



**WOOD BUFFALO
ENVIRONMENTAL ASSOCIATION**

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Wood Buffalo Environmental Association

FEBRUARY 2024 MONTHLY REPORT

CONTINUOUS MONITORING

March 28, 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association





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March 28, 2024

Director, Environmental Monitoring and Evaluation Branch
Alberta Environment and Protected Areas
11th Floor, Oxbridge Place
9820 106 Street
Edmonton, Alberta T5K 2J6

**RE: Monthly Ambient Air Quality Monitoring Report February 2024
Wood Buffalo Environmental Association**

Enclosed is the February 2024 Ambient Air Quality Monitoring Report for the continuous ambient air quality monitoring stations of the Wood Buffalo Environmental Association (WBEA) regional air quality monitoring network.

The continuous ambient air quality monitoring network stations are:

AMS 01 – Bertha Ganter – Fort McKay	AMS 19 – Firebag
AMS 02 – Mildred Lake	AMS 20 – MacKay River
AMS 03 – Lower Camp (Meteorology)	AMS 21 – Conklin
AMS 04 – Buffalo Viewpoint	AMS 22 – Janvier
AMS 05 – Mannix	AMS 23 – Fort Hills
AMS 06 – Patricia McInnes	AMS 25 – Waskōw ohci Pimâtisiwin
AMS 07 – Athabasca Valley	AMS 26 – Christina Lake
AMS 08 – Fort Chipewyan	AMS 27 – Jackfish 2/3
AMS 09 – Barge Landing	AMS 29 – Surmont 2
AMS 11 – Lower Camp (Air Quality)	AMS 30 – Elys River
AMS 13 – Fort McKay South	AMS 501 – Leismer
AMS 14 – Anzac	AMS 505 – Sawbones Bay
AMS 17 - Wapasu	AMS 507 – Kirby South
AMS 18 – Stony Mountain	AMS 511 – Blackgold

The WBEA submits this report on behalf of its members and for some members to satisfy the requirements contained in their EPEA Approvals (as amended):



Industry Operators

Athabasca Oil Corporation
Canadian Natural

EPEA Approval No.

289664-00-00; 241311-00-00
149968-01-00; 153125-01-00;
20809-02-00; 224816-01-00; 228044-00-00;
237382-00-00

Cenovus Energy Inc.

48522-01-00

ChemTrade Logistics

404827-00-00

CNOOC International

137467-01-00; 236394-00-00

Connacher Oil and Gas Ltd.

240008-00-00

ConocoPhillips

48263-01-00

Fort Hills Energy Corporation

151469-01-00

Hammerstone Corporation

189942-00-00

Harvest Operations Corp.

246984-01-00

H.J. Baker Sulphur Canada ULC

426549-00-00

Husky Oil Operations Ltd.

206355-01-00

Imperial Oil Ltd.

00046586-00-00

Inter Pipeline Ltd.

73203-02-00

Keyera Energy Ltd.

187-03-00

MEG Energy Corp.

00216466-01-00

Parsons Creek Aggregates

231302-00

PetroChina Canada Ltd.

254465-00-00

Suncor Energy Inc.

094-02-00; 80105-01-00

Sunshine Oilsands Ltd.

305529-00-00

Surmont Energy

318401-00-00

Syncrude Canada Ltd.

026-02-00

Titan Tire Reclamation Corporation

364232-00-00

Government and Non-Government Organizations

Alberta Energy Regulator

Health Canada

Alberta Environment and Protected Areas

Keyano College

Alberta Health

Parks Canada

Alberta Health Services

Regional Municipality of Wood Buffalo

Environment and Climate Change Canada

Indigenous Communities

Athabasca Chipewyan First Nation

Fort McKay First Nation

Chard Métis Nation

Fort McMurray 468 First Nation

Chipewyan Prairie Dene First Nation

Fort McKay Métis

Christina River Dene Nation Council

Lakeland Métis

Conklin Resource Development Advisory
Council

McMurray Métis

Mikisew Cree First Nation

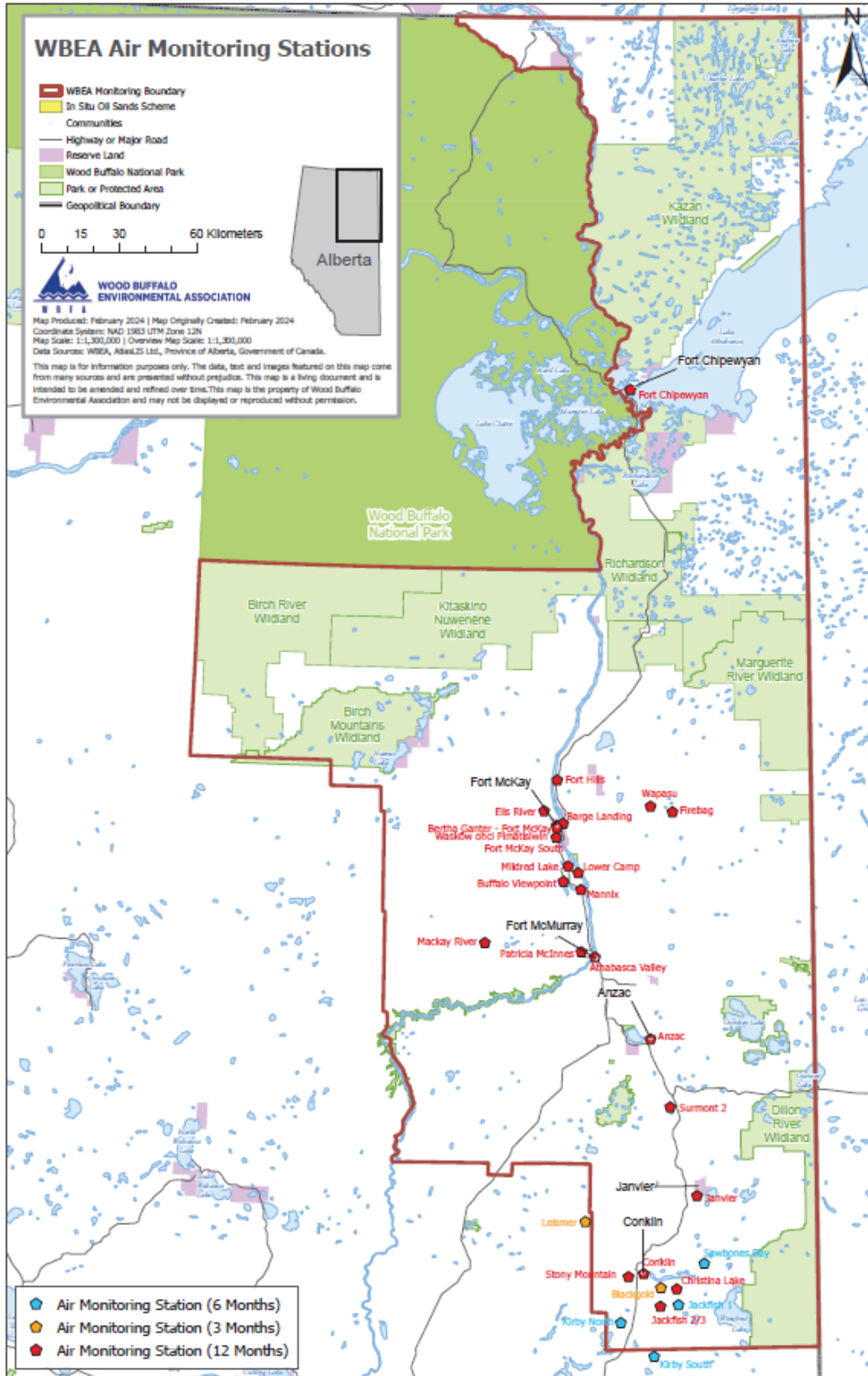


Figure 1. Map of WBEA Continuous Monitoring Network

The following operational notes are provided as per the Air Monitoring Directive requirements.

1.0 Concentrations in Excess of Alberta Ambient Air Quality Guidelines and Objectives

There were no ambient concentrations in excess of the Alberta Ambient Air Quality Objectives or Guidelines (AAAQO/AAAQG) as indicated in the Air Monitoring Directive Section RC 15-F for CO, Dustfall NH₃, NO₂, O₃, SO₂, and TRS.

There were six ground-level concentrations in excess of the 1-hour H₂S objective reported to AEPA; following data validation and processing, all exceedances were confirmed.

There was one ground-level concentrations in excess of the 24-hour H₂S objective reported to AEPA; following data validation and processing, no exceedances were confirmed.

There were five ambient ground-level concentrations in excess of the 1-hour PM_{2.5} guideline reported to AEPA; following data validation and processing, all exceedances were confirmed.

There was one ambient ground-level concentrations in excess of the 24-hour PM_{2.5} objective reported to AEPA; following data validation and processing, no exceedances were confirmed.

There was three ambient ground-level concentrations in excess of the 24-hour TSP objective reported to AEPA; following data validation and processing, all exceedances were confirmed.

Site	Parameter	Date / Time	Reference	Period	Reported	Final	Status*
Mannix	H2S	1Feb24, 23:00	424590	1-hr	12	11.7	exc
Mannix	H2S	2Feb24, 04:00	424593	1-hr	11	11.2	exc
Mannix	H2S	2Feb24, 24:00	424640	24-hr	3	3.0	nae
Christina Lake	H2S	3Feb24, 23:00	424656	1-hr	10	10.2	exc
Conklin	PM2.5	4Feb24, 01:00	424671	1-hr	93	92.5	exc
Mannix	H2S	7Feb24, 21:00	424780	1-hr	13	13.3	exc
Mannix	H2S	8Feb24, 07:00	424783	1-hr	11	11.0	exc
Fort Hills	PM2.5	19Feb24, 22:00	425092	1-hr	87	87.3	exc
Fort Hills	PM2.5	19Feb24, 23:00	425092	1-hr	80	80.2	exc
Fort Hills	PM2.5	19Feb24, 24:00	425092	24-hr	29	28.9	nae
Mildred Lake	H2S	21Feb24, 12:00	425154	1-hr	11	10.4	exc
Surmont 2	PM2.5	27Feb24, 20:00	425410	1-hr	85	85.2	exc
Bertha Ganter	PM2.5	28Feb24, 03:00	425411	1-hr	97	96.6	exc
Ells River	TSP	5Feb24, 24:00	425675	24-hr	171	171	exc
Ells River	TSP	17Feb24, 24:00	425676	24-hr	112	112	exc
Ells River	TSP	23Feb24, 24:00	425677	24-hr	111	111	exc

*status legend:

- late exceedance, raw values were not found to be in exceedance in real time, and/or were not reported, but final values were found to be an exceedance after data processing.
- exc exceedance, raw values reported in real time were confirmed to be in exceedance after data processing.
- nae not an exceedance, raw values reported in real time were found not in exceedance after data processing.
- ret retracted, reported exceedance was found to be not an exceedance after investigation of measurement system status and/or validation of raw data in conjunction with all associated measurement parameters.

2.0 Data Processing and Validation

Concentrations reported in near real-time are raw values. The final values are determined after processing data for reporting. For all parameters, except PM_{2.5}, the final 5-minute data values are determined by subtracting the daily zero responses, interpolated to the time of each raw 5-minute value, from the raw 5-minute data values. The PM_{2.5} analyzers do not have the capability of performing zero's, therefore, the raw 5-minute values are validated through a comparison with associated parameters at the same, or a nearby, AMS. The final 5-minute data values are then rounded to one decimal place greater than the reporting precision indicated in the Air Monitoring Directive (AMD). The final 1-hour data values are calculated from final 5-minute data values and then rounded to reporting precision. The final 24-hour data values are calculated from final 1-hour values.

After data processing and validation, NO₂ concentrations are re-calculated from baseline-corrected NO_x and NO concentrations. Specifically, the NO concentration is subtracted from the NO_x concentration to determine the NO₂ concentration.

2.1 Revisions to ETS Electronic Transfer System – Data and Monthly Reports

There were no revisions to historical data stored at the Electronic Transfer System with this monthly report.

3.0 Operational Status

3.1 Continuous Monitoring

In February 2024, there were two instances that resulted in monitoring instruments operating less than 90% of the time.

Station	Parameter	Details
Surmont 2	THC	<p>The THC analyzer at the Surmont 2 air monitoring station (AMS) operated less than 90% of February 2024, which is a contravention of the Air Monitoring Directive (AMD) (2016, as amended), Chapter 6, Clause DQ 4-C. This incident was reported to Alberta Environment and Protected Areas (AB EPA) March 11, 2024 (reference number 425774).</p> <p>During the daily system check on February 24, the daily zero for THC was elevated and the daily span response was outside the AMD criteria. The WBEA investigated and determined the zero-air generator was defective and</p>

could not maintain adequate pressure. On February 26, the zero-air generator was replaced, its performance was verified, and the issue was resolved. During the monthly data validation process a total of 86 hours of data were invalidated due to this incident, resulting in an 86% operational time for February.

The WS/WD/VWS sensor at the 163-meter elevation at Lower Camp Met Tower operated less than 90% of February 2024, which is a contravention of the Air Monitoring Directive (AMD) (2016, as amended), Chapter 6, Clause DQ 4-C This incident was reported to Alberta Environment and Protected Areas (AB EPA) on March 12, 2024 (reference number 425820).

Lower Camp –
Meteorology WS/WD/VWS
 at 163m

Throughout February, there were intermittent flat-line periods in the WS/WD/VWS sensors' output signal at the 163-meter elevation. Ice fog interfering with the sonic sensor is considered to be the most likely cause and the sensor operation returned to normal once weather conditions changed. Also, periodic failure of the data acquisition system resulted in additional downtime. During the data validation process, a total of 92 hours of data were invalidated, resulting in 87% operational time for February.

3.2 Intermittent Monitoring

The results for time-integrated sampling of precipitation, PAH, VOC, PM_{2.5} ECO, PM_{2.5}, and PM₁₀ will be submitted in the 2024 Annual Report.

3.3 General Network Notes

The Ammonia (NH₃) analyzer currently operates on a 0 to 2500 ppb operating range with a detection level of 5 ppb in the WBEA network. In data processing, values less than five ppb have been considered below detection levels and are reported as zero.

Total hydrocarbon (THC), non-methane hydrocarbon (NMHC), and methane (CH₄) measurements are collected at some air monitoring stations in the WBEA network using the Thermo Environmental model 55i direct THC/CH₄/NMHC analyzer. This analyzer uses a Gas Chromatography (GC) based system, which resets the baseline value at the start of every run. This may cause the ambient background to indicate a response below the expected 1.8 ppm background level. When all measurable criteria indicate valid data during the QAQC and validation process, the data is reported without any additional flags. However, a response below the expected 1.8 ppm triggers an investigation of the analyzer to determine if there is an issue.

Monitoring notes, including changes to monitoring locations, methods, or equipment, and any reporting or monitoring irregularities, for the continuous monitoring stations, are provided on a station-by-station basis. Notes of each interrupted event are provided in chronological order, and meteorological parameters are mentioned last.

Station 1, Bertha Ganter – Fort McKay

The NH₃ analyzer required additional time to stabilize to levels below ambient concentrations following the automated daily spans and routine monthly multipoint calibrations. Additional time is required for stabilization after exposure to high concentrations of NH₃ gas, and this is an inherent behavior in the NH₃

analyzer operations due to the properties of the NH₃ gas. Data for 1 hour following the daily spans have been reported as invalid for a total of 29 hours this month.

Unstable operations due to excessive baseline drift in the output signal of the NH₃ analyzer on February 2 resulted in 1 hour of invalid data.

Maintenance to reinitiate the daily QA check on February 27 interrupted the normal operations of SO₂ and THC/NMHC/CH₄ analyzers for 1 hour.

Cleaning of the manifold on February 27 interrupted the normal operations of all gaseous analyzers, except NH₃ analyzer, for 1 hours.

Intermittent flatlines in the output signal of the wind speed and wind direction all through out the month resulted in 7 hours of invalid data.

Station 2, Mildred Lake

Maintenance to replace the support gas cylinder for THC/NMHC/CH₄ on February 28 resulted in 2 hours of downtime.

Intermittent flatlines in the output signal of the wind sensor through out the month resulted in 19 hours of invalid data.

Station 3, Lower Camp – Meteorology

Failure to record data for all meteorological sensors between February 22 and 28 resulted in 22 hours of invalid data.

Failure to record data for the temperature sensor at 20-meter on February 25 resulted in 1 hour of invalid data.

Intermittent flatlines in the output signal of the wind speed, wind direction and vertical wind speed at 45-meter all through out the month resulted in 13 hours of invalid data.

Intermittent flatlines in the output signal of the wind speed, wind direction and vertical wind speed at 100-meter all through out the month resulted in 50 hours of invalid data.

Intermittent flatlines in the output signal of the wind speed, wind direction and vertical wind speed at 163-meter all through out the month resulted in 70 hours of invalid data.

Station 4, Buffalo Viewpoint

Maintenance to recalibrate THC/NMHC/CH₄ analyzer due to stabilization issue on February 9 resulted in 3 hours of downtime.

Cleaning of the manifold on February 27 interrupted the normal operations of all gaseous analyzers for 1 hour.

Maintenance to replace the external valve for H₂S analyzer on February 29 resulted in 5 hours of downtime.

A flatline in the output signal of the wind sensor on February 10 resulted in 1 hour of invalid data.

Automated daily zero-response checks of the NO₂ analyzer did not meet WBEA's QC acceptance criteria for the month of February. Therefore, the calibrator zeros from the January, February and March multi-point calibrations were used to validate the analyzer baseline response.

Station 5, Mannix

Analyzer failure due to inoperative pump of the THC/NMHC/CH₄ analyzer on February 7 to 8 resulted in 34 hours of invalid data. Subsequent maintenance to replace the pump on February 8 resulted in an additional 4 hours of downtime.

Cleaning of the manifold on February 15 interrupted the normal operations of SO₂ and THC/NMHC/CH₄ analyzers for 1 hour.

Unstable operation due to THC/NMHC/CH₄ analyzer performance within non-compliance of AMD on February 27 resulted in 7 hours of invalid data. Subsequent maintenance to recalibrate the analyzer and to replace the support gas cylinder on February 27 resulted in additional 6 hours of downtime.

Flatline in the output signal of the wind speed, wind direction and vertical wind speed at 20-meter on February 2 resulted in 1 hour of invalid data.

Intermittent flatlines in the output signal of the wind speed, wind direction and vertical wind speed at 45-meter all throughout the month resulted in 40 hours of invalid data.

Intermittent flatlines in the output signal of the wind speed, wind direction and vertical wind speed at 75-meter all throughout the month resulted in 58 hours of invalid data.

Intermittent flatlines in the output signal of the wind speed, wind direction and vertical wind speed at 90-meter all throughout the month resulted in 59 hours of invalid data.

Station 6, Patricia McInnes

The NH₃ analyzer required additional time to stabilize to levels below ambient concentrations following the automated daily spans and routine monthly multipoint calibrations. NH₃ analyzers require additional time for stabilization after being exposed to high concentrations, this is due to the physical properties of the NH₃ gas. Data for 1 hour following each daily span has been reported as invalid for a total of 31 hours this month.

Cleaning of the manifold on February 7 interrupted the normal operations of all gaseous analyzers except for TRS for 1 hour.

Maintenance to reinitiate the daily QA check on February 19 interrupted the normal operation of the O₃ analyzer for 1 hour.

The station power failure on February 23 interrupted the normal operations of all air quality analyzers for 1 hour.

Unstable operation of the TRS analyzer due to flatline in output signal on February 28 resulted in 10 hours of invalid data. Subsequent maintenance to reboot the TRS analyzer on February 28 resulted in additional 2 hours of downtime.

Unstable operation of the THC/NMHC/CH₄ analyzer due to excessive baseline drift on February 19 to 20 and flatline in analyzer output signal of February 24 resulted in 18 hours of invalid data. Subsequent maintenance to reboot the analyzer resulted in a further 1 hour of downtime.

Station 7, Athabasca Valley

Maintenance to replace the THC/NMHC/CH₄ analyzer, performing column conditioning overnight on February 19 and a follow-up calibration on February 20 resulted in 24 hours of downtime.

Cleaning of the manifold on February 27 interrupted the normal operations of CO, O₃, SO₂, THC/NMHC/CH₄, and TRS analyzers for 2 hours.

Unstable operations due to flatline in analyzer output signal of THC/NMHC/CH₄ analyzer on February 17, 18 and 19 resulted in 25 hours of invalid data. Subsequent maintenance to reboot the analyzer on February 17 and 18 resulted in additional 3 hours of downtime.

Flatline in the output signal of the wind sensors on February 3 resulted in 1 hour of invalid data.

Automated daily zero-response checks of the O₃ analyzer did not meet WBEA's QC acceptance criteria for the month of February. Therefore, the calibrator zeros from the January and February multi-point calibrations were used to validate the analyzer baseline response.

Station 8, Fort Chipewyan

Unstable operation of the O₃ analyzer due to performance within non-compliance of AMD on February 6 to 7 resulted in 15 hours of invalid data.

Station power failure on February 17 interrupted the normal operations of all air quality analyzers for 1 hour.

Station operator activities on February 21 interrupted the normal operations of the CO, CO₂ and SO₂ analyzers for 3 hours.

Unstable operation due to excessive baseline drift of NO₂ analyzer throughout the month resulted in 34 hours of invalid data. Maintenance to replace the NO₂ analyzer on February 20 with a stabilization period overnight and a follow-up calibration on February 21 resulted in additional 13 hours of downtime.

The daily span checks for CO₂ analyzer from February 21 to March 8 were outside the 10% AMD criteria due to the nitrogen generator not operating properly. Due to the remote location of the station, the issue was not immediately resolved; nonetheless, on March 7, an in-person visit rectified this issue.

Station 9, Barge Landing

Intermittent flatlines in the output signal of the wind sensors at 10-meter all through out the month resulted in 9 hours of invalid data.

Flatline in the output signal of the wind sensors at 20-meter on February 8 resulted in 1 hour of invalid data.

Station 11, Lower Camp

Cleaning of the manifold on February 29 interrupted the normal operations of all gaseous analyzers for 1 hour.

Maintenance to replace the scrubber beads and subsequent stabilization of the H₂S analyzer on February 28 and 29 resulted in 18 hours of downtime.

A flatline in the output signal of the wind sensor on February 7 resulted in 1 hour of invalid data.

Station 13, Fort McKay South

Intermittent flatlines in the output signal of the wind sensor throughout the month resulted in 4 hours of invalid data.

Station 14, Anzac

Unstable operations due to excessive baseline drift in the output signal of the THC/NMHC/CH₄ analyzer on February 2 and 3 resulted in 31 hours of invalid data. Subsequent maintenance to adjust the retention timing of the THC/NMHC/CH₄ analyzer on February 3 resulted in additional 3 hours of downtime.

Cleaning of the sample manifold on February 7 interrupted the normal operation of NO₂, O₃, THC/NMHC/CH₄ and TRS analyzers for 1 hour.

Maintenance to replace the support gas cylinder for THC/NMHC/CH₄ on February 14 resulted in 3 hours of downtime.

Station 17, Wapasu

Cleaning of the manifold on February 13 interrupted the normal operations of SO₂, H₂S, THC and O₃ analyzers for 1 hour.

An internal audit interrupted the normal operations of all air quality analyzers on February 15 resulted in 2 to 3 hours of downtime.

Flatline in the output signal of the wind sensor on February 8 resulted in 3 hours of invalid data.

Maintenance to empty precipitation bucket of the precipitation collector on February 5 resulted in 1 hour of invalid data.

Station 18, Stony Mountain

Unstable operations due to inconsistent response of the THC/NMHC/CH₄ analyzer on February 1 resulted in 12 hours of invalid data.

Cleaning of the manifold on February 21 interrupted the normal operations of all gaseous analyzers, except NO₂ analyzer, for 2 hours.

Unstable operations due to inconsistent response of the THC/NMHC/CH₄ analyzer on February 29 resulted in 23 hours of invalid data.

Station 19, Firebag

Station power failure on February 3 interrupted the normal operations of all gaseous analyzers for 4 to 5 hours.

Flatlines in the output signal of the wind sensor on February 3 and 4 resulted in 12 hours of invalid data.

Station 20, MacKay River

Cleaning of the manifold on February 20 interrupted the normal operations of all gaseous analyzers for 1 hour.

Flat lines in the output signal of the wind sensor on February 8 and 15 resulted in 2 hours of invalid data.

Maintenance to empty precipitation bucket of the precipitation collector on February 20 resulted in 1 hour of invalid data.

Station 21, Conklin

Intermittent flatlines in the output signal of the wind sensor throughout the month resulted in 3 hours of invalid data.

Automated daily zero-response checks of the O₃ analyzer did not meet WBEA's QC acceptance criteria for February. Therefore, the calibrator zeros from the January, and February multi-point calibrations were used to validate the analyzer baseline response.

Relative humidity and temperatures can affect the performance of the SO_x scrubbers in the TRS analyzer. During these events, the sulfur concentrations take a longer period to stabilize during the daily span checks. Therefore, the TRS span was outside of the 10% AMD criteria from February 27 to 28.

Station 22, Janvier

Maintenance to adjust the retention windows of the THC/NMHC/CH₄ analyzer chromatography on February 29 resulted in 4 hours of downtime.

Intermittent flatlines in the output signal of the wind sensor at the 20-meter elevation throughout the month resulted in 6 hours of invalid data.

A flatline in the output signal of the wind sensor at the 10-meter elevation on February 15 resulted in 1 hour of invalid data.

Station 23, Fort Hills

No operational issues to report.

Station 25, Waskōw ohci Pimâtisiwin

Cleaning of the manifold on February 27 interrupted the normal operations of SO₂ and H₂S analyzers for 1 hour.

Intermittent flatlines in the output signal of the wind sensor throughout the month resulted in 7 hours of invalid data.

Station 26, Christina Lake

Analyzer failure due to communication error of the SO₂ analyzer on February 1 through 3 resulted in 57 hours of invalid data. Subsequent maintenance to replace the SO₂ analyzer on February 3 resulted in additional 2 hours of downtime.

Maintenance to reset station logger/modem on February 2 interrupted the normal operations of H₂S and NO₂ analyzers for 1 hour.

Maintenance to reinitiate the daily QA check on February 3 interrupted the normal operations of H₂S and NO₂ analyzers for 1 to 2 hours.

Station 27, Jackfish 2/3

Maintenance to replace and a subsequent stabilization of the SO₂ analyzer on February 13 and 14 resulted in 20 hours of downtime.

Cleaning of the sample manifold on February 22 interrupted the normal operation of NO₂ and SO₂ analyzers for 1 hour.

Unstable operations due to excessive baseline drift in the output signal of the H₂S analyzer on February 25 resulted in 2 hours of invalid data.

The daily span check of the NO₂ analyzer was outside the 10% AMD criteria on February 18 due to an interruption in the station calibrator configuration.

Station 29, Surmont 2

Station power failure on February 7 interrupted the normal operations of all air quality analyzers for 4 hours.

Unstable operations of the THC analyzer on February 23 through 26 due to failure of the zero-air generator resulted in 83 hours of invalid data. Subsequent maintenance to replace the zero-air generator and verify THC analyzers linearity on February 26 resulted in additional 4 hours of downtime.

Intermittent flatlines in the output signal of the wind sensor throughout the month resulted in 14 hours of invalid data.

Station 30, Ells River

Maintenance to replace the support gas cylinder for THC/NMHC/CH₄ on February 27 resulted in 2 hours of downtime.

Maintenance to replace the calibration gas cylinder for NO₂ analyzer on February 4 resulted in 1 hour of downtime.

Intermittent flatlines in the output signal of the wind sensor throughout the month resulted in 5 hours of invalid data.

The daily span check for the NO₂ analyzer was outside the 10% AMD criteria on February 3 and 4 due to a depleted calibration gas cylinder.

Station 501, Leismer

Failure to record data of all parameters on February 20 resulted in 4 hours of invalid data.

A flatline in the output signal of the wind sensor on February 5 resulted in 1 hour of invalid data.

Station 505, Sawbones Bay

The relative humidity sensor operated out of range throughout the month resulting in 32 hours of invalid data.

A flatline in the output signal of the wind sensor on February 4 resulted in 3 hours of invalid data.

Automated daily zero-response checks of the NO₂ analyzer did not meet WBEA's QC acceptance criteria for February. Therefore, the calibrator zeros from the January, February, and March multi-point calibrations were used to validate the analyzer baseline response.

Station 507, Kirby South

Following the firmware update on the SO₂ analyzer on February 14, the analyzer stopped communicating with the datalogger. Maintenance to conduct field troubleshooting and replacement of the SO₂ analyzer on February 14 and 15 resulted in 21 hours of downtime.

Unstable operations of the THC analyzer due to excessive baseline drift on February 15 resulted in 7 hours of invalid data. Subsequent maintenance to replace the support gas cylinder and field maintenance resulted in additional 26 hours of downtime.

Unstable operations of the THC analyzer due to as-found span during maintenance calibration being outside of AMD compliance on February 22 resulted in 9 hours of downtime. Subsequent maintenance to adjust the zero and span response of the THC analyzer on February 22 resulted in additional 3 hours of downtime.

Station 511, Blackgold

Unstable operations of the SO₂ analyzer due to excessive baseline drift throughout the month resulted in 50 hours of invalid data.

A flatline in the output signal of the wind sensor on February 20 resulted in 1 hour of invalid data.

If additional information is required, please contact the Wood Buffalo Environmental Association at (780) 799-4420.

Yours sincerely,

Wood Buffalo Environmental Association

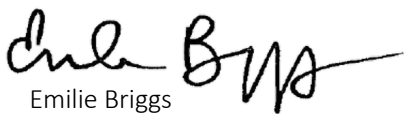
The representative of the Person Responsible for this monitoring program is Emilie Briggs, Operations Manager, WBEA.

Level one (L1) data review was completed by the Field Technicians responsible for each respective air monitoring station. Level two (L2) data validation, report preparation, and submission were completed by Asad Hidayat and Denny Estador of WBEA. The WBEA has retained the services of Whiteley Enterprises to conduct Level three (L3) review on its behalf. Contact information for WBEA staff is included below.

Asad Hidayat, Data Technician
Wood Buffalo Environmental Association
T: (780) 215-6000
E: ahidayat@wbea.org

Denny Estador, Data Technician
Wood Buffalo Environmental Association
T: (780) 713-8510
E: destador@wbea.org

I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe, and the specified analysis, summarization, and reporting requirements.



Emilie Briggs
Operations Manager
Wood Buffalo Environmental Association
Unit 3 - 805 Memorial Drive
Fort McMurray AB T9K 0K4
www.wbea.org
T: (780) 799-8216 | E: ebriggs@wbea.org

R00_2402

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
MONTHLY AIR MONITORING SUMMARY

February 2024

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Created: Mar 28 2024 08:06:08

APPROVAL NUMBERS	REPORT DATE						
	MONTH	YEAR					
289664-00-00	2	2024					
241311-00-00	CONTINUOUS AMBIENT MONITORING						
20809-02-00							
149968-01-00							
237382-00-00				ONE-HOUR AVERAGE		24-HOUR AVERAGE	
48522-01-00	PARAMETER	STN. NO.	% TIME OPERATIONAL	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION
240008-00-00	SO2(ppb)	1	100	18	0	2.8	0
48263-01-00	SO2(ppb)	2	100	41.4	0	11.8	0
224816-00-00	SO2(ppb)	4	100	21.3	0	3.4	0
151469-01-00	SO2(ppb)	5	100	106.5	0	20.4	0
189942-00-00	SO2(ppb)	6	100	24.1	0	6.2	0
206355-00-00	SO2(ppb)	7	100	38.6	0	6.9	0
46586-00-00	SO2(ppb)	8	99	9.6	0	2.2	0
73203-02-00	SO2(ppb)	9	100	10.7	0	2.9	0
216466-01-00	SO2(ppb)	11	100	40.5	0	9.0	0
137467-01-00	SO2(ppb)	13	100	130.0	0	6.7	0
236394-00-00	SO2(ppb)	14	100	11.9	0	4.7	0
254465-00-00	SO2(ppb)	17	100	20.6	0	7.8	0
094-03-00	SO2(ppb)	18	100	5.6	0	2.1	0
80105-01-00	SO2(ppb)	19	99	17.8	0	6.7	0
305529-00-00	SO2(ppb)	20	100	27.6	0	4.7	0
318401-00-00	SO2(ppb)	21	100	6.1	0	0.9	0
026-03-00	SO2(ppb)	22	100	5.0	0	1.3	0
364232-00-00	SO2(ppb)	23	100	15.2	0	2.6	0
228044-00-00	SO2(ppb)	25	100	15.6	0	2.3	0
247548-00-00	SO2(ppb)	26	92	10.8	0	2.2	0
231302-00-00	SO2(ppb)	27	97	11.3	0	1.8	0
246984-01-00	SO2(ppb)	29	99	8.9	0	2.3	0
153125-01-00	SO2(ppb)	30	100	17.3	0	3.1	0
	SO2(ppb)	501	99	31.5	0	4.0	0
	SO2(ppb)	505	100	18.3	0	7.4	0
	SO2(ppb)	507	97	12.0	0	2.3	0
	SO2(ppb)	511	93	18.1	0	4.5	0
	H2S(ppb)	1	100	3.3	0	0.9	0
	H2S(ppb)	2	100	10.4	1	1.6	0
	H2S(ppb)	4	99	7.3	0	1.2	0
	H2S(ppb)	5	100	13.3	4	3.0	0
	H2S(ppb)	11	97	9.1	0	2.1	0
	H2S(ppb)	17	99	1.9	0	0.4	0
	H2S(ppb)	19	99	6.5	0	0.4	0
	H2S(ppb)	20	100	1.5	0	0.3	0
	H2S(ppb)	25	100	3.1	0	0.9	0
	H2S(ppb)	26	100	10.2	1	1.4	0
	H2S(ppb)	27	100	1.4	0	0.5	0
	H2S(ppb)	29	99	0.7	0	0.3	0
	H2S(ppb)	501	99	0.5	0	0.2	0
	H2S(ppb)	505	100	1.5	0	0.7	0
	H2S(ppb)	507	100	0.8	0	0.3	0
	H2S(ppb)	511	100	1.4	0	0.3	0
	TRS(ppb)	1	100	4.6	0	1.5	0
	TRS(ppb)	6	98	2.1	0	1.0	0
	TRS(ppb)	7	100	2.0	0	0.8	0
	TRS(ppb)	8	100	0.6	0	0.2	0
	TRS(ppb)	9	100	4.3	0	1.3	0
	TRS(ppb)	13	100	5.2	0	1.4	0
	TRS(ppb)	14	100	1.4	0	0.5	0
	TRS(ppb)	18	100	0.5	0	0.3	0
	TRS(ppb)	21	100	0.7	0	0.5	0
	TRS(ppb)	22	100	0.7	0	0.4	0
	TRS(ppb)	23	100	2.1	0	0.5	0
	TRS(ppb)	30	100	2.4	0	0.8	0
	THC(ppm)	1	100	3.9	-	2.9	-
	THC(ppm)	2	100	4.1	-	3.0	-
	THC(ppm)	4	99	5.1	-	3.2	-
	THC(ppm)	5	93	6.7	-	3.4	-
	THC(ppm)	6	97	2.9	-	2.4	-
	THC(ppm)	7	92	3.2	-	2.5	-
	THC(ppm)	9	100	3.8	-	2.6	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
MONTHLY AIR MONITORING SUMMARY

February 2024

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APPROVAL NUMBERS	REPORT DATE		CONTINUOUS AMBIENT MONITORING				
	MONTH	YEAR	% TIME OPERATIONAL	ONE-HOUR AVERAGE		24-HOUR AVERAGE	
	2	2024		MAXIMUM CONCENTRATION	NO. READINGS > REGULATION	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION
289664-00-00	THC(ppm)	11	100	4.4	-	3.1	-
241311-00-00	THC(ppm)	13	100	4.4	-	2.9	-
20809-02-00	THC(ppm)	14	95	2.9	-	2.2	-
149968-01-00	THC(ppm)	17	100	3.1	-	2.5	-
237382-00-00	THC(ppm)	18	95	2.4	-	2.2	-
48522-01-00	THC(ppm)	19	99	2.8	-	2.4	-
240008-00-00	THC(ppm)	20	100	3.5	-	2.5	-
48263-01-00	THC(ppm)	21	100	2.5	-	2.3	-
224816-00-00	THC(ppm)	22	99	2.3	-	2.1	-
151469-01-00	THC(ppm)	23	100	7.9	-	3.4	-
189942-00-00	THC(ppm)	29	87	2.4	-	2.2	-
206355-00-00	THC(ppm)	30	100	5.9	-	3.0	-
46586-00-00	THC(ppm)	507	94	3.0	-	2.5	-
73203-02-00	THC(ppm)	511	100	3.4	-	2.4	-
216466-01-00	O3(ppb)	1	100	41.1	0	28.3	-
137467-01-00	O3(ppb)	4	100	45.7	0	38.4	-
236394-00-00	O3(ppb)	6	100	45.4	0	39.9	-
254465-00-00	O3(ppb)	7	100	44.5	0	32.6	-
094-03-00	O3(ppb)	8	98	44.2	0	40.0	-
80105-01-00	O3(ppb)	13	100	44.2	0	28.9	-
305529-00-00	O3(ppb)	14	100	44.3	0	39.7	-
318401-00-00	O3(ppb)	17	100	45.3	0	41.5	-
026-03-00	O3(ppb)	18	100	44.6	0	40.3	-
364232-00-00	O3(ppb)	21	100	46.1	0	39.9	-
228044-00-00	O3(ppb)	22	100	49.6	0	43.5	-
247548-00-00	NO2(ppb)	1	100	38.1	0	21.5	-
231302-00-00	NO2(ppb)	4	100	38.5	0	30.3	-
246984-01-00	NO2(ppb)	6	100	34.1	0	20.7	-
153125-01-00	NO2(ppb)	7	100	37.1	0	20.6	-
	NO2(ppb)	8	93	17.0	0	4.9	-
	NO2(ppb)	9	100	44.2	0	28.3	-
	NO2(ppb)	13	100	37.4	0	20.2	-
	NO2(ppb)	14	100	20.8	0	10.2	-
	NO2(ppb)	17	100	31.0	0	11.5	-
	NO2(ppb)	18	100	11.9	0	5.4	-
	NO2(ppb)	19	99	36.1	0	14.8	-
	NO2(ppb)	20	100	31.9	0	14.9	-
	NO2(ppb)	21	100	19.2	0	7.5	-
	NO2(ppb)	22	100	11.1	0	5.3	-
	NO2(ppb)	23	100	52.5	0	35.1	-
	NO2(ppb)	26	100	27.7	0	17.0	-
	NO2(ppb)	27	100	14.7	0	4.8	-
	NO2(ppb)	29	99	21.0	0	6.6	-
	NO2(ppb)	30	100	46.7	0	23.3	-
	NO2(ppb)	501	99	17.7	0	3.9	-
	NO2(ppb)	505	100	28.2	0	11.0	-
	NO2(ppb)	507	100	38.3	0	10.3	-
	NO2(ppb)	511	100	20.0	0	8.7	-
	CO(ppm)	1	100	0.4	0	0.3	-
	CO(ppm)	7	100	0.6	0	0.3	-
	CO(ppm)	8	99	0.3	0	0.1	-
	CO(ppm)	18	100	0.2	0	0.2	-
	CO2(ppm)	1	100	459.5	-	444.5	-
	CO2(ppm)	8	99	447.0	-	437.5	-
	CO2(ppm)	18	100	467.6	-	451.1	-
	NH3(ppb)	1	96	0.0	0	0.0	-
	NH3(ppb)	6	96	0.0	0	0.0	-
	PM2.5(ug/m3)	1	100	96.6	1	17.1	0
	PM2.5(ug/m3)	4	100	33.3	0	17.1	0
	PM2.5(ug/m3)	6	100	37.6	0	16.5	0
	PM2.5(ug/m3)	7	100	62.7	0	15.2	0
	PM2.5(ug/m3)	8	100	12.3	0	4.2	0
	PM2.5(ug/m3)	9	100	54.9	0	25.1	0
	PM2.5(ug/m3)	13	100	38.6	0	15.3	0

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
MONTHLY AIR MONITORING SUMMARY

February 2024

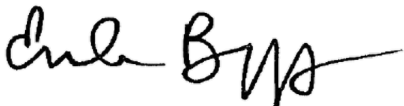
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REPORT DATE

MONTH	YEAR
2	2024

CONTINUOUS AMBIENT MONITORING

APPROVAL NUMBERS	PARAMETER	STN. NO.	% TIME OPERATIONAL	ONE-HOUR AVERAGE		24-HOUR AVERAGE	
				MAXIMUM CONCENTRATION	NO. READINGS > REGULATION	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION
289664-00-00	PM2.5(ug/m3)	14	100	55.5	0	9.5	0
241311-00-00	PM2.5(ug/m3)	17	100	18.2	0	10.6	0
20809-02-00	PM2.5(ug/m3)	18	100	11.3	0	6.1	0
149968-01-00	PM2.5(ug/m3)	21	100	92.5	1	15	0
237382-00-00	PM2.5(ug/m3)	22	100	20.9	0	4.9	0
48522-01-00	PM2.5(ug/m3)	23	100	87.3	2	28.9	0
240008-00-00	PM2.5(ug/m3)	29	99	85.2	1	14.7	0
48263-01-00	PM2.5(ug/m3)	30	100	38.9	0	18.1	0
224816-00-00	WS(km/h)	1	99	-	-	-	-
151469-01-00	WS(km/h)	2	97	-	-	-	-
189942-00-00	WS(km/h)	4	100	-	-	-	-
206355-00-00	WS(km/h)	5	100	-	-	-	-
46586-00-00	WS(km/h)	6	100	-	-	-	-
73203-02-00	WS(km/h)	7	100	-	-	-	-
216466-01-00	WS(km/h)	8	100	-	-	-	-
137467-01-00	WS(km/h)	9	100	-	-	-	-
236394-00-00	WS(km/h)	11	100	-	-	-	-
254465-00-00	WS(km/h)	13	99	-	-	-	-
094-03-00	WS(km/h)	14	100	-	-	-	-
80105-01-00	WS(km/h)	17	100	-	-	-	-
305529-00-00	WS(km/h)	18	100	-	-	-	-
318401-00-00	WS(km/h)	19	98	-	-	-	-
026-03-00	WS(km/h)	20	100	-	-	-	-
364232-00-00	WS(km/h)	21	100	-	-	-	-
228044-00-00	WS(km/h)	22	99	-	-	-	-
247548-00-00	WS(km/h)	23	100	-	-	-	-
231302-00-00	WS(km/h)	25	99	-	-	-	-
246984-01-00	WS(km/h)	26	100	-	-	-	-
153125-01-00	WS(km/h)	27	100	-	-	-	-
	WS(km/h)	29	98	-	-	-	-
	WS(km/h)	30	99	-	-	-	-
	WS(km/h)	501	99	-	-	-	-
	WS(km/h)	505	100	-	-	-	-
	WS(km/h)	507	100	-	-	-	-
	WS(km/h)	511	100	-	-	-	-
							
SIGNATURE OF ASSOCIATION REPRESENTATIVE				FOR ALBERTA ENVIRONMENT USE ONLY			



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS01 BERTHA GANTER - FORT MCKAY FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT McKAY - BERTHA GANTER (AMS01)
 FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2(ppb) Average	661	33	35	99.71	18.2	0	2.8	0
H2S(ppb) Average	661	34	35	99.86	3.3	0	0.9	0
TRS(ppb) Average	661	34	35	99.86	4.6	0	1.5	0
THC(ppm) Average	661	33	35	99.71	3.9	-	2.9	-
NMHC(ppm) Average	661	33	35	99.71	0.712	-	0.253	-
CH4(ppm) Average	661	33	35	99.71	3.6	-	2.7	-
O3 (ppb) Average	662	33	34	99.86	41.1	0	28.3	-
NO2 (ppb) Average	659	36	37	99.86	38.1	0	21.5	-
NO (ppb) Average	659	36	37	99.86	67.6	-	24.7	-
NOX (ppb) Average	659	36	37	99.86	98	-	46.2	-
NH3 (ppb) Average	627	39	69	95.69	0	0	0	-
PM2.5 (ug/m3) Average	695	1	1	100	96.6	1	17.1	0
CO(ppm) Average	662	33	34	99.86	0.4	0	0.3	0
CO2(ppm) Average	663	32	33	99.86	459.5	0	444.5	0
Temperature 2 m (C) Average	696	0	0	100	10.1	-	1.1	-
Temperature 10 m (C) Average	696	0	0	100	9.8	-	2	-
Relative Humidity (%) Average	696	0	0	100	96.1	-	90.4	-
Wind Speed 10 m (km/h) Average	689	0	7	98.99	20	-	12	-
Wind Direction 10 m (deg) Average	689	0	7	98.99	-	-	-	-
Precipitation (mm) Total	696	0	0	100	0.8	-	2.3	-
Leaf Wetness (% of range) Average	696	0	0	100	48.2	-	6.1	-
Global Solar Radiation (W/m2) Average	696	0	0	100	447.9	-	105.3	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BERTHA GANTER FORT McKAY (AMS01)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	661	0.83	2	-	0	0	0.1	0.2	0.5	1.8	18.2
H2S (ppb) Average	661	0.41	0.5	-	0	0.1	0.1	0.2	0.5	0.9	3.3
TRS (ppb) Average	661	0.74	0.6	-	0.3	0.4	0.5	0.5	0.8	1.2	4.6
THC (ppm) Average	661	2.31	0.3	-	2	2	2.1	2.2	2.4	2.8	3.9
NMHC(ppm) Average	661	0.054	0.091	-	0	0	0	0	0.1	0.2	0.712
CH4(ppm) Average	661	2.25	0.3	-	2	2	2.1	2.2	2.3	2.6	
O3 (ppb) Average	662	16.15	11.5	-	0.2	0.9	5.2	15.9	26.3	31.6	41.1
NO2 (ppb) Average	659	12.51	8.4	-	0	1.7	5.7	11.9	18.9	23.9	38.1
NO (ppb) Average	659	6.04	10.8	-	0	0	0	0.9	6.6	21.6	67.6
NOX (ppb) Average	659	18.55	17.1	-	0	1.7	6.4	13.4	26.3	44.6	98
NH3 (ppb) Average	627	0	0	-	0	0	0	0	0	0	0
PM2.5 (ug/m3) Average	695	7.63	7.2	-	0.2	1.9	3.2	5.5	9.8	15.8	96.6
CO(ppm) Average	662	0.22	0	-	0.1	0.2	0.2	0.2	0.2	0.3	0.4
CO2(ppm) Average	663	432.35	7.2	-	421.3	424.5	426.5	430.8	437.6	442.1	459.5
Temperature 2 m (C) Average	696	-9.99	7.6	-	-30.1	-19.3	-14.8	-9.8	-5	-0.5	10.1
Temperature 10 m (C) Average	696	-9.87	7.6	-	-30.2	-19.2	-14.8	-9.8	-4.7	0.2	9.8
Relative Humidity (%) Average	696	70.88	14	-	29.4	49.6	61.3	74.2	81.8	85.6	96.1
Wind Speed 10 m (km/h) Average	689	6.4	4	-	0	2	3	5	9	13	20
Wind Direction 10 m (deg) Average	689	-	-	-	-	-	-	-	-	-	-
Precipitation (mm) Total	696	-	-	6.55	-	-	-	-	-	-	-
Leaf Wetness (% of range) Average	696	3.05	2.2	-	1.4	2.1	2.5	2.7	3.3	3.8	48.2
Global Solar Radiation (W/m2) Average	696	60.77	107.4	-	0	0	0	0	74.1	249.6	447.9

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BERTHA GANTER FORT MCKAY (AMS01)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
ALL GASEOUS ANALYZERS (Except NH3)	27 Feb 2024 16:00	27 Feb 2024 16:00	1	Maintenance - sample manifold cleaned
SO2, THC/NMHC/CH4	27 Feb 2024 16:00	27 Feb 2024 16:00	1	Maintenance - reinitiated daily QA check
NH3	02 Feb 2024 12:00	02 Feb 2024 12:00	1	Unstable Operation - excessive baseline noise
NH3	01 Feb 2024 07:00	29 Feb 2024 05:00	29	Stabilization after daily QA check
Wind Speed, Wind Direction	07 Feb 2024 06:00	07 Feb 2024 07:00	2	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction	08 Feb 2024 00:00	08 Feb 2024 00:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction	08 Feb 2024 03:00	08 Feb 2024 03:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction	08 Feb 2024 05:00	08 Feb 2024 06:00	2	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction	28 Feb 2024 05:00	28 Feb 2024 05:00	1	Flat line in sensor output signal - Sensor frozen



Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 18.2 ppb on Feb 15 18:00	Maximum Daily Average: 2.8 ppb on Feb 12		Hours of Data:	661
Minimum Value: 0.0 ppb on Feb 2 03:00	Minimum Daily Average: 0.0 ppb on Feb 2		Hours of Missing Data:	35
Maximum Diurnal Average: 1.6 ppb at hour 14	Minimum Diurnal Average: 0.3 ppb at hour 24		Hours of Calibration:	33
Monthly Average: 0.83 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.5 P ₉₀ = 1.8 P ₉₉ = 10.6		Percent Operational Time:	99.7

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.6	0.3	Z	0.4	0.7	0.7	8.2	1.5	0.7	0.8	1.7	1.6	0.7	0.5	4.6	7.4	4.5	1.8	1.7	0.9	0.6	0.4	0.2	0.3	1.8	8.2
2-Feb	0.5	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5
3-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2
4-Feb	0.1	0.0	0.0	0.0	0.1	Z	0.2	0.4	2.3	2.8	1.8	2.5	3.5	4.8	6.0	1.1	0.8	1.0	0.9	0.6	0.6	0.5	0.4	0.5	1.3	6.0
5-Feb	Z	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.5	0.4	0.2	C	C	C	C	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.5
6-Feb	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.3	0.1	0.5	1.9	2.1	0.1	0.0	0.1	1.0	6.3	1.5	0.6	6.3
7-Feb	2.6	1.5	Z	0.8	0.3	0.1	0.2	0.2	0.1	0.2	0.2	0.0	0.1	0.2	0.1	0.0	0.3	0.4	1.3	0.9	0.6	0.5	0.5	0.5	0.5	2.6
8-Feb	0.5	0.3	0.3	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.6	0.8	1.1	1.3	1.4	1.5	1.3	0.6	0.5	0.4	0.4	0.3	0.3	0.6	1.5
9-Feb	0.3	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.3
10-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.5	0.3	0.3	0.3	0.4	1.3	5.4	6.9	1.2	1.1	0.8	0.7	0.8	0.3	0.3	0.3	0.3	0.3	0.9	6.9
11-Feb	Z	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.2	0.4
12-Feb	0.1	Z	1.8	2.8	4.6	1.7	9.3	11.2	13.6	7.6	6.8	1.2	0.6	0.3	0.3	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	2.8	13.6
13-Feb	0.2	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	1.3	5.3	2.8	4.5	1.1	0.4	0.3	0.2	0.2	0.2	0.1	0.8	5.3
14-Feb	0.1	0.1	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.2
15-Feb	0.0	0.1	0.1	0.1	Z	1.5	1.7	1.8	1.3	1.1	0.9	0.7	0.6	0.4	0.4	0.5	11.7	18.2	9.4	6.0	2.3	1.2	0.8	0.6	2.7	18.2
16-Feb	0.6	0.4	0.3	0.3	0.3	Z	0.3	0.3	0.4	0.9	0.8	0.5	0.6	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.9
17-Feb	Z	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.5	0.6	1.2	0.7	0.8	0.9	0.8	0.7	0.7	0.3	0.2	0.1	0.2	0.1	0.1	0.4	1.2
18-Feb	0.0	Z	0.1	0.1	0.3	0.1	0.0	0.0	0.1	0.1	0.5	0.6	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.6
19-Feb	0.1	0.1	Z	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.3	0.4	0.6	0.7	0.7	0.6	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.7
20-Feb	0.1	0.1	0.1	Z	0.2	0.1	0.1	0.2	0.2	0.4	0.9	3.1	3.5	4.9	5.1	6.4	4.2	5.5	3.4	2.0	1.8	2.1	1.8	1.1	2.0	6.4
21-Feb	0.5	0.6	0.3	0.3	Z	0.3	0.1	0.1	0.2	0.3	1.1	1.3	4.8	7.1	2.9	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	1.0	7.1
22-Feb	0.3	0.3	0.4	0.4	0.3	Z	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.4	0.5	0.2	0.3	0.2	0.2	0.3	0.3	0.5
23-Feb	Z	2.4	2.2	1.8	3.4	13.0	12.8	13.6	6.7	3.4	1.1	0.6	0.4	0.4	0.2	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.1	2.7	13.6	
24-Feb	0.0	Z	0.1	0.1	0.0	0.1	0.2	0.0	0.1	0.0	0.0	0.7	1.1	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1
25-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
26-Feb	0.1	0.2	0.3	Z	0.3	0.3	0.2	0.2	0.3	0.9	2.2	1.6	0.8	2.3	2.3	1.1	0.6	0.5	0.2	0.3	0.2	0.1	0.1	0.1	0.7	2.3
27-Feb	0.1	0.1	0.1	0.1	Z	0.0	0.1	0.0	0.1	0.1	M	0.3	0.4	0.3	0.1	M	3.6	6.1	2.5	1.2	0.4	0.1	0.0	0.0	0.7	6.1
28-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.1	0.1	0.1	0.4	6.3	9.9	10.1	10.2	4.5	0.6	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	1.9	10.2
29-Feb	Z	0.1	0.0	0.1	0.1	0.1	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.5	2.6	1.8	2.0	1.3	0.5	0.5	0.4	0.4	0.4	0.3	0.6	2.6

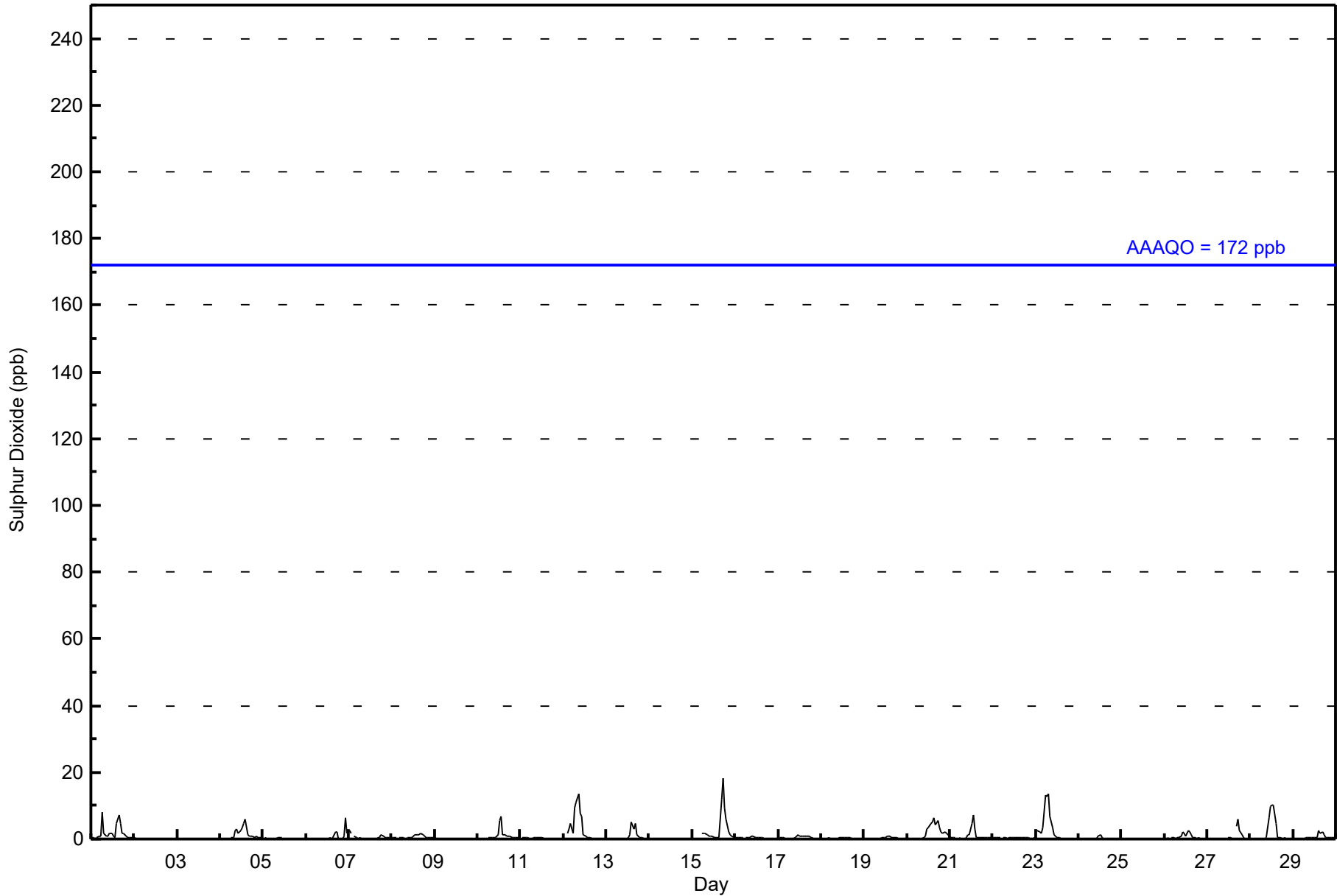
0.3	0.3	0.3	0.4	0.5	0.8	1.2	1.1	1.0	0.8	1.0	1.1	1.3	1.6	1.4	1.0	1.4	1.5	0.8	0.5	0.3	0.3	0.5	0.3	Diurnal Average	
2.6	2.4	2.2	2.8	4.6	13.0	12.8	13.6	13.6	7.6	6.8	9.9	10.1	10.2	6.0	7.4	11.7	18.2	9.4	6.0	2.3	2.1	6.3	1.5	Diurnal Maximum	

Z - zerspan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Fort McKay - Bertha Ganter - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	654	98.94	98.94
11 - 20	7	1.06	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	83	77	49	14	9	8	24	79	98	31	27	25	26	22	37	38	647
11 - 20	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	83	77	49	14	9	8	24	79	105	31	27	25	26	22	37	38	654

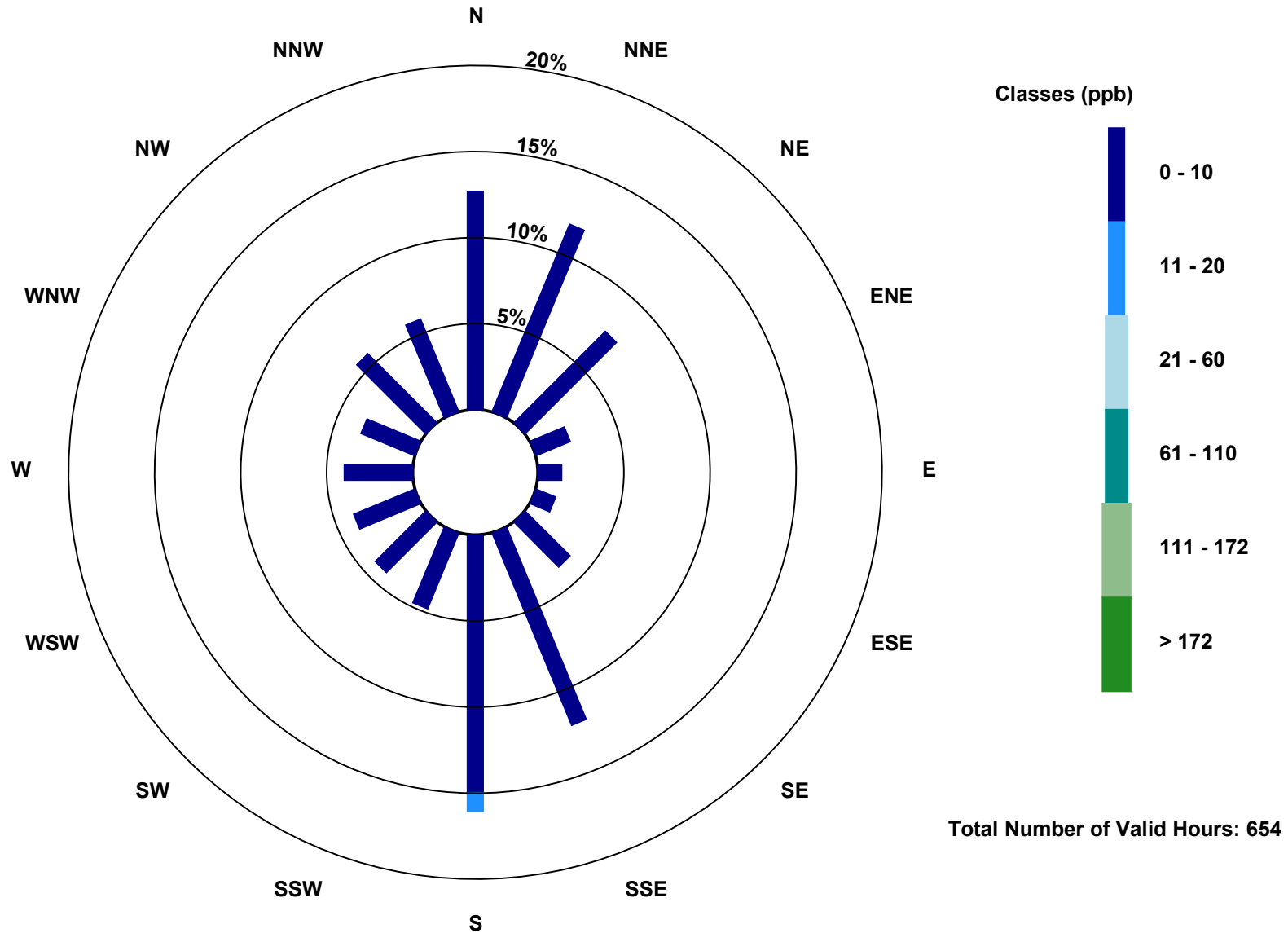
Total Number of Valid Hours: 654

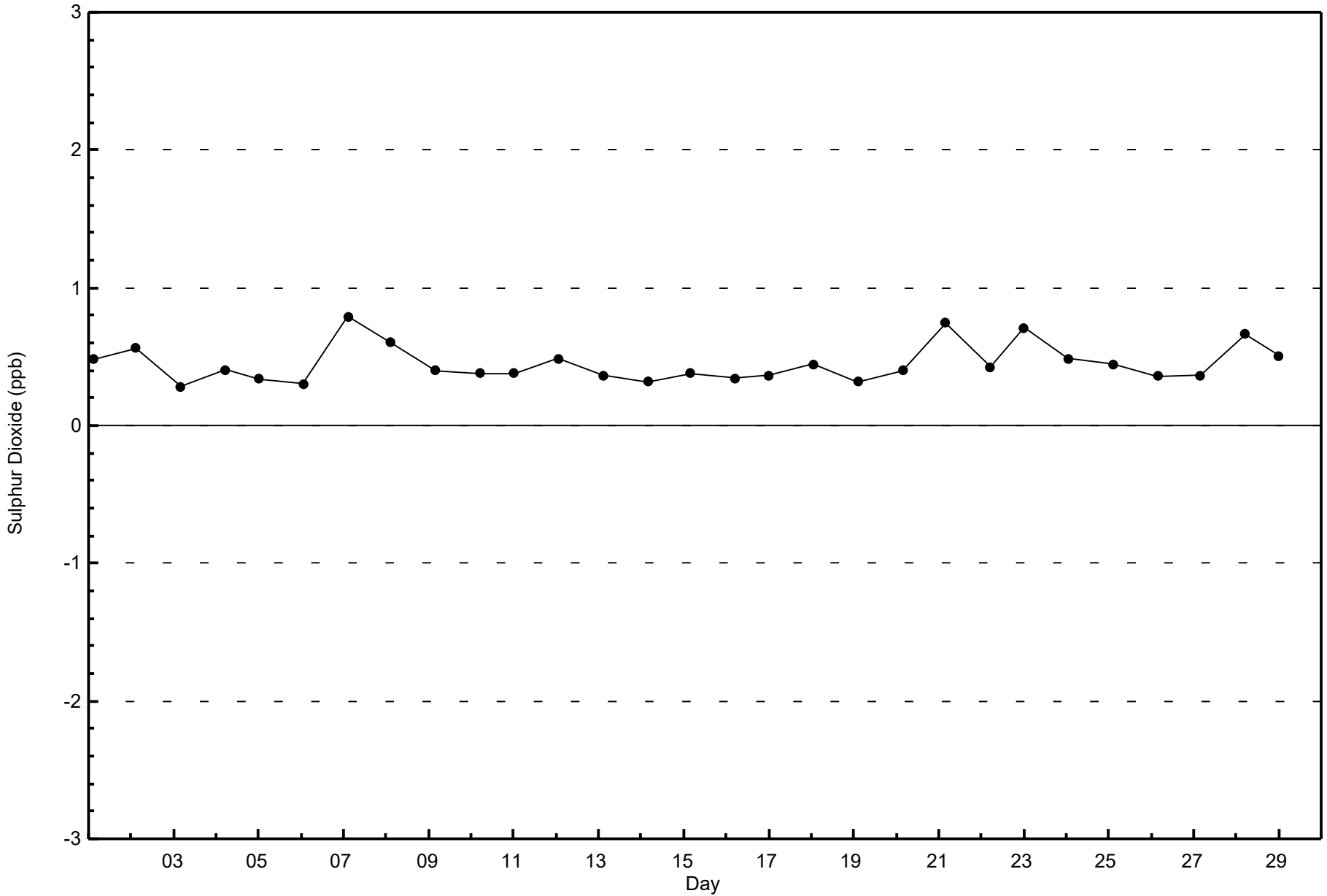
Total Number of Hours: 696

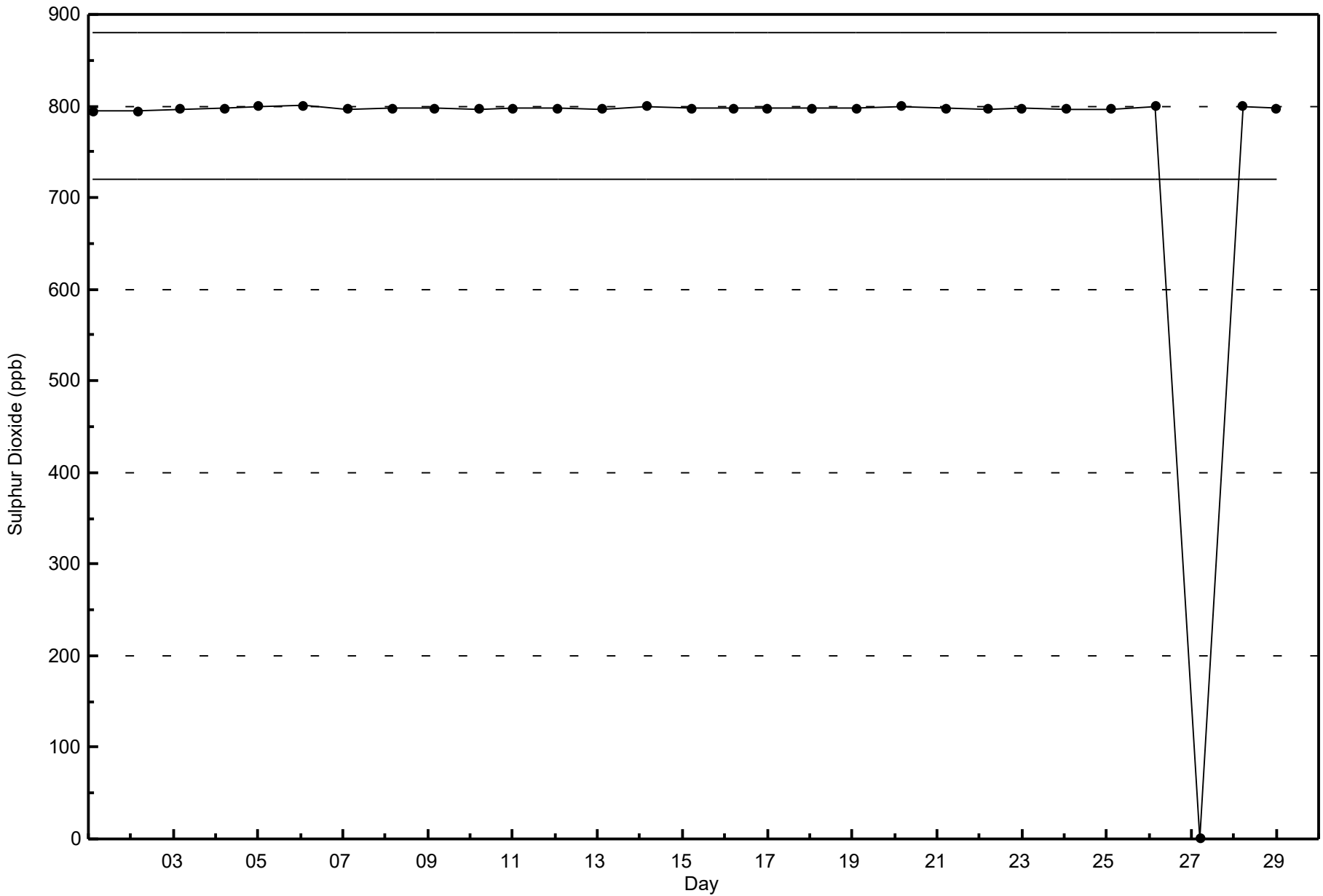


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Fort McKay - Bertha Ganter

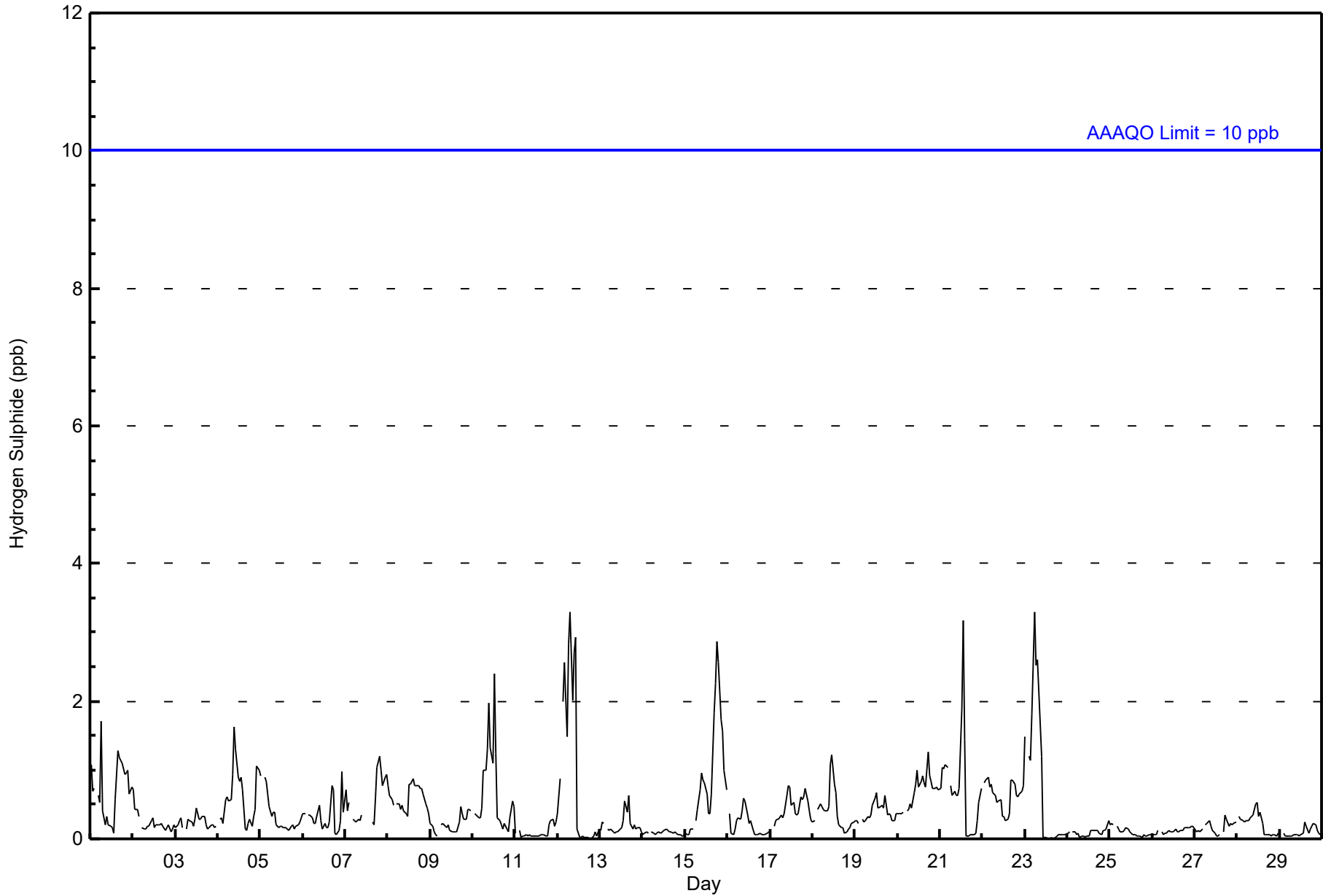








Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														661																																																							
Maximum Value: 3.3 ppb on Feb 12 08:00				Maximum Daily Average: 0.9 ppb on Feb 12		Hours of Data: 661														35																																																							
Minimum Value: 0.0 ppb on Feb 12 20:00				Minimum Daily Average: 0.1 ppb on Feb 14		Hours of Missing Data: 35														34																																																							
Maximum Diurnal Average: 0.5 ppb at hour 10				Minimum Diurnal Average: 0.3 ppb at hour 16		Hours of Calibration: 34														99.9																																																							
Monthly Average: 0.41 ppb				Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.5 P ₉₀ = 0.9 P ₉₉ = 2.6		Percent Operational Time: 99.9																																																																					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																																																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																																																			
1-Feb	1.1	0.7	0.7	Z	0.6	0.5	1.7	0.4	0.2	0.3	0.2	0.2	0.2	0.1	0.6	1.3	1.2	1.1	1.1	0.9	1.0	1.0	0.7	0.8	0.7	1.7																																																	
2-Feb	0.7	0.4	0.4	0.3	Z	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.7																																																	
3-Feb	0.2	0.2	0.3	0.3	0.2	Z	0.1	0.3	0.3	0.2	0.2	0.3	0.5	0.3	0.3	0.3	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.5																																																	
4-Feb	Z	0.3	0.3	0.2	0.6	0.6	0.5	0.6	0.9	1.6	1.3	0.9	0.8	0.9	0.7	0.1	0.1	0.2	0.3	0.2	0.3	0.4	1.1	1.0	0.6	1.6																																																	
5-Feb	0.9	Z	0.9	0.8	0.6	0.5	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.9																																																	
6-Feb	0.4	0.4	Z	0.3	0.3	0.3	0.2	0.2	0.3	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.8	0.7	0.1	0.1	0.1	0.3	1.0	0.4	0.3	1.0																																																	
7-Feb	0.7	0.4	0.5	Z	0.3	0.3	0.2	0.3	0.3	0.4	C	C	C	C	C	0.2	0.2	0.6	1.0	1.2	1.0	0.8	0.9	0.9	0.6	1.2																																																	
8-Feb	0.8	0.6	0.6	0.5	Z	0.5	0.5	0.4	0.5	0.4	0.4	0.3	0.8	0.8	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.4	0.6	0.9																																																	
9-Feb	0.2	0.2	0.1	0.1	0.0	Z	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.5	0.4	0.3	0.3	0.4	0.4	0.4	0.2	0.5																																																	
10-Feb	Z	0.4	0.3	0.3	0.3	0.4	1.0	1.0	1.3	2.0	1.3	1.1	2.4	1.2	0.3	0.3	0.2	0.1	0.2	0.1	0.1	0.3	0.5	0.5	0.7	2.4																																																	
11-Feb	0.1	Z	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.2	0.3	0.3	0.2	0.2	0.1	0.3																																																	
12-Feb	0.4	0.9	Z	2.0	2.6	1.5	2.8	3.3	2.0	2.7	2.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.9	3.3																																																	
13-Feb	0.1	0.2	0.2	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.4	0.6	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.6																																																	
14-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1																																																	
15-Feb	0.1	0.1	0.1	0.1	0.2	Z	0.3	0.4	0.7	1.0	0.9	0.8	0.7	0.4	0.4	0.7	1.8	2.3	2.9	2.6	1.7	1.6	1.0	0.7	0.9	2.9																																																	
16-Feb	Z	0.4	0.1	0.1	0.2	0.3	0.3	0.3	0.4	0.6	0.6	0.3	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.6																																																	
17-Feb	0.1	Z	0.2	0.3	0.3	0.3	0.4	0.3	0.4	0.6	0.8	0.8	0.5	0.5	0.4	0.3	0.4	0.6	0.6	0.6	0.7	0.5	0.4	0.3	0.4	0.8																																																	
18-Feb	0.3	0.3	Z	0.4	0.5	0.5	0.4	0.4	0.4	0.5	1.1	1.2	0.8	0.7	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.4	1.2																																																	
19-Feb	0.3	0.3	0.2	Z	0.3	0.2	0.3	0.3	0.3	0.4	0.5	0.6	0.7	0.4	0.5	0.5	0.4	0.6	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.7																																																	
20-Feb	0.4	0.4	0.4	0.4	Z	0.4	0.4	0.5	0.5	0.7	0.8	1.0	0.8	0.8	0.9	0.8	0.8	1.3	0.9	0.8	0.7	0.7	0.8	0.7	0.7	1.3																																																	
21-Feb	0.7	1.0	1.0	1.1	1.0	Z	0.8	0.6	0.7	0.6	0.6	0.7	1.9	3.2	1.4	0.0	0.0	0.1	0.1	0.1	0.1	0.3	0.5	0.7	0.8	3.2																																																	
22-Feb	Z	0.8	0.9	0.9	0.7	0.8	0.7	0.6	0.5	0.5	0.6	0.3	0.3	0.3	0.3	0.4	0.9	0.9	0.8	0.6	0.6	0.6	0.7	0.8	0.6	0.9																																																	
23-Feb	1.5	Z	1.2	1.1	1.8	3.3	2.5	2.6	2.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.8	3.3																																																	
24-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.3																																																	
25-Feb	0.2	0.2	0.2	Z	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.2																																																	
26-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2																																																	
27-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.2	0.2	0.3	0.2	0.1	0.1	0.0	0.0	0.1	M	0.1	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3																																																	
28-Feb	Z	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.2	0.5																																																	
29-Feb	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2																																																	
																								0.4		0.4		0.4		0.4		0.5		0.5		0.5		0.5		0.5		0.5		0.5		0.5		0.5		0.4		0.4																							
																								1.5		1.0		1.2		2.0		2.6		3.3		2.8		3.3		2.1		2.7		2.9		1.2		2.4		3.2		1.4		1.3		1.8		2.3		2.9		2.6		1.7		1.6		1.1		1.0		Diurnal Average		Diurnal Maximum	
Z - zerspan																								C - Calibration				M - Maintenance																																															
Alberta Ambient Air Quality Objectives (AAAQO):																								1-hr 10 ppb				24-hr 3 ppb																																															





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Hydrogen Sulphide (H₂S) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	650	98.34	98.34
3 - 4	11	1.66	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Hydrogen Sulphide (H₂S) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	82	82	49	14	8	5	22	78	98	31	25	25	27	22	38	38	644
3 - 4	0	0	0	0	0	0	0	1	9	1	0	0	0	0	0	0	11
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	82	82	49	14	8	5	22	79	107	32	25	25	27	22	38	38	655

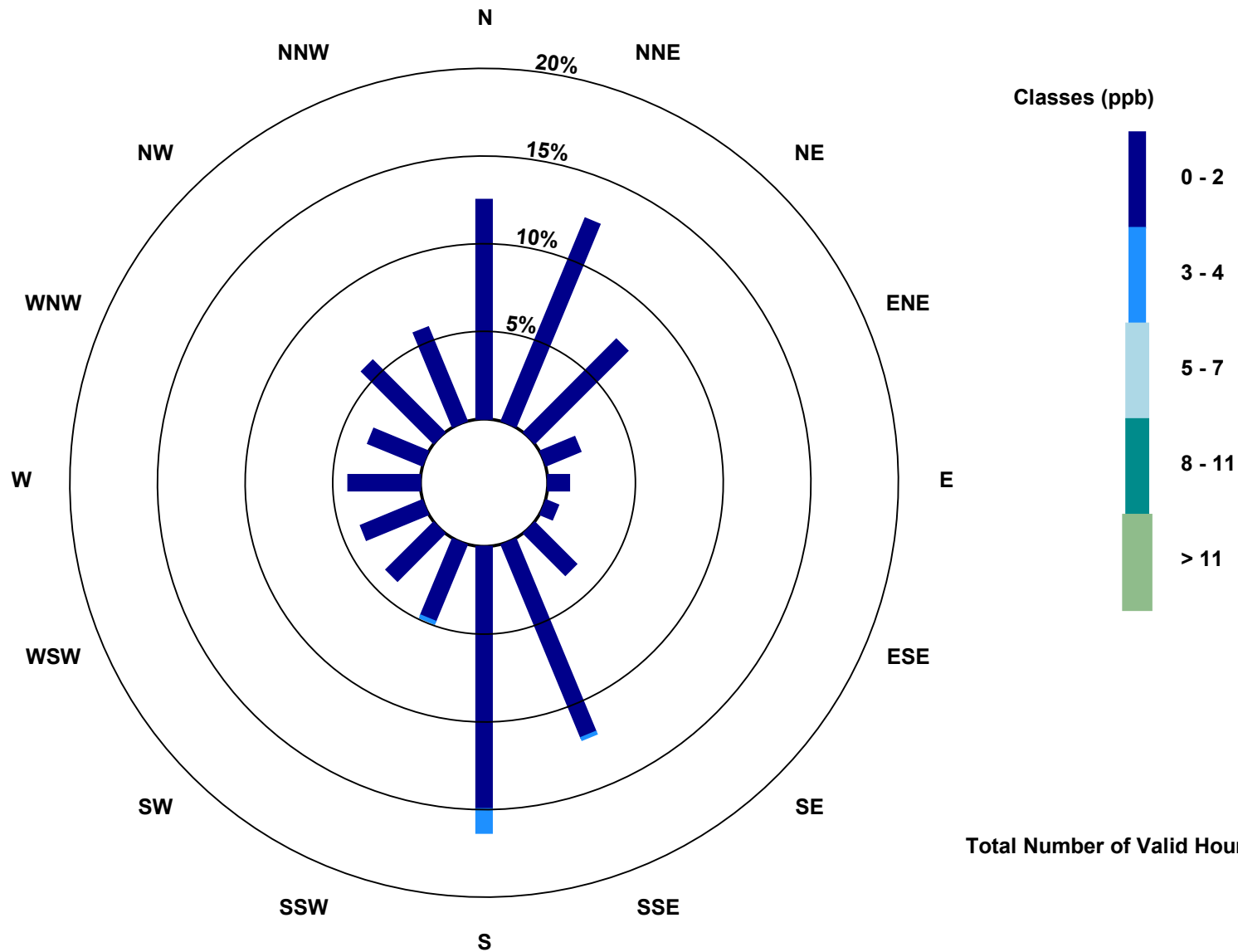
Total Number of Valid Hours: 655

Total Number of Hours: 696

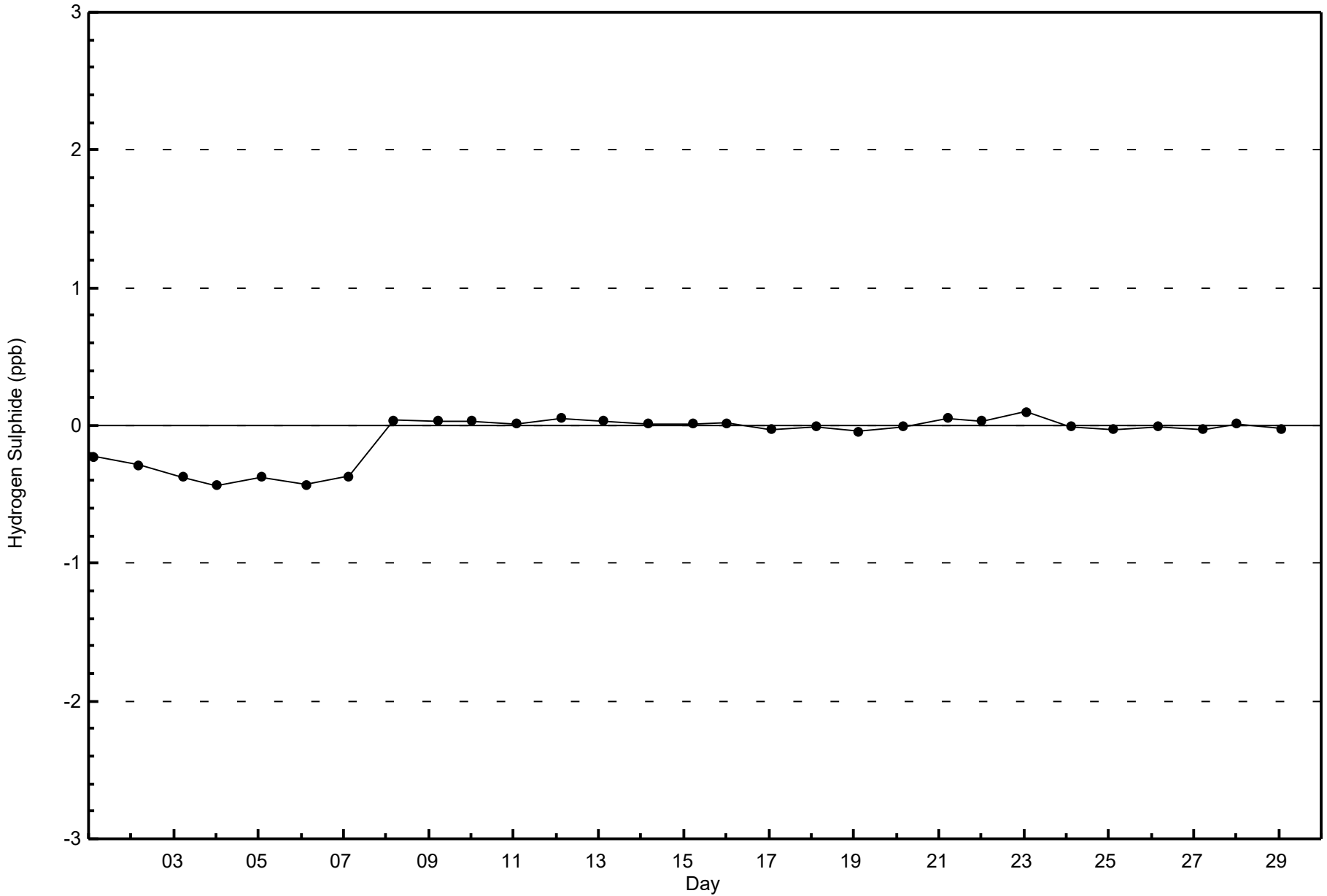


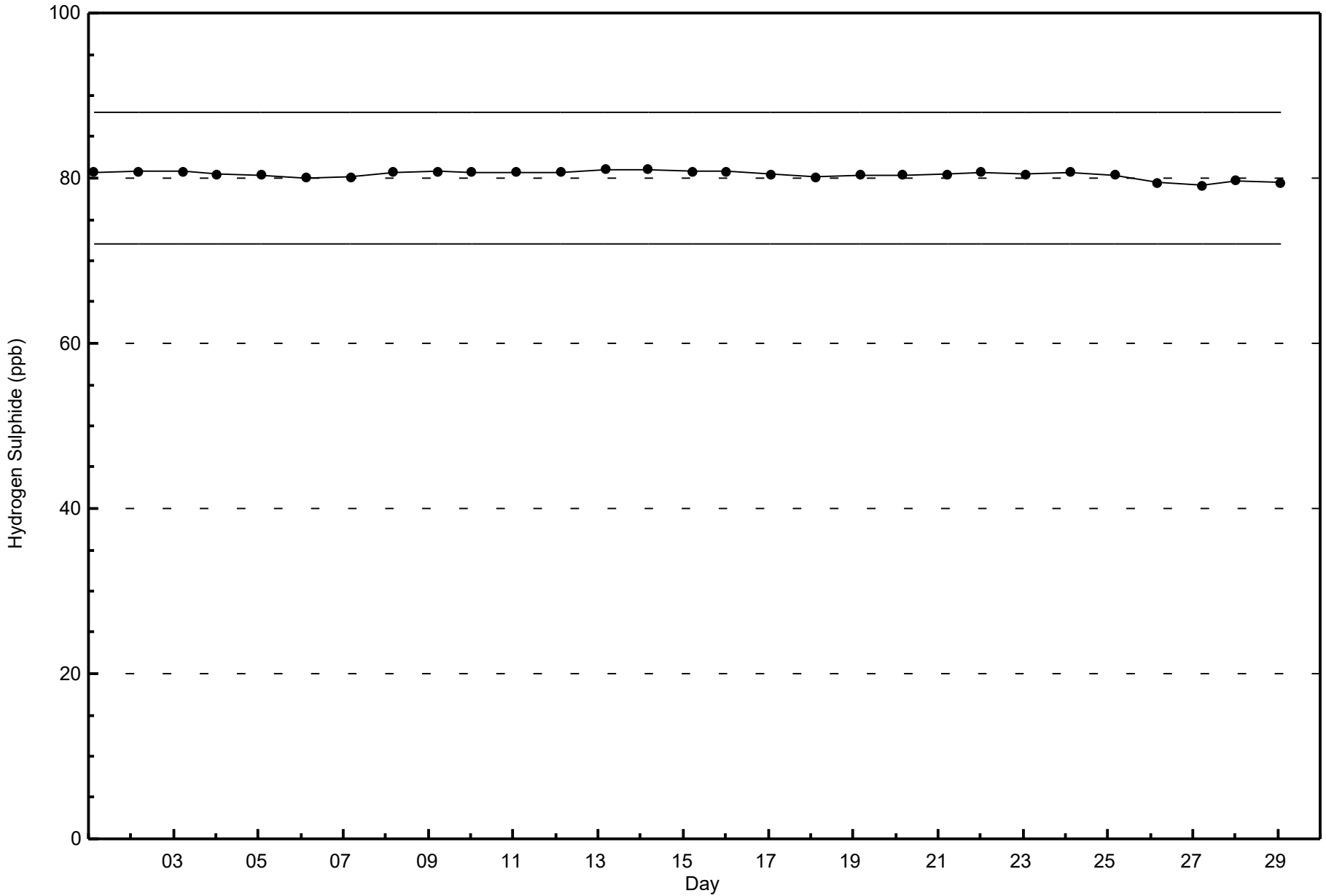
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Fort McKay - Bertha Ganter



Total Number of Valid Hours: 655







Wood Buffalo Environmental Association

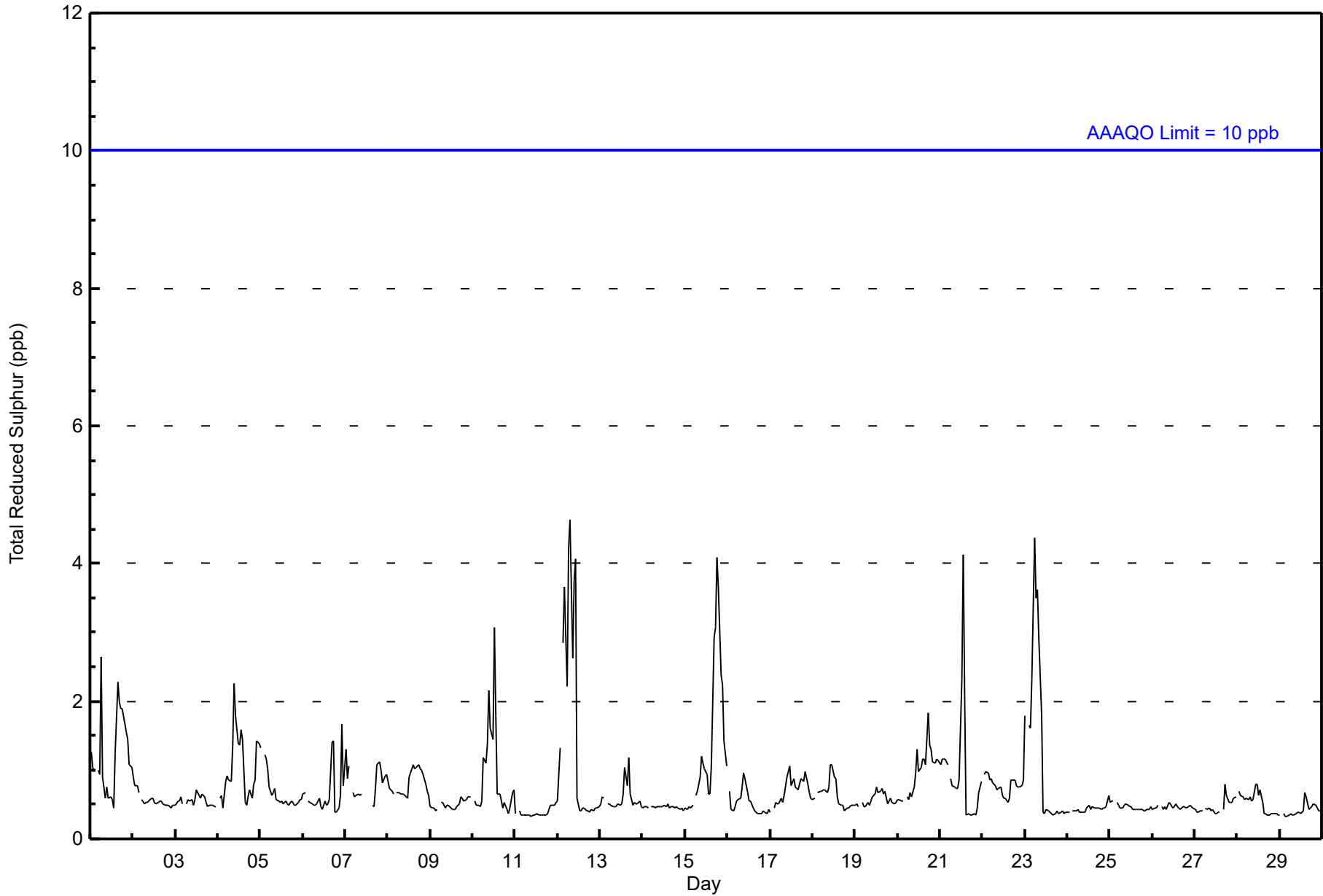
Summary of Hour Averages

Total Reduced Sulphur (TRS) - ppb

Fort McKay - Bertha Ganter - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	Hours of Data: 661						
Maximum Value: 4.6 ppb on Feb 12 08:00		Maximum Daily Average: 1.5 ppb on Feb 12		Hours of Missing Data: 35																	Hours of Calibration: 34						
Minimum Value: 0.3 ppb on Feb 29 04:00		Minimum Daily Average: 0.4 ppb on Feb 11		Hours of Calibration: 34																	Percent Operational Time: 99.9						
Maximum Diurnal Average: 0.9 ppb at hour 7		Minimum Diurnal Average: 0.6 ppb at hour 16		Percentiles: P ₁ = 0.3 P ₁₀ = 0.4 Q ₁ = 0.5 Median = 0.5 Q ₃ = 0.8 P ₉₀ = 1.2 P ₉₉ = 3.7																							
Monthly Average: 0.74 ppb																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	1.3	1.0	1.0	Z	1.0	0.9	2.6	0.9	0.6	0.7	0.6	0.6	0.6	0.4	1.2	2.3	2.0	1.9	1.9	1.7	1.5	1.4	1.1	1.0	1.2	2.6	
2-Feb	0.9	0.8	0.8	0.7	Z	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.6	0.9	
3-Feb	0.5	0.5	0.5	0.6	0.5	Z	0.5	0.6	0.6	0.6	0.5	0.6	0.7	0.6	0.6	0.7	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.7	
4-Feb	Z	0.6	0.6	0.4	0.8	0.9	0.9	0.8	1.3	2.3	1.8	1.4	1.4	1.6	1.4	0.5	0.5	0.6	0.7	0.6	0.8	0.9	1.4	1.4	1.0	2.3	
5-Feb	1.3	Z	1.2	1.2	1.0	0.7	0.6	0.7	0.7	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.7	1.3	
6-Feb	0.7	0.7	Z	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.4	0.5	0.5	0.5	0.6	1.4	1.4	0.4	0.4	0.5	0.6	1.7	0.8	0.7	1.7	
7-Feb	1.3	0.9	1.1	Z	0.7	0.6	0.6	0.6	0.6	0.6	C	C	C	C	C	0.5	0.5	0.7	1.1	1.1	1.0	0.8	0.9	0.9	0.8	1.3	
8-Feb	0.8	0.7	0.7	0.7	Z	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.9	1.0	1.1	1.0	1.0	1.1	1.0	1.0	0.9	0.8	0.7	0.6	0.8	1.1	
9-Feb	0.5	0.5	0.5	0.4	0.4	Z	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.6	
10-Feb	Z	0.6	0.5	0.5	0.5	0.5	1.2	1.1	1.4	2.2	1.6	1.4	3.1	1.8	0.7	0.7	0.5	0.5	0.5	0.4	0.4	0.4	0.7	0.7	0.9	3.1	
11-Feb	0.4	Z	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.4	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.5	
12-Feb	0.5	1.3	Z	2.8	3.7	2.2	4.2	4.6	2.6	3.8	4.1	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	1.5	4.6	
13-Feb	0.5	0.6	0.6	Z	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.7	1.0	0.8	1.2	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.6	1.2	
14-Feb	0.5	0.5	0.5	0.4	Z	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5	
15-Feb	0.4	0.4	0.5	0.5	0.5	Z	0.6	0.7	0.9	1.2	1.1	1.0	0.9	0.7	0.7	1.1	2.9	3.1	4.1	3.7	2.4	2.2	1.4	1.1	1.4	4.1	
16-Feb	Z	0.7	0.4	0.4	0.5	0.5	0.6	0.6	0.8	1.0	0.9	0.7	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	1.0	
17-Feb	0.4	Z	0.4	0.5	0.5	0.5	0.6	0.5	0.6	0.9	1.0	1.0	0.8	0.9	0.7	0.7	0.7	0.9	0.9	0.8	1.0	0.8	0.7	0.6	0.7	1.0	
18-Feb	0.6	0.6	Z	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.1	1.1	0.9	0.9	0.6	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.6	1.1	
19-Feb	0.5	0.5	0.5	Z	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.8	0.7	0.7	0.7	0.6	0.7	0.5	0.5	0.6	0.5	0.5	0.5	0.6	0.8	
20-Feb	0.6	0.6	0.5	0.5	Z	0.6	0.6	0.7	0.6	0.8	1.0	1.3	1.0	1.0	1.2	1.2	1.1	1.8	1.4	1.3	1.1	1.1	1.2	1.1	1.0	1.8	
21-Feb	1.1	1.2	1.2	1.2	1.1	Z	0.9	0.8	0.7	0.7	0.7	0.9	2.3	4.1	2.1	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.7	0.8	1.0	4.1	
22-Feb	Z	0.9	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.6	0.9	0.9	0.8	0.8	0.7	0.8	0.8	0.9	0.8	1.0	
23-Feb	1.8	Z	1.7	1.6	2.3	4.4	3.5	3.6	2.9	1.8	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	1.3	4.4	
24-Feb	0.4	0.4	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.4	0.4	0.5	0.5	0.4	0.5	0.4	0.5	0.6	0.4	0.6	
25-Feb	0.5	0.6	0.5	Z	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	
26-Feb	0.4	0.4	0.4	0.5	Z	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
27-Feb	0.4	0.4	0.4	0.4	0.4	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	M	0.4	0.4	0.8	0.6	0.5	0.5	0.5	0.6	0.6	0.8	
28-Feb	Z	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.8	0.8	0.6	0.7	0.5	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.5	0.8	
29-Feb	0.3	Z	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.7	0.6	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.7	
																								Diurnal Average			
																								Diurnal Maximum			
																								Diurnal Average			
																								Diurnal Maximum			

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Reduced Sulphur (TRS) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	643	97.28	97.28
3 - 4	17	2.57	99.85
5 - 7	1	0.15	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Fort McKay - Bertha Ganter - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	82	82	49	14	8	5	22	78	93	29	25	25	27	22	38	38	637
3 - 4	0	0	0	0	0	0	0	1	13	3	0	0	0	0	0	0	17
5 - 7	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	82	82	49	14	8	5	22	79	107	32	25	25	27	22	38	38	655

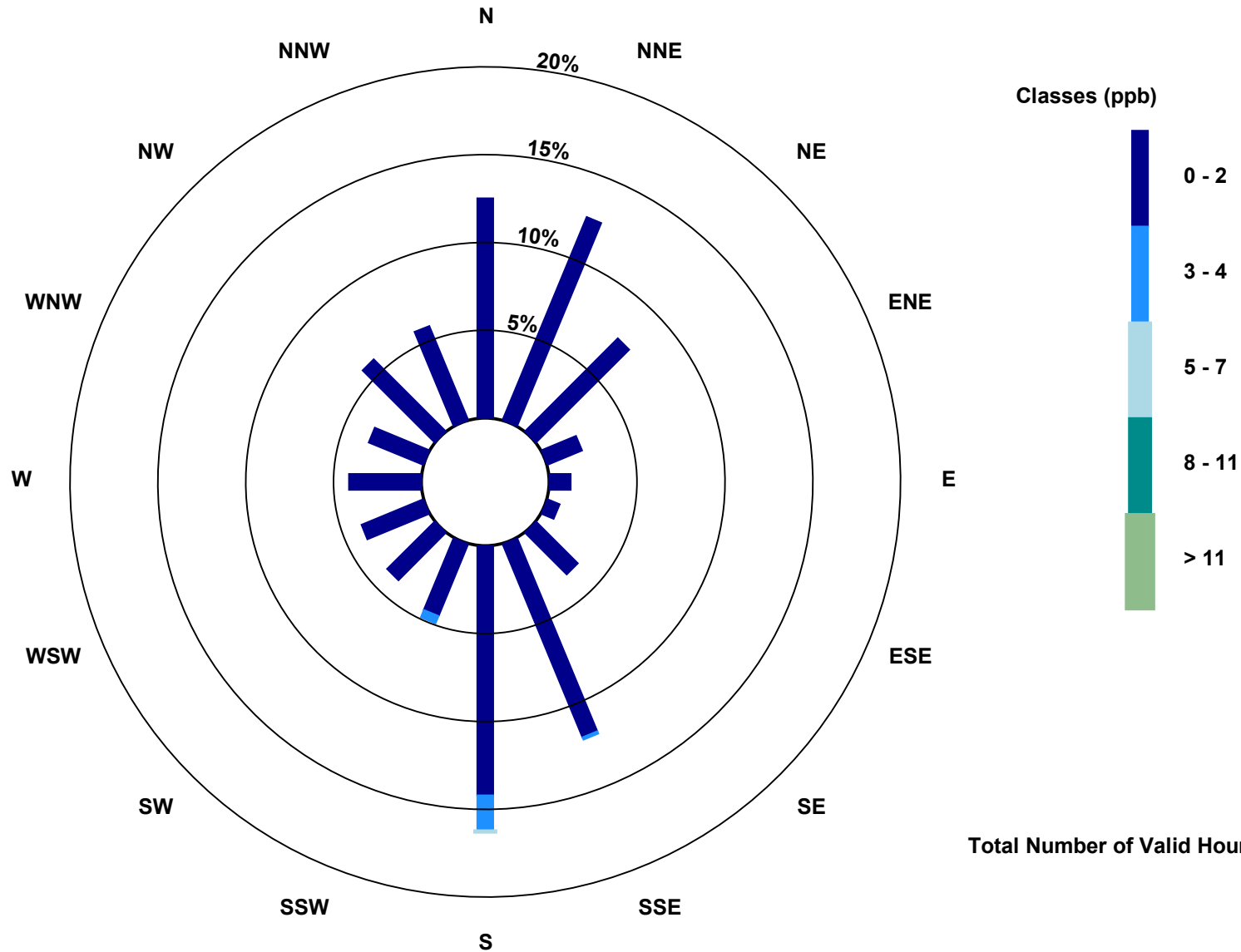
Total Number of Valid Hours: 655

Total Number of Hours: 696

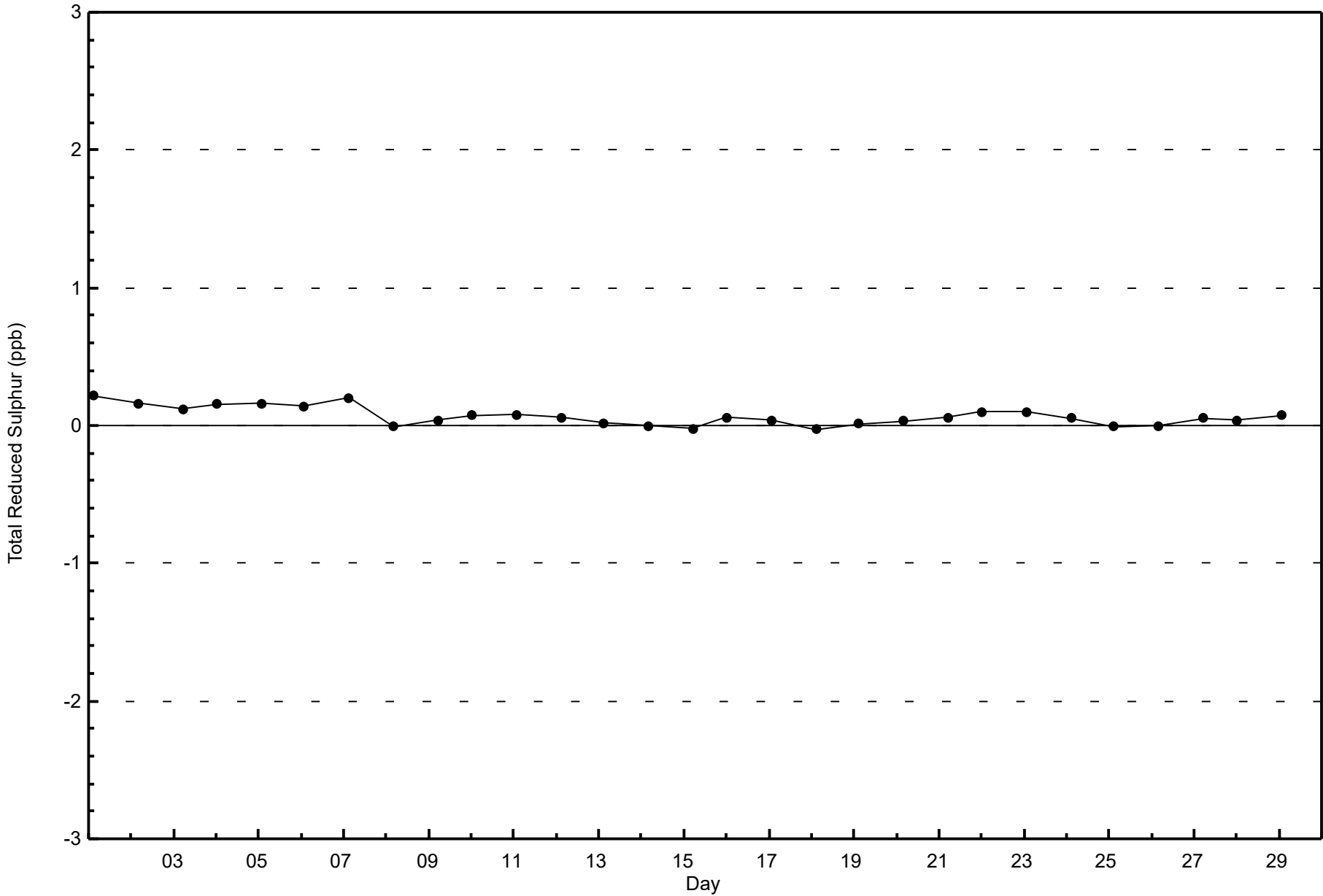


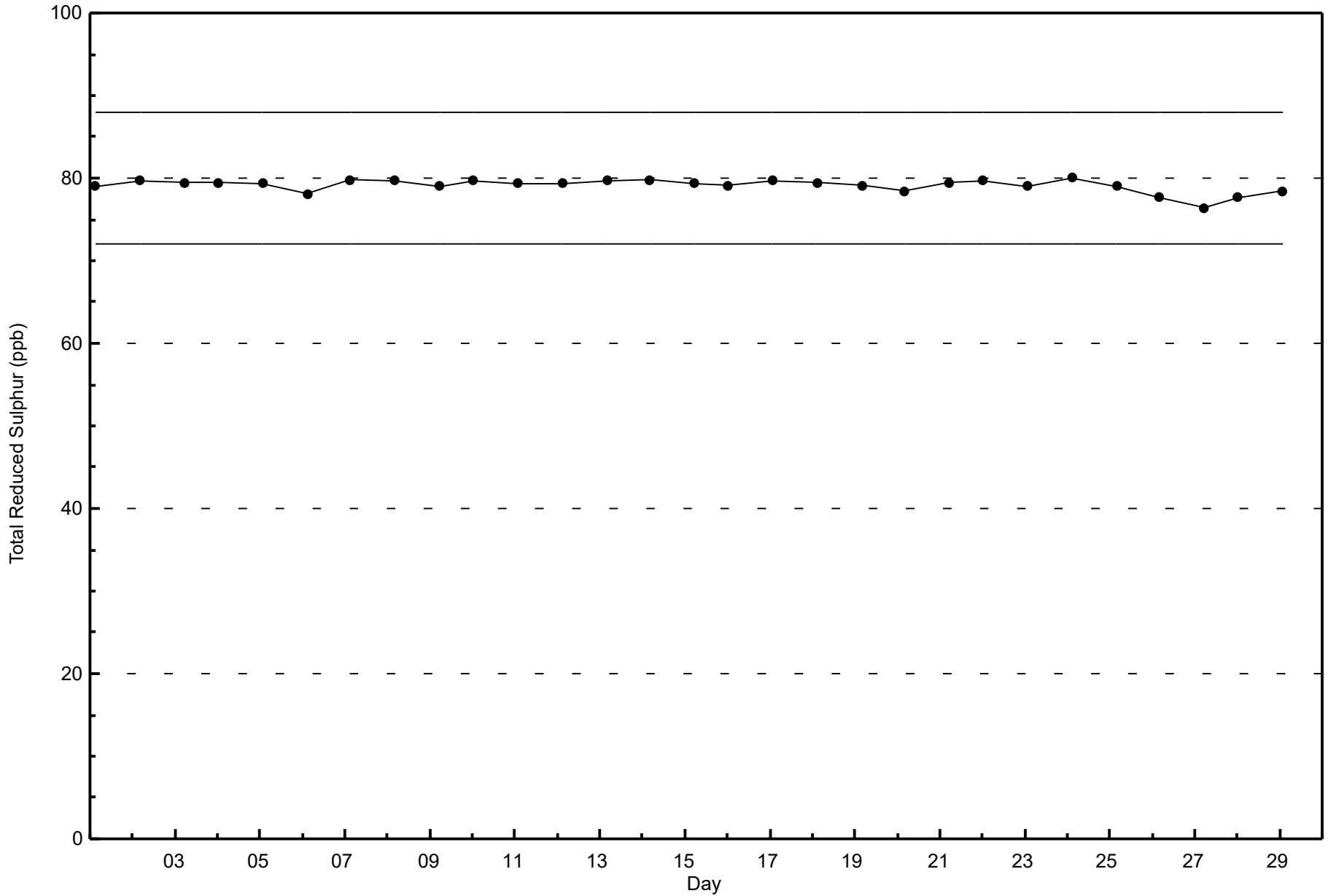
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Reduced Sulphur (TRS) - ppb
Fort McKay - Bertha Ganter



Total Number of Valid Hours: 655







Wood Buffalo Environmental Association
Summary of Hour Averages

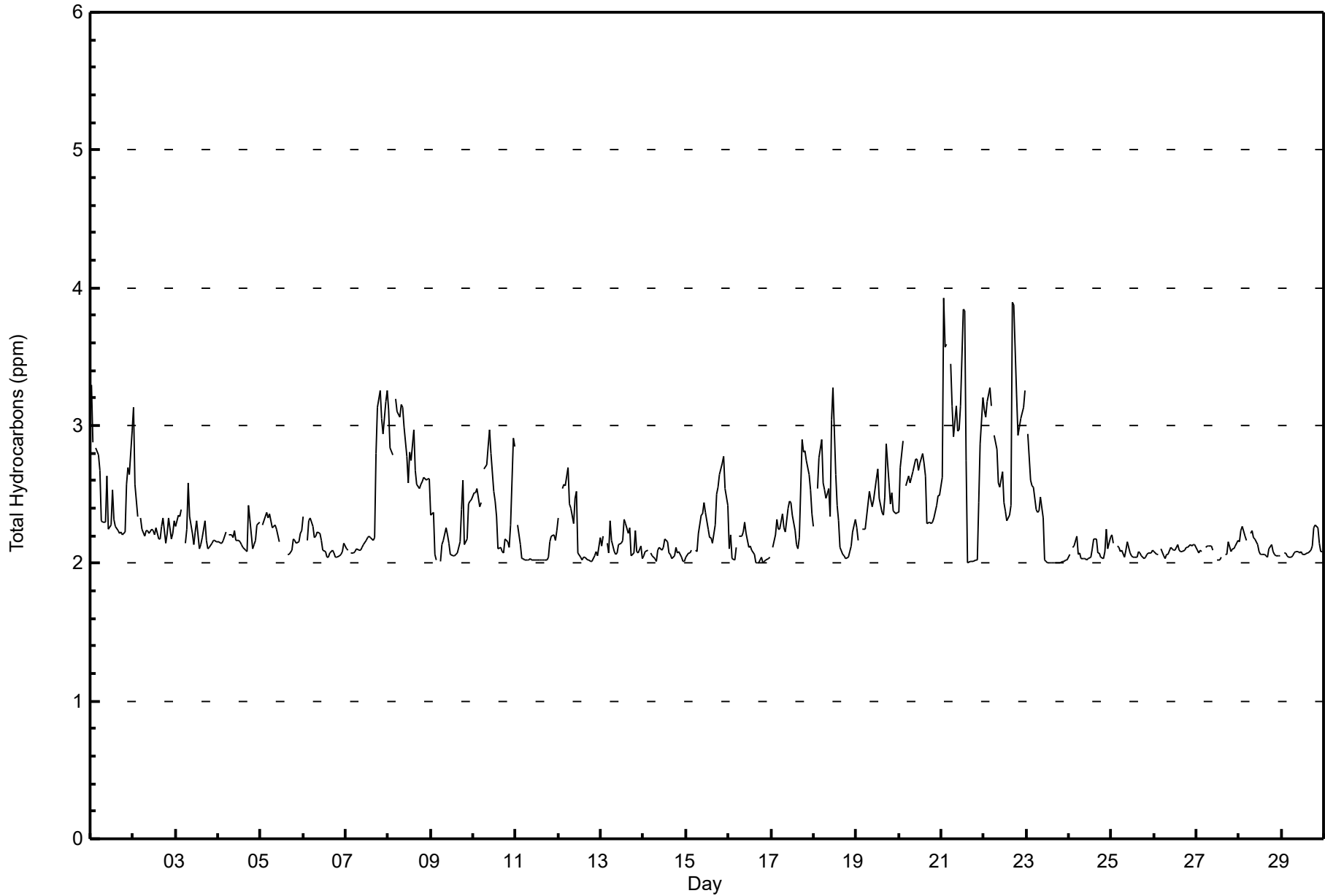
Total Hydrocarbons (THC) - ppm
Fort McKay - Bertha Ganter - February 2024

Maximum Value: 3.9 ppm on Feb 21 02:00																				Maximum Daily Average: 2.9 ppm on Feb 22					Hours in Service: 696				
Minimum Value: 2.0 ppm on Feb 21 16:00																				Minimum Daily Average: 2.1 ppm on Feb 14					Hours of Data: 661				
Maximum Diurnal Average: 2.4 ppm at hour 2																				Minimum Diurnal Average: 2.2 ppm at hour 16					Hours of Missing Data: 35				
Monthly Average: 2.31 ppm																				Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.1 Median = 2.2 Q ₃ = 2.4 P ₉₀ = 2.8 P ₉₉ = 3.5					Hours of Calibration: 33				
																				Percent Operational Time: 99.7									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Feb	3.3	2.9	Z	2.8	2.8	2.7	2.3	2.3	2.3	2.6	2.2	2.3	2.5	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.7	2.6	3.0	2.5	3.3			
2-Feb	3.1	2.6	Z	Z	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.3	2.1	2.2	2.3	2.2	2.2	2.3	2.3	3.1				
3-Feb	2.3	2.3	2.3	2.4	Z	2.1	2.2	2.6	2.3	2.2	2.1	2.2	2.3	2.1	2.1	2.2	2.3	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.6				
4-Feb	2.2	2.1	2.1	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.4	2.3	2.1	2.1	2.2	2.3	2.2	2.4				
5-Feb	Z	2.3	2.3	2.4	2.3	2.4	2.3	2.3	2.3	2.2	2.2	C	C	C	C	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.4				
6-Feb	2.3	Z	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.3				
7-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.8	3.1	3.3	3.0	2.9	3.2	2.4	3.3				
8-Feb	3.1	2.8	2.8	Z	3.2	3.1	3.1	3.2	3.1	3.0	2.8	2.6	2.8	2.7	3.0	2.7	2.6	2.5	2.6	2.6	2.6	2.6	2.6	2.8	3.2				
9-Feb	2.4	2.4	2.1	2.0	Z	2.0	2.1	2.2	2.3	2.2	2.1	2.1	2.0	2.1	2.1	2.1	2.2	2.4	2.6	2.1	2.2	2.4	2.5	2.2	2.6				
10-Feb	2.5	2.5	2.5	2.4	2.4	Z	2.7	2.7	2.8	3.0	2.8	2.5	2.4	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.3	2.9	2.5	3.0				
11-Feb	Z	2.3	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.2	2.2	2.1	2.3				
12-Feb	2.3	Z	2.5	2.6	2.6	2.7	2.4	2.4	2.3	2.5	2.5	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.2	2.2	2.7				
13-Feb	2.1	2.2	Z	2.1	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.2	2.3	2.1	2.1	2.2	2.1	2.1	2.1	2.0	2.2	2.3				
14-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.2				
15-Feb	2.0	2.1	2.1	2.1	Z	2.1	2.1	2.2	2.3	2.4	2.4	2.4	2.2	2.2	2.2	2.2	2.2	2.3	2.5	2.6	2.6	2.7	2.8	2.3	2.8				
16-Feb	2.1	2.2	2.0	2.0	2.1	Z	2.2	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3				
17-Feb	Z	2.1	2.2	2.3	2.2	2.2	2.4	2.3	2.2	2.4	2.5	2.4	2.3	2.2	2.1	2.1	2.2	2.9	2.8	2.8	2.7	2.6	2.5	2.4	2.9				
18-Feb	2.3	Z	2.5	2.8	2.9	2.6	2.5	2.5	2.5	2.3	3.0	3.3	2.6	2.4	2.3	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.2	2.4	3.3				
19-Feb	2.3	2.2	Z	2.3	2.2	2.3	2.3	2.5	2.5	2.4	2.5	2.6	2.7	2.5	2.4	2.3	2.5	2.9	2.6	2.4	2.5	2.4	2.4	2.4	2.9				
20-Feb	2.4	2.7	2.9	Z	2.6	2.6	2.6	2.6	2.7	2.8	2.8	2.7	2.7	2.8	2.7	2.6	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.6	2.9				
21-Feb	2.6	3.9	3.6	3.6	Z	3.4	3.1	2.9	3.1	3.0	3.0	3.1	3.8	3.8	2.7	2.0	2.0	2.0	2.0	2.0	2.4	2.9	3.2	2.9	3.9				
22-Feb	3.1	3.1	3.2	3.3	3.1	Z	2.9	2.8	2.6	2.5	2.7	2.4	2.4	2.3	2.3	2.4	3.9	3.9	3.2	2.9	3.0	3.1	3.1	2.9	3.9				
23-Feb	Z	2.9	2.6	2.6	2.6	2.4	2.4	2.4	2.5	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.9				
24-Feb	2.1	Z	2.1	2.1	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.1	2.1	2.1	2.0	2.1	2.2	2.1	2.2	2.1	2.2				
25-Feb	2.2	2.1	Z	2.1	2.1	2.1	2.1	2.0	2.1	2.2	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.2				
26-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1				
27-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	M	2.0	2.0	2.0	2.0	M	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2.2				
28-Feb	2.2	2.2	2.3	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3				
29-Feb	Z	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.3	2.1	2.1	2.1	2.3				
2.4 2.4 2.4 2.4 2.4 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.2 2.2 2.2 2.3 2.3 2.3 2.3 2.3 2.4																								Diurnal Average					
3.3 3.9 3.6 3.6 3.2 3.4 3.1 3.2 3.1 3.0 3.0 3.3 3.8 3.8 3.0 2.7 3.9 3.9 3.2 3.3 3.0 3.1 3.2 3.3																								Diurnal Maximum					
Z - zerspan			C - Calibration			M - Maintenance																							



Wood Buffalo Environmental Association
Hourly Averages

Total Hydrocarbons (THC) - ppm
Fort McKay - Bertha Ganter - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	98	14.83	14.83
2.1 - 3.0	529	80.03	94.86
3.1 - 10.0	34	5.14	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Total Hydrocarbons (THC) - ppm
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	10	6	7	2	1	2	1	5	5	5	7	11	17	8	8	3	98
2.1 - 3.0	67	70	42	12	8	6	22	70	98	24	19	13	9	14	22	29	525
3.1 - 10.0	6	1	0	0	0	0	1	4	2	2	1	1	0	0	7	6	31
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	83	77	49	14	9	8	24	79	105	31	27	25	26	22	37	38	654

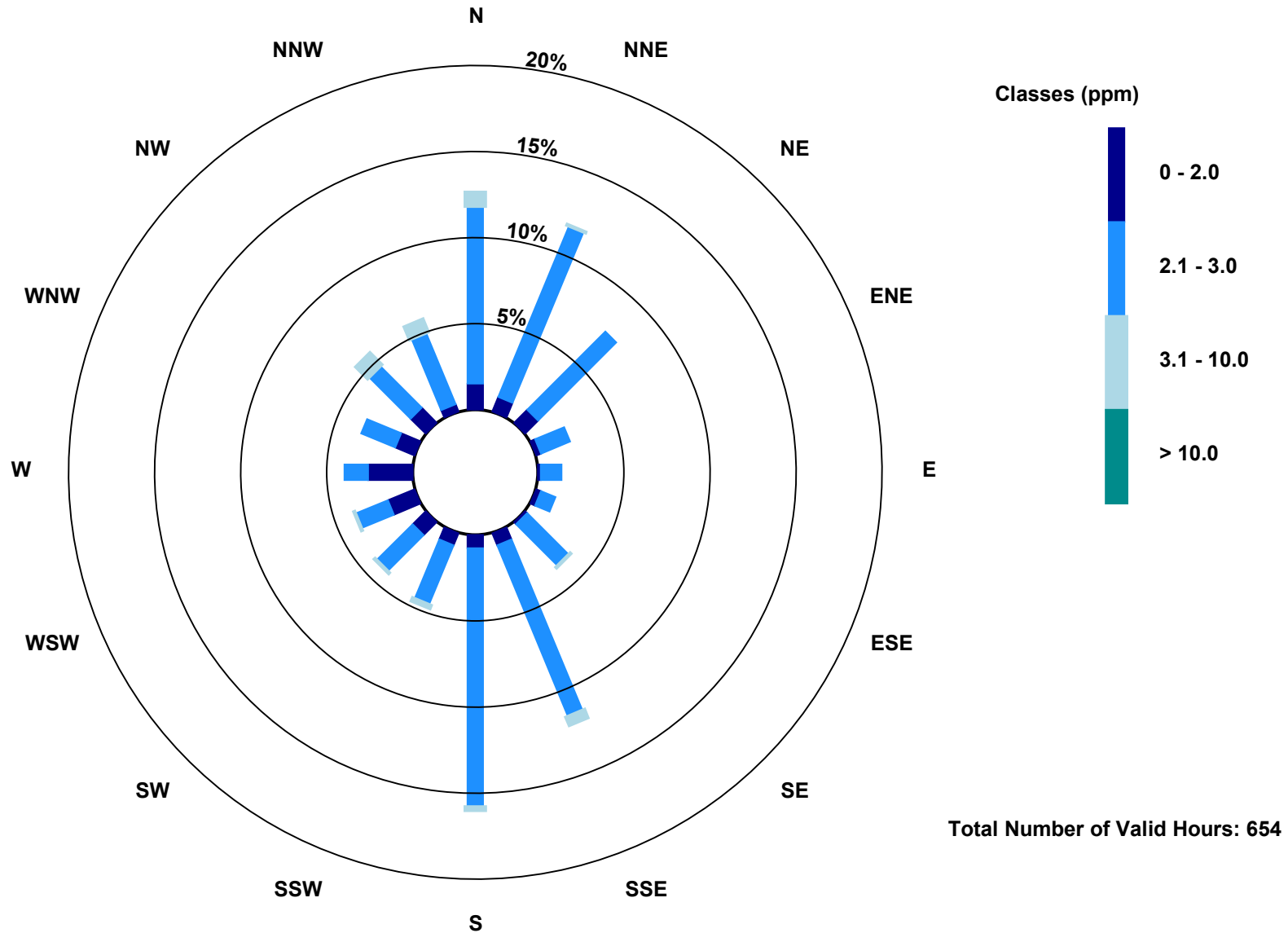
Total Number of Valid Hours: 654

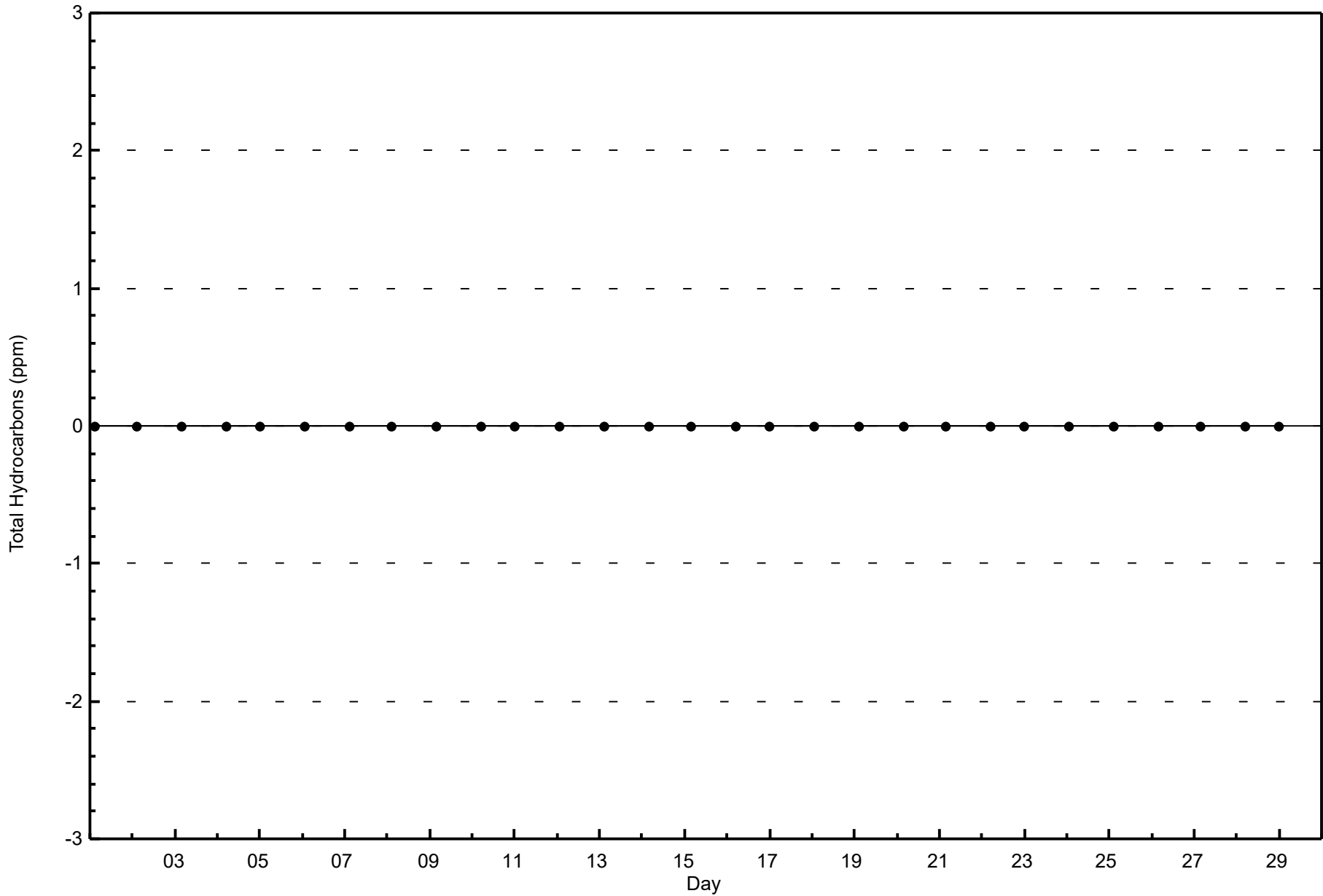
Total Number of Hours: 696

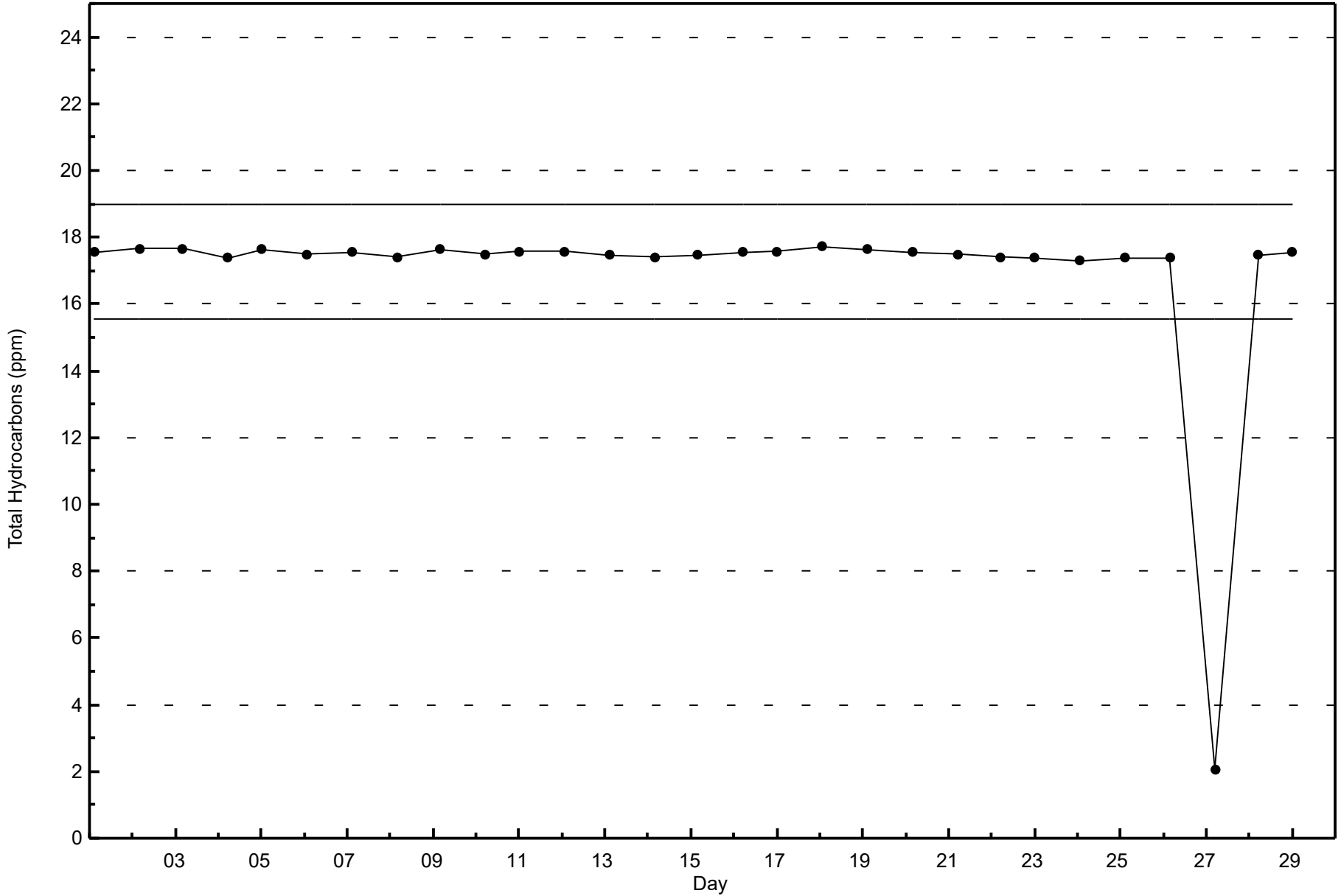


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Fort McKay - Bertha Ganter





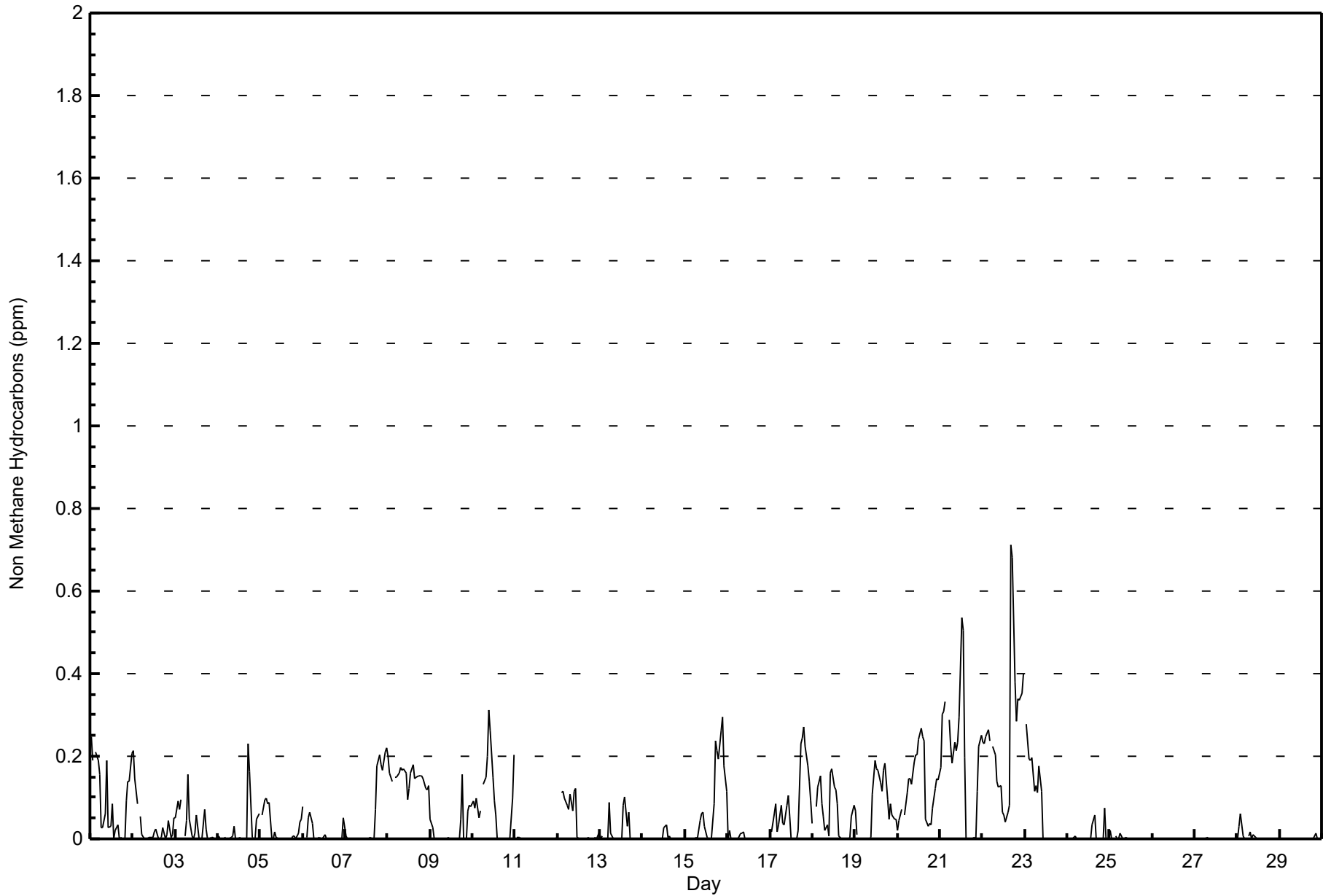




Wood Buffalo Environmental Association
Summary of Hour Averages

Non Methane Hydrocarbons (NMHC) - ppm
Fort McKay - Bertha Ganter - February 2024

Maximum Value: 0.712 ppm on Feb 22 17:00		Maximum Daily Average: 0.253 ppm on Feb 22		Hours in Service:	696																						
Minimum Value: 0.000 ppm on Feb 1 14:00		Minimum Daily Average: 0.000 ppm on Feb 26		Hours of Data:	661																						
Maximum Diurnal Average: 0.076 ppm at hour 24		Minimum Diurnal Average: 0.026 ppm at hour 16		Hours of Missing Data:	35																						
Monthly Average: 0.054 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.1 P ₉₀ = 0.2 P ₉₉ = 0.3		Hours of Calibration:	33																						
				Percent Operational Time:	99.7																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.249	0.191	Z	0.210	0.191	0.156	0.028	0.026	0.061	0.190	0.027	0.031	0.085	0.000	0.020	0.035	0.000	0.002	0.000	0.000	0.093	0.137	0.139	0.208	0.090	0.249	
2-Feb	0.212	0.146	0.085	Z	0.054	0.009	0.000	0.000	0.002	0.003	0.004	0.003	0.017	0.023	0.000	0.000	0.005	0.029	0.000	0.010	0.043	0.002	0.009	0.049	0.031	0.212	
3-Feb	0.050	0.093	0.072	0.095	Z	0.007	0.045	0.154	0.046	0.006	0.000	0.013	0.056	0.000	0.000	0.000	0.071	0.023	0.000	0.000	0.002	0.005	0.000	0.000	0.032	0.154	
4-Feb	0.006	0.001	0.000	0.000	0.002	Z	0.000	0.003	0.006	0.032	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.231	0.162	0.005	0.000	0.000	0.049	0.060	0.024	0.231	
5-Feb	Z	0.059	0.093	0.100	0.084	0.090	0.002	0.000	0.018	0.003	0.000	C	C	C	C	0.000	0.000	0.000	0.006	0.008	0.001	0.014	0.041	0.049	0.030	0.100	
6-Feb	0.079	Z	0.002	0.050	0.066	0.038	0.000	0.001	0.001	0.003	0.000	0.000	0.011	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.051	0.013	0.079		
7-Feb	0.005	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.071	0.177	0.202	0.181	0.165	0.209	0.220	0.054	0.220	
8-Feb	0.200	0.158	0.139	Z	0.149	0.150	0.158	0.172	0.165	0.170	0.160	0.094	0.121	0.158	0.181	0.147	0.149	0.151	0.152	0.151	0.145	0.123	0.120	0.130	0.150	0.200	
9-Feb	0.047	0.028	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.156	0.000	0.000	0.066	0.082	0.077	0.022	0.156	
10-Feb	0.090	0.074	0.100	0.052	0.067	Z	0.131	0.149	0.201	0.313	0.261	0.149	0.090	0.058	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.099	0.204	0.089	0.313	
11-Feb	Z	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.004	
12-Feb	0.006	Z	0.111	0.117	0.098	0.082	0.071	0.109	0.068	0.115	0.121	0.003	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.003	0.000	0.017	0.040	0.121		
13-Feb	0.000	0.008	Z	0.000	0.001	0.089	0.013	0.000	0.000	0.000	0.000	0.000	0.001	0.081	0.101	0.031	0.064	0.001	0.000	0.002	0.000	0.000	0.000	0.000	0.017	0.101	
14-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.028	0.033	0.003	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.033	
15-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.004	0.002	0.044	0.062	0.063	0.032	0.004	0.000	0.000	0.001	0.083	0.237	0.214	0.192	0.260	0.295	0.175	0.114	0.077	0.295	
16-Feb	0.000	0.019	0.000	0.000	0.000	Z	0.000	0.013	0.013	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.019	
17-Feb	Z	0.016	0.062	0.083	0.016	0.034	0.081	0.036	0.035	0.082	0.106	0.053	0.000	0.001	0.000	0.000	0.020	0.230	0.245	0.271	0.222	0.176	0.138	0.092	0.087	0.271	
18-Feb	0.038	Z	0.080	0.126	0.153	0.085	0.056	0.021	0.033	0.005	0.161	0.170	0.126	0.118	0.085	0.006	0.000	0.000	0.000	0.000	0.001	0.003	0.055	0.080	0.061	0.170	
19-Feb	0.069	0.010	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.108	0.188	0.169	0.165	0.136	0.116	0.168	0.182	0.097	0.048	0.086	0.058	0.047	0.047	0.074	0.188	
20-Feb	0.019	0.045	0.072	Z	0.059	0.111	0.146	0.146	0.132	0.185	0.203	0.203	0.240	0.268	0.249	0.237	0.048	0.030	0.036	0.033	0.076	0.124	0.147	0.144	0.128	0.268	
21-Feb	0.174	0.302	0.309	0.331	Z	0.288	0.222	0.184	0.234	0.214	0.233	0.296	0.537	0.504	0.196	0.000	0.000	0.000	0.000	0.004	0.000	0.114	0.224	0.250	0.201	0.537	
22-Feb	0.236	0.230	0.248	0.263	0.238	Z	0.225	0.202	0.139	0.126	0.128	0.066	0.057	0.041	0.063	0.082	0.712	0.681	0.379	0.285	0.341	0.336	0.353	0.399	0.253	0.712	
23-Feb	Z	0.277	0.193	0.189	0.195	0.117	0.128	0.111	0.177	0.117	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.065	0.277	
24-Feb	0.000	Z	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.057	0.000	0.000	0.000	0.000	0.000	0.075	0.000	0.000	0.008	0.075	
25-Feb	0.019	0.000	Z	0.007	0.000	0.000	0.013	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.019	
26-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.002	0.000	0.000	0.000	M	0.000	0.000	0.000	0.000	M	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
28-Feb	0.000	0.029	0.061	0.007	0.000	Z	0.007	0.016	0.000	0.009	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.061	
29-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.001	0.012	
		0.062	0.068	0.068	0.068	0.057	0.052	0.046	0.046	0.047	0.057	0.056	0.046	0.055	0.052	0.038	0.026	0.045	0.066	0.056	0.042	0.050	0.059	0.065	0.076	Diurnal Average	
		0.249	0.302	0.309	0.331	0.238	0.288	0.225	0.202	0.234	0.313	0.261	0.296	0.537	0.504	0.249	0.237	0.712	0.681	0.379	0.285	0.341	0.336	0.353	0.399	Diurnal Maximum	
Z - zerspan		C - Calibration			M - Maintenance																						





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Fort McKay - Bertha Ganter - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	368	55.67	55.67
0.006 - 0.05	88	13.31	68.99
0.06 - 0.1	109	16.49	85.48
> 0.1	96	14.52	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Fort McKay - Bertha Ganter - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	40	48	32	9	7	6	17	43	39	16	18	20	23	17	15	15	365
0.006 - 0.05	16	15	4	2	1	0	1	7	20	4	5	0	1	1	4	7	88
0.06 - 0.1	12	10	10	2	0	1	4	12	30	4	2	3	2	3	5	6	106
> 0.1	15	4	3	1	1	1	2	17	16	7	2	2	0	1	13	10	95
Totals	83	77	49	14	9	8	24	79	105	31	27	25	26	22	37	38	654

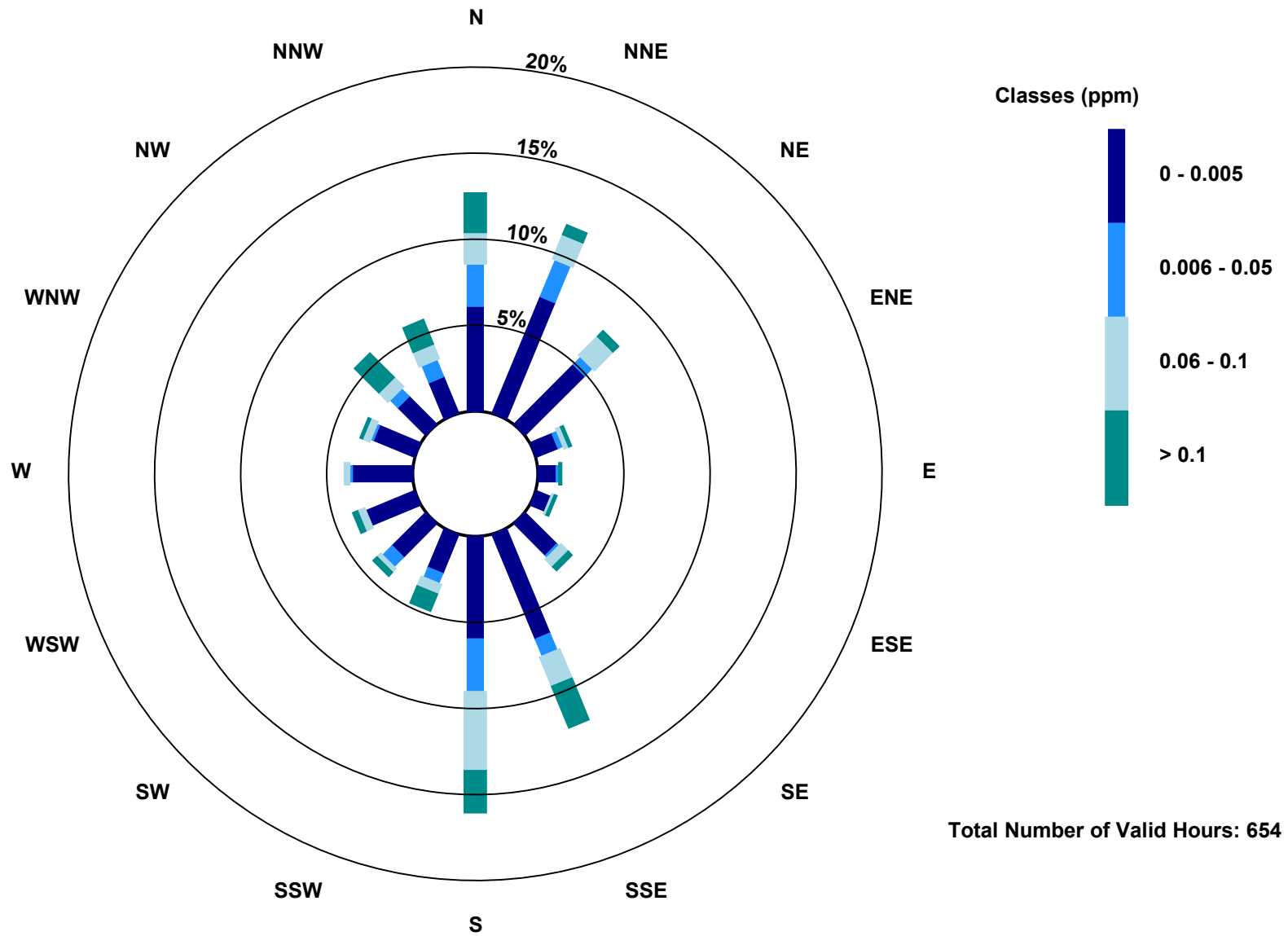
Total Number of Valid Hours: 654

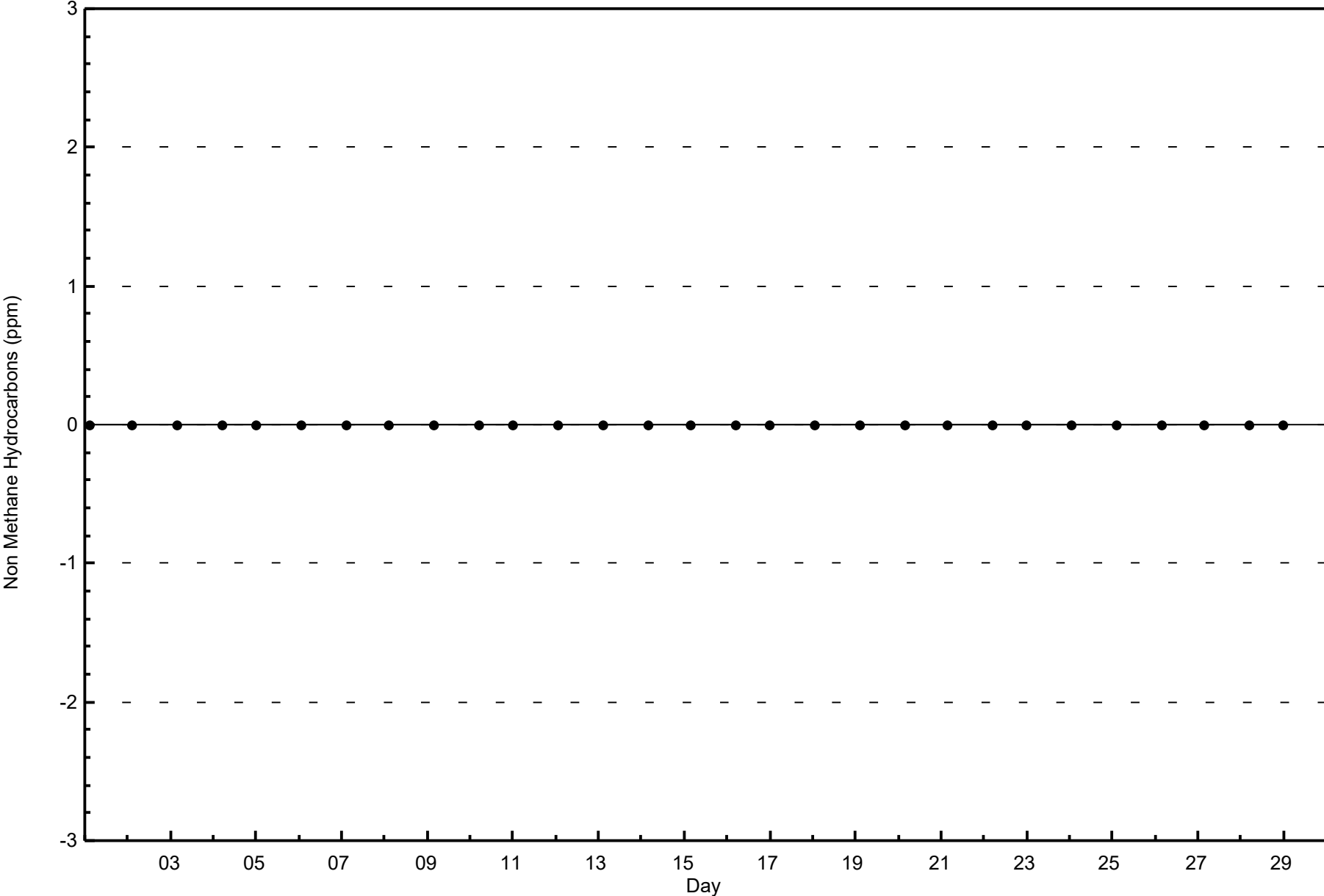
Total Number of Hours: 696

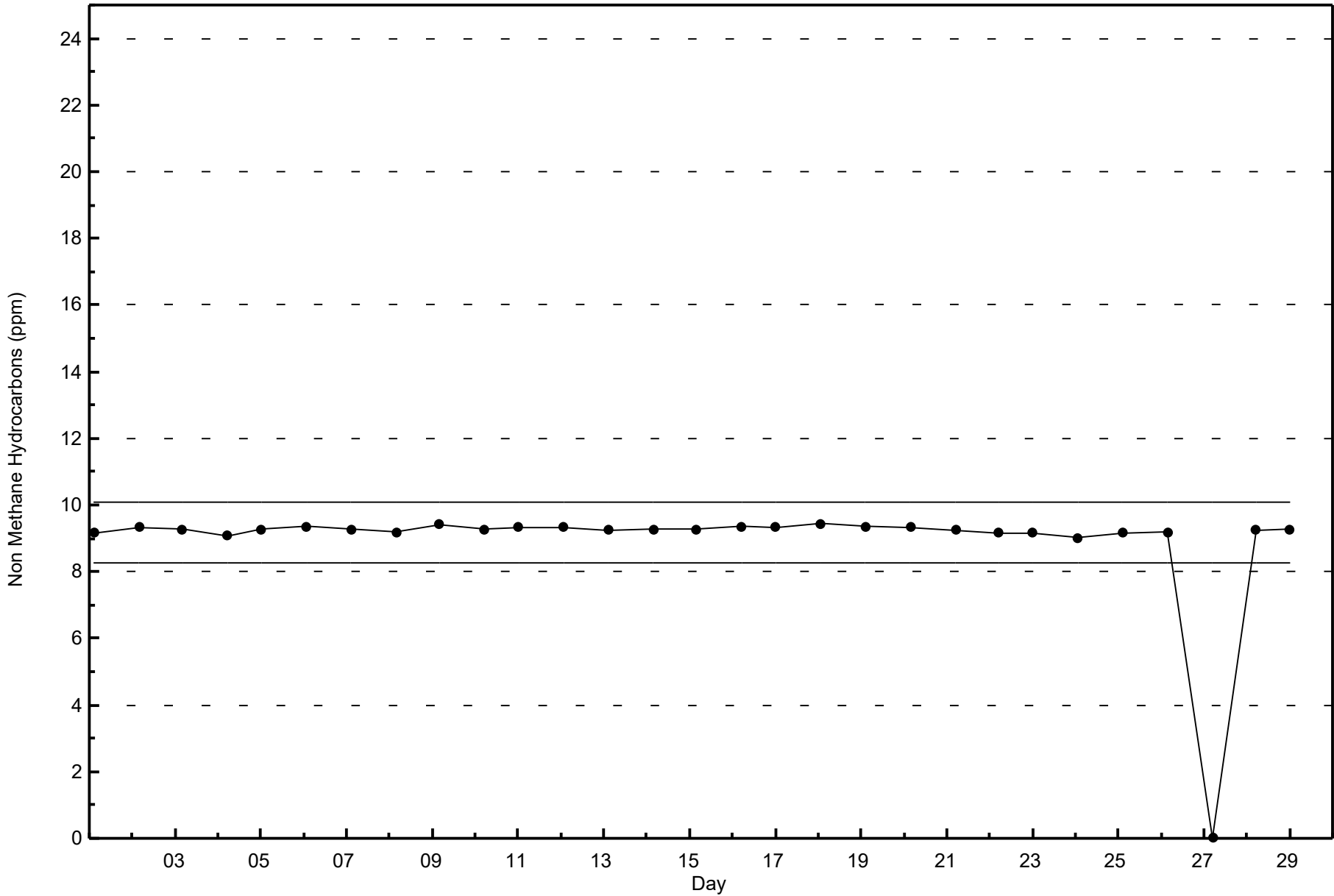


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Fort McKay - Bertha Ganter









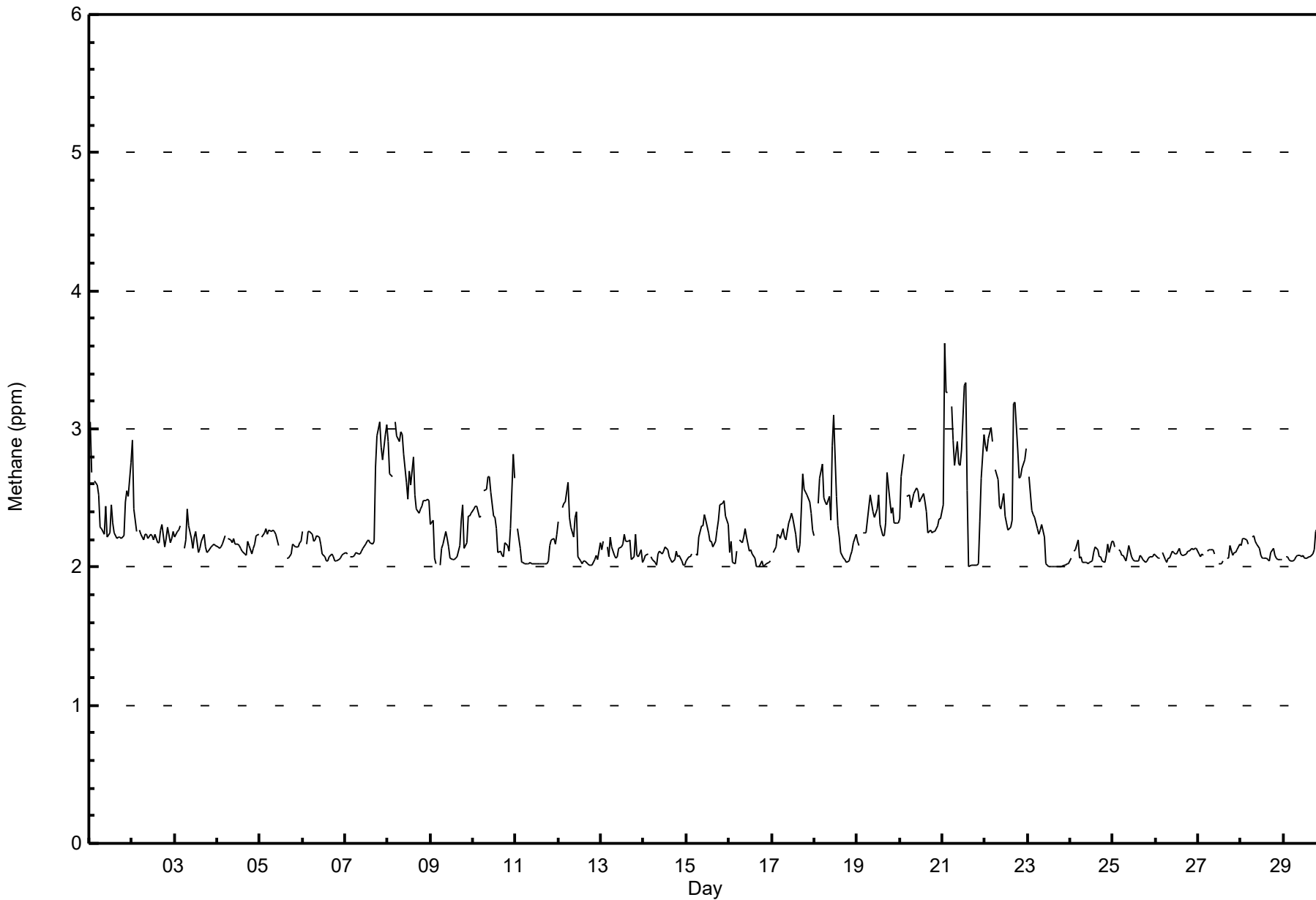
Wood Buffalo Environmental Association

Summary of Hour Averages

Methane (CH₄) - ppm

Fort McKay - Bertha Ganter - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	696																												
Maximum Value: 3.6 ppm on Feb 21 02:00		Maximum Daily Average: 2.7 ppm on Feb 21																	661																														
Minimum Value: 2.0 ppm on Feb 21 16:00		Minimum Daily Average: 2.1 ppm on Feb 14																	35																														
Maximum Diurnal Average: 2.3 ppm at hour 2		Minimum Diurnal Average: 2.1 ppm at hour 16																	33																														
Monthly Average: 2.25 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.1 Median = 2.2 Q ₃ = 2.3 P ₉₀ = 2.6 P ₉₉ = 3.2																	99.7																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	3.0	2.7	Z	2.6	2.6	2.5	2.3	2.3	2.2	2.4	2.2	2.3	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.5	2.6	2.5	2.8	2.4	3.0																							
2-Feb	2.9	2.4	Z	Z	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.1	2.2	2.3	2.2	2.2	2.3	2.3	2.9																							
3-Feb	2.2	2.3	Z	Z	Z	2.1	2.2	2.4	2.3	2.2	2.1	2.2	2.3	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.4																							
4-Feb	2.1	2.1	2.1	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2																							
5-Feb	Z	2.2	2.2	2.3	2.2	Z	2.3	2.3	2.3	2.2	2.2	C	C	C	C	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.2	2.3																								
6-Feb	2.3	Z	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.3																							
7-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.7	3.0	3.1	2.9	2.8	3.0	3.0	2.4	3.1																							
8-Feb	2.9	2.7	Z	Z	3.0	2.9	2.9	3.0	3.0	2.8	2.6	2.5	2.7	2.6	2.8	2.5	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.7	3.0																							
9-Feb	2.3	2.3	2.1	Z	Z	2.0	2.1	2.2	2.3	2.2	2.1	2.1	2.0	2.1	2.1	2.1	2.2	2.3	2.4	2.1	2.2	2.4	2.4	2.4	2.2	2.4																							
10-Feb	2.4	2.4	2.4	2.4	2.4	Z	2.6	2.6	2.6	2.7	2.5	2.4	2.4	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.3	2.8	2.6	2.4	2.8																							
11-Feb	Z	2.3	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.2	2.2	2.1	2.3																							
12-Feb	2.3	Z	2.4	2.5	2.5	2.6	2.4	2.3	2.2	2.4	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.2	2.2	2.6																							
13-Feb	2.1	2.2	Z	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.0	2.1	2.2																							
14-Feb	2.1	2.1	Z	Z	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1																							
15-Feb	2.0	2.1	2.1	2.1	Z	2.1	2.1	2.2	2.3	2.3	2.4	2.3	2.2	2.2	2.2	2.1	2.2	2.3	2.3	2.5	2.5	2.5	2.4	2.3	2.2	2.5																							
16-Feb	2.1	2.2	2.0	2.0	2.1	Z	2.2	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3																							
17-Feb	Z	2.1	2.1	2.2	2.2	Z	2.2	2.3	2.2	2.2	2.3	2.3	2.4	2.3	2.2	2.1	2.1	2.2	2.7	2.6	2.5	2.5	2.5	2.4	2.3	2.7																							
18-Feb	2.2	Z	2.5	2.6	2.7	2.5	2.5	2.5	2.5	2.3	2.9	3.1	2.5	2.3	2.2	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.2	2.2	2.4	3.1																							
19-Feb	2.2	2.2	Z	Z	2.3	2.2	2.3	2.3	2.5	2.5	2.4	2.4	2.4	2.5	2.3	2.2	2.2	2.3	2.7	2.5	2.4	2.4	2.3	2.3	2.3	2.7																							
20-Feb	2.4	2.7	2.8	Z	2.5	2.5	2.4	2.5	2.5	2.6	2.6	2.5	2.5	2.5	2.5	2.4	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.8																							
21-Feb	2.5	3.6	3.3	3.3	Z	3.2	2.9	2.7	2.9	2.7	2.7	2.8	3.3	3.3	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.6	3.0	2.7	3.6																							
22-Feb	2.9	2.8	2.9	3.0	2.9	Z	2.7	2.6	2.4	2.4	2.5	2.4	2.3	2.3	2.3	2.3	3.2	3.2	2.8	2.6	2.7	2.7	2.8	2.9	2.7	3.2																							
23-Feb	Z	2.7	2.4	2.4	2.4	Z	2.2	2.3	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.7																							
24-Feb	2.1	Z	2.1	2.1	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.2	2.1	2.2	2.1	2.2																							
25-Feb	2.2	2.1	Z	2.1	2.1	2.1	2.1	2.0	2.1	2.2	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2																							
26-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1																						
27-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	M	2.0	2.0	2.0	2.0	M	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.2																							
28-Feb	2.2	2.2	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2																						
29-Feb	Z	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.3																						
																								2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	Diurnal Average		
																								3.0	3.6	3.3	3.3	3.0	3.2	2.9	3.0	3.0	2.8	2.9	3.1	3.3	3.3	2.8	2.5	3.2	3.2	3.0	3.1	2.9	2.8	3.0	3.0	Diurnal Maximum	
Z - zerspan		C - Calibration				M - Maintenance																																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	98	14.83	14.83
2.1 - 3.0	553	83.66	98.49
3.1 - 10.0	10	1.51	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Methane (CH₄) - ppm
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	10	6	7	2	1	2	1	5	5	5	7	11	17	8	8	3	98
2.1 - 3.0	72	70	42	12	8	6	23	73	99	26	20	14	9	14	26	32	546
3.1 - 10.0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	3	3	10
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	83	77	49	14	9	8	24	79	105	31	27	25	26	22	37	38	654

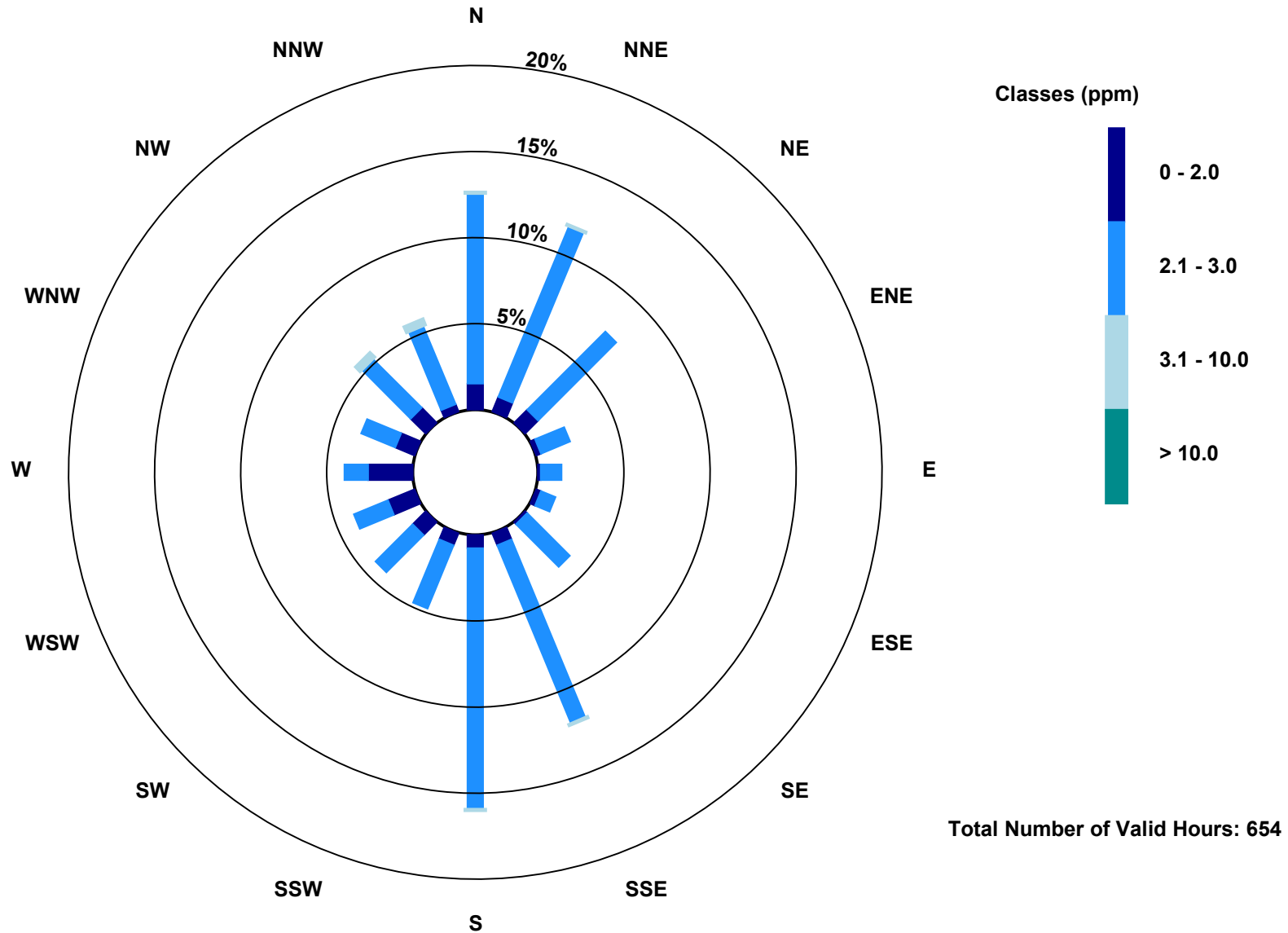
Total Number of Valid Hours: 654

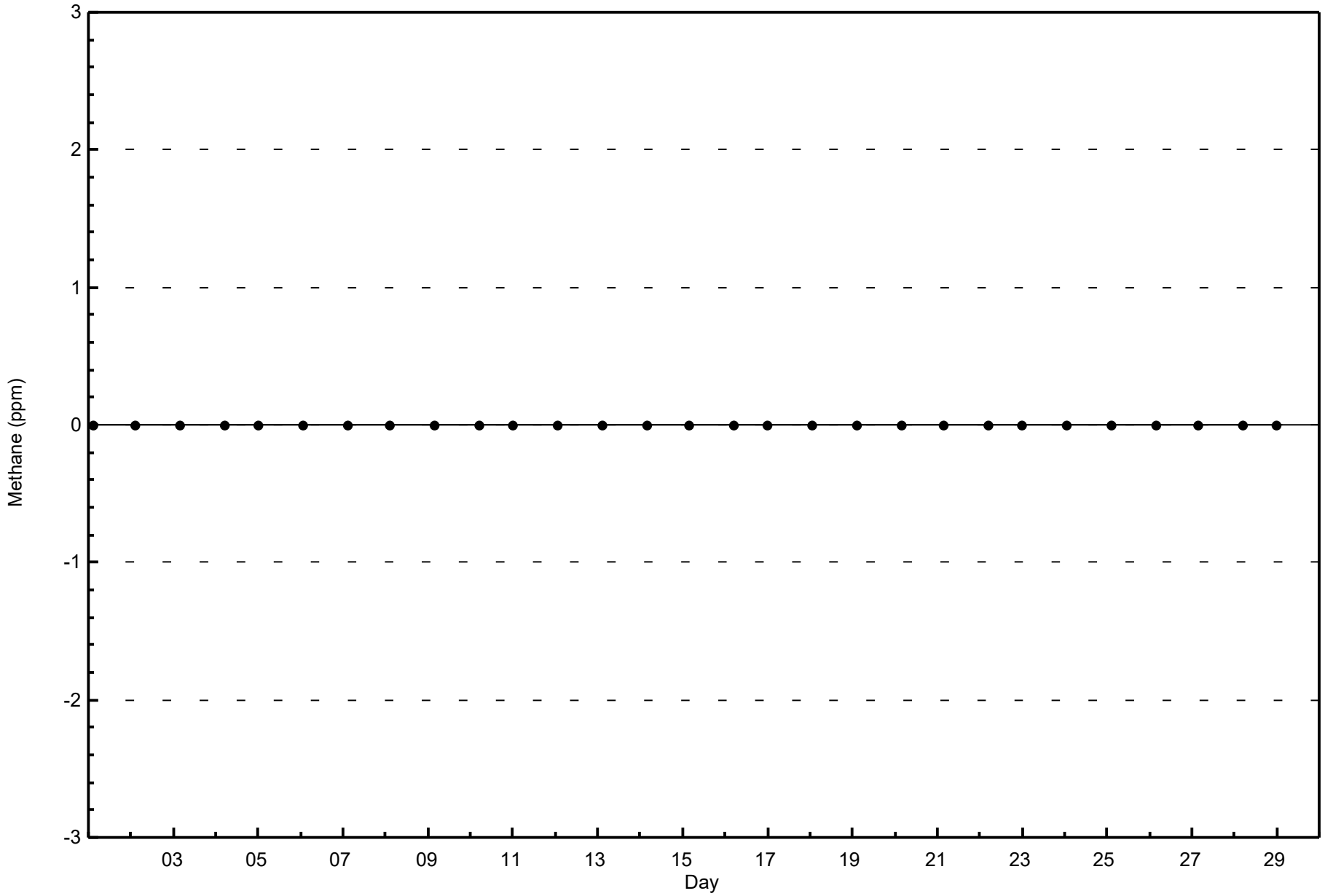
Total Number of Hours: 696

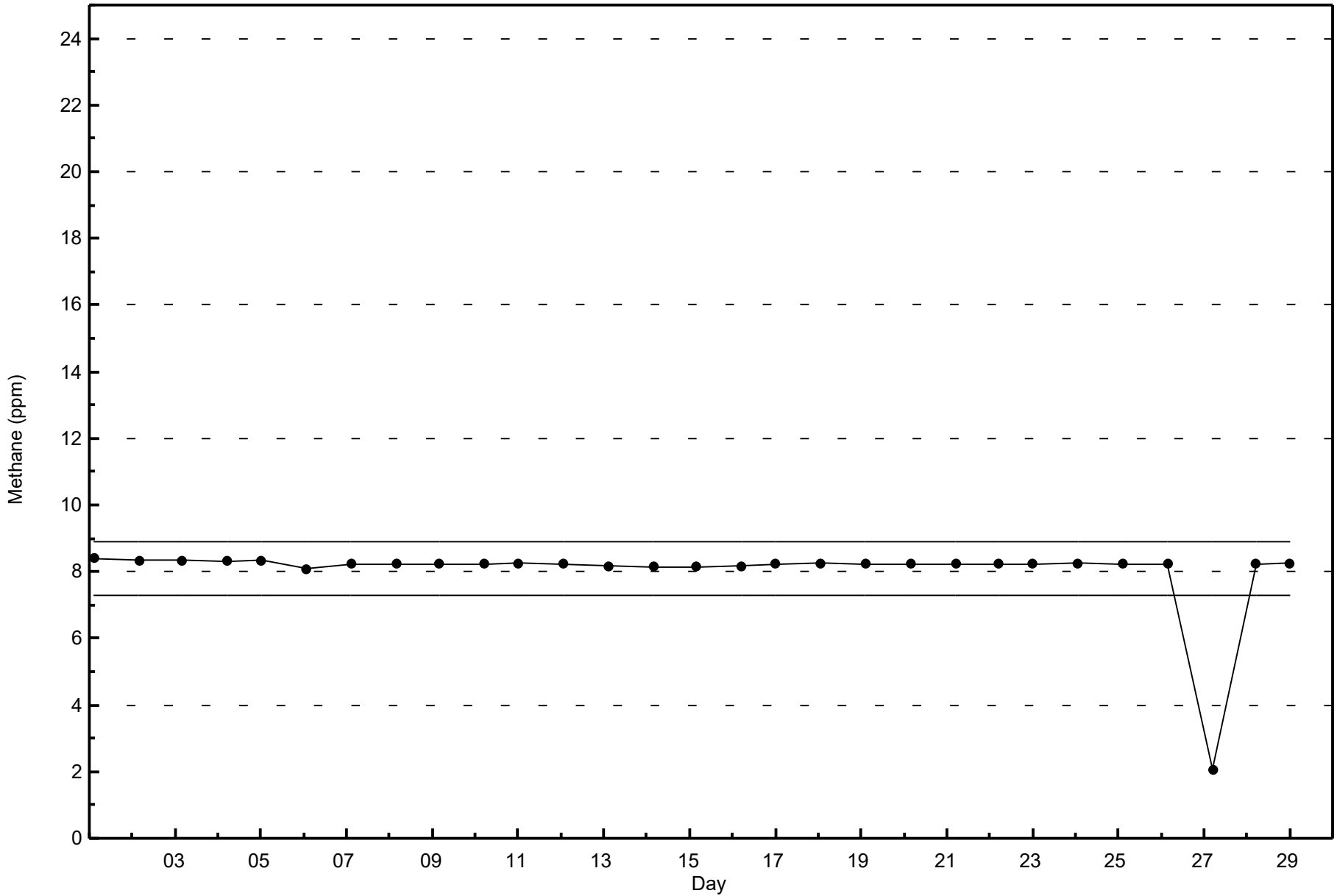


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Fort McKay - Bertha Ganter







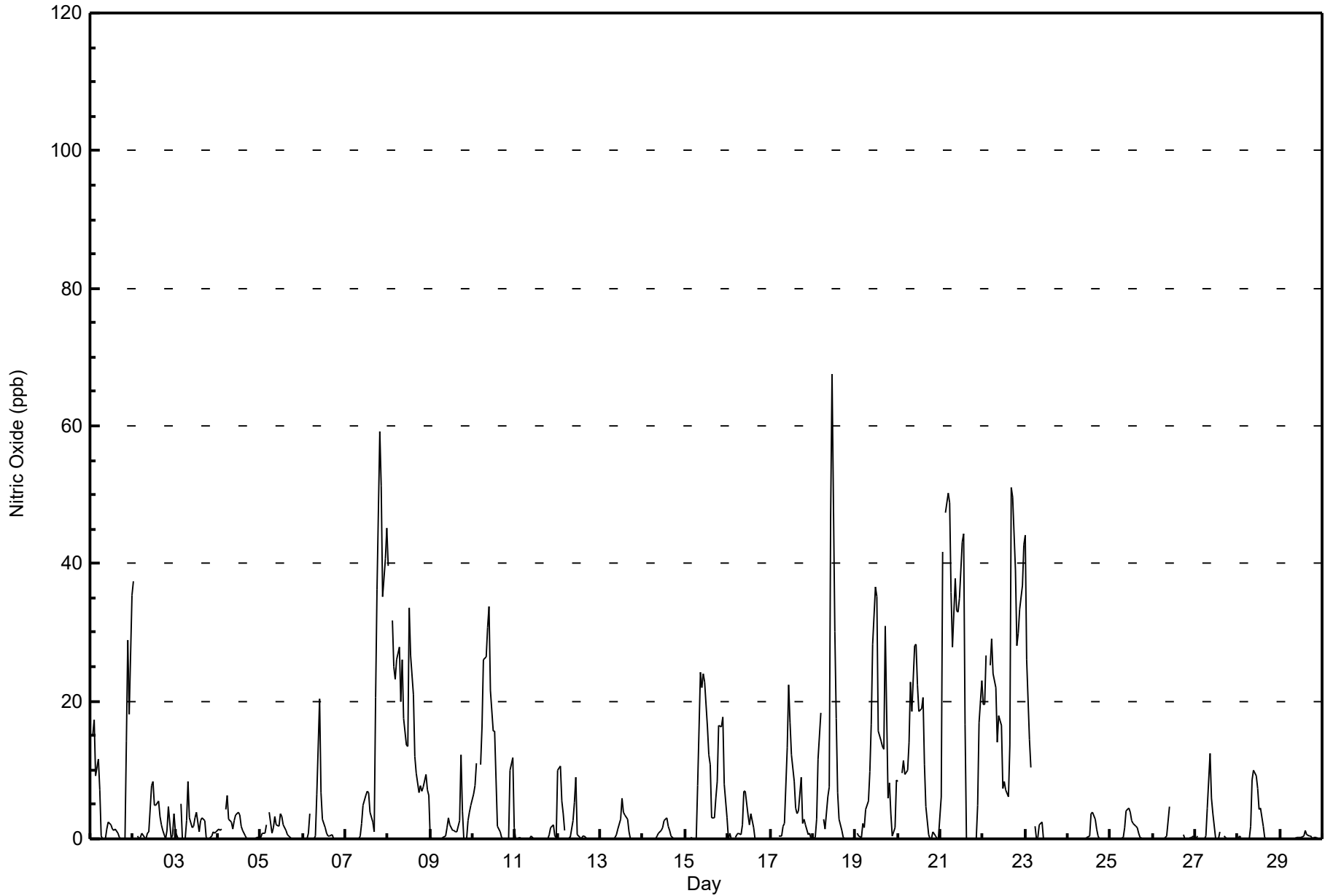


Maximum Value: 67.6 ppb on Feb 18 12:00																				Maximum Daily Average: 24.7 ppb on Feb 22					Hours in Service: 696		
Minimum Value: 0.0 ppb on Feb 1 18:00																				Minimum Daily Average: 0.2 ppb on Feb 29					Hours of Data: 659		
Maximum Diurnal Average: 10.8 ppb at hour 11																				Minimum Diurnal Average: 3.0 ppb at hour 16					Hours of Missing Data: 37		
Monthly Average: 6.04 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.9 Q ₃ = 6.6 P ₉₀ = 21.6 P ₉₉ = 48.0					Hours of Calibration: 36		
																									Percent Operational Time: 99.9		
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	Z	15.0	17.2	9.1	11.5	7.0	0.3	0.1	0.1	1.5	2.5	2.1	1.4	1.2	1.4	0.9	0.3	0.0	0.0	0.0	14.2	29.0	18.1	35.4	7.3	35.4	
2-Feb	37.5	Z	0.3	0.0	0.1	0.9	0.2	0.0	0.9	0.9	7.8	8.4	4.9	4.8	5.4	3.3	2.0	1.2	0.1	1.3	4.6	0.0	0.7	3.6	3.9	37.5	
3-Feb	1.0	0.0	Z	5.1	0.0	0.0	2.6	8.2	3.0	1.6	1.8	3.1	3.8	0.9	2.7	3.0	2.6	0.1	0.0	0.0	0.3	1.0	0.8	0.9	1.9	8.2	
4-Feb	1.5	1.2	1.5	Z	4.3	6.2	2.9	2.5	1.4	2.7	3.5	3.9	3.5	1.8	1.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.7	6.2	
5-Feb	0.2	0.8	0.8	2.0	Z	3.9	0.9	1.6	3.2	2.0	1.8	3.7	3.2	2.0	1.3	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	3.9	
6-Feb	0.0	0.0	0.0	0.8	3.7	Z	0.1	0.3	6.5	20.3	6.8	2.8	1.7	0.9	0.3	0.4	0.6	0.1	0.0	0.0	0.0	0.0	0.1	0.1	2.0	20.3	
7-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.1	4.9	6.2	6.8	6.7	3.9	2.4	1.0	20.6	36.3	59.2	51.2	35.2	40.6	45.1	14.0	59.2	
8-Feb	39.7	Z	31.7	25.1	23.1	26.1	27.9	20.0	25.9	17.5	13.7	13.5	33.7	26.6	20.9	11.9	9.6	6.6	7.6	7.0	7.5	9.4	7.1	6.3	18.2	39.7	
9-Feb	0.2	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.3	1.7	3.0	2.0	1.2	1.2	1.1	1.0	2.7	12.3	4.2	0.0	0.0	2.6	3.9	4.9	1.8	12.3	
10-Feb	6.4	7.8	11.0	Z	10.7	16.2	26.0	26.4	30.6	33.7	21.5	15.6	15.6	8.7	1.8	1.0	0.2	0.0	0.0	0.0	0.0	10.0	11.7	1.6	11.2	33.7	
11-Feb	0.0	0.0	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.6	2.0	0.4	0.2	0.2	2.0	
12-Feb	9.9	10.5	5.4	3.7	1.2	Z	0.1	0.1	2.7	5.4	9.0	0.5	0.2	0.0	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.2	10.5	
13-Feb	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.7	1.4	2.8	5.9	3.9	3.4	2.8	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	5.9	
14-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	1.3	1.7	2.6	3.1	1.8	1.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	3.1	
15-Feb	0.0	0.0	Z	0.1	0.0	0.0	0.1	7.7	24.3	22.1	24.1	22.7	16.2	12.3	10.8	3.1	3.1	5.9	8.3	16.5	16.3	17.7	7.9	3.0	9.7	24.3	
16-Feb	0.0	0.7	0.0	Z	0.1	0.7	0.7	0.6	2.0	6.9	7.0	3.5	2.1	3.6	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	7.0	
17-Feb	0.0	0.0	0.0	0.1	Z	0.3	0.4	1.8	2.3	13.2	22.5	16.9	12.1	8.3	4.4	3.6	4.0	9.0	2.2	2.9	2.1	0.6	0.8	0.1	4.7	22.5	
18-Feb	0.0	0.3	2.9	11.7	18.4	Z	2.8	1.5	6.0	7.5	46.8	67.6	30.1	17.4	6.6	2.9	1.2	0.3	0.0	0.0	0.0	0.0	0.0	0.1	9.7	67.6	
19-Feb	Z	0.9	0.5	0.1	2.2	1.6	4.2	5.5	9.7	16.7	28.3	36.6	35.2	15.6	14.3	13.3	13.0	30.9	5.8	8.1	3.6	0.3	1.6	8.6	11.2	36.6	
20-Feb	8.4	Z	9.6	11.3	9.3	9.9	14.1	22.8	18.5	28.0	28.4	22.3	18.4	18.8	20.5	10.8	4.6	0.6	0.0	0.0	1.1	0.5	0.1	0.2	11.2	28.4	
21-Feb	6.1	41.7	Z	47.4	50.2	48.8	35.8	27.8	37.9	33.1	33.0	34.9	43.1	44.3	16.6	0.1	0.0	0.0	0.0	0.0	0.0	5.0	16.8	22.9	23.7	50.2	
22-Feb	19.6	19.5	26.6	Z	25.2	29.0	24.1	21.9	14.1	18.0	16.6	7.2	8.3	7.1	6.1	13.6	51.0	49.5	39.0	28.1	29.8	33.4	36.9	42.7	24.7	51.0	
23-Feb	44.2	26.1	14.4	10.3	Z	1.7	0.0	0.2	1.9	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	44.2	
24-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	3.7	3.8	2.8	1.5	0.4	0.0	0.0	0.0	0.0	0.1	0.1	0.6	3.8	
25-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.0	0.1	1.5	4.0	4.5	4.0	2.6	2.2	1.9	1.7	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.5	
26-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.5	4.7	C	C	C	C	C	C	C	C	0.6	0.0	0.0	0.0	0.1	0.2	0.5	--	4.7	
27-Feb	0.0	0.3	Z	0.0	0.0	0.0	0.4	4.5	12.4	5.9	3.6	0.0	0.0	0.0	1.0	M	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.3	12.4	
28-Feb	0.0	0.3	0.2	Z	0.0	0.0	0.1	1.9	8.5	9.9	9.2	7.4	4.3	4.5	1.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	9.9	
29-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.4	1.2	0.5	0.5	0.4	0.1	0.2	0.2	0.1	0.0	0.0	0.2	1.2	
7.3 5.2 5.1 5.3 6.7 6.1 5.0 5.4 7.4 9.1 10.8 10.4 9.2 7.1 4.9 3.0 3.6 4.8 3.6 4.3 4.6 5.1 5.1 6.1																								Diurnal Average			
44.2 41.7 31.7 47.4 50.2 48.8 35.8 27.8 37.9 33.7 46.8 67.6 43.1 44.3 20.9 13.6 51.0 49.5 39.0 59.2 51.2 35.2 40.6 45.1																								Diurnal Maximum			
Z - zerspan		C - Calibration				M - Maintenance																					



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Fort McKay - Bertha Ganter - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Fort McKay - Bertha Ganter - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	590	89.53	89.53
21 - 40	53	8.04	97.57
41 - 80	16	2.43	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Nitric Oxide (NO) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	77	73	44	13	9	6	22	63	101	27	23	24	24	23	26	32	587
21 - 40	6	3	2	0	0	1	2	14	5	4	1	2	0	1	5	4	50
41 - 80	3	1	1	0	0	0	0	1	3	0	0	0	0	0	3	3	15
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	86	77	47	13	9	7	24	78	109	31	24	26	24	24	34	39	652

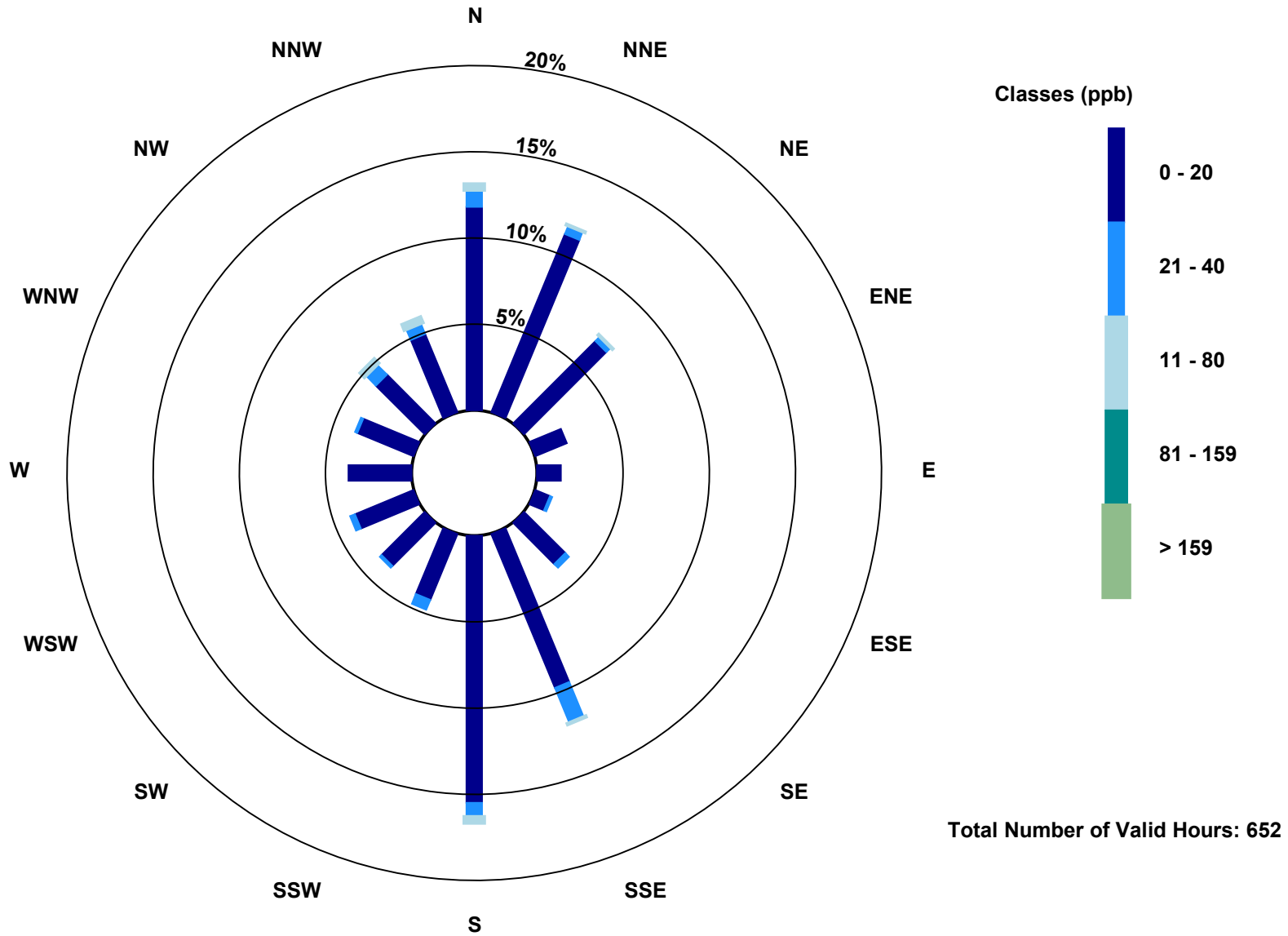
Total Number of Valid Hours: 652

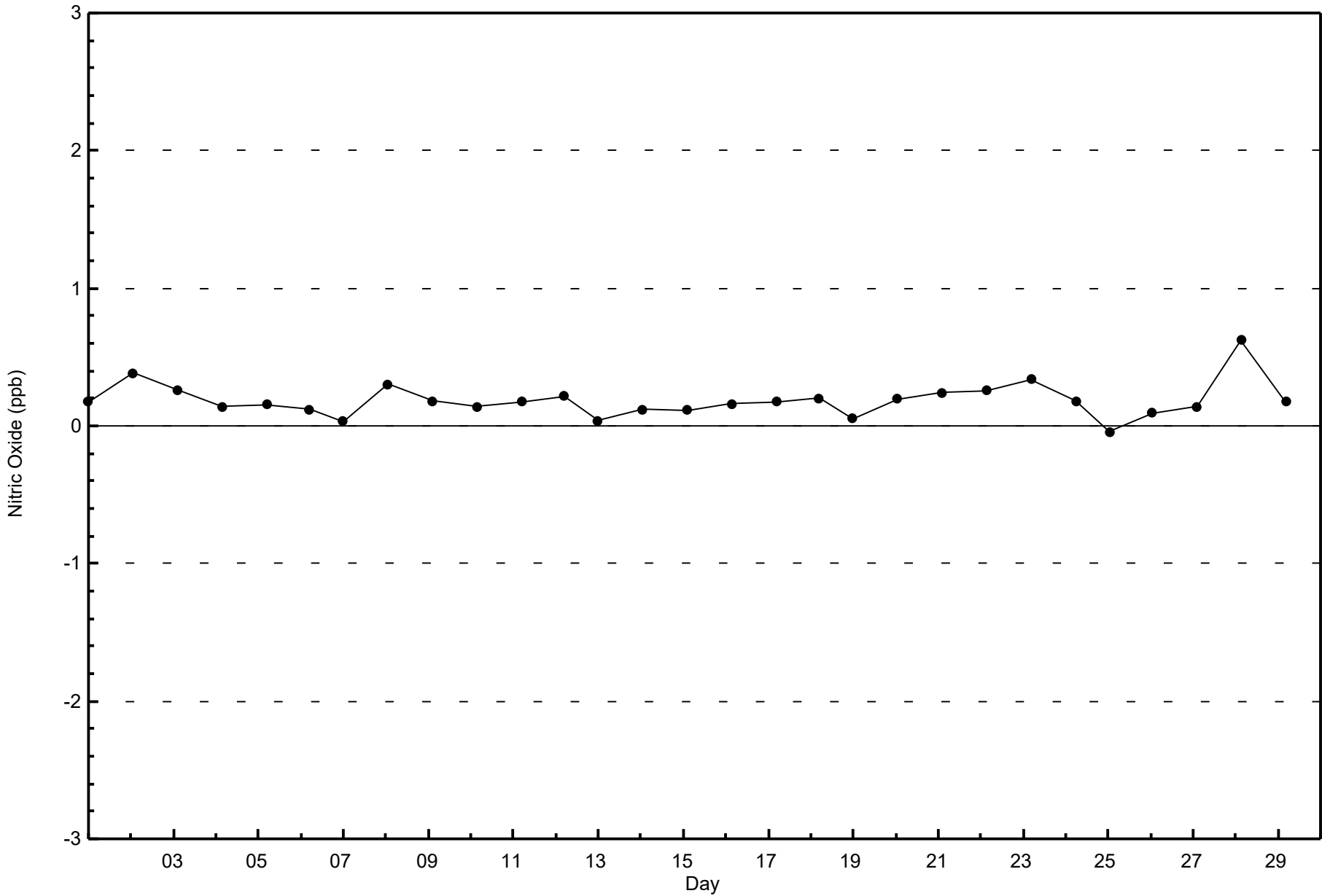
Total Number of Hours: 696

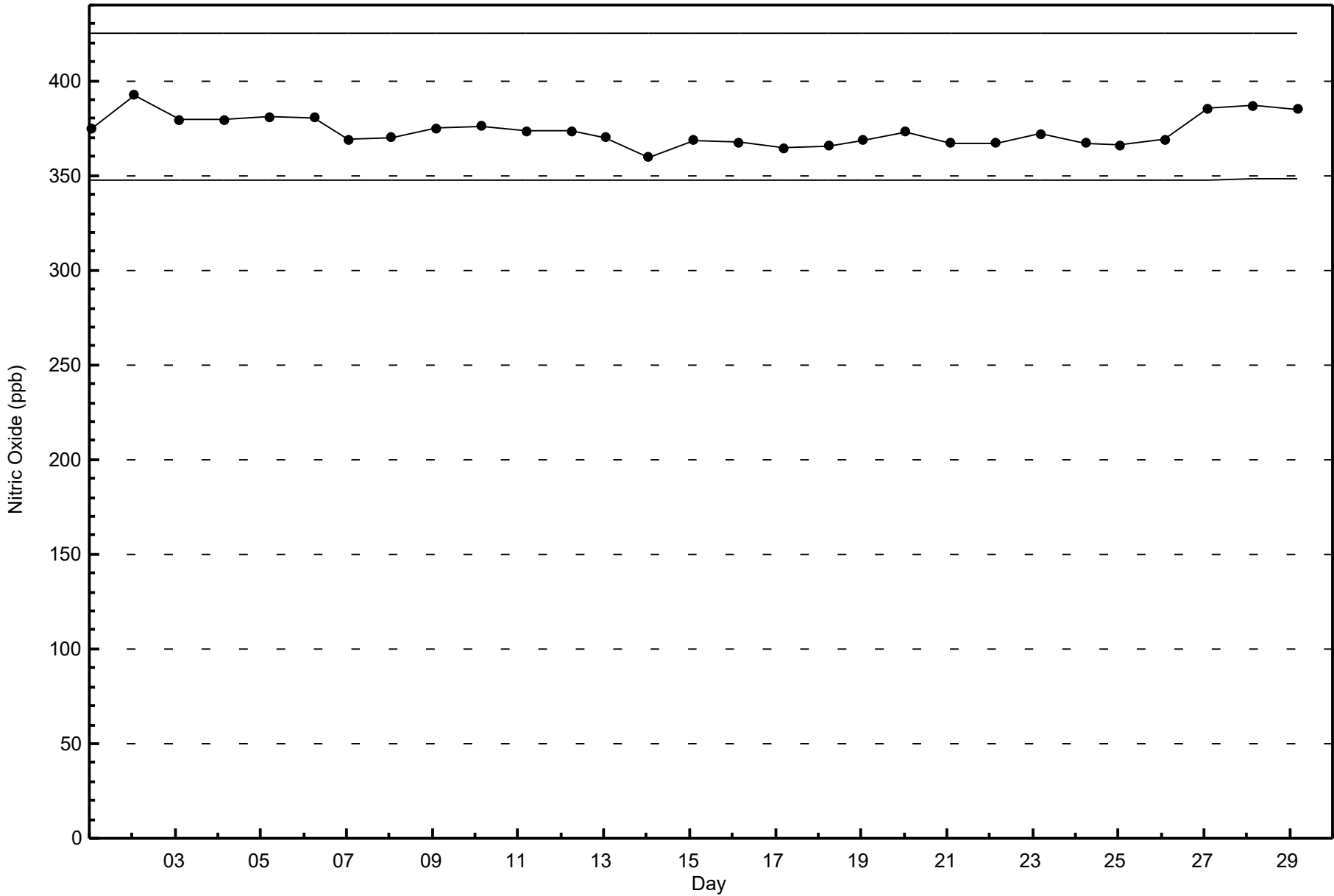


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Fort McKay - Bertha Ganter









Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

Fort McKay - Bertha Ganter - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 38.1 ppb on Feb 17 19:00	Maximum Daily Average: 21.5 ppb on Feb 22		Hours of Data:	659
Minimum Value: 0.0 ppb on Feb 11 16:00	Minimum Daily Average: 5.3 ppb on Feb 29		Hours of Missing Data:	37
Maximum Diurnal Average: 15.3 ppb at hour 2	Minimum Diurnal Average: 7.6 ppb at hour 16		Hours of Calibration:	36
Monthly Average: 12.51 ppb	Percentiles: P ₁ = 0.1 P ₁₀ = 1.7 Q ₁ = 5.7 Median = 11.9 Q ₃ = 18.9 P ₉₀ = 23.9 P ₉₉ = 33.6		Percent Operational Time:	99.9

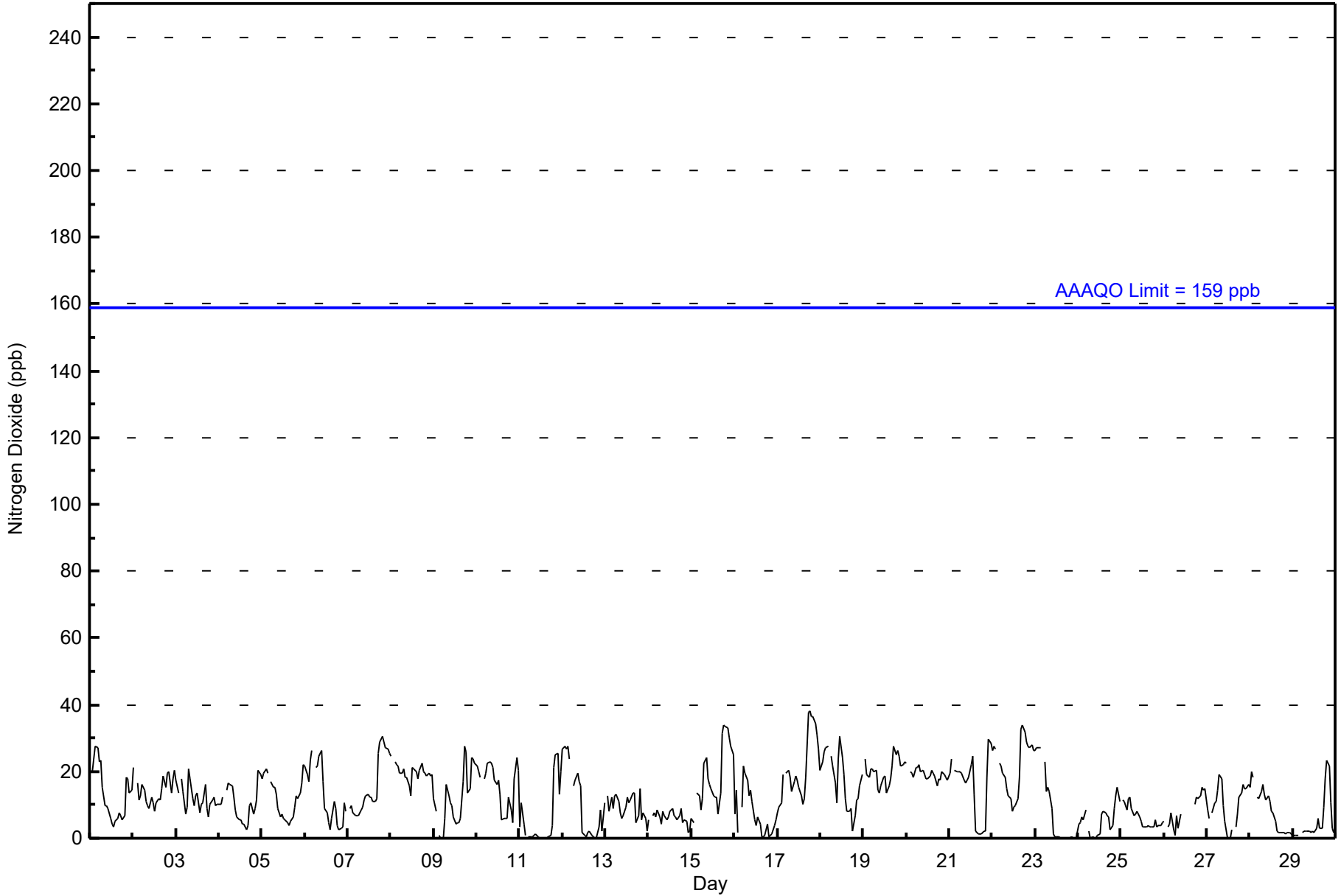
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	Z	20.1	23.7	27.4	27.3	23.0	23.1	15.2	9.7	9.9	8.7	5.9	4.1	3.6	5.2	6.0	7.5	6.9	5.7	6.9	18.3	17.6	13.6	14.3	13.2	27.4																							
2-Feb	21.2	Z	16.5	11.4	12.5	16.2	14.3	11.0	9.8	8.7	12.2	10.6	8.0	10.8	12.0	11.5	14.7	18.8	15.1	19.3	20.0	13.6	17.8	20.4	14.2	21.2																							
3-Feb	17.5	13.5	Z	17.8	13.8	7.0	9.3	20.7	17.7	11.8	9.6	12.9	13.5	7.7	10.1	10.5	15.9	8.9	6.5	10.1	11.4	12.2	9.8	10.1	12.1	20.7																							
4-Feb	10.3	10.1	12.1	Z	14.6	16.4	16.0	15.8	12.4	8.3	6.2	5.5	5.4	4.1	4.1	2.7	4.0	9.9	10.5	7.2	8.8	11.5	20.4	18.9	10.2	20.4																							
5-Feb	17.6	19.6	20.7	19.4	Z	16.8	15.1	15.4	13.2	9.0	6.2	7.0	5.8	5.3	4.5	3.7	4.9	6.5	9.5	12.7	11.8	13.7	16.7	22.0	12.0	22.0																							
6-Feb	21.5	18.9	17.1	23.5	26.1	Z	21.2	21.4	24.7	26.3	17.1	9.0	7.5	4.5	2.7	5.8	10.9	8.8	3.8	2.7	2.8	3.6	10.5	7.9	13.0	26.3																							
7-Feb	Z	8.8	9.8	7.6	6.9	6.6	6.7	8.5	9.5	11.4	12.5	13.3	12.2	12.2	11.0	11.1	11.9	25.4	29.0	30.3	29.0	27.2	26.8	25.6	15.4	30.3																							
8-Feb	24.5	Z	22.9	22.2	21.5	19.4	19.7	20.9	18.4	18.3	15.5	12.8	21.1	20.8	19.9	18.0	20.4	22.5	20.0	19.3	18.7	19.5	18.5	19.0	19.7	24.5																							
9-Feb	11.7	8.0	Z	0.7	0.2	0.2	6.1	16.0	12.6	10.4	9.6	6.3	4.1	4.5	4.6	6.1	17.0	27.7	25.9	13.5	14.7	24.1	23.9	22.4	11.8	27.7																							
10-Feb	21.4	19.8	18.3	Z	18.0	19.5	22.6	22.9	22.4	21.1	17.5	16.0	17.5	13.0	5.7	5.8	6.1	6.0	12.4	8.3	4.6	17.9	24.1	20.4	15.7	24.1																							
11-Feb	3.6	10.8	4.3	0.7	Z	0.6	0.5	0.3	0.8	1.3	0.3	0.1	0.2	0.2	0.1	0.0	0.5	0.7	4.0	21.0	25.2	25.5	13.2	20.0	5.8	25.5																							
12-Feb	26.7	27.4	26.9	27.5	23.8	Z	15.5	17.4	19.5	17.1	15.5	1.8	0.9	0.5	1.9	2.3	0.7	0.4	0.2	0.2	3.6	8.5	2.3	10.7	10.9	27.5																							
13-Feb	Z	12.9	8.2	12.3	9.0	12.5	13.2	10.9	7.7	6.1	6.6	9.4	12.4	10.8	11.5	13.7	13.4	4.5	6.7	14.8	5.4	7.7	6.1	2.3	9.5	14.8																							
14-Feb	5.3	Z	6.9	7.7	6.5	8.6	6.3	4.4	7.9	6.8	5.4	6.3	8.2	8.9	6.6	6.3	5.6	6.7	8.9	4.8	5.7	5.2	1.9	2.2	6.2	8.9																							
15-Feb	5.9	4.7	Z	13.7	12.5	8.6	11.9	22.5	24.2	18.0	16.0	14.8	12.5	12.1	12.3	7.4	13.7	31.2	33.7	33.5	33.1	30.1	27.7	25.0	18.5	33.7																							
16-Feb	7.2	14.4	1.8	Z	9.5	21.4	19.7	17.4	12.8	14.4	11.2	5.6	3.8	6.4	4.4	0.6	0.5	0.7	4.2	0.4	0.8	1.1	3.7	5.4	7.3	21.4																							
17-Feb	7.7	9.4	10.4	19.0	Z	19.7	20.3	18.4	14.1	16.8	18.7	17.3	15.2	12.9	10.3	11.8	18.3	37.6	38.1	36.3	36.5	34.4	31.1	26.5	20.9	38.1																							
18-Feb	20.3	22.8	26.0	27.2	27.7	Z	24.5	21.5	16.5	10.5	23.7	30.4	24.1	19.2	11.9	8.2	8.0	8.8	2.2	6.7	11.5	12.0	15.5	19.0	17.3	30.4																							
19-Feb	Z	23.7	19.1	18.4	20.6	20.9	19.9	20.3	14.6	13.5	15.7	18.2	18.5	13.6	15.5	17.9	21.8	27.6	25.1	26.2	24.5	21.6	22.1	22.9	20.1	27.6																							
20-Feb	22.4	Z	20.1	19.4	18.4	21.2	21.2	21.9	20.1	20.4	19.1	17.8	18.0	18.6	20.2	19.4	18.5	15.5	17.7	17.3	19.9	19.1	18.1	17.5	19.2	22.4																							
21-Feb	19.5	23.7	Z	20.2	20.0	19.9	19.9	19.7	17.2	16.5	17.4	18.2	22.0	24.5	13.2	2.0	1.1	1.2	1.3	2.0	2.3	18.4	29.7	28.4	15.6	29.7																							
22-Feb	26.4	27.4	26.6	Z	22.6	21.4	19.4	18.1	14.8	12.8	11.9	8.2	9.4	9.8	12.0	18.2	32.7	33.8	31.7	28.9	27.6	27.3	27.9	26.1	21.5	33.8																							
23-Feb	26.4	27.2	27.0	27.2	Z	22.9	14.1	15.2	14.0	8.7	1.1	0.5	0.4	0.4	0.1	0.1	0.2	0.0	0.2	0.2	0.3	0.0	0.0	0.0	8.1	27.2																							
24-Feb	4.1	4.6	6.3	5.7	8.6	Z	2.1	0.0	0.3	0.2	0.0	1.0	1.3	7.4	8.2	7.7	6.8	6.2	2.4	4.0	9.1	12.6	15.3	11.0	5.4	15.3																							
25-Feb	Z	11.3	11.2	8.6	11.7	12.1	9.0	6.7	7.1	7.9	6.4	5.0	3.5	3.2	3.4	3.8	3.5	3.4	3.4	5.4	3.6	3.7	3.7	4.6	6.2	12.1																							
26-Feb	5.2	Z	3.2	4.2	7.7	2.7	1.0	6.9	3.0	7.0	C	C	C	C	C	C	C	10.1	12.2	11.8	12.5	15.1	14.2	14.8	--	15.1																							
27-Feb	8.3	6.1	Z	7.6	10.8	11.1	14.6	18.9	17.6	9.7	5.2	0.1	0.1	0.2	2.6	M	3.4	7.4	12.1	13.4	16.0	14.9	14.7	16.2	9.6	18.9																							
28-Feb	15.2	20.1	18.4	Z	12.2	12.0	14.0	15.9	13.3	11.3	12.5	11.1	8.0	7.5	4.9	2.2	1.6	1.7	1.6	1.9	1.3	1.7	1.5	1.2	8.3	20.1																							
29-Feb	0.9	1.0	0.9	0.7	Z	1.6	2.2	2.2	2.3	2.1	1.9	2.2	1.8	3.0	6.0	3.0	2.9	9.5	18.0	23.3	21.5	10.4	2.8	1.8	5.3	23.3																							
																								14.6	15.3	14.9	14.6	15.1	13.7	13.9	14.7	13.0	11.6	10.8	9.5	9.3	8.8	8.0	7.6	9.5	12.0	12.5	13.2	13.8	14.8	15.0	15.1	Diurnal Average	
																								26.7	27.4	27.0	27.5	27.7	23.0	24.5	22.9	24.7	26.3	23.7	30.4	24.1	24.5	20.2	19.4	32.7	37.6	38.1	36.3	36.5	34.4	31.1	28.4	Diurnal Maximum	

Z - zerspan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Fort McKay - Bertha Ganter - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Fort McKay - Bertha Ganter - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	543	82.40	82.40
21 - 40	116	17.60	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Nitrogen Dioxide (NO₂) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	66	67	46	12	5	7	24	70	83	21	22	23	23	19	25	26	539
21 - 40	20	10	1	1	4	0	0	8	26	10	2	3	1	5	9	13	113
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	86	77	47	13	9	7	24	78	109	31	24	26	24	24	34	39	652

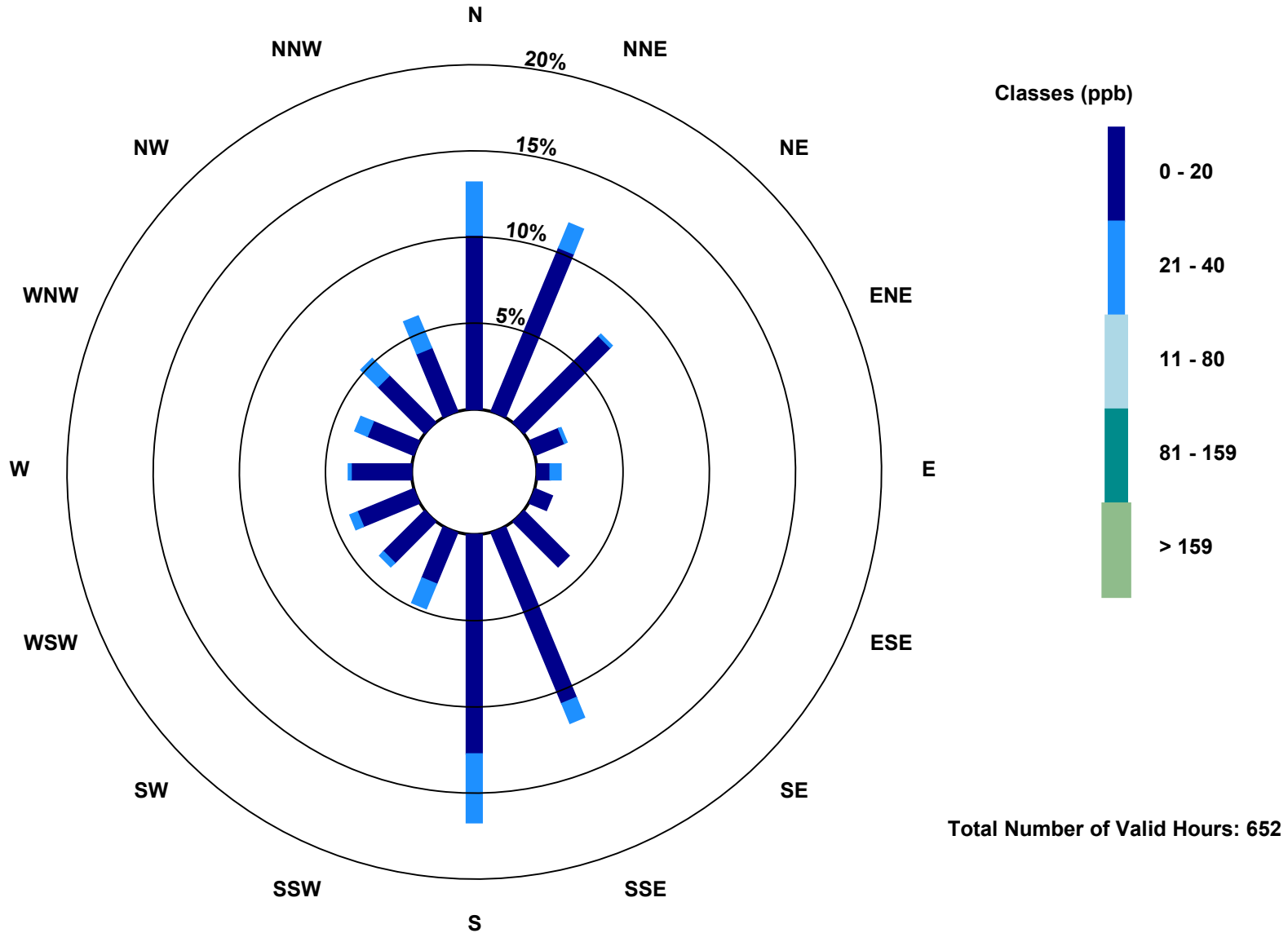
Total Number of Valid Hours: 652

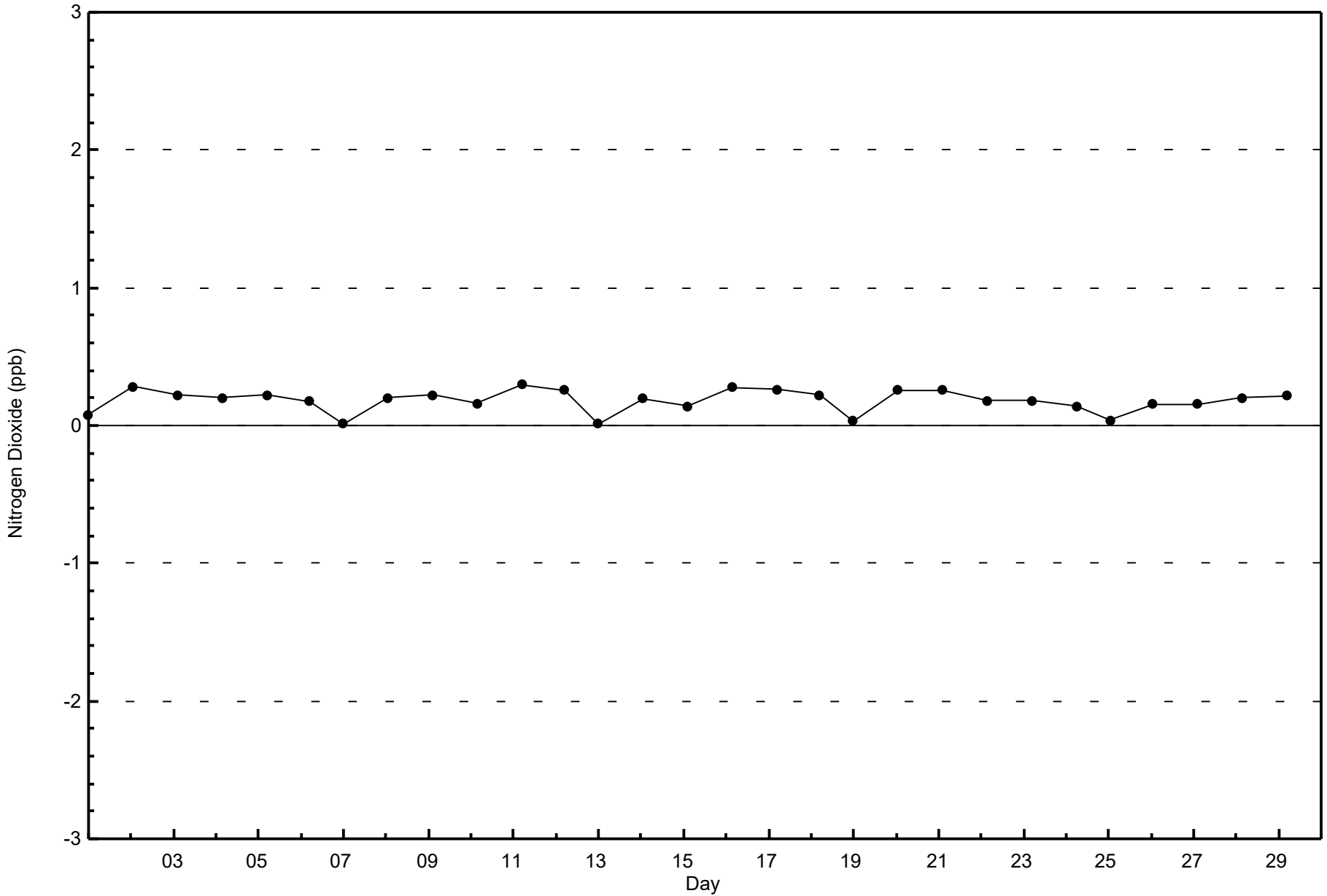
Total Number of Hours: 696

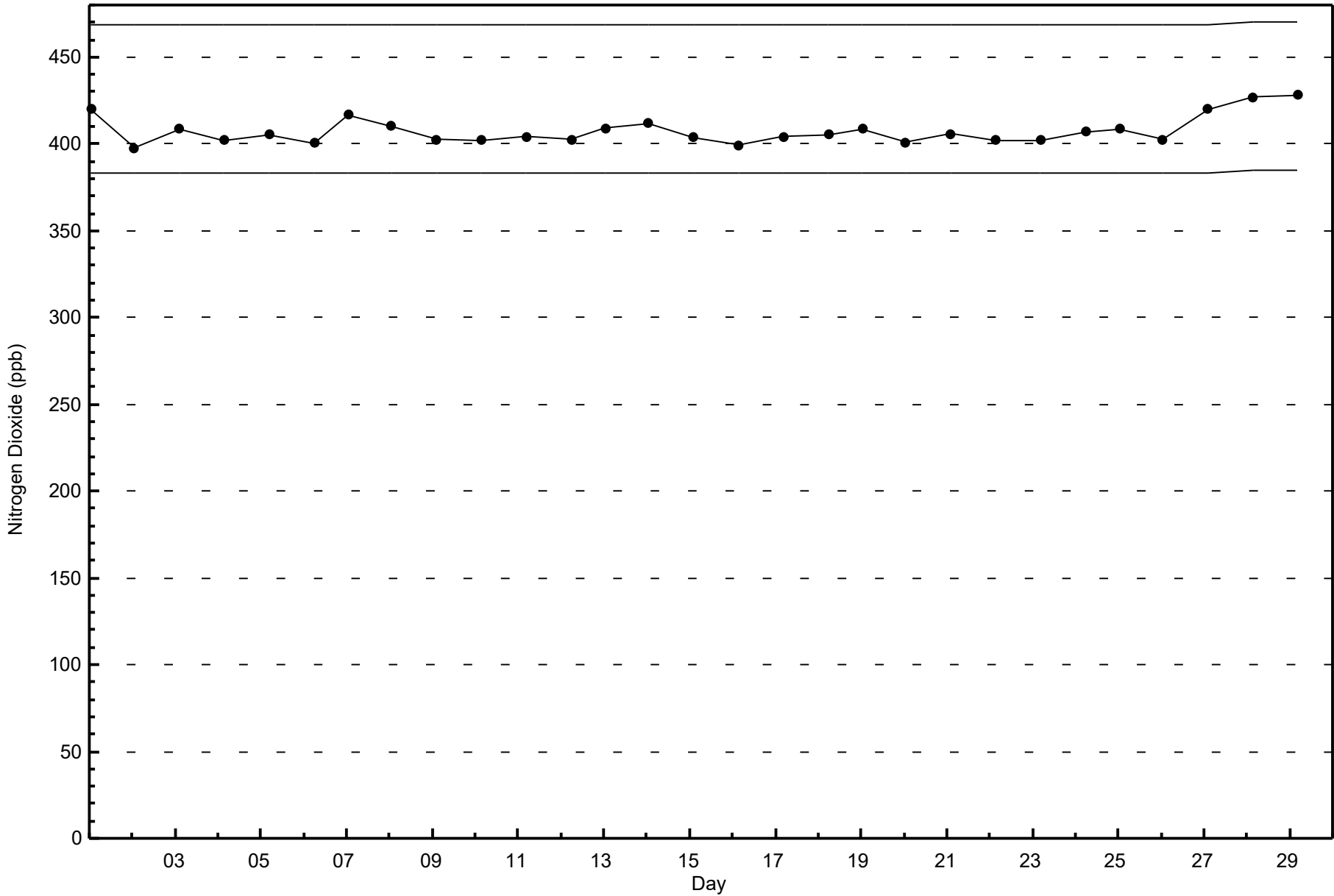


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Fort McKay - Bertha Ganter









Wood Buffalo Environmental Association
Summary of Hour Averages

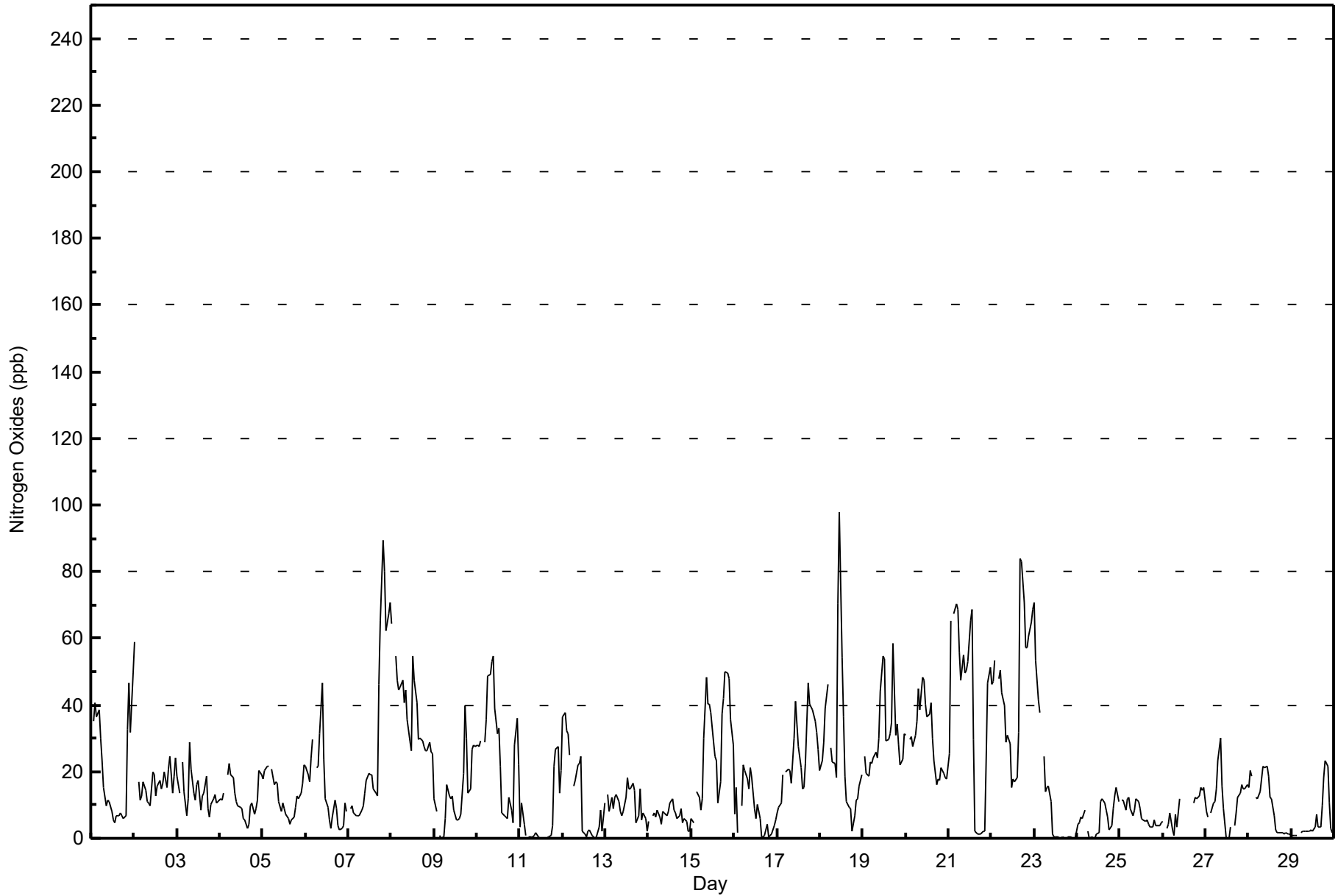
Nitrogen Oxides (NO_x) - ppb
Fort McKay - Bertha Ganter - February 2024

Maximum Value: 98.0 ppb on Feb 18 12:00																						Maximum Daily Average: 46.2 ppb on Feb 22				Hours in Service: 696	
Minimum Value: 0.0 ppb on Feb 23 22:00																						Minimum Daily Average: 5.5 ppb on Feb 29				Hours of Data: 659	
Maximum Diurnal Average: 21.9 ppb at hour 1																						Minimum Diurnal Average: 10.6 ppb at hour 16				Hours of Missing Data: 37	
Monthly Average: 18.55 ppb																						Percentiles: P ₁ = 0.1 P ₁₀ = 1.7 Q ₁ = 6.4 Median = 13.4 Q ₃ = 26.3 P ₉₀ = 44.6 P ₉₉ = 70.6				Hours of Calibration: 36	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	Z	35.1	40.9	36.5	38.8	30.0	23.4	15.3	9.8	11.4	11.2	8.0	5.5	4.8	6.6	6.9	7.8	6.9	5.7	6.9	32.5	46.6	31.7	49.7	20.5	49.7	
2-Feb	58.7	Z	16.8	11.4	12.6	17.1	14.5	11.0	10.7	9.6	20.0	19.0	12.9	15.6	17.4	14.8	16.7	20.0	15.2	20.6	24.6	13.6	18.5	24.0	18.1	58.7	
3-Feb	18.5	13.5	Z	22.9	13.8	7.0	11.9	28.9	20.7	13.4	11.4	16.0	17.3	8.6	12.8	13.5	18.5	9.0	6.5	10.1	11.7	13.2	10.6	11.0	14.0	28.9	
4-Feb	11.8	11.3	13.6	Z	18.9	22.6	18.9	18.3	13.8	11.0	9.7	9.4	8.9	5.9	5.4	3.0	4.1	9.9	10.5	7.2	8.8	11.5	20.5	19.1	11.9	22.6	
5-Feb	17.8	20.4	21.5	21.4	Z	20.7	16.0	17.0	16.4	11.0	8.0	10.7	9.0	7.3	5.8	4.3	5.3	6.5	9.5	12.7	11.8	13.7	16.7	22.0	13.3	22.0	
6-Feb	21.5	18.9	17.1	24.3	29.8	Z	21.3	21.7	31.2	46.6	23.9	11.8	9.2	5.4	3.0	6.2	11.5	8.9	3.8	2.7	2.8	3.6	10.6	8.0	15.0	46.6	
7-Feb	Z	8.8	9.8	7.6	6.9	6.6	6.7	8.5	9.8	13.5	17.4	19.5	19.0	18.9	14.9	13.5	12.9	46.0	65.3	89.5	80.2	62.4	67.4	70.7	29.4	89.5	
8-Feb	64.2	Z	54.6	47.3	44.6	45.5	47.6	40.9	44.3	35.8	29.2	26.3	54.8	47.4	40.8	29.9	30.0	29.1	27.6	26.3	26.2	28.9	25.6	25.3	37.9	64.2	
9-Feb	11.9	8.0	Z	0.7	0.2	0.2	6.1	16.2	12.9	12.1	12.6	8.3	5.3	5.7	5.7	7.1	19.7	40.0	30.1	13.5	14.7	26.7	27.8	27.3	13.6	40.0	
10-Feb	27.8	27.6	29.3	Z	28.7	35.7	48.6	49.3	53.0	54.8	39.0	31.6	33.1	21.7	7.5	6.8	6.3	6.0	12.4	8.3	4.6	27.9	35.8	22.0	26.9	54.8	
11-Feb	3.6	10.8	4.4	0.7	Z	0.6	0.5	0.3	0.8	1.6	0.3	0.1	0.2	0.2	0.1	0.0	0.5	0.7	4.0	21.6	26.8	27.5	13.6	20.2	6.0	27.5	
12-Feb	36.6	37.9	32.3	31.2	25.0	Z	15.6	17.5	22.2	22.5	24.5	2.3	1.1	0.5	2.2	2.7	0.7	0.4	0.2	0.2	3.6	8.5	2.3	10.8	13.1	37.9	
13-Feb	Z	13.0	8.2	12.3	9.0	12.5	13.2	11.0	7.9	6.8	8.0	12.2	18.3	14.7	14.9	16.5	14.5	4.6	6.7	14.8	5.4	7.7	6.1	2.3	10.5	18.3	
14-Feb	5.3	Z	6.9	7.7	6.5	8.6	6.3	4.4	8.2	7.6	6.7	8.0	10.8	12.0	8.4	7.4	6.1	6.7	8.9	4.8	5.7	5.2	1.9	2.2	6.8	12.0	
15-Feb	5.9	4.7	Z	13.8	12.5	8.6	12.0	30.2	48.5	40.1	40.1	37.5	28.7	24.4	23.1	10.5	16.8	37.1	42.0	50.0	49.4	47.8	35.6	28.0	28.1	50.0	
16-Feb	7.2	15.1	1.8	Z	9.6	22.1	20.4	18.0	14.8	21.3	18.2	9.1	5.9	10.0	6.1	0.6	0.5	0.7	4.2	0.4	0.8	1.1	3.7	5.4	8.6	22.1	
17-Feb	7.7	9.4	10.4	19.1	Z	20.0	20.7	20.2	16.4	30.0	41.2	34.2	27.3	21.2	14.7	15.4	22.3	46.6	40.3	39.2	38.6	35.0	31.9	26.6	25.6	46.6	
18-Feb	20.3	23.1	28.9	38.9	46.1	Z	27.3	23.0	22.5	18.0	70.5	98.0	54.2	36.6	18.5	11.1	9.2	9.1	2.2	6.7	11.5	12.0	15.5	19.1	27.1	98.0	
19-Feb	Z	24.6	19.6	18.5	22.8	22.5	24.1	25.8	24.3	30.2	44.0	54.8	53.7	29.2	29.8	31.2	34.8	58.5	30.9	34.3	28.1	21.9	23.7	31.5	31.3	58.5	
20-Feb	30.8	Z	29.7	30.7	27.7	31.1	35.3	44.7	38.6	48.4	47.5	40.1	36.4	37.4	40.7	30.2	23.1	16.1	17.7	17.3	21.0	19.6	18.2	17.7	30.4	48.4	
21-Feb	25.6	65.4	Z	67.6	70.2	68.7	55.7	47.5	55.1	49.6	50.4	53.1	65.1	68.8	29.8	2.1	1.1	1.2	1.3	2.0	2.3	23.4	46.5	51.3	39.3	70.2	
22-Feb	46.0	46.9	53.2	Z	47.8	50.4	43.5	40.0	28.9	30.8	28.5	15.4	17.7	16.9	18.1	31.8	83.7	83.3	70.7	57.0	57.4	60.7	64.8	68.8	46.2	83.7	
23-Feb	70.6	53.3	41.4	37.5	Z	24.6	14.1	15.4	15.9	11.2	1.1	0.5	0.4	0.4	0.1	0.1	0.2	0.0	0.2	0.2	0.3	0.0	0.0	0.0	12.5	70.6	
24-Feb	4.1	4.6	6.3	5.7	8.6	Z	2.1	0.0	0.3	0.2	0.0	1.2	1.7	11.1	12.0	10.5	8.3	6.6	2.4	4.0	9.1	12.6	15.4	11.1	6.0	15.4	
25-Feb	Z	11.4	11.3	8.7	11.8	12.2	9.0	6.8	8.6	11.9	10.9	9.0	6.1	5.4	5.3	5.5	4.4	3.5	3.4	5.4	3.6	3.7	3.7	4.6	7.2	12.2	
26-Feb	5.2	Z	3.2	4.2	7.7	2.7	1.0	7.0	3.5	11.7	C	C	C	C	C	C	C	10.7	12.2	11.8	12.5	15.2	14.4	15.3	--	15.3	
27-Feb	8.3	6.4	Z	7.6	10.8	11.1	15.0	23.4	30.0	15.6	8.8	0.1	0.1	0.2	3.6	M	3.7	7.6	12.1	13.4	16.0	14.9	14.7	16.2	10.9	30.0	
28-Feb	15.2	20.4	18.6	Z	12.2	12.0	14.1	17.8	21.8	21.2	21.7	18.5	12.3	12.0	6.7	2.4	1.6	1.7	1.6	1.9	1.3	1.7	1.5	1.2	10.4	21.8	
29-Feb	0.9	1.0	0.9	0.7	Z	1.6	2.2	2.2	2.3	2.2	2.0	2.4	1.9	3.4	7.2	3.5	3.4	9.9	18.1	23.5	21.7	10.5	2.8	1.8	5.5	23.5	
21.9 20.5 20.0 19.9 21.8 19.8 18.9 20.1 20.5 20.7 21.7 19.9 18.5 15.9 12.9 10.6 13.1 16.8 16.1 17.5 18.4 19.9 20.1 21.1																						Diurnal Average					
70.6 65.4 54.6 67.6 70.2 68.7 55.7 49.3 55.1 54.8 70.5 98.0 65.1 68.8 40.8 31.8 83.7 83.3 70.7 89.5 80.2 62.4 67.4 70.7																						Diurnal Maximum					
Z - zerspan		C - Calibration				M - Maintenance																					



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Fort McKay - Bertha Ganter - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Oxides (NO_x) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	439	66.62	66.62
21 - 40	143	21.70	88.32
41 - 80	73	11.08	99.39
81 - 159	4	0.61	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Nitrogen Oxides (NO_x) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	56	59	37	11	5	6	18	46	67	18	18	21	23	18	15	18	436
21 - 40	19	12	7	2	4	0	4	20	30	8	5	3	1	5	10	13	143
11 - 80	10	5	3	0	0	1	2	12	12	5	1	2	0	1	9	6	69
81 - 159	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	86	77	47	13	9	7	24	78	109	31	24	26	24	24	34	39	652

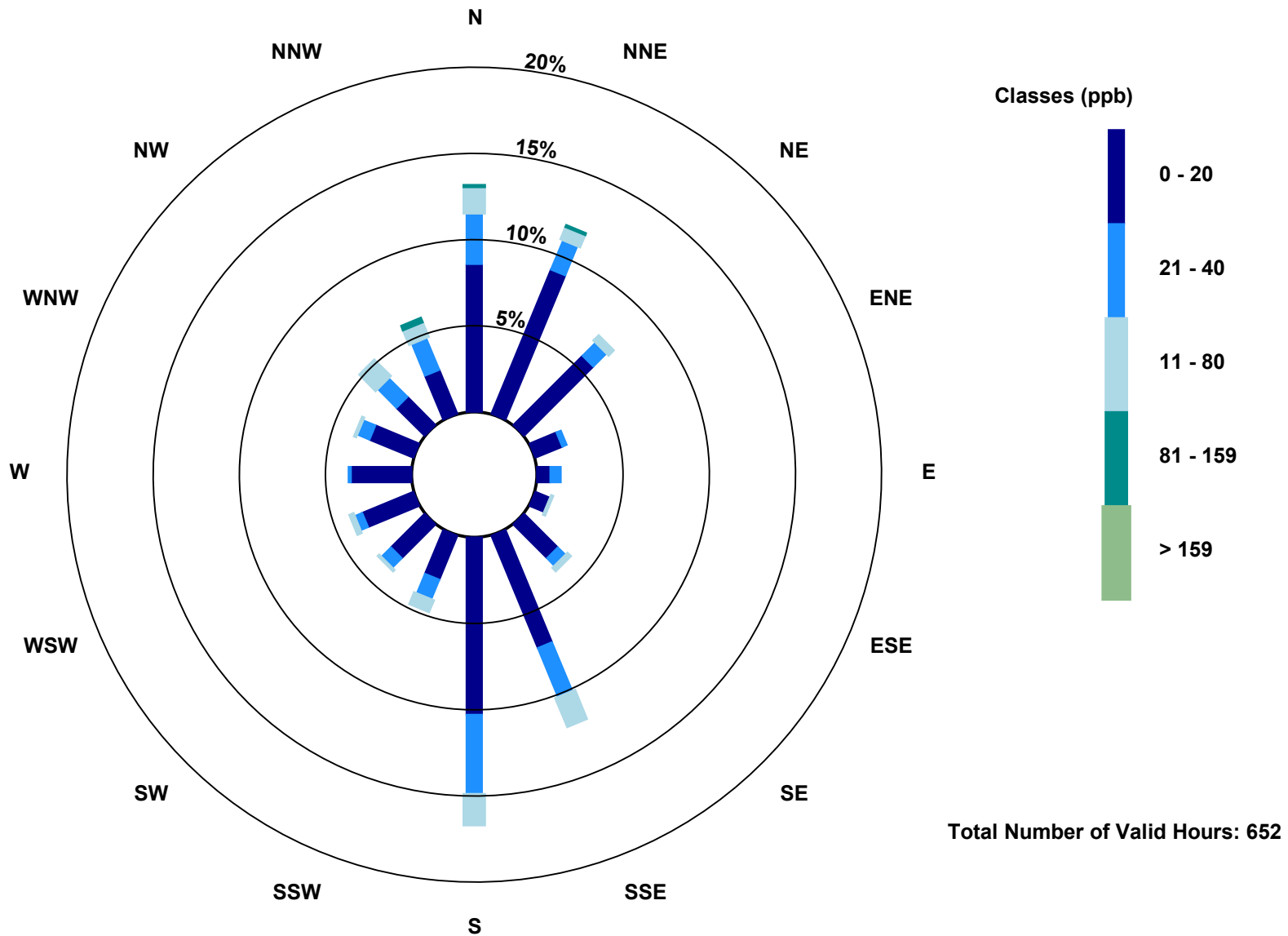
Total Number of Valid Hours: 652

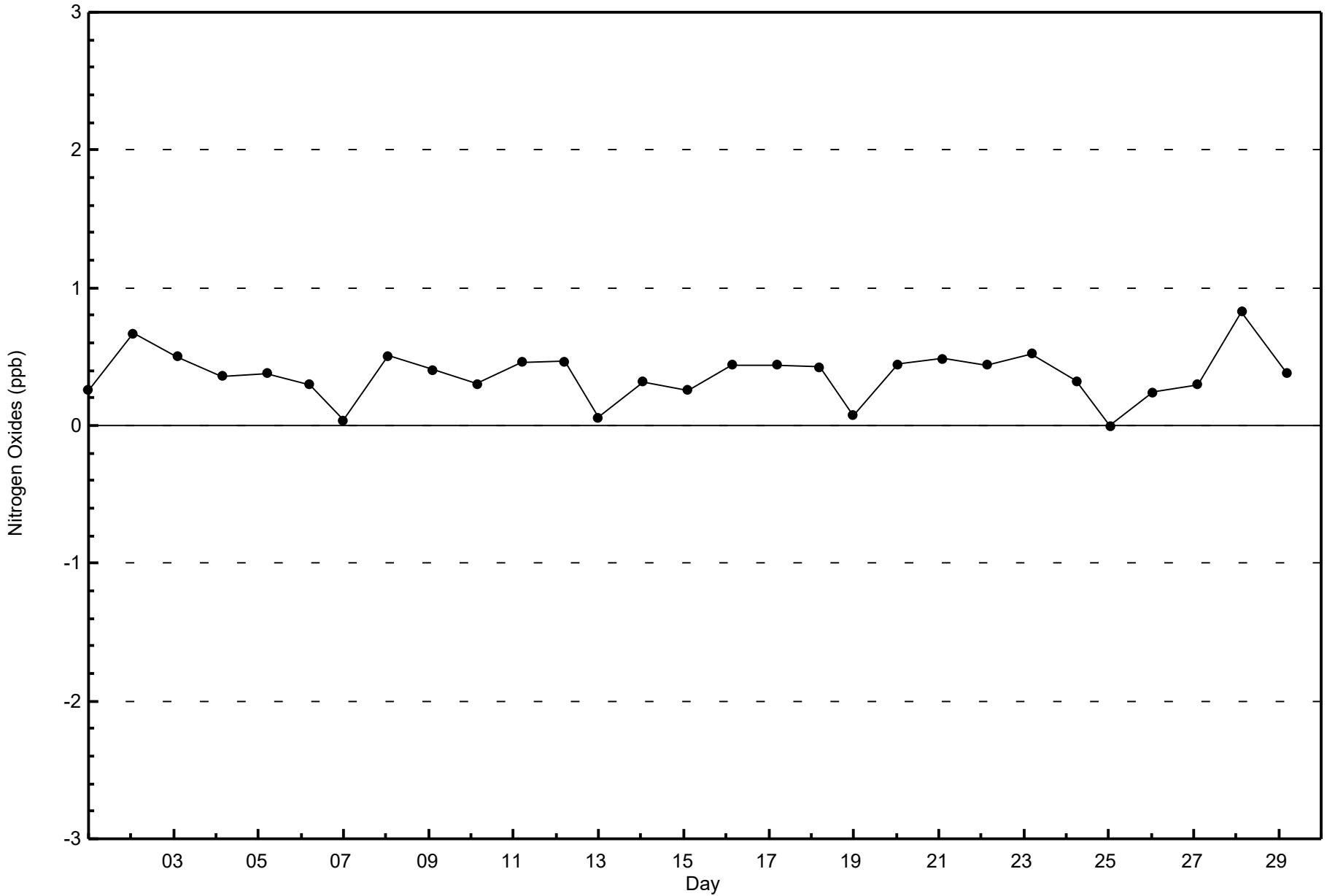
Total Number of Hours: 696

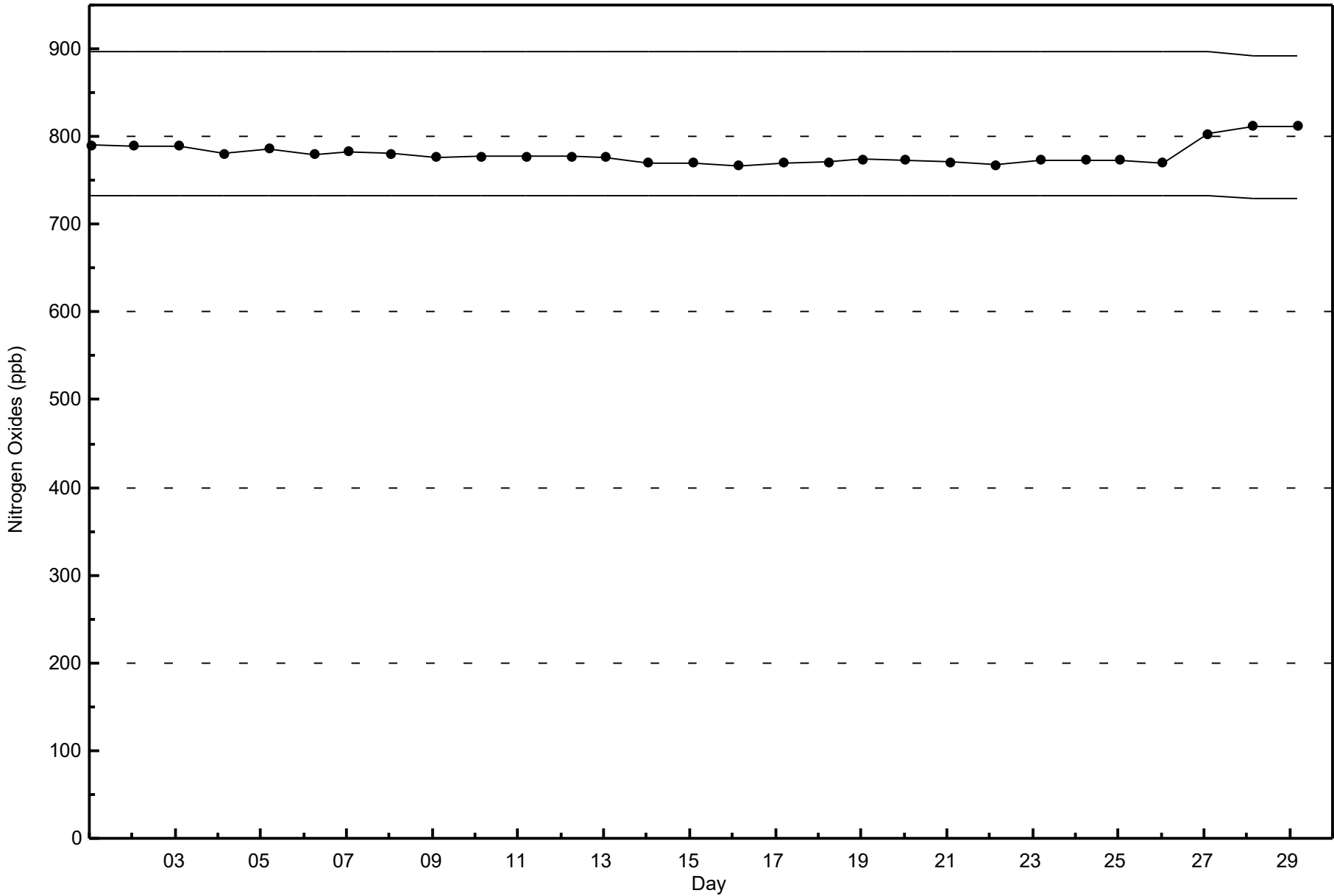


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Fort McKay - Bertha Ganter









Wood Buffalo Environmental Association

Summary of Hour Averages

Ozone (O₃) - ppb

Fort McKay - Bertha Ganter - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 41.1 ppb on Feb 23 23:00	Maximum Daily Average: 28.3 ppb on Feb 14		Hours of Data:	662
Minimum Value: 0.2 ppb on Feb 21 04:00	Minimum Daily Average: 2.2 ppb on Feb 8		Hours of Missing Data:	34
Maximum Diurnal Average: 24.4 ppb at hour 15	Minimum Diurnal Average: 10.0 ppb at hour 5		Hours of Calibration:	33
Monthly Average: 16.15 ppb	Percentiles: P ₁ = 0.3 P ₁₀ = 0.9 Q ₁ = 5.2 Median = 15.9 Q ₃ = 26.3 P ₉₀ = 31.6 P ₉₉ = 38.4		Percent Operational Time:	99.9

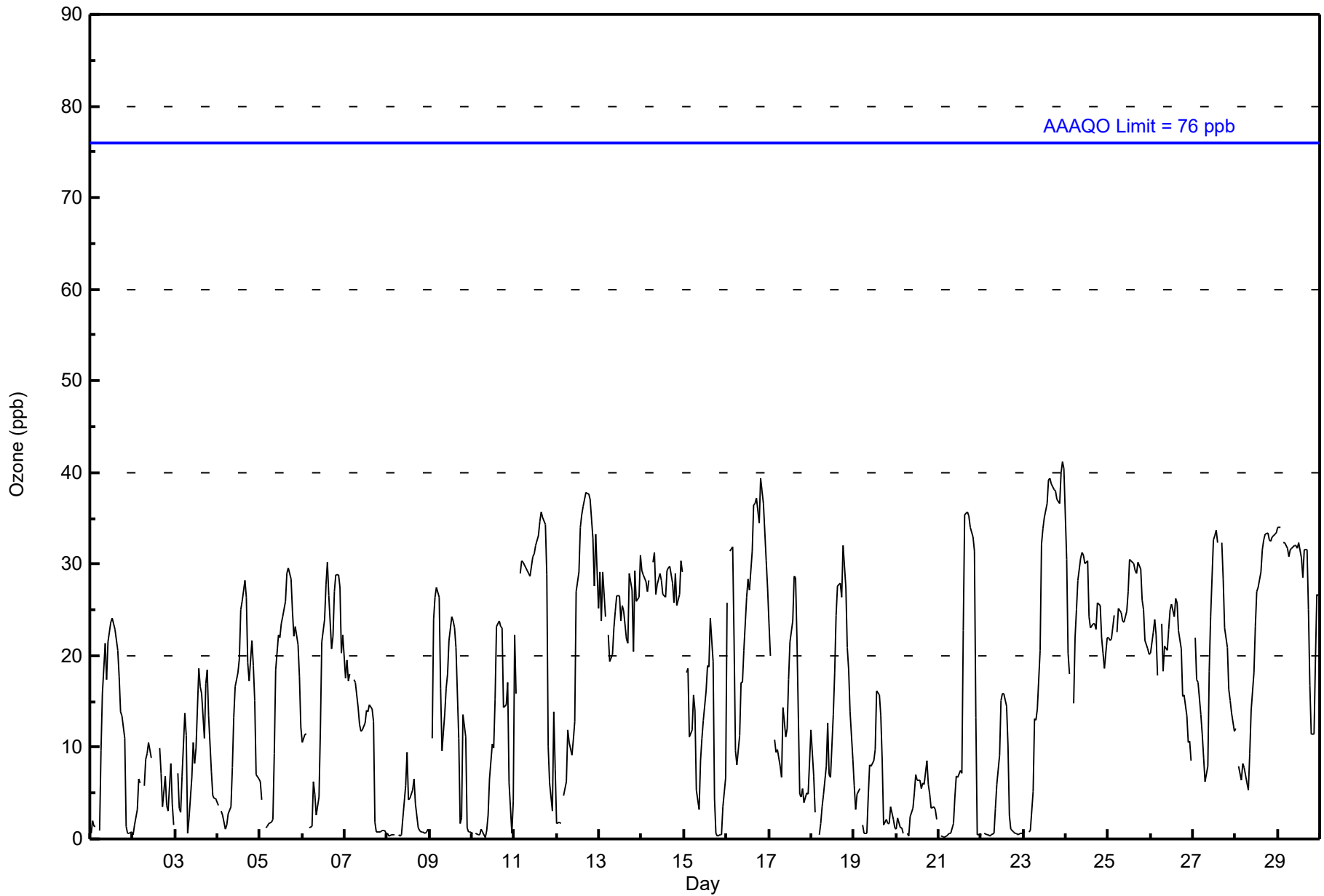
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.7	1.9	1.4	1.4	Z	1.0	9.6	15.9	21.3	17.4	21.4	23.7	24.1	23.4	22.9	20.7	17.7	13.9	13.4	11.0	1.3	0.6	0.6	0.7	11.6	24.1																							
2-Feb	0.4	1.6	3.3	6.5	6.1	Z	5.8	8.8	9.3	10.6	8.8	C	C	C	C	9.9	7.1	3.4	6.9	3.6	3.0	8.2	3.9	1.5	5.7	10.6																							
3-Feb	Z	7.2	3.4	3.0	6.9	13.7	11.3	0.6	2.3	6.8	10.6	8.3	9.8	18.6	16.6	15.9	10.9	17.0	18.5	13.4	7.3	4.7	4.5	4.4	9.4	18.6																							
4-Feb	3.7	Z	3.0	2.5	1.0	1.5	2.8	3.4	7.8	13.2	16.7	18.2	19.7	25.1	26.0	28.3	26.4	19.2	17.2	21.7	18.9	15.1	7.0	6.6	13.3	28.3																							
5-Feb	6.2	4.2	Z	1.2	1.4	1.6	1.8	2.1	9.3	18.4	22.3	21.9	23.6	24.2	25.9	29.0	29.5	28.4	24.9	22.2	23.2	21.2	17.6	12.2	16.2	29.5																							
6-Feb	10.6	11.4	11.5	Z	1.2	1.3	6.2	4.9	2.7	4.6	12.1	21.5	23.9	27.8	30.3	26.5	20.8	22.1	27.0	28.8	28.9	27.4	20.3	22.2	17.1	30.3																							
7-Feb	17.6	19.6	17.3	17.9	Z	17.4	17.1	14.4	12.5	11.8	12.0	12.6	14.1	13.9	14.7	14.2	12.8	1.8	0.8	0.8	0.8	0.9	0.9	0.7	10.7	19.6																							
8-Feb	0.5	0.3	0.5	0.4	0.5	Z	0.4	0.3	0.5	2.3	5.8	9.4	4.2	4.4	5.4	6.5	3.8	1.3	0.9	0.7	0.7	0.7	0.8	1.1	2.2	9.4																							
9-Feb	Z	11.1	24.0	26.3	27.4	26.4	16.4	9.6	13.8	16.5	18.0	21.7	24.3	23.7	23.1	20.9	11.0	1.6	2.3	13.6	11.1	1.2	0.7	0.7	15.0	27.4																							
10-Feb	0.6	Z	0.6	0.5	0.5	1.0	0.8	0.2	0.9	2.6	6.6	10.4	9.9	15.2	23.2	23.8	23.2	23.0	14.4	14.6	17.1	6.1	0.6	4.1	8.7	23.8																							
11-Feb	22.3	15.9	Z	29.0	30.4	30.1	29.6	29.3	29.0	28.7	30.8	31.1	32.0	33.0	34.6	35.7	35.1	34.3	28.8	10.0	6.1	3.0	13.9	7.7	25.2	35.7																							
12-Feb	1.7	1.8	1.7	Z	4.7	6.3	12.0	10.5	9.1	10.8	12.8	27.0	29.1	34.0	35.4	36.3	37.9	37.6	37.7	37.0	32.8	27.6	33.2	25.2	21.8	37.9																							
13-Feb	29.1	23.7	29.1	24.3	Z	22.2	19.4	20.2	23.0	24.8	26.6	26.6	23.8	25.5	24.9	21.8	21.4	29.0	27.2	20.5	29.2	25.9	26.5	31.0	25.0	31.0																							
14-Feb	29.2	28.8	28.1	27.0	28.2	Z	30.2	31.3	26.6	27.7	29.0	28.2	26.6	26.3	29.3	29.5	29.8	27.9	25.7	28.9	25.5	26.7	30.3	29.2	28.3	31.3																							
15-Feb	Z	18.1	18.6	11.2	11.9	15.7	14.0	5.3	3.2	8.6	11.0	13.0	16.1	18.9	18.7	24.1	19.3	4.4	0.6	0.4	0.5	0.4	3.5	6.7	10.6	24.1																							
16-Feb	25.7	Z	31.4	31.9	21.6	9.7	8.0	11.3	17.1	17.0	20.6	26.4	28.4	27.1	31.4	36.4	36.6	37.2	34.5	39.3	38.0	36.6	30.4	27.3	27.1	39.3																							
17-Feb	23.5	20.0	Z	10.8	9.5	9.7	8.0	6.7	14.3	11.2	12.0	17.4	21.5	23.9	28.7	28.6	21.8	5.0	4.5	5.5	4.0	5.0	4.9	8.4	13.3	28.7																							
18-Feb	11.9	6.8	2.9	Z	0.4	1.7	3.5	4.9	7.9	12.6	7.1	6.7	13.6	18.2	24.5	27.7	27.9	26.3	32.0	27.4	20.9	18.5	13.9	8.8	14.2	32.0																							
19-Feb	5.8	3.2	4.9	5.5	Z	1.5	0.6	0.6	4.5	8.0	7.9	8.6	9.8	16.2	15.7	13.4	8.5	1.5	2.2	1.6	1.7	3.6	2.1	1.2	5.6	16.2																							
20-Feb	1.1	2.2	1.2	1.2	0.6	Z	0.6	0.3	2.4	3.4	5.0	7.1	6.4	6.4	5.5	6.1	6.0	8.6	6.0	4.9	3.3	3.6	3.2	2.1	3.8	8.6																							
21-Feb	Z	0.3	0.3	0.2	0.3	0.5	0.6	0.6	1.7	4.5	6.8	6.7	7.5	7.1	22.8	35.4	35.8	35.2	34.0	33.0	31.4	13.3	0.4	0.4	12.1	35.8																							
22-Feb	0.4	Z	0.6	0.4	0.5	0.3	0.4	0.5	3.3	6.0	9.1	15.1	15.9	15.9	14.5	10.2	2.6	1.0	0.7	0.6	0.6	0.5	0.6	0.6	4.4	15.9																							
23-Feb	0.7	0.7	Z	0.8	0.9	5.1	13.1	13.0	14.1	20.5	32.1	33.9	35.1	36.6	39.3	39.3	38.8	38.2	38.0	37.0	36.6	40.0	41.1	40.4	25.9	41.1																							
24-Feb	30.5	20.3	17.9	Z	14.8	22.0	25.0	28.2	30.6	31.3	30.9	30.1	30.3	24.3	23.1	23.4	23.5	22.9	25.8	25.5	21.9	20.3	18.6	22.0	24.5	31.3																							
25-Feb	22.0	21.7	21.8	24.4	Z	22.6	25.2	24.7	23.9	23.7	24.8	27.1	30.6	30.4	30.0	29.3	29.0	30.2	29.4	26.0	25.0	21.6	20.8	20.1	25.4	30.6																							
26-Feb	20.3	22.5	23.9	22.3	17.8	Z	23.5	18.3	21.0	20.6	22.9	25.0	25.6	24.3	26.2	25.8	22.7	20.8	15.6	15.7	13.5	10.6	10.6	8.5	19.9	26.2																							
27-Feb	Z	22.0	17.4	17.0	13.6	11.4	8.9	6.2	8.0	18.3	24.2	32.7	33.1	33.7	32.4	M	32.3	28.3	23.1	20.9	16.4	15.1	13.8	11.7	20.0	33.7																							
28-Feb	12.1	Z	7.9	6.4	8.2	7.8	6.1	5.3	9.3	14.0	18.1	23.3	27.1	27.4	29.2	31.5	32.6	33.2	33.4	32.7	32.5	32.9	33.2	33.4	21.6	33.4																							
29-Feb	34.1	34.0	Z	32.4	32.4	31.8	30.8	31.5	31.7	32.1	32.0	31.8	32.4	30.7	28.5	31.6	31.6	25.1	16.8	11.4	11.4	19.5	26.7	26.6	28.1	34.1																							
																								12.9	12.5	11.4	12.2	10.0	10.9	11.4	10.7	12.4	14.8	17.2	20.2	21.4	22.7	24.4	24.3	22.6	19.9	18.7	17.5	16.0	14.2	13.3	12.6	Diurnal Average	
																								34.1	34.0	31.4	32.4	32.4	31.8	30.8	31.5	31.7	32.1	32.1	33.9	35.1	36.6	39.3	39.3	38.8	38.2	38.0	39.3	38.0	40.0	41.1	40.4	Diurnal Maximum	

Z - zerspan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 76 ppb



Wood Buffalo Environmental Association
Hourly Averages

Ozone (O₃) - ppb
Fort McKay - Bertha Ganter - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ozone (O₃) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	390	58.91	58.91
21 - 50	272	41.09	100.00
51 - 82	0	0.00	100.00
> 83	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Ozone (O₃) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	54	43	19	7	5	4	10	41	84	20	15	10	8	10	27	27	384
21 - 50	30	38	29	8	3	4	14	38	26	10	9	13	19	13	10	8	272
51 - 82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	84	81	48	15	8	8	24	79	110	30	24	23	27	23	37	35	656

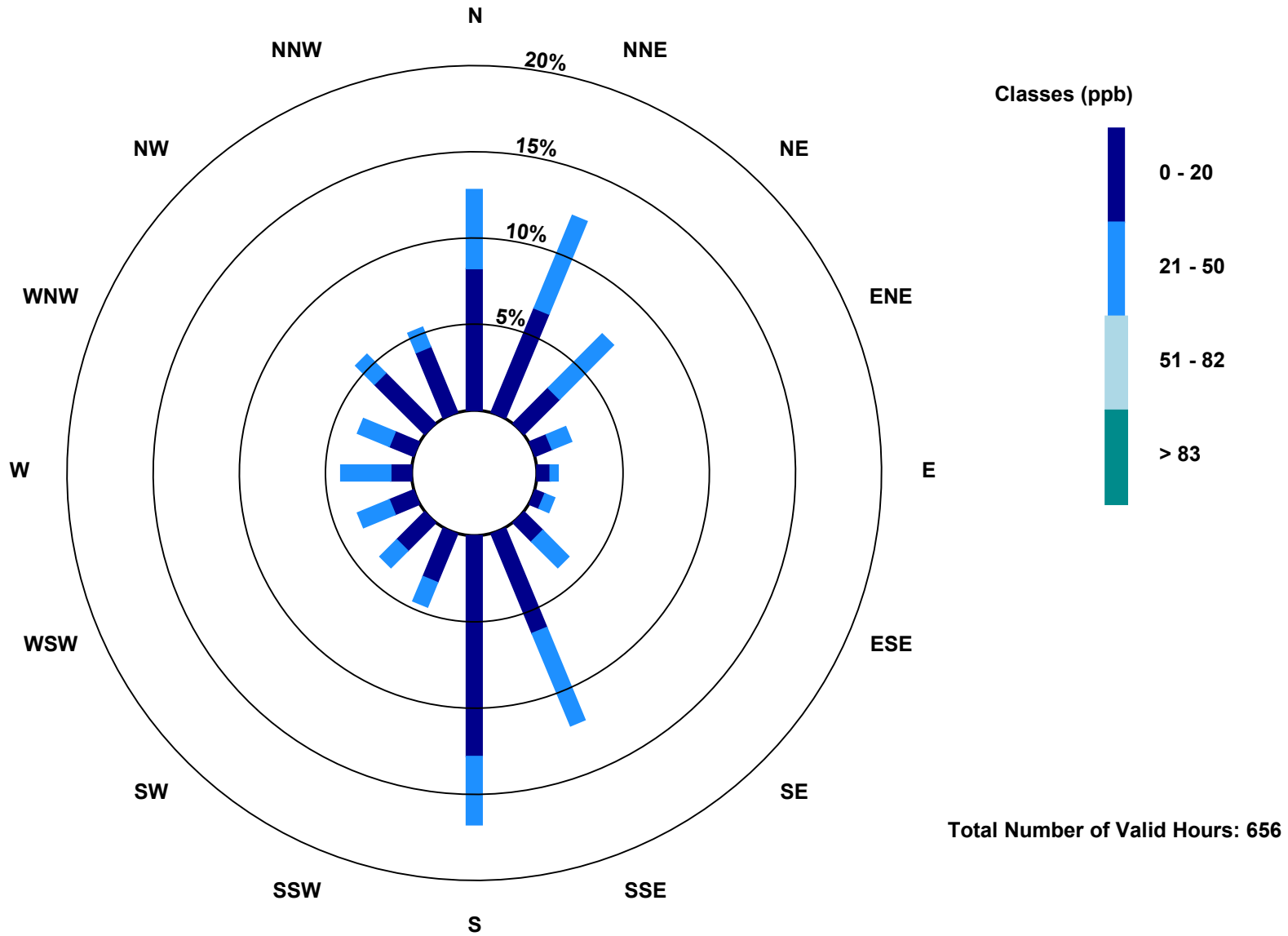
Total Number of Valid Hours: 656

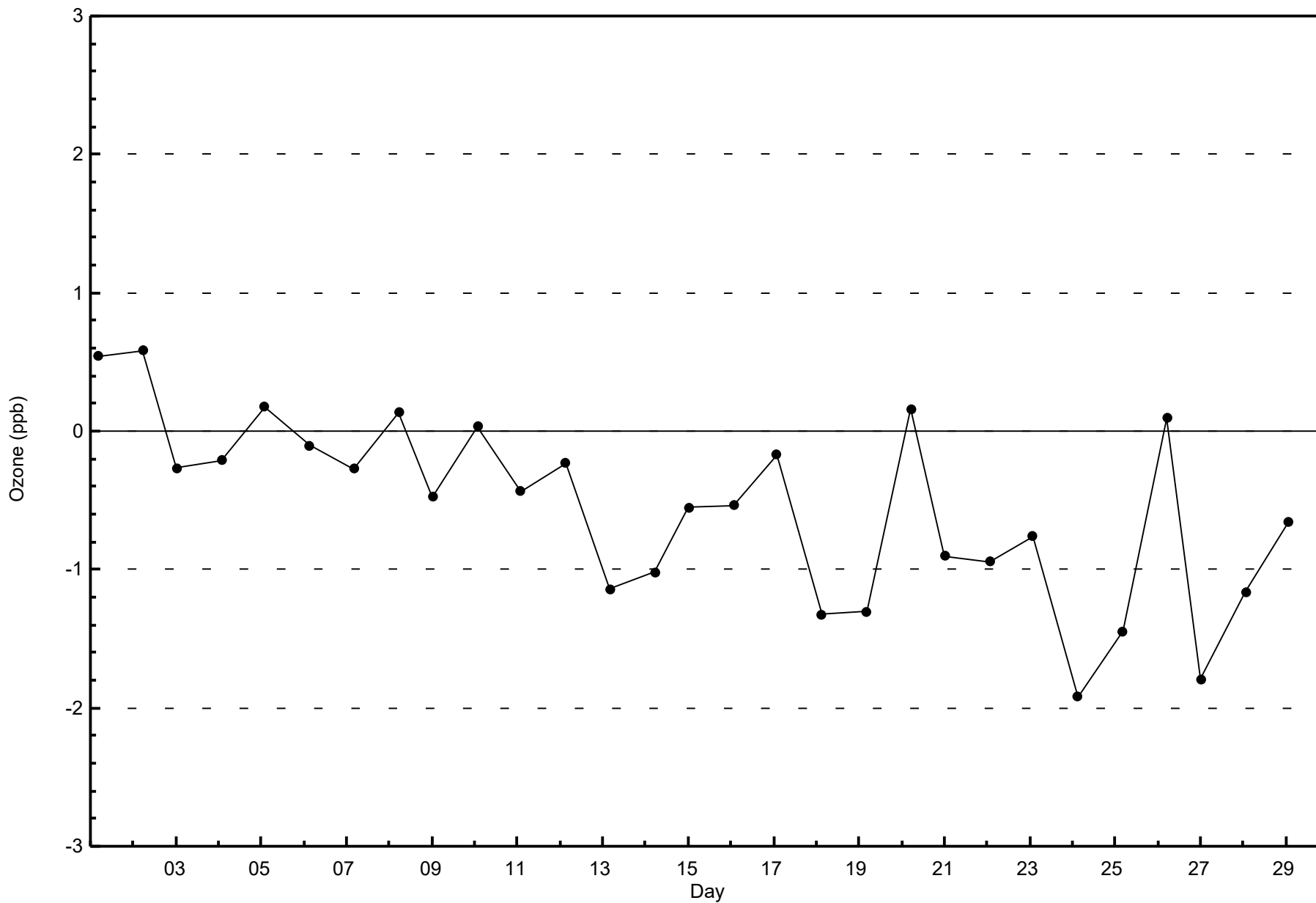
Total Number of Hours: 696

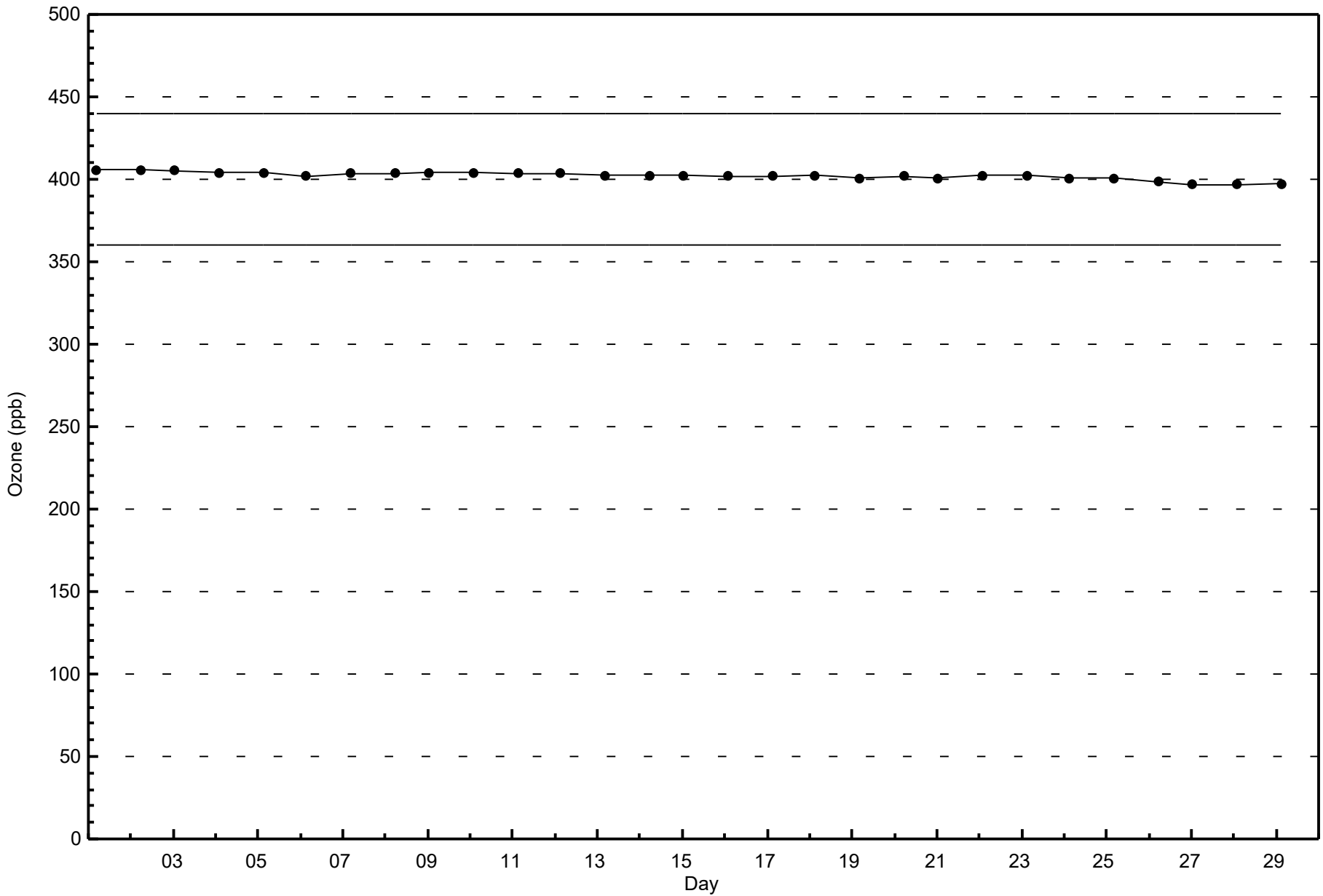


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Ozone (O₃) - ppb
Fort McKay - Bertha Ganter









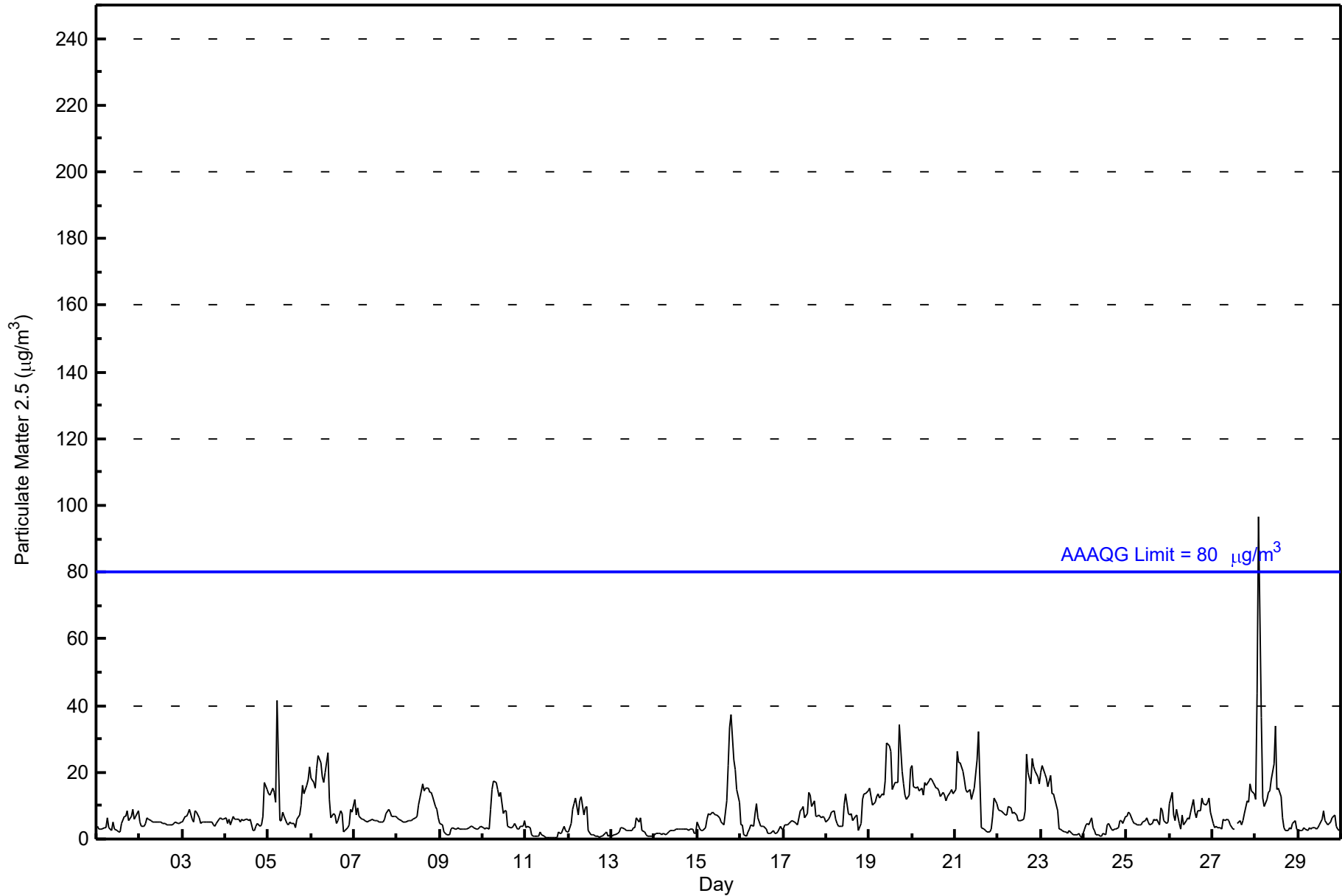
Wood Buffalo Environmental Association

Summary of Hour Averages

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Fort McKay - Bertha Ganter - February 2024

Number of Exceedences (AAAQO):		1-hr: 1	24-hr: 0																		Hours in Service:	696				
Maximum Value: 96.6 µg/m ³ on Feb 28 03:00		Maximum Daily Average: 17.1 µg/m ³ on Feb 19																	Hours of Data:	695						
Minimum Value: 0.2 µg/m ³ on Feb 11 17:00		Minimum Daily Average: 1.5 µg/m ³ on Feb 11																	Hours of Missing Data:	1						
Maximum Diurnal Average: 10.3 µg/m ³ at hour 3		Minimum Diurnal Average: 5.7 µg/m ³ at hour 16																	Hours of Calibration:	1						
Monthly Average: 7.63 µg/m ³		Percentiles: P ₁ = 0.6 P ₁₀ = 1.9 Q ₁ = 3.2 Median = 5.5 Q ₃ = 9.8 P ₉₀ = 15.8 P ₉₉ = 33.3																	Percent Operational Time:	100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	3.7	2.8	3.1	3.1	3.4	3.2	6.2	3.3	2.6	4.9	2.8	2.6	2.3	2.3	4.6	6.8	6.9	8.5	5.7	6.9	8.7	5.9	6.9	8.4	4.8	8.7
2-Feb	5.2	3.7	3.8	4.8	6.5	5.9	5.6	5.1	5.3	5.0	5.0	5.3	5.2	4.8	4.7	4.4	4.2	4.1	4.2	4.6	5.0	4.8	4.8	5.0	4.9	6.5
3-Feb	5.0	6.6	6.7	7.6	9.1	5.9	5.1	8.5	8.1	6.2	4.7	4.9	5.1	5.1	5.0	5.3	5.1	4.4	4.0	4.5	5.9	6.2	5.8	6.0	5.9	9.1
4-Feb	6.2	4.5	6.1	4.2	6.9	6.0	6.1	5.8	5.2	5.9	5.4	5.8	6.1	5.7	6.1	2.6	2.5	3.9	4.7	3.8	4.2	6.7	17.2	14.8	6.1	17.2
5-Feb	13.4	13.3	15.4	14.0	10.9	41.4	5.6	5.4	8.2	6.6	4.8	4.3	4.9	4.6	4.8	3.6	5.7	7.0	10.0	16.2	13.7	16.0	17.8	21.6	11.2	41.4
6-Feb	18.4	16.9	15.4	21.4	24.8	22.9	18.5	16.9	19.8	25.7	11.9	6.5	7.6	7.1	4.7	5.6	8.5	7.5	2.1	2.4	3.3	4.1	8.9	8.2	12.1	25.7
7-Feb	11.7	7.3	9.4	7.0	6.1	5.8	5.4	5.2	5.5	5.6	5.7	5.4	5.6	5.5	5.1	5.1	4.9	6.0	7.5	8.8	8.1	7.0	6.8	6.8	6.6	11.7
8-Feb	6.4	6.0	5.6	5.3	5.2	5.2	5.4	5.4	5.5	5.8	6.5	6.7	10.1	12.5	16.3	14.3	15.1	15.1	14.0	13.8	12.9	9.8	8.9	6.5	9.1	16.3
9-Feb	4.8	4.1	2.1	1.5	1.5	1.4	3.0	3.4	3.0	3.0	3.3	3.2	2.9	3.0	3.0	3.2	3.5	3.8	3.8	3.2	3.0	3.1	3.3	3.7	3.1	4.8
10-Feb	3.4	3.1	3.2	3.0	9.0	14.9	17.4	17.0	15.0	12.7	14.1	7.8	8.6	8.5	3.8	3.5	3.3	3.6	4.6	3.1	2.8	3.8	4.0	5.4	7.3	17.4
11-Feb	3.4	3.9	3.6	1.2	0.9	0.8	0.7	0.7	2.3	1.1	0.7	0.5	0.4	0.4	0.3	0.3	0.2	0.3	1.9	1.8	1.5	3.8	2.4	2.0	1.5	3.9
12-Feb	1.9	4.5	8.8	10.4	12.2	7.1	11.5	12.8	7.1	9.5	9.9	2.5	1.4	1.2	1.2	1.0	0.7	0.6	0.7	0.8	1.7	2.1	0.7	1.4	4.6	12.8
13-Feb	1.0	1.3	1.2	1.7	2.0	3.4	3.2	2.8	2.6	2.4	2.3	2.4	3.2	3.6	6.2	5.2	6.2	2.6	2.1	1.5	0.7	1.0	1.0	1.0	2.5	6.2
14-Feb	1.3	1.8	1.9	1.6	1.3	1.6	1.4	1.7	2.2	2.7	2.7	2.7	3.0	3.0	2.8	2.8	2.9	2.9	2.8	2.4	2.8	2.9	1.9	1.6	2.3	3.0
15-Feb	5.1	2.9	2.5	2.7	3.4	6.0	7.5	7.1	8.0	7.6	7.3	7.1	6.2	5.1	4.5	4.1	11.5	22.2	33.3	37.1	23.8	20.8	15.0	11.1	10.9	37.1
16-Feb	4.4	4.4	1.4	1.0	1.9	3.1	4.1	3.9	7.5	10.7	6.3	3.8	3.8	3.8	2.8	1.8	1.7	1.7	2.4	1.8	1.6	1.9	3.7	3.2	3.4	10.7
17-Feb	3.2	4.1	4.3	4.7	5.0	5.3	5.3	4.6	4.4	8.3	8.9	9.5	6.3	7.6	13.9	13.0	9.7	11.3	7.0	6.6	7.1	6.2	6.8	6.4	7.1	13.9
18-Feb	5.2	5.8	6.8	7.9	8.4	6.0	4.6	3.7	4.0	3.8	10.4	13.6	7.8	7.2	7.8	5.6	6.9	7.2	2.5	4.6	11.7	13.5	13.6	14.3	7.6	14.3
19-Feb	15.2	12.7	10.0	11.0	12.6	13.4	12.3	13.4	13.0	17.5	28.9	28.0	26.1	14.8	17.0	17.0	17.0	34.5	20.4	16.3	13.0	12.0	13.1	21.2	17.1	34.5
20-Feb	22.1	15.6	15.2	15.8	14.3	15.3	13.3	17.0	16.2	17.3	18.2	17.7	16.8	15.4	15.2	14.6	12.5	14.0	13.1	11.6	12.7	13.9	14.9	13.5	15.2	22.1
21-Feb	14.9	26.1	23.1	22.9	20.5	17.9	14.9	13.8	14.8	11.8	13.6	15.2	23.9	32.2	17.6	3.4	3.0	2.6	2.2	2.1	3.0	6.7	12.4	10.7	13.7	32.2
22-Feb	8.9	8.5	8.4	7.6	7.2	7.3	9.8	9.4	7.8	8.2	7.3	5.5	5.4	5.6	5.8	8.6	25.3	20.1	16.6	24.3	21.4	20.3	18.8	16.4	11.9	25.3
23-Feb	20.1	21.9	19.7	18.3	15.8	19.0	13.5	13.5	11.7	8.4	2.9	3.0	2.5	2.3	2.2	1.8	2.7	1.5	1.3	1.2	1.1	1.5	0.7	0.6	7.8	21.9
24-Feb	3.1	4.2	4.7	4.2	6.2	3.2	2.4	1.4	1.1	0.8	0.9	1.5	1.4	4.0	4.7	2.9	2.6	3.1	2.9	3.4	5.3	5.4	4.8	6.9	3.4	6.9
25-Feb	6.9	8.0	7.4	5.5	4.9	4.5	4.2	4.4	4.2	5.2	5.5	6.4	5.0	4.1	4.7	5.8	5.4	5.8	4.3	9.3	8.5	5.5	4.8	5.0	5.6	9.3
26-Feb	10.7	13.8	7.0	5.5	9.0	4.8	3.0	7.0	4.2	5.5	6.2	5.9	8.1	12.0	7.9	6.2	8.5	8.7	12.2	10.4	10.2	11.1	12.1	8.2	8.3	13.8
27-Feb	4.8	3.6	3.8	3.3	3.3	3.1	5.8	5.3	6.1	5.3	4.3	2.8	2.8	C	4.5	5.5	4.4	5.3	7.8	11.3	11.2	16.5	14.5	13.7	6.5	16.5
28-Feb	12.0	43.5	96.6	36.2	12.1	9.9	11.9	14.1	14.5	17.7	22.4	33.8	14.9	15.1	12.9	6.4	3.5	2.7	2.4	3.2	2.9	4.7	5.5	2.9	16.7	96.6
29-Feb	2.6	2.4	2.7	3.3	3.1	2.7	3.2	2.9	3.3	3.3	3.1	3.5	4.3	5.9	8.5	5.5	4.2	4.8	4.9	6.4	7.0	4.0	2.9	2.7	4.1	8.5
7.8 8.9 10.3 8.2 7.8 8.5 7.3 7.4 7.4 7.9 7.8 7.5 7.0 7.2 6.9 5.7 6.5 7.4 6.9 7.7 7.4 7.6 8.1 7.9																								Diurnal Average		
22.1 43.5 96.6 36.2 24.8 41.4 18.5 17.0 19.8 25.7 28.9 33.8 26.1 32.2 17.6 17.0 25.3 34.5 33.3 37.1 23.8 20.8 18.8 21.6																								Diurnal Maximum		
C - Calibration																										
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	353	50.79	50.79
6 - 15	270	38.85	89.64
16 - 25	58	8.35	97.99
26 - 80	13	1.87	99.86
> 81.0	1	0.14	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	36	57	33	8	4	4	15	32	41	16	20	18	23	18	17	8	350
6 - 15	44	23	11	7	2	3	10	42	53	9	6	5	3	5	17	26	266
16 - 25	8	3	3	0	3	0	0	5	16	6	1	2	1	1	3	6	58
26 - 80	1	2	2	0	0	1	0	1	2	1	1	1	0	0	1	0	13
> 81.0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Totals	89	85	49	15	9	8	25	81	112	32	28	26	27	24	38	40	688

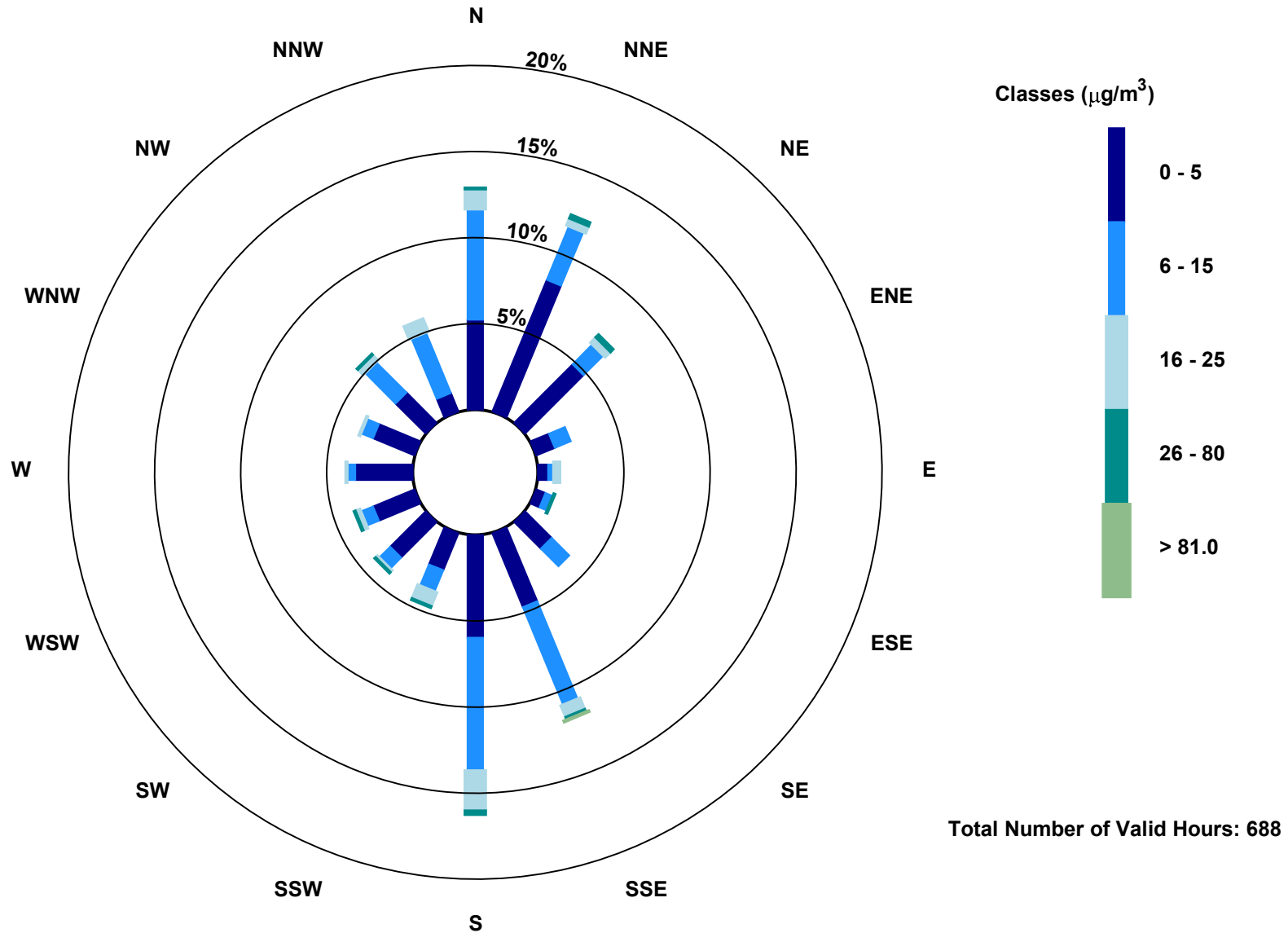
Total Number of Valid Hours: 688

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Fort McKay - Bertha Ganter



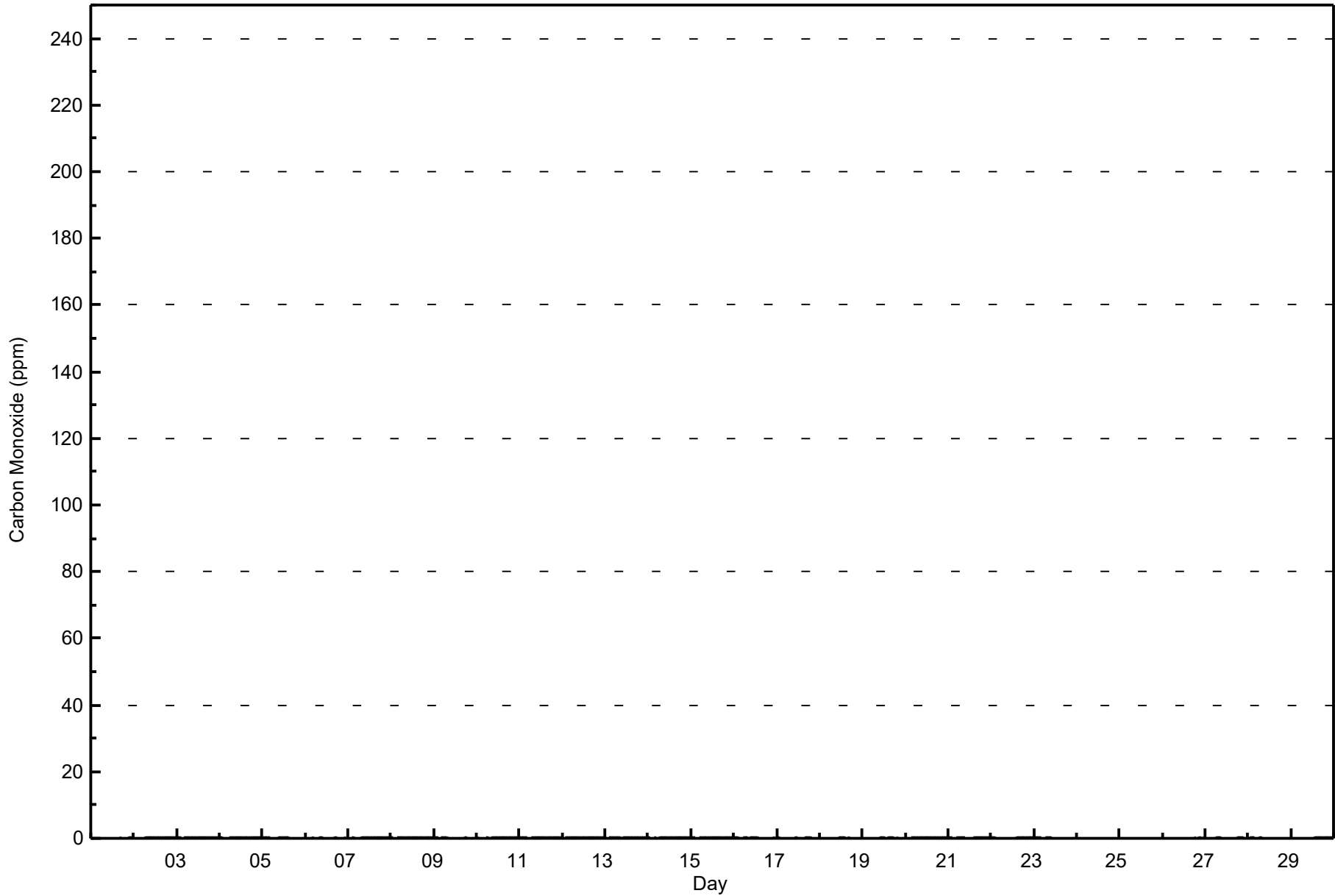


Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																		Hours in Service: 696											
Maximum Value: 0.4 ppm on Feb 28 03:00																		Maximum Daily Average: 0.3 ppm on Feb 3											
Minimum Value: 0.1 ppm on Feb 2 04:00																		Minimum Daily Average: 0.2 ppm on Feb 24											
Maximum Diurnal Average: 0.2 ppm at hour 21																		Minimum Diurnal Average: 0.2 ppm at hour 5											
Monthly Average: 0.22 ppm																		Percentiles: P ₁ = 0.1 P ₁₀ = 0.2 Q ₁ = 0.2 Median = 0.2 Q ₃ = 0.2 P ₉₀ = 0.3 P ₉₉ = 0.3											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Feb	0.2	Z	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
2-Feb	0.2	0.2	Z	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
3-Feb	0.3	0.3	0.3	Z	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
4-Feb	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
5-Feb	0.2	0.3	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
6-Feb	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
7-Feb	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
8-Feb	0.2	0.3	Z	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
9-Feb	0.3	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10-Feb	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
11-Feb	0.2	0.3	0.3	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.3
12-Feb	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
13-Feb	0.3	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
14-Feb	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
15-Feb	0.3	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
16-Feb	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
17-Feb	0.2	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
18-Feb	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
19-Feb	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
20-Feb	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
21-Feb	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.3	0.3	C	C	C	C	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
22-Feb	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3
23-Feb	0.2	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
24-Feb	Z	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
25-Feb	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
26-Feb	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
27-Feb	0.2	0.2	0.2	Z	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	M	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
28-Feb	0.2	0.3	0.4	0.3	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4
29-Feb	0.2	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3
0.2																								Diurnal Average					
0.3																								Diurnal Maximum					
Z - zerospan C - Calibration M - Maintenance																													
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13 ppm																													



Wood Buffalo Environmental Association
Hourly Averages

Carbon Monoxide (CO) - ppm
Fort McKay - Bertha Ganter - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Carbon Monoxide (CO) - ppm
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.3	661	99.85	99.85
0.4 - 0.5	1	0.15	100.00
0.6 - 0.7	0	0.00	100.00
0.8 - 1.4	0	0.00	100.00
1.5 - 10	0	0.00	100.00
> 10	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Carbon Monoxide (CO) - ppm
Fort McKay - Bertha Ganter - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.3	84	81	49	14	8	8	25	77	105	30	28	25	26	21	36	39	656
0.4 - 0.5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0.6 - 0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.8 - 1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.5 - 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	84	81	49	14	8	8	25	78	105	30	28	25	26	21	36	39	657

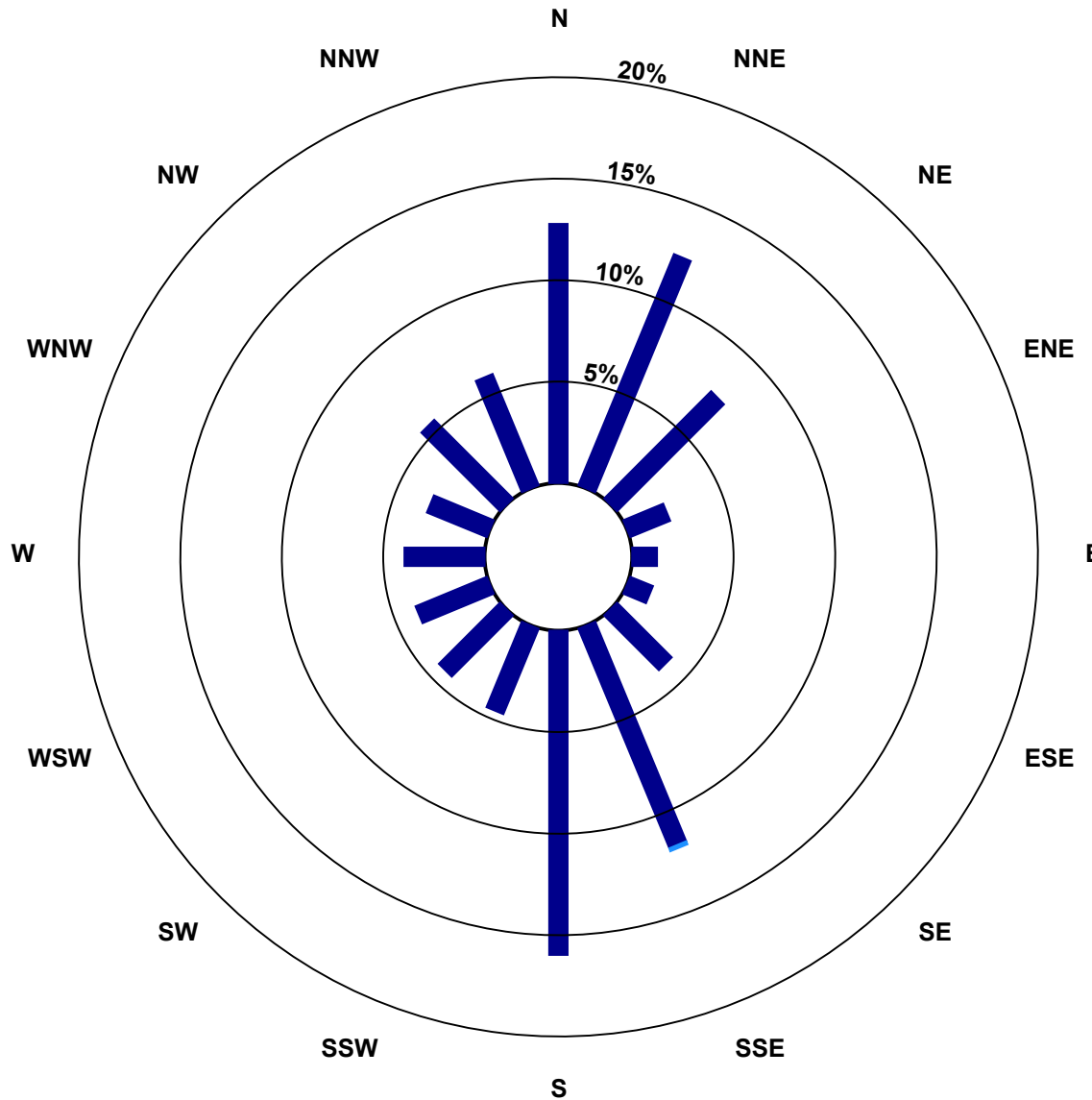
Total Number of Valid Hours: 657

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Carbon Monoxide (CO) - ppm
Fort McKay - Bertha Ganter



Classes (ppm)



Total Number of Valid Hours: 657



Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 459.5 ppm on Feb 21 09:00	Maximum Daily Average: 444.5 ppm on Feb 22		Hours of Data:	663
Minimum Value: 421.3 ppm on Feb 14 07:00	Minimum Daily Average: 423.2 ppm on Feb 14		Hours of Missing Data:	33
Maximum Diurnal Average: 434.7 ppm at hour 9	Minimum Diurnal Average: 429.2 ppm at hour 16		Hours of Calibration:	32
Monthly Average: 432.35 ppm	Percentiles: P ₁ = 422.1 P ₁₀ = 424.5 Q ₁ = 426.5 Median = 430.8 Q ₃ = 437.6 P ₉₀ = 442.1 P ₉₉ = 453.6		Percent Operational Time:	99.9

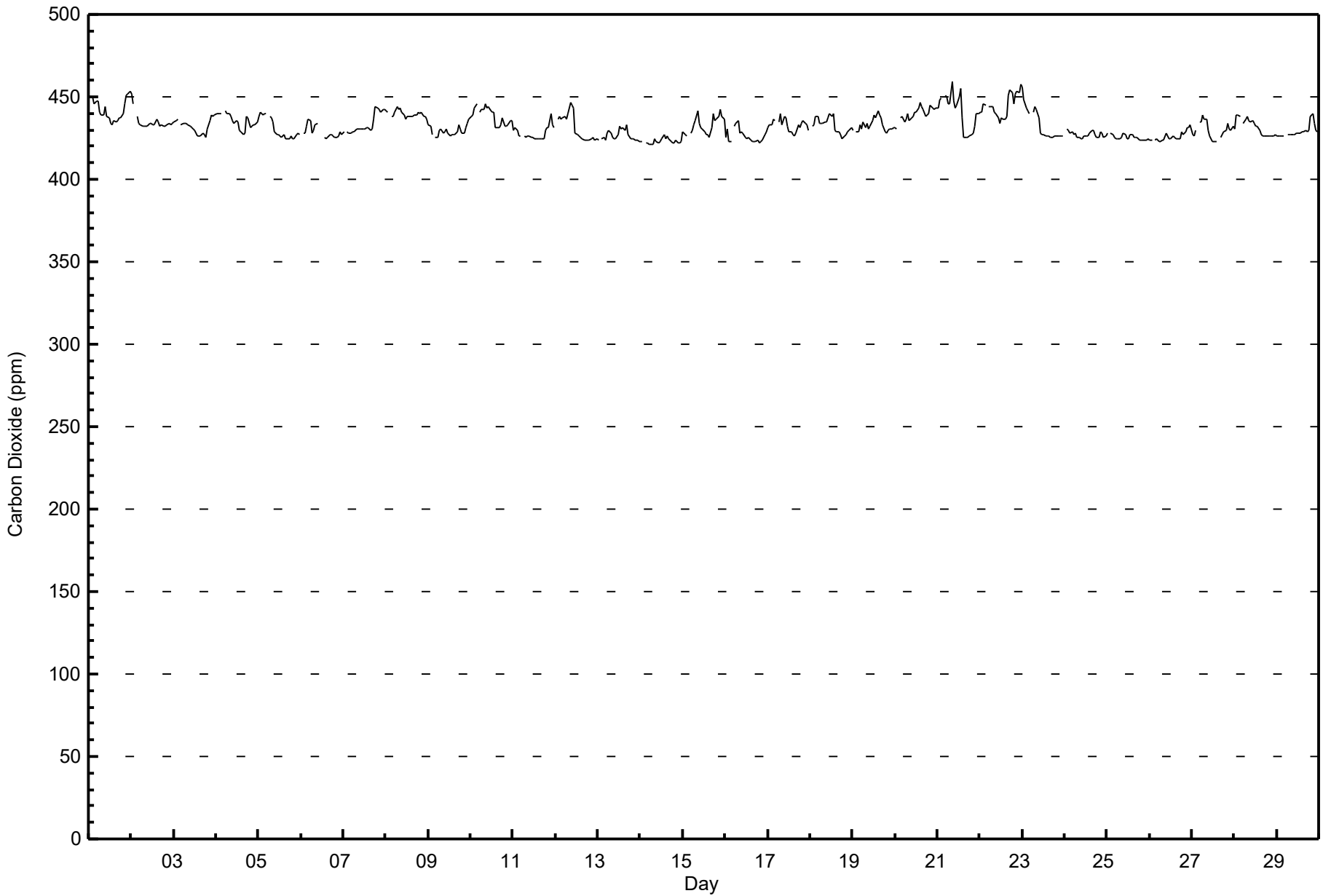
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	455.4	Z	449.8	446.2	447.4	447.3	440.3	439.2	438.9	444.2	438.3	436.9	433.6	433.4	435.7	435.1	435.4	437.2	437.6	439.7	445.7	451.1	451.8	453.6	442.3	455.4
2-Feb	452.1	446.0	Z	437.8	434.3	433.3	432.6	432.1	432.5	432.5	433.6	433.5	433.1	433.0	436.7	435.0	432.5	432.8	431.9	432.1	433.0	433.9	433.4	433.6	434.8	452.1
3-Feb	434.7	435.9	436.1	Z	433.1	433.6	433.9	433.9	433.0	431.9	431.1	430.8	430.1	426.4	426.1	426.5	427.9	427.4	425.2	430.8	435.7	438.7	437.8	439.2	432.2	439.2
4-Feb	440.2	439.9	439.8	439.5	Z	441.2	439.8	440.0	437.8	435.9	434.0	435.3	434.7	429.7	429.2	427.2	427.8	438.3	437.6	431.7	432.2	432.7	433.0	434.7	435.3	441.2
5-Feb	437.7	440.6	439.1	439.7	440.2	Z	438.1	437.5	434.9	428.6	427.5	427.3	426.4	425.8	426.8	424.8	424.4	424.3	426.2	424.5	424.8	426.7	427.6	427.5	430.5	440.6
6-Feb	Z	427.7	428.1	431.9	436.4	435.5	428.3	429.8	433.1	433.8	C	C	C	425.4	424.8	425.8	427.2	427.3	426.0	425.5	425.7	426.5	429.2	427.4	428.8	436.4
7-Feb	428.4	Z	428.7	428.1	427.8	428.4	428.6	430.5	430.5	430.4	430.5	430.5	430.8	431.0	431.4	429.9	430.6	436.0	443.8	442.8	442.4	441.0	442.2	442.6	433.4	443.8
8-Feb	441.7	440.3	Z	438.0	438.4	441.0	444.5	442.0	442.8	440.4	438.6	436.7	438.5	438.3	438.4	438.1	439.3	439.2	440.7	440.2	440.4	438.5	438.2	436.5	439.6	444.5
9-Feb	433.4	432.1	427.5	Z	425.2	425.3	429.6	430.9	428.1	428.5	430.6	427.6	426.7	426.8	426.8	427.3	429.2	432.7	430.9	428.0	428.2	431.4	434.3	436.1	429.4	436.1
10-Feb	438.2	438.8	443.2	446.0	Z	440.9	442.1	442.3	445.7	443.4	443.9	441.2	440.6	440.3	431.5	431.3	431.1	432.7	437.0	431.9	432.0	433.1	435.9	435.8	438.2	446.0
11-Feb	429.4	431.1	429.6	426.5	425.9	Z	426.0	425.7	426.3	425.9	425.6	425.3	425.0	424.7	424.4	424.2	424.2	424.8	430.1	431.5	431.6	440.0	432.8	431.4	427.9	440.0
12-Feb	Z	436.6	438.4	436.9	437.4	437.8	436.1	439.6	447.0	444.5	443.3	428.3	427.4	425.9	425.1	424.9	423.9	423.8	423.5	423.5	424.3	425.2	423.7	424.4	431.4	447.0
13-Feb	424.1	Z	424.6	425.4	423.9	428.1	430.1	428.1	425.5	424.7	424.4	427.4	432.4	430.8	431.1	429.4	433.0	426.8	424.4	424.9	424.5	423.8	423.8	423.2	426.7	433.0
14-Feb	422.8	422.7	Z	422.3	422.1	421.5	421.3	421.6	424.2	423.2	422.3	423.1	424.9	427.3	424.9	426.6	424.5	423.1	422.1	421.7	423.5	422.2	422.0	422.9	423.2	427.3
15-Feb	428.7	427.5	426.2	Z	428.2	429.5	432.7	435.6	441.9	433.9	431.4	430.3	429.0	426.8	426.8	425.6	431.1	439.8	435.7	436.3	438.4	442.1	437.7	436.4	432.7	442.1
16-Feb	425.3	430.7	423.0	422.7	Z	432.6	434.0	435.5	427.7	428.8	427.7	425.3	424.7	425.1	423.7	422.5	422.7	422.6	423.4	422.0	423.0	423.5	427.2	428.6	426.2	435.5
17-Feb	431.0	432.8	432.8	436.6	435.3	Z	435.2	439.6	433.4	438.4	437.0	432.2	428.8	428.5	426.8	426.4	427.7	433.1	431.7	434.1	435.6	433.8	432.8	430.0	432.8	439.6
18-Feb	Z	432.5	433.1	437.8	437.9	434.2	434.1	433.8	434.4	434.8	437.6	440.2	437.8	440.0	430.0	428.6	428.5	427.1	424.9	426.0	427.4	428.9	430.0	431.0	432.6	440.2
19-Feb	429.8	Z	429.0	428.5	432.6	430.4	435.0	431.7	434.1	430.5	432.3	435.8	438.6	437.4	441.4	438.9	436.9	432.7	428.9	428.4	429.7	430.1	430.8	431.0	432.8	441.4
20-Feb	431.1	430.5	Z	437.3	438.4	434.8	436.1	440.2	436.0	437.0	438.3	440.5	440.4	442.8	446.4	443.8	442.3	438.4	439.2	440.0	445.1	442.9	442.1	443.0	439.4	446.4
21-Feb	442.8	448.2	449.5	Z	450.7	450.0	445.7	446.1	459.5	447.7	443.5	445.1	450.1	455.4	437.0	425.3	425.4	425.6	426.4	427.0	428.2	432.4	439.8	440.2	440.9	459.5
22-Feb	440.3	440.9	445.5	444.8	Z	444.2	444.3	443.8	441.0	440.1	437.7	434.2	436.9	436.7	436.6	437.9	450.6	454.2	452.5	445.8	451.4	453.6	452.4	457.4	444.5	457.4
23-Feb	456.3	448.3	443.0	441.6	439.8	Z	440.9	443.8	442.7	437.6	427.6	427.1	427.1	426.5	425.9	426.0	425.7	425.7	426.1	426.2	426.2	426.1	426.1	426.4	433.2	456.3
24-Feb	Z	430.4	429.7	428.2	428.5	427.2	427.9	425.6	425.2	424.8	424.6	426.4	426.2	426.5	427.7	429.6	429.8	427.2	425.1	425.3	429.0	427.9	425.8	426.1	427.2	430.4
25-Feb	427.6	Z	427.7	427.3	425.5	424.7	424.9	424.4	425.4	427.7	426.8	424.7	425.0	427.4	426.9	425.8	425.5	425.5	424.1	424.0	423.6	424.0	423.9	424.9	425.5	427.7
26-Feb	424.0	423.4	Z	423.5	424.2	423.1	422.8	423.3	423.8	427.9	426.4	424.7	424.6	425.9	425.0	424.3	424.6	425.0	428.5	427.0	428.6	431.7	431.6	432.8	425.9	432.8
27-Feb	426.7	426.5	429.8	Z	434.3	434.7	438.7	436.4	436.6	429.3	426.1	422.5	423.0	422.9	422.9	M	425.0	426.8	428.9	429.8	433.5	430.5	429.7	432.6	429.4	438.7
28-Feb	430.7	439.2	439.1	438.5	Z	434.0	436.4	438.5	435.6	434.5	435.3	433.9	432.3	432.4	430.0	427.4	426.6	426.4	426.3	426.5	426.4	426.2	426.5	426.8	431.7	439.2
29-Feb	426.4	426.2	426.4	426.5	Z	426.8	427.2	427.5	427.4	427.4	427.9	427.6	427.9	428.9	428.5	429.3	429.0	430.0	437.9	439.7	434.2	429.3	428.5	429.0	429.0	439.7
434.4 434.5 434.2 433.8 433.1 433.9 434.0 434.4 434.7 433.4 432.3 431.2 431.3 431.1 430.0 429.2 429.7 430.5 430.6 430.5 432.1 432.9 432.8 433.3																								Diurnal Average		
456.3 448.3 449.8 446.2 450.7 450.0 445.7 446.1 459.5 447.7 443.9 445.1 450.1 455.4 446.4 443.8 450.6 454.2 452.5 445.8 451.4 453.6 452.4 457.4																								Diurnal Maximum		

Z - zerospan C - Calibration M - Maintenance



Wood Buffalo Environmental Association
Hourly Averages

Carbon Dioxide (CO₂) - ppm
Fort McKay - Bertha Ganter - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Carbon Dioxide (CO₂) - ppm
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
400 - 420	0	0.00	0.00
420 - 440	577	87.03	87.03
440 - 460	86	12.97	100.00
460 - 480	0	0.00	100.00
480 - 500	0	0.00	100.00
> 500	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Carbon Dioxide (CO₂) - ppm
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
400 - 420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
420 - 440	73	78	48	14	7	8	23	65	82	25	26	23	26	20	26	30	574
440 - 460	10	3	1	0	1	0	2	15	23	5	2	2	0	1	10	9	84
460 - 480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
480 - 500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	83	81	49	14	8	8	25	80	105	30	28	25	26	21	36	39	658

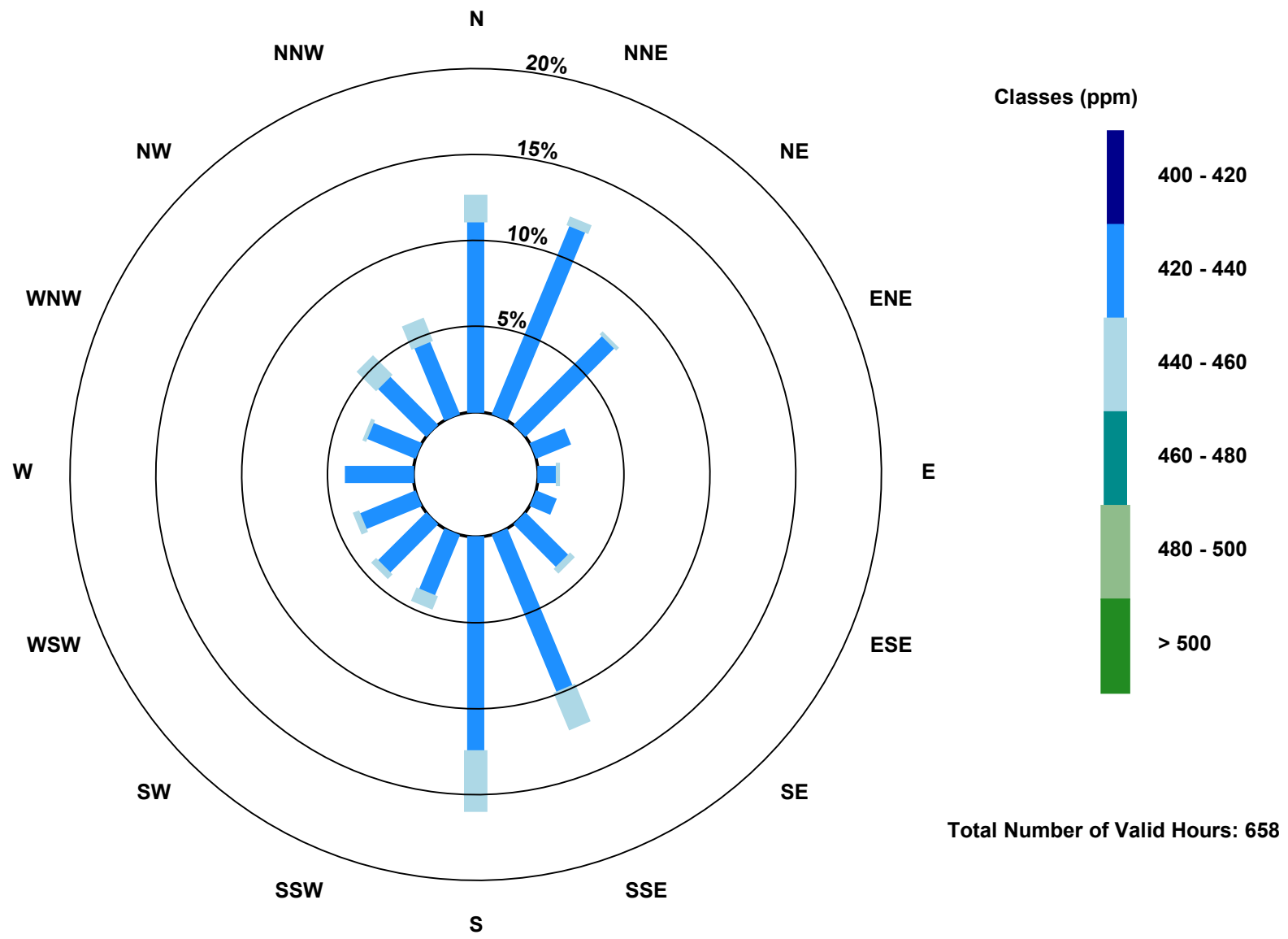
Total Number of Valid Hours: 658

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Carbon Dioxide (CO₂) - ppm
Fort McKay - Bertha Ganter



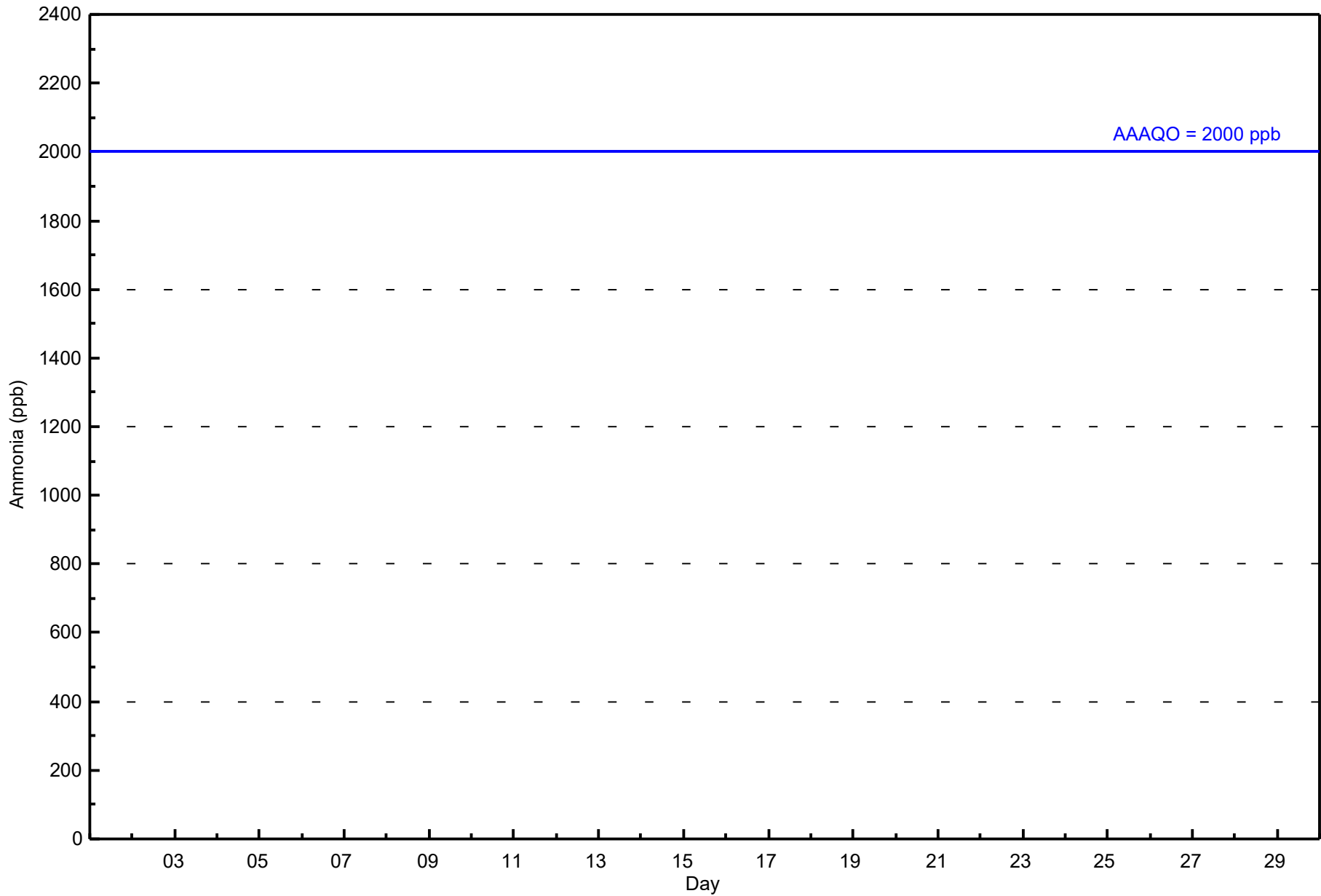


Number of Exceedences (AAAQO): 1-hr: 0		Hours in Service: 696																										
Maximum Value: 0.0 ppb on Feb 1 01:00		Maximum Daily Average: 0.0 ppb on Feb 1																										
Minimum Value: 0.0 ppb on Feb 1 01:00		Hours of Data: 627																										
Maximum Diurnal Average: 0.0 ppb at hour 1		Hours of Missing Data: 69																										
Monthly Average: 0.00 ppb		Hours of Calibration: 39																										
Minimum Daily Average: 0.0 ppb on Feb 1		Percent Operational Time: 95.7																										
Minimum Diurnal Average: 0.0 ppb at hour 1		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.0																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
1-Feb	0.0	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2-Feb	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	UO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3-Feb	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4-Feb	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Feb	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Feb	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Feb	0.0	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Feb	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Feb	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Feb	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Feb	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-Feb	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Feb	0.0	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Feb	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Feb	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Feb	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Feb	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Feb	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Feb	0.0	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Feb	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Feb	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Feb	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Feb	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24-Feb	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Feb	0.0	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Feb	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Feb	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	C	C	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28-Feb	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Feb	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0																								Diurnal Average				
0.0																								Diurnal Maximum				
Z - zerspan C - Calibration UO - Unstable Operation RE - Recovery																												
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 2000 ppb																												



Wood Buffalo Environmental Association
Hourly Averages

Ammonia (NH₃) - ppb
Fort McKay - Bertha Ganter - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ammonia (NH₃) - ppb
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 5	627	100.00	100.00
6 - 10	0	0.00	100.00
11 - 15	0	0.00	100.00
16 - 20	0	0.00	100.00
21 - 25	0	0.00	100.00
> 26	0	0.00	100.00

Total Number of Valid Hours: 627

Total Number of Hours: 696



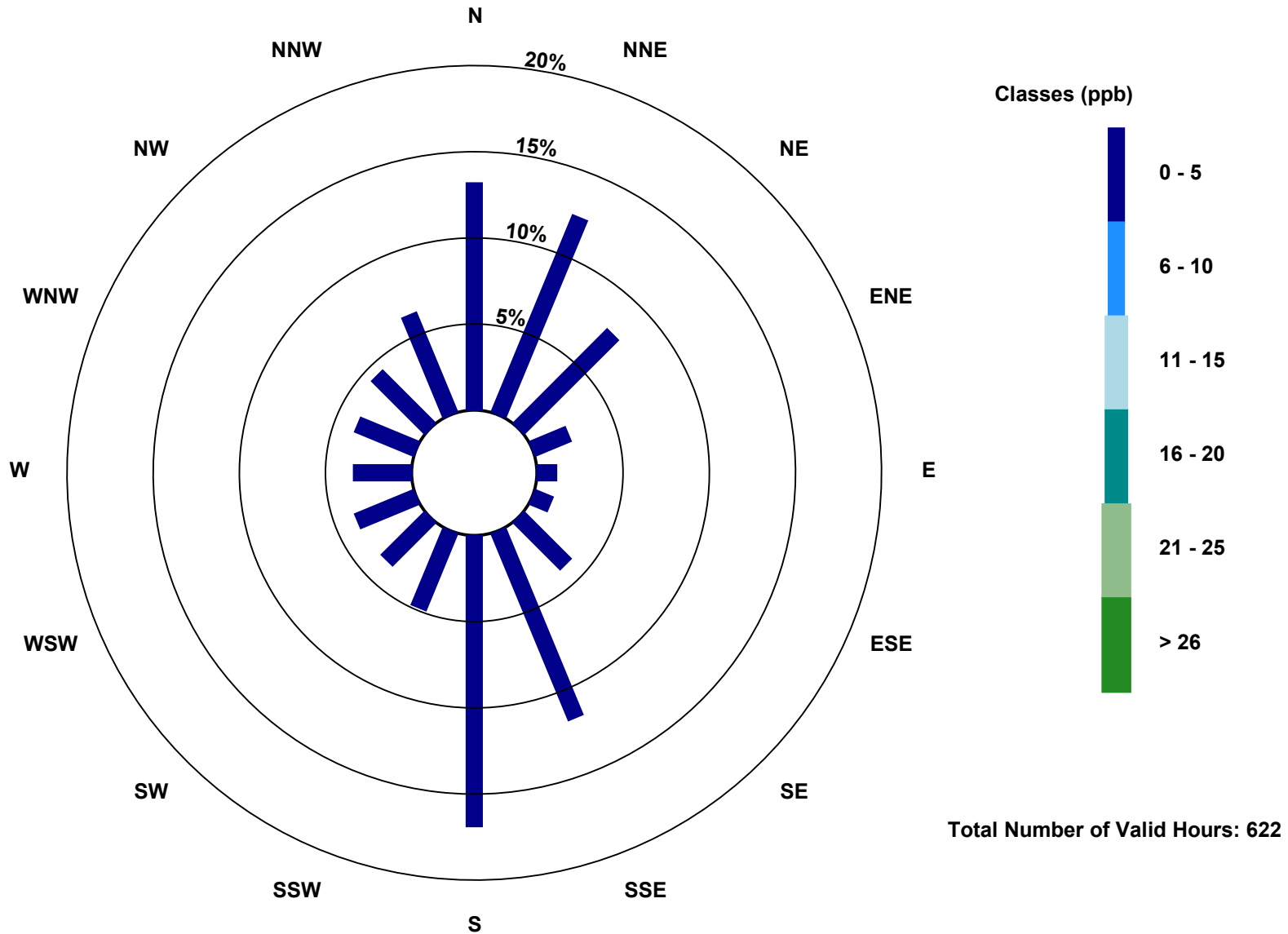
Wood Buffalo Environmental Association
Frequency Distribution

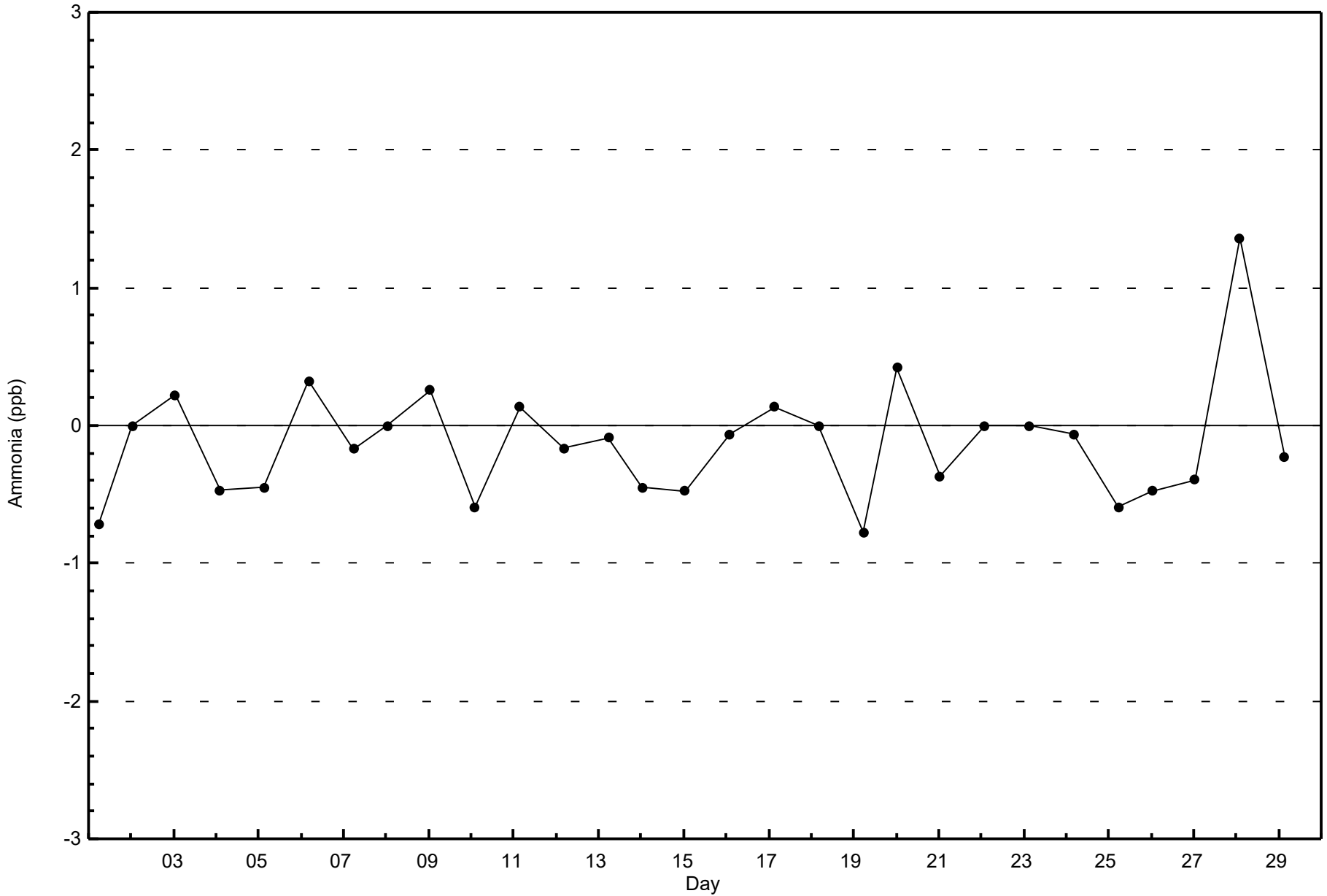
Ammonia (NH₃) - ppb
Fort McKay - Bertha Ganter - February 2024

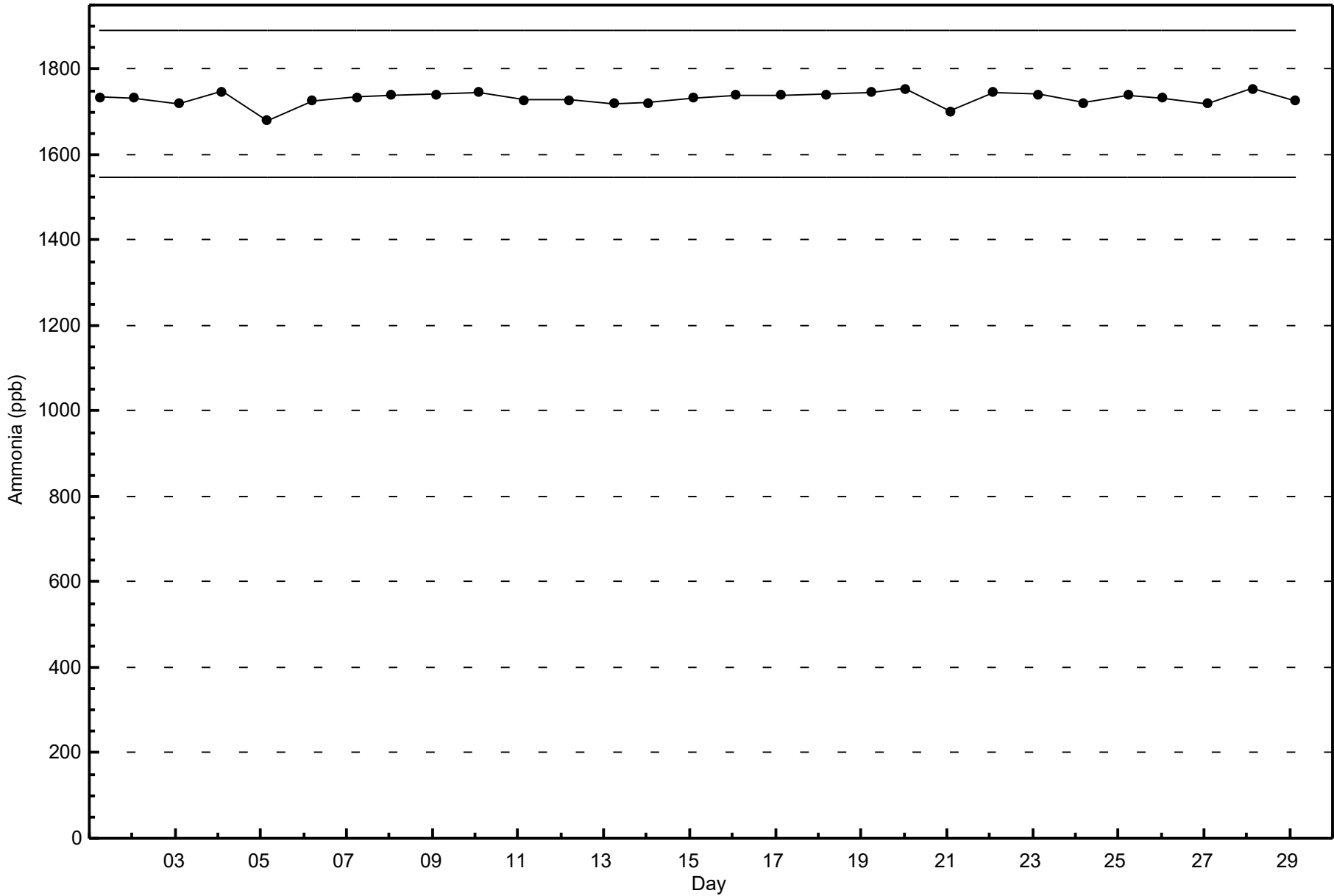
Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	82	77	48	14	7	7	24	73	105	30	22	23	21	23	27	39	622
6 - 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	82	77	48	14	7	7	24	73	105	30	22	23	21	23	27	39	622

Total Number of Valid Hours: 622

Total Number of Hours: 696





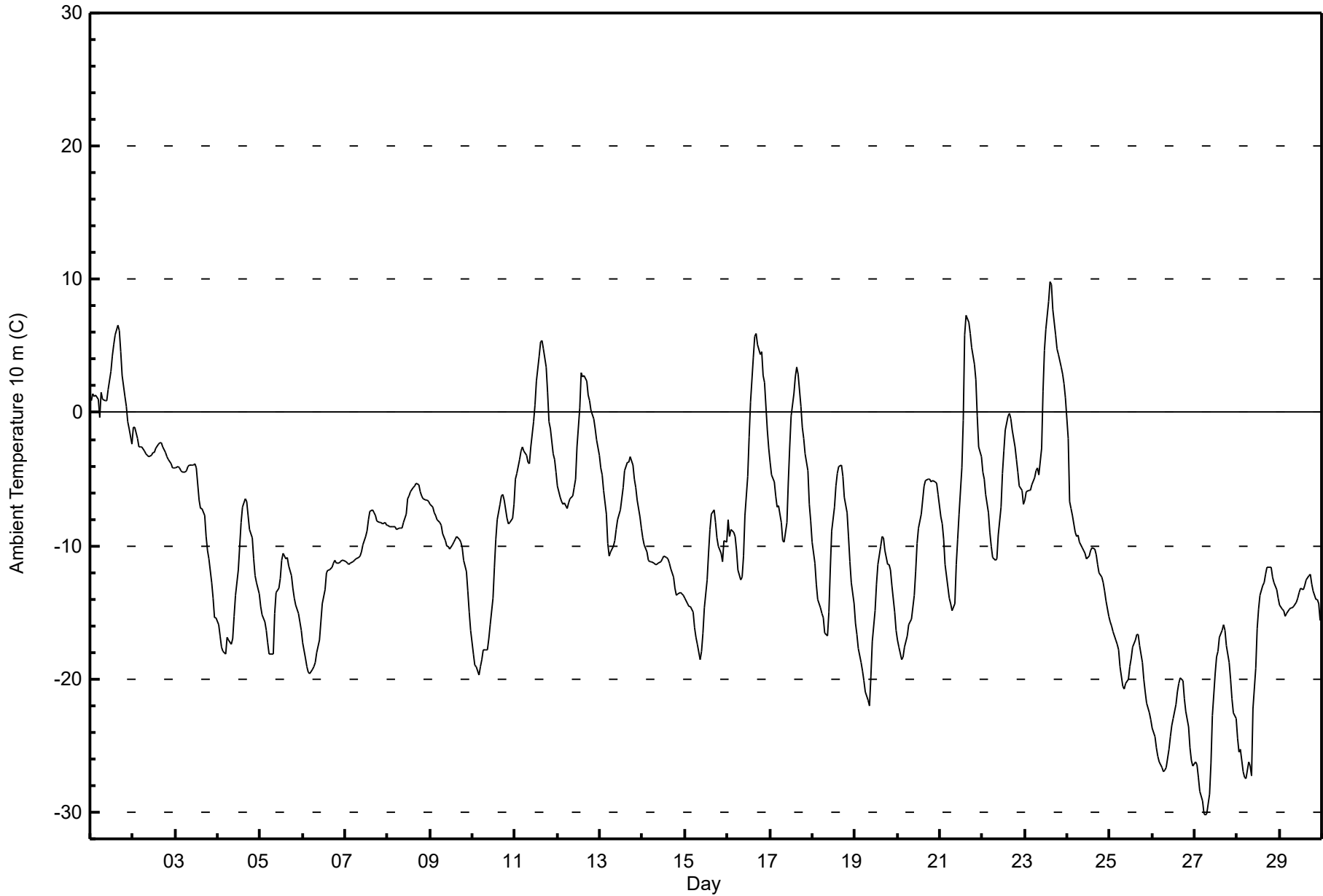




Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature 10 m (AT 10m) - C
Fort McKay - Bertha Ganter - February 2024

Maximum Value: 9.8 C on Feb 23 15:00		Maximum Daily Average: 2.0 C on Feb 1		Hours in Service: 696																						
Minimum Value: -30.2 C on Feb 27 07:00		Minimum Daily Average: -24.0 C on Feb 26		Hours of Data: 696																						
Maximum Diurnal Average: -5.4 C at hour 16		Minimum Diurnal Average: -13.5 C at hour 8		Hours of Missing Data: 0																						
Monthly Average: -9.87 C		Percentiles: P ₁ = -27.4 P ₁₀ = -19.2 Q ₁ = -14.8 Median = -9.8 Q ₃ = -4.7 P ₉₀ = 0.2 P ₉₉ = 6.3		Hours of Calibration: 0																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.9	1.4	1.3	1.3	1.0	-0.4	1.6	1.0	0.9	0.9	1.7	3.1	4.2	5.0	5.8	6.5	6.1	4.6	2.8	1.2	0.5	-0.7	-1.2	-2.4	2.0	6.5
2-Feb	-1.1	-1.1	-2.0	-2.6	-2.6	-2.6	-2.9	-3.2	-3.2	-3.3	-3.2	-3.0	-3.0	-2.7	-2.3	-2.3	-2.3	-2.6	-3.0	-3.3	-3.5	-3.9	-4.1	-4.2	-2.8	-1.1
3-Feb	-4.2	-4.0	-4.2	-4.4	-4.5	-4.5	-4.4	-4.0	-4.0	-4.0	-4.0	-3.8	-4.2	-6.6	-7.2	-7.2	-7.7	-9.3	-10.4	-11.0	-12.8	-13.9	-15.4	-15.4	-7.1	-3.8
4-Feb	-15.9	-16.7	-17.6	-17.9	-18.2	-16.8	-17.0	-17.4	-17.0	-15.3	-13.7	-11.8	-10.0	-8.2	-7.1	-6.4	-6.7	-7.7	-8.8	-9.5	-11.0	-12.2	-12.8	-13.6	-12.9	-6.4
5-Feb	-14.5	-15.2	-15.8	-16.3	-17.3	-18.1	-18.2	-18.1	-15.0	-13.5	-13.2	-12.5	-11.1	-10.6	-11.0	-10.9	-11.5	-12.3	-13.2	-13.9	-14.5	-15.1	-15.8	-16.4	-14.3	-10.6
6-Feb	-17.3	-18.4	-19.1	-19.5	-19.6	-19.3	-19.1	-18.7	-18.0	-17.1	-15.7	-14.3	-13.3	-12.0	-11.8	-11.8	-11.6	-11.3	-11.1	-11.3	-11.3	-11.2	-11.1	-11.1	-14.8	-11.1
7-Feb	-11.2	-11.3	-11.4	-11.3	-11.2	-11.1	-11.0	-10.9	-10.8	-10.4	-9.9	-9.3	-8.8	-8.0	-7.4	-7.3	-7.5	-7.8	-8.1	-8.2	-8.3	-8.3	-8.3	-8.4	-9.4	-7.3
8-Feb	-8.5	-8.6	-8.6	-8.6	-8.6	-8.7	-8.7	-8.6	-8.6	-8.2	-7.6	-6.5	-6.3	-5.9	-5.7	-5.5	-5.3	-5.4	-5.9	-6.3	-6.4	-6.5	-6.6	-6.6	-7.2	-5.3
9-Feb	-6.9	-7.1	-7.5	-7.8	-8.1	-8.3	-8.4	-9.1	-9.7	-10.0	-10.1	-10.2	-10.0	-9.8	-9.6	-9.3	-9.5	-9.8	-10.1	-11.0	-12.0	-13.4	-15.0	-16.3	-9.9	-6.9
10-Feb	-18.1	-19.0	-19.1	-19.7	-19.0	-18.5	-17.8	-17.8	-17.8	-17.0	-15.9	-13.9	-11.6	-9.6	-8.0	-6.9	-6.2	-6.1	-6.6	-8.0	-8.4	-8.3	-7.9	-6.9	-12.8	-6.1
11-Feb	-5.0	-4.6	-3.5	-2.9	-2.6	-2.9	-3.2	-3.7	-3.8	-2.5	-0.7	0.6	2.3	4.2	5.3	5.4	4.8	3.4	1.5	-0.7	-1.2	-3.2	-3.5	-4.4	-0.9	5.4
12-Feb	-5.5	-6.4	-6.7	-6.9	-6.8	-7.2	-6.8	-6.5	-6.3	-5.6	-5.0	-2.6	0.4	3.0	2.7	2.8	2.4	1.3	0.9	0.1	-0.5	-1.2	-2.1	-3.2	-2.7	3.0
13-Feb	-4.2	-4.7	-5.8	-7.7	-9.8	-10.7	-10.5	-10.1	-9.6	-8.8	-8.1	-7.3	-6.5	-5.6	-4.4	-3.7	-3.8	-3.4	-4.0	-5.0	-5.6	-6.6	-7.9	-8.7	-6.8	-3.4
14-Feb	-9.4	-9.9	-10.4	-11.1	-11.2	-11.2	-11.3	-11.4	-11.4	-11.3	-11.2	-10.9	-10.8	-10.9	-11.0	-11.3	-11.8	-12.4	-13.2	-13.7	-13.7	-13.5	-13.6	-13.8	-11.7	-9.4
15-Feb	-13.9	-14.3	-14.6	-14.5	-15.0	-16.1	-16.9	-17.4	-18.6	-17.9	-16.5	-14.6	-12.6	-10.6	-8.8	-7.6	-7.3	-8.2	-9.4	-10.1	-10.5	-11.1	-9.7	-9.7	-12.7	-7.3
16-Feb	-8.1	-9.3	-8.7	-9.0	-9.3	-10.4	-11.9	-12.5	-12.4	-10.8	-7.7	-4.8	-1.8	0.8	4.2	5.7	5.9	5.1	4.3	4.6	2.8	2.2	-1.3	-2.7	-3.5	5.9
17-Feb	-3.7	-4.7	-5.2	-6.2	-7.1	-6.9	-8.3	-9.6	-9.7	-8.2	-5.2	-2.6	-0.3	1.4	2.6	3.4	2.9	0.5	-1.1	-2.0	-3.1	-4.3	-6.9	-8.2	-3.9	3.4
18-Feb	-9.7	-11.3	-12.9	-14.0	-14.6	-15.1	-15.4	-16.5	-16.7	-15.0	-11.7	-8.9	-7.1	-5.5	-4.5	-4.0	-3.9	-4.7	-6.4	-7.5	-9.4	-11.2	-12.8	-14.4	-10.6	-3.9
19-Feb	-15.8	-16.7	-17.8	-18.8	-19.4	-20.1	-21.0	-21.6	-22.1	-19.9	-17.2	-14.9	-12.9	-11.4	-10.0	-9.3	-9.4	-10.4	-11.4	-11.4	-11.9	-13.0	-15.0	-16.4	-15.3	-9.3
20-Feb	-17.1	-17.6	-18.6	-18.4	-17.6	-16.7	-15.9	-15.7	-15.4	-13.8	-12.0	-9.8	-8.6	-7.6	-6.6	-5.6	-5.1	-5.0	-5.0	-5.2	-5.1	-5.2	-5.3	-6.1	-10.8	-5.0
21-Feb	-7.8	-8.3	-9.5	-11.4	-13.1	-13.9	-14.3	-14.9	-14.3	-11.4	-9.5	-7.6	-4.2	-0.6	5.8	7.3	6.8	5.9	4.8	3.6	2.5	-0.2	-2.5	-3.3	-4.6	7.3
22-Feb	-4.5	-5.0	-6.1	-7.5	-9.0	-10.0	-10.9	-11.1	-11.0	-9.2	-7.1	-4.6	-2.9	-1.3	-0.3	0.0	-0.5	-1.4	-2.6	-3.6	-4.4	-5.5	-5.9	-6.9	-5.5	0.0
23-Feb	-6.5	-6.0	-5.8	-5.8	-5.4	-4.9	-4.3	-4.2	-4.7	-2.7	1.6	4.7	6.3	8.3	9.8	9.6	7.7	5.8	4.8	4.3	3.4	2.9	2.1	1.2	0.9	9.8
24-Feb	-1.9	-6.7	-7.2	-7.7	-9.0	-9.3	-9.2	-9.8	-10.1	-10.3	-10.6	-11.0	-10.8	-10.3	-10.1	-10.2	-10.7	-11.4	-12.1	-12.4	-12.8	-13.4	-14.2	-15.3	-10.3	-1.9
25-Feb	-15.7	-16.0	-16.5	-17.1	-17.4	-17.8	-19.0	-20.6	-20.7	-20.4	-20.0	-19.1	-18.5	-17.6	-17.1	-16.6	-16.7	-17.5	-18.8	-20.0	-21.0	-21.8	-22.5	-23.1	-18.8	-15.7
26-Feb	-23.7	-24.3	-25.2	-25.8	-26.2	-26.6	-26.9	-26.8	-26.7	-25.3	-24.3	-23.5	-23.0	-21.9	-21.0	-20.4	-19.9	-20.2	-21.5	-22.5	-23.6	-25.2	-26.1	-26.6	-24.0	-19.9
27-Feb	-26.2	-26.4	-27.4	-28.5	-29.2	-30.1	-30.2	-30.1	-28.7	-26.3	-22.7	-19.6	-18.4	-18.0	-16.9	-16.3	-15.9	-16.3	-17.5	-18.7	-20.1	-21.5	-22.5	-23.0	-22.9	-15.9
28-Feb	-24.5	-25.5	-25.3	-27.0	-27.4	-27.5	-26.2	-26.5	-27.2	-22.3	-19.2	-16.2	-14.8	-13.7	-13.0	-12.7	-12.2	-11.7	-11.6	-11.6	-12.4	-12.8	-13.3	-13.9	-18.7	-11.6
29-Feb	-14.5	-14.8	-14.8	-15.3	-15.1	-14.7	-14.7	-14.6	-14.5	-14.2	-13.9	-13.5	-13.2	-13.3	-13.0	-12.6	-12.2	-12.2	-12.9	-13.5	-14.0	-14.0	-14.3	-15.6	-14.0	-12.2
																								Diurnal Average		
																								Diurnal Maximum		





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 10 m (AT 10m) - C
Fort McKay - Bertha Ganter - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	60	8.62	8.62
-20 - 0	565	81.18	89.80
0 - 10	71	10.20	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

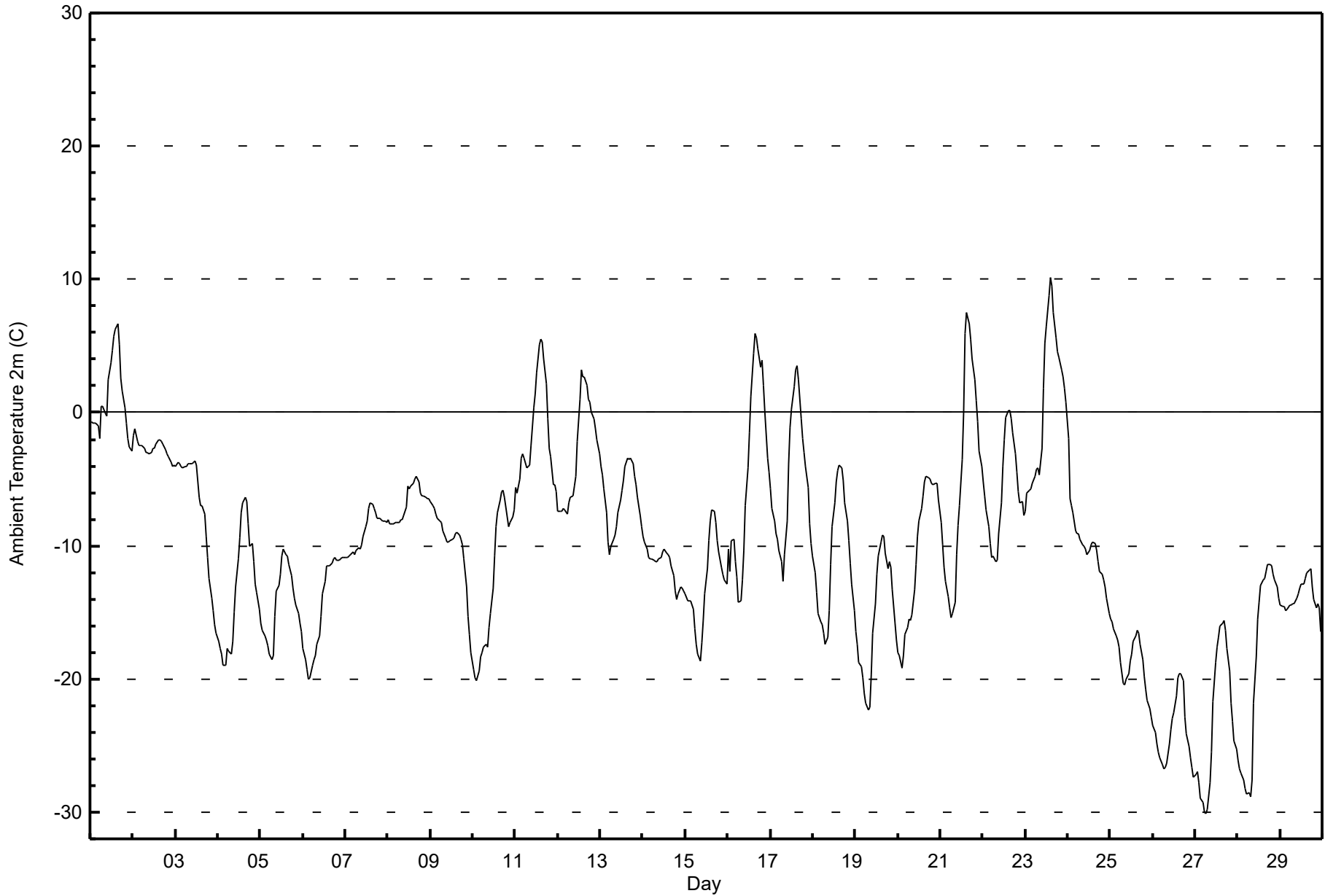
Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature 2m (AT 2m) - C
Fort McKay - Bertha Ganter - February 2024

Maximum Value: 10.1 C on Feb 23 15:00 Maximum Daily Average: 1.1 C on Feb 1																						Hours in Service:	696			
Minimum Value: -30.1 C on Feb 27 07:00 Minimum Daily Average: -24.0 C on Feb 26																						Hours of Data:	696			
Maximum Diurnal Average: -5.2 C at hour 16 Minimum Diurnal Average: -13.7 C at hour 8																						Hours of Missing Data:	0			
Monthly Average: -9.99 C Percentiles: P ₁ = -28.6 P ₁₀ = -19.3 Q ₁ = -14.8 Median = -9.8 Q ₃ = -5.0 P ₉₀ = -0.5 P ₉₉ = 6.4																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	-0.7	-0.8	-0.8	-0.7	-1.0	-1.9	0.4	0.4	-0.1	-0.2	2.5	3.7	4.7	5.7	6.3	6.6	5.1	2.5	1.6	0.3	-0.8	-1.9	-2.6	-2.9	1.1	6.6
2-Feb	-1.8	-1.2	-2.2	-2.5	-2.5	-2.5	-2.7	-3.0	-3.0	-3.1	-3.0	-2.7	-2.7	-2.4	-2.1	-2.1	-2.1	-2.4	-2.8	-3.1	-3.3	-3.7	-4.0	-4.0	-2.7	-1.2
3-Feb	-4.0	-3.7	-3.8	-4.0	-4.2	-4.0	-4.0	-3.8	-3.8	-3.8	-3.7	-3.6	-3.9	-6.3	-6.9	-7.0	-7.6	-9.3	-10.9	-12.4	-13.9	-14.9	-15.9	-16.6	-7.2	-3.6
4-Feb	-17.2	-17.7	-18.2	-19.0	-19.0	-17.7	-17.9	-18.2	-17.2	-15.0	-13.0	-11.0	-9.4	-7.5	-6.8	-6.3	-6.7	-8.4	-10.0	-9.8	-11.2	-12.9	-13.6	-14.8	-13.3	-6.3
5-Feb	-15.9	-16.3	-16.7	-17.1	-17.5	-18.1	-18.6	-18.3	-15.3	-13.3	-12.9	-10.8	-10.3	-10.7	-10.8	-11.4	-12.2	-13.2	-13.9	-14.4	-15.1	-15.8	-16.5	-14.5	-10.3	
6-Feb	-17.7	-18.5	-19.3	-20.1	-19.9	-19.0	-18.6	-18.2	-17.4	-16.8	-15.3	-13.6	-12.7	-11.5	-11.5	-11.3	-11.0	-10.9	-11.0	-11.1	-11.0	-10.9	-10.9	-14.6	-10.9	
7-Feb	-10.9	-10.8	-10.8	-10.6	-10.5	-10.6	-10.4	-10.1	-10.2	-9.9	-9.3	-8.6	-8.1	-7.2	-6.8	-6.9	-7.2	-7.5	-7.9	-8.0	-8.1	-8.2	-8.1	-8.2	-9.0	-6.8
8-Feb	-8.1	-8.3	-8.3	-8.4	-8.2	-8.3	-8.2	-8.0	-8.1	-7.8	-7.1	-5.5	-5.8	-5.5	-5.3	-5.0	-4.8	-5.2	-6.0	-6.2	-6.3	-6.4	-6.5	-6.5	-6.8	-4.8
9-Feb	-6.7	-7.0	-7.2	-7.7	-8.0	-8.2	-8.2	-8.9	-9.4	-9.7	-9.7	-9.6	-9.5	-9.4	-9.1	-9.0	-9.2	-9.5	-10.0	-11.0	-13.1	-15.3	-16.7	-18.0	-10.0	-6.7
10-Feb	-19.3	-20.0	-20.1	-19.4	-18.3	-18.0	-17.6	-17.4	-17.6	-16.1	-15.0	-13.2	-10.7	-8.6	-7.5	-6.6	-6.0	-5.9	-6.4	-7.8	-8.5	-8.3	-7.9	-7.3	-12.6	-5.9
11-Feb	-5.7	-6.0	-5.0	-3.5	-3.1	-3.5	-4.1	-4.1	-3.9	-2.5	0.4	1.4	3.0	5.1	5.6	5.3	4.1	2.2	-0.5	-2.7	-3.3	-5.4	-5.4	-5.9	-1.6	5.6
12-Feb	-7.4	-7.4	-7.4	-7.2	-7.3	-7.6	-6.8	-6.4	-6.2	-5.5	-4.8	-2.1	1.0	3.2	2.7	2.6	2.1	1.0	0.8	0.1	-0.5	-1.2	-2.0	-3.1	-2.9	3.2
13-Feb	-4.1	-4.6	-5.7	-7.5	-9.8	-10.6	-10.0	-9.5	-9.2	-8.5	-7.5	-6.5	-5.8	-5.1	-4.1	-3.4	-3.5	-3.4	-3.9	-4.8	-5.4	-6.4	-7.7	-8.6	-6.5	-3.4
14-Feb	-9.3	-9.8	-10.2	-10.9	-11.0	-11.0	-11.1	-11.2	-11.2	-11.0	-10.9	-10.5	-10.3	-10.5	-10.7	-10.9	-11.5	-12.3	-13.4	-14.1	-13.6	-13.0	-13.1	-13.4	-11.5	-9.3
15-Feb	-13.6	-14.1	-14.1	-14.1	-14.8	-16.2	-17.4	-18.2	-18.7	-17.3	-15.6	-13.6	-11.7	-9.6	-8.1	-7.3	-7.4	-8.3	-9.6	-10.4	-11.6	-12.2	-12.6	-12.9	-12.9	-7.3
16-Feb	-10.3	-12.0	-9.6	-9.5	-11.2	-12.4	-14.2	-14.2	-12.5	-10.4	-7.0	-4.2	-1.5	1.3	4.5	5.9	5.6	4.8	3.4	4.0	2.1	0.0	-3.4	-4.5	-4.4	5.9
17-Feb	-5.7	-7.2	-8.1	-9.1	-9.6	-10.3	-11.2	-12.7	-10.7	-8.2	-3.8	-1.1	0.2	2.0	3.2	3.5	2.5	-0.5	-2.0	-3.0	-4.1	-5.6	-8.4	-9.8	-5.0	3.5
18-Feb	-10.7	-12.0	-13.5	-15.1	-15.7	-16.0	-16.6	-17.4	-16.9	-14.9	-11.4	-8.6	-6.8	-5.2	-4.4	-4.0	-4.1	-5.1	-6.7	-8.1	-9.6	-11.3	-12.9	-14.8	-10.9	-4.0
19-Feb	-16.4	-17.4	-18.7	-19.1	-20.0	-21.0	-21.8	-22.3	-22.1	-19.7	-16.5	-14.4	-12.1	-10.8	-9.7	-9.2	-9.3	-10.6	-11.7	-11.2	-11.6	-13.3	-15.8	-17.0	-15.5	-9.2
20-Feb	-18.1	-18.2	-19.2	-18.2	-16.7	-16.1	-15.5	-15.6	-15.2	-13.3	-11.4	-9.3	-8.2	-7.2	-6.2	-5.2	-4.8	-4.8	-5.0	-5.4	-5.4	-5.3	-5.3	-6.6	-10.7	-4.8
21-Feb	-8.3	-10.0	-11.6	-12.7	-13.8	-14.7	-15.4	-15.1	-14.3	-10.6	-8.5	-7.0	-3.5	0.1	5.9	7.5	6.6	5.5	4.1	2.4	0.9	-0.7	-2.9	-4.1	-5.0	7.5
22-Feb	-5.2	-6.3	-7.3	-8.6	-9.8	-10.9	-10.8	-11.1	-11.1	-9.1	-6.8	-4.1	-2.1	-0.3	0.1	0.2	-0.5	-1.6	-3.1	-4.5	-6.0	-6.7	-6.7	-7.7	-5.8	0.2
23-Feb	-7.4	-6.0	-5.9	-5.8	-5.3	-4.8	-4.3	-4.1	-4.7	-2.7	1.8	5.2	6.4	8.8	10.1	9.5	7.5	5.6	4.6	4.2	3.2	2.7	1.8	0.8	0.9	10.1
24-Feb	-2.0	-6.5	-7.0	-7.5	-8.8	-9.1	-9.0	-9.6	-9.9	-10.1	-10.2	-10.6	-10.4	-9.9	-9.7	9.8	-10.4	-11.2	-11.9	-12.2	-12.5	-13.1	-13.9	-15.1	-10.0	-2.0
25-Feb	-15.5	-15.8	-16.2	-16.8	-17.1	-17.6	-18.8	-20.4	-20.4	-20.1	-19.6	-18.7	-18.1	-17.2	-16.7	-16.3	-16.6	-17.4	-18.6	-19.8	-20.8	-21.6	-22.3	-22.8	-18.5	-15.5
26-Feb	-23.5	-24.0	-24.9	-25.5	-26.0	-26.4	-26.8	-26.6	-26.4	-24.8	-23.8	-22.9	-22.5	-21.2	-20.0	-19.6	-19.6	-20.2	-22.9	-24.1	-25.1	-25.9	-26.6	-27.3	-24.0	-19.6
27-Feb	-27.2	-27.0	-27.8	-29.0	-29.2	-30.0	-30.1	-29.8	-27.8	-25.5	-21.7	-18.8	-17.6	-16.9	-16.0	-15.8	-15.6	-16.3	-17.7	-19.4	-21.8	-23.2	-24.6	-25.3	-23.1	-15.6
28-Feb	-26.1	-26.8	-27.1	-27.6	-28.2	-28.6	-28.6	-28.8	-27.6	-21.8	-18.3	-15.5	-14.2	-13.0	-12.5	-12.4	-11.9	-11.5	-11.4	-11.5	-12.2	-12.6	-13.1	-13.9	-19.0	-11.4
29-Feb	-14.4	-14.6	-14.6	-14.9	-14.8	-14.5	-14.4	-14.4	-14.3	-14.0	-13.6	-13.2	-12.9	-12.9	-12.5	-12.1	-11.8	-11.8	-13.1	-14.0	-14.7	-14.3	-14.7	-16.4	-13.9	-11.8
																								Diurnal Average		
																								Diurnal Maximum		





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 2m (AT 2m) - C
Fort McKay - Bertha Ganter - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	59	8.48	8.48
-20 - 0	571	82.04	90.52
0 - 10	65	9.34	99.86
10 - 20	1	0.14	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Relative Humidity (RH) - %

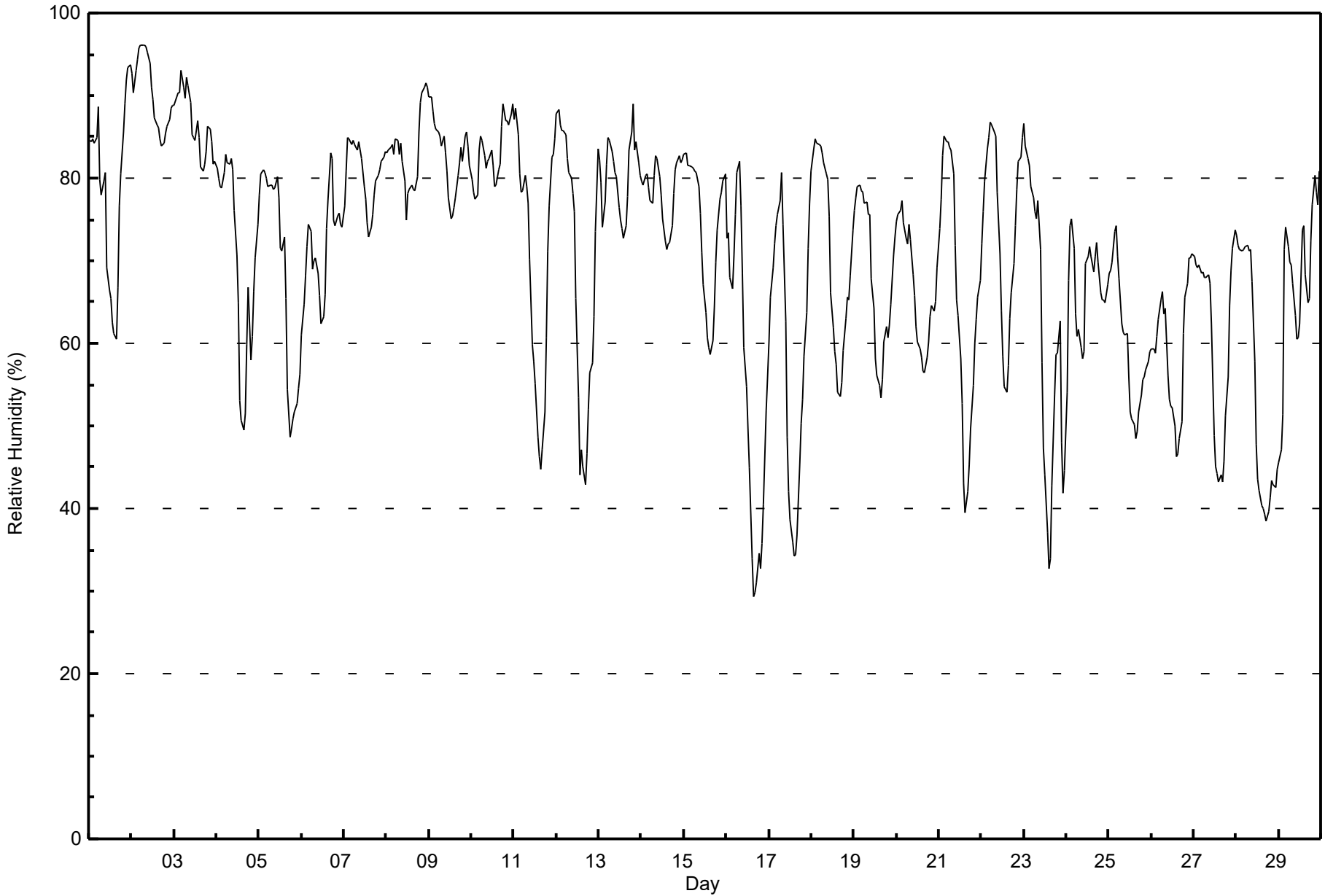
Fort McKay - Bertha Ganter - February 2024

Maximum Value: 96.1 % on Feb 2 06:00 Maximum Daily Average: 90.4 % on Feb 2																						Hours in Service:	696			
Minimum Value: 29.4 % on Feb 16 16:00 Minimum Daily Average: 54.9 % on Feb 28																						Hours of Data:	696			
Maximum Diurnal Average: 79.5 % at hour 6 Minimum Diurnal Average: 58.7 % at hour 16																						Hours of Missing Data:	0			
Monthly Average: 70.88 % Percentiles: P ₁ = 34.2 P ₁₀ = 49.6 Q ₁ = 61.3 Median = 74.2 Q ₃ = 81.8 P ₉₀ = 85.6 P ₉₉ = 93.9																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	84.6	84.5	84.7	84.2	85.0	88.6	79.8	77.9	79.7	80.6	69.2	66.5	65.5	62.5	61.2	60.6	66.8	76.7	80.4	85.6	88.9	91.8	93.3	93.7	78.8	93.7
2-Feb	92.7	90.3	93.1	94.4	95.8	96.1	96.1	96.1	96.0	95.3	93.8	91.1	89.4	87.2	86.4	86.1	84.8	84.0	84.3	85.5	86.2	87.0	88.5	88.8	90.4	96.1
3-Feb	88.9	89.8	90.3	90.3	93.1	91.1	89.7	92.2	91.1	89.1	85.2	85.0	84.6	86.9	84.9	81.3	80.9	81.7	83.2	86.2	85.9	84.4	81.7	82.1	86.7	93.1
4-Feb	81.3	80.0	79.0	78.8	80.7	82.9	81.8	81.8	82.4	81.0	76.1	70.7	64.9	53.0	50.6	49.5	51.5	59.8	66.8	58.0	60.9	66.2	70.4	74.3	70.1	82.9
5-Feb	77.9	80.5	81.1	80.7	80.0	79.0	79.1	79.1	78.7	78.8	80.1	77.6	71.5	71.2	72.8	65.5	54.3	48.6	49.6	50.9	51.6	52.8	54.5	56.2	68.8	81.1
6-Feb	61.0	64.7	68.1	71.7	74.4	73.6	68.9	70.0	70.3	68.6	65.8	62.4	63.2	65.9	73.9	77.3	83.1	82.3	74.9	74.2	75.4	75.8	74.5	74.1	71.4	83.1
7-Feb	76.6	80.9	84.9	84.8	84.1	84.5	84.1	83.5	84.3	83.4	82.3	79.0	77.5	74.6	72.9	74.1	75.5	77.9	79.6	80.4	81.0	82.1	82.6	83.3	80.6	84.9
8-Feb	83.0	83.4	83.8	84.0	82.9	84.8	84.5	82.9	84.3	82.0	79.6	74.9	78.2	78.6	79.1	78.6	78.5	80.1	85.6	89.2	90.4	91.1	91.5	91.0	83.4	91.5
9-Feb	89.8	89.8	88.2	86.7	85.9	85.6	85.1	84.0	85.0	83.1	80.8	77.7	75.0	75.4	76.4	77.6	80.3	81.8	83.8	82.1	85.0	85.6	83.9	81.4	82.9	89.8
10-Feb	79.8	78.3	77.4	77.9	83.4	85.2	84.5	82.7	81.3	82.1	82.3	83.4	81.5	78.9	79.1	81.1	81.6	86.2	89.0	87.0	87.0	86.4	87.8	89.0	83.0	89.0
11-Feb	87.2	88.5	85.3	80.4	78.2	78.5	80.3	78.9	76.9	70.2	59.8	57.8	55.0	48.6	46.3	44.7	47.2	51.7	60.7	71.1	76.6	82.6	82.8	84.7	69.8	88.5
12-Feb	87.9	88.3	86.4	85.7	85.8	85.3	82.3	80.7	80.1	78.1	75.9	65.4	53.5	44.1	47.1	45.0	42.9	46.6	52.1	56.4	57.6	63.2	73.5	83.6	68.6	88.3
13-Feb	82.3	79.6	74.1	77.1	81.7	85.0	84.6	83.3	82.1	80.7	80.2	76.4	75.0	73.9	72.7	74.2	77.8	83.4	85.6	89.0	83.4	84.5	81.9	80.4	80.4	89.0
14-Feb	79.7	79.1	80.3	80.5	78.7	77.3	77.0	80.4	82.7	82.4	80.2	78.0	75.1	72.4	71.3	72.0	72.2	74.2	78.1	81.0	81.9	82.6	81.8	82.3	78.4	82.7
15-Feb	82.9	83.1	81.5	81.5	81.4	81.1	80.9	80.6	79.0	75.8	71.0	67.0	63.7	60.7	59.6	58.6	60.4	64.3	69.8	73.7	77.5	78.2	79.6	80.5	73.9	83.1
16-Feb	72.7	73.4	68.0	66.6	70.7	75.6	80.6	82.0	76.6	68.5	59.5	54.8	49.6	44.9	34.0	29.4	29.8	31.0	34.6	32.7	35.8	40.5	51.9	56.0	55.0	82.0
17-Feb	60.2	65.5	69.2	72.1	74.2	75.6	77.2	80.7	74.4	62.8	48.6	42.0	38.6	35.9	34.2	34.4	36.8	45.4	50.3	53.2	58.5	63.7	71.5	76.9	58.4	80.7
18-Feb	80.8	83.5	84.8	84.3	84.1	83.9	83.1	81.8	80.4	79.8	75.5	66.2	61.9	59.0	57.4	54.1	53.6	55.3	59.2	63.1	65.6	65.3	68.2	73.7	71.0	84.8
19-Feb	76.1	77.6	79.0	79.1	78.5	78.3	76.9	77.1	75.6	75.6	67.7	64.2	58.2	56.0	54.8	53.4	55.7	60.2	62.0	60.7	62.2	64.8	70.7	72.8	68.2	79.1
20-Feb	74.8	75.6	76.1	77.3	74.6	72.7	72.0	74.4	72.6	68.4	65.7	62.0	60.2	59.4	58.3	56.6	56.5	58.3	60.2	63.1	64.5	63.9	65.1	69.1	66.7	77.3
21-Feb	73.8	77.4	82.7	85.0	84.4	84.4	83.7	83.5	80.6	71.9	65.2	63.3	58.2	52.7	43.0	39.5	42.0	45.3	49.6	54.9	59.9	62.9	65.5	67.6	65.7	85.0
22-Feb	72.0	75.9	79.7	83.5	84.9	86.7	86.4	85.6	85.0	78.3	70.9	63.9	58.4	54.7	54.1	57.2	63.1	66.1	69.7	74.2	78.6	82.1	82.6	85.0	74.1	86.7
23-Feb	86.6	84.0	82.4	81.5	79.0	77.6	75.9	75.0	77.2	71.3	57.7	47.3	44.0	37.1	32.8	33.9	42.8	53.7	58.7	58.8	62.6	47.9	41.9	44.6	60.6	86.6
24-Feb	54.1	67.7	74.3	75.1	71.6	63.6	60.8	61.7	59.4	58.1	59.1	69.7	70.5	71.8	70.5	68.6	70.4	72.1	69.8	66.1	65.3	65.2	64.9	67.2	66.6	75.1
25-Feb	68.5	68.7	69.9	73.5	74.2	70.6	67.8	62.4	61.3	60.9	61.1	56.0	51.8	50.8	50.2	48.5	49.3	51.7	53.8	55.7	56.0	56.8	57.8	58.9	59.8	74.2
26-Feb	59.4	59.3	58.9	60.8	63.0	65.2	66.3	63.6	64.2	56.2	53.3	52.4	52.1	50.0	46.3	46.6	48.5	50.6	61.2	65.7	67.3	70.3	70.3	70.8	59.3	70.8
27-Feb	70.6	69.5	69.1	69.5	68.4	68.7	68.0	67.9	68.2	67.3	62.4	48.8	45.1	44.3	43.1	44.1	43.2	45.8	51.2	55.9	64.5	68.8	71.5	73.7	60.4	73.7
28-Feb	73.0	71.9	71.3	71.1	71.3	71.7	71.9	71.2	71.4	67.4	57.8	47.8	43.6	42.3	40.4	40.0	39.4	38.5	39.6	41.3	43.3	42.9	42.6	44.7	54.9	73.0
29-Feb	45.7	47.0	51.3	71.4	74.0	71.6	69.8	69.5	67.3	63.4	60.5	60.6	62.3	73.7	74.2	68.4	64.9	65.4	72.4	76.8	80.3	78.3	76.8	80.8	67.8	80.8
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Fort McKay - Bertha Ganter - February 2024



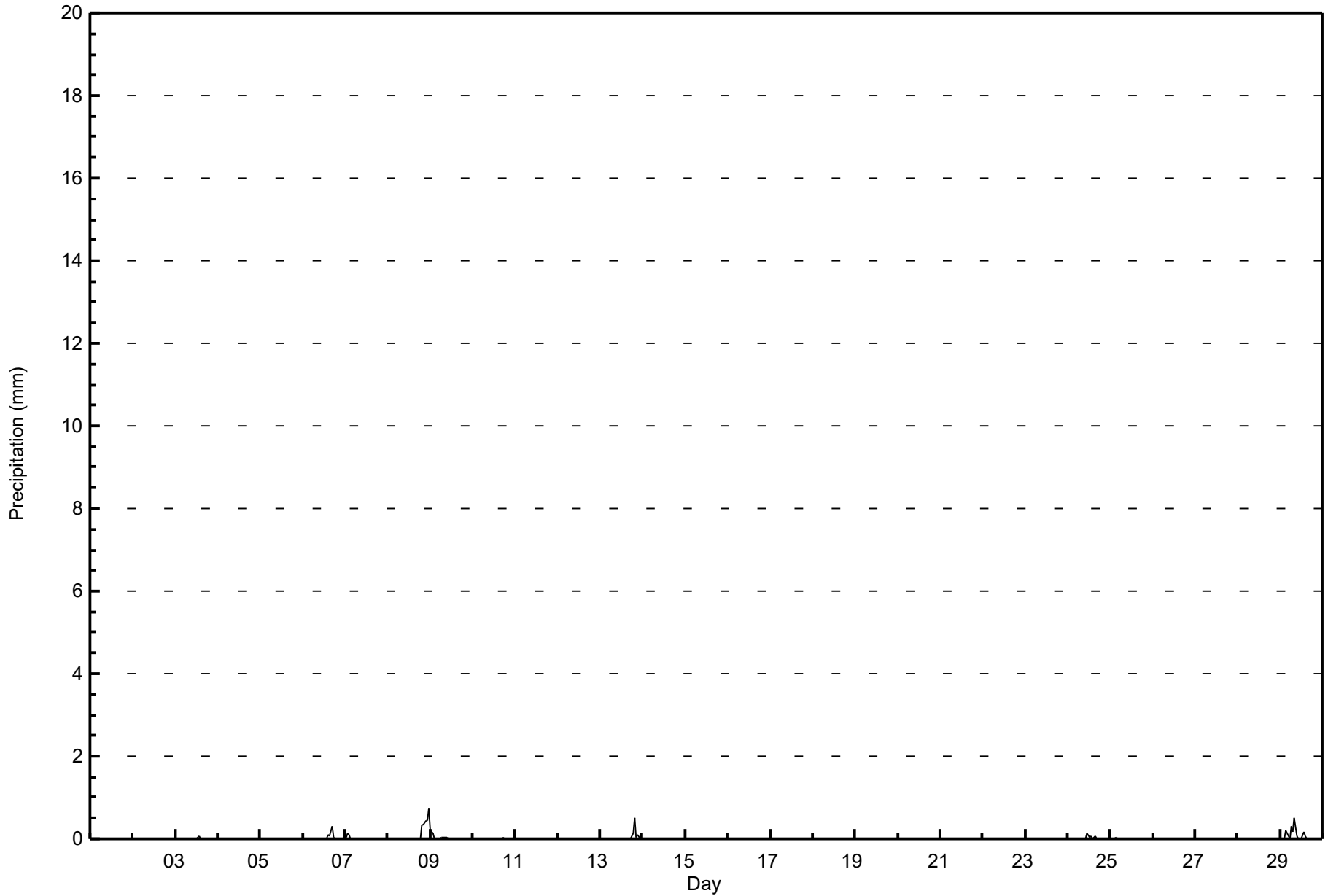


Maximum Value: 0.8 mm on Feb 9 00:00		Maximum Daily Total: 2.3 mm on Feb 8		Hours in Service: 696																																
Minimum Value: 0.0 mm on Feb 1 01:00		Minimum Daily Total: 0.0 mm on Feb 1		Hours of Data: 696																																
Maximum Diurnal Total: 0.9 mm at hour 20		Minimum Diurnal Total: 0.0 mm at hour 6		Hours of Missing Data: 0																																
Monthly Total: 6.55 mm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.3		Hours of Calibration: 0																																
				Percent Operational Time: 100.0																																
Day	Hourly Period Ending At (MST)																								Daily Total	Daily Maximum										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24												
1-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
2-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
3-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
4-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
5-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
6-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	
7-Feb	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	
8-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.4	0.4	0.8	2.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
9-Feb	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2	
10-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	
11-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
12-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
13-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5	
14-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
16-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
17-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
18-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
19-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
20-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
21-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
22-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
23-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
24-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1
25-Feb	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	
26-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
27-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
28-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
29-Feb	0.0	0.0	0.0	0.2	0.1	0.0	0.3	0.2	0.5	0.1	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.5
		0.2	0.3	0.1	0.3	0.1	0.0	0.4	0.2	0.6	0.1	0.0	0.1	0.1	0.3	0.2	0.1	0.3	0.1	0.2	0.9	0.4	0.5	0.4	0.8							Diurnal Average				
		0.2	0.2	0.1	0.2	0.1	0.0	0.3	0.2	0.5	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.3	0.1	0.2	0.5	0.3	0.4	0.4	0.8							Diurnal Maximum				



Wood Buffalo Environmental Association
Hourly Averages

Precipitation (PC) - mm
Fort McKay - Bertha Ganter - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Precipitation (PC) - mm
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (mm)	Number of Hours	%	Cumulative %
0 - 0.3	691	99.28	99.28
0.4 - 0.5	4	0.57	99.86
0.6 - 0.7	0	0.00	99.86
0.8 - 1.4	1	0.14	100.00
1.5 - 10	0	0.00	100.00
> 10	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696

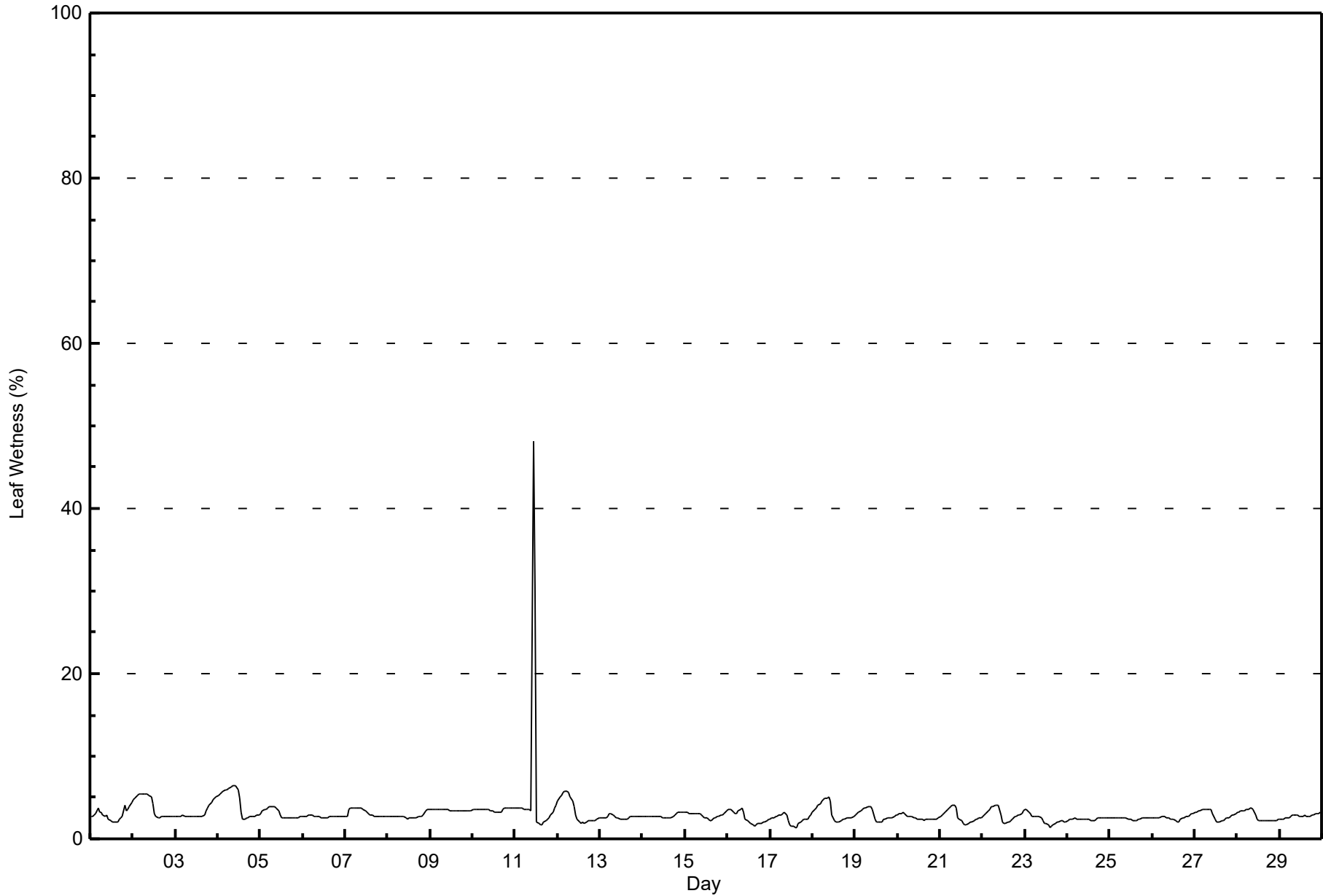


Maximum Value: 48.2 % on Feb 11 11:00		Maximum Daily Average: 6.1 % on Feb 11		Hours in Service: 696																							
Minimum Value: 1.4 % on Feb 23 15:00		Minimum Daily Average: 2.3 % on Feb 23		Hours of Data: 696																							
Maximum Diurnal Average: 4.6 % at hour 11		Minimum Diurnal Average: 2.3 % at hour 15		Hours of Missing Data: 0																							
Monthly Average: 3.05 %		Percentiles: P ₁ = 1.6 P ₁₀ = 2.1 Q ₁ = 2.5 Median = 2.7 Q ₃ = 3.3 P ₉₀ = 3.8 P ₉₉ = 6.0		Hours of Calibration: 0																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	2.7	2.7	2.8	3.0	3.7	3.3	3.2	2.9	2.8	2.9	2.4	2.2	2.0	2.0	2.0	2.0	2.3	2.5	2.7	4.1	3.4	3.5	3.9	4.4	2.9	4.4	
2-Feb	4.7	4.9	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.3	5.0	4.2	3.1	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.8	2.8	3.9	5.4	
3-Feb	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.8	2.7	2.7	2.8	3.3	3.8	4.1	4.4	4.7	4.9	5.1	3.2	5.1	
4-Feb	5.3	5.4	5.6	5.7	5.9	6.0	6.2	6.3	6.4	6.5	6.4	6.0	5.0	3.2	2.4	2.5	2.6	2.6	2.7	2.6	2.6	2.7	2.8	2.9	4.4	6.5	
5-Feb	3.1	3.3	3.5	3.6	3.7	3.8	3.9	4.0	4.0	3.8	3.4	2.8	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.1	4.0	
6-Feb	2.7	2.7	2.8	2.9	2.9	2.8	2.7	2.7	2.7	2.7	2.6	2.5	2.5	2.5	2.6	2.6	2.7	2.7	2.7	2.6	2.7	2.7	2.7	2.6	2.7	2.9	
7-Feb	2.7	2.8	3.6	3.8	3.8	3.8	3.8	3.8	3.7	3.7	3.6	3.4	3.2	3.0	2.9	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	3.2	3.8	
8-Feb	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.6	2.3	2.5	2.5	2.5	2.5	2.6	2.6	2.7	2.8	2.9	3.3	3.5	3.6	2.8	3.6	
9-Feb	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.4	3.4	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.5	3.5	3.5	3.5	3.6	
10-Feb	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.3	3.2	3.2	3.2	3.2	3.2	3.6	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.7	
11-Feb	3.7	3.8	3.8	3.8	3.7	3.6	3.6	3.6	3.5	3.4	48.2	30.6	2.0	1.8	1.7	1.8	2.1	2.3	2.4	2.6	2.9	3.3	3.7	4.1	6.1	48.2	
12-Feb	4.6	5.1	5.3	5.5	5.7	5.7	5.6	5.1	4.6	3.8	2.9	2.4	2.0	1.9	2.0	1.9	2.1	2.1	2.2	2.2	2.2	2.3	2.4	2.5	3.4	5.7	
13-Feb	2.5	2.6	2.5	2.6	2.7	3.0	3.0	3.0	2.8	2.6	2.5	2.4	2.3	2.4	2.4	2.4	2.5	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.6	3.0	
14-Feb	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.5	2.5	2.5	2.6	2.7	2.9	3.1	3.2	3.2	3.2	3.2	2.8	3.2	
15-Feb	3.2	3.2	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.7	2.6	2.5	2.4	2.3	2.3	2.5	2.6	2.6	2.7	2.8	2.8	3.1	3.4	2.8	3.4	
16-Feb	3.5	3.6	3.5	3.2	3.0	3.1	3.3	3.6	3.7	3.2	2.5	2.2	2.1	1.9	1.7	1.6	1.8	1.8	1.9	1.9	2.0	2.1	2.2	2.3	2.6	3.7	
17-Feb	2.4	2.5	2.6	2.7	2.7	2.8	2.9	3.1	3.2	2.9	2.1	1.8	1.6	1.5	1.4	1.4	1.8	2.1	2.2	2.3	2.3	2.5	2.6	2.9	2.3	3.2	
18-Feb	3.2	3.5	3.8	4.1	4.3	4.5	4.7	4.9	5.0	5.0	4.5	2.9	2.1	2.1	2.1	2.1	2.3	2.3	2.4	2.5	2.5	2.5	2.6	2.8	3.3	5.0	
19-Feb	2.9	3.1	3.3	3.4	3.6	3.7	3.8	3.9	3.9	3.9	3.5	2.5	2.1	2.1	2.0	2.1	2.3	2.5	2.5	2.5	2.5	2.6	2.7	2.8	2.9	3.9	
20-Feb	2.9	3.0	3.1	3.2	3.0	2.8	2.6	2.7	2.7	2.6	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.5	2.6	3.2	
21-Feb	2.7	2.9	3.1	3.3	3.5	3.7	3.9	4.0	4.1	3.7	2.5	2.3	2.1	1.9	1.8	1.7	1.8	2.0	2.1	2.2	2.4	2.4	2.5	2.6	2.7	4.1	
22-Feb	2.7	2.9	3.0	3.3	3.6	3.9	4.0	4.0	4.1	4.1	2.9	2.1	1.9	1.9	2.0	2.1	2.2	2.4	2.6	2.8	2.9	3.0	3.1	3.4	3.0	4.1	
23-Feb	3.6	3.5	3.3	3.0	2.7	2.7	2.6	2.6	2.7	2.6	2.2	1.8	1.9	1.6	1.4	1.5	1.7	1.9	2.0	2.1	2.2	2.1	2.1	2.1	2.3	3.6	
24-Feb	2.2	2.3	2.4	2.4	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.3	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.5	
25-Feb	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.4	2.3	2.3	2.2	2.2	2.2	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.6	
26-Feb	2.5	2.5	2.6	2.6	2.6	2.6	2.7	2.6	2.6	2.5	2.4	2.3	2.3	2.2	2.1	2.1	2.3	2.5	2.6	2.7	2.8	2.9	3.0	3.1	2.5	3.1	
27-Feb	3.2	3.3	3.3	3.4	3.5	3.5	3.6	3.6	3.6	3.5	3.1	2.3	2.1	2.0	2.1	2.2	2.2	2.4	2.5	2.6	2.7	2.8	2.9	3.0	2.9	3.6	
28-Feb	3.1	3.2	3.3	3.4	3.5	3.5	3.6	3.6	3.7	3.5	2.9	2.3	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.8	3.7
29-Feb	2.3	2.3	2.3	2.5	2.6	2.6	2.7	2.8	2.8	2.8	2.8	2.8	2.7	2.8	2.8	2.7	2.7	2.8	2.9	3.0	3.0	3.0	3.0	3.2	2.8	3.2	
																								Diurnal Average			
																								Diurnal Maximum			



Wood Buffalo Environmental Association
Hourly Averages

Leaf Wetness (LW) - %
Fort McKay - Bertha Ganter - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Leaf Wetness (LW) - %
Fort McKay - Bertha Ganter - February 2024

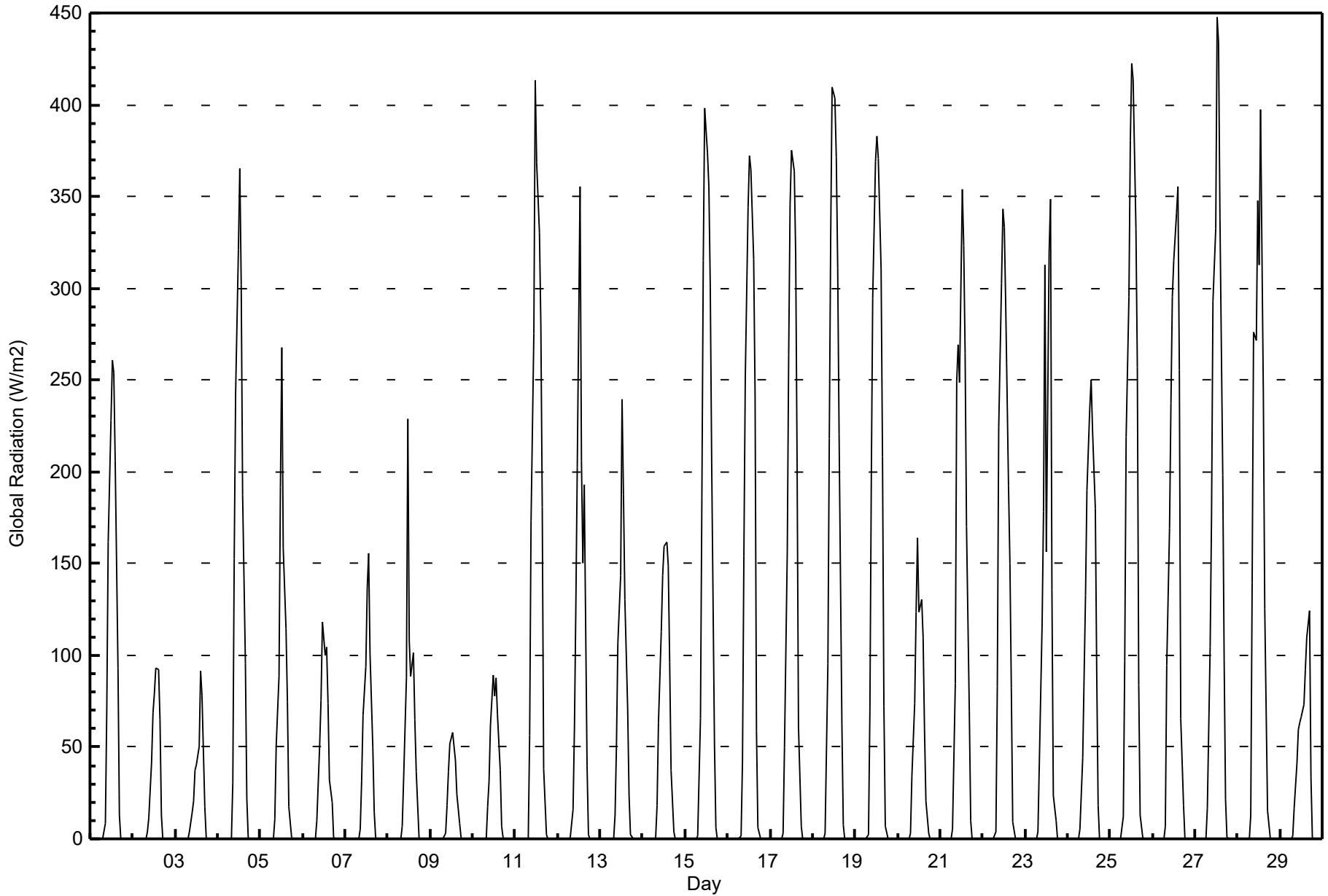
Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 0.3	0	0.00	0.00
0.4 - 0.5	0	0.00	0.00
0.6 - 0.7	0	0.00	0.00
0.8 - 1.4	3	0.43	0.43
1.5 - 10	691	99.28	99.71
> 10	2	0.29	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Maximum Value: 447.9 W/m2 on Feb 27 13:00 Maximum Daily Average: 105.3 W/m2 on Feb 25																								Hours in Service: 696 Hours of Data: 696		
Minimum Value: 0.0 W/m2 on Feb 1 01:00 Minimum Daily Average: 12.3 W/m2 on Feb 9 Maximum Diurnal Average: 251.4 W/m2 at hour 13 Minimum Diurnal Average: 0.0 W/m2 at hour 22 Monthly Average: 60.77 W/m2 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 74.1 P ₉₀ = 249.6 P ₉₉ = 398.4																								Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5	71.0	161.4	227.9	260.9	254.2	205.7	93.3	12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.0	260.9
2-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	11.1	42.2	68.7	79.6	93.2	92.5	65.1	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	93.2
3-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	14.8	20.4	37.6	40.4	50.5	91.8	77.8	17.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	14.8	91.8
4-Feb	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	30.8	152.4	242.5	321.0	365.1	301.7	187.6	95.6	21.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	71.7	365.1
5-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	51.2	88.7	191.3	267.6	158.9	114.5	74.6	17.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	40.6	267.6
6-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.9	50.3	75.2	118.6	99.8	104.8	73.9	31.7	19.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0	24.3	118.6
7-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	30.9	67.2	94.0	136.3	155.3	100.5	49.4	14.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	27.3	155.3
8-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	32.9	87.6	228.6	108.0	88.8	101.4	65.0	36.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	31.5	228.6
9-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	18.6	36.8	52.0	58.3	50.0	42.4	24.8	8.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	12.3	58.3
10-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	17.7	31.5	62.0	89.5	78.0	87.4	67.8	37.6	7.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	20.0	89.5
11-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.6	172.8	275.4	413.0	368.7	330.3	279.9	180.6	38.4	2.5	0.0	0.0	0.0	0.0	0.0	0.0	88.3	413.0
12-Feb	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.4	16.0	60.9	127.1	202.1	355.8	205.6	150.3	192.7	39.4	2.6	0.0	0.0	0.0	0.0	0.0	0.0	56.4	355.8
13-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	12.8	51.2	107.1	143.8	239.7	187.6	130.3	71.2	23.3	2.1	0.0	0.0	0.0	0.0	0.0	0.0	40.4	239.7
14-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	18.4	63.3	113.1	143.1	159.6	161.6	149.0	95.8	37.1	4.1	0.0	0.0	0.0	0.0	0.0	0.0	39.4	161.6
15-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	65.4	186.3	314.7	398.1	373.9	355.6	300.7	205.1	51.9	5.8	0.0	0.0	0.0	0.0	0.0	0.0	94.1	398.1
16-Feb	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.6	41.7	153.8	251.3	343.7	372.2	364.4	315.6	241.9	58.6	6.4	0.0	0.0	0.0	0.0	0.0	0.0	89.6	372.2
17-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	49.6	156.9	264.0	345.6	375.2	363.7	318.2	205.5	60.7	6.9	0.0	0.0	0.0	0.0	0.0	0.0	89.6	375.2
18-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	95.5	218.1	327.8	410.0	403.7	371.3	311.4	220.8	62.8	7.6	0.0	0.0	0.0	0.0	0.0	0.0	101.3	410.0
19-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	69.5	195.0	294.8	368.9	382.9	370.5	310.2	208.4	72.5	6.8	0.0	0.0	0.0	0.0	0.0	0.0	95.1	382.9
20-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	34.5	73.8	123.5	164.1	123.3	130.7	110.1	59.8	20.5	3.1	0.0	0.0	0.0	0.0	0.0	0.0	35.3	164.1
21-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	84.6	249.3	269.3	248.5	354.0	323.4	264.9	170.3	69.7	9.9	0.0	0.0	0.0	0.0	0.0	0.0	85.4	354.0
22-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	82.8	224.3	302.6	343.1	333.4	290.7	192.5	150.1	82.7	9.0	0.0	0.0	0.0	0.0	0.0	0.0	83.9	343.1
23-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	40.9	117.8	178.2	312.7	156.5	319.6	348.4	135.9	23.4	9.7	0.0	0.0	0.0	0.0	0.0	0.0	68.6	348.4
24-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	44.3	89.6	132.8	190.0	234.4	249.8	222.7	179.8	89.7	18.2	0.0	0.0	0.0	0.0	0.0	0.0	60.7	249.8
25-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.3	96.8	218.8	295.5	380.6	422.9	413.0	332.9	256.9	83.5	13.1	0.0	0.0	0.0	0.0	0.0	0.0	105.3	422.9
26-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	94.6	169.0	237.1	295.5	315.3	340.9	355.6	255.4	65.7	18.3	0.0	0.0	0.0	0.0	0.0	0.0	89.8	355.6
27-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.8	104.6	176.2	292.9	332.8	447.9	434.0	338.3	198.3	97.4	21.4	0.6	0.0	0.0	0.0	0.0	0.0	102.6	447.9
28-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.3	139.8	276.0	271.8	348.1	312.4	397.5	241.5	125.2	70.4	15.2	0.3	0.0	0.0	0.0	0.0	0.0	92.1	397.5
29-Feb	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.6	16.4	41.5	59.2	63.2	66.1	73.3	92.6	109.6	124.5	33.2	0.6	0.0	0.0	0.0	0.0	0.0	28.4	124.5
0.0																								Diurnal Average		
0.1																								Diurnal Maximum		





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Global Radiation (GR) - W/m2
Fort McKay - Bertha Ganter - February 2024

Concentration Ranges (W/m2)	Number of Hours	%	Cumulative %
0 - 20	458	65.80	65.80
21 - 100	93	13.36	79.17
101 - 300	94	13.51	92.67
301 - 600	51	7.33	100.00
601 - 900	0	0.00	100.00
> 900	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696

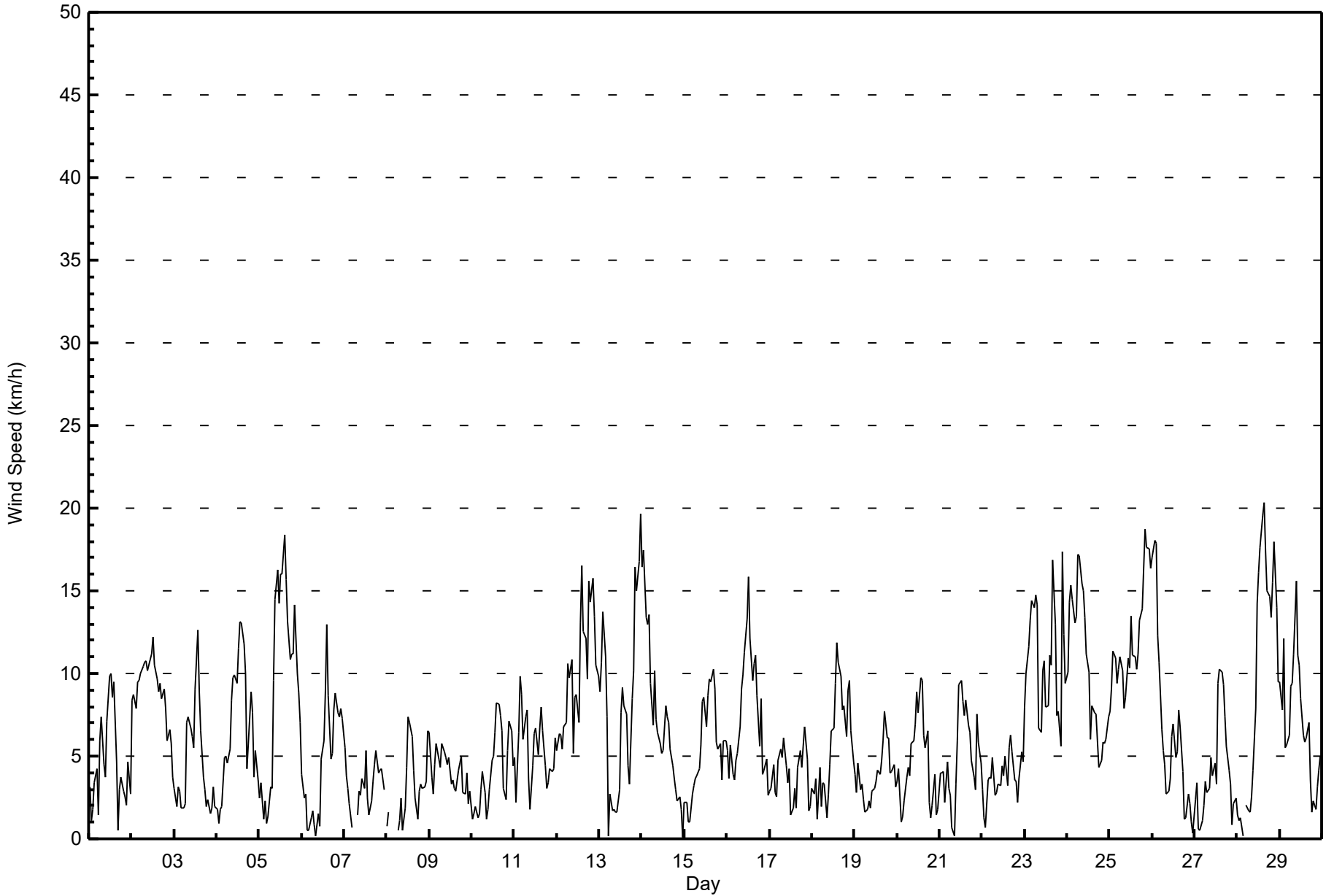


Maximum Speed: 20 km/h on Feb 28 16:00		Maximum Daily Speed Average: 11.7 km/h on Feb 25		Hours in Service: 696																						
Minimum Speed Value: 0 km/h on Feb 15 00:00		Minimum Daily Speed Average: 0.4 km/h on Feb 17		Hours of Data: 689																						
Maximum Diurnal Speed Average: 3.0 km/h at hour 14		Minimum Diurnal Speed Average: 0.0 km/h at hour 7		Hours of Missing Data: 7																						
Monthly Average Velocity: 0.6 km/h 39.8 deg		Percentiles: P ₁ = 0 P ₁₀ = 2 Q ₁ = 3 Median = 5 Q ₃ = 9 P ₉₀ = 13 P ₉₉ = 18		Percent Operational Time: 99.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	N3	NW1	NNE2	SSE3	SSE4	E1	S6	S7	SSW5	S4	S7	SSE10	SSE10	SSE9	SSE10	S5	NNW0	N3	NNW4	NNW3	NW3	NW2	NW5	NNW3	S2.2	SSE10
2-Feb	N8	NNE9	N8	N10	NNE10	NNE10	NNE10	N11	N11	N10	NNE11	N11	N12	NNE11	NNE10	NNE9	NNE9	NNE9	NNE9	NNE8	NNE6	N7	N6	N4	NNE9.0	N12
3-Feb	NNW3	NNE2	ESE3	ENE3	ENE2	E2	NW2	NNW7	N7	NNW7	N6	N5	NNE9	NNE13	NNE9	NNE6	NE4	ENE3	ENE2	WSW2	SSW2	SW2	SSW3	SSW2	NNE2.9	NNE13
4-Feb	SW2	SW1	SSW2	SW2	S5	S5	S5	S5	S8	S10	S10	SSE9	S11	S13	S13	S12	S10	S4	S6	S9	S8	SSE4	SSW5	S4	S6.7	S13
5-Feb	S2	S3	SW1	NW2	W1	WSW1	NW3	WNW3	N10	NNE15	NNE16	NNE14	NNE16	NNE18	NNE16	NNE16	N13	N11	N11	N11	N14	N10	N9	N7	N8.3	NNE18
6-Feb	NNW4	N2	N3	SSW0	WSW0	NE1	E2	E1	E0	NNE1	N1	S5	SSE6	S9	S13	S9	SSE5	SSE5	SSE8	SSE9	SSE8	SSE7	SSE8	SSE7	SSE3.6	S13
7-Feb	S5	S4	SSE3	ESE2	E1	UO	UO	S1	S3	SSE3	SSE4	SE3	SE5	ESE2	ENE1	NE2	NE4	NNE4	N5	NNW4	N4	N4	NW3	UO	E0.8	S5
8-Feb	NW1	NW2	UO	NW1	UO	UO	SW0	SSE1	SSE2	SW1	SSE2	SE4	SSE7	SSE7	SSE6	SSE4	SE2	ENE1	NNW3	NW3	N3	NNW3	NNW3	NNW7	SSE0.5	SSE7
9-Feb	NNW6	NW4	W3	WNW4	WNW6	WNW5	NE4	NNE6	NNE5	NNE5	NE4	ENE5	ENE3	NE4	NE3	NE3	NE4	NNE5	NNE5	NE3	NW3	NW4	WNW2	W3	N2.7	NNW6
10-Feb	WNW1	WSW1	SW2	SSE1	S2	S3	S4	SSW3	SSW1	SSE2	SSE3	SSE5	S5	SSE6	SSE8	S8	S7	S7	W3	SW2	S5	S7	S7	SSW4	S3.7	SSE8
11-Feb	W5	SW2	WSW6	W10	W9	W6	W7	W8	SSW4	SSW2	SW4	W6	W7	WSW5	W7	W8	W6	W4	SSW3	SSW3	S4	SSW4	SSW4	S6	WSW4.7	W10
12-Feb	S5	S6	S6	SSW5	S7	S7	S11	S10	S11	S5	S9	SW9	WSW7	NW13	NNW17	NNW13	NW12	NW10	NW16	NW14	NW16	NNW14	N10	NNE10	WNW3.6	NNW17
13-Feb	NNE9	NNE11	N14	NNE11	NE7	WNW0	SW3	SW2	WSW2	NW2	E2	SE3	S8	S9	S8	S8	SSE4	WSW3	NNE8	NNE10	N16	NNE15	NNE17	N20	NNE4.0	N20
14-Feb	N16	NNE17	NNE13	NNE13	NNE14	NNE9	NE7	NNE10	NE7	NE6	NE6	ENE5	ENE5	NE8	NE7	NE7	NE5	NE4	NE4	NNE3	NNE2	ESE3	ESE2	SSW0	NE6.8	NNE17
15-Feb	WSW2	W2	SW1	SSW1	WSW3	WSW3	WSW4	SSW4	S4	SSE6	SSE8	SSE9	SE7	SSE9	SSE10	SSE10	S10	S9	S6	SSW5	S6	S4	S6	S6	S4.9	S10
16-Feb	SW5	SW4	W6	SW4	S4	S5	SSE5	S7	S9	S10	S11	SSE13	SSE16	SSE12	SSW10	SW11	SW11	SSW9	S6	WNW9	W4	WNW4	S5	S3	SSW6.1	SSE16
17-Feb	SSW3	S3	S4	S3	SSW3	SSW5	S5	S5	S6	S4	SSE3	SSE4	N1	NE2	ENE3	ENE2	NNE4	N5	N4	N6	N7	NW5	N2	N2	SSE0.4	N7
18-Feb	N3	N3	N4	NNW1	N4	NNE2	N3	NNW3	NNE1	NNE3	NE4	NNE7	NNE7	NNE9	N12	NNW11	NNW10	NNW8	N8	N6	N9	N10	N7	N5	N5.6	N12
19-Feb	NNW4	WNW3	N5	N3	WNW3	NW2	NW2	WNW2	N2	NNE2	NE3	NE3	ESE4	NE4	NE4	NE5	NNE6	N8	N6	N6	NNE4	N4	NW4	NW3	N2.9	N8
20-Feb	NNW3	NW4	NNE1	SW1	SE2	SSE4	S4	S4	S6	S6	SSE7	SSE9	SSE8	SSE10	SSE10	S6	S6	S6	S2	NNE1	S2	S4	SSE1	N2	S3.6	SSE10
21-Feb	NNW4	NW4	NW4	NW2	N5	NNW3	NW3	NW1	SE0	SE3	SSE6	SSE9	S10	SSE8	SSW7	SW8	SW7	WSW6	WSW5	W4	WNW3	N8	NW6	NNW5	WSW1.9	S10
22-Feb	N3	NNW1	WSW1	NW4	N4	NNW4	NNE5	N3	N3	NE3	NE3	ENE4	SE4	SE5	NE3	NE5	N6	NNW5	NNW4	WNW3	WSW2	SSW4	SSW5	S5	NNE1.4	N6
23-Feb	S8	S10	S12	S13	S14	S14	S15	S14	SSW7	SSW6	W10	W11	WSW8	SW8	WSW11	WSW10	NW17	NNW13	WSW7	WSW8	W6	WNW17	WNW12	WNW9	SW6.7	WNW17
24-Feb	N10	NNE14	N15	N14	N13	N14	NNW17	N17	N15	N15	N13	N11	N10	NE6	NE8	NE8	NE8	NE6	NE4	NE5	NE6	NE6	NE6	N7	NNE9.8	NNW17
25-Feb	NNE8	N9	N11	N11	N9	NNE10	NNE11	NNE10	NNE8	NE9	NNE11	NE10	NNE13	NNE11	NE11	NE10	NE11	NE13	NNE14	NNE16	NNE19	NNE18	NNE18	NNE16	NNE11.7	NNE19
26-Feb	N17	N18	NNE18	NNE12	N11	N7	NNW5	NNW4	WNW3	N3	NE4	NNE6	NNE7	ENE5	SSE5	SE8	SSE7	SSE4	WSW1	WNW1	W3	WSW2	SW1	S0	NNE3.7	N18
27-Feb	NW2	NW3	SW1	WNW0	S1	S2	S3	SSE3	SSE3	SSE5	SSE4	WSW5	SSE3	SE9	SSE10	SSE10	SSE9	SE7	SSE6	SSE4	S3	W1	NNW2	NW2	SSE3.0	SSE10
28-Feb	NNW1	SW1	SSE1	NNE0	UO	WNW2	W2	S2	NNW3	S4	SSE8	S14	S16	SSE18	SSE20	SSE20	SE17	SE15	SE15	SE13	SSE16	SSE18	SSE14	SSE9	SSE9.1	SSE20
29-Feb	SE9	ESE8	SE12	E6	ENE6	E6	ESE9	SE9	SE11	SE16	SE11	SE10	SSE8	SE6	SSE6	SSE6	S7	WSW4	WNW2	S2	SW2	W3	WNW4	WNW5	SE5.2	SE16
N2.3 N2.1 N1.9 N1.6 N1.4 NNE0.6 S0.0 SSE0.1 ESE0.4 ESE1.3 ESE1.7 SE2.1 SE2.3 SE3.0 SE2.1 SE1.5 ENE0.6 NNE1.0 N1.6 NNW1.6 N1.8 NNW2.2 NNW1.4 NNW1.8																								Diurnal Average		
NNE17 N18 NNE18 N14 S14 S14 NNW17 N17 N15 SE16 NNE16 NNE14 S16 SSE18 SSE20 SSE20 SE17 SE15 NW16 NNE16 NNE19 SSE18 NNE18 N20																								Diurnal Maximum		
UO - Unstable Operation																										
All monthly, daily, and diurnal averages have been calculated using vector methods																										



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Fort McKay - Bertha Ganter - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed (WS) - km/h
Fort McKay - Bertha Ganter - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	353	51.23	51.23
6 - 11	253	36.72	87.95
12 - 19	80	11.61	99.56
20 - 28	3	0.44	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 689

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Wind Speed (WS) - km/h
Fort McKay - Bertha Ganter - February 2024

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	32	20	28	14	7	6	10	31	49	26	22	18	13	19	29	29	353
6 - 11	40	40	20	1	2	2	9	42	51	6	6	8	14	3	2	7	253
12 - 19	16	25	1	0	0	0	6	7	12	0	0	0	0	2	7	4	80
20 - 28	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	89	85	49	15	9	8	25	82	112	32	28	26	27	24	38	40	689

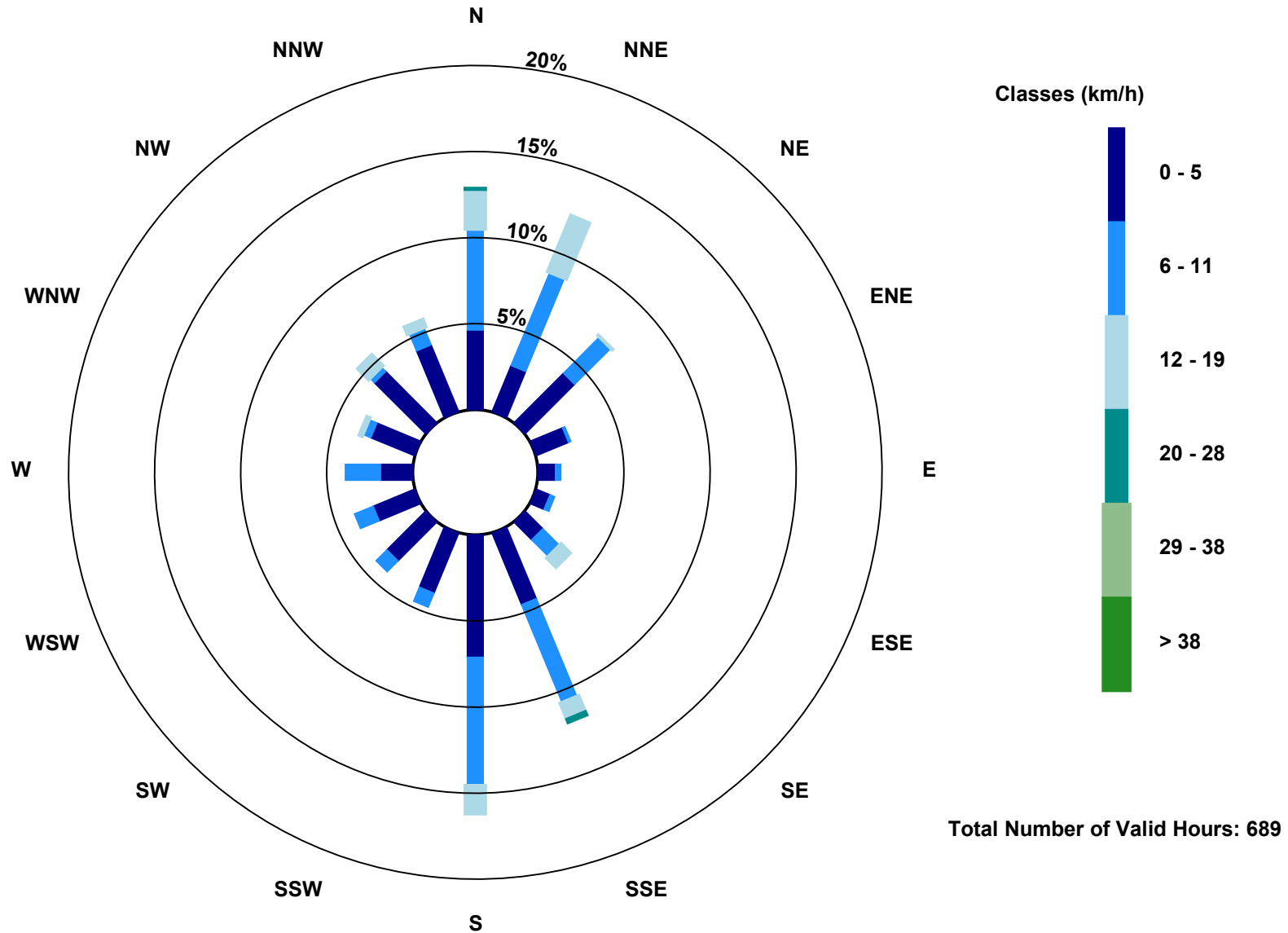
Total Number of Valid Hours: 689

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Fort McKay - Bertha Ganter





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Fort McKay - Bertha Ganter - February 2024

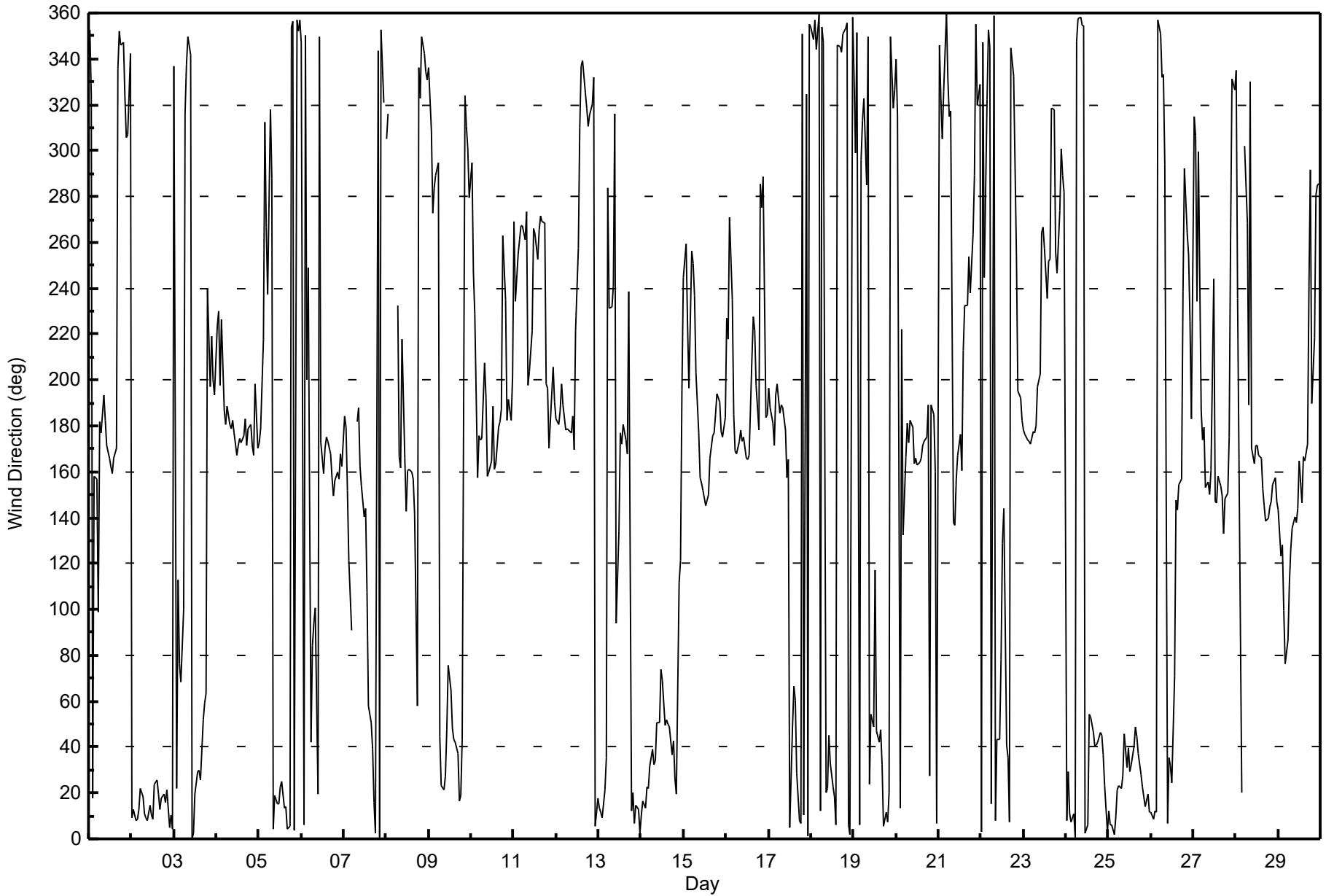
Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8 km/h on Feb 23 22:00 Minimum Value: 0 km/h on Feb 27 21:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 2 P ₉₀ = 3 P ₉₉ = 5																	Hours in Service: 696 Hours of Data: 689 Hours of Missing Data: 7 Hours of Calibration: 0 Percent Operational Time: 99.0								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	2	1	2	1	1	1	2	1	3	3	1	2	2	2	2	2	1	2	1	1	2	1	1	2	3
2-Feb	2	3	1	2	2	2	3	2	2	2	3	3	2	2	2	2	2	2	2	2	2	1	1	1	3
3-Feb	2	1	2	1	1	1	2	1	1	1	2	1	3	3	2	2	1	1	1	1	1	1	1	2	4
4-Feb	1	1	1	1	2	1	1	1	2	2	2	2	4	4	3	2	3	1	2	1	2	1	1	2	4
5-Feb	2	2	2	2	1	1	2	2	2	4	4	4	4	4	5	4	2	2	2	2	2	2	1	2	5
6-Feb	1	1	1	1	1	1	1	1	1	1	1	2	1	4	3	3	1	2	2	2	2	1	2	2	4
7-Feb	1	1	1	2	1	UO	UO	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	UO	2
8-Feb	1	1	UO	1	UO	UO	1	1	1	1	1	2	1	1	1	1	1	1	1	1	0	1	1	1	2
9-Feb	1	1	1	2	2	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2
10-Feb	1	2	1	1	1	1	1	1	1	1	1	1	2	2	3	2	2	2	2	1	2	1	2	2	3
11-Feb	2	1	3	4	3	2	2	3	2	2	2	3	3	2	3	3	2	1	1	2	1	1	2	2	4
12-Feb	1	1	1	1	2	2	2	2	3	2	2	3	3	8	5	5	3	2	5	3	3	3	3	2	8
13-Feb	3	3	3	3	2	1	1	1	1	1	1	2	2	2	2	2	2	1	5	3	4	4	4	4	5
14-Feb	4	4	3	3	4	3	2	3	2	2	2	2	1	3	2	2	2	1	1	2	1	2	1	1	4
15-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2	1	2	2
16-Feb	2	1	2	1	1	1	1	1	1	2	2	2	2	2	4	4	4	3	3	4	2	2	2	2	4
17-Feb	2	1	1	1	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2
18-Feb	1	1	2	2	2	2	1	1	1	2	1	2	2	3	3	2	3	2	3	2	1	2	2	1	3
19-Feb	1	2	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2
20-Feb	1	1	1	1	1	2	1	1	1	1	2	1	1	2	1	2	2	2	2	2	1	2	1	1	2
21-Feb	1	2	2	2	1	1	1	1	1	1	2	2	2	1	3	3	3	3	1	2	2	2	1	1	3
22-Feb	1	1	2	2	1	1	2	1	2	2	1	1	2	1	1	2	1	1	2	1	1	1	1	1	2
23-Feb	2	2	2	2	2	3	3	3	3	2	4	5	4	4	5	5	6	5	3	3	2	8	5	3	8
24-Feb	5	4	4	4	4	3	5	4	3	3	3	2	2	3	3	2	2	2	2	2	2	2	2	1	5
25-Feb	1	2	2	2	2	2	3	3	2	2	3	3	4	4	3	3	4	4	4	5	6	4	5	4	6
26-Feb	5	4	5	3	2	1	1	1	1	2	2	3	3	2	2	1	2	2	1	2	2	2	1	1	5
27-Feb	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	0	1	1	1	2
28-Feb	1	1	2	1	UO	1	1	1	1	2	2	4	3	4	4	4	4	3	3	4	3	4	4	2	4
29-Feb	3	3	3	3	2	2	3	3	4	5	4	3	3	2	1	1	2	2	1	1	2	1	1	1	5
Diurnal Maximum																									
5 4 5 4 4 3 5 4 4 5 4 5 4 8 5 5 6 5 5 5 6 8 5 4																									
UO - Unstable Operation																									



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Fort McKay - Bertha Ganter - February 2024

Direction of Maximum Speed: 152 deg on Feb 28 16:00																						Hours in Service: 696			
Direction of Maximum Daily Speed Average: 24.1 deg on Feb 25																						Hours of Data: 689			
Direction of Minimum Speed: 196 deg on Feb 15 00:00											Direction of Minimum Daily Speed Average: 0.4 deg on Feb 17											Hours of Missing Data: 7			
Monthly Average Direction: 39.8 deg																						Percent Operational Time: 99.0			
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	353	324	18	158	157	99	182	177	193	183	172	166	162	159	166	170	336	352	346	347	324	306	307	342	173.9
2-Feb	9	13	8	8	13	22	18	11	9	8	14	10	8	24	26	19	13	18	19	16	21	5	10	4	13.9
3-Feb	337	22	113	76	68	100	316	337	350	342	0	2	19	29	30	26	52	59	64	240	197	219	200	194	16.6
4-Feb	223	230	198	226	187	180	188	180	179	183	177	167	172	174	173	176	183	171	179	181	172	167	198	171	178.7
5-Feb	173	179	218	313	267	237	318	288	4	19	15	15	22	25	14	14	4	6	354	356	4	357	352	357	7.0
6-Feb	347	6	350	200	249	42	84	94	100	19	350	172	159	170	175	173	168	158	150	156	160	157	168	162	161.0
7-Feb	184	179	152	121	91	UO	UO	182	188	162	154	140	144	107	58	51	39	16	2	344	1	353	321	UO	95.1
8-Feb	305	316	UO	311	UO	UO	232	167	161	218	166	143	160	161	160	157	141	58	336	323	350	343	334	331	168.0
9-Feb	336	309	273	284	289	295	45	23	21	28	48	75	65	48	44	42	37	16	19	43	324	311	301	280	2.6
10-Feb	295	247	229	157	176	174	175	207	192	158	160	164	188	161	164	179	182	188	263	235	182	191	183	201	184.4
11-Feb	269	234	255	261	267	267	261	273	198	204	221	266	264	253	265	272	269	268	198	197	170	194	206	190	248.5
12-Feb	183	181	187	198	189	178	179	178	177	184	170	222	257	310	337	339	325	318	310	316	320	332	5	18	288.3
13-Feb	14	12	9	21	36	284	231	232	241	316	94	134	177	172	181	174	168	239	12	20	6	15	13	2	17.2
14-Feb	10	16	13	23	22	32	39	32	34	50	51	74	69	49	52	50	49	36	42	26	20	112	121	196	33.9
15-Feb	245	259	224	197	256	251	237	203	177	157	155	152	145	148	150	166	176	177	185	194	190	178	175	184	175.7
16-Feb	227	218	271	235	185	169	168	173	178	173	175	166	165	167	209	228	221	198	178	286	275	289	183	185	195.5
17-Feb	197	188	181	171	193	198	185	189	188	178	157	166	5	49	66	61	28	8	7	351	11	325	1	355	157.4
18-Feb	354	349	357	344	360	12	354	347	20	22	45	33	23	18	6	346	345	343	351	353	356	6	2	358	1.7
19-Feb	331	299	351	6	296	313	323	285	349	24	54	49	117	47	42	48	32	6	11	7	20	350	318	326	5.6
20-Feb	340	315	13	222	132	167	181	173	182	179	164	166	163	164	166	171	173	175	189	27	189	185	160	7	172.2
21-Feb	346	323	305	326	360	331	315	317	138	137	157	167	177	161	213	232	233	254	238	264	289	355	320	329	247.8
22-Feb	3	347	245	322	353	345	15	359	8	43	43	78	129	144	41	35	8	345	333	293	254	195	192	182	13.1
23-Feb	178	176	174	173	172	178	177	180	197	203	264	267	257	235	252	253	319	318	256	246	274	301	289	282	234.0
24-Feb	8	29	11	7	11	0	348	358	358	355	2	6	54	53	46	40	41	42	46	45	37	23	3	12.8	
25-Feb	12	6	6	2	10	21	23	22	28	46	31	40	29	33	40	49	45	38	28	23	18	14	19	12	24.1
26-Feb	11	8	12	12	357	351	332	333	294	7	35	31	24	71	148	143	155	157	239	292	264	254	226	183	13.5
27-Feb	315	306	235	299	187	174	180	153	155	150	160	244	147	146	158	154	150	133	148	151	175	262	331	326	160.4
28-Feb	335	235	166	20	UO	302	268	189	330	170	164	172	171	167	166	152	145	138	140	145	147	154	157	147	156.6
29-Feb	143	123	128	99	76	87	111	127	135	140	138	144	165	146	167	165	172	241	292	190	219	281	285	286	141.4
353.2	2.0	6.2	0.6	5.8	11.5	185.1	148.5	119.9	101.7	112.4	136.1	136.2	125.9	136.2	139.2	77.8	13.8	2.5	344.3	356.6	341.7	336.0	342.6		
Diurnal Average																									
UO - Unstable Operation																									
All monthly, daily, and diurnal averages have been calculated using vector methods																									





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Fort McKay - Bertha Ganter - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 696
Maximum Value: 101 deg on Feb 26 20:00	Hours of Data: 689
Minimum Value: 9 deg on Feb 16 09:00	Hours of Missing Data: 7
Percentiles: P ₁ = 10 P ₁₀ = 13 Q ₁ = 15 Median = 21 Q ₃ = 37 P ₉₀ = 59 P ₉₉ = 92	Hours of Calibration: 0
	Percent Operational Time: 99.0

Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	66	86	64	20	11	69	19	12	25	56	14	12	13	11	11	22	78	25	15	30	39	55	19	58	86
2-Feb	15	13	13	13	14	16	15	15	14	15	14	17	18	16	20	17	15	14	16	15	19	15	13	20	20
3-Feb	44	44	24	26	50	45	63	15	17	16	21	26	19	15	17	21	27	30	30	58	52	39	16	64	64
4-Feb	52	73	64	26	13	11	17	11	13	15	15	15	22	15	13	12	14	16	15	10	10	30	13	35	73
5-Feb	65	49	76	66	69	50	38	43	14	15	14	16	17	18	17	16	15	13	14	15	15	14	14	14	76
6-Feb	20	37	28	88	97	54	30	50	45	35	67	27	19	20	15	14	18	17	13	15	13	13	14	14	97
7-Feb	17	34	22	41	34	UO	UO	74	23	31	19	27	17	55	60	38	21	13	13	19	20	15	34	UO	74
8-Feb	63	15	UO	22	UO	UO	71	48	31	99	78	21	15	16	16	21	24	40	21	14	15	17	16	10	99
9-Feb	17	19	37	24	20	29	28	16	15	18	30	27	28	22	19	21	16	14	22	29	30	9	35	28	37
10-Feb	40	65	20	70	43	30	20	25	46	34	24	19	23	20	18	17	16	19	52	72	17	19	20	26	72
11-Feb	41	72	36	30	30	35	25	33	68	94	57	44	46	63	39	30	27	19	48	60	25	27	45	9	94
12-Feb	12	12	13	14	11	11	12	12	16	35	15	31	47	30	23	19	12	12	13	13	11	16	16	15	47
13-Feb	15	15	14	15	20	97	30	47	67	49	71	54	20	15	19	16	19	53	45	15	17	19	15	17	97
14-Feb	16	15	14	14	16	23	22	16	18	25	27	31	31	26	23	26	25	15	22	29	21	47	39	92	92
15-Feb	35	15	79	71	35	29	16	16	16	9	11	12	12	11	11	11	13	11	11	13	13	18	17	25	79
16-Feb	34	55	43	53	36	23	13	10	9	11	12	10	10	11	34	31	30	25	66	41	57	54	41	72	72
17-Feb	35	47	13	25	44	19	27	23	22	14	24	18	71	59	44	57	13	18	20	19	12	26	29	42	71
18-Feb	27	35	25	91	25	70	37	19	52	37	17	25	18	21	19	17	11	14	16	26	15	15	20	21	91
19-Feb	19	53	28	36	44	38	54	58	46	49	44	44	52	36	40	18	17	13	12	17	26	30	25	38	58
20-Feb	29	33	68	76	44	21	22	36	13	15	14	13	14	11	11	17	21	15	80	31	56	18	62	85	85
21-Feb	28	14	21	25	20	29	35	71	82	21	18	13	14	9	42	37	37	44	30	40	48	19	16	16	82
22-Feb	19	29	94	28	20	28	22	36	39	27	27	24	51	28	27	19	16	13	39	25	63	24	14	21	94
23-Feb	13	13	10	11	10	12	12	13	21	42	38	42	44	44	46	41	27	18	42	41	40	19	24	28	46
24-Feb	44	19	18	16	17	15	17	18	20	21	23	22	23	33	27	28	21	20	22	26	25	22	15	16	44
25-Feb	15	17	16	19	18	18	18	16	20	20	20	27	22	27	26	25	26	18	16	17	20	20	18	21	27
26-Feb	20	22	20	20	23	21	20	26	47	76	56	40	34	46	39	16	16	31	82	101	64	73	57	96	101
27-Feb	59	56	82	67	87	33	19	19	37	14	65	56	76	17	18	14	15	12	14	14	18	80	25	13	87
28-Feb	56	64	88	78	UO	34	35	67	30	60	26	14	16	16	16	14	13	13	13	14	12	14	13	14	88
29-Feb	13	19	16	34	29	23	24	17	16	15	17	16	23	18	21	19	28	43	34	28	79	15	14	16	79
	66	86	94	91	97	97	71	74	82	99	78	56	76	63	60	57	78	53	82	101	79	80	62	96	
	Diurnal Maximum																								

UO - Unstable Operation



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS02 MILDRED LAKE FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILDRED LAKE (AMS02)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	664	32	32	100	41.4	0	11.8	0
H2S (ppb) Average	662	34	34	100	10.4	1	1.6	0
THC (ppm) Average	662	32	34	99.71	4.1	-	3	-
NMHC(ppm) Average	662	32	34	99.71	0.579	-	0.14	-
CH4(ppm) Average	662	32	34	99.71	4	-	2.9	-
Temperature (C) Average	696	0	0	100	9.2	-	2.8	-
Relative Humidity (%) Average	696	0	0	100	98.5	-	95	-
Wind Speed 10 m (km/h) Average	677	0	19	97.27	24	-	15	-
Wind Direction 10 m (deg) Average	677	0	19	97.27	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILDRED LAKE (AMS02)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	664	2.53	5.7	-	0	0	0.2	0.5	1.8	6.6	41.4
H2S (ppb) Average	662	0.54	0.9	-	0	0.1	0.1	0.2	0.6	1.1	10.4
THC (ppm) Average	662	2.2	0.3	-	1.9	2	2	2.1	2.3	2.6	4.1
NMHC(ppm) Average	662	0.015	0.052	-	0	0	0	0	0	0	0.579
CH4(ppm) Average	662	2.18	0.3	-	1.9	2	2	2.1	2.3	2.6	4
Temperature 2 m (C) Average	696	-9.33	7.3	-	-26.4	-18.6	-14.3	-9.5	-4.3	0.5	9.2
Relative Humidity (%) Average	696	72.39	14.5	-	32	51.9	62.3	74.1	84.6	88.6	98.5
Wind Speed 10 m (km/h) Average	677	8.3	4	-	1	3	5	8	11	14	24
Wind Direction 10 m (deg) Average	677	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILDRED LAKE (AMS02)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
THC/NMHC/CH4	28 Feb 2024 13:00	28 Feb 2024 14:00	2	Maintenance - replaced support gas cylinder
WS/WD	03 Feb 2024 21:00	03 Feb 2024 21:00	1	Flat line in sensor output signal
WS/WD	05 Feb 2024 02:00	05 Feb 2024 02:00	1	Flat line in sensor output signal
WS/WD	05 Feb 2024 07:00	05 Feb 2024 07:00	1	Flat line in sensor output signal
WS/WD	06 Feb 2024 07:00	06 Feb 2024 07:00	1	Flat line in sensor output signal
WS/WD	07 Feb 2024 12:00	07 Feb 2024 12:00	1	Flat line in sensor output signal
WS/WD	07 Feb 2024 16:00	07 Feb 2024 18:00	3	Flat line in sensor output signal
WS/WD	08 Feb 2024 08:00	08 Feb 2024 09:00	2	Flat line in sensor output signal
WS/WD	08 Feb 2024 11:00	08 Feb 2024 12:00	2	Flat line in sensor output signal
WS/WD	10 Feb 2024 00:00	10 Feb 2024 00:00	1	Flat line in sensor output signal
WS/WD	15 Feb 2024 02:00	15 Feb 2024 02:00	1	Flat line in sensor output signal
WS/WD	15 Feb 2024 04:00	15 Feb 2024 05:00	2	Flat line in sensor output signal
WS/WD	19 Feb 2024 16:00	19 Feb 2024 16:00	1	Flat line in sensor output signal
WS/WD	21 Feb 2024 04:00	21 Feb 2024 04:00	1	Flat line in sensor output signal
WS/WD	21 Feb 2024 09:00	21 Feb 2024 09:00	1	Flat line in sensor output signal



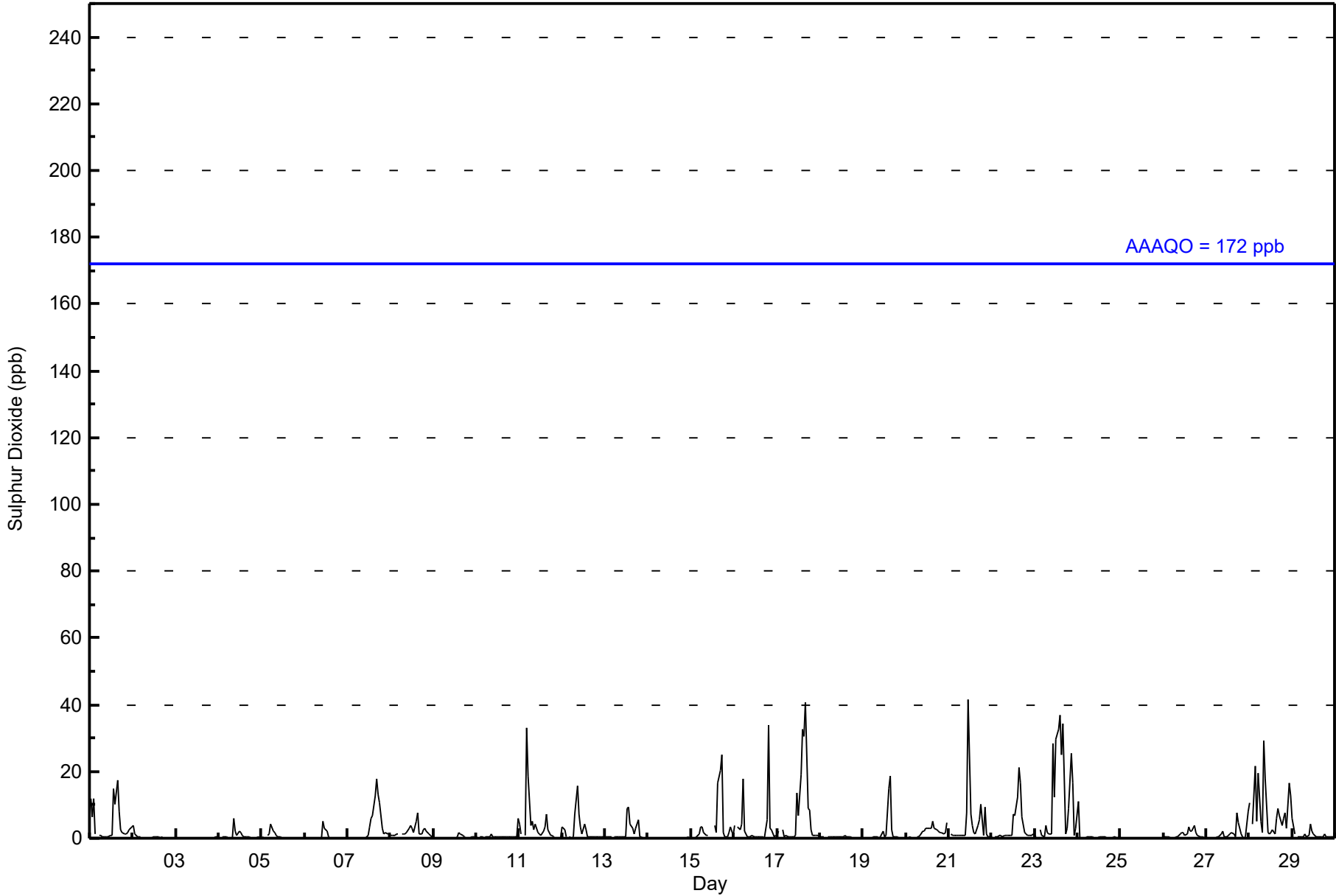
Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

Mildred Lake - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	Daily Average		Daily Maximum																										
Maximum Value: 41.4 ppb on Feb 21 12:00		Maximum Daily Average: 11.8 ppb on Feb 23		Hours of Data: 664																	Hours of Missing Data: 32		Hours of Calibration: 32																										
Minimum Value: 0.0 ppb on Feb 2 19:00		Minimum Daily Average: 0.0 ppb on Feb 3		Hours of Calibration: 32																	Percent Operational Time: 100.0																												
Maximum Diurnal Average: 6.2 ppb at hour 16		Minimum Diurnal Average: 0.8 ppb at hour 2		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 0.5 Q ₃ = 1.8 P ₉₀ = 6.6 P ₉₉ = 32.6																																													
Monthly Average: 2.53 ppb																																																	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	12.0	6.5	12.0	1.3	Z	1.1	0.7	0.3	0.3	0.5	0.6	0.7	0.6	14.9	10.2	17.5	7.9	2.5	1.6	1.2	1.3	1.7	2.7	3.5	4.4	17.5																							
2-Feb	3.7	1.1	0.5	0.3	0.3	Z	0.1	0.2	0.2	0.2	0.1	0.3	0.3	0.3	0.3	0.2	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	3.7																							
3-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.0	0.5																							
4-Feb	0.2	Z	0.2	0.3	0.2	0.0	0.1	0.0	6.1	2.1	0.6	2.0	1.6	0.7	0.4	0.4	0.2	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.7	6.1																							
5-Feb	0.0	0.3	Z	1.0	1.3	4.1	1.9	1.9	0.7	0.5	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4.1																							
6-Feb	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.1	0.0	0.0	5.0	3.0	2.0	0.6	0.2	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.5	5.0																							
7-Feb	0.0	0.1	0.0	0.1	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.8	3.5	5.7	6.6	12.6	17.6	13.0	10.5	3.1	1.2	1.6	1.2	1.1	3.4	17.6																							
8-Feb	1.0	1.0	1.0	1.1	1.1	Z	1.3	1.2	1.3	1.8	3.1	3.7	2.8	1.6	5.2	7.5	1.4	1.5	2.4	3.2	2.2	1.1	0.7	0.4	2.1	7.5																							
9-Feb	Z	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.0	0.3	1.7	1.3	0.9	0.4	0.1	0.1	0.0	0.4	0.4	0.4	0.3	1.7																							
10-Feb	0.6	Z	0.4	0.2	0.1	0.2	0.3	0.4	1.2	0.5	0.5	0.4	0.6	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.5	0.2	5.9	0.6	5.9																							
11-Feb	4.2	1.2	Z	0.7	33.1	18.4	3.8	5.0	2.5	4.2	1.5	1.1	1.0	2.3	3.3	7.1	2.4	0.8	0.8	0.3	0.1	0.1	0.1	0.2	4.1	33.1																							
12-Feb	3.5	2.3	0.5	Z	0.2	0.2	0.2	7.4	15.9	7.4	3.5	1.5	4.3	2.5	0.6	0.4	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.3	2.3	15.9																							
13-Feb	0.4	0.4	0.4	0.3	Z	0.3	0.3	0.3	0.4	0.4	0.3	0.3	9.0	9.5	4.1	2.8	1.3	3.2	5.3	0.3	0.2	0.2	0.1	0.1	1.7	9.5																							
14-Feb	0.1	0.0	0.0	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2																							
15-Feb	Z	0.2	0.1	0.4	1.5	3.3	3.3	1.6	0.9	0.8	C	C	C	4.0	1.5	16.6	20.4	25.1	1.8	0.6	0.4	1.5	3.2	0.8	4.4	25.1																							
16-Feb	3.8	Z	3.4	2.4	4.3	17.6	2.2	0.5	0.4	0.4	0.7	0.4	0.3	0.4	0.4	0.3	0.5	0.0	5.5	34.0	3.0	2.3	0.6	0.7	3.7	34.0																							
17-Feb	1.0	2.0	Z	2.4	0.6	0.7	0.5	0.4	0.4	0.5	0.9	13.5	6.9	19.1	32.8	30.7	40.9	9.0	8.3	2.5	1.0	1.0	0.8	0.7	7.7	40.9																							
18-Feb	0.6	0.4	0.4	Z	0.4	0.5	0.5	0.6	0.5	0.5	0.4	0.5	0.4	0.5	0.6	0.4	0.3	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.4	0.6																							
19-Feb	0.0	0.0	0.0	0.1	Z	0.1	0.3	0.3	0.5	0.2	0.2	2.0	0.5	0.7	14.9	18.5	2.5	0.5	0.3	0.2	0.2	0.1	0.1	0.0	1.8	18.5																							
20-Feb	0.1	0.2	0.3	0.2	0.0	Z	0.2	0.6	0.8	2.2	2.0	2.9	3.1	3.0	3.0	4.9	2.9	2.6	2.0	1.7	1.6	1.5	1.5	4.7	1.8	4.9																							
21-Feb	Z	1.3	0.7	0.7	0.8	1.0	0.9	0.7	0.8	1.0	7.8	41.4	7.2	3.8	1.8	1.3	3.8	5.7	10.0	1.0	9.1	1.2	0.5	0.6	4.5	41.4																							
22-Feb	0.5	Z	0.6	0.4	0.8	0.9	0.6	0.7	0.6	0.8	0.8	0.8	7.3	6.9	12.1	21.4	16.7	6.6	1.5	1.1	1.0	0.9	1.0	1.2	3.7	21.4																							
23-Feb	0.9	0.6	Z	2.7	0.8	0.3	4.0	1.6	1.5	1.1	28.5	12.1	29.5	32.5	37.0	24.9	34.3	1.1	3.1	9.1	25.4	16.5	1.0	2.8	11.8	37.0																							
24-Feb	11.0	0.2	0.2	Z	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.3	0.6	0.5	0.3	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.3	0.2	0.2	0.7	11.0																						
25-Feb	0.1	0.1	0.1	0.1	Z	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2																						
26-Feb	0.2	0.3	0.3	0.3	0.2	Z	0.2	0.3	0.3	1.2	1.8	1.6	0.9	1.1	3.2	2.1	2.1	4.0	1.5	0.7	0.6	0.3	0.3	0.1	1.0	4.0																							
27-Feb	Z	0.1	0.0	0.1	0.1	0.1	0.3	0.3	1.2	2.1	0.6	0.3	0.9	1.1	1.8	1.1	0.5	7.6	4.5	1.1	0.3	0.2	0.6	7.9	1.4	7.9																							
28-Feb	10.5	Z	4.1	21.6	5.0	19.3	4.9	1.5	29.1	18.0	1.9	1.4	1.5	2.4	1.4	6.0	9.1	6.6	3.9	6.0	7.7	3.0	16.7	12.9	8.5	29.1																							
29-Feb	6.1	1.1	Z	0.5	0.5	0.5	0.4	1.1	0.5	0.7	4.2	2.1	1.1	0.6	0.4	0.3	0.4	0.6	1.4	0.6	0.5	0.4	0.3	0.3	1.1	6.1																							
																								2.5	0.8	1.1	1.5	2.2	2.9	0.9	0.9	2.3	1.6	2.3	3.3	3.1	4.0	5.0	6.2	5.8	3.2	2.3	2.3	2.0	1.2	1.2	1.6	Diurnal Average	
																								12.0	6.5	12.0	21.6	33.1	19.3	4.9	7.4	29.1	18.0	28.5	41.4	29.5	32.5	37.0	30.7	40.9	25.1	10.5	34.0	25.4	16.5	16.7	12.9	Diurnal Maximum	
Z - zerospan C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																																																	





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Mildred Lake - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	622	93.67	93.67
11 - 20	25	3.77	97.44
21 - 60	17	2.56	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 664

Total Number of Hours: 696



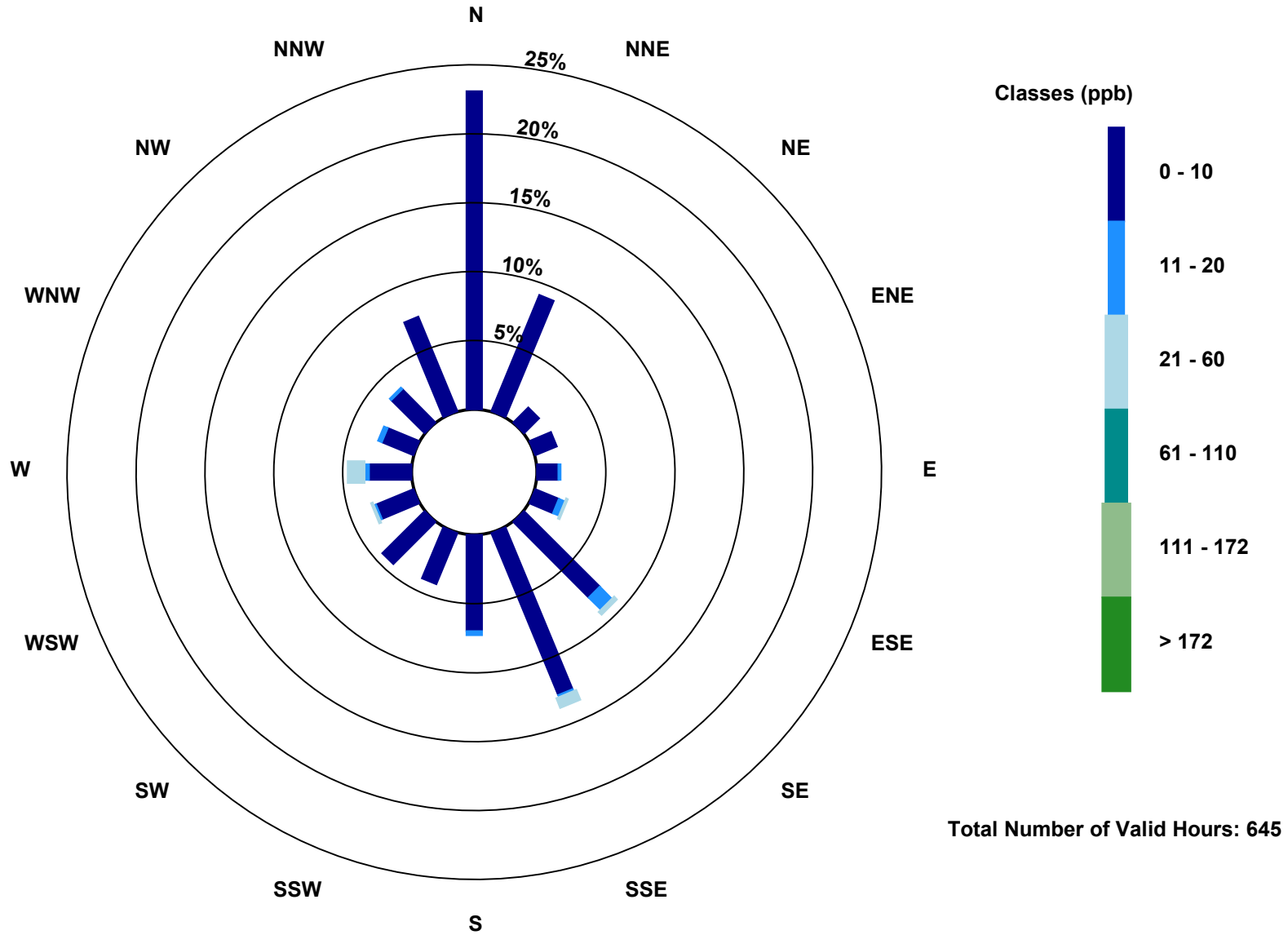
**Wood Buffalo Environmental Association
Frequency Distribution**

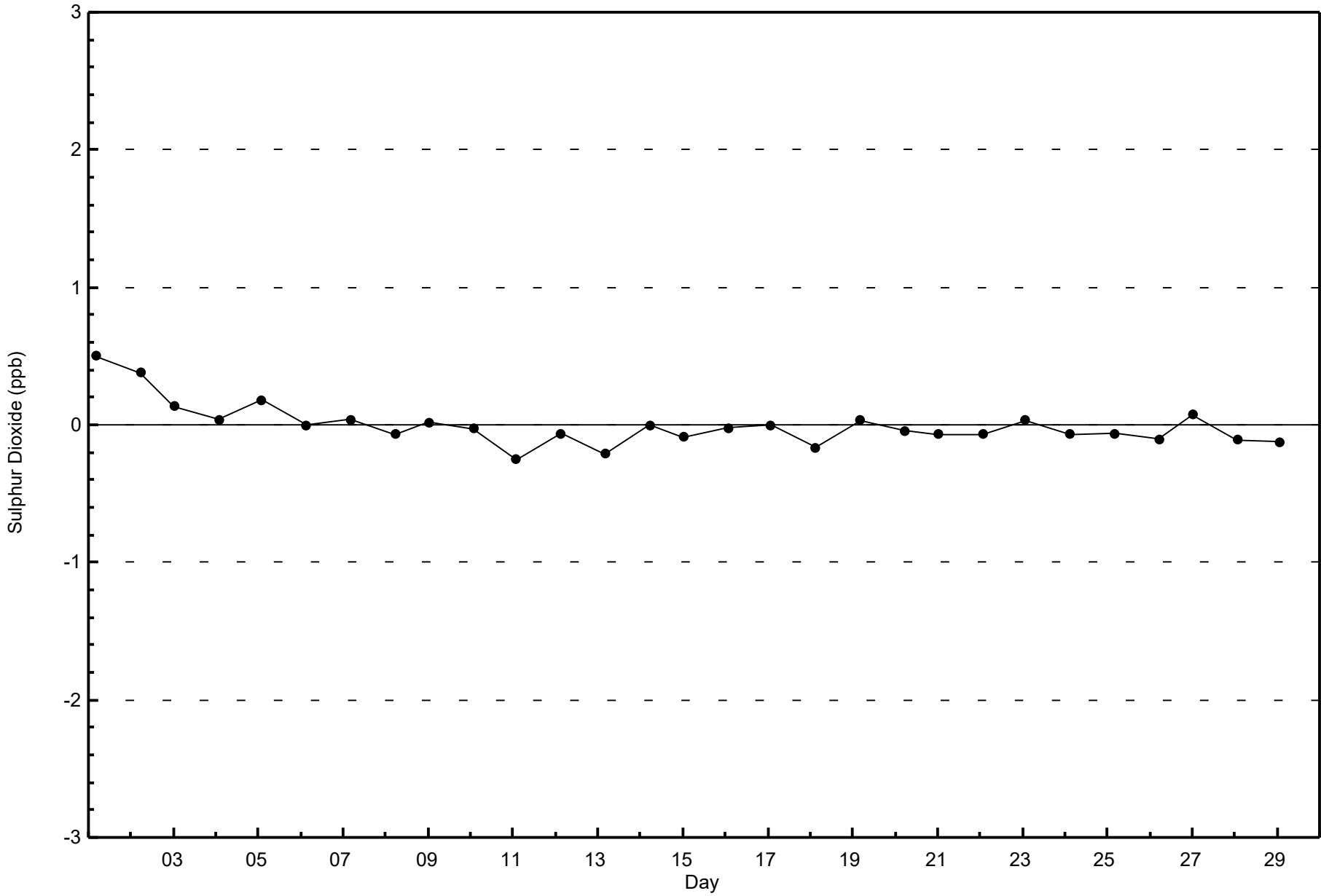
**Sulphur Dioxide (SO₂) - ppb
Mildred Lake - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	149	59	10	11	10	12	50	82	45	26	28	19	20	16	22	48	607
11 - 20	0	0	0	0	1	3	8	1	2	0	0	1	2	2	1	0	21
21 - 60	0	0	0	0	0	1	2	5	0	0	0	1	8	0	0	0	17
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	149	59	10	11	11	16	60	88	47	26	28	21	30	18	23	48	645

Total Number of Valid Hours: 645

Total Number of Hours: 696

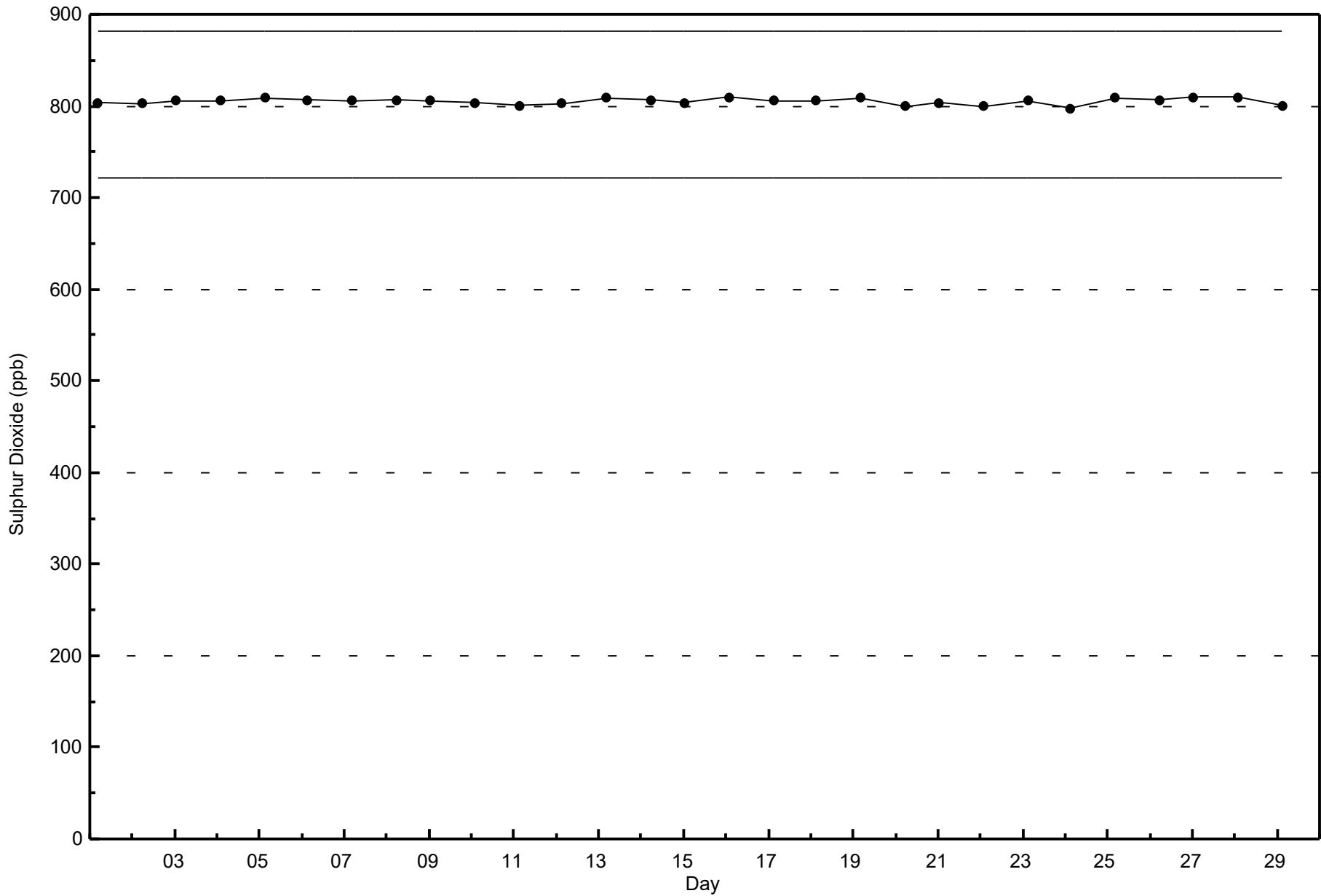






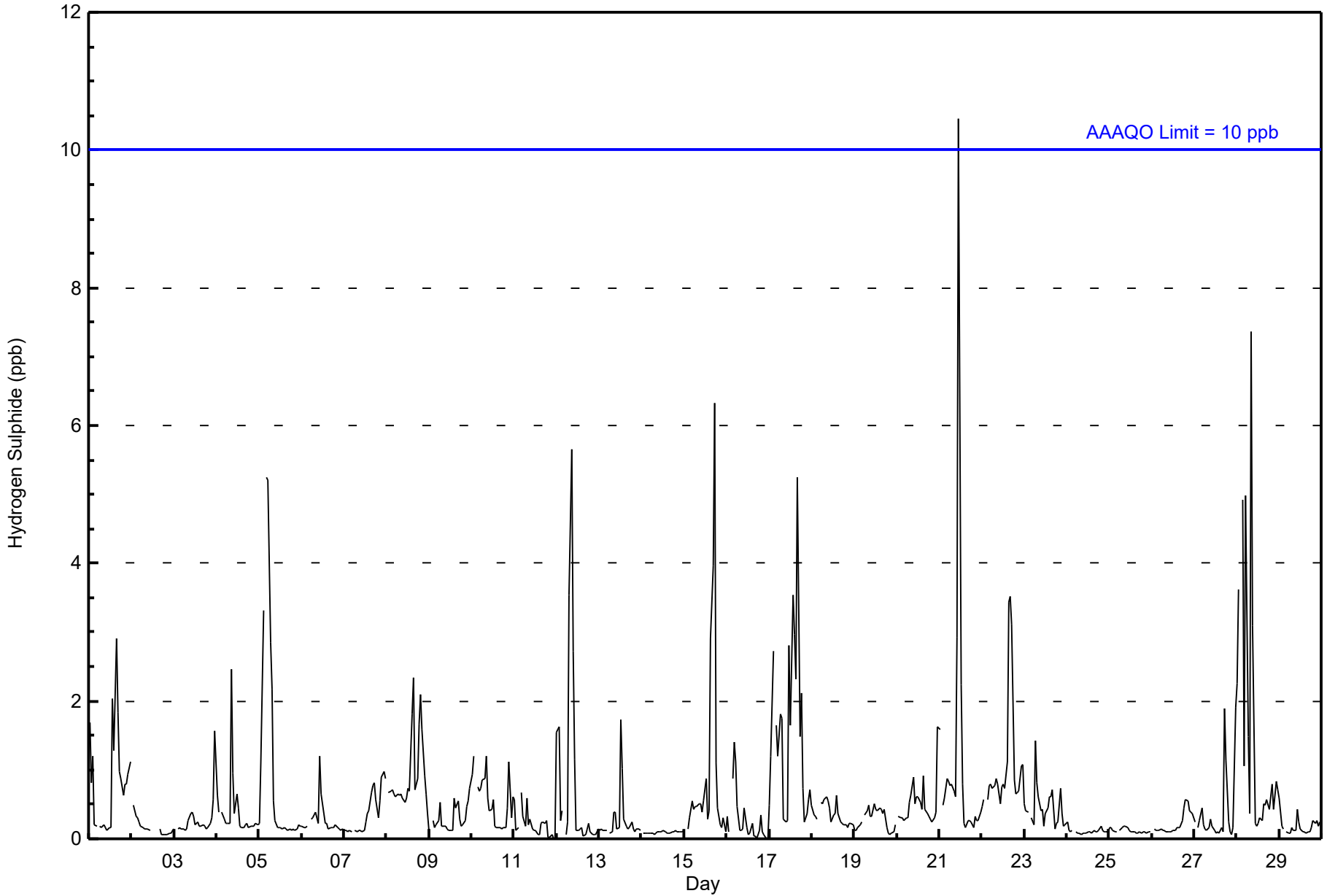
Wood Buffalo Environmental Association
Span Responses

Sulphur Dioxide (SO₂) - ppb
Mildred Lake - February 2024





Number of Exceedences (AAAQO):		1-hr: 1	24-hr: 0																		Hours in Service:	696							
Maximum Value: 10.4 ppb on Feb 21 12:00		Maximum Daily Average: 1.6 ppb on Feb 17																			Hours of Data:	662							
Minimum Value: 0.0 ppb on Feb 11 23:00		Minimum Daily Average: 0.1 ppb on Feb 14																			Hours of Missing Data:	34							
Maximum Diurnal Average: 0.9 ppb at hour 9		Minimum Diurnal Average: 0.3 ppb at hour 22																			Hours of Calibration:	34							
Monthly Average: 0.54 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.6 P ₉₀ = 1.1 P ₉₉ = 5.1																			Percent Operational Time:	100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Feb	1.7	0.8	1.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.1	0.2	0.2	2.0	1.3	2.9	1.8	1.0	0.9	0.6	0.8	0.8	0.9	1.1	0.8	2.9			
2-Feb	Z	0.5	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	C	C	C	C	C	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.5			
3-Feb	0.2	Z	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.6	1.6	0.3	1.6		
4-Feb	0.6	0.4	Z	0.4	0.3	0.2	0.2	0.2	2.5	1.0	0.4	0.6	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	2.5		
5-Feb	0.2	1.1	3.3	Z	5.3	5.2	2.9	2.2	0.6	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	1.0	5.3			
6-Feb	0.2	0.2	0.2	0.2	Z	0.3	0.3	0.3	0.4	0.2	1.2	0.6	0.4	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.3	1.2			
7-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.4	0.7	0.8	0.8	0.6	0.3	0.5	0.9	1.0	0.9	0.4	1.0			
8-Feb	Z	0.7	0.7	0.7	0.7	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.7	0.7	1.8	2.3	0.7	0.9	1.7	2.1	1.6	0.9	0.6	0.4	0.9	2.3			
9-Feb	0.1	Z	0.3	0.2	0.2	0.3	0.5	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.6	0.4	0.6	0.3	0.2	0.2	0.3	0.5	0.5	0.7	0.3	0.7			
10-Feb	0.9	1.2	Z	0.8	0.7	0.7	0.9	0.9	1.2	0.6	0.4	0.4	0.6	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.4	1.1	0.3	0.6	0.6	1.2			
11-Feb	0.6	0.1	0.2	Z	0.7	0.3	0.2	0.6	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.0	0.0	0.1	0.0	0.0	0.2	0.7			
12-Feb	1.6	1.6	0.3	0.4	Z	0.1	0.2	3.5	5.6	2.7	1.2	0.1	0.1	0.2	0.2	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.8	5.6			
13-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.4	0.4	0.1	0.2	1.7	1.0	0.3	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.3	1.7			
14-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
15-Feb	0.1	Z	0.1	0.3	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.6	0.9	0.3	0.4	2.9	4.0	6.3	1.1	0.4	0.2	0.2	0.3	0.1	0.9	6.3			
16-Feb	0.3	0.1	Z	0.9	1.4	1.1	0.5	0.1	0.1	0.1	0.5	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.4	0.1	0.1	0.0	0.0	0.3	1.4			
17-Feb	0.5	1.2	2.7	Z	1.6	1.2	1.8	1.8	0.3	0.2	0.3	2.8	1.7	3.5	3.0	2.3	5.3	1.5	2.1	0.7	0.2	0.4	0.6	0.7	1.6	5.3			
18-Feb	0.5	0.4	0.3	0.3	Z	0.5	0.5	0.6	0.6	0.5	0.4	0.2	0.3	0.4	0.6	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.6			
19-Feb	0.1	0.1	0.2	0.2	0.2	Z	0.3	0.4	0.5	0.3	0.3	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.5			
20-Feb	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.6	0.9	0.5	0.6	0.6	0.5	0.4	0.9	0.4	0.4	0.3	0.3	0.3	0.3	0.4	1.6	0.5	1.6			
21-Feb	1.6	Z	0.5	0.6	0.9	0.8	0.8	0.8	0.7	0.6	2.9	10.4	2.2	0.8	0.2	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.4	1.1	10.4			
22-Feb	0.5	0.6	Z	0.6	0.8	0.8	0.7	0.8	0.9	0.8	0.5	0.8	0.8	0.7	1.1	3.4	3.5	3.1	0.8	0.7	0.7	0.7	1.1	1.1	1.1	3.5			
23-Feb	0.5	0.4	0.4	Z	0.3	0.2	1.4	0.8	0.6	0.4	0.4	0.2	0.4	0.4	0.6	0.6	0.7	0.1	0.2	0.2	0.7	0.4	0.2	0.2	0.5	1.4			
24-Feb	0.3	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3			
25-Feb	0.2	0.2	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2			
26-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.6	0.6	0.4	0.4	0.4	0.2	0.6			
27-Feb	0.2	Z	0.2	0.3	0.5	0.2	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.1	1.9	1.1	0.2	0.1	0.1	0.2	1.9	0.4	1.9			
28-Feb	2.3	3.6	Z	4.9	1.1	5.0	1.5	0.4	7.4	3.1	0.2	0.2	0.2	0.3	0.3	0.5	0.5	0.6	0.4	0.6	0.8	0.4	0.8	0.7	1.6	7.4			
29-Feb	0.6	0.2	0.1	Z	0.1	0.1	0.1	0.2	0.1	0.1	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.6			
		0.6	0.6	0.5	0.5	0.7	0.8	0.5	0.6	0.9	0.5	0.4	0.7	0.5	0.5	0.5	0.7	0.7	0.7	0.4	0.3	0.3	0.3	0.3	0.5	Diurnal Average			
		2.3	3.6	3.3	4.9	5.3	5.2	2.9	3.5	7.4	3.1	2.9	10.4	2.2	3.5	3.0	3.4	5.3	6.3	2.1	2.1	1.6	1.1	1.1	1.9	Diurnal Maximum			
Z - zerspan		C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr	10 ppb	24-hr	3 ppb																								





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Mildred Lake - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	636	96.07	96.07
3 - 4	17	2.57	98.64
5 - 7	8	1.21	99.85
8 - 11	1	0.15	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Mildred Lake - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	141	64	12	9	11	14	51	83	43	26	28	21	30	18	25	43	619
3 - 4	1	0	0	0	0	1	7	4	2	0	0	1	0	0	0	0	16
5 - 7	0	0	0	2	0	1	2	3	0	0	0	0	0	0	0	0	8
8 - 11	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	142	64	12	11	11	16	60	91	45	26	28	22	30	18	25	43	644

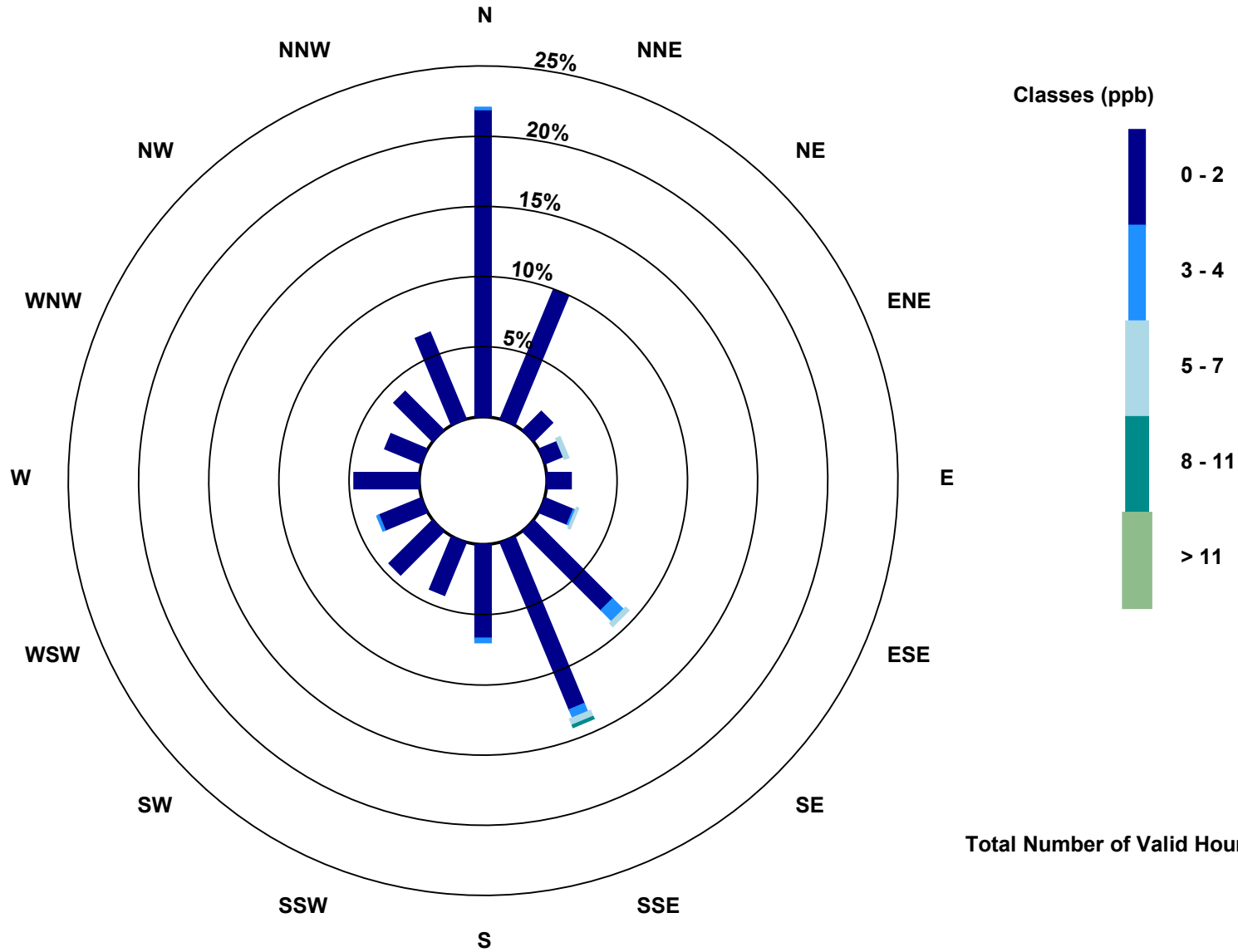
Total Number of Valid Hours: 644

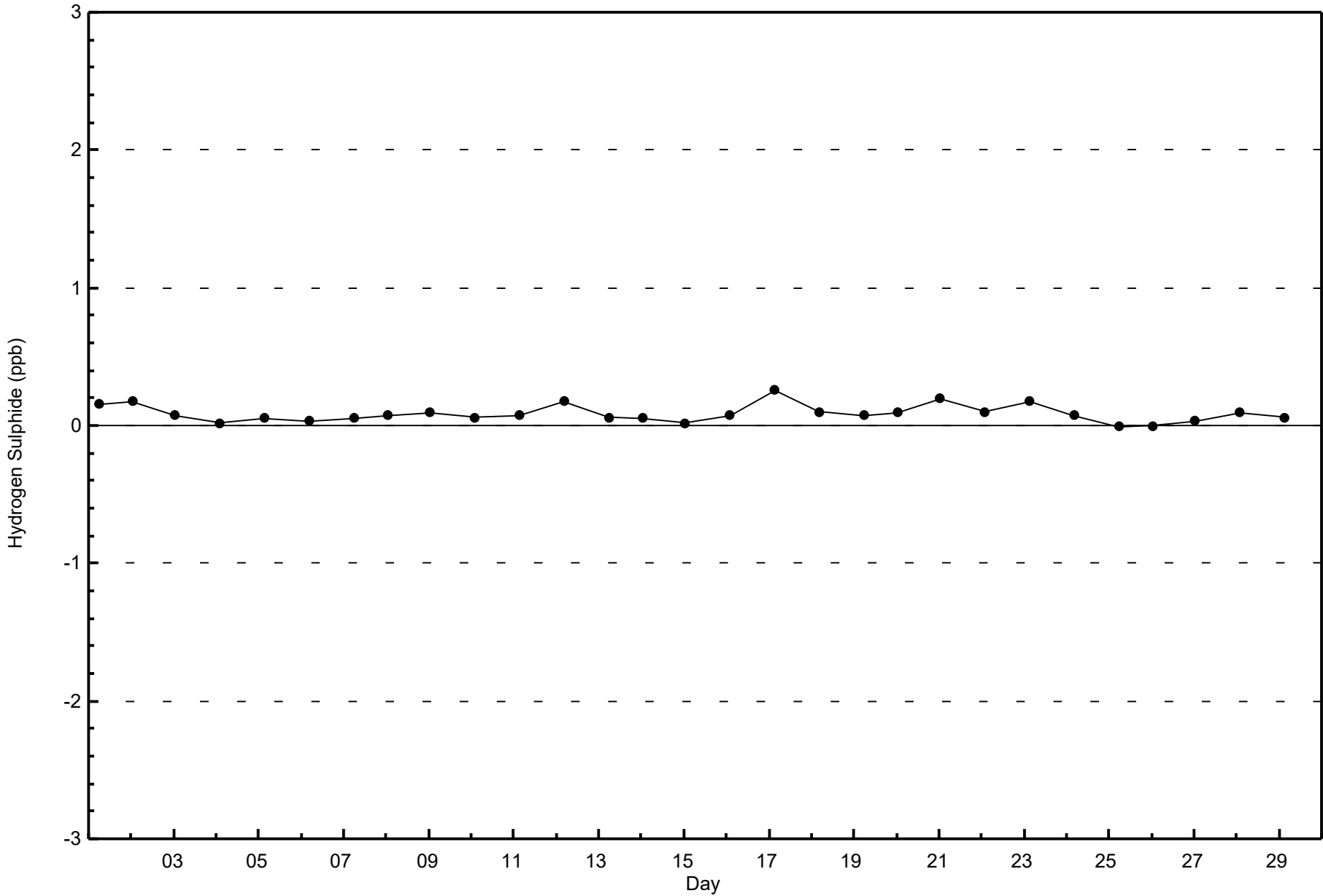
Total Number of Hours: 696

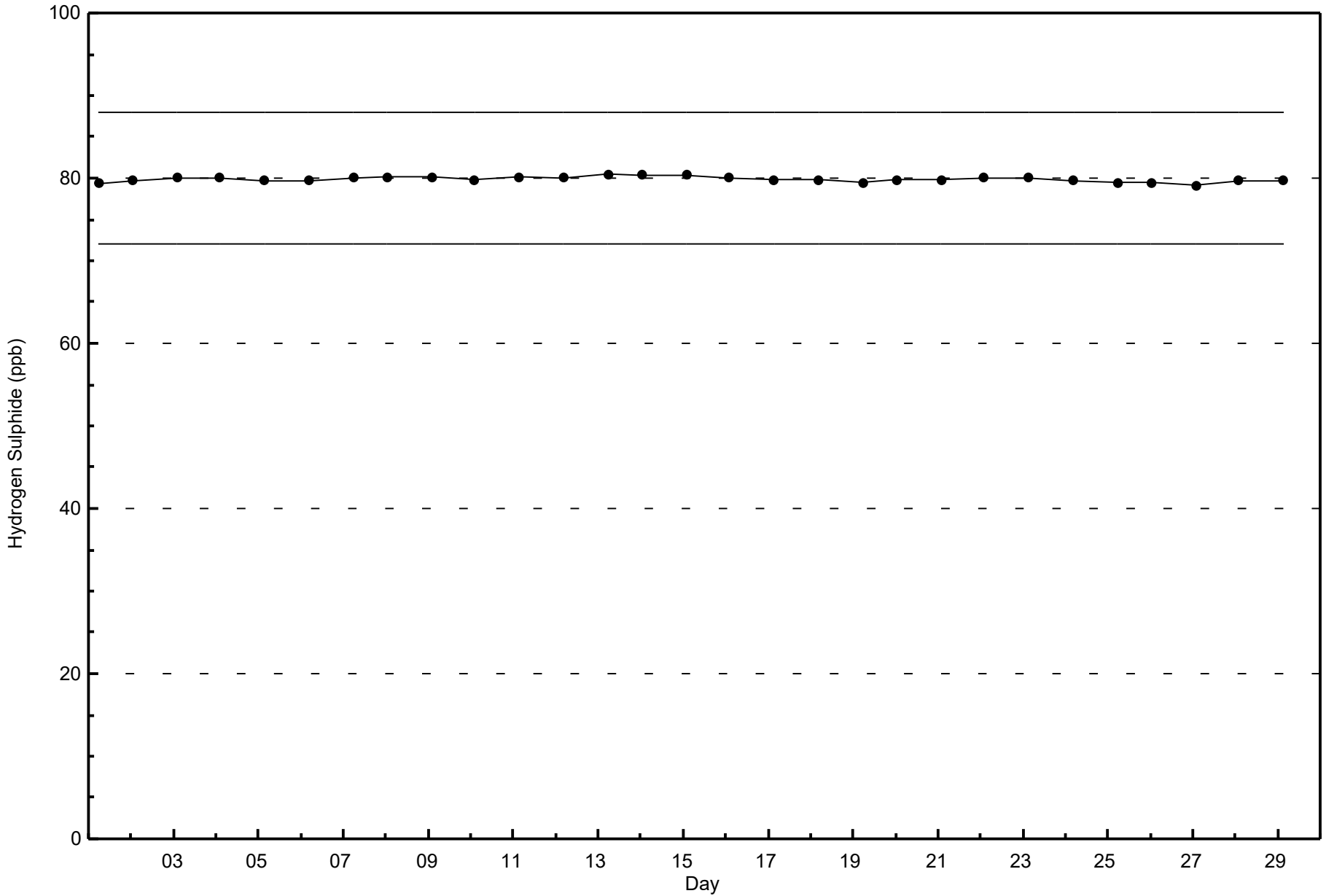


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Mildred Lake









Wood Buffalo Environmental Association
Summary of Hour Averages

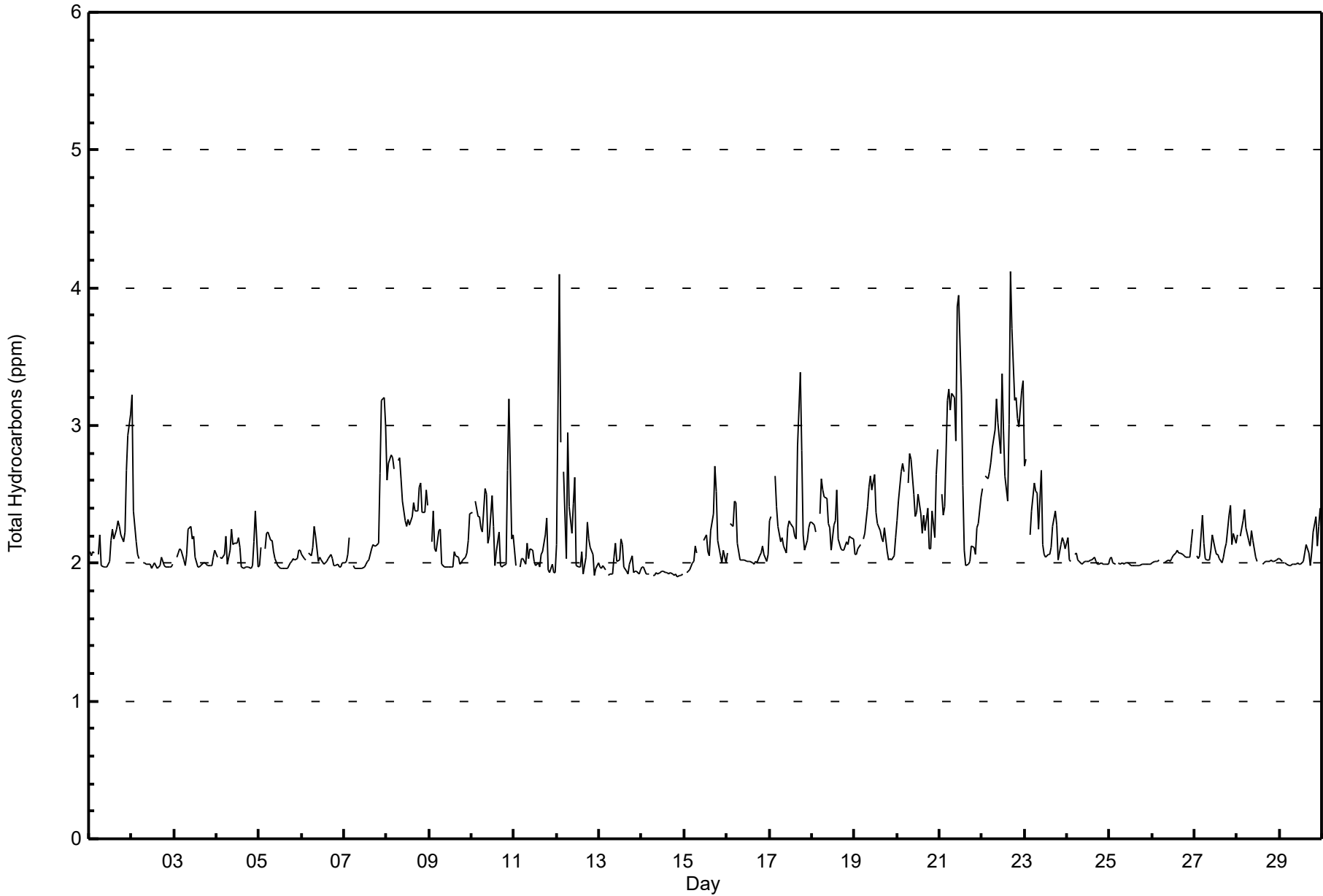
Total Hydrocarbons (THC) - ppm
Mildred Lake - February 2024

Maximum Value: 4.1 ppm on Feb 22 17:00																				Maximum Daily Average: 3.0 ppm on Feb 22					Hours in Service: 696	
Minimum Value: 1.9 ppm on Feb 14 21:00																				Minimum Daily Average: 1.9 ppm on Feb 14					Hours of Data: 662	
Maximum Diurnal Average: 2.3 ppm at hour 5																				Minimum Diurnal Average: 2.1 ppm at hour 15					Hours of Missing Data: 34	
Monthly Average: 2.20 ppm																				Percentiles: P ₁ = 1.9 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.1 Q ₃ = 2.3 P ₉₀ = 2.6 P ₉₉ = 3.3					Hours of Calibration: 32	
																									Percent Operational Time: 99.7	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.1	2.0	2.1	2.1	Z	2.1	2.2	2.0	2.0	2.0	2.0	2.2	2.3	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.7	2.9	3.1	2.2	3.1
2-Feb	3.2	2.4	2.2	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	3.2
3-Feb	Z	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.2	2.3	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.3
4-Feb	2.0	Z	2.0	2.0	2.1	2.2	2.0	2.1	2.2	2.1	2.2	2.1	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.4	2.0	2.1	2.4
5-Feb	2.0	2.1	Z	2.1	2.2	2.2	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2
6-Feb	2.1	2.0	2.0	Z	2.1	2.1	2.1	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3
7-Feb	2.0	2.0	2.1	2.2	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.7	3.2	3.2	3.0	2.2	3.2
8-Feb	2.6	2.7	2.8	2.8	2.7	Z	2.7	2.8	2.6	2.5	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.6	2.6	2.4	2.4	2.5	2.4	2.5	2.8
9-Feb	Z	2.2	2.4	2.1	2.1	2.2	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.4	2.1	2.4
10-Feb	2.4	Z	2.4	2.3	2.3	2.3	2.2	2.5	2.5	2.1	2.2	2.5	2.3	2.0	2.1	2.2	2.0	2.0	2.0	2.0	2.7	3.2	2.2	2.2	2.3	3.2
11-Feb	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.2	2.3	2.0	1.9	2.0	1.9	1.9	1.9	2.0	2.3
12-Feb	2.1	4.1	2.9	Z	2.7	2.0	3.0	2.4	2.2	2.4	2.6	2.0	2.0	2.0	2.1	1.9	2.0	2.3	2.2	2.1	2.1	1.9	2.0	2.0	2.3	4.1
13-Feb	2.0	2.0	2.0	1.9	Z	1.9	1.9	1.9	2.0	2.1	2.0	2.0	2.2	2.1	2.0	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.2
14-Feb	2.0	2.0	1.9	1.9	1.9	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0
15-Feb	Z	1.9	1.9	1.9	2.0	2.0	2.1	2.1	C	C	C	2.2	2.2	2.1	2.1	2.2	2.4	2.7	2.5	2.2	2.1	2.0	2.1	2.0	2.1	2.7
16-Feb	2.1	Z	2.3	2.3	2.5	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.5
17-Feb	2.3	2.3	Z	2.6	2.4	2.3	2.2	2.2	2.1	2.1	2.3	2.3	2.3	2.3	2.2	2.2	2.8	3.4	2.8	2.2	2.1	2.2	2.3	2.3	2.4	3.4
18-Feb	2.3	2.3	2.2	Z	2.4	2.6	2.5	2.5	2.5	2.3	2.3	2.1	2.3	2.3	2.5	2.2	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.3	2.6
19-Feb	2.1	2.1	2.1	2.1	Z	2.2	2.2	2.4	2.6	2.6	2.5	2.6	2.4	2.3	2.2	2.2	2.2	2.3	2.1	2.0	2.0	2.0	2.0	2.2	2.2	2.6
20-Feb	2.3	2.5	2.7	2.7	2.7	Z	2.6	2.8	2.8	2.5	2.3	2.4	2.5	2.4	2.2	2.3	2.2	2.4	2.1	2.1	2.4	2.2	2.6	2.8	2.5	2.8
21-Feb	Z	2.5	2.3	2.4	3.2	3.3	3.1	3.2	3.2	2.9	3.9	4.0	3.2	2.6	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.3	2.3	2.5	2.7	4.0
22-Feb	2.5	Z	2.6	2.6	2.7	2.7	2.8	3.0	3.2	3.0	2.8	3.4	3.0	2.6	2.4	3.0	4.1	3.7	3.2	3.2	3.1	3.0	3.3	3.3	3.0	4.1
23-Feb	2.7	2.8	Z	2.2	2.4	2.6	2.5	2.5	2.2	2.7	2.1	2.1	2.0	2.1	2.1	2.3	2.4	2.3	2.0	2.1	2.2	2.2	2.1	2.3	2.8	2.8
24-Feb	2.2	2.0	2.0	Z	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2
25-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.2	2.1	2.2
27-Feb	Z	2.1	2.0	2.1	2.4	2.1	2.0	2.0	2.0	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.4	2.4	2.1	2.2	2.1	2.1	2.4
28-Feb	2.2	Z	2.2	2.3	2.4	2.3	2.2	2.1	2.2	2.2	2.0	2.0	M	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.4
29-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	2.2	2.3	2.1	2.3	2.4	2.1	2.4
2.2 2.3 2.2 2.2 2.3 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.1 2.1 2.1 2.2 2.2 2.2 2.1 2.2 2.2 2.2 2.3																								Diurnal Average		
3.2 4.1 2.9 2.8 3.2 3.3 3.1 3.2 3.2 3.0 3.9 4.0 3.2 2.6 2.5 3.0 4.1 3.7 3.2 3.2 3.1 3.2 3.3 3.3																								Diurnal Maximum		
Z - zerspan			C - Calibration			M - Maintenance																				



Wood Buffalo Environmental Association
Hourly Averages

Total Hydrocarbons (THC) - ppm
Mildred Lake - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Mildred Lake - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	295	44.56	44.56
2.1 - 3.0	343	51.81	96.37
3.1 - 10.0	24	3.63	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Mildred Lake - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	81	47	8	3	5	11	24	21	22	17	14	5	9	3	4	16	290
2.1 - 3.0	59	12	2	7	6	5	34	63	22	8	14	16	20	15	19	28	330
3.1 - 10.0	9	0	0	1	0	0	0	5	3	0	0	0	1	0	0	4	23
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	149	59	10	11	11	16	58	89	47	25	28	21	30	18	23	48	643

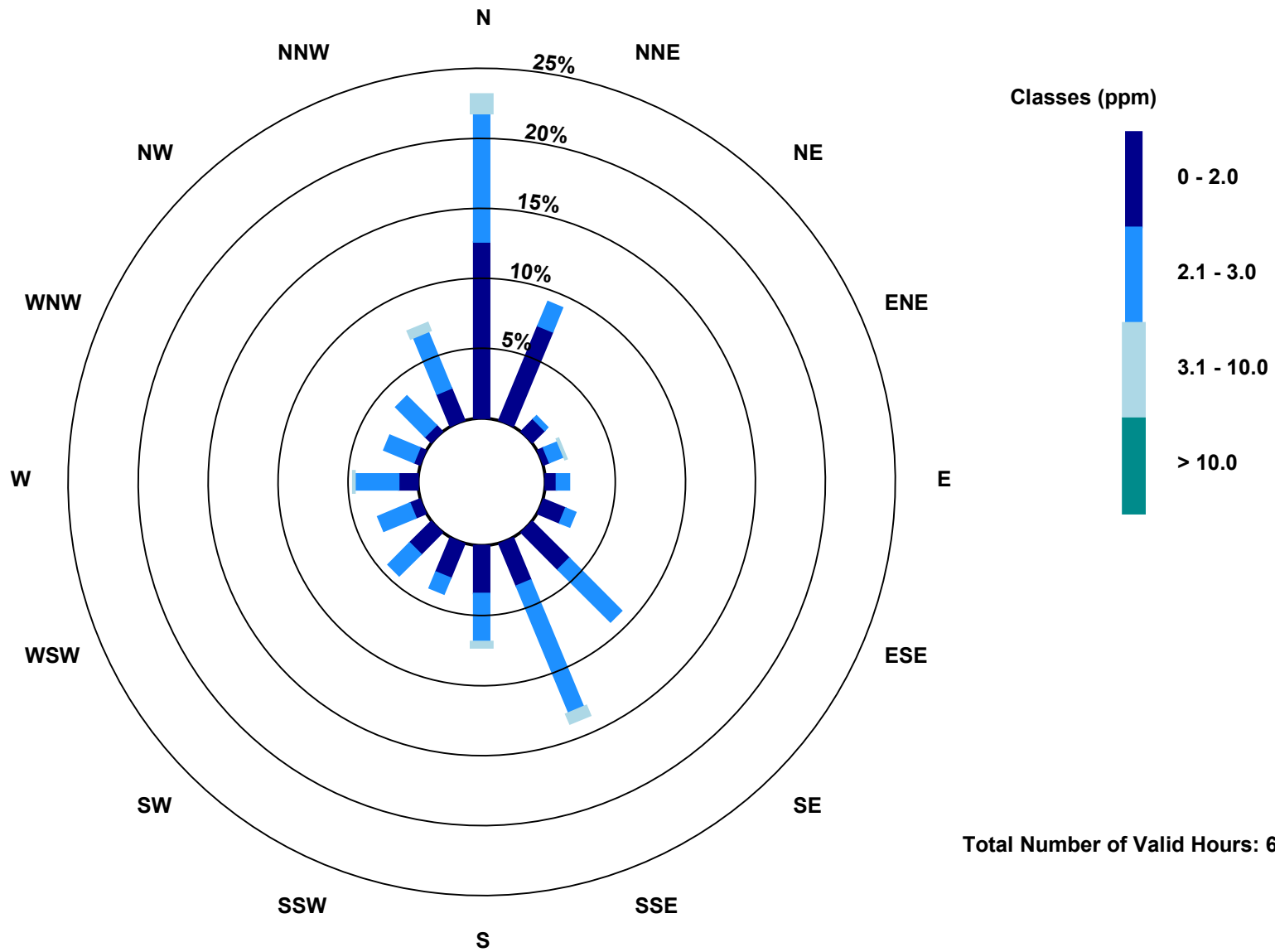
Total Number of Valid Hours: 643

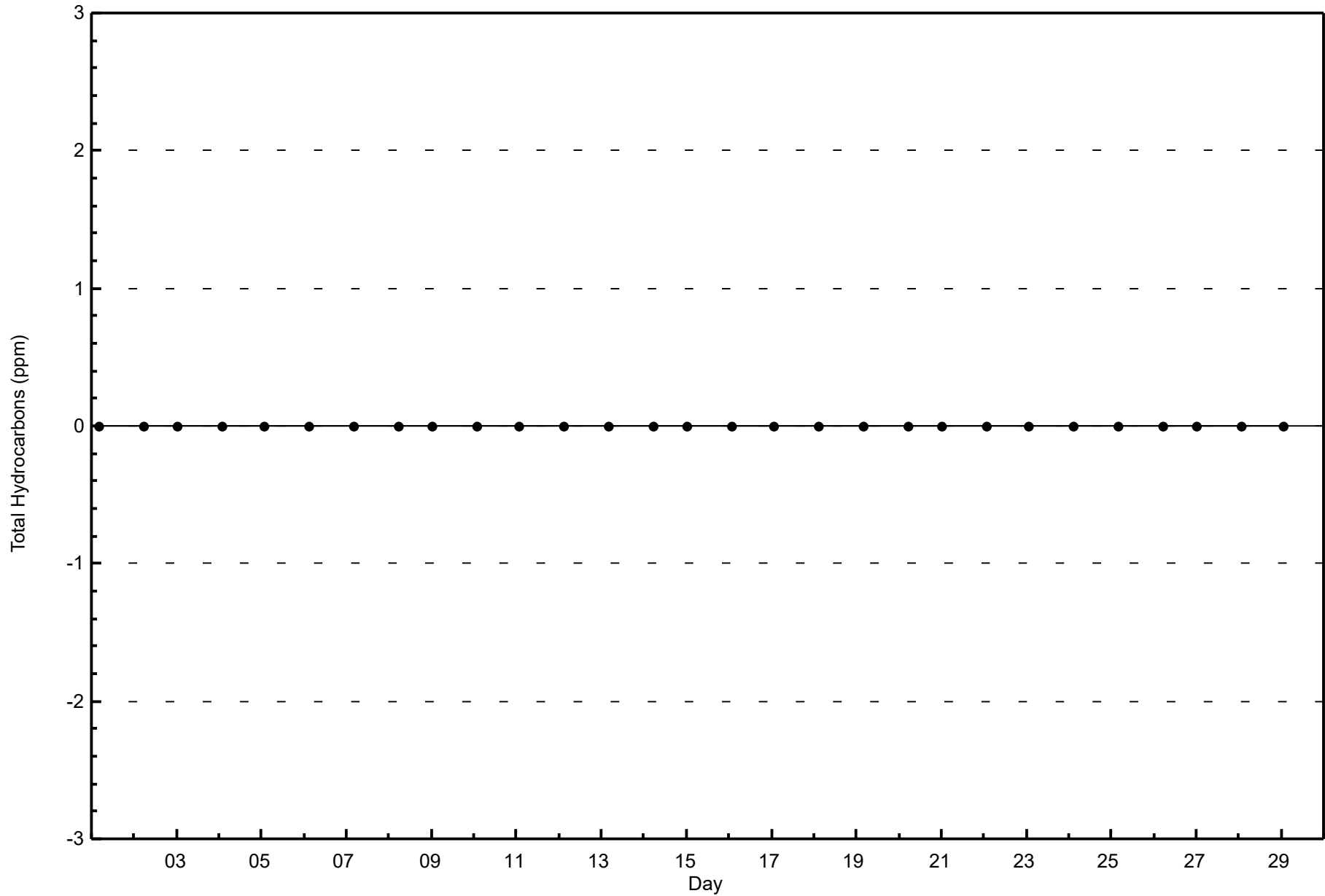
Total Number of Hours: 696

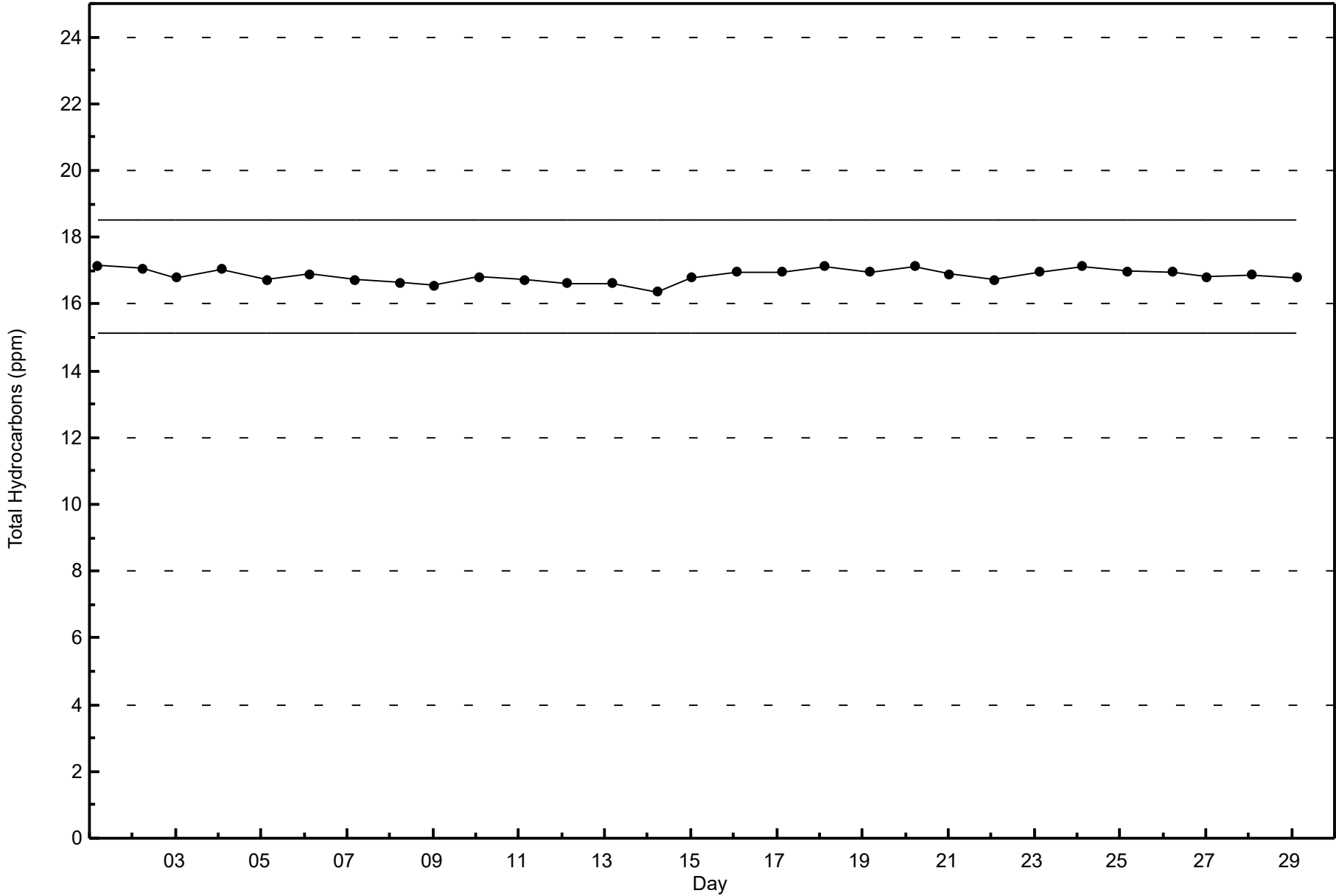


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Mildred Lake





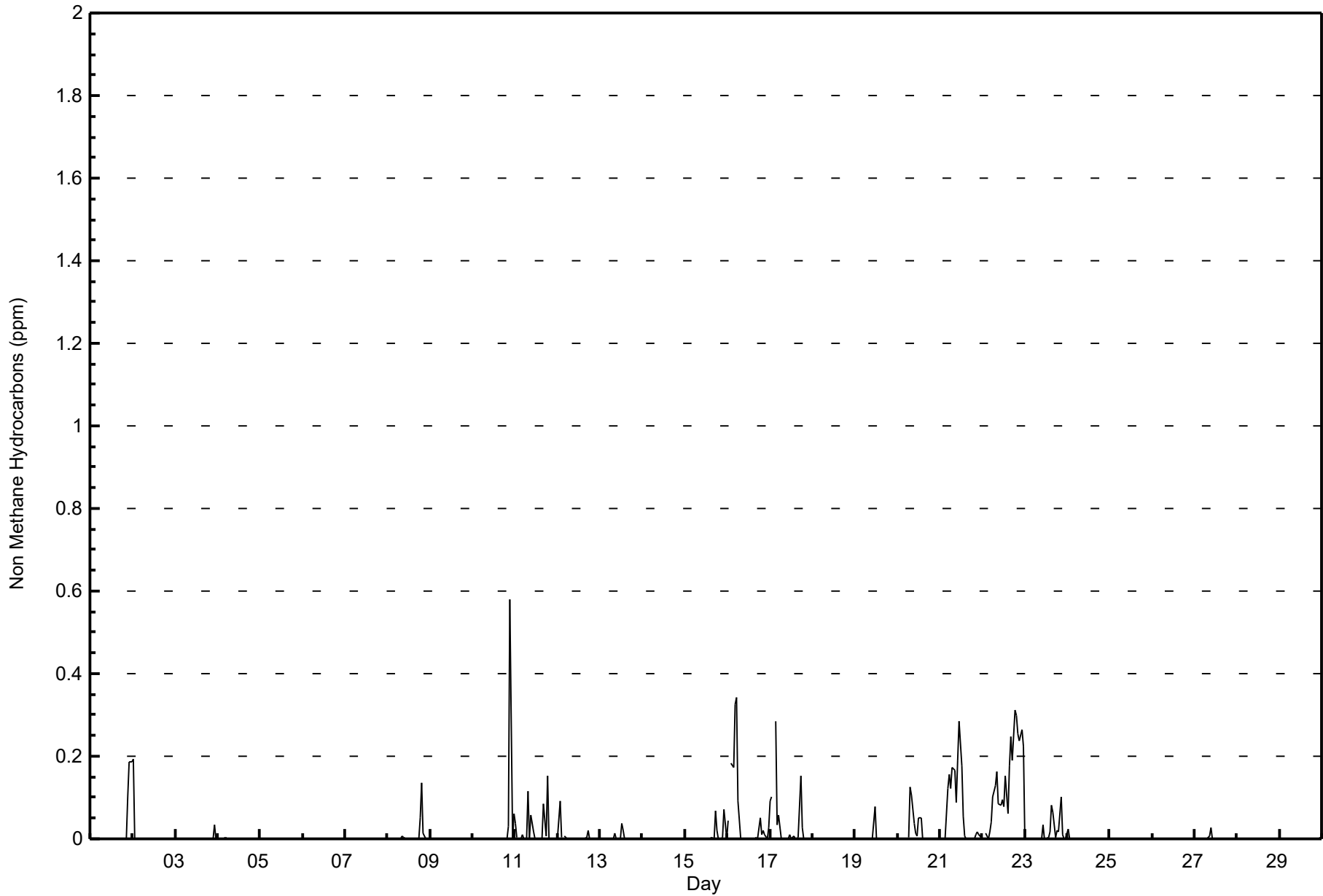




Summary of Hour Averages

Mildred Lake - February 2024

Maximum Value: 0.579 ppm on Feb 10 22:00		Maximum Daily Average: 0.140 ppm on Feb 22		Hours in Service:	696																								
Minimum Value: 0.000 ppm on Feb 1 01:00		Minimum Daily Average: 0.000 ppm on Feb 5		Hours of Data:	662																								
Maximum Diurnal Average: 0.033 ppm at hour 22		Minimum Diurnal Average: 0.003 ppm at hour 15		Hours of Missing Data:	34																								
Monthly Average: 0.015 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.3		Hours of Calibration:	32																								
				Percent Operational Time:	99.7																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.103	0.185	0.188	0.021	0.188			
2-Feb	0.193	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.193			
3-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.034	0.000	0.001	0.034			
4-Feb	0.002	Z	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003			
5-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
6-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
7-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.003			
8-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.007	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.052	0.137	0.014	0.000	0.000	0.000	0.009	0.137			
9-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
10-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.579	0.000	0.062	0.029	0.579			
11-Feb	0.037	0.002	Z	0.000	0.009	0.000	0.000	0.116	0.000	0.056	0.017	0.000	0.000	0.000	0.000	0.083	0.008	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.021	0.153			
12-Feb	0.000	0.092	0.002	Z	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.092			
13-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.014	0.000	0.000	0.000	0.037	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.037			
14-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
15-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	C	C	C	0.000	0.000	0.000	0.004	0.000	0.069	0.021	0.000	0.000	0.002	0.070	0.000	0.008	0.070			
16-Feb	0.043	Z	0.182	0.172	0.327	0.343	0.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.052	0.010	0.021	0.010	0.000	0.026	0.000	0.056	0.343			
17-Feb	0.091	0.103	Z	0.286	0.033	0.059	0.000	0.000	0.000	0.000	0.000	0.011	0.000	0.005	0.000	0.003	0.152	0.028	0.000	0.000	0.000	0.000	0.000	0.000	0.033	0.286			
18-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
19-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.077	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.077			
20-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.002	0.124	0.105	0.037	0.012	0.005	0.050	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.124			
21-Feb	Z	0.000	0.000	0.000	0.121	0.155	0.121	0.173	0.164	0.089	0.191	0.285	0.175	0.055	0.006	0.000	0.000	0.000	0.000	0.000	0.009	0.016	0.009	0.005	0.068	0.285			
22-Feb	0.000	Z	0.013	0.000	0.018	0.042	0.101	0.128	0.161	0.086	0.081	0.094	0.077	0.153	0.060	0.178	0.246	0.191	0.312	0.299	0.254	0.237	0.263	0.224	0.140	0.312			
23-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.000	0.000	0.002	0.017	0.082	0.063	0.002	0.020	0.017	0.102	0.010	0.000	0.001	0.015	0.102			
24-Feb	0.023	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.023			
25-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
26-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
27-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.028			
28-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	M	M	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
29-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.004			
		0.016	0.008	0.008	0.018	0.022	0.025	0.011	0.019	0.016	0.011	0.012	0.016	0.012	0.010	0.003	0.009	0.014	0.015	0.022	0.016	0.015	0.033	0.019	0.018	Diurnal Average			
		0.193	0.103	0.182	0.286	0.327	0.343	0.121	0.173	0.164	0.089	0.191	0.285	0.175	0.153	0.060	0.178	0.246	0.191	0.312	0.299	0.254	0.579	0.263	0.224	Diurnal Maximum			
Z - zerspan		C - Calibration			M - Maintenance																								





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Non Methane Hydrocarbons (NMHC) - ppm
Mildred Lake - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	562	84.89	84.89
0.006 - 0.05	43	6.50	91.39
0.06 - 0.1	29	4.38	95.77
> 0.1	28	4.23	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Mildred Lake - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	132	59	9	10	10	16	56	73	39	21	18	7	18	15	20	42	545
0.006 - 0.05	5	0	1	0	0	0	1	7	3	2	5	5	8	3	1	1	42
0.06 - 0.1	4	0	0	0	1	0	1	3	1	2	3	5	4	0	2	3	29
> 0.1	8	0	0	1	0	0	0	6	4	0	2	4	0	0	0	2	27
Totals	149	59	10	11	11	16	58	89	47	25	28	21	30	18	23	48	643

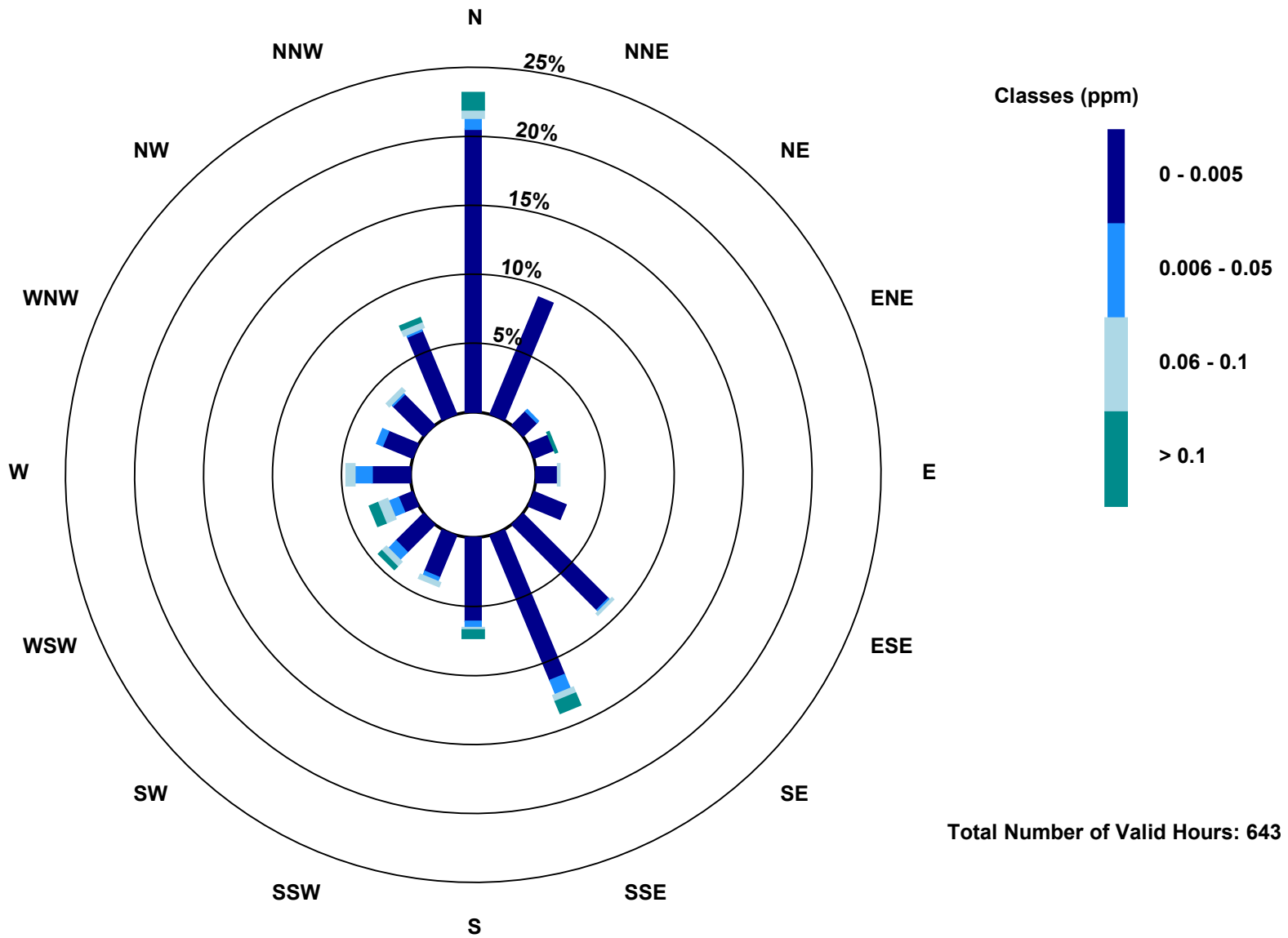
Total Number of Valid Hours: 643

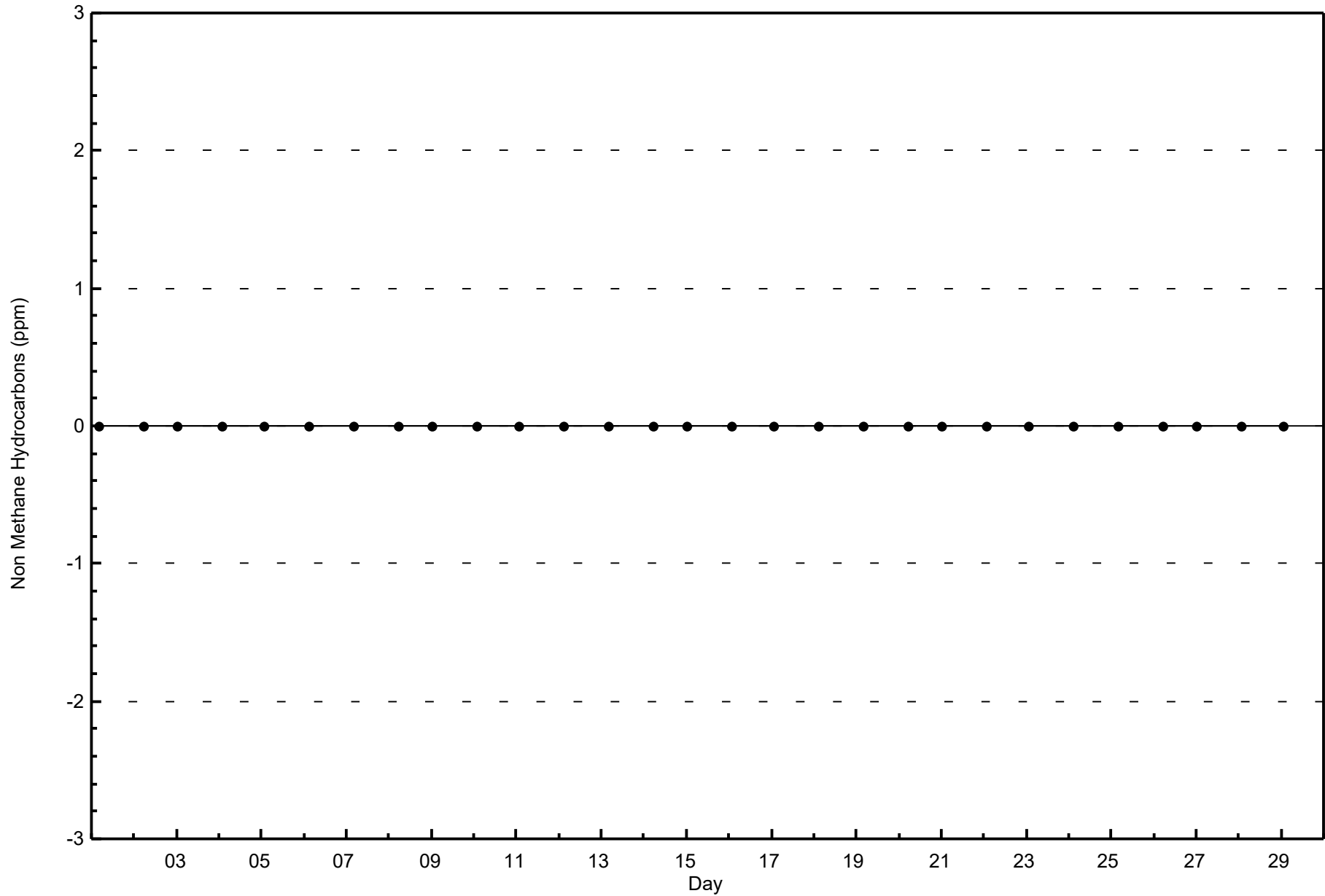
Total Number of Hours: 696

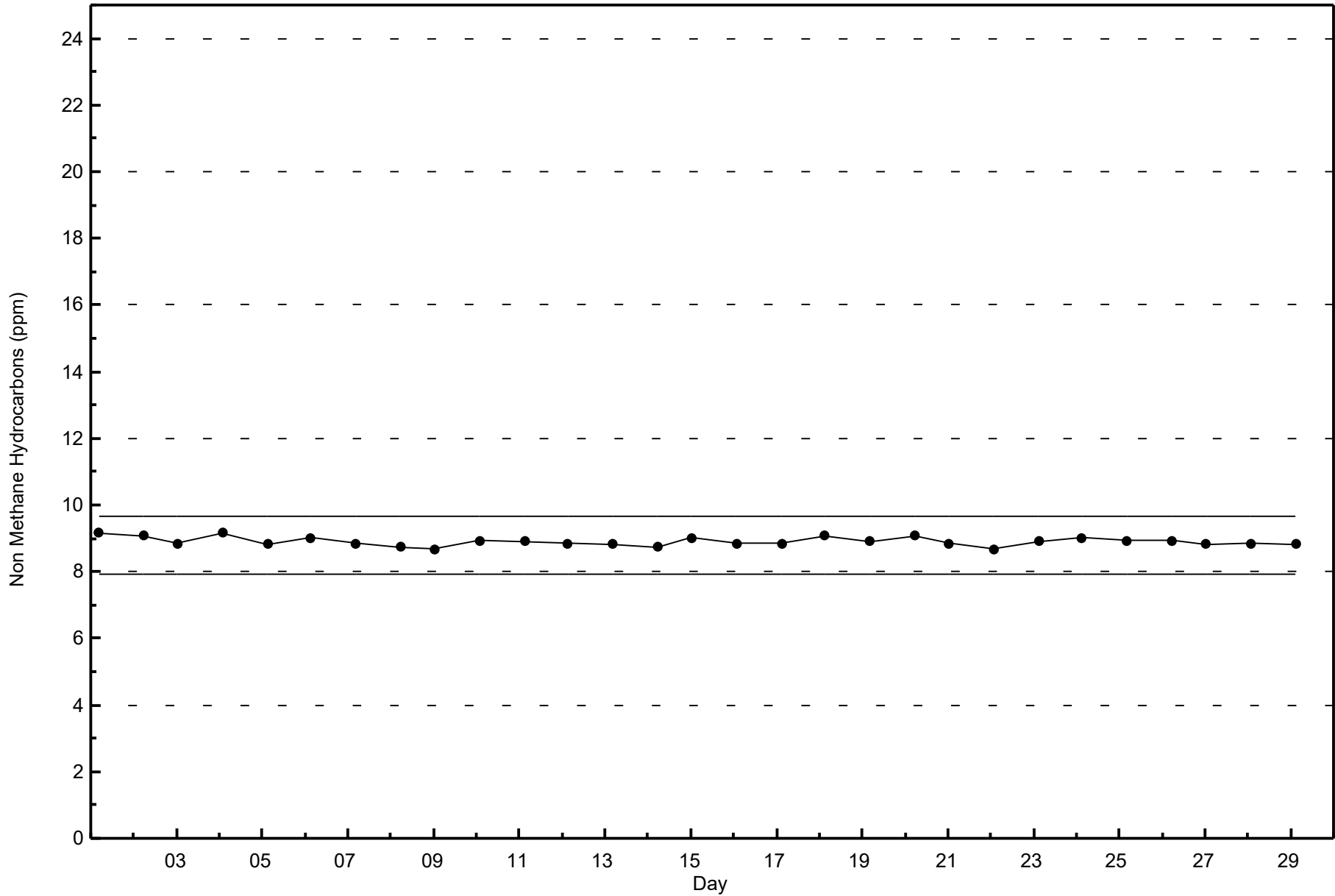


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Mildred Lake







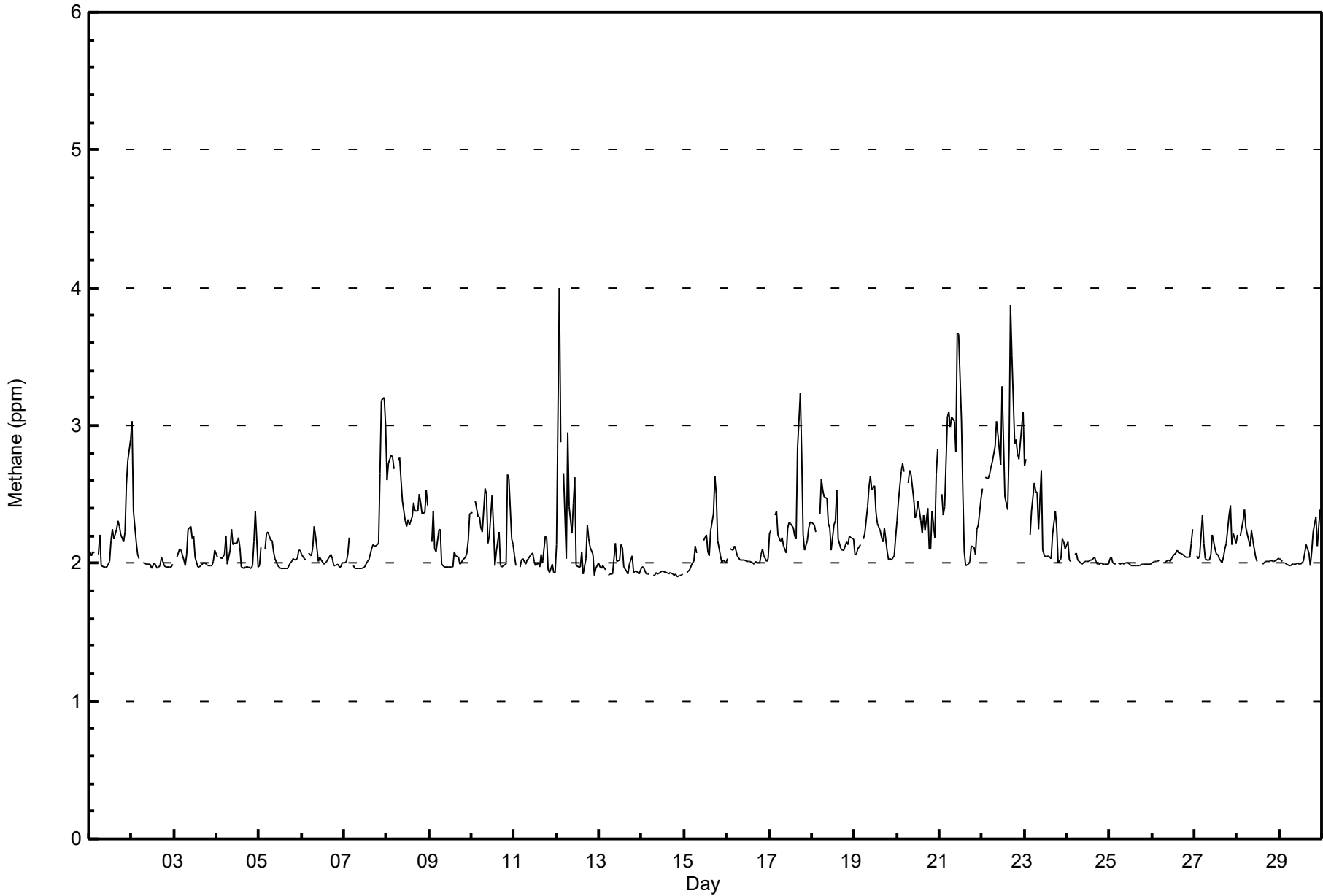


Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														696							
Maximum Value: 4.0 ppm on Feb 12 02:00		Maximum Daily Average: 2.9 ppm on Feb 22		Hours of Data: 662														662									
Minimum Value: 1.9 ppm on Feb 14 21:00		Minimum Daily Average: 1.9 ppm on Feb 14		Hours of Missing Data: 34														34									
Maximum Diurnal Average: 2.3 ppm at hour 5		Minimum Diurnal Average: 2.1 ppm at hour 15		Hours of Calibration: 32														32									
Monthly Average: 2.18 ppm		Percentiles: P ₁ = 1.9 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.1 Q ₃ = 2.3 P ₉₀ = 2.6 P ₉₉ = 3.2		Percent Operational Time: 99.7														99.7									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	2.1	2.0	2.1	2.1	Z	2.1	2.2	2.0	2.0	2.0	2.0	2.2	2.3	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.6	2.7	2.9	2.2	2.9	
2-Feb	3.0	2.4	2.2	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	3.0	
3-Feb	Z	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.2	2.3	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.3	
4-Feb	2.0	Z	2.0	2.0	2.1	2.2	2.0	2.1	2.2	2.1	2.2	2.1	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.4	2.0	2.1	2.4	
5-Feb	2.0	2.1	Z	2.1	2.2	2.2	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	
6-Feb	2.1	2.0	2.0	Z	2.1	2.1	2.1	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	
7-Feb	2.0	2.0	2.1	2.2	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.7	3.2	3.2	3.0	2.2	3.2	
8-Feb	2.6	2.7	2.8	2.8	2.7	Z	2.7	2.8	2.6	2.4	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.4	2.4	2.4	2.5	2.4	2.5	2.8	
9-Feb	Z	2.2	2.4	2.1	2.1	2.2	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.4	2.1	2.4	
10-Feb	2.4	Z	2.4	2.3	2.3	2.3	2.2	2.5	2.5	2.1	2.2	2.5	2.3	2.0	2.1	2.2	2.0	2.0	2.0	2.0	2.6	2.6	2.2	2.1	2.3	2.6	
11-Feb	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.2	2.2	2.0	1.9	2.0	1.9	1.9	2.0	2.2	
12-Feb	2.1	4.0	2.9	Z	2.7	2.0	3.0	2.4	2.2	2.4	2.6	2.0	2.0	2.0	2.1	1.9	2.0	2.3	2.2	2.1	2.1	1.9	2.0	2.0	2.3	4.0	
13-Feb	2.0	2.0	2.0	1.9	Z	1.9	1.9	1.9	2.0	2.1	2.0	2.0	2.1	2.1	2.0	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.1	
14-Feb	2.0	2.0	1.9	1.9	1.9	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	
15-Feb	Z	1.9	1.9	1.9	2.0	2.0	2.1	2.1	C	C	C	2.2	2.2	2.1	2.1	2.2	2.4	2.6	2.5	2.2	2.1	2.0	2.0	2.0	2.1	2.6	
16-Feb	2.0	Z	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.1	
17-Feb	2.2	2.2	Z	2.4	2.4	2.2	2.2	2.2	2.1	2.1	2.3	2.3	2.3	2.3	2.2	2.2	2.8	3.2	2.8	2.2	2.1	2.2	2.3	2.3	2.3	3.2	
18-Feb	2.3	2.3	2.2	Z	2.4	2.6	2.5	2.5	2.5	2.3	2.3	2.1	2.3	2.3	2.5	2.2	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.3	2.6	
19-Feb	2.1	2.1	2.1	2.1	Z	2.2	2.2	2.4	2.6	2.6	2.5	2.6	2.4	2.3	2.2	2.2	2.2	2.3	2.1	2.0	2.0	2.0	2.0	2.2	2.2	2.6	
20-Feb	2.3	2.5	2.7	2.7	2.7	Z	2.6	2.7	2.6	2.5	2.3	2.4	2.4	2.3	2.2	2.3	2.2	2.4	2.1	2.1	2.4	2.2	2.6	2.8	2.4	2.8	
21-Feb	Z	2.5	2.3	2.4	3.1	3.1	3.0	3.1	3.0	2.8	3.7	3.7	3.0	2.5	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.3	2.5	2.6	3.7	
22-Feb	2.5	Z	2.6	2.6	2.6	2.7	2.7	2.8	3.0	2.9	2.7	3.3	2.9	2.5	2.4	2.8	3.9	3.5	2.9	2.9	2.8	2.8	3.0	3.1	2.9	3.9	
23-Feb	2.7	2.8	Z	2.2	2.4	2.6	2.5	2.5	2.2	2.7	2.1	2.1	2.0	2.1	2.0	2.0	2.2	2.4	2.3	2.0	2.0	2.2	2.2	2.1	2.3	2.8	
24-Feb	2.2	2.0	2.0	Z	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	
25-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
26-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.2	2.1	2.2
27-Feb	Z	2.1	2.0	2.1	2.4	2.1	2.0	2.0	2.0	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.4	2.4	2.1	2.2	2.1	2.1	2.4	
28-Feb	2.2	Z	2.2	2.3	2.4	2.3	2.2	2.1	2.2	2.2	2.0	2.0	M	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.4	
29-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	2.2	2.3	2.1	2.3	2.4	2.1	2.4	
2.2																								Diurnal Average			
3.0																								Diurnal Maximum			
Z - zerspan		C - Calibration				M - Maintenance																					



Wood Buffalo Environmental Association
Hourly Averages

Methane (CH₄) - ppm
Mildred Lake - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Mildred Lake - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	305	46.07	46.07
2.1 - 3.0	344	51.96	98.04
3.1 - 10.0	13	1.96	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Methane (CH₄) - ppm
Mildred Lake - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	81	47	8	3	5	11	24	21	22	17	17	9	12	3	4	16	300
2.1 - 3.0	63	12	2	7	6	5	34	64	24	8	11	12	17	15	19	31	330
3.1 - 10.0	5	0	0	1	0	0	0	4	1	0	0	0	1	0	0	1	13
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	149	59	10	11	11	16	58	89	47	25	28	21	30	18	23	48	643

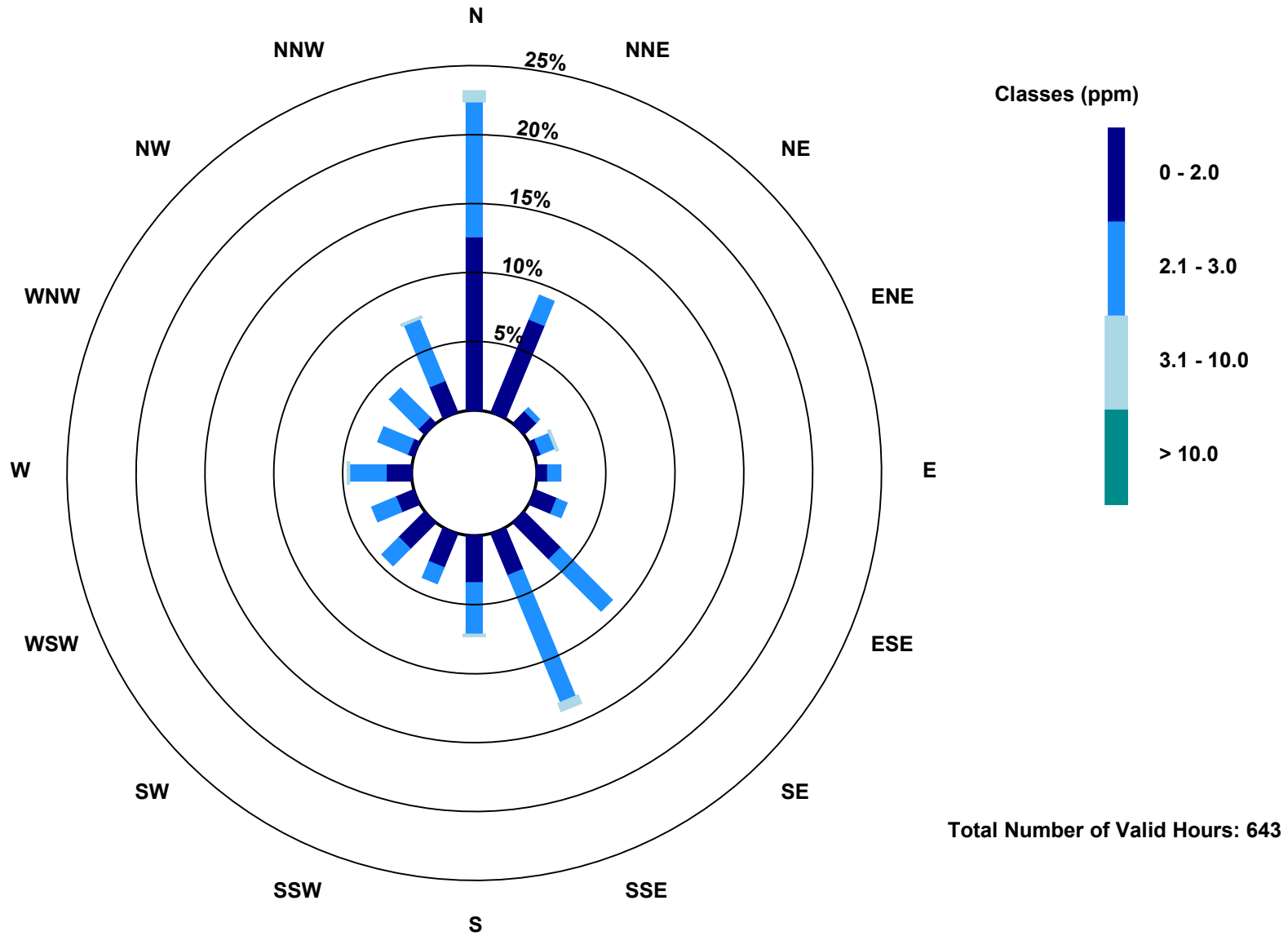
Total Number of Valid Hours: 643

Total Number of Hours: 696

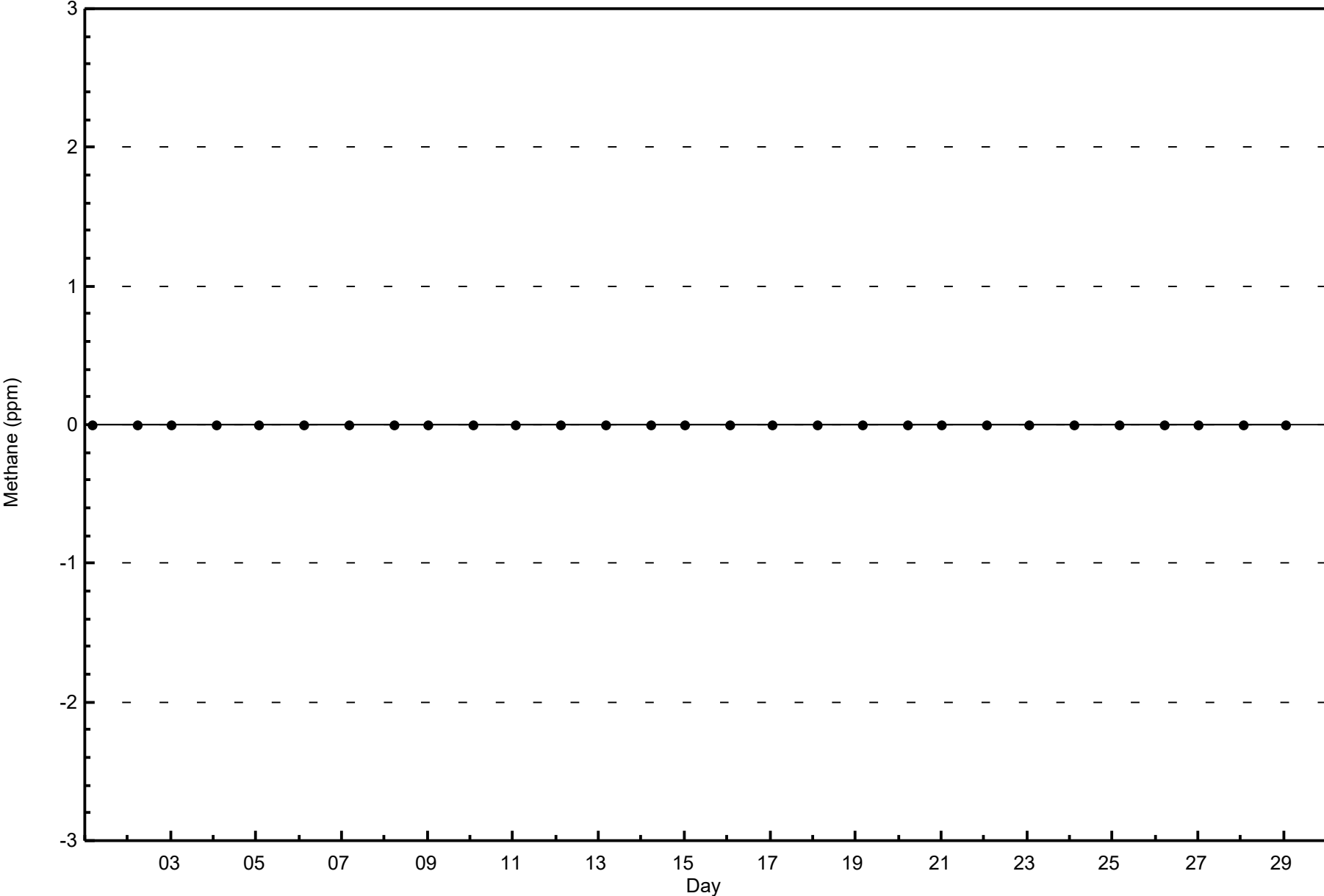


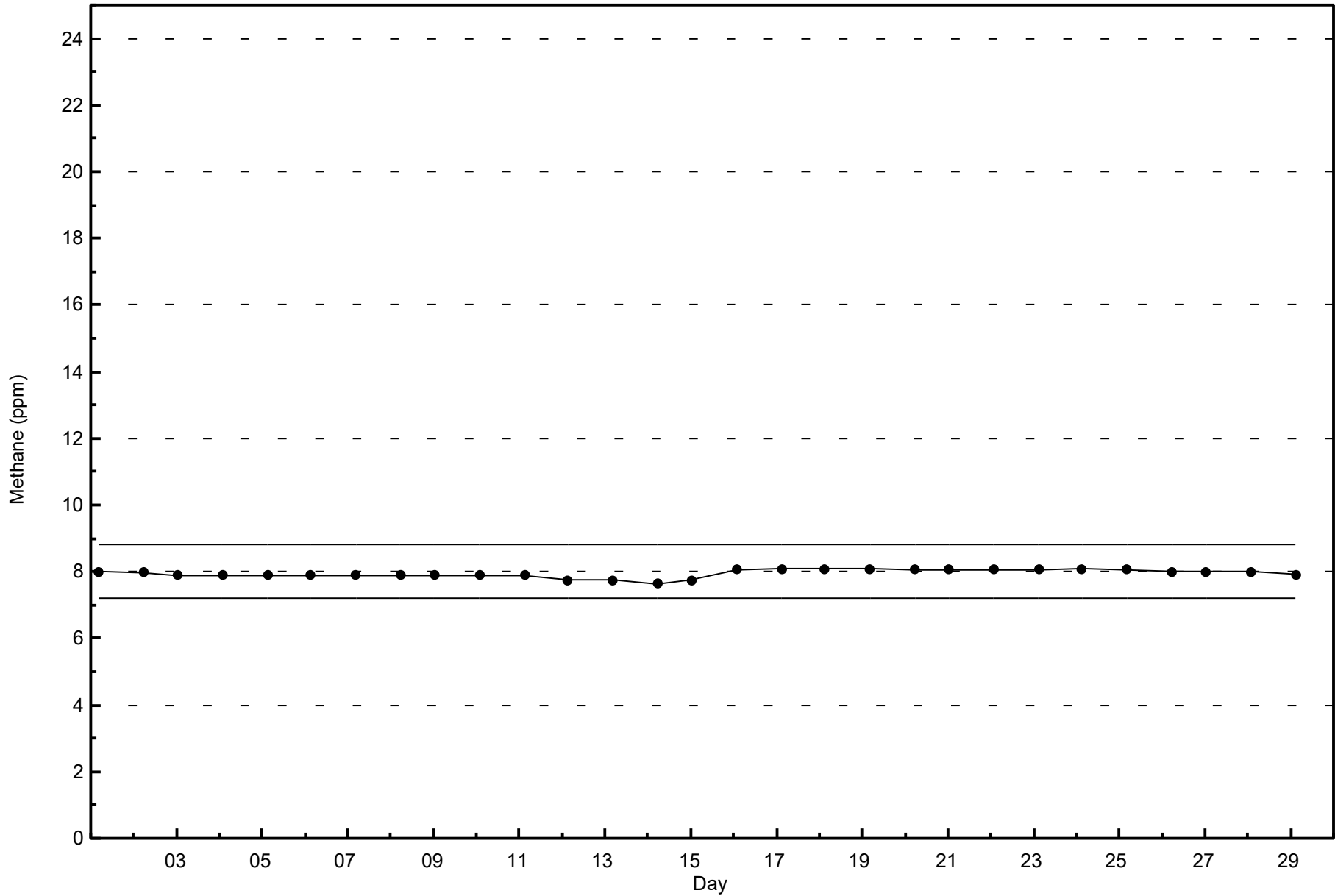
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Mildred Lake



Total Number of Valid Hours: 643







Wood Buffalo Environmental Association
Summary of Hour Averages

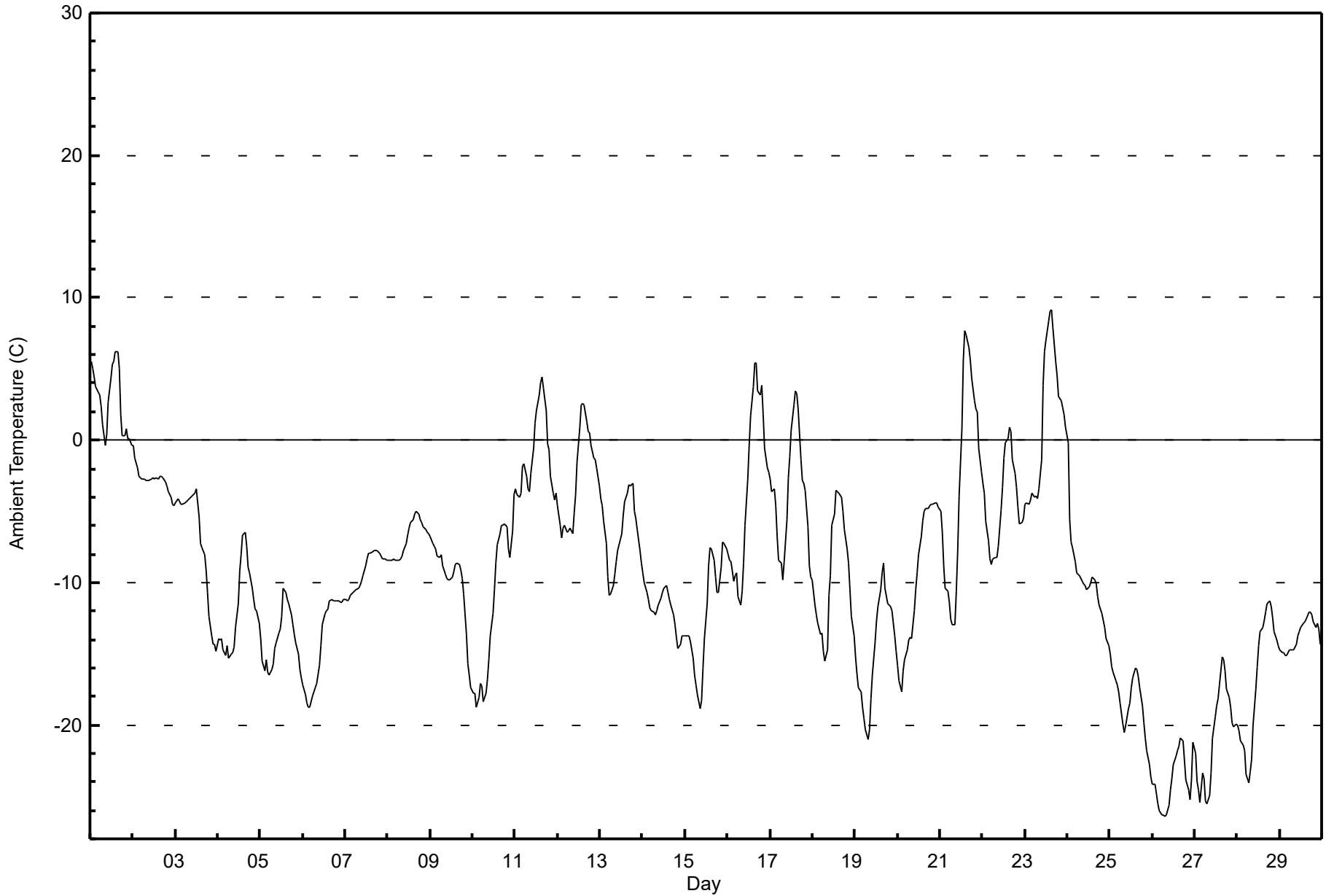
Ambient Temperature (AT) - C
Mildred Lake - February 2024

Maximum Value: 9.2 C on Feb 23 16:00		Maximum Daily Average: 2.8 C on Feb 1		Hours in Service: 696																							
Minimum Value: -26.4 C on Feb 26 08:00		Minimum Daily Average: -24.0 C on Feb 26		Hours of Data: 696																							
Maximum Diurnal Average: -5.4 C at hour 16		Minimum Diurnal Average: -12.6 C at hour 8		Hours of Missing Data: 0																							
Monthly Average: -9.33 C		Percentiles: P ₁ = -25.5 P ₁₀ = -18.6 Q ₁ = -14.3 Median = -9.5 Q ₃ = -4.3 P ₉₀ = 0.5 P ₉₉ = 6.5		Hours of Calibration: 0																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	5.6	5.1	4.4	3.7	3.4	3.1	2.4	1.1	-0.3	0.5	2.7	4.4	5.3	5.5	6.2	6.2	5.1	1.8	0.3	0.3	0.8	0.1	0.1	-0.4	2.8	6.2	
2-Feb	-0.4	-1.2	-1.9	-2.6	-2.7	-2.7	-2.7	-2.8	-2.9	-2.8	-2.8	-2.7	-2.7	-2.7	-2.6	-2.6	-2.6	-2.6	-2.9	-3.2	-3.6	-4.0	-4.5	-4.6	-2.8	-0.4	
3-Feb	-4.4	-4.1	-4.3	-4.5	-4.5	-4.5	-4.3	-4.2	-4.1	-3.9	-3.8	-3.7	-3.4	-5.4	-7.3	-7.6	-8.1	-9.1	-10.7	-12.4	-13.7	-14.3	-14.3	-14.8	-7.1	-3.4	
4-Feb	-14.0	-14.1	-13.9	-14.7	-15.1	-14.5	-15.4	-15.1	-14.9	-14.5	-13.1	-11.5	-9.2	-8.0	-6.6	-6.5	-7.4	-9.0	-9.3	-10.4	-11.2	-11.9	-12.0	-12.8	-11.9	-6.5	
5-Feb	-13.9	-15.5	-16.2	-15.4	-16.3	-16.5	-16.1	-15.7	-14.6	-14.3	-13.3	-12.4	-10.4	-10.7	-11.1	-11.5	-12.3	-13.0	-13.7	-14.3	-15.0	-16.1	-16.7	-14.1	-10.4		
6-Feb	-17.2	-17.8	-18.5	-18.8	-18.7	-18.0	-17.7	-17.4	-17.1	-15.8	-14.4	-13.0	-12.2	-12.0	-11.9	-11.3	-11.2	-11.3	-11.3	-11.3	-11.4	-11.4	-11.2	-14.3	-11.2		
7-Feb	-11.2	-11.2	-11.1	-10.9	-10.7	-10.6	-10.5	-10.4	-10.2	-9.9	-9.5	-8.8	-8.3	-8.0	-7.9	-7.8	-7.8	-7.8	-7.8	-7.9	-8.2	-8.3	-8.4	-8.4	-9.2	-7.8	
8-Feb	-8.4	-8.4	-8.4	-8.4	-8.4	-8.4	-8.4	-8.3	-8.1	-7.7	-7.3	-6.7	-6.2	-5.8	-5.5	-5.2	-5.0	-5.2	-5.6	-5.8	-6.0	-6.3	-6.4	-6.5	-6.9	-5.0	
9-Feb	-6.8	-7.3	-7.5	-7.7	-8.2	-8.2	-8.0	-8.8	-9.5	-9.7	-9.8	-9.8	-9.6	-9.3	-8.7	-8.7	-8.7	-9.1	-9.7	-10.8	-13.6	-15.7	-16.5	-17.4	-10.0	-6.8	
10-Feb	-17.8	-17.7	-18.8	-18.0	-17.1	-17.2	-18.3	-17.7	-16.8	-15.4	-13.7	-12.1	-10.5	-8.6	-7.4	-6.6	-6.0	-5.9	-5.9	-6.1	-7.6	-8.2	-6.4	-3.8	-11.8	-3.8	
11-Feb	-3.4	-3.8	-4.0	-3.7	-1.8	-1.6	-2.5	-3.4	-3.6	-2.3	-0.5	1.2	2.1	3.2	4.0	4.4	3.6	2.1	-0.2	-0.7	-2.5	-3.7	-4.2	-3.7	-1.0	4.4	
12-Feb	-4.6	-6.0	-6.9	-6.2	-5.9	-6.5	-6.4	-6.2	-6.5	-5.1	-3.8	-1.6	0.9	2.5	2.6	2.5	1.3	0.6	0.5	-0.4	-1.2	-1.3	-2.0	-3.2	-2.6	2.6	
13-Feb	-4.1	-4.6	-5.7	-7.3	-9.6	-10.9	-10.8	-10.2	-9.5	-8.5	-7.7	-7.0	-6.5	-5.3	-4.3	-3.7	-3.2	-3.2	-3.1	-5.0	-5.5	-6.2	-7.8	-8.7	-6.6	-3.1	
14-Feb	-9.3	-10.0	-10.7	-11.1	-11.8	-11.9	-12.1	-12.2	-12.0	-11.6	-11.1	-10.7	-10.4	-10.2	-10.7	-11.2	-11.6	-12.3	-12.9	-13.8	-14.6	-14.3	-13.8	-13.7	-11.8	-9.3	
15-Feb	-13.7	-13.7	-13.7	-14.1	-15.3	-16.5	-17.2	-17.9	-18.8	-18.3	-16.0	-14.0	-11.5	-8.8	-7.5	-7.7	-8.4	-9.6	-10.7	-10.7	-9.0	-7.2	-7.2	-7.7	-12.3	-7.2	
16-Feb	-8.0	-8.4	-8.6	-9.9	-9.5	-9.3	-11.0	-11.6	-10.6	-8.7	-6.0	-2.8	-0.4	1.7	3.7	5.4	5.4	3.5	3.2	3.8	1.8	-0.5	-2.0	-2.2	-3.4	5.4	
17-Feb	-2.7	-3.6	-3.5	-4.6	-6.8	-8.4	-8.6	-9.9	-8.5	-5.5	-2.6	-1.1	0.7	2.4	3.5	3.2	2.2	-1.4	-2.9	-3.0	-3.5	-6.1	-8.8	-9.7	-3.7	3.5	
18-Feb	-9.8	-11.5	-12.3	-12.9	-13.6	-13.6	-14.8	-15.5	-14.7	-10.9	-9.5	-6.0	-5.2	-3.5	-3.6	-3.7	-4.0	-5.0	-6.3	-7.7	-8.6	-10.5	-12.3	-13.8	-9.6	-3.5	
19-Feb	-15.2	-16.4	-17.4	-17.7	-18.8	-19.5	-20.4	-21.0	-20.3	-18.2	-16.5	-14.2	-12.7	-11.7	-10.5	-9.3	-8.6	-10.4	-11.5	-11.6	-11.7	-12.0	-13.8	-14.9	-14.7	-8.6	
20-Feb	-15.8	-16.9	-17.7	-16.2	-15.4	-14.7	-14.1	-13.9	-14.0	-12.0	-10.5	-9.3	-8.1	-6.8	-5.7	-5.0	-4.8	-4.8	-4.6	-4.6	-4.5	-4.4	-4.4	-4.7	-9.7	-4.4	
21-Feb	-5.0	-6.5	-8.8	-10.4	-10.6	-11.4	-12.6	-13.0	-13.0	-10.6	-7.8	-3.9	0.8	5.6	7.7	7.3	6.5	5.6	4.3	2.8	2.2	2.0	-0.6	-2.2	-3.0	7.7	
22-Feb	-3.0	-3.7	-5.6	-7.1	-8.4	-8.7	-8.4	-8.2	-8.2	-7.4	-4.9	-3.3	-1.3	-0.2	0.1	0.9	0.7	-1.4	-2.3	-3.4	-4.7	-5.9	-5.8	-5.5	-4.4	0.9	
23-Feb	-4.5	-4.4	-4.5	-4.2	-3.7	-4.0	-3.9	-4.1	-3.4	-1.3	3.9	6.2	6.9	8.3	9.1	9.2	7.9	5.5	4.5	3.0	2.8	2.2	1.7	0.9	1.4	9.2	
24-Feb	-0.2	-5.6	-7.1	-7.6	-8.6	-9.3	-9.4	-9.5	-9.9	-10.1	-10.2	-10.5	-10.3	-10.0	-9.6	9.8	-10.1	-11.0	-11.6	-12.2	-12.6	-13.1	-13.9	-14.4	-9.9	-0.2	
25-Feb	-15.0	-15.9	-16.3	-16.9	-17.2	-17.7	-18.5	-19.9	-20.6	-20.1	-18.9	-18.5	-17.4	-16.7	-16.0	-16.1	-16.6	-17.4	-18.6	-19.9	-21.0	-21.8	-22.8	-23.6	-18.5	-15.0	
26-Feb	-24.1	-24.2	-24.8	-25.6	-26.0	-26.3	-26.4	-26.4	-26.4	-25.6	-24.5	-23.7	-22.7	-22.2	-21.8	-21.5	-20.9	-21.1	-22.5	-23.9	-24.5	-25.3	-23.9	-21.2	-24.0	-20.9	
27-Feb	-22.0	-23.9	-24.6	-25.5	-23.3	-23.7	-25.3	-25.5	-25.0	-23.4	-21.0	-19.5	-18.6	-18.2	-17.2	-15.2	-15.4	-16.2	-17.5	-18.0	-18.8	-19.8	-20.1	-20.0	-20.7	-15.2	
28-Feb	-20.0	-20.5	-21.1	-21.4	-21.8	-23.5	-24.1	-23.2	-22.4	-20.0	-17.5	-15.9	-14.5	-13.5	-13.2	-12.7	-12.1	-11.4	-11.3	-11.7	-12.5	-13.5	-14.1	-14.5	-16.9	-11.3	
29-Feb	-14.8	-14.9	-15.0	-15.1	-15.1	-14.8	-14.7	-14.8	-14.7	-14.4	-13.7	-13.5	-13.1	-12.9	-12.8	-12.6	-12.1	-12.0	-12.3	-12.7	-13.2	-12.9	-13.3	-14.4	-13.7	-12.0	
		-9.8	-10.6	-11.2	-11.5	-11.8	-12.1	-12.4	-12.6	-12.4	-11.3	-9.8	-8.5	-7.3	-6.2	-5.7	-5.4	-5.6	-6.6	-7.3	-8.0	-8.6	-9.3	-9.8	-10.1	Diurnal Average	
		5.6	5.1	4.4	3.7	3.4	3.1	2.4	1.1	-0.3	0.5	3.9	6.2	6.9	8.3	9.1	9.2	7.9	5.6	4.5	3.8	2.8	2.2	1.7	0.9	Diurnal Maximum	



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Mildred Lake - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Mildred Lake - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	53	7.61	7.61
-20 - 0	567	81.47	89.08
0 - 10	76	10.92	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

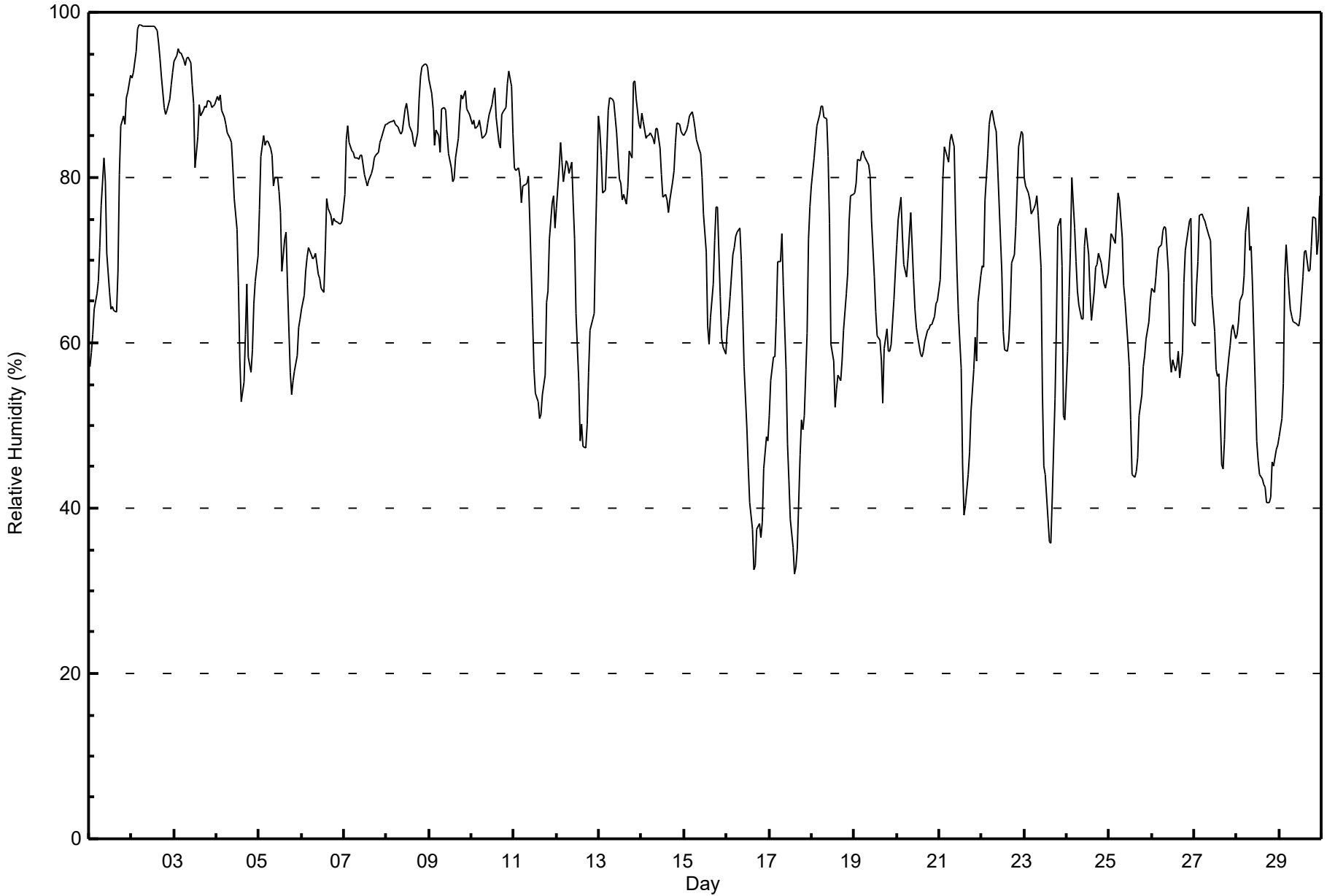
Relative Humidity (RH) - %
Mildred Lake - February 2024

Maximum Value: 98.5 % on Feb 2 05:00 Maximum Daily Average: 95.0 % on Feb 2																						Hours in Service: 696 Hours of Data: 696																											
Minimum Value: 32.0 % on Feb 17 15:00 Minimum Daily Average: 53.1 % on Feb 16 Maximum Diurnal Average: 80.2 % at hour 6 Minimum Diurnal Average: 62.1 % at hour 16 Monthly Average: 72.39 % Percentiles: P ₁ = 36.0 P ₁₀ = 51.9 Q ₁ = 62.3 Median = 74.1 Q ₃ = 84.6 P ₉₀ = 88.6 P ₉₉ = 98.3																						Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	57.2	58.8	61.0	64.1	65.9	67.5	71.5	76.6	82.3	79.6	70.8	66.1	64.1	64.4	63.8	63.8	68.6	80.4	86.3	87.4	86.4	89.6	90.4	92.4	73.3	92.4																							
2-Feb	92.0	92.6	95.3	98.0	98.5	98.4	98.4	98.3	98.3	98.3	98.3	98.3	98.3	98.3	97.8	96.2	94.5	92.2	88.6	87.6	88.1	89.5	91.3	92.7	95.0	98.5																							
3-Feb	94.0	94.8	95.5	95.0	95.2	94.3	93.6	94.4	94.7	93.8	91.2	88.9	81.1	85.0	88.9	87.4	88.2	88.6	88.6	89.3	89.2	88.4	88.7	88.8	90.7	95.5																							
4-Feb	89.8	89.3	89.9	88.1	87.3	86.5	85.4	84.7	84.3	81.2	77.4	73.7	67.0	57.9	52.9	55.2	61.1	67.2	58.3	56.5	59.1	64.7	67.5	70.5	73.1	89.9																							
5-Feb	76.1	82.6	85.0	83.9	84.4	84.4	83.6	82.7	78.9	80.0	80.0	78.3	75.8	68.7	72.5	73.4	67.1	56.4	53.7	55.5	56.6	58.4	61.9	62.9	72.6	85.0																							
6-Feb	64.1	65.7	68.6	70.4	71.5	70.6	70.2	70.4	70.8	68.3	67.8	66.6	66.1	71.1	77.4	76.3	75.3	74.2	75.0	74.7	74.6	74.5	74.5	74.8	71.4	77.4																							
7-Feb	77.9	84.5	86.2	84.3	83.2	83.1	82.4	82.4	82.2	82.7	82.8	80.4	79.6	79.1	79.7	80.5	81.3	82.4	82.6	83.1	84.3	84.8	85.9	86.5	82.6	86.5																							
8-Feb	86.4	86.6	86.7	86.8	86.9	86.5	86.1	85.6	85.2	85.6	88.3	88.9	87.9	86.3	85.4	84.2	83.7	85.4	89.5	92.3	93.4	93.8	93.8	93.5	87.9	93.8																							
9-Feb	91.8	90.1	88.3	83.9	85.8	85.1	83.0	88.2	88.5	88.2	85.0	82.9	81.1	79.5	79.9	82.4	84.8	87.8	90.0	89.5	90.5	88.3	87.9	87.6	86.3	91.8																							
10-Feb	86.4	86.9	86.0	86.3	86.9	86.0	84.8	85.1	85.5	86.6	87.6	88.8	90.0	90.8	87.2	84.3	83.5	87.6	88.0	88.4	91.4	92.8	91.1	85.3	87.4	92.8																							
11-Feb	81.1	80.9	81.2	80.0	77.0	79.0	79.2	79.3	80.2	74.9	63.1	56.8	54.0	52.9	50.9	51.4	53.7	56.0	64.9	66.3	72.6	76.9	77.8	74.0	69.3	81.2																							
12-Feb	76.3	81.2	84.2	81.9	79.5	82.0	81.8	80.4	81.9	76.9	72.5	63.6	55.2	48.1	50.1	47.4	47.3	50.3	56.5	61.5	62.9	63.5	72.9	87.4	68.6	87.4																							
13-Feb	85.7	82.7	78.2	78.5	83.2	88.1	89.7	89.6	89.1	87.3	85.4	79.9	79.4	77.3	78.0	76.8	78.8	83.2	82.4	91.5	91.6	89.5	86.5	86.0	84.1	91.6																							
14-Feb	87.7	86.9	84.8	85.1	85.1	85.4	84.8	84.0	85.9	86.0	83.5	80.4	77.7	77.9	77.3	75.7	77.3	79.5	80.9	84.3	86.7	86.4	85.7	85.2	83.1	87.7																							
15-Feb	85.1	85.7	86.5	87.5	88.0	87.2	85.9	84.5	83.5	82.9	80.0	75.5	71.0	62.0	59.8	63.0	67.2	72.3	76.4	76.4	65.6	60.5	59.5	58.7	75.2	88.0																							
16-Feb	61.8	63.3	65.6	70.6	71.5	72.9	73.4	73.9	70.1	63.9	57.2	49.7	44.9	40.7	37.4	32.6	33.0	37.5	38.1	36.4	38.4	44.8	48.6	48.2	53.1	73.9																							
17-Feb	51.1	55.4	58.3	58.2	63.1	69.8	69.8	73.3	66.9	56.8	47.7	43.4	38.6	35.3	32.0	32.8	35.1	46.4	50.7	49.5	51.2	61.2	72.5	76.5	54.0	76.5																							
18-Feb	79.0	82.4	84.4	86.2	87.6	88.7	88.7	87.4	87.1	82.5	74.4	59.9	57.9	52.1	54.5	56.2	55.4	57.9	61.6	65.9	68.5	74.7	77.8	78.0	72.9	88.7																							
19-Feb	78.1	79.3	82.3	82.1	83.1	83.3	82.6	81.9	81.5	80.1	74.7	67.9	63.7	60.8	60.3	58.0	52.8	59.4	61.6	58.9	58.9	59.8	65.3	68.6	70.2	83.3																							
20-Feb	71.8	74.9	77.6	73.0	69.5	68.0	70.2	73.1	75.7	67.6	64.0	61.9	60.7	58.6	58.3	59.0	60.2	61.4	61.7	62.3	62.3	63.2	64.8	65.2	66.0	77.6																							
21-Feb	67.6	73.0	80.2	83.8	82.6	81.9	84.4	85.2	83.8	75.1	68.7	63.5	56.9	45.3	39.1	40.4	44.0	46.9	51.7	56.8	60.8	57.8	64.8	68.1	65.1	85.2																							
22-Feb	69.3	69.1	77.4	82.9	86.4	87.6	88.1	86.3	85.7	81.5	72.9	68.6	61.4	59.1	58.9	60.4	63.9	69.7	70.7	74.1	79.1	83.7	85.5	85.3	75.3	88.1																							
23-Feb	80.0	79.0	78.1	77.2	75.5	76.3	76.8	77.8	75.5	69.2	54.0	45.0	44.1	38.7	36.0	35.8	41.2	53.2	62.4	74.2	75.1	69.3	51.2	50.6	62.3	80.0																							
24-Feb	59.0	65.5	71.5	80.0	73.9	69.8	66.3	64.6	62.9	62.9	71.6	74.0	70.8	66.1	62.6	66.3	69.1	69.6	70.8	69.6	68.4	67.1	66.7	68.4	68.2	80.0																							
25-Feb	70.6	73.3	73.0	72.0	75.2	78.1	77.3	72.8	66.9	65.0	60.0	57.1	50.7	44.0	43.8	44.4	46.2	51.2	53.8	57.1	58.6	60.5	62.5	65.0	61.6	78.1																							
26-Feb	66.7	66.1	68.0	70.2	71.6	71.9	73.6	74.1	73.9	68.4	58.3	56.4	58.0	56.7	57.2	59.0	55.7	58.8	67.4	71.2	73.6	74.8	75.1	62.5	66.2	75.1																							
27-Feb	62.0	66.8	69.8	75.5	75.5	75.1	74.8	74.1	72.9	72.4	65.7	61.3	56.7	55.9	56.3	45.3	44.7	48.3	54.6	58.1	59.6	61.6	62.3	60.5	62.9	75.5																							
28-Feb	61.0	62.6	65.1	65.9	68.2	73.4	76.4	71.2	71.7	66.8	54.3	48.2	45.8	44.0	43.5	42.8	42.5	40.6	40.7	41.3	45.6	45.0	47.1	47.7	54.6	76.4																							
29-Feb	48.7	50.9	55.1	68.0	71.8	66.3	64.1	63.2	62.6	62.5	62.2	62.1	63.1	67.9	70.9	71.1	68.6	68.8	71.6	75.3	75.2	70.7	72.5	77.7	66.3	77.7																							
																								74.4	76.2	78.1	79.3	79.8	80.2	80.2	80.2	79.6	76.8	72.4	68.6	65.6	62.9	62.5	62.1	62.9	66.0	68.2	70.2	71.3	72.3	73.5	74.1	Diurnal Average	
																								94.0	94.8	95.5	98.0	98.5	98.4	98.4	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	97.8	96.2	94.5	92.2	90.0	92.3	93.4	93.8	93.8	93.5	Diurnal Maximum



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Mildred Lake - February 2024





Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Speed (WS) - km/h
Mildred Lake - February 2024

Maximum Speed: 24 km/h on Feb 28 22:00	Maximum Daily Speed Average: 15.1 km/h on Feb 28	Hours in Service: 696
Minimum Speed Value: 1 km/h on Feb 15 14:00	Minimum Daily Speed Average: 1.2 km/h on Feb 17	Hours of Data: 677
Maximum Diurnal Speed Average: 2.7 km/h at hour 24	Minimum Diurnal Speed Average: 0.5 km/h at hour 15	Hours of Missing Data: 19
Monthly Average Velocity: 0.8 km/h 9.5 deg	Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 5 Median = 8 Q ₃ = 11 P ₉₀ = 14 P ₉₉ = 19	Percent Operational Time: 97.3

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	SE16	SE18	SE14	SSE14	SSE15	SSE15	SSE10	SSE8	S6	S5	S5	S8	SSE8	SE10	SE9	ESE8	ENE3	NE4	N5	N6	N8	N7	N7	N9	SE5.3	SE18
2-Feb	N11	N11	N12	N14	N11	N11	N11	N11	N10	N10	N10	N10	N11	N9	N10	N7	N8	N8	N10	N9	N7	NNW7	NNW7	NNW6	N9.5	N14
3-Feb	NW8	NNW7	ENE4	ENE4	N6	N7	N7	NNW7	NNW9	NNW9	NNW8	NNW8	NW16	N14	NNE10	N7	N5	NNE5	NE4	NNE3	UO	ESE4	SSE3	S5	N5.4	NW16
4-Feb	S6	S6	S7	S6	S6	SSE8	S6	S7	SSE11	SE14	SE15	SE11	SE11	SSE16	SSE14	SSE13	S7	S7	SSE6	SSE8	S8	SSE8	S7	S8	SSE8.6	SSE16
5-Feb	SSE5	UO	SSE5	S3	ENE2	ENE3	UO	N7	N12	N15	N14	N14	N10	N13	N14	N15	N13	N13	N11	N11	N10	NNW8	N8	N9	N8.3	N15
6-Feb	N7	N6	N7	N7	NNW6	N4	UO	N3	NNE4	E6	ESE6	SSE12	SE11	SE12	SSE12	SSE11	SSE11	SSE13	SE13	SE16	SE15	SE15	SE15	SSE14	SE6.4	SE16
7-Feb	SE12	SSE11	SSE11	SSE8	SSE6	S4	S5	S6	S6	S7	SSE6	UO	SE3	SW3	NW3	UO	UO	UO	N3	N5	N7	N5	NNW4	NNW4	SSE2.7	SE12
8-Feb	NNW4	N4	NNW3	N4	NNE3	NNE3	NNE3	UO	UO	ENE1	UO	UO	SSE4	SE4	ESE5	SE5	SE4	E4	N3	N4	N6	N7	NNW7	NW8	NNE2.1	NW8
9-Feb	NW11	NW9	WNW7	W10	WNW9	WNW8	NW7	N6	NNE7	N7	NNE6	ENE6	ENE5	E3	SE3	ENE3	NE3	N5	N8	NNE3	NNW3	N5	WNW1	UO	NNW3.7	NW11
10-Feb	SSW2	SSW3	SSW4	S3	S2	S3	S4	SSE4	SSE4	S4	SSE4	SSE6	S6	S7	SSE9	SSE10	SSE9	S6	S8	SW2	NE1	S7	S9	SW7	S4.9	SSE10
11-Feb	SW12	SW9	SW6	SW8	W14	W13	W14	WSW3	W9	W8	W11	W11	NNW11	W13	W13	W8	WSW8	W8	SW5	SW6	SSW4	SSW5	SW5	SW6	WSW8.0	W14
12-Feb	SSE5	SSE7	SSE6	SSE9	SSE10	SSE7	SSE8	SE6	SE6	SE6	S7	SW10	WSW10	W14	NW18	NNW14	NW10	NW12	WNW17	NW15	NW13	NNW15	N13	N15	WNW3.5	NW18
13-Feb	N12	N11	N11	N14	NNE11	N9	N6	NW3	SSW3	W4	N8	E4	SSE8	SSE9	S9	S4	WSW6	WNW9	WNW9	N12	N11	N15	N15	N17	N5.4	N17
14-Feb	N14	N16	NNE16	NNE14	N12	NNE11	N12	NNE10	NNE12	NNE8	NNE7	NNE7	NNW5	N7	NE8	NE9	NE8	NNE6	NNE5	NNE5	NNE5	NE5	NE5	NNE4	NNE8.5	N16
15-Feb	NE3	UO	SE3	UO	UO	SW4	SW4	SSW6	SSW5	S5	S3	SSE5	S4	SSE1	SE4	SE8	SE7	SSE6	S4	S6	SSW6	SSW7	SW7	SW9	S4.2	SW9
16-Feb	SW10	WSW11	WSW9	SW6	WSW6	WSW5	SSW6	SSW7	SSW9	SSW12	SSW14	SSW13	SSW13	SSW13	SSW11	SSW10	SW12	SW14	SW17	W14	WSW5	SW6	SW8	WSW7	SW9.3	SW17
17-Feb	WSW8	WSW7	WSW7	WSW7	WSW5	SW4	SW5	SSW4	SW5	SSE4	SE3	SE4	SE4	S6	SE4	ESE5	SSE6	ENE1	N7	N8	N9	N5	N4	N6	WSW1.2	N9
18-Feb	N8	NNE5	NNE6	N4	NNW5	N5	NNW5	N5	N7	NNE2	NNW4	W3	W3	WSW4	NW7	NNW10	NNW11	N7	N9	N9	N8	N9	NNW10	N11	NNW6.1	N11
19-Feb	N13	N8	N8	N7	NNW4	NNW5	N3	NNE3	NNE3	N5	NW3	NW5	NW6	NW5	NW3	UO	NW3	N8	N8	NNE7	NNE7	N5	NNW8	NNW11	NNW5.7	N13
20-Feb	N7	N4	NNW4	N3	NNE3	NE2	SSE4	S4	SSE6	S7	SSE8	SSE7	SSE6	SSE7	SSE7	SE6	SSE5	SSE5	SSE5	SSE5	SSE4	SSE6	SSE6	E2	SSE3.1	SSE8
21-Feb	WSW1	S4	SSE1	UO	N6	N7	NNW6	N5	UO	SE2	SSE6	SSE8	SSE7	SW6	SW14	SW13	WSW12	WSW8	WSW7	SW8	W10	NNW10	NNW12	N9	W3.4	SW14
22-Feb	NNW8	N7	S2	NNW1	N3	N4	N5	NNW8	N8	NNW8	NW5	W4	SSW3	SSE5	E6	SSE5	S3	N5	NNW9	N5	NNW4	S3	S6	SSE7	NNW1.9	NNW9
23-Feb	SSE10	SSE10	SSE11	SSE12	SSE13	SSE11	SSE11	SSE10	SE8	SSE6	W13	W19	W15	W17	W20	WSW19	W17	NW13	W13	WSW15	W19	WNW15	W16	W17	WSW8.2	W20
24-Feb	WNW13	NNE19	N16	N14	N15	N12	N11	NNW14	NNW14	N13	N9	N11	NNW11	NNW10	N9	NNE8	NNE8	NNE8	NNE8	NNE10	NNE7	NNE8	NNE8	NNE7	N10.1	NNE19
25-Feb	N8	N9	N9	N11	N9	N9	N10	NNE11	NNE10	NNE12	N14	NNE13	N14	NNE14	NNE13	NNE14	NNE12	NNE12	NNE12	N15	N16	NNE14	NNE11	NNE11.7	N16	
26-Feb	N11	N14	N17	N13	N10	NNE6	NNE6	NNE6	N7	NNE9	NNW9	NNW7	NW6	NNE2	SE6	E5	E4	E3	E4	ESE4	ENE3	SE2	NNW5	NNW10	N5.1	N17
27-Feb	NW8	NNW8	NNW6	NW3	WNW3	WSW3	SSW5	SSW4	SSW3	W4	WNW6	NW3	NNE3	NE5	SSE8	SSE10	SE9	SE8	SE8	SE9	SE7	ESE8	SE10	SSE1.8	SE10	
28-Feb	SSE14	SE11	SE10	SSE9	SSE8	SE7	SSE7	SSE13	SE12	SE14	SE17	SSE19	SE18	SE19	SE20	SE19	SE15	SE16	SE19	SE20	SE17	SE24	SE19	ESE19	SE15.1	SE24
29-Feb	ESE18	ESE15	ESE17	ESE13	E11	E13	ESE17	ESE18	ESE15	ESE14	SE14	SE16	SSE11	SSE8	SSE7	SE6	SSE8	SSW5	NNW3	N2	NW4	WNW8	WNW8	WNW9	ESE7.3	ESE18
NNW1.6NNE1.9NNE1.4NNE1.5 N1.7NNE1.4NNE0.6 NE0.8 NE1.3 E0.9 E0.5 S0.7SSW0.9SSW1.0 SE0.5 SE1.6 SSE0.7 N1.0NNW1.7 N1.6 N2.2 N1.6NNW1.8NNW2.7																								Diurnal Average		
ESE18 NNE19 ESE17 NNE14 SSE15 SSE15 ESE17 ESE18 ESE15 N15 SE17 W19 SE18 SE19 W20WSW19 W17 SE16 SE19 SE20 W19 SE24 SE19 ESE19																								Diurnal Maximum		

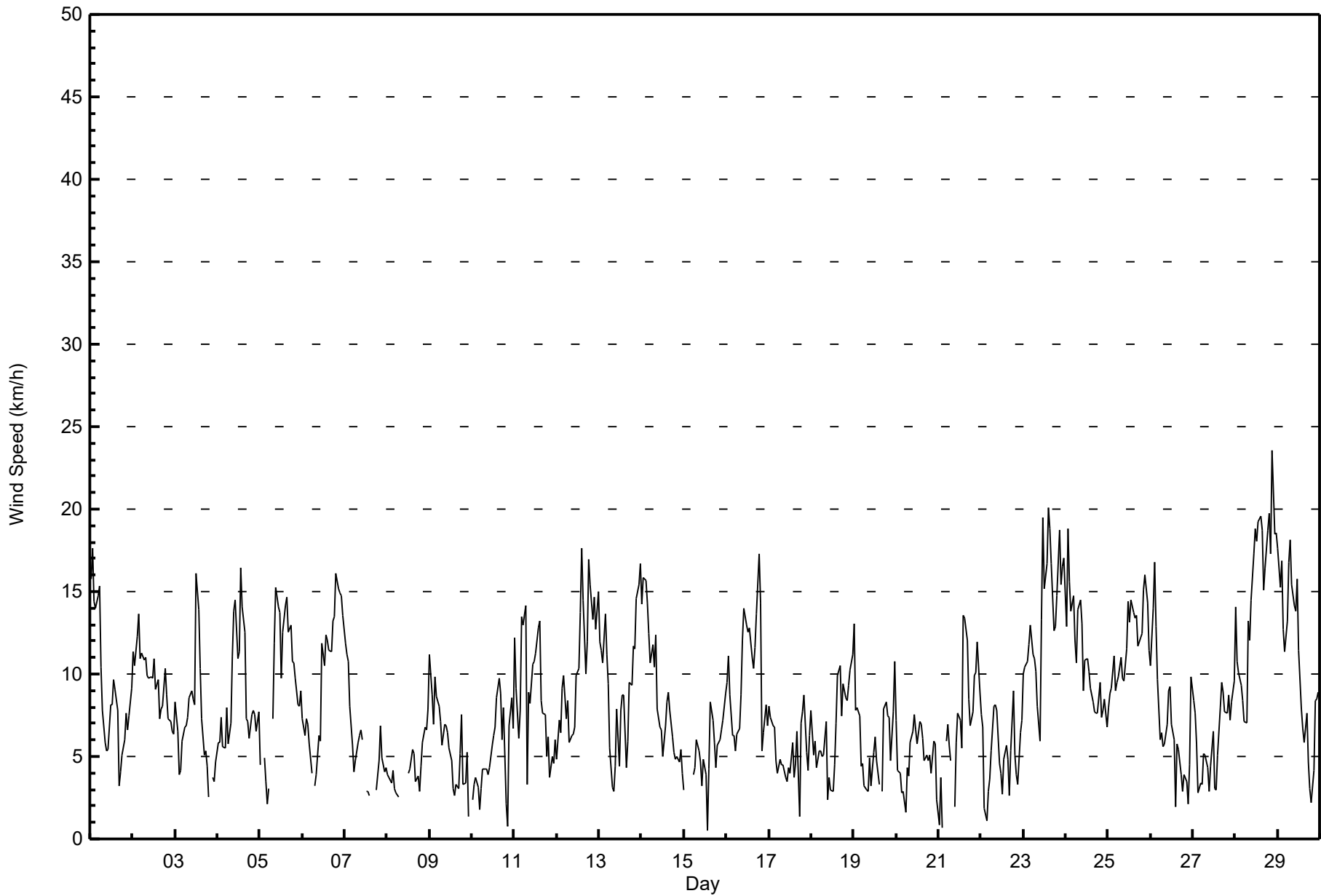
UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Mildred Lake - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8 km/h on Feb 16 20:00 Minimum Value: 1 km/h on Feb 7 19:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																	Hours in Service: 696 Hours of Data: 677 Hours of Missing Data: 19 Hours of Calibration: 0 Percent Operational Time: 97.3																														
Day	Hourly Period Ending At (MST)																								Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																							
1-Feb	4	3	3	3	3	3	3	2	1	2	2	2	1	2	2	2	2	1	1	2	1	1	1	2	4																						
2-Feb	2	2	3	3	3	3	3	3	2	2	2	2	3	2	2	2	2	2	2	2	2	2	1	2	3																						
3-Feb	2	2	1	1	1	2	1	1	2	2	2	2	6	4	3	2	1	1	1	1	UO	1	1	1	6																						
4-Feb	1	2	2	1	1	2	1	3	3	3	3	2	4	2	2	2	2	2	1	1	1	1	1	1	4																						
5-Feb	2	UO	1	1	1	1	UO	3	3	3	4	4	3	4	3	4	4	3	3	2	2	2	1	1	4																						
6-Feb	1	1	1	1	2	2	UO	1	1	1	1	3	3	3	3	3	3	3	3	4	3	3	3	3	4																						
7-Feb	3	2	2	3	1	1	1	1	1	1	1	UO	1	1	1	UO	UO	UO	1	1	1	2	1	1	3																						
8-Feb	1	1	1	1	1	1	1	UO	UO	2	UO	UO	1	1	1	1	1	1	1	1	1	1	1	1	2																						
9-Feb	2	2	2	2	2	2	2	1	2	2	2	2	1	1	1	1	1	1	2	1	1	1	1	UO	2																						
10-Feb	1	1	1	1	1	1	1	1	1	1	1	2	2	1	3	2	2	2	2	2	2	1	2	2	3																						
11-Feb	3	3	2	2	5	4	4	4	3	4	3	3	4	4	4	3	2	3	2	2	1	2	1	2	5																						
12-Feb	1	3	1	2	3	1	2	2	1	2	3	3	4	4	7	3	2	2	6	4	3	4	4	3	7																						
13-Feb	3	3	3	4	3	2	2	1	1	3	2	2	2	2	2	2	2	3	4	3	3	4	4	5	5																						
14-Feb	3	4	4	3	3	3	3	3	3	3	2	2	1	2	2	2	2	2	1	1	1	1	1	1	4																						
15-Feb	1	UO	1	UO	UO	1	1	2	1	1	1	1	1	1	1	2	2	1	1	1	1	2	4	3	4																						
16-Feb	3	3	3	1	2	2	2	2	2	3	4	3	4	3	3	3	4	4	6	8	3	2	2	2	8																						
17-Feb	2	2	1	1	2	1	1	2	2	1	1	1	1	1	1	2	1	1	1	2	2	1	1	1	2																						
18-Feb	1	1	2	2	2	2	1	1	2	2	2	1	2	2	3	2	2	2	1	1	2	2	2	2	3																						
19-Feb	2	4	2	2	1	1	1	1	1	1	1	1	1	1	1	UO	2	1	2	2	2	1	1	2	4																						
20-Feb	2	1	1	1	1	1	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	1	2																						
21-Feb	1	2	1	UO	1	2	2	2	UO	2	2	2	2	3	4	4	4	3	3	2	3	2	2	2	4																						
22-Feb	2	2	1	1	1	1	3	2	2	2	1	2	2	1	1	1	2	3	2	2	2	2	1	2	3																						
23-Feb	3	2	2	2	2	2	2	2	2	3	5	6	5	5	7	6	6	3	4	5	7	4	5	6	7																						
24-Feb	4	5	5	4	4	4	4	3	4	4	3	3	3	3	3	2	2	2	2	2	2	2	2	2	5																						
25-Feb	2	2	2	3	2	2	3	3	2	3	3	4	3	4	4	4	3	4	4	4	4	4	4	4	4																						
26-Feb	3	4	4	4	3	2	2	1	1	2	3	3	2	2	2	1	1	1	2	1	1	1	2	3	4																						
27-Feb	2	1	1	1	1	1	1	1	1	1	3	2	2	2	1	3	2	2	1	1	1	1	2	2	3																						
28-Feb	3	3	2	2	2	1	2	3	3	4	4	4	4	4	5	5	4	5	5	7	4	5	5	5	7																						
29-Feb	5	5	5	3	4	6	4	5	4	4	4	5	3	2	1	1	2	2	2	2	1	2	2	2	6																						
Diurnal Maximum																								5	5	5	4	5	6	4	5	4	4	5	6	6	5	7	6	6	5	6	8	7	5	5	6
UO - Unstable Operation																																															





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Mildred Lake - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	196	28.95	28.95
6 - 11	333	49.19	78.14
12 - 19	144	21.27	99.41
20 - 28	4	0.59	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 677

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Mildred Lake - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	30	18	9	10	7	4	12	21	21	14	9	7	5	3	11	15	196
6 - 11	87	33	3	1	3	4	22	57	29	8	15	13	8	12	9	29	333
12 - 19	37	13	0	0	1	9	24	16	0	5	5	4	16	3	6	5	144
20 - 28	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	4
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	154	64	12	11	11	17	61	94	50	27	29	24	30	18	26	49	677

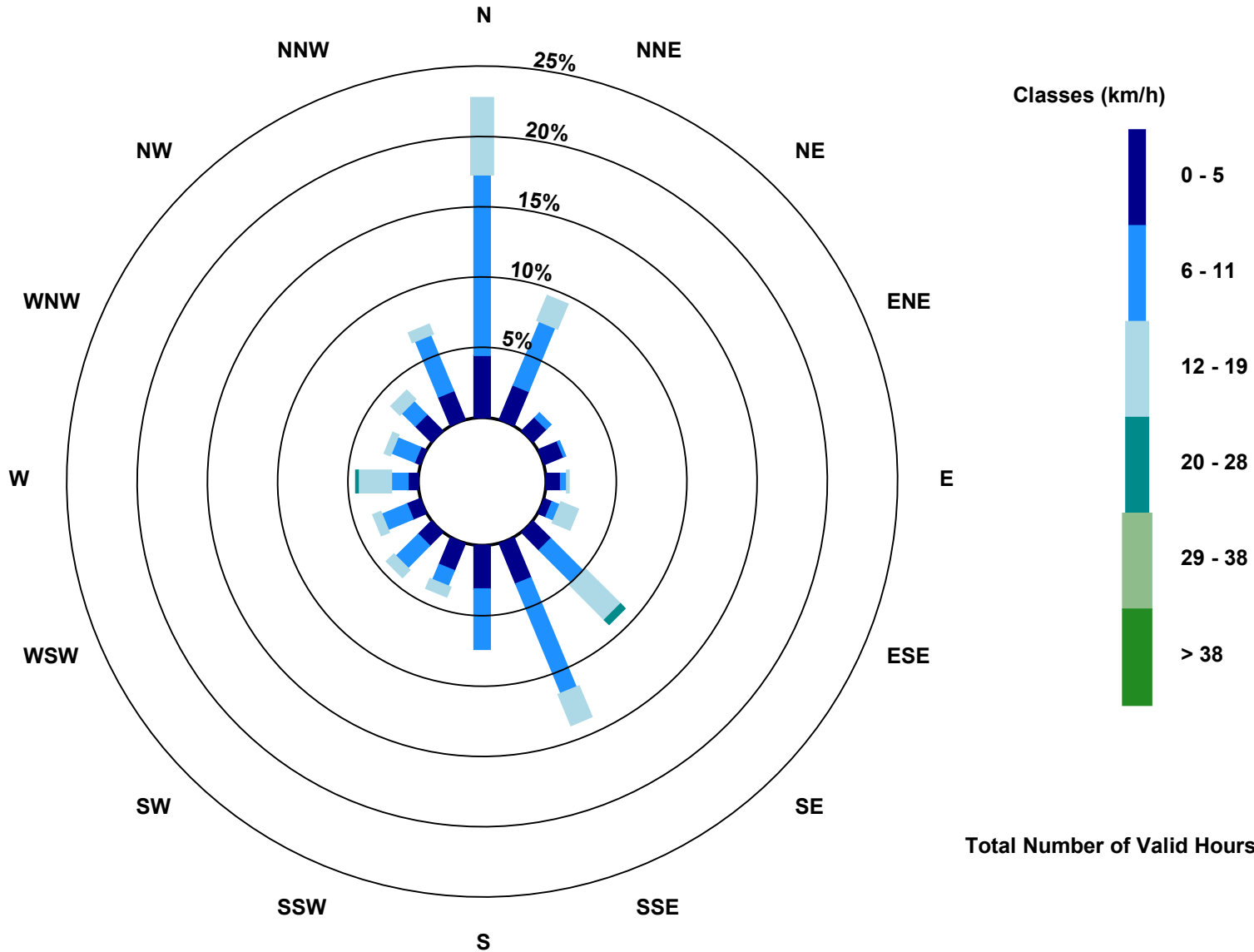
Total Number of Valid Hours: 677

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Mildred Lake





Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Mildred Lake - February 2024

Direction of Maximum Speed: 139 deg on Feb 28 22:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 139.2 deg on Feb 28	Hours of Data: 677
Direction of Minimum Speed: 150 deg on Feb 15 14:00	Direction of Minimum Daily Speed Average: 1.2 deg on Feb 17
Direction of Minimum Speed: 150 deg on Feb 15 14:00	Hours of Missing Data: 19
Monthly Average Direction: 9.5 deg	Percent Operational Time: 97.3

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	135	142	142	155	150	149	160	168	175	178	190	172	159	135	133	110	71	35	7	5	354	0	359	350	137.6
2-Feb	357	1	359	359	4	4	5	358	1	357	7	351	354	8	3	2	350	356	360	357	359	348	348	331	358.3
3-Feb	324	336	73	76	11	358	353	343	342	334	348	345	323	1	17	9	9	20	39	33	UO	108	166	170	357.3
4-Feb	173	171	178	181	175	161	186	170	155	143	146	140	138	148	154	151	170	176	161	164	169	154	176	190	159.6
5-Feb	166	UO	166	180	58	76	UO	354	6	3	7	8	11	10	360	1	3	5	358	356	356	347	349	353	3.6
6-Feb	1	4	360	358	348	360	UO	5	26	97	115	148	138	143	150	152	151	148	140	143	144	143	145	148	132.3
7-Feb	146	156	166	160	166	181	174	178	186	175	153	UO	141	217	315	UO	UO	UO	9	353	355	6	343	342	162.2
8-Feb	343	351	344	351	23	29	17	UO	UO	73	UO	UO	168	136	112	129	136	86	11	350	2	354	344	323	17.5
9-Feb	318	308	287	279	283	287	320	4	20	10	29	66	73	83	129	70	47	5	357	19	344	351	288	UO	342.4
10-Feb	194	198	195	189	185	169	186	157	166	176	165	157	175	172	154	152	168	173	172	236	55	173	172	216	173.3
11-Feb	236	232	224	236	265	276	278	242	265	265	277	280	282	276	280	270	242	272	224	230	197	212	218	219	258.0
12-Feb	167	149	162	152	158	166	159	135	124	144	177	219	249	274	319	338	319	310	300	307	310	328	351	351	290.5
13-Feb	354	356	357	359	14	3	2	310	209	280	357	82	161	155	184	172	242	287	301	4	2	358	6	355	351.8
14-Feb	354	6	14	13	10	15	9	13	25	23	15	24	348	6	41	34	41	32	30	24	30	45	46	25	18.0
15-Feb	50	UO	137	UO	UO	221	216	212	196	185	173	158	171	150	160	142	139	152	185	189	207	212	214	224	184.3
16-Feb	235	240	238	224	246	258	205	209	203	203	201	199	205	205	192	208	226	221	233	271	253	221	233	239	221.8
17-Feb	239	251	257	244	248	232	228	213	225	151	142	142	129	185	140	112	156	66	358	3	7	359	351	353	239.2
18-Feb	357	12	15	353	346	350	343	354	355	25	333	269	273	237	326	330	340	351	355	358	2	349	344	349	346.3
19-Feb	352	355	352	2	329	340	9	12	18	351	322	316	318	309	304	UO	304	351	0	17	19	8	337	344	348.2
20-Feb	355	357	337	349	15	50	155	187	149	177	165	159	147	159	152	146	156	162	164	162	148	165	147	83	151.3
21-Feb	250	180	163	UO	358	358	342	1	UO	141	150	147	148	231	235	234	244	251	249	235	267	296	336	351	261.4
22-Feb	346	355	191	344	356	360	352	334	349	331	313	276	199	158	82	156	176	350	342	359	343	174	175	164	342.7
23-Feb	152	155	154	148	147	148	149	150	144	168	260	273	269	265	262	250	269	313	270	238	259	283	278	273	240.4
24-Feb	284	15	7	357	0	355	351	344	343	358	2	4	347	343	355	13	27	23	24	26	33	31	33	21	1.8
25-Feb	10	3	359	8	11	8	9	14	12	20	13	4	13	6	14	23	26	27	21	14	11	6	15	13	12.7
26-Feb	11	8	358	7	9	20	13	19	24	351	12	331	329	323	30	128	90	100	100	115	70	132	286	299	7.6
27-Feb	314	327	328	312	296	239	203	212	202	196	277	287	315	25	49	167	147	135	126	143	143	142	123	128	163.6
28-Feb	148	138	137	148	157	125	160	151	140	146	144	147	142	138	141	134	129	128	139	143	134	139	132	120	139.2
29-Feb	117	114	112	104	94	93	107	117	107	108	134	142	152	157	149	139	168	200	335	355	326	291	293	293	121.0
	344.6	16.7	31.7	21.1	10.0	17.3	11.6	49.0	55.7	79.2	95.7	187.3	200.1	195.0	146.0	133.7	167.2	1.2	340.6	351.2	354.2	351.6	345.2	332.1	
	Diurnal Average																								

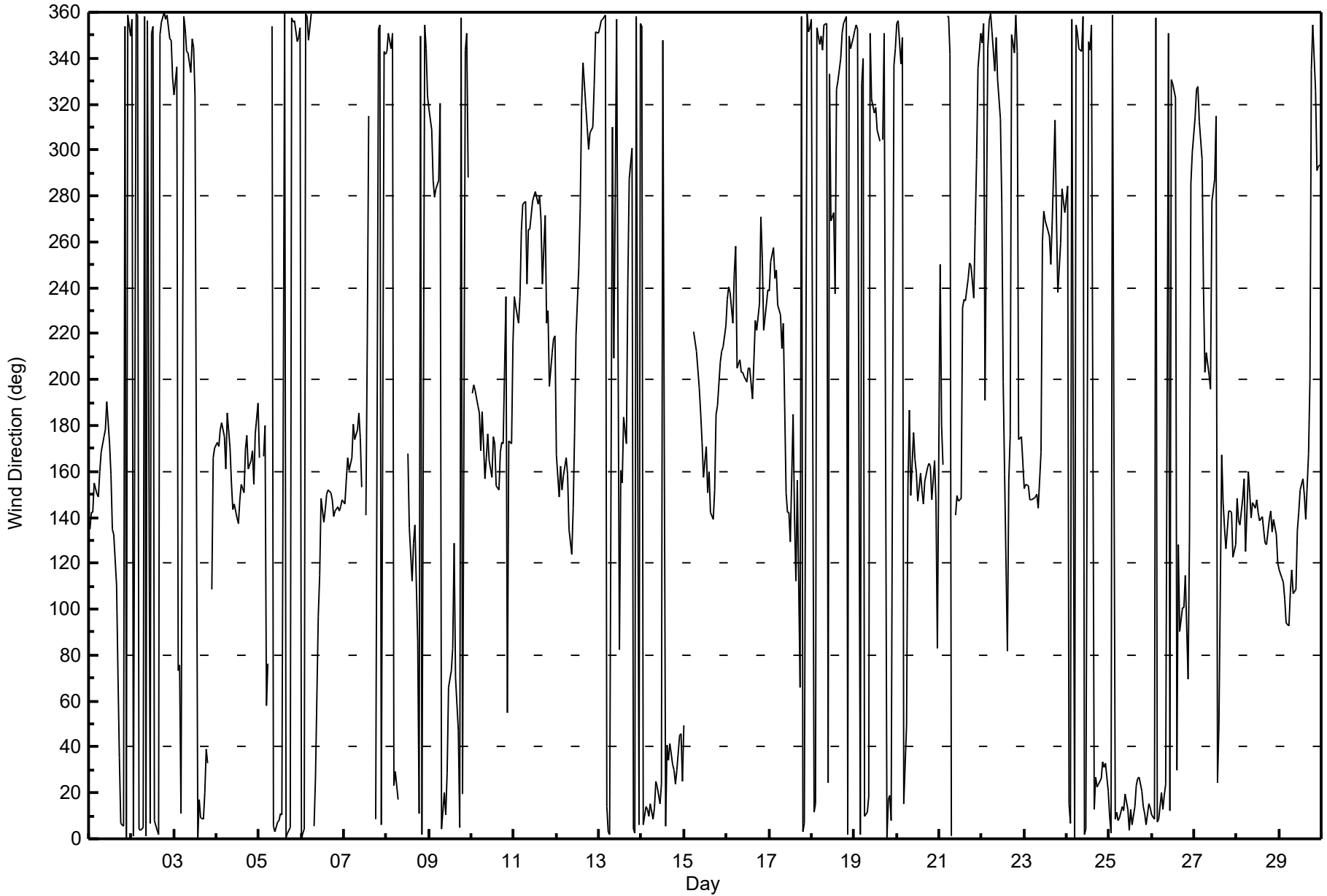
UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Mildred Lake - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 91 deg on Feb 8 10:00 Minimum Value: 7 deg on Feb 9 22:00 Percentiles: P ₁ = 9 P ₁₀ = 12 Q ₁ = 15 Median = 18 Q ₃ = 23 P ₉₀ = 35 P ₉₉ = 81																		Hours in Service: 696 Hours of Data: 677 Hours of Missing Data: 19 Hours of Calibration: 0 Percent Operational Time: 97.3							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	15	12	14	12	12	11	15	14	15	21	23	17	21	18	18	16	38	14	10	16	10	13	11	10	38
2-Feb	15	15	15	14	17	18	18	16	18	16	18	17	17	20	17	21	17	14	16	16	17	13	13	14	21
3-Feb	11	19	31	15	18	15	17	13	15	12	18	14	12	25	22	20	14	16	15	23	UO	21	21	10	31
4-Feb	14	11	11	10	19	15	12	20	16	12	11	14	16	12	14	10	17	20	17	12	9	12	25	12	25
5-Feb	35	UO	13	21	37	32	UO	19	18	17	19	18	22	21	19	17	17	18	16	15	15	13	11	11	37
6-Feb	13	11	12	9	14	18	UO	23	24	21	25	16	18	15	15	15	16	15	16	14	14	13	13	12	25
7-Feb	14	16	15	18	18	21	16	14	18	19	19	UO	64	53	31	UO	UO	UO	17	14	13	23	20	10	64
8-Feb	18	15	12	13	20	20	23	UO	UO	91	UO	UO	26	27	27	20	20	18	24	10	12	11	12	11	91
9-Feb	10	15	18	17	17	18	30	15	20	16	25	26	23	37	42	28	22	13	14	31	26	7	67	UO	67
10-Feb	17	16	13	16	38	24	16	16	18	18	25	17	17	17	16	15	14	17	23	63	87	16	18	45	87
11-Feb	22	23	24	24	25	22	19	84	28	32	20	23	22	21	19	25	24	31	21	26	23	21	22	21	84
12-Feb	27	16	10	10	12	10	14	21	15	20	27	22	37	19	22	15	16	14	17	14	14	11	15	15	37
13-Feb	16	15	15	17	19	15	16	33	47	44	24	32	17	16	13	52	29	24	38	16	17	18	18	18	52
14-Feb	16	18	18	18	18	18	17	17	18	26	25	24	35	29	22	20	21	19	17	15	14	16	19	20	35
15-Feb	20	UO	18	UO	UO	21	18	18	18	21	26	15	45	88	21	15	15	16	16	15	17	33	45	25	88
16-Feb	20	16	21	19	21	26	22	18	19	18	17	17	21	18	17	29	25	23	27	33	54	29	16	14	54
17-Feb	16	16	13	14	15	20	16	35	39	26	25	41	48	20	37	32	9	65	9	11	14	16	19	10	65
18-Feb	11	10	29	42	22	16	11	16	18	80	53	63	84	42	73	15	13	11	10	10	17	8	8	9	84
19-Feb	9	15	11	13	26	17	20	24	21	21	16	17	14	21	54	UO	57	12	15	18	16	24	11	10	57
20-Feb	15	29	26	43	34	64	21	38	13	16	21	21	25	16	16	23	19	22	29	14	34	15	17	58	64
21-Feb	87	26	87	UO	15	17	23	20	UO	74	17	17	16	38	24	25	24	24	27	25	22	33	11	18	87
22-Feb	12	18	74	70	30	24	34	14	12	16	39	46	65	29	14	26	68	16	9	20	50	51	12	13	74
23-Feb	14	12	12	12	12	13	11	10	13	41	26	19	22	22	21	23	27	15	29	23	22	21	18	19	41
24-Feb	26	21	20	17	18	20	23	16	17	19	24	23	19	25	26	20	19	17	18	15	22	19	18	18	26
25-Feb	16	15	14	16	19	16	18	18	18	23	22	24	26	20	26	21	20	20	20	19	20	19	19	19	26
26-Feb	18	20	19	20	19	21	18	21	19	28	28	23	40	36	74	19	16	22	44	15	27	46	53	16	74
27-Feb	18	17	10	35	44	35	12	19	23	45	68	35	71	50	29	41	15	15	13	12	11	12	15	16	71
28-Feb	10	14	15	18	14	19	16	15	14	15	15	13	16	17	16	19	19	19	16	18	17	15	19	18	19
29-Feb	17	18	17	16	20	20	17	19	17	20	19	16	18	24	16	21	24	39	59	78	29	16	16	15	78
87 29 87 70 44 64 34 84 47 91 68 63 84 88 74 52 68 65 59 78 87 51 67 58																									
Diurnal Maximum																									
UO - Unstable Operation																									





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS03 LOWER CAMP METEOROLOGY FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LOWER CAMP MET TOWER (AMS03)
FEBRUARY 2024

MONTHLY SUMMARY for
AMD SECTION III.B.1(c)

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
Temperature 20 m (C) Average	673	0	23	96.7	8.9	-	3.5	-
Temperature 45 m (C) Average	674	0	22	96.84	8.9	-	3.9	-
Temperature 100 m (C) Average	674	0	22	96.84	8.8	-	4.4	-
Temperature 163 m (C) Average	674	0	22	96.84	8.4	-	4.8	-
Relative Humidity 20 m (%) Average	674	0	22	96.84	98.2	-	91.9	-
Relative Humidity 45 m (%) Average	674	0	22	96.84	99.5	-	93.6	-
Relative Humidity 100 m (%) Average	674	0	22	96.84	95.2	-	91.7	-
Relative Humidity 163 m (%) Average	674	0	22	96.84	97.1	-	94.8	-
Wind Speed 20 m (km/h) Average	674	0	22	96.84	27	-	17.0	-
Wind Speed 45 m (km/h) Average	661	0	35	94.97	39	-	25.0	-
Wind Speed 100 m (km/h) Average	624	0	72	89.66	45	-	32.0	-
Wind Speed 163 m (km/h) Average	604	0	92	86.78	47	-	34.0	-
Wind Direction 20 m (deg) Average	674	0	22	96.84	-	-	-	-
Wind Direction 45 m (deg) Average	661	0	35	94.97	-	-	-	-
Wind Direction 100 m (deg) Average	624	0	72	89.66	-	-	-	-
Wind Direction 163 m (deg) Average	604	0	92	86.78	-	-	-	-
Vertical Wind Speed 20 m (km/h) Average	674	0	22	96.84	0.5	-	0.0	-
Vertical Wind Speed 45 m (km/h) Average	661	0	35	94.97	1.5	-	0.6	-
Vertical Wind Speed 100 m (km/h) Average	624	0	72	89.66	3.5	-	0.8	-
Vertical Wind Speed 163 m (km/h) Average	604	0	92	86.78	6	-	1.4	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LOWER CAMP MET TOWER (AMS03)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
Temperature 20 m (C) Average	673	-8.78	7	-	-26.2	-17.6	-13.8	-9	-4.2	0.8	8.9
Temperature 45 m (C) Average	674	-8.62	7.1	-	-26.5	-17.2	-13.5	-8.8	-4.1	1.3	8.9
Temperature 100 m (C) Average	674	-8.39	7.2	-	-27.1	-17.1	-13.5	-8.7	-3.5	1.7	8.8
Temperature 163 m (C) Average	674	-8.25	7.3	-	-27.6	-16.6	-13.3	-8.7	-3.2	2.1	8.4
Relative Humidity 20 m (%) Average	674	71.3	14.3	-	30.7	50.8	60.8	73.3	82.9	87.6	98.2
Relative Humidity 45 m (%) Average	674	71.17	14.9	-	29.9	50	60.2	73	83.5	88.4	99.5
Relative Humidity 100 m (%) Average	674	67.08	15.2	-	27	46.6	56.2	67.1	80.4	85.4	95.2
Relative Humidity 163 m (%) Average	674	67.64	16.3	-	28.1	46.3	56.3	66.6	83	89.1	97.1
Wind Speed 20 m (km/h) Average	674	7.5	5	-	0	2	4	6	11	15	27
Wind Speed 45 m (km/h) Average	661	11.1	7	-	0	3	5	10	16	22	39
Wind Speed 100 m (km/h) Average	624	14.4	9	-	0	3	6	13	21	28	45
Wind Speed 163 m (km/h) Average	604	16.8	11	-	0	4	7	15	25	32	47
Wind Direction 20 m (deg) Average	674	-	-	-	-	-	-	-	-	-	-
Wind Direction 45 m (deg) Average	661	-	-	-	-	-	-	-	-	-	-
Wind Direction 100 m (deg) Average	624	-	-	-	-	-	-	-	-	-	-
Wind Direction 163 m (deg) Average	604	-	-	-	-	-	-	-	-	-	-
Vertical Wind Speed 20 m (km/h) Average	674	-0.18	0.3	-	-2.2	-0.6	-0.3	-0.1	0	0.1	0.5
Vertical Wind Speed 45 m (km/h) Average	661	0.08	0.4	-	-3.7	-0.2	-0.1	0	0.2	0.5	1.5
Vertical Wind Speed 100 m (km/h) Average	624	0.17	0.6	-	-4.4	-0.4	-0.1	0.1	0.4	0.8	3.5
Vertical Wind Speed 163 m (km/h) Average	604	0.45	0.7	-	-1.7	-0.1	0.1	0.2	0.6	1.3	6

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LOWER CAMP MET TOWER (AMS03)
 FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
ALL METEOROLOGICAL SENSORS	22 Feb 2024 09:00	22 Feb 2024 13:00	5	DAS Failure - data not recorded
ALL METEOROLOGICAL SENSORS	26 Feb 2024 11:00	26 Feb 2024 11:00	1	DAS Failure - data not recorded
ALL METEOROLOGICAL SENSORS	26 Feb 2024 23:00	27 Feb 2024 09:00	11	DAS Failure - data not recorded
ALL METEOROLOGICAL SENSORS	28 Feb 2024 05:00	28 Feb 2024 09:00	5	DAS Failure - data not recorded
Temperature 20 m	25 Feb 2024 05:00	25 Feb 2024 05:00	1	DAS Failure - data not recorded
Wind Speed, Wind Direction, Vertical Wind Speed 45m	26 Feb 2024 00:00	26 Feb 2024 11:00	12	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 45m	27 Feb 2024 10:00	27 Feb 2024 10:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 100m	02 Feb 2024 07:00	03 Feb 2024 10:00	28	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 100m	03 Feb 2024 16:00	04 Feb 2024 13:00	22	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 163m	02 Feb 2024 06:00	04 Feb 2024 21:00	64	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 163m	10 Feb 2024 05:00	10 Feb 2024 10:00	6	Flat line in sensor output signal



Wood Buffalo Environmental Association
Summary of Hour Averages

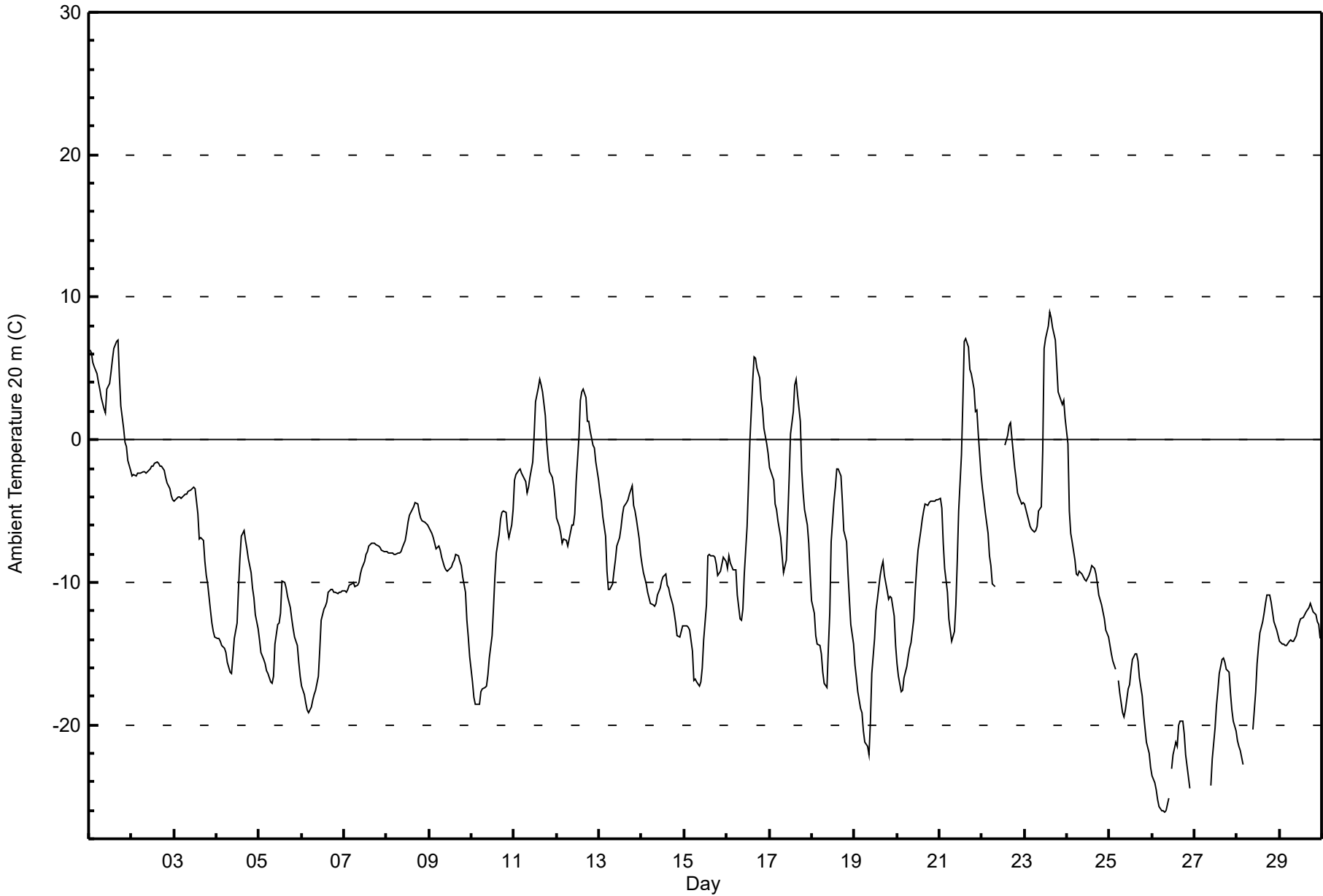
Ambient Temperature 20 m (AT20m) - C
Lower Camp Met Tower - February 2024

Maximum Value: 8.9 C on Feb 23 15:00 Maximum Daily Average: 3.5 C on Feb 1																				Hours in Service: 696 Hours of Data: 673							
Minimum Value: -26.2 C on Feb 26 08:00 Minimum Daily Average: -23.4 C on Feb 26 Maximum Diurnal Average: -5.0 C at hour 16 Minimum Diurnal Average: -11.9 C at hour 10 Monthly Average: -8.78 C Percentiles: P ₁ = -24.7 P ₁₀ = -17.6 Q ₁ = -13.8 Median = -9.0 Q ₃ = -4.2 P ₉₀ = 0.8 P ₉₉ = 7.0																				Hours of Missing Data: 23 Hours of Calibration: 0 Percent Operational Time: 96.7							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	6.3	6.1	5.5	5.2	4.7	4.0	3.5	3.0	2.1	1.8	3.5	3.9	4.7	5.6	6.4	6.9	7.0	4.4	2.4	0.8	-0.2	-0.4	-1.5	-2.1	3.5	7.0	
2-Feb	-2.6	-2.5	-2.5	-2.3	-2.3	-2.3	-2.2	-2.3	-2.3	-2.2	-2.0	-1.9	-1.8	-1.7	-1.6	-1.7	-1.9	-1.9	-2.2	-2.6	-3.0	-3.4	-3.9	-4.2	-2.4	-1.6	
3-Feb	-4.3	-4.1	-4.0	-4.0	-4.1	-3.9	-3.8	-3.8	-3.7	-3.5	-3.4	-3.3	-3.4	-5.2	-6.9	-6.8	-7.1	-8.5	-9.6	-10.1	-12.0	-12.9	-13.5	-13.8	-6.5	-3.3	
4-Feb	-13.9	-14.0	-14.1	-14.4	-14.7	-14.9	-15.6	-16.3	-16.4	-15.2	-13.9	-12.8	-10.4	-8.3	-6.8	-6.4	-7.1	-7.7	-8.4	-9.3	-10.4	-11.1	-12.3	-13.3	-12.0	-6.4	
5-Feb	-14.1	-14.9	-15.4	-15.7	-16.2	-16.4	-17.0	-17.1	-16.6	-14.3	-13.0	-12.9	-12.2	-10.0	-10.4	-11.0	-11.8	-12.6	-13.3	-13.8	-14.4	-15.6	-16.6	-14.0	-10.0		
6-Feb	-17.3	-17.9	-18.5	-19.0	-19.2	-18.8	-18.3	-17.9	-17.5	-16.6	-14.8	-12.7	-11.9	-11.7	-11.4	-10.7	-10.5	-10.5	-10.7	-10.7	-10.8	-10.7	-10.7	-10.6	-14.1	-10.5	
7-Feb	-10.6	-10.7	-10.5	-10.2	-10.1	-10.0	-10.3	-10.2	-10.0	-9.4	-9.1	-8.5	-8.0	-7.8	-7.5	-7.2	-7.2	-7.3	-7.4	-7.5	-7.6	-7.7	-7.8	-7.8	-8.8	-7.2	
8-Feb	-7.9	-7.9	-8.0	-8.0	-8.0	-8.0	-8.0	-7.9	-7.8	-7.6	-7.1	-6.4	-5.7	-5.3	-4.9	-4.7	-4.4	-4.5	-5.1	-5.5	-5.7	-5.8	-5.9	-6.0	-6.5	-4.4	
9-Feb	-6.2	-6.6	-6.8	-7.2	-7.7	-7.5	-7.7	-8.3	-8.9	-9.2	-9.2	-9.1	-8.9	-8.6	-8.4	-8.0	-8.1	-8.5	-8.9	-9.7	-10.7	-12.7	-13.9	-15.3	-9.0	-6.2	
10-Feb	-17.0	-18.1	-18.5	-18.5	-18.6	-17.7	-17.4	-17.4	-17.3	-16.5	-15.3	-13.7	-11.7	-9.6	-7.9	-6.7	-5.6	-5.1	-5.0	-5.1	-6.2	-6.9	-6.0	-4.9	-12.0	-4.9	
11-Feb	-2.8	-2.5	-2.1	-2.1	-2.4	-2.6	-3.0	-3.7	-3.3	-2.7	-1.6	0.3	2.6	3.6	4.2	3.8	3.4	1.7	-0.1	-1.4	-2.2	-2.7	-3.3	-4.2	-0.9	4.2	
12-Feb	-5.5	-6.0	-6.5	-7.2	-6.9	-7.0	-7.4	-6.9	-6.0	-5.9	-5.2	-3.0	0.2	2.7	3.3	3.5	2.9	1.3	1.3	0.6	-0.3	-0.6	-1.6	-2.8	-2.6	3.5	
13-Feb	-3.7	-4.3	-5.4	-6.7	-9.3	-10.5	-10.5	-10.1	-9.2	-8.4	-7.5	-6.9	-6.1	-5.3	-4.7	-4.4	-4.2	-3.8	-3.2	-4.6	-5.0	-5.6	-7.0	-8.1	-6.4	-3.2	
14-Feb	-8.7	-9.4	-10.1	-10.7	-11.1	-11.5	-11.6	-11.7	-11.5	-10.9	-10.4	-9.9	-9.6	-9.4	-10.2	-10.4	-10.9	-11.5	-12.2	-12.8	-13.7	-13.8	-13.4	-13.1	-11.2	-8.7	
15-Feb	-13.1	-13.1	-13.1	-13.4	-14.8	-16.9	-16.8	-17.0	-17.3	-17.0	-16.0	-14.0	-11.6	-8.2	-8.1	-8.1	-8.1	-8.3	-8.7	-9.6	-9.2	-8.7	-8.3	-8.6	-12.0	-8.1	
16-Feb	-9.0	-8.1	-8.7	-9.1	-9.1	-9.2	-10.9	-12.5	-12.7	-11.9	-9.4	-6.1	-3.1	-0.1	4.2	5.8	5.7	5.1	4.4	2.8	2.1	0.8	-0.3	-1.0	-3.8	5.8	
17-Feb	-1.9	-2.2	-2.9	-4.5	-4.9	-5.7	-6.9	-8.1	-9.4	-8.4	-5.6	-2.7	0.5	2.0	3.8	4.3	3.1	1.3	-2.1	-3.7	-4.9	-6.0	-7.3	-9.4	-3.4	4.3	
18-Feb	-11.3	-12.2	-13.7	-14.4	-14.5	-15.0	-16.3	-17.1	-17.4	-14.6	-12.1	-7.2	-4.3	-3.4	-2.0	-2.1	-2.5	-4.3	-6.4	-7.2	-9.3	-11.2	-12.9	-14.3	-10.2	-2.0	
19-Feb	-15.8	-16.7	-17.7	-18.8	-19.1	-20.4	-21.2	-21.5	-22.1	-19.8	-16.4	-14.0	-11.9	-11.2	-9.6	-8.9	-8.5	-9.5	-10.6	-11.1	-11.0	-11.1	-12.3	-14.4	-14.7	-8.5	
20-Feb	-15.7	-16.6	-17.7	-17.6	-16.7	-15.9	-15.2	-14.6	-14.2	-12.6	-10.6	-9.1	-7.7	-6.4	-5.6	-5.0	-4.5	-4.6	-4.4	-4.3	-4.3	-4.3	-4.2	-4.2	-9.8	-4.2	
21-Feb	-4.2	-4.8	-7.3	-9.0	-10.7	-12.5	-13.4	-14.2	-13.5	-11.6	-8.5	-5.0	-1.1	2.6	6.9	7.1	6.5	4.9	4.6	3.6	2.0	2.1	0.4	-2.5	-3.2	7.1	
22-Feb	-3.4	-4.3	-5.1	-6.6	-8.1	-8.8	-10.1	-10.3	DF	DF	DF	DF	DF	-0.4	0.3	1.0	1.2	0.1	-2.0	-2.7	-3.7	-4.0	-4.5	-4.4	-4.0	1.2	
23-Feb	-4.5	-4.9	-5.7	-6.1	-6.3	-6.5	-6.4	-6.1	-5.0	-4.8	-0.7	6.4	7.1	8.0	8.9	8.6	7.9	7.0	5.2	3.3	2.8	2.5	2.8	1.5	0.6	8.9	
24-Feb	-0.2	-5.0	-6.6	-7.2	-8.4	-9.5	-9.6	-9.3	-9.4	-9.7	-9.8	-9.9	-9.5	-9.2	-8.8	-9.0	-9.4	-10.2	-10.9	-11.6	-12.1	-12.6	-13.4	-13.8	-9.4	-0.2	
25-Feb	-14.4	-15.0	-15.5	-16.1	DF	-16.9	-17.7	-19.2	-19.5	-18.9	-17.5	-17.2	-16.2	-15.4	-15.0	-15.0	-15.5	-16.7	-18.0	-19.3	-20.2	-21.2	-22.0	-23.0	-17.6	-14.4	
26-Feb	-23.6	-24.1	-24.6	-25.3	-25.7	-26.0	-26.1	-26.2	-26.0	-25.2	DF	-23.1	-22.1	-21.2	-21.5	-20.0	-19.7	-19.7	-20.6	-22.1	-23.6	-24.5	DF	DF	-23.4	-19.7	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	-24.3	-22.4	-20.2	-18.6	-17.6	-16.4	-15.4	-15.3	-15.6	-16.1	-16.3	-17.8	-18.9	-19.7	-20.4	--	-15.3
28-Feb	-21.1	-21.6	-21.8	-22.8	DF	DF	DF	DF	DF	DF	-20.3	-17.6	-15.7	-14.5	-13.5	-12.7	-12.2	-11.5	-10.9	-10.8	-11.4	-12.1	-12.8	-13.3	-13.8	-15.3	-10.8
29-Feb	-14.1	-14.3	-14.3	-14.4	-14.4	-14.1	-14.1	-14.1	-14.1	-14.1	-13.7	-13.2	-12.9	-12.6	-12.4	-12.3	-12.1	-11.8	-11.5	-11.8	-12.1	-12.3	-12.8	-13.0	-13.9	-13.2	-11.5
																								Diurnal Average			
																								Diurnal Maximum			
DF - DAS Failure																											



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature 20 m (AT20m) - C
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 20 m (AT20m) - C
Lower Camp Met Tower - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	36	5.35	5.35
-20 - 0	561	83.36	88.71
0 - 10	76	11.29	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 673

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

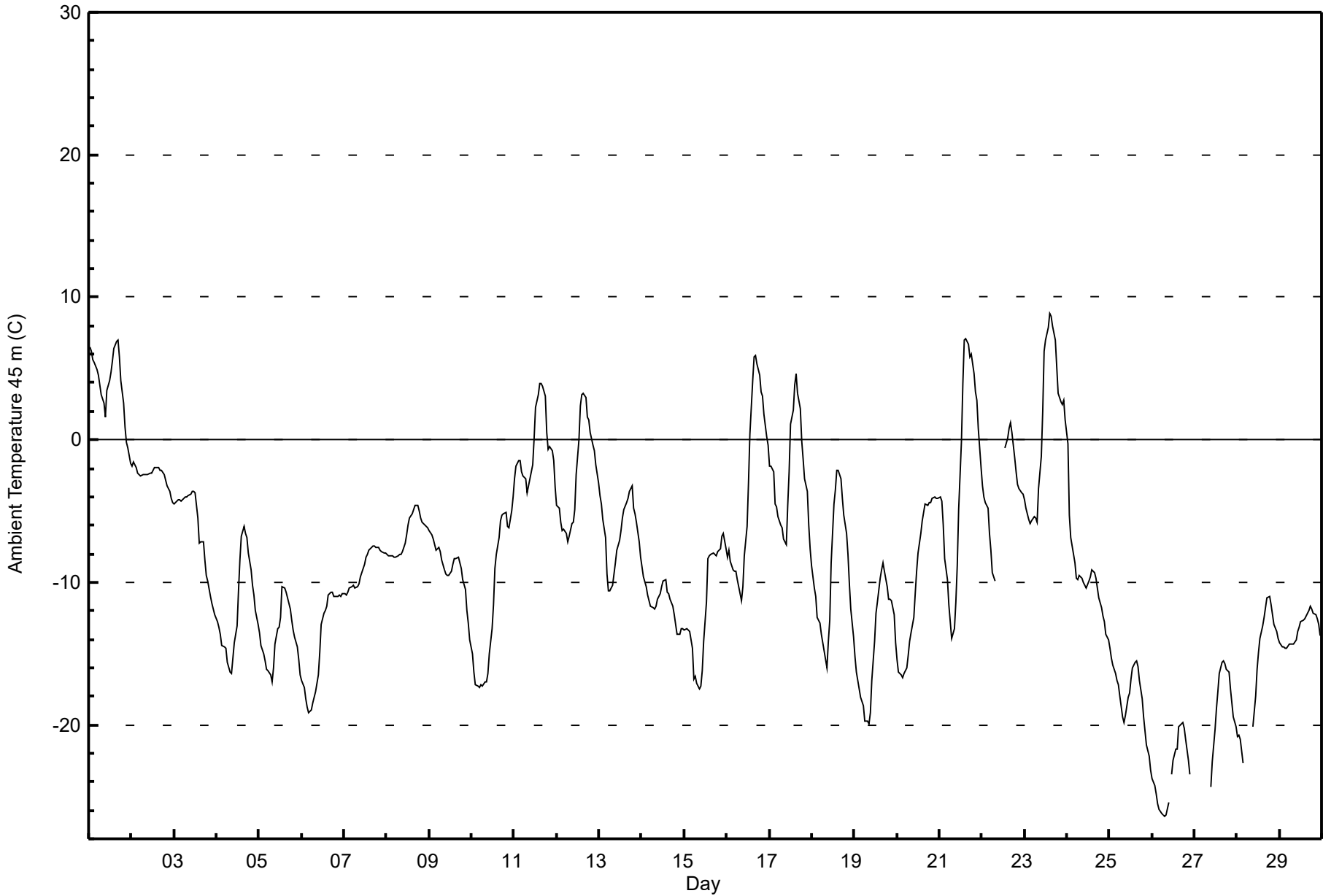
Ambient Temperature 45 m (AT45m) - C
Lower Camp Met Tower - February 2024

Maximum Value: 8.9 C on Feb 23 15:00 Maximum Daily Average: 3.9 C on Feb 1																				Hours in Service: 696 Hours of Data: 674							
Minimum Value: -26.5 C on Feb 26 08:00 Minimum Daily Average: -23.4 C on Feb 26 Maximum Diurnal Average: -5.1 C at hour 16 Minimum Diurnal Average: -11.7 C at hour 10 Monthly Average: -8.62 C Percentiles: P ₁ = -25.0 P ₁₀ = -17.2 Q ₁ = -13.5 Median = -8.8 Q ₃ = -4.1 P ₉₀ = 1.3 P ₉₉ = 7.0																				Hours of Missing Data: 22 Hours of Calibration: 0 Percent Operational Time: 96.8							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	6.5	6.2	5.6	5.5	4.9	4.5	3.8	3.1	2.5	1.6	3.5	4.1	4.8	5.6	6.4	6.9	7.0	5.8	4.1	2.5	0.9	-0.2	-0.6	-1.7	3.9	7.0	
2-Feb	-1.8	-1.6	-1.9	-2.3	-2.5	-2.5	-2.4	-2.5	-2.5	-2.4	-2.4	-2.3	-2.2	-2.0	-1.9	-1.9	-2.1	-2.1	-2.4	-2.8	-3.2	-3.6	-4.1	-4.4	-2.5	-1.6	
3-Feb	-4.5	-4.3	-4.2	-4.2	-4.3	-4.2	-4.0	-4.0	-3.9	-3.8	-3.6	-3.6	-3.7	-5.5	-7.2	-7.2	-7.2	-8.4	-9.5	-9.9	-11.0	-11.5	-11.8	-12.2	-6.4	-3.6	
4-Feb	-12.8	-13.2	-13.6	-14.4	-14.6	-14.6	-15.6	-16.3	-16.4	-15.3	-14.3	-13.1	-10.6	-8.5	-6.8	-6.1	-6.6	-6.9	-8.0	-9.1	-10.2	-10.9	-12.0	-12.9	-11.8	-6.1	
5-Feb	-13.5	-14.5	-15.0	-15.5	-16.1	-16.2	-16.5	-17.0	-16.0	-14.3	-13.3	-13.2	-12.5	-10.3	-10.4	-10.7	-11.1	-11.8	-12.7	-13.4	-13.9	-14.5	-15.4	-16.5	-13.9	-10.3	
6-Feb	-16.9	-17.4	-18.1	-18.8	-19.1	-18.9	-18.4	-18.1	-17.7	-16.5	-14.9	-13.0	-12.2	-12.0	-11.7	-10.9	-10.7	-10.7	-11.0	-10.9	-11.0	-10.9	-11.0	-10.8	-14.2	-10.7	
7-Feb	-10.8	-10.9	-10.7	-10.4	-10.3	-10.2	-10.4	-10.3	-10.1	-9.6	-9.3	-8.7	-8.2	-8.0	-7.7	-7.5	-7.4	-7.5	-7.5	-7.6	-7.8	-7.9	-8.0	-8.0	-9.0	-7.4	
8-Feb	-8.1	-8.1	-8.2	-8.2	-8.2	-8.2	-8.1	-8.0	-8.0	-7.8	-7.3	-6.6	-6.0	-5.5	-5.2	-4.9	-4.6	-4.6	-5.0	-5.5	-5.8	-6.0	-6.1	-6.2	-6.7	-4.6	
9-Feb	-6.4	-6.7	-7.0	-7.3	-7.7	-7.6	-7.9	-8.4	-9.1	-9.4	-9.5	-9.6	-9.2	-8.7	-8.4	-8.3	-8.3	-8.7	-9.0	-9.8	-10.5	-11.9	-12.8	-14.1	-9.0	-6.4	
10-Feb	-15.0	-16.3	-17.2	-17.3	-17.4	-17.2	-17.2	-17.0	-17.0	-16.4	-15.0	-13.2	-11.6	-9.0	-8.0	-6.8	-5.7	-5.3	-5.2	-5.1	-6.0	-6.1	-4.9	-4.1	-11.4	-4.1	
11-Feb	-2.7	-1.9	-1.4	-1.4	-2.3	-2.5	-2.8	-3.8	-3.3	-2.7	-1.7	0.1	2.3	3.2	3.9	3.9	3.8	3.1	0.5	-0.7	-0.5	-0.7	-1.5	-3.3	-0.5	3.9	
12-Feb	-4.6	-4.8	-5.7	-6.3	-6.2	-6.6	-7.2	-6.7	-5.9	-5.8	-4.9	-2.5	0.0	2.4	3.1	3.3	2.9	1.6	1.3	0.5	-0.3	-0.7	-1.8	-3.0	-2.4	3.3	
13-Feb	-4.0	-4.5	-5.6	-6.9	-9.4	-10.6	-10.6	-10.2	-9.4	-8.6	-7.7	-7.1	-6.4	-5.5	-4.9	-4.4	-4.1	-3.6	-3.3	-4.8	-5.2	-5.8	-7.2	-8.3	-6.6	-3.3	
14-Feb	-8.9	-9.6	-10.3	-10.9	-11.3	-11.7	-11.8	-11.9	-11.7	-11.2	-10.8	-10.3	-9.9	-9.8	-10.7	-10.8	-11.2	-11.7	-12.3	-12.9	-13.6	-13.7	-13.3	-13.3	-11.4	-8.9	
15-Feb	-13.3	-13.3	-13.3	-13.5	-14.7	-16.8	-16.6	-17.1	-17.5	-17.2	-16.2	-14.2	-11.4	-8.3	-8.1	-8.0	-7.9	-8.1	-8.2	-7.9	-7.6	-6.8	-6.6	-7.6	-11.7	-6.6	
16-Feb	-8.3	-7.8	-8.5	-9.1	-9.2	-9.2	-9.9	-10.8	-11.3	-10.3	-8.1	-6.0	-3.1	0.4	4.1	5.8	5.9	5.3	4.5	3.3	3.0	1.8	0.2	-0.4	-3.2	5.9	
17-Feb	-1.9	-1.8	-2.3	-4.5	-4.7	-5.4	-6.0	-6.2	-6.9	-7.3	-4.6	-2.3	1.1	2.1	3.8	4.6	3.2	2.2	-0.1	-1.3	-2.8	-3.7	-6.0	-7.6	-2.4	4.6	
18-Feb	-8.8	-10.4	-11.0	-12.4	-12.9	-13.7	-14.2	-14.8	-16.0	-14.1	-12.6	-8.6	-4.5	-3.5	-2.2	-2.2	-2.7	-4.2	-5.3	-6.6	-8.1	-10.1	-11.9	-13.8	-9.4	-2.2	
19-Feb	-15.2	-16.3	-16.9	-18.1	-18.3	-18.7	-19.8	-19.8	-19.9	-19.2	-16.9	-14.2	-12.2	-11.4	-9.8	-9.1	-8.7	-9.2	-10.3	-11.2	-11.2	-11.3	-12.3	-14.2	-14.3	-8.7	
20-Feb	-15.4	-16.3	-16.5	-16.7	-16.4	-16.0	-15.1	-14.1	-13.6	-12.4	-10.8	-9.3	-7.9	-6.6	-5.7	-5.1	-4.5	-4.6	-4.4	-4.4	-4.1	-4.0	-4.2	-4.1	-9.7	-4.0	
21-Feb	-4.0	-4.3	-6.0	-8.4	-9.8	-11.6	-12.8	-13.9	-13.3	-11.4	-8.9	-4.9	-0.1	3.9	7.0	7.1	6.7	5.8	6.0	4.6	3.4	2.7	0.8	-1.9	-2.6	7.1	
22-Feb	-3.3	-4.0	-4.4	-4.8	-6.6	-7.8	-9.3	-9.9	DF	DF	DF	DF	DF	-0.6	0.2	0.8	1.2	0.5	-1.3	-2.3	-3.1	-3.5	-3.7	-3.8	-3.5	1.2	
23-Feb	-4.2	-4.8	-5.6	-5.9	-5.7	-5.4	-5.5	-5.8	-3.4	-1.2	1.9	6.2	7.0	7.9	8.9	8.7	8.0	7.0	5.2	3.3	2.7	2.4	2.7	1.4	1.1	8.9	
24-Feb	-0.3	-5.3	-6.9	-7.4	-8.7	-9.7	-9.8	-9.5	-9.7	-10.2	-10.4	-10.0	-9.6	-9.2	-9.4	-9.7	-10.4	-11.1	-11.8	-12.3	-12.3	-12.8	-13.6	-14.1	-9.7	-0.3	
25-Feb	-14.7	-15.3	-15.8	-16.4	-16.9	-17.2	-18.0	-19.5	-19.8	-19.3	-18.1	-17.7	-16.8	-16.0	-15.6	-15.5	-15.9	-16.9	-18.2	-19.5	-20.5	-21.4	-22.2	-23.2	-17.9	-14.7	
26-Feb	-23.8	-24.3	-24.8	-25.5	-25.9	-26.3	-26.3	-26.5	-26.4	-25.4	DF	-23.5	-22.5	-21.7	-21.7	-20.1	-20.0	-19.9	-20.3	-21.0	-22.5	-23.5	DF	DF	-23.4	-19.9	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	-24.4	-22.6	-20.3	-18.9	-17.7	-16.4	-15.6	-15.5	-15.7	-16.1	-16.3	-17.5	-18.4	-19.4	-20.1	--	-15.5
28-Feb	-20.9	-20.7	-21.0	-22.6	DF	DF	DF	DF	DF	DF	-20.2	-18.0	-16.1	-14.9	-13.9	-13.1	-12.5	-11.7	-11.1	-11.0	-11.6	-12.3	-13.0	-13.5	-13.9	-15.4	-11.0
29-Feb	-14.3	-14.5	-14.6	-14.7	-14.6	-14.3	-14.3	-14.4	-14.3	-14.0	-13.5	-13.1	-12.8	-12.7	-12.5	-12.4	-12.0	-11.7	-11.9	-12.1	-12.2	-12.5	-13.0	-13.7	-13.3	-11.7	-11.7
																								Diurnal Average			
																								Diurnal Maximum			
DF - DAS Failure																											



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature 45 m (AT45m) - C
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 45 m (AT45m) - C
Lower Camp Met Tower - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	33	4.90	4.90
-20 - 0	561	83.23	88.13
0 - 10	80	11.87	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 674

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

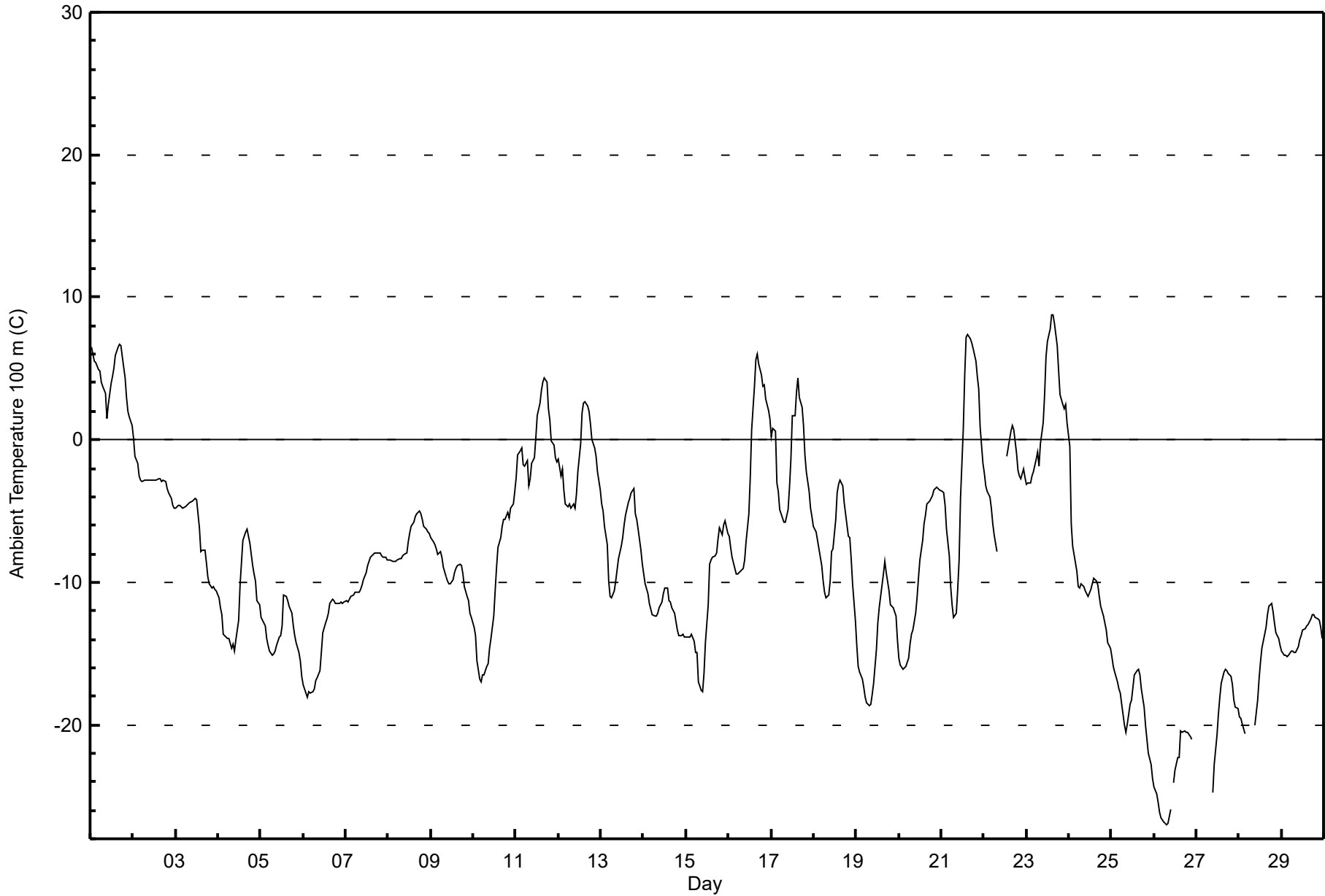
Ambient Temperature 100 m (AT100m) - C
Lower Camp Met Tower - February 2024

Maximum Value: 8.8 C on Feb 23 16:00 Maximum Daily Average: 4.4 C on Feb 1																				Hours in Service: 696 Hours of Data: 674							
Minimum Value: -27.1 C on Feb 26 08:00 Minimum Daily Average: -23.7 C on Feb 26 Maximum Diurnal Average: -5.4 C at hour 17 Minimum Diurnal Average: -11.3 C at hour 10 Monthly Average: -8.39 C Percentiles: P ₁ = -25.6 P ₁₀ = -17.1 Q ₁ = -13.5 Median = -8.7 Q ₃ = -3.5 P ₉₀ = 1.7 P ₉₉ = 6.9																				Hours of Missing Data: 22 Hours of Calibration: 0 Percent Operational Time: 96.8							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	6.5	6.1	5.6	5.4	5.0	4.9	4.0	3.7	3.2	1.5	2.5	4.0	4.4	5.0	5.9	6.5	6.7	6.6	5.8	4.4	3.0	2.0	1.6	1.0	4.4	6.7	
2-Feb	0.1	-1.2	-1.7	-2.6	-2.9	-2.9	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.9	-2.8	-2.7	-2.8	-2.9	-2.8	-3.0	-3.4	-3.7	-4.1	-4.6	-4.8	-2.8	0.1	
3-Feb	-4.8	-4.6	-4.6	-4.7	-4.8	-4.7	-4.6	-4.5	-4.4	-4.3	-4.2	-4.2	-4.3	-6.1	-7.8	-7.8	-7.8	-8.6	-9.6	-10.1	-10.4	-10.4	-10.5	-10.6	-6.6	-4.2	
4-Feb	-11.1	-11.8	-12.3	-13.6	-13.9	-13.9	-13.9	-14.6	-14.3	-14.9	-14.0	-12.7	-10.2	-8.7	-7.1	-6.4	-6.3	-6.8	-7.3	-8.8	-9.4	-9.9	-11.3	-11.6	-11.0	-6.3	
5-Feb	-12.4	-12.6	-13.0	-13.9	-14.4	-14.8	-15.1	-15.0	-14.8	-14.4	-13.9	-13.7	-13.0	-10.8	-11.0	-11.3	-11.7	-12.2	-13.0	-13.7	-14.3	-14.9	-15.5	-16.6	-13.6	-10.8	
6-Feb	-17.2	-17.7	-18.1	-17.6	-17.8	-17.7	-17.5	-16.9	-16.7	-16.2	-14.9	-13.6	-12.8	-12.5	-12.2	-11.4	-11.2	-11.3	-11.5	-11.5	-11.5	-11.4	-11.5	-11.4	-14.3	-11.2	
7-Feb	-11.3	-11.4	-11.2	-11.0	-10.8	-10.7	-10.7	-10.7	-10.5	-10.2	-9.8	-9.3	-8.8	-8.5	-8.3	-8.0	-7.9	-7.9	-7.9	-7.9	-8.2	-8.2	-8.2	-8.4	-9.4	-7.9	
8-Feb	-8.4	-8.5	-8.5	-8.5	-8.5	-8.5	-8.3	-8.4	-8.1	-8.1	-7.9	-7.2	-6.6	-6.1	-5.8	-5.4	-5.2	-5.0	-5.2	-5.6	-6.1	-6.3	-6.5	-6.6	-7.0	-5.0	
9-Feb	-6.8	-7.1	-7.3	-7.6	-8.0	-7.8	-8.2	-8.9	-9.6	-9.9	-10.1	-10.1	-9.8	-9.3	-9.0	-8.9	-8.7	-8.9	-9.4	-10.3	-11.0	-11.3	-12.2	-12.5	-9.3	-6.8	
10-Feb	-13.2	-13.8	-15.5	-16.7	-16.9	-16.5	-16.5	-15.9	-15.8	-14.6	-14.0	-12.4	-10.6	-9.0	-7.6	-6.9	-6.1	-5.5	-5.6	-5.1	-5.5	-4.8	-4.5	-3.6	-10.7	-3.6	
11-Feb	-2.6	-1.0	-0.8	-0.6	-1.8	-1.8	-1.5	-3.2	-2.7	-1.6	-1.3	0.1	1.7	2.6	3.5	4.0	4.4	4.0	2.2	1.4	-0.1	-0.4	-1.2	-1.6	0.1	4.4	
12-Feb	-1.3	-2.5	-2.0	-3.6	-4.5	-4.7	-4.5	-4.8	-4.5	-4.8	-3.9	-2.2	-0.3	1.9	2.6	2.7	2.4	2.0	1.0	0.1	-0.6	-1.1	-2.3	-3.5	-1.6	2.7	
13-Feb	-4.5	-5.0	-6.1	-7.4	-9.9	-11.0	-11.1	-10.6	-9.9	-9.1	-8.3	-7.5	-6.9	-6.0	-5.3	-4.4	-4.1	-3.7	-3.5	-5.2	-5.6	-6.3	-7.7	-8.8	-7.0	-3.5	
14-Feb	-9.4	-10.1	-10.8	-11.4	-11.8	-12.2	-12.3	-12.4	-12.2	-11.8	-11.4	-10.8	-10.4	-10.4	-11.2	-11.4	-11.7	-12.2	-12.8	-13.3	-13.8	-13.8	-13.7	-13.8	-11.9	-9.4	
15-Feb	-13.8	-13.8	-13.8	-13.7	-14.2	-14.9	-14.9	-17.0	-17.6	-17.7	-16.4	-14.3	-11.6	-8.8	-8.5	-8.2	-8.1	-7.9	-6.9	-6.2	-6.6	-6.0	-5.7	-6.6	-11.4	-5.7	
16-Feb	-6.8	-7.5	-8.3	-9.1	-9.4	-9.4	-9.3	-9.1	-9.0	-8.4	-7.1	-5.2	-2.6	0.7	3.8	5.6	6.0	5.3	4.5	3.7	3.8	2.9	2.1	1.5	-2.5	6.0	
17-Feb	0.2	0.8	0.6	-3.0	-3.6	-4.9	-5.5	-5.7	-5.8	-4.9	-3.3	-1.4	1.7	1.7	3.3	4.3	3.0	2.3	1.0	-1.0	-2.3	-3.6	-4.8	-5.4	-1.5	4.3	
18-Feb	-6.1	-6.5	-7.0	-7.6	-8.9	-9.9	-10.7	-11.1	-10.9	-9.9	-7.9	-7.6	-5.5	-3.8	-3.1	-2.8	-3.2	-4.4	-5.2	-6.8	-6.9	-8.3	-10.1	-12.6	-7.4	-2.8	
19-Feb	-14.4	-15.9	-16.3	-16.8	-17.4	-18.1	-18.4	-18.7	-18.6	-17.9	-17.1	-14.7	-12.8	-11.7	-10.2	-9.4	-8.6	-9.4	-10.6	-11.6	-11.7	-11.8	-12.4	-14.0	-14.1	-8.6	
20-Feb	-15.3	-15.8	-16.1	-16.0	-15.9	-15.3	-14.3	-13.6	-13.3	-12.2	-11.0	-9.7	-8.4	-7.0	-5.9	-5.3	-4.5	-4.3	-4.1	-3.9	-3.5	-3.3	-3.5	-3.5	-9.4	-3.3	
21-Feb	-3.6	-3.7	-4.6	-6.3	-8.2	-10.3	-11.6	-12.5	-12.1	-10.5	-8.4	-4.1	0.8	4.6	7.2	7.4	7.1	6.8	6.5	5.6	4.4	3.5	0.9	-1.7	-1.8	7.4	
22-Feb	-2.4	-3.3	-3.6	-4.0	-4.8	-5.9	-6.7	-7.8	DF	DF	DF	DF	DF	-1.2	0.0	0.6	1.0	0.7	-0.9	-2.2	-2.5	-2.7	-2.1	-2.6	-2.6	1.0	
23-Feb	-3.1	-3.0	-3.0	-2.6	-2.3	-1.4	-0.8	-1.9	-0.2	1.2	3.2	5.8	6.9	7.8	8.7	8.8	8.2	6.6	4.9	3.1	2.5	2.1	2.4	1.2	2.3	8.8	
24-Feb	-0.4	-5.9	-7.4	-8.0	-9.2	-10.3	-10.4	-10.1	-10.3	-10.6	-10.8	-11.0	-10.5	-10.1	-9.7	-9.9	-9.9	-10.2	-11.0	-11.7	-12.4	-12.9	-13.3	-14.2	-14.7	-10.2	-0.4
25-Feb	-15.2	-15.9	-16.3	-17.0	-17.4	-17.8	-18.6	-20.1	-20.5	-19.9	-18.6	-18.3	-17.4	-16.5	-16.2	-16.1	-16.5	-17.5	-18.8	-20.0	-21.0	-22.0	-22.8	-23.7	-18.5	-15.2	
26-Feb	-24.3	-24.9	-25.4	-26.1	-26.5	-26.8	-26.9	-27.1	-26.9	-26.0	DF	-24.1	-23.2	-22.3	-22.3	-20.5	-20.5	-20.4	-20.5	-20.5	-20.8	-21.0	DF	DF	-23.7	-20.4	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	-24.8	-22.8	-20.7	-19.2	-18.1	-17.1	-16.3	-16.1	-16.2	-16.4	-16.6	-17.2	-18.3	-18.8	-18.8	--	-16.1
28-Feb	-19.4	-19.5	-19.9	-20.6	DF	DF	DF	DF	DF	DF	-20.1	-18.3	-16.8	-15.6	-14.6	-13.7	-13.1	-12.3	-11.7	-11.5	-12.1	-12.8	-13.5	-14.0	-14.5	-15.5	-11.5
29-Feb	-14.8	-15.1	-15.1	-15.2	-15.1	-14.8	-14.9	-14.9	-14.9	-14.5	-14.0	-13.7	-13.4	-13.2	-13.1	-12.9	-12.6	-12.3	-12.2	-12.5	-12.6	-12.7	-13.1	-14.0	-13.8	-12.2	
																								Diurnal Average			
																								Diurnal Maximum			
DF - DAS Failure																											



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature 100 m (AT100m) - C
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 100 m (AT100m) - C
Lower Camp Met Tower - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	33	4.90	4.90
-20 - 0	549	81.45	86.35
0 - 10	92	13.65	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 674

Total Number of Hours: 696

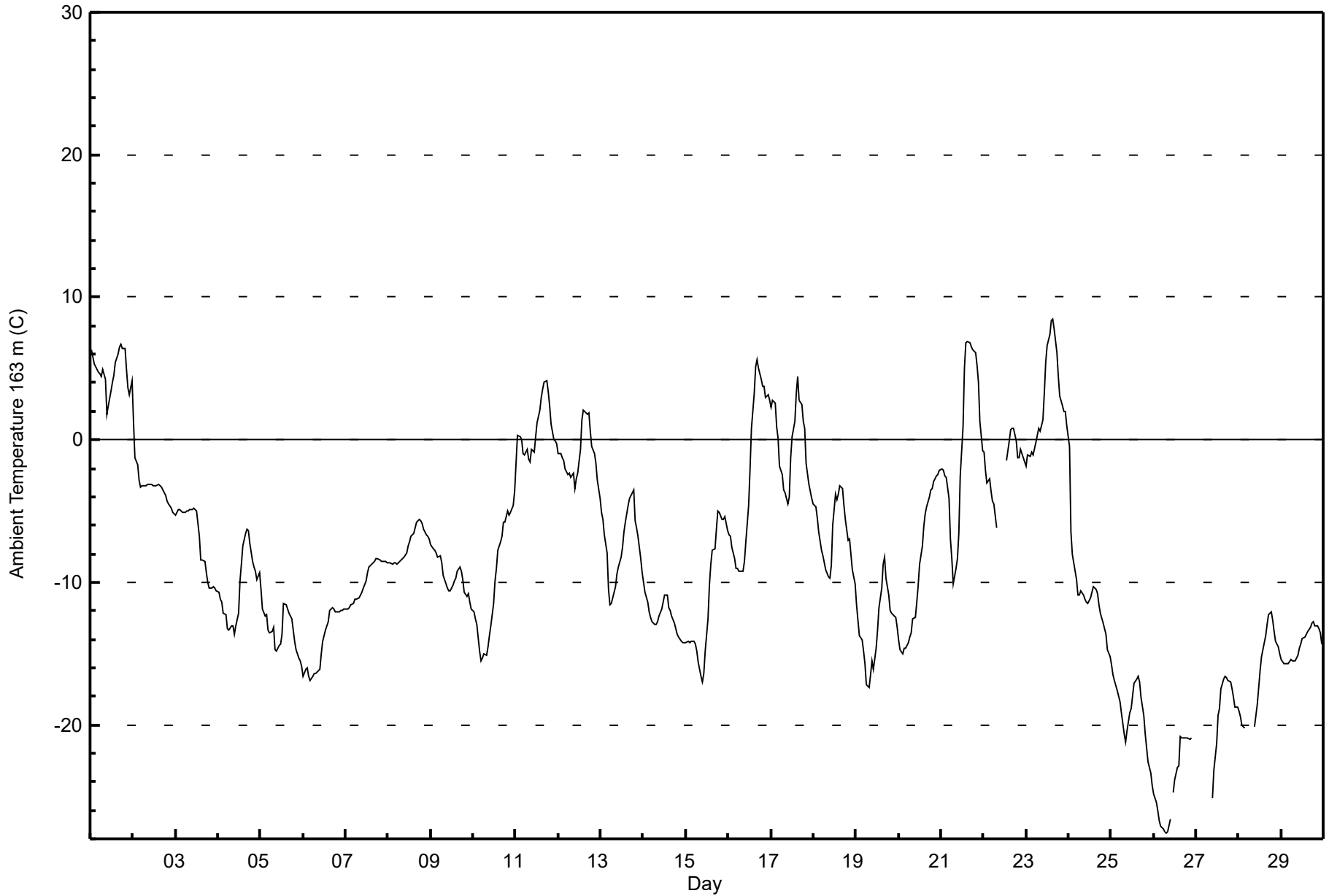


Maximum Value: 8.4 C on Feb 23 16:00		Maximum Daily Average: 4.8 C on Feb 1		Hours in Service: 696																							
Minimum Value: -27.6 C on Feb 26 08:00		Minimum Daily Average: -24.2 C on Feb 26		Hours of Data: 674																							
Maximum Diurnal Average: -5.8 C at hour 17		Minimum Diurnal Average: -11.2 C at hour 10		Hours of Missing Data: 22																							
Monthly Average: -8.25 C		Percentiles: P ₁ = -26.2 P ₁₀ = -16.6 Q ₁ = -13.3 Median = -8.7 Q ₃ = -3.2 P ₉₀ = 2.1 P ₉₉ = 6.7		Hours of Calibration: 0																							
				Percent Operational Time: 96.8																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	6.3	5.8	5.3	5.2	4.7	4.6	4.4	5.0	4.2	1.8	2.4	3.4	4.1	4.5	5.4	6.0	6.5	6.7	6.4	6.4	4.9	3.6	3.1	4.1	4.8	6.7	
2-Feb	1.3	-1.2	-1.8	-2.9	-3.3	-3.3	-3.2	-3.2	-3.1	-3.1	-3.2	-3.2	-3.3	-3.2	-3.1	-3.2	-3.4	-3.5	-3.9	-4.3	-4.5	-4.8	-5.1	-5.2	-3.2	1.3	
3-Feb	-5.2	-4.9	-4.9	-5.0	-5.1	-5.1	-5.0	-5.0	-4.9	-4.9	-4.8	-4.9	-5.0	-6.8	-8.4	-8.4	-8.5	-9.3	-10.0	-10.4	-10.4	-10.3	-10.4	-10.6	-7.0	-4.8	
4-Feb	-10.7	-11.2	-11.4	-12.2	-12.2	-13.2	-13.4	-13.0	-13.1	-13.7	-13.1	-12.2	-9.9	-8.7	-7.5	-6.6	-6.3	-6.4	-7.3	-8.5	-8.9	-9.2	-9.8	-9.3	-10.3	-6.3	
5-Feb	-10.5	-11.9	-12.3	-12.2	-13.4	-13.5	-13.4	-13.4	-13.1	-14.8	-14.8	-14.5	-14.3	-13.6	-11.5	-11.5	-11.9	-12.2	-12.5	-13.4	-14.1	-14.8	-15.3	-15.5	-15.9	-13.4	-10.5
6-Feb	-16.6	-16.1	-16.0	-16.6	-16.8	-16.6	-16.4	-16.4	-16.3	-16.1	-15.0	-14.2	-13.4	-13.1	-12.7	-12.0	-11.8	-11.8	-12.1	-12.0	-12.1	-12.0	-12.0	-11.9	-14.2	-11.8	
7-Feb	-11.8	-11.9	-11.8	-11.6	-11.4	-11.2	-11.2	-11.1	-10.9	-10.7	-10.4	-9.9	-9.4	-8.9	-8.8	-8.6	-8.5	-8.4	-8.3	-8.4	-8.6	-8.5	-8.5	-8.6	-9.9	-8.3	
8-Feb	-8.7	-8.6	-8.7	-8.6	-8.7	-8.7	-8.5	-8.4	-8.4	-8.2	-7.9	-7.4	-7.1	-6.8	-6.6	-6.2	-5.8	-5.6	-5.7	-5.9	-6.3	-6.7	-6.8	-6.9	-7.4	-5.6	
9-Feb	-7.3	-7.7	-7.8	-8.0	-8.3	-8.2	-8.6	-9.5	-10.1	-10.4	-10.6	-10.6	-10.2	-9.9	-9.7	-9.2	-8.9	-9.2	-9.8	-10.7	-11.0	-10.8	-11.4	-11.9	-9.6	-7.3	
10-Feb	-12.1	-12.5	-12.9	-14.8	-15.5	-15.3	-15.0	-15.1	-14.5	-13.7	-13.1	-11.4	-9.9	-9.0	-7.8	-7.2	-6.7	-5.8	-5.8	-5.0	-5.3	-5.1	-4.6	-3.6	-10.1	-3.6	
11-Feb	-1.6	0.3	0.2	0.0	-0.9	-1.1	-0.7	-1.4	-1.5	-0.7	-0.9	0.2	1.2	2.1	3.0	3.6	4.1	4.1	3.4	2.4	1.1	0.0	-0.1	-0.3	0.7	4.1	
12-Feb	-0.9	-0.9	-1.2	-1.5	-2.0	-2.4	-2.4	-2.7	-2.4	-3.5	-2.7	-2.3	-0.7	1.4	2.1	2.0	1.8	1.8	0.6	-0.5	-1.0	-1.7	-2.9	-4.1	-1.1	2.1	
13-Feb	-5.1	-5.6	-6.7	-8.0	-10.5	-11.5	-11.4	-10.7	-10.3	-9.4	-8.9	-8.3	-7.5	-6.5	-5.8	-4.6	-4.1	-3.9	-3.5	-5.7	-6.2	-6.8	-8.3	-9.3	-7.4	-3.5	
14-Feb	-10.0	-10.7	-11.4	-12.1	-12.4	-12.8	-12.9	-13.0	-12.7	-12.4	-11.9	-11.4	-10.9	-10.9	-11.7	-12.0	-12.3	-12.8	-13.3	-13.7	-13.9	-14.1	-14.2	-14.3	-12.4	-10.0	
15-Feb	-14.2	-14.2	-14.2	-14.1	-14.2	-14.3	-14.8	-15.7	-16.6	-17.0	-16.4	-14.8	-12.5	-10.2	-8.7	-7.7	-7.7	-6.2	-5.0	-5.1	-5.6	-5.6	-5.4	-6.3	-11.1	-5.0	
16-Feb	-6.7	-6.8	-7.5	-8.3	-9.0	-9.1	-9.2	-9.2	-9.2	-8.6	-7.2	-4.6	-2.0	0.8	3.3	5.2	5.6	5.0	4.3	3.8	3.8	2.9	3.2	2.8	-2.4	5.6	
17-Feb	2.3	2.7	2.6	0.9	0.1	-1.9	-2.4	-3.6	-3.7	-4.5	-4.0	-1.3	0.2	1.3	3.2	4.5	2.8	2.5	1.3	0.8	-1.7	-3.1	-3.6	-4.1	-0.4	4.5	
18-Feb	-4.5	-4.7	-5.4	-6.5	-7.7	-8.1	-8.7	-9.2	-9.6	-9.7	-8.9	-6.0	-3.8	-4.2	-3.9	-3.2	-3.5	-4.6	-5.6	-7.1	-6.9	-8.0	-9.2	-10.1	-6.6	-3.2	
19-Feb	-11.6	-12.6	-13.7	-14.0	-14.8	-15.7	-17.1	-17.3	-16.5	-15.5	-16.1	-14.6	-13.4	-11.7	-10.4	-8.7	-8.3	-9.7	-10.9	-11.9	-12.2	-12.3	-12.4	-13.1	-13.1	-8.3	
20-Feb	-14.0	-14.7	-15.0	-14.7	-14.6	-14.2	-13.9	-13.6	-12.6	-12.5	-11.4	-10.2	-8.8	-7.4	-6.1	-5.2	-4.7	-4.0	-3.5	-3.4	-3.0	-2.5	-2.4	-2.1	-8.9	-2.1	
21-Feb	-2.0	-2.2	-2.5	-2.6	-4.1	-7.0	-8.3	-10.1	-9.1	-8.4	-6.5	-2.5	0.9	5.1	6.8	6.9	6.8	6.5	6.3	6.1	5.2	4.0	1.3	-0.8	-0.4	6.9	
22-Feb	-0.9	-2.2	-3.1	-2.7	-3.6	-4.3	-4.5	-6.2	DF	DF	DF	DF	DF	-1.5	-0.1	0.8	0.8	0.8	-0.1	-1.2	-1.3	-0.7	-1.3	-1.5	-1.7	0.8	
23-Feb	-1.9	-1.1	-1.2	-0.9	-1.1	-0.1	0.3	0.8	0.7	1.4	3.3	5.5	6.6	7.4	8.3	8.4	7.8	6.1	4.5	3.1	2.3	2.0	2.0	1.0	2.7	8.4	
24-Feb	-0.5	-6.5	-8.1	-8.6	-9.8	-10.9	-10.9	-10.6	-10.9	-11.2	-11.4	-11.5	-11.1	-10.7	-10.3	-10.5	-10.8	-11.6	-12.2	-12.8	-13.3	-13.7	-14.7	-15.3	-10.7	-0.5	
25-Feb	-15.8	-16.5	-16.9	-17.6	-18.0	-18.4	-19.2	-20.7	-21.2	-20.5	-19.1	-18.9	-18.0	-17.1	-16.8	-16.6	-17.0	-18.0	-19.3	-20.6	-21.6	-22.6	-23.4	-24.3	-19.1	-15.8	
26-Feb	-24.8	-25.4	-26.0	-26.7	-27.1	-27.3	-27.5	-27.6	-27.5	-26.7	DF	-24.8	-23.9	-23.0	-22.8	-20.8	-20.9	-20.9	-20.9	-20.9	-21.0	-20.9	DF	DF	-24.2	-20.8	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	-25.2	-23.1	-21.3	-19.4	-18.9	-17.4	-16.7	-16.6	-16.7	-16.9	-17.0	-17.5	-18.0	-18.8	-18.7	--	-16.6
28-Feb	-19.1	-19.5	-20.0	-20.2	DF	DF	DF	DF	DF	DF	-20.2	-18.6	-17.4	-16.2	-15.2	-14.3	-13.8	-12.9	-12.2	-12.1	-12.7	-13.4	-14.1	-14.6	-15.0	-15.9	-12.1
29-Feb	-15.4	-15.7	-15.7	-15.7	-15.7	-15.4	-15.5	-15.6	-15.5	-15.1	-14.6	-14.3	-14.0	-13.8	-13.7	-13.5	-13.2	-12.9	-12.8	-13.0	-13.1	-13.3	-13.5	-14.4	-14.4	-12.8	
		-7.9	-8.4	-8.9	-9.3	-9.5	-9.8	-10.0	-10.2	-10.4	-11.2	-9.9	-9.4	-8.2	-7.1	-6.4	-5.8	-5.8	-6.0	-6.4	-7.0	-7.4	-7.8	-7.8	-8.2	Diurnal Average	
		6.3	5.8	5.3	5.2	4.7	4.6	4.4	5.0	4.2	1.8	3.3	5.5	6.6	7.4	8.3	8.4	7.8	6.7	6.4	6.4	5.2	4.0	3.2	4.1	Diurnal Maximum	
DF - DAS Failure																											



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature 163 m (AT163m) - C
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 163 m (AT163m) - C
Lower Camp Met Tower - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	34	5.04	5.04
-20 - 0	540	80.12	85.16
0 - 10	100	14.84	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 674

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

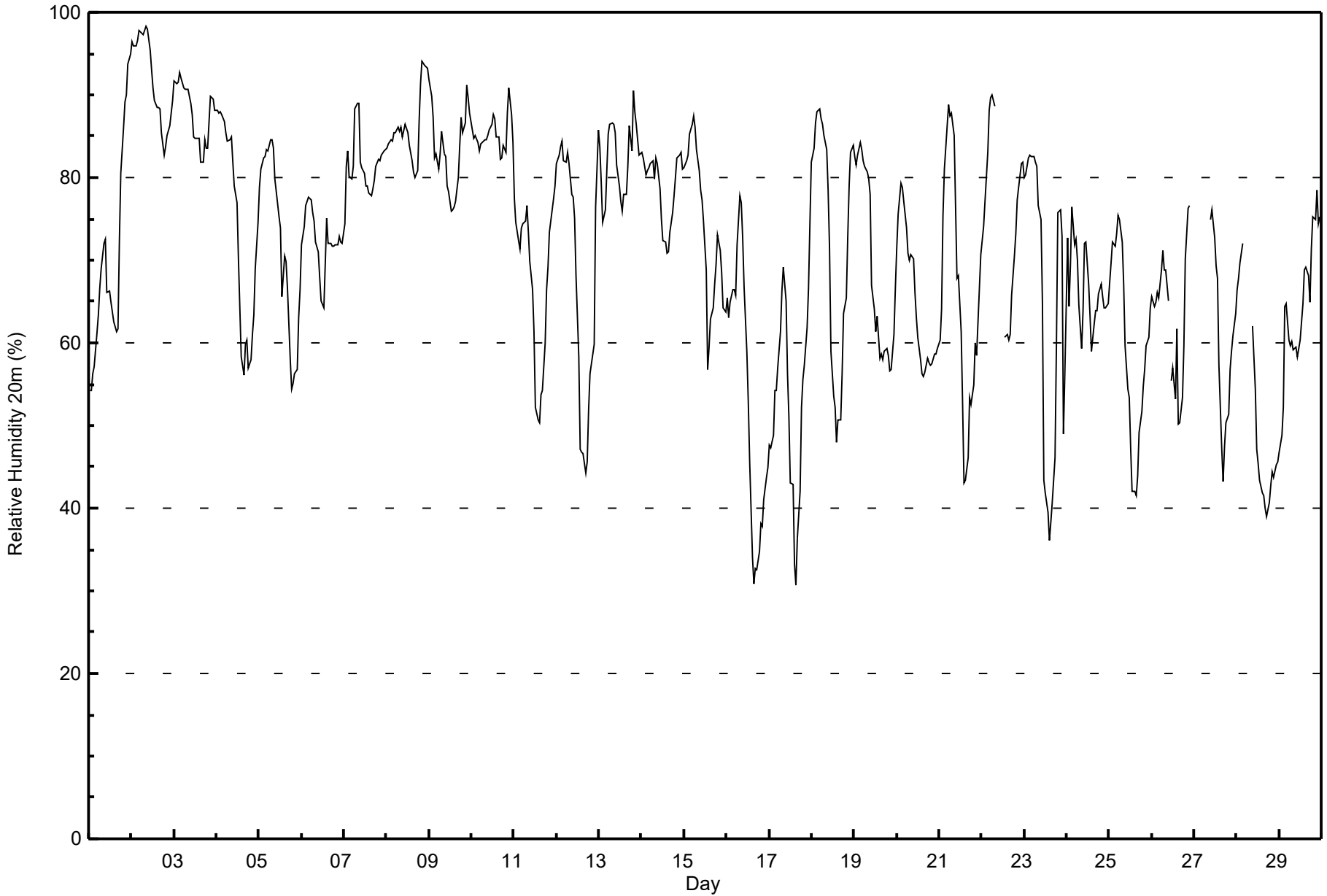
Relative Humidity 20m (RH20m) - %
Lower Camp Met Tower - February 2024

Maximum Value: 98.2 % on Feb 2 09:00 Maximum Daily Average: 91.9 % on Feb 2																						Hours in Service:	696			
Minimum Value: 30.7 % on Feb 17 16:00 Minimum Daily Average: 50.2 % on Feb 28																						Hours of Data:	674			
Maximum Diurnal Average: 80.0 % at hour 7 Minimum Diurnal Average: 60.1 % at hour 16																						Hours of Missing Data:	22			
Monthly Average: 71.30 % Percentiles: P ₁ = 35.8 P ₁₀ = 50.8 Q ₁ = 60.8 Median = 73.3 Q ₃ = 82.9 P ₉₀ = 87.6 P ₉₉ = 96.5																						Hours of Calibration:	0			
																						Percent Operational Time:	96.8			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	54.2	54.2	56.3	57.1	61.1	63.4	66.6	68.9	72.1	72.6	66.2	66.3	64.9	63.7	62.6	61.3	61.6	72.2	80.6	86.1	89.2	90.0	93.8	94.9	70.0	94.9
2-Feb	96.4	96.0	95.9	96.7	97.9	97.7	97.3	97.8	98.2	97.9	95.4	93.0	90.8	89.3	88.4	88.5	88.3	85.4	82.7	83.7	85.0	86.3	87.9	89.4	91.9	98.2
3-Feb	91.7	91.4	91.5	92.7	92.0	90.8	90.6	90.7	90.7	89.1	87.6	85.0	84.8	84.7	84.7	81.8	81.8	84.5	83.5	83.6	89.9	89.7	89.5	88.2	87.9	92.7
4-Feb	88.2	87.7	88.0	87.6	86.8	85.5	84.6	84.6	85.0	81.9	79.0	76.9	70.1	64.3	58.4	56.2	59.8	60.3	57.0	58.0	61.0	63.5	69.0	74.6	73.7	88.2
5-Feb	78.8	81.0	82.3	82.5	83.3	83.3	84.6	84.5	83.6	79.8	76.8	75.2	73.8	65.7	70.5	69.9	66.7	58.0	54.3	55.1	56.2	56.8	63.1	66.4	72.2	84.6
6-Feb	71.8	74.1	76.7	77.1	77.7	77.3	75.8	74.7	72.1	71.0	68.0	65.1	64.3	69.7	75.0	72.1	72.0	71.8	71.7	71.8	71.8	72.8	72.1	72.1	72.4	77.7
7-Feb	74.5	81.4	83.3	80.2	79.9	81.3	88.2	89.0	88.9	81.9	81.1	80.4	79.0	79.1	78.1	77.8	78.7	79.7	81.3	82.2	82.1	82.8	83.3	83.4	81.6	89.0
8-Feb	83.6	84.0	84.6	84.4	85.5	85.3	86.1	85.6	86.1	84.9	86.5	85.9	85.5	83.9	82.1	80.7	80.0	80.9	86.8	91.3	94.0	93.5	93.4	93.3	86.2	94.0
9-Feb	91.9	89.8	87.3	82.5	82.8	81.0	82.9	85.6	82.9	82.5	79.0	78.3	75.9	76.1	76.5	77.0	80.0	83.8	87.3	85.5	86.7	91.3	89.7	87.8	83.5	91.9
10-Feb	85.8	84.8	85.1	84.2	83.2	84.0	84.2	84.5	84.5	85.1	85.7	86.5	87.7	87.2	84.9	85.0	82.2	82.3	83.9	83.0	87.8	90.9	87.6	84.2	85.2	90.9
11-Feb	77.4	74.6	72.3	71.4	73.9	74.5	74.7	76.6	73.3	69.9	66.5	61.3	52.2	50.7	50.4	53.7	54.3	60.0	66.5	69.2	73.4	76.1	77.4	78.9	67.9	78.9
12-Feb	81.7	82.7	83.7	84.4	82.1	81.8	83.0	81.7	78.0	77.7	75.1	68.1	58.3	47.2	46.8	46.6	44.3	45.6	51.9	56.2	58.6	59.8	76.4	85.7	68.2	85.7
13-Feb	83.7	79.4	74.6	76.2	80.8	85.3	86.5	86.6	86.5	85.4	81.5	78.9	77.1	76.0	77.9	78.0	81.4	86.3	83.3	90.5	87.9	86.4	82.7	82.9	82.3	90.5
14-Feb	83.1	82.3	80.4	80.8	81.3	81.8	82.0	79.8	82.4	81.7	78.7	75.0	72.3	72.2	70.9	71.1	73.4	75.7	77.8	79.9	82.4	82.8	83.0	81.1	78.8	83.1
15-Feb	81.1	82.1	82.7	85.2	86.5	87.4	86.1	83.4	80.8	78.5	77.2	74.7	68.8	56.8	59.6	62.9	64.2	67.1	69.4	73.1	71.3	68.5	64.2	63.8	74.0	87.4
16-Feb	65.5	63.1	64.8	66.5	66.4	65.7	71.9	77.7	76.9	72.8	66.7	58.9	52.9	45.7	34.1	30.8	32.7	32.6	34.8	38.1	37.8	41.1	43.6	44.9	53.6	77.7
17-Feb	47.6	47.2	48.8	54.2	54.3	56.9	61.4	66.3	69.2	65.0	56.2	51.0	43.1	43.0	33.3	30.7	36.2	42.1	52.2	55.5	57.3	61.9	66.6	74.4	53.1	74.4
18-Feb	81.8	83.6	86.6	87.9	88.3	87.2	86.5	85.1	83.4	78.5	71.5	59.0	53.5	52.3	48.0	50.6	50.7	56.2	63.6	65.5	72.6	79.0	83.0	83.8	72.4	88.3
19-Feb	82.5	81.6	82.7	84.2	83.4	82.0	81.4	80.6	79.8	77.9	67.0	64.1	61.3	63.2	58.1	58.6	57.9	59.0	59.3	58.4	56.6	56.8	61.0	66.6	69.3	84.2
20-Feb	71.4	75.6	79.4	78.8	77.1	73.8	70.9	70.0	70.7	70.1	66.2	63.1	60.6	58.1	56.3	56.0	56.5	58.2	57.6	57.4	57.4	58.6	58.7	59.3	65.1	79.4
21-Feb	60.3	64.1	75.4	81.0	86.4	88.9	87.5	87.7	85.1	76.5	67.8	68.2	61.4	52.8	43.1	43.4	46.1	53.4	52.5	54.9	60.1	58.5	62.5	70.6	66.2	88.9
22-Feb	72.4	74.1	77.1	83.0	88.1	89.6	90.0	88.7	DF	DF	DF	DF	DF	60.7	61.0	60.4	61.0	65.7	70.6	73.2	77.4	78.7	81.7	81.8	75.5	90.0
23-Feb	80.0	80.4	82.3	82.7	82.6	81.8	81.4	76.6	75.0	64.9	43.3	41.8	39.5	36.2	38.3	40.6	46.1	59.9	75.7	76.1	72.9	49.0	56.3	64.4	82.7	
24-Feb	72.7	64.4	69.5	76.4	71.8	72.6	70.0	64.5	59.3	63.9	72.0	72.2	67.1	63.1	58.9	62.4	63.8	64.0	65.9	67.1	65.6	64.2	64.2	64.8	66.7	76.4
25-Feb	67.2	69.7	72.2	71.8	73.3	73.3	74.8	72.2	67.1	59.6	54.5	53.3	47.3	42.1	42.1	41.6	43.9	49.1	51.6	54.8	56.7	59.7	60.7	64.2	59.4	75.3
26-Feb	65.6	64.4	64.9	66.1	65.4	68.7	71.2	68.8	68.9	65.1	DF	55.4	56.9	53.2	61.7	50.1	50.4	53.4	59.7	70.2	76.3	76.7	DF	DF	63.5	76.7
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	74.9	76.1	72.6	69.4	67.8	57.3	47.2	43.3	47.5	50.3	51.3	56.7	58.9	60.8	63.6	--	76.1
28-Feb	66.5	67.9	69.6	72.1	DF	DF	DF	DF	DF	62.0	54.4	47.0	45.4	43.4	41.9	41.5	40.1	38.9	40.7	42.8	44.4	43.8	45.3	45.6	50.2	72.1
29-Feb	46.7	48.8	52.3	64.4	64.7	60.3	59.7	60.1	59.2	59.5	58.4	59.3	60.3	64.8	68.8	69.1	68.1	64.9	71.4	75.2	74.9	78.5	74.4	75.3	64.1	78.5
																						Diurnal Average				
																						Diurnal Maximum				
DF - DAS Failure																										



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity 20m (RH20m) - %
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Relative Humidity 20m (RH20m) - %
Lower Camp Met Tower - February 2024**

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	14	2.08	2.08
40 - 60	144	21.36	23.44
60 - 80	277	41.10	64.54
80 - 100	239	35.46	100.00

Total Number of Valid Hours: 674

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

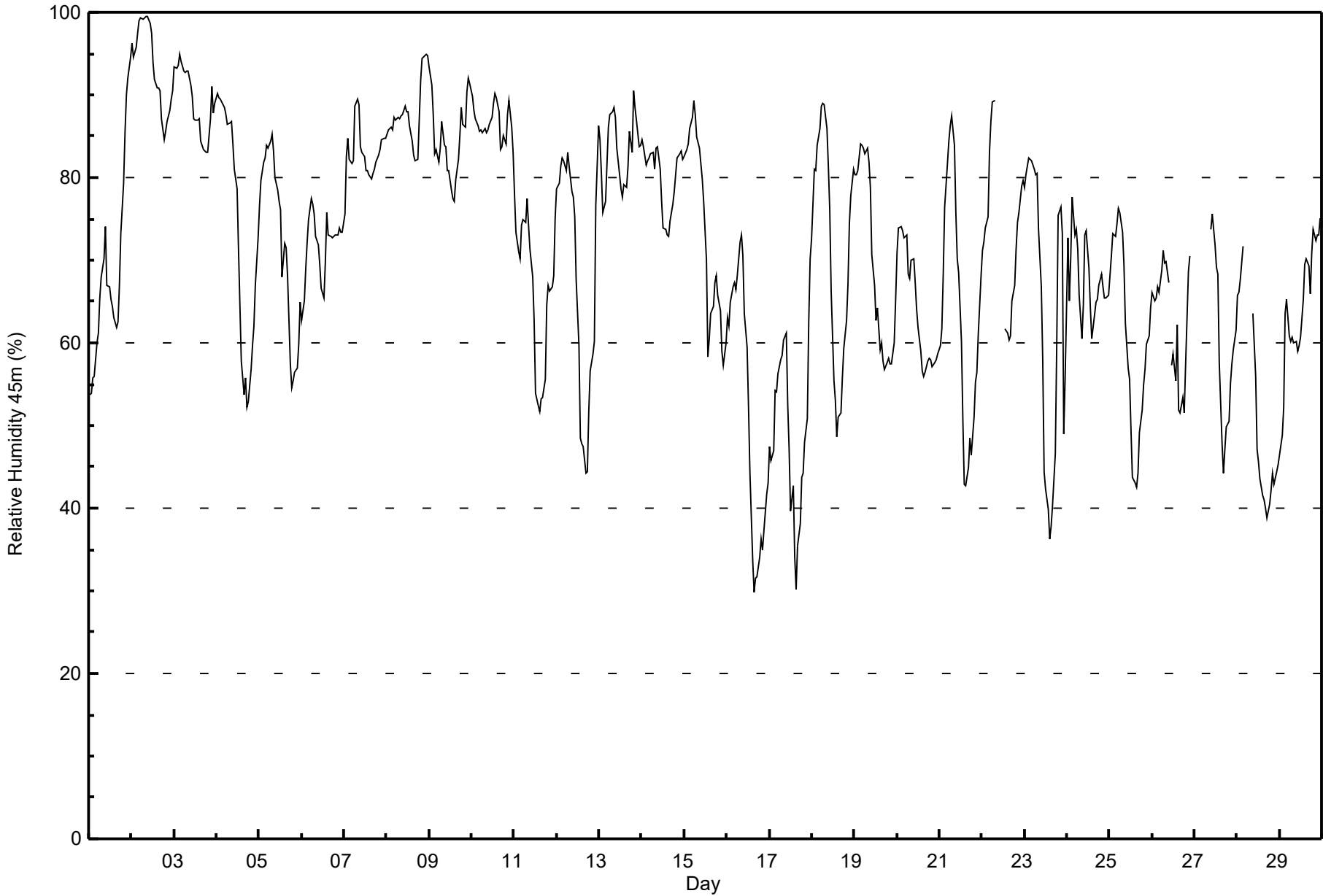
Relative Humidity 45m (RH45m) - %
Lower Camp Met Tower - February 2024

Maximum Value: 99.5 % on Feb 2 09:00 Maximum Daily Average: 93.6 % on Feb 2																						Hours in Service:	696			
Minimum Value: 29.9 % on Feb 16 16:00 Minimum Daily Average: 49.3 % on Feb 17																						Hours of Data:	674			
Maximum Diurnal Average: 80.3 % at hour 8 Minimum Diurnal Average: 60.9 % at hour 16																						Hours of Missing Data:	22			
Monthly Average: 71.17 % Percentiles: P ₁ = 34.6 P ₁₀ = 50.0 Q ₁ = 60.2 Median = 73.0 Q ₃ = 83.5 P ₉₀ = 88.4 P ₉₉ = 97.8																						Hours of Calibration:	0			
																						Percent Operational Time:	96.8			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	53.7	53.9	55.7	55.9	59.9	61.2	65.4	68.0	70.2	74.0	67.0	66.7	65.3	64.4	63.1	61.8	62.6	66.9	73.2	79.3	85.4	90.0	92.0	94.5	68.8	94.5
2-Feb	96.3	94.6	95.7	97.4	99.1	99.3	99.2	99.3	99.5	99.5	98.7	97.4	93.9	91.9	90.9	90.9	90.4	87.2	84.5	85.5	86.8	88.1	89.5	90.6	93.6	99.5
3-Feb	93.3	93.2	93.5	94.9	94.1	92.9	92.7	92.9	92.9	91.2	89.8	87.0	87.0	86.9	87.0	84.3	83.3	83.3	83.1	83.0	87.2	90.9	87.9	89.0	89.2	94.9
4-Feb	90.2	89.6	89.4	89.2	88.4	87.6	86.4	86.6	86.8	84.1	81.1	78.6	71.3	64.6	57.8	53.8	55.8	52.3	52.8	56.7	59.7	62.0	67.0	72.7	73.5	90.2
5-Feb	76.5	79.7	81.9	82.4	83.9	83.6	84.4	85.2	83.2	80.0	78.5	77.1	76.1	67.9	71.9	71.6	68.1	57.5	54.6	55.5	56.5	56.9	59.8	64.9	72.4	85.2
6-Feb	62.7	65.1	69.0	72.1	75.0	77.4	76.7	75.6	72.9	71.8	69.5	66.6	65.5	69.9	75.8	73.0	72.9	72.6	72.9	73.0	73.1	73.9	73.3	73.5	71.8	77.4
7-Feb	75.6	82.6	84.8	82.2	81.7	82.0	88.6	89.5	88.8	83.8	83.0	82.5	80.8	80.8	80.3	79.9	80.6	81.1	81.9	82.7	83.4	84.5	84.8	84.8	82.9	89.5
8-Feb	85.2	85.7	86.2	85.8	87.2	86.9	87.3	87.1	87.4	87.6	88.6	88.0	87.9	86.2	84.5	82.8	82.0	82.3	87.0	91.6	94.4	94.8	94.8	94.7	87.7	94.8
9-Feb	93.4	91.2	87.6	82.9	83.4	81.8	83.5	86.8	83.9	83.8	80.8	80.9	78.5	77.5	77.1	79.7	82.2	85.1	88.4	86.5	86.2	90.3	92.1	91.4	84.8	93.4
10-Feb	89.9	88.2	87.2	86.2	85.5	85.7	85.5	85.9	85.4	85.8	86.5	87.3	88.9	90.3	89.7	88.0	83.3	83.7	85.1	84.0	87.6	89.4	86.2	83.0	86.6	90.3
11-Feb	78.0	73.4	71.0	70.1	74.3	74.9	74.6	77.5	74.2	71.4	67.9	62.8	53.8	52.4	51.7	53.2	53.3	55.6	64.6	66.9	66.3	66.8	68.2	75.0	66.6	78.0
12-Feb	78.7	79.3	81.4	82.4	82.0	80.8	83.1	81.4	78.3	77.6	75.3	67.7	59.7	48.5	47.7	47.5	44.2	44.4	51.7	56.7	58.6	60.2	76.7	86.3	67.9	86.3
13-Feb	84.5	80.6	75.8	77.1	81.6	86.1	87.7	88.0	88.5	87.3	83.6	80.4	78.6	77.6	79.2	78.8	81.4	85.6	83.1	90.6	88.5	87.0	83.8	83.8	83.3	90.6
14-Feb	84.6	83.7	81.6	82.0	82.5	83.0	83.1	81.1	83.6	83.8	81.0	77.2	73.8	73.8	73.0	72.8	74.8	76.9	78.4	80.4	82.4	82.9	83.2	82.3	80.1	84.6
15-Feb	82.6	83.4	84.1	85.9	87.3	89.3	87.7	85.0	83.6	81.7	79.8	77.0	70.0	58.3	60.6	63.6	64.4	67.2	68.2	65.7	63.9	59.0	57.3	60.0	73.6	89.3
16-Feb	63.1	62.1	64.9	66.9	67.3	66.5	68.1	72.2	73.1	70.5	63.6	59.5	52.4	44.3	33.8	29.9	31.5	31.7	34.1	36.3	34.8	37.3	41.7	43.0	52.0	73.1
17-Feb	47.4	45.8	46.9	54.3	54.1	56.2	58.0	58.5	60.3	61.2	52.5	47.2	39.7	42.7	34.1	30.2	35.4	38.1	43.7	44.2	48.0	50.9	62.6	70.1	49.3	70.1
18-Feb	72.5	81.0	80.9	84.0	85.9	88.7	88.9	88.8	85.9	81.3	76.2	66.2	55.4	53.0	48.7	51.0	51.5	55.8	59.3	62.7	67.1	74.3	77.8	81.0	71.6	88.9
19-Feb	80.4	80.3	80.8	84.0	83.9	83.6	82.9	83.6	81.8	78.8	70.7	67.0	62.7	64.2	59.2	59.9	57.8	56.7	57.6	58.2	57.4	57.4	60.0	65.1	69.8	84.0
20-Feb	70.8	73.9	74.0	73.5	72.6	73.1	68.3	67.8	69.9	70.2	67.2	64.0	61.9	59.0	56.5	56.0	56.4	57.8	58.1	58.0	57.0	57.7	57.9	58.7	64.2	74.0
21-Feb	59.6	61.7	68.4	76.4	81.7	84.4	86.2	87.5	83.9	75.7	70.1	68.4	60.1	50.6	42.9	42.7	44.9	48.6	46.5	51.0	55.2	56.4	61.0	68.1	63.8	87.5
22-Feb	71.2	72.2	73.9	75.3	83.0	86.7	89.1	89.3	DF	DF	DF	DF	DF	61.6	61.2	60.4	60.8	65.2	66.9	71.4	74.6	75.8	79.0	79.7	73.5	89.3
23-Feb	78.9	80.3	82.5	82.3	82.0	81.0	80.4	80.5	73.8	66.7	58.0	44.5	42.4	39.8	36.3	37.9	40.3	46.6	59.7	75.4	76.5	73.2	48.9	55.7	63.5	82.5
24-Feb	72.7	65.1	70.3	77.6	73.1	73.7	71.4	65.7	60.6	64.5	73.0	73.6	69.0	64.3	60.5	63.4	65.0	65.2	67.0	68.3	66.8	65.4	65.4	65.8	67.8	77.6
25-Feb	68.1	70.5	73.2	72.9	74.4	76.3	75.8	73.4	69.3	62.4	57.0	55.6	49.6	43.7	43.1	42.5	44.2	49.1	51.9	55.0	56.8	59.9	60.9	64.3	60.4	76.3
26-Feb	66.0	65.0	65.4	66.7	66.0	68.8	71.2	69.7	69.8	67.3	DF	57.3	58.7	55.5	62.3	51.9	51.6	53.4	51.5	57.4	68.6	70.6	DF	DF	62.6	71.2
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	73.8	75.6	71.9	69.1	68.4	57.7	47.7	44.2	47.1	49.8	50.5	55.1	57.5	59.2	61.6	--	75.6
28-Feb	65.7	66.1	67.7	71.8	DF	DF	DF	DF	DF	63.5	55.9	47.1	45.6	43.6	41.4	40.9	40.0	38.8	40.5	42.3	44.2	42.8	44.4	45.3	49.9	71.8
29-Feb	46.5	48.8	52.2	63.6	65.3	60.9	60.2	60.7	60.0	60.2	59.0	59.6	60.7	65.2	69.5	70.2	69.3	65.9	70.8	73.7	72.5	73.0	73.1	75.1	64.0	75.1
																								Diurnal Average		
																								Diurnal Maximum		
DF - DAS Failure																										



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity 45m (RH45m) - %
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Relative Humidity 45m (RH45m) - %
Lower Camp Met Tower - February 2024**

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	17	2.52	2.52
40 - 60	148	21.96	24.48
60 - 80	262	38.87	63.35
80 - 100	247	36.65	100.00

Total Number of Valid Hours: 674

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

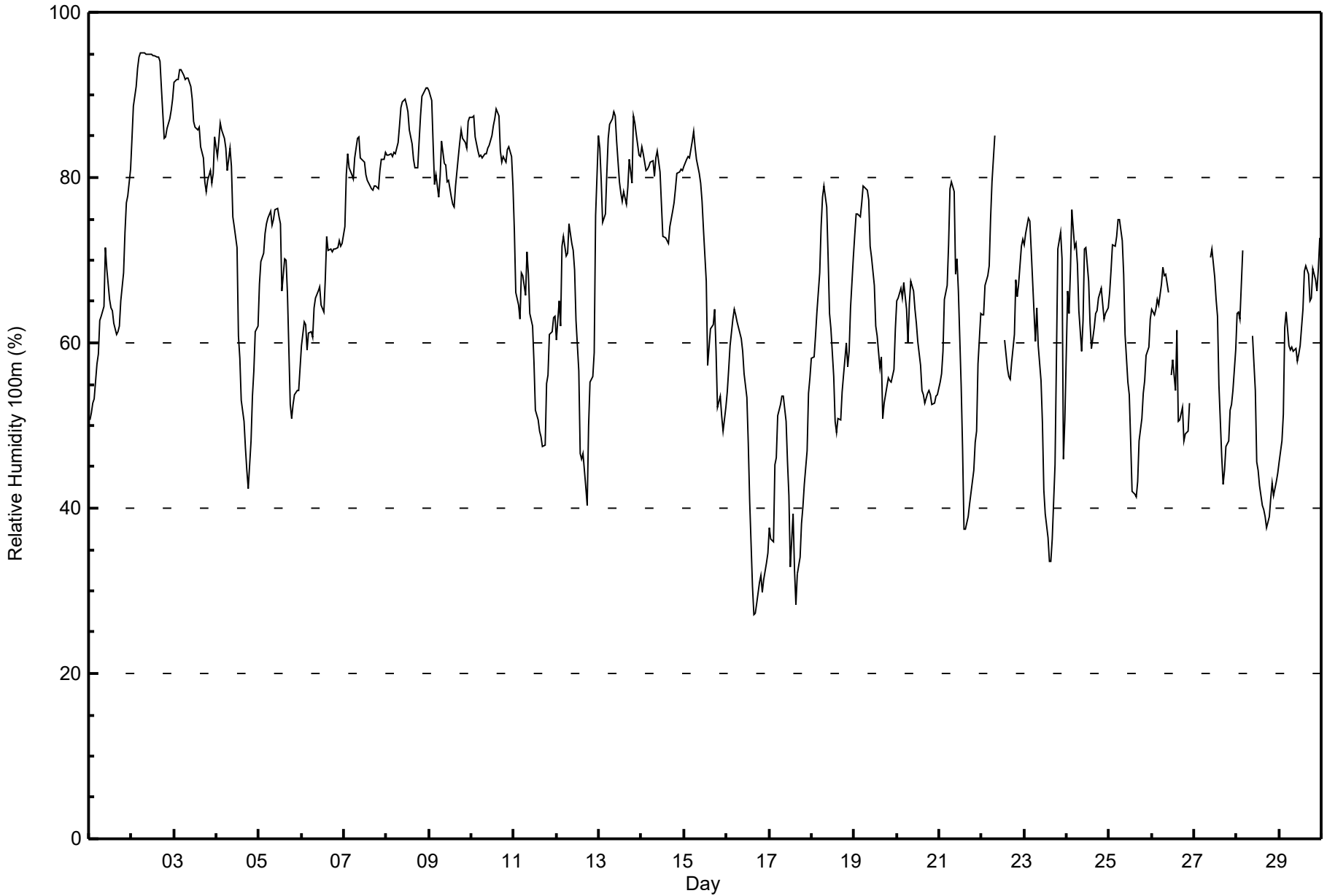
Relative Humidity 100m (RH100m) - %
Lower Camp Met Tower - February 2024

Maximum Value: 95.2 % on Feb 2 06:00 Maximum Daily Average: 91.7 % on Feb 2																						Hours in Service:	696																								
Minimum Value: 27.0 % on Feb 16 16:00 Minimum Daily Average: 42.8 % on Feb 17																						Hours of Data:	674																								
Maximum Diurnal Average: 75.4 % at hour 8 Minimum Diurnal Average: 58.8 % at hour 17																						Hours of Missing Data:	22																								
Monthly Average: 67.08 % Percentiles: P ₁ = 31.2 P ₁₀ = 46.6 Q ₁ = 56.2 Median = 67.1 Q ₃ = 80.4 P ₉₀ = 85.4 P ₉₉ = 94.8																						Hours of Calibration:	0																								
																						Percent Operational Time:	96.8																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																							
1-Feb	50.6	51.5	52.7	53.3	57.4	58.6	62.7	63.2	64.4	71.6	68.9	65.2	64.3	63.8	62.5	61.0	61.3	62.1	65.0	68.5	73.4	77.0	77.7	81.0	64.1	81.0																					
2-Feb	84.8	88.6	91.1	93.2	94.6	95.2	95.1	95.0	95.0	95.0	95.0	94.9	94.8	94.7	94.6	94.5	94.1	90.9	84.8	85.0	86.0	87.1	88.2	89.4	91.7	95.2																					
3-Feb	91.6	91.8	91.8	93.1	93.1	92.3	91.9	92.1	92.1	91.0	89.6	86.7	86.2	85.7	86.2	83.8	82.4	79.5	78.4	79.6	80.9	79.4	80.5	85.0	86.9	93.1																					
4-Feb	82.5	84.5	86.6	85.8	84.7	83.5	80.9	83.6	81.4	75.2	74.1	71.5	60.9	58.1	53.0	50.5	47.3	44.6	42.4	48.1	53.5	56.6	61.4	62.1	67.2	86.6																					
5-Feb	67.1	69.8	70.9	73.2	74.4	75.0	75.9	74.2	74.9	76.2	76.3	75.3	74.5	66.3	70.2	70.0	65.9	52.6	50.8	52.6	53.8	54.3	54.3	57.0	66.9	76.3																					
6-Feb	59.7	62.5	62.3	59.1	61.1	61.4	60.7	64.3	65.5	66.3	66.8	64.6	63.8	67.6	72.9	71.1	71.3	71.1	71.3	71.3	71.5	72.4	71.7	72.1	66.8	72.9																					
7-Feb	74.0	80.4	82.8	81.1	80.4	79.8	82.5	84.8	84.9	82.3	82.2	81.9	80.4	79.7	79.2	78.6	78.4	79.0	79.0	78.6	80.8	82.1	82.2	83.0	80.8	84.9																					
8-Feb	82.7	82.7	82.9	82.5	83.1	82.8	84.3	86.2	88.6	89.2	89.5	88.9	88.0	85.7	84.1	82.2	81.3	81.1	84.3	87.4	89.8	90.4	90.9	90.8	85.8	90.9																					
9-Feb	90.5	89.4	84.0	79.2	80.3	77.7	80.1	84.4	81.7	81.5	79.4	79.7	77.6	76.8	76.4	79.0	82.6	84.2	85.7	84.7	84.3	83.6	86.8	87.3	82.4	90.5																					
10-Feb	87.3	87.5	84.9	83.3	82.5	82.8	82.4	82.9	82.9	83.6	83.9	85.0	86.4	87.2	88.3	87.5	83.2	81.8	82.6	81.8	83.5	83.8	82.5	78.9	84.0	88.3																					
11-Feb	73.6	66.1	64.5	62.9	68.4	68.1	65.7	71.0	68.4	63.6	62.0	57.6	51.8	50.7	49.3	48.7	47.4	47.6	55.1	56.1	61.0	61.4	63.0	63.3	60.3	73.6																					
12-Feb	60.4	65.0	62.1	71.7	72.8	70.5	70.9	74.4	72.0	71.3	68.8	62.7	56.6	46.5	45.9	46.6	42.5	40.3	50.1	55.3	55.9	58.9	75.4	85.1	61.7	85.1																					
13-Feb	83.6	79.7	74.5	75.7	80.4	84.7	86.5	87.2	88.0	87.4	84.4	79.5	78.1	77.2	78.3	76.8	78.9	82.3	79.4	87.5	86.7	85.2	82.8	82.5	82.0	88.0																					
14-Feb	83.7	82.9	80.8	81.0	81.4	81.9	82.1	80.1	82.4	83.2	80.7	76.8	72.9	72.8	72.3	72.1	74.0	76.0	77.0	78.6	80.5	80.8	81.1	80.8	79.0	83.7																					
15-Feb	81.4	82.2	82.6	82.4	84.4	85.6	83.8	82.2	80.5	79.3	77.2	73.7	67.5	57.3	59.5	61.7	62.2	64.1	59.0	52.2	53.6	51.2	49.3	52.2	69.4	85.6																					
16-Feb	54.1	56.8	59.7	62.8	64.1	63.4	62.6	61.2	60.5	59.0	56.2	53.4	47.8	40.8	30.5	27.0	27.4	28.5	31.0	31.9	29.9	31.3	33.5	34.5	46.2	64.1																					
17-Feb	37.7	36.3	36.0	45.2	46.1	51.2	52.6	53.5	53.6	50.5	45.5	41.5	32.9	39.4	32.5	28.3	32.0	34.0	38.2	40.2	42.9	46.9	53.9	55.8	42.8	55.8																					
18-Feb	58.1	58.4	60.9	63.8	68.5	74.1	77.6	78.9	76.4	70.3	63.5	61.6	56.0	50.5	49.2	50.8	50.6	54.0	56.1	60.0	57.1	58.9	64.3	70.3	62.1	78.9																					
19-Feb	73.1	75.6	75.6	75.2	76.9	79.0	78.9	78.4	77.2	71.6	70.3	66.9	62.0	60.8	57.0	58.3	50.9	52.7	54.7	55.8	55.5	55.3	56.7	61.6	65.8	79.0																					
20-Feb	65.1	65.4	66.6	65.4	67.3	64.1	59.9	64.7	67.5	66.3	64.1	62.4	60.1	57.2	54.3	53.7	52.8	53.8	54.3	53.7	52.6	52.8	53.6	53.7	59.6	67.5																					
21-Feb	55.2	56.3	58.9	65.2	67.0	71.9	78.6	79.5	78.4	68.2	70.2	66.3	54.8	47.2	37.5	37.5	38.9	40.5	41.9	44.6	47.9	49.3	57.4	63.6	57.4	79.5																					
22-Feb	63.5	63.3	66.9	68.1	69.3	75.1	79.5	85.0	DF	DF	DF	DF	DF	60.3	57.0	55.9	55.7	57.6	61.1	67.7	65.6	67.1	71.7	72.6	66.5	85.0																					
23-Feb	71.8	73.2	75.1	74.7	71.2	63.8	60.2	64.2	59.7	55.4	50.4	42.1	39.3	36.5	33.5	33.5	36.2	45.3	58.2	71.3	73.5	70.2	46.0	50.7	56.5	75.1																					
24-Feb	66.3	63.6	68.8	76.2	71.6	72.0	69.5	63.8	59.0	62.8	71.3	71.6	67.4	62.5	59.3	61.8	63.6	64.0	65.5	66.6	64.7	62.8	63.6	64.2	65.9	76.2																					
25-Feb	66.2	68.8	71.9	71.6	73.0	74.9	74.9	72.4	68.2	61.0	55.2	53.8	48.2	42.1	41.6	41.4	43.2	48.1	50.8	53.8	55.4	58.5	59.5	62.9	59.1	74.9																					
26-Feb	64.1	63.4	64.1	65.3	64.6	67.1	69.1	68.1	68.3	66.1	DF	56.1	58.0	54.2	61.5	50.5	50.7	52.2	48.1	48.9	49.2	52.7	DF	DF	59.2	69.1																					
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	70.3	71.4	67.9	65.3	63.3	54.9	46.3	42.9	44.6	47.4	48.2	51.9	52.5	54.3	59.1	--	71.4																					
28-Feb	63.6	63.8	62.8	71.2	DF	DF	DF	DF	DF	60.8	54.3	45.6	44.6	42.7	40.3	39.8	39.1	37.6	38.9	41.2	43.1	41.5	43.2	44.3	48.3	71.2																					
29-Feb	45.6	48.1	51.3	61.9	63.8	59.7	59.1	59.6	58.9	59.3	57.8	58.6	59.7	64.0	68.6	69.3	68.3	65.1	65.4	68.9	67.7	66.3	69.1	72.8	62.0	72.8																					
																						69.2	69.9	70.5	72.3	73.4	73.9	74.4	75.4	74.2	72.1	70.7	67.6	64.3	61.8	60.4	59.3	58.8	59.1	60.6	62.8	63.9	64.5	66.2	68.5	Diurnal Average	
																						91.6	91.8	91.8	93.2	94.6	95.2	95.1	95.0	95.0	95.0	95.0	94.9	94.8	94.7	94.6	94.5	94.1	90.9	85.7	87.5	89.8	90.4	90.9	90.8	Diurnal Maximum	
DF - DAS Failure																																															



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity 100m (RH100m) - %
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Relative Humidity 100m (RH100m) - %
Lower Camp Met Tower - February 2024**

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	32	4.75	4.75
40 - 60	184	27.30	32.05
60 - 80	286	42.43	74.48
80 - 100	172	25.52	100.00

Total Number of Valid Hours: 674

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

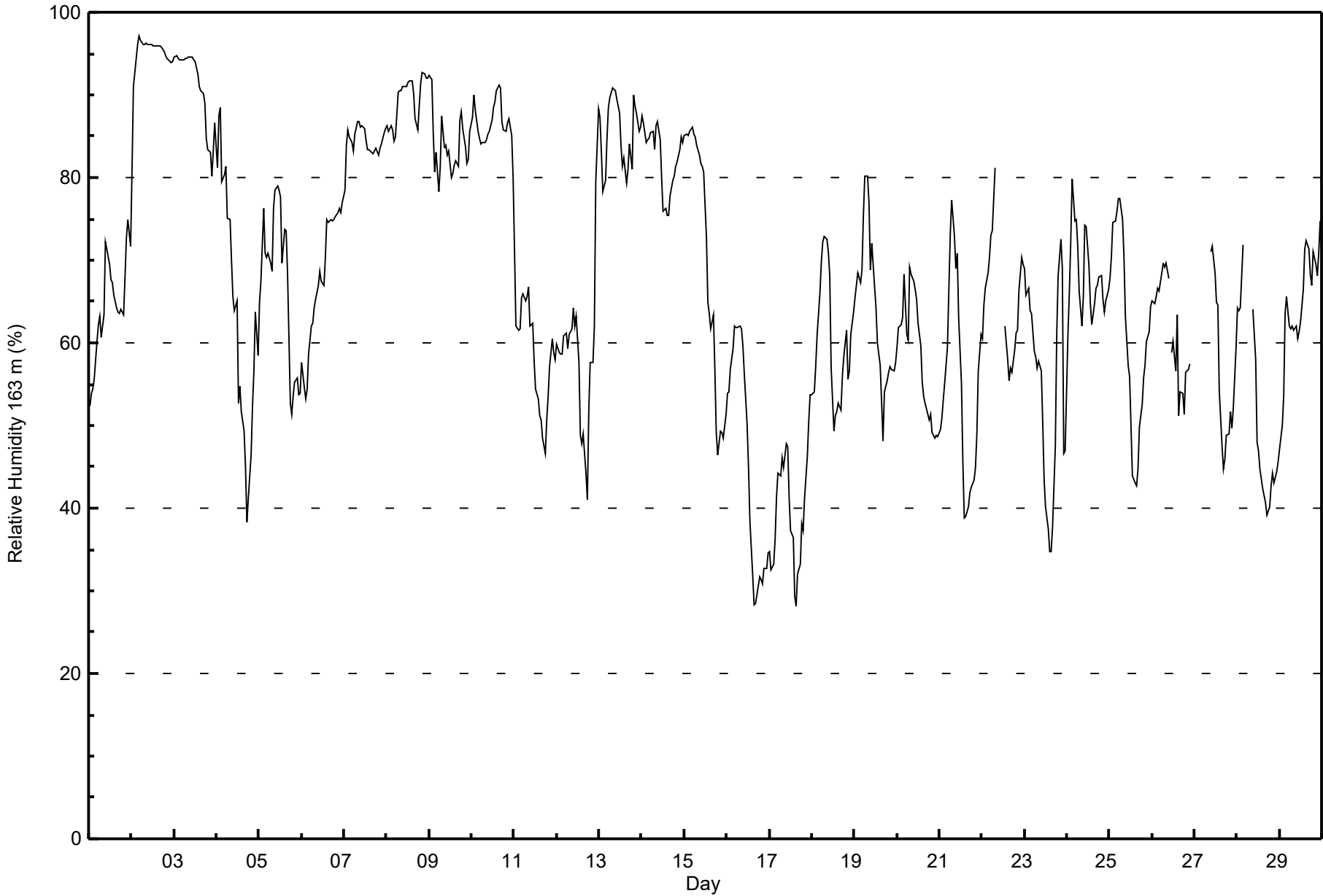
Relative Humidity 163 m (RH163m) - %
Lower Camp Met Tower - February 2024

Maximum Value: 97.1 % on Feb 2 05:00																						Maximum Daily Average: 94.8 % on Feb 2																						Hours in Service: 696			
Minimum Value: 28.1 % on Feb 17 16:00																						Minimum Daily Average: 39.9 % on Feb 17																						Hours of Data: 674			
Maximum Diurnal Average: 74.5 % at hour 8																						Minimum Diurnal Average: 60.7 % at hour 18																						Hours of Missing Data: 22			
Monthly Average: 67.64 %																						Percentiles: P ₁ = 31.6 P ₁₀ = 46.3 Q ₁ = 56.3 Median = 66.6 Q ₃ = 83.0 P ₉₀ = 89.1 P ₉₉ = 96.1																						Hours of Calibration: 0			
																																												Percent Operational Time: 96.8			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																							
1-Feb	52.4	53.9	54.4	55.5	60.2	62.2	63.3	60.7	63.4	72.3	71.3	69.5	67.7	67.3	65.7	64.2	63.8	63.5	64.1	63.4	67.9	72.8	75.0	71.8	64.4	75.0																					
2-Feb	80.9	91.1	94.5	96.0	97.1	96.6	96.1	96.1	96.2	96.1	96.1	96.0	96.0	96.0	96.0	95.9	95.7	95.2	94.7	94.4	94.1	94.0	94.1	94.8	97.1																						
3-Feb	94.5	94.7	94.4	94.3	94.2	94.2	94.4	94.5	94.5	94.5	94.6	94.3	94.1	92.5	91.0	90.4	90.1	89.0	84.7	83.3	83.1	80.1	83.3	86.6	90.9	94.7																					
4-Feb	81.3	87.5	88.6	79.5	80.3	81.3	75.1	75.0	70.0	65.6	63.9	65.1	52.6	54.8	51.8	49.3	45.0	38.2	41.2	46.4	52.4	56.7	63.8	58.5	63.5	88.6																					
5-Feb	65.0	67.4	76.2	70.8	70.4	70.8	69.6	68.7	76.2	78.4	79.0	78.4	77.7	69.7	73.8	73.5	68.5	52.7	51.4	53.6	55.3	55.7	53.8	54.0	67.1	79.0																					
6-Feb	57.7	54.6	53.3	54.4	58.6	62.0	62.3	64.2	65.2	66.9	68.7	67.5	67.0	70.4	74.9	74.6	75.0	74.8	75.0	75.2	75.7	76.3	75.8	76.9	67.8	76.9																					
7-Feb	78.5	83.9	85.8	84.9	84.2	83.3	85.2	86.7	86.7	86.1	86.2	86.0	84.5	83.4	83.4	83.0	82.8	83.2	83.6	82.8	83.6	84.1	85.5	86.0	84.3	86.7																					
8-Feb	86.2	85.7	86.2	85.8	84.4	84.9	90.3	90.5	90.5	91.1	90.9	91.0	91.6	91.8	91.7	90.1	87.1	85.8	88.6	91.4	92.7	92.6	92.1	92.1	89.4	92.7																					
9-Feb	92.4	91.8	85.4	80.7	83.1	78.3	81.4	87.5	83.5	84.0	82.7	83.3	80.1	80.4	81.6	82.0	81.4	87.0	88.0	86.0	83.8	81.6	82.3	85.6	83.9	92.4																					
10-Feb	87.3	90.1	88.2	85.6	84.7	84.2	84.3	84.2	84.6	85.2	85.6	87.0	88.5	89.2	90.5	91.3	90.9	86.8	85.7	85.6	86.7	87.2	85.1	80.0	86.6	91.3																					
11-Feb	71.1	62.1	61.6	61.6	65.4	66.0	65.1	65.5	66.8	62.0	62.3	57.7	54.3	53.1	51.2	50.7	48.4	46.6	50.7	53.6	57.2	60.5	58.8	57.9	58.8	71.1																					
12-Feb	59.9	58.9	58.7	58.6	60.9	61.1	59.3	61.0	61.8	64.3	62.0	63.2	57.6	48.9	47.8	49.1	44.3	41.0	51.8	57.7	57.6	62.0	79.6	88.4	59.0	88.4																					
13-Feb	87.3	83.0	78.2	79.6	84.7	88.5	89.7	90.9	90.7	90.5	89.5	87.8	83.9	81.4	82.3	79.3	81.0	84.1	81.0	89.9	88.7	87.8	85.7	86.1	85.5	90.9																					
14-Feb	87.5	86.7	84.2	84.5	84.7	85.4	85.6	83.3	86.2	86.8	84.6	80.0	76.0	76.2	75.5	75.5	77.8	79.6	80.2	81.3	81.9	83.3	84.9	84.3	82.3	87.5																					
15-Feb	85.1	85.3	85.0	85.6	86.2	85.2	85.0	83.9	82.7	81.7	81.3	80.6	72.7	65.0	63.6	61.6	63.4	56.8	49.1	46.5	49.3	49.1	48.4	51.3	70.2	86.2																					
16-Feb	53.9	54.1	56.7	59.4	62.0	61.9	61.9	62.1	61.7	59.7	56.3	50.2	45.0	38.5	31.8	28.4	28.5	29.5	31.7	31.3	30.8	32.7	32.7	34.5	45.6	62.1																					
17-Feb	34.8	32.5	33.3	36.2	41.4	44.3	43.9	46.2	44.9	47.8	47.4	41.4	37.2	36.5	29.4	28.1	32.1	33.3	38.2	37.4	41.2	46.3	50.5	53.7	39.9	53.7																					
18-Feb	53.7	54.1	57.3	61.0	66.0	69.8	72.1	72.9	72.5	71.1	68.2	56.9	49.2	51.2	51.6	52.7	51.9	56.0	58.3	61.5	55.6	56.6	61.0	63.8	60.2	72.9																					
19-Feb	65.4	67.0	68.5	67.3	68.8	75.5	80.2	80.2	77.0	68.8	72.0	66.8	64.3	60.0	57.3	52.9	48.1	54.0	55.4	56.5	57.1	56.8	56.6	57.6	63.9	80.2																					
20-Feb	59.5	61.9	62.2	63.0	68.2	61.0	60.3	69.2	68.2	67.5	66.5	65.2	62.3	59.7	55.3	53.5	52.7	51.4	50.7	51.4	49.1	48.5	48.8	48.7	58.5	69.2																					
21-Feb	49.5	50.8	53.0	55.0	59.4	66.4	73.1	77.3	72.9	69.0	70.9	63.1	55.1	45.6	38.7	39.0	40.2	41.9	42.6	43.3	44.9	48.9	56.7	61.1	54.9	77.3																					
22-Feb	60.6	64.6	66.6	68.5	70.3	73.0	73.6	81.2	DF	DF	DF	DF	DF	62.0	58.0	55.4	56.9	56.5	59.1	61.2	61.5	66.3	70.4	69.6	65.0	81.2																					
23-Feb	69.0	65.8	66.5	64.0	63.6	59.0	58.2	57.0	57.7	56.5	50.3	43.3	40.1	37.4	34.7	34.7	37.6	47.5	60.9	68.1	72.6	69.0	46.6	47.0	54.5	72.6																					
24-Feb	61.0	66.1	72.2	79.8	74.7	74.9	71.8	66.3	62.1	65.6	74.2	74.0	69.4	64.8	62.2	64.7	66.6	67.0	67.9	68.1	65.2	63.7	65.1	66.4	68.1	79.8																					
25-Feb	67.8	70.3	74.5	74.8	75.9	77.4	77.4	75.0	70.4	63.3	57.3	55.9	50.0	43.9	43.1	42.7	44.7	49.9	52.5	55.8	57.2	60.3	61.3	64.5	61.1	77.4																					
26-Feb	65.1	64.7	65.6	66.7	66.2	68.5	69.7	69.1	69.7	67.8	DF	58.8	60.2	56.7	63.3	51.2	54.0	53.9	51.4	56.4	56.7	57.5	DF	DF	61.6	69.7																					
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	71.0	71.6	68.4	64.9	64.5	54.3	47.5	44.7	45.9	48.7	49.0	51.6	49.7	52.0	59.5	--	71.6																					
28-Feb	64.2	64.0	64.3	71.8	DF	DF	DF	DF	DF	64.0	57.9	48.0	46.9	44.8	42.4	41.5	40.7	39.1	40.1	42.7	44.2	43.0	44.5	45.6	50.0	71.8																					
29-Feb	47.1	50.1	53.5	63.6	65.5	62.0	61.6	62.1	61.6	62.0	60.5	61.4	62.5	66.5	71.4	72.3	71.4	68.3	67.0	71.0	69.5	68.1	70.8	74.7	64.4	74.7																					
																						68.5	69.4	70.3	71.0	72.6	73.2	73.7	74.5	73.8	72.8	72.3	69.3	66.1	63.9	62.6	61.2	60.9	60.7	61.9	63.6	64.4	65.2	66.6	67.9	Diurnal Average	
																						94.5	94.7	94.5	96.0	97.1	96.6	96.1	96.1	96.2	96.1	96.1	96.0	96.0	96.0	96.0	96.0	95.9	95.7	95.2	94.7	94.4	94.1	94.0	94.1	Diurnal Maximum	
DF - DAS Failure																																															



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity 163 m (RH163m) - %
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Relative Humidity 163 m (RH163m) - %
Lower Camp Met Tower - February 2024**

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	31	4.60	4.60
40 - 60	190	28.19	32.79
60 - 80	251	37.24	70.03
80 - 100	202	29.97	100.00

Total Number of Valid Hours: 674

Total Number of Hours: 696



Maximum Speed: 27 km/h on Feb 28 22:00		Maximum Daily Speed Average: 16.6 km/h on Feb 28		Hours in Service: 696																							
Minimum Speed Value: 0 km/h on Feb 4 01:00		Minimum Daily Speed Average: 0.1 km/h on Feb 22		Hours of Data: 674																							
Maximum Diurnal Speed Average: 2.5 km/h at hour 11		Minimum Diurnal Speed Average: 0.3 km/h at hour 18		Hours of Missing Data: 22																							
Monthly Average Velocity: 0.6 km/h 53.1 deg		Percentiles: P ₁ = 1 P ₁₀ = 2 Q ₁ = 4 Median = 6 Q ₃ = 11 P ₉₀ = 15 P ₉₉ = 20		Percent Operational Time: 96.8																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	ESE13	ESE17	SE16	SE16	SE18	SE17	SE16	SSE17	SE8	ENE2	SSE1	SE11	SE11	SE12	SE11	SE7	NNW0	NNW2	NNW3	NW3	NW4	NW4	NW3	NW4	SE6.8	SE18	
2-Feb	NNW4	N6	N7	NNW6	N10	N12	N12	NNW7	NNW6	NNW8	N10	N10	NNW11	NNW8	N8	NNW6	N6	NNW7	NNW8	NNW8	NNW7	NNW5	NNW5	NW6	NNW7.5	N12	
3-Feb	NNW5	N2	E3	NE1	N4	NNW5	NNW5	NNW6	NNW6	N7	N7	N8	N9	N13	N12	N8	N5	NNE4	N2	NW2	NNW1	NNW1	WNW1	SW1	N4.6	N13	
4-Feb	W0	SSE1	SE7	SE8	SE6	ESE7	SE10	ESE9	ESE6	ESE5	ESE3	SE8	SE12	SE10	SE8	SE10	SE8	SSE11	SE7	E3	SE5	SE5	SE4	SSE3	SE6.4	SE12	
5-Feb	SSE4	SE4	SSE5	SE6	E1	E1	NNW3	NNW5	NW5	NNW9	N12	N14	N7	N13	N16	N16	N13	N11	NNW10	NNW8	NNW7	NNW6	N8	NNW4	N6.2	N16	
6-Feb	N4	N4	N5	NNW3	NW2	NNW2	NNW2	NNW3	NNW3	NW3	NNW3	SE9	SE13	SE13	SE13	SE14	SE14	SE15	SE14	SE15	SE11	SE13	SE12	SE11	SE5.7	SE15	
7-Feb	SE9	SE9	SE8	SSE8	SE5	ESE2	NE2	N1	NW1	S5	S6	S2	SSE2	WSW3	WSW3	NNW2	N1	NW2	NNW3	NW2	NNW5	NNW3	NW3	NNW3	SSE1.1	SE9	
8-Feb	NNW3	NNW3	NW3	NNW5	NNW3	NW2	NW2	N2	N1	N1	N2	NE1	SE2	ESE2	ESE4	SE5	SE3	ESE2	NNW3	NNW3	N5	NNW3	NW4	NW6	N1.5	NW6	
9-Feb	NW7	NW7	NW5	W10	W9	WNW6	N5	N5	N8	N6	NNE7	NE4	NNE3	SSW1	ENE1	N1	NNW2	NNW4	NNW5	NNW4	NW3	WNW3	W3	WNW2	NW3.4	W10	
10-Feb	WNW2	ENE1	SW2	SSW1	NW1	WSW1	SE1	SE3	SE5	SE7	SE6	SE5	SE3	SE7	SE10	SE7	SSE5	S12	SSE7	SSE4	WNW1	SE5	SE12	SSE9	SSE4.2	SE12	
11-Feb	WSW19	WSW21	WSW17	WSW21	W16	W16	W19	W12	W5	W8	WSW7	WSW7	W9	W10	W11	WSW11	WSW9	WSW7	WSW2	SW3	SSE4	SSE5	SSE9	SE10	WSW9.3	WSW21	
12-Feb	SE12	SE13	SE15	SE17	SE15	SE13	SE12	SE11	SE9	SE9	SE13	SSE10	SW10	W14	NW13	NNW11	NW6	NW8	WNW16	NW15	NW12	NNW11	N16	N12	SE1.0	SE17	
13-Feb	NNW10	NNW11	NNW11	N10	N11	NNW6	WNW2	W3	W2	W5	N3	SSW2	SSE6	SE8	SE8	SE11	ESE6	SSE3	NW4	N11	N13	N14	N14	NNW17	N4.2	NNW17	
14-Feb	NNW16	N17	N15	N13	N11	N9	N7	N9	N7	NNE5	NNE5	N6	NNW7	N7	NNE8	NNE8	NNE7	NNE6	NNW3	N4	N4	N3	N3	NNE3	N7.4	N17	
15-Feb	N1	NNW1	SE2	SE2	WSW4	WSW5	WSW5	SW6	SW6	SW5	SSE3	SE5	SE5	SSE2	SE4	SE14	SE10	SE6	SE2	SE5	SE9	SE14	SE9	SE6	SSE4.1	SE14	
16-Feb	S5	SW6	WSW6	SE3	SSE6	SSE8	SE10	SE11	SE15	SE16	SE18	SE16	SE14	SE13	SSW12	SW11	WSW14	WSW15	WSW16	WSW12	WSW12	WSW13	WSW11	W7	S6.8	SE18	
17-Feb	W7	W12	WSW11	W7	WSW6	SW1	SE5	SE8	SE10	SE9	SE8	SE5	SSE3	SSW3	S3	S3	SSE5	ENE1	NNW3	NNW4	N7	NNW4	WNW3	WNW3	SSW1.7	W12	
18-Feb	NNW3	NW3	NW5	NW5	NW5	NNW4	NW4	NW4	NW4	NNW4	NNW2	N5	N3	WSW3	NW3	NW6	NW5	NNW4	N4	N4	NNW5	NW4	NNW3	NNW4	NNW3.8	NW6	
19-Feb	NNW5	NNW4	NNW4	NW3	NW4	NW4	NW3	NW3	NW3	NW2	N5	N2	W2	WSW9	WSW5	WSW4	WSW5	NW4	NNW6	NNW4	N5	NNW4	NNW6	N6	NW3.3	WSW9	
20-Feb	NNW4	NNW4	NNW4	N1	NNW2	NNW1	ENE1	NNW1	SE3	SE4	SE4	SE5	SE4	SE4	SE8	SE8	SE6	SE7	ESE4	ESE4	SE9	SE9	SE7	SE7	SE3.2	SE9	
21-Feb	SE3	SE1	NNW6	NNW3	NW2	NNW3	NNW4	WNW2	WNW1	WSW1	SSE2	SE8	SE13	SE11	WSW15	WSW14	WSW13	WSW4	WSW11	WSW9	W11	WNW7	NNW7	NNW5	WSW2.9	WSW15	
22-Feb	WNW3	NW2	NNE1	NW3	NNW3	NW3	NW3	NW4	DF	DF	DF	DF	DF	DF	SSE2	SSE6	SSE8	S2	N4	NNW4	N3	NW2	S3	SSE6	SE7	W0.1	SSE8
23-Feb	SE7	SE9	ESE9	SE10	SE12	SE15	SE15	SE10	SE14	SE17	SSE8	W17	W13	WSW12	W15	WSW22	W18	NW14	W13	WSW22	W16	WNW15	WNW17	W19	SW6.1	WSW22	
24-Feb	W13	N19	N17	N15	N17	N10	N7	NNW11	NNW17	N12	N10	N12	N12	N10	N8	N7	NNE7	NNE7	NNE7	NNE7	NNE5	NNE7	N7	N7	N9.7	N19	
25-Feb	N8	N8	N8	N10	N10	N10	N10	N11	N8	NNE9	N13	N13	N14	N13	N14	N14	NNE13	NNE13	NNE11	NNE13	N15	N14	N14	N11	N11.4	N15	
26-Feb	N11	N12	N15	N11	N12	N10	NNE10	N10	N9	N6	DF	NNW7	NNW7	N6	SW4	SW1	E1	SE2	ENE1	NW1	NNW3	NNW1	DF	DF	N5.9	N15	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	SE5	ESE6	SE6	ENE4	NNE6	NE4	SE6	SE9	SE9	SE8	SE9	ESE6	ESE6	ESE4	SE7	----	SE9
28-Feb	ESE6	ESE4	SE9	SE8	DF	DF	DF	DF	DF	DF	SE15	SE16	SE20	SE20	SE22	SE24	SE20	SE17	ESE16	SE18	SE19	SE19	SE27	SE19	SE18	SE16.6	SE27
29-Feb	SE16	ESE16	ESE15	ESE12	ESE8	ESE10	ESE15	SE18	ESE15	ESE13	SE17	SE16	SSE15	SE10	SSE7	SE4	S6	SSW8	WNW3	NNW2	NNW2	NNW1	WSW1	WSW8	SE8.2	ESE18	
NNW0.8 N1.5 NNE1.3 NE0.8 N1.4 NNE1.2 ENE1.1 ENE1.0 ENE1.5 E1.9 E2.5 ESE2.1 ESE1.8 SE1.4 S1.0 SSE1.3 SSW0.7 E0.3 NW1.2 NW1.3 NNW1.6 N0.7 N1.0 NNW0.8																								Diurnal Average			
WSW19 WSW21 WSW17 WSW21 SE18 SE17 W19 ESE18 NNW17 SE17 SE18 SE20 SE20 SE22 SE24 WSW22 W18 ESE16 SE18 WSW22 SE19 SE27 SE19 W19																								Diurnal Maximum			
DF - DAS Failure																											
All monthly, daily, and diurnal averages have been calculated using vector methods																											



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

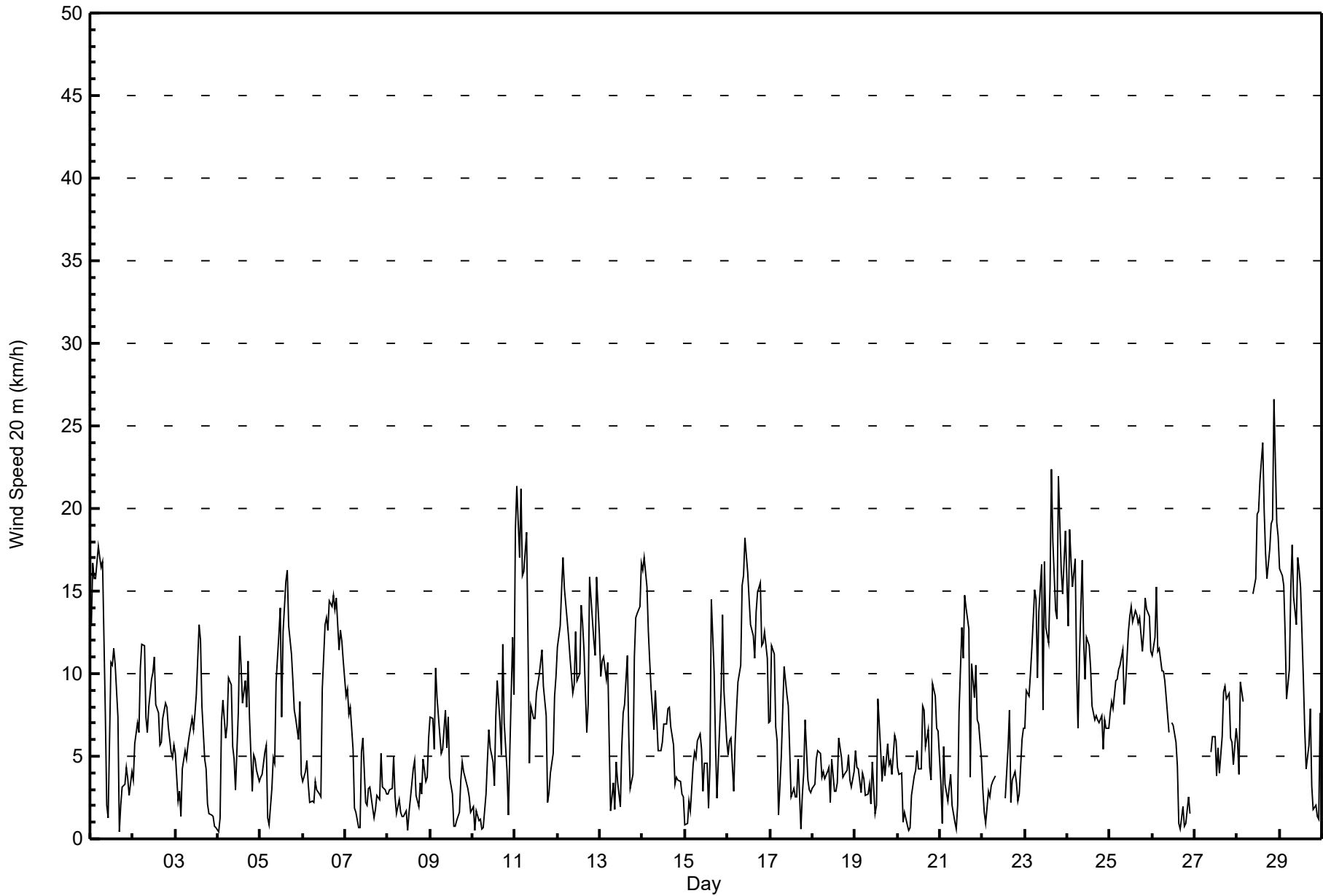
Wind Speed 20 m (WS20m) - km/h
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8 km/h on Feb 28 22:00														Hours in Service: 696 Hours of Data: 674 Hours of Missing Data: 22 Hours of Calibration: 0 Percent Operational Time: 96.8																								
Minimum Value: 0 km/h on Feb 4 01:00																																						
Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 2 Median = 2 Q ₃ = 4 P ₉₀ = 5 P ₉₉ = 7																																						
Day	Hourly Period Ending At (MST)																							Daily Maximum														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24													
1-Feb	4	5	4	4	3	4	3	5	5	1	3	3	2	3	2	2	1	1	2	1	2	2	1	1	5													
2-Feb	2	2	2	3	4	4	4	3	3	4	3	4	3	3	3	2	2	3	3	3	3	2	2	2	4													
3-Feb	2	2	1	2	2	2	2	2	2	2	2	3	5	4	3	2	2	1	1	1	1	1	1	1	5													
4-Feb	0	1	2	3	2	2	3	3	4	4	2	2	3	6	4	3	2	3	4	4	1	2	2	2	6													
5-Feb	2	2	1	2	2	1	2	2	2	4	4	4	4	5	5	5	4	4	3	3	3	2	3	2	5													
6-Feb	1	1	1	1	1	2	1	1	1	2	1	4	5	5	4	4	4	4	5	5	5	4	4	4	5													
7-Feb	3	2	3	2	2	1	1	1	1	3	2	1	1	1	1	1	1	1	1	1	2	1	1	1	3													
8-Feb	1	1	1	2	1	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	2	2													
9-Feb	2	2	2	4	3	3	3	3	3	2	3	2	2	1	1	1	1	1	2	1	1	1	1	1	4													
10-Feb	1	1	2	1	1	1	1	2	2	2	1	1	2	2	3	2	3	2	3	3	2	5	3	4	5													
11-Feb	5	4	3	4	5	4	6	6	4	4	3	2	3	4	3	3	4	4	2	2	2	1	1	1	6													
12-Feb	1	1	2	2	3	3	4	4	4	5	3	4	6	5	6	5	2	3	6	4	4	4	5	5	6													
13-Feb	5	5	4	4	4	2	1	1	2	2	2	1	2	2	2	2	2	2	6	3	4	5	5	6	6													
14-Feb	6	5	6	4	4	3	3	3	3	3	3	2	2	3	3	3	3	2	1	2	1	2	1	1	6													
15-Feb	1	1	1	1	3	3	2	3	2	3	2	1	2	1	2	3	2	2	1	1	4	2	2	2	4													
16-Feb	2	4	4	2	2	2	2	2	1	3	3	3	3	2	3	2	5	4	6	3	6	3	5	4	6													
17-Feb	3	5	3	3	3	2	2	3	2	3	1	2	1	1	1	1	1	2	1	2	2	2	2	1	5													
18-Feb	1	1	2	2	2	1	2	1	2	4	2	2	2	2	2	2	2	2	2	2	3	2	2	2	4													
19-Feb	3	2	1	1	1	1	1	1	1	1	2	1	2	2	2	1	2	1	2	2	2	2	2	2	3													
20-Feb	2	2	1	1	1	1	1	2	1	1	2	3	1	2	2	3	2	2	2	1	2	2	2	1	3													
21-Feb	1	1	2	1	2	2	2	1	1	1	1	2	3	4	6	4	5	2	2	2	4	4	2	2	6													
22-Feb	2	1	1	2	2	1	2	1	DF	DF	DF	DF	DF	1	2	2	2	2	2	1	2	1	1	2	2													
23-Feb	2	3	3	3	5	5	6	4	4	2	5	6	5	4	5	6	6	4	7	4	6	5	6	6	7													
24-Feb	5	7	5	5	5	4	3	4	6	5	3	4	3	3	3	3	2	3	3	3	3	3	2	2	7													
25-Feb	2	2	3	4	3	3	3	4	3	3	5	5	5	4	5	4	5	5	5	5	5	5	5	4	5													
26-Feb	4	5	5	4	4	4	4	3	3	3	DF	3	3	3	1	1	1	1	1	1	1	DF	DF	5														
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	1	2	2	2	2	3	2	3	2	2	2	2	2	2	3													
28-Feb	3	2	4	4	DF	DF	DF	DF	DF	DF	4	5	6	6	7	7	7	6	5	6	6	6	8	6	8													
29-Feb	6	6	6	5	4	6	6	6	6	5	5	7	5	5	3	3	2	3	1	2	1	2	1	2	7													
														6	7	6	5	5	6	6	6	6	5	7	6	6	7	7	7	6	5	7	6	6	8	6	6	
Diurnal Maximum																																						
DF - DAS Failure																																						



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed 20 m (WS20m) - km/h
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed 20 m (WS20m) - km/h
Lower Camp Met Tower - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	288	42.73	42.73
6 - 11	235	34.87	77.60
12 - 19	141	20.92	98.52
20 - 28	10	1.48	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

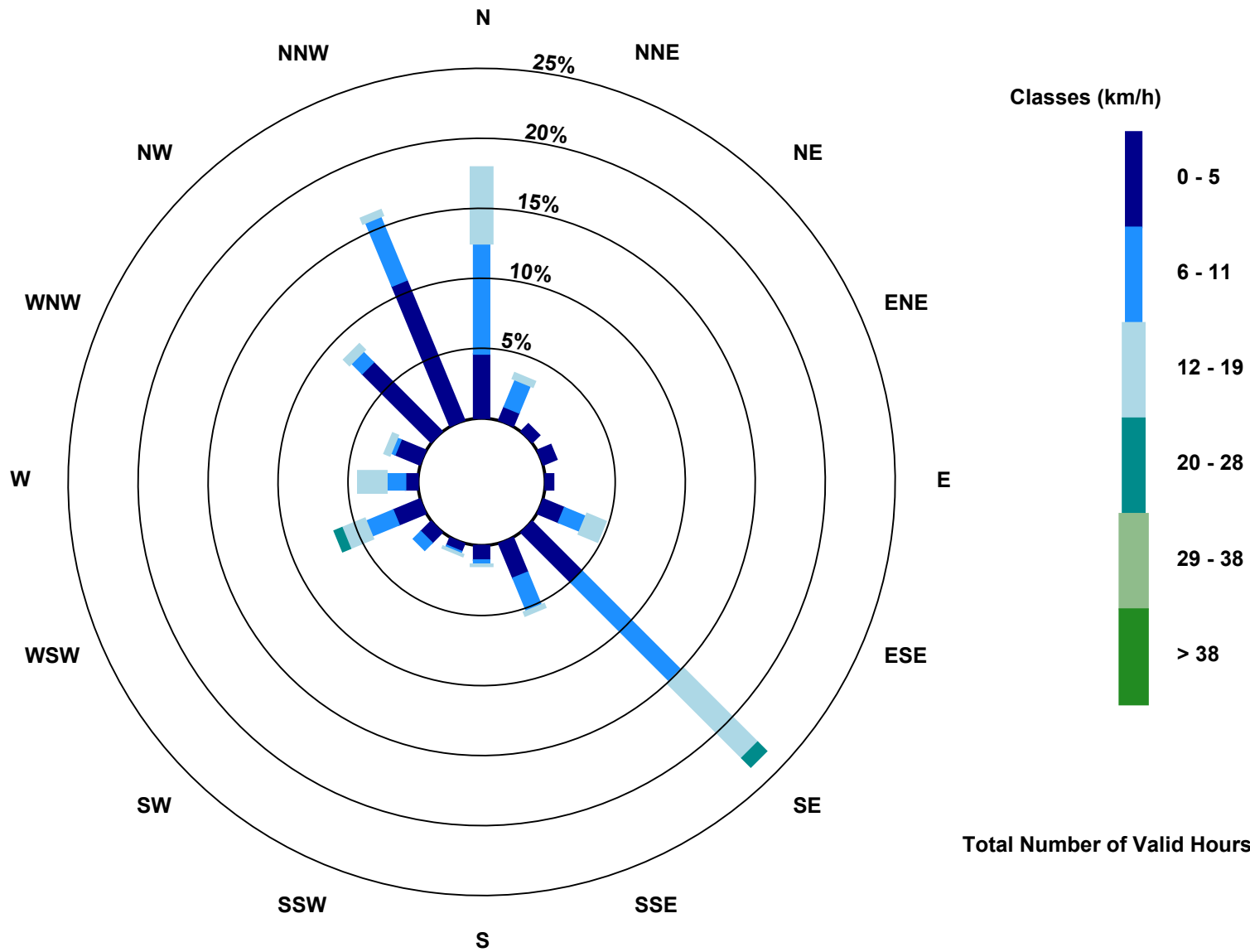
Total Number of Valid Hours: 674

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed 20 m (WS20m) - km/h
Lower Camp Met Tower





Maximum Speed: 39 km/h on Feb 28 22:00 Minimum Speed Value: 0 km/h on Feb 26 16:00 Maximum Diurnal Speed Average: 2.8 km/h at hour 21 Monthly Average Velocity: 0.9 km/h 42.4 deg		Maximum Daily Speed Average: 25.4 km/h on Feb 28 Minimum Daily Speed Average: 0.2 km/h on Feb 12 Minimum Diurnal Speed Average: 0.6 km/h at hour 18 Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 5 Median = 10 Q ₃ = 16 P ₉₀ = 22 P ₉₉ = 30		Hours in Service: 696 Hours of Data: 661 Hours of Missing Data: 35 Percent Operational Time: 95.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	ESE22	ESE25	SE24	SE26	SE24	SE30	SE22	SSE22	SSE15	E4	SE2	SE13	SE12	SE14	SE14	SE10	E2	N4	NNW8	NNW8	N9	NNW7	NNW7	NNW8	SE9.8	SE30	
2-Feb	NNW8	NNW9	NNW11	NNW11	N16	N18	N17	NNW11	NNW10	NNW12	N15	N14	NNW16	N12	N10	NNW8	N9	N11	NNW13	NNW12	NNW10	NNW9	NNW9	NNW10	NNW11.6	N18	
3-Feb	NNW9	N4	E4	NE3	N6	NNW8	NNW8	NNW9	NNW10	N11	N9	N11	N12	N19	N17	N11	N8	NNE10	NNE4	NNW2	NNE1	SW1	SE3	SE5	N6.7	N19	
4-Feb	SE5	SE5	SE11	SE12	SE9	SE11	SE15	SE16	SE13	SE13	SE7	SE12	SE17	SE14	SSE11	SSE11	SE12	SSE13	SE13	ESE6	SE9	SE8	SE8	SE8	SE10.6	SE17	
5-Feb	SE5	SE7	SE8	SE9	SE4	SE4	NNW3	NNW8	NNW11	N17	N20	N21	N12	N20	N24	N24	N19	N21	NNW16	NNW13	NNW13	NNW11	NNW13	NNW8	N10.1	N24	
6-Feb	NNW8	N8	NNW9	N7	NNW5	NNW4	NNW3	NNW5	NNW5	NW1	NNE1	SE14	SE20	SE21	SE19	SE21	SE21	SE22	SE21	SE23	SE19	SE21	SE19	SE16	ESE8.9	SE23	
7-Feb	SE13	SE12	SE10	SE10	SE7	SE3	NE2	E1	S1	S6	S6	S2	SSE2	WSW3	W4	NNW2	NNE2	NW2	NNW4	NNW4	NNW8	NNW5	NNW5	NNW5	SE1.3	SE13	
8-Feb	NNW5	NNW5	NNW5	NNW7	N3	NNW2	NNW3	NNW2	N2	NNW1	NNW2	NE0	SE2	ESE3	ESE6	SE6	SSE3	ESE4	N3	N5	NNW7	NNW6	NNW6	NW10	N2.3	NW10	
9-Feb	NW11	NW11	NW9	W15	W14	NNW11	N8	N9	N13	N10	NNE10	NE6	NNE3	SW0	ENE1	N1	NNW2	NNW5	NNW8	NNW7	NNW5	NNW4	WNW3	W2	NNW5.3	W15	
10-Feb	WNW2	WSW1	WSW3	SE4	SE2	SSE3	SE3	SE8	SE8	SE8	ESE7	SE6	SE6	SSE9	SE13	SE11	SSE8	S14	SSE10	SSE6	WSW2	SE10	SE13	SSW8	SSE6.0	S14	
11-Feb	WSW26	WSW31	WSW24	WSW30	W25	W25	W30	W19	W11	W17	WSW10	WSW10	W12	W15	W16	WSW18	WSW17	WSW17	WSW3	SW4	SSE4	SSE8	SE7	SE12	WSW14.4	WSW31	
12-Feb	SE14	SE16	SE19	SE19	SE18	SE18	SE20	SE20	SE16	SE13	SE13	SSW10	WSW15	W20	NW19	NNW17	NW10	NW15	NNW24	NW21	NW19	NNW18	N24	N20	NE0.2	N24	
13-Feb	NNW15	N16	NNW17	N16	N16	N10	NNW3	WNW5	W3	WSW7	NNW5	S2	SSE6	SE9	SSE10	SE13	SE7	SW5	WNW6	N16	N22	N21	N22	N24	N6.7	N24	
14-Feb	NNW23	N24	N25	N19	N16	N14	N12	N14	N12	NNE8	NNE8	N8	N8	N9	NNE12	NNE11	NNE10	NNE8	N6	N6	NNE7	NNE8	NNE7	NE5	N11.3	N25	
15-Feb	NNE1	N1	SE3	ESE3	WSW7	WSW10	WSW9	SW8	SW6	SSE3	SE5	SE4	SSE2	SE4	SE15	SE13	SE8	SE6	SE9	SE10	SSE9	SW12	SSW4	SSW4	S4.4	SE15	
16-Feb	SW11	SW14	WSW12	SW5	SSW7	SSW8	SSE8	SE13	SE16	SE16	SE17	SE18	SE17	SSE11	SW15	SW16	WSW21	SW22	WSW22	WSW19	WSW20	WSW22	SW20	WSW14	SSW10.5	WSW22	
17-Feb	WSW12	WSW18	WSW16	WSW12	WSW11	WSW5	SSW5	S5	SE11	SE12	ESE8	SE4	SSW2	SSW4	SSE2	S1	SSE5	SE3	NNW7	NNW10	N10	NNE6	NNW3	NNW4	WSW2.4	WSW18	
18-Feb	NNW6	NW6	NNW7	NNW9	NNW7	NW4	NNW7	NNW7	NNW8	NW4	NW4	NW5	NNW3	W3	NW4	NNW8	NW8	NNW7	NNW11	N9	N11	NNW8	NNW7	NNW8	NNW6.5	NNW11	
19-Feb	NNW10	NNW7	NNW9	NNW7	NW4	NNW5	NNW3	W2	NW2	NW4	NNW4	WNW2	WNW3	WSW8	WSW5	W4	W6	NNW8	NNW10	NNW8	N7	NNW6	NNW11	NNW10	NW5.2	NNW11	
20-Feb	NNW8	NNW6	NW6	NW2	N3	NNW2	SE1	SSW2	SE5	SE6	SE5	SE5	SE4	SSE5	SE10	SE11	SE8	SE10	ESE7	ESE6	SE11	SE13	SE10	SE9	SE4.2	SE13	
21-Feb	SE6	SE6	N3	NNW7	NNW6	NNW8	NW5	NNW5	N4	NNW1	SE3	SE11	SE14	SSE7	WSW23	WSW21	WSW20	SW7	WSW17	SW15	WSW20	NNW14	NW11	NNW9	WSW5.0	WSW23	
22-Feb	NNW5	NNW4	WNW1	NNW3	NNW3	NNW5	NNW8	NNW7	DF	DF	DF	DF	DF	SSE3	SE6	SSE8	SSW3	NNW5	NNW8	NNW5	NNW5	SSE2	SE10	SE10	N1.0	SE10	
23-Feb	SE11	SE12	ESE13	SE16	SE20	SE24	SE24	SE19	SE19	SSE14	SW9	W24	W19	W18	W23	WSW31	W27	NW20	W19	WSW28	W23	WNW21	WNW24	W26	SW9.1	WSW31	
24-Feb	W19	N28	N26	N23	N25	N16	N10	N16	NNW24	N17	N13	N17	N15	N13	N11	N10	NNE11	NNE10	NNE11	N9	N10	N9	N10	N10	N13.9	N28	
25-Feb	N11	N11	N11	N14	N13	N15	N17	N17	N11	N12	N17	N18	N19	N18	N20	N19	N20	NNE19	NNE17	NNE18	N23	N21	DF	UO	N16.4	N23	
26-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	NNW9	NNW9	N7	SSW4	S0	E1	SE3	ESE3	SSW0	NNW3	NW2	DF	DF	---	NNW9	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	UO	SE6	SSE6	ENE4	N5	NE3	SE6	SE10	SE14	SE12	SE12	SE11	SE10	ESE12	SE12	---	ESE14
28-Feb	SE11	SE12	SE18	SE13	DF	DF	DF	DF	DF	DF	SE23	SE25	SE30	SE28	SE31	SE34	SE29	SE25	ESE24	SE27	SE27	SE29	SE39	SE31	SE28	SE25.4	SE39
29-Feb	SE26	ESE23	ESE23	ESE19	ESE13	ESE15	ESE22	ESE26	ESE22	ESE19	SE26	SE24	SE19	SE12	SSE7	SE6	S6	SSW9	WNW5	NNW4	NNW4	WNW4	WSW3	WSW6	SE11.7	ESE26	
NNW0.8 N1.4 NE1.2 NE1.3 N1.4 NNE1.1 ENE1.2 ENE1.4 ENE2.0 E2.3 E2.8 E2.4 ESE2.0 ESE1.2 S0.7 SSE1.2 SSW0.8 NNE0.6 NNW2.0 NNW2.1 NNW2.8 N1.7 N1.4 N1.4																								Diurnal Average			
WSW26 WSW31 N26 WSW30 N25 SE30 W30 ESE26 NNW24 SE23 SE26 SE30 SE28 SE31 SE34 WSW31 W27 ESE24 SE27 WSW28 SE29 SE39 SE31 SE28																								Diurnal Maximum			
DF - DAS Failure UO - Unstable Operation All monthly, daily, and diurnal averages have been calculated using vector methods																											



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

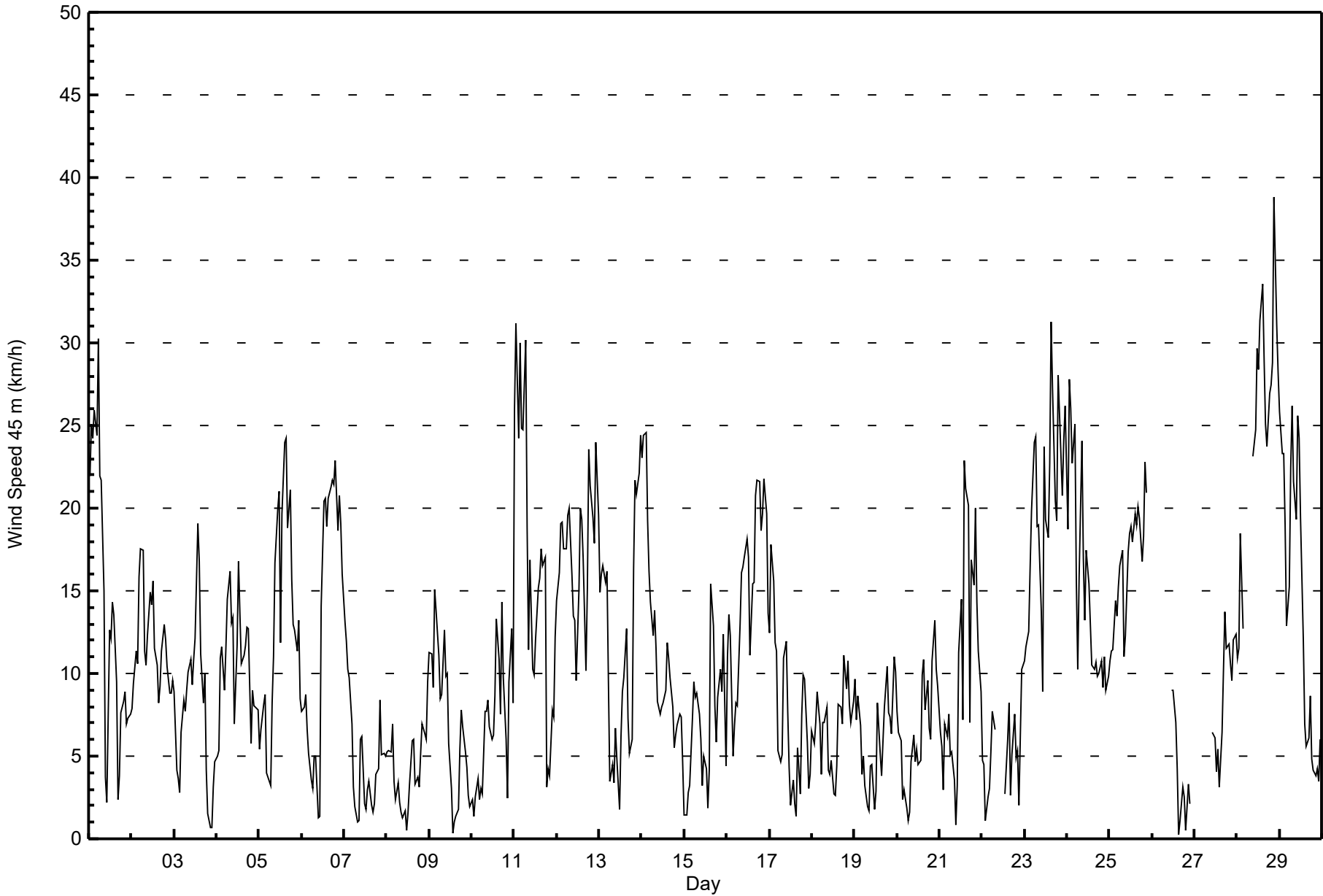
Wind Speed 45 m (WS45m) - km/h
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8 km/h on Feb 23 19:00														Hours in Service: 696 Hours of Data: 661 Hours of Missing Data: 35 Hours of Calibration: 0 Percent Operational Time: 95.0											
Minimum Value: 0 km/h on Feb 26 20:00																									
Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 2 Median = 2 Q ₃ = 4 P ₉₀ = 5 P ₉₉ = 7																									
Day	Hourly Period Ending At (MST)																							Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24
1-Feb	4	4	3	3	5	3	4	5	8	2	4	1	2	3	2	2	2	1	3	1	1	2	1	2	8
2-Feb	2	2	2	2	4	4	4	3	2	4	3	4	3	3	2	2	2	3	3	3	2	2	2	2	4
3-Feb	3	2	1	2	2	3	2	2	2	2	2	3	5	4	2	2	2	2	1	1	1	2	1	5	
4-Feb	1	1	2	2	2	2	2	3	5	6	4	3	5	5	3	2	2	3	3	2	2	2	2	6	
5-Feb	2	2	1	1	2	2	1	2	3	4	4	4	5	5	4	4	3	4	3	3	2	2	3	5	
6-Feb	2	1	1	1	2	2	1	1	2	2	2	4	4	4	4	4	4	4	4	4	5	4	6	6	
7-Feb	4	2	3	2	2	2	1	1	1	3	2	1	1	1	1	1	1	1	2	2	1	1	1	4	
8-Feb	1	1	1	2	1	1	1	1	1	2	1	1	1	2	2	1	1	1	2	1	1	1	2	2	
9-Feb	2	3	3	4	3	4	4	3	2	2	3	2	2	1	1	1	1	1	2	2	1	2	1	4	
10-Feb	1	1	1	1	1	1	2	2	2	2	1	1	2	3	3	2	3	2	3	3	2	5	2	5	
11-Feb	5	3	2	2	5	5	5	7	5	6	4	3	4	4	4	2	5	4	3	3	1	2	2	7	
12-Feb	2	1	2	2	3	2	3	3	4	4	3	4	7	4	7	5	3	3	6	5	4	5	5	7	
13-Feb	5	6	4	4	3	2	1	1	2	2	2	1	2	2	2	1	3	3	7	3	4	4	7	7	
14-Feb	5	4	6	4	5	3	3	3	3	4	3	2	1	3	3	3	3	1	1	2	2	2	2	6	
15-Feb	1	1	1	2	6	4	2	3	2	3	2	1	2	1	2	2	2	2	2	1	2	2	4	6	
16-Feb	4	6	5	3	2	3	3	1	3	2	2	2	3	2	4	3	6	4	7	4	6	3	5	7	
17-Feb	4	5	4	3	4	4	3	2	2	2	1	1	1	2	1	1	1	2	3	1	3	1	2	5	
18-Feb	3	3	4	3	2	2	2	2	2	3	1	1	2	1	2	2	2	4	2	2	2	3	3	4	
19-Feb	2	2	1	2	1	1	1	1	1	1	1	1	2	2	2	1	2	2	2	2	2	1	2	2	
20-Feb	2	2	2	1	1	1	1	2	2	2	2	3	1	2	2	3	2	2	2	1	2	1	2	3	
21-Feb	2	2	4	1	2	2	2	2	1	1	2	2	1	4	5	3	5	4	2	2	5	6	2	6	
22-Feb	3	2	1	2	1	1	3	3	DF	DF	DF	DF	DF	2	2	1	2	4	2	1	2	1	2	4	
23-Feb	3	2	3	3	3	2	3	2	3	3	5	5	5	4	5	6	7	4	8	4	6	5	7	8	
24-Feb	6	7	5	5	5	5	3	5	6	4	3	4	3	3	3	3	2	3	3	3	3	2	2	7	
25-Feb	2	2	3	4	3	3	3	4	3	3	5	5	4	4	5	4	4	4	5	4	5	4	DF	5	
26-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	3	3	3	1	1	1	1	2	0	1	1	DF	3	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	UO	1	2	1	2	2	3	2	3	3	2	2	DF	3	
28-Feb	2	2	3	3	DF	DF	DF	DF	DF	DF	5	6	5	5	6	5	7	5	6	6	6	7	5	7	
29-Feb	6	5	5	4	5	7	8	6	5	5	7	5	6	3	3	2	2	2	2	3	2	3	3	8	
Diurnal Maximum																									
DF - DAS Failure UO - Unstable Operation																									



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed 45 m (WS45m) - km/h
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed 45 m (WS45m) - km/h
Lower Camp Met Tower - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	172	26.02	26.02
6 - 11	234	35.40	61.42
12 - 19	157	23.75	85.17
20 - 28	86	13.01	98.18
29 - 38	11	1.66	99.85
> 38	1	0.15	100.00

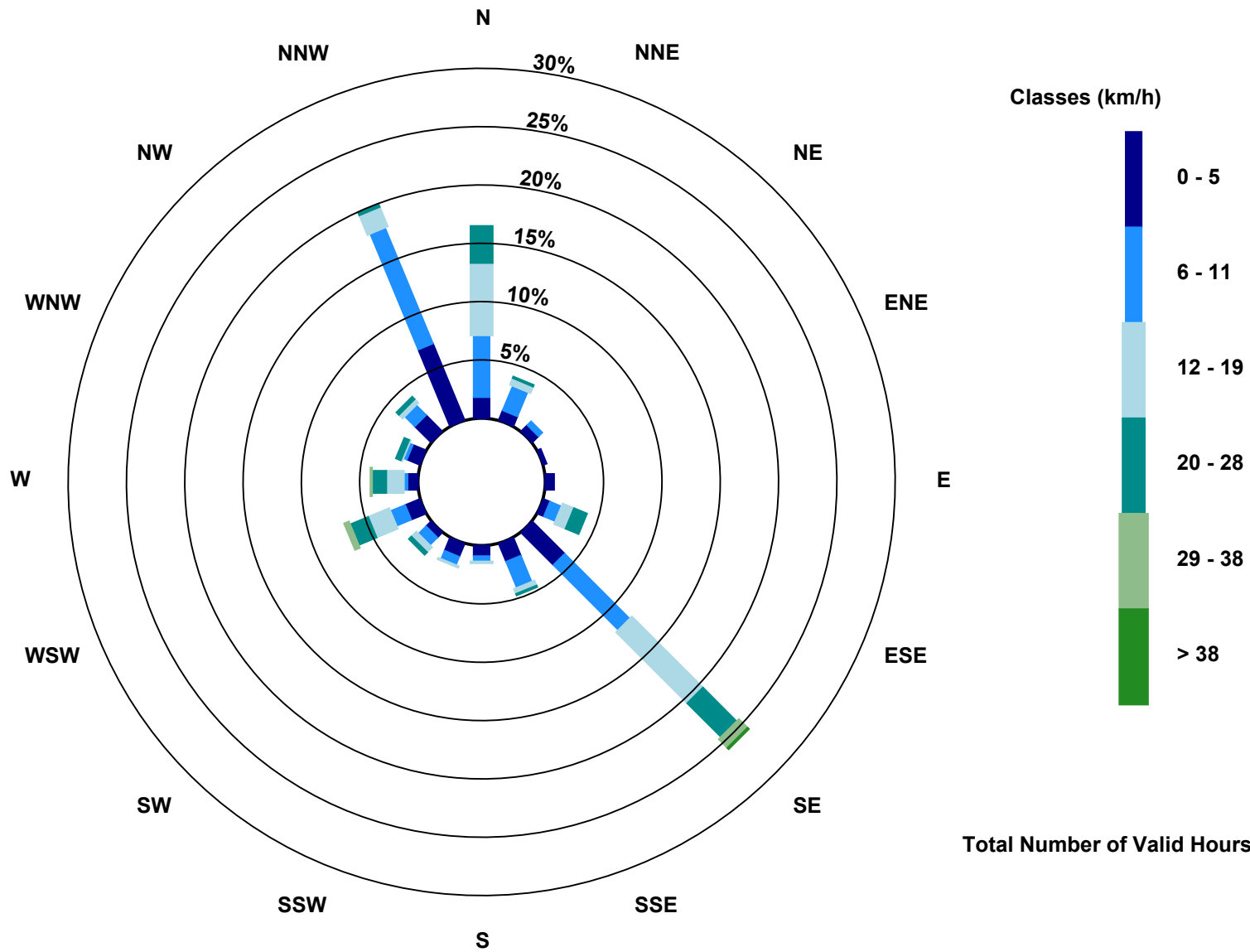
Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed 45 m (WS45m) - km/h
Lower Camp Met Tower





Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Speed 100 m (WS100m) - km/h

Lower Camp Met Tower - February 2024

Maximum Speed: 45 km/h on Feb 28 22:00	Maximum Daily Speed Average: 31.7 km/h on Feb 28	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 27 15:00	Minimum Daily Speed Average: 2.0 km/h on Feb 7	Hours of Data: 624
Maximum Diurnal Speed Average: 3.7 km/h at hour 24	Minimum Diurnal Speed Average: 0.4 km/h at hour 8	Hours of Missing Data: 72
Monthly Average Velocity: 0.7 km/h 293.9 deg	Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 6 Median = 13 Q ₃ = 21 P ₉₀ = 28 P ₉₉ = 37	Percent Operational Time: 89.7

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	SE32	SE33	SE34	SE33	SE29	SE36	SE26	SSE31	SSE29	SE6	SE9	SSE13	SE12	SE15	SE14	SE11	ESE5	E3	ENE4	NE5	N7	N8	NNE8	NNW13	SE14.2	SE36	
2-Feb	NNW18	N14	N17	N16	N19	N20	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	----	N20	
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	N11	N12	NNW14	N22	N19	UO	UO	UO	UO	UO	UO	UO	UO	----	N22	
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	SSE16	S16	SSE13	SSE14	SSE17	SSE19	SSE12	SSE16	SSE15	SE10	SSE8	----	SSE19
5-Feb	SE9	SE8	SSE6	SSW2	SSE2	SE4	ENE3	NNW10	N23	N24	N23	N23	N16	N22	N26	N28	N23	N29	N23	N20	N20	NNW17	N19	N14	N13.9	N29	
6-Feb	N10	NNE7	NNE7	NNE7	N6	NNW4	NNE3	NE2	E3	ESE6	ESE10	SE19	SE24	SE23	SE23	SE23	SE23	SE24	SE26	SE28	SE24	SE26	SE23	SE21	SE12.6	SE28	
7-Feb	SE18	SE15	SE13	SE11	SE8	SSE6	SE1	SE3	S4	S7	S6	S2	SSW1	SW2	W3	NW2	NE1	W3	NNW5	NNW7	N11	N7	N5	NNW6	SE2.0	SE18	
8-Feb	NNW8	NNW6	NNW6	NNW8	NNW6	N4	NNE4	NNW3	N1	NNW2	NNW2	WSW1	S2	SE3	ESE6	SSE6	S5	SE4	SW1	N3	N7	N11	N9	NNW13	N2.7	NNW13	
9-Feb	NW16	NW16	NNW14	W18	W17	NNW18	N10	N9	N15	N11	NNE11	NE6	NNE3	ESE1	ENE1	NE2	ENE2	N6	N10	N7	N3	NNW8	NNW7	NW2	NNW6.8	W18	
10-Feb	N1	SE1	SSE4	SSE5	SSE5	SE10	SSE9	SSE13	SSE13	SSE11	SSE7	SSE9	SSE11	SSE14	SE17	SE16	SSE12	SSE19	SSE13	S8	SSW6	S11	S11	WSW19	SSE9.2	WSW19	
11-Feb	WSW37	WSW39	WSW32	WSW37	WSW36	W34	W40	W29	W23	W31	W16	W15	W17	W22	W23	W23	WSW24	WSW22	WSW17	WSW18	SW10	SSW8	SW7	SSW3	WSW22.8	W40	
12-Feb	S8	SSE15	SSE18	SSE19	SSE19	SSE18	SSE22	SE22	SSE20	SSE12	SSE10	SW17	WSW22	W25	NW26	NNW20	NW15	NW26	NNW32	NW29	NW28	NNW24	N29	N25	W4.8	WSW32	
13-Feb	N19	N20	N22	N19	N18	N12	NNW7	NW6	W5	W9	NNW8	SE2	SSE6	SSE10	S10	S11	SSW6	WSW13	NNW11	N20	N26	N26	N26	N30	NNW9.0	N30	
14-Feb	N28	N28	N27	N22	N20	N16	N15	N16	N15	NNE10	NNE9	N9	N8	N9	NNE13	NNE12	NNE10	NNE9	NNE8	NNE10	NNE14	NNE14	NNE11	NE8	N13.6	N28	
15-Feb	NE3	NE3	ESE4	SSE4	SW8	WSW12	WSW13	SW15	SW12	WSW11	S5	SSE5	S4	SSE1	SSE4	SE13	SE13	SE13	S12	SSW11	SW11	SW16	WSW26	WSW21	SSW7.0	WSW26	
16-Feb	WSW27	WSW27	WSW26	WSW18	WSW15	SW17	SW14	SW8	SSW11	S11	S14	SSE14	SSE13	SSW11	SW21	SW21	WSW30	SW32	SW33	W29	W24	W23	WSW24	WSW21	SW18.5	SW33	
17-Feb	WSW23	W23	W24	WSW25	WSW21	WSW12	WSW13	SW13	SW8	SSW5	SSE3	SE2	SSE2	SSW4	SE1	N1	SSE7	SE6	N7	N7	NE7	ENE6	N5	N7	WSW5.8	WSW25	
18-Feb	N6	E4	ESE9	ESE5	S1	NNW3	NW3	NNE4	NNE7	ENE3	NNE4	NW4	NNW2	NNW2	NW5	NNW8	NNW11	NNW12	N17	N11	ENE6	NE6	NNW8	NNW15	N4.6	N17	
19-Feb	NNW16	NNW12	NW10	NNW10	NW5	NW5	NNW7	NNW8	N6	NNW9	NW4	NW3	NW3	NNW6	NNW4	NNW3	NW6	N12	N14	NNE12	NNE11	N8	NNW13	NNW15	NNW7.8	NNW16	
20-Feb	NNW11	N6	NNW10	NNW6	NNW3	NW2	SSE2	SW7	SSE7	S8	SSE6	SSE6	SE5	S8	SSE10	SSE11	SSE8	SSE12	SSE11	SSE11	SSE12	S13	SSE11	SSE10	SSE4.8	S13	
21-Feb	SSE6	S6	S5	NW1	NNW12	NNW18	NW11	NNW14	NNW5	NNE2	SE8	SE13	SSE12	SW13	WSW32	WSW30	WSW31	WSW17	WSW23	WSW25	WSW30	W25	NW16	NNW16	W9.7	WSW32	
22-Feb	NNW14	NNW13	NNW4	NNW3	NNW4	NNW6	NW6	NW12	DF	DF	DF	DF	DF	S2	E5	SE6	SSE3	N3	NNW14	NNW8	N4	SE4	SE18	SE17	N2.2	SE18	
23-Feb	SSE19	SSE19	SSE20	SSE23	SSE24	SSE26	SSE29	SSE28	S21	SSW12	WSW22	W33	W29	W27	W31	WSW40	W35	NW28	W25	WSW35	WSW33	W27	NNW31	W34	SW16.6	WSW40	
24-Feb	W25	N30	N30	N26	N28	N19	N14	NNW20	NNW28	N20	N14	N18	N17	N14	N12	N11	NNE12	NNE11	NNE13	NE14	NE14	NE16	NNE12	N11	N16.0	N30	
25-Feb	NNE12	N12	N13	N17	N14	N16	N18	N19	N18	NNE13	N18	N20	N20	N19	N21	NNE20	NNE22	NNE22	NNE20	NNE23	N28	N25	N25	N22	N18.8	N28	
26-Feb	N23	N24	N26	N23	N21	N20	N20	N17	N13	N10	DF	NNW10	NNW10	N8	SSW4	NE1	ENE2	ESE3	ESE5	ESE6	ESE5	SE4	DF	DF	N10.0	N26	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	SSW6	S5	S6	NE3	NNW4	ENE0	SE7	SE10	SE15	SE14	SSE15	SE15	SSE16	SE20	SE22	----	SE22
28-Feb	SE23	SE24	SE27	SE22	DF	DF	DF	DF	DF	DF	SE30	SE31	SE33	SE31	SE35	SE37	SE34	SE30	SE29	SE34	SE33	SE35	SE45	SE37	SE35	SE31.7	SE45
29-Feb	SE31	ESE28	ESE28	ESE23	ESE16	ESE19	ESE27	SE31	ESE26	ESE23	SE31	SE28	SE22	SE14	SSE7	SE6	S7	SSW9	WNW6	NW7	NW7	W8	W7	WNW6	SE13.6	SE31	

NNW2.1	N1.8	N1.0	NW0.8	NW2.6	NW2.0	W0.7	WSW0.4	E0.5	SSE0.7	ESE1.8	SSE1.5	S1.5	SSW1.4	SW1.8	S2.3	SW2.3	SW0.8	NNW1.9	NW1.9	NNW2.3	NNW1.7	NNW2.7	NW3.7	Diurnal Average	
WSW37	WSW39	SE34	WSW37	WSW36	SE36	W40	ESE31	SSE29	W31	SE31	W33	SE31	SE35	SE37	WSW40	W35	SW32	SE34	WSW35	SE35	SE45	SE37	SE35	Diurnal Maximum	

DF - DAS Failure UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

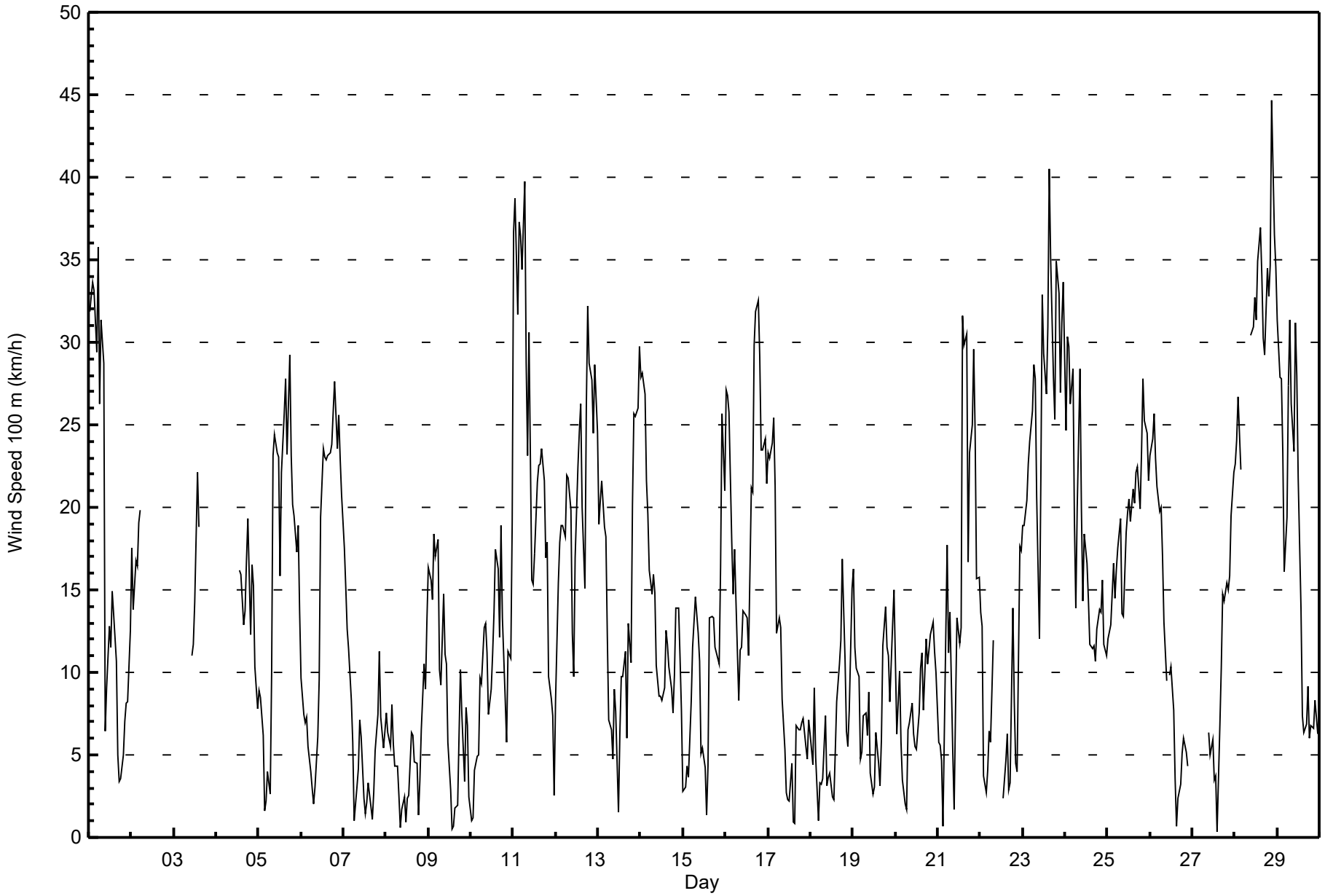
Wind Speed 100 m (WS100m) - km/h
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8 km/h on Feb 23 19:00 Minimum Value: 0 km/h on Feb 10 02:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 2 Median = 2 Q ₃ = 4 P ₉₀ = 5 P ₉₉ = 7														Hours in Service: 696 Hours of Data: 624 Hours of Missing Data: 72 Hours of Calibration: 0 Percent Operational Time: 89.7											
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	3	3	3	3	3	3	5	5	7	4	4	2	2	3	2	2	2	1	2	1	2	2	1	4	7
2-Feb	4	2	2	2	3	3	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	4
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	2	1	4	5	4	UO	UO	UO	UO	UO	UO	UO	UO	UO	5
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	5
5-Feb	2	2	3	1	1	1	1	5	2	4	4	4	4	4	4	2	2	3	3	3	3	2	1	3	5
6-Feb	1	1	1	2	2	2	2	1	2	2	4	3	3	3	3	3	3	3	3	3	3	3	5	3	5
7-Feb	3	2	2	2	2	3	1	1	1	2	2	1	1	1	1	2	1	1	2	1	1	1	1	1	3
8-Feb	1	1	1	1	1	1	1	1	1	2	1	1	1	2	2	1	1	1	1	1	2	1	1	2	2
9-Feb	2	3	3	3	3	4	5	4	3	2	3	1	1	1	1	1	0	2	1	2	1	2	3	1	5
10-Feb	1	0	2	3	2	2	1	2	2	3	2	2	2	3	2	3	4	2	4	4	2	3	2	6	6
11-Feb	4	3	2	2	6	3	3	6	4	4	4	2	4	3	2	2	3	2	5	3	3	2	2	1	6
12-Feb	4	2	1	1	2	2	2	1	2	3	2	5	6	4	8	6	4	2	5	5	5	5	4	5	8
13-Feb	4	5	3	4	3	2	1	1	1	2	4	2	2	2	2	2	3	4	7	3	4	4	5	6	7
14-Feb	5	3	6	4	5	3	3	3	3	4	2	2	1	3	2	2	2	2	2	2	2	2	2	2	6
15-Feb	2	1	1	1	3	1	2	3	1	3	2	1	2	1	2	2	1	2	2	2	4	3	4	3	4
16-Feb	3	4	4	5	3	3	3	2	2	1	1	2	2	3	3	3	5	4	7	5	3	2	3	4	7
17-Feb	2	2	3	3	6	5	4	3	3	2	1	1	2	2	1	1	2	3	2	2	2	3	2	2	6
18-Feb	2	2	5	3	3	3	2	1	2	3	4	1	1	2	2	2	2	3	2	2	2	3	5	2	5
19-Feb	1	2	3	4	2	1	1	1	1	1	1	2	2	2	2	1	1	2	2	2	3	1	2	1	4
20-Feb	1	1	2	1	2	2	1	2	1	2	2	3	1	3	2	2	2	2	3	2	2	2	1	2	3
21-Feb	3	2	2	2	4	3	2	3	2	1	3	1	2	4	4	3	5	2	3	1	3	8	3	2	8
22-Feb	1	2	2	2	2	1	2	3	DF	DF	DF	DF	DF	2	1	2	2	3	2	3	2	4	3	4	4
23-Feb	2	2	2	2	1	3	3	2	3	3	7	4	5	4	4	5	8	4	8	4	6	6	7	6	8
24-Feb	7	6	4	4	5	5	3	5	5	4	2	3	2	3	2	3	2	3	3	3	3	3	3	2	7
25-Feb	2	2	2	3	2	2	2	3	2	3	4	4	3	3	4	3	3	5	5	5	5	3	4	5	5
26-Feb	6	5	5	4	3	3	3	3	2	3	DF	3	3	3	2	1	1	1	1	1	1	1	DF	DF	6
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	2	2	2	2	2	2	3	2	2	3	2	2	3	2	2	3
28-Feb	2	2	3	3	DF	DF	DF	DF	DF	5	4	3	4	4	4	5	5	5	6	5	5	6	5	5	6
29-Feb	5	5	5	4	5	8	7	6	5	5	6	5	7	4	3	2	3	2	2	3	2	4	4	4	8
														Diurnal Maximum											
														7 6 6 5 6 8 7 6 7 5 7 5 7 5 8 6 8 5 8 5 6 8 7 6											
DF - DAS Failure UO - Unstable Operation																									



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed 100 m (WS100m) - km/h
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed 100 m (WS100m) - km/h
Lower Camp Met Tower - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	116	18.59	18.59
6 - 11	167	26.76	45.35
12 - 19	158	25.32	70.67
20 - 28	123	19.71	90.38
29 - 38	56	8.97	99.36
> 38	4	0.64	100.00

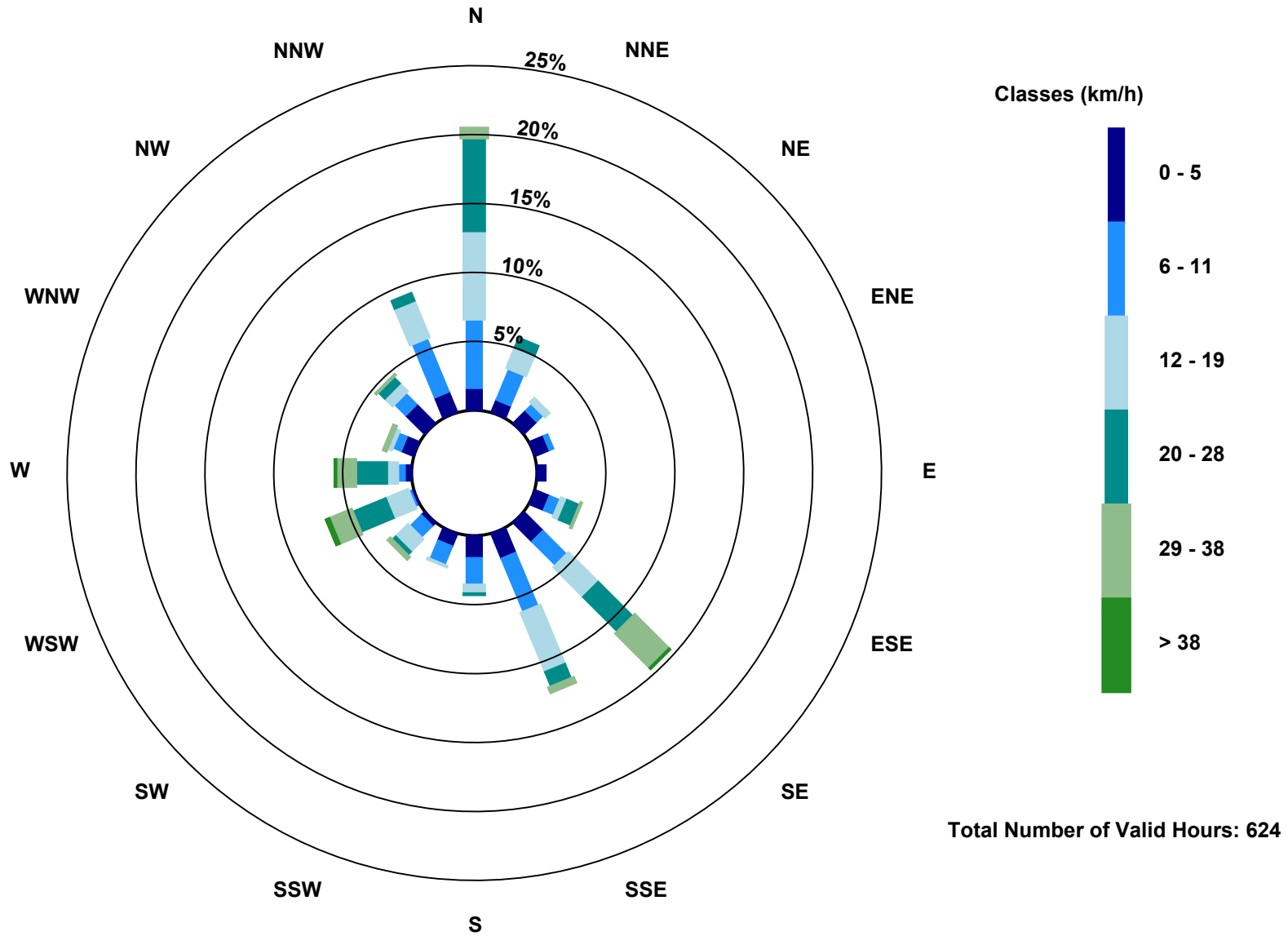
Total Number of Valid Hours: 624

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed 100 m (WS100m) - km/h
Lower Camp Met Tower





Maximum Speed: 47 km/h on Feb 28 22:00	Maximum Daily Speed Average: 34.2 km/h on Feb 28	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 7 17:00	Minimum Daily Speed Average: 1.8 km/h on Feb 8	Hours of Data: 604
Maximum Diurnal Speed Average: 3.2 km/h at hour 20	Minimum Diurnal Speed Average: 0.2 km/h at hour 9	Hours of Missing Data: 92
Monthly Average Velocity: 1.2 km/h 270.0 deg	Percentiles: P ₁ = 1 P ₁₀ = 4 Q ₁ = 7 Median = 15 Q ₃ = 25 P ₉₀ = 32 P ₉₉ = 41	Percent Operational Time: 86.8

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	SE38	SE36	SE40	SE37	SE30	SE33	SSE31	SSE38	SSE37	SSE18	SSE16	S14	SSE11	SE15	SE14	SE12	SE8	SE7	ESE7	E9	SE10	ESE3	NNE6	NNE11	SE18.3	SE40	
2-Feb	NNE21	NNE20	NNE20	N19	N20	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	----	NNE21	
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	----	----	
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	SSE18	SSE14	SSE16	----	SSE18	
5-Feb	SSE11	S7	SSE7	SSE6	S7	S7	S3	N14	NNE33	NNE30	N26	N24	N19	NNE23	N25	N27	N26	N36	N31	N28	N23	N20	NNE20	NNE20	N15.8	N36	
6-Feb	NE16	ENE12	ENE9	E6	ESE4	S1	S2	ESE7	ESE11	ESE16	SE16	SE23	SE25	SE24	SE25	SE24	SE23	SE24	SE27	SE29	SE25	SE27	SE25	SE22	SE16.2	SE29	
7-Feb	SE20	SE17	SSE14	SE13	SE9	SSE7	S3	SSE5	S7	S8	S6	S2	SW1	SSW1	WSW2	WNW2	WNW0	WNW2	NNW4	N8	N12	NNE10	NE7	N4	SE3.1	SE20	
8-Feb	N4	N3	N3	NNW6	N4	NNE5	NNE5	N3	NNE2	NW1	WNW2	SSW2	SSW5	S3	ESE7	SSE6	S6	SSE5	SSW6	W2	N6	N13	N13	NNW13	N1.8	N13	
9-Feb	NNW19	NNW18	NW17	WNW20	WNW19	NW23	NNW14	NNE10	NNE16	NNE12	NNE10	NE5	NNE3	ESE1	S2	SSE2	SSE1	NE5	NNE9	NE10	NE5	N6	N3	SSW1	NNW7.0	NW23	
10-Feb	S3	SSE3	SSE6	SSE7	UO	UO	UO	UO	UO	UO	UO	SE12	SSE13	SSE18	SSE17	SSE18	SSE19	SSE17	SSE20	S18	SSW12	SW9	SW15	SW17	WSW28	S11.3	WSW28
11-Feb	W43	W44	W36	W37	W41	W40	WNW40	WNW31	WNW28	WNW35	WNW20	W20	W20	W25	W26	W26	W26	W22	WSW24	WSW30	WSW26	WSW22	WSW25	WSW19	W28.7	W44	
12-Feb	SSW10	SSW11	SSW14	S16	S14	S14	S21	S23	S22	S15	SW12	WSW24	WSW27	WNW26	NW30	NNW22	NW19	NW32	NW40	NW35	NW34	NNW28	N31	N28	WNW11.0	NW40	
13-Feb	N22	N23	N24	N20	N19	N13	NNE12	N11	W5	NW10	N9	ENE3	SSE7	S10	S11	SSW12	WSW15	W19	NW18	N24	NNE30	N29	N29	N32	N11.1	N32	
14-Feb	N30	N29	N29	N24	N21	N17	N16	NNE19	NNE18	NNE13	NNE8	N9	N8	N9	NNE12	NE11	NE11	NE11	NNE12	NE17	NE18	NE16	NE11	NE9	NNE15.0	N30	
15-Feb	NE3	ENE2	SE4	SSW5	SW7	SSW9	SSW10	SW9	WSW4	WSW12	SW10	SSW7	SW7	SW3	SSW5	SSE9	SSE11	S14	SW19	WSW23	WSW26	WSW30	WSW33	WSW31	SW10.3	WSW33	
16-Feb	WSW33	WSW32	WSW28	WSW30	WSW27	WSW23	WSW25	WSW19	SW18	SW15	SW15	SW16	SW15	SW19	SW24	WSW26	WSW34	WSW40	WSW43	W40	W27	W25	WNW22	WNW18	WSW24.3	WSW43	
17-Feb	WNW25	WNW25	WNW23	W25	WNW21	W17	W17	WSW16	W17	WSW15	WSW7	ESE1	E3	SE4	NE2	NNE4	SE5	SE7	NNE5	NNE5	E10	ESE11	SSE9	ESE2	W6.4	WNW25	
18-Feb	ESE5	SE17	SE23	SE19	SE10	SE5	SE7	ESE12	ESE10	ESE11	E6	ENE2	NW1	NNW3	NNW5	NNW8	NNW10	N13	N20	NNE11	ESE12	ESE14	SE5	E2	E5.4	SE23	
19-Feb	ESE7	SE10	ESE6	ESE11	SE8	SW4	W5	WNW3	NW1	NNW2	NNW4	NNW4	NW4	NNW5	NNW4	N4	N8	N13	NNE20	NNE19	NNE17	NNE11	NNE10	N14	NNE4.7	NNE20	
20-Feb	N14	NNE11	N10	N5	NNW4	NNW3	S3	SSW9	SSE13	S12	S10	S8	S6	S10	SSE13	SSE13	SSE14	SSE19	SSE23	S21	S22	SSW18	SSW13	S9	S7.7	SSE23	
21-Feb	SSW5	SW8	SW12	WSW12	WSW10	NNW8	NNW6	N5	NNE1	SSW4	S9	S14	SSW13	WSW24	WSW35	WSW33	WSW35	WSW22	W29	WSW35	W40	WNW30	NNW19	N14	WSW13.9	W40	
22-Feb	NNE11	NNE12	NE6	SE4	WSW4	NW4	NNW6	NNW12	DF	DF	DF	DF	DF	DF	SW4	E4	E3	ESE2	E3	NNW6	NE5	ENE3	SSE7	SSE17	SSE21	E2.0	SSE21
23-Feb	SSE25	SSE24	SSE25	SSE26	SSE27	S22	SSW26	SSW30	SSW22	WSW17	W32	W40	W37	W33	W36	WSW44	W39	NW33	W30	WSW40	W43	WNW36	WNW37	W38	WSW22.6	WSW44	
24-Feb	W30	NNE31	N31	N28	N31	N22	N17	N22	N29	N21	N14	N18	N17	N15	N12	N11	NNE11	NE12	NE16	NE19	NE18	NE20	NE16	NNE12	N17.3	NNE31	
25-Feb	NNE15	NNE14	N13	N16	NNE14	NNE17	NNE17	NNE21	NNE17	NNE14	N17	N19	N19	NNE18	NNE20	NNE23	NNE26	NNE25	NNE27	NNE32	N28	NNE29	NNE26	NNE20.2	NNE32		
26-Feb	N30	N29	N29	N27	N26	N26	NNE25	N20	N15	N11	DF	NNW10	NNW10	N7	S2	NNE1	ENE2	ESE3	SE4	SE4	SE4	SW5	DF	DF	N11.9	N30	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	WSW9	WSW8	SW6	N2	WNW3	WSW2	SSE7	SSE11	SE14	SSE15	SSE18	SSE19	SSE25	SSE26	SSE26	----	SSE26
28-Feb	SSE26	SSE29	SSE29	SSE24	DF	DF	DF	DF	DF	DF	SE31	SE32	SE33	SE32	SE36	SE38	SE37	SE33	SE34	SE38	SE36	SE39	SE47	SE41	SE39	SE34.2	SE47
29-Feb	SE36	SE32	SE31	ESE27	ESE20	ESE23	ESE31	SE34	ESE30	SE26	SE34	SE30	SE22	SE15	SSE8	SE7	S8	SSW10	W8	NW8	WNW8	WNW10	WNW11	WNW13	SE14.8	SE36	

N1.2	NE2.2	ENE1.6	S0.2	NW2.2	NNW2.6	W1.8	WSW0.9	S0.2	SW1.1	S2.3	SSW2.3	SSW2.7	SW2.9	SW2.9	SW2.5	SW3.1	NNW1.0	NNW2.9	NW3.2	NW2.9	NW1.5	NNW2.4	NW2.6	Diurnal Average		
W43	W44	SE40	W37	W41	W40	WNW40	SSE38	SSE37	WNW35	SE34	W40	W37	SE36	SE38	WSW44	W39	WSW40	WSW43	W40	W43	SE47	SE41	SE39	Diurnal Maximum		

DF - DAS Failure UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

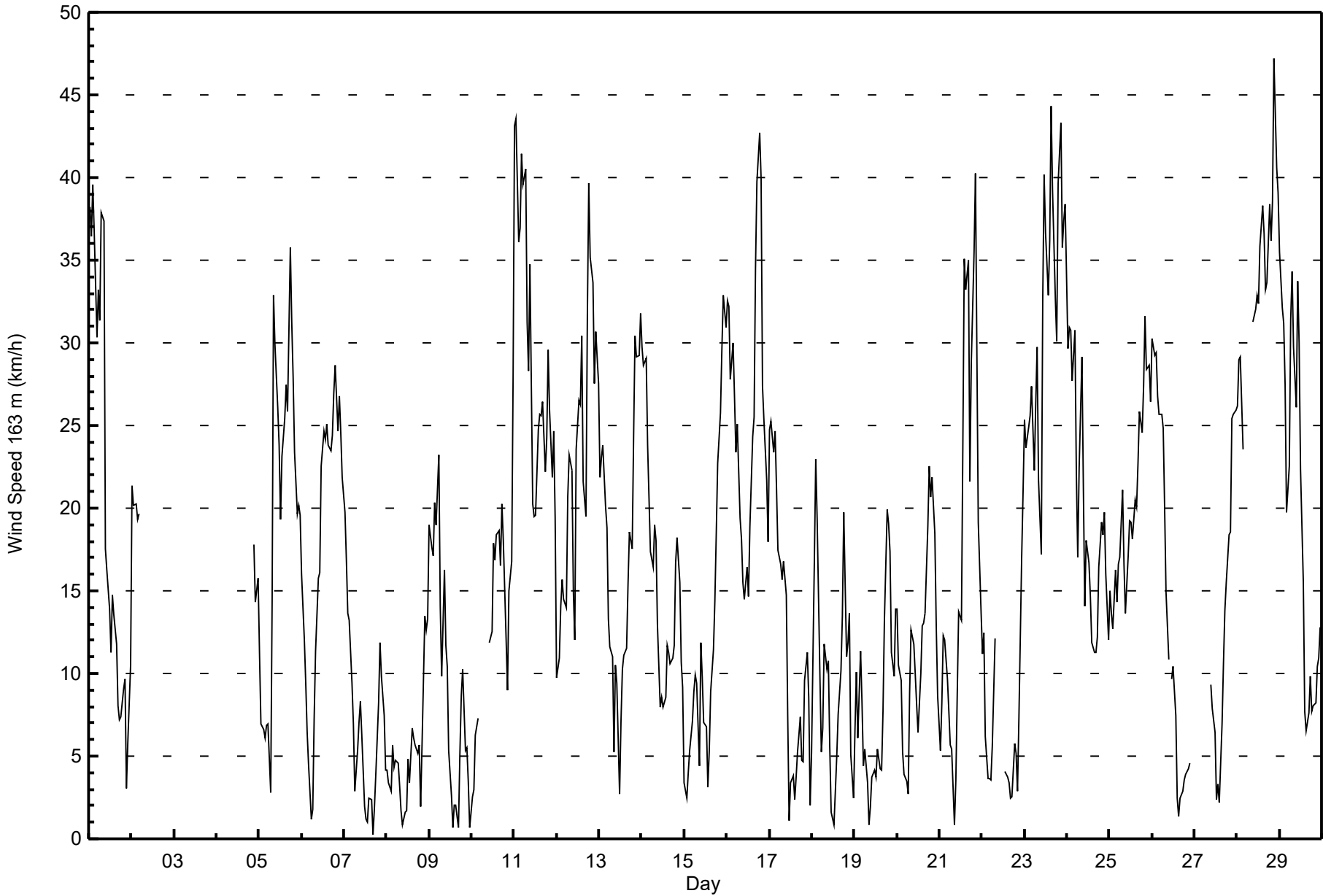
Wind Speed 163 m (WS163m) - km/h
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 10 km/h on Feb 5 08:00 Minimum Value: 0 km/h on Feb 8 01:00 Percentiles: P ₁ = 0 P ₁₀ = 1 Q ₁ = 2 Median = 2 Q ₃ = 3 P ₉₀ = 5 P ₉₉ = 7														Hours in Service: 696 Hours of Data: 604 Hours of Missing Data: 92 Hours of Calibration: 0 Percent Operational Time: 86.8											
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	3	3	3	3	3	3	5	2	4	4	3	2	1	2	2	1	2	1	2	3	2	2	1	2	5
2-Feb	3	3	2	2	2	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	3
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	2
5-Feb	2	3	1	1	1	1	1	10	3	4	5	4	3	4	3	3	3	4	3	3	2	2	1	1	10
6-Feb	2	2	3	2	2	1	1	4	3	2	2	3	3	3	2	3	2	3	2	3	3	3	5	3	5
7-Feb	2	2	2	2	2	2	1	2	1	2	2	1	1	1	1	2	0	1	2	1	1	1	1	0	2
8-Feb	0	0	1	1	0	0	0	1	1	2	1	2	2	1	1	2	1	1	2	1	3	1	1	2	3
9-Feb	2	2	2	2	3	4	4	3	3	2	2	1	1	1	1	1	1	1	1	1	2	1	2	1	4
10-Feb	1	1	1	2	UO	UO	UO	UO	UO	UO	2	3	3	2	3	3	4	2	5	4	3	3	3	5	5
11-Feb	4	4	2	3	4	3	2	6	3	4	2	3	4	2	2	2	2	3	2	3	2	2	2	4	6
12-Feb	2	1	2	2	2	2	3	2	2	3	3	3	4	4	7	6	5	2	5	5	4	5	4	5	7
13-Feb	4	5	4	4	4	3	1	3	1	3	4	2	3	2	2	3	3	2	6	4	4	4	5	5	6
14-Feb	4	3	6	5	5	3	3	3	3	5	2	2	1	2	2	2	2	2	2	2	1	1	2	2	6
15-Feb	2	1	1	1	1	1	2	4	2	4	3	1	1	2	1	2	2	1	2	2	4	2	5	3	5
16-Feb	2	1	2	2	3	4	3	2	3	3	2	2	3	3	3	3	5	4	6	5	3	3	2	4	6
17-Feb	2	1	2	2	2	2	3	3	3	2	3	2	1	1	1	2	3	1	2	2	2	4	3	2	4
18-Feb	4	2	5	3	6	3	2	3	4	6	2	1	1	2	2	2	2	2	2	2	4	3	3	2	6
19-Feb	1	2	3	4	5	1	2	1	1	1	1	2	2	2	2	2	1	3	2	3	3	2	1	2	5
20-Feb	1	2	1	2	2	1	1	2	2	2	2	3	1	3	2	2	4	3	2	2	2	1	2	1	4
21-Feb	1	2	1	2	3	3	1	1	1	3	2	1	2	5	3	3	5	3	3	2	1	8	3	2	8
22-Feb	2	2	3	2	1	1	3	2	DF	DF	DF	DF	DF	2	1	1	1	1	4	2	1	4	3	3	4
23-Feb	2	2	2	2	2	2	3	2	4	3	6	4	3	4	4	5	8	4	7	4	4	7	7	6	8
24-Feb	7	7	5	4	5	5	3	5	5	4	2	3	2	3	2	2	2	2	2	2	2	2	3	2	7
25-Feb	3	2	2	3	2	2	3	3	3	3	4	4	3	3	4	3	3	6	5	6	6	4	5	5	6
26-Feb	6	5	5	4	4	3	3	3	3	3	DF	3	3	3	2	1	1	1	1	1	1	1	DF	DF	6
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	1	2	3	2	2	3	2	2	3	3	3	3	4	3	4
28-Feb	3	3	3	3	DF	DF	DF	DF	DF	DF	5	4	3	3	4	4	4	4	5	5	5	4	5	4	5
29-Feb	5	5	5	4	6	8	7	6	6	4	5	4	7	4	4	2	3	2	2	3	2	4	3	5	8
														Diurnal Maximum											
														7 7 6 5 6 8 7 10 6 6 6 4 7 5 7 6 8 6 7 6 6 8 7 6											
DF - DAS Failure UO - Unstable Operation																									



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed 163 m (WS163m) - km/h
Lower Camp Met Tower - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed 163 m (WS163m) - km/h
Lower Camp Met Tower - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	109	18.05	18.05
6 - 11	125	20.70	38.74
12 - 19	143	23.68	62.42
20 - 28	123	20.36	82.78
29 - 38	84	13.91	96.69
> 38	20	3.31	100.00

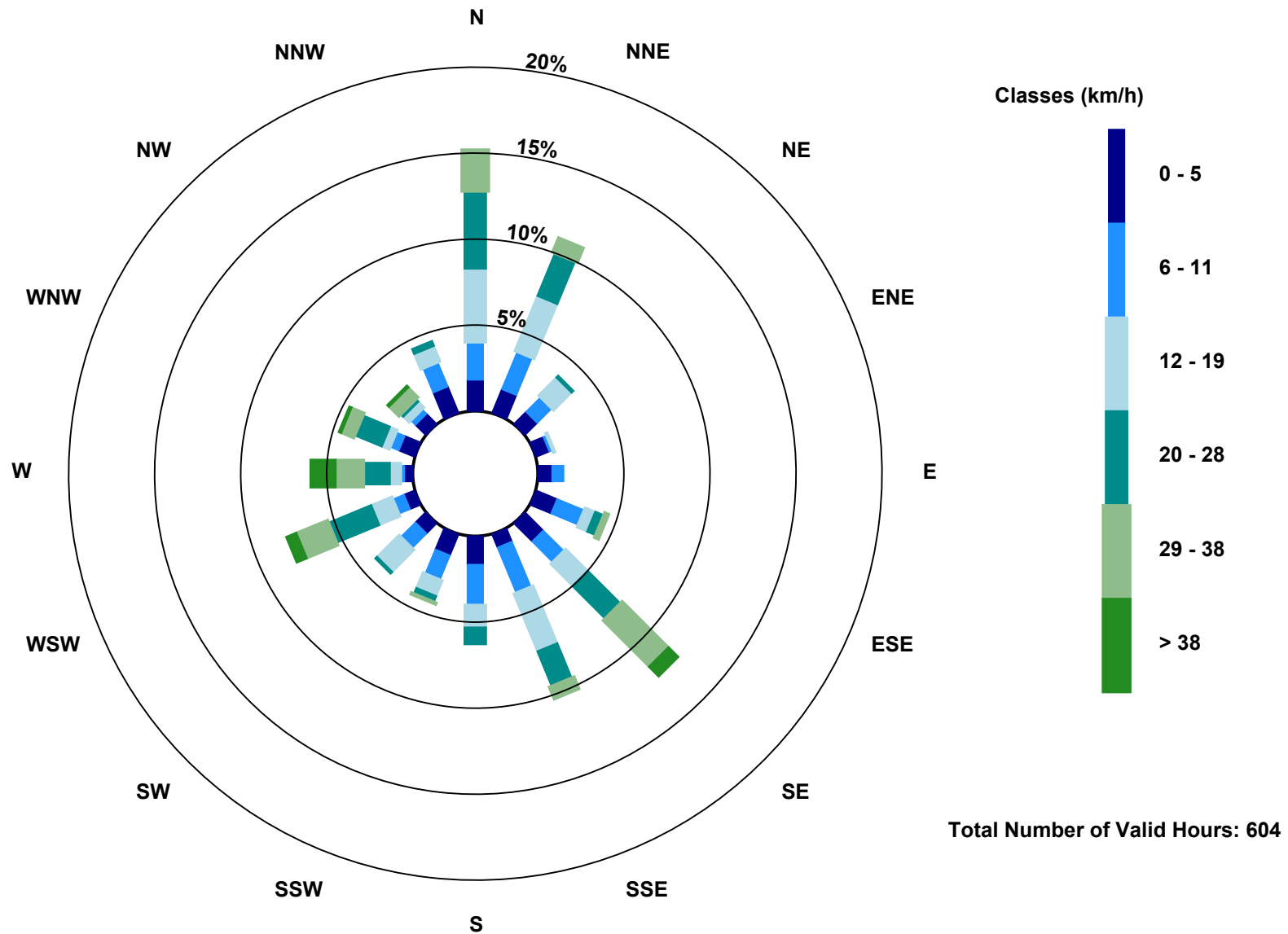
Total Number of Valid Hours: 604

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed 163 m (WS163m) - km/h
Lower Camp Met Tower





Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction 20 m (WD20m) - deg
Lower Camp Met Tower - February 2024

Direction of Maximum Speed: 137 deg on Feb 28 22:00																						Hours in Service: 696			
Direction of Maximum Daily Speed Average: 131.2 deg on Feb 28																						Hours of Data: 674			
Direction of Minimum Speed: 263 deg on Feb 4 01:00											Direction of Minimum Daily Speed Average: 0.1 deg on Feb 22											Hours of Missing Data: 22			
Monthly Average Direction: 53.1 deg																						Percent Operational Time: 96.8			
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	118	119	128	132	146	134	141	149	142	73	159	144	138	138	137	133	330	329	330	315	315	316	315	317	134.5
2-Feb	343	353	349	343	349	359	352	336	337	340	0	349	348	347	358	345	356	345	341	341	342	330	329	326	346.4
3-Feb	342	5	101	34	351	335	338	331	335	349	354	3	353	7	359	353	355	15	350	321	338	332	292	220	353.2
4-Feb	263	159	132	132	125	117	132	114	118	121	115	126	137	139	142	145	144	147	141	98	144	143	146	153	134.1
5-Feb	161	137	150	141	93	85	337	340	320	344	1	359	356	10	0	351	349	358	345	342	342	341	352	346	355.6
6-Feb	357	360	351	340	312	342	336	327	334	322	345	130	128	134	138	142	137	136	124	129	131	137	134	138	127.5
7-Feb	134	142	140	147	141	112	36	8	325	176	183	185	163	244	258	342	10	314	346	320	341	337	326	339	153.5
8-Feb	336	333	326	348	340	314	316	353	10	352	2	41	124	110	116	139	146	102	340	345	351	336	322	321	352.5
9-Feb	322	308	311	260	265	293	0	355	6	2	12	42	27	203	67	356	345	342	339	341	323	285	276	297	326.0
10-Feb	298	72	228	209	314	240	135	134	136	136	136	131	129	132	144	144	163	182	149	157	286	138	129	152	147.7
11-Feb	245	252	247	249	264	264	262	265	279	271	241	248	259	263	260	251	257	250	248	217	159	161	150	146	248.5
12-Feb	138	134	135	135	133	132	135	138	138	135	133	160	236	270	312	345	316	314	299	313	307	337	350	352	146.2
13-Feb	345	348	343	359	8	348	301	277	281	266	350	203	149	141	145	138	114	164	317	353	1	357	4	348	359.3
14-Feb	346	350	4	7	356	354	1	354	359	26	12	354	346	10	29	23	25	14	347	349	358	354	10	25	2.0
15-Feb	3	336	136	129	248	258	251	221	219	231	163	133	136	161	138	140	142	142	137	144	149	136	168	135	161.3
16-Feb	175	227	257	143	164	166	131	130	132	133	133	137	138	140	210	236	245	239	244	253	247	248	241	261	190.0
17-Feb	269	261	257	266	250	236	145	134	130	130	133	146	166	202	169	181	159	57	335	338	352	348	290	297	207.9
18-Feb	327	316	316	313	324	328	322	319	318	348	344	359	6	243	314	325	322	342	349	353	347	324	334	331	329.7
19-Feb	343	343	335	321	321	322	325	322	318	317	357	11	271	239	246	252	255	322	346	334	353	330	332	354	318.6
20-Feb	348	327	341	352	330	340	77	340	125	130	132	139	138	143	140	141	134	137	106	122	133	126	124	133	126.6
21-Feb	140	146	344	336	324	336	338	291	302	249	148	134	134	133	249	250	254	238	238	250	263	289	331	337	251.9
22-Feb	303	318	18	315	333	319	323	323	DF	DF	DF	DF	DF	155	149	147	191	351	340	349	314	172	150	139	268.3
23-Feb	128	131	122	128	132	136	134	133	135	128	153	270	268	258	262	250	263	317	267	240	263	284	289	269	230.3
24-Feb	266	4	358	349	355	351	360	347	346	355	0	355	353	355	354	358	14	18	18	24	27	31	1	360	356.5
25-Feb	9	350	359	360	359	357	358	6	359	13	357	3	356	1	7	10	12	18	16	13	3	355	6	357	3.7
26-Feb	356	360	4	5	356	6	13	3	1	356	DF	337	334	357	217	216	83	134	62	318	342	338	DF	DF	357.8
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	124	121	140	72	14	48	128	138	126	143	138	120	114	123	125	--
28-Feb	115	114	137	128	DF	DF	DF	DF	DF	137	134	134	135	130	135	129	125	121	128	135	129	137	132	130	131.2
29-Feb	124	117	122	111	105	105	116	124	115	114	130	131	149	146	167	134	174	199	295	345	340	341	241	241	129.3
343.7	2.9	26.7	45.9	357.4	17.1	57.1	57.5	64.0	89.8	93.6	106.3	121.2	125.2	171.6	162.0	191.5	79.7	319.1	321.2	337.2	5.9	7.8	344.0		
Diurnal Average																									
DF - DAS Failure																									
All monthly, daily, and diurnal averages have been calculated using vector methods																									



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

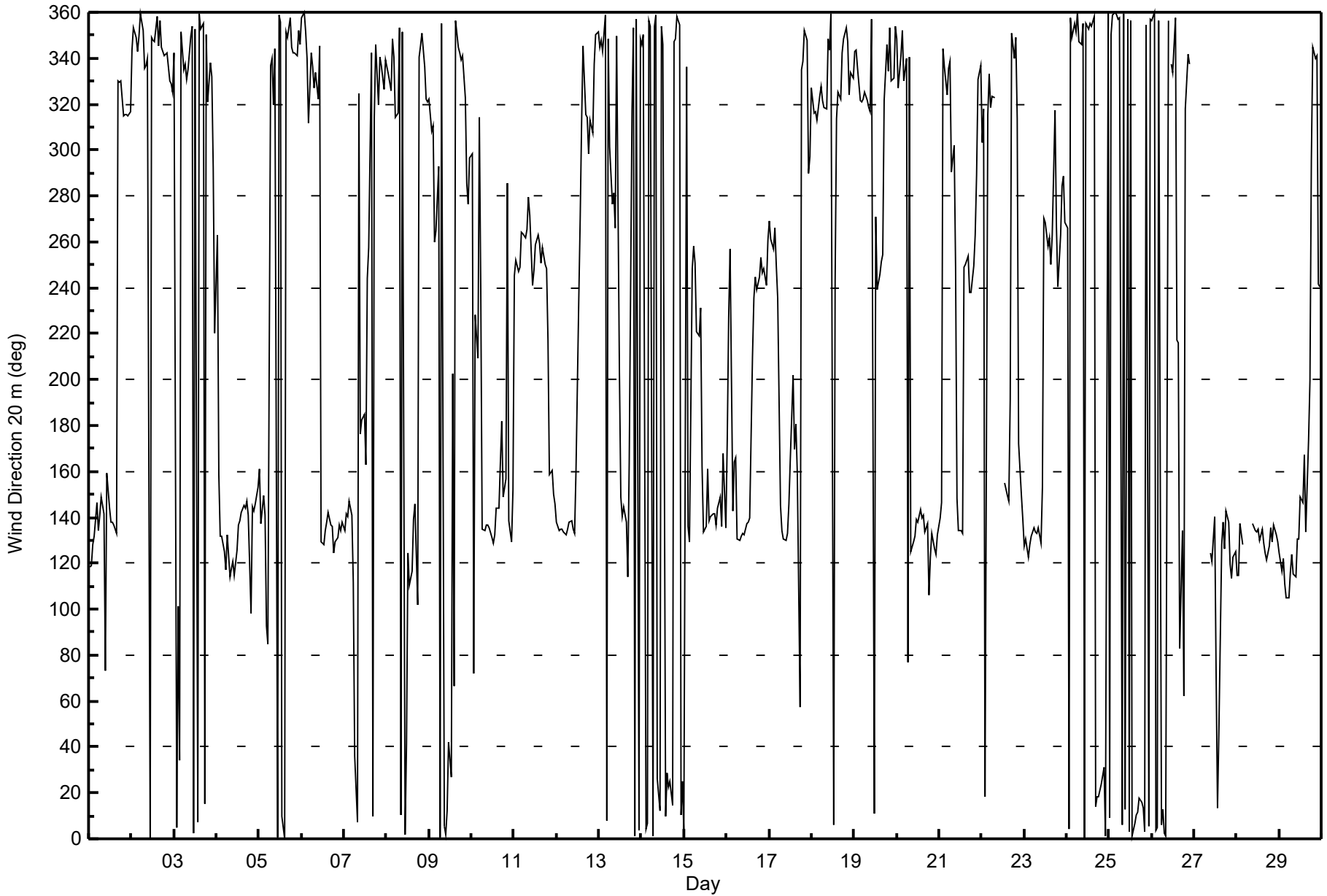
Wind Direction 20 m (WD20m) - deg
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 101 deg on Feb 17 06:00 Minimum Value: 4 deg on Feb 16 09:00 Percentiles: P ₁ = 6 P ₁₀ = 12 Q ₁ = 16 Median = 19 Q ₃ = 32 P ₉₀ = 55 P ₉₉ = 86																	Hours in Service: 696 Hours of Data: 674 Hours of Missing Data: 22 Hours of Calibration: 0 Percent Operational Time: 96.8																								
Day	Hourly Period Ending At (MST)																								Daily Maximum																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																	
1-Feb	16	14	12	13	11	12	8	12	62	64	98	10	8	10	11	10	79	43	30	18	16	14	20	13	98																
2-Feb	32	8	15	19	16	16	16	17	19	19	20	16	16	18	24	22	24	15	16	17	15	15	14	16	32																
3-Feb	20	63	26	72	26	18	21	15	19	15	21	18	15	20	16	16	17	24	45	45	44	41	72	78	78																
4-Feb	82	44	11	12	22	18	14	19	67	64	72	22	16	16	17	9	11	8	23	51	28	13	39	28	82																
5-Feb	29	27	10	12	76	67	14	16	21	17	17	16	20	20	17	14	13	15	15	16	15	18	11	32	76																
6-Feb	17	10	12	20	35	48	31	28	28	40	47	25	19	17	19	14	15	14	16	17	19	18	17	16	48																
7-Feb	19	14	17	14	16	60	23	55	75	27	17	57	39	38	27	47	42	37	18	17	17	23	17	15	75																
8-Feb	21	19	17	13	34	32	22	29	33	69	41	97	71	38	29	18	31	67	24	15	11	16	16	13	97																
9-Feb	14	16	23	18	18	40	24	19	19	21	20	36	38	84	78	53	29	15	16	16	21	25	36	43	84																
10-Feb	56	83	69	49	45	92	76	37	17	13	14	16	41	15	13	17	30	8	24	61	77	63	9	38	92																
11-Feb	13	10	7	8	17	15	17	28	85	44	27	19	21	23	18	13	21	47	71	44	21	17	8	6	85																
12-Feb	8	5	6	6	6	9	18	20	28	52	9	36	48	19	26	19	20	16	17	15	17	16	13	18	52																
13-Feb	17	15	17	23	19	16	31	19	78	37	30	66	26	14	12	8	25	57	66	15	16	16	18	15	78																
14-Feb	14	13	16	18	18	16	19	17	20	35	31	25	14	19	22	20	23	17	20	29	19	30	32	41	41																
15-Feb	62	62	25	75	32	33	19	25	14	24	52	16	19	53	23	7	9	17	53	14	11	7	19	32	75																
16-Feb	36	71	47	55	24	17	17	7	4	6	6	8	10	9	20	15	13	13	26	15	24	13	25	50	71																
17-Feb	35	26	18	28	38	101	35	20	10	10	8	17	34	38	20	36	16	83	41	18	11	53	79	48	101																
18-Feb	16	28	38	30	30	29	21	22	25	53	76	16	67	63	50	19	21	64	31	41	42	48	55	31	76																
19-Feb	16	18	19	28	27	19	27	24	19	41	18	90	80	15	31	29	17	33	11	22	26	21	17	19	90																
20-Feb	24	20	21	84	53	86	79	83	52	21	27	30	20	23	12	17	23	16	20	21	7	9	12	11	86																
21-Feb	43	81	11	14	41	43	19	37	49	99	64	11	8	22	22	12	15	44	7	13	12	38	20	33	99																
22-Feb	30	60	72	32	52	17	33	24	DF	DF	DF	DF	DF	46	12	7	63	39	25	16	43	33	17	11	72																
23-Feb	18	10	15	18	24	17	28	24	15	8	53	18	20	19	17	12	23	16	26	10	21	18	19	20	53																
24-Feb	35	20	17	17	17	18	23	19	16	22	18	18	15	17	20	24	20	16	19	18	35	20	22	18	35																
25-Feb	18	15	18	20	16	16	16	18	19	21	18	20	18	17	19	20	20	16	19	18	17	16	16	17	21																
26-Feb	16	18	15	18	17	18	20	17	19	26	DF	31	35	35	32	85	67	40	76	52	20	36	DF	DF	85																
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	19	18	19	35	23	39	25	15	16	16	13	15	17	26	17	39															
28-Feb	21	24	14	31	DF	DF	DF	DF	DF	DF	17	16	16	15	16	15	18	17	17	17	18	16	14	16	17	31															
29-Feb	17	17	19	18	23	26	19	19	19	20	17	17	20	22	22	28	34	13	52	87	43	64	86	15	87																
																	82	83	72	84	76	101	79	83	85	99	98	97	80	84	78	85	79	83	76	87	77	64	86	78	
Diurnal Maximum																																									
DF - DAS Failure																																									



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction 20 m (WD20m) - deg
Lower Camp Met Tower - February 2024





Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction 45 m (WD45m) - deg
Lower Camp Met Tower - February 2024

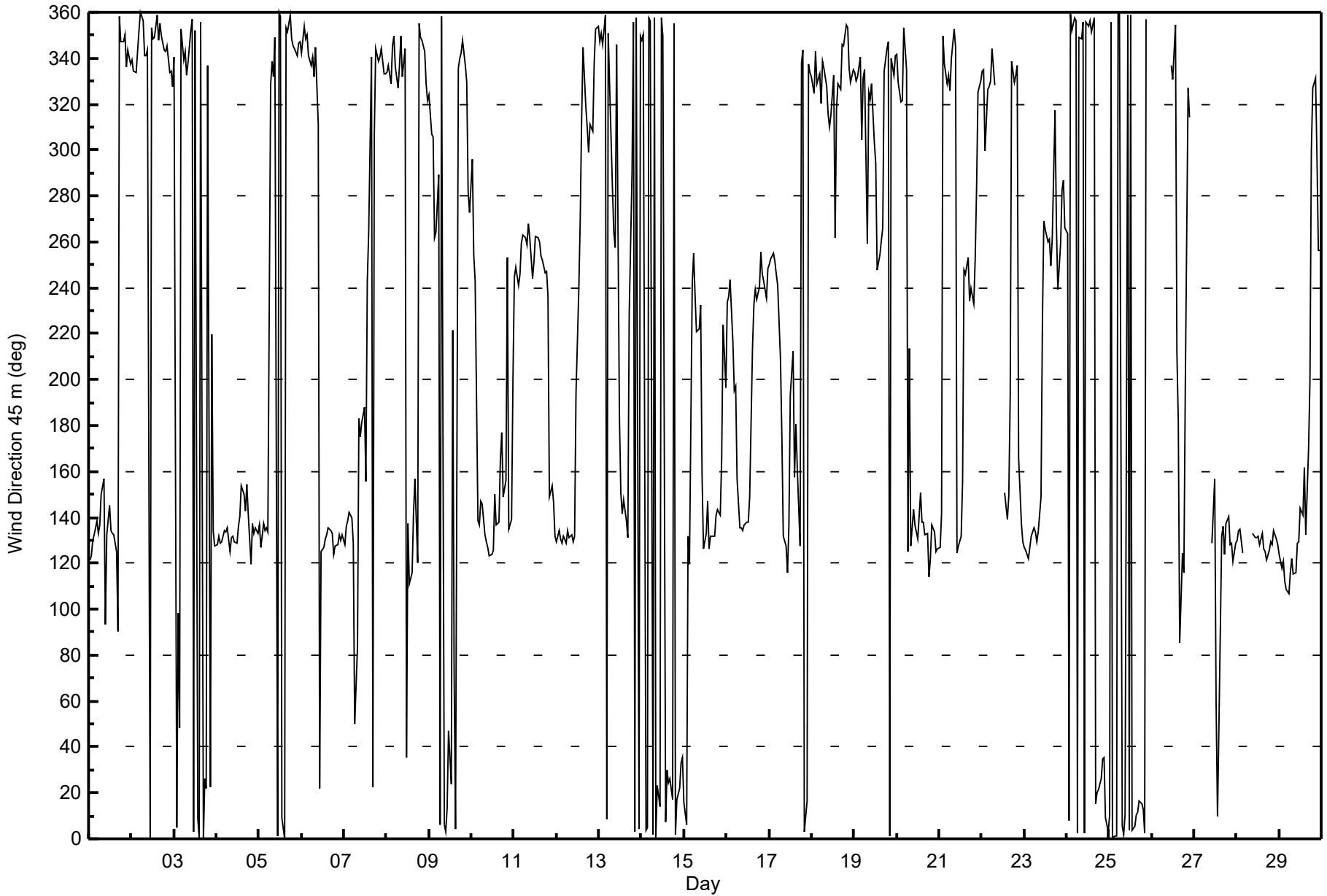
Direction of Maximum Speed: 134 deg on Feb 28 22:00																				Hours in Service: 696						
Direction of Maximum Daily Speed Average: 129.5 deg on Feb 28																				Hours of Data: 661						
Direction of Minimum Speed: 182 deg on Feb 26 16:00										Direction of Minimum Daily Speed Average: 0.2 deg on Feb 12										Hours of Missing Data: 35						
Monthly Average Direction: 42.4 deg																				Percent Operational Time: 95.0						
Day	Hourly Period Ending At (MST)																								Daily Average	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	122	123	130	132	139	133	137	150	157	93	133	145	134	133	132	125	90	358	347	347	350	336	344	338	127.4	
2-Feb	339	334	334	343	352	360	356	341	341	344	1	353	348	349	359	348	355	350	344	343	345	334	334	327	346.9	
3-Feb	340	5	98	48	352	339	343	332	338	352	357	3	352	9	1	356	0	26	22	337	23	220	134	127	359.7	
4-Feb	128	132	129	129	134	133	136	125	131	132	129	129	136	140	154	150	143	154	142	119	137	133	136	133	135.8	
5-Feb	137	127	137	134	136	134	328	339	332	349	1	360	358	9	0	353	352	359	348	345	344	341	346	347	358.1	
6-Feb	342	354	348	350	341	337	341	332	345	311	22	125	127	130	133	136	134	133	124	128	128	132	130	132	121.9	
7-Feb	128	136	138	142	140	129	50	83	183	175	181	188	156	243	264	340	23	306	344	339	341	344	333	333	135.1	
8-Feb	334	337	329	345	350	336	327	337	349	332	344	36	137	111	116	142	157	120	355	349	348	343	329	322	349.4	
9-Feb	324	307	306	261	264	289	6	358	6	3	13	47	24	221	73	4	336	340	342	348	337	330	282	273	328.7	
10-Feb	296	254	243	138	137	147	146	133	130	127	123	124	126	150	137	138	165	177	149	156	253	135	139	200	147.8	
11-Feb	244	249	241	246	259	263	262	259	268	262	244	252	262	262	260	254	252	246	247	236	149	154	146	132	249.0	
12-Feb	129	134	131	129	132	129	135	131	133	129	132	194	239	269	313	345	319	310	299	311	308	338	353	354	41.9	
13-Feb	347	351	346	359	8	351	328	284	264	258	346	184	151	141	148	138	131	229	290	355	3	357	5	350	355.6	
14-Feb	348	351	4	5	358	356	2	357	0	23	14	357	349	8	30	24	26	17	355	2	17	22	33	35	5.4	
15-Feb	16	6	132	120	242	255	237	221	222	233	158	126	133	147	126	132	132	132	141	144	141	165	224	196	172.2	
16-Feb	234	236	244	216	195	197	157	135	136	134	137	138	138	149	214	232	239	235	240	256	246	243	235	248	208.9	
17-Feb	250	253	255	251	246	241	209	174	132	128	116	136	193	212	157	180	161	128	338	343	3	16	338	334	236.6	
18-Feb	332	325	343	329	333	320	339	336	327	316	310	316	333	262	318	329	326	346	346	355	353	335	329	335	333.4	
19-Feb	334	330	332	340	304	331	335	260	325	322	329	303	294	248	254	260	266	335	344	347	1	340	333	341	323.8	
20-Feb	342	330	321	322	353	335	125	213	127	144	137	134	130	151	138	138	132	133	114	122	137	134	125	126	127.8	
21-Feb	127	142	349	338	329	332	326	340	353	344	125	127	132	155	248	246	253	234	240	233	253	284	325	330	256.2	
22-Feb	335	335	300	327	328	330	344	328	DF	DF	DF	DF	DF	150	139	150	193	338	330	333	337	166	137	130	355.1	
23-Feb	127	126	122	127	132	136	134	129	134	149	225	269	265	260	261	249	261	317	266	239	259	283	287	266	230.6	
24-Feb	264	8	360	352	357	356	3	349	348	356	2	356	354	356	351	358	15	20	21	26	35	36	9	3	358.9	
25-Feb	10	356	0	1	1	359	359	5	2	11	359	4	359	4	6	10	11	16	15	13	3	357	DF	UO	4.8	
26-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	337	331	355	213	182	86	124	116	196	327	314	DF	DF	--	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	UO	129	157	58	10	49	132	136	124	137	140	128	129	129	--	
28-Feb	130	134	135	125	DF	DF	DF	DF	DF	DF	133	131	131	132	128	133	126	125	122	126	130	128	134	131	128	129.5
29-Feb	124	118	121	112	109	107	116	122	115	116	129	129	144	141	162	132	170	200	300	327	331	297	256	257	126.2	
338.4 2.9 43.2 54.3 357.5 21.9 60.0 77.8 71.1 91.4 82.4 98.0 113.7 114.4 169.3 155.9 203.0 19.4 329.9 336.2 345.7 0.6 5.9 349.1																										
Diurnal Average																										
DF - DAS Failure UO - Unstable Operation																										
All monthly, daily, and diurnal averages have been calculated using vector methods																										



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction 45 m (WD45m) - deg
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 110 deg on Feb 1 11:00 Minimum Value: 3 deg on Feb 12 03:00 Percentiles: P ₁ = 4 P ₁₀ = 7 Q ₁ = 9 Median = 13 Q ₃ = 22 P ₉₀ = 43 P ₉₉ = 83																	Hours in Service: 696 Hours of Data: 661 Hours of Missing Data: 35 Hours of Calibration: 0 Percent Operational Time: 95.0								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	8	7	6	6	7	5	5	10	38	45	110	8	6	5	6	7	56	25	6	5	8	9	5	10	110
2-Feb	11	6	6	10	10	10	8	12	12	13	13	11	11	13	17	19	17	9	10	11	10	9	8	12	19
3-Feb	14	29	20	40	18	10	13	10	12	9	15	11	9	13	9	10	11	9	30	40	76	69	31	10	76
4-Feb	7	6	7	6	8	9	7	8	19	19	32	12	8	13	14	9	8	7	10	27	11	9	7	11	32
5-Feb	14	9	5	5	15	33	21	9	8	11	9	8	12	12	9	8	8	6	9	9	9	9	5	13	33
6-Feb	8	6	7	14	10	28	21	18	17	82	79	14	9	8	11	7	6	7	9	9	10	9	9	10	82
7-Feb	11	11	12	12	13	50	24	46	61	18	16	55	44	36	21	52	32	23	5	9	11	17	8	8	61
8-Feb	11	8	8	10	19	16	13	22	32	71	39	95	71	28	21	16	29	11	57	5	4	9	10	8	95
9-Feb	10	11	13	15	10	30	21	13	12	9	13	27	37	88	60	47	20	8	11	11	9	33	26	32	88
10-Feb	34	59	20	17	26	33	35	10	10	8	9	12	19	17	6	10	24	7	19	56	63	22	12	41	63
11-Feb	8	5	3	5	10	8	8	16	29	18	32	16	15	13	11	6	13	8	68	72	29	13	15	5	72
12-Feb	3	4	3	3	4	4	7	6	8	13	9	35	33	13	22	13	14	10	11	10	12	11	7	12	35
13-Feb	12	10	10	17	14	9	16	24	33	28	25	69	26	13	12	5	18	73	62	10	9	11	11	10	73
14-Feb	8	8	8	10	12	10	9	10	11	24	25	18	8	16	17	15	15	12	14	19	13	17	11	24	25
15-Feb	60	50	52	25	26	17	14	14	10	32	51	18	23	65	21	4	4	7	13	11	9	18	21	57	65
16-Feb	19	29	18	51	30	22	30	6	7	7	5	4	5	13	12	10	8	8	18	9	11	6	8	24	51
17-Feb	19	15	13	17	17	50	39	33	9	6	10	21	36	28	34	92	11	74	17	8	22	14	69	17	92
18-Feb	19	25	37	36	27	41	10	9	8	46	28	21	67	63	45	16	14	27	6	10	10	19	21	9	67
19-Feb	8	8	7	16	32	8	14	28	35	16	20	76	64	28	31	20	16	24	6	15	17	15	9	11	76
20-Feb	10	14	16	48	25	47	66	63	27	18	18	29	18	25	14	14	14	8	13	11	8	6	6	6	66
21-Feb	7	10	82	5	11	9	14	11	18	85	45	5	5	43	8	6	10	31	4	7	10	31	8	15	85
22-Feb	17	30	55	74	25	7	11	16	DF	DF	DF	DF	DF	47	12	5	54	48	8	13	16	84	7	8	84
23-Feb	11	8	8	6	6	6	7	5	6	9	43	13	13	12	11	8	20	13	25	9	14	16	14	17	43
24-Feb	33	16	11	10	10	12	15	14	11	18	12	11	8	11	15	17	13	12	13	13	18	13	20	12	33
25-Feb	12	11	13	13	10	10	8	10	14	14	11	13	12	12	14	14	12	11	13	13	11	10	DF	UO	14
26-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	27	28	32	36	97	41	20	62	75	23	41	DF	DF	97
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	UO	21	24	33	24	51	21	13	8	13	10	10	8	8	51
28-Feb	10	8	6	10	DF	DF	DF	DF	DF	DF	9	9	7	8	9	9	11	10	10	10	12	8	7	8	12
29-Feb	9	10	10	11	15	18	12	13	12	13	12	9	17	19	23	24	34	11	55	58	21	24	73	14	73
Diurnal Maximum																									
DF - DAS Failure UO - Unstable Operation																									





Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Direction 100 m (WD100m) - deg

Lower Camp Met Tower - February 2024

Direction of Maximum Speed: 135 deg on Feb 28 22:00																				Hours in Service: 696					
Direction of Maximum Daily Speed Average: 132.8 deg on Feb 28																				Hours of Data: 624					
Direction of Minimum Speed: 60 deg on Feb 27 15:00										Direction of Minimum Daily Speed Average: 2.0 deg on Feb 7										Hours of Missing Data: 72					
Monthly Average Direction: 293.9 deg																				Percent Operational Time: 89.7					
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	132	131	135	137	140	139	142	153	158	132	139	167	144	135	134	127	110	100	58	53	7	360	26	346	134.2
2-Feb	348	357	349	349	354	360	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	353	360	348	9	4	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	149	169	163	160	166	152	145	149	148	143	159	--
5-Feb	141	146	153	202	150	134	66	346	358	1	3	2	360	9	359	355	356	0	354	351	350	346	351	357	0.1
6-Feb	356	12	22	28	352	346	29	47	86	111	119	129	127	130	133	137	135	135	127	130	131	136	133	136	123.8
7-Feb	133	137	143	140	141	150	139	132	179	176	178	179	209	222	264	307	44	272	339	346	351	7	354	328	137.8
8-Feb	337	348	337	336	346	9	18	331	359	302	298	252	190	144	119	153	175	137	235	10	357	357	351	330	349.9
9-Feb	325	315	302	268	273	294	349	6	9	6	17	42	24	104	68	52	67	7	356	8	2	346	327	313	332.5
10-Feb	7	139	152	166	154	141	151	152	151	157	157	151	163	166	146	145	167	166	160	177	211	186	191	240	165.4
11-Feb	246	254	252	255	258	268	270	262	266	271	260	267	264	263	262	261	257	257	239	238	235	205	218	208	257.0
12-Feb	169	163	164	151	154	156	154	144	149	151	158	227	246	274	314	343	322	314	300	310	315	340	353	354	276.9
13-Feb	352	353	351	358	7	354	343	316	262	274	345	136	163	159	173	169	208	248	287	1	6	358	3	351	347.6
14-Feb	350	353	5	5	359	360	2	2	7	21	15	357	351	4	27	26	28	28	12	22	31	32	31	41	9.5
15-Feb	35	46	117	160	232	239	239	228	236	237	189	162	181	168	151	127	124	140	181	213	225	236	241	243	209.8
16-Feb	244	239	240	245	243	235	226	219	199	189	176	168	166	208	218	233	239	233	236	259	260	259	249	256	234.1
17-Feb	252	268	271	248	249	246	245	231	227	202	157	142	152	192	128	351	151	137	9	2	48	69	350	351	252.1
18-Feb	7	94	111	119	169	329	311	15	32	77	28	306	296	299	321	332	333	343	354	354	57	49	338	335	359.1
19-Feb	339	333	324	346	317	312	335	341	350	344	315	322	313	284	294	292	316	353	1	12	16	2	342	345	340.6
20-Feb	347	355	328	335	331	313	160	230	163	184	161	153	140	172	153	150	163	153	162	159	167	170	161	156	164.7
21-Feb	165	174	180	305	341	333	325	337	335	13	139	142	162	233	248	246	254	247	253	245	254	281	325	335	263.0
22-Feb	332	337	335	340	331	339	323	323	DF	DF	DF	DF	DF	169	94	135	159	353	337	347	353	132	142	146	355.7
23-Feb	150	151	152	149	149	158	160	159	171	193	255	267	264	261	261	250	263	317	269	245	258	280	287	268	235.4
24-Feb	267	11	2	352	358	358	360	348	347	354	0	355	353	353	350	357	16	27	31	35	41	41	25	9	0.7
25-Feb	16	3	360	1	3	2	2	8	9	14	0	4	1	4	8	13	13	21	18	15	5	1	6	3	7.2
26-Feb	2	360	2	3	358	4	11	1	2	355	DF	339	329	350	203	42	72	111	110	111	104	145	DF	DF	5.3
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	202	189	189	36	344	60	141	140	130	138	148	143	151	138	143	--
28-Feb	140	143	143	143	DF	DF	DF	DF	DF	135	136	132	132	130	133	129	126	124	130	131	130	135	131	128	132.8
29-Feb	126	122	122	116	111	111	118	124	119	121	131	130	143	142	155	132	175	200	284	316	307	280	274	298	128.6
308.3	353.8	357.8	324.3	318.5	317.2	269.8	249.2	90.0	147.6	120.7	149.9	183.4	196.3	215.2	191.0	218.4	230.5	284.5	306.6	333.1	341.0	341.9	323.0		
Diurnal Average																									
DF - DAS Failure UO - Unstable Operation																									
All monthly, daily, and diurnal averages have been calculated using vector methods																									



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

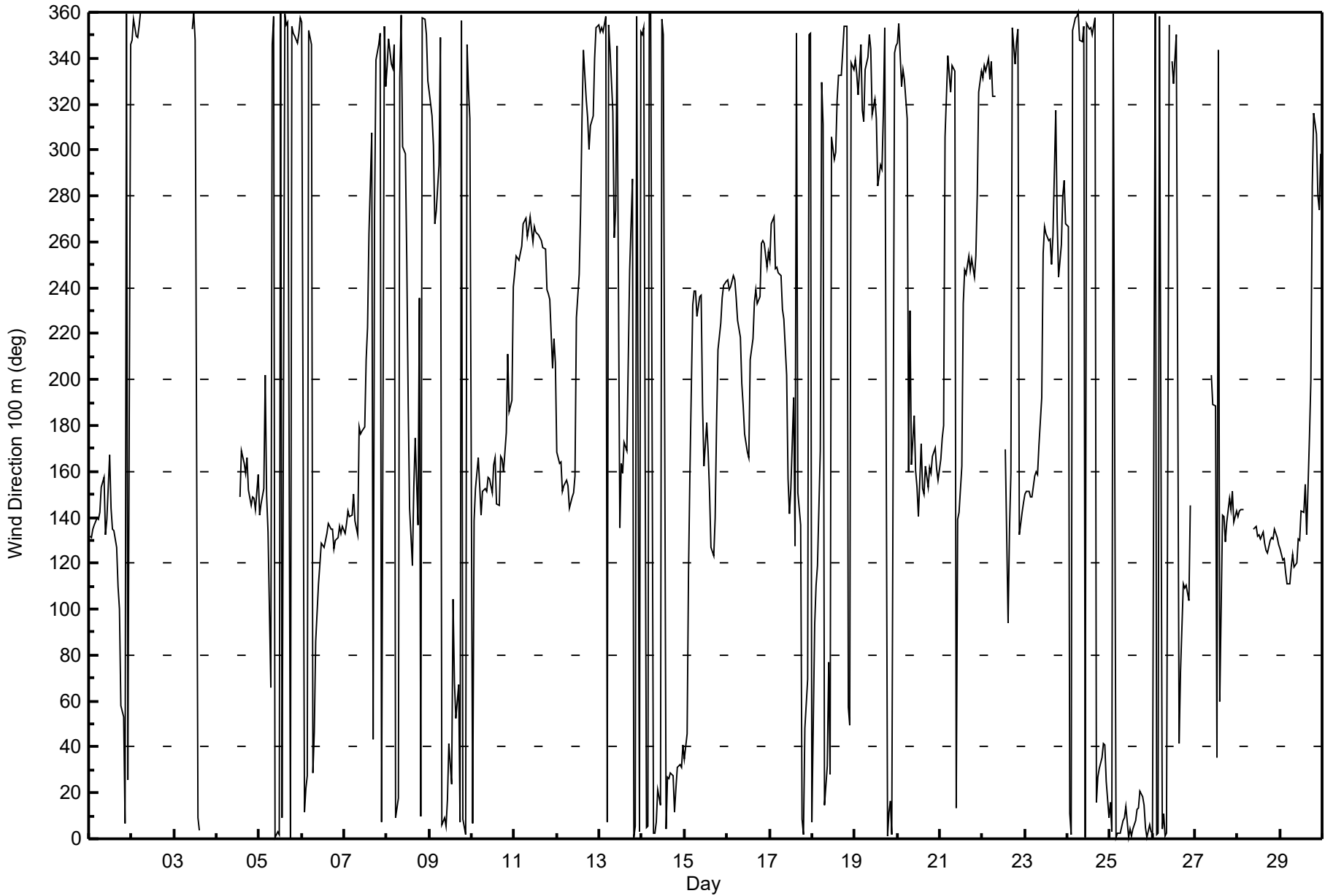
Wind Direction 100 m (WD100m) - deg
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 696
Maximum Value: 89 deg on Feb 21 04:00	Hours of Data: 624
Minimum Value: 2 deg on Feb 21 06:00	Hours of Missing Data: 72
Percentiles: P ₁ = 3 P ₁₀ = 5 Q ₁ = 7 Median = 10 Q ₃ = 18 P ₉₀ = 35 P ₉₉ = 84	Hours of Calibration: 0
	Percent Operational Time: 89.7

Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	4	4	4	4	4	3	6	5	6	28	20	9	12	7	7	8	12	10	34	15	15	13	6	18	34
2-Feb	10	10	6	6	6	6	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	10
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	11	10	8	10	8	UO	UO	UO	UO	UO	UO	UO	UO	UO	11
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	37	10	8	8	6	7	6	6	11	14	37	
5-Feb	12	9	34	43	36	20	38	10	5	6	7	6	7	10	6	5	5	4	5	5	5	4	3	6	43
6-Feb	8	9	13	25	22	28	28	31	45	22	19	7	5	4	7	5	4	5	6	4	5	6	5	6	45
7-Feb	6	8	8	9	9	19	54	17	23	17	13	43	55	46	28	65	38	23	16	5	6	8	16	4	65
8-Feb	6	5	9	4	7	9	15	24	66	67	27	88	48	38	17	16	20	13	59	11	7	3	4	8	88
9-Feb	6	7	6	11	7	12	32	11	7	6	11	19	28	80	72	31	18	15	10	12	16	6	21	14	80
10-Feb	48	37	26	34	22	6	8	9	15	8	12	13	14	17	7	7	13	6	11	40	22	11	13	14	48
11-Feb	3	4	4	3	6	4	3	7	8	5	15	10	9	7	5	4	5	9	10	6	21	22	25	30	30
12-Feb	15	4	5	4	6	3	4	5	6	13	19	14	18	10	17	12	11	7	9	7	7	10	4	8	19
13-Feb	8	7	7	13	8	6	8	27	28	23	17	74	20	11	13	18	36	11	55	8	7	8	7	7	74
14-Feb	6	6	6	8	9	7	7	9	9	20	20	15	7	19	11	8	12	12	13	7	5	7	14	20	20
15-Feb	32	26	21	35	12	14	10	5	5	18	26	13	16	78	24	5	4	11	16	10	18	8	5	8	78
16-Feb	3	4	5	12	12	10	11	10	14	10	7	11	11	19	6	7	5	5	9	8	5	4	7	14	19
17-Feb	9	8	6	5	7	16	12	13	17	19	35	36	82	30	71	87	10	36	24	16	33	16	36	10	87
18-Feb	12	30	49	59	86	62	32	32	25	79	85	36	47	57	32	13	8	7	4	4	33	61	76	4	86
19-Feb	3	11	14	13	25	16	12	5	6	8	20	70	59	29	32	28	18	16	8	11	12	13	6	4	70
20-Feb	6	13	7	25	29	55	39	20	32	9	16	41	20	13	17	16	12	15	11	12	8	5	6	6	55
21-Feb	20	11	26	89	5	2	7	5	12	71	15	6	11	25	4	4	6	5	3	5	8	26	7	6	89
22-Feb	4	6	25	55	18	5	11	10	DF	DF	DF	DF	DF	58	10	8	28	65	4	11	25	64	7	10	65
23-Feb	9	5	6	4	3	6	6	5	9	10	14	8	7	7	7	6	20	10	25	7	10	17	11	13	25
24-Feb	33	13	8	7	7	8	8	10	7	14	8	8	5	8	12	13	9	10	9	11	11	8	19	11	33
25-Feb	11	11	8	9	7	7	6	7	11	11	9	11	10	9	10	11	9	12	10	8	6	7	8	12	12
26-Feb	7	7	7	6	7	8	8	8	8	13	DF	18	21	23	47	85	22	20	5	6	8	37	DF	DF	85
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	15	32	24	44	41	89	19	16	7	11	9	8	11	8	5	89
28-Feb	5	5	6	6	DF	DF	DF	DF	DF	7	6	4	5	6	6	8	7	8	8	10	5	5	6	6	10
29-Feb	6	8	7	9	11	12	9	9	9	10	7	7	16	19	22	20	29	9	50	15	14	12	15	20	50
	48	37	49	89	86	62	54	32	66	79	85	88	82	80	89	87	38	65	59	40	33	64	76	30	

Diurnal Maximum

DF - DAS Failure UO - Unstable Operation





Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction 163 m (WD163m) - deg
Lower Camp Met Tower - February 2024

Direction of Maximum Speed: 136 deg on Feb 28 22:00																				Hours in Service: 696					
Direction of Maximum Daily Speed Average: 136.1 deg on Feb 28																				Hours of Data: 604					
Direction of Minimum Speed: 285 deg on Feb 7 17:00										Direction of Minimum Daily Speed Average: 1.8 deg on Feb 8										Hours of Missing Data: 92					
Monthly Average Direction: 270.0 deg																				Percent Operational Time: 86.8					
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	140	138	138	140	143	146	153	162	167	166	164	181	166	142	143	136	144	126	103	86	124	103	33	27	144.8
2-Feb	16	24	19	9	4	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	147	153	160	--
5-Feb	159	169	156	166	172	177	171	2	14	12	10	8	6	14	4	2	4	8	4	1	1	359	13	30	10.3
6-Feb	38	65	74	86	104	176	175	110	117	116	125	132	129	130	136	141	137	136	131	134	137	140	138	145	127.5
7-Feb	140	142	149	141	144	163	173	165	179	178	172	174	219	192	257	290	285	295	344	359	4	31	37	6	136.5
8-Feb	351	10	350	335	5	27	16	3	32	311	293	196	207	187	123	167	188	163	207	271	8	0	359	341	354.8
9-Feb	332	327	306	282	293	307	334	17	18	16	29	45	33	122	182	163	153	34	19	36	48	7	354	203	340.6
10-Feb	177	158	151	166	UO	UO	UO	UO	UO	UO	146	148	148	165	154	156	164	157	169	206	232	217	230	253	178.8
11-Feb	261	271	273	275	272	281	286	284	285	290	282	280	272	271	271	267	268	279	258	253	256	245	251	245	270.8
12-Feb	212	200	199	191	179	188	186	187	191	184	216	239	255	283	316	343	324	318	304	313	322	344	356	358	283.3
13-Feb	357	359	360	4	10	9	12	356	274	309	358	74	167	175	191	208	241	259	304	10	12	5	7	357	351.2
14-Feb	357	1	11	10	6	8	10	12	19	29	22	4	354	10	30	34	37	39	33	36	45	38	39	48	18.4
15-Feb	51	72	142	204	216	198	210	235	243	239	222	204	216	226	205	160	153	184	222	243	250	248	255	251	228.4
16-Feb	255	256	257	255	256	251	240	239	232	229	218	220	219	227	224	239	245	239	242	264	275	277	289	292	249.1
17-Feb	285	295	295	281	288	279	276	257	259	253	253	103	87	139	36	17	141	133	24	24	81	112	165	122	277.2
18-Feb	104	126	126	129	132	137	139	121	102	120	90	64	309	331	331	342	346	357	6	15	116	115	132	99	95.0
19-Feb	111	124	114	112	136	223	262	287	308	330	328	328	324	332	334	349	351	8	19	31	33	26	13	353	22.5
20-Feb	5	19	353	4	337	329	171	195	167	182	173	183	169	182	168	162	166	164	167	169	178	197	201	185	174.7
21-Feb	201	217	222	240	249	329	333	8	23	206	185	180	200	244	252	251	257	252	263	258	266	289	329	11	257.7
22-Feb	21	19	52	134	242	306	347	339	DF	DF	DF	DF	DF	228	79	85	118	87	348	42	71	148	158	155	78.8
23-Feb	156	162	160	162	165	189	193	194	203	241	262	268	267	264	264	255	267	319	276	257	263	285	290	279	246.9
24-Feb	280	19	8	356	2	4	359	349	349	356	6	358	356	353	356	3	24	37	48	49	53	48	45	26	7.8
25-Feb	33	21	8	9	14	14	13	18	25	23	9	11	10	12	15	21	21	27	25	21	12	8	14	12	16.5
26-Feb	9	5	6	7	5	9	14	5	7	356	DF	339	336	350	176	16	73	109	136	145	137	215	DF	DF	7.0
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	241	237	229	1	293	242	152	151	140	147	156	157	162	155	148	--
28-Feb	147	148	149	148	DF	DF	DF	DF	DF	140	140	133	134	133	135	131	129	129	134	135	134	136	132	130	136.1
29-Feb	129	124	126	120	115	115	120	126	122	125	132	132	146	145	155	137	180	203	273	310	297	283	289	301	132.2
350.3	42.3	64.8	184.3	308.5	292.1	267.5	254.3	177.2	215.2	178.5	199.5	208.3	224.1	228.3	221.1	235.7	281.9	286.6	305.0	314.9	309.7	329.9	324.3		
Diurnal Average																									
DF - DAS Failure UO - Unstable Operation																									
All monthly, daily, and diurnal averages have been calculated using vector methods																									



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction 163 m (WD163m) - deg
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 696
Maximum Value: 97 deg on Feb 9 14:00	Hours of Data: 604
Minimum Value: 2 deg on Feb 11 05:00	Hours of Missing Data: 92
Percentiles: P ₁ = 3 P ₁₀ = 4 Q ₁ = 6 Median = 9 Q ₃ = 16 P ₉₀ = 30 P ₉₉ = 81	Hours of Calibration: 0
	Percent Operational Time: 86.8

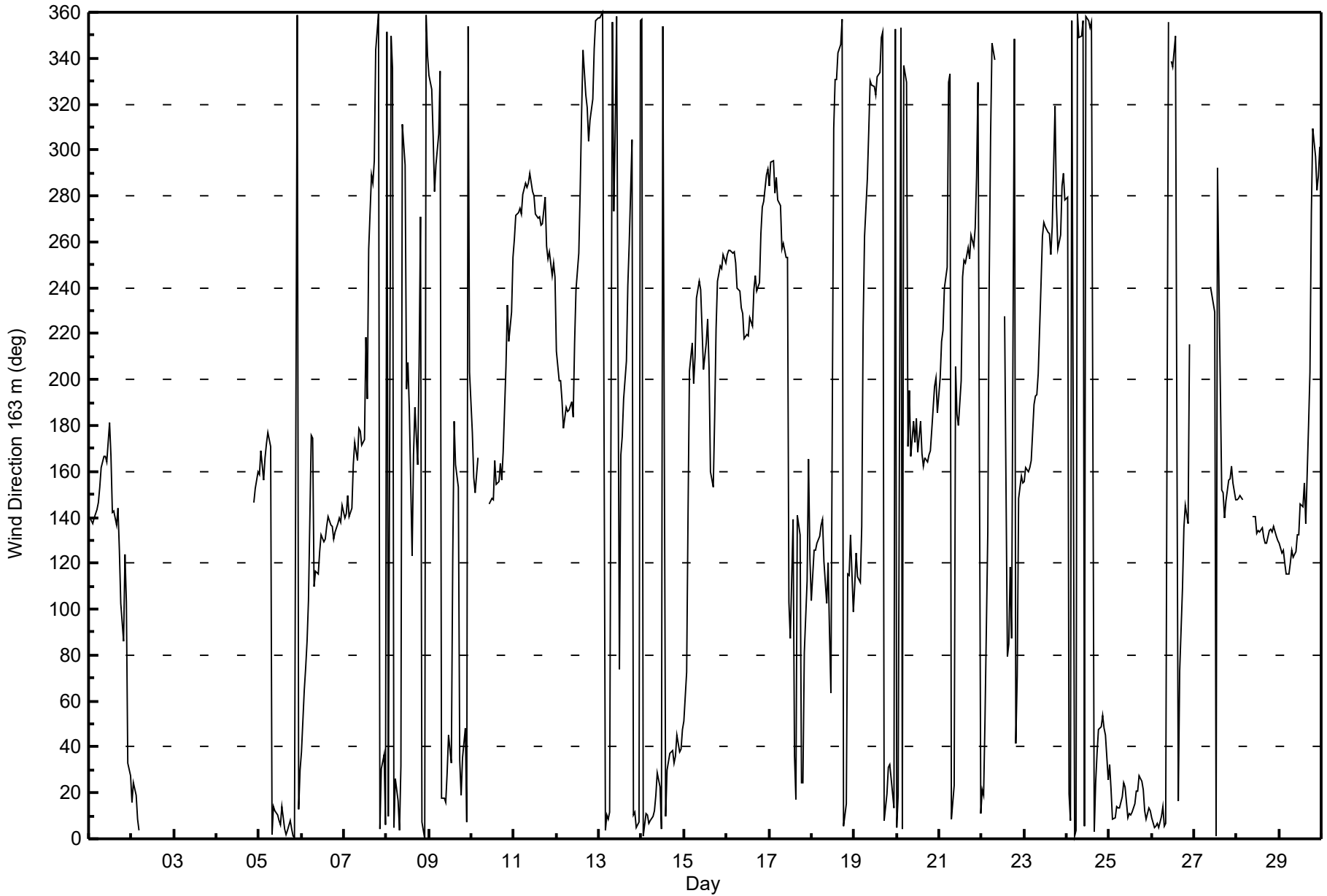
Day	Hourly Period Ending At (MST)																								Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	4	4	3	4	4	4	6	3	3	9	10	8	13	7	8	8	9	14	18	10	15	37	18	7	37		
2-Feb	7	6	5	5	6	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	7		
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--		
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	5		
5-Feb	9	8	13	5	5	7	22	27	4	6	7	6	6	9	6	5	5	3	4	4	5	4	4	5	27		
6-Feb	9	7	9	10	23	74	58	13	9	6	7	6	4	4	5	5	4	5	4	4	6	5	5	5	74		
7-Feb	6	8	8	8	8	17	18	8	14	15	11	35	61	64	51	42	88	27	22	5	7	6	7	10	88		
8-Feb	9	7	13	9	10	8	16	16	25	82	43	85	20	33	15	17	13	17	14	34	16	5	6	6	85		
9-Feb	5	5	7	9	7	8	30	12	5	8	10	17	47	97	52	43	76	12	8	10	16	9	11	81	97		
10-Feb	20	22	13	11	UO	UO	UO	UO	UO	UO	7	9	13	10	8	9	10	4	12	20	14	9	9	6	22		
11-Feb	3	4	3	3	2	3	3	5	5	4	6	5	8	5	4	4	4	9	8	4	3	6	4	4	9		
12-Feb	22	8	9	7	11	8	6	8	5	10	17	5	17	8	14	11	10	6	7	6	5	8	4	7	22		
13-Feb	7	6	7	9	8	7	6	13	29	19	22	58	20	9	10	21	9	5	42	7	6	7	7	6	58		
14-Feb	5	6	6	8	9	7	7	8	9	16	17	13	8	20	10	8	11	9	8	8	4	6	8	8	20		
15-Feb	19	14	24	25	16	18	9	17	32	11	16	11	14	43	26	14	12	16	12	4	3	3	6	3	43		
16-Feb	4	3	4	5	4	5	4	5	8	8	8	8	8	8	6	7	5	4	6	7	6	9	7	12	12		
17-Feb	10	5	4	7	5	9	8	11	6	9	16	79	34	31	65	20	27	11	34	20	7	22	18	61	79		
18-Feb	19	8	8	7	21	55	15	7	10	25	20	41	67	46	23	12	7	5	5	16	19	13	26	39	67		
19-Feb	7	9	16	10	37	31	13	31	74	34	21	38	43	19	25	36	15	19	7	6	8	9	10	8	74		
20-Feb	5	8	12	32	15	21	36	17	10	7	10	19	12	9	9	9	6	4	3	3	9	3	5	9	36		
21-Feb	12	10	11	8	22	28	14	29	66	55	10	8	13	10	3	3	4	5	3	2	6	19	5	20	66		
22-Feb	11	10	16	50	33	21	23	6	DF	DF	DF	DF	DF	49	10	14	26	31	28	23	31	16	5	5	50		
23-Feb	3	6	3	8	9	9	7	6	11	12	7	4	4	5	5	6	19	9	22	6	4	15	10	9	22		
24-Feb	28	11	8	6	7	8	7	7	6	13	9	8	5	9	11	11	8	7	4	4	5	5	11	12	28		
25-Feb	10	11	9	8	7	7	7	7	9	11	10	11	12	11	10	11	9	8	10	10	8	6	7	7	12		
26-Feb	5	6	6	6	7	5	6	6	7	14	DF	17	19	23	66	71	21	23	12	13	14	31	DF	DF	71		
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	9	18	35	83	59	90	20	18	8	12	9	9	4	7	5	90		
28-Feb	5	6	6	5	DF	DF	DF	DF	DF	7	7	4	5	5	5	6	6	6	7	10	4	4	5	5	10		
29-Feb	5	7	6	8	9	10	8	7	8	9	6	6	16	18	20	18	26	9	39	11	15	11	13	12	39		
	28	22	24	50	37	74	58	31	74	82	43	85	83	97	90	71	88	31	42	34	31	37	26	81			
Diurnal Maximum																											

DF - DAS Failure UO - Unstable Operation



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction 163 m (WD163m) - deg
Lower Camp Met Tower - February 2024





Wood Buffalo Environmental Association
Summary of Hour Averages

Vertical Wind Speed 20 m (VW20m) - km/h
Lower Camp Met Tower - February 2024

Maximum Value: 0.5 km/h on Feb 18 12:00		Maximum Daily Average: 0.0 km/h on Feb 18		Hours in Service: 696																							
Minimum Value: -2.2 km/h on Feb 17 02:00		Minimum Daily Average: -0.6 km/h on Feb 23		Hours of Data: 674																							
Maximum Diurnal Average: -0.1 km/h at hour 9		Minimum Diurnal Average: -0.3 km/h at hour 16		Hours of Missing Data: 22																							
Monthly Average: -0.18 km/h		Percentiles: P ₁ = -1.0 P ₁₀ = -0.6 Q ₁ = -0.3 Median = -0.1 Q ₃ = 0.0 P ₉₀ = 0.1 P ₉₉ = 0.3		Hours of Calibration: 0																							
				Percent Operational Time: 96.8																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	-0.3	-0.8	-0.7	-0.5	-1.0	-0.5	-0.7	-0.3	0.1	-0.2	-0.2	-0.4	-0.6	-0.5	-0.6	-0.3	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.3	0.1	
2-Feb	-0.1	0.0	0.1	0.0	-0.1	-0.3	-0.2	0.1	0.1	0.0	0.0	-0.3	-0.3	-0.1	-0.1	0.1	0.0	-0.1	0.0	0.0	-0.1	0.0	0.1	-0.1	-0.1	0.1	
3-Feb	0.1	0.0	-0.2	-0.1	0.0	0.0	0.1	0.0	0.1	-0.2	-0.2	-0.1	-0.1	0.2	-0.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
4-Feb	0.0	0.0	0.0	-0.4	-0.1	-0.8	-0.5	-0.4	0.0	0.1	0.1	-0.4	-0.6	-0.4	-0.3	-0.4	-0.4	-0.2	-0.1	0.0	-0.4	-0.1	0.0	0.0	-0.2	0.1	
5-Feb	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.2	-0.1	-0.3	-0.2	0.1	-0.1	-0.1	0.0	0.0	0.0	-0.1	0.0	0.2	
6-Feb	0.0	0.0	0.0	0.0	-0.1	0.0	-0.1	-0.2	0.0	0.0	-0.1	-0.1	-0.3	-0.4	-0.5	-0.8	-0.6	-0.6	-0.5	-0.5	-0.3	-0.1	-0.4	-0.3	-0.2	0.0	
7-Feb	-0.3	-0.5	-0.4	-0.3	-0.3	0.0	0.0	0.0	0.0	-0.2	-0.4	0.0	0.0	-0.4	-0.1	-0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.1	
8-Feb	0.1	0.0	0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	-0.2	-0.2	-0.3	-0.1	0.0	-0.1	0.0	-0.1	0.0	0.0	-0.1	0.0	0.1	
9-Feb	-0.1	-0.3	-0.1	-0.5	-0.3	-0.1	0.0	0.0	0.0	0.1	-0.1	0.0	0.1	-0.1	0.1	0.1	0.0	-0.1	-0.1	0.0	-0.1	0.0	0.0	0.0	-0.1	0.1	
10-Feb	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	-0.3	-0.2	0.2	-0.2	-0.2	-0.3	0.0	0.1	-0.1	0.2	0.0	0.2	
11-Feb	-1.0	-1.1	-0.9	-1.2	-0.9	-0.6	-0.8	-0.7	-0.1	0.0	-0.5	-0.6	-0.1	-0.1	-0.4	-0.6	-0.3	-0.1	-0.2	-0.1	-0.1	0.0	-0.1	0.1	-0.4	0.1	
12-Feb	0.0	-0.5	-0.6	-0.7	-0.9	-0.7	-0.7	-0.6	-0.2	-0.4	-0.5	-0.1	-0.3	-0.5	-0.2	-0.2	-0.1	-0.3	-0.5	-0.3	-0.3	0.1	-0.4	-0.1	-0.4	0.1	
13-Feb	-0.1	-0.2	-0.2	0.0	0.1	0.0	0.0	-0.2	-0.1	-0.2	0.0	-0.3	-0.2	-0.7	-0.4	-0.6	0.0	0.0	0.0	-0.1	0.0	-0.1	0.1	-0.4	-0.2	0.1	
14-Feb	-0.3	-0.3	0.1	0.0	0.0	0.1	-0.1	0.1	0.1	0.0	0.0	-0.1	-0.3	0.0	0.1	-0.1	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.2	
15-Feb	-0.1	-0.1	-0.1	0.0	-0.2	-0.1	-0.3	-0.2	-0.3	-0.3	-0.2	-0.3	-0.5	-0.4	-0.3	-0.6	-0.6	-0.1	0.0	0.0	-0.1	0.0	-0.2	0.1	-0.2	0.1	
16-Feb	0.1	0.2	-0.1	0.1	-0.5	-0.6	-0.1	0.2	-0.1	-0.3	-0.7	-1.2	-0.9	-0.3	-0.4	-0.6	-0.8	-0.5	-0.6	-0.6	-0.4	-0.6	-0.3	-0.9	-0.4	0.2	
17-Feb	-0.9	-2.2	-0.7	-1.0	-0.4	-0.1	0.1	0.1	0.0	0.3	-0.1	-0.2	-0.2	-0.4	0.1	-0.2	-0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	-0.2	0.3	
18-Feb	0.0	0.0	-0.1	-0.2	-0.1	0.0	-0.1	0.0	-0.1	0.1	0.1	0.5	0.3	0.0	0.3	0.1	0.1	0.1	0.0	0.1	0.1	-0.1	0.0	-0.1	0.0	0.5	
19-Feb	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.2	0.3	-0.6	-0.1	-0.1	-0.2	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.3	
20-Feb	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	-0.1	0.1	0.0	-0.1	-0.1	-0.2	-0.1	-0.4	-0.4	-0.1	-0.4	-0.1	-0.1	-0.4	-0.3	-0.2	-0.1	-0.1	0.1	
21-Feb	0.0	0.0	0.1	-0.1	0.0	0.0	-0.1	0.0	0.0	0.1	0.0	-0.4	-0.6	-0.3	-0.7	-0.9	-0.7	-0.2	-0.3	-0.2	-0.4	-0.2	-0.1	0.0	-0.2	0.1	
22-Feb	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	DF	DF	DF	DF	DF	-0.4	-0.3	-0.3	-0.2	0.0	0.0	-0.1	-0.1	0.0	-0.1	-0.2	-0.1	0.0	
23-Feb	-0.4	-0.5	-0.5	-0.7	-0.6	-0.7	-0.6	-0.7	-0.4	-0.3	-0.1	-1.0	-0.6	-0.4	-0.9	-1.3	-0.9	-0.4	-0.6	-0.9	-0.8	-0.7	-0.4	-1.0	-0.6	-0.1	
24-Feb	-0.7	0.1	-0.1	-0.1	-0.2	-0.1	0.0	-0.2	-0.3	0.0	-0.1	-0.2	-0.4	-0.4	-0.1	0.0	0.1	0.0	0.2	0.0	0.0	0.1	-0.1	0.0	-0.1	0.2	
25-Feb	0.1	-0.1	0.0	0.1	-0.1	0.0	0.0	0.1	0.0	0.0	-0.3	-0.1	-0.4	-0.3	-0.1	-0.1	0.3	0.2	0.1	0.1	0.2	0.0	0.2	-0.1	0.0	0.3	
26-Feb	0.0	-0.2	-0.1	0.1	-0.1	0.0	0.3	0.0	-0.1	-0.1	DF	-0.3	0.1	0.0	-0.3	-0.2	-0.1	0.1	0.0	0.0	0.0	0.0	DF	DF	0.0	0.3	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	-0.1	-0.3	-0.2	0.1	0.0	-0.2	0.0	-0.4	-0.3	-0.3	-0.1	0.0	0.2	-0.1	-0.2	0.2	
28-Feb	0.0	0.1	-0.1	-0.2	DF	DF	DF	DF	DF	DF	-0.7	-0.5	-0.6	-0.8	-1.0	-1.1	-0.6	-0.8	-0.5	-0.6	-0.8	-0.8	-1.2	-0.7	-0.6	-0.6	0.1
29-Feb	-0.5	-0.7	-0.6	-0.4	-0.2	-0.4	-0.4	-0.6	-0.5	-0.5	-0.4	-0.6	-0.9	-0.6	-0.4	-0.1	-0.4	-0.5	-0.1	0.0	-0.1	0.0	-0.1	-0.5	-0.4	0.0	
		-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	Diurnal Average	
		0.1	0.2	0.1	0.1	0.1	0.0	0.3	0.2	0.1	0.3	0.1	0.5	0.3	0.2	0.3	0.1	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.2	Diurnal Maximum	
DF - DAS Failure																											



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Vertical Wind Speed 20 m (VW20m) - km/h
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 4.2 km/h on Feb 28 22:00 Minimum Value: 0.1 km/h on Feb 4 00:00 Percentiles: P ₁ = 0.1 P ₁₀ = 0.3 Q ₁ = 0.6 Median = 1.1 Q ₃ = 1.8 P ₉₀ = 2.5 P ₉₉ = 3.6																					Hours in Service: 696 Hours of Data: 674 Hours of Missing Data: 22 Hours of Calibration: 0 Percent Operational Time: 96.8				
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	2.4	2.8	2.4	2.4	1.9	2.7	1.6	1.7	1.8	0.7	0.9	1.1	1.1	1.4	1.2	0.8	0.3	0.2	0.3	0.2	0.3	0.3	0.1	0.3	2.8
2-Feb	0.5	0.5	0.8	1.2	1.9	2.0	2.0	1.6	1.4	1.5	1.9	1.8	2.0	1.5	1.4	1.3	1.3	1.3	1.6	1.6	1.2	1.0	0.9	0.9	2.0
3-Feb	1.0	0.6	0.5	0.4	0.9	1.1	1.1	1.1	1.3	1.2	1.1	1.3	1.5	2.5	2.1	1.5	0.9	0.9	0.5	0.3	0.2	0.2	0.2	0.1	2.5
4-Feb	0.1	0.1	1.0	1.3	0.8	1.2	1.2	1.9	1.9	1.7	1.3	1.7	2.0	1.7	1.2	0.9	0.8	0.8	1.0	0.7	0.9	0.6	0.5	0.5	2.0
5-Feb	0.3	0.3	0.3	0.5	0.4	0.2	0.3	0.8	0.7	1.8	2.4	2.5	1.6	2.6	2.6	2.5	2.0	2.0	1.7	1.4	1.3	1.1	0.9	0.7	2.6
6-Feb	0.4	0.4	0.6	0.4	0.3	0.5	0.5	0.6	0.6	0.8	0.7	2.2	2.7	2.6	2.4	2.3	2.4	2.5	2.7	2.9	2.6	2.6	2.6	2.1	2.9
7-Feb	1.9	1.5	1.1	1.2	0.8	0.7	0.3	0.1	0.2	0.9	0.9	0.8	0.9	0.8	0.9	0.7	0.4	0.2	0.4	0.3	1.0	0.6	0.5	0.4	1.9
8-Feb	0.6	0.6	0.6	0.7	0.4	0.3	0.3	0.3	0.3	0.5	0.6	0.8	0.9	0.8	1.0	0.7	0.5	0.3	0.3	0.3	0.6	0.7	0.7	1.1	1.1
9-Feb	1.3	1.3	1.1	1.6	1.6	1.5	1.0	1.0	1.4	1.2	1.3	1.1	1.0	0.6	0.6	0.5	0.3	0.4	0.7	0.7	0.2	0.3	0.2	0.1	1.6
10-Feb	0.2	0.6	0.9	0.6	0.1	0.2	0.2	0.5	0.6	0.9	0.6	0.7	0.7	1.0	1.3	1.2	1.1	1.1	1.3	0.9	0.4	0.6	1.0	1.5	1.5
11-Feb	2.3	2.3	1.4	2.1	2.9	2.9	3.3	2.7	1.7	2.3	1.2	1.3	2.0	2.3	2.1	1.5	1.6	1.6	0.7	0.7	0.6	0.6	0.6	0.4	3.3
12-Feb	0.5	0.6	1.0	1.4	1.1	1.4	2.0	2.1	1.7	1.3	1.4	1.6	2.1	2.8	2.7	2.1	1.0	1.2	2.9	2.6	2.2	2.2	2.3	2.4	2.9
13-Feb	1.9	1.9	2.1	1.9	1.8	1.0	0.4	0.4	0.5	1.0	1.0	0.9	1.0	1.2	1.2	1.1	1.0	1.0	1.6	1.8	2.4	2.2	2.9	2.7	2.9
14-Feb	2.7	2.5	2.8	2.3	2.0	1.7	1.4	1.7	1.4	1.3	1.3	1.1	1.5	1.8	1.5	1.4	1.0	0.6	0.7	0.6	0.5	0.7	0.7	0.7	2.8
15-Feb	0.4	0.3	0.2	0.3	0.8	1.2	0.7	0.9	0.9	1.0	0.8	0.8	1.0	0.9	0.9	1.4	1.1	0.4	0.4	0.6	0.6	1.0	1.5	1.2	1.5
16-Feb	1.3	1.6	1.7	1.2	1.3	1.2	0.9	0.5	0.7	1.2	1.5	1.7	1.8	1.5	1.6	1.3	1.8	2.0	2.3	1.7	1.5	1.7	2.0	1.8	2.3
17-Feb	2.3	3.0	2.0	1.9	1.8	1.0	1.0	0.7	0.7	0.9	0.7	0.8	0.7	0.8	0.7	0.6	0.3	0.2	0.3	0.5	0.6	0.4	0.2	0.2	3.0
18-Feb	0.2	0.3	0.7	0.5	0.4	0.3	0.3	0.2	0.5	0.7	0.7	1.2	1.1	1.3	1.4	1.3	1.0	0.6	0.6	0.5	0.7	0.8	0.4	0.6	1.4
19-Feb	0.8	0.5	0.4	0.3	0.2	0.2	0.2	0.1	0.2	0.5	0.9	1.2	1.5	1.4	1.3	0.9	0.9	0.5	0.6	0.8	1.1	0.7	0.9	0.8	1.5
20-Feb	0.5	0.3	0.3	0.3	0.4	0.4	0.4	0.2	0.4	0.7	0.9	1.1	1.0	0.9	1.2	1.2	0.7	0.9	0.7	0.4	0.6	0.9	0.8	0.6	1.2
21-Feb	0.3	0.2	0.4	0.4	0.3	0.6	0.4	0.4	0.1	0.6	0.8	1.2	1.3	1.3	2.3	2.0	1.9	0.5	0.6	0.9	1.4	1.6	0.9	0.6	2.3
22-Feb	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.5	DF	DF	DF	DF	DF	0.9	0.8	0.7	0.4	0.4	0.7	0.3	0.2	0.2	0.4	0.7	0.9
23-Feb	1.0	1.0	1.4	1.7	2.4	2.5	2.4	2.1	1.4	1.4	1.5	3.2	2.6	2.3	2.8	3.1	3.1	2.4	2.2	2.4	3.2	2.7	3.1	3.2	3.2
24-Feb	2.4	3.5	3.0	2.6	2.8	1.9	1.5	2.0	2.8	2.3	1.8	2.2	2.1	1.6	1.6	1.5	1.5	1.3	1.4	1.4	1.4	1.5	1.4	1.3	3.5
25-Feb	1.4	1.5	1.5	1.9	1.7	1.8	2.0	2.2	1.7	2.0	2.4	2.6	2.5	2.4	2.8	2.6	2.5	2.4	2.4	2.4	2.7	2.4	2.4	2.0	2.8
26-Feb	2.1	2.3	2.7	2.4	2.2	2.0	2.2	1.8	1.6	1.5	DF	1.8	1.9	1.6	1.1	0.9	0.4	0.3	0.2	0.2	0.2	0.2	DF	DF	2.7
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	1.0	1.2	1.2	1.4	1.5	1.4	1.6	1.3	1.5	1.1	1.0	0.9	0.7	1.1	1.0	1.6
28-Feb	1.0	0.6	1.4	1.6	DF	DF	DF	DF	DF	2.5	3.2	3.7	3.5	4.1	3.7	4.0	3.3	3.2	3.5	3.4	3.6	4.2	3.9	3.7	4.2
29-Feb	3.3	3.1	3.0	2.5	1.9	2.3	3.1	3.6	3.0	2.6	3.4	3.1	2.1	1.5	1.0	1.0	1.0	0.9	0.7	0.6	0.5	0.5	0.5	0.8	3.6
3.3 3.5 3.0 2.6 2.9 2.9 3.3 3.6 3.0 2.6 3.4 3.7 3.5 4.1 3.7 4.0 3.3 3.2 3.5 3.4 3.6 4.2 3.9 3.7																									
Diurnal Maximum																									
DF - DAS Failure																									



Wood Buffalo Environmental Association
Summary of Hour Averages

Vertical Wind Speed 45 m (VW45m) - km/h
Lower Camp Met Tower - February 2024

Maximum Value: 1.5 km/h on Feb 16 02:00 Maximum Daily Average: 0.6 km/h on Feb 28																				Hours in Service: 696 Hours of Data: 661						
Minimum Value: -3.7 km/h on Feb 17 02:00 Minimum Daily Average: -0.2 km/h on Feb 17 Maximum Diurnal Average: 0.2 km/h at hour 9 Minimum Diurnal Average: 0.0 km/h at hour 2 Monthly Average: 0.08 km/h Percentiles: $P_1 = -0.9$ $P_{10} = -0.2$ $Q_1 = -0.1$ Median = 0.0 $Q_3 = 0.2$ $P_{90} = 0.5$ $P_{99} = 1.0$																				Hours of Missing Data: 35 Hours of Calibration: 0 Percent Operational Time: 95.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.7	0.3	0.1	0.5	0.8	0.9	0.5	1.4	1.3	-0.1	0.1	0.4	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.0	-0.2	0.0	-0.1	0.3	1.4	
2-Feb	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	0.0	-0.1	-0.3	0.3	-0.1	-0.4	-0.2	0.0	0.1	0.0	0.0	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	0.3	
3-Feb	-0.2	0.0	-0.1	0.1	0.1	0.0	0.1	-0.2	0.0	-0.1	-0.1	-0.1	-0.2	0.1	-0.3	-0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.2	0.5	
4-Feb	0.2	0.2	0.3	-0.3	0.4	-1.0	-0.1	-0.1	0.8	0.5	0.4	0.3	0.4	0.4	0.2	0.0	0.2	0.3	0.8	0.0	-0.3	0.1	0.6	0.3	0.8	
5-Feb	0.2	0.3	0.5	0.6	0.2	0.2	-0.1	0.0	-0.2	-0.1	0.1	-0.1	-0.1	0.1	-0.1	-0.1	-0.1	0.2	-0.1	-0.1	0.0	-0.2	0.0	0.0	0.6	
6-Feb	-0.2	-0.1	-0.1	0.0	0.0	-0.1	0.0	-0.2	0.0	0.1	0.1	0.8	0.7	0.6	0.6	0.8	0.6	0.6	0.4	0.5	0.5	1.0	0.6	0.5	1.0	
7-Feb	0.3	0.1	0.2	0.2	0.0	0.0	-0.1	0.0	0.0	0.2	0.0	0.5	0.2	-0.2	-0.1	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	0.5	
8-Feb	0.0	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.1	0.0	-0.1	-0.1	-0.1	0.0	-0.2	0.2	
9-Feb	-0.4	-0.4	-0.2	-0.1	0.0	0.0	0.2	0.0	0.1	-0.1	0.1	0.1	0.1	0.0	0.3	0.2	0.0	-0.1	0.0	0.0	-0.1	0.1	0.0	0.0	0.3	
10-Feb	0.1	0.0	0.1	0.3	0.1	0.2	0.1	0.4	0.2	0.1	0.1	0.1	0.1	0.4	0.6	0.3	1.0	0.6	0.1	-0.1	0.1	0.6	0.5	0.7	1.0	
11-Feb	-0.1	-0.3	0.0	-0.4	-0.8	-0.7	-0.3	-0.2	0.2	0.7	0.2	-0.3	0.1	0.1	0.1	0.2	0.4	0.8	0.0	0.0	0.2	0.4	0.5	0.9	0.9	
12-Feb	0.7	0.3	0.2	0.0	-0.2	-0.4	0.3	0.4	0.5	0.1	0.1	0.7	0.8	-0.3	-0.6	-0.3	-0.2	-0.5	-0.7	-1.0	-0.7	-0.2	-0.1	0.0	0.8	
13-Feb	-0.2	-0.1	-0.3	0.2	0.2	0.1	0.0	-0.1	0.1	-0.2	0.0	-0.3	0.1	0.0	0.0	0.1	0.2	0.3	0.7	-0.1	0.0	0.0	0.1	-0.3	0.7	
14-Feb	-0.5	-0.4	-0.1	0.1	0.0	0.0	0.2	0.0	0.2	0.1	0.2	-0.2	-0.5	0.1	0.2	0.1	0.1	0.2	0.0	0.0	0.2	0.2	0.3	0.2	0.3	
15-Feb	-0.1	0.0	0.0	0.1	0.3	0.4	0.1	0.1	0.1	0.0	0.0	0.0	-0.2	-0.1	0.1	0.2	0.1	0.2	0.1	0.5	0.5	0.1	0.5	0.3	0.5	
16-Feb	0.7	1.5	0.6	0.3	-0.3	-0.5	0.3	1.1	0.8	0.6	0.3	-0.1	0.3	0.5	0.4	-0.2	-0.2	0.3	-0.2	-0.4	0.3	0.6	1.2	-1.4	1.5	
17-Feb	-2.0	-3.7	-0.3	-1.9	-0.4	0.0	0.1	0.2	0.7	1.2	0.5	0.1	-0.1	0.0	0.4	0.1	0.0	0.3	0.0	0.0	0.0	0.2	0.0	0.1	1.2	
18-Feb	0.0	0.0	0.1	-0.2	-0.2	0.0	0.0	0.0	-0.3	0.0	-0.1	0.1	0.4	-0.1	0.6	0.2	0.1	0.0	0.1	0.1	0.2	-0.2	0.0	-0.1	0.6	
19-Feb	-0.1	-0.1	-0.2	0.0	0.0	0.0	0.1	0.0	0.1	-0.2	0.0	0.2	0.7	0.1	0.3	0.2	0.0	-0.1	-0.1	-0.1	0.0	0.0	-0.2	-0.1	0.7	
20-Feb	-0.1	-0.2	-0.2	0.0	0.0	-0.1	0.0	0.1	0.3	0.4	0.3	0.2	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.4	
21-Feb	0.2	0.3	0.1	-0.1	-0.1	-0.1	-0.2	0.0	0.1	0.0	0.1	-0.1	0.2	0.1	-0.4	-0.4	-0.2	0.1	0.1	0.3	0.1	0.3	-0.4	-0.2	0.3	
22-Feb	0.0	0.0	0.0	0.0	0.1	0.0	-0.1	-0.2	DF	DF	DF	DF	DF	-0.2	0.2	0.1	0.1	0.0	-0.1	-0.1	-0.1	0.1	0.4	0.2	0.4	
23-Feb	-0.2	-0.2	-0.2	-0.3	0.3	0.9	0.9	-0.4	0.5	0.4	0.0	-0.9	-0.1	-0.3	-0.3	-0.5	-0.6	-1.0	-0.3	0.1	-0.7	-0.7	-0.4	-0.5	0.9	
24-Feb	-0.3	0.1	-0.2	-0.4	-0.3	0.0	0.2	-0.2	-0.5	-0.1	-0.3	-0.4	-0.5	-0.5	-0.1	-0.1	0.2	0.1	0.3	0.0	0.4	0.2	-0.1	0.1	0.4	
25-Feb	-0.1	-0.1	0.2	0.3	0.0	0.1	0.1	0.1	0.2	0.1	-0.1	-0.1	-0.2	0.0	0.0	0.3	0.4	0.1	0.0	0.1	0.0	DF	UO	0.4	0.4	
26-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	-0.4	0.2	0.0	-0.2	-0.3	0.0	0.3	0.2	0.1	0.1	0.1	DF	DF	0.3	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	UO	0.0	0.1	0.3	-0.1	-0.3	0.6	0.1	0.3	0.6	0.5	0.7	0.4	0.5	0.6	0.7
28-Feb	0.4	0.9	1.0	0.3	DF	DF	DF	DF	DF	DF	0.6	0.7	0.7	0.8	0.6	0.6	0.7	0.4	0.5	0.8	0.8	0.3	0.6	0.6	0.8	1.0
29-Feb	0.7	0.4	0.3	0.3	0.2	0.3	0.3	0.5	0.5	0.2	0.6	0.6	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	-0.1	0.0	-0.5	0.7	
0.0																								Diurnal Average		
0.7																								Diurnal Maximum		
DF - DAS Failure UO - Unstable Operation																										



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Vertical Wind Speed 45 m (VW45m) - km/h
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																				Hours in Service: 696						
Maximum Value: 3.6 km/h on Feb 23 12:00																				Hours of Data: 661						
Minimum Value: 0.1 km/h on Feb 22 05:00																				Hours of Missing Data: 35						
Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.6 Median = 1.0 Q ₃ = 1.6 P ₉₀ = 2.3 P ₉₉ = 3.1																				Hours of Calibration: 0						
Percent Operational Time: 95.0																										
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.0	2.2	1.8	1.7	1.4	1.5	1.1	1.8	1.8	0.8	0.9	1.0	0.9	1.0	0.8	0.6	0.4	0.2	0.3	0.3	0.4	0.3	0.2	0.5	2.2	
2-Feb	0.7	0.5	0.8	1.1	1.7	1.5	1.5	1.6	1.3	1.5	1.6	1.5	1.5	1.4	1.2	1.2	1.1	1.0	1.4	1.4	1.1	0.9	0.8	0.8	1.7	
3-Feb	1.0	0.5	0.5	0.5	0.7	1.1	1.1	1.1	1.3	1.0	0.9	1.0	1.2	2.3	1.9	1.2	0.7	0.9	0.8	0.4	0.3	0.3	0.4	0.2	2.3	
4-Feb	0.3	0.3	1.1	1.0	1.0	1.2	1.2	1.6	1.8	1.9	1.4	1.4	1.3	1.5	1.4	1.1	0.8	0.9	1.0	0.8	0.9	0.9	0.6	0.5	1.9	
5-Feb	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.6	0.9	1.8	2.1	2.0	1.4	2.2	2.0	2.0	1.7	1.4	1.4	1.4	1.3	1.1	0.6	0.6	2.2	
6-Feb	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.7	1.0	0.9	2.2	2.1	1.8	1.9	1.5	1.6	1.5	2.2	2.3	2.1	2.1	2.0	1.8	2.3	
7-Feb	1.6	1.3	1.1	1.3	0.8	0.9	0.2	0.2	0.4	1.0	1.0	0.9	1.0	0.9	0.9	0.7	0.3	0.2	0.2	0.3	0.8	0.5	0.4	0.4	1.6	
8-Feb	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.4	0.7	0.9	0.9	0.8	1.0	0.6	0.6	0.4	0.3	0.2	0.3	0.6	0.6	0.9	1.0	
9-Feb	1.3	1.1	1.2	1.2	1.5	1.5	1.1	0.9	1.0	0.8	1.1	0.9	1.1	0.6	0.6	0.5	0.3	0.4	0.6	0.7	0.2	0.4	0.2	0.2	1.5	
10-Feb	0.2	0.2	0.3	0.3	0.2	0.4	0.4	0.6	0.5	0.6	0.5	0.6	0.7	0.8	1.0	1.2	1.5	1.2	1.4	1.1	0.5	0.8	1.1	1.7	1.7	
11-Feb	2.1	1.2	0.8	1.4	2.8	2.7	2.8	2.7	2.0	2.5	1.0	1.2	2.0	2.3	2.2	1.0	1.3	1.2	0.9	0.8	0.9	0.9	1.0	0.4	2.8	
12-Feb	0.6	0.4	0.6	0.8	0.8	1.0	1.4	1.5	1.4	1.0	0.9	1.7	2.1	2.8	2.9	2.1	1.3	1.2	2.8	2.7	2.2	2.0	1.9	2.1	2.9	
13-Feb	1.7	1.8	1.9	1.7	1.6	0.9	0.5	0.5	0.5	1.1	0.9	0.8	1.0	1.2	1.1	0.7	1.1	1.3	1.5	1.6	2.0	2.0	2.4	2.5	2.5	
14-Feb	2.1	1.9	2.2	2.0	1.7	1.3	1.2	1.4	1.3	1.6	1.3	1.1	0.9	1.4	1.6	1.4	1.3	0.9	0.6	1.0	0.9	0.6	0.8	0.9	2.2	
15-Feb	0.5	0.4	0.3	0.3	0.7	1.4	0.9	1.2	1.1	1.1	0.7	0.7	0.8	1.1	1.0	0.7	0.6	0.5	0.7	1.0	1.1	1.3	1.3	1.5	1.5	
16-Feb	1.8	1.9	1.9	1.8	1.7	1.6	1.4	0.6	0.7	0.7	0.7	0.9	1.1	1.5	1.8	1.1	1.6	2.1	2.6	1.8	1.1	0.9	1.6	2.3	2.6	
17-Feb	2.5	3.0	2.4	2.0	2.3	1.3	1.3	1.0	0.9	0.6	0.4	0.4	0.5	0.7	0.8	0.6	0.4	0.4	0.3	0.3	0.7	0.6	0.3	0.3	3.0	
18-Feb	0.2	0.4	0.8	0.7	0.6	0.4	0.4	0.3	0.5	0.5	0.6	1.0	1.2	1.3	1.5	1.4	1.2	0.6	0.6	0.5	1.0	1.1	0.5	0.6	1.5	
19-Feb	0.8	0.5	0.4	0.4	0.3	0.2	0.2	0.1	0.2	0.4	0.8	1.2	1.6	1.4	1.4	0.9	0.7	0.6	0.6	1.1	1.2	0.8	0.8	0.8	1.6	
20-Feb	0.4	0.2	0.2	0.3	0.3	0.3	0.2	0.3	0.5	0.7	0.9	1.0	1.0	1.0	0.9	1.0	0.6	0.7	0.6	0.4	0.6	0.9	0.6	0.4	1.0	
21-Feb	0.3	0.4	0.4	0.3	0.5	0.5	0.3	0.5	0.2	0.6	0.7	0.6	0.7	1.2	1.9	1.6	1.8	0.5	0.5	0.9	0.9	1.7	0.7	0.8	1.9	
22-Feb	0.5	0.3	0.1	0.1	0.1	0.1	0.3	0.5	DF	DF	DF	DF	DF	0.7	0.6	0.4	0.3	0.4	0.6	0.3	0.2	0.3	0.5	0.8	0.8	
23-Feb	1.1	1.1	1.1	1.2	1.4	1.3	1.7	1.3	1.3	0.9	1.8	3.6	3.0	2.5	2.8	2.7	2.6	2.3	2.0	2.2	3.3	2.9	3.1	3.1	3.6	
24-Feb	2.2	3.1	2.6	2.1	2.3	1.7	1.4	2.1	2.6	2.1	1.5	1.6	1.5	1.6	1.3	1.3	1.2	1.5	1.5	1.6	1.6	1.7	1.2	1.2	3.1	
25-Feb	1.3	1.3	1.4	1.7	1.4	1.4	1.5	1.9	1.7	2.0	2.0	2.2	2.3	2.0	2.4	2.2	2.3	2.3	2.4	2.6	2.5	2.2	DF	UO	2.6	
26-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	2.0	2.3	1.7	1.2	0.9	0.5	0.4	0.2	0.2	0.2	0.2	DF	DF	2.3	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	UO	1.0	1.3	1.5	1.3	1.1	1.7	1.2	1.1	1.3	1.3	0.9	1.0	1.1	0.8	1.7
28-Feb	1.2	1.0	1.1	1.2	DF	DF	DF	DF	DF	DF	1.9	2.4	2.5	2.7	2.9	2.6	3.0	2.8	2.7	2.9	3.1	2.8	3.1	2.8	3.1	3.1
29-Feb	2.8	2.6	2.7	2.3	1.9	2.1	2.9	3.1	2.8	2.4	2.7	2.4	1.8	1.5	1.1	1.0	1.2	1.0	0.7	0.7	0.7	0.7	0.6	1.0	3.1	
2.8 3.1 2.7 2.3 2.8 2.7 2.9 3.1 2.8 2.5 2.7 3.6 3.0 2.9 2.9 3.0 2.8 2.7 2.9 3.1 3.3 3.1 3.1 3.1																										
Diurnal Maximum																										
DF - DAS Failure UO - Unstable Operation																										



Maximum Value: 3.5 km/h on Feb 1 09:00 Maximum Daily Average: 0.8 km/h on Feb 28																								Hours in Service:	696		
Minimum Value: -4.4 km/h on Feb 17 04:00 Minimum Daily Average: -0.4 km/h on Feb 17																								Hours of Data:	624		
Maximum Diurnal Average: 0.3 km/h at hour 9 Minimum Diurnal Average: 0.0 km/h at hour 16																								Hours of Missing Data:	72		
Monthly Average: 0.17 km/h Percentiles: P ₁ = -1.2 P ₁₀ = -0.4 Q ₁ = -0.1 Median = 0.1 Q ₃ = 0.4 P ₉₀ = 0.8 P ₉₉ = 1.6																								Hours of Calibration:	0		
																								Percent Operational Time:	89.7		
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.7	-0.2	-0.4	0.1	1.6	1.1	0.7	2.4	3.5	0.6	0.3	0.0	0.0	0.1	0.0	0.3	0.3	0.2	0.1	0.1	0.2	0.2	0.3	-0.1	0.5	3.5	
2-Feb	-0.1	0.0	-0.1	0.1	0.1	-0.1	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	0.1	
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	0.2	0.1	-0.1	1.0	-0.6	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	1.0	
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	1.1	0.3	-0.5	0.4	0.2	1.4	-0.1	-0.4	0.3	0.4	0.0	--	1.4	
5-Feb	0.2	0.4	0.2	0.1	0.1	0.1	0.1	0.0	0.2	0.4	0.2	0.0	0.1	0.4	0.1	0.1	0.4	0.5	0.1	0.1	0.1	-0.1	0.0	0.2	0.2	0.5	
6-Feb	-0.1	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.3	0.0	0.8	1.5	0.6	0.4	0.9	1.2	0.4	0.3	0.5	0.5	0.9	1.6	1.2	1.3	0.6	1.6	
7-Feb	1.0	0.3	0.4	0.4	0.0	-0.1	0.1	0.2	-0.2	0.3	0.0	1.1	0.5	-0.2	-0.2	0.1	0.1	0.1	0.0	0.0	0.2	0.3	0.0	0.0	0.2	1.1	
8-Feb	0.2	0.1	0.0	-0.1	0.0	0.1	0.1	0.0	0.0	-0.1	0.0	0.0	0.2	0.2	0.2	0.0	-0.1	0.2	-0.1	0.1	0.0	0.1	0.1	-0.2	0.0	0.2	
9-Feb	-0.5	-0.4	-0.1	0.1	0.2	0.3	0.9	0.3	0.4	0.2	0.3	0.3	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.0	0.3	0.0	0.0	0.1	0.9	
10-Feb	0.1	0.1	0.3	0.3	0.3	1.0	0.5	0.8	0.2	0.2	0.0	0.0	0.0	0.1	0.9	0.4	1.7	0.8	0.3	-0.4	-0.1	-0.2	-0.3	0.5	0.3	1.7	
11-Feb	-0.8	-1.1	-0.6	-0.6	-0.9	-0.9	0.1	1.0	1.5	1.7	0.5	0.1	0.1	-0.1	-0.1	0.2	0.5	0.8	0.2	0.4	0.1	-0.3	-0.4	0.1	0.1	1.7	
12-Feb	0.1	-0.2	0.0	0.6	0.3	0.7	0.9	0.9	0.9	0.9	-0.1	0.5	1.0	-0.1	-0.8	-0.4	-0.3	-0.6	-1.1	-1.0	-0.6	0.0	0.3	0.5	0.1	1.0	
13-Feb	0.0	0.3	0.2	0.6	0.5	0.3	0.0	-0.2	0.0	-0.3	-0.1	-0.3	0.0	0.0	0.2	-0.2	0.0	0.4	1.2	0.3	0.3	0.6	0.6	0.2	0.2	1.2	
14-Feb	-0.2	0.0	0.3	0.0	0.2	0.3	0.6	0.3	0.2	0.6	0.8	-0.1	-0.6	0.3	0.8	0.3	0.6	0.2	0.1	0.3	0.6	0.6	0.6	0.7	0.3	0.8	
15-Feb	0.0	0.2	0.1	0.1	0.6	0.7	0.2	-0.7	-0.2	-0.6	-0.1	-0.1	-0.2	0.3	0.2	-0.1	0.2	0.3	-0.1	-0.2	0.0	-0.5	0.1	0.5	0.0	0.7	
16-Feb	1.2	2.9	1.5	0.8	-1.1	-1.5	-0.5	-0.1	-0.3	-0.3	-0.4	-0.5	0.0	0.4	0.1	-0.7	-0.7	-0.3	-1.0	-0.9	0.3	0.4	0.9	-1.6	-0.1	2.9	
17-Feb	-3.0	-3.4	-0.1	-4.4	-1.2	0.2	0.2	-0.4	-0.2	0.0	0.2	0.2	0.0	0.0	0.2	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	-0.4	0.4	
18-Feb	0.3	0.2	0.3	0.1	0.1	0.1	0.0	0.1	0.2	0.1	0.1	-0.1	-0.1	0.1	0.9	0.4	0.4	0.1	0.5	0.3	0.2	0.2	0.1	-0.1	0.2	0.9	
19-Feb	0.0	0.0	-0.3	0.0	0.0	-0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.8	0.4	0.6	-0.1	-0.1	0.1	0.0	0.5	0.3	0.2	0.0	0.0	0.1	0.8	
20-Feb	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	-0.1	0.3	0.0	0.0	0.1	-0.2	0.1	-0.1	-0.1	0.0	0.1	0.0	-0.3	-0.5	-0.4	-0.1	0.2	-0.1	0.3	
21-Feb	0.0	0.0	-0.1	0.1	-0.1	-0.1	-0.2	-0.1	0.0	-0.1	0.3	0.3	-0.1	-0.6	-0.9	-0.8	-0.5	-0.1	-0.4	-0.3	-0.2	1.1	-0.3	-0.2	-0.1	1.1	
22-Feb	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.2	DF	DF	DF	DF	DF	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.2	0.6	0.1	0.1	0.6	
23-Feb	-0.1	-0.2	0.0	0.7	1.6	1.3	0.8	-0.3	-0.7	-0.4	-0.5	-1.2	-0.9	-0.6	-0.6	-1.0	-0.6	-1.0	-0.8	-0.7	-0.8	-0.9	-0.7	-0.6	-0.3	1.6	
24-Feb	-0.2	1.0	0.4	0.1	0.4	0.5	0.7	0.3	-0.1	0.0	-0.2	-0.4	-0.6	-0.8	0.3	-0.1	0.7	0.5	0.5	0.4	1.2	0.6	0.0	0.4	0.2	1.2	
25-Feb	0.3	0.2	0.6	0.9	0.3	0.7	0.5	0.8	0.3	0.4	0.5	0.5	0.5	0.2	1.2	0.3	0.9	0.6	0.5	0.5	0.7	0.6	0.2	0.4	0.5	1.2	
26-Feb	0.5	0.3	0.2	0.4	0.2	0.6	0.8	0.5	0.1	-0.1	DF	0.1	0.0	0.1	0.1	-0.5	0.1	0.2	0.3	0.3	0.3	0.2	DF	DF	0.2	0.8	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	-0.3	-0.1	-0.3	0.4	-0.2	-0.2	0.2	-0.1	0.4	1.2	0.9	0.9	1.1	0.7	1.1	--	1.2
28-Feb	1.3	1.5	1.2	1.5	DF	DF	DF	DF	DF	DF	0.8	0.9	0.4	0.4	0.4	0.2	0.9	0.5	0.7	1.3	1.8	0.0	0.0	0.7	1.1	0.8	1.8
29-Feb	1.2	1.0	0.6	0.8	0.3	0.8	0.7	1.4	0.8	0.8	0.3	0.6	0.9	0.5	0.7	0.0	0.0	-0.3	0.2	0.0	-0.1	0.0	0.1	-0.4	0.4	1.4	
																								Diurnal Average			
																								Diurnal Maximum			
0.1 0.1 0.2 0.1 0.2 0.2 0.3 0.3 0.3 0.2 0.2 0.1 0.1 0.1 0.2 0.0 0.2 0.2 0.2 0.1 0.1 0.2 0.2 0.2 1.3 2.9 1.5 1.5 1.6 1.3 0.9 2.4 3.5 1.7 0.9 1.5 1.0 1.1 1.2 1.2 1.7 0.8 1.4 1.8 1.2 1.6 1.2 1.3																											
DF - DAS Failure UO - Unstable Operation																											



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Vertical Wind Speed 100 m (VW100m) - km/h
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 3.7 km/h on Feb 28 20:00 Minimum Value: 0.1 km/h on Feb 8 08:00 Percentiles: P ₁ = 0.1 P ₁₀ = 0.3 Q ₁ = 0.6 Median = 1.1 Q ₃ = 1.7 P ₉₀ = 2.3 P ₉₉ = 3.2																								Hours in Service: 696 Hours of Data: 624 Hours of Missing Data: 72 Hours of Calibration: 0 Percent Operational Time: 89.7	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	1.8	1.7	1.8	1.8	1.7	1.8	1.5	1.7	1.5	1.5	1.4	1.1	1.0	1.3	1.1	0.7	0.5	0.2	0.3	0.5	0.5	0.3	0.3	0.4	1.8
2-Feb	0.5	0.7	0.5	1.0	1.4	1.6	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	1.6
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	0.8	1.1	1.1	2.4	1.9	UO	UO	UO	UO	UO	UO	UO	UO	UO	2.4
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	1.6	1.7	1.4	1.3	1.2	1.3	1.0	1.0	1.0	0.9	0.6	1.7
5-Feb	0.4	0.6	0.5	0.4	0.3	0.3	0.2	0.6	1.2	1.9	2.3	2.2	1.4	2.3	2.0	1.7	1.4	1.3	1.2	1.2	1.2	0.9	0.4	0.4	2.3
6-Feb	0.4	0.6	0.6	0.6	0.6	0.2	0.4	0.4	0.8	1.5	1.4	2.0	1.7	1.7	1.6	1.6	1.5	1.7	2.0	2.0	1.7	1.9	1.6	1.5	2.0
7-Feb	1.4	1.3	1.3	1.5	0.9	1.0	0.3	0.3	0.6	1.2	1.2	0.8	1.1	0.8	0.8	0.7	0.2	0.3	0.2	0.1	0.4	0.4	0.2	0.2	1.5
8-Feb	0.2	0.2	0.1	0.2	0.3	0.2	0.3	0.1	0.1	0.3	0.5	0.8	1.0	0.7	0.9	0.9	0.7	0.5	0.5	0.2	0.2	0.2	0.2	0.4	1.0
9-Feb	0.8	1.0	1.1	1.1	1.3	1.4	1.7	1.0	1.0	0.7	1.2	1.0	1.0	1.0	0.6	0.4	0.2	0.2	0.5	0.7	0.4	0.2	0.3	0.2	1.7
10-Feb	0.2	0.1	1.1	1.5	0.4	0.7	0.6	0.8	0.8	0.6	0.6	0.7	0.7	1.1	1.2	1.5	1.8	1.4	1.8	1.2	0.8	1.0	1.1	1.7	1.8
11-Feb	1.2	0.6	0.8	0.6	1.7	1.3	1.6	2.4	2.0	1.2	1.2	1.1	1.5	1.7	1.4	0.8	0.9	0.9	0.9	0.9	1.4	1.5	1.6	0.6	2.4
12-Feb	0.6	0.5	0.7	0.7	0.8	0.8	1.0	1.0	1.1	1.1	0.6	1.5	2.0	2.6	2.4	1.9	1.3	0.9	2.7	2.3	2.0	1.6	1.6	2.0	2.7
13-Feb	1.8	1.8	1.9	2.0	2.1	0.8	0.4	0.4	0.5	1.2	0.9	0.9	0.9	1.3	1.2	0.9	1.4	1.4	1.7	1.6	2.2	2.1	2.7	2.2	2.7
14-Feb	1.9	1.8	2.4	2.2	1.8	1.4	1.3	1.7	1.8	2.0	1.5	1.1	0.9	1.8	2.1	1.6	1.8	1.2	0.9	1.3	1.0	0.6	0.7	1.1	2.4
15-Feb	0.6	0.6	0.4	0.4	0.5	1.1	0.8	1.7	0.7	1.6	0.6	0.5	0.5	1.1	0.6	0.6	0.6	0.7	1.1	1.4	1.3	1.4	1.0	1.3	1.7
16-Feb	1.2	1.5	1.8	2.5	2.1	1.9	1.7	1.0	0.9	0.8	0.9	1.1	1.3	1.8	1.5	1.3	1.3	2.0	2.9	1.9	1.3	0.9	1.1	2.4	2.9
17-Feb	2.3	2.6	2.1	2.0	2.8	2.1	1.8	1.4	1.1	0.6	0.5	0.4	0.3	0.6	0.9	0.9	0.4	0.4	0.3	0.4	1.0	0.9	0.5	0.3	2.8
18-Feb	0.5	0.4	1.1	1.0	0.9	0.4	0.5	0.5	0.7	0.6	0.5	0.5	0.9	1.3	1.9	1.6	1.1	0.6	0.7	0.7	1.2	1.4	0.7	0.5	1.9
19-Feb	0.4	0.7	0.5	0.5	0.3	0.4	0.4	0.2	0.2	0.1	0.4	0.9	1.8	1.6	1.4	0.7	0.4	0.7	1.0	1.4	1.6	0.9	0.4	0.4	1.8
20-Feb	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.6	0.7	0.8	1.0	0.8	0.9	0.8	0.8	0.6	0.9	1.1	0.7	0.9	0.8	0.5	0.6	1.1
21-Feb	0.4	0.5	0.4	0.5	0.5	0.3	0.3	0.3	0.2	0.3	0.5	0.6	0.9	1.2	1.0	0.9	1.0	0.5	0.5	0.4	0.5	1.9	0.6	0.7	1.9
22-Feb	0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.4	DF	DF	DF	DF	DF	0.6	0.4	0.3	0.3	0.2	0.3	0.2	0.3	0.4	0.8	1.0	1.0
23-Feb	1.3	1.1	1.1	1.3	1.1	1.4	2.1	1.5	1.2	1.0	1.9	3.1	2.5	2.1	2.4	1.7	1.7	1.9	1.7	1.5	3.1	3.1	3.4	3.0	3.4
24-Feb	2.0	3.4	2.9	2.1	2.4	1.8	1.4	2.1	2.4	2.2	1.7	1.3	1.3	1.5	1.9	1.2	1.4	1.2	1.5	1.7	1.8	1.5	1.9	1.5	3.4
25-Feb	1.7	1.4	1.5	1.7	1.5	1.5	1.6	2.2	1.8	2.0	2.1	2.3	2.7	2.5	3.1	2.5	2.8	2.7	2.7	3.1	2.8	2.4	2.5	2.2	3.1
26-Feb	1.9	2.2	2.6	2.5	2.0	1.8	2.1	1.8	1.5	1.6	DF	2.4	2.5	2.1	1.5	0.8	0.6	0.5	0.3	0.4	0.5	0.5	DF	DF	2.6
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	1.0	1.0	1.4	1.3	1.2	1.2	1.8	1.5	1.5	1.8	1.9	1.5	1.8	1.7	1.3	1.9
28-Feb	1.4	1.7	1.6	1.3	DF	DF	DF	DF	DF	2.0	2.4	2.4	3.1	3.1	2.9	3.1	2.9	2.7	3.3	3.7	2.8	3.2	2.9	3.1	3.7
29-Feb	2.9	3.1	2.9	2.6	2.2	2.4	3.2	3.4	3.2	2.7	2.8	2.5	2.2	1.7	1.5	1.1	1.5	1.1	0.9	0.9	0.9	0.8	0.8	1.2	3.4
2.9 3.4 2.9 2.6 2.8 2.4 3.2 3.4 3.2 2.7 2.8 3.1 3.1 3.1 3.1 3.1 2.9 2.7 3.3 3.7 3.1 3.2 3.4 3.1																									
Diurnal Maximum																									
DF - DAS Failure UO - Unstable Operation																									



Maximum Value: 6.0 km/h on Feb 16 02:00																				Maximum Daily Average: 1.4 km/h on Feb 11					Hours in Service:	696	
Minimum Value: -1.7 km/h on Feb 17 04:00																				Minimum Daily Average: 0.1 km/h on Feb 20					Hours of Data:	604	
Maximum Diurnal Average: 0.6 km/h at hour 24																				Minimum Diurnal Average: 0.3 km/h at hour 14					Hours of Missing Data:	92	
Monthly Average: 0.45 km/h																				Percentiles: P ₁ = -0.9 P ₁₀ = -0.1 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.6 P ₉₀ = 1.3 P ₉₉ = 2.8					Hours of Calibration:	0	
																									Percent Operational Time:	86.8	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.6	-0.6	-1.1	-0.4	1.0	0.5	0.6	2.4	4.7	1.3	0.6	0.2	0.0	-0.2	-0.2	0.3	0.3	0.1	0.2	-0.1	0.1	0.1	0.2	0.4	0.5	4.7	
2-Feb	0.5	0.6	0.6	0.3	0.2	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	0.6	
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	--	
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	0.6	
5-Feb	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.3	0.4	0.1	-0.3	-0.1	0.0	-0.1	0.2	0.3	0.6	0.1	0.2	0.3	0.1	0.3	0.8	0.2	0.8	
6-Feb	-0.1	0.0	0.2	0.0	0.1	0.1	0.1	0.4	0.4	-0.1	0.8	1.6	0.4	-0.1	1.1	1.4	0.1	0.0	0.0	0.4	1.3	1.8	1.7	2.0	0.6	2.0	
7-Feb	1.6	0.7	0.5	0.6	-0.2	-0.2	0.2	0.2	0.2	0.5	0.3	1.0	0.5	-0.1	0.1	0.2	0.0	0.2	0.0	0.2	0.2	0.5	0.2	0.2	0.3	1.6	
8-Feb	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.2	-0.1	0.2	0.2	0.1	-0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.1	0.3	
9-Feb	0.1	0.1	0.5	1.1	1.2	1.0	1.7	0.5	0.8	0.4	0.0	0.3	-0.1	0.2	0.0	0.1	0.0	0.1	0.4	0.1	0.0	0.2	0.1	0.0	0.4	1.7	
10-Feb	0.1	0.1	0.1	0.1	UO	UO	UO	UO	UO	UO	1.3	1.0	2.1	0.8	1.8	1.0	2.3	1.8	0.7	-0.2	0.1	0.2	0.4	2.2	0.9	2.3	
11-Feb	2.0	0.8	1.1	0.9	1.1	0.7	1.5	2.7	2.8	2.8	1.7	1.1	1.3	1.3	1.3	1.7	1.9	1.7	1.8	2.4	1.7	0.2	-0.4	0.0	1.4	2.8	
12-Feb	0.2	0.0	-0.1	-0.4	-0.2	0.1	0.2	0.4	0.5	0.7	0.1	1.6	2.9	1.1	-0.1	0.1	0.3	0.3	0.0	0.1	0.1	0.8	0.6	0.6	0.4	2.9	
13-Feb	0.4	0.4	0.6	0.7	0.4	0.4	0.1	0.3	0.2	0.0	0.1	-0.2	-0.1	0.0	0.4	0.2	1.0	1.6	2.3	0.3	0.3	0.7	1.0	0.7	0.5	2.3	
14-Feb	0.2	0.1	0.2	-0.2	0.2	0.1	0.6	0.3	0.4	0.6	1.1	0.0	-0.7	0.2	0.6	0.1	0.4	-0.1	0.2	0.3	0.3	0.5	0.2	0.7	0.3	1.1	
15-Feb	0.2	0.1	0.1	0.1	0.8	0.4	0.1	0.0	0.1	-0.4	-0.1	0.0	0.0	0.5	0.3	0.0	0.3	-0.2	0.5	0.6	1.5	0.6	2.1	2.5	0.4	2.5	
16-Feb	3.6	6.0	3.8	3.8	0.2	-0.4	0.2	0.4	0.2	0.2	0.1	0.7	0.9	1.2	1.0	0.2	0.7	1.1	0.6	0.8	1.6	1.3	1.1	0.0	1.2	6.0	
17-Feb	-0.9	-1.0	0.3	-1.7	0.3	1.2	1.5	0.3	0.4	0.5	0.1	0.1	0.1	0.2	0.0	0.5	0.2	0.2	0.2	0.2	0.1	0.1	-0.1	0.1	0.1	1.5	
18-Feb	0.1	0.2	0.3	-0.2	0.2	0.0	0.1	0.1	-0.1	0.2	0.1	0.0	-0.1	-0.1	1.4	0.6	1.0	0.5	0.8	0.6	-0.3	0.2	0.1	0.1	0.2	1.4	
19-Feb	0.1	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.8	0.3	0.7	0.1	0.1	0.5	0.2	0.7	0.5	0.4	0.2	0.3	0.3	0.8	
20-Feb	0.3	0.4	0.2	0.2	0.1	0.1	0.1	0.0	0.3	-0.2	-0.2	0.4	-0.1	0.3	0.1	0.3	0.2	0.4	0.3	-0.5	-0.9	-0.4	-0.1	0.1	0.1	0.4	
21-Feb	0.2	0.2	0.3	0.2	0.3	0.2	0.1	0.2	0.1	0.1	-0.1	-0.1	-0.2	0.4	0.9	0.8	1.2	1.1	1.0	1.8	2.2	2.5	0.3	0.3	0.6	2.5	
22-Feb	0.6	0.5	0.0	0.1	0.1	0.1	0.2	0.3	DF	DF	DF	DF	DF	0.4	-0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.2	0.6	0.4	0.2	0.6	
23-Feb	0.4	-0.2	0.1	0.9	1.5	0.3	-0.3	-1.5	-0.3	0.2	0.7	0.6	0.9	0.9	1.2	1.2	1.1	-0.1	0.5	1.2	1.6	0.7	0.7	1.3	0.6	1.6	
24-Feb	1.1	1.5	0.3	0.3	0.4	0.5	0.6	1.0	0.3	0.0	-0.3	-0.3	-0.6	-0.9	0.3	0.0	0.8	0.5	0.3	0.2	1.2	0.5	-0.2	0.4	0.3	1.5	
25-Feb	0.2	0.2	0.5	0.9	0.3	0.6	0.6	0.8	0.3	0.1	0.7	1.1	0.8	0.0	1.7	0.3	1.0	0.6	0.8	0.5	0.5	0.4	0.3	0.5	0.6	1.7	
26-Feb	0.4	0.4	-0.1	0.1	0.3	0.9	1.2	0.8	0.0	-0.3	DF	0.4	0.6	0.2	0.3	-0.7	0.0	0.1	0.2	0.1	0.1	0.2	DF	DF	0.2	1.2	
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	-0.2	0.2	-0.2	0.2	-0.2	0.0	-0.4	-0.3	0.3	1.6	1.3	1.0	2.2	1.3	1.4	--	2.2
28-Feb	1.7	1.1	1.4	1.9	DF	DF	DF	DF	DF	DF	0.4	0.8	-0.3	-0.3	-0.1	-0.5	0.2	0.0	0.4	1.3	2.1	-0.4	-0.6	0.5	0.8	0.5	2.1
29-Feb	1.0	0.6	0.5	0.3	-0.1	0.1	0.1	1.0	0.2	0.3	-0.3	0.0	0.7	0.6	1.3	-0.2	0.2	0.0	0.7	0.1	0.2	0.7	0.8	-0.4	0.4	1.3	
																								Diurnal Average			
																								Diurnal Maximum			
0.6 0.5 0.4 0.4 0.4 0.3 0.4 0.5 0.5 0.3 0.3 0.4 0.4 0.3 0.5 0.3 0.5 0.5 0.6 0.5 0.5 0.5 0.5 0.6 3.6 6.0 3.8 3.8 1.5 1.2 1.7 2.7 4.7 2.8 1.7 1.6 2.9 1.3 1.8 1.7 2.3 1.8 2.3 2.4 2.2 2.5 2.1 2.5																											
DF - DAS Failure UO - Unstable Operation																											



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Vertical Wind Speed 163 m (VW163m) - km/h
Lower Camp Met Tower - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 3.8 km/h on Feb 28 20:00 Minimum Value: 0.1 km/h on Feb 8 03:00 Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.7 Median = 1.1 Q ₃ = 1.8 P ₉₀ = 2.3 P ₉₉ = 3.2																								Hours in Service: 696 Hours of Data: 604 Hours of Missing Data: 92 Hours of Calibration: 0 Percent Operational Time: 86.8	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	2.0	2.1	1.9	1.9	2.1	2.0	2.1	1.1	1.0	2.2	1.8	1.2	0.8	1.3	1.2	0.9	0.9	0.4	0.6	0.4	0.4	0.3	0.3	0.3	2.2
2-Feb	0.9	1.1	0.8	0.9	1.5	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	1.5
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	1.1
5-Feb	0.5	0.4	0.3	0.4	0.2	0.4	0.3	0.9	1.6	2.3	2.4	2.2	1.5	2.5	2.1	1.7	1.5	1.0	1.1	1.3	1.2	0.7	0.5	0.6	2.5
6-Feb	0.7	0.6	0.6	0.6	0.4	0.2	0.4	0.8	1.1	1.6	1.3	1.9	1.5	1.7	1.5	1.8	1.7	1.9	1.6	2.1	1.9	2.1	1.5	1.7	2.1
7-Feb	1.5	1.1	1.5	1.4	0.9	1.0	0.5	0.5	0.8	1.5	1.1	1.0	1.0	0.8	0.7	0.5	0.2	0.4	0.3	0.2	0.3	0.5	0.3	0.2	1.5
8-Feb	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.3	0.4	0.7	1.0	0.8	0.8	0.8	0.8	0.6	0.7	0.4	0.1	0.2	0.2	0.3	1.0
9-Feb	0.7	0.8	1.0	1.4	1.5	1.2	1.7	1.1	0.9	0.7	1.1	1.0	0.7	0.9	0.5	0.4	0.3	0.3	0.5	0.8	0.6	0.2	0.3	0.2	1.7
10-Feb	0.2	0.2	0.2	0.3	UO	UO	UO	UO	UO	UO	0.7	1.1	1.1	1.5	1.9	2.0	1.9	1.3	2.5	1.3	1.3	1.4	1.3	1.5	2.5
11-Feb	1.1	0.7	0.8	1.0	1.2	1.0	1.1	2.1	2.1	1.9	1.7	1.3	1.6	1.6	1.2	1.1	0.9	1.1	0.7	0.9	1.0	1.0	2.0	0.9	2.1
12-Feb	0.7	0.7	0.9	0.9	1.3	0.8	1.0	1.2	1.1	1.3	1.0	1.4	1.8	2.7	2.2	1.9	1.3	0.6	2.0	2.1	1.9	1.6	1.6	1.9	2.7
13-Feb	1.9	1.9	2.0	2.2	2.3	1.2	0.6	0.3	0.6	1.3	0.8	0.9	1.0	1.2	1.1	1.0	1.3	1.3	2.1	1.9	2.5	2.2	3.1	2.3	3.1
14-Feb	1.9	1.7	2.3	2.4	1.9	1.5	1.5	2.1	2.1	2.2	1.6	1.2	1.0	1.7	2.0	1.5	1.8	1.2	1.0	1.3	0.6	1.0	1.0	1.0	2.4
15-Feb	0.7	0.4	0.3	0.5	0.4	0.5	0.7	1.1	0.8	1.3	1.0	0.5	0.5	1.0	0.7	0.9	1.0	0.7	0.9	0.7	1.0	1.3	0.9	0.9	1.3
16-Feb	1.2	0.7	1.0	1.7	2.1	1.2	1.1	1.1	1.3	1.5	1.2	1.1	1.2	1.9	1.7	1.5	1.4	2.1	2.9	2.0	1.8	1.3	1.1	1.2	2.9
17-Feb	1.3	1.3	1.0	1.1	1.8	2.3	1.5	1.1	0.8	0.6	0.6	0.4	0.4	0.4	0.6	1.0	0.4	0.3	0.4	0.3	0.8	0.8	0.7	0.5	2.3
18-Feb	0.6	0.6	0.8	1.4	1.3	0.8	0.8	0.6	0.9	0.8	0.5	0.3	0.6	1.5	2.1	1.4	1.0	0.6	0.9	1.1	1.1	1.5	0.8	0.4	2.1
19-Feb	0.5	0.8	0.7	0.5	0.4	0.3	0.6	0.3	0.2	0.1	0.3	1.2	1.7	1.5	1.6	0.5	0.4	0.7	1.1	1.7	1.7	1.1	0.4	0.2	1.7
20-Feb	0.2	0.3	0.2	0.4	0.2	0.2	0.3	0.4	0.7	0.8	1.0	1.1	0.7	0.9	0.8	1.0	0.8	1.2	1.0	0.7	0.8	0.6	0.7	0.4	1.2
21-Feb	0.5	0.7	0.5	0.6	0.7	0.4	0.2	0.3	0.3	0.3	0.6	0.7	0.8	0.9	1.1	1.0	1.1	0.9	0.7	0.7	0.6	1.9	0.8	1.3	1.9
22-Feb	0.7	0.4	0.3	0.2	0.2	0.1	0.2	0.3	DF	DF	DF	DF	DF	0.6	0.5	0.3	0.3	0.2	0.3	0.3	0.5	0.5	0.7	0.8	0.8
23-Feb	1.1	1.2	1.3	1.9	2.0	1.6	2.0	1.0	1.7	1.4	2.2	2.5	1.9	2.0	2.6	1.9	1.9	1.5	1.5	2.3	2.6	3.5	2.8	3.5	3.5
24-Feb	2.1	3.8	2.9	2.4	2.4	1.9	1.3	2.1	2.3	2.0	1.9	1.2	1.3	1.7	2.1	1.3	1.7	1.1	0.8	1.1	1.3	0.8	1.7	1.4	3.8
25-Feb	1.7	1.7	1.5	1.5	1.2	1.5	1.4	2.0	1.7	2.0	2.3	2.9	3.0	2.9	3.8	2.8	2.9	2.3	2.9	3.2	3.1	2.5	2.6	2.2	3.8
26-Feb	1.7	2.1	2.4	2.2	2.1	1.6	2.0	1.7	1.4	1.7	DF	3.0	3.2	2.4	1.8	0.9	0.6	0.5	0.4	0.4	0.5	0.6	DF	DF	3.2
27-Feb	DF	DF	DF	DF	DF	DF	DF	DF	DF	0.9	0.9	1.3	1.3	1.4	1.3	1.6	1.6	1.6	1.9	2.2	2.1	1.3	2.1	1.6	2.2
28-Feb	2.0	2.4	1.9	1.5	DF	DF	DF	DF	DF	2.2	2.9	2.3	3.1	3.1	2.8	3.0	2.6	2.6	3.3	3.8	2.3	3.1	3.1	2.9	3.8
29-Feb	2.6	2.9	3.0	2.3	2.2	2.6	3.1	3.3	2.9	2.9	2.5	2.6	2.6	1.8	1.8	1.2	1.8	1.0	0.9	1.1	1.1	1.1	1.1	1.6	3.3
2.6 3.8 3.0 2.4 2.4 2.6 3.1 3.3 2.9 2.9 2.9 3.0 3.2 3.1 3.8 3.0 2.9 2.6 3.3 3.8 3.1 3.1 3.5 2.9																									
Diurnal Maximum																									
DF - DAS Failure UO - Unstable Operation																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS04 BUFFALO VIEWPOINT FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BUFFALO VIEWPOINT (AMS04)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	663	32	33	99.86	21.3	0	3.4	0
H2S (ppb) Average	656	34	40	99.14	7.3	0	1.2	0
THC (ppm) Average	657	35	39	99.43	5.1	-	3.2	-
NMHC(ppm) Average	657	35	39	99.43	0.672	-	0.103	-
CH4(ppm) Average	657	35	39	99.43	4.9	-	3.2	-
O3(ppb) Average	663	32	33	99.86	45.7	0	38.4	-
NO2(ppb) Average	661	34	35	99.86	38.5	0	30.3	-
NO(ppb) Average	661	34	35	99.86	116.7	-	49.6	-
NOX(ppb) Average	661	34	35	99.86	147.1	-	79.9	-
PM2.5(ug/m3) Average	694	2	2	100	33.3	0	17.1	0
Temperature (C) Average	696	0	0	100	9.7	-	2.9	-
Relative Humidity (%) Average	696	0	0	100	96.9	-	93.8	-
Wind Speed 10 m (km/h) Average	695	0	1	99.86	27	-	15	-
Wind Direction 10 m (deg) Average	695	0	1	99.86	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BUFFALO VIEWPOINT (AMS04)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	663	0.89	2.2	-	0	0	0	0.2	0.7	2	21.3
H2S (ppb) Average	656	0.36	0.6	-	0	0.1	0.1	0.1	0.4	0.9	7.3
THC (ppm) Average	657	2.27	0.4	-	1.9	2	2.1	2.1	2.3	2.7	5.1
NMHC(ppm) Average	657	0.01	0.056	-	0	0	0	0	0	0	0.672
CH4(ppm) Average	657	2.26	0.4	-	1.9	2	2.1	2.1	2.3	2.7	4.9
O3(ppb) Average	663	23.73	12.8	-	1	2.4	12.9	27.1	34	38.9	45.7
NO2(ppb) Average	661	9.39	9.7	-	0.2	0.7	2.2	5	14.7	25.2	38.5
NO(ppb) Average	661	5.96	15	-	0	0	0	0.2	2	22.9	116.7
NOX(ppb) Average	661	15.34	22.7	-	0.2	0.8	2.3	5.6	17.7	49.5	147.1
PM2.5(ug/m3) Average	694	6.25	5.9	-	0.3	1.3	2.4	4	7.8	14.6	33.3
Temperature 2 m (C) Average	696	-9.14	7.4	-	-26.8	-18.8	-14	-8.9	-4.1	0.8	9.7
Relative Humidity (%) Average	696	71.08	14.8	-	27.8	50.2	61.8	72.6	83.3	87.5	96.9
Wind Speed 10 m (km/h) Average	695	8.4	5	-	0	3	5	7	11	15	27
Wind Direction 10 m (deg) Average	695	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BUFFALO VIEWPOINT (AMS04)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
ALL GASEOUS ANALYZERS	27 Feb 2024 10:00	27 Feb 2024 10:00	1	Maintenance - sample manifold cleaned
H2S	29 Feb 2024 08:00	29 Feb 2024 12:00	5	Maintenance - external valve replaced
THC/NMHC/CH4	09 Feb 2024 08:00	09 Feb 2024 10:00	3	Maintenance - recalibration
Wind Speed, Wind Direction	10 Feb 2024 00:00	10 Feb 2024 00:00	1	Flat line in sensor output signal



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

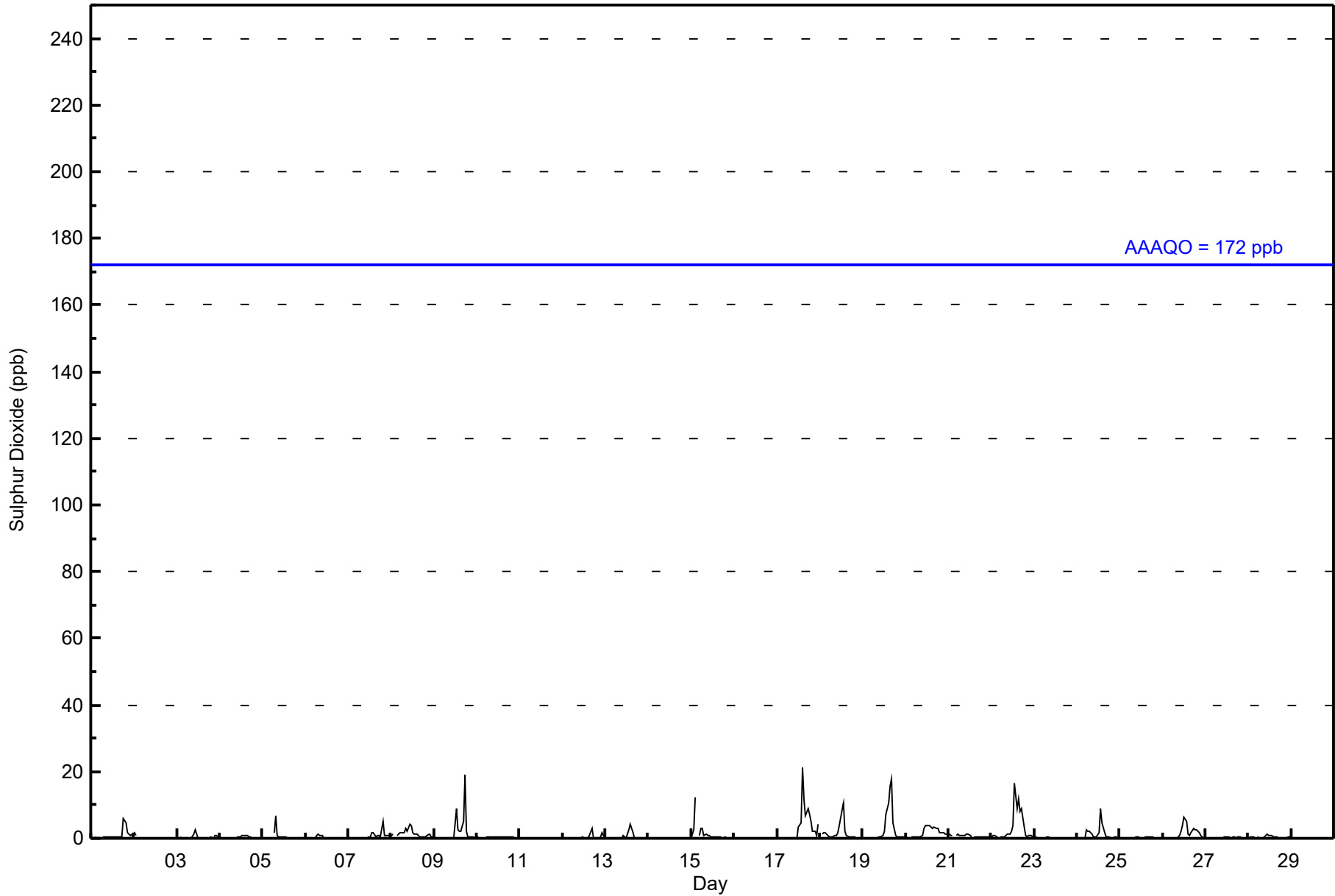
Buffalo Viewpoint - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 21.3 ppb on Feb 17 15:00 Maximum Daily Average: 3.4 ppb on Feb 17		Hours in Service: 696 Hours of Data: 663 Hours of Missing Data: 33 Hours of Calibration: 32 Percent Operational Time: 99.9																								
Minimum Value: 0.0 ppb on Feb 2 12:00 Maximum Diurnal Average: 2.4 ppb at hour 14 Monthly Average: 0.89 ppb		Minimum Daily Average: 0.0 ppb on Feb 14 Minimum Diurnal Average: 0.2 ppb at hour 5 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.2 Q ₃ = 0.7 P ₉₀ = 2.0 P ₉₉ = 11.8																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.3	Z	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.2	0.3	0.3	5.8	4.5	1.8	1.2	0.8	1.2	0.9	5.8
2-Feb	1.7	1.0	Z	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.7
3-Feb	0.0	0.0	0.3	Z	0.1	0.0	0.0	0.0	0.0	1.4	2.7	1.3	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.1	0.8	0.7	0.3	0.4	2.7
4-Feb	0.2	0.1	0.1	0.2	Z	0.1	0.0	0.1	0.1	0.2	0.4	0.6	0.8	0.7	0.7	0.6	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.3	0.8	
5-Feb	0.0	0.0	0.0	0.0	0.0	Z	1.7	6.7	0.9	0.5	0.4	0.4	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	6.7
6-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.7	1.3	1.0	0.8	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	1.3
7-Feb	0.1	Z	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	1.7	1.7	0.5	0.8	0.6	0.4	4.9	0.9	1.0	1.0	1.0	0.7	4.9
8-Feb	0.9	1.2	Z	0.9	1.3	1.8	1.5	1.5	2.8	2.3	4.3	3.9	1.8	1.3	1.1	0.7	0.5	0.4	0.4	0.2	0.7	1.1	0.6	0.3	1.4	4.3
9-Feb	0.2	0.1	0.1	Z	0.1	0.1	0.1	C	C	C	0.0	0.2	8.9	2.7	2.0	2.0	4.9	19.2	2.1	0.4	0.3	0.3	0.3	0.2	2.2	19.2
10-Feb	0.2	0.2	0.1	0.2	Z	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.3	0.5
11-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1
12-Feb	Z	0.2	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.9	2.8	0.2	0.1	0.0	0.1	0.3	1.7	0.2	0.3	0.3	2.8
13-Feb	0.1	Z	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.8	0.1	1.2	2.6	4.3	1.6	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.5	4.3
14-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
15-Feb	0.0	2.6	12.1	Z	0.7	2.8	2.9	1.0	1.2	0.8	0.9	0.6	0.6	0.5	0.4	0.4	0.4	0.1	0.1	0.3	0.2	0.0	0.0	0.0	1.2	12.1
16-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.2
17-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.1	0.1	0.0	0.1	0.0	0.2	3.2	4.7	21.3	11.8	6.6	8.9	7.2	5.2	2.1	2.0	0.9	4.4	3.4	21.3
18-Feb	Z	1.1	1.6	1.7	0.7	0.5	0.4	0.5	0.6	0.7	1.6	4.0	8.3	10.5	2.1	0.7	0.5	0.3	0.3	0.2	0.1	0.1	0.0	0.1	1.6	10.5
19-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.7	2.3	7.2	10.6	15.8	17.7	4.8	0.8	0.6	0.6	0.4	0.4	0.4	2.8	17.7
20-Feb	0.4	0.4	Z	0.6	0.5	0.4	0.5	0.5	0.6	1.0	2.9	3.6	3.7	3.8	3.5	3.2	3.3	3.0	2.8	1.8	1.8	1.7	1.4	1.2	1.8	3.8
21-Feb	1.1	1.0	1.0	Z	0.7	1.2	0.8	0.8	0.9	1.0	1.2	1.2	1.0	0.2	0.2	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.3	0.7	1.2
22-Feb	0.6	0.7	0.8	0.5	Z	0.4	0.6	0.2	0.7	1.1	1.1	2.0	3.8	16.7	9.0	11.8	7.9	9.0	3.6	0.9	0.6	0.8	0.8	0.6	3.2	16.7
23-Feb	0.6	0.5	0.2	0.0	0.0	Z	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.6
24-Feb	Z	0.1	0.1	0.2	0.1	2.3	2.0	2.0	1.3	0.4	0.3	0.3	1.7	9.1	4.7	1.8	0.5	0.2	0.2	0.1	0.1	0.3	0.2	0.2	1.2	9.1
25-Feb	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.1	0.1	0.1	0.3	0.4	0.5	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.5
26-Feb	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.1	0.1	0.9	2.0	3.7	6.3	4.9	1.1	0.8	1.8	2.8	2.5	2.7	1.6	0.9	0.4	0.0	1.4	6.3
27-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	M	0.2	0.5	0.5	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.0	0.2	0.2	0.5
28-Feb	0.2	0.3	0.3	0.3	Z	0.3	0.1	0.2	0.2	0.5	1.4	0.9	1.0	0.9	0.6	0.3	0.2	0.2	0.2	0.1	0.0	0.1	0.3	0.3	0.4	1.4
29-Feb	0.1	0.2	0.0	0.1	0.0	Z	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2
0.3 0.4 0.7 0.2 0.2 0.5 0.4 0.6 0.4 0.5 0.8 0.9 1.6 2.4 2.2 1.9 1.7 1.8 1.0 0.8 0.4 0.4 0.4 0.4 0.4 1.7 2.6 12.1 1.7 1.3 2.8 2.9 6.7 2.8 2.3 4.3 4.0 8.9 16.7 21.3 15.8 17.7 19.2 7.2 5.2 2.1 2.0 1.7 4.4																								Diurnal Average Diurnal Maximum		
Z - zerospan C - Calibration M - Maintenance Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																										



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Buffalo Viewpoint - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	654	98.64	98.64
11 - 20	8	1.21	99.85
21 - 60	1	0.15	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Buffalo Viewpoint - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	130	71	32	4	5	18	58	109	30	20	26	34	43	22	22	29	653
11 - 20	0	3	1	0	1	1	0	0	1	0	0	0	0	0	0	1	8
21 - 60	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	130	75	33	4	6	19	58	109	31	20	26	34	43	22	22	30	662

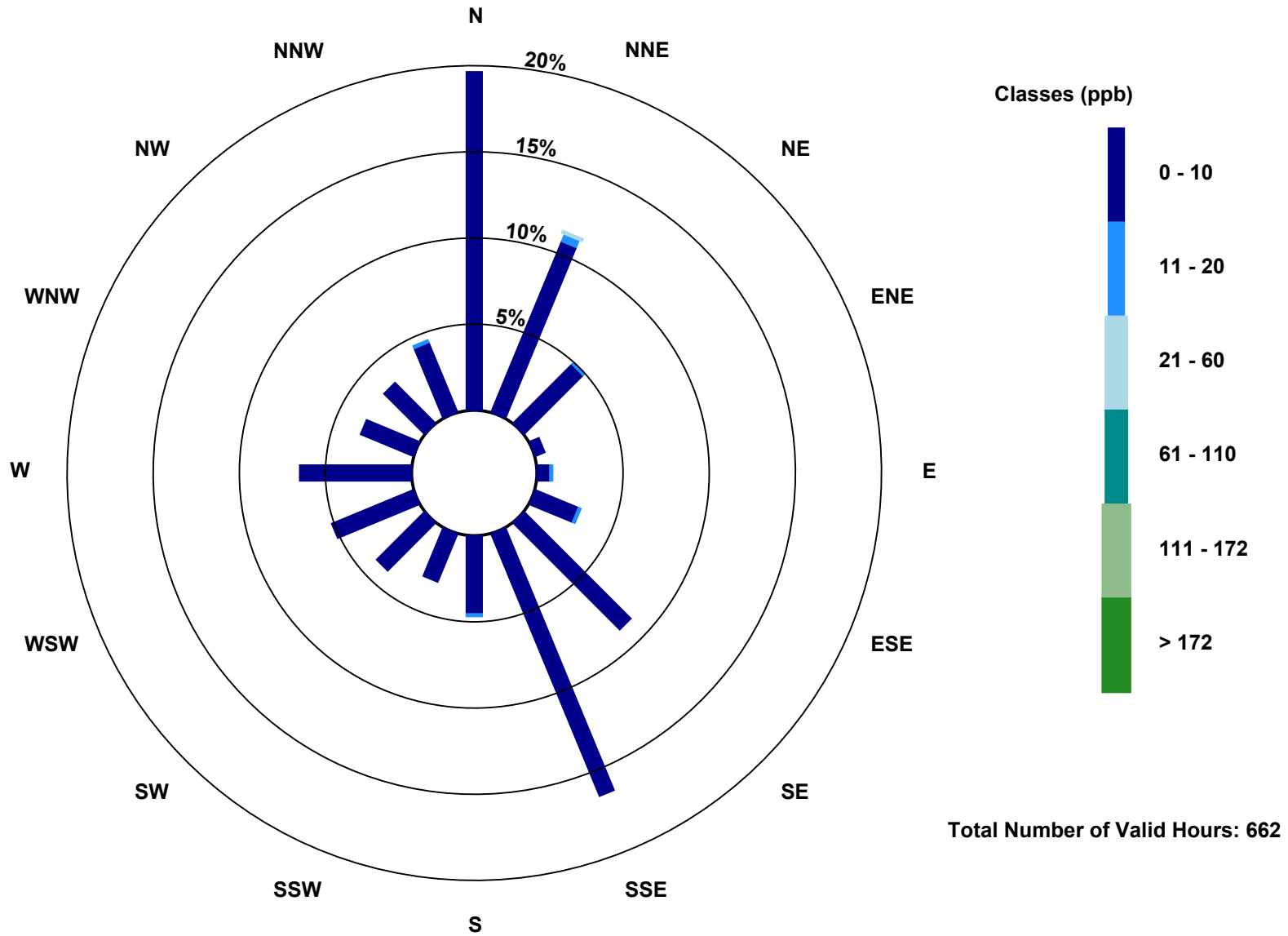
Total Number of Valid Hours: 662

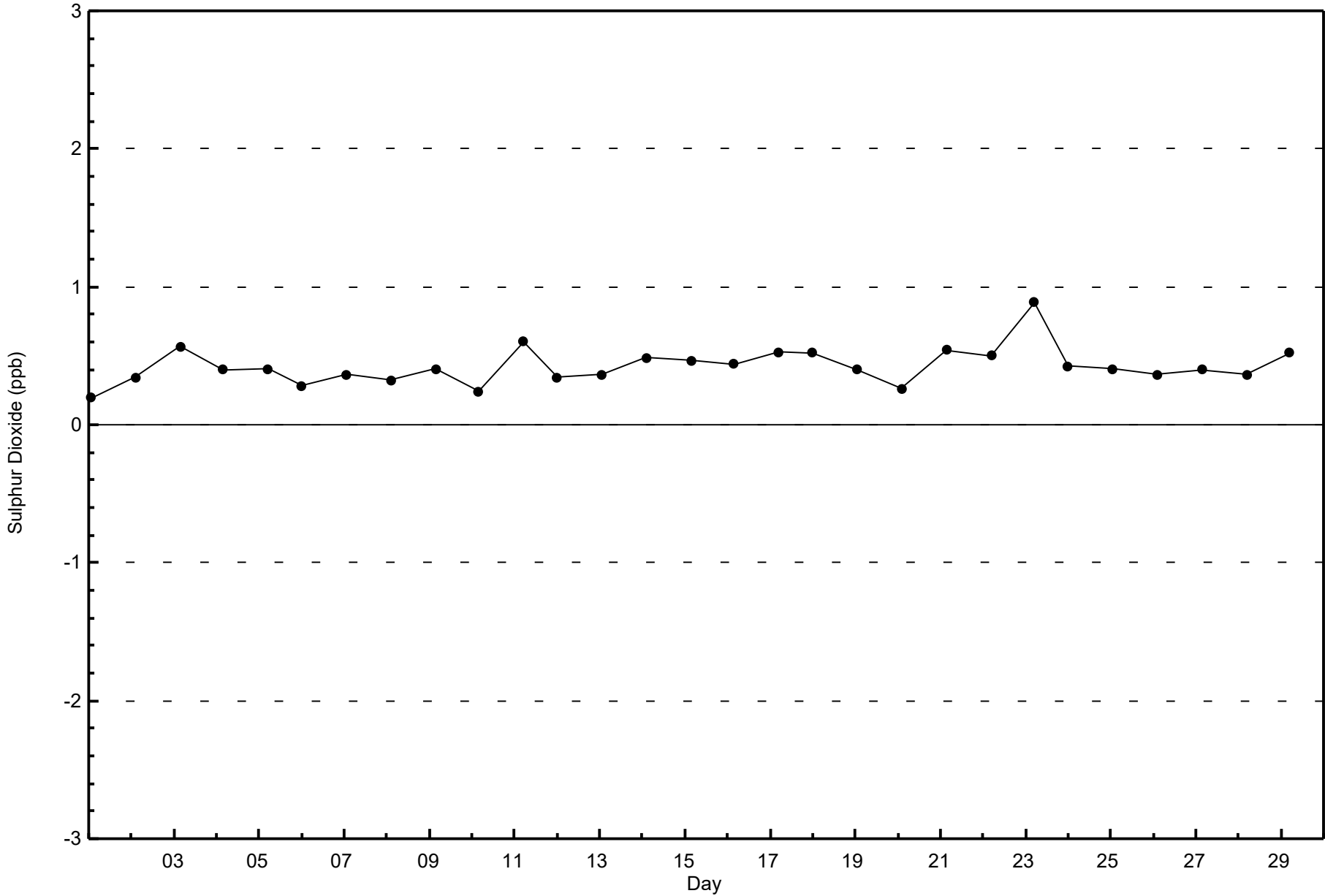
Total Number of Hours: 696

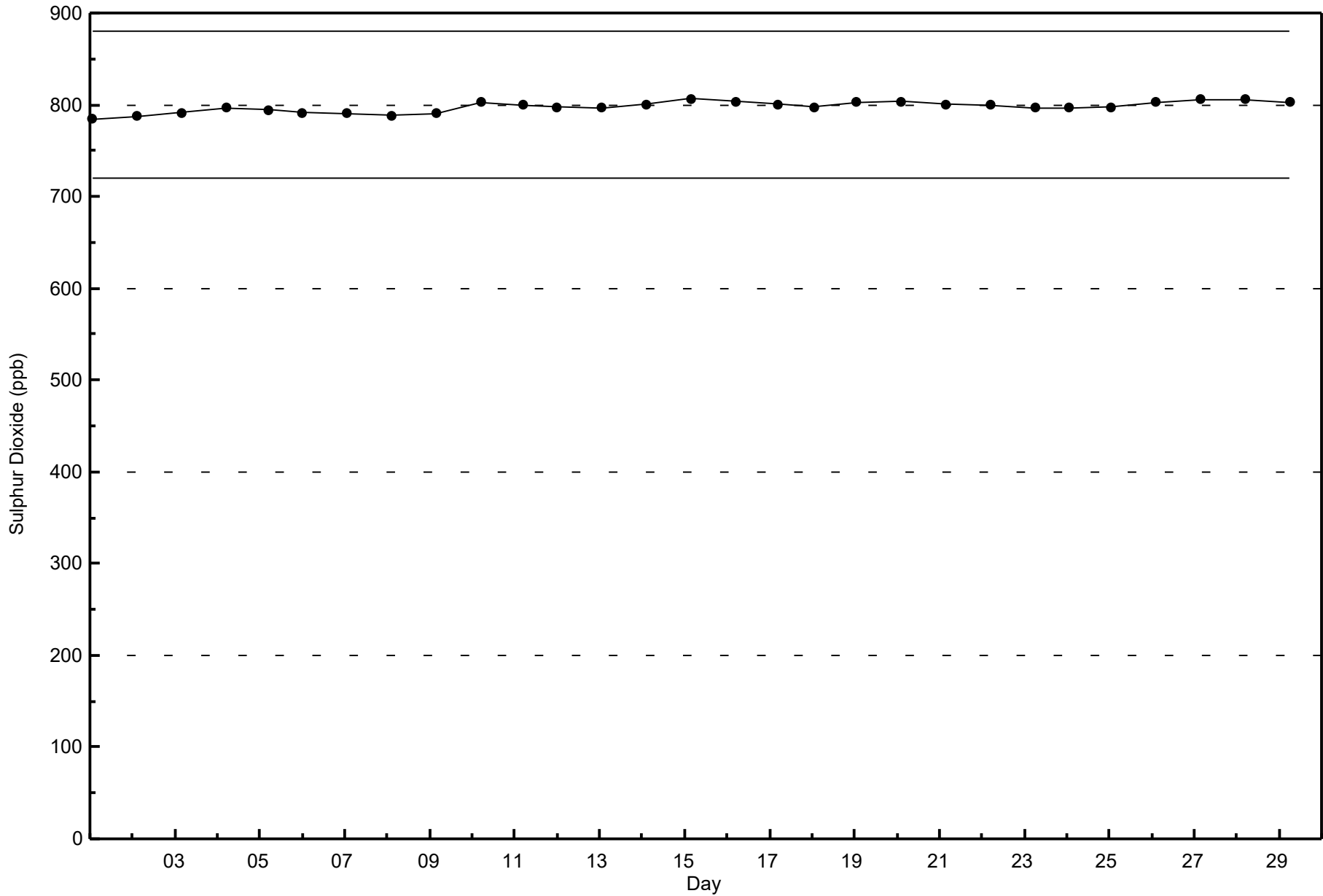


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Buffalo Viewpoint







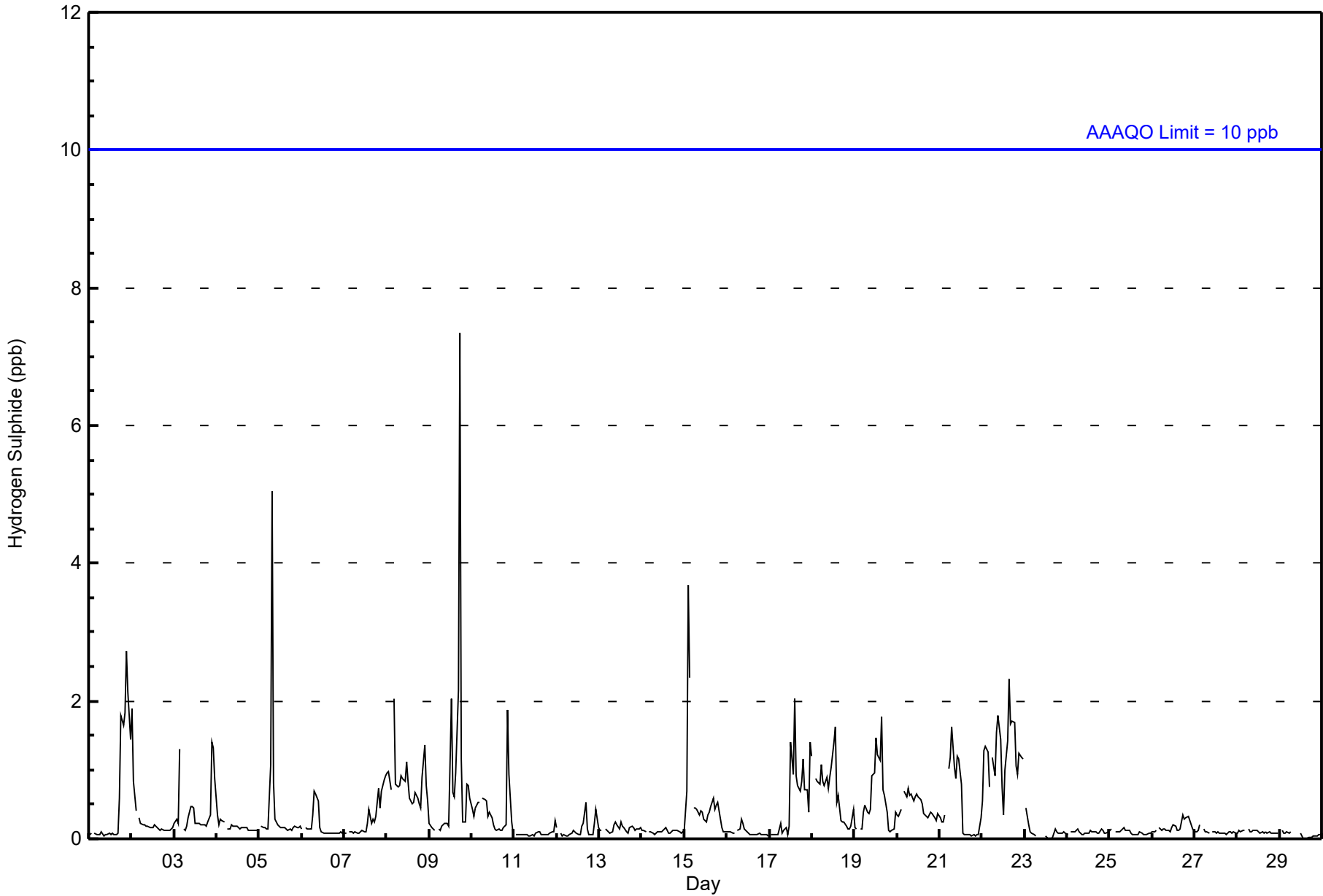


Wood Buffalo Environmental Association

Summary of Hour Averages

Hydrogen Sulphide (H₂S) - ppb
Buffalo Viewpoint - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:		696																																									
Maximum Value: 7.3 ppb on Feb 9 18:00		Maximum Daily Average: 1.2 ppb on Feb 22				Hours of Data:		656																																									
Minimum Value: 0.0 ppb on Feb 23 14:00		Minimum Daily Average: 0.1 ppb on Feb 29				Hours of Missing Data:		40																																									
Maximum Diurnal Average: 0.5 ppb at hour 18		Minimum Diurnal Average: 0.3 ppb at hour 6				Hours of Calibration:		34																																									
Monthly Average: 0.36 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.1 Q ₃ = 0.4 P ₉₀ = 0.9 P ₉₉ = 2.1				Percent Operational Time:		99.1																																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6	1.8	1.7	1.8	2.7	2.1	1.4	0.6	2.7																							
2-Feb	1.9	0.8	0.4	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	1.9																						
3-Feb	0.2	0.3	0.2	1.3	Z	0.1	0.1	0.2	0.3	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	1.4	1.3	0.9	0.4	1.4																						
4-Feb	0.4	0.2	0.3	0.3	0.2	Z	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4																						
5-Feb	Z	0.2	0.2	0.2	0.1	0.1	1.1	5.0	0.8	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.4	5.0																						
6-Feb	0.1	Z	0.2	0.1	0.1	0.2	0.3	0.7	0.7	0.6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.7																						
7-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.2	0.3	0.2	0.3	0.7	0.5	0.7	0.9	0.9	0.3	0.9	0.9																						
8-Feb	1.0	1.0	0.7	Z	2.0	0.8	0.8	0.8	0.8	0.9	0.9	0.8	1.1	0.8	0.6	0.5	0.5	0.7	0.6	0.5	0.5	0.9	1.4	0.8	0.5	0.8	2.0																						
9-Feb	0.2	0.2	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.2	0.2	0.2	2.0	0.7	0.6	1.0	2.2	7.3	1.2	0.2	0.2	0.8	0.8	0.6	0.8	7.3																							
10-Feb	0.4	0.3	0.5	0.5	0.5	Z	0.6	0.6	0.6	0.3	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	1.9	0.9	0.2	0.1	0.4	1.9																							
11-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.3																						
12-Feb	0.2	Z	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.5	0.1	0.1	0.1	0.1	0.2	0.4	0.2	0.1	0.5																							
13-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2																						
14-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2																						
15-Feb	0.1	0.7	3.7	2.3	Z	0.4	0.5	0.4	0.4	0.4	0.4	0.3	0.2	0.3	0.4	0.5	0.6	0.4	0.5	0.5	0.3	0.2	0.1	0.1	0.6	3.7																							
16-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.3																						
17-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2	1.4	0.9	2.0	0.9	0.8	0.7	0.8	1.2	0.7	0.7	0.4	1.4	0.6	2.0																							
18-Feb	1.2	Z	0.9	0.8	0.8	1.1	0.8	0.8	0.9	0.7	0.9	1.0	1.4	1.6	0.5	0.6	0.3	0.2	0.3	0.2	0.1	0.2	0.2	0.4	0.7	1.6																							
19-Feb	0.2	0.1	Z	0.1	0.2	0.4	0.5	0.4	0.4	0.4	0.9	1.0	1.5	1.2	1.1	1.8	0.7	0.6	0.4	0.1	0.1	0.1	0.2	0.4	0.6	1.8																							
20-Feb	0.4	0.3	0.4	Z	0.7	0.6	0.7	0.6	0.7	0.6	0.6	0.7	0.6	0.6	0.5	0.4	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.5	0.7																							
21-Feb	0.3	0.3	0.2	0.3	Z	1.0	1.2	1.6	1.0	0.9	1.2	1.2	0.8	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.3	0.5	1.6																							
22-Feb	0.5	1.3	1.3	1.3	0.7	Z	1.2	0.9	1.6	1.8	1.4	0.7	0.3	1.0	1.4	2.3	1.7	1.7	1.7	1.1	0.9	1.2	1.2	1.2	1.2	2.3																							
23-Feb	Z	0.4	0.2	0.1	0.1	0.1	0.0	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4																							
24-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																							
25-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2																						
26-Feb	0.1	0.1	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.2	0.3																							
27-Feb	0.1	0.1	0.1	0.2	Z	0.1	0.1	0.1	0.1	M	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2																						
28-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																						
29-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	M	M	M	M	M	M	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1																						
																								0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.5	0.4	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.5	0.3	0.3	0.3	0.4	0.4	0.4	Diurnal Average	
																								1.9	1.3	3.7	2.3	2.0	1.1	1.2	5.0	1.6	1.8	1.4	1.2	2.0	1.6	2.0	2.3	2.2	7.3	1.8	1.7	1.9	2.7	2.1	1.4	Diurnal Maximum	
Z - zerspan C - Calibration M - Maintenance																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																																																	





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	652	99.39	99.39
3 - 4	2	0.30	99.70
5 - 7	2	0.30	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 656

Total Number of Hours: 696



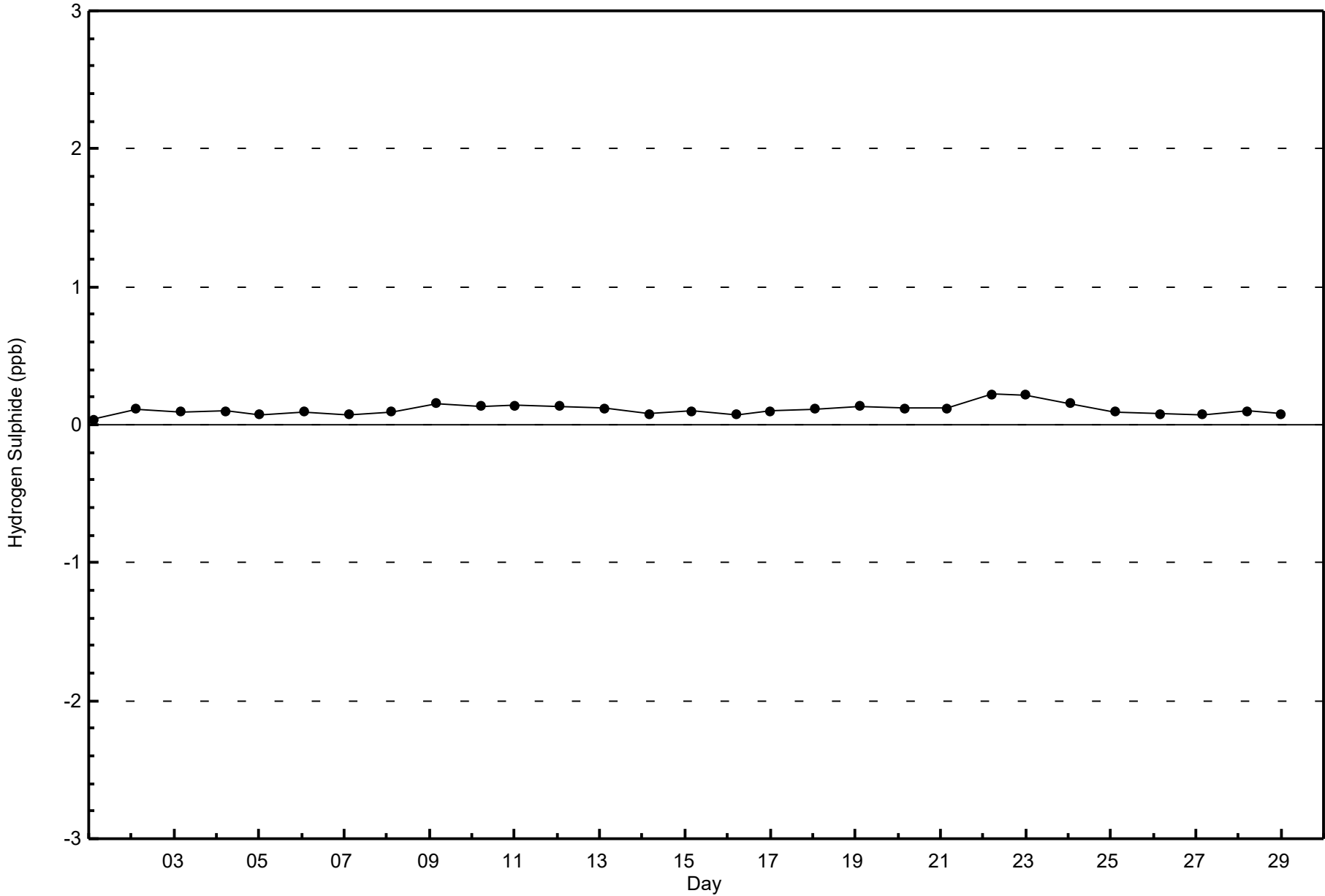
**Wood Buffalo Environmental Association
Frequency Distribution**

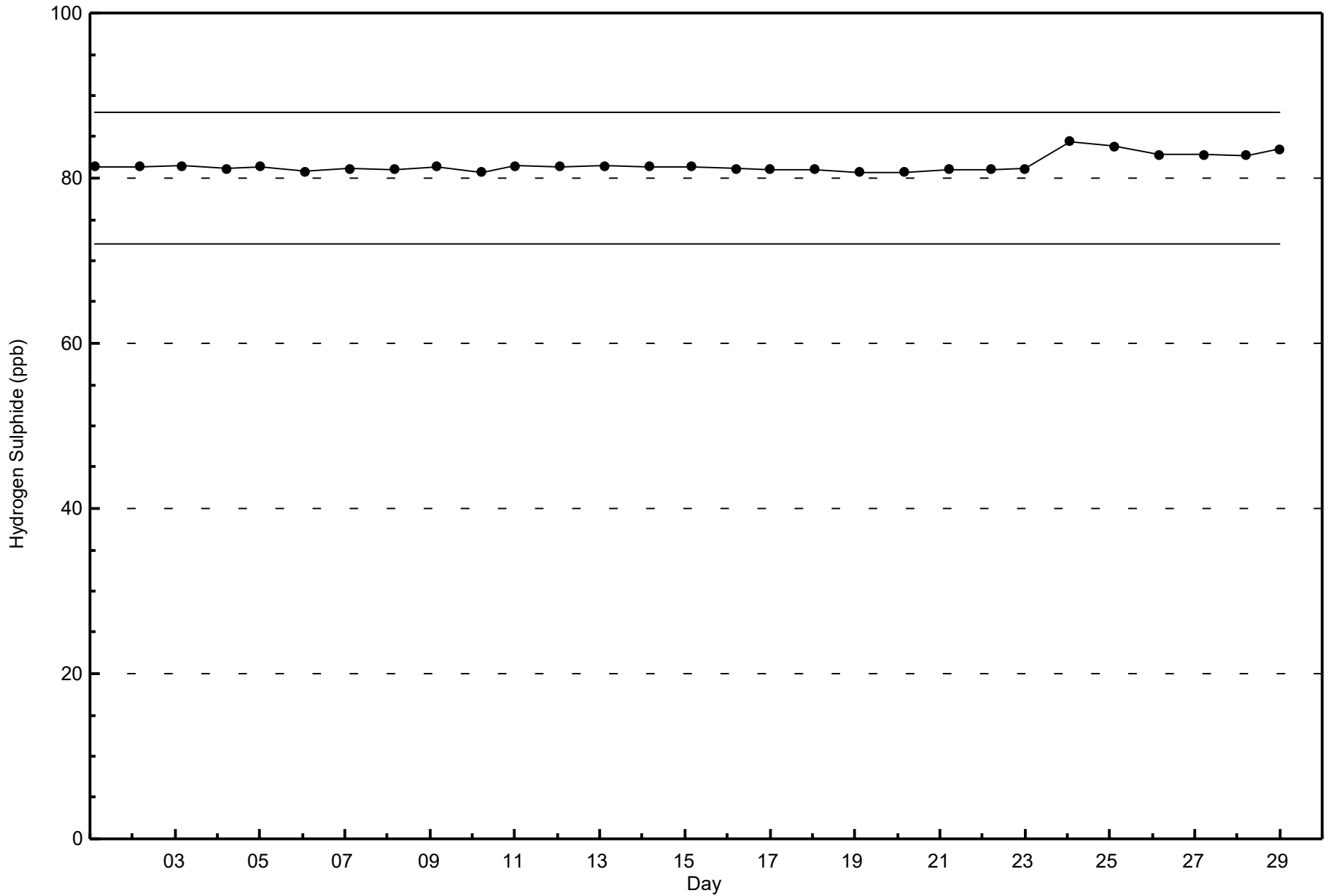
**Hydrogen Sulphide (H₂S) - ppb
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	127	75	35	4	5	17	56	104	31	21	26	32	44	21	22	31	651
3 - 4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2
5 - 7	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	128	76	35	4	5	17	56	104	32	21	26	32	44	21	22	32	655

Total Number of Valid Hours: 655

Total Number of Hours: 696







Wood Buffalo Environmental Association
Summary of Hour Averages

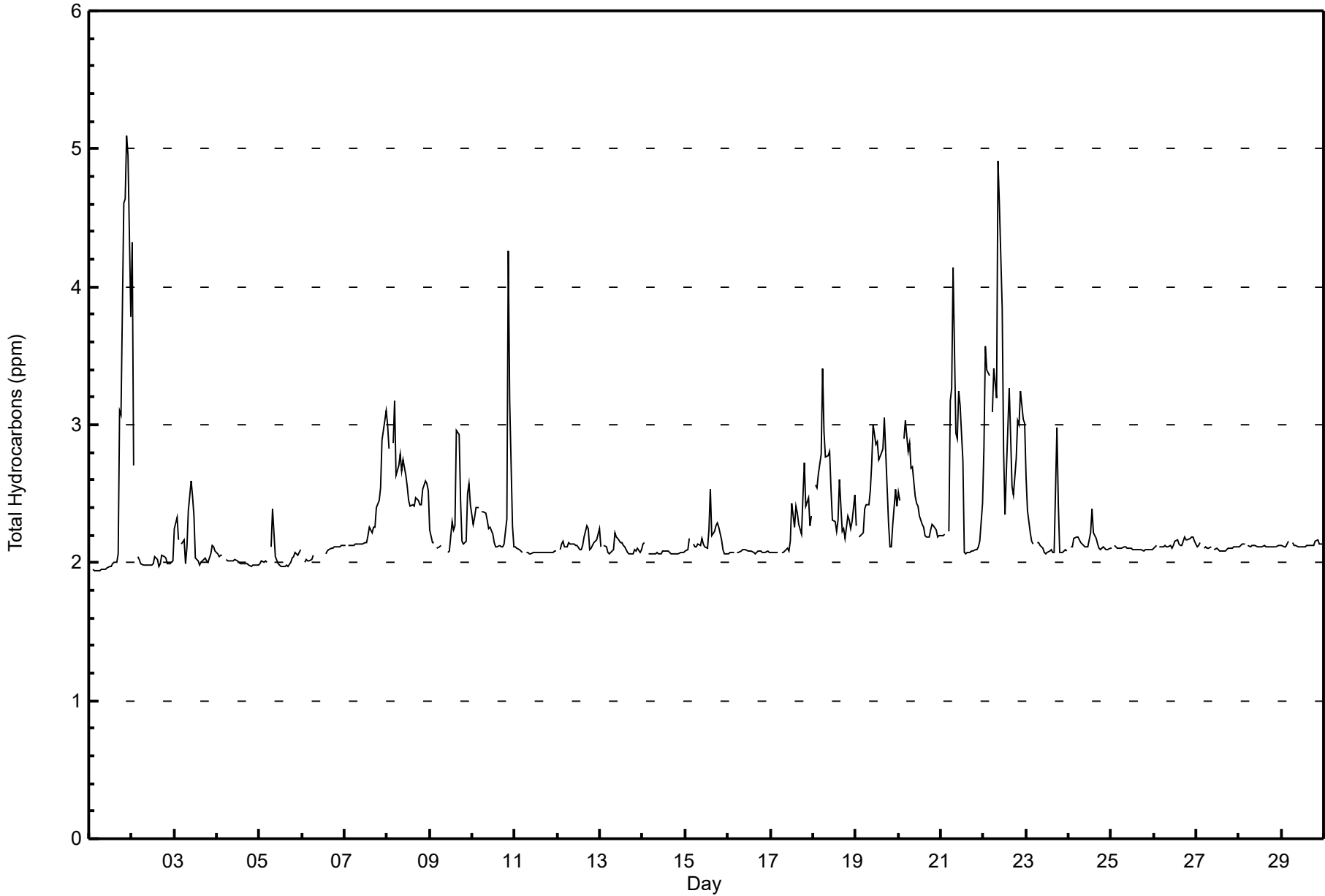
Total Hydrocarbons (THC) - ppm
Buffalo Viewpoint - February 2024

Maximum Value: 5.1 ppm on Feb 1 22:00		Maximum Daily Average: 3.2 ppm on Feb 22		Hours in Service: 696																						
Minimum Value: 1.9 ppm on Feb 1 01:00		Minimum Daily Average: 2.0 ppm on Feb 4		Hours of Data: 657																						
Maximum Diurnal Average: 2.4 ppm at hour 22		Minimum Diurnal Average: 2.2 ppm at hour 14		Hours of Missing Data: 39																						
Monthly Average: 2.27 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.1 Median = 2.1 Q ₃ = 2.3 P ₉₀ = 2.7 P ₉₉ = 4.3		Hours of Calibration: 35																						
				Percent Operational Time: 99.4																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	1.9	Z	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	3.1	3.1	4.6	4.6	5.1	5.0	3.8	2.6	5.1	
2-Feb	4.3	2.7	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	4.3	
3-Feb	2.3	2.3	2.2	Z	2.1	2.2	2.0	2.1	2.4	2.6	2.5	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.6	
4-Feb	2.1	2.0	2.1	2.1	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
5-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.1	2.4	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.4	
6-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.1	C	C	C	C	C	C	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	--	2.1	
7-Feb	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.3	2.3	2.4	2.5	2.5	2.9	3.0	3.1	3.1	
8-Feb	3.0	2.8	Z	2.9	3.2	2.6	2.7	2.8	2.7	2.7	2.6	2.5	2.5	2.4	2.4	2.4	2.5	2.4	2.4	2.4	2.5	2.6	2.6	2.5	3.2	
9-Feb	2.2	2.1	2.1	Z	2.1	2.1	2.1	M	M	M	2.1	2.1	2.3	2.2	2.3	3.0	2.9	2.4	2.2	2.1	2.2	2.5	2.6	2.4	3.0	
10-Feb	2.3	2.3	2.4	2.4	Z	2.4	2.4	2.4	2.3	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	4.3	3.2	2.3	2.1	4.3	
11-Feb	2.1	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
12-Feb	Z	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.1	2.1	2.1	2.2	2.2	2.3	2.1	2.3	
13-Feb	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	
14-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
15-Feb	2.1	2.1	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.5	2.2	2.2	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.5	
16-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
17-Feb	2.1	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.3	2.4	2.4	2.3	2.2	2.5	2.7	2.4	2.5	2.3	2.3	2.7	
18-Feb	Z	2.6	2.5	2.6	2.8	3.4	3.0	2.8	2.8	2.8	2.5	2.3	2.3	2.2	2.3	2.6	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.5	3.4	
19-Feb	2.3	Z	2.2	2.2	2.2	2.4	2.4	2.4	2.5	2.7	3.0	2.9	2.9	2.7	2.8	2.8	3.1	2.8	2.3	2.1	2.1	2.3	2.5	2.4	3.1	
20-Feb	2.5	2.5	Z	2.9	3.0	2.8	2.9	2.7	2.7	2.5	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	3.0	
21-Feb	2.2	2.2	2.2	Z	2.2	3.2	3.3	4.1	2.9	2.9	3.2	3.1	2.7	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	4.1	
22-Feb	2.8	3.6	3.4	3.4	Z	3.1	3.4	3.2	4.9	4.6	3.8	2.8	2.3	2.7	3.3	2.9	2.6	2.5	2.8	3.0	3.0	3.2	3.0	3.0	4.9	
23-Feb	2.6	2.4	2.2	2.2	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.0	2.4	2.1	2.1	2.1	2.1	2.1	2.1	3.0	
24-Feb	Z	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	
25-Feb	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
26-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	
27-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	M	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
28-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
29-Feb	2.1	2.1	2.1	2.1	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.2	
																								Diurnal Average		
																								Diurnal Maximum		
																								Diurnal Average		
																								Diurnal Maximum		
Z - zerospan C - Calibration M - Maintenance																										



Wood Buffalo Environmental Association
Hourly Averages

Total Hydrocarbons (THC) - ppm
Buffalo Viewpoint - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	85	12.94	12.94
2.1 - 3.0	542	82.50	95.43
3.1 - 10.0	30	4.57	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 657

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	31	7	3	0	1	3	6	21	10	0	0	0	0	0	1	2	85
2.1 - 3.0	93	63	27	4	5	16	45	87	19	20	26	34	43	20	19	20	541
3.1 - 10.0	6	5	1	0	0	0	3	1	2	0	0	0	0	2	2	8	30
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	130	75	31	4	6	19	54	109	31	20	26	34	43	22	22	30	656

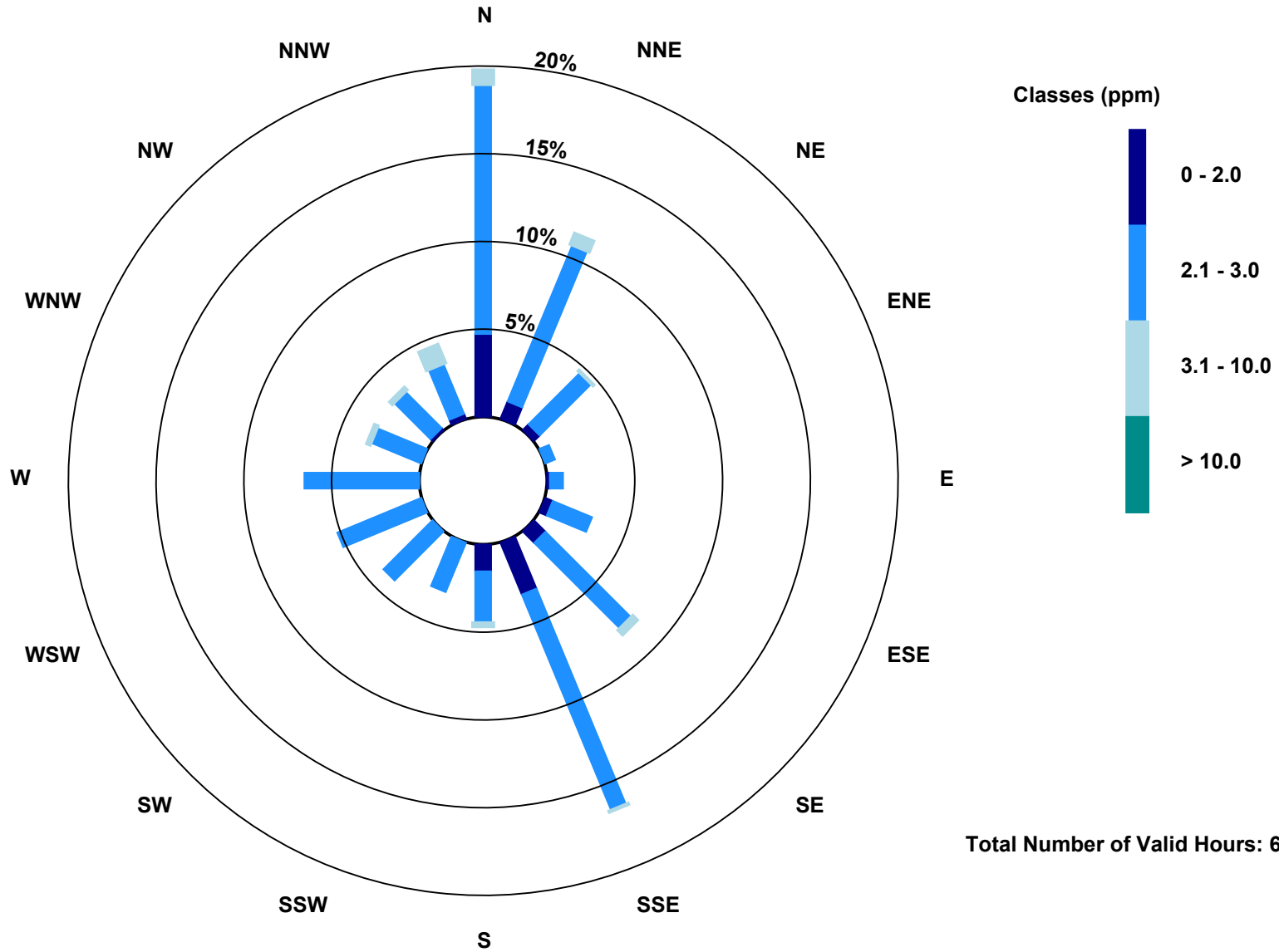
Total Number of Valid Hours: 656

Total Number of Hours: 696

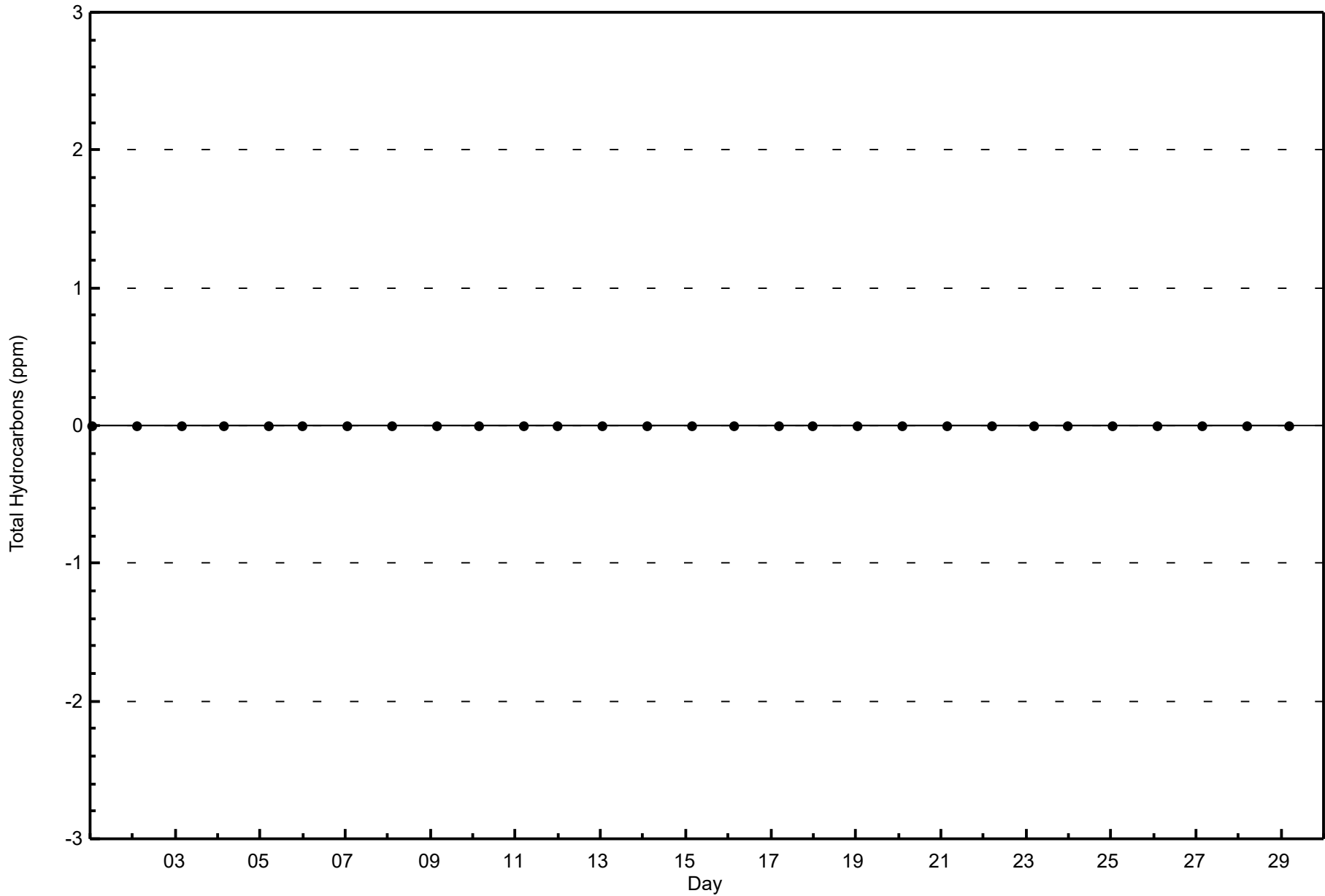


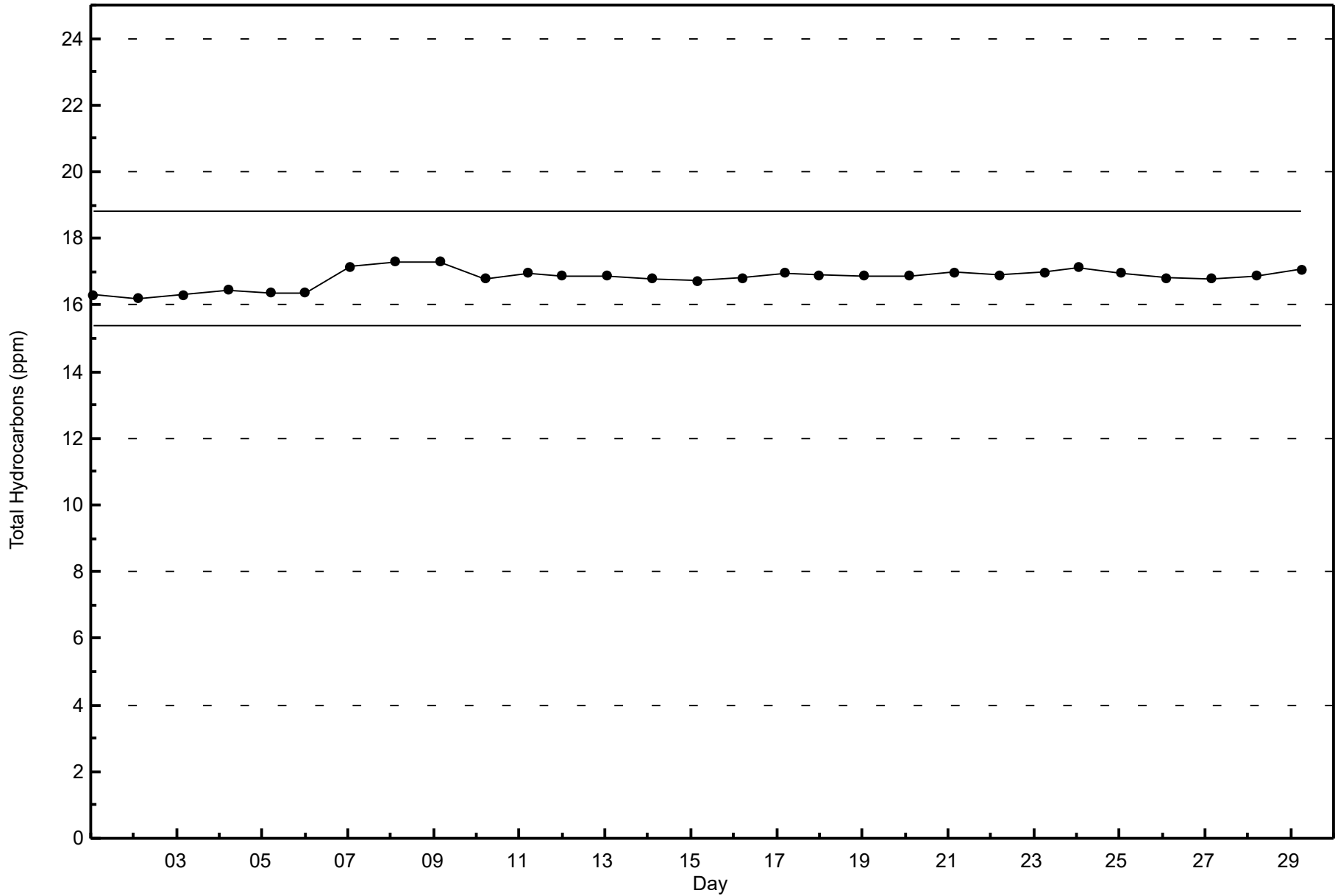
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Buffalo Viewpoint



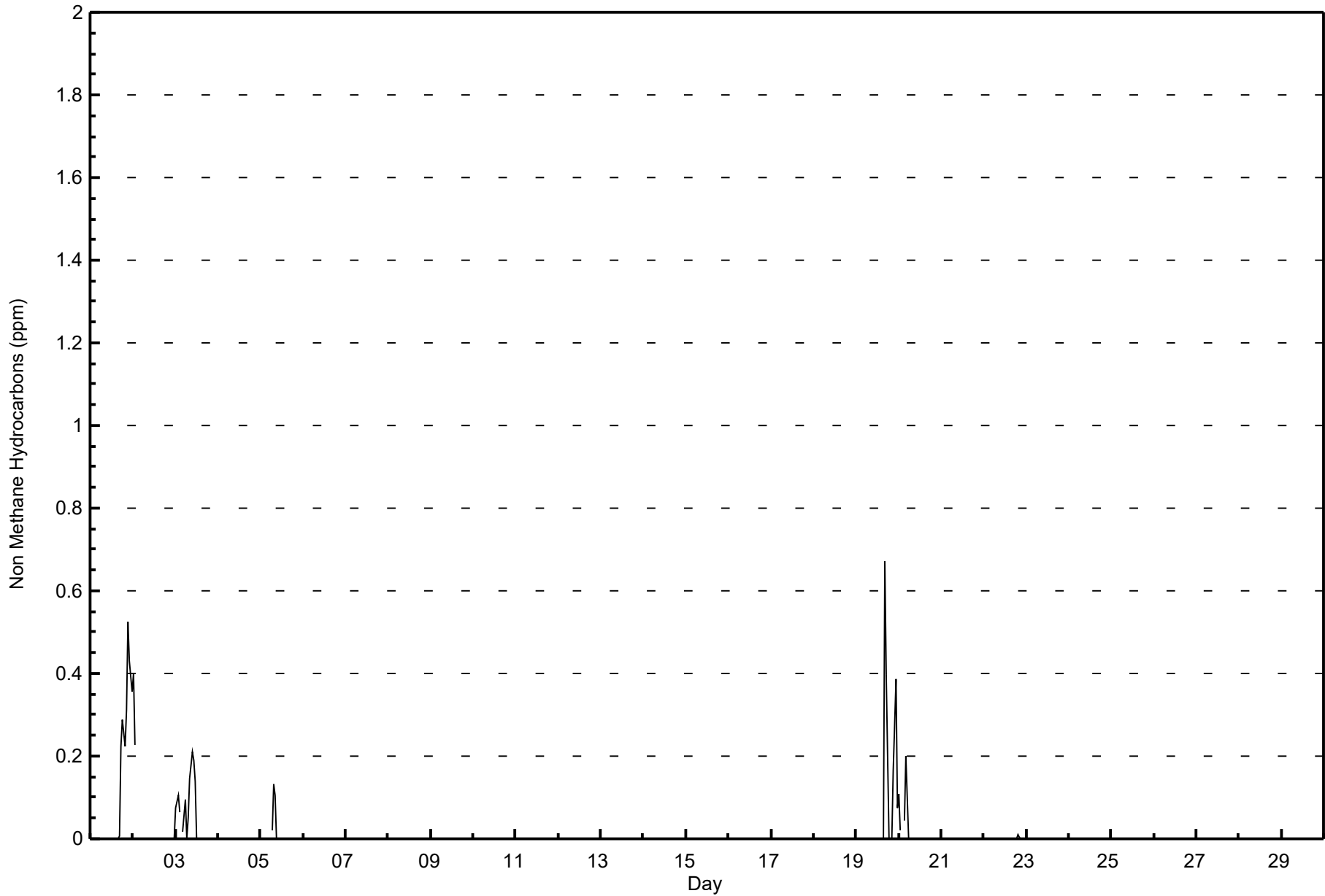
Total Number of Valid Hours: 656







Maximum Value: 0.672 ppm on Feb 19 17:00		Maximum Daily Average: 0.103 ppm on Feb 1		Hours in Service: 696																							
Minimum Value: 0.000 ppm on Feb 1 01:00		Minimum Daily Average: 0.000 ppm on Feb 4		Hours of Data: 657																							
Maximum Diurnal Average: 0.028 ppm at hour 23		Minimum Diurnal Average: 0.000 ppm at hour 14		Hours of Missing Data: 39																							
Monthly Average: 0.010 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.3		Hours of Calibration: 35																							
				Percent Operational Time: 99.4																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.225	0.287	0.225	0.311	0.525	0.431	0.356	0.103	0.525	
2-Feb	0.398	0.226	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.027	0.398	
3-Feb	0.076	0.105	0.064	Z	0.017	0.096	0.000	0.050	0.147	0.212	0.189	0.140	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.212	
4-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
5-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.020	0.134	0.106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.134	
6-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	C	C	C	C	C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	--	0.000	
7-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
8-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
9-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	M	M	M	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
10-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
12-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
13-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
14-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
15-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
16-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
17-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
18-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
19-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.672	0.398	0.000	0.000	0.000	0.166	0.386	0.074	0.074	0.672	
20-Feb	0.108	0.021	Z	0.044	0.199	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.199	
21-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
22-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.003	0.000	0.000	0.001	0.009	
23-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
24-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
25-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
26-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
27-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
28-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
29-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		0.023	0.015	0.003	0.002	0.009	0.004	0.001	0.007	0.009	0.008	0.007	0.005	0.000	0.000	0.000	0.023	0.021	0.010	0.008	0.011	0.024	0.028	0.015	Diurnal Average		
		0.398	0.226	0.064	0.044	0.199	0.096	0.020	0.134	0.147	0.212	0.189	0.140	0.001	0.000	0.000	0.672	0.398	0.287	0.225	0.311	0.525	0.431	0.356	Diurnal Maximum		
Z - zerospan		C - Calibration			M - Maintenance																						





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	624	94.98	94.98
0.006 - 0.05	7	1.07	96.04
0.06 - 0.1	10	1.52	97.56
> 0.1	16	2.44	100.00

Total Number of Valid Hours: 657

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	117	68	30	3	6	18	53	109	31	20	26	34	43	22	20	23	623
0.006 - 0.05	2	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	7
0.06 - 0.1	4	1	0	1	0	0	0	0	0	0	0	0	0	0	2	2	10
> 0.1	7	3	1	0	0	0	0	0	0	0	0	0	0	0	0	5	16
Totals	130	75	31	4	6	19	54	109	31	20	26	34	43	22	22	30	656

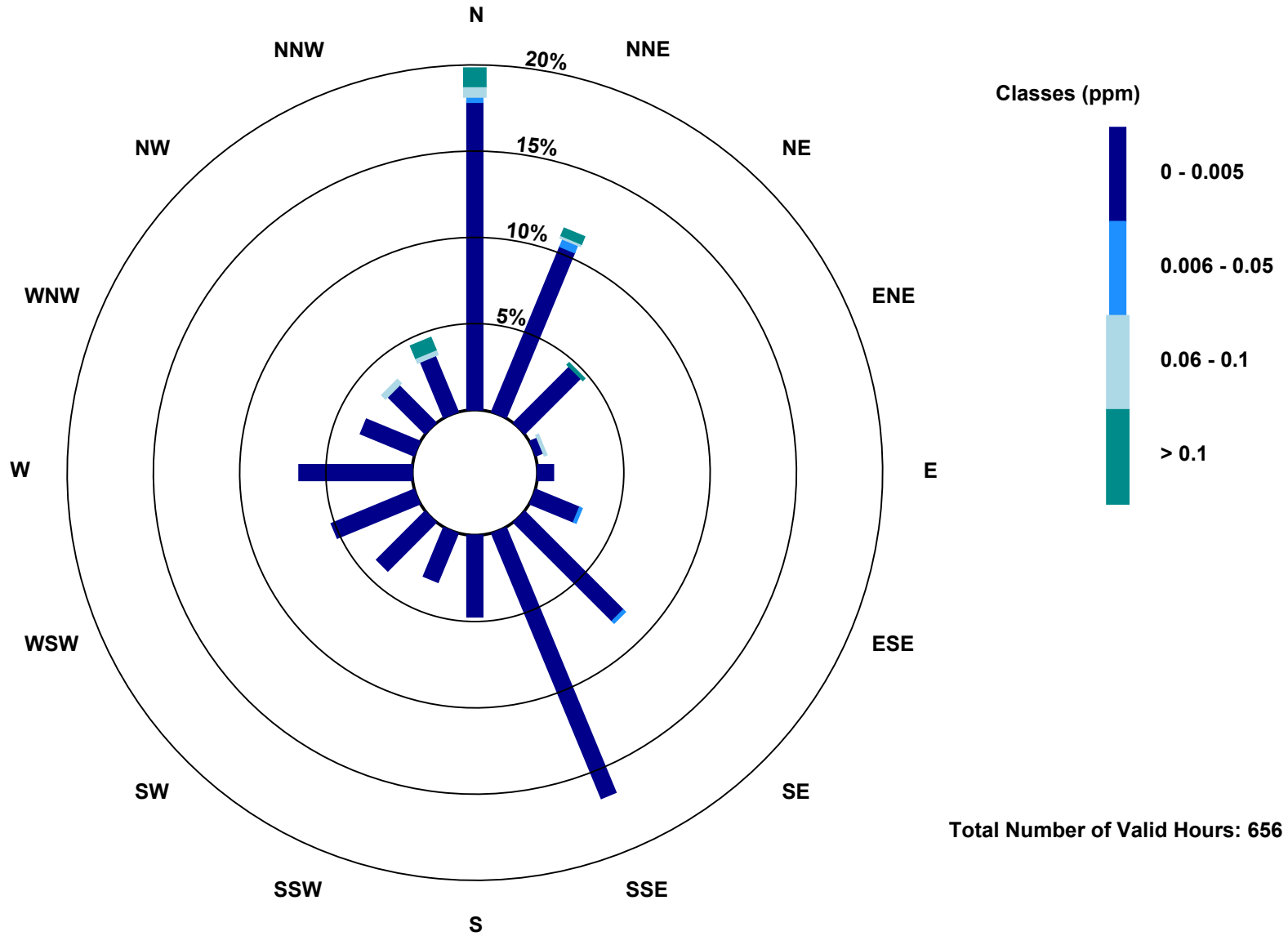
Total Number of Valid Hours: 656

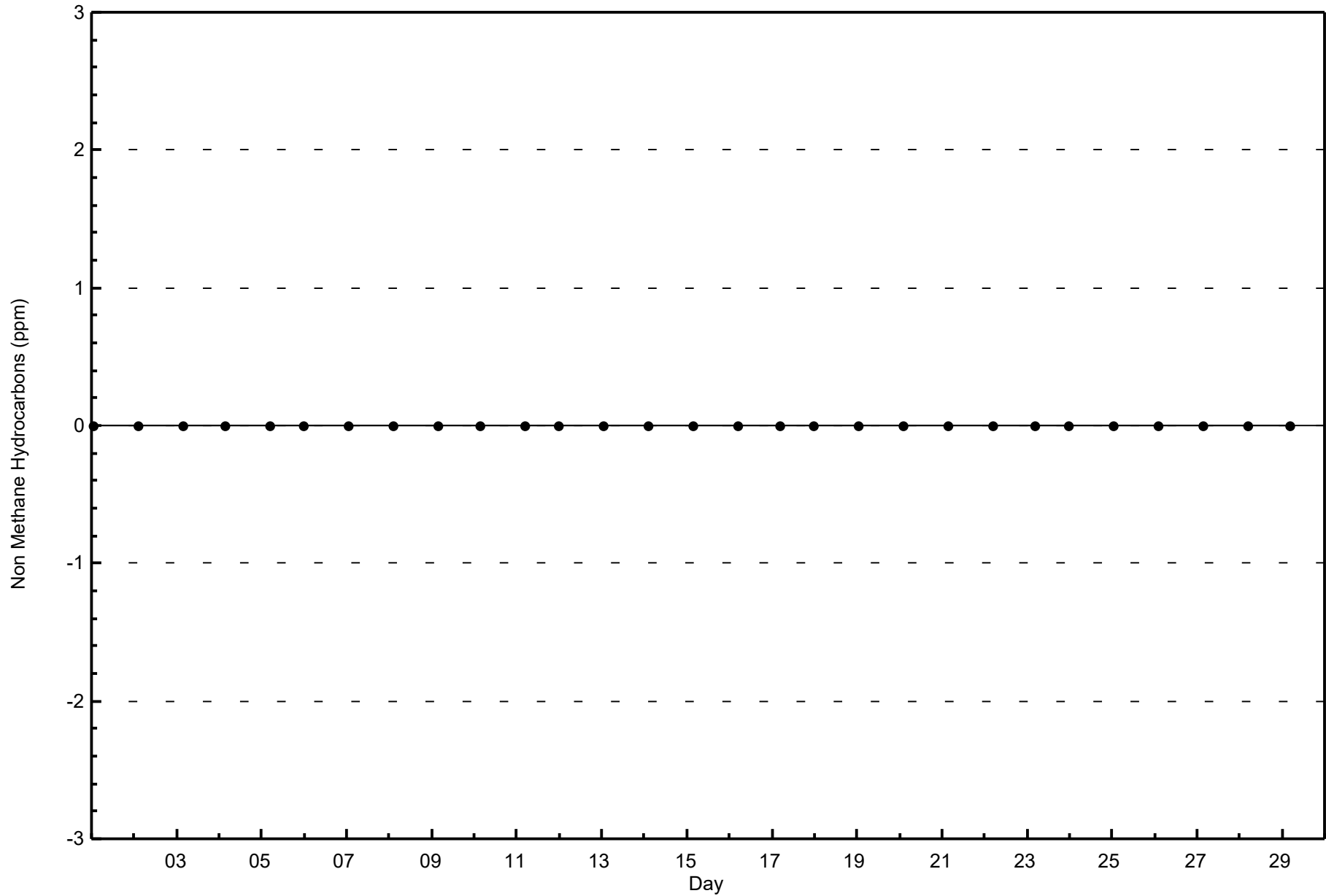
Total Number of Hours: 696

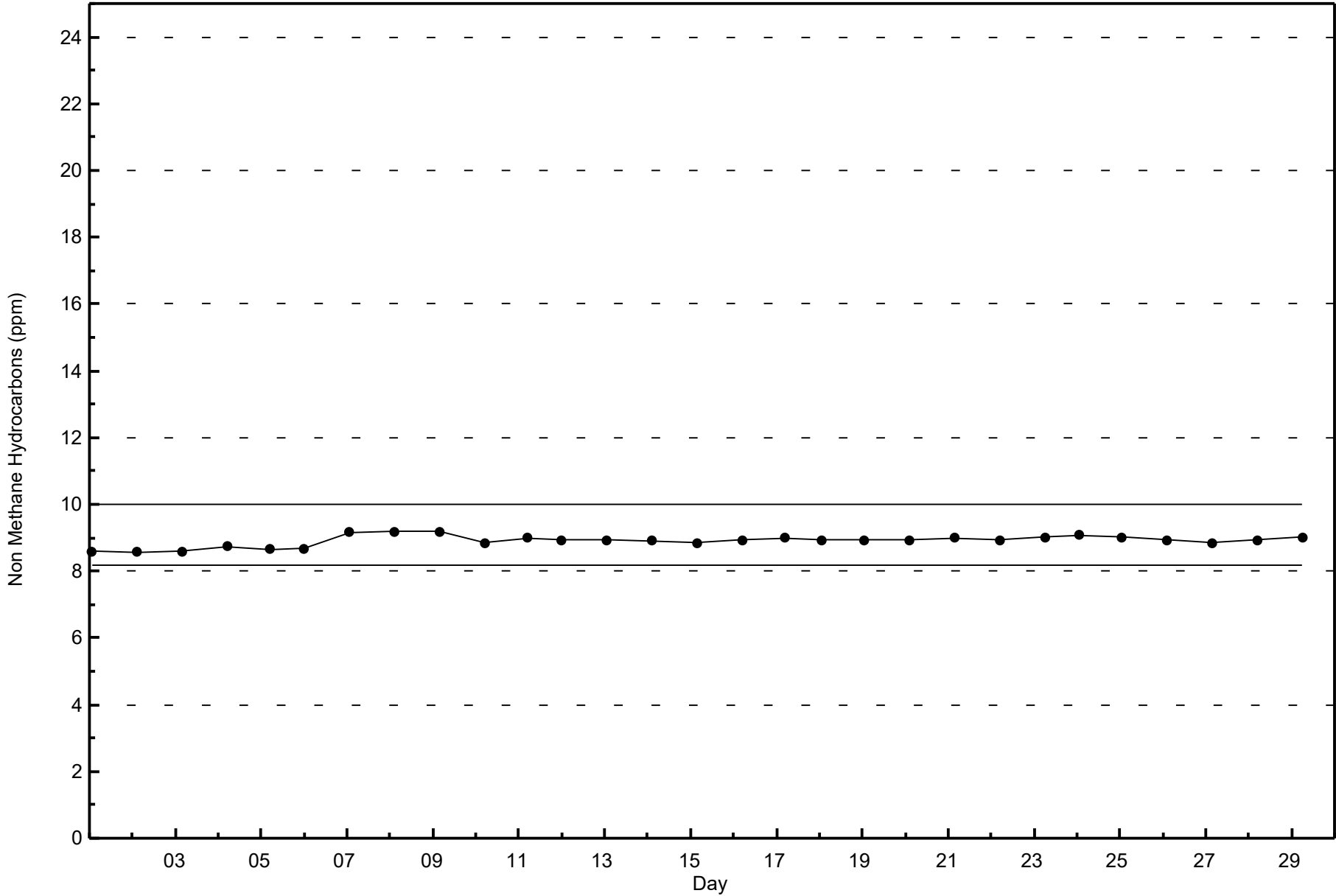


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Buffalo Viewpoint

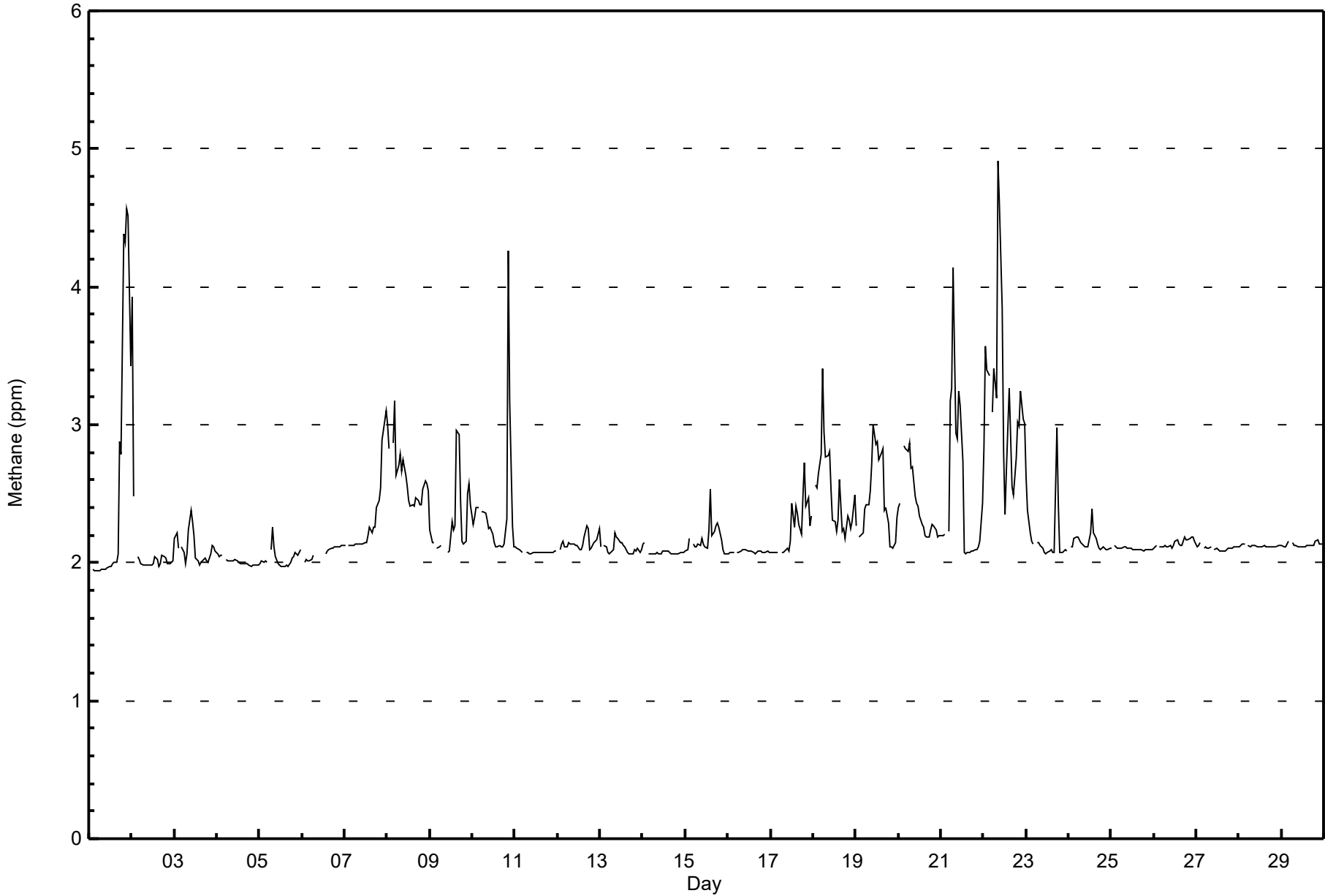








Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														696																											
Maximum Value: 4.9 ppm on Feb 22 09:00		Maximum Daily Average: 3.2 ppm on Feb 22		Hours of Data: 657														657																													
Minimum Value: 1.9 ppm on Feb 1 01:00		Minimum Daily Average: 2.0 ppm on Feb 4		Hours of Missing Data: 39														39																													
Maximum Diurnal Average: 2.3 ppm at hour 22		Minimum Diurnal Average: 2.2 ppm at hour 14		Hours of Calibration: 35														35																													
Monthly Average: 2.26 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.1 Median = 2.1 Q ₃ = 2.3 P ₉₀ = 2.7 P ₉₉ = 4.2		Percent Operational Time: 99.4														99.4																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																							
1-Feb	1.9	Z	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.9	2.8	4.4	4.3	4.6	4.5	3.4	2.5	4.6																						
2-Feb	3.9	2.5	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	3.9																						
3-Feb	2.2	2.2	2.1	Z	2.1	2.1	2.0	2.1	2.2	2.4	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.4																						
4-Feb	2.1	2.0	2.1	2.1	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1																						
5-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.1	2.3	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.3																						
6-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.1	C	C	C	C	C	C	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1																						
7-Feb	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.3	2.3	2.4	2.5	2.5	2.9	3.0	3.1																						
8-Feb	3.0	2.8	Z	2.9	3.2	2.6	2.7	2.8	2.7	2.7	2.6	2.5	2.5	2.4	2.4	2.4	2.5	2.4	2.4	2.4	2.5	2.6	2.6	2.5	3.2																						
9-Feb	2.2	2.1	2.1	Z	2.1	2.1	2.1	M	M	M	2.1	2.1	2.3	2.2	2.3	3.0	2.9	2.4	2.2	2.1	2.2	2.5	2.6	2.4	3.0																						
10-Feb	2.3	2.3	2.4	2.4	Z	2.4	2.4	2.4	2.3	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	4.3	3.2	2.3	2.1	4.3																						
11-Feb	2.1	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1																						
12-Feb	Z	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.1	2.1	2.1	2.2	2.2	2.3	2.3																						
13-Feb	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2																						
14-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1																						
15-Feb	2.1	2.1	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.5	2.2	2.2	2.3	2.3	2.3	2.2	2.1	2.1	2.5																						
16-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1																						
17-Feb	2.1	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.3	2.4	2.4	2.3	2.2	2.5	2.7	2.4	2.5	2.3	2.3	2.7																						
18-Feb	Z	2.6	2.5	2.6	2.8	3.4	3.0	2.8	2.8	2.8	2.5	2.3	2.3	2.2	2.3	2.6	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.5	3.4																						
19-Feb	2.3	Z	2.2	2.2	2.2	2.4	2.4	2.4	2.5	2.7	3.0	2.9	2.9	2.7	2.8	2.8	2.4	2.4	2.3	2.1	2.1	2.1	2.1	2.3	3.0																						
20-Feb	2.4	2.4	Z	2.8	2.8	2.8	2.9	2.7	2.7	2.5	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.9																						
21-Feb	2.2	2.2	2.2	Z	2.2	3.2	3.3	4.1	2.9	2.9	3.2	3.1	2.7	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	4.1																						
22-Feb	2.8	3.6	3.4	3.4	Z	3.1	3.4	3.2	4.9	4.6	3.8	2.8	2.3	2.7	3.3	2.9	2.6	2.5	2.8	3.0	3.0	3.2	3.0	3.0	4.9																						
23-Feb	2.6	2.4	2.2	2.2	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.0	2.4	2.1	2.1	2.1	2.1	2.1	2.1	3.0																						
24-Feb	Z	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4																						
25-Feb	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1																						
26-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2																						
27-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	M	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1																						
28-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1																						
29-Feb	2.1	2.1	2.1	2.1	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2																						
2.3																								2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	Diurnal Average
3.9																								3.6	3.4	3.4	3.2	3.4	3.4	4.1	4.9	4.6	3.8	3.1	2.9	2.7	3.3	3.0	2.9	3.0	2.8	4.4	4.3	4.6	4.5	3.4	Diurnal Maximum
Z - zerospan		C - Calibration				M - Maintenance																																									





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Methane (CH₄) - ppm
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	85	12.94	12.94
2.1 - 3.0	545	82.95	95.89
3.1 - 10.0	27	4.11	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 657

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Methane (CH₄) - ppm
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	31	7	3	0	1	3	6	21	10	0	0	0	0	0	1	2	85
2.1 - 3.0	93	64	28	4	5	16	45	87	19	20	26	34	43	20	19	21	544
3.1 - 10.0	6	4	0	0	0	0	3	1	2	0	0	0	0	2	2	7	27
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	130	75	31	4	6	19	54	109	31	20	26	34	43	22	22	30	656

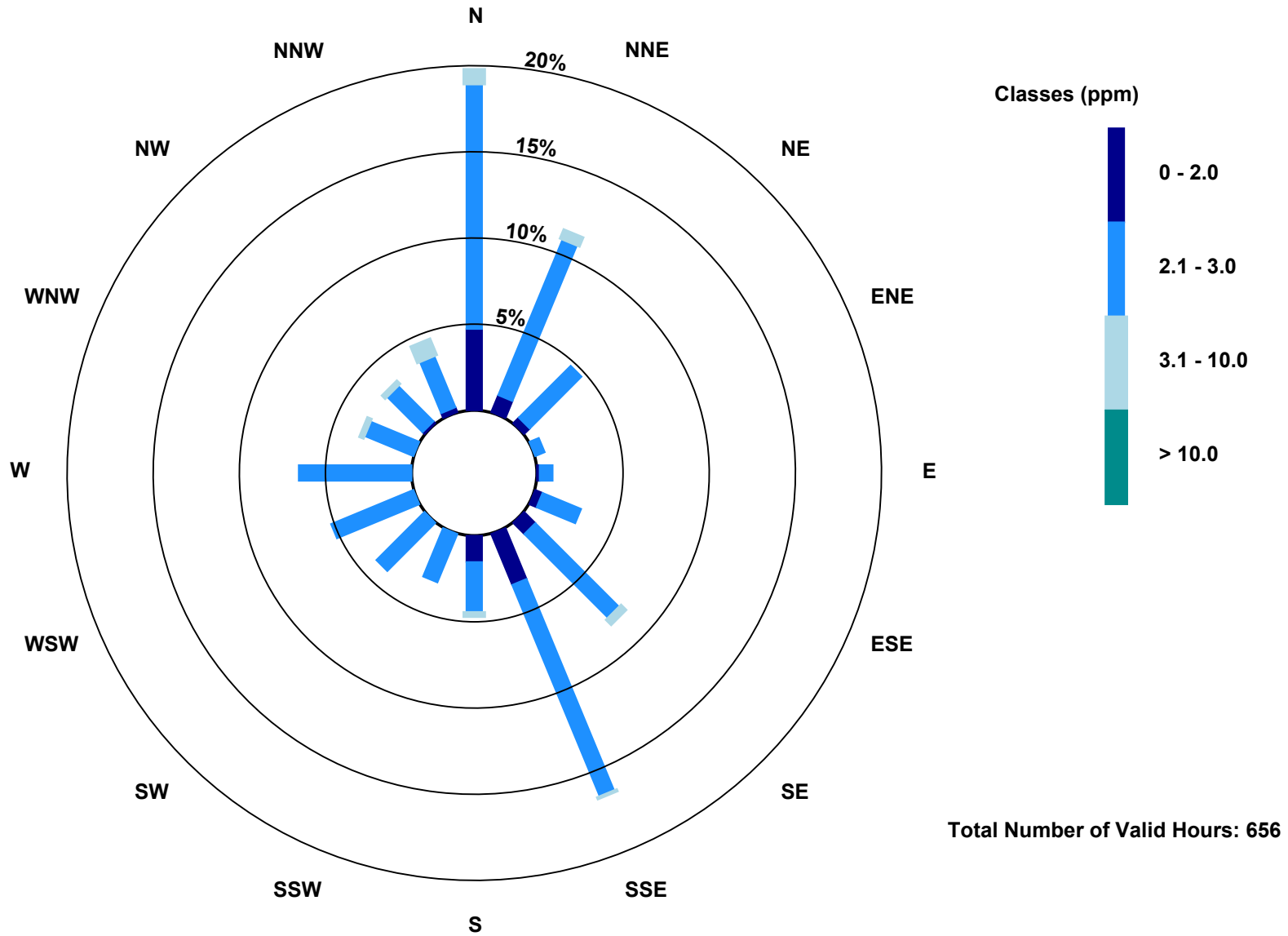
Total Number of Valid Hours: 656

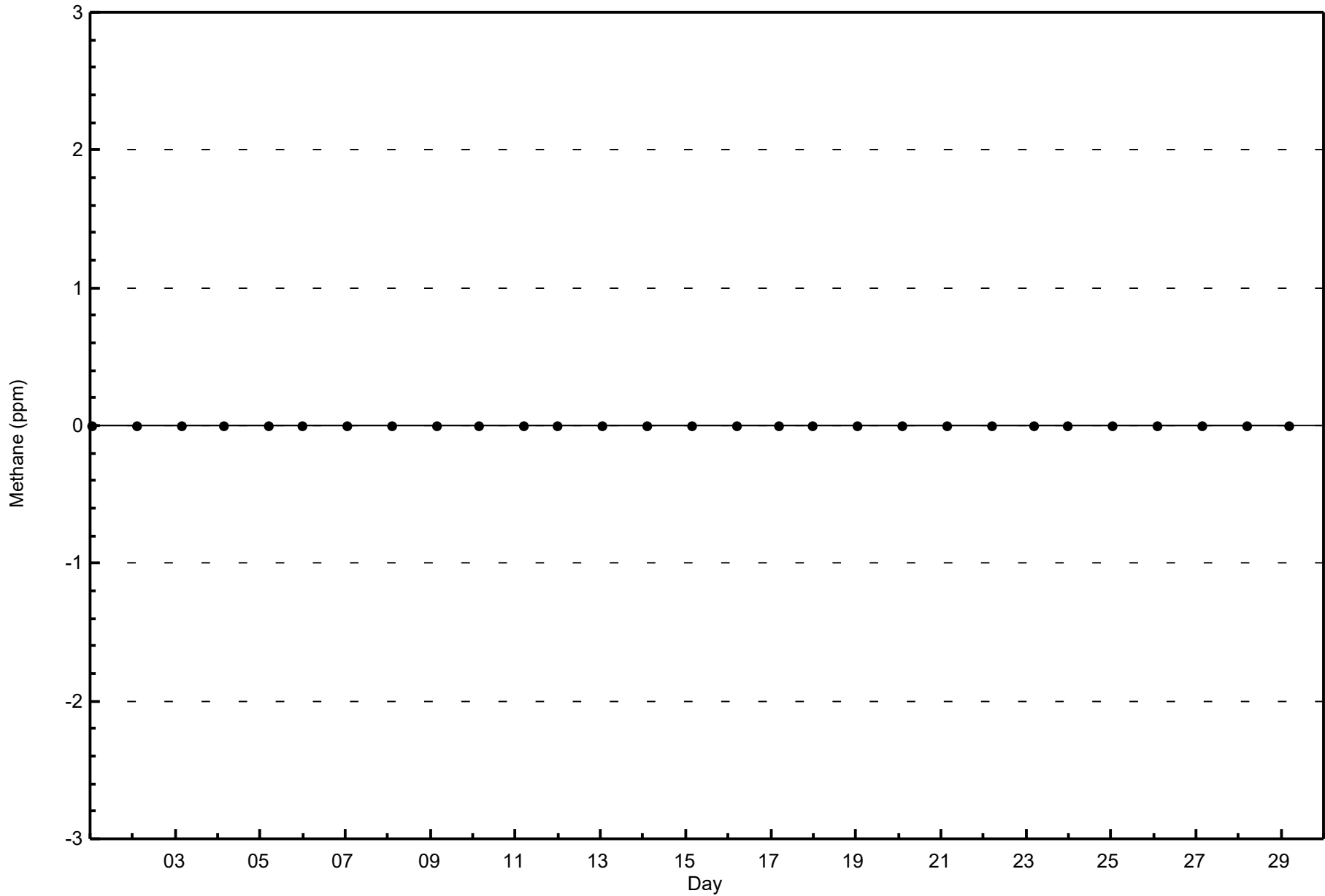
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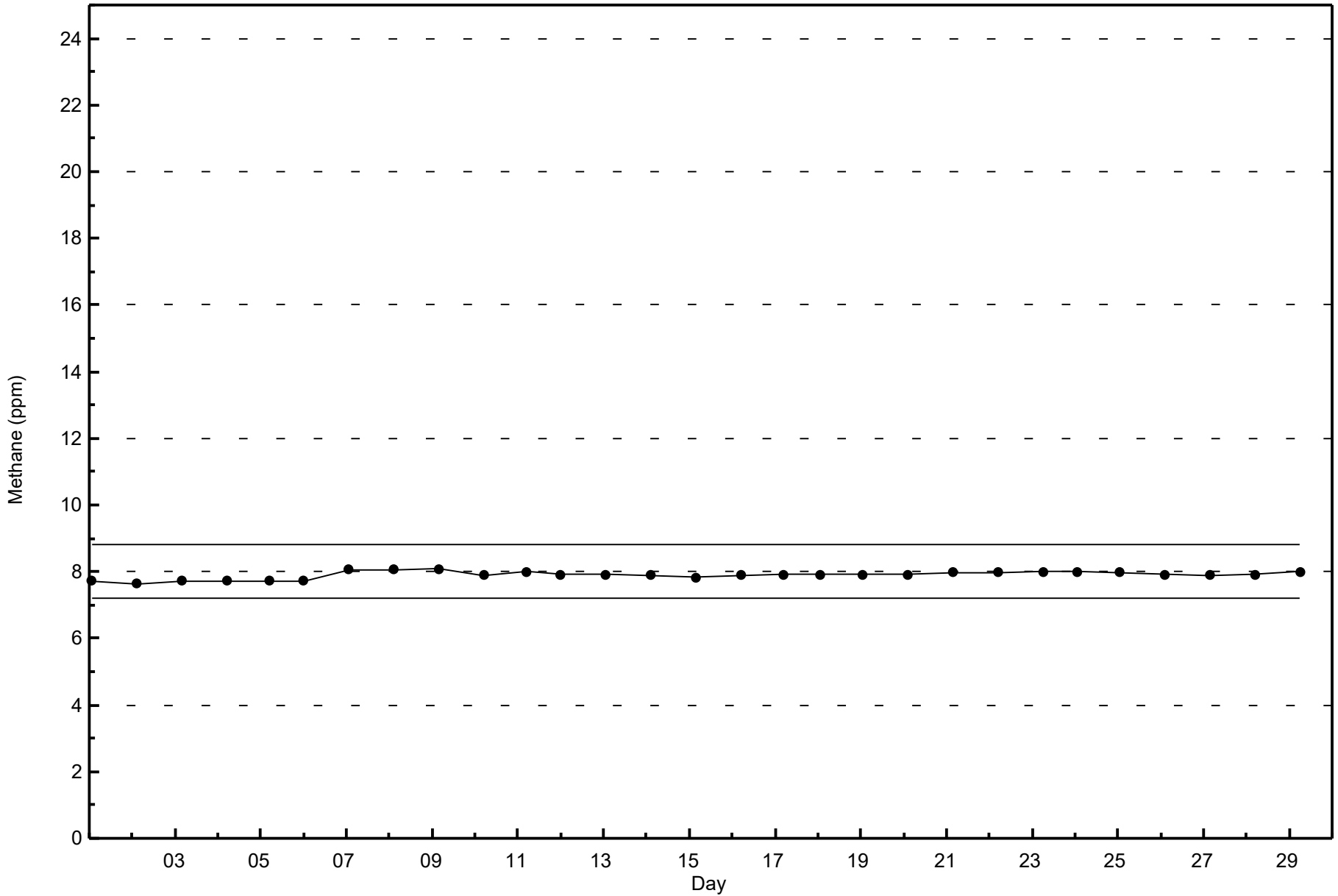


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Buffalo Viewpoint

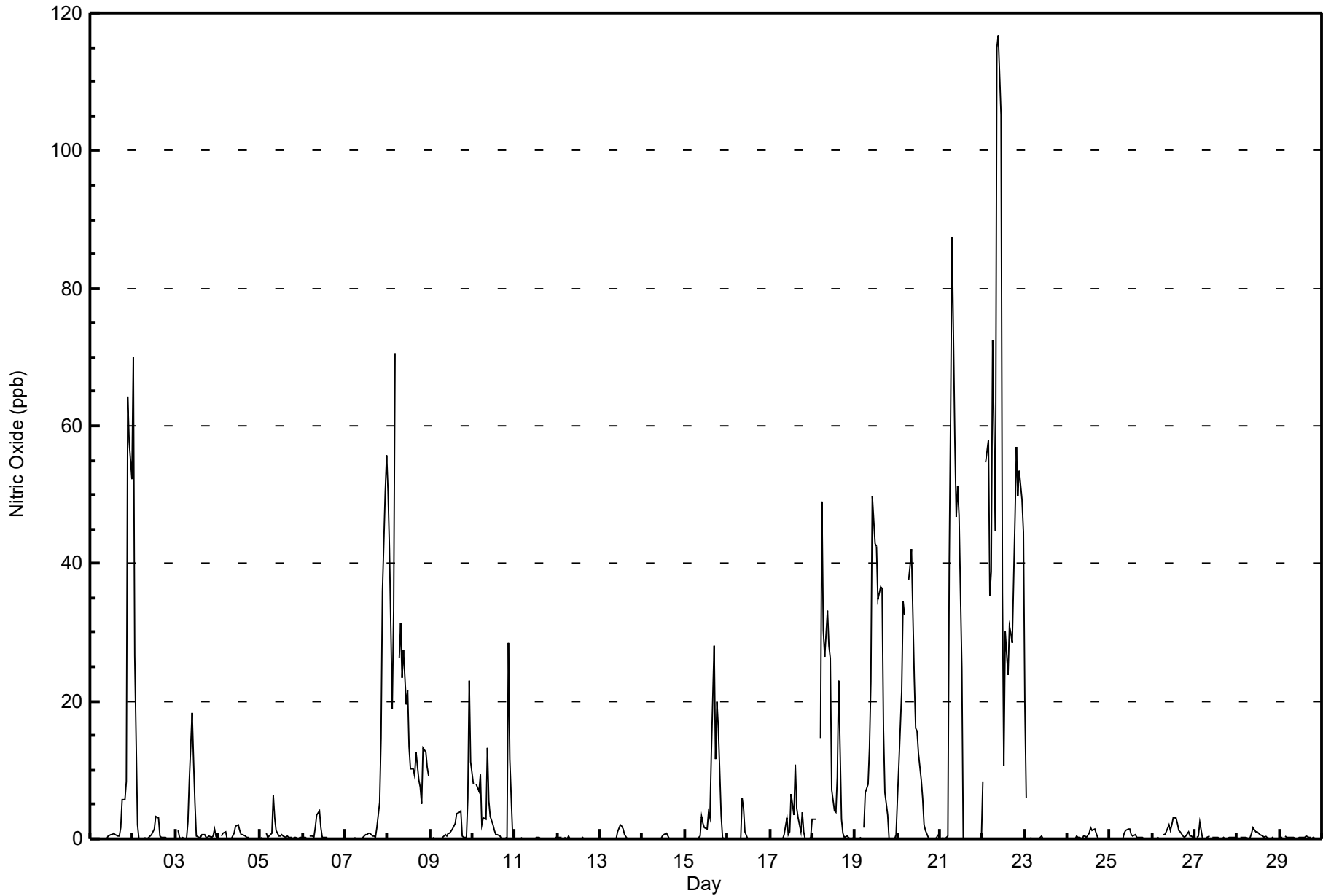








Maximum Value: 116.7 ppb on Feb 22 10:00																					Maximum Daily Average: 49.6 ppb on Feb 22					Hours in Service:	696
Minimum Value: 0.0 ppb on Feb 1 01:00																					Minimum Daily Average: 0.1 ppb on Feb 11					Hours of Data:	661
Maximum Diurnal Average: 11.6 ppb at hour 9																					Minimum Diurnal Average: 2.3 ppb at hour 18					Hours of Missing Data:	35
Monthly Average: 5.96 ppb																					Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.2 Q ₃ = 2.0 P ₉₀ = 22.9 P ₉₉ = 66.6					Hours of Calibration:	34
																										Percent Operational Time:	99.9
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.4	0.6	0.5	0.8	0.5	0.4	0.4	1.7	5.8	5.6	8.3	64.3	57.8	52.2	8.7	64.3	
2-Feb	70.0	26.6	2.1	0.0	0.0	Z	0.2	0.0	0.0	0.3	0.7	1.0	1.3	3.2	3.0	0.4	0.2	0.3	0.3	0.0	0.0	0.0	0.0	0.0	4.8	70.0	
3-Feb	Z	1.2	0.1	0.1	0.2	0.1	0.0	2.5	8.6	18.2	11.6	5.4	0.5	0.2	0.2	0.6	0.6	0.2	0.3	0.4	0.3	0.3	1.5	0.4	2.3	18.2	
4-Feb	0.5	Z	0.3	0.7	1.1	0.0	0.1	0.1	0.3	0.8	1.8	2.0	1.2	0.6	0.5	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.0	
5-Feb	0.1	0.2	Z	0.7	0.1	0.3	0.8	6.3	3.1	1.2	0.4	0.4	0.6	0.5	0.2	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.7	6.3	
6-Feb	0.2	0.2	0.0	Z	0.3	0.3	0.2	1.7	3.5	4.1	1.6	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.6	4.1	
7-Feb	0.0	0.0	0.0	0.0	Z	0.2	0.1	0.0	0.0	0.0	0.3	0.6	0.6	0.7	0.9	0.4	0.5	0.3	1.6	5.4	14.6	36.1	50.4	55.8	7.3	55.8	
8-Feb	50.5	42.1	18.9	33.2	70.7	Z	26.2	31.3	23.4	27.5	19.5	21.6	13.4	10.1	10.1	9.1	12.6	8.6	7.5	5.1	13.3	12.6	10.4	9.2	21.2	70.7	
9-Feb	Z	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.5	0.4	0.7	0.8	1.4	1.8	2.3	3.7	3.9	4.1	0.5	0.2	0.3	6.0	23.1	11.2	2.7	23.1	
10-Feb	8.0	Z	7.9	6.9	9.3	2.0	3.1	2.8	13.1	5.6	3.2	2.0	1.2	0.6	0.5	0.3	0.0	0.0	0.1	0.3	28.4	11.5	0.7	0.0	4.7	28.4	
11-Feb	0.0	0.0	Z	0.2	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.2	0.1
12-Feb	0.1	0.1	0.1	Z	0.2	0.0	0.3	0.1	C	C	C	C	C	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	
13-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	1.1	2.0	1.9	1.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.0	
14-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.4	0.6	0.9	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9	
15-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	3.2	2.3	1.5	1.4	3.8	3.1	12.5	28.0	11.7	19.9	16.0	3.4	0.3	0.0	0.0	4.7	28.0	
16-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	5.9	4.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	5.9	
17-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.6	3.1	0.6	1.1	6.5	3.4	10.7	4.5	3.1	0.9	3.8	1.1	0.0	0.0	0.0	0.1	1.7	10.7	
18-Feb	2.9	2.8	2.9	Z	14.5	48.9	30.2	26.4	33.2	28.2	26.3	7.1	4.0	3.8	9.0	22.9	2.8	0.9	0.2	0.4	0.2	0.0	0.1	0.3	11.7	48.9	
19-Feb	0.0	0.0	0.0	0.2	Z	1.7	6.7	7.8	13.2	22.7	49.8	43.0	42.4	34.7	36.6	36.4	15.8	6.7	3.6	0.0	0.0	0.0	0.0	0.7	14.0	49.8	
20-Feb	5.8	10.7	21.3	34.5	32.4	Z	37.7	39.7	42.2	23.4	16.1	15.6	12.4	8.6	5.8	2.0	1.2	0.1	0.0	0.0	0.0	0.0	0.2	0.7	13.5	42.2	
21-Feb	Z	0.2	0.0	0.0	0.5	40.1	62.3	87.4	57.9	46.7	51.2	47.0	24.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	18.2	87.4	
22-Feb	8.2	Z	54.6	58.0	35.4	38.9	72.4	44.8	115.0	116.7	105.2	35.7	10.6	30.2	23.9	30.8	29.8	28.6	46.8	57.0	49.8	53.5	49.2	44.5	49.6	116.7	
23-Feb	19.8	5.8	Z	0.2	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	19.8	
24-Feb	0.0	0.0	0.0	Z	0.1	0.4	0.2	0.2	0.1	0.4	0.3	0.2	0.7	1.7	1.2	1.3	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.7	
25-Feb	0.1	0.0	0.1	0.0	Z	0.1	0.0	0.1	0.8	1.3	1.4	1.4	0.5	0.4	0.5	0.3	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.3	1.4	
26-Feb	0.1	0.0	0.1	0.1	0.1	Z	0.7	0.5	1.1	1.9	1.3	2.0	3.1	3.0	2.2	1.2	0.9	0.5	0.1	0.4	1.1	0.5	0.4	0.1	0.9	3.1	
27-Feb	Z	0.2	0.3	2.4	0.0	0.1	0.0	0.1	0.4	M	0.3	0.3	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.2	0.2	0.1	0.2	2.4	
28-Feb	0.1	Z	0.2	0.2	0.2	0.1	0.1	0.2	0.9	1.6	1.0	1.1	0.8	0.7	0.5	0.2	0.5	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.4	1.6	
29-Feb	0.1	0.2	Z	0.3	0.2	0.1	0.2	0.2	0.2	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.3	
																					6.9 3.8 4.5 5.5 6.9 5.6 8.3 8.7 11.6 11.6 10.7 6.9 4.7 3.9 3.9 4.4 3.5 2.3 3.1 3.2 4.1 6.4 6.7 6.1					Diurnal Average	
																					70.0 42.1 54.6 58.0 70.7 48.9 72.4 87.4 115.0 116.7 105.2 47.0 42.4 34.7 36.6 36.4 29.8 28.6 46.8 57.0 49.8 64.3 57.8 55.8					Diurnal Maximum	
Z - zerospan			C - Calibration			M - Maintenance																					





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	591	89.41	89.41
21 - 40	37	5.60	95.01
41 - 80	29	4.39	99.39
81 - 159	4	0.61	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	119	62	26	2	6	17	51	101	29	19	25	33	46	16	15	23	590
21 - 40	3	8	7	1	0	2	3	1	2	3	1	0	0	2	0	4	37
11 - 80	8	6	0	0	0	0	3	3	1	0	0	0	0	1	1	6	29
81 - 159	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	4
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	131	76	33	3	6	19	57	105	32	22	26	33	46	20	18	33	660

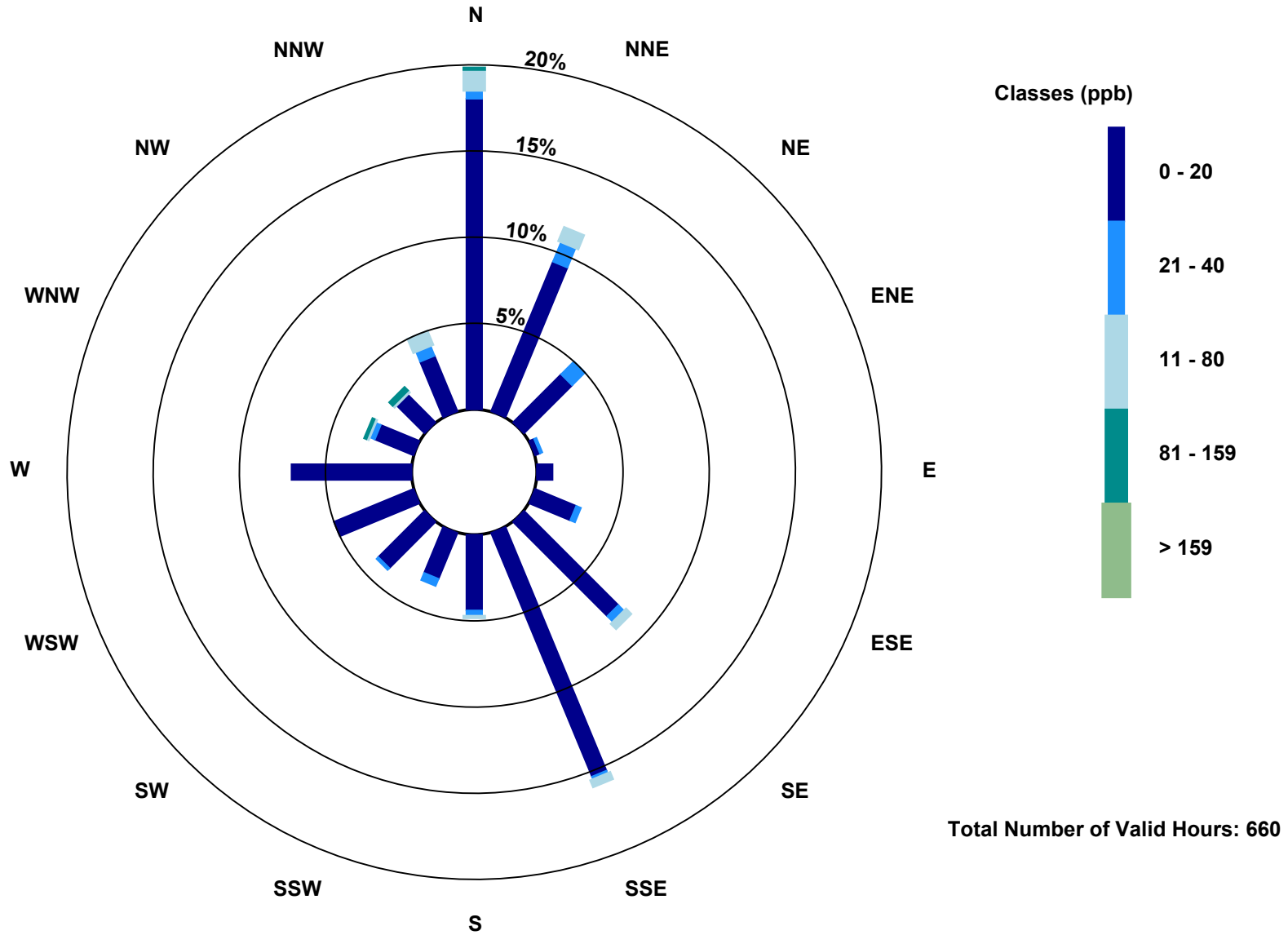
Total Number of Valid Hours: 660

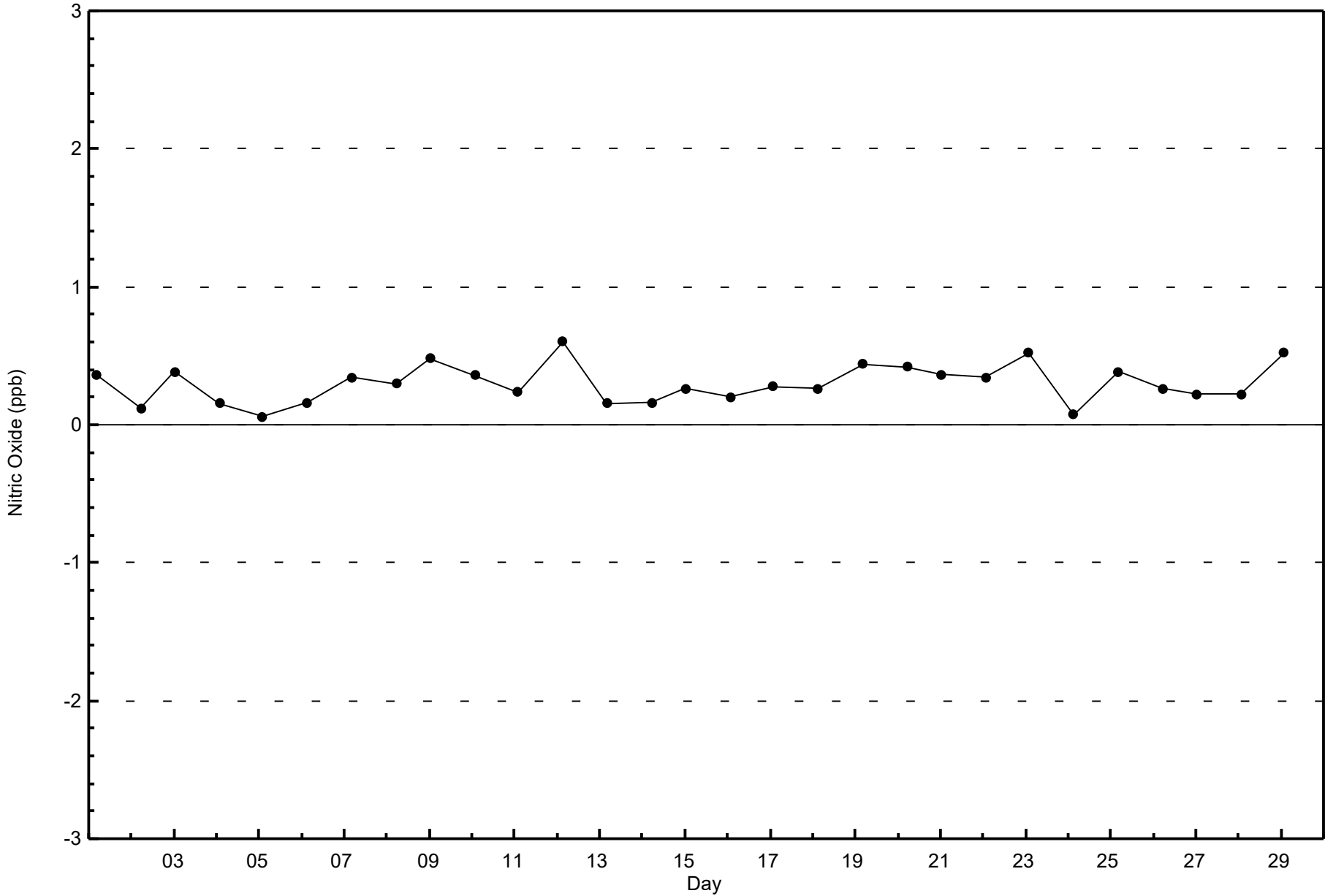
Total Number of Hours: 696

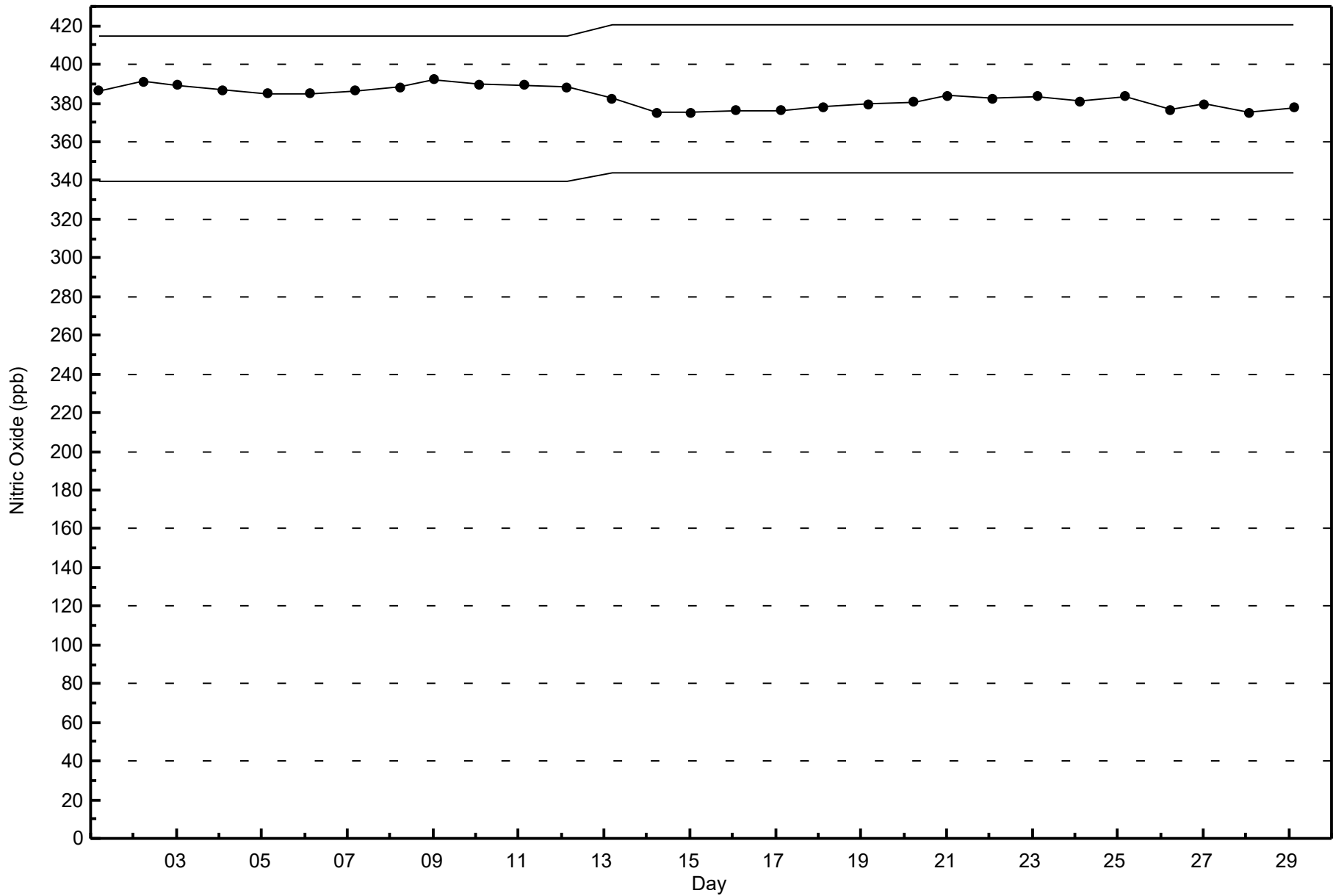


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Buffalo Viewpoint









Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

Buffalo Viewpoint - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 38.5 ppb on Feb 18 01:00	Maximum Daily Average: 30.3 ppb on Feb 22		Hours of Data:	661
Minimum Value: 0.2 ppb on Feb 13 18:00	Minimum Daily Average: 1.4 ppb on Feb 11		Hours of Missing Data:	35
Maximum Diurnal Average: 12.0 ppb at hour 9	Minimum Diurnal Average: 5.9 ppb at hour 14		Hours of Calibration:	34
Monthly Average: 9.39 ppb	Percentiles: P ₁ = 0.3 P ₁₀ = 0.7 Q ₁ = 2.2 Median = 5.0 Q ₃ = 14.7 P ₉₀ = 25.2 P ₉₉ = 36.5		Percent Operational Time:	99.9

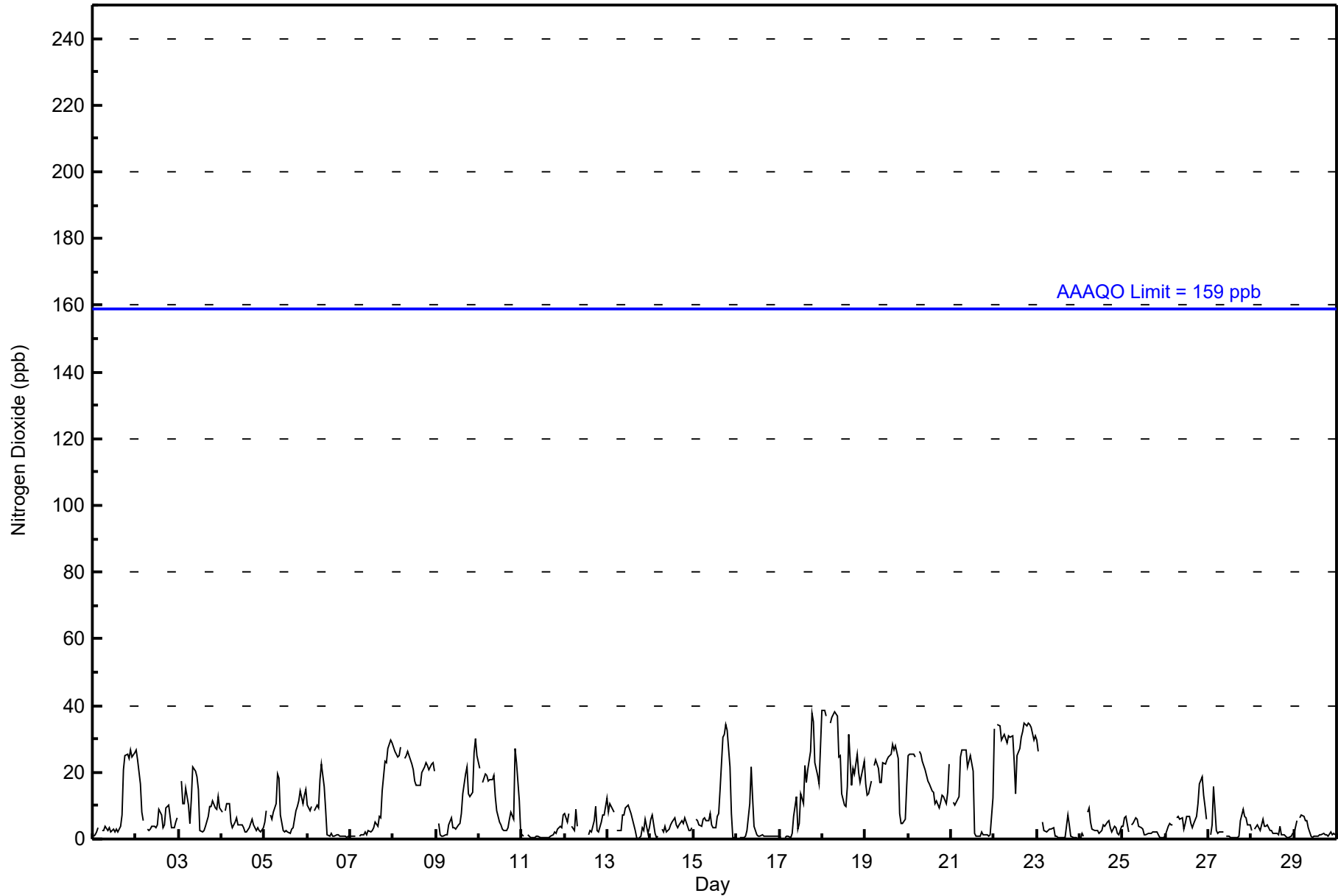
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.9	1.1	2.2	3.6	Z	2.6	2.5	3.9	2.4	3.2	2.3	2.9	2.0	3.1	2.3	3.7	7.4	20.6	25.1	25.3	24.3	26.7	24.5	25.7	9.5	26.7																							
2-Feb	26.5	23.9	16.5	8.0	5.6	Z	3.0	2.7	3.1	3.8	3.7	3.4	4.4	8.8	7.3	3.4	4.4	9.5	10.3	6.8	3.6	3.3	5.0	6.4	7.5	26.5																							
3-Feb	Z	17.2	10.4	10.5	15.3	10.3	4.6	11.9	21.7	20.5	18.5	14.7	2.6	2.3	2.5	4.0	6.6	9.6	9.9	11.4	9.2	8.8	12.6	9.3	10.6	21.7																							
4-Feb	8.2	Z	8.3	10.7	10.8	5.1	3.5	4.9	6.2	4.3	4.4	4.1	3.2	2.0	2.3	3.3	4.7	6.0	4.4	2.7	3.5	2.4	2.3	3.3	4.8	10.8																							
5-Feb	5.1	8.4	Z	7.2	5.9	7.9	10.6	19.4	18.1	7.0	2.7	2.3	2.4	2.2	1.5	3.0	3.5	8.5	9.6	11.6	14.4	10.8	13.1	14.7	8.3	19.4																							
6-Feb	10.1	8.6	9.9	Z	8.3	10.1	9.2	17.9	22.6	15.8	9.0	1.4	0.7	1.9	0.7	0.7	1.2	1.3	0.9	0.8	0.8	0.7	0.6	0.7	5.8	22.6																							
7-Feb	0.7	1.0	0.8	0.8	Z	0.9	1.1	1.1	2.1	1.4	2.4	2.3	2.6	3.5	5.0	4.0	6.8	6.4	14.2	23.2	22.7	27.2	29.6	28.9	8.2	29.6																							
8-Feb	27.5	26.1	24.4	25.1	27.6	Z	24.0	25.2	26.1	25.2	22.3	20.6	17.5	15.9	16.2	16.2	20.0	21.7	22.8	21.9	20.8	22.6	22.7	20.4	22.3	27.6																							
9-Feb	Z	4.8	1.3	0.7	0.8	1.1	1.4	4.1	6.2	3.5	3.4	2.8	4.3	4.8	7.6	13.6	19.3	21.8	13.7	12.5	13.9	25.7	30.0	24.8	9.7	30.0																							
10-Feb	21.1	Z	17.1	19.3	19.2	17.2	18.0	17.7	19.1	12.7	8.6	5.0	4.2	2.8	2.7	2.4	3.5	6.0	7.9	5.9	27.3	22.9	11.6	1.6	11.9	27.3																							
11-Feb	1.1	1.0	Z	1.1	0.7	0.6	0.6	0.5	0.7	0.7	0.4	0.4	0.5	0.6	0.4	0.3	0.8	1.4	2.3	1.6	3.0	3.7	3.2	7.3	1.4	7.3																							
12-Feb	7.7	5.1	7.5	Z	3.7	2.7	8.7	3.9	C	C	C	C	C	1.1	2.4	2.2	5.3	9.7	2.4	2.3	4.9	7.2	7.3	12.3	5.4	12.3																							
13-Feb	8.1	10.8	9.8	8.1	Z	2.7	2.7	7.1	7.1	9.5	10.0	8.7	7.6	5.8	2.4	0.6	0.2	0.7	3.2	2.4	6.0	1.7	3.3	5.3	10.8																								
14-Feb	5.9	7.2	1.6	0.6	0.7	Z	3.0	2.3	4.0	2.3	2.9	4.3	5.0	6.2	4.3	3.3	4.2	5.6	4.7	6.5	5.2	2.5	2.5	3.5	3.8	7.2																							
15-Feb	Z	5.9	5.5	4.4	3.8	6.1	6.5	5.5	5.5	7.8	4.3	3.2	3.5	6.7	7.6	14.7	30.5	31.5	34.4	32.7	21.4	7.7	0.4	0.4	10.9	34.4																							
16-Feb	0.3	Z	0.6	0.5	0.4	0.9	2.6	10.5	21.7	12.4	3.9	1.1	1.0	1.0	1.4	1.0	1.0	0.8	0.7	0.7	0.8	0.7	0.9	0.7	2.9	21.7																							
17-Feb	0.7	0.5	Z	0.5	0.7	0.7	0.6	1.7	6.7	12.5	3.1	4.6	13.5	10.7	22.1	16.9	20.8	26.4	37.6	35.0	22.9	18.9	16.6	27.6	13.1	37.6																							
18-Feb	38.5	38.5	36.8	Z	34.6	36.3	37.2	38.0	36.7	24.5	24.8	13.7	10.1	9.8	15.5	31.2	16.3	21.0	19.5	25.3	20.1	16.9	19.0	23.5	25.6	38.5																							
19-Feb	16.5	13.3	13.6	17.5	Z	22.1	23.7	21.1	16.8	16.8	23.0	22.5	23.7	24.4	25.4	28.4	26.6	27.8	24.3	7.8	4.6	4.6	6.1	16.2	18.6	28.4																							
20-Feb	25.0	25.3	25.6	25.3	24.4	Z	26.3	25.6	23.5	20.9	19.1	17.3	16.5	14.3	13.8	10.5	11.4	9.2	11.2	13.0	12.7	10.8	14.1	22.4	18.2	26.3																							
21-Feb	Z	10.9	10.3	11.0	12.9	24.6	26.8	26.6	26.6	21.8	23.5	24.9	20.4	1.7	0.8	1.0	1.0	2.2	1.2	1.2	1.3	0.7	1.3	12.1	11.5	26.8																							
22-Feb	33.1	Z	34.5	33.8	29.7	30.5	31.5	28.9	30.8	30.4	31.0	23.3	13.7	24.9	27.3	30.6	32.1	34.8	33.9	34.8	34.2	33.4	29.7	30.9	30.3	34.8																							
23-Feb	29.8	26.3	Z	5.1	2.7	2.0	2.6	3.1	2.9	3.6	0.7	0.7	0.5	0.5	0.3	0.3	7.0	4.3	0.8	0.5	0.4	0.4	0.2	4.1	29.8																								
24-Feb	0.2	1.6	1.0	Z	8.2	9.4	4.9	3.0	2.7	2.6	2.5	1.9	2.4	4.3	3.7	5.2	5.6	3.4	2.3	4.0	3.6	1.7	1.3	3.7	3.4	9.4																							
25-Feb	4.0	6.5	6.9	2.3	Z	4.1	4.7	6.2	5.9	3.9	3.4	2.9	1.3	1.3	1.5	1.5	1.5	2.3	2.1	2.0	1.1	0.6	0.3	0.4	2.9	6.9																							
26-Feb	1.2	3.7	4.6	4.3	4.1	Z	6.3	6.6	6.1	6.5	3.1	4.6	6.8	6.9	4.7	3.6	4.8	6.9	10.6	16.5	18.7	13.0	9.8	6.1	6.9	18.7																							
27-Feb	Z	1.3	4.4	15.5	2.4	1.9	2.3	2.2	2.3	M	0.9	0.8	0.5	0.3	0.3	0.3	0.3	1.0	5.3	9.1	6.6	6.4	4.4	4.1	3.3	15.5																							
28-Feb	2.5	Z	2.9	4.1	3.4	2.7	5.8	3.7	4.0	4.2	2.5	2.4	1.9	1.8	1.6	1.3	3.9	1.2	1.1	0.7	0.6	0.6	0.7	1.8	2.4	5.8																							
29-Feb	1.5	5.3	Z	6.5	7.1	6.7	5.4	5.7	3.4	0.9	0.6	0.7	0.9	0.8	1.4	1.3	1.9	1.4	1.2	1.0	2.0	1.3	1.7	1.1	2.6	7.1																							
																								11.5	10.6	10.7	9.1	9.7	8.7	9.7	10.6	12.0	10.2	8.4	7.1	6.2	5.9	6.5	7.3	8.5	10.5	11.0	11.0	10.6	9.9	9.4	10.8	Diurnal Average	
																								38.5	38.5	36.8	33.8	34.6	36.3	37.2	38.0	36.7	30.4	31.0	24.9	23.7	24.9	27.3	31.2	32.1	34.8	37.6	35.0	34.2	33.4	30.0	30.9	Diurnal Maximum	

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Buffalo Viewpoint - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	540	81.69	81.69
21 - 40	121	18.31	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	112	52	19	1	6	17	47	91	29	19	23	33	45	14	14	18	540
21 - 40	19	24	14	2	0	2	10	14	3	3	3	0	1	6	4	15	120
41 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	131	76	33	3	6	19	57	105	32	22	26	33	46	20	18	33	660

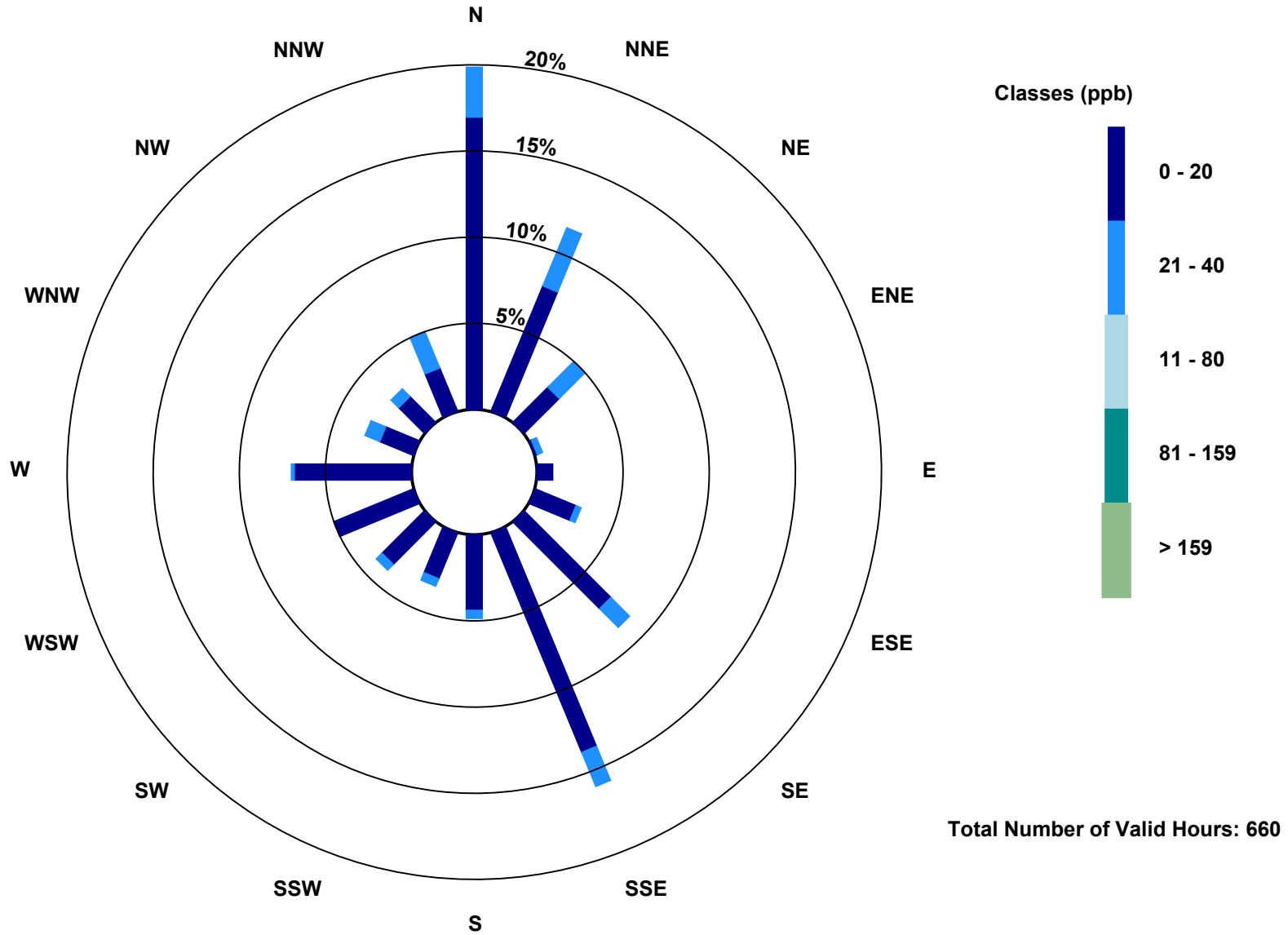
Total Number of Valid Hours: 660

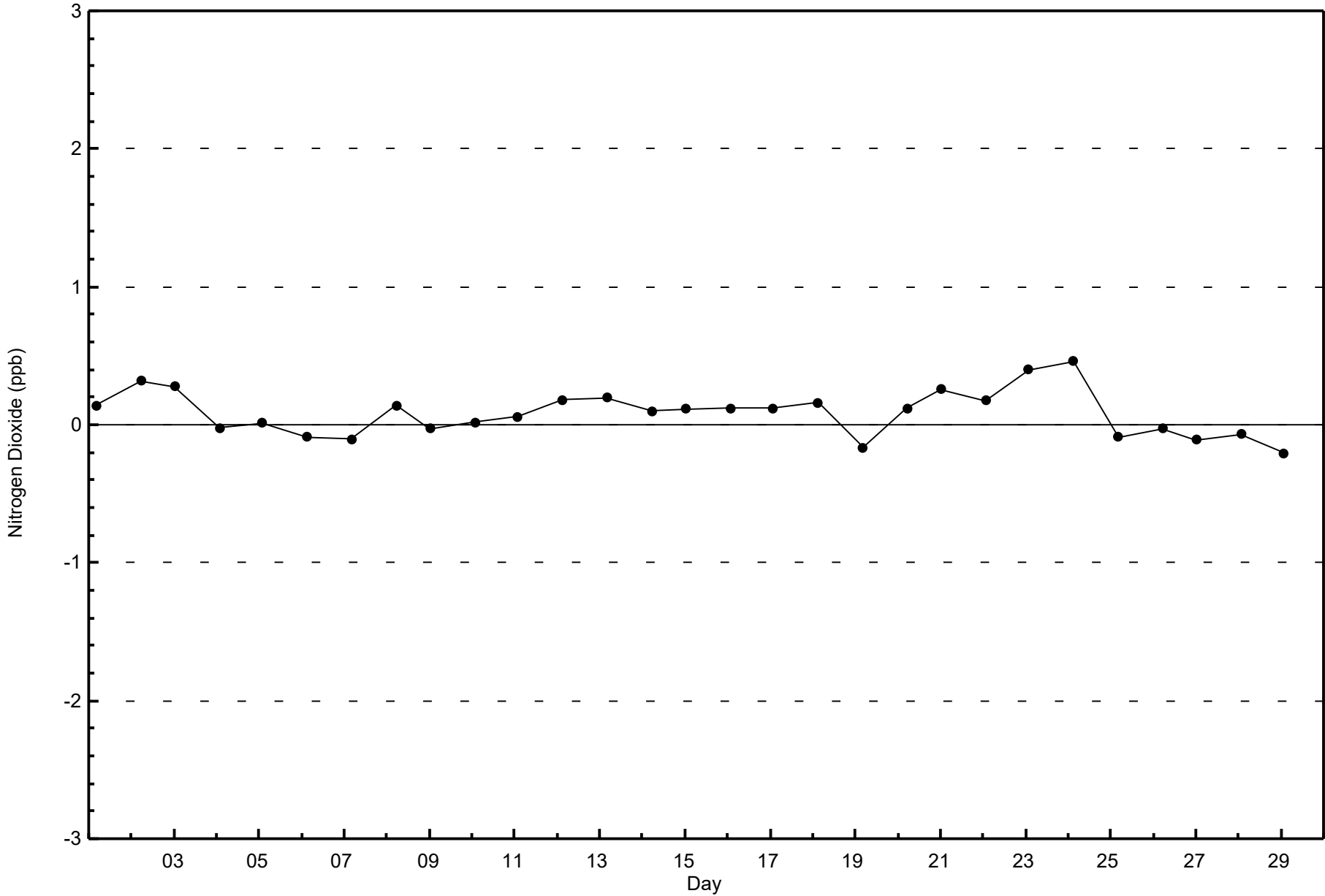
Total Number of Hours: 696

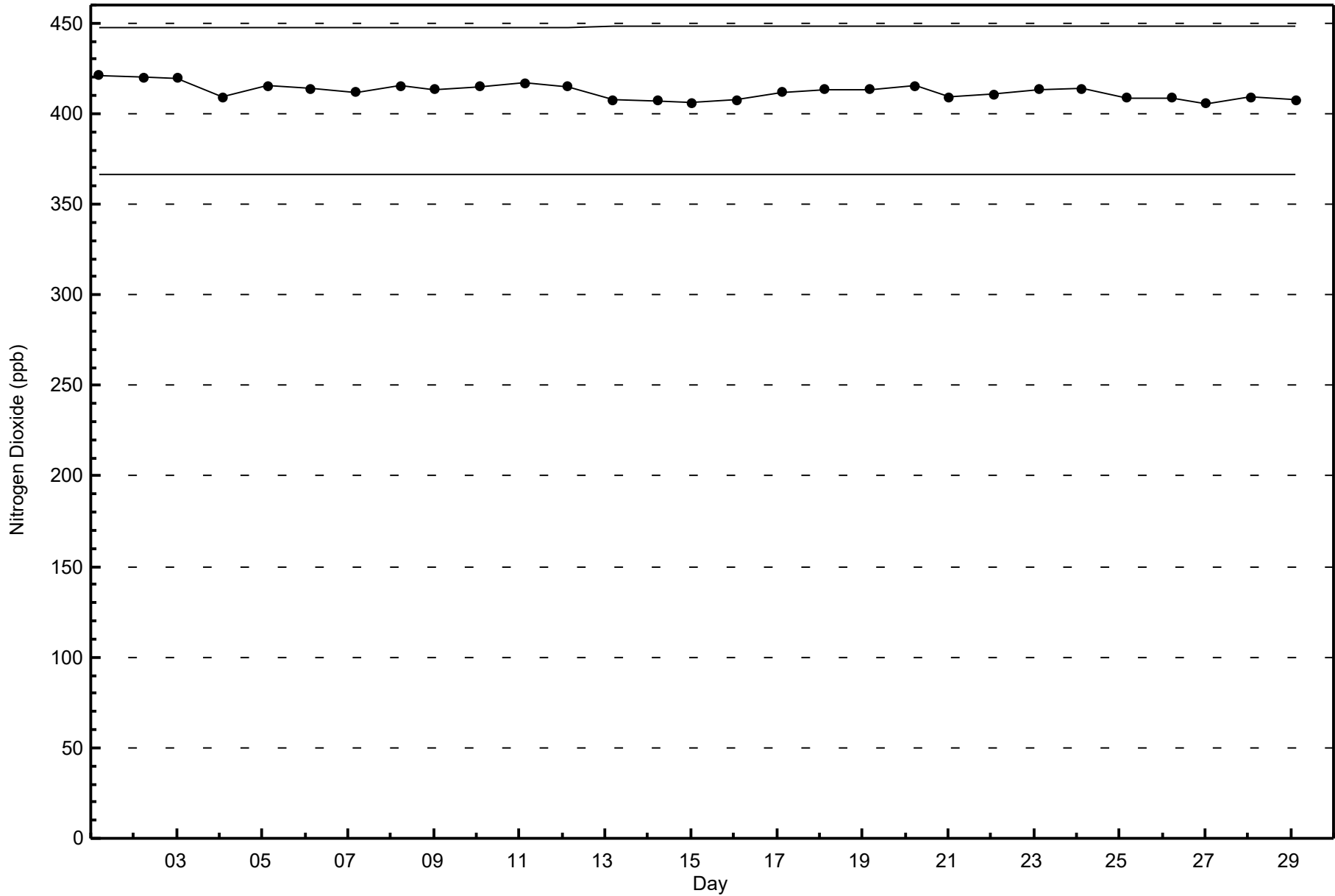


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Buffalo Viewpoint









Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Oxides (NO_x) - ppb

Buffalo Viewpoint - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 147.1 ppb on Feb 22 10:00	Maximum Daily Average: 79.9 ppb on Feb 22		Hours of Data:	661
Minimum Value: 0.2 ppb on Feb 24 01:00	Minimum Daily Average: 1.5 ppb on Feb 11		Hours of Missing Data:	35
Maximum Diurnal Average: 23.5 ppb at hour 9	Minimum Diurnal Average: 9.8 ppb at hour 14		Hours of Calibration:	34
Monthly Average: 15.34 ppb	Percentiles: P ₁ = 0.3 P ₁₀ = 0.8 Q ₁ = 2.3 Median = 5.6 Q ₃ = 17.7 P ₉₀ = 49.5 P ₉₉ = 93.7		Percent Operational Time:	99.9

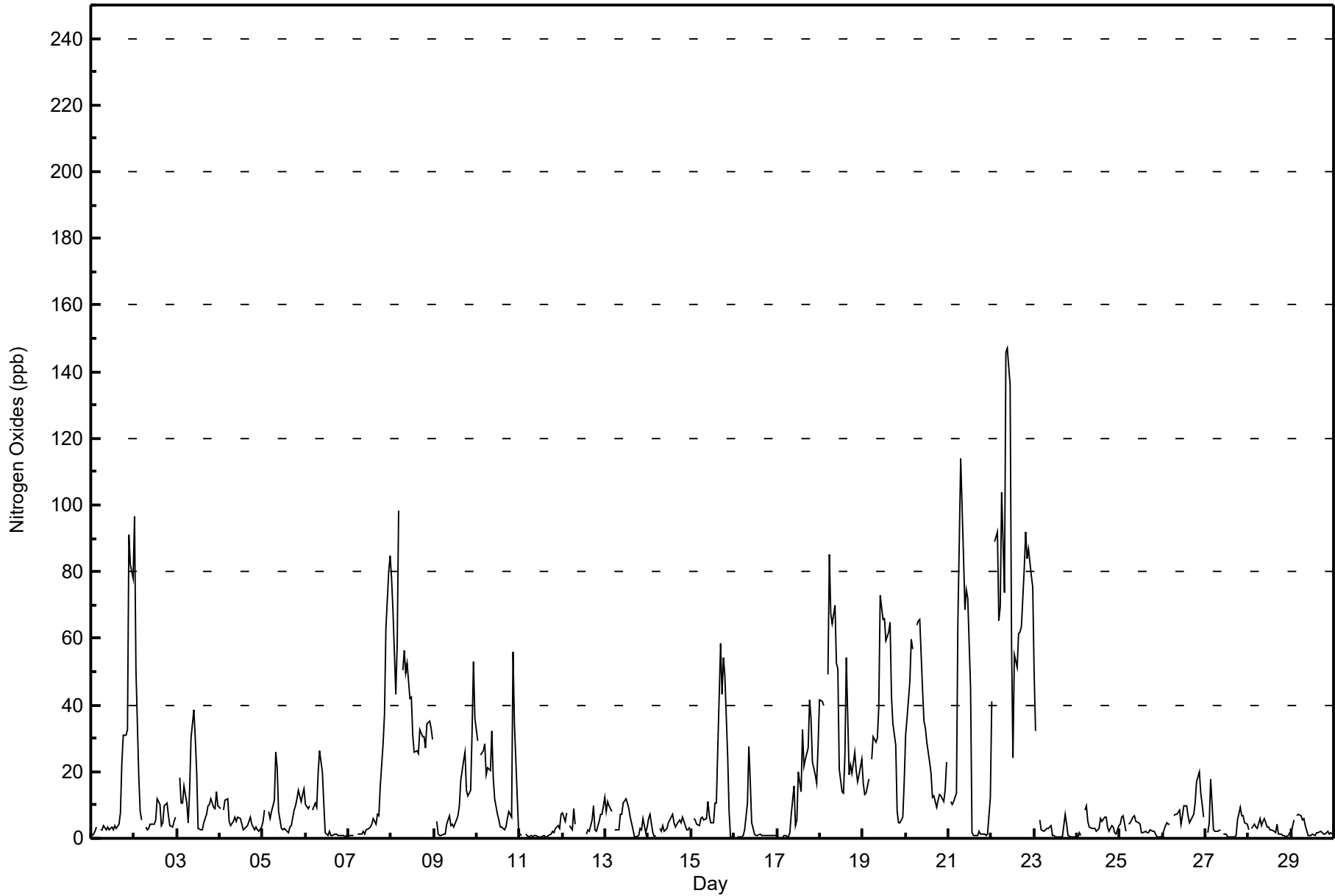
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.9	1.1	2.2	3.6	Z	2.6	2.5	3.9	2.4	3.3	2.7	3.5	2.5	3.9	2.8	4.1	7.8	22.3	30.9	30.9	32.6	91.0	82.3	77.9	18.2	91.0																							
2-Feb	96.5	50.5	18.6	8.0	5.6	Z	3.2	2.7	3.1	4.1	4.4	4.4	5.7	12.0	10.3	3.8	4.6	9.8	10.6	6.8	3.6	3.3	5.0	6.4	12.3	96.5																							
3-Feb	Z	18.4	10.5	10.6	15.5	10.4	4.6	14.4	30.3	38.7	30.1	20.1	3.1	2.5	2.7	4.6	7.2	9.8	10.2	11.8	9.5	9.1	14.1	9.7	13.0	38.7																							
4-Feb	8.7	Z	8.6	11.4	11.9	5.1	3.6	5.0	6.5	5.1	6.2	6.1	4.4	2.6	2.8	3.8	4.9	6.2	4.4	2.7	3.5	2.4	2.3	3.3	5.3	11.9																							
5-Feb	5.2	8.6	Z	7.9	6.0	8.2	11.4	25.7	21.2	8.2	3.1	2.7	3.0	2.7	1.7	3.3	3.7	8.7	9.7	11.8	14.5	10.9	13.2	14.9	9.0	25.7																							
6-Feb	10.3	8.8	9.9	Z	8.6	10.4	9.4	19.6	26.1	19.9	10.6	1.5	0.8	2.2	0.7	0.7	1.2	1.3	0.9	0.8	0.9	0.7	0.6	0.7	6.4	26.1																							
7-Feb	0.7	1.0	0.8	0.8	Z	1.1	1.2	1.1	2.1	1.4	2.7	2.9	3.2	4.2	5.9	4.4	7.3	6.7	15.8	28.6	37.3	63.3	80.0	84.7	15.5	84.7																							
8-Feb	78.0	68.2	43.3	58.3	98.3	Z	50.2	56.5	49.5	52.7	41.8	42.2	30.9	26.0	26.3	25.3	32.6	30.3	30.3	27.0	34.1	35.2	33.1	29.6	43.5	98.3																							
9-Feb	Z	5.0	1.3	0.8	0.8	1.1	1.4	4.2	6.7	3.9	4.1	3.6	5.7	6.6	9.9	17.3	23.2	25.9	14.2	12.7	14.2	31.7	53.1	36.0	12.3	53.1																							
10-Feb	29.1	Z	25.0	26.2	28.5	19.2	21.1	20.5	32.2	18.3	11.8	7.0	5.4	3.4	3.2	2.7	3.5	6.0	8.0	6.2	55.7	34.4	12.3	1.6	16.6	55.7																							
11-Feb	1.1	1.0	Z	1.3	0.8	0.6	0.7	0.5	0.7	0.8	0.4	0.5	0.6	0.8	0.5	0.3	0.8	1.4	2.3	1.7	3.0	3.8	3.2	7.4	1.5	7.4																							
12-Feb	7.8	5.2	7.6	Z	3.9	2.7	9.0	4.0	C	C	C	C	C	1.1	2.6	2.2	5.3	9.7	2.4	2.3	4.9	7.2	7.3	12.3	5.4	12.3																							
13-Feb	8.1	10.8	9.8	8.1	Z	2.7	2.7	2.7	7.1	7.2	10.6	12.0	10.6	9.1	6.5	2.4	0.6	0.2	0.7	3.2	2.4	6.0	1.7	3.3	5.6	12.0																							
14-Feb	5.9	7.2	1.6	0.6	0.7	Z	3.0	2.3	4.0	2.3	2.9	4.7	5.6	7.1	4.7	3.3	4.3	5.6	4.7	6.5	5.2	2.5	2.5	3.5	3.9	7.2																							
15-Feb	Z	5.9	5.5	4.4	3.8	6.1	6.5	5.5	5.8	11.0	6.6	4.7	4.9	10.5	10.7	27.2	58.5	43.2	54.3	48.7	24.8	8.0	0.4	0.4	15.5	58.5																							
16-Feb	0.3	Z	0.6	0.5	0.4	0.9	2.6	10.5	27.6	16.9	4.8	1.1	1.0	1.0	1.4	1.0	1.0	0.8	0.7	0.7	0.8	0.7	0.9	0.7	3.4	27.6																							
17-Feb	0.7	0.5	Z	0.5	0.7	0.7	0.6	1.7	7.3	15.6	3.7	5.7	20.0	14.1	32.8	21.4	23.9	27.3	41.4	36.1	22.9	18.9	16.6	27.7	14.8	41.4																							
18-Feb	41.4	41.3	39.7	Z	49.1	85.2	67.4	64.4	69.9	52.7	51.1	20.8	14.1	13.6	24.5	54.1	19.1	21.9	19.7	25.7	20.3	16.9	19.1	23.8	37.2	85.2																							
19-Feb	16.5	13.3	13.6	17.7	Z	23.8	30.4	28.9	30.0	39.5	72.8	65.5	66.1	59.1	62.0	64.8	42.4	34.5	27.9	7.8	4.6	4.6	6.1	16.9	32.6	72.8																							
20-Feb	30.8	36.0	46.9	59.8	56.8	Z	64.0	65.3	65.7	44.3	35.2	32.9	28.9	22.9	19.6	12.5	12.6	9.3	11.2	13.0	12.7	10.8	14.3	23.1	31.7	65.7																							
21-Feb	Z	11.1	10.3	11.0	13.4	64.7	89.1	114.0	84.5	68.5	74.7	71.9	45.1	1.8	0.8	1.0	1.0	2.2	1.2	1.2	1.3	0.7	1.3	12.4	29.7	114.0																							
22-Feb	41.3	Z	89.1	91.8	65.1	69.4	103.9	73.7	145.8	147.1	136.2	59.0	24.3	55.1	51.1	61.4	61.9	63.4	80.7	91.8	84.0	86.9	78.9	75.4	79.9	147.1																							
23-Feb	49.6	32.1	Z	5.3	2.7	2.0	2.6	3.1	2.9	4.0	0.7	0.7	0.5	0.5	0.5	0.3	0.3	7.0	4.3	0.8	0.5	0.4	0.4	0.2	5.3	49.6																							
24-Feb	0.2	1.6	1.0	Z	8.3	9.8	5.1	3.2	2.8	3.0	2.8	2.1	3.1	6.0	4.9	6.5	6.4	3.5	2.3	4.0	3.6	1.7	1.3	3.7	3.8	9.8																							
25-Feb	4.1	6.5	7.0	2.3	Z	4.2	4.7	6.3	6.7	5.2	4.8	4.3	1.8	1.7	2.0	1.8	1.7	2.5	2.3	2.1	1.1	0.6	0.3	0.4	3.2	7.0																							
26-Feb	1.3	3.7	4.7	4.4	4.2	Z	7.0	7.1	7.2	8.4	4.4	6.6	9.9	9.9	6.9	4.8	5.7	7.4	10.7	16.9	19.8	13.5	10.2	6.2	7.9	19.8																							
27-Feb	Z	1.5	4.7	17.9	2.4	2.0	2.3	2.3	2.7	M	1.2	1.1	0.6	0.4	0.3	0.3	0.4	1.0	5.4	9.3	6.7	6.6	4.6	4.2	3.5	17.9																							
28-Feb	2.6	Z	3.1	4.3	3.6	2.8	5.9	3.9	4.9	5.8	3.5	3.5	2.7	2.5	2.1	1.5	4.4	1.3	1.2	0.8	0.7	0.6	0.8	1.9	2.8	5.9																							
29-Feb	1.6	5.5	Z	6.8	7.3	6.8	5.6	5.9	3.6	0.9	0.7	0.8	1.1	1.0	1.6	1.6	2.1	1.6	1.3	1.1	2.1	1.3	1.7	1.1	2.7	7.3																							
																								18.4	14.4	15.2	14.6	16.6	14.3	18.0	19.3	23.5	21.8	19.1	14.0	10.9	9.8	10.4	11.7	12.0	12.8	14.1	14.2	14.7	16.3	16.1	16.9	Diurnal Average	
																								96.5	68.2	89.1	91.8	98.3	85.2	103.9	114.0	145.8	147.1	136.2	71.9	66.1	59.1	62.0	64.8	61.9	63.4	80.7	91.8	84.0	91.0	82.3	84.7	Diurnal Maximum	

Z - zerospan C - Calibration M - Maintenance



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Buffalo Viewpoint - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	513	77.61	77.61
21 - 40	67	10.14	87.75
41 - 80	62	9.38	97.13
81 - 159	18	2.72	99.85
> 159	0	0.00	99.85

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	107	49	19	1	4	17	44	84	27	15	23	33	45	14	13	18	513
21 - 40	12	13	5	1	2	0	7	13	2	4	1	0	1	1	1	3	66
41 - 80	6	10	9	1	0	2	6	8	2	3	2	0	0	3	2	8	62
81 - 159	5	4	0	0	0	0	0	0	1	0	0	0	0	2	2	4	18
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	130	76	33	3	6	19	57	105	32	22	26	33	46	20	18	33	659

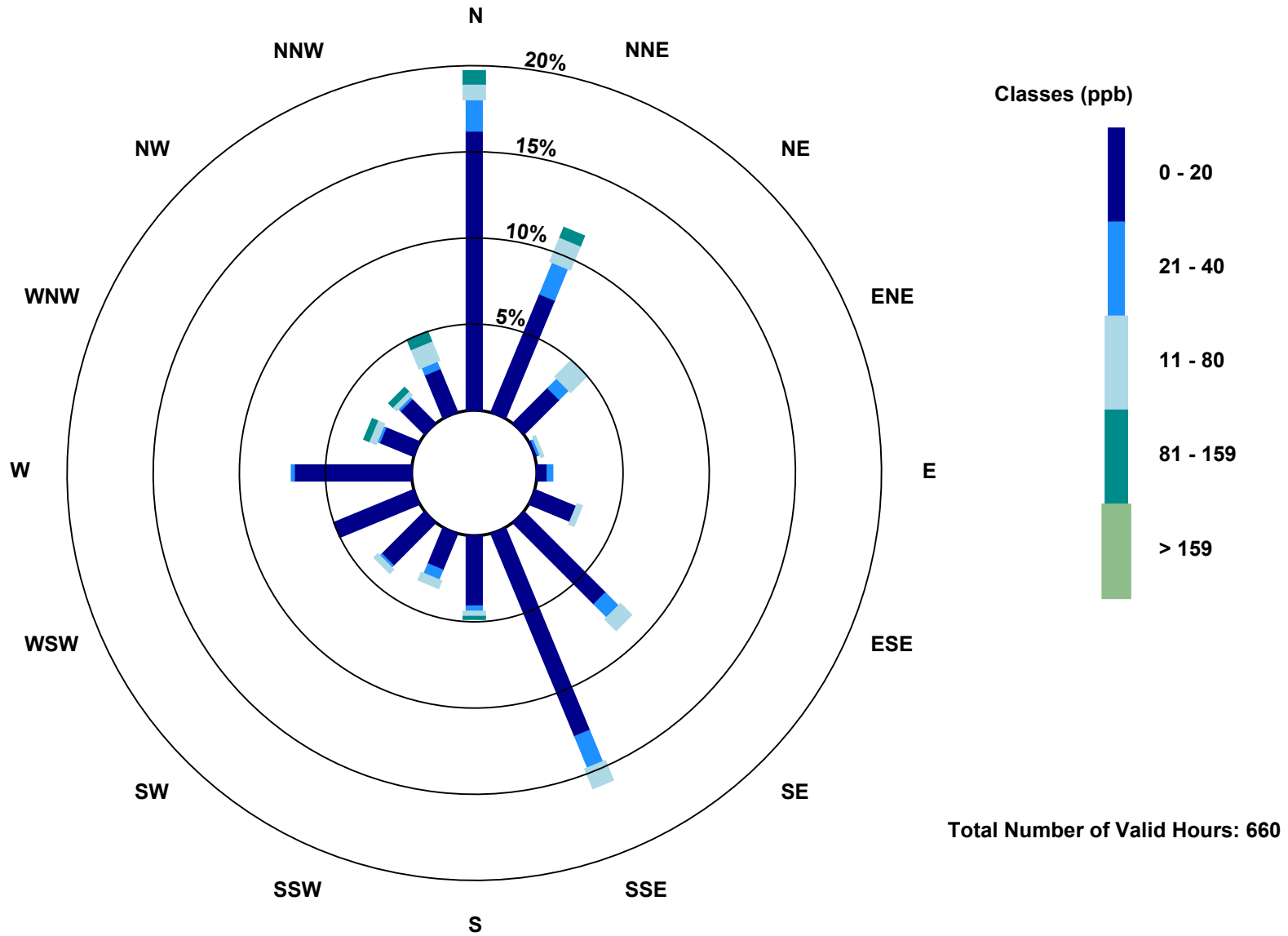
Total Number of Valid Hours: 660

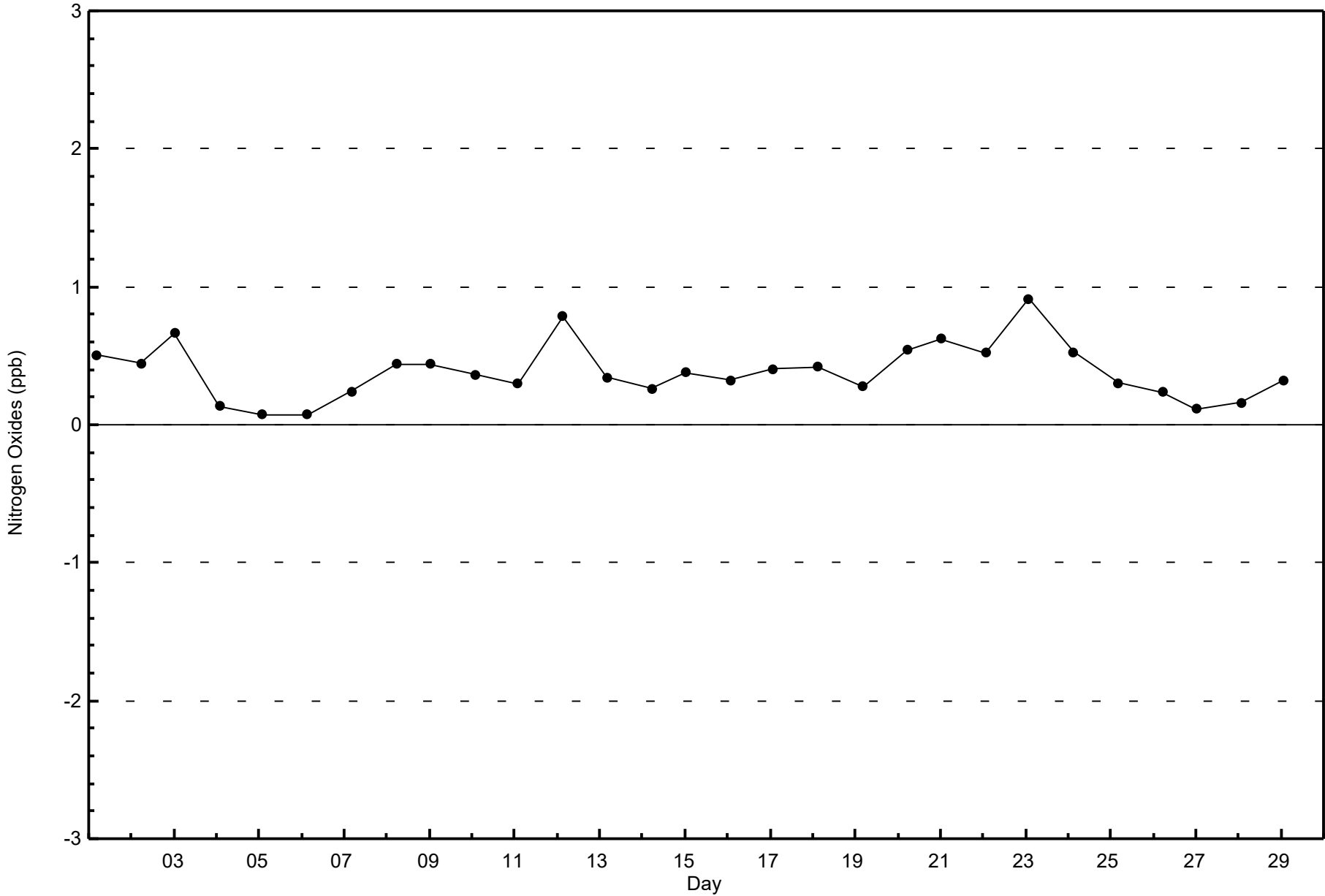
Total Number of Hours: 696

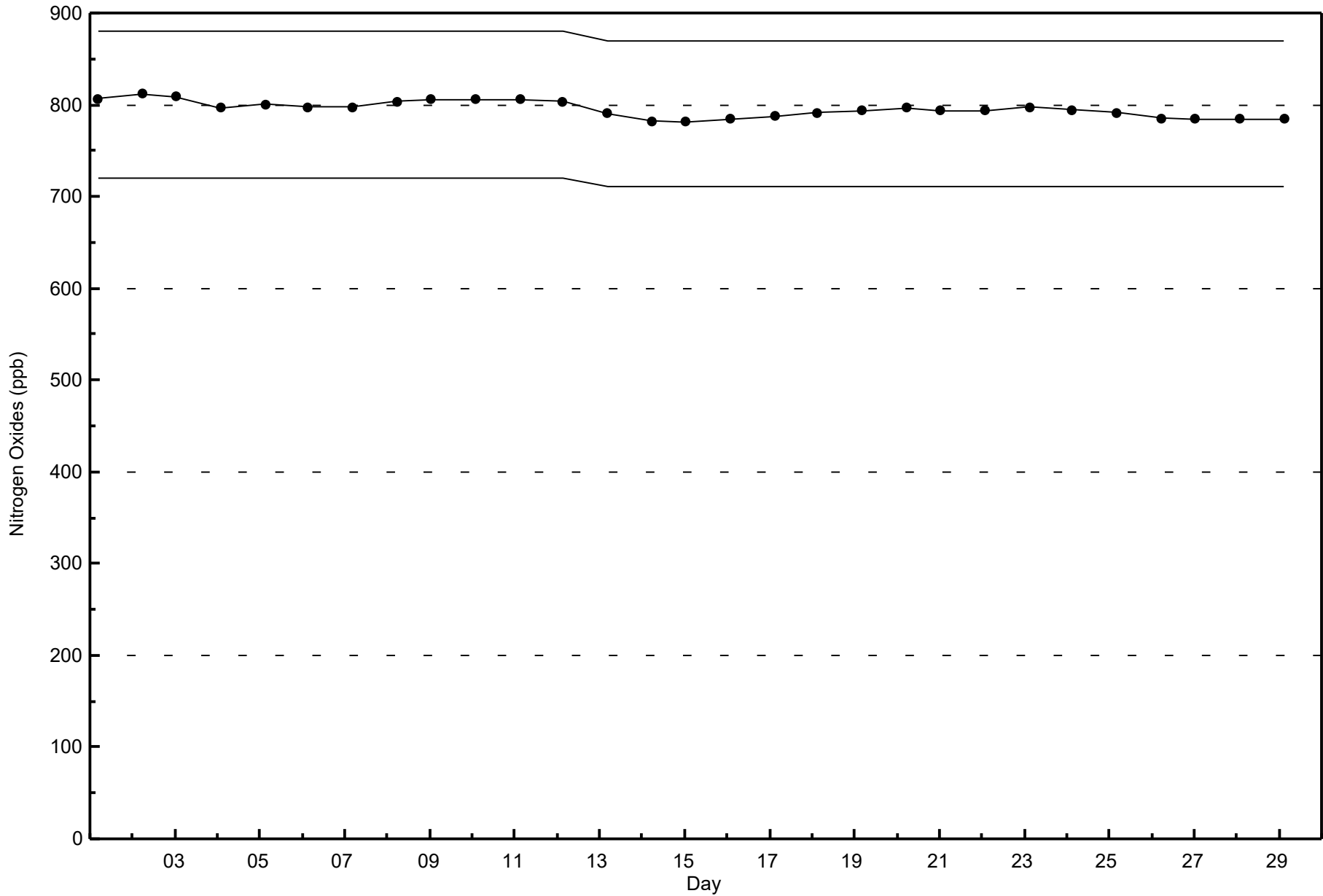


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Buffalo Viewpoint









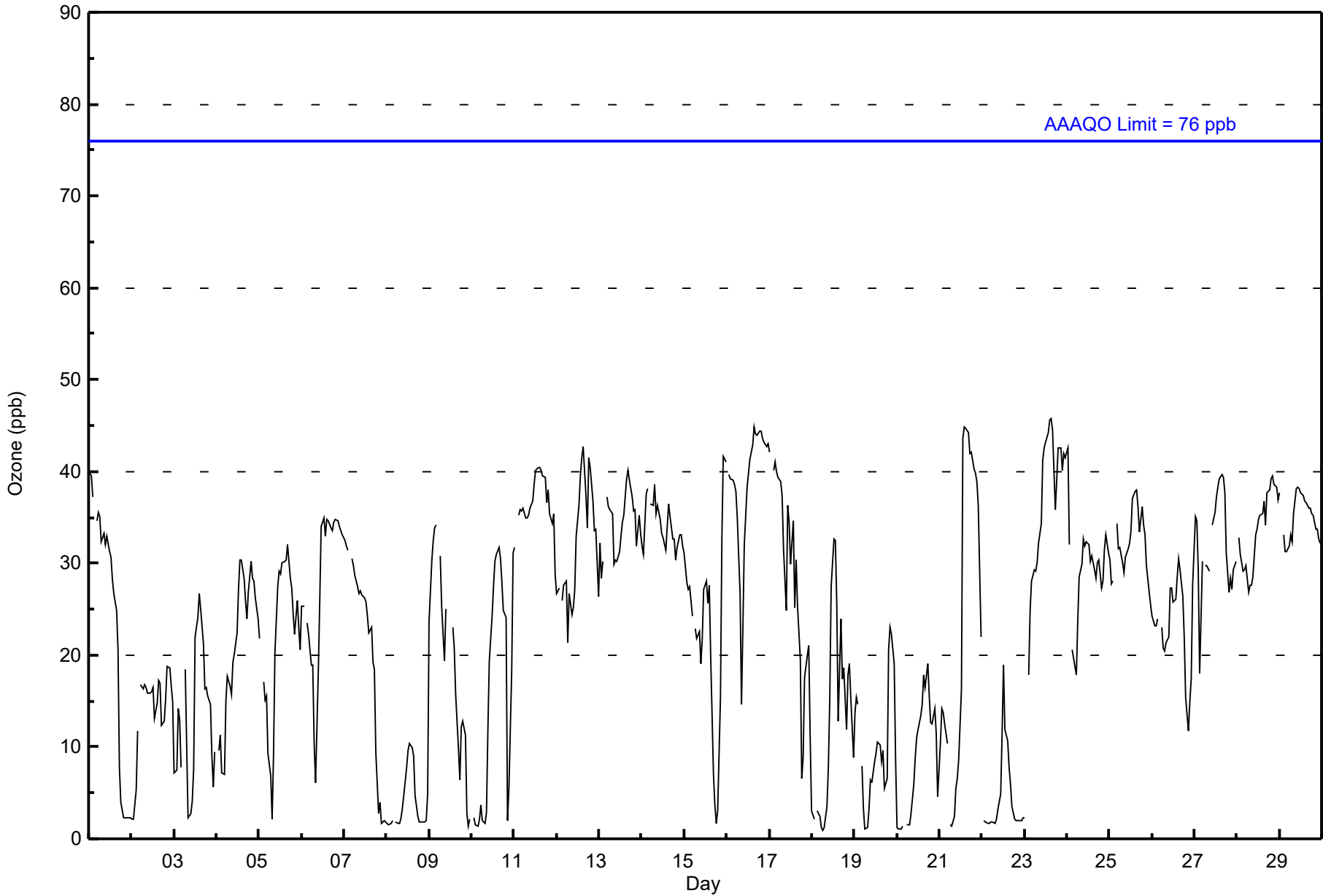
Summary of Hour Averages

Buffalo Viewpoint - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 45.7 ppb on Feb 23 16:00	Maximum Daily Average: 38.4 ppb on Feb 16		Hours of Data:	663
Minimum Value: 1.0 ppb on Feb 18 07:00	Minimum Daily Average: 4.0 ppb on Feb 8		Hours of Missing Data:	33
Maximum Diurnal Average: 29.5 ppb at hour 14	Minimum Diurnal Average: 18.9 ppb at hour 9		Hours of Calibration:	32
Monthly Average: 23.73 ppb	Percentiles: P ₁ = 1.3 P ₁₀ = 2.4 Q ₁ = 12.9 Median = 27.1 Q ₃ = 34.0 P ₉₀ = 38.9 P ₉₉ = 44.4		Percent Operational Time:	99.9

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	39.9	39.5	37.2	Z	34.6	35.5	35.1	32.3	33.3	32.0	32.9	31.3	30.7	28.3	26.8	24.9	20.6	7.8	3.9	2.3	2.3	2.3	2.2	2.2	23.4	39.9																						
2-Feb	2.1	2.2	5.4	11.7	Z	16.7	16.4	16.8	16.5	15.9	15.8	16.0	16.5	13.1	14.7	17.3	16.9	12.3	12.8	15.3	18.8	18.6	16.6	15.0	14.1	18.8																						
3-Feb	7.1	7.4	14.2	13.0	7.9	Z	18.5	10.1	2.3	2.8	4.1	7.6	22.0	24.1	26.7	25.0	21.2	16.4	16.5	15.6	14.7	9.0	5.6	9.4	13.1	26.7																						
4-Feb	Z	9.6	11.3	7.2	7.0	15.0	17.7	16.7	15.8	19.2	20.1	22.4	27.2	30.4	30.4	28.4	25.9	24.0	26.9	30.2	28.3	28.1	26.3	24.0	21.4	30.4																						
5-Feb	21.7	Z	17.1	15.1	15.5	9.3	6.8	2.2	9.1	20.3	27.4	29.1	28.9	30.0	30.2	30.3	32.0	28.3	27.4	24.5	22.3	26.0	23.0	20.6	21.6	32.0																						
6-Feb	25.4	25.3	Z	23.5	22.3	19.0	18.9	10.3	6.1	18.4	25.9	33.9	34.9	33.0	34.7	34.7	33.8	33.5	34.4	34.7	34.6	34.0	33.6	33.1	27.7	34.9																						
7-Feb	32.5	31.9	31.5	Z	30.5	29.7	28.6	27.4	26.7	27.0	26.5	26.2	25.7	24.3	22.5	23.0	19.3	18.5	9.5	2.8	4.0	1.7	2.0	1.8	20.6	32.5																						
8-Feb	1.6	1.6	1.6	1.9	Z	1.8	1.7	1.7	2.3	3.3	6.2	7.7	9.6	10.4	9.9	9.0	4.7	2.4	1.9	1.9	1.8	1.8	1.9	4.9	4.0	10.4																						
9-Feb	23.6	30.4	32.5	33.9	34.1	Z	30.8	25.3	19.4	25.0	C	C	C	23.0	20.7	15.7	9.8	6.4	12.2	12.7	11.4	2.7	1.4	2.1	18.7	34.1																						
10-Feb	Z	2.2	1.5	1.3	2.1	3.7	2.0	1.6	2.9	12.0	19.4	24.2	27.4	30.3	30.9	31.8	30.4	27.9	24.9	24.1	2.1	5.5	18.4	31.1	15.6	31.8																						
11-Feb	31.8	Z	35.2	35.8	35.7	36.0	35.0	35.0	35.3	36.0	36.8	38.6	40.2	40.4	40.4	40.1	39.5	39.3	36.6	38.0	35.4	34.4	35.4	28.8	36.5	40.4																						
12-Feb	26.7	27.3	Z	25.9	27.7	28.1	21.4	26.7	24.4	25.2	27.2	33.0	36.3	39.6	41.5	42.7	37.4	33.9	41.4	40.5	36.7	33.5	33.7	26.4	32.0	42.7																						
13-Feb	32.2	28.4	30.3	Z	37.3	36.1	35.9	35.4	29.9	30.3	30.2	31.2	32.9	34.5	35.3	39.3	40.2	39.1	37.2	35.6	35.8	31.9	35.2	33.3	34.2	40.2																						
14-Feb	31.9	31.0	37.5	38.1	Z	36.4	36.3	38.6	35.4	36.2	34.8	33.3	32.8	31.4	34.0	36.4	35.2	32.6	32.6	30.4	31.7	33.1	33.1	31.9	34.1	38.6																						
15-Feb	31.1	27.9	27.1	27.4	24.3	Z	23.0	21.8	22.5	19.1	21.8	27.1	28.1	25.6	27.7	19.9	7.0	3.6	1.7	3.1	15.4	32.6	41.6	41.0	22.6	41.6																						
16-Feb	Z	39.7	39.1	39.1	38.7	37.9	35.0	26.7	14.6	23.0	32.1	38.3	39.8	41.4	42.9	44.8	44.1	43.9	44.4	44.4	43.7	43.2	42.7	42.9	38.4	44.8																						
17-Feb	42.1	Z	40.1	41.1	40.0	39.4	39.0	37.3	31.6	24.8	36.3	34.5	30.0	34.7	25.1	30.4	25.3	19.6	6.5	8.8	17.5	20.0	21.1	11.2	28.5	42.1																						
18-Feb	3.1	2.2	Z	3.0	2.5	1.2	1.0	1.2	3.5	7.8	15.2	27.5	32.7	32.5	25.6	12.8	23.9	17.4	18.6	12.0	17.8	19.0	15.4	8.8	13.2	32.7																						
19-Feb	13.8	15.4	14.6	Z	7.9	3.3	1.1	1.3	3.2	6.4	6.1	8.3	9.3	10.6	10.2	8.3	9.6	5.5	6.5	20.6	23.1	22.3	19.0	8.6	10.2	23.1																						
20-Feb	1.3	1.1	1.1	1.4	Z	1.5	1.5	1.6	2.8	5.9	8.8	11.0	12.0	13.4	14.6	17.9	16.5	19.0	15.6	12.7	12.6	14.3	11.4	4.5	8.8	19.0																						
21-Feb	10.5	14.3	13.8	12.5	10.4	Z	1.6	1.4	2.4	5.5	6.6	8.5	16.3	43.6	44.9	44.7	44.2	41.9	42.1	40.3	39.9	39.0	36.3	21.9	23.6	44.9																						
22-Feb	Z	2.0	1.9	1.7	1.6	1.9	1.8	1.7	2.2	3.1	5.0	11.4	18.9	11.9	10.7	7.7	6.0	3.4	2.1	2.0	2.0	2.0	2.0	2.3	4.6	18.9																						
23-Feb	2.2	Z	17.9	24.9	28.1	29.3	29.2	30.0	32.1	34.4	41.2	42.5	43.1	44.2	45.6	45.7	44.6	35.9	39.1	42.5	42.6	40.1	42.0	41.6	35.6	45.7																						
24-Feb	42.5	32.1	Z	20.5	18.7	17.9	23.6	28.5	29.9	32.7	31.9	32.4	32.1	30.2	30.9	29.3	28.4	30.0	30.3	27.3	28.1	31.5	33.1	31.1	29.3	42.5																						
25-Feb	30.4	27.8	28.1	Z	34.2	31.6	31.8	30.1	29.0	30.7	31.6	32.2	33.5	37.1	37.8	37.9	36.2	33.4	36.2	34.2	33.1	29.8	26.9	25.4	32.1	37.9																						
26-Feb	24.2	23.2	23.3	23.9	Z	23.0	20.8	20.5	21.3	21.9	27.4	27.3	25.7	26.1	28.5	30.6	29.2	26.4	21.9	15.3	11.7	14.9	17.4	27.6	23.1	30.6																						
27-Feb	35.1	34.6	29.3	17.9	30.2	Z	29.7	29.7	29.2	M	34.2	35.5	37.3	38.2	39.1	39.7	39.4	37.7	31.1	26.8	28.4	27.2	29.3	30.1	32.3	39.7																						
28-Feb	Z	32.8	31.0	29.1	29.3	29.7	26.8	27.6	27.5	28.5	33.0	33.8	34.8	35.3	35.4	36.7	34.2	37.6	37.9	39.1	39.5	38.5	38.3	36.9	33.6	39.5																						
29-Feb	37.8	Z	33.2	31.3	31.3	31.8	33.1	32.3	35.4	38.1	38.3	38.1	37.7	37.3	36.7	36.6	36.1	36.0	35.3	35.2	33.8	33.8	32.6	32.2	35.0	38.3																						
																								22.9	20.4	22.2	20.1	23.0	21.5	20.8	19.7	18.9	20.9	24.2	26.5	28.4	29.5	29.5	29.0	27.3	24.6	23.7	23.2	23.1	23.1	23.4	21.8	Diurnal Average
																								42.5	39.7	40.1	41.1	40.0	39.4	39.0	38.6	35.4	38.1	41.2	42.5	43.1	44.2	45.6	45.7	44.6	43.9	44.4	44.4	43.7	43.2	42.7	42.9	Diurnal Maximum

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 76 ppb





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ozone (O₃) - ppb
Buffalo Viewpoint - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	244	36.80	36.80
21 - 50	419	63.20	100.00
51 - 82	0	0.00	100.00
> 83	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Ozone (O₃) - ppb
Buffalo Viewpoint - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	56	30	19	4	3	2	19	50	8	10	3	1	2	6	9	21	243
21 - 50	72	42	15	0	2	17	41	57	23	12	22	32	43	16	12	13	419
51 - 82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	128	72	34	4	5	19	60	107	31	22	25	33	45	22	21	34	662

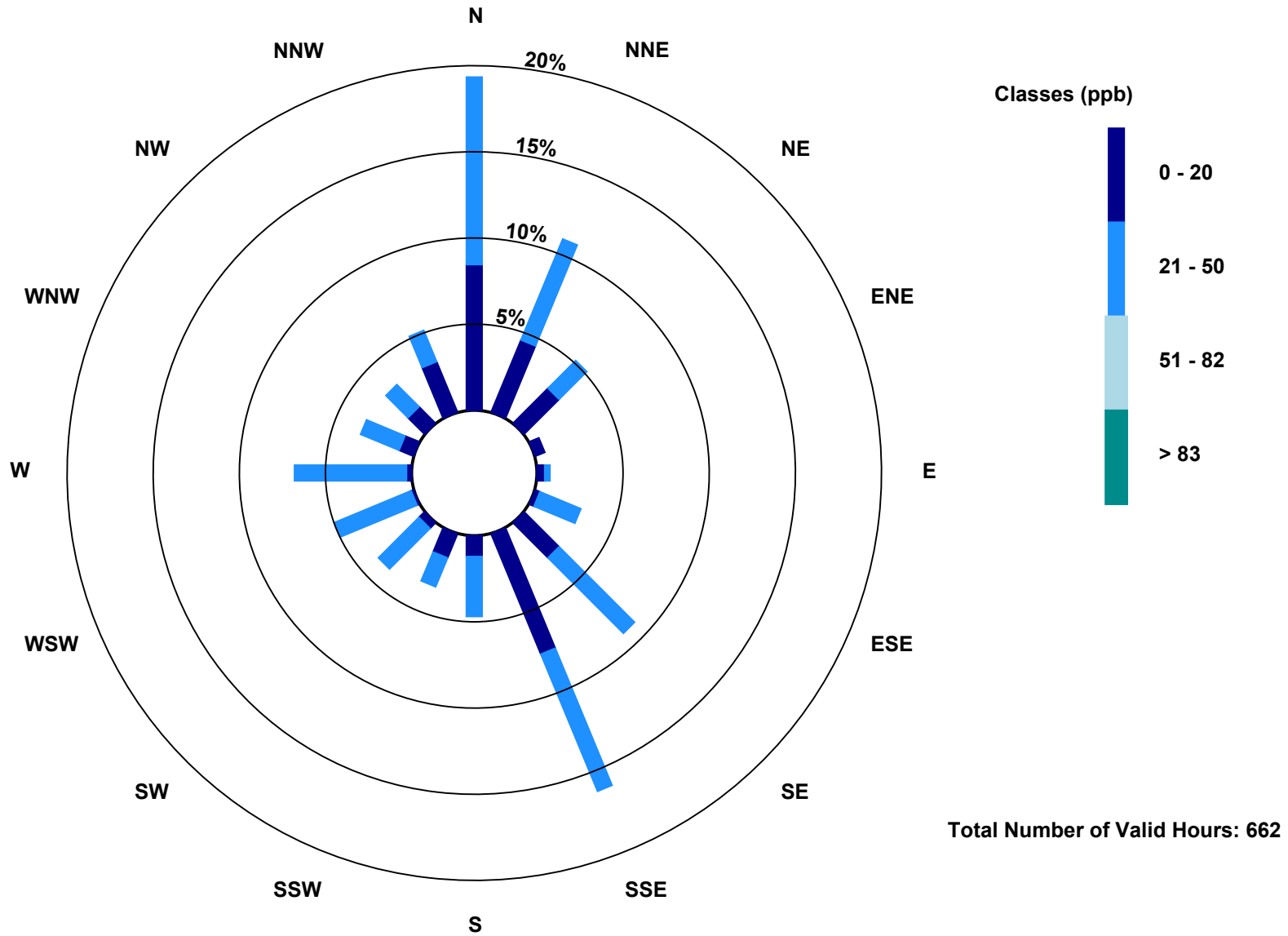
Total Number of Valid Hours: 662

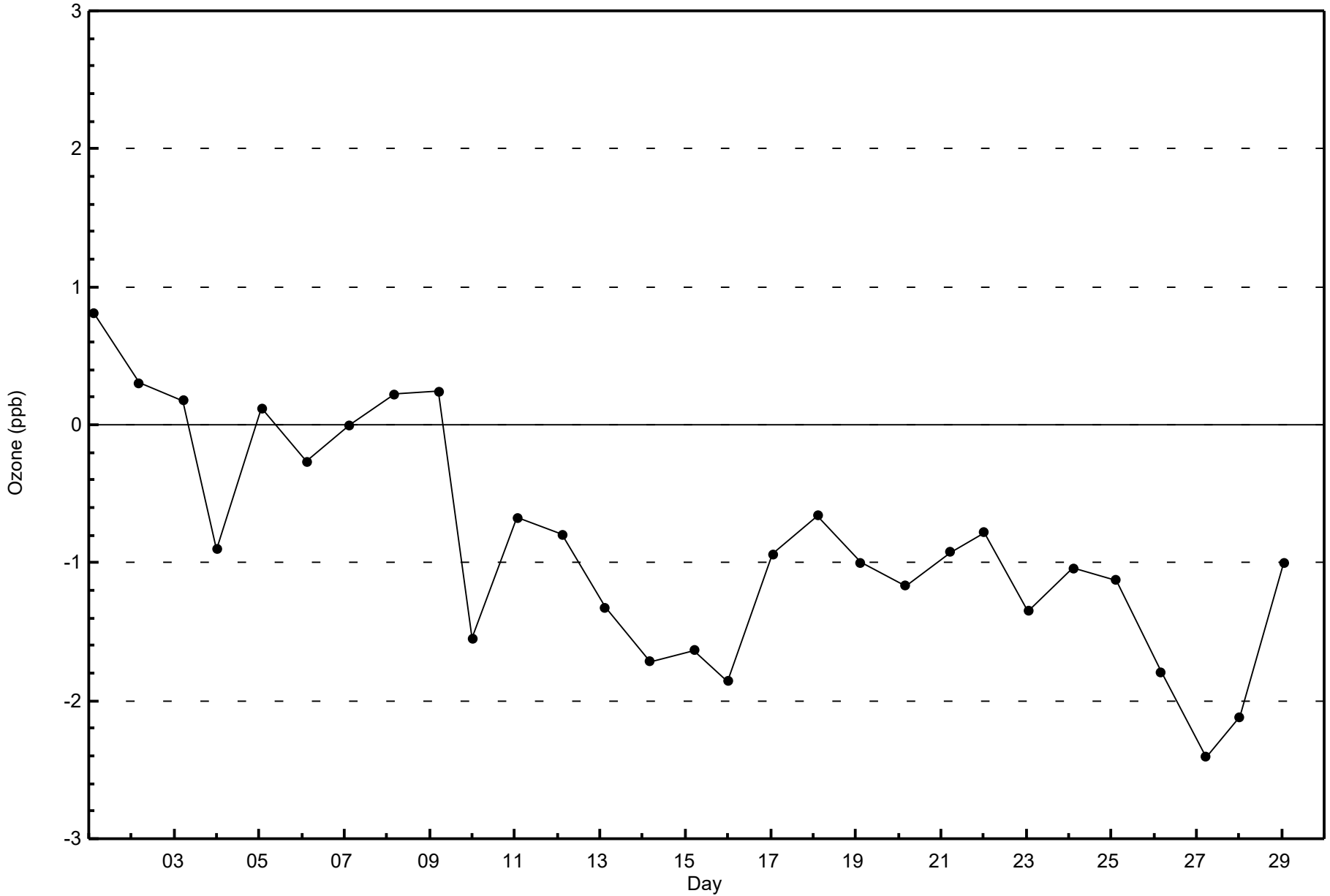
Total Number of Hours: 696

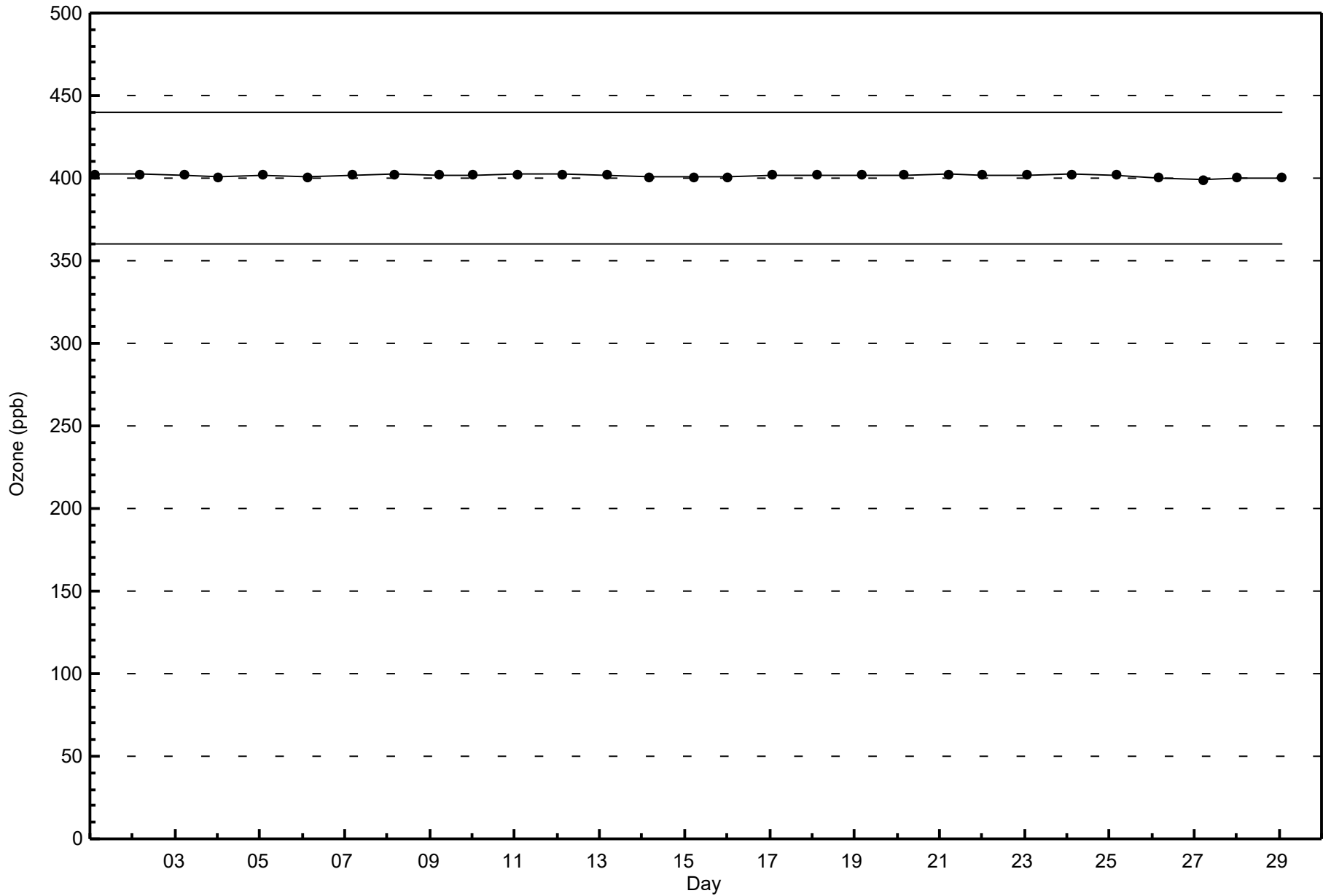


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Ozone (O₃) - ppb
Buffalo Viewpoint

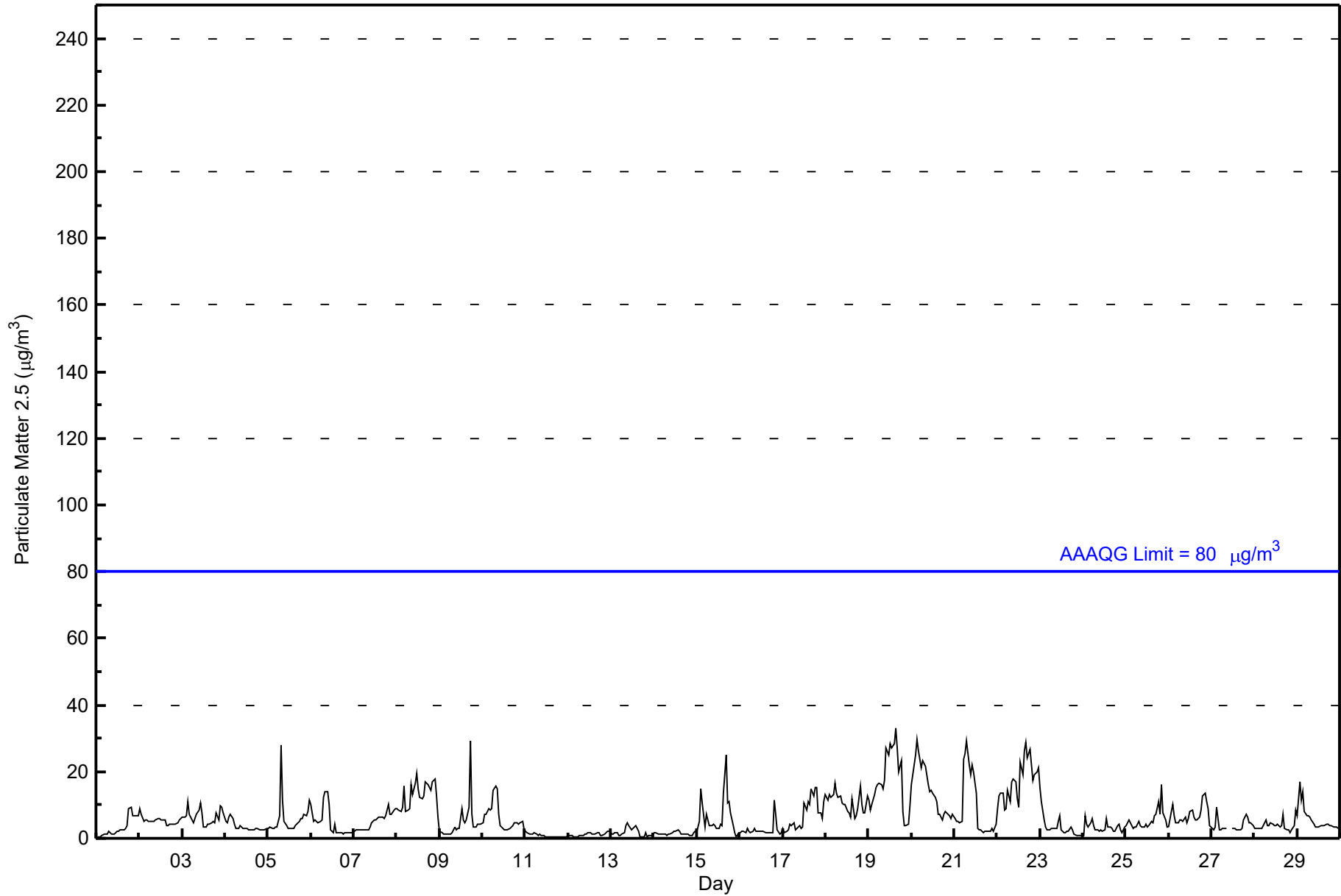








Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service:																	696					
Maximum Value: 33.3 µg/m ³ on Feb 19 16:00		Maximum Daily Average: 17.1 µg/m ³ on Feb 22																	Hours of Data:	694						
Minimum Value: 0.3 µg/m ³ on Feb 11 15:00		Minimum Daily Average: 0.8 µg/m ³ on Feb 11																	Hours of Missing Data:	2						
Maximum Diurnal Average: 7.5 µg/m ³ at hour 8		Minimum Diurnal Average: 5.0 µg/m ³ at hour 23																	Hours of Calibration:	2						
Monthly Average: 6.25 µg/m ³		Percentiles: P ₁ = 0.4 P ₁₀ = 1.3 Q ₁ = 2.4 Median = 4.0 Q ₃ = 7.8 P ₉₀ = 14.6 P ₉₉ = 28.0																	Percent Operational Time:	100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.4	0.5	0.5	0.9	1.3	1.3	1.3	2.2	1.4	1.4	1.3	2.0	2.3	2.4	2.4	2.5	3.0	3.9	8.8	9.3	6.7	6.9	6.7	6.9	3.2	9.3
2-Feb	8.8	7.2	5.0	5.3	5.5	5.0	5.1	5.0	5.0	5.3	5.8	5.9	5.5	5.7	5.4	3.9	3.7	4.1	4.0	4.1	4.1	4.4	5.5	6.1	5.2	8.8
3-Feb	6.4	6.4	6.8	11.2	7.2	5.6	4.9	6.0	7.1	8.6	10.6	7.8	3.4	3.5	4.3	4.2	4.8	4.9	4.5	7.8	5.5	9.8	9.2	7.8	6.6	11.2
4-Feb	5.2	4.7	6.4	7.1	5.9	4.3	3.1	3.2	4.0	3.2	3.1	3.2	2.9	2.5	2.7	2.7	2.8	3.0	2.7	2.5	2.6	2.6	2.9	3.6	7.1	
5-Feb	3.0	3.2	3.2	3.1	3.2	3.5	6.8	28.0	11.5	5.3	3.6	2.9	2.9	3.1	3.0	3.7	4.1	5.2	6.0	5.8	7.2	6.7	7.9	11.3	6.0	28.0
6-Feb	10.1	5.2	5.5	5.0	4.6	5.2	5.7	12.1	14.0	13.9	10.0	2.6	1.7	4.1	1.7	1.6	1.6	1.4	1.5	1.6	1.7	1.7	1.8	4.8	14.0	
7-Feb	2.0	2.4	2.5	2.5	2.5	2.5	2.4	2.4	2.5	3.4	4.9	5.7	5.7	5.9	6.5	6.3	6.5	6.0	6.7	10.1	7.1	7.2	8.3	8.9	5.0	10.1
8-Feb	8.7	8.5	7.9	9.4	15.6	8.2	8.4	8.9	16.0	13.1	16.6	19.3	15.0	12.4	11.7	12.9	17.1	15.9	15.1	14.3	16.9	17.6	12.9	6.3	12.9	19.3
9-Feb	2.2	1.6	1.5	1.3	1.1	1.1	1.3	1.7	3.3	2.7	2.8	3.0	8.8	5.5	4.7	5.7	9.5	29.3	7.2	3.5	3.6	4.1	4.4	4.2	4.7	29.3
10-Feb	4.4	7.0	7.3	8.9	8.3	9.0	14.6	15.8	14.8	7.2	3.9	2.9	2.7	2.5	2.6	2.8	3.2	3.9	4.7	4.8	4.0	4.6	5.2	2.5	6.2	15.8
11-Feb	2.0	1.8	1.4	1.2	1.5	1.8	1.3	1.0	1.1	0.7	0.7	0.5	0.4	0.4	0.3	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.8	2.0
12-Feb	0.9	0.6	0.7	0.6	0.5	0.5	0.7	0.8	1.0	1.1	1.2	1.5	1.9	1.2	1.3	1.4	1.7	1.7	0.9	1.0	1.1	1.7	2.2	2.0	1.2	2.2
13-Feb	1.3	1.3	1.5	1.7	1.0	0.8	1.2	1.6	3.8	4.7	3.8	2.4	2.9	3.2	3.9	2.2	0.4	0.4	0.5	1.5	0.6	0.8	0.8	1.0	1.8	4.7
14-Feb	1.5	1.7	1.1	1.1	1.1	1.1	1.1	0.9	1.2	1.3	1.5	1.9	2.2	2.7	2.0	1.4	1.3	1.2	1.2	1.2	1.0	1.0	1.6	2.1	1.4	2.7
15-Feb	1.8	4.9	14.7	10.7	3.5	7.0	5.5	3.7	4.0	4.3	3.8	3.0	2.9	4.2	3.8	13.7	25.1	10.8	10.8	7.7	4.0	1.7	0.6	1.8	6.4	25.1
16-Feb	1.5	2.2	2.1	1.6	2.8	2.1	1.8	2.2	2.8	2.2	2.0	2.0	1.9	2.0	1.9	1.8	1.8	1.7	1.6	11.6	7.3	2.6	1.4	1.6	2.6	11.6
17-Feb	2.9	1.8	2.0	2.5	4.0	4.0	4.5	2.6	3.0	3.9	2.8	3.5	10.6	8.5	11.0	10.1	14.6	12.7	15.1	15.1	7.8	7.6	5.9	10.9	7.0	15.1
18-Feb	13.3	11.6	13.2	12.5	13.1	16.3	13.6	12.4	12.9	10.7	10.3	10.0	8.1	7.6	6.6	11.9	5.9	6.7	9.0	15.5	10.1	7.6	7.5	12.8	10.8	16.3
19-Feb	11.4	8.6	10.1	13.3	15.3	16.3	16.6	16.1	14.8	17.3	27.3	25.0	28.4	27.3	28.5	33.3	27.0	19.9	23.1	8.0	3.7	3.7	4.1	9.6	17.0	33.3
20-Feb	16.1	19.3	25.0	29.9	26.3	21.3	23.2	22.3	21.6	16.2	13.9	14.4	13.6	12.2	10.8	7.4	7.1	5.7	7.0	7.9	7.6	6.7	6.0	7.1	14.5	29.9
21-Feb	6.1	5.1	5.1	4.8	5.1	23.7	25.6	29.2	22.1	19.1	22.2	19.9	13.4	2.8	2.6	2.5	1.8	2.1	1.9	2.1	2.2	2.8	2.2	4.1	9.5	29.2
22-Feb	8.7	12.6	13.4	13.5	8.7	8.8	14.3	11.0	16.9	17.8	16.9	11.7	9.4	23.0	19.1	26.2	28.7	24.0	26.8	22.2	17.6	19.0	20.0	21.3	17.1	28.7
23-Feb	15.1	11.2	5.3	3.4	2.7	2.6	2.8	3.1	2.9	2.8	5.0	6.8	2.7	1.9	1.9	2.2	2.0	3.4	2.4	1.4	1.0	1.0	0.8	0.6	3.5	15.1
24-Feb	0.9	6.8	4.1	3.5	4.6	6.0	3.8	2.7	2.5	2.2	2.6	2.2	2.5	6.0	3.5	3.3	3.0	2.3	2.0	3.8	4.0	2.4	1.8	3.4	3.3	6.8
25-Feb	4.0	4.8	5.3	3.6	3.2	3.4	3.3	4.9	3.8	3.3	3.3	4.2	3.3	3.7	5.2	4.8	6.6	7.3	11.2	7.0	16.2	7.4	5.5	3.4	5.4	16.2
26-Feb	3.5	8.1	10.0	6.7	4.8	4.7	5.3	5.5	5.0	6.3	4.5	6.1	8.1	8.6	6.3	5.5	5.3	6.6	8.4	12.8	13.7	11.1	8.8	4.0	7.1	13.7
27-Feb	3.1	2.6	3.5	9.5	2.5	2.6	3.0	2.8	3.0	C	C	3.1	2.9	2.8	2.6	2.5	2.7	2.9	5.7	7.4	6.2	4.8	4.7	4.0	3.9	9.5
28-Feb	3.1	2.9	2.9	3.1	3.0	4.0	5.4	4.0	3.9	4.8	4.4	3.9	3.9	4.4	3.6	3.9	7.0	2.8	2.7	2.4	1.9	2.6	3.9	8.7	3.9	8.7
29-Feb	6.7	17.0	11.6	14.0	8.1	6.8	6.7	6.3	5.5	4.1	3.4	3.4	3.3	3.6	3.6	3.8	4.1	4.2	4.0	3.7	3.5	3.3	3.3	3.0	5.7	17.0
5.4 5.9 6.2 6.6 5.7 6.2 6.7 7.5 7.3 6.7 6.9 6.2 6.0 6.0 5.6 6.4 7.0 6.7 6.8 6.8 5.8 5.3 5.0 5.5																								Diurnal Average		
16.1 19.3 25.0 29.9 26.3 23.7 25.6 29.2 22.1 19.1 27.3 25.0 28.4 27.3 28.5 33.3 28.7 29.3 26.8 22.2 17.6 19.0 20.0 21.3																								Diurnal Maximum		
C - Calibration																										
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Buffalo Viewpoint - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	430	61.96	61.96
6 - 15	204	29.39	91.35
16 - 25	45	6.48	97.84
26 - 80	15	2.16	100.00
> 81.0	0	0.00	100.00

Total Number of Valid Hours: 694

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Buffalo Viewpoint - February 2024**

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	77	36	19	0	2	10	39	75	24	14	21	32	43	18	10	9	429
6 - 15	48	27	12	3	4	7	15	31	6	6	3	3	4	3	10	22	204
16 - 25	4	11	5	1	0	1	6	7	2	2	2	0	0	1	2	1	45
26 - 80	6	4	0	0	0	2	1	0	0	0	0	0	0	0	0	2	15
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	135	78	36	4	6	20	61	113	32	22	26	35	47	22	22	34	693

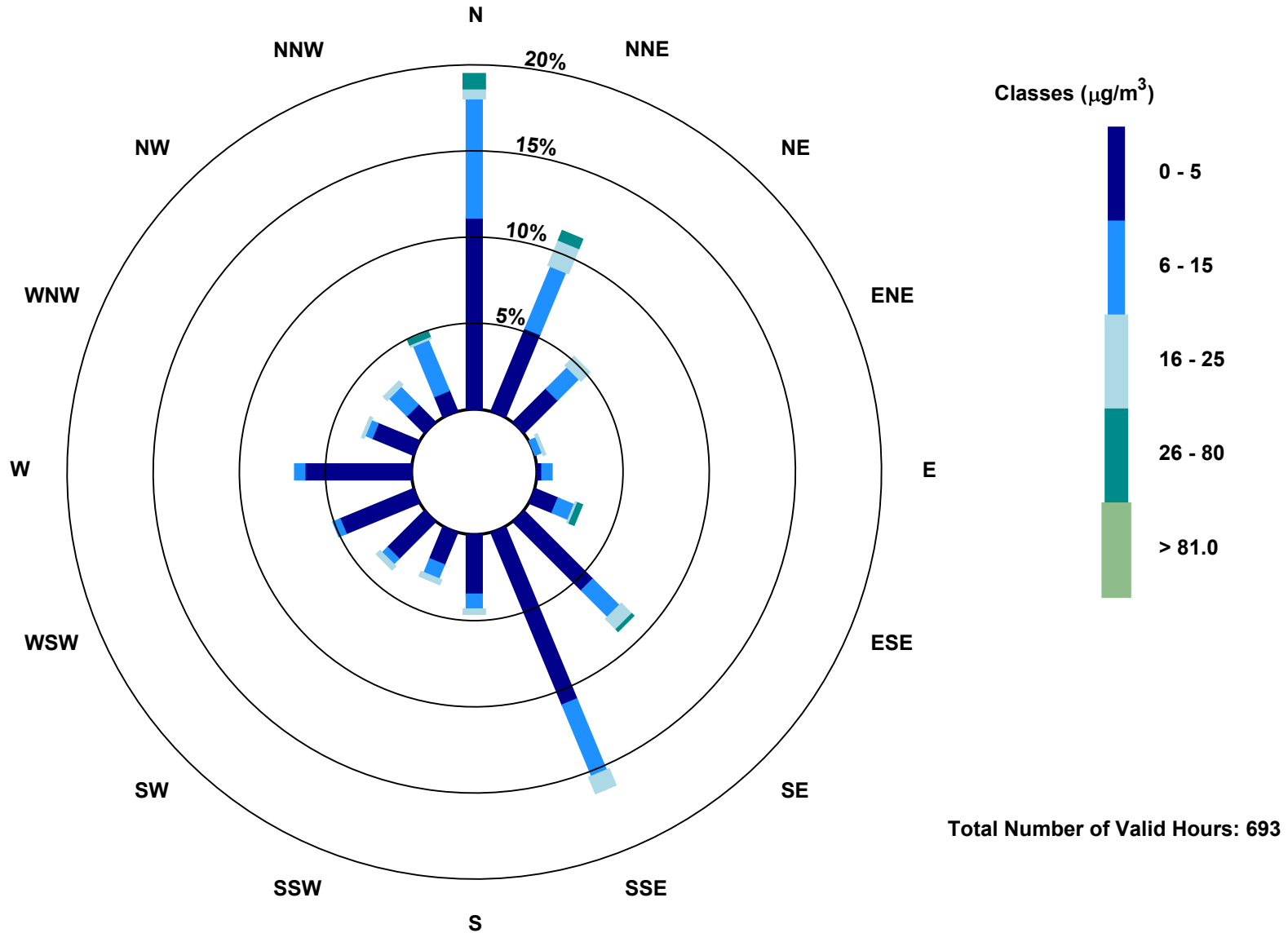
Total Number of Valid Hours: 693

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Buffalo Viewpoint

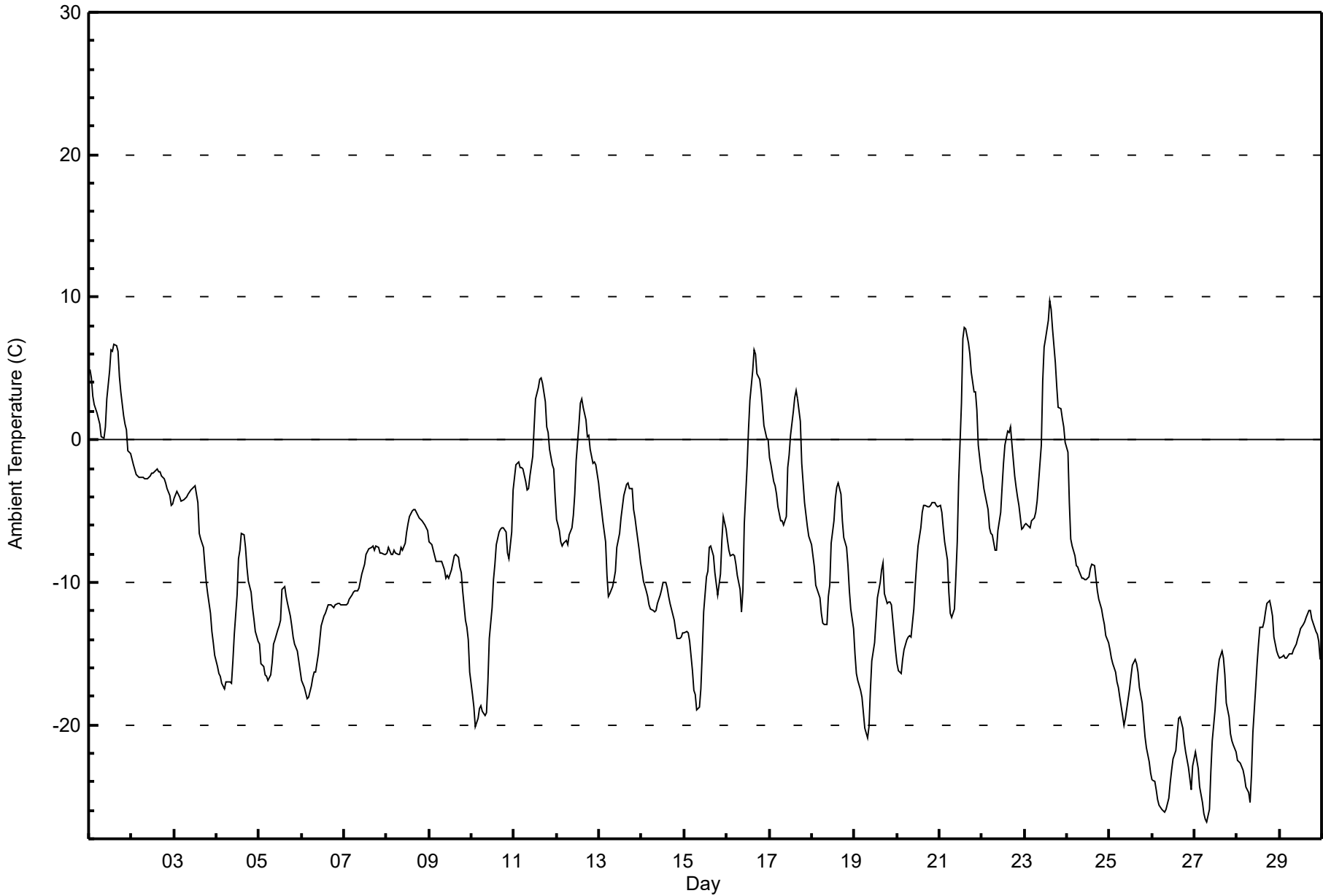




Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature (AT) - C
Buffalo Viewpoint - February 2024

Maximum Value: 9.7 C on Feb 23 15:00 Maximum Daily Average: 2.9 C on Feb 1																						Hours in Service: 696 Hours of Data: 696				
Minimum Value: -26.8 C on Feb 27 08:00 Minimum Daily Average: -23.4 C on Feb 26 Maximum Diurnal Average: -5.1 C at hour 16 Minimum Diurnal Average: -12.5 C at hour 8 Monthly Average: -9.14 C Percentiles: P ₁ = -25.9 P ₁₀ = -18.8 Q ₁ = -14.0 Median = -8.9 Q ₃ = -4.1 P ₉₀ = 0.8 P ₉₉ = 7.1																						Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	4.9	4.4	3.1	2.5	1.9	1.5	1.1	0.2	0.1	0.9	2.8	4.9	6.3	6.3	6.7	6.6	6.3	4.4	3.4	1.7	1.1	0.7	-0.8	-1.0	2.9	6.7
2-Feb	-1.3	-1.8	-2.4	-2.5	-2.6	-2.7	-2.6	-2.7	-2.8	-2.7	-2.5	-2.3	-2.4	-2.2	-2.1	-2.2	-2.3	-2.5	-2.8	-3.1	-3.4	-3.9	-4.6	-4.6	-2.7	-1.3
3-Feb	-4.1	-3.7	-3.8	-4.1	-4.3	-4.2	-4.1	-4.0	-3.8	-3.6	-3.5	-3.3	-3.3	-4.4	-6.6	-7.0	-7.5	-8.8	-10.0	-10.8	-12.2	-13.5	-14.3	-15.1	-6.6	-3.3
4-Feb	-15.9	-16.4	-16.6	-17.1	-17.4	-17.0	-17.0	-17.0	-17.1	-15.5	-13.6	-10.9	-8.4	-7.7	-6.6	-6.7	-7.5	-8.9	-10.0	-10.7	-11.7	-12.6	-13.5	-14.2	-12.9	-6.6
5-Feb	-14.4	-15.7	-15.9	-16.5	-16.6	-16.9	-16.5	-15.7	-14.3	-13.1	-13.0	-12.7	-10.5	-10.3	-11.0	-11.5	-12.4	-13.1	-13.9	-14.4	-14.9	-15.5	-16.2	-14.1	-10.3	
6-Feb	-16.9	-17.3	-17.8	-18.2	-18.1	-17.2	-16.7	-16.3	-16.3	-15.0	-14.0	-13.1	-12.4	-12.2	-11.8	-11.6	-11.6	-11.7	-11.8	-11.6	-11.5	-11.5	-11.6	-11.6	-14.1	-11.5
7-Feb	-11.6	-11.6	-11.5	-11.2	-10.9	-10.7	-10.6	-10.6	-10.4	-9.9	-9.5	-8.7	-8.1	-7.9	-7.6	-7.6	-7.5	-7.8	-7.5	-7.5	-7.9	-8.0	-8.0	-8.1	-9.2	-7.5
8-Feb	-7.9	-7.6	-8.1	-8.1	-7.8	-7.9	-8.1	-8.1	-7.5	-7.7	-7.3	-6.4	-5.9	-5.4	-5.0	-4.9	-4.9	-5.3	-5.4	-5.6	-5.7	-6.0	-6.2	-6.4	-6.6	-4.9
9-Feb	-7.1	-7.4	-7.7	-8.1	-8.5	-8.5	-8.5	-8.6	-9.2	-9.8	-9.5	-9.7	-9.2	-8.6	-8.1	-8.0	-8.3	-8.9	-9.3	-10.6	-12.6	-13.2	-14.0	-16.3	-9.6	-7.1
10-Feb	-17.9	-18.7	-20.1	-19.6	-18.8	-18.6	-19.1	-19.4	-19.2	-17.0	-13.9	-11.8	-9.8	-8.7	-7.4	-6.5	-6.3	-6.1	-6.2	-6.4	-7.9	-8.3	-6.5	-3.5	-12.4	-3.5
11-Feb	-2.6	-1.7	-1.6	-1.9	-1.9	-2.0	-3.0	-3.5	-3.4	-2.5	-1.2	0.9	2.8	3.7	4.3	4.3	3.9	2.7	0.9	0.5	-0.7	-1.7	-2.1	-4.0	-0.4	4.3
12-Feb	-5.6	-6.3	-7.1	-7.4	-7.3	-7.1	-7.3	-6.7	-6.2	-5.3	-3.8	-1.4	1.1	2.6	2.9	2.3	1.4	0.2	0.3	-0.6	-1.6	-1.5	-1.8	-3.0	-2.9	2.9
13-Feb	-4.0	-4.8	-5.7	-7.2	-9.6	-11.0	-10.8	-10.3	-9.8	-9.2	-7.5	-6.6	-5.5	-4.7	-4.0	-3.1	-3.0	-3.5	-3.4	-4.9	-5.5	-6.3	-7.7	-8.7	-6.5	-3.0
14-Feb	-9.3	-9.9	-10.6	-11.0	-11.5	-11.9	-12.0	-12.1	-12.0	-11.4	-10.9	-10.5	-10.0	-10.0	-10.4	-11.0	-11.5	-12.2	-12.6	-13.3	-13.9	-13.9	-13.8	-13.6	-11.6	-9.3
15-Feb	-13.5	-13.4	-13.5	-14.1	-16.2	-17.6	-17.9	-18.9	-18.8	-17.5	-14.9	-12.1	-9.6	-9.2	-7.6	-7.5	-8.1	-9.3	-10.1	-10.9	-9.4	-7.1	-5.4	-6.3	-12.1	-5.4
16-Feb	-7.0	-7.7	-8.2	-8.0	-8.1	-8.7	-9.6	-10.5	-12.1	-10.6	-5.8	-1.9	0.7	2.8	4.9	6.3	6.0	4.6	4.2	3.5	2.3	1.0	0.1	0.0	-2.6	6.3
17-Feb	-1.2	-1.8	-3.0	-3.2	-3.8	-4.7	-5.6	-5.7	-6.0	-5.4	-2.0	-1.0	0.3	1.9	3.0	3.4	2.9	1.3	-1.7	-3.1	-4.4	-6.1	-6.7	-7.0	-2.5	3.4
18-Feb	-7.3	-9.0	-10.2	-10.5	-11.1	-12.2	-12.9	-12.9	-13.0	-11.0	-10.2	-7.2	-5.7	-4.1	-3.3	-3.0	-3.9	-5.7	-6.9	-7.6	-8.9	-10.6	-11.9	-13.3	-8.8	-3.0
19-Feb	-15.1	-16.4	-16.9	-17.5	-18.1	-19.2	-20.2	-20.9	-20.1	-17.6	-15.5	-14.2	-12.7	-11.1	-10.1	-9.1	-8.6	-10.8	-11.4	-11.4	-11.4	-11.6	-13.7	-14.8	-14.5	-8.6
20-Feb	-15.7	-16.2	-16.4	-15.4	-14.7	-14.0	-13.8	-13.7	-13.8	-11.8	-10.2	-8.7	-7.4	-6.2	-5.1	-4.6	-4.6	-4.7	-4.7	-4.6	-4.4	-4.4	-4.6	-4.7	-9.4	-4.4
21-Feb	-4.6	-5.1	-6.2	-7.1	-8.4	-10.7	-12.2	-12.4	-11.9	-9.6	-7.2	-3.0	2.6	7.1	7.9	7.8	6.8	6.0	4.7	3.4	3.4	2.1	-0.4	-2.1	-2.0	7.9
22-Feb	-2.6	-3.5	-3.9	-4.9	-6.2	-6.6	-6.7	-7.7	-7.7	-6.4	-5.1	-3.3	-1.6	-0.4	0.6	0.5	0.9	-0.3	-2.6	-3.3	-4.0	-4.6	-6.2	-6.2	-3.8	0.9
23-Feb	-6.0	-5.9	-6.1	-6.1	-5.7	-5.5	-5.1	-4.3	-3.0	-0.4	4.1	6.5	7.1	8.4	9.7	9.1	7.8	5.4	3.8	2.3	2.1	1.5	0.9	-0.2	0.9	9.7
24-Feb	-0.9	-4.4	-6.9	-7.5	-8.2	-8.8	-8.9	-9.2	-9.7	-9.7	-9.8	-9.8	-9.6	-9.0	-8.8	-8.8	-9.7	-10.6	-11.2	-11.9	-12.5	-13.0	-13.7	-14.2	-9.4	-0.9
25-Feb	-14.7	-15.3	-15.8	-16.3	-17.0	-17.4	-18.1	-19.4	-20.0	-19.5	-18.2	-17.5	-16.6	-15.8	-15.4	-15.7	-16.3	-17.4	-18.5	-19.6	-20.8	-21.6	-22.6	-23.4	-18.0	-14.7
26-Feb	-23.9	-24.0	-24.5	-25.3	-25.7	-25.9	-26.1	-26.1	-25.9	-25.2	-24.1	-23.2	-22.4	-21.8	-20.6	-19.5	-19.4	-20.2	-21.3	-21.9	-23.0	-23.8	-24.6	-22.8	-23.4	-19.4
27-Feb	-21.9	-22.5	-23.1	-24.3	-25.5	-26.2	-26.6	-26.8	-25.9	-23.3	-21.1	-18.9	-17.4	-16.2	-15.4	-14.8	-15.3	-16.5	-18.4	-19.4	-20.6	-21.1	-21.4	-21.9	-21.0	-14.8
28-Feb	-22.5	-22.6	-22.7	-23.1	-23.7	-24.3	-24.8	-25.4	-23.4	-20.5	-17.4	-15.7	-14.3	-13.2	-13.1	-12.7	-12.1	-11.5	-11.3	-11.8	-12.4	-13.9	-14.8	-15.1	-17.6	-11.3
29-Feb	-15.4	-15.3	-15.1	-15.3	-15.3	-15.0	-15.0	-15.0	-14.7	-14.3	-14.0	-13.6	-13.2	-13.0	-12.7	-12.4	-12.0	-12.0	-12.5	-12.9	-13.4	-13.6	-14.1	-15.4	-14.0	-12.0
	-9.9	-10.4	-11.0	-11.3	-11.8	-12.1	-12.4	-12.5	-12.3	-11.2	-9.6	-8.1	-6.8	-5.8	-5.2	-5.1	-5.4	-6.3	-7.1	-7.8	-8.5	-9.0	-9.6	-10.1	Diurnal Average	
	4.9	4.4	3.1	2.5	1.9	1.5	1.1	0.2	0.1	0.9	4.1	6.5	7.1	8.4	9.7	9.1	7.8	6.0	4.7	3.5	3.4	2.1	0.9	0.0	Diurnal Maximum	





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Buffalo Viewpoint - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	56	8.05	8.05
-20 - 0	559	80.32	88.36
0 - 10	81	11.64	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Relative Humidity (RH) - %

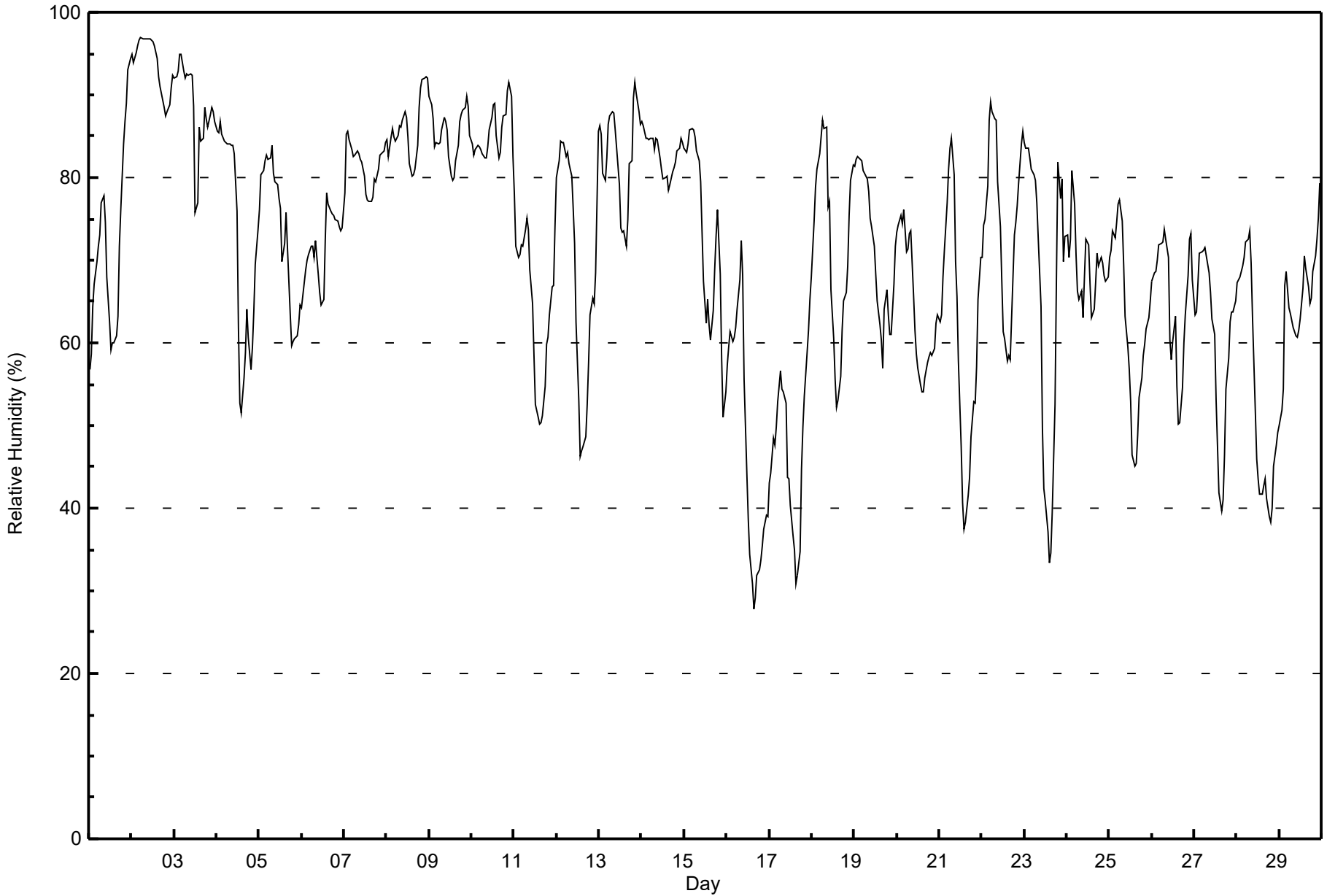
Buffalo Viewpoint - February 2024

Maximum Value: 96.9 % on Feb 2 06:00 Maximum Daily Average: 93.8 % on Feb 2																						Hours in Service: 696				
Minimum Value: 27.8 % on Feb 16 16:00 Minimum Daily Average: 47.3 % on Feb 17																						Hours of Data: 696				
Maximum Diurnal Average: 78.7 % at hour 8 Minimum Diurnal Average: 60.2 % at hour 16																						Hours of Missing Data: 0				
Monthly Average: 71.08 % Percentiles: P₁ = 33.3 P₁₀ = 50.2 Q₁ = 61.8 Median = 72.6 Q₃ = 83.3 P₉₀ = 87.5 P₉₉ = 96.6																						Hours of Calibration: 0				
																						Percent Operational Time: 100.0				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	56.8	58.6	64.4	67.1	69.9	71.7	73.1	76.9	77.9	74.5	68.0	62.5	59.2	60.0	59.9	60.9	63.2	71.6	76.2	84.0	86.7	89.1	93.1	94.4	71.7	94.4
2-Feb	94.9	94.0	95.0	95.9	96.7	96.9	96.8	96.8	96.8	96.8	96.7	96.6	96.4	96.0	94.5	92.2	91.0	90.2	88.4	87.5	87.9	88.9	90.9	92.4	93.8	96.9
3-Feb	92.0	92.2	93.0	95.0	94.8	93.0	92.0	92.5	92.4	92.5	92.3	88.6	75.8	77.0	86.1	84.4	84.7	88.5	87.1	86.0	87.7	88.5	88.1	86.8	88.8	95.0
4-Feb	85.5	85.5	86.7	85.2	84.3	84.3	84.1	84.0	83.9	83.9	83.0	76.0	61.9	52.8	51.6	55.7	58.9	64.0	60.7	56.7	59.4	63.9	69.5	73.8	72.3	86.7
5-Feb	76.1	80.4	80.9	82.1	82.7	82.3	82.4	83.8	80.5	79.5	79.1	77.5	76.3	69.9	72.0	75.8	71.5	63.4	59.6	60.2	60.5	60.9	62.3	64.6	73.5	83.8
6-Feb	64.2	67.2	68.9	70.0	70.7	71.8	71.7	70.4	72.5	68.4	66.1	64.5	65.2	72.5	78.1	76.7	75.9	75.6	75.4	74.9	74.7	74.1	73.6	74.0	71.5	78.1
7-Feb	78.1	85.2	85.6	84.5	83.4	82.5	82.7	83.2	82.8	82.1	81.9	80.2	78.0	77.3	77.1	77.1	77.6	79.8	79.5	81.0	82.8	82.9	83.2	84.2	81.4	85.6
8-Feb	84.6	82.6	84.9	85.9	84.9	84.4	85.1	86.2	86.2	87.0	87.9	87.2	85.0	81.7	80.2	80.3	80.9	83.8	88.4	90.8	91.8	92.0	92.1	92.1	86.1	92.1
9-Feb	89.9	88.8	87.2	83.8	84.3	84.1	84.2	85.7	87.3	86.7	85.8	82.6	80.2	79.6	79.9	82.1	84.0	86.8	87.7	88.2	88.5	89.8	88.6	85.2	85.4	89.9
10-Feb	84.0	82.8	83.4	84.0	83.7	83.3	82.9	82.3	82.3	83.8	85.8	87.2	88.9	89.0	85.1	82.4	83.0	86.1	87.4	87.6	90.4	91.6	89.9	82.6	85.4	91.6
11-Feb	77.9	71.7	70.3	70.6	71.9	71.8	73.8	75.1	73.7	68.8	64.8	58.5	52.5	51.0	50.1	50.4	51.1	54.7	59.8	60.7	63.4	66.9	67.0	74.0	64.6	77.9
12-Feb	80.0	82.1	84.4	84.2	84.3	82.6	83.0	81.7	80.1	76.3	72.1	62.5	53.1	46.2	46.9	47.4	48.6	52.5	57.7	63.4	65.5	64.7	68.6	85.7	68.9	85.7
13-Feb	86.3	85.2	80.5	79.7	82.4	86.5	87.5	88.0	87.9	85.7	83.6	79.1	73.8	73.4	73.5	71.8	75.0	81.7	82.0	89.6	91.5	90.3	87.9	86.4	82.9	91.5
14-Feb	86.7	86.3	84.7	84.7	84.6	84.8	84.8	83.3	84.8	84.5	82.5	81.0	79.8	80.0	80.2	78.5	79.2	80.7	81.2	81.8	83.2	83.6	84.7	84.2	82.9	86.7
15-Feb	83.5	83.1	84.0	85.7	85.9	85.8	84.9	83.2	82.1	79.4	73.4	67.5	62.4	65.3	62.2	60.4	64.0	68.9	72.9	76.1	68.4	57.9	51.0	54.1	72.6	85.9
16-Feb	57.4	59.5	61.3	60.2	60.7	61.9	64.1	67.6	72.3	68.1	55.5	44.0	38.7	34.5	30.8	27.8	29.2	31.8	32.5	33.7	35.4	37.5	39.1	39.0	47.6	72.3
17-Feb	43.0	44.2	48.5	47.7	49.9	52.9	56.6	54.4	54.1	52.7	43.8	43.6	40.3	36.6	34.9	30.8	31.9	34.7	44.8	49.8	53.6	58.9	61.6	65.2	47.3	65.2
18-Feb	67.9	74.7	78.9	81.0	82.8	84.8	87.0	85.9	86.1	76.4	77.1	66.5	60.6	55.6	52.2	53.1	56.0	61.6	65.1	66.0	69.3	75.5	79.6	81.5	71.9	87.0
19-Feb	81.3	82.3	82.5	82.2	82.1	80.9	80.6	79.9	78.3	75.1	74.0	71.7	68.4	65.2	62.2	60.4	57.0	64.1	66.4	63.4	61.0	61.0	67.2	71.7	71.6	82.5
20-Feb	73.5	74.3	75.3	74.4	76.1	70.9	71.3	73.3	73.6	65.7	61.6	58.7	57.0	55.0	54.0	54.0	55.7	57.6	58.3	58.7	58.5	59.3	62.3	63.4	64.3	76.1
21-Feb	62.6	63.4	68.0	71.2	76.9	81.1	83.6	84.8	80.3	69.7	65.6	57.8	47.5	40.6	37.4	38.2	41.5	43.7	48.6	52.8	52.7	57.1	65.3	70.3	60.9	84.8
22-Feb	70.4	74.3	75.0	79.0	87.0	89.1	87.9	87.2	86.9	79.4	74.1	67.4	61.3	60.5	57.9	58.5	57.9	63.0	73.0	74.5	76.6	79.4	84.0	85.6	74.6	89.1
23-Feb	84.3	83.6	83.6	82.4	81.1	80.4	79.6	76.9	72.6	64.5	49.6	42.4	40.9	37.1	33.3	34.5	39.4	52.6	67.7	81.9	77.4	79.9	69.7	72.9	65.4	84.3
24-Feb	73.1	70.3	72.6	80.8	76.8	70.6	66.3	65.2	66.2	63.1	67.9	72.6	71.9	67.2	63.1	64.1	67.3	70.8	69.3	70.3	69.6	68.1	67.4	68.0	69.3	80.8
25-Feb	70.3	71.2	73.5	72.7	74.6	76.9	77.3	74.8	69.4	63.2	59.5	56.7	52.9	46.4	45.0	45.4	48.8	53.4	55.8	58.5	59.8	61.8	63.1	65.1	62.3	77.3
26-Feb	67.4	68.5	68.7	70.0	71.8	72.1	72.3	73.7	72.6	70.4	60.3	58.0	60.1	63.2	54.7	50.2	50.4	54.6	60.0	63.4	68.2	72.5	73.2	67.7	65.2	73.7
27-Feb	63.5	63.8	67.1	70.8	71.0	71.1	71.5	70.4	68.5	66.1	62.9	61.0	53.1	47.4	41.9	39.6	41.0	46.4	54.5	58.1	62.5	63.7	63.8	65.2	60.2	71.5
28-Feb	67.3	67.6	67.9	69.3	70.3	72.2	72.5	73.5	69.6	63.0	51.7	45.9	43.6	41.6	41.7	42.7	43.5	41.1	38.9	38.3	40.1	45.0	47.6	49.2	54.3	73.5
29-Feb	50.0	51.9	54.5	66.9	68.7	64.3	63.5	62.7	61.8	60.9	60.7	61.5	62.8	66.6	70.5	69.0	66.7	64.7	65.4	68.6	70.5	72.6	75.0	79.4	65.0	79.4
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Buffalo Viewpoint - February 2024





Maximum Speed: 27 km/h on Feb 11 06:00	Maximum Daily Speed Average: 14.0 km/h on Feb 25	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 20 04:00	Minimum Daily Speed Average: 0.2 km/h on Feb 8	Hours of Data: 695
Maximum Diurnal Speed Average: 2.5 km/h at hour 24	Minimum Diurnal Speed Average: 0.6 km/h at hour 17	Hours of Missing Data: 1
Monthly Average Velocity: 1.4 km/h 334.1 deg	Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 5 Median = 7 Q ₃ = 11 P ₉₀ = 15 P ₉₉ = 23	Percent Operational Time: 99.9

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	SE8	SE6	SE6	SE7	SE7	SE8	SSE8	SSE7	SSE8	S7	S7	S7	S5	ESE10	ESE9	ESE8	ESE5	NE5	NNE6	NNE7	NNW5	NNW5	N7	N6	SE3.6	ESE10
2-Feb	N10	N10	N10	N11	N12	N13	N12	N12	N12	N11	N12	N10	N11	N9	N8	N7	N8	N10	N11	N9	N9	N7	N7	NNW6	N9.9	N13
3-Feb	NW8	NW7	ENE3	NE4	NNE7	N6	N8	N8	NNW9	NNW10	N9	NNW8	NW20	NNW18	NNE15	NNE10	NNE8	NNE7	NE6	E2	SSE2	SSE5	SSE6	SSE7	N5.4	NW20
4-Feb	SSE6	SSE7	SSE6	S5	S5	SSE6	SSE6	S5	S5	SSE6	SSE7	SSE7	SSE11	SSE11	SSE11	SSE8	S6	S6	SSE7	S8	S8	SSE9	SSE8	SSE8	SSE7.0	SSE11
5-Feb	SSE7	S7	SSE8	SSE7	SE6	SSE6	N4	N8	N16	N20	N18	N16	N12	N14	N17	N17	N16	N16	N16	N12	NNW11	NNW11	N10	NNE9	N8.6	N20
6-Feb	NNE10	NNE9	NNE9	NE7	NNE4	NE2	SE1	NE3	NE4	SE7	SE9	SE8	SE9	SE9	SE7	SSE9	SSE8	SE8	SSE10	SSE10	SSE9	SSE10	SSE9	SSE8	ESE5.1	NNE10
7-Feb	SSE8	SSE7	SSE6	SSE6	SSE3	SSE2	SE3	SSE4	S4	S4	S4	SW3	N4	NNW3	NNW3	NW2	NNE1	NW1	N2	N5	N7	NNE4	NW2	NNW2	SE0.7	SSE8
8-Feb	NNW2	NNE2	NNW2	NNW4	NNE2	ENE2	NE1	ENE1	NE0	SW2	SW2	SSW4	SSW5	SSW3	SE4	SSE4	SSE5	SE4	SSE3	W1	NNE4	N6	N6	NW9	N0.2	NW9
9-Feb	NW13	WNW11	WNW9	W14	W12	W9	W8	NNW6	NNE7	NE7	NNE6	NE6	E4	ESE4	E2	NNE3	NNE2	NNE4	N5	NNE5	N5	WNW3	WNW3	UO	NW3.6	W14
10-Feb	SSE3	SSE3	SSE3	SSE2	SSW2	SSE3	S3	SSE3	SSE3	SSE3	SSE4	SSE5	S5	S7	SSE9	S9	S8	S7	S7	SW2	S1	SSE6	SSW7	W12	S4.1	W12
11-Feb	WSW13	WSW16	WSW14	WSW14	WSW23	W27	W25	W25	WSW11	W8	W15	W14	W12	W13	W15	W15	WSW11	WSW8	SW8	SW10	SW7	SSW4	SW4	S5	WSW12.7	W27
12-Feb	SE8	SSE8	SSE7	SSE7	SSE4	SSE7	SSE9	SSE8	SE8	SE5	SE4	WSW9	W15	NNW15	NW19	NNW15	NW9	NW11	NW17	NW16	NW13	NNW16	NNW15	N13	WNW4.0	NW19
13-Feb	N13	N13	N13	N15	NNE14	NNE10	N4	NNW3	SW4	SSW3	N4	NE3	SSE2	S7	SSW7	SW7	WSW7	W8	W8	N16	N13	N17	N19	N19	N6.1	N19
14-Feb	N18	N18	N18	N13	N13	N10	N9	N11	N9	NNE7	N6	NNE6	N5	N5	NE7	NNE9	NNE8	NNE8	NNE6	NNE6	NE5	NE5	NE8	NNE5	N8.7	N18
15-Feb	NE3	NE1	S2	SSW3	WNW4	WSW3	SW5	SW5	SW4	SSW5	SE4	SSW4	WSW1	NNE5	NE5	SE9	SE8	SSE7	SSE9	SSE9	SSW8	SW12	WSW17	W12	SSW3.3	WSW17
16-Feb	W11	W15	W12	W17	WSW10	WSW5	SSW4	SSW5	SE7	SE9	SSE6	SW11	SW11	SW13	SW13	SW15	SW15	SW17	WSW20	W23	WSW11	WSW11	WSW10	W13	WSW10.2	W23
17-Feb	W12	W11	WNW11	WNW10	W10	W7	W8	WSW8	SW5	S4	WNW3	NNE5	NNE5	NNE5	NNE5	E4	SE5	SSE5	NNE7	N7	NNE7	N5	N2	NE6	NW2.9	W12
18-Feb	NE8	NE5	NE5	NW3	WNW3	NNE3	NE1	NE4	NNE6	NE2	NNE5	NNE3	N6	N6	N7	N7	N7	NNE7	NNE10	NE10	NE8	NNE6	NNW5	N7	NNE5.1	NE10
19-Feb	N8	N7	N7	NNE7	NW3	SW2	SSE2	ENE1	E2	NNE3	N4	NNE6	N6	NNW4	NNE5	NNE5	NNW3	N7	NNE8	NNE8	NNE8	N6	NNW6	N6	N4.6	N8
20-Feb	NNE6	NNE4	N4	SE0	NNE1	NE2	SSE3	SSW4	SE5	S6	S6	S4	SE5	SSE5	SSE5	SSE6	SE4	SSE5	SSE6	SSE5	SSE5	SSE5	SE6	SE7	SSE3.2	SE7
21-Feb	SSE5	SSE7	SSE7	SE7	E2	NNE8	N6	N6	NNE3	SSE3	SE5	SE6	SSW7	WSW17	WSW18	WSW17	WSW14	SW8	SW9	SW11	WSW15	W13	NW8	NNW6	WSW4.5	WSW18
22-Feb	NW4	NNW3	NNW1	WNW2	NNW1	NNW4	N4	NNW5	NW6	NW7	WNW6	NW5	N5	NE7	SE7	ESE6	ESE3	NE4	N7	NNE6	NNW5	S3	SSE8	SSE9	N1.7	SSE9
23-Feb	SSE9	SSE9	SSE9	SSE10	SSE8	SSE8	SSE9	SSE10	SSE9	SSW4	W19	W24	W20	W18	W21	WSW25	W22	NNW13	W13	WSW14	WSW24	W23	W20	WSW22	WSW11.0	WSW25
24-Feb	W18	N17	N19	N17	N19	N19	NNW15	NNW16	N16	N15	N13	N13	N11	N9	N8	NNE7	NNE9	NE9	NE10	NE9	NE9	NE11	NNE11	N11.3	N19	
25-Feb	NNE11	NNE11	N10	N13	N12	N12	N12	NNE14	NNE12	NNE11	N11	N14	N12	N13	N15	NNE14	N15	NNE16	NNE15	NNE16	N21	N21	N21	N17	N14.0	N21
26-Feb	N16	N16	N20	N17	N12	NNE11	NNE8	NNE7	NNE8	N8	N10	N9	NNW5	NW5	N5	N4	ESE3	SSE4	S5	SSE6	SE6	SSW3	WSW4	WNW9	N5.7	N20
27-Feb	WNW11	WNW6	WNW3	W4	WSW5	SW7	SW7	SSW5	W7	W7	WNW8	W7	W6	WSW5	SSW5	ESE7	SE7	SE6	SE5	SSE5	SSE6	SSE6	SE6	SW3.2	WNW11	
28-Feb	SSE5	SSE7	SSE8	SSE7	SSE6	SSE4	SSE5	SE7	SE7	SSE10	SE13	SE11	SE12	SE14	SE15	ESE15	ESE12	SE12	SE16	SSE16	SE15	SE13	SE14	SE15	SE10.6	SSE16
29-Feb	SE16	ESE14	ESE15	ESE14	ESE13	ESE14	ESE17	ESE16	ESE14	SE14	SE13	ESE10	SE6	SE5	SSE5	SE5	S6	SSW5	WNW6	WNW6	WNW6	W7	W7	W9	SE6.5	ESE17

NNW2.1	N2.1	N1.8	NNW1.5	NNW1.9	NNW1.4	NW0.8	NNW1.0	NE1.3	NE0.9	N1.0	NW1.4	NNW1.7	NW1.7	NW1.2	NNW0.6	NNW0.6	N0.8	NNW1.1	NNW1.7	NNW2.2	NW2.2	NW2.1	NW2.5	Diurnal Average
W18	N18	N20	N17	WSW23	W27	W25	W25	N16	N20	W19	W24	W20	W18	W21	WSW25	W22	SW17	WSW20	W23	WSW24	W23	W20	WSW22	Diurnal Maximum

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

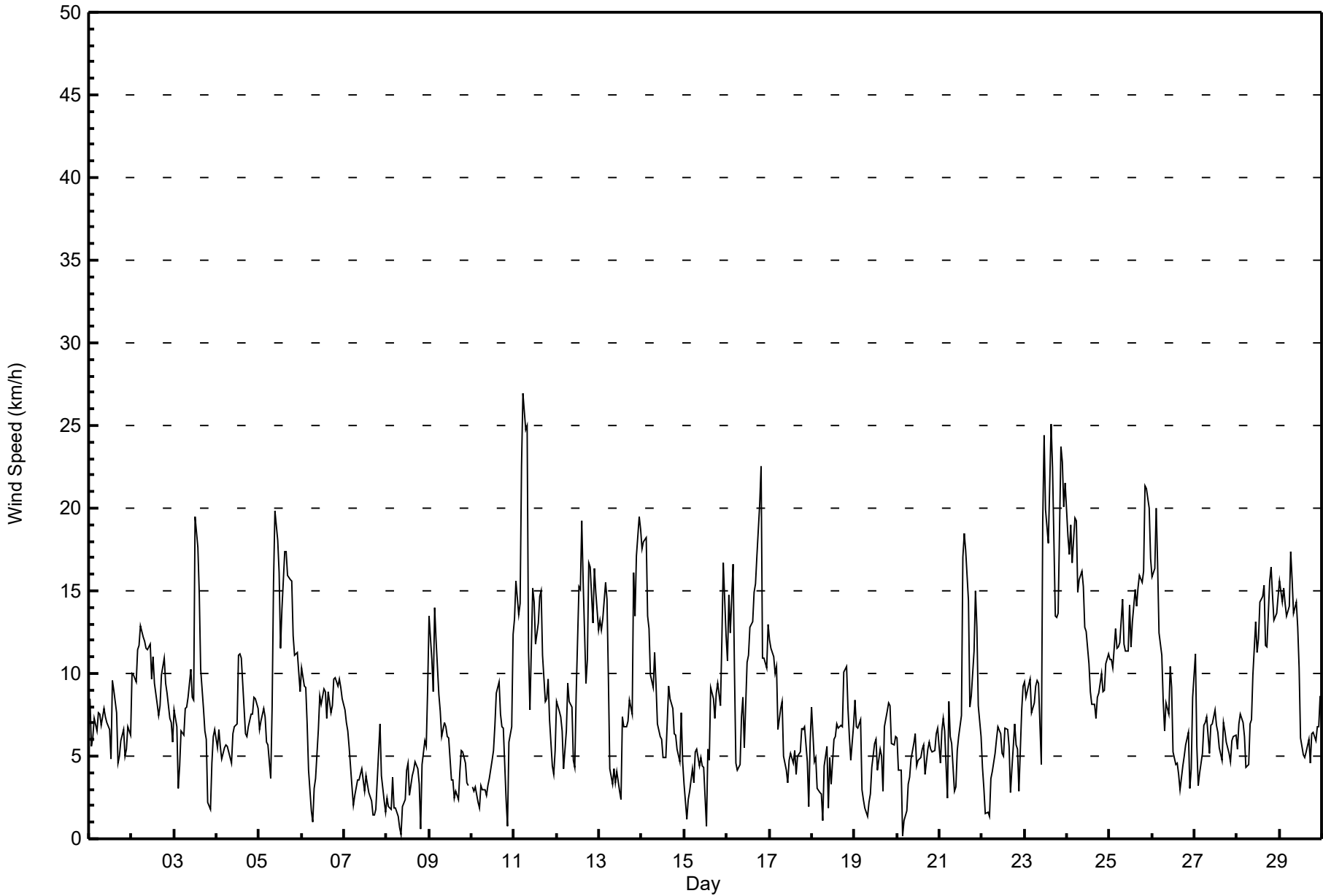
Wind Speed (WS) - km/h
Buffalo Viewpoint - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8 km/h on Feb 11 09:00														Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9											
Minimum Value: 0 km/h on Feb 10 08:00																									
Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																									
Day	Hourly Period Ending At (MST)																							Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24
1-Feb	2	2	2	2	2	3	2	2	2	2	2	2	1	2	2	2	1	2	1	1	1	1	1	1	3
2-Feb	2	2	2	2	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	1	1	1	3
3-Feb	2	3	1	1	2	2	2	2	2	3	2	3	5	6	4	3	2	1	1	1	2	1	1	1	6
4-Feb	1	1	1	1	1	1	1	1	1	2	2	2	4	4	4	2	2	1	2	2	2	2	1	1	4
5-Feb	1	2	1	1	1	2	2	4	3	4	4	4	4	4	4	4	3	3	3	3	3	2	2	4	
6-Feb	2	2	2	1	2	1	1	1	1	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3
7-Feb	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	3
8-Feb	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	0	1	1	1	1	4	4
9-Feb	3	3	2	3	3	2	2	2	2	2	2	2	1	1	1	1	1	2	1	1	1	1	1	UO	3
10-Feb	1	0	1	1	1	1	0	0	0	1	1	2	2	2	3	3	2	2	2	1	2	1	2	5	5
11-Feb	6	5	3	4	4	4	5	4	8	2	3	4	3	4	4	3	3	2	3	3	2	1	1	1	8
12-Feb	1	1	1	1	1	1	2	2	2	1	2	4	5	4	6	4	2	3	4	4	3	4	4	3	6
13-Feb	3	3	3	4	4	2	2	1	1	2	2	1	1	2	2	2	2	2	2	5	3	5	5	5	5
14-Feb	4	4	4	4	3	3	2	3	3	2	2	2	1	1	3	2	2	2	1	1	2	2	2	1	4
15-Feb	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	2	2	1	1	1	2	5	4	4	5
16-Feb	4	3	3	4	4	3	1	1	2	2	2	3	3	3	4	4	4	5	7	6	4	3	2	3	7
17-Feb	3	3	2	2	3	1	2	3	1	1	1	1	2	1	1	1	1	1	2	1	1	2	1	2	3
18-Feb	1	3	2	1	1	2	2	1	1	2	1	1	1	2	1	1	1	1	2	2	2	1	1	2	3
19-Feb	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	2
20-Feb	1	1	1	2	1	1	1	1	2	2	2	1	1	1	2	2	1	2	2	1	1	1	1	1	2
21-Feb	2	2	1	2	2	1	1	1	1	1	1	2	3	4	5	4	6	2	2	2	4	5	2	1	6
22-Feb	1	1	1	2	2	1	1	1	2	2	1	1	1	2	2	1	1	1	1	2	1	2	1	2	2
23-Feb	2	2	2	3	2	2	2	2	2	4	5	5	5	4	6	6	6	4	5	5	5	6	4	4	6
24-Feb	5	6	5	4	4	5	4	4	4	3	4	3	3	2	3	3	2	2	3	2	2	2	2	3	6
25-Feb	3	3	3	3	3	3	3	4	3	3	3	3	3	3	4	4	4	4	5	5	6	5	5	4	6
26-Feb	4	4	5	4	3	3	2	2	3	3	3	3	2	2	2	1	1	1	1	1	1	1	1	2	5
27-Feb	3	2	1	1	1	1	1	1	1	3	2	2	2	2	3	2	2	1	1	1	1	1	2	1	3
28-Feb	1	2	2	2	2	2	1	2	2	3	5	4	4	5	5	5	3	4	6	5	5	5	4	4	6
29-Feb	5	4	5	4	4	5	5	5	5	4	4	3	3	2	2	2	2	2	2	1	1	1	2	1	5
														Diurnal Maximum											
UO - Unstable Operation																									



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Buffalo Viewpoint - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Buffalo Viewpoint - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	217	31.22	31.22
6 - 11	319	45.90	77.12
12 - 19	138	19.86	96.98
20 - 28	21	3.02	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Buffalo Viewpoint - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	18	25	20	4	6	4	15	40	15	17	11	6	2	9	7	18	217
6 - 11	58	44	16	0	0	6	33	72	17	5	10	12	16	12	8	10	319
12 - 19	55	8	0	0	0	10	13	1	0	0	5	12	21	1	6	6	138
20 - 28	4	1	0	0	0	0	0	0	0	0	0	5	10	0	1	0	21
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	135	78	36	4	6	20	61	113	32	22	26	35	49	22	22	34	695

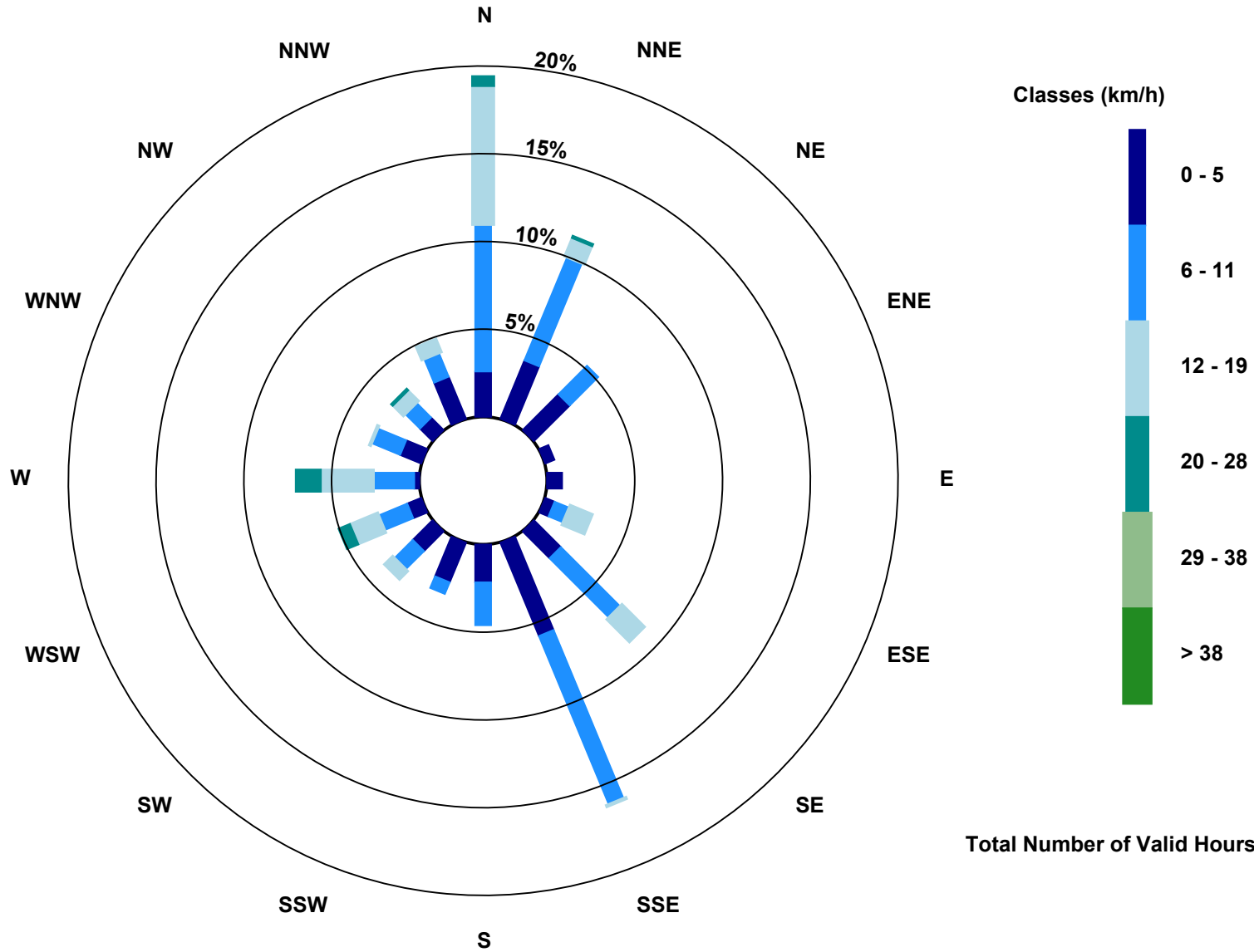
Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Buffalo Viewpoint



Total Number of Valid Hours: 695



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Buffalo Viewpoint - February 2024

Direction of Maximum Speed: 261 deg on Feb 11 06:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 10.6 deg on Feb 25	Hours of Data: 695
Direction of Minimum Speed: 127 deg on Feb 20 04:00	Hours of Missing Data: 1
Direction of Minimum Daily Speed Average: 0.2 deg on Feb 8	Percent Operational Time: 99.9
Monthly Average Direction: 334.1 deg	

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	143	141	132	130	138	141	165	162	167	170	169	169	178	117	113	120	113	53	28	17	331	338	354	351	128.7
2-Feb	359	360	350	353	354	357	355	354	356	354	359	351	357	358	1	0	352	356	354	351	359	351	359	348	355.3
3-Feb	323	325	64	55	27	3	357	354	346	332	351	336	317	338	14	25	17	24	56	84	167	167	162	150	357.6
4-Feb	168	161	157	176	171	165	163	169	169	155	153	149	153	152	149	155	173	175	166	172	172	165	159	156	161.3
5-Feb	149	169	154	151	141	156	11	359	4	2	4	3	2	9	354	355	359	0	359	352	348	346	353	12	4.2
6-Feb	29	27	31	37	30	36	125	52	42	129	129	131	125	130	140	147	150	146	147	151	151	149	147	152	119.8
7-Feb	151	156	160	153	156	156	146	158	182	186	185	226	3	344	336	314	19	319	353	5	7	12	322	342	145.8
8-Feb	347	27	347	334	16	77	52	77	47	232	229	201	196	193	138	164	154	140	156	263	22	359	349	317	352.9
9-Feb	309	303	284	263	266	273	274	332	22	35	28	54	91	104	98	21	30	23	359	16	356	284	284	UO	322.0
10-Feb	162	161	155	161	201	164	169	160	168	168	158	164	179	175	162	169	174	176	171	225	190	157	212	275	179.1
11-Feb	251	245	246	250	258	261	262	259	258	259	264	265	271	277	273	264	254	241	228	233	230	196	226	171	254.7
12-Feb	145	147	158	157	164	162	164	148	135	144	129	241	263	284	313	336	324	313	306	313	313	327	333	3	297.5
13-Feb	9	5	8	8	15	12	1	282	216	212	350	41	149	183	194	234	247	264	279	8	3	356	3	355	352.0
14-Feb	351	355	2	2	357	1	3	358	8	20	7	12	353	7	41	30	29	20	27	21	37	43	44	28	10.3
15-Feb	51	52	178	211	283	247	223	220	217	201	138	195	244	29	41	127	137	158	151	153	208	236	249	260	199.9
16-Feb	269	265	270	263	253	254	199	200	145	128	147	223	227	231	225	236	235	230	238	261	255	256	253	260	241.0
17-Feb	275	280	287	283	277	266	278	251	234	174	300	29	30	18	33	101	138	159	32	357	15	9	352	38	306.2
18-Feb	38	41	48	318	298	22	36	44	26	53	25	25	6	354	1	359	356	16	30	38	35	13	340	357	17.2
19-Feb	5	349	8	32	316	218	161	78	79	28	3	19	11	335	19	13	337	351	12	18	14	10	347	351	6.8
20-Feb	12	18	11	127	27	38	167	203	145	180	187	188	126	162	156	157	133	151	151	156	157	149	134	136	148.3
21-Feb	148	154	159	145	82	29	359	356	28	155	135	143	198	254	255	254	255	236	230	219	250	280	306	331	243.4
22-Feb	315	345	330	302	339	335	1	336	319	313	297	304	9	43	128	120	103	50	11	14	342	175	157	153	1.4
23-Feb	152	158	152	151	159	150	153	165	165	210	259	261	261	259	262	255	260	318	275	240	257	265	266	256	244.4
24-Feb	260	6	4	357	3	351	346	335	351	356	356	355	359	4	11	6	23	32	40	37	40	37	35	22	2.0
25-Feb	22	13	5	3	9	6	4	12	12	25	7	360	7	4	10	22	6	23	19	14	8	6	11	9	10.6
26-Feb	9	7	350	360	5	19	31	24	23	8	5	0	344	316	355	7	102	153	171	149	142	193	248	294	5.7
27-Feb	299	288	293	267	245	229	234	214	206	270	264	291	263	279	240	211	120	130	131	143	162	153	152	146	226.1
28-Feb	155	158	150	159	153	156	159	136	141	155	145	136	133	134	137	123	117	127	142	151	141	133	130	128	139.0
29-Feb	125	120	120	112	109	113	114	116	119	124	128	122	137	146	154	141	185	204	283	286	286	273	270	278	130.4
	339.7	352.0	5.0	344.9	333.3	340.1	316.8	326.6	36.8	48.5	354.4	312.0	302.5	307.3	324.1	299.7	281.8	4.6	345.5	340.7	328.0	318.0	320.1	325.7	
	Diurnal Average																								

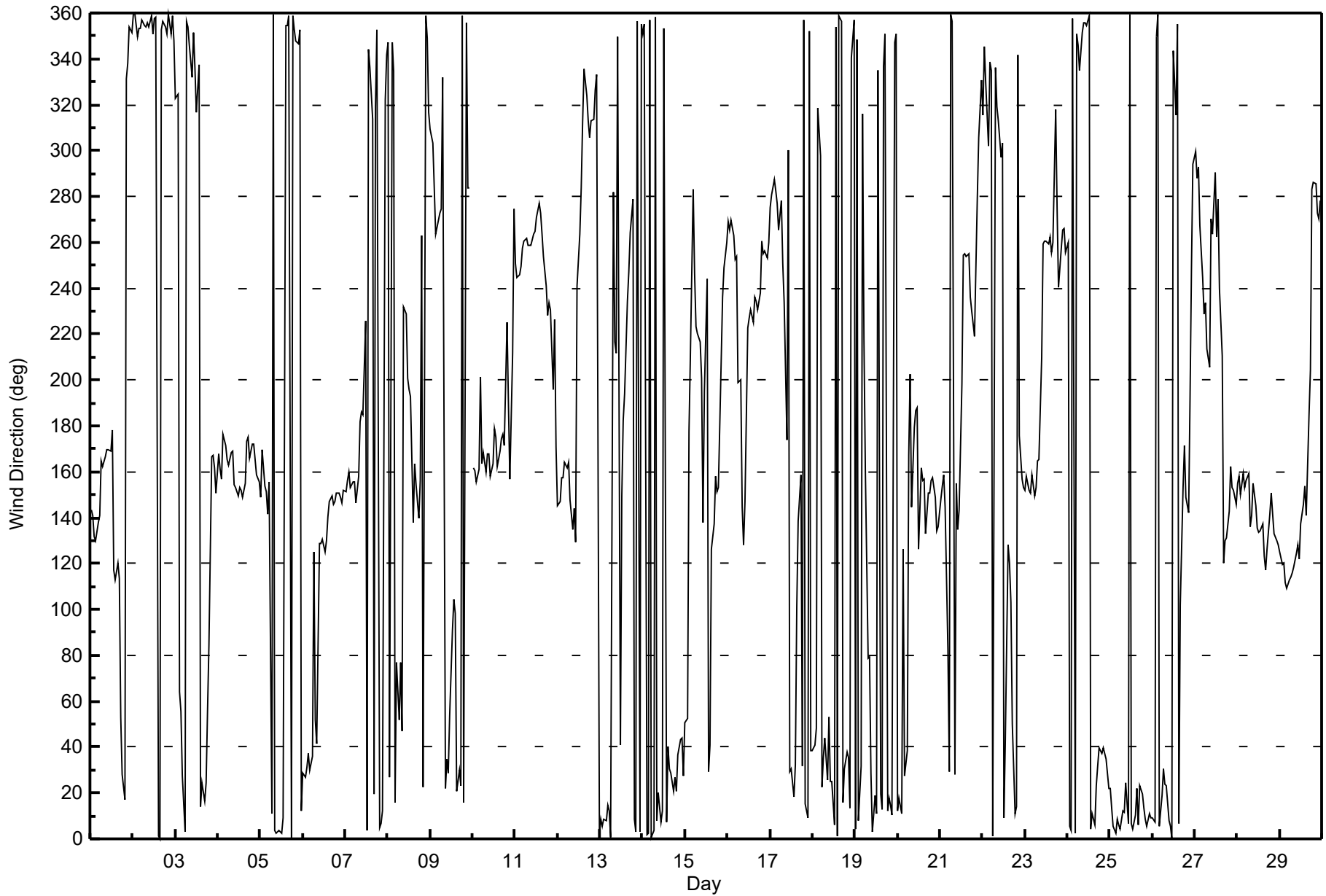
UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Buffalo Viewpoint - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 98 deg on Feb 8 08:00 Minimum Value: 4 deg on Feb 10 02:00 Percentiles: P ₁ = 8 P ₁₀ = 13 Q ₁ = 17 Median = 20 Q ₃ = 27 P ₉₀ = 39 P ₉₉ = 83																	Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	28	28	23	23	21	25	27	23	25	23	29	28	36	18	18	17	12	27	19	10	28	15	9	14	36
2-Feb	14	17	15	19	19	19	18	18	19	18	19	18	19	19	22	19	19	16	17	17	17	16	15	16	22
3-Feb	21	22	29	21	19	19	19	18	17	19	21	24	20	31	20	21	17	18	10	51	64	17	7	7	64
4-Feb	10	6	12	13	14	16	17	20	25	31	28	26	27	28	28	27	20	19	24	20	20	18	12	14	31
5-Feb	17	14	9	8	9	16	62	11	16	19	19	18	19	19	20	20	20	18	18	17	15	16	16	16	62
6-Feb	13	12	11	8	24	60	64	18	17	26	27	28	25	28	29	25	27	26	28	29	29	27	29	29	64
7-Feb	30	27	23	29	26	21	17	21	23	30	37	45	30	45	30	39	29	47	39	14	18	22	22	11	47
8-Feb	15	19	22	14	41	20	60	98	84	73	46	31	24	44	43	31	25	17	14	73	15	14	15	16	98
9-Feb	18	21	19	11	12	16	15	28	25	18	19	22	41	35	47	46	23	34	18	19	14	21	13	UO	47
10-Feb	22	4	17	50	22	16	20	11	14	20	27	29	29	28	30	27	25	23	21	62	91	18	26	23	91
11-Feb	27	18	18	16	11	10	11	11	46	22	11	15	19	20	17	12	16	17	36	19	24	36	20	31	46
12-Feb	15	11	11	16	12	15	15	18	26	33	55	38	20	20	23	17	22	17	20	18	17	16	18	20	55
13-Feb	19	18	18	18	17	17	50	30	21	16	52	57	72	26	22	26	21	17	26	20	19	20	21	20	72
14-Feb	18	19	19	20	20	20	22	18	20	22	20	21	24	20	22	19	19	15	16	13	18	19	15	19	24
15-Feb	25	35	38	27	23	21	20	15	17	27	28	29	93	20	34	17	13	18	7	15	30	28	16	19	93
16-Feb	23	14	18	16	27	57	31	26	21	10	34	17	19	18	16	18	18	16	20	16	38	15	15	17	57
17-Feb	16	17	15	20	16	14	13	14	21	31	43	17	26	18	17	47	17	12	24	16	14	26	41	8	47
18-Feb	10	25	47	43	57	57	95	23	11	83	20	69	15	26	17	16	13	12	14	13	15	12	17	21	95
19-Feb	12	10	8	17	61	58	48	76	32	24	30	20	21	44	19	16	30	10	18	17	19	27	14	23	76
20-Feb	16	29	30	92	91	65	37	40	33	27	27	37	34	38	34	29	27	36	22	21	15	16	13	16	92
21-Feb	38	23	12	16	59	9	16	17	43	37	30	27	35	13	13	14	14	17	14	11	17	24	24	29	59
22-Feb	15	18	35	76	59	22	25	21	22	26	21	23	20	24	23	20	25	27	10	23	20	80	15	13	80
23-Feb	16	16	20	31	23	16	16	18	21	75	14	12	13	14	14	14	16	33	20	12	12	12	11	75	
24-Feb	15	49	22	20	20	22	19	17	22	20	20	20	19	26	25	24	20	20	20	18	19	18	17	18	49
25-Feb	18	19	20	20	18	20	19	19	19	20	23	22	25	21	25	22	21	20	19	20	21	20	20	19	25
26-Feb	18	21	20	21	20	22	20	22	23	25	23	23	44	51	49	46	51	20	17	13	12	56	19	14	56
27-Feb	18	25	32	42	18	12	12	17	28	25	25	27	39	35	47	48	32	20	18	23	15	19	22	21	48
28-Feb	20	24	27	28	28	38	27	19	27	29	30	31	31	30	30	24	23	26	28	29	26	28	25	24	38
29-Feb	24	24	23	22	20	21	21	23	25	24	25	26	36	42	35	32	31	35	20	19	19	10	10	11	42
Diurnal Maximum																									
UO - Unstable Operation																									





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

**AMS05
MANNIX
FEBRUARY 2024**

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MANNIX (AMS05)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	662	33	34	99.86	106.5	0	20.4	0
H2S (ppb) Average	662	34	34	100	13	4	3	0
THC (ppm) Average	613	31	83	92.53	6.7	-	3.4	-
NMHC(ppm) Average	613	31	83	92.53	1.747	-	0.438	-
CH4(ppm) Average	613	31	83	92.53	6.1	-	3	-
Temperature 2 m (C) Average	696	0	0	100	9.1	-	3	-
Temperature 20 m (C) Average	696	0	0	100	9.2	-	4	-
Temperature 45 m (C) Average	696	0	0	100	8.9	-	4.3	-
Temperature 75 m (C) Average	696	0	0	100	8.7	-	4.5	-
Temperature 90 m (C) Average	696	0	0	100	8.7	-	4.7	-
Relative Humidity 2 m (%) Average	696	0	0	100	96	-	93	-
Relative Humidity 20 m (%) Average	696	0	0	100	98	-	95	-
Relative Humidity 45 m (%) Average	696	0	0	100	97	-	95	-
Relative Humidity 75 m (%) Average	696	0	0	100	100	-	99	-
Relative Humidity 90 m (%) Average	696	0	0	100	99	-	97	-
Wind Speed 20 m (km/h) Average	695	0	1	99.86	29	-	19	-
Wind Speed 45 m (km/h) Average	656	0	40	94.25	36	-	26	-
Wind Speed 75 m (km/h) Average	638	0	58	91.67	40	-	30	-
Wind Speed 90 m (km/h) Average	637	0	59	91.52	41	-	30	-
Wind Direction 20 m (deg) Average	695	0	1	99.86	-	-	-	-
Wind Direction 45 m (deg) Average	656	0	40	94.25	-	-	-	-
Wind Direction 75 m (deg) Average	638	0	58	91.67	-	-	-	-
Wind Direction 90 m (deg) Average	637	0	59	91.52	-	-	-	-
Vertical Wind Speed 20 m (km/h) Average	695	0	1	99.86	1.9	-	0.9	-
Vertical Wind Speed 45 m (km/h) Average	656	0	40	94.25	2.1	-	0.6	-
Vertical Wind Speed 75 m (km/h) Average	638	0	58	91.67	1.8	-	0.4	-
Vertical Wind Speed 90 m (km/h) Average	637	0	59	91.52	2.3	-	0.6	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MANNIX (AMS05)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	662	3.87	9.1	-	0	0.1	0.2	0.5	3.1	10.2	106.5
H2S (ppb) Average	662	0.89	1.5	-	0	0.1	0.2	0.3	0.9	2.3	13.3
THC (ppm) Average	613	2.23	0.5	-	1.8	1.9	2	2	2.3	2.8	6.7
NMHC(ppm) Average	613	0.08	0.153	-	0	0	0	0	0.1	0.3	1.747
CH4(ppm) Average	613	2.15	0.4	-	1.8	1.9	2	2	2.2	2.5	6.1
Temperature 2 m (C) Average	696	-9.27	7.1	-	-26.9	-17.9	-14.1	-9.2	-4.7	0.1	9.1
Temperature 20 m (C) Average	696	-8.81	7.3	-	-26.8	-17.6	-13.7	-8.7	-4.3	1.2	9.2
Temperature 45 m (C) Average	696	-8.77	7.4	-	-27.1	-17.3	-13.9	-8.8	-3.9	1.5	8.9
Temperature 75 m (C) Average	696	-8.68	7.5	-	-27.4	-17.6	-13.8	-8.8	-3.2	1.5	8.7
Temperature 90 m (C) Average	696	-8.52	7.5	-	-27.4	-17.6	-13.4	-8.7	-3	1.6	8.7
Relative Humidity 2 m (%) Average	696	72	13	-	33	54	64	74	83	88	96
Relative Humidity 20 m (%) Average	696	69.3	15	-	28	49	59	70	82	88	98
Relative Humidity 45 m (%) Average	696	69.3	16	-	27	48	59	69	83	89	97
Relative Humidity 75 m (%) Average	696	69.8	17	-	27	47	58	68	85	93	100
Relative Humidity 90 m (%) Average	696	68.4	17	-	27	46	57	68	84	90	99
Wind Speed 20 m (km/h) Average	695	10.1	6	-	1	3	5	9	14	19	29
Wind Speed 45 m (km/h) Average	656	13.6	8	-	1	4	7	13	19	24	36
Wind Speed 75 m (km/h) Average	638	15.3	9	-	1	4	7	14	22	28	40
Wind Speed 90 m (km/h) Average	637	16.1	10	-	0	4	8	15	23	30	41
Wind Direction 20 m (deg) Average	695	-	-	-	-	-	-	-	-	-	-
Wind Direction 45 m (deg) Average	656	-	-	-	-	-	-	-	-	-	-
Wind Direction 75 m (deg) Average	638	-	-	-	-	-	-	-	-	-	-
Wind Direction 90 m (deg) Average	637	-	-	-	-	-	-	-	-	-	-
Vertical Wind Speed 20 m (km/h) Average	695	0.09	0.5	-	-1.2	-0.4	-0.2	0	0.4	0.7	1.9
Vertical Wind Speed 45 m (km/h) Average	656	-0.01	0.5	-	-1.4	-0.6	-0.3	-0.1	0.3	0.6	2.1
Vertical Wind Speed 75 m (km/h) Average	638	0.14	0.3	-	-1.1	-0.2	0	0.1	0.3	0.5	1.8
Vertical Wind Speed 90 m (km/h) Average	637	0.07	0.5	-	-1.5	-0.4	-0.2	0	0.3	0.7	2.3

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MANNIX (AMS05)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
SO2, THC/NMHC/CH4	15 Feb 2024 15:00	15 Feb 2024 15:00	1	Maintenance - sample manifold cleaned
THC/NMHC/CH4	07 Feb 2024 02:00	08 Feb 2024 11:00	34	Analyzer Failure - pump failure
THC/NMHC/CH4	08 Feb 2024 12:00	08 Feb 2024 15:00	4	Maintenance - replaced sample pump
THC/NMHC/CH4	27 Feb 2024 04:00	27 Feb 2024 10:00	7	Analyzer within non-compliance of AMD
THC/NMHC/CH4	27 Feb 2024 11:00	27 Feb 2024 16:00	6	Maintenance - replaced support gas cylinder
Wind Speed, Wind Direction, Vertical Wind Speed 20m	02 Feb 2024 15:00	02 Feb 2024 15:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 45m	02 Feb 2024 07:00	03 Feb 2024 14:00	32	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 45m	04 Feb 2024 03:00	04 Feb 2024 06:00	4	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 45m	04 Feb 2024 09:00	04 Feb 2024 09:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 45m	10 Feb 2024 06:00	10 Feb 2024 06:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 45m	10 Feb 2024 14:00	10 Feb 2024 14:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 45m	10 Feb 2024 16:00	10 Feb 2024 16:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 75m	02 Feb 2024 06:00	04 Feb 2024 14:00	57	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 75m	10 Feb 2024 06:00	10 Feb 2024 06:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 90m	02 Feb 2024 07:00	04 Feb 2024 13:00	55	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 90m	10 Feb 2024 07:00	10 Feb 2024 08:00	2	Flat line in sensor output signal
Wind Speed, Wind Direction, Vertical Wind Speed 90m	10 Feb 2024 10:00	10 Feb 2024 11:00	2	Flat line in sensor output signal



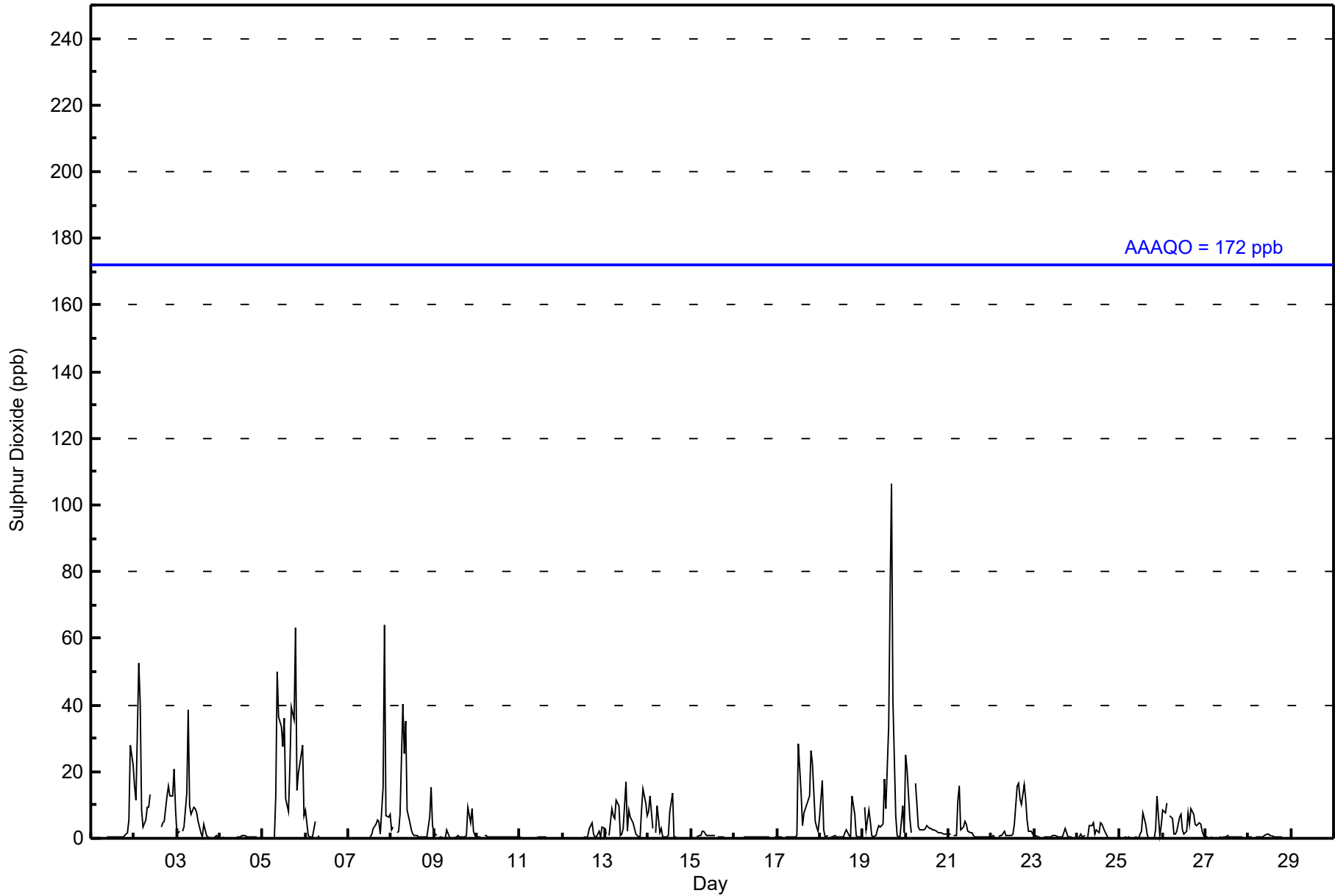
Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

Mannix - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																		Hours in Service:	696																											
Maximum Value: 106.5 ppb on Feb 19 17:00		Maximum Daily Average: 20.4 ppb on Feb 5																	Hours of Data:	662																													
Minimum Value: 0.0 ppb on Feb 12 02:00		Minimum Daily Average: 0.1 ppb on Feb 29																	Hours of Missing Data:	34																													
Maximum Diurnal Average: 7.0 ppb at hour 17		Minimum Diurnal Average: 1.7 ppb at hour 5																	Hours of Calibration:	33																													
Monthly Average: 3.87 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.5 Q ₃ = 3.1 P ₉₀ = 10.2 P ₉₉ = 41.0																	Percent Operational Time:	99.9																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.5	1.1	1.5	5.4	27.9	22.1	2.7	27.9																							
2-Feb	15.6	11.3	52.4	40.6	8.6	3.6	5.7	9.3	9.3	13.2	C	C	C	C	C	3.4	4.5	5.0	12.7	15.5	12.6	12.7	20.7	8.9	14.0	52.4																							
3-Feb	1.1	2.2	Z	2.0	3.4	13.4	38.4	9.5	7.4	9.3	8.9	7.4	5.1	1.5	0.4	4.1	0.7	0.3	0.1	0.1	0.2	0.7	0.3	5.1	38.4																								
4-Feb	0.2	0.1	0.2	Z	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.1	0.1	0.0	0.3	0.9																							
5-Feb	0.1	0.1	0.0	0.0	Z	0.1	0.0	12.8	49.9	36.2	33.4	27.7	36.0	11.7	8.3	21.4	39.3	35.7	63.3	14.6	19.7	24.9	27.8	6.7	20.4	63.3																							
6-Feb	8.3	0.9	0.5	0.6	0.3	5.2	Z	0.7	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.8	8.3																								
7-Feb	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	1.1	2.9	4.3	5.6	5.0	1.2	15.5	64.2	6.8	6.2	7.3	5.3	64.2																							
8-Feb	2.7	3.2	Z	1.6	2.3	7.4	40.1	25.5	35.2	8.3	4.7	2.4	1.4	1.0	0.7	0.5	0.5	0.5	0.5	0.5	0.4	6.4	15.3	3.8	7.2	40.1																							
9-Feb	1.7	0.9	Z	0.3	0.2	0.2	0.2	2.5	0.3	0.2	0.2	0.2	0.3	0.7	0.6	0.6	0.5	0.5	0.8	9.4	4.7	8.7	1.9	0.8	1.6	9.4																							
10-Feb	0.4	0.4	0.2	Z	0.7	0.7	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.3	0.3	0.2	0.2	0.4	0.7																							
11-Feb	0.2	0.2	0.2	0.1	Z	0.2	0.1	0.1	0.1	0.2	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.0	0.0	0.2	0.2	0.1	0.2	0.4																							
12-Feb	0.1	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.8	3.0	4.7	1.2	0.4	0.4	2.2	0.6	3.3	3.0	0.9	4.7																							
13-Feb	1.1	Z	1.0	8.7	6.6	6.1	11.6	9.9	0.8	1.1	2.9	17.0	2.0	8.4	6.2	4.6	3.1	1.1	0.5	0.5	8.3	14.7	10.6	6.9	5.8	17.0																							
14-Feb	8.2	12.6	2.8	Z	1.5	9.7	1.5	2.8	0.5	0.2	0.2	0.6	8.2	13.5	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.8	13.5																							
15-Feb	0.3	0.1	Z	0.2	0.7	1.0	1.9	2.1	1.0	0.8	0.7	0.7	0.7	0.8	M	0.4	0.4	0.5	0.3	0.2	0.2	0.2	0.2	0.1	0.6	2.1																							
16-Feb	0.1	0.1	0.1	Z	0.1	0.2	0.3	0.6	0.3	0.3	0.4	0.5	0.4	0.6	0.4	0.3	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.6																							
17-Feb	0.2	0.2	0.2	0.1	Z	0.4	0.4	0.5	0.5	0.5	0.4	1.0	28.5	13.6	3.6	7.8	9.0	11.3	12.9	26.1	22.5	5.2	3.6	2.1	6.6	28.5																							
18-Feb	6.0	17.6	2.3	0.5	0.8	Z	0.4	0.3	0.7	0.3	0.4	0.3	0.2	0.2	1.5	2.7	0.6	0.4	12.7	7.2	1.0	0.6	0.4	0.5	2.5	17.6																							
19-Feb	Z	9.5	2.6	8.3	5.0	0.8	0.5	0.8	2.4	4.0	3.2	4.2	18.0	8.9	33.5	72.6	106.5	41.6	6.9	1.0	0.6	0.6	9.7	1.5	14.9	106.5																							
20-Feb	24.9	20.7	6.0	1.8	Z	16.6	10.2	3.6	2.4	2.3	2.5	3.0	3.6	3.0	2.8	2.7	2.5	2.0	1.8	1.7	1.6	1.5	1.2	1.3	5.2	24.9																							
21-Feb	1.3	1.1	Z	0.9	0.7	11.3	15.6	2.5	3.5	5.1	4.1	2.1	1.7	1.6	0.8	0.6	0.5	0.5	0.5	0.6	0.6	0.4	0.3	0.3	2.5	15.6																							
22-Feb	0.3	1.0	0.3	Z	0.4	0.6	1.0	2.1	0.7	1.0	0.9	1.0	1.1	4.4	15.6	16.4	11.8	10.1	15.9	12.1	5.6	1.9	2.2	1.5	4.7	16.4																							
23-Feb	1.0	0.7	0.5	0.4	Z	0.4	0.4	0.4	0.4	0.4	0.9	0.8	0.6	0.6	0.5	0.4	0.4	3.1	1.8	0.3	0.3	0.2	0.2	0.2	0.6	3.1																							
24-Feb	0.1	0.3	1.1	0.6	0.7	Z	0.3	3.7	3.7	4.5	1.4	2.4	1.5	4.6	4.4	2.0	1.1	0.3	0.2	0.1	0.2	0.2	0.2	0.1	1.5	4.6																							
25-Feb	Z	0.1	0.1	0.5	0.0	0.2	0.1	0.1	0.1	0.2	0.2	1.2	2.2	7.4	4.2	1.1	0.1	0.1	0.1	0.2	2.6	12.6	0.8	3.7	1.6	12.6																							
26-Feb	8.4	7.5	10.7	Z	6.8	6.0	1.3	1.5	1.9	6.2	7.1	2.5	1.3	2.2	7.5	4.2	8.8	7.3	4.3	4.0	4.5	4.2	2.2	0.7	4.8	10.7																							
27-Feb	0.4	0.3	Z	0.3	0.1	0.2	0.2	0.2	0.3	0.2	0.4	0.6	0.8	0.5	0.4	0.4	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.8																							
28-Feb	0.4	0.5	0.6	Z	0.3	0.3	0.3	0.3	0.5	0.8	1.1	1.1	0.9	0.8	0.6	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.4	1.1																							
29-Feb	0.0	0.0	0.1	0.0	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.2																							
																								3.3	3.3	3.6	3.1	1.7	3.3	4.7	3.2	4.2	3.3	2.7	2.8	4.2	3.2	3.6	5.4	7.0	4.5	4.8	3.9	5.3	3.8	4.7	2.5	Diurnal Average	
																								24.9	20.7	52.4	40.6	8.6	16.6	40.1	25.5	49.9	36.2	33.4	27.7	36.0	13.6	33.5	72.6	106.5	41.6	63.3	26.1	64.2	24.9	27.9	22.1	Diurnal Maximum	
Z - zerospan C - Calibration M - Maintenance																								Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb				24-hr 48 ppb																					





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Mannix - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	596	90.03	90.03
11 - 20	36	5.44	95.47
21 - 60	26	3.93	99.40
61 - 110	4	0.60	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Mannix - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	42	61	16	7	7	17	69	126	27	17	19	44	52	30	28	34	596
11 - 20	16	1	1	2	0	1	3	1	0	0	0	0	0	0	1	10	36
21 - 60	14	2	0	0	0	1	0	0	0	0	0	0	0	2	3	4	26
61 - 110	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	4
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	74	64	17	9	7	19	72	127	27	17	19	44	53	32	33	48	662

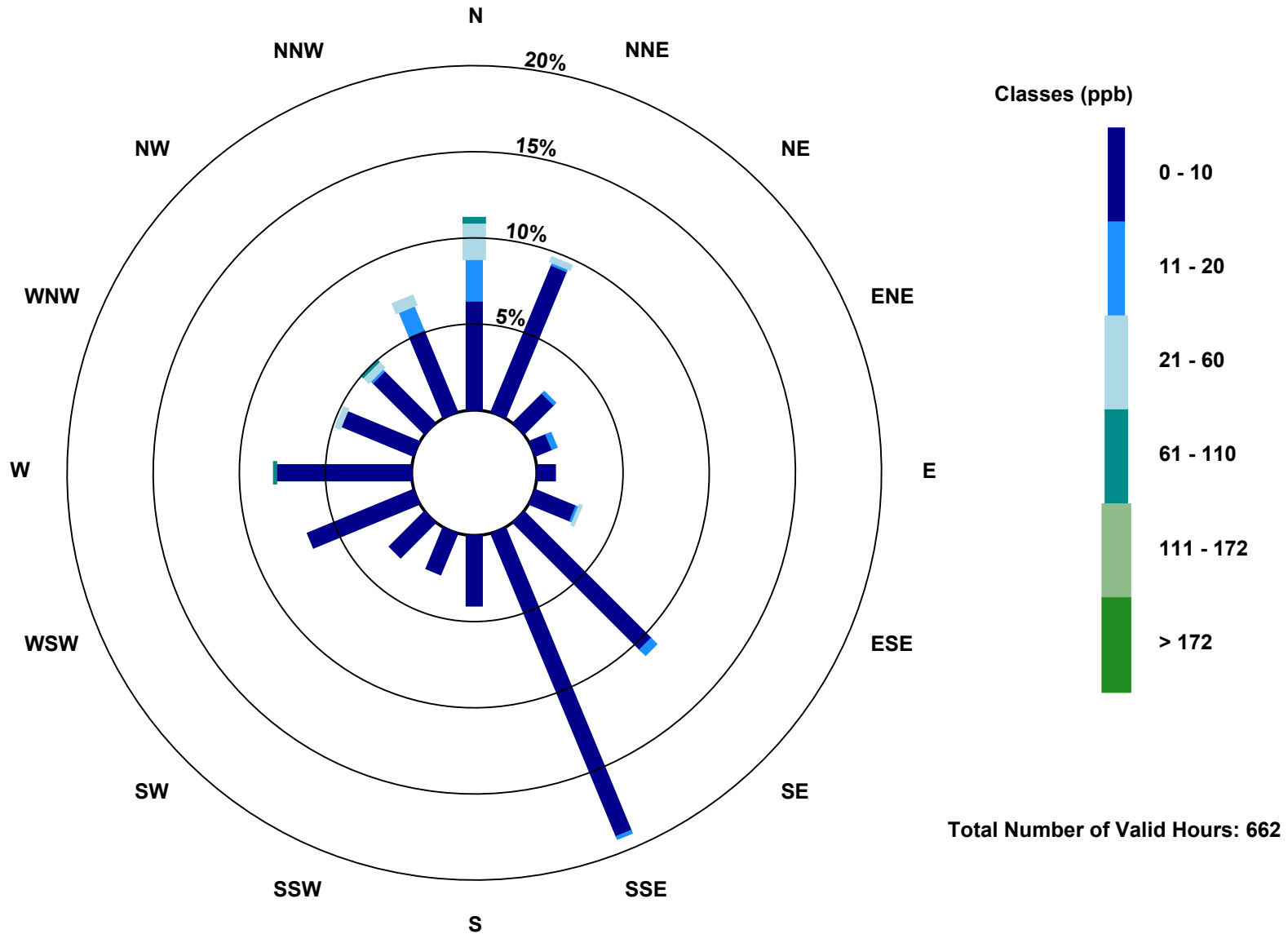
Total Number of Valid Hours: 662

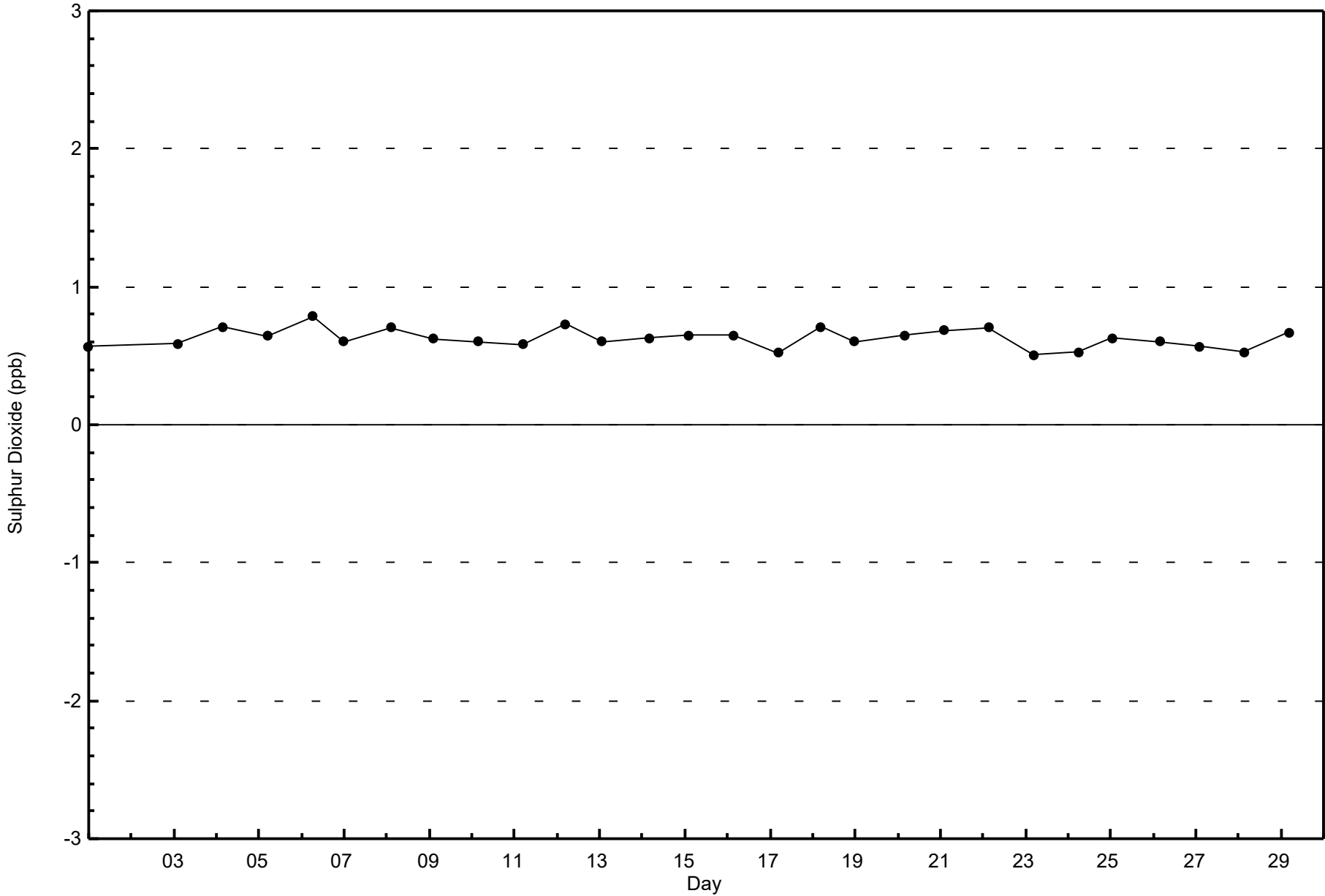
Total Number of Hours: 696

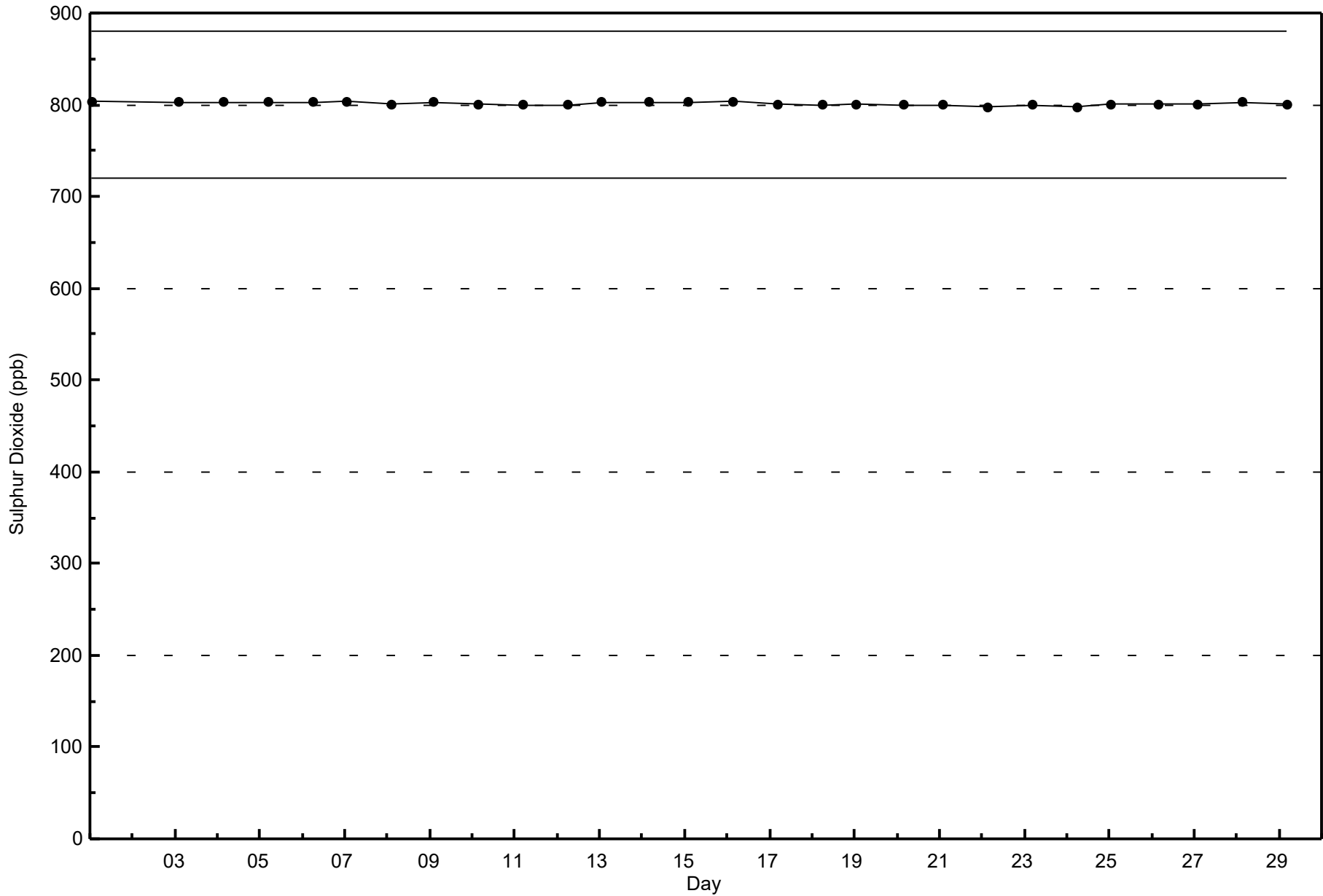


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Mannix

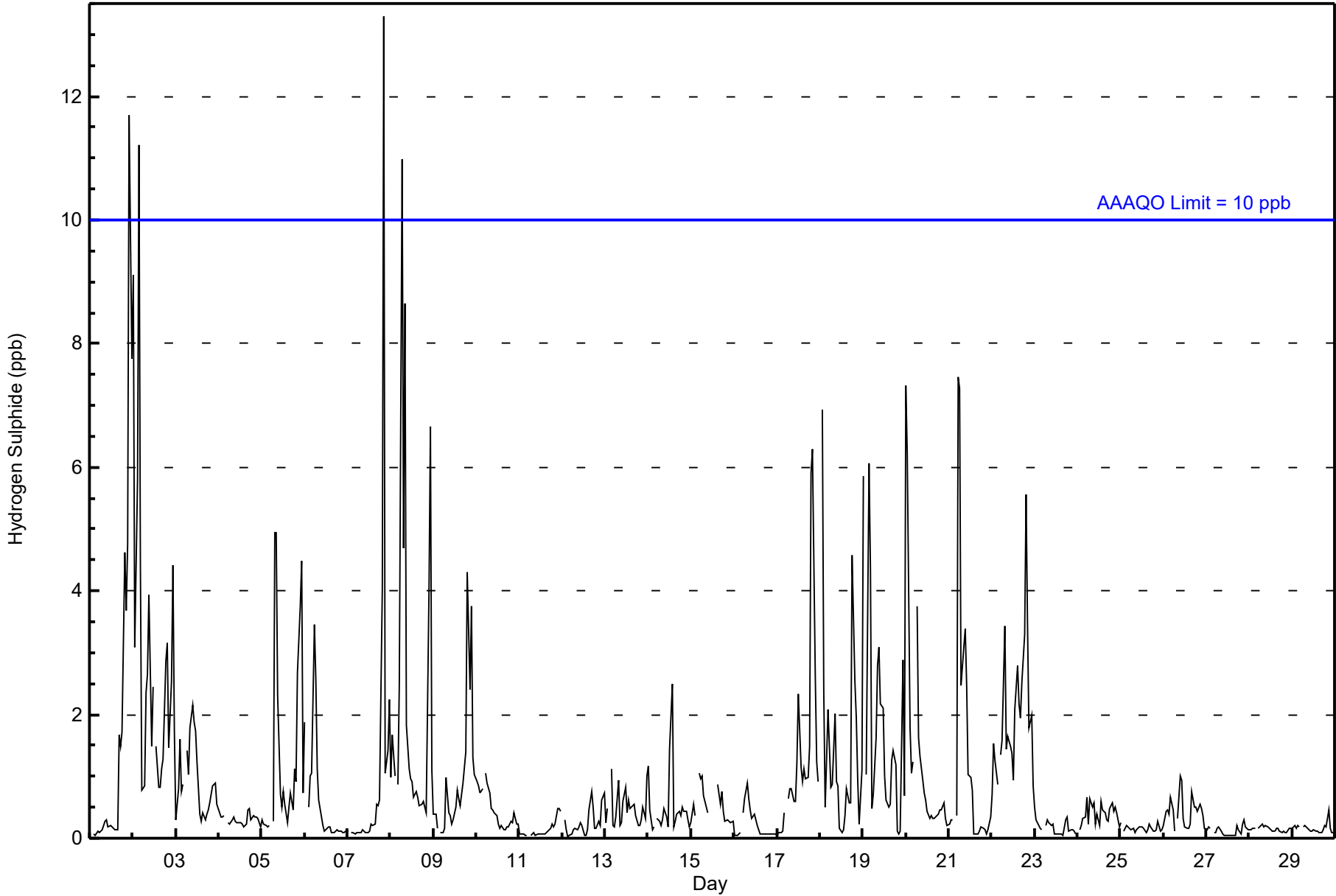








Number of Exceedences (AAAQO):		1-hr: 4	24-hr: 0	Hours in Service: 696																	662					
Maximum Value: 13.3 ppb on Feb 7 21:00		Maximum Daily Average: 3.0 ppb on Feb 2																	Hours of Data: 662							
Minimum Value: 0.0 ppb on Feb 12 04:00		Minimum Daily Average: 0.1 ppb on Feb 27																	Hours of Missing Data: 34							
Maximum Diurnal Average: 1.4 ppb at hour 23		Minimum Diurnal Average: 0.4 ppb at hour 15																	Hours of Calibration: 34							
Monthly Average: 0.89 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.3 Q ₃ = 0.9 P ₉₀ = 2.3 P ₉₉ = 7.6																	Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	1.7	1.5	1.7	4.6	3.7	4.8	11.7	7.8	1.7	11.7
2-Feb	9.1	3.1	5.8	11.2	4.4	0.8	0.8	2.4	2.7	3.9	1.5	2.5	Z	1.5	0.8	0.8	1.1	1.3	2.9	3.1	1.5	2.5	4.4	1.8	3.0	11.2
3-Feb	0.3	0.8	1.6	0.8	0.9	Z	1.4	1.0	1.8	2.2	1.9	1.7	1.2	0.4	0.3	0.4	0.3	0.4	0.5	0.6	0.9	0.9	0.9	0.5	0.9	2.2
4-Feb	0.4	0.3	0.4	0.4	Z	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.5	0.5	0.3	0.4	0.4	0.3	0.3	0.2	0.3	0.5
5-Feb	0.3	0.2	0.2	0.2	Z	Z	0.3	4.9	4.9	2.3	0.7	0.5	0.8	0.6	0.3	0.5	0.7	0.5	1.1	0.9	2.7	3.8	4.5	0.7	1.4	4.9
6-Feb	1.9	Z	0.5	1.0	1.0	3.5	2.6	1.1	0.6	0.3	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6	3.5
7-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.5	0.5	0.6	4.0	13.3	1.0	1.4	2.2	1.1	13.3
8-Feb	1.0	1.7	1.0	Z	0.9	2.5	11.0	4.7	8.6	1.8	1.1	1.0	0.9	0.7	0.8	0.7	0.5	0.5	0.6	0.5	0.4	4.0	6.6	1.1	2.3	11.0
9-Feb	0.4	0.4	0.2	Z	0.1	0.1	0.2	1.0	0.4	0.4	0.2	0.3	0.5	0.8	0.6	0.5	0.9	1.2	1.4	4.3	2.4	3.7	1.3	1.0	1.0	4.3
10-Feb	0.9	0.8	0.7	0.8	Z	1.1	0.9	0.7	0.5	0.5	0.4	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.2	0.2	0.4	1.1
11-Feb	0.1	0.1	0.1	0.1	0.0	Z	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.5	0.5	0.4	0.1	0.5
12-Feb	Z	0.3	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.5	0.8	0.5	0.2	0.2	0.3	0.2	0.6	0.7	0.3	0.8
13-Feb	0.3	0.5	Z	1.1	0.2	0.2	0.3	0.9	0.2	0.3	0.6	0.8	0.4	0.6	0.5	0.6	0.4	0.2	0.2	0.3	0.5	0.3	1.0	0.5	1.1	
14-Feb	1.2	0.5	0.1	0.2	Z	0.3	0.3	0.2	0.3	0.5	0.3	0.2	1.4	2.5	0.2	0.3	0.4	0.4	0.4	0.5	0.4	0.4	0.3	0.2	0.5	2.5
15-Feb	0.2	0.6	0.4	Z	1.1	1.0	1.0	0.7	0.5	0.4	C	C	C	C	C	0.9	0.6	0.7	0.4	0.3	0.3	0.3	0.2	0.3	0.5	1.1
16-Feb	0.1	0.0	0.0	0.1	Z	0.4	0.6	0.9	0.6	0.4	0.3	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.9
17-Feb	0.0	0.1	0.1	0.1	0.4	Z	0.6	0.8	0.8	0.6	0.6	1.2	2.3	1.1	0.9	1.1	1.0	1.0	1.5	5.9	6.3	2.6	1.2	0.9	1.4	6.3
18-Feb	Z	6.9	2.4	0.5	2.1	1.5	0.8	0.9	2.0	0.9	0.8	0.2	0.1	0.1	0.4	0.8	0.6	0.6	4.6	2.5	1.9	0.9	0.2	1.1	1.4	6.9
19-Feb	5.9	Z	1.0	6.1	4.4	0.5	0.7	1.6	2.8	3.1	2.2	2.1	1.0	0.6	0.5	0.5	1.3	1.4	1.2	0.1	0.1	0.1	2.9	0.7	1.8	6.1
20-Feb	7.3	6.2	1.8	1.0	1.2	Z	3.8	1.6	1.3	0.9	0.7	0.6	0.4	0.3	0.4	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.3	0.2	1.4	7.3
21-Feb	0.2	0.3	0.3	Z	0.4	7.5	7.3	2.5	3.1	3.4	2.5	1.0	1.0	0.8	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.3	1.4	7.5
22-Feb	0.7	1.5	1.3	0.9	Z	1.3	1.6	3.4	1.4	1.7	1.5	1.4	0.9	2.1	2.8	2.2	2.0	2.5	3.3	5.6	3.5	1.8	2.0	0.8	2.0	5.6
23-Feb	0.5	0.3	0.2	0.2	0.1	Z	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.5
24-Feb	Z	0.1	0.2	0.3	0.4	0.7	0.2	0.6	0.5	0.6	0.2	0.4	0.2	0.6	0.5	0.4	0.3	0.3	0.5	0.6	0.4	0.5	0.4	0.2	0.4	0.7
25-Feb	0.3	Z	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.3	0.1	0.1	0.2	0.3
26-Feb	0.2	0.4	0.5	0.4	0.7	0.5	0.1	Z	0.3	1.0	0.9	0.3	0.2	0.2	0.2	0.2	0.8	0.5	0.5	0.4	0.5	0.5	0.4	0.2	0.4	1.0
27-Feb	0.1	0.2	0.2	Z	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.3
28-Feb	0.1	0.1	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2
29-Feb	0.2	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.2	0.1	0.1	0.2	0.4
1.2 1.1 0.7 1.1 0.8 1.0 1.2 1.1 1.2 0.9 0.7 0.6 0.5 0.5 0.4 0.4 0.5 0.6 0.8 1.3 1.4 1.1 1.4 0.8																								Diurnal Average		
9.1 6.9 5.8 11.2 4.4 7.5 11.0 4.9 8.6 3.9 2.5 2.5 2.3 2.5 2.8 2.2 2.0 2.5 4.6 5.9 13.3 4.8 11.7 7.8																								Diurnal Maximum		
Z - zerspan C - Calibration																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																										





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Mannix - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	604	91.24	91.24
3 - 4	33	4.98	96.22
5 - 7	18	2.72	98.94
8 - 11	3	0.45	99.40
> 11	4	0.60	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Mannix - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	53	60	15	7	6	18	70	124	26	18	17	44	50	32	29	34	603
3 - 4	10	1	2	0	1	1	1	1	2	0	1	0	1	1	3	8	33
5 - 7	7	2	1	1	0	0	0	0	0	0	0	0	0	0	2	5	18
8 - 11	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3
> 11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
Totals	75	63	18	8	7	19	71	125	28	18	18	44	51	34	34	48	661

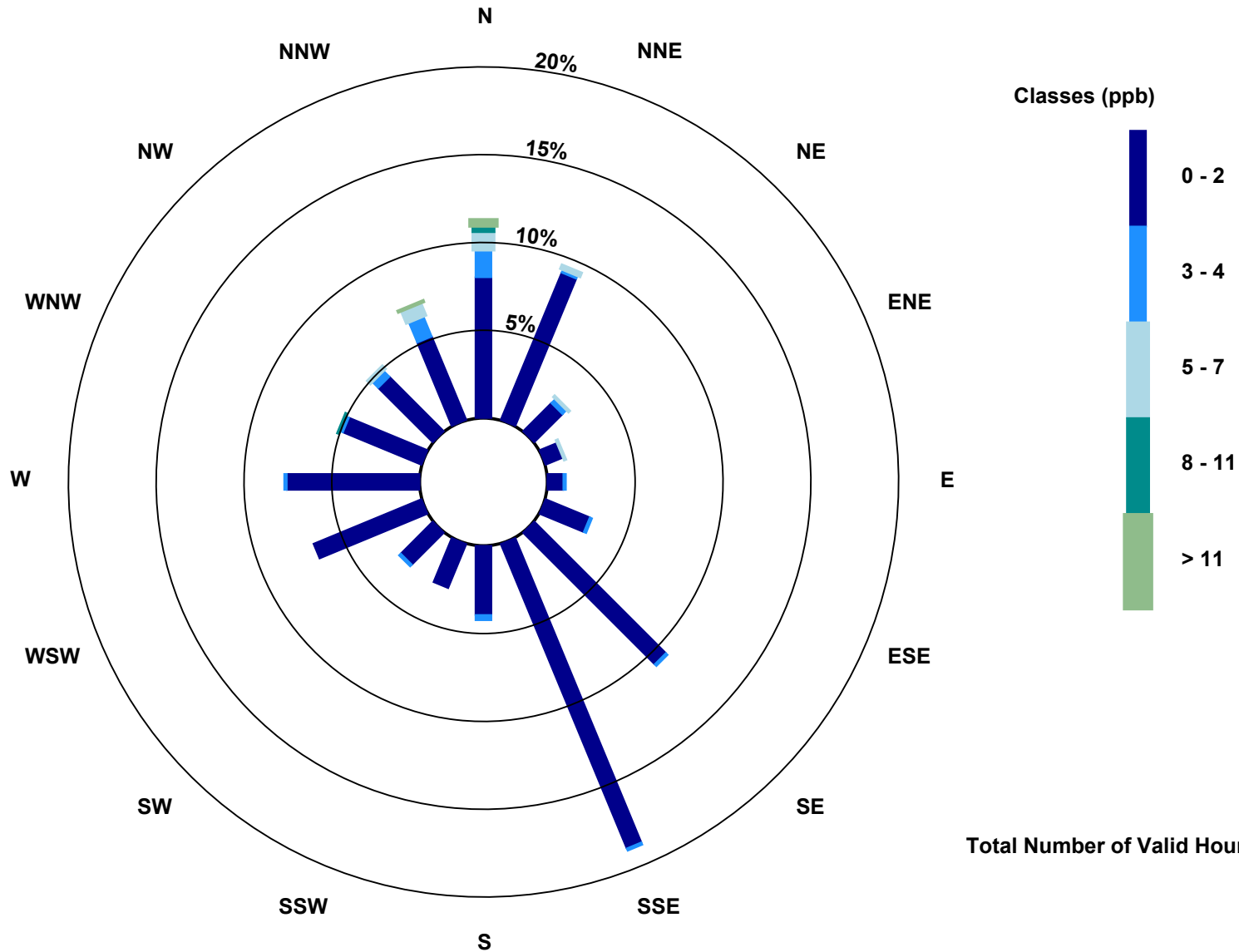
Total Number of Valid Hours: 661

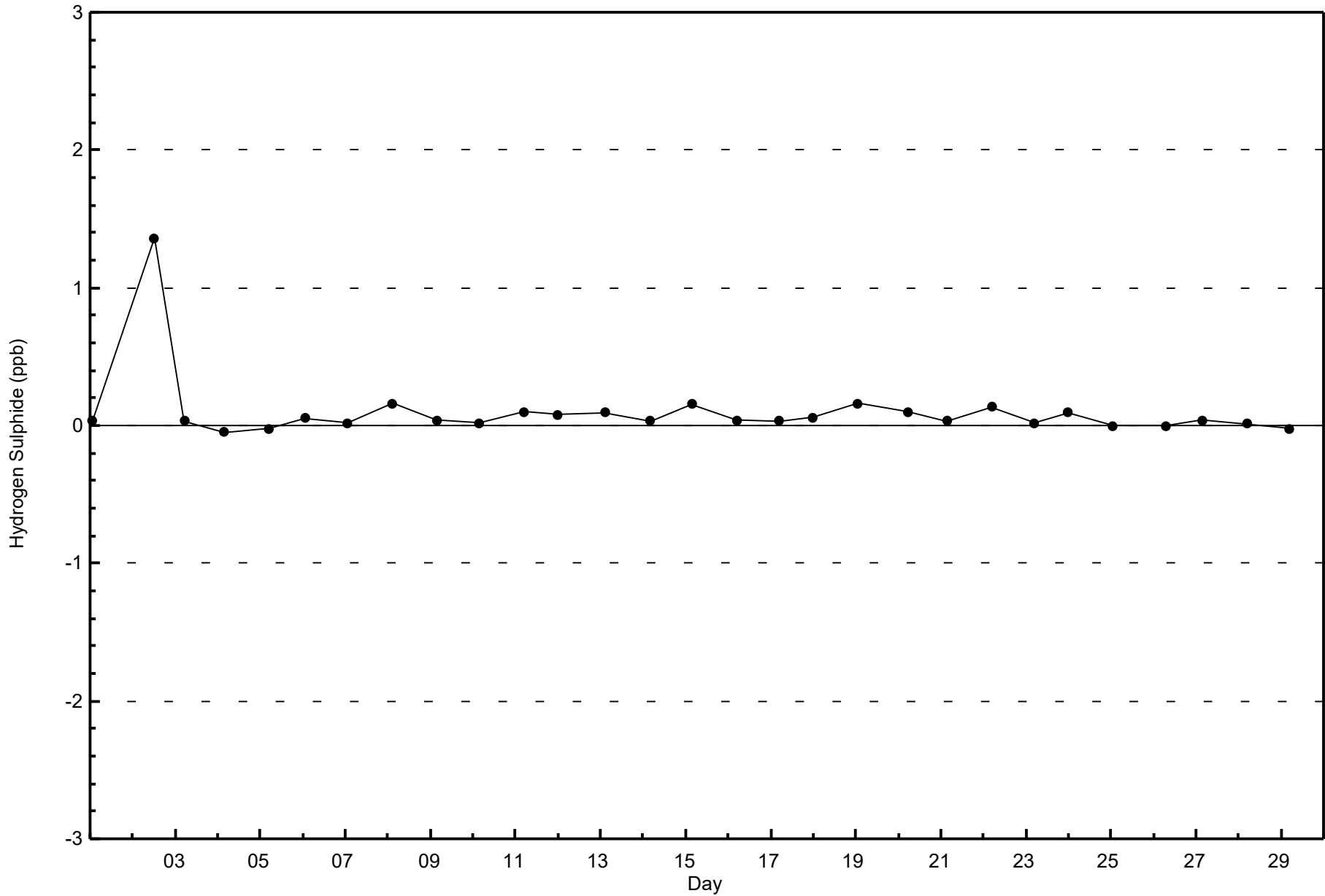
Total Number of Hours: 696

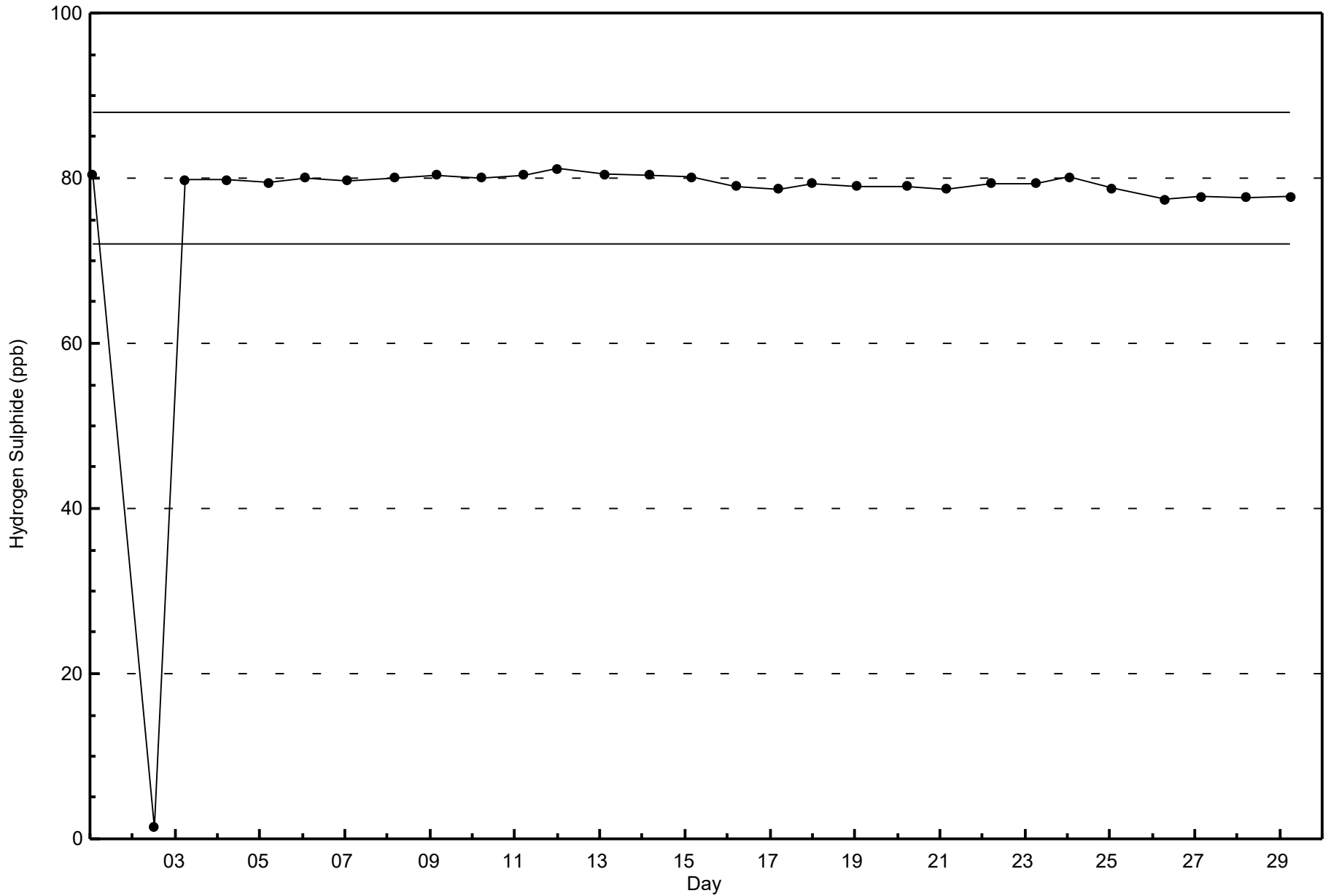


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Mannix

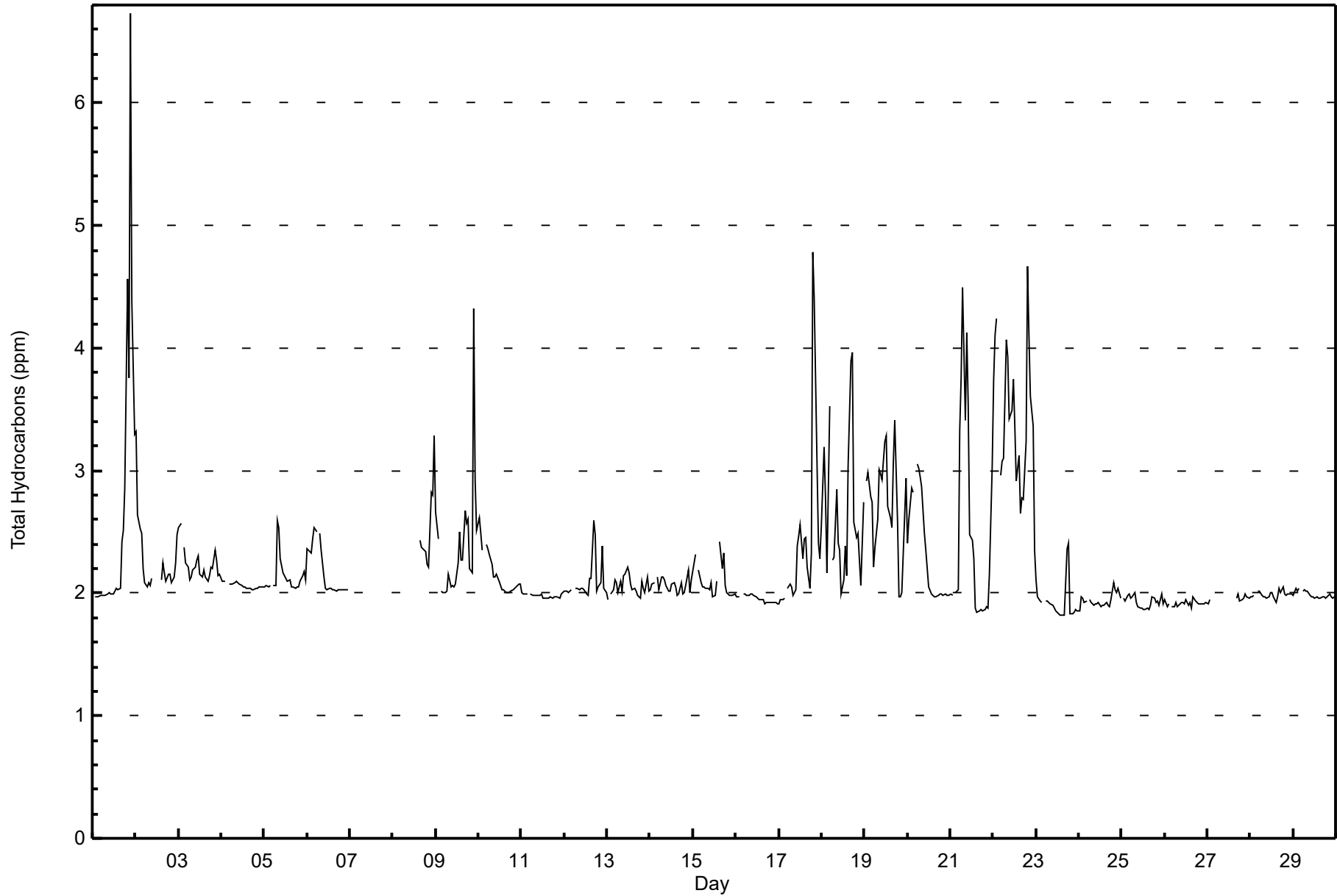








Maximum Value: 6.7 ppm on Feb 1 22:00		Maximum Daily Average: 3.4 ppm on Feb 22		Hours in Service: 696																							
Minimum Value: 1.8 ppm on Feb 23 14:00		Minimum Daily Average: 1.9 ppm on Feb 26		Hours of Data: 613																							
Maximum Diurnal Average: 2.4 ppm at hour 22		Minimum Diurnal Average: 2.1 ppm at hour 15		Hours of Missing Data: 83																							
Monthly Average: 2.23 ppm		Percentiles: P ₁ = 1.8 P ₁₀ = 1.9 Q ₁ = 2.0 Median = 2.0 Q ₃ = 2.3 P ₉₀ = 2.8 P ₉₉ = 4.4		Hours of Calibration: 31																							
				Percent Operational Time: 92.5																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.5	2.9	4.6	3.8	6.7	4.4	3.3	2.6	6.7		
2-Feb	3.3	2.6	2.5	2.5	2.2	2.1	2.0	2.1	2.1	2.1	C	C	C	C	2.1	2.3	2.2	2.1	2.2	2.2	2.1	2.1	2.2	2.5	2.3	3.3	
3-Feb	2.5	2.6	Z	2.4	2.2	2.2	2.1	2.1	2.2	2.2	2.3	2.3	2.2	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.1	2.2	2.2	2.6	
4-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.1	
5-Feb	2.0	2.1	2.1	2.1	Z	2.1	2.1	2.6	2.5	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.6	
6-Feb	2.4	2.3	2.3	2.4	2.5	2.5	Z	2.5	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.5	
7-Feb	Z	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--	
8-Feb	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	M	M	M	M	2.4	2.4	2.4	2.3	2.2	2.2	2.8	2.8	3.3	--	3.3	
9-Feb	2.7	2.4	Z	2.0	2.0	2.0	2.0	2.2	2.1	2.1	2.1	2.1	2.3	2.5	2.3	2.3	2.7	2.6	2.6	2.2	2.2	4.3	2.9	2.5	2.4	4.3	
10-Feb	2.6	2.5	2.3	Z	2.4	2.4	2.3	2.2	2.1	2.1	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.6	
11-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
12-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.6	2.5	2.0	2.1	2.1	2.4	2.0	2.0	2.0	2.1	2.6	
13-Feb	2.0	Z	2.0	2.0	2.1	2.1	2.0	2.1	2.0	2.1	2.2	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.0	2.0	2.1	2.2	
14-Feb	2.0	2.1	2.1	Z	2.1	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.1	2.2	2.0	2.1	2.1	2.1	2.2	
15-Feb	2.2	2.3	Z	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.1	M	2.4	2.2	2.3	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.4	
16-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	
17-Feb	1.9	1.9	1.9	2.0	Z	2.0	2.1	2.1	2.0	2.0	2.4	2.5	2.6	2.3	2.4	2.5	2.2	2.0	2.3	4.8	4.4	3.1	2.4	2.3	2.4	4.8	
18-Feb	2.5	3.2	2.8	2.2	3.5	Z	2.3	2.3	2.8	2.4	2.3	2.0	2.1	2.4	2.1	3.0	3.9	4.0	2.6	2.5	2.5	2.3	2.1	2.7	2.6	4.0	
19-Feb	Z	2.9	3.0	2.8	2.7	2.2	2.4	2.6	3.0	3.0	2.9	3.2	3.3	2.7	2.6	2.5	3.1	3.4	2.6	2.0	2.0	2.0	2.6	2.9	2.7	3.4	
20-Feb	2.4	2.6	2.9	2.8	Z	3.0	3.0	3.0	2.9	2.5	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	3.0	
21-Feb	2.0	2.0	Z	2.0	2.0	3.3	3.8	4.5	3.4	4.1	3.5	2.5	2.4	2.3	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.2	3.0	2.5	4.5	
22-Feb	3.7	4.1	4.2	Z	3.0	3.1	3.1	4.1	3.9	3.4	3.5	3.7	3.4	2.9	3.1	2.6	2.8	2.8	3.2	4.7	4.1	3.6	3.4	2.3	3.4	4.7	
23-Feb	2.1	2.0	1.9	1.9	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	2.4	2.4	1.8	1.8	1.9	1.9	1.9	1.9	2.4	
24-Feb	1.9	2.0	2.0	1.9	1.9	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.0	2.0	2.0	2.0	1.9	2.1	
25-Feb	Z	2.0	1.9	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	
26-Feb	2.0	1.9	1.9	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	
27-Feb	1.9	1.9	Z	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	M	M	M	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	--	2.0
28-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
29-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
		2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.4	2.3	2.2	Diurnal Average	
		3.7	4.1	4.2	2.8	3.5	3.3	3.8	4.5	3.9	4.1	3.5	3.7	3.4	2.9	3.1	3.0	3.9	4.0	3.2	4.8	4.4	6.7	4.4	3.3	Diurnal Maximum	
Z - zerspan		C - Calibration				M - Maintenance				AF - Analyzer Failure				UO - Unstable Operation													





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Mannix - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	329	53.67	53.67
2.1 - 3.0	242	39.48	93.15
3.1 - 10.0	42	6.85	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 613

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Mannix - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	30	32	5	1	0	7	51	81	13	8	11	30	38	7	2	13	329
2.1 - 3.0	33	31	10	7	6	10	17	36	9	4	7	7	8	12	17	27	241
3.1 - 10.0	7	1	2	1	1	2	2	2	0	2	0	0	3	4	9	6	42
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	70	64	17	9	7	19	70	119	22	14	18	37	49	23	28	46	612

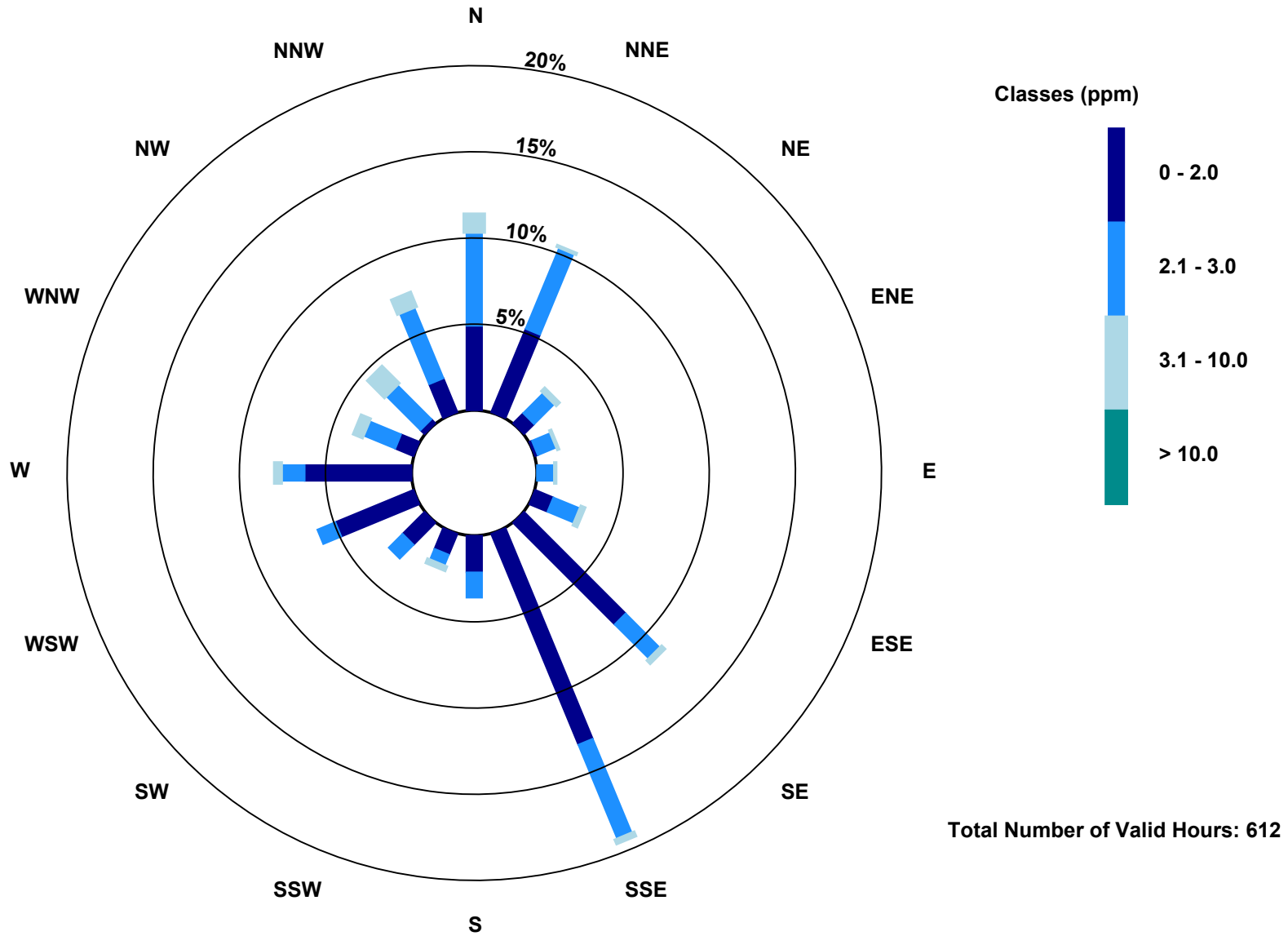
Total Number of Valid Hours: 612

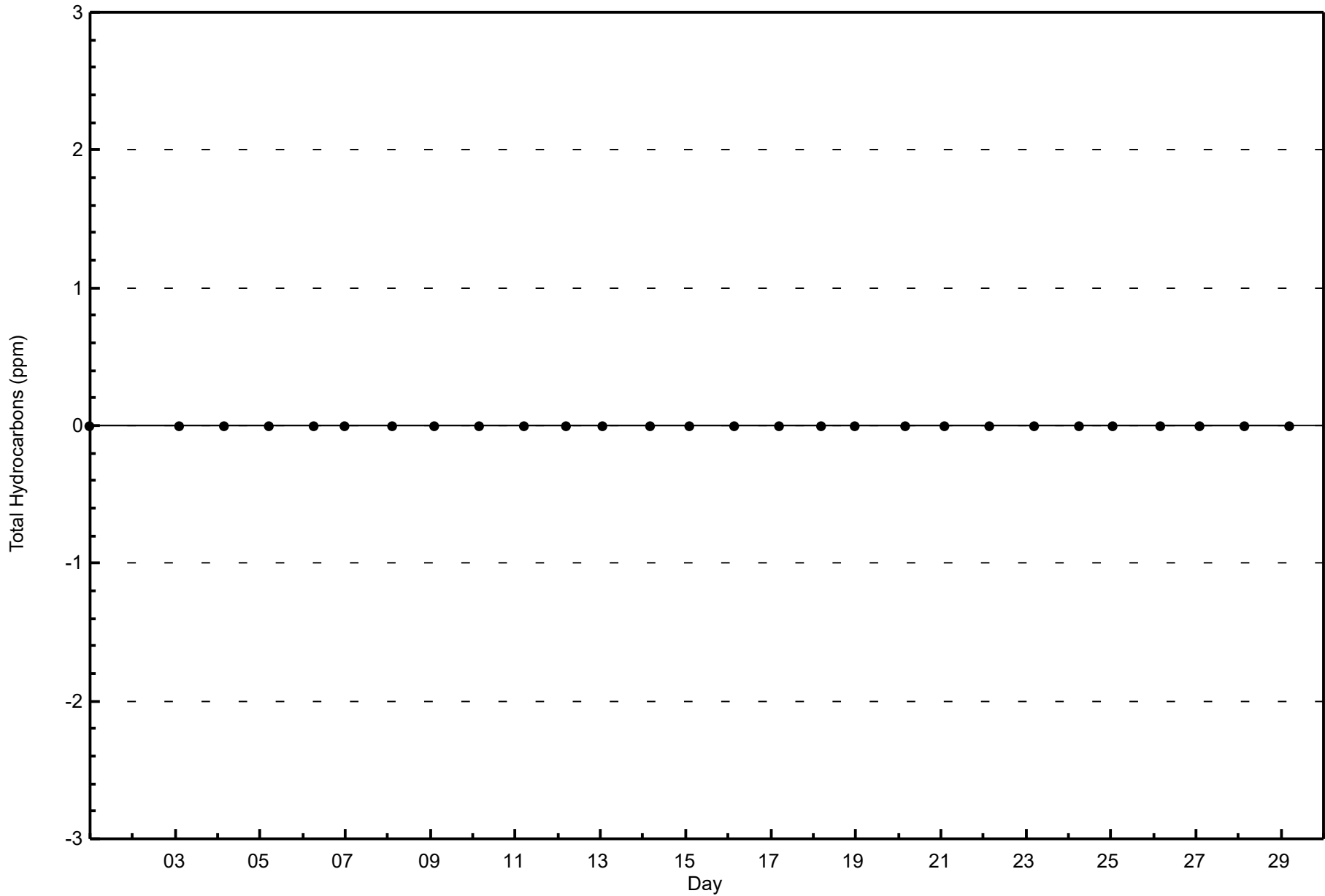
Total Number of Hours: 696

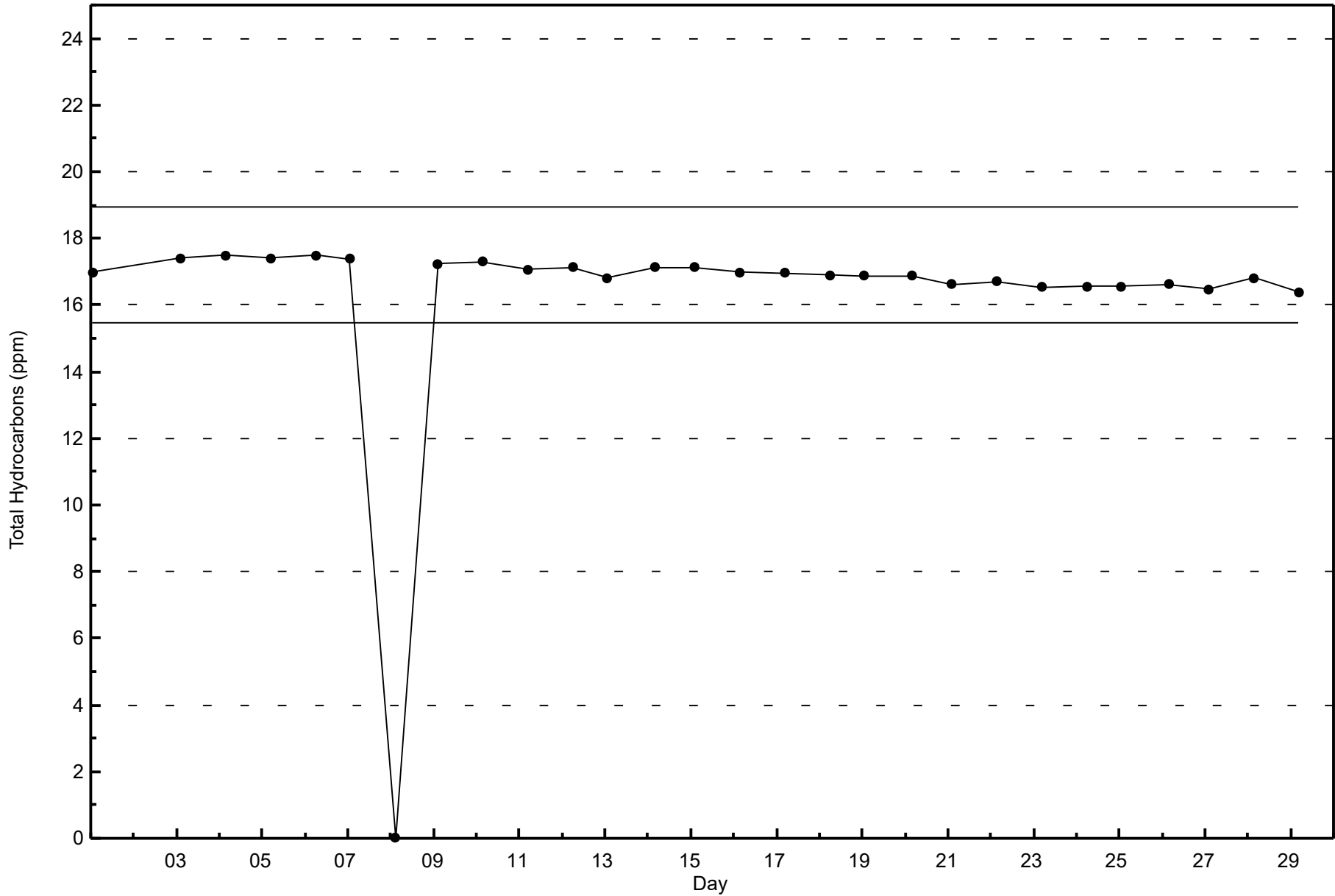


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Mannix





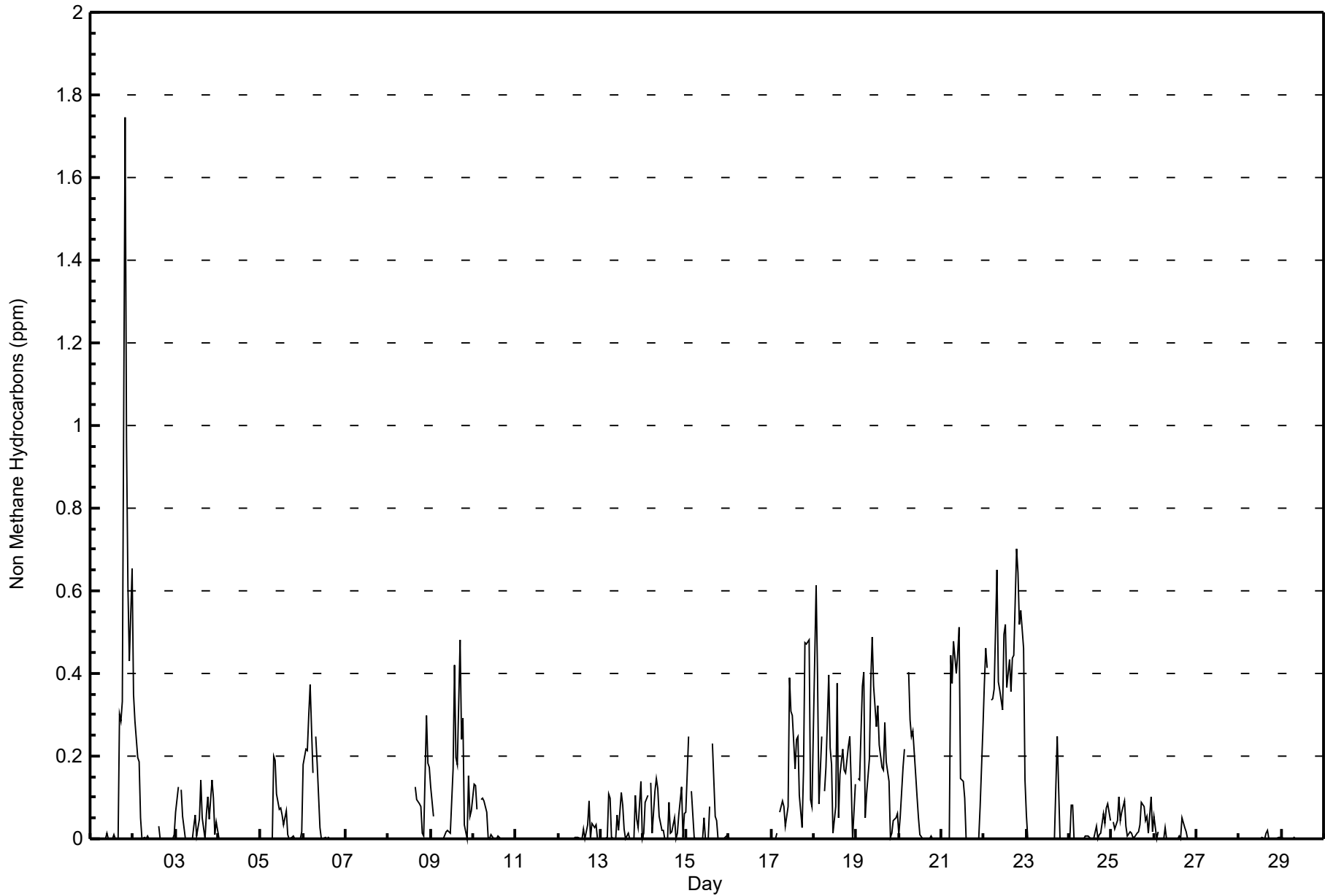




Summary of Hour Averages

Mannix - February 2024

Maximum Value: 1.747 ppm on Feb 1 20:00		Maximum Daily Average: 0.438 ppm on Feb 22		Hours in Service: 696																							
Minimum Value: 0.000 ppm on Feb 1 02:00		Minimum Daily Average: 0.000 ppm on Feb 11		Hours of Data: 613																							
Maximum Diurnal Average: 0.123 ppm at hour 20		Minimum Diurnal Average: 0.059 ppm at hour 15		Hours of Missing Data: 83																							
Monthly Average: 0.080 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.1 P ₉₀ = 0.3 P ₉₉ = 0.6		Hours of Calibration: 31																							
				Percent Operational Time: 92.5																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.010	0.000	0.000	0.303	0.286	0.331	1.747	0.959	0.610	0.432	0.655	0.232	1.747	
2-Feb	0.349	0.285	0.197	0.186	0.050	0.000	0.003	0.000	0.007	0.000	C	C	C	C	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.056	0.349		
3-Feb	0.065	0.124	Z	0.120	0.054	0.000	0.000	0.000	0.000	0.001	0.030	0.057	0.006	0.048	0.143	0.052	0.000	0.060	0.100	0.047	0.142	0.097	0.012	0.042	0.052	0.143	
4-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001		
5-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.200	0.189	0.110	0.070	0.075	0.059	0.034	0.067	0.009	0.001	0.003	0.006	0.000	0.000	0.000	0.016	0.036	0.200		
6-Feb	0.178	0.217	0.212	0.297	0.374	0.158	Z	0.249	0.184	0.027	0.000	0.000	0.003	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.083	0.374		
7-Feb	Z	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--		
8-Feb	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	M	M	M	M	0.125	0.095	0.086	0.078	0.013	0.007	0.300	0.183	0.174	--	0.300	
9-Feb	0.127	0.054	Z	0.000	0.000	0.000	0.000	0.001	0.016	0.020	0.016	0.015	0.169	0.421	0.196	0.178	0.480	0.242	0.292	0.035	0.000	0.153	0.055	0.069	0.110	0.480	
10-Feb	0.131	0.129	0.071	Z	0.094	0.100	0.091	0.063	0.004	0.001	0.011	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.031	0.131		
11-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
12-Feb	0.000	0.000	0.000	0.000	0.001	Z	0.000	0.000	0.000	0.000	0.003	0.004	0.005	0.000	0.000	0.023	0.000	0.034	0.093	0.001	0.036	0.027	0.034	0.000	0.000	0.011	0.093
13-Feb	0.000	Z	0.000	0.004	0.109	0.100	0.004	0.000	0.000	0.059	0.020	0.111	0.082	0.025	0.000	0.014	0.001	0.000	0.000	0.104	0.047	0.028	0.139	0.000	0.037	0.139	
14-Feb	0.012	0.087	0.105	Z	0.135	0.015	0.116	0.145	0.122	0.053	0.021	0.020	0.000	0.000	0.088	0.013	0.018	0.052	0.001	0.014	0.057	0.127	0.004	0.061	0.055	0.145	
15-Feb	0.066	0.249	Z	0.116	0.003	0.000	0.000	0.000	0.000	0.000	0.052	0.000	0.000	0.077	M	0.230	0.053	0.043	0.000	0.000	0.000	0.005	0.009	0.041	0.249		
16-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002		
17-Feb	0.000	0.000	0.000	0.014	Z	0.066	0.093	0.079	0.032	0.078	0.389	0.309	0.300	0.170	0.242	0.248	0.104	0.028	0.168	0.475	0.471	0.481	0.094	0.078	0.170	0.481	
18-Feb	0.262	0.615	0.393	0.084	0.249	Z	0.115	0.172	0.397	0.221	0.181	0.013	0.077	0.376	0.050	0.155	0.215	0.166	0.161	0.223	0.248	0.135	0.002	0.131	0.202	0.615	
19-Feb	Z	0.147	0.144	0.370	0.404	0.051	0.110	0.194	0.382	0.488	0.369	0.273	0.321	0.226	0.173	0.167	0.283	0.186	0.138	0.004	0.015	0.045	0.051	0.061	0.200	0.488	
20-Feb	0.012	0.054	0.171	0.216	Z	0.402	0.289	0.248	0.261	0.156	0.103	0.052	0.010	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.086	0.402		
21-Feb	0.000	0.000	Z	0.000	0.000	0.445	0.377	0.478	0.401	0.447	0.511	0.147	0.140	0.098	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.078	0.266	0.147	0.511		
22-Feb	0.372	0.460	0.414	Z	0.336	0.340	0.364	0.649	0.381	0.360	0.311	0.494	0.520	0.368	0.435	0.356	0.438	0.444	0.703	0.646	0.520	0.553	0.460	0.142	0.438	0.703	
23-Feb	0.056	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.246	0.122	0.000	0.000	0.000	0.000	0.000	0.019	0.246		
24-Feb	0.000	0.083	0.080	0.000	0.000	Z	0.000	0.002	0.000	0.005	0.007	0.005	0.000	0.000	0.000	0.030	0.002	0.010	0.015	0.060	0.038	0.076	0.083	0.043	0.023	0.083	
25-Feb	Z	0.040	0.025	0.045	0.102	0.046	0.064	0.091	0.031	0.006	0.016	0.014	0.005	0.003	0.015	0.019	0.034	0.089	0.077	0.045	0.056	0.013	0.101	0.017	0.041	0.102	
26-Feb	0.054	0.000	0.019	Z	0.000	0.000	0.028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.053	0.028	0.017	0.000	0.000	0.000	0.000	0.009	0.054		
27-Feb	0.000	0.000	Z	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	M	M	M	0.000	0.000	0.000	0.000	0.000	0.000	0.000	--	0.000	
28-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.001	0.003	0.002	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.019	
29-Feb	0.005	0.000	0.000	0.002	Z	0.000	0.000	0.002	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.005		
0.070 0.098 0.083 0.077 0.096 0.075 0.066 0.099 0.093 0.079 0.084 0.064 0.068 0.074 0.059 0.060 0.076 0.074 0.079 0.123 0.092 0.095 0.061 0.064																								Diurnal Average			
0.372 0.615 0.414 0.370 0.404 0.445 0.377 0.649 0.401 0.488 0.511 0.494 0.520 0.421 0.435 0.356 0.480 0.444 0.703 1.747 0.959 0.610 0.460 0.655																								Diurnal Maximum			
Z - zerspan			C - Calibration				M - Maintenance				AF - Analyzer Failure				UO - Unstable Operation												





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Non Methane Hydrocarbons (NMHC) - ppm
Mannix - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	322	52.53	52.53
0.006 - 0.05	95	15.50	68.03
0.06 - 0.1	86	14.03	82.06
> 0.1	110	17.94	100.00

Total Number of Valid Hours: 613

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Mannix - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	24	4	0	0	0	7	49	90	17	8	12	30	39	8	4	30	322
0.006 - 0.05	19	26	5	1	1	1	6	12	2	1	1	2	1	4	8	4	94
0.06 - 0.1	10	26	3	3	0	1	6	14	0	3	2	5	2	4	3	4	86
> 0.1	17	8	9	5	6	10	9	3	3	2	3	0	7	7	13	8	110
Totals	70	64	17	9	7	19	70	119	22	14	18	37	49	23	28	46	612

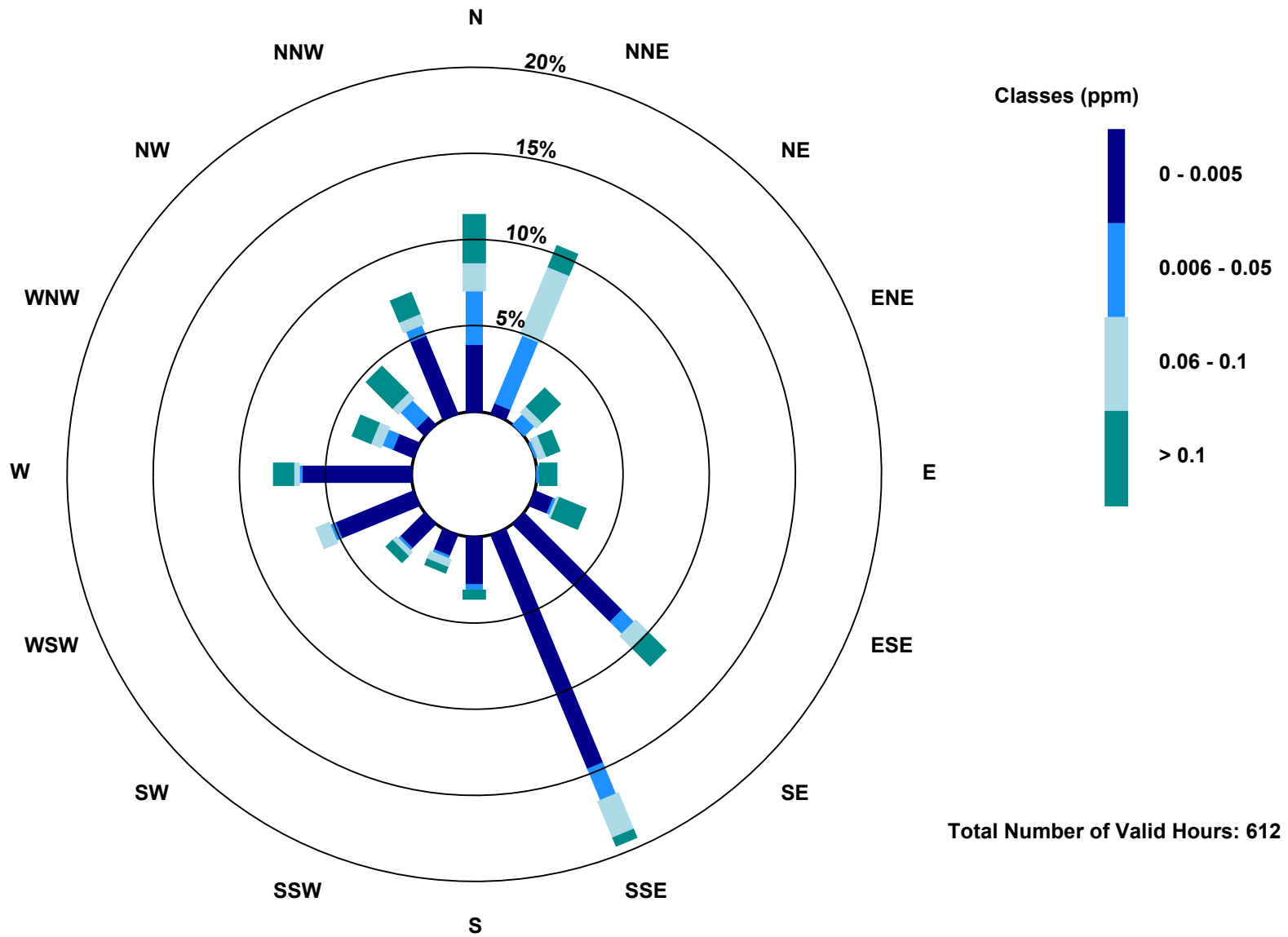
Total Number of Valid Hours: 612

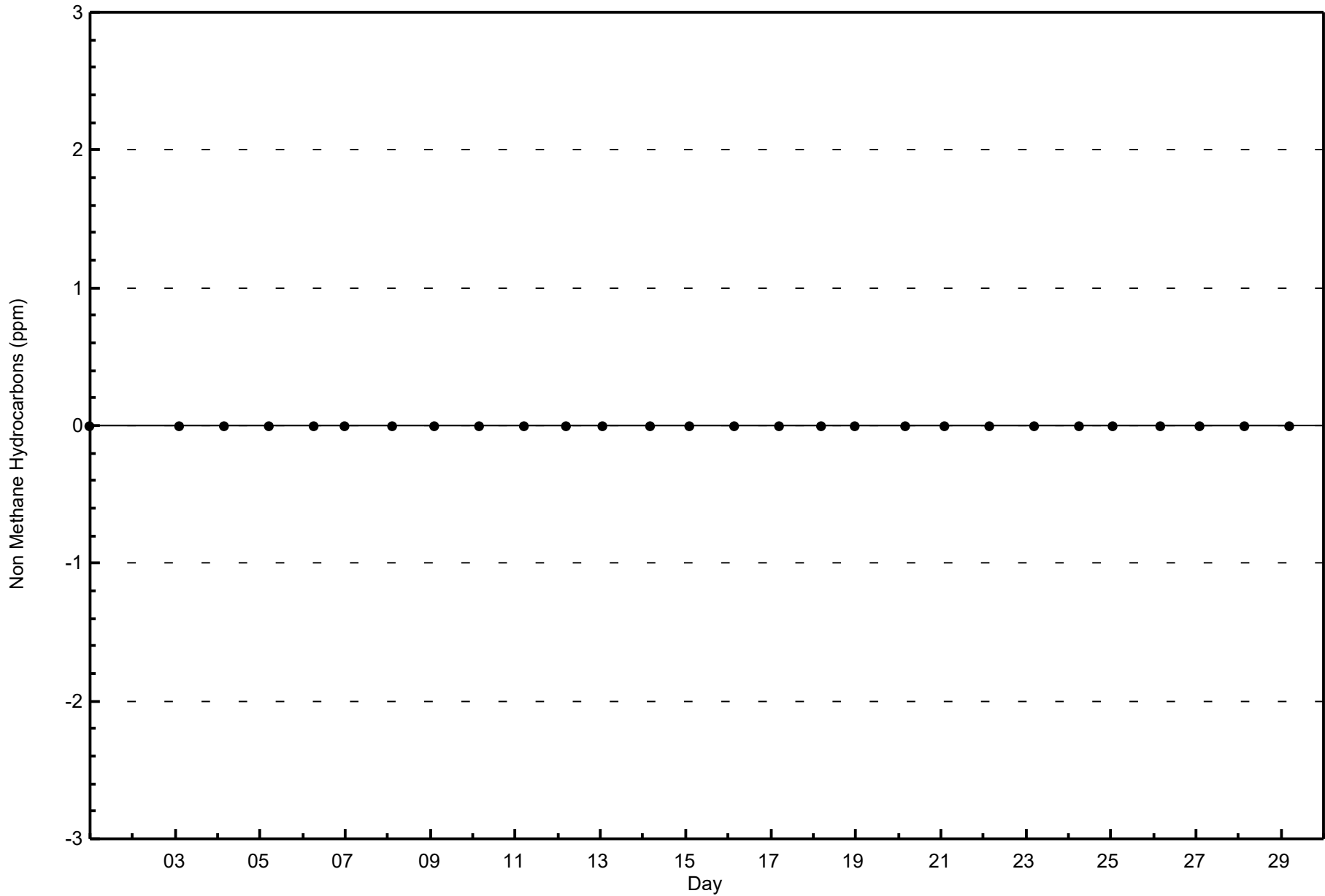
Total Number of Hours: 696

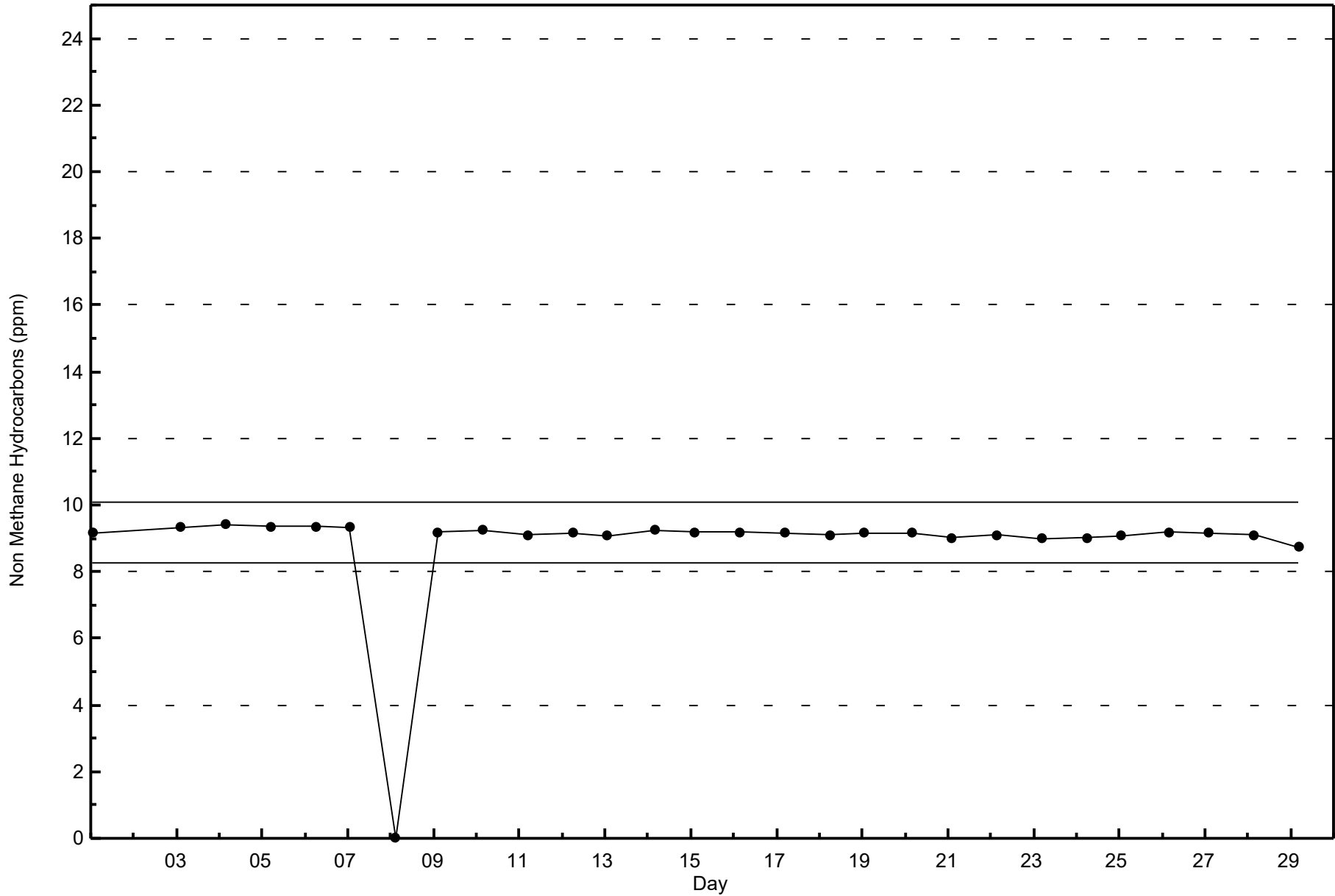


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Mannix









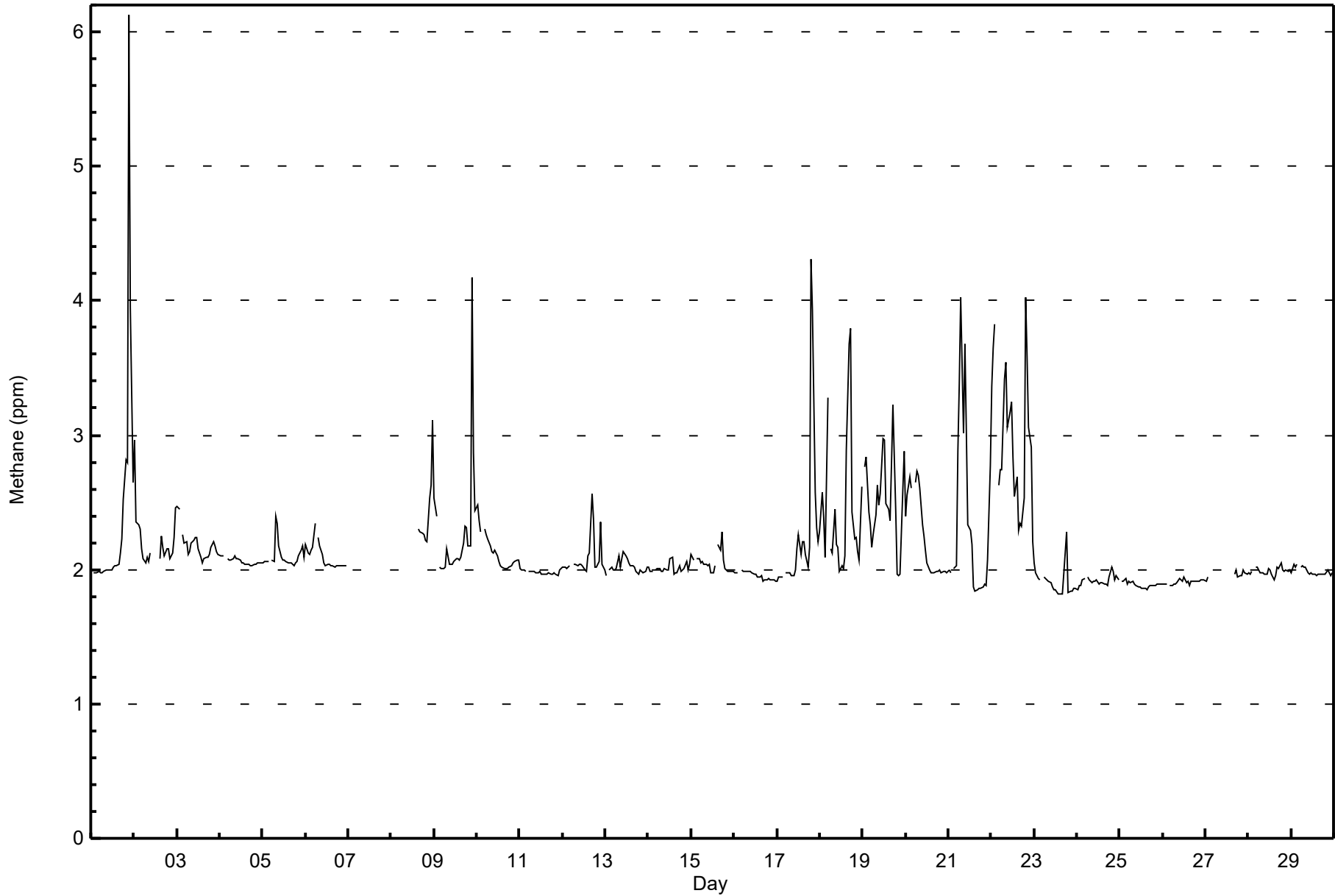
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Summary of Hour Averages

Methane (CH₄) - ppm

Mannix - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696																												
Maximum Value: 6.1 ppm on Feb 1 22:00		Maximum Daily Average: 3.0 ppm on Feb 22		Hours of Data:														613																														
Minimum Value: 1.8 ppm on Feb 23 14:00		Minimum Daily Average: 1.9 ppm on Feb 25		Hours of Missing Data:														83																														
Maximum Diurnal Average: 2.3 ppm at hour 22		Minimum Diurnal Average: 2.0 ppm at hour 15		Hours of Calibration:														31																														
Monthly Average: 2.15 ppm		Percentiles: P ₁ = 1.8 P ₁₀ = 1.9 Q ₁ = 2.0 Median = 2.0 Q ₃ = 2.2 P ₉₀ = 2.5 P ₉₉ = 3.9		Percent Operational Time:														92.5																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.5	2.8	2.8	6.1	4.0	2.6	2.4	6.1																							
2-Feb	3.0	2.4	2.3	2.3	2.1	2.1	2.0	2.1	2.1	2.1	C	C	C	C	2.1	2.3	2.2	2.1	2.2	2.2	2.1	2.1	2.2	2.5	2.2	3.0																						
3-Feb	2.5	2.5	Z	2.3	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.2	2.5																						
4-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1																						
5-Feb	2.0	2.1	2.1	2.1	Z	2.1	2.1	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.1	2.1	2.4																						
6-Feb	2.2	2.1	2.1	2.1	2.2	2.3	Z	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3																						
7-Feb	Z	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--																					
8-Feb	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	M	M	M	M	2.3	2.3	2.3	2.3	2.2	2.2	2.5	2.6	3.1	--	3.1																						
9-Feb	2.5	2.4	Z	2.0	2.0	2.0	2.0	2.2	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.2	2.2	4.2	2.9	2.4	2.3	4.2																						
10-Feb	2.5	2.4	2.3	Z	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.5																						
11-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0																					
12-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.6	2.4	2.0	2.0	2.1	2.4	2.0	2.0	2.0	2.1	2.6																						
13-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1																						
14-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.1																						
15-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	M	2.2	2.1	2.3	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.3																						
16-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0																						
17-Feb	1.9	1.9	1.9	1.9	Z	2.0	2.0	2.0	1.9	2.0	2.0	2.2	2.3	2.1	2.2	2.2	2.1	2.0	2.2	4.3	3.9	2.6	2.3	2.2	2.3	4.3																						
18-Feb	2.3	2.6	2.4	2.1	3.3	Z	2.2	2.1	2.5	2.2	2.2	2.0	2.0	2.0	2.1	2.9	3.7	3.8	2.4	2.2	2.2	2.1	2.1	2.6	2.4	3.8																						
19-Feb	Z	2.8	2.8	2.4	2.3	2.2	2.3	2.4	2.6	2.5	2.6	3.0	3.0	2.5	2.4	2.4	2.8	3.2	2.4	2.0	2.0	2.0	2.6	2.9	2.5	3.2																						
20-Feb	2.4	2.6	2.7	2.6	Z	2.6	2.7	2.7	2.6	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.7																						
21-Feb	2.0	2.0	Z	2.0	2.0	2.9	3.4	4.0	3.0	3.7	3.0	2.3	2.3	2.2	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.8	2.4	4.0																						
22-Feb	3.4	3.6	3.8	Z	2.6	2.7	2.7	3.4	3.5	3.1	3.2	3.2	2.8	2.5	2.7	2.3	2.3	2.3	2.5	4.0	3.6	3.1	2.9	2.2	3.0	4.0																						
23-Feb	2.0	2.0	1.9	1.9	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	2.1	2.3	1.8	1.8	1.8	1.9	1.9	1.9	2.3																						
24-Feb	1.9	1.9	1.9	1.9	1.9	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	2.0	1.9	1.9	2.0																						
25-Feb	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9																						
26-Feb	1.9	1.9	1.9	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9																						
27-Feb	1.9	1.9	Z	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	M	M	M	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	--	2.0																					
28-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1																					
29-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0																					
2.2																								2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.2	2.1	2.2	2.2	2.3	2.2	2.2	Diurnal Average	
3.4																								3.6	3.8	2.6	3.3	2.9	3.4	4.0	3.5	3.7	3.2	3.2	3.0	2.5	2.7	2.9	3.7	3.8	2.5	4.3	3.9	6.1	4.0	3.1	Diurnal Maximum	
Z - zerspan																								C - Calibration				M - Maintenance				AF - Analyzer Failure				UO - Unstable Operation												





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Mannix - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	362	59.05	59.05
2.1 - 3.0	227	37.03	96.08
3.1 - 10.0	24	3.92	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 613

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Methane (CH₄) - ppm
Mannix - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	34	47	8	2	1	10	51	85	13	8	11	31	38	8	2	13	362
2.1 - 3.0	34	16	9	7	6	9	19	33	9	4	7	6	8	13	19	27	226
3.1 - 10.0	2	1	0	0	0	0	0	1	0	2	0	0	3	2	7	6	24
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	70	64	17	9	7	19	70	119	22	14	18	37	49	23	28	46	612

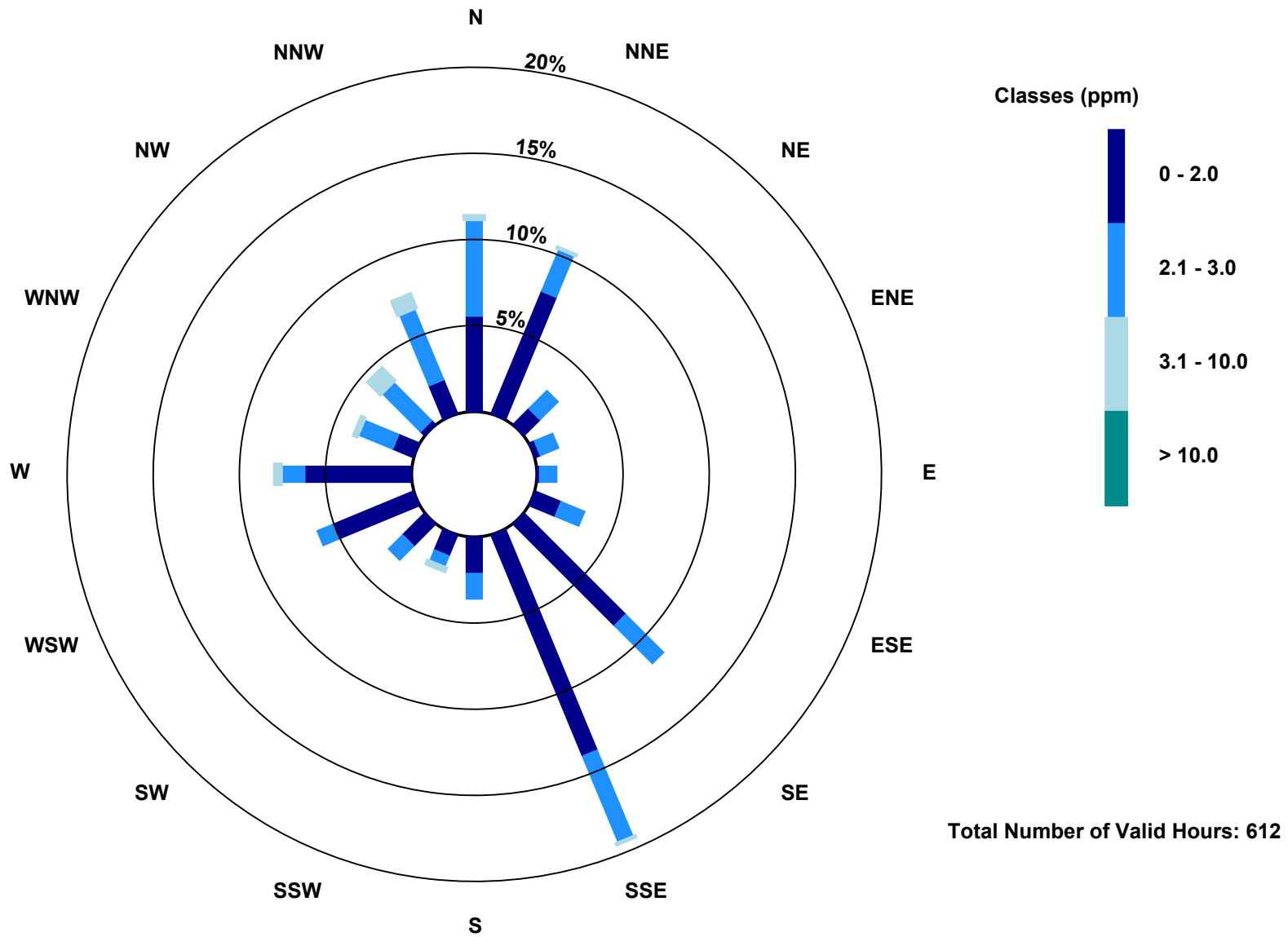
Total Number of Valid Hours: 612

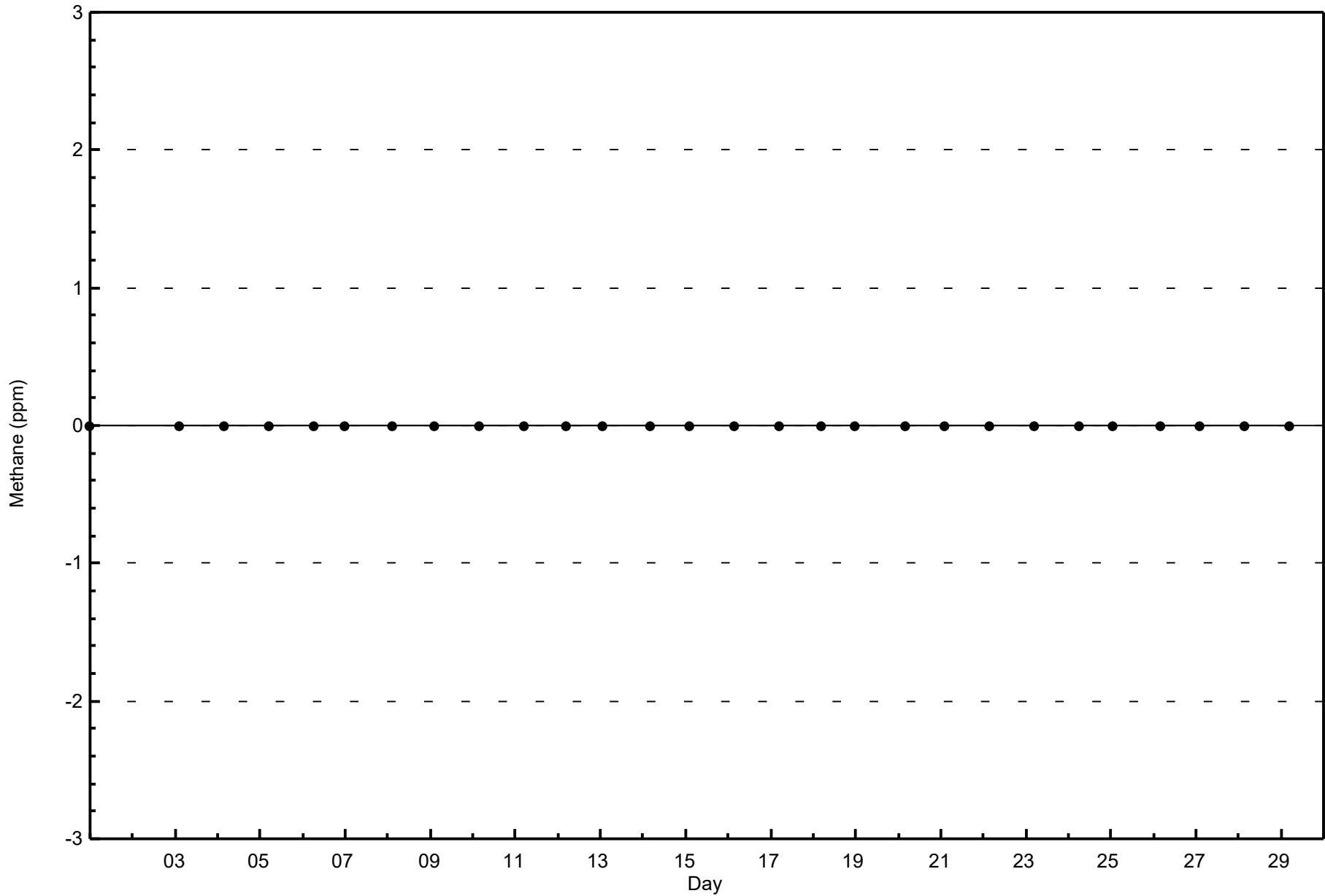
Total Number of Hours: 696

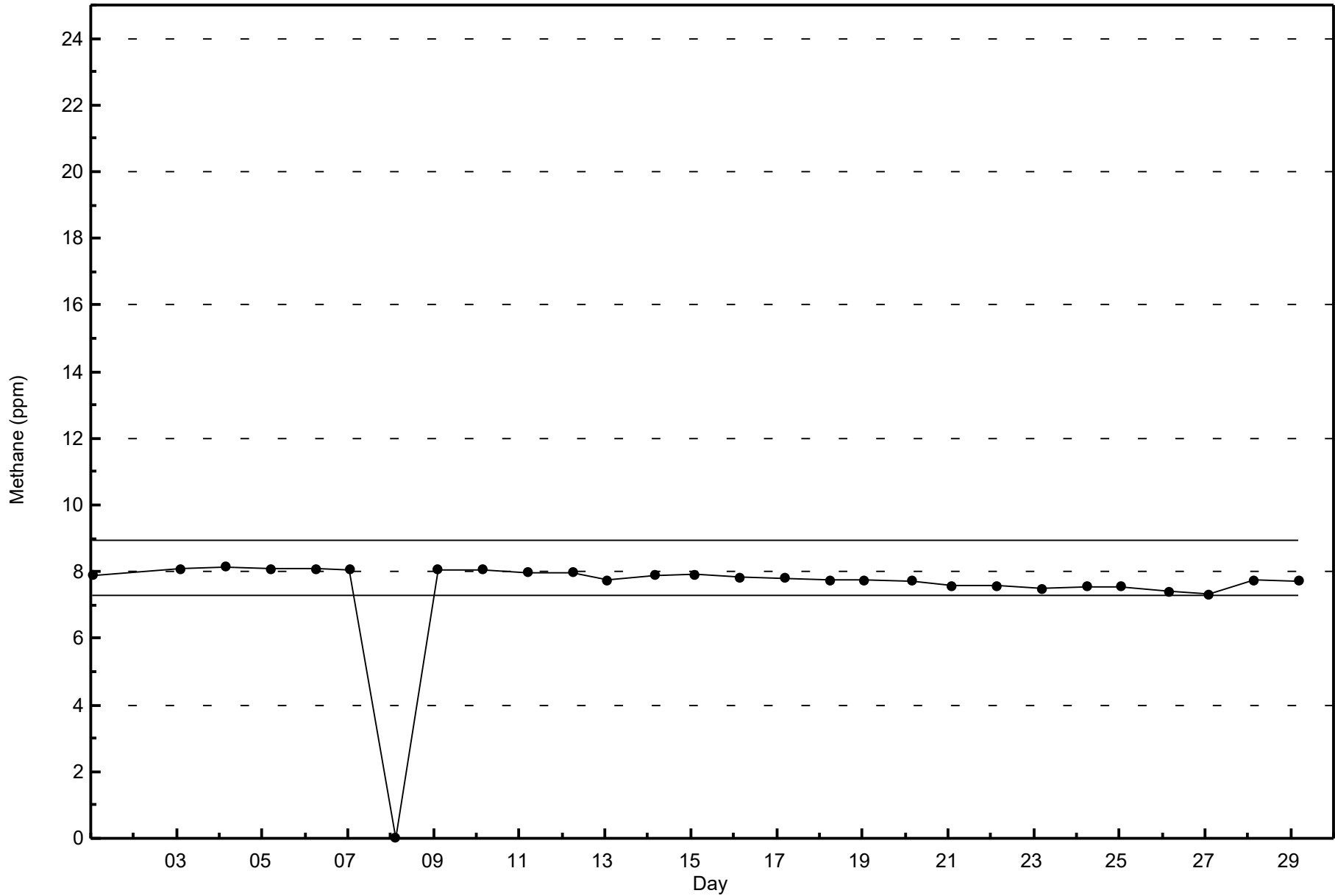


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Mannix







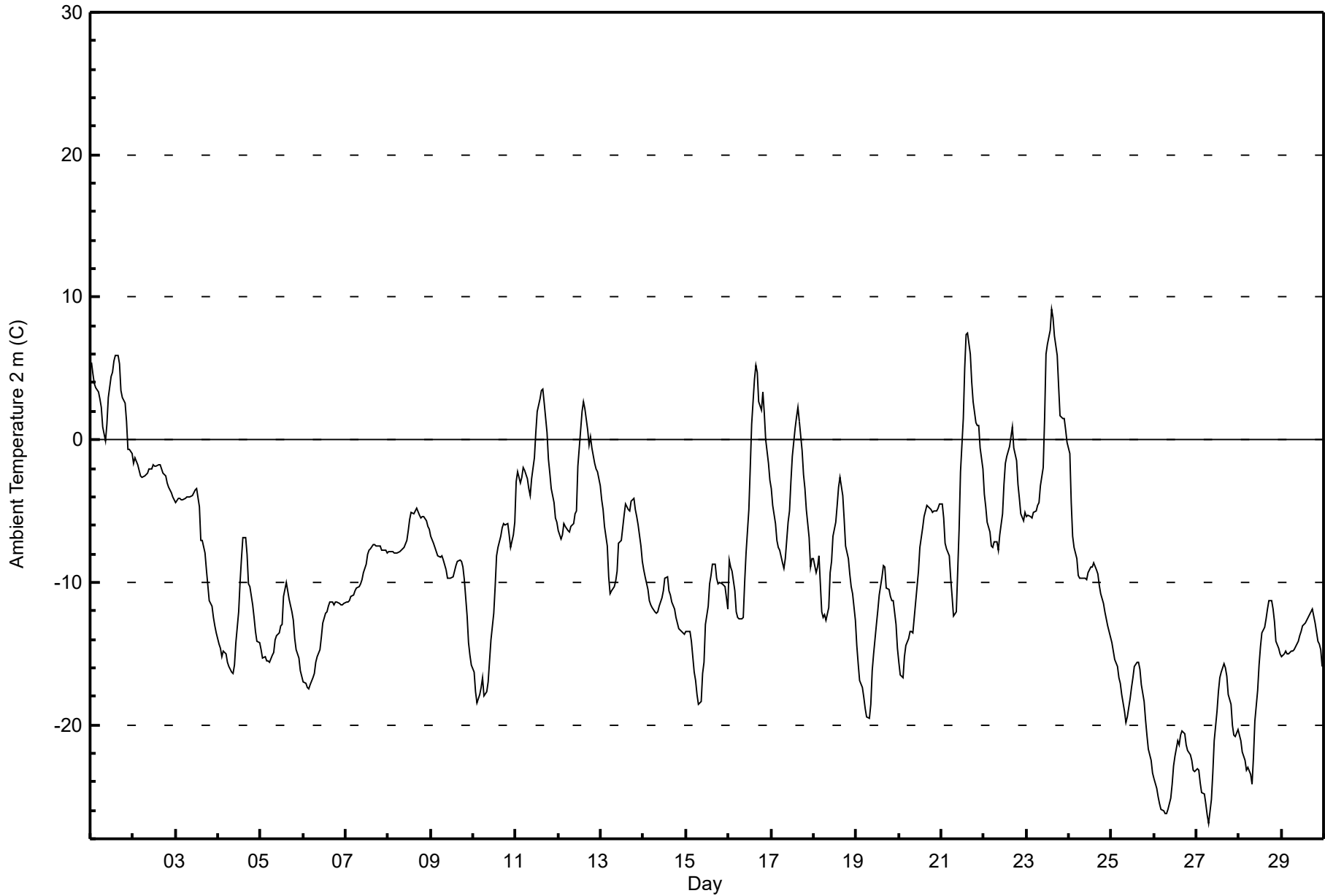


Maximum Value: 9.1 C on Feb 23 15:00																				Maximum Daily Average: 3.0 C on Feb 1					Hours in Service: 696		
Minimum Value: -26.9 C on Feb 27 08:00																				Minimum Daily Average: -23.4 C on Feb 26					Hours of Data: 696		
Maximum Diurnal Average: -5.4 C at hour 16																				Minimum Diurnal Average: -12.4 C at hour 8					Hours of Missing Data: 0		
Monthly Average: -9.27 C																				Percentiles: P ₁ = -25.6 P ₁₀ = -17.9 Q ₁ = -14.1 Median = -9.2 Q ₃ = -4.7 P ₉₀ = 0.1 P ₉₉ = 6.1					Hours of Calibration: 0		
																									Percent Operational Time: 100.0		
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	5.4	4.6	4.0	3.6	3.3	2.9	2.2	0.9	-0.1	1.1	2.9	4.4	4.8	5.5	5.9	5.9	5.3	3.5	3.0	2.6	1.3	-0.6	-0.7	-1.0	3.0	5.9	
2-Feb	-1.7	-1.3	-1.7	-2.1	-2.5	-2.6	-2.5	-2.5	-2.3	-2.1	-2.1	-1.8	-1.8	-1.8	-1.7	-2.1	-2.3	-2.5	-3.1	-3.3	-3.7	-4.0	-4.2	-2.4	-1.3		
3-Feb	-4.4	-4.2	-4.1	-4.2	-4.2	-4.1	-4.0	-4.0	-4.0	-3.9	-3.8	-3.5	-3.5	-4.7	-7.1	-7.0	-7.9	-9.2	-10.2	-11.3	-11.7	-12.4	-13.0	-13.5	-6.7	-3.5	
4-Feb	-14.3	-14.7	-15.2	-14.9	-15.0	-15.6	-15.9	-16.3	-16.4	-15.8	-14.2	-12.1	-10.0	-8.3	-6.9	-8.0	-10.1	-10.3	-11.6	-12.5	-13.4	-14.2	-14.3	-12.8	-6.9		
5-Feb	-14.7	-15.3	-15.2	-15.5	-15.6	-15.1	-14.9	-14.0	-13.8	-13.5	-13.0	-12.9	-11.0	-10.9	-10.6	-11.2	-12.1	-12.6	-14.0	-14.7	-15.3	-16.2	-16.6	-13.9	-10.0		
6-Feb	-17.0	-17.1	-17.4	-17.5	-17.2	-16.7	-16.4	-15.7	-15.2	-14.7	-13.9	-12.9	-12.2	-12.1	-11.7	-11.3	-11.4	-11.5	-11.4	-11.3	-11.5	-11.6	-11.6	-11.4	-13.8	-11.3	
7-Feb	-11.4	-11.4	-11.3	-11.0	-10.8	-10.6	-10.5	-10.3	-10.2	-9.8	-9.4	-8.8	-8.1	-7.8	-7.6	-7.3	-7.4	-7.5	-7.5	-7.7	-7.8	-7.8	-7.9	-9.0	-7.3		
8-Feb	-7.9	-7.8	-7.9	-7.9	-7.9	-7.9	-7.9	-7.7	-7.7	-7.7	-7.5	-7.1	-6.4	-5.6	-5.1	-5.2	-5.0	-4.8	-5.3	-5.5	-5.4	-5.4	-5.7	-6.1	-6.3	-6.6	-4.8
9-Feb	-6.7	-7.2	-7.6	-7.9	-8.2	-8.2	-8.1	-8.4	-9.2	-9.7	-9.7	-9.7	-9.6	-9.3	-8.8	-8.6	-8.5	-8.6	-8.9	-9.9	-12.4	-14.2	-15.1	-15.8	-9.6	-6.7	
10-Feb	-16.3	-17.6	-18.5	-17.9	-17.4	-16.7	-17.9	-17.7	-17.0	-15.5	-14.0	-12.2	-10.3	-8.1	-7.6	-6.8	-6.2	-5.9	-6.0	-5.9	-6.7	-7.6	-6.7	-5.8	-11.8	-5.8	
11-Feb	-3.0	-2.2	-3.0	-2.6	-1.9	-2.1	-2.7	-3.4	-3.9	-2.8	-1.3	0.5	2.0	2.9	3.4	3.6	2.6	0.5	-1.4	-2.4	-3.4	-4.4	-5.5	-5.8	-1.5	3.6	
12-Feb	-6.4	-6.9	-6.7	-5.9	-6.1	-6.4	-6.4	-6.1	-5.9	-5.2	-4.9	-1.9	0.7	2.0	2.7	2.2	0.7	-0.4	0.2	-0.5	-1.7	-2.0	-2.2	-3.2	-2.9	2.7	
13-Feb	-4.2	-4.9	-6.1	-7.4	-9.6	-10.8	-10.6	-10.3	-9.9	-9.2	-7.3	-7.0	-6.2	-5.3	-4.5	-4.9	-5.0	-4.3	-4.1	-4.9	-5.4	-6.0	-7.4	-8.5	-6.8	-4.1	
14-Feb	-9.1	-9.6	-10.5	-11.3	-11.6	-11.8	-12.1	-12.2	-12.1	-11.6	-11.1	-10.6	-9.7	-9.6	-10.6	-10.9	-11.4	-11.9	-12.4	-12.9	-13.3	-13.4	-13.6	-13.6	-11.5	-9.1	
15-Feb	-13.5	-13.5	-13.5	-14.1	-16.3	-16.9	-17.9	-18.6	-18.4	-16.4	-15.6	-13.0	-11.6	-10.1	-9.5	-8.7	-8.8	-9.7	-10.1	-10.0	-10.1	-10.2	-10.3	-11.8	-12.9	-8.7	
16-Feb	-8.4	-8.9	-9.2	-10.6	-12.1	-12.4	-12.6	-12.6	-12.5	-10.1	-7.9	-4.9	-2.0	1.1	4.3	5.3	4.7	2.7	2.0	3.4	1.9	0.0	-1.7	-2.8	-4.3	5.3	
17-Feb	-3.4	-4.6	-5.9	-7.1	-7.6	-7.8	-8.6	-9.0	-8.3	-5.8	-5.0	-3.0	-1.2	0.8	1.6	2.3	1.3	-0.8	-2.5	-3.4	-4.9	-6.9	-9.0	-8.4	-4.5	2.3	
18-Feb	-8.3	-9.4	-8.9	-8.1	-12.1	-12.4	-12.3	-12.7	-11.8	-9.3	-8.5	-6.8	-5.8	-4.6	-3.4	-2.7	-3.9	-5.6	-7.5	-8.4	-9.4	-10.3	-10.8	-12.6	-8.6	-2.7	
19-Feb	-14.5	-15.7	-16.9	-17.4	-18.1	-18.9	-19.4	-19.6	-18.5	-16.2	-15.0	-12.9	-12.0	-10.9	-9.6	-8.8	-9.0	-10.4	-10.5	-11.0	-11.3	-11.3	-13.0	-14.7	-14.0	-8.8	
20-Feb	-15.7	-16.5	-16.7	-15.2	-14.5	-14.0	-13.4	-13.5	-13.6	-11.4	-10.3	-9.2	-7.5	-6.1	-5.4	-5.0	-4.6	-4.8	-4.9	-5.1	-5.0	-5.0	-4.8	-4.5	-9.4	-4.5	
21-Feb	-4.5	-5.5	-7.2	-7.7	-8.2	-9.7	-11.0	-12.4	-12.0	-9.2	-6.3	-2.3	1.5	5.0	7.4	7.5	6.0	4.1	2.6	1.2	1.0	1.0	-0.6	-2.1	-2.6	7.5	
22-Feb	-3.8	-4.7	-5.8	-6.5	-7.5	-7.5	-7.1	-7.1	-7.7	-6.7	-5.2	-3.2	-1.7	-1.1	-0.5	0.2	0.9	-0.6	-1.5	-3.1	-4.2	-5.2	-5.7	-5.1	-4.2	0.9	
23-Feb	-5.4	-5.3	-5.4	-5.5	-5.1	-5.0	-4.6	-4.4	-3.3	-1.9	1.5	6.0	6.7	7.7	9.1	8.6	7.3	5.9	3.8	1.7	1.5	1.5	0.7	-0.2	0.7	9.1	
24-Feb	-1.0	-4.4	-6.8	-8.5	-7.5	-8.4	-9.5	-9.7	-9.8	-9.8	-9.8	-9.4	-8.9	-8.9	-8.6	-9.1	-9.4	-10.3	-10.8	-11.5	-12.1	-12.5	-13.1	-13.8	-9.4	-1.0	
25-Feb	-14.3	-14.9	-15.4	-15.9	-16.7	-17.1	-17.9	-19.0	-19.8	-19.5	-18.2	-17.4	-16.7	-16.0	-15.6	-15.6	-16.1	-17.2	-18.4	-19.6	-20.7	-21.7	-22.5	-23.3	-17.9	-14.3	
26-Feb	-23.8	-24.4	-25.0	-25.6	-25.9	-26.1	-26.3	-26.2	-26.0	-25.1	-24.2	-22.9	-22.2	-21.1	-21.4	-20.7	-20.4	-20.6	-21.4	-21.8	-22.1	-22.5	-23.2	-23.3	-23.4	-20.4	
27-Feb	-23.1	-23.2	-24.0	-24.8	-24.8	-25.6	-26.3	-26.9	-25.3	-23.4	-21.2	-19.0	-17.6	-16.7	-16.3	-15.7	-16.0	-16.6	-17.9	-18.6	-20.0	-20.7	-20.8	-20.3	-21.0	-15.7	
28-Feb	-20.8	-21.1	-21.9	-22.5	-23.1	-23.0	-23.5	-24.1	-22.3	-19.7	-17.5	-15.8	-14.5	-13.6	-13.1	-12.5	-11.8	-11.3	-11.3	-11.9	-12.8	-14.1	-14.7	-15.0	-17.2	-11.3	
29-Feb	-15.2	-15.1	-14.8	-15.0	-15.0	-14.8	-14.8	-14.8	-14.5	-14.1	-13.7	-13.4	-13.1	-12.9	-12.7	-12.5	-12.1	-11.9	-12.4	-12.9	-14.1	-14.3	-14.7	-15.9	-13.9	-11.9	
																								Diurnal Average			
																								Diurnal Maximum			



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature 2 m (AT2m) - C
Mannix - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 2 m (AT2m) - C
Mannix - February 2024**

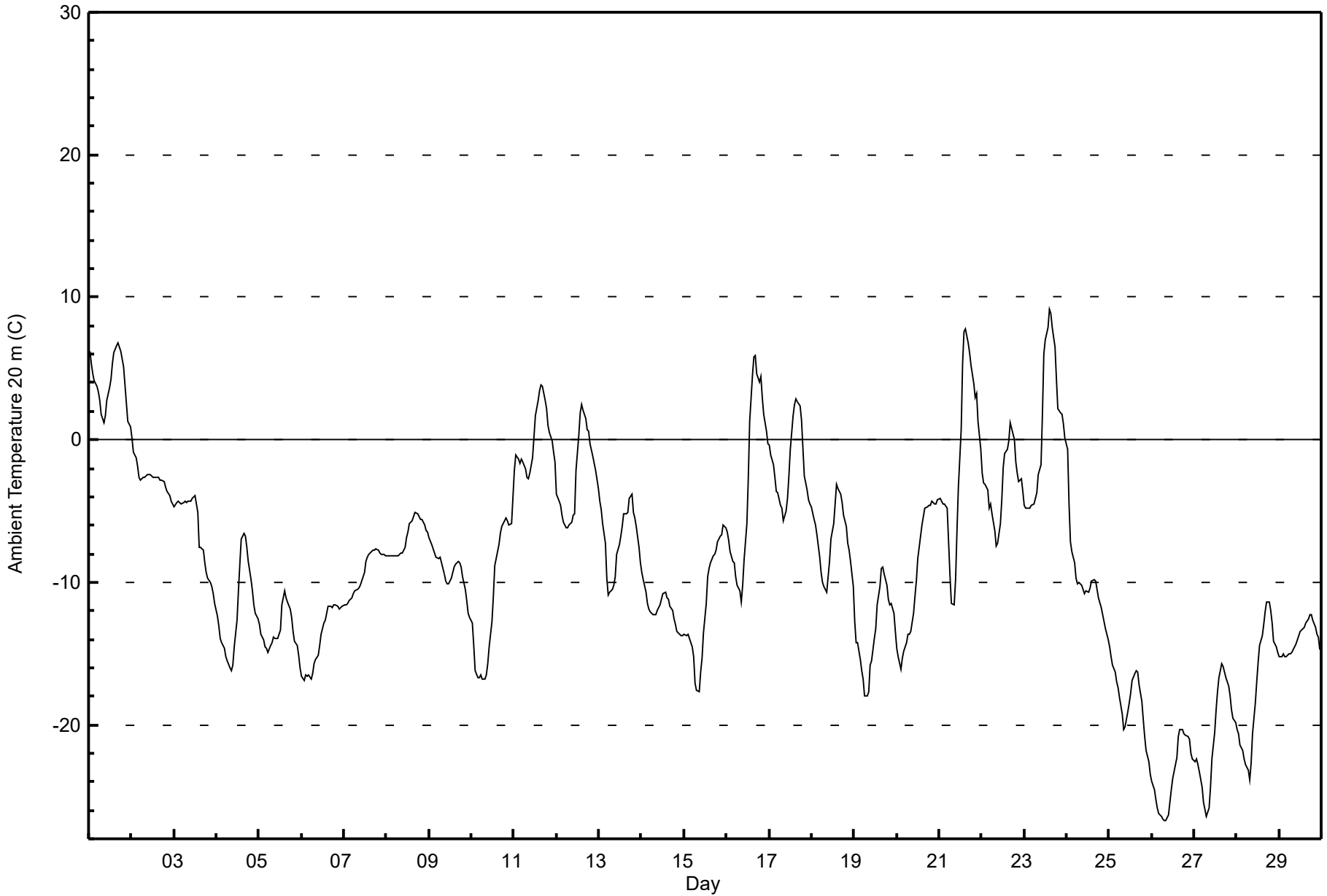
Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	52	7.47	7.47
-20 - 0	573	82.33	89.80
0 - 10	71	10.20	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Maximum Value: 9.2 C on Feb 23 15:00 Maximum Daily Average: 4.0 C on Feb 1																				Hours in Service: 696 Hours of Data: 696						
Minimum Value: -26.8 C on Feb 26 09:00 Minimum Daily Average: -23.6 C on Feb 26 Maximum Diurnal Average: -5.6 C at hour 17 Minimum Diurnal Average: -11.9 C at hour 9 Monthly Average: -8.81 C Percentiles: P ₁ = -26.0 P ₁₀ = -17.6 Q ₁ = -13.7 Median = -8.7 Q ₃ = -4.3 P ₉₀ = 1.2 P ₉₉ = 6.9																				Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	6.2	5.3	4.6	4.2	3.8	3.4	2.8	1.8	1.2	1.7	2.7	3.6	4.2	5.3	6.1	6.6	6.8	6.5	6.2	5.1	3.8	2.6	1.3	0.9	4.0	6.8
2-Feb	0.2	-0.8	-1.2	-1.8	-2.6	-2.8	-2.7	-2.7	-2.5	-2.5	-2.4	-2.5	-2.7	-2.7	-2.6	-2.7	-2.8	-2.9	-2.9	-3.3	-3.6	-3.9	-4.3	-4.5	-2.6	0.2
3-Feb	-4.7	-4.4	-4.3	-4.4	-4.5	-4.4	-4.3	-4.4	-4.4	-4.3	-4.1	-4.0	-3.9	-5.1	-7.5	-7.5	-7.8	-8.6	-9.4	-9.7	-10.0	-10.3	-10.8	-11.5	-6.4	-3.9
4-Feb	-12.4	-13.1	-13.9	-14.3	-14.6	-15.2	-15.5	-16.0	-16.2	-15.8	-14.6	-12.7	-10.6	-8.7	-7.0	-6.6	-6.8	-7.5	-8.5	-9.8	-10.6	-11.5	-12.2	-12.6	-11.9	-6.6
5-Feb	-13.0	-13.6	-14.1	-14.5	-14.6	-14.9	-14.5	-14.2	-13.9	-14.0	-13.9	-13.6	-13.4	-11.6	-10.6	-11.1	-11.4	-11.9	-12.4	-13.5	-14.1	-14.4	-15.1	-16.0	-13.5	-10.6
6-Feb	-16.6	-16.9	-16.5	-16.6	-16.5	-16.8	-16.4	-15.7	-15.4	-15.1	-14.5	-13.6	-12.9	-12.7	-12.1	-11.7	-11.7	-11.8	-11.6	-11.6	-11.7	-11.9	-11.8	-11.7	-13.9	-11.6
7-Feb	-11.6	-11.6	-11.4	-11.2	-11.0	-10.8	-10.6	-10.5	-10.4	-10.2	-9.9	-9.3	-8.6	-8.2	-8.0	-7.8	-7.8	-7.7	-7.7	-7.7	-7.9	-8.0	-8.0	-8.2	-9.3	-7.7
8-Feb	-8.1	-8.1	-8.1	-8.2	-8.2	-8.2	-8.1	-8.0	-8.0	-7.9	-7.6	-6.9	-6.5	-5.8	-5.7	-5.4	-5.1	-5.2	-5.4	-5.5	-5.6	-6.0	-6.3	-6.5	-6.9	-5.1
9-Feb	-6.9	-7.3	-7.7	-7.9	-8.2	-8.3	-8.3	-8.6	-9.4	-9.9	-10.1	-10.1	-9.7	-9.3	-8.9	-8.7	-8.5	-8.6	-8.9	-9.6	-10.5	-11.3	-12.1	-12.5	-9.2	-6.9
10-Feb	-12.8	-14.4	-16.2	-16.7	-16.7	-16.5	-16.8	-16.7	-16.5	-15.7	-14.5	-12.8	-11.0	-8.8	-8.3	-7.4	-6.6	-6.0	-5.9	-5.5	-5.7	-6.0	-5.9	-4.0	-11.1	-4.0
11-Feb	-2.1	-1.1	-1.4	-1.6	-1.3	-1.5	-2.1	-2.7	-2.7	-2.3	-1.3	0.3	1.7	2.8	3.5	3.8	3.7	2.7	2.2	1.0	0.5	-0.1	-0.9	-1.5	0.0	3.8
12-Feb	-3.8	-4.3	-4.6	-5.2	-5.8	-6.2	-6.2	-6.0	-5.7	-5.3	-5.2	-2.2	0.3	1.9	2.5	2.1	1.5	0.7	0.6	-0.2	-1.2	-1.7	-2.2	-3.4	-2.5	2.5
13-Feb	-4.3	-4.9	-5.9	-7.3	-9.7	-10.9	-10.7	-10.5	-10.2	-9.6	-8.0	-7.3	-6.8	-6.0	-5.1	-5.1	-5.1	-4.1	-3.8	-5.1	-5.5	-6.1	-7.6	-8.6	-7.0	-3.8
14-Feb	-9.3	-9.8	-10.7	-11.5	-11.8	-12.1	-12.3	-12.3	-12.0	-11.6	-11.2	-10.8	-10.7	-11.1	-11.2	-11.6	-12.0	-12.5	-12.9	-13.4	-13.6	-13.7	-13.8	-13.8	-11.8	-9.3
15-Feb	-13.7	-13.7	-13.7	-13.9	-14.5	-15.3	-17.1	-17.6	-17.6	-16.3	-15.3	-13.6	-11.4	-9.6	-9.0	-8.7	-8.2	-8.0	-7.7	-7.1	-6.8	-6.7	-6.0	-6.2	-11.6	-6.0
16-Feb	-6.4	-7.1	-7.9	-8.5	-8.6	-9.6	-10.2	-10.6	-11.4	-10.2	-8.5	-5.9	-2.8	1.3	4.6	5.8	5.9	4.6	4.0	4.5	2.9	1.8	0.6	-0.3	-3.0	5.9
17-Feb	-0.4	-1.0	-1.8	-2.7	-3.6	-3.7	-4.6	-4.8	-5.7	-5.0	-4.1	-2.6	-0.7	1.7	2.4	2.9	2.7	2.4	1.4	-0.6	-2.5	-3.5	-4.3	-4.5	-1.8	2.9
18-Feb	-4.7	-5.5	-5.9	-6.6	-8.3	-9.3	-10.0	-10.3	-10.7	-9.6	-8.6	-6.9	-5.9	-4.5	-3.2	-3.5	-3.8	-4.4	-5.3	-6.1	-7.3	-7.8	-8.6	-10.3	-7.0	-3.2
19-Feb	-12.8	-14.2	-14.2	-15.4	-16.2	-16.8	-18.0	-17.9	-17.6	-15.8	-15.6	-14.0	-13.2	-11.6	-10.3	-9.0	-8.9	-9.4	-10.2	-11.2	-11.5	-11.5	-12.2	-13.5	-13.4	-8.9
20-Feb	-14.6	-15.2	-16.2	-15.4	-14.8	-14.2	-13.7	-13.6	-13.5	-12.2	-11.0	-9.9	-8.3	-6.8	-6.0	-5.4	-4.8	-4.7	-4.6	-4.6	-4.3	-4.5	-4.5	-4.3	-9.5	-4.3
21-Feb	-4.1	-4.3	-4.5	-4.5	-4.8	-7.1	-9.5	-11.5	-11.6	-9.8	-6.4	-3.3	0.7	5.3	7.6	7.8	6.8	6.1	5.2	4.0	2.9	3.2	1.3	-0.6	-1.3	7.8
22-Feb	-2.4	-3.0	-3.1	-3.5	-4.8	-4.5	-5.2	-6.4	-7.5	-7.3	-5.9	-4.2	-2.0	-0.9	-0.7	0.0	1.2	0.8	0.0	-1.6	-2.4	-3.0	-2.7	-3.6	-3.0	1.2
23-Feb	-4.6	-4.8	-4.8	-4.8	-4.6	-4.5	-4.1	-3.8	-2.5	-1.7	1.8	6.0	7.0	7.9	9.2	8.9	7.9	6.5	4.2	2.2	1.9	1.8	1.1	0.1	1.1	9.2
24-Feb	-0.7	-4.5	-7.2	-7.9	-8.6	-9.8	-10.1	-10.0	-10.2	-10.5	-10.8	-10.6	-10.7	-10.4	-9.9	-8.9	-9.9	-10.5	-11.1	-11.7	-12.3	-12.8	-13.2	-14.0	-9.9	-0.7
25-Feb	-14.5	-15.2	-15.8	-16.3	-17.0	-17.4	-18.1	-19.3	-20.4	-20.2	-19.1	-18.5	-17.8	-16.9	-16.4	-16.2	-16.3	-17.2	-18.4	-19.7	-20.8	-21.8	-22.6	-23.4	-18.3	-14.5
26-Feb	-24.0	-24.6	-25.2	-25.9	-26.2	-26.4	-26.6	-26.7	-26.8	-26.3	-25.4	-24.5	-23.8	-22.8	-22.3	-20.9	-20.4	-20.3	-20.6	-20.8	-20.8	-21.0	-22.0	-22.4	-23.6	-20.3
27-Feb	-22.6	-22.4	-22.8	-23.2	-24.4	-25.4	-26.0	-26.5	-25.8	-24.4	-22.4	-20.5	-19.0	-17.7	-16.7	-15.8	-15.9	-16.3	-16.7	-17.2	-18.0	-18.9	-19.5	-19.9	-20.7	-15.8
28-Feb	-20.3	-20.7	-21.4	-21.8	-22.4	-22.8	-23.2	-23.9	-22.7	-20.7	-18.5	-16.9	-15.6	-14.4	-13.7	-13.0	-12.1	-11.4	-11.4	-12.0	-12.8	-14.1	-14.6	-14.9	-17.3	-11.4
29-Feb	-15.2	-15.2	-15.0	-15.2	-15.2	-15.0	-15.0	-15.0	-14.7	-14.4	-14.0	-13.8	-13.5	-13.3	-13.2	-12.9	-12.6	-12.3	-12.3	-12.7	-13.1	-13.6	-13.9	-14.8	-14.0	-12.3
	-9.0	-9.5	-10.0	-10.4	-10.9	-11.3	-11.6	-11.9	-11.9	-11.3	-10.3	-9.0	-7.8	-6.6	-5.9	-5.6	-5.6	-5.9	-6.3	-7.0	-7.6	-8.1	-8.6	-9.2	Diurnal Average	
	6.2	5.3	4.6	4.2	3.8	3.4	2.8	1.8	1.2	1.7	2.7	6.0	7.0	7.9	9.2	8.9	7.9	6.5	6.2	5.1	3.8	3.2	1.3	0.9	Diurnal Maximum	





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 20 m (AT20m) - C
Mannix - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	52	7.47	7.47
-20 - 0	558	80.17	87.64
0 - 10	86	12.36	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

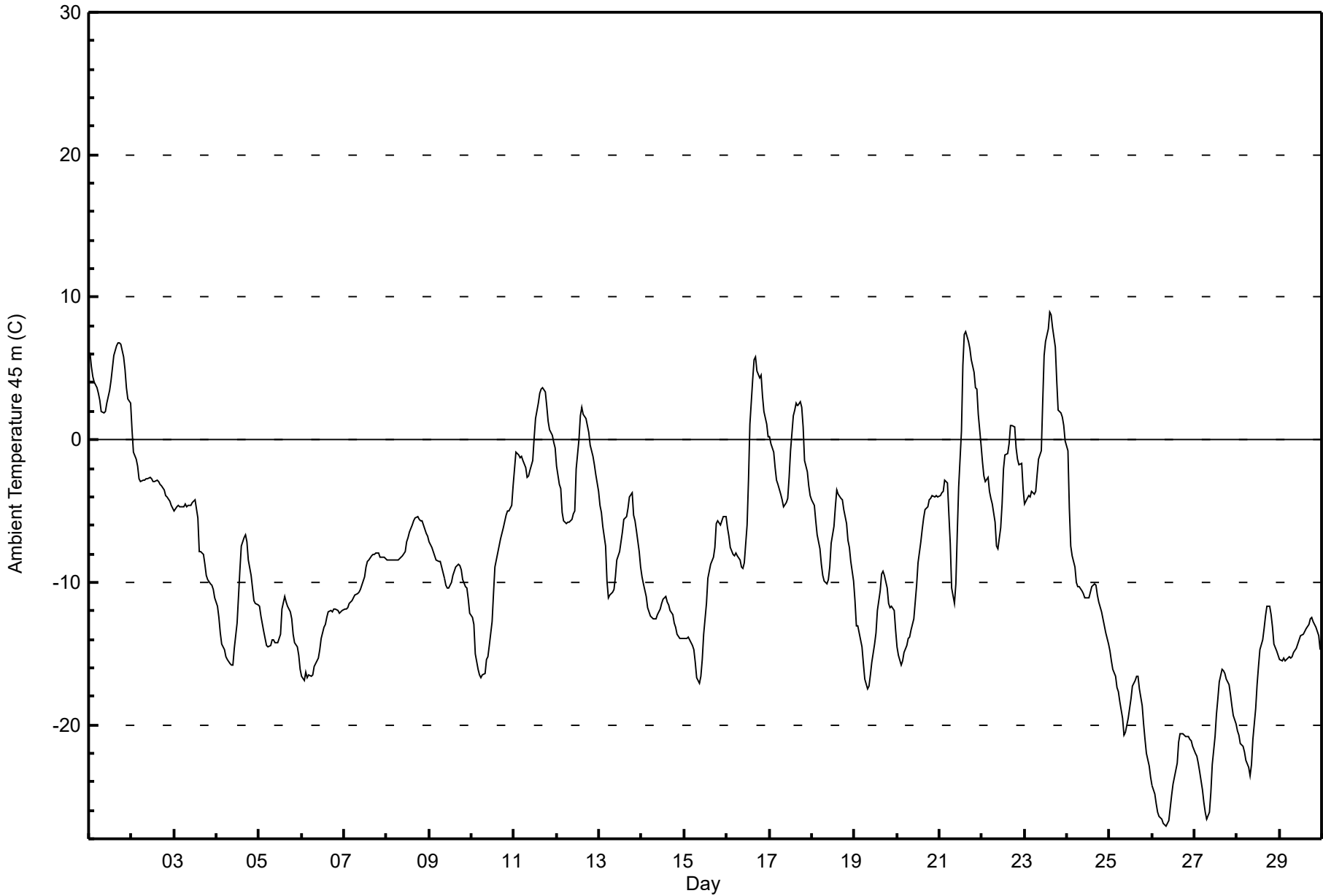
Total Number of Hours: 696



Summary of Hour Averages

Mannix - February 2024

Maximum Value: 8.9 C on Feb 23 15:00		Maximum Daily Average: 4.3 C on Feb 1		Hours in Service: 696																						
Minimum Value: -27.1 C on Feb 26 09:00		Minimum Daily Average: -23.8 C on Feb 26		Hours of Data: 696																						
Maximum Diurnal Average: -5.7 C at hour 17		Minimum Diurnal Average: -11.7 C at hour 9		Hours of Missing Data: 0																						
Monthly Average: -8.77 C		Percentiles: P ₁ = -26.2 P ₁₀ = -17.3 Q ₁ = -13.9 Median = -8.8 Q ₃ = -3.9 P ₉₀ = 1.5 P ₉₉ = 6.9		Hours of Calibration: 0																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	6.1	5.2	4.5	4.0	3.6	3.3	2.7	2.0	1.9	2.0	2.5	3.5	4.1	5.0	5.9	6.6	6.8	6.8	6.7	5.8	4.9	3.7	2.9	2.5	4.3	6.8
2-Feb	0.7	-0.8	-1.3	-1.9	-2.8	-3.0	-2.9	-2.9	-2.7	-2.7	-2.7	-2.7	-2.9	-2.9	-2.8	-2.9	-3.1	-3.2	-3.5	-3.9	-4.0	-4.3	-4.6	-4.8	-2.9	0.7
3-Feb	-5.0	-4.7	-4.6	-4.7	-4.7	-4.7	-4.6	-4.7	-4.6	-4.6	-4.4	-4.3	-4.2	-5.5	-7.9	-7.9	-8.0	-8.8	-9.6	-9.8	-10.1	-10.2	-10.5	-11.1	-6.6	-4.2
4-Feb	-11.7	-12.5	-13.5	-14.3	-14.7	-15.3	-15.4	-15.7	-15.8	-15.8	-14.6	-12.9	-11.0	-9.1	-7.5	-6.9	-6.6	-7.2	-8.5	-9.5	-10.4	-11.3	-11.5	-11.6	-11.8	-6.6
5-Feb	-11.7	-12.4	-13.4	-13.9	-14.4	-14.5	-14.4	-14.1	-14.0	-14.2	-14.3	-13.9	-13.7	-11.9	-11.0	-11.4	-11.6	-12.1	-12.6	-13.6	-14.3	-14.5	-15.2	-16.1	-13.5	-11.0
6-Feb	-16.6	-16.9	-16.3	-16.7	-16.5	-16.6	-16.5	-15.9	-15.7	-15.4	-14.7	-13.9	-13.2	-13.0	-12.4	-12.0	-12.0	-12.1	-11.9	-11.9	-12.0	-12.2	-12.1	-12.0	-14.1	-11.9
7-Feb	-11.9	-11.9	-11.7	-11.5	-11.3	-11.1	-10.9	-10.8	-10.7	-10.5	-10.2	-9.6	-8.9	-8.6	-8.4	-8.1	-8.1	-8.0	-7.9	-8.0	-8.2	-8.2	-8.3	-8.4	-9.6	-7.9
8-Feb	-8.4	-8.4	-8.4	-8.5	-8.4	-8.5	-8.4	-8.3	-8.2	-8.2	-7.8	-7.2	-6.9	-6.5	-6.0	-5.7	-5.5	-5.4	-5.6	-5.7	-5.7	-6.2	-6.6	-6.7	-7.1	-5.4
9-Feb	-7.2	-7.6	-7.9	-8.1	-8.4	-8.5	-8.5	-8.9	-9.7	-10.2	-10.4	-10.4	-10.0	-9.5	-9.3	-9.0	-8.7	-8.8	-9.1	-9.8	-10.3	-10.4	-11.2	-12.2	-9.3	-7.2
10-Feb	-12.5	-13.0	-15.0	-16.1	-16.5	-16.7	-16.5	-16.4	-15.4	-15.2	-14.5	-12.8	-10.8	-9.0	-8.4	-7.4	-6.9	-6.6	-6.1	-5.2	-5.0	-5.0	-4.6	-3.2	-10.8	-3.2
11-Feb	-2.0	-0.9	-1.1	-1.3	-1.2	-1.4	-2.0	-2.6	-2.6	-2.2	-1.4	0.1	1.5	2.6	3.3	3.6	3.7	3.4	2.4	1.3	0.7	0.3	-0.2	-0.6	0.1	3.7
12-Feb	-1.9	-3.1	-3.4	-5.1	-5.7	-5.9	-5.7	-5.8	-5.6	-5.2	-5.0	-2.0	0.0	1.7	2.3	1.8	1.5	1.0	0.5	-0.4	-1.2	-1.8	-2.4	-3.7	-2.3	2.3
13-Feb	-4.6	-5.1	-6.1	-7.5	-9.9	-11.1	-10.9	-10.7	-10.5	-9.6	-8.5	-7.9	-7.1	-6.4	-5.5	-5.4	-4.8	-4.0	-3.8	-5.3	-5.7	-6.4	-7.8	-8.9	-7.2	-3.8
14-Feb	-9.6	-10.1	-11.0	-11.8	-12.1	-12.3	-12.6	-12.6	-12.6	-12.3	-11.9	-11.5	-11.2	-11.0	-11.4	-11.6	-12.0	-12.3	-12.8	-13.2	-13.7	-13.9	-14.0	-14.0	-12.1	-9.6
15-Feb	-13.9	-13.9	-13.8	-14.1	-14.4	-14.8	-15.6	-16.7	-17.1	-16.6	-15.4	-13.7	-11.5	-9.7	-9.3	-8.7	-8.2	-7.6	-5.9	-5.7	-6.0	-5.7	-5.4	-5.4	-11.2	-5.4
16-Feb	-6.2	-6.8	-7.6	-8.1	-8.1	-8.0	-8.1	-8.5	-8.9	-9.0	-8.6	-6.0	-2.9	1.1	4.3	5.6	5.8	4.9	4.4	4.6	3.1	1.9	1.1	0.3	-2.5	5.8
17-Feb	0.2	-0.3	-0.8	-1.9	-2.9	-3.1	-3.8	-4.2	-4.7	-4.4	-4.1	-2.7	-0.7	1.6	2.1	2.5	2.4	2.7	2.3	0.9	-1.5	-2.3	-3.3	-3.9	-1.2	2.7
18-Feb	-4.2	-4.6	-5.7	-6.7	-7.6	-8.7	-9.5	-9.9	-10.1	-9.8	-8.9	-7.3	-6.1	-4.7	-3.6	-3.8	-4.1	-4.2	-4.9	-5.9	-7.0	-7.6	-8.6	-9.9	-6.8	-3.6
19-Feb	-11.3	-13.0	-13.1	-14.0	-14.6	-15.7	-16.8	-17.5	-17.3	-16.5	-15.6	-14.3	-13.6	-12.0	-10.6	-9.4	-9.2	-9.5	-10.4	-11.5	-11.8	-11.7	-12.0	-13.3	-13.1	-9.2
20-Feb	-14.5	-15.2	-15.9	-15.5	-15.0	-14.5	-14.0	-13.9	-13.4	-12.5	-11.4	-10.2	-8.6	-7.2	-6.3	-5.5	-4.9	-4.7	-4.2	-4.1	-4.0	-4.0	-4.0	-4.0	-9.5	-4.0
21-Feb	-4.0	-3.7	-3.6	-2.9	-3.1	-5.2	-7.3	-10.4	-11.5	-10.1	-6.6	-3.3	0.6	5.3	7.4	7.6	6.9	6.4	5.6	4.7	3.6	3.6	1.8	-0.4	-0.8	7.6
22-Feb	-1.6	-2.5	-2.9	-2.7	-3.7	-4.1	-4.5	-5.8	-7.5	-7.6	-6.1	-4.5	-2.1	-1.0	-1.0	-0.3	1.0	1.0	0.9	-0.6	-1.4	-1.8	-1.7	-3.4	-2.7	1.0
23-Feb	-4.5	-4.3	-3.9	-4.0	-3.6	-3.8	-3.6	-2.4	-1.4	-0.8	2.6	5.9	6.9	7.8	8.9	8.7	7.9	6.5	4.2	2.1	1.9	1.6	1.0	-0.1	1.4	8.9
24-Feb	-0.8	-4.8	-7.5	-8.1	-8.9	-10.0	-10.3	-10.3	-10.6	-10.8	-11.1	-11.1	-11.1	-10.7	-10.3	-10.1	-10.3	-10.9	-11.4	-12.1	-12.6	-13.1	-13.5	-14.3	-10.2	-0.8
25-Feb	-14.8	-15.5	-16.1	-16.6	-17.3	-17.7	-18.3	-19.6	-20.7	-20.5	-19.5	-18.9	-18.2	-17.3	-16.9	-16.6	-16.6	-17.5	-18.7	-19.9	-21.1	-22.0	-22.9	-23.7	-18.6	-14.8
26-Feb	-24.2	-24.8	-25.5	-26.2	-26.5	-26.7	-26.9	-27.1	-27.1	-26.7	-25.8	-24.9	-24.2	-23.2	-22.6	-21.3	-20.6	-20.6	-20.8	-20.9	-20.8	-21.0	-21.1	-21.5	-23.8	-20.6
27-Feb	-22.0	-22.2	-22.7	-23.3	-24.5	-25.5	-26.1	-26.6	-26.1	-24.8	-22.8	-20.9	-19.3	-18.1	-17.0	-16.1	-16.2	-16.4	-16.8	-17.2	-17.9	-18.6	-19.4	-19.9	-20.8	-16.1
28-Feb	-20.4	-20.7	-21.3	-21.5	-21.9	-22.5	-23.0	-23.6	-22.8	-21.1	-18.8	-17.2	-15.9	-14.7	-14.0	-13.3	-12.4	-11.7	-11.7	-12.3	-13.1	-14.4	-14.9	-15.2	-17.4	-11.7
29-Feb	-15.4	-15.5	-15.3	-15.5	-15.5	-15.3	-15.3	-15.2	-15.0	-14.6	-14.3	-14.1	-13.8	-13.6	-13.5	-13.2	-12.9	-12.6	-12.5	-12.8	-13.1	-13.5	-13.7	-14.7	-14.2	-12.5
	-8.7	-9.3	-9.8	-10.3	-10.7	-11.1	-11.4	-11.7	-11.7	-11.4	-10.5	-9.3	-8.1	-6.9	-6.3	-5.9	-5.7	-5.9	-6.3	-6.9	-7.5	-7.9	-8.4	-9.0		Diurnal Average
	6.1	5.2	4.5	4.0	3.6	3.3	2.7	2.0	1.9	2.0	2.6	5.9	6.9	7.8	8.9	8.7	7.9	6.8	6.7	5.8	4.9	3.7	2.9	2.5		Diurnal Maximum





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 45 m (AT45m) - C
Mannix - February 2024**

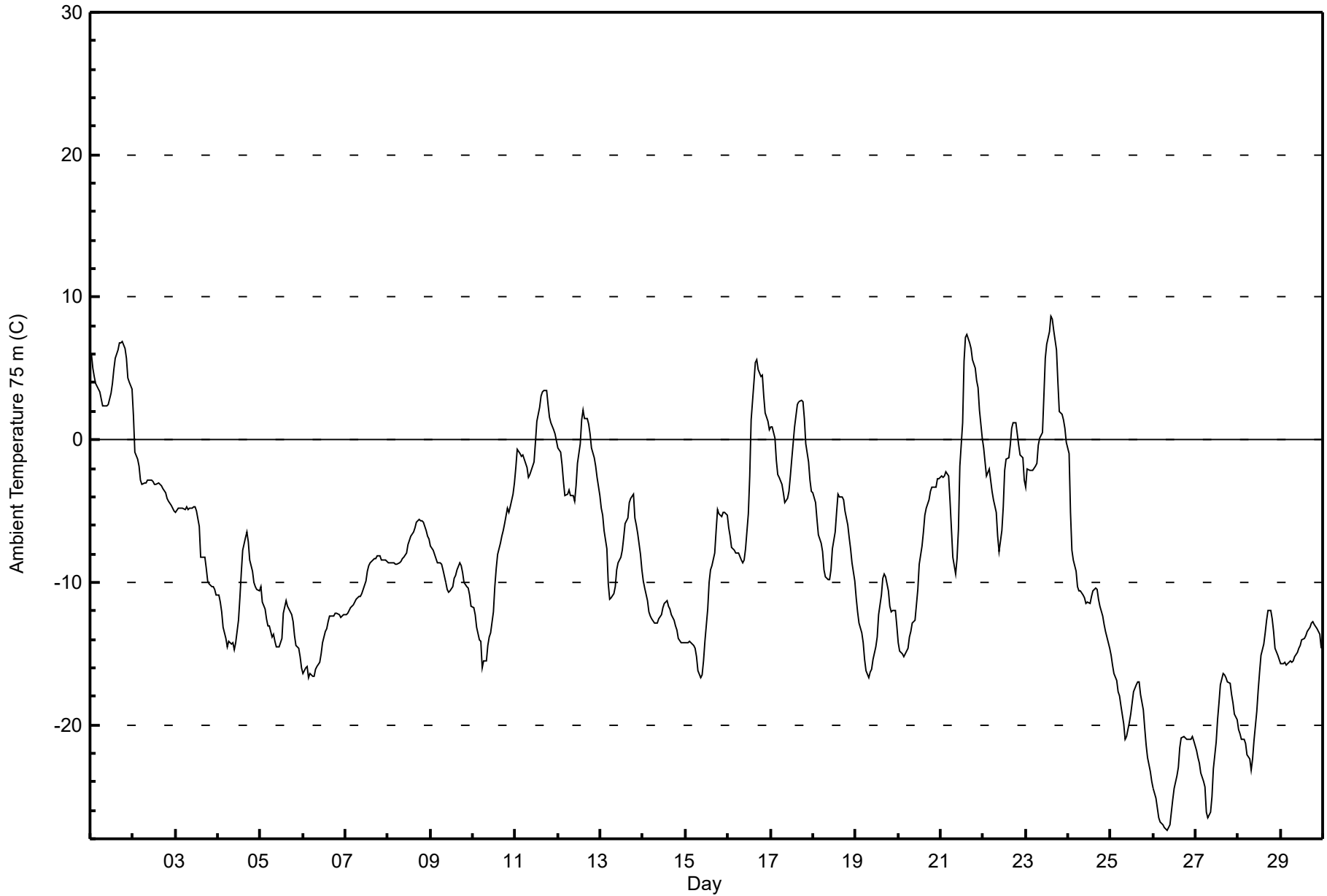
Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	52	7.47	7.47
-20 - 0	555	79.74	87.21
0 - 10	89	12.79	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Maximum Value: 8.7 C on Feb 23 15:00 Maximum Daily Average: 4.5 C on Feb 1																						Hours in Service: 696 Hours of Data: 696				
Minimum Value: -27.4 C on Feb 26 09:00 Minimum Daily Average: -24.0 C on Feb 26 Maximum Diurnal Average: -5.9 C at hour 17 Minimum Diurnal Average: -11.4 C at hour 9 Monthly Average: -8.68 C Percentiles: P ₁ = -26.5 P ₁₀ = -17.6 Q ₁ = -13.8 Median = -8.8 Q ₃ = -3.2 P ₉₀ = 1.5 P ₉₉ = 6.8																						Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	6.1	5.1	4.4	3.9	3.5	3.4	2.9	2.4	2.4	2.3	2.5	3.3	4.0	4.9	5.7	6.3	6.8	6.8	6.9	6.4	5.7	4.3	4.1	3.5	4.5	6.9
2-Feb	1.7	-0.9	-1.4	-1.9	-2.8	-3.1	-3.0	-3.0	-2.9	-2.9	-2.8	-2.9	-3.1	-3.1	-3.0	-3.1	-3.3	-3.4	-3.7	-4.1	-4.3	-4.6	-4.8	-5.0	-3.0	1.7
3-Feb	-5.1	-4.8	-4.8	-4.8	-4.8	-4.9	-4.7	-4.9	-4.8	-4.8	-4.7	-4.7	-5.0	-6.1	-8.2	-8.2	-8.2	-9.1	-9.9	-10.1	-10.3	-10.3	-10.5	-10.9	-6.9	-4.7
4-Feb	-10.9	-11.4	-12.1	-13.2	-14.0	-14.5	-14.1	-14.4	-14.2	-14.7	-14.2	-12.7	-11.1	-9.3	-7.7	-6.9	-6.5	-7.2	-8.4	-9.3	-10.0	-10.3	-10.5	-10.6	-11.2	-6.5
5-Feb	-10.3	-11.4	-11.8	-12.6	-13.0	-13.1	-13.8	-13.6	-14.2	-14.5	-14.2	-14.2	-14.0	-12.2	-11.3	-11.7	-11.9	-12.3	-12.7	-13.7	-14.4	-14.7	-15.2	-16.0	-13.2	-10.3
6-Feb	-16.4	-16.0	-16.0	-16.7	-16.4	-16.6	-16.6	-16.1	-15.9	-15.6	-15.0	-14.2	-13.4	-13.3	-12.7	-12.3	-12.3	-12.4	-12.2	-12.2	-12.3	-12.5	-12.4	-12.3	-14.2	-12.2
7-Feb	-12.2	-12.2	-12.0	-11.8	-11.6	-11.4	-11.2	-11.0	-11.0	-10.8	-10.5	-9.9	-9.2	-8.8	-8.7	-8.4	-8.4	-8.3	-8.2	-8.2	-8.5	-8.5	-8.5	-8.5	-9.9	-8.2
8-Feb	-8.6	-8.7	-8.6	-8.6	-8.7	-8.7	-8.7	-8.5	-8.3	-8.3	-8.0	-7.4	-7.1	-6.7	-6.5	-6.2	-5.8	-5.6	-5.7	-5.7	-5.8	-6.4	-6.7	-6.9	-7.3	-5.6
9-Feb	-7.4	-7.8	-8.1	-8.3	-8.6	-8.7	-8.7	-9.1	-10.0	-10.5	-10.7	-10.6	-10.3	-9.7	-9.5	-9.1	-8.6	-8.8	-9.3	-10.0	-10.3	-10.4	-10.9	-11.7	-9.5	-7.4
10-Feb	-11.8	-12.2	-13.2	-14.1	-14.1	-16.1	-15.5	-15.5	-14.4	-13.9	-13.5	-12.1	-10.3	-9.1	-8.1	-7.2	-6.8	-6.3	-5.9	-4.8	-5.1	-4.7	-3.9	-3.0	-10.1	-3.0
11-Feb	-2.0	-0.7	-1.0	-1.1	-1.1	-1.4	-1.9	-2.6	-2.5	-2.1	-1.6	-0.2	1.3	2.3	3.1	3.4	3.5	3.5	2.5	1.6	1.2	0.7	0.4	-0.1	0.2	3.5
12-Feb	-0.6	-0.9	-1.7	-2.9	-3.9	-3.8	-3.5	-3.9	-3.9	-4.3	-3.2	-1.7	-0.3	1.4	2.1	1.5	1.5	1.1	0.4	-0.5	-1.3	-1.9	-2.7	-3.9	-1.5	2.1
13-Feb	-4.8	-5.3	-6.3	-7.7	-10.1	-11.2	-11.1	-10.8	-10.3	-9.1	-8.7	-8.2	-7.8	-6.9	-5.8	-5.5	-4.4	-4.1	-3.8	-5.5	-5.9	-6.6	-8.1	-9.1	-7.4	-3.8
14-Feb	-9.9	-10.4	-11.3	-12.1	-12.4	-12.6	-12.9	-12.9	-12.9	-12.6	-12.2	-11.8	-11.5	-11.3	-11.7	-11.9	-12.3	-12.6	-13.1	-13.4	-13.9	-14.2	-14.3	-14.2	-12.4	-9.9
15-Feb	-14.2	-14.2	-14.1	-14.2	-14.4	-14.6	-15.2	-16.2	-16.7	-16.5	-15.5	-14.1	-11.8	-10.0	-9.1	-8.9	-8.0	-6.4	-4.9	-5.2	-5.4	-5.1	-5.1	-5.3	-11.0	-4.9
16-Feb	-6.1	-6.8	-7.5	-7.8	-8.0	-7.9	-7.9	-8.4	-8.6	-8.4	-7.6	-5.2	-2.6	1.4	4.0	5.4	5.7	4.9	4.4	4.5	3.0	1.9	1.3	0.7	-2.3	5.7
17-Feb	1.0	0.9	0.1	-1.5	-2.4	-2.6	-3.1	-3.7	-4.4	-4.1	-3.6	-2.6	-1.4	0.9	1.7	2.5	2.7	2.8	2.6	1.5	-0.3	-1.5	-2.8	-3.6	-0.9	2.8
18-Feb	-3.8	-4.4	-5.6	-6.7	-7.2	-7.9	-9.1	-9.6	-9.9	-9.8	-9.1	-7.7	-6.5	-5.1	-3.9	-4.0	-4.0	-4.2	-5.0	-6.0	-6.9	-7.7	-8.7	-10.0	-6.8	-3.8
19-Feb	-11.1	-12.1	-12.9	-13.5	-14.3	-15.4	-16.2	-16.7	-16.3	-16.2	-15.5	-14.6	-13.8	-12.3	-10.9	-9.7	-9.4	-9.6	-10.6	-11.7	-12.0	-12.0	-11.9	-13.1	-13.0	-9.4
20-Feb	-14.3	-14.9	-15.0	-15.2	-15.0	-14.7	-13.8	-13.4	-12.9	-12.7	-11.6	-10.5	-8.8	-7.4	-6.5	-5.3	-4.8	-4.2	-3.6	-3.3	-3.4	-3.3	-2.7	-2.8	-9.2	-2.7
21-Feb	-2.6	-2.7	-2.5	-2.3	-2.6	-4.4	-6.3	-8.2	-9.4	-8.4	-6.3	-1.9	1.2	5.6	7.2	7.4	6.8	6.4	5.7	5.0	4.1	3.7	2.0	0.1	-0.1	7.4
22-Feb	-0.6	-1.6	-2.5	-2.1	-2.8	-3.6	-4.2	-5.1	-6.8	-7.8	-6.4	-4.7	-2.2	-1.4	-1.2	-0.4	0.8	1.2	1.2	0.5	-0.4	-1.1	-1.2	-2.8	-2.3	1.2
23-Feb	-3.3	-2.0	-2.2	-2.1	-2.2	-1.9	-1.7	-0.4	0.1	0.5	3.1	5.7	6.7	7.6	8.7	8.5	7.7	6.3	4.0	2.0	1.8	1.4	0.8	-0.2	2.1	8.7
24-Feb	-1.0	-5.1	-7.8	-8.4	-9.2	-10.3	-10.6	-10.9	-11.1	-11.4	-11.4	-11.5	-11.0	-10.6	-10.4	-10.5	-11.2	-11.7	-12.4	-12.9	-13.4	-13.8	-14.7	-10.5	-1.0	
25-Feb	-15.1	-15.8	-16.4	-16.9	-17.7	-18.0	-18.6	-19.9	-21.0	-20.8	-19.9	-19.3	-18.5	-17.6	-17.2	-16.9	-17.0	-17.8	-19.0	-20.3	-21.4	-22.3	-23.2	-24.0	-18.9	-15.1
26-Feb	-24.5	-25.1	-25.8	-26.5	-26.8	-27.0	-27.2	-27.3	-27.4	-27.0	-26.1	-25.3	-24.5	-23.5	-22.9	-21.6	-20.9	-20.8	-20.9	-21.1	-21.0	-21.0	-20.8	-21.1	-24.0	-20.8
27-Feb	-21.8	-22.3	-22.7	-23.4	-23.9	-24.4	-26.1	-26.5	-26.1	-25.1	-23.1	-21.2	-19.6	-18.5	-17.2	-16.4	-16.5	-16.7	-17.0	-17.1	-17.9	-18.5	-19.2	-19.7	-20.9	-16.4
28-Feb	-20.3	-20.6	-21.0	-21.1	-21.3	-22.1	-22.4	-23.2	-22.4	-21.1	-19.1	-17.6	-16.3	-15.1	-14.4	-13.6	-12.7	-12.0	-12.0	-12.6	-13.4	-14.7	-15.1	-15.4	-17.5	-12.0
29-Feb	-15.7	-15.8	-15.6	-15.8	-15.7	-15.5	-15.6	-15.5	-15.3	-14.9	-14.7	-14.4	-14.1	-13.9	-13.8	-13.5	-13.2	-12.9	-12.8	-13.0	-13.2	-13.5	-13.7	-14.6	-14.4	-12.8
	-8.5	-9.0	-9.5	-10.0	-10.4	-10.8	-11.1	-11.3	-11.4	-11.2	-10.5	-9.4	-8.3	-7.2	-6.5	-6.1	-5.9	-6.0	-6.3	-6.8	-7.4	-7.8	-8.2	-8.8	Diurnal Average	
	6.1	5.1	4.4	3.9	3.5	3.4	2.9	2.4	2.4	2.3	3.1	5.7	6.7	7.6	8.7	8.5	7.7	6.8	6.9	6.4	5.7	4.3	4.1	3.5	Diurnal Maximum	





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 75 m (AT75m) - C
Mannix - February 2024**

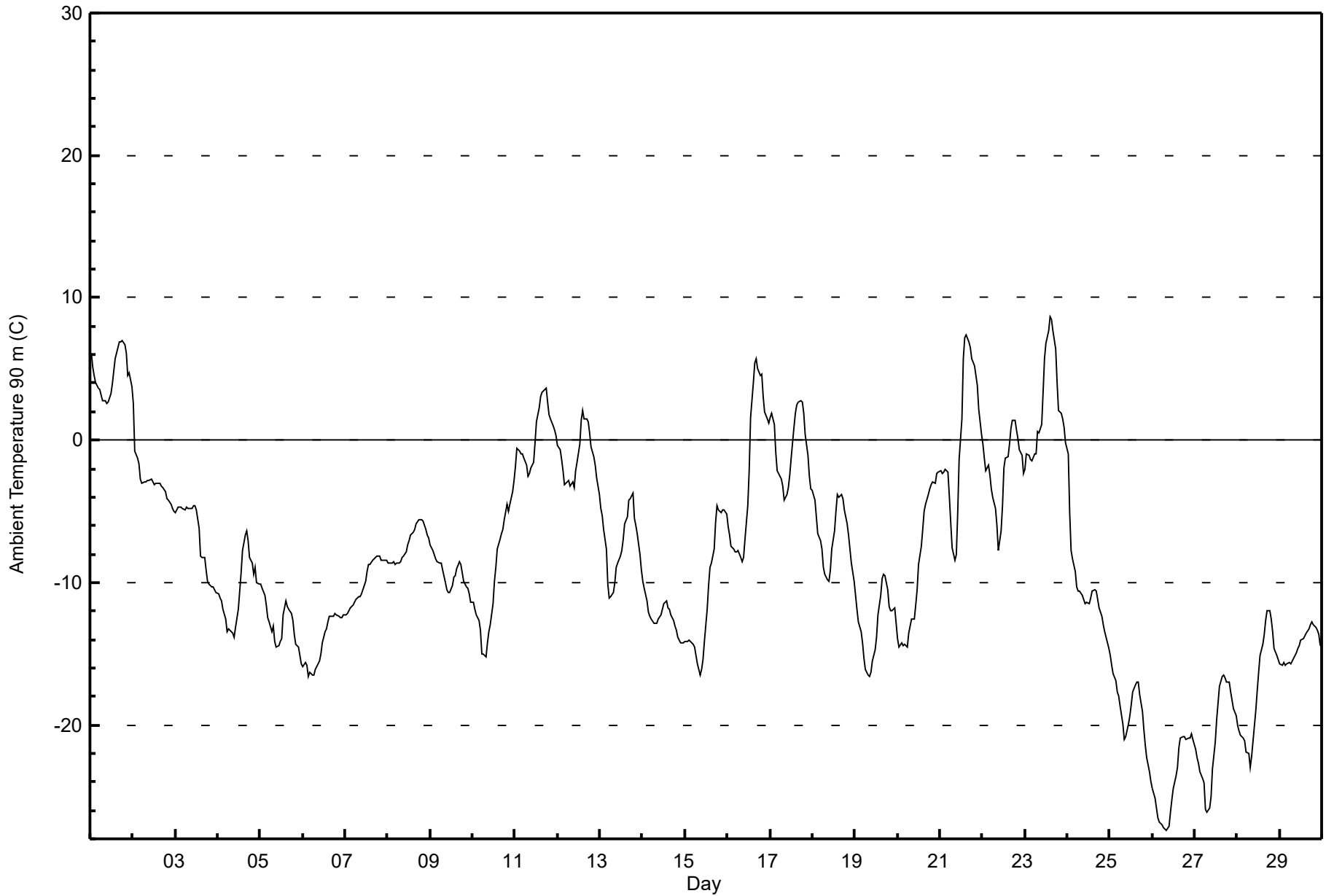
Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	53	7.61	7.61
-20 - 0	549	78.88	86.49
0 - 10	94	13.51	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Maximum Value: 8.7 C on Feb 23 15:00																				Maximum Daily Average: 4.7 C on Feb 1					Hours in Service: 696	
Minimum Value: -27.4 C on Feb 26 09:00																				Minimum Daily Average: -24.0 C on Feb 26					Hours of Data: 696	
Maximum Diurnal Average: -5.8 C at hour 17																				Minimum Diurnal Average: -11.2 C at hour 9					Hours of Missing Data: 0	
Monthly Average: -8.52 C																				Percentiles: P ₁ = -26.2 P ₁₀ = -17.6 Q ₁ = -13.4 Median = -8.7 Q ₃ = -3.0 P ₉₀ = 1.6 P ₉₉ = 6.9					Hours of Calibration: 0	
																									Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	6.1	5.1	4.5	4.0	3.6	3.5	3.1	2.8	2.8	2.6	2.6	3.3	3.9	4.8	5.7	6.5	6.9	6.9	7.0	6.7	6.2	4.5	4.7	3.7	4.7	7.0
2-Feb	2.5	-0.7	-1.2	-1.6	-2.8	-3.0	-3.0	-2.9	-2.8	-2.8	-2.8	-2.9	-3.1	-3.1	-3.0	-3.1	-3.2	-3.3	-3.7	-4.1	-4.2	-4.5	-4.8	-5.0	-2.9	2.5
3-Feb	-5.1	-4.7	-4.7	-4.7	-4.8	-4.9	-4.7	-4.8	-4.8	-4.8	-4.6	-4.6	-4.9	-6.2	-8.2	-8.2	-8.2	-9.1	-9.9	-10.1	-10.3	-10.3	-10.5	-10.7	-6.8	-4.6
4-Feb	-10.8	-11.1	-11.3	-11.9	-12.6	-13.5	-13.3	-13.4	-13.5	-13.8	-13.1	-11.8	-10.6	-9.3	-7.7	-6.7	-6.4	-7.1	-8.2	-8.6	-9.4	-9.0	-10.0	-10.2	-10.5	-6.4
5-Feb	-10.1	-10.4	-10.9	-11.6	-12.5	-12.8	-13.5	-13.1	-14.1	-14.5	-14.5	-14.2	-14.0	-12.2	-11.3	-11.7	-11.9	-12.2	-12.7	-13.6	-14.3	-14.6	-15.2	-15.7	-13.0	-10.1
6-Feb	-15.9	-15.6	-15.8	-16.6	-16.3	-16.5	-16.5	-16.1	-15.9	-15.6	-15.0	-14.2	-13.4	-13.3	-12.7	-12.4	-12.3	-12.4	-12.2	-12.2	-12.3	-12.5	-12.4	-12.3	-14.2	-12.2
7-Feb	-12.2	-12.2	-12.0	-11.8	-11.6	-11.4	-11.2	-11.0	-11.0	-10.8	-10.5	-9.9	-9.2	-8.8	-8.7	-8.4	-8.4	-8.3	-8.1	-8.1	-8.4	-8.5	-8.4	-8.5	-9.9	-8.1
8-Feb	-8.6	-8.6	-8.6	-8.5	-8.7	-8.7	-8.6	-8.5	-8.3	-8.2	-7.9	-7.3	-7.0	-6.7	-6.5	-6.3	-5.9	-5.6	-5.6	-5.6	-5.7	-6.3	-6.7	-6.9	-7.3	-5.6
9-Feb	-7.4	-7.8	-8.1	-8.3	-8.5	-8.6	-8.7	-9.1	-10.0	-10.5	-10.6	-10.7	-10.2	-9.7	-9.6	-9.1	-8.5	-8.7	-9.3	-10.0	-10.3	-10.4	-10.8	-11.4	-9.4	-7.4
10-Feb	-11.4	-11.9	-12.2	-12.7	-13.3	-15.1	-15.0	-15.2	-14.3	-13.4	-12.9	-11.5	-9.9	-9.0	-7.7	-7.0	-6.6	-6.3	-5.6	-4.5	-5.0	-4.5	-3.7	-2.8	-9.6	-2.8
11-Feb	-1.8	-0.5	-0.8	-1.0	-0.9	-1.3	-1.8	-2.5	-2.3	-2.0	-1.5	-0.2	1.3	2.3	3.1	3.4	3.5	3.6	2.7	1.8	1.5	1.0	0.7	0.3	0.4	3.6
12-Feb	-0.4	-0.7	-1.4	-2.1	-3.1	-3.0	-2.8	-3.2	-3.0	-3.3	-2.2	-1.5	-0.3	1.4	2.1	1.5	1.5	1.3	0.5	-0.5	-1.2	-1.8	-2.7	-3.9	-1.2	2.1
13-Feb	-4.8	-5.3	-6.3	-7.6	-10.1	-11.1	-11.0	-10.7	-10.0	-8.9	-8.6	-8.2	-7.8	-7.0	-5.9	-5.3	-4.2	-4.1	-3.7	-5.5	-5.9	-6.6	-8.1	-9.1	-7.3	-3.7
14-Feb	-9.9	-10.4	-11.3	-12.1	-12.4	-12.6	-12.9	-12.9	-12.9	-12.6	-12.3	-11.9	-11.5	-11.3	-11.7	-11.9	-12.3	-12.6	-13.1	-13.3	-13.8	-14.2	-14.2	-14.2	-12.4	-9.9
15-Feb	-14.2	-14.2	-14.1	-14.1	-14.3	-14.5	-15.1	-15.7	-16.5	-16.1	-15.4	-14.2	-11.9	-10.2	-8.9	-8.7	-7.6	-5.8	-4.6	-4.9	-5.1	-4.9	-4.9	-5.2	-10.9	-4.6
16-Feb	-6.0	-6.7	-7.4	-7.6	-7.8	-7.8	-7.8	-8.2	-8.5	-8.3	-7.0	-4.6	-2.1	1.6	4.0	5.4	5.7	5.0	4.5	4.6	3.1	2.0	1.5	1.2	-2.1	5.7
17-Feb	1.6	1.9	1.1	-0.9	-2.1	-2.4	-2.7	-3.2	-4.2	-3.8	-3.3	-2.4	-1.3	0.9	1.9	2.5	2.7	2.8	2.7	1.9	0.4	-1.1	-2.5	-3.4	-0.5	2.8
18-Feb	-3.6	-4.3	-5.4	-6.6	-7.0	-7.6	-8.9	-9.4	-9.8	-9.9	-9.2	-7.6	-6.3	-5.0	-3.8	-4.0	-3.9	-4.1	-4.9	-5.9	-6.7	-7.6	-8.6	-9.9	-6.7	-3.6
19-Feb	-10.9	-11.9	-12.8	-13.4	-14.2	-15.3	-16.1	-16.5	-16.6	-16.3	-15.5	-14.7	-13.8	-12.3	-10.9	-9.7	-9.4	-9.5	-10.5	-11.7	-12.0	-11.9	-11.8	-12.9	-12.9	-9.4
20-Feb	-13.9	-14.5	-14.3	-14.5	-14.4	-14.5	-13.6	-13.1	-12.6	-12.6	-11.6	-10.5	-8.7	-7.4	-6.3	-5.0	-4.5	-3.8	-3.4	-3.1	-3.0	-3.0	-2.4	-2.2	-8.9	-2.2
21-Feb	-2.2	-2.3	-2.2	-2.1	-2.3	-3.9	-5.8	-7.6	-8.4	-8.0	-5.1	-1.4	1.5	5.7	7.2	7.4	6.9	6.5	5.7	5.2	4.5	3.9	2.2	0.4	0.2	7.4
22-Feb	-0.3	-1.2	-2.1	-1.7	-2.4	-3.4	-4.1	-4.8	-6.0	-7.7	-6.3	-4.6	-2.0	-1.2	-1.1	-0.3	0.8	1.4	1.4	0.7	0.1	-0.7	-1.0	-2.3	-2.0	1.4
23-Feb	-2.0	-0.9	-1.0	-1.3	-1.4	-1.0	-0.9	0.6	0.5	1.1	3.3	5.7	6.8	7.6	8.7	8.5	7.7	6.4	4.1	2.1	1.9	1.5	0.9	-0.2	2.4	8.7
24-Feb	-0.9	-5.1	-7.8	-8.4	-9.2	-10.3	-10.6	-10.9	-11.2	-11.5	-11.4	-11.5	-11.1	-10.6	-10.5	-10.6	-11.2	-11.8	-12.4	-12.9	-13.4	-13.9	-14.7	-14.7	-10.5	-0.9
25-Feb	-15.1	-15.8	-16.4	-16.9	-17.7	-18.0	-18.7	-19.9	-21.1	-20.9	-19.9	-19.3	-18.5	-17.7	-17.2	-17.0	-17.0	-17.9	-19.0	-20.3	-21.4	-22.3	-23.3	-24.0	-19.0	-15.1
26-Feb	-24.5	-25.2	-25.8	-26.5	-26.8	-27.0	-27.3	-27.4	-27.4	-27.1	-26.1	-25.3	-24.5	-23.6	-23.0	-21.6	-20.9	-20.8	-20.9	-21.0	-20.9	-20.9	-20.6	-21.0	-24.0	-20.6
27-Feb	-21.7	-22.3	-22.7	-23.3	-23.8	-24.1	-25.9	-26.1	-25.8	-25.1	-23.1	-21.2	-19.7	-18.5	-17.2	-16.6	-16.5	-16.7	-17.0	-17.0	-17.7	-18.2	-18.9	-19.3	-20.8	-16.5
28-Feb	-20.0	-20.4	-20.8	-20.9	-21.1	-21.9	-22.0	-22.9	-22.2	-21.1	-19.0	-17.6	-16.3	-15.1	-14.4	-13.6	-12.7	-12.0	-12.0	-12.6	-13.4	-14.7	-15.1	-15.5	-17.4	-12.0
29-Feb	-15.7	-15.8	-15.6	-15.8	-15.8	-15.6	-15.7	-15.6	-15.3	-15.0	-14.7	-14.4	-14.1	-13.9	-13.8	-13.5	-13.2	-12.9	-12.8	-13.0	-13.2	-13.4	-13.6	-14.5	-14.4	-12.8
																								Diurnal Average		
																								Diurnal Maximum		





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 90 m (AT90m) - C
Mannix - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	52	7.47	7.47
-20 - 0	546	78.45	85.92
0 - 10	98	14.08	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Relative Humidity (RH) - %

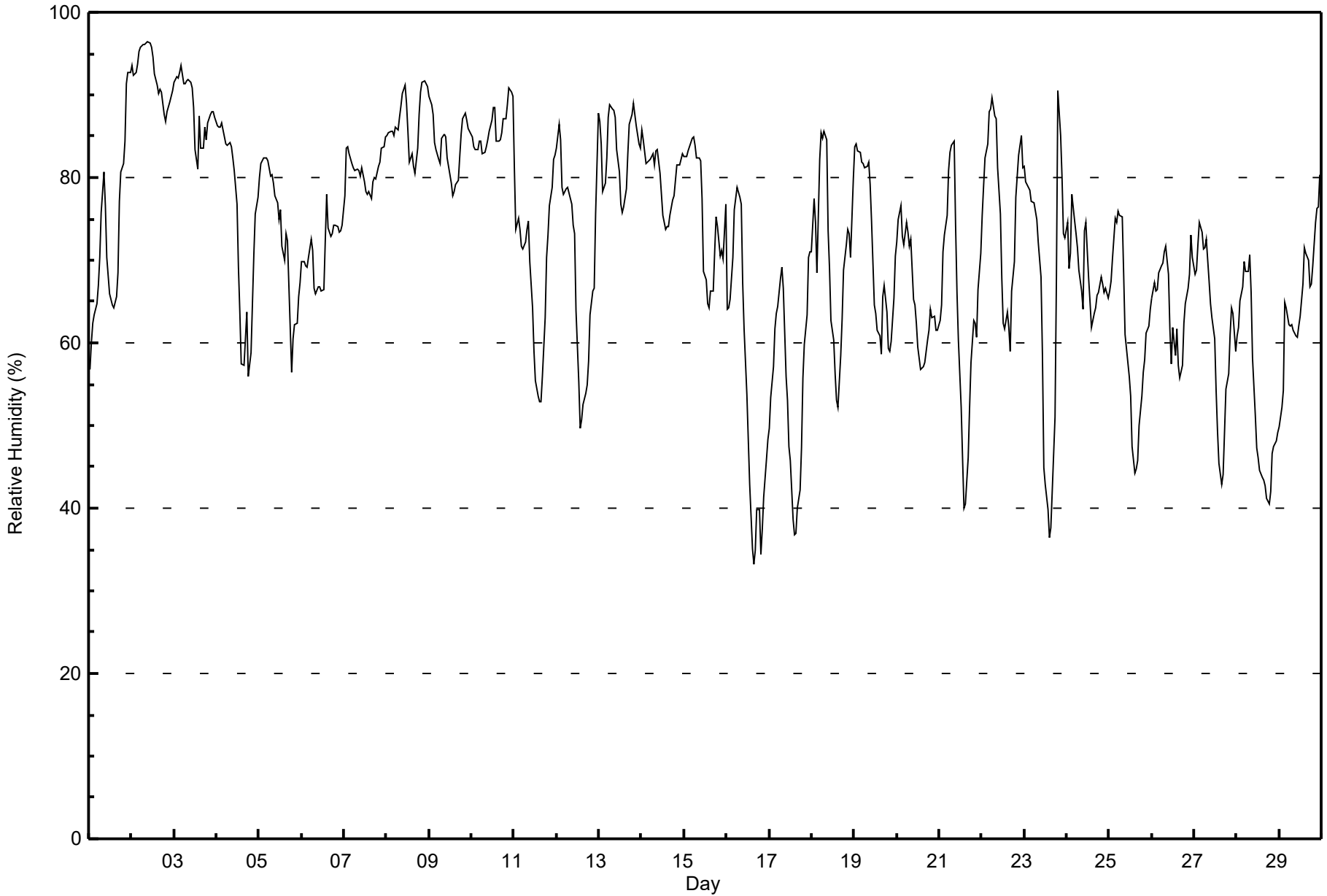
Mannix - February 2024

Maximum Value: 96 % on Feb 2 10:00 Maximum Daily Average: 92.6 % on Feb 2																		Hours in Service: 696 Hours of Data: 696									
Minimum Value: 33 % on Feb 16 16:00 Minimum Daily Average: 53.8 % on Feb 28 Maximum Diurnal Average: 78.9 % at hour 8 Minimum Diurnal Average: 61.8 % at hour 16 Monthly Average: 72.0 % Percentiles: P ₁ = 37 P ₁₀ = 54 Q ₁ = 64 Median = 74 Q ₃ = 83 P ₉₀ = 88 P ₉₉ = 95																		Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	57	60	62	63	65	67	70	76	81	77	70	66	65	65	64	66	68	77	81	82	84	91	93	93	72.6	93	
2-Feb	94	92	93	94	95	96	96	96	96	96	96	96	95	93	91	90	91	90	88	87	88	89	90	91	92.6	96	
3-Feb	92	92	92	93	94	91	91	92	92	91	91	88	83	81	88	84	84	86	85	87	88	88	88	87	88.6	94	
4-Feb	86	86	86	87	85	84	84	84	84	82	81	77	69	64	58	57	60	64	56	59	65	71	76	78	74.2	87	
5-Feb	80	82	82	82	82	82	80	80	79	78	77	75	76	72	70	73	72	62	56	60	62	62	66	67	73.3	82	
6-Feb	70	70	69	69	70	73	71	67	66	67	67	66	67	72	78	74	73	73	74	74	74	73	74	74	71.0	78	
7-Feb	78	84	84	83	82	81	81	81	81	80	81	79	78	78	78	77	79	80	80	81	82	84	84	85	80.9	85	
8-Feb	85	85	86	86	85	86	86	87	89	90	91	89	86	82	83	81	80	84	88	90	92	92	91	91	86.8	92	
9-Feb	90	89	88	84	83	82	82	85	85	85	82	81	79	78	78	79	80	83	85	87	88	87	86	86	83.8	90	
10-Feb	85	84	83	83	84	84	83	83	84	85	86	87	88	88	84	84	85	85	87	87	89	91	90	90	85.9	91	
11-Feb	81	74	75	74	72	71	72	74	75	70	64	59	55	54	53	53	56	63	70	73	77	79	82	83	69.1	83	
12-Feb	84	86	85	79	78	79	79	78	77	74	73	64	55	50	51	52	54	55	58	63	66	67	76	88	69.6	88	
13-Feb	87	84	78	79	82	87	89	88	88	87	83	81	77	76	76	79	83	86	88	89	88	86	84	84	83.7	89	
14-Feb	86	85	82	82	82	83	82	83	83	80	78	75	74	74	74	75	77	78	80	81	82	82	83	83	80.2	86	
15-Feb	83	83	83	84	85	85	84	82	82	82	77	69	68	65	64	66	66	71	75	74	71	71	70	77	75.7	85	
16-Feb	64	64	65	70	76	77	79	78	77	67	62	54	48	43	35	33	35	40	40	34	38	41	46	48	54.8	79	
17-Feb	50	53	57	62	64	64	68	69	67	56	53	47	46	39	37	37	40	42	47	56	60	63	70	71	54.9	71	
18-Feb	71	77	75	68	82	85	85	86	85	74	69	63	60	56	53	52	59	63	69	72	74	73	70	80	70.9	86	
19-Feb	84	84	83	83	82	82	81	81	82	79	75	65	63	61	61	59	66	67	64	59	59	60	65	71	71.5	84	
20-Feb	72	75	77	73	72	75	73	72	72	65	65	62	59	57	57	57	58	60	62	64	63	63	62	61	65.7	77	
21-Feb	63	65	71	73	75	81	83	84	84	74	66	60	52	46	40	40	46	52	58	63	62	61	67	71	64.1	84	
22-Feb	75	79	82	84	88	88	90	87	87	81	76	68	62	62	64	62	59	66	70	78	80	83	85	81	76.6	90	
23-Feb	81	80	79	79	77	77	76	75	72	68	59	45	43	40	36	38	42	51	68	90	85	80	73	73	66.1	90	
24-Feb	75	69	71	78	75	73	71	69	66	64	73	75	68	65	62	64	64	66	66	68	67	66	67	65	68.6	78	
25-Feb	66	67	70	75	75	76	75	75	68	61	58	56	54	47	44	45	46	50	54	56	58	61	62	64	61.0	76	
26-Feb	65	67	66	66	68	69	70	71	72	68	62	57	62	59	62	57	56	57	62	65	67	68	73	70	65.0	73	
27-Feb	68	69	72	75	73	71	72	73	67	65	63	60	54	49	45	43	44	49	54	56	61	64	64	59	61.3	75	
28-Feb	61	62	65	67	70	69	69	71	66	58	51	47	46	45	44	43	43	41	40	42	47	47	48	49	53.8	71	
29-Feb	50	52	54	65	64	62	62	62	61	61	61	62	63	67	71	71	70	67	67	69	75	76	76	80	65.4	80	
	75.2	75.8	76.4	77.2	78.2	78.7	78.8	78.9	78.2	74.8	72.2	68.2	65.5	62.9	62.1	61.8	63.2	65.8	67.9	70.6	72.0	73.1	74.5	75.8	Diurnal Average		
	94	92	93	94	95	96	96	96	96	96	96	96	96	95	93	91	90	91	90	88	90	92	92	93	93	Diurnal Maximum	



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Mannix - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Mannix - February 2024

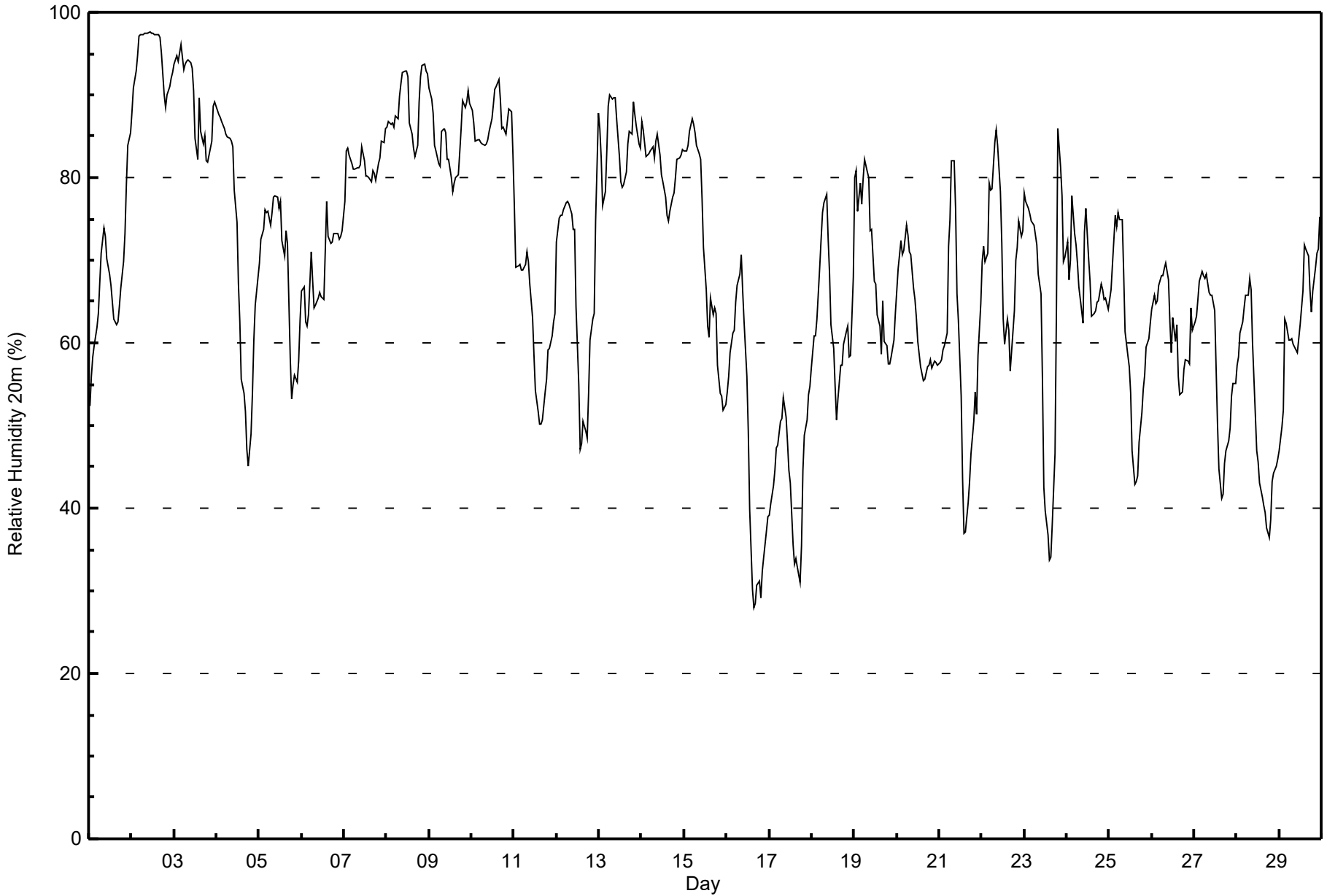
Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	14	2.01	2.01
40 - 60	104	14.94	16.95
60 - 80	338	48.56	65.52
80 - 100	240	34.48	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Maximum Value: 98 % on Feb 2 11:00 Maximum Daily Average: 94.6 % on Feb 2																			Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0							
Minimum Value: 28 % on Feb 16 16:00 Minimum Daily Average: 44.1 % on Feb 17 Maximum Diurnal Average: 76.7 % at hour 8 Minimum Diurnal Average: 61.4 % at hour 16 Monthly Average: 69.3 % Percentiles: P ₁ = 32 P ₁₀ = 49 Q ₁ = 59 Median = 70 Q ₃ = 82 P ₉₀ = 88 P ₉₉ = 97																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	52	56	58	60	62	64	67	71	74	73	70	68	67	65	63	62	63	64	67	70	73	79	84	85	67.4	85
2-Feb	88	91	93	95	97	97	97	97	97	98	98	98	97	97	97	97	97	95	90	89	90	91	92	93	94.6	98
3-Feb	94	95	94	95	96	93	94	94	94	93	90	85	82	90	86	84	85	82	82	84	84	89	89	89	89.5	96
4-Feb	88	88	87	87	86	85	85	85	84	84	78	75	67	62	56	54	52	47	45	49	54	60	65	68	70.4	88
5-Feb	70	73	74	76	76	76	74	76	78	78	78	76	77	72	71	73	72	58	53	55	56	55	58	63	69.5	78
6-Feb	66	67	62	62	63	71	67	64	65	65	66	66	65	71	77	73	72	72	73	73	73	73	74	74	69.0	77
7-Feb	77	83	83	83	82	81	81	81	81	81	84	82	80	80	80	79	81	80	80	82	82	84	84	86	81.6	86
8-Feb	86	87	87	87	86	88	87	90	91	93	93	93	92	87	85	84	83	84	89	92	94	94	93	92	88.9	94
9-Feb	91	89	88	84	83	82	81	86	86	85	82	82	80	78	79	80	80	83	86	89	88	89	91	89	84.7	91
10-Feb	88	87	84	85	85	84	84	84	84	85	86	87	89	91	91	92	89	86	86	85	87	88	88	83	86.5	92
11-Feb	76	69	69	69	69	69	70	71	70	67	63	58	54	52	50	50	51	54	56	59	59	61	63	63	62.2	76
12-Feb	72	75	75	75	76	77	77	77	76	74	74	64	55	47	48	50	49	49	54	60	63	64	75	88	66.4	88
13-Feb	86	82	77	78	83	89	90	90	90	90	87	82	79	79	79	81	84	86	85	89	88	86	84	84	84.5	90
14-Feb	87	86	83	83	83	83	84	82	84	85	83	80	79	78	75	76	78	78	80	82	82	83	83	83	81.3	87
15-Feb	83	83	84	86	87	87	85	84	83	82	77	71	66	62	61	65	63	64	64	57	54	54	52	53	71.2	87
16-Feb	54	56	59	61	62	65	67	68	71	66	63	56	49	40	30	28	28	31	31	29	32	34	37	39	48.2	71
17-Feb	39	41	43	45	47	48	50	51	53	51	48	45	43	36	33	34	33	31	36	45	49	51	54	55	44.1	55
18-Feb	57	61	61	63	69	73	76	77	78	73	69	62	59	55	51	53	57	57	60	61	62	58	58	68	63.2	78
19-Feb	80	81	76	79	77	80	82	81	80	74	74	67	67	63	62	59	65	60	60	58	58	58	60	64	69.3	82
20-Feb	66	69	72	71	71	74	73	71	71	67	65	63	60	57	56	55	56	57	57	58	57	58	58	57	63.3	74
21-Feb	58	58	59	60	61	72	75	82	82	76	66	63	54	44	37	37	41	43	47	50	54	51	59	65	58.0	82
22-Feb	70	72	70	71	79	79	79	84	86	84	78	72	63	60	63	62	57	59	64	70	72	75	73	74	71.3	86
23-Feb	78	77	76	76	75	74	73	72	68	66	56	43	40	37	34	34	38	47	64	86	81	78	70	70	63.0	86
24-Feb	72	68	70	78	73	72	70	67	64	62	73	76	70	67	63	64	64	65	65	67	66	65	65	64	68.0	78
25-Feb	65	67	69	75	74	76	75	75	69	61	58	57	54	47	43	43	44	48	52	54	56	60	60	62	60.2	76
26-Feb	64	66	65	65	67	68	68	69	70	68	63	59	63	60	62	56	54	54	57	58	58	57	64	62	62.3	70
27-Feb	62	63	65	67	69	68	68	68	66	66	66	64	57	50	45	41	42	45	47	48	50	54	55	55	57.6	69
28-Feb	57	58	61	63	64	66	66	68	66	60	51	47	46	43	41	40	39	38	36	39	43	44	45	46	51.2	68
29-Feb	47	50	52	63	62	60	60	60	60	59	59	60	62	66	72	71	70	66	64	66	69	71	71	75	63.3	75
	71.6	72.2	72.3	73.8	74.7	75.8	76.1	76.7	76.6	74.7	72.4	69.2	66.2	63.1	61.9	61.4	61.5	61.6	63.0	65.6	66.7	67.6	69.0	70.6	Diurnal Average	
	94	95	94	95	97	97	97	97	97	98	98	98	97	97	97	97	97	95	90	92	94	94	93	93	Diurnal Maximum	





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity 20m (RH20m) - %
Mannix - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	29	4.17	4.17
40 - 60	157	22.56	26.72
60 - 80	303	43.53	70.26
80 - 100	207	29.74	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696

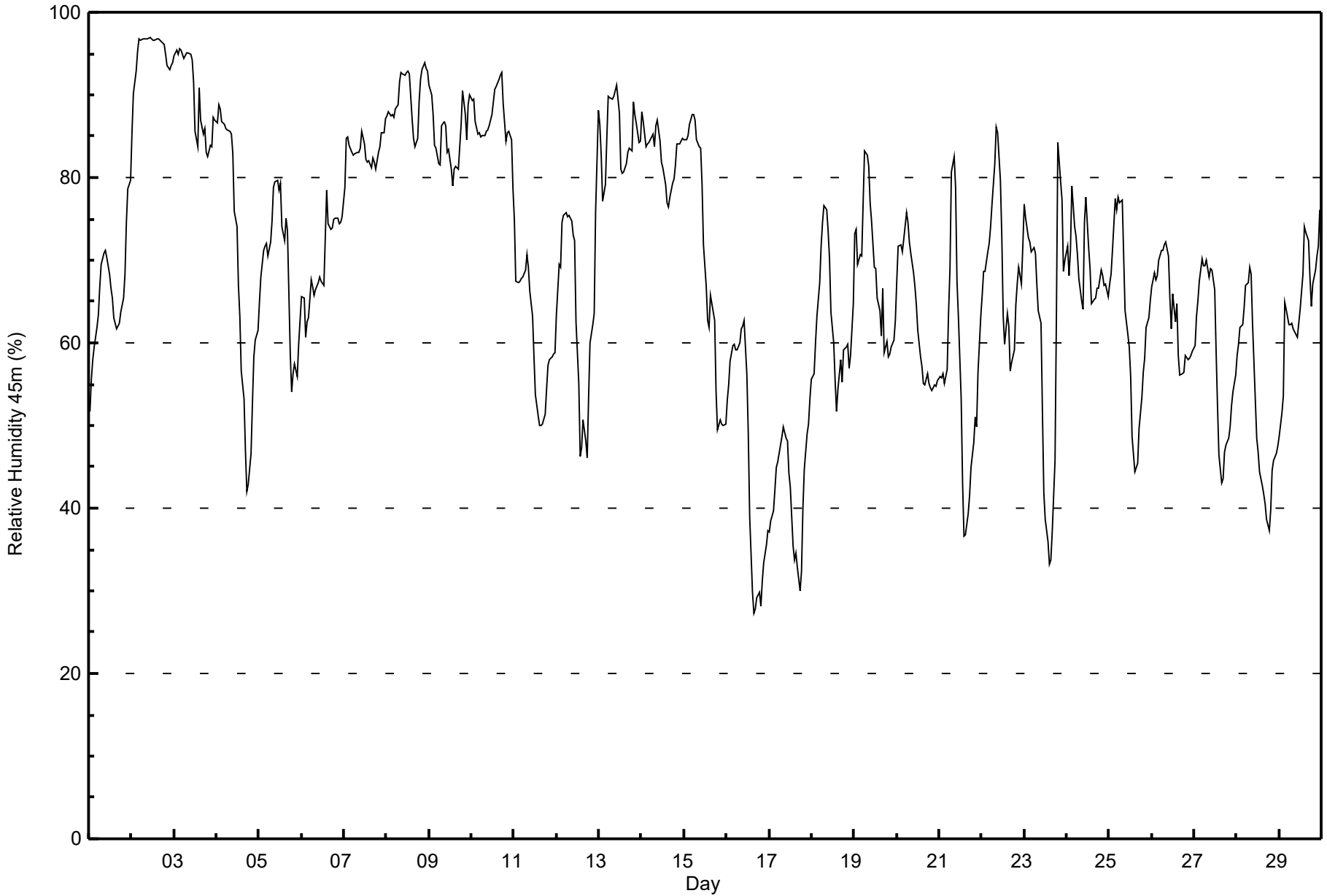


Maximum Value: 97 % on Feb 2 11:00														Maximum Daily Average: 95.1 % on Feb 2														Hours in Service: 696											
Minimum Value: 27 % on Feb 16 16:00														Minimum Daily Average: 42.2 % on Feb 17														Hours of Data: 696											
Maximum Diurnal Average: 76.8 % at hour 8														Minimum Diurnal Average: 61.6 % at hour 18														Hours of Missing Data: 0											
Monthly Average: 69.3 %														Percentiles: P ₁ = 31 P ₁₀ = 48 Q ₁ = 59 Median = 69 Q ₃ = 83 P ₉₀ = 89 P ₉₉ = 97														Hours of Calibration: 0											
																												Percent Operational Time: 100.0											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24															
1-Feb	52	56	58	60	62	63	67	69	71	71	70	68	67	65	63	62	62	62	64	65	68	75	79	80	65.8	80													
2-Feb	85	90	93	95	97	97	97	97	97	97	97	97	97	97	97	97	97	97	96	95	94	93	93	94	95.1	97													
3-Feb	95	95	95	96	95	94	95	95	95	94	91	86	84	91	87	85	86	83	83	84	84	87	87	90.1	96														
4-Feb	87	89	88	87	86	86	86	86	85	83	76	74	67	63	57	53	47	42	43	47	53	58	60	62	69.3	89													
5-Feb	65	68	71	72	72	70	72	75	79	79	80	79	79	74	72	75	74	59	54	56	57	56	60	63	69.2	80													
6-Feb	66	65	61	62	63	68	67	66	66	67	68	67	67	73	79	74	74	74	75	75	75	74	75	75	69.9	79													
7-Feb	79	85	85	84	83	83	83	83	83	84	86	84	82	82	82	81	82	82	81	83	84	85	85	87	83.2	87													
8-Feb	87	88	88	88	87	88	89	92	93	93	92	93	93	93	87	85	84	85	89	92	93	94	93	93	89.9	94													
9-Feb	91	90	88	84	84	82	82	86	87	86	83	83	81	79	81	81	81	84	87	90	88	85	89	90	85.0	91													
10-Feb	89	89	87	85	85	85	85	85	86	86	86	88	89	91	91	92	92	93	89	84	85	86	85	79	87.2	93													
11-Feb	75	67	67	67	68	68	69	71	69	66	63	58	54	51	50	50	50	51	54	57	58	58	59	59	60.9	75													
12-Feb	63	69	69	75	75	76	75	75	75	73	72	63	55	46	47	51	48	46	53	60	62	64	76	88	64.9	88													
13-Feb	86	83	77	79	85	90	90	90	90	91	88	81	81	81	82	83	84	83	89	88	87	84	84	84	85.2	91													
14-Feb	88	87	84	84	84	85	85	84	86	87	84	82	81	79	77	76	78	79	80	82	84	84	84	85	82.9	88													
15-Feb	85	85	85	86	88	88	87	85	84	84	79	72	67	63	62	66	64	63	54	49	51	50	50	50	70.6	88													
16-Feb	53	55	58	60	60	59	59	60	62	62	63	56	49	39	30	27	28	29	30	28	31	33	36	37	46.0	63													
17-Feb	37	38	40	42	45	46	48	49	50	49	48	44	42	35	34	35	33	30	32	40	45	49	50	53	42.2	53													
18-Feb	56	56	60	63	67	72	75	77	76	73	70	64	60	55	52	54	58	55	59	59	60	57	58	65	62.6	77													
19-Feb	73	74	70	71	71	77	83	83	81	77	75	69	69	65	64	61	67	59	60	58	59	60	60	63	68.6	83													
20-Feb	67	72	72	71	73	76	74	72	71	69	67	65	62	58	57	55	55	56	55	55	54	55	55	56	63.3	76													
21-Feb	56	56	56	55	57	64	69	81	82	79	67	63	53	43	37	37	39	41	45	48	51	50	56	63	56.2	82													
22-Feb	66	69	69	71	72	74	77	82	86	86	80	73	63	60	63	62	57	58	59	65	67	69	67	72	69.3	86													
23-Feb	77	75	73	72	71	72	71	67	64	62	52	42	39	36	33	34	37	46	63	84	80	77	69	70	61.1	84													
24-Feb	72	68	71	79	74	73	71	68	65	64	75	78	72	69	65	65	65	67	67	69	68	67	67	66	69.3	79													
25-Feb	67	68	71	77	76	78	77	77	71	64	61	59	56	49	44	45	45	50	53	57	58	62	63	65	62.3	78													
26-Feb	67	69	68	68	70	71	71	72	72	70	65	62	66	63	65	59	56	56	56	59	58	58	58	59	64.1	72													
27-Feb	60	63	65	67	70	69	69	70	68	69	69	66	59	52	46	43	44	47	48	48	50	52	54	56	58.6	70													
28-Feb	58	60	62	62	64	67	67	69	68	62	53	48	47	44	43	42	41	39	37	40	45	46	47	48	52.4	69													
29-Feb	49	51	54	65	64	62	62	62	62	61	61	62	64	68	74	73	72	68	64	67	69	70	72	76	64.8	76													
														70.7	71.8	71.8	73.4	74.1	75.2	75.9	76.8	76.7	75.4	73.4	70.3	67.1	64.0	62.8	62.2	62.0	61.6	62.6	65.0	66.1	66.8	68.0	69.7	Diurnal Average	
														95	95	95	96	97	97	97	97	97	97	97	97	97	97	97	97	97	97	96	95	94	94	93	94	Diurnal Maximum	



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity 45m (RH45m) - %
Mannix - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity 45m (RH45m) - %
Mannix - February 2024

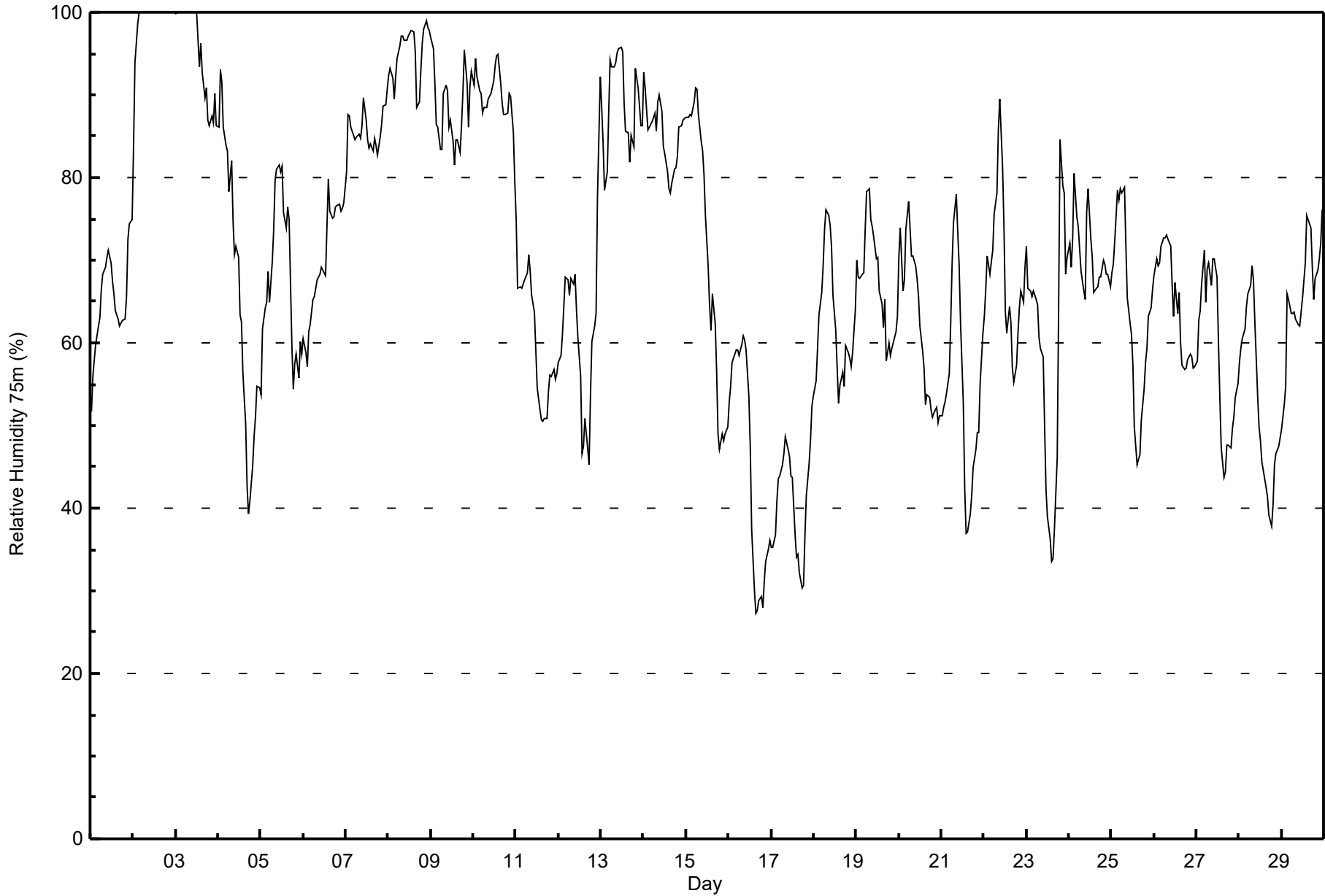
Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	32	4.60	4.60
40 - 60	162	23.28	27.87
60 - 80	291	41.81	69.68
80 - 100	211	30.32	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Maximum Value: 100 % on Feb 2 04:00																			Maximum Daily Average: 99.0 % on Feb 2						Hours in Service: 696	
Minimum Value: 27 % on Feb 16 16:00																			Minimum Daily Average: 40.8 % on Feb 17						Hours of Data: 696	
Maximum Diurnal Average: 76.7 % at hour 8																			Minimum Diurnal Average: 61.8 % at hour 18						Hours of Missing Data: 0	
Monthly Average: 69.8 %																			Percentiles: P ₁ = 31 P ₁₀ = 47 Q ₁ = 58 Median = 68 Q ₃ = 85 P ₉₀ = 93 P ₉₉ = 100						Hours of Calibration: 0	
																									Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	52	56	58	60	62	63	66	68	69	70	71	70	67	66	64	63	62	62	63	63	66	73	74	75	65.1	75
2-Feb	84	94	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99.0	100
3-Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	93	96	93	90	91	87	86	87	87	90	86	95.3	100
4-Feb	86	93	91	86	84	83	78	82	75	71	72	70	63	63	57	50	43	39	41	45	49	51	55	55	65.9	93
5-Feb	54	62	64	65	69	65	70	74	80	81	81	81	81	76	74	76	75	59	54	57	59	56	60	59	68.0	81
6-Feb	60	59	57	61	62	65	66	67	68	68	69	69	68	74	80	76	75	75	76	77	77	76	76	77	69.9	80
7-Feb	81	88	87	86	85	85	85	85	85	86	90	87	84	84	84	83	85	84	83	85	86	89	89	91	85.6	91
8-Feb	92	93	92	90	92	94	96	97	97	97	97	97	97	98	98	95	88	89	93	96	98	99	98	98	95.1	99
9-Feb	97	96	91	86	86	83	83	90	91	91	86	87	84	82	85	85	83	86	90	95	91	86	91	93	88.3	97
10-Feb	91	94	92	91	90	88	88	88	89	90	90	92	93	95	95	91	89	88	88	88	90	90	85	80	89.8	95
11-Feb	75	67	67	67	67	68	69	71	69	66	64	59	55	52	51	51	51	51	54	56	56	57	56	56	60.4	75
12-Feb	58	58	61	64	68	68	66	68	67	68	64	61	56	47	47	51	47	45	54	60	62	64	78	92	61.4	92
13-Feb	89	84	78	81	88	94	93	93	94	95	96	96	95	89	86	85	82	85	84	93	92	91	86	86	89.0	96
14-Feb	93	91	86	86	86	87	88	86	89	90	88	84	83	81	79	78	79	81	81	83	86	86	87	87	85.2	93
15-Feb	87	87	88	88	89	91	91	88	84	83	80	75	69	64	62	66	62	57	49	47	49	48	49	50	71.0	91
16-Feb	53	55	58	59	59	59	58	60	61	60	59	54	48	38	30	27	28	29	29	28	31	33	35	36	45.3	61
17-Feb	35	35	37	41	44	44	45	47	49	47	46	44	44	37	34	34	32	30	31	37	41	45	48	52	40.8	52
18-Feb	54	55	59	63	66	69	74	76	75	74	72	66	62	57	53	55	57	55	60	59	58	57	59	64	62.4	76
19-Feb	70	68	68	68	69	74	78	79	75	74	73	70	70	66	65	62	65	58	60	59	59	60	61	63	67.3	79
20-Feb	70	74	66	68	74	77	74	71	70	69	68	66	62	59	57	53	54	53	52	51	51	52	50	51	62.2	77
21-Feb	51	52	53	54	56	62	69	75	78	74	70	62	53	42	37	37	39	42	45	47	49	49	55	61	54.7	78
22-Feb	63	66	70	68	70	71	76	78	86	89	81	74	64	61	64	62	57	55	57	61	64	66	65	69	68.4	89
23-Feb	72	67	66	66	66	65	65	61	59	58	50	42	39	36	34	34	37	46	64	84	79	78	68	70	58.6	84
24-Feb	72	69	73	81	75	74	71	69	66	65	76	79	73	70	66	67	67	68	68	70	69	68	68	67	70.4	81
25-Feb	68	70	72	79	77	79	78	79	72	65	62	61	57	50	45	46	46	51	54	58	59	63	64	66	63.5	79
26-Feb	68	70	69	70	72	73	73	73	73	72	67	63	67	64	66	60	57	57	57	58	59	58	57	57	64.9	73
27-Feb	58	63	64	67	71	65	69	70	67	70	70	68	60	54	47	44	44	48	48	47	50	51	53	55	58.4	71
28-Feb	58	59	61	62	64	66	67	69	68	63	54	50	48	46	44	43	41	39	38	41	45	47	47	48	52.7	69
29-Feb	49	53	55	66	65	64	64	64	63	62	62	64	65	70	75	75	74	69	65	68	69	70	72	76	65.8	76
	70.3	71.6	71.8	73.1	74.4	75.0	75.9	76.7	76.5	75.9	74.4	72.0	69.3	65.9	64.6	63.5	62.4	61.8	62.9	65.5	66.6	67.3	68.2	69.7	Diurnal Average	
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	Diurnal Maximum	





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Relative Humidity 75m (RH75m) - %
Mannix - February 2024**

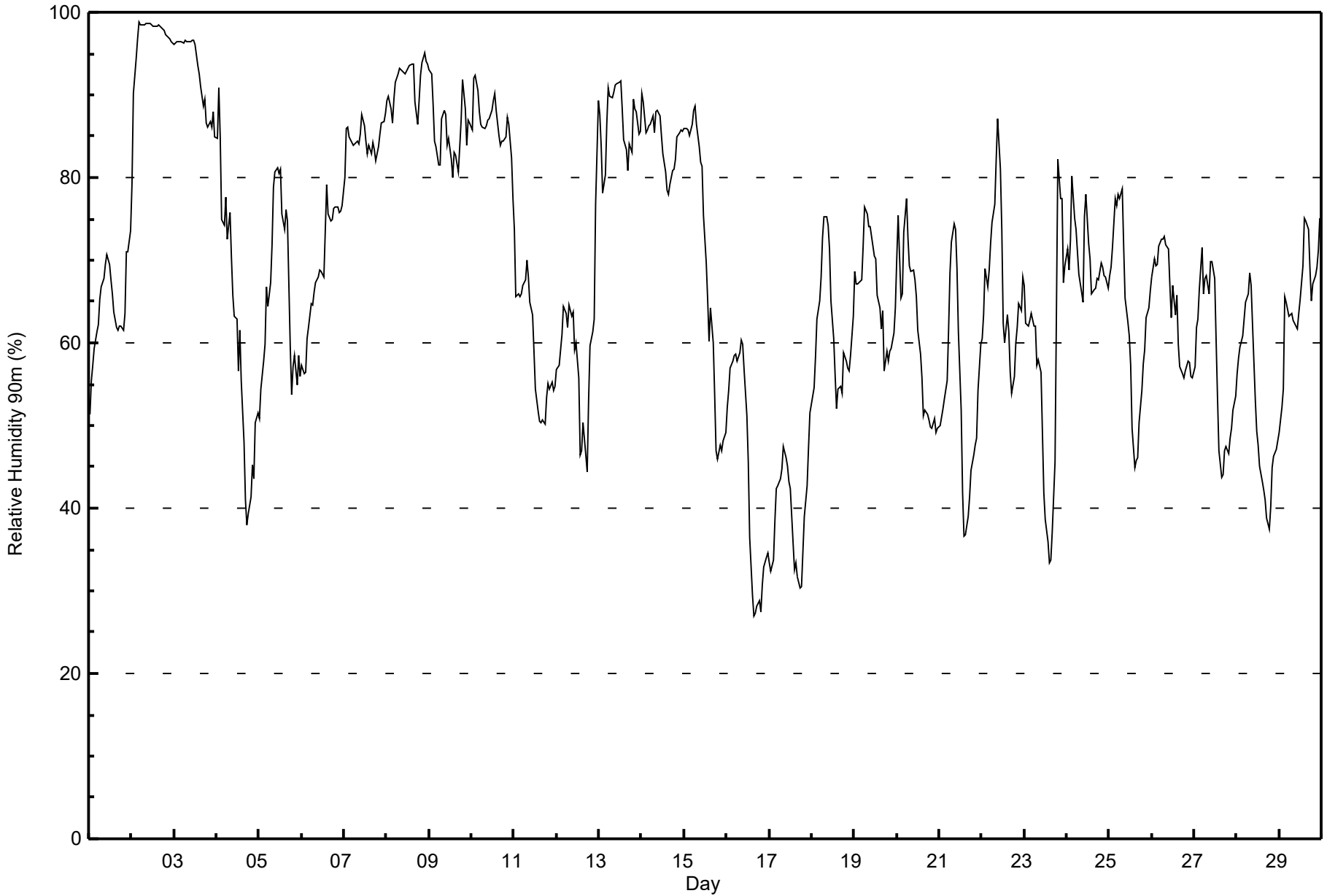
Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	32	4.60	4.60
40 - 60	172	24.71	29.31
60 - 80	277	39.80	69.11
80 - 100	184	26.44	95.55

Total Number of Valid Hours: 696

Total Number of Hours: 696



Maximum Value: 99 % on Feb 2 05:00 Maximum Daily Average: 96.7 % on Feb 2																		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0								
Minimum Value: 27 % on Feb 16 16:00 Minimum Daily Average: 39.4 % on Feb 17 Maximum Diurnal Average: 74.9 % at hour 8 Minimum Diurnal Average: 60.8 % at hour 18 Monthly Average: 68.4 % Percentiles: P ₁ = 31 P ₁₀ = 46 Q ₁ = 57 Median = 68 Q ₃ = 84 P ₉₀ = 90 P ₉₉ = 98																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	51	55	57	59	61	62	65	67	68	69	71	70	68	66	64	62	62	62	62	62	64	71	71	74	64.3	74
2-Feb	79	90	94	97	99	99	98	99	99	99	99	99	98	98	98	98	98	98	98	97	97	97	96	96	96.7	99
3-Feb	96	96	96	96	96	96	97	96	96	96	97	97	96	94	93	91	89	90	87	86	87	86	88	85	92.8	97
4-Feb	85	91	85	75	74	78	72	76	70	66	63	63	57	61	55	48	41	38	39	41	45	44	50	52	61.2	91
5-Feb	51	54	58	60	67	64	67	72	79	81	81	81	81	76	74	76	75	60	54	57	58	55	59	56	66.4	81
6-Feb	57	56	56	60	62	65	65	66	67	68	69	69	68	73	79	76	75	75	76	76	76	76	76	77	69.3	79
7-Feb	80	86	86	85	84	84	84	84	84	85	88	86	84	83	84	83	84	83	82	84	85	87	87	88	84.6	88
8-Feb	89	90	88	87	90	91	93	93	93	93	93	93	93	94	94	94	89	86	89	92	94	95	94	94	91.7	95
9-Feb	93	93	89	84	84	82	82	87	88	88	84	85	82	80	83	83	81	84	87	92	88	84	87	87	85.6	93
10-Feb	86	92	92	90	88	87	86	86	86	87	87	88	89	90	88	85	84	84	84	85	87	87	82	77	86.7	92
11-Feb	74	66	66	66	66	67	68	70	68	65	63	59	54	52	50	50	51	50	53	55	54	55	54	55	59.6	74
12-Feb	57	57	59	61	64	64	62	65	63	64	59	60	56	46	47	50	46	44	53	60	61	63	77	89	59.5	89
13-Feb	88	84	78	80	87	91	90	90	90	91	91	92	92	88	85	83	81	84	83	89	88	88	85	86	86.8	92
14-Feb	90	89	85	86	86	86	87	85	88	88	87	85	83	81	79	78	79	81	81	82	85	85	86	86	84.6	90
15-Feb	86	86	86	85	87	88	89	86	84	82	81	76	70	65	60	64	60	54	47	46	48	47	48	49	69.7	89
16-Feb	52	54	57	58	58	59	58	59	60	60	57	51	46	36	30	27	27	28	29	27	31	33	34	35	44.4	60
17-Feb	33	32	34	39	42	43	44	45	47	46	45	43	42	36	33	33	32	30	31	35	39	43	47	52	39.4	52
18-Feb	52	55	58	63	65	68	73	75	75	74	71	65	60	56	52	54	55	54	59	58	57	57	58	63	61.6	75
19-Feb	69	67	67	67	68	72	76	76	74	74	73	70	70	66	64	62	64	57	59	58	59	59	61	64	66.5	76
20-Feb	70	75	65	66	73	77	73	69	69	69	68	66	61	59	56	51	52	51	51	50	50	51	49	50	61.3	77
21-Feb	50	51	52	53	56	61	68	72	74	74	69	61	52	42	37	37	39	41	45	46	48	48	54	60	53.8	74
22-Feb	61	63	69	67	69	72	75	77	82	87	81	74	62	60	63	61	56	54	56	60	62	65	64	68	67.0	87
23-Feb	67	62	62	63	64	62	62	57	58	56	49	42	39	36	33	34	37	46	64	82	77	77	67	69	56.9	82
24-Feb	71	69	72	80	75	74	71	68	66	65	75	78	72	70	66	66	67	68	68	70	69	68	68	67	70.1	80
25-Feb	68	69	72	77	77	78	78	79	72	65	62	61	57	50	45	46	46	50	54	57	59	63	64	66	63.2	79
26-Feb	68	70	69	70	72	73	73	73	72	71	67	63	67	63	66	60	57	56	56	57	58	58	56	56	64.5	73
27-Feb	57	62	63	66	71	66	68	68	66	70	70	68	60	53	47	44	44	47	47	47	48	50	52	54	57.8	71
28-Feb	56	58	59	61	63	65	66	68	67	62	53	49	48	45	43	42	41	39	37	40	45	46	47	48	52.1	68
29-Feb	49	52	54	66	65	63	63	63	63	62	62	63	65	69	75	75	74	69	65	67	68	69	71	75	65.4	75
68.5 69.9 70.1 71.3 72.8 73.6 74.2 74.9 74.8 74.4 72.9 70.9 68.1 65.1 63.5 62.5 61.6 60.8 61.9 64.1 65.1 65.7 66.7 68.1																		Diurnal Average								
96 96 96 97 99 99 98 99 99 99 99 99 98 98 98 98 98 98 98 97 97 97 96 96																		Diurnal Maximum								





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity 90m (RH90m) - %
Mannix - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	35	5.03	5.03
40 - 60	186	26.72	31.75
60 - 80	265	38.07	69.83
80 - 100	210	30.17	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



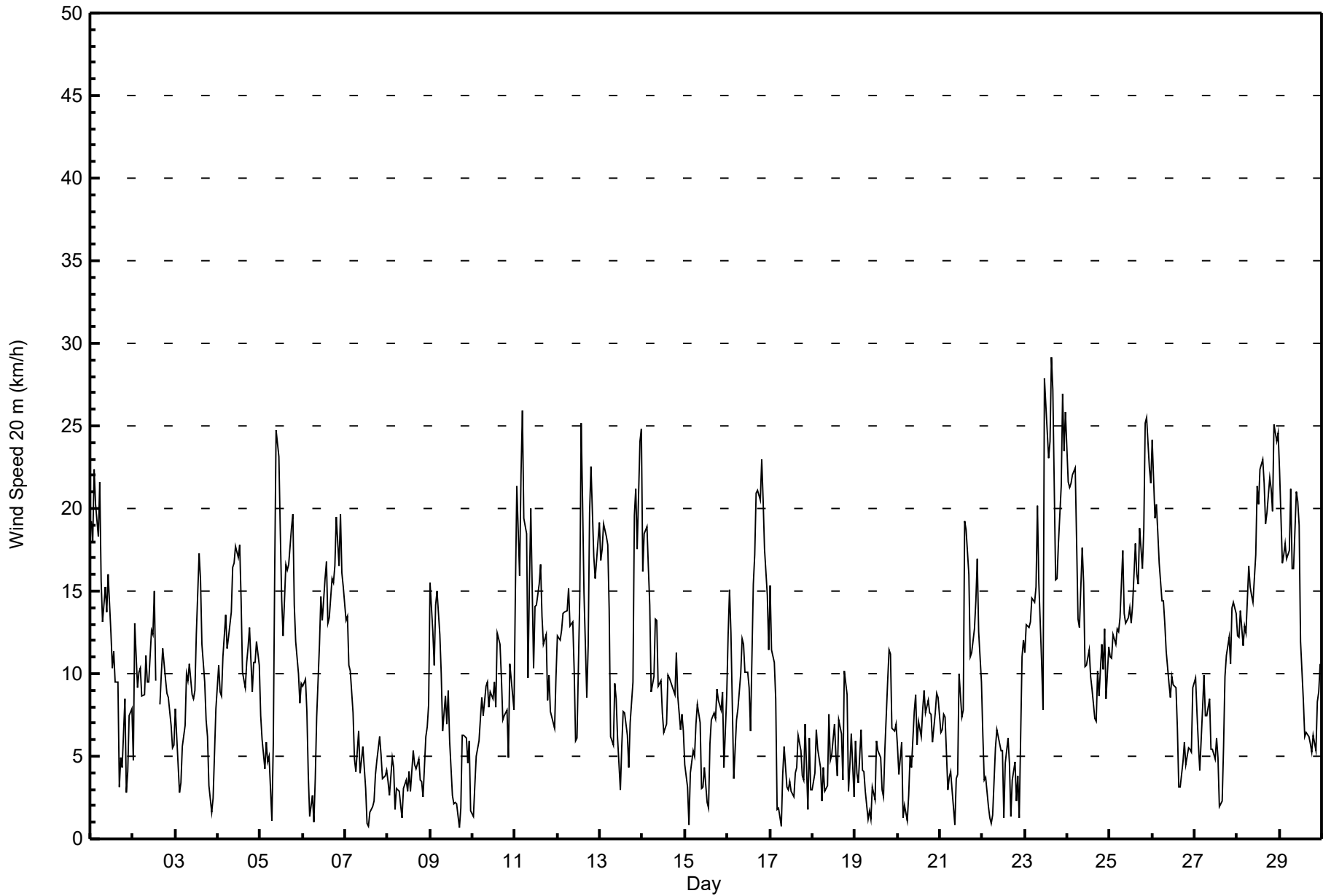
Maximum Speed: 29 km/h on Feb 23 16:00 Minimum Speed Value: 1 km/h on Feb 9 17:00 Maximum Diurnal Speed Average: 1.9 km/h at hour 11 Monthly Average Velocity: 0.2 km/h 233.8 deg		Maximum Daily Speed Average: 18.0 km/h on Feb 28 Minimum Daily Speed Average: 0.6 km/h on Feb 22 Minimum Diurnal Speed Average: 0.2 km/h at hour 5 Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 5 Median = 9 Q ₃ = 14 P ₉₀ = 19 P ₉₉ = 26		Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	SE19	SE18	SE22	SE20	SE18	SE22	SE16	SSE13	SSE15	SSE14	SSE16	SSE12	SSE10	SSE11	SE9	SE10	ESE3	ENE5	ENE4	NE8	N3	NNW4	N7	N8	SE9.5	SE22	
2-Feb	N5	N13	N9	N10	NNW10	NNW9	N9	NNW11	N9	N10	NNE13	NNW12	NNW15	NNW10	UO	NW8	NNW10	NNW12	NNW10	NNW9	N9	NNW7	NNW5	NW6	NNW9.3	NNW15	
3-Feb	NW8	NNW4	NE3	NNE3	N6	NNW7	N10	NNW10	NNW11	NNW9	NNW8	NNW9	NW12	NNW17	NNE16	N12	N10	NNE7	NNE6	NNE3	ENE2	SSE2	S5	S8	N6.0	NNW17	
4-Feb	SSE11	S9	SSE9	SSE11	SSE14	SSE12	SSE14	SSE16	SSE17	SSE18	SSE17	SSE18	SSE14	S10	S9	SSE11	SSE12	SSE13	SSE9	SSE11	SSE11	SSE12	S11	SSE12.3	SSE18		
5-Feb	SSE7	S6	SSW4	S6	S5	S5	WSW1	N6	N16	N25	NNE23	N19	N15	N12	N17	N16	N17	N19	N20	N14	NNW12	N10	N8	N9	N9.2	N25	
6-Feb	N9	NNE10	NE8	NNE4	NNW1	SW3	S1	E4	ESE7	SE12	SE15	SE13	SE16	SE17	SE13	SE13	SE16	SE15	SE17	SE20	SE17	SE20	SE16	SE15	SE9.6	SE20	
7-Feb	SE13	SE13	SSE11	SSE10	SSE8	SSE5	SSE4	SSE7	S4	S5	SSE6	SSE3	WSW1	S1	SSW2	WNW2	NW2	WNW4	NW5	NNW6	N5	N4	NW4	WNW4	SSE2.4	SE13	
8-Feb	WNW3	NW3	WNW5	WNW4	N2	N3	NNW3	NW2	WNW1	WSW3	W4	S3	SSW4	SSW3	SE5	SSE4	SSW4	SSE5	SW4	WSW3	NW3	N6	NNW7	NW8	W1.6	NW8	
9-Feb	NW15	WNW13	WNW11	W14	W15	W12	WNW10	NNW7	NNE9	NNE7	NNE9	NE6	E3	ESE2	SE2	ESE2	ENE1	NE2	N6	N6	N6	NW5	WNW6	NW2	NW4.5	NW15	
10-Feb	WNW1	WSW3	SW5	SSE6	SE7	SSE9	SSE7	SE9	SE10	SSE8	SSE9	SSE8	SSE10	SSE8	SSE12	SSE12	SSE10	SSE7	S7	S8	S5	SSE11	SSE9	SW8	SSE7.3	SSE12	
11-Feb	WSW15	W21	WSW16	W22	W26	W19	W18	W10	W15	W20	WSW10	W14	W14	W15	W17	WSW13	WSW12	WSW12	SW8	SW10	SW8	SSW7	SSW7	SSE10	WSW13.2	W26	
12-Feb	SSE12	SSE12	SSE13	SSE14	SSE14	SSE14	SSE15	SSE13	SSE13	SSE10	SSE6	SW6	WSW15	W25	WNW20	NNW15	NW9	WNW12	WNW20	WNW23	WNW17	NW16	NNW17	NNW19	W3.9	W25	
13-Feb	NNW17	N18	NNW19	N18	NNE18	NNE14	N6	WNW6	W9	W8	NW6	ENE3	SSE6	SSE8	SSE8	SE6	S4	W7	WSW10	NNE20	NNE21	N18	NNE24	N25	N7.8	N25	
14-Feb	N16	N18	NNE19	NNE16	NNE14	N9	NNE10	NNE13	NNE13	NNE9	NNE10	NNE8	NW6	NNW7	NNE10	NE10	NE9	NE9	NNE9	NNE11	NE9	NNE7	NNE8	NNE7	NNE10.2	NNE19	
15-Feb	NNE4	NNE3	SSW1	SSW4	SW5	WSW5	W7	WSW8	W7	SW3	ESE3	SSE4	SE2	ENE2	E6	SE7	SE8	SSE7	S9	SSW8	SSW8	SW9	SSW4	SW9	SSW3.1	S9	
16-Feb	WSW12	WSW15	WSW12	SSW4	S5	SSE7	SSE8	SSE10	SSE12	SSE12	SSE10	SSE10	SSE9	SSW7	SW15	SW17	WSW21	SW21	SW20	W23	W21	W18	W15	W11	SW9.9	W23	
17-Feb	W15	W11	W11	WSW8	W2	WSW2	SSE1	WSW4	SSE6	SSE3	E3	E3	ESE3	SE3	ESE4	SE4	SSE6	SE5	NE4	NNW4	NNE7	E2	SSW6	SE3	SW1.4	W15	
18-Feb	NNE3	ENE4	ESE7	SE5	SSW4	ESE2	SE4	SE3	NE3	SE8	ENE5	ENE5	ESE7	ESE5	E4	NW7	NW6	NNW4	N10	N9	NE3	SE4	SSE6	NW3	ENE2.1	N10	
19-Feb	N6	N4	N3	NNE7	W4	W4	WSW3	NW1	NE2	NE1	W3	WNW2	NW6	W5	WNW5	W3	NW3	NW5	N10	N11	NNE11	N7	NW7	NNW7	NNW3.8	N11	
20-Feb	NNW6	NW4	WNW6	NW1	NW2	N1	S3	SW5	S4	S8	SSE9	SSE6	SSE7	S6	SSE8	SSE9	SSE8	SSE8	SSE8	SSE8	SSE8	S6	SSE8	SSE9	SSE9	SSE4.4	SSE9
21-Feb	SSE6	SSE7	S8	SSE7	SE3	N4	NNW4	NNW3	SE1	SSE4	SE4	SSE10	SSE7	WSW8	WSW19	WSW19	WSW16	WSW11	WSW11	WSW13	WSW14	W17	WNW13	NW9	WSW5.8	WSW19	
22-Feb	NW6	NNW4	W4	WSW2	SW1	WNW1	NE1	WNW6	NW7	WNW6	W5	W5	ESE1	E5	ESE6	SE5	SSE1	NE4	N5	N2	NW4	S1	SSE11	SSE12	W0.6	SSE12	
23-Feb	SSE11	SE13	SE13	SE13	SE15	SSE14	SSE15	SSE20	SSE15	SSE11	WSW8	W28	W26	W23	WSW24	WSW29	W27	WNW16	W16	WSW18	WSW21	W27	W23	W26	SW11.8	WSW29	
24-Feb	W22	N21	N22	N22	N22	N18	N13	N13	NNW18	N16	N10	NNW10	NNW11	NNW10	NNW9	NNE7	N7	NNE10	NE9	NE12	NE10	NE13	NNE8	NNE12	N11.7	N22	
25-Feb	NNE11	NNE11	NNE12	NNE12	NNE13	NNE13	NNE13	NNE17	NNE14	NNE13	NNE13	NNE14	NNE13	N14	NNE18	NNE16	NNE15	NNE19	NNE16	NNE19	NNE25	N26	NNE22	N21	NNE15.8	N26	
26-Feb	N24	N19	N20	N19	N17	N14	N14	NNW13	NNW11	NNW9	NNW9	NW10	NW9	WNW9	N7	NNE3	SE3	SSE5	SSW6	S4	SSE6	S5	WSW5	W9	NNW7.1	N24	
27-Feb	WNW10	WNW8	WNW6	W4	W8	WSW10	WSW7	WSW7	WSW8	WSW5	WSW5	W5	WNW6	WNW5	WNW2	S2	SSE6	SE10	SSE11	SSE12	SSE11	SSE14	SSE14	SSE14	SSW4.3	SSE14	
28-Feb	SE12	SSE12	SSE14	SSE12	SSE13	SSE12	SSE17	SSE15	SE15	SE14	SE17	SE21	SE20	SE22	SE23	SE22	SE19	SE20	SE22	SE21	SE20	SE25	SE24	SE25	SE18.0	SE25	
29-Feb	SE22	ESE17	ESE17	ESE18	ESE17	ESE17	ESE21	ESE16	ESE16	SE21	SE20	SE19	SSE12	SSE8	SSE6	SE6	S6	SSW6	WSW5	WNW6	WNW5	W8	W9	W11	SE9.3	SE22	
WWN1.3 N1.7 NNE0.8 ENE0.7 SE0.2 ESE0.5 SE1.0 SE0.7 ESE0.9 SE1.6 ESE1.9 SSE1.1 SSW1.4 WSW1.4 SW1.0 SSW1.2 SW1.5 SSW0.5 W0.9 NW1.4 NNW1.7 NNW1.0 NNW0.7 NNW1.6																								Diurnal Average			
N24 W21 SE22 N22 W26 SE22 ESE21 SSE20 NNW18 N25 NNE23 W28 W26 W25 WSW24 WSW29 W27 SW21 SE22 W23 NNE25 W27 NNE24 W26																								Diurnal Maximum			
UO - Unstable Operation All monthly, daily, and diurnal averages have been calculated using vector methods																											



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed 20 m (WS20m) - km/h
Mannix - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 9 km/h on Feb 23 11:00 Minimum Value: 1 km/h on Feb 9 17:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 2 Median = 2 Q ₃ = 4 P ₉₀ = 5 P ₉₉ = 7																	Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	5	5	5	5	5	5	4	2	2	2	3	2	2	2	2	2	2	1	1	1	2	1	2	3	5
2-Feb	3	2	3	3	3	4	4	5	5	6	6	7	7	5	UO	4	4	4	3	3	3	2	2	2	7
3-Feb	2	2	1	1	2	3	3	3	3	3	3	2	6	5	4	4	3	2	2	1	2	1	2	6	
4-Feb	1	2	2	2	3	3	3	3	3	3	3	4	4	4	3	2	2	1	3	2	2	2	2	4	
5-Feb	2	2	1	2	2	1	1	3	6	5	5	4	5	4	5	4	5	7	7	4	3	3	2	7	
6-Feb	3	2	2	2	1	1	1	2	2	4	4	4	4	4	4	4	4	4	5	5	4	5	4	5	
7-Feb	4	4	2	3	2	2	1	2	1	2	2	1	1	1	1	1	1	1	2	2	2	1	1	4	
8-Feb	1	1	1	2	1	1	1	1	1	2	1	2	2	2	2	2	2	1	1	1	1	2	2	2	
9-Feb	4	3	2	2	2	2	2	3	2	2	2	2	1	1	1	1	1	1	2	2	1	1	1	4	
10-Feb	1	2	1	3	3	3	3	2	2	2	2	3	3	3	3	2	2	2	2	2	1	2	2	4	
11-Feb	3	3	3	3	4	3	4	7	5	5	3	3	3	4	4	5	2	3	1	1	1	1	1	7	
12-Feb	1	1	2	2	3	3	3	3	3	4	2	3	6	5	5	5	3	3	5	5	4	5	5	6	
13-Feb	5	6	5	5	4	4	3	2	1	2	3	1	2	2	2	2	2	3	1	5	6	6	7	7	
14-Feb	5	5	6	5	4	4	3	4	4	3	2	2	2	2	3	2	3	2	2	2	3	2	2	6	
15-Feb	1	1	1	1	1	1	1	1	1	3	1	1	2	1	2	2	2	1	2	1	1	2	1	3	
16-Feb	3	2	3	2	1	2	1	1	1	2	2	2	2	3	6	5	5	4	4	5	4	2	3	6	
17-Feb	2	1	1	2	2	2	1	2	2	2	1	1	1	1	1	2	2	2	1	1	3	2	2	3	
18-Feb	2	2	3	3	2	2	2	2	2	5	3	2	2	2	2	2	1	2	2	1	3	3	3	5	
19-Feb	2	2	1	3	3	1	2	1	1	1	1	2	2	2	2	1	1	2	3	3	3	2	2	3	
20-Feb	1	2	2	2	1	1	2	2	2	3	3	2	2	2	2	3	2	2	1	2	1	1	2	3	
21-Feb	2	2	2	2	2	2	2	1	1	1	2	3	2	6	5	5	7	2	2	2	2	2	3	7	
22-Feb	1	1	1	3	3	1	2	2	2	3	2	2	2	2	2	2	1	1	2	1	2	2	2	3	
23-Feb	2	2	2	3	3	3	3	3	4	2	9	6	5	5	6	8	7	5	7	4	6	5	5	9	
24-Feb	4	7	6	6	6	5	4	4	5	4	4	3	4	3	3	3	3	3	2	3	3	3	3	7	
25-Feb	3	3	3	4	3	3	3	4	4	3	4	4	3	4	4	4	4	5	5	5	6	6	6	6	
26-Feb	6	6	6	6	5	4	5	4	3	3	3	3	3	3	2	3	2	2	1	1	1	1	1	6	
27-Feb	2	2	2	2	1	2	2	2	2	2	2	2	3	2	2	3	2	2	2	2	2	2	3	3	
28-Feb	3	2	3	2	2	2	3	3	4	5	5	6	6	6	6	7	6	5	7	6	6	6	7	7	
29-Feb	7	6	6	6	5	6	6	6	6	6	6	5	4	3	2	2	2	2	2	2	1	1	1	7	
																	Diurnal Maximum								
UO - Unstable Operation																									





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed 20 m (WS20m) - km/h
Mannix - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	181	26.04	26.04
6 - 11	262	37.70	63.74
12 - 19	190	27.34	91.08
20 - 28	61	8.78	99.86
29 - 38	1	0.14	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Wind Speed 20 m (WS20m) - km/h
Mannix - February 2024

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	12	8	8	9	7	9	16	12	16	11	7	14	12	14	15	11	181
6 - 11	30	26	8	0	1	4	10	71	14	8	8	12	13	13	16	28	262
12 - 19	24	27	2	0	0	7	30	47	0	0	2	15	15	5	3	13	190
20 - 28	11	6	0	0	0	1	19	1	0	0	2	3	15	3	0	0	61
29 - 38	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	77	67	18	9	8	21	75	131	30	19	19	45	55	35	34	52	695

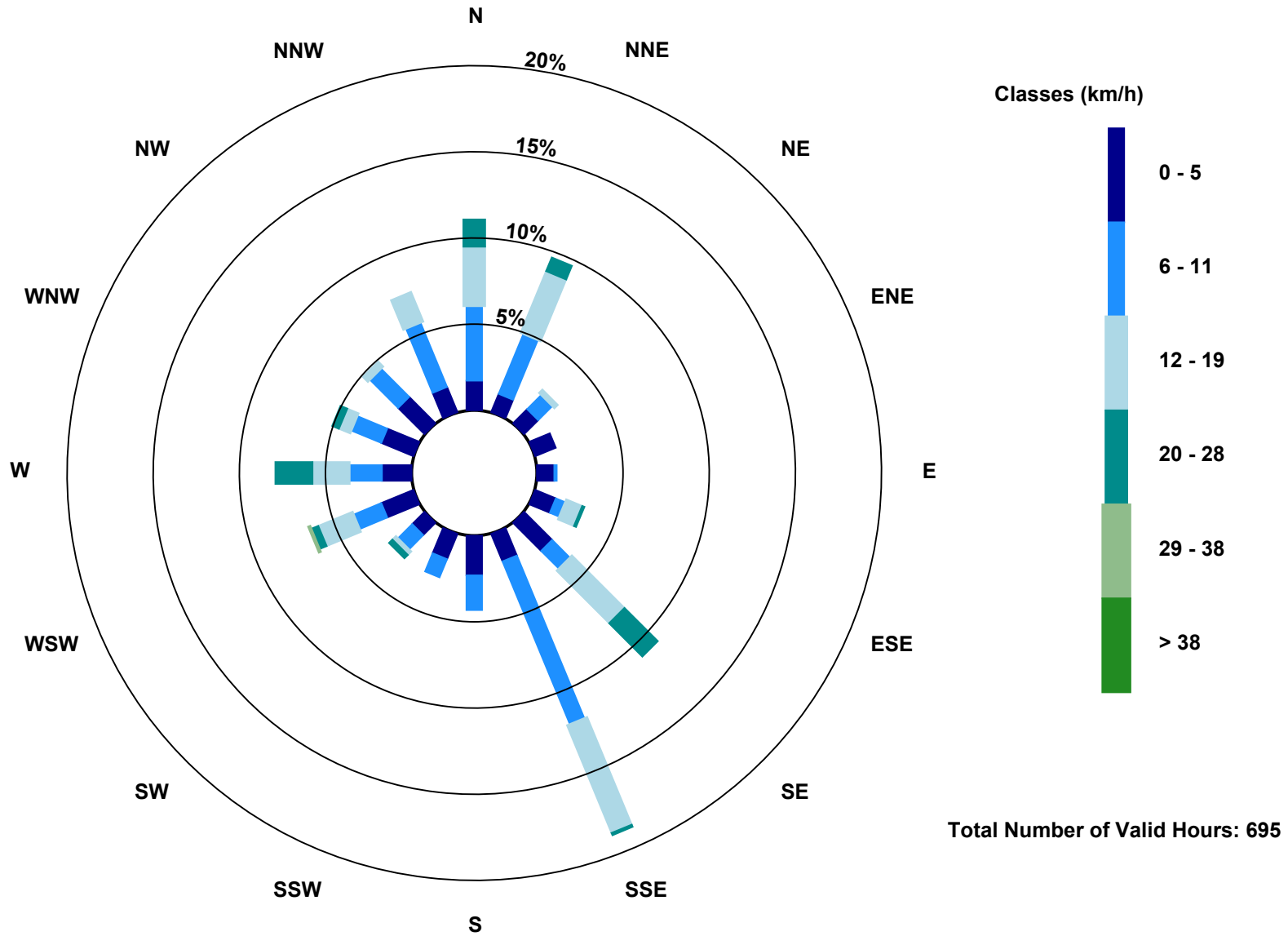
Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed 20 m (WS20m) - km/h
Mannix





Maximum Speed: 36 km/h on Feb 23 16:00	Maximum Daily Speed Average: 23.0 km/h on Feb 28	Hours in Service: 696
Minimum Speed Value: 1 km/h on Feb 7 14:00	Minimum Daily Speed Average: 0.9 km/h on Feb 22	Hours of Data: 656
Maximum Diurnal Speed Average: 3.0 km/h at hour 10	Minimum Diurnal Speed Average: 0.3 km/h at hour 6	Hours of Missing Data: 40
Monthly Average Velocity: 0.6 km/h 184.7 deg	Percentiles: P ₁ = 1 P ₁₀ = 4 Q ₁ = 7 Median = 13 Q ₃ = 19 P ₉₀ = 24 P ₉₉ = 32	Percent Operational Time: 94.3

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	SE27	SE23	SE28	SE26	SE24	SE29	SE22	SSE20	SSE22	SSE19	SSE21	SSE14	SE11	SE14	SE12	SE12	ESE5	ENE7	E5	NE10	ENE3	N6	NNE11	N13	SE13.1	SE29	
2-Feb	N10	N19	N15	N16	NNW14	NNW12	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	----	N19	
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	NNE19	N16	N14	NNE10	NNE8	NE4	ENE3	SE6	SSE9	SSE15	----	NNE19
4-Feb	SSE18	SSE17	UO	UO	UO	UO	SSE21	SSE22	UO	SSE25	SSE24	SSE22	SSE22	SSE17	S14	SSE14	SSE16	SSE17	SSE19	SSE14	SSE16	SSE17	SE18	SSE15	SSE18.2	SSE25	
5-Feb	SE11	SSE10	SSE7	S10	S11	S11	SSW3	NNW9	N23	N32	N29	N24	N19	N16	N21	N22	N26	N27	N20	NNW17	N15	N12	N14	N12.0	N32		
6-Feb	N13	NNE11	NE12	NE6	ESE1	SSW1	SE2	E5	E9	SE14	SE18	SE16	SE18	SE20	SE16	SE17	SE19	SE19	SE20	SE24	SE21	SE24	SE20	SE19	ESE12.0	SE24	
7-Feb	SE16	SE17	SE13	SE12	SE9	SSE6	SSE5	SSE8	S6	S6	SSE6	SSE3	WSW1	S1	SSW2	WNW2	NW3	WNW4	NW6	NNW8	N8	N5	NW5	NW5	SSE2.8	SE17	
8-Feb	NW4	NW4	WNW6	WNW6	NNW2	N3	NNW3	NW3	NW1	WSW3	WSW3	S4	SSW5	SSW4	SE6	SSE5	S7	SSE6	SSW6	SW6	WNW4	N9	NNW10	NW11	W1.9	NW11	
9-Feb	WNW20	WNW17	WNW14	W17	W18	W17	WNW13	NNW9	NNE11	NNE9	NNE11	NNE6	E2	ESE2	SE3	ESE2	ENE1	NE2	NNE7	N8	NNE7	NNE4	NNW4	NNE3	NW5.4	WNW20	
10-Feb	NE2	SE3	SSE6	SSE9	SSE11	UO	SE13	SE16	SE17	SE12	SE11	SE12	SE12	UO	SSE14	UO	SSE13	SSE12	S13	S15	SSW8	SSE13	S12	WSW13	SSE10.2	SE17	
11-Feb	WSW21	W26	WSW23	WSW29	WSW33	W25	W25	W15	W20	W25	WSW14	W17	W17	W19	W19	WSW18	WSW17	WSW21	WSW13	WSW15	WSW12	SW11	WSW12	SSW7	WSW18.5	WSW33	
12-Feb	SSE18	SSE19	SSE20	SSE21	SSE21	SSE21	SSE23	SSE20	SSE20	SSE16	SSE10	SW11	WSW17	W30	WNW27	NNW20	NW14	WNW19	WNW27	WNW30	WNW24	NW23	NNW22	NNW26	WSW5.5	WNW30	
13-Feb	NNW23	NNW24	NNW26	N24	N23	N18	N9	WNW7	W11	WNW10	NW8	ENE3	SSE6	SSE9	SSE9	SE7	SSW7	WSW11	WSW14	N26	N28	N23	N32	NNW33	NNW10.9	NNW33	
14-Feb	N22	N24	N25	NNE21	NNE19	N12	NNE12	NNE17	NNE17	NNE12	NNE11	N9	NW8	NNW8	NNE11	NE11	NE12	NE11	NNE12	NNE15	NNE12	NNE8	NNE10	NNE8	NNE13.2	N25	
15-Feb	NNE5	NNE4	SSE1	SSW5	SW6	SW5	W8	WSW12	WSW13	SW5	SE3	SSE4	S3	NE2	E5	SE8	SE10	SE13	S17	SW16	SW13	SW17	SW9	WSW16	SSW5.2	S17	
16-Feb	WSW19	WSW21	WSW20	WSW10	SW5	SSW6	SSW10	SSW11	S14	S14	SSE13	SSE12	SSE11	SSW9	SW20	SW23	SW28	SW30	SW29	WSW30	W26	W22	W22	W19	SW15.0	SW30	
17-Feb	W22	W18	W18	W17	W10	W9	W5	WSW10	SSW7	SW6	ENE1	ENE3	E3	ESE3	E4	SE4	SSE8	SE8	E5	N8	NNE9	ESE7	SSE12	SE7	WSW3.1	W22	
18-Feb	NE2	E7	ESE10	ESE8	SSE8	SE6	SE9	E4	ENE7	ESE10	ENE5	ENE6	E8	E6	E5	NW8	NW7	N4	N14	NNE11	NE5	ESE9	SE11	ESE1	E4.2	N14	
19-Feb	NNE7	NE8	ENE5	NE10	SE3	SW4	WNW5	NNW2	NE2	NE2	W2	WNW3	NW7	W6	WNW5	WNW3	NW3	NNW8	N14	N15	N15	N9	NNW9	NNW11	N4.6	N15	
20-Feb	N9	NNW5	NW8	NNW2	NNW3	NW1	S3	SSW6	SSE8	S10	SSE10	SSE6	SSE8	SSE8	SE9	SSE13	SSE12	SSE14	SSE14	SSE15	S13	SSE14	SSE15	SE15	SSE6.7	SSE15	
21-Feb	SSE13	SSE13	SSE15	S8	SW4	WNW3	NW7	NNW7	NE1	SSE4	SE5	SE13	SSE8	WSW13	WSW24	WSW24	WSW22	SW18	WSW18	SW21	WSW23	W22	WNW19	NW14	SW8.9	WSW24	
22-Feb	NNW10	NNW6	NW4	SSW1	SW2	WNW1	N2	NW8	NW10	WNW8	WNW6	W5	ENE1	E4	E6	SE5	SE2	ENE5	N5	NNE5	N4	ESE4	SE19	SE19	NE0.9	SE19	
23-Feb	SE18	SE21	SE21	SE22	SE25	SSE23	SSE24	SSE28	SSE25	SSE15	WSW13	W32	W31	WSW27	WSW30	WSW36	WSW34	WNW22	W21	WSW24	WSW28	W32	W28	WSW31	SW15.2	WSW36	
24-Feb	W27	N28	N29	NNW29	N29	N24	N18	NNW17	NNW23	NNW19	N13	NNW13	NNW14	NNW12	NNW11	NNE9	N9	NNE12	NE11	NE14	NE12	NE15	NNE10	NNE14	N15.0	NNW29	
25-Feb	NNE13	NNE13	N15	N15	NNE16	N16	N17	NNE21	N17	NNE15	NNE16	NNE17	NNE16	N17	N22	N19	NNE19	NNE24	NNE21	N23	N33	N33	NNE29	N29	NNE19.7	N33	
26-Feb	N32	N25	N27	N24	N22	N19	N19	NNW17	NNW15	NNW12	NNW10	NW12	NW11	WNW11	NNW8	N4	ESE3	SSE5	S7	SSE7	SSE7	S6	W9	W15	NNW9.6	N32	
27-Feb	WNW18	WNW13	WNW10	WNW5	W11	WSW14	WSW10	WSW10	WSW11	WSW6	WSW6	W6	W7	WNW6	W2	S4	SSE6	SE11	SE16	SE18	SSE16	SSE20	SSE21	SE20	SSW5.0	SSE21	
28-Feb	SE19	SE18	SSE22	SE20	SE19	SE17	SE23	SE23	SE21	SE19	SE22	SE25	SE24	SE25	SE28	SE24	SE23	SE24	SE28	SE25	SE24	SE30	SE28	ESE28	SE23.0	SE30	
29-Feb	ESE25	ESE19	ESE19	ESE20	ESE20	ESE20	ESE24	ESE19	ESE19	SE24	SE24	SE23	SE14	SE10	SSE8	SE8	SSE8	SSW8	SW8	W10	WNW10	W13	W14	W15	SE10.2	ESE25	
NW1.1 NNE1.9 NNE1.6 NE1.1 SE0.4 SSE0.3 SSE2.3 SSE1.8 SE1.5 SE3.0 SE2.9 SSE2.3 S2.3 SW2.3 SW1.3 SW1.3 SSW2.3 SSW1.4 SW1.0 NNW1.4 NW1.9 NNW0.0 NNW0.4 NW2.1																								Diurnal Average			
N32 N28 N29 NNW29 WSW33 SE29 W25 SSE28 SSE25 N32 N29 W32 W31 W30 WSW30 WSW36 WSW34 SW30 SW29 NNW30 N33 N33 N32 NNW33																								Diurnal Maximum			

UO - Unstable Operation

All monthly, daily, and diurnal averages have been calculated using vector methods

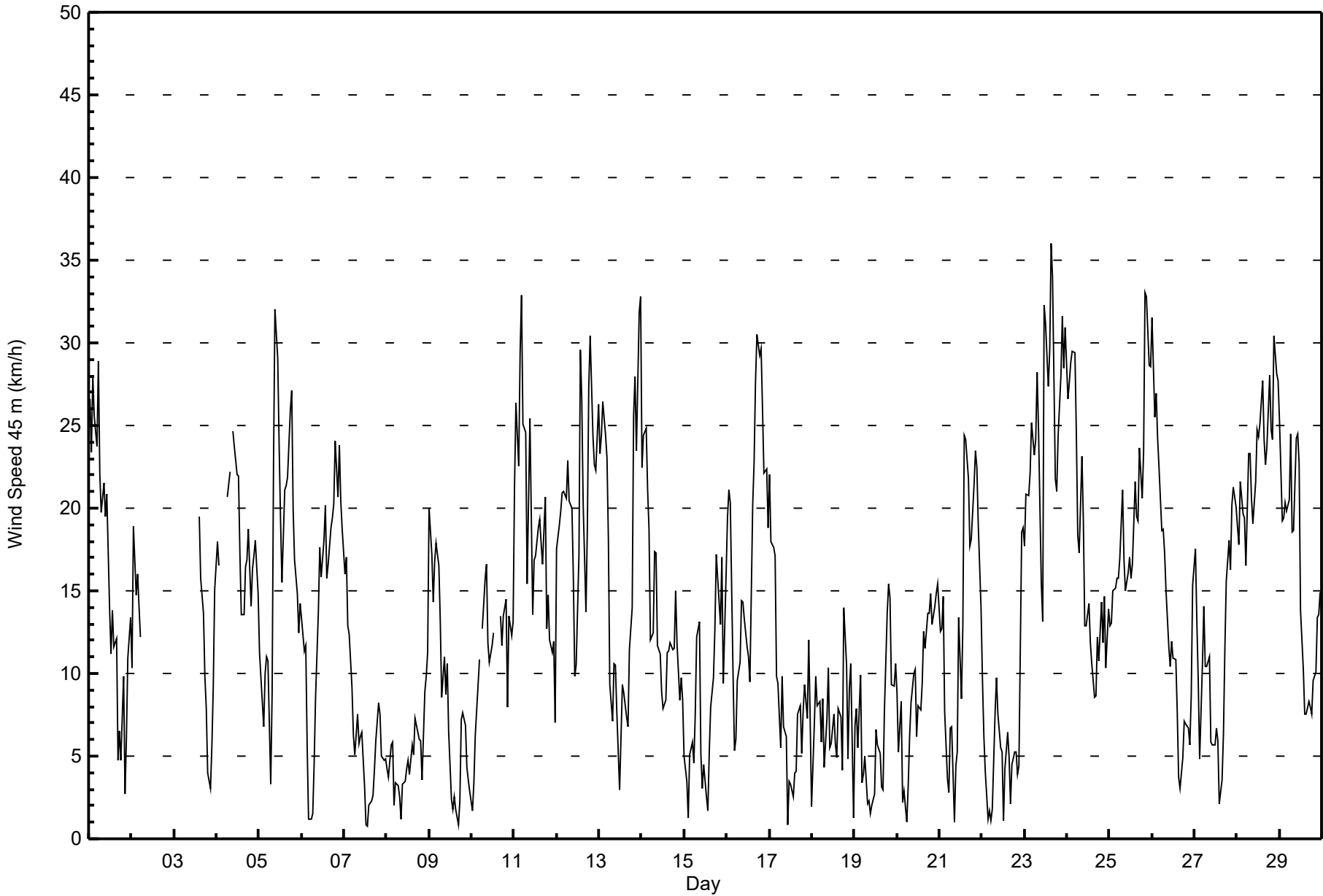


Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 10 km/h on Feb 23 11:00 Minimum Value: 0 km/h on Feb 26 21:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 2 Median = 2 Q ₃ = 4 P ₉₀ = 5 P ₉₉ = 7																		Hours in Service: 696 Hours of Data: 656 Hours of Missing Data: 40 Hours of Calibration: 0 Percent Operational Time: 94.3							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	6	5	5	5	5	5	5	2	2	2	2	2	2	2	2	2	3	2	1	2	2	2	1	3	6
2-Feb	5	2	3	4	3	4	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	5
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	4	4	2	2	2	2	1	2	2	1	4
4-Feb	1	2	UO	UO	UO	UO	2	3	UO	3	3	4	4	4	3	2	2	2	3	2	2	2	1	1	4
5-Feb	2	2	2	3	2	1	3	4	6	5	5	3	6	4	6	5	5	7	8	3	3	2	2	3	8
6-Feb	2	2	2	2	1	1	1	3	2	4	3	3	5	3	4	4	4	4	4	5	4	4	4	4	5
7-Feb	4	4	2	3	2	2	1	2	1	2	2	1	1	1	1	1	1	1	1	1	2	1	1	1	4
8-Feb	1	1	1	2	1	1	1	1	1	3	1	3	2	2	2	1	2	1	2	1	1	3	2	2	3
9-Feb	3	3	2	2	2	2	2	3	2	2	2	2	1	1	1	1	1	1	2	2	1	1	1	1	3
10-Feb	1	2	1	1	1	UO	2	2	3	2	2	3	2	UO	2	UO	2	2	2	2	1	4	4	5	5
11-Feb	3	3	3	3	4	4	4	8	6	5	3	3	3	4	4	5	3	3	2	1	2	1	2	1	8
12-Feb	2	1	2	2	3	3	2	3	3	4	3	3	7	4	5	5	3	2	4	5	3	5	4	5	7
13-Feb	5	6	4	5	4	4	3	2	1	2	3	1	2	2	2	2	2	2	1	5	6	6	7	7	7
14-Feb	4	6	6	6	5	5	4	4	4	3	2	2	2	2	3	2	3	2	2	2	3	2	2	2	6
15-Feb	1	1	1	1	1	1	1	1	2	6	1	1	2	2	2	2	2	3	1	1	1	2	3	3	6
16-Feb	3	2	2	5	1	1	2	1	1	1	2	2	2	3	6	4	5	4	4	5	4	2	2	2	6
17-Feb	2	1	1	2	2	4	2	4	2	2	1	2	1	1	1	2	1	1	2	2	1	2	1	3	4
18-Feb	2	2	3	3	2	3	3	2	2	5	3	2	2	2	3	1	1	3	2	2	3	4	4	1	5
19-Feb	4	2	1	2	3	2	2	2	1	1	1	2	2	1	1	1	1	2	3	2	2	2	2	1	4
20-Feb	2	3	1	2	1	1	2	2	2	2	2	2	2	2	2	3	3	2	2	2	1	1	2	2	3
21-Feb	3	2	2	3	1	3	1	1	1	2	2	3	3	7	5	5	6	2	1	2	2	2	4	3	7
22-Feb	2	2	1	2	2	1	1	3	3	3	2	2	1	2	2	1	1	1	1	2	1	4	2	2	4
23-Feb	2	2	1	2	2	2	3	3	4	4	10	6	5	5	6	8	7	5	7	4	5	5	4	4	10
24-Feb	5	8	5	6	6	5	4	4	4	5	4	3	3	3	3	3	2	2	2	2	3	3	2	2	8
25-Feb	3	2	3	3	3	3	3	4	3	3	4	3	3	4	3	3	3	4	5	5	5	5	5	6	6
26-Feb	5	6	6	6	5	5	5	4	3	3	3	3	2	3	2	3	2	2	1	1	0	1	2	2	6
27-Feb	2	3	2	2	1	2	3	2	3	1	2	2	3	3	2	3	2	2	3	1	2	2	2	3	3
28-Feb	3	2	3	2	2	2	3	3	4	5	4	6	5	6	7	8	6	6	7	7	6	6	7	7	8
29-Feb	7	6	6	6	5	6	5	5	6	7	6	5	4	3	2	2	3	1	2	2	1	1	1	2	7
Diurnal Maximum																									
UO - Unstable Operation																									



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed 45 m (WS45m) - km/h
Mannix - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed 45 m (WS45m) - km/h
Mannix - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	117	17.84	17.84
6 - 11	179	27.29	45.12
12 - 19	197	30.03	75.15
20 - 28	135	20.58	95.73
29 - 38	28	4.27	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 656

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Wind Speed 45 m (WS45m) - km/h
Mannix - February 2024

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	7	5	9	10	10	8	9	7	5	7	6	3	4	10	9	8	117
6 - 11	11	20	7	3	5	5	18	28	10	11	7	8	10	10	12	14	179
12 - 19	29	19	5	0	0	4	35	38	8	0	4	18	16	7	3	11	197
20 - 28	22	4	0	0	0	6	36	23	0	0	4	12	13	5	1	9	135
29 - 38	8	1	0	0	0	0	2	0	0	0	2	7	4	1	0	3	28
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	77	49	21	13	15	23	100	96	23	18	23	48	47	33	25	45	656

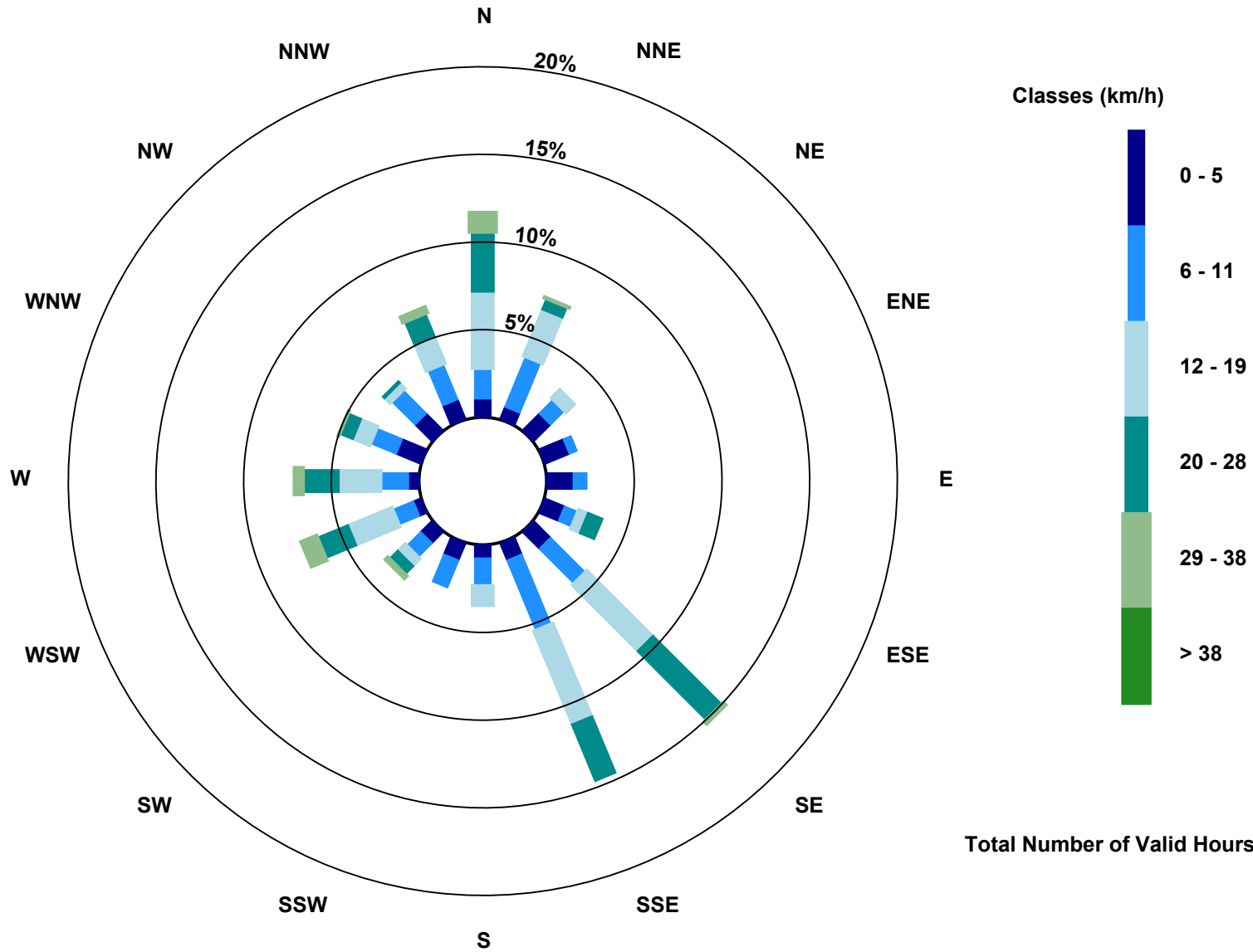
Total Number of Valid Hours: 656

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed 45 m (WS45m) - km/h
Mannix





Maximum Speed: 40 km/h on Feb 23 16:00		Maximum Daily Speed Average: 23.6 km/h on Feb 28		Hours in Service:	696																						
Minimum Speed Value: 1 km/h on Feb 19 11:00		Minimum Daily Speed Average: 1.1 km/h on Feb 22		Hours of Data:	638																						
Maximum Diurnal Speed Average: 3.7 km/h at hour 24		Minimum Diurnal Speed Average: 0.4 km/h at hour 5		Hours of Missing Data:	58																						
Monthly Average Velocity: 0.9 km/h 235.8 deg		Percentiles: P ₁ = 1 P ₁₀ = 4 Q ₁ = 7 Median = 14 Q ₃ = 22 P ₉₀ = 28 P ₉₉ = 36		Percent Operational Time:	91.7																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	SE30	SE24	SE24	SE24	SE26	SE31	SE27	SSE26	SSE29	SSE26	SSE24	S14	SSE12	SSE14	SE12	SE11	SE7	E5	E5	E11	SE5	N2	NNE8	NNE11	SE15.1	SE31	
2-Feb	N16	NNE23	N20	N21	N16	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	----	NNE23	
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	----	----	
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	SSE15	SSE18	SSE20	SSE21	SE22	SE18	SE23	SE19	SE17	----	SE23	
5-Feb	SE13	SE10	SE5	SE6	SSE7	SSE10	SSW4	NNW11	N28	N36	N31	N26	N22	N17	N22	N23	N24	N30	N32	SE18	N23	N20	N18	N15	NNE18	N14.7	N36
6-Feb	NNE14	NE13	ENE14	ENE7	SE4	SSE2	ESE2	E5	ESE7	SE10	SE15	SE15	SE14	SE16	SE16	SE18	SE21	SE21	SE20	SE24	SE21	SE26	SE21	SE21	SE12.6	SE26	
7-Feb	SE18	SE19	SE14	SE15	SE11	SSE7	SSE6	SSE8	S7	S7	SSE6	S3	WSW1	S1	SSW2	WNW2	NW2	WNW4	NW6	NNW9	N9	NNE6	NNW5	NNW5	SE3.3	SE19	
8-Feb	NNW4	NW4	NW6	NW6	NW2	N3	NNW3	NW3	NNE1	SW3	SW3	S5	SSW5	SSW4	SE5	SSE5	S9	S8	SSW8	SSW8	W4	N10	N12	NW13	W1.8	NW13	
9-Feb	NW22	NW19	NNW17	W19	W20	W20	NNW16	NNW9	NNE12	NNE10	NNE11	NE7	E2	SE2	SSE3	SE1	W2	NNE2	NNE7	NNE8	NNE7	NNE5	N3	ENE2	NW6.0	NW22	
10-Feb	ESE1	SE4	SE8	SSE13	SSE19	UO	SE19	SE23	SE24	SE21	SE19	SE19	SE21	SSE17	SE23	SSE20	SSE17	SSE16	S19	SSW17	SW7	S10	SW13	WSW19	SSE14.2	SE24	
11-Feb	WSW26	W32	WSW28	W35	W38	W31	W30	W21	W24	W30	W17	W19	W18	W20	W20	WSW20	WSW19	WSW24	WSW17	WSW20	WSW18	WSW16	WSW17	WSW11	W22.8	W38	
12-Feb	S13	S13	S15	SSE20	SSE23	SSE19	S25	S26	SSE26	S21	S15	WSW15	WSW19	W31	WNW30	NNW24	NW17	WNW24	WNW32	WNW35	WNW28	NNW28	NNW26	N30	W8.6	WNW35	
13-Feb	N27	N29	N31	N28	N26	N21	N12	NW8	NNW11	NW14	NNW9	ENE2	SSE6	S10	S9	SSE8	SW11	W14	W18	NNE29	N32	N27	N36	N37	N13.2	N37	
14-Feb	N26	N27	N28	NNE24	NNE21	N13	NNE14	NNE20	NNE20	NNE13	NNE12	NNE9	NW8	NNW9	NNE12	NE12	NE13	NE13	NNE14	NNE17	NE15	NNE10	NNE12	NNE9	NNE14.9	NNE28	
15-Feb	NE5	NE4	SE1	S5	S6	S6	SW4	WSW10	WSW14	WSW8	SSE3	SSE5	SSW3	NNW1	ESE3	SE6	SE10	S14	SW18	SW21	WSW20	WSW24	WSW16	WSW21	SW6.9	WSW24	
16-Feb	WSW24	WSW25	WSW25	WSW17	WSW10	SW6	SW11	SW13	SSW14	SSW15	S15	S13	S12	SW13	SW23	SW26	WSW32	SW36	SW34	WSW34	W30	W26	W28	W26	WSW19.1	SW36	
17-Feb	W29	W26	W25	W23	W17	W16	W13	WSW16	SW9	WSW10	WNW4	NNE3	ENE5	E3	E4	SE4	SE8	SE7	ESE6	N5	NE9	ESE9	SSE12	ESE3	WSW5.6	W29	
18-Feb	E3	ESE7	ESE9	ESE7	SE10	ESE7	SE10	E6	E8	ESE9	E6	ENE6	E7	E6	E5	NNW7	NW5	NE3	N14	NE10	ENE7	ESE10	SE11	ESE3	E5.3	N14	
19-Feb	NE6	ENE8	E6	E10	SE6	SSE6	SW4	SSW3	SE1	E1	W1	NW2	NW6	WNW5	NW5	WNW3	NW3	NNW8	N17	NNE18	NNE17	N11	N9	N12	NNE4.0	NNE18	
20-Feb	N11	N8	NNW11	NNW6	N4	NW2	SE4	S9	SSE13	S12	SSE11	SSE6	SSE9	SSE9	SSE11	SSE17	SSE16	SSE18	SSE20	SSE21	S20	S18	S12	SSE13	SSE8.3	SSE21	
21-Feb	S11	S10	S10	SW7	W11	W6	NNW7	NW9	NNW4	SSE3	SSE9	SSE14	S10	WSW18	WSW27	WSW27	WSW25	WSW22	WSW23	WSW28	WSW32	W28	W22	NW16	WSW12.3	WSW32	
22-Feb	N12	N9	N2	SW4	SW5	W3	NW4	NW8	NNW13	NW7	WNW5	WNW5	ENE1	E3	E5	ESE4	ESE3	E5	ENE3	ENE3	E4	SE8	SE21	SE24	E1.1	SSE24	
23-Feb	SSE26	SSE30	SSE28	SSE30	SSE32	SSE27	SSE29	S34	S26	S13	WSW20	W35	W34	WSW30	WSW33	WSW40	WSW38	WNW25	W24	WSW29	WSW33	W35	W32	W35	SW19.5	WSW40	
24-Feb	W30	N30	N33	N33	N33	N27	N22	N20	NNW26	N21	N14	NNW13	NNW15	NNW12	NNW11	NNE9	N9	NNE12	NE12	NE16	NE13	NE16	NNE12	NNE15	N16.4	N33	
25-Feb	NNE14	NNE14	NNE16	NNE17	NNE17	NNE17	NNE19	NNE23	NNE18	NNE15	NNE17	NNE18	NNE16	N17	N23	NNE21	NNE21	NNE26	NNE23	NNE26	NNE37	N36	NNE32	N32	NNE21.4	NNE37	
26-Feb	N36	N28	N31	N27	N25	N21	N21	NNW20	NNW17	NNW12	NNW11	NW12	NW11	WNW11	NNW8	N3	ESE3	SSE4	S7	SSE7	SSE5	SW4	NNW12	NNW20	NNW11.3	N36	
27-Feb	WNW22	NW16	NW13	NW6	NNW11	W15	W14	WSW15	WSW15	WSW7	WSW6	W6	W7	W6	W2	S4	SSE6	SE12	SE18	SE22	SSE21	SSE26	SSE27	SE27	SSW5.4	SSE27	
28-Feb	SE26	SE25	SSE29	SE25	SE20	SE18	SE27	SE29	SE22	SE22	SE24	SE23	SE21	SE22	SE27	SE20	SE20	SE21	SE30	SE25	SE23	SE28	SE23	SE21	SE23.6	SE30	
29-Feb	SE19	ESE15	ESE15	ESE15	ESE15	ESE15	ESE17	ESE15	ESE15	SE20	SE21	SE20	SE14	SSE10	SSE8	SSE8	S9	SSW9	WSW9	NNW12	NNW13	W17	W17	W19	SE7.4	SE21	
NW2.2 N2.7 N2.1 NNE0.9 SW0.4 SW0.9 S2.1 S2.0 SSE1.2 SSE1.7 SE2.0 S1.5 SSW1.9 SW2.9 SSW2.5 SSW2.6 SSW3.4 SSW2.4 SW2.5 W1.7 NNW2.3 NNW1.6 NW2.0 NW3.7																								Diurnal Average			
N36 W32 N33 W35 W38 SE31 W30 S34 SSE29 N36 N31 W35 W34 W31 WSW33 WSW40 WSW38 SW36 SW34 NNW35 NNE37 N36 N36 N37																								Diurnal Maximum			
UO - Unstable Operation																											
All monthly, daily, and diurnal averages have been calculated using vector methods																											



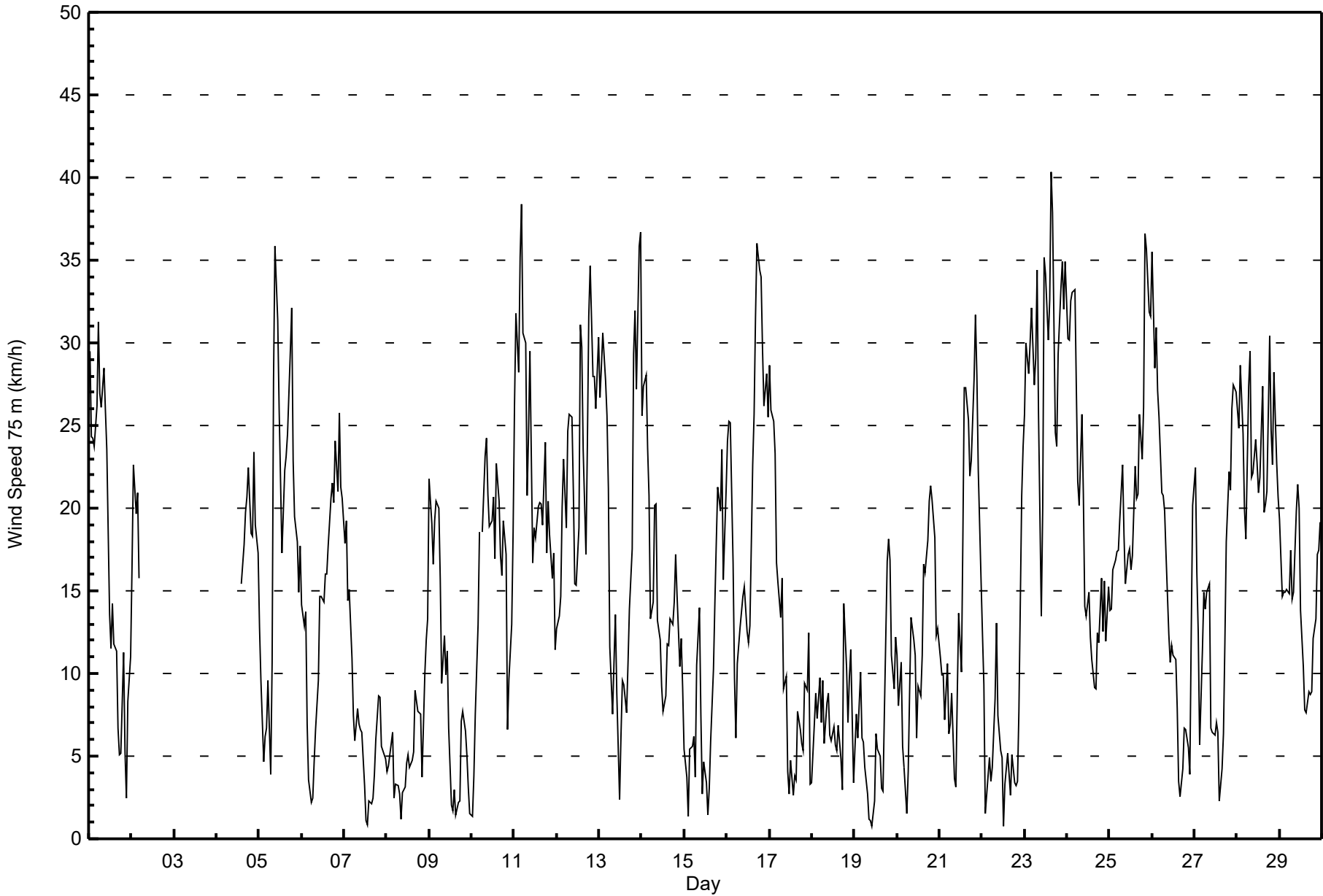
Wood Buffalo Environmental Association

Summary of Hour Standard Deviations

Wind Speed 75 m (WS75m) - km/h

Mannix - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 10 km/h on Feb 28 20:00 Minimum Value: 0 km/h on Feb 15 04:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 2 Median = 2 Q ₃ = 4 P ₉₀ = 5 P ₉₉ = 9																		Hours in Service: 696 Hours of Data: 638 Hours of Missing Data: 58 Hours of Calibration: 0 Percent Operational Time: 91.7							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	7	7	8	8	5	6	4	2	2	2	3	2	1	2	3	3	2	2	2	2	3	1	2	1	8
2-Feb	4	2	3	3	3	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	4
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	3
5-Feb	3	4	2	2	1	1	2	5	6	4	5	3	6	4	3	5	5	8	8	3	2	2	2	2	8
6-Feb	1	1	2	2	1	1	1	2	2	5	5	4	6	5	4	4	4	4	5	6	6	5	5	4	6
7-Feb	4	4	2	3	2	2	2	2	1	2	2	1	1	1	1	1	1	1	1	1	2	2	2	1	4
8-Feb	1	1	1	2	1	1	1	1	1	3	1	3	2	2	2	1	1	1	1	1	1	3	2	2	3
9-Feb	3	3	2	2	2	2	2	3	2	3	2	2	1	1	1	1	1	1	2	2	1	1	1	1	3
10-Feb	1	1	1	3	1	UO	1	2	1	2	2	3	3	3	2	2	2	1	2	3	2	4	3	6	6
11-Feb	3	3	3	3	4	4	4	9	6	6	3	3	3	4	4	4	3	2	2	2	2	1	2	3	9
12-Feb	2	2	3	2	2	1	3	2	1	4	3	2	7	4	6	5	3	3	4	4	3	5	4	5	7
13-Feb	5	5	4	5	3	3	4	2	1	3	4	1	2	1	2	2	2	2	2	5	6	6	6	6	6
14-Feb	4	6	5	6	4	5	4	4	4	3	3	2	2	2	3	2	2	2	2	1	2	2	2	2	6
15-Feb	1	1	1	0	1	1	1	3	3	6	1	1	2	2	1	2	2	1	2	1	1	3	4	4	6
16-Feb	3	2	2	5	2	1	3	1	1	1	2	1	2	3	6	4	5	3	4	5	4	3	2	2	6
17-Feb	2	2	2	2	2	3	3	4	2	2	3	1	2	1	1	2	1	2	2	3	1	3	4	2	4
18-Feb	1	3	3	3	4	4	4	3	2	4	3	3	2	2	3	1	2	3	3	2	3	5	4	1	5
19-Feb	3	3	2	2	3	2	1	2	1	1	1	1	1	1	2	1	1	2	4	2	3	3	2	2	4
20-Feb	1	2	2	2	1	1	3	2	2	2	2	2	3	2	2	3	2	2	2	1	1	2	2	1	3
21-Feb	2	3	3	3	3	4	2	2	2	2	3	2	2	5	5	5	6	2	1	3	2	3	4	3	6
22-Feb	1	1	2	4	3	1	1	3	3	3	1	2	1	2	2	2	1	1	1	2	2	4	2	1	4
23-Feb	2	1	1	2	1	4	3	2	4	5	9	6	5	5	6	7	6	5	7	4	4	5	4	4	9
24-Feb	5	8	5	5	6	5	3	4	4	5	4	3	2	3	3	3	2	2	2	3	3	3	2	8	8
25-Feb	3	2	3	3	3	3	2	3	3	3	3	3	3	4	3	3	3	4	5	5	5	4	5	6	6
26-Feb	5	7	6	6	5	5	5	4	3	3	3	3	2	3	2	3	2	2	1	1	1	1	3	3	7
27-Feb	2	2	2	2	2	2	3	3	4	2	2	2	3	3	2	3	3	3	3	1	2	2	2	2	4
28-Feb	2	2	3	2	4	4	5	3	8	5	5	8	7	8	8	9	8	8	7	10	8	9	9	9	10
29-Feb	8	5	6	5	5	5	5	6	7	9	8	8	5	3	2	2	3	2	2	1	2	1	1	2	9
Diurnal Maximum																									
UO - Unstable Operation																									





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed 75 m (WS75m) - km/h
Mannix - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	107	16.77	16.77
6 - 11	146	22.88	39.66
12 - 19	169	26.49	66.14
20 - 28	156	24.45	90.60
29 - 38	59	9.25	99.84
> 38	1	0.16	100.00

Total Number of Valid Hours: 638

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed 75 m (WS75m) - km/h
Mannix - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	6	5	3	6	13	8	10	9	5	6	7	1	5	7	10	6	107
6 - 11	8	12	4	5	7	9	15	21	16	3	6	8	5	4	11	12	146
12 - 19	14	27	9	1	0	8	24	17	14	3	4	15	14	6	7	6	169
20 - 28	26	13	0	0	0	0	45	21	4	0	3	18	15	5	1	5	156
29 - 38	18	3	0	0	0	0	4	5	1	0	2	8	15	3	0	0	59
> 38	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Totals	72	60	16	12	20	25	98	73	40	12	22	51	54	25	29	29	638

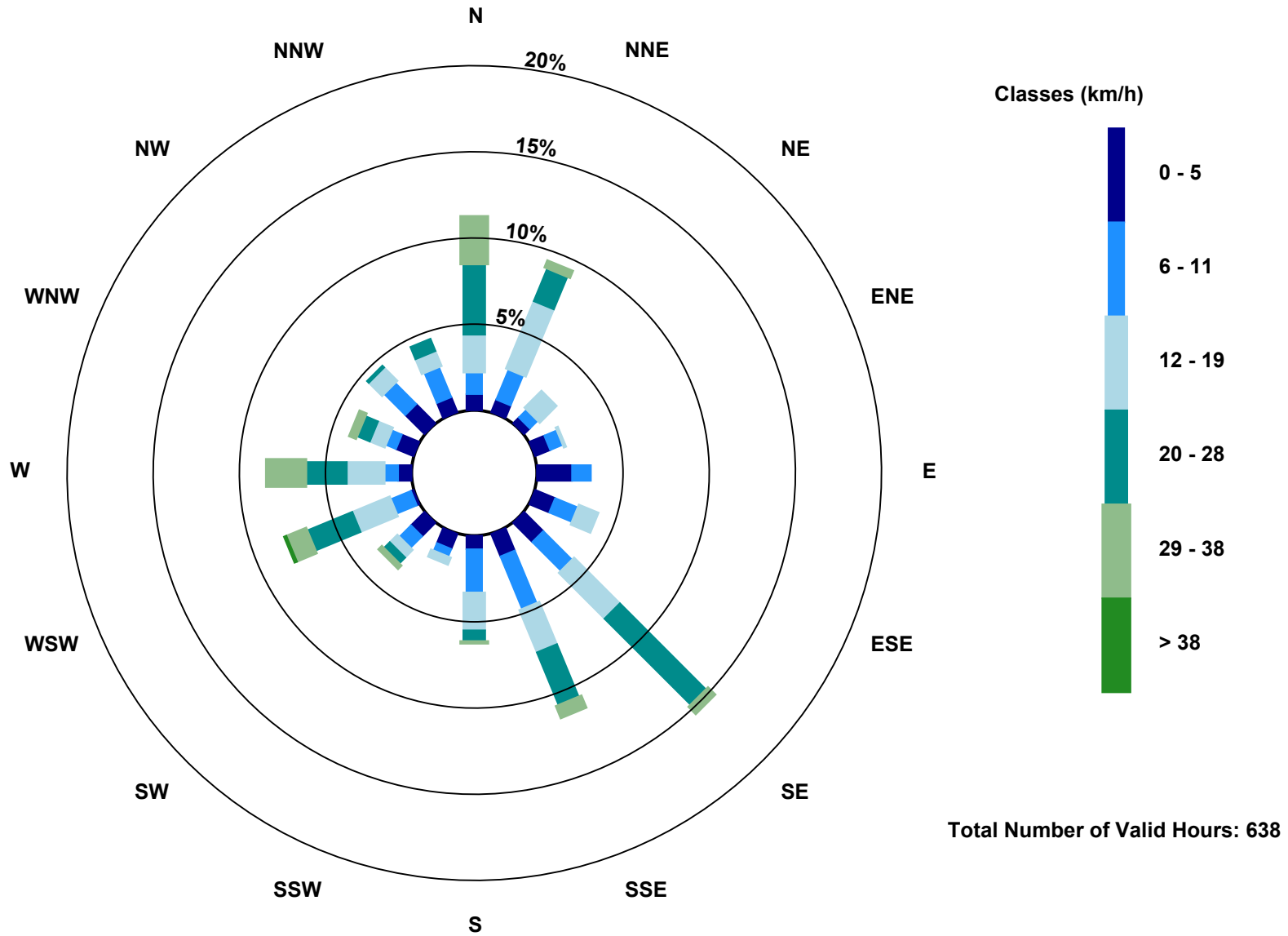
Total Number of Valid Hours: 638

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed 75 m (WS75m) - km/h
Mannix

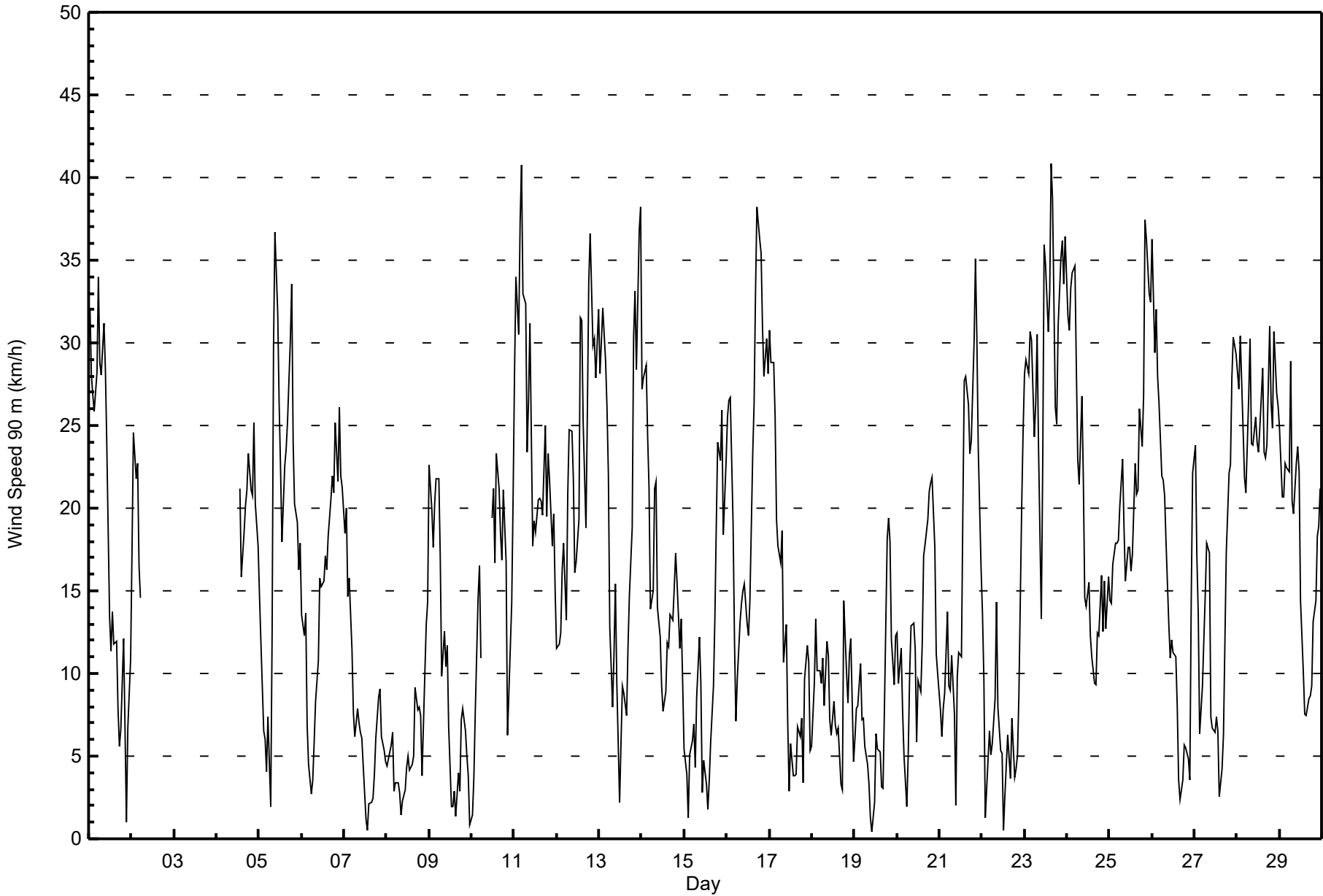




Maximum Speed: 41 km/h on Feb 23 16:00 Minimum Speed Value: 0 km/h on Feb 19 11:00 Maximum Diurnal Speed Average: 4.2 km/h at hour 24 Monthly Average Velocity: 1.2 km/h 259.3 deg		Maximum Daily Speed Average: 25.7 km/h on Feb 28 Minimum Daily Speed Average: 1.1 km/h on Feb 22 Minimum Diurnal Speed Average: 0.5 km/h at hour 5 Percentiles: P ₁ = 1 P ₁₀ = 4 Q ₁ = 8 Median = 15 Q ₃ = 23 P ₉₀ = 30 P ₉₉ = 37		Hours in Service: 696 Hours of Data: 637 Hours of Missing Data: 59 Percent Operational Time: 91.5																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	SE32	SE28	SE27	SE26	SE28	SE34	SE29	SSE28	SSE31	SSE28	SSE24	S13	SSE11	SSE14	SE12	SE12	SE8	ESE6	E7	E12	ESE7	N1	NNE7	NNE11	SE16.3	SE34
2-Feb	N17	NNE25	N22	N23	N17	N15	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	----	NNE25
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	----	----
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	SSE21	SSE16	SSE19	SE20	SSE21	SE23	SE21	SSE25	SE20	SSE18	----	SSE25
5-Feb	SE15	SE12	SE7	SSE6	SE4	SSE7	SW2	N13	N30	N37	N32	N26	N22	N18	N23	N24	N25	N30	N34	N24	N20	N19	N16	NNE18	N15.4	N37
6-Feb	NNE14	ENE12	ENE14	ENE7	SE4	SE3	ESE4	ESE6	ESE8	ESE11	SE16	SE15	SE16	SE17	SE16	SE18	SE21	SE22	SE21	SE25	SE22	SE26	SE22	SE21	SE13.5	SE26
7-Feb	SE19	SE20	SE15	SE16	SE11	SSE8	SSE6	SSE8	SSE7	S6	SSE6	S3	W1	S1	SW2	NW2	NW2	WNW4	NW6	N9	N9	NNE6	NNW5	NNW5	SE3.4	SE20
8-Feb	NNW4	NW5	NW6	NW6	NW3	N3	N3	NW3	NE1	SW2	SSW3	S4	SSW5	SSW4	SE5	S5	S9	S8	SSW8	SSW7	W4	N10	N13	NW14	W1.8	NW14
9-Feb	NW23	NW20	NNW18	W20	W22	NNW22	NNW17	NNW10	NNE13	NNE10	NNE12	NE7	ENE2	SE2	S3	S1	WNW4	NNW3	NNE7	N8	NNE7	NNE5	N4	E1	NW6.7	NW23
10-Feb	ESE1	SE4	SE8	SSE15	SSE17	SE11	UO	UO	SE17	UO	UO	SE19	SE21	SSE17	SE23	SE21	SSE18	SSE17	S21	SSW17	SW6	SSW9	SW14	WSW21	SSE12.2	SE23
11-Feb	WSW28	W34	WSW30	W37	W41	W33	W32	W23	W27	W31	W18	W19	W19	W21	W21	WSW20	WSW20	WSW25	WSW19	WSW23	WSW22	WSW18	WSW20	WSW15	W24.6	W41
12-Feb	SSW11	SSW12	S12	S16	SSE18	S13	S21	S25	S25	S22	SSW16	WSW17	WSW19	W32	WNW31	NNW25	NW19	NNW26	NNW34	NNW37	NNW30	NNW28	NNW32	W10.9	WNW37	
13-Feb	N28	N30	N32	N29	N26	N22	N13	NW8	NNW11	NW15	NNW9	NE2	SSE6	S9	S9	S7	WSW12	W15	W19	N30	N33	N28	N37	N38	NNW14.3	N38
14-Feb	N27	N28	N29	NNE24	NNE21	N14	NNE15	NNE21	NNE22	NNE14	NNE12	N9	NW8	NNW9	NNE12	NNE12	NE14	NE13	NNE15	NNE17	NE15	NNE12	NNE13	NNE9	NNE15.5	N29
15-Feb	NE5	NE4	SE1	S5	S6	S7	SSW4	WSW9	WSW12	WSW9	SSW3	S5	SW3	NW2	ESE4	ESE6	SSE9	SSW13	SW19	WSW24	WSW23	WSW26	WSW18	WSW23	SW7.5	WSW26
16-Feb	WSW26	WSW27	WSW27	WSW19	WSW12	WSW7	WSW10	WSW13	SW14	SW15	SSW15	SSW13	S12	SW14	SW23	SW26	WSW33	SW38	WSW36	WSW35	W31	W28	W30	W28	WSW20.8	SW38
17-Feb	W31	W29	W29	W25	W19	W18	W17	WSW19	WSW11	WSW13	WNW7	N3	NE6	E4	ENE4	SE4	SE7	SE6	ESE7	NNE3	NE10	ESE12	SE11	ESE5	W6.4	W31
18-Feb	E6	ESE9	ESE13	ESE10	SE10	ESE9	SE11	E8	E12	ESE11	E7	E6	E8	E7	E6	NNW7	NW3	ENE3	NNE14	NE10	ENE8	ESE11	SE12	ESE5	E6.9	NNE14
19-Feb	ENE6	E8	E8	E11	SE7	SSE7	SSW6	S4	SSE3	SSE1	NW0	NW2	NW6	WNW5	NW5	NW3	NW3	N8	N18	NNE19	NNE18	N12	N9	N12	NNE3.9	NNE19
20-Feb	N12	N9	NNW12	NNW8	N5	NNW2	SE5	S10	SSE13	SSE13	SSE11	SSE6	SSE10	SSE9	SSE12	SSE17	SSE18	SSE19	SSE21	SSE22	S22	S18	S11	S10	SSE8.1	S22
21-Feb	S8	S6	SSW8	WSW9	W14	W9	W9	NNW11	NNW8	S2	S10	S11	SSW11	WSW20	WSW28	WSW28	WSW26	WSW23	WSW24	WSW30	WSW35	W30	W24	NW16	WSW14.3	WSW35
22-Feb	N14	N10	NNE1	SSW5	SW7	W5	NW6	NNW9	NNW14	NW8	NW5	NW5	NE1	ENE3	E6	ESE5	ESE4	E7	E4	ESE4	SE5	SE9	SE20	SSE25	E1.1	SSE25
23-Feb	SSE28	SSE29	SSE28	SSE31	SSE30	S24	S26	S30	S24	SSW13	W23	W36	W35	W31	WSW33	WSW41	WSW39	NNW26	W25	WSW31	WSW35	W36	W34	W36	SW21.2	WSW41
24-Feb	W32	N31	N33	N34	N35	N28	N23	NNW21	NNW27	NNW22	N15	NNW14	NNW15	NNW12	NNW11	NNE9	N9	NNE12	NE12	NE16	NE13	NE16	NNE13	NNE16	N17.1	N35
25-Feb	NNE14	NNE14	NNE17	N18	NNE18	NNE18	NNE20	NNE23	NNE19	NNE16	NNE18	NNE18	NNE16	N17	N23	NNE21	NNE21	NNE26	NNE24	NNE27	N37	N36	NNE33	N32	NNE21.8	N37
26-Feb	N36	N29	N32	N28	N26	N22	N22	NNW21	NNW18	NNW13	NNW11	NW12	NW11	NNW11	NNW8	N4	ESE2	SE4	S6	SSE6	S5	WSW4	NNW14	NNW22	NNW12.2	N36
27-Feb	WNW24	NW17	NW14	NW6	WNW9	W12	W15	W18	W17	WSW7	WSW7	W6	W7	W7	W3	S4	SSE6	SE12	SE17	SE22	SSE23	SSE28	SSE30	SE29	SSW5.3	SSE30
28-Feb	SE28	SE27	SSE30	SE25	SE22	SE21	SE27	SE30	SE24	SE24	SE26	SE24	SE23	SE25	SE28	ESE23	SE23	SE24	SE31	SE26	SE25	SE31	ESE27	ESE26	SE25.7	SE31
29-Feb	ESE25	ESE21	ESE21	ESE23	ESE22	ESE22	ESE29	ESE20	ESE20	ESE23	SE24	SE22	SE14	SE10	SSE8	SE7	S8	SSW9	WSW9	NNW13	NNW14	W18	W19	W21	SE9.7	ESE29
NW2.4 N2.8 N2.4 N1.1WNW0.5 W0.5SSW1.3 SW1.6SSW0.5 SW1.1 S0.9SSW1.3 SW1.7 SW2.9 SW2.5SSW2.4SSW3.4SSW2.4 SW2.6 W2.2WNW2.7WNW2.1 NW2.7 NW4.2																								Diurnal Average		
N36 W34 N33 W37 W41 SE34 W32 S30 SSE31 N37 N32 W36 W35 W32WSW33WSW41WSW39 SW38WSW36WNW37 N37 N36 N37 N38																								Diurnal Maximum		
UO - Unstable Operation All monthly, daily, and diurnal averages have been calculated using vector methods																										



Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0														Hours in Service: 696													
Maximum Value: 9 km/h on Feb 11 08:00														Hours of Data: 637													
Minimum Value: 0 km/h on Feb 9 22:00														Hours of Missing Data: 59													
Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 2 Median = 2 Q ₃ = 4 P ₉₀ = 5 P ₉₉ = 7														Hours of Calibration: 0													
														Percent Operational Time: 91.5													
Day	Hourly Period Ending At (MST)																								Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	5	5	6	6	4	4	4	2	2	2	3	2	1	2	2	3	1	1	2	2	3	1	2	1	6		
2-Feb	4	2	2	3	3	3	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	4		
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--		
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	4		
5-Feb	1	4	1	1	2	1	2	6	5	4	5	3	5	4	5	4	5	7	3	3	2	2	2	2	7		
6-Feb	1	1	1	2	1	1	2	3	3	4	3	3	4	3	3	3	4	3	4	5	4	3	4	3	5		
7-Feb	3	3	2	2	2	2	2	2	1	2	2	1	1	1	1	1	1	1	1	2	2	2	1	3			
8-Feb	1	0	1	2	1	1	1	1	1	3	1	3	2	2	2	2	1	1	1	1	1	4	2	2	4		
9-Feb	3	3	2	2	2	2	2	3	2	3	2	2	1	1	1	1	1	1	2	2	1	0	1	1	3		
10-Feb	0	1	1	3	2	2	UO	UO	3	UO	UO	2	2	3	2	2	3	1	2	3	2	4	3	5	5		
11-Feb	3	3	3	3	4	4	4	9	5	5	3	3	3	4	4	4	4	2	3	2	2	1	2	3	9		
12-Feb	2	1	2	1	2	2	4	2	1	4	2	2	7	4	6	5	3	3	4	4	3	5	3	5	7		
13-Feb	4	5	4	5	3	4	3	2	1	3	5	1	2	1	1	2	2	2	2	5	6	6	6	6	6		
14-Feb	4	5	5	6	3	5	4	4	4	3	3	2	2	2	3	2	2	2	1	1	2	2	2	2	6		
15-Feb	1	1	1	1	1	1	1	3	3	6	2	1	2	2	2	2	2	1	2	1	1	3	4	4	6		
16-Feb	3	2	2	5	2	1	3	1	1	1	2	1	2	3	6	4	5	3	4	5	4	3	1	2	6		
17-Feb	1	1	2	2	2	2	2	5	2	2	5	1	2	1	1	1	1	1	1	2	2	3	2	2	5		
18-Feb	2	3	3	3	4	3	4	3	2	3	3	3	2	3	3	1	2	3	3	2	2	4	3	1	4		
19-Feb	2	2	1	1	3	2	1	2	1	1	1	1	1	1	2	1	1	2	4	2	3	3	2	2	4		
20-Feb	1	2	1	2	1	1	3	2	2	2	2	2	3	2	2	3	2	2	1	2	1	2	1	2	3		
21-Feb	2	2	2	4	3	4	3	2	3	2	1	2	2	4	5	4	5	2	1	4	2	3	4	3	5		
22-Feb	1	1	2	3	3	1	1	3	2	3	1	2	1	2	2	1	2	1	2	2	2	3	2	2	3		
23-Feb	2	2	2	2	2	4	4	2	3	4	8	6	5	5	6	7	6	5	7	4	4	5	4	4	8		
24-Feb	5	7	5	5	6	5	3	3	4	5	4	3	2	3	3	3	2	2	2	2	3	3	3	2	7		
25-Feb	3	2	3	3	2	3	2	3	3	3	3	3	3	4	3	3	3	4	5	5	5	4	6	6	6		
26-Feb	5	6	6	6	5	5	5	4	3	3	3	3	2	3	2	3	2	2	1	1	2	1	3	3	6		
27-Feb	3	2	3	2	2	2	2	2	3	2	2	2	3	3	3	3	2	2	2	1	1	2	2	2	3		
28-Feb	2	2	3	2	2	2	4	3	6	5	4	6	5	6	7	7	6	6	6	8	6	7	7	6	8		
29-Feb	6	6	6	6	6	6	6	6	6	6	6	6	4	3	1	2	3	2	2	1	1	1	1	2	6		
														Diurnal Maximum													
														6 7 6 6 6 6 6 9 6 6 8 6 7 6 7 7 6 7 7 8 6 7 7 6													
UO - Unstable Operation																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed 90 m (WS90m) - km/h
Mannix - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	93	14.60	14.60
6 - 11	148	23.23	37.83
12 - 19	160	25.12	62.95
20 - 28	159	24.96	87.91
29 - 38	74	11.62	99.53
> 38	3	0.47	100.00

Total Number of Valid Hours: 637

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Wind Speed 90 m (WS90m) - km/h
Mannix - February 2024

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	7	3	5	4	3	9	10	4	10	7	4	1	4	3	14	5	93
6 - 11	8	9	4	3	13	12	12	21	16	8	2	9	5	6	11	9	148
12 - 19	18	30	6	2	2	2	19	16	6	7	5	13	15	5	7	7	160
20 - 28	22	12	0	0	0	12	42	13	9	0	2	21	13	5	2	6	159
29 - 38	23	1	0	0	0	1	7	6	1	0	1	9	19	4	1	1	74
> 38	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3
Totals	78	55	15	9	18	36	90	60	42	22	14	55	57	23	35	28	637

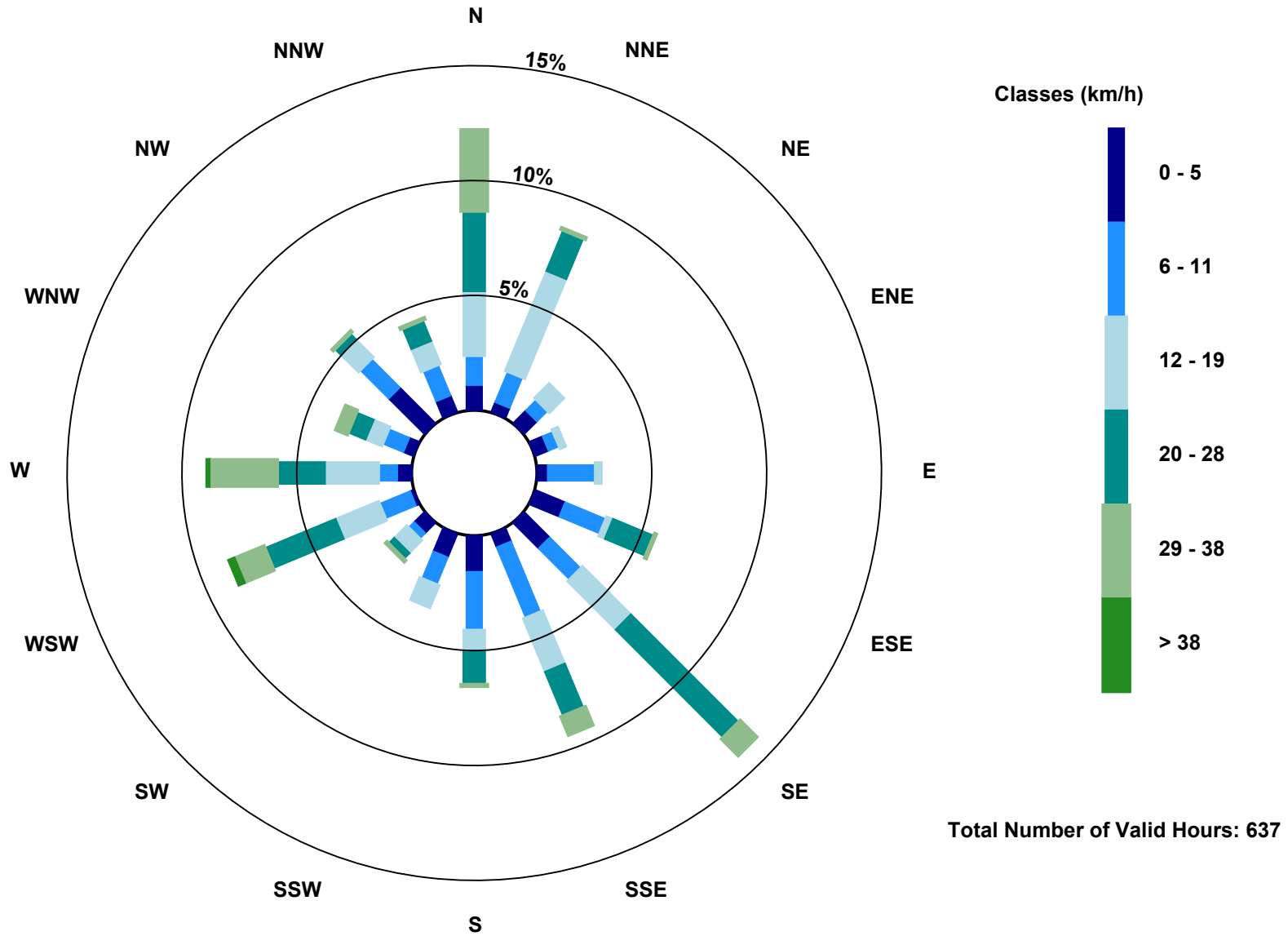
Total Number of Valid Hours: 637

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed 90 m (WS90m) - km/h
Mannix





Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Direction 20 m (WD20m) - deg

Mannix - February 2024

Direction of Maximum Speed: 253 deg on Feb 23 16:00		Hours in Service:	696
Direction of Maximum Daily Speed Average: 140.5 deg on Feb 28		Hours of Data:	695
Direction of Minimum Speed: 76 deg on Feb 9 17:00		Hours of Missing Data:	1
Direction of Minimum Daily Speed Average: 0.6 deg on Feb 22		Percent Operational Time:	99.9
Monthly Average Direction: 233.8 deg			

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	132	131	132	135	139	136	144	154	166	164	163	160	151	148	141	132	113	67	62	34	11	332	2	7	136.3
2-Feb	354	11	359	0	347	347	350	342	349	354	14	333	327	346	UO	322	336	346	342	339	357	344	341	315	346.5
3-Feb	308	345	41	14	359	338	358	336	339	339	348	341	317	347	19	360	355	17	27	23	75	159	187	174	351.1
4-Feb	163	169	162	150	154	155	154	152	158	157	155	158	163	161	176	169	161	159	153	159	155	159	161	170	159.3
5-Feb	165	185	208	186	182	175	249	349	3	9	12	10	8	6	9	3	4	4	3	349	347	352	351	4	3.3
6-Feb	10	17	35	26	347	226	171	100	104	136	137	136	134	135	143	143	144	146	137	136	136	139	139	142	131.2
7-Feb	143	144	152	149	155	165	168	155	179	175	161	164	255	186	206	286	320	286	307	344	359	360	318	297	162.9
8-Feb	301	318	296	301	354	355	334	313	299	244	263	178	210	203	145	164	192	167	227	252	319	360	344	311	278.1
9-Feb	306	298	291	270	271	281	288	347	27	25	20	34	101	105	130	102	76	54	11	3	360	315	291	326	319.5
10-Feb	289	240	226	162	139	150	152	142	145	152	153	151	159	163	159	157	162	168	178	171	176	155	157	225	162.1
11-Feb	255	267	258	262	264	270	270	266	271	261	257	265	268	275	267	258	250	250	234	230	227	201	199	160	257.0
12-Feb	155	156	155	152	152	154	156	150	151	156	150	227	249	277	302	339	321	289	293	300	299	325	345	348	259.5
13-Feb	346	349	348	355	15	13	358	287	265	275	325	68	156	167	167	146	172	259	247	16	12	4	13	350	352.8
14-Feb	353	8	14	17	15	3	24	18	28	31	21	16	319	339	22	41	39	42	31	33	35	24	30	19	18.6
15-Feb	16	13	202	206	227	252	278	256	267	227	120	150	141	75	98	132	138	150	182	197	199	217	197	236	198.9
16-Feb	253	258	255	202	184	154	163	164	161	158	151	151	150	198	228	230	239	231	235	261	270	271	261	261	227.2
17-Feb	266	269	270	258	261	254	154	252	168	159	98	86	106	125	102	144	166	138	42	338	20	83	199	131	220.4
18-Feb	17	77	103	127	205	119	144	142	38	133	68	75	104	106	85	315	307	345	3	10	42	137	159	322	76.4
19-Feb	1	355	5	29	264	270	255	324	36	44	269	288	306	273	296	278	309	325	6	10	12	3	320	335	336.7
20-Feb	340	311	288	315	318	1	189	224	178	177	163	149	155	169	149	161	155	158	157	165	171	160	150	150	166.8
21-Feb	153	162	174	166	139	6	327	336	126	163	145	152	148	237	249	248	253	238	244	237	257	272	294	305	238.3
22-Feb	310	335	275	258	231	297	48	300	316	299	277	261	103	93	104	135	159	34	349	9	304	191	151	148	281.1
23-Feb	148	146	145	142	145	150	157	159	155	147	239	264	267	263	256	253	259	297	270	241	253	270	273	263	235.4
24-Feb	266	3	9	350	351	352	352	352	348	352	358	348	343	347	345	26	10	30	39	42	50	50	31	19	0.4
25-Feb	24	15	13	12	17	13	13	15	14	18	21	18	18	10	12	14	23	19	16	14	14	11	17	9	15.2
26-Feb	10	357	2	3	353	359	7	345	347	336	331	324	308	303	351	17	126	158	195	178	168	191	248	270	345.9
27-Feb	286	292	286	279	269	257	238	235	245	251	252	277	288	288	284	179	151	142	148	150	158	163	160	150	210.0
28-Feb	146	150	156	154	157	151	159	156	141	144	140	137	133	133	137	132	133	134	143	143	134	135	133	132	140.5
29-Feb	130	116	121	113	112	112	112	118	121	132	134	135	148	150	164	145	171	204	238	284	292	273	264	266	134.7

302.1 352.9 13.6 72.9 125.5 121.3 138.2 144.6 111.8 137.2 111.3 150.4 206.8 240.8 213.9 205.1 217.1 203.5 269.7 325.0 332.9 296.0 292.9 298.4
Diurnal Average

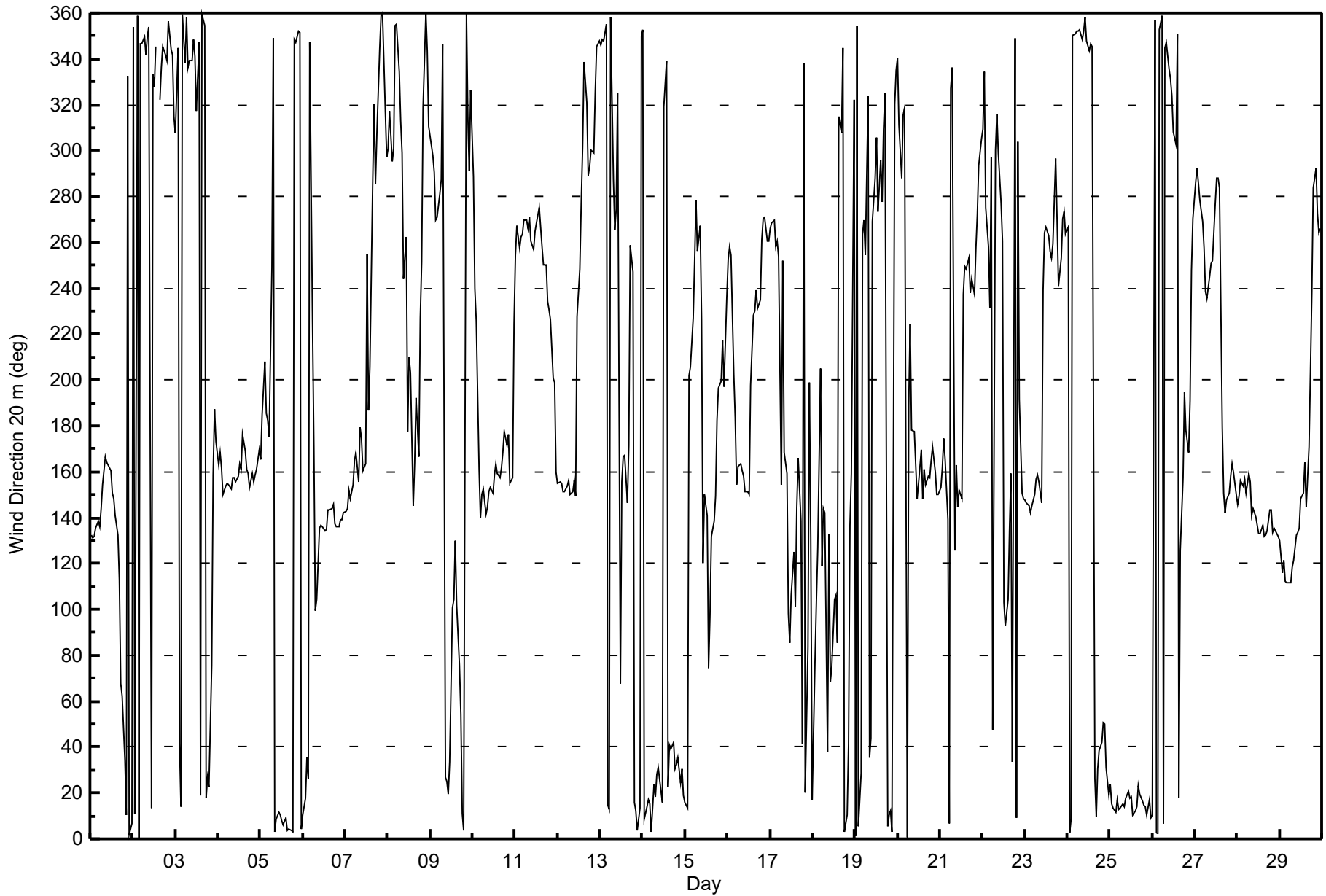
UO - Unstable Operation
All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction 20 m (WD20m) - deg
Mannix - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 96 deg on Feb 15 03:00 Minimum Value: 3 deg on Feb 17 01:00 Percentiles: P ₁ = 5 P ₁₀ = 8 Q ₁ = 10 Median = 13 Q ₃ = 22 P ₉₀ = 39 P ₉₉ = 86																		Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	8	8	7	8	8	8	10	7	4	5	7	6	9	9	12	7	34	20	34	10	56	31	13	27	56
2-Feb	34	9	14	15	12	22	24	24	35	44	34	31	19	14	UO	32	19	11	13	15	16	15	17	14	44
3-Feb	15	30	35	24	14	17	14	14	16	14	15	12	19	32	12	19	13	19	12	46	38	41	25	8	46
4-Feb	5	6	9	8	9	10	10	7	9	8	7	8	9	11	14	11	5	4	9	8	6	6	6	4	14
5-Feb	12	10	13	11	10	12	70	15	15	10	9	9	14	15	14	11	13	14	14	11	11	11	9	10	70
6-Feb	13	8	10	28	65	32	71	34	16	10	9	10	9	8	12	12	10	10	9	8	8	9	9	9	71
7-Feb	11	11	10	10	9	21	22	12	16	20	19	33	83	78	57	45	26	17	19	18	18	22	23	14	83
8-Feb	10	15	8	29	21	19	21	31	46	63	30	80	32	48	20	20	18	20	17	14	39	12	15	14	80
9-Feb	10	10	10	6	6	9	14	26	14	15	12	23	16	18	28	31	42	28	14	14	8	24	12	39	42
10-Feb	52	30	16	28	39	40	14	8	8	12	9	13	16	18	10	7	10	12	17	13	13	5	12	35	52
11-Feb	11	7	7	6	7	8	9	55	15	8	12	10	11	12	12	13	10	9	10	8	10	13	22	6	55
12-Feb	5	5	5	7	8	6	7	10	10	19	24	31	17	8	19	15	17	11	10	10	9	12	11	12	31
13-Feb	12	13	12	16	9	11	21	22	9	11	30	39	18	18	16	14	23	18	18	11	11	15	12	12	39
14-Feb	15	12	13	13	11	16	15	14	17	20	17	18	19	29	18	14	13	14	11	9	13	16	12	11	29
15-Feb	20	29	96	15	5	26	11	7	13	56	27	17	68	72	11	13	9	13	8	8	9	9	28	23	96
16-Feb	9	7	9	41	14	12	12	5	5	8	9	7	9	45	14	12	9	8	10	14	8	6	11	9	45
17-Feb	3	5	7	9	89	89	66	37	18	44	56	19	32	23	8	28	7	12	48	30	20	69	33	52	89
18-Feb	42	39	20	27	47	56	24	69	37	36	36	30	15	24	70	15	12	34	6	10	74	56	43	54	74
19-Feb	11	17	17	27	79	26	67	74	38	60	25	56	25	25	24	36	61	16	18	10	10	26	18	11	79
20-Feb	23	21	21	67	48	67	62	29	35	21	15	17	11	18	14	14	10	9	7	8	10	9	8	9	67
21-Feb	13	11	16	12	28	37	27	32	70	17	23	9	10	38	12	12	12	8	6	5	9	4	14	10	70
22-Feb	17	31	14	86	83	83	60	32	22	32	23	21	87	22	19	18	51	22	32	54	40	96	7	8	96
23-Feb	8	7	6	7	7	7	7	6	7	8	53	9	8	10	13	12	10	22	28	12	12	9	9	9	53
24-Feb	11	44	17	13	12	13	13	14	13	18	25	20	17	21	24	38	37	17	14	15	11	9	16	12	44
25-Feb	12	11	10	12	11	10	10	10	11	14	15	16	17	14	10	15	14	11	11	12	11	10	11	12	17
26-Feb	10	13	14	14	15	15	14	14	14	18	23	19	22	28	36	62	42	36	10	10	11	17	22	11	62
27-Feb	7	12	14	31	10	8	11	10	13	22	22	35	35	58	90	86	27	10	7	6	6	5	8	8	90
28-Feb	10	9	9	9	9	6	8	9	12	13	11	10	10	9	10	11	11	9	10	12	9	9	9	9	13
29-Feb	10	13	13	12	11	12	10	14	16	10	11	9	15	17	18	16	26	19	18	14	12	7	5	6	26
Diurnal Maximum																									
52 44 96 86 89 89 71 74 70 63 56 80 87 78 90 86 61 36 48 54 74 96 43 54																									
UO - Unstable Operation																									





Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Direction 45 m (WD45m) - deg

Mannix - February 2024

Direction of Maximum Speed: 249 deg on Feb 23 16:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 133.7 deg on Feb 28	Hours of Data: 656
Direction of Minimum Speed: 186 deg on Feb 7 14:00	Hours of Missing Data: 40
Direction of Minimum Daily Speed Average: 0.9 deg on Feb 22	Percent Operational Time: 94.3
Monthly Average Direction: 184.7 deg	

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	129	126	125	127	131	130	137	147	153	153	157	163	146	144	137	128	121	78	81	54	75	0	22	9	129.2
2-Feb	354	7	357	358	348	346	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	14	357	351	16	28	44	74	136	160	167	--
4-Feb	158	163	UO	UO	UO	UO	150	147	UO	154	152	156	157	156	169	162	152	149	147	148	149	149	146	152	153.1
5-Feb	137	147	163	173	174	171	204	339	359	3	6	5	4	3	5	359	360	0	0	349	347	354	355	4	3.0
6-Feb	7	23	43	38	107	196	128	90	100	127	129	131	127	127	137	137	138	140	132	130	130	134	134	137	123.5
7-Feb	137	137	144	139	145	161	162	152	176	173	157	166	239	186	208	287	309	288	305	342	358	9	326	312	151.1
8-Feb	309	316	298	303	332	350	334	309	315	242	251	181	198	198	139	163	186	168	206	223	291	357	343	310	271.4
9-Feb	303	297	286	267	268	278	284	344	23	20	16	31	89	115	139	104	65	49	13	5	14	19	343	27	320.0
10-Feb	54	128	154	153	147	UO	138	133	134	143	145	139	143	UO	154	UO	155	164	171	175	193	157	177	241	155.8
11-Feb	252	261	255	258	258	264	265	264	269	261	254	260	264	270	263	254	249	246	242	237	238	230	237	195	255.5
12-Feb	158	155	155	148	149	152	155	150	150	158	159	232	246	272	297	335	320	291	289	296	298	322	341	345	247.0
13-Feb	344	346	346	352	10	9	357	296	265	286	325	59	151	165	168	145	205	256	252	11	7	0	9	346	348.0
14-Feb	349	5	9	12	12	359	19	13	20	25	17	11	315	333	18	34	35	34	25	25	29	25	27	22	13.7
15-Feb	24	23	157	196	219	217	268	251	255	234	132	147	173	41	92	128	133	146	185	218	226	232	233	246	210.6
16-Feb	253	255	254	250	231	203	213	207	180	172	154	154	149	200	223	226	235	227	232	256	266	266	260	262	232.4
17-Feb	265	264	266	260	265	259	268	258	207	216	73	73	93	111	86	139	150	131	88	360	28	107	156	134	237.0
18-Feb	47	97	103	116	153	130	134	98	78	120	68	72	95	97	79	316	309	7	2	18	55	118	137	115	87.1
19-Feb	17	34	78	54	135	221	289	330	37	37	263	297	308	279	296	288	308	330	3	9	11	360	332	344	352.7
20-Feb	349	335	312	333	335	309	181	213	166	172	162	149	155	167	146	154	154	157	159	162	170	165	154	146	161.8
21-Feb	150	154	162	182	236	300	316	337	54	148	137	146	158	238	244	245	248	236	240	234	251	268	286	308	235.4
22-Feb	346	342	316	199	216	299	3	306	322	298	285	271	60	80	99	126	129	57	8	14	11	113	139	142	36.0
23-Feb	145	140	136	133	143	150	153	162	156	151	252	259	261	257	250	249	254	293	272	241	250	265	268	258	224.5
24-Feb	262	359	5	347	349	349	349	347	344	347	352	344	339	343	342	19	4	25	34	34	45	44	29	18	355.8
25-Feb	21	15	11	8	14	10	10	12	11	15	16	13	13	5	8	11	19	15	14	10	9	7	13	6	11.4
26-Feb	6	353	358	359	349	355	3	341	344	333	328	321	306	301	342	359	117	151	180	168	153	186	268	279	342.3
27-Feb	293	303	302	300	270	258	246	244	245	244	245	269	279	286	273	178	148	135	139	144	149	153	151	145	205.5
28-Feb	143	144	150	144	142	136	146	141	132	139	135	130	127	126	132	124	126	127	139	137	128	128	125	123	133.7
29-Feb	122	111	116	108	108	108	108	113	116	124	127	128	141	145	160	144	168	198	234	280	285	270	269	270	131.4
	316.1	18.2	29.0	52.5	130.2	164.4	155.0	157.9	125.5	145.2	127.8	151.4	177.8	220.7	219.0	215.3	205.2	191.5	224.2	297.3	316.7	286.6	283.1	304.5	
	Diurnal Average																								

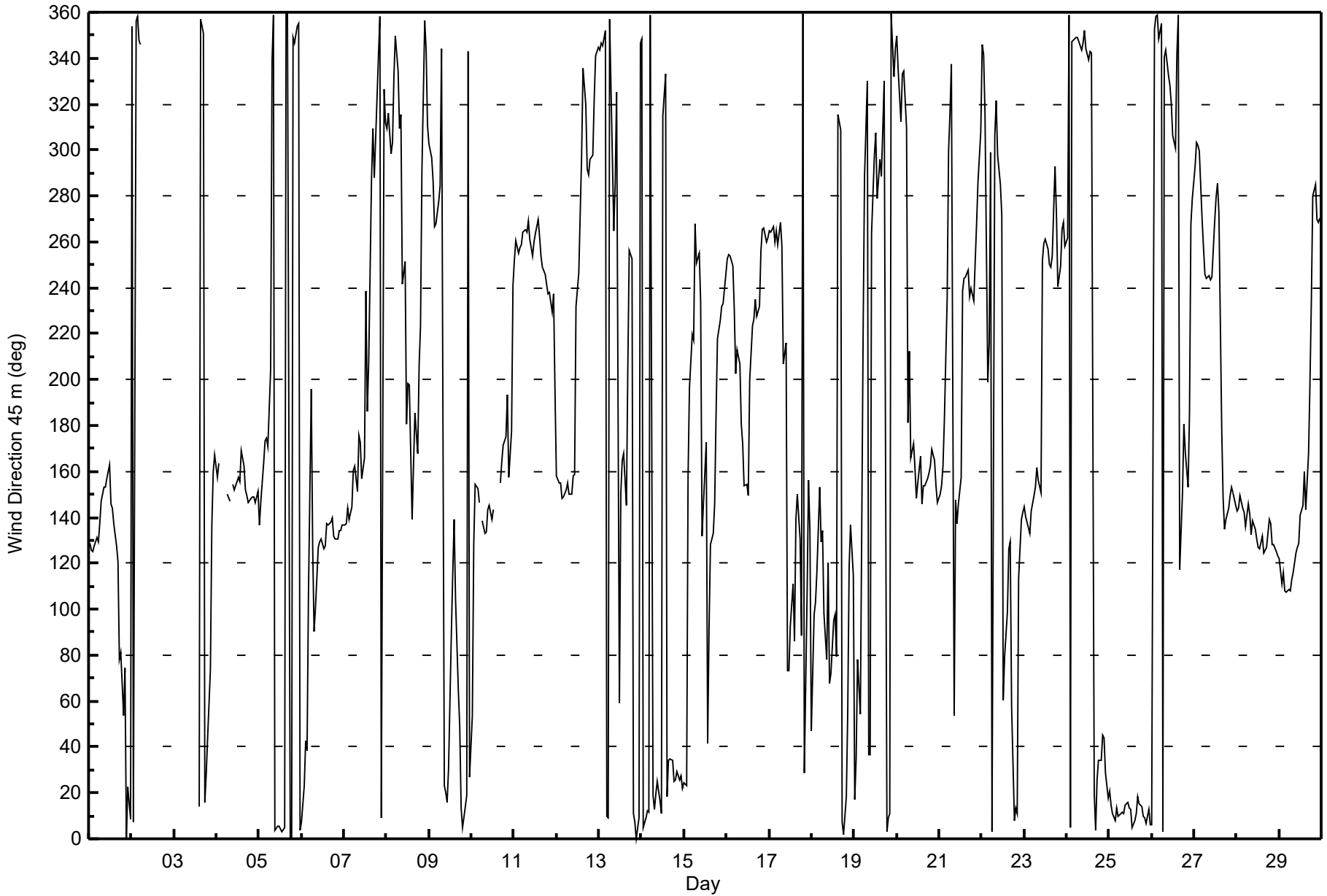
UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 92 deg on Feb 6 06:00			Hours of Data:	656
Minimum Value: 2 deg on Feb 4 01:00			Hours of Missing Data:	40
Percentiles: P ₁ = 3 P ₁₀ = 5 Q ₁ = 7 Median = 10 Q ₃ = 16 P ₉₀ = 32 P ₉₉ = 77			Hours of Calibration:	0
			Percent Operational Time:	94.3

Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	6	6	5	6	6	5	7	5	3	4	3	6	8	6	9	3	17	13	25	13	68	12	6	10	68
2-Feb	12	5	9	9	9	12	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	12
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	8	15	9	12	9	17	19	21	14	4	21
4-Feb	2	4	UO	UO	UO	UO	5	3	UO	4	5	5	6	9	8	7	3	3	5	4	3	3	3	5	9
5-Feb	4	7	8	5	4	5	62	17	11	7	6	7	9	13	13	12	10	10	10	8	7	8	5	6	62
6-Feb	7	10	8	13	61	92	60	31	13	9	6	7	8	5	11	9	8	8	8	7	6	7	7	8	92
7-Feb	8	9	7	8	8	15	18	12	12	14	16	34	78	82	49	35	25	15	14	16	9	15	27	15	82
8-Feb	8	11	7	20	21	14	19	21	50	72	27	70	25	41	20	16	9	16	7	8	42	7	10	11	72
9-Feb	8	9	9	6	5	6	11	24	10	10	9	20	21	27	24	43	55	13	11	12	9	13	14	12	55
10-Feb	19	16	14	11	4	UO	6	4	7	7	7	9	10	UO	7	UO	7	8	9	13	14	7	14	21	21
11-Feb	7	6	5	4	5	7	7	23	10	6	10	8	9	10	10	9	7	6	8	5	6	7	4	20	23
12-Feb	4	4	6	4	5	3	4	6	5	12	15	20	16	7	18	12	13	8	8	7	7	9	8	9	20
13-Feb	9	10	9	13	7	8	15	25	11	14	22	43	13	11	12	14	25	10	15	10	8	12	9	10	43
14-Feb	12	8	8	10	8	14	12	10	12	14	12	14	14	27	14	11	9	11	8	5	9	12	9	8	27
15-Feb	15	19	66	14	9	29	7	6	6	49	20	15	69	68	14	10	7	11	15	5	7	6	13	13	69
16-Feb	5	4	4	11	10	12	6	7	5	10	6	6	8	37	10	9	7	5	7	10	6	5	5	5	37
17-Feb	3	2	5	3	6	8	16	10	19	16	78	21	28	28	11	25	9	6	37	11	27	36	17	9	78
18-Feb	53	33	13	17	15	26	11	30	14	22	39	29	14	21	56	12	8	41	5	15	47	21	16	75	75
19-Feb	32	23	15	13	45	39	29	70	27	33	56	48	20	20	20	36	47	12	10	6	7	22	17	7	70
20-Feb	16	22	16	62	34	73	77	25	24	16	13	14	11	13	13	12	7	6	5	5	5	4	4	4	77
21-Feb	7	5	7	30	34	68	9	13	61	16	15	7	12	20	10	9	10	6	2	3	8	4	12	15	68
22-Feb	10	15	20	78	71	60	44	26	16	24	19	25	84	39	19	14	42	22	18	22	36	61	5	5	84
23-Feb	4	5	3	3	4	4	4	4	5	13	32	8	7	8	12	10	7	20	23	11	9	7	7	7	32
24-Feb	9	43	14	9	9	9	10	10	9	16	22	15	11	15	22	33	32	12	9	10	9	8	10	8	43
25-Feb	9	10	6	9	7	7	7	6	8	10	11	10	12	11	7	12	10	7	8	9	7	6	9	8	12
26-Feb	7	10	11	10	12	12	11	11	9	15	19	14	17	25	32	51	56	35	4	7	9	17	18	6	56
27-Feb	4	7	9	29	7	5	8	7	9	17	20	26	25	47	88	69	27	7	5	3	4	4	5	7	88
28-Feb	7	7	7	4	7	6	4	6	9	11	9	8	8	8	8	9	10	8	9	13	7	7	8	8	13
29-Feb	9	11	11	10	10	11	9	12	13	9	10	8	13	17	16	15	21	13	17	11	8	3	3	3	21
	53	43	66	78	71	92	77	70	61	72	78	70	84	82	88	69	56	41	37	22	68	61	27	75	
	Diurnal Maximum																								

UO - Unstable Operation





Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Direction 75 m (WD75m) - deg

Mannix - February 2024

Direction of Maximum Speed: 251 deg on Feb 23 16:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 135.8 deg on Feb 28	Hours of Data: 638
Direction of Minimum Speed: 261 deg on Feb 19 11:00	Hours of Missing Data: 58
Direction of Minimum Daily Speed Average: 1.1 deg on Feb 22	Percent Operational Time: 91.7
Monthly Average Direction: 235.8 deg	

Day	Hourly Period Ending At (MST)																								Daily Average	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	135	132	130	131	134	134	138	148	154	155	160	173	152	147	141	133	133	95	94	79	129	8	25	31	136.1	
2-Feb	1	15	4	4	356	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	167	158	147	149	146	145	144	143	135	142	--
5-Feb	136	138	129	145	156	163	210	344	3	6	7	7	5	7	8	2	4	4	5	359	356	4	2	13	8.8	
6-Feb	23	51	65	64	129	148	120	98	111	125	130	134	128	130	140	140	139	141	134	134	135	137	136	139	125.5	
7-Feb	139	139	144	139	142	157	154	151	170	172	158	175	249	170	212	302	313	296	315	348	4	22	343	333	143.5	
8-Feb	330	323	306	311	317	355	345	312	28	230	229	182	199	198	143	168	188	174	197	209	273	359	351	319	271.7	
9-Feb	309	304	289	269	273	281	286	348	25	23	19	37	83	140	161	137	278	12	23	12	26	33	358	68	319.5	
10-Feb	121	141	144	153	161	UO	141	143	146	143	141	141	139	157	144	147	154	164	171	193	216	177	217	251	157.9	
11-Feb	253	260	257	259	261	266	268	265	272	267	260	262	266	271	264	256	252	252	250	245	252	247	252	238	259.2	
12-Feb	185	184	174	160	160	166	171	169	165	174	187	239	249	275	301	339	325	298	293	300	303	327	345	349	259.8	
13-Feb	350	352	351	356	11	11	2	317	285	311	335	59	154	171	177	166	233	260	261	13	10	3	11	350	350.6	
14-Feb	352	9	11	15	15	4	21	15	21	20	14	323	338	23	36	37	36	30	31	36	32	31	31	31	17.7	
15-Feb	40	38	153	190	186	180	228	243	256	241	161	167	206	339	109	130	141	175	215	235	244	244	245	251	223.0	
16-Feb	256	255	256	255	252	236	231	228	209	204	179	180	171	214	224	228	237	230	235	257	267	266	262	266	239.9	
17-Feb	269	270	270	263	265	261	265	255	233	254	298	17	73	98	80	136	146	133	109	11	47	123	147	116	255.1	
18-Feb	86	114	109	116	137	122	133	92	96	120	83	78	94	96	84	327	315	48	9	36	69	117	133	110	93.3	
19-Feb	49	73	97	81	136	167	217	210	141	94	261	316	315	291	304	303	320	347	9	16	17	6	351	357	12.3	
20-Feb	1	4	344	342	350	311	142	178	160	170	163	162	161	165	154	154	156	153	160	160	169	177	179	167	161.4	
21-Feb	173	172	183	233	273	277	282	319	331	147	150	158	191	243	246	246	249	239	244	240	253	269	280	319	245.3	
22-Feb	9	6	356	217	219	277	311	315	338	310	299	292	58	81	99	120	120	87	66	78	94	134	144	146	81.5	
23-Feb	149	151	150	147	154	164	165	176	176	183	258	261	263	258	251	251	255	296	276	245	252	266	270	260	226.0	
24-Feb	263	0	8	352	353	353	353	349	346	350	354	348	343	346	346	19	9	29	38	38	49	48	33	25	359.1	
25-Feb	27	22	17	12	19	14	14	15	16	20	20	16	17	9	11	15	21	20	18	13	12	10	16	9	15.3	
26-Feb	9	357	2	2	353	359	7	346	348	338	334	323	310	303	339	355	117	147	169	168	160	217	288	292	346.4	
27-Feb	298	311	316	322	288	276	259	255	254	245	245	266	278	280	265	181	154	136	140	145	150	154	152	146	208.4	
28-Feb	145	146	149	139	135	133	139	137	132	141	137	133	130	130	135	126	130	130	142	141	132	132	128	125	135.8	
29-Feb	124	117	119	112	113	113	111	117	119	127	130	132	143	148	159	147	173	198	237	283	286	277	277	277	143.5	
	322.6	5.2	8.4	14.8	217.4	223.3	179.2	190.1	159.9	165.7	140.3	182.6	206.7	235.4	210.6	199.9	204.1	203.8	222.3	269.8	302.2	286.4	308.0	313.8		
	Diurnal Average																									

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



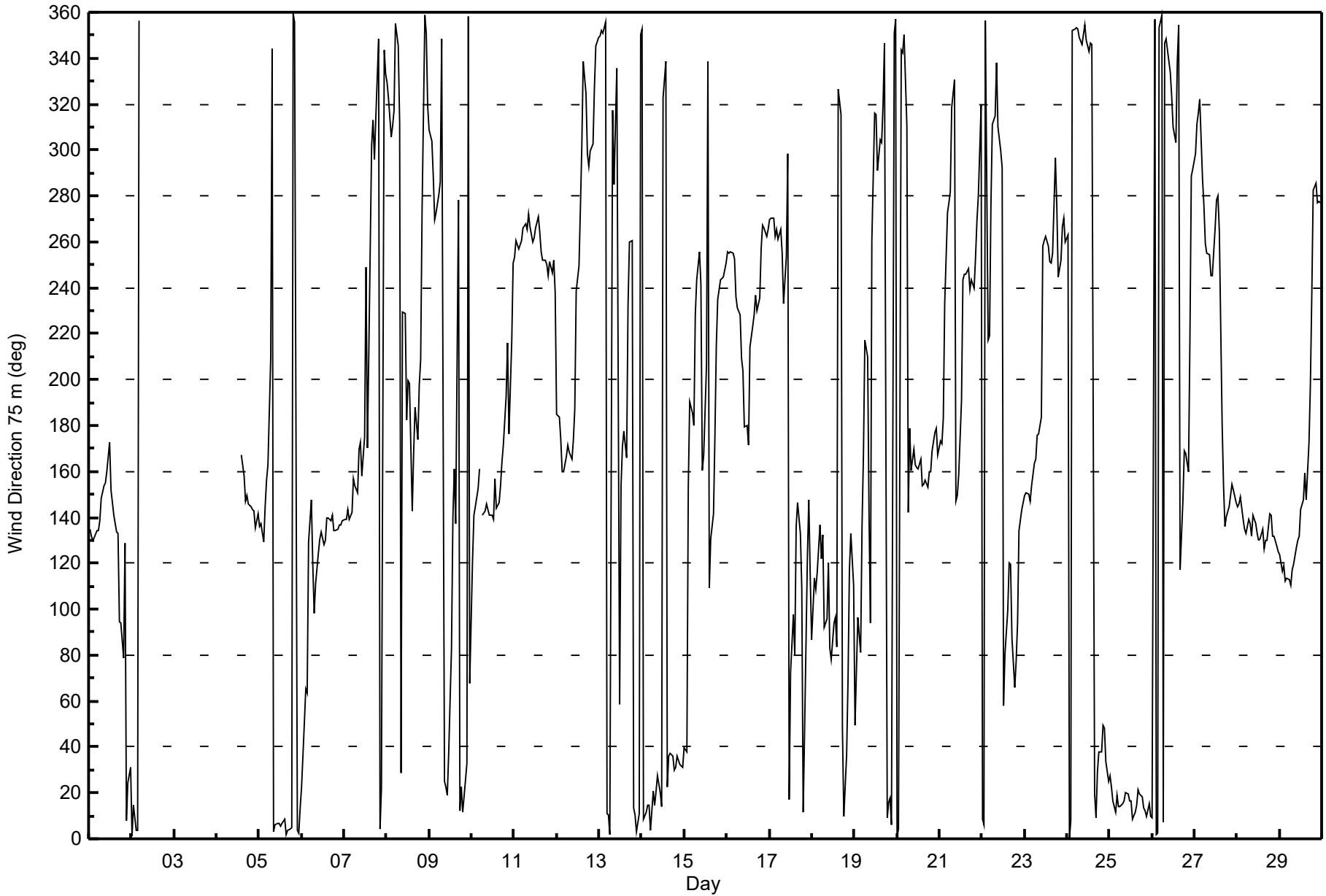
Wood Buffalo Environmental Association

Summary of Hour Standard Deviations

Wind Direction 75 m (WD75m) - deg

Mannix - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 95 deg on Feb 27 15:00		Hours in Service: 696 Hours of Data: 638 Hours of Missing Data: 58 Hours of Calibration: 0 Percent Operational Time: 91.7																							
Minimum Value: 2 deg on Feb 29 23:00																									
Percentiles: P ₁ = 2 P ₁₀ = 4 Q ₁ = 6 Median = 9 Q ₃ = 16 P ₉₀ = 29 P ₉₉ = 75																									
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	5	7	7	7	5	4	5	4	2	3	4	7	10	5	8	6	8	18	20	6	23	67	10	15	67
2-Feb	10	5	6	4	7	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	10
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	7	5	3	2	4	3	3	2	3	4	7
5-Feb	6	9	15	9	9	6	40	23	7	5	5	5	8	12	11	11	8	7	7	8	5	6	4	7	40
6-Feb	12	7	6	13	29	43	40	21	16	13	8	8	10	7	9	8	6	7	7	6	7	5	6	7	43
7-Feb	7	7	6	6	8	12	14	11	9	14	14	37	69	80	43	40	27	14	12	15	8	12	30	11	80
8-Feb	7	8	9	24	22	18	23	19	80	70	28	70	20	33	22	14	7	13	4	10	45	8	8	11	80
9-Feb	8	8	8	6	5	5	11	22	7	8	8	16	28	29	19	50	38	32	10	11	8	5	20	35	50
10-Feb	28	13	7	11	5	UO	3	2	3	3	3	3	5	9	4	6	6	6	6	15	22	15	14	11	28
11-Feb	6	5	5	4	5	6	6	13	7	5	8	8	8	9	10	7	6	3	7	4	3	4	2	11	13
12-Feb	7	9	13	3	7	3	5	4	4	13	16	12	15	6	19	10	11	7	7	6	6	8	7	7	19
13-Feb	7	7	6	10	6	6	9	25	11	11	21	49	13	8	10	18	12	9	13	9	6	10	7	8	49
14-Feb	11	7	6	7	6	12	9	9	10	12	9	15	15	22	11	9	7	9	5	3	6	9	6	5	22
15-Feb	11	15	54	10	17	10	21	9	8	52	28	18	39	76	24	12	6	15	12	3	5	4	9	9	76
16-Feb	5	4	3	4	7	9	4	5	6	9	8	8	12	18	9	9	7	5	7	10	6	5	4	5	18
17-Feb	3	3	4	2	3	3	5	7	9	11	73	36	17	24	15	21	5	11	21	49	28	20	16	20	73
18-Feb	31	22	14	15	15	17	12	18	10	17	21	26	16	19	49	14	17	74	7	17	29	18	10	28	74
19-Feb	33	20	11	8	19	26	20	46	56	58	93	51	18	22	20	35	35	10	7	5	6	16	16	4	93
20-Feb	10	12	14	36	21	60	56	25	12	13	10	16	11	11	12	8	4	8	3	2	4	6	7	4	60
21-Feb	8	10	16	34	9	26	13	12	36	43	12	10	20	11	9	8	10	5	2	2	7	4	9	25	43
22-Feb	8	17	91	50	36	23	13	17	10	25	20	35	89	67	21	17	35	17	30	34	34	20	3	3	91
23-Feb	3	4	3	4	3	6	5	3	7	28	13	7	7	7	11	9	6	21	23	11	7	7	7	6	28
24-Feb	9	43	12	7	7	7	7	8	8	16	20	12	9	13	20	30	29	10	8	8	8	6	8	7	43
25-Feb	8	9	6	7	6	6	6	5	7	8	9	9	10	10	5	10	8	6	7	8	6	5	7	7	10
26-Feb	5	9	9	10	10	11	8	9	7	13	21	14	17	25	31	65	65	32	6	5	17	26	9	3	65
27-Feb	3	4	5	22	8	3	7	4	9	16	21	22	26	31	95	57	27	6	4	2	4	3	3	5	95
28-Feb	4	5	6	3	5	5	3	3	7	9	7	9	9	9	8	11	10	9	8	14	8	7	10	11	14
29-Feb	11	13	13	13	13	12	11	14	14	10	10	9	13	16	14	13	18	11	16	10	4	3	2	3	18
Diurnal Maximum																									
33 43 91 50 36 60 56 46 80 70 93 70 89 80 95 65 65 74 30 49 45 67 30 35																									
UO - Unstable Operation																									





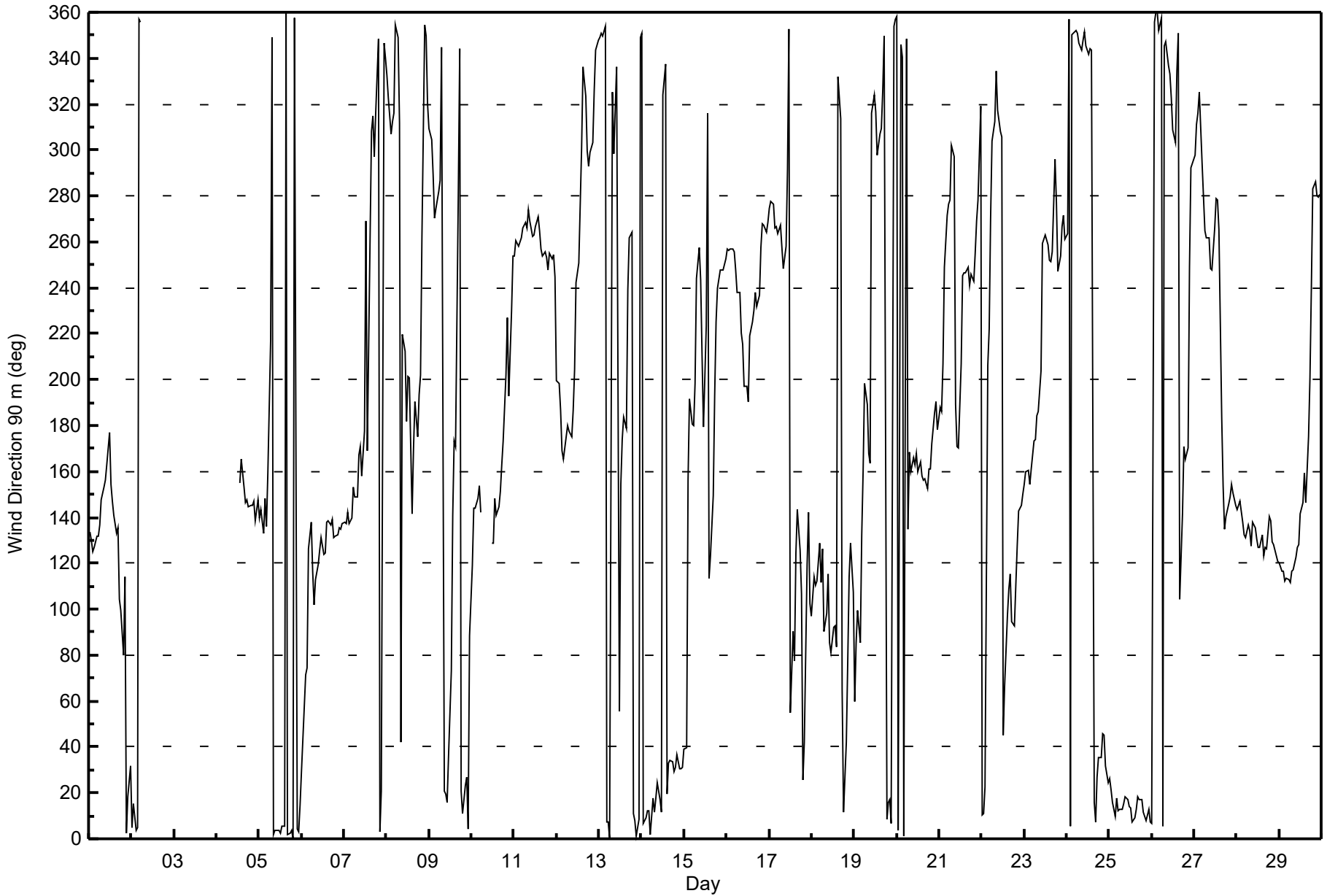
Wood Buffalo Environmental Association

Summary of Hour Standard Deviations

Wind Direction 90 m (WD90m) - deg

Mannix - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 96 deg on Feb 18 18:00																		Hours in Service: 696 Hours of Data: 637 Hours of Missing Data: 59 Hours of Calibration: 0 Percent Operational Time: 91.5							
Minimum Value: 2 deg on Feb 29 23:00																									
Percentiles: P ₁ = 2 P ₁₀ = 4 Q ₁ = 6 Median = 8 Q ₃ = 14 P ₉₀ = 26 P ₉₉ = 80																									
Day	Hourly Period Ending At (MST)																							Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24
1-Feb	5	6	5	5	4	3	4	3	2	3	5	7	11	5	8	5	9	18	15	5	17	78	10	16	78
2-Feb	9	4	5	4	6	10	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	10
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	7	6	4	2	2	4	3	2	3	5	4	7
5-Feb	6	16	19	7	9	8	63	10	6	4	5	5	7	11	11	10	7	7	6	7	6	5	4	8	63
6-Feb	12	8	6	16	20	40	30	18	12	10	8	8	8	6	9	8	6	6	6	5	6	5	6	6	40
7-Feb	7	6	6	5	6	12	14	11	9	14	12	36	67	93	42	34	27	13	11	13	7	10	28	10	93
8-Feb	7	7	9	23	15	20	21	19	71	79	31	57	20	33	25	14	7	12	6	13	40	13	8	10	79
9-Feb	8	8	8	6	5	4	9	21	7	8	6	15	32	30	23	51	10	31	12	11	7	6	15	43	51
10-Feb	36	14	5	5	5	5	UO	UO	14	UO	UO	2	3	8	3	6	5	5	9	15	20	16	14	9	36
11-Feb	6	5	4	3	4	5	6	11	6	5	7	7	8	9	10	6	6	4	6	3	2	3	2	6	11
12-Feb	8	9	14	4	10	5	6	4	3	14	14	9	14	5	18	9	10	6	6	5	6	7	6	6	18
13-Feb	6	7	6	9	5	5	8	22	8	8	19	50	15	9	11	20	7	8	12	10	6	10	6	7	50
14-Feb	10	6	6	6	5	11	8	8	9	11	9	14	15	21	10	9	7	8	5	3	4	8	5	5	21
15-Feb	10	14	51	11	13	4	15	18	10	22	31	20	34	61	31	10	10	16	10	2	4	4	7	8	61
16-Feb	4	3	3	4	6	8	4	4	6	7	8	8	13	12	8	8	6	5	6	9	6	4	4	5	13
17-Feb	3	4	6	3	2	3	6	5	8	7	47	31	18	18	14	19	7	10	16	71	28	14	18	11	71
18-Feb	16	16	10	11	13	12	12	17	6	13	17	24	15	20	46	16	53	96	9	17	25	15	9	23	96
19-Feb	29	14	5	7	14	20	16	27	20	58	90	48	18	21	16	33	29	9	6	4	5	13	16	4	90
20-Feb	8	10	10	23	20	59	37	20	8	12	9	19	12	9	10	6	3	6	2	4	4	9	8	5	59
21-Feb	12	21	23	21	7	12	7	11	9	71	12	12	19	8	8	7	9	5	3	2	6	4	8	27	71
22-Feb	7	15	89	39	23	16	11	14	11	22	23	29	92	81	17	14	25	11	34	30	20	9	3	2	92
23-Feb	5	4	4	4	4	8	7	4	8	26	10	7	7	7	10	9	6	20	22	10	7	7	6	6	26
24-Feb	8	42	11	6	6	7	6	8	7	16	19	12	8	12	20	28	26	9	7	7	7	7	7	6	42
25-Feb	7	8	6	7	6	6	5	5	7	8	8	8	9	10	5	9	7	5	7	7	6	5	6	7	10
26-Feb	5	8	9	10	9	10	8	8	6	12	20	13	15	24	29	54	68	34	7	5	21	28	6	3	68
27-Feb	3	4	5	17	10	4	6	4	7	15	22	20	21	23	86	54	28	6	3	2	4	2	3	4	86
28-Feb	3	4	6	3	4	3	3	3	5	10	7	8	7	8	8	9	9	8	7	14	7	6	7	8	14
29-Feb	8	9	9	8	9	8	6	11	11	8	8	8	14	17	14	13	18	11	15	8	3	3	2	3	18
																		Diurnal Maximum							
UO - Unstable Operation																									





Maximum Value: 1.9 km/h on Feb 2 13:00		Maximum Daily Average: 0.9 km/h on Feb 28		Hours in Service: 696																							
Minimum Value: -1.2 km/h on Feb 25 22:00		Minimum Daily Average: -0.5 km/h on Feb 25		Hours of Data: 695																							
Maximum Diurnal Average: 0.2 km/h at hour 13		Minimum Diurnal Average: -0.1 km/h at hour 20		Hours of Missing Data: 1																							
Monthly Average: 0.09 km/h		Percentiles: P ₁ = -0.9 P ₁₀ = -0.4 Q ₁ = -0.2 Median = 0.0 Q ₃ = 0.4 P ₉₀ = 0.7 P ₉₉ = 1.2		Hours of Calibration: 0																							
				Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.9	0.8	1.0	0.9	0.8	1.1	0.7	0.7	0.6	0.6	0.7	0.6	0.6	0.7	0.6	0.4	0.3	0.1	0.1	-0.2	-0.1	-0.2	-0.3	-0.4	0.5	1.1	
2-Feb	-0.2	-0.5	-0.4	-0.3	-0.5	-0.4	0.0	0.3	1.0	-0.1	0.5	1.3	1.9	0.2	UO	0.1	0.2	1.0	0.0	-0.3	-0.3	-0.2	-0.1	0.0	0.1	1.9	
3-Feb	-0.1	0.0	0.2	0.0	-0.2	-0.2	-0.3	-0.4	-0.4	-0.3	-0.3	-0.4	-0.7	-0.4	-0.4	-0.4	-0.1	-0.1	0.0	0.1	0.2	0.0	0.3	-0.2	0.3		
4-Feb	0.6	0.4	0.5	0.5	0.9	0.7	0.8	0.8	1.0	1.0	0.9	0.9	0.9	0.6	0.4	0.3	0.5	0.7	0.8	0.5	0.6	0.6	0.6	0.2	0.7	1.0	
5-Feb	0.3	0.1	-0.1	0.1	0.1	0.2	0.0	-0.3	-0.5	-1.2	-1.0	-0.7	-0.4	-0.4	-0.6	-0.7	-0.5	-0.7	-0.8	-0.7	-0.5	-0.3	-0.3	-0.4	-0.4	0.3	
6-Feb	-0.5	-0.3	0.0	-0.1	0.0	-0.1	0.0	0.2	0.7	1.0	0.6	0.6	1.0	0.6	0.6	0.7	0.7	0.8	0.6	0.8	0.8	0.8	0.7	0.9	0.5	1.0	
7-Feb	0.8	0.7	0.5	0.7	0.3	0.3	0.1	0.3	0.2	0.3	0.2	0.2	0.4	0.2	0.2	0.0	0.0	0.0	0.0	-0.2	-0.1	-0.1	-0.1	-0.1	0.2	0.8	
8-Feb	0.0	0.1	-0.1	0.0	0.1	-0.1	-0.2	0.1	0.1	0.1	0.0	0.3	0.1	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	-0.1	-0.1	-0.1	0.1	0.3	
9-Feb	-0.4	-0.3	-0.1	0.1	0.0	-0.2	-0.2	-0.2	0.0	0.0	-0.2	-0.2	0.1	0.1	0.3	0.3	0.1	0.2	-0.2	-0.2	-0.2	-0.2	-0.1	0.0	-0.1	0.3	
10-Feb	0.0	0.0	-0.4	1.0	0.2	1.1	0.5	0.5	0.7	0.4	0.5	0.5	0.5	0.3	0.6	0.6	0.4	0.4	0.3	0.4	0.2	0.5	0.3	0.0	0.4	1.1	
11-Feb	-0.2	0.0	-0.3	-0.2	-0.1	-0.1	0.0	0.1	-0.1	-0.3	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.2	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.4	-0.1	0.4	
12-Feb	0.6	0.7	0.7	0.7	0.8	0.9	0.8	0.8	0.7	0.7	0.3	0.1	0.0	-0.3	-0.6	-0.6	-0.3	-0.2	-0.5	-0.7	-0.5	-0.6	-0.9	-0.9	0.1	0.9	
13-Feb	-0.6	-0.7	-0.7	-0.9	-0.7	-0.4	-0.2	0.0	-0.1	-0.1	0.0	0.2	0.2	0.5	0.4	0.4	0.1	0.1	-0.1	-0.8	-0.9	-0.6	-0.9	-1.2	-0.3	0.5	
14-Feb	-0.5	-0.7	-0.8	-0.7	-0.3	-0.2	-0.1	-0.4	-0.2	0.1	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	0.1	-0.1	0.0	-0.1	0.1	-0.1	-0.2	-0.2	-0.2	0.1	
15-Feb	0.0	0.1	0.1	0.0	-0.1	-0.1	-0.3	-0.1	0.0	0.4	0.2	0.3	0.5	0.2	0.3	0.6	0.5	0.4	0.1	0.0	-0.1	-0.2	-0.1	-0.1	0.1	0.6	
16-Feb	-0.3	-0.3	-0.1	0.1	0.1	0.2	0.1	0.1	0.4	0.5	0.4	0.5	0.5	0.4	0.1	0.0	-0.1	0.1	-0.1	-0.2	0.0	0.0	-0.1	-0.2	0.1	0.5	
17-Feb	-0.1	-0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.2	0.2	-0.1	0.1	0.2	0.4	0.0	-0.2	-0.2	0.0	0.0	0.3	0.1	0.4	
18-Feb	0.0	0.1	0.5	0.3	0.0	0.1	0.2	0.2	0.1	0.5	0.2	0.1	0.1	-0.1	0.4	-0.2	-0.1	-0.1	-0.5	-0.4	0.0	0.5	0.3	-0.1	0.1	0.5	
19-Feb	-0.2	-0.2	0.0	-0.2	-0.3	-0.1	0.0	0.1	0.1	0.1	-0.1	0.4	-0.1	0.0	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4	-0.4	-0.1	-0.1	-0.3	-0.1	0.4	
20-Feb	-0.2	-0.1	-0.1	0.1	0.1	0.2	0.1	0.0	0.2	0.2	0.4	0.2	0.3	0.4	0.6	0.5	0.4	0.4	0.4	0.4	0.2	0.3	0.5	0.5	0.3	0.6	
21-Feb	0.4	0.3	0.2	0.3	0.1	-0.1	-0.1	-0.1	0.1	0.2	0.5	0.5	0.4	0.0	-0.1	-0.2	-0.1	0.0	-0.2	-0.1	-0.2	0.0	-0.3	-0.2	0.0	0.5	
22-Feb	-0.2	-0.1	0.0	0.0	0.1	0.0	0.0	0.0	-0.2	-0.1	-0.1	-0.1	0.1	0.0	0.3	0.3	0.0	0.0	-0.2	-0.1	-0.1	0.1	0.6	0.7	0.0	0.7	
23-Feb	0.6	0.7	0.5	0.7	0.7	0.7	0.8	1.3	1.0	0.5	0.0	-0.3	-0.1	-0.3	-0.3	-0.3	-0.3	-0.4	-0.9	-0.4	-0.3	-0.2	-0.2	-0.3	0.1	1.3	
24-Feb	-0.1	-0.8	-0.8	-0.9	-1.0	-0.7	-0.5	-0.4	-0.7	-0.7	-0.3	-0.1	-0.3	-0.6	-0.5	-0.1	-0.1	-0.1	0.2	0.0	-0.1	-0.2	0.2	-0.3	-0.4	0.2	
25-Feb	-0.1	-0.1	-0.6	-0.2	-0.3	-0.5	-0.5	-0.8	-0.3	-0.4	-0.2	-0.2	-0.4	-0.8	-0.8	-0.6	-0.6	-0.4	-0.6	-0.5	-0.7	-0.9	-1.2	-0.7	-0.8	-0.5	-0.1
26-Feb	-1.1	-0.7	-0.5	-0.6	-0.4	-0.4	-0.5	-0.4	-0.4	-0.2	-0.2	-0.3	-0.2	-0.2	-0.3	0.0	0.4	0.2	-0.2	0.0	0.2	0.0	0.0	0.0	-0.2	0.4	
27-Feb	-0.1	0.0	0.0	0.0	0.0	-0.2	-0.2	-0.1	0.1	0.1	-0.2	-0.1	-0.3	-0.1	0.2	0.6	0.3	0.6	0.6	0.7	0.6	0.7	0.8	0.8	0.2	0.8	
28-Feb	0.6	0.6	0.8	0.6	0.7	0.5	0.8	0.7	0.8	0.9	0.9	0.8	1.1	0.9	1.1	0.9	1.1	1.0	1.4	1.0	0.8	0.9	0.9	1.0	0.9	1.4	
29-Feb	1.0	1.4	1.5	1.1	1.2	1.2	0.8	1.5	1.2	1.1	1.0	0.8	0.7	0.6	0.4	0.3	0.4	0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.7	1.5	
		0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	Diurnal Average
		1.0	1.4	1.5	1.1	1.2	1.2	0.8	1.5	1.2	1.1	1.0	1.3	1.9	0.9	1.1	0.9	1.1	1.0	1.4	1.0	0.8	0.9	0.9	1.0	0.0	Diurnal Maximum
UO - Unstable Operation																											



Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																				Hours in Service: 696					
Maximum Value: 3.7 km/h on Feb 2 11:00																				Hours of Data: 695					
Minimum Value: 0.1 km/h on Feb 10 01:00																				Hours of Missing Data: 1					
Percentiles: P ₁ = 0.2 P ₁₀ = 0.4 Q ₁ = 0.6 Median = 1.0 Q ₃ = 1.7 P ₉₀ = 2.4 P ₉₉ = 3.2																				Hours of Calibration: 0					
																				Percent Operational Time: 99.9					
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	2.1	2.0	2.3	2.4	2.1	2.2	1.8	1.0	0.8	0.9	1.3	1.0	1.0	1.2	1.0	0.9	0.5	0.4	0.4	0.4	0.5	0.3	0.4	0.6	2.4
2-Feb	0.7	1.4	1.5	1.6	1.5	1.5	2.0	2.5	2.9	3.3	3.7	3.2	3.2	3.0	UO	2.1	2.2	1.9	1.5	1.3	1.2	0.9	0.8	0.7	3.7
3-Feb	0.9	0.9	0.7	0.5	0.7	1.1	1.4	1.5	1.6	1.3	1.3	1.2	1.6	2.4	2.1	1.8	1.3	1.0	0.7	0.3	0.3	0.3	0.5	2.4	
4-Feb	0.6	0.6	0.9	1.1	1.4	1.3	1.3	1.2	1.4	1.5	1.5	1.6	1.8	1.5	1.5	1.0	0.6	0.4	0.9	0.5	0.6	0.8	0.7	0.4	1.8
5-Feb	0.5	0.3	0.3	0.4	0.5	0.5	0.3	0.6	2.5	3.0	2.6	2.3	2.1	1.9	2.2	2.2	2.5	2.6	2.6	1.9	1.5	1.3	0.8	1.0	3.0
6-Feb	0.8	0.7	0.7	0.5	0.3	0.5	0.5	0.9	1.2	1.6	1.7	1.5	1.8	1.7	1.5	1.8	1.7	1.8	1.9	2.2	1.8	2.1	1.9	1.8	2.2
7-Feb	1.7	1.8	1.2	1.3	0.9	0.7	0.7	0.6	0.7	0.9	0.9	0.9	0.9	0.8	0.7	0.6	0.5	0.5	0.6	0.7	0.8	0.5	0.4	0.4	1.8
8-Feb	0.4	0.3	0.4	0.5	0.3	0.4	0.4	0.5	0.4	0.6	0.6	1.0	1.0	0.9	0.7	0.6	0.8	0.4	0.5	0.4	0.3	0.9	0.9	0.9	1.0
9-Feb	1.5	1.3	1.0	1.0	1.0	1.1	0.9	1.0	1.2	1.1	1.1	1.0	0.6	0.5	0.6	0.5	0.2	0.3	0.6	0.5	0.3	0.2	0.2	0.1	1.5
10-Feb	0.1	0.2	0.5	1.7	2.5	2.7	1.1	1.0	0.8	0.8	0.9	1.0	1.1	1.1	1.2	1.0	0.9	0.8	1.0	0.9	0.4	0.6	0.7	1.3	2.7
11-Feb	1.5	1.3	1.3	1.5	2.0	1.7	1.6	1.4	1.2	1.6	1.3	1.4	1.4	1.4	1.4	1.5	1.2	1.0	0.4	0.4	0.4	0.3	0.4	0.3	2.0
12-Feb	0.4	0.6	0.7	1.2	1.3	1.1	1.2	1.5	1.3	1.2	0.8	0.9	1.9	2.0	2.3	2.1	1.2	1.0	2.1	2.3	1.7	2.0	2.4	2.7	2.7
13-Feb	2.5	2.6	2.8	2.5	2.0	1.7	1.2	0.7	0.7	0.7	1.2	0.8	1.0	1.2	1.1	0.7	0.4	0.7	0.6	2.4	2.8	2.6	3.1	3.2	3.2
14-Feb	2.5	2.5	2.6	2.2	1.9	1.4	1.5	1.9	2.1	1.6	1.3	1.2	1.1	1.2	1.3	1.3	1.5	1.3	1.2	1.3	1.3	1.0	1.1	0.8	2.6
15-Feb	0.6	0.6	0.3	0.3	0.2	0.4	0.5	0.4	0.5	0.8	0.7	1.1	1.0	0.9	0.8	1.0	0.9	0.6	0.8	0.6	0.3	0.6	0.5	0.9	1.1
16-Feb	1.3	1.0	1.3	0.7	0.2	0.3	0.3	0.2	0.4	0.8	1.0	0.9	1.0	1.2	2.0	2.0	2.4	2.1	2.2	2.5	1.6	0.9	1.1	0.8	2.5
17-Feb	0.5	0.3	0.3	0.7	0.4	0.4	0.2	0.4	0.3	0.5	0.4	0.6	0.7	0.8	0.5	0.6	0.5	0.6	0.3	0.3	0.3	0.3	0.5	0.5	0.8
18-Feb	0.3	0.6	0.9	1.0	0.5	0.5	0.6	0.4	0.4	1.4	0.9	1.1	1.2	1.1	1.1	0.9	0.7	0.5	0.6	0.5	0.6	1.0	1.0	0.4	1.4
19-Feb	0.4	0.5	0.2	0.4	0.5	0.4	0.4	0.2	0.2	0.6	0.9	1.1	1.4	1.3	1.1	1.0	0.7	0.4	1.1	1.4	1.4	1.0	0.5	0.6	1.4
20-Feb	0.5	0.3	0.4	0.6	0.5	0.5	0.6	0.6	0.6	1.2	1.1	0.9	0.9	1.1	1.0	1.0	0.8	0.8	0.5	0.5	0.5	0.4	0.7	0.8	1.2
21-Feb	0.7	0.4	0.5	0.6	0.4	0.4	0.4	0.4	0.2	0.7	0.9	1.1	0.9	1.6	2.3	2.3	1.7	1.0	0.7	0.7	1.1	0.8	0.8	0.7	2.3
22-Feb	0.4	0.3	0.2	0.3	0.3	0.2	0.3	0.5	0.7	0.9	0.9	1.0	1.0	1.0	0.9	0.8	0.5	0.4	0.4	0.4	0.3	0.4	0.6	1.0	1.0
23-Feb	1.1	1.2	1.1	1.3	1.3	1.2	1.2	1.3	1.2	1.2	1.6	2.5	2.2	2.2	2.7	3.4	2.9	1.8	2.5	2.3	2.6	2.2	1.8	2.3	3.4
24-Feb	2.0	3.2	3.1	3.1	3.0	2.7	2.0	1.9	2.4	2.1	1.7	1.8	2.0	1.7	1.6	1.5	1.3	1.4	1.4	1.6	1.3	1.4	1.3	1.4	3.2
25-Feb	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.9	1.9	1.9	2.1	2.2	2.0	2.1	2.3	2.2	2.1	2.3	2.1	2.3	3.2	3.1	2.7	2.8	3.2
26-Feb	3.0	2.9	3.1	2.9	2.6	2.3	2.2	2.0	1.8	1.7	1.7	1.6	1.6	1.8	1.4	1.1	1.0	0.7	0.5	0.4	0.4	0.2	0.2	0.5	3.1
27-Feb	0.7	0.7	0.5	0.3	0.6	0.8	0.7	0.7	1.2	1.1	1.3	1.5	1.6	1.5	1.4	1.4	1.2	1.1	1.0	0.9	0.7	0.8	1.2	1.4	1.6
28-Feb	1.6	1.3	1.2	1.0	1.0	0.9	1.3	1.3	1.9	2.0	2.2	2.4	2.4	2.6	2.7	2.6	2.3	2.5	2.6	2.4	2.2	2.8	2.9	2.9	2.9
29-Feb	2.8	2.6	2.7	2.6	2.7	2.6	3.0	2.5	2.3	2.6	2.4	2.2	1.5	1.1	1.0	1.0	1.1	0.9	0.5	0.6	0.4	0.4	0.4	0.5	3.0
3.0 3.2 3.1 3.1 3.0 2.7 3.0 2.5 2.9 3.3 3.7 3.2 3.2 3.0 2.7 3.4 2.9 2.6 2.6 2.5 3.2 3.1 3.1 3.2																									
Diurnal Maximum																									
UO - Unstable Operation																									



Maximum Value: 2.1 km/h on Feb 29 02:00 Maximum Daily Average: 0.6 km/h on Feb 28 Minimum Value: -1.4 km/h on Feb 23 16:00 Minimum Daily Average: -0.5 km/h on Feb 11 Maximum Diurnal Average: 0.1 km/h at hour 10 Minimum Diurnal Average: -0.2 km/h at hour 21 Monthly Average: -0.01 km/h Percentiles: P ₁ = -1.0 P ₁₀ = -0.6 Q ₁ = -0.3 Median = -0.1 Q ₃ = 0.3 P ₉₀ = 0.6 P ₉₉ = 1.3																								Hours in Service: 696		
																								Hours of Data: 656		
																								Hours of Missing Data: 40		
																								Hours of Calibration: 0		
																								Percent Operational Time: 94.3		
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.9	0.6	0.7	0.8	0.8	1.1	0.7	0.6	0.5	0.5	0.6	0.3	0.4	0.4	0.3	0.1	0.2	0.1	0.1	0.0	0.0	-0.1	0.0	-0.2	0.4	1.1
2-Feb	-0.3	-0.4	-0.2	-0.1	-0.4	-0.1	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	-0.1
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	0.1	-0.2	-0.4	0.2	0.0	0.0	0.1	0.2	0.1	0.1	--	0.2
4-Feb	0.6	0.4	UO	UO	UO	UO	0.7	0.7	UO	1.1	0.7	0.6	0.8	0.4	0.2	0.1	0.4	0.5	0.6	0.5	0.4	0.5	0.4	0.1	0.5	1.1
5-Feb	0.5	0.3	0.1	0.0	0.1	0.1	-0.2	-0.4	-0.4	-1.0	-0.8	-0.4	-0.2	-0.3	-0.1	0.3	-0.2	-0.5	-0.5	-0.7	-0.5	-0.4	-0.3	-0.3	-0.3	0.5
6-Feb	-0.4	0.1	0.3	-0.1	-0.1	0.0	-0.3	0.2	1.1	1.0	-0.1	0.1	0.8	0.0	0.2	0.5	0.4	0.6	0.2	0.5	0.4	0.3	0.4	0.7	0.3	1.1
7-Feb	0.7	0.7	0.3	0.5	0.0	0.1	0.0	0.1	0.1	0.2	0.1	0.0	0.4	0.3	0.1	-0.1	-0.1	-0.2	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	0.1	0.7
8-Feb	0.1	0.1	-0.2	-0.1	-0.1	-0.2	-0.2	0.0	0.0	-0.1	-0.1	0.4	0.0	0.0	0.3	0.0	0.0	0.0	-0.2	-0.1	-0.1	-0.2	-0.2	-0.4	-0.1	0.4
9-Feb	-0.6	-0.4	-0.4	-0.3	-0.3	-0.5	-0.4	-0.2	0.1	0.3	-0.2	0.0	0.0	0.0	0.2	0.2	0.0	0.1	-0.1	-0.3	0.0	-0.1	-0.2	0.0	-0.1	0.3
10-Feb	0.0	0.1	0.1	0.5	0.9	UO	0.6	0.5	0.6	0.5	0.3	0.5	0.1	UO	2.0	UO	0.5	0.3	0.2	0.1	-0.2	0.3	-0.1	-0.4	0.3	2.0
11-Feb	-1.0	-0.9	-0.9	-0.9	-0.8	-0.5	-0.3	0.0	-0.5	-0.7	-0.5	-0.5	-0.2	-0.3	-0.5	-0.3	-0.5	-0.7	-0.7	-0.7	-0.5	-0.4	-0.4	-0.1	-0.5	0.0
12-Feb	0.4	0.5	0.5	0.7	0.8	0.7	0.7	0.8	0.7	0.6	0.1	-0.2	-0.5	-0.7	-0.6	-0.8	-0.6	-0.5	-0.7	-0.8	-0.7	-0.7	-1.1	-1.1	-0.1	0.8
13-Feb	-0.7	-0.6	-0.8	-0.4	-0.4	-0.2	-0.1	-0.2	-0.5	-0.5	0.1	0.2	0.0	0.3	0.2	0.2	-0.3	-0.1	-0.5	-0.6	-0.7	-0.1	-0.3	-1.3	-0.3	0.3
14-Feb	-0.4	-0.2	-0.4	-0.2	-0.2	-0.2	0.3	-0.2	0.3	0.1	0.0	-0.2	-0.1	-0.1	0.2	0.0	0.2	0.1	0.0	-0.1	0.2	0.1	0.3	-0.2	0.0	0.3
15-Feb	0.2	0.0	0.0	-0.1	-0.2	-0.2	-0.4	-0.4	-0.3	0.2	0.1	0.0	0.5	0.3	0.1	0.6	0.3	0.4	-0.1	-0.5	-0.5	-0.6	-0.4	-0.4	-0.1	0.6
16-Feb	-0.6	-0.8	-0.4	-0.3	-0.2	-0.1	-0.2	-0.4	-0.1	0.2	0.4	0.2	0.2	0.1	-0.4	-0.3	-0.9	-0.8	-0.9	-0.7	-0.5	-0.5	-0.6	-0.7	-0.3	0.4
17-Feb	-0.6	-0.5	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	0.0	0.1	0.1	0.0	-0.3	0.0	0.3	0.4	0.1	-0.2	-0.1	0.2	0.2	0.5	-0.1	0.5
18-Feb	0.0	0.2	0.7	0.8	0.2	0.2	0.4	0.3	0.3	0.5	0.3	-0.1	-0.1	-0.2	0.5	-0.3	-0.2	-0.1	-0.3	-0.1	0.1	1.2	0.3	0.0	0.2	1.2
19-Feb	0.0	0.2	0.1	0.0	0.0	-0.1	-0.2	-0.1	0.0	-0.1	-0.1	0.5	-0.1	-0.1	-0.3	-0.3	-0.2	-0.2	-0.3	-0.4	-0.1	-0.1	-0.2	-0.3	-0.1	0.5
20-Feb	-0.2	-0.2	-0.4	-0.1	-0.1	0.0	0.0	-0.2	0.0	-0.1	0.4	0.0	-0.1	0.3	0.4	0.5	0.2	0.3	0.3	0.3	0.0	0.0	0.4	0.7	0.1	0.7
21-Feb	0.5	0.3	0.2	-0.1	-0.2	-0.1	-0.2	-0.3	0.0	0.0	0.3	0.2	0.1	-0.4	-0.8	-0.6	-0.7	-0.6	-0.7	-0.7	-0.8	-0.6	-0.6	-0.5	-0.3	0.5
22-Feb	-0.2	-0.2	-0.2	-0.1	0.0	0.0	0.0	-0.2	-0.2	-0.1	-0.2	-0.3	0.3	-0.2	0.2	0.3	-0.1	-0.1	-0.1	-0.1	-0.1	0.1	0.6	0.7	0.0	0.7
23-Feb	0.7	0.8	0.7	0.9	1.0	0.7	0.7	0.9	1.0	0.5	-0.4	-0.4	-0.4	-0.6	-0.9	-1.4	-0.9	-0.6	-0.8	-0.7	-0.9	-0.6	-0.6	-0.8	-0.1	1.0
24-Feb	-0.7	-0.3	-0.3	-1.0	-0.9	-0.8	-0.6	-0.5	-0.9	-0.6	-0.1	0.0	-0.4	-0.6	-0.3	0.4	0.2	0.2	0.4	0.1	-0.1	-0.1	0.7	-0.1	-0.3	0.7
25-Feb	0.3	0.0	-0.3	-0.1	-0.3	-0.2	-0.3	-0.4	-0.2	-0.1	0.0	-0.1	-0.4	-0.5	-0.7	-0.3	-0.2	-0.4	-0.1	-0.5	-0.7	-1.0	-0.3	-0.6	-0.3	0.3
26-Feb	-0.5	-0.3	0.3	0.1	-0.2	0.0	0.0	-0.5	-0.6	-0.1	-0.3	-0.4	-0.3	-0.3	-0.3	-0.1	0.2	0.0	-0.1	-0.1	0.1	-0.1	-0.3	-0.5	-0.2	0.3
27-Feb	-0.6	-0.3	-0.2	-0.1	-0.4	-0.4	-0.6	-0.5	-0.2	0.1	-0.4	-0.3	-0.4	-0.3	0.1	1.0	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.0	1.0
28-Feb	0.5	0.5	0.6	0.6	0.6	0.5	0.6	0.4	0.6	0.8	0.4	0.4	0.7	0.5	0.9	0.8	0.7	0.5	1.5	0.9	0.4	0.6	0.4	0.6	0.6	1.5
29-Feb	0.7	2.1	1.9	1.2	1.4	1.3	0.6	2.0	1.2	0.8	0.6	0.4	0.5	0.5	0.2	0.1	0.4	-0.1	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	0.6	2.1
																								Diurnal Average		
																								Diurnal Maximum		
UO - Unstable Operation																										



Summary of Hour Standard Deviations

Mannix - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 3.6 km/h on Feb 23 16:00 Minimum Value: 0.1 km/h on Feb 10 01:00 Percentiles: $P_1 = 0.2$ $P_{10} = 0.3$ $Q_1 = 0.5$ Median = 1.0 $Q_3 = 1.8$ $P_{90} = 2.5$ $P_{99} = 3.3$																								Hours in Service: 696 Hours of Data: 656 Hours of Missing Data: 40 Hours of Calibration: 0 Percent Operational Time: 94.3	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	2.3	2.0	2.2	2.3	2.2	2.0	1.8	1.0	0.7	0.8	0.9	0.9	1.1	1.1	1.1	0.7	0.6	0.4	0.5	0.4	0.5	0.3	0.2	0.4	2.3
2-Feb	0.7	1.1	1.5	1.4	1.5	1.4	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	1.5
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	2.0	2.0	1.1	1.2	0.9	0.4	0.4	0.5	0.3	0.3	2.0
4-Feb	0.3	0.3	UO	UO	UO	UO	1.1	0.9	UO	1.4	1.5	1.6	1.8	1.8	1.4	0.8	0.5	0.5	0.8	0.5	0.4	0.5	0.4	0.3	1.8
5-Feb	0.5	0.3	0.3	0.2	0.4	0.4	0.3	0.5	2.7	2.8	2.3	1.9	2.0	1.9	2.1	2.2	2.5	2.4	2.7	1.9	1.5	1.2	0.7	0.8	2.8
6-Feb	0.6	0.7	0.8	0.8	0.5	0.5	0.6	1.0	1.6	1.9	1.9	1.8	2.3	1.8	1.7	2.0	2.1	2.2	2.1	2.3	2.2	2.3	2.2	2.2	2.3
7-Feb	2.1	2.1	1.3	1.5	1.0	0.9	0.9	0.9	0.8	1.1	1.1	1.1	1.1	1.0	0.9	0.8	0.7	0.4	0.6	0.5	0.7	0.7	0.3	0.3	2.1
8-Feb	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.5	0.4	0.6	0.7	1.2	1.2	1.1	1.0	0.6	0.6	0.3	0.2	0.2	0.2	0.7	1.0	0.9	1.2
9-Feb	1.5	1.2	1.0	1.2	1.1	1.1	0.9	1.2	1.2	1.4	1.1	1.2	0.7	0.6	0.7	0.6	0.2	0.3	0.6	0.6	0.2	0.2	0.2	0.1	1.5
10-Feb	0.1	0.2	0.2	0.5	0.6	UO	0.4	0.7	0.8	0.6	0.6	0.9	0.9	UO	1.0	UO	0.9	0.8	0.8	0.7	0.4	0.5	0.9	1.7	1.7
11-Feb	1.7	1.8	1.4	1.5	2.1	2.0	1.9	1.8	1.5	1.5	1.5	1.7	1.5	1.7	1.5	1.5	1.1	0.5	0.6	0.4	0.5	0.4	0.4	0.4	2.1
12-Feb	0.3	0.4	0.6	1.0	1.0	0.7	1.0	1.2	1.2	1.1	0.9	1.0	2.0	2.1	2.5	2.3	1.2	1.0	2.3	2.3	1.6	2.2	2.4	2.6	2.6
13-Feb	2.6	2.6	2.8	2.2	1.9	1.7	1.2	0.8	0.5	0.6	1.4	1.0	1.1	1.3	1.2	0.7	0.4	0.7	0.6	2.4	2.6	2.7	3.0	3.2	3.2
14-Feb	2.6	2.2	2.6	2.3	1.9	1.3	1.9	2.3	2.3	2.0	1.6	1.4	1.4	1.4	1.6	1.5	1.5	1.2	1.3	1.1	1.2	1.2	1.3	0.8	2.6
15-Feb	0.8	0.7	0.3	0.1	0.1	0.2	0.3	0.3	0.3	0.9	0.7	1.0	1.1	1.0	0.7	1.1	1.0	0.6	0.5	0.4	0.4	0.5	0.9	1.1	1.1
16-Feb	1.2	0.9	0.9	0.8	0.3	0.2	0.3	0.4	0.5	0.8	0.9	0.8	0.9	1.2	2.0	2.2	2.5	1.9	2.4	2.8	1.8	1.3	0.8	0.7	2.8
17-Feb	0.4	0.3	0.3	0.6	0.4	0.5	0.5	0.5	0.4	0.5	0.4	0.5	0.6	0.7	0.5	0.6	0.5	0.7	0.4	0.2	0.4	0.4	0.5	0.7	0.7
18-Feb	0.4	0.9	1.4	1.3	0.7	0.8	0.7	0.6	0.7	1.7	1.1	1.4	1.3	1.2	1.2	1.0	0.5	0.6	0.4	0.7	0.7	1.6	1.4	0.7	1.7
19-Feb	0.4	0.3	0.3	0.4	0.5	0.3	0.4	0.3	0.2	0.6	0.9	1.3	1.7	1.4	1.3	1.1	0.9	0.3	1.0	1.2	1.3	1.1	0.4	0.5	1.7
20-Feb	0.4	0.3	0.3	0.5	0.5	0.5	0.5	0.4	0.7	1.1	1.4	1.0	1.0	1.1	1.1	1.1	0.7	0.7	0.6	0.6	0.5	0.4	0.4	0.6	1.4
21-Feb	0.6	0.4	0.8	0.9	0.7	0.5	0.2	0.4	0.3	0.5	0.8	1.2	0.9	1.7	2.4	2.6	1.8	1.1	0.5	0.7	0.9	1.1	0.7	0.6	2.6
22-Feb	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.8	0.9	1.1	1.0	1.1	1.1	0.9	0.9	0.5	0.4	0.3	0.3	0.3	0.5	0.5	0.8	1.1
23-Feb	0.9	0.8	0.8	1.0	0.9	1.0	1.1	0.9	1.1	1.3	2.0	2.9	2.6	2.6	3.0	3.6	3.0	1.7	1.7	1.9	2.8	2.6	2.1	2.5	3.6
24-Feb	2.3	2.7	3.0	2.9	3.0	2.7	2.1	2.1	2.5	2.3	1.9	2.0	2.3	2.1	2.0	1.9	1.5	1.6	1.5	1.4	1.4	1.3	1.6	1.5	3.0
25-Feb	1.7	1.7	1.4	1.5	1.6	1.5	1.7	1.8	1.9	1.9	2.2	2.2	2.3	2.3	2.0	2.1	2.3	2.1	2.3	2.6	2.9	2.4	2.9	2.6	2.9
26-Feb	2.8	3.3	3.5	2.9	3.0	2.5	2.5	2.2	1.7	2.0	2.2	2.2	2.0	2.0	1.7	1.2	1.3	0.8	0.2	0.4	0.5	0.2	0.3	0.5	3.5
27-Feb	0.7	0.8	0.6	0.4	0.7	0.7	0.7	0.7	1.3	1.3	1.5	1.8	2.0	1.8	1.9	2.0	1.6	1.4	0.9	0.6	0.7	0.9	1.3	1.4	2.0
28-Feb	1.6	1.5	1.2	0.8	0.8	0.9	1.2	1.3	1.9	2.2	2.4	2.7	2.6	3.1	3.3	3.1	3.0	2.8	3.3	3.1	2.5	3.1	3.1	3.4	3.4
29-Feb	3.1	3.4	3.4	3.0	3.2	3.4	3.4	3.3	2.9	3.0	2.9	2.5	1.9	1.5	1.2	1.3	1.4	0.9	0.4	0.6	0.4	0.3	0.3	0.4	3.4
3.1 3.4 3.5 3.0 3.2 3.4 3.4 3.3 2.9 3.0 2.9 2.9 2.6 3.1 3.3 3.6 3.0 2.8 3.3 3.1 2.9 3.1 3.1 3.4																									
Diurnal Maximum																									
UO - Unstable Operation																									



Maximum Value: 1.8 km/h on Feb 10 07:00 Maximum Daily Average: 0.4 km/h on Feb 23																								Hours in Service:	696	
Minimum Value: -1.1 km/h on Feb 10 11:00 Minimum Daily Average: -0.1 km/h on Feb 6																								Hours of Data:	638	
Maximum Diurnal Average: 0.3 km/h at hour 4 Minimum Diurnal Average: 0.0 km/h at hour 11																								Hours of Missing Data:	58	
Monthly Average: 0.14 km/h Percentiles: $P_1 = -0.8$ $P_{10} = -0.2$ $Q_1 = 0.0$ Median = 0.1 $Q_3 = 0.3$ $P_{90} = 0.5$ $P_{99} = 1.2$																								Hours of Calibration:	0	
																								Percent Operational Time:	91.7	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	-0.3	-0.4	-0.5	-0.1	0.0	-0.1	-0.1	0.2	0.4	0.5	0.7	0.4	0.5	0.1	0.1	-0.4	0.1	0.0	0.3	-0.1	0.3	0.1	0.2	0.1	0.1	0.7
2-Feb	0.0	-0.1	0.3	0.4	0.0	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	0.4
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	--
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	0.5	0.4	0.1	0.3	0.2	0.2	0.2	0.2	0.0	-0.1	--	0.5
5-Feb	-0.1	0.0	0.2	0.2	0.3	0.4	0.1	0.0	-0.2	-0.8	-0.6	0.1	0.2	-0.1	0.1	0.4	0.1	0.2	0.1	0.0	-0.1	0.1	0.0	0.2	0.0	0.4
6-Feb	-0.1	0.3	0.6	0.1	0.0	0.3	-0.1	0.3	1.2	0.8	-0.9	-0.7	0.1	-1.0	-0.5	-0.2	-0.3	-0.2	-0.6	-0.6	-0.5	-0.7	-0.3	-0.1	-0.1	1.2
7-Feb	0.0	0.0	-0.1	-0.1	-0.1	0.2	0.0	0.3	0.4	0.2	0.3	0.2	0.6	0.5	0.4	0.2	0.2	0.0	0.3	0.1	0.1	0.1	0.1	0.2	0.2	0.6
8-Feb	0.2	0.1	0.1	0.3	0.2	0.0	0.0	0.3	0.2	0.1	0.1	0.4	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.2	0.2	0.0	0.1	0.1	0.4
9-Feb	0.2	0.5	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.4	-0.1	0.2	0.1	0.0	0.2	0.2	0.2	0.1	0.1	-0.2	0.1	0.1	0.1	0.1	0.1	0.5
10-Feb	0.1	0.2	0.3	1.0	0.2	UO	1.8	0.7	0.9	0.0	-1.1	-1.0	-0.8	0.2	0.0	0.5	0.5	0.5	0.6	0.1	0.0	0.2	0.0	0.2	0.2	1.8
11-Feb	-0.2	-0.5	-0.4	-0.1	0.3	0.4	0.5	0.9	0.0	-0.1	0.2	0.3	0.5	0.5	0.3	0.4	0.1	0.1	-0.2	-0.2	-0.1	0.0	0.3	0.1	0.1	0.9
12-Feb	0.1	0.2	0.2	0.6	0.6	0.5	0.5	0.6	0.5	0.6	0.1	0.1	0.1	0.4	0.3	-0.3	0.0	0.5	0.4	0.5	0.3	-0.3	-0.6	-0.5	0.2	0.6
13-Feb	-0.1	-0.2	-0.1	0.1	-0.1	0.1	0.3	0.2	0.0	-0.2	0.4	0.4	0.1	0.5	0.3	0.2	0.0	0.3	0.0	-0.3	-0.4	0.6	0.2	-0.9	0.1	0.6
14-Feb	0.4	0.2	-0.1	0.2	0.0	0.3	0.5	0.1	0.3	-0.1	0.2	0.0	0.3	0.3	0.5	0.1	0.2	0.4	0.2	0.1	0.3	0.4	0.4	0.1	0.2	0.5
15-Feb	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.3	0.1	0.1	0.4	0.6	0.3	0.6	0.0	0.3	-0.2	-0.1	0.0	-0.1	-0.1	0.3	0.2	0.6
16-Feb	0.2	-0.1	0.3	0.3	0.1	0.2	0.1	0.0	-0.2	-0.1	0.2	0.0	0.1	0.3	0.2	0.0	0.0	-0.2	-0.1	0.5	0.5	0.2	0.1	-0.1	0.1	0.5
17-Feb	0.0	0.0	0.3	0.4	0.2	0.3	0.2	0.2	0.0	0.1	0.1	0.1	0.1	0.1	-0.1	0.3	0.4	0.1	0.1	0.2	0.1	0.1	0.4	0.2	0.2	0.4
18-Feb	0.1	0.2	0.8	1.2	0.1	0.3	0.2	0.4	0.1	0.5	0.6	-0.1	-0.3	-0.4	0.7	0.2	0.2	0.4	0.0	0.1	0.4	1.7	0.0	0.2	0.3	1.7
19-Feb	0.2	0.5	0.1	-0.1	0.2	0.2	0.1	0.2	0.2	0.2	-0.2	0.8	0.2	0.2	-0.1	0.0	0.0	0.2	-0.1	-0.1	0.2	0.0	0.1	0.0	0.1	0.8
20-Feb	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.2	0.1	0.5	0.0	-0.2	0.3	0.2	0.4	0.5	0.5	0.7	0.8	0.3	0.1	0.2	0.5	0.2	0.8
21-Feb	0.4	0.2	0.1	0.1	0.1	0.2	0.2	0.0	0.1	0.2	0.1	0.2	0.0	0.2	0.1	0.4	-0.1	-0.1	-0.2	-0.2	-0.1	0.0	0.2	0.1	0.1	0.4
22-Feb	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.1	0.0	0.6	-0.2	0.2	0.2	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.2	0.6
23-Feb	0.5	0.8	0.3	0.3	1.1	0.6	0.7	0.7	0.8	0.3	0.4	0.4	0.5	0.2	-0.1	-0.5	0.1	0.4	0.0	-0.1	0.0	0.4	0.5	0.1	0.4	1.1
24-Feb	0.3	0.2	0.3	-0.6	-0.6	-0.4	-0.2	-0.3	-0.4	-0.4	0.2	0.3	-0.3	-0.4	-0.1	0.5	0.4	0.4	0.3	0.3	-0.1	-0.2	0.7	0.1	0.0	0.7
25-Feb	0.5	0.2	-0.1	0.2	0.0	0.1	-0.1	-0.1	0.0	0.1	-0.1	0.1	-0.2	-0.2	-0.5	-0.1	0.0	-0.1	0.1	-0.1	-0.6	-1.0	-0.2	-0.3	-0.1	0.5
26-Feb	-0.1	0.8	0.9	1.3	0.8	0.8	0.5	0.1	-0.4	0.3	0.2	0.0	0.3	0.2	-0.2	0.4	0.3	0.2	0.1	0.0	0.2	0.0	0.1	0.1	0.3	1.3
27-Feb	0.5	0.3	0.2	0.1	0.2	0.2	-0.2	-0.1	0.2	0.3	-0.3	-0.2	-0.2	0.1	0.4	1.1	0.0	-0.3	0.0	0.0	0.3	0.5	0.4	0.2	0.2	1.1
28-Feb	0.1	0.1	0.4	0.2	0.1	-0.2	-0.2	-0.5	0.0	0.4	-0.4	-0.4	-0.5	-0.1	-0.3	0.3	-0.1	-0.4	0.3	0.2	-0.5	-0.8	-0.4	-0.3	-0.1	0.4
29-Feb	0.1	1.8	1.5	0.4	0.9	0.5	-0.5	1.6	0.8	0.1	-0.3	-0.4	0.0	0.4	0.2	0.0	0.4	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.4	1.8
																								Diurnal Average		
																								Diurnal Maximum		
0.1 0.2 0.2 0.3 0.2 0.2 0.2 0.2 0.2 0.2 0.0 0.0 0.1 0.1 0.1 0.2 0.1 0.1 0.1 0.0 0.1 0.1 0.1 0.0 0.5 1.8 1.5 1.3 1.1 0.8 1.8 1.6 1.2 0.8 0.7 0.8 0.6 0.6 0.7 1.1 0.5 0.5 0.7 0.8 0.5 1.7 0.7 0.5																										
UO - Unstable Operation																										



Summary of Hour Standard Deviations

Mannix - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 4.2 km/h on Feb 29 07:00 Minimum Value: 0.1 km/h on Feb 8 19:00 Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.6 Median = 1.0 Q ₃ = 1.9 P ₉₀ = 2.5 P ₉₉ = 3.7																								Hours in Service: 696 Hours of Data: 638 Hours of Missing Data: 58 Hours of Calibration: 0 Percent Operational Time: 91.7	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	2.3	2.0	2.1	2.0	1.9	1.9	1.5	0.7	0.8	0.9	0.8	1.0	1.0	0.9	1.1	0.8	0.8	0.7	0.9	0.5	0.9	0.3	0.2	0.5	2.3
2-Feb	0.5	1.0	1.3	1.1	1.4	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	1.4
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	1.3	0.6	0.4	0.5	0.5	0.4	0.3	0.4	0.7	0.4	1.3
5-Feb	0.6	0.5	0.6	0.3	0.3	0.3	0.3	0.4	2.5	2.4	2.2	1.8	1.9	2.0	2.0	2.1	2.6	2.0	2.2	2.1	1.2	1.2	0.7	0.7	2.6
6-Feb	0.6	0.7	0.8	0.8	0.7	0.6	0.8	1.4	1.9	2.2	2.0	1.9	2.7	1.7	1.7	1.8	1.8	2.0	1.9	2.1	2.0	2.1	2.0	2.1	2.7
7-Feb	1.9	1.9	1.2	1.3	1.0	0.9	1.0	1.1	0.7	1.2	1.3	1.3	1.2	1.0	1.0	0.9	0.8	0.4	0.6	0.4	0.6	0.6	0.3	0.3	1.9
8-Feb	0.3	0.3	0.2	0.4	0.3	0.3	0.4	0.6	0.4	0.4	0.6	1.2	1.4	1.2	1.1	0.6	0.5	0.2	0.1	0.1	0.2	0.6	0.9	0.8	1.4
9-Feb	1.3	1.2	0.9	1.3	1.1	1.0	0.8	1.2	1.0	1.3	1.1	1.2	0.7	0.5	0.7	0.4	0.2	0.3	0.5	0.6	0.3	0.1	0.2	0.2	1.3
10-Feb	0.2	0.2	0.2	0.6	0.9	UO	0.8	0.9	1.3	1.6	1.0	1.3	1.2	0.9	0.8	0.8	0.8	0.6	0.7	0.7	0.5	0.9	1.2	2.0	2.0
11-Feb	1.9	2.2	1.6	1.5	2.0	2.3	2.2	2.0	1.6	1.7	1.5	1.9	1.8	1.9	1.9	1.5	1.1	0.4	0.6	0.6	0.5	0.3	0.2	0.6	2.3
12-Feb	0.4	0.7	0.5	0.6	0.7	0.6	0.6	0.7	0.8	1.0	0.8	1.1	2.3	2.2	2.5	2.0	1.1	1.1	2.2	2.2	1.7	2.0	2.2	2.4	2.5
13-Feb	2.4	2.7	2.4	2.1	1.7	1.6	1.2	0.8	0.4	0.6	1.6	1.0	1.1	1.3	1.1	0.6	0.5	0.9	0.6	2.2	2.5	2.8	2.8	2.9	2.9
14-Feb	2.6	1.9	2.3	2.1	1.7	1.4	1.7	2.3	2.4	2.0	1.7	1.7	1.5	1.5	1.6	1.3	1.3	1.0	1.0	0.6	0.8	1.1	1.1	0.6	2.6
15-Feb	0.9	0.7	0.4	0.1	0.2	0.1	0.4	0.4	0.3	0.6	0.5	0.9	1.3	1.2	0.9	1.0	0.8	0.4	0.3	0.4	0.4	0.6	1.3	1.4	1.4
16-Feb	1.2	1.1	0.8	0.8	0.7	0.5	0.3	0.3	0.7	1.0	0.9	0.8	0.9	1.4	2.2	2.2	2.4	2.0	2.7	3.1	2.1	1.4	0.7	0.6	3.1
17-Feb	0.3	0.3	0.4	0.5	0.4	0.4	0.5	0.6	0.6	0.6	0.4	0.3	0.5	0.7	0.5	0.7	0.4	0.8	0.8	0.3	0.6	1.2	0.6	0.8	1.2
18-Feb	0.8	1.4	2.3	1.9	0.7	1.2	1.0	1.0	1.5	1.9	1.3	1.7	1.6	1.5	1.5	1.0	0.7	0.8	0.5	0.9	1.1	2.1	1.6	0.9	2.3
19-Feb	0.5	0.6	1.1	0.5	0.7	0.3	0.4	0.3	0.2	0.5	0.7	1.4	1.7	1.4	1.2	1.2	0.8	0.3	0.9	1.1	1.2	1.0	0.4	0.4	1.7
20-Feb	0.4	0.3	0.3	0.4	0.3	0.4	0.4	0.3	0.4	1.0	1.3	0.9	0.8	1.1	0.9	0.9	0.7	0.6	0.5	0.3	0.4	0.3	0.2	0.4	1.3
21-Feb	0.7	0.6	1.1	1.2	0.7	0.6	0.4	0.4	0.4	0.3	0.8	0.9	0.9	1.8	2.3	2.5	1.8	1.2	0.5	0.5	0.9	1.3	0.7	0.6	2.5
22-Feb	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.8	0.7	0.9	0.8	1.1	1.1	1.0	0.9	0.8	1.0	0.5	0.6	0.5	0.6	0.3	0.5	1.1
23-Feb	0.6	0.7	0.7	0.7	0.7	1.1	1.0	0.8	1.6	1.3	2.5	3.1	3.0	2.9	3.4	3.4	3.2	1.8	1.7	1.7	2.6	2.8	2.3	2.5	3.4
24-Feb	2.3	2.6	2.7	2.7	2.8	2.5	1.9	2.1	2.3	2.2	2.0	2.0	2.1	2.4	2.2	2.1	1.6	1.7	1.4	1.2	1.4	1.0	1.5	1.4	2.8
25-Feb	1.7	1.7	1.2	1.5	1.3	1.4	1.5	1.7	1.9	2.1	2.4	2.3	2.5	2.5	2.0	2.1	2.1	1.9	2.3	2.6	2.8	2.3	3.0	2.7	3.0
26-Feb	2.6	3.4	3.7	3.1	3.1	2.8	2.6	1.9	1.4	2.0	2.3	2.5	2.3	2.2	1.7	1.5	1.4	0.9	0.2	0.2	0.6	0.2	0.4	0.6	3.7
27-Feb	0.6	0.8	0.6	0.6	0.5	0.4	0.6	0.7	1.0	1.5	1.6	2.0	2.1	2.1	2.2	2.4	1.6	1.3	0.4	0.4	0.6	0.8	1.2	1.1	2.4
28-Feb	1.1	1.2	0.8	0.5	0.9	1.0	0.9	1.0	1.6	1.9	2.2	2.7	2.5	3.1	3.2	3.3	3.0	2.6	3.2	3.1	2.5	2.9	3.0	3.5	3.5
29-Feb	3.3	3.9	3.9	3.8	4.1	4.1	4.2	4.0	3.5	3.1	3.0	2.3	1.9	1.8	1.3	1.3	1.6	0.9	0.4	0.5	0.3	0.3	0.3	0.4	4.2
3.3 3.9 3.9 3.8 4.1 4.1 4.2 4.0 3.5 3.1 3.0 3.1 3.0 3.1 3.4 3.4 3.2 2.6 3.2 3.1 2.8 2.9 3.0 3.5																									
Diurnal Maximum																									
UO - Unstable Operation																									



Summary of Hour Averages

Mannix - February 2024

Maximum Value: 2.3 km/h on Feb 26 03:00 Maximum Daily Average: 0.6 km/h on Feb 14																								Hours in Service:	696	
Minimum Value: -1.5 km/h on Feb 6 14:00 Minimum Daily Average: -0.5 km/h on Feb 16																								Hours of Data:	637	
Maximum Diurnal Average: 0.3 km/h at hour 4 Minimum Diurnal Average: -0.1 km/h at hour 14																								Hours of Missing Data:	59	
Monthly Average: 0.07 km/h Percentiles: $P_1 = -1.1$ $P_{10} = -0.4$ $Q_1 = -0.2$ Median = 0.0 $Q_3 = 0.3$ $P_{90} = 0.7$ $P_{99} = 1.7$																								Hours of Calibration:	0	
																								Percent Operational Time:	91.5	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.1	-0.3	-1.5	-0.7	0.2	0.3	0.5	0.1	-0.2	-0.2	-0.1	-0.1	0.2	0.0	0.1	-0.4	0.1	0.1	0.2	0.1	0.1	0.0	0.2	0.3	0.0	0.5
2-Feb	0.5	0.5	0.9	1.1	0.3	0.4	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	1.1
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	--
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	0.0	0.0	0.1	0.1	0.3	0.3	0.3	0.3	0.4	0.0	--	0.4
5-Feb	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.6	0.1	0.2	0.7	0.8	0.4	0.6	0.6	0.9	0.9	0.9	0.7	0.6	0.5	0.3	0.8	0.4	0.9
6-Feb	0.1	0.5	0.8	0.2	-0.1	0.3	-0.1	0.3	1.2	0.8	-1.2	-0.8	-0.1	-1.5	-0.5	-0.2	-0.1	0.1	-0.6	-0.4	-0.4	-0.2	-0.1	0.2	-0.1	1.2
7-Feb	0.1	0.2	0.0	0.1	-0.2	-0.1	-0.3	0.1	0.1	-0.1	0.1	0.0	0.5	0.3	0.1	0.0	0.1	-0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.5
8-Feb	0.1	-0.1	-0.1	0.1	0.0	0.0	-0.1	0.1	0.1	-0.1	-0.1	0.1	-0.2	-0.2	0.3	-0.2	-0.2	-0.1	-0.2	-0.2	0.0	0.3	0.2	0.0	0.0	0.3
9-Feb	0.1	0.3	-0.1	-0.3	-0.2	-0.2	-0.2	0.1	0.4	0.6	0.1	0.3	0.0	-0.3	0.1	0.0	0.0	0.0	0.2	-0.1	0.2	0.1	0.0	0.0	0.0	0.6
10-Feb	0.0	0.1	0.2	0.8	1.2	1.4	UO	UO	1.8	UO	UO	0.2	0.2	0.1	0.6	0.5	0.2	0.1	0.0	-0.5	-0.3	-0.3	-0.4	-0.3	0.3	1.8
11-Feb	-0.9	-1.5	-1.1	-0.9	-0.5	-0.3	-0.1	0.5	-0.5	-0.7	-0.2	-0.1	0.1	0.1	-0.2	-0.1	-0.3	-0.5	-0.7	-0.8	-0.5	-0.3	-0.1	-0.3	-0.4	0.5
12-Feb	-0.3	-0.4	-0.3	-0.2	-0.1	-0.1	-0.2	-0.1	-0.2	-0.1	-0.5	-0.4	-0.5	-0.2	0.1	-0.1	0.0	0.2	-0.1	0.0	0.1	-0.2	-0.1	0.0	-0.1	0.2
13-Feb	0.5	0.5	0.6	0.9	0.7	0.7	0.5	0.0	-0.2	-0.4	0.4	0.4	0.0	0.2	0.0	-0.1	-0.4	0.0	-0.4	0.6	0.4	1.7	1.3	-0.3	0.3	1.7
14-Feb	1.1	1.1	0.8	0.8	0.6	0.7	0.8	0.5	0.8	0.2	0.4	0.1	0.3	0.2	0.8	0.3	0.6	0.8	0.6	0.5	0.8	0.8	0.7	0.3	0.6	1.1
15-Feb	0.4	0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0.1	0.4	0.1	0.4	0.0	-0.2	-0.6	-0.9	-0.6	-0.7	-0.5	-0.3	-0.1	0.4
16-Feb	-0.4	-0.8	-0.3	-0.1	-0.1	-0.1	-0.2	-0.4	-0.6	-0.7	-0.5	-0.6	-0.4	-0.1	-0.4	-0.7	-1.0	-1.3	-1.1	-0.2	-0.2	-0.4	-0.5	-0.6	-0.5	-0.1
17-Feb	-0.5	-0.5	-0.2	-0.1	-0.1	0.0	-0.2	-0.2	-0.3	-0.2	0.0	0.0	0.1	0.0	-0.1	0.2	0.2	0.0	0.1	0.2	0.3	0.2	0.2	0.2	0.0	0.3
18-Feb	0.1	0.2	0.8	1.1	0.1	0.2	0.4	0.5	0.3	0.3	0.8	-0.1	-0.4	-0.4	0.7	0.1	0.1	0.3	0.4	0.3	0.6	2.0	0.0	0.1	0.3	2.0
19-Feb	0.3	0.4	0.2	0.1	0.1	0.0	-0.1	0.0	0.0	0.1	-0.4	0.8	0.0	0.0	-0.4	-0.2	-0.1	0.2	0.4	0.4	0.8	0.3	0.1	0.1	0.1	0.8
20-Feb	0.2	0.1	0.1	0.1	0.0	0.0	0.2	-0.1	0.0	-0.2	0.1	-0.2	-0.4	0.0	0.0	0.1	0.0	0.1	0.0	0.0	-0.2	-0.4	-0.2	0.0	0.0	0.2
21-Feb	0.0	-0.1	-0.3	-0.2	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.5	-0.4	-0.7	-0.4	-0.8	-0.8	-0.8	-1.0	-0.9	-0.7	-0.2	0.1	-0.3	0.1
22-Feb	0.4	0.2	0.0	-0.1	-0.2	0.0	0.1	0.0	0.3	0.3	-0.1	-0.1	0.3	-0.3	0.3	0.1	-0.1	0.0	0.1	0.0	0.1	0.1	0.3	0.2	0.1	0.4
23-Feb	0.3	0.2	0.0	0.2	0.3	-0.2	-0.3	-0.4	0.0	-0.2	-0.1	-0.4	-0.2	-0.4	-0.9	-1.4	-0.8	0.2	-0.4	-1.0	-0.8	-0.2	-0.1	-0.6	-0.3	0.3
24-Feb	-0.4	1.0	1.3	0.1	0.1	0.2	0.2	0.0	-0.1	-0.1	0.3	0.4	-0.3	-0.3	-0.1	0.6	0.5	0.8	0.5	0.8	0.1	0.2	0.8	0.4	0.3	1.3
25-Feb	0.9	0.6	0.3	0.6	0.6	0.6	0.4	0.5	0.6	0.6	0.3	0.5	0.2	0.2	0.1	0.5	0.5	0.7	0.8	0.7	0.6	0.0	0.7	0.6	0.5	0.9
26-Feb	1.1	1.8	2.3	2.2	1.7	1.4	1.2	0.4	-0.1	0.4	0.3	-0.1	0.1	0.0	-0.3	0.5	0.1	-0.1	-0.1	-0.1	0.0	-0.2	-0.1	-0.3	0.5	2.3
27-Feb	0.1	0.2	0.2	0.0	-0.1	-0.2	-0.6	-0.5	-0.2	-0.2	-0.7	-0.4	-0.6	-0.2	0.1	0.9	-0.1	-0.4	0.4	0.1	0.1	-0.1	0.0	0.5	-0.1	0.9
28-Feb	0.5	0.3	0.4	1.1	0.3	0.0	0.3	0.2	-0.4	0.2	0.0	-0.2	-0.9	-0.4	-0.2	0.1	-0.1	-0.6	0.5	0.1	-0.4	-0.8	-0.9	-0.8	-0.1	1.1
29-Feb	-0.3	1.6	1.2	0.6	1.1	0.7	0.3	2.0	0.8	-0.3	-0.4	-0.6	-0.2	0.2	0.0	-0.2	0.0	-0.3	-0.3	-0.1	-0.2	-0.1	-0.3	-0.3	0.2	2.0
																								Diurnal Average		
																								Diurnal Maximum		
UO - Unstable Operation																										



Summary of Hour Standard Deviations

Mannix - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 4.0 km/h on Feb 29 08:00 Minimum Value: 0.1 km/h on Feb 10 01:00 Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.5 Median = 1.0 Q ₃ = 1.8 P ₉₀ = 2.5 P ₉₉ = 3.5																								Hours in Service: 696 Hours of Data: 637 Hours of Missing Data: 59 Hours of Calibration: 0 Percent Operational Time: 91.5	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	2.3	1.8	1.9	1.9	1.6	1.5	1.3	0.6	0.6	0.8	0.7	1.0	0.9	0.9	1.1	0.6	0.8	0.6	0.6	0.4	0.7	0.3	0.2	0.5	2.3
2-Feb	0.5	1.0	1.2	1.1	1.3	1.4	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	1.4
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	1.4
5-Feb	0.4	0.3	0.4	0.2	0.3	0.3	0.2	0.5	2.4	2.5	2.2	1.8	2.0	2.1	2.0	2.2	2.6	1.9	2.4	2.2	1.2	1.1	0.8	0.7	2.6
6-Feb	0.6	0.6	0.7	0.8	0.8	0.7	0.9	1.4	1.8	2.4	2.0	1.9	2.9	1.6	1.6	1.8	1.7	1.9	1.8	1.8	1.9	2.0	2.1	2.9	
7-Feb	1.9	1.8	1.2	1.2	0.9	0.9	1.1	1.2	0.7	1.2	1.4	1.4	1.3	1.0	1.0	0.9	0.8	0.3	0.6	0.4	0.6	0.7	0.3	0.3	1.9
8-Feb	0.3	0.3	0.2	0.3	0.3	0.3	0.4	0.6	0.4	0.4	0.5	1.3	1.4	1.3	1.1	0.6	0.4	0.2	0.1	0.1	0.2	0.7	0.9	0.7	1.4
9-Feb	1.2	1.2	0.9	1.2	1.1	0.9	0.8	1.3	0.9	1.4	1.0	1.2	0.7	0.5	0.7	0.4	0.2	0.3	0.5	0.5	0.3	0.2	0.1	0.2	1.4
10-Feb	0.1	0.2	0.2	0.3	0.6	1.5	UO	UO	2.6	UO	UO	1.2	1.1	1.1	0.7	0.8	0.7	0.5	0.7	0.6	0.5	1.1	1.4	2.1	2.6
11-Feb	1.9	2.2	1.5	1.4	2.0	2.3	2.1	2.0	1.7	1.6	1.6	1.8	1.7	2.1	1.9	1.5	1.2	0.4	0.6	0.6	0.5	0.3	0.2	0.6	2.3
12-Feb	0.4	0.7	0.4	0.5	0.6	0.6	0.6	0.5	0.5	1.0	0.7	1.1	2.3	2.1	2.4	1.8	1.1	1.1	2.2	2.1	1.8	1.8	2.0	2.3	2.4
13-Feb	2.3	2.6	2.3	2.1	1.7	1.6	1.1	0.9	0.5	0.7	1.7	1.0	1.2	1.3	1.0	0.6	0.6	0.9	0.6	2.2	2.4	3.1	2.8	2.9	3.1
14-Feb	2.5	2.0	2.3	1.9	1.7	1.6	1.6	2.3	2.3	2.1	1.8	1.7	1.6	1.6	1.6	1.3	1.2	1.0	0.8	0.6	0.6	1.1	0.9	0.6	2.5
15-Feb	1.0	0.8	0.4	0.1	0.1	0.1	0.4	0.5	0.3	0.5	0.5	1.0	1.3	1.3	0.7	1.0	0.6	0.4	0.3	0.4	0.5	0.6	1.3	1.5	1.5
16-Feb	1.2	1.0	0.8	0.8	0.7	0.7	0.4	0.3	0.7	1.0	0.9	0.8	1.0	1.5	2.3	2.4	2.5	2.0	2.8	3.3	2.0	1.3	0.6	0.5	3.3
17-Feb	0.3	0.3	0.4	0.4	0.3	0.4	0.5	0.6	0.7	0.6	0.5	0.3	0.4	0.5	0.5	0.6	0.4	0.8	0.4	0.3	0.3	0.6	0.4	0.6	0.8
18-Feb	0.7	1.4	2.0	1.8	0.7	0.9	1.0	0.9	0.8	1.9	1.3	1.7	1.4	1.4	1.4	1.0	0.7	1.0	0.6	1.0	1.4	2.2	1.6	0.9	2.2
19-Feb	0.5	0.5	0.5	0.3	0.6	0.3	0.4	0.3	0.2	0.4	0.7	1.6	1.7	1.5	1.3	1.2	0.8	0.4	0.8	0.9	1.1	1.0	0.5	0.3	1.7
20-Feb	0.3	0.4	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.9	1.2	0.9	0.8	1.0	0.8	0.6	0.5	0.4	0.3	0.2	0.3	0.3	0.2	0.4	1.2
21-Feb	0.7	0.6	1.2	1.3	0.6	0.5	0.4	0.5	0.5	0.4	0.6	0.9	1.0	1.9	2.3	2.4	1.9	1.2	0.5	0.5	0.8	1.3	0.8	0.6	2.4
22-Feb	0.5	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.9	0.7	0.8	0.9	1.2	1.1	0.7	0.7	0.8	0.5	0.6	0.6	0.5	0.6	0.4	0.3	1.2
23-Feb	0.6	0.5	0.6	0.6	0.6	1.0	0.9	0.9	1.7	1.4	2.7	3.1	3.0	2.9	3.5	3.3	3.3	1.7	1.8	1.6	2.7	2.7	2.3	2.3	3.5
24-Feb	2.4	2.5	2.8	2.8	3.0	2.8	1.9	2.2	2.2	2.0	2.1	2.2	2.7	2.3	2.2	1.8	1.8	1.3	1.1	1.4	1.0	1.5	1.3	3.0	
25-Feb	1.6	1.6	1.1	1.3	1.2	1.3	1.4	1.5	1.8	2.1	2.3	2.4	2.6	2.7	2.0	2.1	2.0	1.8	2.2	2.6	2.8	2.4	3.0	2.8	3.0
26-Feb	2.8	3.7	3.8	3.2	3.3	2.9	2.6	1.9	1.4	2.1	2.4	2.7	2.5	2.4	2.0	1.7	1.6	1.0	0.2	0.2	0.7	0.3	0.5	0.6	3.8
27-Feb	0.6	0.7	0.7	0.6	0.4	0.3	0.5	0.6	0.8	1.5	1.7	2.3	2.2	2.3	2.5	2.7	1.9	1.3	0.5	0.3	0.4	0.6	1.0	0.9	2.7
28-Feb	0.9	1.0	0.9	0.7	0.7	0.6	0.9	0.7	1.3	1.8	2.0	2.7	2.4	3.3	3.1	3.4	3.0	2.7	3.2	3.2	2.6	2.9	3.2	3.5	3.5
29-Feb	3.5	3.8	3.6	3.1	3.5	3.6	3.3	4.0	3.3	3.4	3.0	2.4	2.0	2.1	1.4	1.3	1.6	1.0	0.5	0.5	0.3	0.2	0.3	0.4	4.0
3.5 3.8 3.8 3.2 3.5 3.6 3.3 4.0 3.3 3.4 3.0 3.1 3.0 3.3 3.5 3.4 3.3 2.7 3.2 3.3 2.8 3.1 3.2 3.5																									
Diurnal Maximum																									
UO - Unstable Operation																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS06
PATRICIA MCINNES
FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - PATRICIA McINNES (AMS06)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	660	34	36	99.71	24.1	0	6.2	0
TRS (ppb) Average	650	33	46	98.13	2.1	0	1	0
THC (ppm) Average	642	33	54	96.98	2.9	-	2.4	-
NMHC(ppm) Average	642	33	54	96.98	0.081	-	0.041	-
CH4(ppm) Average	642	33	54	96.98	2.9	-	2.4	-
O3 (ppb) Average	659	34	37	99.57	45.4	0	39.9	-
NO2 (ppb) Average	659	35	37	99.71	34.1	0	20.7	-
NO (ppb) Average	659	35	37	99.71	56.6	-	19	-
NOX (ppb) Average	659	35	37	99.71	85	-	39.7	-
NH3 (ppb) Average	628	37	68	95.55	0	0	0	-
PM2.5 (ug/m3) Average	694	1	2	99.86	37.6	0	16.5	0
Temperature 2 m (C) Average	696	0	0	100	9	-	2.8	-
Relative Humidity (%) Average	696	0	0	100	97.2	-	95.4	-
Wind Speed 10 m (km/h) Average	696	0	0	100	30	-	16	-
Wind Direction 10 m (deg) Average	696	0	0	100	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - PATRICIA McINNES (AMS06)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	660	1.5	3.2	-	0	0	0.2	0.3	1.2	4.6	24.1
TRS (ppb) Average	650	0.51	0.3	-	0.3	0.3	0.3	0.4	0.5	0.8	2.1
THC (ppm) Average	642	2.09	0.1	-	2	2	2	2	2.1	2.2	2.9
NMHC(ppm) Average	642	0.017	0.015	-	0	0	0	0	0	0	0.081
CH4(ppm) Average	642	2.07	0.1	-	1.9	2	2	2	2.1	2.2	2.9
O3 (ppb) Average	659	24.55	12.1	-	1.2	5.7	15.1	26.5	34.6	39.2	45.4
NO2 (ppb) Average	659	8.07	7.2	-	0	0.7	2.4	5.9	11.7	18.8	34.1
NO (ppb) Average	659	3.35	7.3	-	0	0.1	0.3	1	2.7	8.8	56.6
NOX (ppb) Average	659	11.42	13.2	-	0	0.8	3	7.2	13.9	27.1	85
NH3 (ppb) Average	628	0	0	-	0	0	0	0	0	0	0
PM2.5 (ug/m3) Average	694	5.55	5	-	0.3	1.3	2.3	4.3	7	10.8	37.6
Temperature 2 m (C) Average	696	-8.96	7.5	-	-28.1	-18.3	-14.6	-8.8	-3.9	1	9
Relative Humidity (%) Average	696	70.74	14.8	-	31.4	49.6	61.3	72.7	82.3	87	97.2
Wind Speed 10 m (km/h) Average	696	9.5	6	-	1	3	5	8	13	18	30
Wind Direction 10 m (deg) Average	696	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - PATRICIA MCINNES (AMS06)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
SO2, THC/NMHC/CH4, NO2, O3, NH3	07 Feb 2024 15:00	07 Feb 2024 15:00	1	Maintenance - sample manifold cleaned
AIR QUALITY ANALYZERS	23 Feb 2024 20:00	23 Feb 2024 20:00	1	Station power failure
O3	19 Feb 2024 10:00	19 Feb 2024 10:00	1	Maintenance - verify daily QA response
TRS	28 Feb 2024 00:00	28 Feb 2024 09:00	10	Unstable Operation - flatline in analyzer output signal
TRS	28 Feb 2024 10:00	28 Feb 2024 11:00	2	Maintenance - analyzer rebooted
THC/NMHC/CH4	19 Feb 2024 04:00	19 Feb 2024 04:00	1	Unstable Operation - excessive baseline drift
THC/NMHC/CH4	20 Feb 2024 07:00	20 Feb 2024 08:00	2	Unstable Operation - excessive baseline drift
THC/NMHC/CH4	23 Feb 2024 21:00	24 Feb 2024 11:00	15	Unstable Operation - flatline in analyzer output signal
THC/NMHC/CH4	24 Feb 2024 12:00	24 Feb 2024 12:00	1	Maintenance - analyzer rebooted
NH3	01 Feb 2024 06:00	29 Feb 2024 05:00	31	Stabilization after daily span



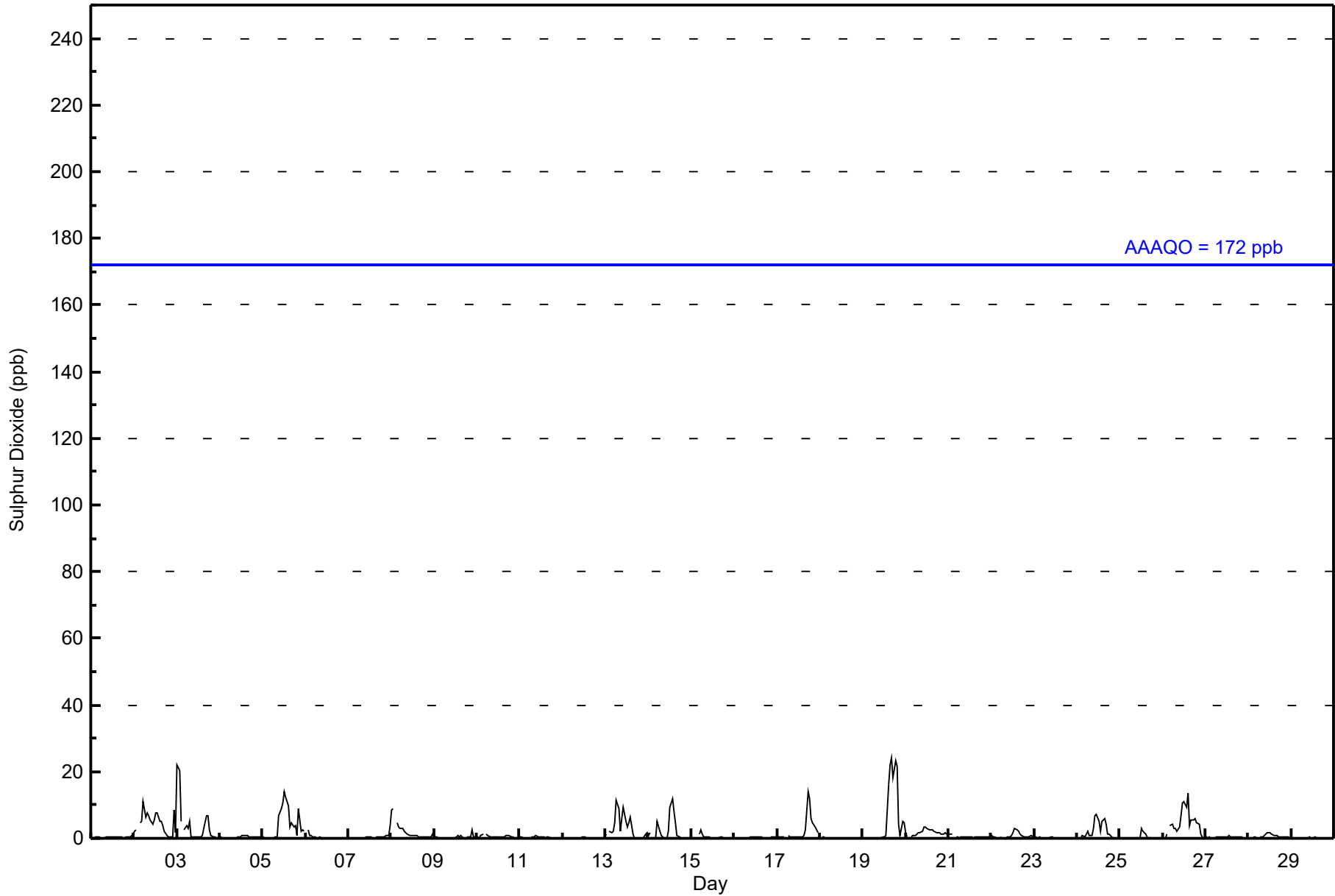
Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

Patricia McInnes - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	696																												
Maximum Value: 24.1 ppb on Feb 19 17:00		Maximum Daily Average: 6.2 ppb on Feb 19																	Hours of Data: 660																														
Minimum Value: 0.0 ppb on Feb 6 19:00		Minimum Daily Average: 0.1 ppb on Feb 23																	Hours of Missing Data: 36																														
Maximum Diurnal Average: 2.8 ppb at hour 15		Minimum Diurnal Average: 0.6 ppb at hour 22																	Hours of Calibration: 34																														
Monthly Average: 1.50 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 0.3 Q ₃ = 1.2 P ₉₀ = 4.6 P ₉₉ = 17.0																	Percent Operational Time: 99.7																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.4	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.3	0.3	0.4	0.4	0.4	0.5	0.3	0.2	0.3	0.2	0.2	0.4	1.4	0.4	1.4																							
2-Feb	2.0	2.5	Z	4.7	5.2	11.0	6.3	7.6	6.6	5.3	4.4	5.7	7.7	7.8	5.1	5.3	3.6	2.2	1.0	0.4	0.3	0.3	8.3	1.9	4.6	11.0																							
3-Feb	22.1	20.4	5.2	Z	2.4	3.8	2.8	5.2	0.6	0.6	0.4	0.4	0.3	0.3	0.9	2.9	6.9	6.6	2.5	1.0	0.5	0.3	0.2	0.1	3.8	22.1																							
4-Feb	0.3	0.1	0.0	0.1	Z	0.2	0.2	0.1	0.2	0.2	0.5	0.6	0.8	0.9	0.9	0.8	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.4	0.9																							
5-Feb	0.2	0.1	0.2	0.2	0.1	Z	0.2	0.2	0.4	6.8	8.8	10.4	13.9	12.4	9.6	3.2	4.7	3.5	3.9	0.9	8.8	2.0	2.4	1.9	4.1	13.9																							
6-Feb	Z	2.6	0.9	0.6	0.4	0.3	0.2	0.2	0.3	0.1	C	C	C	C	C	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.4	2.6																							
7-Feb	0.1	Z	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.3	0.4	0.3	0.3	M	0.3	0.4	0.3	0.3	0.3	0.5	0.8	0.8	3.6	0.5	3.6																							
8-Feb	8.6	8.8	Z	4.8	3.6	2.8	2.8	2.2	1.9	1.3	1.0	0.8	0.8	0.7	0.8	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	1.2	2.0	8.8																							
9-Feb	0.4	0.2	0.2	Z	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.5	0.8	0.6	0.8	0.2	0.2	0.2	0.3	0.6	2.6	0.6	0.3	0.4	2.6																							
10-Feb	0.3	0.2	0.8	1.3	Z	1.1	0.9	0.5	0.3	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.7	0.7	0.7	0.5	0.2	0.2	0.1	0.1	0.5	1.3																							
11-Feb	0.2	0.2	0.1	0.1	0.2	Z	0.3	0.4	0.6	0.6	0.5	0.5	0.4	0.4	0.2	0.4	0.4	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.3	0.6																							
12-Feb	Z	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.4																							
13-Feb	1.3	Z	2.2	1.7	1.9	4.8	11.4	9.0	2.1	5.7	9.4	5.2	3.5	4.8	6.4	1.3	0.2	0.2	0.2	0.1	0.1	0.0	1.5	1.5	3.2	11.4																							
14-Feb	1.0	1.8	Z	0.2	0.1	5.1	2.3	0.9	0.2	0.2	0.1	1.9	9.4	12.0	8.0	4.5	0.7	0.4	0.1	0.0	0.0	0.0	0.0	0.0	2.1	12.0																							
15-Feb	0.0	0.0	0.0	Z	1.1	2.6	1.1	0.4	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.2	0.3	0.3	0.1	0.1	0.0	0.1	0.1	0.1	0.3	2.6																							
16-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.4	0.2	0.5																							
17-Feb	0.5	0.6	0.4	0.3	0.4	Z	0.7	0.3	0.2	0.4	0.6	0.6	0.6	0.4	0.5	1.0	2.4	14.1	11.9	5.9	4.5	3.6	2.7	1.7	2.4	14.1																							
18-Feb	Z	0.6	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.6																							
19-Feb	0.0	Z	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.6	0.9	16.0	22.0	24.1	18.4	23.5	21.5	4.2	0.8	4.9	4.6	6.2	24.1																							
20-Feb	1.6	0.5	Z	0.6	0.8	1.0	1.5	1.5	1.6	2.2	3.4	3.3	2.8	2.4	2.4	2.5	2.3	1.9	1.7	1.5	1.4	1.4	1.5	1.4	1.8	3.4																							
21-Feb	1.3	1.5	1.2	Z	0.6	0.3	0.2	0.2	0.3	0.6	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.3	0.6	0.5	1.5																							
22-Feb	0.7	0.3	0.3	0.2	Z	0.2	0.2	0.2	0.2	0.3	0.5	0.6	1.5	2.9	2.4	2.0	1.3	0.8	0.5	0.6	0.4	0.6	1.0	0.4	0.8	2.9																							
23-Feb	0.2	0.2	0.2	0.2	0.1	Z	0.0	0.1	0.1	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3																							
24-Feb	0.1	Z	0.0	0.8	0.4	1.4	2.1	1.0	0.9	2.9	6.6	7.3	5.1	2.3	5.3	6.1	4.0	1.4	1.2	0.2	0.2	0.1	0.1	0.0	2.2	7.3																							
25-Feb	0.0	0.0	Z	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.2	3.0	1.9	1.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	3.0																							
26-Feb	0.0	0.1	1.2	Z	3.8	4.2	2.8	2.9	2.1	3.6	7.0	10.7	10.8	9.5	13.4	4.0	5.6	5.6	5.8	4.8	4.1	1.3	0.3	0.2	4.5	13.4																							
27-Feb	0.2	0.2	0.2	0.1	Z	0.2	0.6	0.4	0.4	0.6	0.5	0.6	0.6	0.7	0.6	0.5	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.4	0.7																							
28-Feb	0.1	0.1	0.1	0.2	0.2	Z	0.3	0.2	0.4	1.0	1.9	1.9	1.7	1.4	0.7	0.7	0.7	0.7	0.4	0.3	0.5	0.3	0.2	0.2	0.6	1.9																							
29-Feb	Z	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.3																							
																								1.7	1.7	0.6	0.7	0.9	1.7	1.3	1.2	0.7	1.2	1.7	1.9	2.4	2.3	2.8	2.1	2.1	2.1	1.9	1.5	1.0	0.6	0.9	0.8	Diurnal Average	
																								22.1	20.4	5.2	4.8	5.2	11.0	11.4	9.0	6.6	6.8	9.4	10.7	13.9	12.4	16.0	22.0	24.1	18.4	23.5	21.5	8.8	3.6	8.3	4.6	Diurnal Maximum	
Z - zerspan																								C - Calibration				M - Maintenance				PF - Power Failure																	
Alberta Ambient Air Quality Objectives (AAAQO):																								1-hr 172 ppb				24-hr 48 ppb																					





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Patricia McInnes - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	642	97.27	97.27
11 - 20	13	1.97	99.24
21 - 60	5	0.76	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Patricia McInnes - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	101	34	20	13	23	52	63	33	27	21	45	59	41	22	28	60	642
11 - 20	7	1	1	0	0	0	0	0	0	0	0	0	0	0	2	2	13
21 - 60	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	5
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	109	35	23	13	23	52	63	33	27	21	45	59	41	22	31	63	660

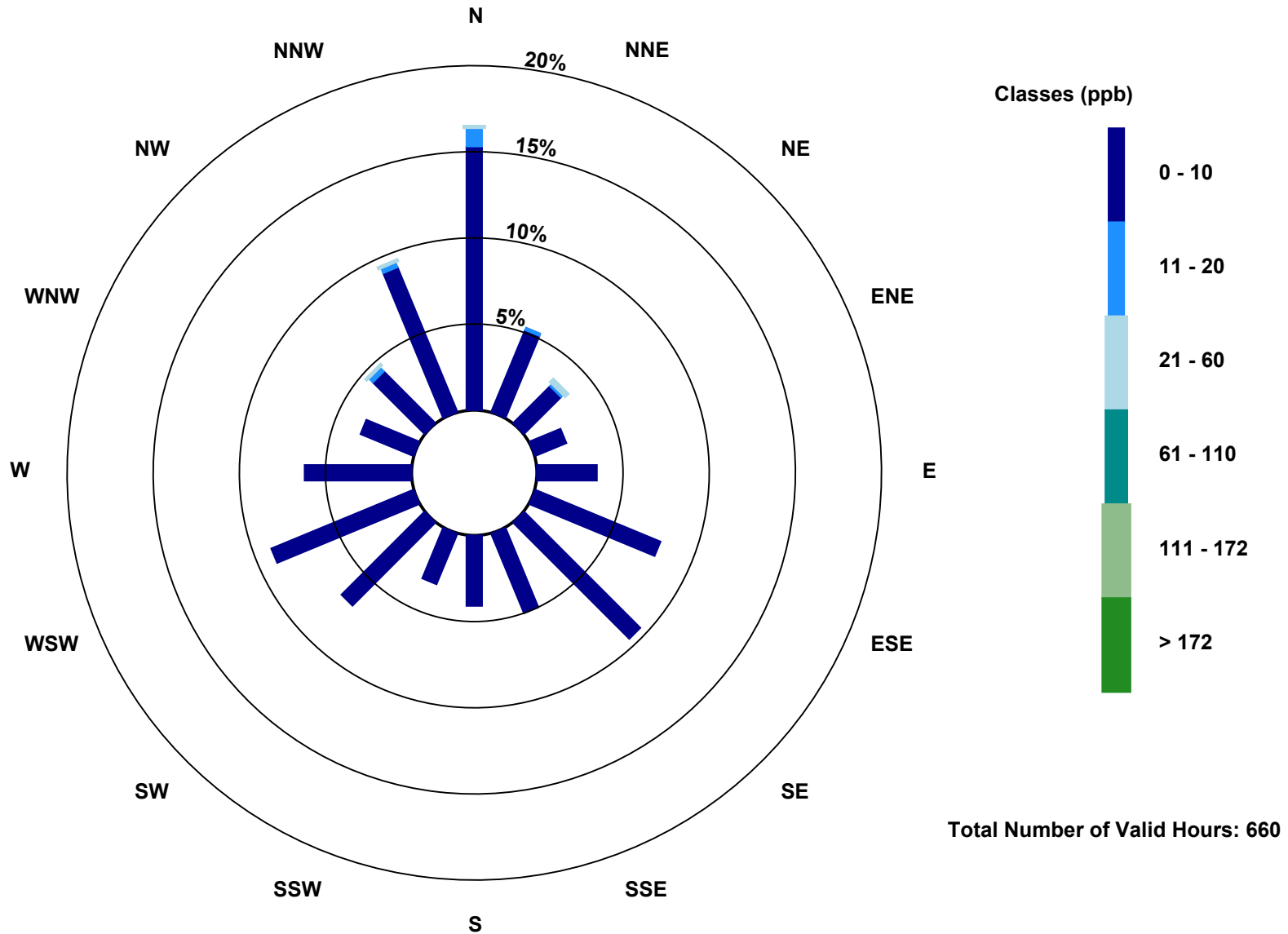
Total Number of Valid Hours: 660

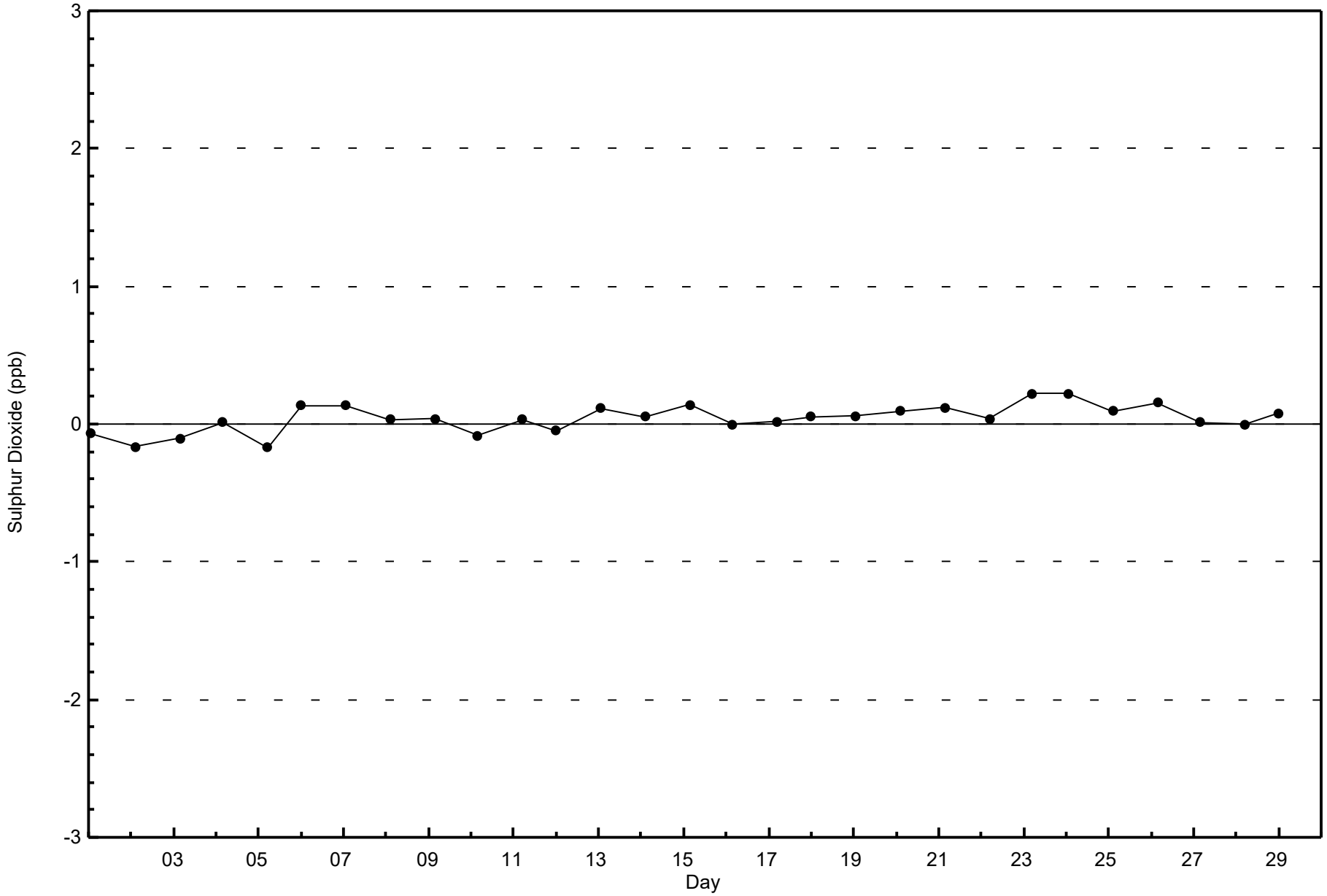
Total Number of Hours: 696

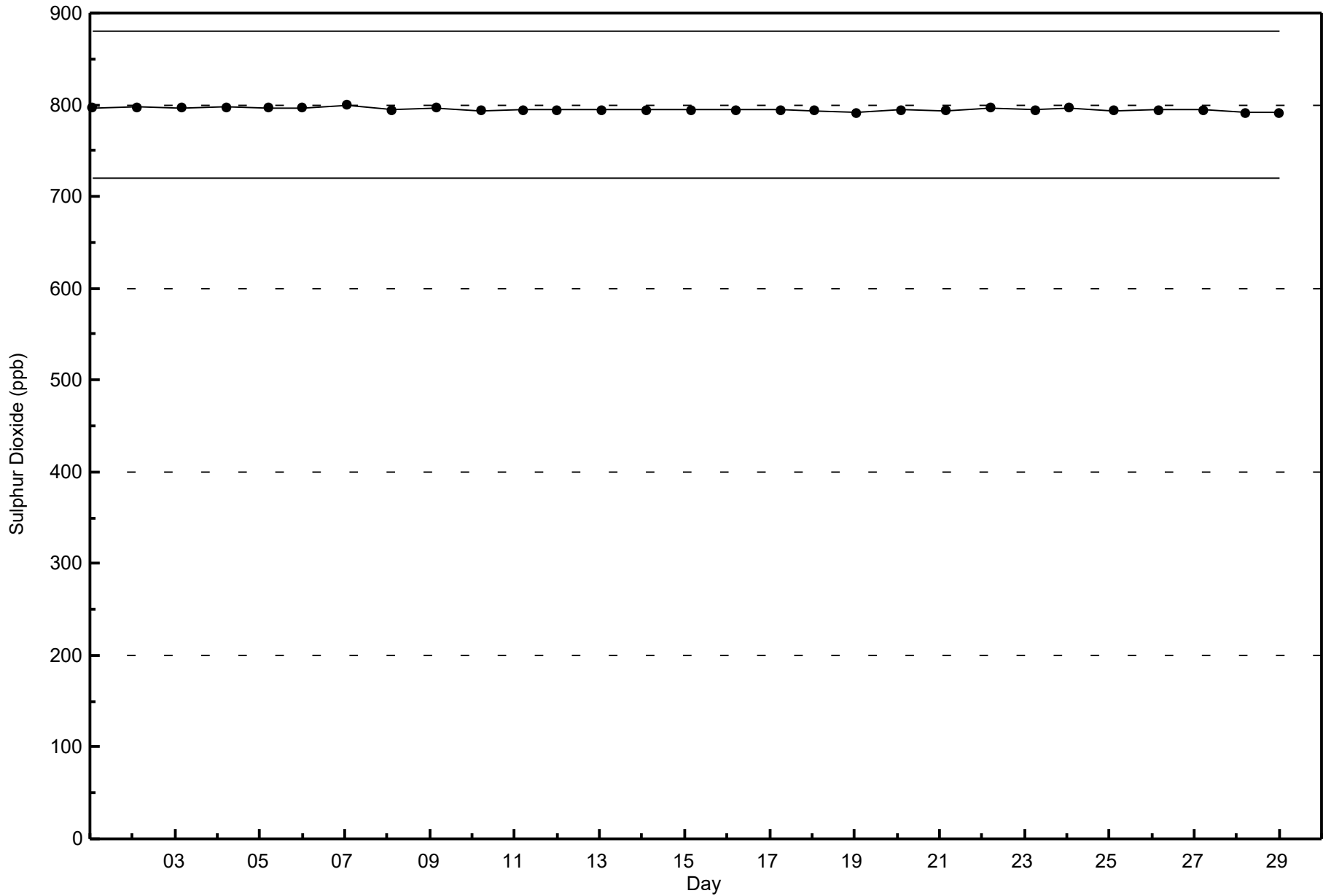


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Patricia McInnes









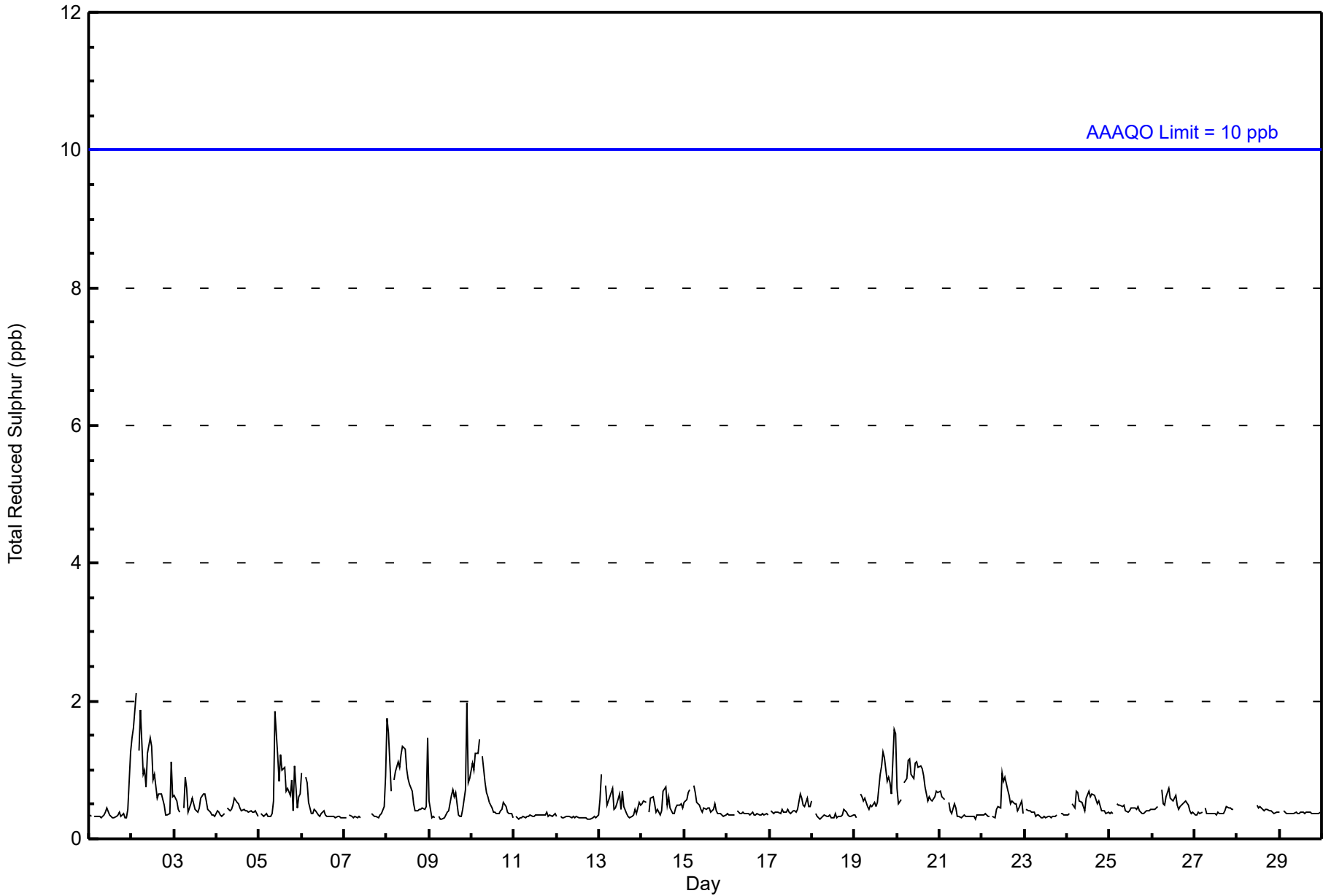
Wood Buffalo Environmental Association

Summary of Hour Averages

Total Reduced Sulphur (TRS) - ppb

Patricia McInnes - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696																													
Maximum Value: 2.1 ppb on Feb 2 03:00		Maximum Daily Average: 1.0 ppb on Feb 2														Hours of Data:		650																															
Minimum Value: 0.3 ppb on Feb 18 05:00		Minimum Daily Average: 0.3 ppb on Feb 12														Hours of Missing Data:		46																															
Maximum Diurnal Average: 0.6 ppb at hour 1		Minimum Diurnal Average: 0.4 ppb at hour 20														Hours of Calibration:		33																															
Monthly Average: 0.51 ppb		Percentiles: P ₁ = 0.3 P ₁₀ = 0.3 Q ₁ = 0.3 Median = 0.4 Q ₃ = 0.5 P ₉₀ = 0.8 P ₉₉ = 1.6														Percent Operational Time:		98.1																															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.4	0.3	0.3	0.4	1.3	0.4	1.3																								
2-Feb	1.5	1.6	2.1	Z	1.3	1.9	0.9	1.0	0.8	1.2	1.5	1.3	0.8	0.9	0.6	0.6	0.7	0.6	0.5	0.3	0.3	0.4	1.1	0.6	1.0	2.1																							
3-Feb	0.6	0.5	0.4	0.4	Z	0.4	0.9	0.7	0.4	0.5	0.6	0.5	0.4	0.4	0.4	0.6	0.6	0.7	0.6	0.4	0.4	0.4	0.3	0.3	0.5	0.9																							
4-Feb	0.4	0.4	0.3	0.3	0.4	Z	0.5	0.4	0.4	0.5	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.6																							
5-Feb	Z	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.6	1.8	1.2	0.8	1.2	1.0	1.0	0.7	0.7	0.6	0.9	0.4	1.1	0.4	0.6	0.6	0.7	1.8																							
6-Feb	1.0	Z	0.9	0.8	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	1.0																							
7-Feb	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	C	C	C	C	C	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.9	0.4	0.9																						
8-Feb	1.7	1.6	0.7	Z	0.8	1.0	1.1	1.0	1.2	1.3	1.3	1.0	0.9	0.8	0.7	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	1.5	0.9	1.7																						
9-Feb	0.5	0.3	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.6	0.7	0.6	0.7	0.3	0.3	0.3	0.4	0.7	2.0	0.8	0.9	0.5	2.0																							
10-Feb	1.1	1.0	1.2	1.2	1.5	Z	1.2	0.8	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.3	0.7	1.5																							
11-Feb	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.4																							
12-Feb	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4																						
13-Feb	0.6	0.9	Z	0.8	0.5	0.5	0.6	0.7	0.4	0.5	0.5	0.7	0.4	0.7	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.9																						
14-Feb	0.5	0.5	0.5	Z	0.4	0.6	0.6	0.5	0.4	0.4	0.3	0.4	0.7	0.8	0.5	0.6	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.8																						
15-Feb	0.5	0.6	0.7	0.7	Z	0.8	0.7	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.5	0.8																							
16-Feb	0.4	0.4	0.4	0.3	0.4	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4																						
17-Feb	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.5	0.5	0.6	0.5	0.5	0.4	0.6																						
18-Feb	0.5	Z	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.5																						
19-Feb	0.3	0.3	Z	0.6	0.6	0.6	0.6	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.9	1.1	1.3	1.2	0.8	0.9	0.8	0.6	1.6	1.5	0.7	1.6																							
20-Feb	0.7	0.5	0.6	Z	0.8	0.9	1.1	1.2	0.9	0.9	1.1	1.1	1.0	1.1	1.0	0.9	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	1.2																							
21-Feb	0.7	0.6	0.6	0.6	Z	0.5	0.4	0.4	0.5	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.7																							
22-Feb	0.4	0.4	0.4	0.3	0.3	Z	0.3	0.3	0.4	0.5	0.4	1.0	0.8	0.9	0.7	0.6	0.5	0.6	0.5	0.5	0.4	0.4	0.5	0.4	0.5	1.0																							
23-Feb	Z	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	PF	0.4	0.4	0.4	0.3	0.4																							
24-Feb	0.3	0.4	Z	0.5	0.5	0.7	0.7	0.5	0.5	0.5	0.4	0.6	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.7																							
25-Feb	0.4	0.4	0.4	Z	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5																							
26-Feb	0.4	0.4	0.4	0.5	Z	0.7	0.5	0.5	0.6	0.7	0.6	0.6	0.5	0.6	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.7																							
27-Feb	0.3	0.4	0.4	0.4	0.4	Z	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5																							
28-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5																							
29-Feb	0.4	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4																							
																								Diurnal Average		0.6		0.6		0.6		0.5		0.5		0.6		0.5		0.5		0.5		0.6		0.5		0.6	
																								Diurnal Maximum		1.7		1.6		2.1		1.2		1.5		1.9		1.2		1.2		1.2		1.8		1.5		1.3	
Z - zerspan																								C - Calibration		M - Maintenance		UO - Unstable Operation		PF - Power Failure																			
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																																																	





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Reduced Sulphur (TRS) - ppb
Patricia McInnes - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	650	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 650

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Patricia McInnes - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	105	36	22	12	23	54	56	31	24	24	43	58	44	23	31	64	650
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	105	36	22	12	23	54	56	31	24	24	43	58	44	23	31	64	650

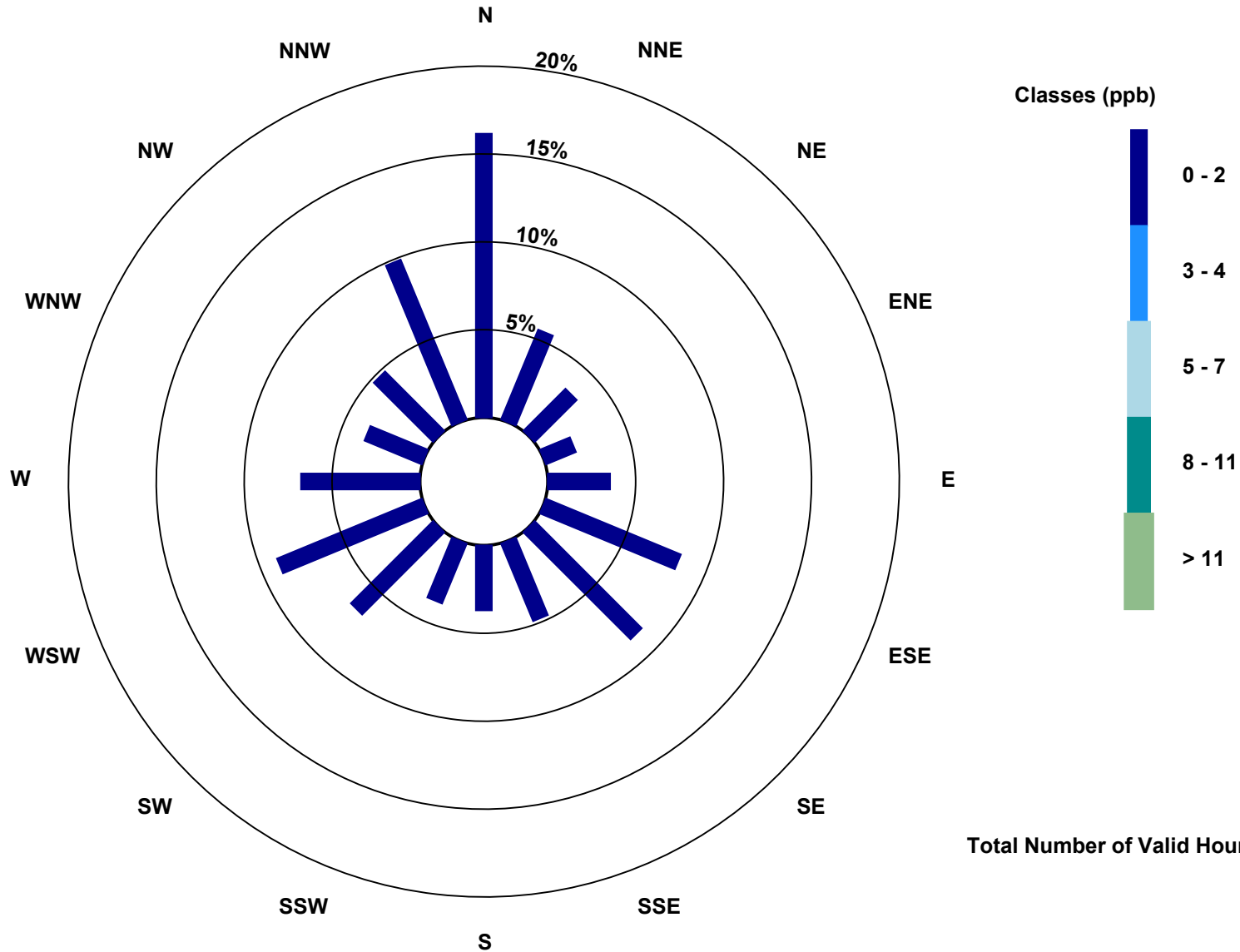
Total Number of Valid Hours: 650

Total Number of Hours: 696

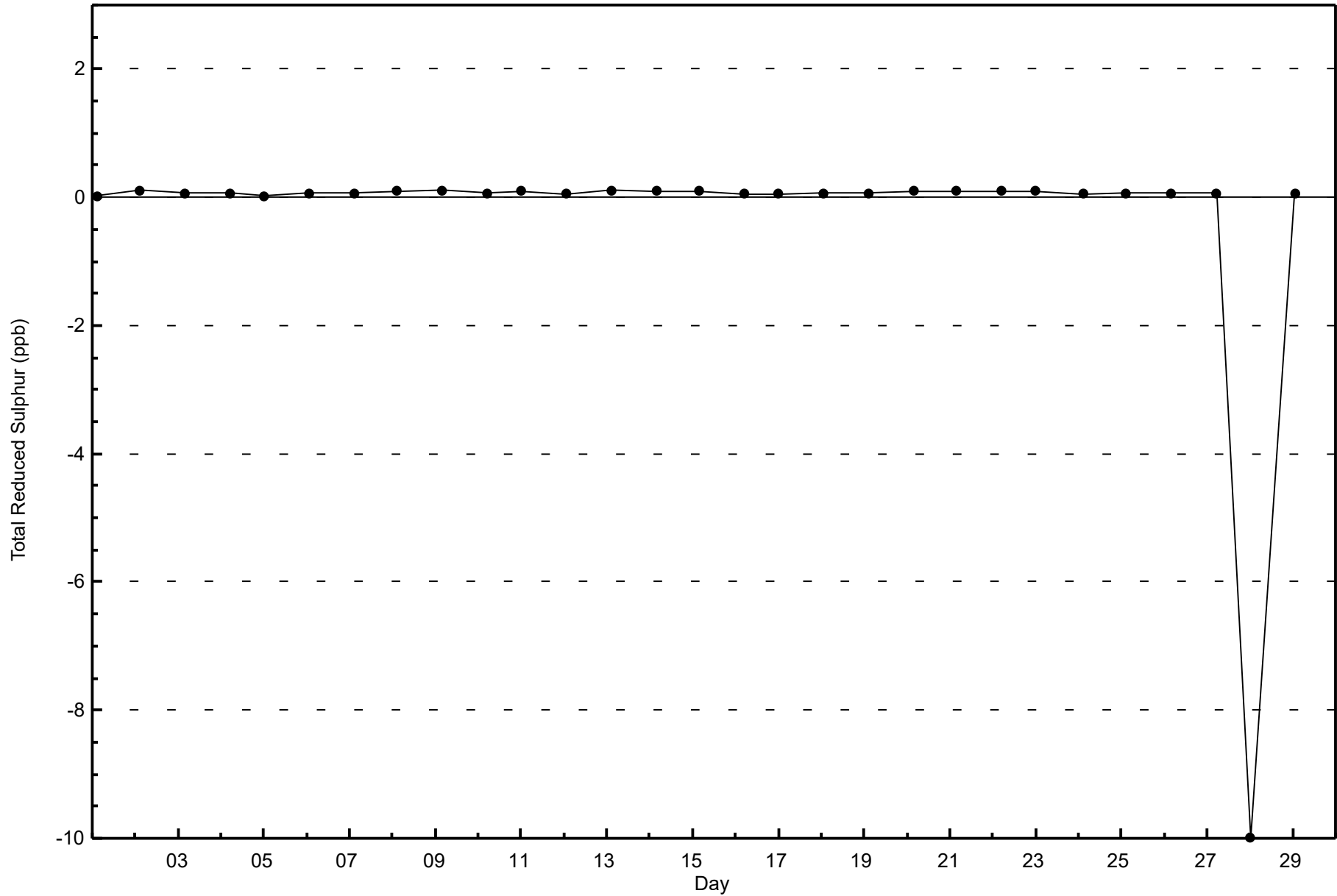


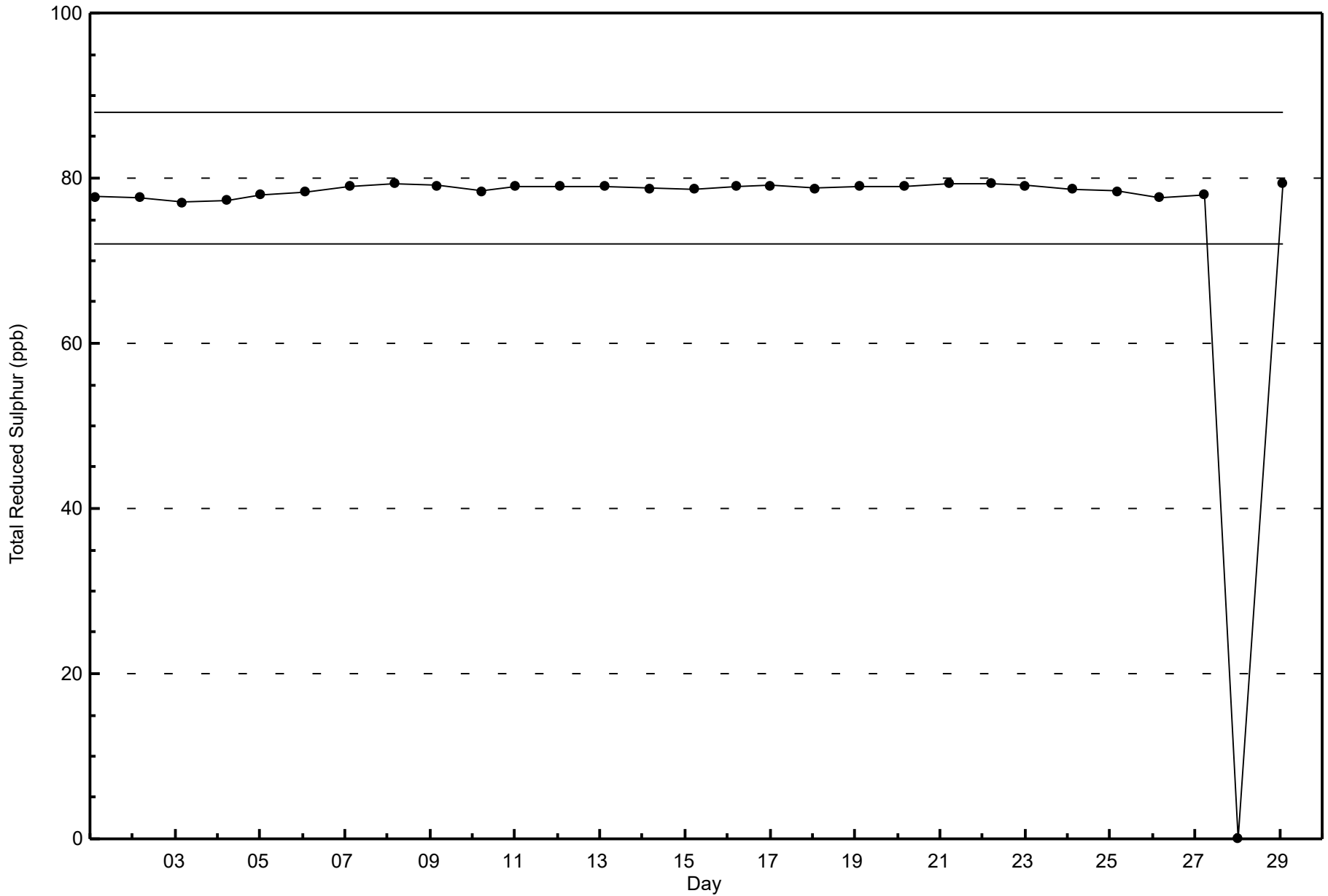
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Reduced Sulphur (TRS) - ppb
Patricia McInnes



Total Number of Valid Hours: 650







Wood Buffalo Environmental Association
Summary of Hour Averages

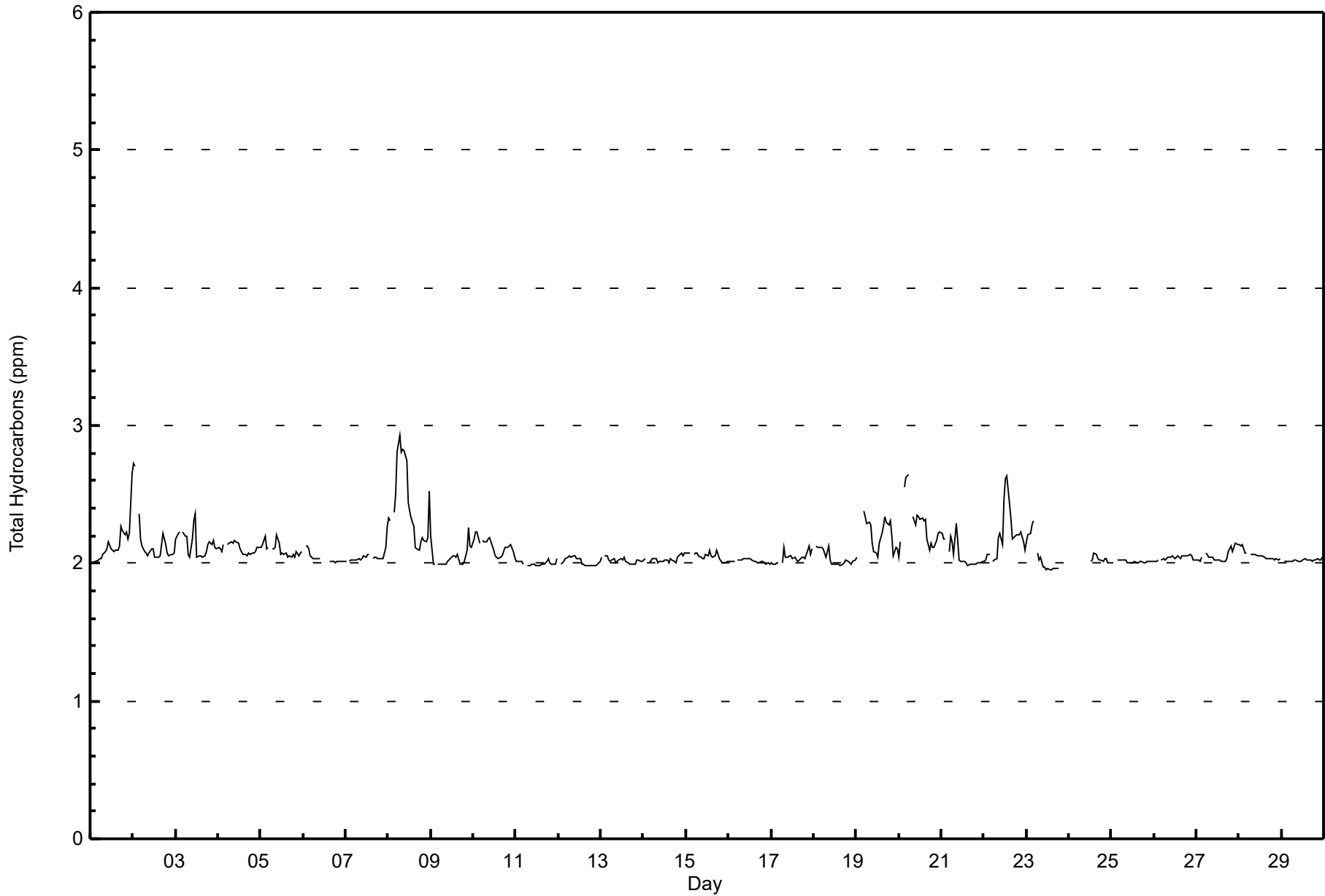
Total Hydrocarbons (THC) - ppm
Patricia McInnes - February 2024

Maximum Value: 2.9 ppm on Feb 8 07:00		Maximum Daily Average: 2.4 ppm on Feb 8		Hours in Service: 696																																												
Minimum Value: 2.0 ppm on Feb 23 14:00		Minimum Daily Average: 2.0 ppm on Feb 11		Hours of Data: 642																																												
Maximum Diurnal Average: 2.1 ppm at hour 6		Minimum Diurnal Average: 2.1 ppm at hour 17		Hours of Missing Data: 54																																												
Monthly Average: 2.09 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.0 Q ₃ = 2.1 P ₉₀ = 2.2 P ₉₉ = 2.7		Hours of Calibration: 33																																												
				Percent Operational Time: 97.0																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.2	2.2	2.2	2.2	2.7	2.1	2.7																						
2-Feb	2.7	Z	Z	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.7																						
3-Feb	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.1	2.0	2.2	2.3	2.4	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.2	2.1	2.2	2.1	2.1	2.1	2.4																						
4-Feb	2.1	2.1	2.1	Z	Z	2.1	2.1	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2																						
5-Feb	2.1	2.1	2.2	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.1	2.0	2.1	2.0	2.1	2.1	2.1	2.2																						
6-Feb	Z	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	C	C	C	C	C	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1																						
7-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.0	2.3																						
8-Feb	2.3	2.3	Z	2.4	2.5	2.8	2.9	2.8	2.8	2.8	2.7	2.4	2.4	2.3	2.3	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.9																						
9-Feb	2.2	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.3	2.1	2.1	2.0	2.3																						
10-Feb	2.2	2.2	2.2	2.1	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.2																						
11-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0																					
12-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1																						
13-Feb	2.0	Z	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1																						
14-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.1																						
15-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1																						
16-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0																						
17-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.1	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.1																						
18-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1																						
19-Feb	2.0	Z	2.0	UO	2.4	2.3	2.3	2.3	2.3	2.1	2.1	2.1	2.0	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.0	2.1	2.1	2.2	2.4																						
20-Feb	2.0	2.2	Z	2.6	2.6	2.6	UO	UO	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.6																						
21-Feb	2.2	2.2	2.2	Z	2.1	2.2	2.2	2.1	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3																						
22-Feb	2.0	2.0	2.1	2.1	Z	2.0	2.0	2.0	2.2	2.2	2.1	2.5	2.6	2.6	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.6																						
23-Feb	2.2	2.2	2.2	2.3	2.3	Z	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	PF	UO	UO	UO	UO	2.3																						
24-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	--	2.1																						
25-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0																						
26-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1																						
27-Feb	2.0	2.0	2.0	2.0	Z	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1																						
28-Feb	2.1	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1																						
29-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0																						
																								2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	Diurnal Average
																								2.7	2.7	2.2	2.6	2.6	2.8	2.9	2.8	2.8	2.8	2.7	2.5	2.6	2.6	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.2	2.7	Diurnal Maximum
Z - zerspan																								C - Calibration				M - Maintenance				UO - Unstable Operation				PF - Power Failure												



Wood Buffalo Environmental Association
Hourly Averages

Total Hydrocarbons (THC) - ppm
Patricia McInnes - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Patricia McInnes - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	349	54.36	54.36
2.1 - 3.0	293	45.64	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 642

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Patricia McInnes - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	60	20	14	5	15	38	20	4	2	11	31	45	33	16	19	16	349
2.1 - 3.0	43	10	9	8	8	14	43	29	24	10	14	13	4	6	12	46	293
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	103	30	23	13	23	52	63	33	26	21	45	58	37	22	31	62	642

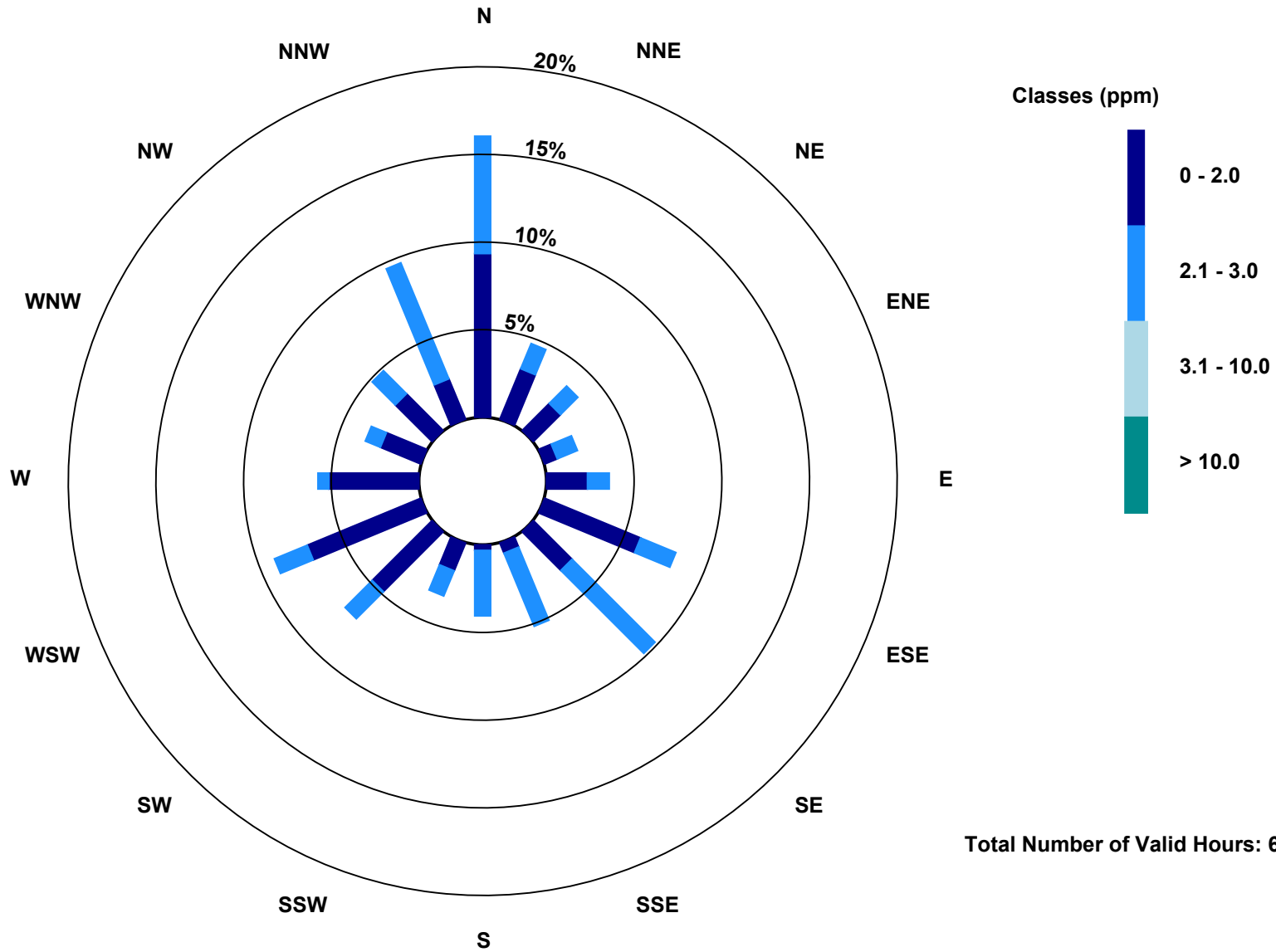
Total Number of Valid Hours: 642

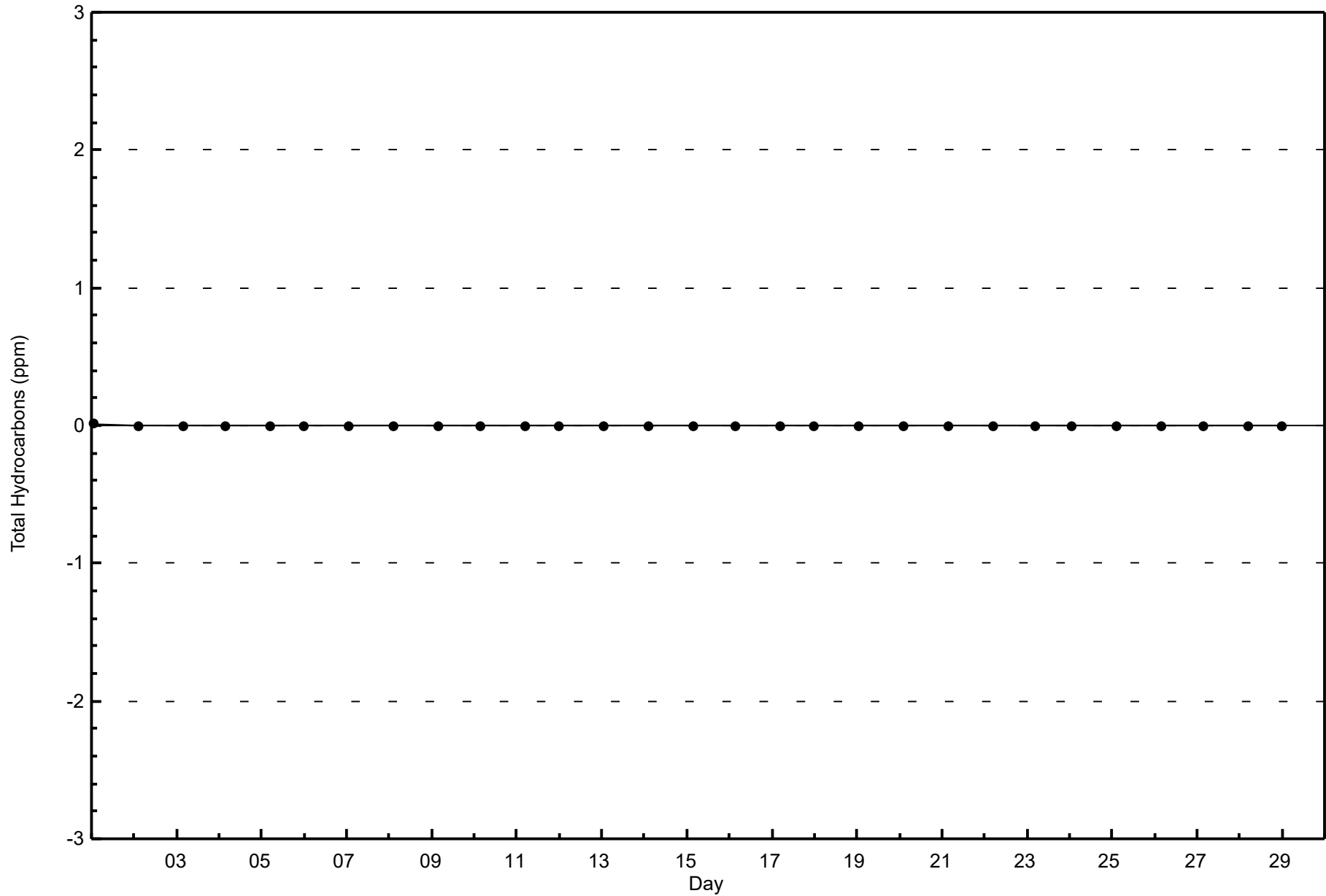
Total Number of Hours: 696

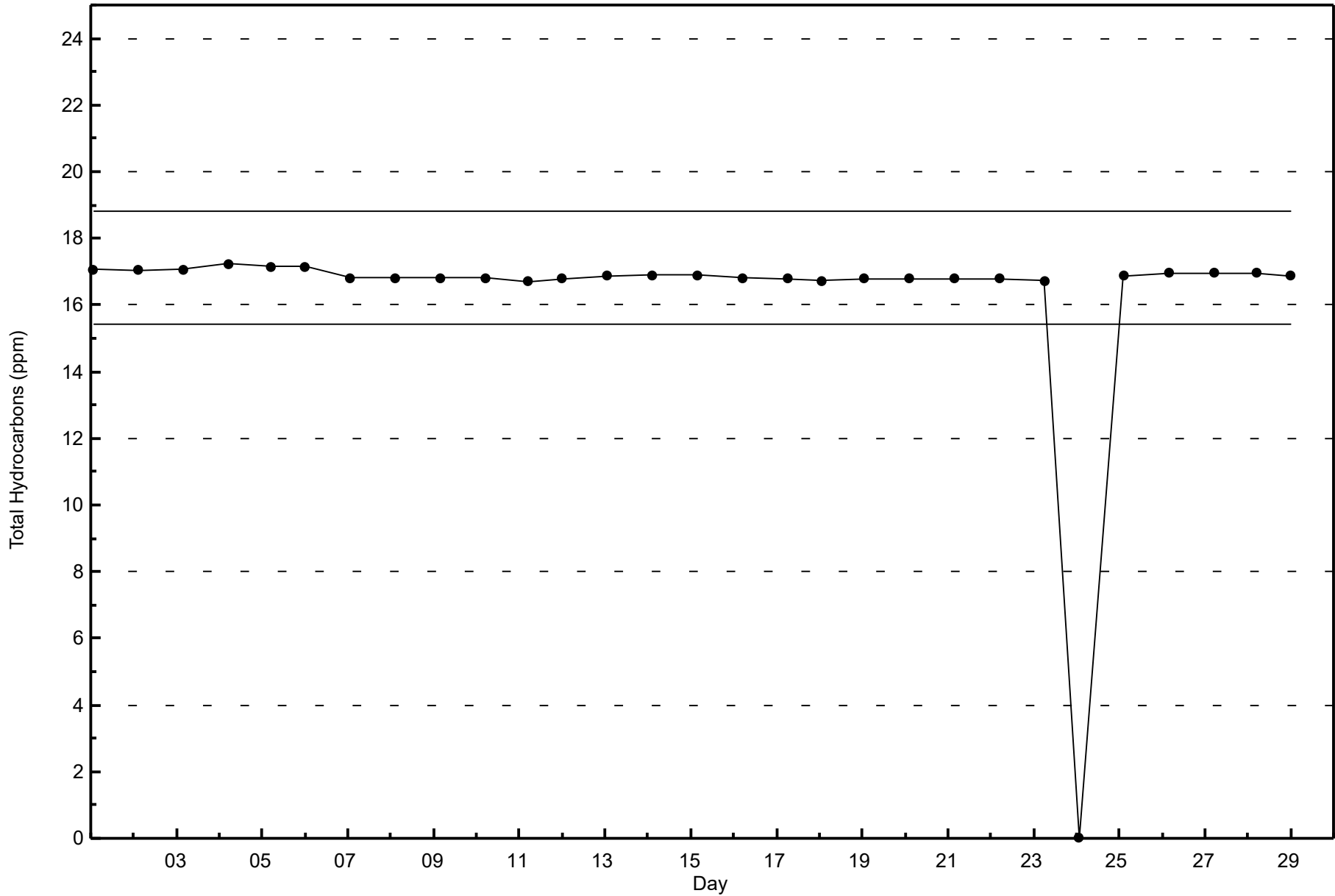


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Patricia McInnes

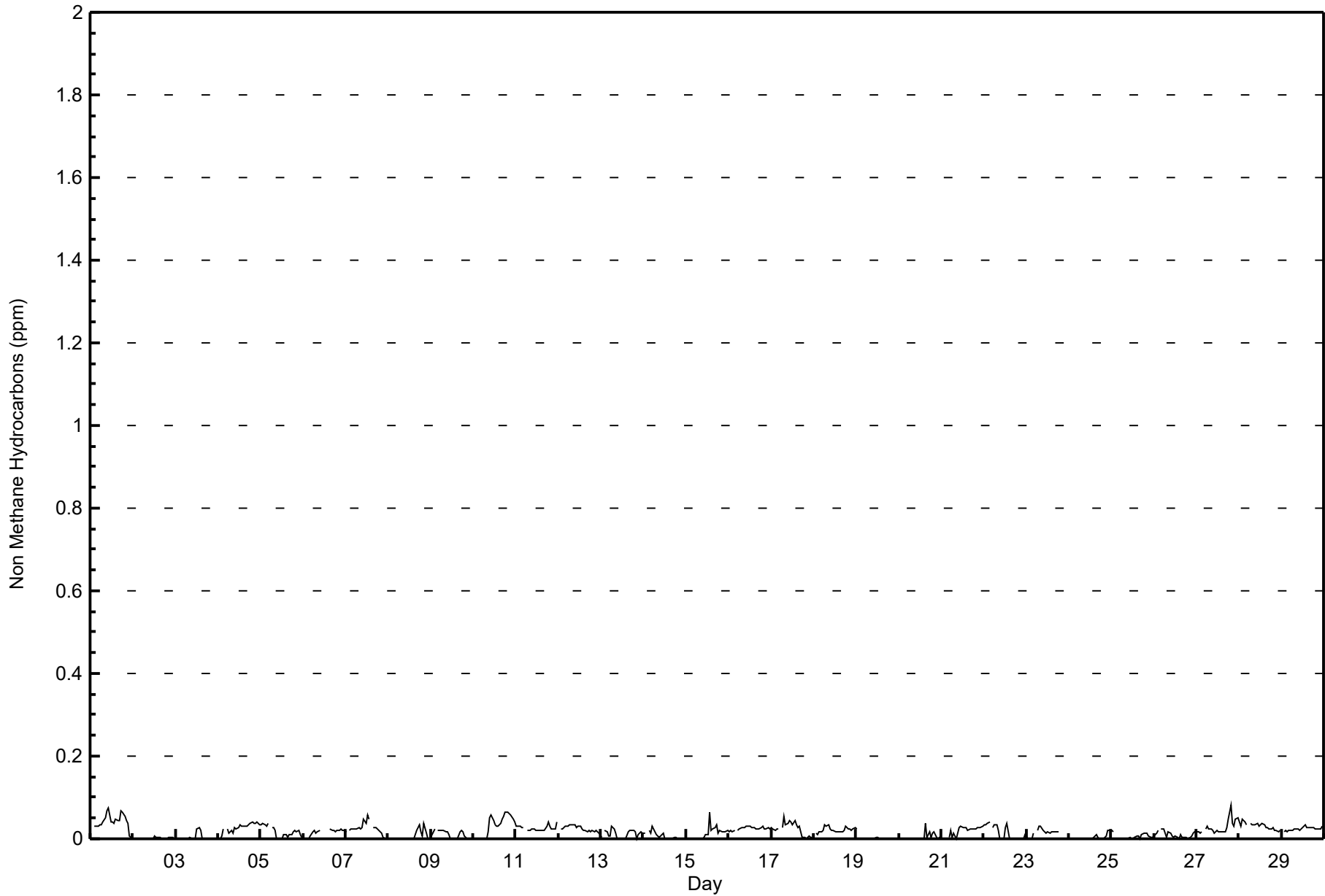








Maximum Value: 0.081 ppm on Feb 27 20:00		Maximum Daily Average: 0.041 ppm on Feb 1		Hours in Service:	696																						
Minimum Value: 0.000 ppm on Feb 2 00:00		Minimum Daily Average: 0.001 ppm on Feb 2		Hours of Data:	642																						
Maximum Diurnal Average: 0.020 ppm at hour 20		Minimum Diurnal Average: 0.013 ppm at hour 2		Hours of Missing Data:	54																						
Monthly Average: 0.017 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.1		Hours of Calibration:	33																						
				Percent Operational Time:	97.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.031	Z	0.031	0.030	0.031	0.034	0.033	0.041	0.050	0.067	0.076	0.042	0.040	0.037	0.047	0.044	0.044	0.069	0.066	0.053	0.044	0.037	0.007	0.000	0.041	0.076	
2-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.006	0.002	0.002	0.002	0.000	0.000	0.000	0.001	0.002	0.003	0.002	0.000	0.001	0.006	
3-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.001	0.002	0.000	0.000	0.000	0.024	0.028	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.028	
4-Feb	0.000	0.001	0.005	0.024	Z	0.023	0.014	0.020	0.013	0.028	0.023	0.027	0.035	0.030	0.029	0.031	0.030	0.035	0.037	0.041	0.037	0.037	0.041	0.035	0.026	0.041	
5-Feb	0.034	0.039	0.033	0.031	0.036	Z	0.027	0.028	0.021	0.000	0.000	0.000	0.001	0.011	0.011	0.004	0.010	0.011	0.017	0.020	0.016	0.020	0.010	0.004	0.017	0.039	
6-Feb	Z	0.000	0.000	0.000	0.007	0.015	0.020	0.012	0.015	0.022	C	C	C	C	C	0.023	0.020	0.020	0.018	0.022	0.019	0.024	0.020	0.022	0.015	0.024	
7-Feb	0.019	Z	0.021	0.024	0.024	0.025	0.024	0.028	0.025	0.028	0.047	0.038	0.058	0.046	M	0.027	0.028	0.028	0.025	0.019	0.014	0.002	0.002	0.000	0.025	0.058	
8-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.022	0.032	0.016	0.007	0.037	0.014	0.001	0.000	0.006	0.037	
9-Feb	0.005	0.018	0.023	Z	0.020	0.020	0.022	0.020	0.018	0.017	0.009	0.002	0.000	0.000	0.000	0.001	0.015	0.019	0.017	0.006	0.000	0.000	0.000	0.000	0.010	0.023	
10-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.015	0.052	0.059	0.045	0.033	0.031	0.030	0.037	0.046	0.054	0.066	0.065	0.061	0.058	0.046	0.040	0.032	0.066	
11-Feb	0.031	0.031	0.030	0.029	0.026	Z	0.019	0.022	0.022	0.024	0.022	0.020	0.020	0.019	0.021	0.021	0.022	0.032	0.040	0.030	0.025	0.024	0.023	0.039	0.026	0.040	
12-Feb	Z	0.024	0.024	0.027	0.032	0.031	0.034	0.033	0.034	0.035	0.028	0.030	0.032	0.024	0.020	0.019	0.016	0.020	0.016	0.020	0.019	0.021	0.018	0.009	0.025	0.035	
13-Feb	0.005	Z	0.019	0.018	0.008	0.007	0.031	0.023	0.012	0.000	0.000	0.000	0.000	0.001	0.015	0.021	0.020	0.021	0.017	0.001	0.011	0.016	0.013	0.011	0.031		
14-Feb	0.014	0.014	Z	0.020	0.015	0.030	0.019	0.012	0.007	0.003	0.011	0.012	0.001	0.001	0.000	0.000	0.002	0.002	0.005	0.000	0.000	0.000	0.000	0.007	0.030		
15-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.011	0.009	0.066	0.021	0.024	0.027	0.033	0.015	0.022	0.017	0.016	0.016	0.019	0.013	0.066	
16-Feb	0.018	0.021	0.018	0.019	Z	0.021	0.024	0.026	0.027	0.028	0.030	0.032	0.030	0.026	0.027	0.024	0.025	0.025	0.029	0.029	0.024	0.023	0.026	0.022	0.025	0.032	
17-Feb	0.026	0.023	0.022	0.024	0.024	Z	0.026	0.053	0.036	0.037	0.043	0.039	0.035	0.045	0.033	0.026	0.031	0.004	0.002	0.004	0.001	0.006	0.003	0.003	0.024	0.053	
18-Feb	Z	0.012	0.012	0.015	0.018	0.021	0.032	0.032	0.034	0.024	0.019	0.019	0.016	0.018	0.017	0.015	0.018	0.022	0.029	0.025	0.023	0.020	0.024	0.028	0.021	0.034	
19-Feb	0.024	Z	0.011	UO	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.024	
20-Feb	0.000	0.000	Z	0.000	0.000	0.000	UO	UO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.037	0.004	0.017	0.003	0.013	0.016	0.005	0.001	0.002	0.005	0.037	
21-Feb	0.000	0.000	0.000	Z	0.004	0.019	0.002	0.014	0.002	0.014	0.027	0.029	0.027	0.028	0.026	0.021	0.025	0.024	0.024	0.024	0.028	0.029	0.028	0.029	0.019	0.029	
22-Feb	0.034	0.035	0.038	0.042	Z	0.028	0.033	0.033	0.020	0.000	0.000	0.000	0.026	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.015	0.042		
23-Feb	0.006	0.000	0.000	0.001	0.015	Z	0.020	0.029	0.029	0.020	0.017	0.014	0.016	0.015	0.016	0.018	0.017	0.017	0.017	PF	UO	UO	UO	UO	0.015	0.029	
24-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	0.001	0.000	0.003	0.009	0.003	0.000	0.000	0.002	0.008	0.019	0.020	-	0.020	
25-Feb	0.020	0.017	Z	0.001	0.000	0.000	0.000	0.001	0.000	0.001	0.003	0.001	0.002	0.003	0.005	0.006	0.001	0.009	0.014	0.014	0.014	0.007	0.003	0.004	0.005	0.020	
26-Feb	0.008	0.012	0.020	Z	0.023	0.023	0.013	0.003	0.016	0.012	0.006	0.003	0.008	0.004	0.001	0.011	0.004	0.003	0.004	0.001	0.002	0.008	0.012	0.017	0.009	0.023	
27-Feb	0.017	0.018	0.015	0.017	Z	0.023	0.030	0.024	0.025	0.021	0.014	0.019	0.016	0.018	0.018	0.015	0.017	0.028	0.047	0.081	0.037	0.029	0.047	0.050	0.027	0.081	
28-Feb	0.041	0.029	0.048	0.040	0.035	Z	0.038	0.033	0.034	0.033	0.036	0.032	0.034	0.036	0.034	0.026	0.028	0.023	0.025	0.026	0.022	0.022	0.018	0.020	0.031	0.048	
29-Feb	Z	0.018	0.021	0.017	0.021	0.021	0.022	0.024	0.023	0.023	0.022	0.024	0.027	0.033	0.028	0.028	0.028	0.026	0.026	0.023	0.025	0.025	0.023	0.030	0.024	0.033	
		0.014	0.013	0.017	0.017	0.015	0.015	0.018	0.019	0.017	0.017	0.018	0.016	0.018	0.020	0.015	0.017	0.017	0.020	0.020	0.020	0.017	0.016	0.015	0.015	Diurnal Average	
		0.041	0.039	0.048	0.042	0.036	0.034	0.038	0.053	0.050	0.067	0.076	0.045	0.058	0.066	0.047	0.044	0.046	0.069	0.066	0.081	0.061	0.058	0.047	0.050	Diurnal Maximum	
Z - zerospan		C - Calibration					M - Maintenance					UO - Unstable Operation					PF - Power Failure										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Non Methane Hydrocarbons (NMHC) - ppm
Patricia McInnes - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	219	34.11	34.11
0.006 - 0.05	411	64.02	98.13
0.06 - 0.1	12	1.87	100.00
> 0.1	0	0.00	100.00

Total Number of Valid Hours: 642

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Non Methane Hydrocarbons (NMHC) - ppm
Patricia McInnes - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	60	15	11	5	3	4	11	9	14	4	9	7	5	4	11	47	219
0.006 - 0.05	41	15	12	6	20	48	49	23	12	15	34	51	32	18	20	15	411
0.06 - 0.1	2	0	0	2	0	0	3	1	0	2	2	0	0	0	0	0	12
> 0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	103	30	23	13	23	52	63	33	26	21	45	58	37	22	31	62	642

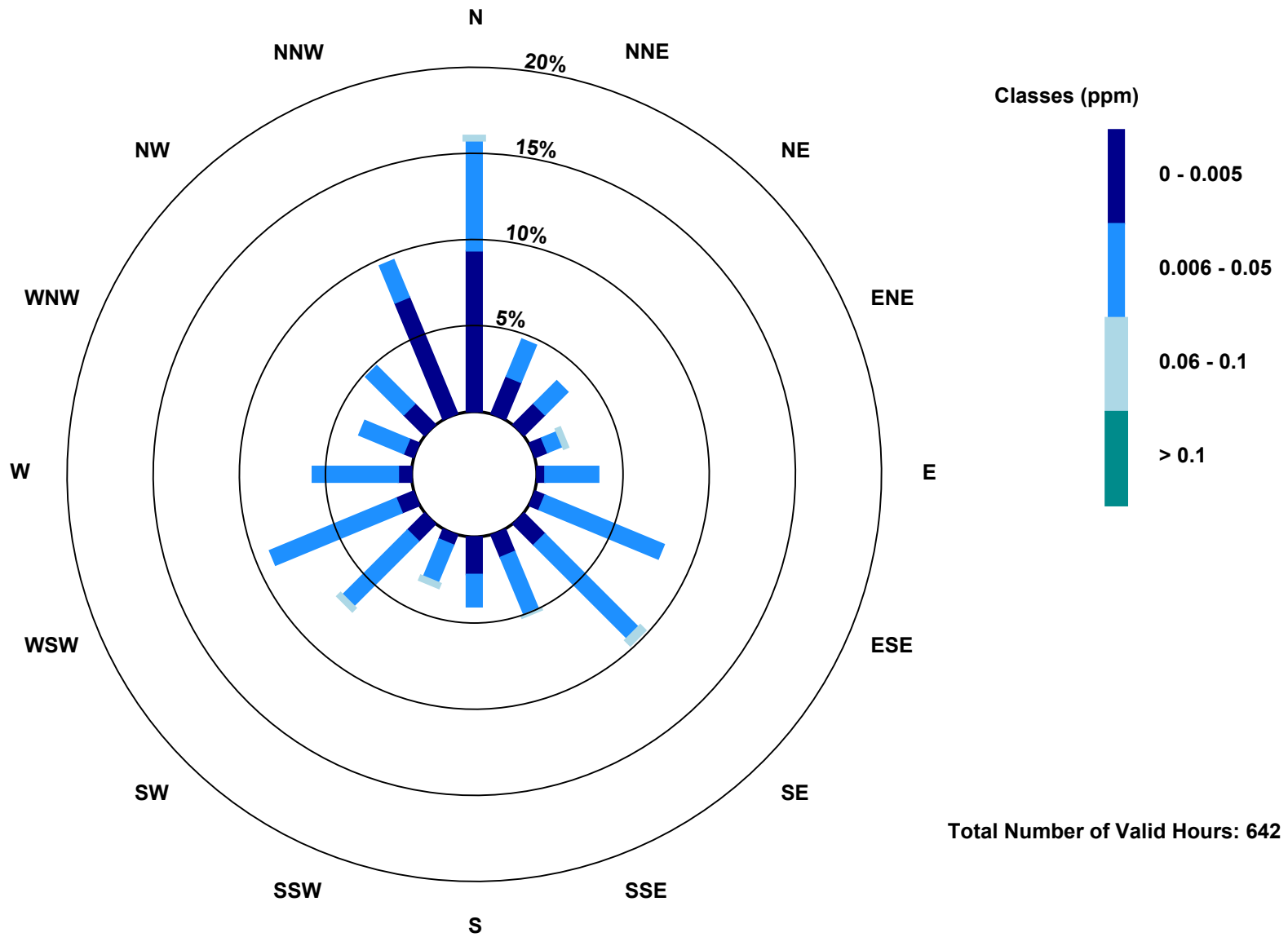
Total Number of Valid Hours: 642

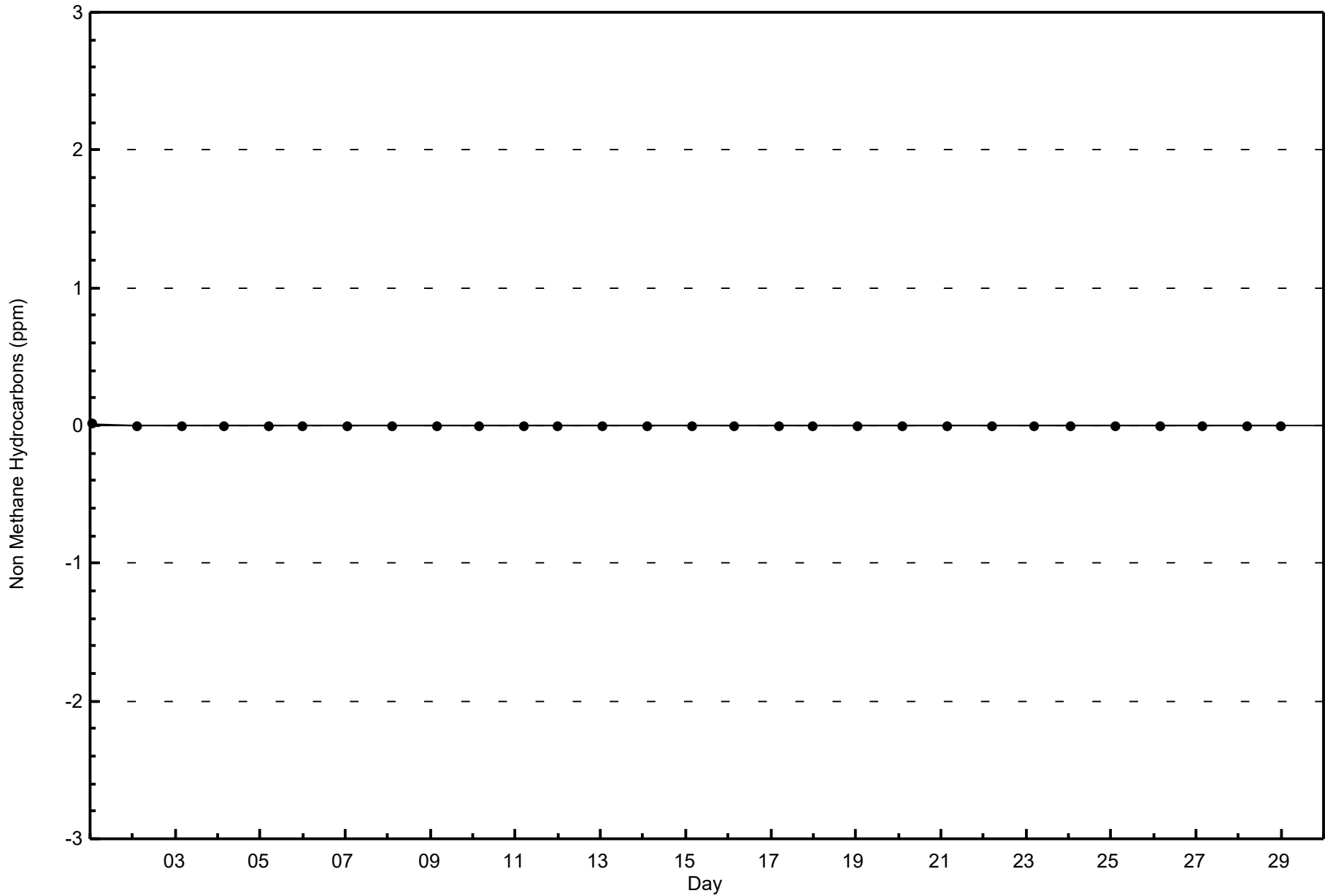
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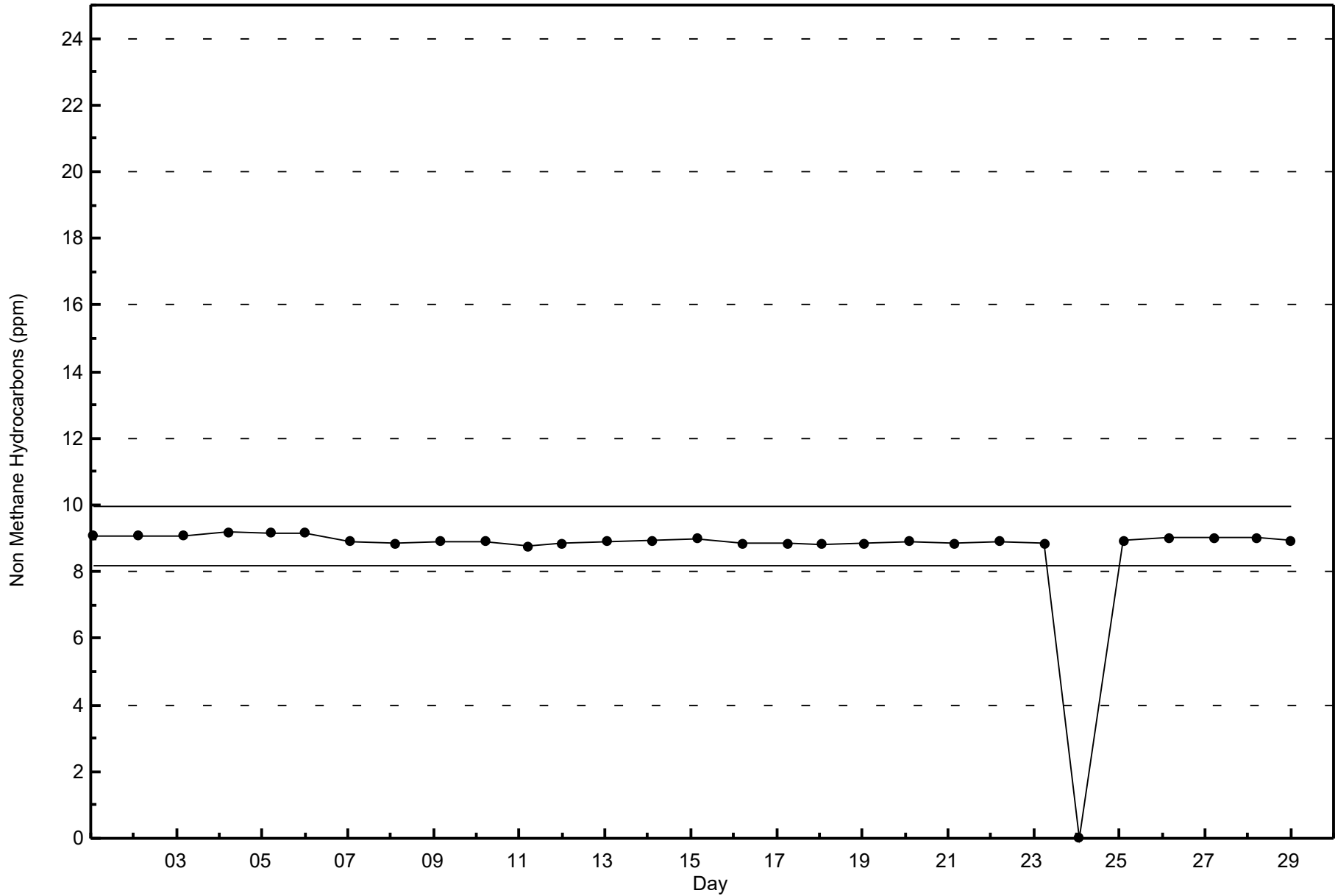


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Patricia McInnes

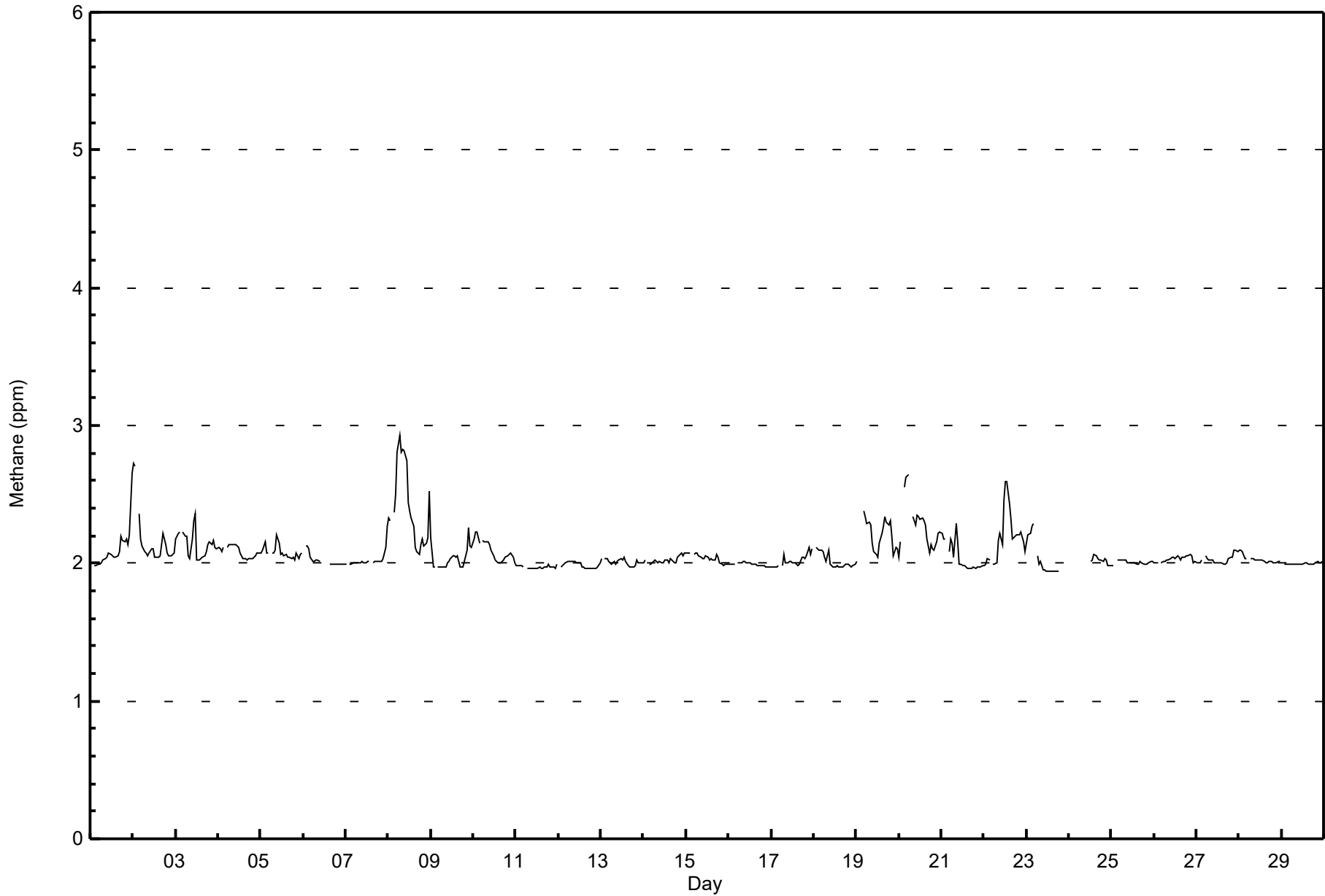








Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																		Hours in Service:	696						
Maximum Value: 2.9 ppm on Feb 8 07:00		Maximum Daily Average: 2.4 ppm on Feb 8																	Hours of Data:	642								
Minimum Value: 1.9 ppm on Feb 23 16:00		Minimum Daily Average: 2.0 ppm on Feb 11																	Hours of Missing Data:	54								
Maximum Diurnal Average: 2.1 ppm at hour 6		Minimum Diurnal Average: 2.0 ppm at hour 17																	Hours of Calibration:	33								
Monthly Average: 2.07 ppm		Percentiles: P ₁ = 1.9 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.0 Q ₃ = 2.1 P ₉₀ = 2.2 P ₉₉ = 2.7																	Percent Operational Time:	97.0								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
1-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.7	2.1	2.7		
2-Feb	2.7	Z	Z	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.7	
3-Feb	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.1	2.0	2.2	2.3	2.4	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.4	
4-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	
5-Feb	2.1	2.1	2.2	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.2	
6-Feb	Z	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	C	C	C	C	C	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	
7-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.0	2.3	2.3	
8-Feb	2.3	2.3	Z	2.4	2.5	2.8	2.9	2.8	2.8	2.8	2.7	2.4	2.4	2.3	2.3	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.5	2.4	2.9	2.9	
9-Feb	2.2	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.3	2.1	2.1	2.0	2.3	2.3	
10-Feb	2.2	2.2	2.2	2.1	Z	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.2	2.2	
11-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1
15-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
16-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1
18-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19-Feb	2.0	Z	2.0	UO	2.4	2.3	2.3	2.3	2.3	2.1	2.1	2.1	2.0	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.0	2.1	2.1	2.2	2.4	2.4	
20-Feb	2.0	2.2	Z	2.6	2.6	2.6	UO	UO	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.6	2.6	
21-Feb	2.2	2.2	2.2	Z	2.1	2.2	2.2	2.0	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3
22-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.2	2.2	2.1	2.5	2.6	2.6	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.6	2.6	
23-Feb	2.1	2.2	2.2	2.3	2.3	Z	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.3	2.3	
24-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1
25-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1
27-Feb	2.0	2.0	2.0	2.0	Z	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.1
28-Feb	2.1	2.1	2.1	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
29-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	Diurnal Average			
		2.7	2.7	2.2	2.6	2.6	2.8	2.9	2.8	2.8	2.8	2.7	2.5	2.6	2.6	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.2	2.7	Diurnal Maximum		
Z - zerspan		C - Calibration					M - Maintenance					UO - Unstable Operation					PF - Power Failure											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Patricia McInnes - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	403	62.77	62.77
2.1 - 3.0	239	37.23	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 642

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Methane (CH₄) - ppm
Patricia McInnes - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	65	20	16	8	16	47	41	6	3	14	35	46	33	17	19	17	403
2.1 - 3.0	38	10	7	5	7	5	22	27	23	7	10	12	4	5	12	45	239
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	103	30	23	13	23	52	63	33	26	21	45	58	37	22	31	62	642

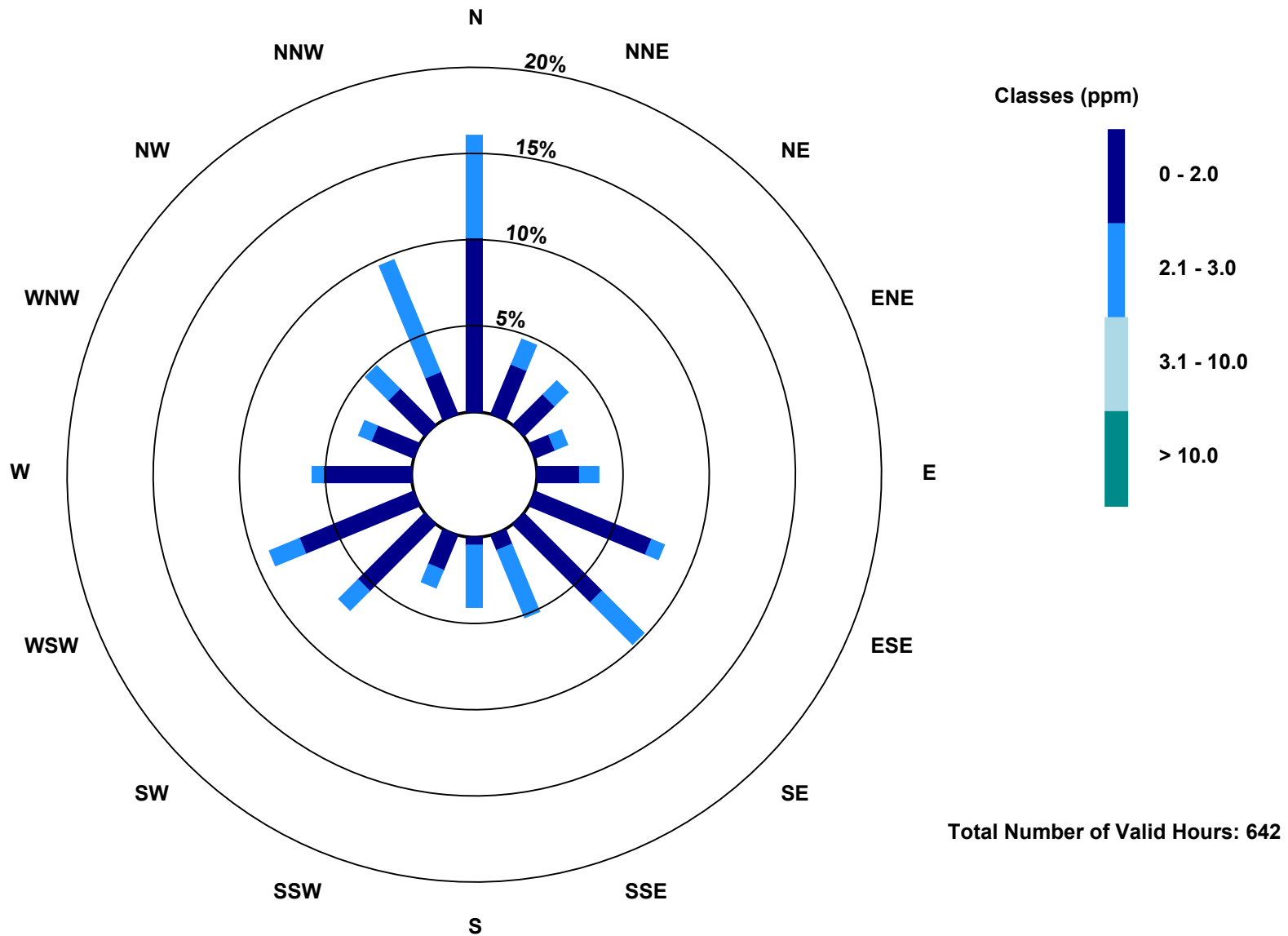
Total Number of Valid Hours: 642

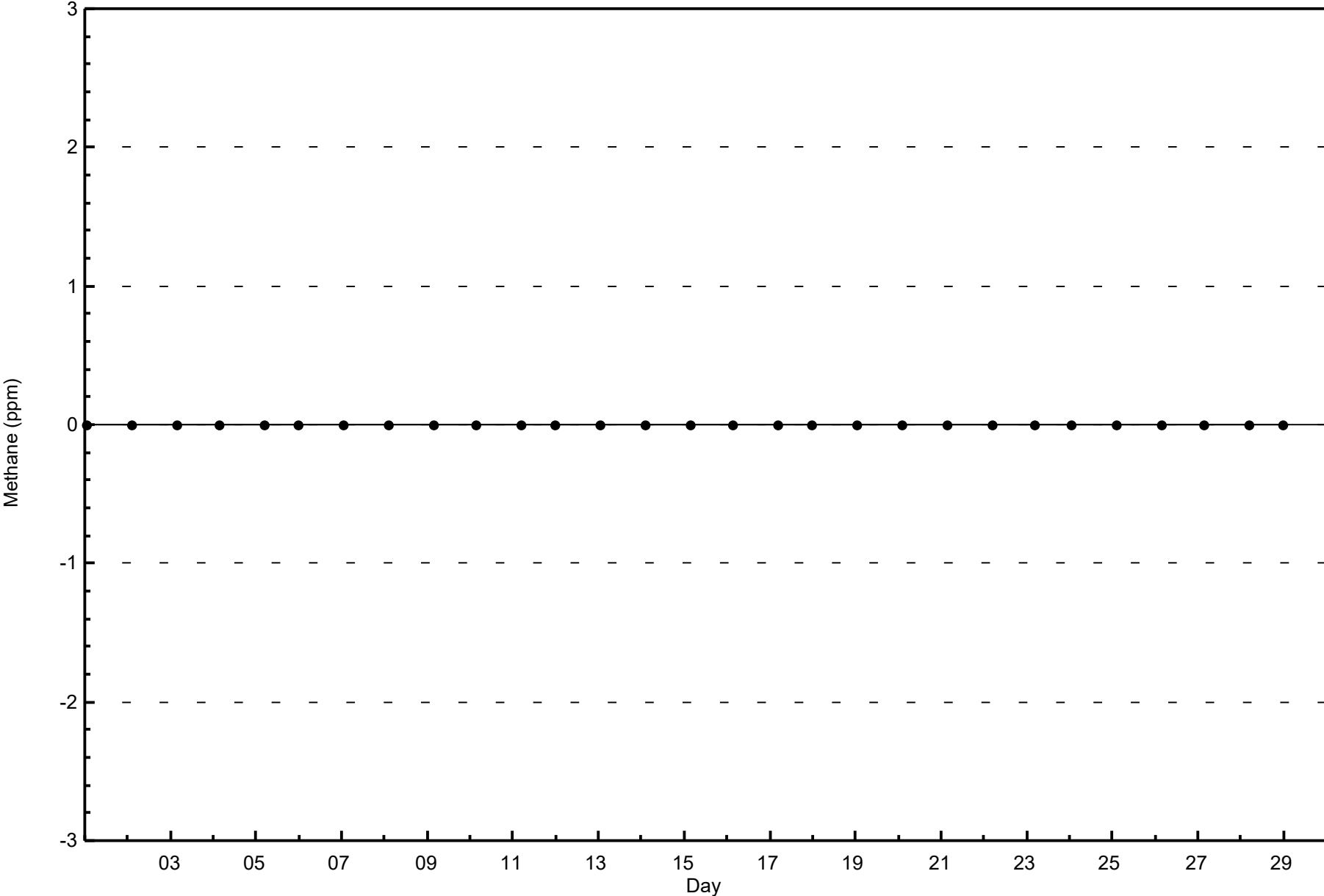
Total Number of Hours: 696

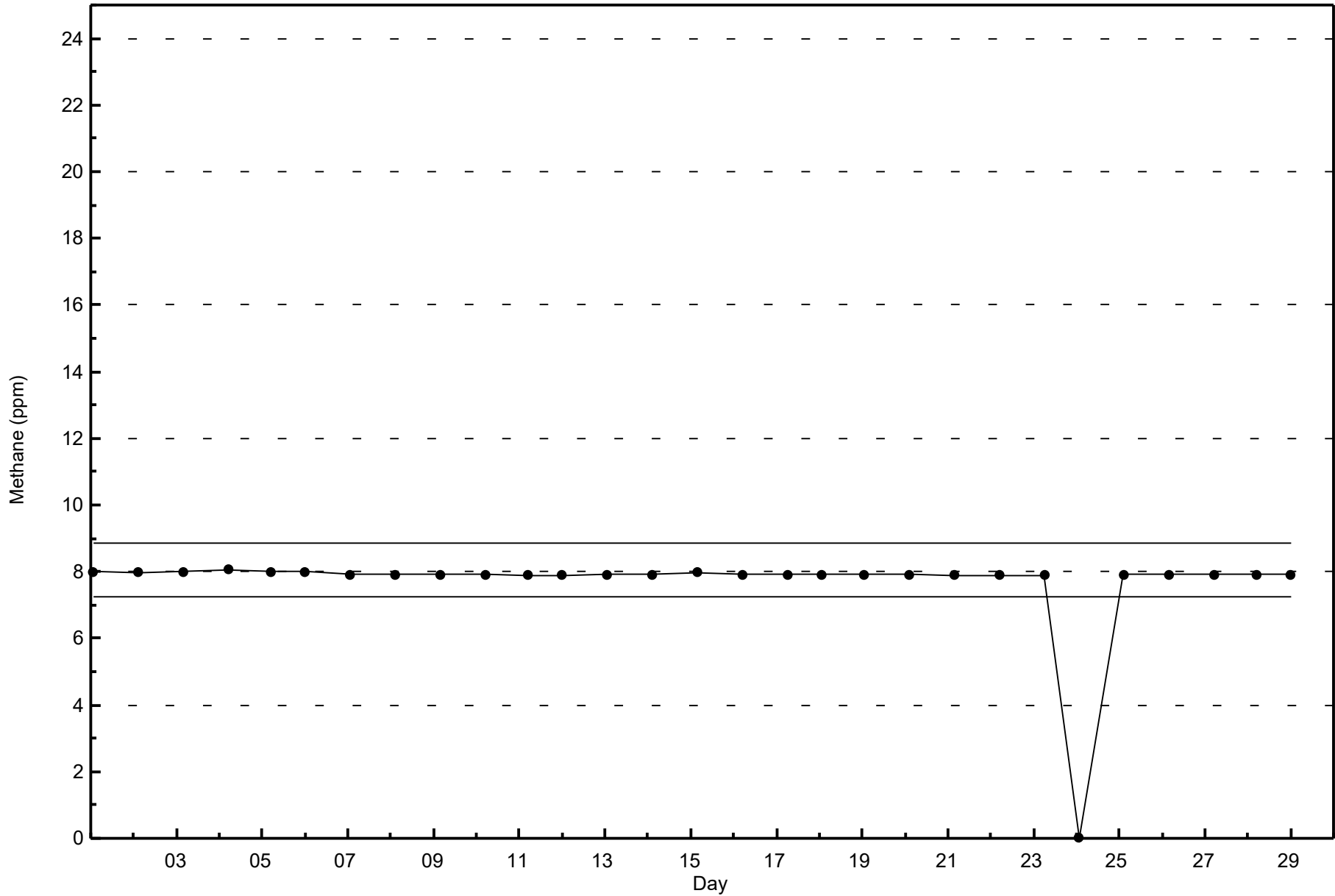


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Patricia McInnes









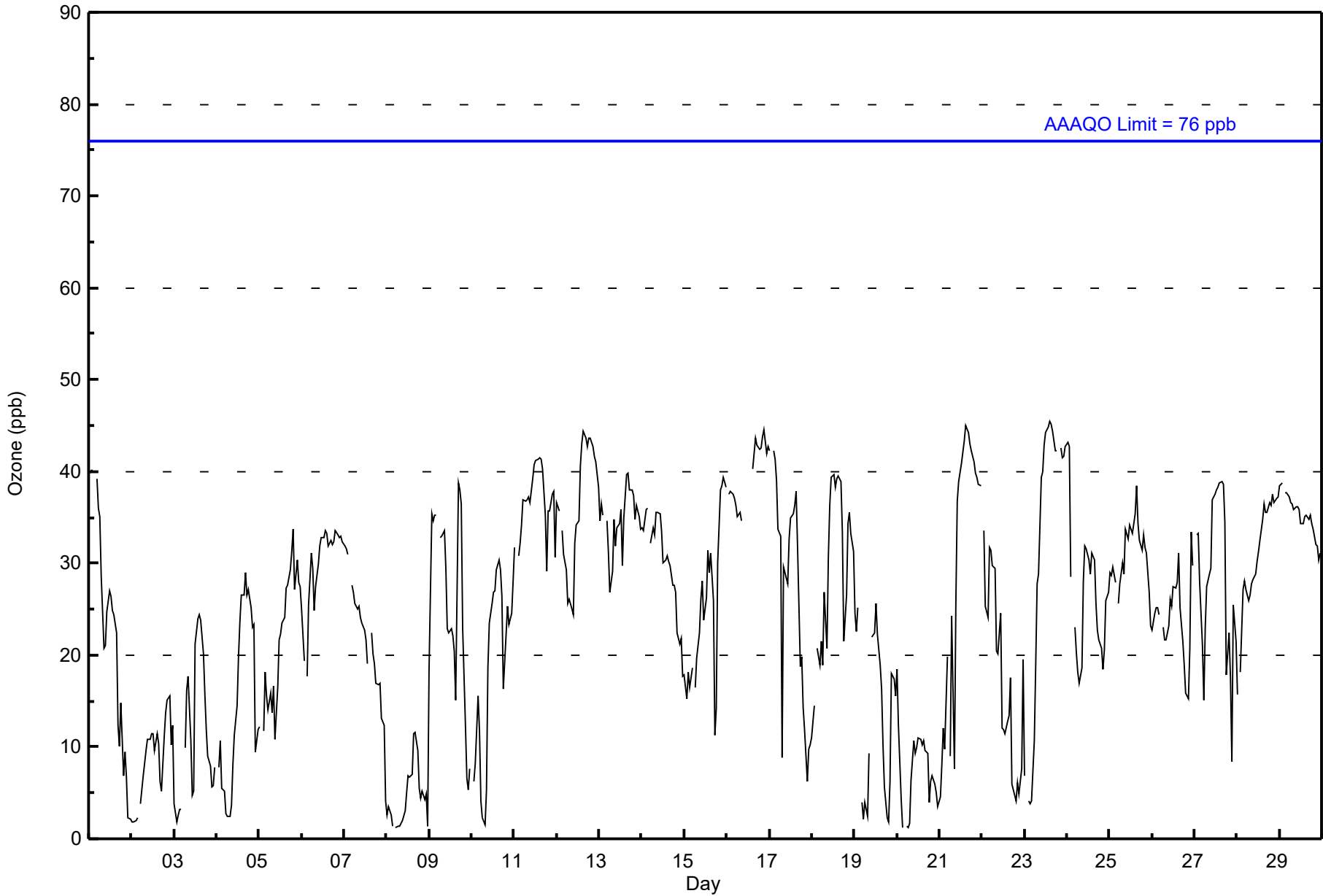
Wood Buffalo Environmental Association

Summary of Hour Averages

Ozone (O₃) - ppb

Patricia McInnes - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	Hours of Data: 659						
Maximum Value: 45.4 ppb on Feb 23 15:00		Maximum Daily Average: 39.9 ppb on Feb 16																	Hours of Missing Data: 37								
Minimum Value: 1.2 ppb on Feb 8 06:00		Minimum Daily Average: 4.6 ppb on Feb 8																	Hours of Calibration: 34								
Maximum Diurnal Average: 30.0 ppb at hour 16		Minimum Diurnal Average: 20.9 ppb at hour 7																	Percent Operational Time: 99.6								
Monthly Average: 24.55 ppb		Percentiles: P ₁ = 1.4 P ₁₀ = 5.7 Q ₁ = 15.1 Median = 26.5 Q ₃ = 34.6 P ₉₀ = 39.2 P ₉₉ = 44.3																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	39.8	40.1	40.2	Z	39.2	36.0	35.0	28.6	20.7	21.1	24.8	27.0	26.4	24.8	24.4	22.4	12.3	10.0	14.8	6.9	9.4	6.7	2.3	2.1	22.4	40.2	
2-Feb	1.8	1.9	2.0	2.3	Z	3.7	6.9	8.2	9.7	10.9	10.8	11.4	11.5	9.6	11.4	10.3	6.3	5.2	11.1	13.7	15.1	15.6	10.3	12.3	8.8	15.6	
3-Feb	3.8	1.9	2.6	3.2	3.1	Z	10.0	16.1	17.7	10.7	4.7	5.2	21.2	23.9	24.5	23.8	20.1	15.8	12.0	9.0	7.9	5.6	5.8	7.7	11.1	24.5	
4-Feb	Z	7.8	10.7	5.5	5.2	2.7	2.4	2.4	3.7	8.0	11.4	14.5	19.8	23.7	26.5	26.6	29.0	26.5	27.1	25.2	23.0	23.4	9.4	11.9	15.1	29.0	
5-Feb	12.1	Z	11.7	18.2	15.6	14.0	15.8	13.8	16.7	10.9	16.5	21.7	22.3	23.6	24.1	27.3	27.7	29.4	31.3	33.7	27.2	30.4	27.9	27.5	21.7	33.7	
6-Feb	25.0	19.3	Z	17.8	25.5	31.1	29.4	24.9	27.4	29.9	31.9	32.8	32.7	33.6	33.3	31.8	32.4	32.0	32.3	33.6	33.0	32.8	32.9	32.4	29.9	33.6	
7-Feb	31.9	31.5	31.0	Z	27.5	26.9	25.6	25.0	25.4	24.1	23.5	22.8	21.7	19.1	M	22.4	20.2	19.1	16.9	16.8	16.9	13.1	12.3	4.1	21.7	31.9	
8-Feb	2.6	3.6	2.6	1.3	Z	1.2	1.4	1.4	1.6	2.0	3.1	5.0	6.9	6.7	7.0	11.4	11.6	9.7	5.4	4.5	5.1	4.3	4.9	1.4	4.6	11.6	
9-Feb	18.5	35.4	34.6	35.2	35.2	Z	32.8	33.0	33.5	29.5	22.9	22.5	22.9	22.2	20.5	15.1	38.7	38.0	36.5	22.8	12.3	6.6	5.4	7.6	25.3	38.7	
10-Feb	Z	6.3	8.3	15.6	11.8	4.2	2.3	1.6	5.3	18.6	23.5	25.6	26.9	26.9	29.4	30.3	29.3	26.3	16.4	22.2	25.3	23.3	24.6	28.1	18.8	30.3	
11-Feb	31.8	Z	30.9	32.2	34.2	36.8	36.7	37.0	37.3	36.6	39.2	40.7	41.1	41.3	41.5	41.3	40.3	35.3	29.1	35.7	35.7	37.5	37.8	30.7	36.5	41.5	
12-Feb	36.7	35.7	Z	33.5	31.0	29.3	25.6	26.0	25.0	24.4	32.3	34.2	34.6	40.5	43.0	44.4	43.6	42.7	43.6	43.6	42.8	41.7	41.1	38.4	36.2	44.4	
13-Feb	34.7	36.4	35.2	Z	34.7	31.3	26.9	29.1	34.8	31.9	33.9	34.4	35.8	29.7	34.9	39.7	39.9	38.0	38.0	37.3	34.8	36.3	35.1	33.7	34.6	39.9	
14-Feb	33.9	33.5	35.9	36.0	Z	32.2	33.9	33.2	35.6	35.3	33.5	30.0	30.3	30.8	30.2	29.8	27.7	27.6	26.8	22.4	21.2	21.9	17.7	30.2	36.0		
15-Feb	17.9	15.2	18.2	16.5	18.5	Z	16.4	19.7	22.4	26.1	28.1	23.8	26.2	31.4	29.0	31.2	26.0	11.2	14.1	30.1	38.0	38.5	39.4	38.3	25.1	39.4	
16-Feb	Z	37.6	37.8	37.5	37.1	36.3	35.1	35.5	34.7	C	C	C	C	C	40.3	42.0	43.6	42.8	42.3	42.6	43.8	44.5	42.0	42.6	39.9	44.5	
17-Feb	42.3	Z	42.2	41.4	39.1	33.7	32.9	8.9	29.6	28.4	27.8	32.6	34.9	35.4	36.2	37.9	31.8	18.7	19.8	14.3	11.8	6.3	9.8	10.2	27.2	42.3	
18-Feb	11.0	14.5	Z	20.7	19.0	21.6	18.9	26.9	20.8	30.6	36.3	39.3	39.6	38.3	39.2	39.5	38.8	33.4	21.4	26.5	34.4	35.6	33.3	31.2	29.2	39.6	
19-Feb	24.5	22.6	25.1	Z	4.0	2.1	3.9	2.5	9.2	M	21.9	22.4	25.6	22.2	18.8	16.3	10.3	5.7	2.2	1.9	6.3	17.9	17.4	15.6	13.6	25.6	
20-Feb	18.5	12.4	4.3	1.3	Z	1.3	1.3	1.7	6.5	10.7	9.4	9.8	11.1	10.8	10.2	10.7	9.6	9.3	3.9	6.2	6.8	5.9	5.0	3.6	7.4	18.5	
21-Feb	4.5	8.1	12.0	9.7	19.8	Z	9.0	24.2	7.7	25.6	36.8	38.9	40.8	42.1	43.3	44.9	44.2	43.0	42.3	41.0	39.8	39.3	38.6	38.4	30.2	44.9	
22-Feb	Z	33.6	25.3	24.0	31.8	31.5	29.8	29.4	20.4	20.2	24.5	12.0	11.8	11.5	12.9	13.4	17.5	5.9	4.7	4.1	6.0	4.9	7.6	19.6	17.5	33.6	
23-Feb	6.8	Z	4.1	3.8	4.1	10.6	18.9	27.7	28.9	39.4	39.9	42.8	44.3	44.9	45.4	45.1	44.3	42.2	42.3	PF	42.5	41.4	41.7	42.8	32.0	45.4	
24-Feb	43.2	42.6	28.6	Z	23.0	20.3	18.2	16.9	18.6	28.1	31.8	31.6	30.3	28.8	31.2	30.4	25.7	22.7	21.7	20.8	18.5	20.6	25.9	26.8	26.4	43.2	
25-Feb	29.0	28.7	29.5	28.0	Z	25.6	27.8	30.0	28.9	33.7	32.7	34.2	33.7	33.2	35.4	38.5	34.3	32.6	31.4	33.1	31.8	31.0	26.8	23.1	31.0	38.5	
26-Feb	22.8	24.6	25.2	25.2	24.4	Z	23.0	21.6	21.6	23.2	26.0	25.3	27.5	27.3	28.0	31.1	25.2	21.5	18.9	15.9	15.3	20.8	33.4	29.8	24.2	33.4	
27-Feb	Z	33.1	33.3	27.9	21.0	15.1	23.0	27.5	28.8	29.5	36.8	37.5	38.0	38.3	38.7	38.8	38.6	34.4	17.8	22.4	17.5	8.4	25.4	21.6	28.4	38.8	
28-Feb	15.7	Z	18.1	27.1	28.1	27.1	25.9	26.5	27.7	28.2	28.9	30.3	31.3	32.5	34.8	36.4	35.6	35.5	36.6	36.3	37.5	36.7	37.1	37.3	30.9	37.5	
29-Feb	38.4	38.7	Z	37.6	37.6	37.2	36.5	36.5	35.9	36.1	36.2	35.8	34.4	34.3	35.1	35.2	34.8	35.2	34.3	33.8	32.0	31.9	30.3	31.1	35.2	38.7	
		22.8	23.5	22.0	20.9	23.8	21.3	20.9	21.2	21.9	24.2	26.1	26.7	28.0	28.1	29.6	30.0	29.0	25.9	24.0	23.6	23.9	23.5	23.6	23.0	Diurnal Average	
		43.2	42.6	42.2	41.4	39.2	37.2	36.7	37.0	37.3	39.4	39.9	42.8	44.3	44.9	45.4	45.1	44.3	43.0	43.6	43.6	43.8	44.5	42.0	42.8	Diurnal Maximum	
Z - zerospan		C - Calibration				M - Maintenance				PF - Power Failure																	
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 76 ppb																									





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ozone (O₃) - ppb
Patricia McInnes - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	227	34.45	34.45
21 - 50	432	65.55	100.00
51 - 82	0	0.00	100.00
> 83	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Ozone (O₃) - ppb
Patricia McInnes - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	31	12	7	4	6	5	18	26	22	7	7	8	6	4	15	49	227
21 - 50	74	24	16	9	18	52	46	7	3	16	32	49	39	17	15	15	432
51 - 82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	105	36	23	13	24	57	64	33	25	23	39	57	45	21	30	64	659

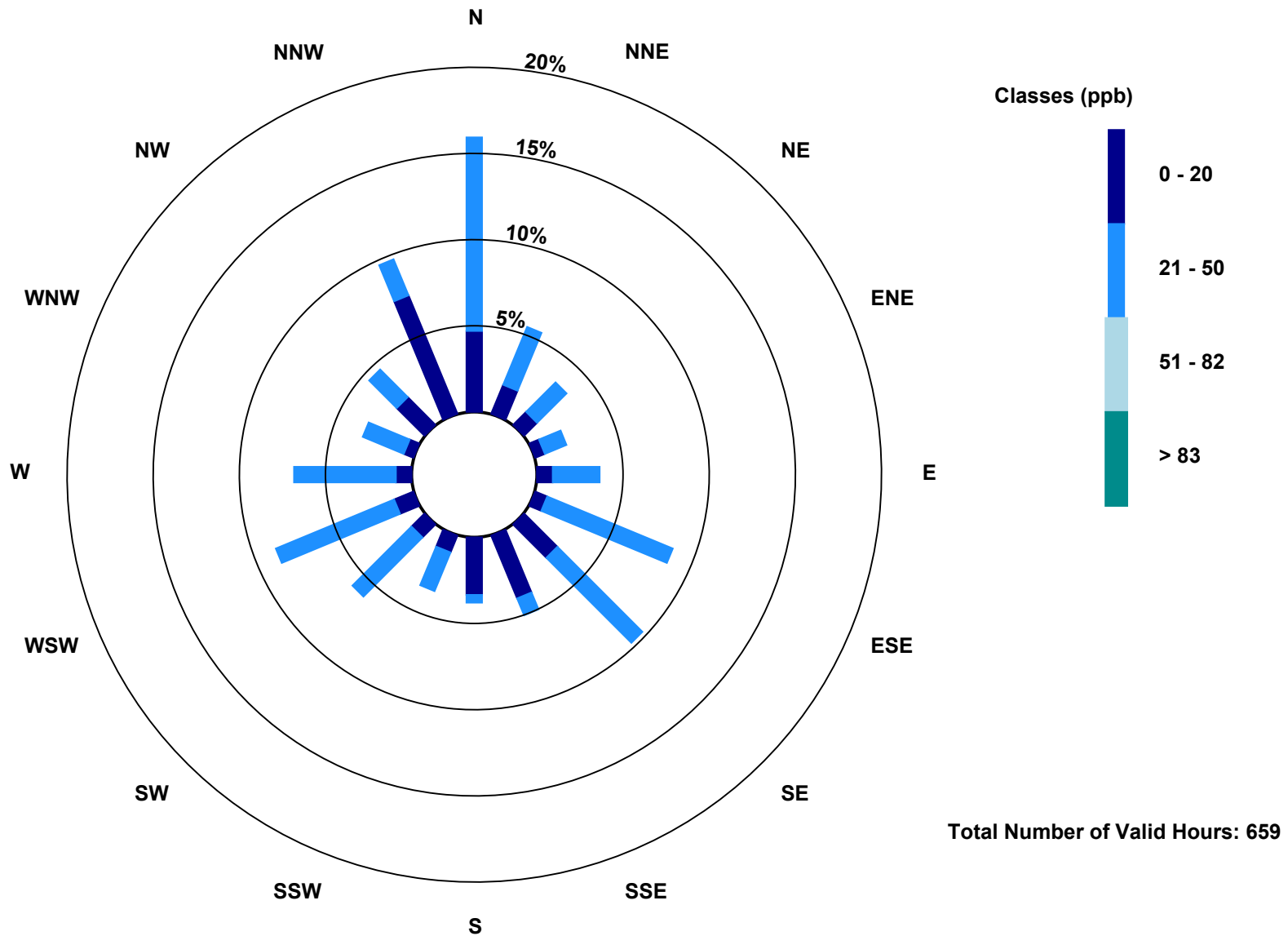
Total Number of Valid Hours: 659

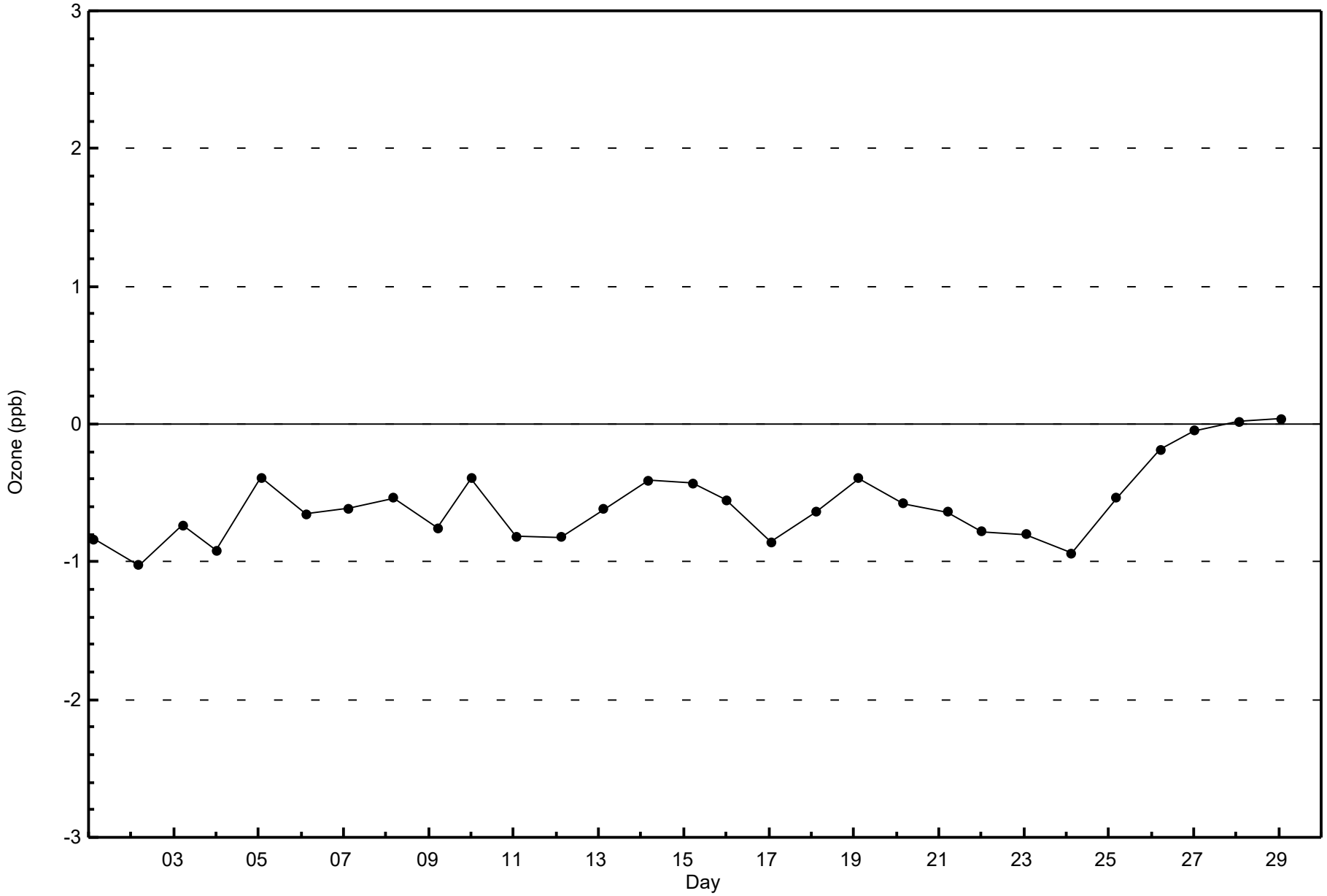
Total Number of Hours: 696

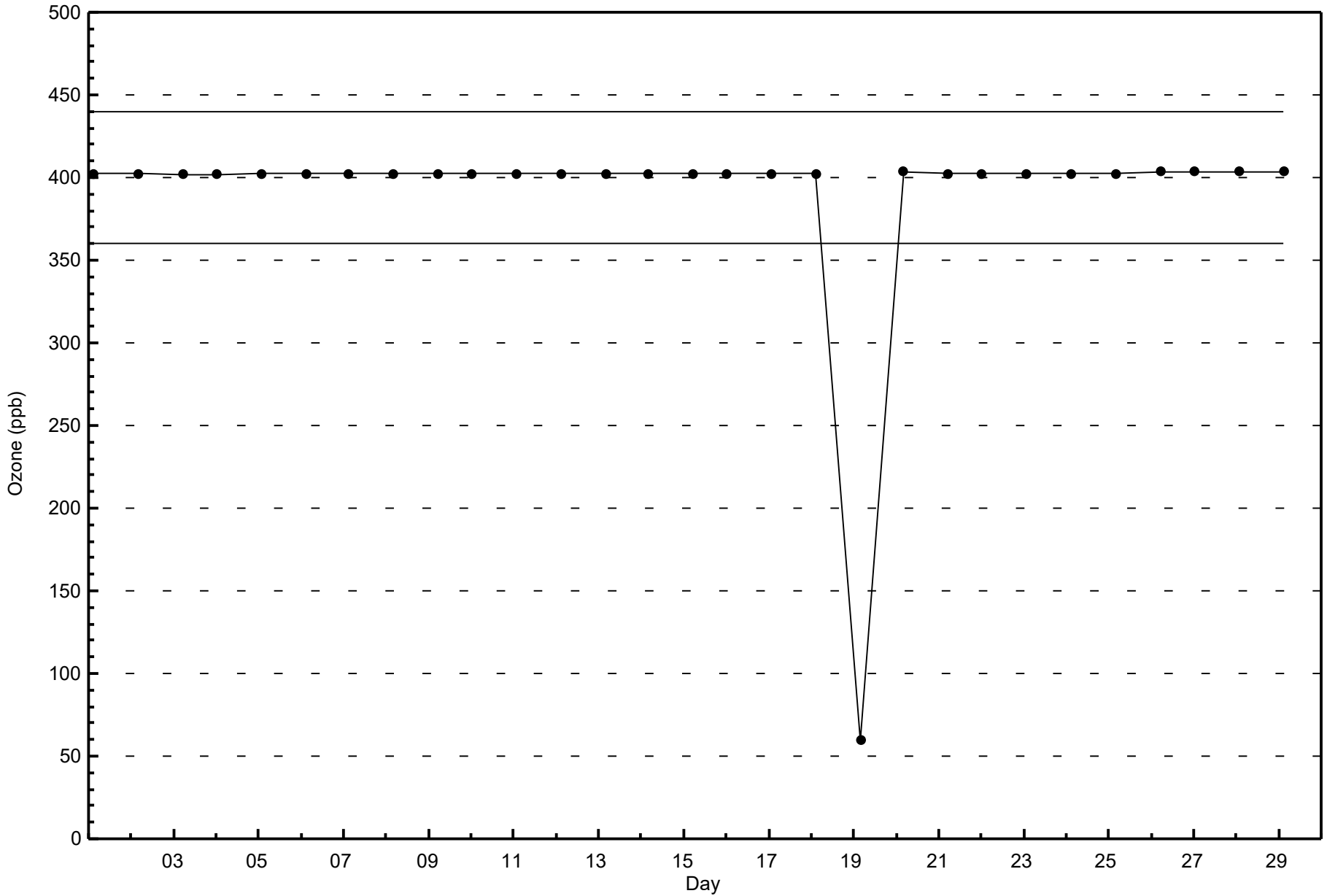


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Ozone (O₃) - ppb
Patricia McInnes







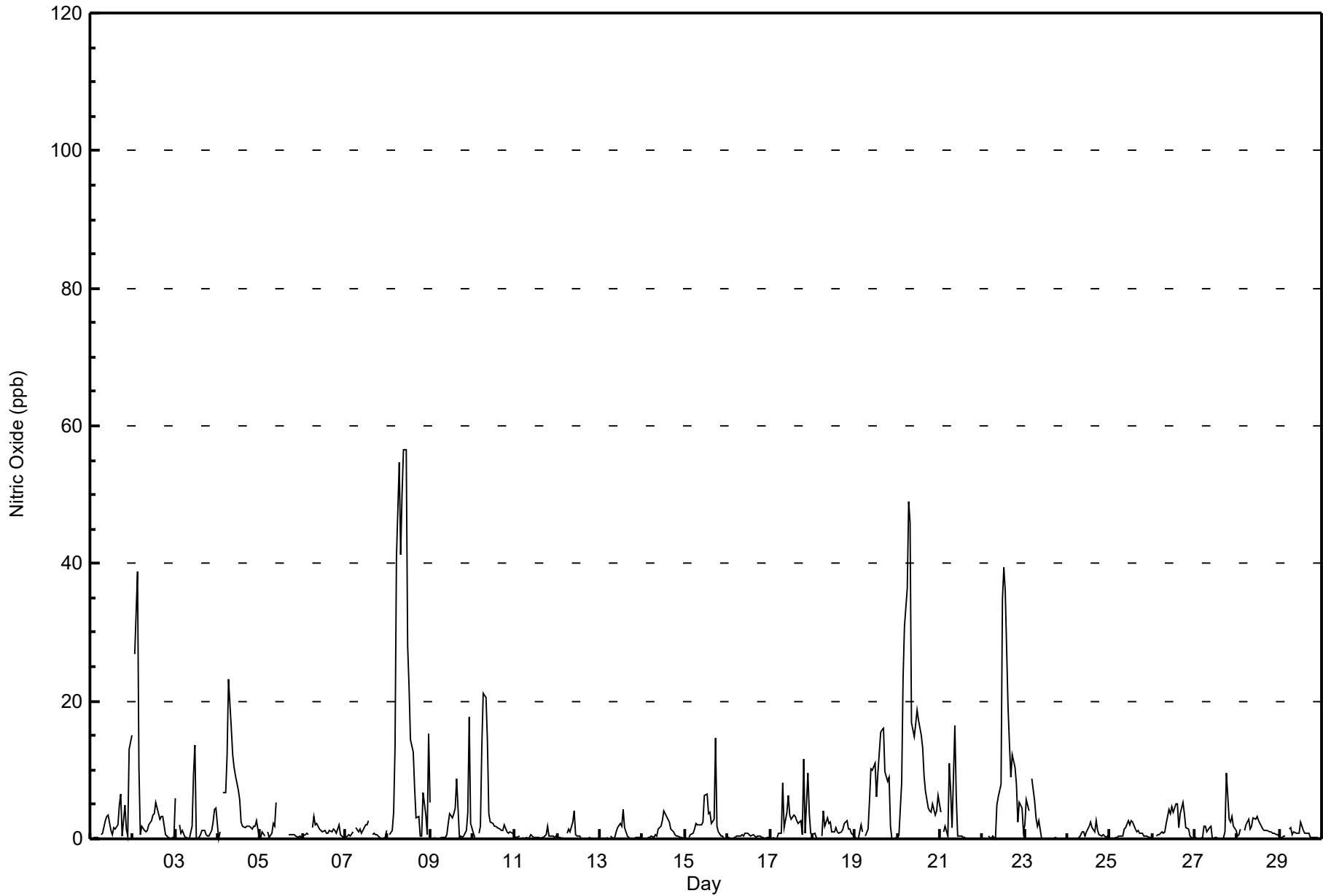


Maximum Value: 56.6 ppb on Feb 8 10:00		Maximum Daily Average: 19.0 ppb on Feb 8		Hours in Service: 696																							
Minimum Value: 0.0 ppb on Feb 7 22:00		Minimum Daily Average: 0.3 ppb on Feb 11		Hours of Data: 659																							
Maximum Diurnal Average: 6.4 ppb at hour 7		Minimum Diurnal Average: 0.9 ppb at hour 1		Hours of Missing Data: 37																							
Monthly Average: 3.35 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.3 Median = 1.0 Q ₃ = 2.7 P ₉₀ = 8.8 P ₉₉ = 41.0		Hours of Calibration: 35																							
				Percent Operational Time: 99.7																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.1	0.1	0.2	0.1	0.2	Z	0.7	0.8	2.5	3.2	3.5	1.3	0.7	1.6	1.5	2.0	4.9	6.4	0.3	4.9	1.4	0.3	13.1	15.0	2.8	15.0	
2-Feb	Z	26.8	38.7	10.3	0.6	1.8	1.2	1.0	1.2	2.0	2.6	3.4	3.7	5.4	3.6	2.8	3.3	3.3	0.7	0.4	0.1	0.0	0.3	0.1	4.9	38.7	
3-Feb	5.8	Z	2.1	0.9	1.3	0.2	0.1	0.0	0.1	1.7	9.3	13.5	0.0	0.3	0.6	1.2	1.2	0.7	0.4	0.3	1.1	2.5	4.3	4.5	2.3	13.5	
4-Feb	0.1	1.1	Z	6.7	6.8	12.2	23.1	16.0	12.1	10.4	9.1	7.1	5.7	2.4	1.8	1.7	1.8	1.8	1.7	1.4	1.8	1.8	2.6	0.2	5.6	23.1	
5-Feb	0.3	1.1	0.4	Z	1.1	0.1	0.8	2.2	1.8	5.4	C	C	C	C	C	C	0.6	0.5	0.6	0.6	0.4	0.3	0.4	0.2	--	5.4	
6-Feb	0.4	0.7	0.8	0.5	Z	1.7	3.2	2.1	2.2	1.5	1.2	1.0	1.2	0.9	0.9	1.2	1.0	1.5	1.3	0.9	2.0	0.6	0.4	0.2	1.2	3.2	
7-Feb	0.3	0.3	0.5	0.4	1.0	Z	1.7	1.0	1.3	0.9	1.3	2.1	2.0	2.6	M	0.6	0.9	0.6	0.6	0.2	0.0	0.0	0.2	1.3	0.9	2.6	
8-Feb	Z	0.6	1.3	3.8	13.4	40.9	54.8	41.2	50.0	56.6	56.5	28.2	22.1	14.4	12.6	7.4	3.1	3.2	0.4	0.5	6.7	3.4	0.5	15.2	19.0	56.6	
9-Feb	5.4	Z	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.7	2.3	3.6	3.0	3.7	4.5	8.7	0.3	0.3	0.3	0.3	1.3	3.8	17.7	2.2	2.6	17.7	
10-Feb	0.9	0.3	Z	0.8	1.7	13.5	21.1	20.5	14.2	3.7	2.5	2.2	1.8	1.9	1.6	1.4	1.2	1.2	2.0	1.0	0.9	1.0	0.9	0.6	4.2	21.1	
11-Feb	0.3	0.3	0.4	Z	0.2	0.1	0.2	0.1	0.2	0.6	0.3	0.2	0.2	0.1	0.0	0.2	0.1	0.6	1.8	0.5	0.5	0.4	0.1	0.5	0.3	1.8	
12-Feb	0.1	0.2	0.1	0.2	Z	0.7	1.4	1.1	2.4	4.0	0.7	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.5	4.0	
13-Feb	0.0	0.0	0.0	0.0	0.3	Z	0.4	0.1	0.2	1.0	1.6	2.2	1.8	4.3	1.7	0.3	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.1	0.6	4.3	
14-Feb	Z	0.1	0.0	0.1	0.2	0.4	0.2	0.7	0.4	1.4	1.9	2.6	4.1	3.3	2.8	2.4	1.5	1.1	0.5	0.4	0.4	0.2	0.3	0.1	1.1	4.1	
15-Feb	0.1	Z	0.1	0.7	0.9	1.4	2.3	2.0	2.1	2.0	2.4	6.2	6.4	3.6	3.9	2.3	2.9	14.7	1.7	1.0	0.3	0.3	0.1	0.2	2.5	14.7	
16-Feb	0.3	0.1	Z	0.2	0.3	0.4	0.4	0.3	0.6	0.5	0.9	0.7	0.5	0.5	0.6	0.4	0.2	0.3	0.4	0.3	0.1	0.0	0.1	0.1	0.4	0.9	
17-Feb	0.1	0.0	0.1	Z	0.3	0.8	0.9	8.2	1.7	3.9	6.3	3.5	2.9	3.4	3.3	2.7	2.2	2.7	0.6	11.5	0.8	9.5	3.7	0.9	3.0	11.5	
18-Feb	0.7	0.8	0.2	0.0	Z	0.5	4.0	1.8	3.0	2.2	2.4	1.0	1.0	1.7	1.0	0.8	1.0	1.5	2.3	2.7	1.4	1.4	0.7	0.4	1.4	4.0	
19-Feb	0.2	0.0	0.0	2.1	1.0	Z	0.3	1.5	5.5	10.2	10.1	10.9	6.2	9.6	15.4	15.8	16.0	9.8	8.4	9.0	1.8	0.1	0.0	0.2	5.8	16.0	
20-Feb	Z	0.5	8.2	23.4	30.9	36.5	49.0	46.1	16.9	14.9	16.6	18.6	17.3	15.0	13.2	9.2	6.8	4.5	4.1	3.9	5.1	3.4	4.1	6.2	15.4	49.0	
21-Feb	3.9	Z	1.0	1.9	0.4	11.0	7.0	1.7	16.4	6.0	0.4	0.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	16.4	
22-Feb	0.0	0.0	Z	0.5	0.2	0.0	0.4	0.0	5.0	6.2	8.0	34.9	39.4	36.0	19.1	13.7	9.0	12.1	10.4	8.0	2.4	5.3	4.4	1.0	9.4	39.4	
23-Feb	2.0	5.7	4.1	Z	8.7	5.6	3.1	1.8	2.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	PF	0.0	0.0	0.0	0.0	1.5	8.7	
24-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.2	0.2	1.0	0.9	0.5	1.0	1.9	2.5	1.5	0.9	2.6	1.2	0.7	0.4	0.5	0.3	0.2	0.7	0.8	2.6	
25-Feb	Z	0.1	0.1	0.1	0.2	0.4	0.4	0.4	1.4	1.6	2.7	2.0	2.6	2.5	1.5	0.9	1.2	0.8	0.7	0.4	0.5	0.4	0.3	0.3	0.9	2.7	
26-Feb	0.3	Z	0.4	0.6	0.6	1.0	0.9	1.0	2.3	4.3	3.7	4.6	3.8	5.0	5.1	1.7	3.7	5.3	3.8	1.5	1.5	0.3	0.2	0.1	2.2	5.3	
27-Feb	0.1	0.0	Z	0.1	0.2	1.8	1.9	1.1	1.7	1.9	0.1	0.2	0.1	0.1	0.1	0.1	0.3	1.0	9.5	2.9	2.4	3.3	1.9	1.3	1.4	9.5	
28-Feb	0.4	0.6	1.5	Z	1.2	2.0	2.8	1.5	1.9	3.1	2.9	3.2	2.6	2.3	1.4	1.2	1.3	1.3	1.0	1.1	0.8	0.8	0.5	0.7	1.6	3.2	
29-Feb	0.3	0.2	0.4	0.4	Z	1.4	1.6	0.7	1.0	0.8	0.8	0.8	2.4	1.2	0.7	0.8	0.9	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.7	2.4	
		0.9	1.6	2.5	2.2	2.9	5.6	6.4	5.4	5.2	5.2	5.4	5.6	4.8	4.4	3.7	2.9	2.4	2.7	1.9	1.9	1.2	1.4	2.0	1.8	Diurnal Average	
		5.8	26.8	38.7	23.4	30.9	40.9	54.8	46.1	50.0	56.6	56.5	34.9	39.4	36.0	19.1	15.8	16.0	14.7	10.4	11.5	6.7	9.5	17.7	15.2	Diurnal Maximum	
Z - zerspan		C - Calibration				M - Maintenance				PF - Power Failure																	



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Patricia McInnes - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitric Oxide (NO) - ppb
Patricia McInnes - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	638	96.81	96.81
21 - 40	13	1.97	98.79
41 - 80	8	1.21	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Nitric Oxide (NO) - ppb
Patricia McInnes - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	96	33	21	12	22	56	64	28	24	22	47	57	45	22	28	61	638
21 - 40	4	0	1	0	2	0	1	2	1	1	0	0	0	0	0	1	13
11 - 80	2	3	0	0	0	0	0	0	1	0	0	0	0	0	0	2	8
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	102	36	22	12	24	56	65	30	26	23	47	57	45	22	28	64	659

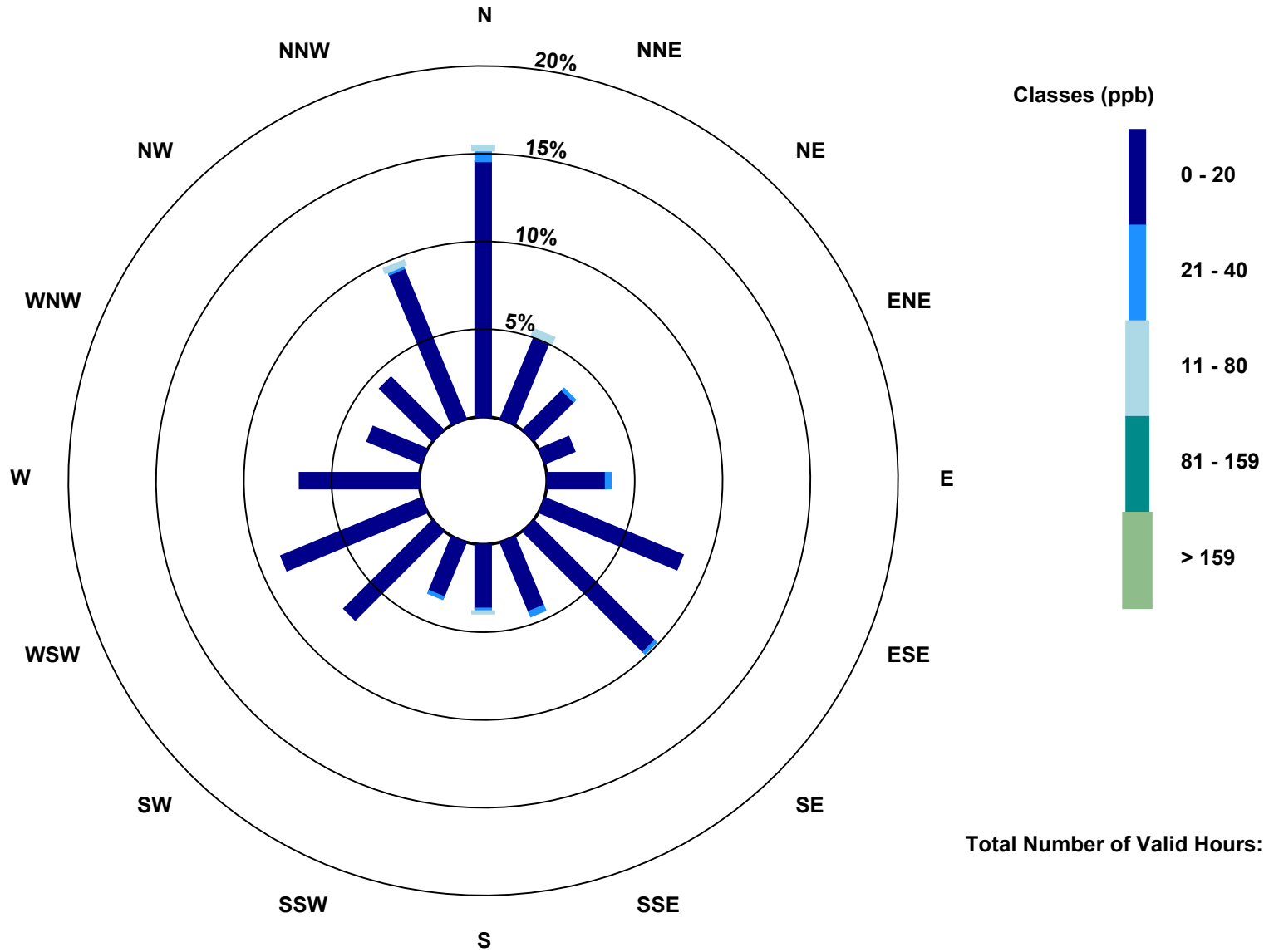
Total Number of Valid Hours: 659

Total Number of Hours: 696

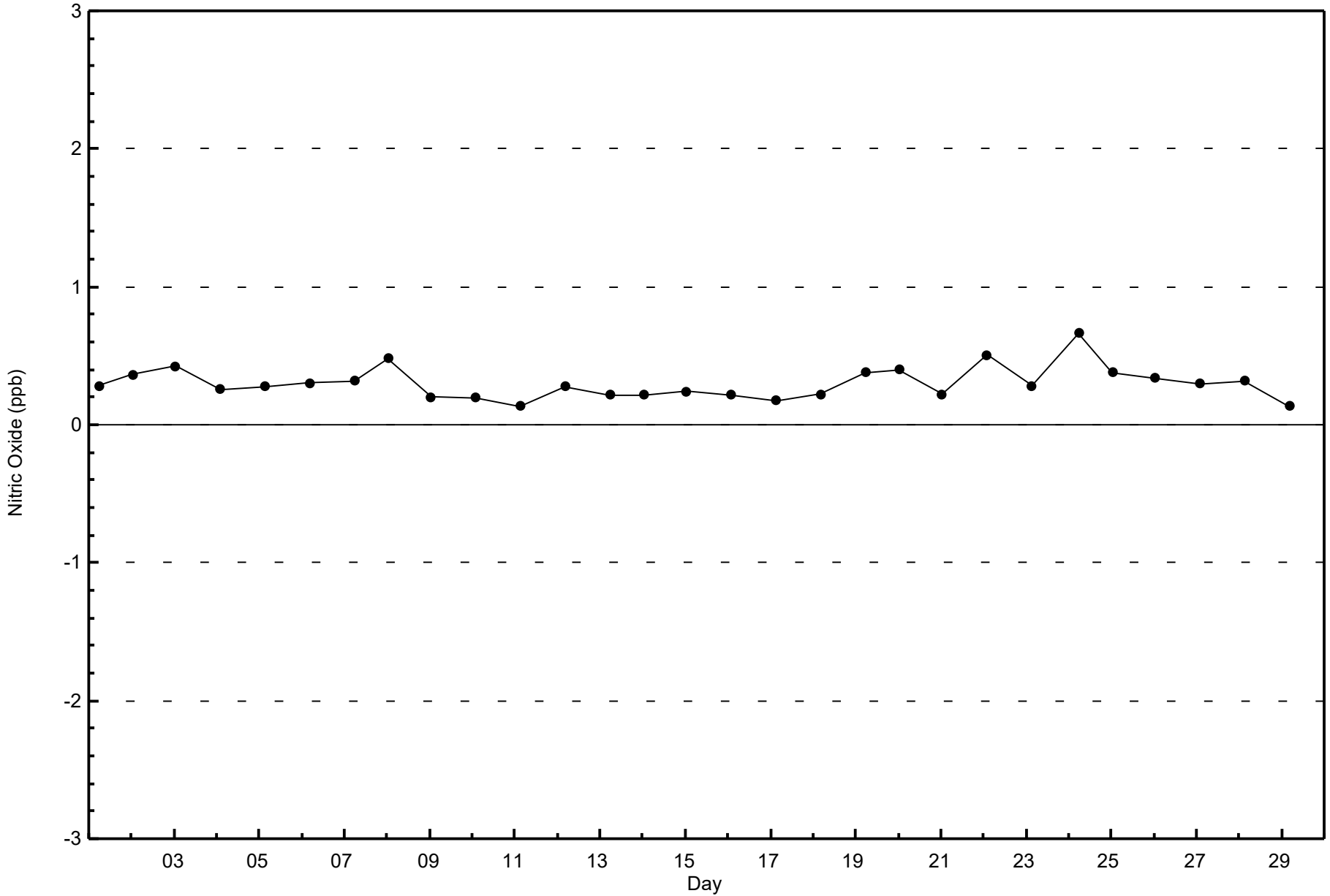


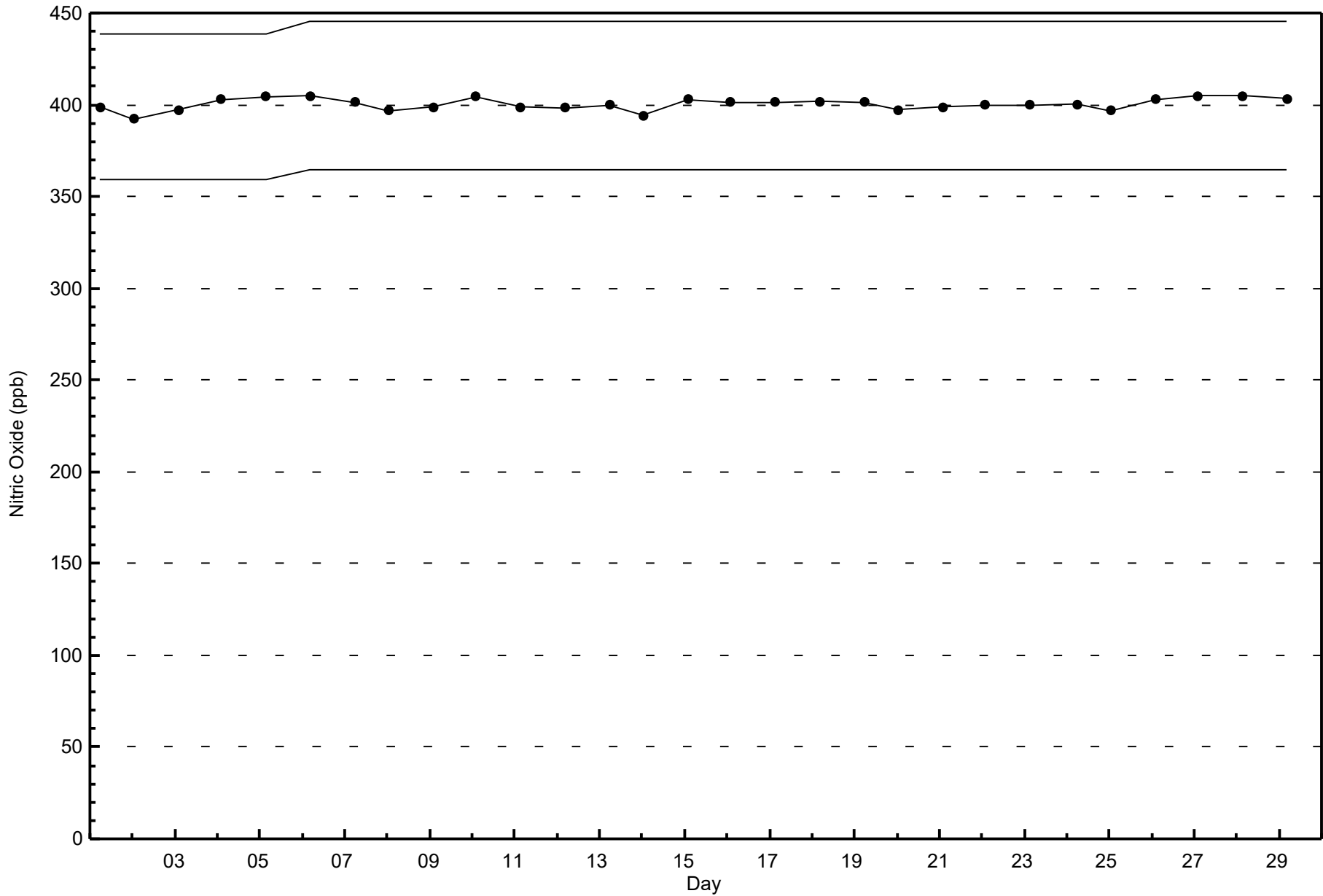
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Patricia McInnes



Total Number of Valid Hours: 659







Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

Patricia McInnes - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 34.1 ppb on Feb 19 19:00	Maximum Daily Average: 20.7 ppb on Feb 8		Hours of Data:	659
Minimum Value: 0.0 ppb on Feb 11 13:00	Minimum Daily Average: 1.4 ppb on Feb 16		Hours of Missing Data:	37
Maximum Diurnal Average: 10.9 ppb at hour 19	Minimum Diurnal Average: 5.5 ppb at hour 13		Hours of Calibration:	35
Monthly Average: 8.07 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.7 Q ₁ = 2.4 Median = 5.9 Q ₃ = 11.7 P ₉₀ = 18.8 P ₉₉ = 28.3		Percent Operational Time:	99.7

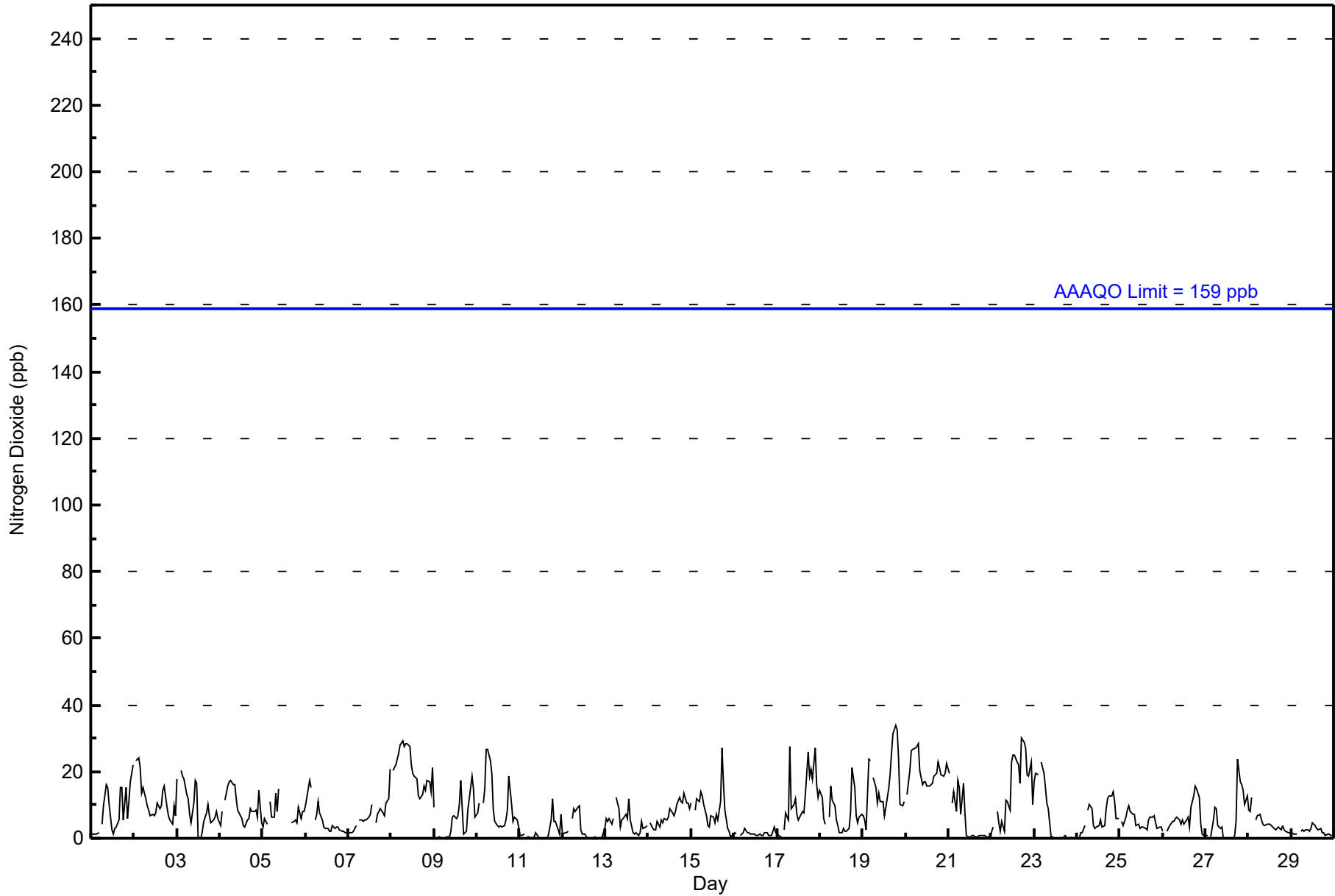
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	1.3	1.2	1.2	1.1	1.8	Z	4.4	9.6	16.2	15.1	10.3	2.5	1.3	2.9	3.4	5.4	15.4	15.3	5.5	15.3	6.1	11.1	17.0	22.2	8.1	22.2																						
2-Feb	Z	23.4	24.0	21.0	13.7	15.2	11.7	9.9	8.4	6.8	7.0	6.9	7.7	10.4	8.7	9.9	14.5	15.7	9.5	6.7	5.6	4.2	9.8	6.8	11.2	24.0																						
3-Feb	18.0	Z	20.3	18.7	17.8	13.2	11.8	7.4	4.6	10.5	17.3	16.4	0.5	0.2	2.1	5.0	7.8	10.2	6.7	4.6	5.6	6.4	8.1	5.8	9.5	20.3																						
4-Feb	4.0	8.0	Z	11.4	15.6	17.1	17.3	16.1	15.9	11.8	8.6	6.7	5.9	3.8	3.6	5.4	5.8	9.1	8.1	8.2	8.5	6.5	14.3	4.6	9.4	17.3																						
5-Feb	3.4	6.1	4.4	Z	11.0	6.3	6.4	13.6	8.0	14.8	C	C	C	C	C	C	4.7	5.2	5.7	4.6	9.3	6.1	8.2	8.1	--	14.8																						
6-Feb	9.6	15.0	17.5	15.1	Z	5.7	7.1	10.9	7.7	5.4	3.6	3.0	3.0	2.3	2.3	3.7	2.8	3.5	3.5	2.4	2.1	2.2	1.6	1.5	5.7	17.5																						
7-Feb	1.6	1.5	1.5	2.3	3.7	Z	5.3	5.5	4.9	5.5	5.7	6.3	7.4	10.1	M	4.8	7.3	7.9	9.0	7.7	6.7	10.5	11.7	20.8	6.7	20.8																						
8-Feb	Z	20.2	22.1	23.9	25.3	28.0	29.1	27.7	28.2	28.4	27.4	22.1	19.4	18.5	17.7	12.9	12.0	13.1	15.6	14.4	17.3	16.9	13.8	21.2	20.7	29.1																						
9-Feb	9.5	Z	0.4	0.3	0.2	0.2	0.2	0.3	0.4	2.1	6.4	6.9	6.1	6.8	10.1	17.5	1.3	1.8	2.0	8.3	15.1	18.5	14.7	6.2	5.9	18.5																						
10-Feb	7.8	10.6	Z	10.4	14.7	26.7	26.7	23.2	19.7	8.9	4.9	3.8	3.4	4.0	3.6	3.9	5.4	8.6	18.6	10.1	5.2	6.2	5.5	3.6	10.2	26.7																						
11-Feb	1.0	1.0	1.3	Z	0.6	0.3	0.2	0.2	0.5	1.5	0.3	0.1	0.0	0.0	0.0	0.1	0.9	5.7	11.8	4.9	5.0	2.6	1.4	7.3	2.0	11.8																						
12-Feb	1.4	1.9	1.5	2.1	Z	5.9	8.9	7.9	9.4	9.9	2.6	1.1	1.1	0.3	0.0	0.0	0.0	0.2	0.4	0.0	0.0	0.0	0.3	2.8	2.5	9.9																						
13-Feb	6.0	5.0	5.9	4.2	6.1	Z	12.3	9.0	3.3	5.5	6.0	7.4	5.9	11.7	5.7	1.8	1.3	1.8	0.7	1.5	4.9	3.1	3.4	4.0	5.1	12.3																						
14-Feb	Z	4.5	2.9	2.7	2.5	5.2	3.4	5.5	4.6	6.1	5.6	6.3	8.8	7.7	6.9	8.2	10.0	12.4	11.2	10.4	13.4	10.7	10.4	8.8	7.3	13.4																						
15-Feb	10.5	Z	8.5	11.8	11.1	14.0	12.5	10.1	6.8	3.9	3.5	6.7	6.5	4.6	7.1	5.7	11.1	27.0	16.4	8.4	3.1	2.2	0.6	1.3	8.4	27.0																						
16-Feb	1.9	1.4	Z	1.0	1.1	1.7	3.0	1.8	1.9	1.1	1.4	1.2	0.9	0.8	1.1	1.0	0.8	1.5	1.7	1.0	1.0	0.9	3.4	1.7	1.4	3.4																						
17-Feb	1.5	0.9	0.6	Z	2.4	7.5	5.6	27.5	8.9	10.3	12.0	7.0	5.7	7.0	8.1	7.8	13.0	25.7	18.7	20.9	17.6	27.0	16.2	12.1	11.5	27.5																						
18-Feb	14.2	12.2	5.9	4.4	Z	6.4	15.6	11.6	9.8	5.7	4.0	1.5	1.6	3.0	2.2	2.1	2.9	7.8	21.3	15.2	6.7	4.6	6.4	7.3	7.5	21.3																						
19-Feb	6.7	5.6	2.5	23.8	23.3	Z	18.4	15.2	10.6	13.5	11.2	10.9	6.7	9.5	15.0	19.1	25.6	31.5	34.1	32.7	24.0	10.2	9.9	10.9	16.1	34.1																						
20-Feb	Z	13.0	20.3	26.3	26.8	27.1	27.6	28.2	20.5	15.9	17.0	16.8	15.8	15.7	16.0	16.4	18.6	19.3	22.9	21.2	19.1	18.7	19.7	22.3	20.2	28.2																						
21-Feb	19.3	Z	10.5	14.0	8.0	17.3	15.4	7.0	16.6	7.7	1.0	0.6	0.5	0.7	0.7	0.4	0.6	0.8	0.8	0.8	0.8	0.6	0.4	0.4	5.4	19.3																						
22-Feb	2.0	3.3	Z	8.1	4.5	2.2	5.0	2.2	11.3	11.0	8.3	22.9	25.1	25.2	22.8	22.1	16.7	30.2	28.9	27.1	19.2	18.7	23.0	10.3	15.2	30.2																						
23-Feb	17.1	19.7	19.0	Z	22.7	19.4	15.2	10.5	8.9	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	PF	0.3	0.0	0.1	0.0	6.2	22.7																						
24-Feb	0.0	0.0	1.8	1.6	3.8	Z	8.5	10.0	8.8	3.7	2.8	3.3	3.8	5.3	3.5	3.8	8.8	12.0	12.8	12.5	13.8	11.0	5.9	5.8	6.2	13.8																						
25-Feb	Z	5.0	3.9	6.5	8.3	9.8	8.2	7.1	7.2	3.9	4.1	2.9	3.5	3.5	2.8	2.5	5.6	6.4	6.2	6.6	4.8	3.0	3.6	3.5	5.2	9.8																						
26-Feb	2.3	Z	2.1	2.9	3.9	5.2	5.1	6.0	6.2	5.7	4.2	5.5	4.3	5.7	6.4	3.2	9.3	12.6	15.6	14.8	12.3	4.2	1.3	0.7	6.1	15.6																						
27-Feb	0.8	0.8	Z	0.5	5.4	9.2	8.7	3.9	2.9	3.2	0.0	0.0	0.0	0.0	0.1	0.1	0.7	4.9	23.9	17.0	16.0	14.3	10.2	12.7	5.9	23.9																						
28-Feb	8.4	8.1	12.1	Z	5.5	6.6	7.1	5.7	4.4	3.9	4.1	4.2	4.1	3.9	2.9	2.4	3.1	3.5	2.6	3.7	2.6	2.3	1.7	1.5	4.5	12.1																						
29-Feb	1.5	1.3	1.4	1.2	Z	2.3	2.5	2.3	2.7	2.4	2.3	2.8	4.8	3.9	2.8	2.7	2.8	1.7	1.6	0.9	1.2	1.3	0.8	0.7	2.1	4.8																						
																								6.2	7.1	8.0	9.0	9.6	10.5	10.5	10.2	8.9	7.8	6.5	6.3	5.5	6.0	5.8	6.0	7.2	10.2	10.9	10.1	8.5	7.7	7.7	7.4	Diurnal Average
																								19.3	23.4	24.0	26.3	26.8	28.0	29.1	28.2	28.2	28.4	27.4	22.9	25.1	25.2	22.8	22.1	25.6	31.5	34.1	32.7	24.0	27.0	23.0	22.3	Diurnal Maximum

Z - zerospan C - Calibration M - Maintenance PF - Power Failure
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Patricia McInnes - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Patricia McInnes - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	607	92.11	92.11
21 - 40	52	7.89	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Patricia McInnes - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	91	30	20	9	22	53	63	25	21	22	47	56	44	22	28	54	607
21 - 40	11	6	2	3	2	3	2	5	5	1	0	1	1	0	0	10	52
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	102	36	22	12	24	56	65	30	26	23	47	57	45	22	28	64	659

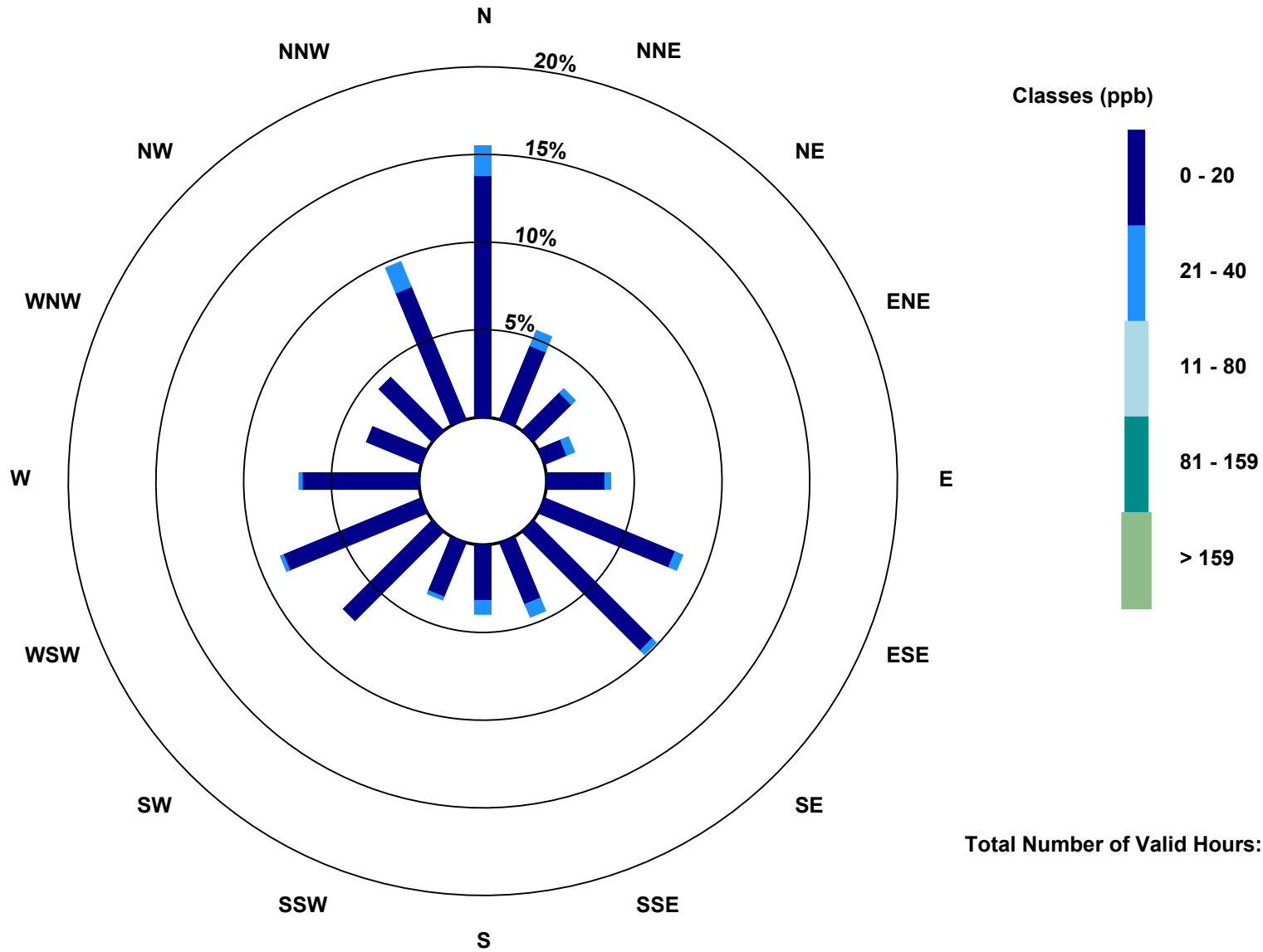
Total Number of Valid Hours: 659

Total Number of Hours: 696

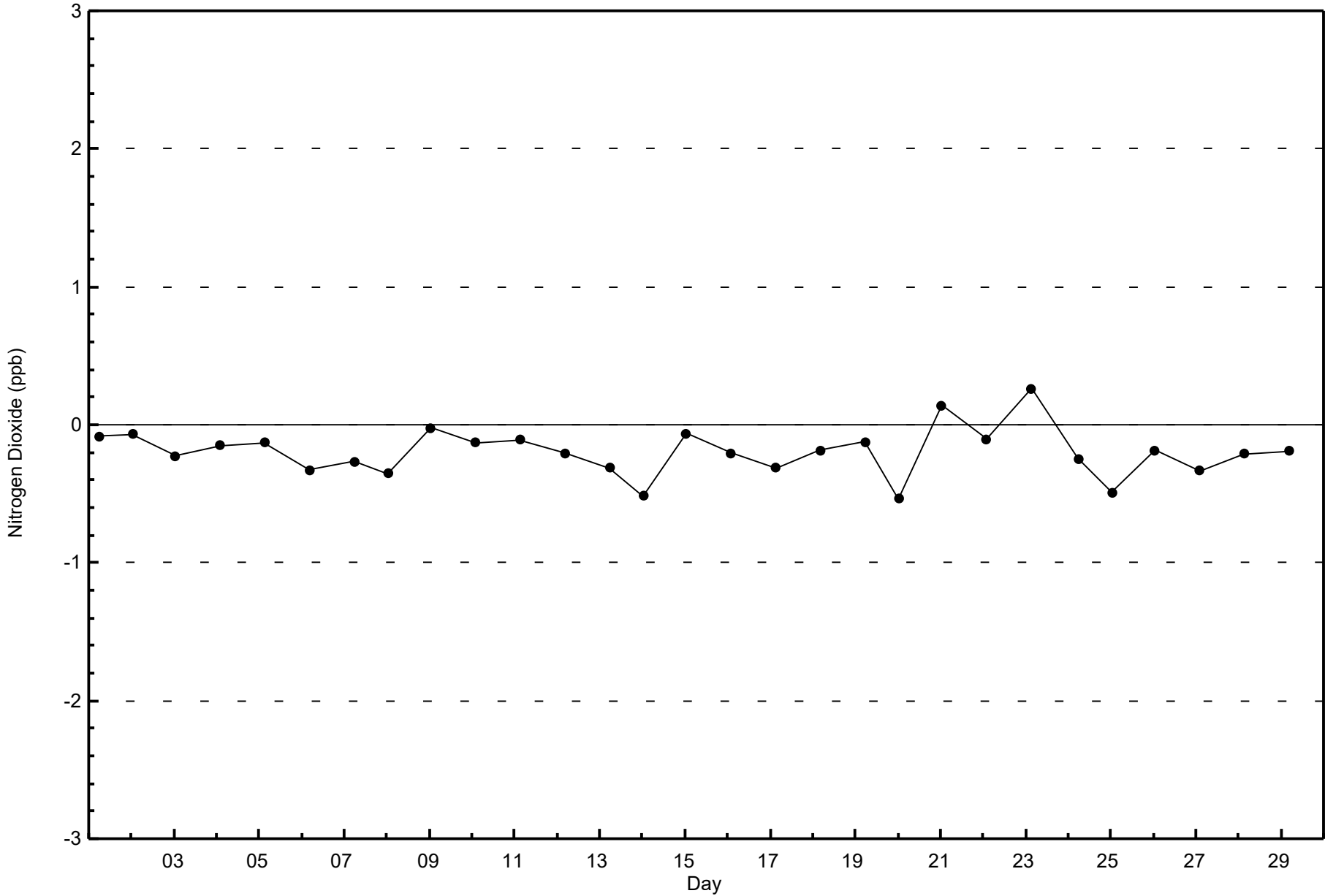


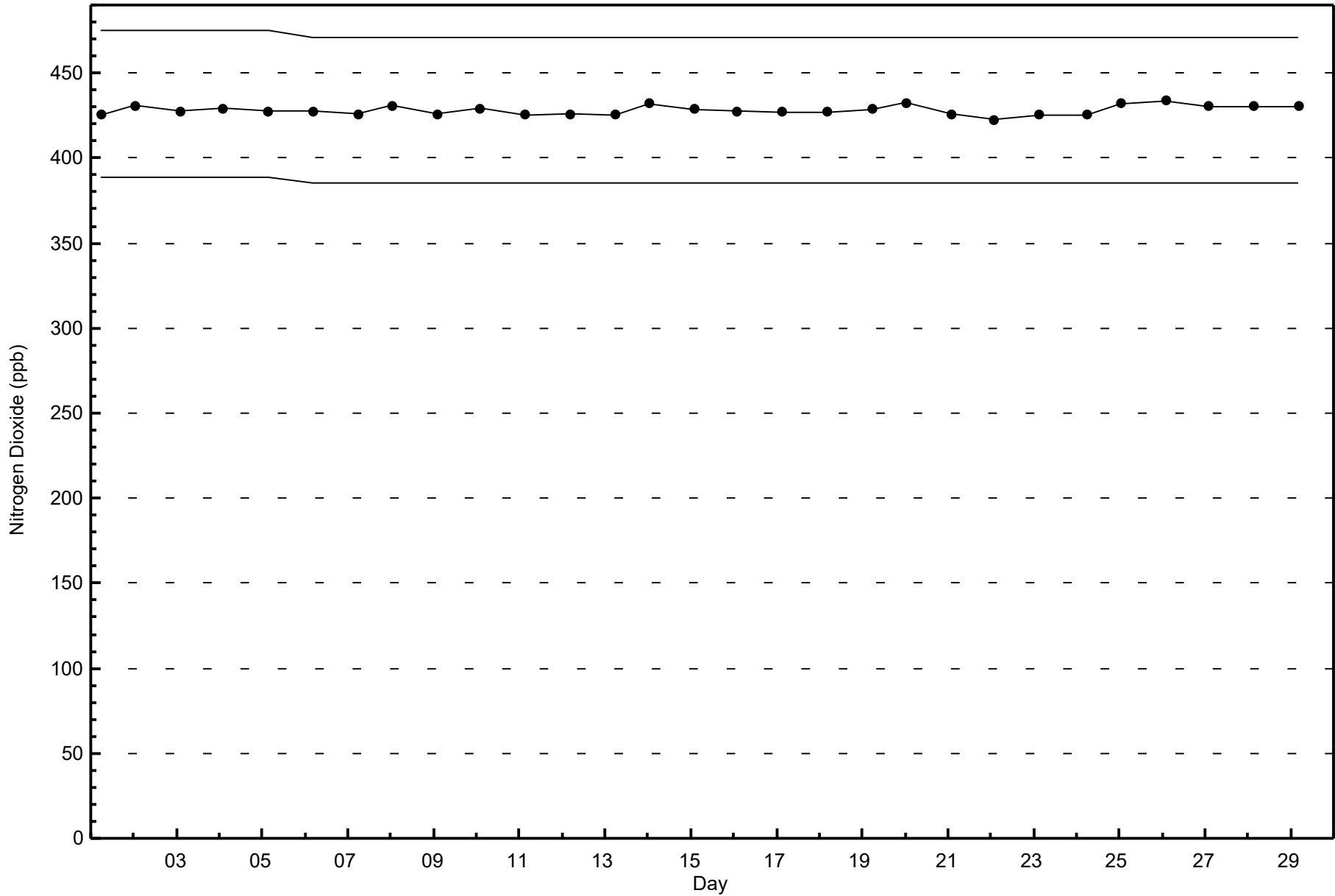
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Patricia McInnes



Total Number of Valid Hours: 659



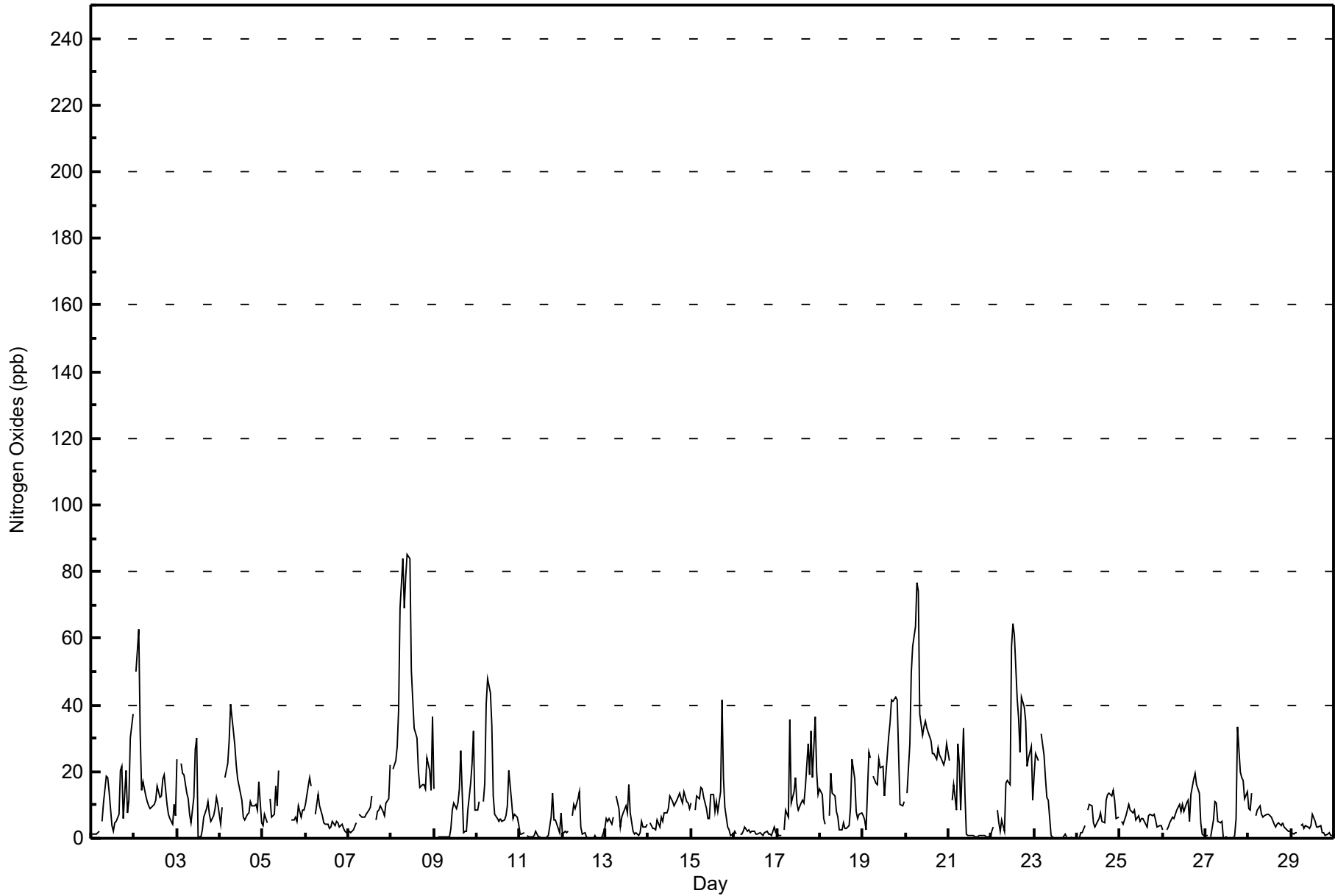




Wood Buffalo Environmental Association
Summary of Hour Averages

Nitrogen Oxides (NO_x) - ppb
Patricia McInnes - February 2024

Maximum Value: 85.0 ppb on Feb 8 10:00																				Maximum Daily Average: 39.7 ppb on Feb 8					Hours in Service: 696	
Minimum Value: 0.0 ppb on Feb 12 15:00																				Minimum Daily Average: 1.8 ppb on Feb 16					Hours of Data: 659	
Maximum Diurnal Average: 16.8 ppb at hour 7																				Minimum Diurnal Average: 7.2 ppb at hour 1					Hours of Missing Data: 37	
Monthly Average: 11.42 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.8 Q ₁ = 3.0 Median = 7.2 Q ₃ = 13.9 P ₉₀ = 27.1 P ₉₉ = 68.9					Hours of Calibration: 35	
																									Percent Operational Time: 99.7	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	1.4	1.3	1.4	1.2	2.0	Z	5.1	10.4	18.7	18.3	13.8	3.8	2.0	4.5	4.9	7.4	20.3	21.7	5.8	20.2	7.5	11.4	30.1	37.2	10.9	37.2
2-Feb	Z	50.2	62.7	31.3	14.3	17.0	12.9	10.9	9.6	8.8	9.6	10.3	11.4	15.8	12.3	12.7	17.8	19.0	10.2	7.1	5.7	4.2	10.1	6.9	16.1	62.7
3-Feb	23.8	Z	22.4	19.6	19.1	13.4	11.9	7.4	4.7	12.2	26.6	29.9	0.5	0.5	2.7	6.2	9.0	10.9	7.1	4.9	6.7	8.9	12.4	10.3	11.8	29.9
4-Feb	4.1	9.1	Z	18.1	22.4	29.3	40.4	32.1	28.0	22.2	17.7	13.8	11.6	6.2	5.4	7.1	7.6	10.9	9.8	9.6	10.3	8.3	16.9	4.8	15.0	40.4
5-Feb	3.7	7.2	4.8	Z	12.1	6.4	7.2	15.8	9.8	20.2	C	C	C	C	C	C	5.3	5.7	6.3	5.2	9.7	6.4	8.6	8.3	--	20.2
6-Feb	10.0	15.7	18.3	15.6	Z	7.4	10.3	13.0	9.9	6.9	4.8	4.0	4.2	3.2	3.2	4.9	3.8	5.0	4.8	3.3	4.1	2.8	2.0	1.7	6.9	18.3
7-Feb	1.9	1.8	2.0	2.7	4.7	Z	7.0	6.5	6.2	6.4	7.0	8.4	9.4	12.7	M	5.4	8.2	8.5	9.6	7.9	6.7	10.5	11.9	22.1	7.6	22.1
8-Feb	Z	20.8	23.4	27.7	38.7	68.9	83.9	68.9	78.2	85.0	83.9	50.3	41.5	32.9	30.3	20.3	15.1	16.3	16.0	14.9	24.0	20.3	14.3	36.4	39.7	85.0
9-Feb	14.9	Z	0.5	0.3	0.3	0.3	0.3	0.5	0.6	2.8	8.7	10.5	9.1	10.5	14.6	26.2	1.6	2.1	2.3	8.6	16.4	22.3	32.4	8.4	8.4	32.4
10-Feb	8.7	10.9	Z	11.2	16.4	40.3	47.8	43.7	33.9	12.6	7.4	6.0	5.2	5.9	5.2	5.3	6.6	9.8	20.6	11.1	6.1	7.2	6.4	4.2	14.5	47.8
11-Feb	1.3	1.3	1.7	Z	0.8	0.4	0.4	0.3	0.7	2.1	0.6	0.3	0.2	0.1	0.0	0.3	1.0	6.3	13.6	5.4	5.5	3.0	1.5	7.8	2.4	13.6
12-Feb	1.5	2.1	1.6	2.3	Z	6.6	10.3	9.0	11.8	13.9	3.3	1.4	1.6	0.3	0.0	0.0	0.0	0.2	0.6	0.0	0.0	0.0	0.3	2.8	3.0	13.9
13-Feb	6.0	5.0	5.9	4.2	6.4	Z	12.7	9.1	3.5	6.5	7.6	9.6	7.7	16.0	7.4	2.1	1.4	1.9	0.7	1.6	5.0	3.3	3.6	4.1	5.7	16.0
14-Feb	Z	4.6	2.9	2.8	2.7	5.6	3.6	6.2	5.0	7.5	7.5	8.9	12.9	11.0	9.7	10.6	11.5	13.5	11.7	10.8	13.8	10.9	10.7	8.9	8.4	13.8
15-Feb	10.6	Z	8.6	12.5	12.0	15.5	14.8	12.1	8.9	5.9	5.9	12.9	12.9	8.2	11.0	8.0	14.0	41.7	18.1	9.4	3.4	2.5	0.7	1.5	10.9	41.7
16-Feb	2.2	1.5	Z	1.2	1.4	2.1	3.4	2.1	2.5	1.6	2.3	1.9	1.4	1.3	1.7	1.4	1.0	1.8	2.1	1.3	1.1	0.9	3.5	1.8	1.8	3.5
17-Feb	1.6	0.9	0.7	Z	2.7	8.3	6.5	35.7	10.6	14.2	18.3	10.5	8.6	10.4	11.4	10.5	15.2	28.4	19.3	32.4	18.4	36.5	19.9	13.0	14.5	36.5
18-Feb	14.9	13.0	6.1	4.4	Z	6.9	19.6	13.4	12.8	7.9	6.4	2.5	2.6	4.7	3.2	2.9	3.9	9.3	23.6	17.9	8.1	6.0	7.1	7.7	8.9	23.6
19-Feb	6.9	5.6	2.5	25.9	24.3	Z	18.7	16.7	16.1	23.7	21.3	21.8	12.9	19.1	30.4	34.9	41.6	41.3	42.5	41.7	25.8	10.3	9.9	11.1	22.0	42.5
20-Feb	Z	13.5	28.5	49.7	57.7	63.6	76.6	74.3	37.4	30.8	33.6	35.4	33.1	30.7	29.2	25.6	25.4	23.8	27.0	25.1	24.2	22.1	23.8	28.5	35.6	76.6
21-Feb	23.2	Z	11.5	15.9	8.4	28.3	22.4	8.7	33.0	13.7	1.4	1.0	0.8	0.9	0.9	0.4	0.6	0.8	0.8	0.8	0.8	0.6	0.4	0.4	7.6	33.0
22-Feb	2.0	3.3	Z	8.6	4.7	2.2	5.4	2.2	16.3	17.2	16.3	57.8	64.5	61.2	41.9	35.8	25.7	42.3	39.3	35.1	21.6	24.0	27.4	11.3	24.6	64.5
23-Feb	19.1	25.4	23.1	Z	31.4	25.0	18.3	12.3	11.5	0.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.5	PF	0.3	0.0	0.1	0.0	7.7	31.4
24-Feb	0.0	0.0	1.8	1.6	3.8	Z	8.7	10.2	9.8	4.6	3.3	4.3	5.7	7.8	5.0	4.7	11.4	13.2	13.5	12.9	14.3	11.3	6.1	6.5	7.0	14.3
25-Feb	Z	5.1	4.0	6.6	8.5	10.2	8.6	7.5	8.6	5.5	6.8	4.9	6.1	6.0	4.3	3.4	6.8	7.2	6.9	7.0	5.3	3.4	3.9	3.8	6.1	10.2
26-Feb	2.6	Z	2.5	3.5	4.5	6.2	6.0	7.0	8.5	10.0	7.9	10.1	8.1	10.7	11.5	4.9	13.0	17.9	19.4	16.3	13.8	4.5	1.5	0.8	8.3	19.4
27-Feb	0.9	0.8	Z	0.6	5.6	11.0	10.6	5.0	4.6	5.1	0.1	0.2	0.1	0.1	0.2	0.2	1.0	5.9	33.4	19.9	18.4	17.6	12.1	14.0	7.3	33.4
28-Feb	8.8	8.7	13.6	Z	6.7	8.6	9.9	7.2	6.3	7.0	7.0	7.4	6.7	6.2	4.3	3.6	4.4	4.8	3.6	4.8	3.4	3.1	2.2	2.2	6.1	13.6
29-Feb	1.8	1.5	1.8	1.6	Z	3.7	4.1	3.0	3.7	3.2	3.1	3.6	7.2	5.1	3.5	3.5	3.7	1.9	1.8	1.0	1.4	1.5	0.9	0.9	2.8	7.2
7.2 8.7 10.5 11.2 12.5 16.1 16.8 15.6 14.2 13.0 11.9 11.8 10.3 10.4 9.4 8.9 9.5 12.9 12.8 12.0 9.7 9.1 9.7 9.2																								Diurnal Average		
23.8 50.2 62.7 49.7 57.7 68.9 83.9 74.3 78.2 85.0 83.9 57.8 64.5 61.2 41.9 35.8 41.6 42.3 42.5 41.7 25.8 36.5 32.4 37.2																								Diurnal Maximum		
Z - zerspan			C - Calibration			M - Maintenance			PF - Power Failure																	





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Oxides (NO_x) - ppb
Patricia McInnes - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	557	84.52	84.52
21 - 40	75	11.38	95.90
41 - 80	24	3.64	99.54
81 - 159	3	0.46	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Patricia McInnes - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	89	30	18	6	22	51	58	14	9	21	47	54	43	20	26	49	557
21 - 40	6	2	2	5	0	4	6	14	15	1	0	3	2	2	2	11	75
11 - 80	6	3	2	1	2	1	1	2	2	1	0	0	0	0	0	3	24
81 - 159	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	102	36	22	12	24	56	65	30	26	23	47	57	45	22	28	64	659

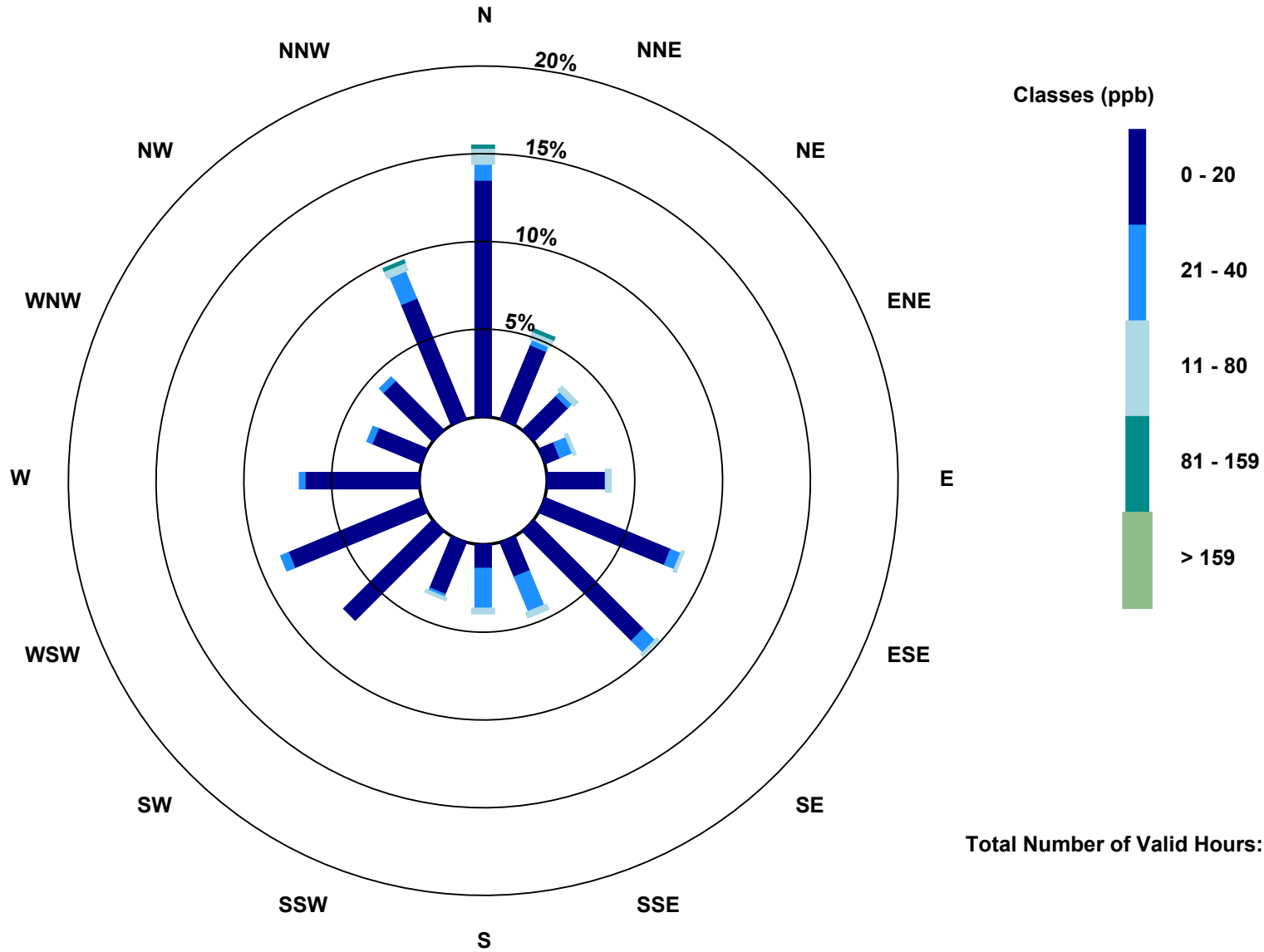
Total Number of Valid Hours: 659

Total Number of Hours: 696

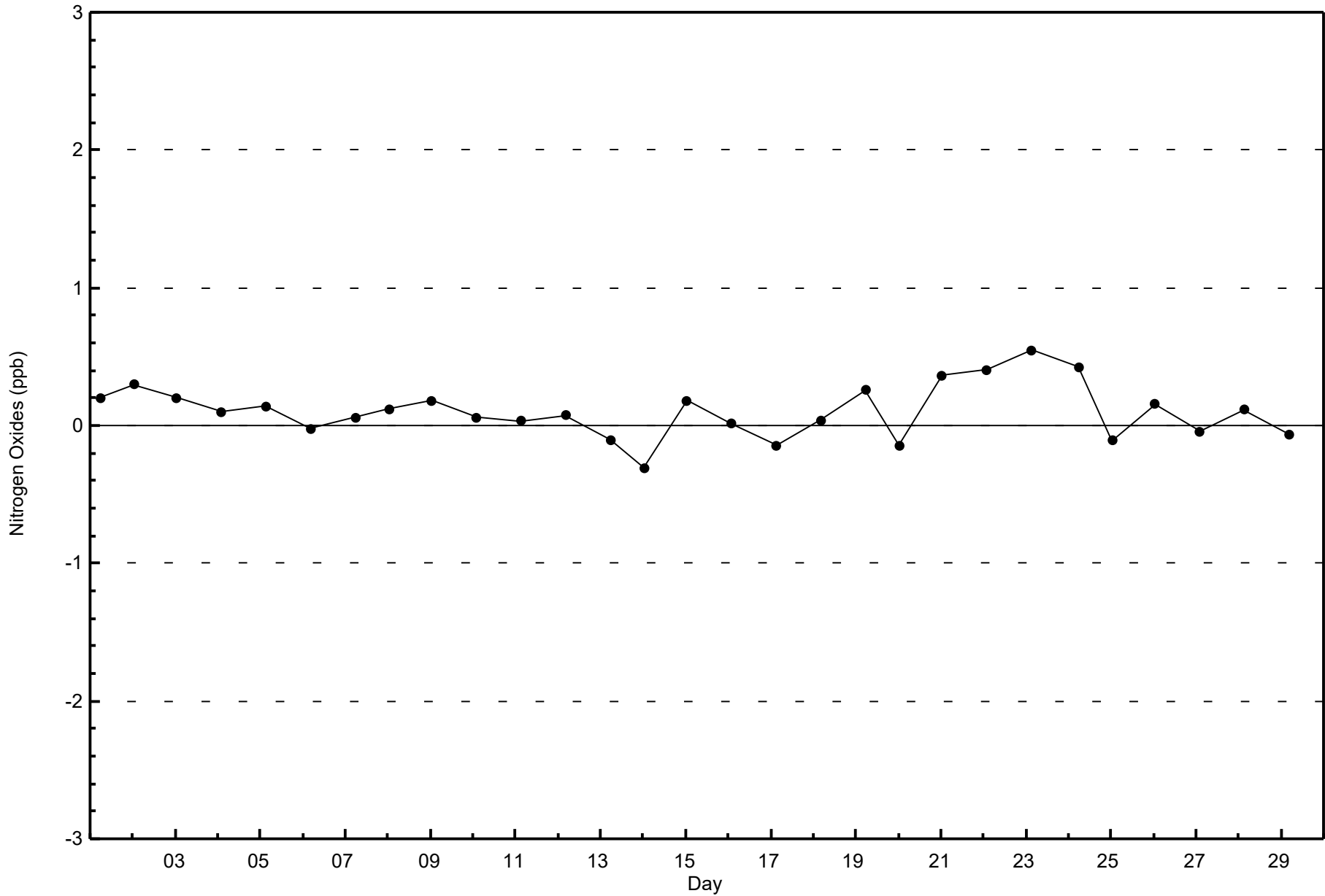


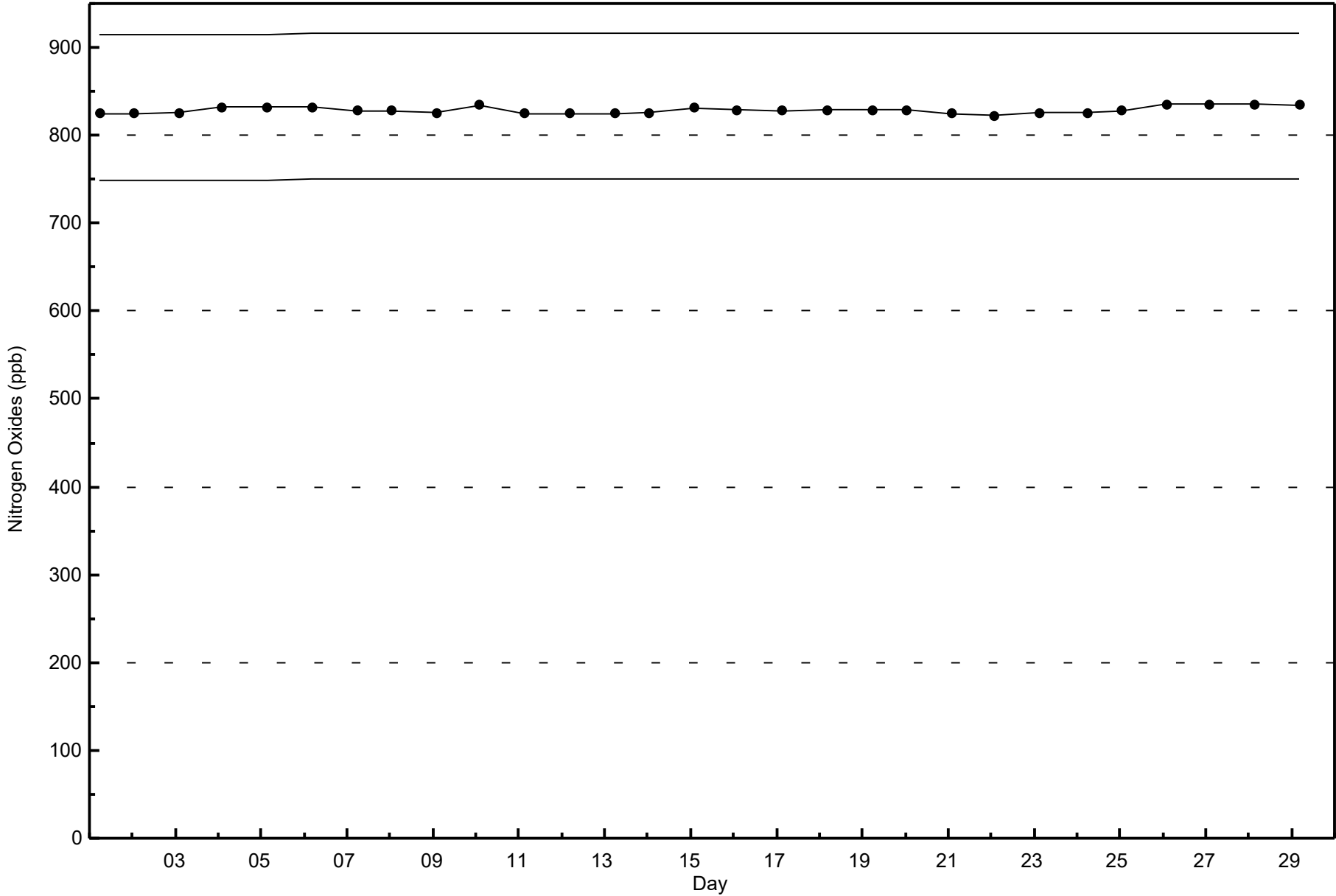
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Patricia McInnes



Total Number of Valid Hours: 659





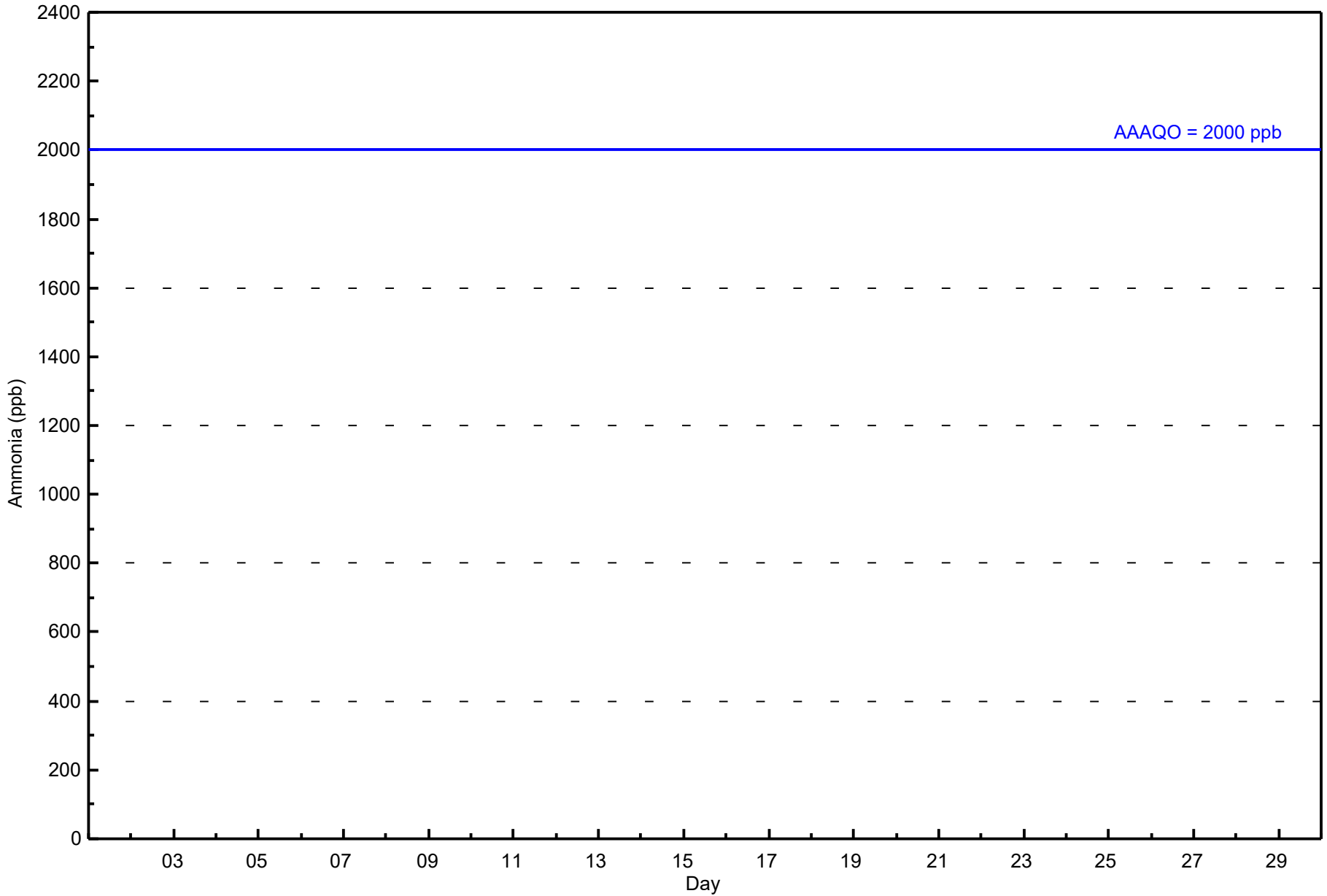


Number of Exceedences (AAAQO): 1-hr: 0		Hours in Service: 696																										
Maximum Value: 0.0 ppb on Feb 1 01:00		Maximum Daily Average: 0.0 ppb on Feb 1																										
Minimum Value: 0.0 ppb on Feb 1 01:00		Hours of Data: 628																										
Maximum Diurnal Average: 0.0 ppb at hour 1		Hours of Missing Data: 68																										
Monthly Average: 0.00 ppb		Hours of Calibration: 37																										
Minimum Daily Average: 0.0 ppb on Feb 1		Percent Operational Time: 95.6																										
Minimum Diurnal Average: 0.0 ppb at hour 1		Percentages: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.0																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
1-Feb	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2-Feb	0.0	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3-Feb	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4-Feb	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Feb	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Feb	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Feb	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Feb	0.0	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Feb	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Feb	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Feb	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-Feb	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Feb	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Feb	0.0	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Feb	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Feb	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Feb	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Feb	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Feb	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Feb	0.0	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Feb	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Feb	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Feb	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24-Feb	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Feb	0.0	0.0	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Feb	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Feb	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28-Feb	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Feb	0.0	0.0	0.0	Z	RE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
																								Diurnal Average				
																								Diurnal Maximum				
Z - zerspan C - Calibration M - Maintenance PF - Power Failure RE - Recovery																												
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 2000 ppb																												



Wood Buffalo Environmental Association
Hourly Averages

Ammonia (NH₃) - ppb
Patricia McInnes - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ammonia (NH₃) - ppb
Patricia McInnes - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 5	628	100.00	100.00
6 - 10	0	0.00	100.00
11 - 15	0	0.00	100.00
16 - 20	0	0.00	100.00
21 - 25	0	0.00	100.00
> 26	0	0.00	100.00

Total Number of Valid Hours: 628

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Ammonia (NH₃) - ppb
Patricia McInnes - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	100	32	23	12	24	54	62	29	24	22	44	48	44	21	26	63	628
6 - 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	100	32	23	12	24	54	62	29	24	22	44	48	44	21	26	63	628

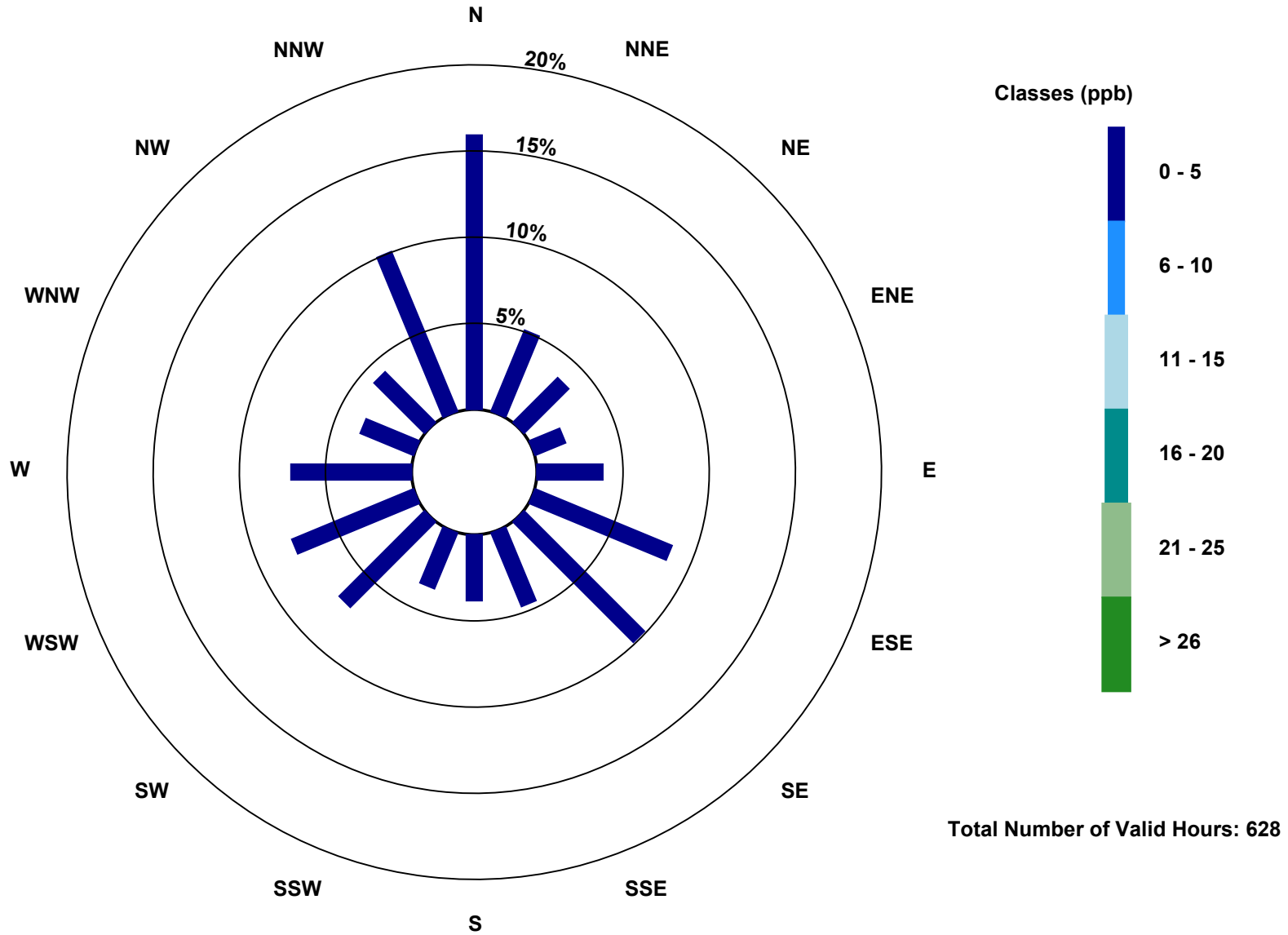
Total Number of Valid Hours: 628

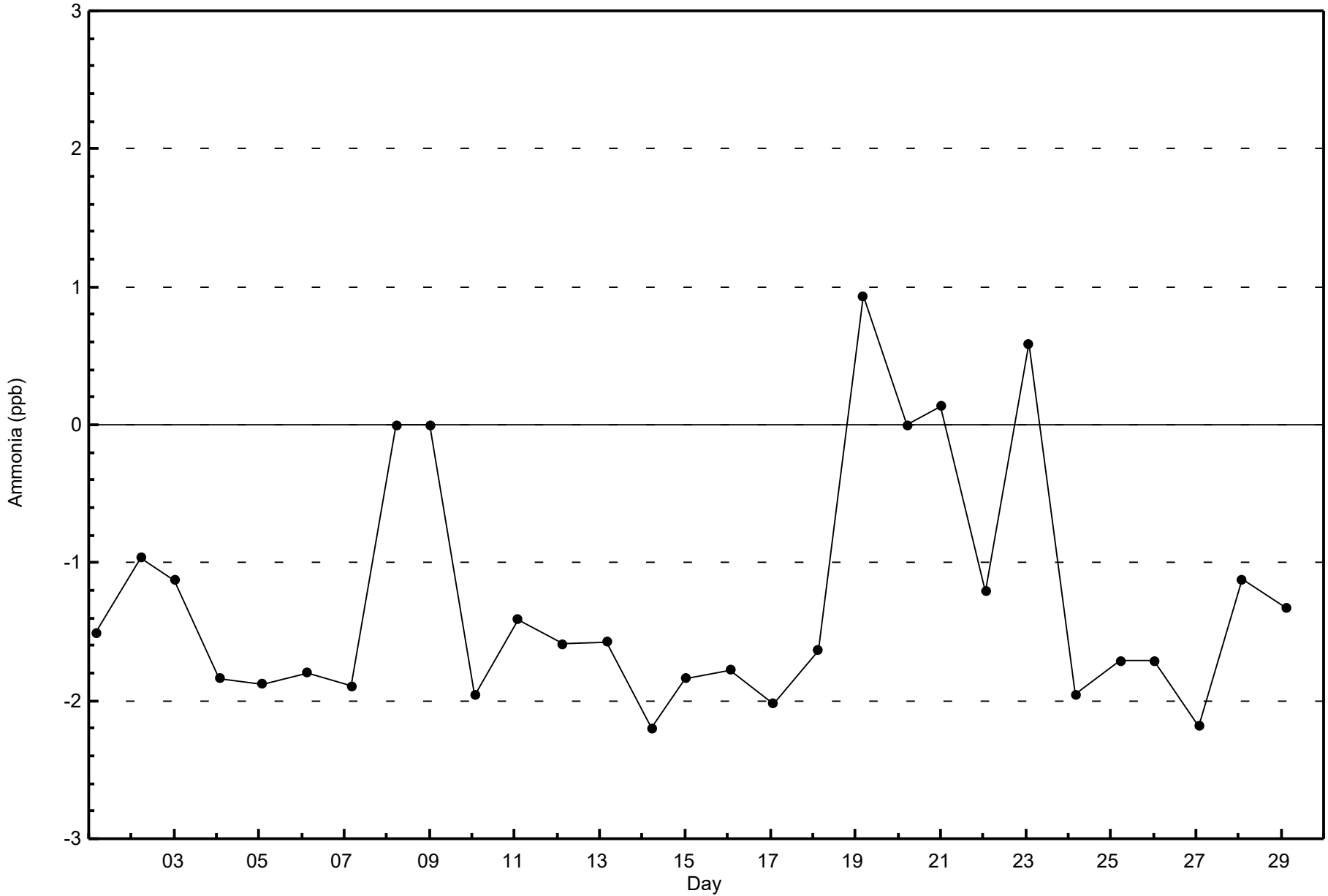
Total Number of Hours: 696

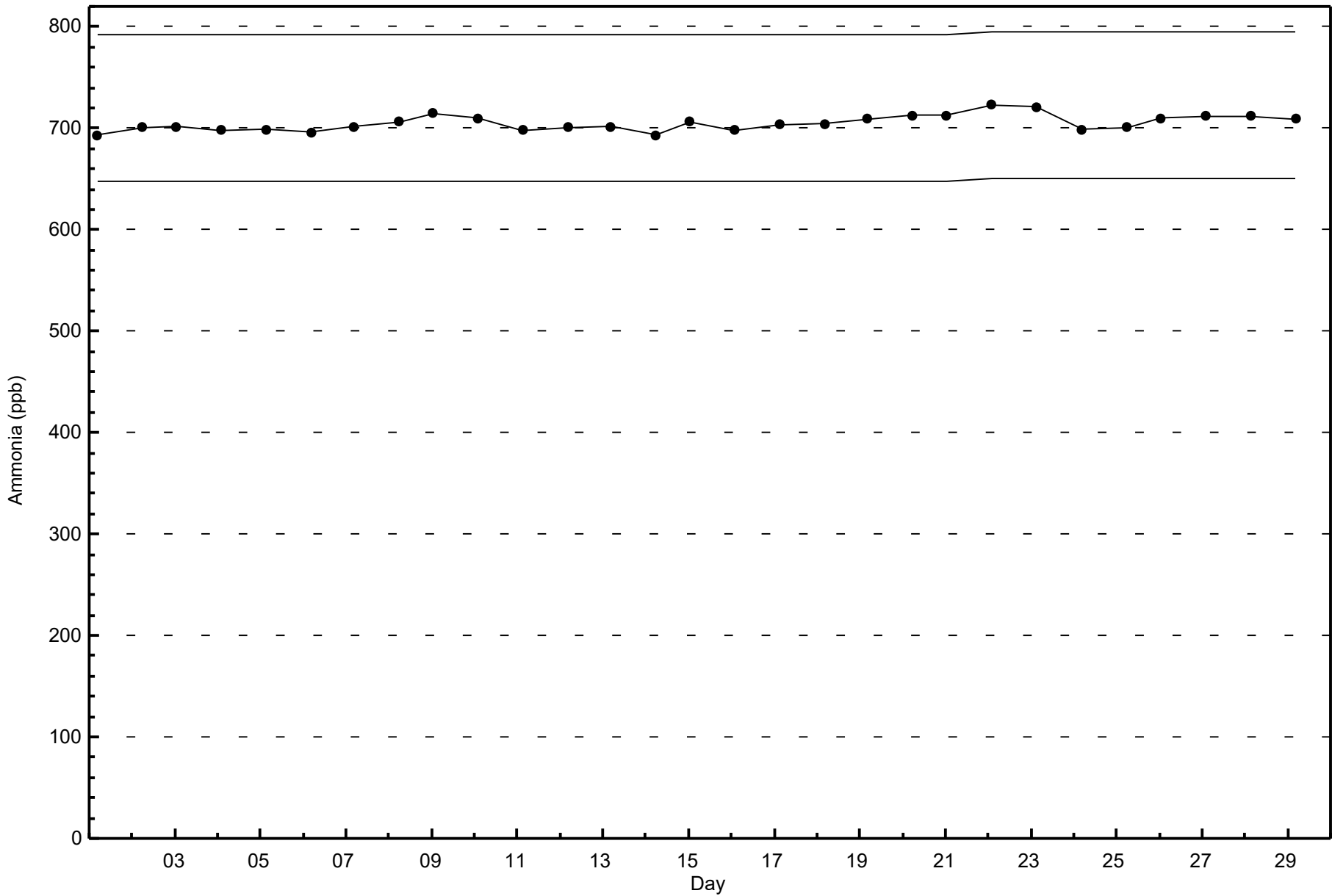


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Ammonia (NH₃) - ppb
Patricia McInnes









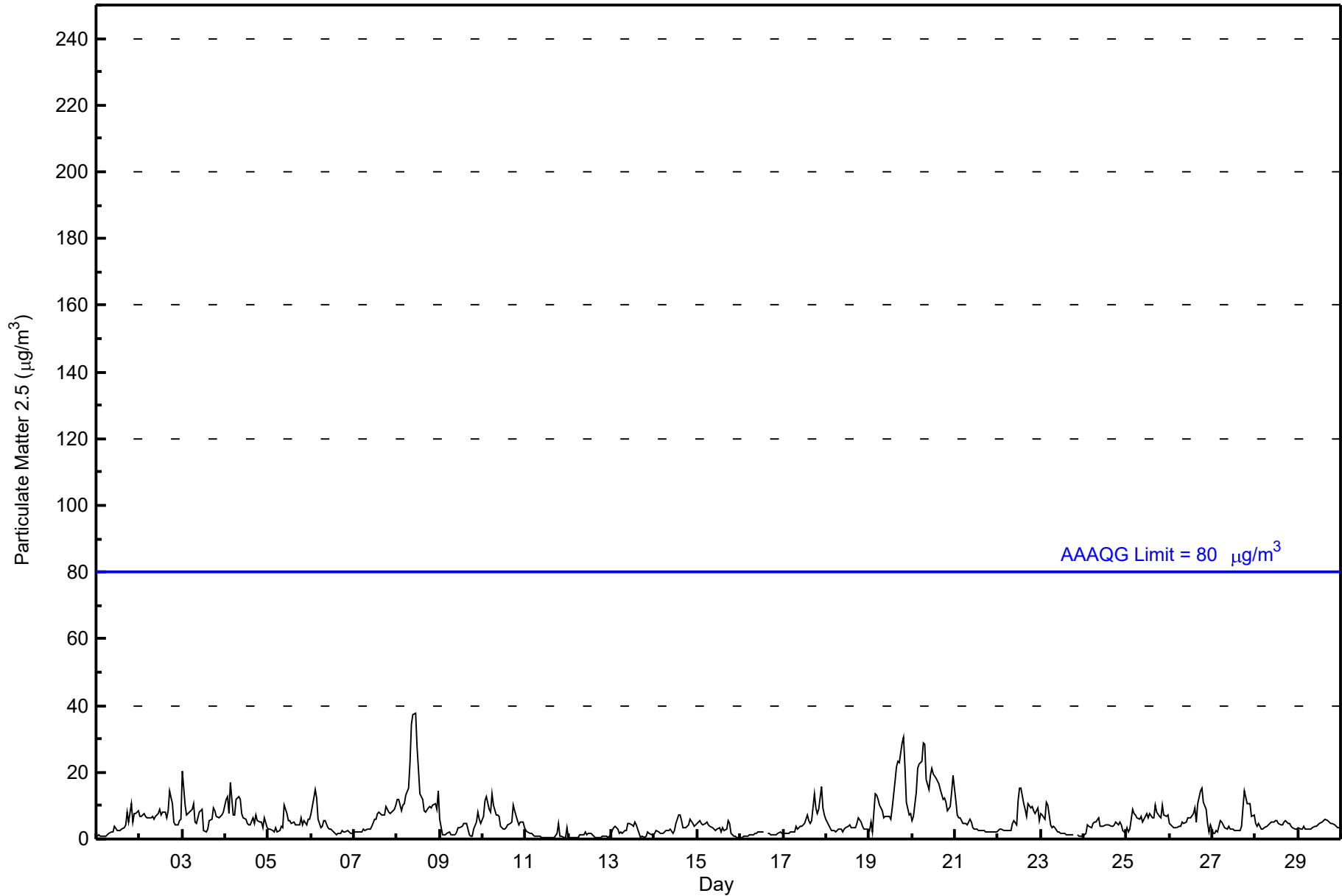
Wood Buffalo Environmental Association

Summary of Hour Averages

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Patricia McInnes - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																		Hours in Service:	696				
Maximum Value: 37.6 µg/m ³ on Feb 8 11:00		Maximum Daily Average: 16.5 µg/m ³ on Feb 20																	Hours of Data:	694						
Minimum Value: 0.3 µg/m ³ on Feb 12 03:00		Minimum Daily Average: 0.8 µg/m ³ on Feb 12																	Hours of Missing Data:	2						
Maximum Diurnal Average: 7.0 µg/m ³ at hour 19		Minimum Diurnal Average: 4.7 µg/m ³ at hour 3																	Hours of Calibration:	1						
Monthly Average: 5.55 µg/m ³		Percentiles: P ₁ = 0.4 P ₁₀ = 1.3 Q ₁ = 2.3 Median = 4.3 Q ₃ = 7.0 P ₉₀ = 10.8 P ₉₉ = 27.6																	Percent Operational Time:	99.9						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.8	1.4	0.7	0.8	1.0	1.0	1.2	1.6	2.1	2.0	3.7	2.4	2.6	2.7	3.1	3.5	4.2	8.0	4.9	10.5	4.9	7.5	7.4	8.6	3.6	10.5
2-Feb	6.6	6.8	7.7	6.8	6.5	6.2	6.2	6.6	6.1	6.7	7.5	8.8	7.0	8.1	8.1	6.3	8.3	14.4	10.6	4.9	4.1	4.2	5.6	5.8	7.1	14.4
3-Feb	20.2	10.3	7.4	7.5	8.1	8.9	10.6	5.2	4.6	8.1	8.4	8.7	2.4	2.2	3.1	5.6	5.8	9.3	8.7	7.0	6.3	6.8	7.0	8.2	7.5	20.2
4-Feb	11.8	12.7	7.8	16.8	7.2	7.3	12.0	12.8	11.9	7.5	6.3	5.9	4.5	4.1	4.4	6.3	4.7	7.3	5.5	5.1	4.9	3.6	6.3	3.5	7.5	16.8
5-Feb	2.8	3.2	2.4	2.3	3.2	2.3	2.5	3.7	3.6	10.4	7.8	5.5	5.6	4.7	5.2	4.3	4.2	4.1	6.2	4.4	5.6	4.2	6.1	5.8	4.6	10.4
6-Feb	7.5	12.4	14.9	12.4	6.1	3.3	4.0	5.5	5.4	3.6	2.9	3.0	2.0	1.7	1.5	1.5	1.8	2.3	2.1	1.9	2.4	2.0	1.9	1.9	4.3	14.9
7-Feb	2.1	2.1	2.0	2.1	2.2	2.9	2.7	2.8	2.8	3.0	3.9	6.0	5.9	7.4	7.9	7.0	7.1	7.3	9.9	7.9	7.4	8.1	8.9	10.3	5.4	10.3
8-Feb	12.0	12.0	8.5	10.0	10.5	13.2	15.1	22.9	34.2	37.2	37.6	27.5	20.8	13.6	11.8	8.3	7.9	9.4	9.6	9.2	10.4	10.5	9.0	14.5	15.6	37.6
9-Feb	5.8	1.2	1.4	1.2	1.5	2.1	1.2	1.3	1.4	2.0	3.3	3.4	3.9	4.6	4.5	4.8	1.4	1.0	0.9	3.1	5.1	8.2	5.8	4.7	3.1	8.2
10-Feb	7.0	11.4	12.8	8.8	8.0	13.5	10.0	7.1	7.0	6.7	3.9	3.0	3.0	3.5	4.2	4.5	5.0	10.2	8.5	5.4	4.3	5.0	4.9	3.3	6.7	13.5
11-Feb	2.4	1.9	1.8	1.6	1.3	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.5	1.6	4.5	1.0	0.8	0.5	0.3	3.5	1.2	4.5	
12-Feb	0.3	0.3	0.3	0.3	0.4	0.6	1.1	1.1	1.3	2.1	1.3	1.5	1.6	1.1	0.7	0.5	0.5	0.5	0.6	0.7	0.8	0.8	0.6	1.2	0.8	2.1
13-Feb	2.4	3.4	3.8	3.0	1.6	2.0	1.9	2.7	2.4	4.7	4.5	4.4	3.6	5.1	4.3	1.5	0.4	0.7	0.5	1.0	2.1	1.6	1.4	1.2	2.5	5.1
14-Feb	1.8	2.4	2.3	1.6	1.5	1.8	2.6	2.7	2.6	2.8	1.9	2.4	4.5	7.1	7.3	5.4	3.4	3.2	3.7	4.4	5.9	4.5	3.7	4.1	3.5	7.3
15-Feb	4.8	5.4	4.8	4.4	4.5	4.9	4.4	3.6	3.4	2.9	2.5	3.0	3.2	2.2	3.6	2.3	3.0	5.6	4.7	1.8	0.7	0.7	0.6	0.6	3.2	5.6
16-Feb	0.6	0.6	0.8	0.8	1.1	1.2	1.3	1.4	1.6	1.8	2.0	2.1	2.1	2.0	C	1.7	1.6	1.4	1.3	1.5	1.5	1.6	2.2	1.7	1.5	2.2
17-Feb	1.7	1.7	1.8	1.8	2.0	2.3	2.2	3.6	2.9	3.8	4.0	4.1	4.8	7.2	5.5	4.6	5.4	13.7	9.4	7.7	8.8	15.5	9.3	7.2	5.5	15.5
18-Feb	6.0	4.3	3.4	2.7	2.7	1.9	2.4	3.1	2.8	2.3	2.8	3.4	3.6	4.3	3.3	3.3	3.5	4.7	6.2	5.3	3.7	2.8	3.1	2.8	3.5	6.2
19-Feb	2.5	4.9	2.1	13.5	13.2	11.9	10.0	8.4	6.4	6.8	6.6	6.6	6.0	9.4	17.3	21.8	23.3	22.7	29.0	30.6	21.8	10.9	7.4	7.6	12.5	30.6
20-Feb	5.6	6.9	13.9	21.1	22.5	23.2	29.0	28.5	17.8	15.0	18.9	21.0	19.3	18.2	17.2	16.4	15.0	12.0	12.2	10.9	8.5	9.6	14.2	19.1	16.5	29.0
21-Feb	11.6	7.3	6.2	6.5	4.5	4.6	4.6	4.1	5.9	5.2	3.5	3.1	2.9	2.7	2.7	2.5	2.3	2.2	2.2	2.0	2.2	2.2	2.2	2.3	4.0	11.6
22-Feb	2.5	2.9	3.0	2.7	2.7	2.6	2.7	2.7	4.5	5.3	4.4	11.6	15.1	15.4	10.6	9.0	6.9	10.6	9.2	10.0	8.3	7.6	9.4	5.6	6.9	15.4
23-Feb	7.8	7.2	6.1	10.9	10.2	4.1	3.2	3.8	3.2	2.3	2.1	1.9	1.8	1.6	1.4	1.4	1.4	1.3	1.4	PF	1.1	1.0	0.7	0.9	3.3	10.9
24-Feb	1.1	1.7	4.3	3.7	3.3	4.8	5.1	5.3	6.3	3.7	3.9	3.9	4.3	4.3	4.2	3.8	4.0	4.3	5.0	4.4	5.1	4.4	2.7	1.9	4.0	6.3
25-Feb	3.5	2.3	3.0	8.7	7.4	7.4	6.4	6.1	6.6	5.0	6.8	7.7	6.5	7.6	6.4	6.2	10.0	8.0	6.8	6.5	10.1	7.2	6.7	7.0	6.7	10.1
26-Feb	4.7	3.8	3.2	3.4	3.2	3.8	3.9	5.0	4.6	5.0	6.3	6.6	6.4	7.4	9.2	5.0	10.8	14.5	15.4	10.9	8.9	4.7	2.2	4.1	6.4	15.4
27-Feb	1.8	1.9	2.5	2.2	5.7	5.2	4.1	3.3	3.1	3.9	2.8	2.8	2.7	2.7	2.7	2.6	3.9	9.1	14.4	10.8	10.4	10.5	6.6	7.0	5.1	14.4
28-Feb	4.7	3.7	4.7	3.2	3.2	3.6	3.8	4.4	4.7	4.9	5.3	5.7	5.4	4.8	4.4	4.1	4.9	5.5	4.6	4.6	3.7	3.6	3.1	3.1	4.3	5.7
29-Feb	3.3	2.9	3.0	3.9	2.9	2.8	2.9	3.1	3.5	3.7	3.9	4.1	4.5	5.0	5.3	5.7	5.7	5.2	4.7	4.5	4.2	3.9	3.5	3.2	4.0	5.7
5.0 4.8 4.7 5.7 5.1 5.2 5.4 5.6 5.6 5.8 5.8 5.9 5.4 5.5 5.7 5.2 5.4 6.9 7.0 6.3 5.6 5.3 4.9 5.2																								Diurnal Average		
20.2 12.7 14.9 21.1 22.5 23.2 29.0 28.5 34.2 37.2 37.6 27.5 20.8 18.2 17.3 21.8 23.3 22.7 29.0 30.6 21.8 15.5 14.2 19.1																								Diurnal Maximum		
C - Calibration PF - Power Failure																										
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Patricia McInnes - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	444	63.98	63.98
6 - 15	221	31.84	95.82
16 - 25	21	3.03	98.85
26 - 80	8	1.15	100.00
> 81.0	0	0.00	100.00

Total Number of Valid Hours: 694

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - μg/m³
Patricia McInnes - February 2024

Concentration Ranges (μg/m ³)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	55	23	14	4	20	53	44	8	7	17	45	54	40	20	18	22	444
6 - 15	53	10	6	9	4	5	18	23	17	6	2	7	5	3	12	41	221
16 - 25	3	2	3	0	0	1	3	3	3	0	0	0	0	0	1	2	21
26 - 80	3	1	0	0	0	0	0	0	1	1	0	0	0	0	0	2	8
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	114	36	23	13	24	59	65	34	28	24	47	61	45	23	31	67	694

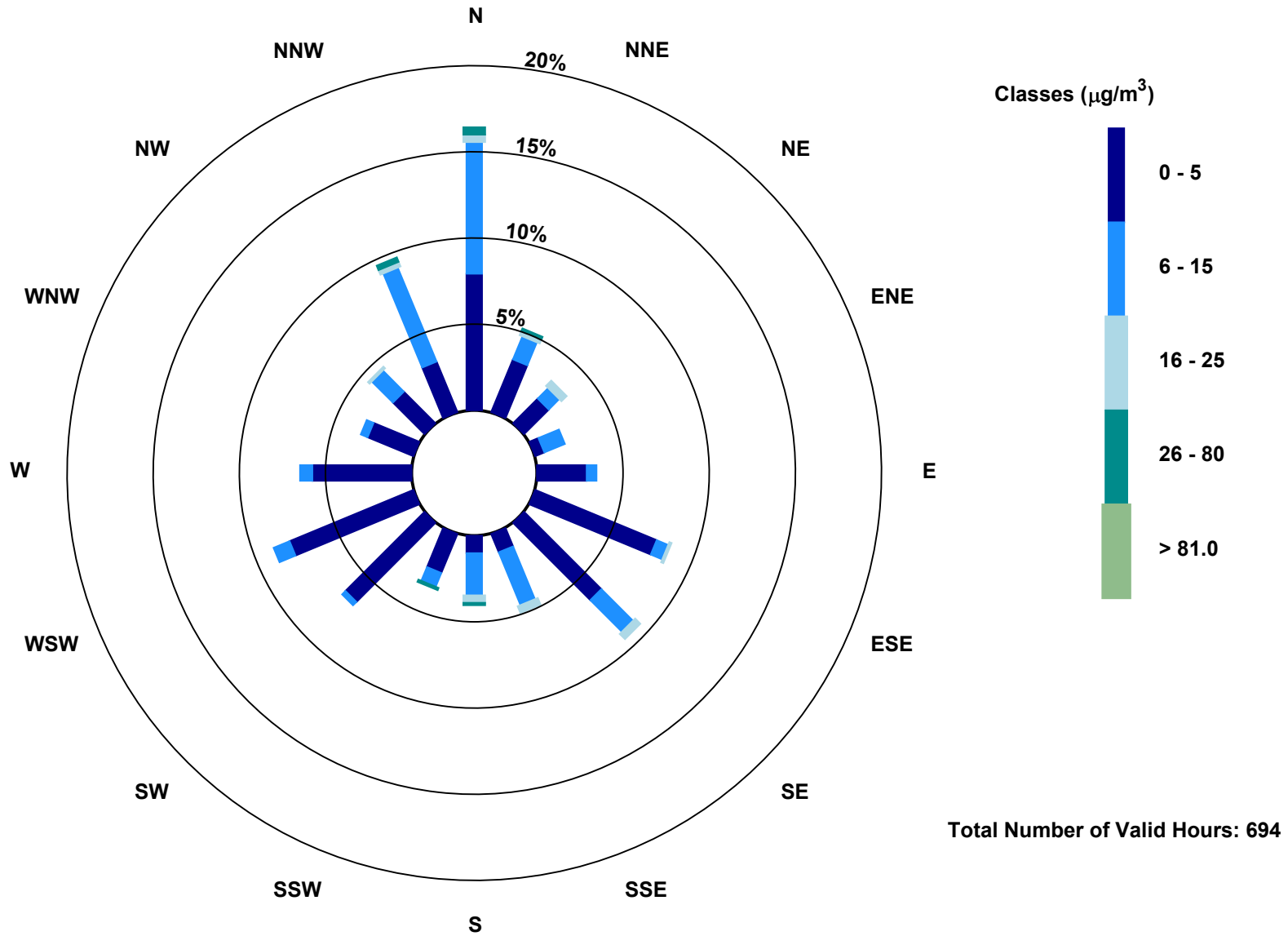
Total Number of Valid Hours: 694

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Patricia McInnes

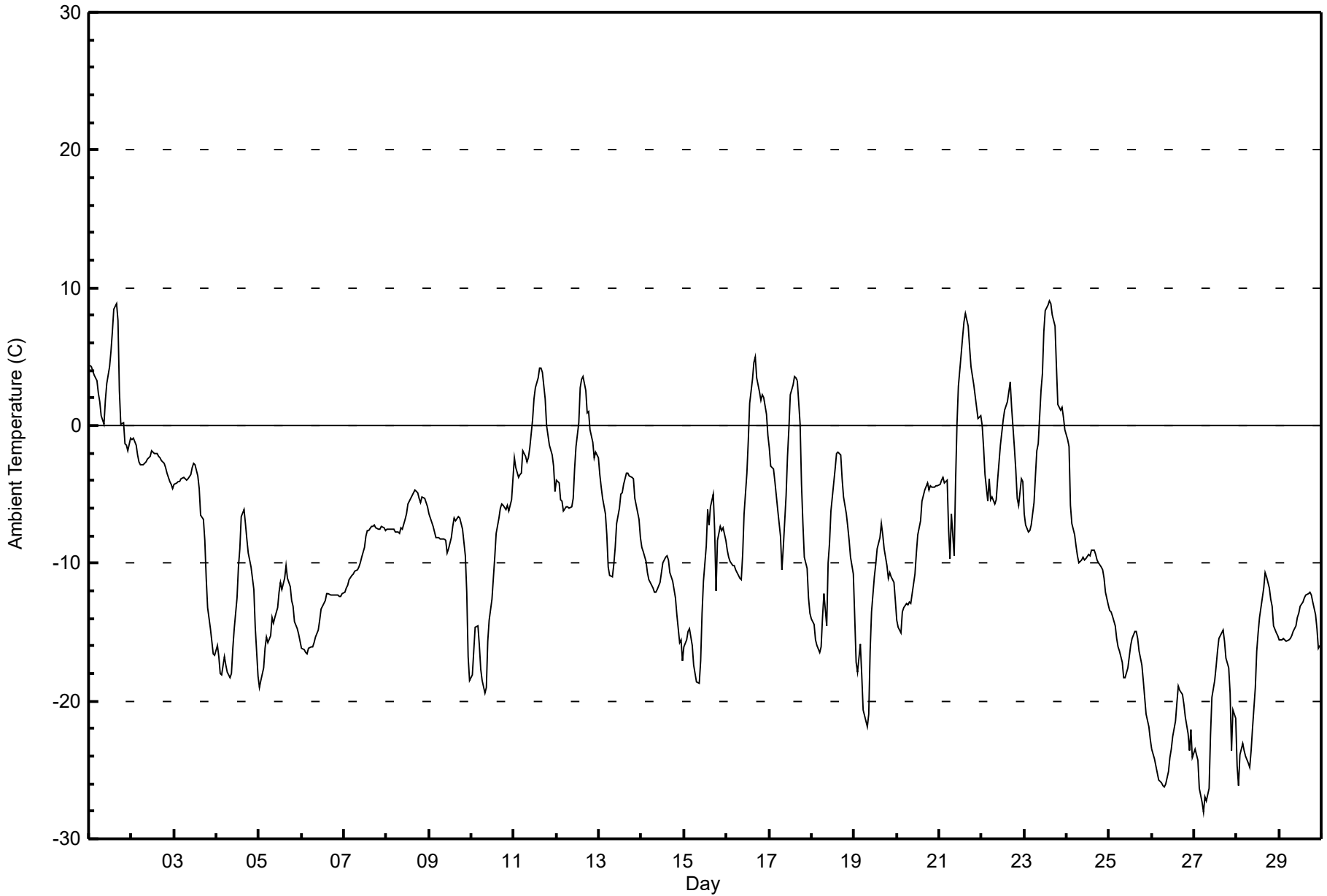




Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature (AT) - C
Patricia McInnes - February 2024

Maximum Value: 9.0 C on Feb 23 15:00 Maximum Daily Average: 2.8 C on Feb 1																				Hours in Service: 696 Hours of Data: 696						
Minimum Value: -28.1 C on Feb 27 06:00 Minimum Daily Average: -23.1 C on Feb 26 Maximum Diurnal Average: -4.6 C at hour 16 Minimum Diurnal Average: -12.2 C at hour 8 Monthly Average: -8.96 C Percentiles: P ₁ = -26.2 P ₁₀ = -18.3 Q ₁ = -14.6 Median = -8.8 Q ₃ = -3.9 P ₉₀ = 1.0 P ₉₉ = 8.0																				Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	4.4	4.3	4.0	3.7	3.2	2.4	1.8	0.7	0.1	1.9	3.0	4.3	5.3	6.8	8.5	8.9	7.6	2.6	0.1	0.2	-1.3	-1.5	-1.8	-0.9	2.8	8.9
2-Feb	-1.0	-1.0	-1.4	-2.1	-2.6	-2.9	-2.8	-2.7	-2.7	-2.4	-2.2	-1.9	-1.9	-2.0	-2.0	-2.2	-2.4	-2.6	-2.7	-3.0	-3.5	-4.0	-4.2	-4.6	-2.5	-1.0
3-Feb	-4.3	-4.1	-4.0	-4.1	-3.8	-3.8	-3.9	-4.0	-3.9	-3.6	-3.1	-2.7	-2.8	-3.6	-4.6	-6.5	-6.8	-8.3	-11.1	-13.3	-14.7	-15.6	-16.6	-16.7	-6.9	-2.7
4-Feb	-16.0	-16.7	-18.0	-18.1	-16.8	-17.4	-17.9	-18.3	-18.0	-16.2	-14.8	-12.5	-10.2	-9.0	-6.6	-6.1	-7.1	-8.2	-9.2	-10.2	-11.1	-11.9	-14.7	-18.2	-13.5	-6.1
5-Feb	-19.0	-18.6	-17.6	-16.1	-15.4	-15.8	-15.2	-13.9	-14.4	-14.0	-13.2	-12.2	-11.4	-11.9	-11.1	-10.2	-11.1	-11.7	-12.7	-13.2	-14.3	-14.8	-15.1	-15.6	-14.1	-10.2
6-Feb	-16.2	-16.3	-16.4	-16.5	-16.2	-16.1	-16.0	-15.8	-15.3	-14.9	-14.1	-13.3	-12.9	-12.7	-12.2	-12.2	-12.3	-12.3	-12.3	-12.3	-12.3	-12.4	-12.4	-12.2	-14.0	-12.2
7-Feb	-12.1	-11.8	-11.5	-11.2	-10.9	-10.7	-10.6	-10.5	-10.3	-10.0	-9.5	-8.9	-8.1	-7.6	-7.7	-7.4	-7.3	-7.2	-7.4	-7.5	-7.5	-7.3	-7.4	-7.6	-9.1	-7.2
8-Feb	-7.5	-7.5	-7.5	-7.5	-7.6	-7.7	-7.7	-7.8	-7.4	-7.5	-6.8	-6.4	-5.7	-5.5	-5.1	-4.9	-4.7	-4.9	-5.3	-5.6	-5.2	-5.3	-5.6	-5.9	-6.4	-4.7
9-Feb	-6.4	-7.1	-7.4	-7.8	-8.2	-8.2	-8.2	-8.2	-8.2	-8.3	-9.3	-9.0	-8.1	-7.3	-6.7	-6.9	-6.6	-6.8	-7.1	-7.5	-9.5	-12.1	-16.8	-18.5	-8.8	-6.4
10-Feb	-18.1	-16.4	-14.7	-14.6	-16.0	-17.7	-18.6	-19.4	-19.1	-15.6	-14.1	-12.6	-11.0	-9.5	-7.8	-6.7	-6.0	-5.7	-5.8	-6.1	-5.8	-6.2	-5.4	-3.9	-11.5	-3.9
11-Feb	-2.3	-3.1	-3.8	-3.5	-3.5	-1.9	-2.3	-2.7	-2.3	-1.6	0.4	1.9	2.8	3.4	4.1	4.1	3.9	1.9	0.0	-0.7	-1.4	-2.1	-2.9	-4.8	-0.7	4.1
12-Feb	-3.9	-4.2	-5.4	-5.5	-6.2	-5.9	-5.9	-6.0	-5.9	-5.3	-3.1	-1.5	0.2	2.8	3.4	3.5	2.5	0.9	1.0	-0.3	-1.3	-2.3	-1.9	-2.3	-2.2	3.5
13-Feb	-3.6	-4.5	-5.3	-6.4	-8.0	-10.2	-10.9	-11.0	-10.1	-8.8	-7.2	-6.0	-5.0	-4.9	-4.2	-3.5	-3.4	-3.7	-3.7	-3.9	-5.3	-5.8	-6.8	-8.2	-6.3	-3.4
14-Feb	-8.9	-9.2	-9.9	-10.7	-11.2	-11.4	-11.8	-12.1	-12.1	-11.9	-11.3	-10.6	-9.9	-9.6	-9.4	-9.8	-10.6	-11.2	-11.9	-12.5	-13.7	-15.7	-15.5	-17.0	-11.6	-8.9
15-Feb	-16.1	-15.6	-15.0	-14.7	-15.9	-17.3	-18.0	-18.6	-18.7	-17.1	-13.6	-11.3	-8.7	-6.1	-7.2	-5.9	-5.0	-7.6	-12.0	-8.3	-7.4	-7.7	-7.4	-8.3	-11.8	-5.0
16-Feb	-9.1	-9.6	-9.8	-10.2	-10.2	-10.5	-10.6	-11.0	-11.2	-9.4	-6.5	-3.5	-1.2	1.6	3.4	4.6	5.0	3.5	2.5	1.9	2.2	2.0	0.8	-0.7	-3.6	5.0
17-Feb	-1.6	-3.0	-3.2	-4.1	-5.1	-6.1	-8.0	-10.5	-8.9	-5.1	-2.2	-0.2	2.2	3.0	3.6	3.4	3.3	0.1	-4.2	-7.1	-9.6	-10.3	-12.5	-13.7	-4.2	3.6
18-Feb	-14.0	-14.4	-15.6	-15.9	-16.5	-16.1	-14.0	-12.2	-14.6	-9.9	-8.5	-6.2	-4.2	-3.1	-2.1	-2.0	-2.2	-3.9	-5.2	-6.4	-7.3	-8.3	-9.5	-10.8	-9.3	-2.0
19-Feb	-13.9	-17.1	-17.9	-15.9	-18.1	-20.6	-21.1	-21.9	-21.0	-16.4	-13.5	-10.9	-10.1	-8.9	-8.1	-7.1	-7.9	-8.9	-10.2	-11.1	-10.6	-11.0	-11.4	-12.7	-13.6	-7.1
20-Feb	-14.1	-14.7	-15.0	-13.5	-13.2	-12.9	-13.0	-12.8	-12.9	-11.5	-10.8	-9.2	-7.9	-6.9	-5.5	-5.0	-4.6	-4.2	-4.7	-4.4	-4.5	-4.5	-4.4	-4.4	-8.9	-4.2
21-Feb	-4.3	-3.9	-3.8	-4.2	-4.0	-7.5	-9.6	-6.4	-9.5	-4.0	0.1	2.9	5.2	6.4	7.5	8.1	7.3	5.7	4.2	2.9	2.2	1.3	0.6	0.7	-0.1	8.1
22-Feb	0.0	-1.6	-3.6	-5.5	-3.9	-5.4	-5.2	-5.7	-5.4	-3.9	-1.4	-0.5	0.4	1.1	1.7	2.5	3.2	1.3	-1.6	-3.3	-5.3	-5.8	-3.9	-4.0	-2.3	3.2
23-Feb	-6.4	-7.2	-7.7	-7.6	-7.2	-5.6	-3.7	-1.9	-1.3	2.5	3.8	6.8	8.3	8.7	9.0	8.9	8.0	7.2	4.3	1.5	1.1	1.3	0.6	-0.3	1.0	9.0
24-Feb	-1.0	-1.6	-5.8	-7.1	-8.0	-8.8	-9.5	-10.0	-9.7	-9.5	-9.7	-9.7	-9.4	-9.4	-9.1	-9.1	-9.4	-9.8	-9.9	-10.3	-10.5	-11.1	-12.1	-13.1	-8.9	-1.0
25-Feb	-13.4	-13.6	-13.9	-14.5	-15.5	-16.1	-16.4	-17.2	-18.3	-18.3	-17.5	-16.8	-16.0	-15.4	-15.0	-14.9	-15.5	-16.4	-17.4	-18.5	-19.7	-20.9	-21.9	-22.8	-16.9	-13.4
26-Feb	-23.5	-24.2	-24.7	-25.2	-25.7	-25.9	-26.1	-26.3	-26.0	-25.1	-24.1	-23.5	-22.6	-21.5	-20.1	-18.9	-19.2	-19.6	-20.2	-21.2	-22.3	-23.5	-22.0	-24.1	-23.1	-18.9
27-Feb	-23.5	-23.9	-24.3	-26.4	-27.4	-28.1	-26.9	-27.2	-26.4	-22.5	-19.8	-18.5	-17.4	-16.4	-15.5	-15.0	-14.9	-15.7	-16.8	-17.6	-19.5	-23.6	-20.6	-21.3	-21.2	-14.9
28-Feb	-24.7	-26.2	-23.9	-23.1	-23.6	-24.0	-24.6	-24.8	-23.6	-21.9	-19.0	-16.4	-15.0	-14.0	-12.5	-11.8	-10.7	-11.0	-11.8	-12.6	-13.1	-14.6	-15.1	-15.3	-18.1	-10.7
29-Feb	-15.6	-15.6	-15.4	-15.6	-15.7	-15.5	-15.4	-15.2	-15.0	-14.5	-14.0	-13.6	-13.1	-12.8	-12.5	-12.3	-12.2	-12.1	-12.3	-12.8	-13.7	-14.7	-16.2	-16.0	-14.2	-12.1
	-10.2	-10.6	-11.0	-11.2	-11.5	-12.0	-12.1	-12.2	-12.1	-10.5	-9.0	-7.6	-6.5	-5.7	-5.0	-4.6	-4.8	-5.8	-7.0	-7.7	-8.4	-9.3	-9.7	-10.5	Diurnal Average	
	4.4	4.3	4.0	3.7	3.2	2.4	1.8	0.7	0.1	2.5	3.8	6.8	8.3	8.7	9.0	8.9	8.0	7.2	4.3	2.9	2.2	2.0	0.8	0.7	Diurnal Maximum	





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Patricia McInnes - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	51	7.33	7.33
-20 - 0	560	80.46	87.79
0 - 10	85	12.21	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

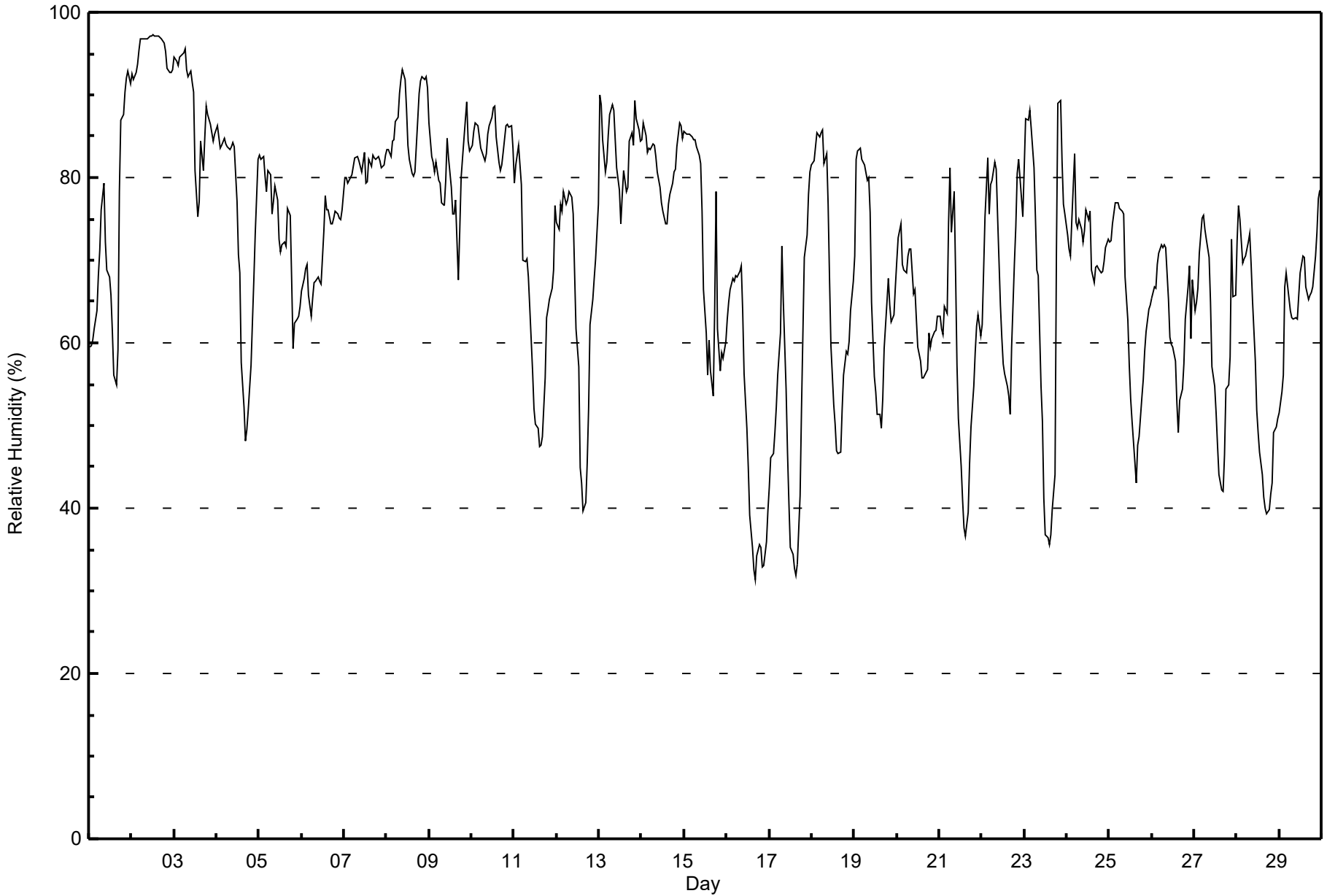
Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

Relative Humidity (RH) - %
Patricia McInnes - February 2024

Maximum Value: 97.2 % on Feb 2 13:00 Maximum Daily Average: 95.4 % on Feb 2																						Hours in Service:	696			
Minimum Value: 31.4 % on Feb 16 17:00 Minimum Daily Average: 50.1 % on Feb 16																						Hours of Data:	696			
Maximum Diurnal Average: 78.0 % at hour 7 Minimum Diurnal Average: 58.9 % at hour 16																						Hours of Missing Data:	0			
Monthly Average: 70.74 % Percentiles: P ₁ = 34.2 P ₁₀ = 49.6 Q ₁ = 61.3 Median = 72.7 Q ₃ = 82.3 P ₉₀ = 87.0 P ₉₉ = 96.9																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	59.5	59.7	60.4	61.7	63.9	68.1	71.1	76.1	79.3	72.1	68.8	67.9	65.8	61.3	56.1	54.9	59.1	78.3	86.9	87.6	90.3	92.0	92.8	91.4	71.9	92.8
2-Feb	92.6	91.9	92.8	93.8	95.4	96.8	96.8	96.8	96.8	96.9	97.1	97.2	97.2	97.1	97.1	97.1	96.9	96.7	96.3	95.3	93.3	92.7	92.6	93.1	95.4	97.2
3-Feb	94.7	94.1	93.6	94.5	94.7	95.1	95.6	93.1	92.3	92.9	91.5	90.3	80.8	75.3	77.1	84.4	80.8	84.9	88.7	87.6	86.4	85.5	84.4	85.2	88.5	95.6
4-Feb	86.3	84.9	83.5	83.9	84.8	84.0	83.8	83.4	83.7	84.2	83.8	77.2	70.7	68.5	57.6	52.1	48.1	49.5	51.9	57.3	62.5	67.7	73.3	82.2	72.7	86.3
5-Feb	82.7	82.2	82.5	80.2	78.3	80.8	80.3	75.7	77.1	79.0	77.4	72.6	71.0	71.9	72.2	71.8	76.3	75.4	67.6	59.3	62.3	62.9	63.2	64.5	73.6	82.7
6-Feb	66.4	67.8	69.0	69.5	65.7	63.3	65.5	67.4	67.4	67.9	67.5	67.2	73.6	77.8	76.0	76.1	74.3	74.4	75.1	75.9	75.6	75.0	75.0	76.0	71.2	77.8
7-Feb	80.0	80.0	79.3	79.7	80.4	81.4	82.3	82.5	82.1	81.3	80.6	83.0	79.3	79.5	82.2	81.3	82.6	82.4	82.2	82.6	82.0	81.2	81.6	82.7	81.3	83.0
8-Feb	83.3	83.4	82.5	84.4	84.5	86.7	87.3	90.1	91.9	93.0	91.8	88.3	84.0	82.1	80.5	80.1	80.7	86.9	90.1	91.6	92.3	91.9	92.2	90.9	87.1	93.0
9-Feb	86.6	82.6	81.9	80.7	81.8	79.7	79.3	76.9	76.6	79.7	84.8	82.4	78.9	75.5	75.6	77.3	67.6	73.5	79.9	82.3	87.0	89.1	84.5	83.3	80.3	89.1
10-Feb	84.0	85.6	86.7	86.3	84.9	83.6	83.0	82.0	82.9	85.3	86.3	87.4	88.5	88.7	84.9	81.8	80.8	81.5	83.0	86.2	86.5	86.1	86.3	83.6	84.8	88.7
11-Feb	79.4	81.6	83.9	81.5	79.1	70.0	69.9	70.3	67.9	64.2	56.7	52.0	50.2	49.7	47.5	47.7	48.7	55.8	63.0	64.1	65.2	66.5	68.7	76.5	65.0	83.9
12-Feb	74.7	73.8	76.9	75.9	78.3	76.8	77.3	78.4	77.6	75.7	68.5	61.7	57.0	44.9	43.1	39.7	40.7	45.4	52.0	62.3	65.2	67.7	70.2	76.8	65.0	78.4
13-Feb	90.0	88.9	84.5	80.7	81.9	85.1	87.6	88.9	88.1	84.6	81.2	78.6	74.4	77.7	80.9	78.3	78.9	84.5	85.3	83.8	89.4	87.0	85.8	84.5	83.8	90.0
14-Feb	84.5	86.6	85.1	83.0	83.6	83.4	84.1	83.9	82.6	80.7	78.8	77.0	75.9	74.4	74.4	76.7	78.0	79.3	80.7	81.1	83.8	86.6	86.2	84.8	81.5	86.6
15-Feb	85.6	85.2	85.3	85.3	84.9	84.6	84.6	83.7	82.6	81.7	76.0	66.4	61.2	56.1	60.3	56.5	53.5	64.0	78.3	61.8	56.5	58.7	58.1	60.1	71.3	85.6
16-Feb	62.9	65.0	66.5	67.8	67.4	68.2	68.0	68.6	69.3	63.8	56.2	49.7	45.0	39.1	35.2	32.5	31.4	34.2	35.6	35.3	32.8	33.0	35.9	39.6	50.1	69.3
17-Feb	42.5	46.2	46.6	49.2	52.2	56.1	61.2	71.7	65.1	54.3	46.8	40.7	35.2	34.3	32.7	31.9	33.2	41.6	52.0	61.3	70.3	73.1	78.0	80.7	52.4	80.7
18-Feb	81.6	82.1	83.8	85.4	84.8	85.4	85.7	81.8	83.0	76.7	67.8	59.6	52.6	50.2	46.9	46.7	46.8	51.8	56.1	59.0	58.6	60.2	63.8	67.4	67.4	85.7
19-Feb	70.6	82.2	83.2	83.6	82.3	81.9	81.5	79.6	80.0	75.7	64.9	56.0	54.0	51.3	51.3	49.6	53.3	59.4	64.8	67.8	64.5	62.6	63.4	66.9	67.9	83.6
20-Feb	69.9	72.7	74.4	69.5	68.8	68.4	70.5	71.4	71.4	66.0	66.4	62.8	59.5	57.8	55.8	55.7	56.1	56.8	61.1	59.5	60.6	61.3	61.5	63.2	64.2	74.4
21-Feb	63.2	61.7	61.0	64.5	63.6	74.6	81.2	73.4	78.3	68.5	57.3	50.8	45.1	40.9	37.6	36.6	39.5	45.3	49.8	54.8	58.7	62.0	63.5	60.8	58.0	81.2
22-Feb	62.2	68.7	75.2	82.4	75.5	79.2	79.6	81.8	81.0	75.2	64.6	60.7	57.4	56.3	54.8	53.6	51.3	59.4	69.6	74.0	80.5	82.3	77.6	75.2	69.9	82.4
23-Feb	81.2	87.1	87.0	88.1	85.9	81.2	75.2	68.8	68.2	54.8	50.6	41.1	36.7	36.5	35.6	36.9	39.9	44.1	71.1	89.0	89.3	82.0	76.8	75.6	65.9	89.3
24-Feb	73.1	71.3	70.4	75.0	82.8	74.6	73.9	75.0	73.8	72.1	73.5	76.1	75.0	75.9	68.8	67.2	69.1	69.4	69.0	68.5	68.7	69.8	71.6	72.6	72.4	82.8
25-Feb	72.3	72.4	74.4	77.0	77.0	76.9	76.3	75.9	75.6	68.0	62.7	57.4	53.2	50.5	45.5	43.1	47.7	48.7	53.3	55.6	58.9	61.4	64.1	64.5	63.0	77.0
26-Feb	65.5	66.8	66.6	69.6	70.8	71.9	71.6	71.8	71.6	65.3	60.6	59.9	59.5	57.8	52.8	49.1	53.0	54.4	57.5	62.9	66.8	69.4	60.5	67.6	63.5	71.9
27-Feb	63.8	64.9	66.7	70.8	75.1	75.5	73.8	72.5	70.4	64.9	57.1	54.7	51.5	47.7	44.1	42.1	42.0	46.5	54.5	54.9	58.2	72.6	65.6	65.8	60.6	75.5
28-Feb	72.4	76.7	74.8	69.6	70.1	70.5	72.1	73.3	69.5	65.1	57.8	51.9	49.2	46.8	44.1	41.3	40.0	39.3	39.8	41.7	43.1	49.2	49.8	50.8	56.6	76.7
29-Feb	51.5	54.1	56.1	66.9	68.6	65.5	63.9	63.1	62.9	63.1	62.9	65.8	68.5	70.5	70.4	66.7	65.3	65.8	66.1	66.9	70.5	73.5	77.4	78.5	66.0	78.5
																								Diurnal Average		
																								Diurnal Maximum		





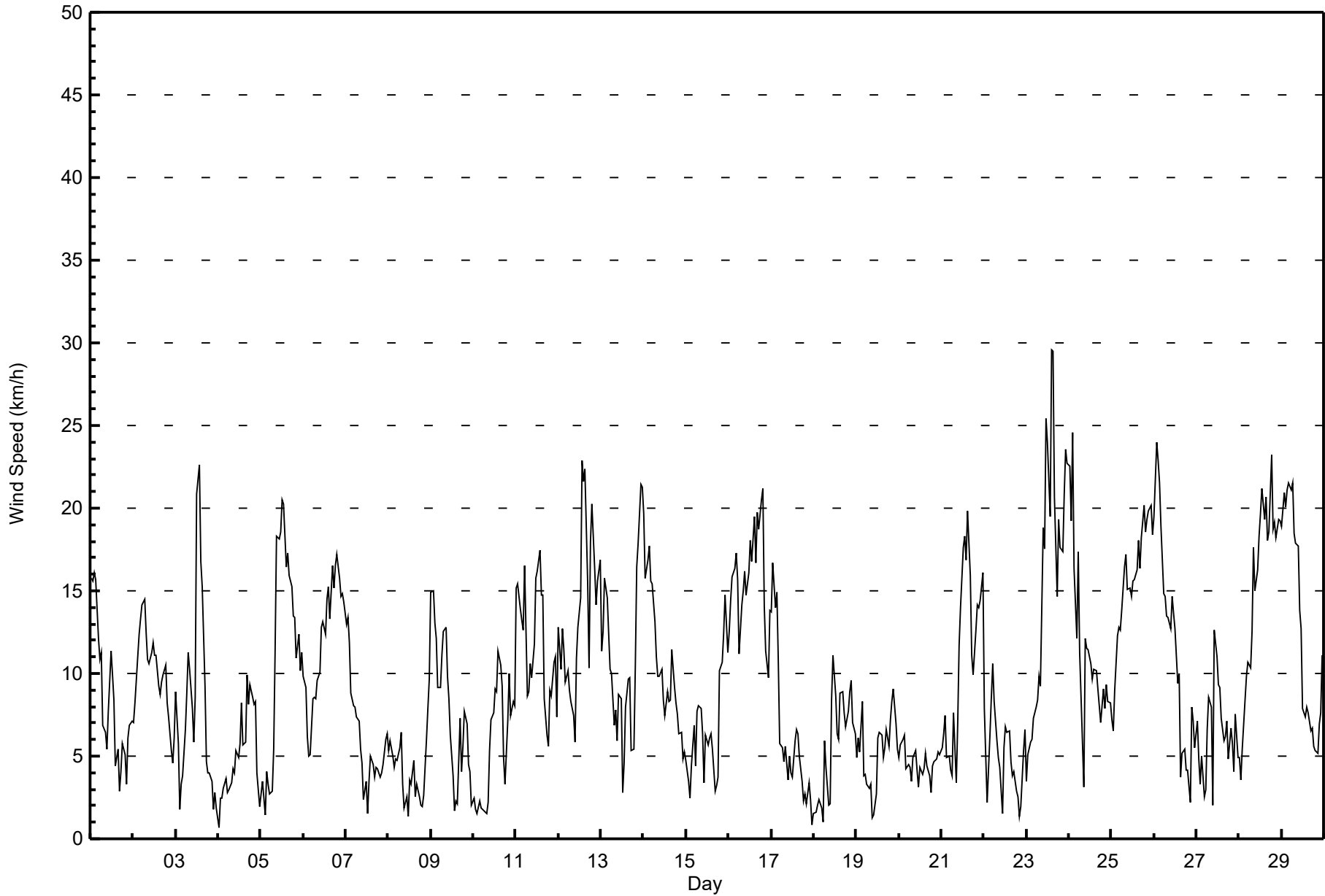
Maximum Speed: 30 km/h on Feb 23 15:00 Minimum Speed Value: 1 km/h on Feb 4 01:00 Maximum Diurnal Speed Average: 2.7 km/h at hour 24 Monthly Average Velocity: 1.6 km/h 322.9 deg		Maximum Daily Speed Average: 15.5 km/h on Feb 16 Minimum Daily Speed Average: 0.2 km/h on Feb 22 Minimum Diurnal Speed Average: 0.3 km/h at hour 18 Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 5 Median = 8 Q ₃ = 13 P ₉₀ = 18 P ₉₉ = 23		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	SE16	SE16	SE16	SE16	SE12	ESE11	SE11	SE7	SE6	SE5	SSE8	SSW11	SSW10	S8	SE4	ESE5	E3	N4	N6	NNE5	NNW3	NNW6	N7	N7	SE5.1	SE16
2-Feb	N7	N8	NNW11	N12	NNW13	N14	N15	N12	N11	N11	N11	NNW12	NNW11	N11	NNW9	NNW9	NNW10	NNW10	NNW11	NNW8	NNW7	NW5	NNW5	NW6	NNW9.8	N15
3-Feb	NW9	NW6	S2	W3	NNW4	NNW7	NNW9	NNW11	NNW10	NNW8	NNW6	NNW9	NW21	NNW23	NNW17	N15	N9	NNW5	NW4	NW4	W3	SW2	WSW3	WSW2	NNW7.0	WNW23
4-Feb	SW1	S2	SSE2	SSE3	SSE4	S3	SSE3	SSE3	S4	SSE4	SSE5	SE5	SE6	SSE8	SE6	SE6	SE10	SE8	SE9	SE9	SE8	SE8	SSE4	WSW2	SE4.9	SE10
5-Feb	S3	SSE3	SE1	SSE4	SSE3	WNW3	NNW3	NNE5	NNW11	N18	N18	N19	N21	N20	N16	N17	N16	N15	N13	N13	NNW11	N12	N10	N11	N9.9	N21
6-Feb	N10	N9	N6	N5	ENE5	E8	E9	E8	E10	ESE10	ESE13	ESE13	ESE12	ESE14	ESE15	ESE13	ESE17	ESE15	ESE16	ESE17	ESE16	ESE15	ESE15	ESE14	ESE10.1	ESE17
7-Feb	ESE13	ESE13	ESE12	ESE9	ESE8	ESE8	ESE7	SE7	ESE5	ESE5	ESE2	SSE3	ENE1	NE4	N5	N4	NE4	N4	N4	NW4	NW4	NNW4	N6	NNE6	E3.4	ESE13
8-Feb	NNW5	NNW6	NNW5	NNW4	N5	NNE5	NNE6	NNW6	N3	N2	NNW3	SSW1	SE4	SE3	ESE5	SSE3	SE3	SE3	NW2	NW2	ENE3	N6	NNW8	NNW10	N2.5	NNW10
9-Feb	NW15	NW15	NW13	W12	W9	WNW9	NNW11	NNW13	NW13	NNW10	NNE8	NNE6	NNE4	E2	E2	ENE2	WNW7	W4	W6	NNW8	NNW7	NNW5	WNW4	W2	NW6.2	NW15
10-Feb	WSW2	WSW2	S2	SSW2	SSW2	SSE2	SSE2	S2	SSE2	SSE5	SE7	SE8	SE9	SE9	SE11	SE11	SE9	SE5	SSW3	SW7	SW10	SSW7	SSW8	SW8	SSE4.4	SE11
11-Feb	WSW15	WSW15	WSW14	WSW13	WSW13	W17	W9	WNW9	NNW11	WSW10	WSW12	W16	W16	W17	W15	W15	W9	SW6	SSW6	WSW9	WSW9	WSW11	WSW11	SSW7	WSW11.1	W17
12-Feb	SW13	SW10	SW13	SSW11	SSW9	SW10	SSW9	SSW8	SSW7	SSW6	SW11	WSW13	WSW15	NNW23	NW22	NW22	NW16	NNW10	NW18	NW20	NW16	NW14	NW16	NNW17	W9.6	WNW23
13-Feb	N11	N13	N16	N15	NNE12	N10	N10	NNW7	NW8	NNW6	N9	N8	NNE3	SE5	SSW8	WSW10	WSW10	WSW5	WNW5	NNW10	N16	N18	N21	N21	NNW8.0	N21
14-Feb	N20	N16	N17	N18	N16	N15	NNW13	N11	N10	N10	NNE10	NNE8	N7	NNW9	N8	NNE8	NNE11	NNE9	N8	N8	N6	NNW6	N5	NNW5	N10.4	N20
15-Feb	NNW5	NW3	WNW2	SW4	SW7	SW4	SW8	SW8	SW8	SW6	SE3	E6	E6	ENE6	NE6	NE5	ESE3	SSE3	SW4	SW10	WSW11	SW12	WSW15	SW11	SW3.3	WSW15
16-Feb	SW13	SW14	WSW16	WSW16	WSW17	SW16	WSW11	SW14	SW15	SW16	SW15	SW16	SW18	SW17	SW19	SW17	WSW20	SW19	SW21	WSW21	W14	W11	WSW10	WSW14	WSW15.5	WSW21
17-Feb	WSW14	WSW17	WSW14	WSW15	WSW11	SW6	WSW6	S5	SSW6	SSE4	E5	ESE4	E4	E6	ENE7	ENE6	NE5	N3	NW2	W3	NNW2	NNE3	NW2	NE1	WSW2.1	WSW17
18-Feb	E2	E2	SSW2	WSW2	WSW2	E1	SE6	ESE4	N2	NNW2	ESE8	ESE11	ESE9	NE6	NE6	ENE9	E9	E8	ENE7	E8	E9	E10	E7	E6	E4.6	ESE11
19-Feb	NE5	N6	N5	N8	NNW4	NNW4	W3	WNW3	NNW3	S1	WNW1	ENE3	NE6	NE6	NE6	NE5	NE6	NNE7	N6	NNW7	NNW8	NNW9	NNW7	NNW5	N4.3	NNW9
20-Feb	NNW5	N6	NW6	N6	N4	N4	NNE4	S3	S5	SSE5	S4	SE3	SE4	S4	ESE4	SE5	SSE4	SSE4	WSW3	S4	S5	S5	S5	SSE5	SSE1.4	N6
21-Feb	SSE5	S6	S7	SSW5	SW5	WSW4	WSW4	WSW8	NW3	WSW7	WSW12	SW14	WSW18	SW18	WSW17	W20	WSW16	WSW11	WSW10	WSW13	WSW14	WSW14	W14	W16	WSW10.1	W20
22-Feb	NW8	N5	SW2	SW6	SW9	WSW11	WSW8	WNW6	N5	NNW4	NNE2	E6	E7	NE6	ENE7	ENE5	SE4	ESE4	SE3	ESE3	W1	SSE2	SE5	SE7	SSE0.2	WSW11
23-Feb	S3	S5	S6	SSE6	S7	S8	S8	SSE10	SSW9	SW19	SW18	W25	W24	W20	W30	W30	W21	W15	NW19	NNW18	WSW17	W21	W24	W23	WSW12.7	W30
24-Feb	W23	W19	N25	NNW16	N12	N17	NNE11	NNE9	NNE3	NNE12	N11	N11	NNE11	NE10	NE10	NNE10	NE9	NE8	NE7	NNE9	NNE8	NE9	NNE8	NE8	N9.1	N25
25-Feb	NE7	NNE7	NNE9	N12	N13	N13	N14	N16	N17	N15	N15	N15	N16	N16	N16	N18	N16	NNE18	NNE20	NNE19	NNE19	N20	NNE20	N18	N15.2	NNE20
26-Feb	N20	N24	N23	N22	N19	N15	N15	N13	N13	N13	N15	N14	NNW13	NNW9	N10	NNE4	ENE5	SE5	SE4	SSW4	WSW2	WNW8	NW7	WNW6	N9.8	N24
27-Feb	WNW7	WNW5	W3	W5	WSW3	SW3	SW7	WSW9	SW8	S2	NNW13	W11	W9	W9	W7	W6	SW6	S7	ESE5	SE7	SSE6	SE4	SE8	SE5	WSW3.4	WNW13
28-Feb	SE5	S4	SE5	SSE8	SE10	SE11	SE10	SE13	ESE18	SE15	ESE16	ESE18	ESE20	ESE21	ESE19	SE21	SE18	SE19	SE23	SE19	SE19	ESE18	ESE19	ESE19	SE15.1	SE23
29-Feb	ESE19	ESE21	ESE20	ESE21	ESE22	ESE21	ESE22	ESE18	ESE18	ESE18	ESE14	ESE13	SE8	SE7	SE8	SSE8	SSW7	SW7	WSW6	W5	WNW5	W7	W8	W11	ESE8.9	ESE22
NW2.4 NW2.1 NNW2.0 NW1.7 NW1.0 NNW1.5 NNW1.0 NNW1.0 NNW1.1 NNW0.8 NNE1.0 NNW0.9 NW1.7 NW1.6 NNW1.8 NNW1.9 N0.8 N0.3 NW1.7 NW2.3 NW2.2 NW2.7 NW2.7 NW2.7																								Diurnal Average		
W23 N24 N25 N22 ESE22 ESE21 ESE22 ESE18 ESE18 SW19 N18 W25 W24 NNW23 W30 W30 W21 SW19 SE23 WSW21 NNE19 W21 W24 W23																								Diurnal Maximum		
All monthly, daily, and diurnal averages have been calculated using vector methods																										



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Patricia McInnes - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 23 16:00																		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0							
Minimum Value: 0 km/h on Feb 10 08:00																									
Percentiles: P ₁ = 0 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																									
Day	Hourly Period Ending At (MST)																							Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24
1-Feb	4	4	3	4	2	3	3	2	1	1	2	3	2	2	2	1	1	1	2	2	2	1	1	1	4
2-Feb	1	2	2	2	2	3	3	2	2	2	2	2	2	3	1	2	1	2	2	2	2	1	1	2	3
3-Feb	2	3	1	1	1	1	2	2	2	2	1	3	4	5	4	4	2	1	1	0	1	1	1	1	5
4-Feb	1	1	0	0	1	0	0	1	1	1	1	1	2	2	4	2	3	1	2	2	2	1	1	1	4
5-Feb	1	1	2	2	1	1	1	1	3	3	4	4	4	4	3	4	4	3	3	3	2	2	2	2	4
6-Feb	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3	4	3	4	4	4	4	3	3	4
7-Feb	3	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	3
8-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
9-Feb	4	3	3	2	2	2	2	2	2	2	2	1	2	1	2	2	2	1	1	3	1	1	1	1	4
10-Feb	0	0	1	0	0	0	0	0	1	1	2	2	2	2	3	2	2	2	1	2	2	1	2	3	3
11-Feb	3	2	2	2	2	3	5	2	4	2	3	3	3	3	3	3	3	1	1	1	1	1	2	3	5
12-Feb	2	2	3	3	2	1	2	1	1	2	3	3	5	5	6	6	5	2	4	4	4	3	4	5	6
13-Feb	4	3	4	3	2	2	2	1	2	1	3	2	2	1	2	3	2	2	3	7	3	4	6	4	7
14-Feb	4	3	3	4	3	3	2	2	2	2	2	2	2	2	2	2	2	1	2	1	1	1	1	1	4
15-Feb	1	1	1	1	1	2	2	2	2	1	1	1	1	2	2	1	1	1	1	2	2	2	3	2	3
16-Feb	2	2	2	2	3	2	2	2	2	3	3	3	3	3	4	4	5	4	5	4	4	4	2	2	5
17-Feb	2	2	1	2	3	1	2	2	2	1	3	1	1	1	1	1	1	1	1	1	1	2	1	1	3
18-Feb	2	2	1	1	1	1	2	2	1	2	2	3	2	2	2	2	2	2	1	2	2	2	2	2	3
19-Feb	1	1	2	2	1	1	0	1	1	2	1	2	2	2	2	2	1	1	1	1	1	2	2	1	2
20-Feb	1	1	1	1	1	2	1	2	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	2
21-Feb	2	2	1	1	2	1	2	3	1	3	3	3	3	3	3	5	3	3	1	1	2	1	2	2	5
22-Feb	5	2	1	3	1	2	1	1	2	2	2	1	1	1	2	1	1	1	2	2	1	1	2	1	5
23-Feb	1	1	1	1	1	1	2	1	2	4	3	6	7	5	6	7	5	4	6	4	3	4	4	4	7
24-Feb	4	4	5	4	3	5	3	2	3	4	2	2	2	3	3	2	2	2	2	2	2	2	1	2	5
25-Feb	2	1	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4
26-Feb	4	5	5	5	3	4	4	2	3	3	3	3	3	3	3	3	1	1	1	1	1	2	1	3	5
27-Feb	1	1	1	1	1	1	1	2	3	3	3	3	3	4	4	3	2	1	1	1	2	1	1	1	4
28-Feb	1	1	2	2	2	2	2	3	4	4	4	4	5	5	5	6	5	5	6	4	5	4	4	4	6
29-Feb	4	5	5	5	5	5	5	5	5	4	3	3	3	2	2	2	2	1	1	1	1	1	1	2	5
																		5 5 5 5 5 5 5 5 5 5 4 4 6 7 5 6 7 5 5 6 7 5 4 6 5							
Diurnal Maximum																									





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed (WS) - km/h
Patricia McInnes - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	208	29.89	29.89
6 - 11	272	39.08	68.97
12 - 19	173	24.86	93.82
20 - 28	41	5.89	99.71
29 - 38	2	0.29	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Patricia McInnes - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	17	10	7	7	8	12	22	26	21	8	7	13	9	9	11	21	208
6 - 11	37	19	16	6	16	9	30	8	7	16	20	21	13	10	6	38	272
12 - 19	49	5	0	0	0	30	11	0	0	0	20	25	12	3	10	8	173
20 - 28	11	2	0	0	0	8	2	0	0	0	1	2	9	2	4	0	41
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	114	36	23	13	24	59	65	34	28	24	48	61	45	24	31	67	696

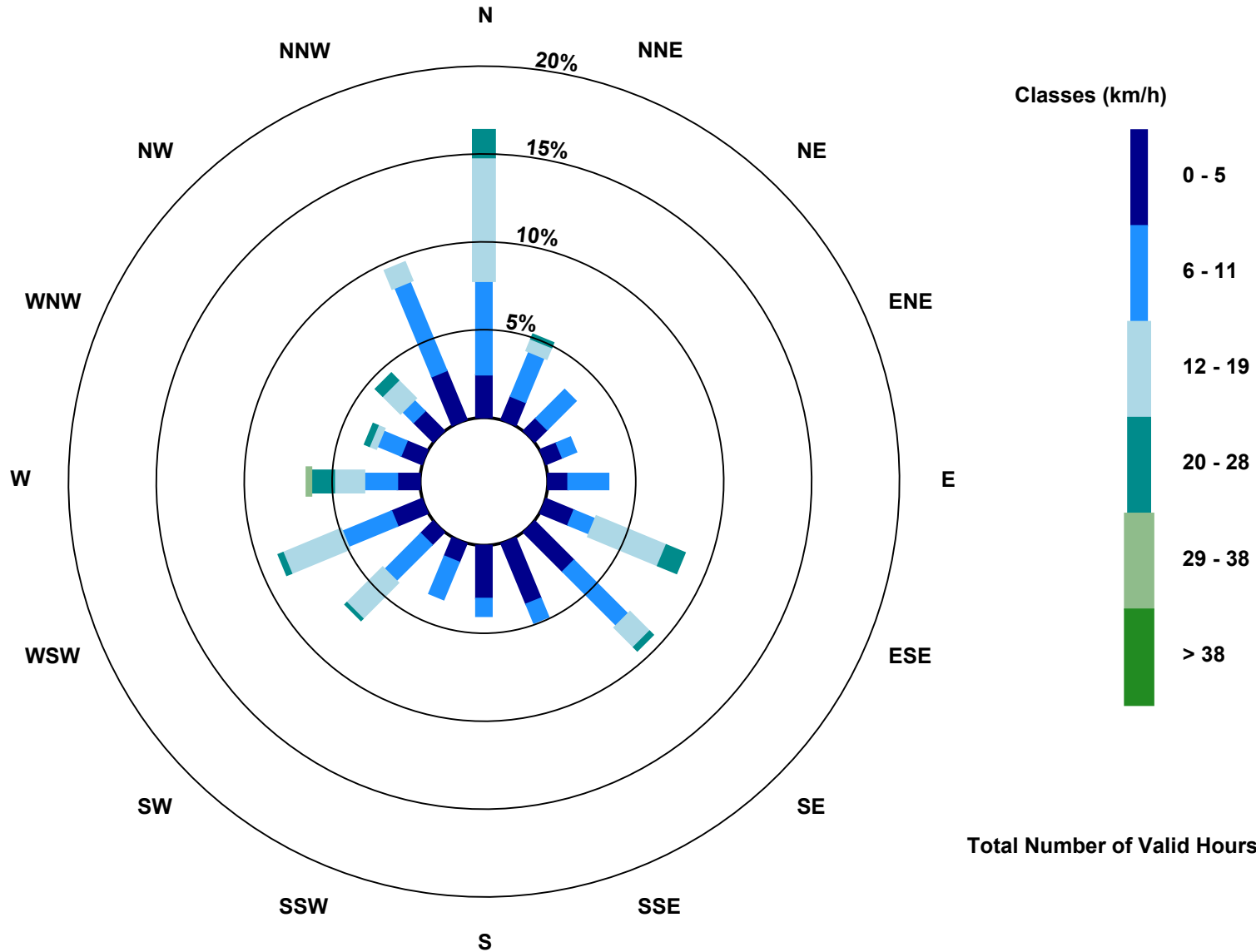
Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Patricia McInnes



Total Number of Valid Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Patricia McInnes - February 2024

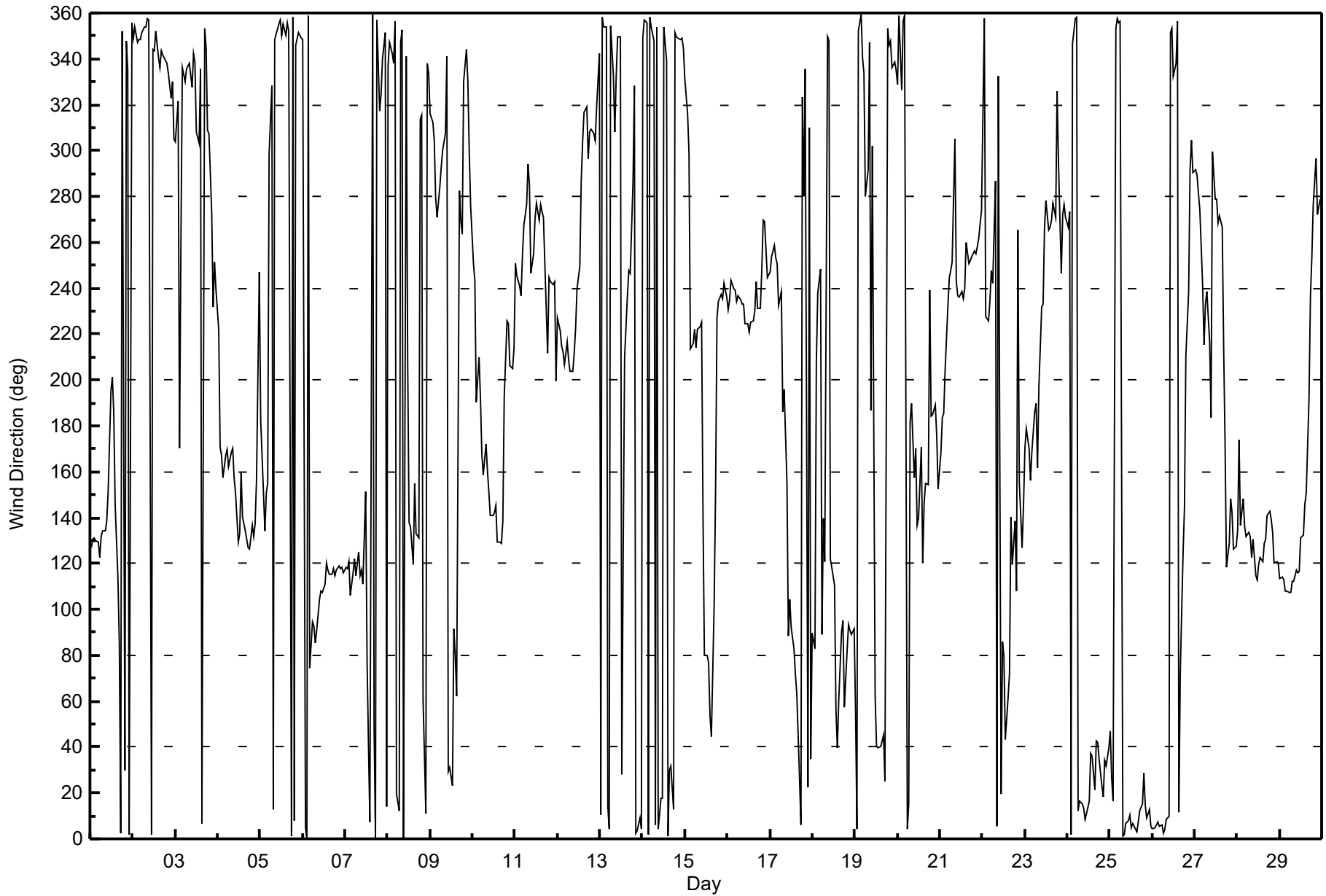
Direction of Maximum Speed: 267 deg on Feb 23 15:00																						Hours in Service: 696			
Direction of Maximum Daily Speed Average: 236.4 deg on Feb 16																						Hours of Data: 696			
Direction of Minimum Speed: 222 deg on Feb 4 01:00											Direction of Minimum Daily Speed Average: 0.2 deg on Feb 22											Hours of Missing Data: 0			
Monthly Average Direction: 322.9 deg																						Percent Operational Time: 100.0			
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	127	130	131	130	129	123	132	134	134	138	151	195	201	186	146	113	85	2	352	30	348	335	2	356	130.0
2-Feb	349	354	347	349	348	352	354	354	358	357	2	344	343	352	341	336	344	342	339	338	334	323	330	305	346.2
3-Feb	304	322	170	260	336	330	335	337	338	328	342	338	308	303	336	7	353	345	309	308	273	232	251	240	324.3
4-Feb	222	171	167	157	167	170	162	168	170	158	150	129	133	160	140	134	131	127	126	136	132	137	156	247	144.9
5-Feb	182	167	134	151	155	298	328	13	348	351	355	357	350	355	350	355	352	1	358	8	346	351	350	349	354.4
6-Feb	349	5	0	359	75	95	93	85	91	104	108	107	111	120	117	115	115	118	115	117	119	118	118	116	104.5
7-Feb	118	118	121	106	116	122	115	125	114	117	111	152	78	41	7	359	50	0	357	317	325	340	352	14	89.1
8-Feb	337	347	342	338	356	19	12	347	353	0	341	208	138	136	120	155	133	131	314	316	61	11	338	333	0.2
9-Feb	316	312	305	280	271	284	293	300	308	341	29	31	23	92	80	62	283	269	264	330	344	330	300	276	311.3
10-Feb	251	243	190	210	192	168	158	172	160	151	141	141	142	145	129	129	129	138	193	226	225	206	205	214	168.1
11-Feb	251	245	241	237	254	267	276	294	285	247	255	270	277	270	276	273	271	231	212	245	243	242	243	200	257.3
12-Feb	227	221	215	212	207	217	208	204	204	212	223	240	249	287	304	317	319	297	308	309	308	304	319	342	275.2
13-Feb	10	358	354	354	14	4	355	333	308	332	350	349	28	126	210	237	248	246	286	328	3	4	9	4	348.3
14-Feb	349	357	356	2	358	354	348	6	354	4	18	18	354	340	1	30	32	13	351	349	349	348	349	345	359.4
15-Feb	331	316	299	214	216	222	214	222	223	225	142	80	80	77	54	44	103	152	227	235	237	236	242	236	224.5
16-Feb	231	235	243	240	239	234	237	235	233	233	224	225	221	225	226	230	243	231	231	248	270	269	245	246	236.4
17-Feb	247	254	258	253	251	232	239	186	196	155	88	105	92	83	72	63	45	6	324	280	336	23	310	35	248.1
18-Feb	89	83	208	238	248	89	140	121	349	348	122	118	110	56	39	60	91	95	57	83	94	91	89	92	91.7
19-Feb	56	4	352	359	340	334	280	292	347	187	302	62	40	39	40	43	45	25	354	346	348	336	339	335	2.5
20-Feb	329	359	326	356	359	4	15	182	190	158	170	137	140	171	121	146	155	155	239	185	185	189	175	153	160.6
21-Feb	168	184	186	204	232	245	248	251	305	243	237	236	238	236	240	260	251	252	254	256	255	258	262	274	245.3
22-Feb	315	358	228	226	234	248	242	286	6	333	19	86	79	43	62	72	140	120	139	108	266	155	127	145	153.0
23-Feb	170	179	170	156	169	186	190	162	197	232	233	266	278	265	267	270	277	271	326	294	247	272	277	271	258.3
24-Feb	267	273	2	347	357	358	12	17	16	14	8	11	17	37	36	22	43	42	35	23	18	34	32	40	5.7
25-Feb	47	26	17	353	357	355	356	1	2	7	8	11	5	7	5	3	7	12	15	28	15	9	13	6	8.6
26-Feb	4	5	6	7	5	6	2	5	9	10	352	353	333	338	356	12	72	124	144	210	239	292	304	291	358.6
27-Feb	292	289	281	274	241	215	233	238	217	184	299	279	279	269	271	267	215	173	118	129	148	142	126	128	240.5
28-Feb	134	174	137	148	136	132	134	132	123	131	115	113	120	123	121	128	131	141	143	139	134	120	121	120	128.6
29-Feb	113	114	113	108	108	107	107	112	112	117	116	116	131	132	146	151	192	236	253	276	296	272	276	279	122.0
308.6	315.7	334.3	315.5	317.2	328.8	338.0	331.4	336.2	342.8	12.3	342.0	310.8	307.4	334.3	339.8	349.5	350.1	325.7	308.4	306.8	315.9	315.8	317.3		
Diurnal Average																									
All monthly, daily, and diurnal averages have been calculated using vector methods																									



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Patricia McInnes - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 90 deg on Feb 19 10:00 Minimum Value: 6 deg on Feb 29 23:00 Percentiles: P ₁ = 7 P ₁₀ = 10 Q ₁ = 12 Median = 15 Q ₃ = 21 P ₉₀ = 36 P ₉₉ = 75																			Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	13	13	12	12	12	12	12	12	9	12	12	19	16	15	40	14	38	21	9	27	64	12	12	17	64	
2-Feb	14	12	11	12	12	14	14	14	14	15	16	11	16	15	16	22	14	10	11	12	11	12	22	13	22	
3-Feb	13	46	52	32	24	15	15	10	12	10	12	12	11	10	34	15	18	12	9	10	13	53	35	36	53	
4-Feb	65	19	13	9	11	12	11	9	12	19	18	17	23	18	40	19	14	11	11	11	11	11	11	44	65	
5-Feb	37	24	64	42	48	23	19	14	15	14	16	17	14	14	14	15	14	15	15	13	10	13	13	9	64	
6-Feb	10	13	15	19	34	13	14	14	15	14	14	14	15	12	13	13	13	13	13	13	13	13	13	13	34	
7-Feb	14	13	14	12	15	14	13	14	20	19	58	34	75	34	21	29	26	28	31	11	15	12	13	12	75	
8-Feb	12	12	13	12	18	15	16	12	21	55	41	69	31	40	20	42	32	22	67	52	30	13	9	9	69	
9-Feb	10	10	13	10	10	12	9	8	10	26	12	15	29	54	45	74	15	37	16	15	11	9	10	51	74	
10-Feb	25	27	23	17	16	15	17	11	14	15	14	15	15	15	13	13	12	22	38	18	11	15	18	21	38	
11-Feb	10	8	9	10	9	10	35	18	19	14	17	12	13	12	14	12	19	17	24	6	9	8	9	20	35	
12-Feb	12	18	11	13	11	10	15	13	17	27	19	13	19	14	14	12	15	8	12	10	11	10	15	15	27	
13-Feb	18	15	15	15	13	16	16	21	13	17	16	16	59	38	26	21	12	17	18	38	15	14	16	17	59	
14-Feb	13	16	16	14	14	14	12	14	16	15	15	21	22	16	16	20	12	11	12	11	9	7	9	13	22	
15-Feb	20	10	22	15	12	10	10	13	13	14	49	13	24	30	16	13	32	25	19	8	10	10	10	14	49	
16-Feb	9	8	8	9	9	9	11	10	10	10	11	12	11	12	11	12	12	11	11	12	25	17	9	7	25	
17-Feb	7	6	6	6	10	11	17	25	20	30	29	25	19	18	13	16	15	28	39	10	44	43	39	77	77	
18-Feb	84	86	42	50	54	85	23	19	58	55	27	17	18	38	34	19	23	13	16	20	12	13	12	15	86	
19-Feb	29	12	14	13	11	11	15	25	15	90	56	57	22	25	25	35	19	12	15	11	13	10	12	23	90	
20-Feb	23	22	21	19	27	29	32	59	23	24	39	47	35	45	34	21	24	32	57	15	16	18	15	14	59	
21-Feb	16	21	9	17	15	33	56	13	30	13	13	14	12	11	13	13	10	11	6	7	7	7	10	9	56	
22-Feb	42	20	66	24	8	7	11	24	30	33	80	22	13	20	21	24	25	23	58	51	64	70	34	13	80	
23-Feb	24	10	7	10	8	8	13	12	20	11	10	15	12	13	13	13	11	14	14	24	10	13	11	11	24	
24-Feb	10	11	18	15	15	17	18	14	27	23	20	17	20	19	16	18	21	19	16	13	14	11	10	10	27	
25-Feb	14	24	16	14	15	14	14	15	15	14	16	20	17	18	18	15	14	11	11	12	14	14	13	14	24	
26-Feb	16	14	14	14	13	14	16	15	13	18	20	19	18	32	27	68	25	19	21	25	74	11	7	14	74	
27-Feb	10	13	22	9	30	13	12	9	15	76	16	22	30	39	58	48	47	20	14	12	15	29	11	15	76	
28-Feb	10	31	13	13	13	12	14	12	13	15	15	14	13	15	15	15	16	15	13	15	14	12	12	12	31	
29-Feb	13	13	13	13	12	14	13	14	14	14	15	15	22	27	18	21	32	19	12	21	20	7	6	8	32	
	84	86	66	50	54	85	56	59	58	90	80	69	75	54	58	74	47	37	67	52	74	70	39	77		
Diurnal Maximum																										





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS07 ATHABASCA VALLEY FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ATHABASCA VALLEY (AMS07)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	660	34	36	99.71	38.6	0	6.9	0
TRS (ppb) Average	660	34	36	99.71	2	0	0.8	0
THC (ppm) Average	607	35	89	92.24	3.2	-	2.5	-
NMHC (ppm) Average	607	35	89	92.24	0.3	-	0.11	-
CH4(ppm) Average	607	35	89	92.24	2.9	-	2.3	-
O3 (ppb) Average	660	34	36	99.71	44.5	0	32.6	-
NO2 (ppb) Average	661	35	35	100	37.1	0	20.6	-
NO (ppb) Average	661	35	35	100	60.3	-	24.5	-
NOX (ppb) Average	661	35	35	100	87.1	-	45.1	-
PM2.5 (ug/m3) Average	693	3	3	100	62.7	0	15.2	0
CO(ppm) Average	661	33	35	99.71	0.6	0	0.3	-
Temperature 2 m (C) Average	696	0	0	100	9.5	-	2.1	-
Relative Humidity (%) Average	696	0	0	100	95	-	90.8	-
Barometric Pressure (inHg) Average	696	0	0	100	29.5	-	29.4	-
Wind Speed 10 m (km/h) Average	695	0	1	99.86	30	-	16	-
Wind Direction 10 m (deg) Average	695	0	1	99.86	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ATHABASCA VALLEY (AMS07)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	660	0.99	2.8	-	0	0.1	0.1	0.2	0.6	2.3	38.6
TRS (ppb) Average	660	0.32	0.3	-	0.1	0.1	0.2	0.2	0.4	0.7	2
THC (ppm) Average	607	2.05	0.2	-	1.9	2	2	2	2.1	2.2	3.2
NMHC (ppm) Average	607	0.008	0.039	-	0	0	0	0	0	0	0.3
CH4(ppm) Average	607	2.04	0.1	-	1.9	2	2	2	2.1	2.2	2.9
O3 (ppb) Average	660	21.14	11.7	-	2.1	4.8	11	21.6	31.4	36.6	44.5
NO2 (ppb) Average	661	10.99	8	-	0.2	3	4.7	8.8	15.2	24.1	37.1
NO (ppb) Average	661	5.5	9.7	-	0	0.1	0.6	1.8	5.1	16	60.3
NOX (ppb) Average	661	16.48	16.3	-	0.2	3.4	5.9	11.2	19.8	39.8	87.1
PM2.5 (ug/m3) Average	693	6.08	5.2	-	0.7	2	3.1	4.7	7.4	12	62.7
CO(ppm) Average	661	0.18	0.1	-	0.1	0.1	0.1	0.2	0.2	0.3	0.6
Temperature 2 m (C) Average	696	-9.07	7.3	-	-27.4	-18.3	-14.2	-8.8	-4.5	0.8	9.5
Relative Humidity (%) Average	696	68.88	14.2	-	30.5	48.2	59.7	71.5	79.5	84.5	95
Barometric Pressure (inHg) Average	696	28.98	0.2	-	28.5	28.6	28.8	29	29.2	29.3	29.5
Wind Speed 10 m (km/h) Average	695	7.7	5	-	0	2	3	6	11	16	30
Wind Direction 10 m (deg) Average	695	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ATHABASCA VALLEY (AMS07)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
SO2, TRS, THC/NMHC/CH4, CO, O3	27 Feb 2024 15:00	27 Feb 2024 16:00	2	Maintenance - sample manifold cleaned
THC/NMHC/CH4	17 Feb 2024 01:00	17 Feb 2024 11:00	11	Unstable Operations - flatline in analyzer output signal
THC/NMHC/CH4	17 Feb 2024 12:00	17 Feb 2024 13:00	2	Maintenance - analyzer rebooted
THC/NMHC/CH4	18 Feb 2024 09:00	18 Feb 2024 13:00	5	Unstable Operations - flatline in analyzer output signal
THC/NMHC/CH4	18 Feb 2024 14:00	18 Feb 2024 14:00	1	Maintenance - analyzer rebooted
THC/NMHC/CH4	19 Feb 2024 03:00	19 Feb 2024 11:00	9	Unstable Operations - flatline in analyzer output signal
THC/NMHC/CH4	19 Feb 2024 12:00	20 Feb 2024 11:00	24	Maintenance - replaced analyzer
Wind Speed, Wind Direction	03 Feb 2024 04:00	03 Feb 2024 04:00	1	Flat line in sensor output signal



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

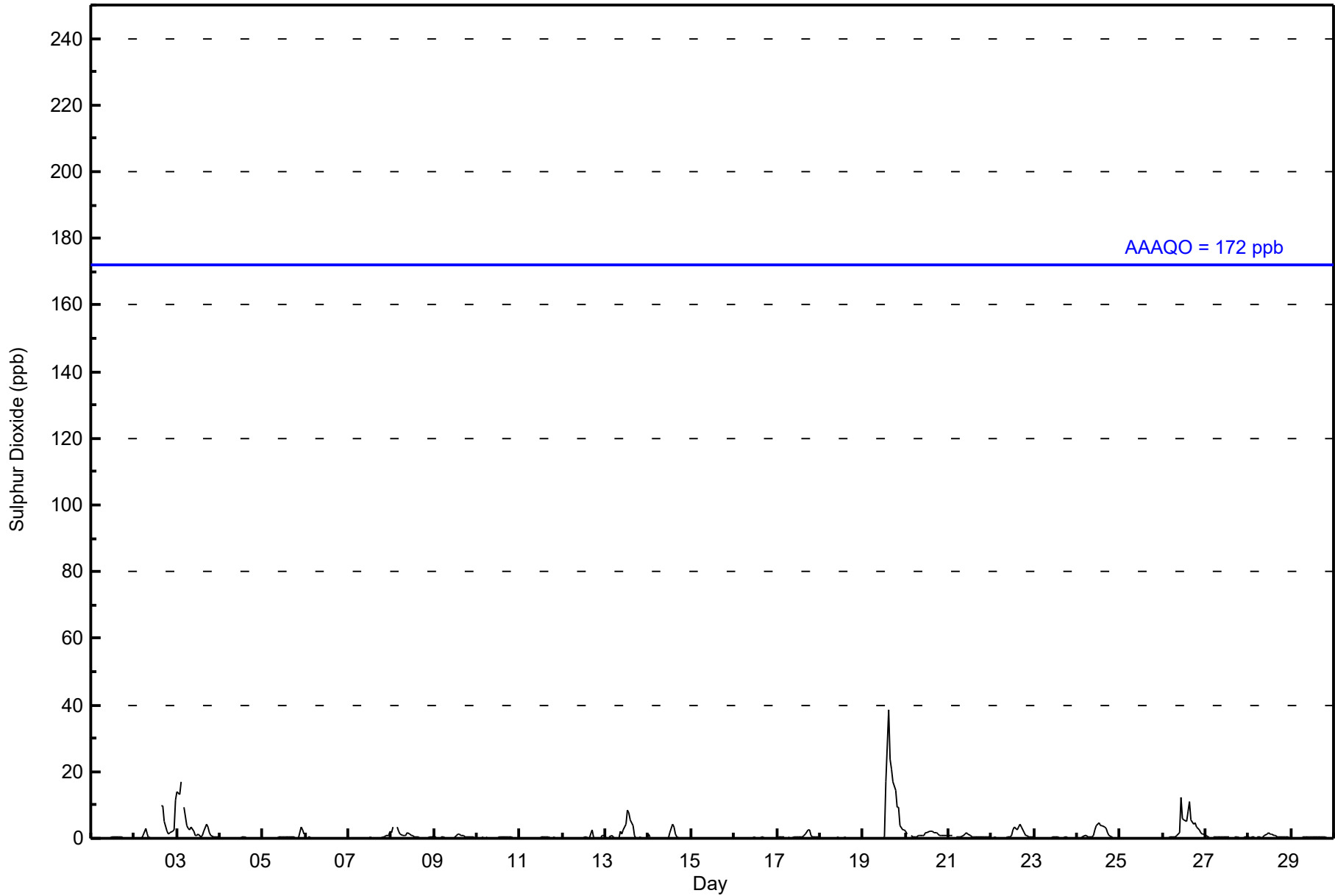
Athabasca Valley - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	696																											
Maximum Value: 38.6 ppb on Feb 19 15:00		Maximum Daily Average: 6.9 ppb on Feb 19																	Hours of Data: 660																													
Minimum Value: 0.0 ppb on Feb 2 01:00		Minimum Daily Average: 0.1 ppb on Feb 25																	Hours of Missing Data: 36																													
Maximum Diurnal Average: 2.6 ppb at hour 15		Minimum Diurnal Average: 0.3 ppb at hour 8																	Hours of Calibration: 34																													
Monthly Average: 0.99 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.6 P ₉₀ = 2.3 P ₉₉ = 14.3																	Percent Operational Time: 99.7																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.5	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.5																						
2-Feb	0.0	0.0	Z	0.1	0.2	0.9	3.1	1.2	0.2	0.3	C	C	C	C	C	9.8	9.8	5.1	2.1	1.2	1.6	1.9	2.4	11.4	2.9	11.4																						
3-Feb	14.1	13.0	16.8	Z	9.1	3.7	3.1	2.5	3.2	2.2	0.8	0.9	1.4	0.3	0.7	2.1	4.2	3.6	1.9	0.7	0.6	0.3	0.4	0.2	3.7	16.8																						
4-Feb	0.2	0.2	0.1	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.2																						
5-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.2	0.6	0.3	0.3	0.2	0.1	0.1	3.2	2.5	1.2	0.5	3.2																						
6-Feb	Z	0.4	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4																					
7-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.5	0.8	1.0	2.0	0.3	2.0																						
8-Feb	1.9	3.2	Z	3.6	2.1	1.2	1.0	1.0	0.9	1.6	1.3	1.0	0.7	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	1.0	3.6																						
9-Feb	0.8	0.2	0.1	Z	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.7	1.3	1.2	0.9	0.7	0.5	0.4	0.4	0.3	0.5	0.3	0.1	0.4	1.3																						
10-Feb	0.1	0.1	0.1	0.6	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.5	0.5	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.6																						
11-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.2	0.1	0.2	0.2	0.2	0.2	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.4																						
12-Feb	Z	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	2.4	0.5	0.2	0.1	0.1	0.1	0.8	0.8	0.3	2.4																						
13-Feb	0.2	Z	0.4	0.9	0.6	0.1	0.1	0.2	2.3	1.3	2.7	4.4	8.3	7.4	5.6	3.9	0.7	0.2	0.2	0.2	0.1	0.1	0.1	0.0	1.7	8.3																						
14-Feb	1.4	0.4	Z	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.2	1.5	4.3	3.2	1.3	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.6	4.3																						
15-Feb	0.1	0.1	0.1	Z	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2																						
16-Feb	0.1	0.1	0.1	0.0	Z	0.1	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2																						
17-Feb	0.2	0.2	0.3	0.3	0.3	Z	0.3	0.1	0.2	0.3	0.3	0.3	0.3	0.5	0.4	0.9	1.3	2.5	2.4	1.0	0.5	0.5	0.4	0.3	0.6	2.5																						
18-Feb	Z	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.2																						
19-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	17.2	38.6	23.7	20.6	16.8	14.5	9.3	9.2	3.8	2.7	2.6	6.9	38.6																						
20-Feb	2.2	1.1	Z	0.8	0.6	0.6	0.6	0.8	0.8	0.8	1.0	1.5	1.7	2.0	2.2	2.0	1.9	1.5	1.2	0.8	0.7	0.7	0.9	0.8	1.2	2.2																						
21-Feb	0.7	0.7	0.7	Z	0.4	0.4	0.3	0.2	0.9	1.2	1.7	1.5	0.9	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.6	1.7																						
22-Feb	0.2	0.2	0.2	0.1	Z	0.1	0.0	0.0	0.1	0.2	0.4	0.7	2.6	3.3	2.7	3.4	4.1	3.4	1.6	0.9	0.7	0.4	0.4	0.4	1.1	4.1																						
23-Feb	0.2	0.2	0.2	0.2	0.2	Z	0.2	0.1	0.1	0.1	0.2	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.4	0.4																						
24-Feb	Z	0.1	0.0	0.4	0.9	0.7	0.6	0.4	0.4	0.7	2.4	3.6	4.8	3.7	4.0	3.6	2.8	1.8	1.0	0.3	0.2	0.2	0.1	0.0	1.4	4.8																						
25-Feb	0.0	Z	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1																						
26-Feb	0.1	0.1	Z	0.2	0.2	0.2	0.3	0.4	1.0	1.9	12.2	5.9	5.5	5.0	8.0	11.0	5.7	4.2	4.7	3.4	2.5	1.6	1.3	1.1	3.3	12.2																						
27-Feb	0.7	0.5	0.2	Z	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.4	0.5	M	M	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.7																						
28-Feb	0.4	0.2	0.3	0.4	Z	0.3	0.2	0.2	0.2	0.7	1.1	1.7	1.5	1.2	0.7	0.6	0.5	0.4	0.5	0.3	0.3	0.3	0.2	0.2	0.5	1.7																						
29-Feb	0.2	0.1	0.2	0.2	0.2	Z	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.3																					
1.0																								0.9	0.9	0.4	0.7	0.4	0.4	0.3	0.4	0.5	1.0	0.9	1.2	1.8	2.6	2.4	2.0	1.5	1.2	0.7	0.7	0.6	0.5	0.8	Diurnal Average	
14.1																								13.0	16.8	3.6	9.1	3.7	3.1	2.5	3.2	2.2	12.2	5.9	8.3	17.2	38.6	23.7	20.6	16.8	14.5	9.3	9.2	3.8	2.7	11.4	Diurnal Maximum	
Z - zerspan C - Calibration M - Maintenance																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																																																



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Athabasca Valley - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Athabasca Valley - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	648	98.18	98.18
11 - 20	9	1.36	99.55
21 - 60	3	0.45	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Athabasca Valley - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	48	17	11	15	11	57	79	33	18	40	37	39	39	24	42	138	648
11 - 20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	9
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	50	17	11	15	11	57	79	33	18	40	37	39	39	24	46	144	660

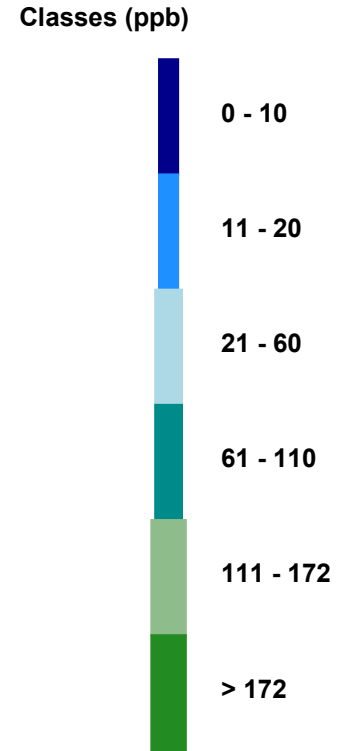
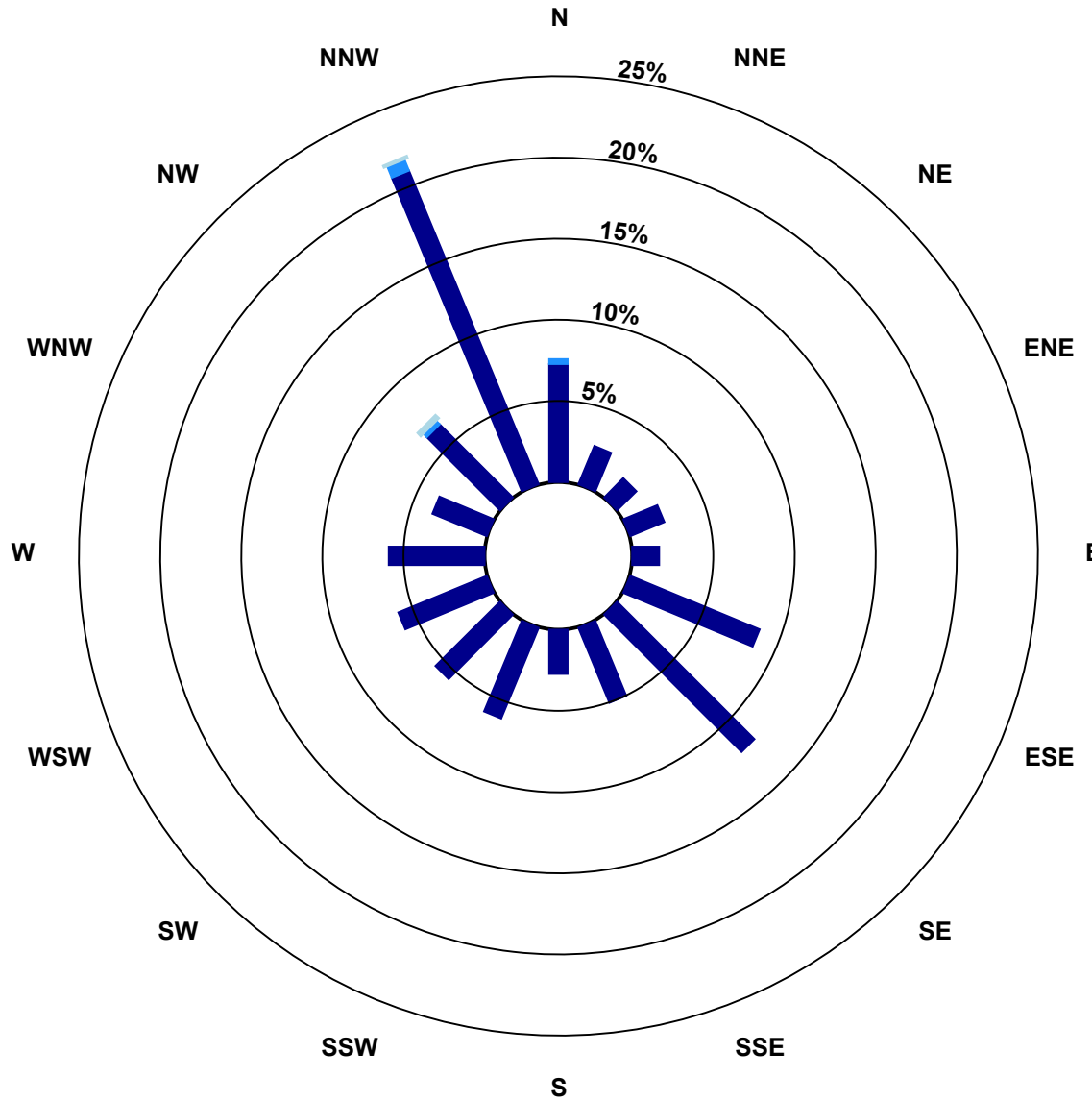
Total Number of Valid Hours: 660

Total Number of Hours: 696

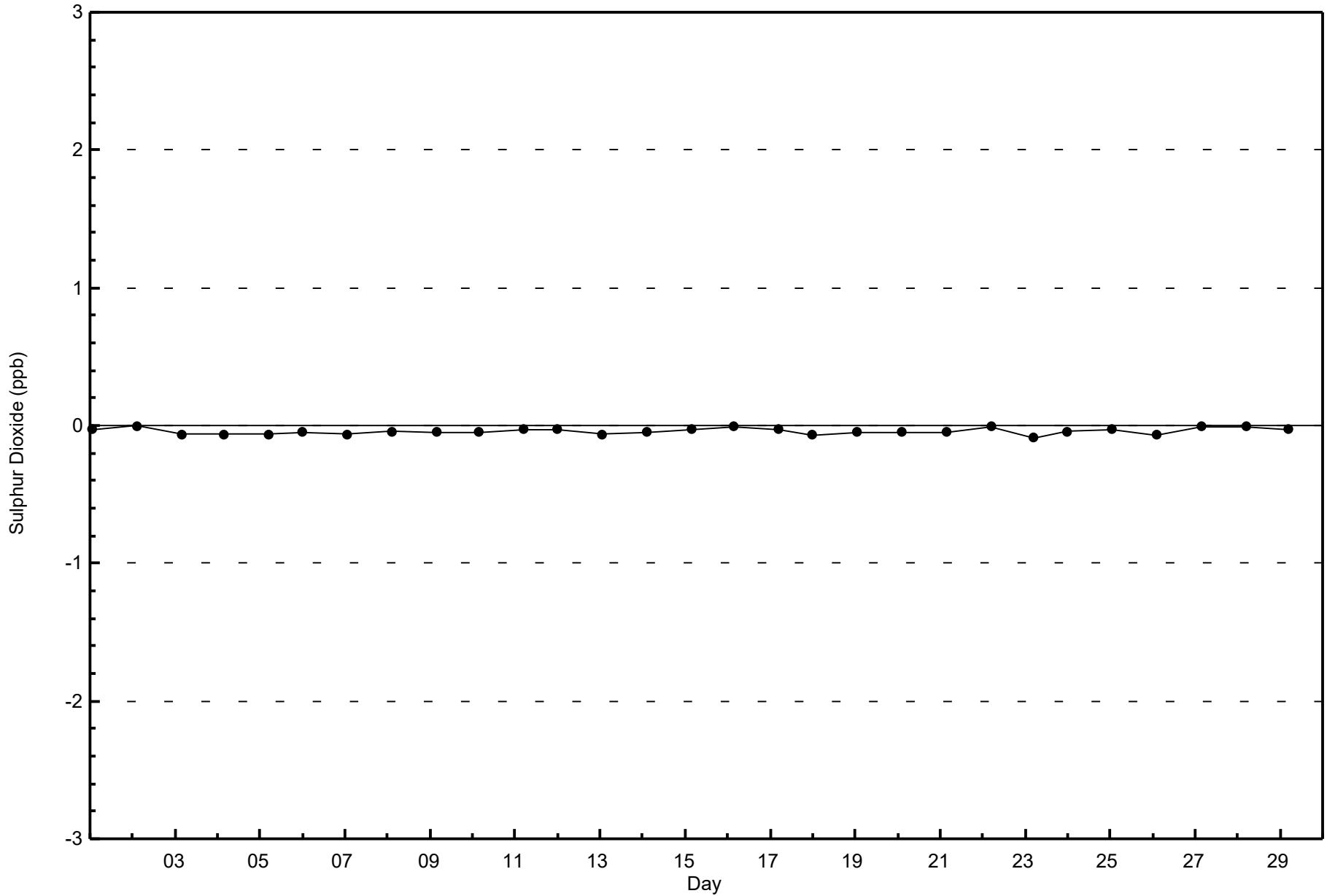


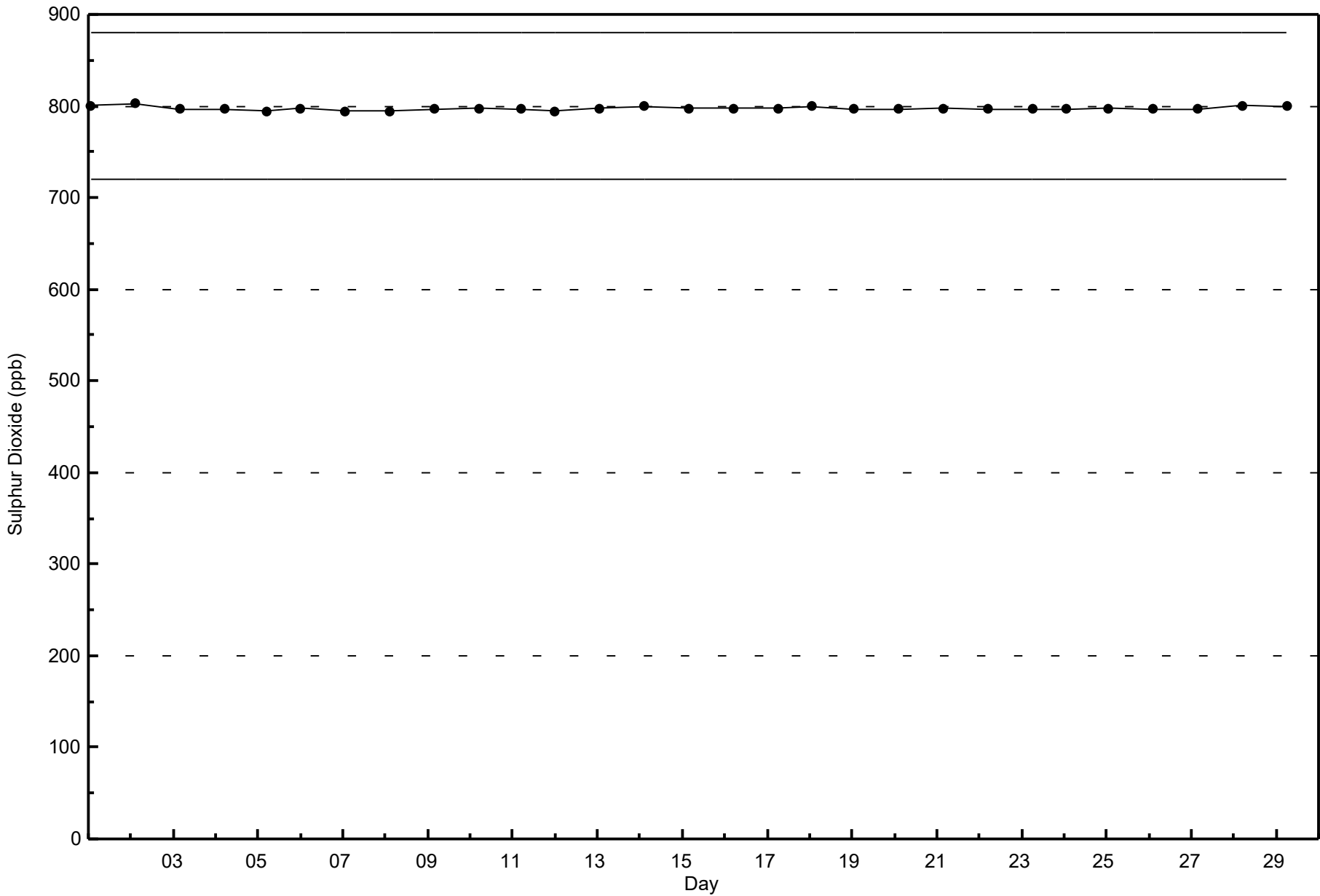
Wood Buffalo Environmental Association
Wind Rose Feb 2024

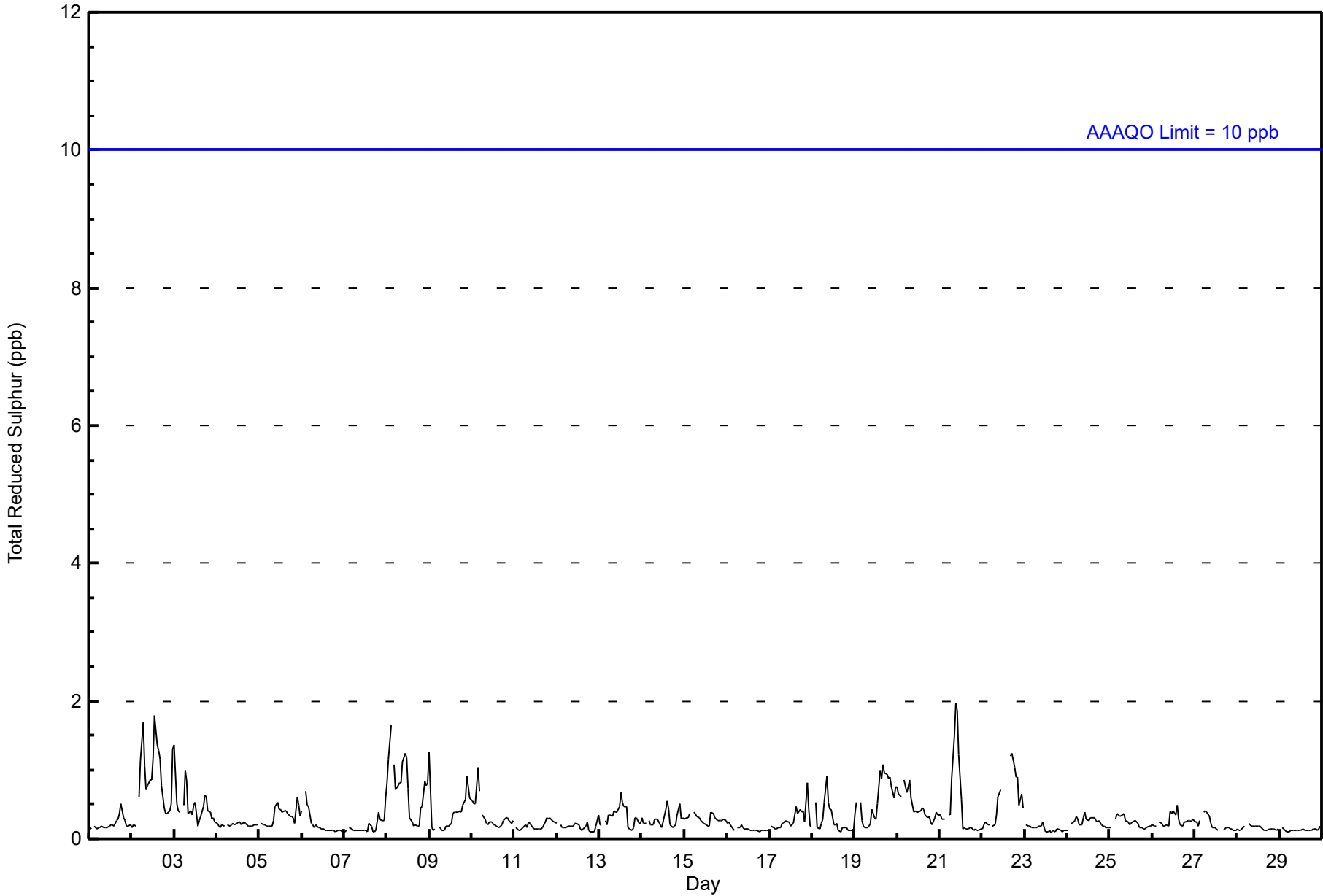
Sulphur Dioxide (SO₂) - ppb
Athabasca Valley



Total Number of Valid Hours: 660









**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Athabasca Valley - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	660	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Athabasca Valley - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	52	18	10	16	11	56	80	33	18	40	37	40	41	23	44	140	659
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	52	18	10	16	11	56	80	33	18	40	37	40	41	23	44	140	659

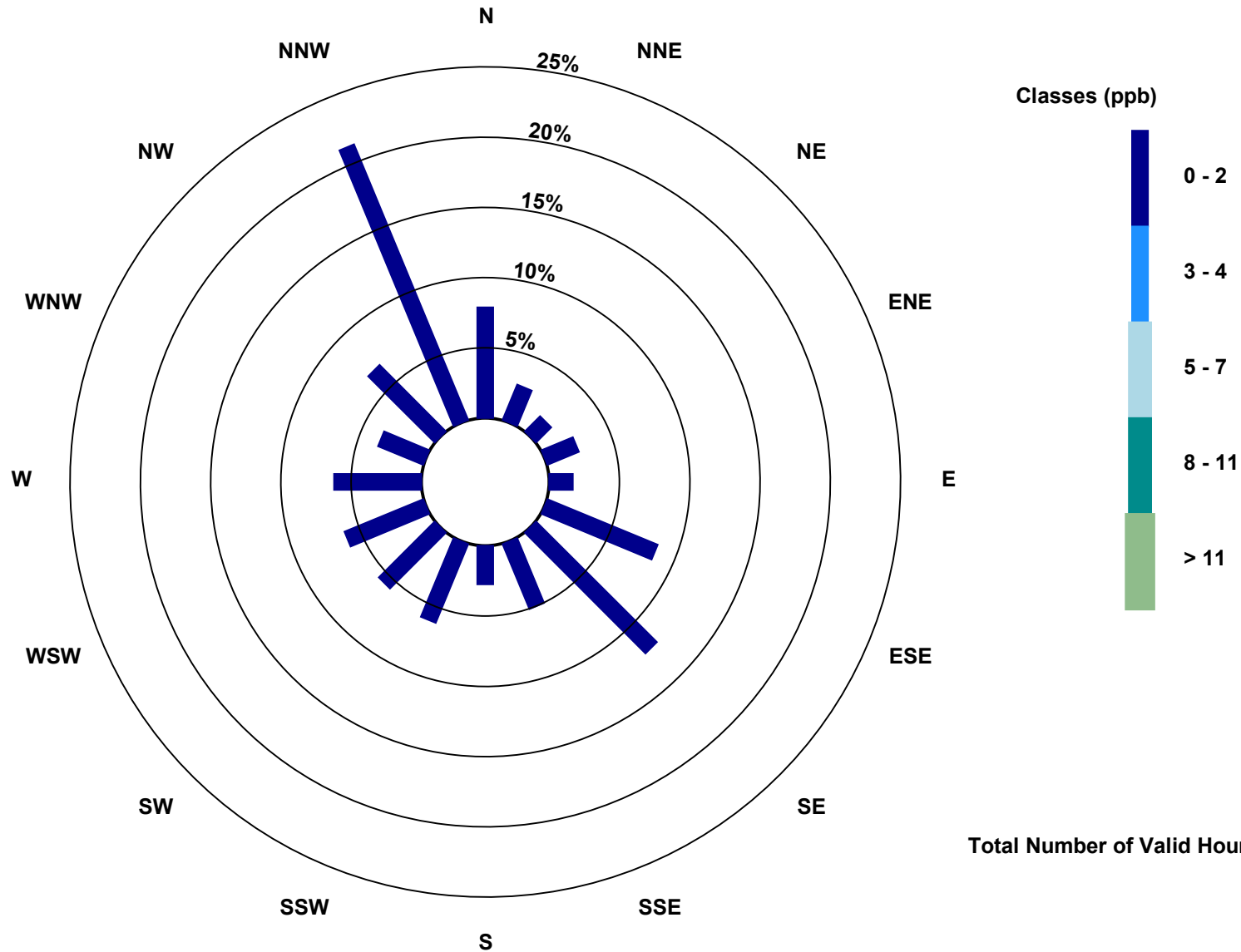
Total Number of Valid Hours: 659

Total Number of Hours: 696

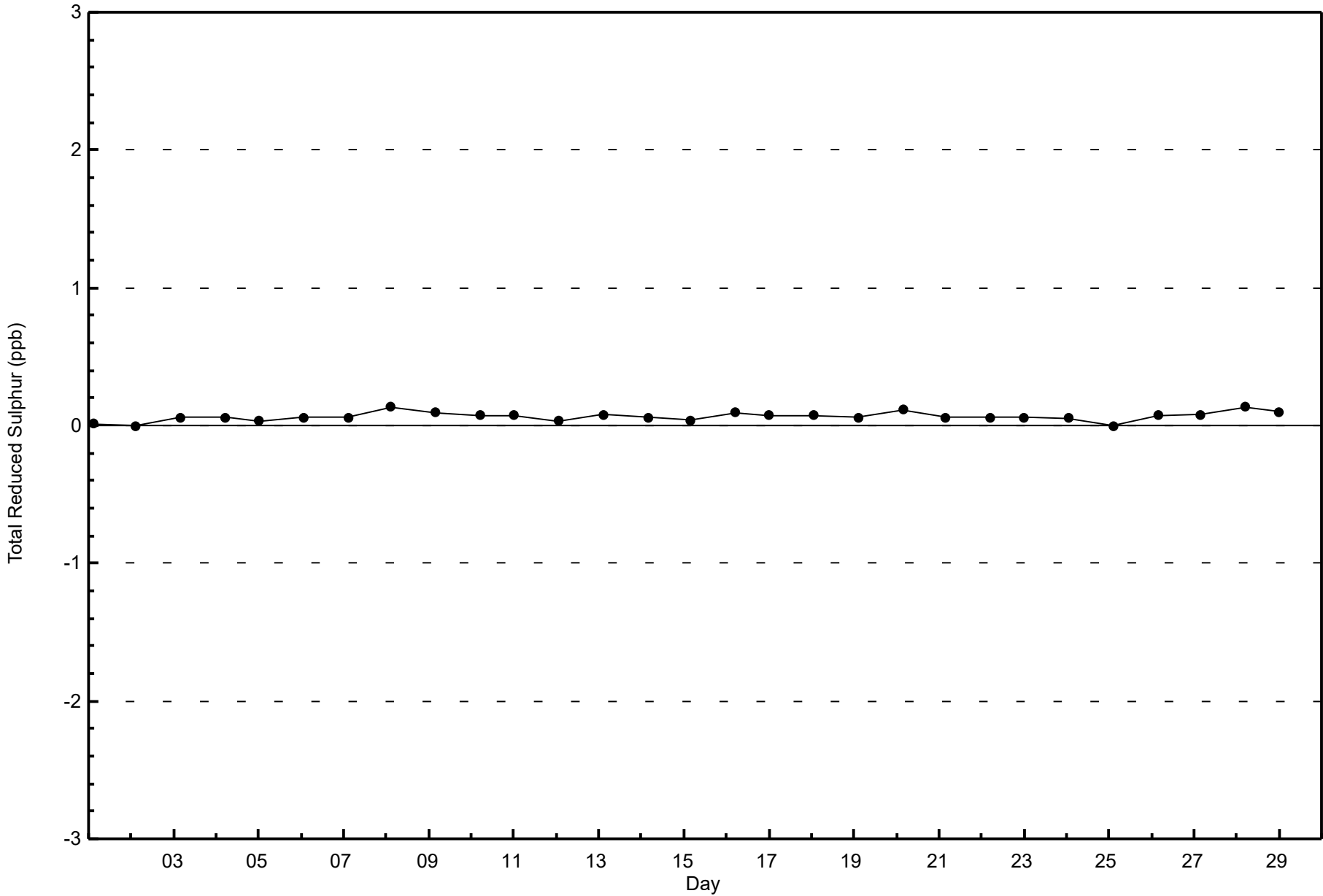


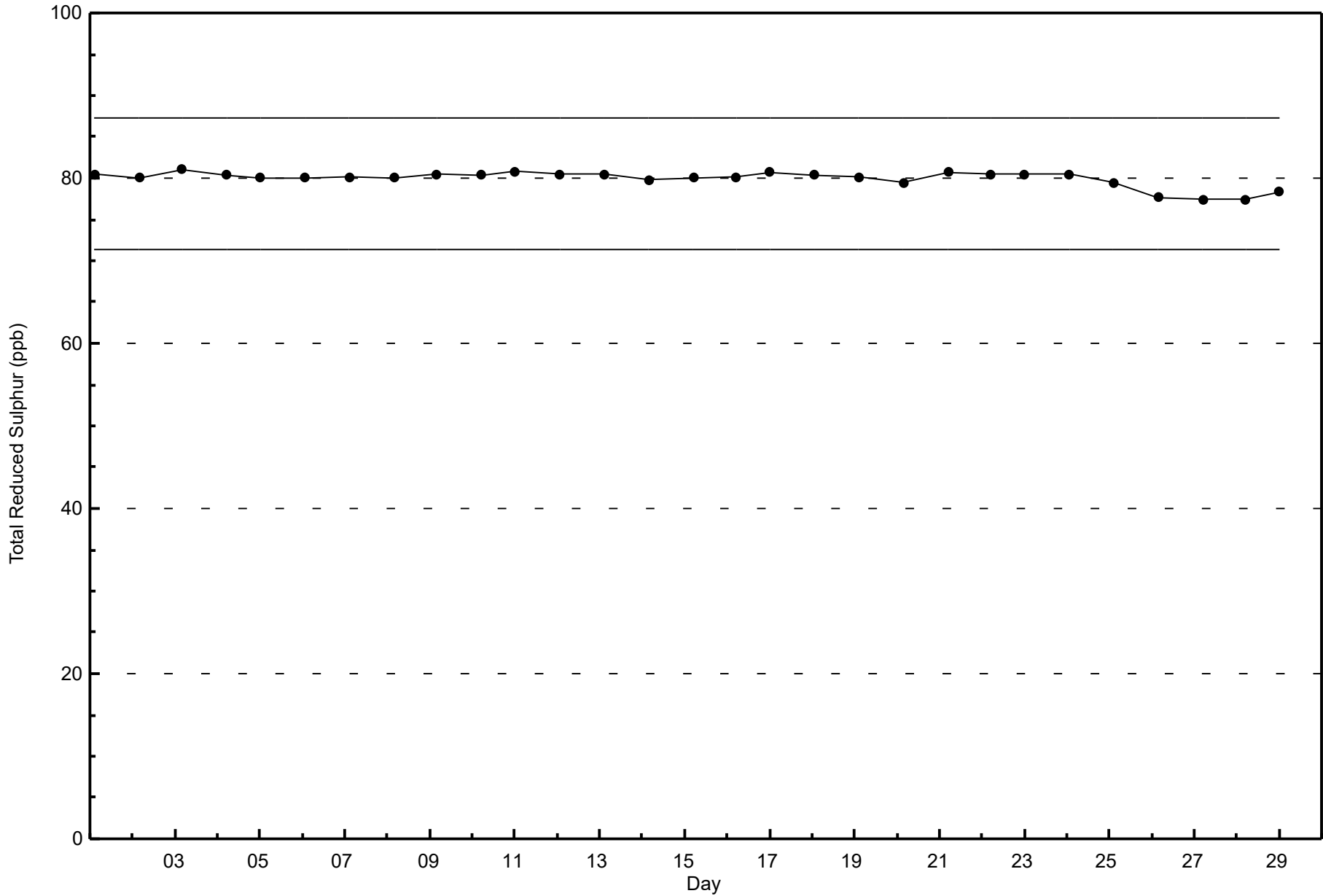
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Reduced Sulphur (TRS) - ppb
Athabasca Valley



Total Number of Valid Hours: 659







Wood Buffalo Environmental Association
Summary of Hour Averages

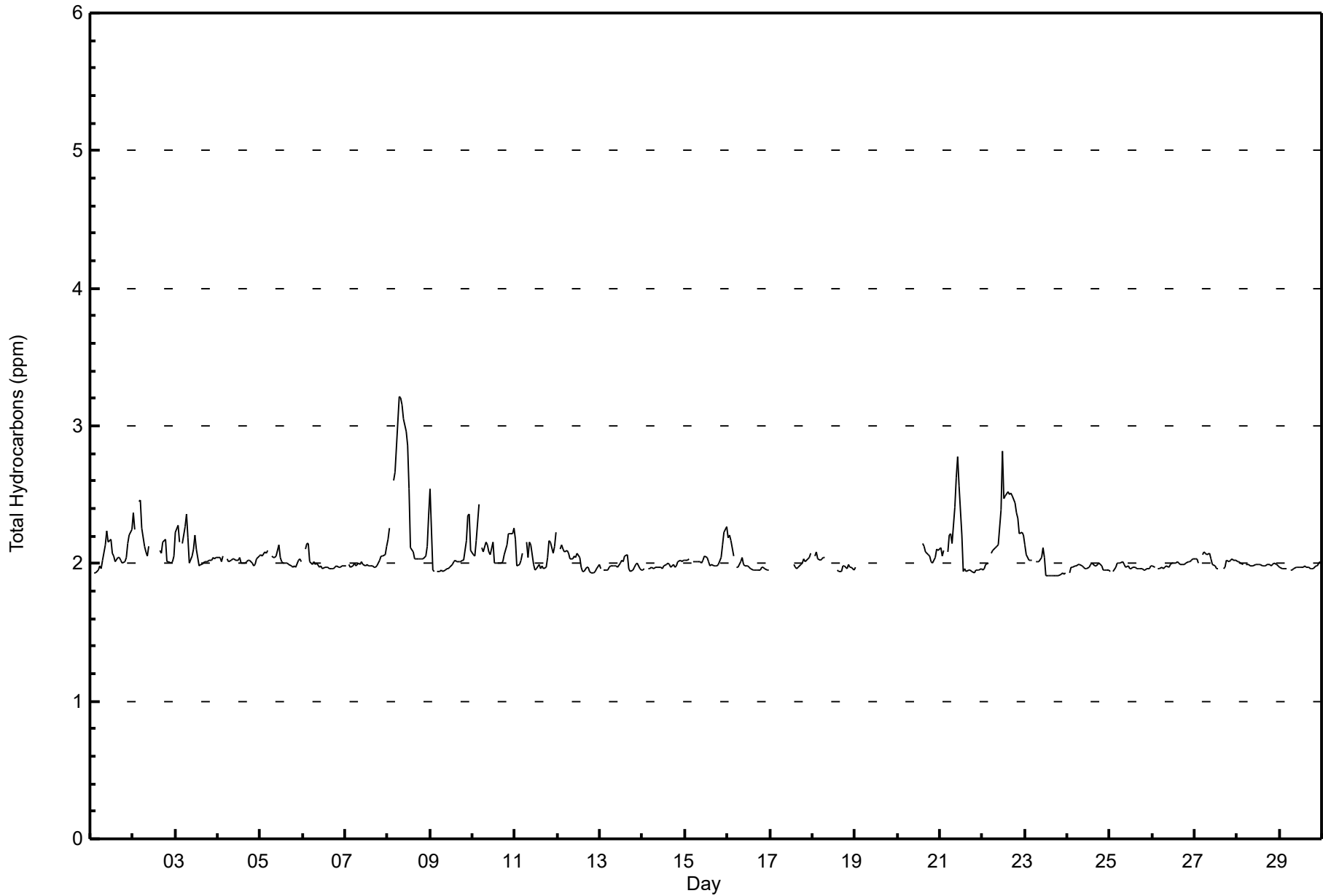
Total Hydrocarbons (THC) - ppm
Athabasca Valley - February 2024

Maximum Value: 3.2 ppm on Feb 8 07:00		Maximum Daily Average: 2.5 ppm on Feb 8		Hours in Service: 696																									
Minimum Value: 1.9 ppm on Feb 23 16:00		Minimum Daily Average: 2.0 ppm on Feb 29		Hours of Data: 607																									
Maximum Diurnal Average: 2.1 ppm at hour 12		Minimum Diurnal Average: 2.0 ppm at hour 17		Hours of Missing Data: 89																									
Monthly Average: 2.05 ppm		Percentiles: P ₁ = 1.9 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.0 Q ₃ = 2.1 P ₉₀ = 2.2 P ₉₉ = 2.8		Hours of Calibration: 35																									
				Percent Operational Time: 92.2																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Feb	1.9	Z	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.1	2.2			
2-Feb	2.4	2.2	Z	2.5	2.5	2.3	2.1	2.1	2.1	2.1	C	C	C	C	C	2.1	2.1	2.2	2.2	2.0	2.0	2.0	2.0	2.1	2.2	2.5			
3-Feb	2.2	2.3	2.2	Z	2.1	2.3	2.4	2.2	2.0	2.1	2.1	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.4			
4-Feb	2.0	2.0	2.0	2.1	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1			
5-Feb	2.1	2.1	2.1	2.1	2.1	Z	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1			
6-Feb	Z	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1			
7-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.1			
8-Feb	2.2	2.3	Z	2.6	2.7	2.8	3.2	3.2	3.1	3.1	3.0	2.9	2.5	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.3	2.5	3.2			
9-Feb	2.5	2.0	1.9	Z	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.4	2.4	2.1	2.1	2.5			
10-Feb	2.1	2.1	2.2	2.4	Z	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.3	2.1	2.4			
11-Feb	2.2	2.0	2.0	2.0	2.1	Z	2.2	2.0	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.1	2.1	2.2	2.1	2.2			
12-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.1	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1			
13-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1			
14-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0			
15-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.3	2.0	2.3			
16-Feb	2.2	2.2	2.2	2.1	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2			
17-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	--	2.1				
18-Feb	Z	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	--	2.1			
19-Feb	2.0	Z	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	M	M	M	M	M	M	M	M	M	M	--	2.0		
20-Feb	M	M	M	M	M	M	M	M	M	M	M	M	C	C	C	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	--	2.1	
21-Feb	2.1	2.1	2.1	Z	2.1	2.2	2.2	2.1	2.4	2.6	2.8	2.6	2.2	1.9	2.0	1.9	1.9	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.8			
22-Feb	2.0	2.0	2.0	2.0	Z	2.1	2.1	2.1	2.1	2.1	2.4	2.8	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.3	2.2	2.2	2.2	2.3	2.8		
23-Feb	2.1	2.1	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1		
24-Feb	Z	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0		
25-Feb	1.9	Z	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0		
26-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
27-Feb	2.0	2.0	2.0	Z	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	M	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1		
28-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
29-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
																								Diurnal Average					
																								Diurnal Maximum					
																								2.1 2.1 2.0 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.1 2.1					
																								2.5 2.3 2.2 2.6 2.7 2.8 3.2 3.2 3.1 3.1 3.0 2.9 2.5 2.5 2.5 2.5 2.5 2.5 2.4 2.4 2.3 2.4 2.4 2.3					
Z - zerspan																								C - Calibration		M - Maintenance		UO - Unstable Operation	



Wood Buffalo Environmental Association
Hourly Averages

Total Hydrocarbons (THC) - ppm
Athabasca Valley - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Athabasca Valley - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	442	72.82	72.82
2.1 - 3.0	161	26.52	99.34
3.1 - 10.0	4	0.66	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 607

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Athabasca Valley - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	36	16	8	11	7	46	55	16	9	25	23	26	28	17	24	95	442
2.1 - 3.0	10	1	3	3	4	9	20	17	8	11	10	9	5	4	14	33	161
3.1 - 10.0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	47	17	11	14	11	55	75	33	17	36	33	35	33	21	38	131	607

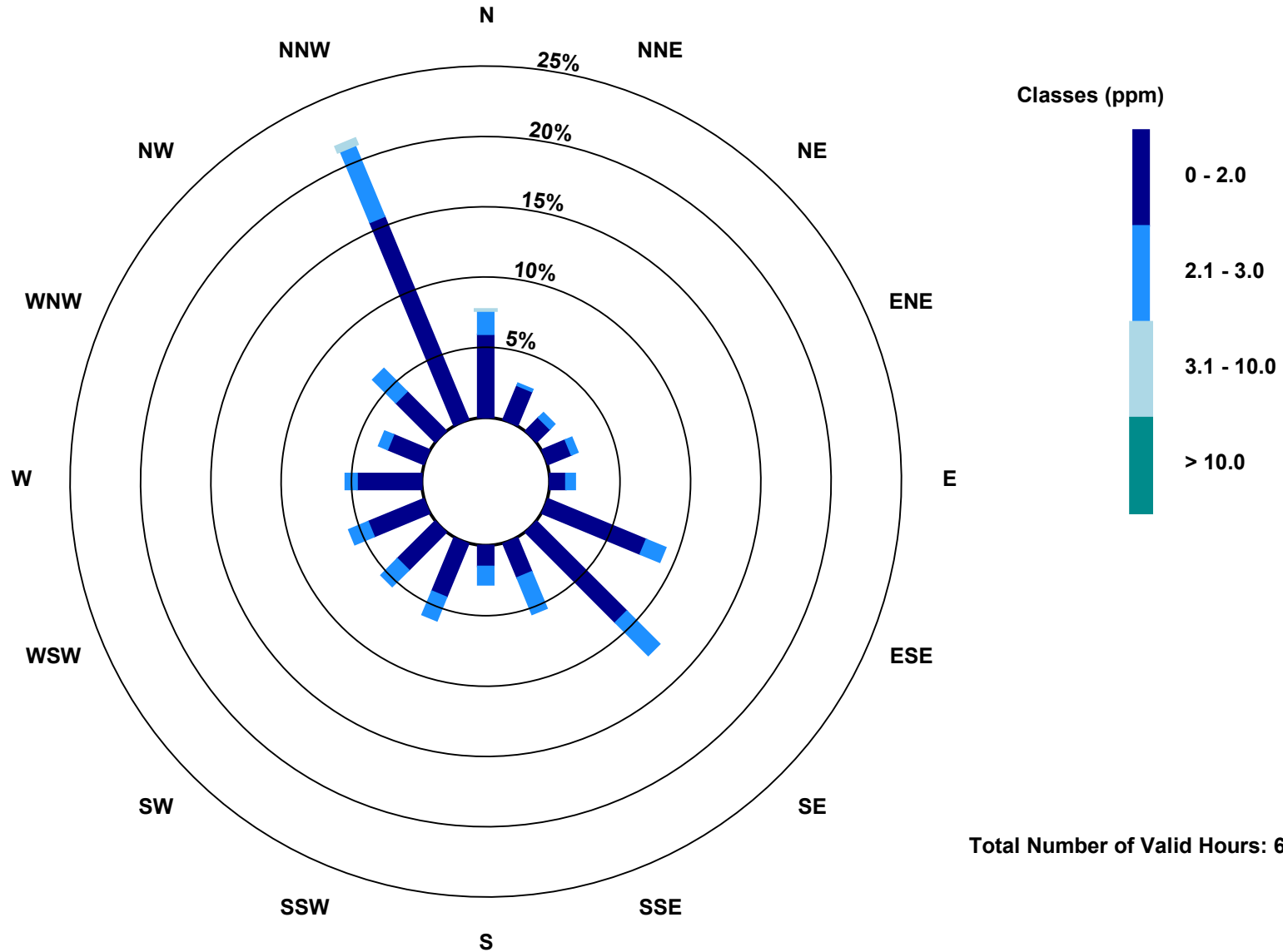
Total Number of Valid Hours: 607

Total Number of Hours: 696

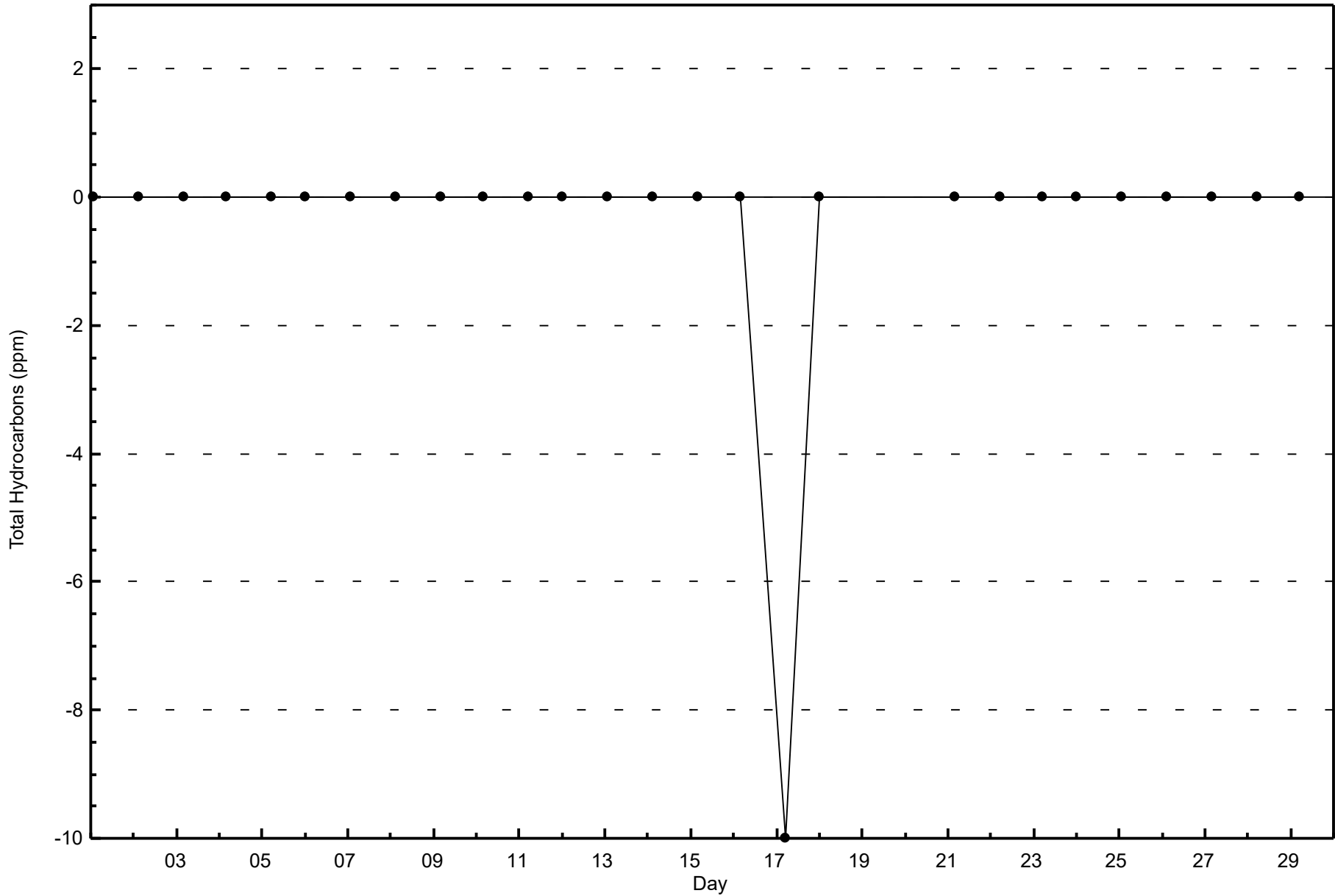


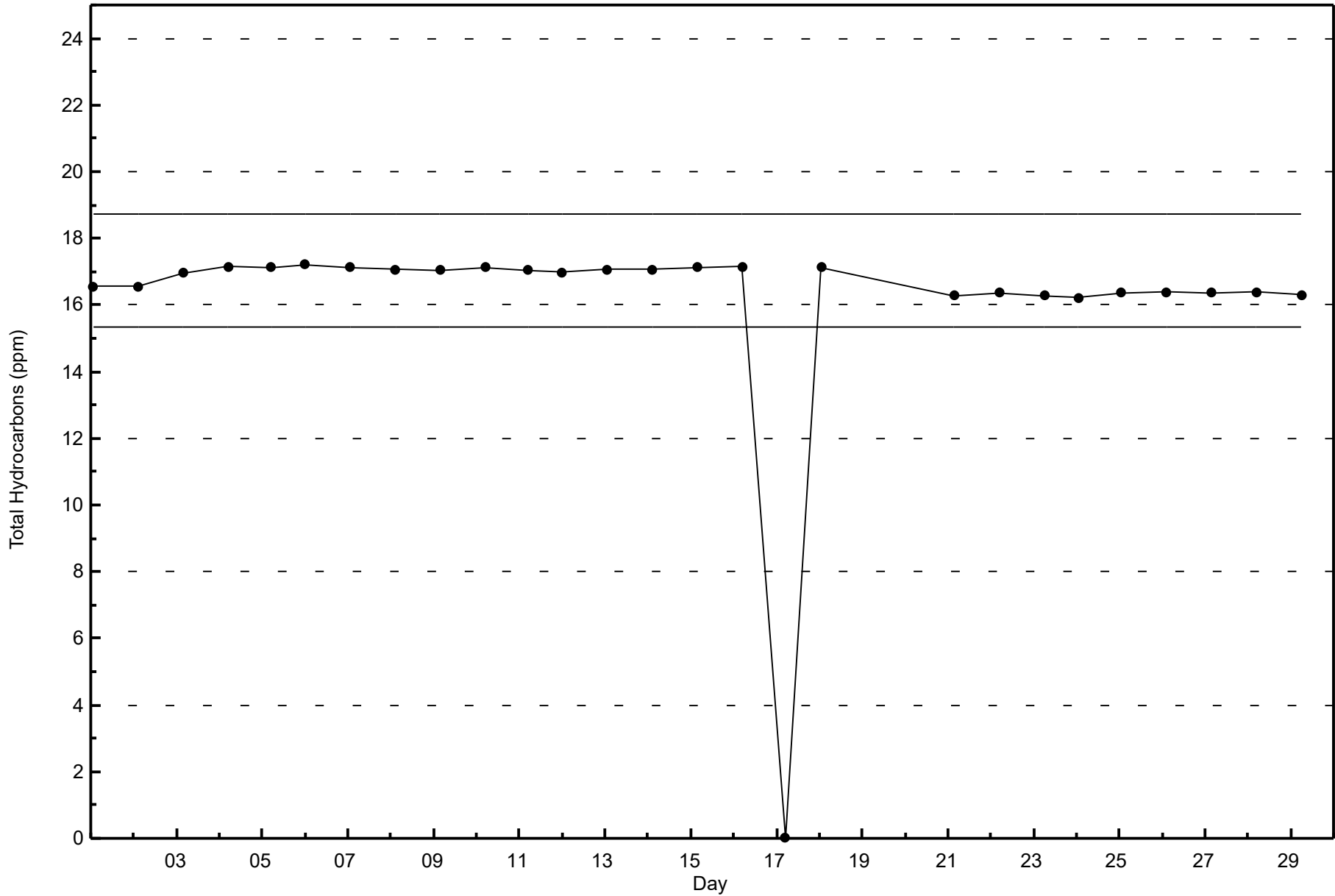
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Athabasca Valley



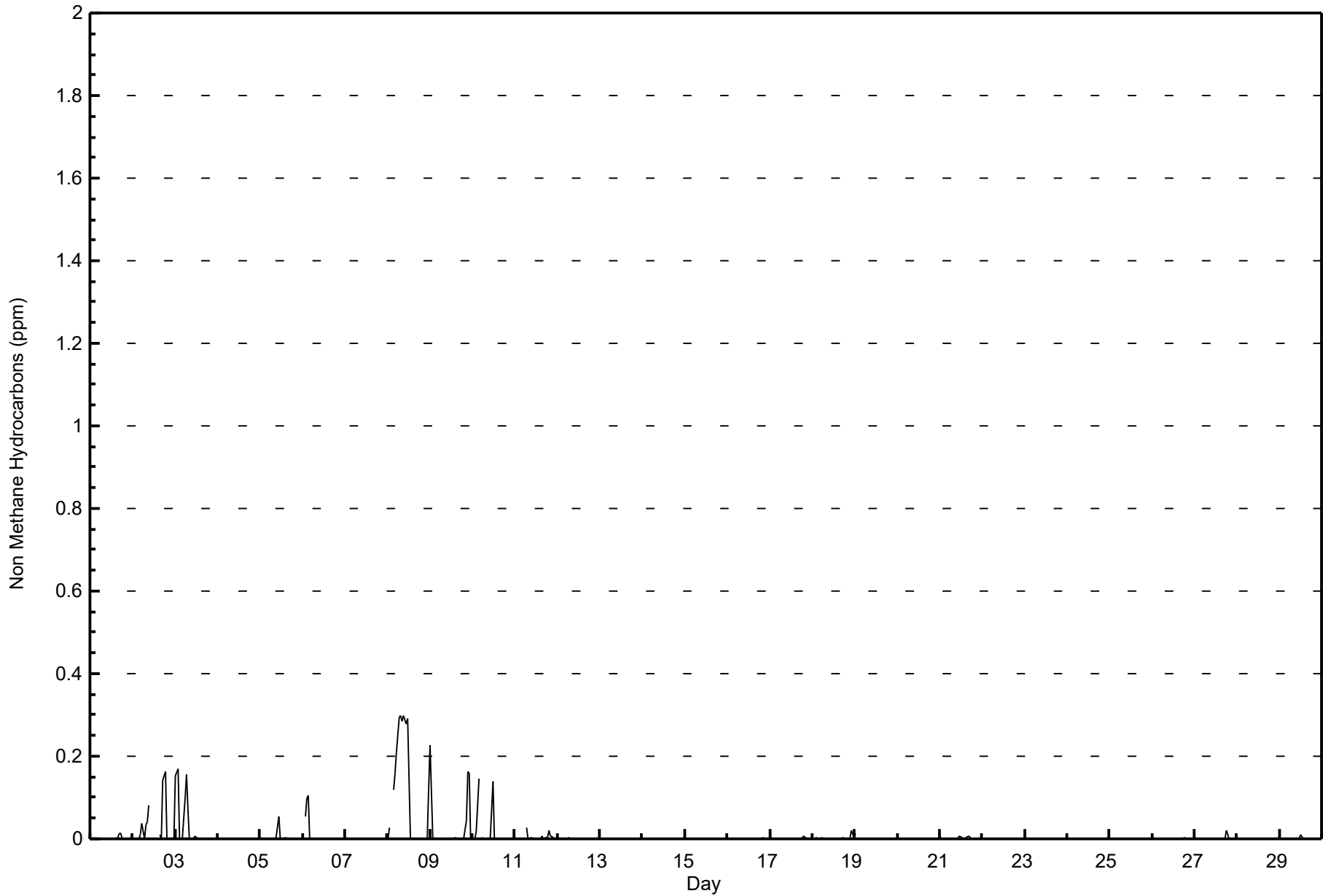
Total Number of Valid Hours: 607







Maximum Value: 0.300 ppm on Feb 8 10:00		Maximum Daily Average: 0.110 ppm on Feb 8		Hours in Service: 696																							
Minimum Value: 0.000 ppm on Feb 1 01:00		Minimum Daily Average: 0.000 ppm on Feb 4		Hours of Data: 607																							
Maximum Diurnal Average: 0.019 ppm at hour 12		Minimum Diurnal Average: 0.000 ppm at hour 14		Hours of Missing Data: 89																							
Monthly Average: 0.008 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.2		Hours of Calibration: 35																							
				Percent Operational Time: 92.2																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.015	
2-Feb	0.000	0.000	Z	0.000	0.009	0.038	0.000	0.032	0.042	0.081	C	C	C	C	C	0.009	0.000	0.141	0.163	0.000	0.000	0.000	0.000	0.000	0.029	0.163	
3-Feb	0.153	0.168	0.000	Z	0.000	0.099	0.156	0.074	0.000	0.000	0.000	0.007	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.029	0.168	
4-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
5-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.002	0.053	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.053	
6-Feb	Z	0.053	0.100	0.105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.105	
7-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
8-Feb	0.000	0.027	Z	0.120	0.158	0.209	0.294	0.299	0.284	0.300	0.278	0.292	0.147	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.120	0.110	0.300	
9-Feb	0.226	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.045	0.162	0.161	0.000	0.226	
10-Feb	0.000	0.000	0.016	0.144	Z	0.004	0.000	0.000	0.000	0.000	0.000	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.144	
11-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.027	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.003	0.005	0.021	0.006	0.005	0.000	0.000	0.003	0.027	
12-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	
13-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
14-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
15-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
16-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.002	
17-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	0.000	0.000	0.000	0.000	0.002	0.005	0.004	0.002	0.000	0.000	--	0.005	
18-Feb	Z	0.000	0.002	0.000	0.000	0.002	0.000	0.000	0.000	UO	UO	UO	UO	UO	M	0.000	0.000	0.000	0.003	0.000	0.000	0.001	0.000	0.020	0.003	--	0.020
19-Feb	0.013	Z	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	M	M	M	M	M	M	M	M	M	M	--	0.013
20-Feb	M	M	M	M	M	M	M	M	M	M	M	M	C	C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	--	0.000	
21-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.003	0.000	0.000	0.003	0.006	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.008	
22-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	
23-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
24-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
25-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
26-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.003	
27-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	M	M	0.000	0.000	0.020	0.000	0.000	0.000	0.000	0.000	0.001	
28-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
29-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		0.017	0.011	0.005	0.018	0.008	0.016	0.019	0.016	0.013	0.015	0.014	0.019	0.007	0.000	0.000	0.001	0.001	0.006	0.007	0.001	0.002	0.006	0.007	0.004	Diurnal Average	
		0.226	0.168	0.100	0.144	0.158	0.209	0.294	0.299	0.284	0.300	0.278	0.292	0.147	0.001	0.004	0.009	0.012	0.141	0.163	0.021	0.045	0.162	0.161	0.120	Diurnal Maximum	
Z - zerspan		C - Calibration				M - Maintenance				UO - Unstable Operation																	





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Athabasca Valley - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	559	92.09	92.09
0.006 - 0.05	22	3.62	95.72
0.06 - 0.1	11	1.81	97.53
> 0.1	15	2.47	100.00

Total Number of Valid Hours: 607

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Athabasca Valley - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	43	15	11	14	9	55	70	30	17	36	33	35	32	20	32	107	559
0.006 - 0.05	1	2	0	0	1	0	4	2	0	0	0	0	1	0	1	10	22
0.06 - 0.1	2	0	0	0	1	0	1	1	0	0	0	0	0	0	0	6	11
> 0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	5	8	15
Totals	47	17	11	14	11	55	75	33	17	36	33	35	33	21	38	131	607

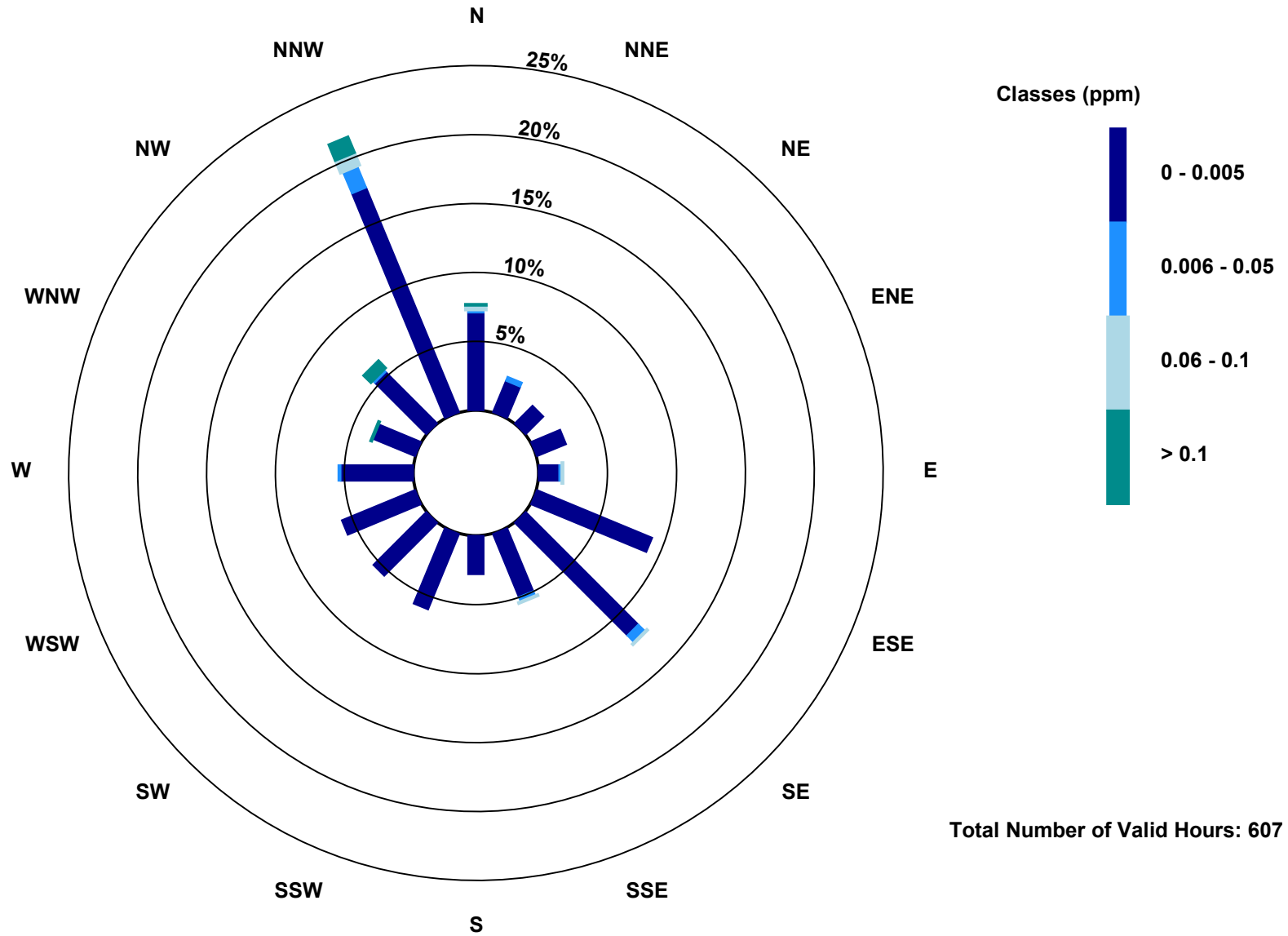
Total Number of Valid Hours: 607

Total Number of Hours: 696

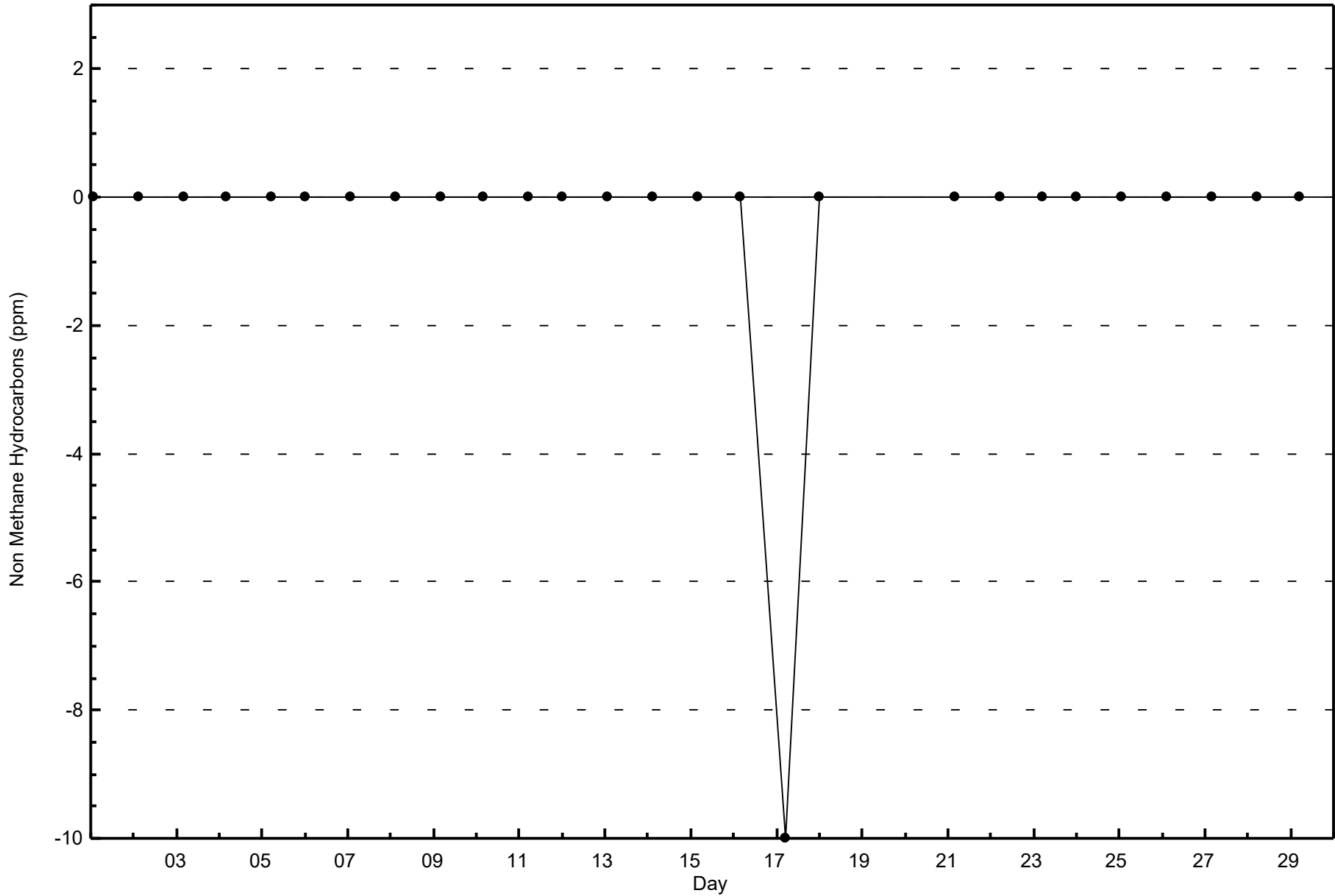


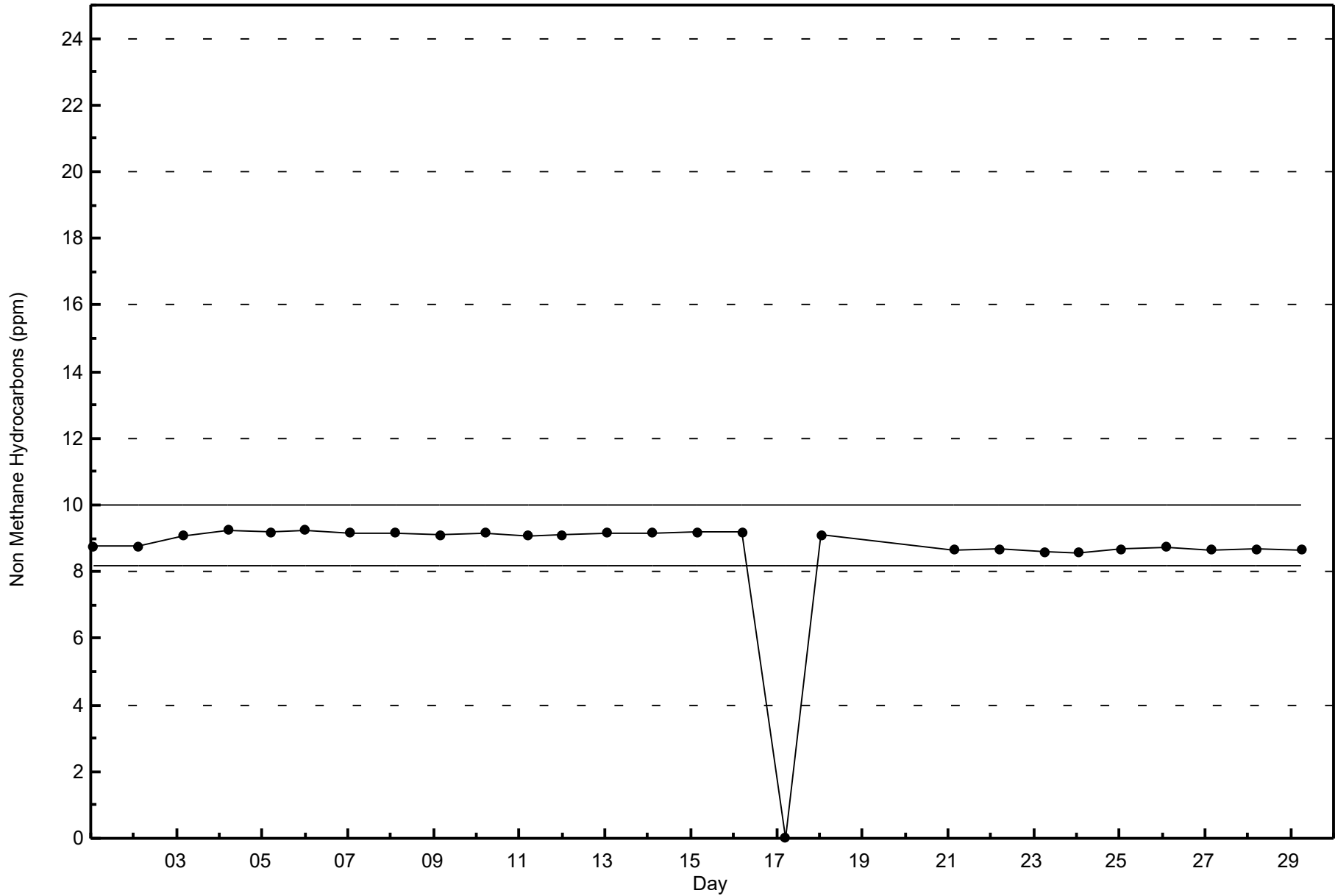
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Athabasca Valley



Total Number of Valid Hours: 607





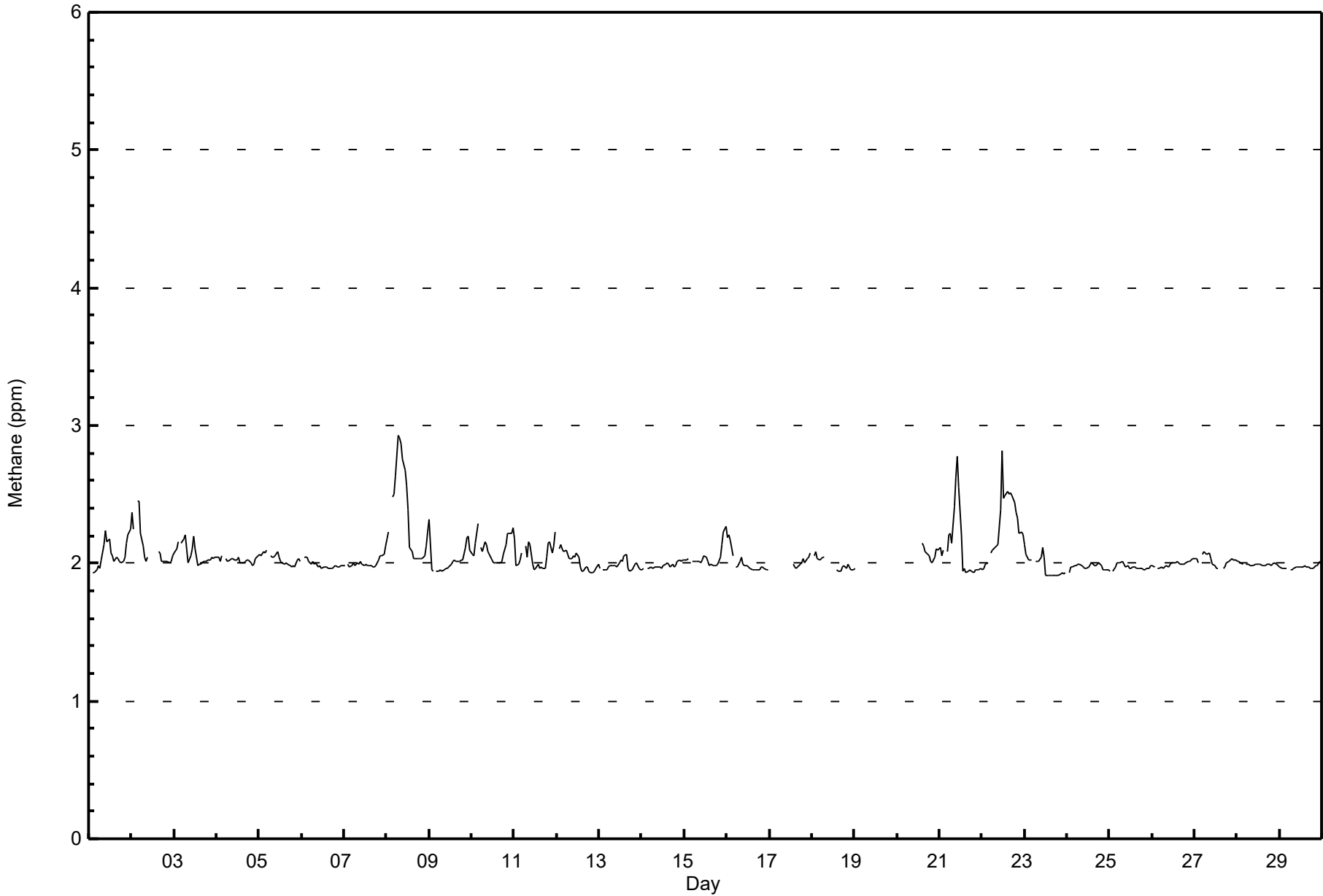


Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														696							
Maximum Value: 2.9 ppm on Feb 8 07:00		Maximum Daily Average: 2.3 ppm on Feb 8		Hours of Data: 607														607									
Minimum Value: 1.9 ppm on Feb 23 16:00		Minimum Daily Average: 2.0 ppm on Feb 29		Hours of Missing Data: 89														89									
Maximum Diurnal Average: 2.1 ppm at hour 12		Minimum Diurnal Average: 2.0 ppm at hour 18		Hours of Calibration: 35														35									
Monthly Average: 2.04 ppm		Percentiles: P ₁ = 1.9 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.0 Q ₃ = 2.1 P ₉₀ = 2.2 P ₉₉ = 2.7		Percent Operational Time: 92.2														92.2									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	1.9	Z	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.1	2.1	
2-Feb	2.4	2.2	Z	2.5	2.5	2.2	2.1	2.0	2.0	2.0	C	C	C	C	C	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.5	
3-Feb	2.1	2.1	2.2	Z	2.1	2.2	2.2	2.1	2.0	2.1	2.1	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	
4-Feb	2.0	2.0	2.0	2.1	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
5-Feb	2.1	2.1	2.1	2.1	2.1	Z	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
6-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
7-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.1	
8-Feb	2.2	2.2	Z	2.5	2.5	2.6	2.9	2.9	2.9	2.8	2.7	2.6	2.4	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.0	2.9	
9-Feb	2.3	2.0	1.9	Z	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.1	2.0	2.3	
10-Feb	2.1	2.1	2.1	2.3	Z	2.1	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.3	2.1	2.3	
11-Feb	2.2	2.0	2.0	2.0	2.1	Z	2.1	2.0	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.1	2.1	2.2	2.1	2.2	
12-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.1	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	
13-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
14-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
15-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.3	2.0	2.3	
16-Feb	2.2	2.2	2.2	2.1	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	
17-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	--	2.1		
18-Feb	Z	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	UO	UO	UO	UO	UO	M	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	--	2.1	
19-Feb	2.0	Z	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	M	M	M	M	M	M	M	M	M	M	2.0	
20-Feb	M	M	M	M	M	M	M	M	M	M	M	M	C	C	C	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	--	2.1
21-Feb	2.1	2.1	2.1	Z	2.1	2.2	2.2	2.1	2.4	2.6	2.8	2.6	2.2	1.9	2.0	1.9	1.9	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.8	
22-Feb	2.0	2.0	2.0	2.0	Z	2.1	2.1	2.1	2.1	2.1	2.4	2.8	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.3	2.2	2.2	2.2	2.3	2.8	
23-Feb	2.1	2.1	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	
24-Feb	Z	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	
25-Feb	1.9	Z	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	
26-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
27-Feb	2.0	2.0	2.0	Z	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	M	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
28-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
29-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
2.1 2.0 2.0 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.1																								Diurnal Average			
2.4 2.2 2.2 2.5 2.5 2.6 2.9 2.9 2.9 2.8 2.8 2.8 2.5 2.5 2.5 2.5 2.5 2.5 2.4 2.4 2.3 2.2 2.2 2.3																								Diurnal Maximum			
Z - zerspan C - Calibration M - Maintenance UO - Unstable Operation																											



Wood Buffalo Environmental Association
Hourly Averages

Methane (CH₄) - ppm
Athabasca Valley - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Athabasca Valley - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	451	74.30	74.30
2.1 - 3.0	156	25.70	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 607

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Methane (CH₄) - ppm
Athabasca Valley - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	38	16	8	11	7	46	56	16	9	25	23	26	28	17	25	100	451
2.1 - 3.0	9	1	3	3	4	9	19	17	8	11	10	9	5	4	13	31	156
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	47	17	11	14	11	55	75	33	17	36	33	35	33	21	38	131	607

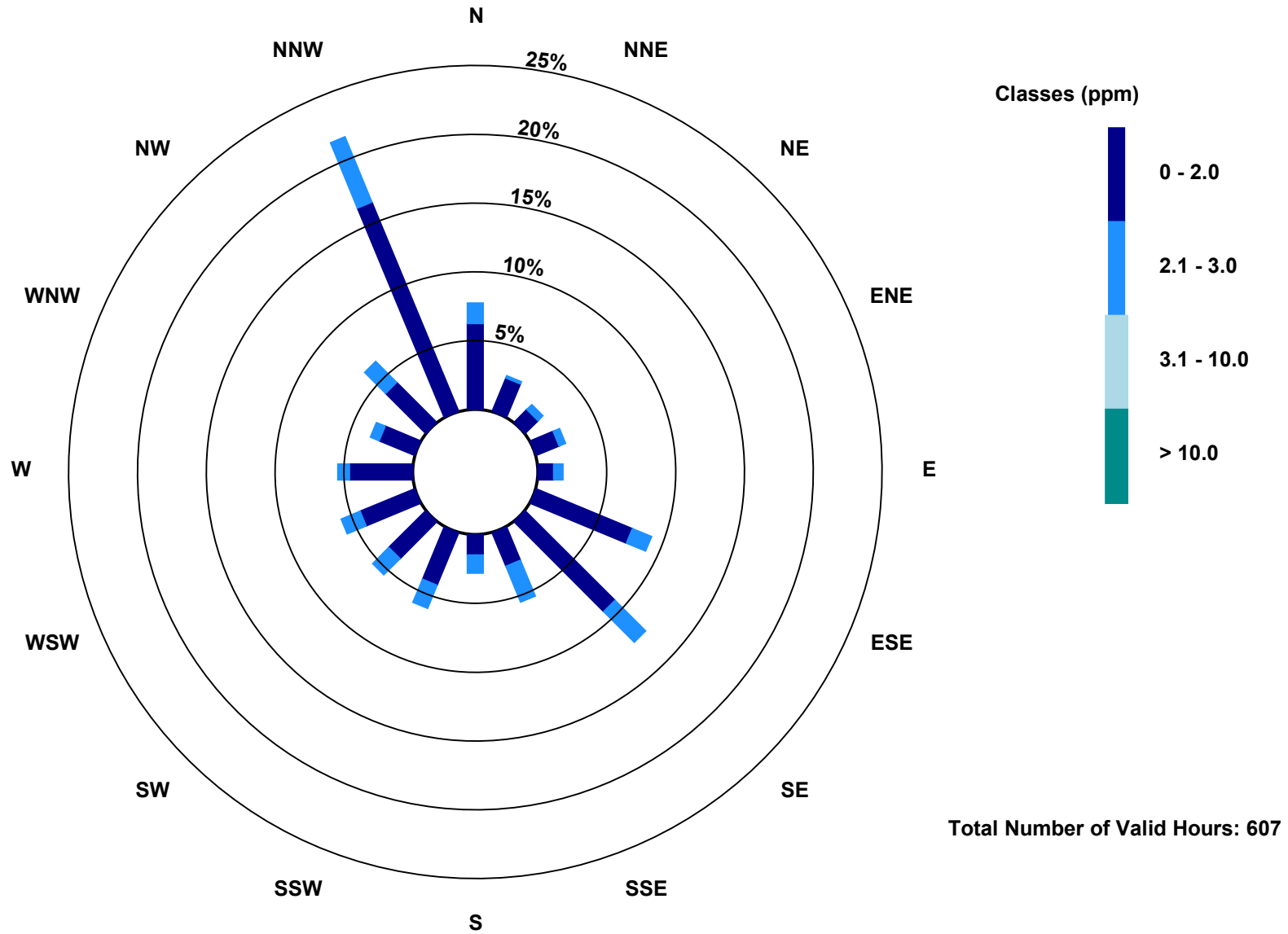
Total Number of Valid Hours: 607

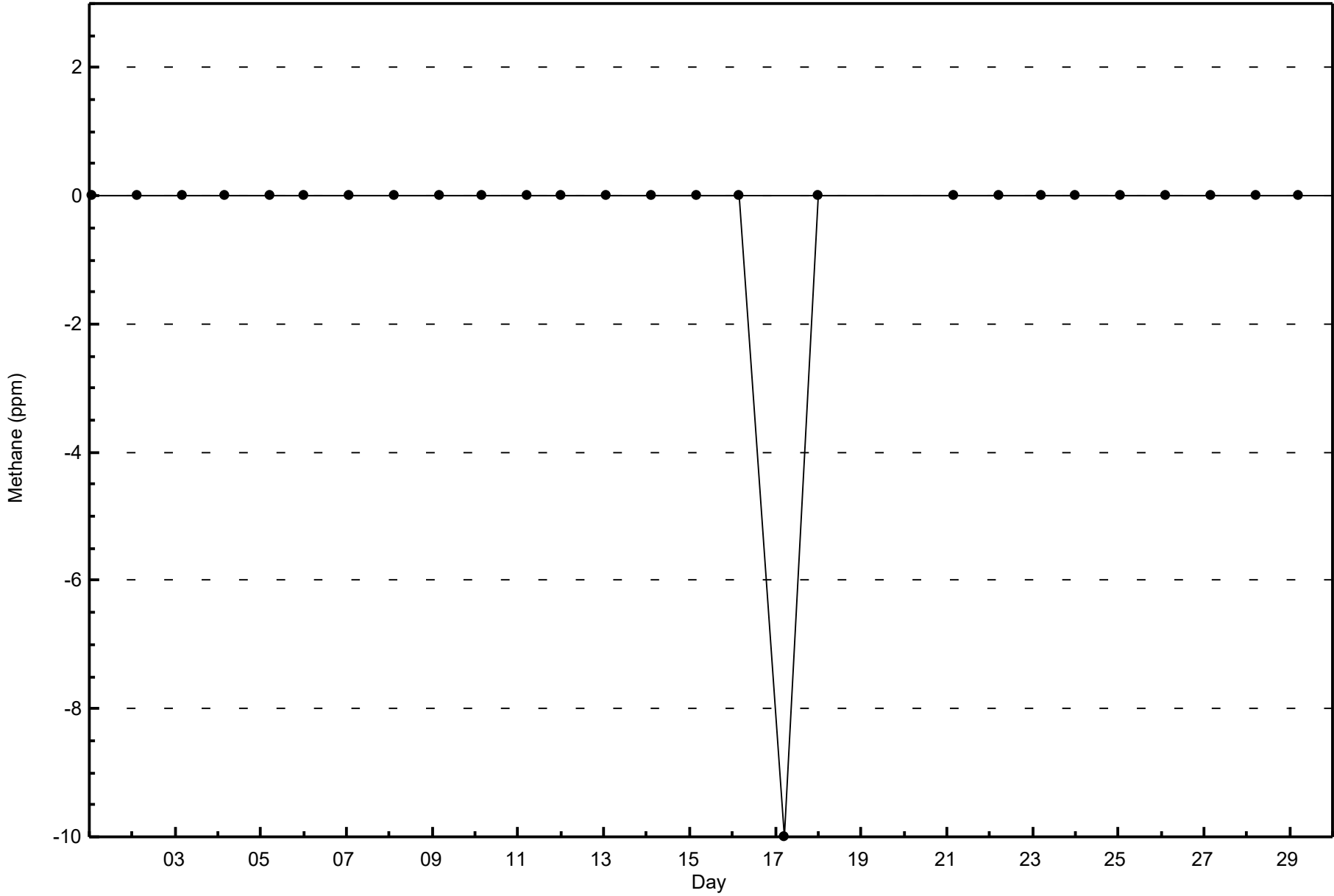
Total Number of Hours: 696

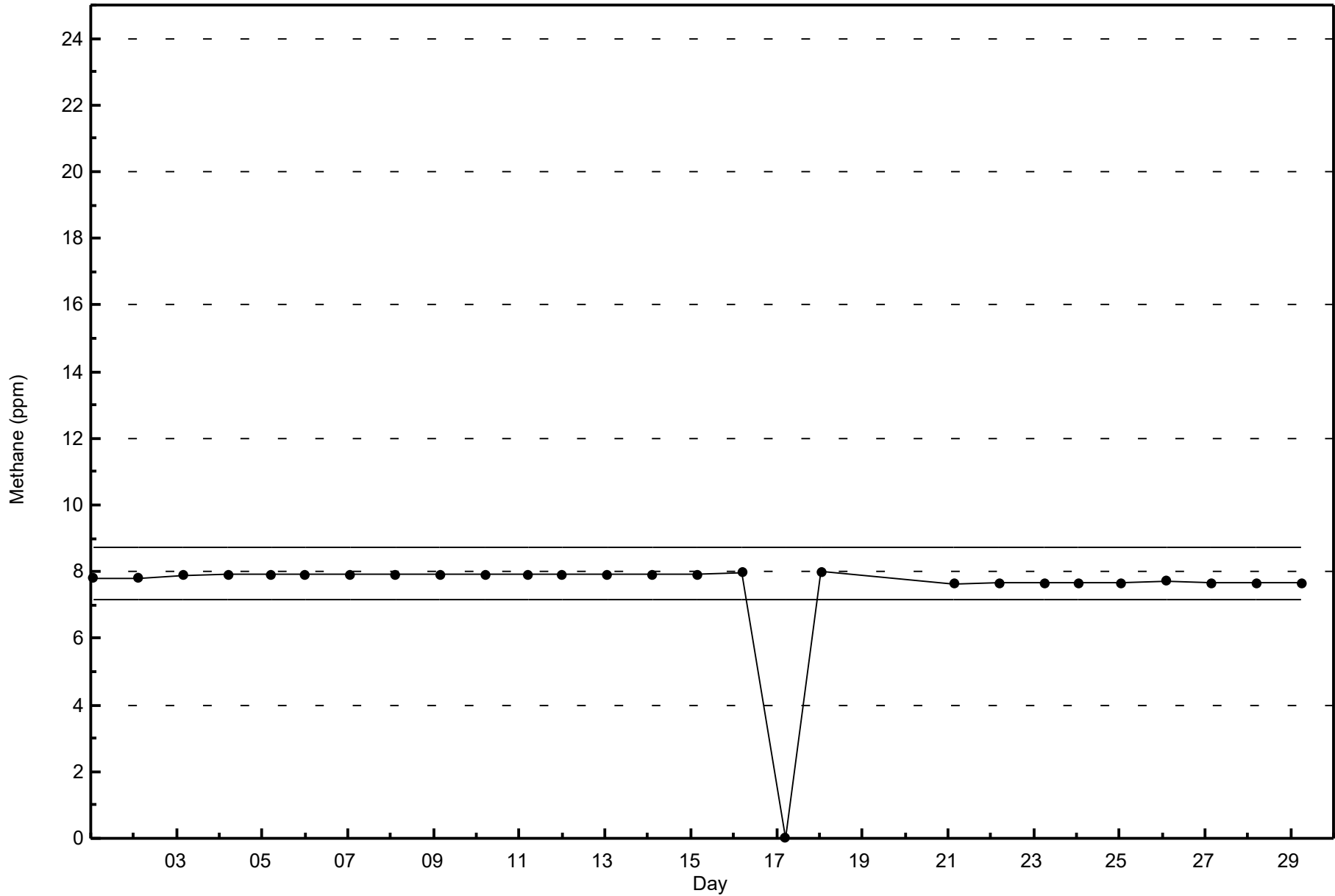


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Athabasca Valley

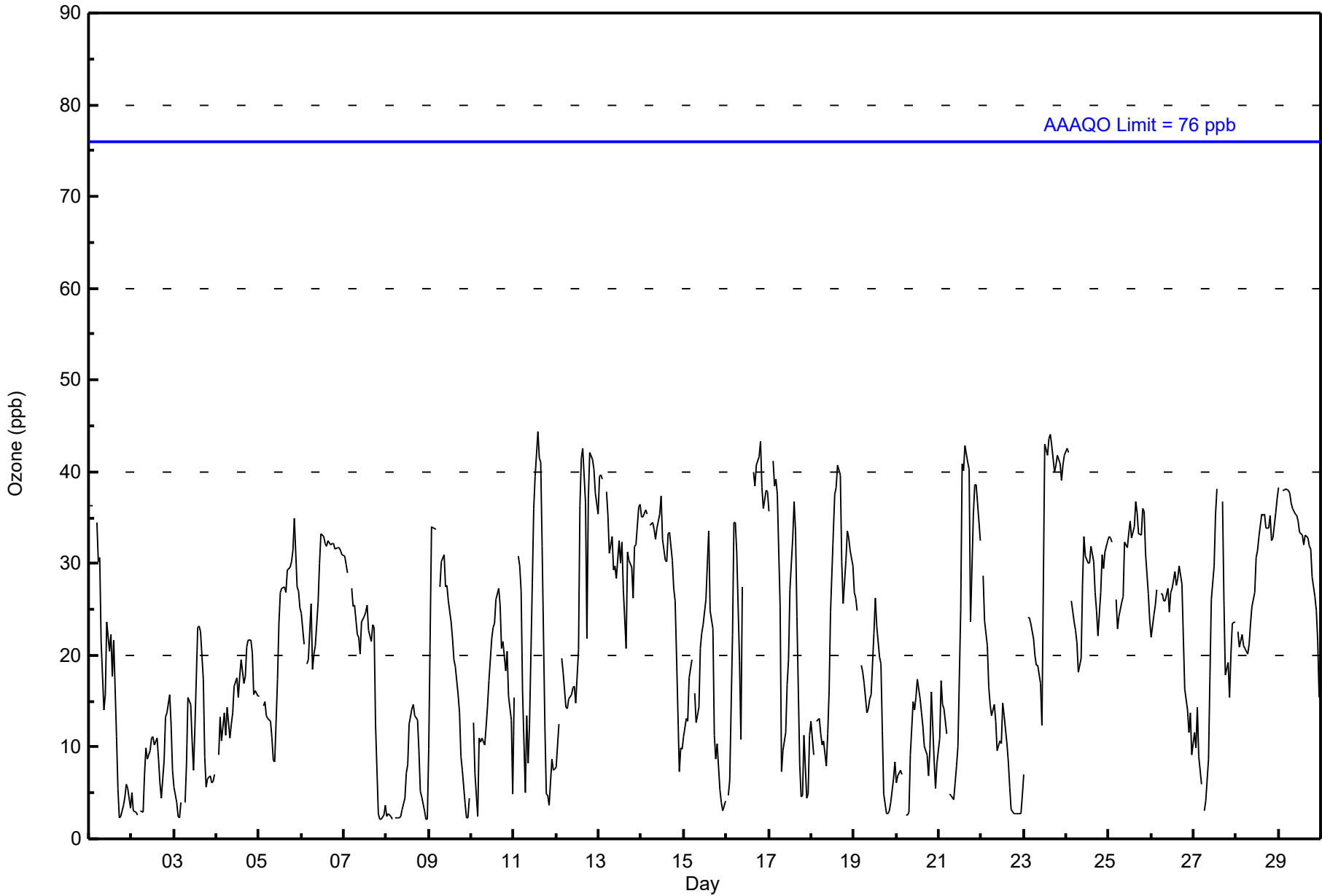








Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																		Hours in Service:	696					
Maximum Value: 44.5 ppb on Feb 11 14:00		Maximum Daily Average: 32.6 ppb on Feb 29																			Hours of Data:	660					
Minimum Value: 2.1 ppb on Feb 7 21:00		Minimum Daily Average: 5.9 ppb on Feb 8																			Hours of Missing Data:	36					
Maximum Diurnal Average: 28.1 ppb at hour 14		Minimum Diurnal Average: 16.4 ppb at hour 8																			Hours of Calibration:	34					
Monthly Average: 21.14 ppb		Percentiles: P ₁ = 2.2 P ₁₀ = 4.8 Q ₁ = 11.0 Median = 21.6 Q ₃ = 31.4 P ₉₀ = 36.6 P ₉₉ = 42.6																			Percent Operational Time:	99.7					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	36.3	36.3	36.3	Z	34.5	30.2	30.7	21.5	14.0	15.7	23.7	20.4	22.2	17.6	21.7	11.2	5.6	2.2	2.5	3.7	4.6	5.9	5.4	3.4	17.6	36.3	
2-Feb	5.1	3.1	3.0	2.6	Z	3.0	3.0	7.0	10.0	8.7	9.7	11.0	11.1	10.2	10.9	8.7	6.1	4.5	8.5	13.2	13.8	15.7	12.4	7.4	8.2	15.7	
3-Feb	5.6	4.0	2.5	2.3	3.9	Z	4.0	8.2	15.3	14.6	10.6	7.5	12.2	23.0	23.2	22.5	17.4	9.0	5.6	6.5	6.9	6.1	6.2	7.1	9.7	23.2	
4-Feb	Z	9.2	13.2	10.7	13.8	11.3	14.3	11.0	12.6	13.7	16.6	17.5	15.5	17.6	19.5	17.0	17.6	20.9	21.7	20.3	15.7	16.1	15.5	15.8	21.7	15.8	
5-Feb	15.5	Z	14.5	15.0	13.5	13.1	12.9	11.0	8.5	8.3	17.4	23.5	26.8	27.2	27.5	26.9	29.2	29.6	30.1	31.4	34.9	27.4	26.9	25.1	21.6	34.9	
6-Feb	24.6	21.2	Z	19.1	19.5	25.7	18.4	20.2	21.1	25.8	30.1	33.2	32.9	32.2	31.9	32.5	32.0	32.2	32.2	31.5	31.7	31.7	31.4	30.9	27.9	33.2	
7-Feb	30.9	29.9	29.0	Z	27.3	25.3	25.5	22.3	21.9	20.1	23.6	24.2	24.7	25.5	22.8	21.5	23.4	23.1	12.5	2.7	2.1	2.2	2.6	3.7	19.4	30.9	
8-Feb	2.5	2.8	2.4	2.2	Z	2.3	2.3	2.3	2.5	3.2	4.4	7.2	8.1	12.5	14.1	14.6	13.4	12.9	9.7	5.1	4.6	3.1	2.2	2.2	5.9	14.6	
9-Feb	9.7	34.0	33.9	33.9	33.8	Z	27.5	30.3	31.0	27.5	27.6	26.0	23.6	21.8	19.6	18.8	15.7	13.8	9.0	7.5	3.9	2.2	2.2	4.5	19.9	34.0	
10-Feb	Z	12.6	7.2	2.4	11.0	10.5	11.0	10.3	12.2	14.5	17.2	21.9	23.0	23.5	26.1	27.3	25.4	20.8	21.5	18.2	20.4	15.6	13.0	4.9	16.1	27.3	
11-Feb	15.4	Z	30.9	29.7	27.0	16.2	5.1	13.5	8.3	12.5	28.0	36.0	39.6	44.5	41.4	41.0	31.9	12.0	4.9	4.7	3.7	8.8	7.4	7.6	20.4	44.5	
12-Feb	7.7	12.5	Z	19.7	18.2	14.3	14.1	15.2	15.7	16.5	16.7	14.7	20.5	36.3	41.5	42.5	36.7	21.8	37.0	42.1	41.3	40.3	37.7	35.4	26.0	42.5	
13-Feb	39.5	39.6	39.1	Z	37.8	35.2	31.1	33.0	29.3	29.7	28.4	32.4	30.0	32.4	27.2	20.8	31.3	30.3	29.7	26.2	31.9	32.0	36.1	36.4	32.1	39.6	
14-Feb	35.1	35.1	35.9	35.4	Z	34.2	34.5	33.7	32.7	33.8	35.4	37.4	32.7	30.3	30.2	33.2	33.4	30.4	27.4	25.9	20.0	7.3	9.9	9.8	29.3	37.4	
15-Feb	11.1	13.1	12.9	17.5	19.6	Z	15.9	12.6	14.4	20.8	22.5	23.3	26.0	29.9	33.5	24.8	22.8	11.2	8.7	10.3	5.4	4.0	3.1	4.1	16.0	33.5	
16-Feb	Z	4.8	6.3	22.3	34.5	34.5	31.3	19.4	10.9	27.4	C	C	C	C	C	40.0	38.5	40.7	41.6	43.4	38.3	36.0	38.0	37.9	30.3	43.4	
17-Feb	35.7	Z	41.2	38.4	39.1	37.5	25.3	7.3	9.6	11.5	16.7	19.6	27.1	32.8	36.8	33.6	24.3	8.1	4.6	4.8	11.3	4.4	4.9	11.3	21.1	41.2	
18-Feb	12.9	9.2	Z	12.8	13.1	11.4	10.3	10.7	7.9	11.5	16.2	24.7	33.5	37.5	38.2	40.7	39.7	30.2	25.6	30.4	33.6	32.8	31.4	29.7	23.7	40.7	
19-Feb	26.9	26.3	24.9	Z	18.9	18.1	16.9	13.7	14.1	15.2	15.7	22.4	26.2	23.2	19.9	19.0	11.8	4.9	2.8	2.8	3.0	3.9	6.5	8.3	15.0	26.9	
20-Feb	6.0	6.8	7.5	7.0	Z	2.6	2.6	2.8	9.1	14.9	14.0	15.4	17.4	15.2	13.7	12.2	10.1	9.2	6.9	9.8	16.0	8.6	5.5	8.3	9.6	17.4	
21-Feb	11.0	17.2	14.7	14.3	11.4	Z	4.9	4.7	4.3	6.0	7.9	10.1	25.1	40.8	40.1	42.8	41.0	40.3	23.6	35.3	38.6	38.5	36.6	32.4	23.6	42.8	
22-Feb	Z	28.7	23.8	21.1	16.6	14.6	13.5	14.7	12.8	9.6	10.7	10.4	14.8	13.4	10.3	8.4	5.6	3.2	2.8	2.7	2.7	2.7	2.7	4.8	10.9	28.7	
23-Feb	6.9	Z	24.0	24.1	23.4	21.8	20.0	19.0	19.0	17.0	12.3	27.4	42.9	41.8	43.6	44.1	42.8	40.0	40.8	41.8	40.9	39.1	40.7	41.8	31.1	44.1	
24-Feb	42.5	42.1	Z	25.9	23.7	22.7	21.3	18.2	19.7	27.8	33.0	30.8	30.0	30.1	31.9	30.1	26.9	24.9	22.1	26.9	31.0	29.5	31.2	32.5	28.5	42.5	
25-Feb	33.0	32.8	32.4	Z	26.1	22.9	24.2	25.8	26.5	32.4	31.7	33.3	34.7	32.8	33.9	36.8	35.5	33.3	33.1	36.0	35.6	31.1	26.8	23.7	31.1	36.8	
26-Feb	22.0	24.3	25.5	27.2	Z	26.7	26.6	26.0	26.0	27.3	24.7	26.9	27.3	29.1	27.6	28.4	29.7	27.8	22.0	16.4	14.1	11.5	13.8	9.2	23.5	29.7	
27-Feb	11.6	10.0	14.4	8.9	5.9	Z	3.0	4.1	8.7	17.7	26.1	29.8	35.4	38.1	M	M	36.7	25.9	17.8	19.2	15.4	20.1	23.5	23.6	18.9	38.1	
28-Feb	Z	22.5	21.0	22.3	21.0	20.8	20.1	21.2	23.5	25.3	26.8	30.6	31.5	32.9	35.4	35.3	35.4	33.8	33.8	35.3	32.5	32.9	35.6	37.1	29.0	37.1	
29-Feb	38.3	Z	38.0	38.0	38.2	38.0	37.6	36.7	36.0	35.5	35.3	34.6	33.4	33.2	32.0	33.1	32.8	31.9	31.5	28.5	26.3	24.8	21.6	15.4	32.6	38.3	
		20.2	19.9	21.4	18.9	22.2	20.5	17.5	16.4	16.5	18.8	20.8	23.3	26.0	28.1	27.9	27.4	26.0	21.7	19.7	20.1	20.2	18.4	18.3	17.7	Diurnal Average	
		42.5	42.1	41.2	38.4	39.1	38.0	37.6	36.7	36.0	35.5	35.4	37.4	42.9	44.5	43.6	44.1	42.8	40.7	41.6	43.4	41.3	40.3	40.7	41.8	Diurnal Maximum	
Z - zerspan		C - Calibration		M - Maintenance																							
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr		76 ppb																							





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ozone (O₃) - ppb
Athabasca Valley - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	314	47.58	47.58
21 - 50	346	52.42	100.00
51 - 82	0	0.00	100.00
> 83	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Ozone (O₃) - ppb
Athabasca Valley - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	19	5	6	6	7	10	45	26	13	21	18	23	20	10	30	54	313
21 - 50	32	13	5	10	3	47	34	8	6	17	15	17	22	13	15	89	346
51 - 82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	51	18	11	16	10	57	79	34	19	38	33	40	42	23	45	143	659

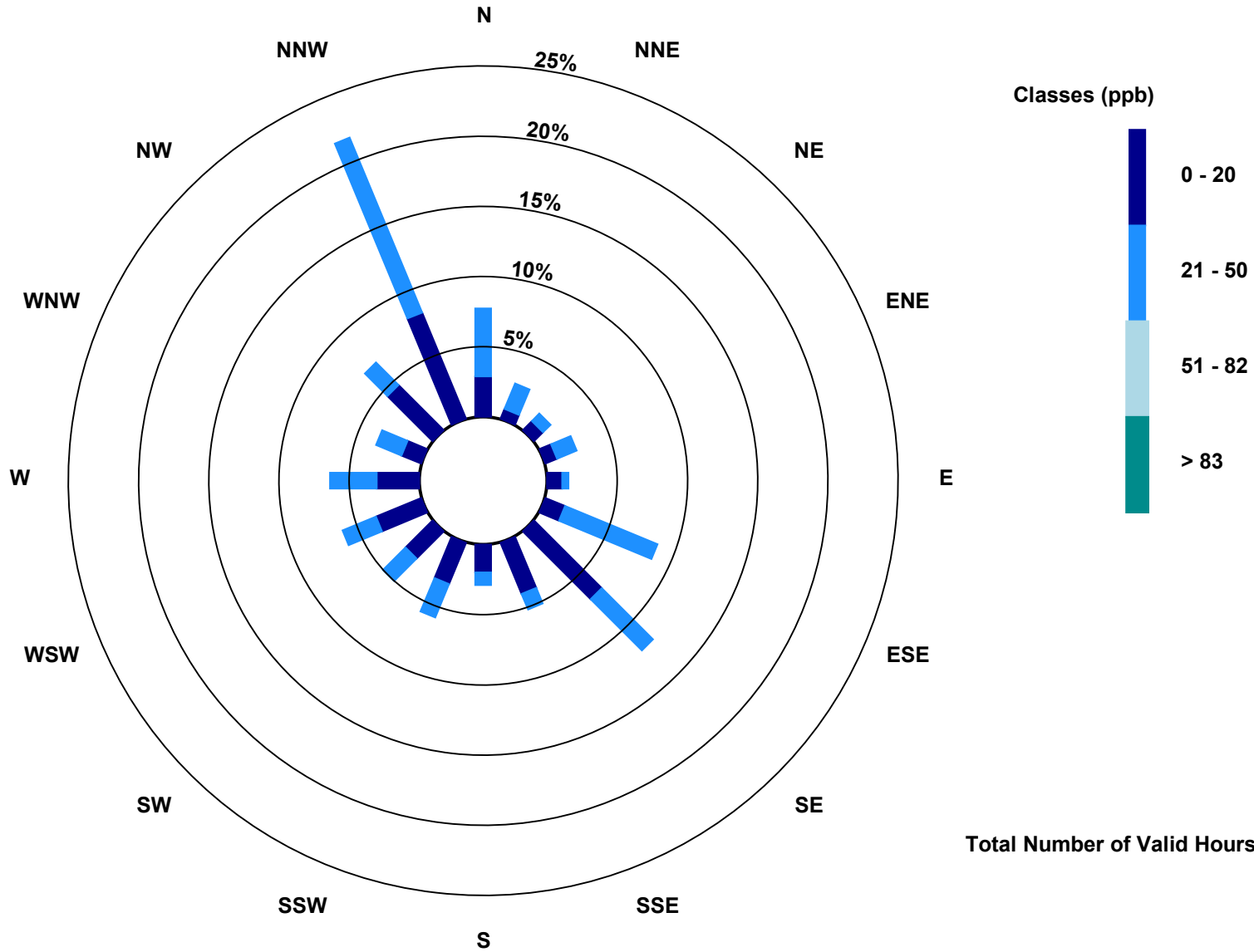
Total Number of Valid Hours: 659

Total Number of Hours: 696

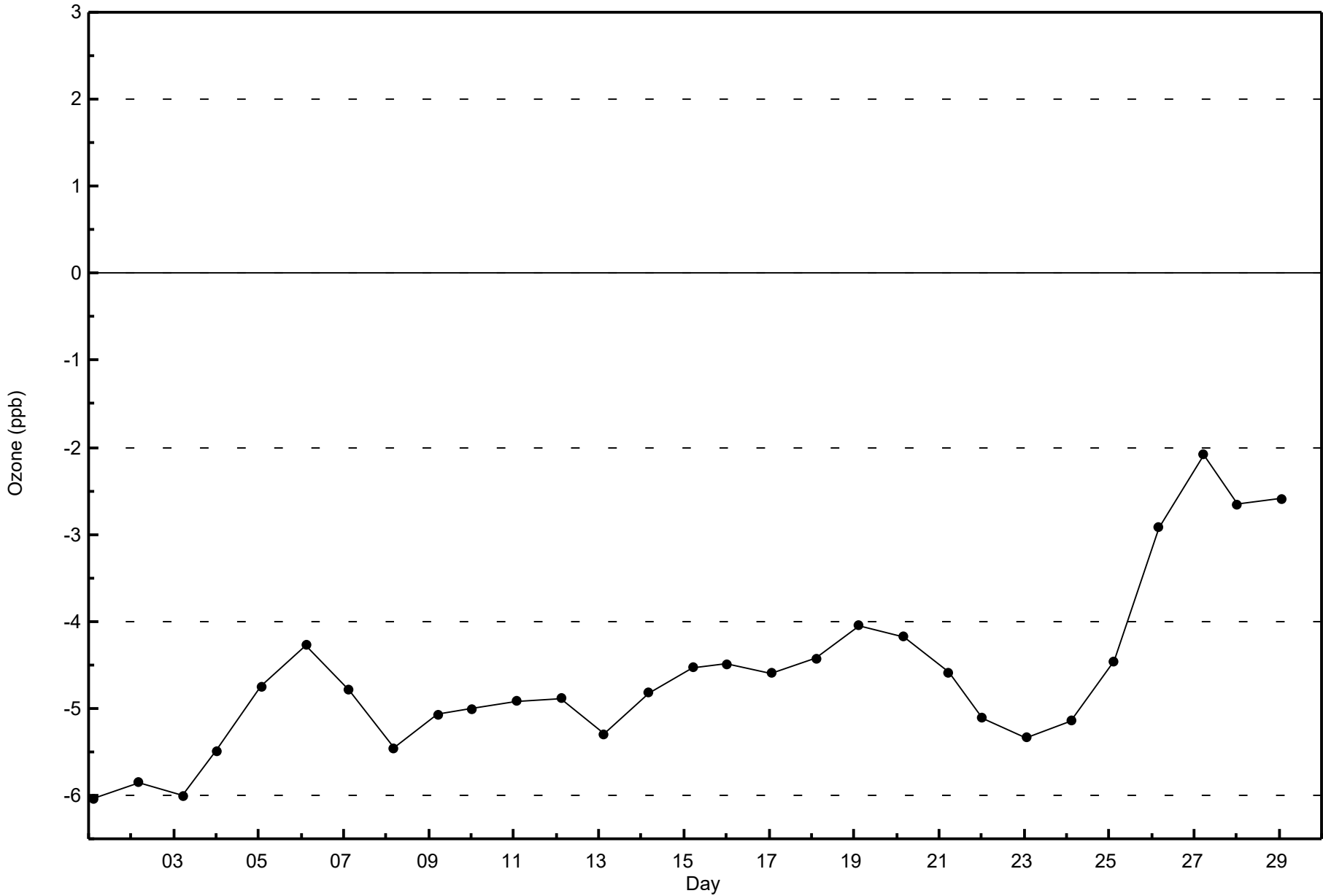


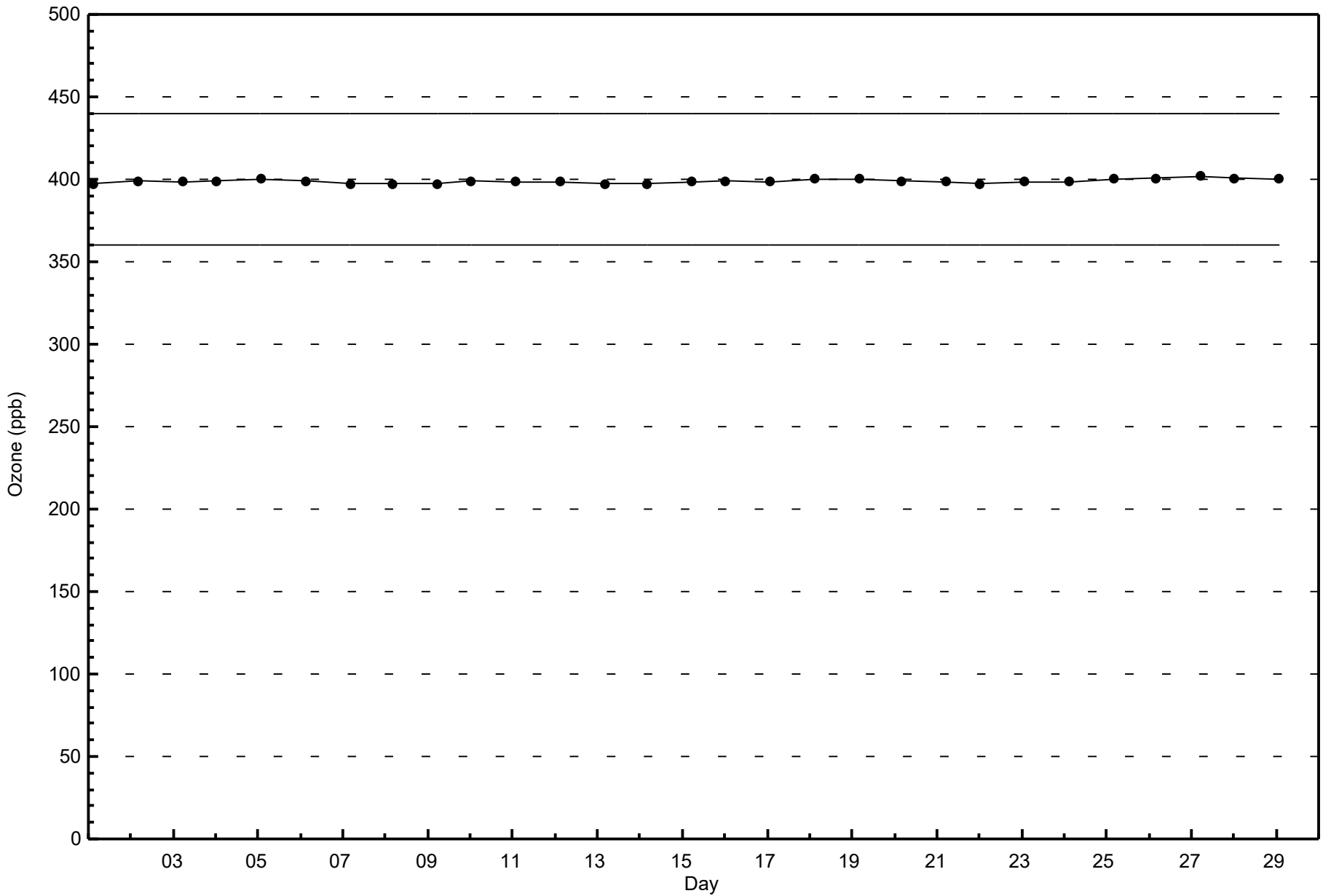
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Ozone (O₃) - ppb
Athabasca Valley



Total Number of Valid Hours: 659



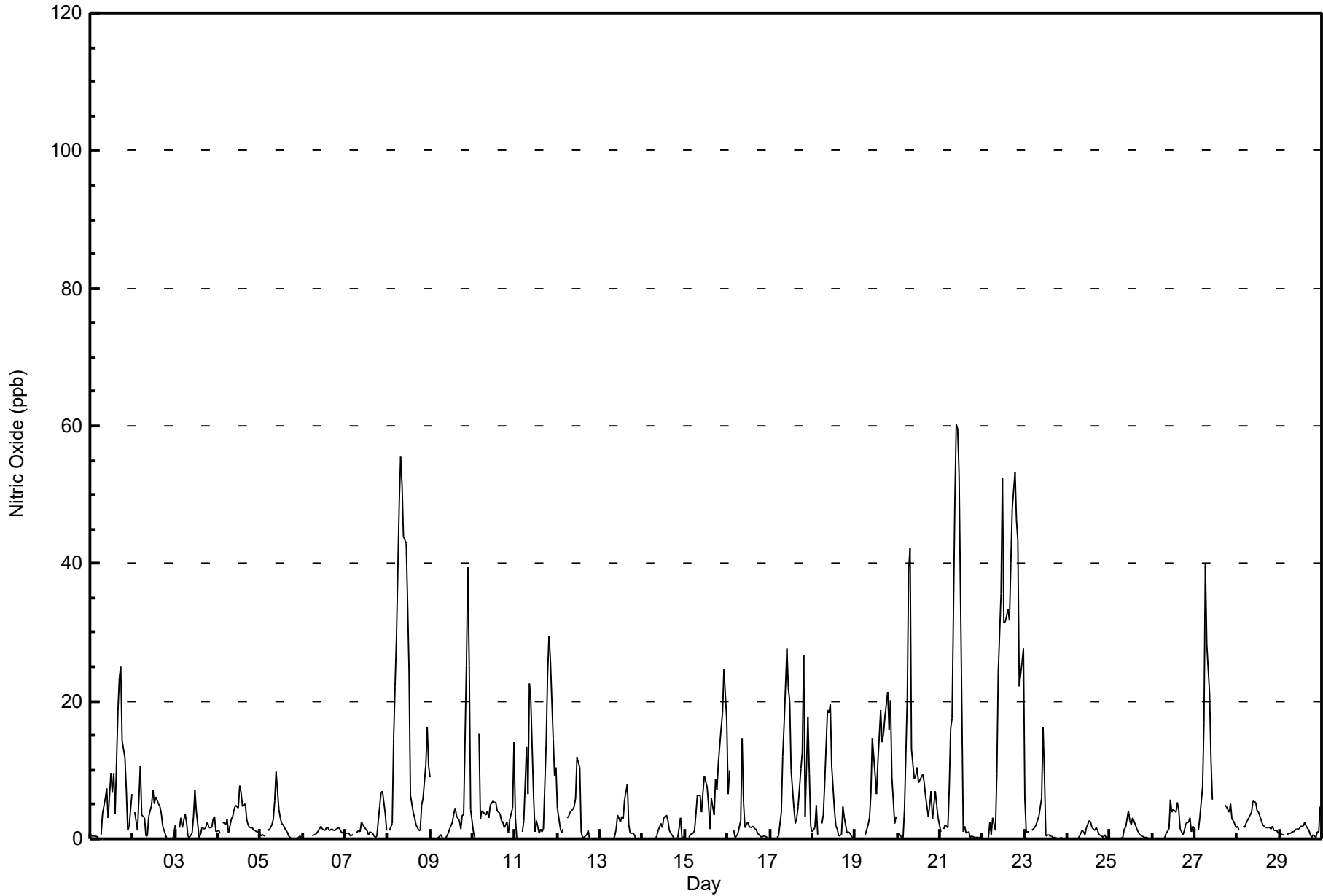




Wood Buffalo Environmental Association
Summary of Hour Averages

Nitric Oxide (NO) - ppb
Athabasca Valley - February 2024

Maximum Value: 60.3 ppb on Feb 21 10:00																					Maximum Daily Average: 24.5 ppb on Feb 22					Hours in Service: 696																							
Minimum Value: 0.0 ppb on Feb 9 03:00																					Minimum Daily Average: 0.8 ppb on Feb 24					Hours of Data: 661																							
Maximum Diurnal Average: 10.3 ppb at hour 11																					Minimum Diurnal Average: 0.7 ppb at hour 3					Hours of Missing Data: 35																							
Monthly Average: 5.50 ppb																					Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.6 Median = 1.8 Q ₃ = 5.1 P ₉₀ = 16.0 P ₉₉ = 50.0					Hours of Calibration: 35																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.3	0.3	0.3	0.4	0.1	Z	0.7	3.6	5.9	7.3	3.1	9.5	6.7	9.6	3.7	18.5	23.4	25.0	14.2	11.8	7.0	1.2	1.8	6.6	7.0	25.0																							
2-Feb	Z	3.9	1.2	5.9	10.5	3.6	3.0	0.4	0.4	3.3	4.8	7.0	5.1	6.1	5.1	4.7	3.6	1.8	0.5	0.1	0.1	0.0	0.1	0.6	3.1	10.5																							
3-Feb	2.1	Z	1.7	2.9	1.6	3.7	2.5	0.5	0.2	0.7	3.3	7.1	4.0	0.2	0.6	1.7	1.5	1.9	2.5	1.5	1.7	2.8	3.3	1.1	2.1	7.1																							
4-Feb	1.3	0.7	Z	2.5	2.1	2.9	0.9	2.9	3.2	4.3	4.9	4.4	7.8	6.7	4.7	5.1	2.9	2.1	1.7	1.6	1.1	1.3	1.1	1.0	2.9	7.8																							
5-Feb	0.4	0.6	0.4	Z	1.5	1.3	2.0	2.8	5.5	9.8	4.3	3.0	2.3	2.0	1.2	0.9	0.3	0.0	0.0	0.0	0.0	0.3	0.4	0.3	1.7	9.8																							
6-Feb	0.0	0.1	0.1	0.1	Z	0.4	0.6	0.5	0.7	1.4	1.9	1.4	1.3	1.7	1.6	1.2	1.4	1.3	1.2	1.5	1.6	1.2	0.9	0.9	1.0	1.9																							
7-Feb	0.8	0.8	0.8	0.4	0.7	Z	0.7	1.2	1.0	2.5	2.1	1.5	1.3	0.6	1.0	0.9	0.3	0.2	0.3	4.8	6.7	6.8	3.6	1.3	1.8	6.8																							
8-Feb	Z	1.3	2.2	14.6	22.1	29.1	48.9	55.5	51.5	43.9	42.8	34.0	24.4	6.3	3.9	3.0	2.1	1.1	1.2	4.9	6.0	10.7	16.2	10.5	19.0	55.5																							
9-Feb	8.9	Z	0.0	0.0	0.1	0.4	0.5	0.1	0.1	0.4	0.8	1.5	2.4	3.7	4.4	3.2	2.6	1.4	3.5	3.4	25.2	39.5	25.1	4.3	5.7	39.5																							
10-Feb	1.0	0.2	Z	15.3	2.8	4.0	3.9	3.5	4.0	3.0	4.9	5.5	5.2	5.2	4.1	3.6	2.6	2.5	1.7	2.4	0.9	2.9	4.4	14.1	4.3	15.3																							
11-Feb	3.1	0.1	0.0	Z	0.9	2.6	13.4	6.4	22.5	20.1	6.2	1.1	2.7	0.9	1.3	1.1	1.5	14.1	23.8	29.5	26.0	14.7	9.1	10.3	9.2	29.5																							
12-Feb	4.5	1.5	0.9	1.5	Z	3.0	3.2	3.8	4.3	4.8	5.9	11.8	10.4	1.0	0.2	0.3	0.7	1.2	0.1	0.0	0.0	0.0	0.0	0.0	2.6	11.8																							
13-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.1	0.5	1.4	3.5	2.4	3.3	2.9	5.6	7.9	2.0	0.9	0.8	0.6	0.0	0.0	0.0	0.0	1.4	7.9																							
14-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.3	2.2	1.7	3.0	3.4	2.7	1.3	0.9	0.2	0.0	0.1	0.3	3.1	0.2	0.2	0.2	0.9	3.4																							
15-Feb	0.5	Z	0.1	0.5	0.7	1.1	3.7	6.4	6.3	3.9	6.6	9.1	7.5	5.0	1.5	6.0	3.4	8.7	7.2	11.0	16.0	18.3	24.5	17.3	7.2	24.5																							
16-Feb	6.4	9.9	Z	1.2	0.2	0.5	0.7	2.6	14.6	5.2	1.7	2.4	1.7	1.6	1.8	1.4	1.4	0.8	0.4	0.2	0.4	0.4	0.3	0.0	2.4	14.6																							
17-Feb	0.2	0.0	0.0	Z	0.1	0.5	3.9	11.9	16.7	27.7	22.0	19.9	9.9	4.6	2.2	3.0	4.6	10.2	12.5	26.7	3.3	17.6	9.5	1.8	9.1	27.7																							
18-Feb	1.1	1.7	4.9	0.7	Z	2.3	3.5	8.1	18.7	18.3	19.6	10.6	4.1	1.8	1.3	0.4	0.6	4.6	3.0	0.8	1.1	0.8	0.5	0.0	4.7	19.6																							
19-Feb	0.0	0.0	0.0	0.0	0.2	Z	0.6	2.0	3.1	6.4	14.7	9.3	6.5	11.1	18.7	14.0	15.2	17.7	21.3	15.8	20.1	9.0	2.1	3.3	8.3	21.3																							
20-Feb	Z	0.7	0.2	0.3	4.3	20.5	39.0	42.2	13.0	8.8	9.2	10.3	8.2	8.9	9.4	8.4	6.4	3.2	4.9	6.8	2.9	7.0	4.9	3.1	9.7	42.2																							
21-Feb	1.0	Z	1.4	2.0	1.7	7.4	16.0	17.5	49.1	60.3	59.6	53.1	18.7	1.0	1.8	0.8	1.0	0.3	0.5	0.2	0.2	0.2	0.2	0.3	12.8	60.3																							
22-Feb	0.1	0.0	Z	0.2	2.4	0.7	3.0	1.2	9.5	24.2	35.5	52.6	31.4	31.6	33.4	31.7	40.0	48.0	53.3	46.4	43.2	22.2	25.6	27.6	24.5	53.3																							
23-Feb	6.0	1.0	1.0	Z	1.2	1.5	2.0	2.6	3.3	5.9	16.3	9.3	0.4	0.6	0.5	0.3	0.2	0.1	0.1	0.0	0.3	0.1	0.0	0.1	2.3	16.3																							
24-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.1	0.5	1.1	0.9	0.7	1.6	2.6	2.4	1.5	1.2	1.7	1.2	0.5	0.4	0.2	0.7	0.2	0.3	0.8	2.6																							
25-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.2	1.4	1.7	4.1	2.7	2.0	3.0	2.1	1.3	1.0	0.5	0.4	0.3	0.2	0.1	0.0	0.1	0.9	4.1																							
26-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.7	1.4	5.7	3.9	4.3	3.9	5.2	4.0	1.5	0.6	1.3	2.2	2.4	3.1	0.9	1.9	1.9	5.7																							
27-Feb	1.2	Z	1.2	3.1	7.5	16.9	39.9	28.2	21.1	11.5	5.7	C	C	C	C	C	C	4.9	4.8	3.9	5.0	2.9	2.7	1.7	--	39.9																							
28-Feb	1.8	1.2	Z	1.9	1.7	2.3	3.0	3.4	3.8	5.4	5.2	4.0	4.0	3.2	2.1	1.8	1.7	1.7	1.6	1.5	1.9	1.3	1.2	0.9	2.5	5.4																							
29-Feb	0.8	0.7	0.7	Z	0.6	0.8	0.8	1.0	1.1	1.4	1.5	1.5	1.9	1.7	2.4	1.8	1.2	0.6	0.2	0.5	0.1	1.1	1.0	4.6	1.2	4.6																							
																								1.7	1.0	0.7	2.2	2.5	4.4	6.8	7.2	9.1	9.9	10.3	10.1	6.5	4.7	4.4	4.6	4.5	5.4	5.6	6.2	6.0	5.8	4.8	3.9	Diurnal Average	
																								8.9	9.9	4.9	15.3	22.1	29.1	48.9	55.5	51.5	60.3	59.6	53.1	31.4	31.6	33.4	31.7	40.0	48.0	53.3	46.4	43.2	39.5	25.6	27.6	Diurnal Maximum	
Z - zerspan																								C - Calibration																									





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitric Oxide (NO) - ppb
Athabasca Valley - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	613	92.74	92.74
21 - 40	33	4.99	97.73
41 - 80	15	2.27	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Athabasca Valley - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	49	17	8	13	8	56	72	28	17	42	36	38	39	20	42	127	612
21 - 40	1	0	1	1	1	2	3	6	1	0	0	1	1	1	2	12	33
11 - 80	2	0	2	0	1	0	2	0	0	0	0	0	0	1	0	7	15
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	52	17	11	14	10	58	77	34	18	42	36	39	40	22	44	146	660

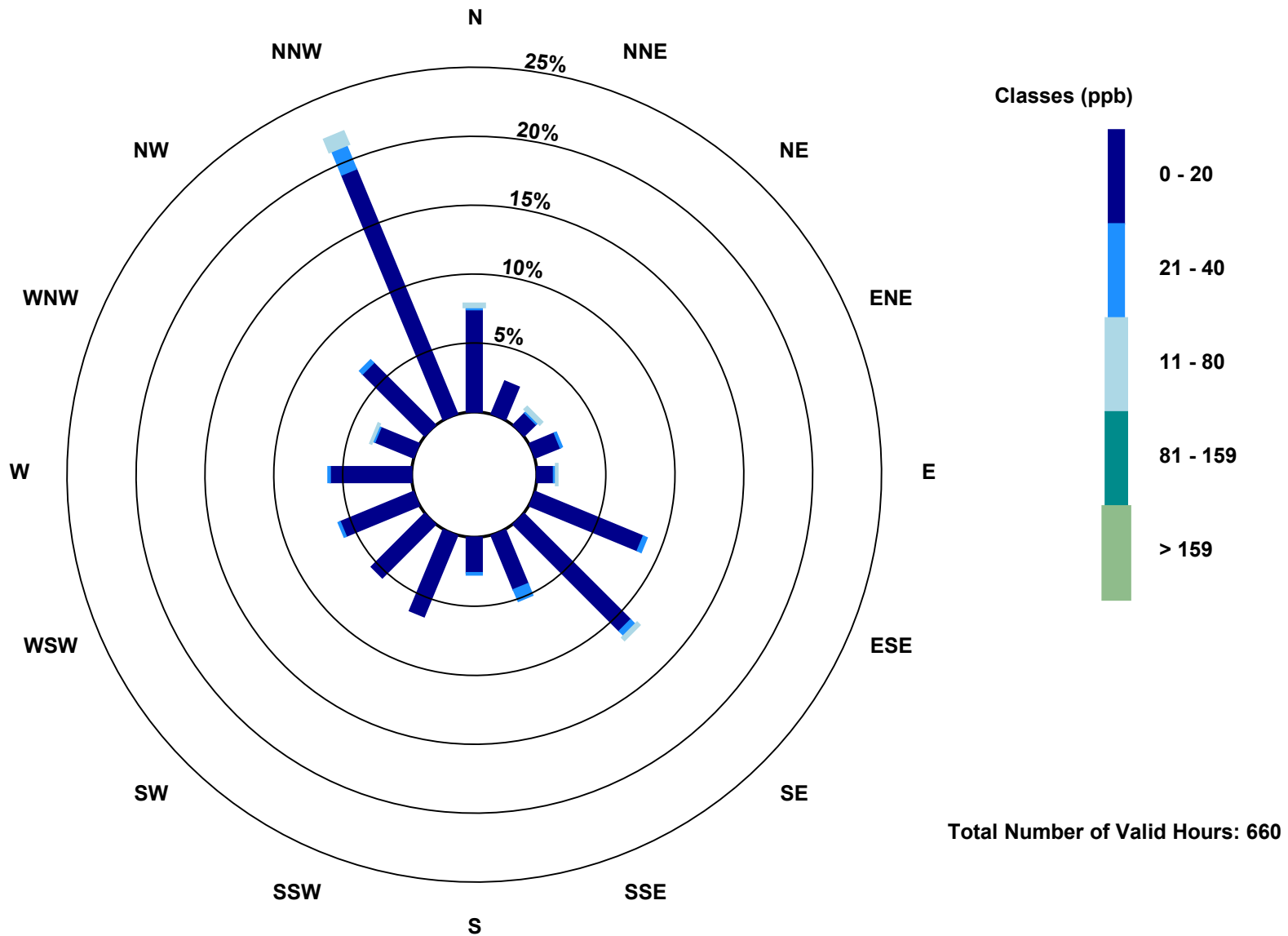
Total Number of Valid Hours: 660

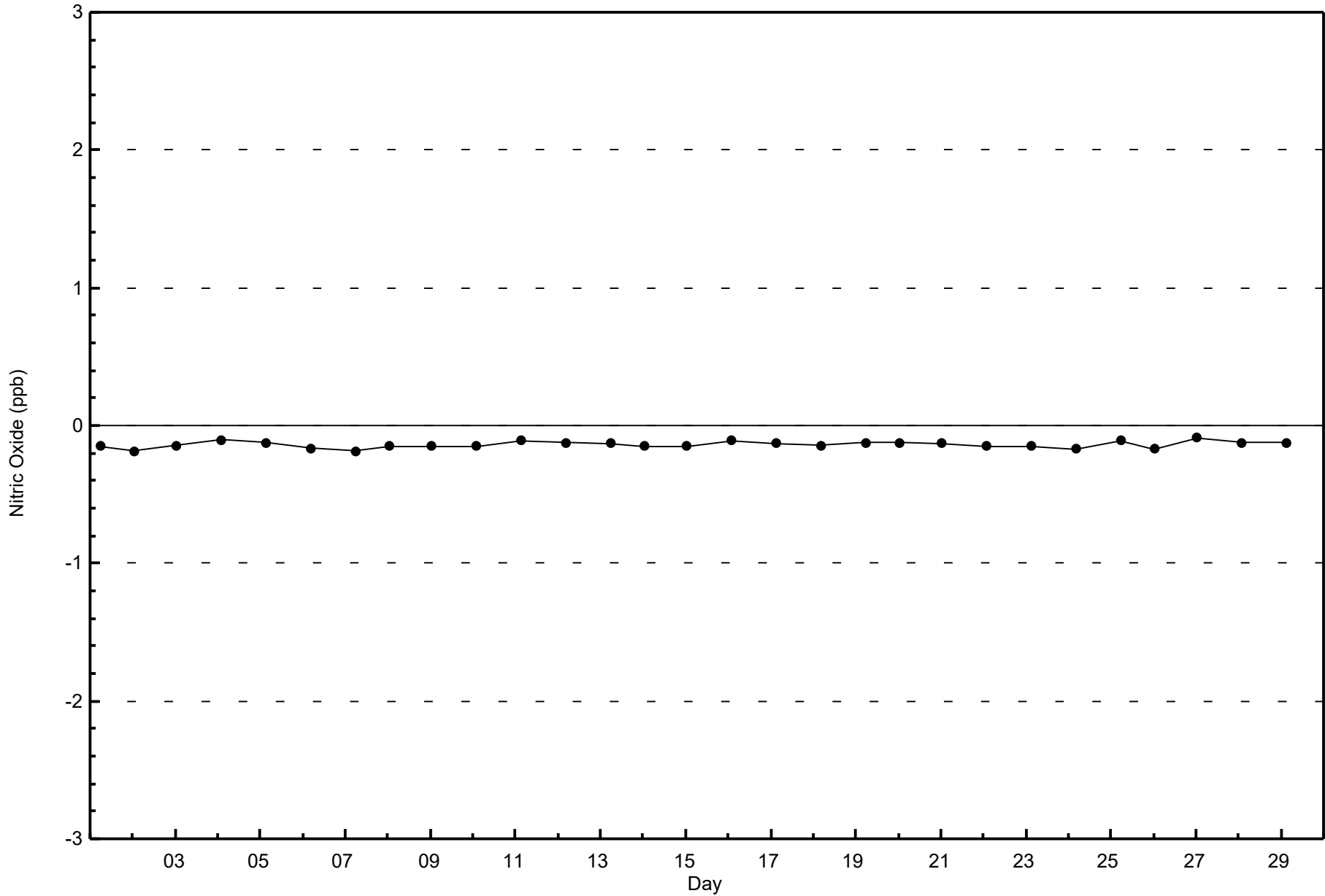
Total Number of Hours: 696

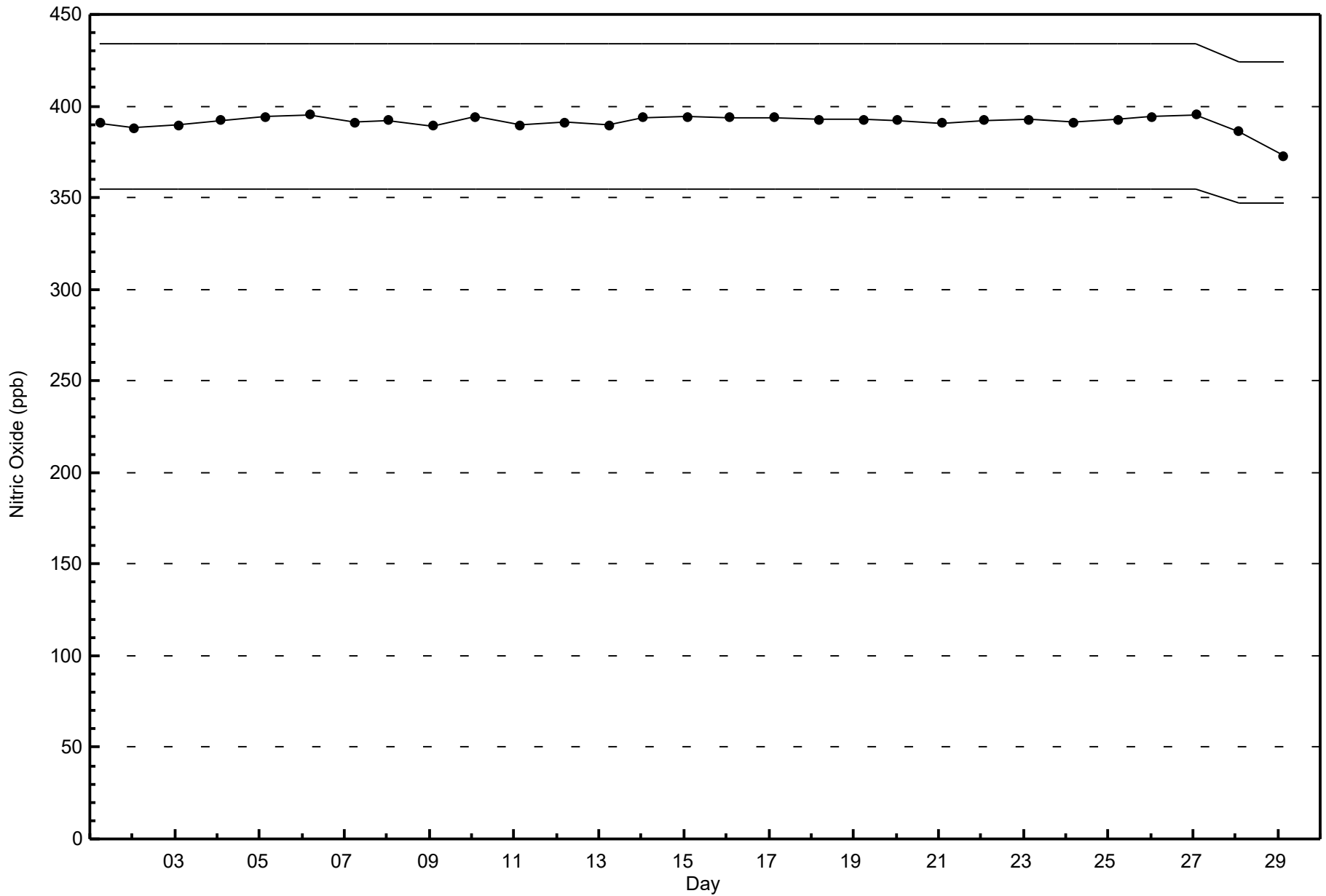


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Athabasca Valley









Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

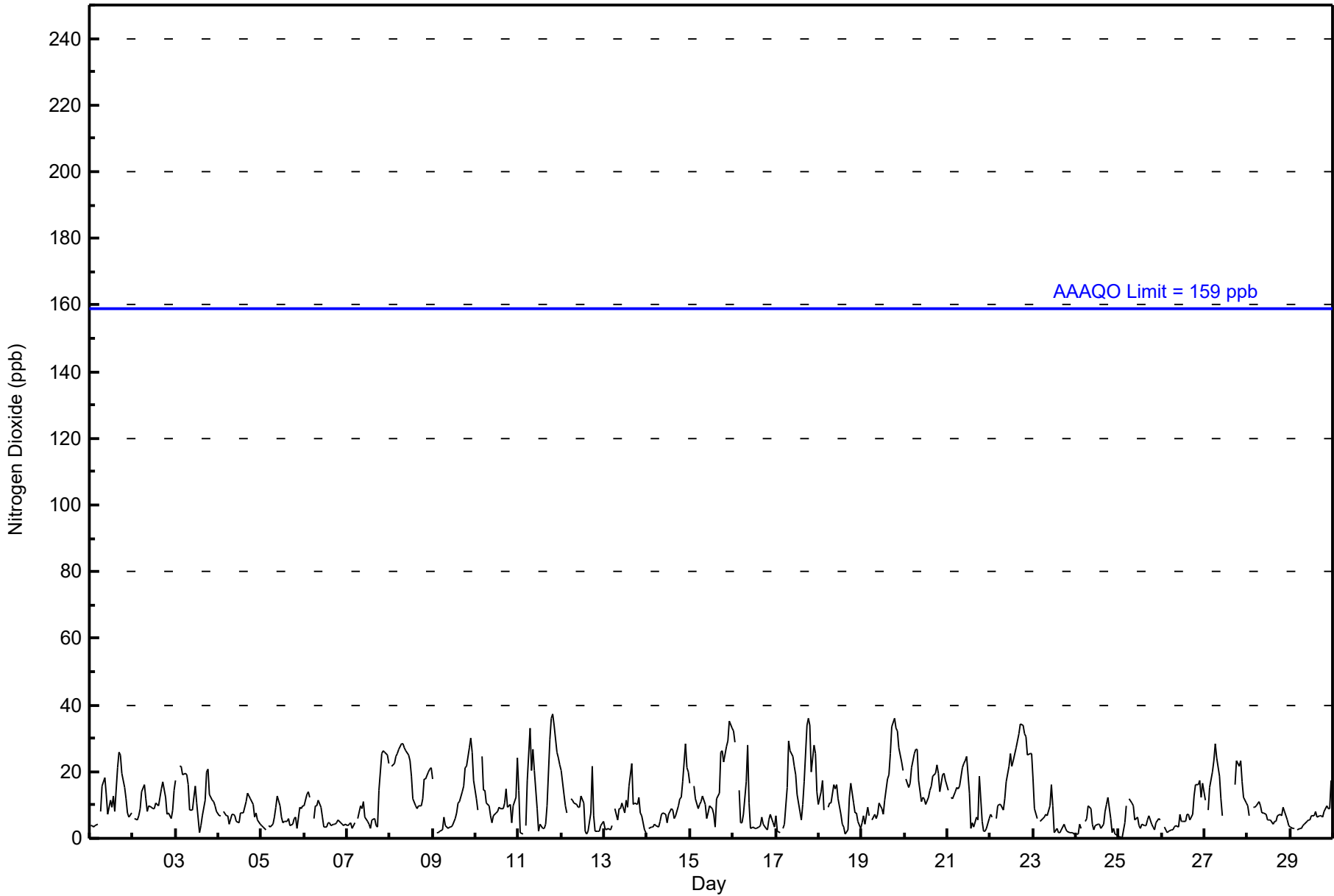
Athabasca Valley - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service:																	696																												
Maximum Value: 37.1 ppb on Feb 11 20:00		Maximum Daily Average: 20.6 ppb on Feb 22																	Hours of Data:		661																												
Minimum Value: 0.2 ppb on Feb 25 03:00		Minimum Daily Average: 4.8 ppb on Feb 24																	Hours of Missing Data:		35																												
Maximum Diurnal Average: 15.8 ppb at hour 19		Minimum Diurnal Average: 7.1 ppb at hour 14																	Hours of Calibration:		35																												
Monthly Average: 10.99 ppb		Percentiles: P ₁ = 1.4 P ₁₀ = 3.0 Q ₁ = 4.7 Median = 8.8 Q ₃ = 15.2 P ₉₀ = 24.1 P ₉₉ = 34.0																	Percent Operational Time:		100.0																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	4.0	3.9	3.5	3.9	4.4	Z	7.9	15.7	18.1	13.2	7.4	11.5	9.5	12.5	7.9	21.3	25.7	25.2	19.3	15.3	11.9	7.5	6.3	7.8	11.5	25.7																							
2-Feb	Z	6.0	5.3	6.9	8.9	14.1	16.2	11.7	8.1	9.9	9.5	9.0	8.8	10.7	9.9	12.2	14.8	16.9	12.2	7.1	7.6	6.0	8.6	14.4	10.2	16.9																							
3-Feb	17.2	Z	21.6	21.6	19.2	19.3	19.2	16.1	8.5	8.3	12.3	15.6	10.8	1.6	3.8	6.8	11.5	20.0	20.7	13.3	11.6	11.2	9.6	8.1	13.4	21.6																							
4-Feb	6.8	6.7	Z	8.1	6.7	6.7	4.4	7.2	7.2	6.8	5.2	4.6	7.6	7.7	7.8	10.9	13.5	12.8	11.8	10.2	6.4	7.8	5.6	4.1	7.7	13.5																							
5-Feb	3.7	3.3	2.5	Z	4.0	3.5	4.3	6.4	9.5	12.8	9.6	6.4	4.8	5.1	4.9	5.9	4.0	4.4	5.8	6.2	2.9	9.5	8.8	9.7	6.0	12.8																							
6-Feb	9.7	13.0	13.8	12.1	Z	6.0	9.7	9.7	11.5	9.4	6.4	3.2	3.5	4.7	4.6	3.7	4.2	4.1	4.6	5.3	4.5	4.2	4.0	4.2	6.8	13.8																							
7-Feb	3.8	4.2	4.6	2.9	4.8	Z	6.0	9.7	9.1	11.1	6.4	4.9	4.2	3.1	5.5	6.1	3.8	3.5	14.3	25.5	26.4	26.0	24.8	22.5	10.1	26.4																							
8-Feb	Z	21.8	22.3	24.5	25.6	26.8	28.5	28.4	27.2	26.3	24.8	23.1	18.7	11.7	9.9	9.0	9.6	9.7	11.8	17.9	17.9	19.8	20.9	21.1	19.9	28.5																							
9-Feb	17.6	Z	1.8	1.9	2.1	2.6	6.4	3.7	3.1	3.6	3.5	3.9	5.9	7.8	10.4	11.0	14.0	15.7	21.3	21.4	27.2	30.0	25.8	17.3	11.2	30.0																							
10-Feb	11.8	8.6	Z	24.7	14.4	14.2	10.5	9.6	6.8	4.7	6.9	7.7	8.2	9.3	9.0	9.0	10.8	14.9	9.3	10.2	4.6	9.7	12.1	24.2	10.9	24.7																							
11-Feb	14.6	1.6	1.3	Z	4.0	17.2	33.0	20.3	26.7	20.3	8.7	2.3	4.1	2.9	3.1	4.2	9.6	29.5	36.0	37.1	34.0	25.9	24.1	22.2	16.6	37.1																							
12-Feb	20.3	13.0	9.9	7.8	Z	11.8	11.6	10.8	10.0	9.4	9.4	12.6	10.6	2.1	1.4	2.1	7.5	21.5	6.8	2.1	2.1	2.2	3.7	5.2	8.4	21.5																							
13-Feb	3.1	2.5	2.8	2.4	3.8	Z	9.0	5.7	9.0	8.7	10.5	7.7	11.4	9.4	15.8	22.4	10.3	10.6	10.0	12.1	7.6	6.7	2.7	1.8	8.1	22.4																							
14-Feb	Z	3.0	3.2	3.3	4.4	3.7	3.6	5.0	7.1	7.8	7.3	4.6	7.1	9.0	8.6	6.0	6.8	9.6	12.0	12.2	17.0	28.6	21.2	20.0	9.2	28.6																							
15-Feb	16.6	Z	15.5	11.7	8.8	10.1	11.0	12.8	10.2	5.8	7.8	9.6	8.7	7.0	3.6	11.9	13.4	25.7	26.2	22.8	27.4	29.1	35.0	33.2	15.8	35.0																							
16-Feb	32.0	28.8	Z	14.2	4.5	4.5	7.3	16.9	28.1	10.8	3.0	3.4	2.8	2.9	3.5	3.8	6.4	4.3	2.8	2.6	5.4	7.3	4.5	3.2	8.8	32.0																							
17-Feb	6.8	2.2	1.9	Z	3.1	4.2	15.1	29.4	26.2	24.5	21.8	19.1	13.1	8.1	5.7	10.0	16.9	34.1	36.2	33.8	19.9	28.0	25.4	14.0	17.4	36.2																							
18-Feb	10.2	13.8	17.3	8.5	Z	9.5	10.6	10.6	16.2	14.7	16.2	12.0	7.0	4.1	3.5	1.4	2.5	12.2	16.4	10.8	7.8	7.7	5.0	2.9	9.6	17.3																							
19-Feb	4.6	6.6	4.3	9.4	6.8	Z	5.4	7.3	5.9	7.0	10.7	8.8	7.2	11.5	17.7	18.9	25.5	33.6	36.1	32.9	32.1	27.3	23.0	20.3	15.8	36.1																							
20-Feb	Z	18.0	15.2	16.7	21.2	25.6	26.7	26.6	17.2	10.9	12.1	11.8	10.1	12.3	14.3	15.8	18.6	19.6	22.0	19.6	14.0	19.0	19.7	17.4	17.6	26.7																							
21-Feb	14.4	Z	12.1	11.9	13.9	15.4	14.9	15.5	21.2	22.3	23.3	24.5	13.4	2.8	4.7	3.2	6.5	5.5	18.6	5.1	2.2	2.2	3.0	6.1	11.4	24.5																							
22-Feb	7.2	6.4	Z	6.1	9.8	10.0	10.3	8.3	11.8	17.1	21.7	25.5	21.5	23.5	27.3	29.1	31.2	34.5	33.8	31.3	30.7	25.2	25.6	25.5	20.6	34.5																							
23-Feb	17.9	9.1	5.9	Z	5.0	5.8	6.4	7.0	6.8	9.6	16.0	9.6	1.8	2.8	1.8	1.6	2.4	4.2	2.9	2.0	1.7	1.9	1.7	1.4	5.4	17.9																							
24-Feb	1.2	1.3	4.4	3.0	Z	5.2	6.0	9.9	9.1	4.2	2.7	3.8	4.3	4.4	2.8	4.4	8.0	10.2	12.4	6.0	1.7	3.0	1.4	0.8	4.8	12.4																							
25-Feb	0.3	0.4	0.2	4.7	9.9	Z	11.7	10.8	9.8	5.6	6.4	4.0	2.8	4.1	3.8	3.9	5.7	6.8	4.4	3.3	2.5	4.6	6.1	5.4	5.1	11.7																							
26-Feb	Z	3.3	2.7	1.7	2.3	2.6	2.5	3.4	4.0	3.2	7.0	5.1	5.2	5.1	7.2	7.2	5.7	7.4	12.9	15.9	16.2	17.2	12.2	16.4	7.2	17.2																							
27-Feb	11.4	Z	8.3	15.4	20.0	23.4	28.4	24.1	18.6	11.9	6.8	C	C	C	C	C	C	C	16.1	23.4	21.5	23.3	16.9	12.2	10.5	--	28.4																						
28-Feb	9.8	6.8	Z	9.3	9.5	9.6	10.9	9.9	7.7	7.6	7.2	5.7	5.6	5.5	4.1	4.9	5.2	6.6	7.4	6.6	9.3	8.1	5.4	4.0	7.2	10.9																							
29-Feb	3.6	3.1	2.9	Z	2.7	2.8	3.0	3.7	4.2	4.9	5.5	5.6	6.6	6.9	7.9	6.4	6.6	6.7	6.4	8.1	9.8	8.7	9.1	17.5	6.2	17.5																							
																								10.4	7.8	7.6	9.7	8.8	10.6	11.7	12.3	12.4	10.8	10.2	9.5	8.0	7.1	7.5	9.0	10.7	14.7	15.8	14.4	13.3	13.8	12.7	12.5	Diurnal Average	
																								32.0	28.8	22.3	24.7	25.6	26.8	33.0	29.4	28.1	26.3	24.8	25.5	21.5	23.5	27.3	29.1	31.2	34.5	36.2	37.1	34.0	30.0	35.0	33.2	Diurnal Maximum	
Z - zerspan C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb																																																	



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Athabasca Valley - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Athabasca Valley - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	562	85.02	85.02
21 - 40	99	14.98	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Athabasca Valley - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	44	16	8	13	9	52	64	22	15	40	34	39	37	15	37	117	562
21 - 40	8	1	3	1	1	6	13	12	3	2	2	0	3	7	7	29	98
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	52	17	11	14	10	58	77	34	18	42	36	39	40	22	44	146	660

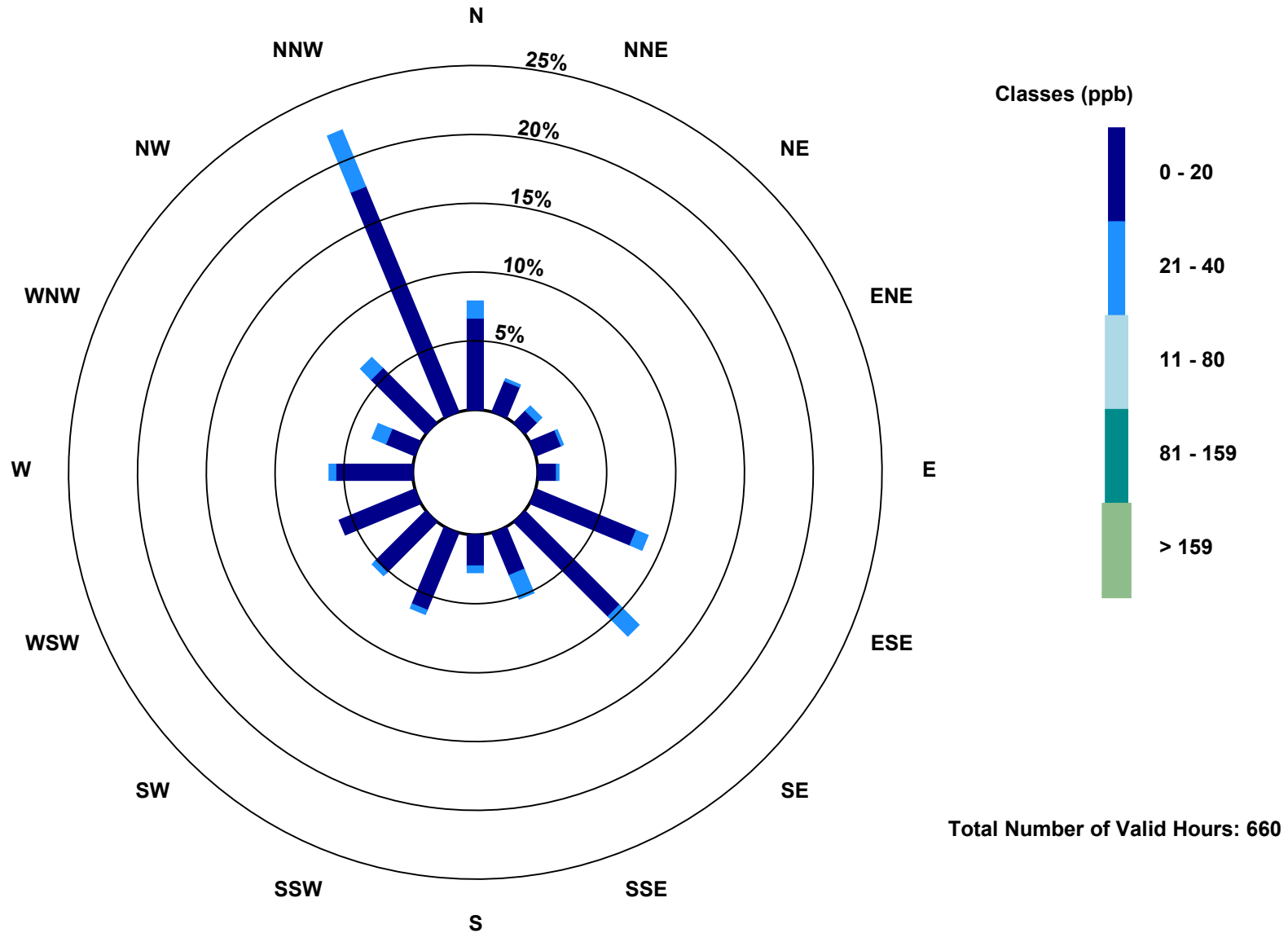
Total Number of Valid Hours: 660

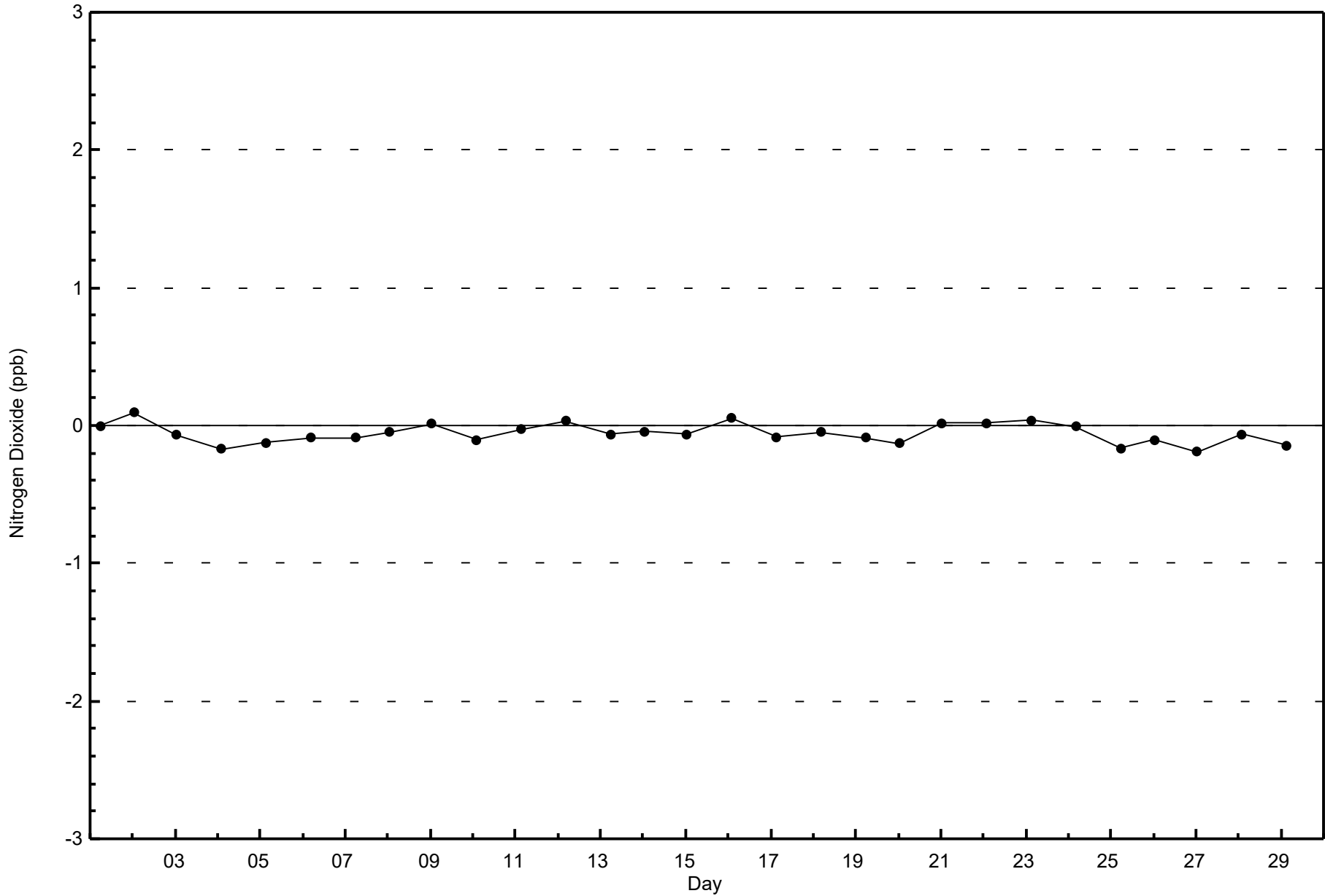
Total Number of Hours: 696

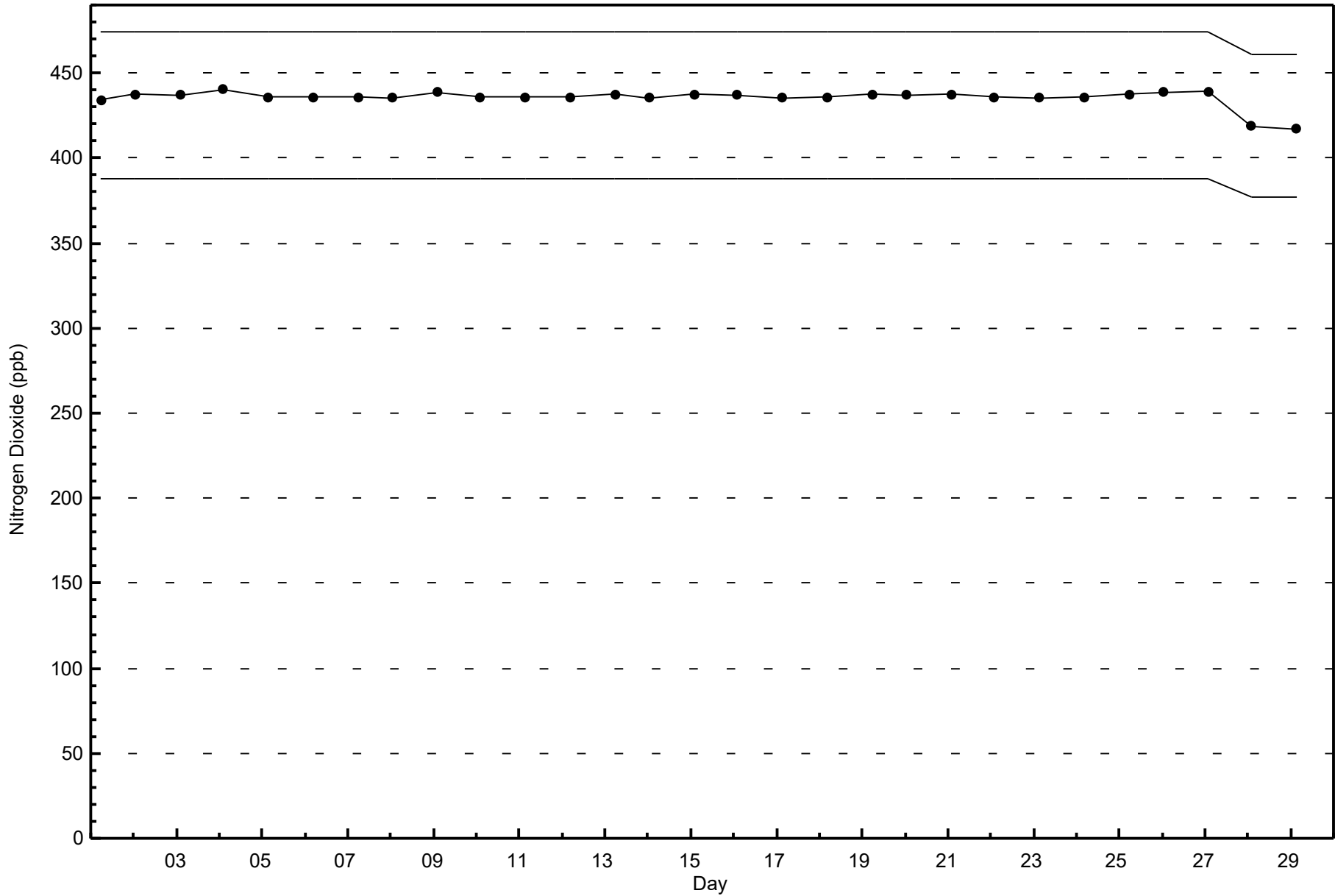


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Athabasca Valley









Wood Buffalo Environmental Association
Summary of Hour Averages

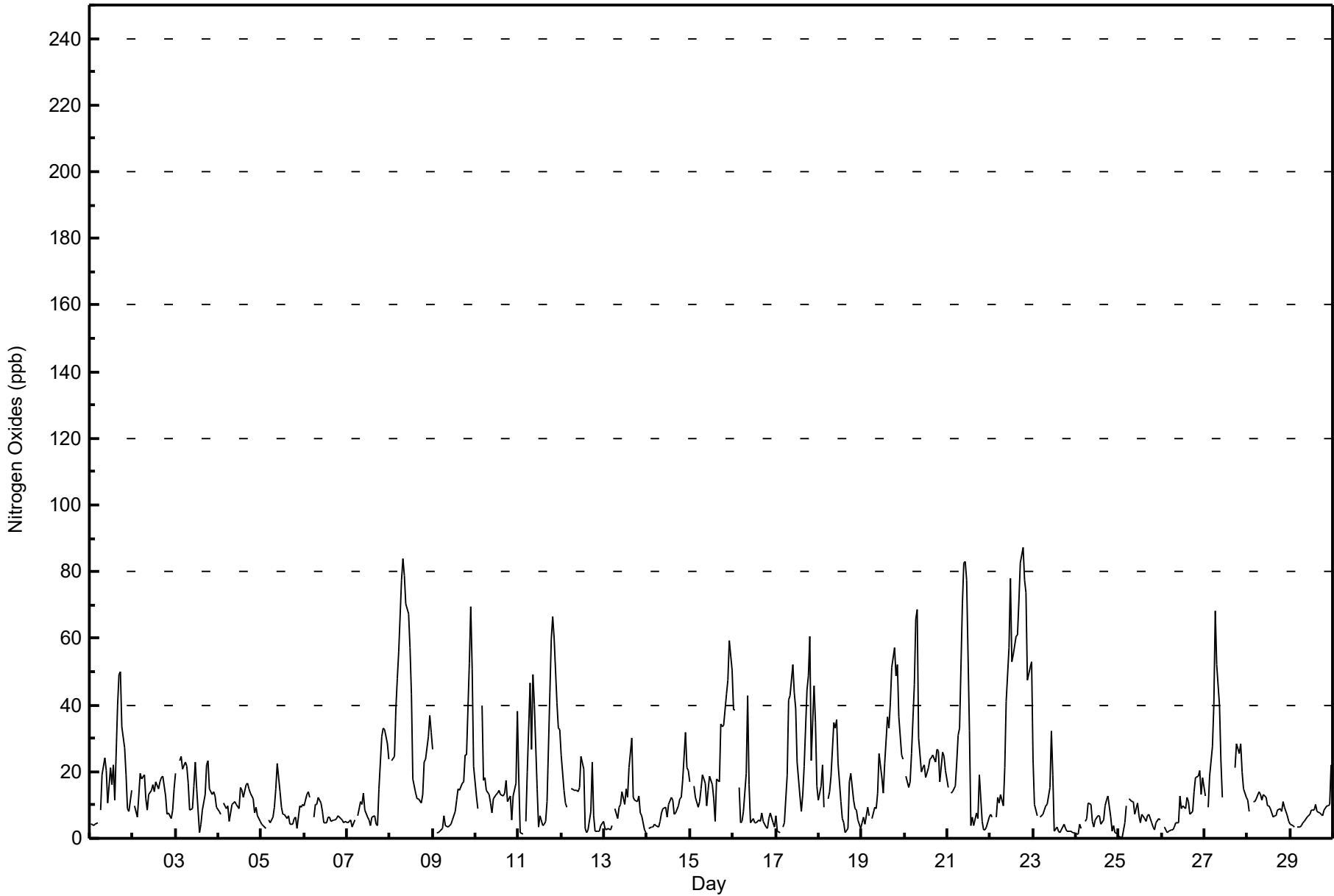
Nitrogen Oxides (NO_x) - ppb
Athabasca Valley - February 2024

Maximum Value: 87.1 ppb on Feb 22 19:00																						Hours in Service: 696																											
Maximum Daily Average: 45.1 ppb on Feb 22																						Hours of Data: 661																											
Minimum Value: 0.2 ppb on Feb 25 03:00																						Hours of Missing Data: 35																											
Minimum Daily Average: 5.6 ppb on Feb 24																						Hours of Calibration: 35																											
Maximum Diurnal Average: 21.5 ppb at hour 9																						Percent Operational Time: 100.0																											
Minimum Diurnal Average: 8.3 ppb at hour 3																																																	
Monthly Average: 16.48 ppb																																																	
Percentiles: P ₁ = 1.5 P ₁₀ = 3.4 Q ₁ = 5.9 Median = 11.2 Q ₃ = 19.8 P ₉₀ = 39.8 P ₉₉ = 77.9																																																	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	4.3	4.2	3.8	4.3	4.5	Z	8.6	19.3	24.0	20.5	10.5	21.0	16.2	22.1	11.6	39.8	49.1	50.2	33.5	27.1	18.9	8.7	8.1	14.4	18.5	50.2																							
2-Feb	Z	9.9	6.5	12.8	19.4	17.7	19.2	12.1	8.5	13.2	14.3	16.0	13.9	16.8	15.0	16.9	18.4	18.7	12.7	7.2	7.7	6.0	8.7	15.0	13.3	19.4																							
3-Feb	19.3	Z	23.3	24.5	20.8	23.0	21.7	16.6	8.7	9.0	15.6	22.7	14.8	1.8	4.4	8.5	13.0	21.9	23.2	14.8	13.3	14.0	12.9	9.2	15.5	24.5																							
4-Feb	8.1	7.4	Z	10.6	8.8	9.6	5.3	10.1	10.4	11.1	10.1	9.0	15.4	14.4	12.5	16.0	16.4	14.9	13.5	11.8	7.5	9.1	6.7	5.1	10.6	16.4																							
5-Feb	4.1	3.9	2.9	Z	5.5	4.8	6.3	9.2	15.0	22.6	13.9	9.4	7.1	7.1	6.1	6.8	4.3	4.4	5.8	6.2	2.9	9.8	9.2	10.0	7.7	22.6																							
6-Feb	9.7	13.1	13.9	12.2	Z	6.4	10.3	10.2	12.2	10.8	8.3	4.6	4.8	6.4	6.2	4.9	5.6	5.4	5.8	6.8	6.1	5.4	4.9	5.1	7.8	13.9																							
7-Feb	4.6	5.0	5.4	3.3	5.5	Z	6.7	10.9	10.1	13.6	8.5	6.4	5.5	3.7	6.5	7.0	4.1	3.7	14.6	30.3	33.1	32.8	28.4	23.8	11.9	33.1																							
8-Feb	Z	23.1	24.5	39.1	47.7	55.9	77.4	83.9	78.7	70.2	67.6	57.1	43.1	18.0	13.8	12.0	11.7	10.8	13.0	22.8	23.9	30.5	37.1	31.6	38.8	83.9																							
9-Feb	26.5	Z	1.8	1.9	2.2	3.0	6.9	3.8	3.2	4.0	4.3	5.4	8.3	11.5	14.8	14.2	16.6	17.1	24.8	24.8	52.4	69.5	50.9	21.6	16.9	69.5																							
10-Feb	12.8	8.8	Z	40.0	17.2	18.2	14.4	13.1	10.8	7.7	11.8	13.2	13.4	14.5	13.1	12.6	13.4	17.4	11.0	12.6	5.5	12.6	16.5	38.3	15.2	40.0																							
11-Feb	17.7	1.7	1.3	Z	4.9	19.8	46.4	26.7	49.2	40.4	14.9	3.4	6.8	3.8	4.4	5.3	11.1	43.6	59.8	66.6	60.0	40.6	33.2	32.5	25.8	66.6																							
12-Feb	24.8	14.5	10.8	9.3	Z	14.8	14.8	14.6	14.3	14.2	15.3	24.4	21.0	3.1	1.6	2.4	8.2	22.7	6.9	2.1	2.1	2.2	3.7	5.2	11.0	24.8																							
13-Feb	3.1	2.5	2.8	2.4	3.8	Z	9.0	5.8	9.5	10.1	14.0	10.1	14.7	12.3	21.4	30.3	12.3	11.5	10.8	12.7	7.6	6.7	2.7	1.8	9.5	30.3																							
14-Feb	Z	3.0	3.2	3.3	4.4	3.7	3.6	5.0	7.5	9.1	9.5	6.3	10.1	12.4	11.3	7.3	7.7	9.8	12.0	12.3	17.3	31.7	21.4	20.2	10.1	31.7																							
15-Feb	17.1	Z	15.6	12.2	9.5	11.2	14.7	19.2	16.5	9.7	14.4	18.7	16.2	12.0	5.1	17.9	16.8	34.4	33.8	43.4	47.4	59.5	50.5	23.0	59.5																								
16-Feb	38.4	38.7	Z	15.4	4.7	5.0	8.0	19.5	42.7	16.0	4.7	5.8	4.5	4.5	5.3	5.2	7.8	5.1	3.2	2.8	5.8	7.7	4.8	3.2	11.3	42.7																							
17-Feb	7.0	2.2	1.9	Z	3.2	4.7	19.0	41.3	42.9	52.2	43.8	39.0	23.0	12.7	7.9	13.0	21.5	44.3	48.7	60.5	23.2	45.6	34.9	15.8	26.4	60.5																							
18-Feb	11.3	15.5	22.2	9.2	Z	11.8	14.1	18.7	34.9	33.0	35.8	22.6	11.1	5.9	4.8	1.8	3.1	16.8	19.4	11.6	8.9	8.5	5.5	2.9	14.3	35.8																							
19-Feb	4.6	6.6	4.3	9.4	7.0	Z	6.0	9.3	9.0	13.4	25.4	18.1	13.7	22.6	36.5	32.9	40.7	51.3	57.4	48.7	52.2	36.3	25.1	23.6	24.1	57.4																							
20-Feb	Z	18.7	15.4	17.0	25.5	46.1	65.7	68.8	30.2	19.7	21.3	22.1	18.3	21.2	23.7	24.2	25.0	22.8	26.9	26.4	16.9	26.0	24.6	20.5	27.3	68.8																							
21-Feb	15.4	Z	13.5	13.9	15.6	22.8	30.9	33.0	70.3	82.6	82.9	77.6	32.1	3.8	6.5	4.0	7.5	5.8	19.1	5.3	2.4	2.4	3.2	6.4	24.2	82.9																							
22-Feb	7.3	6.4	Z	6.3	12.2	10.7	13.3	9.5	21.3	41.3	57.2	78.1	52.9	55.1	60.7	60.8	71.2	82.5	87.1	77.7	73.9	47.4	51.2	53.1	45.1	87.1																							
23-Feb	23.9	10.1	6.9	Z	6.2	7.3	8.4	9.6	10.1	15.5	32.3	18.9	2.2	3.4	2.3	1.9	2.6	4.3	3.0	2.0	2.0	2.0	1.7	1.5	7.7	32.3																							
24-Feb	1.2	1.3	4.4	3.0	Z	5.2	6.1	10.4	10.2	5.1	3.4	5.4	6.9	6.8	4.3	5.6	9.7	11.4	12.9	6.4	1.9	3.7	1.6	1.1	5.6	12.9																							
25-Feb	0.3	0.4	0.2	4.7	9.9	Z	11.7	11.0	11.2	7.3	10.5	6.7	4.8	7.1	5.9	5.2	6.7	7.3	4.8	3.6	2.7	4.7	6.1	5.5	6.0	11.7																							
26-Feb	Z	3.3	2.7	1.7	2.3	2.6	2.6	3.6	4.7	4.6	12.7	9.0	9.5	9.0	12.4	11.2	7.2	8.0	14.2	18.1	18.6	20.3	13.1	18.3	9.1	20.3																							
27-Feb	12.6	Z	9.5	18.5	27.5	40.3	68.3	52.3	39.7	23.4	12.5	C	C	C	C	C	C	C	21.0	28.2	25.4	28.3	19.8	14.9	12.2	--	68.3																						
28-Feb	11.6	8.0	Z	11.2	11.2	11.9	13.9	13.3	11.5	13.0	12.4	9.7	9.6	8.7	6.2	6.7	6.9	8.3	9.0	8.1	11.2	9.4	6.6	4.9	9.7	13.9																							
29-Feb	4.4	3.8	3.6	Z	3.3	3.6	3.8	4.7	5.3	6.3	7.0	7.1	8.5	8.6	10.3	8.2	7.8	7.3	6.6	8.6	9.9	9.8	10.1	22.1	7.4	22.1																							
																								12.1	8.8	8.3	11.9	11.3	15.0	18.5	19.5	21.5	20.7	20.5	19.6	14.6	11.8	11.9	13.7	15.2	20.1	21.4	20.6	19.3	19.7	17.5	16.4	Diurnal Average	
																								38.4	38.7	24.5	40.0	47.7	55.9	77.4	83.9	78.7	82.6	82.9	78.1	52.9	55.1	60.7	60.8	71.2	82.5	87.1	77.7	73.9	69.5	59.5	53.1	Diurnal Maximum	
Z - zerospan																								C - Calibration																									



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Athabasca Valley - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Oxides (NO_x) - ppb
Athabasca Valley - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	500	75.64	75.64
21 - 40	98	14.83	90.47
41 - 80	58	8.77	99.24
81 - 159	5	0.76	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



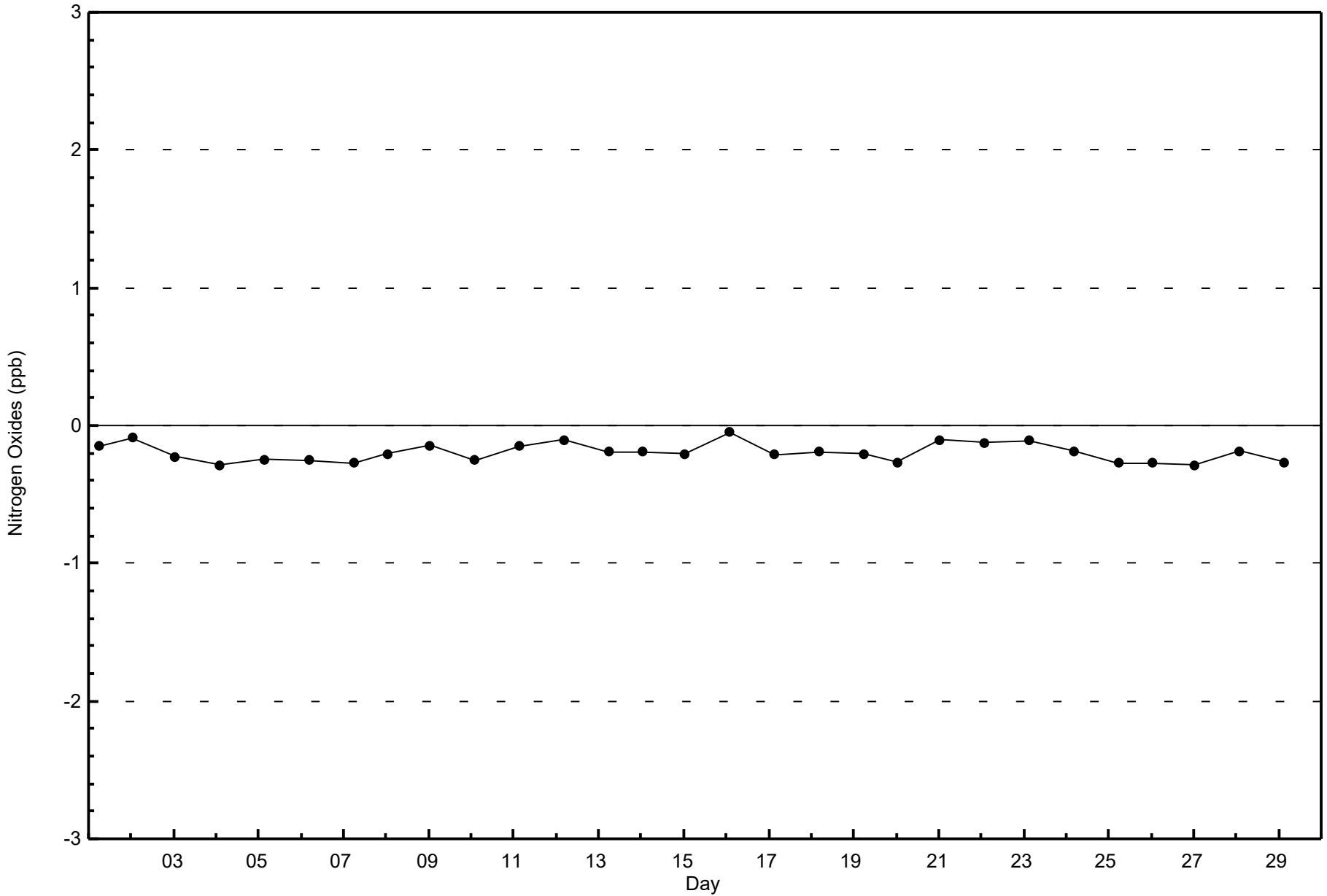
**Wood Buffalo Environmental Association
Frequency Distribution**

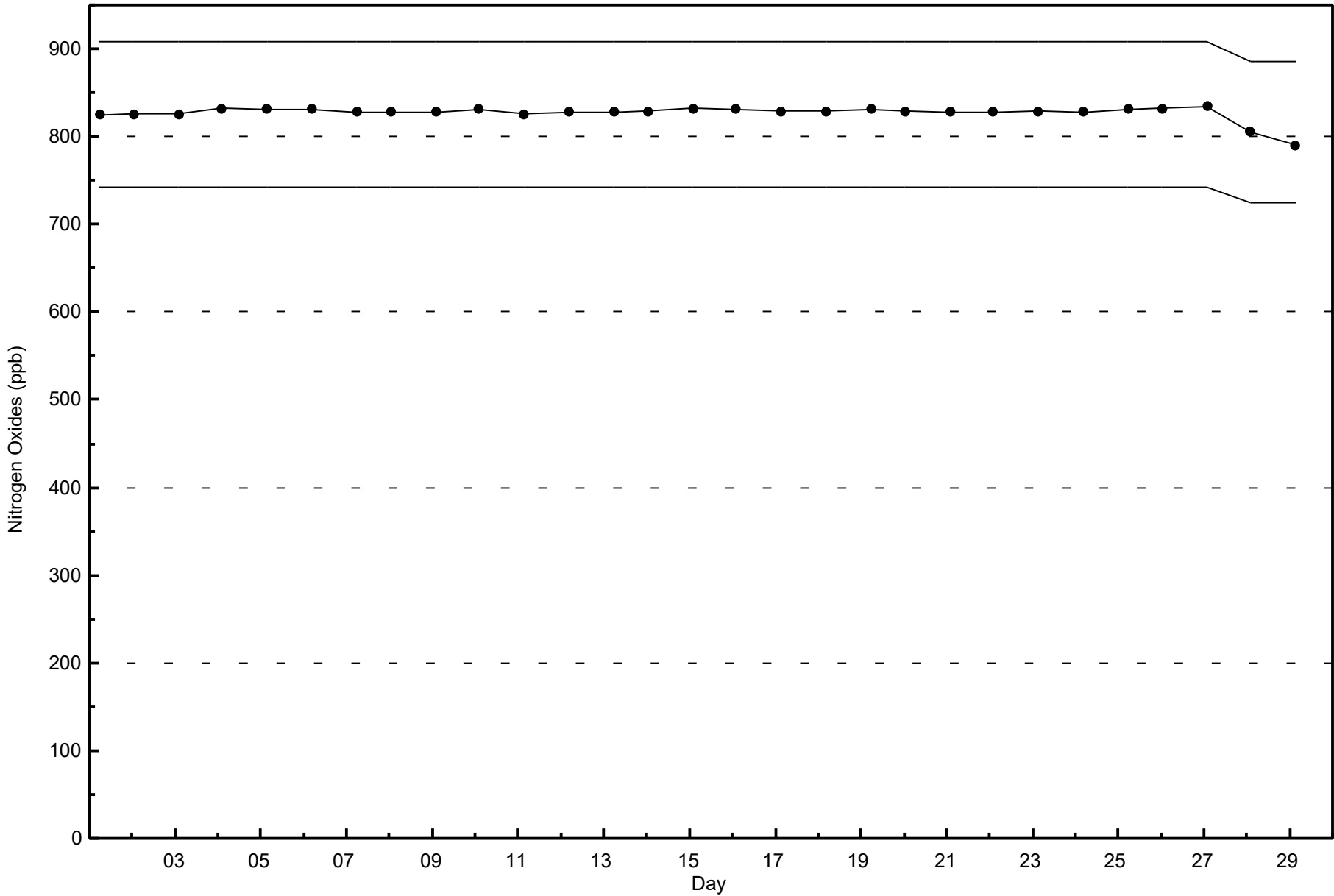
**Nitrogen Oxides (NO_x) - ppb
Athabasca Valley - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	39	15	8	13	5	48	60	17	12	36	31	33	34	14	28	107	500
21 - 40	10	1	0	0	3	7	9	9	4	5	4	5	5	6	11	18	97
11 - 80	3	1	2	1	1	3	8	8	2	1	1	1	1	1	5	19	58
81 - 159	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	2	5
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	52	17	11	14	10	58	77	34	18	42	36	39	40	22	44	146	660

Total Number of Valid Hours: 660

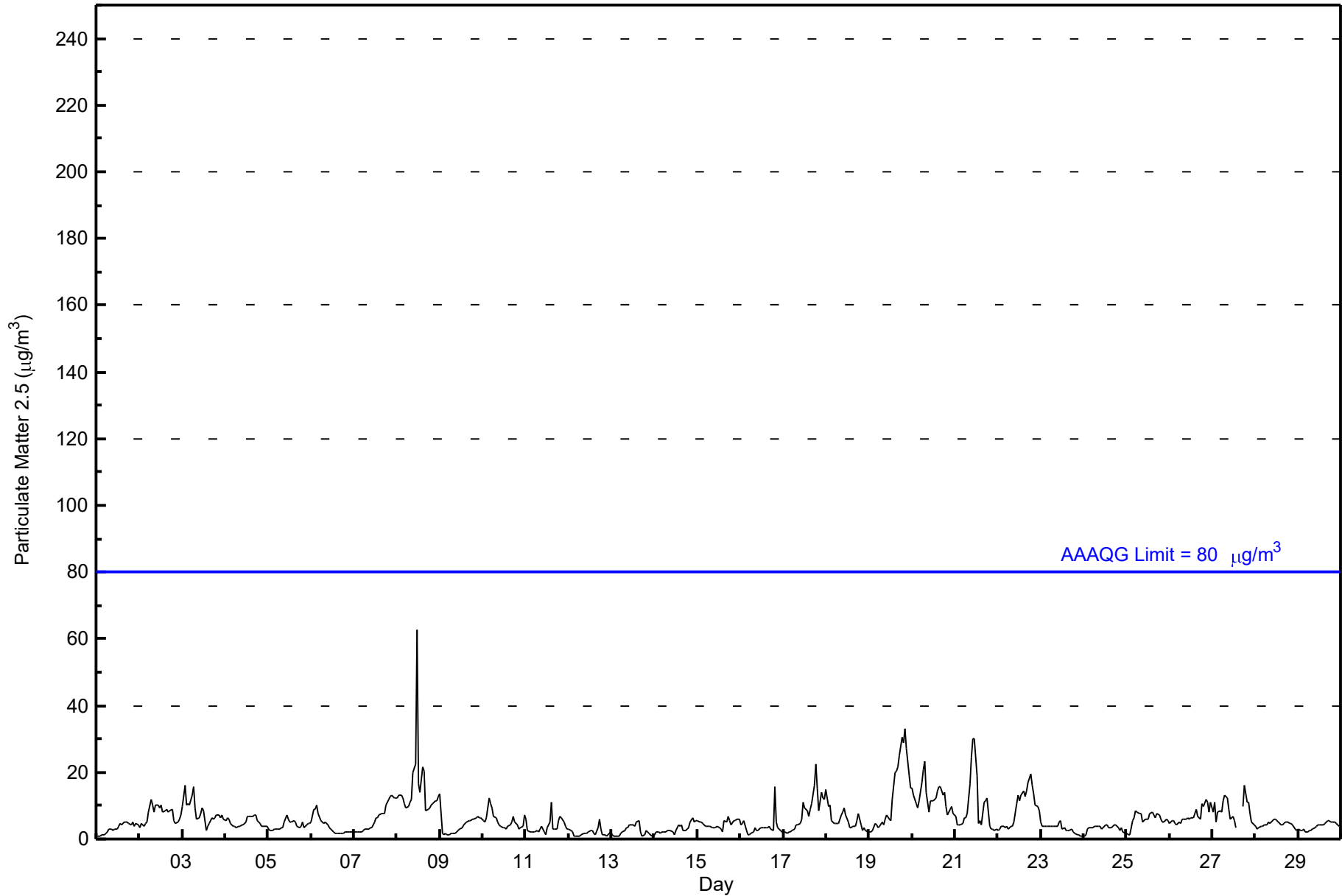
Total Number of Hours: 696







Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																		Hours in Service:	696					
Maximum Value: 62.7 µg/m ³ on Feb 8 12:00		Maximum Daily Average: 15.2 µg/m ³ on Feb 8																	Hours of Data:	693							
Minimum Value: 0.7 µg/m ³ on Feb 13 04:00		Minimum Daily Average: 2.0 µg/m ³ on Feb 12																	Hours of Missing Data:	3							
Maximum Diurnal Average: 8.4 µg/m ³ at hour 12		Minimum Diurnal Average: 4.5 µg/m ³ at hour 5																	Hours of Calibration:	3							
Monthly Average: 6.08 µg/m ³		Percentiles: P ₁ = 0.8 P ₁₀ = 2.0 Q ₁ = 3.1 Median = 4.7 Q ₃ = 7.4 P ₉₀ = 12.0 P ₉₉ = 25.2																	Percent Operational Time:	100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.7	0.7	0.9	1.2	1.3	1.5	2.0	2.9	3.1	2.6	2.9	3.2	3.9	4.5	4.4	5.2	5.2	5.2	4.5	4.3	5.1	4.0	4.8	4.4	3.3	5.2	
2-Feb	3.5	4.5	3.8	4.5	5.2	8.1	11.9	10.0	8.0	10.0	10.3	9.5	10.2	7.8	8.4	8.7	8.1	8.4	8.8	5.4	4.6	4.9	5.7	7.2	7.4	11.9	
3-Feb	9.8	16.2	10.2	10.4	10.4	13.0	15.7	9.3	5.9	6.4	7.6	9.3	8.7	2.6	3.6	4.8	6.4	6.1	6.3	7.0	7.4	6.5	7.0	6.0	8.2	16.2	
4-Feb	5.6	6.5	5.8	4.8	3.6	4.0	3.3	3.8	3.9	4.2	4.2	5.3	6.6	6.7	6.9	6.8	7.2	7.4	5.5	4.7	3.8	3.7	3.7	3.9	5.1	7.4	
5-Feb	3.1	2.7	2.6	2.8	3.0	2.9	2.9	3.3	3.6	5.2	7.4	6.1	4.9	4.9	5.5	4.9	3.8	3.4	3.7	4.9	3.2	4.2	4.8	4.8	4.1	7.4	
6-Feb	5.1	8.9	8.9	10.3	7.4	5.3	5.0	4.5	5.2	4.3	3.6	3.1	2.1	1.9	1.7	1.5	1.6	1.7	1.8	2.0	2.1	2.0	2.1	2.2	3.9	10.3	
7-Feb	2.2	2.2	2.2	2.1	2.2	2.6	2.8	2.9	3.1	3.4	3.4	5.1	6.5	6.2	7.2	7.8	7.6	7.4	10.1	11.8	12.8	13.0	12.5	12.2	6.2	13.0	
8-Feb	12.3	13.1	13.3	12.4	10.6	9.5	9.8	10.9	11.8	19.9	22.6	62.7	16.4	14.0	21.8	20.2	8.5	8.9	9.3	10.1	10.7	11.4	11.6	12.7	15.2	62.7	
9-Feb	13.5	1.6	1.4	1.6	1.4	1.2	1.7	1.8	1.7	2.1	2.7	3.0	3.4	4.1	4.7	5.0	5.3	5.3	5.9	5.8	6.3	6.9	6.2	6.4	4.1	13.5	
10-Feb	5.7	4.9	6.4	12.5	10.6	9.2	6.6	6.3	5.3	4.0	3.6	3.2	3.2	3.1	3.6	4.4	5.2	6.8	5.0	4.1	3.1	3.6	3.9	7.4	5.5	12.5	
11-Feb	6.1	2.6	2.3	2.3	2.2	2.2	2.4	2.1	3.1	3.6	2.0	1.2	3.5	4.9	11.0	3.0	2.9	3.0	5.5	6.8	6.5	5.1	3.8	3.0	3.8	11.0	
12-Feb	3.2	2.7	2.0	0.9	0.8	0.9	0.9	1.2	1.8	1.7	1.6	2.2	2.6	2.5	1.6	1.4	3.4	6.0	2.9	1.1	1.1	1.0	1.4	2.3	2.0	6.0	
13-Feb	1.3	0.8	0.8	0.7	1.1	1.8	2.3	2.7	3.4	3.3	4.4	4.2	4.0	4.0	4.9	5.4	1.9	1.0	1.2	2.4	2.0	1.5	0.7	0.7	2.4	5.4	
14-Feb	1.2	2.2	2.0	1.8	2.0	2.2	2.1	2.6	2.6	2.6	2.1	1.1	2.6	4.1	3.8	4.1	2.6	2.4	2.9	3.3	5.2	6.2	5.2	5.7	3.0	6.2	
15-Feb	5.6	5.3	4.9	4.6	3.9	3.9	3.8	3.8	3.5	3.3	3.3	3.6	3.2	2.8	2.1	5.6	5.2	6.6	5.4	4.2	5.3	5.4	5.9	6.1	4.5	6.6	
16-Feb	4.3	4.8	5.6	2.7	1.3	1.4	1.6	2.3	3.2	2.6	2.7	3.3	3.6	3.4	3.5	3.5	4.0	3.1	2.7	15.5	5.0	3.3	2.7	1.9	3.7	15.5	
17-Feb	2.3	2.0	1.9	2.2	2.3	2.7	3.2	4.2	4.3	4.5	5.8	10.9	9.5	8.3	6.8	8.8	10.6	16.2	22.3	15.1	8.4	14.1	12.4	12.0	7.9	22.3	
18-Feb	14.7	9.7	10.3	5.4	4.7	4.8	4.6	4.5	7.3	7.9	9.2	7.1	5.1	3.5	3.6	3.8	3.8	5.5	7.5	4.1	2.6	3.2	2.4	2.0	5.7	14.7	
19-Feb	2.0	1.9	2.4	4.8	4.4	3.5	3.8	5.1	4.3	5.8	7.0	6.1	5.7	12.0	20.1	20.5	21.5	25.1	30.3	28.6	33.2	27.0	18.9	15.4	12.9	33.2	
20-Feb	15.5	13.2	10.7	9.3	11.3	16.9	20.9	23.1	13.8	8.1	11.3	11.3	11.6	12.4	14.5	15.8	15.5	13.1	14.1	9.9	7.3	8.8	9.9	7.7	12.8	23.1	
21-Feb	6.7	4.1	4.3	4.2	4.7	6.1	6.3	7.5	16.6	24.5	30.1	30.1	18.9	4.8	5.6	4.2	10.9	11.2	12.3	4.0	3.1	2.9	2.6	2.8	9.5	30.1	
22-Feb	2.6	3.0	3.9	3.7	3.5	3.7	3.0	3.8	3.7	5.2	10.7	12.9	11.3	13.0	14.5	12.8	14.5	17.1	19.5	16.2	13.4	10.1	9.5	8.3	9.2	19.5	
23-Feb	5.2	4.0	3.7	3.7	3.9	3.8	3.7	3.8	3.7	3.9	5.1	5.6	3.1	3.5	2.7	2.4	2.5	3.0	2.3	1.8	1.3	1.3	0.9	0.8	3.1	5.6	
24-Feb	0.8	1.3	3.2	3.3	3.2	3.5	3.9	4.0	3.9	3.7	3.0	3.5	4.0	4.1	3.6	3.3	3.8	4.1	4.4	3.5	2.7	3.4	2.2	1.8	3.3	4.4	
25-Feb	1.5	1.4	1.3	5.3	6.5	8.6	8.1	7.8	7.5	5.0	5.8	5.8	5.8	7.5	8.1	7.2	6.5	7.7	7.3	5.7	5.3	5.0	5.7	5.6	5.9	8.6	
26-Feb	4.9	5.4	5.3	4.6	4.3	4.9	4.8	5.9	5.7	6.0	6.2	6.0	6.4	6.2	7.7	9.1	6.9	5.7	10.5	9.7	11.9	11.0	8.0	11.0	7.0	11.9	
27-Feb	8.1	11.2	5.1	8.0	8.6	8.1	11.6	13.0	12.4	9.0	6.1	6.6	5.3	3.4	C	C	C	9.8	16.0	11.2	11.2	7.5	4.9	4.4	8.6	16.0	
28-Feb	3.7	3.1	3.2	3.7	3.6	4.1	4.1	4.9	4.8	4.9	5.9	5.9	5.7	5.3	4.4	4.4	4.8	5.3	4.9	4.7	4.7	4.3	3.0	2.6	4.4	5.9	
29-Feb	2.8	2.4	2.6	3.1	2.2	2.1	2.5	2.6	3.0	3.2	3.9	4.3	4.0	4.0	4.4	4.7	5.6	5.3	5.3	5.2	5.2	4.6	4.2	3.8	3.8	5.6	
		5.3	4.9	4.5	4.7	4.5	4.9	5.4	5.5	5.5	5.9	6.7	8.4	6.3	5.7	6.8	6.8	6.6	7.3	8.2	7.3	6.7	6.4	5.8	5.7	Diurnal Average	
		15.5	16.2	13.3	12.5	11.3	16.9	20.9	23.1	16.6	24.5	30.1	62.7	18.9	14.0	21.8	20.5	21.5	25.1	30.3	28.6	33.2	27.0	18.9	15.4	Diurnal Maximum	
C - Calibration																											
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Athabasca Valley - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	429	61.90	61.90
6 - 15	230	33.19	95.09
16 - 25	27	3.90	98.99
26 - 80	7	1.01	100.00
> 81.0	0	0.00	100.00

Total Number of Valid Hours: 693

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Athabasca Valley - February 2024**

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	25	13	7	9	5	51	64	22	11	35	29	27	27	14	20	70	429
6 - 15	26	4	3	7	3	8	15	13	9	7	7	12	15	6	22	72	229
16 - 25	2	1	1	0	2	1	2	0	0	1	2	2	0	2	3	8	27
26 - 80	0	0	0	0	1	0	1	0	0	0	0	0	0	2	2	1	7
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	53	18	11	16	11	60	82	35	20	43	38	41	42	24	47	151	692

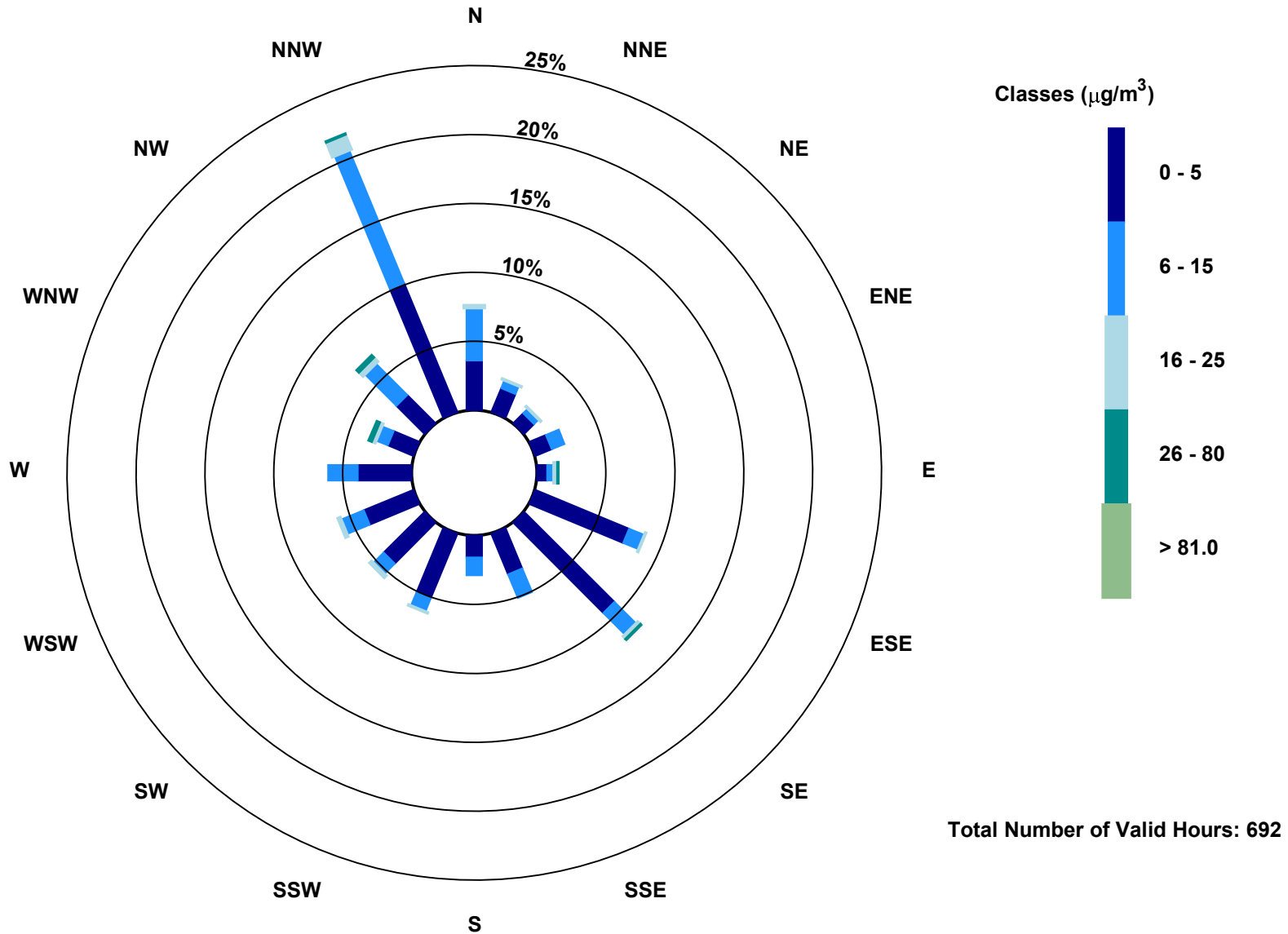
Total Number of Valid Hours: 692

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

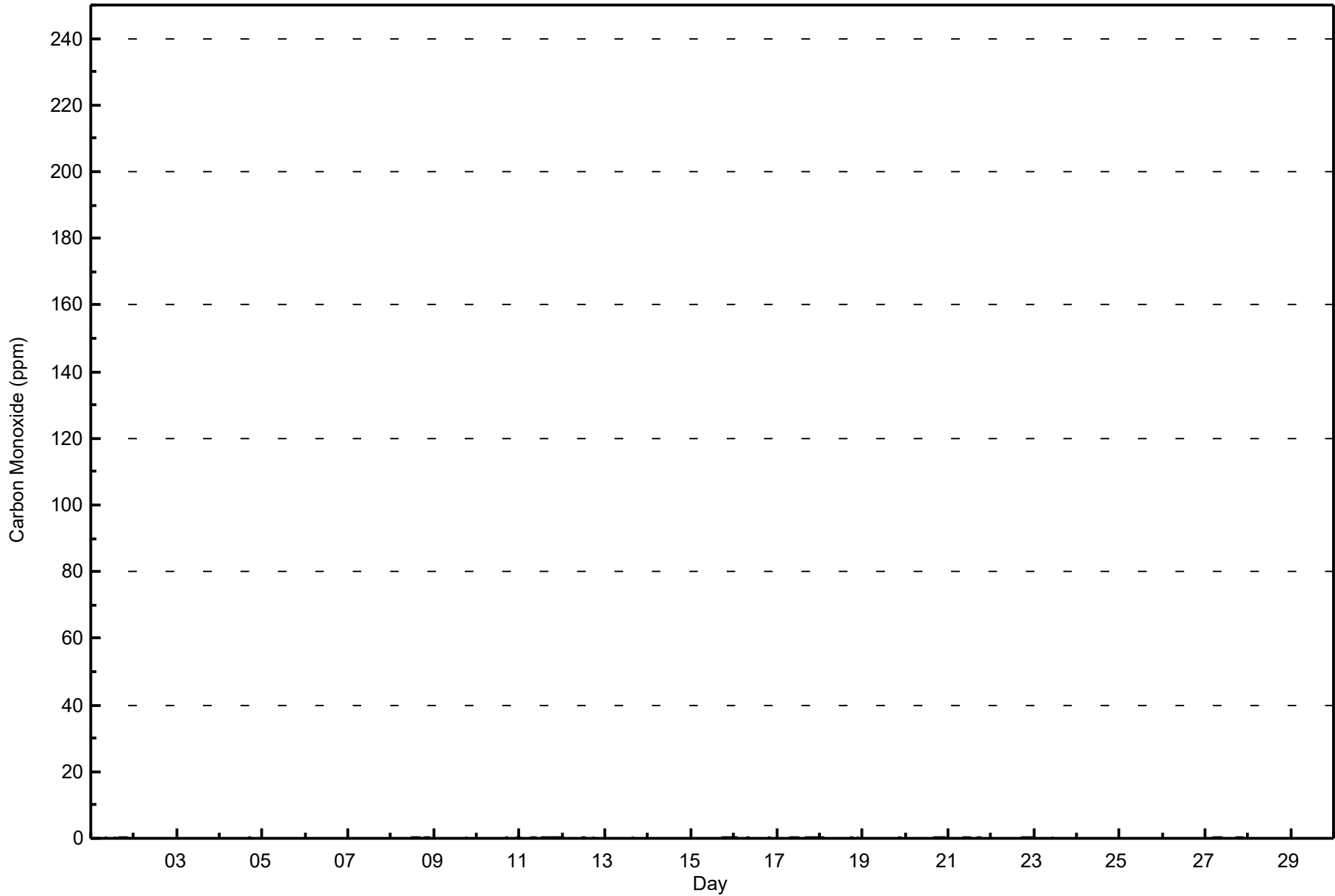
Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Athabasca Valley





Wood Buffalo Environmental Association
Hourly Averages

Carbon Monoxide (CO) - ppm
Athabasca Valley - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Carbon Monoxide (CO) - ppm
Athabasca Valley - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.3	639	96.67	96.67
0.4 - 0.5	21	3.18	99.85
0.6 - 0.7	1	0.15	100.00
0.8 - 1.4	0	0.00	100.00
1.5 - 10	0	0.00	100.00
> 10	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Carbon Monoxide (CO) - ppm
Athabasca Valley - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.3	48	15	10	16	11	56	73	26	17	40	35	40	34	23	46	148	638
0.4 - 0.5	0	1	0	0	0	2	4	7	2	1	1	0	2	0	0	1	21
0.6 - 0.7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0.8 - 1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.5 - 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	48	16	10	16	11	58	77	33	19	41	36	40	37	23	46	149	660

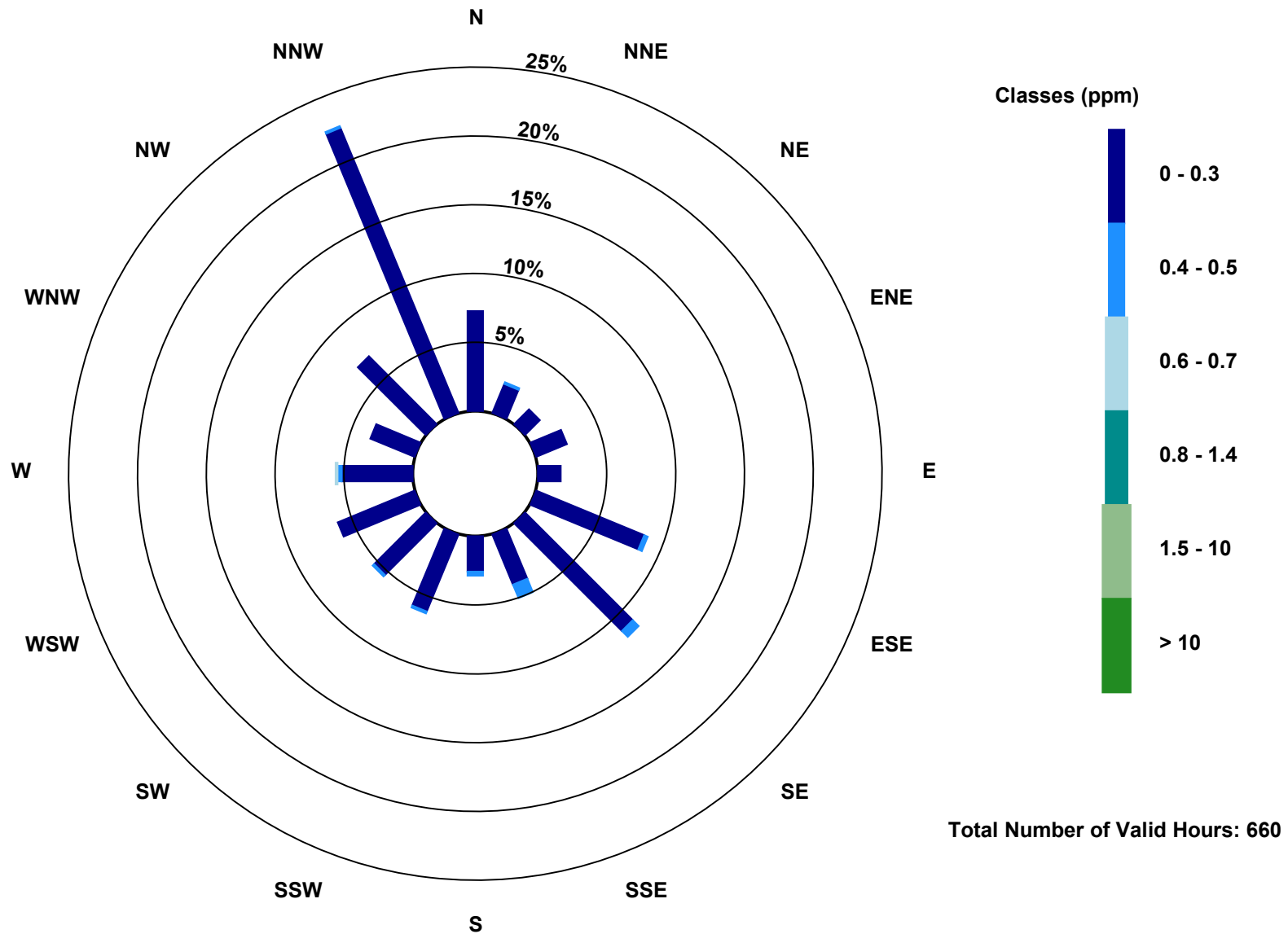
Total Number of Valid Hours: 660

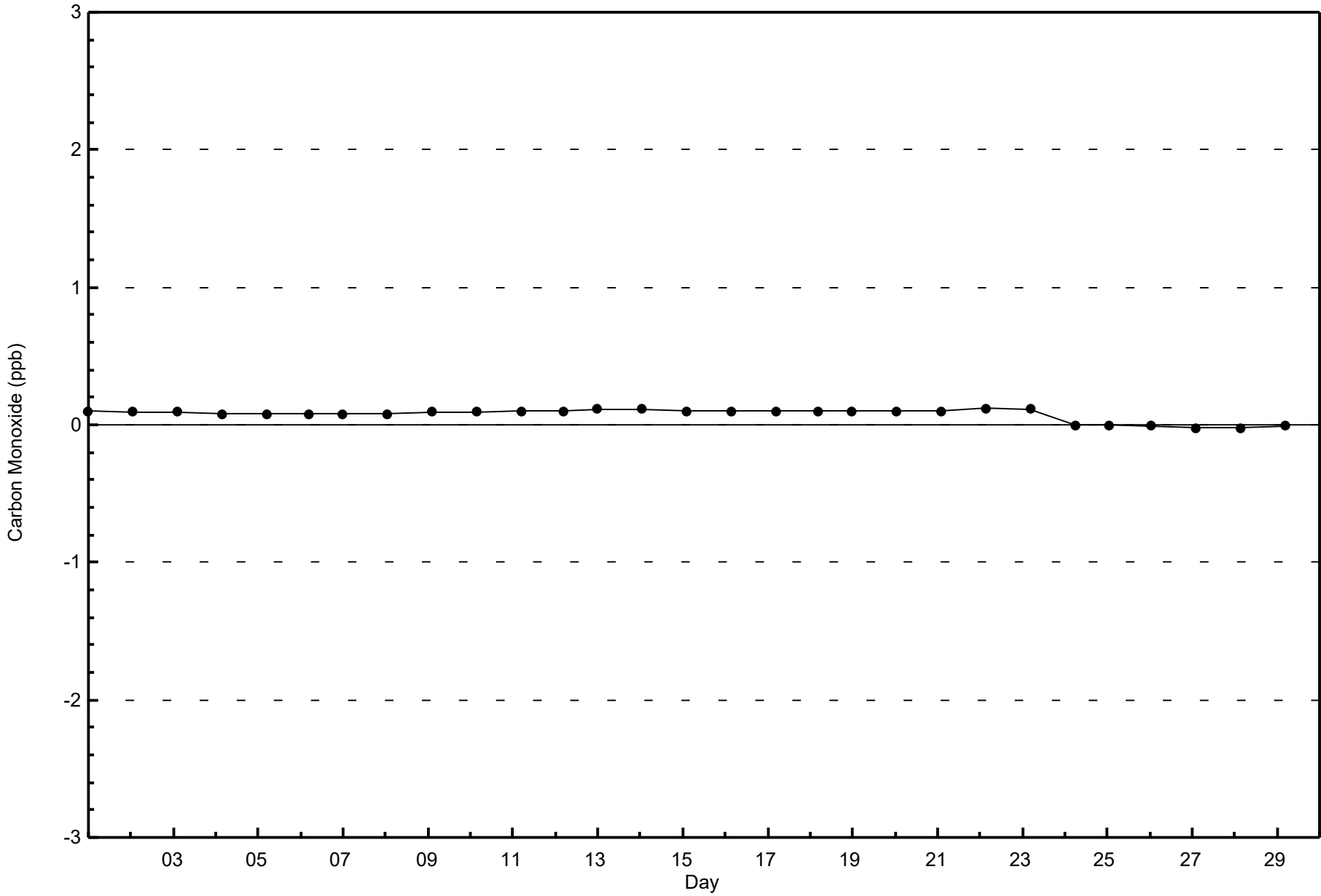
Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Carbon Monoxide (CO) - ppm
Athabasca Valley

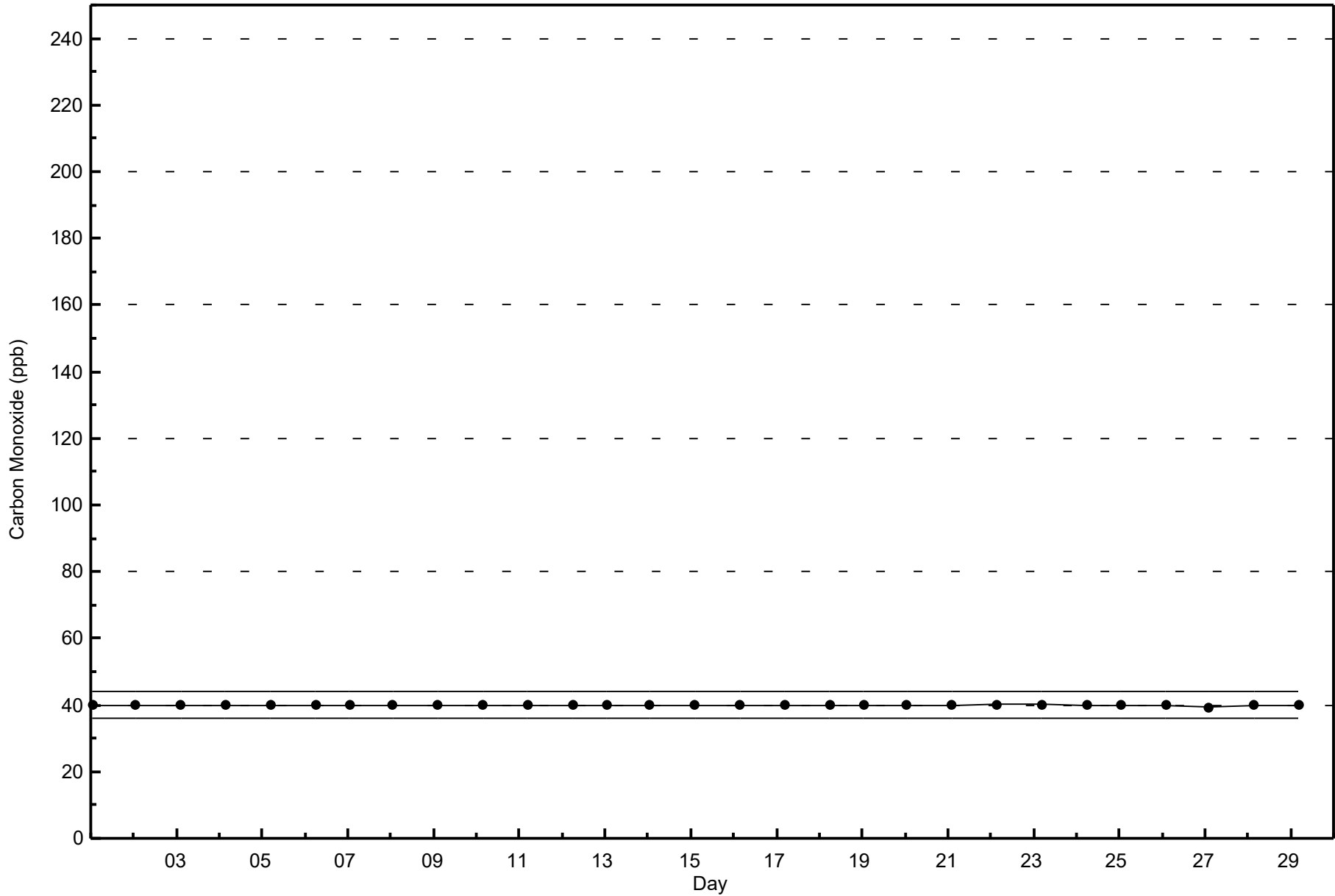






Wood Buffalo Environmental Association
Span Responses

Carbon Monoxide (CO) - ppb
Athabasca Valley - February 2024

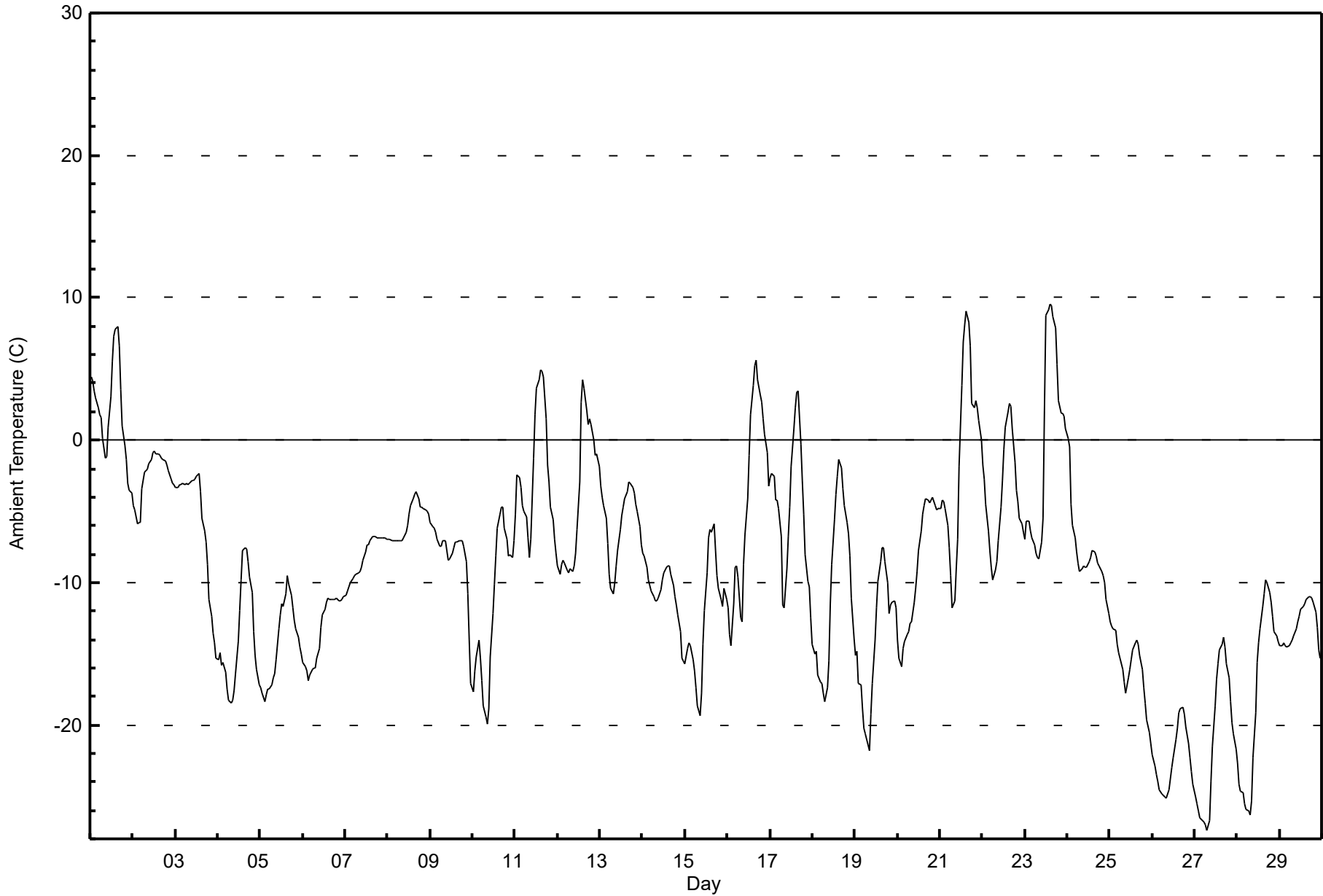




Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature (AT) - C
Athabasca Valley - February 2024

Maximum Value: 9.5 C on Feb 23 15:00 Maximum Daily Average: 2.1 C on Feb 1		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: -27.4 C on Feb 27 08:00 Minimum Daily Average: -22.5 C on Feb 26 Maximum Diurnal Average: -4.2 C at hour 16 Minimum Diurnal Average: -13.1 C at hour 8 Monthly Average: -9.07 C Percentiles: P ₁ = -26.1 P ₁₀ = -18.3 Q ₁ = -14.2 Median = -8.8 Q ₃ = -4.5 P ₉₀ = 0.8 P ₉₉ = 8.1																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	4.5	4.2	3.5	3.0	2.2	1.8	1.6	0.1	-1.2	-1.2	0.9	3.1	5.5	7.3	7.8	7.9	6.6	3.5	1.0	-0.4	-1.4	-3.0	-3.5	-3.7	2.1	7.9
2-Feb	-4.6	-4.9	-5.9	-5.8	-5.7	-3.4	-2.3	-2.1	-2.0	-1.7	-1.4	-0.9	-0.8	-1.0	-1.0	-1.1	-1.2	-1.4	-1.5	-1.8	-2.1	-2.7	-3.0	-3.2	-2.6	-0.8
3-Feb	-3.3	-3.3	-3.2	-3.1	-3.1	-3.1	-3.0	-3.1	-3.1	-2.9	-2.8	-2.7	-2.6	-2.3	-3.6	-5.4	-6.3	-7.2	-8.7	-11.2	-12.3	-13.6	-14.2	-15.3	-5.8	-2.3
4-Feb	-15.5	-14.9	-15.9	-15.7	-16.3	-17.5	-18.2	-18.5	-18.3	-17.6	-16.4	-14.1	-12.0	-9.8	-7.8	-7.6	-7.7	-8.6	-9.6	-10.7	-13.4	-15.1	-16.2	-17.2	-13.9	-7.6
5-Feb	-17.3	-17.8	-18.3	-17.9	-17.5	-17.5	-17.2	-16.7	-16.4	-15.5	-13.3	-12.3	-11.5	-11.7	-10.8	-9.6	-10.1	-10.9	-11.8	-12.7	-13.3	-13.8	-14.6	-15.1	-14.3	-9.6
6-Feb	-15.7	-15.9	-16.2	-16.9	-16.5	-16.1	-16.0	-16.0	-15.3	-14.6	-13.1	-12.3	-11.9	-11.4	-11.1	-11.2	-11.2	-11.2	-11.2	-11.1	-11.2	-11.3	-11.2	-11.0	-13.3	-11.0
7-Feb	-10.9	-10.6	-10.3	-10.0	-9.7	-9.5	-9.4	-9.3	-9.2	-8.9	-8.4	-7.8	-7.3	-7.3	-7.0	-6.8	-6.8	-6.8	-6.8	-6.8	-6.9	-6.9	-6.9	-6.9	-8.2	-6.8
8-Feb	-6.9	-7.0	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1	-6.9	-6.5	-6.0	-5.2	-4.6	-4.1	-3.8	-3.6	-4.1	-4.7	-4.7	-4.8	-4.9	-5.0	-5.2	-5.7	-3.6
9-Feb	-5.7	-6.0	-6.2	-6.5	-7.0	-7.5	-7.4	-7.1	-7.1	-7.8	-8.5	-8.3	-7.9	-7.5	-7.1	-7.2	-7.0	-7.1	-7.1	-7.4	-8.5	-10.8	-14.0	-17.1	-8.1	-5.7
10-Feb	-17.6	-16.2	-15.3	-14.1	-15.3	-16.9	-18.7	-19.5	-19.9	-18.8	-15.2	-12.2	-10.1	-8.1	-6.2	-5.2	-4.7	-4.7	-6.2	-7.0	-8.2	-8.1	-8.2	-7.1	-11.8	-4.7
11-Feb	-5.2	-2.4	-2.7	-3.3	-4.6	-5.0	-5.4	-6.9	-8.2	-6.9	-1.3	1.8	3.6	4.3	5.0	4.8	4.4	1.5	-1.7	-2.9	-4.7	-5.6	-7.0	-8.0	-2.4	5.0
12-Feb	-8.8	-9.4	-8.8	-8.4	-8.7	-9.1	-9.3	-9.0	-9.2	-8.9	-7.9	-6.3	-3.0	2.7	4.2	3.7	2.1	1.1	1.5	1.1	0.0	-1.1	-0.9	-1.8	-3.9	4.2
13-Feb	-3.2	-4.0	-4.6	-5.5	-7.3	-9.4	-10.4	-10.8	-10.0	-8.8	-7.7	-6.3	-5.3	-4.7	-4.2	-3.6	-3.0	-3.0	-3.3	-3.8	-4.5	-5.0	-6.0	-7.4	-5.9	-3.0
14-Feb	-7.9	-8.2	-8.9	-9.8	-10.2	-10.6	-11.0	-11.3	-11.3	-11.1	-10.5	-9.8	-9.3	-8.9	-8.9	-8.9	-9.4	-10.2	-11.0	-11.6	-12.3	-13.4	-15.4	-15.5	-10.6	-7.9
15-Feb	-15.7	-14.6	-14.2	-14.5	-15.4	-16.2	-17.4	-18.7	-19.3	-17.8	-14.3	-12.0	-9.3	-6.9	-6.3	-6.5	-5.9	-7.7	-9.6	-10.4	-11.2	-11.7	-10.4	-11.2	-12.4	-5.9
16-Feb	-11.8	-13.7	-14.4	-11.5	-8.9	-8.9	-9.6	-12.5	-12.8	-8.7	-6.7	-4.1	-1.0	1.8	3.9	5.2	5.7	4.2	3.2	2.7	1.5	0.4	-0.8	-3.2	-4.2	5.7
17-Feb	-2.6	-2.3	-2.6	-4.2	-4.2	-4.8	-6.8	-11.6	-11.8	-9.1	-6.8	-4.7	-1.8	0.8	2.3	3.4	3.4	-0.3	-2.8	-5.2	-8.0	-9.9	-10.3	-12.5	-4.7	3.4
18-Feb	-14.3	-15.0	-14.8	-16.5	-17.0	-17.1	-17.8	-18.3	-17.4	-15.5	-11.5	-8.7	-5.6	-3.8	-2.6	-1.4	-1.9	-3.4	-4.6	-5.8	-6.5	-8.1	-11.1	-14.0	-10.5	-1.4
19-Feb	-15.2	-14.8	-17.1	-17.2	-18.9	-20.2	-20.7	-21.4	-21.8	-19.2	-17.1	-14.1	-11.8	-9.9	-8.5	-7.6	-7.6	-8.5	-10.0	-12.2	-11.6	-11.4	-11.3	-11.8	-14.2	-7.6
20-Feb	-14.0	-15.4	-15.9	-14.7	-14.1	-13.6	-13.4	-12.9	-12.8	-11.4	-10.5	-9.2	-7.7	-6.4	-5.2	-4.6	-4.1	-4.2	-4.4	-4.2	-4.0	-4.6	-4.9	-4.8	-9.0	-4.0
21-Feb	-4.8	-4.2	-4.3	-4.8	-6.0	-7.6	-9.5	-11.7	-11.3	-9.1	-7.0	-1.9	3.8	6.9	8.1	9.1	8.3	6.6	2.5	2.3	2.8	2.3	1.4	0.1	-1.2	9.1
22-Feb	-1.8	-2.8	-4.5	-6.3	-7.7	-8.9	-9.8	-9.1	-8.5	-7.1	-4.7	-2.9	-0.7	0.9	2.0	2.5	2.3	0.8	-1.6	-3.5	-4.3	-5.5	-5.9	-6.5	-3.9	2.5
23-Feb	-7.0	-5.7	-5.6	-6.3	-6.8	-7.3	-7.9	-8.3	-8.4	-7.1	-5.5	2.0	8.8	9.2	9.5	9.4	8.6	7.9	5.3	2.8	1.9	1.9	1.7	0.8	-0.3	9.5
24-Feb	0.1	-0.4	-4.5	-6.0	-6.9	-7.8	-8.6	-9.2	-9.1	-8.9	-8.9	-9.0	-8.5	-8.3	-7.8	-7.9	-8.2	-8.6	-8.9	-9.2	-9.5	-10.0	-11.2	-12.2	-7.9	0.1
25-Feb	-12.7	-13.0	-13.2	-13.4	-14.4	-14.9	-15.3	-16.1	-17.0	-17.7	-16.7	-16.1	-15.5	-14.7	-14.2	-14.0	-14.3	-15.2	-16.1	-17.3	-18.5	-19.6	-20.5	-21.3	-15.9	-12.7
26-Feb	-22.1	-22.9	-23.4	-24.0	-24.6	-24.9	-25.0	-25.1	-25.1	-24.6	-23.8	-23.0	-22.3	-21.0	-20.2	-19.2	-18.9	-18.7	-19.2	-20.1	-21.3	-22.3	-23.3	-24.2	-22.5	-18.7
27-Feb	-25.0	-25.5	-26.0	-26.5	-26.7	-26.8	-27.0	-27.4	-26.7	-24.0	-21.6	-18.7	-16.8	-15.7	-14.7	-14.3	-13.9	-14.6	-15.7	-16.7	-18.4	-19.8	-20.7	-21.8	-21.0	-13.9
28-Feb	-22.7	-24.1	-24.6	-24.7	-25.5	-26.0	-26.0	-26.3	-25.4	-22.3	-19.2	-15.6	-14.2	-13.2	-11.7	-10.8	-9.8	-10.0	-10.7	-11.4	-12.3	-13.4	-13.7	-14.1	-17.8	-9.8
29-Feb	-14.5	-14.5	-14.3	-14.4	-14.5	-14.4	-14.3	-14.0	-13.8	-13.2	-12.8	-12.3	-11.9	-11.7	-11.4	-11.2	-10.9	-11.0	-11.0	-11.4	-12.1	-13.2	-14.7	-15.3	-13.0	-10.9
	-10.4	-10.5	-11.0	-11.2	-11.7	-12.1	-12.5	-13.1	-13.1	-12.0	-10.3	-8.4	-6.6	-5.4	-4.5	-4.2	-4.3	-5.2	-6.4	-7.3	-8.1	-9.0	-9.7	-10.6		Diurnal Average
	4.5	4.2	3.5	3.0	2.2	1.8	1.6	0.1	-1.2	-1.2	0.9	3.1	8.8	9.2	9.5	9.4	8.6	7.9	5.3	2.8	2.8	2.3	1.7	0.8		Diurnal Maximum





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Athabasca Valley - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	49	7.04	7.04
-20 - 0	572	82.18	89.22
0 - 10	75	10.78	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

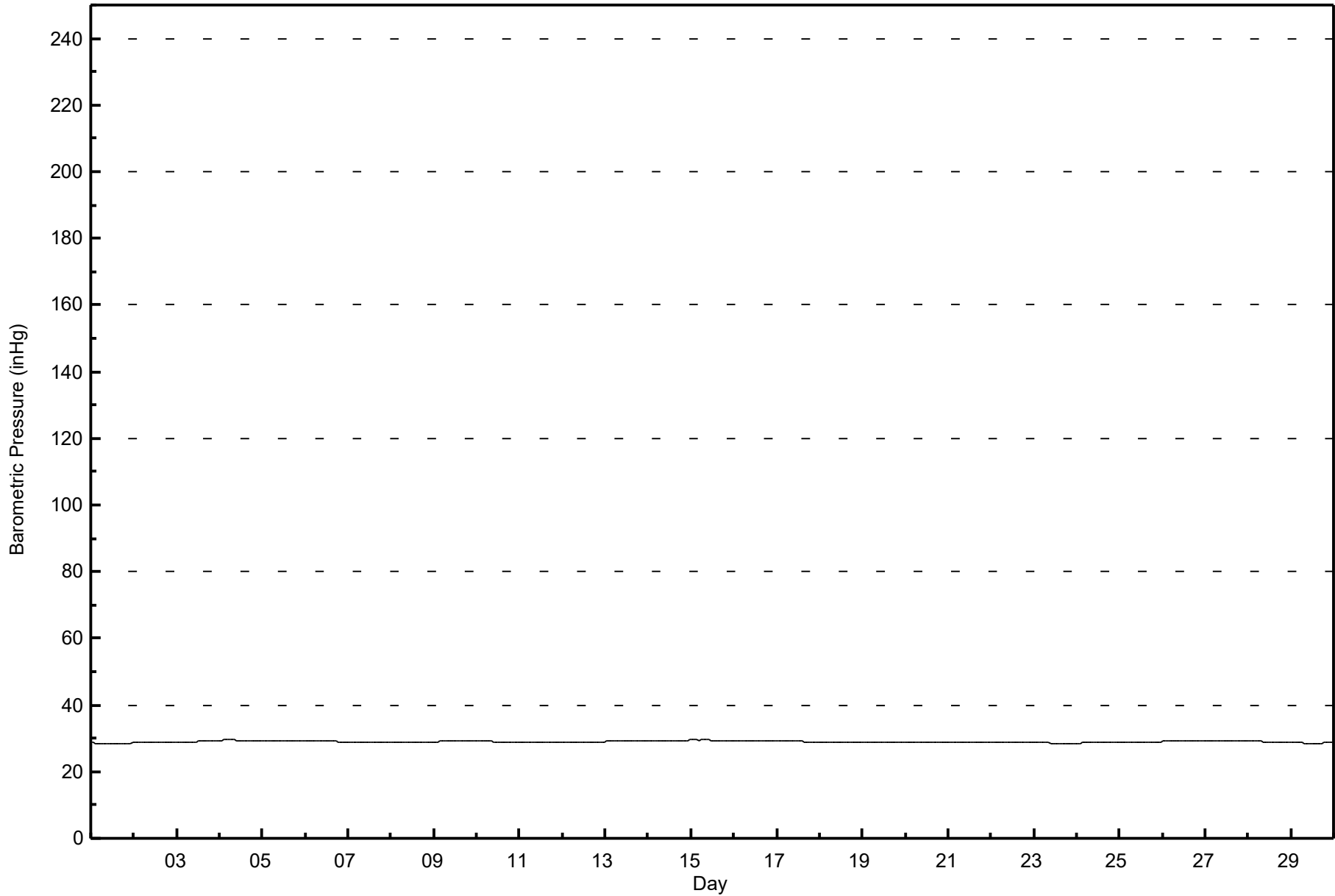
Barometric Pressure (BP) - inHg
Athabasca Valley - February 2024

Maximum Value: 29.5 inHg on Feb 15 03:00 Maximum Daily Average: 29.4 inHg on Feb 15																						Hours in Service: 696								
Minimum Value: 28.5 inHg on Feb 23 18:00 Minimum Daily Average: 28.6 inHg on Feb 1																						Hours of Data: 696								
Maximum Diurnal Average: 29.0 inHg at hour 10 Minimum Diurnal Average: 29.0 inHg at hour 17																						Hours of Missing Data: 0								
Monthly Average: 28.98 inHg Percentiles: P ₁ = 28.5 P ₁₀ = 28.6 Q ₁ = 28.8 Median = 29.0 Q ₃ = 29.2 P ₉₀ = 29.3 P ₉₉ = 29.5																						Hours of Calibration: 0								
																						Percent Operational Time: 100.0								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24						
1-Feb	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6
2-Feb	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
3-Feb	28.7	28.7	28.7	28.7	28.7	28.8	28.8	28.8	28.9	28.9	29.0	29.0	29.1	29.1	29.2	29.2	29.3	29.3	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
4-Feb	29.4	29.4	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.4	29.4	29.4	29.3	29.3	29.3	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.1	29.1	29.1	29.1	29.1	29.1	
5-Feb	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.3	29.3	29.3	29.3	29.3	29.3	29.3
6-Feb	29.3	29.3	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.1	29.1	29.1	29.1	29.1	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
7-Feb	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
8-Feb	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	28.9	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
9-Feb	29.0	29.0	29.0	29.0	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2
10-Feb	29.2	29.1	29.1	29.1	29.1	29.1	29.1	29.0	29.0	29.0	29.0	28.9	28.9	28.9	28.8	28.8	28.8	28.8	28.8	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
11-Feb	28.7	28.7	28.7	28.7	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9
12-Feb	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.9	28.9	28.9	28.9	28.9	28.9	28.9	29.0	29.0	29.0	29.0	29.0	29.0	29.0
13-Feb	29.0	29.1	29.1	29.1	29.1	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.1	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2
14-Feb	29.2	29.2	29.3	29.3	29.3	29.3	29.3	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
15-Feb	29.5	29.5	29.5	29.5	29.4	29.5	29.5	29.5	29.5	29.5	29.5	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
16-Feb	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.2	29.2	29.2	29.1	29.1	29.1	29.1	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
17-Feb	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
18-Feb	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9
19-Feb	28.9	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
20-Feb	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9
21-Feb	28.9	28.9	28.9	28.8	28.8	28.8	28.8	28.8	28.9	28.9	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8
22-Feb	28.8	28.8	28.8	28.8	28.8	28.8	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9
23-Feb	28.8	28.8	28.8	28.8	28.8	28.7	28.7	28.7	28.6	28.6	28.6	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
24-Feb	28.5	28.5	28.6	28.6	28.7	28.7	28.7	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8
25-Feb	28.8	28.8	28.8	28.8	28.8	28.8	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.8	28.8	28.8	28.8	28.8	28.8	28.9	28.9	28.9	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
26-Feb	29.0	29.1	29.1	29.1	29.2	29.2	29.2	29.2	29.2	29.2	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3
27-Feb	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.2	29.2	29.2	29.2	29.2	29.2	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
28-Feb	29.1	29.1	29.1	29.1	29.1	29.0	29.0	29.0	29.0	29.0	29.0	28.9	28.9	28.9	28.9	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8
29-Feb	28.7	28.7	28.7	28.7	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6
29.0																						Diurnal Average								
29.5																						Diurnal Maximum								



Wood Buffalo Environmental Association
Hourly Averages

Barometric Pressure (BP) - inHg
Athabasca Valley - February 2024

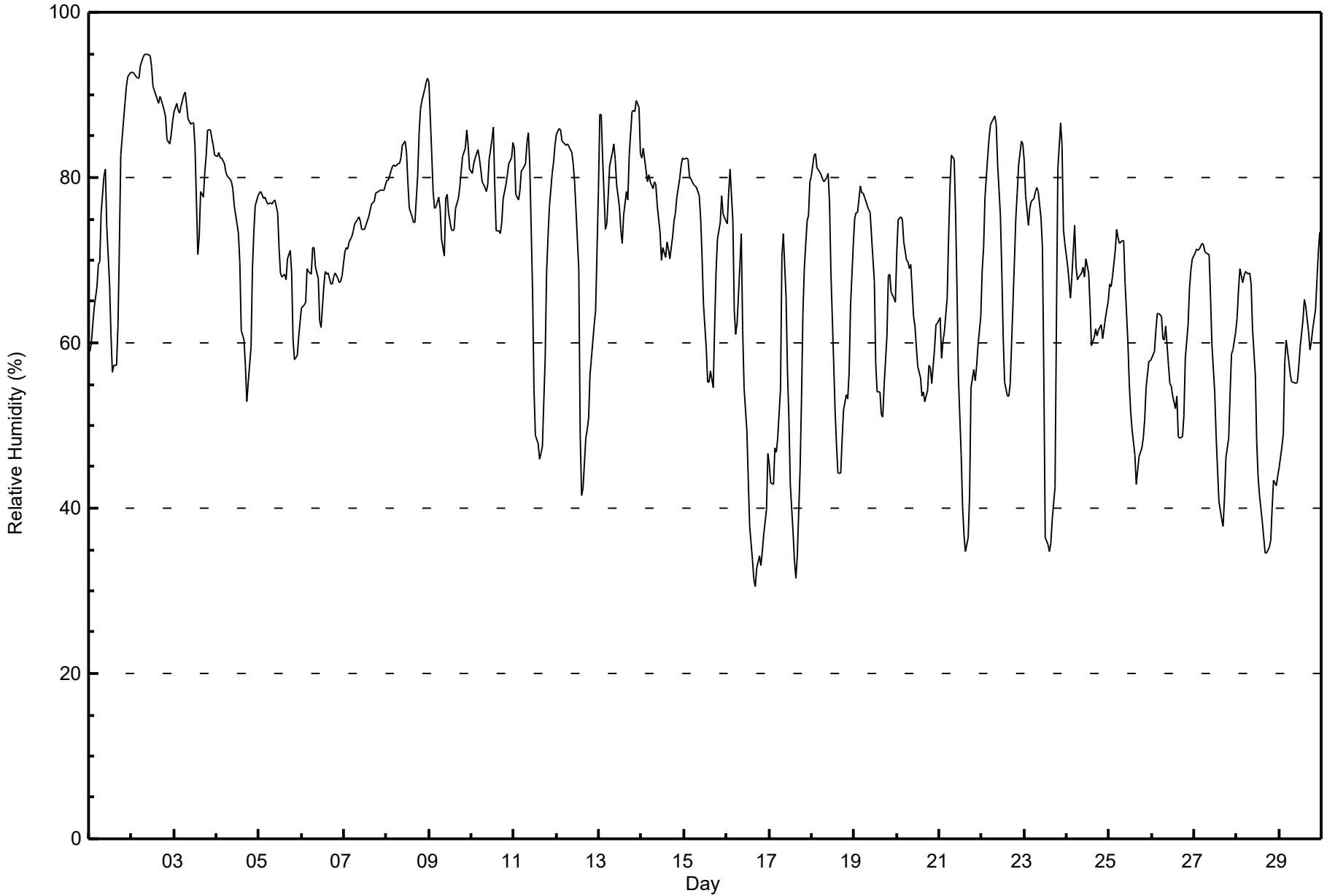




Wood Buffalo Environmental Association
Summary of Hour Averages

Relative Humidity (RH) - %
Athabasca Valley - February 2024

Maximum Value: 95.0 % on Feb 2 08:00																						Maximum Daily Average: 90.8 % on Feb 2				Hours in Service: 696																						
Minimum Value: 30.5 % on Feb 16 17:00																						Minimum Daily Average: 51.6 % on Feb 16				Hours of Data: 696																						
Maximum Diurnal Average: 76.5 % at hour 9																						Minimum Diurnal Average: 56.7 % at hour 16				Hours of Missing Data: 0																						
Monthly Average: 68.88 %																						Percentiles: P ₁ = 34.2 P ₁₀ = 48.2 Q ₁ = 59.7 Median = 71.5 Q ₃ = 79.5 P ₉₀ = 84.5 P ₉₉ = 92.8				Hours of Calibration: 0																						
																										Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	59.0	59.9	62.1	64.2	66.8	69.6	69.8	75.8	80.2	81.0	74.0	67.1	61.0	56.5	57.2	57.2	62.1	71.6	82.8	86.9	89.0	91.0	92.3	92.7	72.1	92.7																						
2-Feb	92.7	92.6	92.2	92.0	92.1	93.5	94.6	95.0	94.9	94.9	94.8	93.4	91.0	90.5	89.4	89.1	89.8	89.3	88.2	87.2	84.6	84.1	85.3	86.9	90.8	95.0																						
3-Feb	88.0	88.9	88.1	87.8	88.7	90.0	90.4	88.8	87.1	86.4	86.6	86.7	83.7	70.7	72.9	78.2	77.7	80.7	82.8	85.8	85.8	84.7	83.9	82.8	84.5	90.4																						
4-Feb	82.6	83.1	82.4	82.4	81.7	80.7	80.1	79.8	79.5	78.6	76.6	74.5	73.2	69.7	61.6	60.3	57.2	52.8	55.3	59.4	69.0	73.4	76.6	77.7	72.8	83.1																						
5-Feb	78.2	78.3	77.5	77.5	77.2	76.8	77.0	76.7	77.0	77.2	75.7	71.5	68.6	68.0	68.3	67.6	70.2	71.2	68.5	60.3	57.9	58.4	60.7	62.6	70.9	78.3																						
6-Feb	64.2	64.5	65.0	69.0	68.6	68.3	71.4	71.6	69.1	67.8	62.7	61.9	67.0	68.6	68.3	68.4	67.1	67.2	67.9	68.5	67.8	67.3	67.4	68.1	67.4	71.6																						
7-Feb	71.1	71.5	71.4	72.2	72.9	73.6	74.4	74.9	75.2	74.7	73.7	73.7	74.2	74.8	75.3	76.7	77.0	77.2	78.1	78.4	78.5	78.6	78.4	79.2	75.2	79.2																						
8-Feb	79.6	79.6	80.8	81.4	81.6	81.4	81.6	81.6	82.4	84.0	84.4	83.1	79.3	76.2	75.2	74.7	74.6	80.4	85.4	88.3	89.4	90.7	91.6	92.0	82.5	92.0																						
9-Feb	91.6	82.9	78.3	76.3	76.4	77.6	76.3	72.6	70.5	77.5	77.9	75.7	73.8	73.6	73.7	76.2	77.4	78.8	80.7	82.5	83.6	85.7	83.9	81.1	78.5	91.6																						
10-Feb	80.6	81.7	82.4	83.5	82.4	81.0	79.5	78.8	78.3	79.1	82.1	84.5	86.2	79.0	73.5	73.5	73.3	74.7	77.5	79.1	80.4	81.7	82.4	84.2	80.0	86.2																						
11-Feb	83.5	77.9	77.3	78.5	80.8	81.0	81.7	84.2	85.4	81.6	66.3	54.4	48.8	47.8	45.9	46.6	47.4	58.2	68.4	72.7	76.5	80.5	81.9	84.0	70.5	85.4																						
12-Feb	85.3	85.9	85.8	84.4	84.3	83.9	84.1	83.7	83.0	81.7	79.5	76.0	68.8	48.9	41.6	42.4	48.5	49.4	50.8	56.1	60.3	62.2	63.8	78.4	69.5	85.9																						
13-Feb	87.6	87.7	82.3	73.7	74.4	77.7	81.3	83.0	84.1	82.1	79.2	76.5	73.7	72.0	75.5	78.2	77.2	82.7	88.0	88.1	88.0	89.3	88.5	82.9	81.4	89.3																						
14-Feb	82.4	83.6	80.8	79.5	80.3	79.5	78.6	79.4	79.2	76.6	73.4	69.9	71.5	70.4	72.2	71.4	70.2	73.0	74.7	75.8	77.7	79.8	81.3	82.4	76.8	83.6																						
15-Feb	82.3	82.4	82.1	80.2	79.4	79.2	79.0	78.7	77.9	75.0	70.3	64.8	59.2	55.2	55.2	56.7	54.5	62.1	68.7	72.5	74.6	77.8	75.5	74.8	71.6	82.4																						
16-Feb	74.5	78.1	81.0	74.8	63.8	61.0	62.4	69.3	73.2	61.6	54.5	49.3	43.4	37.8	33.7	31.3	30.5	32.6	34.2	33.1	34.7	36.8	39.8	46.5	51.6	81.0																						
17-Feb	45.2	43.1	42.8	47.3	46.7	48.6	54.4	70.3	73.2	65.3	56.5	50.9	42.9	36.9	33.5	31.5	34.2	44.7	53.2	63.6	69.0	74.8	75.4	79.5	53.5	79.5																						
18-Feb	80.1	82.6	82.9	81.2	80.6	80.4	79.8	79.4	80.1	80.5	77.0	68.4	57.5	51.7	47.7	44.2	44.3	48.4	51.9	53.7	53.2	56.5	64.4	72.0	66.6	82.9																						
19-Feb	75.1	75.7	75.7	79.1	78.2	78.2	77.6	76.7	76.1	75.8	72.8	67.5	57.4	54.0	54.0	51.4	51.1	55.0	60.9	68.1	68.4	66.2	65.5	64.9	67.7	79.1																						
20-Feb	70.8	74.9	75.2	74.9	72.2	70.0	69.8	68.9	69.5	63.2	62.0	59.5	57.1	55.7	53.6	54.1	52.9	54.3	57.3	56.9	55.1	59.3	62.2	62.3	63.0	75.2																						
21-Feb	63.0	58.1	60.1	61.3	65.5	72.7	78.8	82.7	82.2	75.8	66.5	55.9	46.4	40.2	36.8	34.7	36.5	41.5	54.6	56.8	55.3	57.1	59.7	63.3	58.6	82.7																						
22-Feb	68.8	71.5	77.6	82.7	84.9	86.4	86.8	87.4	86.4	81.8	75.4	68.7	60.8	55.2	53.5	53.5	55.0	60.0	69.8	75.0	78.2	81.6	84.4	84.1	73.7	87.4																						
23-Feb	82.1	77.9	74.3	76.3	77.1	77.5	78.4	78.7	78.3	75.1	71.5	56.3	36.5	35.6	34.7	35.8	38.6	42.5	62.5	80.9	86.7	83.8	73.7	72.0	66.1	86.7																						
24-Feb	69.4	67.5	65.4	68.1	74.3	69.2	67.7	68.0	68.5	69.1	68.0	70.2	68.4	64.6	59.7	60.7	61.8	60.8	61.5	62.1	60.4	61.6	63.0	65.0	65.6	74.3																						
25-Feb	67.1	66.8	68.0	71.2	73.7	72.7	72.1	72.4	72.4	67.3	60.2	55.1	51.6	49.4	46.5	42.9	44.6	46.2	47.3	48.5	50.6	54.6	57.8	57.8	59.0	73.7																						
26-Feb	58.1	59.0	61.5	63.5	63.6	63.3	60.4	60.3	62.0	57.3	55.1	54.7	53.6	52.1	53.6	48.7	48.4	48.6	51.3	58.1	62.3	66.6	68.7	70.2	58.4	70.2																						
27-Feb	70.8	71.3	71.1	71.4	72.0	71.9	71.0	70.8	70.7	65.6	59.8	54.0	48.7	44.7	40.9	38.7	37.8	41.3	46.1	48.5	53.9	58.6	59.2	61.4	58.3	72.0																						
28-Feb	63.0	66.4	68.9	67.4	68.2	68.6	68.3	68.5	67.2	61.7	56.1	47.9	43.8	41.6	38.4	36.5	34.5	34.6	35.2	36.1	40.1	43.3	42.7	43.9	51.8	68.9																						
29-Feb	45.0	47.5	48.9	57.6	60.3	57.6	56.0	55.2	55.2	55.1	55.3	57.2	59.5	62.7	65.2	64.5	61.4	59.1	60.1	61.7	64.0	67.6	71.0	73.3	59.2	73.3																						
																								73.8	73.8	73.9	74.5	74.8	74.9	75.3	76.3	76.5	74.3	70.6	66.5	62.3	58.8	57.2	56.7	57.1	60.0	64.3	67.1	68.8	70.8	71.8	73.3	Diurnal Average
																								92.7	92.6	92.2	92.0	92.1	93.5	94.6	95.0	94.9	94.9	94.8	93.4	91.0	90.5	89.4	89.1	89.8	89.3	88.2	88.3	89.4	91.0	92.3	92.7	Diurnal Maximum





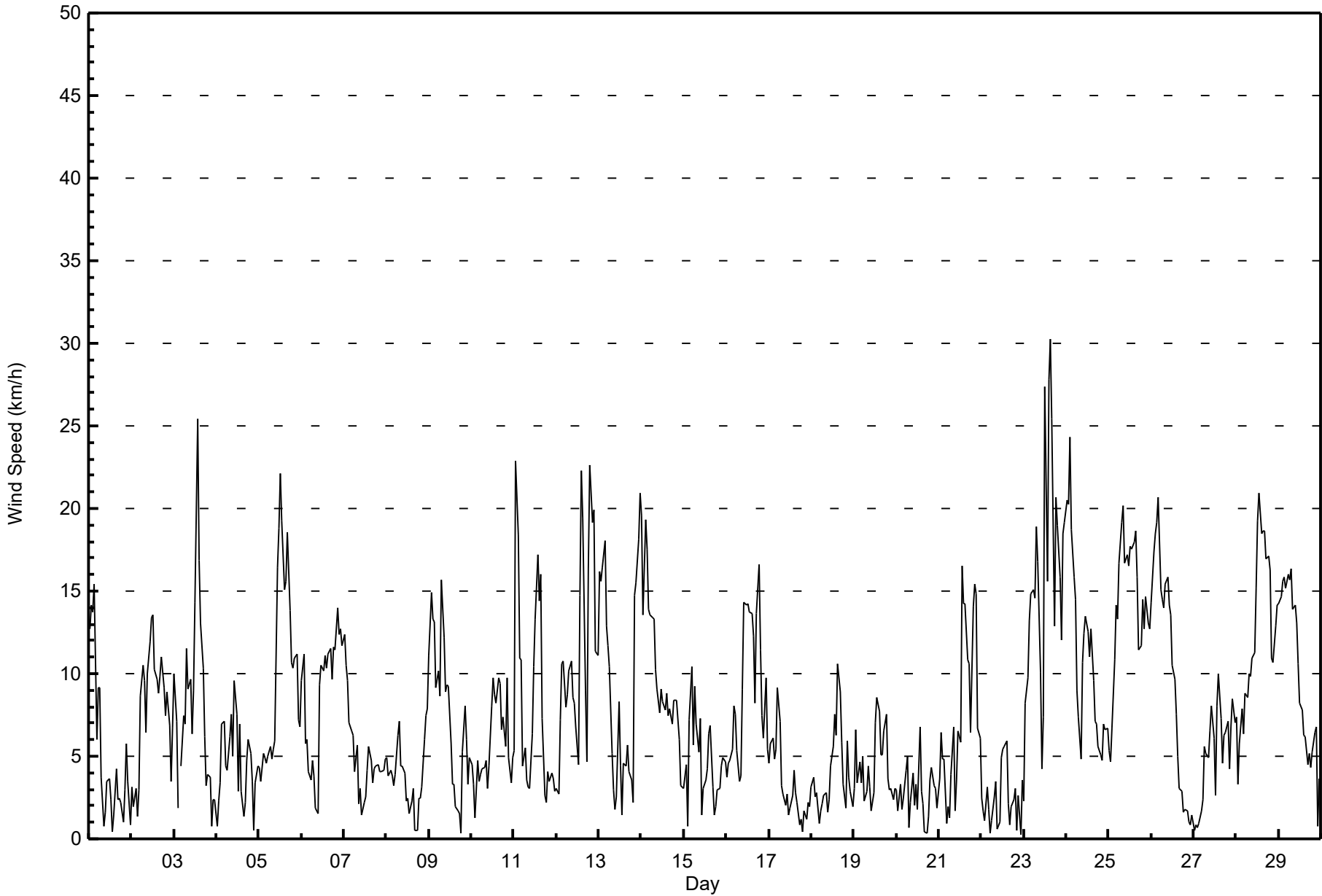
Maximum Speed: 30 km/h on Feb 23 16:00		Maximum Daily Speed Average: 13.8 km/h on Feb 25		Hours in Service: 696																							
Minimum Speed Value: 0 km/h on Feb 22 23:00		Minimum Daily Speed Average: 0.9 km/h on Feb 20		Hours of Data: 695																							
Maximum Diurnal Speed Average: 4.2 km/h at hour 15		Minimum Diurnal Speed Average: 0.3 km/h at hour 4		Hours of Missing Data: 1																							
Monthly Average Velocity: 1.5 km/h 317.9 deg		Percentiles: P ₁ = 0 P ₁₀ = 2 Q ₁ = 3 Median = 6 Q ₃ = 11 P ₉₀ = 16 P ₉₉ = 23		Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	SE13	SE14	SE14	SE15	ESE6	SE9	SE9	SSE4	SSE1	SE2	ESE4	SSE4	ENE2	SSW0	NW1	SE4	NNW2	NNW2	NW2	WSW1	WSW3	WSW6	WSW3	W1	SE3.5	SE15	
2-Feb	WSW3	WSW2	WSW3	NW1	NW3	NNW9	NNW10	NNW10	NNW6	NNW10	NNW12	NNW13	NW14	N10	NNW10	NNW9	NNW10	NNW11	NW9	NNW7	NW9	NW7	NW3	NW7	NNW7.4	NW14	
3-Feb	NW10	NNW7	N2	UO	NNW4	NNW7	NW7	NNW12	NNW9	NNW10	N6	NNW9	NW14	NNW25	NNW17	N13	NW10	NW6	NW3	WSW4	WSW4	SSW1	SW2	SW2	NW7.3	NNW25	
4-Feb	S1	SSW2	SSW3	SE7	SE7	SSE4	ESE4	SSE6	SSE8	SE5	SE10	SE8	SE3	SSE7	S3	WNW1	SE2	ESE5	SE6	SE5	E3	E1	SW3	SW4	SE3.8	SE10	
5-Feb	SW4	SW3	SW5	SW5	SSW5	SW5	SW6	WSW5	WSW5	NW6	NNW16	NNW19	NNW22	NNW19	NNW15	NNW16	NNW19	NNW14	NNW11	NNW10	NNW11	N11	NNW7	N7	NNW7.9	NNW22	
6-Feb	NNW10	NNW11	N6	N6	NNE4	NE4	ENE5	NE4	NE2	ESE2	ESE9	ESE10	ESE10	ESE11	ESE10	ESE11	ESE12	ESE10	ESE12	ESE11	ESE14	ESE12	ESE13	ESE12	E6.4	ESE14	
7-Feb	ESE12	ESE11	ESE10	E7	ESE7	SE6	ESE4	SSE6	SSE2	SE3	NE1	S2	ENE3	NNW4	NNW6	N5	N3	NNW4	N4	NW4	N4	N4	N4	NNW5	ENE2.0	ESE12	
8-Feb	NW5	N4	NNW4	NNW4	NNW3	NNW4	NNW6	NNW7	N4	NNW4	NNW4	WNW2	E2	ENE2	ESE2	SW3	NNW0	W1	NNW2	N2	N3	NNW6	NNW7	NNW8	NNW3.2	NNW8	
9-Feb	NW11	NW15	NW13	W13	WSW9	SW10	WSW9	NNW16	NW12	NNW9	NNW9	NNW9	NNW6	NNW3	ENE3	N2	NNE2	NE2	W0	NNW5	NNW8	NNW6	NW3	WSW5	NW5.9	NNW16	
10-Feb	SW4	W3	E1	SSE5	SSW3	S4	S4	S4	SSW5	SW3	SE4	SE8	SSE10	SSE9	SE8	SE10	SE9	SSE7	SSW7	SSW6	SW10	SSW5	SSW3	SSE5	S4.8	SW10	
11-Feb	S5	WSW23	WSW18	SW11	SW11	S4	SE6	SSW4	SSE3	SSE3	SSW6	SW10	W13	W17	W14	W16	WSW7	SSW3	SSE2	SSE4	SSE3	S4	SSW4	S3	SW6.5	WSW23	
12-Feb	S3	SSW3	SSE7	SE11	SE11	SE8	SE9	SE10	SE11	SE9	SE8	SE7	S4	W15	NNW22	NW19	NNW9	W5	NNW16	NNW23	NNW19	W20	NW11	NNW11	W3.3	NNW23	
13-Feb	NNW16	NNW16	NNW16	NNW18	N13	NNW12	NNW10	NNW5	NNW3	NW2	NNW3	NNW8	N4	NW1	E5	ESE4	SSW6	SSW4	S4	N2	NNW15	NNW16	NNW18	NNW21	NNW7.6	NNW21	
14-Feb	NNW20	NNW14	NNW19	NNW18	NNW14	NNW14	NNW13	NNW13	NNW10	NNW9	NNW8	NNW9	NW8	N8	NNW9	N7	N8	NNW7	NNW8	NNW8	NNW8	NNW6	NNW3	NW3	NNW10.1	NNW20	
15-Feb	W3	WSW5	SW1	SSW7	SSW10	SSW6	SSW9	SSW7	SSW5	SW7	SE1	ENE3	ENE4	ENE4	NNW6	NNW7	NNW3	WNW1	SW2	SSE3	SSE3	SSE4	SE5	ESE5	SSW2.1	SSW10	
16-Feb	ESE4	SE5	SE5	S5	SSW8	SSW8	S5	ESE3	ESE4	SSW9	SSW14	SSW14	SSW14	SW14	SSW14	SW12	SW8	SW14	SW17	WSW11	WSW7	SW6	SW10	W5	SSW7.8	SW17	
17-Feb	SSW5	SSW6	SW6	S5	SSW5	SSW9	SSW7	SE3	SE3	ESE2	ENE3	W1	NW2	WNW3	NW4	NW3	N2	NNE1	SW1	S0	NNW2	NNW1	NNW2	WSW2	SW1.6	SSW9	
18-Feb	W3	NW4	WNW3	W3	NNW1	W2	W2	W3	N3	NNW2	NNW2	NNW4	NNW6	NNW8	NW6	ENE11	E9	E6	NNE3	SE2	ESE6	ENE4	NNE3	NNE2	NNE1.7	ENE11	
19-Feb	NNE3	N7	NNW3	N5	W3	W5	SW2	WSW3	WSW4	WSW3	NW2	NW3	NNW7	NNW9	NNW8	NW5	NW5	NNW7	NNW8	NW4	NW3	WNW3	NNW2	W3	NW3.6	NNW9	
20-Feb	W3	WNW2	W3	NW2	NNW2	N4	NNW5	SE1	ESE2	SE4	SW2	WSW3	W2	SW7	WSW3	WSW2	E0	NNE0	SSE1	SE4	SE4	SSE3	SSW3	SE2	SW0.9	SW7	
21-Feb	SSE4	SSE6	SSE5	SSE5	SSE1	SW2	W1	N4	NNW7	NE2	E4	SE7	SSW6	SW17	SW14	WSW14	WSW11	W11	W6	WSW14	WSW15	WSW15	SW7	SSW6	SW5.2	SW17	
22-Feb	NW2	WNW2	WNW1	SSW3	SSE2	WNW0	S1	W3	NW3	WSW1	NW1	NNW5	NNW5	NNW6	NNW6	NE2	NNW1	WNW2	NNW2	N3	NE0	W3	SSE0	SE4	NW1.4	NNW6	
23-Feb	SE2	SE8	SE10	SE13	SE15	SE15	SE19	SE17	SE10	ESE4	WSW7	W27	W16	W28	W30	W25	W13	NW21	NNW19	SW16	W12	W19	W19	WSW7.2	W30		
24-Feb	WSW21	W20	NNW24	NNW19	NNW16	N14	N9	NNE7	N5	N11	NNW12	NNW13	NNW13	NNW11	NNW13	N10	NNE7	NNE7	N6	NNE5	NNE5	NE7	NE7	NNE7	NNW8.9	NNW24	
25-Feb	NNE5	NNE5	N7	NNW11	NNW14	NNW13	NNW17	NNW19	NNW20	NNW17	NNW17	NNW17	NNW18	NNW18	NNW18	NNW19	NNW16	N11	N12	NNE14	N13	N15	N13	N13	NNW13.8	NNW20	
26-Feb	N14	N17	N19	NNW19	NNW21	NNW15	N15	N14	NNW15	NNW16	N14	N14	N11	NNW10	NNW8	NNW5	NNW3	WSW3	SSW2	SSW2	WSW2	ENE1	WSW1	NE1	NNW9.4	NNW21	
27-Feb	SE0	S1	N1	ENE1	ESE2	ESE2	SSE6	SE5	ESE5	E6	ENE8	ENE6	ENE3	WNW8	W10	WNW7	SSW5	SSE6	SE6	SE7	SE4	SE7	SE8	SE7	SE2.5	W10	
28-Feb	SE7	SSE3	ESE6	SE8	ESE6	ESE9	SE9	SE10	SE10	SE11	SE11	ESE15	ESE19	ESE21	ESE18	ESE19	SE19	SE17	SE17	SE16	SE11	SE11	ESE13	ESE14	SE12.4	ESE21	
29-Feb	ESE14	ESE15	ESE16	ESE16	ESE15	ESE16	ESE16	ESE16	ESE16	ESE14	ESE14	ESE13	ESE11	SE8	SE8	SE6	ESE6	S5	WSW5	W4	WSW5	WNW6	WSW7	WNW1	S4	ESE7.7	ESE16
NW1.4 NNW1.6 NNW1.5 NNW0.3 NW0.4 N0.3 NE0.5 NNE0.6 NNE1.0 NNE1.0 NNE1.7 N1.9 NW3.0 NNW3.8 NW4.2 NW3.3 NW2.0 NW1.4 NW1.9 NNW1.9 NNW2.1 NNW2.1 NNW1.4 NW1.1																								Diurnal Average			
WSW21 WSW23 NNW24 NNW19 NNW21 ESE16 NNW17 NNW19 NNW20 NNW17 NNW17 NNW19 W27 NNW25 W28 W30 W25 SE17 NNW21 NNW23 NNW19 W20 W19 NNW21																								Diurnal Maximum			
UO - Unstable Operation																											
All monthly, daily, and diurnal averages have been calculated using vector methods																											



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Athabasca Valley - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8 km/h on Feb 23 19:00 Minimum Value: 1 km/h on Feb 9 17:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																		Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	3	3	3	3	3	2	4	1	1	2	2	2	2	1	1	1	1	1	1	1	2	1	1	2	4
2-Feb	1	2	1	1	2	3	2	3	2	2	2	3	2	3	2	2	2	2	2	1	2	2	1	2	3
3-Feb	3	2	1	UO	1	2	1	2	2	2	2	5	4	5	3	3	2	1	1	1	1	1	1	5	
4-Feb	1	2	2	2	2	2	2	2	2	2	3	3	3	3	3	1	2	2	2	2	2	2	2	3	
5-Feb	1	1	1	1	2	1	1	1	1	3	4	4	4	4	4	5	4	4	3	2	2	2	2	5	
6-Feb	2	3	1	2	1	1	1	1	2	2	3	3	3	3	3	3	3	3	4	4	5	4	4	5	
7-Feb	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	3	
8-Feb	1	1	1	1	1	1	2	2	1	1	1	1	2	1	2	1	1	1	1	1	1	1	2	2	
9-Feb	6	3	3	2	3	1	3	2	4	2	2	1	1	1	1	1	1	1	2	3	1	2	1	6	
10-Feb	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	2	2	3	
11-Feb	3	3	5	3	3	2	1	2	2	2	3	2	4	4	3	4	3	1	1	2	1	1	1	5	
12-Feb	1	2	3	2	3	2	2	2	3	2	2	2	5	5	4	5	3	1	6	5	5	3	3	6	
13-Feb	4	3	5	3	4	3	3	1	1	1	2	2	1	1	1	1	2	1	1	5	3	3	5	5	
14-Feb	4	4	4	3	4	4	3	3	2	2	2	2	1	1	1	1	2	1	1	1	1	2	1	4	
15-Feb	1	2	1	4	3	2	3	2	1	2	1	1	1	1	2	1	1	1	1	2	1	1	2	4	
16-Feb	2	1	1	2	2	2	2	1	1	4	3	3	3	3	3	3	2	3	5	4	4	2	2	5	
17-Feb	2	2	2	2	1	2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	3	
18-Feb	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	4	2	2	2	2	3	2	1	4	
19-Feb	1	2	2	2	1	1	2	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	2	
20-Feb	1	1	2	1	1	2	2	2	1	2	2	2	2	2	2	1	1	1	2	1	2	2	1	2	
21-Feb	2	2	2	2	1	1	2	1	2	1	1	2	5	3	3	4	5	2	2	3	2	3	4	5	
22-Feb	2	1	2	3	2	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	1	1	3	
23-Feb	1	3	2	3	3	3	2	3	4	3	1	5	6	5	7	7	6	4	8	6	3	5	4	8	
24-Feb	4	4	7	4	4	5	2	3	1	3	3	2	2	2	3	3	2	1	2	2	2	2	2	7	
25-Feb	1	1	1	4	2	3	3	3	3	4	3	3	3	3	3	3	4	3	3	4	4	4	3	4	
26-Feb	4	5	5	4	4	4	4	4	4	4	3	3	3	3	3	3	1	1	1	1	1	1	1	5	
27-Feb	1	1	1	1	1	1	1	1	1	1	1	1	2	4	3	3	2	2	2	2	2	3	2	4	
28-Feb	2	2	3	2	2	3	2	3	2	3	3	5	5	5	5	5	4	5	4	5	3	3	4	5	
29-Feb	4	4	5	5	4	5	5	4	4	4	4	3	3	2	2	2	2	1	1	2	2	1	2	5	
																		Diurnal Maximum							
UO - Unstable Operation																									





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Athabasca Valley - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	314	45.18	45.18
6 - 11	223	32.09	77.27
12 - 19	139	20.00	97.27
20 - 28	18	2.59	99.86
29 - 38	1	0.14	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Wind Speed (WS) - km/h
Athabasca Valley - February 2024

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	22	12	9	13	7	17	25	24	20	23	18	25	23	15	27	34	314
6 - 11	16	5	2	3	4	18	43	11	0	17	13	9	3	3	13	63	223
12 - 19	15	1	0	0	0	24	14	0	0	4	7	5	11	4	6	48	139
20 - 28	0	0	0	0	0	1	0	0	0	0	0	2	5	3	1	6	18
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	53	18	11	16	11	60	82	35	20	44	38	41	43	25	47	151	695

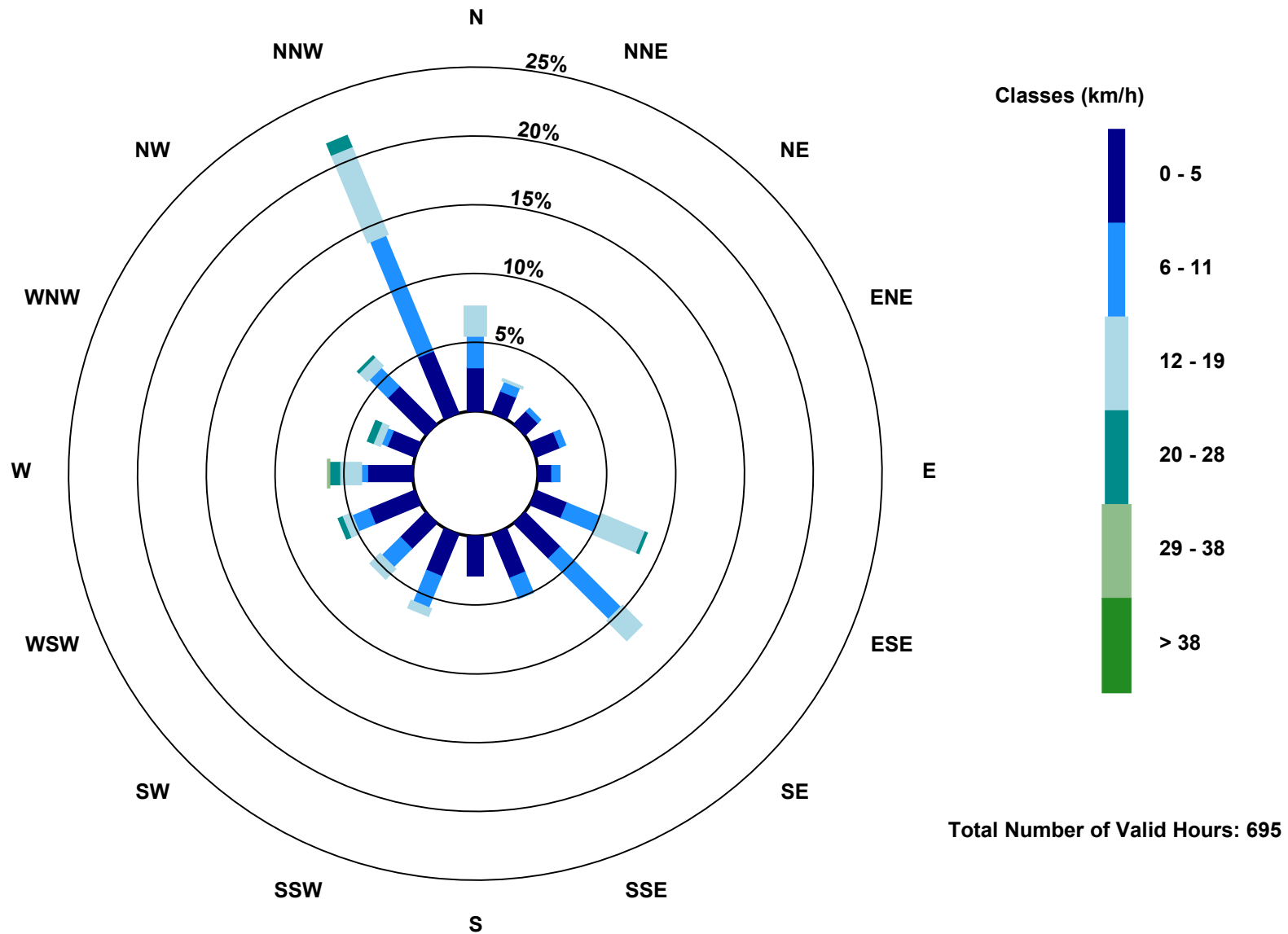
Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Athabasca Valley





Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Athabasca Valley - February 2024

Direction of Maximum Speed: 267 deg on Feb 23 16:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 344.9 deg on Feb 25	Hours of Data: 695
Direction of Minimum Speed: 161 deg on Feb 22 23:00	Direction of Minimum Daily Speed Average: 0.9 deg on Feb 20
Direction of Minimum Speed: 161 deg on Feb 22 23:00	Hours of Missing Data: 1
Monthly Average Direction: 317.9 deg	Percent Operational Time: 99.9

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	127	132	132	135	121	133	130	151	152	143	118	163	71	205	312	142	328	330	312	244	253	254	244	266	139.6
2-Feb	237	245	255	307	319	339	339	340	347	337	336	336	323	352	344	328	328	333	325	334	310	312	310	304	328.7
3-Feb	324	332	4	UO	347	332	323	331	339	337	351	340	324	300	328	350	324	322	318	255	249	205	226	218	323.8
4-Feb	186	213	205	140	141	151	103	159	152	129	143	133	128	159	176	295	129	112	126	125	84	98	223	222	145.9
5-Feb	224	221	222	224	210	232	230	238	245	313	342	339	336	341	343	339	338	340	342	342	345	349	347	350	328.4
6-Feb	342	342	349	360	18	55	72	55	56	110	119	105	111	118	112	108	110	102	111	115	116	119	119	120	98.0
7-Feb	119	119	121	99	115	137	115	147	151	143	41	188	67	330	333	349	356	342	351	321	356	5	359	342	77.8
8-Feb	324	3	338	336	337	343	339	345	354	332	334	303	87	78	110	225	348	280	341	349	354	342	336	334	341.1
9-Feb	317	310	305	269	250	233	253	282	315	345	336	337	339	346	61	0	32	49	263	327	344	332	312	242	305.8
10-Feb	227	263	93	150	197	178	189	183	211	228	137	141	152	160	139	130	141	158	197	196	215	208	194	148	171.2
11-Feb	186	240	237	219	225	175	142	193	151	151	204	221	267	272	266	269	256	195	149	155	168	188	195	184	230.4
12-Feb	171	195	152	142	136	145	142	141	137	133	139	128	169	269	293	325	330	280	299	303	297	281	314	343	274.5
13-Feb	339	333	336	334	351	342	342	340	333	316	331	341	4	325	95	122	208	212	191	2	337	337	341	342	338.7
14-Feb	338	343	339	337	342	344	342	338	339	334	334	335	325	351	340	351	6	342	343	344	338	342	302	313	339.8
15-Feb	272	237	228	205	213	208	209	196	213	216	128	63	64	74	348	334	330	286	220	158	147	151	144	123	201.2
16-Feb	121	131	133	181	199	200	185	115	122	194	202	205	209	215	213	221	224	234	233	245	242	220	228	263	211.1
17-Feb	199	197	215	181	206	212	204	140	136	117	68	274	324	295	318	323	350	28	230	180	332	334	284	237	217.3
18-Feb	276	315	296	268	318	261	266	274	10	347	339	328	341	336	323	78	90	94	24	133	115	73	21	15	12.4
19-Feb	13	353	348	355	269	259	228	244	252	237	306	324	332	335	328	314	322	339	330	308	308	292	284	274	314.8
20-Feb	260	297	280	313	340	359	334	145	122	142	229	238	260	233	240	255	84	27	166	144	144	160	201	129	226.2
21-Feb	161	158	154	156	155	233	278	351	336	46	82	126	199	233	227	246	248	270	274	255	246	247	221	192	233.9
22-Feb	312	303	288	213	166	291	190	271	313	244	307	338	341	329	332	39	348	286	331	358	44	262	161	131	317.7
23-Feb	134	140	138	140	135	134	138	136	139	135	105	242	274	261	265	267	273	269	324	296	235	260	262	259	238.7
24-Feb	258	264	344	339	342	352	1	22	8	349	346	337	339	339	332	350	26	29	11	18	19	48	55	15	343.5
25-Feb	17	25	5	340	338	342	339	336	335	337	334	335	333	338	332	336	340	354	4	15	8	353	353	1	344.9
26-Feb	352	359	349	341	334	341	353	351	346	342	351	349	351	338	346	334	327	256	202	208	241	62	253	36	344.8
27-Feb	140	175	10	64	116	106	151	132	120	91	76	69	66	289	272	297	193	155	127	128	134	133	139	132	129.8
28-Feb	135	164	114	133	117	123	126	129	126	134	127	114	121	122	119	123	126	133	138	136	133	125	122	117	126.0
29-Feb	118	115	114	111	109	104	107	115	114	121	119	121	140	129	124	118	184	240	260	247	289	246	299	182	123.2
314.1 294.5 336.6 334.3 319.2 1.4 38.6 22.3 18.2 15.7 22.8 351.5 321.6 298.7 305.2 315.2 316.1 304.6 313.0 301.0 295.7 297.4 294.6 318.0																									
Diurnal Average																									

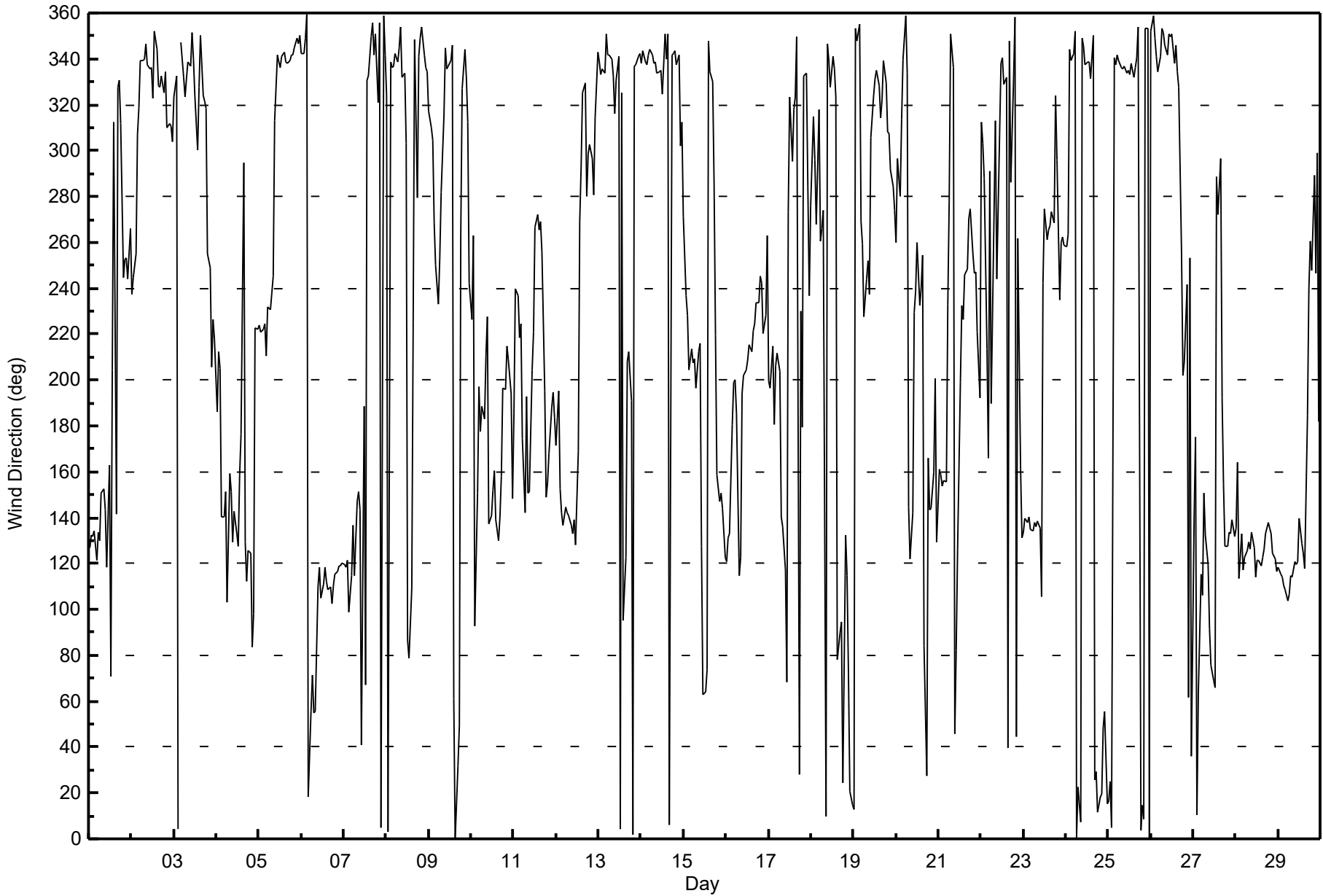
UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Athabasca Valley - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 102 deg on Feb 9 19:00 Minimum Value: 8 deg on Feb 9 12:00 Percentiles: P ₁ = 9 P ₁₀ = 11 Q ₁ = 15 Median = 21 Q ₃ = 44 P ₉₀ = 71 P ₉₉ = 96		Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	16	14	14	11	57	15	34	70	93	82	60	48	60	94	65	32	46	41	60	87	38	14	55	78	94
2-Feb	24	53	22	66	40	25	14	17	19	13	10	11	11	18	16	19	13	11	13	17	10	9	26	16	66
3-Feb	16	17	43	UO	16	16	22	10	13	12	19	12	20	9	31	21	14	21	29	14	18	92	58	67	92
4-Feb	85	87	63	21	22	45	45	30	25	42	18	32	93	36	78	72	89	32	23	41	49	98	75	14	98
5-Feb	12	25	12	21	24	15	11	13	16	41	15	12	11	14	15	14	12	13	15	14	14	14	17	45	45
6-Feb	14	14	18	23	27	20	17	28	73	90	22	20	22	18	21	20	21	21	23	20	19	20	19	17	90
7-Feb	17	18	19	20	22	23	53	21	71	51	72	69	60	13	15	21	21	18	20	14	14	14	18	19	72
8-Feb	14	23	17	17	20	17	11	13	21	19	18	63	73	76	80	50	84	88	36	36	20	10	9	11	88
9-Feb	12	12	12	13	17	10	19	10	23	14	11	8	14	28	40	78	48	71	102	47	17	12	36	12	102
10-Feb	22	17	80	21	20	34	30	35	23	56	50	15	16	17	18	15	16	25	36	27	11	22	65	31	80
11-Feb	42	8	10	19	19	34	24	40	59	56	41	12	18	12	11	10	20	51	68	41	46	42	27	54	68
12-Feb	35	46	17	12	11	17	17	18	14	21	16	23	67	34	12	13	24	35	24	9	10	12	28	17	67
13-Feb	14	9	10	8	18	14	14	18	59	53	51	14	42	63	35	26	44	17	35	98	11	11	14	16	98
14-Feb	12	16	12	10	15	15	13	13	11	10	12	12	17	17	13	19	17	11	10	11	10	15	24	30	30
15-Feb	41	59	94	18	11	26	16	16	16	15	83	65	14	13	35	16	46	56	55	53	41	25	21	36	94
16-Feb	33	19	28	46	20	26	39	38	36	29	12	14	14	15	14	15	18	15	12	18	57	21	9	52	57
17-Feb	51	30	18	44	20	9	27	43	48	47	40	66	51	27	10	39	43	86	68	82	71	77	50	47	86
18-Feb	45	33	46	56	80	63	67	71	56	89	73	18	25	11	12	25	16	34	46	93	25	49	29	64	93
19-Feb	46	22	40	23	22	20	88	41	13	24	28	48	14	14	10	11	17	12	8	33	34	43	52	47	88
20-Feb	34	66	42	66	39	33	19	101	84	51	83	70	87	25	46	81	88	97	87	48	36	43	40	76	101
21-Feb	57	34	31	35	74	64	77	35	17	81	25	17	55	10	11	14	17	17	21	10	9	10	47	30	81
22-Feb	66	73	72	64	81	94	57	55	38	96	81	22	28	17	11	57	63	59	51	40	97	45	91	44	97
23-Feb	67	21	16	14	13	13	11	9	11	13	38	65	11	15	13	12	10	14	14	25	10	18	12	11	67
24-Feb	11	10	17	13	16	20	23	23	22	23	16	10	12	12	10	19	27	15	18	27	31	20	24	17	31
25-Feb	23	26	17	13	9	13	11	9	8	11	9	10	12	13	11	12	13	18	16	15	16	17	17	18	26
26-Feb	18	18	18	16	8	18	19	18	16	15	20	18	19	24	31	47	54	33	81	75	84	75	86	71	86
27-Feb	89	82	98	92	75	49	13	28	25	19	9	15	77	35	25	36	54	19	18	16	30	26	15	29	98
28-Feb	23	71	53	20	30	24	22	20	21	18	16	20	15	15	17	16	16	17	16	17	16	19	17	19	71
29-Feb	19	19	19	19	20	20	20	18	20	17	18	22	27	31	27	34	45	16	30	21	20	19	94	54	94
89 87 98 92 81 94 88 101 93 96 83 70 93 94 80 81 89 97 102 98 97 98 94 78																									
Diurnal Maximum																									
UO - Unstable Operation																									





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS08 FORT CHIPEWYAN FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT CHIPEWYAN (AMS08)
 FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2(ppb) Average	660	32	36	99.43	9.6	0	2.2	0
TRS (ppb) Average	662	33	34	99.86	0.6	0	0.2	0
O3(ppb) Average	648	32	48	97.7	44.2	0	40	-
NO2(ppb) Average	610	38	86	93.1	17	0	4.9	-
NO(ppb) Average	610	38	86	93.1	6	-	0.8	-
NOX(ppb) Average	610	38	86	93.1	21.6	-	5	-
PM2.5(ug/m3) Average	693	2	3	99.86	12.3	0	4.2	0
CO(ppm) Average	660	32	36	99.43	0.3	0	0.1	-
CO2(ppm) Average	659	33	37	99.43	447	-	437.5	-
Temperature 2 m (C) Average	696	0	0	100	4.2	-	1.2	-
Relative Humidity (%) Average	696	0	0	100	94	-	87.7	-
Wind Speed 10 m (km/h) Average	696	0	0	100	47	-	29	-
Wind Direction 10 m (deg) Average	696	0	0	100	-	-	-	-
PC(mm) Total	692	0	4	99.43	1.5	-	7.4	-
Leaf Wetness (% of range) Average	696	0	0	100	39.3	-	6.8	-
Global Solar Radiation (W/m2) Average	696	0	0	100	450.5	-	117.1	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT CHIPEWYAN (AMS08)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2(ppb) Average	660	0.24	0.8	-	0	0	0	0	0.1	0.4	9.6
TRS (ppb) Average	662	0.16	0	-	0.1	0.1	0.1	0.1	0.2	0.2	0.6
O3(ppb) Average	648	31.13	5.8	-	13.7	23.9	25.7	31.9	35.8	38.4	44.2
NO2(ppb) Average	610	1.05	2.4	-	0	0	0.1	0.3	0.6	2.2	17
NO(ppb) Average	610	0.13	0.4	-	0	0	0	0	0.1	0.3	6
NOX(ppb) Average	610	1.17	2.5	-	0	0	0.2	0.4	0.8	2.4	21.6
PM2.5(ug/m3) Average	693	2.74	1.3	-	0.2	1.2	2	2.7	3.2	4	12.3
CO(ppm) Average	660	0.1	0	-	0	0	0.1	0.1	0.1	0.1	0.3
CO2(ppm) Average	659	431.09	4.3	-	418.5	424.3	430.3	431.8	433.5	434.7	447
Temperature 2 m (C) Average	696	-13.35	7.1	-	-30.3	-22.4	-18.2	-12.9	-9	-3.8	4.2
Relative Humidity (%) Average	696	74.79	11.5	-	36.8	58	67.7	76.5	84.8	87.2	94
Wind Speed 10 m (km/h) Average	696	13.5	8	-	1	6	8	11	18	24	47
Wind Direction 10 m (deg) Average	696	-	-	-	-	-	-	-	-	-	-
Precipitation (mm) Total	692	-	-	50.26	-	-	-	-	-	-	-
Leaf Wetness (% of range) Average	696	2.06	2.1	-	1.1	1.6	1.8	1.8	1.9	2.3	39.3
Global Solar Radiation (W/m2) Average	696	58.59	103	-	0	0	0	0	78.1	225	450.5

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT CHIPEWYAN (AMS08)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
AIR QUALITY ANALYZERS	17 Feb 2024 14:00	17 Feb 2024 14:00	1	Station power failure
SO2, CO, CO2	21 Feb 2024 13:00	21 Feb 2024 15:00	3	Maintenance - station operator activities
O3	06 Feb 2024 19:00	07 Feb 2024 04:00	10	Analyzer within non-compliance of AMD
O3	07 Feb 2024 06:00	07 Feb 2024 10:00	5	Analyzer within non-compliance of AMD
NO2	11 Feb 2024 12:00	11 Feb 2024 18:00	7	Unstable Operation - excessive baseline drift
NO2	12 Feb 2024 13:00	12 Feb 2024 15:00	3	Unstable Operation - excessive baseline drift
NO2	15 Feb 2024 15:00	15 Feb 2024 17:00	3	Unstable Operation - excessive baseline drift
NO2	16 Feb 2024 12:00	16 Feb 2024 17:00	6	Unstable Operation - excessive baseline drift
NO2	17 Feb 2024 10:00	17 Feb 2024 13:00	4	Unstable Operation - excessive baseline drift
NO2	17 Feb 2024 15:00	17 Feb 2024 17:00	3	Unstable Operation - excessive baseline drift
NO2	19 Feb 2024 11:00	19 Feb 2024 18:00	8	Unstable Operation - excessive baseline drift
NO2	20 Feb 2024 20:00	21 Feb 2024 08:00	13	Maintenance - replace analyzer



Wood Buffalo Environmental Association

Summary of Hour Averages

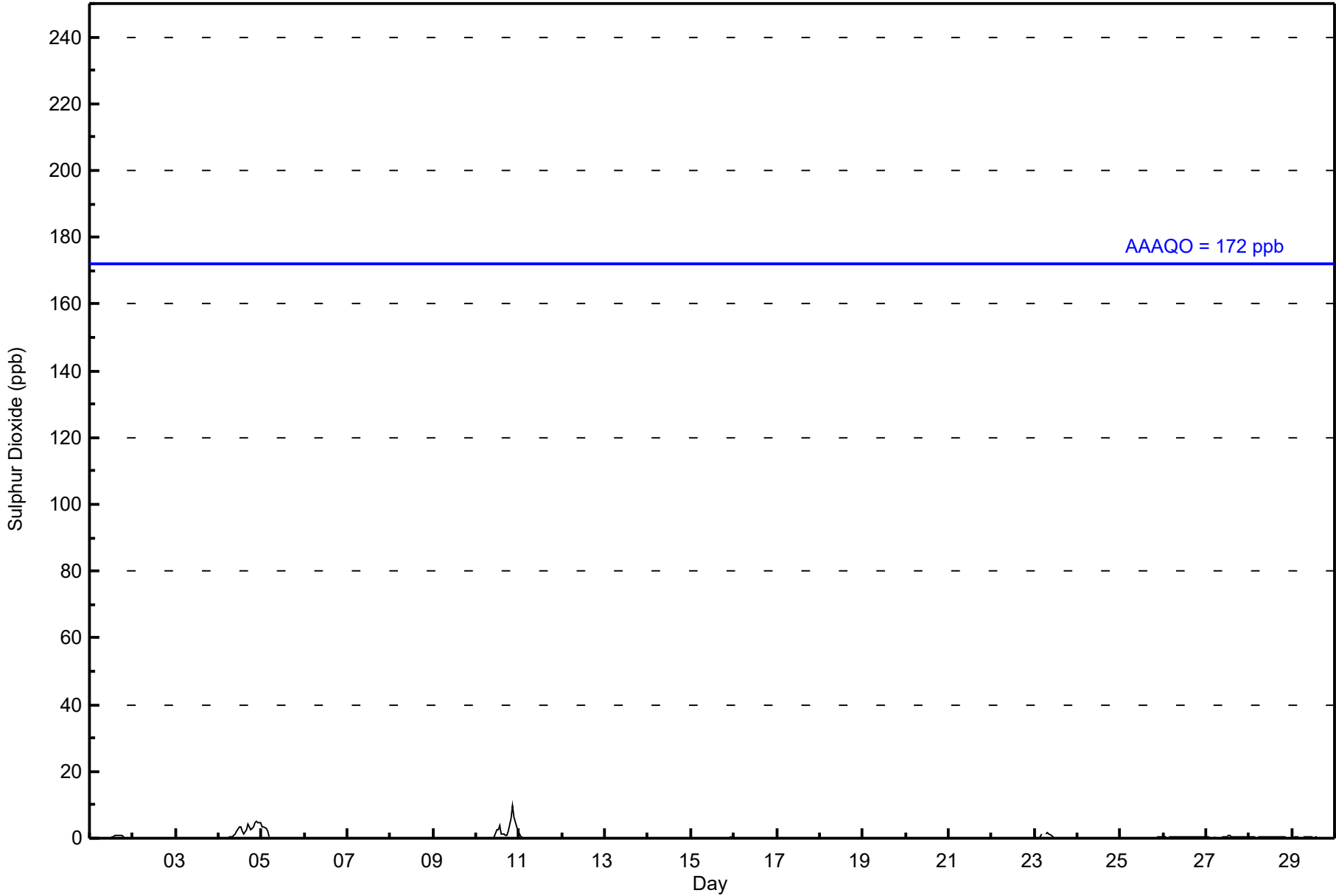
Sulphur Dioxide (SO₂) - ppb
Fort Chipewyan - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																		Hours in Service:	696					
Maximum Value: 9.6 ppb on Feb 10 21:00		Maximum Daily Average: 2.2 ppb on Feb 4																	Hours of Data:	660							
Minimum Value: 0.0 ppb on Feb 2 13:00		Minimum Daily Average: 0.0 ppb on Feb 24																	Hours of Missing Data:	36							
Maximum Diurnal Average: 0.6 ppb at hour 21		Minimum Diurnal Average: 0.1 ppb at hour 6																	Hours of Calibration:	32							
Monthly Average: 0.24 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.1 P ₉₀ = 0.4 P ₉₉ = 4.5																	Percent Operational Time:	99.4							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.3	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.4	0.6	0.7	0.7	0.9	1.0	0.8	0.2	0.0	0.0	0.0	0.0	0.3	1.0	
2-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4-Feb	0.0	0.0	0.0	0.0	Z	0.1	0.3	0.5	0.9	1.2	1.9	3.2	3.2	2.0	1.5	2.4	4.3	3.4	2.6	3.3	4.8	5.1	4.8	4.6	2.2	5.1	
5-Feb	3.5	3.6	2.8	2.0	0.4	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	3.6	
6-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Feb	0.0	0.0	Z	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
8-Feb	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
9-Feb	0.0	0.1	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
10-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.3	2.6	2.7	4.0	1.5	1.3	0.8	0.7	2.1	6.0	9.6	6.5	3.4	2.0	1.9	9.6	
11-Feb	1.1	0.4	0.1	0.1	0.1	Z	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.1
12-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
13-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.1	0.0	0.2	
16-Feb	0.0	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
17-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	PF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
20-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.0	M	M	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
22-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Feb	0.0	0.0	0.1	0.3	1.1	Z	1.3	1.5	1.3	0.8	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.5	
24-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.5	0.5	0.1	0.5	
26-Feb	0.5	0.4	Z	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.4	0.3	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.5
27-Feb	0.3	0.2	0.2	Z	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.6	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.6	0.5	0.4	0.4	0.4	0.4	0.7
28-Feb	0.4	0.3	0.3	0.3	Z	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.5	
29-Feb	0.2	0.2	0.3	0.2	0.2	Z	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.3	
		0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.4	0.6	0.5	0.4	0.3	Diurnal Average	
		3.5	3.6	2.8	2.0	1.1	0.5	1.3	1.5	1.3	1.2	1.9	3.2	3.2	4.0	1.5	2.4	4.3	3.4	2.6	6.0	9.6	6.5	4.8	4.6	Diurnal Maximum	
Z - zerospan		C - Calibration				M - Maintenance				PF - Power Failure																	
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 172 ppb				24-hr 48 ppb																					



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Fort Chipewyan - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Fort Chipewyan - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	660	100.00	100.00
11 - 20	0	0.00	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Fort Chipewyan - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	13	13	20	97	152	20	15	14	19	10	13	26	34	53	94	67	660
11 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	13	13	20	97	152	20	15	14	19	10	13	26	34	53	94	67	660

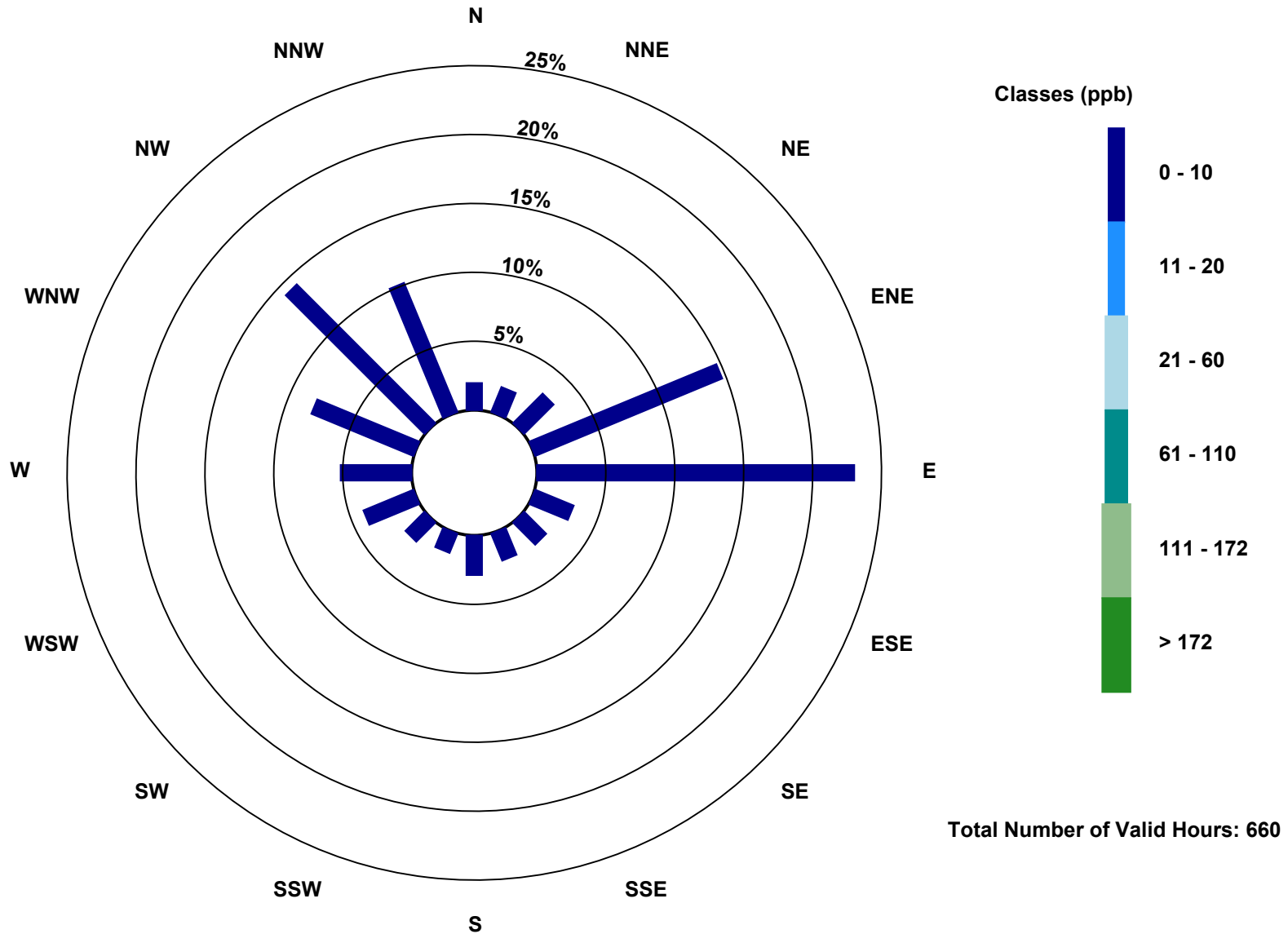
Total Number of Valid Hours: 660

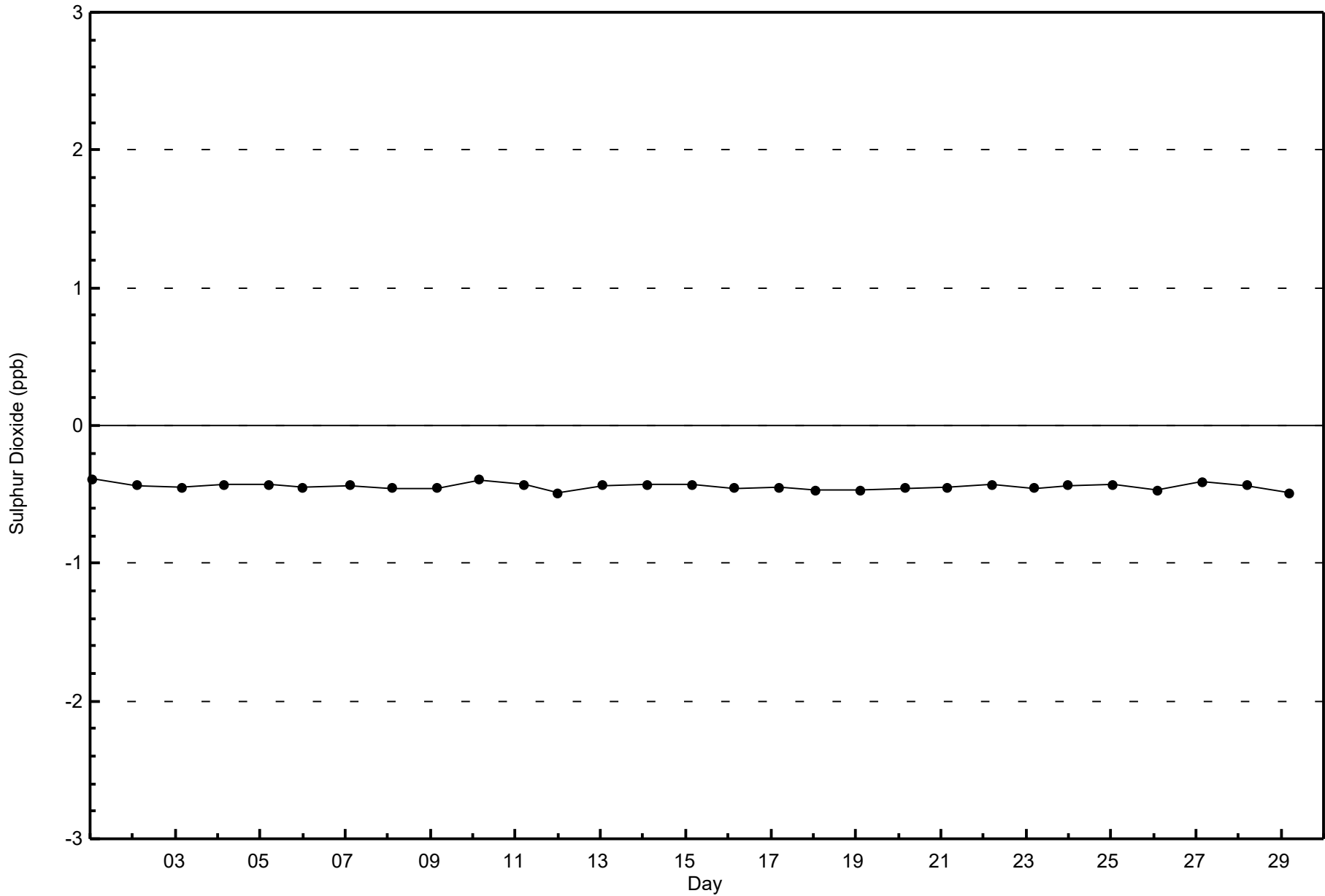
Total Number of Hours: 696

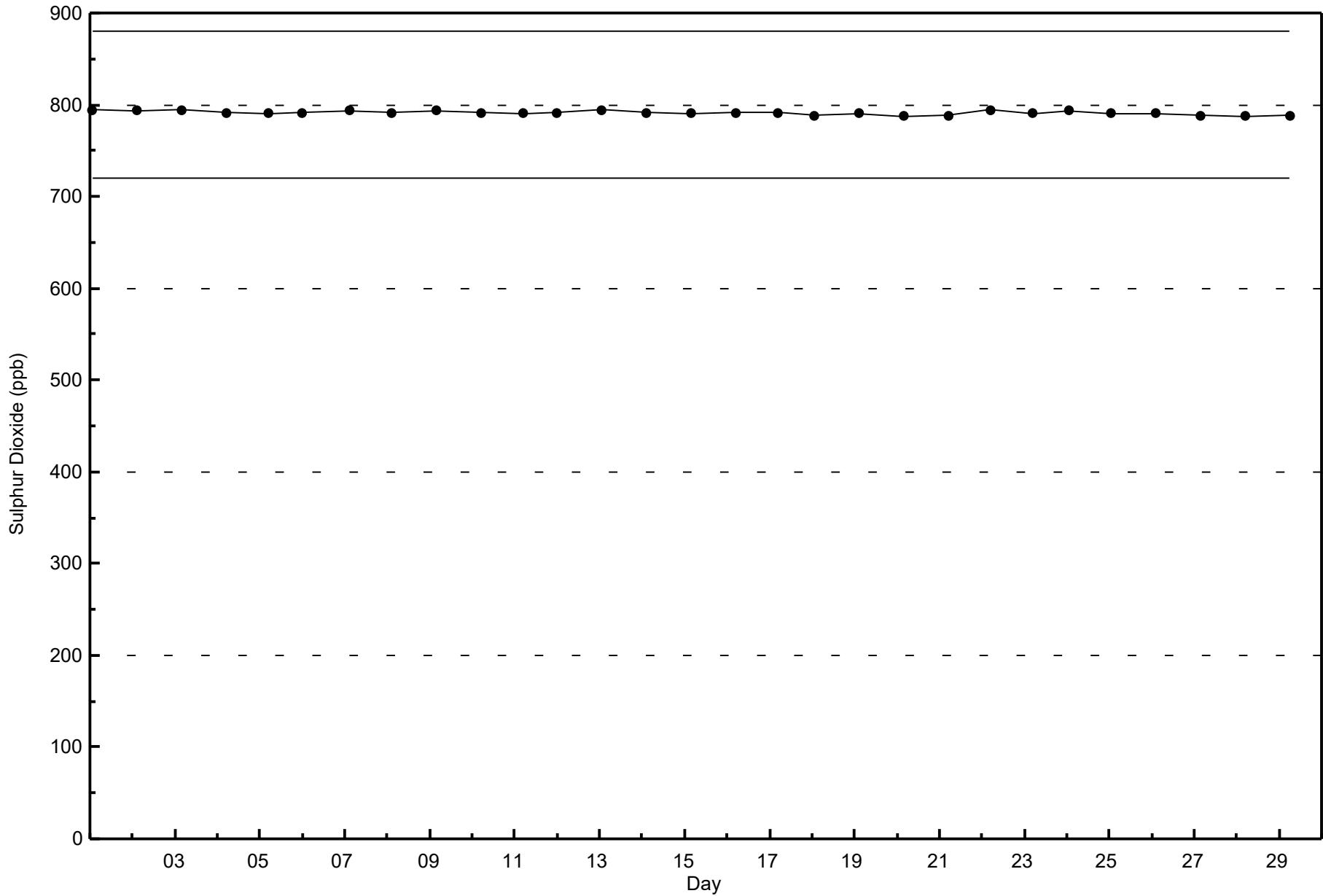


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Fort Chipewyan



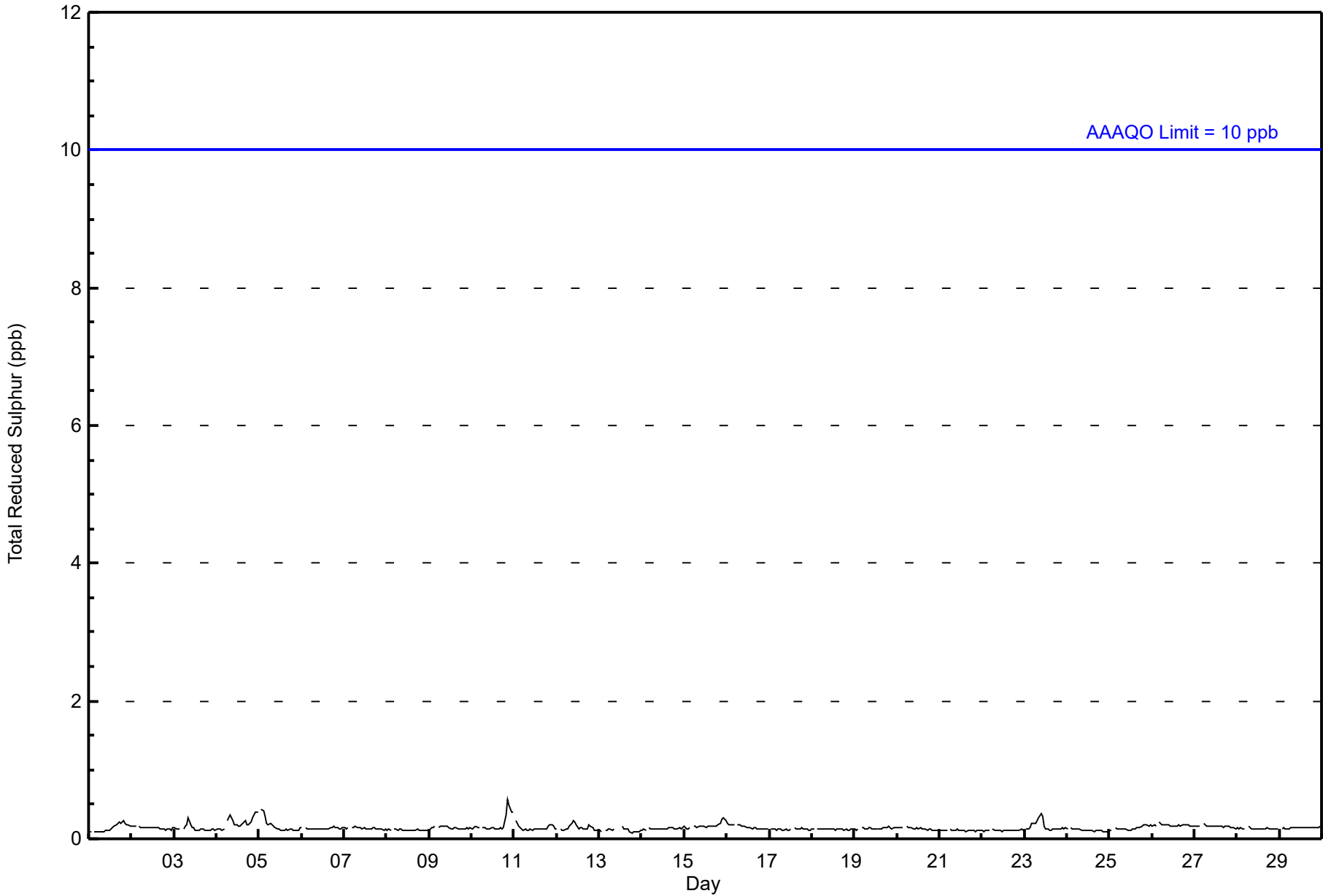






Wood Buffalo Environmental Association
Hourly Averages

Total Reduced Sulphur (TRS) - ppb
Fort Chipewyan - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Reduced Sulphur (TRS) - ppb
Fort Chipewyan - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	662	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Fort Chipewyan - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	13	13	20	98	153	20	16	14	16	9	13	27	34	54	92	70	662
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	13	13	20	98	153	20	16	14	16	9	13	27	34	54	92	70	662

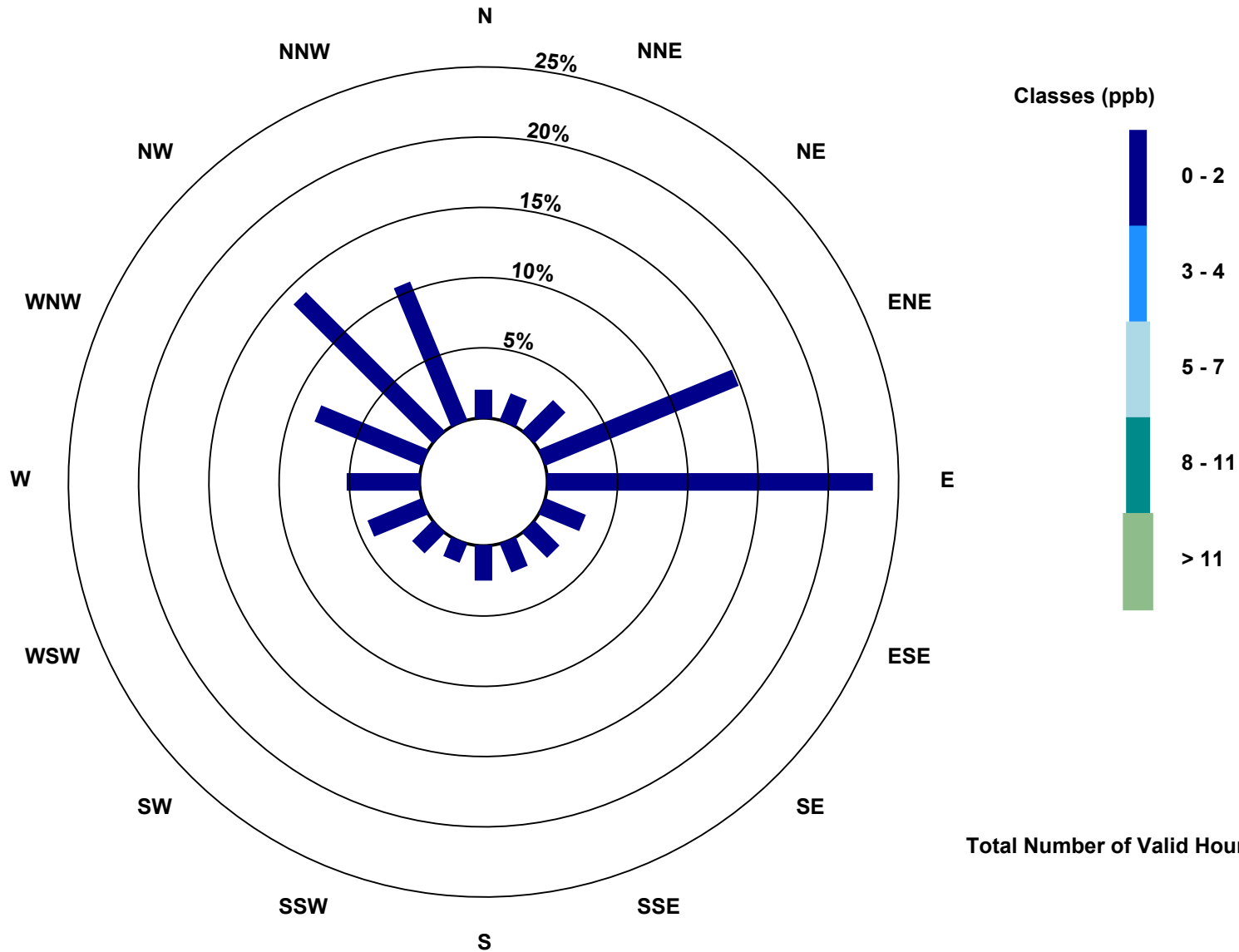
Total Number of Valid Hours: 662

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Reduced Sulphur (TRS) - ppb
Fort Chipewyan

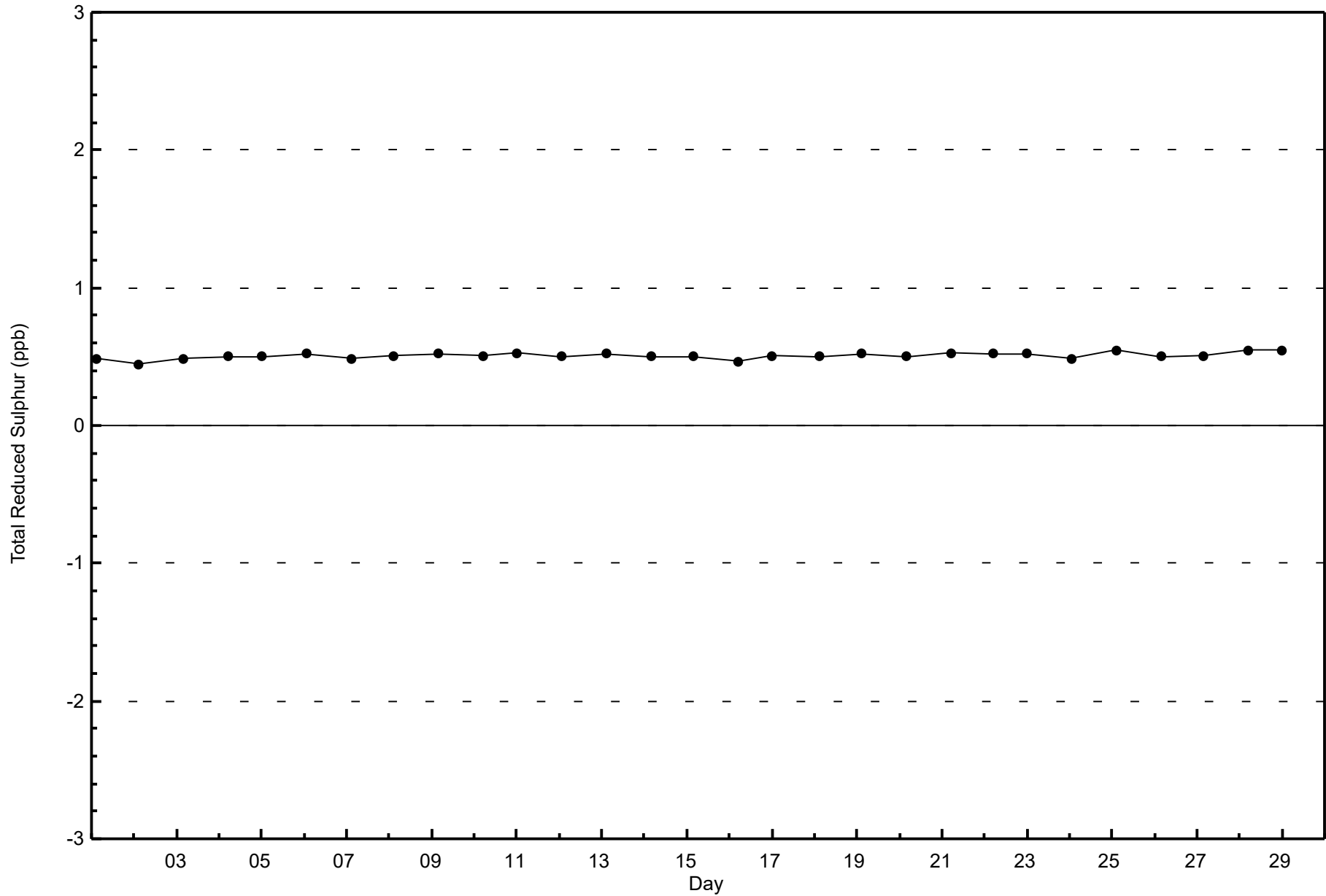


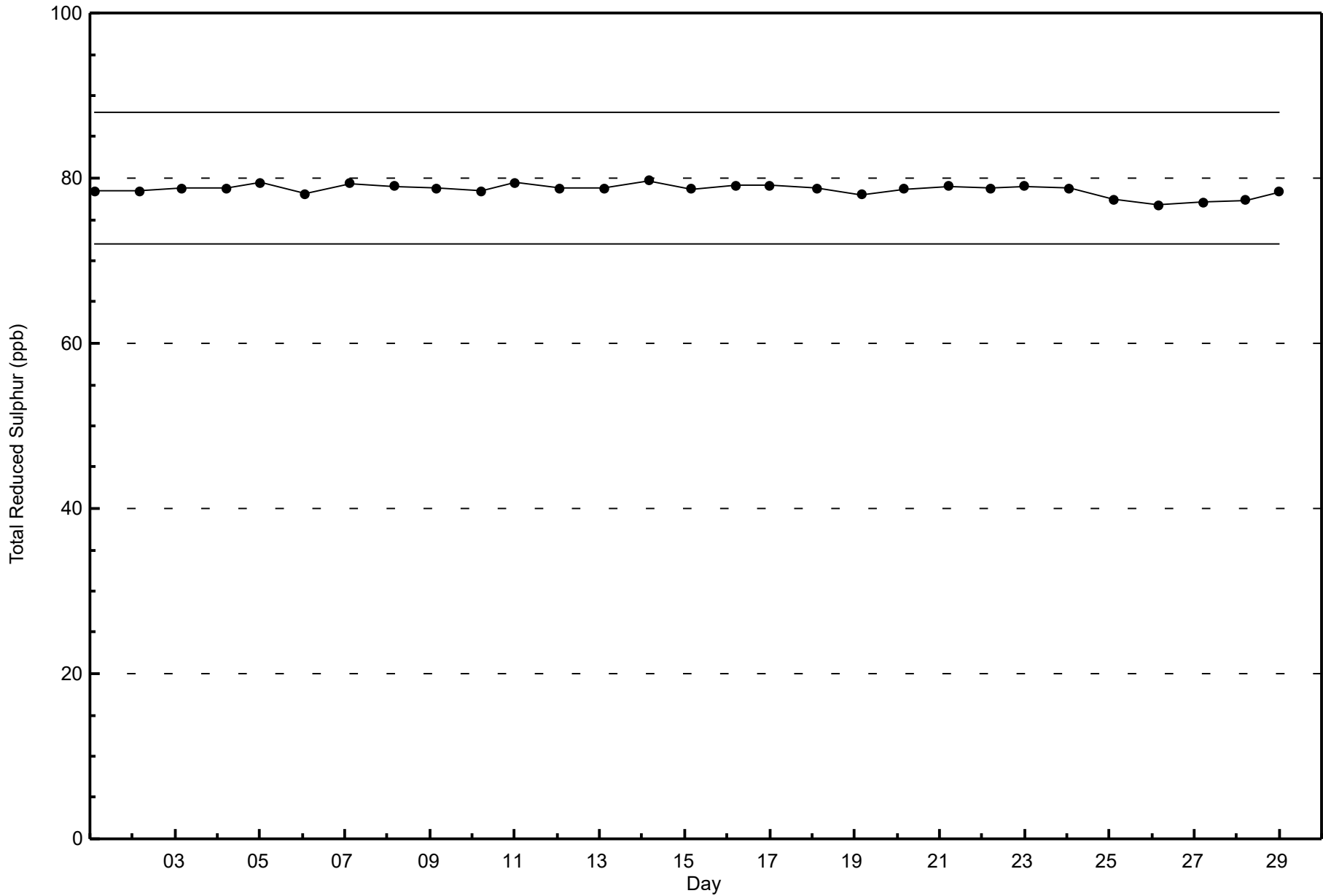
Total Number of Valid Hours: 662



Wood Buffalo Environmental Association
Zero Responses

Total Reduced Sulphur (TRS) - ppb
Fort Chipewyan - February 2024

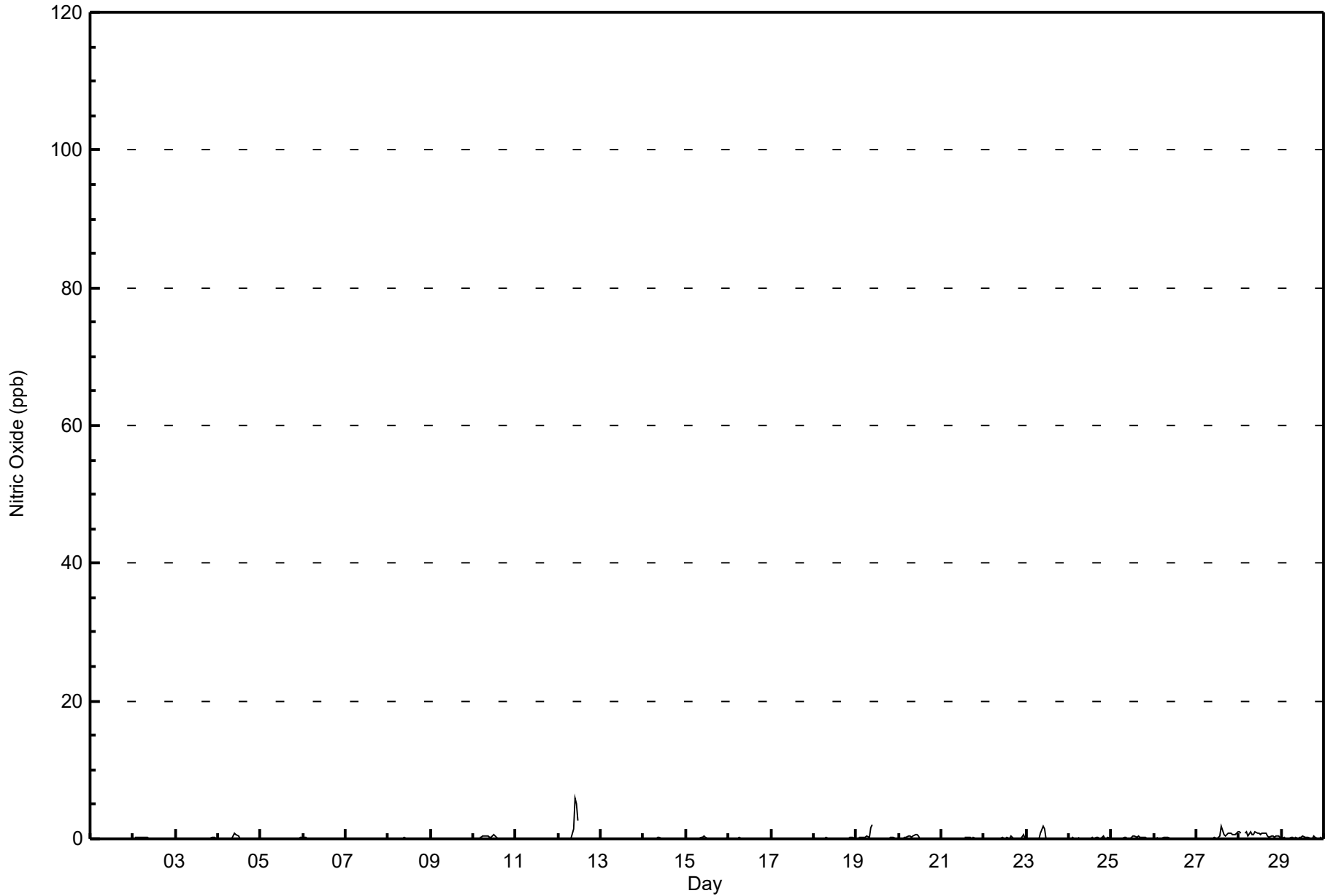






Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Fort Chipewyan - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Fort Chipewyan - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	610	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 610

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Nitric Oxide (NO) - ppb
Fort Chipewyan - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	11	12	20	96	140	20	10	7	19	8	13	22	23	49	92	68	610
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	11	12	20	96	140	20	10	7	19	8	13	22	23	49	92	68	610

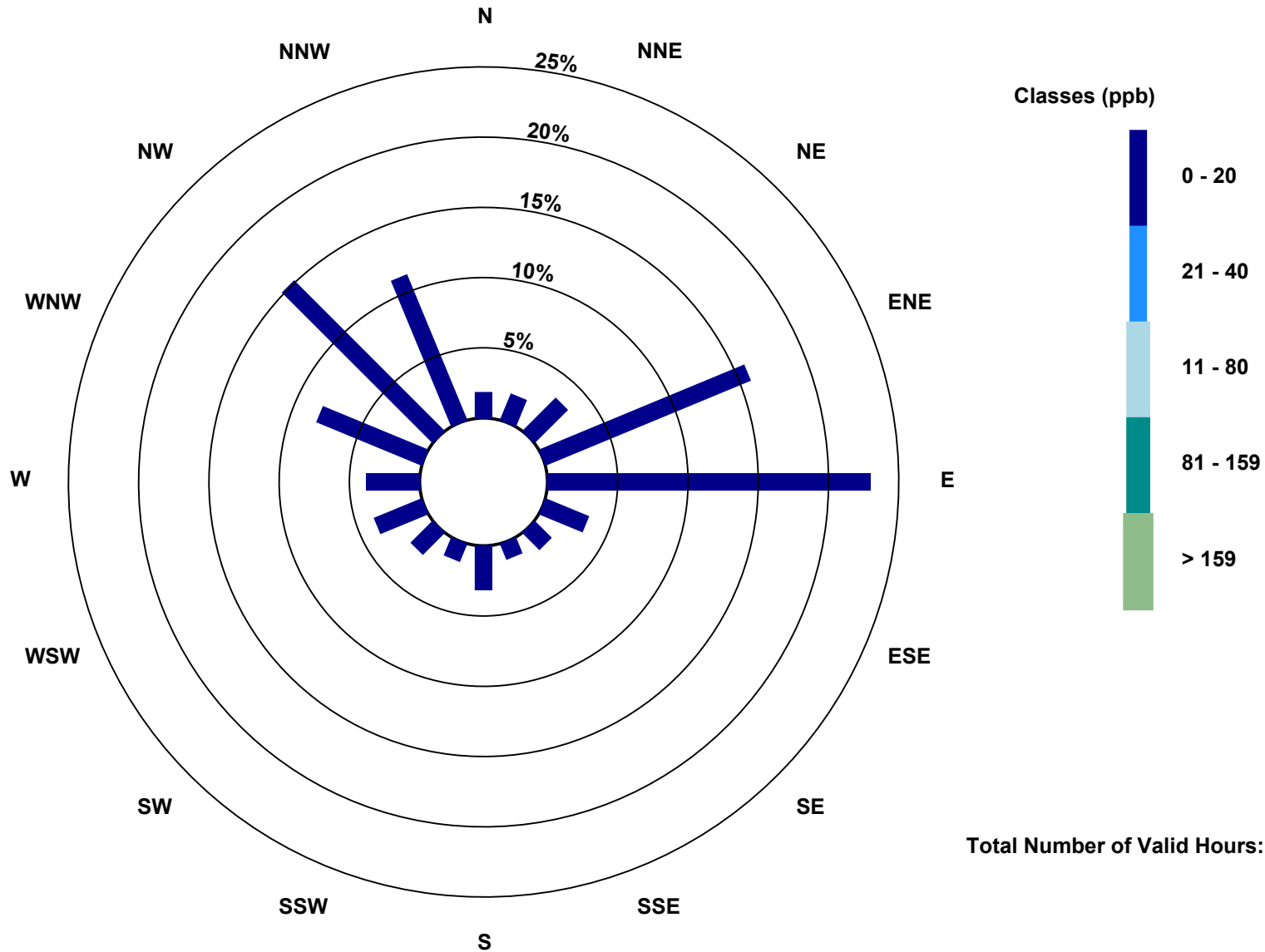
Total Number of Valid Hours: 610

Total Number of Hours: 696

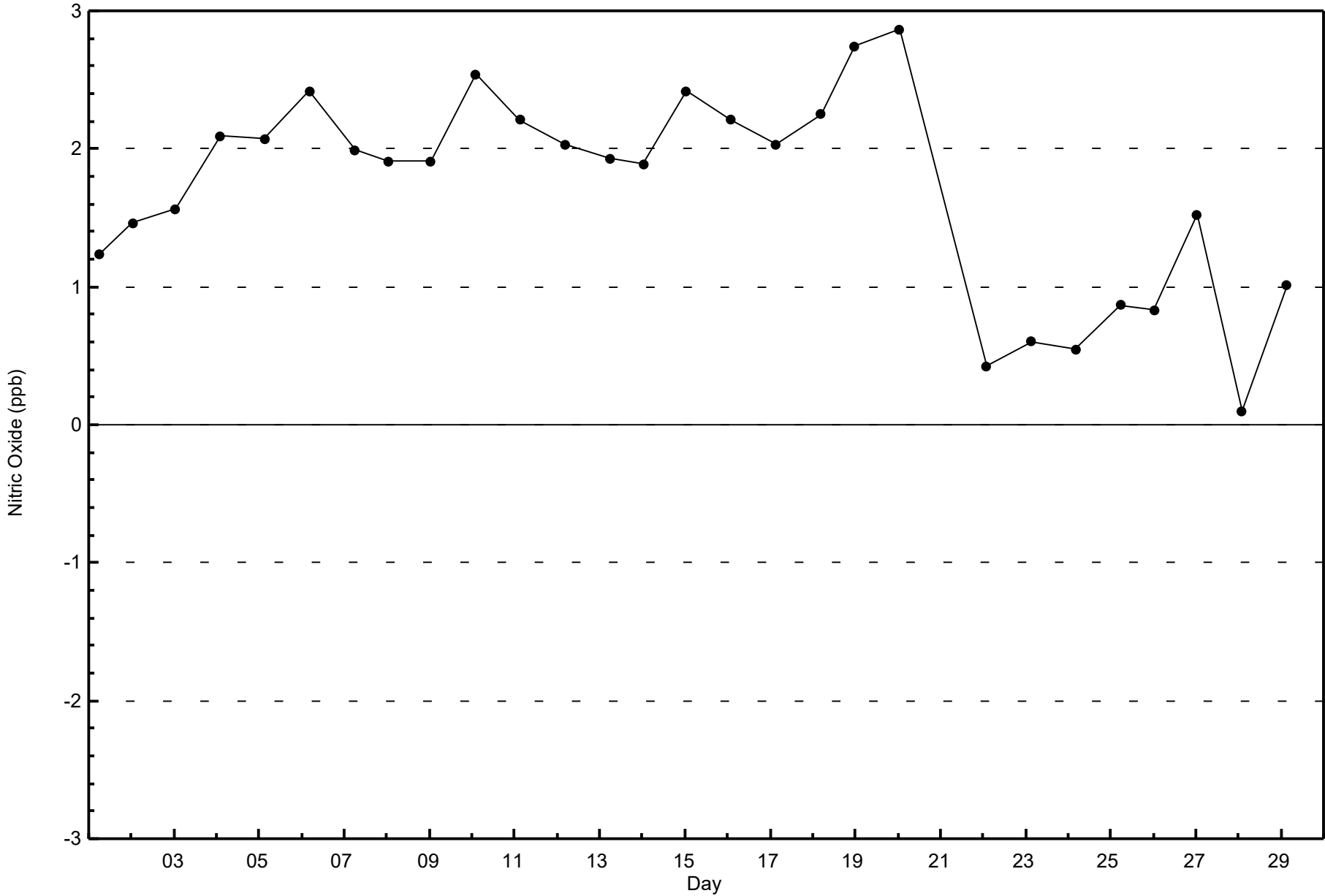


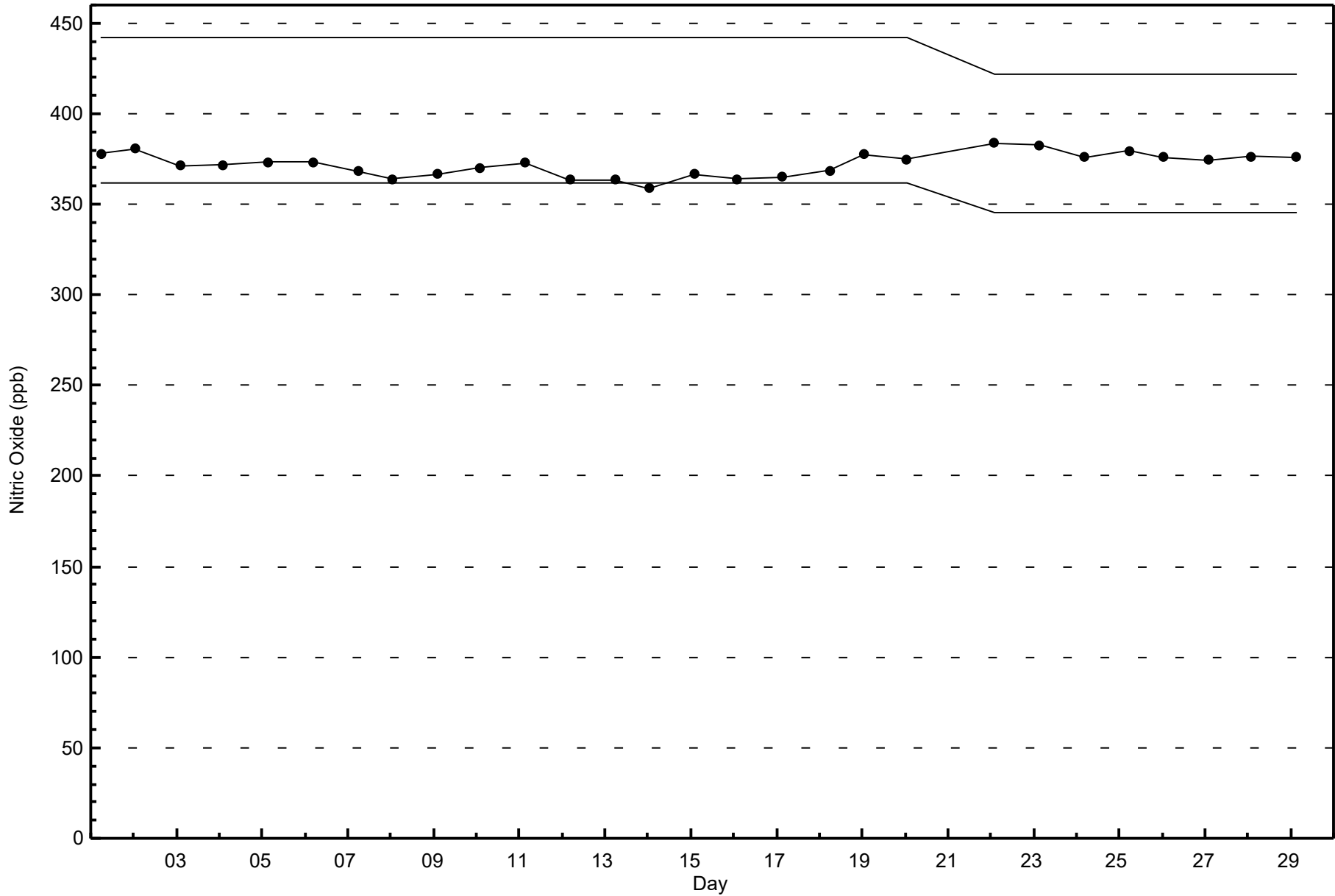
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Fort Chipewyan



Total Number of Valid Hours: 610







Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb
Fort Chipewyan - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 17.0 ppb on Feb 10 21:00	Maximum Daily Average: 4.9 ppb on Feb 4		Hours of Data:	610
Minimum Value: 0.0 ppb on Feb 1 11:00	Minimum Daily Average: 0.1 ppb on Feb 24		Hours of Missing Data:	86
Maximum Diurnal Average: 1.7 ppb at hour 10	Minimum Diurnal Average: 0.3 ppb at hour 13		Hours of Calibration:	38
Monthly Average: 1.05 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.3 Q ₃ = 0.6 P ₉₀ = 2.2 P ₉₉ = 12.5		Percent Operational Time:	93.1

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.4	0.4	0.4	0.4	0.3	Z	0.5	0.5	0.6	0.5	0.0	0.0	2.2	3.3	4.2	3.7	6.1	7.1	4.5	0.2	0.2	0.3	0.4	0.5	1.6	7.1	
2-Feb	Z	0.6	0.5	0.4	0.3	0.2	0.2	0.5	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.6	
3-Feb	0.5	Z	0.7	0.5	0.5	0.5	0.4	0.4	0.2	0.2	0.2	0.3	0.2	0.2	0.0	0.0	0.0	0.1	0.5	1.2	0.6	3.6	1.1	0.8	0.6	3.6	
4-Feb	0.4	0.4	Z	0.6	0.5	1.2	4.2	6.6	6.9	5.1	3.7	3.7	1.7	1.7	2.2	4.2	6.9	5.0	4.7	6.7	9.9	11.7	12.5	12.7	4.9	12.7	
5-Feb	13.3	12.3	11.1	Z	2.1	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.4	0.3	0.5	0.4	4.2	7.1	2.3	13.3	
6-Feb	6.8	0.6	0.3	0.9	Z	0.3	0.1	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.4	0.5	6.8	
7-Feb	0.3	0.3	0.3	0.3	0.4	0.6	Z	0.5	0.4	0.5	0.6	0.6	0.1	0.2	0.2	0.3	0.4	0.3	0.6	0.3	0.1	0.2	0.2	0.3	0.3	0.6	
8-Feb	Z	0.3	0.4	0.6	0.2	0.4	0.4	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.9	0.3	0.1	0.1	0.2	0.2	0.5	0.4	0.3	0.9	
9-Feb	0.5	Z	0.7	0.5	0.5	0.4	0.3	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.1	0.1	0.0	0.0	0.2	0.7	
10-Feb	0.2	1.4	Z	3.3	2.9	1.1	0.4	1.2	0.3	0.3	0.6	1.7	1.5	1.8	1.2	1.1	1.0	0.9	2.8	10.9	17.0	12.1	7.8	7.4	3.4	17.0	
11-Feb	6.2	2.3	1.0	Z	0.7	0.6	0.7	0.6	0.4	0.3	0.0	UO	UO	UO	UO	UO	UO	UO	0.0	0.1	0.1	0.1	0.3	0.2	--	6.2	
12-Feb	0.5	1.8	1.7	1.2	Z	2.2	4.8	9.5	13.5	15.6	11.5	4.6	UO	UO	UO	UO	0.6	0.3	0.0	0.0	0.0	0.0	0.1	0.1	3.4	15.6	
13-Feb	0.2	0.3	0.2	0.3	0.3	Z	0.4	0.6	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.6	1.4	0.3	0.9	1.2	1.0	0.3	0.5	1.6	
14-Feb	Z	0.3	0.2	0.2	0.2	0.2	0.4	0.4	0.5	0.5	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.8	0.4	0.9	1.0	0.4	0.3	0.3	1.0	
15-Feb	0.6	Z	0.3	0.2	0.4	0.4	0.2	0.5	0.3	0.3	0.3	0.3	0.1	0.0	UO	UO	UO	UO	0.0	0.2	2.1	4.6	8.3	9.5	5.5	1.7	9.5
16-Feb	1.6	0.8	Z	0.7	0.7	0.7	0.7	0.7	0.5	0.3	0.0	UO	UO	UO	UO	UO	UO	UO	0.0	0.0	0.1	0.2	0.3	0.4	0.6	--	1.6
17-Feb	0.5	0.5	0.5	Z	0.4	0.3	0.3	0.2	0.3	UO	UO	UO	UO	PF	UO	UO	UO	UO	0.0	1.1	0.5	0.3	0.1	0.1	0.2	--	1.1
18-Feb	0.5	0.4	0.2	0.4	0.5	Z	0.6	0.5	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.7	0.9	1.0	0.6	0.3	1.0	
19-Feb	Z	0.9	1.5	0.9	1.0	1.8	1.2	0.5	3.4	2.7	UO	UO	UO	UO	UO	UO	UO	UO	0.7	5.9	2.1	0.4	1.0	1.1	--	5.9	
20-Feb	1.1	Z	0.2	0.5	0.8	0.7	0.3	0.2	0.4	0.2	0.2	0.1	0.2	0.2	C	C	C	C	C	C	M	M	M	M	M	--	1.1
21-Feb	M	M	M	M	M	M	M	M	C	C	C	C	C	0.1	0.4	0.7	0.3	0.3	0.5	0.5	0.5	0.7	0.1	0.3	--	0.7	
22-Feb	0.0	0.2	Z	0.7	0.5	0.3	0.4	0.1	0.5	0.2	0.3	0.2	0.1	0.1	0.3	0.6	0.5	1.0	0.6	0.7	0.8	0.2	1.0	0.0	0.4	1.0	
23-Feb	0.0	0.0	0.0	Z	5.2	4.0	4.1	7.2	10.9	14.7	11.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	14.7	
24-Feb	0.0	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.4	0.3	0.0	0.3	0.1	0.1	0.4	
25-Feb	0.0	0.1	0.0	0.0	0.1	Z	0.7	0.6	0.6	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.3	0.2	0.2	0.4	0.2	0.2	0.4	0.2	0.7
26-Feb	Z	0.7	0.4	0.5	0.5	0.4	0.3	0.5	1.0	0.8	0.0	0.2	0.4	0.4	0.2	0.3	0.4	0.5	1.0	0.7	0.4	0.3	0.2	0.3	0.5	1.0	
27-Feb	0.3	Z	1.1	0.7	0.9	0.5	0.6	0.6	1.0	0.4	0.4	0.3	0.4	0.2	1.3	0.2	0.2	0.3	2.6	3.3	0.3	0.4	0.2	0.0	0.7	3.3	
28-Feb	0.0	0.0	Z	0.3	0.4	0.3	0.3	0.6	0.5	0.4	0.5	0.4	0.3	0.2	0.8	0.4	0.3	0.4	0.3	0.3	0.2	0.2	0.3	0.4	0.3	0.8	
29-Feb	0.3	0.4	0.4	Z	0.3	0.3	0.4	0.3	0.5	0.6	0.8	0.6	0.2	0.3	0.4	0.2	0.0	0.1	0.1	0.1	0.3	0.8	0.7	0.2	0.4	0.8	

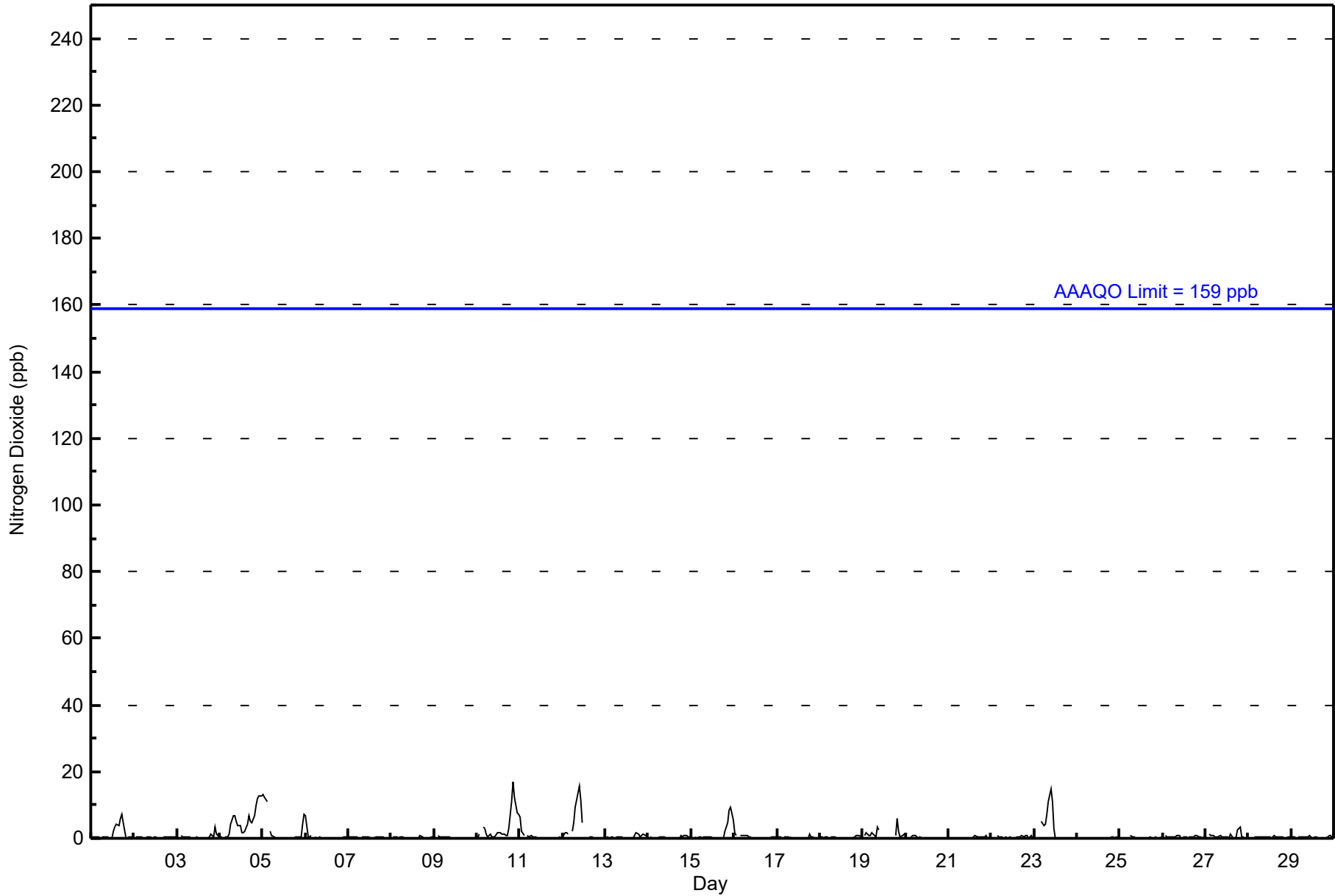
1.5	1.1	1.0	0.6	0.8	0.8	0.9	1.2	1.6	1.7	1.2	0.7	0.3	0.4	0.5	0.6	0.8	0.7	0.9	1.3	1.5	1.6	1.6	1.5	1.5	1.5	Diurnal Average
13.3	12.3	11.1	3.3	5.2	4.0	4.8	9.5	13.5	15.6	11.5	4.6	2.2	3.3	4.2	4.2	6.9	7.1	4.7	10.9	17.0	12.1	12.5	12.7	12.7	12.7	Diurnal Maximum

Z - zerspan C - Calibration M - Maintenance UO - Unstable Operation PF - Power Failure
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Fort Chipewyan - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Fort Chipewyan - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	610	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 610

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Fort Chipewyan - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	11	12	20	96	140	20	10	7	19	8	13	22	23	49	92	68	610
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	11	12	20	96	140	20	10	7	19	8	13	22	23	49	92	68	610

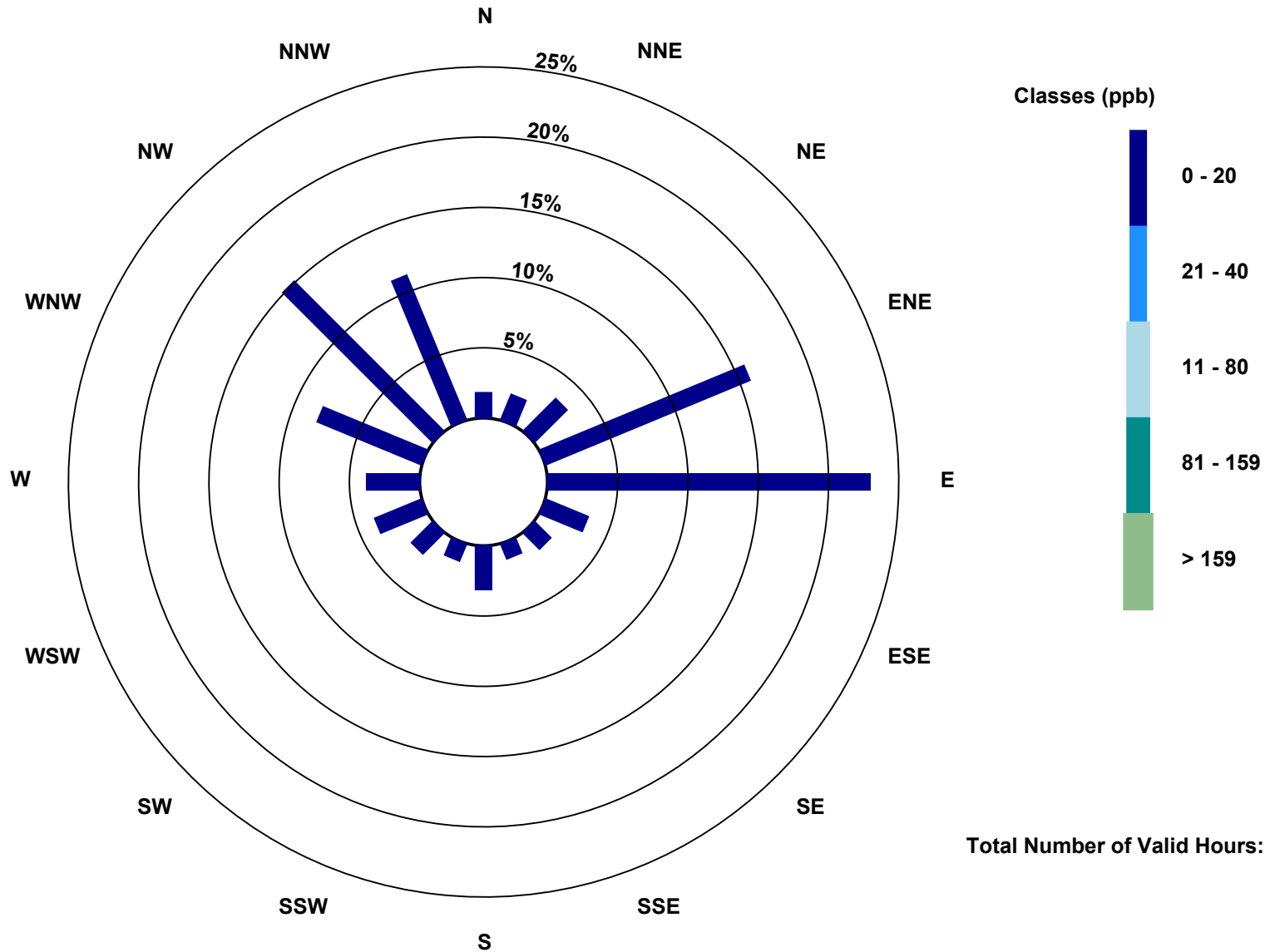
Total Number of Valid Hours: 610

Total Number of Hours: 696

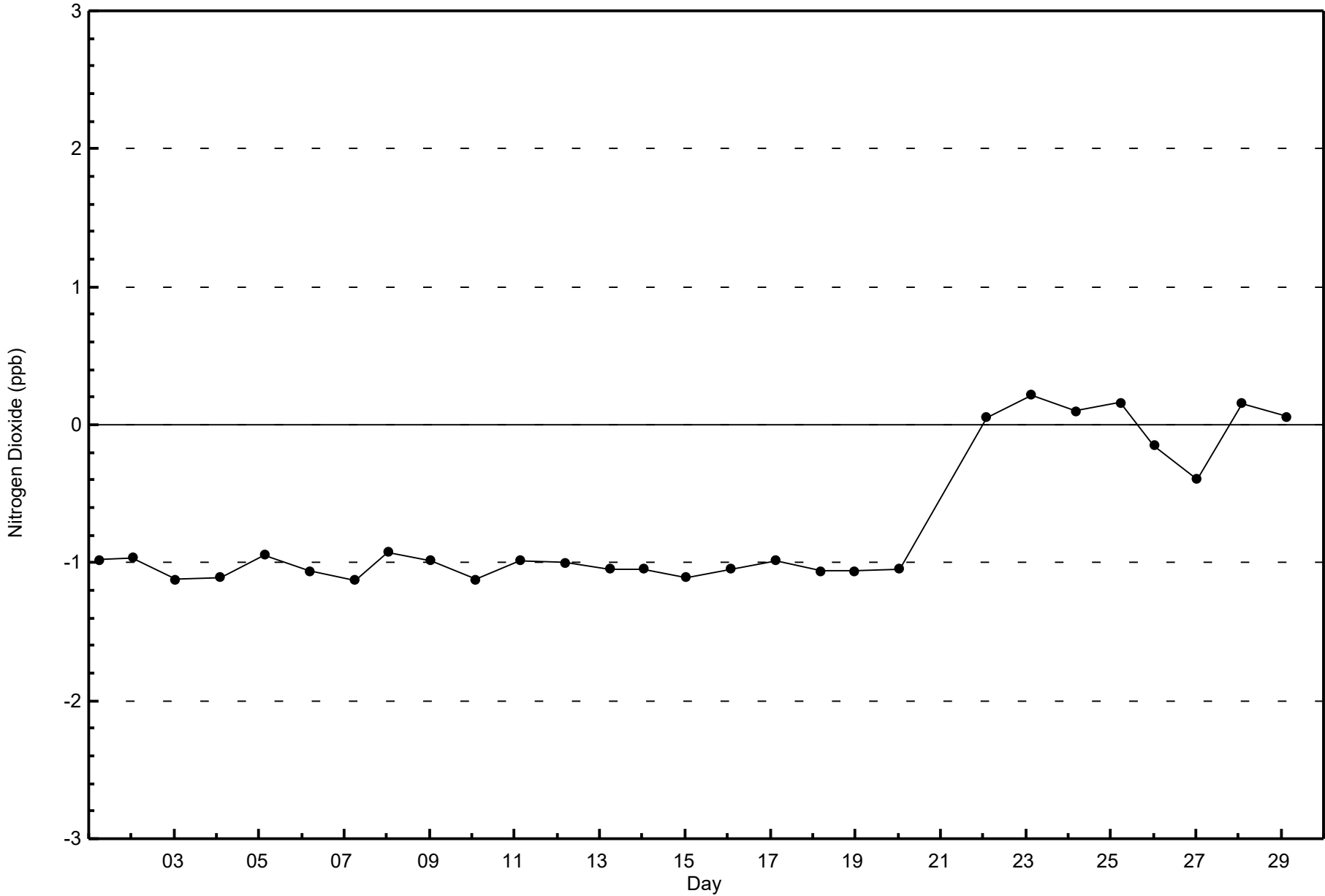


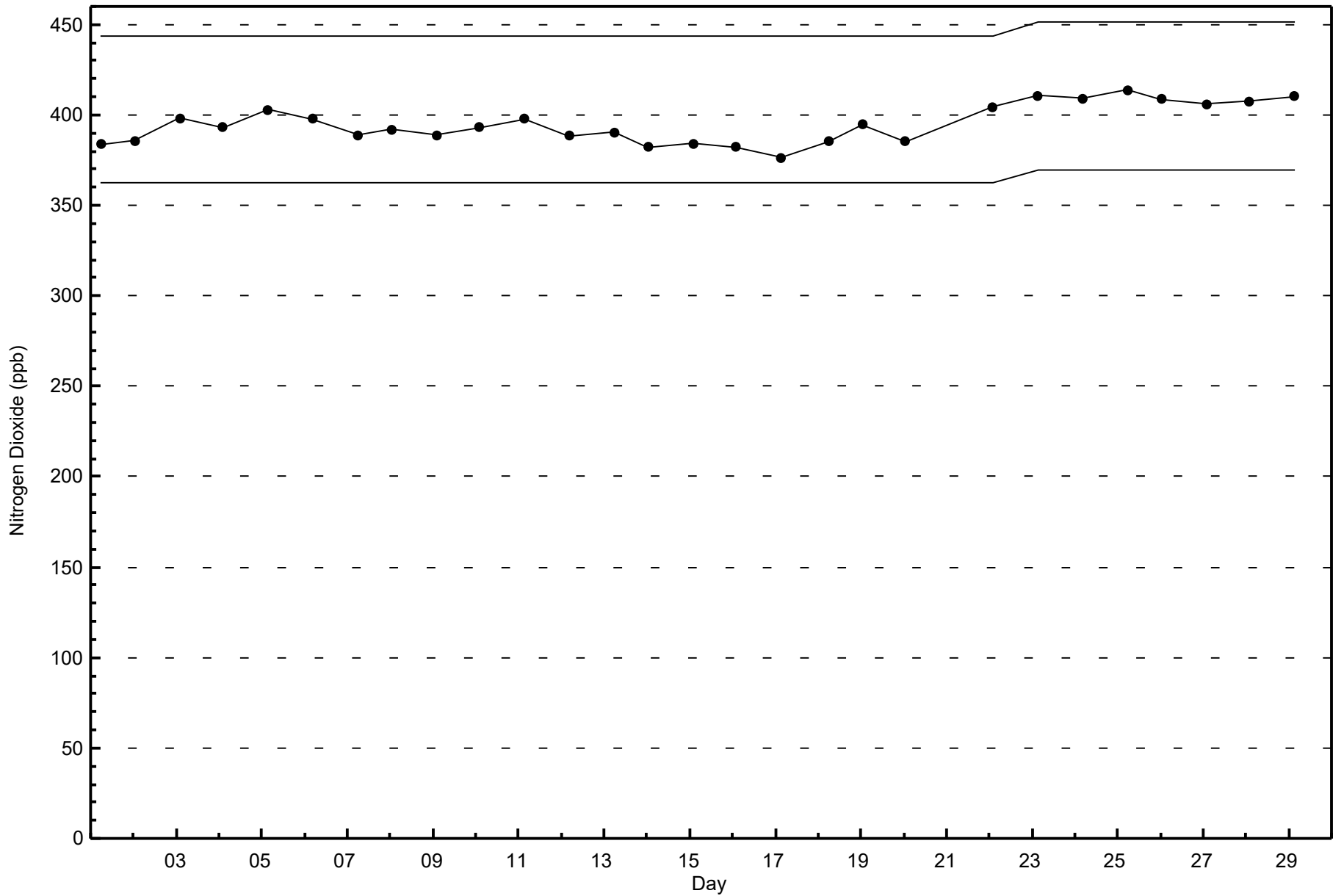
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Fort Chipewyan



Total Number of Valid Hours: 610







Wood Buffalo Environmental Association
Summary of Hour Averages

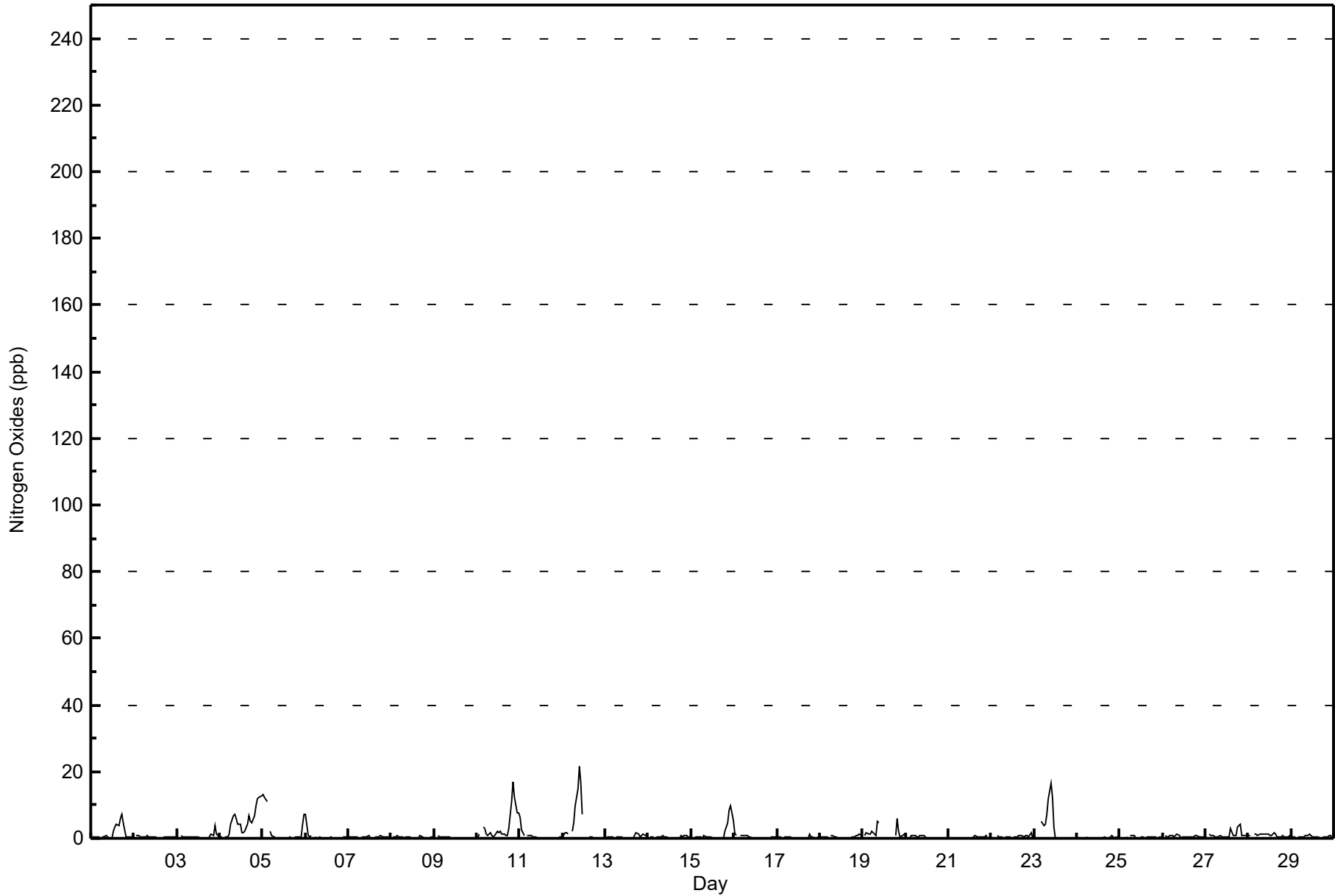
Nitrogen Oxides (NO_x) - ppb
Fort Chipewyan - February 2024

Maximum Value: 21.6 ppb on Feb 12 10:00		Maximum Daily Average: 5.0 ppb on Feb 4		Hours in Service: 696																																													
Minimum Value: 0.0 ppb on Feb 1 11:00		Minimum Daily Average: 0.1 ppb on Feb 24		Hours of Data: 610																																													
Maximum Diurnal Average: 2.1 ppb at hour 10		Minimum Diurnal Average: 0.4 ppb at hour 13		Hours of Missing Data: 86																																													
Monthly Average: 1.17 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 0.4 Q ₃ = 0.8 P ₉₀ = 2.4 P ₉₉ = 12.7		Hours of Calibration: 38																																													
				Percent Operational Time: 93.1																																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.4	0.4	0.4	0.4	0.3	Z	0.6	0.5	0.7	0.6	0.0	0.0	2.2	3.3	4.2	3.7	6.1	7.1	4.5	0.2	0.2	0.3	0.4	0.5	1.6	7.1																							
2-Feb	Z	0.7	0.7	0.6	0.6	0.5	0.4	0.7	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.4	0.7																							
3-Feb	0.6	Z	0.7	0.5	0.5	0.5	0.4	0.4	0.2	0.2	0.2	0.3	0.2	0.2	0.0	0.0	0.0	0.1	0.5	1.2	0.7	3.7	1.3	0.9	0.6	3.7																							
4-Feb	0.5	0.5	Z	0.6	0.5	1.2	4.3	6.6	7.2	6.0	4.2	4.2	1.7	1.7	2.2	4.2	6.9	5.0	4.7	6.7	9.9	11.7	12.5	12.7	5.0	12.7																							
5-Feb	13.3	12.3	11.2	Z	2.1	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.4	0.3	0.5	0.5	4.3	7.2	2.3	13.3																							
6-Feb	7.0	0.7	0.4	0.9	Z	0.3	0.1	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.4	0.5	7.0																							
7-Feb	0.3	0.3	0.3	0.3	0.4	0.6	Z	0.5	0.4	0.5	0.6	0.6	0.1	0.2	0.2	0.3	0.4	0.3	0.7	0.4	0.2	0.3	0.3	0.4	0.4	0.7																							
8-Feb	Z	0.3	0.5	0.6	0.2	0.4	0.4	0.2	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.9	0.3	0.1	0.1	0.2	0.2	0.5	0.4	0.3	0.9																							
9-Feb	0.5	Z	0.7	0.5	0.5	0.4	0.3	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.1	0.1	0.0	0.0	0.2	0.7																							
10-Feb	0.2	1.4	Z	3.5	3.1	1.4	0.8	1.6	0.7	0.4	0.8	2.3	1.9	2.0	1.2	1.1	1.0	0.9	2.8	10.9	17.0	12.1	7.8	7.5	3.6	17.0																							
11-Feb	6.2	2.4	1.1	Z	0.8	0.6	0.7	0.6	0.4	0.3	0.0	UO	UO	UO	UO	UO	UO	UO	0.0	0.1	0.1	0.1	0.3	0.2	--	6.2																							
12-Feb	0.5	1.8	1.7	1.2	Z	2.2	4.8	9.6	14.9	21.6	16.5	7.2	UO	UO	UO	UO	0.6	0.3	0.0	0.0	0.0	0.0	0.1	0.1	4.2	21.6																							
13-Feb	0.2	0.3	0.2	0.3	0.3	Z	0.4	0.6	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.6	1.4	0.3	0.9	1.2	1.0	0.3	0.5	1.6																							
14-Feb	Z	0.3	0.2	0.2	0.2	0.2	0.4	0.4	0.7	0.6	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.8	0.4	0.9	1.0	0.4	0.3	0.3	1.0																							
15-Feb	0.6	Z	0.3	0.2	0.4	0.4	0.2	0.6	0.5	0.5	0.6	0.5	0.1	0.0	0.0	UO	UO	UO	0.0	0.2	2.1	4.6	8.3	9.6	1.8	9.6																							
16-Feb	1.6	0.8	Z	0.7	0.7	0.8	0.8	0.8	0.5	0.3	0.0	UO	UO	UO	UO	UO	UO	UO	0.0	0.0	0.1	0.2	0.3	0.4	0.6	--	1.6																						
17-Feb	0.5	0.5	0.6	Z	0.5	0.3	0.3	0.2	0.3	UO	UO	UO	UO	PF	UO	UO	UO	UO	0.0	1.1	0.5	0.3	0.1	0.1	0.3	--	1.1																						
18-Feb	0.6	0.4	0.2	0.4	0.5	Z	0.7	0.6	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.8	1.0	1.1	0.7	0.4	1.1																							
19-Feb	Z	1.0	1.6	1.1	1.2	2.0	1.5	0.7	5.1	4.7	UO	UO	UO	UO	UO	UO	UO	UO	0.7	6.1	2.2	0.5	1.0	1.1	--	6.1																							
20-Feb	1.1	Z	0.2	0.6	1.0	1.0	0.6	0.5	0.9	0.8	0.8	0.6	0.2	0.2	C	C	C	C	C	C	M	M	M	M	M	--	1.1																						
21-Feb	M	M	M	M	M	M	M	M	C	C	C	C	C	C	0.2	0.6	1.0	0.6	0.3	0.6	0.5	0.5	0.7	0.1	0.3	--	1.0																						
22-Feb	0.0	0.2	Z	0.7	0.5	0.3	0.4	0.1	0.5	0.2	0.5	0.2	0.1	0.2	0.3	1.0	0.8	1.0	0.6	0.7	0.9	0.2	1.6	0.0	0.5	1.6																							
23-Feb	0.0	0.0	0.0	Z	5.3	4.0	4.1	7.2	11.7	16.5	12.3	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	16.5																						
24-Feb	0.0	0.0	0.1	0.0	Z	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.1	0.8	0.3	0.1	0.5	0.1	0.1	0.8																						
25-Feb	0.0	0.1	0.0	0.0	0.2	Z	0.7	0.8	0.8	0.0	0.0	0.2	0.6	0.5	0.2	0.3	0.3	0.4	0.5	0.4	0.4	0.2	0.3	0.4	0.3	0.8	0.8																						
26-Feb	Z	0.9	0.5	0.6	0.6	0.7	0.5	0.7	1.1	0.8	0.0	0.2	0.5	0.4	0.2	0.3	0.4	0.5	1.0	0.7	0.4	0.3	0.2	0.3	0.5	1.1																							
27-Feb	0.3	Z	1.1	0.7	0.9	0.5	0.6	0.6	1.0	0.4	0.5	0.4	0.6	0.6	3.0	0.8	0.7	0.9	3.5	4.1	1.0	1.0	0.8	0.9	1.1	4.1																							
28-Feb	1.1	0.8	Z	1.2	1.4	0.8	1.3	1.3	1.2	1.5	1.3	1.3	0.9	1.0	1.5	1.1	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.7	1.0	1.5																							
29-Feb	0.4	0.5	0.5	Z	0.3	0.4	0.6	0.3	0.7	0.6	1.1	0.8	0.5	0.4	0.6	0.3	0.0	0.2	0.4	0.3	0.3	0.9	0.9	0.2	0.5	1.1																							
																								1.6	1.1	1.0	0.7	0.9	0.9	1.0	1.3	1.9	2.1	1.6	0.9	0.4	0.5	0.7	0.7	0.9	0.8	0.9	1.4	1.5	1.6	1.7	1.5	Diurnal Average	
																								13.3	12.3	11.2	3.5	5.3	4.0	4.8	9.6	14.9	21.6	16.5	7.2	2.2	3.3	4.2	4.2	6.9	7.1	4.7	10.9	17.0	12.1	12.5	12.7	Diurnal Maximum	
Z - zerspan																								C - Calibration				M - Maintenance				UO - Unstable Operation				PF - Power Failure													



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Fort Chipewyan - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Fort Chipewyan - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	609	99.84	99.84
21 - 40	1	0.16	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 610

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Fort Chipewyan - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	11	12	20	96	140	20	10	7	19	8	12	22	23	49	92	68	609
21 - 40	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	11	12	20	96	140	20	10	7	19	8	13	22	23	49	92	68	610

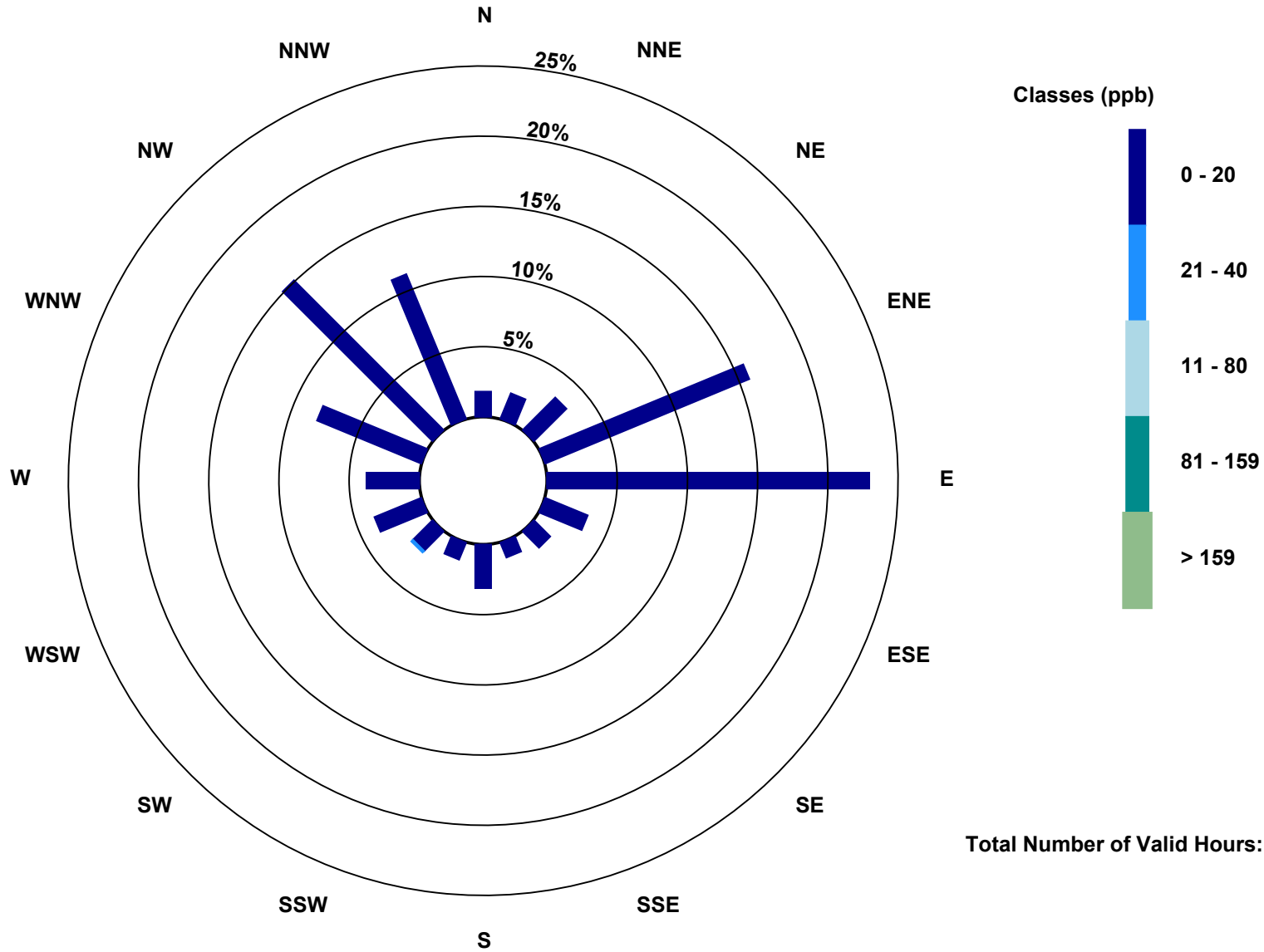
Total Number of Valid Hours: 610

Total Number of Hours: 696

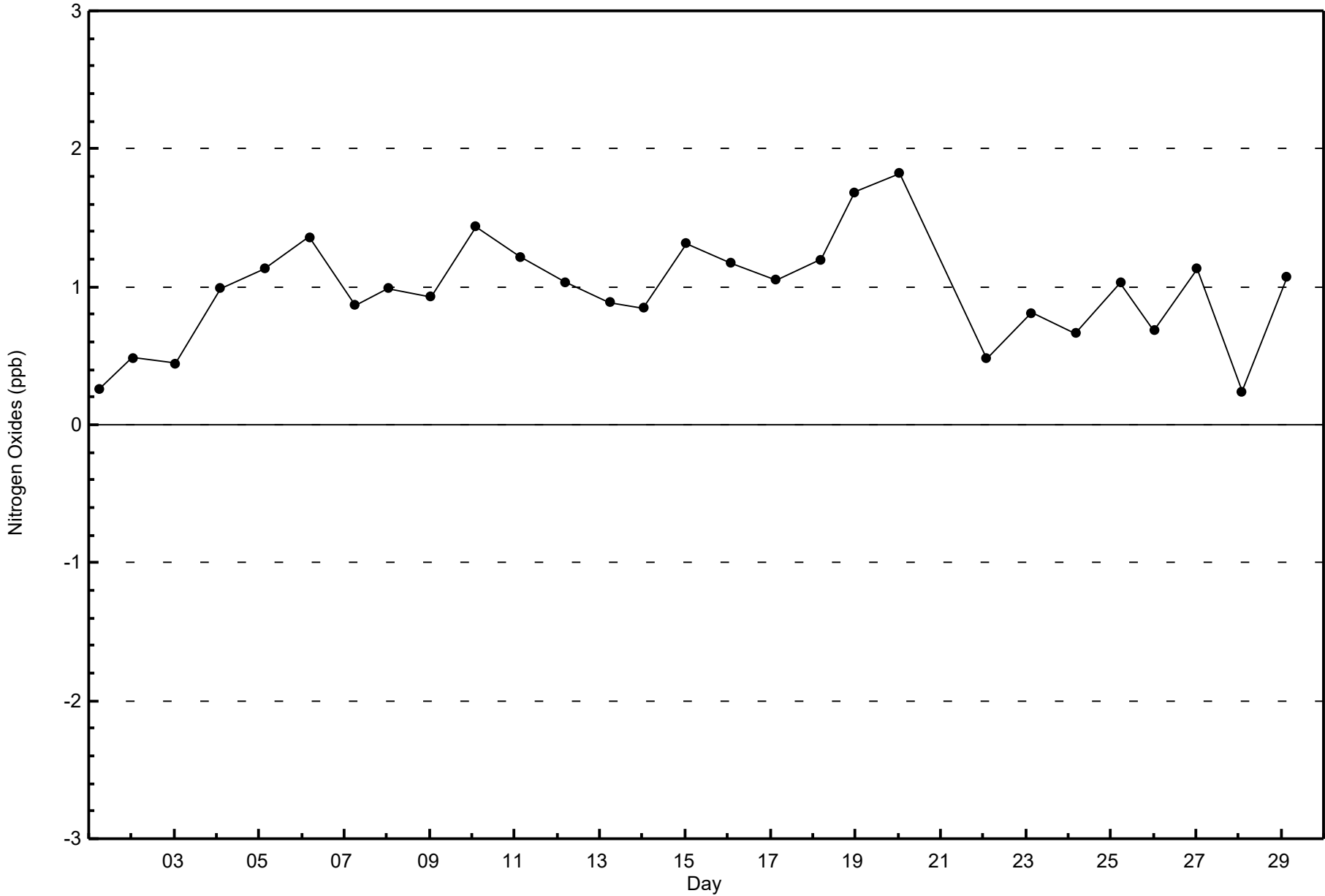


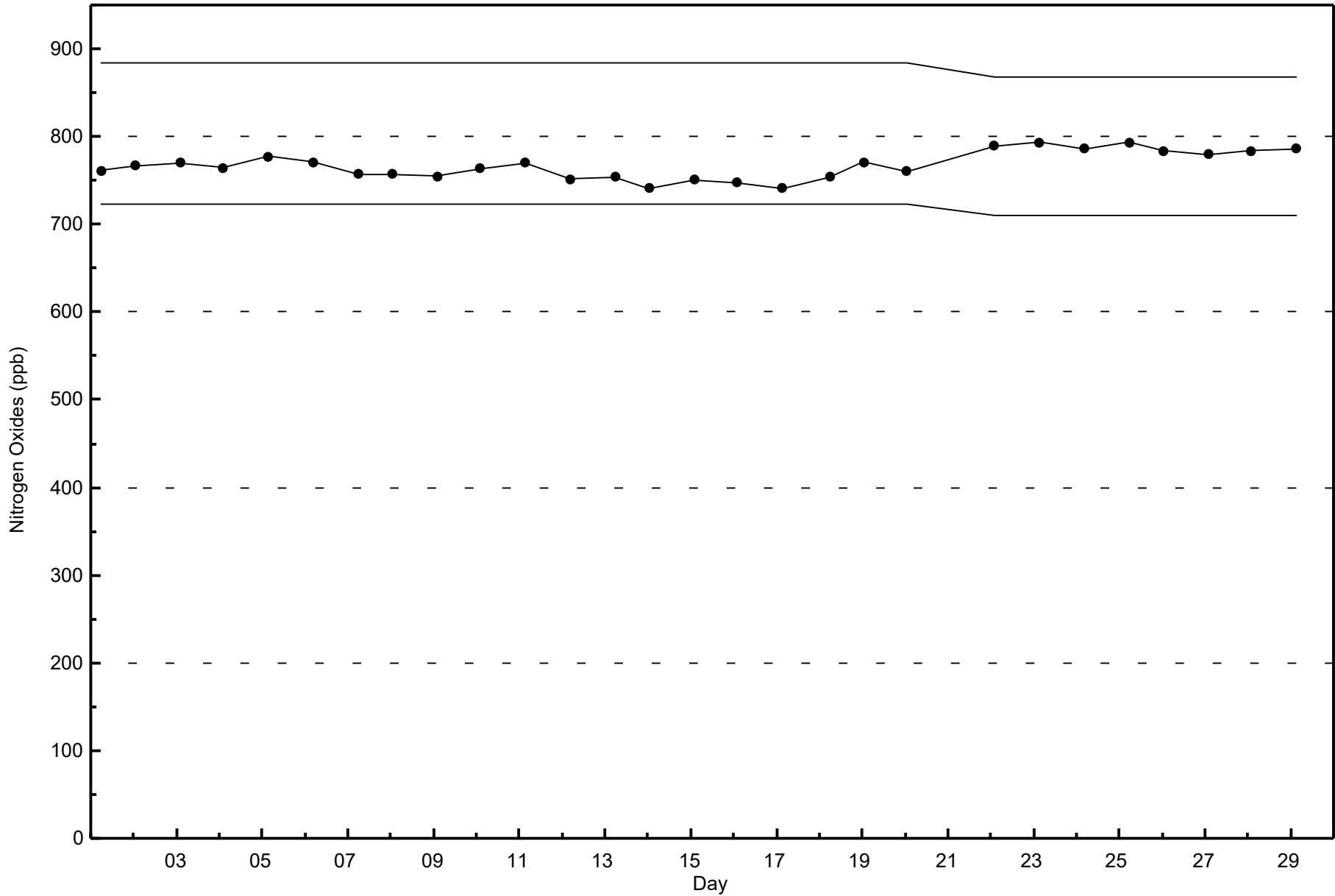
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Fort Chipewyan



Total Number of Valid Hours: 610







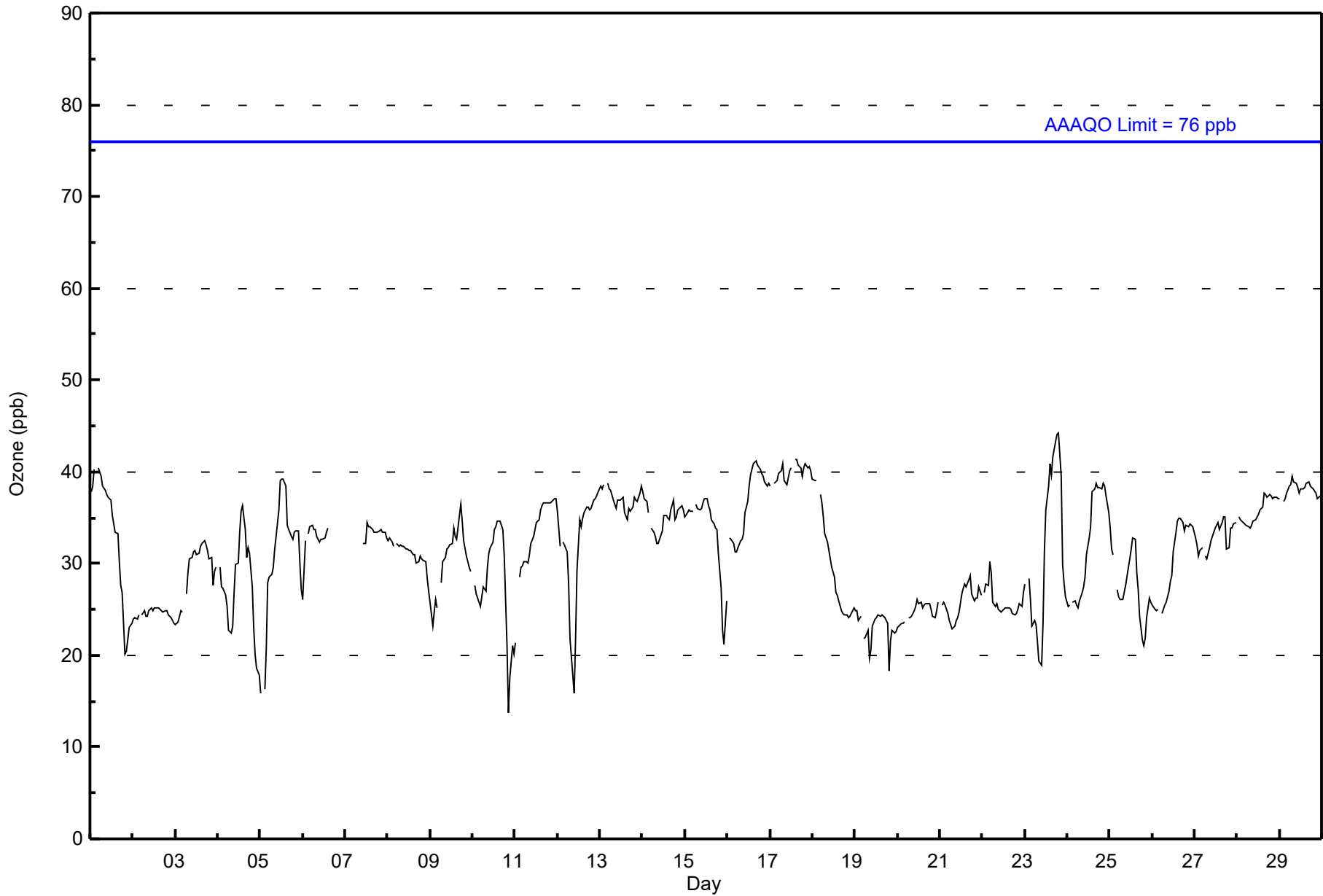
Wood Buffalo Environmental Association

Summary of Hour Averages

Ozone (O₃) - ppb

Fort Chipewyan - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																		Hours in Service:	696							
Maximum Value: 44.2 ppb on Feb 23 20:00		Maximum Daily Average: 40.0 ppb on Feb 17																			Hours of Data:	648							
Minimum Value: 13.7 ppb on Feb 10 21:00		Minimum Daily Average: 23.0 ppb on Feb 19																			Hours of Missing Data:	48							
Maximum Diurnal Average: 33.6 ppb at hour 15		Minimum Diurnal Average: 29.1 ppb at hour 4																			Hours of Calibration:	32							
Monthly Average: 31.13 ppb		Percentiles: P ₁ = 18.1 P ₁₀ = 23.9 Q ₁ = 25.7 Median = 31.9 Q ₃ = 35.8 P ₉₀ = 38.4 P ₉₉ = 41.2																			Percent Operational Time:	97.7							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Feb	37.8	38.4	40.2	Z	40.4	40.0	39.5	38.5	38.0	37.5	37.3	36.9	35.2	34.3	33.5	33.2	30.3	27.7	26.9	20.1	20.4	21.6	23.0	23.5	32.8	40.4			
2-Feb	24.0	24.1	23.9	24.4	Z	24.5	24.8	24.2	24.3	24.9	25.1	24.9	25.2	25.2	25.1	24.9	24.6	24.8	24.8	24.5	24.0	23.8	23.4	24.6	25.2				
3-Feb	23.3	23.6	24.3	24.8	24.8	Z	26.7	29.0	30.5	30.7	31.3	31.5	31.0	31.1	31.9	32.3	32.5	32.0	31.4	30.4	30.7	27.7	29.1	29.6	29.1	32.5			
4-Feb	Z	29.5	27.4	27.2	26.6	25.4	22.8	22.5	23.3	26.8	29.8	30.1	33.4	35.7	36.3	33.7	30.7	31.8	31.2	27.4	23.0	20.1	18.6	17.8	27.4	36.3			
5-Feb	15.9	Z	16.4	20.8	27.9	28.5	28.8	29.6	31.5	32.9	35.8	39.0	39.2	39.2	38.4	34.2	33.8	32.9	32.7	33.3	33.6	33.5	30.0	27.2	31.1	39.2			
6-Feb	26.1	32.5	Z	33.2	34.1	34.2	33.7	33.8	33.0	32.3	32.6	32.7	32.7	33.4	33.9	C	C	C	UO	UO	UO	UO	UO	UO	--	34.2			
7-Feb	UO	UO	UO	UO	Z	UO	UO	UO	UO	UO	32.2	32.2	34.4	34.0	33.9	33.6	33.4	33.3	33.3	33.6	33.8	33.5	33.4	32.7	--	34.4			
8-Feb	32.5	32.7	32.3	31.8	Z	32.1	31.9	32.0	31.8	31.8	31.5	31.5	31.5	31.4	31.0	31.0	30.0	30.3	30.8	30.5	30.3	30.2	28.4	26.9	31.1	32.7			
9-Feb	25.7	23.1	24.7	26.1	25.1	Z	27.9	30.3	30.7	31.6	31.7	32.0	32.3	33.9	33.0	32.6	35.2	36.5	34.7	32.5	30.8	30.2	29.5	29.2	30.4	36.5			
10-Feb	Z	27.6	26.8	25.7	25.4	26.4	27.4	27.0	29.5	31.1	31.7	32.3	33.7	34.0	34.6	34.6	34.1	33.8	30.9	21.0	13.7	17.5	21.1	20.1	27.8	34.6			
11-Feb	21.4	Z	28.5	29.5	29.8	30.2	30.1	30.1	30.9	32.2	32.9	33.8	34.4	34.8	35.9	36.3	36.5	36.7	36.5	36.6	36.5	37.0	37.1	37.0	33.3	37.1			
12-Feb	35.7	31.9	Z	32.3	32.0	31.2	27.9	21.8	17.9	15.9	21.8	29.3	34.7	34.0	35.0	35.5	36.1	36.2	35.9	36.0	36.9	37.1	37.4	38.2	31.8	38.2			
13-Feb	38.4	38.2	38.7	Z	38.8	38.1	37.9	36.9	36.5	36.0	36.9	37.0	37.1	37.2	35.5	34.7	36.0	35.7	36.2	37.3	36.9	36.8	37.6	38.4	37.1	38.8			
14-Feb	37.9	37.0	36.8	35.5	Z	33.9	33.5	32.9	32.2	32.2	33.0	33.5	35.3	35.3	34.9	34.8	35.8	36.9	34.8	35.0	35.9	36.2	36.3	35.8	35.0	37.9			
15-Feb	35.2	35.5	35.8	35.7	35.7	Z	36.4	36.1	35.9	36.0	36.6	37.1	37.0	36.4	35.8	34.8	34.4	33.9	33.7	31.1	27.2	22.7	21.2	25.9	33.5	37.1			
16-Feb	Z	32.7	32.6	32.2	31.2	31.2	31.7	32.5	32.6	33.3	35.5	36.8	38.5	39.7	40.8	41.1	41.2	40.7	40.2	39.8	39.5	38.9	38.4	38.8	36.5	41.2			
17-Feb	38.5	Z	38.8	38.8	39.0	39.8	40.1	40.9	39.1	38.6	39.4	40.2	40.4	PF	41.4	41.3	40.7	40.4	39.5	40.4	40.9	40.5	40.6	40.2	40.0	41.4			
18-Feb	39.2	39.0	39.0	Z	37.6	36.6	35.0	33.3	32.3	31.5	30.5	29.5	28.6	26.8	26.5	25.9	24.8	24.5	24.5	24.4	24.1	24.2	24.6	25.2	29.9	39.2			
19-Feb	24.9	24.9	23.8	24.3	Z	21.7	21.9	22.7	19.8	20.6	23.1	23.9	24.1	24.4	24.3	24.4	24.2	24.1	23.4	18.3	21.6	22.7	22.4	22.6	23.0	24.9			
20-Feb	23.0	23.1	23.5	23.5	23.6	Z	24.1	24.1	24.2	24.9	25.3	26.1	25.6	25.8	25.2	25.4	25.7	25.7	25.6	25.0	24.2	24.2	24.8	25.8	24.7	26.1			
21-Feb	Z	25.5	25.7	25.5	24.5	23.8	23.4	23.0	23.2	23.8	24.0	24.7	26.7	27.3	27.7	27.4	28.2	28.6	26.7	25.9	26.3	26.3	27.5	26.5	25.7	28.6			
22-Feb	Z	26.8	27.7	27.5	30.1	29.0	25.8	25.3	25.6	25.0	24.6	24.9	25.1	25.2	25.2	25.2	25.0	24.6	24.4	24.5	25.0	25.6	25.4	26.8	25.8	30.1			
23-Feb	27.7	Z	28.3	26.0	23.2	23.8	23.3	21.5	19.3	18.9	23.5	31.4	35.9	38.5	40.8	39.6	41.6	43.3	44.1	44.2	39.5	29.9	27.9	26.4	31.3	44.2			
24-Feb	25.4	25.4	Z	25.8	26.0	25.5	25.2	25.9	26.9	27.5	28.6	30.9	32.7	34.0	37.8	38.1	38.8	38.2	38.3	38.1	38.7	38.4	37.4	35.6	32.1	38.8			
25-Feb	33.8	31.7	31.0	Z	27.1	26.4	26.0	26.1	26.8	27.6	29.6	30.5	31.5	32.7	32.7	29.0	27.2	24.3	21.6	21.1	21.8	24.1	26.3	25.7	27.6	33.8			
26-Feb	25.5	24.9	24.8	25.0	Z	24.5	25.0	25.5	25.8	26.9	28.0	28.7	31.3	33.4	34.6	35.0	34.9	34.5	33.6	34.1	34.0	34.3	34.1	34.0	30.1	35.0			
27-Feb	32.8	32.0	30.8	31.5	31.7	Z	30.8	30.5	31.7	32.5	32.9	33.8	34.2	34.5	33.7	34.4	35.1	35.1	31.6	31.8	33.9	33.9	34.4	34.4	33.0	35.1			
28-Feb	Z	35.1	34.8	34.4	34.3	34.2	34.0	33.8	34.1	34.6	34.7	35.1	35.4	35.9	36.1	37.6	37.6	37.3	37.6	37.4	37.0	37.2	37.2	37.1	35.8	37.6			
29-Feb	37.0	Z	36.7	37.0	37.7	38.4	38.5	39.5	38.9	38.7	38.3	37.7	38.2	38.2	38.2	38.7	38.8	38.5	38.3	38.2	37.7	37.1	37.2	37.4	38.0	39.5			
		30.1	30.2	30.1	29.1	30.7	30.4	29.8	29.6	29.5	29.9	31.0	32.0	32.9	33.1	33.6	33.2	33.1	32.9	32.3	31.2	30.7	30.2	30.2	30.1	Diurnal Average			
		39.2	39.0	40.2	38.8	40.4	40.0	40.1	40.9	39.1	38.7	39.4	40.2	40.4	39.7	41.4	41.3	41.6	43.3	44.1	44.2	40.9	40.5	40.6	40.2	Diurnal Maximum			
Z - zerospan		C - Calibration				UO - Unstable Operation				PF - Power Failure																			
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr		76 ppb																									





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ozone (O₃) - ppb
Fort Chipewyan - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	16	2.47	2.47
21 - 50	632	97.53	100.00
51 - 82	0	0.00	100.00
> 83	0	0.00	100.00

Total Number of Valid Hours: 648

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Ozone (O₃) - ppb
Fort Chipewyan - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	0	0	0	1	2	1	0	0	1	3	4	1	0	0	0	3	16
21 - 50	13	13	20	93	145	14	15	13	19	7	10	24	34	54	93	65	632
51 - 82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	13	13	20	94	147	15	15	13	20	10	14	25	34	54	93	68	648

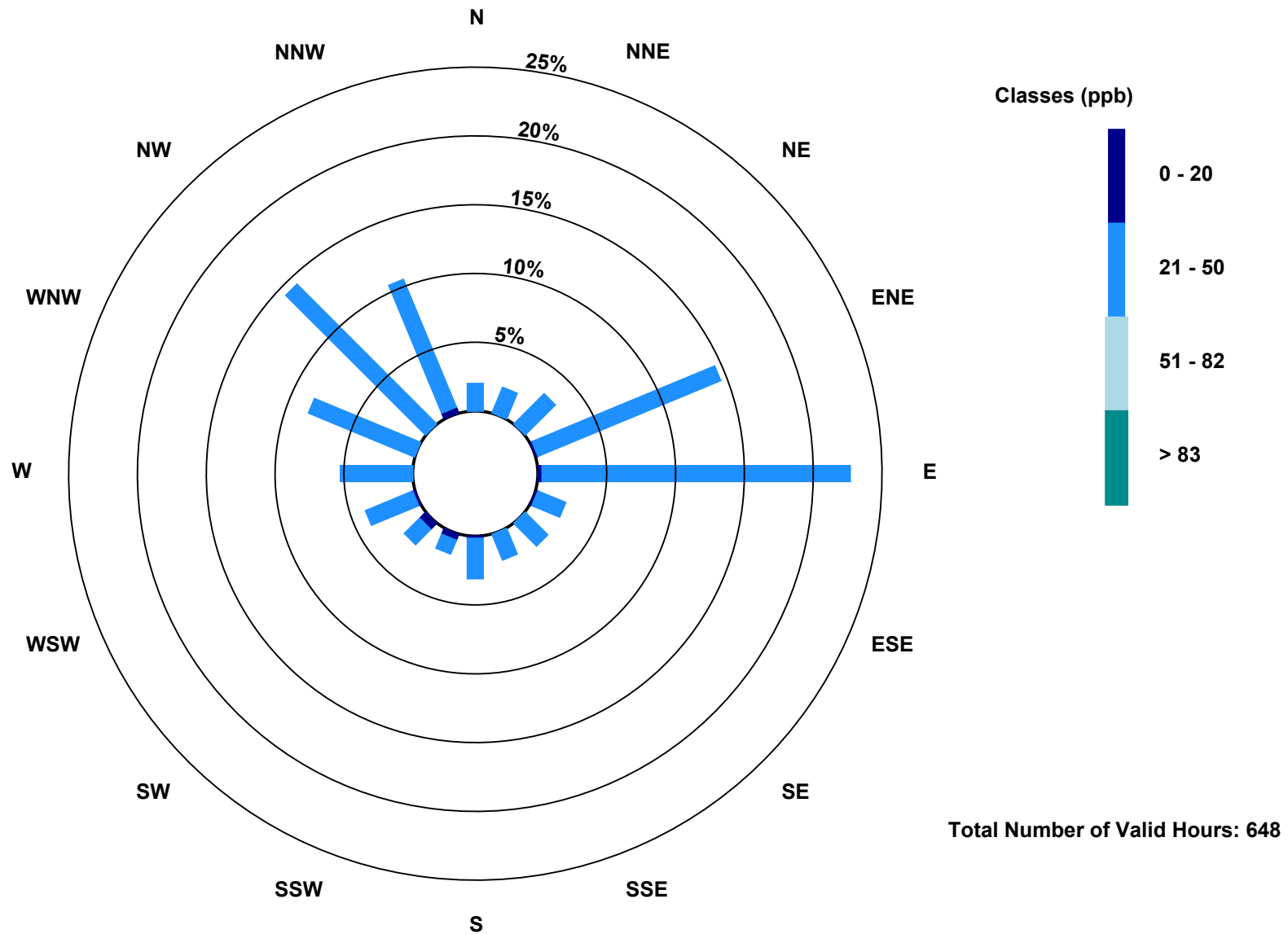
Total Number of Valid Hours: 648

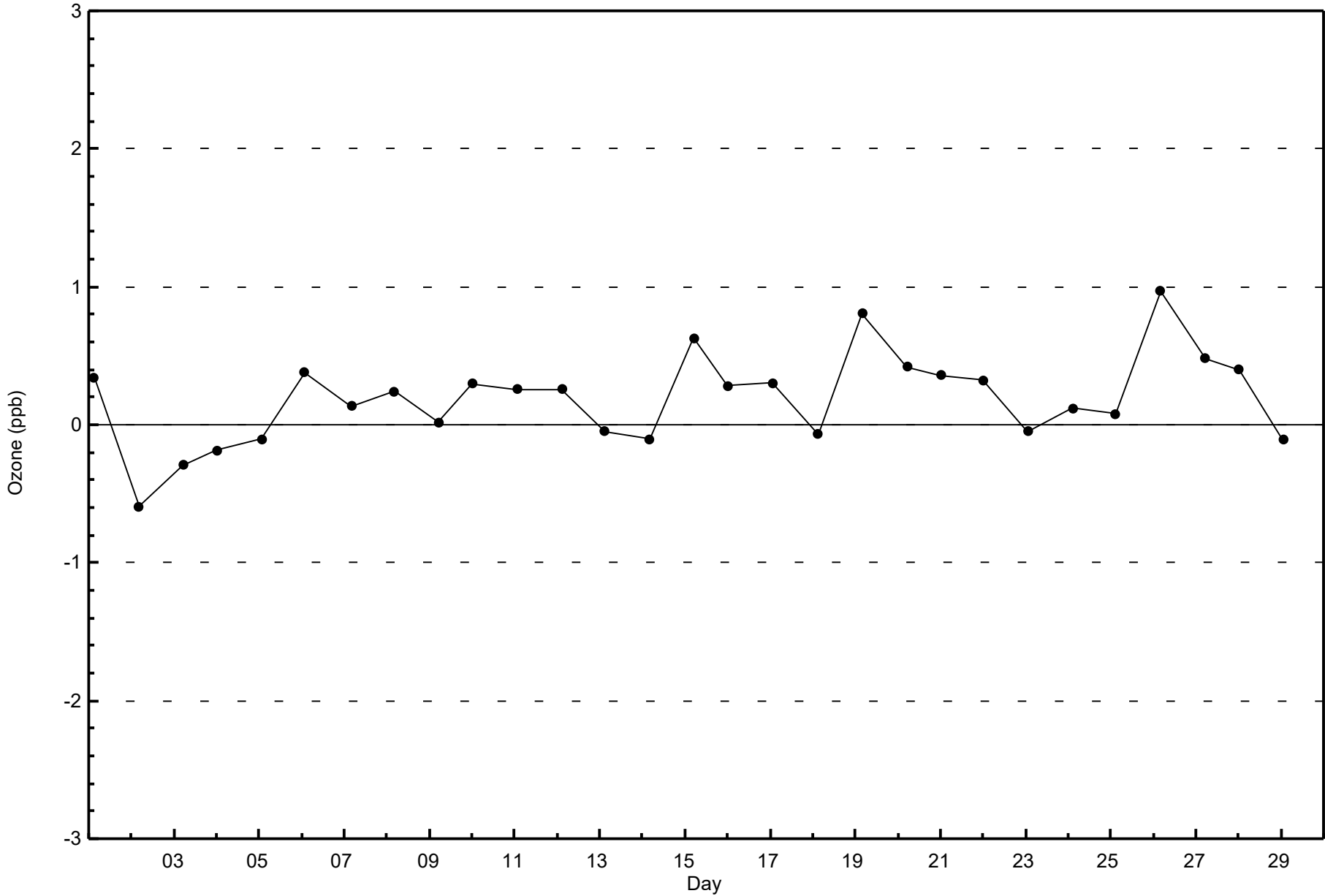
Total Number of Hours: 696

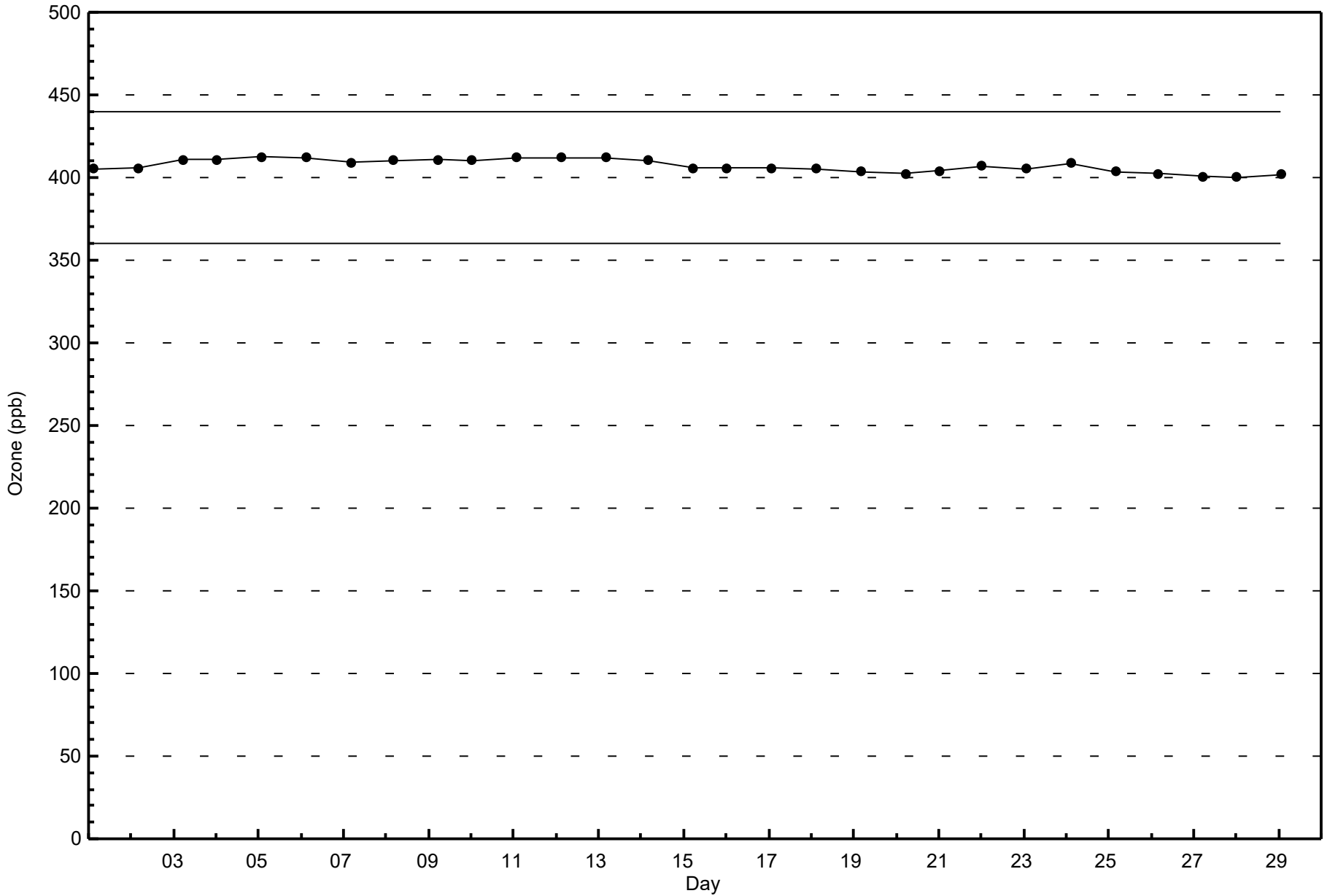


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Ozone (O₃) - ppb
Fort Chipewyan









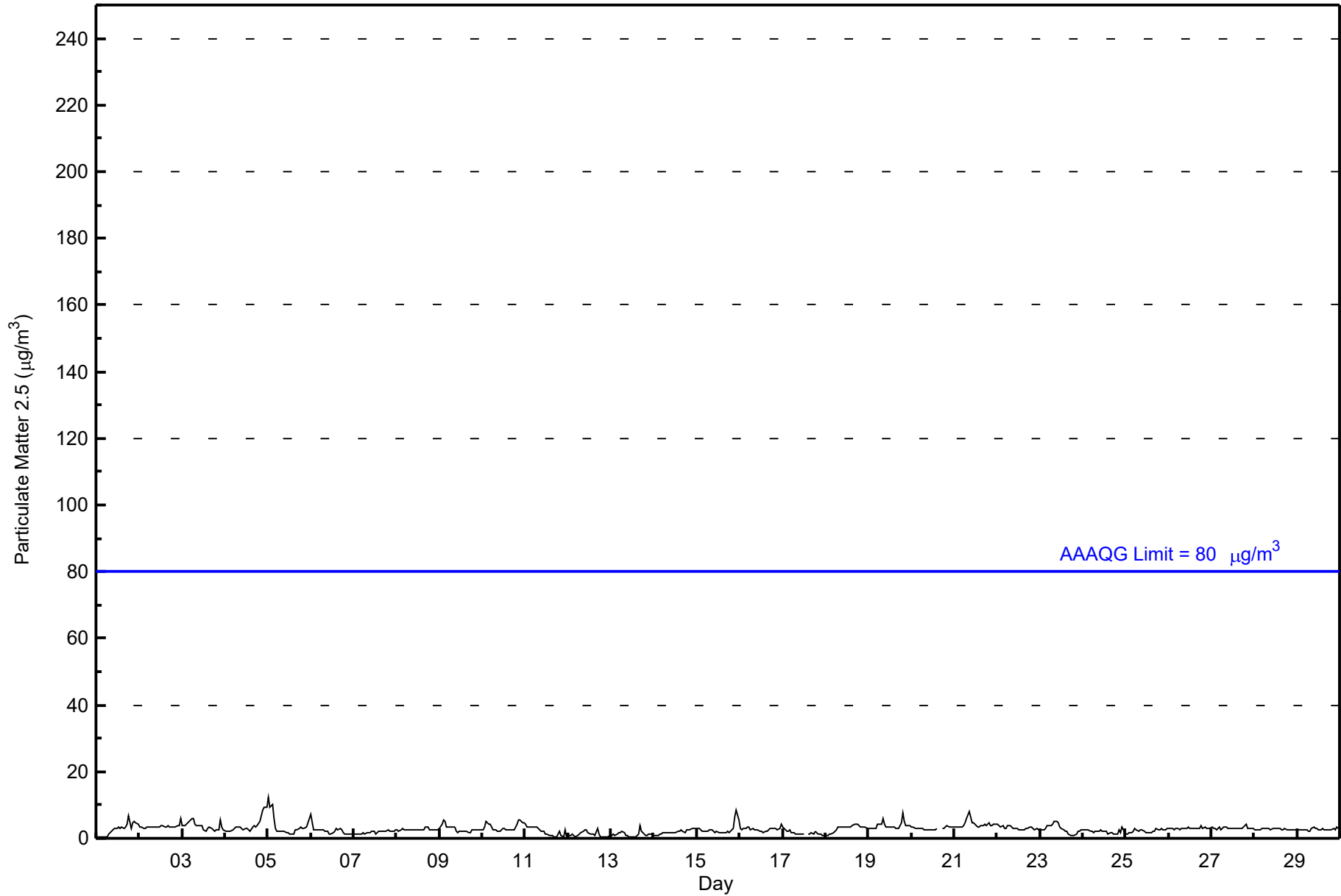
Wood Buffalo Environmental Association

Summary of Hour Averages

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Fort Chipewyan - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 12.3 µg/m ³ on Feb 5 01:00 Minimum Value: 0.2 µg/m ³ on Feb 13 14:00 Maximum Diurnal Average: 3.3 µg/m ³ at hour 23 Monthly Average: 2.74 µg/m ³		Maximum Daily Average: 4.2 µg/m ³ on Feb 21 Minimum Daily Average: 1.2 µg/m ³ on Feb 13 Minimum Diurnal Average: 2.3 µg/m ³ at hour 15 Percentiles: P ₁ = 0.4 P ₁₀ = 1.2 Q ₁ = 2.0 Median = 2.7 Q ₃ = 3.2 P ₉₀ = 4.0 P ₉₉ = 7.9		Hours in Service: 696 Hours of Data: 693 Hours of Missing Data: 3 Hours of Calibration: 2 Percent Operational Time: 99.9																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.5	0.5	0.4	0.3	0.3	0.4	0.6	1.1	2.0	2.5	2.9	3.1	3.2	3.1	3.2	3.2	3.4	4.1	6.8	2.8	4.6	5.0	4.8	4.0	2.6	6.8
2-Feb	3.4	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.2	3.3	3.3	3.5	3.8	3.6	3.5	3.6	3.9	3.6	3.5	3.5	3.4	3.6	3.6	6.1	3.5	6.1
3-Feb	3.8	3.9	4.4	4.6	5.2	5.9	5.9	4.2	3.7	3.7	3.8	3.8	2.4	2.0	2.9	3.5	3.1	2.5	2.3	2.5	2.7	5.6	3.3	2.5	3.7	5.9
4-Feb	2.1	2.0	2.0	2.2	2.5	2.9	3.5	3.5	3.4	2.9	2.5	3.1	2.9	2.5	2.3	3.2	4.0	3.4	3.8	5.0	6.8	8.5	9.1	9.5	3.9	9.5
5-Feb	12.3	9.4	10.1	6.0	3.0	2.3	2.1	2.1	2.1	2.2	1.8	1.8	1.4	1.4	1.4	2.5	2.5	2.8	3.3	3.0	3.0	3.5	4.7	6.0	3.8	12.3
6-Feb	7.3	2.7	2.3	2.7	2.6	2.5	2.5	2.4	2.3	1.9	1.3	1.4	1.9	2.0	2.8	2.4	2.9	2.5	1.5	1.1	1.2	1.2	1.2	1.2	2.2	7.3
7-Feb	1.3	1.4	1.3	1.3	1.4	1.7	1.4	1.7	1.7	1.8	2.0	2.2	1.5	1.7	1.9	2.2	2.3	2.3	2.3	2.4	2.1	2.2	2.1	2.5	1.9	2.5
8-Feb	2.6	2.3	2.7	2.8	2.4	2.7	2.6	2.5	2.6	2.6	2.7	2.6	2.6	2.6	2.6	2.6	3.5	3.2	2.6	2.6	2.6	2.6	2.6	2.7	2.7	3.5
9-Feb	3.0	4.0	5.6	5.2	3.4	3.5	3.5	3.3	3.2	2.1	1.8	2.0	2.0	1.9	2.0	1.9	1.7	2.4	2.6	2.6	2.6	2.6	2.6	2.6	2.8	5.6
10-Feb	2.7	3.5	5.0	4.2	4.2	3.3	2.6	2.6	2.3	2.1	2.1	2.8	2.8	2.6	2.7	2.6	2.5	2.4	2.8	4.3	5.4	5.3	4.8	4.6	3.3	5.4
11-Feb	4.2	3.5	3.3	3.5	3.4	3.3	3.2	2.9	2.5	2.1	1.9	1.3	1.2	0.8	0.7	0.7	0.6	0.5	1.5	2.2	0.8	0.5	2.4	0.5	2.0	4.2
12-Feb	1.0	0.8	1.2	0.8	0.5	0.8	1.2	1.7	2.2	2.7	2.7	1.8	1.1	1.2	1.4	0.9	2.9	1.2	0.5	0.4	0.4	0.5	0.6	0.7	1.2	2.9
13-Feb	0.9	1.1	1.0	1.3	1.8	1.5	1.9	1.8	0.9	0.7	0.4	0.4	0.3	0.2	0.3	1.3	4.0	2.3	1.3	1.0	1.0	1.3	1.4	0.9	1.2	4.0
14-Feb	0.9	1.0	1.0	1.1	1.4	1.5	1.6	1.5	1.7	1.7	1.6	1.7	1.7	1.9	2.2	2.4	2.1	1.8	2.7	2.4	2.6	2.8	3.1	2.8	1.9	3.1
15-Feb	2.8	2.8	2.3	2.3	2.3	2.2	2.3	2.7	2.6	2.0	1.9	2.0	1.8	1.8	1.5	1.5	1.9	1.9	1.6	2.1	2.9	6.2	8.5	5.6	2.7	8.5
16-Feb	3.1	2.6	2.9	2.9	3.2	3.4	2.6	2.8	2.6	2.6	2.3	2.2	2.1	1.8	2.0	2.2	2.7	2.9	2.8	2.8	2.8	2.7	2.8	4.1	2.7	4.1
17-Feb	3.2	2.8	2.2	2.1	2.4	1.7	1.6	1.4	1.4	1.4	1.2	1.2	1.1	PF	1.1	1.1	1.5	1.4	2.2	1.7	1.3	1.2	1.0	1.0	1.6	3.2
18-Feb	1.0	1.1	1.1	1.3	1.8	2.2	2.7	3.2	3.4	3.5	3.5	3.5	3.5	3.5	3.6	3.9	4.1	4.2	4.2	3.5	3.5	3.4	3.3	3.1	3.0	4.2
19-Feb	3.1	3.0	3.0	3.0	2.9	4.2	4.4	4.0	6.1	4.1	3.6	3.4	3.2	3.3	3.2	3.1	3.1	3.1	4.7	7.5	5.2	3.8	4.0	3.8	3.8	7.5
20-Feb	3.5	3.3	3.1	3.0	3.1	3.0	2.9	2.7	2.6	2.5	2.5	2.5	2.6	2.7	2.8	C	C	3.0	3.0	3.3	3.6	3.4	3.4	3.3	3.0	3.6
21-Feb	3.3	3.3	3.2	3.3	3.5	3.7	4.8	6.1	7.9	6.2	4.8	4.5	3.8	3.2	3.2	3.6	3.8	4.3	3.7	4.5	3.8	4.0	4.3	4.1	4.2	7.9
22-Feb	4.1	3.7	3.6	3.8	3.0	3.2	3.7	3.6	3.4	3.0	2.9	2.8	2.7	2.7	2.6	2.6	2.8	3.0	3.3	3.2	3.0	2.7	2.8	2.7	3.1	4.1
23-Feb	2.7	2.6	2.7	3.1	4.0	3.9	4.0	4.3	5.0	5.3	4.7	3.5	2.8	2.6	2.0	2.2	1.3	0.9	0.7	1.0	1.4	2.1	2.2	2.5	2.8	5.3
24-Feb	2.6	2.7	2.6	2.6	2.3	2.0	1.8	2.0	2.1	2.2	2.4	2.2	2.3	2.0	1.3	1.6	1.5	1.3	1.3	1.3	2.5	1.6	3.3	1.9	2.1	3.3
25-Feb	1.3	1.4	1.6	1.7	2.0	3.0	2.7	2.2	2.6	2.8	1.9	1.8	1.8	1.6	1.6	1.9	2.2	3.1	2.7	2.7	2.8	2.7	2.7	2.8	2.2	3.1
26-Feb	2.8	2.8	2.8	2.7	2.9	3.0	2.7	2.8	2.9	3.1	3.2	3.2	3.1	2.9	2.9	3.0	3.0	3.0	3.6	2.9	3.5	3.2	2.8	2.8	3.0	3.6
27-Feb	3.3	2.9	2.8	2.7	3.3	2.7	2.8	3.2	3.3	2.9	3.0	3.0	3.0	2.9	2.8	2.9	2.8	2.8	3.4	4.3	3.1	3.0	3.0	2.9	3.0	4.3
28-Feb	2.7	2.7	2.7	2.7	2.9	2.8	2.8	2.8	2.8	2.7	2.8	2.9	2.9	2.8	2.8	2.6	2.7	2.8	2.6	2.4	2.4	2.4	2.5	2.5	2.7	2.9
29-Feb	2.5	2.6	2.7	2.5	2.4	2.7	2.3	2.1	2.9	3.5	3.0	3.1	2.7	2.7	2.9	2.7	2.5	2.5	2.6	2.6	2.8	2.7	3.2	2.8	2.7	3.5
																								Diurnal Average		
																								Diurnal Maximum		
3.0 2.7 2.9 2.7 2.7 2.7 2.8 2.8 2.9 2.8 2.6 2.5 2.3 2.3 2.3 2.4 2.7 2.6 2.7 2.8 2.9 3.1 3.3 3.2 12.3 9.4 10.1 6.0 5.2 5.9 5.9 6.1 7.9 6.2 4.8 4.5 3.8 3.6 3.6 3.9 4.1 4.3 6.8 7.5 6.8 8.5 9.1 9.5																										
C - Calibration PF - Power Failure Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Fort Chipewyan - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	669	96.54	96.54
6 - 15	24	3.46	100.00
16 - 25	0	0.00	100.00
26 - 80	0	0.00	100.00
> 81.0	0	0.00	100.00

Total Number of Valid Hours: 693

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - μg/m³
Fort Chipewyan - February 2024

Concentration Ranges (μg/m ³)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	13	13	20	100	157	21	16	11	19	8	14	25	35	56	93	68	669
6 - 15	0	0	0	3	3	1	0	3	1	2	0	2	0	1	4	4	24
16 - 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	13	13	20	103	160	22	16	14	20	10	14	27	35	57	97	72	693

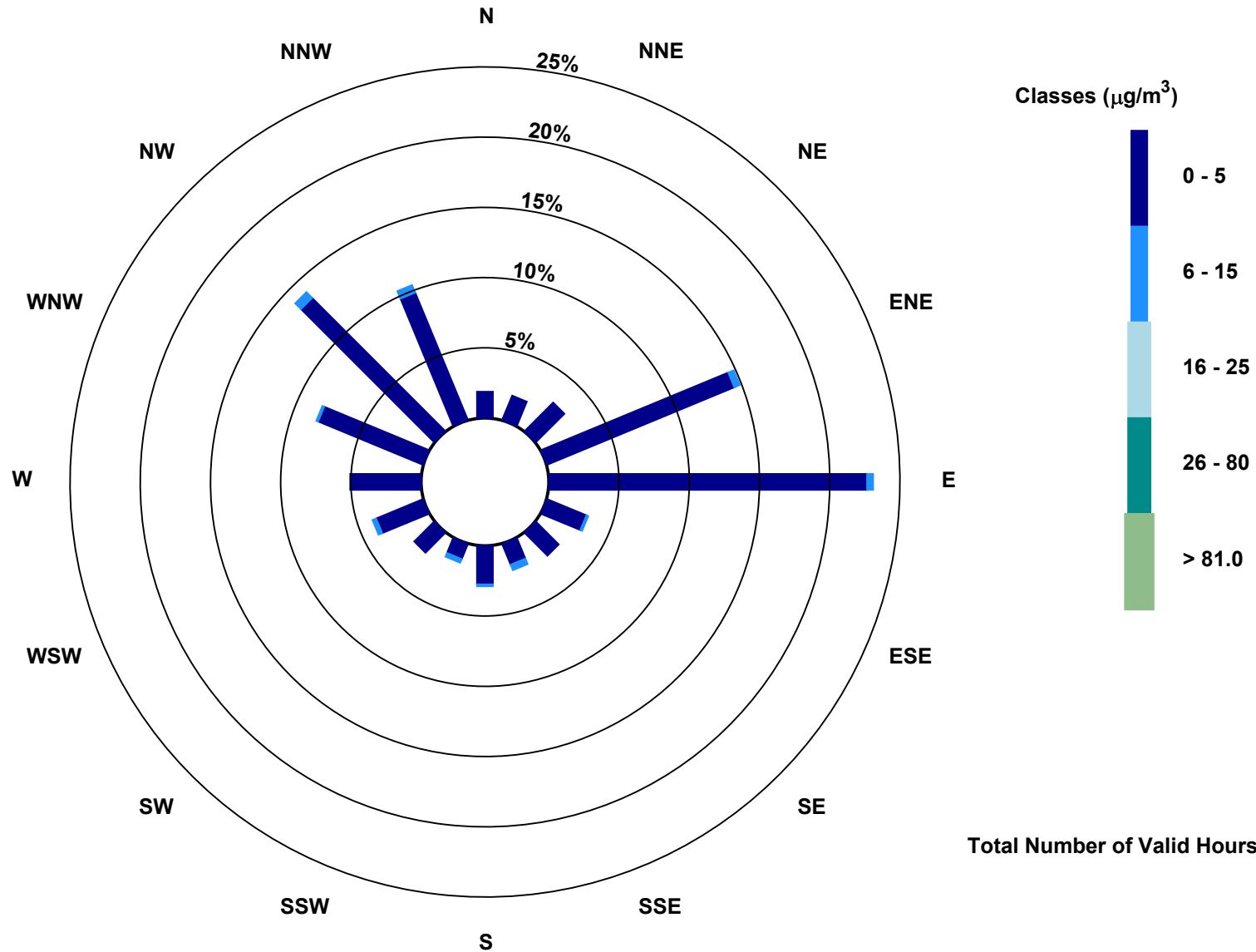
Total Number of Valid Hours: 693

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Fort Chipewyan





Wood Buffalo Environmental Association
Summary of Hour Averages

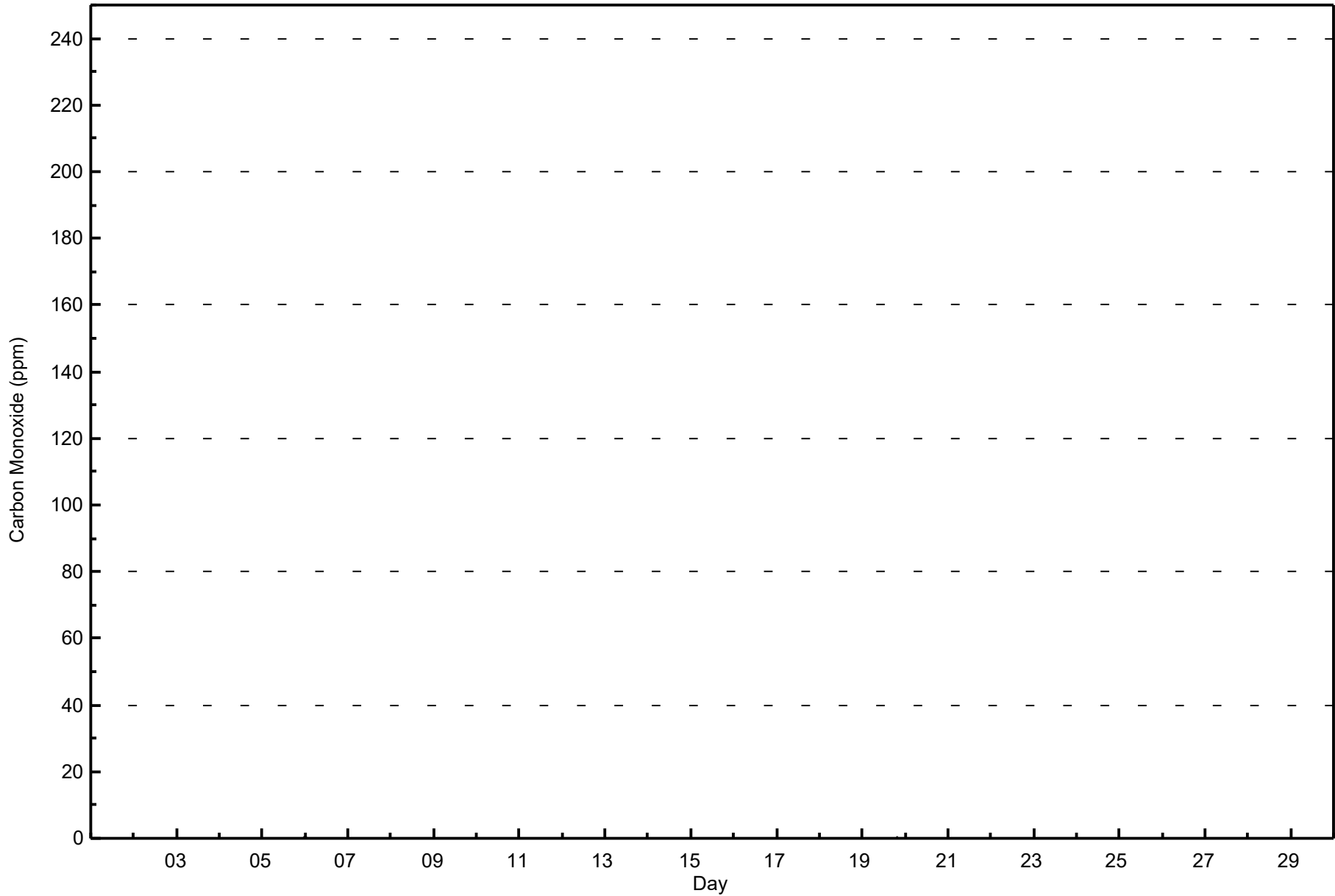
Carbon Monoxide (CO) - ppm
Fort Chipewyan - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																			Hours in Service:	696																													
Maximum Value: 0.3 ppm on Feb 6 01:00		Maximum Daily Average: 0.1 ppm on Feb 19																		Hours of Data:	660																															
Minimum Value: 0.0 ppm on Feb 1 02:00		Minimum Daily Average: 0.0 ppm on Feb 1																		Hours of Missing Data:	36																															
Maximum Diurnal Average: 0.1 ppm at hour 1		Minimum Diurnal Average: 0.1 ppm at hour 16																		Hours of Calibration:	32																															
Monthly Average: 0.10 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.1 Q ₃ = 0.1 P ₉₀ = 0.1 P ₉₉ = 0.2																		Percent Operational Time:	99.4																															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																												
1-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																									
2-Feb	0.0	Z	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																								
3-Feb	0.1	0.1	Z	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1																								
4-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
5-Feb	0.2	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.2																								
6-Feb	0.3	0.1	0.1	0.2	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	C	C	C	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
7-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
8-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
9-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
10-Feb	0.1	0.1	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
11-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
12-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1																								
13-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
14-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
15-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
16-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
17-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	PF	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
18-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
19-Feb	0.1	Z	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1																								
20-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
21-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	M	M	M	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
22-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
23-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1																								
24-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
25-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1																								
26-Feb	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1																								
27-Feb	0.2	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
28-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
29-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																								
																								0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
																								0.3	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Z - zerospan																								C - Calibration		M - Maintenance		PF - Power Failure																								
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13 ppm																																																				



Wood Buffalo Environmental Association
Hourly Averages

Carbon Monoxide (CO) - ppm
Fort Chipewyan - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Carbon Monoxide (CO) - ppm
Fort Chipewyan - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.3	660	100.00	100.00
0.4 - 0.5	0	0.00	100.00
0.6 - 0.7	0	0.00	100.00
0.8 - 1.4	0	0.00	100.00
1.5 - 10	0	0.00	100.00
> 10	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Carbon Monoxide (CO) - ppm
Fort Chipewyan - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.3	13	13	20	95	154	18	15	14	20	10	13	27	34	53	95	66	660
0.4 - 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.6 - 0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.8 - 1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.5 - 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	13	13	20	95	154	18	15	14	20	10	13	27	34	53	95	66	660

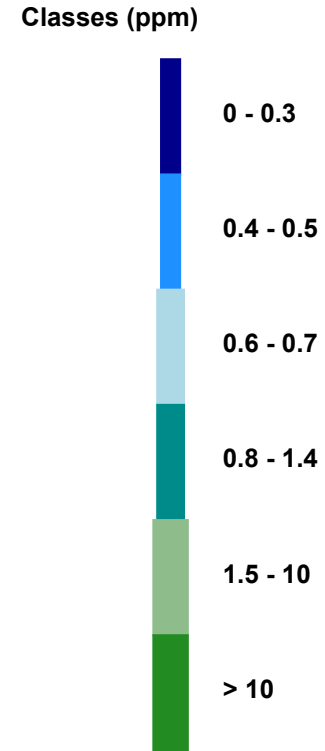
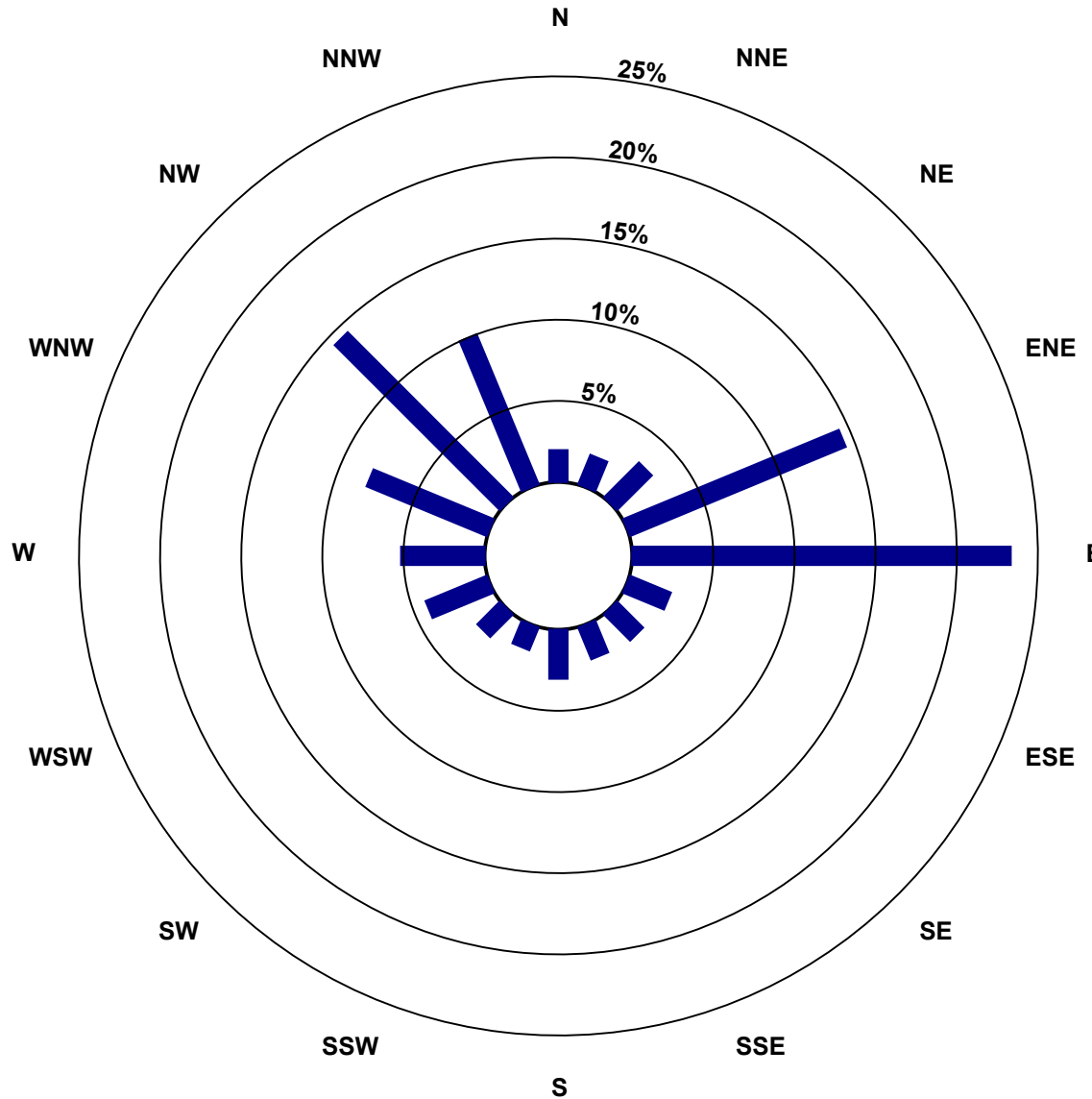
Total Number of Valid Hours: 660

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Carbon Monoxide (CO) - ppm
Fort Chipewyan



Total Number of Valid Hours: 660



Wood Buffalo Environmental Association
Summary of Hour Averages

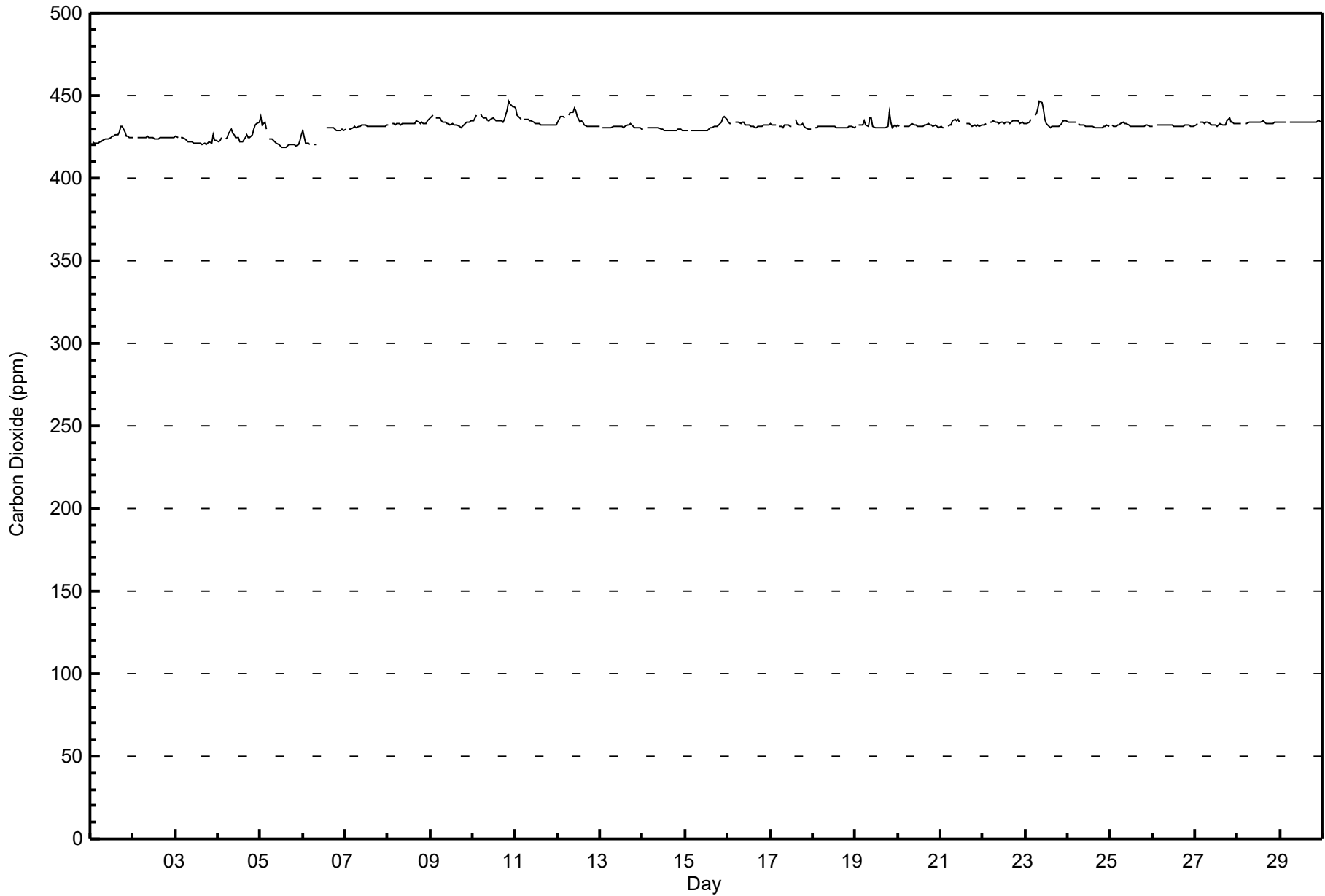
Carbon Dioxide (CO₂) - ppm
Fort Chipewyan - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service:																	696						
Maximum Value: 447.0 ppm on Feb 10 21:00		Maximum Daily Average: 437.5 ppm on Feb 10																	Hours of Data:	659							
Minimum Value: 418.5 ppm on Feb 5 14:00		Minimum Daily Average: 422.4 ppm on Feb 3																	Hours of Missing Data:	37							
Maximum Diurnal Average: 431.9 ppm at hour 10		Minimum Diurnal Average: 430.2 ppm at hour 14																	Hours of Calibration:	33							
Monthly Average: 431.09 ppm		Percentiles: P ₁ = 420.0 P ₁₀ = 424.3 Q ₁ = 430.3 Median = 431.8 Q ₃ = 433.5 P ₉₀ = 434.7 P ₉₉ = 442.6																	Percent Operational Time:	99.4							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	Z	422.3	421.3	421.1	421.0	421.6	422.2	422.9	423.6	423.9	424.0	424.3	425.5	425.8	426.4	425.9	428.2	431.0	431.2	427.8	425.8	425.3	424.7	424.6	424.8	424.5	425.2
2-Feb	424.6	Z	424.8	424.6	424.6	424.6	424.3	425.0	425.2	424.4	424.3	424.2	424.1	424.1	424.1	424.3	424.4	424.7	424.6	424.5	424.5	424.6	424.8	424.9	424.5	425.2	
3-Feb	425.1	424.9	Z	424.4	424.3	424.1	423.2	422.3	421.7	421.7	421.3	421.6	421.4	420.9	420.7	420.8	420.7	421.1	421.7	421.1	426.1	422.8	422.6	422.4	422.4	426.1	
4-Feb	421.8	423.0	424.3	Z	423.8	424.6	426.8	429.3	427.4	426.0	424.7	424.8	422.4	422.0	422.2	424.4	425.9	424.7	424.7	426.5	432.0	433.1	434.2	426.0	434.2	434.2	
5-Feb	436.9	432.5	433.6	430.0	Z	424.0	423.3	422.7	421.6	421.0	420.5	419.3	418.7	418.5	418.6	419.8	420.1	420.3	420.7	420.1	419.8	420.0	422.9	426.3	423.1	436.9	
6-Feb	429.0	421.0	421.3	421.2	420.5	Z	420.0	419.9	420.6	C	C	C	C	430.7	430.6	430.8	430.6	430.4	429.3	428.8	428.9	429.1	429.3	429.2	426.4	430.8	
7-Feb	429.5	Z	430.1	429.9	430.6	431.2	430.8	431.2	431.8	432.0	432.2	432.3	431.1	431.2	431.2	431.3	431.4	431.4	431.5	431.6	431.4	431.5	431.6	432.0	431.2	432.3	
8-Feb	432.2	Z	432.6	433.1	432.3	432.7	432.7	432.6	432.7	432.7	432.9	433.0	433.1	433.2	433.0	433.2	434.6	433.7	433.3	433.6	433.4	433.4	434.5	435.7	433.2	435.7	
9-Feb	436.6	438.0	Z	436.2	436.6	436.4	434.9	433.6	433.5	433.1	433.1	432.6	432.6	432.0	432.3	432.6	431.6	430.7	431.6	432.6	433.6	433.7	434.1	434.4	433.8	438.0	
10-Feb	434.6	436.5	437.8	Z	438.9	437.4	436.9	436.4	435.1	434.4	435.2	436.3	435.6	435.1	434.5	434.4	434.4	434.3	435.3	441.3	447.0	445.1	443.0	443.6	437.5	447.0	
11-Feb	442.6	438.2	436.4	435.7	Z	435.2	435.3	435.6	435.1	434.7	434.0	433.2	433.1	433.0	432.6	432.3	432.0	432.0	432.2	432.4	432.3	432.2	432.2	432.3	434.1	442.6	
12-Feb	434.1	437.6	437.1	437.2	436.7	Z	437.9	439.6	439.8	442.0	440.4	437.2	434.2	434.7	433.6	432.2	431.6	431.6	431.4	431.7	431.6	431.6	431.6	431.1	435.1	442.0	
13-Feb	Z	430.9	430.7	430.6	430.5	430.8	430.6	431.3	431.4	431.7	431.3	431.1	431.2	430.9	431.5	432.4	432.5	432.7	431.0	430.9	430.7	430.6	430.3	429.9	431.1	432.7	
14-Feb	429.9	Z	430.1	430.3	430.3	430.4	430.3	430.4	430.5	430.3	429.9	429.7	429.1	429.0	428.9	429.1	428.8	428.8	429.2	429.0	429.4	429.6	428.9	428.5	429.6	430.5	
15-Feb	428.9	428.9	Z	428.7	428.8	428.8	428.8	429.0	428.9	429.0	429.0	429.1	429.1	429.8	430.4	430.8	431.0	431.3	431.5	432.5	434.1	436.6	437.4	435.5	430.8	437.4	
16-Feb	433.5	432.9	433.1	Z	433.6	433.6	433.6	433.4	434.0	434.2	432.4	432.1	431.8	431.2	431.0	430.9	430.9	431.2	431.6	431.7	431.9	432.3	432.4	432.5	432.4	434.2	
17-Feb	432.7	432.3	432.4	432.3	Z	431.6	431.4	430.8	432.0	432.2	431.8	431.3	431.2	PF	435.6	432.7	431.9	432.2	433.3	431.3	430.2	430.1	429.9	429.9	431.8	435.6	
18-Feb	Z	430.7	430.8	431.2	431.3	431.4	431.2	431.3	431.1	431.0	431.1	431.1	431.0	430.8	430.7	430.6	430.2	430.2	430.1	430.4	431.0	431.2	431.4	430.9	430.9	431.4	
19-Feb	431.4	Z	432.5	431.8	431.8	434.5	432.3	431.8	436.9	436.8	431.8	430.8	430.7	430.8	430.9	430.6	430.3	430.2	431.1	439.6	433.7	430.7	431.8	431.8	432.4	439.6	
20-Feb	431.8	431.3	Z	431.0	431.6	431.5	431.2	431.9	432.7	432.4	431.9	431.5	431.7	431.6	431.6	432.1	432.5	433.5	431.9	432.0	431.7	432.0	431.0	430.9	431.8	433.5	
21-Feb	431.0	430.8	430.9	Z	431.6	432.3	432.6	435.1	435.5	434.6	435.2	434.2	M	M	M	433.3	432.7	432.5	431.3	432.6	431.8	432.0	431.3	432.2	432.7	435.5	
22-Feb	431.9	432.5	433.0	Z	434.1	434.0	434.3	433.9	433.6	433.1	433.6	433.5	433.5	433.5	433.5	433.2	433.5	434.4	434.4	434.7	434.4	433.5	433.7	433.4	433.6	434.7	
23-Feb	433.3	433.2	433.7	435.5	Z	438.3	439.1	442.7	446.7	446.0	441.2	436.0	433.2	431.7	430.9	431.4	431.6	431.5	431.8	432.7	434.4	434.7	434.4	434.4	435.4	446.7	
24-Feb	434.3	434.2	434.1	433.9	433.5	Z	432.9	432.5	432.1	431.8	431.7	431.4	431.3	431.4	431.1	430.9	430.7	430.7	430.7	430.7	431.3	431.1	431.8	431.4	432.0	434.3	
25-Feb	Z	431.8	431.5	431.5	432.0	432.1	433.1	433.7	433.4	433.0	431.8	431.7	431.8	431.6	431.4	431.6	431.6	431.6	431.6	431.8	431.9	431.8	431.5	431.5	432.0	433.7	
26-Feb	431.6	Z	431.9	432.0	432.4	432.2	432.0	432.1	432.1	432.1	432.0	432.1	431.8	431.6	431.5	431.4	431.6	431.7	432.2	431.8	432.1	431.7	431.6	431.6	431.9	432.4	
27-Feb	432.3	432.7	Z	433.5	433.5	433.2	433.5	433.7	433.1	432.6	432.3	431.8	431.7	431.8	432.9	432.2	431.8	431.8	434.9	436.3	433.6	433.8	433.2	432.9	433.0	436.3	
28-Feb	432.7	432.7	432.8	Z	433.3	433.4	433.7	433.8	433.7	433.6	433.9	434.1	434.0	434.2	434.5	433.7	433.4	433.5	433.4	433.3	433.4	433.5	433.6	433.9	433.6	434.5	
29-Feb	433.9	434.0	434.3	434.1	Z	433.8	433.8	433.5	433.9	433.7	433.8	434.0	433.8	434.0	434.2	433.7	433.7	433.7	433.8	433.9	434.2	434.5	434.5	434.1	434.0	434.5	
431.9 431.4 431.3 430.9 430.7 431.3 431.1 431.4 431.7 431.9 431.3 430.9 430.3 430.2 430.4 430.4 430.5 430.6 430.7 431.3 431.3 431.5 431.5 431.6																								Diurnal Average			
442.6 438.2 437.8 437.2 438.9 438.3 439.1 442.7 446.7 446.0 441.2 437.2 435.6 435.1 435.6 434.4 434.6 434.4 435.3 441.3 447.0 445.1 443.0 443.6																								Diurnal Maximum			
Z - zerspan		C - Calibration				M - Maintenance				PF - Power Failure																	



Wood Buffalo Environmental Association
Hourly Averages

Carbon Dioxide (CO₂) - ppm
Fort Chipewyan - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Carbon Dioxide (CO₂) - ppm
Fort Chipewyan - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
400 - 420	13	1.97	1.97
420 - 440	635	96.36	98.33
440 - 460	11	1.67	100.00
460 - 480	0	0.00	100.00
480 - 500	0	0.00	100.00
> 500	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Carbon Dioxide (CO₂) - ppm
Fort Chipewyan - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
400 - 420	3	5	0	0	2	0	0	0	0	0	0	0	0	0	0	3	13
420 - 440	10	8	20	95	151	18	15	13	19	7	9	25	34	53	95	63	635
440 - 460	0	0	0	0	0	0	0	1	1	3	4	2	0	0	0	0	11
460 - 480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
480 - 500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	13	13	20	95	153	18	15	14	20	10	13	27	34	53	95	66	659

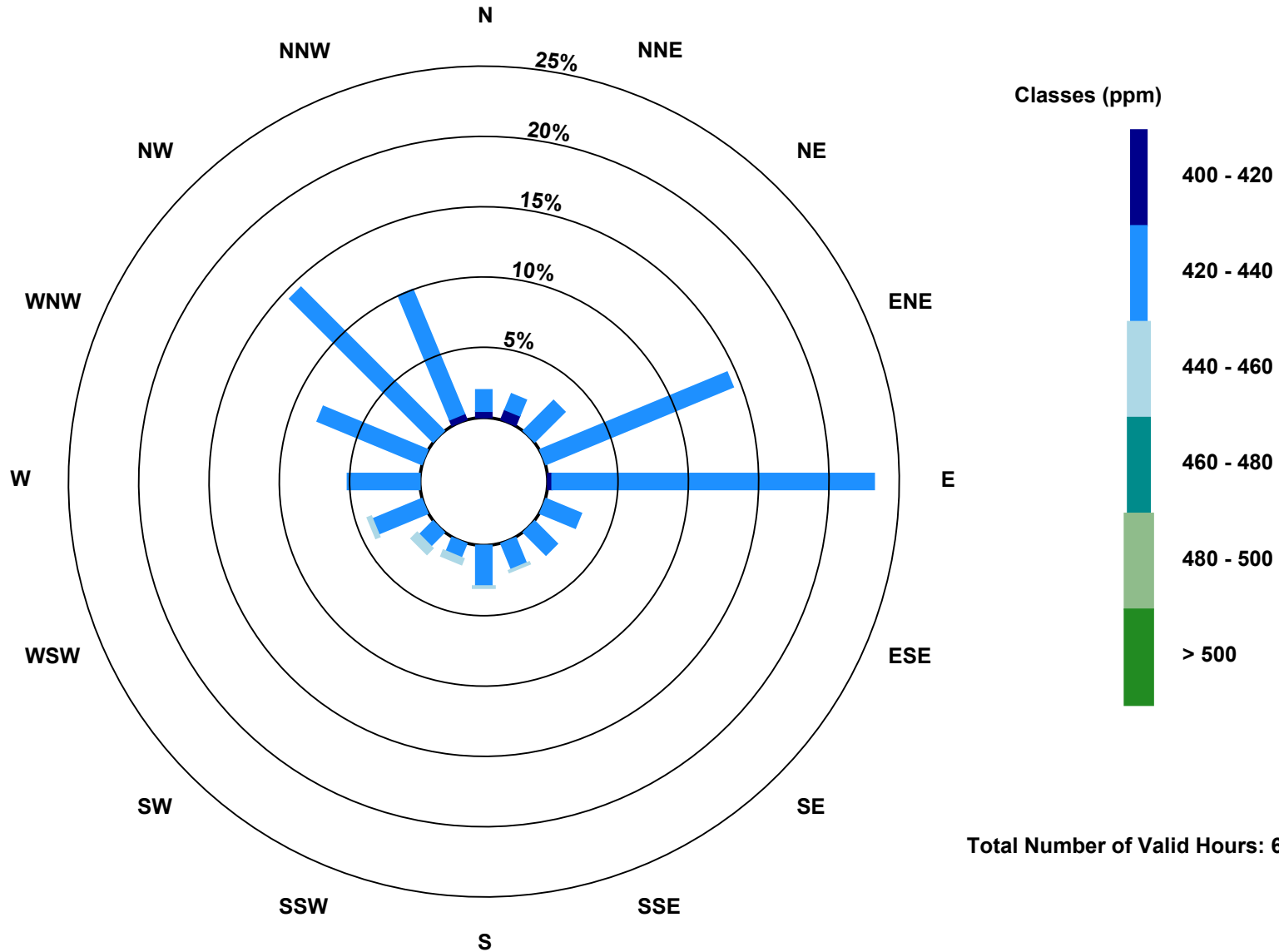
Total Number of Valid Hours: 659

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Carbon Dioxide (CO₂) - ppm
Fort Chipewyan

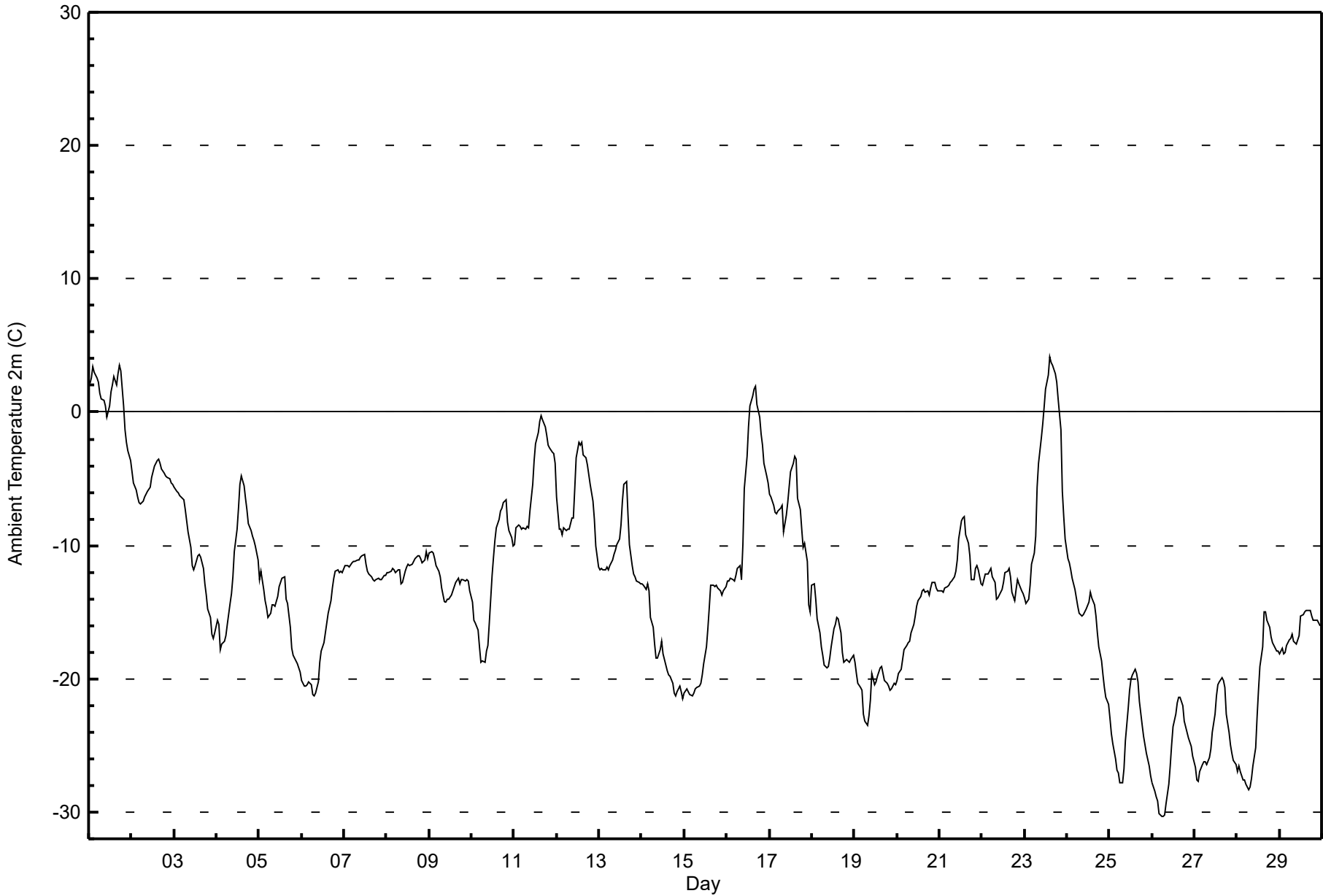




Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature 2m (AT 2m) - C
Fort Chipewyan - February 2024

Maximum Value: 4.2 C on Feb 23 15:00 Maximum Daily Average: 1.2 C on Feb 1																						Hours in Service:	696			
Minimum Value: -30.3 C on Feb 26 06:00 Minimum Daily Average: -26.0 C on Feb 26																						Hours of Data:	696			
Maximum Diurnal Average: -10.5 C at hour 16 Minimum Diurnal Average: -15.2 C at hour 7																						Hours of Missing Data:	0			
Monthly Average: -13.35 C Percentiles: P ₁ = -28.4 P ₁₀ = -22.4 Q ₁ = -18.2 Median = -12.9 Q ₃ = -9.0 P ₉₀ = -3.8 P ₉₉ = 2.9																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.2	2.6	3.4	3.0	2.6	2.2	1.4	1.0	0.9	0.4	-0.4	0.5	1.6	2.0	2.7	2.1	2.9	3.5	3.1	0.4	-1.4	-2.2	-2.9	-3.6	1.2	3.5
2-Feb	-4.4	-5.3	-5.8	-6.3	-6.8	-6.9	-6.6	-6.4	-6.2	-5.9	-5.6	-4.9	-4.4	-4.0	-3.6	-3.5	-3.8	-4.2	-4.5	-4.7	-4.9	-5.0	-5.3	-5.5	-5.2	-3.5
3-Feb	-5.6	-5.9	-6.1	-6.2	-6.3	-6.6	-7.3	-8.1	-9.0	-10.1	-11.5	-11.8	-11.5	-10.8	-10.6	-10.9	-11.7	-12.9	-13.8	-14.8	-15.4	-16.7	-17.0	-16.6	-10.7	-5.6
4-Feb	-15.6	-16.0	-17.8	-17.4	-17.2	-16.7	-15.9	-14.3	-13.6	-12.4	-10.5	-8.8	-7.2	-5.4	-4.8	-5.6	-6.4	-7.3	-8.3	-8.9	-9.3	-9.6	-10.1	-11.1	-11.3	-4.8
5-Feb	-12.6	-11.9	-13.3	-14.1	-14.7	-15.4	-15.1	-14.5	-14.4	-14.5	-13.9	-13.1	-12.7	-12.4	-12.3	-14.1	-14.3	-16.1	-17.7	-18.2	-18.4	-18.8	-19.2	-19.5	-15.1	-11.9
6-Feb	-20.1	-20.5	-20.6	-20.4	-20.3	-20.4	-21.2	-21.2	-21.1	-20.2	-18.8	-17.9	-17.3	-16.6	-15.8	-15.0	-14.1	-13.2	-12.4	-11.9	-11.8	-12.0	-11.9	-12.1	-17.0	-11.8
7-Feb	-11.5	-11.5	-11.5	-11.6	-11.3	-11.1	-11.2	-11.1	-11.1	-10.9	-10.8	-10.6	-11.4	-12.0	-12.1	-12.3	-12.6	-12.6	-12.5	-12.5	-12.6	-12.5	-12.3	-12.2	-11.7	-10.6
8-Feb	-12.0	-12.0	-11.9	-11.7	-11.8	-12.0	-11.8	-11.8	-12.8	-12.8	-11.9	-11.6	-11.4	-11.5	-11.4	-11.2	-10.9	-10.8	-10.8	-11.0	-11.2	-11.1	-10.5	-11.0	-11.5	-10.5
9-Feb	-10.5	-10.5	-10.6	-11.0	-11.5	-11.9	-12.4	-13.2	-14.2	-14.3	-14.1	-14.0	-13.7	-13.4	-13.1	-12.7	-12.5	-12.9	-12.6	-12.6	-12.7	-12.6	-12.7	-13.4	-12.6	-10.5
10-Feb	-14.3	-15.6	-15.9	-16.4	-17.6	-18.8	-18.7	-18.7	-17.9	-17.5	-15.8	-12.2	-10.8	-9.6	-8.6	-8.0	-7.4	-7.2	-6.7	-6.6	-8.3	-8.9	-9.5	-10.1	-12.5	-6.6
11-Feb	-9.9	-8.6	-8.5	-8.5	-8.8	-8.7	-8.7	-8.6	-8.7	-7.5	-5.4	-3.6	-2.4	-1.6	-0.7	-0.2	-0.5	-1.1	-1.8	-2.5	-2.7	-3.0	-3.1	-3.8	-4.9	-0.2
12-Feb	-6.4	-8.8	-8.8	-9.2	-8.7	-8.9	-8.8	-8.8	-8.0	-7.9	-5.7	-3.4	-2.3	-2.4	-2.3	-3.2	-3.4	-4.0	-4.7	-5.4	-6.6	-8.1	-10.0	-11.6	-6.6	-2.3
13-Feb	-11.9	-11.7	-11.9	-11.9	-11.6	-11.8	-11.5	-11.1	-10.6	-10.3	-9.9	-9.5	-8.5	-6.6	-5.4	-5.2	-7.8	-10.0	-11.5	-12.1	-12.3	-12.6	-12.7	-12.9	-10.5	-5.2
14-Feb	-12.9	-13.0	-13.3	-12.8	-13.4	-15.4	-16.1	-17.4	-18.5	-18.5	-17.8	-17.2	-18.1	-19.0	-19.4	-19.7	-19.8	-20.4	-21.0	-21.2	-20.9	-20.5	-21.0	-21.5	-17.9	-12.8
15-Feb	-21.1	-20.7	-20.9	-21.2	-21.3	-21.0	-20.8	-20.7	-20.5	-20.4	-19.7	-18.8	-17.6	-16.2	-14.6	-12.9	-12.9	-13.1	-13.0	-13.2	-13.4	-13.7	-13.4	-13.1	-17.3	-12.9
16-Feb	-12.6	-12.7	-12.4	-12.5	-12.7	-12.2	-11.8	-11.5	-12.6	-9.9	-5.8	-3.3	-1.2	0.5	1.2	1.8	2.0	0.5	-0.4	-1.6	-2.5	-3.8	-4.7	-5.3	-6.0	2.0
17-Feb	-6.2	-6.3	-7.0	-7.5	-7.6	-7.4	-7.2	-7.0	-9.0	-7.7	-6.8	-5.6	-4.5	-3.9	-3.3	-3.5	-6.5	-7.3	-8.8	-10.1	-9.8	-11.1	-14.5	-15.0	-7.6	-3.3
18-Feb	-12.9	-12.9	-14.0	-15.5	-16.6	-17.6	-18.2	-19.0	-19.1	-19.0	-18.5	-17.6	-16.3	-16.0	-15.4	-15.5	-16.5	-18.0	-18.8	-18.6	-18.6	-18.7	-18.5	-18.3	-17.1	-12.9
19-Feb	-18.7	-19.5	-20.4	-20.7	-20.9	-22.7	-23.2	-23.5	-22.8	-21.6	-19.6	-20.5	-20.2	-19.8	-19.2	-19.1	-19.5	-20.1	-20.3	-20.5	-20.8	-20.8	-20.3	-20.5	-20.6	-18.7
20-Feb	-20.1	-19.6	-19.3	-18.5	-17.8	-17.5	-17.3	-17.2	-16.6	-16.0	-15.3	-14.5	-14.1	-13.8	-13.4	-13.3	-13.5	-13.4	-13.7	-13.2	-12.7	-12.8	-13.1	-13.4	-15.4	-12.7
21-Feb	-13.4	-13.4	-13.5	-13.2	-13.1	-13.0	-12.8	-12.6	-12.4	-11.9	-11.1	-9.5	-8.2	-7.9	-7.8	-9.2	-9.8	-10.8	-12.5	-12.6	-11.7	-11.5	-11.8	-12.9	-11.5	-7.8
22-Feb	-12.9	-12.5	-12.2	-12.2	-12.0	-11.7	-12.4	-12.8	-14.0	-14.0	-13.5	-13.3	-12.8	-12.0	-11.9	-11.7	-12.4	-13.5	-14.1	-13.3	-12.5	-12.9	-13.4	-13.6	-12.8	-11.7
23-Feb	-13.9	-14.3	-14.0	-12.9	-11.4	-10.5	-9.3	-5.7	-3.8	-2.0	-0.9	0.4	1.7	2.7	4.2	3.7	3.5	2.9	2.2	1.0	-1.4	-5.9	-7.9	-9.6	-4.2	4.2
24-Feb	-11.0	-11.3	-11.8	-12.4	-13.3	-13.9	-14.5	-15.1	-15.3	-15.2	-15.0	-14.8	-14.3	-13.5	-13.9	-14.5	-15.3	-16.5	-17.6	-18.6	-19.7	-20.6	-21.4	-21.9	-15.5	-11.0
25-Feb	-23.0	-24.1	-24.9	-26.0	-26.8	-27.1	-27.8	-27.8	-26.7	-24.7	-22.2	-20.9	-20.0	-19.7	-19.3	-19.7	-20.3	-21.7	-23.5	-24.3	-25.0	-25.6	-26.5	-27.2	-23.9	-19.3
26-Feb	-27.8	-28.4	-28.9	-29.2	-30.1	-30.3	-30.3	-30.2	-29.4	-27.9	-26.5	-25.0	-23.6	-22.7	-21.8	-21.4	-21.3	-22.0	-23.2	-23.5	-24.4	-24.8	-25.1	-25.8	-26.0	-21.3
27-Feb	-26.6	-27.6	-27.7	-26.9	-26.5	-26.2	-26.2	-26.5	-25.9	-25.3	-24.0	-22.6	-21.3	-20.5	-20.2	-19.9	-20.1	-20.7	-22.6	-24.0	-25.0	-25.5	-26.1	-26.4	-24.4	-19.9
28-Feb	-26.9	-26.5	-27.0	-27.6	-27.5	-27.9	-28.3	-28.1	-27.5	-26.5	-25.1	-22.8	-20.9	-19.1	-17.6	-14.9	-15.0	-15.6	-16.2	-16.9	-17.3	-17.5	-17.9	-17.9	-22.0	-14.9
29-Feb	-18.2	-17.7	-18.2	-18.0	-17.5	-17.1	-17.0	-16.6	-17.2	-17.4	-17.1	-16.8	-15.3	-15.2	-15.0	-14.9	-14.9	-14.8	-15.3	-15.6	-15.6	-15.6	-15.8	-16.1	-16.4	-14.8
																								Diurnal Average		
																								Diurnal Maximum		





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 2m (AT 2m) - C
Fort Chipewyan - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	129	18.53	18.53
-20 - 0	534	76.72	95.26
0 - 10	33	4.74	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

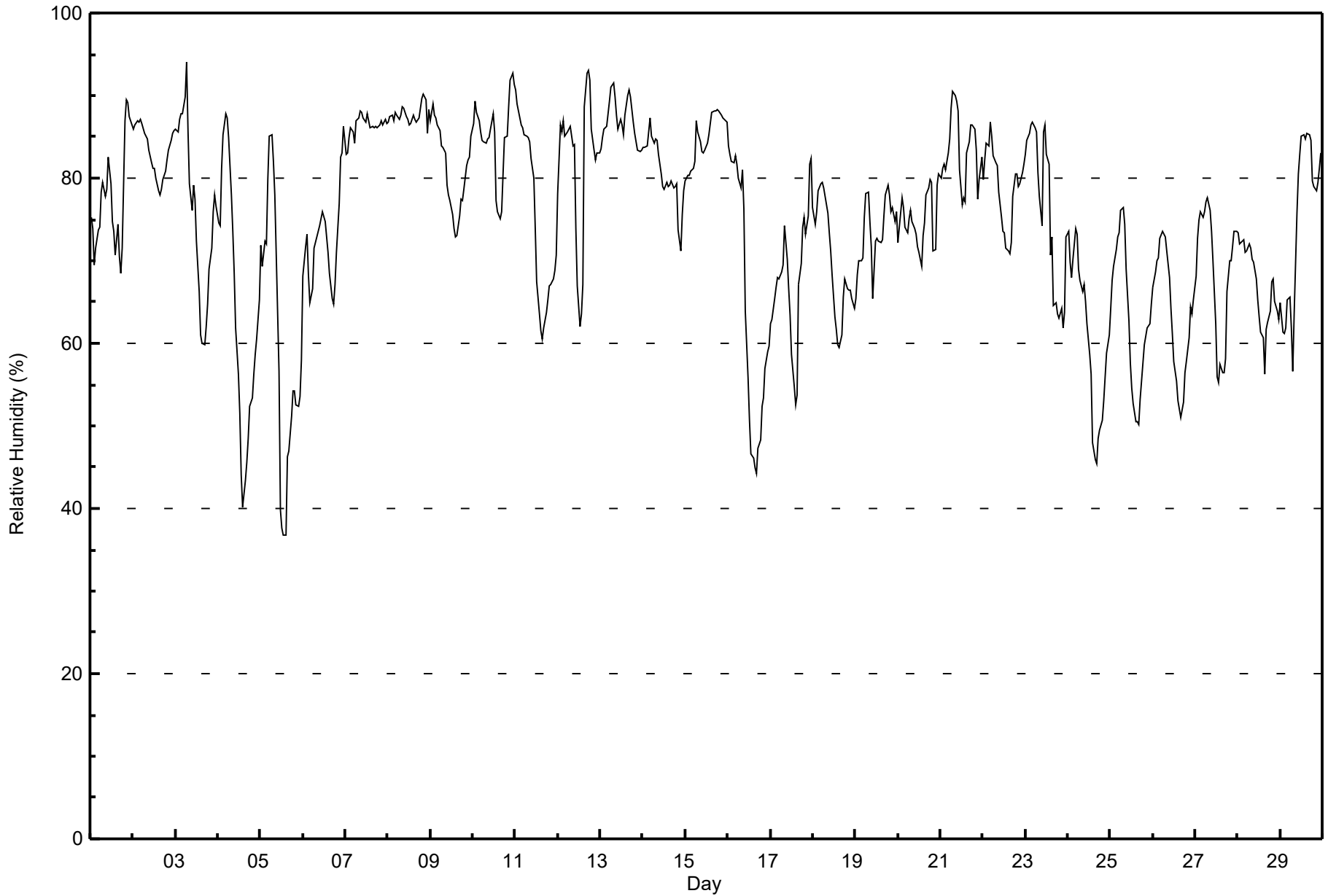
**Relative Humidity (RH) - %
Fort Chipewyan - February 2024**

Maximum Value: 94.0 % on Feb 3 07:00 Maximum Daily Average: 87.7 % on Feb 8																						Hours in Service:	696																										
Minimum Value: 36.8 % on Feb 5 14:00 Minimum Daily Average: 60.2 % on Feb 5																						Hours of Data:	696																										
Maximum Diurnal Average: 80.8 % at hour 7 Minimum Diurnal Average: 66.9 % at hour 15																						Hours of Missing Data:	0																										
Monthly Average: 74.79 % Percentiles: P ₁ = 44.3 P ₁₀ = 58.0 Q ₁ = 67.7 Median = 76.5 Q ₃ = 84.8 P ₉₀ = 87.2 P ₉₉ = 91.4																						Hours of Calibration:	0																										
																						Percent Operational Time:	100.0																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	75.2	73.9	69.5	71.5	73.7	74.1	78.4	79.5	77.8	78.7	82.5	79.3	74.7	73.5	70.7	74.4	70.6	68.5	71.4	87.0	89.5	89.1	87.5	86.5	77.4	89.5																							
2-Feb	85.9	86.4	86.9	86.8	87.1	86.6	85.4	85.0	84.8	83.3	81.8	81.1	81.1	80.0	78.4	78.0	78.7	79.8	80.9	82.2	83.4	84.5	85.4	85.8	83.3	87.1																							
3-Feb	85.9	85.7	87.1	87.8	87.9	89.8	94.0	85.8	79.3	76.1	79.2	77.5	72.3	66.2	61.1	60.0	59.8	62.0	64.7	69.0	71.5	76.0	78.0	76.5	76.4	94.0																							
4-Feb	74.5	74.2	81.2	85.2	87.9	87.3	85.0	78.0	73.5	68.6	61.8	56.3	51.4	44.1	40.2	43.4	45.7	48.5	52.4	53.3	56.3	58.7	60.5	65.3	63.9	87.9																							
5-Feb	71.9	69.4	72.4	71.9	79.8	85.0	85.2	82.1	78.0	70.9	56.6	39.9	37.5	36.8	36.8	46.3	46.9	51.2	54.3	54.2	52.6	52.4	53.6	57.9	60.2	85.2																							
6-Feb	68.2	71.8	73.2	68.4	65.0	66.6	71.6	72.1	72.9	74.3	75.0	76.0	74.7	72.9	71.0	68.5	65.4	64.7	67.2	71.1	76.9	82.6	83.0	86.3	72.5	86.3																							
7-Feb	82.8	83.1	84.9	86.1	85.5	84.3	87.0	87.2	88.2	87.9	87.3	86.8	87.7	86.9	86.1	86.2	86.0	86.3	86.1	86.5	86.9	86.5	87.2	86.7	86.3	88.2																							
8-Feb	86.7	87.5	87.6	87.0	88.0	87.6	87.1	87.6	88.7	88.5	87.4	87.1	86.4	86.6	87.6	87.1	86.9	87.2	88.4	89.6	90.2	89.4	85.4	88.4	87.7	90.2																							
9-Feb	87.0	89.0	87.6	87.3	86.5	85.8	84.0	83.7	83.0	79.2	77.9	77.3	75.5	74.0	72.9	73.1	75.5	77.4	77.2	78.7	81.6	82.1	82.6	85.0	81.0	89.0																							
10-Feb	86.6	89.3	88.0	86.9	85.6	84.6	84.4	84.2	84.7	84.8	86.0	87.8	85.5	77.2	75.9	75.1	76.0	80.5	84.8	85.0	88.6	91.9	92.7	91.4	84.9	92.7																							
11-Feb	90.6	89.0	87.3	86.4	86.1	85.2	85.1	84.9	84.4	82.4	79.9	74.0	67.5	63.6	61.5	60.6	61.9	63.7	65.3	66.9	67.1	67.8	68.8	70.7	75.0	90.6																							
12-Feb	78.2	86.4	85.6	87.0	85.0	85.6	85.9	86.3	83.9	84.0	73.9	67.0	62.0	63.6	67.0	88.6	92.7	93.1	91.9	85.9	83.3	82.1	83.1	83.1	81.9	93.1																							
13-Feb	83.6	84.9	85.9	86.3	87.7	89.4	91.1	91.6	89.9	87.6	86.0	87.1	86.5	85.3	87.6	90.0	90.6	89.9	86.9	85.5	84.4	83.5	83.3	83.5	87.0	91.6																							
14-Feb	83.8	83.7	83.9	85.5	87.3	85.1	84.2	84.8	84.6	82.9	80.5	79.0	78.7	79.5	79.1	79.1	79.7	78.8	78.9	79.4	73.7	71.2	75.6	78.4	80.7	87.3																							
15-Feb	79.7	80.3	80.4	80.8	81.2	82.1	86.9	85.5	84.3	83.2	83.1	83.4	84.2	85.3	86.7	88.0	88.2	88.2	88.3	88.2	87.7	87.3	87.2	86.8	84.9	88.3																							
16-Feb	83.9	82.9	82.1	81.9	82.8	81.8	80.1	78.8	81.0	76.3	63.8	55.7	50.7	46.7	46.1	45.0	44.3	47.3	48.3	52.3	53.5	57.0	58.9	59.7	64.2	83.9																							
17-Feb	62.3	62.8	65.4	66.7	68.0	67.8	68.6	69.5	74.2	70.1	66.6	63.4	58.7	54.8	52.6	53.7	67.1	69.7	74.0	75.3	73.3	75.4	81.7	82.4	67.7	82.4																							
18-Feb	76.4	74.4	75.9	78.4	79.3	79.4	78.7	77.9	75.8	73.4	71.3	68.4	63.2	61.8	59.8	59.4	61.0	65.6	67.9	66.5	66.4	66.4	65.5	64.2	69.9	79.4																							
19-Feb	65.3	68.4	70.1	70.0	70.4	75.3	78.2	78.2	74.7	71.6	65.4	72.4	72.7	72.4	72.2	72.5	75.4	78.0	79.1	77.9	75.9	76.5	74.8	75.9	73.5	79.1																							
20-Feb	72.2	74.1	77.6	76.4	74.0	73.4	75.1	76.1	74.7	74.0	73.2	71.6	71.1	69.4	73.0	74.7	78.0	78.9	79.9	79.5	71.2	71.3	79.1	80.4	75.0	80.4																							
21-Feb	80.0	81.1	81.7	81.0	83.0	84.8	88.4	90.5	90.0	89.3	88.1	81.0	76.8	77.6	77.2	83.0	84.4	86.5	86.4	86.0	83.4	77.5	79.8	82.5	83.3	90.5																							
22-Feb	79.7	82.2	84.3	83.9	86.8	85.0	82.7	81.9	81.5	78.3	75.3	73.5	73.3	71.6	71.2	70.9	72.2	77.8	80.4	80.5	79.0	79.3	80.7	81.7	78.9	86.8																							
23-Feb	82.9	84.5	85.4	86.5	86.7	86.1	85.6	80.7	77.8	74.3	85.7	86.4	82.9	81.8	70.7	72.8	64.6	64.9	63.6	63.1	64.3	61.9	63.7	73.0	76.3	86.7																							
24-Feb	73.6	69.8	68.0	70.2	74.0	73.1	69.0	67.6	66.3	67.1	65.0	62.5	58.7	56.3	48.0	46.0	45.4	48.4	49.5	50.6	53.1	55.9	58.9	61.1	60.7	74.0																							
25-Feb	64.2	67.6	69.4	71.3	72.8	73.5	76.1	76.4	74.3	69.0	62.8	57.6	54.6	52.8	50.5	50.5	50.1	53.2	57.7	59.9	60.8	61.8	62.4	64.7	63.1	76.4																							
26-Feb	66.7	68.7	70.0	70.3	72.7	73.5	73.3	72.9	71.1	67.9	64.2	61.2	57.8	55.5	53.1	52.0	51.0	52.8	56.5	57.9	60.6	64.4	63.6	65.3	63.5	73.5																							
27-Feb	68.1	72.6	74.9	75.9	75.3	75.9	77.0	77.7	76.1	73.5	70.1	62.4	56.0	55.2	57.4	56.4	56.5	58.1	66.3	70.0	70.1	71.7	73.5	73.5	68.5	77.7																							
28-Feb	73.4	72.0	72.1	72.5	71.0	71.3	72.1	71.5	70.2	69.8	67.8	65.2	63.2	61.3	60.8	56.3	61.7	62.5	63.8	67.4	67.9	65.1	63.9	62.9	66.9	73.4																							
29-Feb	64.9	61.3	61.3	61.9	65.3	65.6	61.8	56.6	63.6	75.7	80.5	82.8	85.2	85.3	84.7	85.4	85.3	84.5	79.7	79.0	78.4	79.5	81.1	83.0	74.7	85.4																							
																								77.0	77.8	78.6	79.0	79.9	80.2	80.8	79.8	78.9	77.3	75.1	72.5	70.0	68.2	66.9	68.2	69.0	70.6	72.1	73.4	73.5	74.1	75.2	76.6	Diurnal Average	
																								90.6	89.3	88.0	87.8	88.0	89.8	94.0	91.6	90.0	89.3	88.1	87.8	87.7	86.9	87.6	90.0	92.7	93.1	91.9	89.6	90.2	91.9	92.7	91.4	Diurnal Maximum	



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Fort Chipewyan - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Relative Humidity (RH) - %
Fort Chipewyan - February 2024**

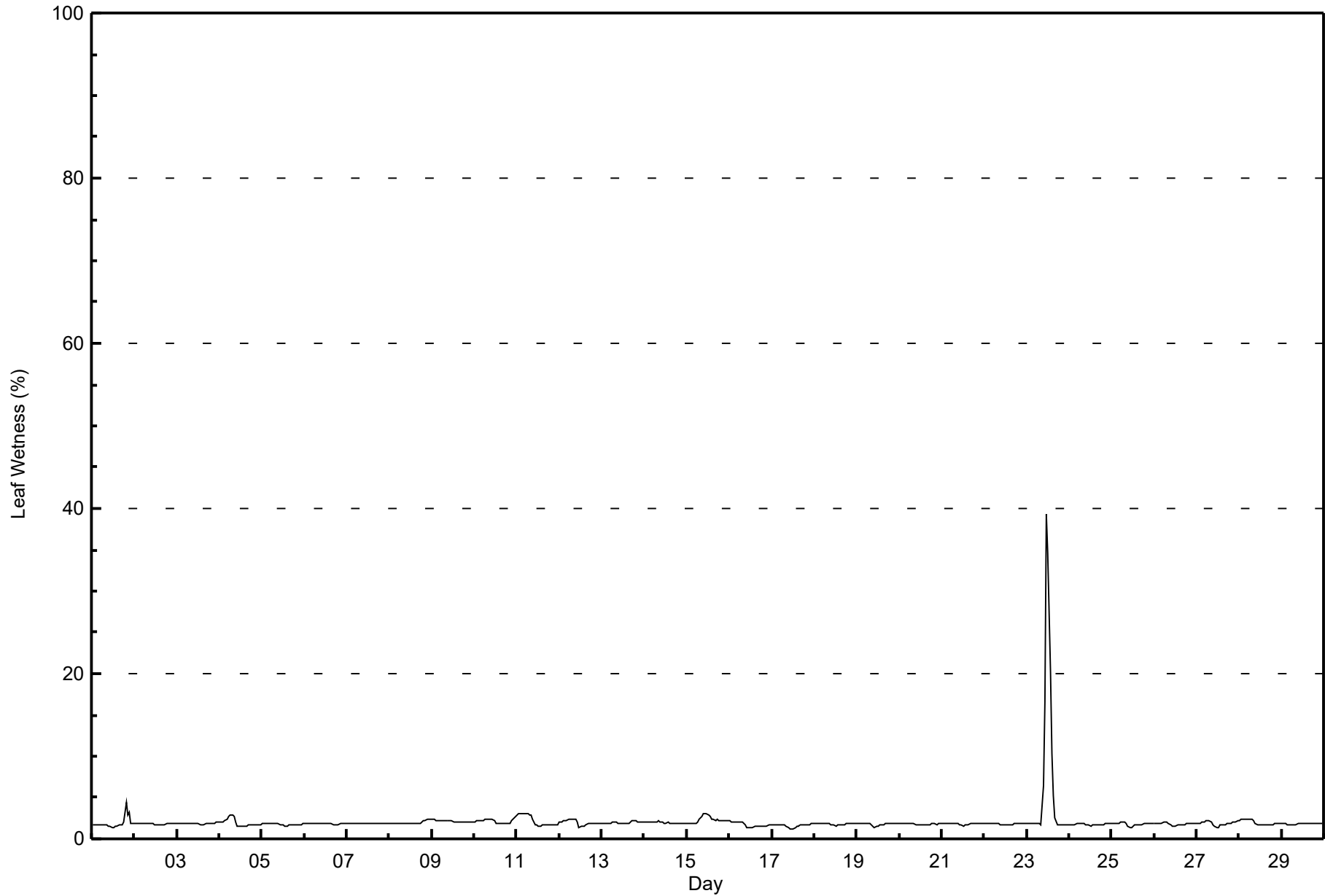
Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	4	0.57	0.57
40 - 60	77	11.06	11.64
60 - 80	341	48.99	60.63
80 - 100	274	39.37	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Maximum Value: 39.3 % on Feb 23 12:00		Maximum Daily Average: 6.8 % on Feb 23		Hours in Service: 696																							
Minimum Value: 1.1 % on Feb 17 12:00		Minimum Daily Average: 1.6 % on Feb 17		Hours of Data: 696																							
Maximum Diurnal Average: 3.0 % at hour 12		Minimum Diurnal Average: 1.8 % at hour 18		Hours of Missing Data: 0																							
Monthly Average: 2.06 %		Percentiles: $P_1 = 1.3$ $P_{10} = 1.6$ $Q_1 = 1.8$ Median = 1.8 $Q_3 = 1.9$ $P_{90} = 2.3$ $P_{99} = 4.5$		Hours of Calibration: 0																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.6	1.5	1.4	1.3	1.5	1.6	1.7	1.7	1.7	2.0	4.5	2.9	3.3	1.9	1.8	1.9	4.5	
2-Feb	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9
3-Feb	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.1	1.9	2.1	
4-Feb	2.1	2.0	2.0	2.2	2.4	2.6	2.8	2.8	2.7	2.0	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	2.8	
5-Feb	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.7	1.6	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	
6-Feb	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	
7-Feb	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
8-Feb	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.1	2.2	2.3	2.3	2.3	2.3	2.0	2.3	
9-Feb	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	
10-Feb	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.1	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.2	2.5	2.7	2.1	2.7	
11-Feb	2.8	3.0	3.0	3.0	3.0	3.0	3.0	2.8	2.8	2.4	1.7	1.7	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	2.2	3.0	
12-Feb	2.0	2.1	2.1	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.0	1.3	1.5	1.6	1.6	1.7	1.8	1.8	1.9	1.8	1.8	1.8	1.9	1.9	2.0	2.4	
13-Feb	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	
14-Feb	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	
15-Feb	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.3	2.7	3.0	3.1	3.0	2.9	2.7	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.2	2.3	3.1	
16-Feb	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.7	1.4	1.3	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.7	2.2	
17-Feb	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.3	1.2	1.1	1.2	1.4	1.5	1.5	1.6	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.6	1.8	
18-Feb	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.7	1.7	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	
19-Feb	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.7	1.5	1.4	1.5	1.6	1.7	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.8	1.9	
20-Feb	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	
21-Feb	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.9	1.8	1.9	
22-Feb	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.7	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.9	
23-Feb	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	6.5	16.7	39.3	34.6	20.2	10.3	5.3	2.5	1.6	1.6	1.6	1.7	1.7	1.7	1.8	6.8	39.3	
24-Feb	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.5	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.8	
25-Feb	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.1	1.9	1.5	1.4	1.4	1.4	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.1	
26-Feb	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.6	1.6	1.5	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	2.0	
27-Feb	1.9	1.9	1.9	2.0	2.0	2.1	2.2	2.2	2.0	1.7	1.6	1.4	1.4	1.6	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.2	1.9	2.2	
28-Feb	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.1	1.9	1.7	1.7	1.7	1.8	1.8	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.3	
29-Feb	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.9	
1.9 1.9 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.1 2.3 3.0 2.8 2.4 2.0 1.9 1.8 1.8 1.8 1.9 1.9 1.9 1.9 1.9																								Diurnal Average			
2.8 3.0 3.0 3.0 3.0 3.0 3.0 3.0 2.8 2.8 6.5 16.7 39.3 34.6 20.2 10.3 5.3 2.5 2.3 2.3 4.5 2.9 3.3 2.5 2.7																								Diurnal Maximum			





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Leaf Wetness (LW) - %
Fort Chipewyan - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 0.3	0	0.00	0.00
0.4 - 0.5	0	0.00	0.00
0.6 - 0.7	0	0.00	0.00
0.8 - 1.4	18	2.59	2.59
1.5 - 10	664	95.40	97.99
> 10	5	0.72	98.71

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Precipitation (PC) - mm

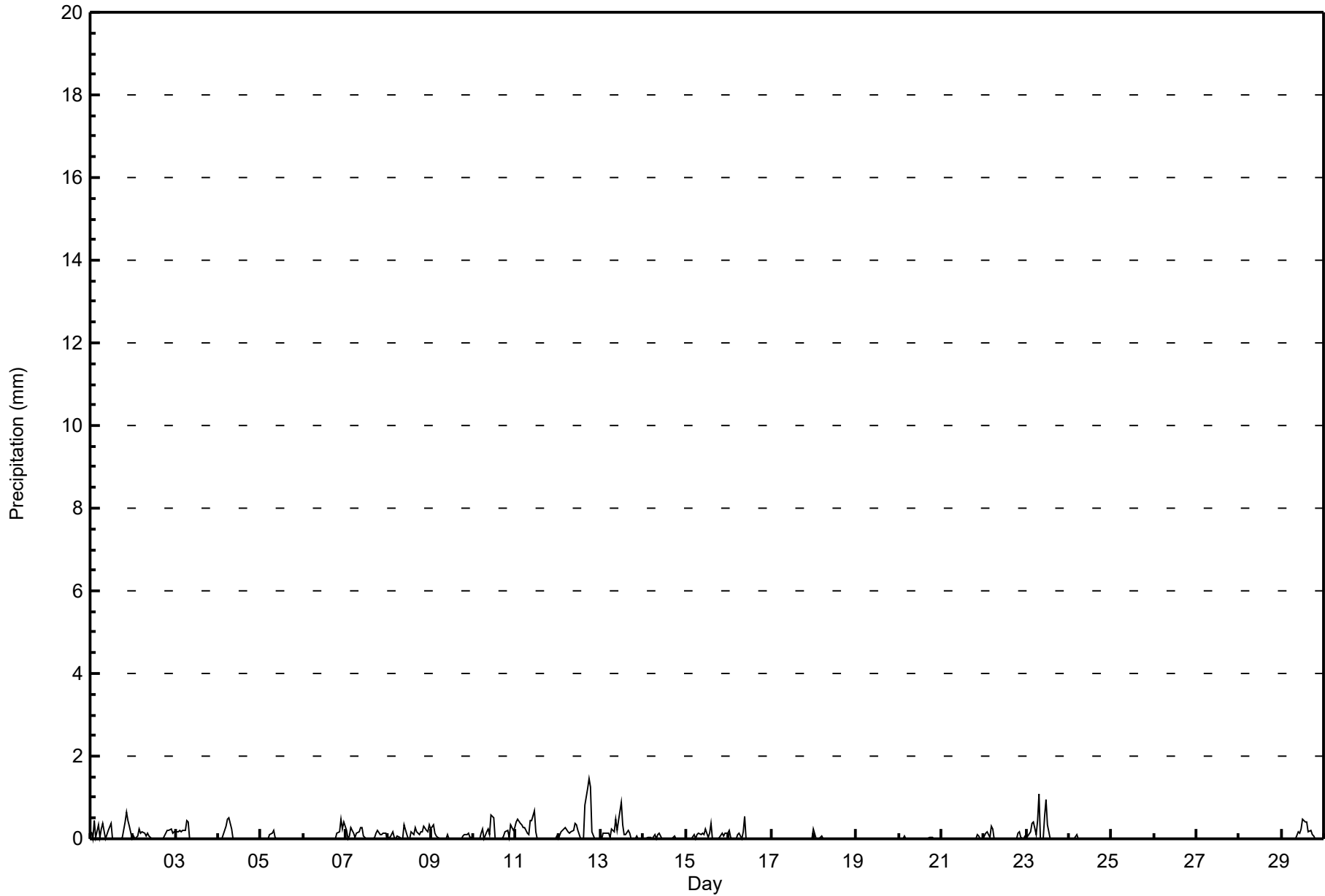
Fort Chipewyan - February 2024

Maximum Value: 1.5 mm on Feb 12 18:00		Maximum Daily Total: 7.4 mm on Feb 12		Hours in Service: 696																						
Minimum Value: 0.0 mm on Feb 1 02:00		Minimum Daily Total: 0.0 mm on Feb 17		Hours of Data: 692																						
Maximum Diurnal Total: 3.5 mm at hour 12		Minimum Diurnal Total: 0.8 mm at hour 14		Hours of Missing Data: 4																						
Monthly Total: 50.26 mm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.1 P ₉₀ = 0.2 P ₉₉ = 0.7		Hours of Calibration: 0																						
				Percent Operational Time: 99.4																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.2	0.0	0.5	0.1	0.3	0.1	0.2	0.4	0.0	0.1	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.7	0.5	0.3	0.0	4.2	0.7
2-Feb	0.1	0.0	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	2.2	0.2
3-Feb	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.4
4-Feb	0.0	0.0	0.0	0.1	0.3	0.5	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.5
5-Feb	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2
6-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.2	0.4	1.4	0.5
7-Feb	0.2	0.0	0.1	0.3	0.1	0.1	0.1	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	2.4	0.3
8-Feb	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.3	0.1	0.0	0.0	0.2	0.1	0.3	0.2	0.1	0.2	0.2	0.3	0.2	0.2	0.3	3.0	0.3
9-Feb	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	1.4	0.4
10-Feb	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.2	0.2	0.1	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.0	0.3	0.2	0.3	3.2	0.6
11-Feb	0.4	0.5	0.4	0.4	0.3	0.3	0.2	0.1	0.4	0.4	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	4.2	0.7
12-Feb	0.0	0.2	0.2	0.3	0.3	0.2	0.1	0.2	0.2	0.4	0.3	0.2	0.0	0.0	0.8	1.2	1.5	1.3	0.2	0.0	0.0	0.0	0.0	7.4	1.5	
13-Feb	0.0	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.5	0.2	0.5	0.9	0.3	0.1	0.1	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	4.0	0.9	
14-Feb	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	
15-Feb	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.4	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	1.9	0.4	
16-Feb	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.5	
17-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	DF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Feb	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	
19-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Feb	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.1	
21-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	DF	DF	DF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.1	
22-Feb	0.1	0.1	0.2	0.1	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.1	1.3	0.3	
23-Feb	0.1	0.1	0.2	0.4	0.4	0.1	0.5	1.1	0.0	0.0	0.6	0.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	1.1	
24-Feb	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	
25-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.5	0.4	0.4	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	2.4	0.5	
1.9 1.6 2.2 2.2 3.0 2.3 2.9 3.3 2.2 2.9 3.2 3.5 1.2 0.8 1.0 1.4 1.8 2.0 2.1 1.7 2.0 2.1 1.4 1.5																								Diurnal Average		
0.4 0.5 0.5 0.4 0.4 0.5 0.5 1.1 0.5 0.5 0.7 0.9 0.5 0.4 0.4 0.8 1.2 1.5 1.3 0.4 0.7 0.5 0.3 0.4																								Diurnal Maximum		
DF - DAS Failure																										



Wood Buffalo Environmental Association
Hourly Averages

Precipitation (PC) - mm
Fort Chipewyan - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Precipitation (PC) - mm
Fort Chipewyan - February 2024

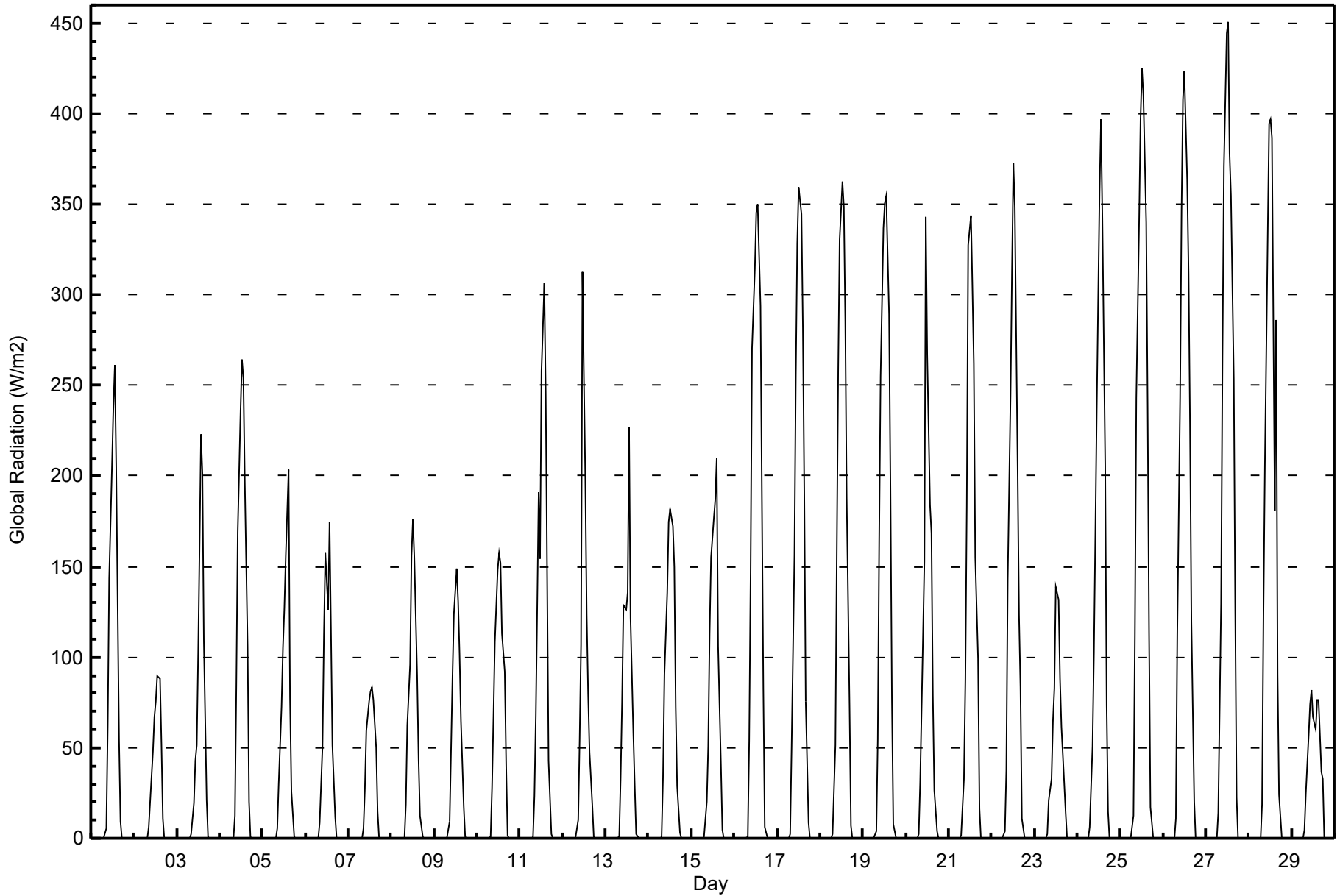
Concentration Ranges (mm)	Number of Hours	%	Cumulative %
0 - 0.3	653	94.36	94.36
0.4 - 0.5	28	4.05	98.41
0.6 - 0.7	4	0.58	98.99
0.8 - 1.4	6	0.87	99.86
1.5 - 10	0	0.00	99.86
> 10	0	0.00	99.86

Total Number of Valid Hours: 692

Total Number of Hours: 696



Maximum Value: 450.5 W/m2 on Feb 27 13:00 Maximum Daily Average: 117.1 W/m2 on Feb 27																								Hours in Service:	696	
Minimum Value: 0.0 W/m2 on Feb 1 01:00 Minimum Daily Average: 19.1 W/m2 on Feb 2																								Hours of Data:	696	
Maximum Diurnal Average: 245.2 W/m2 at hour 13 Minimum Diurnal Average: 0.0 W/m2 at hour 6																								Hours of Missing Data:	0	
Monthly Average: 58.59 W/m2 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 78.1 P ₉₀ = 225.0 P ₉₉ = 396.9																								Hours of Calibration:	0	
																								Percent Operational Time:	100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7	62.7	143.3	205.8	238.4	260.9	204.1	54.6	9.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	49.4	260.9
2-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	20.6	48.0	67.1	75.8	89.5	87.9	51.9	10.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	19.1	89.5
3-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	19.2	42.9	51.7	102.0	222.9	201.3	109.2	20.8	0.8	0.1	0.2	0.1	0.0	0.0	0.0	32.2	222.9
4-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.7	84.0	169.4	236.5	264.3	254.2	197.5	105.9	20.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	56.1	264.3
5-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	30.6	72.6	105.1	127.3	156.0	203.1	78.2	25.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	33.5	203.1
6-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	8.7	50.9	111.9	157.7	126.2	174.9	114.6	51.4	11.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	33.7	174.9
7-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	27.6	59.4	75.3	80.9	83.5	76.8	49.7	14.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	19.7	83.5
8-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	19.0	62.2	95.8	156.3	176.6	155.4	89.8	43.7	12.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	33.8	176.6
9-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	9.5	48.9	89.0	124.0	149.0	130.9	102.2	64.7	17.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	30.7	149.0
10-Feb	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.6	28.2	66.7	108.7	147.8	157.1	151.8	113.3	92.2	40.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	37.9	157.1
11-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	23.3	67.6	190.8	154.6	258.2	306.2	245.2	143.6	42.7	2.2	0.0	0.0	0.0	0.0	0.0	0.0	59.8	306.2
12-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	10.5	54.4	107.1	312.9	199.6	123.1	80.4	47.6	18.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	39.8	312.9
13-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	32.7	74.5	128.3	126.2	136.0	227.1	121.8	57.7	29.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	39.0	227.1
14-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	33.8	90.6	135.3	174.6	181.9	172.2	149.8	72.8	28.9	2.8	0.0	0.0	0.0	0.0	0.0	0.0	43.5	181.9
15-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	20.6	50.5	112.8	155.0	176.6	187.0	209.5	106.1	40.7	4.4	0.0	0.0	0.0	0.0	0.0	0.0	44.3	209.5
16-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	53.6	146.7	270.4	314.3	345.6	350.4	293.9	186.6	82.6	6.5	0.0	0.0	0.0	0.0	0.0	0.0	85.5	350.4
17-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	50.1	155.8	255.6	327.9	359.1	344.4	281.8	189.6	75.3	8.2	0.0	0.0	0.0	0.0	0.0	0.0	85.4	359.1
18-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	51.3	158.5	258.8	330.5	362.4	348.3	285.4	188.0	73.7	6.8	0.0	0.0	0.0	0.0	0.0	0.0	86.1	362.4
19-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	54.2	164.2	255.0	336.5	351.2	354.5	289.2	192.0	78.1	7.5	0.0	0.0	0.0	0.0	0.0	0.0	86.9	354.5
20-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	30.7	110.7	152.7	343.4	267.7	184.2	168.6	79.1	26.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	57.1	343.4
21-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	33.0	87.0	183.0	327.8	343.6	303.9	262.0	155.2	99.1	16.5	0.0	0.0	0.0	0.0	0.0	0.0	75.5	343.6
22-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	37.2	142.7	245.2	313.8	372.6	348.4	204.4	123.0	83.3	11.1	0.0	0.0	0.0	0.0	0.0	0.0	78.6	372.6
23-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	21.1	32.9	64.5	82.6	138.5	131.6	88.4	61.4	46.4	14.2	0.1	0.0	0.0	0.0	0.0	0.0	28.5	138.5
24-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	50.7	102.4	167.5	237.0	357.0	396.9	341.3	206.0	73.2	15.1	0.2	0.0	0.1	0.0	0.0	0.0	81.4	396.9
25-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	112.0	243.2	340.6	396.6	425.2	410.1	340.1	239.2	114.6	17.4	0.2	0.0	0.0	0.0	0.0	0.0	110.5	425.2
26-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	112.4	243.6	346.1	407.9	423.1	363.0	311.9	228.7	119.2	19.9	0.3	0.0	0.0	0.0	0.0	0.0	107.8	423.1
27-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.3	129.1	265.9	371.5	444.3	450.5	378.0	354.8	253.0	126.4	22.5	0.3	0.1	0.0	0.0	0.0	0.0	117.1	450.5
28-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.1	18.5	124.7	206.2	332.9	394.4	396.9	386.5	181.2	286.4	90.3	24.1	0.2	0.0	0.0	0.0	0.0	0.0	101.8	396.9
29-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	25.1	56.5	73.7	81.9	67.2	60.1	76.1	76.4	36.6	32.4	0.5	0.0	0.0	0.0	0.0	0.0	24.6	81.9
																								Diurnal Average		
																								Diurnal Maximum		





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Global Radiation (GR) - W/m2
Fort Chipewyan - February 2024

Concentration Ranges (W/m2)	Number of Hours	%	Cumulative %
0 - 20	451	64.80	64.80
21 - 100	92	13.22	78.02
101 - 300	110	15.80	93.82
301 - 600	43	6.18	100.00
601 - 900	0	0.00	100.00
> 900	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



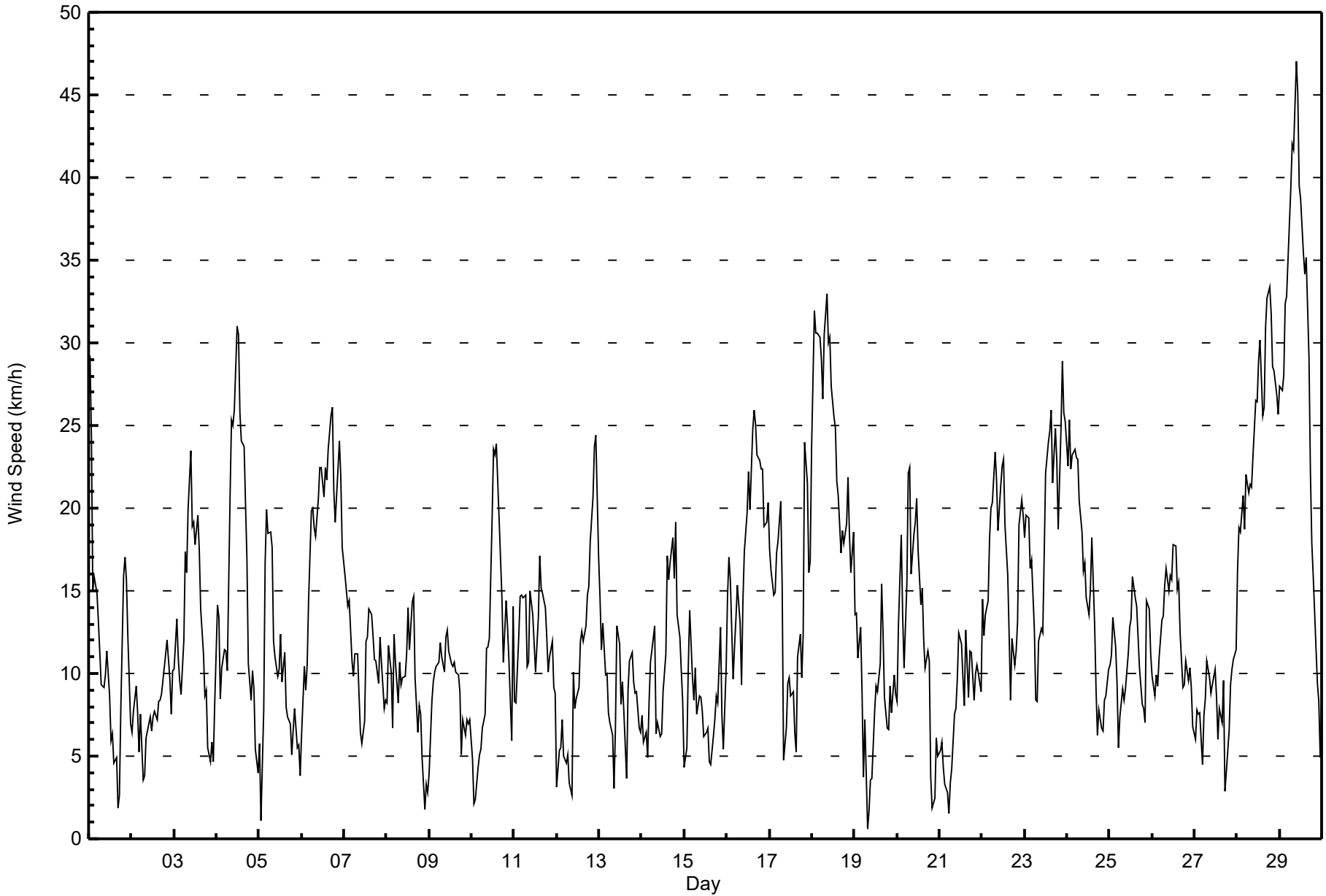
Maximum Speed: 47 km/h on Feb 29 10:00		Maximum Daily Speed Average: 29.0 km/h on Feb 29		Hours in Service:	696																					
Minimum Speed Value: 1 km/h on Feb 19 08:00		Minimum Daily Speed Average: 2.8 km/h on Feb 27		Hours of Data:	696																					
Maximum Diurnal Speed Average: 5.8 km/h at hour 4		Minimum Diurnal Speed Average: 3.2 km/h at hour 16		Hours of Missing Data:	0																					
Monthly Average Velocity: 4.2 km/h 43.1 deg		Percentiles: P ₁ = 2 P ₁₀ = 6 Q ₁ = 8 Median = 11 Q ₃ = 18 P ₉₀ = 24 P ₉₉ = 37		Percent Operational Time:	100.0																					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	E29	E24	ESE15	ESE16	SE15	SE13	ESE11	E9	E9	E10	E11	E9	ENE6	E6	E5	E5	N2	N3	NNW8	NNW16	NNW17	NNW16	NNW12	NNW7	ENE6.8	E29
2-Feb	NNW6	NNW8	NNW9	NNW8	NNW5	NNW8	NNW4	NW4	NW6	NNW7	NNW7	NNW7	NNW7	NNW8	NNW7	NNW8	NNW8	NNW9	NW10	NNW11	NNW12	NNW10	NNW8	NW10	NNW7.7	NNW12
3-Feb	NW10	NW13	NNW11	NNW10	NW9	NW12	NW17	NW16	NW20	NW23	NW19	NW19	NW18	NW20	NW17	NW14	NW11	NW9	NW9	NW5	NW5	ENE6	SE5	S8	NW11.4	NW23
4-Feb	SSE14	SSE13	E9	ESE10	ESE11	ESE11	SE10	S21	S25	S25	S26	S31	S31	S26	S24	S24	S20	S17	SSW11	SSW8	SSW10	SSW9	S5	ESE4	S14.9	S31
5-Feb	E6	NNW1	NNW8	NNW17	NNW20	NNW18	N19	N18	N12	NNE11	NNE10	NNE10	NNE12	NNE9	NNE11	NNW8	NNW7	NNW7	NNW5	N7	N8	N5	NE6	ENE4	N9.1	NNW20
6-Feb	E6	E10	E9	ENE11	ENE14	E20	E20	E19	E18	E21	E22	E22	ENE21	ENE22	ENE22	ENE24	ENE26	ENE26	ENE21	E19	ESE22	ESE24	ESE22	E18	E18.8	ENE26
7-Feb	ESE16	ESE15	E14	E14	E11	ESE10	E11	E11	E9	E6	E6	E7	E12	E12	E14	E14	E12	E11	E11	E9	E12	E11	E8	E8	E10.9	ESE16
8-Feb	E8	E12	ENE10	E7	E12	E11	E8	E11	E9	E10	E10	E11	E14	ESE11	E14	E15	E10	E6	E8	E8	ESE5	SSE2	W3	SW3	E8.5	E15
9-Feb	W4	NW8	NW10	NW10	NW10	NW11	NW12	NW11	NW10	NW12	NW13	NW11	NW11	NW10	WNW11	WNW10	NW10	NW9	W5	W7	W6	W7	WSW7	WSW7	WNW8.7	NW13
10-Feb	WSW5	SE2	SE2	E4	E5	E5	E7	E8	E12	E12	E12	SE19	SE24	SE23	SE24	SE19	SE17	SSE15	S11	SSW14	SSW13	SSW11	SSE6	SW14	SE9.2	SE24
11-Feb	SW8	W8	WNW12	WNW15	WNW15	W15	WNW15	WNW10	W11	WNW15	WNW14	WNW12	W10	W13	W17	W15	W15	W14	W12	W10	W11	W12	WSW9	WSW9	W12.0	W17
12-Feb	SW3	E5	E6	ENE7	E5	E5	ENE5	E3	SW3	SW10	W8	WNW8	WNW9	WNW12	NW13	NW12	NW13	NW15	NNW15	NNW18	NNW21	NNW24	NNW24	NNW17	NW7.2	NNW24
13-Feb	NNW15	NNW11	NW13	NW10	NW10	NW8	WNW7	WNW6	WSW3	S7	S13	S12	S8	SW9	WSW8	NNE4	NE9	NE11	NNE11	NNE10	NNE9	NNE9	NNE7	N6	NNW3.4	NNW15
14-Feb	N7	NNW6	NNW6	NNW5	NNW8	NW11	NNW12	NNW13	NNW6	NNW7	NNW6	NNW6	E9	E11	E17	E16	E17	ENE18	ENE16	ENE19	ENE14	ENE12	ENE10	E8	NE7.1	ENE19
15-Feb	ESE4	E5	ESE10	E14	E10	ENE8	E10	E8	E9	E9	E8	E6	E6	E7	E5	S4	SSE6	S7	S9	SSW8	SW13	WSW7	WSW5	WNW10	ESE4.1	E14
16-Feb	WNW15	WNW17	WNW16	WNW10	WNW12	WNW13	WNW15	W13	SW9	WSW14	WSW17	WSW20	WSW22	WSW20	WSW25	W26	W25	WNW23	WNW23	W22	WNW22	WNW19	WNW19	WNW20	W17.4	W26
17-Feb	WNW18	WNW16	WNW15	WNW15	WNW17	WNW18	NW20	NW15	WSW5	W7	W9	W10	WNW9	WNW9	N6	NNE5	ENE11	ENE12	ENE10	ENE12	ENE24	ENE22	E16	ENE17	NNW5.1	ENE24
18-Feb	ENE24	ENE32	ENE31	ENE31	ENE30	ENE29	ENE27	ENE30	ENE33	ENE30	ENE30	ENE27	NE25	NE25	NE22	NE21	NE17	NE19	NE18	NE19	ENE22	ENE18	ENE16	ENE19	ENE24.5	ENE33
19-Feb	ENE14	ENE14	ENE11	ENE13	ENE9	NW4	NNW7	NNW1	E2	E4	SSE4	E8	E9	E9	E11	E15	E12	E9	E7	ENE7	E9	E8	ENE10	ENE9	ENE7.5	E15
20-Feb	ENE8	E13	E18	ENE14	ENE10	ENE15	ENE22	ENE22	ENE16	ENE18	ENE19	E21	ENE17	E14	E15	E12	E10	E11	E11	ENE4	N2	E2	ESE6	SE5	E12.6	ENE22
21-Feb	SE5	ESE6	SE4	SW3	WSW3	SSW1	SSW3	SSE4	SSE8	SSE8	SSE10	SSE12	SE12	ESE10	ENE8	E13	E9	E11	E11	E8	E10	ENE11	ENE10	E9	ESE6.4	E13
22-Feb	E14	ENE12	ENE14	ENE14	ENE18	ENE20	ENE20	NE23	NE22	NE19	NE21	ENE23	ENE23	ENE19	NE16	NE12	NE8	ENE12	NE11	NE11	ENE13	ENE19	ENE20	ENE20	ENE16.7	NE23
23-Feb	E18	E20	E19	E16	E17	E13	E8	S8	SW12	WSW13	WSW12	WSW17	WSW22	WSW24	WSW25	WSW26	WSW22	W25	W23	WNW19	NW25	NW29	NW26	NW25	W7.3	NW29
24-Feb	NW23	NW25	NW22	NW23	NNW24	NW23	NW23	NW20	NNW19	NW16	NW17	NW15	NW14	NW15	NW18	NW13	NNW9	NNW6	N8	N7	NNW7	NNW8	NW9	NNW10	NW15.3	NW25
25-Feb	NNW11	NW11	NW13	NNW12	NW9	WNW6	WNW7	WNW9	WNW8	WNW9	WNW11	NW13	WNW13	NW16	NW15	NW14	NNW12	NNW10	NNW8	NW8	NNW7	NNW14	NNW14	NNW11	NW10.4	NW16
26-Feb	NW10	WNW9	WNW10	WNW9	WNW11	WNW13	WNW13	WNW15	WNW16	WNW15	WNW16	WNW16	NW18	NW18	NW15	NW16	NW12	NW9	NW9	NW11	NW10	NW10	NW9	NW7	WNW12.2	NW18
27-Feb	W6	W8	W8	WNW8	W4	WSW7	W8	WNW11	NW10	NW9	NW9	NW10	NW9	W6	WSW8	SW7	SW10	SW3	ESE4	E7	E9	ENE10	E11	E11	WNW2.8	E11
28-Feb	E16	E19	E19	E21	E19	E22	E21	E21	E21	E23	E27	ENE26	E29	ENE30	ENE26	E26	E31	E33	E33	E32	E29	E28	E27	ENE26	E25.1	E33
29-Feb	ENE27	ENE27	ENE28	ENE32	ENE33	E37	ENE39	ENE42	ENE42	ENE47	ENE45	ENE39	ENE39	ENE35	ENE34	E35	E29	E22	E18	E16	E12	E9	E8	E5	ENE29.0	ENE47
NE4.3 NE4.9 NE5.4 NE5.8 NE5.5 NE5.2 NNE5.5 NE5.0 NE4.1 NE3.8 NE3.9 ENE3.6 ENE3.8 NE3.2 NE3.2 NE3.2 NE3.6 NE3.8 NE3.7 NNE3.9 NNE4.4 NNE5.0 NE4.5 NNE3.4																								Diurnal Average		
E29 ENE32 ENE31 ENE32 ENE33 E37 ENE39 ENE42 ENE42 ENE47 ENE45 ENE39 ENE39 ENE35 ENE34 E35 E31 E33 E33 E32 E29 NW29 E27 ENE26																								Diurnal Maximum		
All monthly, daily, and diurnal averages have been calculated using vector methods																										



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Fort Chipewyan - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 10 km/h on Feb 23 22:00 Minimum Value: 0 km/h on Feb 10 06:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 2 Median = 3 Q ₃ = 3 P ₉₀ = 5 P ₉₉ = 8																		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	3	3	3	3	2	2	1	1	1	2	1	2	1	1	1	1	2	1	3	4	5	5	6	3	6
2-Feb	3	3	3	4	2	4	2	2	2	3	3	2	3	2	2	3	3	3	3	4	4	4	3	3	4
3-Feb	3	4	3	3	3	4	5	5	6	7	7	6	5	6	6	4	3	3	2	1	1	1	2	2	7
4-Feb	2	4	1	2	1	1	3	4	4	3	3	4	5	4	4	3	3	2	2	2	2	1	1	1	5
5-Feb	1	2	5	4	5	5	5	5	4	3	3	3	4	3	4	3	2	2	2	3	3	2	1	1	5
6-Feb	2	1	1	1	4	2	2	2	2	2	2	2	2	2	3	3	3	4	2	2	2	3	2	4	4
7-Feb	1	1	1	1	2	1	1	1	1	1	0	2	1	1	1	1	2	1	1	1	1	2	1	1	2
8-Feb	2	1	2	2	2	3	1	3	2	2	3	3	3	2	2	2	3	1	1	1	1	1	0	0	3
9-Feb	1	3	3	3	2	3	3	3	3	4	4	3	3	3	3	3	3	3	2	1	1	2	1	1	4
10-Feb	1	1	1	1	1	0	1	1	1	1	2	3	4	3	3	4	2	5	2	3	2	3	2	4	5
11-Feb	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	3	3
12-Feb	2	2	1	1	1	1	1	1	3	2	2	3	3	3	4	3	4	5	5	6	7	8	8	6	8
13-Feb	5	4	4	3	4	2	2	2	2	3	1	2	2	2	2	4	4	4	3	3	3	2	2	2	5
14-Feb	2	2	2	2	3	3	3	4	2	2	2	2	4	1	2	3	2	2	2	3	3	2	2	2	4
15-Feb	2	2	3	1	2	1	1	2	1	1	1	1	1	1	2	1	2	2	1	1	2	4	1	3	4
16-Feb	3	3	4	3	2	2	3	2	2	3	4	5	5	5	6	6	6	5	4	4	5	4	4	4	6
17-Feb	3	3	3	3	3	4	4	7	3	2	2	2	3	3	2	2	4	2	1	4	3	2	3	3	7
18-Feb	3	4	4	4	4	4	5	5	5	4	4	4	4	4	4	4	4	4	4	4	3	3	2	3	5
19-Feb	3	3	1	3	3	2	2	2	1	1	1	1	1	1	1	2	2	1	1	1	2	1	2	1	3
20-Feb	3	4	3	2	2	4	3	3	3	3	3	2	2	2	1	2	1	2	2	2	1	1	1	1	4
21-Feb	1	1	3	1	1	1	1	2	1	1	2	3	2	1	1	3	2	1	1	2	2	3	2	3	3
22-Feb	2	3	2	2	3	3	3	4	4	4	4	3	4	3	4	3	3	2	2	2	3	2	2	2	4
23-Feb	2	2	2	2	2	2	1	2	2	2	3	5	5	6	6	7	5	7	6	5	9	10	9	9	10
24-Feb	7	7	8	9	8	7	8	7	7	6	6	4	5	5	5	3	2	2	1	1	2	2	3	3	9
25-Feb	3	3	4	3	2	2	1	2	1	2	3	4	4	5	5	5	4	4	3	3	2	6	6	4	6
26-Feb	3	2	2	2	2	3	3	3	4	4	4	4	5	6	5	5	4	2	2	3	2	3	3	2	6
27-Feb	1	1	1	2	2	2	1	2	2	3	3	4	3	3	2	1	2	2	1	1	1	1	1	1	4
28-Feb	1	2	2	2	3	3	3	3	2	2	2	2	3	3	3	4	3	4	2	2	2	2	2	2	4
29-Feb	2	3	3	3	3	3	4	4	5	6	6	6	5	3	3	3	2	3	2	2	1	1	1	2	6
																		7 7 8 9 8 7 8 7 7 7 7 6 5 6 6 7 6 7 6 6 9 10 9 9							
																		Diurnal Maximum							





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed (WS) - km/h
Fort Chipewyan - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	65	9.34	9.34
6 - 11	287	41.24	50.57
12 - 19	206	29.60	80.17
20 - 28	104	14.94	95.11
29 - 38	27	3.88	98.99
> 38	7	1.01	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Fort Chipewyan - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	4	2	0	3	14	5	6	3	2	2	5	5	4	0	3	7	65
6 - 11	6	10	6	20	76	10	1	6	6	6	6	8	17	22	43	44	287
12 - 19	3	1	7	29	46	4	6	4	3	2	3	5	9	31	37	16	206
20 - 28	0	0	7	29	17	3	3	1	7	0	0	9	5	4	14	5	104
29 - 38	0	0	0	15	9	0	0	0	2	0	0	0	0	0	1	0	27
> 38	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
Totals	13	13	20	103	162	22	16	14	20	10	14	27	35	57	98	72	696

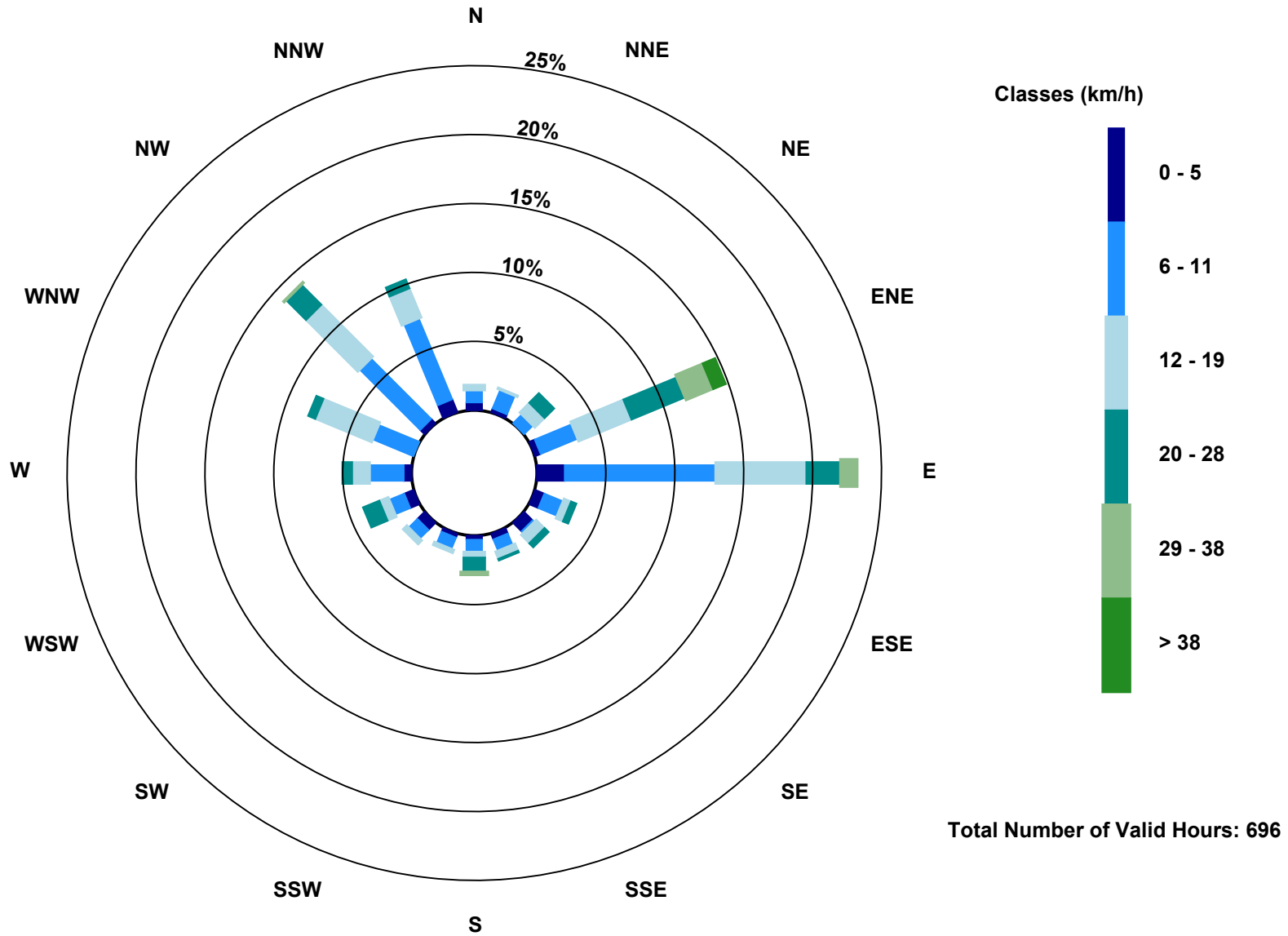
Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Fort Chipewyan





Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Fort Chipewyan - February 2024

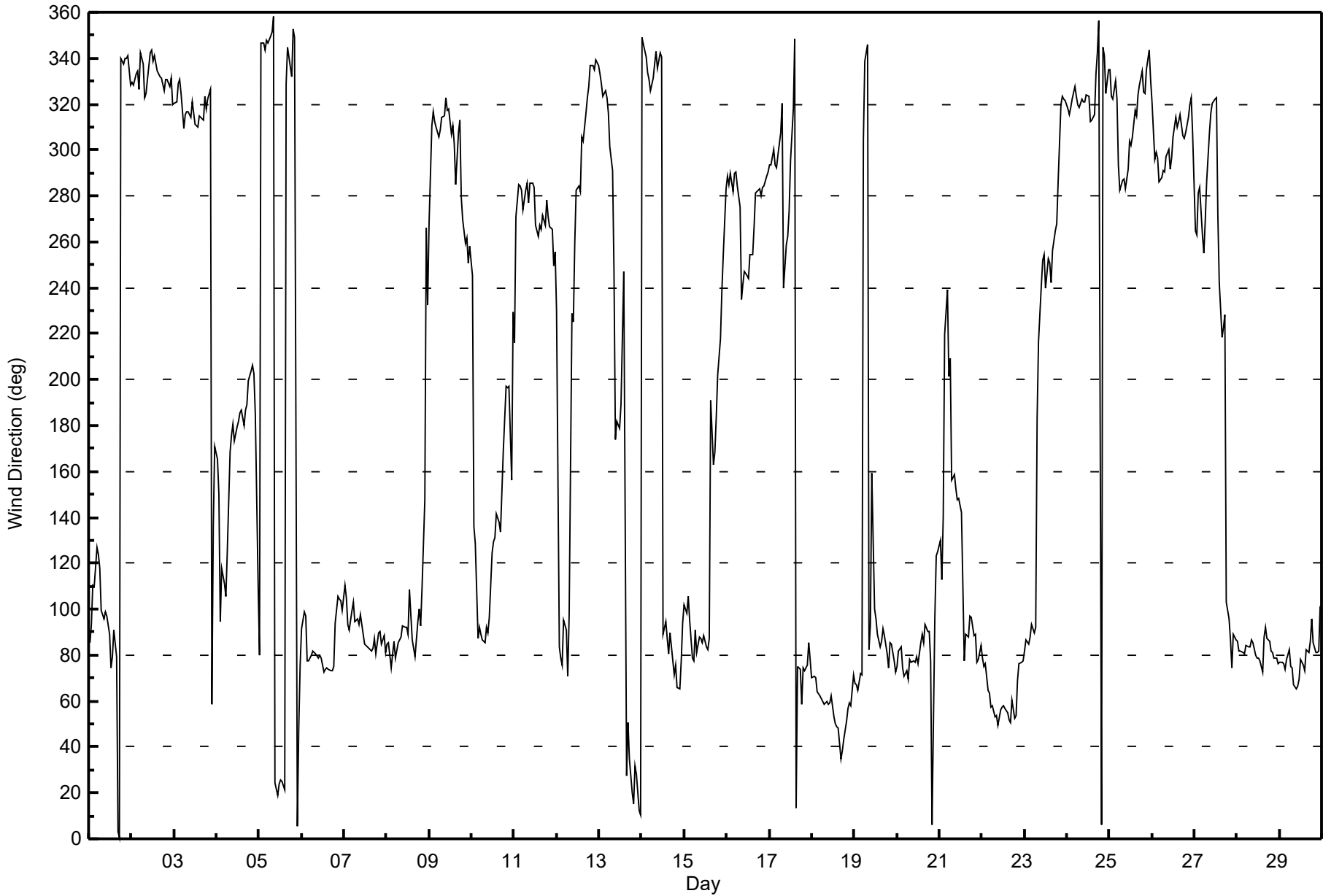
Direction of Maximum Speed: 65 deg on Feb 29 10:00																						Hours in Service: 696			
Direction of Maximum Daily Speed Average: 76.0 deg on Feb 29																						Hours of Data: 696			
Direction of Minimum Speed: 346 deg on Feb 19 08:00											Direction of Minimum Daily Speed Average: 2.8 deg on Feb 27											Hours of Missing Data: 0			
Monthly Average Direction: 43.1 deg																						Percent Operational Time: 100.0			
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	86	93	111	110	127	124	118	100	96	99	97	89	74	79	91	80	3	0	340	337	340	340	341	328	75.1
2-Feb	330	328	333	334	327	342	337	323	325	331	342	343	339	341	334	333	332	332	326	331	331	328	331	319	331.9
3-Feb	321	321	329	331	325	309	316	317	316	314	321	316	311	310	315	314	313	323	318	322	326	59	136	171	317.4
4-Feb	165	150	95	118	111	105	125	169	176	181	173	180	182	185	187	180	186	189	199	204	207	203	185	111	172.9
5-Feb	80	346	346	344	348	347	350	352	358	24	19	24	25	25	22	329	354	336	332	353	349	6	48	76	1.1
6-Feb	92	99	97	78	77	80	82	81	81	79	80	79	73	74	75	74	73	73	75	94	106	105	104	99	83.5
7-Feb	110	105	93	91	100	103	95	96	93	97	93	85	84	84	83	82	83	87	81	89	90	85	88	81	91.1
8-Feb	85	85	74	81	86	79	85	87	88	93	92	92	89	109	87	83	80	95	100	93	109	148	266	232	89.3
9-Feb	268	310	317	312	310	306	309	314	315	323	318	318	307	311	302	285	308	313	280	270	259	262	251	258	301.8
10-Feb	245	136	129	87	92	89	87	86	92	90	97	124	129	131	142	138	134	151	169	197	196	197	156	229	138.9
11-Feb	216	271	285	285	283	274	282	286	277	285	286	284	267	262	267	266	272	267	278	271	267	266	250	256	272.5
12-Feb	230	84	79	76	95	91	71	98	229	225	259	283	284	282	306	304	316	323	328	337	337	335	339	337	324.9
13-Feb	333	329	323	326	323	316	302	291	247	174	182	179	189	219	247	28	51	35	20	15	32	28	12	10	336.5
14-Feb	349	346	341	334	331	326	332	338	343	336	342	340	89	95	87	81	90	77	71	76	66	65	77	94	47.5
15-Feb	102	98	106	95	79	77	91	81	88	88	85	89	83	82	87	191	163	169	184	202	218	238	255	283	117.1
16-Feb	288	285	290	282	290	290	284	275	235	242	247	245	244	254	254	267	281	282	283	280	284	284	289	291	272.9
17-Feb	293	294	300	294	292	298	308	321	240	259	262	273	295	318	349	13	75	74	58	74	73	76	85	78	341.0
18-Feb	70	71	70	64	62	61	60	58	60	59	59	62	53	50	49	48	35	38	44	51	57	59	58	72	58.3
19-Feb	67	67	64	72	72	304	339	346	82	94	159	100	96	89	83	86	92	89	80	74	85	85	78	72	78.1
20-Feb	75	82	83	74	71	73	70	78	77	77	77	79	76	85	89	85	93	90	90	77	6	96	123	125	80.9
21-Feb	130	113	140	220	239	201	209	156	159	152	148	148	142	111	78	89	88	97	96	89	89	77	78	84	113.6
22-Feb	79	75	76	64	64	57	58	53	54	49	56	58	58	57	55	52	50	60	53	54	69	76	77	78	61.7
23-Feb	81	87	85	88	94	90	92	183	217	241	252	255	240	253	251	242	256	265	268	286	320	323	322	322	274.2
24-Feb	318	315	318	322	328	324	320	319	322	321	321	324	324	312	313	315	333	343	356	6	345	341	324	335	323.5
25-Feb	335	323	322	330	322	294	282	287	287	283	292	304	302	306	317	315	324	328	334	325	324	335	344	330	316.0
26-Feb	321	296	299	296	286	288	291	291	297	300	291	296	306	315	310	312	315	306	305	308	314	320	323	307	303.3
27-Feb	265	263	281	284	263	255	269	286	307	316	320	322	323	271	242	218	223	228	103	96	87	75	89	87	288.1
28-Feb	86	82	82	81	81	84	84	84	86	85	80	78	79	77	73	88	92	87	86	82	81	79	79	76	82.2
29-Feb	77	77	76	74	78	82	75	74	67	65	66	70	78	76	73	83	81	86	96	86	81	81	82	101	76.0
52.5	51.3	41.2	41.1	39.5	35.5	28.9	37.4	49.6	47.1	50.1	57.2	64.2	50.6	41.7	55.8	52.7	50.3	39.7	33.5	33.5	31.1	38.1	33.1		
Diurnal Average																									
All monthly, daily, and diurnal averages have been calculated using vector methods																									



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Fort Chipewyan - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 90 deg on Feb 19 08:00 Minimum Value: 3 deg on Feb 7 15:00 Percentiles: P ₁ = 4 P ₁₀ = 5 Q ₁ = 7 Median = 13 Q ₃ = 19 P ₉₀ = 25 P ₉₉ = 71														Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Day	Hourly Period Ending At (MST)																								Daily Maximum													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24														
1-Feb	5	8	8	13	12	14	13	11	9	15	5	6	12	15	12	16	31	17	16	17	20	26	49	54	54													
2-Feb	49	38	29	61	78	48	75	63	42	71	52	36	38	24	21	25	21	27	20	23	20	45	34	17	78													
3-Feb	20	16	19	20	25	15	17	19	18	17	22	20	18	18	18	18	18	19	15	16	37	29	29	10	37													
4-Feb	8	23	17	12	13	11	27	8	7	7	6	9	7	8	10	7	8	8	15	16	11	10	16	23	27													
5-Feb	17	76	52	16	18	17	19	18	23	18	18	18	21	31	20	19	17	39	55	20	30	25	9	76														
6-Feb	6	9	7	6	6	5	6	5	6	6	4	5	6	6	6	7	7	6	7	13	4	5	6	6	13													
7-Feb	6	6	4	6	7	8	8	6	4	9	5	6	4	4	3	5	5	5	7	6	4	5	7	9	9													
8-Feb	11	6	7	14	6	6	7	6	7	6	7	6	7	8	7	5	6	11	5	7	9	74	12	12	74													
9-Feb	16	17	18	18	15	15	17	17	17	22	19	19	18	20	18	21	19	20	17	17	13	16	14	13	22													
10-Feb	15	40	33	9	9	6	6	6	6	4	11	6	7	6	8	8	9	12	17	11	10	14	36	12	40													
11-Feb	13	20	14	13	12	13	13	16	17	14	15	16	17	13	14	14	14	12	12	11	12	12	13	17	20													
12-Feb	74	31	17	6	24	25	17	28	79	10	23	29	20	13	20	16	19	20	22	22	22	21	20	23	79													
13-Feb	24	25	21	22	22	18	23	25	38	9	15	9	11	11	18	61	12	16	16	19	19	16	21	23	61													
14-Feb	19	19	14	21	22	18	18	18	27	24	24	23	54	6	4	6	7	7	8	9	7	9	14	14	54													
15-Feb	19	25	10	10	8	9	8	7	5	5	6	10	6	8	45	32	22	15	10	11	9	18	21	12	45													
16-Feb	15	12	14	16	12	11	12	14	12	15	14	14	15	15	14	16	15	13	13	12	13	13	13	13	16													
17-Feb	12	13	11	13	13	13	13	59	64	18	18	19	31	22	38	41	12	7	8	7	5	5	5	6	64													
18-Feb	6	6	7	7	8	8	9	9	8	8	8	8	10	9	10	10	13	12	11	11	8	8	9	7	13													
19-Feb	11	13	10	9	15	69	15	90	48	29	32	8	10	5	6	3	5	5	7	7	8	13	8	6	90													
20-Feb	10	6	5	8	9	6	7	5	6	6	7	4	7	4	4	7	6	6	6	37	69	27	12	10	69													
21-Feb	13	11	22	29	32	47	22	16	8	18	14	10	10	22	9	6	11	7	4	15	12	9	8	21	47													
22-Feb	7	5	5	9	7	12	8	8	10	11	10	8	8	9	9	11	21	8	8	8	9	5	5	6	21													
23-Feb	6	5	5	7	8	9	15	37	9	16	25	19	14	16	16	15	18	15	15	20	19	22	22	21	37													
24-Feb	20	19	20	22	22	21	20	20	21	22	21	25	25	22	19	26	25	16	14	14	13	17	14	15	26													
25-Feb	17	16	16	16	14	22	10	10	11	14	23	23	25	21	25	23	23	23	22	23	25	25	25	25	25													
26-Feb	24	15	15	19	13	13	14	14	14	16	16	19	20	19	21	18	18	16	13	15	15	15	20	18	24													
27-Feb	13	10	9	9	19	12	13	11	18	17	19	22	28	51	34	18	16	39	22	13	5	7	5	4	51													
28-Feb	4	4	5	5	6	8	6	7	6	6	5	5	5	5	6	14	9	6	4	4	4	4	4	4	14													
29-Feb	4	5	5	5	6	5	5	5	7	7	7	6	6	5	6	6	5	5	7	7	8	5	5	28	28													
														74	76	52	61	78	69	75	90	79	71	52	36	54	51	45	61	31	39	39	55	69	74	49	54	
Diurnal Maximum																																						





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS09 BARGE LANDING FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BARGE LANDING (AMS09)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	663	33	33	100	10.7	0	2.9	0
TRS(ppb) Average	663	33	33	100	4.3	0	1.3	0
THC(ppm) Average	663	33	33	100	3.8	-	2.6	-
NMHC(ppm) Average	663	33	33	100	0.204	-	0.023	-
CH4(ppm) Average	663	33	33	100	3.8	-	2.6	-
NO2 (ppb) Average	662	34	34	100	44.2	0	28.3	-
NO (ppb) Average	662	34	34	100	105.1	-	37.1	-
NOX (ppb) Average	662	34	34	100	149.3	-	61.4	-
PM2.5(ug/m3) Average	695	1	1	100	54.9	0	25.1	0
Temperature (C) Average	696	0	0	100	9.6	-	2	-
Relative Humidity (%) Average	696	0	0	100	96.5	-	91	-
Barometric Pressure (inHg) Average	696	0	0	100	29.4	-	29.3	-
Wind Speed 10 m (km/h) Average	687	0	9	98.71	15	-	10	-
Wind Direction 10 m (deg) Average	687	0	9	98.71	-	-	-	-
Wind Speed 20 m (km/h) Average	695	0	1	99.86	25	-	16	-
Wind Direction 20 m (deg) Average	695	0	1	99.86	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BARGE LANDING (AMS09)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Min	P10	Percentile					Max
							Q1	Median	Q3	P90		
SO2 (ppb) Average	663	0.57	1.3	-	0	0	0	0.2	0.4	1.5	10.7	
TRS(ppb) Average	663	0.56	0.5	-	0.2	0.3	0.3	0.4	0.6	1	4.3	
THC(ppm) Average	663	2.2	0.3	-	1.9	2	2	2.1	2.3	2.5	3.8	
NMHC(ppm) Average	663	0.003	0.015	-	0	0	0	0	0	0	0.204	
CH4(ppm) Average	663	2.19	0.3	-	1.9	2	2	2.1	2.3	2.5	3.8	
NO2 (ppb) Average	662	14.6	9.8	-	0.2	2.2	5.9	13.4	21.6	28	44.2	
NO (ppb) Average	662	9.73	16.4	-	0	0	0.2	2.2	11	30.8	105.1	
NOX (ppb) Average	662	24.34	24.1	-	0.2	2.5	7.1	15.8	34	58.1	149.3	
PM2.5(ug/m3) Average	695	9.4	7.6	-	0.3	2.2	4	6.8	12.7	20.7	54.9	
Temperature (C) Average	696	-9.73	7.5	-	-29.6	-19.2	-14.6	-9.8	-4.8	0.1	9.6	
Relative Humidity (%) Average	696	71.86	14.5	-	29.3	49.6	62.3	74.2	83.8	87.3	96.5	
Barometric Pressure (inHg) Average	696	28.89	0.2	-	28.4	28.6	28.7	28.9	29.1	29.2	29.4	
Wind Speed 10 m (km/h) Average	687	4.9	3	-	0	2	3	4	7	9	15	
Wind Direction 10 m (deg) Average	687	87.6	-	-	-	-	-	-	-	-	-	
Wind Speed 20 m (km/h) Average	695	8.8	5	-	1	3	5	8	12	15	25	
Wind Direction 20 m (deg) Average	695	88.9	-	-	-	-	-	-	-	-	-	

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BARGE LANDING (AMS09)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
Wind Speed, Wind Direction 10m	01 Feb 2024 22:00	01 Feb 2024 22:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction 10m	03 Feb 2024 02:00	03 Feb 2024 02:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction 10m	08 Feb 2024 02:00	08 Feb 2024 03:00	2	Flat line in sensor output signal
Wind Speed, Wind Direction 10m	08 Feb 2024 05:00	08 Feb 2024 05:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction 10m	08 Feb 2024 07:00	08 Feb 2024 07:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction 10m	08 Feb 2024 18:00	08 Feb 2024 19:00	2	Flat line in sensor output signal
Wind Speed, Wind Direction 10m	10 Feb 2024 04:00	10 Feb 2024 04:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction 20m	08 Feb 2024 07:00	08 Feb 2024 07:00	1	Flat line in sensor output signal



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb
Barge Landing - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 10.7 ppb on Feb 21 13:00	Maximum Daily Average: 2.9 ppb on Feb 4		Hours of Data:	663
Minimum Value: 0.0 ppb on Feb 1 03:00	Minimum Daily Average: 0.0 ppb on Feb 14		Hours of Missing Data:	33
Maximum Diurnal Average: 1.2 ppb at hour 14	Minimum Diurnal Average: 0.2 ppb at hour 4		Hours of Calibration:	33
Monthly Average: 0.57 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.2 Q ₃ = 0.4 P ₉₀ = 1.5 P ₉₉ = 6.2		Percent Operational Time:	100.0

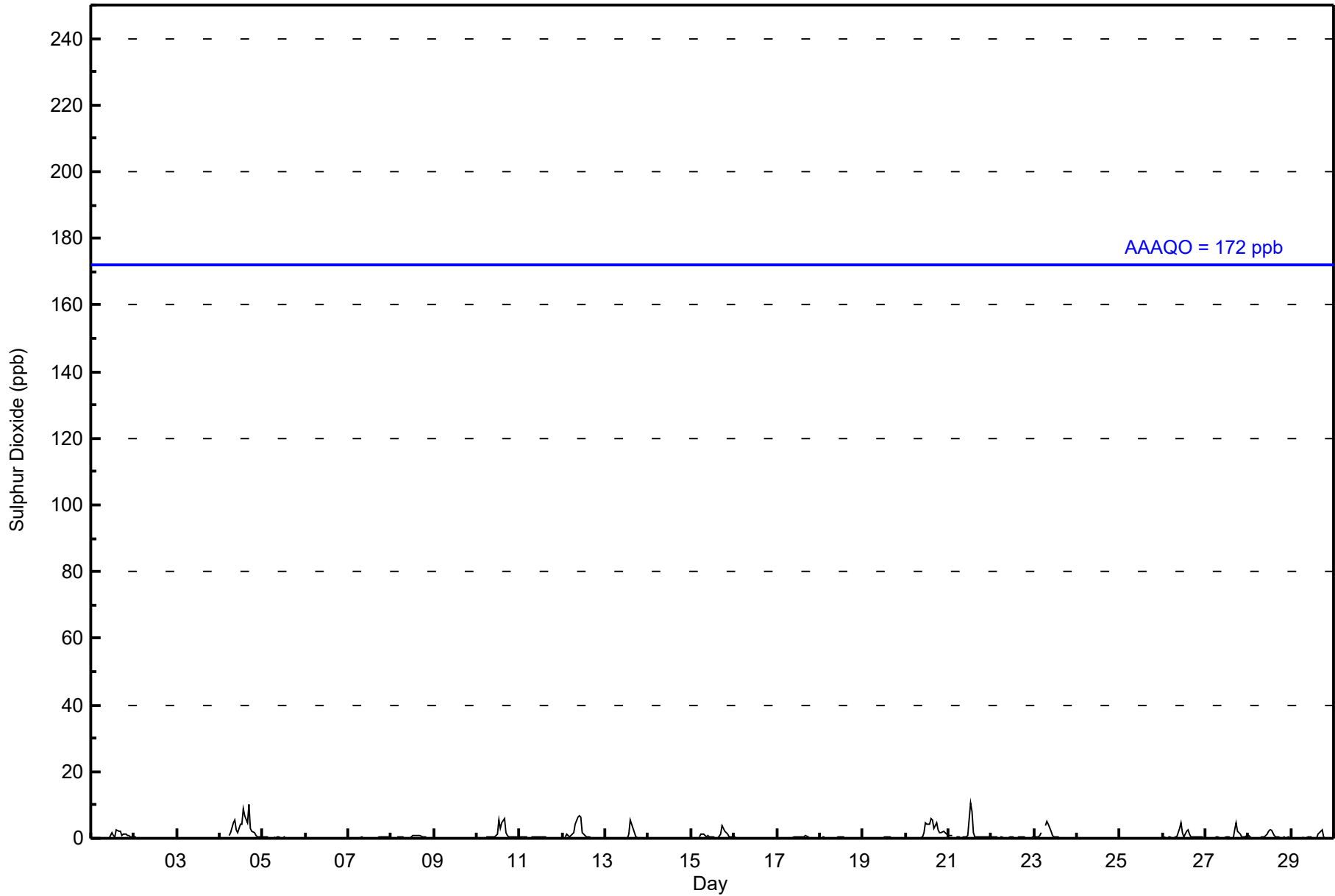
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	0.3	Z	0.0	0.1	0.2	0.2	0.1	0.2	0.0	0.0	0.1	1.8	0.9	0.4	2.5	2.3	2.0	0.9	1.2	1.4	0.8	0.7	0.4	0.5	0.7	2.5																						
2-Feb	0.4	0.3	Z	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4																						
3-Feb	0.1	0.0	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.2																						
4-Feb	0.0	0.0	0.2	0.1	Z	0.7	1.9	4.7	5.5	2.6	1.6	4.3	4.4	8.8	6.6	4.7	10.3	2.8	2.3	1.9	0.8	0.6	0.5	0.4	2.9	10.3																						
5-Feb	0.3	0.3	0.2	0.1	0.2	Z	0.4	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.4																						
6-Feb	Z	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1																						
7-Feb	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.3	0.5	0.5	0.3	0.4	0.5	0.4	0.2	0.5																						
8-Feb	0.1	0.0	Z	0.3	0.2	0.3	0.3	0.2	0.1	0.1	0.2	0.5	0.8	0.7	0.8	1.0	0.9	0.5	0.3	0.2	0.2	0.1	0.1	0.0	0.4	1.0																						
9-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.2																						
10-Feb	0.1	0.1	0.2	0.2	Z	0.3	0.6	0.4	0.4	0.3	0.2	1.1	5.3	2.9	4.8	6.0	1.5	0.7	0.5	0.4	0.3	0.4	0.3	0.3	1.2	6.0																						
11-Feb	0.3	0.3	0.3	0.3	0.2	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.2	0.3																						
12-Feb	Z	0.3	1.3	0.8	0.6	1.1	1.8	4.2	6.2	6.7	6.2	1.9	0.7	0.4	0.4	0.5	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	1.5	6.7																						
13-Feb	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	5.3	2.8	1.9	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.5	5.3																						
14-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																						
15-Feb	0.0	0.0	0.0	Z	0.3	1.4	1.4	1.1	0.5	0.7	0.5	0.4	0.4	0.1	0.0	0.0	1.3	3.7	3.0	2.0	1.2	0.5	0.2	0.3	0.8	3.7																						
16-Feb	0.2	0.1	0.1	0.1	Z	0.2	0.2	0.1	0.0	0.1	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2																						
17-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.5	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.7																						
18-Feb	Z	0.6	0.4	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.4	0.5	0.3	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6																						
19-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.3	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4																						
20-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.5	1.7	4.7	4.4	4.1	6.0	5.3	2.9	4.6	2.4	1.9	1.8	1.9	1.5	1.1	2.0	6.0																						
21-Feb	1.0	1.0	0.7	Z	0.4	0.3	0.2	0.2	0.2	0.4	0.6	0.9	10.7	8.2	1.8	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	1.3	10.7																						
22-Feb	0.3	0.2	0.4	0.3	Z	0.4	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.5	0.2	0.5																						
23-Feb	0.3	0.5	0.2	0.7	1.6	Z	4.0	5.1	4.4	2.1	0.8	0.5	0.3	0.3	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.9	5.1																						
24-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2																						
25-Feb	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.2																						
26-Feb	0.2	0.3	Z	0.4	0.4	0.2	0.2	0.3	0.4	3.1	4.6	1.5	0.5	2.3	2.6	1.5	0.6	0.4	0.3	0.3	0.2	0.3	0.4	0.1	0.9	4.6																						
27-Feb	0.1	0.1	0.0	Z	0.1	0.0	0.2	0.2	0.1	0.2	0.1	0.3	0.4	0.4	0.2	0.2	2.5	4.8	2.2	1.1	0.4	0.3	0.5	0.8	0.7	4.8																						
28-Feb	0.7	0.3	0.2	0.2	Z	0.2	0.1	0.2	0.3	0.4	1.4	1.9	2.4	2.4	1.0	0.6	0.4	0.3	0.2	0.1	0.3	0.2	0.2	0.1	0.6	2.4																						
29-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.3	0.2	0.2	0.3	0.2	0.2	0.1	0.0	0.1	1.2	2.0	2.5	0.3	0.0	0.2	0.1	0.1	0.0	0.4	2.5																						
																								0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.6	0.7	0.7	0.7	0.8	1.2	1.2	1.2	1.0	1.0	0.8	0.5	0.4	0.3	0.2	0.2	0.2	Diurnal Average
																								1.0	1.0	1.3	0.8	1.6	1.4	4.0	5.1	6.2	6.7	6.2	4.7	10.7	8.8	6.6	6.0	10.3	4.8	3.0	2.0	1.8	1.9	1.5	1.1	Diurnal Maximum

Z - zerspan C - Calibration
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Barge Landing - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Barge Landing - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	662	99.85	99.85
11 - 20	1	0.15	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Barge Landing - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	88	55	38	13	9	21	50	98	57	30	35	35	13	22	16	81	661
11 - 20	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	88	55	38	13	9	21	50	98	58	30	35	35	13	22	16	81	662

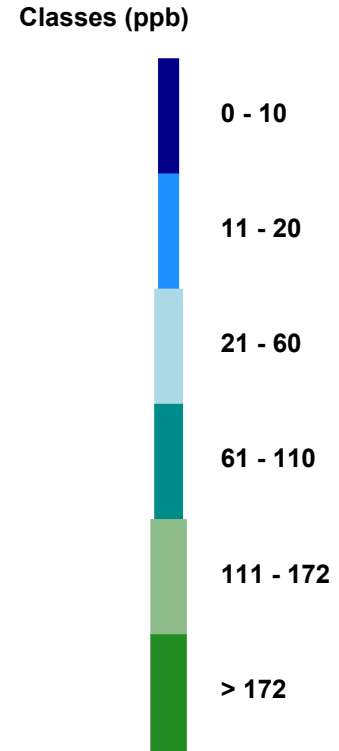
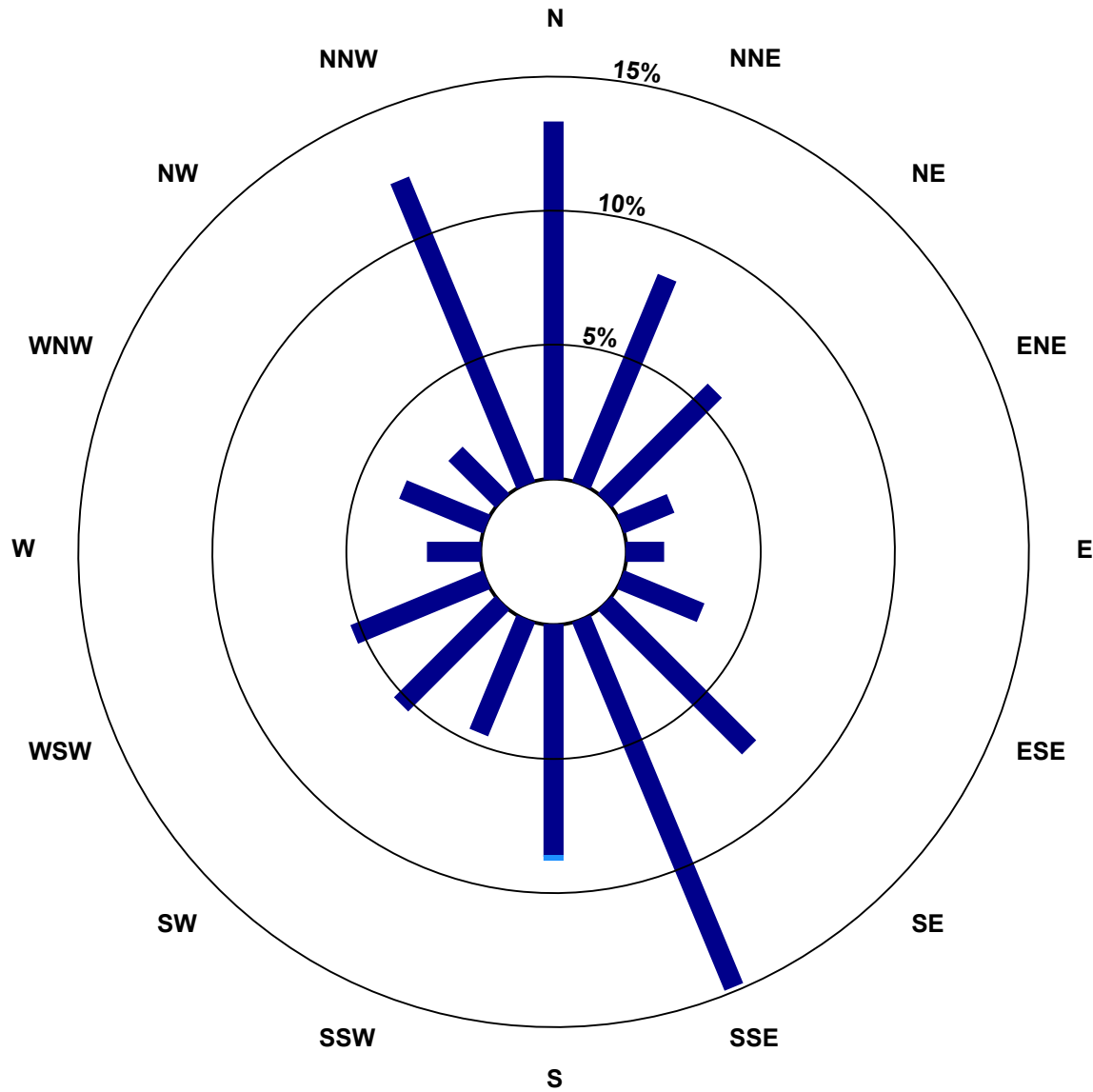
Total Number of Valid Hours: 662

Total Number of Hours: 696

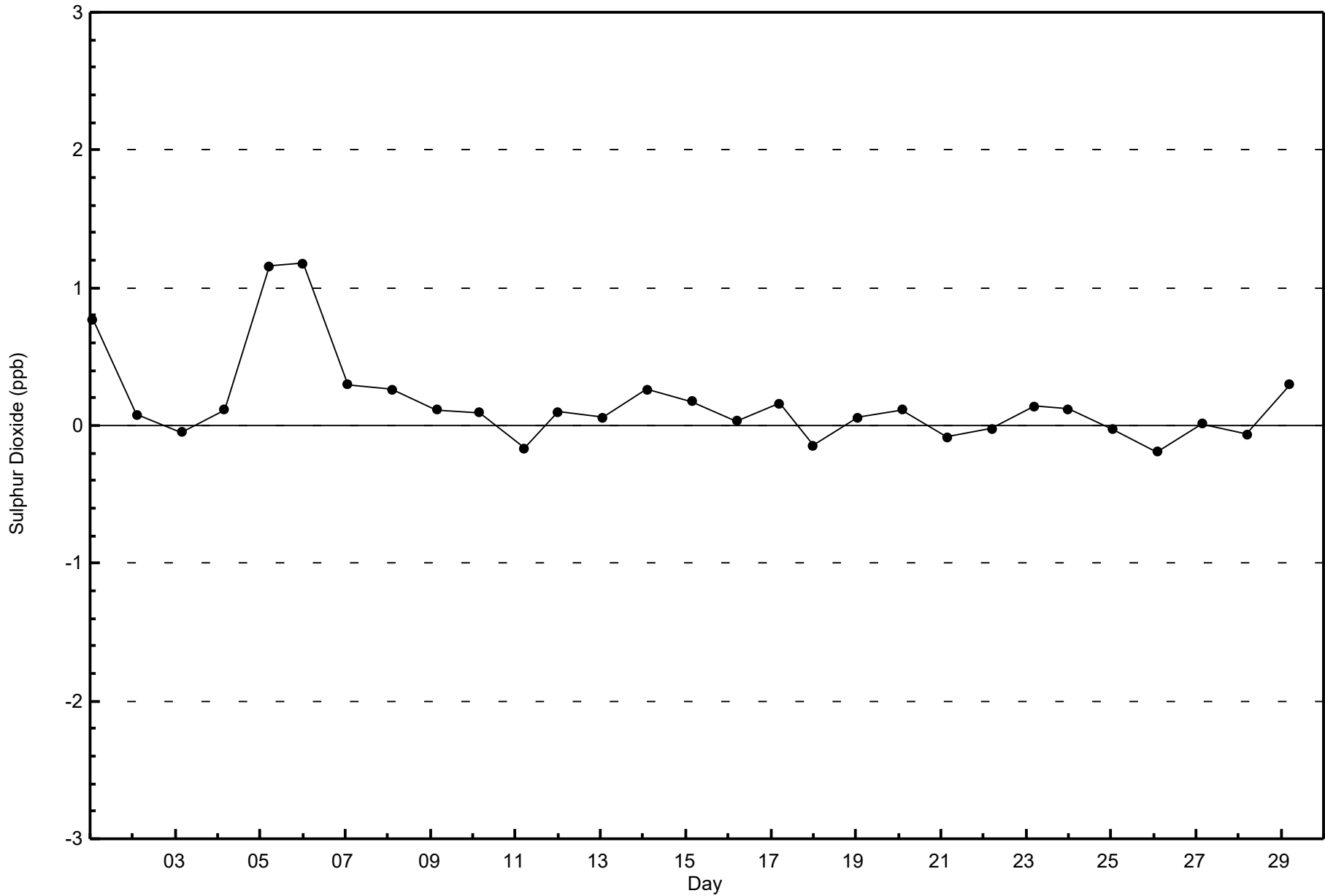


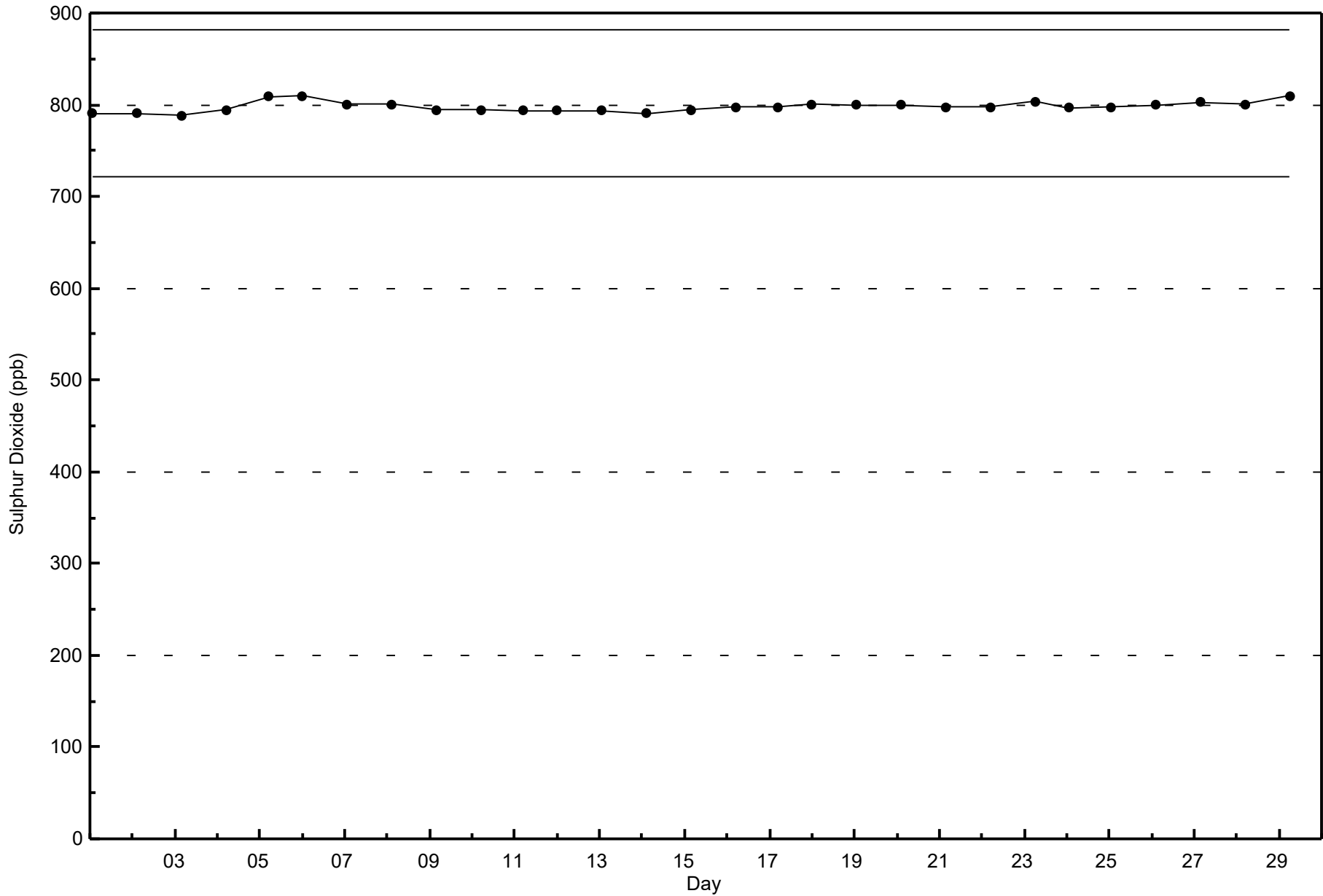
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Barge Landing



Total Number of Valid Hours: 662







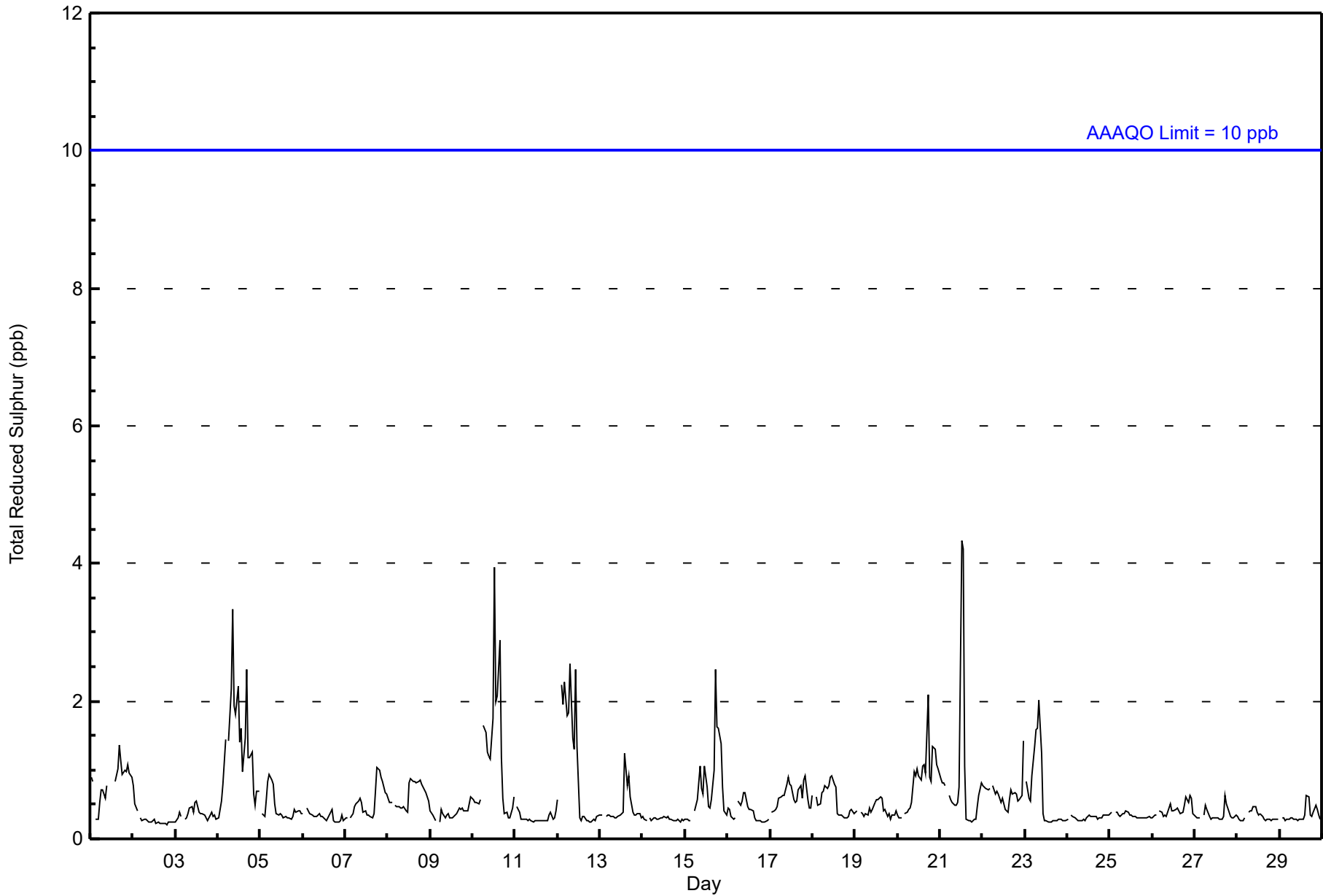
Wood Buffalo Environmental Association

Summary of Hour Averages

Total Reduced Sulphur (TRS) - ppb

Barge Landing - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														663						
Maximum Value: 4.3 ppb on Feb 21 13:00		Maximum Daily Average: 1.3 ppb on Feb 4														Hours of Data: 663										
Minimum Value: 0.2 ppb on Feb 2 20:00		Minimum Daily Average: 0.3 ppb on Feb 14														Hours of Missing Data: 33										
Maximum Diurnal Average: 0.7 ppb at hour 13		Minimum Diurnal Average: 0.4 ppb at hour 2														Hours of Calibration: 33										
Monthly Average: 0.56 ppb		Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.3 Median = 0.4 Q ₃ = 0.6 P ₉₀ = 1.0 P ₉₉ = 2.5														Percent Operational Time: 100.0										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.9	0.8	Z	0.3	0.3	0.5	0.7	0.7	0.6	0.8	C	C	C	C	0.8	1.0	1.4	1.1	0.9	1.0	1.0	1.1	0.9	0.9	0.8	1.4
2-Feb	0.8	0.5	0.4	Z	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.8
3-Feb	0.2	0.3	0.4	0.3	Z	0.3	0.3	0.4	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.5
4-Feb	0.3	0.4	0.5	0.8	1.4	Z	1.4	2.2	3.3	1.9	1.8	2.2	1.4	1.6	1.0	1.5	2.5	1.2	1.2	1.3	0.6	0.5	0.7	0.7	1.3	3.3
5-Feb	Z	0.4	0.3	0.6	0.8	0.9	0.9	0.8	0.5	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.9
6-Feb	0.4	Z	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.5
7-Feb	0.3	0.3	Z	0.3	0.4	0.5	0.5	0.5	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.7	1.0	1.0	0.9	0.8	0.7	0.6	0.5	1.0
8-Feb	0.6	0.5	0.5	Z	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.8	0.9	0.8	0.8	0.8	0.8	0.9	0.8	0.8	0.7	0.6	0.5	0.6	0.9
9-Feb	0.4	0.3	0.3	0.3	Z	0.2	0.4	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.4	0.6
10-Feb	0.6	0.5	0.5	0.5	0.6	Z	1.7	1.5	1.3	1.2	1.2	1.8	3.9	2.0	2.1	2.9	1.2	0.6	0.4	0.4	0.3	0.3	0.5	0.6	1.1	3.9
11-Feb	Z	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.3	0.5
12-Feb	0.6	Z	2.2	1.9	2.3	1.8	1.8	2.5	1.5	1.3	2.5	1.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.4	1.0	2.5
13-Feb	0.4	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	1.2	0.8	0.9	0.6	0.4	0.3	0.3	0.4	0.4	0.3	0.4	1.2
14-Feb	0.3	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3
15-Feb	0.3	0.3	0.3	0.3	Z	0.4	0.5	0.6	1.1	0.7	0.7	1.1	0.7	0.5	0.4	0.6	1.0	2.5	1.6	1.6	1.4	0.8	0.4	0.3	0.8	2.5
16-Feb	0.4	0.4	0.3	0.3	0.3	Z	0.6	0.5	0.6	0.7	0.7	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.4	0.7	0.7
17-Feb	Z	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.8	0.9	0.8	0.8	0.6	0.5	0.5	0.7	0.8	0.6	0.9	0.9	0.6	0.4	0.5	0.6	0.9
18-Feb	0.6	Z	0.6	0.5	0.5	0.7	0.7	0.8	0.7	0.8	0.9	0.9	0.8	0.8	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.6	0.9
19-Feb	0.4	0.4	Z	0.4	0.4	0.3	0.4	0.3	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.4	0.4	0.3	0.4	0.3	0.3	0.4	0.4	0.4	0.6
20-Feb	0.4	0.3	0.3	Z	0.4	0.4	0.4	0.4	0.5	1.0	0.9	1.0	0.9	0.9	1.1	1.1	1.0	2.1	0.9	0.8	1.3	1.3	1.1	1.0	0.8	2.1
21-Feb	0.9	0.8	0.8	0.8	Z	0.6	0.6	0.5	0.5	0.5	0.5	0.7	4.3	4.2	1.1	0.3	0.3	0.3	0.2	0.3	0.3	0.5	0.6	0.8	0.9	4.3
22-Feb	0.8	0.8	0.7	0.7	0.7	Z	0.8	0.7	0.7	0.6	0.5	0.6	0.5	0.4	0.4	0.6	0.7	0.6	0.7	0.7	0.5	0.6	0.6	1.4	0.7	1.4
23-Feb	Z	0.8	0.6	0.5	0.9	1.4	1.6	1.6	2.0	1.3	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	2.0
24-Feb	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4
25-Feb	0.4	0.4	Z	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
26-Feb	0.3	0.4	0.4	Z	0.4	0.4	0.3	0.3	0.3	0.4	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.6	0.5	0.6	0.6	0.4	0.4	0.6
27-Feb	0.3	0.3	0.3	0.3	Z	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.6
28-Feb	0.3	0.3	0.3	0.3	0.3	Z	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5
29-Feb	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.6	0.3	0.3	0.4	0.5	0.4	0.3	0.3	0.3	0.6
																								Diurnal Average		
																								Diurnal Maximum		
0.5 0.4 0.5 0.5 0.6 0.5 0.6 0.7 0.7 0.6 0.6 0.6 0.7 0.6 0.6 0.6 0.6 0.6 0.6 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5																										
0.9 0.8 2.2 1.9 2.3 1.8 1.8 2.5 3.3 1.9 2.5 2.2 4.3 4.2 2.1 2.9 2.5 2.5 1.6 1.6 1.4 1.3 1.1 1.4																										
Z - zerospan C - Calibration																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																										





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Barge Landing - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	657	99.10	99.10
3 - 4	6	0.90	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Barge Landing - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	88	58	36	15	9	21	46	97	56	31	35	34	13	20	17	80	656
3 - 4	0	0	0	0	0	0	0	2	3	0	1	0	0	0	0	0	6
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	88	58	36	15	9	21	46	99	59	31	36	34	13	20	17	80	662

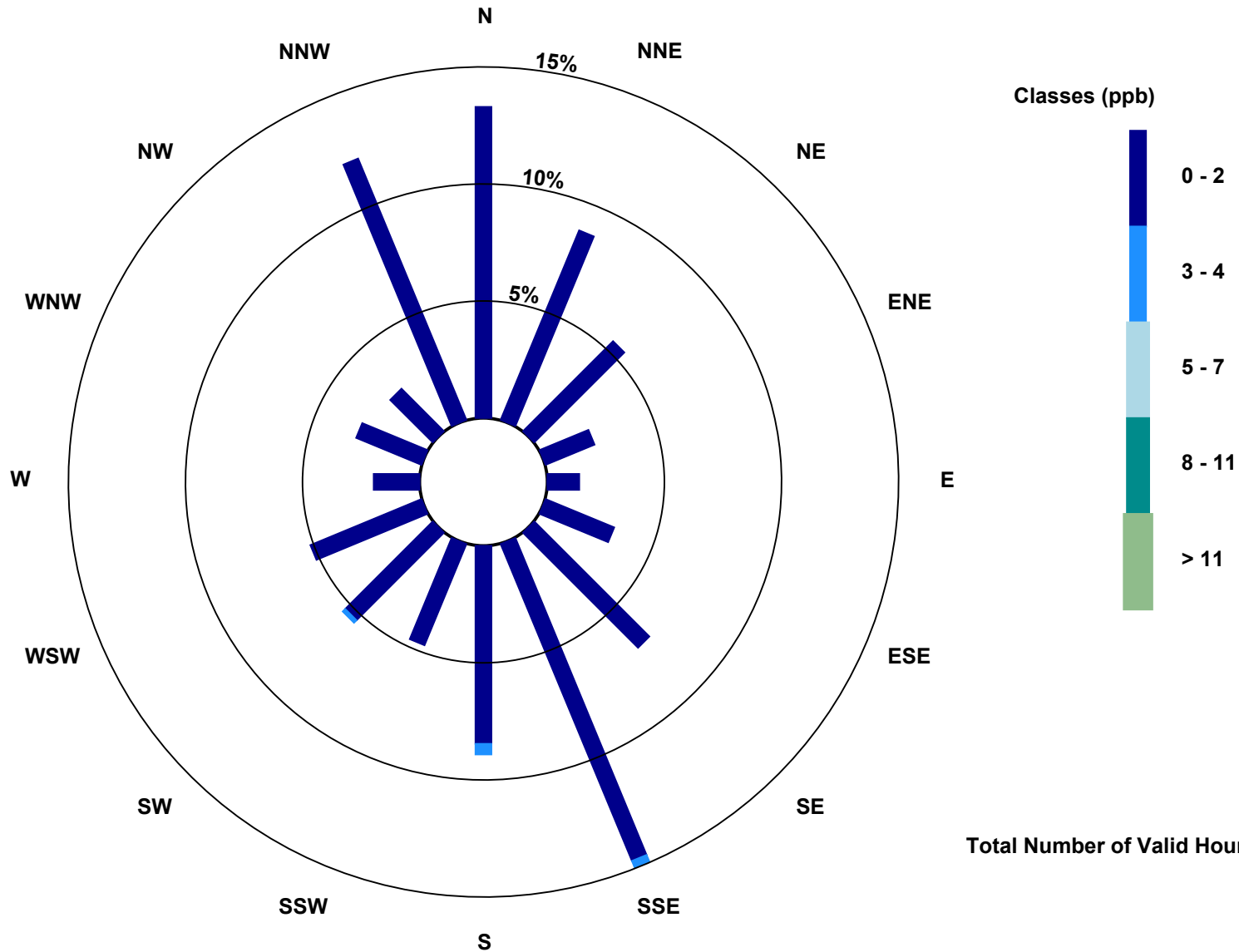
Total Number of Valid Hours: 662

Total Number of Hours: 696

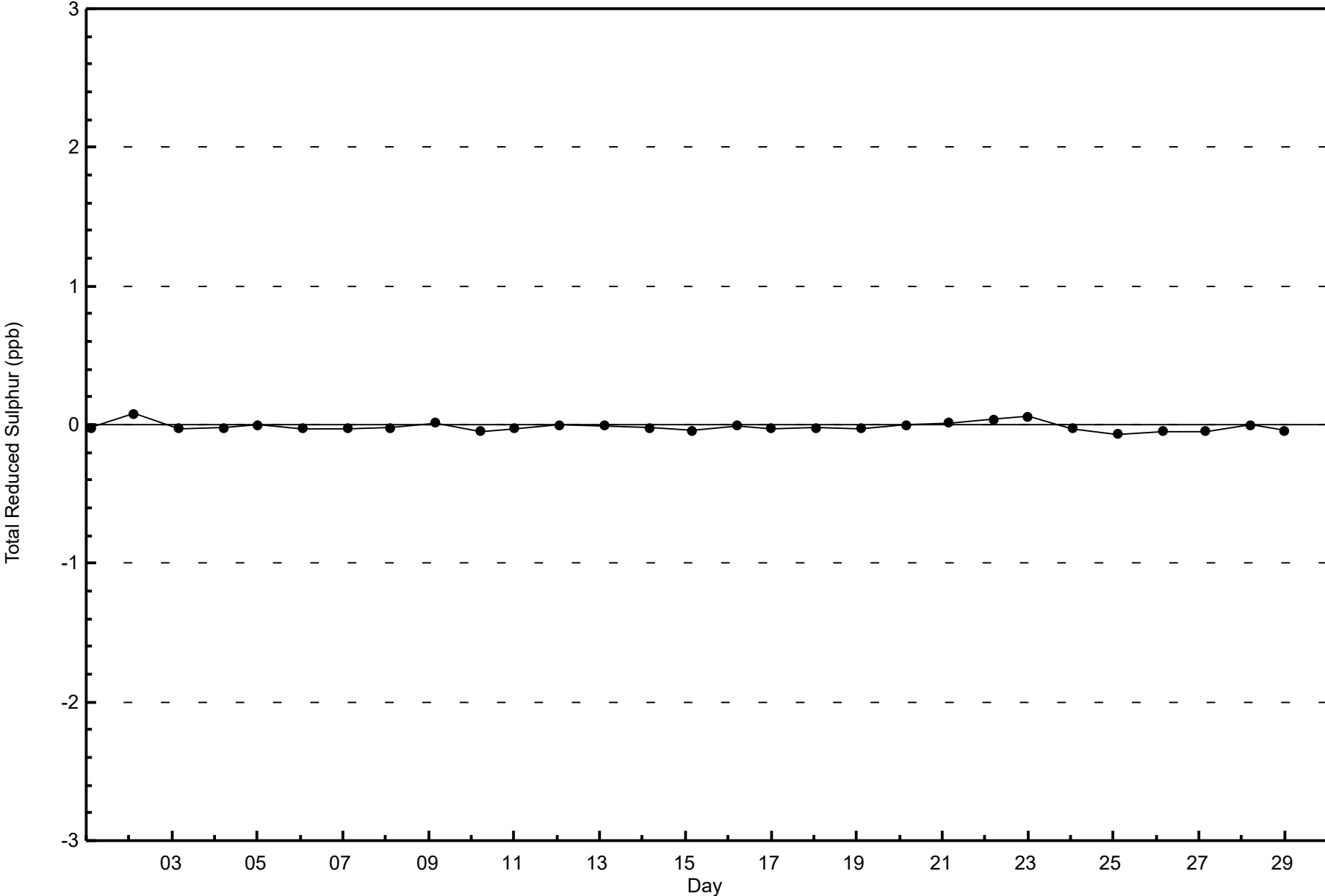


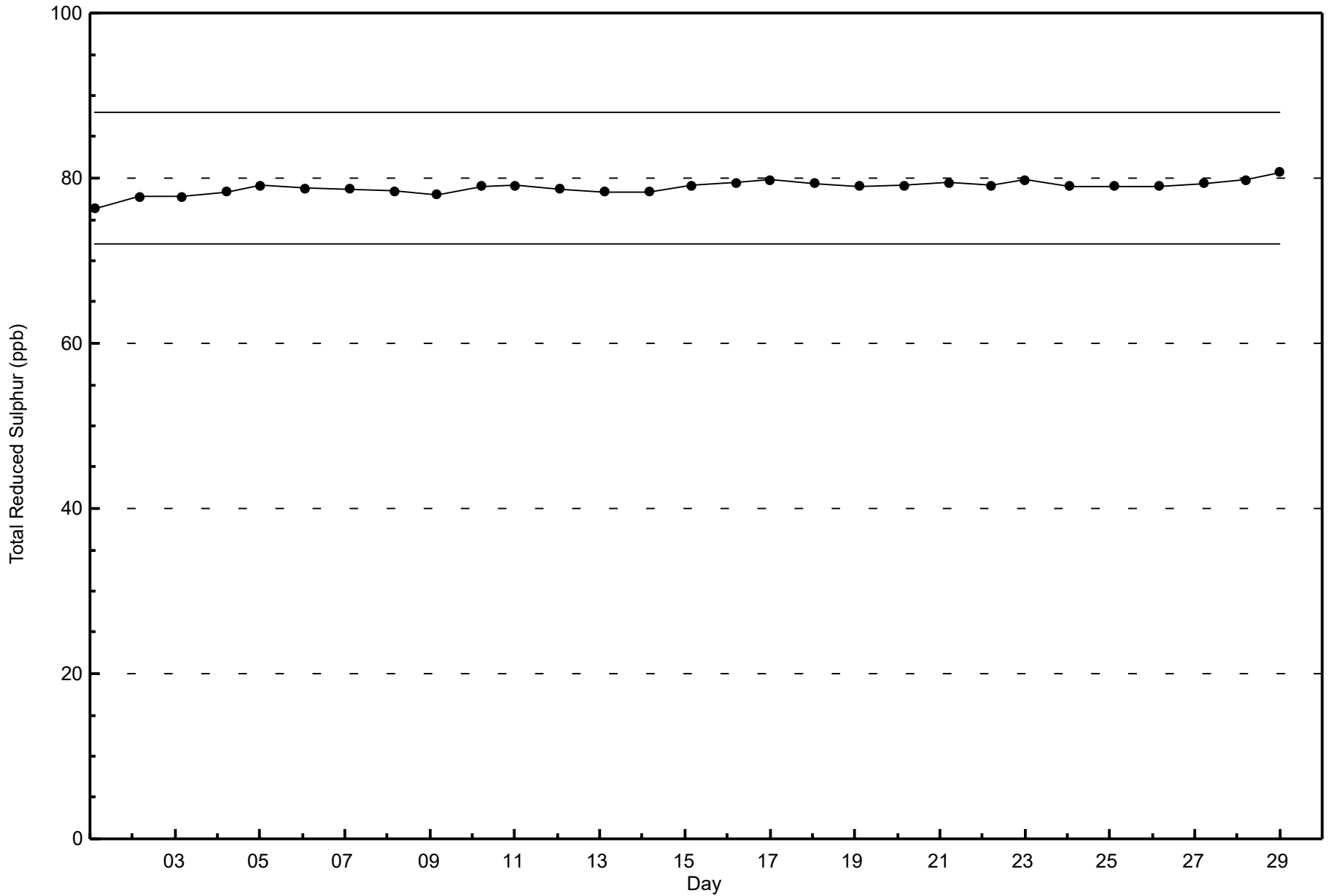
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Reduced Sulphur (TRS) - ppb
Barge Landing



Total Number of Valid Hours: 662







Wood Buffalo Environmental Association
Summary of Hour Averages

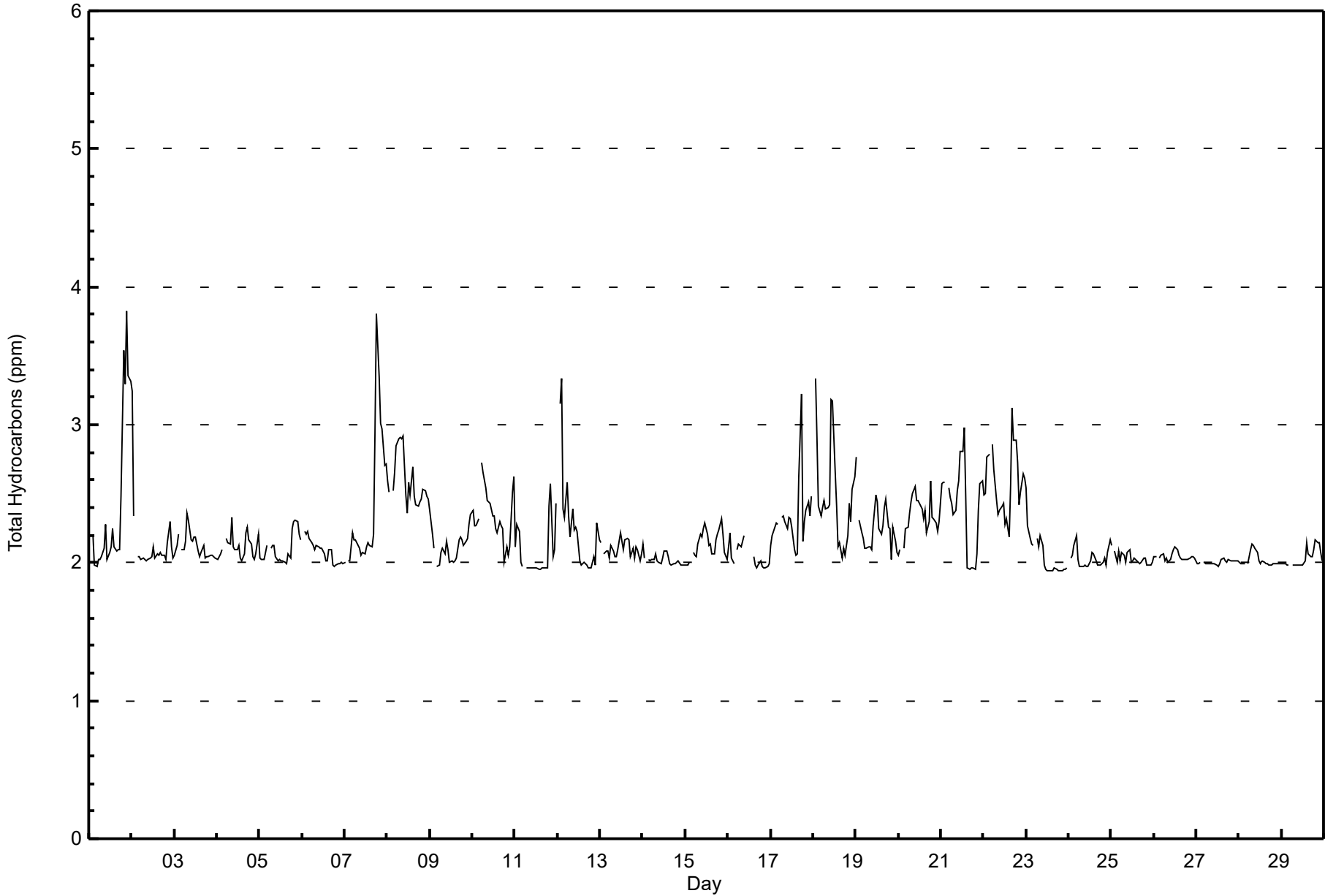
Total Hydrocarbons (THC) - ppm
Barge Landing - February 2024

Maximum Value: 3.8 ppm on Feb 1 22:00		Maximum Daily Average: 2.6 ppm on Feb 8		Hours in Service: 696																						
Minimum Value: 1.9 ppm on Feb 23 15:00		Minimum Daily Average: 2.0 ppm on Feb 27		Hours of Data: 663																						
Maximum Diurnal Average: 2.3 ppm at hour 1		Minimum Diurnal Average: 2.1 ppm at hour 16		Hours of Missing Data: 33																						
Monthly Average: 2.20 ppm		Percentiles: P ₁ = 1.9 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.1 Q ₃ = 2.3 P ₉₀ = 2.5 P ₉₉ = 3.3		Hours of Calibration: 33																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.9	Z	2.2	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.0	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.5	3.5	3.3	3.8	3.4	3.3	2.4	3.8
2-Feb	3.2	2.3	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.3	2.1	2.0	2.1	3.2
3-Feb	2.1	2.1	2.2	Z	2.1	2.1	2.2	2.4	2.3	2.2	2.2	2.2	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.1	2.1	2.4
4-Feb	2.0	2.0	2.1	2.1	Z	2.2	2.1	2.1	2.3	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.2	2.3	2.2	2.1	2.0	2.0	2.1	2.2	2.1	2.3
5-Feb	2.0	2.0	2.0	2.1	2.1	Z	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.2	2.3	2.3	2.3	2.2	2.2	2.1	2.3
6-Feb	Z	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2
7-Feb	2.0	Z	2.0	2.0	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.9	3.8	3.3	3.0	3.0	2.7	2.7	2.4	3.8
8-Feb	2.6	2.5	Z	2.5	2.7	2.8	2.9	2.9	2.9	2.9	2.5	2.4	2.6	2.5	2.7	2.5	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.6	2.9
9-Feb	2.4	2.2	2.1	Z	2.0	2.0	2.1	2.1	2.1	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.1	2.2	2.2	2.3	2.3	2.1	2.4
10-Feb	2.4	2.3	2.3	2.3	Z	2.7	2.7	2.5	2.5	2.4	2.4	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.0	2.1	2.1	2.1	2.5	2.6	2.3	2.7
11-Feb	2.1	2.3	2.2	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.6	2.0	2.1	2.4	2.1	2.6
12-Feb	Z	3.2	3.3	2.4	2.3	2.6	2.3	2.2	2.4	2.2	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.2	2.2	2.3	3.3
13-Feb	2.1	Z	2.1	2.1	2.1	2.0	2.1	2.1	2.0	2.0	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.0	2.1	2.0	2.1	2.1	2.0	2.1	2.1	2.2
14-Feb	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
15-Feb	2.0	2.0	2.0	Z	2.1	2.1	2.0	2.1	2.2	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.1	2.0	2.1	2.3
16-Feb	2.1	2.2	2.0	2.0	Z	2.1	2.1	2.1	2.2	2.2	C	C	C	C	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2
17-Feb	2.1	2.2	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.1	2.1	2.1	2.6	3.2	2.2	2.3	2.4	2.4	2.3	2.5	2.3	3.2
18-Feb	Z	3.3	2.9	2.4	2.3	2.4	2.4	2.4	2.4	2.4	3.2	3.2	2.7	2.4	2.1	2.1	2.0	2.1	2.1	2.2	2.4	2.3	2.5	2.6	2.5	3.3
19-Feb	2.8	Z	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.3	2.5	2.4	2.2	2.2	2.3	2.4	2.5	2.3	2.2	2.0	2.3	2.2	2.1	2.3	2.8
20-Feb	2.1	2.1	Z	2.1	2.2	2.3	2.4	2.4	2.5	2.6	2.5	2.5	2.4	2.4	2.3	2.4	2.2	2.3	2.6	2.3	2.3	2.3	2.2	2.3	2.3	2.6
21-Feb	2.6	2.6	2.6	Z	2.5	2.5	2.4	2.3	2.4	2.5	2.6	2.8	2.8	3.0	2.5	2.0	2.0	2.0	2.0	2.0	2.1	2.4	2.6	2.6	2.4	3.0
22-Feb	2.5	2.5	2.8	2.8	Z	2.9	2.7	2.5	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.6	3.1	2.9	2.9	2.7	2.4	2.5	2.6	2.6	2.6	3.1
23-Feb	2.5	2.3	2.2	2.1	2.1	Z	2.2	2.1	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.5
24-Feb	Z	2.0	2.1	2.1	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.0	2.2
25-Feb	2.1	Z	2.1	2.0	2.1	2.0	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
26-Feb	2.0	2.0	Z	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
27-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
29-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.2
																								Diurnal Average		
																								Diurnal Maximum		
																								2.3 2.3 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.1 2.1 2.1 2.1 2.2 2.2 2.2 2.2 2.2 2.2 2.3		
																								3.2 3.3 3.3 2.8 2.7 2.9 2.9 2.9 2.9 2.9 3.2 3.2 2.8 3.0 2.7 2.6 3.1 3.2 3.8 3.5 3.3 3.8 3.4 3.3		
Z - zerospan C - Calibration																										



Wood Buffalo Environmental Association
Hourly Averages

Total Hydrocarbons (THC) - ppm
Barge Landing - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Barge Landing - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	255	38.46	38.46
2.1 - 3.0	393	59.28	97.74
3.1 - 10.0	15	2.26	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Barge Landing - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	29	17	22	9	2	15	38	25	6	10	19	28	4	13	5	13	255
2.1 - 3.0	56	36	14	4	7	6	12	71	52	20	16	7	9	9	11	62	392
3.1 - 10.0	3	2	2	0	0	0	0	2	0	0	0	0	0	0	0	6	15
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	88	55	38	13	9	21	50	98	58	30	35	35	13	22	16	81	662

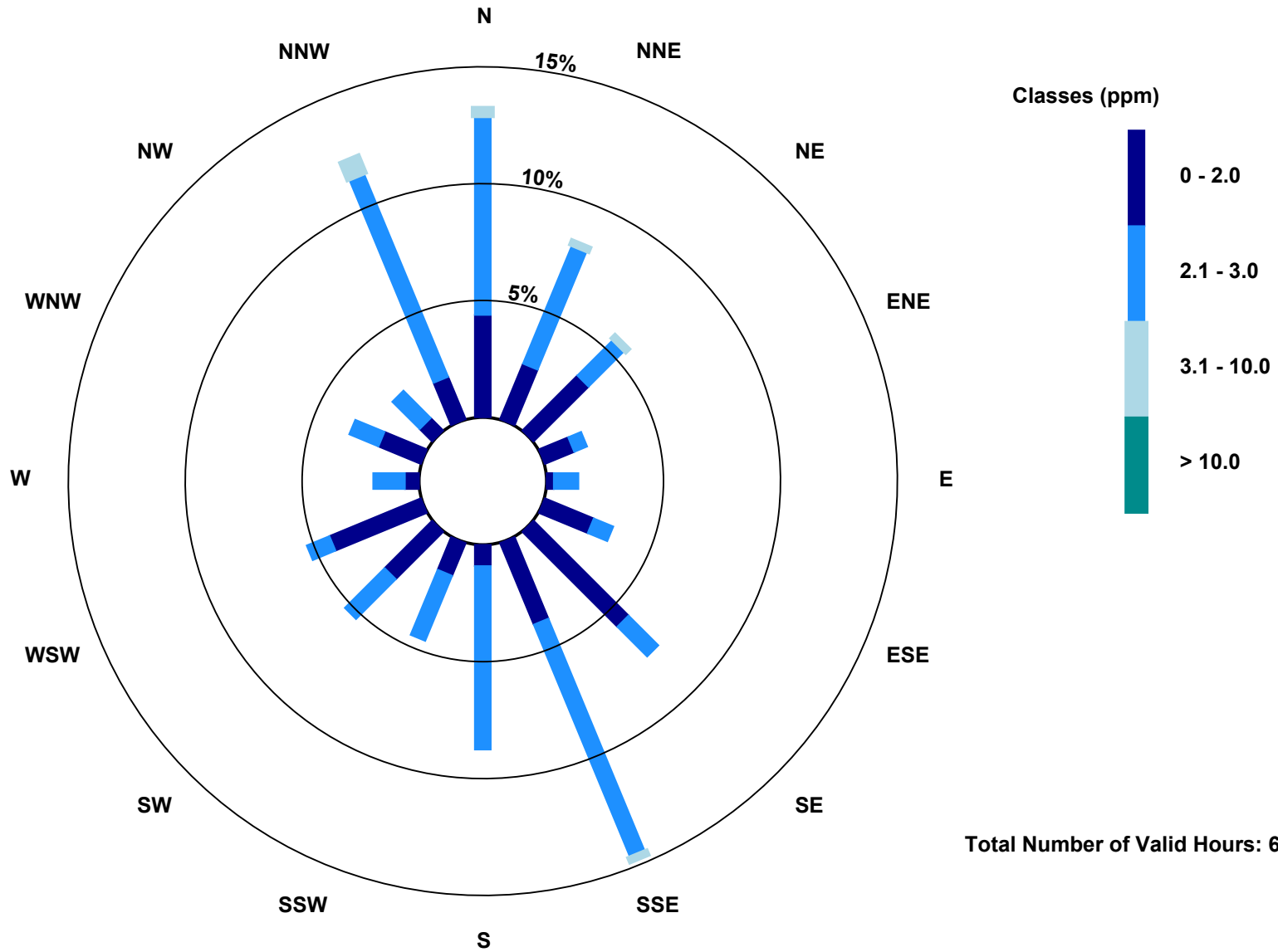
Total Number of Valid Hours: 662

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

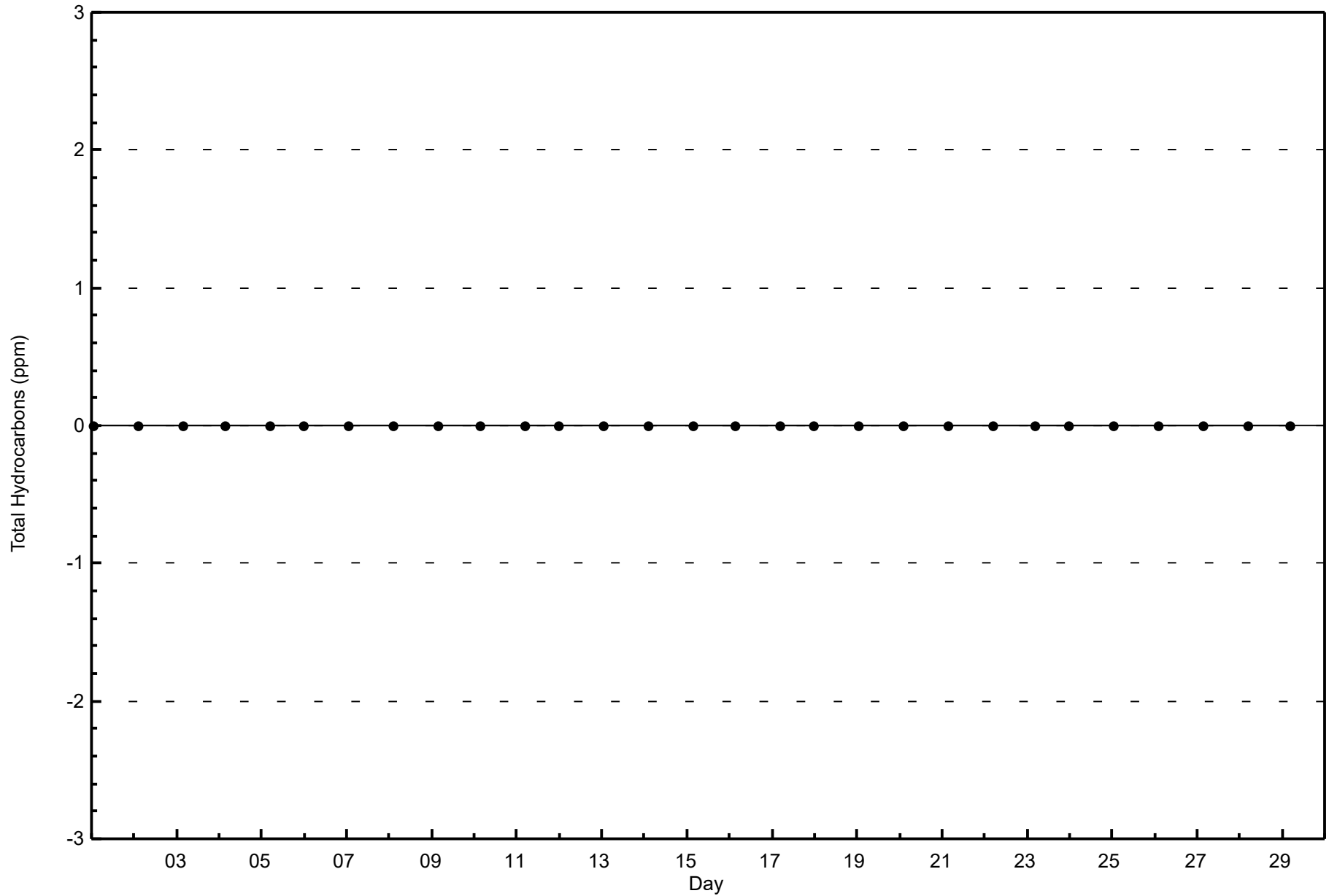
Total Hydrocarbons (THC) - ppm
Barge Landing

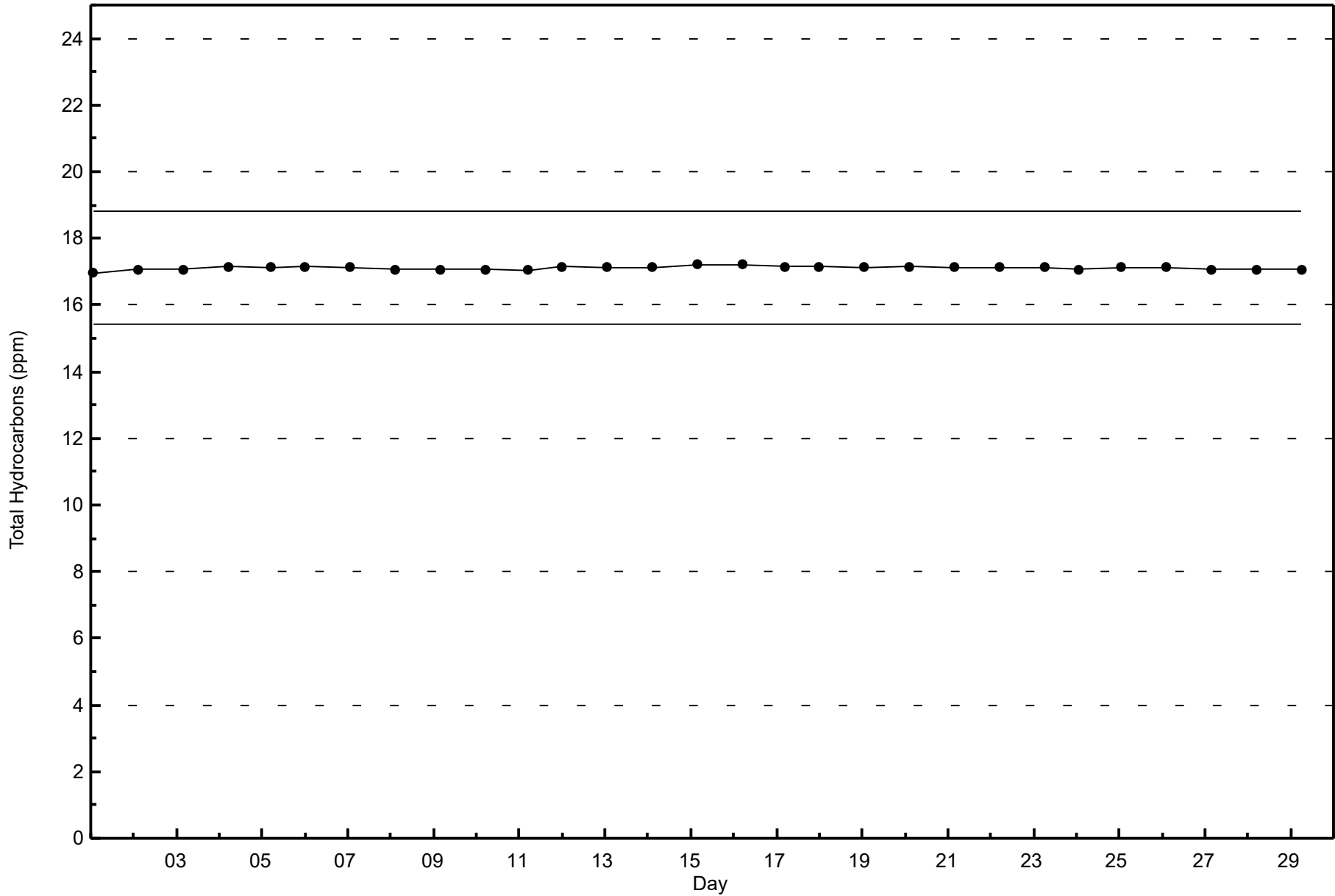




Wood Buffalo Environmental Association
Zero Responses

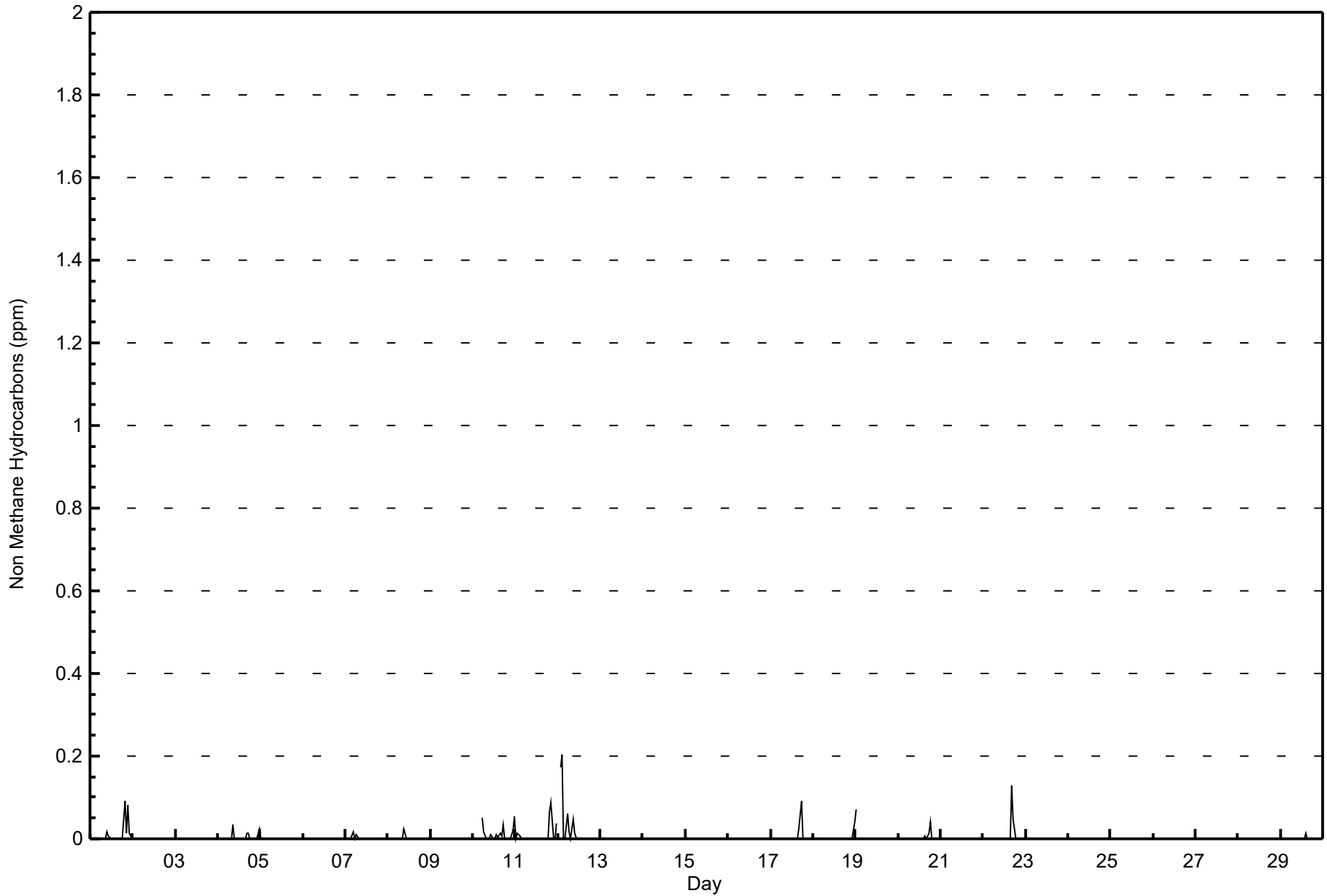
Total Hydrocarbons (THC) - ppm
Barge Landing - February 2024







Maximum Value: 0.204 ppm on Feb 12 03:00		Maximum Daily Average: 0.023 ppm on Feb 12		Hours in Service:	696																																												
Minimum Value: 0.000 ppm on Feb 1 01:00		Minimum Daily Average: 0.000 ppm on Feb 2		Hours of Data:	663																																												
Maximum Diurnal Average: 0.009 ppm at hour 3		Minimum Diurnal Average: 0.000 ppm at hour 8		Hours of Missing Data:	33																																												
Monthly Average: 0.003 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.1		Hours of Calibration:	33																																												
				Percent Operational Time:	100.0																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.014	0.083	0.014	0.000	0.010	0.090																							
2-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
3-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
4-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.022	0.004	0.035																							
5-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
6-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
7-Feb	0.000	Z	0.000	0.000	0.018	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.018	0.018																						
8-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.023	0.023																						
9-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
10-Feb	0.000	0.000	0.000	0.000	Z	0.052	0.017	0.000	0.000	0.001	0.010	0.000	0.000	0.010	0.004	0.013	0.008	0.034	0.000	0.000	0.000	0.000	0.019	0.054	0.010	0.054	0.054																						
11-Feb	0.000	0.015	0.006	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.065	0.088	0.000	0.000	0.036	0.009	0.088																							
12-Feb	Z	0.172	0.204	0.002	0.000	0.060	0.018	0.000	0.046	0.015	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.023	0.204																							
13-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
14-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
15-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
16-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	C	C	C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
17-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.093	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005	0.093																							
18-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.041	0.002	0.041	0.041																						
19-Feb	0.071	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.071	0.071																							
20-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.014	0.041	0.000	0.000	0.000	0.000	0.000	0.003	0.003	0.041	0.041																						
21-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
22-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.129	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.008	0.129	0.129																						
23-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
24-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
25-Feb	0.002	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002																						
26-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
27-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
28-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001																						
29-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.012	0.012																						
																								0.003	0.008	0.009	0.000	0.001	0.005	0.002	0.000	0.003	0.002	0.001	0.000	0.000	0.001	0.001	0.006	0.007	0.001	0.005	0.004	0.003	0.001	0.005	Diurnal Average		
																								0.071	0.172	0.204	0.002	0.018	0.060	0.018	0.000	0.046	0.023	0.010	0.000	0.000	0.010	0.012	0.013	0.129	0.093	0.041	0.090	0.088	0.083	0.019	0.054	Diurnal Maximum	
Z - zerospan		C - Calibration																																															





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Barge Landing - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	620	93.51	93.51
0.006 - 0.05	33	4.98	98.49
0.06 - 0.1	8	1.21	99.70
> 0.1	2	0.30	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Barge Landing - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	84	53	36	13	9	21	47	85	48	24	34	35	13	22	16	79	619
0.006 - 0.05	2	0	1	0	0	0	3	10	9	5	1	0	0	0	0	2	33
0.06 - 0.1	2	2	1	0	0	0	0	1	1	1	0	0	0	0	0	0	8
> 0.1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Totals	88	55	38	13	9	21	50	98	58	30	35	35	13	22	16	81	662

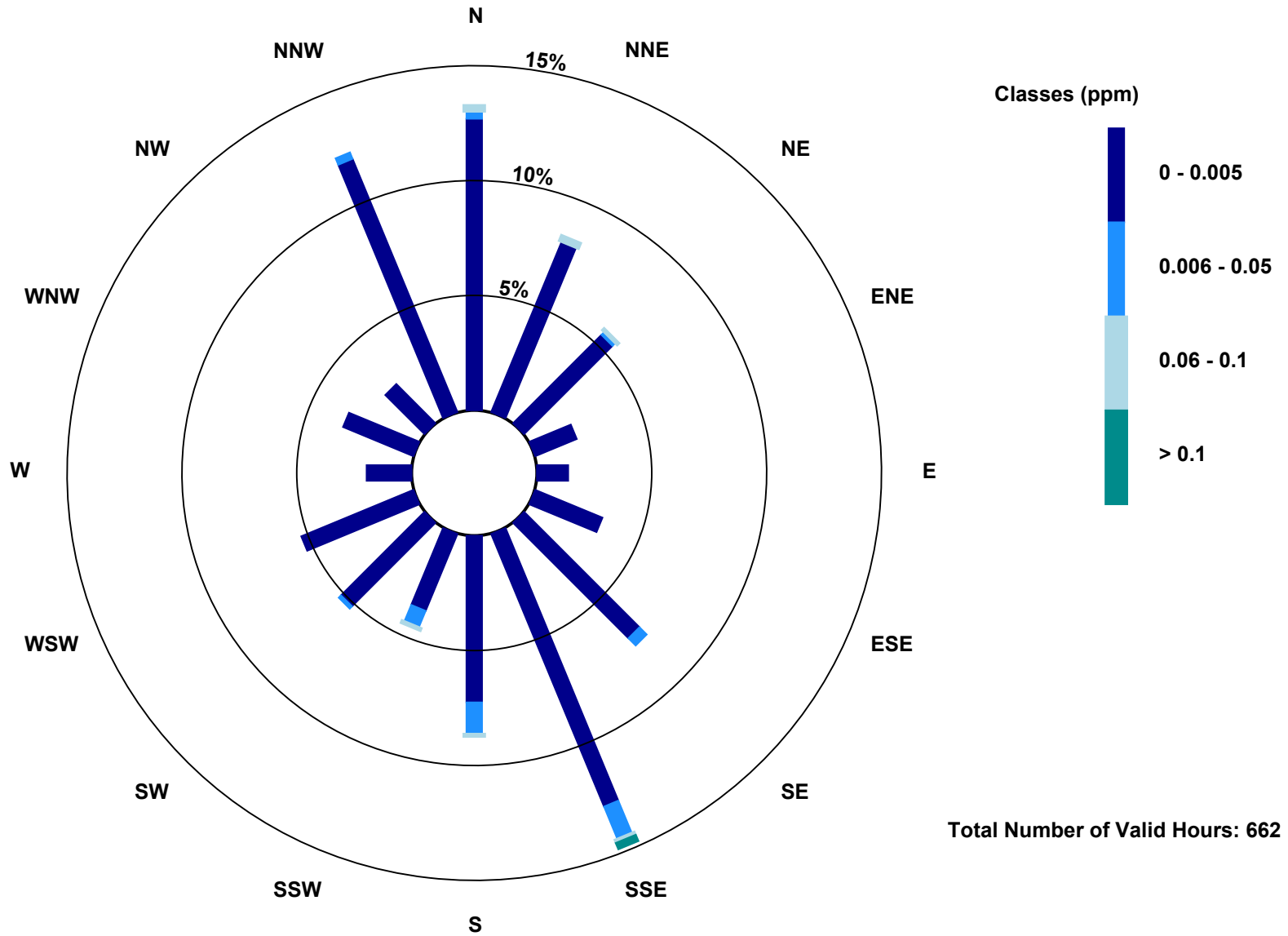
Total Number of Valid Hours: 662

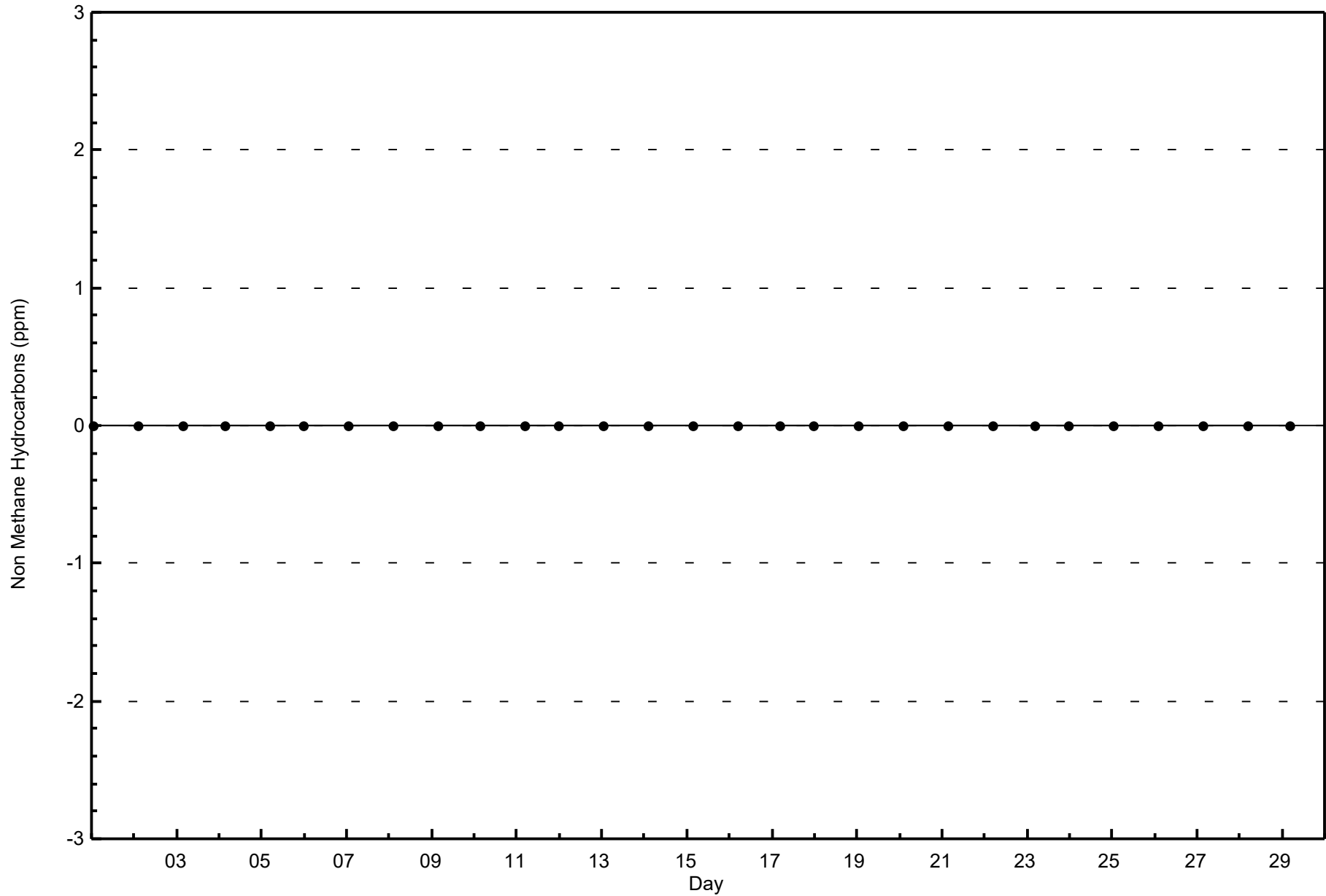
Total Number of Hours: 696

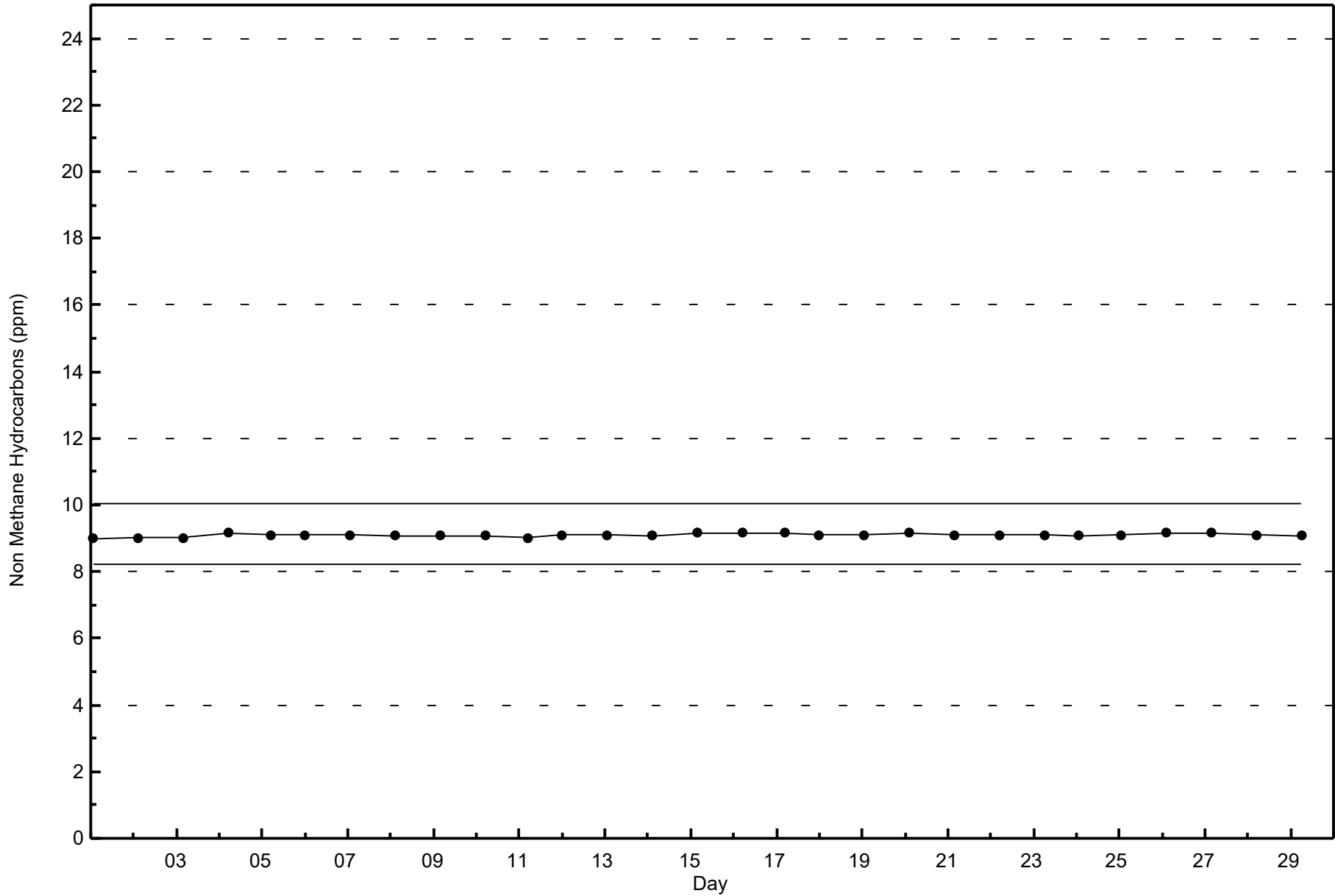


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Barge Landing

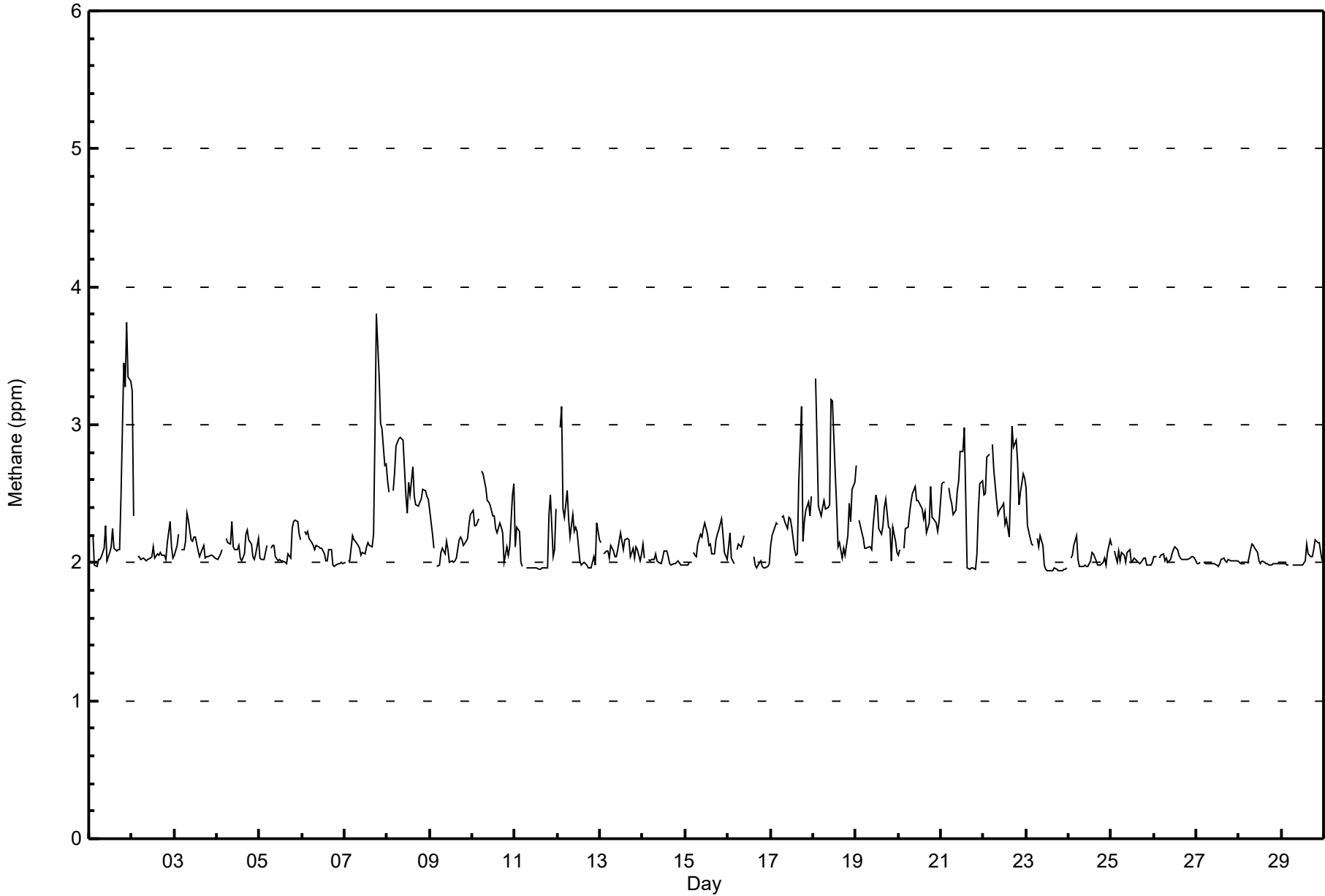








Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																		Hours in Service:	696				
Maximum Value: 3.8 ppm on Feb 7 19:00		Maximum Daily Average: 2.6 ppm on Feb 8																	Hours of Data:	663						
Minimum Value: 1.9 ppm on Feb 23 15:00		Minimum Daily Average: 2.0 ppm on Feb 27																	Hours of Missing Data:	33						
Maximum Diurnal Average: 2.3 ppm at hour 1		Minimum Diurnal Average: 2.1 ppm at hour 16																	Hours of Calibration:	33						
Monthly Average: 2.19 ppm		Percentiles: P ₁ = 1.9 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.1 Q ₃ = 2.3 P ₉₀ = 2.5 P ₉₉ = 3.3																	Percent Operational Time:	100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.9	Z	2.2	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.0	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.5	3.4	3.3	3.7	3.3	3.3	2.4	3.7
2-Feb	3.2	2.3	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.3	2.1	2.0	2.1	3.2
3-Feb	2.1	2.1	2.2	Z	2.1	2.1	2.2	2.4	2.3	2.2	2.2	2.2	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.1	2.1	2.4
4-Feb	2.0	2.0	2.1	2.1	Z	2.2	2.1	2.1	2.3	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.2	2.2	2.2	2.1	2.0	2.0	2.1	2.2	2.1	2.3
5-Feb	2.0	2.0	2.0	2.1	2.1	Z	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.2	2.3	2.3	2.3	2.2	2.2	2.1	2.3
6-Feb	Z	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2
7-Feb	2.0	Z	2.0	2.0	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.9	3.8	3.3	3.0	3.0	2.7	2.7	2.4	3.8
8-Feb	2.6	2.5	Z	2.5	2.7	2.8	2.9	2.9	2.9	2.9	2.5	2.4	2.6	2.5	2.7	2.5	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.6	2.9
9-Feb	2.4	2.2	2.1	Z	2.0	2.0	2.1	2.1	2.1	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.1	2.2	2.2	2.3	2.3	2.1	2.4
10-Feb	2.4	2.3	2.3	2.3	Z	2.7	2.6	2.5	2.5	2.4	2.4	2.3	2.3	2.2	2.2	2.3	2.3	2.2	2.0	2.1	2.1	2.1	2.5	2.6	2.3	2.7
11-Feb	2.1	2.3	2.2	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.5	2.0	2.1	2.4	2.1	2.5
12-Feb	Z	3.0	3.1	2.4	2.3	2.5	2.3	2.2	2.3	2.2	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.2	2.2	3.1
13-Feb	2.1	Z	2.1	2.1	2.1	2.0	2.1	2.1	2.0	2.0	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.0	2.1	2.0	2.1	2.1	2.0	2.1	2.1	2.2
14-Feb	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
15-Feb	2.0	2.0	2.0	Z	2.1	2.1	2.0	2.1	2.2	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.1	2.0	2.1	2.3
16-Feb	2.1	2.2	2.0	2.0	Z	2.1	2.1	2.1	2.2	2.2	C	C	C	C	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2
17-Feb	2.1	2.2	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.1	2.1	2.1	2.6	3.1	2.2	2.3	2.4	2.4	2.3	2.5	2.3	3.1
18-Feb	Z	3.3	2.9	2.4	2.3	2.4	2.4	2.4	2.4	2.4	3.2	3.2	2.7	2.4	2.1	2.1	2.0	2.1	2.1	2.2	2.4	2.3	2.5	2.6	2.5	3.3
19-Feb	2.7	Z	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.3	2.5	2.4	2.2	2.2	2.3	2.4	2.5	2.3	2.2	2.0	2.3	2.2	2.1	2.2	2.7
20-Feb	2.1	2.1	Z	2.1	2.2	2.3	2.4	2.4	2.5	2.6	2.5	2.5	2.4	2.4	2.3	2.4	2.2	2.3	2.6	2.3	2.3	2.3	2.2	2.3	2.3	2.6
21-Feb	2.6	2.6	2.6	Z	2.5	2.5	2.4	2.3	2.4	2.5	2.6	2.8	2.8	3.0	2.5	2.0	2.0	2.0	2.0	2.0	2.1	2.4	2.6	2.6	2.4	3.0
22-Feb	2.5	2.5	2.8	2.8	Z	2.9	2.7	2.5	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.6	3.0	2.8	2.9	2.7	2.4	2.5	2.6	2.6	2.6	3.0
23-Feb	2.5	2.3	2.2	2.1	2.1	Z	2.2	2.1	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.5
24-Feb	Z	2.0	2.1	2.1	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.0	2.2
25-Feb	2.1	Z	2.1	2.0	2.1	2.0	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
26-Feb	2.0	2.0	Z	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
27-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
29-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.2
2.3 2.3 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.1 2.1 2.1 2.1 2.2 2.2 2.2 2.2 2.2 2.2 2.3																								Diurnal Average		
3.2 3.3 3.1 2.8 2.7 2.9 2.9 2.9 2.9 2.9 3.2 3.2 2.8 3.0 2.7 2.6 3.0 3.1 3.8 3.4 3.3 3.7 3.3 3.3																								Diurnal Maximum		
Z - zerospan C - Calibration																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Barge Landing - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	255	38.46	38.46
2.1 - 3.0	395	59.58	98.04
3.1 - 10.0	13	1.96	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



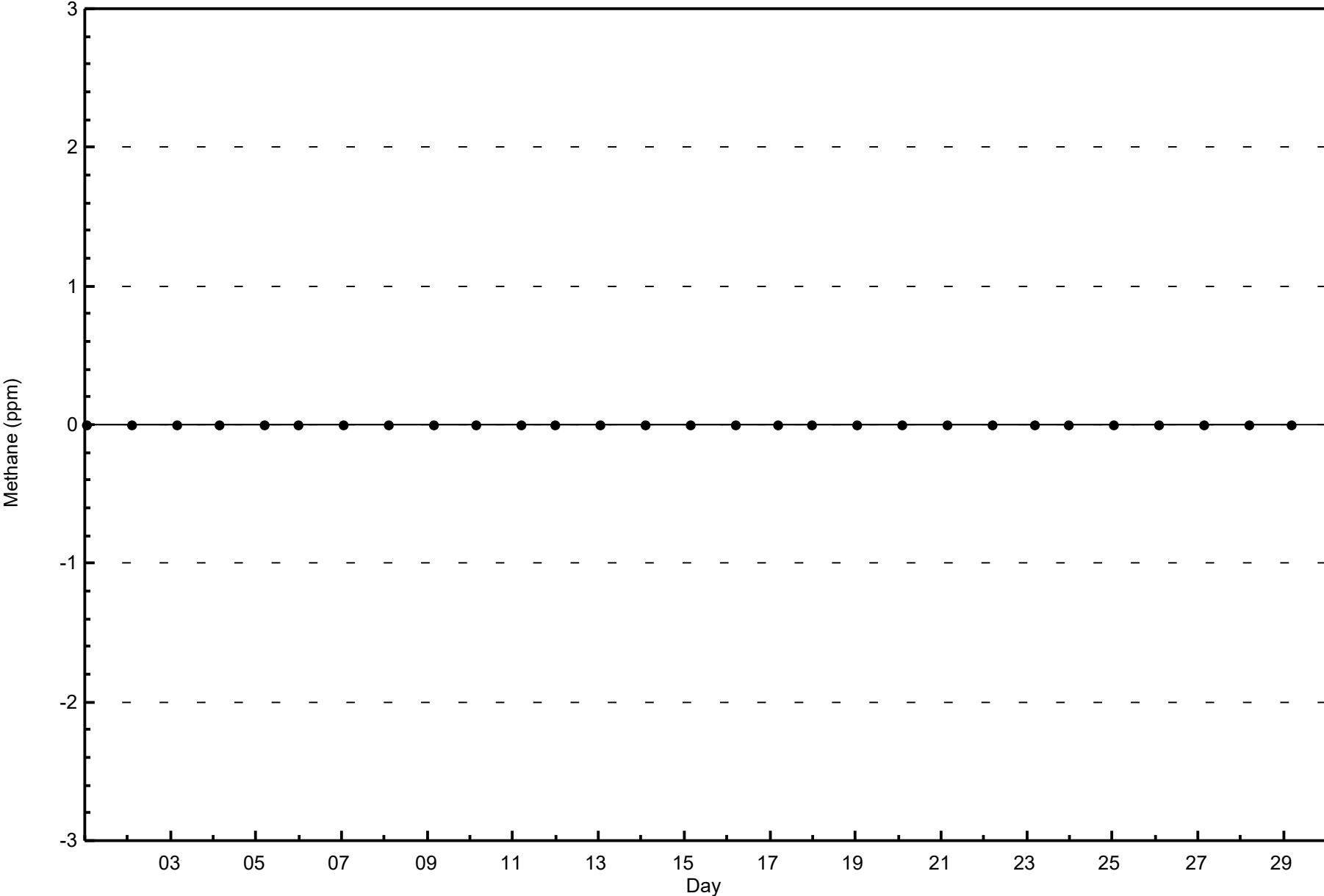
**Wood Buffalo Environmental Association
Frequency Distribution**

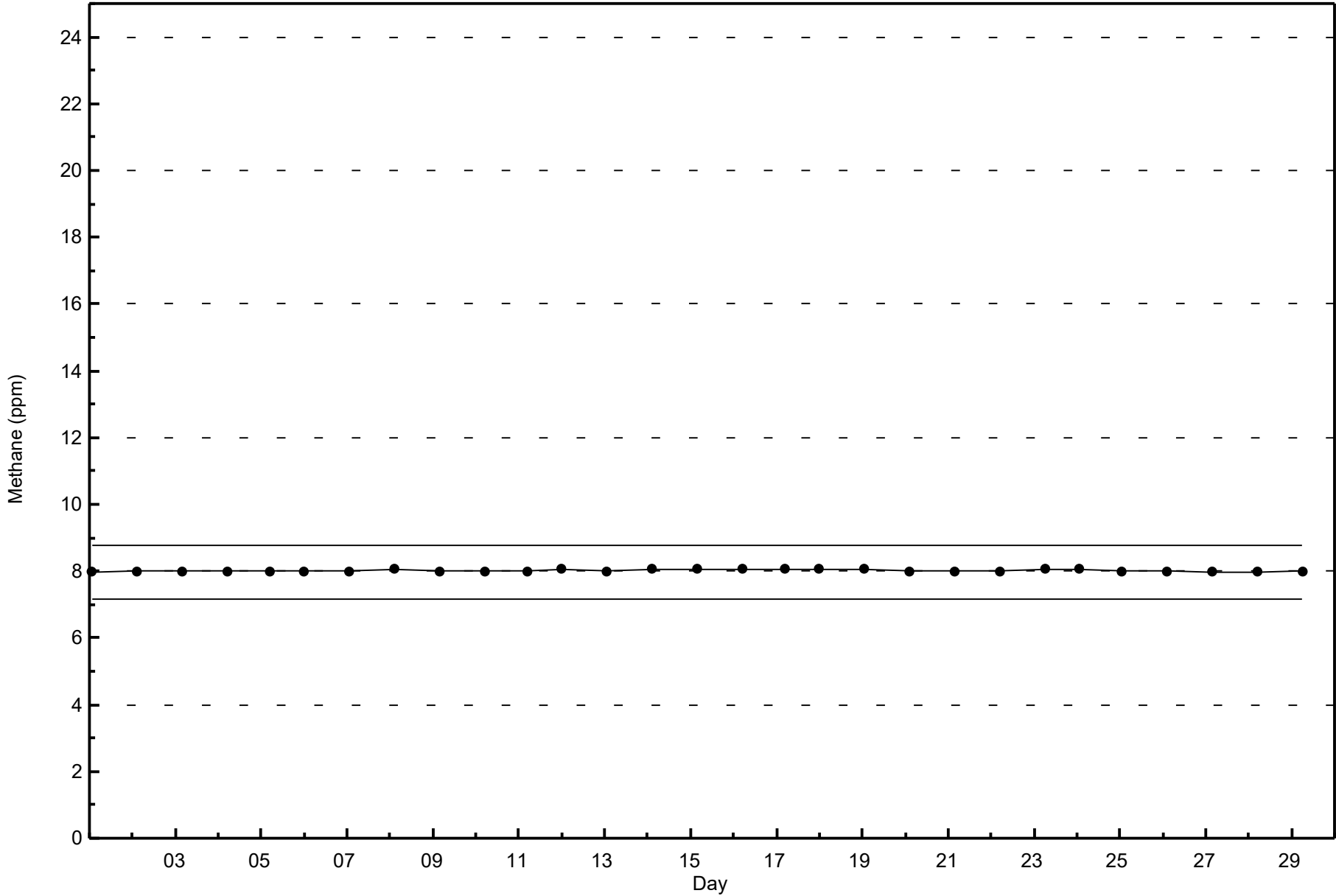
**Methane (CH₄) - ppm
Barge Landing - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	29	17	22	9	2	15	38	25	6	10	19	28	4	13	5	13	255
2.1 - 3.0	57	36	14	4	7	6	12	72	52	20	16	7	9	9	11	62	394
3.1 - 10.0	2	2	2	0	0	0	0	1	0	0	0	0	0	0	0	6	13
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	88	55	38	13	9	21	50	98	58	30	35	35	13	22	16	81	662

Total Number of Valid Hours: 662

Total Number of Hours: 696







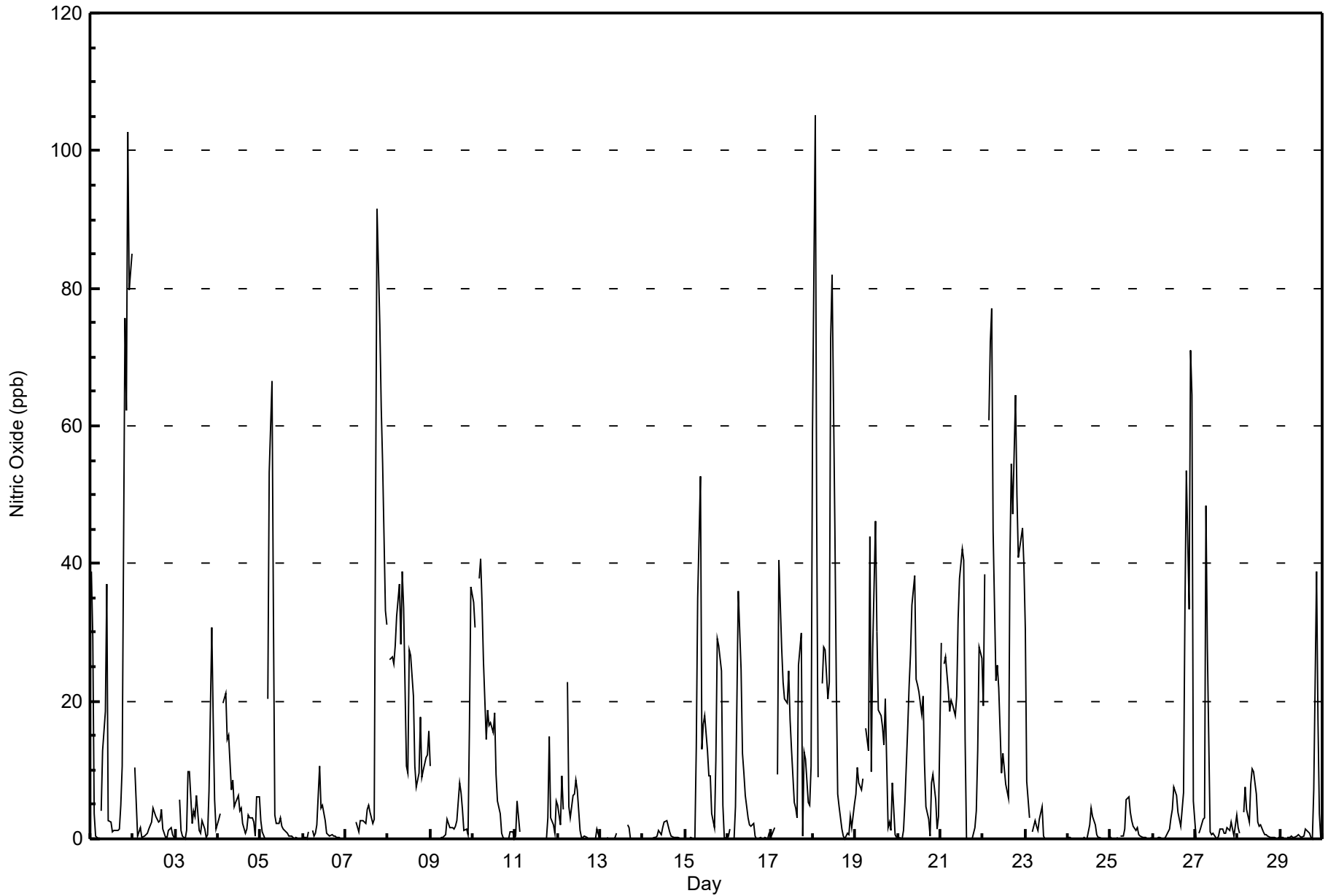
Wood Buffalo Environmental Association

Summary of Hour Averages

Nitric Oxide (NO) - ppb

Barge Landing - February 2024

Maximum Value: 105.1 ppb on Feb 18 02:00		Maximum Daily Average: 37.1 ppb on Feb 22		Hours in Service: 696																							
Minimum Value: 0.0 ppb on Feb 9 04:00		Minimum Daily Average: 0.3 ppb on Feb 13		Hours of Data: 662																							
Maximum Diurnal Average: 15.1 ppb at hour 6		Minimum Diurnal Average: 4.2 ppb at hour 16		Hours of Missing Data: 34																							
Monthly Average: 9.73 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 2.2 Q ₃ = 11.0 P ₉₀ = 30.8 P ₉₉ = 76.2		Hours of Calibration: 34																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	38.9	29.2	3.7	0.4	0.0	Z	4.0	12.8	18.4	37.1	2.7	2.4	1.1	1.3	1.2	1.3	1.4	4.8	10.6	75.6	62.3	102.7	79.7	85.0	25.1	102.7	
2-Feb	Z	10.3	0.4	1.0	1.6	0.2	0.4	0.7	0.8	1.4	2.4	4.5	3.9	3.2	2.4	2.7	4.2	1.5	0.1	0.2	1.3	1.6	0.7	0.1	2.0	10.3	
3-Feb	0.2	Z	5.8	1.2	0.4	0.1	1.3	9.7	9.7	2.2	4.0	3.3	6.4	1.2	0.7	2.6	1.4	0.2	0.6	6.8	30.8	17.3	5.7	1.4	4.9	30.8	
4-Feb	2.9	3.7	Z	19.8	21.1	14.4	15.0	7.1	8.6	4.8	5.3	6.4	4.1	4.4	2.3	0.9	1.3	3.4	3.1	3.1	2.4	0.3	6.0	6.2	6.4	21.1	
5-Feb	2.7	1.1	0.1	Z	20.2	53.2	66.4	32.7	3.5	2.2	2.2	3.1	1.9	1.4	1.1	0.8	0.4	0.4	0.2	0.1	0.2	0.1	0.1	0.1	8.4	66.4	
6-Feb	0.1	0.2	0.1	0.9	Z	1.3	0.3	0.8	2.0	10.5	4.5	4.8	2.6	0.9	0.6	0.5	0.5	0.4	0.3	0.1	0.1	0.0	0.0	0.1	1.4	10.5	
7-Feb	0.1	0.0	0.1	0.1	0.0	Z	2.3	1.0	2.6	2.7	2.7	2.3	4.3	4.9	3.8	2.2	2.9	49.6	91.5	74.7	62.5	54.5	33.2	31.2	18.7	91.5	
8-Feb	Z	26.0	26.4	25.5	28.1	32.4	37.0	28.3	38.8	33.6	10.5	9.6	27.4	26.7	20.8	10.6	7.6	9.5	17.7	9.0	9.9	11.9	12.2	15.7	20.7	38.8	
9-Feb	10.5	Z	0.0	0.0	0.0	0.1	0.3	0.3	0.6	2.8	2.3	1.6	1.6	1.4	1.9	2.7	8.2	6.7	4.2	1.2	1.4	0.7	16.2	36.6	4.4	36.6	
10-Feb	34.3	30.8	Z	37.9	40.7	34.2	25.9	14.4	18.7	16.5	16.9	15.5	18.2	9.4	5.5	3.6	0.7	0.2	0.0	0.0	0.0	1.1	1.0	0.1	14.2	40.7	
11-Feb	0.3	5.5	1.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	14.9	3.1	2.1	0.7	5.5	1.6	14.9	
12-Feb	4.9	2.1	9.1	4.4	Z	22.8	4.7	3.1	6.3	6.5	8.6	7.2	1.2	0.2	0.2	0.4	0.1	0.0	0.0	0.0	0.0	0.0	1.3	0.1	3.6	22.8	
13-Feb	0.0	0.0	0.0	0.1	0.1	Z	0.0	0.0	0.3	0.7	C	C	C	C	C	2.1	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.1	
14-Feb	Z	0.0	0.1	0.1	0.0	0.1	0.1	0.2	0.5	1.1	0.7	1.6	2.4	2.6	1.8	1.0	0.5	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.6	2.6	
15-Feb	0.0	Z	0.0	0.2	0.0	0.0	13.3	34.9	52.8	13.1	16.7	17.9	12.8	9.2	9.2	3.7	1.7	11.4	29.2	28.0	24.4	5.0	0.1	0.0	12.3	52.8	
16-Feb	0.5	1.4	Z	0.1	4.7	19.8	36.0	24.5	12.5	9.5	6.2	3.0	2.1	1.9	2.3	0.5	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.7	5.5	36.0	
17-Feb	1.1	0.5	1.6	Z	9.3	40.6	27.7	22.9	20.3	19.7	24.3	17.2	13.0	5.3	4.6	3.0	25.2	29.8	0.4	12.7	11.6	5.2	4.9	10.5	13.5	40.6	
18-Feb	59.1	105.1	46.7	9.0	Z	22.6	27.9	27.5	20.3	22.7	72.9	82.1	44.9	22.5	6.5	4.7	1.4	0.5	0.0	0.8	0.7	3.2	1.6	5.0	25.5	105.1	
19-Feb	6.6	10.4	8.2	7.2	8.7	Z	16.0	12.8	44.0	9.7	27.6	46.1	30.2	18.8	18.0	16.3	13.6	20.2	1.6	2.4	1.1	8.0	0.5	0.3	14.3	46.1	
20-Feb	Z	0.1	0.1	1.3	5.2	16.0	22.2	26.8	33.9	38.3	23.1	22.4	21.4	18.1	20.8	11.1	4.7	2.9	0.4	8.1	9.4	5.6	1.4	3.3	12.9	38.3	
21-Feb	28.5	Z	25.4	26.4	21.6	18.5	20.1	19.4	17.9	20.8	32.0	37.9	42.0	40.4	14.4	0.1	0.0	0.0	0.0	1.7	4.2	12.9	27.8	26.3	19.1	42.0	
22-Feb	19.4	38.5	Z	60.7	72.2	77.1	44.7	23.0	25.3	21.9	9.7	12.5	10.1	8.0	6.0	40.8	54.4	47.3	64.5	50.1	40.9	42.3	45.1	39.7	37.1	77.1	
23-Feb	30.6	8.3	3.1	Z	1.1	2.7	1.9	1.2	2.9	4.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	30.6	
24-Feb	0.2	0.1	0.0	0.1	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	2.0	4.5	3.3	2.0	0.6	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.6	4.5	
25-Feb	0.2	0.1	0.1	0.1	0.1	Z	0.3	0.5	1.4	5.7	6.2	3.8	2.7	1.9	1.2	1.6	0.6	0.4	0.3	0.2	0.1	0.0	0.1	0.1	1.2	6.2	
26-Feb	Z	0.1	0.1	0.1	0.2	0.0	0.0	0.2	0.7	1.5	3.1	4.2	7.5	6.2	3.9	2.9	1.8	6.7	33.4	53.4	33.4	71.0	64.5	5.6	13.1	71.0	
27-Feb	0.1	Z	0.9	1.4	2.8	3.0	48.4	27.9	1.0	0.5	0.7	0.2	0.1	0.5	1.4	1.4	0.7	0.8	1.7	1.2	2.5	1.5	0.4	3.5	4.5	48.4	
28-Feb	1.6	0.8	Z	3.9	7.4	4.3	2.5	7.9	10.1	9.8	6.6	2.5	1.9	2.0	1.1	0.6	0.6	0.5	0.3	0.2	0.2	0.1	0.1	0.1	2.8	10.1	
29-Feb	0.2	0.1	0.1	Z	0.1	0.1	0.3	0.3	0.2	0.5	0.5	0.4	0.3	0.5	1.5	1.1	0.7	0.1	0.0	7.0	38.8	17.4	3.6	0.0	3.2	38.8	
		10.1	11.4	5.5	8.4	9.8	15.1	14.5	11.8	12.2	10.4	10.5	11.2	9.5	7.0	4.9	4.2	4.7	6.8	9.1	12.1	11.8	12.6	10.6	9.6	Diurnal Average	
		59.1	105.1	46.7	60.7	72.2	77.1	66.4	34.9	52.8	38.3	72.9	82.1	44.9	40.4	20.8	40.8	54.4	49.6	91.5	75.6	62.5	102.7	79.7	85.0	Diurnal Maximum	
Z - zerospan		C - Calibration																									





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Barge Landing - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	549	82.93	82.93
21 - 40	73	11.03	93.96
41 - 80	35	5.29	99.24
81 - 159	5	0.76	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



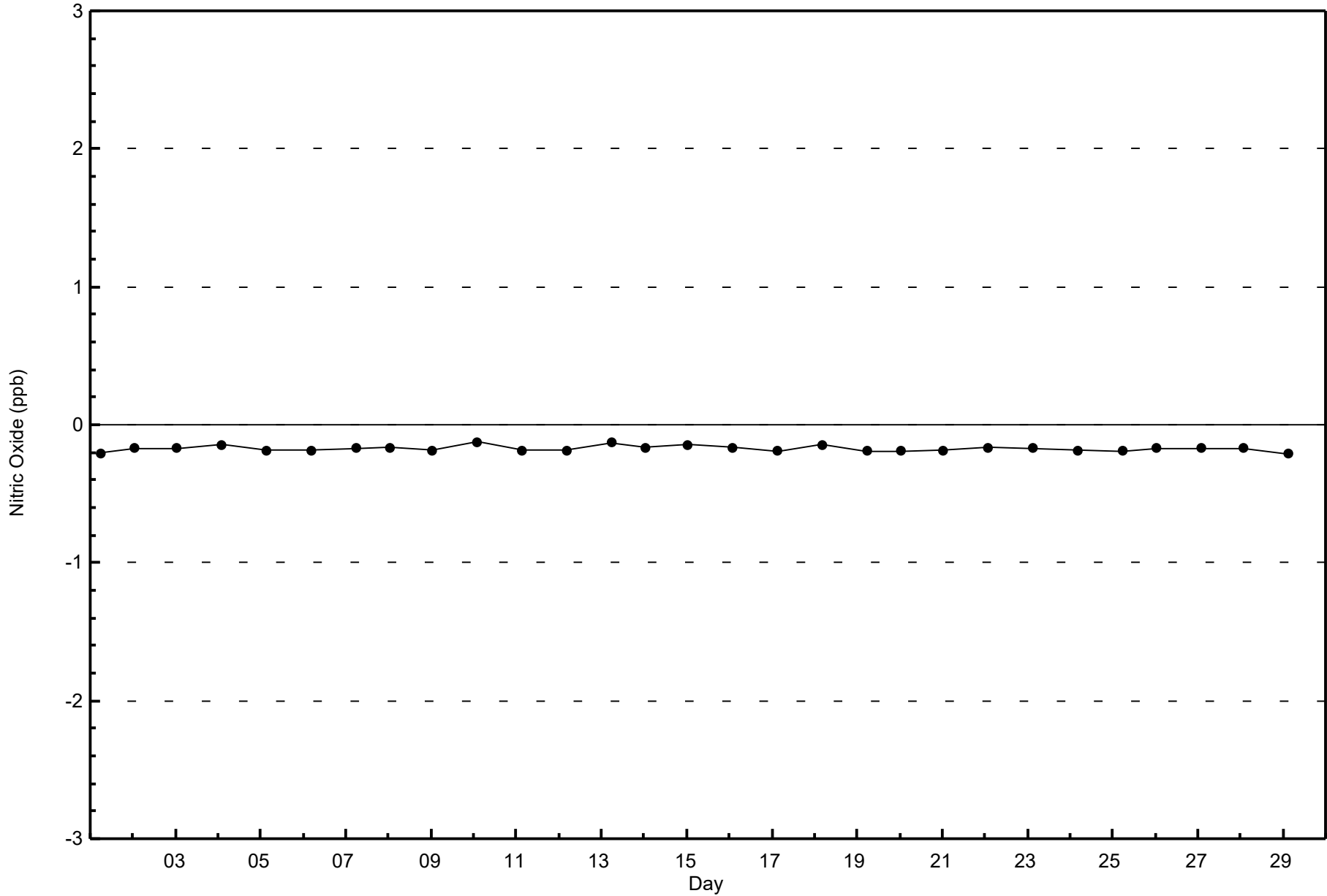
**Wood Buffalo Environmental Association
Frequency Distribution**

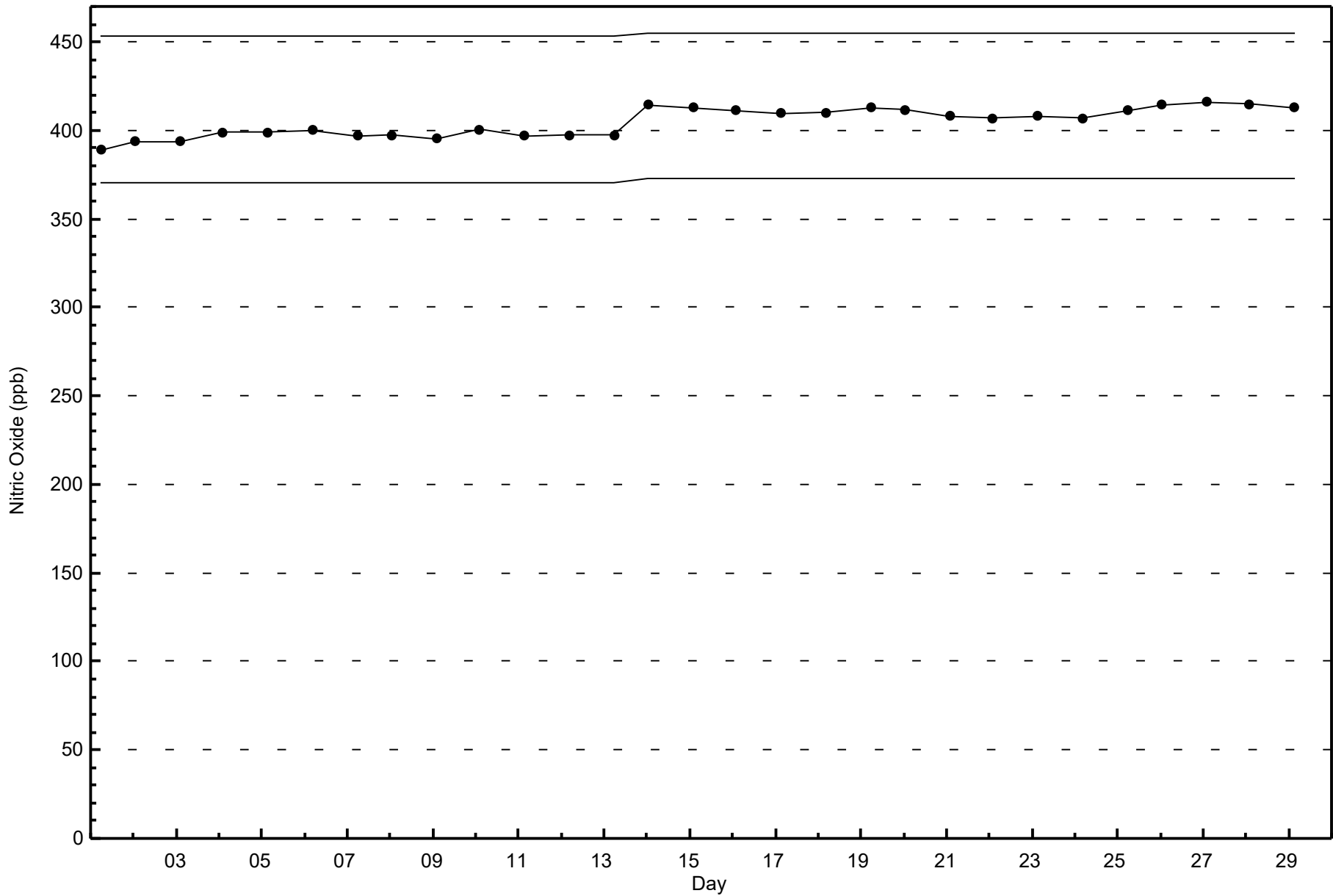
**Nitric Oxide (NO) - ppb
Barge Landing - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	80	52	35	14	7	15	46	81	44	24	30	34	11	14	12	50	549
21 - 40	2	1	2	0	0	3	3	15	13	5	4	0	2	4	3	15	72
11 - 80	7	3	0	1	0	2	1	3	2	3	1	0	1	1	0	10	35
81 - 159	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	5
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	89	57	38	15	7	20	50	99	59	32	35	34	14	19	15	78	661

Total Number of Valid Hours: 661

Total Number of Hours: 696







Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

Barge Landing - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 44.2 ppb on Feb 18 02:00	Maximum Daily Average: 28.3 ppb on Feb 17		Hours of Data:	662
Minimum Value: 0.2 ppb on Feb 24 00:00	Minimum Daily Average: 5.1 ppb on Feb 24		Hours of Missing Data:	34
Maximum Diurnal Average: 18.3 ppb at hour 8	Minimum Diurnal Average: 9.0 ppb at hour 15		Hours of Calibration:	34
Monthly Average: 14.60 ppb	Percentiles: P ₁ = 0.4 P ₁₀ = 2.2 Q ₁ = 5.9 Median = 13.4 Q ₃ = 21.6 P ₉₀ = 28.0 P ₉₉ = 39.2		Percent Operational Time:	100.0

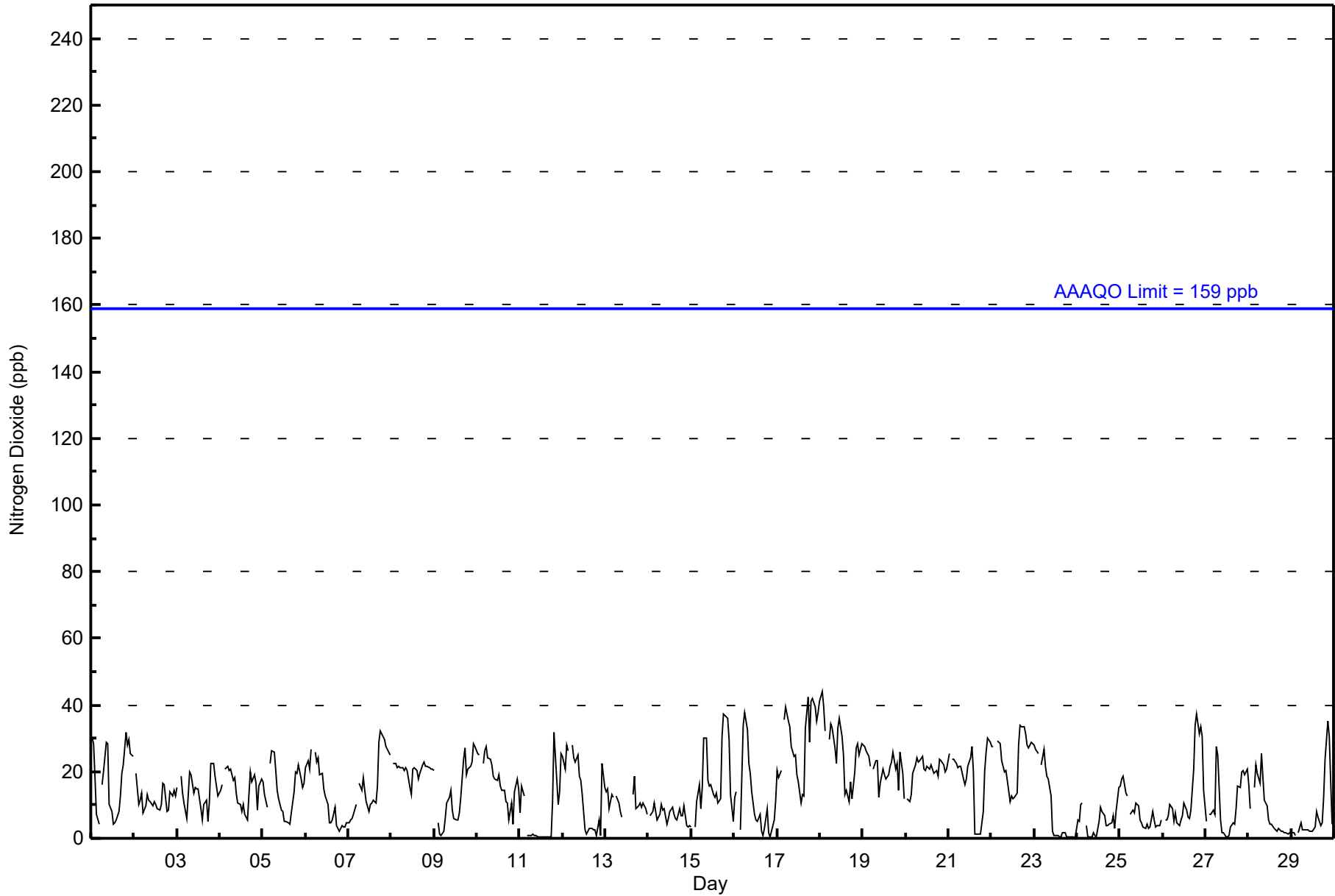
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	30.2	28.4	18.2	7.4	4.3	Z	16.3	19.9	29.0	28.6	10.2	8.1	4.2	4.5	5.5	8.0	12.9	19.4	22.2	31.6	28.1	29.5	25.5	24.4	18.1	31.6																						
2-Feb	Z	19.3	10.2	11.4	13.6	7.5	9.6	13.0	11.6	11.1	9.8	11.0	10.1	9.1	8.3	10.1	16.6	16.1	8.1	8.6	14.1	12.6	14.2	12.5	11.7	19.3																						
3-Feb	15.3	Z	18.8	13.4	10.6	5.9	12.7	19.8	18.9	13.5	15.1	14.7	15.0	8.7	5.5	10.1	11.3	4.9	11.0	22.3	22.5	18.8	15.7	12.6	13.8	22.5																						
4-Feb	14.4	16.0	Z	20.8	21.8	20.5	20.8	17.2	18.4	13.4	10.5	10.3	7.9	10.0	7.3	5.7	13.2	19.8	16.8	19.1	16.6	8.4	15.7	17.6	14.9	21.8																						
5-Feb	17.1	13.1	9.3	Z	22.4	26.1	26.0	20.2	14.2	11.8	8.4	8.1	4.9	5.0	4.6	4.3	7.5	13.9	19.9	19.3	22.1	17.7	15.2	16.4	14.2	26.1																						
6-Feb	21.3	23.3	20.7	26.7	Z	25.9	22.7	24.3	18.9	19.5	15.0	12.5	10.1	4.7	4.7	5.7	9.5	4.0	3.1	2.0	3.8	3.4	3.3	4.7	12.6	26.7																						
7-Feb	4.8	5.3	6.1	7.3	10.0	Z	16.4	14.4	18.2	14.4	10.9	8.0	10.0	10.4	11.3	10.8	15.6	29.0	32.0	30.5	29.5	27.6	26.0	25.0	16.2	32.0																						
8-Feb	Z	22.6	22.3	21.2	21.6	21.2	21.1	20.2	21.2	20.2	15.2	13.1	20.6	21.2	20.4	17.8	19.5	21.9	22.7	21.6	21.6	21.2	20.6	20.9	20.4	22.7																						
9-Feb	20.2	Z	4.7	1.1	0.7	2.0	6.0	10.7	12.1	14.2	8.5	5.9	5.6	5.4	7.6	12.4	23.7	27.2	19.2	20.7	21.6	22.8	28.4	27.5	13.4	28.4																						
10-Feb	25.4	24.9	Z	22.5	26.3	27.4	24.2	23.6	22.0	18.8	18.0	17.4	19.1	15.5	14.3	14.2	11.0	10.8	5.6	10.6	4.3	13.8	18.0	14.9	17.5	27.4																						
11-Feb	7.6	15.8	12.8	Z	0.8	0.7	0.8	1.2	0.8	0.7	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	10.9	31.7	24.7	10.0	13.8	25.5	7.0	31.7																						
12-Feb	24.4	20.9	27.8	26.4	Z	28.1	24.0	22.7	24.8	18.8	17.2	13.2	2.6	1.1	2.3	2.9	3.0	2.4	2.7	0.7	5.6	0.9	22.4	15.4	13.5	28.1																						
13-Feb	14.0	15.0	8.9	13.3	12.2	Z	12.7	10.5	8.0	6.4	C	C	C	C	C	13.2	18.5	8.9	9.8	10.4	9.4	10.4	8.9	7.1	11.0	18.5																						
14-Feb	Z	6.8	8.0	10.4	8.0	5.6	7.3	10.0	8.3	8.9	4.1	5.9	8.1	9.2	7.1	5.8	5.7	9.0	6.7	6.8	9.7	4.0	3.3	4.0	7.1	10.4																						
15-Feb	3.6	Z	3.4	11.1	15.9	9.0	15.3	30.0	30.0	17.3	15.7	16.1	13.1	12.2	13.7	10.8	11.8	30.5	37.4	36.8	36.2	29.7	13.1	4.9	18.2	37.4																						
16-Feb	12.4	13.9	Z	2.6	18.3	33.9	37.6	32.5	22.4	19.4	13.9	7.4	5.5	5.2	7.3	2.1	1.0	2.9	8.8	1.8	0.6	2.2	5.4	11.5	11.7	37.6																						
17-Feb	20.4	18.4	20.4	Z	35.6	39.2	35.2	33.4	27.5	24.4	24.9	19.0	16.8	10.5	13.0	12.8	32.9	42.3	29.0	41.0	42.0	39.5	35.2	37.8	28.3	42.3																						
18-Feb	41.3	44.2	39.3	32.1	Z	29.6	34.4	32.9	27.0	22.5	33.2	35.9	30.5	24.8	13.3	14.4	11.1	17.0	11.9	20.1	27.2	28.2	25.0	28.2	27.1	44.2																						
19-Feb	27.9	27.4	26.2	24.5	21.6	Z	20.6	23.1	23.4	12.3	16.7	20.8	18.9	17.7	19.1	21.4	23.0	25.8	20.8	22.3	14.4	25.7	19.6	11.9	21.1	27.9																						
20-Feb	Z	11.9	11.1	13.3	19.4	22.2	24.2	22.7	23.5	24.4	20.7	20.4	21.4	20.6	22.0	20.9	19.5	20.4	18.5	23.8	23.2	22.2	19.8	20.6	20.3	24.4																						
21-Feb	25.3	Z	23.7	23.6	22.5	21.2	21.5	21.6	17.7	16.0	17.6	21.8	24.3	27.6	19.9	1.3	1.3	1.2	1.3	7.9	20.4	26.0	30.2	28.7	18.4	30.2																						
22-Feb	27.7	27.4	Z	29.1	28.8	28.5	23.2	20.1	20.4	17.3	11.2	12.9	12.0	12.1	13.4	27.9	34.1	33.4	33.6	31.3	28.0	27.3	28.7	28.4	24.2	34.1																						
23-Feb	28.0	26.8	25.5	Z	22.0	26.9	21.7	18.7	17.6	12.6	2.2	0.7	0.7	0.7	0.5	0.4	1.6	1.6	0.4	0.5	0.4	0.3	0.3	0.2	9.1	28.0																						
24-Feb	5.7	5.2	10.2	10.4	Z	3.7	0.5	0.5	0.4	1.5	0.7	0.4	5.2	9.4	8.1	6.8	3.7	3.8	4.4	4.7	6.9	2.8	8.0	15.1	5.1	15.1																						
25-Feb	15.6	17.7	18.7	13.7	12.8	Z	7.2	8.5	7.6	10.8	9.7	5.6	4.6	3.5	2.9	4.2	3.0	3.6	7.9	5.5	3.6	3.8	3.9	5.4	7.8	18.7																						
26-Feb	Z	5.7	5.6	6.9	10.2	8.7	5.0	7.5	4.5	3.7	5.7	6.9	10.7	8.6	6.2	6.1	8.5	20.8	34.0	37.4	31.3	33.6	30.3	14.6	13.6	37.4																						
27-Feb	5.0	Z	7.2	7.1	8.4	7.3	27.5	24.9	5.5	1.9	1.7	0.6	0.4	0.9	3.4	4.7	4.2	8.9	15.6	15.4	19.9	20.5	19.2	20.9	10.0	27.5																						
28-Feb	16.0	8.7	Z	15.1	22.2	19.6	16.4	25.3	18.1	11.3	9.8	5.4	4.2	4.2	2.8	2.5	2.2	3.1	2.2	2.0	1.8	1.6	1.2	1.9	8.6	25.3																						
29-Feb	1.7	1.6	0.9	Z	1.9	4.5	2.6	2.7	2.6	2.6	2.1	2.0	2.1	3.3	8.2	6.5	3.9	4.8	12.3	23.9	35.1	30.5	17.1	4.2	7.7	35.1																						
																								17.7	17.5	15.0	15.5	15.7	17.7	17.7	18.3	16.4	13.7	11.8	10.9	10.3	9.5	9.0	9.1	11.4	14.1	14.8	17.6	18.1	17.1	16.8	16.0	Diurnal Average
																								41.3	44.2	39.3	32.1	35.6	39.2	37.6	33.4	30.0	28.6	33.2	35.9	30.5	27.6	22.0	27.9	34.1	42.3	37.4	41.0	42.0	39.5	35.2	37.8	Diurnal Maximum

Z - zerspan C - Calibration
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Barge Landing - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Barge Landing - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	464	70.09	70.09
21 - 40	193	29.15	99.24
41 - 80	5	0.76	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



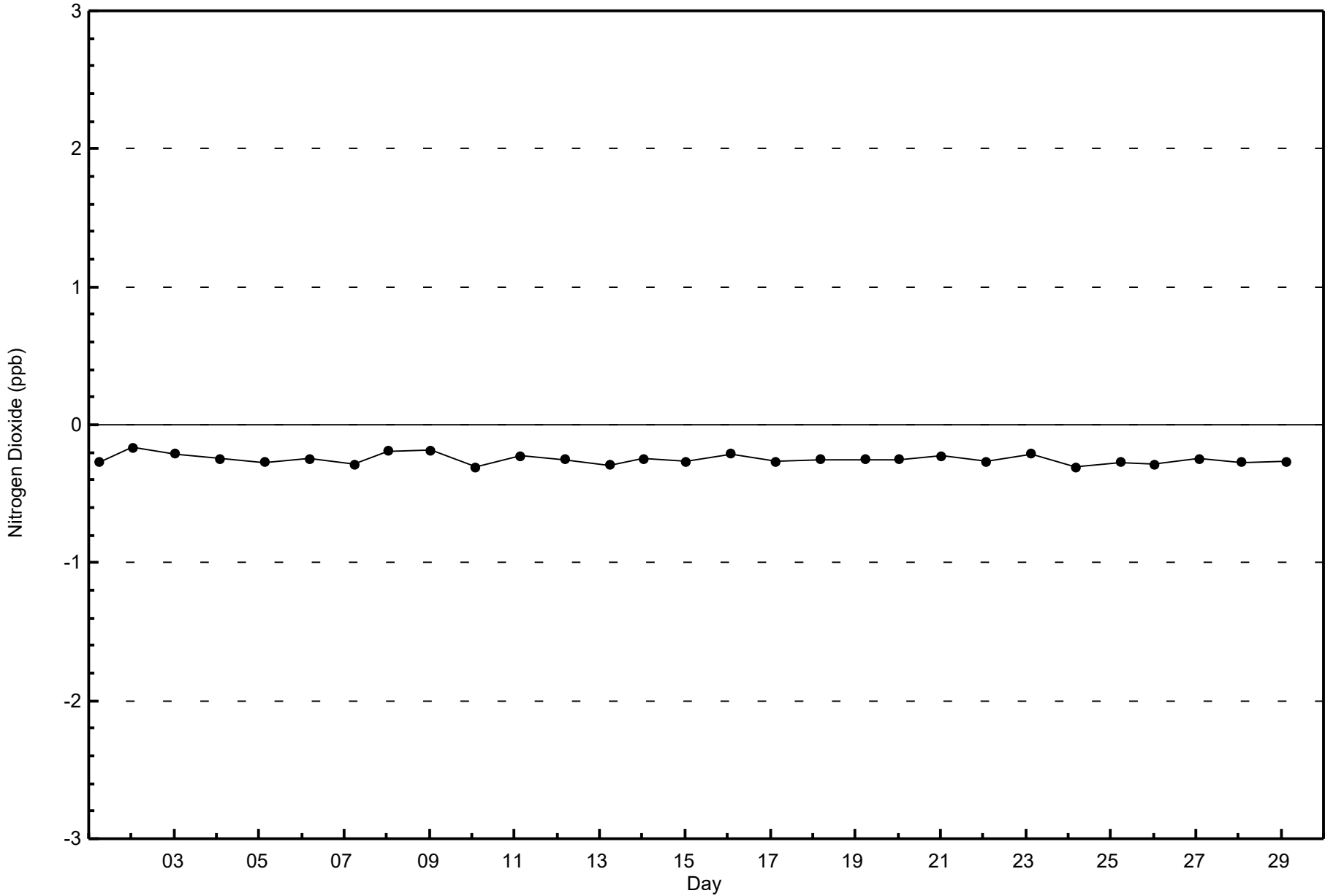
**Wood Buffalo Environmental Association
Frequency Distribution**

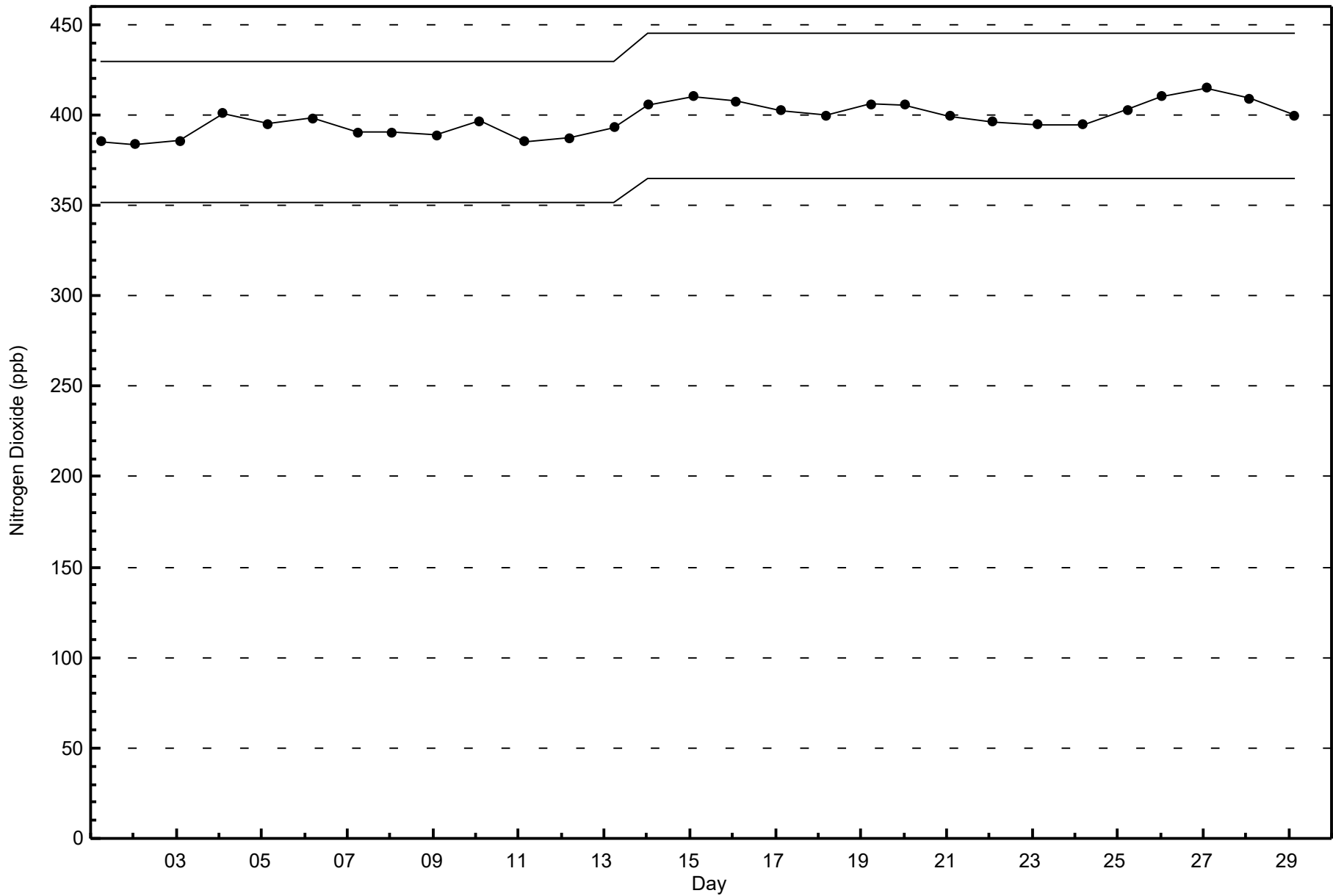
**Nitrogen Dioxide (NO₂) - ppb
Barge Landing - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	60	45	32	13	7	15	38	60	39	22	30	33	11	14	11	34	464
21 - 40	29	9	4	2	0	5	12	39	20	10	5	1	3	5	4	44	192
11 - 80	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	89	57	38	15	7	20	50	99	59	32	35	34	14	19	15	78	661

Total Number of Valid Hours: 661

Total Number of Hours: 696





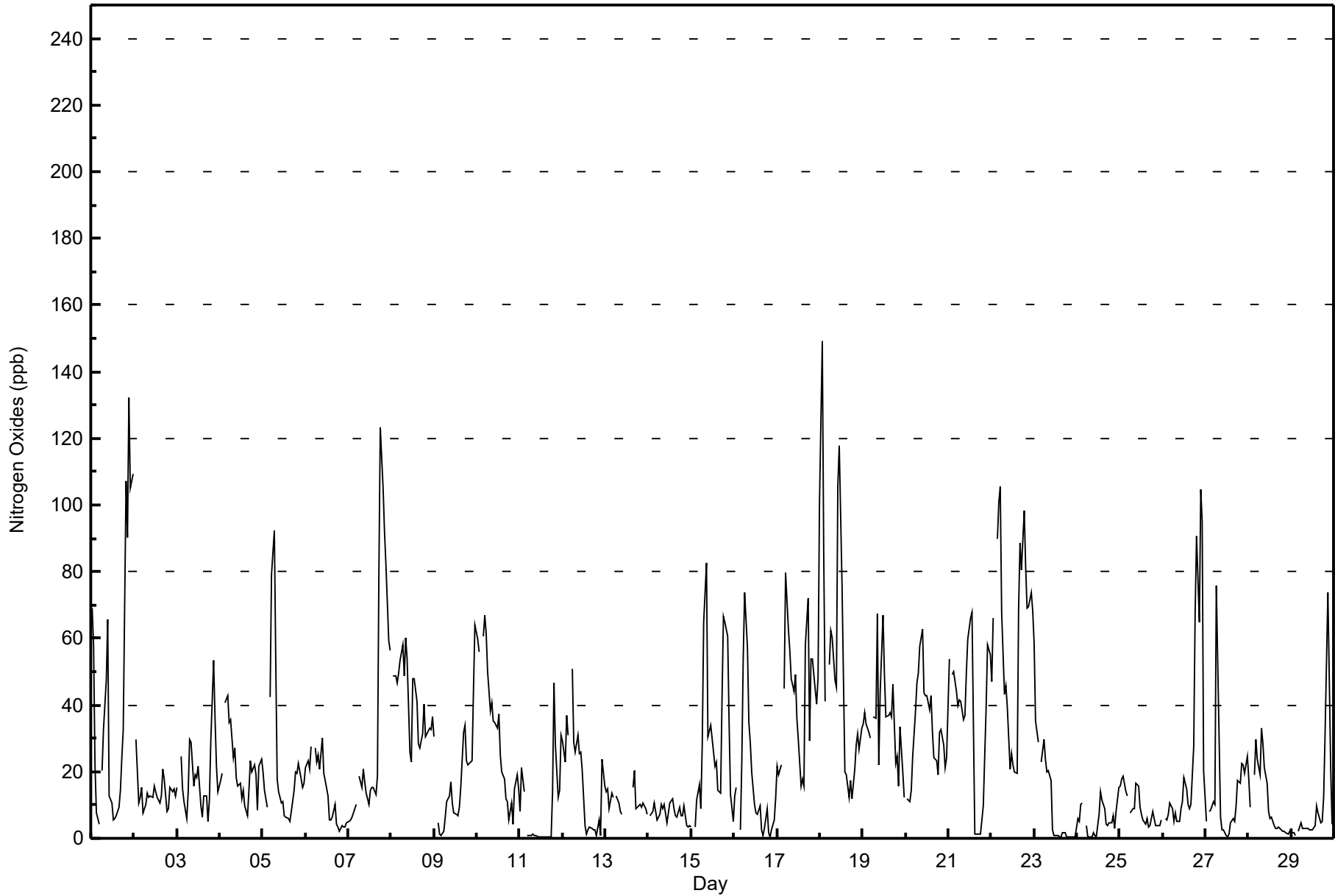


Wood Buffalo Environmental Association
Summary of Hour Averages

Nitrogen Oxides (NO_x) - ppb
Barge Landing - February 2024

Maximum Value: 149.3 ppb on Feb 18 02:00 Maximum Daily Average: 61.4 ppb on Feb 22 Minimum Value: 0.2 ppb on Feb 24 00:00 Minimum Daily Average: 5.7 ppb on Feb 24 Maximum Diurnal Average: 32.9 ppb at hour 6 Minimum Diurnal Average: 13.3 ppb at hour 16 Monthly Average: 24.34 ppb Percentiles: P ₁ = 0.4 P ₁₀ = 2.5 Q ₁ = 7.1 Median = 15.8 Q ₃ = 34.0 P ₉₀ = 58.1 P ₉₉ = 105.8																								Hours in Service:	696																								
																								Hours of Data:	662																								
																								Hours of Missing Data:	34																								
																								Hours of Calibration:	34																								
																								Percent Operational Time:	100.0																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	69.1	57.6	21.9	7.8	4.3	Z	20.3	32.7	47.4	65.7	12.9	10.5	5.3	5.8	6.7	9.3	14.3	24.2	32.8	107.2	90.4	132.2	105.2	109.4	43.2	132.2																							
2-Feb	Z	29.6	10.6	12.4	15.2	7.7	10.0	13.7	12.4	12.5	12.2	15.5	14.0	12.3	10.7	12.8	20.8	17.6	8.2	8.8	15.4	14.2	14.9	12.6	13.7	29.6																							
3-Feb	15.5	Z	24.6	14.6	11.0	6.0	14.0	29.5	28.6	15.7	19.1	18.0	21.4	9.9	6.2	12.7	12.7	5.1	11.6	29.1	53.3	36.1	21.4	14.0	18.7	53.3																							
4-Feb	17.3	19.7	Z	40.6	42.9	34.9	35.8	24.3	27.0	18.2	15.8	16.7	12.0	14.4	9.6	6.6	14.5	23.2	19.9	22.2	19.0	8.7	21.7	23.8	21.3	42.9																							
5-Feb	19.8	14.2	9.4	Z	42.6	79.3	92.4	52.9	17.7	14.0	10.6	11.2	6.8	6.4	5.7	5.1	7.9	14.3	20.1	19.4	22.3	17.8	15.3	16.5	22.7	92.4																							
6-Feb	21.4	23.5	20.8	27.6	Z	27.2	23.0	25.1	20.9	30.0	19.5	17.3	12.7	5.6	5.3	6.2	10.0	4.4	3.4	2.1	3.9	3.4	3.3	4.8	14.0	30.0																							
7-Feb	4.9	5.3	6.2	7.4	10.0	Z	18.7	15.4	20.8	17.1	13.6	10.3	14.3	15.3	15.1	13.0	18.5	78.6	123.5	105.2	92.0	82.1	59.2	56.2	34.9	123.5																							
8-Feb	Z	48.6	48.7	46.7	49.7	53.6	58.1	48.5	60.0	53.8	25.7	22.7	48.0	47.9	41.2	28.4	27.1	31.4	40.4	30.6	31.5	33.1	32.8	36.6	41.1	60.0																							
9-Feb	30.7	Z	4.7	1.1	0.7	2.1	6.3	11.0	12.7	17.0	10.8	7.5	7.2	6.8	9.5	15.1	31.9	33.9	23.4	21.9	23.0	23.5	44.6	64.1	17.8	64.1																							
10-Feb	59.7	55.7	Z	60.4	67.0	61.6	50.1	38.0	40.7	35.3	34.9	32.9	37.3	24.9	19.8	17.8	11.7	11.0	5.6	10.6	4.3	14.9	19.0	15.0	31.7	67.0																							
11-Feb	7.9	21.3	13.8	Z	0.8	0.7	0.8	1.2	0.8	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	13.9	46.6	27.8	12.1	14.5	31.0	8.6	46.6																							
12-Feb	29.3	23.0	36.9	30.8	Z	50.9	28.7	25.8	31.1	25.3	25.8	20.4	3.8	1.3	2.5	3.3	3.1	2.4	2.7	0.7	5.6	0.9	23.7	15.5	17.1	50.9																							
13-Feb	14.0	15.0	8.9	13.4	12.3	Z	12.7	10.5	8.3	7.1	C	C	C	C	C	15.3	20.2	9.0	9.8	10.4	9.4	10.4	8.9	7.1	11.3	20.2																							
14-Feb	Z	6.8	8.1	10.5	8.0	5.7	7.4	10.2	8.8	10.0	4.8	7.5	10.5	11.8	8.9	6.8	6.2	9.2	6.9	6.9	9.8	4.0	3.3	4.0	7.7	11.8																							
15-Feb	3.6	Z	3.4	11.3	15.9	9.0	28.6	64.9	82.8	30.4	32.4	34.0	25.9	21.4	22.9	14.5	13.5	41.9	66.6	64.8	60.6	34.7	13.2	4.9	30.5	82.8																							
16-Feb	12.9	15.3	Z	2.7	23.0	53.7	73.6	57.0	34.9	28.9	20.1	10.4	7.6	7.1	9.6	2.6	1.0	2.9	8.9	1.8	0.6	2.4	5.4	12.2	17.2	73.6																							
17-Feb	21.5	18.9	22.0	Z	44.9	79.8	62.9	56.3	47.8	44.1	49.2	36.2	29.8	15.8	17.6	15.8	58.1	72.1	29.4	53.7	53.6	44.7	40.1	48.3	41.9	79.8																							
18-Feb	100.4	149.3	86.0	41.1	Z	52.2	62.3	60.4	47.3	45.2	106.1	118.0	75.4	47.3	19.8	19.1	12.5	17.5	11.9	20.9	27.9	31.4	26.6	33.2	52.7	149.3																							
19-Feb	34.5	37.8	34.4	31.7	30.3	Z	36.6	35.9	67.4	22.0	44.3	66.9	49.1	36.5	37.1	37.7	36.6	46.0	22.4	24.7	15.5	33.7	20.1	12.2	35.4	67.4																							
20-Feb	Z	12.0	11.2	14.6	24.6	38.2	46.4	49.5	57.4	62.7	43.8	42.8	42.8	38.7	42.8	32.0	24.2	23.3	18.9	31.9	32.6	27.8	21.2	23.9	33.2	62.7																							
21-Feb	53.8	Z	49.1	50.0	44.1	39.7	41.6	41.0	35.6	36.8	49.6	59.7	66.3	68.0	34.3	1.4	1.3	1.2	1.3	9.6	24.6	38.9	58.0	55.0	37.4	68.0																							
22-Feb	47.1	65.9	Z	89.8	101.0	105.6	67.9	43.1	45.7	39.2	20.9	25.4	22.1	20.1	19.4	68.7	88.5	80.7	98.1	81.4	68.9	69.6	73.8	68.1	61.4	105.6																							
23-Feb	58.6	35.1	28.6	Z	23.1	29.6	23.6	19.9	20.5	17.3	2.5	0.8	0.7	0.7	0.5	0.4	1.6	1.6	0.4	0.5	0.4	0.3	0.3	0.2	11.6	58.6																							
24-Feb	5.9	5.3	10.2	10.5	Z	3.7	0.5	0.5	0.4	1.6	0.8	0.5	7.2	13.9	11.4	8.8	4.3	4.0	4.6	4.8	6.9	2.8	8.1	15.1	5.7	15.1																							
25-Feb	15.8	17.8	18.8	13.8	12.9	Z	7.5	9.0	9.0	16.5	15.9	9.4	7.3	5.4	4.1	5.8	3.6	4.0	8.2	5.7	3.7	3.8	4.0	5.5	9.0	18.8																							
26-Feb	Z	5.8	5.7	7.0	10.4	8.7	5.0	7.7	5.2	5.2	8.8	11.1	18.2	14.8	10.1	9.0	10.3	27.5	67.4	90.8	64.7	104.6	94.8	20.2	26.6	104.6																							
27-Feb	5.1	Z	8.1	8.5	11.2	10.3	75.9	52.8	6.5	2.4	2.4	0.8	0.5	1.4	4.8	6.1	4.9	9.7	17.3	16.6	22.4	22.0	19.6	24.4	14.5	75.9																							
28-Feb	17.6	9.5	Z	19.0	29.6	23.9	18.9	33.2	28.2	21.1	16.4	7.9	6.1	6.2	3.9	3.1	2.8	3.6	2.5	2.2	2.0	1.7	1.3	2.0	11.4	33.2																							
29-Feb	1.9	1.7	1.0	Z	2.0	4.6	2.9	3.0	2.8	3.1	2.6	2.4	2.4	3.8	9.7	7.6	4.6	4.9	12.3	30.9	73.9	47.9	20.7	4.2	10.9	73.9																							
																								Diurnal Average																									
																								Diurnal Maximum																									
																								27.8	28.9	20.6	23.9	25.5	32.9	32.2	30.1	28.6	24.1	22.2	22.0	19.8	16.6	13.9	13.3	16.1	20.9	23.9	29.7	29.9	29.6	27.4	25.5		
																								100.4	149.3	86.0	89.8	101.0	105.6	92.4	64.9	82.8	65.7	106.1	118.0	75.4	68.0	42.8	68.7	88.5	80.7	123.5	107.2	92.0	132.2	105.2	109.4		

Z - zerospan C - Calibration





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Barge Landing - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	385	58.16	58.16
21 - 40	144	21.75	79.91
41 - 80	107	16.16	96.07
81 - 159	24	3.63	99.70
> 159	0	0.00	99.70

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Barge Landing - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	55	41	32	12	5	13	31	46	26	14	23	31	9	13	10	24	385
21 - 40	20	9	3	2	2	2	14	30	16	9	7	2	3	1	2	22	144
11 - 80	9	4	2	0	0	3	5	23	16	8	4	1	2	5	3	21	106
81 - 159	5	3	1	1	0	2	0	0	1	1	1	0	0	0	0	9	24
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	89	57	38	15	7	20	50	99	59	32	35	34	14	19	15	76	659

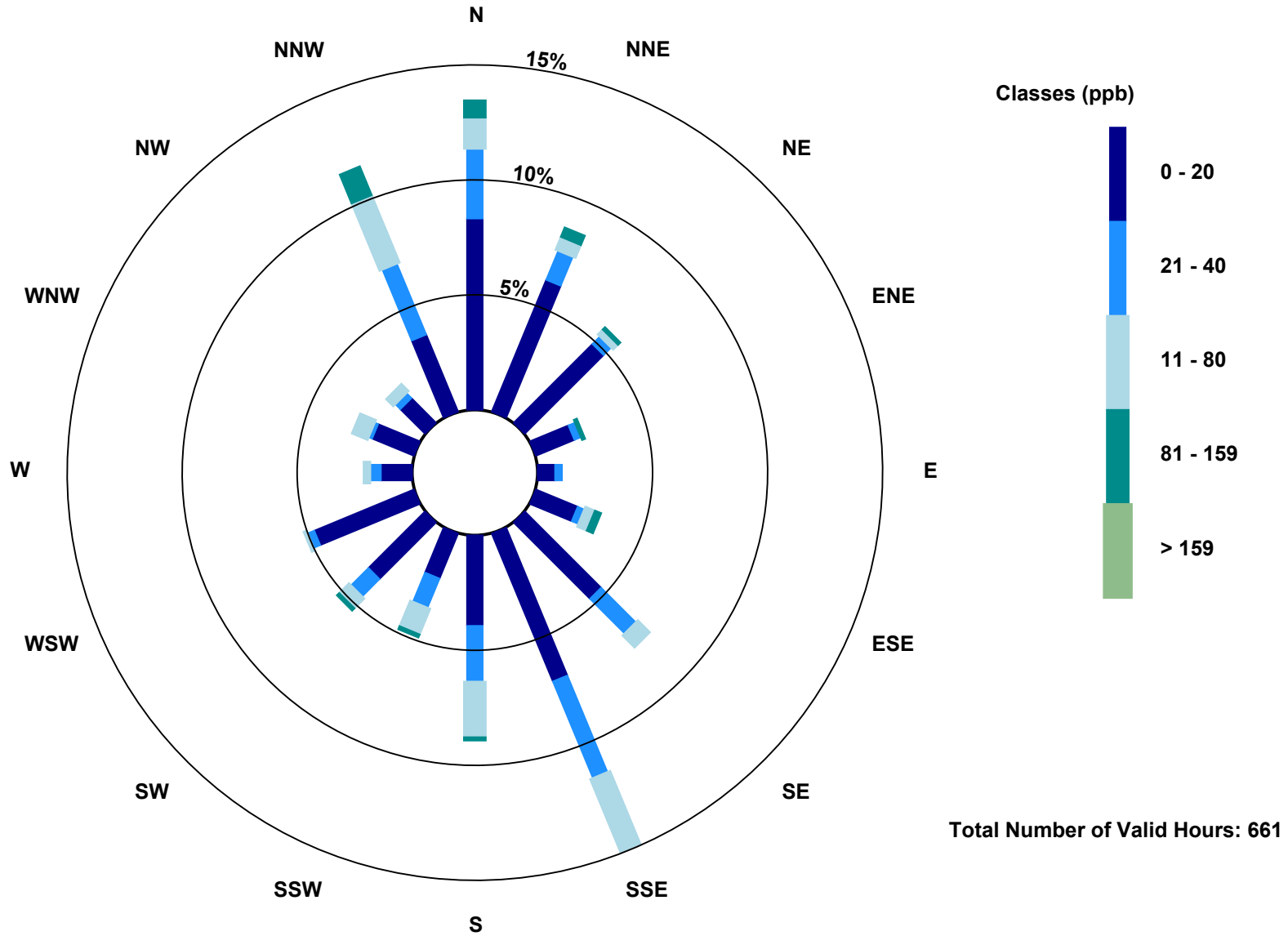
Total Number of Valid Hours: 661

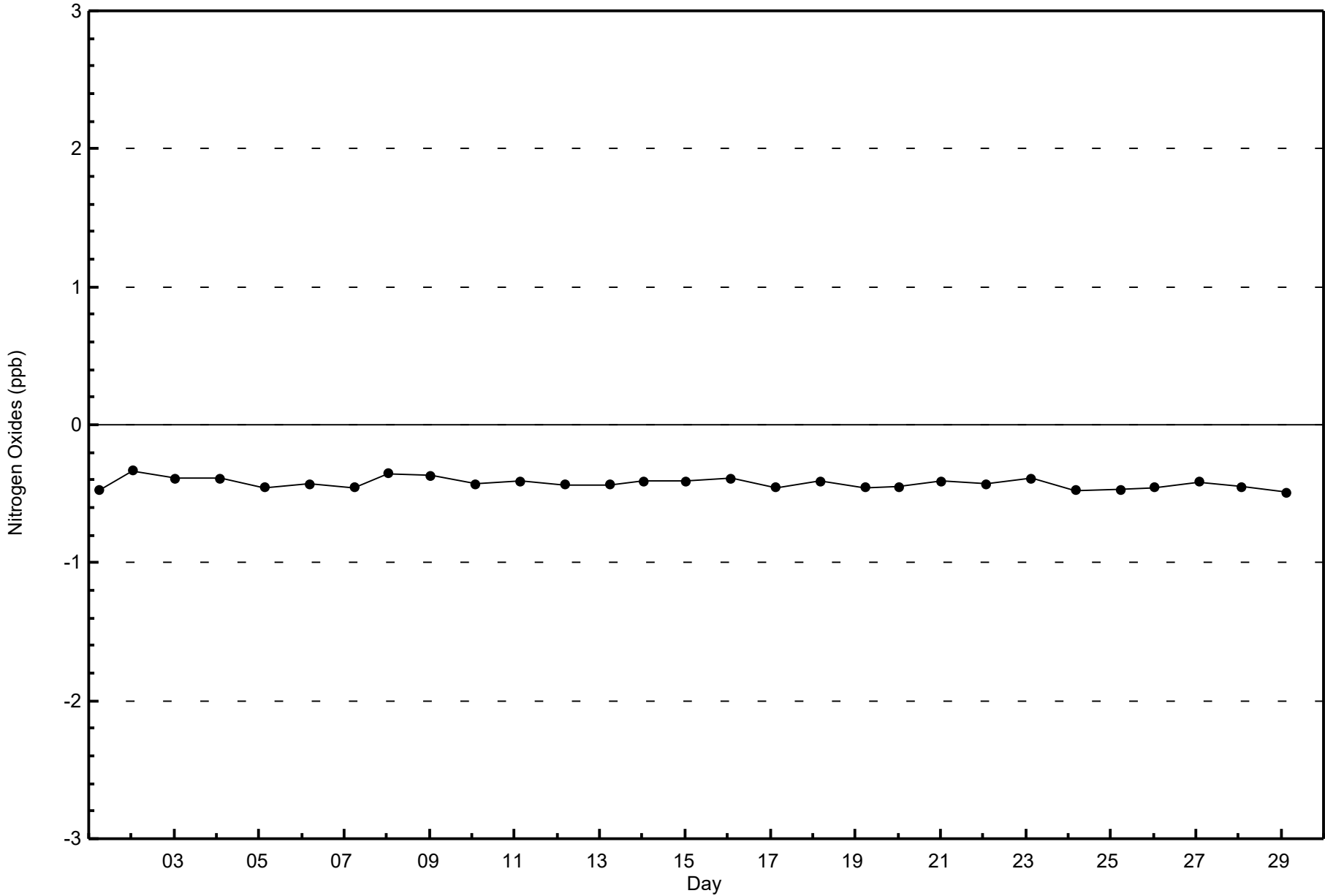
Total Number of Hours: 696

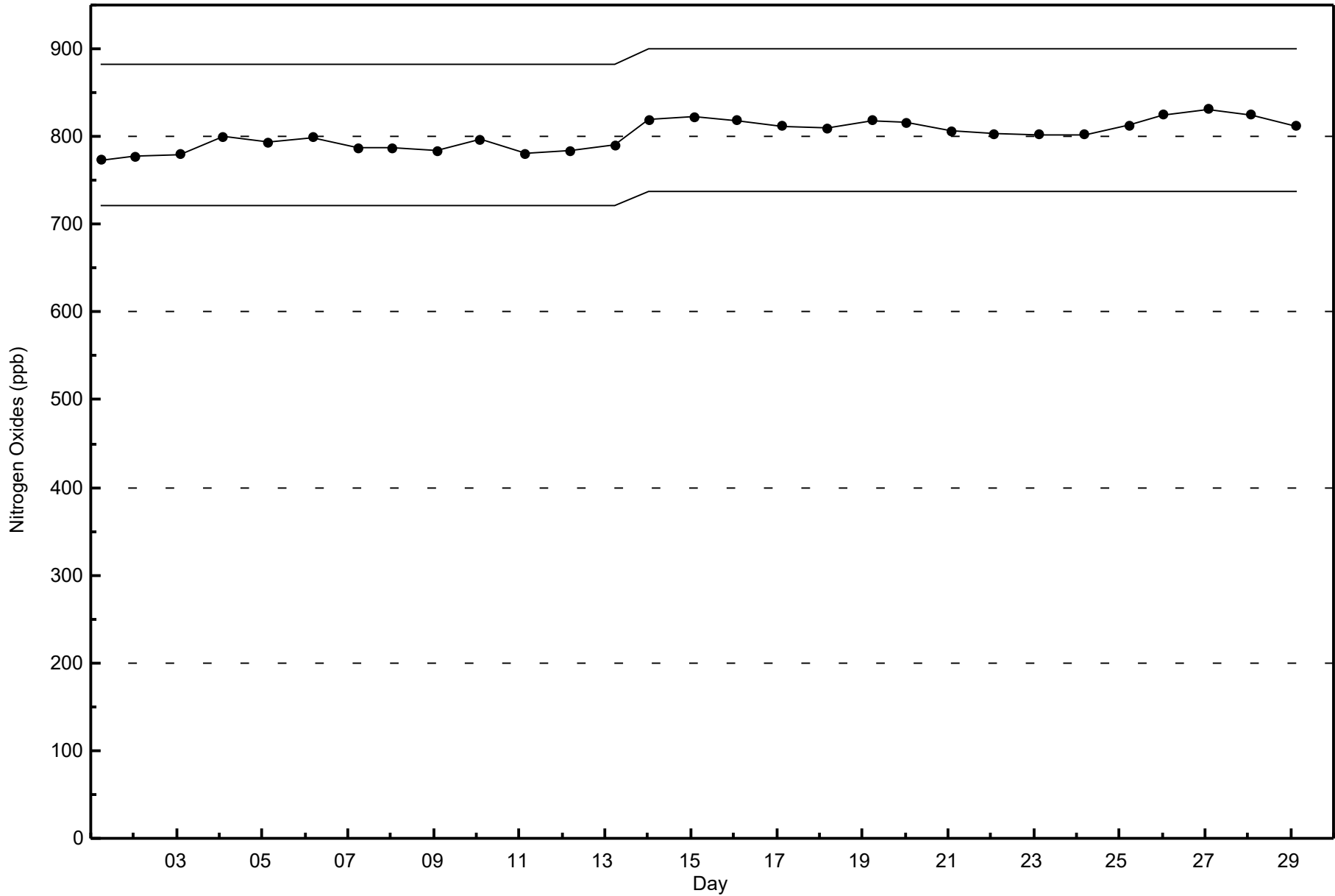


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Barge Landing









Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														Daily Average		Daily Maximum					
Maximum Value: 54.9 µg/m ³ on Feb 18 02:00		Maximum Daily Average: 25.1 µg/m ³ on Feb 19		Hours of Data: 695																							
Minimum Value: 0.3 µg/m ³ on Feb 11 17:00		Minimum Daily Average: 1.4 µg/m ³ on Feb 11		Hours of Missing Data: 1																							
Maximum Diurnal Average: 10.8 µg/m ³ at hour 2		Minimum Diurnal Average: 8.3 µg/m ³ at hour 17		Hours of Calibration: 1																							
Monthly Average: 9.40 µg/m ³		Percentiles: P ₁ = 0.7 P ₁₀ = 2.2 Q ₁ = 4.0 Median = 6.8 Q ₃ = 12.7 P ₉₀ = 20.7 P ₉₉ = 34.3		Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	3.8	3.6	2.0	1.1	1.1	2.7	2.5	3.1	4.1	5.0	2.8	3.9	2.9	3.1	4.7	4.0	4.0	3.4	3.9	7.5	6.5	9.5	8.0	6.8	4.2	9.5	
2-Feb	6.9	4.8	4.8	6.6	6.9	6.1	5.9	5.8	5.9	5.8	6.2	6.4	6.6	5.6	5.1	4.7	4.6	4.6	4.8	4.7	5.5	5.9	5.7	5.5	5.6	6.9	
3-Feb	5.3	5.7	8.1	10.0	8.5	5.1	6.7	7.9	9.2	7.2	6.1	6.1	6.1	5.6	5.0	5.8	5.7	4.2	5.1	6.1	8.5	7.4	5.3	5.3	6.5	10.0	
4-Feb	5.7	8.6	10.9	12.9	14.3	17.0	12.9	10.4	13.6	6.6	6.8	10.2	7.3	6.4	5.8	6.8	14.4	11.7	9.4	13.9	16.9	8.2	14.0	18.8	11.0	18.8	
5-Feb	11.4	9.9	6.8	14.2	22.6	27.2	24.1	17.1	11.4	9.7	7.1	5.8	5.1	4.8	5.7	4.8	5.7	7.6	10.2	12.6	14.2	12.7	16.2	20.6	12.0	27.2	
6-Feb	22.9	24.2	22.3	33.7	33.1	24.2	22.4	26.0	21.2	23.8	19.4	13.6	8.1	5.6	5.6	4.1	4.6	2.1	1.6	1.7	2.7	3.6	4.3	4.7	14.0	33.7	
7-Feb	4.6	5.3	6.4	5.9	6.4	6.5	6.4	6.4	7.3	7.3	6.5	6.6	6.6	6.1	6.2	5.7	5.9	8.7	11.2	11.0	10.8	9.7	8.1	7.8	7.2	11.2	
8-Feb	7.4	7.1	6.9	6.7	6.7	6.6	6.7	6.1	7.9	8.0	7.0	8.2	14.2	14.4	18.5	16.5	16.1	16.4	17.0	16.3	15.4	14.1	12.4	10.0	11.1	18.5	
9-Feb	7.0	5.5	3.9	2.2	1.8	1.9	4.3	3.8	3.3	3.8	3.8	3.5	3.3	3.3	3.5	3.8	4.5	4.4	4.1	3.8	3.4	3.7	4.1	4.1	3.8	7.0	
10-Feb	4.2	4.3	4.3	7.8	12.8	17.5	19.7	14.4	11.2	10.8	9.9	9.4	11.7	8.4	7.4	11.2	6.5	5.4	4.6	3.9	3.3	3.5	5.1	5.9	8.5	19.7	
11-Feb	3.8	3.9	3.7	2.0	1.1	1.0	1.2	1.1	2.5	2.0	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.7	1.7	1.6	0.8	1.4	2.4	1.4	3.9	
12-Feb	3.9	6.2	11.7	10.7	12.4	12.0	11.6	8.5	9.8	7.4	7.6	5.7	2.2	1.7	1.7	1.5	1.1	0.9	1.1	1.0	2.4	0.9	2.6	2.1	5.3	12.4	
13-Feb	1.7	1.8	2.1	2.7	3.9	3.3	4.3	4.2	3.4	3.1	3.5	4.5	5.0	3.9	8.7	7.1	7.6	4.6	2.5	1.5	0.8	1.4	1.4	1.7	3.5	8.7	
14-Feb	2.1	2.0	2.0	2.3	1.9	1.5	1.5	2.5	3.0	2.8	2.7	3.1	3.9	3.5	3.3	3.1	3.2	3.3	2.9	3.2	3.4	2.7	1.7	1.6	2.6	3.9	
15-Feb	1.8	2.1	2.4	2.9	3.6	6.3	8.0	9.1	10.8	7.8	7.3	9.9	7.3	5.2	5.2	4.9	7.0	16.8	21.4	22.4	20.3	8.9	3.3	2.3	8.2	22.4	
16-Feb	3.7	4.3	2.3	1.2	2.8	5.2	5.7	5.8	7.7	8.2	6.8	4.5	C	4.2	4.3	2.6	2.1	2.2	3.8	2.5	1.8	2.1	3.4	3.7	4.0	8.2	
17-Feb	5.1	6.0	7.5	8.3	9.9	12.2	12.3	8.4	8.2	13.1	15.7	11.7	10.3	16.9	16.2	14.0	20.2	19.4	8.2	10.9	11.4	12.8	11.1	12.1	11.7	20.2	
18-Feb	27.8	54.9	26.2	11.7	9.1	11.4	18.2	10.9	7.7	9.2	23.5	20.9	14.3	15.1	9.1	9.4	11.6	18.4	11.8	14.0	16.9	16.3	13.2	13.7	16.5	54.9	
19-Feb	18.2	30.2	27.7	23.7	30.9	21.0	20.7	20.7	25.8	18.7	34.9	45.4	32.0	23.5	27.9	29.0	27.3	34.3	14.5	20.2	12.5	27.9	21.2	14.1	25.1	45.4	
20-Feb	13.2	10.3	8.8	10.0	14.4	16.6	20.1	18.8	21.0	23.2	22.2	21.0	21.0	18.2	18.8	18.6	13.8	18.2	12.6	13.8	20.2	23.7	18.8	19.5	17.4	23.7	
21-Feb	34.8	32.7	28.9	27.2	21.9	18.4	18.7	17.7	15.5	12.2	15.2	22.5	39.2	42.6	18.3	3.9	3.5	3.0	2.6	3.0	4.4	12.7	20.8	16.8	18.2	42.6	
22-Feb	13.6	13.4	21.1	22.0	20.6	18.1	18.5	13.5	13.7	12.6	7.4	7.0	7.5	7.8	7.5	36.7	31.4	21.2	21.2	21.8	22.1	23.9	22.2	23.6	17.9	36.7	
23-Feb	25.0	18.6	13.8	10.1	8.5	13.6	13.6	10.9	10.9	7.7	4.2	3.4	2.8	2.5	2.7	2.3	5.1	2.3	1.9	1.7	1.5	2.6	1.1	0.9	7.0	25.0	
24-Feb	8.8	8.5	6.0	5.7	9.9	5.1	2.5	2.0	1.3	2.2	1.6	2.2	2.7	6.1	5.4	3.8	3.8	4.7	5.1	9.0	12.0	8.2	7.3	7.1	5.5	12.0	
25-Feb	11.5	8.8	10.5	6.4	6.3	4.7	4.8	6.4	6.7	9.9	11.6	6.3	6.9	9.3	8.3	6.3	5.8	7.4	16.5	22.3	13.0	9.3	8.3	7.7	8.9	22.3	
26-Feb	11.5	15.7	12.7	7.7	9.7	13.3	6.6	9.0	9.1	5.7	8.1	11.3	19.8	20.5	12.8	10.2	8.5	11.0	19.2	26.3	26.8	27.3	20.7	7.7	13.8	27.3	
27-Feb	4.2	3.7	4.0	4.2	4.0	3.5	7.9	6.8	4.2	3.7	3.7	3.6	3.5	3.6	5.3	7.2	5.6	12.8	15.7	10.1	12.9	11.9	12.7	13.8	7.0	15.7	
28-Feb	10.9	5.6	4.8	5.9	6.6	5.8	8.0	12.5	14.0	24.5	23.6	20.6	9.6	10.8	9.2	6.2	4.5	5.8	4.1	4.8	4.4	3.7	3.6	4.7	8.9	24.5	
29-Feb	5.2	5.3	4.0	5.1	3.7	3.7	5.0	4.6	4.8	4.4	4.2	4.2	4.5	6.7	10.3	11.2	7.4	5.7	6.2	6.6	6.5	6.5	4.9	3.7	5.6	11.2	
		9.9	10.8	9.5	9.4	10.2	10.1	10.4	9.5	9.5	9.2	9.7	9.7	9.5	9.2	8.4	8.5	8.3	9.0	8.4	9.6	9.7	9.7	9.1	8.6	Diurnal Average	
		34.8	54.9	28.9	33.7	33.1	27.2	24.1	26.0	25.8	24.5	34.9	45.4	39.2	42.6	27.9	36.7	31.4	34.3	21.4	26.3	26.8	27.9	22.2	23.6	Diurnal Maximum	
C - Calibration																											
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Barge Landing - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	264	37.99	37.99
6 - 15	304	43.74	81.73
16 - 25	97	13.96	95.68
26 - 80	30	4.32	100.00
> 81.0	0	0.00	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - μg/m³
Barge Landing - February 2024

Concentration Ranges (μg/m ³)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	30	17	22	12	3	11	17	23	22	13	25	33	7	14	5	10	264
6 - 15	45	31	12	1	4	4	27	60	31	17	9	2	4	7	11	38	303
16 - 25	11	7	3	2	2	5	6	20	7	1	3	1	3	0	1	25	97
26 - 80	8	4	1	0	0	1	2	0	2	1	0	0	0	1	0	10	30
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	94	59	38	15	9	21	52	103	62	32	37	36	14	22	17	83	694

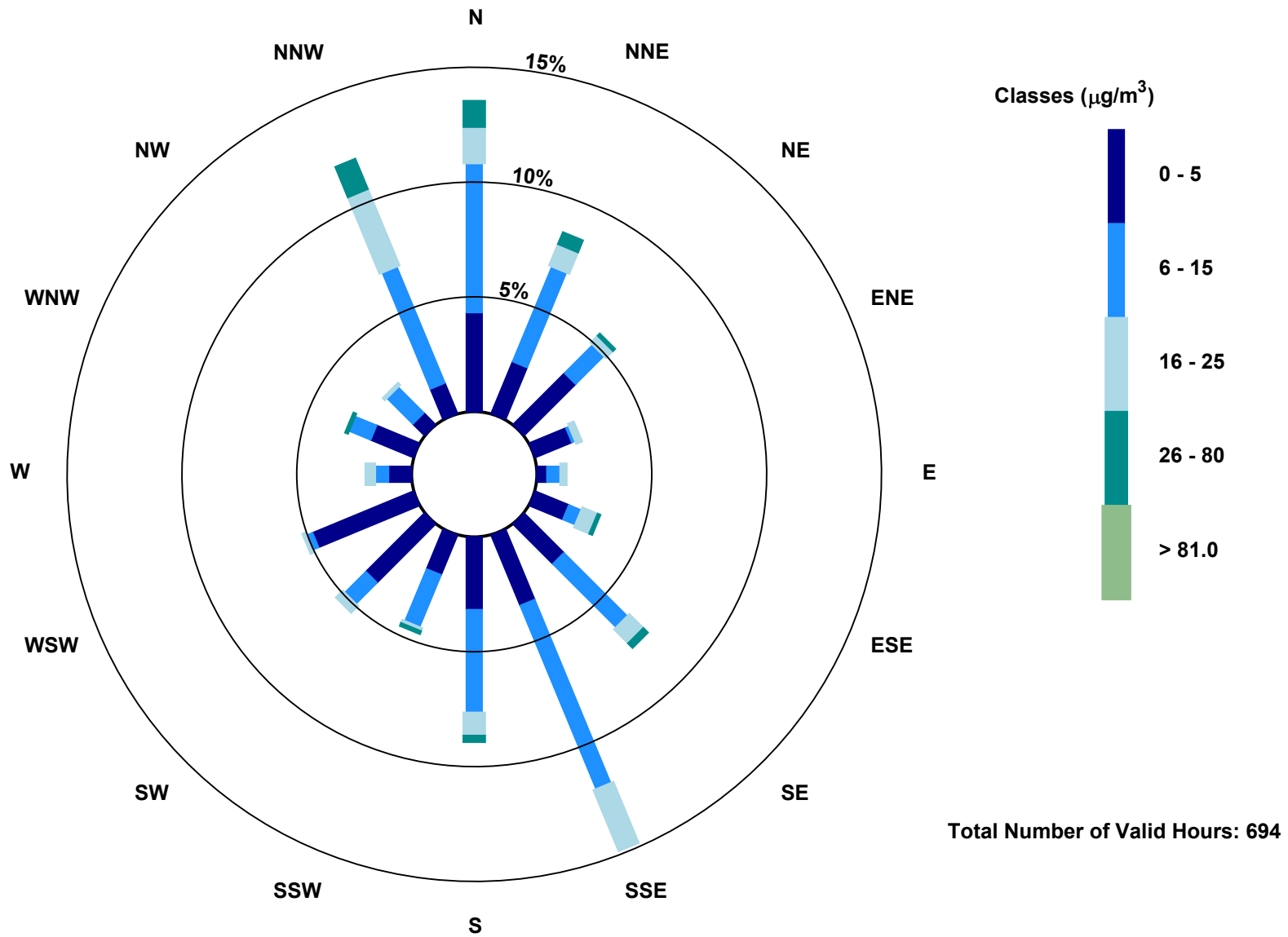
Total Number of Valid Hours: 694

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Barge Landing





Wood Buffalo Environmental Association
Summary of Hour Averages

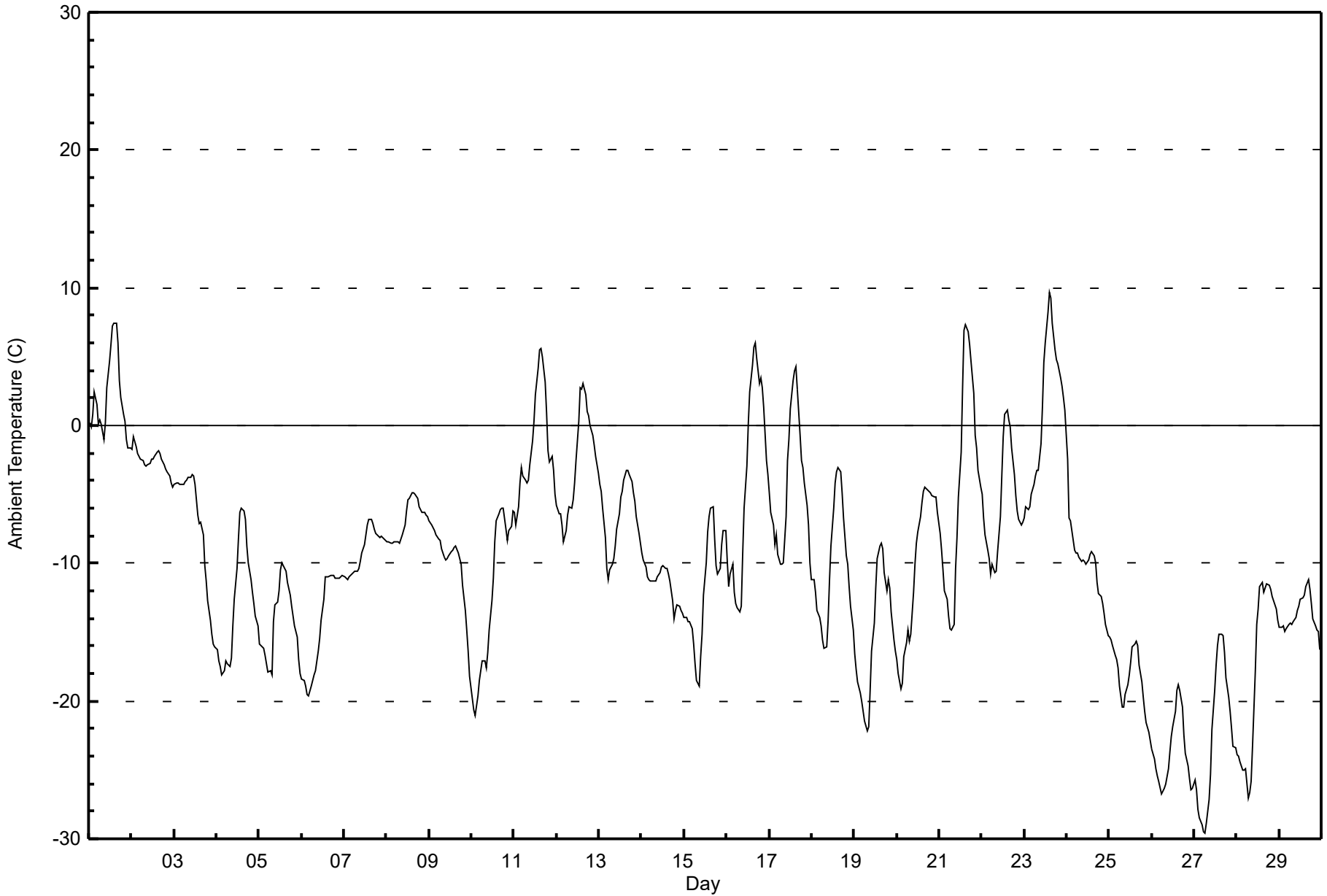
Ambient Temperature (AT) - C
Barge Landing - February 2024

Maximum Value: 9.6 C on Feb 23 15:00 Maximum Daily Average: 2.0 C on Feb 1																						Hours in Service: 696 Hours of Data: 696				
Minimum Value: -29.6 C on Feb 27 07:00 Minimum Daily Average: -23.8 C on Feb 26 Maximum Diurnal Average: -4.8 C at hour 16 Minimum Diurnal Average: -13.4 C at hour 8 Monthly Average: -9.73 C Percentiles: P ₁ = -27.0 P ₁₀ = -19.2 Q ₁ = -14.6 Median = -9.8 Q ₃ = -4.8 P ₉₀ = 0.1 P ₉₉ = 7.3																						Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.2	-0.1	0.8	2.4	1.5	0.1	0.4	0.1	-1.0	0.2	2.7	4.7	5.9	7.3	7.4	7.4	6.0	3.3	2.0	0.8	0.3	-1.0	-1.6	-1.6	2.0	7.4
2-Feb	-1.7	-0.8	-1.5	-2.0	-2.3	-2.4	-2.6	-2.8	-2.9	-2.9	-2.7	-2.5	-2.4	-2.2	-1.9	-1.8	-2.0	-2.5	-2.9	-3.2	-3.4	-3.7	-4.2	-4.5	-2.6	-0.8
3-Feb	-4.2	-4.1	-4.2	-4.3	-4.3	-4.3	-4.1	-3.9	-3.8	-3.7	-3.6	-3.6	-4.2	-6.5	-7.1	-7.1	-7.9	-10.1	-11.3	-12.7	-14.2	-15.2	-15.8	-16.1	-7.3	-3.6
4-Feb	-16.2	-17.1	-17.5	-18.1	-17.8	-17.1	-17.3	-17.5	-16.9	-14.5	-12.6	-10.4	-8.2	-6.3	-6.0	-6.2	-6.8	-8.7	-10.0	-11.2	-12.1	-13.0	-13.8	-14.6	-12.9	-6.0
5-Feb	-15.9	-16.0	-16.2	-16.7	-17.3	-17.9	-17.7	-18.2	-14.3	-13.0	-12.8	-12.0	-10.5	-10.0	-10.4	-10.6	-11.4	-12.3	-13.1	-13.8	-14.5	-15.4	-16.9	-18.0	-14.4	-10.0
6-Feb	-18.4	-18.5	-18.9	-19.6	-19.6	-18.9	-18.5	-18.1	-17.8	-16.3	-15.4	-14.2	-12.6	-11.0	-11.0	-11.0	-10.9	-10.9	-10.9	-11.1	-11.1	-11.1	-11.0	-10.9	-14.5	-10.9
7-Feb	-11.0	-11.0	-11.2	-11.0	-10.8	-10.7	-10.6	-10.5	-10.4	-9.9	-9.2	-8.6	-8.0	-7.2	-6.8	-6.8	-7.1	-7.5	-7.8	-8.0	-8.1	-8.1	-8.2	-8.4	-9.0	-6.8
8-Feb	-8.4	-8.5	-8.5	-8.5	-8.5	-8.5	-8.5	-8.5	-8.3	-7.9	-7.2	-6.2	-5.4	-5.3	-4.9	-4.8	-5.0	-5.3	-5.9	-6.1	-6.3	-6.4	-6.5	-6.6	-6.9	-4.8
9-Feb	-6.9	-7.2	-7.4	-7.6	-7.9	-8.2	-8.4	-9.0	-9.5	-9.8	-9.6	-9.5	-9.1	-9.0	-8.8	-8.8	-9.2	-9.7	-10.1	-11.5	-13.5	-14.8	-16.4	-18.2	-10.0	-6.9
10-Feb	-19.8	-20.7	-21.1	-19.6	-18.5	-17.8	-17.1	-17.1	-17.6	-16.5	-14.9	-12.7	-11.1	-8.4	-6.9	-6.4	-6.1	-6.0	-6.0	-7.5	-8.3	-7.7	-7.3	-6.2	-12.6	-6.0
11-Feb	-6.3	-7.3	-5.9	-4.2	-3.0	-3.6	-3.9	-4.1	-3.9	-2.9	-1.1	0.3	2.2	4.2	5.5	5.6	5.0	3.1	1.0	-1.9	-2.7	-2.2	-3.3	-4.9	-1.4	5.6
12-Feb	-5.8	-6.5	-6.4	-7.2	-8.5	-7.7	-6.5	-5.9	-6.0	-5.3	-4.2	-2.6	0.3	2.8	2.6	3.0	2.3	1.0	0.7	0.0	-0.7	-1.4	-2.3	-3.4	-2.8	3.0
13-Feb	-4.3	-4.8	-6.0	-8.1	-10.3	-11.2	-10.4	-10.1	-9.6	-8.7	-7.5	-6.4	-5.2	-4.8	-4.0	-3.2	-3.3	-3.6	-4.0	-4.9	-5.5	-6.6	-7.8	-8.6	-6.6	-3.2
14-Feb	-9.3	-9.7	-10.3	-11.0	-11.2	-11.3	-11.3	-11.3	-11.0	-10.6	-10.3	-10.2	-10.4	-10.4	-10.8	-11.3	-12.7	-14.0	-13.5	-13.0	-13.2	-13.4	-13.7	-13.7	-11.5	-9.3
15-Feb	-13.9	-13.9	-14.2	-14.2	-14.8	-15.9	-17.3	-18.5	-19.0	-16.8	-15.1	-12.3	-9.9	-7.8	-6.6	-6.0	-5.9	-8.2	-10.2	-10.8	-10.4	-8.6	-7.7	-7.6	-11.9	-5.9
16-Feb	-9.9	-11.7	-10.8	-10.1	-12.1	-12.9	-13.2	-13.5	-13.1	-9.3	-6.0	-2.9	0.1	2.5	4.4	5.7	6.0	4.9	3.0	3.5	2.7	1.3	-2.5	-3.5	-4.1	6.0
17-Feb	-4.9	-6.3	-7.2	-8.6	-7.9	-9.3	-10.0	-10.0	-10.0	-6.6	-2.5	-1.0	1.2	3.2	4.0	4.2	2.6	-0.7	-2.6	-3.0	-4.2	-5.8	-7.2	-10.0	-4.3	4.2
18-Feb	-11.2	-11.2	-12.1	-13.5	-13.9	-14.6	-15.6	-16.2	-16.0	-14.2	-11.2	-8.7	-6.0	-4.1	-3.3	-3.0	-3.3	-4.9	-6.7	-9.5	-10.1	-11.6	-13.1	-14.9	-10.4	-3.0
19-Feb	-16.6	-17.7	-18.6	-19.4	-20.1	-20.7	-21.5	-22.2	-21.8	-19.2	-16.4	-14.3	-11.8	-9.7	-8.8	-8.6	-9.0	-10.7	-12.0	-11.2	-11.8	-13.6	-15.6	-16.4	-15.3	-8.6
20-Feb	-17.0	-18.0	-19.1	-18.8	-16.8	-15.7	-14.9	-15.7	-15.1	-12.1	-10.1	-8.5	-7.7	-6.6	-5.6	-4.8	-4.5	-4.6	-4.7	-4.9	-5.1	-5.2	-5.2	-6.3	-10.3	-4.5
21-Feb	-7.8	-9.0	-10.5	-12.0	-12.6	-13.8	-14.7	-14.8	-14.4	-10.4	-8.1	-5.1	-1.9	2.7	6.9	7.3	6.8	5.9	4.6	2.3	-0.7	-1.6	-3.3	-4.5	-4.5	7.3
22-Feb	-5.0	-6.7	-8.0	-9.1	-9.7	-10.8	-10.1	-10.7	-10.6	-9.2	-6.6	-3.7	-0.9	0.9	1.2	0.4	-0.1	-1.7	-3.5	-5.1	-6.2	-6.8	-7.2	-7.0	-5.7	1.2
23-Feb	-6.7	-5.9	-6.1	-5.8	-5.0	-4.2	-3.7	-3.3	-3.2	-1.3	1.3	4.5	6.0	8.2	9.6	9.3	7.5	5.5	4.8	4.5	3.5	2.8	2.0	1.1	1.1	9.6
24-Feb	-2.5	-6.7	-6.9	-7.6	-9.0	-9.2	-9.2	-9.5	-9.8	-9.8	-9.8	-10.1	-9.7	-9.4	-9.1	-9.5	-10.0	-11.4	-12.2	-12.4	-12.9	-13.6	-14.4	-15.3	-10.0	-2.5
25-Feb	-15.3	-15.6	-16.0	-16.7	-17.0	-17.6	-18.9	-20.4	-20.4	-19.6	-18.8	-18.2	-17.2	-16.1	-15.9	-15.7	-15.9	-17.4	-18.6	-19.7	-20.8	-21.6	-22.3	-22.9	-18.3	-15.3
26-Feb	-23.5	-24.2	-25.0	-25.5	-25.8	-26.7	-26.5	-26.4	-26.1	-25.0	-23.7	-22.6	-21.9	-20.7	-19.2	-18.8	-19.2	-20.4	-22.5	-23.8	-24.8	-25.7	-26.5	-26.3	-23.8	-18.8
27-Feb	-25.7	-26.4	-27.9	-28.4	-29.0	-29.4	-29.6	-28.9	-27.1	-25.3	-22.0	-19.2	-17.4	-16.0	-15.2	-15.2	-15.3	-16.5	-18.3	-19.7	-20.7	-22.0	-23.3	-23.4	-22.6	-15.2
28-Feb	-23.9	-24.0	-24.4	-25.0	-25.0	-25.0	-27.0	-26.6	-25.8	-23.3	-17.8	-14.5	-13.3	-11.7	-11.4	-12.1	-11.8	-11.5	-11.6	-11.9	-12.4	-12.7	-13.3	-14.1	-17.9	-11.4
29-Feb	-14.6	-14.7	-14.6	-14.9	-14.7	-14.4	-14.4	-14.4	-14.3	-13.9	-13.4	-13.1	-12.6	-12.5	-12.3	-11.7	-11.2	-11.9	-12.9	-14.1	-14.5	-14.8	-14.9	-16.3	-13.8	-11.2
	-11.3	-11.9	-12.3	-12.6	-12.8	-13.1	-13.2	-13.4	-13.1	-11.7	-10.0	-8.4	-7.0	-5.6	-5.0	-4.8	-5.2	-6.4	-7.4	-8.3	-9.0	-9.6	-10.4	-11.1	Diurnal Average	
	0.2	-0.1	0.8	2.4	1.5	0.1	0.4	0.1	-1.0	0.2	2.7	4.7	6.0	8.2	9.6	9.3	7.5	5.9	4.8	4.5	3.5	2.8	2.0	1.1	Diurnal Maximum	



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Barge Landing - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Barge Landing - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	59	8.48	8.48
-20 - 0	563	80.89	89.37
0 - 10	74	10.63	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Relative Humidity (RH) - %

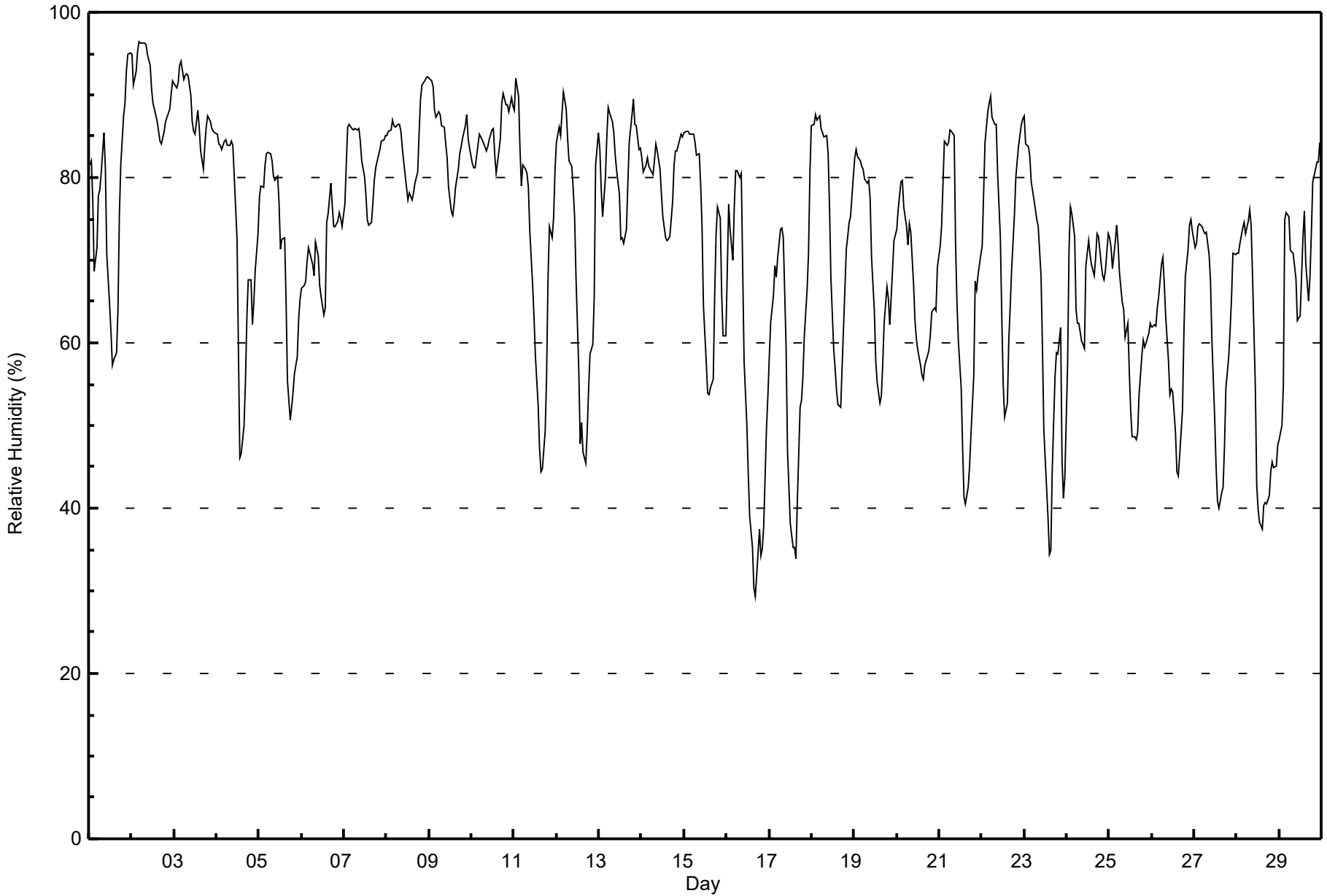
Barge Landing - February 2024

Maximum Value: 96.5 % on Feb 2 05:00 Maximum Daily Average: 91.0 % on Feb 2																						Hours in Service: 696 Hours of Data: 696				
Minimum Value: 29.3 % on Feb 16 17:00 Minimum Daily Average: 55.1 % on Feb 16 Maximum Diurnal Average: 80.9 % at hour 5 Minimum Diurnal Average: 58.6 % at hour 16 Monthly Average: 71.86 % Percentiles: P ₁ = 35.0 P ₁₀ = 49.6 Q ₁ = 62.3 Median = 74.2 Q ₃ = 83.8 P ₉₀ = 87.3 P ₉₉ = 95.0																						Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	81.5	82.0	77.3	68.7	71.5	77.8	78.5	80.5	85.4	81.2	70.7	64.7	61.4	57.2	58.0	58.7	64.0	75.5	81.6	87.5	89.0	92.8	95.0	95.1	76.5	95.1
2-Feb	94.9	91.2	92.9	95.3	96.5	96.2	96.3	96.4	96.1	94.9	93.6	90.8	89.0	88.3	86.9	85.6	84.4	84.1	85.5	86.8	87.4	88.3	90.3	91.6	91.0	96.5
3-Feb	91.3	90.9	91.5	93.6	94.1	91.9	92.3	92.6	92.4	90.1	86.8	85.7	85.2	88.1	86.1	83.2	81.0	83.9	86.1	87.4	86.8	85.9	85.6	85.4	88.3	94.1
4-Feb	85.3	84.1	83.9	83.5	84.4	84.5	83.8	83.8	84.4	83.9	80.2	72.5	59.1	46.0	46.7	50.0	55.2	62.9	67.7	67.6	62.2	64.9	68.8	73.2	71.6	85.3
5-Feb	77.6	78.9	78.8	81.6	82.9	83.1	82.9	82.1	80.2	79.7	80.1	77.0	71.4	72.6	72.7	65.3	55.3	50.6	52.1	54.1	56.3	58.3	62.9	65.3	70.9	83.1
6-Feb	66.7	66.9	67.4	69.9	71.5	70.1	69.6	68.1	72.3	70.6	66.9	65.6	63.4	64.3	74.6	75.6	79.3	76.7	74.1	74.0	74.7	75.7	75.1	74.0	71.1	79.3
7-Feb	76.8	81.7	86.2	86.5	85.9	85.8	86.0	85.8	85.9	84.3	82.0	80.1	78.0	75.0	74.2	74.6	77.0	79.7	81.2	82.7	83.3	84.3	84.6	85.0	81.9	86.5
8-Feb	85.1	85.6	85.8	86.9	86.3	86.2	86.4	86.4	85.6	83.5	80.3	78.8	77.3	78.2	77.4	78.2	79.3	80.7	85.5	89.4	91.2	91.8	92.1	92.3	84.6	92.3
9-Feb	92.1	91.8	91.0	88.2	87.2	87.9	87.7	86.3	86.1	84.1	82.4	78.7	75.9	75.4	76.8	78.8	81.1	82.9	83.8	84.8	86.3	87.6	84.8	83.6	84.4	92.1
10-Feb	81.7	81.3	81.1	83.9	85.3	84.9	84.5	83.8	83.2	83.8	84.6	85.8	85.9	82.8	80.6	83.3	84.7	89.0	90.1	88.8	88.8	88.0	89.6	88.7	85.2	90.1
11-Feb	88.2	92.0	89.8	83.5	78.9	81.5	81.1	80.5	78.9	73.6	67.1	63.2	58.4	52.4	47.2	44.3	44.8	49.4	55.9	67.7	74.1	72.7	75.0	80.8	70.0	92.0
12-Feb	84.3	86.1	85.1	87.8	90.3	88.3	84.7	82.0	81.4	78.6	75.2	68.0	56.5	47.8	50.3	46.7	45.4	49.3	54.4	58.6	59.9	65.4	81.6	85.5	70.6	90.3
13-Feb	83.6	78.7	75.2	80.0	84.8	88.4	87.8	86.8	85.5	82.8	80.9	77.9	72.6	72.6	72.0	73.7	79.2	84.3	87.6	89.6	86.5	86.3	83.5	83.5	81.8	89.6
14-Feb	82.4	80.8	81.6	82.5	81.4	81.1	80.3	82.1	84.1	83.2	81.0	77.9	75.3	72.8	72.3	72.5	72.9	77.1	81.5	83.2	83.2	84.5	85.3	85.0	80.2	85.3
15-Feb	85.4	85.5	85.6	85.2	85.3	85.3	84.2	82.8	82.9	79.2	73.9	64.4	57.7	54.0	53.8	54.6	55.5	65.7	73.1	76.4	75.0	65.9	60.8	60.9	72.2	85.6
16-Feb	68.6	76.7	73.7	70.0	76.4	80.9	80.8	80.0	80.4	69.2	57.8	50.0	44.0	39.1	35.3	30.3	29.3	31.9	37.5	34.2	35.0	37.7	49.7	53.5	55.1	80.9
17-Feb	58.3	62.5	65.7	69.3	68.0	70.4	73.7	73.9	72.7	59.5	46.9	42.6	38.2	35.3	35.3	34.0	40.8	52.2	53.0	55.9	60.9	66.5	70.8	80.5	57.8	80.5
18-Feb	86.2	86.4	87.6	86.9	87.4	86.0	85.4	84.9	85.1	82.8	76.5	67.8	59.2	57.0	54.3	52.6	52.3	57.2	61.9	71.3	72.9	74.6	75.2	80.1	73.8	87.6
19-Feb	82.4	83.4	82.6	82.0	81.3	81.1	79.8	79.3	79.7	77.5	70.3	63.9	57.8	55.3	52.7	53.6	57.5	62.3	66.8	65.5	62.1	65.4	72.4	73.1	70.3	83.4
20-Feb	73.7	76.1	79.5	79.6	76.4	74.0	71.9	74.4	73.3	67.1	62.8	60.5	59.2	57.4	56.2	55.5	57.3	58.4	59.2	61.1	63.7	64.2	63.9	69.1	66.4	79.6
21-Feb	71.7	74.1	79.1	84.4	83.9	84.3	85.7	85.6	85.1	71.9	64.8	60.1	54.6	47.5	41.3	40.4	42.5	45.2	49.1	56.2	67.5	66.5	68.2	70.6	65.8	85.7
22-Feb	71.7	78.0	84.2	88.0	89.1	89.8	87.3	86.5	86.4	80.7	72.6	63.1	55.0	51.0	52.7	60.3	64.4	68.9	75.5	80.1	82.0	83.9	86.4	87.1	76.0	89.8
23-Feb	87.5	84.1	83.7	82.6	79.5	77.3	76.2	74.8	74.0	68.1	59.7	49.5	45.9	38.8	34.4	35.0	44.6	55.9	58.9	58.7	61.9	45.8	41.2	43.8	60.9	87.5
24-Feb	57.7	71.3	76.5	75.6	72.9	64.1	62.4	62.4	60.2	59.8	59.3	69.4	72.4	70.7	69.5	68.2	70.4	73.2	72.9	69.5	68.2	67.6	68.8	73.3	68.2	76.5
25-Feb	72.7	71.5	68.9	72.1	74.2	72.0	68.5	65.0	64.1	60.7	62.4	56.6	51.9	48.7	48.6	48.3	49.2	53.7	58.6	60.4	59.5	60.1	61.2	62.4	61.3	74.2
26-Feb	61.9	62.2	62.1	64.3	65.6	69.6	70.3	67.1	63.2	57.8	53.7	54.3	54.1	49.2	44.5	43.8	46.5	51.9	61.2	68.0	71.4	74.2	74.8	73.5	61.1	74.8
27-Feb	71.6	72.0	74.1	74.4	74.0	73.5	73.3	73.3	70.6	67.5	60.4	50.9	44.8	40.8	40.1	41.9	42.5	47.7	54.5	58.3	61.6	65.5	70.8	70.7	61.4	74.4
28-Feb	70.8	70.9	72.1	73.9	74.6	73.3	74.8	76.1	74.3	68.1	54.8	42.6	39.9	38.3	37.4	40.4	40.7	40.6	41.6	44.4	45.7	44.9	45.1	47.6	55.5	76.1
29-Feb	48.3	50.1	54.8	75.0	75.7	75.3	71.2	71.0	70.9	67.7	62.7	63.1	63.3	72.7	76.0	69.7	65.1	68.0	73.2	79.5	81.0	81.9	81.8	84.2	70.1	84.2
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Barge Landing - February 2024





Wood Buffalo Environmental Association

Summary of Hour Averages

Barometric Pressure (BP) - inHg

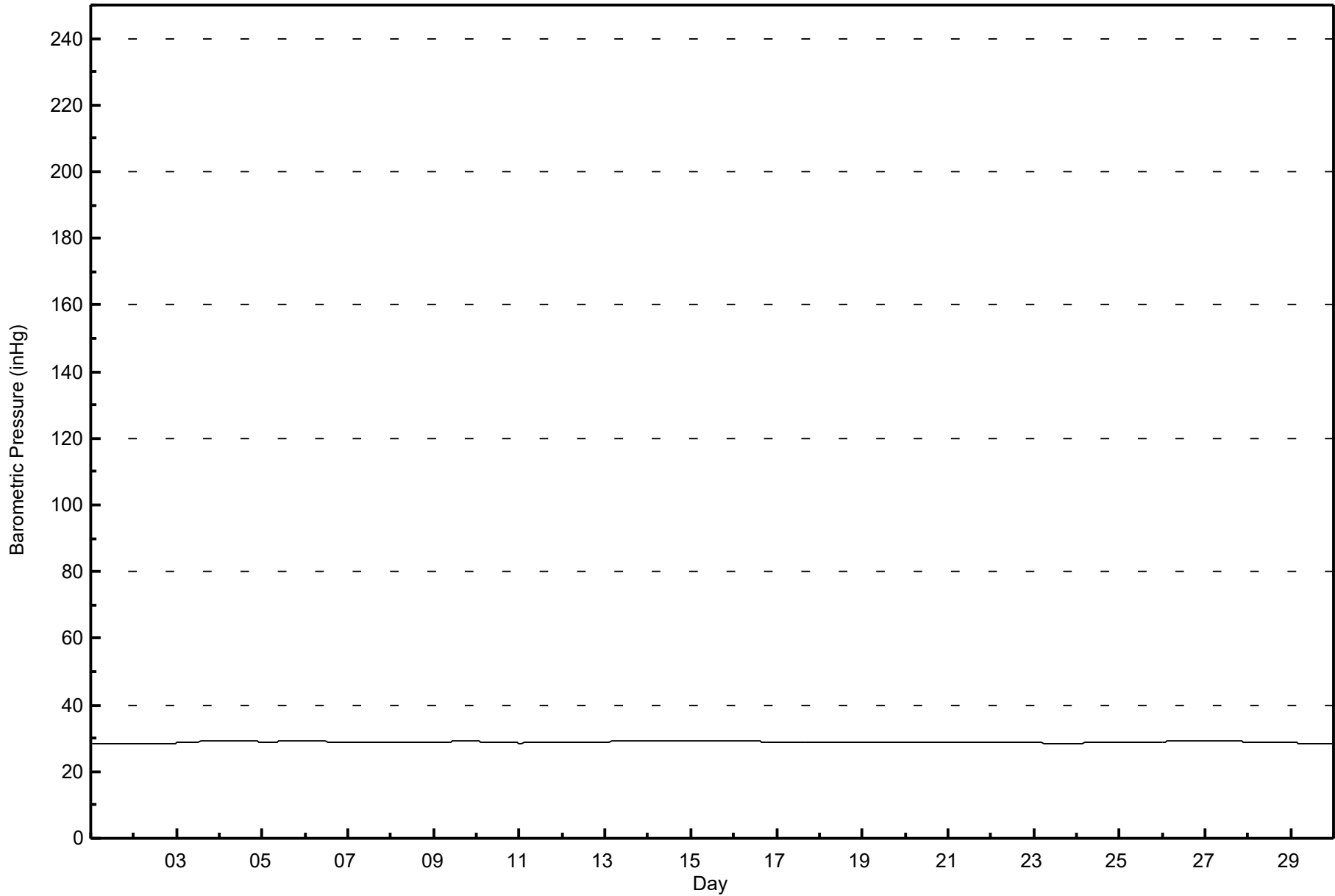
Barge Landing - February 2024

Maximum Value: 29.4 inHg on Feb 15 02:00 Maximum Daily Average: 29.3 inHg on Feb 15																						Hours in Service: 696																															
Minimum Value: 28.4 inHg on Feb 23 20:00 Minimum Daily Average: 28.5 inHg on Feb 23																						Hours of Data: 696																															
Maximum Diurnal Average: 28.9 inHg at hour 10 Minimum Diurnal Average: 28.9 inHg at hour 16																						Hours of Missing Data: 0																															
Monthly Average: 28.89 inHg Percentiles: P ₁ = 28.4 P ₁₀ = 28.6 Q ₁ = 28.7 Median = 28.9 Q ₃ = 29.1 P ₉₀ = 29.2 P ₉₉ = 29.4																						Hours of Calibration: 0																															
																						Percent Operational Time: 100.0																															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																													
1-Feb	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5																						
2-Feb	28.5	28.5	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.5	28.5	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6																						
3-Feb	28.6	28.6	28.6	28.6	28.7	28.7	28.7	28.8	28.8	28.8	28.9	28.9	29.0	29.0	29.1	29.1	29.2	29.2	29.2	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3																						
4-Feb	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.2	29.2	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0																						
5-Feb	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2																						
6-Feb	29.2	29.2	29.2	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.0	29.0	29.0	29.0	29.0	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9																						
7-Feb	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9																						
8-Feb	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9																						
9-Feb	28.9	28.9	28.9	28.9	28.9	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1																						
10-Feb	29.0	29.0	29.0	29.0	29.0	29.0	29.0	28.9	28.9	28.9	28.9	28.8	28.8	28.8	28.7	28.7	28.7	28.7	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6																						
11-Feb	28.6	28.6	28.6	28.6	28.6	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8																						
12-Feb	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8																						
13-Feb	29.0	29.0	29.0	29.0	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.0	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1																						
14-Feb	29.2	29.2	29.2	29.2	29.2	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4																						
15-Feb	29.4	29.4	29.4	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2																						
16-Feb	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.1	29.1	29.1	29.0	29.0	29.0	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9																						
17-Feb	28.9	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9																						
18-Feb	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8																						
19-Feb	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9																						
20-Feb	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.8	28.9	28.9	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8																						
21-Feb	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.7	28.7	28.7	28.7	28.6	28.6	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7																						
22-Feb	28.7	28.7	28.7	28.7	28.7	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8																						
23-Feb	28.7	28.7	28.7	28.7	28.6	28.6	28.6	28.6	28.5	28.5	28.5	28.5	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4																						
24-Feb	28.4	28.5	28.5	28.6	28.6	28.6	28.6	28.6	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7																						
25-Feb	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8																						
26-Feb	29.0	29.0	29.0	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2																						
27-Feb	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0																						
28-Feb	29.0	29.0	29.0	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.8	28.8	28.8	28.8	28.8	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7																						
29-Feb	28.7	28.6	28.6	28.6	28.6	28.6	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5																						
28.9																						28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	Diurnal Average	
29.4																						29.4	29.4	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	Diurnal Maximum



Wood Buffalo Environmental Association
Hourly Averages

Barometric Pressure (BP) - inHg
Barge Landing - February 2024





Maximum Speed: 15 km/h on Feb 23 12:00	Maximum Daily Speed Average: 7.9 km/h on Feb 25	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 6 13:00	Minimum Daily Speed Average: 0.2 km/h on Feb 7	Hours of Data: 687
Maximum Diurnal Speed Average: 1.9 km/h at hour 2	Minimum Diurnal Speed Average: 0.1 km/h at hour 10	Hours of Missing Data: 9
Monthly Average Velocity: 0.5 km/h 74.3 deg	Percentiles: P ₁ = 0 P ₁₀ = 2 Q ₁ = 3 Median = 4 Q ₃ = 7 P ₉₀ = 9 P ₉₉ = 13	Percent Operational Time: 98.7

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	E0	NNW2	SE5	SE5	SSE4	SE4	SSE4	SSE3	SE2	SSE4	S6	S8	S7	SSE6	S6	S3	N0	NNE1	N2	N2	NNW2	UO	NNW3	NNW4	SSE2.1	S8	
2-Feb	N5	N7	N7	N7	N8	NNE8	N7	N7	N7	N7	N7	N7	N7	NNE6	N7	N6	N6	N7	N6	N5	NNE5	NNE4	N4	NNW3	N6.1	NNE8	
3-Feb	NW2	UO	E5	E3	NE3	NE2	WNW2	NNW3	NNW4	NW4	N3	N4	NNE6	NNE8	NE5	NE4	NE4	ENE4	E4	S2	ESE3	ESE4	ESE4	ESE4	NE2.4	NNE8	
4-Feb	SE3	ESE3	ESE3	SE3	SE5	SSE5	SE5	SE5	SSE6	SSE6	SSE8	S7	SSE8	SSE8	SSE9	SSE8	S7	SSE5	SSE6	SE6	SE8	SE6	SE5	ESE4	SSE5.5	SSE9	
5-Feb	ESE4	ESE5	ESE2	NW2	ESE1	SE2	NE1	W2	NNE9	N10	N11	N10	NNE10	NNE10	NNE11	W2	NNE9	N8	N7	N7	N6	NNW6	N5	NNW4	NNW3	N5.0	N11
6-Feb	N2	NNW1	NW2	N2	NNW1	NNW2	NNW1	W1	SW0	SE1	WNW3	W3	SSW0	SSE5	S6	SSE5	SSE4	SE6	SE8	SE7	SSE5	SSE5	SE6	SSE5	SSE1.9	SE8	
7-Feb	SE4	SE2	SE3	SE1	SSW1	SSE0	SE3	SSE2	SSE3	S2	S3	SW2	S3	WNW2	NNE2	NNW2	NNE2	NNW3	NNW3	NNW3	NNW2	NNW1	NW1	NNW1	SSE0.2	SE4	
8-Feb	NW1	UO	UO	WNW1	UO	SE1	UO	S1	SE2	SW1	SW2	WSW3	S4	SSW4	SSE4	SSW2	WSW1	UO	UO	NNW3	NNW3	NNW2	NW3	NW4	WSW0.9	S4	
9-Feb	NW4	WNW3	WSW2	WSW3	WNW3	NNW2	NE3	NNE3	NNE4	NNE4	NE4	E4	ENE4	ENE3	ENE3	ENE3	NE3	N3	NNE3	ENE3	N1	NNW2	N1	SW1	NNE1.7	E4	
10-Feb	SE1	SSW1	SW2	UO	SE2	SE2	SSE3	S3	SSW2	SW1	SW2	SSW2	SW4	S6	S6	S6	SSE6	S4	SW4	WSW4	S4	S6	SSE5	SSW4	S3.1	S6	
11-Feb	SSW2	ESE4	SSW6	SW7	WSW7	SW4	SW7	SSW4	SW6	WSW7	WSW9	WSW10	WSW11	WSW8	WSW8	WSW8	WSW8	WSW7	SSW3	SSE4	S3	SSW5	S4	SSE4	SW5.3	WSW11	
12-Feb	SE5	SSE5	SE5	SE3	SSW2	SE6	SE7	SE7	SSE6	SSW4	SSE6	SSW7	SW9	WNW2	NW10	NNW7	NW8	NW8	NW9	NW8	NW7	NNW7	N8	N7	W1.2	NW10	
13-Feb	N4	N7	N8	NNE8	NE5	NE1	SW3	SW3	WSW3	W2	NW1	ESE3	S5	S6	S5	S5	SSE3	SSW4	NNE5	N9	N10	N10	N11	N11	N2.3	N11	
14-Feb	N8	N10	NNE9	N8	N9	NNE8	NNE8	NNE6	NE6	NE5	NE5	NE5	NE5	NNE6	NE6	NE6	NE4	NE3	NE5	ENE5	ENE5	E4	ESE3	ESE2	NNE5.3	N10	
15-Feb	S1	SW2	SW2	SW2	WSW3	SW3	SSW3	S2	SSE3	SSW4	SSW4	SSE5	S2	S4	SSE4	SSE5	SSE5	SSE4	SE4	SE4	SE4	S4	SSW5	SW7	S3.3	SW7	
16-Feb	SE5	SE5	SW4	SW4	SSW3	SE4	SSE5	SE6	SE6	SE7	SSE8	S9	SSE10	S9	SSW8	SW13	SW13	SSW9	S6	W6	WSW8	WSW5	ESE5	ESE5	S5.0	SW13	
17-Feb	ESE5	ESE5	ESE5	ESE5	SE5	S4	ESE5	SE5	SE5	ESE5	ESE5	SW3	W2	NNE2	ENE4	E4	NE4	NNE4	N2	N3	N4	NNW3	NNW4	N1	E2.1	ESE5	
18-Feb	NE2	NE2	NNW2	NNW3	NNW4	N2	N3	NNW3	N1	NNW3	NW4	NNW6	N5	N6	N7	NNW6	NNW6	NNW6	NNW5	NNE2	N5	N5	N4	N4	N3.9	N7	
19-Feb	N2	ESE1	N3	NE1	NW2	NNW2	NW0	NNW1	NNW2	NW2	NW3	WNW3	N3	NNE4	NNE4	NNE4	N4	N4	NNE4	NNE2	NNE3	N3	NNW4	NNW5	N2.4	NNW5	
20-Feb	NNW5	NNW3	NW2	SSW1	SSE1	SE3	SSE3	SSE2	SE5	SSE4	SSE5	SSE6	SSE5	S6	S7	S4	SSE4	SSE4	S2	ESE1	ESE3	SE4	S0	NW2	SSE2.3	S7	
21-Feb	NNW5	NW4	NW3	NNW2	NNW5	NNW4	NNW3	NW2	WNW0	WSW2	SW4	S6	S6	S5	SW9	SW10	SW10	WSW10	WSW7	SSW3	E1	NNW6	NNW4	NW4	WSW2.6	SW10	
22-Feb	NNW3	ENE1	ESE1	N1	NNW2	NNW3	NNW5	NNW4	NNW4	NNW5	NNW5	N3	E3	SE4	E4	NNE4	N4	NNW4	N2	NW1	WSW1	SE4	SE4	SE5	NNE1.5	NNW5	
23-Feb	SSE6	SE7	SE7	SE7	SE9	SSE8	SSE9	SSE9	S5	S6	WSW10	WSW15	WSW11	SW11	WSW15	WSW12	NW12	NW8	WSW10	WSW11	WSW8	WNW14	W12	W11	SW5.8	WSW15	
24-Feb	NNE7	NNE10	N9	N10	N9	NNW9	NNW9	NNW10	NNW10	NNW7	NNW7	NNW7	N5	NE5	NE6	NE7	NE6	NE5	NE5	ENE5	ENE5	NE6	NE5	NE4	NNE3	N6.1	NNE10
25-Feb	NE4	N5	N6	N7	N6	N7	NNE8	NE7	NE6	NE6	NNE7	NNE9	NNE8	NE9	NE9	NE9	NE9	NE10	NNE9	NNE12	NNE12	N11	NNE11	N9	NNE7.9	NNE12	
26-Feb	N11	N13	N11	N9	N7	NNW3	NNW3	WNW2	NW3	NW2	NW4	NNW5	NNE2	NNE3	ESE3	SE4	SSE3	SE3	ESE2	ESE2	SE2	SE1	SSW2	NNW1	N2.6	N13	
27-Feb	NW3	WNW2	WSW1	W1	WSW2	SW3	S2	S2	SW4	SSW4	SW4	SW6	SW4	SE2	SE7	SSE6	SE7	ESE7	ESE6	ESE6	ESE6	ESE6	ESE4	ESE5	SSE2.4	SE7	
28-Feb	ESE4	SE6	SE5	SE4	SE6	SE5	SSE2	SSE1	SW1	WSW4	SSE6	SSE10	SE12	SSE11	SSE14	SE12	SE13	ESE13	ESE12	ESE12	SE12	SE12	SE9	SE9	SE7.6	SSE14	
29-Feb	ESE8	ESE9	ESE10	E5	ENE5	ENE4	ESE10	ESE9	ESE8	ESE9	ESE10	SE8	SE5	SSE4	SSE4	SSE5	SSW5	SW4	W2	S1	SSE2	S1	WSW1	NNW3	SE4.4	ESE10	

NE1.5	NE1.9	NE1.2	NNE1.1	NNE1.0	ENE0.8	E1.0	ESE0.8	E0.7	W0.1	SSW0.5	SSW1.1	S1.1	SE1.3	SE1.5	SSE1.0	SE0.2	NNE0.4	ENE0.7	NE0.9	NE1.1	NNE0.9	NNE0.9	N0.8	Diurnal Average
N11	N13	N11	N10	SE9	NNW9	ESE10	NNW10	NNW10	N10	N11	WSW15	SE12	SSE11	WSW15	SW13	SE13	ESE13	ESE12	NNE12	SE12	WNW14	W12	W11	Diurnal Maximum

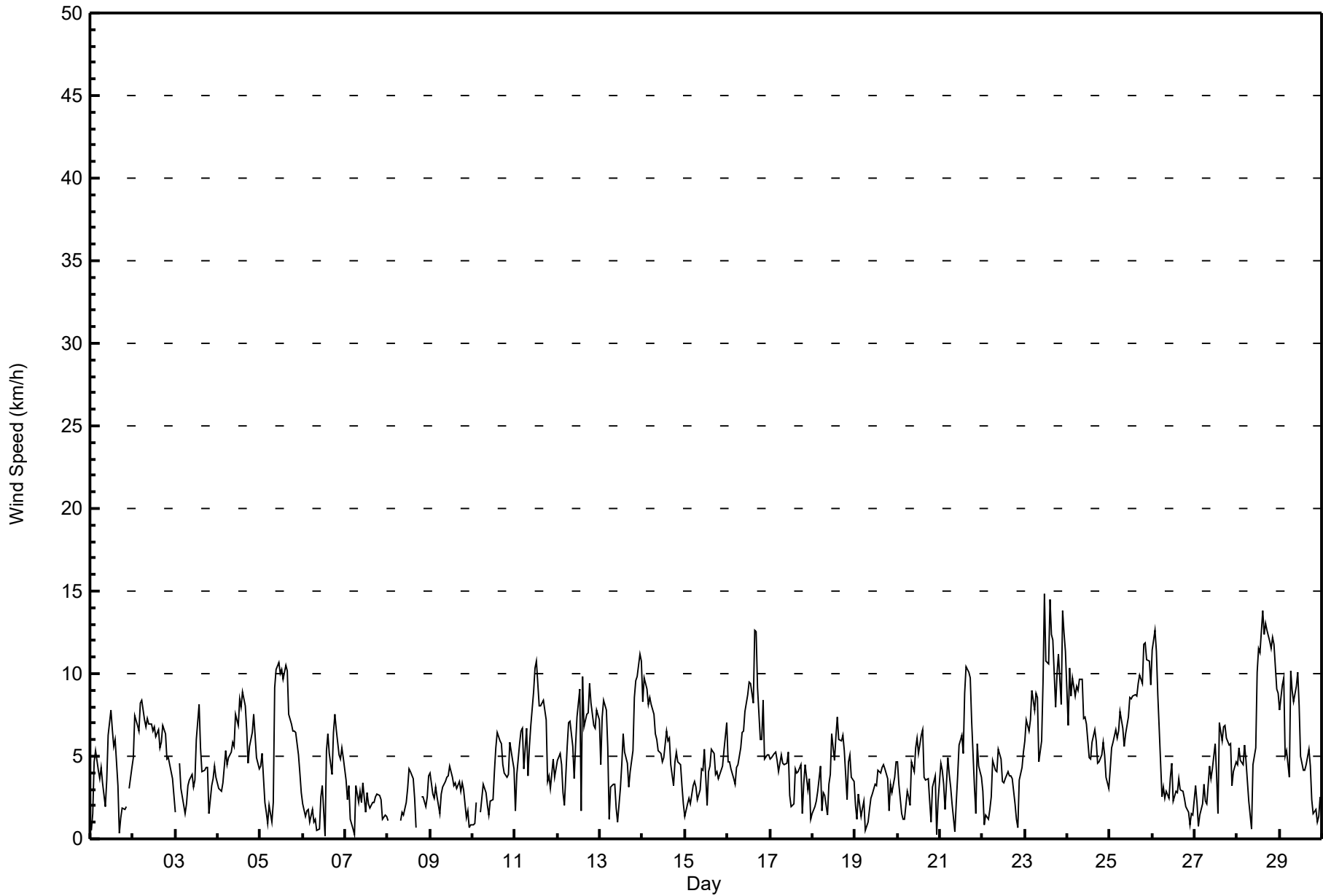
UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Barge Landing - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 23 22:00 Minimum Value: 0 km/h on Feb 21 07:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 1 Q ₃ = 2 P ₉₀ = 3 P ₉₉ = 5																	Hours in Service: 696 Hours of Data: 687 Hours of Missing Data: 9 Hours of Calibration: 0 Percent Operational Time: 98.7								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	2	1	2	1	1	1	1	1	1	2	2	3	3	2	2	2	1	1	1	1	1	UO	1	1	3
2-Feb	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2
3-Feb	2	UO	1	1	1	1	1	1	1	1	1	3	3	2	1	1	1	1	1	1	1	1	1	1	3
4-Feb	1	1	0	0	1	1	1	1	2	2	3	3	3	3	4	3	3	3	1	1	1	1	1	1	4
5-Feb	1	1	2	1	1	2	1	1	3	3	4	3	3	3	3	3	2	2	2	2	2	1	1	1	4
6-Feb	1	1	1	1	1	1	1	1	1	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
7-Feb	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2
8-Feb	1	UO	UO	1	UO	1	UO	1	1	1	1	1	2	1	2	1	1	UO	UO	1	1	1	1	1	2
9-Feb	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
10-Feb	1	1	1	UO	1	1	1	1	1	1	1	1	3	3	2	2	2	2	2	2	2	1	2	2	3
11-Feb	2	1	2	3	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	3
12-Feb	1	1	1	1	2	2	1	2	2	2	2	3	3	2	4	3	3	3	3	3	2	2	2	2	4
13-Feb	2	3	3	3	2	1	1	1	1	1	1	2	3	2	2	2	2	1	3	3	3	3	3	3	3
14-Feb	3	3	3	3	3	2	2	2	2	2	2	1	2	2	2	2	2	1	1	2	1	1	1	1	3
15-Feb	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2	2	2	1	1	1	1	1	2	3	3
16-Feb	1	1	1	1	1	1	1	1	1	2	3	3	3	4	3	4	4	3	3	3	2	2	1	1	4
17-Feb	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2	1	1	1	2
18-Feb	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2	2	2	2	2	1	1	2	1	1	2
19-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20-Feb	1	1	1	2	1	1	1	1	1	1	2	2	2	2	2	2	1	2	2	1	1	1	1	1	2
21-Feb	1	1	1	1	1	1	0	1	1	1	1	2	2	2	3	3	3	3	2	2	1	2	1	1	3
22-Feb	1	1	1	1	1	1	1	1	1	2	2	1	1	2	1	1	1	1	2	1	1	1	1	1	2
23-Feb	2	2	1	2	2	2	3	2	2	2	5	4	3	4	4	4	5	3	4	3	2	7	5	4	7
24-Feb	4	4	3	4	3	3	3	4	3	2	3	2	2	1	2	2	2	1	1	2	2	2	1	1	4
25-Feb	1	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	4	4	3	3	3	4
26-Feb	4	4	4	3	3	1	2	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	1	4
27-Feb	1	1	1	1	2	1	1	1	1	1	1	2	2	2	3	2	2	1	1	1	1	1	1	1	3
28-Feb	1	1	1	1	1	1	1	1	1	1	4	4	4	5	5	5	4	4	3	3	3	4	3	3	5
29-Feb	3	3	3	2	2	2	4	3	2	3	3	3	3	2	1	2	2	1	2	1	1	1	1	1	4
4 4 4 4 3 3 4 4 3 3 5 4 4 5 5 5 5 4 4 4 4 7 5 4																								Diurnal Maximum	
UO - Unstable Operation																									





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Barge Landing - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	443	64.48	64.48
6 - 11	224	32.61	97.09
12 - 19	20	2.91	100.00
20 - 28	0	0.00	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 687

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Barge Landing - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	37	24	28	13	11	36	47	46	29	26	27	14	7	13	26	59	443
6 - 11	52	22	15	0	0	12	24	23	20	4	10	18	2	0	7	15	224
12 - 19	1	2	0	0	0	3	5	1	0	0	2	3	1	1	1	0	20
20 - 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	90	48	43	13	11	51	76	70	49	30	39	35	10	14	34	74	687

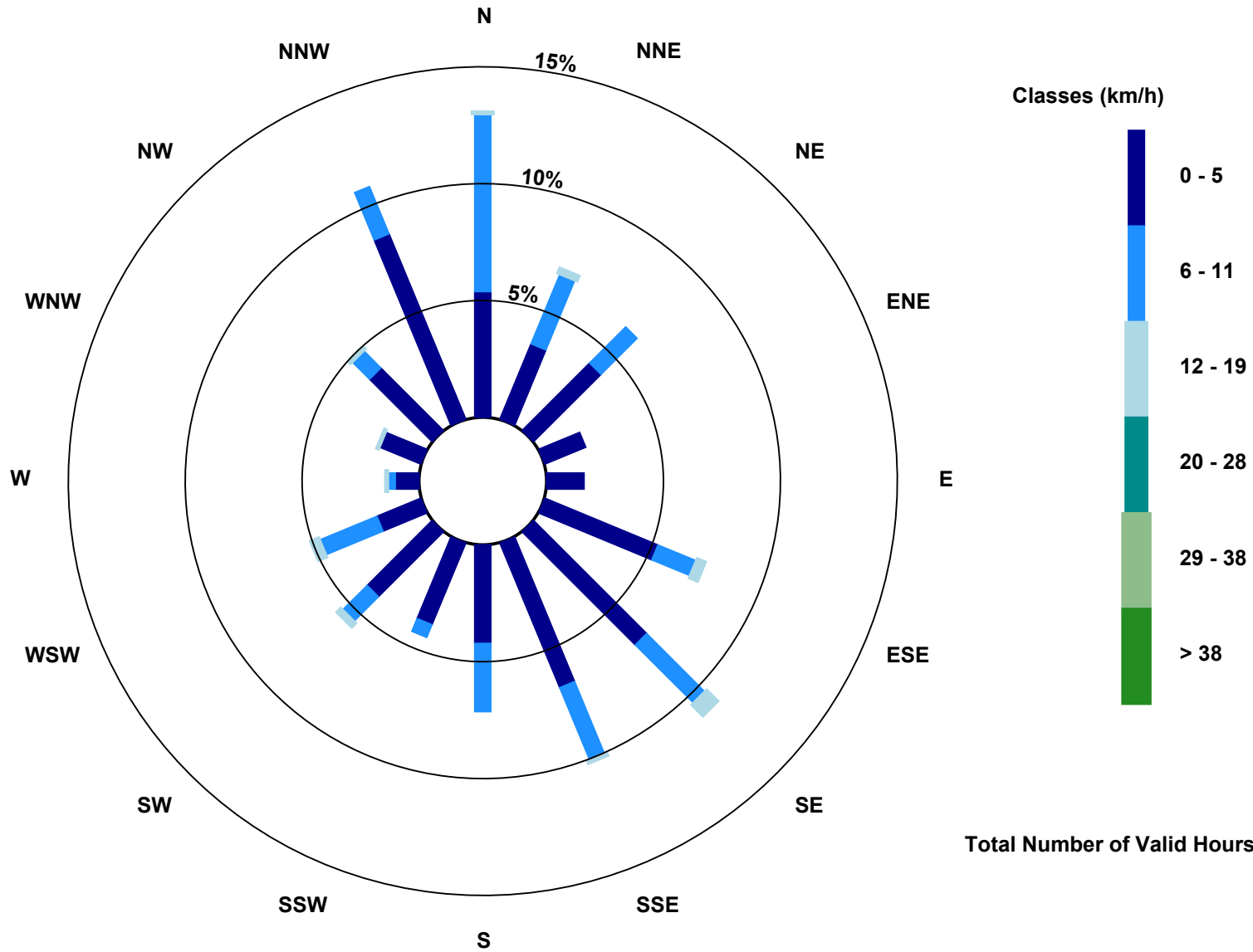
Total Number of Valid Hours: 687

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Barge Landing





Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Barge Landing - February 2024

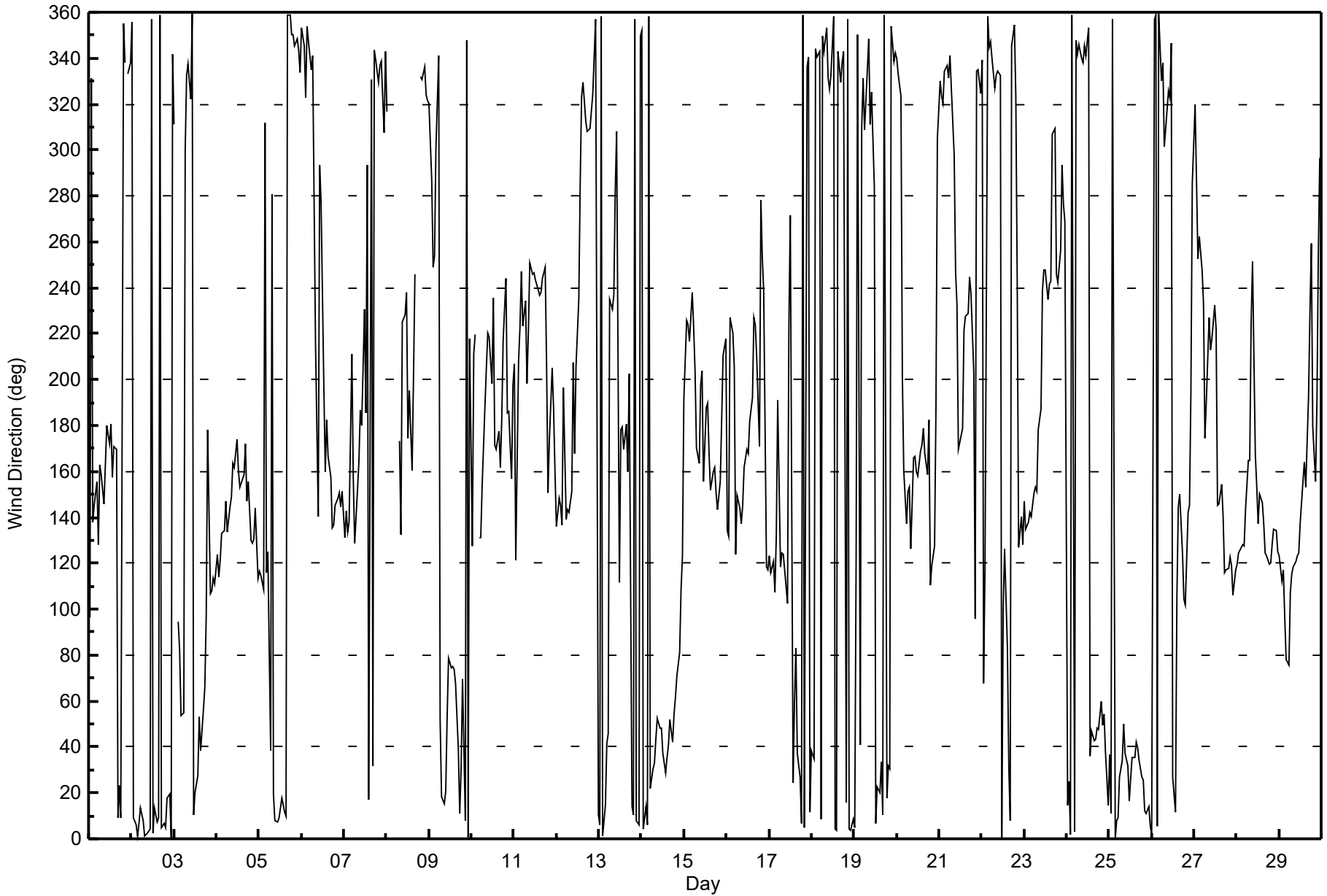
Direction of Maximum Speed: 248 deg on Feb 23 12:00																				Hours in Service: 696					
Direction of Maximum Daily Speed Average: 23.5 deg on Feb 25																				Hours of Data: 687					
Direction of Minimum Speed: 196 deg on Feb 6 13:00										Direction of Minimum Daily Speed Average: 0.2 deg on Feb 7										Hours of Missing Data: 9					
Monthly Average Direction: 74.3 deg																				Percent Operational Time: 98.7					
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	96	332	138	145	156	128	163	159	146	163	180	172	181	157	171	170	9	23	9	355	338	UO	333	338	160.0
2-Feb	356	9	6	1	7	13	8	1	2	3	4	357	2	13	7	9	359	5	7	5	18	19	0	342	5.2
3-Feb	311	UO	95	83	54	55	300	332	337	322	359	10	20	27	53	39	56	66	97	178	107	108	113	111	48.6
4-Feb	124	114	122	133	134	147	134	145	149	164	162	174	161	153	155	159	172	147	156	130	129	130	144	114	147.0
5-Feb	117	115	108	312	116	125	38	281	19	8	7	9	13	18	12	10	359	359	350	350	346	349	344	334	9.3
6-Feb	353	345	323	354	347	335	341	279	217	140	294	277	196	160	183	166	158	135	137	145	148	151	144	151	156.3
7-Feb	131	143	134	138	211	157	129	152	164	187	180	231	185	294	17	331	32	343	339	329	337	338	307	343	155.0
8-Feb	317	UO	UO	297	UO	130	UO	173	133	225	228	238	175	195	160	202	246	UO	UO	332	331	336	324	322	236.9
9-Feb	321	287	249	254	301	341	52	18	15	21	53	79	75	75	74	68	39	11	31	69	8	348	1	218	27.8
10-Feb	128	211	220	UO	131	131	154	189	205	220	218	198	236	171	169	178	162	183	217	244	185	186	157	198	185.4
11-Feb	207	121	208	223	247	223	234	199	221	251	246	247	244	239	237	238	244	249	206	151	174	205	187	160	227.2
12-Feb	136	148	145	137	196	139	143	142	151	207	168	206	235	285	323	330	312	308	309	309	324	341	357	10	280.9
13-Feb	6	358	1	14	42	46	235	231	237	281	308	112	178	180	170	180	160	202	14	10	357	8	6	350	2.7
14-Feb	352	4	14	6	358	22	31	33	43	52	48	49	37	29	35	41	52	42	54	61	71	81	109	123	33.1
15-Feb	191	226	224	217	238	223	204	170	163	198	204	156	188	190	168	152	160	162	151	144	156	183	210	218	184.5
16-Feb	134	132	227	220	206	124	150	144	137	145	162	170	168	182	192	227	224	210	171	278	253	238	118	117	184.7
17-Feb	123	116	121	107	132	191	118	125	124	110	102	224	272	24	60	83	38	27	7	359	5	336	340	11	89.7
18-Feb	39	35	344	341	343	8	350	343	353	331	326	333	358	4	3	343	330	338	343	16	357	4	4	8	350.7
19-Feb	5	123	350	41	311	331	309	335	348	311	325	284	7	23	20	33	10	359	18	32	30	354	339	342	358.3
20-Feb	340	333	324	202	161	138	151	153	126	166	167	160	158	169	171	179	168	158	182	111	119	128	188	305	159.5
21-Feb	330	323	320	335	337	332	341	326	298	247	233	169	176	179	222	228	229	245	237	203	96	334	335	325	255.8
22-Feb	339	68	119	358	345	347	340	327	333	334	333	0	101	126	83	31	8	345	355	323	243	127	140	128	15.9
23-Feb	147	135	138	142	140	151	153	151	178	188	239	248	247	235	242	243	307	309	246	242	256	294	277	269	231.9
24-Feb	15	25	2	359	3	348	342	346	340	338	345	341	353	36	47	43	43	48	48	60	49	55	38	15	10.9
25-Feb	37	11	357	0	8	9	27	34	50	37	32	17	26	35	35	42	40	34	27	26	12	11	14	5	23.5
26-Feb	2	357	359	5	359	330	338	301	309	326	323	346	27	12	105	145	150	124	104	102	142	145	194	285	2.8
27-Feb	320	287	252	262	248	233	175	190	227	213	218	233	222	145	146	154	140	116	117	118	123	119	106	117	161.8
28-Feb	119	125	126	128	127	144	165	165	225	251	167	154	137	150	147	138	125	123	120	120	128	135	134	125	135.5
29-Feb	123	112	117	97	78	76	107	115	118	121	123	125	137	156	164	153	193	230	259	180	155	191	256	296	127.2
38.9 50.0 52.0 33.1 29.4 68.4 97.4 109.3 90.1 281.1 199.8 209.2 175.4 139.2 142.7 158.0 127.0 29.4 57.7 46.0 46.8 30.2 27.2 4.0																									
Diurnal Average																									
UO - Unstable Operation																									
All monthly, daily, and diurnal averages have been calculated using vector methods																									



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Barge Landing - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 103 deg on Feb 6 13:00 Minimum Value: 6 deg on Feb 4 03:00 Percentiles: P ₁ = 8 P ₁₀ = 15 Q ₁ = 19 Median = 24 Q ₃ = 34 P ₉₀ = 54 P ₉₉ = 89																			Hours in Service: 696 Hours of Data: 687 Hours of Missing Data: 9 Hours of Calibration: 0 Percent Operational Time: 98.7						
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	89	75	31	12	17	20	17	26	43	24	28	27	38	34	34	39	88	42	37	43	31	UO	28	14	89
2-Feb	18	17	17	17	18	19	20	19	18	18	18	20	21	20	22	23	19	18	19	20	19	18	15	19	23
3-Feb	45	UO	14	24	31	35	35	19	20	19	34	24	25	20	28	28	19	25	26	44	20	7	8	11	45
4-Feb	21	10	6	13	8	21	8	14	18	25	25	29	31	29	29	25	24	18	16	12	10	9	16	20	31
5-Feb	18	11	70	34	69	41	57	31	20	19	18	19	21	19	21	20	19	18	16	15	16	12	11	21	70
6-Feb	39	44	20	19	37	26	49	48	76	93	24	32	103	43	28	29	33	19	19	23	23	25	22	24	103
7-Feb	17	28	20	60	62	96	14	28	27	42	44	70	51	65	62	32	32	19	16	24	18	40	41	13	96
8-Feb	34	UO	UO	33	UO	59	UO	57	39	78	63	51	51	40	37	57	50	UO	UO	14	15	17	13	17	78
9-Feb	17	24	18	25	35	53	36	20	20	21	33	21	24	25	26	27	22	34	29	37	36	36	62	69	69
10-Feb	68	50	25	UO	45	29	27	32	33	41	45	52	29	34	29	29	27	30	38	35	31	28	32	34	68
11-Feb	77	31	27	33	20	25	17	45	30	21	16	16	16	17	21	19	18	14	40	26	39	18	41	30	77
12-Feb	21	18	16	15	61	14	15	16	31	41	28	29	20	90	28	24	22	22	22	24	20	18	19	18	90
13-Feb	30	21	19	18	18	66	19	21	23	49	81	51	45	31	30	31	29	25	56	19	20	21	20	19	81
14-Feb	21	19	18	20	22	18	19	23	24	24	24	25	23	21	23	21	24	24	20	25	19	22	19	20	25
15-Feb	19	22	24	23	18	17	24	44	29	27	40	33	73	47	47	31	23	14	17	13	31	28	26	24	73
16-Feb	32	24	20	17	27	20	20	13	10	19	28	27	29	31	30	19	20	25	49	44	15	55	15	17	55
17-Feb	15	18	7	9	20	38	15	18	31	16	17	50	83	74	25	24	22	27	97	47	20	23	16	49	97
18-Feb	21	69	48	22	15	48	25	30	81	47	23	19	27	27	23	24	19	16	17	45	14	15	15	18	81
19-Feb	23	53	13	67	62	17	84	63	51	27	39	41	44	40	37	29	19	14	19	54	36	40	17	17	84
20-Feb	16	30	50	82	55	20	28	59	22	27	33	31	31	28	28	40	32	36	46	46	9	13	93	46	93
21-Feb	23	12	20	29	12	12	10	35	44	45	23	31	28	32	23	20	20	19	17	57	71	13	13	12	71
22-Feb	45	33	80	59	27	23	15	15	20	18	26	34	59	43	24	30	19	11	25	71	86	19	15	9	86
23-Feb	17	12	13	19	15	21	21	20	37	32	28	20	20	19	19	21	29	24	23	20	22	29	29	26	37
24-Feb	55	21	21	21	21	20	20	21	20	24	25	24	44	34	30	22	20	21	20	24	22	23	25	33	55
25-Feb	21	21	20	18	19	24	18	18	23	26	25	22	22	23	24	22	19	20	20	19	20	19	19	21	26
26-Feb	19	22	19	19	21	14	21	44	37	61	48	61	72	66	68	53	32	11	12	44	55	64	47	61	72
27-Feb	11	21	45	14	36	16	33	68	16	31	30	32	58	98	38	38	21	11	10	9	8	20	9	8	98
28-Feb	16	8	13	14	8	24	31	70	80	21	66	29	23	30	24	24	17	15	13	14	14	20	19	17	80
29-Feb	14	15	16	24	22	33	20	15	16	18	17	19	38	43	37	35	35	23	17	42	40	64	58	34	64
																			89 75 80 82 69 96 84 70 81 93 81 70 103 98 68 57 88 42 97 71 86 64 93 69						
Diurnal Maximum																									
UO - Unstable Operation																									





Maximum Speed: 25 km/h on Feb 25 20:00	Maximum Daily Speed Average: 15.0 km/h on Feb 25	Hours in Service: 696
Minimum Speed Value: 1 km/h on Feb 8 06:00	Minimum Daily Speed Average: 0.1 km/h on Feb 7	Hours of Data: 695
Maximum Diurnal Speed Average: 2.4 km/h at hour 2	Minimum Diurnal Speed Average: 0.1 km/h at hour 10	Hours of Missing Data: 1
Monthly Average Velocity: 0.7 km/h 41.1 deg	Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 5 Median = 8 Q ₃ = 12 P ₉₀ = 15 P ₉₉ = 21	Percent Operational Time: 99.9

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	SSE6	S4	SE11	SSE12	SSE10	SE8	SSE10	SSE8	SSE6	S7	S10	S12	S11	SSE9	S10	SSE5	E1	ENE5	N6	N5	N6	N5	NNW9	NNW11	SSE4.1	S12
2-Feb	N12	N14	N13	N11	N14	NNE16	N13	N11	N12	N11	N12	N11	N11	NNE11	N11	N10	N10	N11	N12	N9	NNE10	NNE9	N7	N5	N11.0	NNE16
3-Feb	NW4	NNE3	E7	ENE5	NE5	NE3	NW4	NNW6	NNW7	NW6	N6	N6	NNE11	NNE16	NE9	NE7	NE8	ENE10	ENE9	SSE3	SSE5	SE8	SE9	SE8	NE4.0	NNE16
4-Feb	SE6	SSE6	SSE6	SSE7	SSE10	SSE10	SSE9	SSE11	SSE12	SSE10	SSE13	S11	SSE14	SSE13	SSE16	SSE15	S12	SSE9	SSE12	SE11	SE13	SE11	SSE11	SE9	SSE10.7	SSE16
5-Feb	SE9	ESE10	SE6	WNW3	N1	SE3	ESE1	NNW5	NNE20	N19	N19	N18	NNE19	NNE19	N20	N19	N14	N13	N12	N13	N12	N11	NNW10	NNW8	N9.7	NNE20
6-Feb	N7	N4	N4	NNW6	NNW5	NNW4	NNW3	NNW1	E2	ESE3	W2	W4	S1	SSE8	S9	SSE8	SSE6	SE10	SE11	SSE10	SSE8	SSE8	SSE9	SSE8	SSE2.6	SE11
7-Feb	SE5	SE4	SE4	SSE2	SSW1	SSE1	SE5	SSE3	SSE5	S4	S5	SW2	S4	WNW3	NNE3	NW3	NNE4	NNW4	NNW5	NNW5	NNW5	NNW3	NW3	NNW4	S0.1	NNW5
8-Feb	NW3	WNW3	NW3	WNW3	WNW2	ESE1	UO	SSW3	SSE3	SSW2	SW2	WSW3	S6	S6	SSE6	SSW3	SW2	NE2	NNW4	NNW6	NNW5	NNW4	NNW5	NW7	W1.3	NW7
9-Feb	NW7	WNW5	WSW4	WSW5	WNW5	NNW3	NE6	NNE6	NNE7	NNE7	NE7	ENE7	ENE6	ENE5	ENE5	ENE5	NE6	NNE6	NE7	ENE6	N4	N5	N5	W3	NNE3.5	ENE7
10-Feb	WNW1	SW3	WSW5	SW1	SSE2	SE2	SSE3	S3	S2	S1	S2	S2	SW3	S6	SSE10	S9	SSE10	S7	SSW7	WSW7	SSW8	S11	SSE9	SSW8	S4.6	S11
11-Feb	SW5	SSE5	SW13	WSW12	WSW12	SW8	WSW12	SW6	SW9	WSW10	WSW13	WSW15	WSW15	WSW11	WSW11	WSW12	WSW13	WSW13	SW8	S8	SSW8	SSW10	SSW8	SSW9	SW9.6	WSW15
12-Feb	S9	SSE12	SSE10	SSE8	S8	SSE12	SSE14	SSE13	SSE11	SSW7	S10	SSW11	SW12	WNW4	NW17	NNW12	WNW14	WNW14	WNW17	WNW15	NW13	NNW12	N14	N13	WSW2.9	NW17
13-Feb	N8	N13	N14	NNE15	NE11	NNE4	SW4	SW5	WSW5	NNW2	NW2	ESE4	S7	S10	S9	S7	SSE6	SSW8	NNE11	N17	N17	N19	N21	N19	N4.7	N21
14-Feb	N15	N17	NNE18	N16	N15	NNE17	NNE15	NNE12	NE11	NE9	NE9	NE8	NE8	NNE12	NE10	NE11	NE8	NE8	NE11	NE11	ENE9	ENE8	ESE5	ESE4	NNE10.2	NNE18
15-Feb	S3	SW5	SW5	SSW5	WSW6	SW7	SW7	SSW6	S6	S6	SSW5	SSE7	S3	S5	S6	SSE8	SSE9	SSE8	SSE10	SSE9	S9	SSW9	SW11	SW14	SSW6.5	SW14
16-Feb	S8	S7	SW9	SW7	SW8	SSW7	SSW9	S10	SSE11	SSE12	SSE13	S15	S15	S15	S12	SW18	SW19	SSW15	S12	W11	WSW14	WSW10	SSE6	SSE6	SSW9.5	SW19
17-Feb	S7	S4	SSW6	SSE5	SSE6	SSW10	S7	S8	SSE8	SE7	ESE7	SSW2	NNW2	NNE4	ENE6	E6	NE8	NE11	NE7	NNE7	NNE9	NNW7	NNW9	N5	E1.7	NE11
18-Feb	NNE4	NE8	N6	NNW9	NNW12	NNE4	NNW9	NNW8	N5	NNW6	NNW5	NNW9	N7	N10	N12	NNW10	NNW11	NNW12	NNW11	N8	N10	N10	N8	N8	N8.1	NNW12
19-Feb	N6	N1	NNW7	NE4	NNW5	NNW7	NNW5	NNW5	N5	NNW3	NNW3	WNW4	N4	NNE5	NNE5	NNE6	N8	N9	NNE9	NNE5	NE6	N6	NNW8	NNW11	N5.2	NNW11
20-Feb	NNW11	NNW9	NNW6	W3	S2	SSE4	SSE4	SSE5	SE9	S6	S8	SSE9	SSE7	SSE10	S10	S6	SSE7	SSE7	S5	SE4	SE7	SE8	S2	W3	SSE3.7	NNW11
21-Feb	NNW10	NNW10	NNW9	NNW7	NNW12	NNW9	NNW8	NNW7	WNW2	W3	SW4	S9	S9	S8	SW13	SW15	SW16	WSW15	WSW13	SW8	SW3	NNW12	NNW10	NW8	W4.9	SW16
22-Feb	NNW8	NNW4	E2	ENE2	N5	NNW8	NNW11	NNW9	NNW8	NNW9	NNW7	N4	ESE4	SE5	E6	NNE6	N7	NNW8	N6	NNW5	W1	SSE7	SSE10	SSE11	N2.9	SSE11
23-Feb	SSE12	SSE13	SSE13	SSE14	SSE16	SSE15	SSE17	SSE17	S10	SSW12	WSW15	WSW22	WSW16	SW15	WSW21	WSW19	NNW21	NNW15	WSW15	WSW17	W13	WNW24	W22	W20	SW10.3	WNW24
24-Feb	NNE13	NNE21	N15	N17	N15	NNW16	NNW16	NNW17	NNW17	NNW12	NNW12	NNW11	N8	NE7	NE10	NE11	NE10	NE9	NE10	NE10	NE11	NE10	NNE8	NNE7	N10.9	NNE21
25-Feb	NNE9	NNE10	N10	N11	N11	N12	NNE16	NNE14	NE10	NNE11	NNE12	NNE14	NNE15	NNE15	NNE16	NE16	NE18	NNE20	NNE20	NNE25	N23	N20	NNE21	N18	NNE15.0	NNE25
26-Feb	N19	N22	N20	N15	N12	NNW5	NNW6	NW4	NW4	NNW3	NW4	NNW7	NNE4	N4	E3	SE5	SSE5	SE5	ESE5	ESE6	SE4	SSW4	SW5	WNW5	N4.2	N22
27-Feb	NW8	WNW5	W3	W3	WSW6	WSW6	SSW5	SSW6	SW6	SSW4	SSW5	SW7	SW5	SSE3	SSE9	SSE9	SE10	ESE11	ESE11	SE10	SE11	SE7	SE8	SE10	SSE4.1	ESE11
28-Feb	SE10	SE10	SE9	SE9	SE10	SE10	SSE7	SSE6	SSE3	WSW6	SSE10	SSE16	SE17	SSE19	SSE22	SE20	SE19	SE19	ESE18	ESE18	SE18	SE18	SE14	SE13	SE12.8	SSE22
29-Feb	SE12	ESE14	ESE15	E8	E9	ENE6	ESE16	ESE14	ESE13	SE14	SE15	SE11	SE7	SSE6	SSE6	SSE7	S8	SW6	W5	SW5	SW4	WSW5	W5	WNW6	SE6.2	ESE16

NNE2.1 NNE2.4 NNE1.5 N1.6 N1.7 NNE0.7 E0.7 ESE0.7 ESE1.0 N0.1 SSE0.7 SSW1.2 SSE1.3 SE1.8 SE2.0 SSE1.3 ENE0.2 NNE1.2 NE1.6 NNE1.8 NNE1.5 N1.6 NNW1.6 NNW1.9	Diurnal Average
N19 N22 N20 N17 SSE16 NNE17 SSE17 SSE17 NNE20 N19 N19 WSW22 NNE19 NNE19 SSE22 SE20 NNW21 NNE20 NNE20 NNE25 NNE23 NNW24 W22 W20	Diurnal Maximum

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

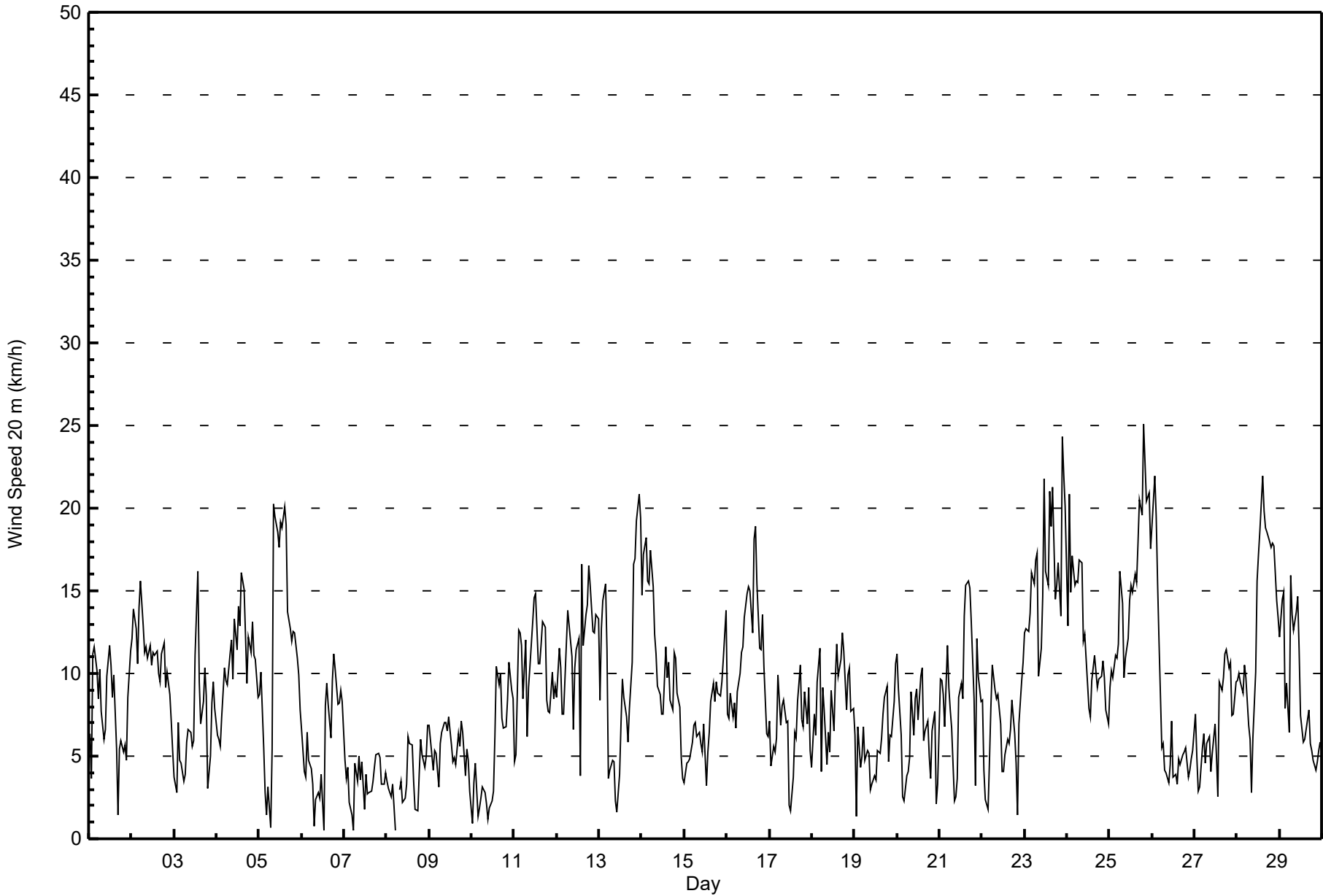
Wind Speed 20 m (WS20m) - km/h
Barge Landing - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 9 km/h on Feb 23 22:00 Minimum Value: 0 km/h on Feb 10 09:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																	Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9									
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	3	2	2	2	1	2	2	2	2	3	2	3	3	3	2	2	1	1	1	2	3	1	3	2	3	
2-Feb	2	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	4	
3-Feb	1	1	1	1	1	1	2	1	2	1	2	2	5	5	3	2	2	2	2	2	1	1	1	1	5	
4-Feb	1	1	1	1	1	1	1	1	2	3	3	4	4	4	3	4	3	4	2	2	1	1	2	2	4	
5-Feb	1	1	4	1	1	1	1	4	5	5	5	5	5	5	5	5	4	3	3	3	3	2	1	1	5	
6-Feb	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	2	2	3	3	2	2	2	3	3	
7-Feb	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	
8-Feb	1	1	1	1	1	1	UO	1	1	2	1	1	2	2	2	1	1	1	1	1	1	1	1	1	2	
9-Feb	1	1	1	2	1	2	2	2	2	2	2	2	1	1	1	1	2	2	1	2	1	1	1	1	2	
10-Feb	1	1	1	1	1	1	1	1	0	1	1	1	1	3	3	2	2	2	2	2	2	2	2	2	3	
11-Feb	3	2	3	4	3	2	2	2	2	3	3	3	3	3	3	3	3	2	2	1	1	2	3	2	4	
12-Feb	1	2	2	1	2	2	2	2	3	2	2	3	3	5	7	4	4	3	4	4	3	3	4	3	7	
13-Feb	3	4	4	4	3	2	2	1	1	1	2	2	2	3	2	2	2	1	6	5	5	6	5	5	6	
14-Feb	4	5	6	4	4	4	4	3	3	2	2	2	2	3	2	2	2	2	2	3	2	2	1	1	6	
15-Feb	1	1	1	1	2	1	1	2	1	1	2	2	2	2	2	2	2	1	1	1	2	2	2	3	3	
16-Feb	2	1	1	1	1	2	1	1	1	2	3	3	3	4	4	6	5	4	4	4	3	4	1	3	6	
17-Feb	2	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	2	3	3	3	2	2	1	2	3	
18-Feb	1	4	3	2	2	1	1	2	3	3	2	2	2	3	4	3	2	3	4	2	2	3	2	2	4	
19-Feb	2	2	2	2	2	1	1	1	2	1	1	1	1	2	1	2	2	2	2	3	2	2	1	1	3	
20-Feb	1	2	1	2	1	2	1	2	1	2	3	2	2	2	2	2	3	2	3	1	1	1	3	2	3	
21-Feb	2	2	1	2	1	1	1	1	1	1	1	2	2	2	4	4	4	3	2	3	3	3	1	1	4	
22-Feb	2	2	2	2	1	1	3	2	2	2	2	2	2	2	1	2	1	1	2	2	2	1	1	1	3	
23-Feb	2	2	2	2	2	3	3	3	4	3	6	5	4	4	6	5	6	4	5	4	3	9	6	5	9	
24-Feb	7	6	4	5	4	4	5	6	5	4	4	3	3	2	3	3	2	2	2	3	2	2	2	2	7	
25-Feb	3	3	3	3	3	3	4	3	3	3	3	4	4	4	4	4	4	5	5	7	6	5	5	5	7	
26-Feb	5	6	6	4	5	1	2	2	1	2	2	4	3	2	2	2	2	1	1	1	1	1	2	1	6	
27-Feb	1	1	1	1	2	1	2	1	2	1	2	2	2	3	3	3	2	1	1	1	1	2	1	1	3	
28-Feb	1	1	1	1	1	1	1	2	2	2	7	4	5	6	5	5	5	4	4	4	4	4	4	4	7	
29-Feb	3	4	4	2	3	3	4	3	3	3	4	3	4	2	2	2	2	2	2	1	1	1	2	1	4	
																	Diurnal Maximum									
UO - Unstable Operation																										



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed 20 m (WS20m) - km/h
Barge Landing - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed 20 m (WS20m) - km/h
Barge Landing - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	192	27.63	27.63
6 - 11	328	47.19	74.82
12 - 19	155	22.30	97.12
20 - 28	20	2.88	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed 20 m (WS20m) - km/h
Barge Landing - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	15	14	3	6	4	8	10	19	17	11	17	6	11	14	10	27	192
6 - 11	36	20	33	9	5	5	31	59	39	19	12	9	1	1	5	44	328
12 - 19	38	18	2	0	0	8	10	24	7	2	8	19	0	5	2	12	155
20 - 28	5	7	0	0	0	0	1	1	0	0	0	2	2	2	0	0	20
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	94	59	38	15	9	21	52	103	63	32	37	36	14	22	17	83	695

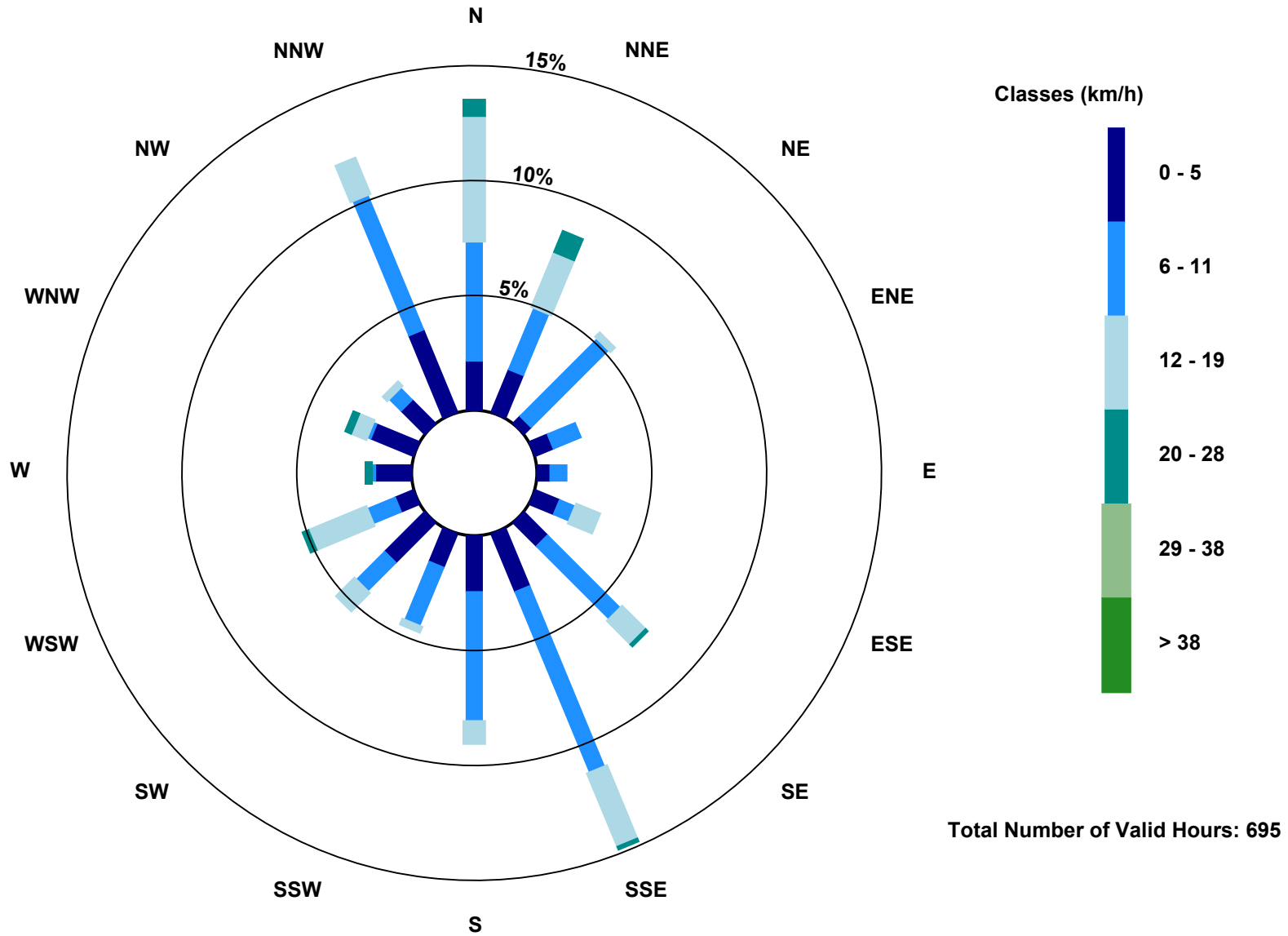
Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed 20 m (WS20m) - km/h
Barge Landing





Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Direction 20 m (WD20m) - deg

Barge Landing - February 2024

Direction of Maximum Speed: 22 deg on Feb 25 20:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 21.5 deg on Feb 25	Hours of Data: 695
Direction of Minimum Speed: 117 deg on Feb 8 06:00	Direction of Minimum Daily Speed Average: 0.1 deg on Feb 7
Direction of Minimum Speed: 117 deg on Feb 8 06:00	Hours of Missing Data: 1
Monthly Average Direction: 41.1 deg	Percent Operational Time: 99.9

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	158	169	143	147	157	144	163	166	168	176	177	170	174	163	169	168	90	69	6	11	359	11	342	343	153.0
2-Feb	358	9	5	1	6	12	8	2	1	3	6	358	0	12	7	8	359	4	8	7	18	20	5	353	5.8
3-Feb	323	27	94	76	50	46	306	332	338	324	0	10	19	27	46	38	52	59	74	155	158	142	145	127	47.7
4-Feb	139	151	149	154	152	160	151	157	159	162	162	170	161	158	158	159	170	160	163	143	137	139	160	138	155.6
5-Feb	129	123	132	297	11	138	119	347	18	8	8	10	12	16	11	10	1	2	352	352	349	350	343	335	8.9
6-Feb	350	11	356	342	340	340	348	337	100	104	280	273	177	161	180	165	161	141	141	151	152	153	150	155	148.9
7-Feb	137	146	143	149	192	154	134	156	167	185	182	221	178	292	15	324	29	344	338	331	342	348	316	343	175.7
8-Feb	322	297	304	295	302	117	UO	199	149	209	219	237	178	188	156	194	236	34	335	332	333	341	328	323	276.7
9-Feb	323	290	255	256	293	327	50	20	14	21	50	73	71	72	68	64	39	20	34	67	11	349	352	281	20.0
10-Feb	290	225	238	216	166	134	158	179	184	188	190	185	226	169	167	175	161	179	213	243	195	189	165	204	187.5
11-Feb	216	163	226	237	254	233	238	216	219	252	246	249	245	243	242	242	250	252	223	182	212	211	212	192	232.5
12-Feb	186	165	158	157	178	153	153	150	159	194	171	207	236	285	319	328	303	301	299	300	320	340	357	8	253.9
13-Feb	5	358	3	15	36	32	231	226	240	291	316	113	178	177	173	178	164	210	12	9	358	8	7	350	4.4
14-Feb	353	5	14	10	1	21	27	27	40	46	44	45	37	27	35	38	51	44	51	55	61	75	102	115	31.1
15-Feb	181	215	218	213	238	226	214	199	188	189	193	159	188	181	170	159	161	163	163	167	188	203	214	221	191.4
16-Feb	180	185	232	230	225	202	193	178	164	158	166	170	170	181	188	225	224	209	184	277	258	251	159	161	198.8
17-Feb	173	177	202	166	166	206	180	178	148	125	106	207	337	29	58	81	38	39	51	13	13	348	334	353	93.4
18-Feb	18	43	9	338	340	13	343	343	354	337	331	331	356	359	1	343	331	338	340	0	2	5	8	7	351.8
19-Feb	354	358	344	40	330	331	337	348	352	332	342	298	3	30	21	31	10	6	19	33	35	2	335	336	358.5
20-Feb	335	331	336	261	181	149	155	161	136	173	172	162	162	167	172	174	166	161	178	140	140	142	169	276	166.2
21-Feb	331	330	331	338	337	332	332	328	283	269	215	169	172	181	220	227	228	246	240	231	229	336	333	325	274.2
22-Feb	337	348	93	67	351	344	340	330	333	334	333	354	102	137	79	30	7	344	351	338	260	157	167	150	358.7
23-Feb	159	148	152	151	149	157	160	158	172	196	243	251	250	235	243	245	300	302	249	244	259	287	276	271	229.6
24-Feb	15	24	2	357	1	346	340	344	338	337	344	338	353	36	45	40	41	45	44	53	46	49	33	18	10.1
25-Feb	31	12	357	0	9	10	24	29	42	33	31	18	25	33	32	37	35	31	25	22	11	10	12	6	21.5
26-Feb	360	358	359	6	360	327	340	309	309	327	326	346	13	8	97	141	156	132	110	107	143	204	229	300	359.3
27-Feb	314	290	272	278	251	243	199	208	221	201	197	235	224	154	148	156	145	118	121	129	135	141	126	127	167.1
28-Feb	130	135	133	138	139	146	157	157	166	243	160	154	143	150	150	142	129	125	123	122	131	140	139	129	139.9
29-Feb	125	115	118	96	79	76	108	117	121	124	127	129	141	157	164	156	189	227	260	233	218	240	264	296	132.7
13.4 33.4 27.2 9.4 2.8 31.3 95.7 123.3 102.1 4.9 163.9 204.8 164.7 126.6 135.7 149.4 66.1 28.1 34.8 24.7 21.7 1.1 345.5 332.5																									
Diurnal Average																									

UO - Unstable Operation

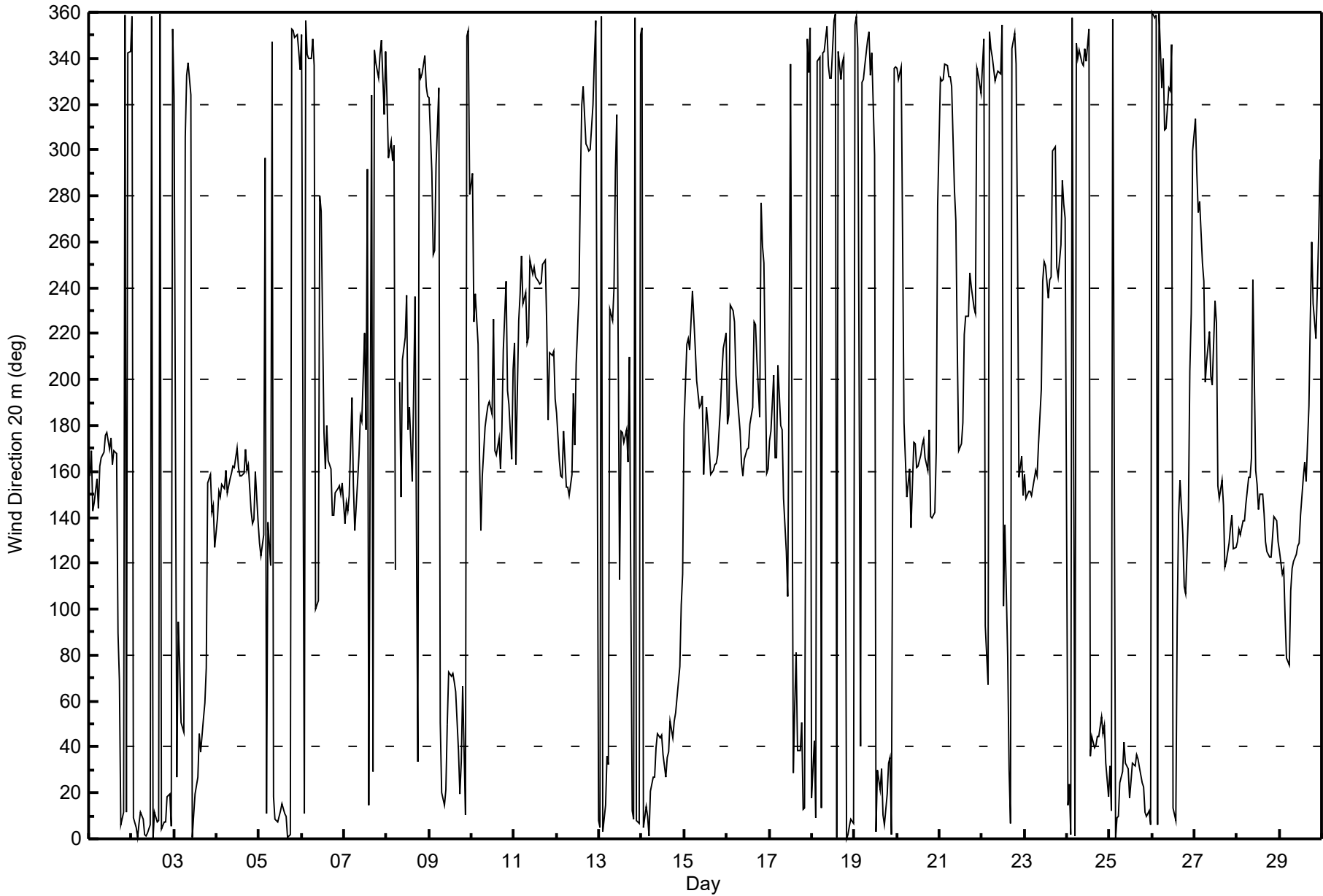
All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction 20 m (WD20m) - deg
Barge Landing - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 100 deg on Feb 6 13:00 Minimum Value: 3 deg on Feb 4 03:00 Percentiles: P ₁ = 6 P ₁₀ = 9 Q ₁ = 12 Median = 16 Q ₃ = 22 P ₉₀ = 39 P ₉₉ = 75																		Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	44	40	15	7	7	10	8	10	8	15	16	14	21	19	18	25	59	17	16	21	20	11	16	11	59
2-Feb	14	13	13	14	14	14	15	15	15	15	16	17	17	16	17	17	15	14	14	16	13	12	13	12	17
3-Feb	41	26	11	16	22	31	41	13	15	15	29	18	20	14	21	22	12	13	15	42	16	4	8	5	42
4-Feb	11	10	3	6	5	9	6	7	8	13	13	17	17	15	14	12	14	10	8	10	8	7	10	13	17
5-Feb	13	6	50	24	65	23	86	37	14	16	15	15	16	14	15	15	16	16	15	12	13	9	7	8	86
6-Feb	16	33	24	7	17	18	22	62	39	58	51	23	100	27	17	16	20	13	12	14	14	14	13	14	100
7-Feb	14	18	13	41	37	83	9	19	15	28	39	61	40	59	48	29	31	15	10	14	12	23	29	12	83
8-Feb	14	21	24	17	24	73	UO	20	28	73	46	56	35	32	23	47	21	16	8	7	8	14	11	12	73
9-Feb	12	17	14	16	25	50	22	13	13	14	27	14	17	18	20	18	15	24	22	18	29	10	11	29	50
10-Feb	52	35	8	44	26	18	15	18	25	29	36	37	27	24	17	18	13	19	28	23	15	16	21	23	52
11-Feb	65	43	12	16	13	14	10	33	20	17	11	11	12	14	19	16	13	8	28	17	16	7	21	16	65
12-Feb	11	9	8	9	12	8	8	10	18	32	16	19	16	84	24	17	14	15	14	15	16	14	15	14	84
13-Feb	21	18	17	13	14	34	53	16	20	40	78	50	31	20	18	18	20	14	54	15	16	16	16	16	78
14-Feb	18	16	13	16	17	11	13	16	15	15	17	16	14	17	14	16	14	9	14	12	18	12	19	19	19
15-Feb	22	10	12	12	12	9	12	21	10	18	29	18	58	37	33	18	10	6	7	7	21	13	13	10	58
16-Feb	21	21	10	10	9	13	11	11	9	10	13	14	15	17	20	15	15	15	31	26	9	42	26	33	42
17-Feb	19	34	22	31	19	9	15	12	16	14	11	61	72	61	17	18	16	19	30	32	15	16	8	18	72
18-Feb	24	28	27	10	9	45	8	9	58	56	18	14	21	22	17	19	14	10	11	19	12	12	12	11	58
19-Feb	11	63	7	29	44	7	17	10	10	30	30	32	40	30	25	20	13	12	12	28	24	28	12	12	63
20-Feb	9	16	20	55	48	18	19	37	17	19	20	16	18	15	16	20	22	17	21	13	6	8	79	56	79
21-Feb	10	6	7	6	7	6	5	12	26	46	36	18	15	22	17	15	15	13	10	33	68	11	7	8	68
22-Feb	8	14	75	65	21	8	8	8	15	14	20	34	63	39	19	24	13	8	12	31	64	13	7	9	75
23-Feb	10	8	8	11	8	11	10	9	20	19	23	14	14	15	16	15	22	16	18	14	13	16	16	14	23
24-Feb	54	14	18	19	17	16	16	15	16	20	21	19	39	25	20	14	12	14	12	15	15	15	19	16	54
25-Feb	15	16	16	15	15	20	12	12	16	17	18	16	15	16	16	14	13	13	13	13	14	15	14	18	20
26-Feb	17	17	18	15	15	12	19	35	33	52	45	51	63	50	61	43	24	8	10	11	9	17	20	32	63
27-Feb	11	15	17	18	11	9	24	12	14	33	29	28	45	89	22	27	15	7	6	6	5	12	6	4	89
28-Feb	7	6	6	8	7	13	8	10	45	20	46	18	17	17	15	16	14	11	11	11	11	14	13	12	46
29-Feb	11	11	12	21	17	22	16	11	14	15	14	15	28	32	20	28	27	20	10	14	18	16	18	24	32
																		65 63 75 65 65 83 86 62 58 73 78 61 100 89 61 47 59 24 54 42 68 42 79 56							
Diurnal Maximum																									
UO - Unstable Operation																									





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS11 LOWER CAMP FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LOWER CAMP (AMS11)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	662	33	34	99.86	40.5	0	9	0
H2S (ppb) Average	640	37	56	97.27	9.1	0	2.1	0
THC (ppm) Average	662	33	34	99.86	4.4	-	3.1	-
CH4(ppm) Average	662	33	34	99.86	4.3	-	3	-
NMHC(ppm) Average	662	33	34	99.86	0.237	-	0.127	-
Temperature (C) Average	696	0	0	100	8.8	-	2.3	-
Relative Humidity (%) Average	696	0	0	100	98.2	-	92.7	-
Barometric Pressure (inHg) Average	696	0	0	100	29.6	-	29.5	-
Wind Speed 10 m (km/h) Average	695	0	1	99.86	29	-	20	-
Wind Direction 10 m (deg) Average	695	0	1	99.86	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LOWER CAMP (AMS11)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	662	2.09	5.5	-	0	0	0.1	0.3	1.2	4.8	40.5
H2S (ppb) Average	640	0.63	1	-	0	0	0.1	0.3	0.8	1.4	9.1
THC (ppm) Average	662	2.32	0.3	-	2	2.1	2.1	2.2	2.4	2.7	4.4
CH4(ppm) Average	662	2.29	0.3	-	2	2.1	2.1	2.2	2.4	2.7	4.3
NMHC(ppm) Average	662	0.022	0.037	-	0	0	0	0	0	0.1	0.237
Temperature 2 m (C) Average	696	-9.61	7.3	-	-28.3	-18.9	-14.4	-9.7	-4.8	-0.1	8.8
Relative Humidity (%) Average	696	73.86	13	-	32.5	54.8	65	75.9	83.6	88.1	98.2
Barometric Pressure (inHg) Average	696	29.09	0.2	-	28.6	28.7	28.9	29.1	29.3	29.4	29.6
Wind Speed 10 m (km/h) Average	695	8.2	6	-	0	2	4	7	12	16	29
Wind Direction 10 m (deg) Average	695	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LOWER CAMP (AMS11)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
ALL GASEOUS ANALYZERS	29 Feb 2024 15:00	29 Feb 2024 15:00	1	Maintenance - sample manifold cleaned
H2S	28 Feb 2024 17:00	29 Feb 2024 10:00	18	Maintenance - replaced scrubber beads
Wind Speed, Wind Direction	07 Feb 2024 08:00	07 Feb 2024 08:00	1	Flat line in sensor output signal



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

Lower Camp - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 40.5 ppb on Feb 22 14:00	Maximum Daily Average: 9.0 ppb on Feb 7		Hours of Data:	662
Minimum Value: 0.0 ppb on Feb 2 06:00	Minimum Daily Average: 0.0 ppb on Feb 25		Hours of Missing Data:	34
Maximum Diurnal Average: 7.1 ppb at hour 16	Minimum Diurnal Average: 0.3 ppb at hour 9		Hours of Calibration:	33
Monthly Average: 2.09 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.3 Q ₃ = 1.2 P ₉₀ = 4.8 P ₉₉ = 31.1		Percent Operational Time:	99.9

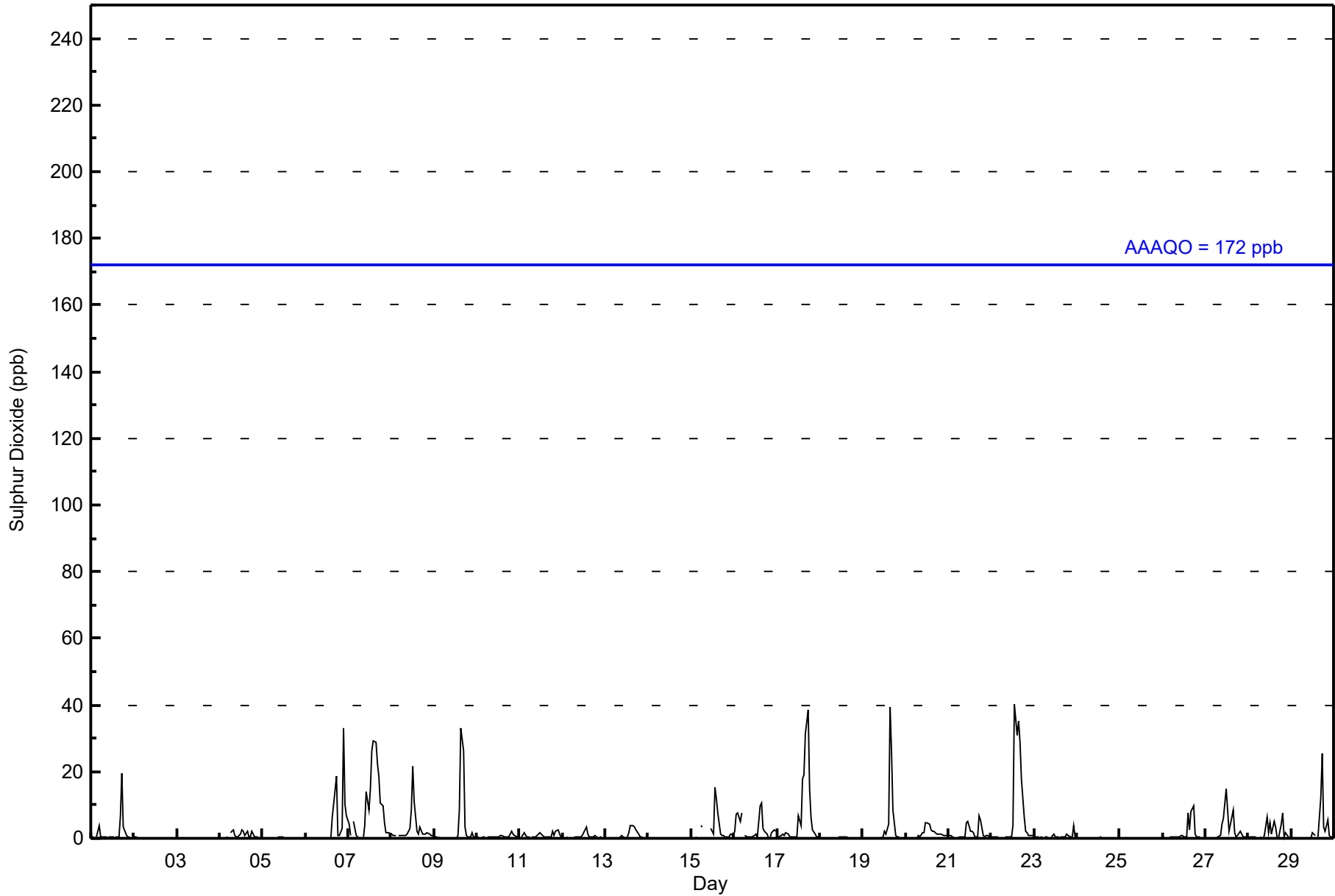
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	0.3	0.3	Z	0.4	3.6	0.5	0.4	0.4	0.3	0.1	0.3	0.4	0.3	0.2	0.2	0.3	6.8	19.4	3.4	1.2	0.3	0.3	0.2	0.1	1.7	19.4																						
2-Feb	0.3	0.5	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.5																						
3-Feb	0.1	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2																						
4-Feb	0.1	0.1	0.1	0.1	0.5	Z	1.5	2.4	0.7	0.5	0.4	1.2	2.3	2.1	1.0	2.3	0.4	0.4	2.0	0.6	0.3	0.3	0.0	0.0	0.9	2.4																						
5-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2																						
6-Feb	0.0	Z	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.1	0.0	0.0	6.3	14.4	18.5	0.6	1.0	2.8	32.9	10.2	6.7	4.1	32.9																						
7-Feb	4.3	0.7	Z	5.1	0.7	0.5	0.1	0.1	0.1	3.9	13.9	8.4	14.9	26.2	29.3	29.0	22.3	18.6	10.7	9.8	4.8	1.7	1.6	1.4	9.0	29.3																						
8-Feb	1.2	1.0	1.0	Z	0.7	0.8	0.8	0.8	0.7	1.2	3.1	8.5	21.6	11.1	2.0	1.4	3.3	1.4	1.3	1.3	1.6	1.4	0.7	0.6	2.9	21.6																						
9-Feb	0.4	0.3	0.2	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.9	8.6	33.0	26.4	3.5	0.7	0.3	0.3	1.9	0.5	0.3	3.4	33.0																						
10-Feb	0.2	0.1	0.1	0.6	0.3	Z	0.6	0.4	0.3	0.2	0.3	0.4	0.4	1.0	0.7	0.5	0.6	0.6	0.5	2.0	1.4	1.0	0.5	1.0	0.6	2.0																						
11-Feb	Z	0.5	1.6	1.0	0.3	0.2	0.2	0.2	0.3	0.2	1.3	1.8	1.1	0.5	0.5	0.3	0.5	0.6	2.1	0.7	2.2	2.7	1.4	0.6	0.9	2.7																						
12-Feb	0.3	Z	0.3	0.2	0.1	0.1	0.1	0.4	0.3	0.4	0.3	1.0	2.4	3.3	1.4	0.4	0.4	0.2	1.0	0.3	0.2	0.3	0.2	0.1	0.6	3.3																						
13-Feb	0.2	0.2	Z	0.1	0.1	0.1	0.2	0.1	0.3	1.0	0.2	0.1	0.3	1.8	3.9	3.9	3.5	2.6	1.3	0.3	0.2	0.1	0.1	0.0	0.9	3.9																						
14-Feb	0.1	0.1	0.0	Z	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1																					
15-Feb	0.0	0.0	0.0	0.3	Z	3.7	3.5	C	C	C	C	3.1	1.4	15.2	11.8	7.7	1.4	0.8	0.8	0.6	0.5	0.4	1.1	0.7	2.8	15.2																						
16-Feb	2.2	7.2	7.8	5.0	7.5	Z	1.0	0.5	0.3	0.5	0.5	0.7	1.2	0.6	9.9	10.5	3.1	2.2	1.2	0.2	0.2	1.7	2.6	2.3	3.0	10.5																						
17-Feb	Z	0.6	0.6	1.4	0.9	1.7	1.1	0.5	0.5	0.4	0.5	0.6	6.8	3.8	17.6	19.1	31.5	38.7	14.7	6.3	2.6	1.4	0.5	0.3	6.6	38.7																						
18-Feb	0.2	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.6	0.4	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.6																						
19-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.9	1.4	4.3	39.2	26.4	8.4	1.0	0.4	0.2	0.2	0.1	0.1	3.7	39.2																						
20-Feb	0.0	0.0	0.0	Z	0.1	0.1	0.2	0.9	0.6	1.5	1.8	4.6	4.8	4.1	2.4	1.9	2.1	1.4	1.5	1.4	1.2	1.0	0.8	0.7	1.4	4.8																						
21-Feb	0.7	0.8	0.5	0.3	Z	0.2	0.2	0.3	0.3	0.5	4.7	5.0	2.2	2.2	1.8	0.6	0.4	6.6	5.4	0.8	0.6	0.7	0.9	0.4	1.6	6.6																						
22-Feb	0.4	0.3	0.3	0.2	0.2	Z	0.2	0.2	0.3	0.4	0.5	0.6	3.9	40.5	30.9	35.1	28.6	17.6	6.2	2.0	1.5	0.9	0.9	0.8	7.5	40.5																						
23-Feb	Z	0.5	0.3	0.2	0.4	0.2	0.2	0.4	0.2	0.1	1.0	1.1	0.5	0.4	0.2	0.2	0.3	0.4	1.1	0.9	0.4	0.3	4.0	0.4	0.6	4.0																						
24-Feb	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3																						
25-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1																						
26-Feb	0.1	0.1	0.2	Z	0.3	0.3	0.3	0.2	0.3	0.4	0.6	0.7	0.5	0.6	7.6	2.7	8.1	9.9	1.1	0.6	0.2	0.1	0.1	0.1	1.5	9.9																						
27-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.0	0.6	0.9	4.3	5.7	14.7	8.4	2.2	4.2	8.4	1.6	0.6	0.7	2.0	1.1	0.4	0.2	0.2	2.5	14.7																						
28-Feb	0.2	0.3	0.2	0.4	0.3	Z	0.2	0.2	0.2	0.9	6.6	1.6	4.5	1.5	5.3	3.4	0.3	0.1	4.2	7.6	0.2	1.6	0.5	0.0	1.8	7.6																						
29-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	1.9	0.6	M	0.2	12.5	25.4	3.3	2.0	5.7	1.0	0.3	0.4	2.4	25.4																						
																								0.5	0.6	0.6	0.7	0.7	0.4	0.4	0.3	0.3	0.6	1.5	1.9	2.8	4.2	5.2	7.1	6.7	6.2	2.2	1.5	1.0	1.8	1.0	0.6	Diurnal Average
																								4.3	7.2	7.8	5.1	7.5	3.7	3.5	2.4	0.9	4.3	13.9	14.7	21.6	40.5	30.9	39.2	31.5	38.7	14.7	9.8	5.7	32.9	10.2	6.7	Diurnal Maximum

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Lower Camp - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Lower Camp - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	628	94.86	94.86
11 - 20	17	2.57	97.43
21 - 60	17	2.57	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Lower Camp - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	37	13	5	4	16	170	23	5	1	5	11	36	56	86	67	92	627
11 - 20	1	1	0	1	0	4	3	0	1	0	1	0	2	2	1	0	17
21 - 60	0	0	1	0	1	3	1	1	0	1	0	1	2	3	3	0	17
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	38	14	6	5	17	177	27	6	2	6	12	37	60	91	71	92	661

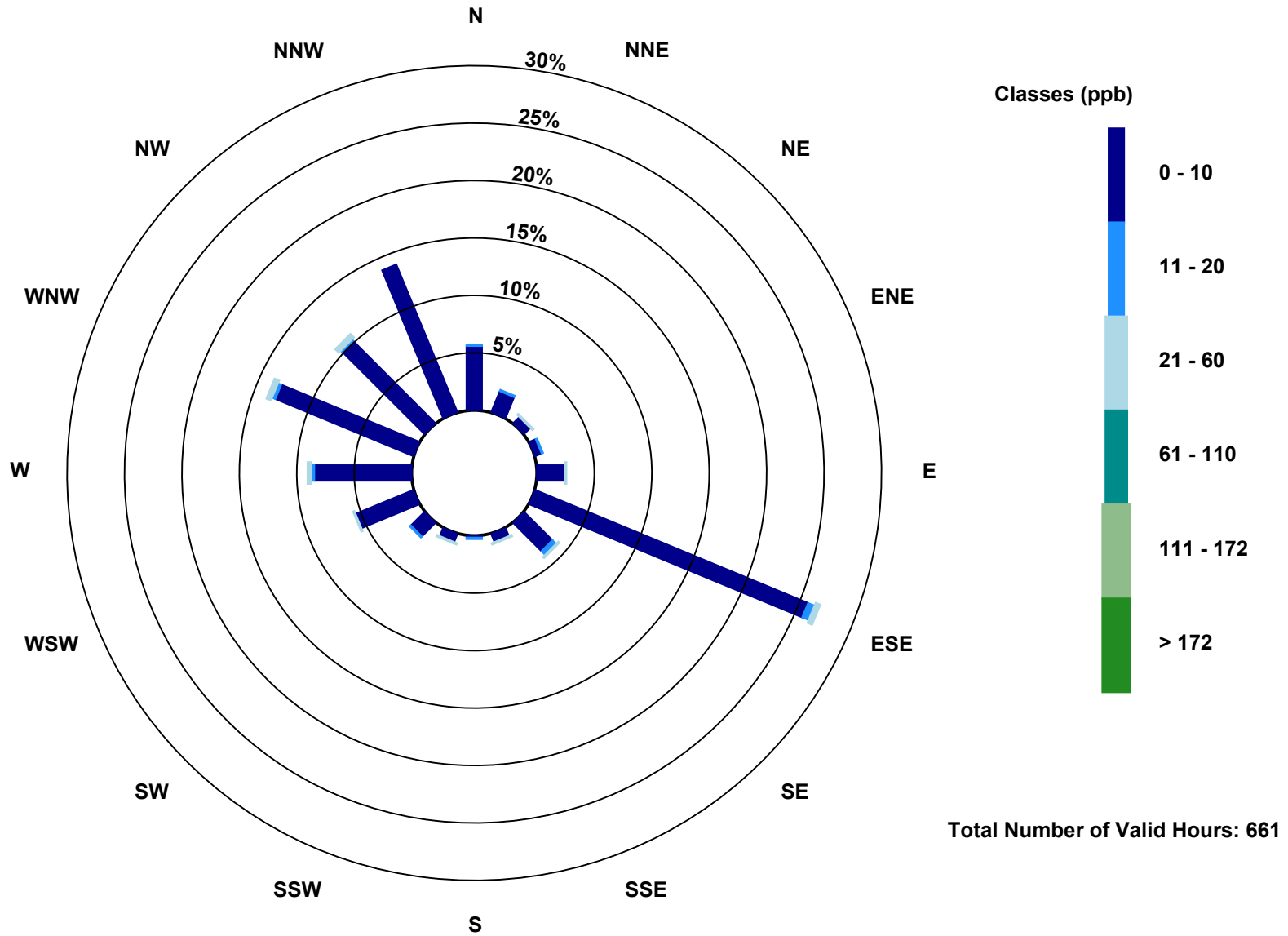
Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

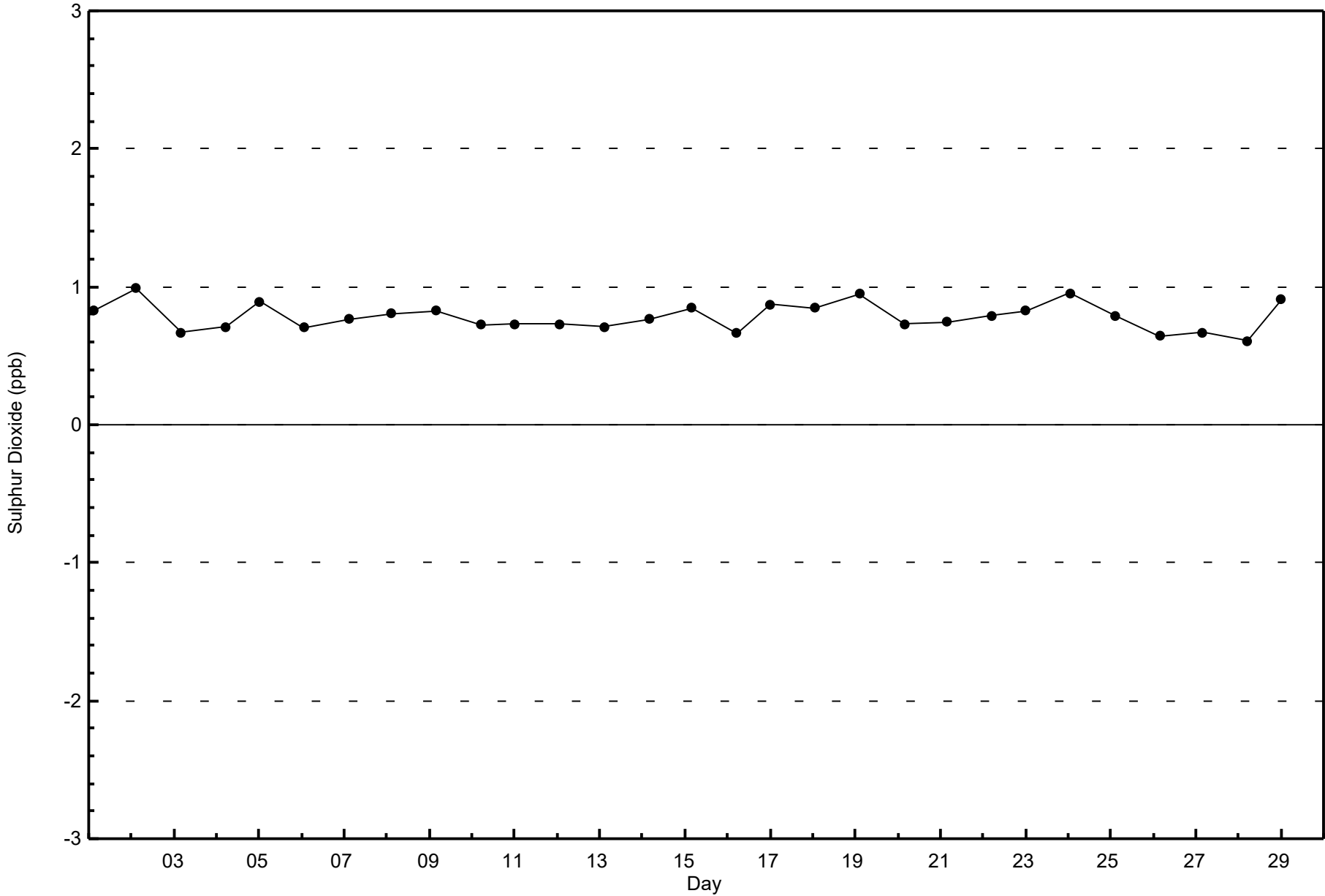
Sulphur Dioxide (SO₂) - ppb
Lower Camp





Wood Buffalo Environmental Association
Zero Responses

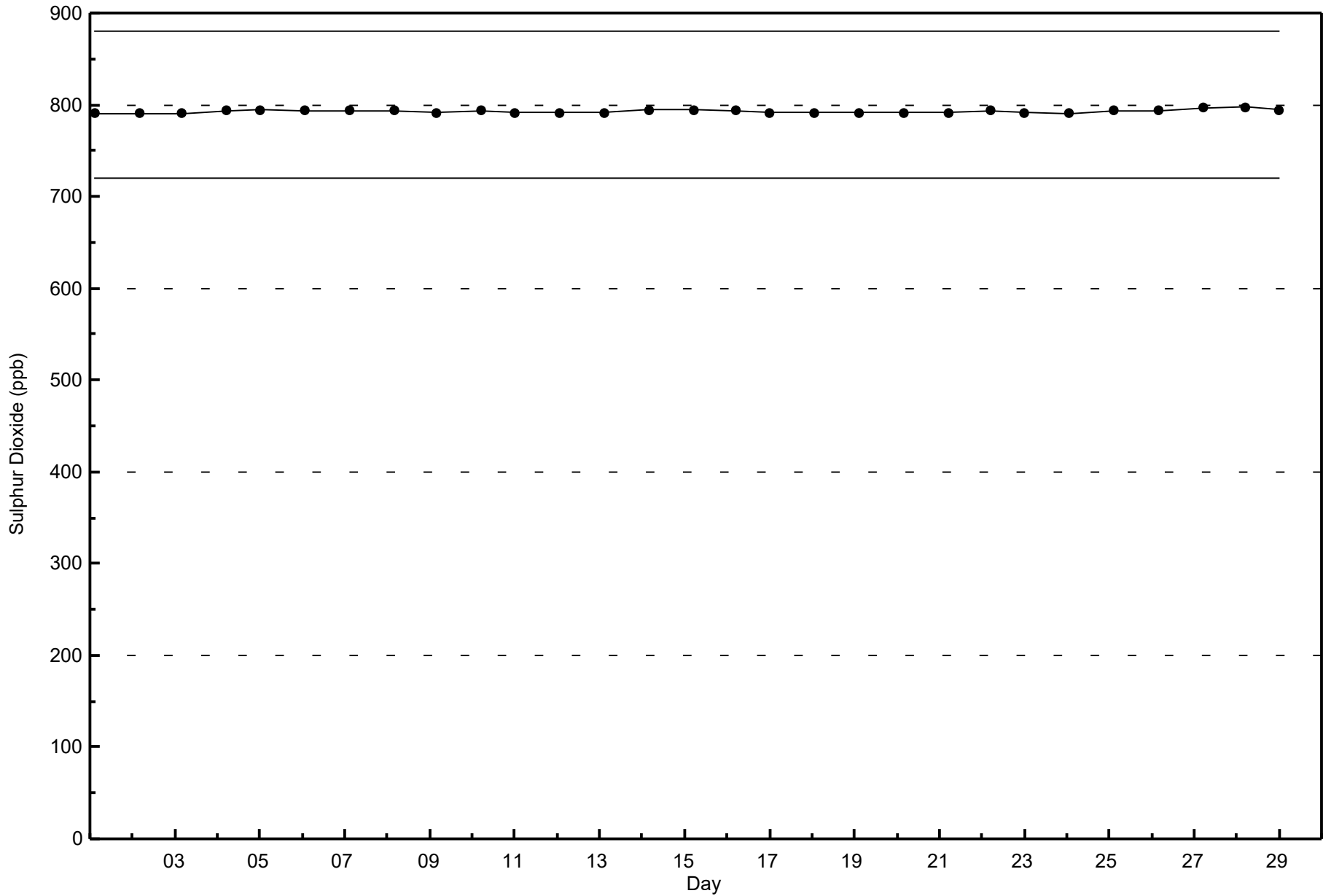
Sulphur Dioxide (SO₂) - ppb
Lower Camp - February 2024





Wood Buffalo Environmental Association
Span Responses

Sulphur Dioxide (SO₂) - ppb
Lower Camp - February 2024





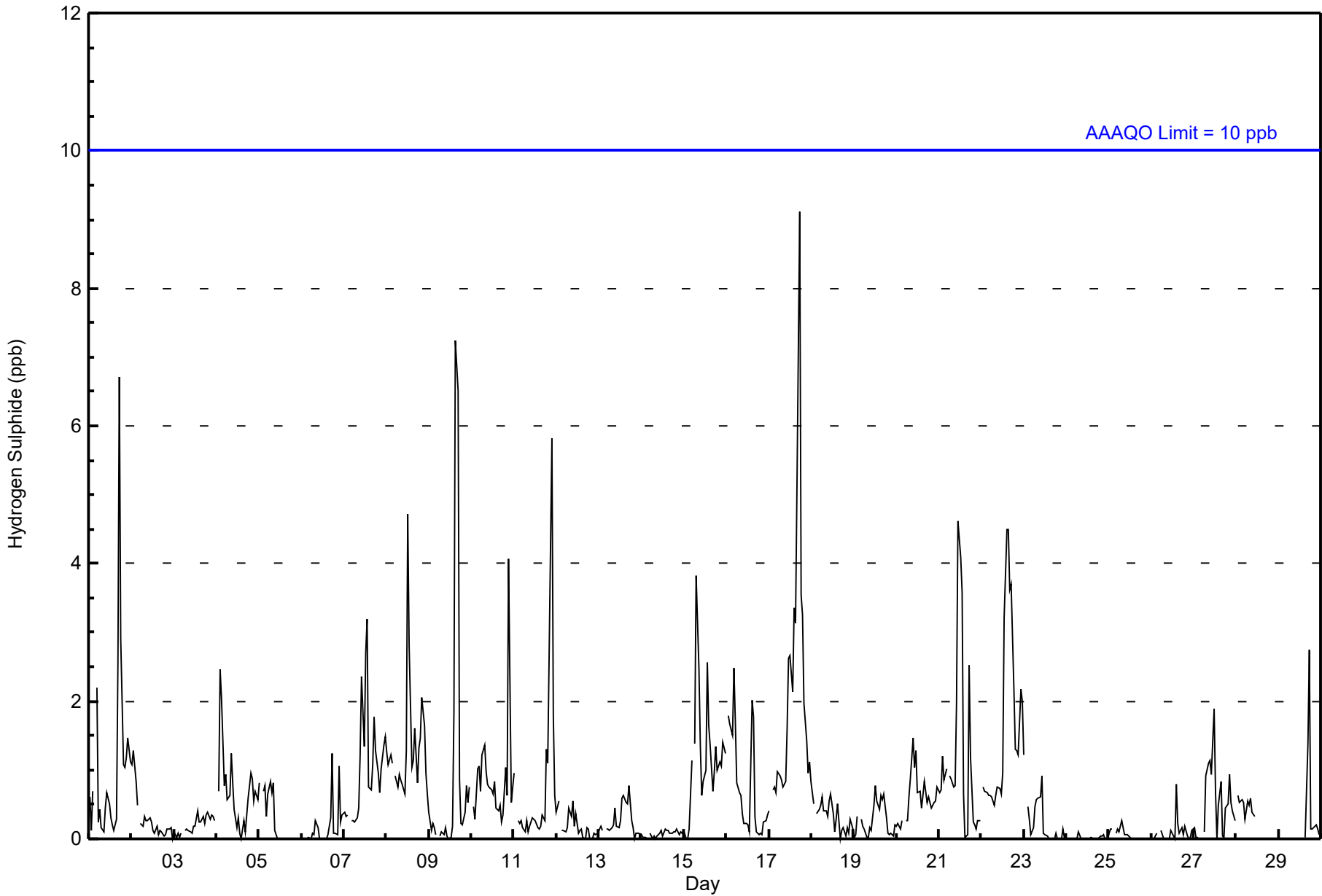
Wood Buffalo Environmental Association

Summary of Hour Averages

Hydrogen Sulphide (H₂S) - ppb

Lower Camp - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:		696																		
Maximum Value: 9.1 ppb on Feb 17 18:00		Maximum Daily Average: 2.1 ppb on Feb 17				Hours of Data:		640																		
Minimum Value: 0.0 ppb on Feb 3 00:00		Minimum Daily Average: 0.0 ppb on Feb 24				Hours of Missing Data:		56																		
Maximum Diurnal Average: 1.2 ppb at hour 18		Minimum Diurnal Average: 0.4 ppb at hour 2				Hours of Calibration:		37																		
Monthly Average: 0.63 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.3 Q ₃ = 0.8 P ₉₀ = 1.4 P ₉₉ = 4.7				Percent Operational Time:		97.3																		
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.6	0.1	0.7	Z	2.2	0.3	0.4	0.2	0.1	0.5	0.7	0.5	0.3	0.2	0.1	0.3	2.5	6.7	2.9	1.1	1.0	1.2	1.5	1.1	1.1	6.7
2-Feb	1.1	1.3	0.8	0.5	Z	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.0	0.3	1.3
3-Feb	0.1	0.0	0.1	0.0	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.3	0.2	0.3	0.2	0.3	0.4	0.3	0.4	0.3	0.3	0.2	0.4
4-Feb	Z	0.7	2.5	2.0	0.8	0.9	0.6	0.6	1.2	0.8	0.4	0.2	0.3	0.1	0.0	0.3	0.1	0.3	0.6	1.0	0.9	0.6	0.7	0.6	0.7	2.5
5-Feb	0.8	Z	0.7	0.8	0.3	0.7	0.8	0.7	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8
6-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.2	0.1	0.1	0.1	1.0	0.2	0.3	0.2	1.2
7-Feb	0.4	0.3	0.3	Z	0.3	0.3	0.2	0.3	0.4	1.2	2.4	1.3	2.7	3.2	0.8	0.7	1.1	1.8	1.3	1.0	0.7	1.0	1.4	1.5	1.1	3.2
8-Feb	1.3	1.1	1.2	1.1	Z	0.9	0.8	0.9	0.9	0.8	0.6	1.3	4.7	2.8	1.0	1.1	1.6	0.8	1.3	1.5	2.1	1.7	0.9	0.7	1.4	4.7
9-Feb	0.4	0.1	0.2	0.2	0.1	Z	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.2	1.8	7.2	6.5	0.8	0.2	0.2	0.4	0.8	0.5	0.7	0.9	7.2
10-Feb	Z	0.5	0.3	1.0	1.1	0.7	1.2	1.4	1.0	0.8	0.7	0.7	0.7	0.8	0.4	0.4	0.5	0.2	0.4	1.0	0.6	4.1	0.5	0.8	0.9	4.1
11-Feb	0.9	Z	0.3	0.2	0.3	0.2	0.1	0.3	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.2	0.3	0.3	1.3	1.1	2.7	5.8	1.8	0.6	0.8	5.8
12-Feb	0.4	0.5	Z	0.1	0.1	0.1	0.2	0.5	0.3	0.5	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.2	0.5
13-Feb	0.2	0.2	0.1	Z	0.1	0.1	0.1	0.2	0.2	0.4	0.2	0.2	0.3	0.6	0.6	0.5	0.5	0.8	0.3	0.2	0.0	0.1	0.1	0.1	0.3	0.8
14-Feb	0.1	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
15-Feb	0.1	0.0	0.0	0.2	1.1	Z	1.4	3.8	2.5	1.4	0.6	0.8	1.0	2.6	1.6	1.4	0.7	1.0	1.3	1.0	1.1	1.1	1.4	1.2	1.2	3.8
16-Feb	Z	1.8	1.7	1.5	2.5	1.7	0.8	0.7	0.6	0.4	0.2	0.2	0.2	0.1	2.0	1.8	0.3	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.8	2.5
17-Feb	0.4	Z	0.7	0.8	0.7	1.0	0.9	0.8	0.8	0.8	1.6	2.6	2.7	2.1	3.4	3.1	5.1	9.1	3.5	3.3	2.0	1.4	0.9	1.1	2.1	9.1
18-Feb	0.8	0.5	Z	0.4	0.4	0.5	0.6	0.4	0.4	0.3	0.5	0.6	0.4	0.1	0.3	0.5	0.0	0.1	0.2	0.0	0.2	0.1	0.3	0.1	0.3	0.8
19-Feb	0.0	0.1	0.3	Z	0.3	0.2	0.1	0.0	0.0	0.2	0.1	0.5	0.8	0.5	0.4	0.6	0.6	0.7	0.3	0.1	0.1	0.1	0.0	0.2	0.3	0.8
20-Feb	0.2	0.2	0.1	0.3	Z	0.3	0.3	0.6	0.9	1.5	1.0	1.3	0.7	0.7	0.4	0.6	0.8	0.5	0.6	0.5	0.4	0.5	0.5	0.7	0.6	1.5
21-Feb	0.7	0.7	1.2	0.9	1.0	Z	0.9	0.9	0.8	0.8	2.0	4.6	4.1	3.6	0.7	0.0	0.1	2.5	1.2	0.2	0.2	0.1	0.3	0.3	1.2	4.6
22-Feb	Z	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.6	0.8	0.7	0.7	1.0	3.2	4.5	4.5	3.6	3.7	2.2	1.3	1.3	1.2	2.2	2.0	1.6	4.5
23-Feb	1.2	Z	0.5	0.3	0.1	0.2	0.5	0.6	0.6	0.6	0.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.2	1.2
24-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
25-Feb	0.1	0.2	0.1	Z	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
26-Feb	0.0	0.0	0.0	0.1	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.8	0.2	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.8
27-Feb	0.2	0.0	0.0	0.0	0.0	Z	0.1	0.9	1.1	1.1	0.9	1.9	0.7	0.0	0.5	0.8	0.0	0.0	0.5	0.5	0.9	0.5	0.4	0.3	0.5	1.9
28-Feb	Z	0.6	0.5	0.6	0.5	0.3	0.5	0.5	0.6	0.4	0.3	C	C	C	C	C	C	M	M	M	M	M	M	M	M	0.6
29-Feb	M	M	M	M	M	M	M	M	M	M	M	C	C	C	C	M	0.0	1.4	2.7	0.1	0.1	0.2	0.2	0.1	0.1	2.7
																								Diurnal Average		
																								Diurnal Maximum		
0.4 0.4 0.5 0.5 0.5 0.4 0.4 0.6 0.5 0.5 0.5 0.7 0.8 0.8 0.8 0.9 1.0 1.2 0.7 0.5 0.6 0.8 0.5 0.5																										
1.3 1.8 2.5 2.0 2.5 1.7 1.4 3.8 2.5 1.5 2.4 4.6 4.7 3.6 4.5 7.2 6.5 9.1 3.5 3.3 2.7 5.8 2.2 2.0																										
Z - zerspan C - Calibration M - Maintenance																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																										





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Lower Camp - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	608	95.00	95.00
3 - 4	24	3.75	98.75
5 - 7	7	1.09	99.84
8 - 11	1	0.16	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 640

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Lower Camp - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	39	12	4	4	11	149	23	6	2	6	12	39	53	86	71	90	607
3 - 4	1	1	0	1	1	7	3	1	1	1	1	0	3	3	0	0	24
5 - 7	0	0	1	0	0	1	2	0	0	0	0	0	1	1	1	0	7
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	40	13	5	5	12	157	28	7	3	7	13	39	58	90	72	90	639

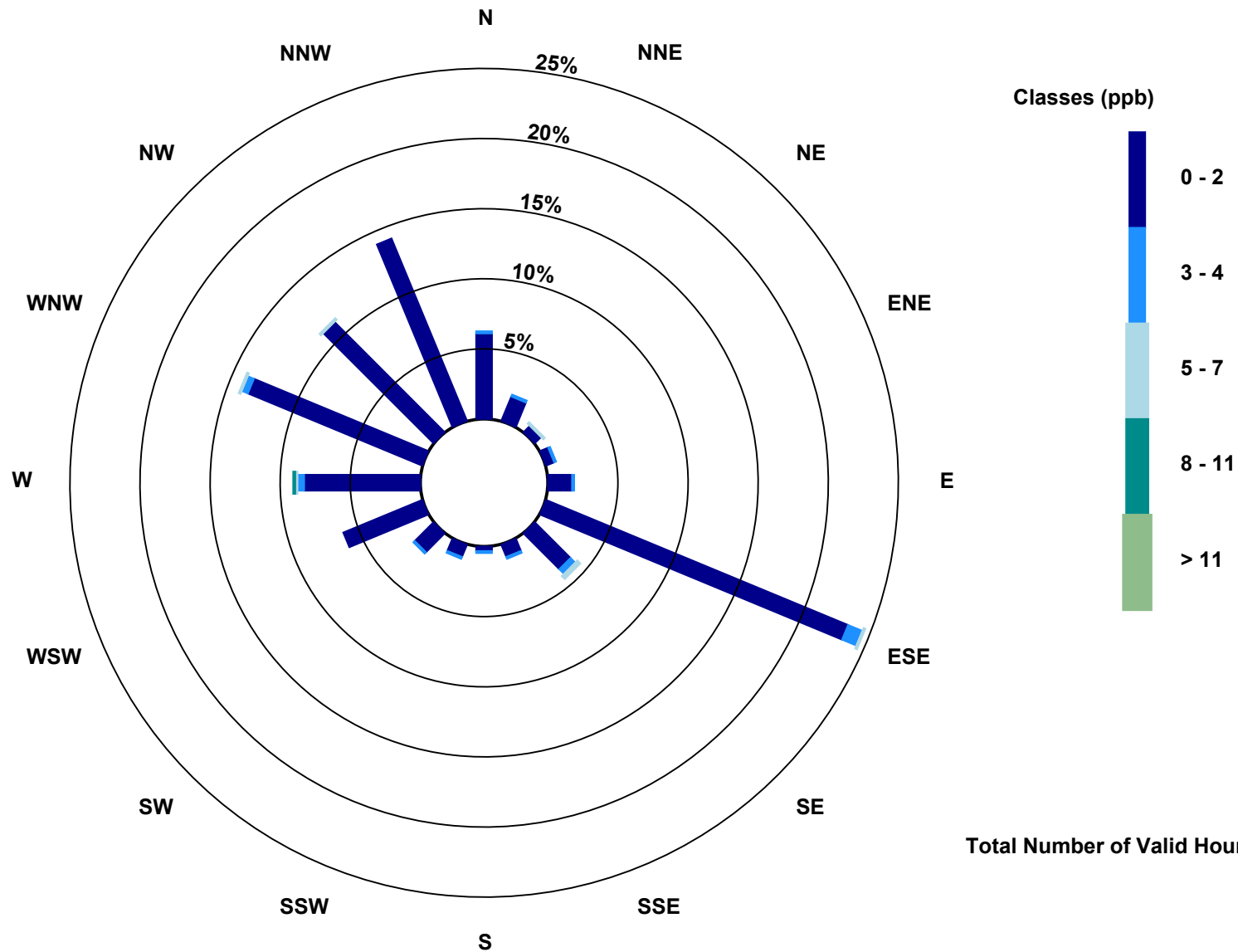
Total Number of Valid Hours: 639

Total Number of Hours: 696

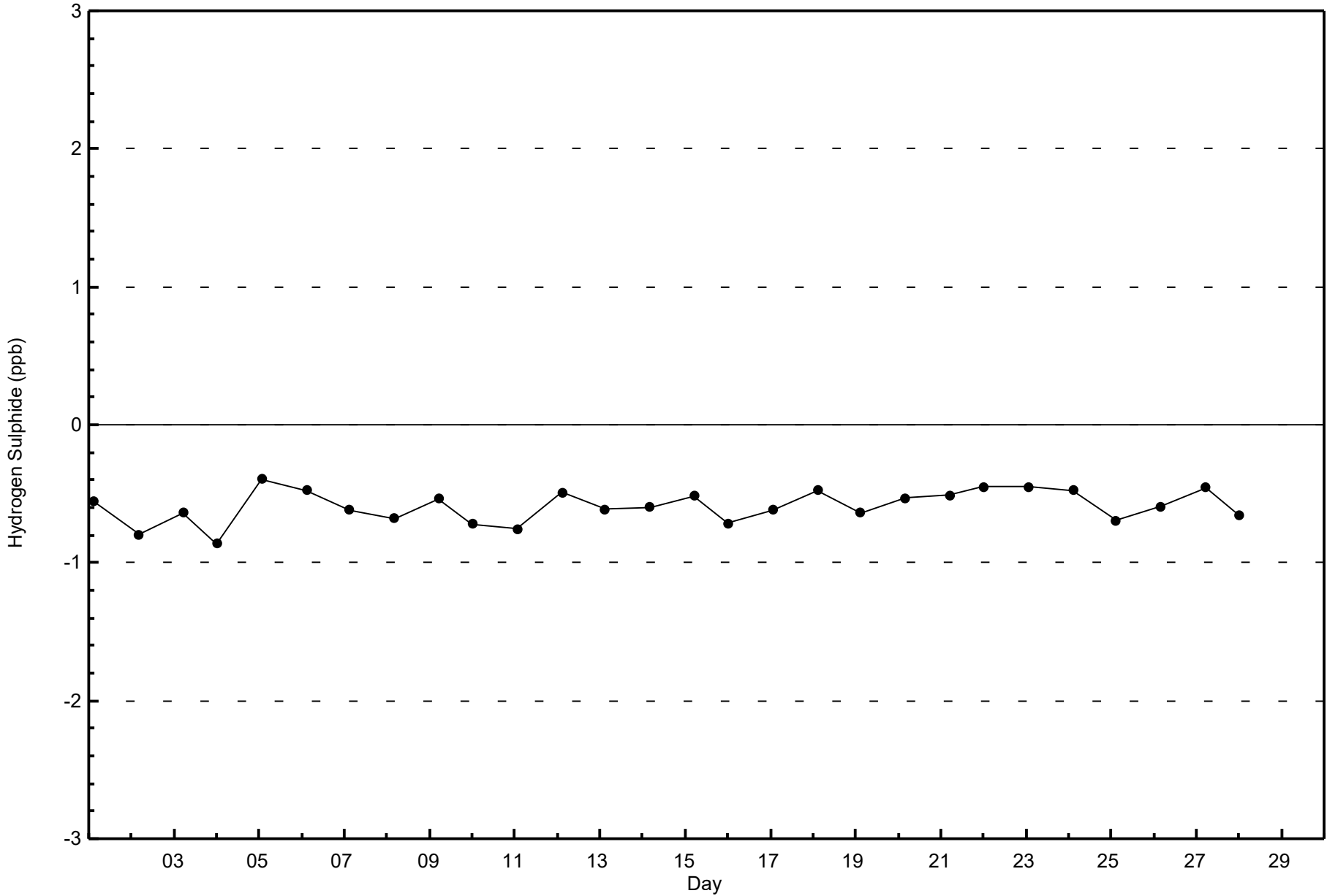


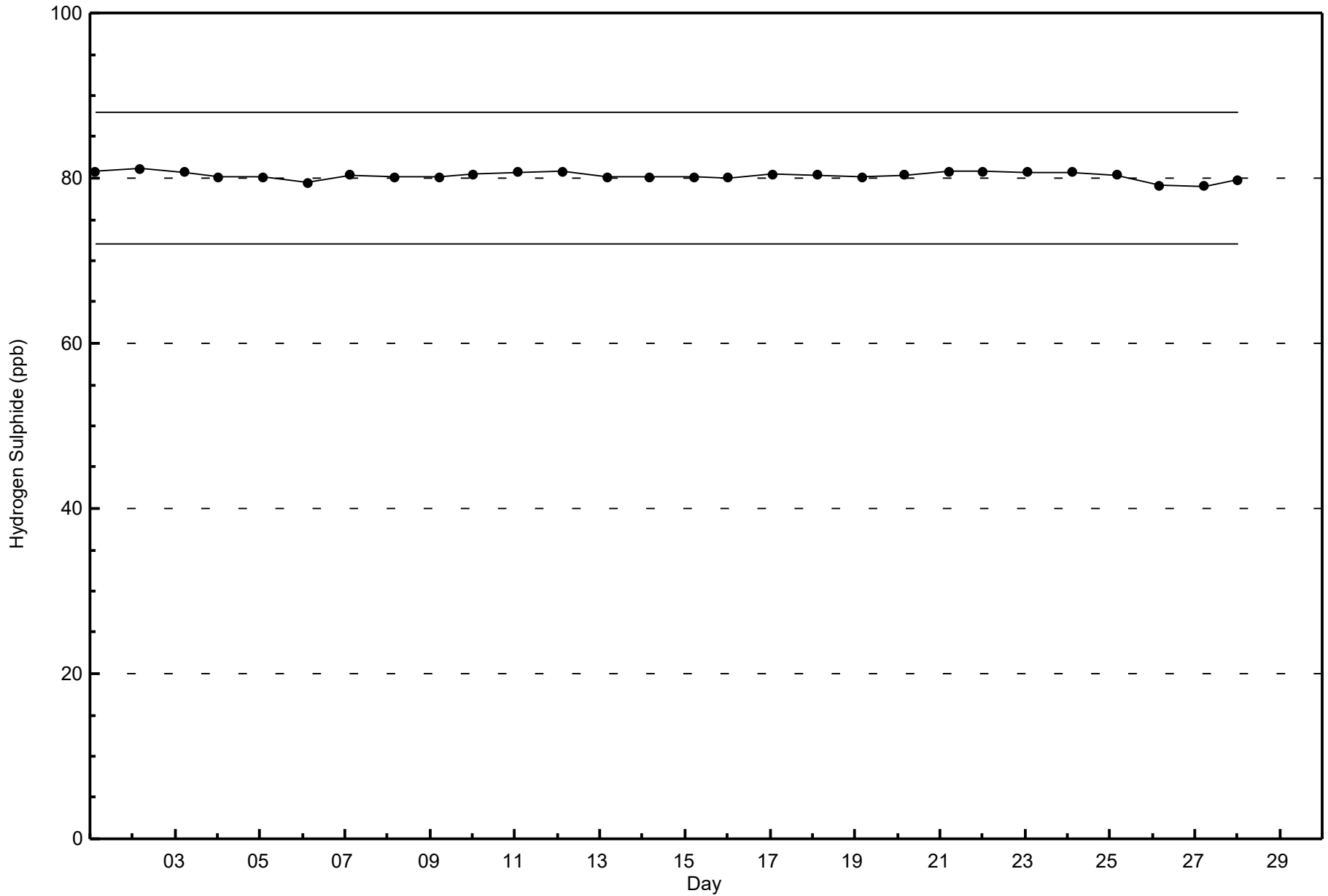
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Lower Camp



Total Number of Valid Hours: 639







Wood Buffalo Environmental Association
Summary of Hour Averages

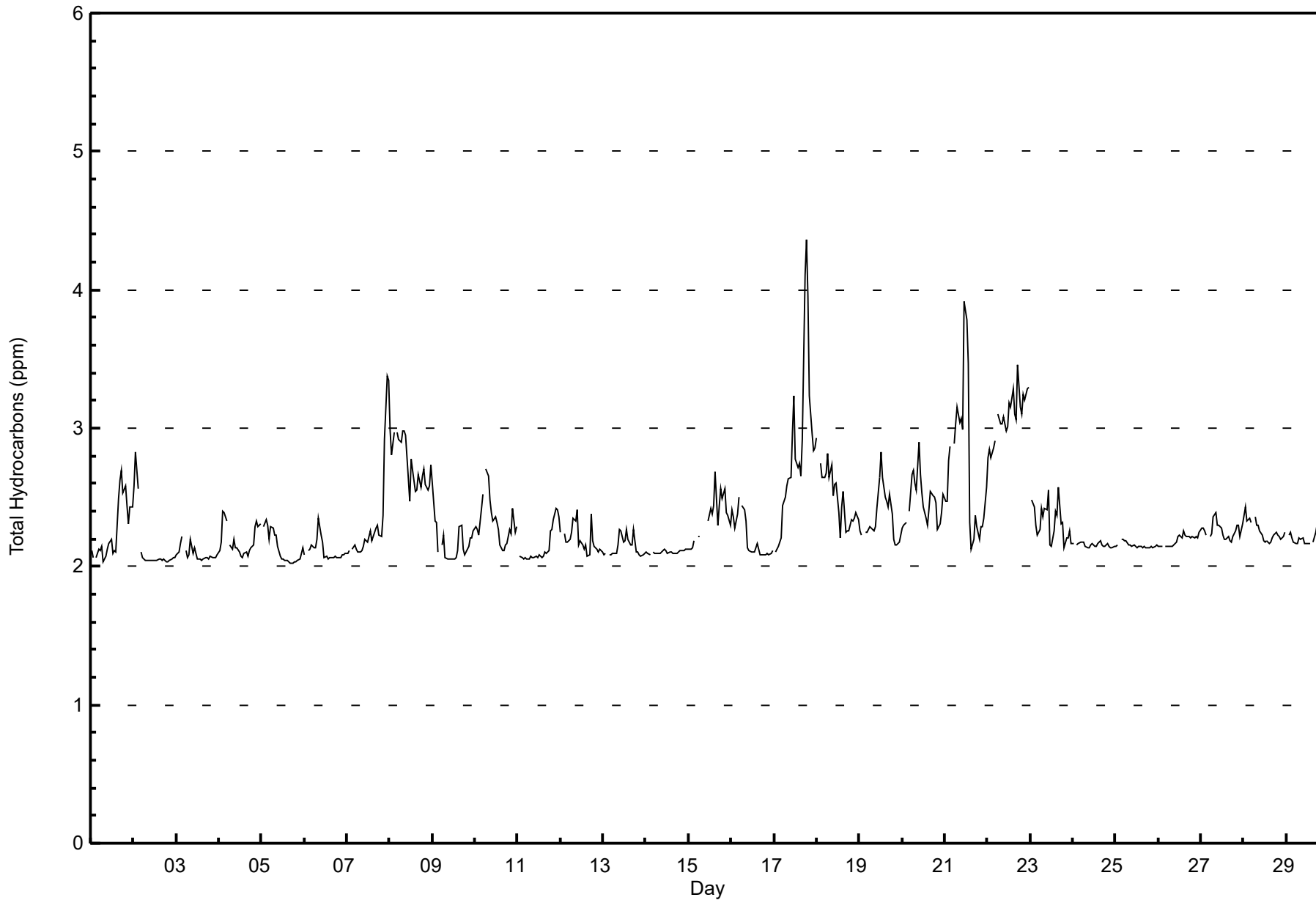
Total Hydrocarbons (THC) - ppm
Lower Camp - February 2024

Maximum Value: 4.4 ppm on Feb 17 19:00		Maximum Daily Average: 3.1 ppm on Feb 22		Hours in Service: 696																							
Minimum Value: 2.0 ppm on Feb 5 18:00		Minimum Daily Average: 2.1 ppm on Feb 3		Hours of Data: 662																							
Maximum Diurnal Average: 2.4 ppm at hour 18		Minimum Diurnal Average: 2.3 ppm at hour 15		Hours of Missing Data: 34																							
Monthly Average: 2.32 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.1 Q ₁ = 2.1 Median = 2.2 Q ₃ = 2.4 P ₉₀ = 2.7 P ₉₉ = 3.4		Hours of Calibration: 33																							
				Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.5	2.6	2.7	2.5	2.6	2.4	2.3	2.4	2.4	2.3	2.7	
2-Feb	2.6	2.8	2.6	Z	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.8
3-Feb	2.1	2.1	2.2	2.2	Z	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	
4-Feb	2.1	2.2	2.4	2.4	2.3	Z	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.4	
5-Feb	Z	2.3	2.3	2.3	2.2	Z	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.3	
6-Feb	2.1	Z	2.1	2.1	2.2	2.1	2.1	2.2	2.4	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	
7-Feb	2.1	2.1	Z	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.3	2.2	2.2	2.4	2.9	3.4	3.3	2.3	3.4	
8-Feb	3.0	2.8	3.0	Z	3.0	2.9	2.9	3.0	3.0	2.9	2.6	2.5	2.8	2.7	2.5	2.6	2.7	2.6	2.7	2.7	2.6	2.5	2.6	2.7	2.7	3.0	
9-Feb	2.6	2.3	2.3	2.1	Z	2.2	2.2	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.2	2.6	
10-Feb	2.3	2.3	2.2	2.4	2.5	Z	2.7	2.7	2.5	2.4	2.3	2.4	2.3	2.3	2.2	2.1	2.1	2.2	2.2	2.3	2.2	2.4	2.2	2.3	2.3	2.7	
11-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.3	2.4	2.4	2.4	2.1	2.4	
12-Feb	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.4	
13-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	
14-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
15-Feb	2.1	2.1	2.1	2.2	Z	2.2	2.2	C	C	C	C	2.3	2.4	2.4	2.4	2.7	2.3	2.4	2.6	2.5	2.6	2.4	2.4	2.3	2.4	2.7	
16-Feb	2.4	2.4	2.3	2.4	2.5	Z	2.4	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.5	
17-Feb	Z	2.1	2.1	2.2	2.2	2.4	2.5	2.6	2.6	2.6	3.0	3.2	2.8	2.7	2.7	2.7	2.9	4.1	4.4	4.0	3.2	3.0	2.8	2.9	2.9	4.4	
18-Feb	2.9	Z	2.7	2.6	2.6	2.7	2.8	2.6	2.7	2.5	2.6	2.6	2.4	2.2	2.4	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.5	2.9	
19-Feb	2.3	2.2	Z	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.6	2.8	2.6	2.5	2.5	2.4	2.5	2.4	2.2	2.2	2.2	2.2	2.2	2.4	2.8	
20-Feb	2.3	2.3	2.3	Z	2.4	2.7	2.7	2.6	2.6	2.9	2.7	2.5	2.4	2.3	2.3	2.4	2.5	2.5	2.5	2.5	2.3	2.3	2.4	2.5	2.5	2.9	
21-Feb	2.5	2.5	2.8	2.9	Z	2.9	3.0	3.2	3.0	3.1	3.0	3.9	3.8	3.5	2.3	2.1	2.2	2.4	2.3	2.2	2.3	2.3	2.4	2.6	2.7	3.9	
22-Feb	2.8	2.8	2.8	2.9	2.9	Z	3.1	3.0	3.0	3.1	3.0	3.0	3.2	3.2	3.3	3.1	3.1	3.5	3.2	3.1	3.2	3.2	3.3	3.3	3.1	3.5	
23-Feb	Z	2.5	2.4	2.3	2.2	2.3	2.4	2.4	2.4	2.4	2.6	2.2	2.1	2.3	2.4	2.4	2.6	2.3	2.3	2.1	2.2	2.2	2.3	2.2	2.3	2.6	
24-Feb	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	
25-Feb	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	
26-Feb	2.1	2.1	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	
27-Feb	2.3	2.3	2.3	2.2	Z	2.2	2.2	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.4	
28-Feb	2.4	2.4	2.3	2.3	2.3	Z	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	
29-Feb	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	M	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.2	2.4		
																								Diurnal Average			
																								Diurnal Maximum			
Z - zerospan C - Calibration M - Maintenance																											



Wood Buffalo Environmental Association
Hourly Averages

Total Hydrocarbons (THC) - ppm
Lower Camp - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Lower Camp - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	24	3.63	3.63
2.1 - 3.0	612	92.45	96.07
3.1 - 10.0	26	3.93	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Lower Camp - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	11	10	24
2.1 - 3.0	36	14	6	5	16	168	26	5	2	6	12	37	54	85	57	82	611
3.1 - 10.0	0	0	0	0	1	9	0	1	0	0	0	0	6	6	3	0	26
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	38	14	6	5	17	177	27	6	2	6	12	37	60	91	71	92	661

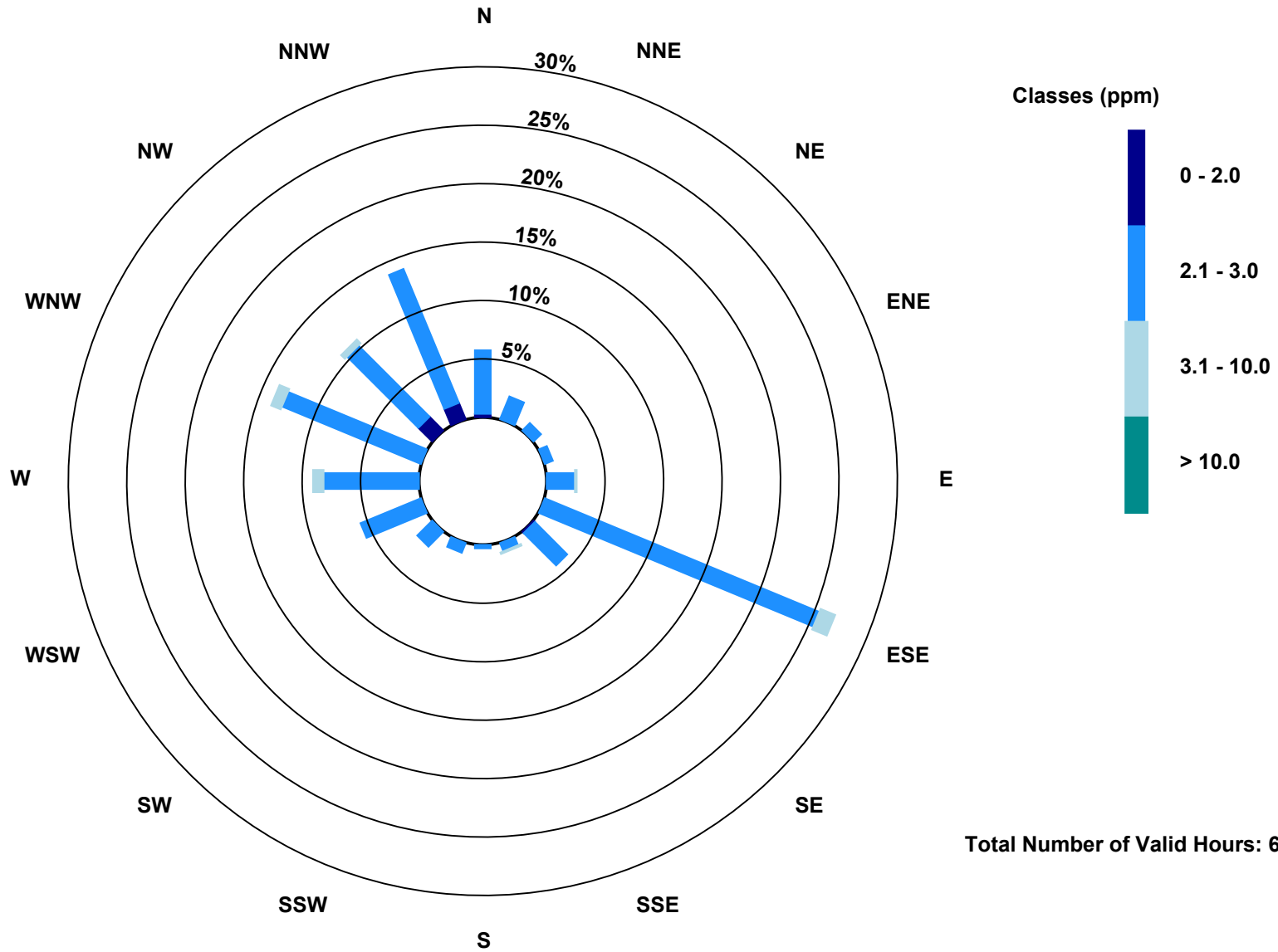
Total Number of Valid Hours: 661

Total Number of Hours: 696

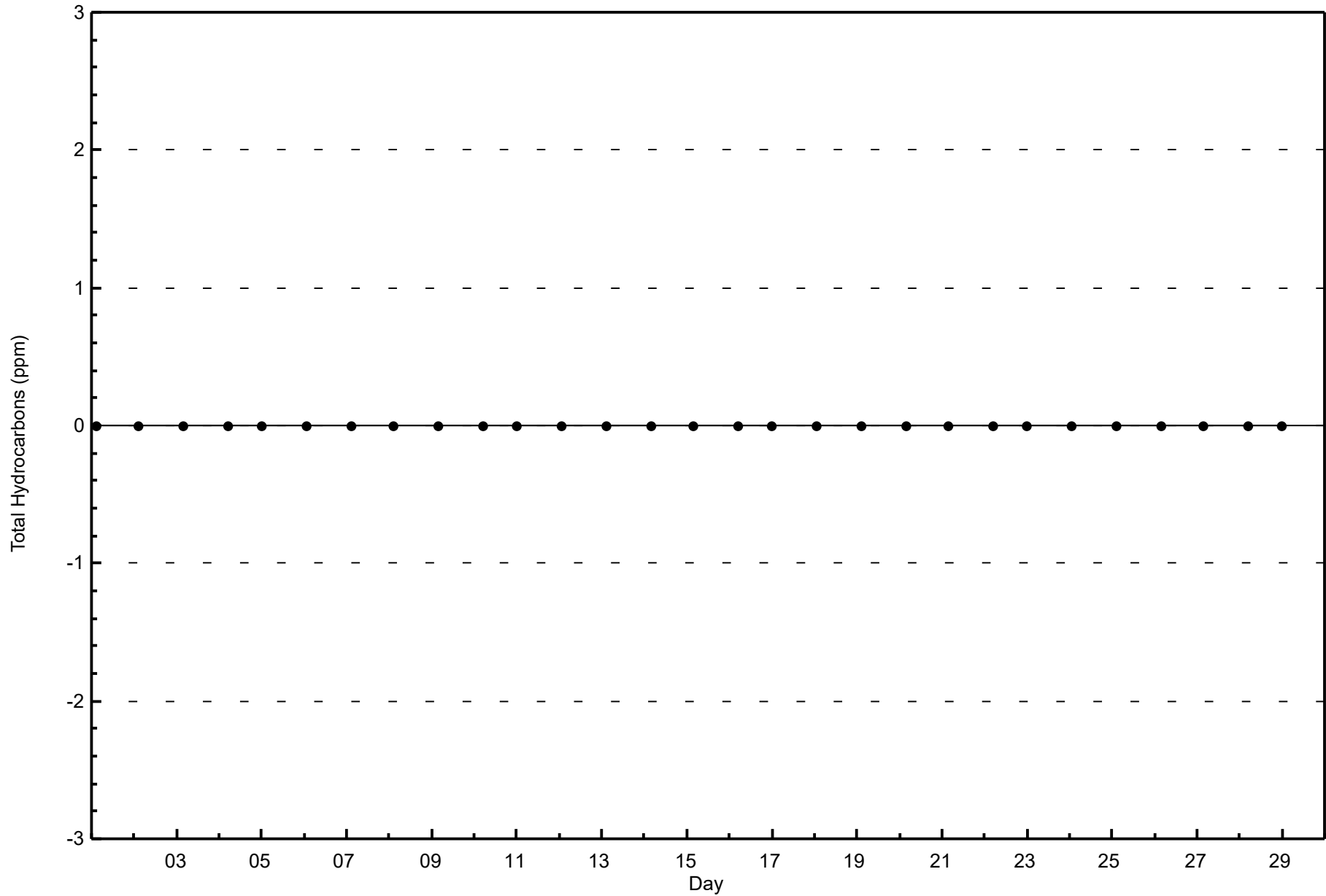


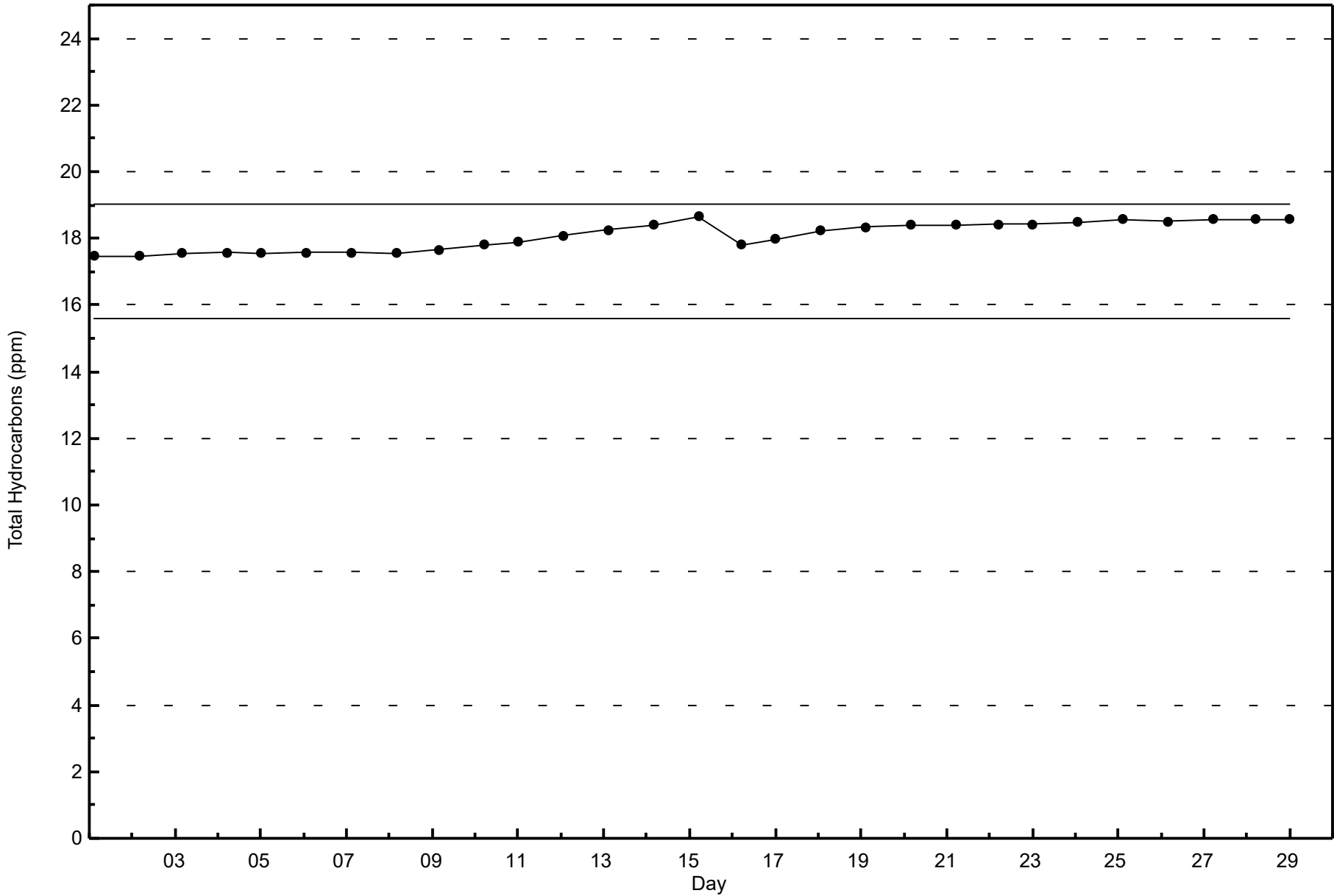
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Lower Camp



Total Number of Valid Hours: 661







Wood Buffalo Environmental Association

Summary of Hour Averages

Methane (CH₄) - ppm

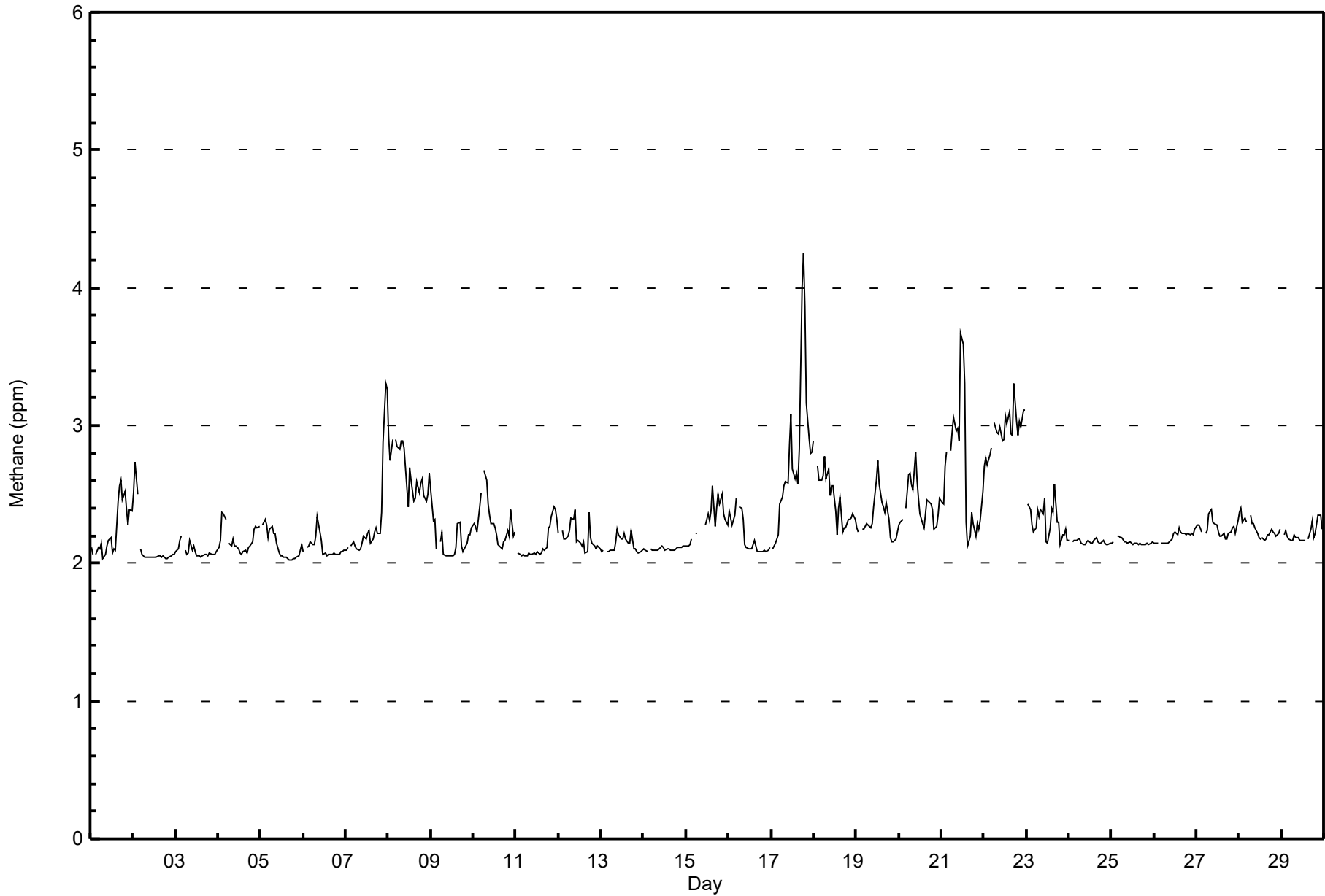
Lower Camp - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														696																												
Maximum Value: 4.3 ppm on Feb 17 19:00		Maximum Daily Average: 3.0 ppm on Feb 22		Hours of Data: 662														662																														
Minimum Value: 2.0 ppm on Feb 5 18:00		Minimum Daily Average: 2.1 ppm on Feb 3		Hours of Missing Data: 34														34																														
Maximum Diurnal Average: 2.3 ppm at hour 18		Minimum Diurnal Average: 2.2 ppm at hour 15		Hours of Calibration: 33														33																														
Monthly Average: 2.29 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.1 Q ₁ = 2.1 Median = 2.2 Q ₃ = 2.4 P ₉₀ = 2.7 P ₉₉ = 3.3		Percent Operational Time: 99.9														99.9																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.5	2.6	2.6	2.5	2.5	2.4	2.3	2.4	2.4	2.2	2.6																						
2-Feb	2.5	2.7	2.5	Z	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.7																					
3-Feb	2.1	2.1	2.2	2.2	Z	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2																						
4-Feb	2.1	2.2	2.4	2.4	2.3	Z	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.2	2.4																						
5-Feb	Z	2.3	2.3	2.3	2.2	Z	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.3																						
6-Feb	2.1	Z	2.1	2.1	2.2	2.1	2.1	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3																						
7-Feb	2.1	2.1	Z	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.3	2.2	2.2	2.4	2.9	3.3	3.3	2.3	3.3																						
8-Feb	2.9	2.7	2.9	Z	2.9	2.8	2.8	2.9	2.9	2.8	2.6	2.4	2.7	2.6	2.5	2.5	2.6	2.5	2.6	2.6	2.5	2.5	2.5	2.7	2.7	2.9																						
9-Feb	2.5	2.3	2.3	2.1	Z	2.2	2.2	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.2	2.5																						
10-Feb	2.3	2.3	2.2	2.4	2.5	Z	2.7	2.6	2.4	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.4	2.2	2.2	2.3	2.7																						
11-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.3	2.4	2.4	2.3	2.1	2.4																						
12-Feb	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.4																						
13-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2																						
14-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1																						
15-Feb	2.1	2.1	2.1	2.2	Z	2.2	2.2	C	C	C	C	2.3	2.4	2.3	2.4	2.6	2.3	2.4	2.5	2.4	2.5	2.4	2.3	2.3	2.3	2.6																						
16-Feb	2.4	2.3	2.3	2.4	2.5	Z	2.4	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.5																						
17-Feb	Z	2.1	2.1	2.2	2.2	2.4	2.5	2.6	2.6	2.6	2.9	3.1	2.7	2.6	2.7	2.6	2.8	4.0	4.3	3.9	3.2	2.9	2.8	2.8	2.8	4.3																						
18-Feb	2.9	Z	2.7	2.6	2.6	2.6	2.8	2.6	2.7	2.5	2.6	2.6	2.4	2.2	2.4	2.5	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.5	2.9																						
19-Feb	2.3	2.2	Z	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.6	2.7	2.6	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.7																						
20-Feb	2.3	2.3	2.3	Z	2.4	2.6	2.7	2.6	2.5	2.8	2.6	2.5	2.4	2.3	2.3	2.4	2.5	2.4	2.4	2.4	2.2	2.3	2.3	2.5	2.4	2.8																						
21-Feb	2.4	2.4	2.7	2.8	Z	2.8	2.9	3.1	3.0	3.0	2.9	3.7	3.6	3.3	2.3	2.1	2.2	2.4	2.3	2.2	2.3	2.2	2.3	2.5	2.7	3.7																						
22-Feb	2.7	2.8	2.7	2.8	2.8	Z	3.0	2.9	2.9	3.0	2.9	2.9	3.1	3.0	3.1	2.9	2.9	3.3	3.0	2.9	3.0	3.0	3.1	3.1	3.0	3.3																						
23-Feb	Z	2.4	2.4	2.3	2.2	2.3	2.4	2.3	2.4	2.4	2.5	2.2	2.1	2.3	2.4	2.4	2.6	2.3	2.3	2.1	2.2	2.2	2.2	2.2	2.3	2.6																						
24-Feb	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2																						
25-Feb	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2																						
26-Feb	2.1	2.1	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3																						
27-Feb	2.3	2.3	2.3	2.2	Z	2.2	2.2	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.3	2.4																						
28-Feb	2.4	2.4	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4																						
29-Feb	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	M	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.2	2.4																						
																								2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	Diurnal Average
																								2.9	2.8	2.9	2.8	2.9	2.8	3.0	3.1	3.0	3.0	2.9	3.7	3.6	3.3	3.1	2.9	2.9	4.0	4.3	3.9	3.2	3.0	3.3	3.3	Diurnal Maximum
Z - zerospan																								C - Calibration				M - Maintenance																				



Wood Buffalo Environmental Association
Hourly Averages

Methane (CH₄) - ppm
Lower Camp - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Lower Camp - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	24	3.63	3.63
2.1 - 3.0	622	93.96	97.58
3.1 - 10.0	16	2.42	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Methane (CH₄) - ppm
Lower Camp - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	11	10	24
2.1 - 3.0	36	14	6	5	17	170	26	6	2	6	12	37	56	87	59	82	621
3.1 - 10.0	0	0	0	0	0	7	0	0	0	0	0	0	4	4	1	0	16
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	38	14	6	5	17	177	27	6	2	6	12	37	60	91	71	92	661

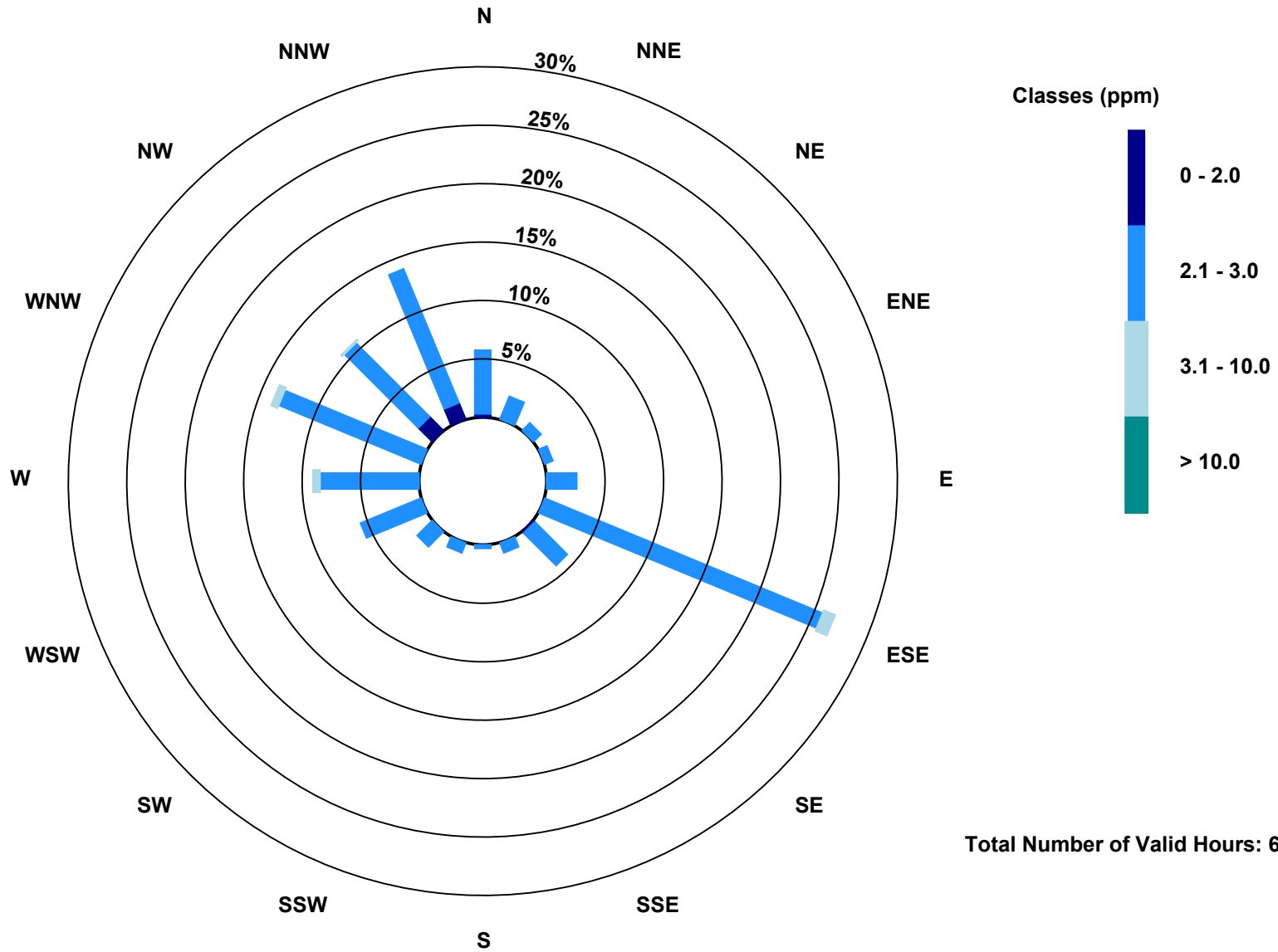
Total Number of Valid Hours: 661

Total Number of Hours: 696

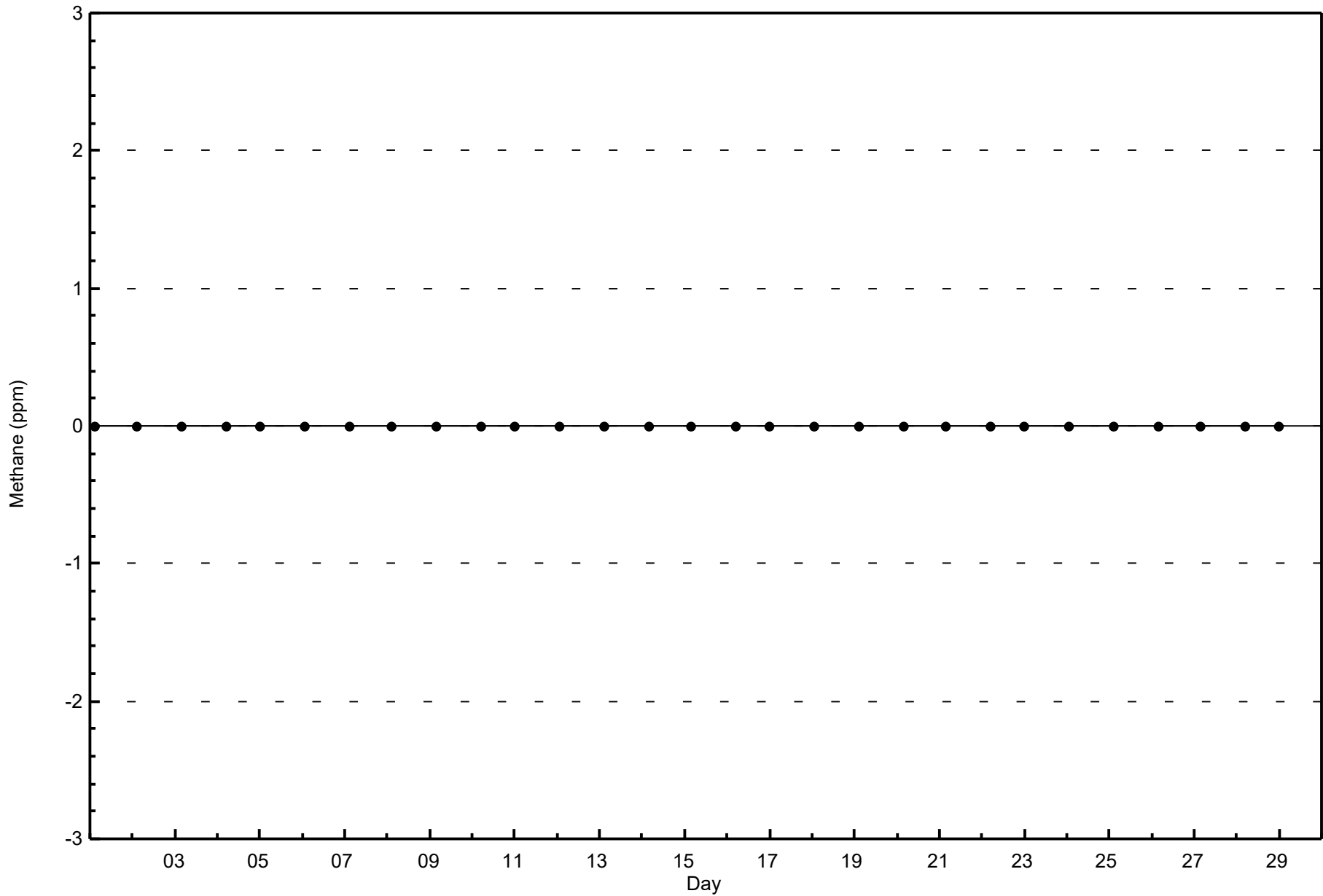


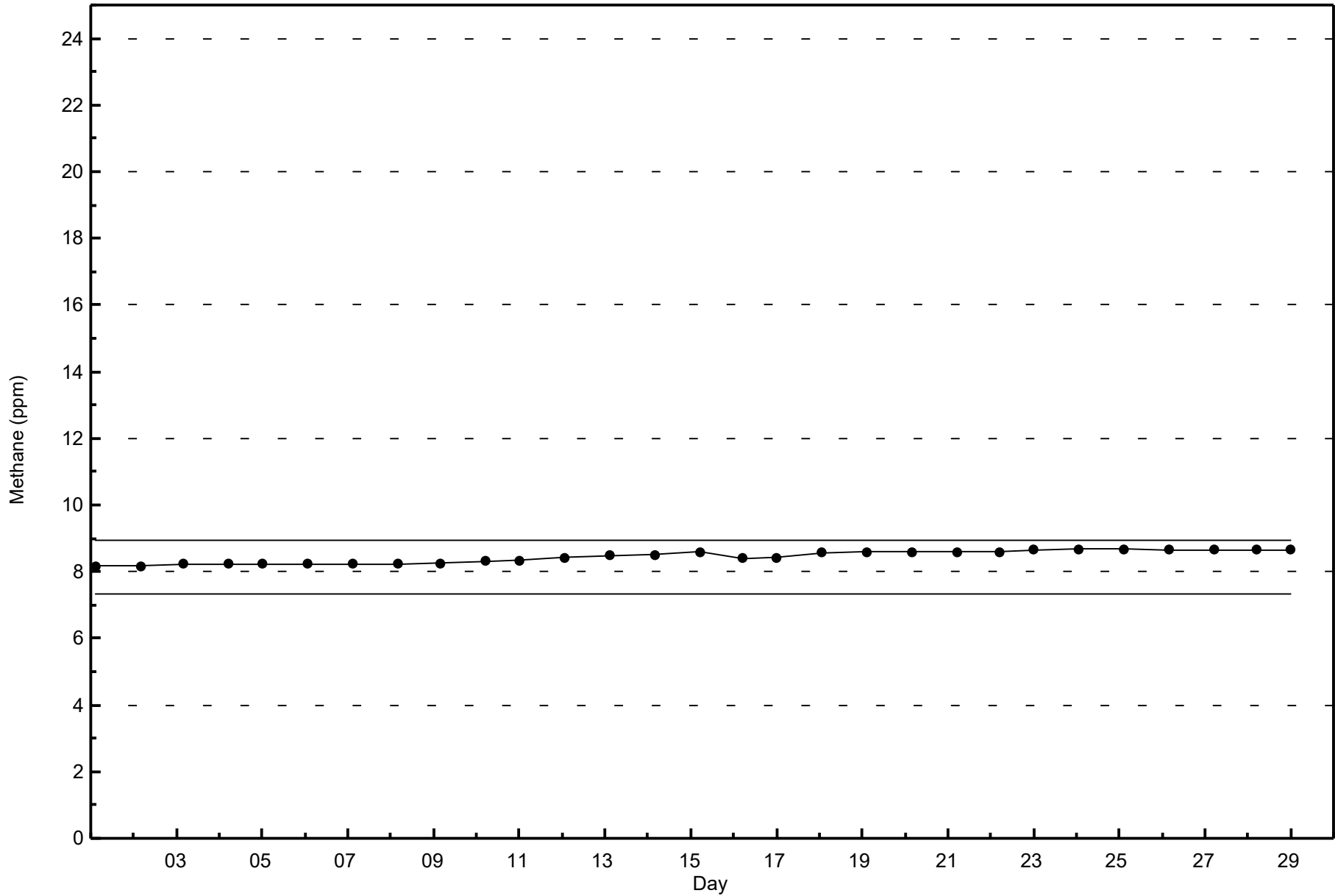
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Lower Camp



Total Number of Valid Hours: 661



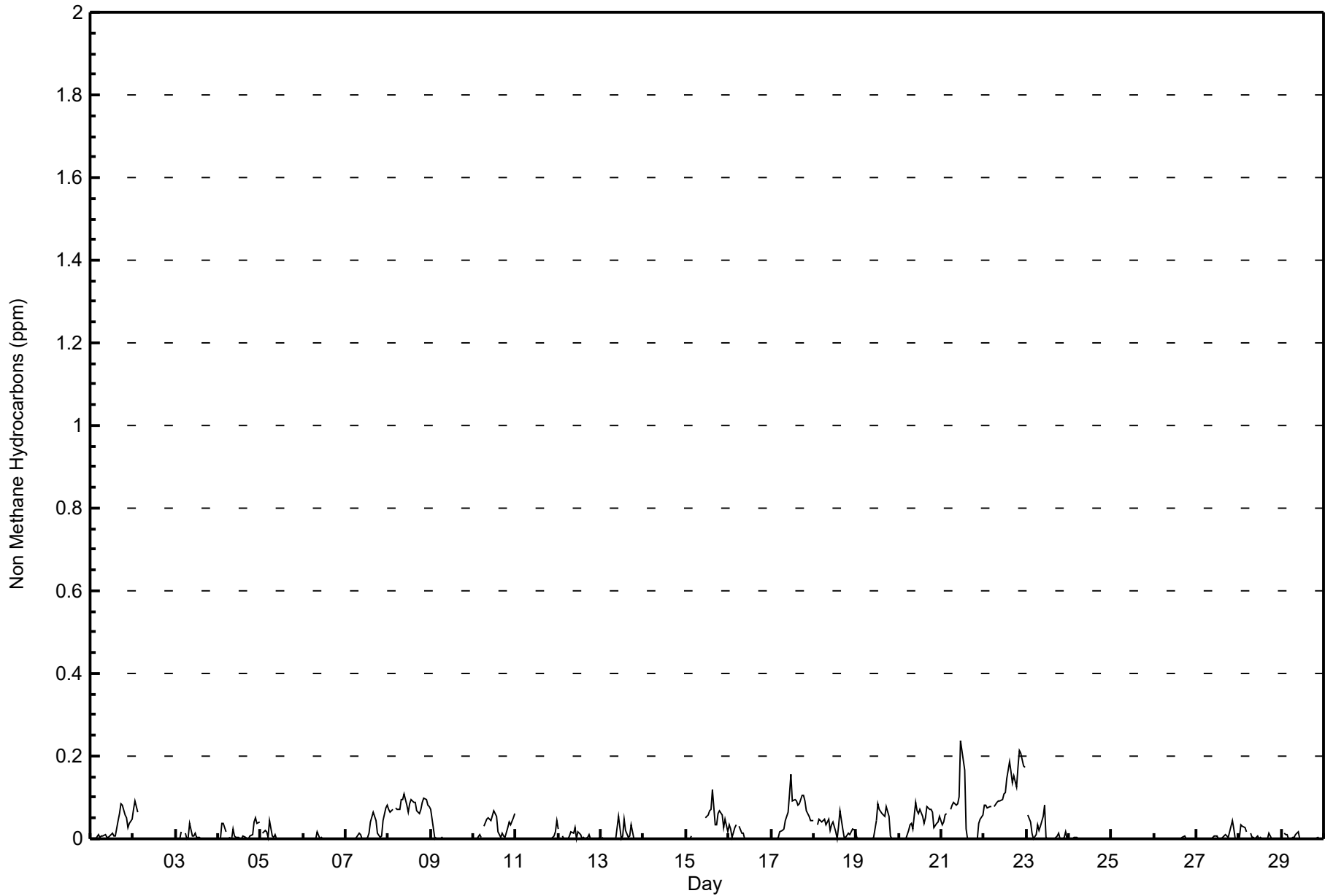




Summary of Hour Averages

Lower Camp - February 2024

Maximum Value: 0.237 ppm on Feb 21 12:00		Maximum Daily Average: 0.127 ppm on Feb 22		Hours in Service:	696																					
Minimum Value: 0.000 ppm on Feb 1 02:00		Minimum Daily Average: 0.000 ppm on Feb 25		Hours of Data:	662																					
Maximum Diurnal Average: 0.031 ppm at hour 12		Minimum Diurnal Average: 0.012 ppm at hour 5		Hours of Missing Data:	34																					
Monthly Average: 0.022 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.1 P ₉₉ = 0.2		Hours of Calibration:	33																					
				Percent Operational Time:	99.9																					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.002	0.000	Z	0.001	0.010	0.004	0.008	0.005	0.011	0.002	0.004	0.011	0.015	0.008	0.007	0.046	0.060	0.084	0.080	0.059	0.051	0.029	0.036	0.047	0.025	0.084
2-Feb	0.071	0.090	0.063	Z	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.090
3-Feb	0.000	0.000	0.000	0.016	Z	0.013	0.000	0.002	0.036	0.008	0.008	0.013	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.036
4-Feb	0.000	0.001	0.037	0.037	0.018	Z	0.004	0.001	0.024	0.005	0.005	0.003	0.000	0.000	0.007	0.003	0.001	0.001	0.008	0.010	0.041	0.052	0.037	0.040	0.014	0.052
5-Feb	Z	0.015	0.021	0.018	0.004	0.042	0.008	0.003	0.010	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.042
6-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.017
7-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.004	0.013	0.009	0.001	0.000	0.000	0.002	0.014	0.040	0.064	0.054	0.044	0.015	0.003	0.008	0.043	0.075	0.083	0.020	0.083
8-Feb	0.070	0.063	0.071	Z	0.074	0.073	0.072	0.096	0.094	0.109	0.082	0.065	0.085	0.093	0.087	0.089	0.067	0.062	0.071	0.089	0.099	0.095	0.080	0.077	0.081	0.109
9-Feb	0.071	0.023	0.002	0.002	Z	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.071
10-Feb	0.001	0.001	0.001	0.011	0.005	Z	0.032	0.049	0.051	0.048	0.043	0.068	0.061	0.053	0.017	0.005	0.014	0.005	0.003	0.027	0.039	0.034	0.049	0.060	0.029	0.068
11-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.005	0.018	0.044	0.003	0.044
12-Feb	0.025	Z	0.005	0.000	0.000	0.000	0.008	0.018	0.014	0.028	0.001	0.016	0.011	0.000	0.004	0.000	0.005	0.009	0.000	0.000	0.000	0.000	0.000	0.002	0.006	0.028
13-Feb	0.001	0.002	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.028	0.054	0.000	0.006	0.049	0.022	0.003	0.007	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.054
14-Feb	0.001	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
15-Feb	0.000	0.000	0.000	0.006	Z	0.000	0.000	C	C	C	C	0.052	0.058	0.067	0.071	0.118	0.035	0.033	0.061	0.067	0.057	0.028	0.048	0.018	0.038	0.118
16-Feb	0.035	0.023	0.005	0.028	0.032	Z	0.030	0.012	0.014	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.035
17-Feb	Z	0.000	0.000	0.001	0.002	0.018	0.022	0.025	0.043	0.063	0.109	0.156	0.091	0.095	0.090	0.082	0.083	0.107	0.106	0.091	0.068	0.054	0.045	0.043	0.061	0.156
18-Feb	0.043	Z	0.035	0.046	0.041	0.045	0.048	0.034	0.046	0.022	0.035	0.040	0.015	0.000	0.030	0.066	0.025	0.004	0.004	0.015	0.012	0.016	0.024	0.021	0.029	0.066
19-Feb	0.002	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.002	0.044	0.086	0.073	0.060	0.059	0.056	0.079	0.054	0.006	0.000	0.000	0.000	0.000	0.023	0.086
20-Feb	0.001	0.002	0.000	Z	0.001	0.019	0.034	0.037	0.024	0.090	0.067	0.063	0.071	0.055	0.037	0.050	0.077	0.072	0.072	0.064	0.027	0.037	0.040	0.055	0.043	0.090
21-Feb	0.035	0.041	0.056	0.062	Z	0.071	0.082	0.087	0.082	0.084	0.101	0.237	0.191	0.166	0.023	0.000	0.000	0.001	0.000	0.000	0.000	0.037	0.046	0.059	0.064	0.237
22-Feb	0.081	0.082	0.076	0.079	0.079	Z	0.078	0.087	0.093	0.090	0.094	0.109	0.112	0.146	0.187	0.162	0.135	0.154	0.124	0.172	0.214	0.208	0.177	0.174	0.127	0.214
23-Feb	Z	0.058	0.042	0.015	0.001	0.011	0.035	0.020	0.029	0.056	0.081	0.005	0.000	0.000	0.000	0.000	0.000	0.006	0.013	0.000	0.000	0.003	0.016	0.000	0.017	0.081
24-Feb	0.000	Z	0.000	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
25-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.004	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.007
27-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.001	0.005	0.007	0.008	0.000	0.000	0.000	0.006	0.009	0.007	0.003	0.032	0.044	0.025	0.000	0.002	0.006	0.044
28-Feb	0.002	0.034	0.030	0.026	0.017	Z	0.012	0.003	0.003	0.002	0.008	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.007	0.034
29-Feb	Z	0.012	0.009	0.012	0.000	0.000	0.004	0.004	0.010	0.017	0.000	0.000	0.000	0.000	M	0.000	0.000	0.000	0.000	0.001	0.003	0.001	0.000	0.000	0.003	0.017
																								Diurnal Average		
																								Diurnal Maximum		
Z - zerospan C - Calibration M - Maintenance																										





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Lower Camp - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	389	58.76	58.76
0.006 - 0.05	163	24.62	83.38
0.06 - 0.1	98	14.80	98.19
> 0.1	12	1.81	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Lower Camp - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	35	13	2	1	9	69	11	2	1	5	11	31	21	45	48	85	389
0.006 - 0.05	1	0	2	2	5	75	12	3	0	1	0	3	19	22	13	4	162
0.06 - 0.1	2	1	2	2	3	24	4	1	1	0	1	3	19	22	10	3	98
> 0.1	0	0	0	0	0	9	0	0	0	0	0	0	1	2	0	0	12
Totals	38	14	6	5	17	177	27	6	2	6	12	37	60	91	71	92	661

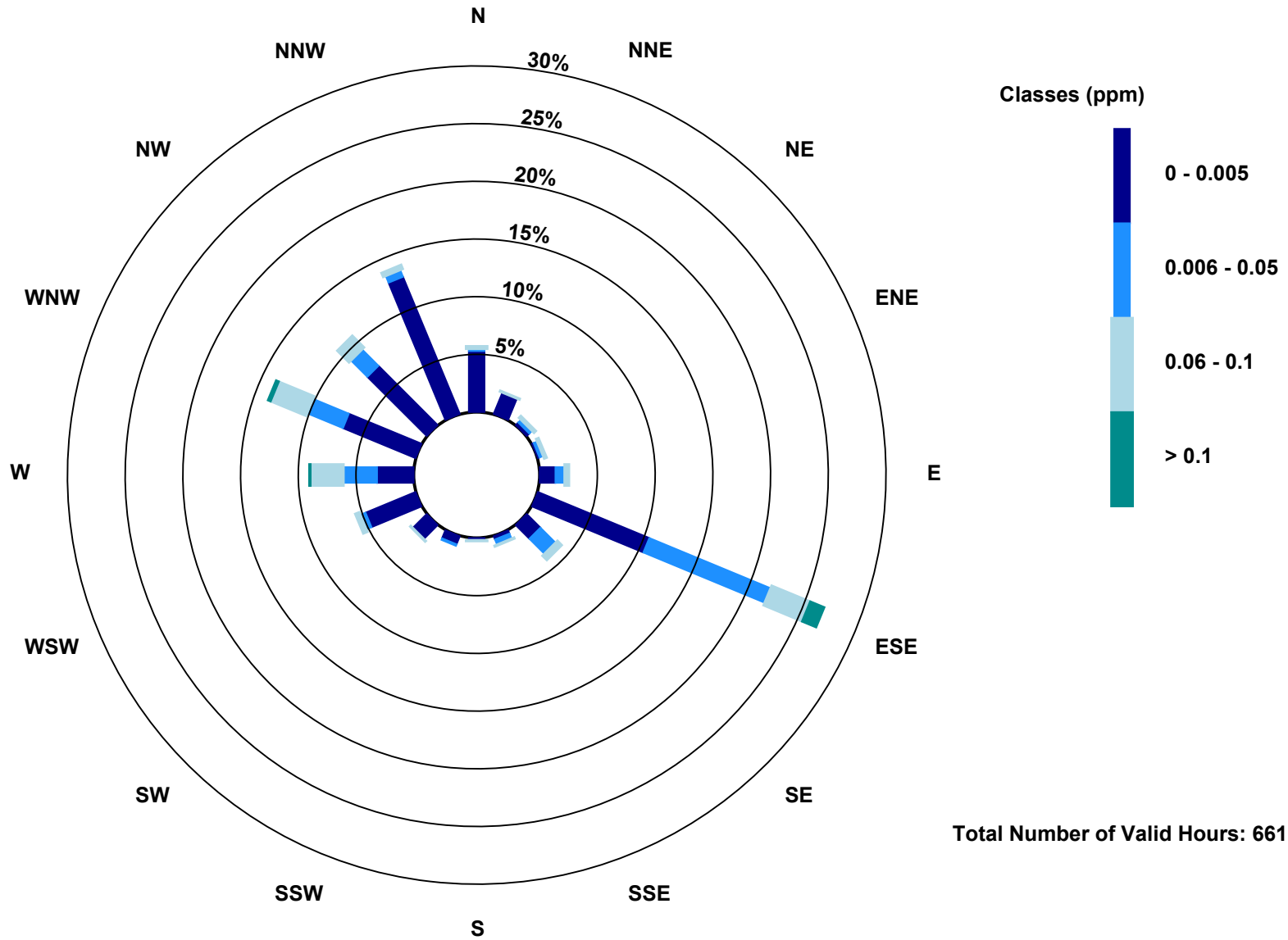
Total Number of Valid Hours: 661

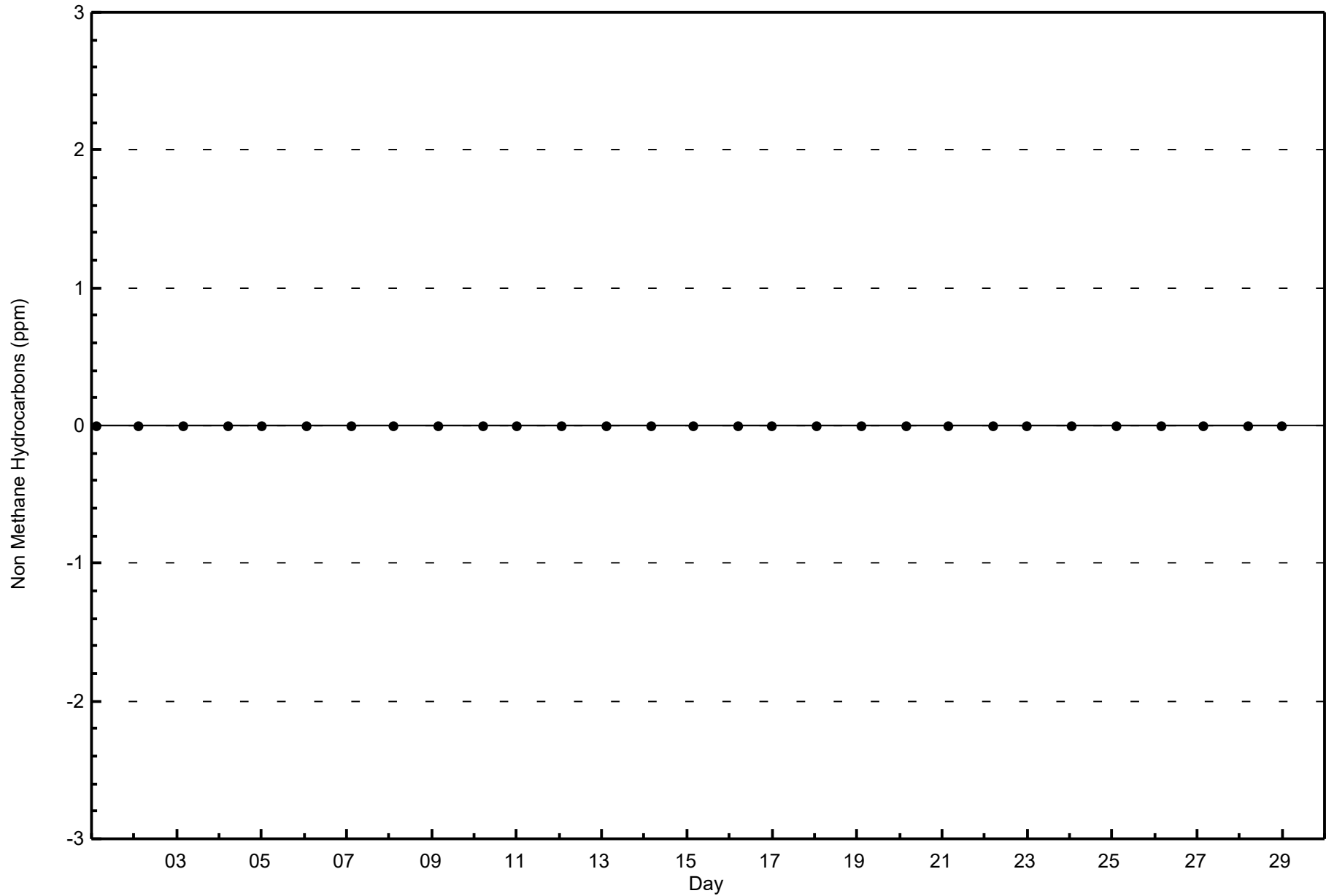
Total Number of Hours: 696

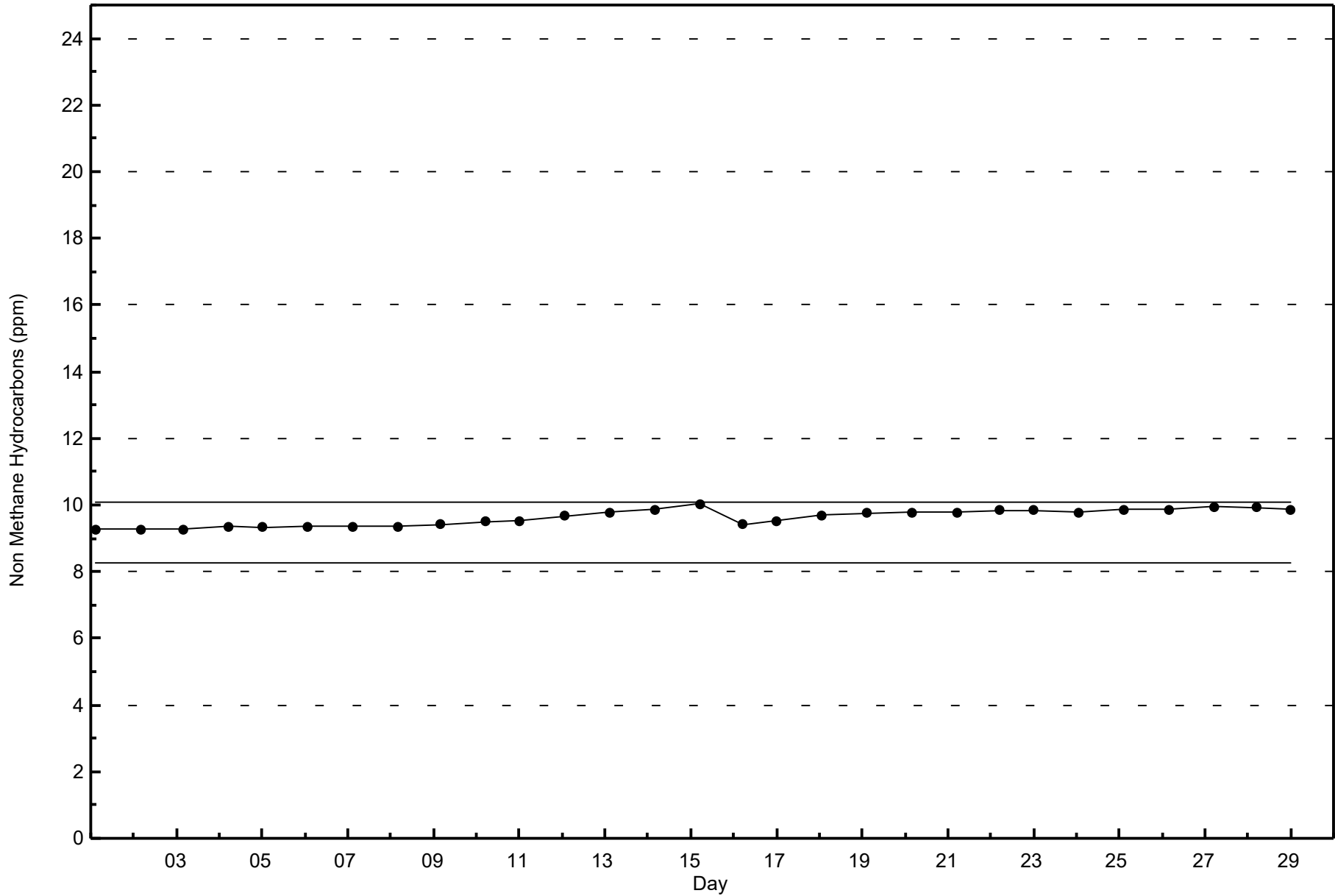


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Lower Camp





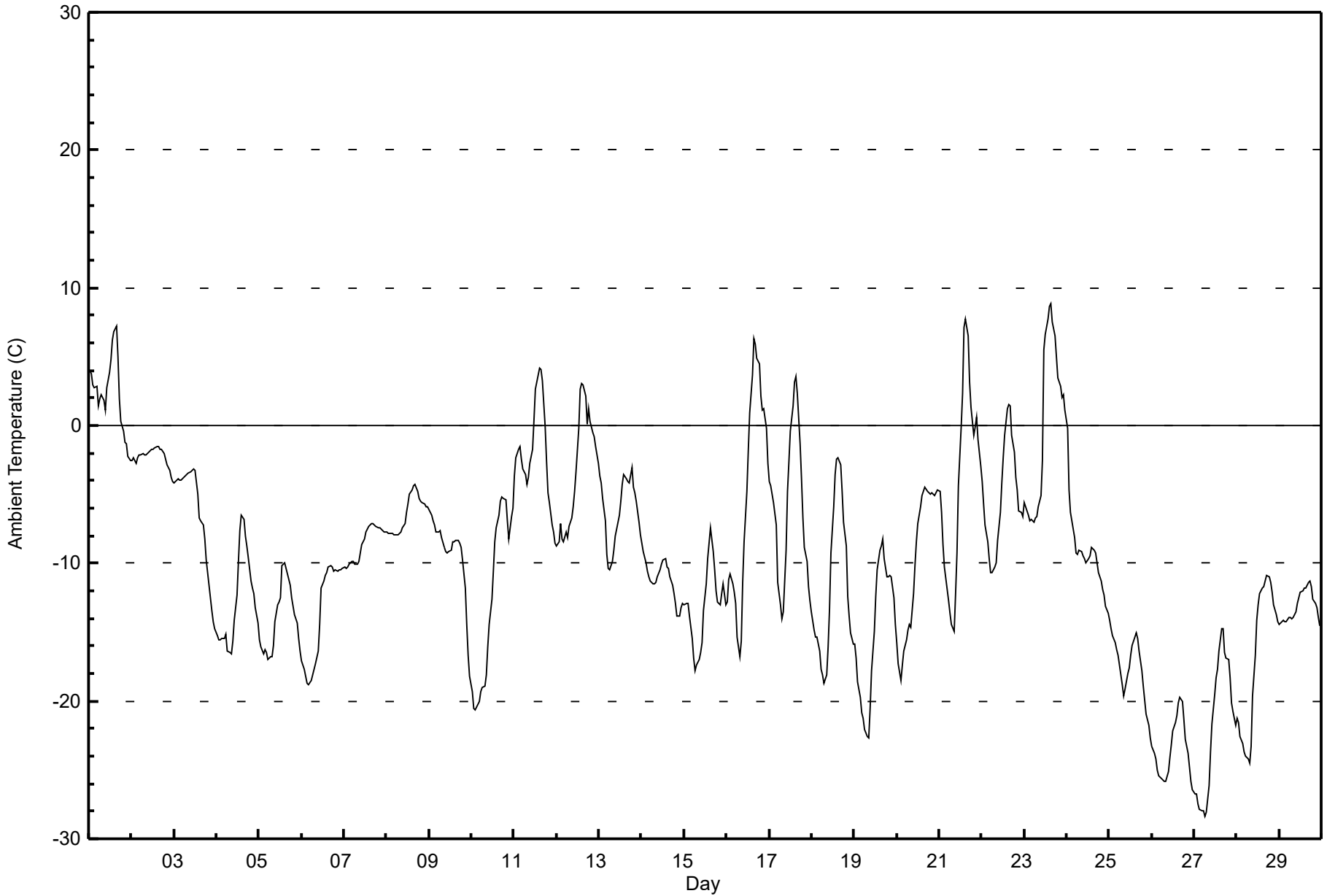




Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature (AT) - C
Lower Camp - February 2024

Maximum Value: 8.8 C on Feb 23 16:00 Maximum Daily Average: 2.3 C on Feb 1																						Hours in Service: 696 Hours of Data: 696					
Minimum Value: -28.3 C on Feb 27 07:00 Minimum Daily Average: -23.6 C on Feb 26																						Hours of Missing Data: 0 Hours of Calibration: 0					
Maximum Diurnal Average: -4.8 C at hour 16 Minimum Diurnal Average: -13.4 C at hour 8																						Percent Operational Time: 100.0					
Monthly Average: -9.61 C Percentiles: P ₁ = -26.7 P ₁₀ = -18.9 Q ₁ = -14.4 Median = -9.7 Q ₃ = -4.8 P ₉₀ = -0.1 P ₉₉ = 6.8																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	3.9	3.7	2.9	2.8	2.9	1.4	1.9	2.3	1.8	1.1	2.7	3.8	4.8	6.2	6.8	7.3	4.9	1.9	0.3	-0.5	-1.2	-1.4	-2.2	-2.5	2.3	7.3	
2-Feb	-2.6	-2.4	-2.7	-2.4	-2.2	-2.2	-2.1	-2.1	-2.2	-2.1	-1.9	-1.8	-1.7	-1.6	-1.5	-1.5	-1.7	-1.7	-2.0	-2.5	-2.8	-3.2	-3.8	-4.1	-2.3	-1.5	
3-Feb	-4.2	-4.0	-3.9	-4.0	-3.9	-3.8	-3.7	-3.6	-3.5	-3.4	-3.2	-3.2	-3.3	-5.0	-6.7	-6.9	-7.2	-8.2	-9.8	-10.7	-12.5	-13.4	-14.2	-14.7	-6.5	-3.2	
4-Feb	-15.3	-15.6	-15.5	-15.5	-15.5	-15.1	-16.4	-16.5	-16.6	-16.6	-15.7	-14.1	-12.4	-9.8	-7.7	-6.5	-6.8	-8.0	-8.8	-9.5	-11.3	-11.8	-12.2	-13.2	-14.3	-12.7	-6.5
5-Feb	-15.5	-16.1	-16.6	-16.3	-16.4	-16.9	-16.8	-16.8	-16.8	-16.0	-14.2	-13.0	-12.8	-12.5	-10.2	-10.4	-10.8	-11.6	-12.5	-13.2	-13.7	-14.4	-15.5	-16.4	-14.1	-10.0	
6-Feb	-17.1	-17.7	-18.2	-18.7	-18.8	-18.5	-18.1	-17.7	-17.3	-16.4	-14.4	-11.8	-11.3	-10.9	-10.7	-10.2	-10.2	-10.3	-10.5	-10.5	-10.6	-10.5	-10.5	-10.4	-13.8	-10.2	
7-Feb	-10.3	-10.4	-10.3	-10.1	-9.9	-9.8	-10.1	-10.1	-9.9	-9.2	-8.6	-8.2	-7.7	-7.5	-7.4	-7.1	-7.1	-7.2	-7.3	-7.4	-7.4	-7.6	-7.7	-7.7	-8.6	-7.1	
8-Feb	-7.7	-7.8	-7.8	-7.8	-7.9	-7.9	-7.9	-7.8	-7.7	-7.5	-7.1	-6.4	-5.7	-5.0	-4.6	-4.4	-4.3	-4.8	-5.3	-5.5	-5.6	-5.7	-5.9	-5.9	-6.4	-4.3	
9-Feb	-6.1	-6.5	-6.9	-7.2	-7.7	-7.7	-7.6	-8.2	-8.8	-9.1	-9.3	-9.2	-9.0	-8.5	-8.5	-8.3	-8.3	-8.5	-8.8	-9.7	-11.8	-14.4	-16.7	-18.2	-9.4	-6.1	
10-Feb	-19.3	-20.6	-20.7	-20.2	-20.0	-19.4	-19.1	-18.9	-18.1	-16.1	-14.4	-12.6	-10.6	-8.5	-7.4	-6.5	-5.4	-5.2	-5.2	-5.3	-6.9	-8.2	-6.6	-6.0	-12.6	-5.2	
11-Feb	-3.6	-2.3	-1.7	-1.5	-2.4	-3.1	-3.5	-4.3	-3.8	-2.8	-1.7	0.4	2.7	3.7	4.1	4.1	3.3	-0.1	-2.6	-4.9	-5.6	-7.2	-7.7	-8.6	-2.1	4.1	
12-Feb	-8.7	-8.4	-7.1	-8.3	-8.4	-7.7	-8.1	-7.3	-6.8	-5.9	-4.8	-3.4	-0.2	2.6	3.1	2.9	2.1	0.1	1.2	0.3	-0.5	-0.8	-1.5	-2.7	-3.3	3.1	
13-Feb	-3.6	-4.2	-5.3	-7.0	-9.4	-10.4	-10.4	-9.9	-9.0	-8.1	-7.5	-6.5	-5.5	-4.3	-3.6	-3.9	-4.1	-4.2	-3.1	-4.4	-4.9	-5.5	-7.0	-8.0	-6.2	-3.1	
14-Feb	-8.5	-9.2	-10.0	-10.6	-10.9	-11.3	-11.5	-11.4	-11.0	-10.5	-10.1	-9.8	-9.7	-10.2	-10.4	-10.9	-11.6	-12.2	-12.9	-13.8	-13.9	-13.2	-12.9	-12.9	-11.2	-8.5	
15-Feb	-13.0	-13.0	-12.9	-13.9	-15.4	-16.9	-17.8	-17.4	-16.9	-16.4	-15.8	-13.4	-11.4	-9.6	-8.5	-7.4	-9.2	-10.5	-12.0	-12.8	-13.0	-12.2	-11.5	-13.0	-13.1	-7.4	
16-Feb	-12.8	-11.2	-10.8	-11.5	-12.2	-12.9	-15.4	-16.8	-15.7	-11.4	-8.4	-4.8	-1.8	0.9	3.7	6.3	5.9	4.9	4.5	2.2	1.1	1.2	-0.2	-2.8	-4.9	6.3	
17-Feb	-4.0	-4.3	-5.5	-6.4	-7.2	-11.4	-13.1	-14.1	-13.5	-9.1	-4.8	-2.6	-0.4	1.4	3.2	3.6	2.4	-1.3	-3.9	-6.7	-8.8	-9.9	-11.7	-12.7	-5.9	3.6	
18-Feb	-13.6	-14.9	-15.3	-15.4	-16.4	-17.7	-18.1	-18.7	-18.1	-16.1	-13.3	-9.2	-5.9	-3.5	-2.4	-2.4	-2.8	-4.8	-7.1	-8.7	-12.4	-13.8	-15.1	-15.9	-11.7	-2.4	
19-Feb	-15.8	-16.9	-18.6	-19.7	-20.8	-21.3	-22.0	-22.6	-22.6	-20.6	-17.8	-14.9	-12.4	-10.5	-9.1	-8.7	-8.2	-9.7	-11.0	-11.0	-10.9	-11.0	-12.5	-14.4	-15.1	-8.2	
20-Feb	-15.7	-17.3	-18.5	-17.4	-16.4	-15.6	-14.9	-14.4	-14.7	-12.2	-10.2	-8.4	-7.1	-5.9	-5.0	-4.8	-4.5	-4.8	-4.9	-5.0	-4.9	-5.1	-4.8	-4.7	-9.9	-4.5	
21-Feb	-4.8	-6.3	-8.7	-10.3	-11.9	-12.7	-13.6	-14.4	-15.0	-12.2	-9.3	-4.4	-0.1	2.3	7.1	7.7	6.5	3.2	1.3	-0.7	-0.1	0.6	-1.0	-3.0	-4.2	7.7	
22-Feb	-4.1	-5.7	-7.2	-8.5	-9.7	-10.7	-10.6	-10.2	-10.0	-8.3	-6.3	-4.2	-2.3	-0.7	1.2	1.5	1.4	-0.7	-2.0	-3.8	-4.7	-6.2	-6.3	-6.6	-5.2	1.5	
23-Feb	-5.6	-5.9	-6.5	-6.9	-6.8	-7.0	-6.7	-6.6	-5.9	-5.1	-2.5	5.5	6.6	7.8	8.6	8.8	7.5	6.5	5.0	3.4	2.8	2.1	2.2	1.1	0.1	8.8	
24-Feb	-0.2	-4.7	-6.3	-7.0	-8.1	-9.2	-9.4	-9.0	-9.2	-9.4	-9.7	-9.9	-9.7	-9.4	-8.9	-9.0	-9.3	-9.9	-10.6	-11.3	-11.9	-12.3	-13.1	-13.6	-9.2	-0.2	
25-Feb	-14.1	-14.7	-15.2	-15.8	-16.3	-16.6	-17.4	-18.9	-19.6	-19.1	-18.0	-17.6	-16.6	-16.0	-15.3	-15.1	-15.5	-16.4	-17.8	-19.0	-19.9	-20.9	-21.8	-22.6	-17.5	-14.1	
26-Feb	-23.3	-23.8	-24.3	-25.0	-25.4	-25.7	-25.7	-25.9	-25.8	-25.2	-24.1	-23.2	-22.2	-21.6	-21.1	-20.2	-19.7	-20.0	-21.4	-22.8	-23.8	-24.8	-25.8	-26.4	-23.6	-19.7	
27-Feb	-26.8	-26.7	-27.4	-27.8	-27.9	-27.9	-28.3	-28.1	-26.2	-23.7	-21.7	-19.5	-18.3	-17.7	-16.4	-14.7	-14.7	-16.5	-16.9	-17.0	-18.3	-20.1	-20.8	-21.7	-21.9	-14.7	
28-Feb	-21.3	-21.6	-22.6	-23.1	-23.7	-24.0	-24.2	-24.5	-23.3	-19.6	-16.7	-14.1	-13.0	-12.2	-11.8	-11.6	-11.3	-10.9	-10.9	-11.4	-12.1	-13.0	-13.7	-14.2	-16.9	-10.9	
29-Feb	-14.5	-14.2	-14.1	-14.2	-14.2	-13.9	-13.9	-14.0	-13.9	-13.5	-12.9	-12.5	-12.1	-12.0	-11.8	-11.8	-11.4	-11.3	-11.7	-12.6	-12.9	-13.2	-14.0	-14.5	-13.1	-11.3	
-10.6 -11.1 -11.7 -12.1 -12.5 -13.0 -13.3 -13.4 -13.1 -11.8 -10.3 -8.5 -7.1 -6.0 -5.2 -4.8 -5.2 -6.3 -7.1 -8.1 -8.9 -9.5 -10.2 -11.0																								Diurnal Average			
3.9 3.7 2.9 2.8 2.9 1.4 1.9 2.3 1.8 1.1 2.7 5.5 6.6 7.8 8.6 8.8 7.5 6.5 5.0 3.4 2.8 2.1 2.2 1.1																								Diurnal Maximum			





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Lower Camp - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	59	8.48	8.48
-20 - 0	569	81.75	90.23
0 - 10	68	9.77	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

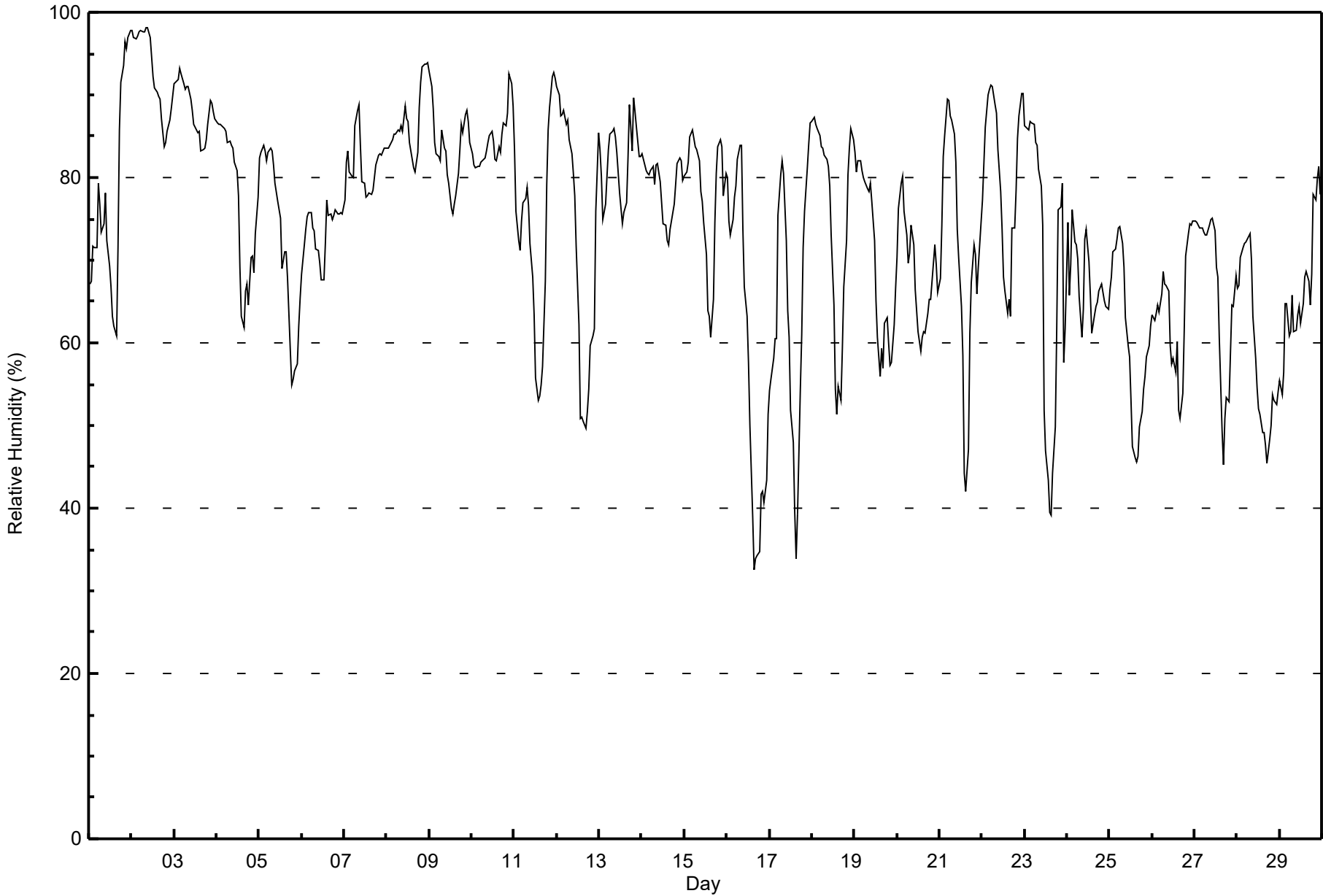
**Relative Humidity (RH) - %
Lower Camp - February 2024**

Maximum Value: 98.2 % on Feb 2 10:00 Maximum Daily Average: 92.7 % on Feb 2																						Hours in Service:	696			
Minimum Value: 32.5 % on Feb 16 16:00 Minimum Daily Average: 58.9 % on Feb 16																						Hours of Data:	696			
Maximum Diurnal Average: 80.5 % at hour 7 Minimum Diurnal Average: 61.9 % at hour 16																						Hours of Missing Data:	0			
Monthly Average: 73.86 % Percentiles: P₁ = 39.3 P₁₀ = 54.8 Q₁ = 65.0 Median = 75.9 Q₃ = 83.6 P₉₀ = 88.1 P₉₉ = 97.6																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	67.1	67.5	71.6	71.6	71.6	79.3	76.8	73.4	74.4	78.1	72.4	69.4	66.8	63.2	62.0	60.9	71.5	85.7	91.6	93.5	96.5	95.5	97.0	97.8	77.3	97.8
2-Feb	97.8	97.0	96.9	97.1	97.6	97.9	97.6	97.6	98.1	98.2	97.0	94.5	92.2	90.9	90.4	89.8	89.5	87.2	83.7	84.2	85.5	86.9	88.3	89.9	92.7	98.2
3-Feb	91.4	91.7	91.8	93.3	92.5	91.3	90.8	91.0	91.0	89.5	88.2	86.4	86.1	85.5	83.3	83.4	83.5	84.5	86.4	89.3	88.9	87.9	87.1	88.3	88.3	93.3
4-Feb	86.6	86.4	86.4	86.2	85.9	85.5	84.3	84.4	83.8	83.6	81.9	80.9	77.8	69.1	63.1	61.8	66.2	67.1	64.6	70.4	70.6	68.5	73.3	77.5	76.9	86.6
5-Feb	82.4	83.1	83.9	83.3	82.0	83.0	83.6	83.2	81.6	79.3	77.2	76.1	75.2	69.0	71.0	71.0	67.9	58.9	55.0	55.6	56.7	57.4	62.1	65.5	72.7	83.9
6-Feb	68.3	71.9	73.8	75.2	75.8	75.7	73.9	73.6	71.3	71.3	69.6	67.6	67.6	72.0	77.4	75.4	75.5	74.9	75.4	76.1	75.6	75.6	75.8	75.6	73.5	77.4
7-Feb	77.3	81.9	83.1	80.6	80.1	79.9	86.2	88.1	88.9	84.0	79.5	79.3	77.7	77.8	78.2	77.9	78.4	80.1	81.5	82.8	83.0	82.8	83.6	83.5	81.5	88.9
8-Feb	83.5	83.6	84.2	84.5	85.3	85.3	85.7	85.7	86.2	85.6	88.6	87.1	86.7	84.3	82.3	81.1	80.7	83.0	88.5	91.5	93.4	93.7	93.8	93.9	86.6	93.9
9-Feb	92.9	91.1	88.4	84.3	82.9	82.5	82.1	85.8	83.6	83.2	80.4	79.3	76.3	75.6	76.7	77.8	80.5	83.4	86.5	85.5	87.6	88.1	86.9	84.3	83.6	92.9
10-Feb	82.8	81.6	81.2	81.3	81.4	81.9	82.1	82.4	83.2	84.2	85.2	85.7	84.4	82.2	82.0	83.8	83.1	85.2	86.6	86.2	87.7	92.6	91.4	88.7	84.4	92.6
11-Feb	83.4	76.0	72.4	71.2	74.8	76.9	77.5	78.9	76.6	72.0	68.0	63.3	55.7	53.1	53.6	54.9	57.0	67.5	79.2	85.8	88.6	92.3	92.8	92.0	73.5	92.8
12-Feb	91.0	89.9	87.4	87.6	88.1	86.5	86.9	84.5	82.9	80.4	77.7	71.7	62.3	50.9	51.1	50.5	49.6	51.8	54.5	59.7	60.9	61.7	76.0	85.3	72.0	91.0
13-Feb	83.4	80.1	74.9	76.8	80.1	83.5	85.3	85.6	85.9	85.0	83.1	78.1	76.2	74.4	75.8	77.0	82.4	88.9	83.3	89.7	88.0	86.1	82.5	82.5	82.0	89.7
14-Feb	83.0	82.2	80.9	80.5	80.4	80.9	81.4	79.2	81.5	81.7	79.5	76.9	74.5	74.3	72.4	71.9	73.7	75.7	76.8	79.1	81.7	82.4	82.0	79.7	78.8	83.0
15-Feb	80.2	80.7	81.9	84.9	85.8	84.7	83.7	83.4	82.0	78.3	77.2	74.6	70.6	63.9	63.2	60.6	65.2	74.5	80.5	83.7	84.6	83.7	77.9	80.5	77.8	85.8
16-Feb	80.0	74.8	73.0	74.9	77.6	79.0	82.3	84.0	83.9	73.8	66.8	63.3	57.6	50.0	39.0	32.5	33.9	34.3	34.7	41.8	42.0	40.7	43.4	51.4	58.9	84.0
17-Feb	54.2	55.6	58.1	60.4	60.5	75.4	80.4	82.0	80.6	72.3	63.9	60.6	51.8	47.9	39.5	33.9	39.3	54.3	61.1	71.6	75.9	81.1	84.0	86.6	63.8	86.6
18-Feb	86.8	87.4	86.4	86.0	85.2	83.7	83.6	82.7	82.2	81.3	79.0	73.0	64.6	54.3	51.4	54.7	53.1	59.3	66.8	72.4	80.4	83.6	85.9	84.6	75.3	87.4
19-Feb	83.0	80.7	82.1	82.0	80.9	80.1	79.4	78.7	78.4	79.3	77.2	72.3	65.1	60.7	55.9	59.3	56.9	62.3	63.0	60.0	57.4	57.6	62.3	66.6	70.0	83.0
20-Feb	70.3	76.3	79.3	80.2	75.9	73.1	69.7	70.8	74.2	71.9	66.4	63.9	61.3	59.0	60.7	61.3	61.2	63.5	65.2	65.3	67.4	71.9	69.5	66.0	68.5	80.2
21-Feb	67.7	74.2	82.6	85.1	89.4	89.2	87.5	87.0	85.2	81.8	73.8	70.3	64.5	58.4	44.2	42.1	47.1	61.1	67.2	71.9	70.7	66.0	69.1	74.6	71.3	89.4
22-Feb	77.3	81.6	86.2	90.0	90.7	91.2	91.1	88.8	87.8	83.4	78.3	73.7	68.0	66.2	63.6	65.2	63.2	73.9	73.9	78.4	84.8	87.5	90.2	90.1	80.2	91.2
23-Feb	86.3	86.0	85.7	86.8	86.6	86.5	84.2	83.9	81.0	79.0	74.2	51.9	47.0	43.4	39.5	39.1	44.2	49.8	61.7	76.1	76.5	79.3	57.7	61.7	68.7	86.8
24-Feb	74.6	65.8	69.4	76.1	72.2	71.9	70.2	65.6	60.7	64.1	72.5	73.7	69.8	65.8	61.2	63.4	64.3	64.9	66.3	67.1	66.1	65.1	64.4	64.1	67.5	76.1
25-Feb	66.4	67.9	71.1	71.3	72.5	73.8	74.1	72.0	69.2	63.1	59.6	58.2	53.1	47.4	46.1	45.6	46.2	49.8	51.7	54.3	55.9	58.3	59.6	62.0	60.4	74.1
26-Feb	63.3	62.7	63.6	64.5	63.7	65.9	68.6	67.1	66.9	66.3	59.7	57.5	58.2	56.4	60.2	51.9	50.9	53.8	61.5	70.5	73.2	74.3	74.2	74.8	63.7	74.8
27-Feb	74.7	74.6	74.2	74.0	73.8	73.3	73.0	73.1	74.2	75.0	75.1	73.6	69.2	67.9	60.7	49.5	45.2	50.9	53.4	53.0	58.9	64.5	64.4	68.2	66.4	75.1
28-Feb	66.5	67.0	70.3	71.6	72.1	72.2	72.8	73.2	70.1	63.2	58.1	54.6	52.0	51.3	49.1	49.2	47.7	45.4	48.2	50.0	53.7	53.0	52.5	54.0	59.1	73.2
29-Feb	55.5	53.7	56.5	64.8	64.7	60.8	61.3	65.7	61.4	61.5	63.3	64.4	62.4	64.8	67.9	68.7	67.4	64.6	68.3	78.0	77.3	79.9	81.4	78.0	66.3	81.4
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Lower Camp - February 2024





Wood Buffalo Environmental Association

Summary of Hour Averages

Barometric Pressure (BP) - inHg

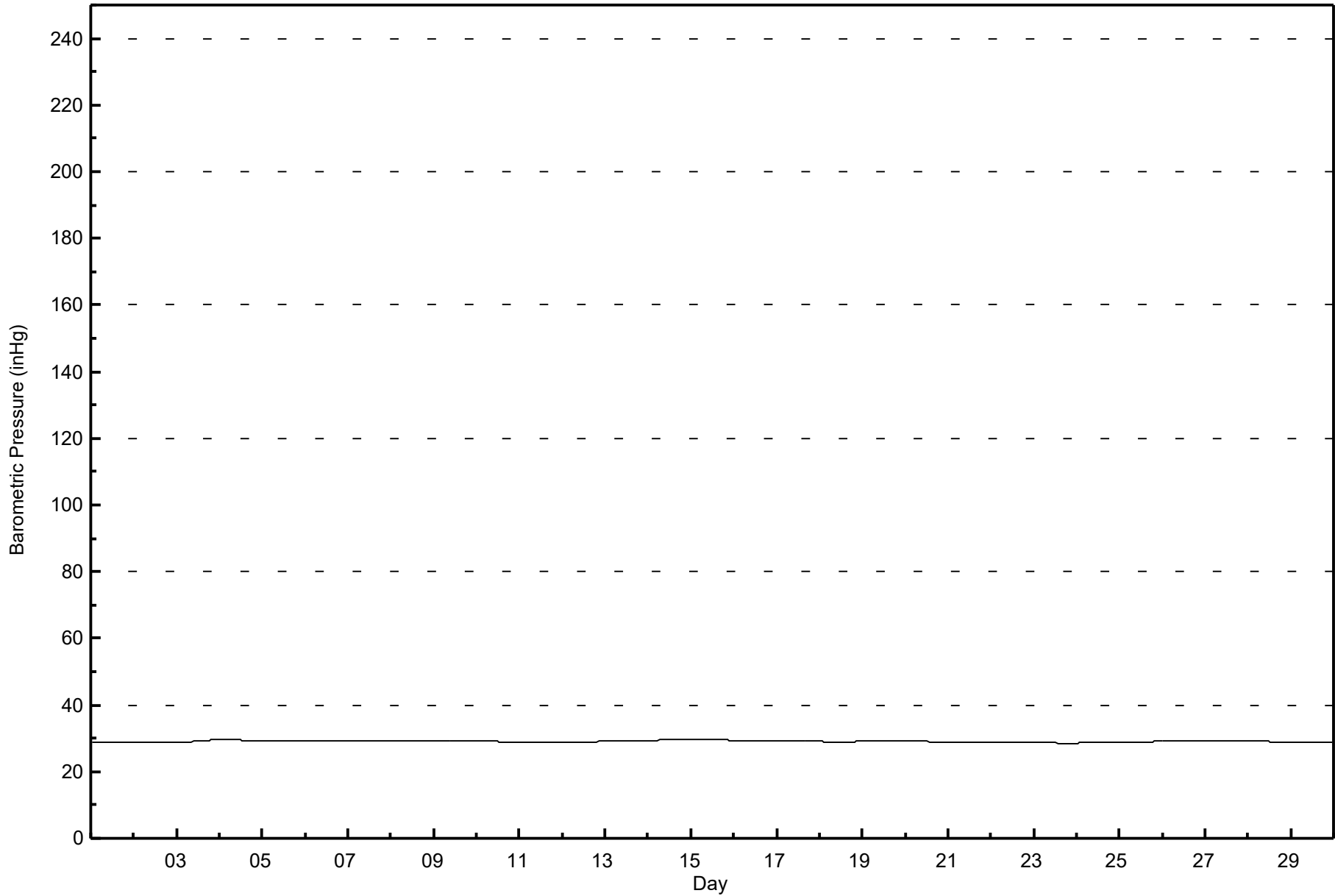
Lower Camp - February 2024

Maximum Value: 29.6 inHg on Feb 15 02:00 Maximum Daily Average: 29.5 inHg on Feb 15																						Hours in Service: 696									
Minimum Value: 28.6 inHg on Feb 23 17:00 Minimum Daily Average: 28.7 inHg on Feb 23																						Hours of Data: 696									
Maximum Diurnal Average: 29.1 inHg at hour 10 Minimum Diurnal Average: 29.1 inHg at hour 17																						Hours of Missing Data: 0									
Monthly Average: 29.09 inHg Percentiles: P ₁ = 28.6 P ₁₀ = 28.7 Q ₁ = 28.9 Median = 29.1 Q ₃ = 29.3 P ₉₀ = 29.4 P ₉₉ = 29.6																						Hours of Calibration: 0									
																						Percent Operational Time: 100.0									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
1-Feb	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
2-Feb	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8
3-Feb	28.8	28.8	28.8	28.8	28.9	28.9	28.9	28.9	29.0	29.0	29.1	29.1	29.2	29.2	29.3	29.3	29.4	29.4	29.4	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5
4-Feb	29.5	29.5	29.5	29.6	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.4	29.4	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2
5-Feb	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
6-Feb	29.4	29.4	29.4	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.2	29.2	29.2	29.2	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
7-Feb	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
8-Feb	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
9-Feb	29.1	29.1	29.1	29.1	29.1	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3
10-Feb	29.3	29.2	29.2	29.2	29.2	29.2	29.2	29.1	29.1	29.1	29.1	29.0	29.0	29.0	28.9	28.9	28.9	28.9	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8
11-Feb	28.8	28.8	28.8	28.8	28.8	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
12-Feb	29.0	29.0	29.0	29.0	29.0	29.0	29.0	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.1	29.1	29.1	29.1	29.1
13-Feb	29.1	29.2	29.2	29.2	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.2	29.2	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3
14-Feb	29.4	29.4	29.4	29.4	29.4	29.4	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6
15-Feb	29.6	29.6	29.6	29.5	29.5	29.6	29.6	29.5	29.6	29.6	29.6	29.6	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
16-Feb	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.3	29.3	29.2	29.2	29.2	29.2	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
17-Feb	29.1	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
18-Feb	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
19-Feb	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
20-Feb	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
21-Feb	29.0	29.0	29.0	28.9	29.0	29.0	29.0	29.0	29.0	29.0	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9
22-Feb	28.9	28.9	28.9	28.9	28.9	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
23-Feb	28.9	28.9	28.9	28.9	28.8	28.8	28.8	28.8	28.7	28.7	28.7	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6
24-Feb	28.6	28.7	28.7	28.8	28.8	28.8	28.8	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9
25-Feb	28.9	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
26-Feb	29.2	29.2	29.2	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
27-Feb	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2
28-Feb	29.2	29.2	29.2	29.2	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.0	29.0	29.0	29.0	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9
29-Feb	28.8	28.8	28.8	28.8	28.8	28.8	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
29.1																						Diurnal Average									
29.6																						Diurnal Maximum									



Wood Buffalo Environmental Association
Hourly Averages

Barometric Pressure (BP) - inHg
Lower Camp - February 2024





Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Speed (WS) - km/h
Lower Camp - February 2024

Maximum Speed: 29 km/h on Feb 28 22:00 Minimum Speed Value: 0 km/h on Feb 11 20:00 Maximum Diurnal Speed Average: 3.5 km/h at hour 11 Monthly Average Velocity: 0.8 km/h 42.6 deg		Maximum Daily Speed Average: 19.8 km/h on Feb 28 Minimum Daily Speed Average: 0.5 km/h on Feb 7 Minimum Diurnal Speed Average: 0.3 km/h at hour 17 Percentiles: P ₁ = 1 P ₁₀ = 2 Q ₁ = 4 Median = 7 Q ₃ = 12 P ₉₀ = 16 P ₉₉ = 26		Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Percent Operational Time: 99.9																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	E13	E16	ESE15	ESE14	ESE12	ESE13	ESE11	SE11	SE10	ESE9	ESE10	ESE10	ESE11	ESE12	ESE10	ESE8	SW2	W2	W3	W4	W5	W3	W4	W5	ESE6.6	E16
2-Feb	WNW4	WNW4	WNW5	NW6	NW9	NNW11	NNW11	NW9	NW8	NW9	NNW13	NNW10	NW11	NNW9	N10	NW8	NNW8	NNW7	NW9	NW8	NW7	WNW7	WNW7	WNW7	NW7.8	NNW13
3-Feb	NW6	NW3	E4	NE2	NW5	NW7	NW6	WNW8	NW8	NNW9	NNW8	N9	NNW10	N16	N13	NNW9	NNW7	N8	WNW2	NW1	WNW1	NNW2	NNW1	N1	NNW5.5	N16
4-Feb	NNW2	NNW1	ESE8	ESE9	E6	ESE7	ESE11	ESE11	SE12	ESE15	ESE13	ESE12	ESE13	ESE12	ESE8	SE6	SE7	SE7	SE9	ENE1	ESE7	ESE7	SE4	ESE3	ESE7.6	ESE15
5-Feb	SSE0	NE1	ENE2	ESE5	E1	NNW3	WNW4	WNW5	W7	NW9	NNW14	NNW14	NNW8	N14	NNW17	NNW15	NNW11	NNW12	NW8	NW8	NW7	NW7	NW5	WNW4	NNW6.5	NNW17
6-Feb	WNW3	NW4	WNW5	WNW4	W4	NW3	NW3	WNW5	WNW4	WNW3	NNE2	ESE17	ESE20	ESE19	ESE17	ESE15	ESE15	ESE16	ESE21	ESE21	ESE17	ESE18	ESE17	ESE14	ESE7.9	ESE21
7-Feb	ESE13	ESE11	ESE9	ESE7	ESE5	ENE3	N3	UO	WNW2	SE2	S4	E4	N2	WNW3	WNW5	NW3	NW2	WNW3	NW3	W4	NW5	WNW4	WNW5	WNW4	E0.5	ESE13
8-Feb	WNW4	WNW4	WNW5	NW5	NW3	W3	W4	WNW3	NW3	NNW3	NNW4	N3	NE3	ENE4	E7	ESE5	ESE2	SE1	WNW3	W3	NW5	WNW5	WNW6	WNW7	NW2.1	WNW7
9-Feb	WNW9	W9	WNW8	WSW12	WSW13	W9	NNW6	NNW5	NNW8	NNW6	N8	NNE5	N4	NW2	WNW2	NW1	WNW2	NW4	NW6	NW5	W4	WSW4	WNW4	NW2	WNW4.4	WSW13
10-Feb	WNW2	N1	NW1	NW1	WNW2	WNW1	W1	ESE3	ESE3	ESE4	ESE5	ESE6	ESE7	ESE7	ESE12	ESE8	SE4	SSE6	ESE6	SSE4	W3	ESE5	ESE11	ESE9	SE3.5	ESE12
11-Feb	SW9	WSW19	WSW16	SW21	W14	W16	WSW19	WSW8	WSW11	WSW16	W2	WSW5	WSW8	WSW11	WSW11	SW12	SW9	WSW5	NW2	SE0	SE4	SE5	ESE6	ESE7	WSW8.4	SW21
12-Feb	ESE8	ESE8	ESE14	ESE15	ESE15	ESE15	ESE17	ESE17	ESE15	ESE12	ESE12	ESE12	SSW8	WSW17	WNW16	NW12	WNW7	WNW7	W20	WNW17	W15	NW12	NNW15	NNW14	SSE1.2	W20
13-Feb	NW10	NW10	NW10	NNW12	N13	NW6	W5	W5	W4	WSW7	NW5	SSW1	ESE7	ESE9	ESE8	ESE10	ESE6	SE3	W5	NNW10	NNW14	NNW15	N17	NNW15	NNW4.4	N17
14-Feb	NW14	NNW16	NNW17	NNW13	NNW12	NNW9	NNW8	NNW9	NNW8	NNE8	NNE8	NNW6	NW7	NNW8	NNE11	NNE10	N9	N7	NW4	WNW4	WNW3	WNW3	NNW4	N5	NNW7.8	NNW17
15-Feb	N2	NNW1	SE2	SSE1	WSW3	WNW4	N1	S2	SSW2	WSW5	ESE4	ESE8	ESE7	NNE2	ESE8	ESE12	ESE9	SE2	S1	NE1	ESE6	ESE9	ESE10	ESE9	SE3.2	ESE12
16-Feb	SE8	SE5	ESE5	ESE8	SE6	SE5	ESE7	ESE8	ESE11	ESE14	ESE16	ESE15	ESE14	ESE13	SSE7	SW9	SW9	SW16	SW16	WSW11	WSW10	SW14	SSW12	SW3	SSE5.9	SW16
17-Feb	NNW4	NW5	W7	SW4	SSW4	ESE5	ESE9	ESE8	ESE9	ESE8	ESE8	ESE7	ESE5	ESE6	SE3	SE2	SE4	W1	W4	WNW4	W3	W3	WNW2	W3	SE1.8	ESE9
18-Feb	WNW4	WNW4	W4	W5	W5	WNW2	WNW4	WNW4	W4	NW4	NW4	NW5	NNW4	W4	W6	WNW7	W7	WNW3	W4	WNW3	WNW3	WNW3	WNW4	WNW4	WNW4.0	WNW7
19-Feb	NW5	NW4	WNW4	WNW3	WNW4	WNW3	WNW3	NW3	WNW3	WNW4	NW5	WNW4	W5	WSW7	WSW6	W5	WSW6	W6	W4	WNW5	NNW5	WNW5	WNW6	WNW4	WNW4.2	WSW7
20-Feb	WNW4	WNW4	WNW4	NW2	WNW2	WNW3	NW1	NW2	E2	ESE4	ESE6	ESE7	ESE6	ESE5	ESE9	ESE8	ESE6	ESE9	ENE3	ESE2	E3	ESE9	ESE8	ESE6	ESE3.0	ESE9
21-Feb	SSE1	NW0	W4	WNW3	WNW5	WNW4	NW4	W4	NW2	NW2	E3	ESE10	ESE13	ESE12	WSW14	WSW13	WSW12	W1	WSW6	NW3	W8	W8	WNW6	W4	WSW2.6	WSW14
22-Feb	WNW4	W2	NW2	WNW4	W3	WNW3	W4	WNW5	W5	NW5	NNW6	N6	NW4	E3	ESE7	ESE8	SSE1	WNW3	WNW5	WNW2	W4	ESE2	ESE3	ESE5	WNW1.3	ESE8
23-Feb	ESE13	ESE14	ESE15	ESE17	ESE17	ESE20	ESE18	ESE18	ESE16	ESE15	ESE11	WSW13	WSW13	WSW12	WSW18	WSW22	WSW20	WNW15	WSW14	SW20	WSW18	W17	W18	WSW21	SSW6.7	WSW22
24-Feb	WSW16	N20	NNW17	NNW16	NNW18	NNW11	NNW9	NNW12	NNW16	NNW13	NNW10	NNW13	NNW11	NNW10	NNW8	NNW9	N9	NNE9	N9	NNE8	NNE7	NNE9	NNW6	NNW8	NNW10.4	N20
25-Feb	N9	NNW9	NNW10	NNW12	NNW10	NNW11	NNW11	NNW13	NNW10	N11	N15	N15	N15	N15	N17	N15	N17	N16	N13	N14	NNW18	NNW15	NNW16	NNW13	N13.2	NNW18
26-Feb	NNW12	NNW15	NNW16	NNW13	NNW13	NNW11	N13	NNW11	NNW9	NNW8	NNW9	NW8	WNW8	NNW7	SW3	N2	WSW1	SE2	NE1	NNW1	WNW2	NW2	NNW2	NNW2	NNW6.5	NNW16
27-Feb	WNW3	WNW3	NW3	NNW2	N2	NNE2	NNE2	E4	ESE4	ESE6	ESE6	ESE6	NNE4	N6	NE4	ESE7	ESE8	ESE10	SE7	SE7	ESE6	ESE3	ESE7	ESE11	E3.4	ESE11
28-Feb	ESE12	ESE10	ESE13	ESE12	ESE11	ESE10	SE8	ESE11	ESE13	ESE15	ESE19	ESE25	ESE25	ESE28	ESE28	ESE28	ESE26	ESE24	ESE25	ESE24	ESE26	ESE29	ESE27	ESE28	ESE19.8	ESE29
29-Feb	ESE25	ESE25	ESE23	E21	E14	E15	E24	ESE27	E21	ESE20	ESE24	ESE22	ESE13	ESE9	SE5	ESE5	SE3	SSW5	W4	SSW1	WSW2	NW2	NW1	W5	ESE11.6	ESE27
NNW0.6 N1.6 NNE1.2 NE0.9 NNW1.3 N1.1 NE1.3 ENE1.2 ENE1.1 ENE1.7 ENE3.5 E3.2 E2.3 ENE2.0 E1.1 ESE0.9 SSE0.3 N0.4 WNW1.4 NNW1.5 NNW1.8 NW0.8 NNW0.7 NNW0.7 ESE25 ESE25 ESE23 SW21 NNW18 ESE20 E24 ESE27 E21 ESE20 ESE24 ESE25 ESE25 ESE28 ESE28 ESE28 ESE26 ESE24 ESE25 ESE24 ESE26 ESE29 ESE27 ESE28																								Diurnal Average	Diurnal Maximum	
UO - Unstable Operation All monthly, daily, and diurnal averages have been calculated using vector methods																										



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

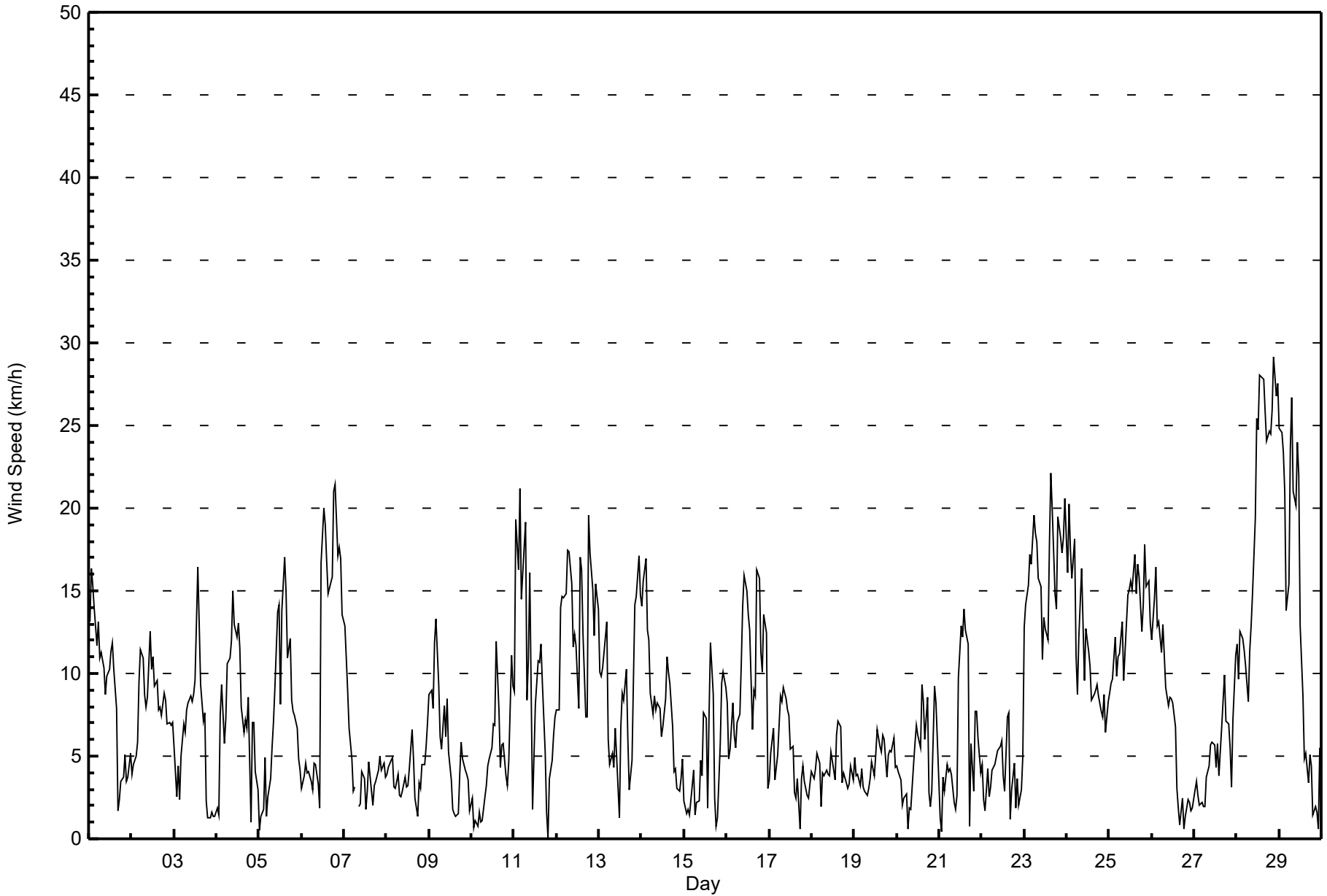
Wind Speed (WS) - km/h
Lower Camp - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 11 08:00 Minimum Value: 1 km/h on Feb 8 09:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 5																	Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	4	3	3	3	3	3	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	2	4
2-Feb	1	1	1	1	3	3	3	2	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	3
3-Feb	2	2	1	2	1	2	2	1	2	2	2	1	2	3	3	2	2	1	1	1	1	1	1	1	4
4-Feb	1	1	3	2	2	3	2	3	3	3	2	3	4	3	2	2	2	2	2	3	3	2	1	1	4
5-Feb	2	1	1	3	2	1	1	1	1	3	3	3	3	4	3	3	3	3	4	4	4	3	3	4	4
6-Feb	1	1	1	1	1	1	1	1	1	1	4	3	3	3	4	3	3	3	3	4	4	4	3	3	4
7-Feb	3	2	2	2	2	1	1	UO	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	3
8-Feb	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
9-Feb	2	2	2	4	2	2	3	3	2	1	2	1	1	1	1	1	1	1	1	1	1	2	1	2	4
10-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	3	3	2	4	2	2	4
11-Feb	5	4	3	3	4	4	4	7	4	4	2	2	2	3	2	2	3	3	1	1	2	1	1	1	7
12-Feb	1	3	3	2	2	2	2	2	2	3	2	3	4	4	6	4	2	3	6	3	3	4	4	3	6
13-Feb	3	3	3	3	3	2	1	1	2	2	1	1	2	2	2	2	1	1	6	3	3	5	4	4	6
14-Feb	3	4	4	3	3	2	2	3	2	3	2	2	1	2	2	2	3	2	1	1	1	1	2	1	4
15-Feb	1	1	1	1	2	2	1	1	1	2	3	1	1	1	2	2	2	2	1	1	3	2	2	2	3
16-Feb	3	2	2	2	2	1	1	1	2	2	2	2	3	2	3	3	6	4	5	3	5	3	4	4	6
17-Feb	2	2	3	3	3	2	2	1	1	2	2	1	2	2	2	1	1	2	2	1	1	1	2	1	3
18-Feb	2	1	2	2	1	1	2	1	1	2	1	2	1	1	2	1	1	1	1	1	2	1	1	2	2
19-Feb	2	1	1	1	1	1	1	1	1	1	2	1	1	2	2	1	1	1	1	2	1	1	1	1	2
20-Feb	1	1	2	2	2	1	1	1	1	2	2	3	1	1	2	4	2	2	2	2	2	1	2	1	4
21-Feb	2	1	1	2	1	1	1	1	1	1	2	2	1	2	5	3	5	1	3	1	3	4	2	2	5
22-Feb	1	2	1	2	2	1	1	2	1	2	2	1	1	3	1	1	2	2	1	1	2	2	1	4	4
23-Feb	2	2	2	2	2	2	3	2	3	2	4	5	4	4	4	5	5	3	5	4	4	4	4	4	5
24-Feb	4	5	5	4	4	3	2	4	4	3	2	3	2	3	2	2	2	2	2	2	1	2	2	2	5
25-Feb	2	2	2	2	2	2	2	2	2	3	3	4	4	4	3	3	3	3	4	3	4	3	3	3	4
26-Feb	3	3	3	3	3	2	2	3	2	2	3	3	2	2	1	1	1	1	1	1	1	1	1	1	3
27-Feb	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	3	2	2	2	2	2	2	2	2	3
28-Feb	2	2	2	2	2	2	2	3	2	5	5	4	4	5	5	5	4	4	5	6	4	5	5	5	6
29-Feb	4	4	4	4	4	5	5	5	4	4	5	4	6	3	2	1	1	2	2	1	1	1	1	3	6
Diurnal Maximum																									
UO - Unstable Operation																									



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Lower Camp - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed (WS) - km/h
Lower Camp - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	290	41.73	41.73
6 - 11	227	32.66	74.39
12 - 19	144	20.72	95.11
20 - 28	33	4.75	99.86
29 - 38	1	0.14	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Lower Camp - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	11	6	6	5	8	23	18	5	3	5	4	7	45	79	48	17	290
6 - 11	12	8	0	0	2	82	10	2	0	1	3	13	9	15	25	45	227
12 - 19	16	0	0	0	4	56	1	0	0	1	4	17	5	3	3	34	144
20 - 28	1	0	0	0	3	23	0	0	0	0	2	3	1	0	0	0	33
29 - 38	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	40	14	6	5	17	185	29	7	3	7	13	40	60	97	76	96	695

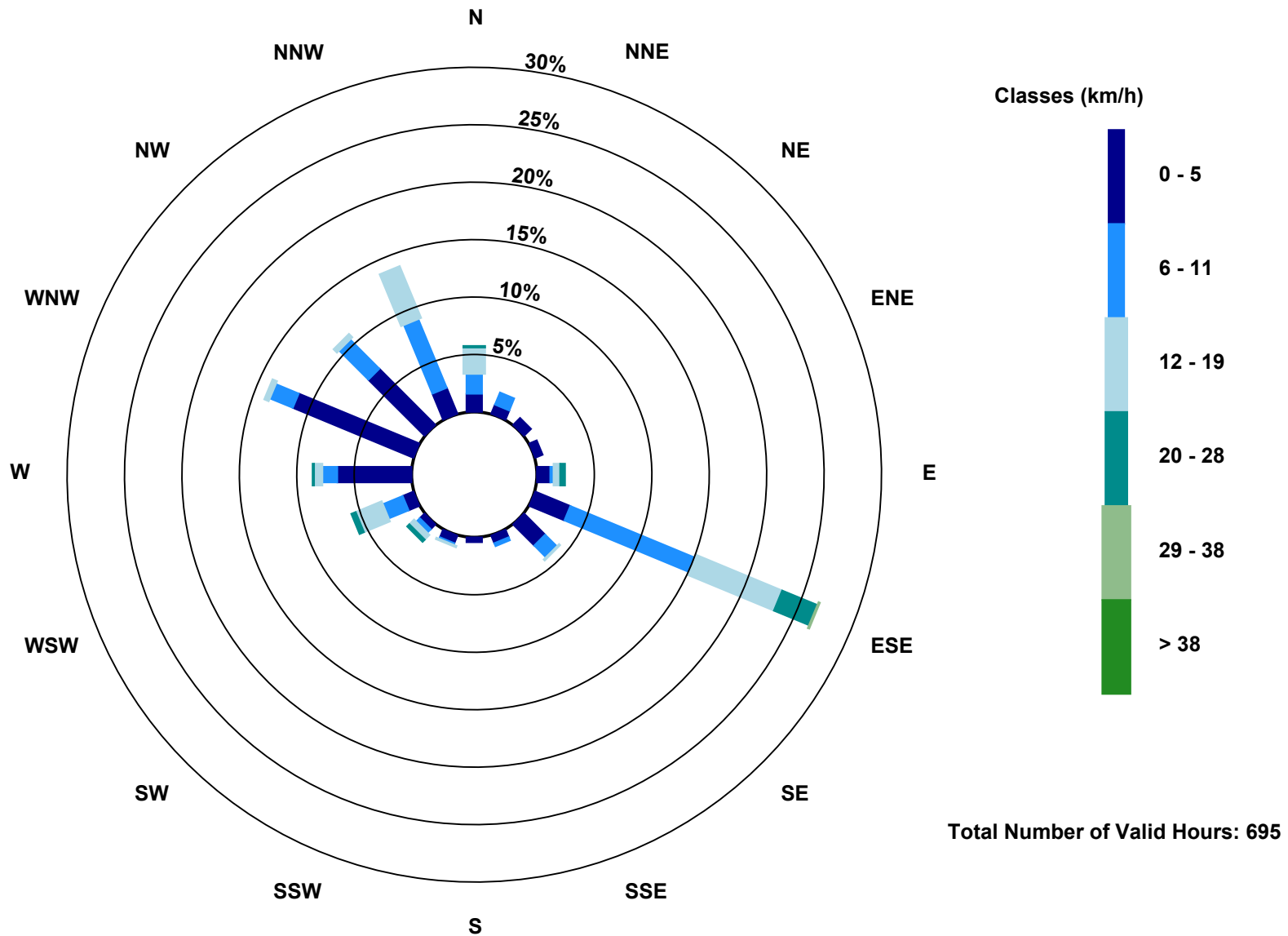
Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Lower Camp





Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Lower Camp - February 2024

Direction of Maximum Speed: 114 deg on Feb 28 22:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 112.9 deg on Feb 28	Hours of Data: 695
Direction of Minimum Speed: 146 deg on Feb 11 20:00	Hours of Missing Data: 1
Direction of Minimum Daily Speed Average: 0.5 deg on Feb 7	Percent Operational Time: 99.9
Monthly Average Direction: 42.6 deg	

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	101	100	103	106	123	119	123	134	133	119	119	121	116	116	116	121	229	275	277	271	272	277	277	277	119.5
2-Feb	289	282	291	304	323	335	334	306	307	310	346	330	325	335	351	326	334	329	315	315	312	301	297	294	320.2
3-Feb	306	319	86	41	324	304	310	302	307	329	342	350	336	351	349	337	338	8	302	323	291	337	346	356	335.4
4-Feb	333	339	117	114	94	113	111	112	124	114	118	115	116	116	122	133	134	135	126	61	114	121	136	104	117.3
5-Feb	165	41	68	115	99	337	292	296	270	314	340	337	331	352	338	333	329	335	312	309	308	307	308	286	326.7
6-Feb	303	314	301	297	281	320	317	288	287	303	33	109	108	113	113	115	114	115	107	110	109	116	112	113	109.5
7-Feb	112	113	116	122	122	77	353	UO	300	134	172	97	10	300	282	311	321	283	306	278	307	299	286	301	96.3
8-Feb	299	301	291	314	310	278	274	300	325	333	341	0	43	66	94	116	122	138	290	274	311	299	285	293	313.6
9-Feb	297	279	285	247	240	259	348	338	346	340	353	22	358	305	298	305	287	305	309	308	271	258	303	307	298.7
10-Feb	291	5	312	309	292	290	268	104	107	119	119	118	113	120	122	123	137	167	111	152	280	115	120	121	124.2
11-Feb	220	242	238	235	259	260	248	248	249	243	260	253	237	248	237	231	235	239	306	146	136	127	122	115	238.1
12-Feb	114	119	122	121	120	120	120	118	113	120	117	123	209	253	289	322	284	286	277	285	278	309	332	333	163.7
13-Feb	320	324	316	346	357	316	273	265	262	247	315	202	116	113	116	120	108	138	277	331	343	339	351	327	336.4
14-Feb	323	331	346	348	340	335	344	333	343	17	15	334	321	344	15	13	10	10	312	302	297	288	336	10	345.1
15-Feb	349	331	140	155	242	292	7	187	209	237	109	121	117	19	113	121	118	146	174	55	122	119	121	121	125.0
16-Feb	124	125	110	122	128	135	117	113	117	120	119	117	117	121	160	222	236	228	234	252	240	230	212	229	162.6
17-Feb	330	308	265	226	208	116	117	115	110	113	116	120	123	119	132	132	138	274	271	290	277	266	300	276	138.4
18-Feb	282	282	275	277	277	289	283	286	274	317	307	321	337	268	266	284	278	283	261	287	296	282	295	295	286.7
19-Feb	308	306	290	289	292	287	290	305	290	302	315	290	270	255	250	267	245	263	278	294	329	297	287	300	285.3
20-Feb	294	286	302	311	303	302	306	317	98	103	110	111	114	105	113	118	116	117	72	109	95	113	115	119	108.7
21-Feb	155	311	273	292	286	291	307	265	316	312	86	114	115	118	240	240	242	277	239	321	270	267	282	277	246.2
22-Feb	286	268	322	290	276	296	270	295	269	310	333	349	310	90	122	121	150	285	290	287	275	112	115	105	298.6
23-Feb	116	118	119	117	117	119	118	117	120	119	123	255	253	244	246	237	246	290	252	225	249	263	266	248	197.6
24-Feb	251	359	340	331	338	334	342	330	329	339	343	335	333	336	332	338	360	12	7	14	14	20	337	344	340.7
25-Feb	354	339	340	347	338	339	342	344	345	1	358	349	356	350	4	357	4	2	7	355	345	339	346	341	350.8
26-Feb	336	340	346	344	338	348	360	342	347	335	331	316	298	341	225	9	244	141	39	335	299	326	334	330	337.8
27-Feb	298	297	318	347	351	20	26	100	119	109	113	106	23	355	53	102	119	109	130	129	123	108	117	117	100.0
28-Feb	119	117	120	121	123	123	125	122	120	111	110	113	113	111	113	108	106	104	108	111	109	114	114	112	112.9
29-Feb	111	103	106	97	90	89	100	108	98	103	110	112	123	119	126	102	132	201	270	207	244	312	308	262	107.4
	348.6	1.0	28.0	48.5	346.8	9.3	50.3	72.5	72.5	73.1	67.1	80.3	87.8	71.7	89.7	109.7	149.2	2.7	281.3	296.0	301.5	311.0	346.1	343.7	
	Diurnal Average																								

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

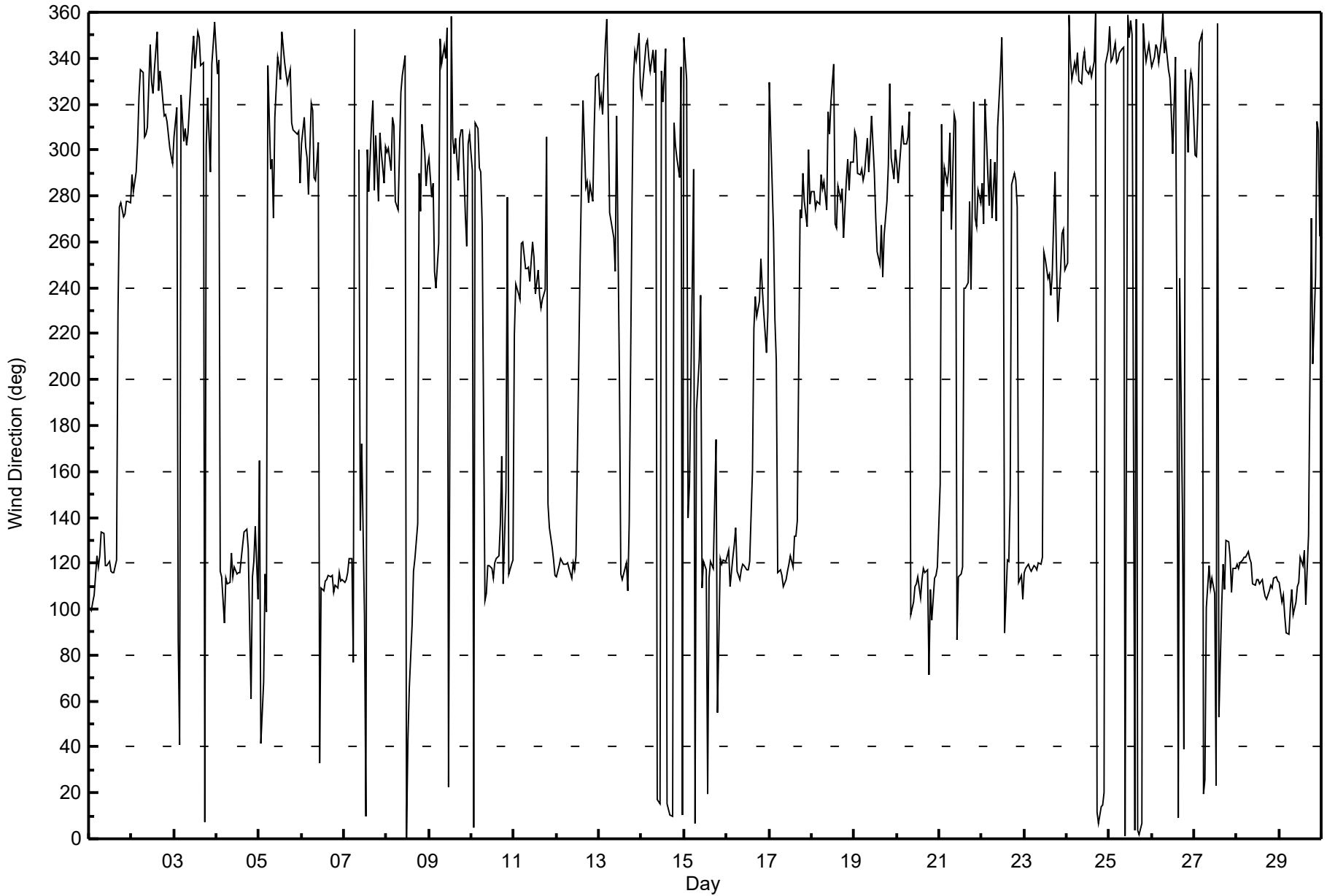
Wind Direction (WD) - deg
Lower Camp - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 104 deg on Feb 4 20:00 Minimum Value: 5 deg on Feb 1 14:00 Percentiles: P ₁ = 6 P ₁₀ = 9 Q ₁ = 14 Median = 19 Q ₃ = 30 P ₉₀ = 56 P ₉₉ = 89																		Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	16	11	10	14	13	12	12	22	21	11	8	7	6	5	6	9	61	38	32	20	10	10	16	12	61
2-Feb	24	19	16	18	18	18	16	15	14	16	16	17	17	17	21	20	22	19	15	16	16	13	12	16	24
3-Feb	24	48	23	83	27	16	16	12	15	17	20	15	15	17	21	15	15	12	35	58	53	36	47	61	83
4-Feb	34	30	19	10	24	28	11	14	12	10	8	11	13	11	12	20	19	14	14	104	29	16	63	65	104
5-Feb	90	77	85	62	86	38	16	16	16	26	15	14	23	21	16	17	17	17	16	14	14	13	18	21	90
6-Feb	26	21	22	28	22	25	34	23	14	34	74	9	8	7	11	11	9	12	8	8	10	11	9	12	74
7-Feb	12	12	18	28	37	55	22	UO	30	82	39	44	56	35	18	51	35	9	19	12	23	20	12	16	82
8-Feb	16	12	9	21	29	13	9	26	32	49	23	40	31	26	18	26	57	78	32	13	18	13	9	10	78
9-Feb	12	12	15	16	11	19	25	24	16	15	15	28	29	31	17	32	20	20	14	25	15	21	18	39	39
10-Feb	35	79	39	65	32	49	43	34	26	22	15	14	10	14	8	16	48	41	55	68	29	68	8	12	79
11-Feb	59	12	11	11	17	12	13	45	24	19	92	50	17	16	14	13	18	31	78	99	40	25	15	7	99
12-Feb	11	28	10	8	7	6	6	8	7	13	7	20	58	12	23	20	15	17	12	10	14	15	16	19	58
13-Feb	18	20	16	26	19	19	12	18	27	27	27	82	38	11	13	8	19	55	60	19	15	19	16	19	82
14-Feb	17	15	14	14	17	18	17	18	16	27	24	23	20	23	19	16	13	22	26	28	29	31	43	25	43
15-Feb	41	67	64	65	29	49	75	81	69	41	75	6	6	69	19	6	7	73	78	92	53	7	10	25	92
16-Feb	17	49	44	18	14	26	14	5	5	6	6	7	8	7	40	22	54	15	29	18	40	13	21	89	89
17-Feb	55	46	37	88	71	49	14	11	8	8	9	14	27	32	70	75	41	92	21	23	22	26	74	27	92
18-Feb	21	27	47	40	34	62	25	36	18	29	46	22	30	33	19	15	13	55	26	23	52	28	26	27	62
19-Feb	12	17	19	21	24	28	20	23	30	22	31	33	31	21	20	18	11	16	16	22	24	23	19	28	33
20-Feb	18	14	25	66	57	34	81	60	87	46	14	19	13	19	8	29	19	13	86	84	77	7	8	17	87
21-Feb	81	88	26	14	15	22	18	21	33	54	62	10	6	6	29	13	14	69	23	53	36	28	29	28	88
22-Feb	14	32	41	22	30	30	21	21	25	31	26	15	32	73	6	8	85	38	19	31	15	73	53	72	85
23-Feb	8	8	7	6	6	5	7	6	9	6	38	15	14	13	14	13	18	13	21	14	15	13	13	16	38
24-Feb	26	20	20	17	16	20	20	19	17	23	20	17	15	16	21	17	24	14	17	16	20	16	25	16	26
25-Feb	17	17	17	17	16	14	14	14	15	16	18	20	23	20	18	20	19	16	19	18	15	14	15	16	23
26-Feb	17	15	14	16	16	15	15	15	18	25	25	29	29	38	65	72	58	55	82	37	31	44	46	41	82
27-Feb	33	28	33	36	35	43	54	26	36	16	14	23	22	18	35	30	15	13	21	19	24	77	19	8	77
28-Feb	10	11	8	10	11	12	17	10	7	11	11	7	9	8	9	10	9	9	10	12	8	8	8	8	17
29-Feb	8	9	10	11	16	15	10	11	12	12	10	8	26	28	43	31	55	26	41	60	46	45	92	22	92
90 88 85 88 86 62 81 81 87 82 92 82 58 73 70 75 85 92 86 104 77 77 92 89																									
Diurnal Maximum																									
UO - Unstable Operation																									



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction (WD) - deg
Lower Camp - February 2024





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS13 FORT MCKAY SOUTH FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT McKAY SOUTH (AMS13)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2(ppb) Average	663	33	33	100	130	0	6.7	0
TRS(ppb) Average	662	34	34	100	5.2	0	1.4	0
THC(ppm) Average	663	33	33	100	4.4	-	2.9	-
NMHC(ppm) Average	663	33	33	100	0.545	-	0.141	-
CH4(ppm) Average	663	33	33	100	3.8	-	2.7	-
O3(ppb) Average	663	33	33	100	44.2	0	28.9	-
NO2(ppb) Average	662	34	34	100	37.4	0	20.2	-
NO(ppb) Average	662	34	34	100	91.2	-	28.4	-
NOX(ppb) Average	662	34	34	100	123.8	-	48.2	-
PM2.5(ug/m3) Average	696	0	0	100	38.6	0	15.3	0
ET(C) Average	696	0	0	100	10.3	-	0.7	-
RH(%) Average	696	0	0	100	97.1	-	91.9	-
WS(km/h) Average	692	0	4	99.43	20	-	13	-
WD(deg) Average	692	0	4	99.43	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT MCKAY SOUTH (AMS13)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2(ppb) Average	663	1.13	5.2	-	0	0.2	0.3	0.5	0.9	2	130
TRS(ppb) Average	662	0.76	0.6	-	0.4	0.4	0.5	0.6	0.8	1.2	5.2
THC(ppm) Average	663	2.31	0.3	-	2	2.1	2.1	2.2	2.4	2.7	4.4
NMHC(ppm) Average	663	0.012	0.062	-	0	0	0	0	0	0	0.545
CH4(ppm) Average	663	2.3	0.3	-	2	2.1	2.1	2.2	2.4	2.7	3.8
O3(ppb) Average	663	16.55	11.9	-	1.1	1.7	4.6	15.4	27.3	32.8	44.2
NO2(ppb) Average	662	12.03	8.1	-	0	2.2	5.2	10.9	17.7	23.6	37.4
NO(ppb) Average	662	7.59	13.4	-	0	0	0.2	1.6	7.6	24.3	91.2
NOX(ppb) Average	662	19.61	19.4	-	0	2.4	6.4	12.9	26.7	46.1	123.8
PM2.5(ug/m3) Average	696	6.9	5.5	-	0.4	1.6	3.2	5.6	8.2	14.7	38.6
Temperature 2 m (C) Average	696	-10.68	8.1	-	-33.9	-21	-15.8	-10.4	-5.6	-0.6	10.3
Relative Humidity (%) Average	696	73.37	14.3	-	28.9	51.6	64.6	77.3	84.4	87.9	97.1
Wind Speed 10 m (km/h) Average	692	6.2	4	-	0	1	3	5	9	13	20
Wind Direction 10 m (deg) Average	692	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT MCKAY SOUTH (AMS13)
FEBRUARY 2024

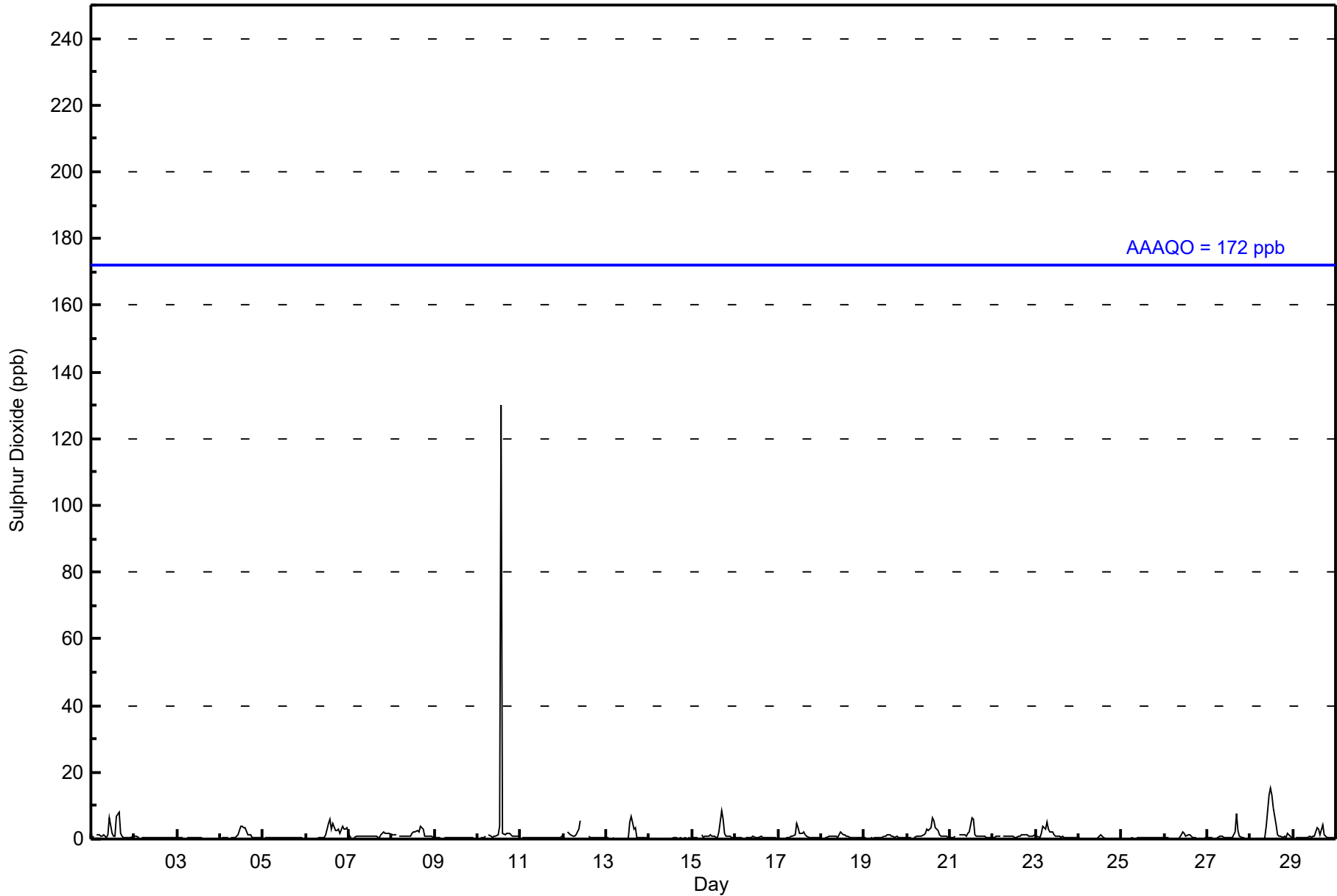
OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
Wind Speed, Wind Direction	01 Feb 2024 09:00	01 Feb 2024 09:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction	02 Feb 2024 00:00	02 Feb 2024 00:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction	06 Feb 2024 09:00	06 Feb 2024 09:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction	08 Feb 2024 05:00	08 Feb 2024 05:00	1	Flat line in sensor output signal



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Fort McKay South - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Fort McKay South - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	659	99.40	99.40
11 - 20	3	0.45	99.85
21 - 60	0	0.00	99.85
61 - 110	0	0.00	99.85
111 - 172	1	0.15	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 663
Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Fort McKay South - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	105	62	10	5	9	9	37	71	75	38	38	57	29	18	35	57	655
11 - 20	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	105	62	10	5	9	9	38	74	75	38	38	57	29	18	35	57	659

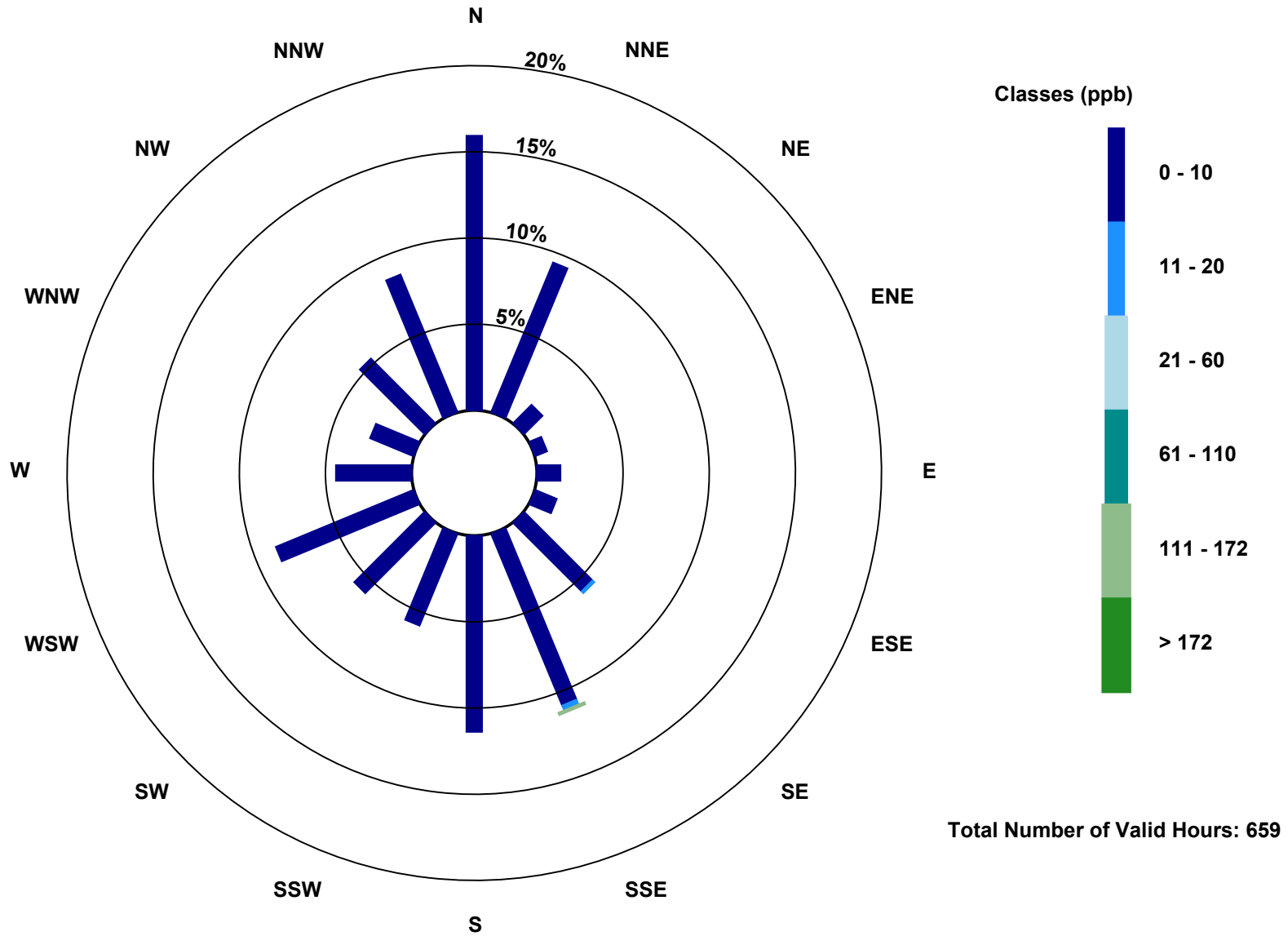
Total Number of Valid Hours: 659

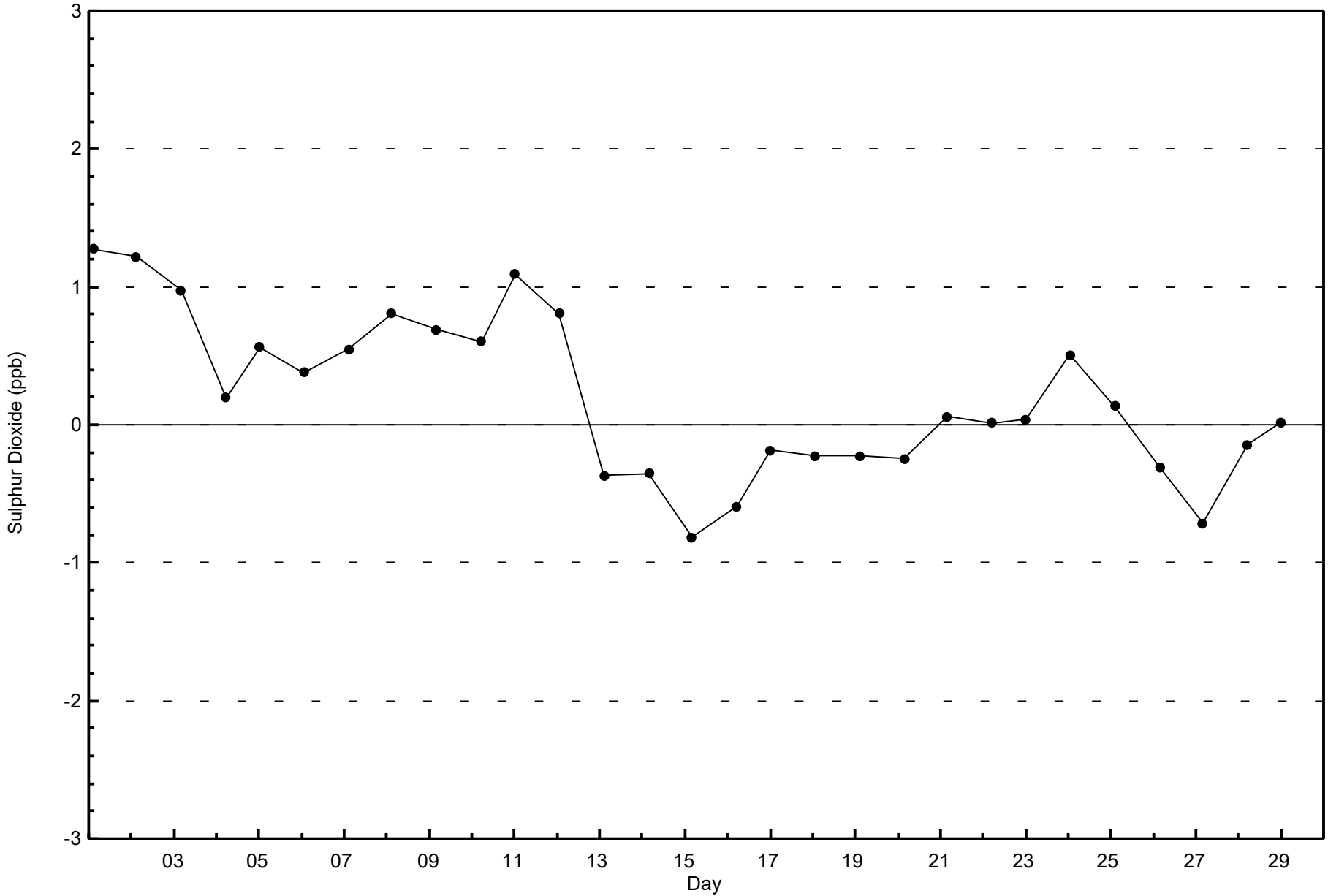
Total Number of Hours: 696

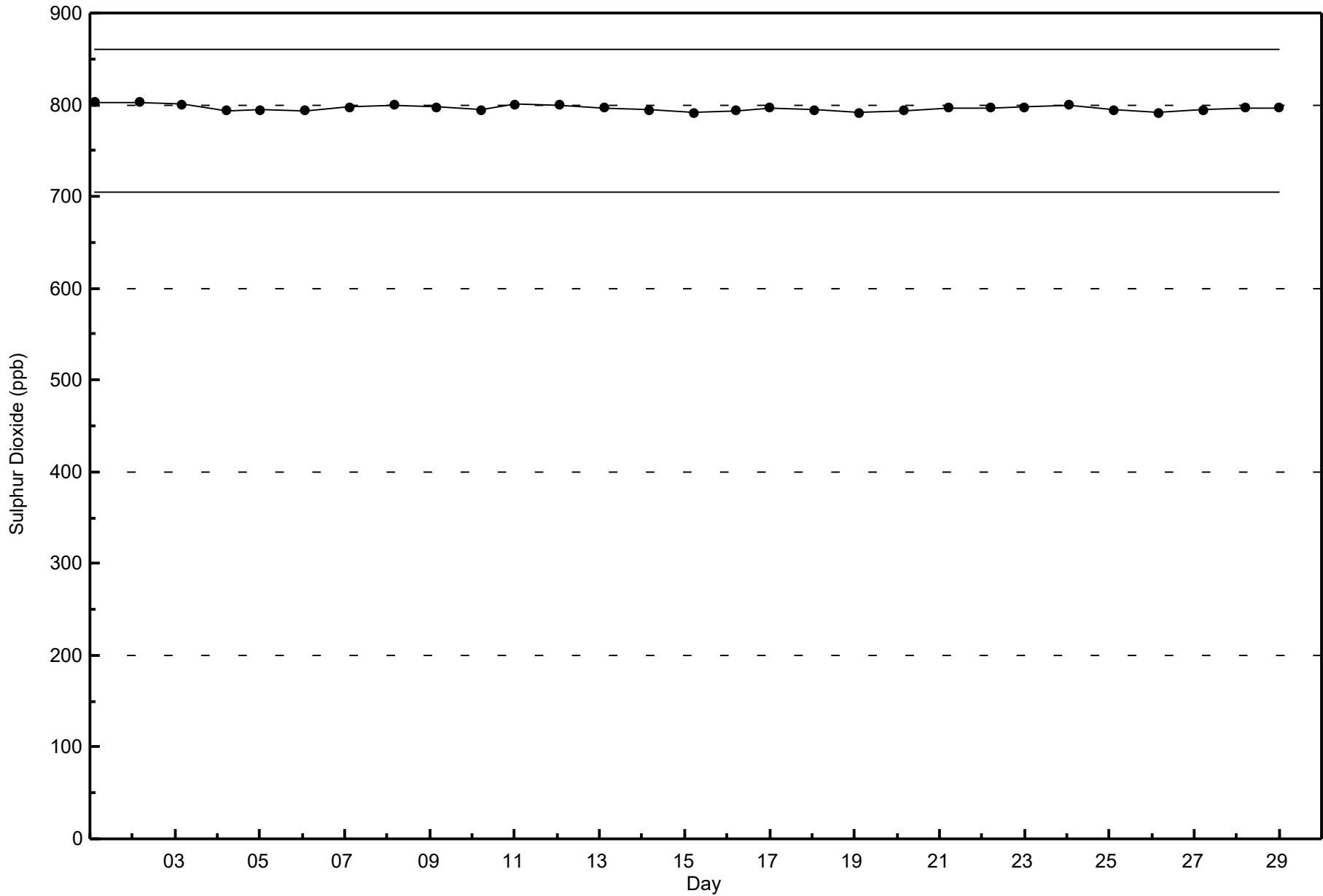


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Fort McKay South









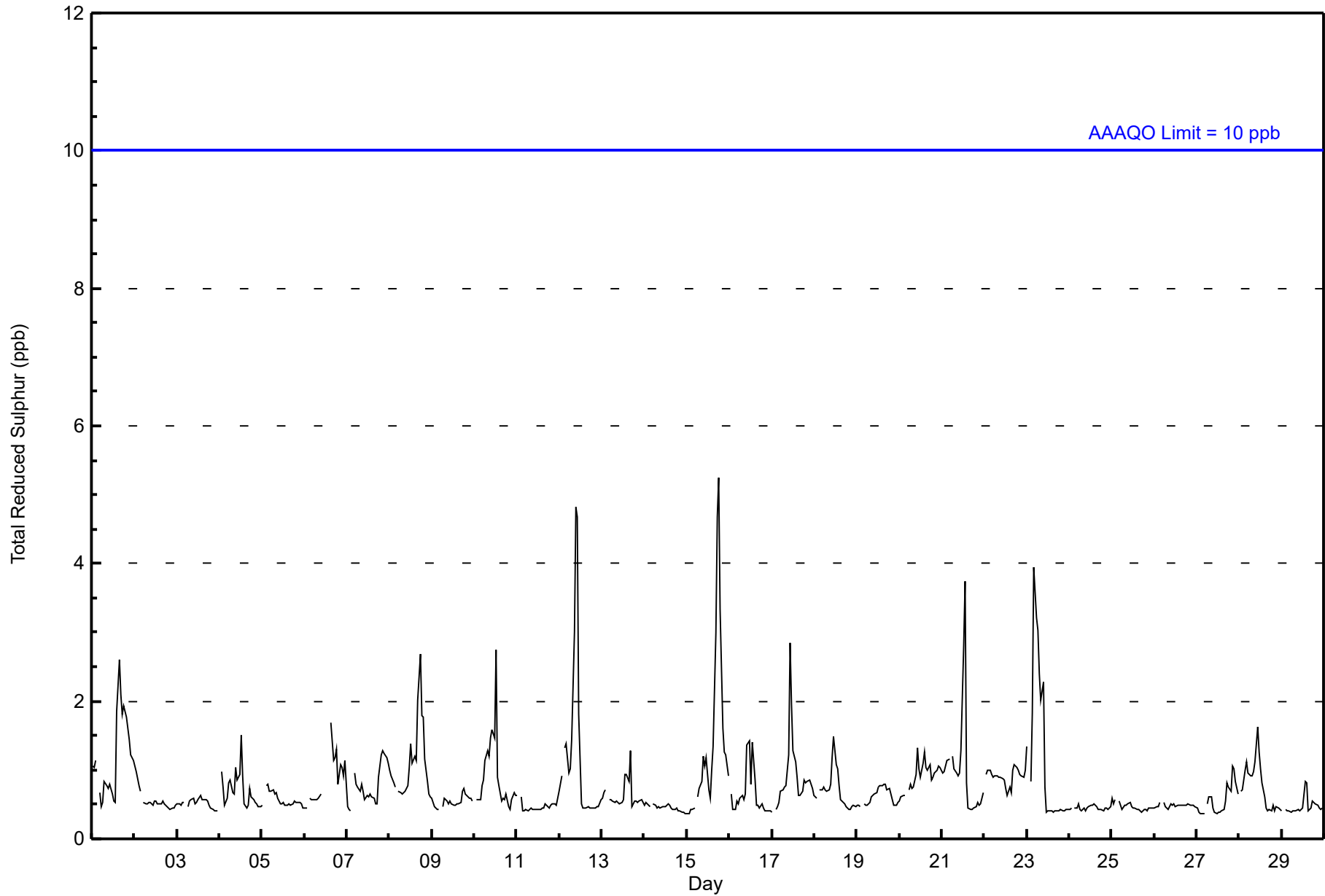
Wood Buffalo Environmental Association

Summary of Hour Averages

Total Reduced Sulphur (TRS) - ppb

Fort McKay South - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696																													
Maximum Value: 5.2 ppb on Feb 15 19:00		Maximum Daily Average: 1.4 ppb on Feb 15		Hours of Data:														662																															
Minimum Value: 0.4 ppb on Feb 27 04:00		Minimum Daily Average: 0.4 ppb on Feb 24		Hours of Missing Data:														34																															
Maximum Diurnal Average: 1.0 ppb at hour 11		Minimum Diurnal Average: 0.6 ppb at hour 24		Hours of Calibration:														34																															
Monthly Average: 0.76 ppb		Percentiles: P ₁ = 0.4 P ₁₀ = 0.4 Q ₁ = 0.5 Median = 0.6 Q ₃ = 0.8 P ₉₀ = 1.2 P ₉₉ = 3.3		Percent Operational Time:														100.0																															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	1.1	1.0	1.1	Z	0.7	0.5	0.5	0.8	0.8	0.7	0.8	0.7	0.5	0.5	1.8	2.6	2.1	1.8	1.9	1.8	1.6	1.4	1.2	1.1	1.2	2.6																							
2-Feb	1.0	1.0	0.8	0.7	Z	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.6	1.0																							
3-Feb	0.5	0.5	0.5	0.5	0.5	Z	0.5	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.6																							
4-Feb	Z	1.0	0.8	0.5	0.6	0.8	0.9	0.7	0.7	1.0	0.9	0.9	1.5	0.9	0.5	0.5	0.5	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.7	1.5																							
5-Feb	0.5	Z	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.6	0.8																							
6-Feb	0.4	0.5	Z	0.6	0.6	0.6	0.6	0.6	0.6	0.7	C	C	C	C	C	1.7	1.1	1.2	1.3	0.8	1.1	1.0	0.9	1.1	0.8	1.7																							
7-Feb	0.5	0.4	0.4	Z	1.0	0.8	0.8	0.7	0.8	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.9	1.2	1.3	1.2	1.2	1.1	0.8	1.3																							
8-Feb	1.0	0.9	0.8	0.8	Z	0.7	0.7	0.7	0.7	0.7	0.8	1.0	1.4	1.1	1.2	1.1	2.0	2.7	1.8	1.8	1.2	0.8	0.7	0.6	1.1	2.7																							
9-Feb	0.6	0.5	0.5	0.4	0.4	Z	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.7																							
10-Feb	Z	0.6	0.6	0.6	0.8	0.8	1.1	1.3	1.2	1.5	1.6	1.5	2.7	0.9	0.8	0.5	0.6	0.6	0.7	0.5	0.4	0.6	0.7	0.6	0.9	2.7																							
11-Feb	0.6	Z	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.6																							
12-Feb	0.7	0.9	Z	1.3	1.4	1.0	1.0	1.4	3.0	4.8	4.7	1.8	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.6	1.2	4.8																							
13-Feb	0.6	0.7	0.7	Z	0.6	0.6	0.5	0.5	0.6	0.5	0.5	0.5	0.6	0.9	0.9	0.8	1.3	0.5	0.5	0.6	0.5	0.5	0.6	0.5	0.6	1.3																							
14-Feb	0.5	0.5	0.5	0.5	Z	0.5	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5																							
15-Feb	0.4	0.4	0.4	0.4	0.5	Z	0.6	0.7	0.8	1.2	1.1	1.2	0.7	0.6	1.0	1.4	3.0	4.7	5.2	3.3	1.6	1.3	1.2	0.9	1.4	5.2																							
16-Feb	Z	0.7	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.7	1.4	1.4	0.8	1.4	0.9	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.6	1.4																							
17-Feb	0.4	Z	0.4	0.5	0.5	0.7	0.7	0.8	0.8	1.2	2.8	1.9	1.3	1.1	0.9	0.6	0.6	0.7	0.9	0.8	0.8	0.9	0.8	0.7	0.9	2.8																							
18-Feb	0.6	0.6	Z	0.7	0.7	0.8	0.7	0.7	0.7	0.8	1.2	1.5	1.1	1.0	0.8	0.6	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.7	1.5																							
19-Feb	0.5	0.5	0.5	Z	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.6	0.8																							
20-Feb	0.5	0.6	0.6	0.6	Z	0.7	0.8	0.7	0.7	0.9	1.3	1.0	0.9	1.1	1.3	1.0	1.0	1.1	0.9	0.9	1.0	1.0	1.1	1.0	0.9	1.3																							
21-Feb	1.0	1.0	1.1	1.1	1.2	Z	1.2	1.0	0.9	0.9	1.0	1.3	2.8	3.7	0.8	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.7	1.0	3.7																							
22-Feb	Z	0.9	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.7	0.6	0.7	0.7	1.0	1.1	1.0	1.0	0.9	0.9	0.9	1.0	0.9	1.1																							
23-Feb	1.3	Z	0.8	1.8	3.9	3.2	3.0	2.4	2.0	2.3	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	1.2	3.9																							
24-Feb	0.4	0.4	Z	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.4	0.5																							
25-Feb	0.6	0.5	0.6	Z	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.6																							
26-Feb	0.5	0.5	0.5	0.5	Z	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5																							
27-Feb	0.5	0.4	0.4	0.4	0.4	Z	0.5	0.6	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.8	0.7	0.7	1.1	1.0	0.8	0.6	0.6	1.1																							
28-Feb	Z	0.7	0.7	1.0	1.1	0.9	0.9	0.9	1.0	1.1	1.6	1.3	1.0	0.8	0.6	0.5	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.4	0.8	1.6																							
29-Feb	0.4	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.8	0.8	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.8																							
																								0.6	0.6	0.6	0.7	0.8	0.7	0.7	0.8	0.9	1.0	0.8	0.8	0.8	0.7	0.7	0.8	0.9	0.9	0.8	0.7	0.7	0.6	0.6	Diurnal Average		
																								1.3	1.0	1.1	1.8	3.9	3.2	3.0	2.4	3.0	4.8	4.7	1.9	2.8	3.7	1.8	2.6	3.0	4.7	5.2	3.3	1.6	1.4	1.2	1.1	Diurnal Maximum	
Z - zerospan C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																																																	





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Fort McKay South - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	646	97.58	97.58
3 - 4	12	1.81	99.40
5 - 7	4	0.60	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Fort McKay South - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	105	63	9	3	9	9	39	64	69	40	38	54	28	20	40	53	643
3 - 4	0	0	1	0	0	0	1	7	3	0	0	0	0	0	0	0	12
5 - 7	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	4
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	105	63	10	3	9	9	40	72	75	40	38	54	28	20	40	53	659

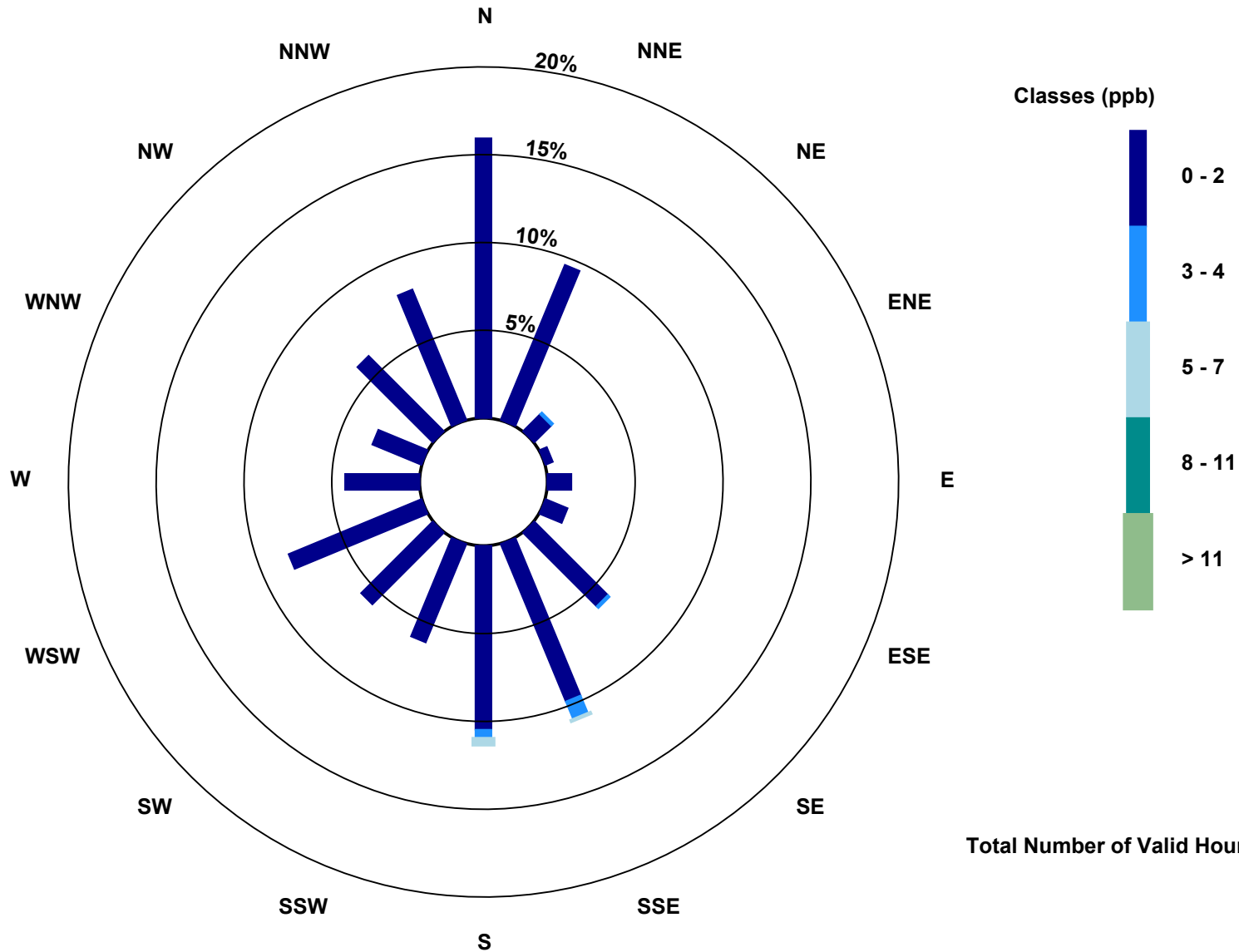
Total Number of Valid Hours: 659

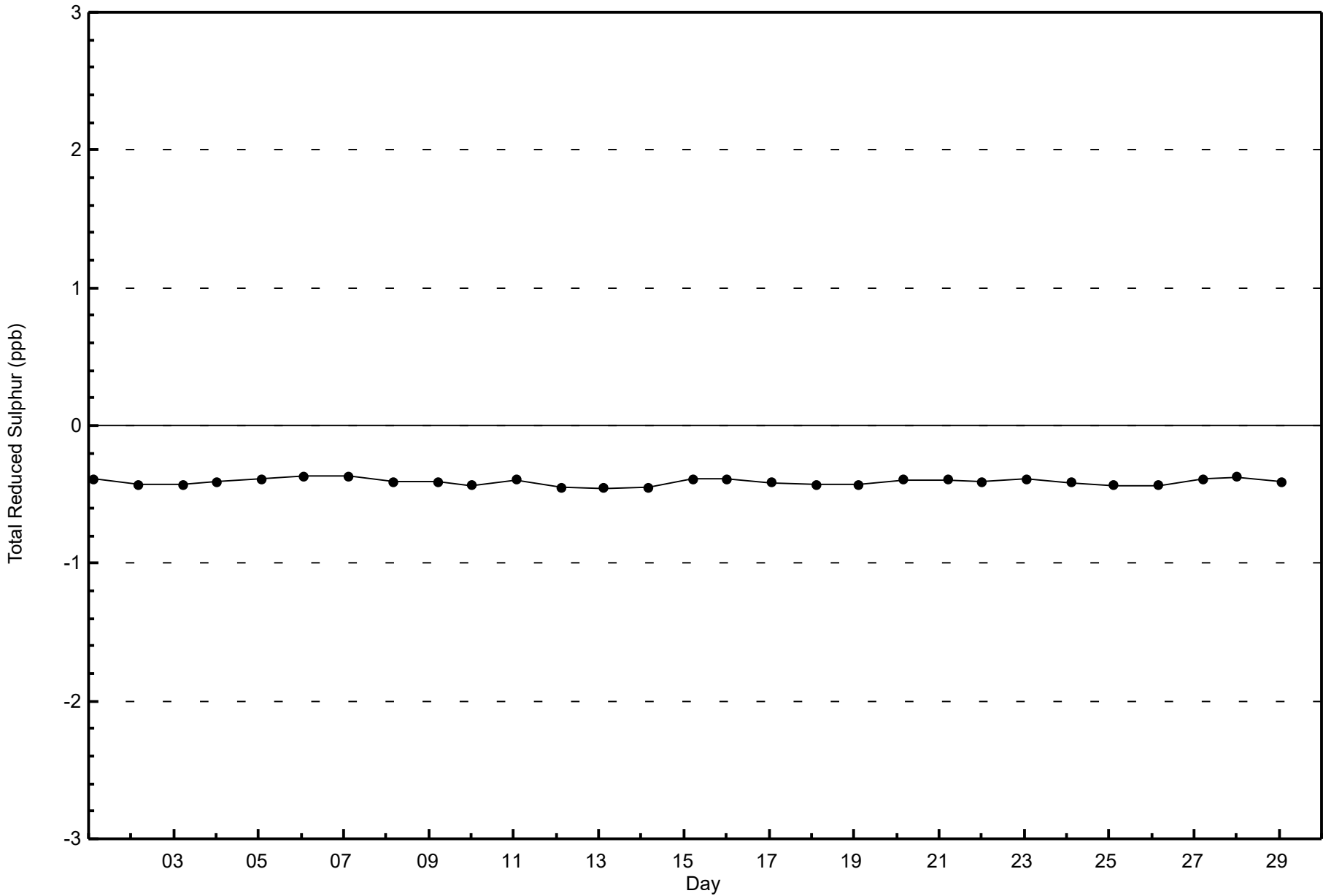
Total Number of Hours: 696

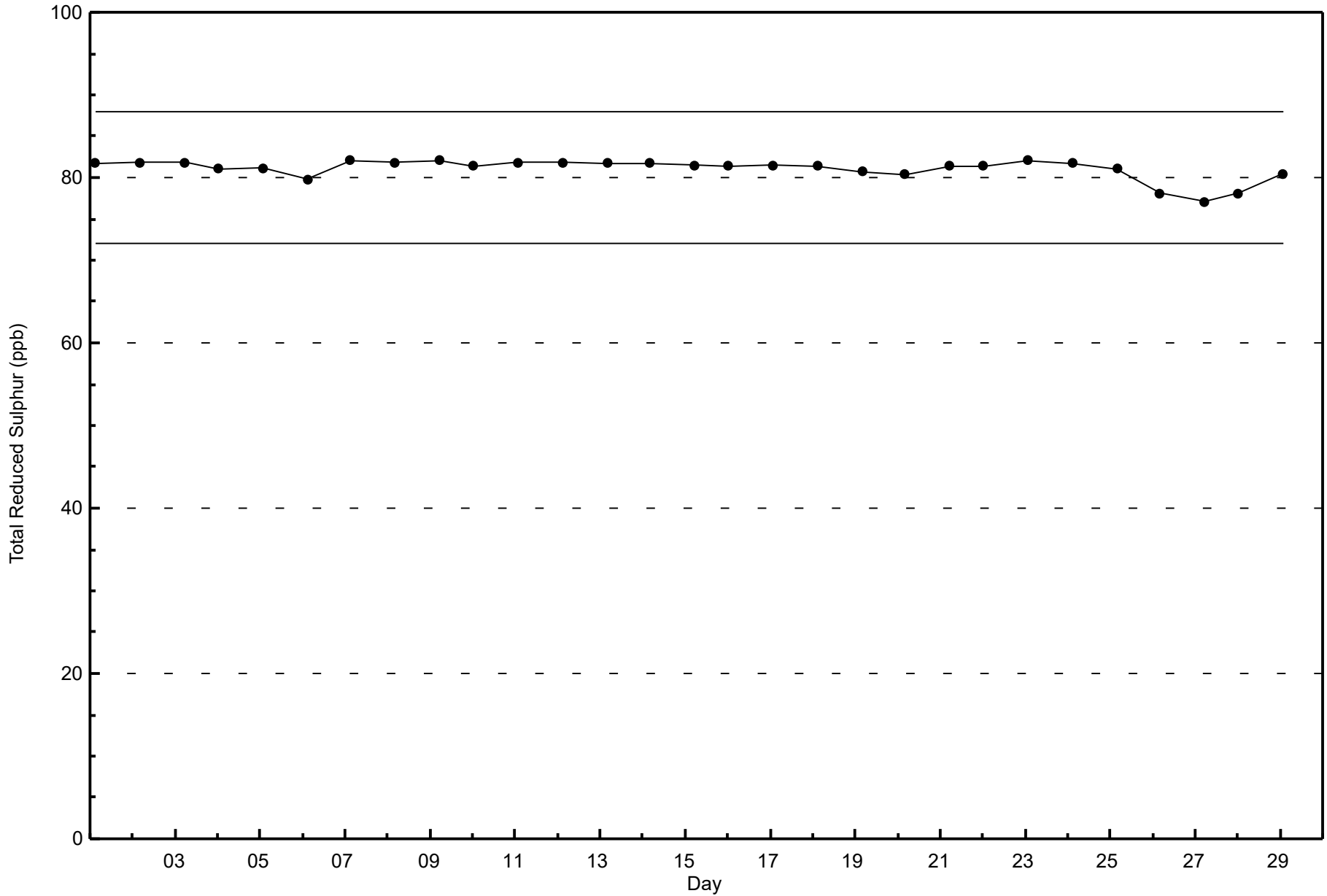


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Reduced Sulphur (TRS) - ppb
Fort McKay South









Wood Buffalo Environmental Association
Summary of Hour Averages

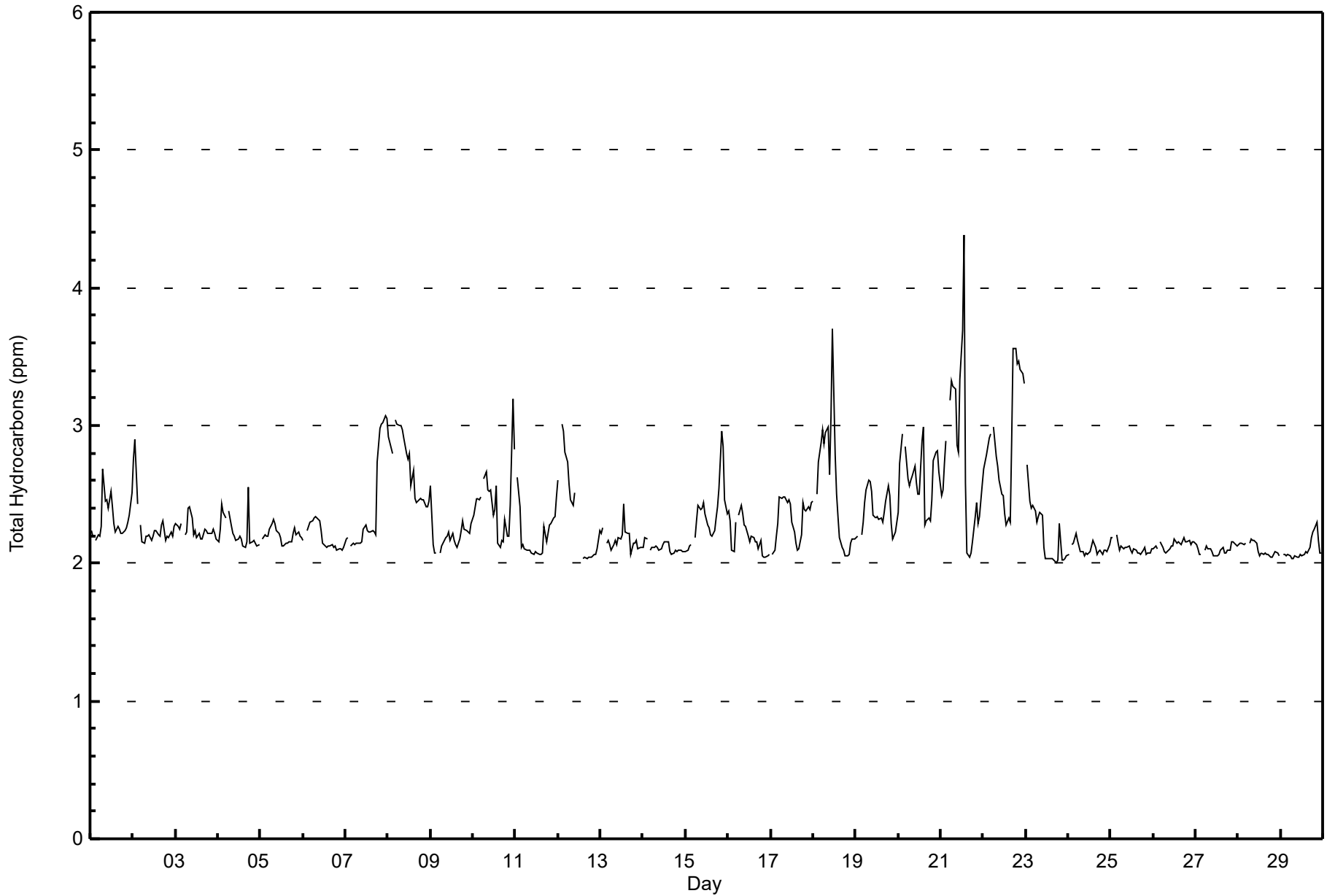
Total Hydrocarbons (THC) - ppm
Fort McKay South - February 2024

Maximum Value: 4.4 ppm on Feb 21 14:00																				Maximum Daily Average: 2.9 ppm on Feb 22					Hours in Service: 696								
Minimum Value: 2.0 ppm on Feb 23 18:00																				Minimum Daily Average: 2.1 ppm on Feb 29					Hours of Data: 663								
Maximum Diurnal Average: 2.4 ppm at hour 8																				Minimum Diurnal Average: 2.2 ppm at hour 16					Hours of Missing Data: 33								
Monthly Average: 2.31 ppm																				Percentiles: P ₁ = 2.0 P ₁₀ = 2.1 Q ₁ = 2.1 Median = 2.2 Q ₃ = 2.4 P ₉₀ = 2.7 P ₉₉ = 3.4					Hours of Calibration: 33								
																				Percent Operational Time: 100.0													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
1-Feb	2.2	2.2	Z	2.2	2.2	2.2	2.3	2.7	2.5	2.5	2.4	2.5	2.4	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.5	2.3	2.7							
2-Feb	2.8	2.9	2.4	Z	2.3	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.9							
3-Feb	2.3	2.3	2.3	2.3	Z	2.2	2.2	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4							
4-Feb	2.2	2.2	2.4	2.4	2.3	Z	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.5	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.5							
5-Feb	Z	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.3							
6-Feb	2.2	Z	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3							
7-Feb	2.2	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.7	3.0	3.0	3.0	3.1	3.1	2.4	3.1							
8-Feb	2.9	2.9	2.8	Z	3.0	3.0	3.0	3.0	3.0	2.9	2.8	2.8	2.8	2.6	2.7	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.4	2.5	2.7	3.0							
9-Feb	2.6	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.2	2.6							
10-Feb	2.3	2.4	2.5	2.5	2.5	Z	2.6	2.7	2.5	2.5	2.5	2.4	2.4	2.6	2.1	2.1	2.2	2.2	2.3	2.2	2.2	2.4	3.2	2.8	2.4	3.2							
11-Feb	Z	2.6	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.5	2.2	2.6							
12-Feb	2.6	Z	3.0	3.0	2.8	2.7	2.6	2.5	2.4	2.5	C	C	C	C	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.4	3.0							
13-Feb	2.2	2.3	Z	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.4	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.4							
14-Feb	2.1	2.2	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2							
15-Feb	2.1	2.1	2.1	2.1	Z	2.2	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.3	2.4	2.5	3.0	2.8	2.5	2.4	2.3	3.0							
16-Feb	2.4	2.3	2.1	2.1	2.3	Z	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.0	2.0	2.1	2.1	2.2	2.4							
17-Feb	Z	2.1	2.1	2.2	2.3	2.5	2.5	2.5	2.5	2.4	2.5	2.4	2.3	2.2	2.1	2.1	2.1	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.5							
18-Feb	2.4	Z	2.5	2.7	2.9	3.0	2.9	3.0	3.0	2.6	3.1	3.7	2.8	2.5	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.5	3.7							
19-Feb	2.2	2.2	Z	2.2	2.3	2.4	2.5	2.6	2.6	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.6	2.5	2.3	2.2	2.2	2.3	2.4	2.6							
20-Feb	2.4	2.7	2.9	Z	2.9	2.6	2.6	2.6	2.6	2.7	2.6	2.5	2.5	2.9	3.0	2.3	2.3	2.3	2.3	2.5	2.7	2.8	2.8	2.7	2.6	3.0							
21-Feb	2.5	2.5	2.7	2.9	Z	3.2	3.3	3.3	3.3	2.9	2.8	3.3	3.7	4.4	2.6	2.1	2.0	2.1	2.2	2.3	2.4	2.3	2.3	2.6	2.8	4.4							
22-Feb	2.7	2.7	2.8	2.9	2.9	Z	3.0	2.8	2.7	2.6	2.5	2.5	2.4	2.3	2.3	2.3	2.9	3.6	3.6	3.5	3.5	3.4	3.4	3.3	2.9	3.6							
23-Feb	Z	2.7	2.5	2.4	2.4	2.4	2.3	2.3	2.4	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.0	2.0	2.0	2.1	2.2	2.7							
24-Feb	2.1	Z	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2							
25-Feb	2.2	2.2	Z	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2							
26-Feb	2.1	2.1	2.1	Z	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.2							
27-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2							
28-Feb	2.1	2.2	2.1	2.1	2.1	Z	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.2							
29-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.3							
																								Diurnal Average									
																								Diurnal Maximum									
Z - zerospan C - Calibration																																	



Wood Buffalo Environmental Association
Hourly Averages

Total Hydrocarbons (THC) - ppm
Fort McKay South - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Fort McKay South - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	26	3.92	3.92
2.1 - 3.0	618	93.21	97.13
3.1 - 10.0	19	2.87	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Fort McKay South - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	0	0	0	0	0	1	4	1	0	0	3	5	2	3	6	1	26
2.1 - 3.0	105	60	10	5	9	8	32	72	73	35	34	52	26	13	27	53	614
3.1 - 10.0	0	2	0	0	0	0	2	1	2	3	1	0	1	2	2	3	19
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	105	62	10	5	9	9	38	74	75	38	38	57	29	18	35	57	659

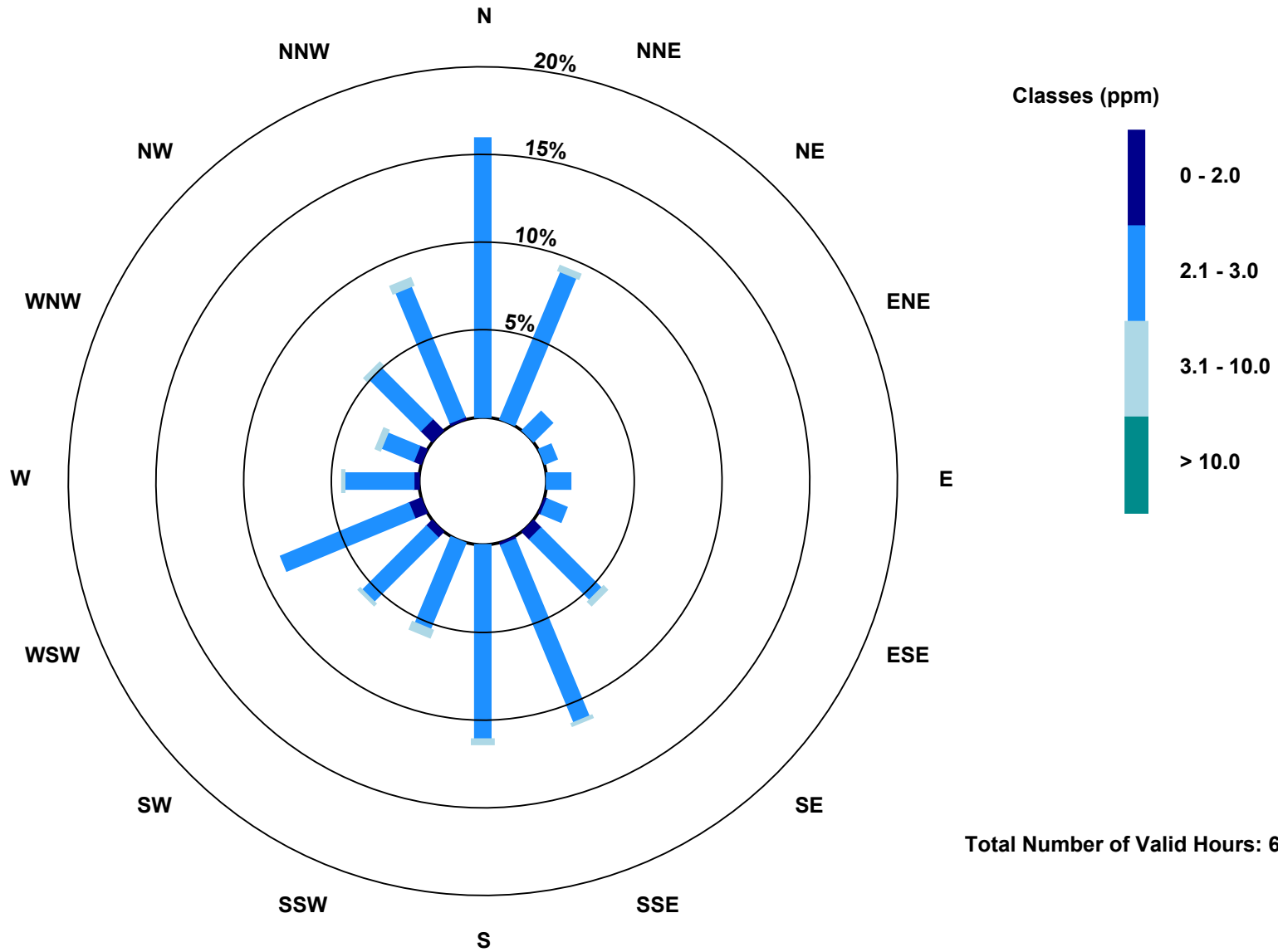
Total Number of Valid Hours: 659

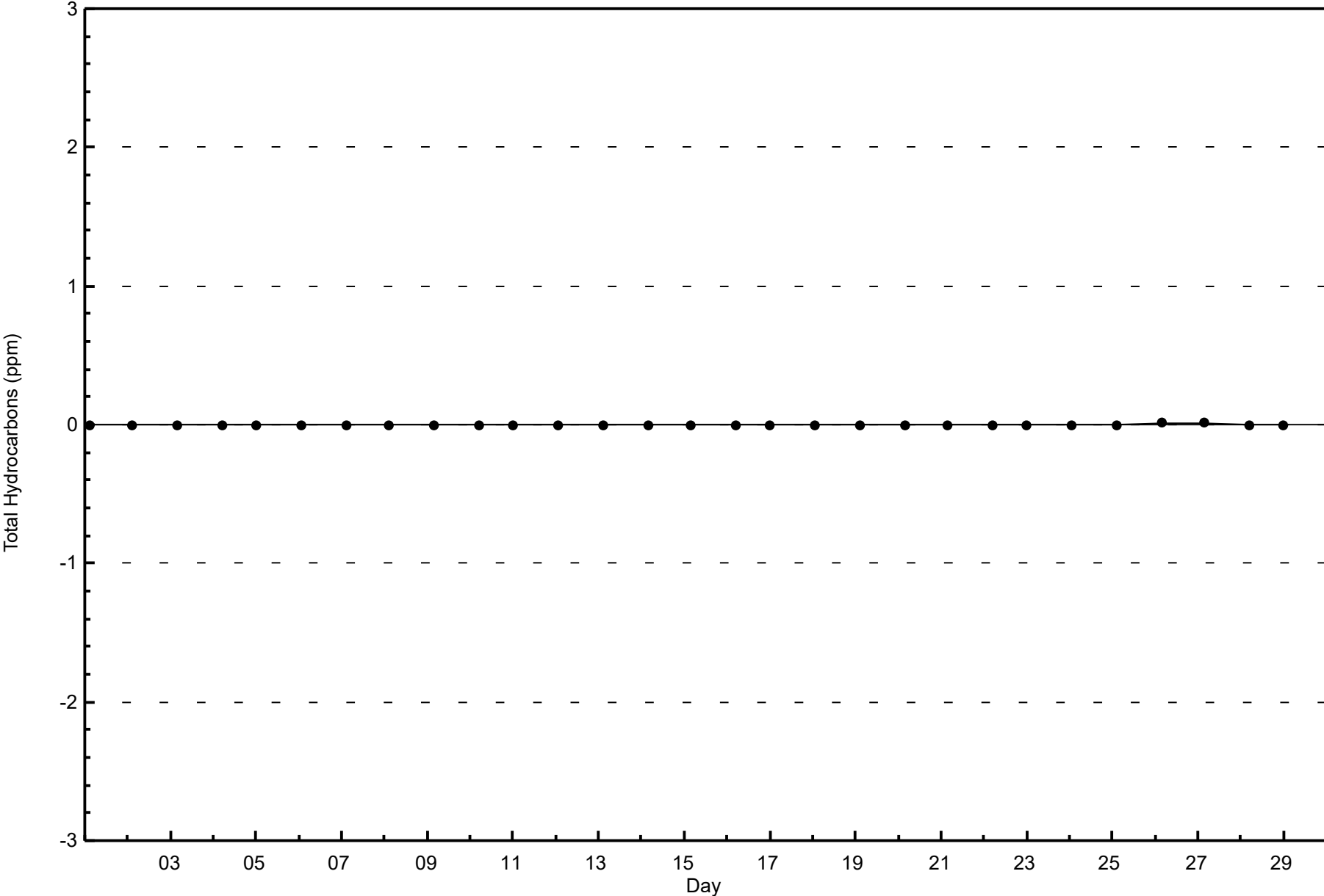
Total Number of Hours: 696

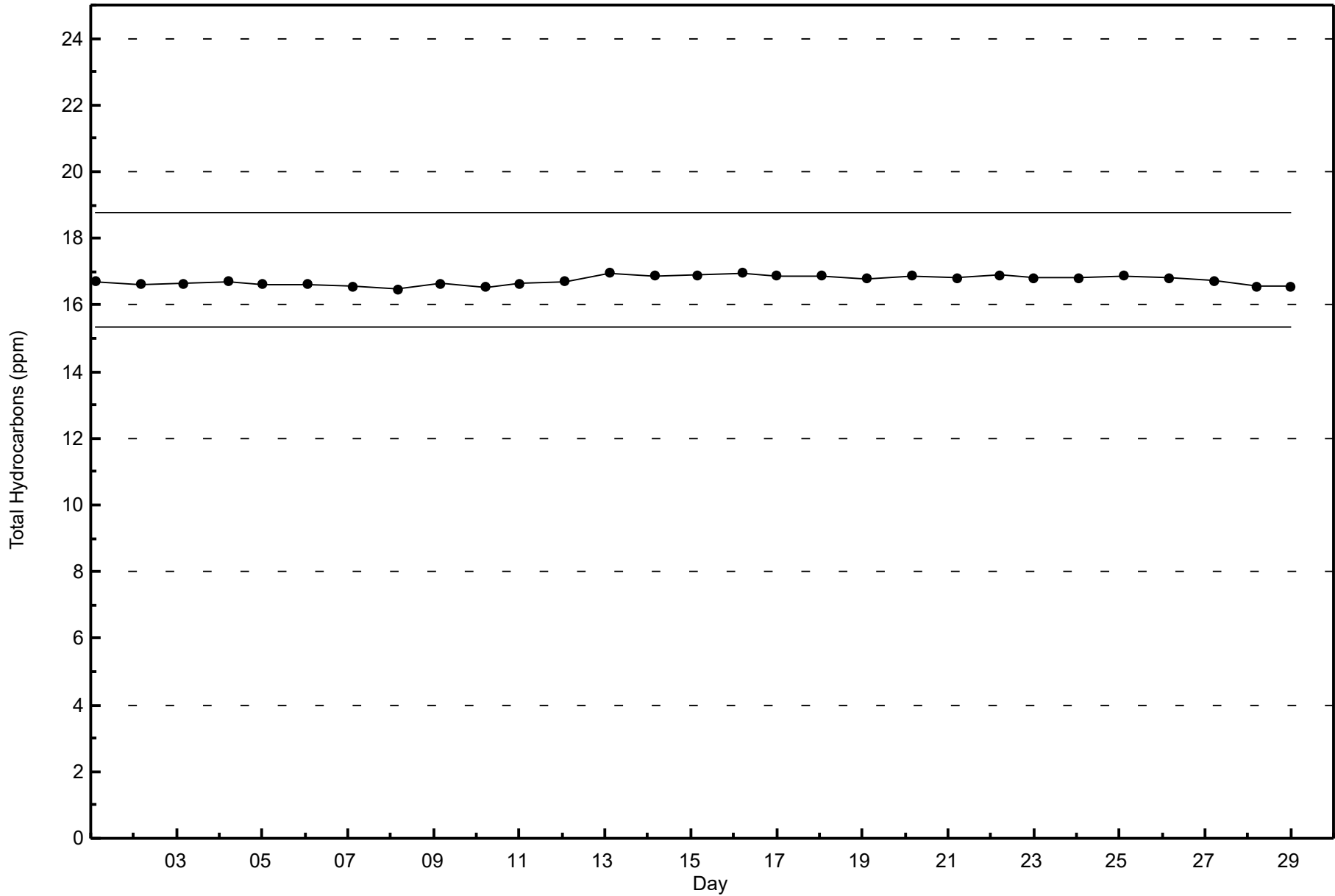


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Fort McKay South

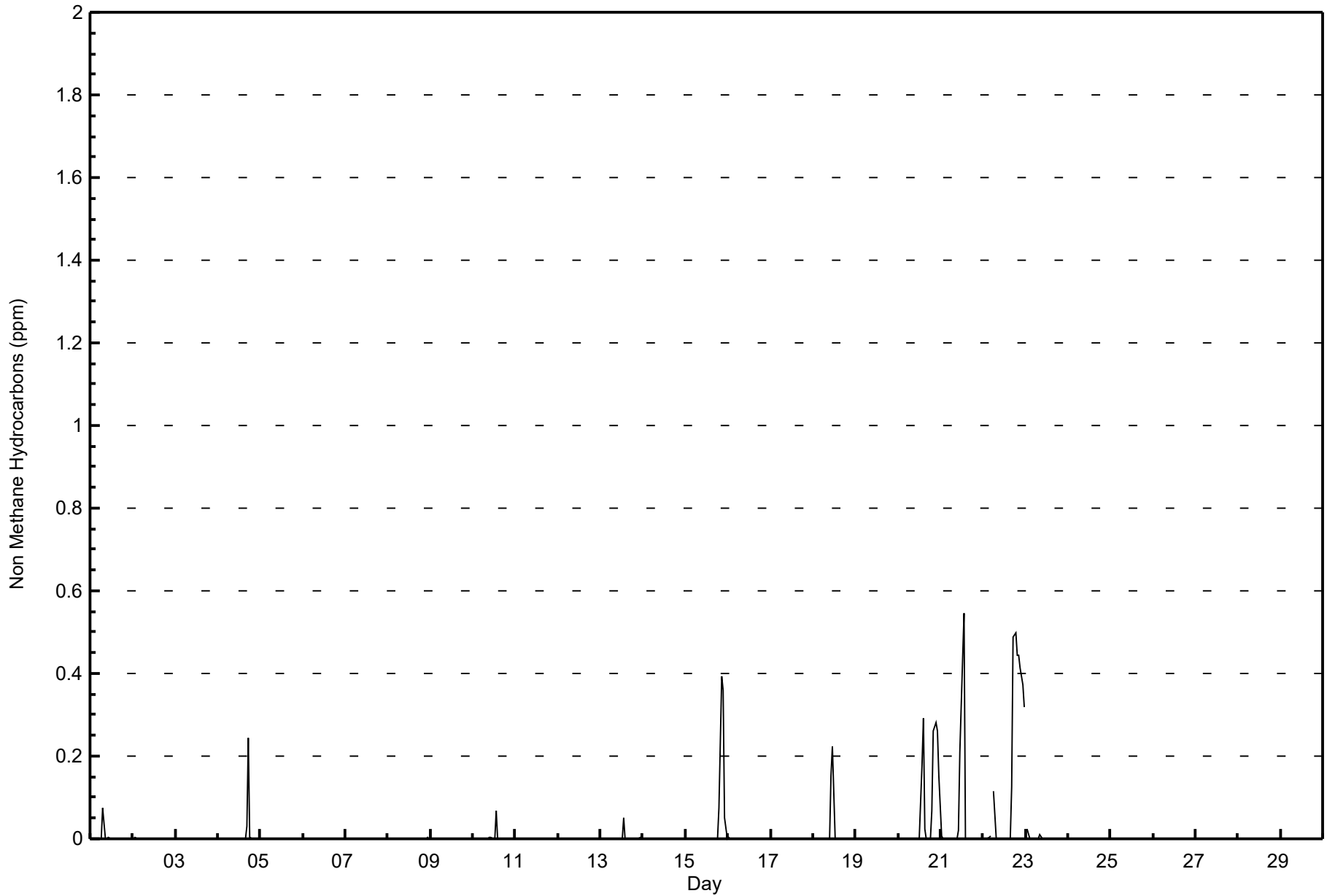








Maximum Value: 0.545 ppm on Feb 21 14:00		Maximum Daily Average: 0.141 ppm on Feb 22		Hours in Service:	696																						
Minimum Value: 0.000 ppm on Feb 1 01:00		Minimum Daily Average: 0.000 ppm on Feb 6		Hours of Data:	663																						
Maximum Diurnal Average: 0.038 ppm at hour 21		Minimum Diurnal Average: 0.000 ppm at hour 3		Hours of Missing Data:	33																						
Monthly Average: 0.012 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.4		Hours of Calibration:	33																						
				Percent Operational Time:	100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.074	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.074	
2-Feb	0.000	0.002	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
3-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.245	0.005	0.000	0.000	0.000	0.000	0.012	0.245	
5-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.000	0.002
8-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.004
9-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.003	0.004	0.000	0.000	0.068	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.068	0.068
11-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	C	C	C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001
13-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.002	0.051
14-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
15-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.075	0.395	0.360	0.050	0.000	0.038	0.395	0.395
16-Feb	0.003	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
17-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.151	0.223	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.223	0.223
19-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.180	0.293	0.022	0.000	0.000	0.000	0.000	0.067	0.262	0.282	0.262	0.152	0.066	0.293	0.293
21-Feb	0.008	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.021	0.209	0.437	0.545	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.053	0.545	0.545
22-Feb	0.000	0.000	0.000	0.005	0.005	Z	0.114	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.127	0.489	0.497	0.445	0.445	0.413	0.374	0.317	0.141	0.497	0.497	0.497
23-Feb	Z	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.024	0.024	0.024
24-Feb	0.000	Z	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
25-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29-Feb	Z	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
																								Diurnal Average			
																								Diurnal Maximum			
0.000 0.001 0.000 0.000 0.000 0.000 0.004 0.003 0.000 0.000 0.006 0.015 0.016 0.030 0.010 0.001 0.005 0.025 0.017 0.020 0.038 0.036 0.024 0.016																								Diurnal Average			
0.008 0.024 0.000 0.005 0.005 0.000 0.114 0.074 0.011 0.003 0.151 0.223 0.437 0.545 0.293 0.022 0.127 0.489 0.497 0.445 0.445 0.413 0.374 0.317																								Diurnal Maximum			
Z - zerospan C - Calibration																											





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Fort McKay South - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	628	94.72	94.72
0.006 - 0.05	8	1.21	95.93
0.06 - 0.1	6	0.90	96.83
> 0.1	21	3.17	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Non Methane Hydrocarbons (NMHC) - ppm
Fort McKay South - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	103	60	10	5	9	9	35	70	65	31	37	56	28	18	35	53	624
0.006 - 0.05	0	0	0	0	0	0	1	1	4	1	0	0	0	0	0	1	8
0.06 - 0.1	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	6
> 0.1	0	2	0	0	0	0	2	2	4	6	1	1	1	0	0	2	21
Totals	105	62	10	5	9	9	38	74	75	38	38	57	29	18	35	57	659

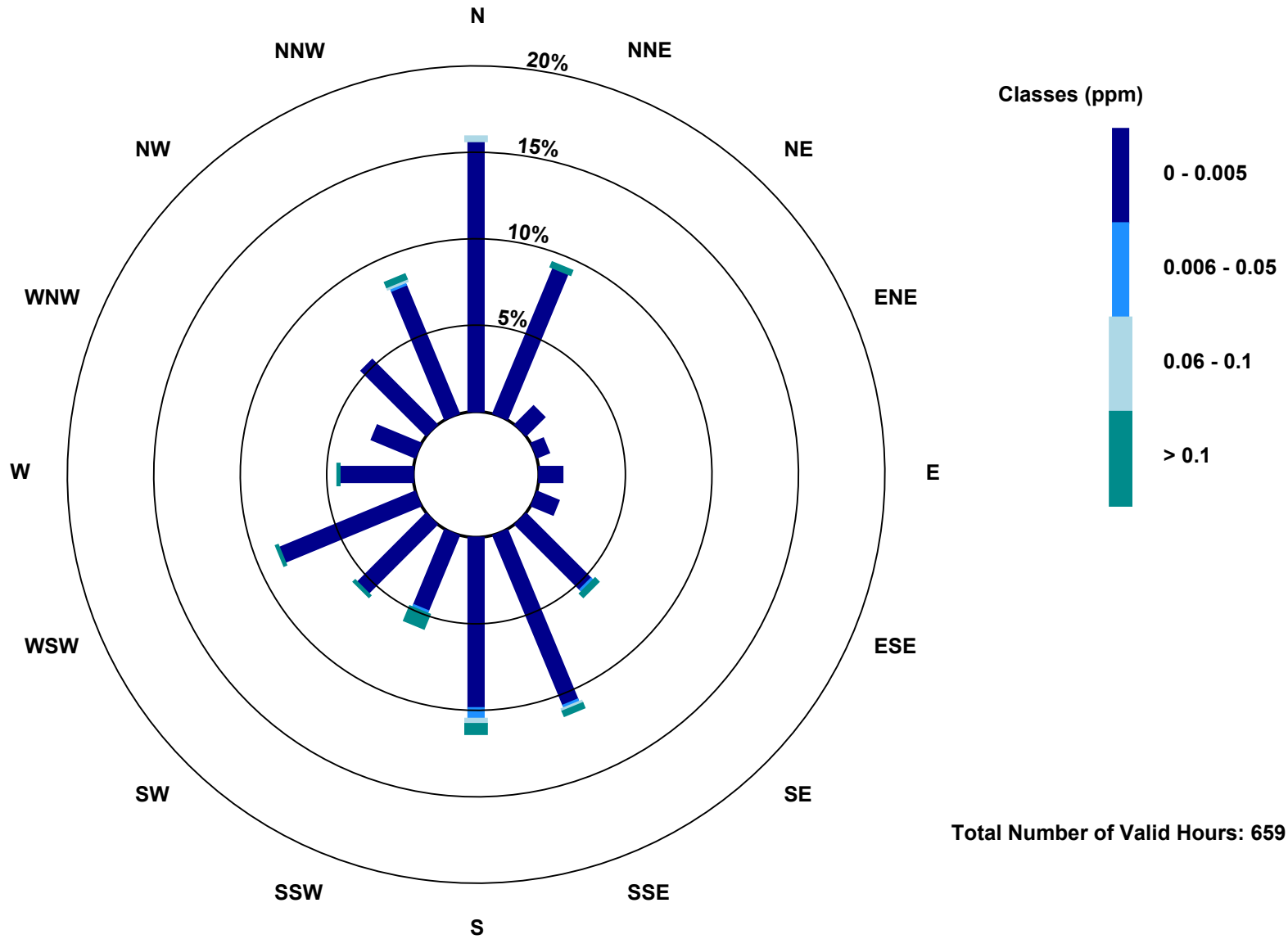
Total Number of Valid Hours: 659

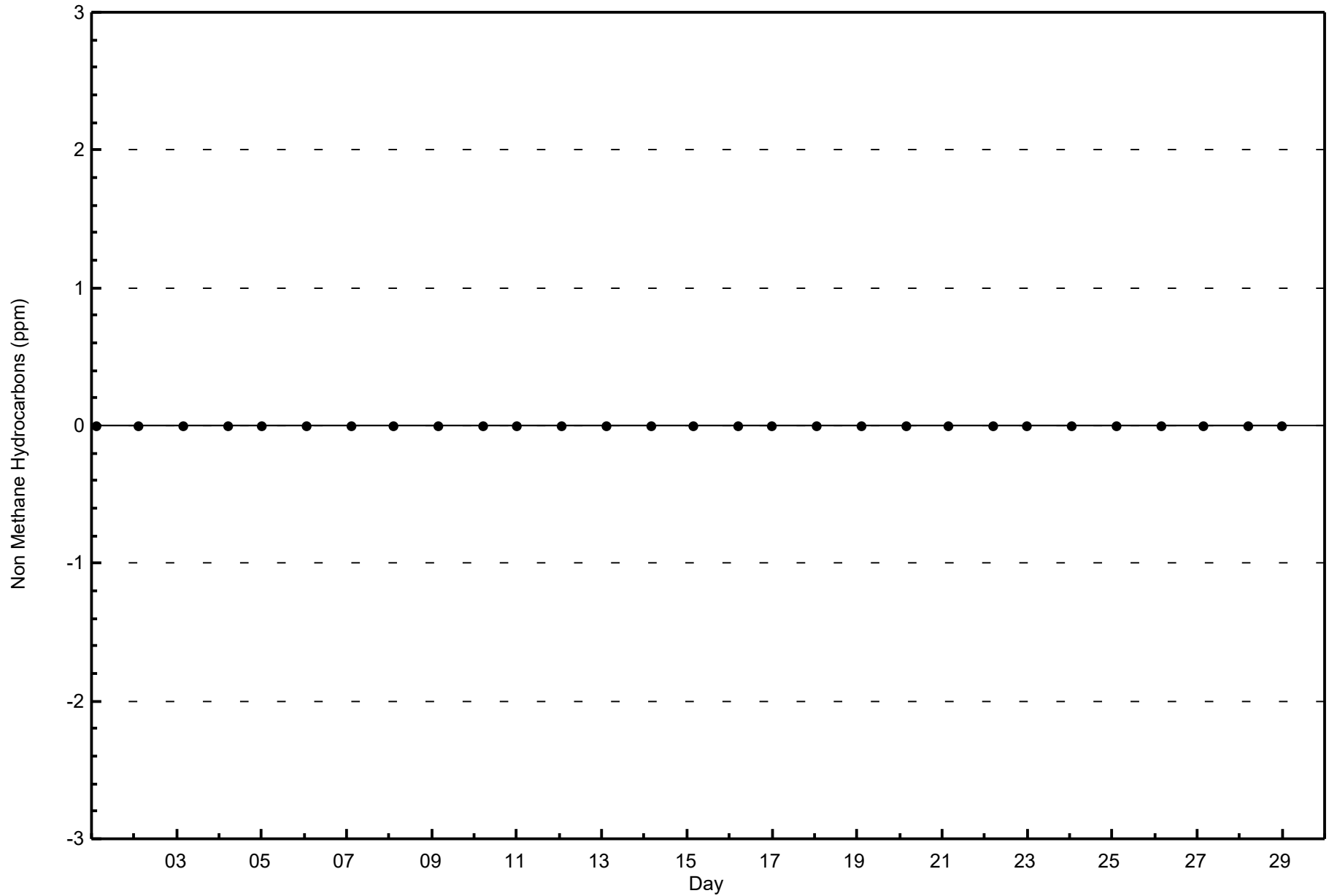
Total Number of Hours: 696

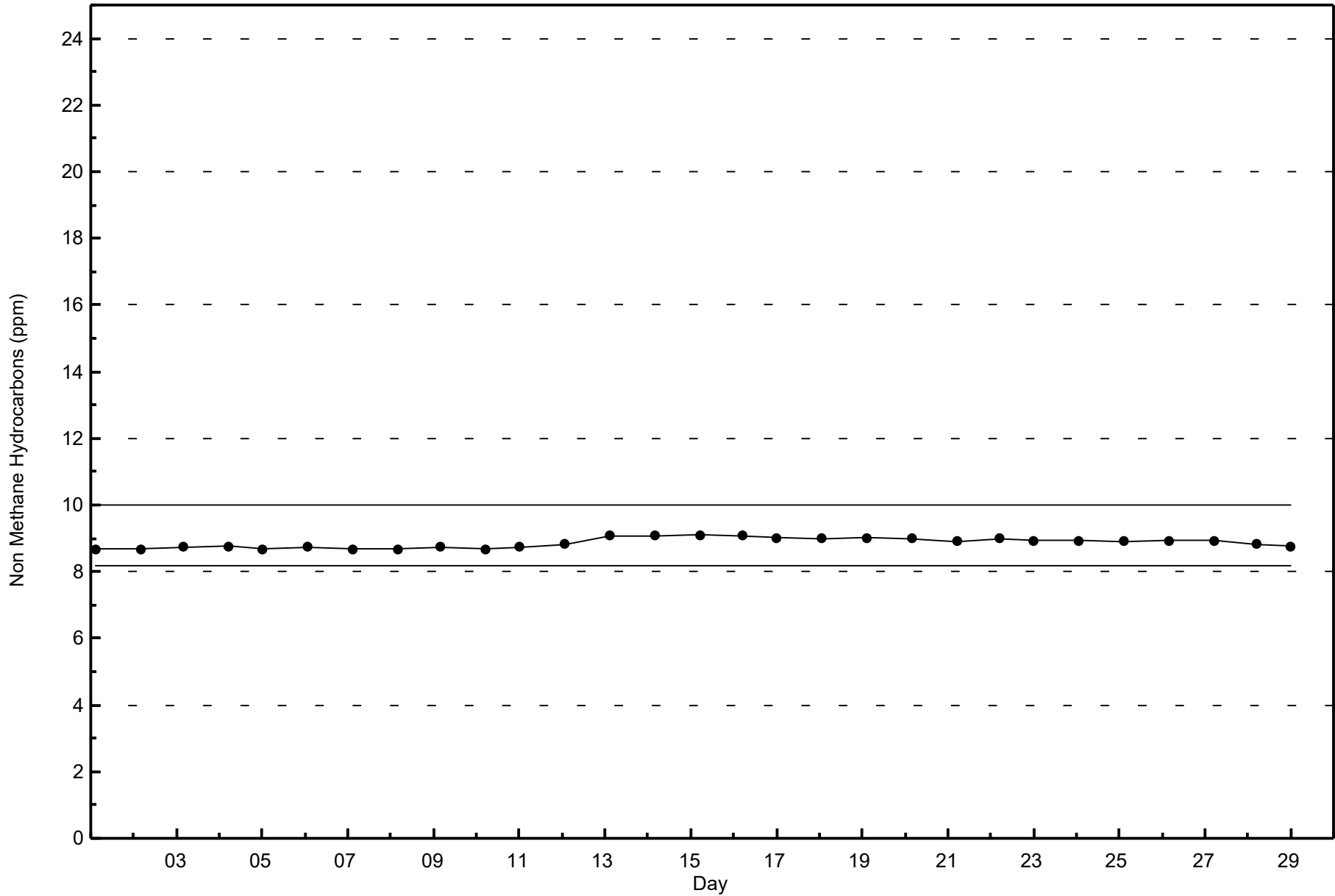


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Fort McKay South









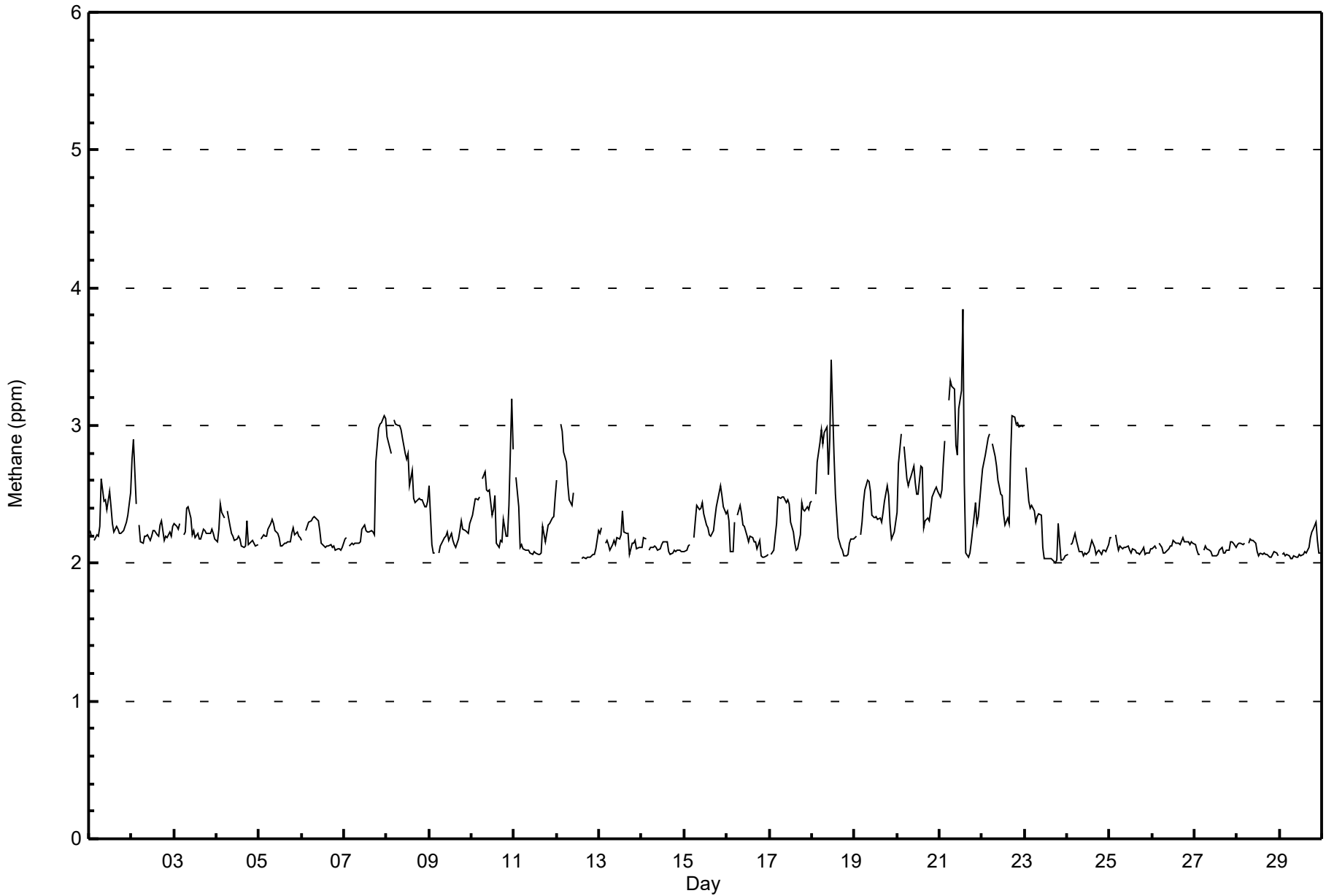
Wood Buffalo Environmental Association

Summary of Hour Averages

Methane (CH₄) - ppm

Fort McKay South - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																		Hours in Service:	696																											
Maximum Value: 3.8 ppm on Feb 21 14:00		Maximum Daily Average: 2.7 ppm on Feb 22																			Hours of Data:	663																											
Minimum Value: 2.0 ppm on Feb 23 18:00		Minimum Daily Average: 2.1 ppm on Feb 27																			Hours of Missing Data:	33																											
Maximum Diurnal Average: 2.4 ppm at hour 8		Minimum Diurnal Average: 2.2 ppm at hour 16																			Hours of Calibration:	33																											
Monthly Average: 2.30 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.1 Q ₁ = 2.1 Median = 2.2 Q ₃ = 2.4 P ₉₀ = 2.7 P ₉₉ = 3.2																			Percent Operational Time:	100.0																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	2.2	2.2	Z	2.2	2.2	2.2	2.3	2.6	2.5	2.5	2.4	2.5	2.4	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.5	2.3	2.6																							
2-Feb	2.8	2.9	2.4	Z	2.3	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.9																							
3-Feb	2.3	2.3	2.3	2.3	Z	2.2	2.2	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4																							
4-Feb	2.2	2.2	2.4	2.4	2.3	Z	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.3	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.4																							
5-Feb	Z	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.3																							
6-Feb	2.2	Z	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3																							
7-Feb	2.2	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.7	3.0	3.0	3.0	3.1	3.1	2.4	3.1																							
8-Feb	2.9	2.9	2.8	Z	3.0	3.0	3.0	3.0	3.0	2.9	2.8	2.8	2.8	2.6	2.7	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.4	2.5	2.7	3.0																							
9-Feb	2.6	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.2	2.6																							
10-Feb	2.3	2.4	2.5	2.5	2.5	Z	2.6	2.7	2.5	2.5	2.5	2.4	2.4	2.5	2.1	2.1	2.2	2.2	2.3	2.2	2.2	2.4	3.2	2.8	2.4	3.2																							
11-Feb	Z	2.6	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.5	2.2	2.6																							
12-Feb	2.6	Z	3.0	3.0	2.8	2.7	2.6	2.5	2.4	2.5	C	C	C	C	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.4	3.0																							
13-Feb	2.2	2.3	Z	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.4	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.4																							
14-Feb	2.1	2.2	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2																							
15-Feb	2.1	2.1	2.1	2.1	Z	2.2	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.3	2.4	2.5	2.6	2.5	2.4	2.4	2.3	2.6																							
16-Feb	2.4	2.3	2.1	2.1	2.3	Z	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.0	2.0	2.1	2.1	2.2	2.4																							
17-Feb	Z	2.1	2.1	2.2	2.3	2.5	2.5	2.5	2.5	2.4	2.5	2.4	2.3	2.2	2.1	2.1	2.1	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.5																							
18-Feb	2.4	Z	2.5	2.7	2.9	3.0	2.9	3.0	3.0	2.6	2.9	3.5	2.8	2.5	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.5	3.5																							
19-Feb	2.2	2.2	Z	2.2	2.3	2.4	2.5	2.6	2.6	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.6	2.5	2.3	2.2	2.2	2.3	2.4	2.6																							
20-Feb	2.4	2.7	2.9	Z	2.9	2.6	2.6	2.6	2.6	2.7	2.6	2.5	2.5	2.7	2.7	2.3	2.3	2.3	2.3	2.4	2.5	2.5	2.6	2.5	2.6	2.9																							
21-Feb	2.5	2.5	2.7	2.9	Z	3.2	3.3	3.3	3.3	2.9	2.8	3.1	3.3	3.8	2.6	2.1	2.0	2.1	2.2	2.3	2.4	2.3	2.3	2.6	2.7	3.8																							
22-Feb	2.7	2.7	2.8	2.9	2.9	Z	2.9	2.8	2.7	2.6	2.5	2.5	2.4	2.3	2.3	2.3	2.8	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.7	3.1																							
23-Feb	Z	2.7	2.5	2.4	2.4	2.4	2.3	2.3	2.4	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.0	2.0	2.0	2.1	2.2	2.7																							
24-Feb	2.1	Z	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2																							
25-Feb	2.2	2.2	Z	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2																							
26-Feb	2.1	2.1	2.1	Z	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.2																							
27-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2																							
28-Feb	2.1	2.2	2.1	2.1	2.1	Z	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.2																							
29-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.3																							
																								2.3	2.3	2.4	2.3	2.4	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	Diurnal Average
																								2.9	2.9	3.0	3.0	3.0	3.2	3.3	3.3	3.3	2.9	2.9	3.5	3.3	3.8	2.7	2.5	2.8	3.1	3.1	3.0	3.0	3.0	3.0	3.2	3.1	Diurnal Maximum
Z - zerospan																								C - Calibration																									





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Fort McKay South - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	26	3.92	3.92
2.1 - 3.0	624	94.12	98.04
3.1 - 10.0	13	1.96	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Methane (CH₄) - ppm
Fort McKay South - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	0	0	0	0	0	1	4	1	0	0	3	5	2	3	6	1	26
2.1 - 3.0	105	61	10	5	9	8	32	72	75	37	34	52	27	13	27	53	620
3.1 - 10.0	0	1	0	0	0	0	2	1	0	1	1	0	0	2	2	3	13
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	105	62	10	5	9	9	38	74	75	38	38	57	29	18	35	57	659

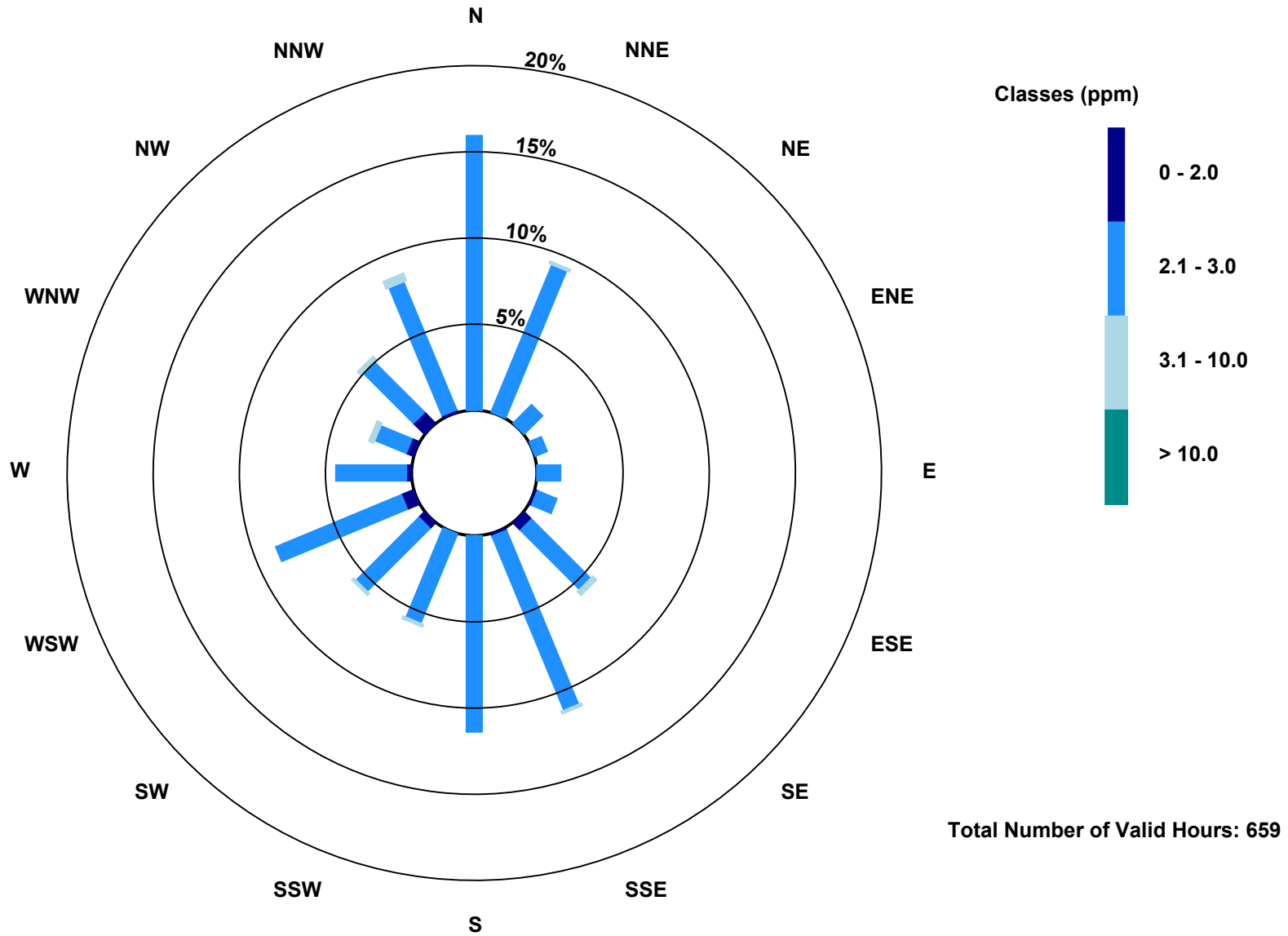
Total Number of Valid Hours: 659

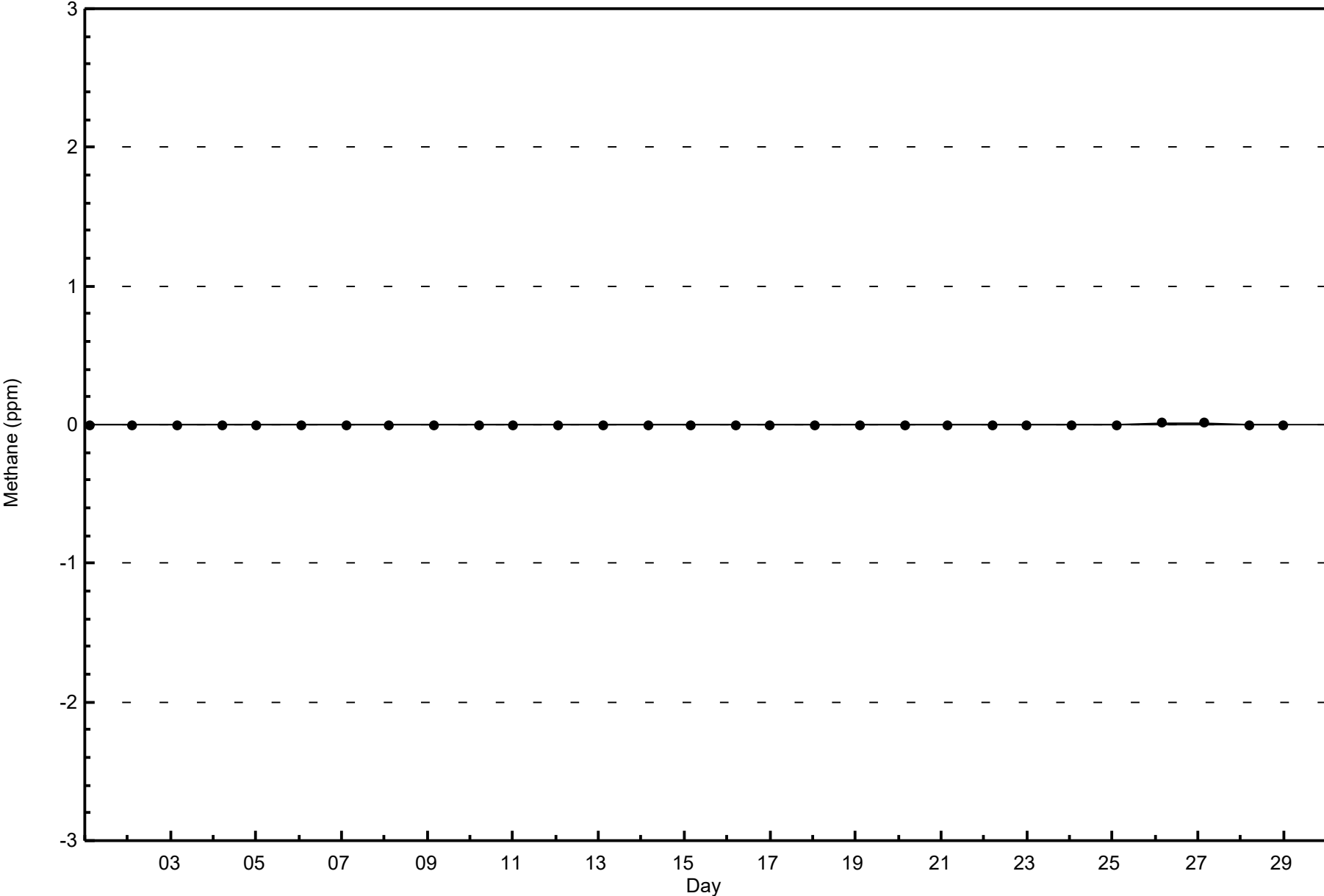
Total Number of Hours: 696

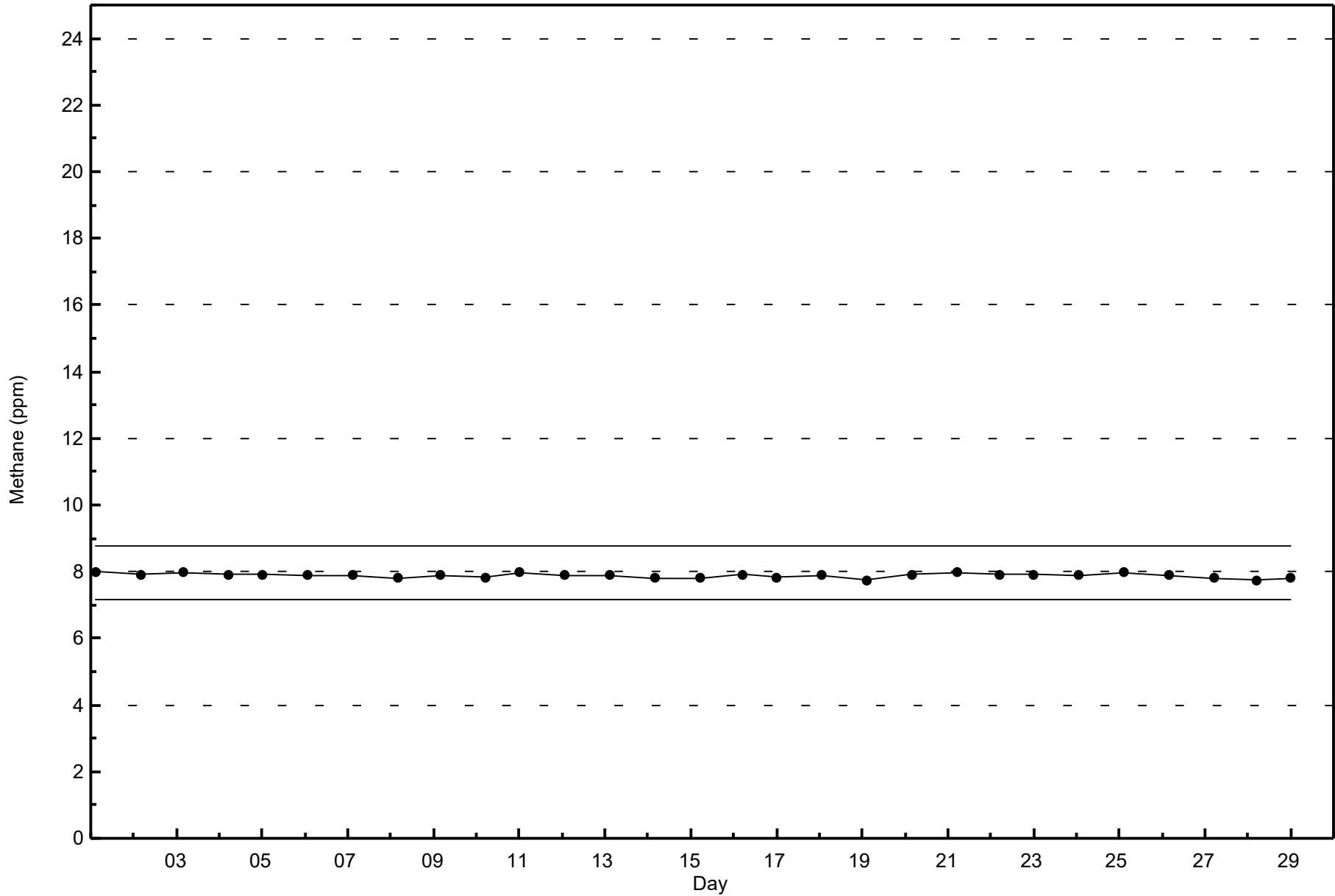


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Fort McKay South









Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 44.2 ppb on Feb 23 23:00	Maximum Daily Average: 28.9 ppb on Feb 29		Hours of Data:	663
Minimum Value: 1.1 ppb on Feb 20 03:00	Minimum Daily Average: 3.0 ppb on Feb 8		Hours of Missing Data:	33
Maximum Diurnal Average: 25.8 ppb at hour 16	Minimum Diurnal Average: 10.3 ppb at hour 5		Hours of Calibration:	33
Monthly Average: 16.55 ppb	Percentiles: P ₁ = 1.3 P ₁₀ = 1.7 Q ₁ = 4.6 Median = 15.4 Q ₃ = 27.3 P ₉₀ = 32.8 P ₉₉ = 40.6		Percent Operational Time:	100.0

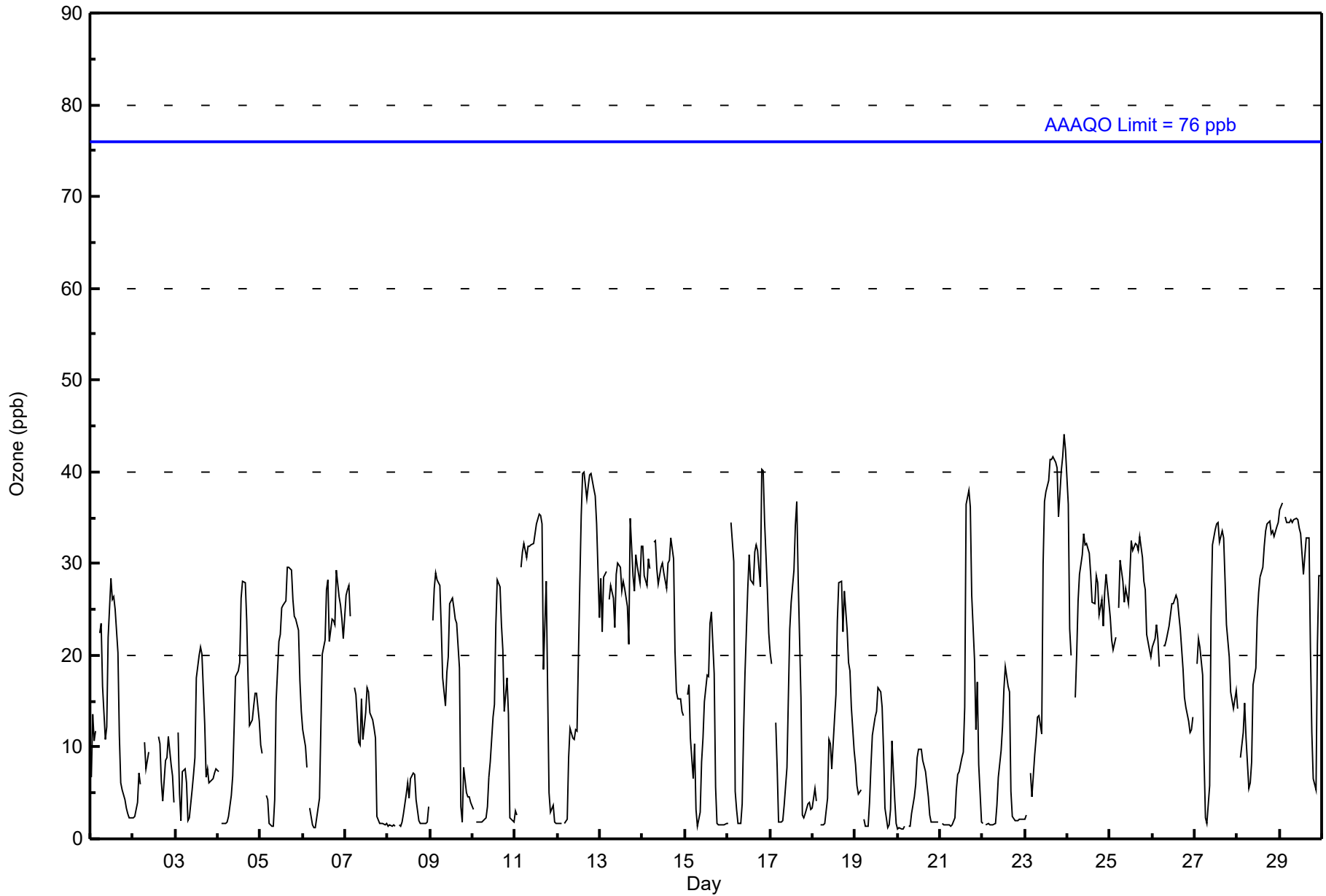
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	6.8	13.6	10.6	11.7	Z	22.4	23.4	16.7	10.8	12.2	22.0	28.4	26.1	26.5	25.0	20.3	11.4	6.1	5.3	4.2	3.3	2.7	2.3	2.3	13.7	28.4																							
2-Feb	2.3	2.4	4.0	7.2	6.0	Z	10.5	7.7	8.6	9.5	C	C	C	C	11.2	10.4	6.3	4.1	8.6	8.9	11.1	8.1	6.9	3.9	7.2	11.2																							
3-Feb	Z	11.6	4.9	2.0	7.3	7.6	6.1	2.1	2.3	5.4	7.0	8.9	17.6	20.0	20.8	20.1	12.5	6.7	7.6	6.1	6.4	6.5	7.2	7.7	8.9	20.8																							
4-Feb	7.4	Z	1.7	1.7	1.7	1.9	2.4	4.7	6.9	12.1	17.6	18.3	19.2	26.3	28.1	28.0	23.7	17.3	12.3	13.0	14.5	15.9	15.8	12.8	13.2	28.1																							
5-Feb	10.3	9.3	Z	4.8	4.3	1.7	1.4	1.3	4.3	14.9	21.5	22.3	25.2	25.5	26.0	29.5	29.6	29.3	26.1	24.3	23.9	22.7	17.3	13.9	16.9	29.6																							
6-Feb	12.0	10.0	7.8	Z	3.3	1.5	1.2	1.3	2.4	4.5	12.3	20.1	21.6	27.1	28.3	21.5	23.9	23.8	23.4	29.2	26.4	25.5	24.0	21.8	16.2	29.2																							
7-Feb	26.5	27.2	27.7	24.3	Z	16.5	15.8	10.5	10.3	15.3	10.9	13.7	16.4	16.0	13.7	12.9	12.1	11.0	2.4	1.7	1.6	1.7	1.6	1.6	12.7	27.7																							
8-Feb	1.4	1.5	1.4	1.5	1.4	Z	1.5	1.4	1.8	2.7	4.9	6.1	4.4	6.6	7.2	7.1	4.3	2.0	1.6	1.6	1.6	1.7	1.8	3.5	3.0	7.2																							
9-Feb	Z	23.8	27.3	29.0	28.2	27.6	23.1	17.6	14.5	18.1	19.8	25.6	26.2	25.1	23.9	23.5	18.6	3.5	1.9	7.9	5.1	4.6	4.5	3.9	17.5	29.0																							
10-Feb	3.2	Z	1.8	1.8	1.9	1.8	1.9	2.3	3.5	6.7	8.4	13.2	14.7	23.3	28.3	27.4	23.3	20.5	13.8	17.6	13.6	2.2	2.0	1.9	10.2	28.3																							
11-Feb	3.0	2.6	Z	29.6	31.3	32.1	30.6	31.9	31.9	32.0	32.2	33.3	34.4	35.3	35.3	34.3	18.5	28.0	16.3	5.1	2.9	3.6	1.9	1.7	22.1	35.3																							
12-Feb	1.7	1.7	1.7	Z	1.7	2.2	8.9	12.1	11.1	10.8	12.0	11.7	27.9	35.3	39.8	39.9	37.0	38.4	39.7	39.8	38.1	37.3	34.4	24.1	22.1	39.9																							
13-Feb	28.4	22.6	28.5	29.2	Z	26.1	27.6	26.2	23.1	28.9	30.1	29.5	27.0	28.1	27.2	25.3	21.1	34.9	28.7	27.0	31.0	29.8	27.9	31.9	27.8	34.9																							
14-Feb	31.9	28.7	27.6	30.4	29.5	Z	32.4	32.5	29.5	27.8	29.6	30.1	29.0	27.3	30.0	30.4	32.8	30.5	20.5	16.0	15.2	15.2	13.9	13.4	26.3	32.8																							
15-Feb	Z	15.7	16.8	11.0	6.5	10.3	3.2	1.4	2.8	8.4	11.0	14.9	17.8	17.7	23.4	24.7	17.9	5.7	1.7	1.6	1.5	1.5	1.6	1.7	9.5	24.7																							
16-Feb	1.7	Z	34.5	30.2	5.2	3.2	1.6	1.7	3.8	11.6	18.0	27.3	31.0	28.2	27.7	31.3	32.0	31.4	27.5	40.3	40.1	34.7	27.1	22.4	22.3	40.3																							
17-Feb	20.3	19.1	Z	12.7	7.8	1.8	1.8	1.9	3.7	7.7	15.4	22.8	25.8	29.3	34.1	36.8	28.4	15.4	2.6	2.3	2.8	3.8	3.9	3.2	13.2	36.8																							
18-Feb	3.3	5.5	4.1	Z	1.5	1.5	1.5	1.7	4.4	10.9	10.3	7.6	13.1	15.7	23.8	28.0	28.1	22.5	27.0	22.7	19.2	18.3	14.3	9.6	12.8	28.1																							
19-Feb	8.0	5.8	4.8	5.4	Z	2.1	1.4	1.4	4.0	7.9	11.3	13.2	13.9	16.4	16.0	14.3	9.6	3.4	1.3	1.5	3.2	10.7	4.2	1.7	7.0	16.4																							
20-Feb	1.1	1.2	1.1	1.1	1.3	Z	1.4	1.4	2.7	4.5	5.9	8.8	9.8	9.7	8.5	8.0	7.4	4.6	2.6	1.8	1.9	1.8	1.9	1.9	3.9	9.8																							
21-Feb	Z	1.7	1.5	1.6	1.5	1.5	1.4	1.5	2.4	5.4	7.0	7.4	8.9	9.5	14.3	36.5	38.0	36.2	26.5	19.5	11.9	17.1	8.1	1.8	11.4	38.0																							
22-Feb	1.6	Z	1.5	1.6	1.5	1.5	1.6	1.6	3.7	6.7	9.6	12.1	16.3	18.8	16.6	16.0	5.2	2.4	2.0	2.0	2.0	2.1	2.1	2.1	5.7	18.8																							
23-Feb	2.1	2.6	Z	7.2	4.5	9.2	11.0	13.3	13.4	11.5	29.8	36.7	37.8	39.0	41.3	41.3	41.6	41.0	40.4	35.1	40.2	41.6	44.2	42.4	27.3	44.2																							
24-Feb	36.5	22.9	19.9	Z	15.4	20.1	25.9	28.9	31.0	33.2	32.0	32.2	31.1	28.8	25.8	25.6	28.7	28.0	24.3	26.2	23.1	26.8	28.9	25.8	27.0	36.5																							
25-Feb	24.1	21.6	20.6	22.0	Z	25.2	30.3	28.1	25.7	27.3	25.7	28.8	32.5	31.4	32.2	32.0	31.5	32.9	30.6	28.1	27.2	22.2	20.6	19.8	27.0	32.9																							
26-Feb	20.9	21.8	23.3	21.8	18.8	Z	21.0	21.0	21.7	23.3	24.4	25.6	26.5	26.0	24.4	22.8	18.5	15.4	14.3	12.8	11.6	12.0	13.2	20.3	26.5																								
27-Feb	Z	19.1	21.8	20.9	17.9	8.7	2.3	1.7	5.7	24.3	32.0	33.8	34.3	34.5	32.3	33.5	32.8	28.2	23.3	19.8	16.0	15.2	14.2	16.2	21.2	34.5																							
28-Feb	14.2	Z	8.9	11.6	14.7	10.9	5.5	6.0	8.4	16.7	18.5	24.1	26.9	28.5	29.6	31.9	33.6	34.3	34.6	33.3	33.6	32.9	34.0	34.4	22.9	34.6																							
29-Feb	35.9	36.6	Z	35.1	34.4	34.5	34.8	34.5	34.8	35.0	34.7	33.8	33.3	28.8	30.8	32.9	32.8	20.7	11.6	6.6	5.3	21.2	28.7	28.7	28.9	36.6																							
																								12.7	13.7	12.7	14.2	10.3	11.3	11.4	10.8	11.3	15.0	18.4	21.1	23.1	24.5	25.1	25.8	22.9	20.0	16.5	15.8	15.0	15.1	14.0	12.7	Diurnal Average	
																								36.5	36.6	34.5	35.1	34.4	34.5	34.8	34.5	34.8	35.0	34.7	36.7	37.8	39.0	41.3	41.3	41.6	41.0	40.4	40.3	40.2	41.6	44.2	42.4	Diurnal Maximum	

Z - zerospan C - Calibration
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 76 ppb



Wood Buffalo Environmental Association
Hourly Averages

Ozone (O₃) - ppb
Fort McKay South - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ozone (O₃) - ppb
Fort McKay South - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	391	58.97	58.97
21 - 50	272	41.03	100.00
51 - 82	0	0.00	100.00
> 83	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Ozone (O₃) - ppb
Fort McKay South - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	48	23	4	3	5	5	17	37	56	34	22	34	13	15	26	45	387
21 - 50	53	40	6	2	4	4	23	39	19	5	15	20	17	4	11	10	272
51 - 82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	101	63	10	5	9	9	40	76	75	39	37	54	30	19	37	55	659

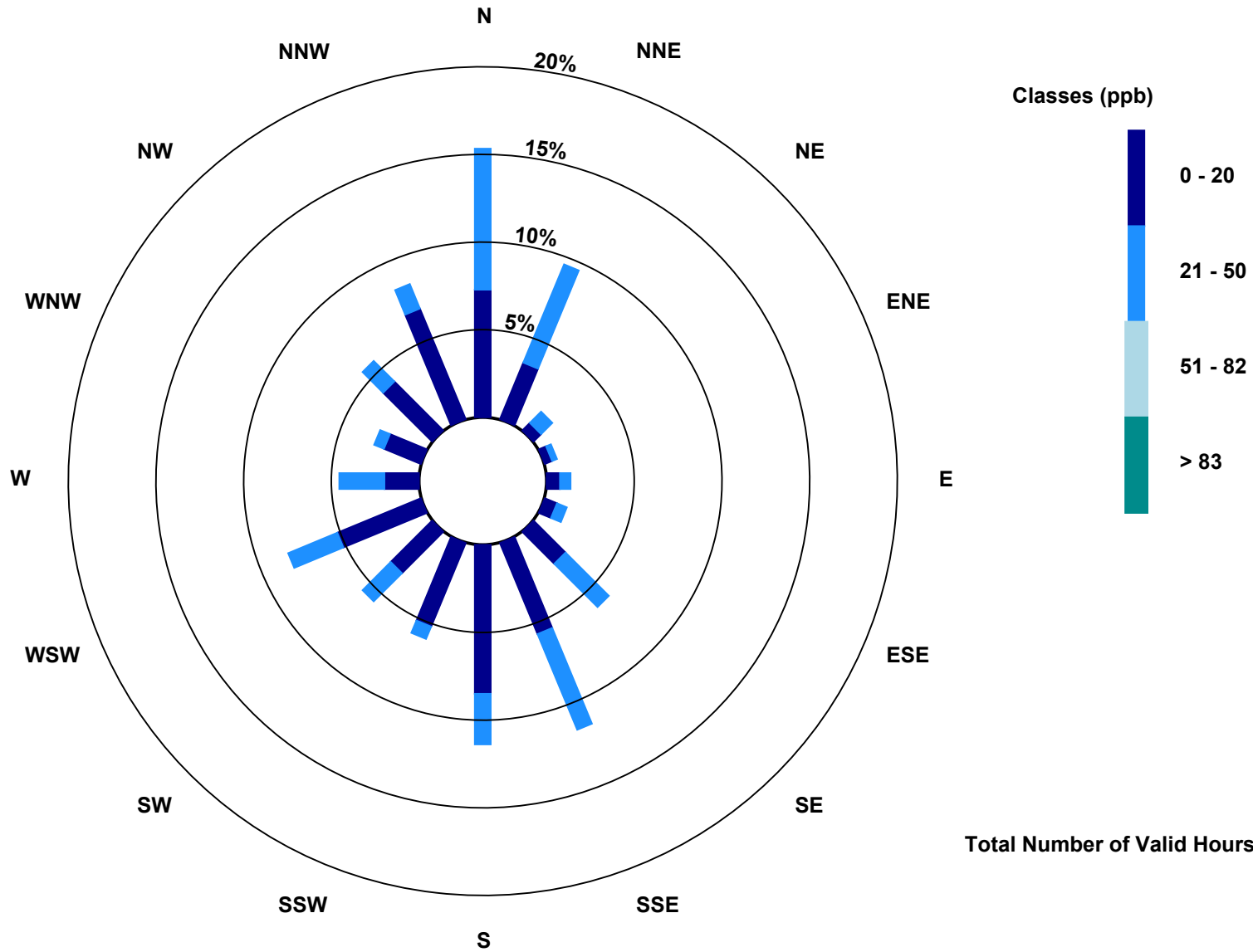
Total Number of Valid Hours: 659

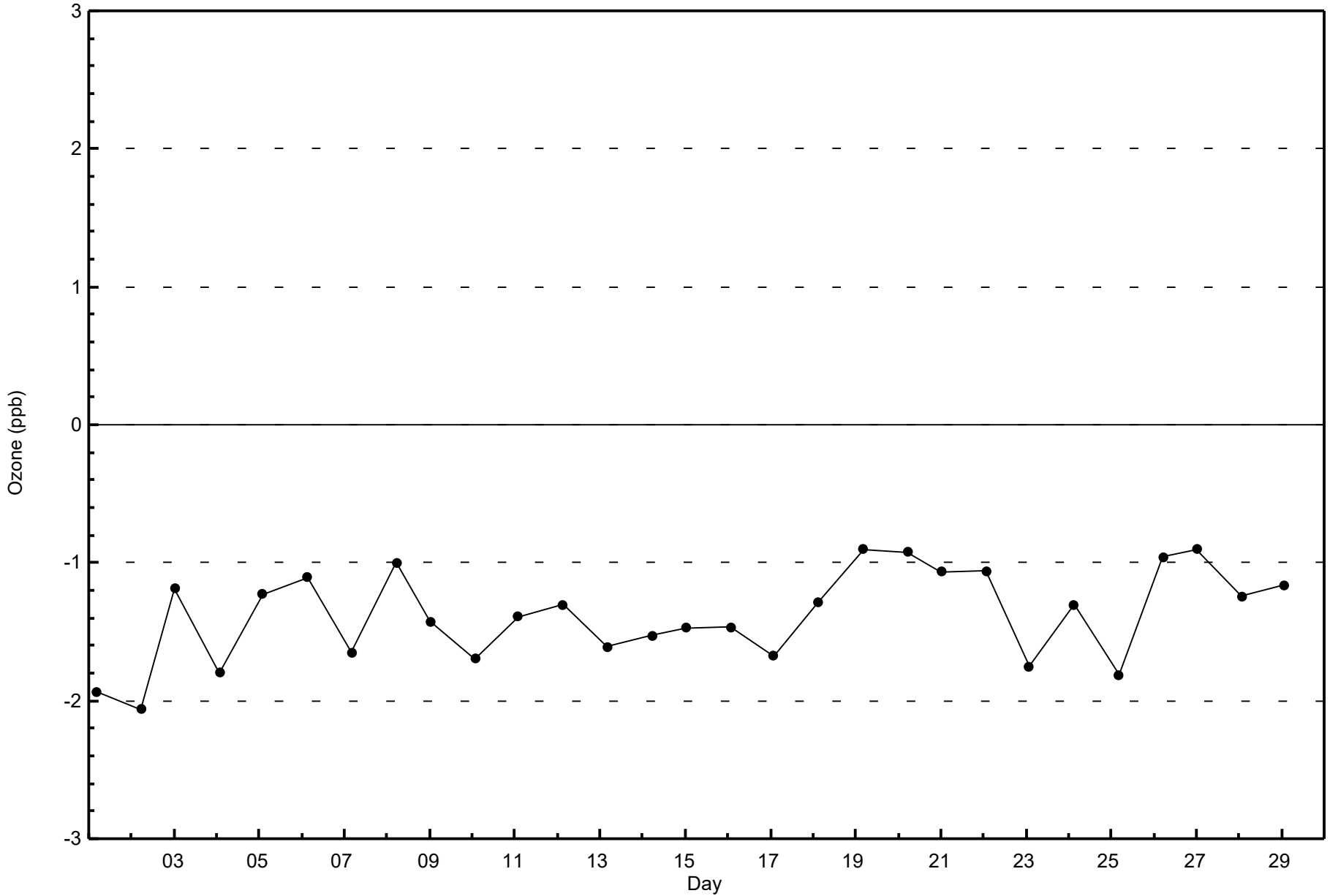
Total Number of Hours: 696

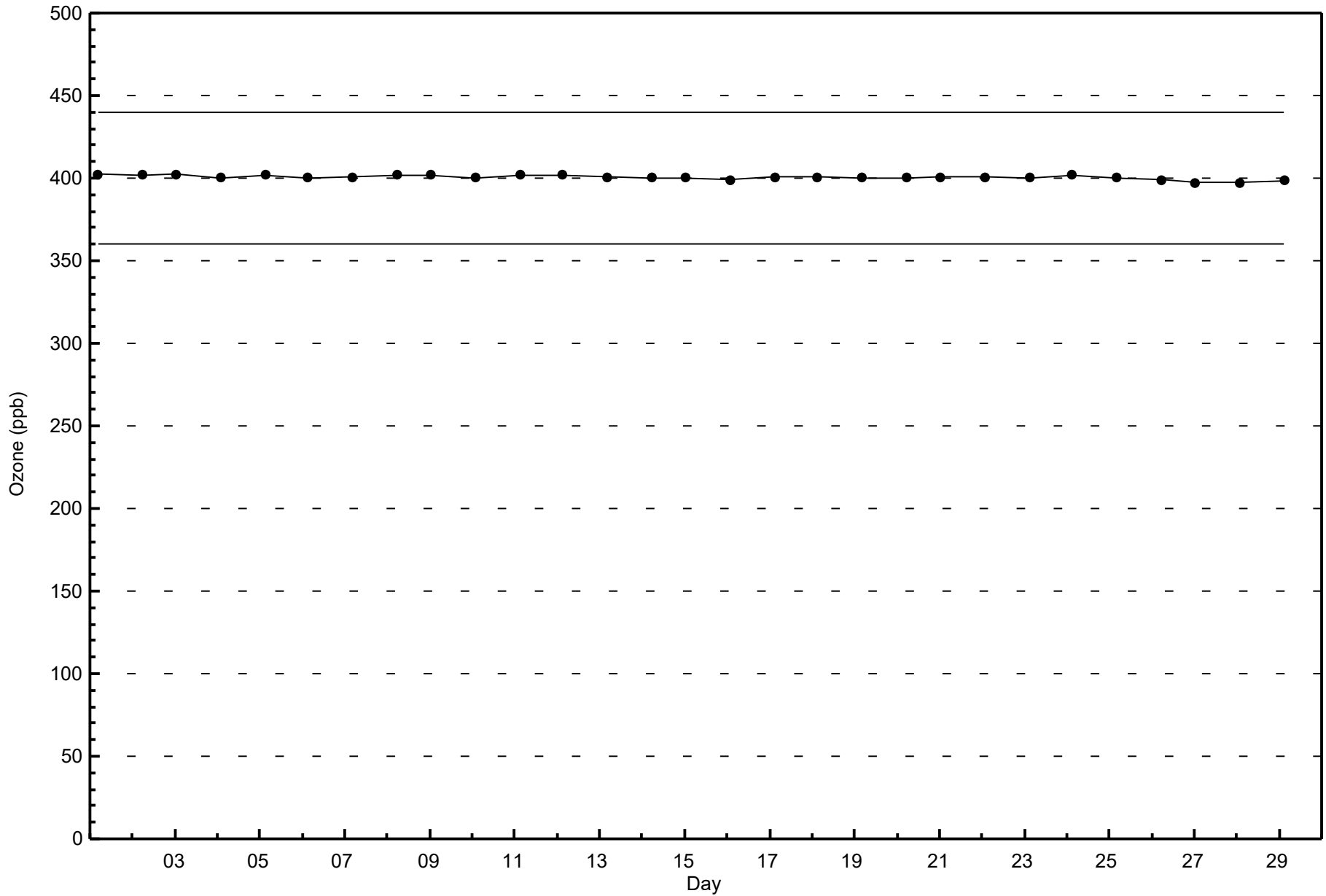


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Ozone (O₃) - ppb
Fort McKay South







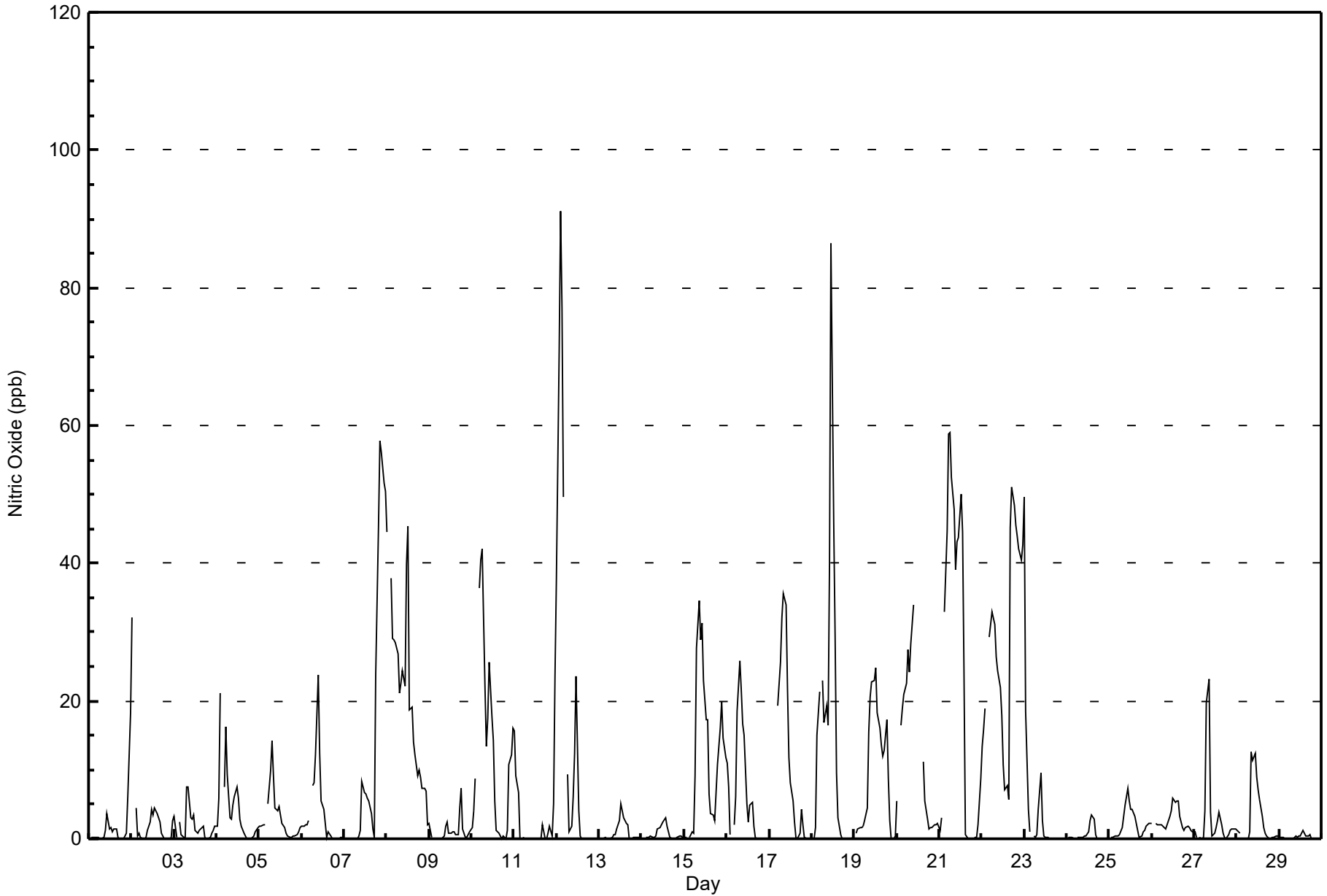


Maximum Value: 91.2 ppb on Feb 12 03:00																				Maximum Daily Average: 28.4 ppb on Feb 22					Hours in Service: 696	
Minimum Value: 0.0 ppb on Feb 1 18:00																				Minimum Daily Average: 0.2 ppb on Feb 29					Hours of Data: 662	
Maximum Diurnal Average: 12.6 ppb at hour 12																				Minimum Diurnal Average: 2.9 ppb at hour 16					Hours of Missing Data: 34	
Monthly Average: 7.59 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 1.6 Q ₃ = 7.6 P ₉₀ = 24.3 P ₉₉ = 56.8					Hours of Calibration: 34	
																									Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	Z	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.2	1.3	3.7	1.4	1.6	1.0	1.5	1.4	0.2	0.0	0.0	0.0	0.4	0.8	6.2	18.3	1.7	18.3
2-Feb	32.1	Z	4.5	0.5	0.8	0.2	0.1	0.1	0.2	1.2	2.4	4.3	3.4	4.5	3.8	3.0	2.4	0.9	0.1	0.1	0.1	0.1	0.2	2.6	2.9	32.1
3-Feb	3.4	0.1	Z	2.5	0.6	0.2	0.2	7.5	7.6	3.1	2.9	3.6	1.3	0.8	1.3	1.4	1.7	0.1	0.0	0.0	0.2	0.7	1.3	1.7	1.8	7.6
4-Feb	1.8	6.0	21.2	Z	7.5	16.3	9.3	3.1	2.9	4.8	6.0	7.6	5.9	2.9	1.8	0.9	0.3	0.0	0.0	0.1	0.3	0.5	1.1	1.7	4.4	21.2
5-Feb	1.7	1.9	1.9	2.0	Z	5.1	9.9	14.3	9.2	4.5	4.0	4.6	3.4	2.2	1.7	0.9	0.4	0.1	0.2	0.3	0.4	0.5	1.1	1.7	3.1	14.3
6-Feb	1.8	1.9	2.0	2.1	2.6	Z	7.7	8.1	12.2	23.8	12.5	5.5	4.2	2.3	0.2	1.1	0.4	0.0	0.0	0.0	0.0	0.1	0.2	3.9	23.8	
7-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.2	8.4	6.8	6.6	5.9	5.6	3.6	1.5	0.1	23.8	45.4	57.8	56.2	51.6	50.4	14.1	57.8
8-Feb	44.5	Z	37.8	29.0	28.8	28.4	26.9	21.2	22.7	24.3	22.1	39.9	45.3	18.7	19.1	14.1	12.2	9.2	10.1	9.0	7.3	7.4	6.8	2.1	21.2	45.3
9-Feb	2.2	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.5	1.9	2.5	0.9	0.8	1.1	1.1	0.7	0.7	4.4	7.3	1.3	0.3	0.3	0.6	0.9	1.2	7.3
10-Feb	1.6	4.1	8.8	Z	36.3	40.6	42.1	22.3	13.5	17.6	25.6	17.7	14.2	5.5	1.3	0.9	0.4	0.0	0.4	0.0	1.2	10.7	12.2	16.1	12.7	42.1
11-Feb	15.7	9.1	6.7	0.1	Z	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	2.0	0.0	0.0	0.9	1.9	0.4	5.2	23.6	2.9	23.6
12-Feb	37.7	70.9	91.2	77.2	49.7	Z	9.3	1.0	1.8	6.0	12.4	23.6	4.2	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	16.8	91.2	
13-Feb	Z	0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.5	0.6	1.4	2.6	5.1	4.1	3.0	2.1	2.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	1.0	5.1
14-Feb	0.0	Z	0.2	0.2	0.3	0.3	0.2	0.1	0.5	1.3	1.7	2.0	2.4	3.0	1.8	1.0	0.1	0.0	0.0	0.0	0.3	0.4	0.4	0.3	0.7	3.0
15-Feb	0.2	0.2	Z	0.2	1.0	0.8	9.1	27.6	34.5	28.9	31.3	22.9	17.3	17.3	6.5	3.6	3.4	2.7	6.7	10.8	16.0	20.0	14.6	11.8	12.5	34.5
16-Feb	11.0	7.6	0.6	Z	2.1	6.0	18.5	25.9	21.6	16.7	15.1	5.1	2.4	4.9	5.2	1.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	25.9
17-Feb	0.0	0.0	0.0	0.0	Z	19.3	25.7	32.2	35.6	34.0	21.8	11.7	8.1	5.5	2.4	0.2	0.0	0.8	4.3	2.0	0.2	0.0	0.0	0.0	8.9	35.6
18-Feb	0.0	0.0	1.5	15.1	21.4	Z	22.9	16.9	19.4	16.6	40.1	86.4	46.0	29.3	9.6	3.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.1	14.3	86.4
19-Feb	Z	0.8	1.4	1.5	1.6	1.9	2.6	4.5	15.4	20.5	22.7	23.0	24.7	18.3	16.1	13.6	12.0	12.8	17.3	8.7	2.6	0.0	0.0	0.5	9.7	24.7
20-Feb	5.6	Z	16.5	19.0	21.0	22.5	27.5	24.2	28.4	33.9	C	C	C	C	C	11.1	5.4	2.8	1.3	1.7	1.7	2.1	2.1	2.2	12.7	33.9
21-Feb	1.2	3.1	Z	33.0	44.8	58.9	58.9	52.5	47.7	39.0	43.2	43.7	49.9	44.6	24.3	0.6	0.0	0.0	0.0	0.0	0.3	0.2	2.1	8.7	24.2	58.9
22-Feb	13.4	15.8	18.9	Z	29.3	31.1	32.9	31.1	26.4	24.3	22.0	17.9	10.8	7.1	7.6	5.7	45.1	51.0	48.4	45.6	43.9	42.2	40.5	42.7	28.4	51.0
23-Feb	49.7	18.5	4.3	1.1	Z	0.4	0.2	0.6	4.2	9.6	2.7	0.4	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	4.0	49.7	
24-Feb	0.1	0.2	0.3	0.1	0.1	Z	0.2	0.2	0.3	0.2	0.3	0.4	1.0	2.7	3.5	2.9	0.7	0.0	0.0	0.0	0.0	0.1	0.2	0.6	3.5	
25-Feb	Z	0.3	0.3	0.4	0.4	0.4	0.7	1.6	3.3	4.8	7.2	5.6	4.2	4.2	3.3	2.2	1.1	0.2	0.3	1.0	1.3	1.9	2.2	2.3	2.1	7.2
26-Feb	2.3	Z	2.2	2.1	2.1	2.0	1.9	1.6	1.4	2.7	3.3	4.1	5.9	5.3	5.4	5.5	3.3	1.6	1.2	1.6	1.8	1.6	1.2	0.9	2.7	5.9
27-Feb	1.0	0.2	Z	0.1	0.0	0.2	4.1	19.7	23.3	3.8	0.3	0.7	1.6	2.7	3.8	2.0	0.9	0.2	0.0	0.6	1.2	1.4	1.4	1.5	3.1	23.3
28-Feb	1.2	1.1	0.8	Z	0.0	0.0	0.0	0.9	12.7	11.4	12.3	9.0	7.1	5.8	3.2	1.6	0.8	0.3	0.0	0.0	0.1	0.2	0.5	0.4	3.0	12.7
29-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.0	0.0	0.1	0.3	0.3	0.3	0.4	1.2	0.8	0.3	0.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.2
9.5 5.9 9.2 7.8 10.5 9.4 10.7 10.9 11.9 11.7 11.7 12.6 9.9 7.2 4.8 2.9 3.4 3.0 4.2 4.5 4.8 5.1 5.2 6.6																								Diurnal Average		
49.7 70.9 91.2 77.2 49.7 58.9 58.9 52.5 47.7 39.0 43.2 86.4 49.9 44.6 24.3 14.1 45.1 51.0 48.4 45.6 57.8 56.2 51.6 50.4																								Diurnal Maximum		
Z - zerospan C - Calibration																										



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Fort McKay South - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Fort McKay South - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	572	86.40	86.40
21 - 40	57	8.61	95.02
41 - 80	31	4.68	99.70
81 - 159	2	0.30	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Nitric Oxide (NO) - ppb
Fort McKay South - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	100	54	9	4	8	8	33	65	55	28	35	53	24	12	35	46	569
21 - 40	5	7	0	1	1	1	2	9	12	5	2	1	3	2	1	4	56
11 - 80	1	1	0	0	0	0	4	1	5	5	1	0	1	3	2	7	31
81 - 159	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	106	63	9	5	9	9	39	75	73	38	38	54	28	17	38	57	658

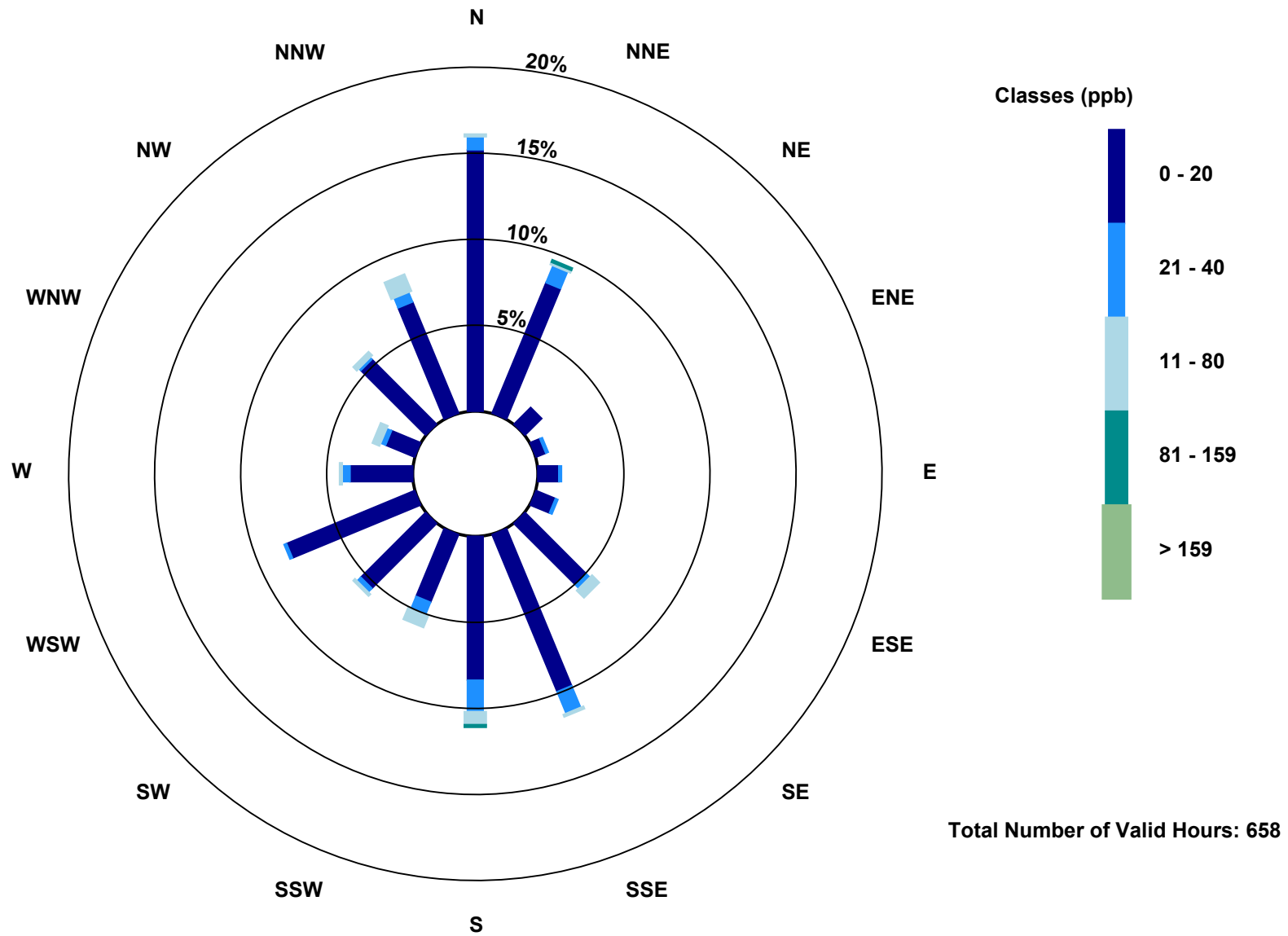
Total Number of Valid Hours: 658

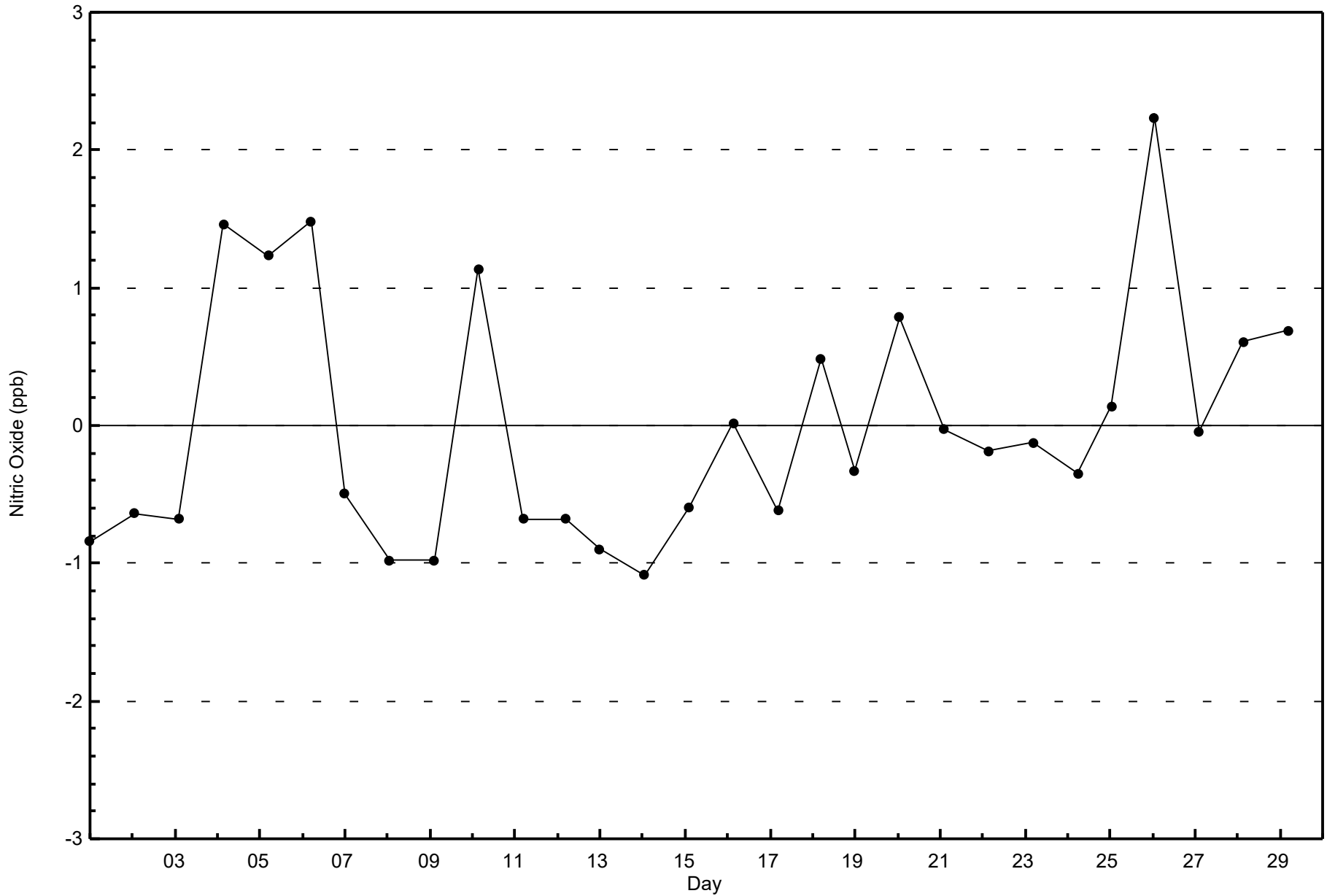
Total Number of Hours: 696

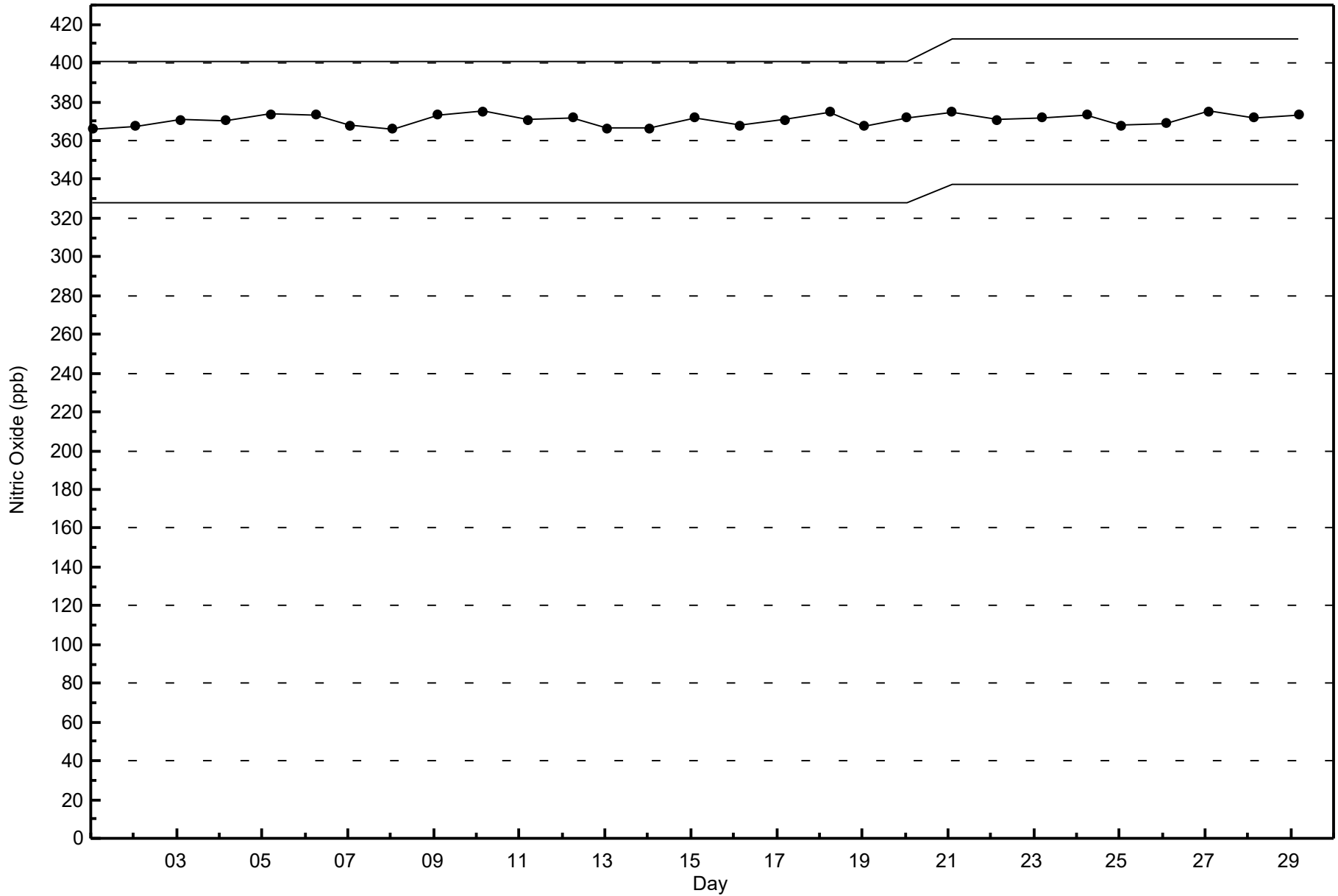


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Fort McKay South









Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb
Fort McKay South - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 37.4 ppb on Feb 18 12:00	Maximum Daily Average: 20.2 ppb on Feb 20		Hours of Data:	662
Minimum Value: 0.0 ppb on Feb 12 18:00	Minimum Daily Average: 4.8 ppb on Feb 24		Hours of Missing Data:	34
Maximum Diurnal Average: 15.0 ppb at hour 8	Minimum Diurnal Average: 8.3 ppb at hour 16		Hours of Calibration:	34
Monthly Average: 12.03 ppb	Percentiles: P ₁ = 0.3 P ₁₀ = 2.2 Q ₁ = 5.2 Median = 10.9 Q ₃ = 17.7 P ₉₀ = 23.6 P ₉₉ = 31.4		Percent Operational Time:	100.0

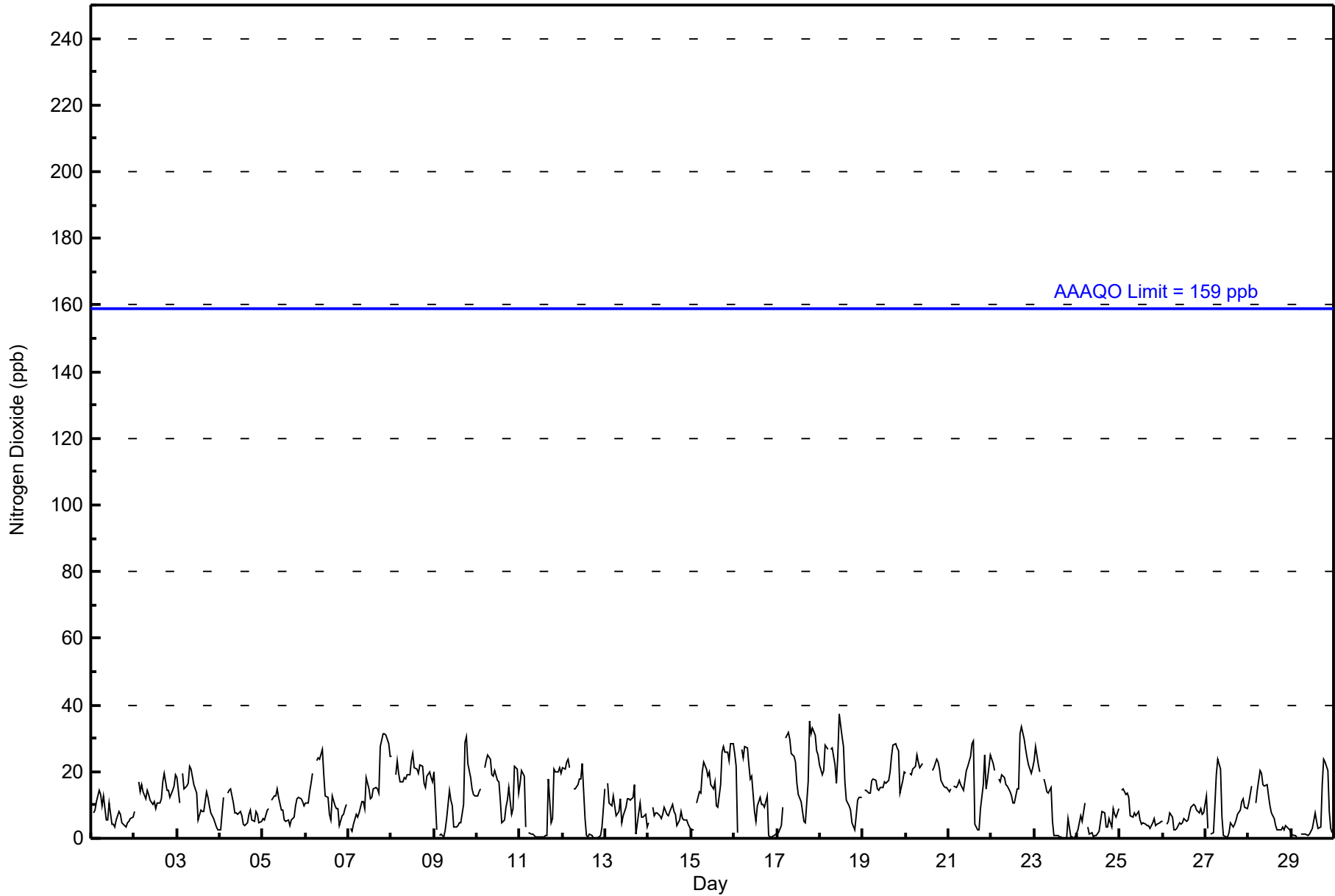
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	Z	7.8	8.3	11.2	14.4	13.1	9.9	12.7	5.7	5.4	10.7	4.3	4.2	3.2	5.5	8.1	7.3	4.7	4.3	3.5	4.5	5.2	6.1	6.3	7.2	14.4																							
2-Feb	8.0	Z	17.1	14.0	15.9	13.9	11.7	14.5	13.0	11.4	10.3	11.2	8.8	10.5	10.7	12.0	16.8	19.6	14.6	14.6	12.1	14.6	15.6	18.9	13.5	19.6																							
3-Feb	18.2	10.7	Z	19.4	15.0	15.6	16.6	21.6	20.8	16.2	14.8	13.7	5.6	8.5	7.9	8.1	13.8	12.1	9.6	7.6	6.1	4.5	3.2	2.4	11.8	21.6																							
4-Feb	2.7	7.6	12.2	Z	13.4	14.3	14.7	10.6	7.8	7.7	7.3	8.2	6.6	4.4	4.0	4.6	7.1	8.6	5.5	5.2	7.9	7.4	4.8	5.2	7.7	14.7																							
5-Feb	5.8	5.4	8.6	8.9	Z	11.5	12.5	12.9	14.8	12.4	8.5	8.5	5.6	5.2	5.6	4.0	5.5	6.4	9.9	12.0	12.4	11.8	10.9	9.7	9.1	14.8																							
6-Feb	10.4	10.7	13.9	16.4	19.4	Z	23.5	24.0	23.7	26.6	19.1	12.7	12.1	7.2	5.7	12.5	9.7	9.0	8.9	3.8	6.8	7.2	8.8	10.2	13.1	26.6																							
7-Feb	Z	2.8	2.3	4.1	7.0	6.5	7.7	10.9	11.0	8.8	18.1	14.7	11.8	12.1	14.8	15.1	14.9	13.6	27.5	31.3	31.5	30.9	28.5	24.4	15.2	31.5																							
8-Feb	24.7	Z	19.2	23.4	19.5	17.1	17.1	18.4	17.6	19.1	19.0	23.1	25.4	21.0	20.7	19.7	22.0	21.8	16.4	15.1	18.7	19.8	18.2	16.8	19.7	25.4																							
9-Feb	19.9	2.5	Z	0.8	1.1	0.6	2.7	5.8	14.2	11.3	9.8	3.2	3.2	4.0	4.8	4.8	10.2	29.0	30.4	22.3	18.1	14.8	13.0	12.8	10.4	30.4																							
10-Feb	12.7	13.8	14.9	Z	21.3	23.1	25.2	23.6	19.1	18.7	20.5	17.4	16.8	11.6	4.5	5.4	9.2	11.3	15.2	7.2	8.9	21.7	20.8	13.6	15.5	25.2																							
11-Feb	16.5	20.4	18.5	3.2	Z	1.7	1.1	1.1	0.8	0.6	0.5	0.5	0.5	0.6	0.7	1.0	17.9	4.5	5.8	20.8	20.1	20.1	21.0	19.6	8.6	21.0																							
12-Feb	21.0	20.9	22.9	23.8	21.3	Z	14.8	14.8	16.2	17.7	18.0	22.3	6.1	0.7	0.4	1.1	0.9	0.0	0.0	0.0	0.5	1.0	3.5	14.7	10.5	23.8																							
13-Feb	Z	16.6	10.8	9.9	12.8	9.6	6.8	8.0	11.7	4.7	6.8	9.4	12.0	11.9	11.3	12.2	16.2	1.3	7.6	10.7	6.4	6.3	7.1	3.6	9.3	16.6																							
14-Feb	4.6	Z	9.4	6.7	7.5	7.6	6.9	6.0	7.3	9.3	7.3	6.7	7.9	10.0	7.9	7.0	4.0	5.7	7.9	5.9	5.6	5.3	4.2	3.4	6.7	10.0																							
15-Feb	2.7	2.6	Z	10.4	14.1	13.6	20.0	22.9	20.8	18.8	19.8	16.0	14.8	16.8	9.8	9.5	16.1	25.7	27.6	26.0	25.7	23.1	28.5	28.5	18.0	28.5																							
16-Feb	25.3	21.8	1.6	Z	26.8	24.2	27.6	27.0	22.2	17.6	18.6	8.0	4.9	9.7	12.2	10.3	10.1	9.5	12.5	0.9	0.3	0.5	0.9	1.1	12.8	27.6																							
17-Feb	1.2	1.9	3.7	9.2	Z	30.2	31.6	29.6	25.3	24.7	23.0	16.5	13.2	11.1	7.9	4.9	4.5	16.9	35.2	31.5	32.9	31.1	26.3	24.8	19.0	35.2																							
18-Feb	22.1	19.1	20.3	27.9	26.5	Z	26.7	27.3	21.9	16.4	24.8	37.4	30.5	27.4	16.9	11.4	9.8	8.5	4.5	2.7	6.8	11.3	12.3	12.1	18.5	37.4																							
19-Feb	Z	14.5	14.4	13.4	13.6	17.3	17.9	17.3	14.8	14.4	15.4	15.4	17.1	16.5	17.5	19.8	24.6	27.8	28.5	27.0	26.1	13.7	17.3	19.9	18.4	28.5																							
20-Feb	19.6	Z	19.5	19.1	20.6	21.5	24.8	23.0	21.1	22.3	C	C	C	C	C	20.4	21.0	23.9	22.8	20.7	17.5	15.6	15.4	15.2	20.2	24.8																							
21-Feb	14.1	15.0	Z	15.8	15.4	16.1	17.2	15.9	14.5	17.4	20.2	21.7	24.7	28.5	29.4	4.3	2.5	2.5	9.0	15.9	25.2	14.8	17.7	25.0	16.6	29.4																							
22-Feb	23.9	22.3	20.5	Z	17.7	16.8	18.9	18.3	16.0	15.5	13.9	12.7	10.8	10.7	15.0	14.7	31.4	33.3	29.5	26.8	24.0	22.1	19.6	21.1	19.8	33.3																							
23-Feb	23.3	27.6	22.0	19.9	Z	18.0	16.2	14.1	13.5	15.4	5.0	0.9	0.8	1.0	0.4	0.3	0.0	0.0	0.2	6.1	0.5	0.3	0.2	0.6	8.1	27.6																							
24-Feb	2.4	4.8	6.8	5.2	10.7	Z	3.2	1.4	1.9	0.4	0.9	0.9	2.3	5.2	8.1	7.7	3.6	3.4	5.8	3.6	8.8	7.2	6.4	8.9	4.8	10.7																							
25-Feb	Z	14.3	14.9	13.2	13.4	12.4	6.6	6.2	7.8	6.6	8.2	5.4	4.1	4.5	4.3	3.9	3.7	2.8	4.7	5.8	3.7	4.3	4.5	5.2	7.0	14.9																							
26-Feb	5.0	Z	4.4	5.2	7.8	6.3	2.4	2.7	3.1	4.6	4.3	4.6	5.9	5.0	5.5	7.6	9.3	10.1	9.9	8.3	7.8	8.9	7.2	7.7	6.2	10.1																							
27-Feb	12.5	3.1	Z	1.1	1.7	10.0	19.1	23.9	20.7	6.3	0.7	0.5	0.5	1.6	4.6	3.5	4.1	5.6	7.0	8.5	11.2	11.9	9.5	9.1	7.7	23.9																							
28-Feb	10.4	13.0	15.5	Z	10.7	14.3	20.3	19.6	16.3	15.7	16.1	12.5	9.8	7.8	6.1	3.8	2.7	2.7	2.4	3.5	2.5	3.8	2.8	2.4	9.3	20.3																							
29-Feb	1.2	0.7	0.7	0.6	Z	1.1	1.1	1.4	1.1	1.0	1.1	2.2	2.9	7.7	5.2	3.0	3.3	16.0	23.7	22.9	20.4	8.0	2.8	1.5	5.6	23.7																							
																								12.8	11.7	12.6	11.8	14.5	13.5	14.6	15.0	14.0	12.7	12.2	11.1	9.6	9.4	8.8	8.3	10.4	11.6	13.3	12.8	12.9	12.0	11.6	11.9	Diurnal Average	
																								25.3	27.6	22.9	27.9	26.8	30.2	31.6	29.6	25.3	26.6	24.8	37.4	30.5	28.5	29.4	20.4	31.4	33.3	35.2	31.5	32.9	31.1	28.5	28.5	Diurnal Maximum	

Z - zerospan C - Calibration
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Fort McKay South - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Fort McKay South - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	548	82.78	82.78
21 - 40	114	17.22	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Fort McKay South - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	96	58	8	4	9	8	34	64	46	26	29	50	27	13	34	39	545
21 - 40	10	5	1	1	0	1	5	11	27	12	9	4	1	4	4	18	113
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	106	63	9	5	9	9	39	75	73	38	38	54	28	17	38	57	658

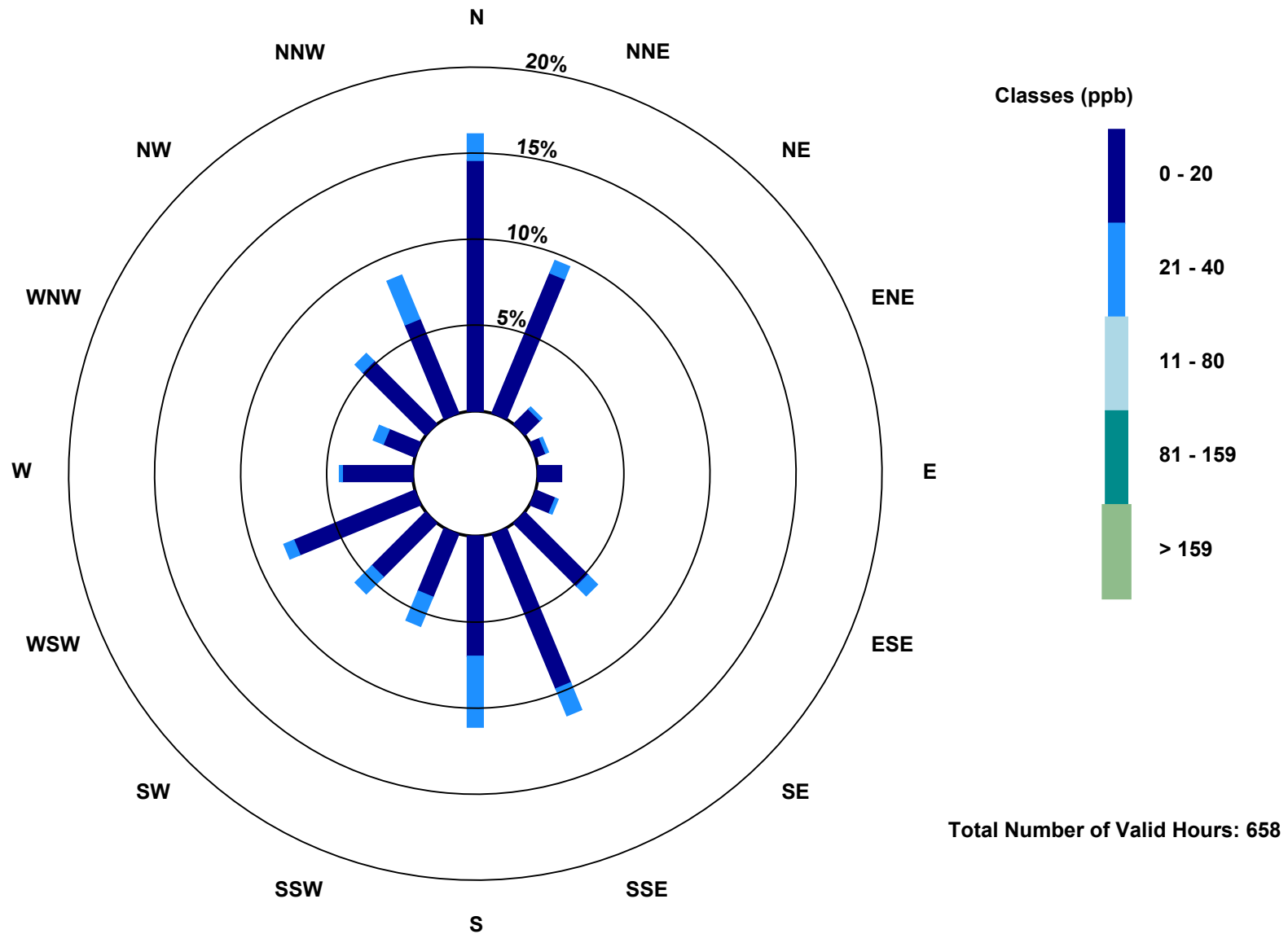
Total Number of Valid Hours: 658

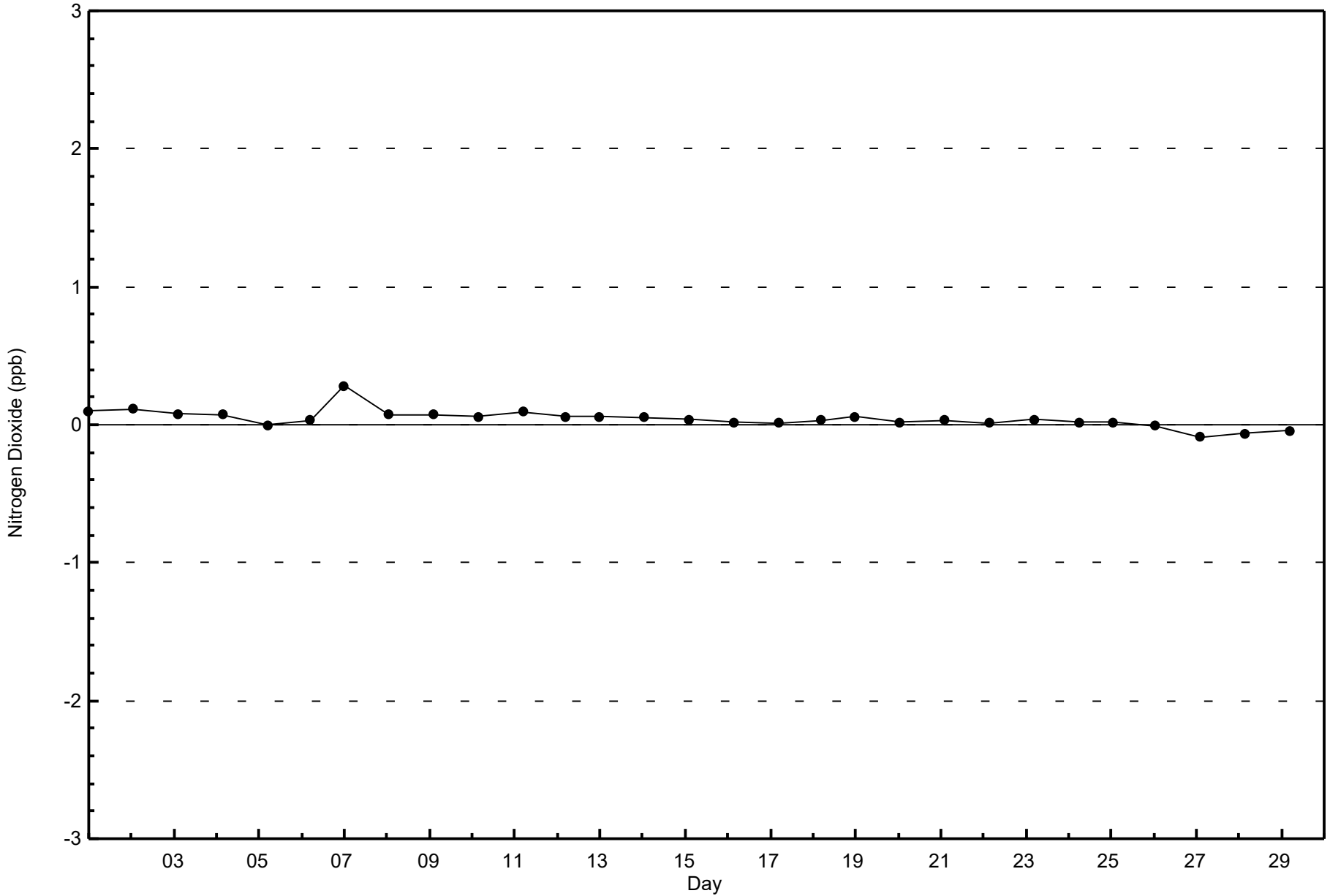
Total Number of Hours: 696

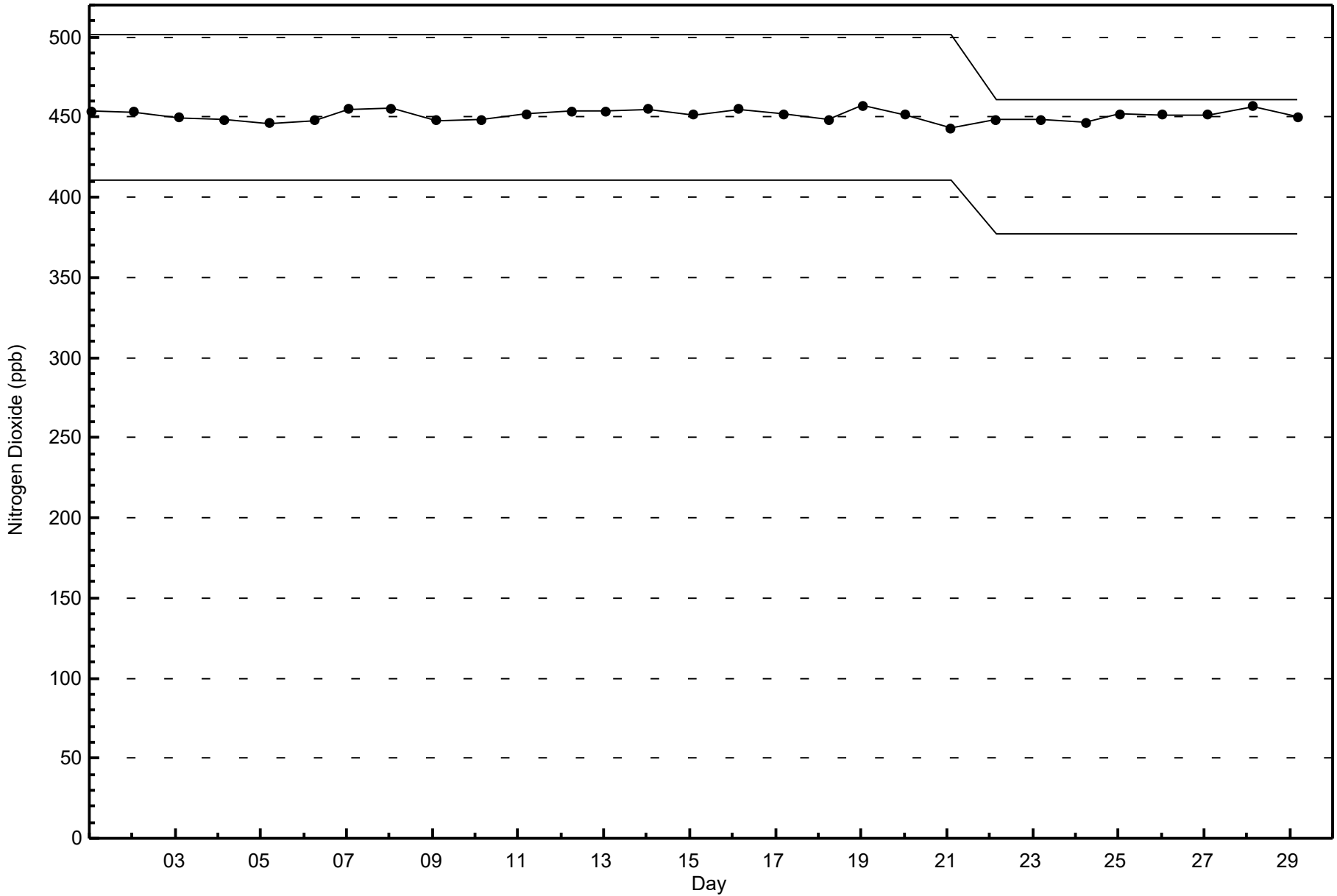


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Fort McKay South









Wood Buffalo Environmental Association
Summary of Hour Averages

Nitrogen Oxides (NO_x) - ppb
Fort McKay South - February 2024

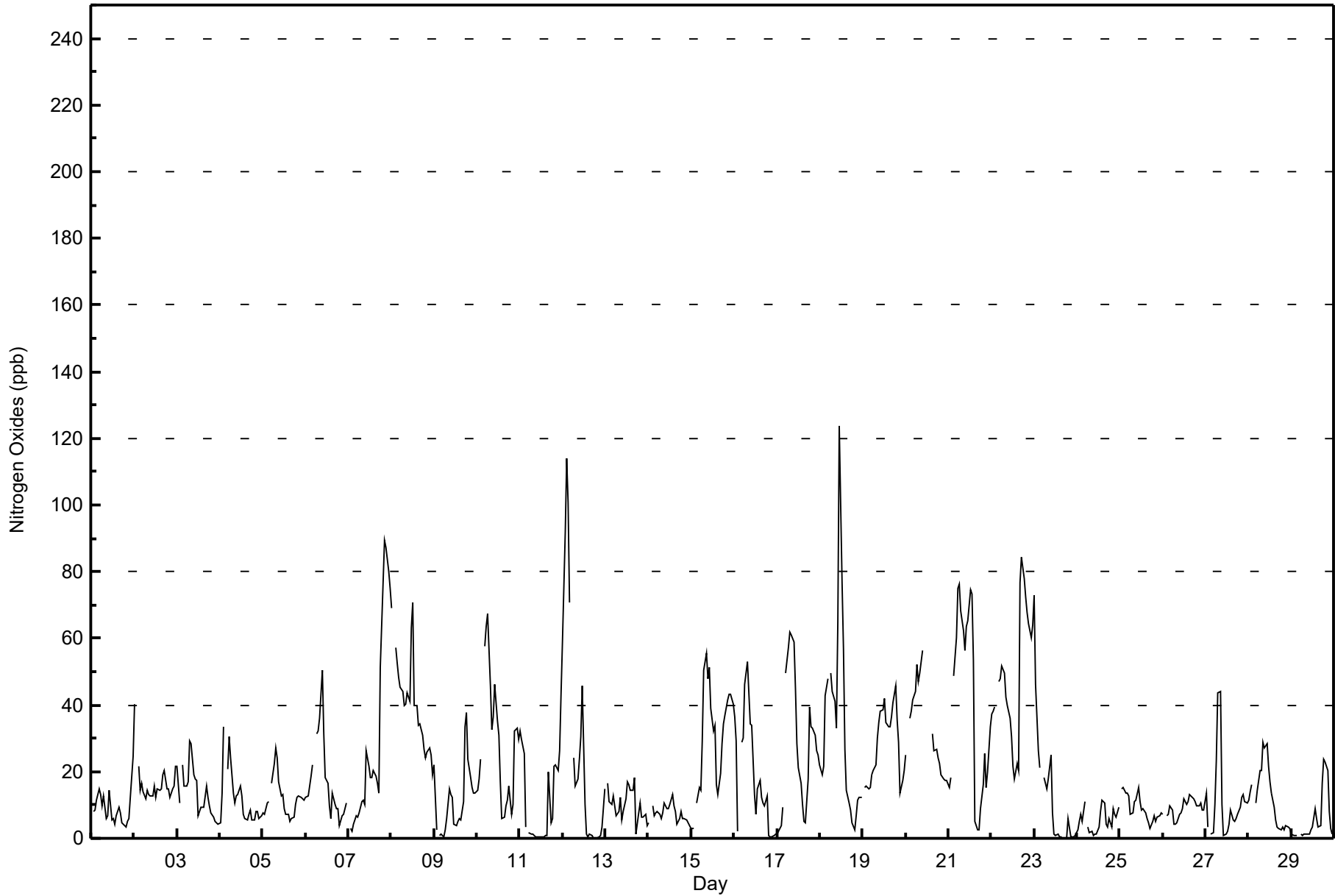
Maximum Value: 123.8 ppb on Feb 18 12:00 Maximum Daily Average: 48.2 ppb on Feb 22 Minimum Value: 0.0 ppb on Feb 12 18:00 Minimum Daily Average: 5.3 ppb on Feb 24 Maximum Diurnal Average: 26.0 ppb at hour 8 Minimum Diurnal Average: 11.2 ppb at hour 16 Monthly Average: 19.61 ppb Percentiles: P ₁ = 0.2 P ₁₀ = 2.4 Q ₁ = 6.4 Median = 12.9 Q ₃ = 26.7 P ₉₀ = 46.1 P ₉₉ = 81.7																						Hours in Service:	696																										
																						Hours of Data:	662																										
																						Hours of Missing Data:	34																										
																						Hours of Calibration:	34																										
																						Percent Operational Time:	100.0																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	Z	7.9	8.5	11.4	14.6	13.2	9.9	12.7	5.9	6.7	14.4	5.7	5.8	4.2	7.0	9.5	7.5	4.7	4.3	3.5	4.9	6.0	12.3	24.6	8.9	24.6																							
2-Feb	40.1	Z	21.6	14.5	16.7	14.1	11.8	14.6	13.2	12.6	12.7	15.5	12.2	15.0	14.5	15.0	19.2	20.5	14.7	14.7	12.2	14.7	15.8	21.5	16.4	40.1																							
3-Feb	21.6	10.8	Z	21.9	15.6	15.8	16.8	29.1	28.4	19.3	17.7	17.3	6.9	9.3	9.2	9.5	15.5	12.2	9.6	7.6	6.3	5.2	4.5	4.1	13.7	29.1																							
4-Feb	4.5	13.6	33.4	Z	20.9	30.6	24.0	13.7	10.7	12.5	13.3	15.8	12.5	7.3	5.8	5.5	7.4	8.6	5.5	5.3	8.2	7.9	5.9	6.9	12.2	33.4																							
5-Feb	7.5	7.3	10.5	10.9	Z	16.6	22.4	27.2	24.0	16.9	12.5	13.1	9.0	7.4	7.3	4.9	5.9	6.5	10.1	12.3	12.8	12.3	12.0	11.4	12.2	27.2																							
6-Feb	12.2	12.6	15.9	18.5	22.0	Z	31.2	32.1	35.9	50.4	31.6	18.2	16.3	9.5	5.9	13.6	10.1	9.0	8.9	3.8	6.8	7.2	8.9	10.4	17.0	50.4																							
7-Feb	Z	2.8	2.3	4.1	7.0	6.5	7.7	10.9	11.3	10.0	26.5	21.5	18.4	18.0	20.4	18.7	16.4	13.7	51.3	76.7	89.3	87.1	80.1	74.8	29.4	89.3																							
8-Feb	69.2	Z	57.0	52.4	48.3	45.5	44.0	39.6	40.3	43.4	41.1	63.0	70.7	39.7	39.8	33.8	34.2	31.0	26.5	24.1	26.0	27.2	25.0	18.9	40.9	70.7																							
9-Feb	22.1	2.6	Z	0.8	1.1	0.6	2.7	5.8	14.7	13.2	12.3	4.1	4.0	5.1	5.9	5.5	10.9	33.4	37.7	23.6	18.4	15.1	13.6	13.7	11.6	37.7																							
10-Feb	14.3	17.9	23.7	Z	57.6	63.7	67.3	45.9	32.6	36.3	46.1	35.1	31.0	17.1	5.8	6.3	9.6	11.3	15.6	7.2	10.1	32.4	33.0	29.7	28.2	67.3																							
11-Feb	32.2	29.5	25.2	3.3	Z	1.8	1.2	1.1	0.8	0.6	0.6	0.6	0.6	0.6	0.7	1.0	19.9	4.5	5.8	21.7	22.0	20.5	26.2	43.2	11.5	43.2																							
12-Feb	58.7	91.8	114.1	101.0	71.0	Z	24.1	15.8	18.0	23.7	30.4	45.9	10.3	1.1	0.5	1.1	0.9	0.0	0.0	0.0	0.5	1.0	3.5	14.8	27.3	114.1																							
13-Feb	Z	16.7	10.9	10.1	12.8	9.6	6.8	8.1	12.2	5.3	8.2	12.0	17.1	16.0	14.3	14.3	18.3	1.3	7.7	10.8	6.5	6.4	7.2	3.7	10.3	18.3																							
14-Feb	4.6	Z	9.6	6.9	7.8	7.9	7.1	6.1	7.8	10.6	9.0	8.7	10.3	13.0	9.7	8.0	4.1	5.7	7.9	5.9	5.9	5.7	4.6	3.7	7.4	13.0																							
15-Feb	2.9	2.8	Z	10.6	15.1	14.4	29.1	50.5	55.3	47.7	51.1	38.9	32.1	34.1	16.3	13.1	19.5	28.4	34.3	36.8	41.7	43.1	43.1	40.3	30.5	55.3																							
16-Feb	36.3	29.4	2.2	Z	28.9	30.2	46.1	52.9	43.8	34.3	33.7	13.1	7.3	14.6	17.4	12.2	10.4	9.5	12.5	0.9	0.3	0.5	0.9	1.1	19.1	52.9																							
17-Feb	1.2	1.9	3.7	9.2	Z	49.5	57.3	61.8	60.9	58.7	44.8	28.2	21.3	16.6	10.3	5.1	4.5	17.7	39.5	33.5	33.1	31.1	26.3	24.8	27.9	61.8																							
18-Feb	22.1	19.1	21.8	43.0	47.9	Z	49.6	44.2	41.3	33.0	64.9	123.8	76.5	56.7	26.5	14.4	10.5	8.5	4.5	2.7	6.8	11.3	12.3	12.2	32.8	123.8																							
19-Feb	Z	15.3	15.8	14.9	15.2	19.2	20.5	21.8	30.2	34.9	38.1	38.4	41.8	34.8	33.6	33.4	36.6	40.6	45.8	35.7	28.7	13.7	17.3	20.4	28.1	45.8																							
20-Feb	25.2	Z	36.0	38.1	41.6	44.0	52.3	47.2	49.5	56.2	C	C	C	C	C	31.5	26.4	26.7	24.2	22.4	19.2	17.7	17.5	17.4	32.9	56.2																							
21-Feb	15.3	18.1	Z	48.8	60.2	75.0	76.1	68.4	62.2	56.4	63.4	65.4	74.6	73.1	53.6	4.9	2.5	2.5	9.0	15.9	25.5	15.0	19.8	33.7	40.8	76.1																							
22-Feb	37.3	38.1	39.4	Z	47.0	47.9	51.8	49.4	42.4	39.8	35.9	30.6	21.6	17.8	22.6	20.4	76.5	84.3	77.9	72.4	67.9	64.3	60.1	63.8	48.2	84.3																							
23-Feb	73.0	46.1	26.3	21.0	Z	18.4	16.4	14.7	17.7	25.0	7.7	1.3	1.0	1.2	0.4	0.3	0.0	0.0	0.2	6.1	0.5	0.3	0.2	0.7	12.1	73.0																							
24-Feb	2.5	5.0	7.1	5.3	10.8	Z	3.4	1.6	2.2	0.6	1.2	1.3	3.3	7.9	11.6	10.6	4.3	3.4	5.8	3.6	8.8	7.2	6.5	9.1	5.3	11.6																							
25-Feb	Z	14.6	15.2	13.6	13.8	12.8	7.3	7.8	11.1	11.4	15.4	11.0	8.3	8.7	7.6	6.1	4.8	3.0	5.0	6.8	5.0	6.2	6.7	7.5	9.1	15.4																							
26-Feb	7.3	Z	6.6	7.3	9.9	8.3	4.3	4.3	4.5	7.3	7.6	8.7	11.8	10.3	10.9	13.1	12.6	11.7	11.1	9.9	9.6	10.5	8.4	8.6	8.9	13.1																							
27-Feb	13.5	3.3	Z	1.2	1.7	10.2	23.2	43.6	44.0	10.1	1.0	1.2	2.1	4.3	8.4	5.5	5.0	5.8	7.0	9.1	12.4	13.3	10.9	10.6	10.8	44.0																							
28-Feb	11.6	14.1	16.3	Z	10.7	14.3	20.3	20.5	29.0	27.1	28.4	21.5	16.9	13.6	9.3	5.4	3.5	3.0	2.4	3.5	2.6	4.0	3.3	2.8	12.4	29.0																							
29-Feb	1.3	0.8	0.8	0.7	Z	1.2	1.1	1.4	1.2	1.3	1.4	2.5	3.3	8.9	6.0	3.3	3.6	16.6	23.7	22.9	20.4	8.0	2.8	1.5	5.9	23.7																							
																								Diurnal Average																									
																								Diurnal Maximum																									
																								22.3	17.6	21.8	19.6	24.9	22.8	25.4	26.0	25.9	24.3	24.0	23.7	19.5	16.6	13.6	11.2	13.8	14.6	17.5	17.2	17.7	17.1	16.8	18.5		
																								73.0	91.8	114.1	101.0	71.0	75.0	76.1	68.4	62.2	58.7	64.9	123.8	76.5	73.1	53.6	33.8	76.5	84.3	77.9	76.7	89.3	87.1	80.1	74.8		

Z - zerospan C - Calibration



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Fort McKay South - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Fort McKay South - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	450	67.98	67.98
21 - 40	120	18.13	86.10
41 - 80	85	12.84	98.94
81 - 159	7	1.06	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Fort McKay South - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	85	52	7	3	7	5	26	51	35	19	24	45	24	9	28	29	449
21 - 40	14	7	2	1	1	3	8	14	17	9	10	8	0	2	6	16	118
11 - 80	7	3	0	1	1	1	5	10	20	8	4	1	4	6	4	9	84
81 - 159	0	1	0	0	0	0	0	0	1	2	0	0	0	0	0	3	7
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	106	63	9	5	9	9	39	75	73	38	38	54	28	17	38	57	658

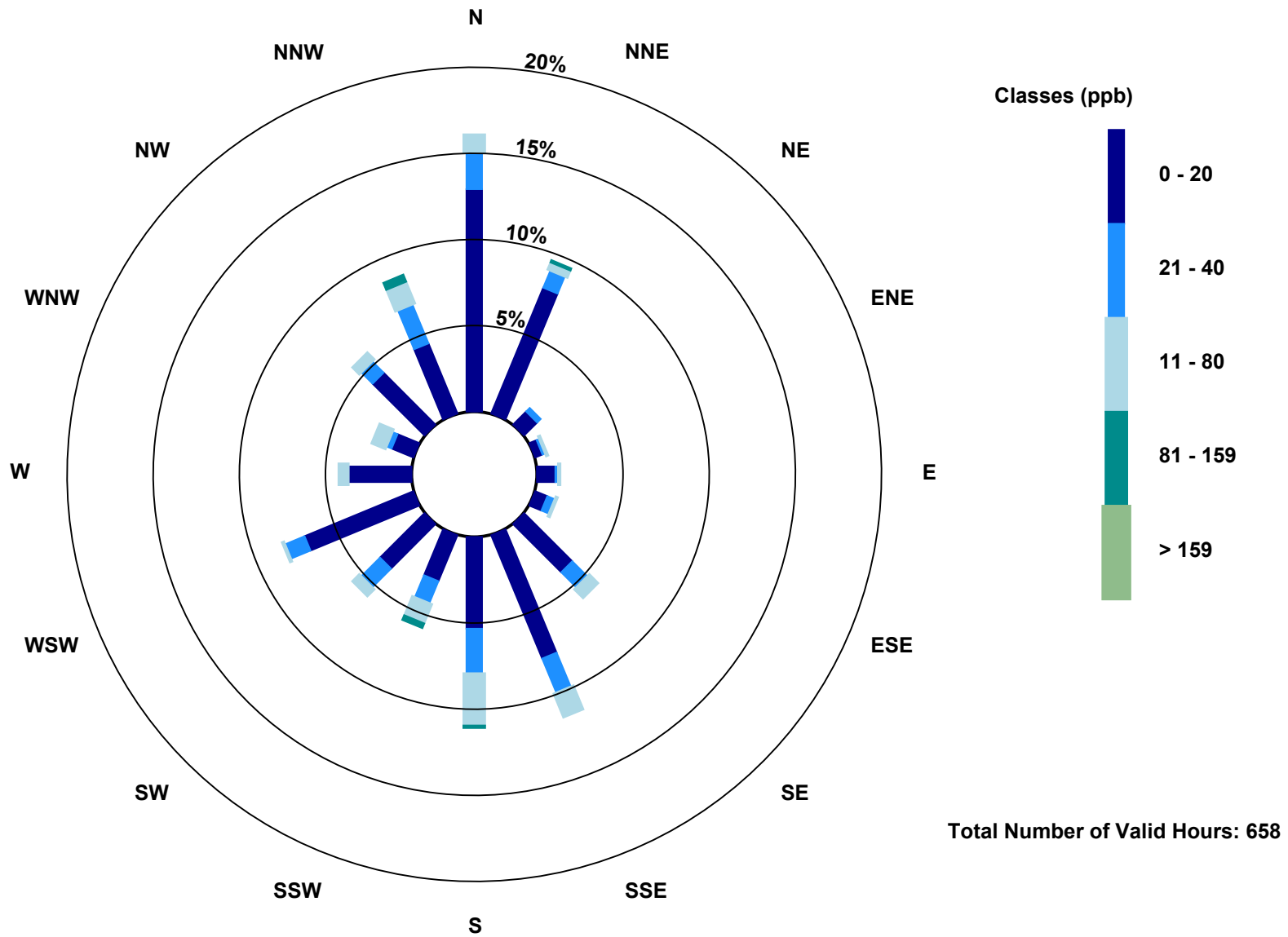
Total Number of Valid Hours: 658

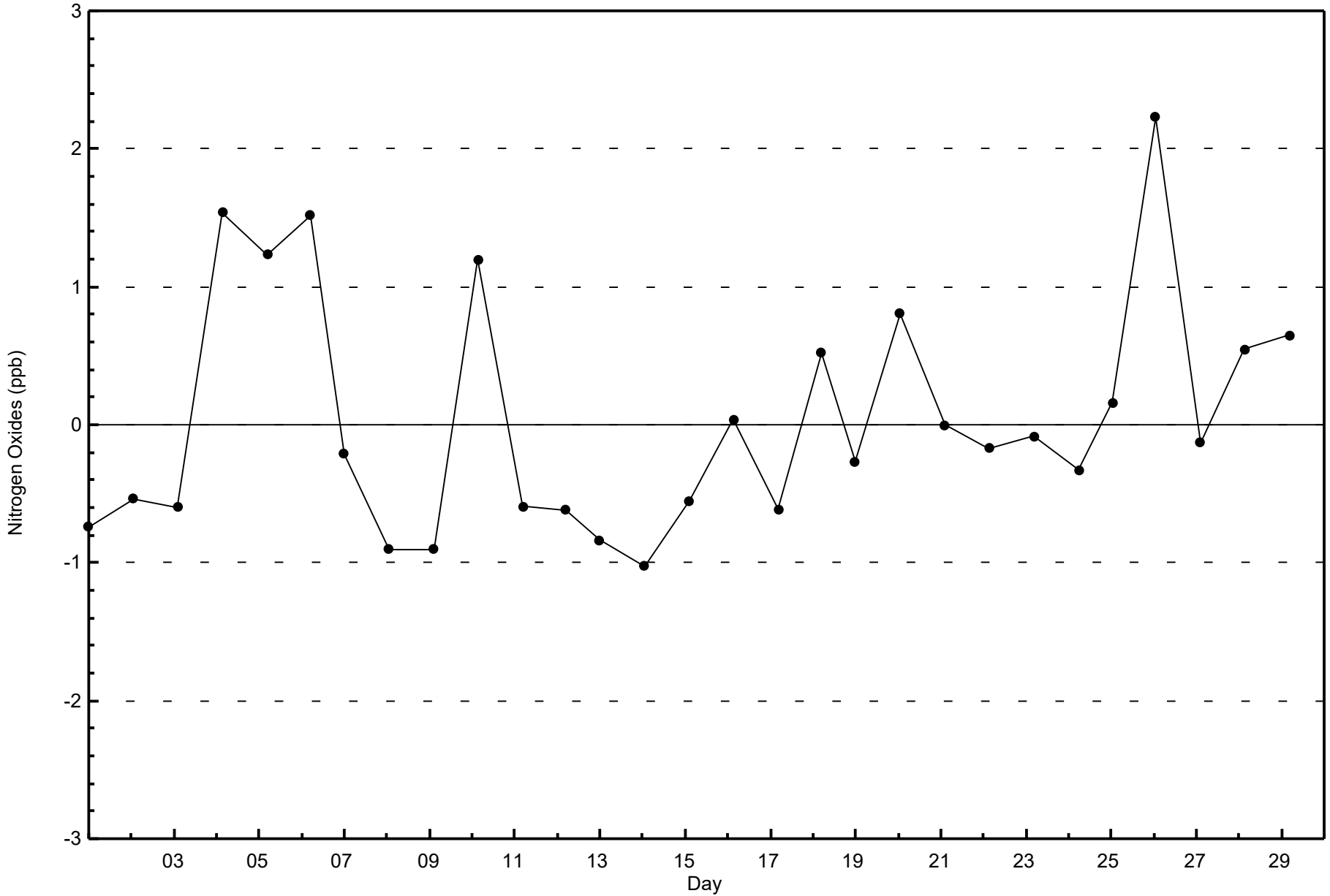
Total Number of Hours: 696

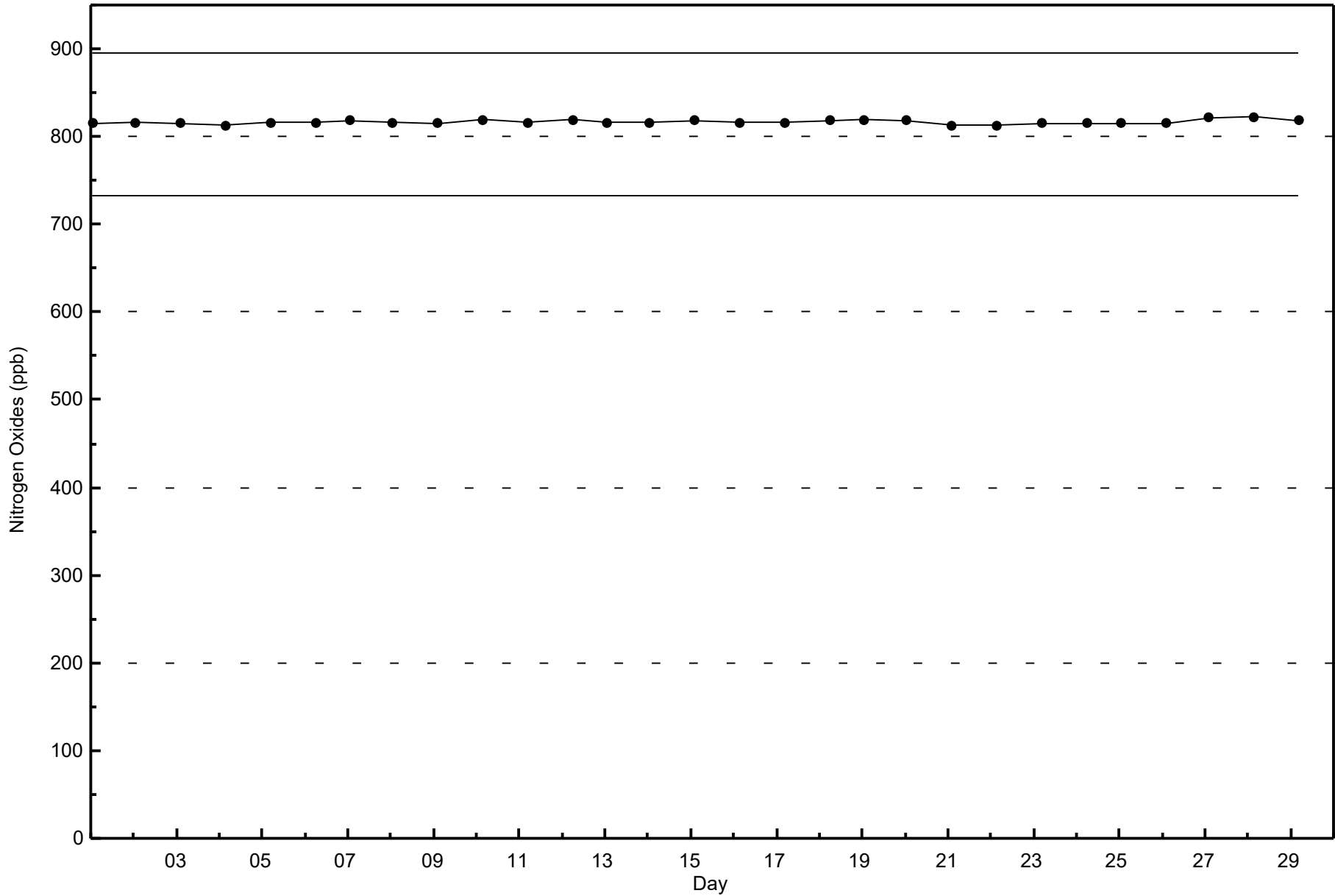


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Fort McKay South









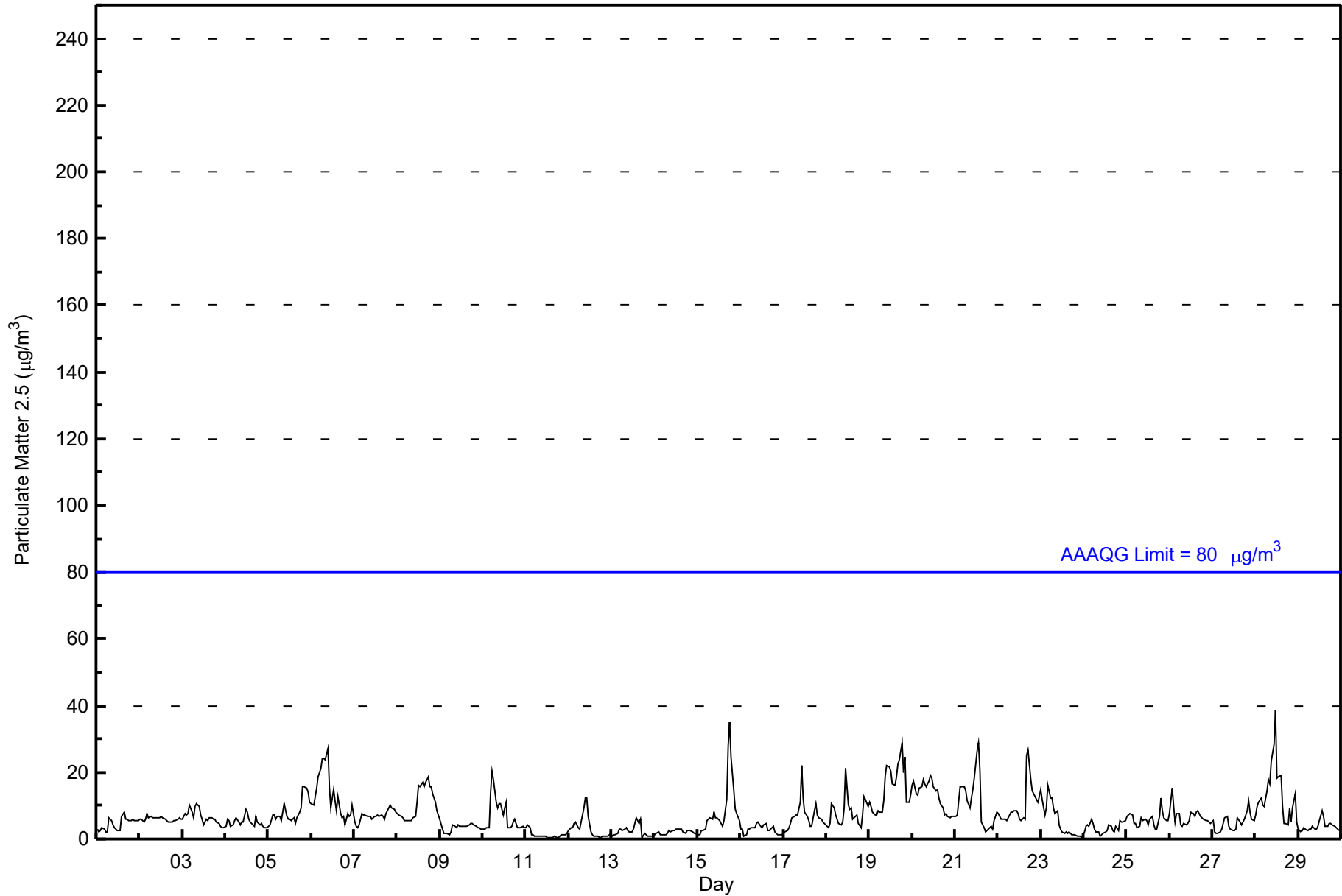
Wood Buffalo Environmental Association

Summary of Hour Averages

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Fort McKay South - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 38.6 µg/m ³ on Feb 28 12:00 Minimum Value: 0.4 µg/m ³ on Feb 11 16:00 Maximum Diurnal Average: 8.6 µg/m ³ at hour 12 Monthly Average: 6.90 µg/m ³		Maximum Daily Average: 15.3 µg/m ³ on Feb 19 Minimum Daily Average: 1.2 µg/m ³ on Feb 11 Minimum Diurnal Average: 5.5 µg/m ³ at hour 24 Percentiles: P ₁ = 0.5 P ₁₀ = 1.6 Q ₁ = 3.2 Median = 5.6 Q ₃ = 8.2 P ₉₀ = 14.7 P ₉₉ = 26.6		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	2.8	2.1	2.7	3.4	2.8	2.1	2.1	6.3	5.4	4.1	3.5	2.4	2.5	2.6	6.6	8.0	6.1	5.7	5.5	5.6	6.0	5.7	5.5	5.6	4.4	8.0																						
2-Feb	5.9	5.8	4.9	6.1	7.7	6.6	6.6	6.5	6.5	6.3	6.3	6.6	6.7	6.1	5.9	5.7	5.1	4.9	4.9	5.3	5.5	6.1	6.1	6.1	6.0	7.7																						
3-Feb	6.1	7.5	7.3	7.4	10.1	8.2	6.5	9.6	10.5	9.7	7.4	6.0	4.4	6.1	5.6	6.3	6.3	6.1	5.9	5.2	4.6	3.9	3.5	3.4	6.6	10.5																						
4-Feb	3.7	6.1	5.6	3.8	4.3	5.7	6.3	5.0	4.4	5.0	5.3	9.1	8.0	6.0	5.3	4.1	3.8	7.0	4.9	4.3	4.7	4.0	3.3	3.4	5.1	9.1																						
5-Feb	3.9	4.1	7.2	7.1	5.8	6.8	6.8	5.6	8.0	10.6	6.9	6.0	5.8	5.3	6.2	4.8	6.6	8.2	9.2	15.8	15.7	15.1	13.8	11.0	8.2	15.8																						
6-Feb	10.4	10.2	12.7	15.4	18.5	21.3	24.1	24.1	23.6	27.0	15.6	9.4	14.7	11.5	8.7	12.6	7.8	6.5	6.6	4.4	7.8	6.9	7.3	10.0	13.2	27.0																						
7-Feb	5.0	4.0	3.3	4.1	7.8	7.3	7.3	6.9	6.8	6.6	6.1	6.6	6.8	7.3	6.9	7.2	6.6	5.9	7.5	9.3	10.1	9.5	8.9	8.1	6.9	10.1																						
8-Feb	7.7	7.1	6.6	6.2	5.7	5.7	5.5	5.5	5.7	6.3	6.9	11.0	16.1	15.6	17.0	15.9	17.1	18.7	15.6	15.8	13.7	10.9	8.5	7.2	10.5	18.7																						
9-Feb	5.9	3.1	1.8	1.7	1.7	1.4	2.3	4.3	3.8	3.6	4.1	3.8	4.0	3.8	3.8	3.9	4.2	4.5	4.8	4.3	3.7	3.4	3.3	3.2	3.5	5.9																						
10-Feb	3.0	3.1	3.4	3.5	13.9	20.4	17.9	11.0	9.2	10.5	10.6	7.1	9.5	11.2	3.4	3.4	4.0	5.1	6.0	3.5	3.2	3.6	3.8	3.4	7.2	20.4																						
11-Feb	3.3	4.3	3.2	1.3	1.1	0.9	0.8	0.9	0.9	0.8	0.8	0.6	0.5	0.5	0.4	0.4	0.9	0.4	0.5	1.0	1.2	1.2	1.5	1.8	1.2	4.3																						
12-Feb	2.4	3.2	3.5	4.8	5.0	3.2	3.1	5.2	9.2	12.3	12.4	6.7	2.3	1.1	0.9	0.9	0.8	0.5	0.6	0.7	0.8	0.7	0.8	1.6	3.4	12.4																						
13-Feb	1.0	1.4	1.3	1.6	2.8	2.8	2.5	3.0	3.5	2.4	2.1	2.1	2.9	4.8	6.3	4.7	5.8	0.6	1.5	1.3	0.7	0.9	1.0	1.0	2.4	6.3																						
14-Feb	1.3	1.6	2.1	1.4	1.4	1.4	1.3	1.6	2.4	2.1	2.5	2.6	2.8	3.1	3.0	2.8	2.2	1.9	2.5	2.3	2.4	2.0	1.8	1.6	2.1	3.1																						
15-Feb	1.3	1.4	2.5	2.4	3.0	5.4	6.0	6.3	6.0	8.0	6.5	6.3	5.7	4.8	3.8	5.7	12.1	27.8	35.3	24.4	14.5	8.7	7.6	5.5	8.8	35.3																						
16-Feb	3.1	3.1	0.9	1.1	3.2	3.0	3.4	3.3	3.2	4.5	5.1	3.7	3.6	4.1	4.5	2.5	2.4	3.0	3.8	2.2	1.5	1.4	1.3	1.4	2.9	5.1																						
17-Feb	1.6	2.0	2.6	3.6	4.5	6.5	6.7	7.1	7.1	11.1	21.9	12.5	8.0	6.7	5.4	3.6	3.6	8.4	10.7	7.4	6.5	6.1	5.1	4.8	6.8	21.9																						
18-Feb	4.3	3.6	4.8	10.7	9.1	7.4	6.0	4.7	4.1	4.9	9.1	21.1	10.0	8.9	9.3	6.1	6.6	7.2	4.7	3.2	7.3	12.6	11.9	9.8	7.8	21.1																						
19-Feb	11.1	9.7	8.1	7.3	7.1	8.6	8.0	8.1	11.6	18.6	22.2	21.6	20.3	16.5	16.2	18.5	22.4	23.6	28.8	19.9	24.5	10.9	11.0	13.3	15.3	28.8																						
20-Feb	16.1	17.6	13.6	13.0	15.3	15.7	17.8	16.5	15.5	17.5	18.9	18.3	15.5	14.6	14.7	12.5	10.7	9.3	7.3	7.4	6.6	6.5	6.9	6.8	13.1	18.9																						
21-Feb	6.8	7.3	11.4	15.6	15.6	15.7	14.3	11.6	9.3	12.2	14.7	18.3	26.4	28.7	20.9	5.0	3.4	2.3	2.7	3.5	3.8	3.1	5.5	8.2	11.1	28.7																						
22-Feb	7.7	6.9	6.1	5.9	5.8	5.5	6.3	8.0	7.9	8.3	8.5	7.5	6.1	5.5	6.4	5.9	25.0	26.6	17.9	14.6	13.4	12.7	11.2	12.6	10.1	26.6																						
23-Feb	14.6	11.7	7.2	9.5	16.3	12.5	12.2	9.3	7.7	8.4	4.3	3.0	2.2	1.9	2.1	1.7	2.2	1.5	1.2	1.3	1.0	0.9	0.7	0.5	5.6	16.3																						
24-Feb	2.0	3.9	4.3	3.9	6.1	4.7	2.9	2.2	2.1	1.0	1.4	1.6	2.0	2.7	4.2	3.7	2.4	2.3	3.8	2.7	5.5	5.2	5.1	5.6	3.4	6.1																						
25-Feb	6.6	7.1	7.8	7.3	4.8	4.5	3.3	3.9	6.2	5.5	6.1	5.6	4.4	6.1	6.6	4.4	3.1	3.0	7.0	12.1	8.6	6.6	5.4	5.6	5.9	12.1																						
26-Feb	7.7	15.2	9.8	4.9	7.4	7.8	4.1	3.8	4.7	4.2	4.8	5.6	8.0	7.5	7.0	8.1	8.4	6.9	6.2	5.7	5.6	5.7	5.1	4.8	6.6	15.2																						
27-Feb	5.4	2.2	1.8	1.8	1.9	3.1	4.8	6.3	6.9	4.0	2.8	2.7	2.6	2.9	6.5	5.0	4.3	5.2	6.0	8.4	11.3	8.2	6.1	5.3	4.8	11.3																						
28-Feb	7.1	9.7	11.0	12.3	10.1	9.8	14.5	17.9	16.3	23.4	28.4	38.6	18.3	18.6	19.1	10.0	4.9	4.6	4.2	9.1	5.2	9.5	13.6	5.3	13.4	38.6																						
29-Feb	3.0	2.2	2.6	3.5	3.1	2.7	2.8	2.8	3.7	3.0	3.0	3.8	5.4	8.3	6.9	3.6	3.9	4.7	4.6	4.2	3.6	3.2	2.8	2.6	3.8	8.3																						
																								5.5	5.8	5.5	5.9	7.0	7.1	7.1	7.2	7.3	8.4	8.6	8.6	7.8	7.7	7.4	6.1	6.6	7.3	7.6	7.1	6.9	6.0	5.8	5.5	Diurnal Average
																								16.1	17.6	13.6	15.6	18.5	21.3	24.1	24.1	23.6	27.0	28.4	38.6	26.4	28.7	20.9	18.5	25.0	27.8	35.3	24.4	24.5	15.1	13.8	13.3	Diurnal Maximum
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																																																





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Fort McKay South - February 2024**

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	332	47.70	47.70
6 - 15	300	43.10	90.80
16 - 25	55	7.90	98.71
26 - 80	9	1.29	100.00
> 81.0	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Fort McKay South - February 2024**

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	48	34	6	3	4	3	18	22	35	20	31	43	20	9	20	15	331
6 - 15	53	24	3	2	5	6	14	46	31	21	8	15	9	9	17	35	298
16 - 25	9	6	1	0	0	0	7	7	10	0	1	1	1	2	3	6	54
26 - 80	1	0	0	0	0	0	2	2	2	0	0	0	0	0	0	2	9
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	111	64	10	5	9	9	41	77	78	41	40	59	30	20	40	58	692

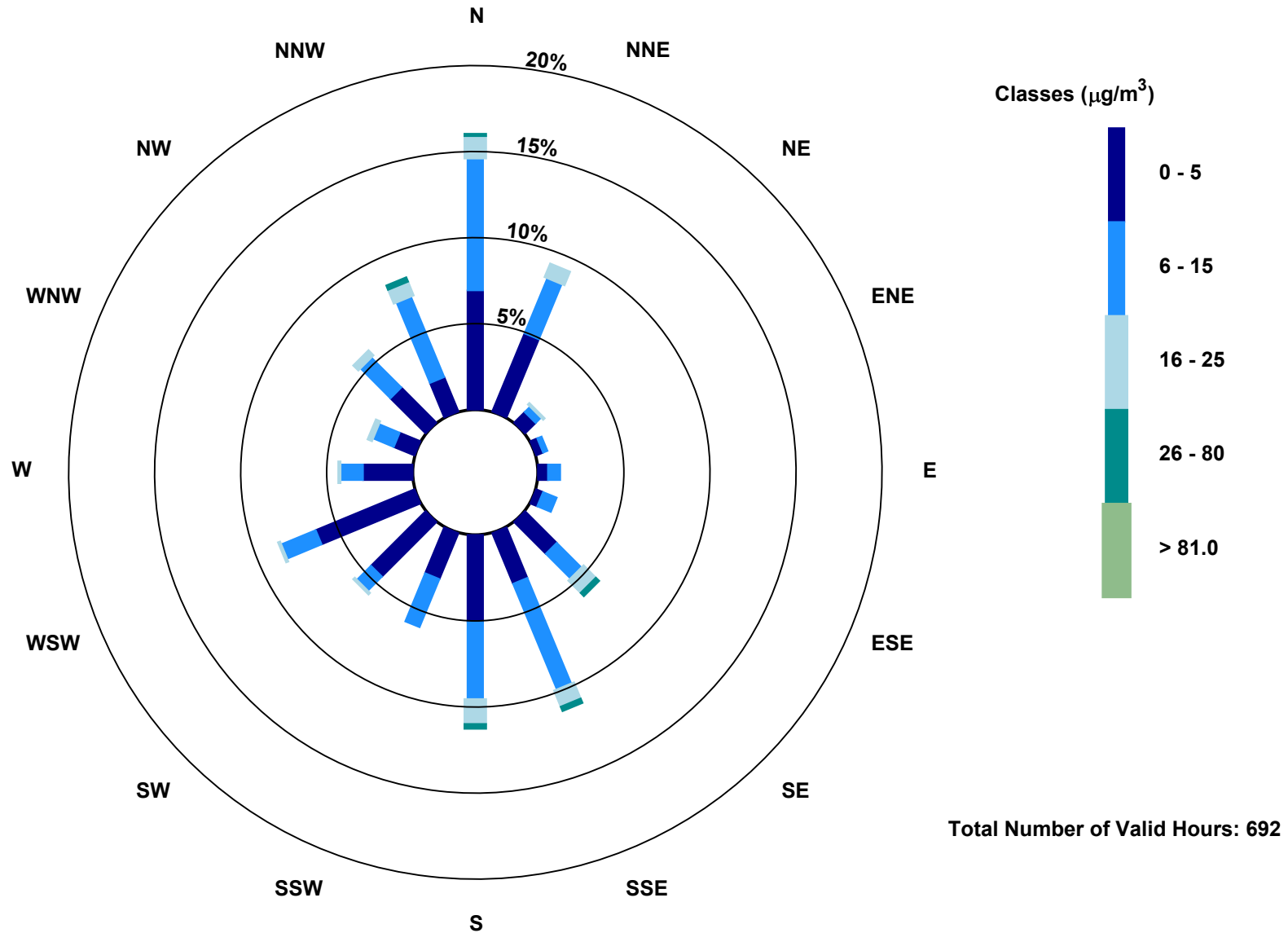
Total Number of Valid Hours: 692

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Fort McKay South





Wood Buffalo Environmental Association
Summary of Hour Averages

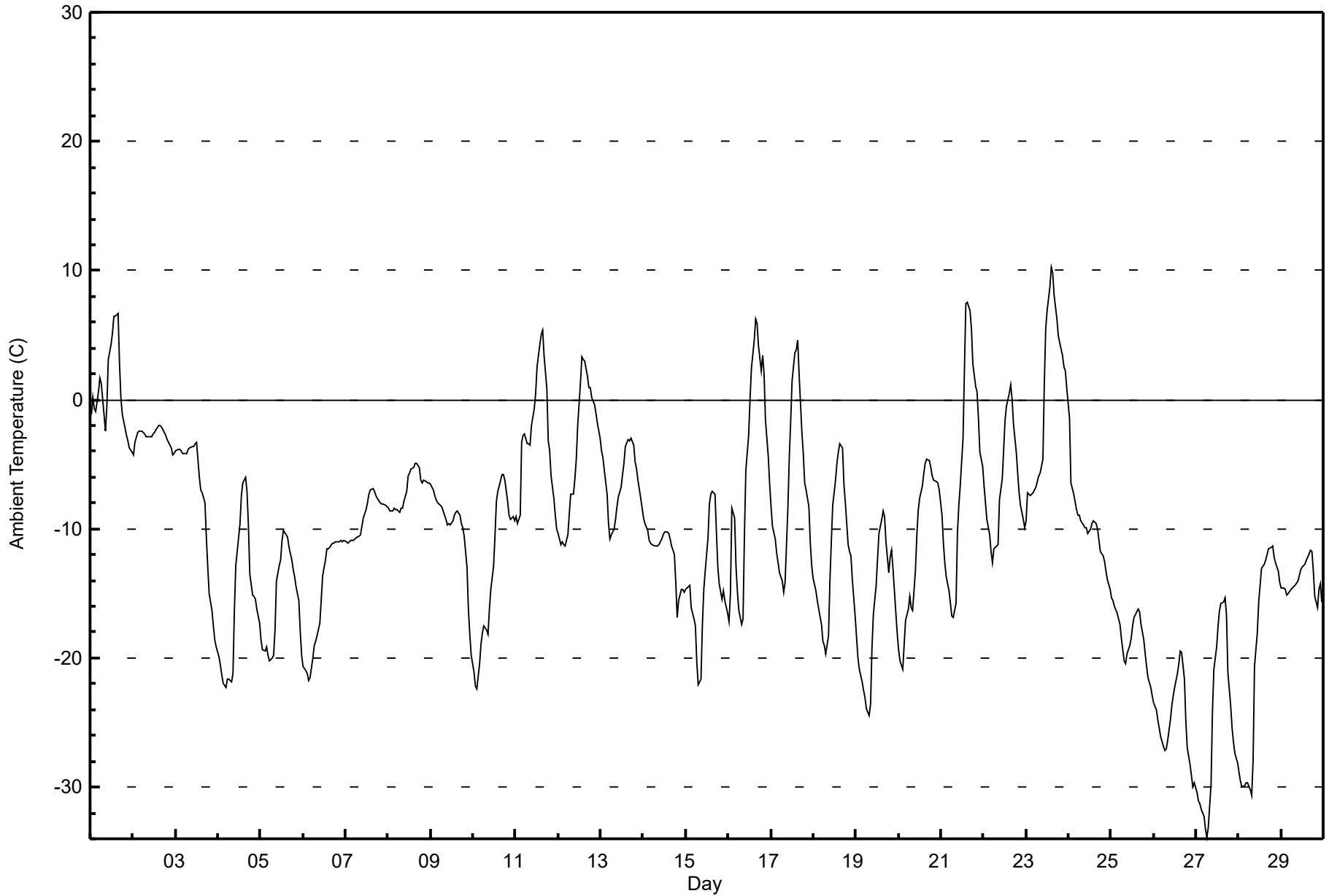
Ambient Temperature (AT) - C
Fort McKay South - February 2024

Maximum Value: 10.3 C on Feb 23 15:00 Maximum Daily Average: 0.7 C on Feb 1																					Hours in Service: 696 Hours of Data: 696					
Minimum Value: -33.9 C on Feb 27 07:00 Minimum Daily Average: -25.0 C on Feb 27 Maximum Diurnal Average: -4.9 C at hour 16 Minimum Diurnal Average: -14.8 C at hour 8 Monthly Average: -10.68 C Percentiles: P ₁ = -30.7 P ₁₀ = -21.0 Q ₁ = -15.8 Median = -10.4 Q ₃ = -5.6 P ₉₀ = -0.6 P ₉₉ = 6.9																					Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	-1.1	0.2	-0.6	-0.9	0.6	1.7	1.2	0.1	-2.4	-0.5	3.1	4.3	5.1	6.4	6.4	6.6	2.9	0.2	-1.2	-2.2	-2.8	-3.2	-3.7	-4.1	0.7	6.6
2-Feb	-4.3	-3.3	-2.5	-2.4	-2.4	-2.5	-2.6	-2.8	-2.9	-2.9	-2.9	-2.6	-2.5	-2.3	-2.0	-2.0	-2.1	-2.4	-2.8	-3.1	-3.3	-3.8	-4.3	-4.2	-2.9	-2.0
3-Feb	-3.9	-3.8	-3.9	-4.0	-4.2	-4.2	-4.2	-3.8	-3.7	-3.6	-3.6	-3.4	-3.3	-6.0	-7.0	-7.2	-8.0	-10.7	-13.0	-15.0	-16.3	-17.5	-18.6	-19.1	-7.8	-3.3
4-Feb	-19.9	-20.6	-21.3	-21.9	-22.3	-21.6	-21.6	-21.9	-21.2	-16.3	-12.9	-10.7	-9.6	-7.4	-6.4	-6.0	-7.1	-9.7	-13.5	-15.2	-15.3	-15.4	-16.2	-17.3	-15.5	-6.0
5-Feb	-18.6	-19.3	-19.5	-19.1	-19.8	-20.3	-20.0	-19.8	-17.9	-14.0	-12.9	-12.4	-10.9	-10.1	-10.5	-10.7	-11.4	-12.4	-13.1	-13.8	-14.4	-15.6	-18.0	-19.8	-15.6	-10.1
6-Feb	-20.7	-21.0	-21.2	-21.8	-21.5	-20.0	-19.1	-18.7	-18.3	-17.3	-15.5	-13.6	-12.4	-11.5	-11.6	-11.4	-11.1	-11.1	-11.0	-11.0	-11.0	-10.9	-11.0	-10.9	-15.2	-10.9
7-Feb	-11.0	-11.1	-11.0	-10.9	-10.8	-10.8	-10.7	-10.6	-10.5	-9.8	-9.2	-8.5	-8.0	-7.3	-7.0	-6.9	-7.1	-7.4	-7.6	-7.9	-8.0	-8.1	-8.2	-8.3	-9.0	-6.9
8-Feb	-8.4	-8.6	-8.6	-8.4	-8.5	-8.5	-8.7	-8.4	-8.4	-7.9	-7.1	-5.9	-5.7	-5.4	-5.3	-5.0	-4.9	-5.3	-6.2	-6.4	-6.2	-6.3	-6.4	-6.4	-7.0	-4.9
9-Feb	-6.6	-7.0	-7.4	-7.7	-8.0	-8.2	-8.3	-8.6	-9.3	-9.6	-9.6	-9.7	-9.4	-8.9	-8.8	-8.6	-8.9	-9.6	-9.9	-10.6	-13.0	-16.2	-18.2	-19.8	-10.1	-6.6
10-Feb	-21.1	-22.2	-22.4	-20.5	-18.9	-18.1	-17.5	-17.9	-18.1	-16.2	-14.7	-12.8	-10.5	-7.9	-7.1	-6.3	-5.8	-5.8	-6.2	-7.9	-8.9	-9.2	-9.0	-9.3	-13.1	-5.8
11-Feb	-9.1	-9.6	-9.0	-3.4	-2.8	-2.6	-3.4	-3.4	-3.5	-2.0	-0.7	0.5	2.5	4.3	5.0	5.3	3.5	0.8	-3.2	-4.0	-5.9	-7.6	-8.9	-10.0	-2.8	5.3
12-Feb	-10.3	-11.2	-11.0	-11.2	-11.3	-10.5	-8.9	-7.3	-7.3	-6.1	-4.6	-2.0	1.3	3.3	3.1	3.0	1.8	1.0	0.9	0.2	-0.4	-1.0	-1.8	-3.0	-3.9	3.3
13-Feb	-4.0	-4.5	-5.5	-7.3	-9.6	-10.8	-10.4	-10.0	-9.3	-8.3	-7.5	-6.7	-5.8	-4.9	-3.7	-3.1	-3.2	-3.0	-3.5	-4.8	-5.4	-6.3	-7.6	-8.5	-6.4	-3.0
14-Feb	-9.2	-9.6	-10.1	-10.8	-11.1	-11.3	-11.3	-11.3	-11.3	-11.2	-10.8	-10.4	-10.3	-10.2	-10.4	-10.8	-11.4	-12.0	-14.1	-16.8	-15.6	-14.7	-14.7	-14.9	-11.8	-9.2
15-Feb	-14.7	-14.4	-14.4	-16.1	-17.0	-17.5	-20.3	-22.1	-21.7	-17.4	-14.7	-13.2	-10.6	-8.1	-7.3	-7.1	-7.4	-10.3	-12.9	-14.3	-15.4	-14.8	-15.6	-16.6	-14.3	-7.1
16-Feb	-17.2	-15.0	-8.4	-9.2	-12.9	-14.9	-16.4	-17.4	-17.0	-10.5	-5.5	-2.7	0.0	2.4	4.6	6.3	5.9	4.2	2.2	3.4	2.0	-1.5	-4.3	-6.5	-5.4	6.3
17-Feb	-8.3	-9.8	-10.8	-11.9	-12.7	-13.4	-14.1	-15.0	-14.1	-8.4	-4.5	-1.7	1.5	3.7	3.9	4.6	2.0	-2.6	-4.2	-6.4	-7.0	-8.3	-11.1	-12.9	-6.7	4.6
18-Feb	-13.8	-14.8	-15.5	-16.2	-17.4	-18.7	-19.0	-19.7	-18.3	-14.0	-11.0	-8.2	-6.2	-5.0	-4.1	-3.4	-3.7	-6.5	-8.0	-11.2	-11.8	-12.0	-14.0	-16.8	-12.1	-3.4
19-Feb	-18.3	-20.0	-20.9	-21.8	-22.5	-23.1	-23.9	-24.5	-23.6	-19.2	-16.6	-14.3	-12.3	-10.4	-9.2	-8.6	-9.1	-11.0	-13.4	-12.2	-11.6	-13.1	-16.4	-18.1	-16.4	-8.6
20-Feb	-19.3	-20.2	-20.8	-19.0	-17.1	-16.2	-15.2	-16.1	-16.3	-13.3	-10.6	-8.6	-7.7	-6.6	-5.7	-4.9	-4.6	-4.7	-5.3	-5.9	-6.2	-6.4	-6.4	-7.0	-11.0	-4.6
21-Feb	-8.9	-11.1	-12.6	-13.7	-14.8	-15.8	-16.7	-16.8	-15.8	-10.3	-8.2	-6.7	-3.0	2.4	7.4	7.6	6.9	5.5	2.7	1.0	0.6	-1.5	-4.0	-5.2	-5.5	7.6
22-Feb	-6.6	-8.0	-9.3	-10.5	-11.7	-12.7	-11.5	-11.4	-11.3	-7.7	-6.1	-3.9	-1.6	-0.5	0.5	1.1	0.1	-1.9	-4.1	-5.7	-7.2	-8.2	-9.2	-9.9	-6.5	1.1
23-Feb	-9.3	-7.2	-7.5	-7.4	-7.3	-6.7	-6.3	-6.0	-5.6	-4.6	1.2	5.5	6.9	8.8	10.3	9.8	8.1	6.2	4.9	4.4	3.4	2.5	2.2	0.9	0.3	10.3
24-Feb	-1.4	-6.4	-6.9	-7.3	-8.5	-8.9	-8.9	-9.3	-9.7	-9.9	-9.9	-10.3	-10.0	-9.6	-9.4	-9.6	-10.0	-10.9	-11.7	-12.1	-12.6	-13.3	-14.0	-14.7	-9.8	-1.4
25-Feb	-15.3	-15.5	-16.0	-16.5	-17.0	-17.4	-18.5	-20.3	-20.4	-19.7	-19.1	-18.4	-17.5	-16.9	-16.4	-16.2	-16.4	-17.4	-18.6	-19.7	-20.7	-21.5	-22.3	-22.9	-18.3	-15.3
26-Feb	-23.4	-24.0	-24.8	-25.5	-26.1	-26.9	-27.2	-27.0	-26.4	-24.7	-23.7	-22.9	-22.3	-21.2	-20.4	-19.5	-19.6	-21.6	-24.9	-27.0	-28.2	-29.2	-29.9	-29.6	-24.8	-19.5
27-Feb	-30.4	-31.1	-31.3	-31.7	-32.3	-33.2	-33.9	-33.1	-29.8	-24.1	-20.9	-19.2	-17.5	-16.3	-15.8	-15.7	-15.4	-16.6	-21.1	-23.7	-25.4	-26.5	-27.3	-28.2	-25.0	-15.4
28-Feb	-28.9	-29.6	-30.0	-29.9	-29.6	-29.6	-30.2	-30.7	-28.0	-20.7	-18.0	-15.6	-14.4	-13.1	-12.8	-12.4	-11.9	-11.5	-11.4	-11.3	-12.2	-12.7	-13.3	-14.1	-19.7	-11.3
29-Feb	-14.5	-14.6	-14.7	-15.1	-15.0	-14.7	-14.6	-14.5	-14.4	-14.1	-13.6	-13.2	-13.0	-12.7	-12.4	-12.2	-11.7	-11.8	-13.3	-15.2	-16.1	-14.7	-14.2	-15.7	-14.0	-11.7
-13.1 -13.6 -13.7 -13.9 -14.2 -14.4 -14.6 -14.8 -14.4 -11.9 -10.0 -8.5 -7.1 -5.9 -5.2 -4.9 -5.5 -6.8 -8.4 -9.5 -10.2 -10.9 -11.9 -12.9																								Diurnal Average		
-1.1 0.2 -0.6 -0.9 0.6 1.7 1.2 0.1 -2.4 -0.5 3.1 5.5 6.9 8.8 10.3 9.8 8.1 6.2 4.9 4.4 3.4 2.5 2.2 0.9																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Fort McKay South - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Fort McKay South - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	86	12.36	12.36
-20 - 0	543	78.02	90.37
0 - 10	66	9.48	99.86
10 - 20	1	0.14	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Relative Humidity (RH) - %

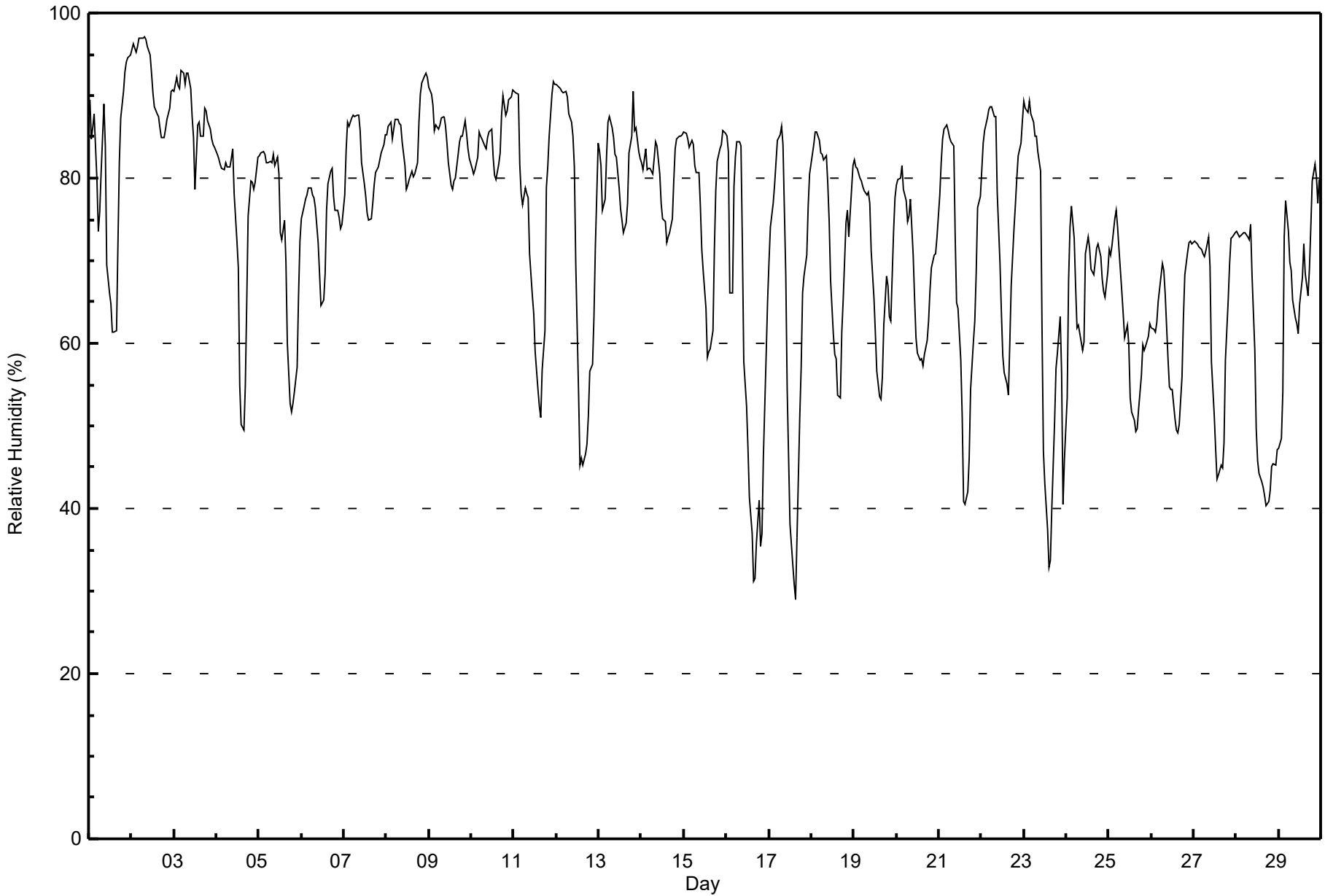
Fort McKay South - February 2024

Maximum Value: 97.1 % on Feb 2 08:00 Maximum Daily Average: 91.9 % on Feb 2																						Hours in Service:	696			
Minimum Value: 28.9 % on Feb 17 16:00 Minimum Daily Average: 56.7 % on Feb 28																						Hours of Data:	696			
Maximum Diurnal Average: 81.9 % at hour 5 Minimum Diurnal Average: 59.6 % at hour 16																						Hours of Missing Data:	0			
Monthly Average: 73.37 % Percentiles: P ₁ = 35.4 P ₁₀ = 51.6 Q ₁ = 64.6 Median = 77.3 Q ₃ = 84.4 P ₉₀ = 87.9 P ₉₉ = 95.9																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	89.5	84.8	86.2	87.7	79.8	73.5	75.9	80.8	89.0	84.0	69.6	66.2	64.7	61.3	61.4	61.5	71.9	81.8	87.3	90.6	92.9	94.0	94.6	95.0	80.2	95.0
2-Feb	95.6	96.2	95.2	95.9	96.9	97.0	97.0	97.1	96.8	96.0	95.0	92.8	90.4	88.6	87.8	87.5	86.2	84.9	85.0	86.0	87.1	88.4	90.5	90.8	91.9	97.1
3-Feb	90.5	92.2	91.2	90.8	93.1	92.7	91.4	92.6	92.7	90.8	87.5	85.0	78.7	86.4	86.7	85.1	85.0	88.5	88.2	87.0	86.0	84.8	84.0	83.7	88.1	93.1
4-Feb	82.8	82.4	81.7	81.3	81.0	81.9	81.4	81.3	82.4	83.6	78.2	72.4	69.1	54.9	50.2	49.4	54.9	65.0	75.4	79.7	79.5	78.6	79.4	82.6	74.5	83.6
5-Feb	82.7	83.0	83.2	82.9	81.9	81.8	82.0	81.9	82.9	81.5	82.6	80.4	73.3	72.5	74.9	69.8	60.0	52.7	51.6	52.7	54.0	57.1	65.7	72.4	72.6	83.2
6-Feb	75.1	76.7	77.4	78.0	78.8	78.8	78.0	77.5	76.4	72.2	68.5	64.6	65.3	68.5	76.1	79.4	80.9	81.1	77.8	76.1	76.1	75.2	74.0	74.3	75.3	81.1
7-Feb	78.0	83.4	86.8	86.4	87.3	87.6	87.5	87.6	87.7	85.7	81.9	79.3	77.8	75.8	74.9	75.0	77.0	79.1	80.7	81.3	82.2	83.0	84.1	85.3	82.3	87.7
8-Feb	85.3	86.3	86.8	84.8	86.0	87.1	87.2	86.6	86.5	84.5	81.5	78.6	79.2	79.8	80.9	80.1	80.5	81.9	86.8	90.2	91.6	92.3	92.7	92.2	85.4	92.7
9-Feb	91.0	90.2	88.7	85.8	86.4	86.0	86.4	87.3	87.5	86.3	84.2	81.9	79.2	78.6	79.6	80.1	82.9	84.5	85.1	85.2	87.0	85.4	83.5	82.3	84.8	91.0
10-Feb	81.2	80.6	81.0	82.5	85.5	85.1	84.8	84.0	83.6	84.9	85.6	85.9	82.5	80.4	79.8	81.7	83.0	87.6	90.0	87.7	88.1	89.5	89.8	90.6	84.8	90.6
11-Feb	90.6	90.3	90.1	81.6	78.1	76.8	78.7	78.2	77.7	70.8	65.7	63.5	59.0	54.3	52.4	51.0	56.7	61.5	78.8	81.4	85.0	90.1	91.7	91.4	74.8	91.7
12-Feb	91.3	90.9	90.9	90.4	90.3	90.5	89.9	87.8	86.8	85.1	81.3	69.7	54.1	45.3	46.1	45.2	46.6	47.8	51.2	56.6	57.5	63.1	71.6	84.2	71.4	91.3
13-Feb	83.2	81.6	76.0	77.4	82.7	86.8	87.4	86.0	84.9	82.9	82.5	78.8	76.3	74.9	73.4	74.6	77.0	83.0	85.1	90.5	85.7	86.1	83.3	82.4	81.8	90.5
14-Feb	81.9	80.9	83.6	81.0	81.3	81.2	80.6	82.4	84.5	83.9	80.5	77.0	75.0	74.7	72.2	72.9	73.5	75.1	79.7	83.6	84.8	85.1	85.1	85.2	80.2	85.2
15-Feb	85.6	85.4	84.8	83.7	84.6	84.1	81.5	80.6	80.7	76.7	71.3	68.9	64.3	58.3	59.1	59.3	61.5	71.3	78.4	82.1	83.6	84.1	85.8	85.5	76.7	85.8
16-Feb	85.1	83.2	66.1	66.1	79.0	82.6	84.4	84.3	83.9	72.0	57.8	52.4	47.3	41.4	37.0	31.3	31.5	35.8	41.0	35.4	36.9	46.3	58.6	65.0	58.5	85.1
17-Feb	69.8	74.0	77.0	79.2	81.9	84.6	85.3	86.2	84.0	68.2	54.4	46.4	38.1	33.3	30.9	28.9	36.4	51.2	57.1	66.1	68.1	70.6	76.6	80.4	63.7	86.2
18-Feb	81.8	84.1	85.7	85.7	84.6	83.0	82.9	82.1	82.8	79.4	74.7	67.7	61.1	58.6	58.1	53.8	53.4	61.4	65.3	74.5	76.2	73.0	75.7	81.5	73.6	85.7
19-Feb	82.3	81.3	81.1	80.0	79.7	79.0	78.5	78.0	78.3	77.0	71.2	65.5	61.2	56.7	53.5	53.2	56.0	62.2	68.1	67.0	63.2	62.8	73.5	77.6	70.3	82.3
20-Feb	79.1	79.9	80.0	81.6	78.6	77.3	74.7	75.4	77.4	70.7	65.4	60.7	58.9	58.0	58.1	57.3	58.6	60.3	62.7	66.4	69.2	70.6	70.8	72.9	69.4	81.6
21-Feb	77.9	81.8	84.7	86.0	86.4	85.8	84.8	84.4	84.0	72.9	65.0	64.2	57.9	51.2	40.8	40.4	42.1	46.1	54.4	60.2	62.8	68.4	76.4	77.8	68.2	86.4
22-Feb	81.0	84.2	85.8	87.3	88.3	88.6	88.7	87.5	87.4	78.3	69.7	63.8	58.4	56.5	55.1	53.7	60.0	67.0	73.9	76.7	80.1	82.8	84.3	86.9	76.1	88.7
23-Feb	89.3	88.5	88.0	89.3	87.7	86.9	85.1	85.0	83.2	80.8	62.1	47.0	43.0	37.5	32.8	33.7	40.0	50.5	57.0	58.9	63.3	56.5	40.5	45.9	63.8	89.3
24-Feb	53.5	67.6	74.1	76.7	72.8	67.0	61.8	62.3	60.1	59.2	60.2	70.9	72.9	71.5	68.9	68.3	69.8	71.6	72.1	70.5	67.9	66.3	65.7	68.7	67.5	76.7
25-Feb	71.4	70.6	71.9	75.1	76.2	74.1	71.3	66.2	63.6	60.6	62.2	59.9	53.3	51.7	50.7	49.3	49.7	52.0	56.1	59.7	59.2	59.7	60.9	62.4	62.0	76.2
26-Feb	61.9	61.7	61.3	62.6	65.0	68.2	69.7	68.8	65.9	58.2	54.7	54.3	54.4	50.8	49.5	49.1	50.3	56.0	63.1	68.4	71.0	72.1	72.4	72.0	61.7	72.4
27-Feb	72.3	72.1	72.1	71.8	71.4	70.9	70.5	71.2	72.9	69.3	57.8	51.4	47.4	43.5	44.1	45.3	45.0	48.0	57.9	65.2	69.7	72.7	72.9	73.4	62.9	73.4
28-Feb	73.5	73.2	73.0	73.3	73.4	73.4	72.9	72.5	74.3	68.2	59.1	49.6	45.8	44.2	43.2	42.6	41.5	40.4	40.9	42.2	45.1	45.5	45.2	47.2	56.7	74.3
29-Feb	47.2	48.5	54.1	72.8	77.3	73.6	69.9	68.9	65.2	63.0	62.3	61.2	64.8	67.9	72.0	68.4	65.8	69.0	74.0	79.6	81.7	80.2	76.9	79.8	68.5	81.7
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Fort McKay South - February 2024





Maximum Speed: 20 km/h on Feb 28 15:00	Maximum Daily Speed Average: 12.4 km/h on Feb 25	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 28 05:00	Minimum Daily Speed Average: 0.5 km/h on Feb 8	Hours of Data: 692
Maximum Diurnal Speed Average: 2.3 km/h at hour 14	Minimum Diurnal Speed Average: 0.4 km/h at hour 8	Hours of Missing Data: 4
Monthly Average Velocity: 0.7 km/h 358.3 deg	Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 3 Median = 5 Q ₃ = 9 P ₉₀ = 13 P ₉₉ = 18	Percent Operational Time: 99.4

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	WSW1	S5	SSE3	S3	S8	SSE9	S9	S5	UO	SSE4	SSE6	S11	S11	SSE8	SSE10	SSE5	S2	NW2	WNW2	NW3	WSW2	W1	NW2	UO	S4.2	S11	
2-Feb	N4	N7	N8	N11	N13	N14	N13	N12	N13	N12	N13	N12	N13	N11	N12	N10	N9	N10	N10	N9	N8	N5	N5	NNW4	N9.8	N14	
3-Feb	NW3	N3	SE3	ENE3	NNE4	N3	NNW3	NNW5	NNW7	NNW7	N6	NNW6	NNW11	NNE12	NNE10	NE6	NNE5	NNE3	NE1	WSW4	SW1	WSW2	SW2	WNW1	N3.5	NNE12	
4-Feb	WSW2	WSW1	WSW2	SW2	SSW3	S4	SSW4	SSW4	S5	SSE1	SSE10	SSE11	SE9	SSE14	SSE15	SSE12	S10	SSW6	SSW4	S6	S6	S5	SSW4	NW1	S5.4	SSE15	
5-Feb	SW2	SW1	SW1	NW1	SSW1	W2	WNW2	WNW3	N7	N12	N16	N14	N16	N16	N16	N16	N13	N11	N12	N13	N11	NNW7	NNW5	NW4	N7.7	N16	
6-Feb	NW2	NW2	NNW4	WSW2	WSW2	WNW1	NNW1	NW0	UO	NNW2	N1	SSE5	SSE7	SSE11	SSE12	SSE7	SSE7	SSE6	SSE6	SSE11	SE8	SSE10	SSE11	SSE8	SSE4.2	SSE12	
7-Feb	S6	S6	S7	SSE3	N1	NE1	SSE2	SSW1	S3	SSE3	SSW4	ESE2	SSE4	E4	SE2	E2	NNE3	NNW3	N5	NNW4	NNW4	NNW4	NW3	WNW2	SSE0.7	S7	
8-Feb	WNW2	WNW2	W1	WNW2	UO	S1	W2	SSE1	S1	S1	SE1	SSE3	S6	S6	SE7	SE4	SE3	NE1	NW2	NW2	NNW4	N3	NW3	NW6	SSW0.5	SE7	
9-Feb	NW6	WNW4	WSW6	W7	W6	W6	N4	NNE5	NNE6	NNE6	NNE6	NE5	NNE4	ENE2	E2	ESE2	N5	N6	N4	NNE4	NW2	W2	WSW2	WSW2	NNW2.4	W7	
10-Feb	WSW2	WSW1	S1	NW1	S1	SE2	S3	SSW2	SW1	ESE1	ESE3	SE6	SSE7	SSE9	SSE12	S11	S7	S6	SW5	WSW4	S5	S7	S3	WSW2	S3.6	SSE12	
11-Feb	SW4	WSW2	SW4	WSW10	W10	W7	WSW10	WSW11	WSW8	WSW4	SW8	W8	WSW9	SW9	SW9	SW7	WSW8	W7	SW5	SW4	SE1	SSW2	S3	SSW4	WSW6.0	WSW11	
12-Feb	SW3	SSW3	S3	SSW3	SSW3	S5	S8	S8	S5	S5	SSE6	SSW7	WSW11	NW9	NW13	NNW13	NW7	NW7	NW11	NW11	NW14	NNW12	N10	N11	WNW3.2	NW14	
13-Feb	N11	N10	N12	NNE12	NNE9	N3	SW1	WSW4	WSW3	NNW2	NNE5	SE0	SSE8	S11	S9	SSE7	S1	WSW7	NNW7	N12	N17	N17	N16	N17	N4.5	N17	
14-Feb	N16	N14	N11	N15	N14	N12	NNE12	NNE10	NNE7	NNE7	NNE7	NNE7	N7	NE9	NNE8	NE9	NE7	NNE5	N2	NW2	NNW3	WNW1	NW1	WSW2	NNE7.3	N16	
15-Feb	WSW2	WSW3	SW3	WSW2	WSW4	WSW5	SW4	SSW3	S3	SSE5	SSE6	SE8	SSE5	S6	SSE6	SSE9	SSE8	S6	S4	SW2	NNW3	WNW1	SW2	S3	SSW2	S3.6	SSE9
16-Feb	SW4	SW6	WSW13	WSW6	S3	SSE5	SSE6	S4	S4	SSE8	S11	S12	S13	S14	S10	SSW10	SW11	SSW9	S8	W6	W7	SW4	WSW4	W1	SSW6.2	S14	
17-Feb	NW1	SSW0	N1	E1	NW1	S2	SSW2	S4	S4	SSE5	SSE6	SE5	SSE3	SSE4	SE4	SSE4	E1	N7	NNW4	NNW5	N7	NNW4	SSW1	SW2	SSE0.6	N7	
18-Feb	NNW3	NW3	NNW3	NNW2	NNW2	WSW1	NW2	WNW2	NW1	N4	NNE5	NNE7	NNE8	N11	N12	N10	N8	NNW6	NNW7	NNW5	NNW7	N9	NNW7	NNW3	N5.0	N12	
19-Feb	NNW3	WSW1	NW3	W2	WNW2	WSW1	W2	WSW2	NNW2	NNE4	NNE5	NNE5	NNE5	NNW4	N4	N6	N9	N6	N4	N4	NNE6	N5	NNW4	NNW3	N3.2	N9	
20-Feb	NNW3	WNW2	SW1	SSW1	ENE1	SSE3	S4	S3	S4	SSE5	SE7	S7	SSE7	S9	SSE9	SSE6	SSE5	SSE5	S1	NNW2	SSW1	SSW3	S2	SSW2	SSE3.1	S9	
21-Feb	NNW3	W1	WSW1	W1	NNW3	NNW2	WNW1	SW1	NW0	E3	SE5	SE8	SE7	SSE7	SW8	SW9	SW9	SW6	SW6	SW6	WSW7	NNW6	NNW5	NNW2	SW2.2	SW9	
22-Feb	NNW1	WSW1	SW2	W1	NNW1	WNW1	N4	NNW2	N4	NNE4	NE5	NE5	ESE4	ESE6	E3	NNE4	N7	NNW5	NNW4	W2	SSW2	SSW3	S4	S4	NNE1.1	N7	
23-Feb	S6	S7	S6	S6	S5	SSE6	SSE7	SSE8	SSW3	SSE6	WSW11	W16	WSW9	SW11	WSW14	WSW13	WNW12	NW11	WSW8	SW11	WSW9	WNW10	WNW12	W10	WSW6.4	W16	
24-Feb	NNW9	NNE18	N15	N15	N14	N12	NNW16	N14	N14	N14	N13	N9	NNE10	NNE9	NNE9	NNE9	NE8	NNE7	NNE6	N6	N7	NNE9	NNE7	NNE7	N10.4	NNE18	
25-Feb	NNE7	NNE8	N10	N11	N11	N12	NNE12	NNE10	NNE9	NNE11	N13	N14	NNE15	NNE15	NNE13	NNE14	NNE14	NNE13	NNE15	N18	N18	NNE14	N13	NNE12.4	N18		
26-Feb	N16	N17	N19	N15	NNW8	NW6	NW4	NW4	NW4	N6	NNE5	NNE7	NNE10	E2	ESE6	SE5	SE5	S3	WSW2	W2	WSW3	WSW3	WSW1	W3	N4.1	N19	
27-Feb	NNW1	W2	SSW0	N2	N1	ENE1	S3	S2	SSE2	SSW4	W6	W8	SW3	SSW4	S8	SE10	SE7	ESE4	S3	S2	SSW2	S2	NNW2	WSW1	S1.7	SE10	
28-Feb	W2	SSW1	SSW1	SSW1	SW0	SE1	NW1	S1	SSE1	SSE8	SE11	SSE15	SSE18	SE18	SSE20	SE18	SE15	SE11	SE12	SSE16	SE14	SSE19	SSE18	SE11	SSE9.5	SSE20	
29-Feb	SE10	SE10	SE10	E6	NE6	ENE6	ESE9	SE9	SE13	SE12	SE8	SE12	SSE9	SE7	SSE5	SSE7	SSE7	SW4	WSW3	SW3	WSW2	W5	W7	W7	SE4.8	SE13	

NNW2.0	NNW1.5	NNW1.6	NNW2.1	NNW2.0	NNW1.0	NNW0.5	NNW0.4	N0.7	NE1.5	ENE1.3	ESE1.2	SE1.4	SE2.3	SE2.2	SE1.8	ENE0.6	NNW1.3	NW1.5	NW1.6	NNW2.2	NNW1.9	NW1.3	NW1.8	Diurnal Average
N16	NNE18	N19	N15	N14	N14	NNW16	N14	N14	N14	N16	W16	SSE18	SE18	SSE20	SE18	SE15	NNE14	NNE13	SSE16	N18	SSE19	SSE18	N17	Diurnal Maximum

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

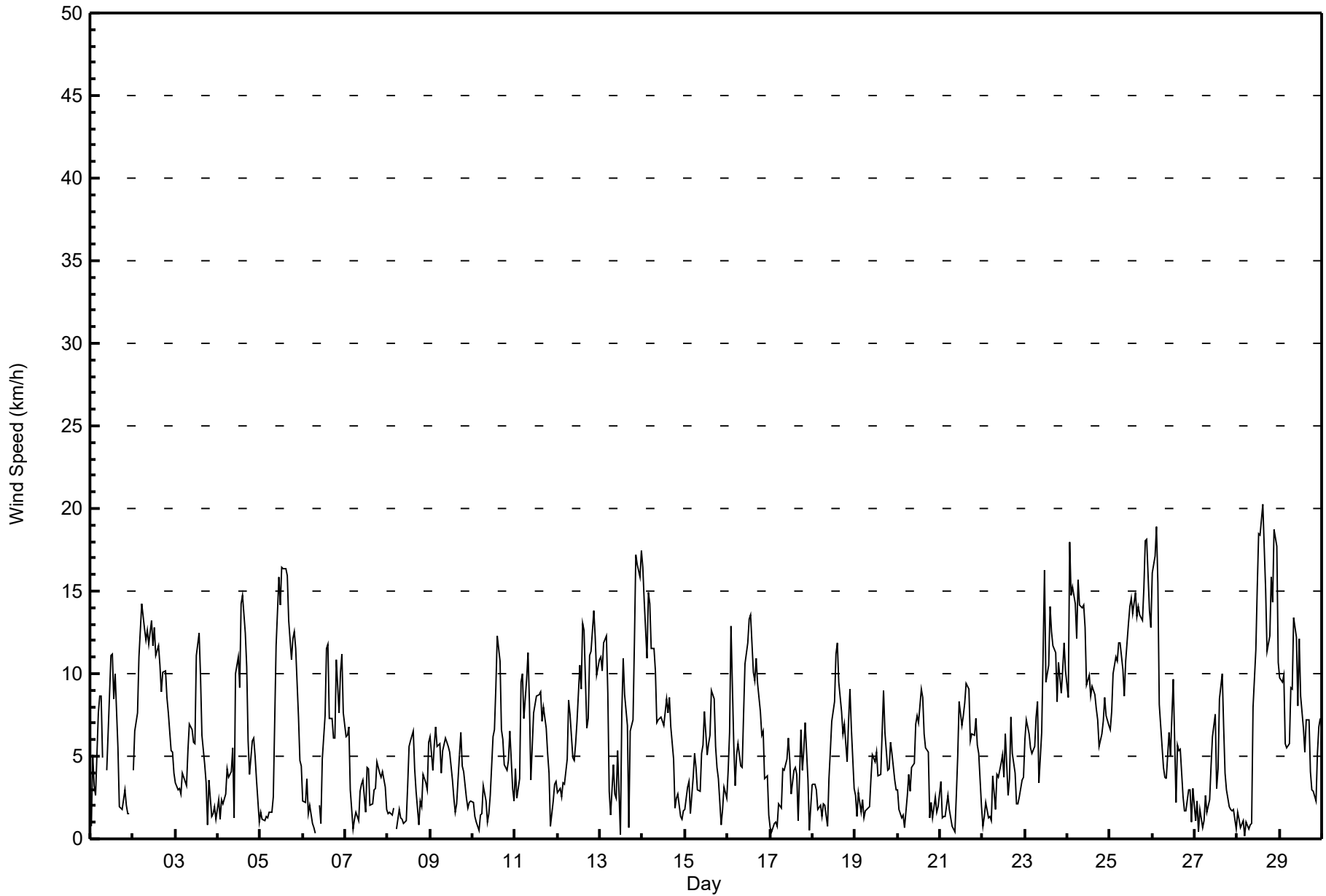
Wind Speed (WS) - km/h
Fort McKay South - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 6 km/h on Feb 24 01:00																	Hours in Service: 696 Hours of Data: 692 Hours of Missing Data: 4 Hours of Calibration: 0 Percent Operational Time: 99.4								
Minimum Value: 0 km/h on Feb 16 09:00																									
Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 2 P ₉₀ = 4 P ₉₉ = 5																									
Day	Hourly Period Ending At (MST)																							Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24
1-Feb	1	2	2	1	2	4	2	3	UO	3	1	2	2	2	2	1	1	1	1	2	1	1	1	UO	4
2-Feb	1	1	2	2	3	3	2	2	2	2	3	3	3	2	2	2	2	2	2	2	2	1	1	2	3
3-Feb	2	1	1	1	1	1	1	1	1	1	1	1	5	3	3	2	1	1	1	1	1	1	1	1	5
4-Feb	1	1	1	1	1	2	1	1	1	1	1	4	3	4	4	3	2	2	2	1	1	1	1	1	4
5-Feb	2	1	1	1	1	1	1	1	2	4	4	4	4	4	4	4	3	2	3	3	2	2	1	1	4
6-Feb	1	1	1	1	1	1	1	1	UO	1	1	1	3	3	3	2	2	1	2	2	2	3	2	2	3
7-Feb	1	1	2	2	1	1	1	1	1	2	1	1	2	1	1	1	1	0	1	1	1	1	1	1	2
8-Feb	1	1	1	2	UO	1	1	1	1	2	1	2	2	2	1	2	1	1	1	1	1	1	1	2	2
9-Feb	2	1	2	2	2	2	2	1	2	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	2
10-Feb	1	1	1	1	1	1	1	1	1	1	1	2	3	2	2	3	1	2	1	2	2	2	1	1	3
11-Feb	2	2	3	2	3	2	3	3	3	3	3	3	3	3	3	2	2	1	2	2	1	1	1	2	3
12-Feb	1	1	1	1	1	1	4	2	3	2	1	2	4	5	4	4	2	3	4	3	4	3	3	3	5
13-Feb	3	2	3	3	3	1	1	2	2	2	2	1	2	2	2	1	1	2	4	3	4	4	4	4	4
14-Feb	4	4	3	4	3	4	3	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	4
15-Feb	1	1	1	1	2	1	1	1	1	1	2	1	2	2	2	1	2	1	1	1	1	1	2	1	2
16-Feb	2	3	4	3	1	1	2	1	0	1	2	2	2	2	3	3	3	3	2	3	3	2	3	1	4
17-Feb	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	2	1	1	1	1	2	1	1	2
18-Feb	1	1	1	2	2	1	1	1	1	2	2	2	2	3	3	2	2	2	2	2	1	1	2	1	3
19-Feb	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	2	2	1	1	1	1	2	1	1	2
20-Feb	1	1	1	1	1	2	1	1	2	1	2	2	1	2	2	2	2	3	1	1	1	1	1	2	3
21-Feb	1	1	1	1	2	1	1	1	1	1	2	2	1	1	2	3	4	2	1	1	2	2	1	1	4
22-Feb	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	3	1	1	1	1	1	1	1	1	3
23-Feb	1	2	1	2	2	2	2	3	4	2	6	6	3	4	5	4	5	5	3	4	3	4	4	3	6
24-Feb	6	5	4	3	3	3	4	4	4	3	3	2	2	2	2	3	2	2	1	2	2	2	2	2	6
25-Feb	1	2	2	2	2	2	3	3	2	3	3	3	4	4	4	3	4	3	3	4	5	5	4	4	5
26-Feb	4	4	4	3	3	1	1	1	2	2	2	4	3	2	2	2	2	1	2	1	1	1	1	3	4
27-Feb	1	1	1	1	1	1	2	1	2	2	3	3	2	3	3	3	2	2	1	1	1	1	1	1	3
28-Feb	1	1	1	1	1	1	1	1	1	2	3	3	4	4	4	4	3	3	3	5	3	5	5	3	5
29-Feb	3	3	4	2	2	2	3	4	4	4	3	4	3	2	2	2	2	2	1	1	1	1	2	2	4
																	Diurnal Maximum								
UO - Unstable Operation																									



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Fort McKay South - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Fort McKay South - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	355	51.30	51.30
6 - 11	240	34.68	85.98
12 - 19	96	13.87	99.86
20 - 28	1	0.14	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 692

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Wind Speed (WS) - km/h
Fort McKay South - February 2024

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	23	19	5	4	8	6	14	26	44	36	26	41	15	17	29	42	355
6 - 11	38	31	5	1	1	3	19	40	31	5	14	15	14	1	9	13	240
12 - 19	50	14	0	0	0	0	8	10	3	0	0	3	1	2	2	3	96
20 - 28	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	111	64	10	5	9	9	41	77	78	41	40	59	30	20	40	58	692

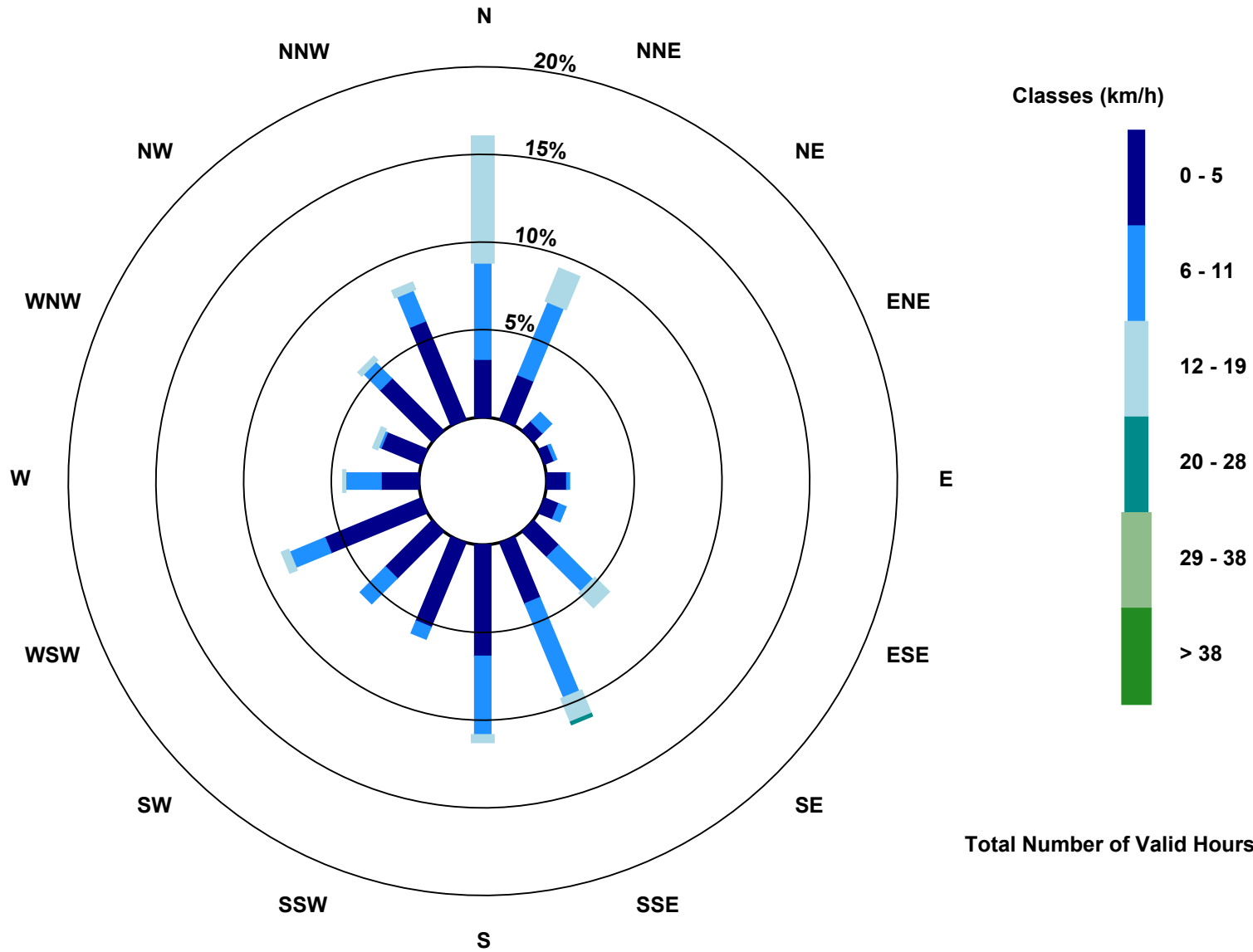
Total Number of Valid Hours: 692

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Fort McKay South



Total Number of Valid Hours: 692



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Fort McKay South - February 2024

Direction of Maximum Speed: 148 deg on Feb 28 15:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 14.2 deg on Feb 25	Hours of Data: 692
Direction of Minimum Speed: 215 deg on Feb 28 05:00	Hours of Missing Data: 4
Direction of Minimum Daily Speed Average: 0.5 deg on Feb 8	Percent Operational Time: 99.4
Monthly Average Direction: 358.3 deg	

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	241	178	163	175	175	163	173	182	UO	165	157	175	182	166	152	151	191	305	286	306	248	266	306	UO	175.4
2-Feb	9	0	2	1	3	9	5	3	3	3	6	358	360	7	2	3	3	5	7	2	4	358	360	330	2.9
3-Feb	326	11	125	76	31	4	332	338	348	340	352	344	348	19	27	34	17	16	43	252	231	238	227	292	0.4
4-Feb	244	242	238	231	206	188	194	194	191	166	154	155	142	152	158	167	180	196	198	169	172	186	200	307	173.2
5-Feb	220	217	227	306	213	263	294	290	355	7	7	10	10	8	7	8	358	358	355	352	350	342	331	323	357.4
6-Feb	325	323	330	257	252	283	339	306	UO	347	3	151	147	159	151	150	162	149	157	149	146	160	163	168	157.9
7-Feb	177	175	169	157	4	42	148	194	179	159	203	116	150	99	145	87	15	335	6	341	336	346	325	300	148.6
8-Feb	290	288	260	296	UO	174	259	155	172	174	135	163	172	187	141	145	129	51	309	315	335	355	323	326	209.2
9-Feb	326	290	257	260	271	268	358	20	21	13	22	54	30	73	91	116	8	356	7	21	305	269	251	246	342.4
10-Feb	243	243	174	312	188	138	176	203	214	109	123	144	160	164	164	170	170	171	236	251	182	183	191	248	176.8
11-Feb	233	239	230	245	260	261	256	255	248	254	233	268	247	232	232	214	248	265	228	220	129	194	177	193	242.1
12-Feb	214	194	191	192	193	180	172	172	177	170	162	208	249	312	324	344	320	309	310	315	324	331	359	11	297.5
13-Feb	3	6	2	12	17	4	224	240	244	328	26	124	162	170	177	162	183	243	342	10	359	3	7	1	2.5
14-Feb	353	0	3	10	4	9	20	19	25	32	21	17	6	35	27	40	40	27	2	315	334	282	314	258	12.3
15-Feb	245	244	232	240	242	246	232	204	187	153	168	146	164	191	163	149	155	184	190	182	239	221	180	210	185.2
16-Feb	217	223	258	240	173	159	165	180	174	157	172	172	173	178	186	211	216	197	173	259	261	225	239	281	198.0
17-Feb	318	210	3	82	313	186	201	179	178	162	153	136	162	164	128	157	92	350	337	335	354	347	206	228	154.2
18-Feb	334	322	345	348	339	249	316	301	304	8	23	23	16	2	6	351	354	333	340	338	346	355	347	340	352.6
19-Feb	339	243	323	270	287	254	265	255	328	15	22	24	28	345	356	351	0	356	351	358	18	0	328	328	351.6
20-Feb	339	299	232	207	66	153	169	182	187	149	134	175	165	175	158	150	155	168	187	336	210	193	187	202	168.5
21-Feb	344	280	258	273	342	328	283	235	309	85	141	140	144	155	216	219	228	231	214	221	240	347	327	331	217.9
22-Feb	346	250	233	272	342	285	0	347	7	15	34	35	104	106	97	13	2	341	332	269	210	204	188	180	12.3
23-Feb	185	183	177	169	180	168	153	166	198	161	250	260	252	235	246	239	301	314	248	225	253	297	287	268	239.2
24-Feb	348	21	7	4	8	358	347	354	355	4	3	3	19	29	27	32	40	32	15	10	8	17	30	21	9.9
25-Feb	14	16	355	358	3	6	19	27	30	26	7	6	12	23	18	21	22	25	21	15	10	10	13	6	14.2
26-Feb	3	2	2	1	342	326	316	304	320	3	14	32	26	82	122	138	141	183	253	267	255	249	243	281	359.5
27-Feb	336	271	211	3	351	66	180	178	167	204	264	274	231	196	169	141	125	117	169	191	201	182	336	252	187.0
28-Feb	259	194	210	206	215	131	311	175	148	165	145	148	151	144	148	146	140	136	140	150	142	152	149	145	147.7
29-Feb	137	128	126	91	48	60	106	128	134	133	128	144	147	139	151	149	165	233	256	233	240	262	266	269	141.1
	336.5	345.8	333.1	344.8	343.3	344.1	338.9	288.0	3.7	55.3	63.5	117.6	123.8	132.9	136.0	127.0	61.2	332.6	322.8	316.5	332.1	333.8	324.6	318.3	
	Diurnal Average																								

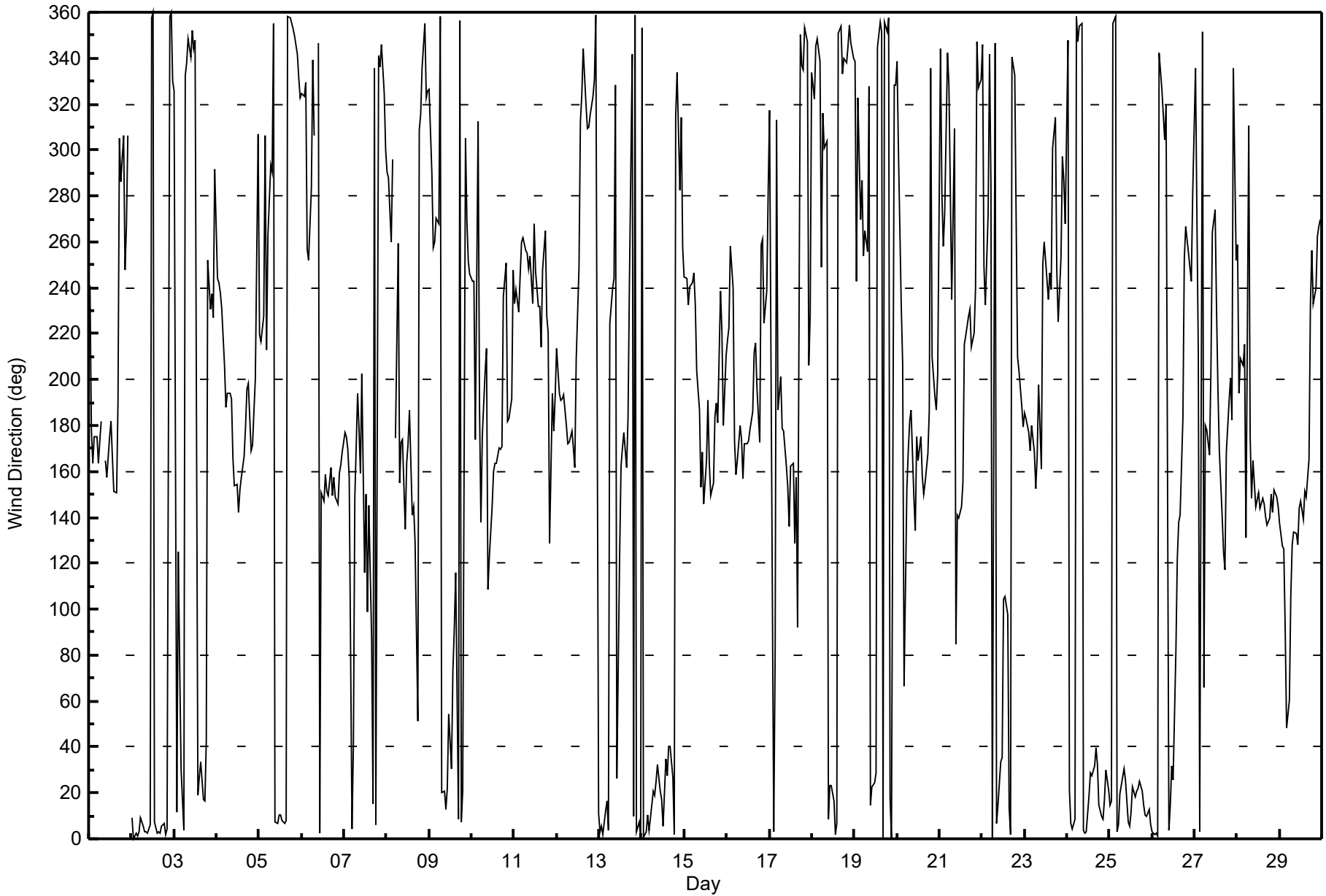
UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Fort McKay South - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 102 deg on Feb 13 17:00		Hours in Service: 696 Hours of Data: 692 Hours of Missing Data: 4 Hours of Calibration: 0 Percent Operational Time: 99.4																							
Minimum Value: 7 deg on Feb 8 19:00																									
Percentiles: P ₁ = 9 P ₁₀ = 13 Q ₁ = 16 Median = 22 Q ₃ = 38 P ₉₀ = 64 P ₉₉ = 88																									
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	87	17	48	32	8	13	12	18	UO	20	15	13	13	14	9	15	40	38	38	36	50	35	77	UO	87
2-Feb	16	12	11	14	14	15	15	15	14	15	15	16	17	16	16	16	16	14	14	14	15	12	12	25	25
3-Feb	35	38	23	35	19	29	31	18	15	15	21	19	27	19	24	19	20	23	78	15	48	44	26	57	78
4-Feb	27	40	23	25	18	14	12	13	13	87	36	15	31	17	10	10	12	13	19	9	14	11	23	80	87
5-Feb	68	68	65	38	48	47	64	36	16	16	15	18	17	16	19	17	15	14	14	15	13	12	17	10	68
6-Feb	29	40	11	32	22	63	48	69	UO	19	79	19	21	14	13	13	12	17	21	13	15	13	12	15	79
7-Feb	11	12	11	55	45	48	27	50	18	31	34	79	48	43	74	55	36	20	14	17	16	14	19	43	79
8-Feb	30	36	39	22	UO	72	44	40	39	70	83	57	39	33	15	25	29	66	7	10	14	12	18	16	83
9-Feb	16	23	18	22	21	19	46	15	15	16	23	20	34	49	64	41	16	11	18	27	35	32	33	35	64
10-Feb	33	46	86	76	61	40	19	49	55	58	40	13	17	24	14	15	14	12	39	37	19	17	44	33	86
11-Feb	25	78	75	17	21	24	15	20	32	93	34	36	27	21	23	24	16	13	32	48	88	28	28	20	93
12-Feb	25	17	54	11	16	9	17	15	62	38	16	30	29	47	23	19	18	17	18	20	17	17	20	14	62
13-Feb	15	15	15	16	14	34	61	22	68	40	29	93	18	15	15	15	102	23	55	16	16	18	16	17	102
14-Feb	16	17	20	17	17	16	15	15	18	20	22	21	20	24	21	20	22	16	37	30	21	31	51	19	51
15-Feb	44	17	25	36	25	14	8	22	12	13	34	15	40	34	30	9	13	10	10	14	63	74	70	58	74
16-Feb	24	39	18	48	32	13	11	9	9	9	11	13	12	12	18	24	22	20	43	49	30	60	79	74	79
17-Feb	85	93	79	74	78	46	50	20	25	16	15	30	46	30	37	36	71	12	19	15	11	65	79	35	93
18-Feb	17	21	25	76	55	60	38	34	56	39	13	17	15	16	17	17	20	10	14	16	10	11	12	15	76
19-Feb	20	62	20	40	30	56	49	45	49	18	17	29	29	56	48	25	13	14	16	16	17	26	28	25	62
20-Feb	31	65	74	48	87	34	20	35	28	12	15	30	19	19	15	13	13	40	86	50	73	26	68	42	87
21-Feb	28	52	42	61	39	48	46	74	75	42	26	9	13	16	27	26	29	25	17	13	14	38	21	75	75
22-Feb	41	45	26	49	74	66	19	68	23	31	23	20	66	19	68	53	12	14	18	37	58	29	15	24	74
23-Feb	10	9	9	13	18	36	17	24	76	18	36	25	31	29	28	26	31	27	31	24	31	27	30	27	76
24-Feb	46	18	17	15	15	17	18	19	21	17	19	22	21	22	25	26	22	18	22	23	15	16	16	15	46
25-Feb	14	20	15	15	14	15	17	17	19	20	19	20	23	21	20	19	17	17	17	17	17	17	16	14	23
26-Feb	17	18	17	16	21	14	14	29	30	28	67	39	27	76	39	49	23	25	41	35	34	11	79	67	79
27-Feb	82	59	99	19	89	61	35	49	56	45	42	48	82	71	32	26	21	27	19	23	26	48	23	53	99
28-Feb	43	41	71	84	90	85	81	83	78	22	18	14	14	16	13	14	14	16	16	15	13	13	13	15	90
29-Feb	16	18	21	32	22	25	24	22	18	19	23	18	21	24	27	16	37	33	18	19	29	15	18	16	37
Diurnal Maximum																									
UO - Unstable Operation																									





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

**AMS14
ANZAC
FEBRUARY 2024**

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ANZAC (AMS14)
 FEBRUARY 2024

MONTHLY SUMMARY for
 AMD SECTION III.B.1(c)

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2(ppb) Average	663	33	33	100	11.9	0	4.7	0
TRS(ppb) Average	660	35	36	99.86	1.4	0	0.5	0
THC(ppm) Average	626	32	70	94.54	2.9	-	2.2	-
NMHC(ppm) Average	626	32	70	94.54	0.479	-	0.096	-
CH4(ppm) Average	626	32	70	94.54	2.4	-	2.1	-
NO2(ppb) Average	661	34	35	99.86	20.8	0	10.2	-
NO(ppb) Average	661	34	35	99.86	34.8	-	3.3	-
NOX(ppb) Average	661	34	35	99.86	53.2	-	13.4	-
O3(ppb) Average	662	33	34	99.86	44.3	0	39.7	-
PM2.5(ug/m3) Average	693	3	3	100	55.5	0	9.5	0
AT 2m(C) Average	696	0	0	100	7.7	-	2.1	-
RH(%) Average	696	0	0	100	98.2	-	96.9	-
WS(km/h) Average	696	0	0	100	30	-	20	-
WD(deg) Average	696	0	0	100	-	-	-	-
Leaf Wetness (% of range) Average	696	0	0	100	33.2	-	4.3	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ANZAC (AMS14)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2(ppb) Average	663	1.16	1.9	-	0	0	0.2	0.5	1.1	3.4	11.9
TRS(ppb) Average	660	0.23	0.2	-	0.1	0.1	0.2	0.2	0.2	0.4	1.4
THC(ppm) Average	626	2.02	0.1	-	1.9	2	2	2	2	2.1	2.9
NMHC (ppm) Average	626	0.019	0.052	-	0	0	0	0	0	0.1	0.479
CH4(ppm) Average	626	2	0.1	-	1.9	2	2	2	2	2.1	2.4
NO2(ppb) Average	661	3.53	3.8	-	0.1	0.7	1.1	2	4.3	8.4	20.8
NO(ppb) Average	661	0.89	2.3	-	0	0	0	0.2	0.8	2.2	34.8
NOX(ppb) Average	661	4.42	5.4	-	0.1	0.7	1.3	2.4	5.5	11	53.2
O3(ppb) Average	662	28.16	10.5	-	0	12.2	22	31	36	39.3	44.3
PM2.5(ug/m3) Average	693	4.66	4.9	-	0.5	1.4	2.2	3.2	5.5	9.4	55.5
Temperature 2 m (C) Average	696	-9.21	7.7	-	-28.5	-19	-14.3	-8.5	-3.9	0.4	7.7
Relative Humidity (%) Average	696	70.51	15.8	-	25.4	48.1	59.5	72.3	82.1	89.5	98.2
Wind Speed 20 m (km/h) Average	696	10.8	6	-	0	4	7	10	14	19	30
Wind Direction 20 m (deg) Average	696	208.2	-	-	-	-	-	-	-	-	-
Leaf Wetness (% of range) Average	696	0.67	1.8	-	0	0	0	0	0.4	2.5	33.2

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ANZAC (AMS14)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
NO2, O3, THC/NMHC/CH4, TRS	07 Feb 2024 14:00	07 Feb 2024 14:00	1	Maintenance - sample manifold cleaned
THC/NMHC/CH4	02 Feb 2024 04:00	03 Feb 2024 10:00	31	Unstable Operation - excessive baseline noise
THC/NMHC/CH4	03 Feb 2024 11:00	03 Feb 2024 13:00	3	Maintenance - retention time adjusted
THC/NMHC/CH4	14 Feb 2024 11:00	14 Feb 2024 13:00	3	Maintenance - replaced support gas cylinder

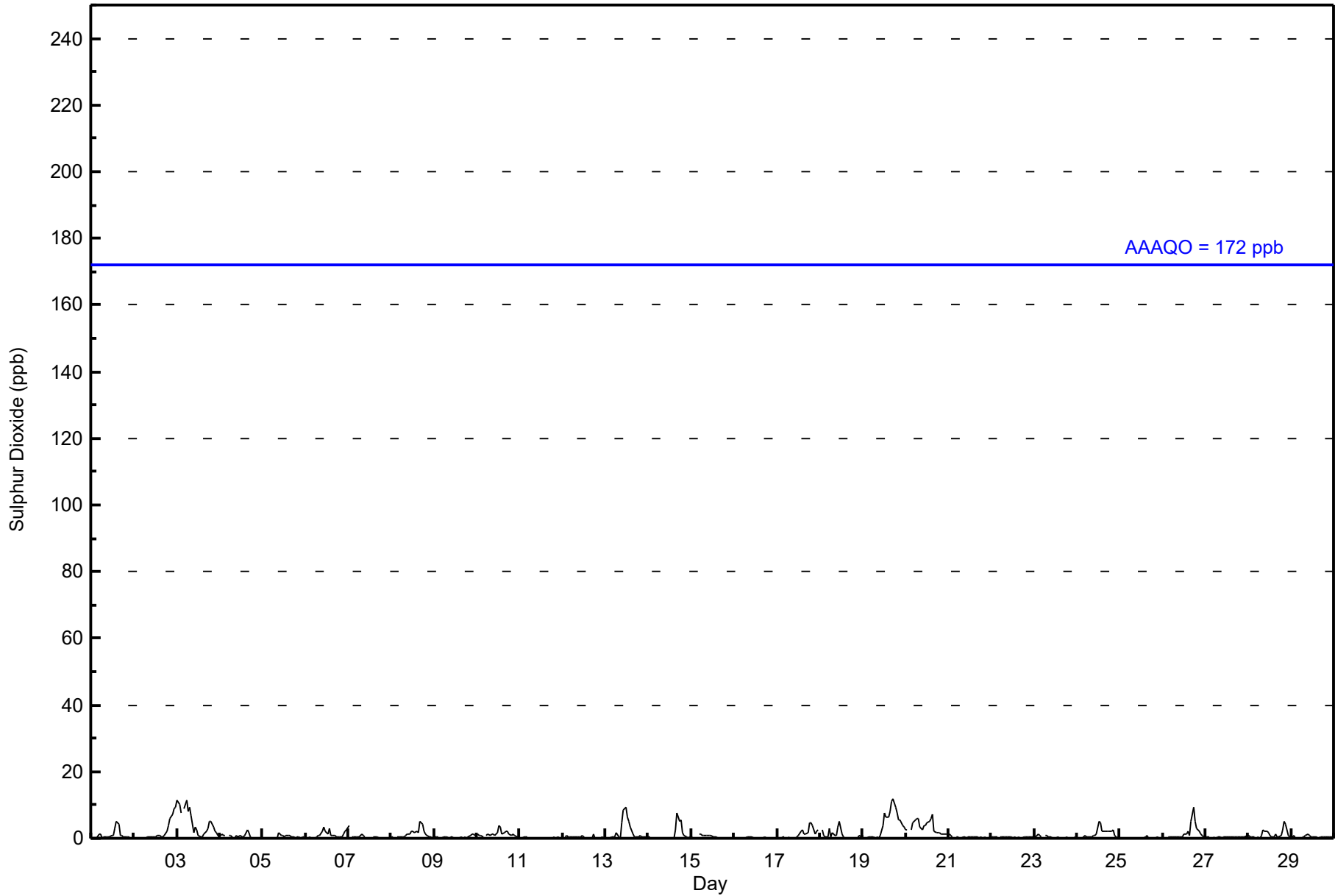


Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	696																											
Maximum Value: 11.9 ppb on Feb 19 18:00		Maximum Daily Average: 4.7 ppb on Feb 3																	Hours of Data: 663																													
Minimum Value: 0.0 ppb on Feb 1 03:00		Minimum Daily Average: 0.1 ppb on Feb 25																	Hours of Missing Data: 33																													
Maximum Diurnal Average: 1.7 ppb at hour 18		Minimum Diurnal Average: 0.4 ppb at hour 4																	Hours of Calibration: 33																													
Monthly Average: 1.16 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 0.5 Q ₃ = 1.1 P ₉₀ = 3.4 P ₉₉ = 9.3																	Percent Operational Time: 100.0																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	0.1	Z	0.0	0.2	1.1	1.1	0.1	0.5	0.3	0.2	0.6	0.7	0.7	3.1	5.1	4.3	0.8	0.7	0.6	0.6	0.4	0.4	0.2	0.1	1.0	5.1																						
2-Feb	0.1	0.0	Z	0.2	0.1	0.2	0.2	0.5	0.5	0.5	0.4	0.5	0.5	0.7	0.6	0.5	0.5	0.7	2.1	4.0	5.9	7.3	8.8	9.2	1.9	9.2																						
3-Feb	11.5	10.2	7.6	Z	8.8	11.2	8.1	9.5	6.9	1.6	3.5	2.7	1.0	0.5	0.2	1.3	2.3	2.9	5.1	5.1	3.4	2.1	1.6	1.0	4.7	11.5																						
4-Feb	0.9	1.1	0.9	0.9	Z	0.7	0.7	0.2	0.1	0.7	0.5	0.7	0.6	0.4	0.7	2.5	1.7	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.6	2.5																						
5-Feb	0.0	0.1	0.1	0.1	0.1	Z	0.0	0.0	0.0	1.5	1.0	1.0	0.5	0.9	0.8	1.0	0.5	0.2	0.1	0.3	0.2	0.2	0.2	0.3	0.4	1.5																						
6-Feb	Z	0.2	0.2	0.2	0.1	0.2	0.6	0.6	1.0	2.0	3.5	2.2	1.2	2.9	0.8	0.9	0.9	0.6	0.3	0.4	0.4	1.2	2.2	2.7	1.1	3.5																						
7-Feb	3.9	Z	0.5	0.6	0.3	0.3	0.3	1.3	0.9	0.4	C	C	C	C	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.5	3.9																						
8-Feb	0.6	0.4	Z	0.3	0.4	0.5	0.5	0.5	1.0	1.1	1.1	2.1	2.0	1.5	1.9	1.7	5.3	4.1	2.3	1.3	1.0	0.2	0.2	0.2	1.3	5.3																						
9-Feb	0.3	0.6	0.2	Z	0.0	0.4	0.2	0.3	0.1	0.4	0.3	0.0	0.1	0.0	0.0	0.4	0.1	0.3	0.0	0.6	0.8	1.2	1.3	0.9	0.4	1.3																						
10-Feb	1.1	1.0	0.7	0.4	Z	0.7	1.1	1.0	1.1	1.1	0.9	1.8	3.8	3.2	1.5	1.5	2.2	2.1	1.3	0.9	1.1	0.7	0.6	0.3	1.3	3.8																						
11-Feb	0.2	0.1	0.4	0.3	0.4	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.2	0.2	0.4	0.2	0.0	0.1	0.4																						
12-Feb	Z	0.5	0.9	0.4	0.3	0.4	0.5	0.5	0.3	0.5	0.4	0.7	0.1	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.3	0.1	0.3	1.2																						
13-Feb	0.0	Z	0.2	0.4	0.6	0.5	1.5	0.4	0.1	4.7	8.4	9.1	6.3	5.1	3.5	1.2	0.6	0.5	0.6	0.7	0.6	0.6	0.5	0.3	2.0	9.1																						
14-Feb	0.3	0.3	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	2.3	7.5	5.1	5.6	1.6	0.7	0.3	0.1	0.5	1.1	7.5																						
15-Feb	0.3	0.0	0.1	Z	1.1	1.1	0.9	1.0	1.0	1.0	1.0	1.0	0.6	0.5	0.3	0.1	0.2	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.5	1.1																						
16-Feb	0.0	0.0	0.0	0.0	Z	0.2	0.0	0.3	0.5	0.6	0.2	0.1	0.0	0.1	0.0	0.1	0.2	0.5	0.1	0.0	0.0	0.0	0.0	0.2	0.1	0.6																						
17-Feb	0.0	0.0	0.0	0.4	0.6	Z	0.2	0.0	0.0	0.0	0.1	0.4	0.9	2.3	2.7	1.5	1.1	1.8	4.7	4.8	4.0	1.3	1.9	2.5	1.4	4.8																						
18-Feb	Z	2.7	0.6	0.6	0.6	2.9	0.3	1.8	0.9	0.7	3.3	5.0	1.1	0.5	0.2	0.2	0.0	0.1	0.1	0.0	0.1	0.2	0.9	0.6	1.0	5.0																						
19-Feb	0.9	Z	0.2	0.3	0.2	0.4	0.3	0.1	0.3	0.1	1.0	3.7	7.8	6.2	6.5	8.2	11.2	11.9	9.2	7.5	5.7	5.5	3.7	3.4	4.1	11.9																						
20-Feb	2.7	2.7	Z	2.6	4.5	5.7	6.0	6.0	3.4	2.7	4.0	3.7	4.8	5.1	5.9	7.1	2.0	1.6	1.7	1.6	1.3	1.2	1.3	1.1	3.4	7.1																						
21-Feb	1.2	0.8	0.6	Z	0.6	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.5	0.3	0.1	0.3	0.2	0.3	0.2	0.1	0.6	0.3	1.2																						
22-Feb	0.5	0.6	0.4	0.2	Z	0.5	0.6	0.6	0.4	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.3	0.5	0.4	0.3	0.4	0.5	0.4	0.6																						
23-Feb	0.3	0.5	1.4	0.8	0.5	Z	0.9	0.7	0.5	0.3	0.1	0.0	0.1	0.3	0.1	0.1	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.4	0.3	1.4																						
24-Feb	Z	0.0	0.0	0.1	0.8	0.6	0.4	0.5	0.6	0.8	1.0	1.2	5.0	4.6	2.1	2.1	2.3	2.1	1.9	2.3	2.3	0.9	0.4	0.1	1.4	5.0																						
25-Feb	0.1	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.2	0.2	0.2	0.1	0.0	0.2	0.1	0.0	0.1	0.7																						
26-Feb	0.0	0.1	Z	0.3	0.3	0.4	0.5	0.5	0.4	0.5	0.6	0.6	1.1	1.3	2.0	0.8	5.2	9.4	5.2	3.1	2.2	1.2	0.7	0.5	1.6	9.4																						
27-Feb	0.4	0.2	0.4	Z	0.4	0.1	0.2	0.3	0.3	0.0	0.5	0.4	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.2	0.4	0.5	0.6	0.7	0.4	0.7																						
28-Feb	0.6	0.5	0.4	0.5	Z	0.4	0.1	0.8	2.3	1.9	2.0	1.6	0.9	0.6	0.4	1.4	0.3	0.2	1.0	2.5	5.3	4.3	0.7	0.4	1.3	5.3																						
29-Feb	0.2	0.7	0.1	0.2	0.2	Z	0.5	0.6	0.7	1.3	1.0	0.4	0.5	0.4	0.3	0.1	0.3	0.2	0.4	0.4	0.5	0.3	0.3	0.3	0.4	1.3																						
1.0																								1.0	0.7	0.4	0.9	1.2	0.9	1.0	0.8	0.9	1.3	1.4	1.5	1.5	1.3	1.4	1.6	1.7	1.5	1.4	1.3	1.1	1.0	1.0	Diurnal Average	
11.5																								10.2	7.6	2.6	8.8	11.2	8.1	9.5	6.9	4.7	8.4	9.1	7.8	6.2	6.5	8.2	11.2	11.9	9.2	7.5	5.9	7.3	8.8	9.2	Diurnal Maximum	
Z - zerspan C - Calibration																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																																																



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Anzac - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Anzac - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	659	99.40	99.40
11 - 20	4	0.60	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Anzac - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	16	11	15	22	72	81	36	8	16	10	38	134	73	65	34	28	659
11 - 20	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	4
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	11	15	22	72	81	36	8	16	10	38	134	74	66	34	30	663

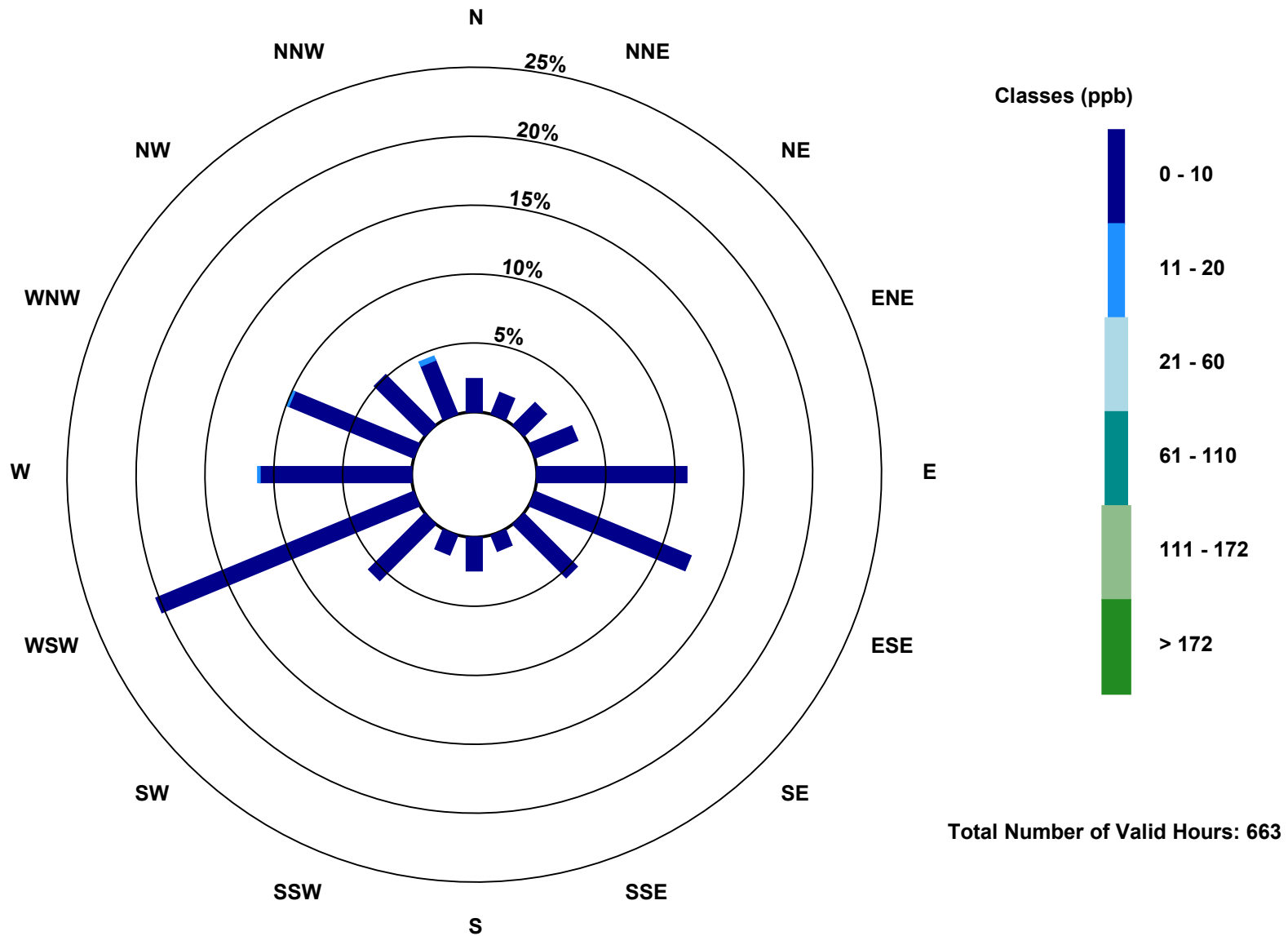
Total Number of Valid Hours: 663

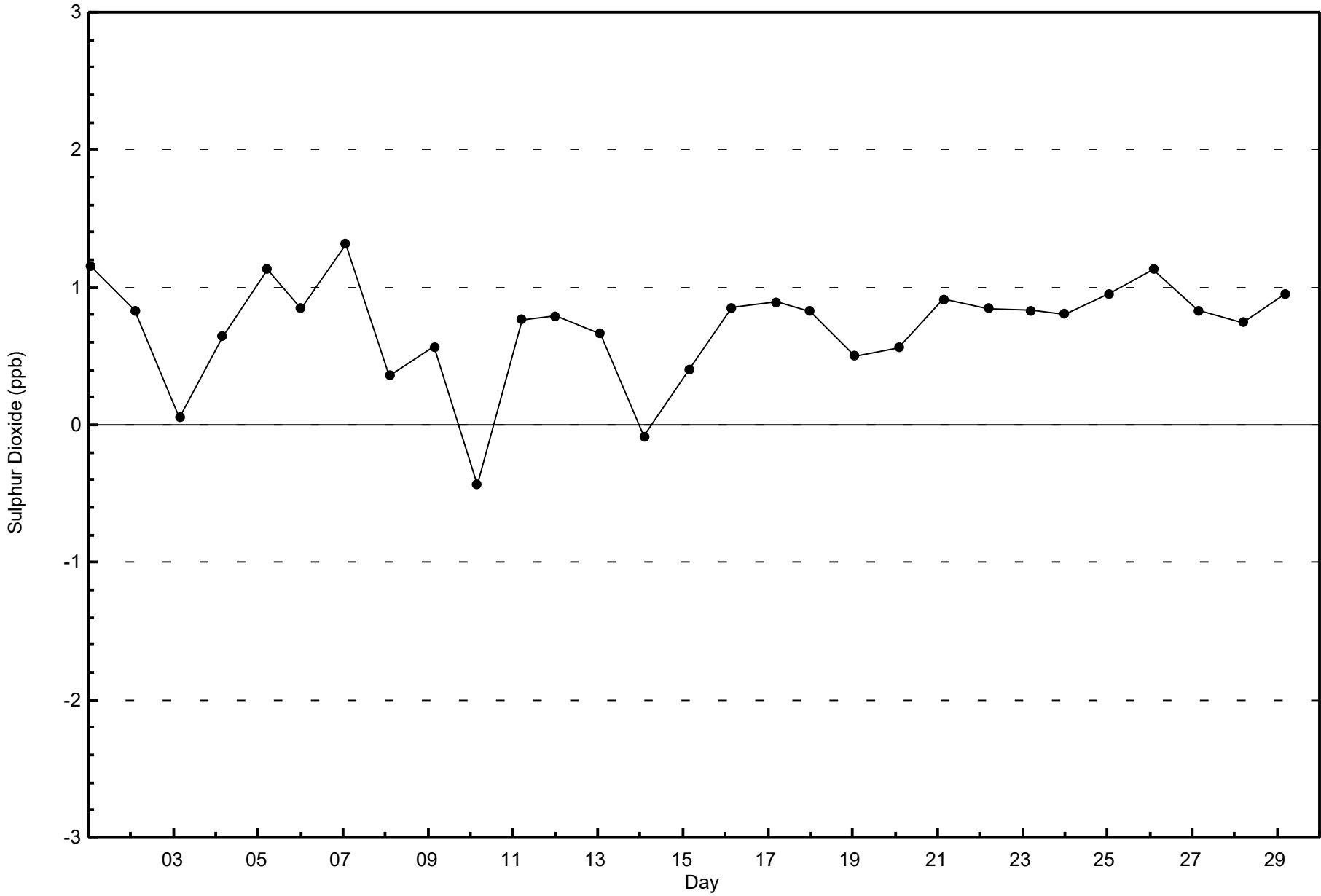
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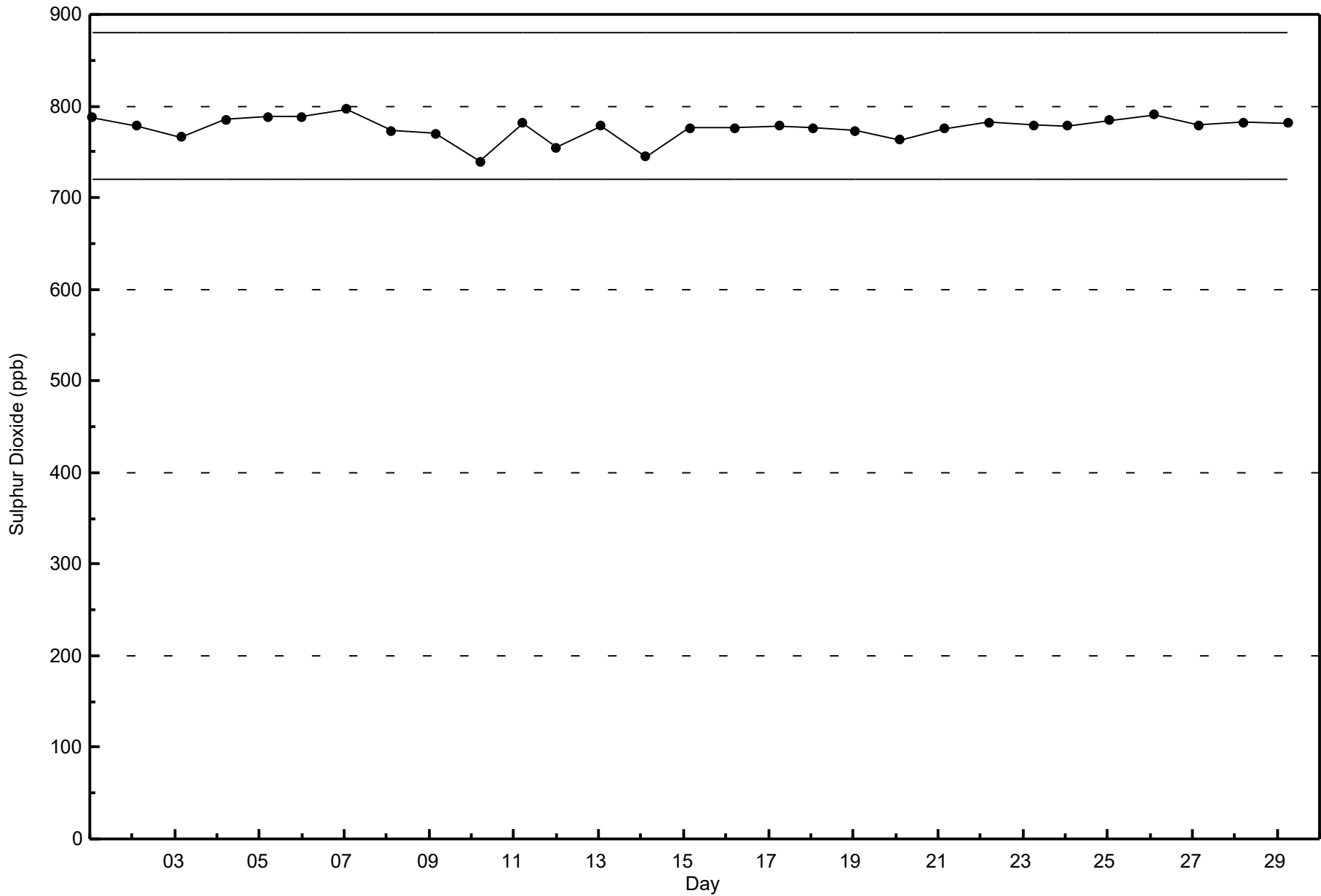


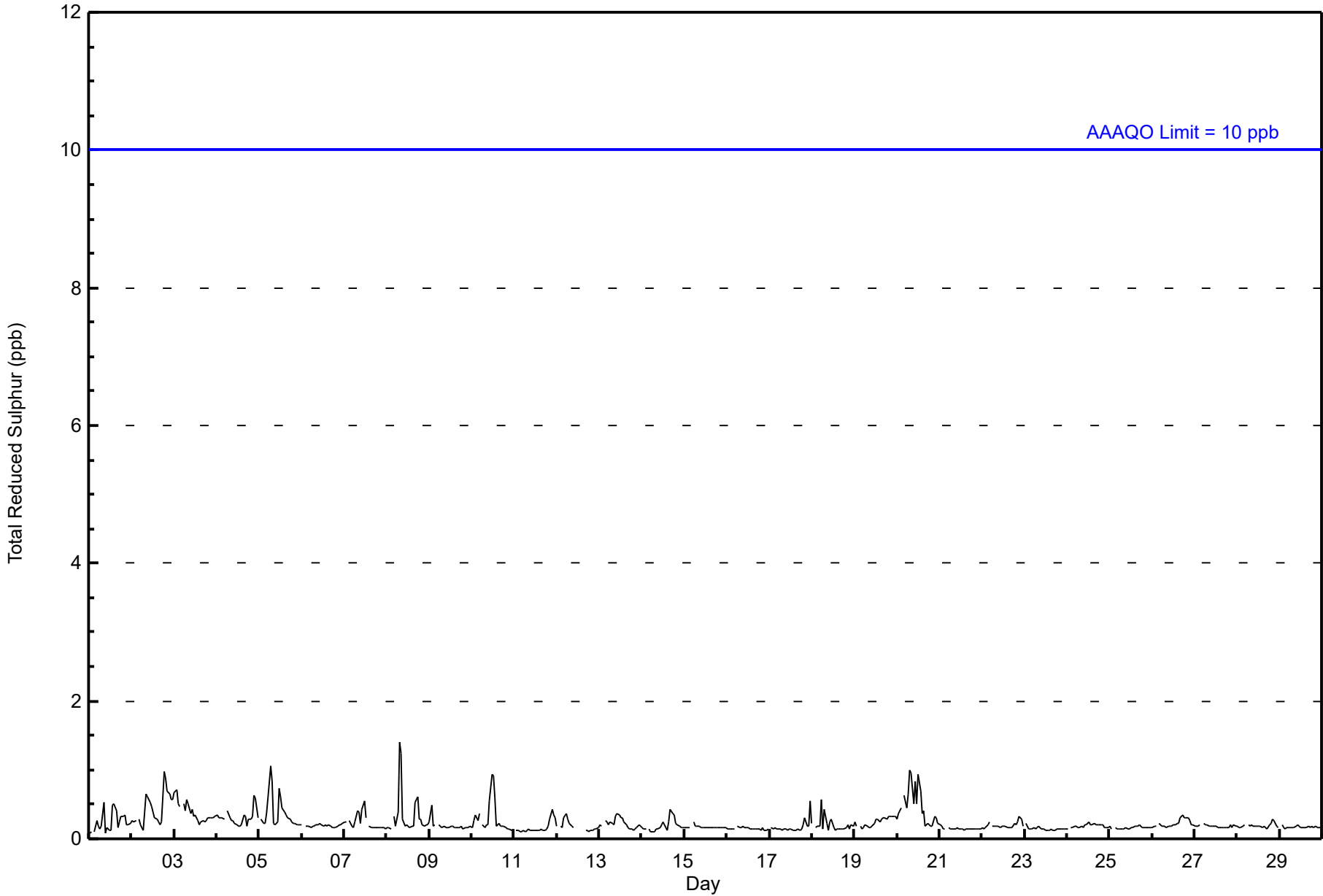
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Anzac











Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Reduced Sulphur (TRS) - ppb
Anzac - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	660	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Total Reduced Sulphur (TRS) - ppb
Anzac - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	16	11	15	25	71	81	38	6	15	10	36	132	75	66	33	30	660
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	11	15	25	71	81	38	6	15	10	36	132	75	66	33	30	660

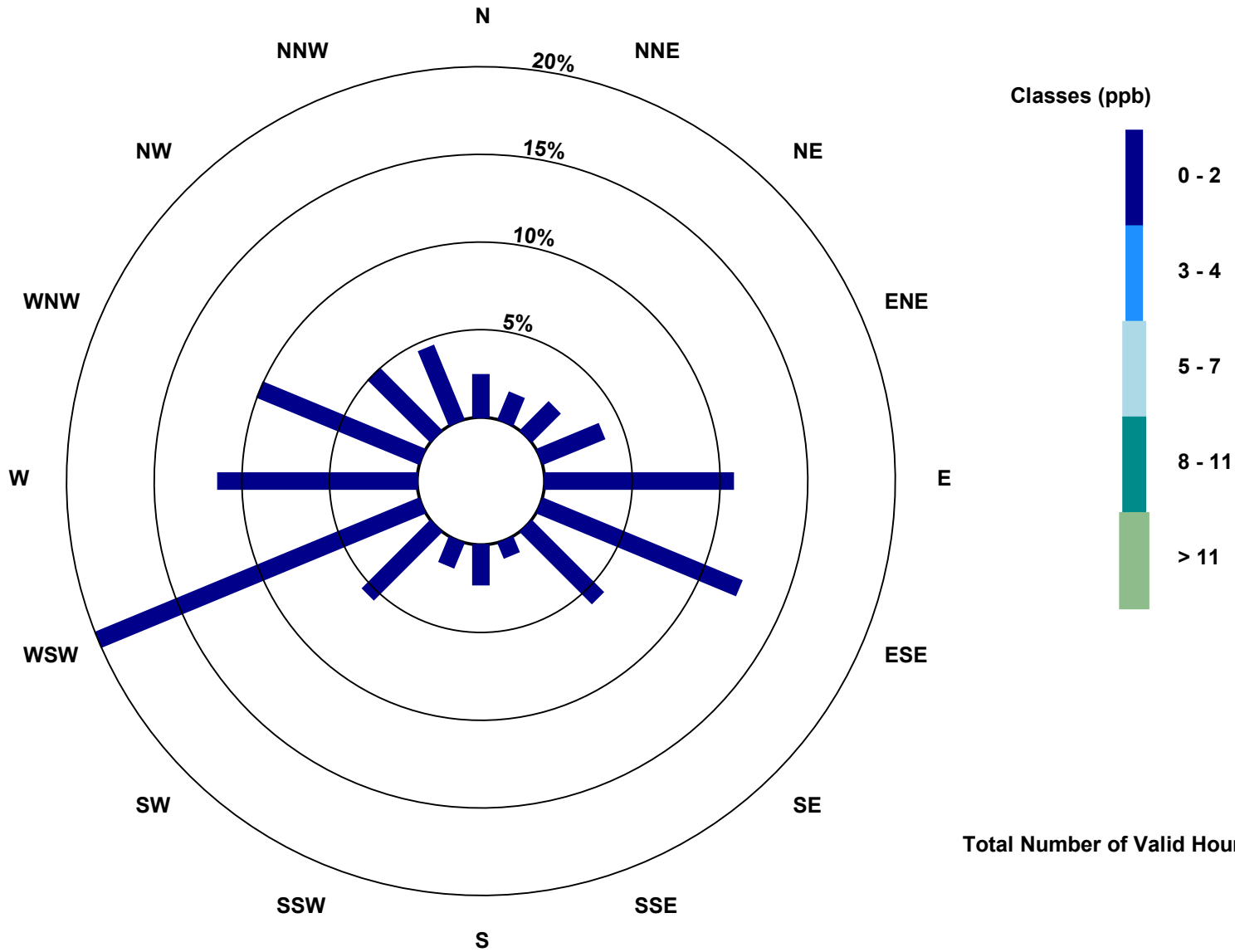
Total Number of Valid Hours: 660

Total Number of Hours: 696

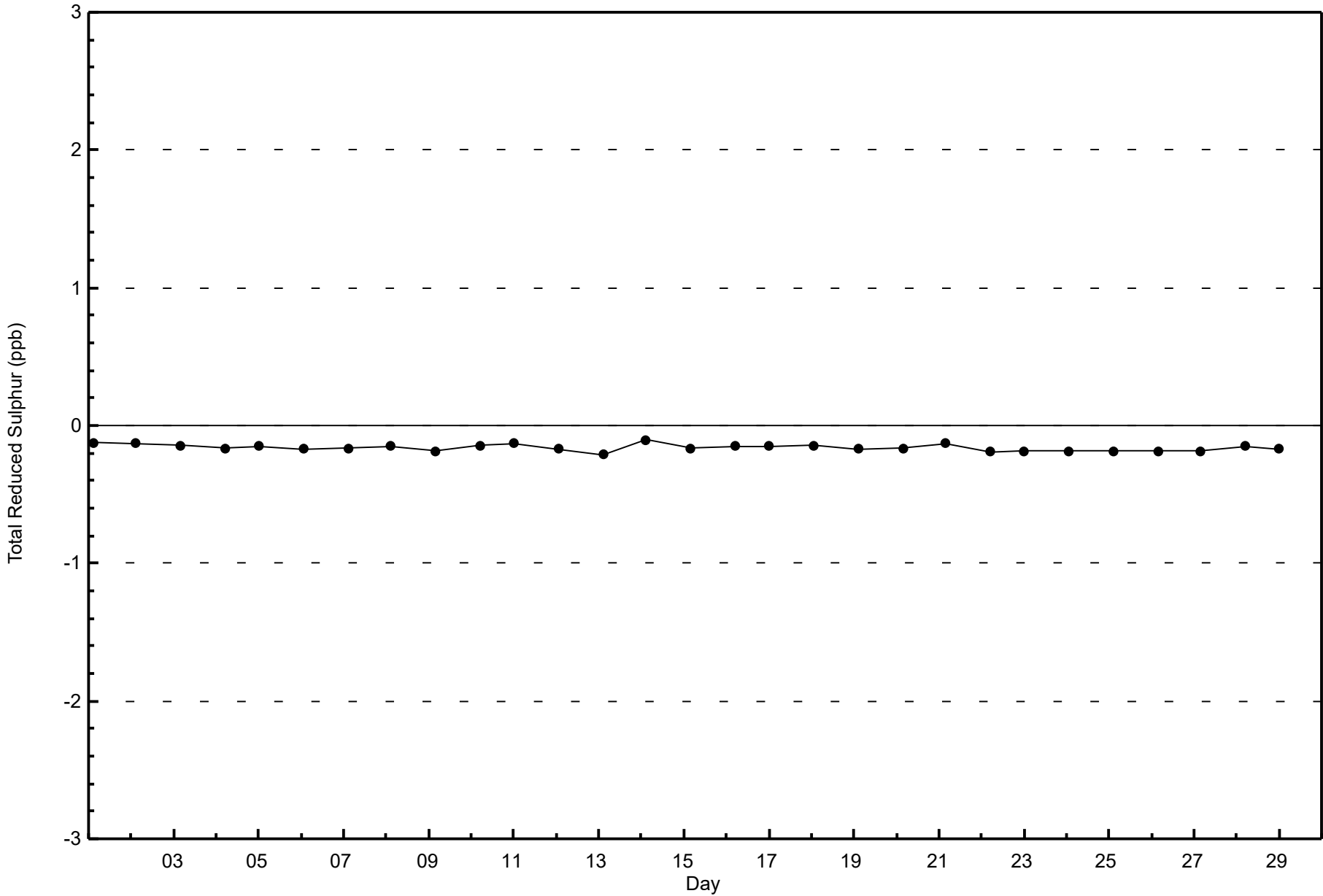


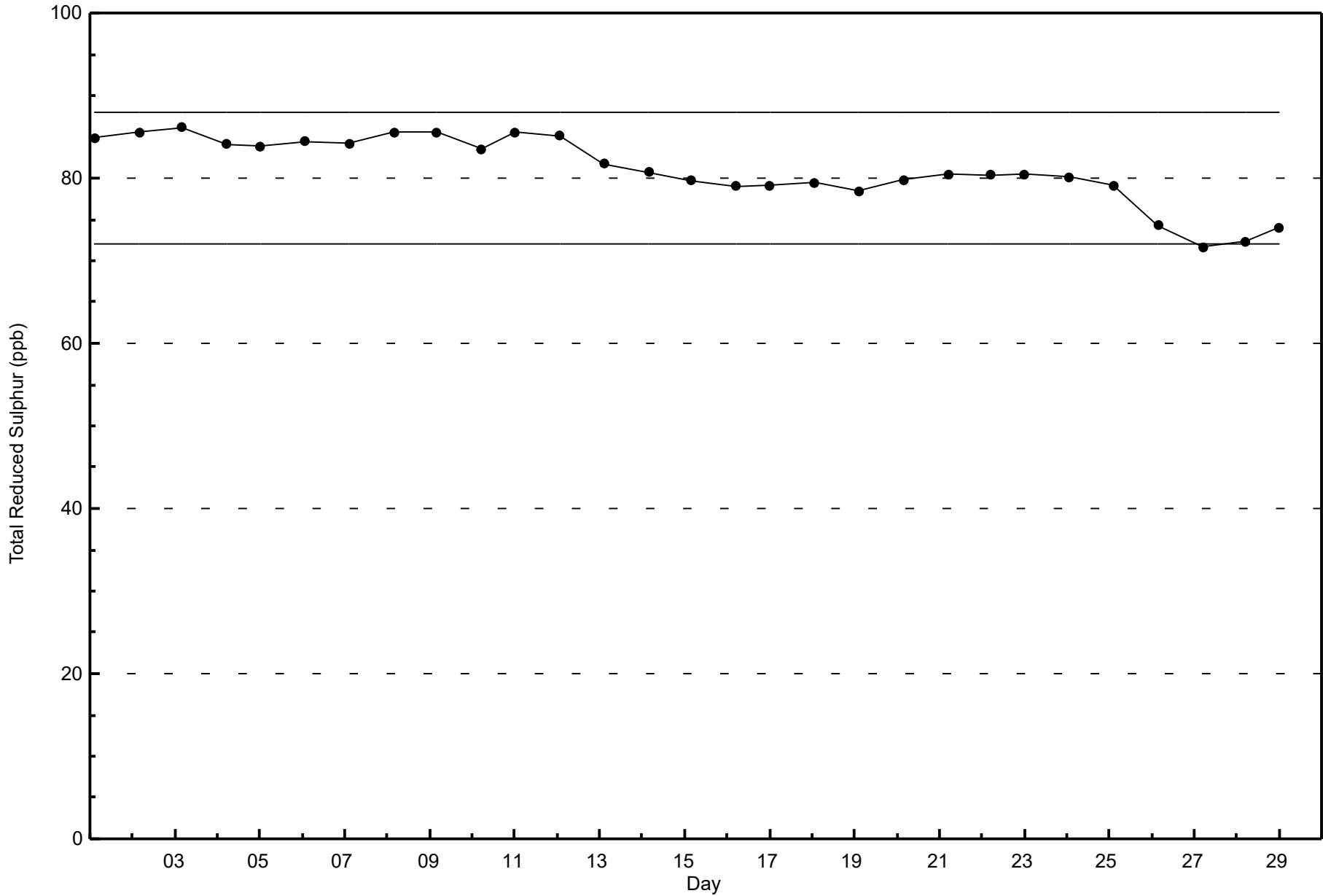
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Reduced Sulphur (TRS) - ppb
Anzac



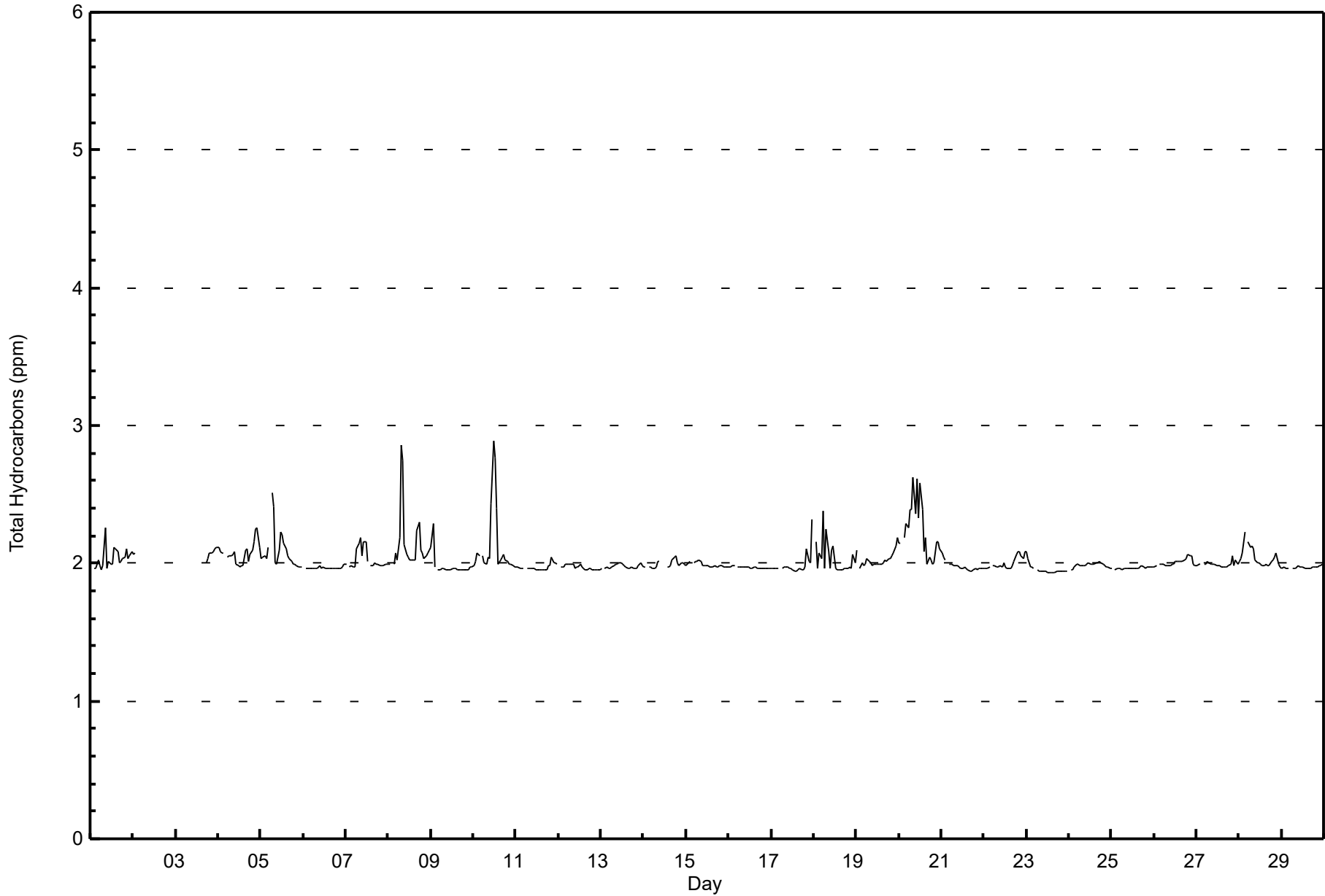
Total Number of Valid Hours: 660







Maximum Value: 2.9 ppm on Feb 10 12:00		Maximum Daily Average: 2.2 ppm on Feb 20		Hours in Service:	696																					
Minimum Value: 1.9 ppm on Feb 23 13:00		Minimum Daily Average: 2.0 ppm on Feb 23		Hours of Data:	626																					
Maximum Diurnal Average: 2.1 ppm at hour 8		Minimum Diurnal Average: 2.0 ppm at hour 15		Hours of Missing Data:	70																					
Monthly Average: 2.02 ppm		Percentiles: P ₁ = 1.9 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.0 Q ₃ = 2.0 P ₉₀ = 2.1 P ₉₉ = 2.6		Hours of Calibration:	32																					
				Percent Operational Time:	94.5																					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.0	2.3
2-Feb	2.1	2.1	Z	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	2.1
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	C	C	C	C	2.0	2.0	2.1	2.1	2.1	2.1	2.1	--	2.1
4-Feb	2.1	2.1	2.1	2.1	Z	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.2	2.2	2.3	2.1	2.1	2.3
5-Feb	2.0	2.0	2.1	2.0	2.1	Z	2.5	2.4	2.0	2.0	2.1	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.5
6-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.1	2.2	2.2	2.0	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2
8-Feb	2.0	2.0	Z	2.0	2.1	2.0	2.2	2.9	2.7	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.2	2.3	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.9
9-Feb	2.1	2.3	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.3
10-Feb	2.0	2.0	2.1	2.1	Z	2.1	2.0	2.0	2.0	2.0	2.4	2.9	2.8	2.4	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.9
11-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0
13-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	M	M	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	1.9	2.0	2.1	2.0	2.0	2.3	2.0	2.0	2.3
18-Feb	Z	2.2	2.0	2.1	2.0	2.4	2.0	2.3	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.4
19-Feb	2.1	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.0	2.0	2.2
20-Feb	2.1	2.1	Z	2.2	2.3	2.3	2.4	2.4	2.6	2.4	2.6	2.3	2.6	2.4	2.1	2.2	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.1	2.2	2.6
21-Feb	2.1	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
22-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.1
23-Feb	2.1	2.0	2.0	2.0	2.0	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1
24-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1
27-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28-Feb	2.0	2.0	2.1	2.2	Z	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.2
29-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.1 2.1 2.0 2.0 2.1 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0																								Diurnal Average		
2.1 2.3 2.1 2.2 2.3 2.4 2.5 2.9 2.7 2.4 2.6 2.9 2.8 2.4 2.1 2.2 2.2 2.3 2.1 2.1 2.2 2.2 2.3 2.3																								Diurnal Maximum		
Z - zerspan			C - Calibration				M - Maintenance				UO - Unstable Operation															





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Anzac - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	507	80.99	80.99
2.1 - 3.0	119	19.01	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 626

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Total Hydrocarbons (THC) - ppm
Anzac - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	15	9	14	18	50	48	15	3	13	6	34	127	48	50	31	26	507
2.1 - 3.0	1	2	1	5	23	33	21	5	3	4	4	2	7	4	1	3	119
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	11	15	23	73	81	36	8	16	10	38	129	55	54	32	29	626

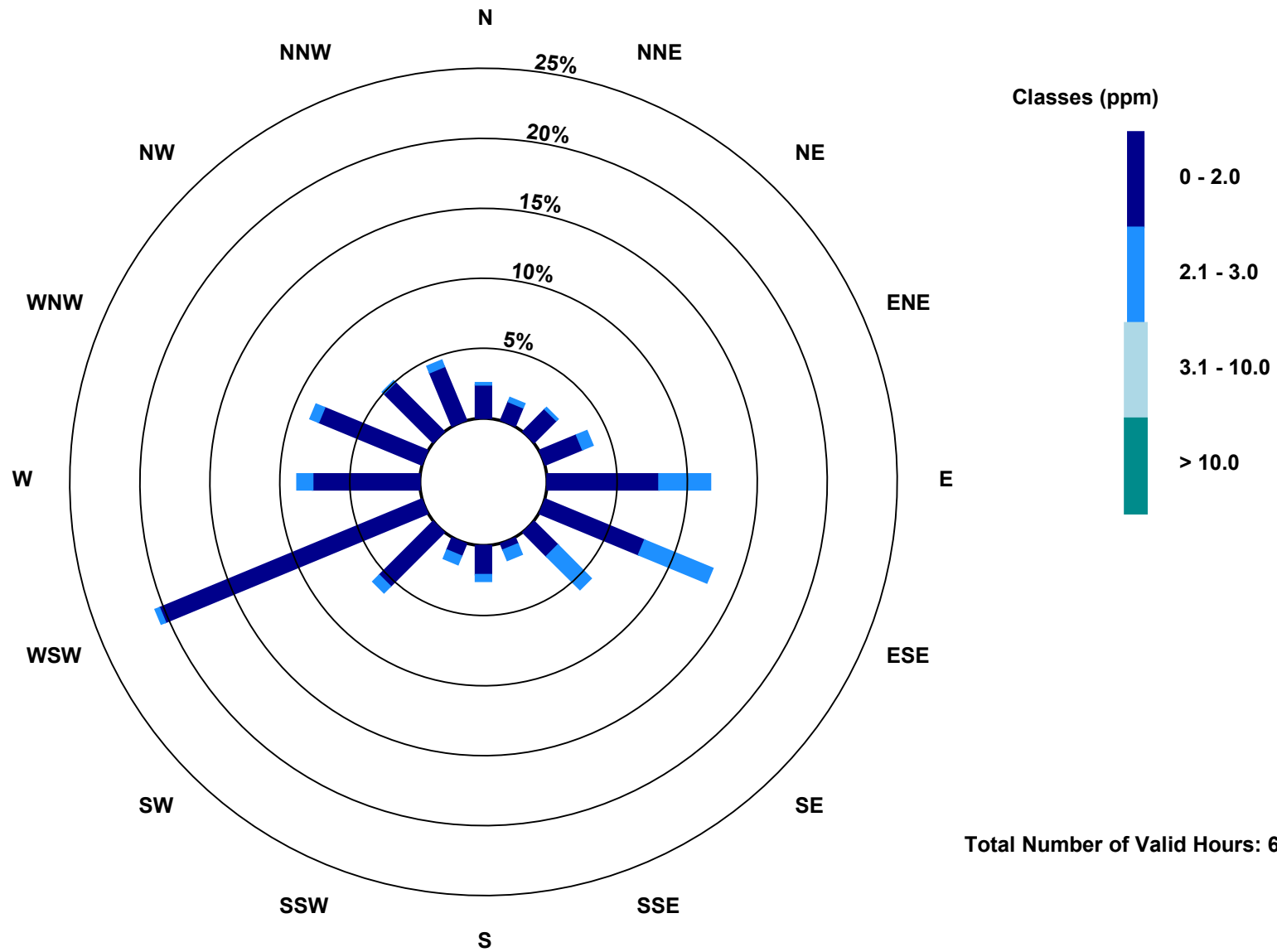
Total Number of Valid Hours: 626

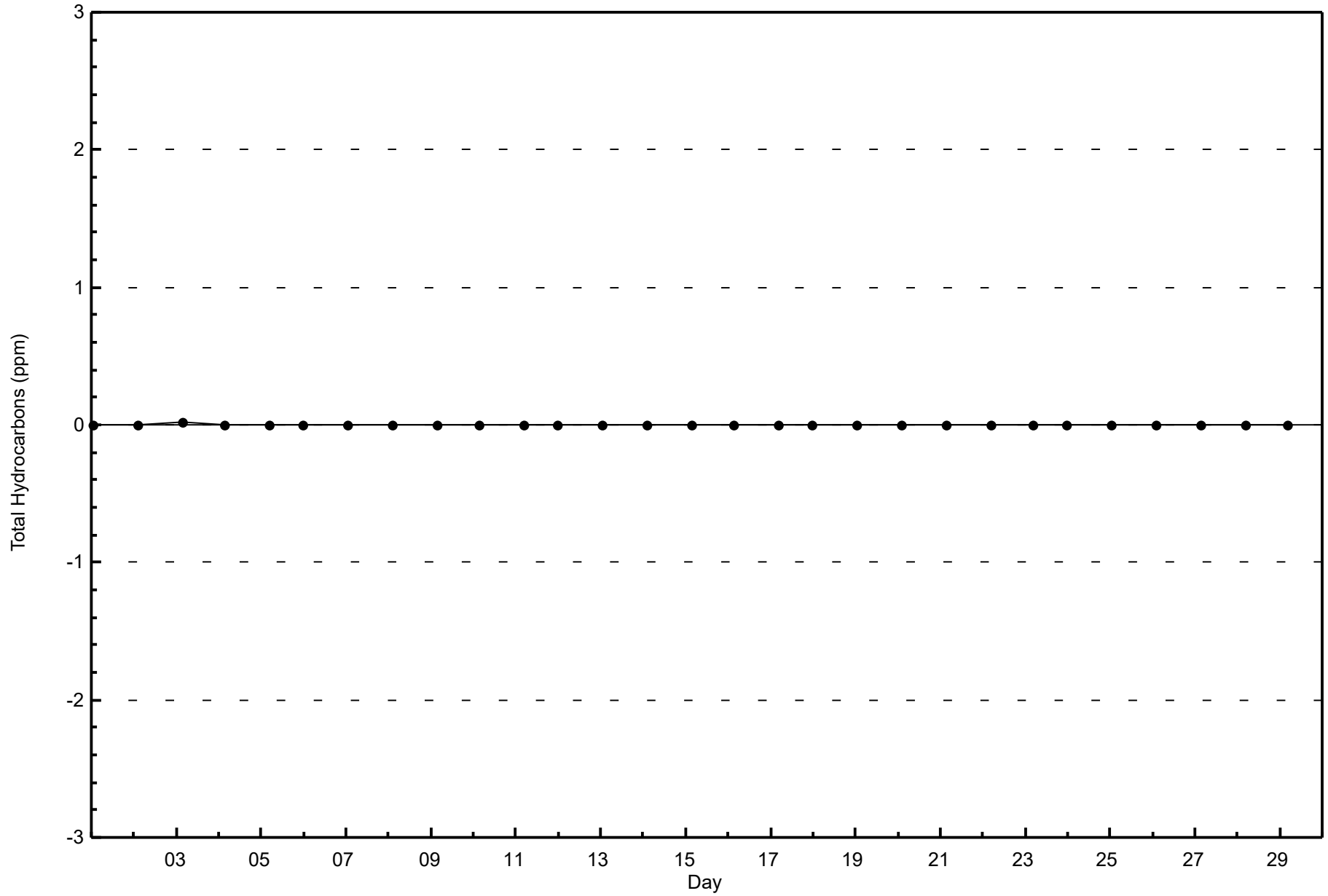
Total Number of Hours: 696

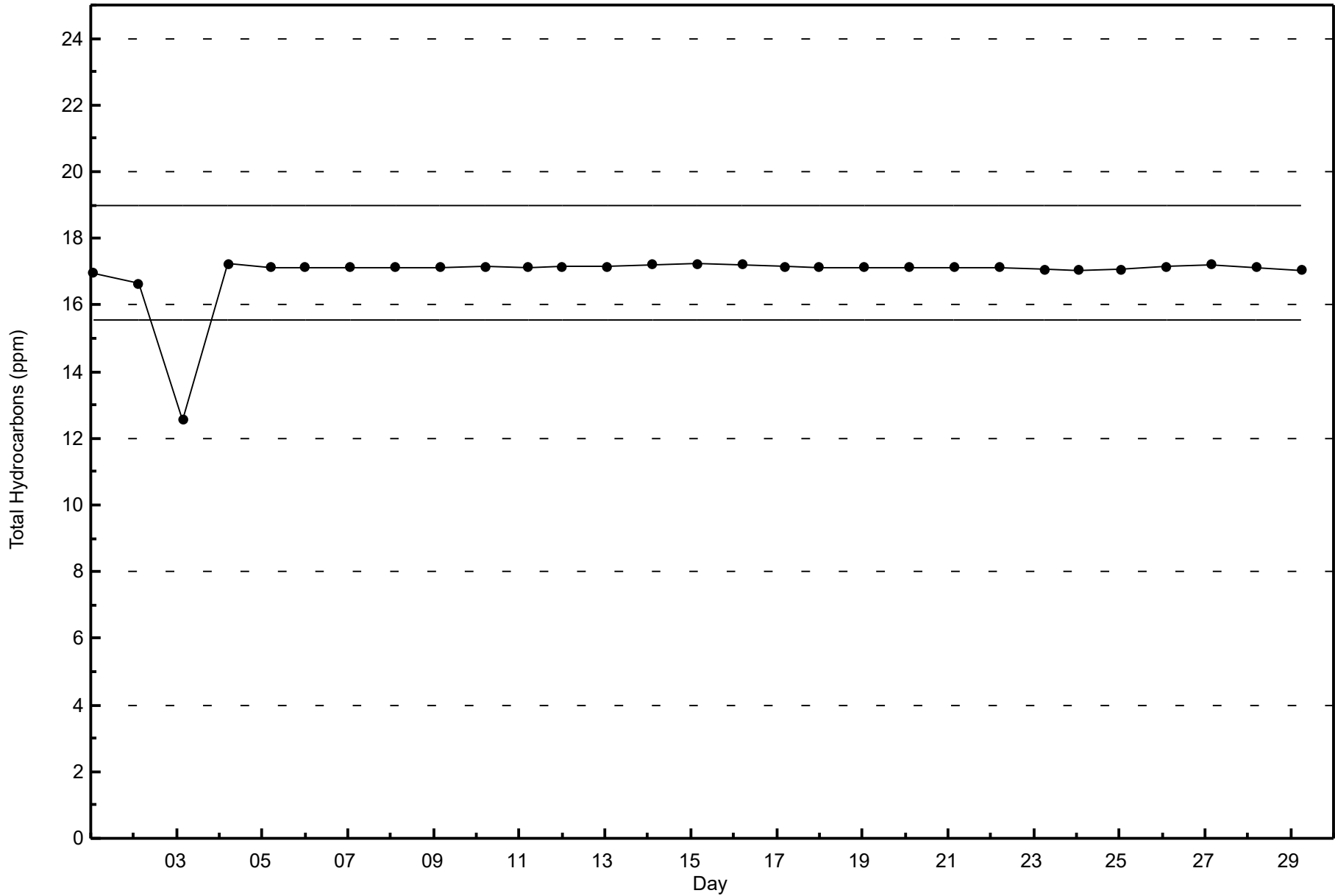


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Anzac





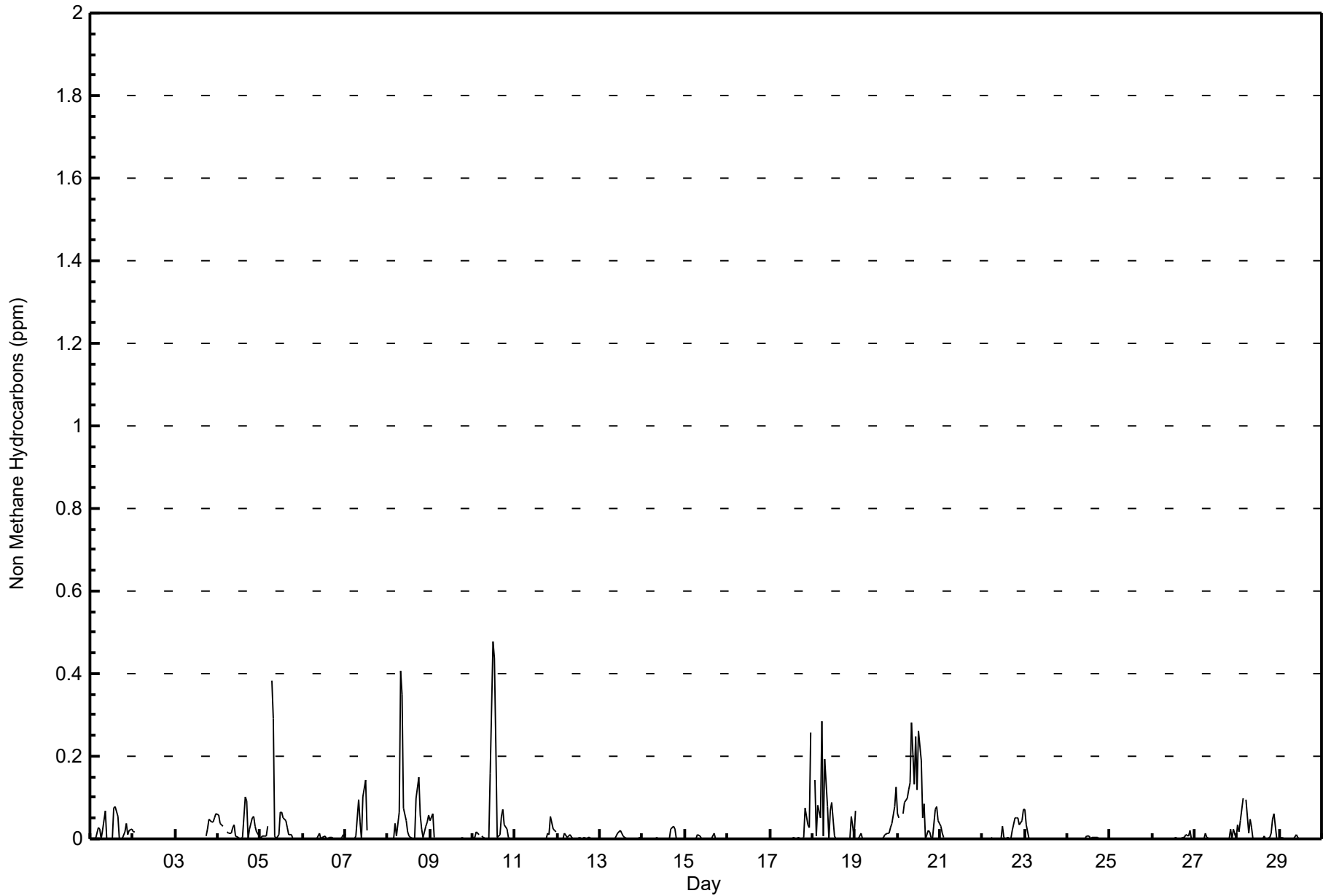




Summary of Hour Averages

Anzac - February 2024

Maximum Value: 0.479 ppm on Feb 10 12:00		Maximum Daily Average: 0.096 ppm on Feb 20		Hours in Service: 696																																													
Minimum Value: 0.000 ppm on Feb 1 01:00		Minimum Daily Average: 0.000 ppm on Feb 25		Hours of Data: 626																																													
Maximum Diurnal Average: 0.046 ppm at hour 8		Minimum Diurnal Average: 0.005 ppm at hour 3		Hours of Missing Data: 70																																													
Monthly Average: 0.019 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.1 P ₉₉ = 0.3		Hours of Calibration: 32																																													
				Percent Operational Time: 94.5																																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.000	Z	0.000	0.000	0.027	0.022	0.000	0.022	0.068	0.000	0.000	0.000	0.000	0.075	0.077	0.055	0.000	0.000	0.000	0.017	0.036	0.011	0.021	0.024	0.020	0.077																							
2-Feb	0.019	0.016	Z	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	0.019																							
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	C	C	C	C	0.008	0.025	0.047	0.040	0.040	0.049	0.060	--	0.060																							
4-Feb	0.056	0.036	0.034	0.031	Z	0.017	0.014	0.015	0.028	0.034	0.006	0.002	0.001	0.000	0.004	0.101	0.092	0.000	0.024	0.049	0.054	0.031	0.018	0.008	0.028	0.101																							
5-Feb	0.001	0.006	0.007	0.005	0.032	Z	0.382	0.290	0.005	0.000	0.010	0.064	0.066	0.049	0.044	0.028	0.010	0.010	0.001	0.000	0.000	0.000	0.000	0.000	0.044	0.382																							
6-Feb	Z	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.001	0.015	0.002	0.003	0.005	0.001	0.000	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.002	0.011	0.002	0.015																							
7-Feb	0.011	Z	0.000	0.001	0.000	0.000	0.006	0.096	0.039	0.000	0.101	0.144	0.020	M	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.019	0.144																							
8-Feb	0.000	0.000	Z	0.000	0.038	0.006	0.064	0.408	0.350	0.076	0.045	0.016	0.006	0.004	0.001	0.001	0.099	0.150	0.058	0.022	0.004	0.029	0.041	0.058	0.064	0.408																							
9-Feb	0.043	0.060	0.002	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.001	0.003	0.000	0.000	0.000	0.001	0.001	0.005	0.060																							
10-Feb	0.002	0.005	0.017	0.011	Z	0.008	0.003	0.000	0.001	0.001	0.160	0.479	0.439	0.231	0.003	0.011	0.053	0.071	0.036	0.025	0.002	0.002	0.000	0.000	0.068	0.479																							
11-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.010	0.053	0.025	0.022	0.016	0.006	0.053																							
12-Feb	Z	0.000	0.000	0.000	0.014	0.004	0.008	0.009	0.001	0.000	0.000	0.001	0.004	0.002	0.001	0.004	0.000	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.002	0.014																							
13-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.006	0.015	0.020	0.012	0.007	0.004	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.004	0.000	0.003	0.020																							
14-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.004	0.000	M	M	M	0.000	0.001	0.000	0.023	0.032	0.025	0.001	0.000	0.000	0.000	0.000	0.004	0.032																							
15-Feb	0.000	0.000	0.000	Z	0.000	0.002	0.001	0.010	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.014	0.000	0.000	0.001	0.000	0.001	0.000	0.000	0.001	0.014																							
16-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001																							
17-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.005	0.001	0.000	0.003	0.074	0.033	0.027	0.258	0.017	0.258																							
18-Feb	Z	0.143	0.006	0.081	0.051	0.285	0.005	0.193	0.078	0.000	0.069	0.087	0.006	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.053	0.006	0.046	0.285																							
19-Feb	0.068	Z	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.005	0.010	0.015	0.015	0.027	0.038	0.078	0.125	0.017	0.125																							
20-Feb	0.060	0.050	Z	0.062	0.089	0.098	0.118	0.135	0.281	0.133	0.249	0.120	0.262	0.190	0.049	0.086	0.001	0.021	0.016	0.003	0.001	0.071	0.077	0.045	0.096	0.281																							
21-Feb	0.029	0.014	0.004	Z	0.000	0.000	0.001	0.000	0.002	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.029																							
22-Feb	0.000	0.000	0.000	0.000	Z	0.002	0.001	0.000	0.001	0.000	0.001	0.030	0.003	0.001	0.003	0.001	0.000	0.019	0.051	0.050	0.052	0.034	0.044	0.072	0.016	0.072																							
23-Feb	0.073	0.035	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.073																							
24-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.006	0.005	0.002	0.002	0.002	0.005	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.006																							
25-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																							
26-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.002	0.005	0.011	0.007	0.021	0.000	0.000	0.002	0.021																							
27-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.012	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.024	0.001	0.024	0.000	0.003	0.024																							
28-Feb	0.033	0.016	0.046	0.097	Z	0.093	0.014	0.048	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.004	0.013	0.046	0.061	0.001	0.000	0.022	0.097																							
29-Feb	0.000	0.004	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.009	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.009																							
																								0.017	0.017	0.005	0.013	0.011	0.024	0.023	0.046	0.033	0.010	0.025	0.037	0.032	0.022	0.007	0.011	0.012	0.012	0.010	0.010	0.015	0.014	0.017	0.024	Diurnal Average	
																								0.073	0.143	0.046	0.097	0.089	0.285	0.382	0.408	0.350	0.133	0.249	0.479	0.439	0.231	0.077	0.101	0.099	0.150	0.058	0.050	0.074	0.071	0.078	0.258	Diurnal Maximum	
Z - zerospan																								C - Calibration				M - Maintenance				UO - Unstable Operation																	





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Non Methane Hydrocarbons (NMHC) - ppm
Anzac - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	440	70.29	70.29
0.006 - 0.05	126	20.13	90.42
0.06 - 0.1	44	7.03	97.44
> 0.1	16	2.56	100.00

Total Number of Valid Hours: 626

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Anzac - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	15	9	14	13	41	37	9	2	7	4	29	122	42	45	27	24	440
0.006 - 0.05	1	1	0	6	14	25	22	4	7	6	7	7	10	8	5	3	126
0.06 - 0.1	0	1	1	3	12	12	5	2	2	0	2	0	2	1	0	1	44
> 0.1	0	0	0	1	6	7	0	0	0	0	0	0	1	0	0	1	16
Totals	16	11	15	23	73	81	36	8	16	10	38	129	55	54	32	29	626

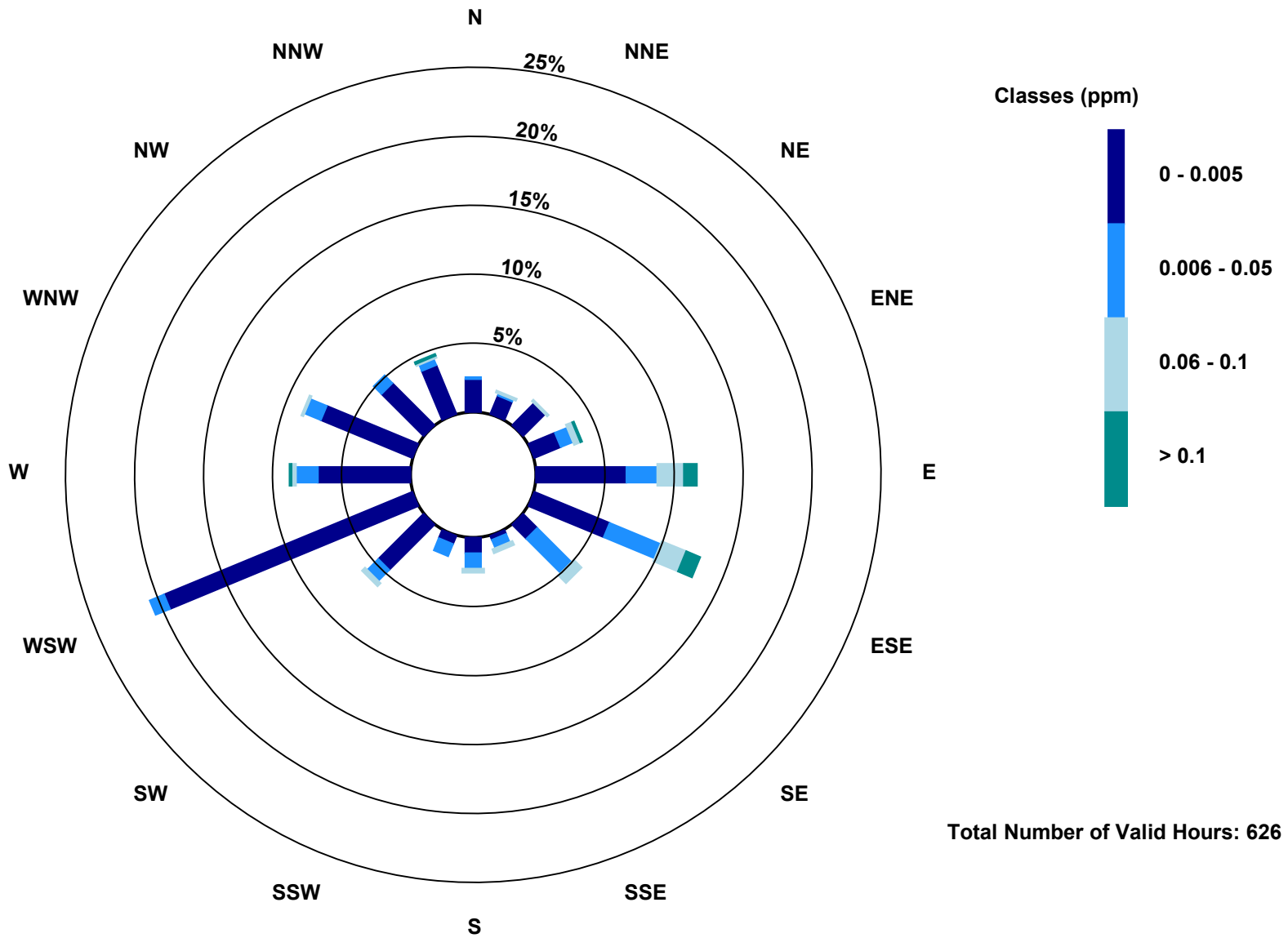
Total Number of Valid Hours: 626

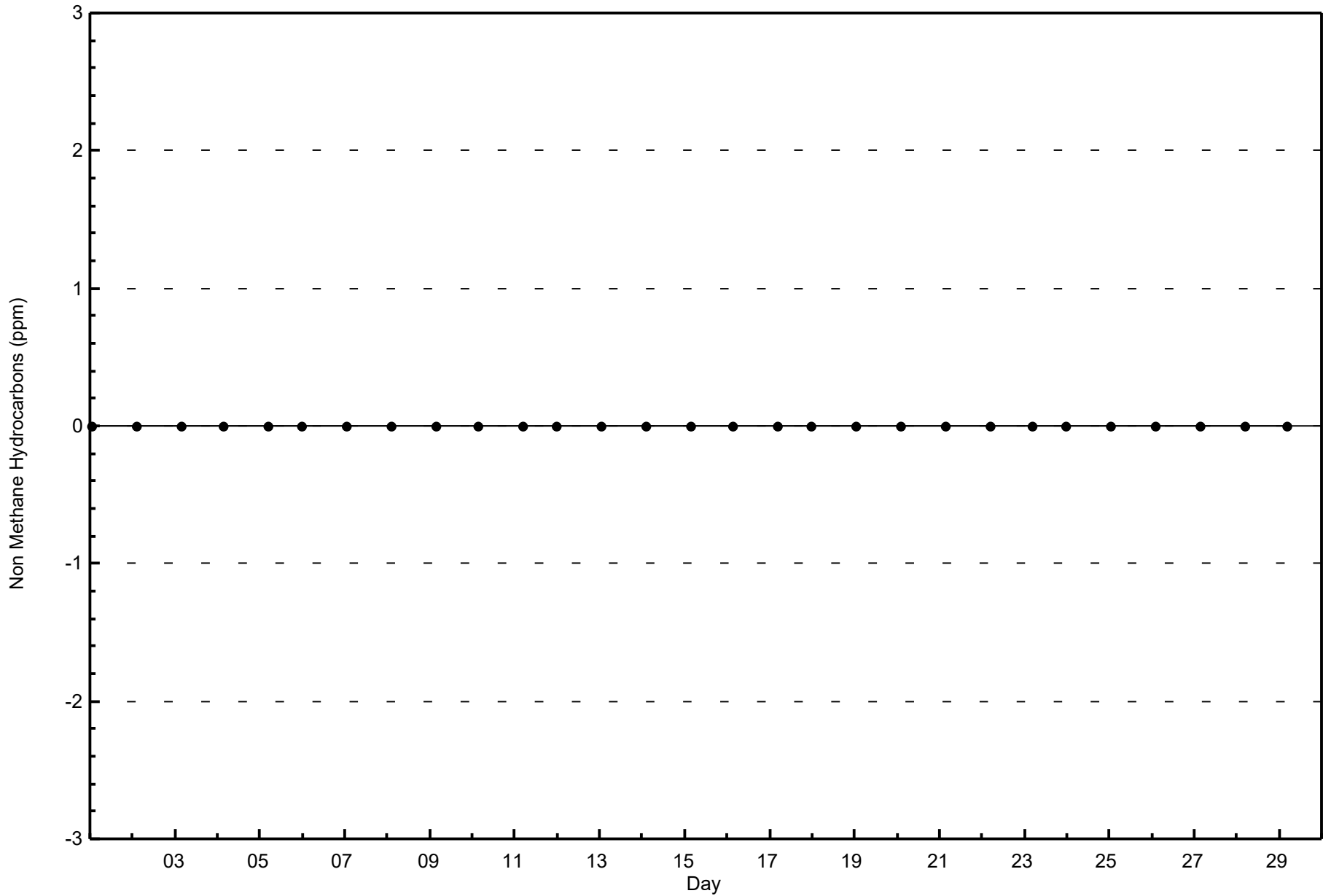
Total Number of Hours: 696

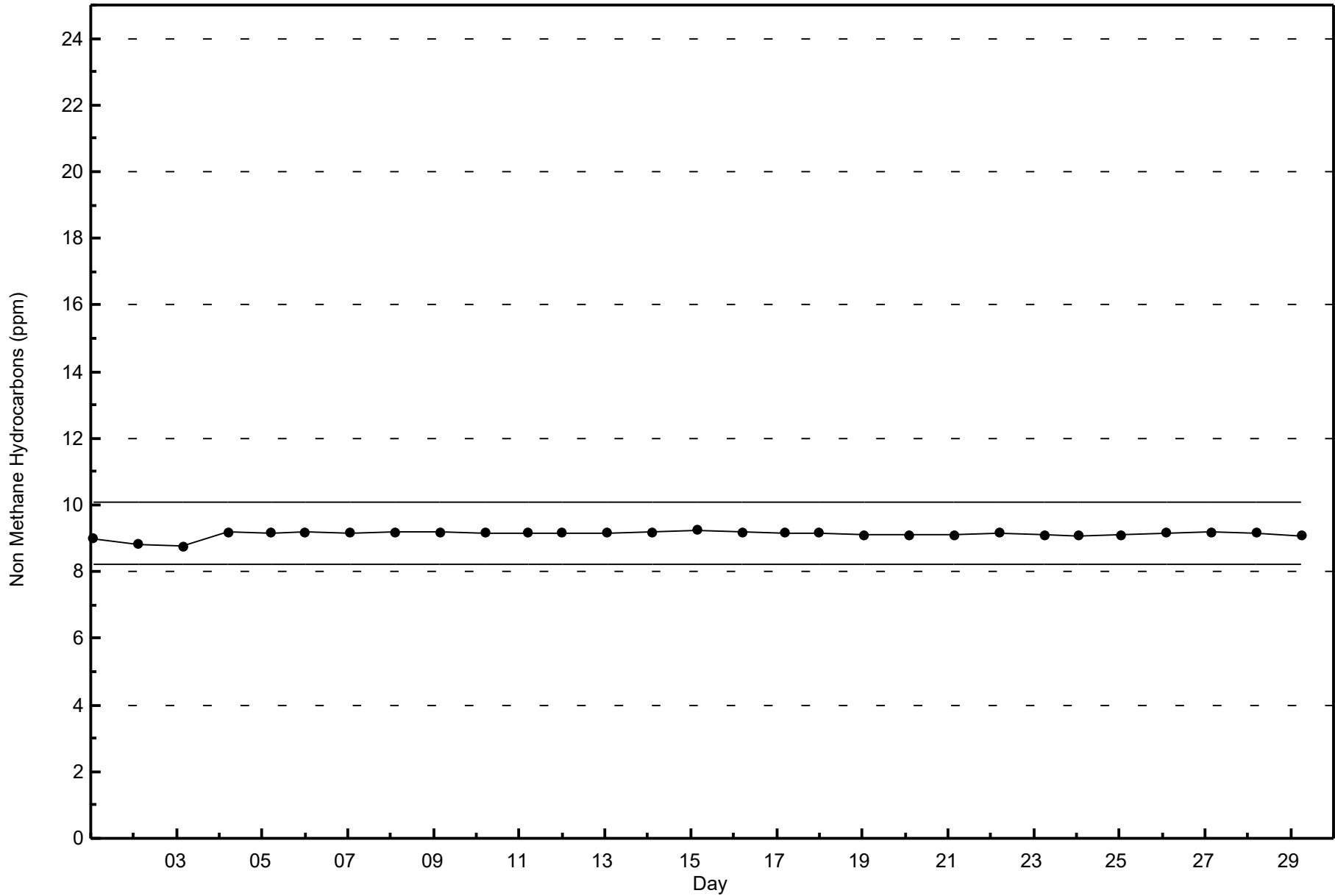


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Anzac









Wood Buffalo Environmental Association
Summary of Hour Averages

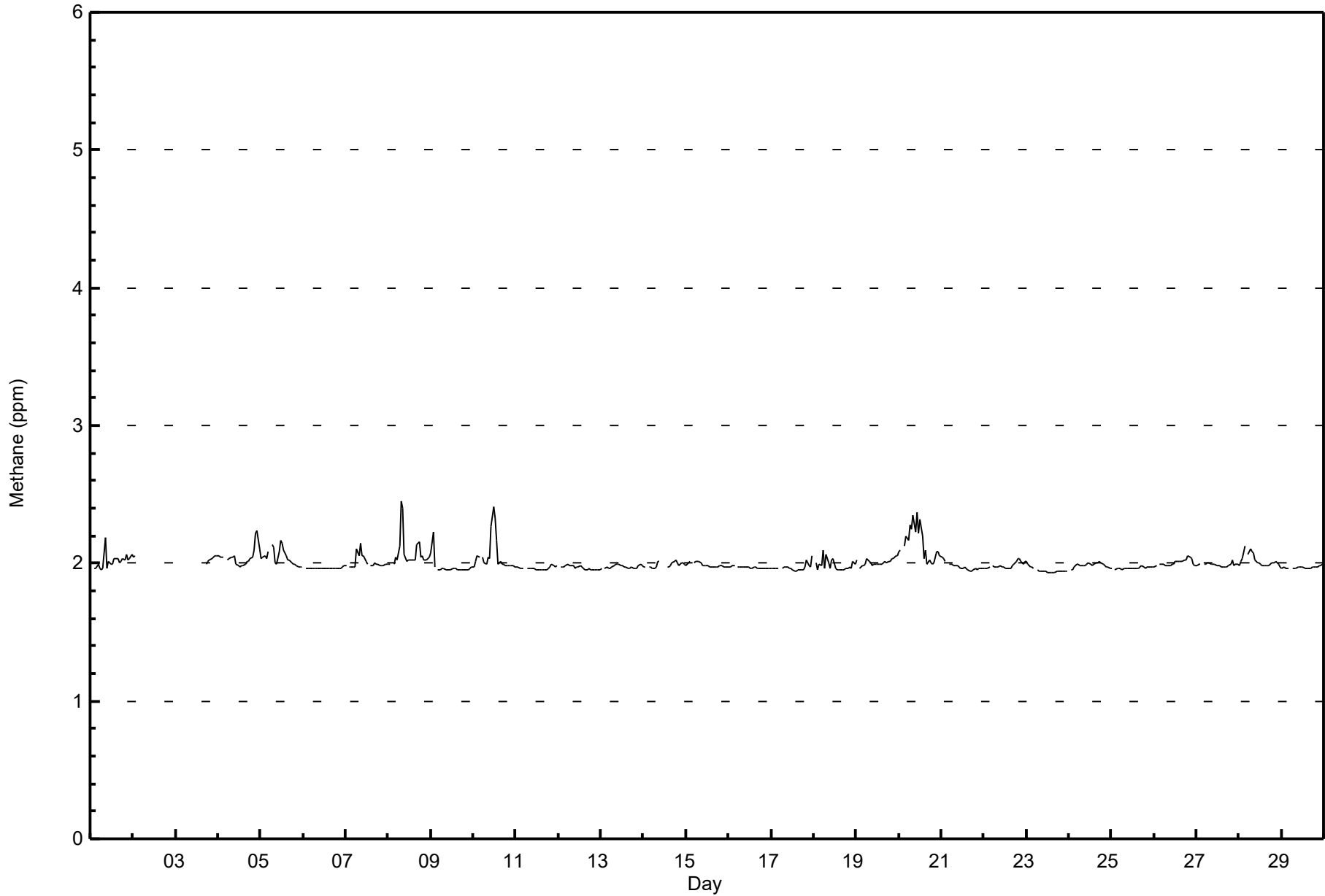
Methane (CH₄) - ppm
Anzac - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 2.4 ppm on Feb 8 08:00 Maximum Daily Average: 2.1 ppm on Feb 20		Hours in Service: 696 Hours of Data: 626 Hours of Missing Data: 70 Hours of Calibration: 32 Percent Operational Time: 94.5																								
Minimum Value: 1.9 ppm on Feb 23 13:00 Maximum Diurnal Average: 2.0 ppm at hour 9 Monthly Average: 2.00 ppm		Minimum Daily Average: 1.9 ppm on Feb 23 Minimum Diurnal Average: 2.0 ppm at hour 15 Percentiles: P ₁ = 1.9 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.0 Q ₃ = 2.0 P ₉₀ = 2.1 P ₉₉ = 2.3																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.0	2.2	
2-Feb	2.0	2.1	Z	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	2.1	
3-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	C	C	C	C	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	
4-Feb	2.1	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.1	2.0	2.2	
5-Feb	2.0	2.0	2.1	2.0	2.1	Z	2.1	2.1	2.0	2.0	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	
6-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
7-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
8-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.1	2.4	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.4	
9-Feb	2.1	2.2	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.2	
10-Feb	2.0	2.0	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.3	2.4	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	
11-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
12-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	
13-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
14-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	M	M	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
15-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
16-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
17-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.1	
18-Feb	Z	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
19-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	
20-Feb	2.1	2.1	Z	2.1	2.2	2.2	2.3	2.3	2.3	2.2	2.4	2.2	2.3	2.2	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.4	
21-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
22-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
23-Feb	2.0	2.0	2.0	2.0	2.0	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	
24-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
25-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
26-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	
27-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
28-Feb	2.0	2.0	2.0	2.1	Z	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
29-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
2.0 2.0																								Diurnal Average		
2.1 2.2 2.1 2.1 2.2 2.2 2.3 2.4 2.4 2.2 2.4 2.4 2.3 2.2 2.1 2.1 2.1 2.2 2.0 2.1 2.1 2.2 2.2 2.1																								Diurnal Maximum		
Z - zerspan			C - Calibration				M - Maintenance				UO - Unstable Operation															



Wood Buffalo Environmental Association
Hourly Averages

Methane (CH₄) - ppm
Anzac - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Anzac - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	560	89.46	89.46
2.1 - 3.0	66	10.54	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 626

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Methane (CH₄) - ppm
Anzac - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	15	9	14	21	64	57	26	7	14	9	37	128	49	53	31	26	560
2.1 - 3.0	1	2	1	2	9	24	10	1	2	1	1	1	6	1	1	3	66
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	11	15	23	73	81	36	8	16	10	38	129	55	54	32	29	626

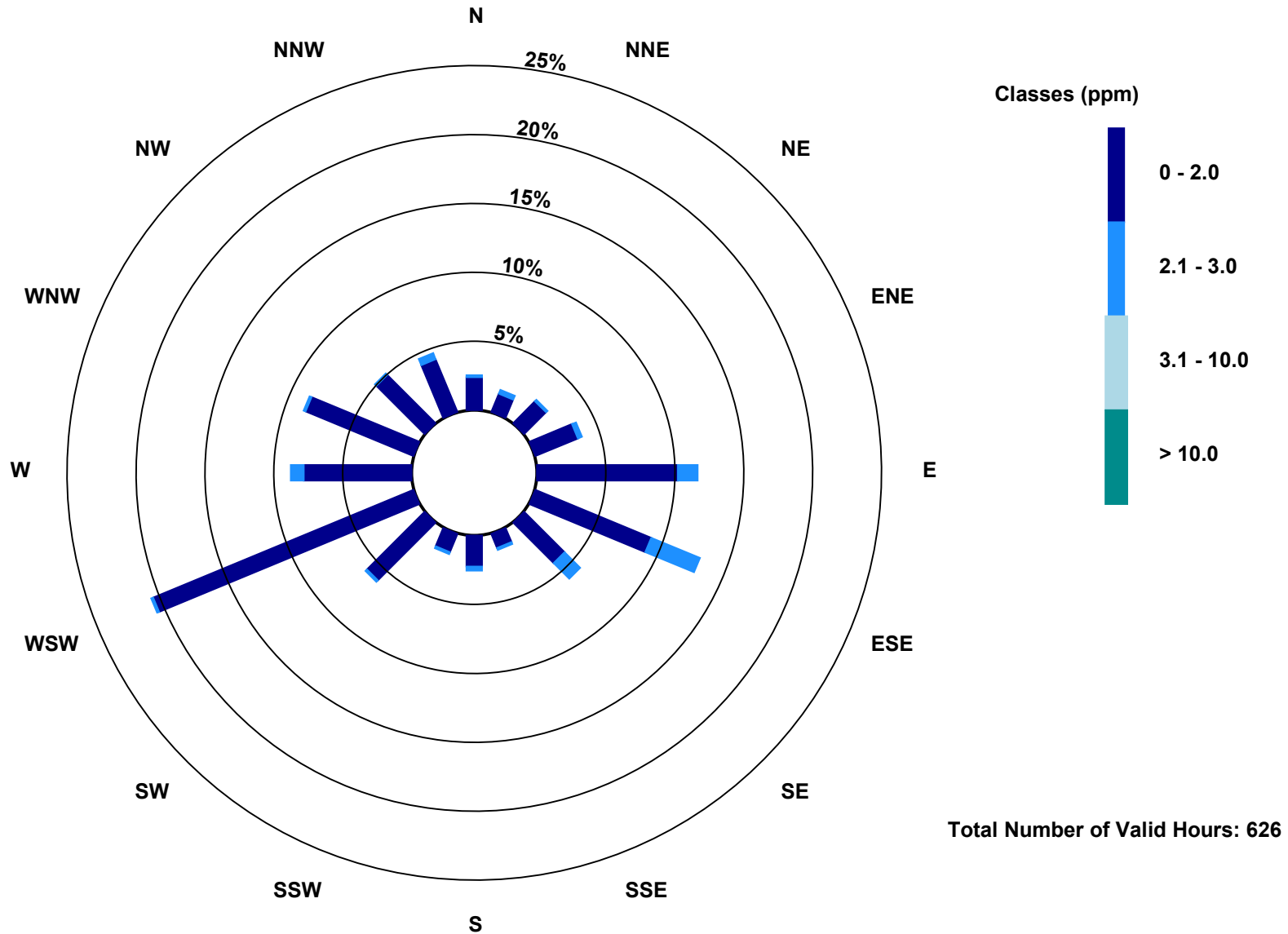
Total Number of Valid Hours: 626

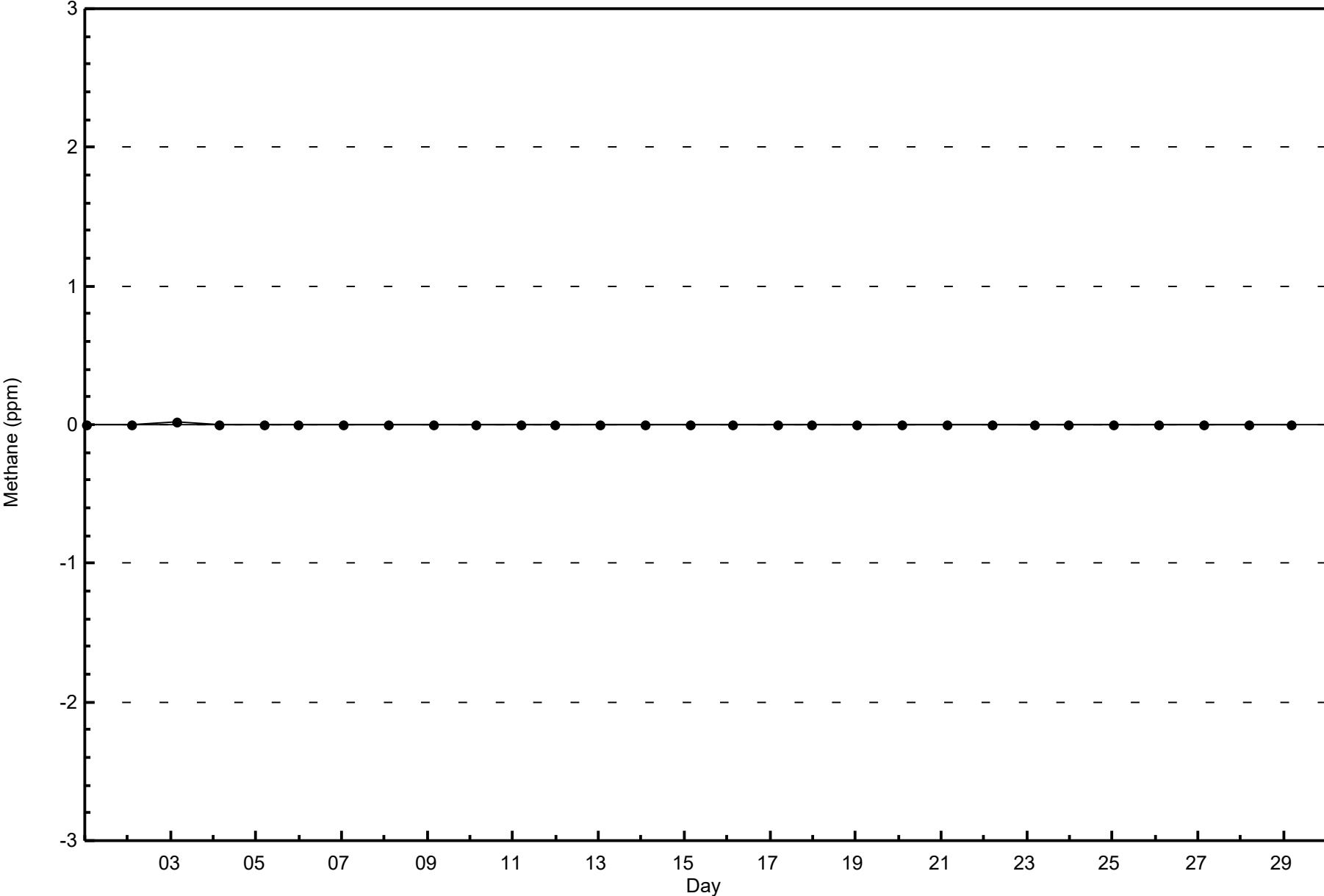
Total Number of Hours: 696

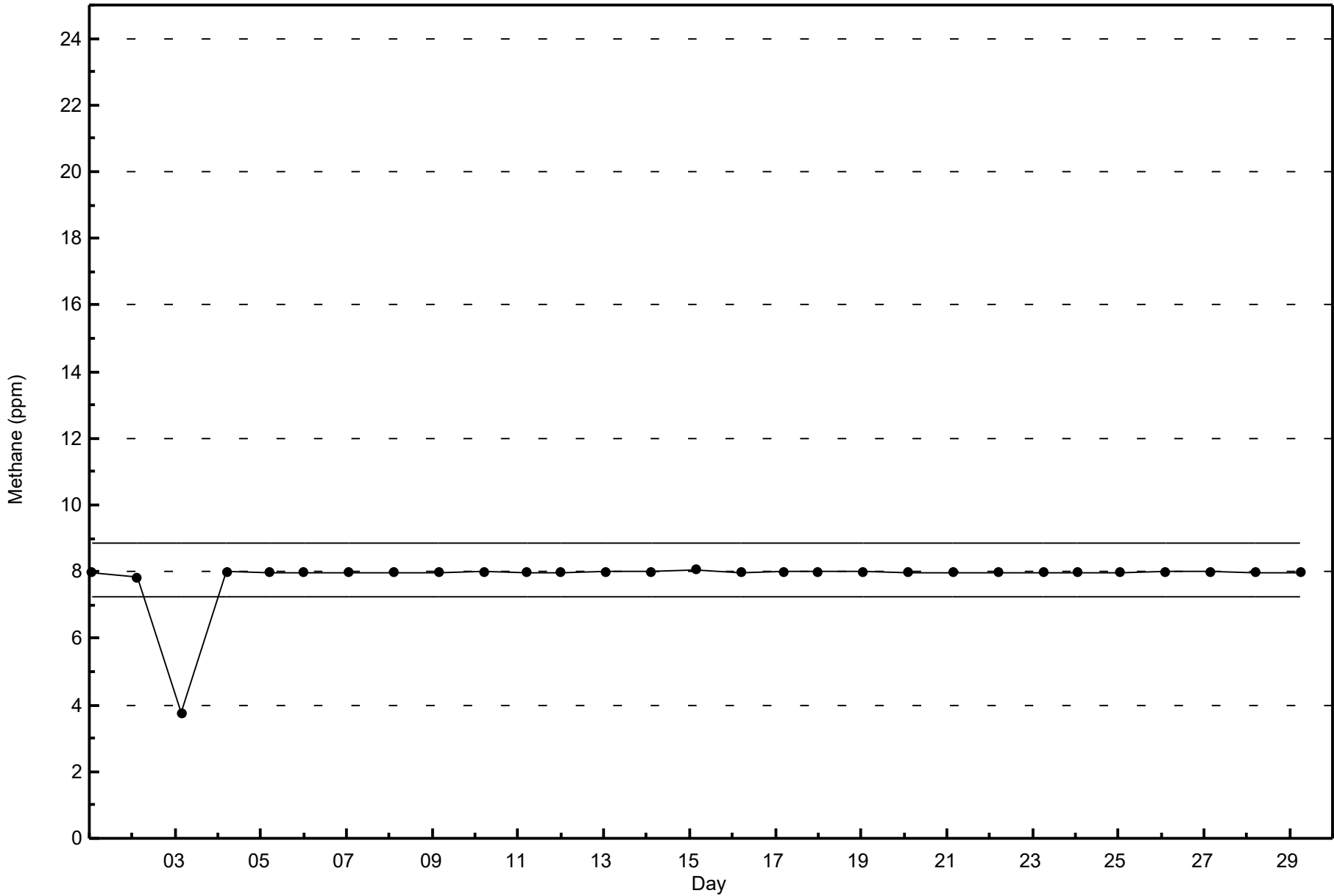


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Anzac









Wood Buffalo Environmental Association
Summary of Hour Averages

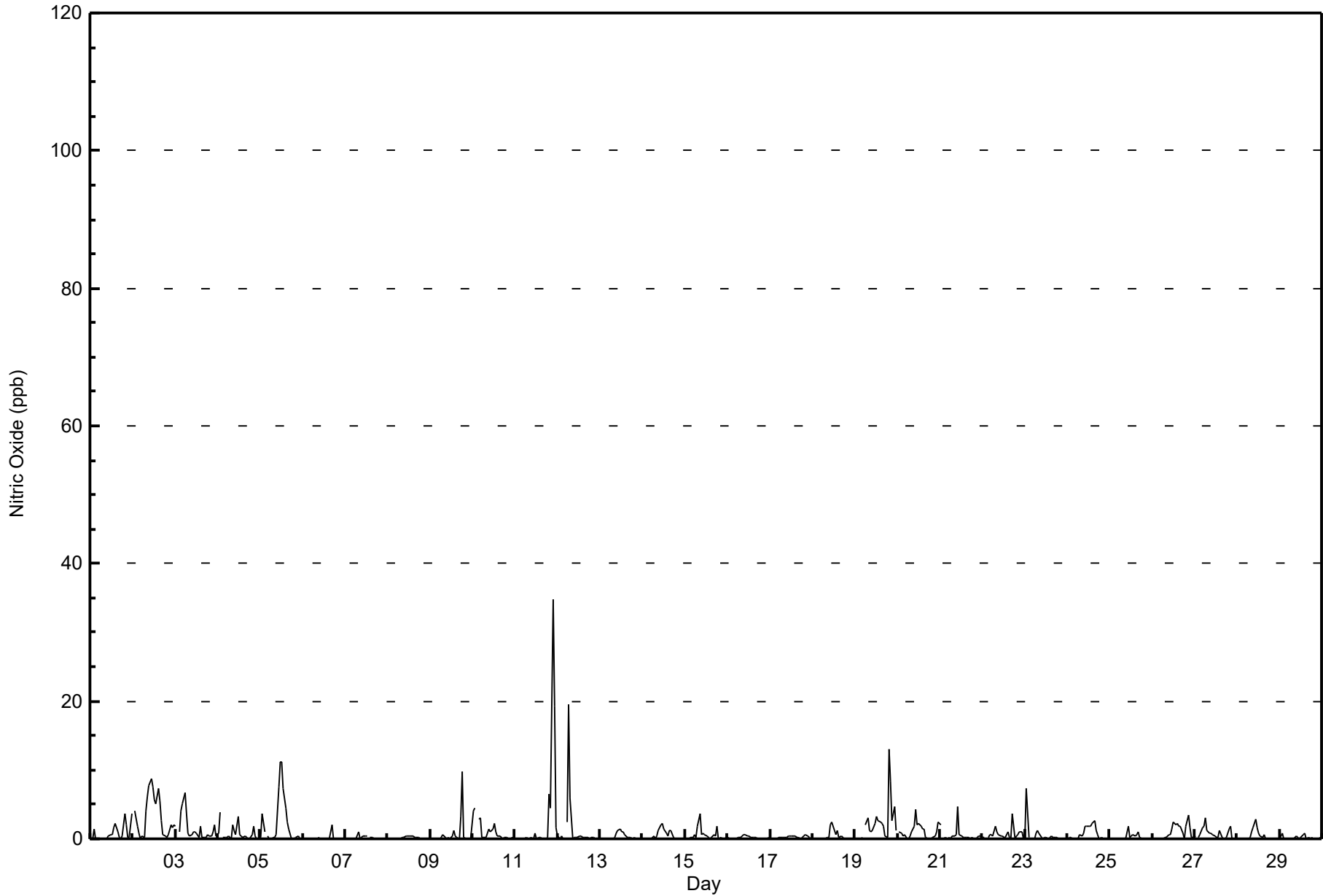
Nitric Oxide (NO) - ppb
Anzac - February 2024

Maximum Value: 34.8 ppb on Feb 11 22:00		Maximum Daily Average: 3.3 ppb on Feb 2		Hours in Service: 696																							
Minimum Value: 0.0 ppb on Feb 1 01:00		Minimum Daily Average: 0.1 ppb on Feb 6		Hours of Data: 661																							
Maximum Diurnal Average: 1.6 ppb at hour 11		Minimum Diurnal Average: 0.3 ppb at hour 3		Hours of Missing Data: 35																							
Monthly Average: 0.89 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.2 Q ₃ = 0.8 P ₉₀ = 2.2 P ₉₉ = 9.2		Hours of Calibration: 34																							
				Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.0	0.0	1.4	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.4	0.5	0.6	1.6	2.2	1.1	0.1	0.0	0.4	3.6	2.1	0.1	0.3	3.6	0.8	3.6	
2-Feb	Z	4.1	1.8	0.8	0.0	0.4	0.2	4.0	6.2	7.7	8.8	7.5	5.7	5.1	7.3	5.5	2.6	0.5	0.4	0.3	0.6	2.0	1.5	2.0	3.3	8.8	
3-Feb	1.9	Z	1.0	4.0	5.1	6.7	3.6	0.9	0.4	0.5	0.9	1.1	0.7	0.2	1.7	0.3	0.2	0.1	0.5	0.3	0.4	1.1	2.1	0.4	1.5	6.7	
4-Feb	0.9	3.8	Z	0.2	0.2	0.2	0.4	0.1	2.0	1.3	0.6	3.2	0.6	0.4	0.3	0.5	0.2	0.0	0.0	0.7	1.9	0.5	0.1	0.0	0.8	3.8	
5-Feb	0.1	3.7	1.1	Z	0.5	0.0	0.0	0.1	0.1	0.7	7.5	11.1	11.2	7.2	4.4	2.5	1.4	0.1	0.0	0.0	0.2	0.4	0.0	0.0	2.3	11.2	
6-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.2	C	C	C	C	C	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.1	
7-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	1.0	0.1	0.2	0.5	0.4	0.4	M	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0	
8-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.4	0.4	0.2	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	
9-Feb	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.7	0.1	0.1	0.2	0.1	0.5	1.3	0.5	0.3	0.1	3.3	9.8	0.2	0.1	0.0	0.1	0.1	0.8	9.8	
10-Feb	4.0	4.4	Z	2.9	3.0	0.2	0.1	0.2	0.8	1.4	1.1	1.4	2.3	1.0	0.5	0.4	0.2	0.1	0.3	0.2	0.1	0.1	0.2	0.2	1.1	4.4	
11-Feb	0.1	0.1	0.0	Z	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.2	6.6	4.4	34.8	19.3	1.7	3.0	34.8	
12-Feb	0.4	0.0	0.4	0.0	Z	2.5	19.5	5.9	0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.0	0.0	0.0	1.4	19.5	
13-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.8	1.3	1.5	1.1	1.1	0.7	0.3	0.2	0.2	0.0	0.2	0.1	0.0	0.0	0.0	0.3	1.5	
14-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	1.2	2.0	2.3	1.3	0.9	0.5	1.2	1.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.3	
15-Feb	0.1	Z	0.0	0.2	0.3	0.5	0.3	1.8	3.6	0.5	0.8	0.7	0.4	0.2	0.1	0.1	0.6	0.4	1.8	0.0	0.1	0.1	0.1	0.1	0.5	3.6	
16-Feb	0.1	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.5	0.6	0.5	0.4	0.4	0.2	0.2	0.3	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.2	0.6	
17-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.0	0.1	0.4	0.6	0.3	0.1	0.1	0.2	0.6	
18-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.2	0.2	2.0	2.4	1.3	0.6	1.2	0.1	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.4	
19-Feb	0.0	0.0	0.0	0.1	0.1	Z	2.0	3.0	1.3	1.1	1.2	2.2	3.3	2.6	2.4	2.2	1.8	0.5	0.3	13.0	8.4	2.7	4.7	1.2	2.3	13.0	
20-Feb	Z	1.1	0.7	0.4	0.6	0.0	0.0	0.4	0.9	1.8	4.2	2.0	2.3	1.8	1.5	1.5	0.3	0.1	0.0	0.0	0.2	0.3	1.1	2.5	1.0	4.2	
21-Feb	1.9	Z	0.0	0.1	0.1	0.3	0.1	0.4	0.3	0.6	4.6	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.2	0.4	0.4	0.5	4.6	
22-Feb	0.2	0.2	Z	0.1	0.6	0.5	0.5	1.8	1.0	0.6	0.4	0.3	0.3	0.2	1.1	0.1	0.1	3.7	0.1	0.4	0.5	1.0	1.1	0.1	0.6	3.7	
23-Feb	0.1	7.3	0.2	Z	0.0	0.0	0.9	1.2	0.8	0.2	0.1	0.2	0.1	0.1	0.2	0.3	0.3	0.2	0.1	0.0	0.1	0.0	0.1	0.1	0.5	7.3	
24-Feb	0.1	0.2	0.1	0.0	Z	0.0	0.1	0.6	0.3	0.8	1.8	1.9	1.8	1.8	2.3	2.7	1.3	0.5	0.1	0.3	0.0	0.0	0.0	0.0	0.7	2.7	
25-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	1.8	0.2	0.5	0.5	0.5	0.5	0.7	0.9	0.3	0.0	0.0	0.0	0.0	0.0	0.2	1.8	
26-Feb	Z	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.2	0.5	0.6	1.5	2.5	2.1	2.2	1.8	1.8	0.9	0.1	1.8	3.4	1.6	0.2	0.2	0.9	3.4	
27-Feb	0.3	Z	0.2	0.5	1.6	1.8	3.1	1.3	0.7	0.8	0.6	0.3	0.2	0.2	1.2	0.1	0.0	0.0	0.3	1.4	1.8	0.0	0.0	0.0	0.7	3.1	
28-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	1.1	1.7	2.9	1.7	0.8	0.5	0.2	0.5	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.4	2.9	
29-Feb	0.0	0.9	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.1	0.2	0.5	0.7	0.1	0.2	0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.9	
		0.4	1.1	0.3	0.4	0.5	0.6	1.1	0.8	0.8	0.9	1.6	1.6	1.4	1.2	1.2	0.8	0.6	0.4	0.5	1.0	0.9	1.6	1.1	0.5	Diurnal Average	
		4.0	7.3	1.8	4.0	5.1	6.7	19.5	5.9	6.2	7.7	8.8	11.1	11.2	7.2	7.3	5.5	2.6	3.7	9.8	13.0	8.4	34.8	19.3	3.6	Diurnal Maximum	
Z - zerspan		C - Calibration					M - Maintenance																				



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Anzac - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Anzac - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	660	99.85	99.85
21 - 40	1	0.15	100.00
11 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Nitric Oxide (NO) - ppb
Anzac - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	15	11	16	24	70	79	36	8	16	11	38	136	74	65	33	28	660
21 - 40	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	15	11	16	24	70	79	36	8	16	11	39	136	74	65	33	28	661

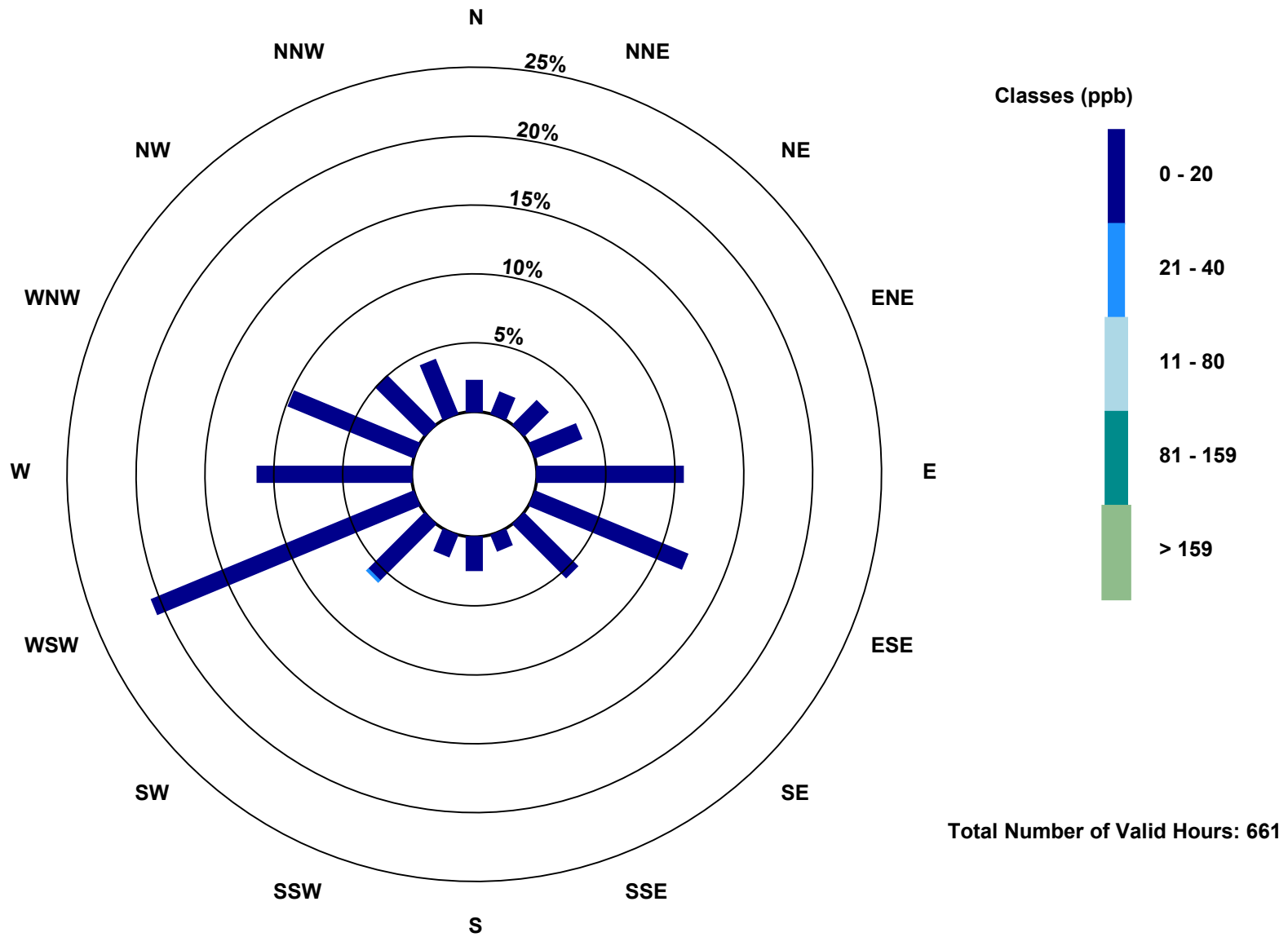
Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

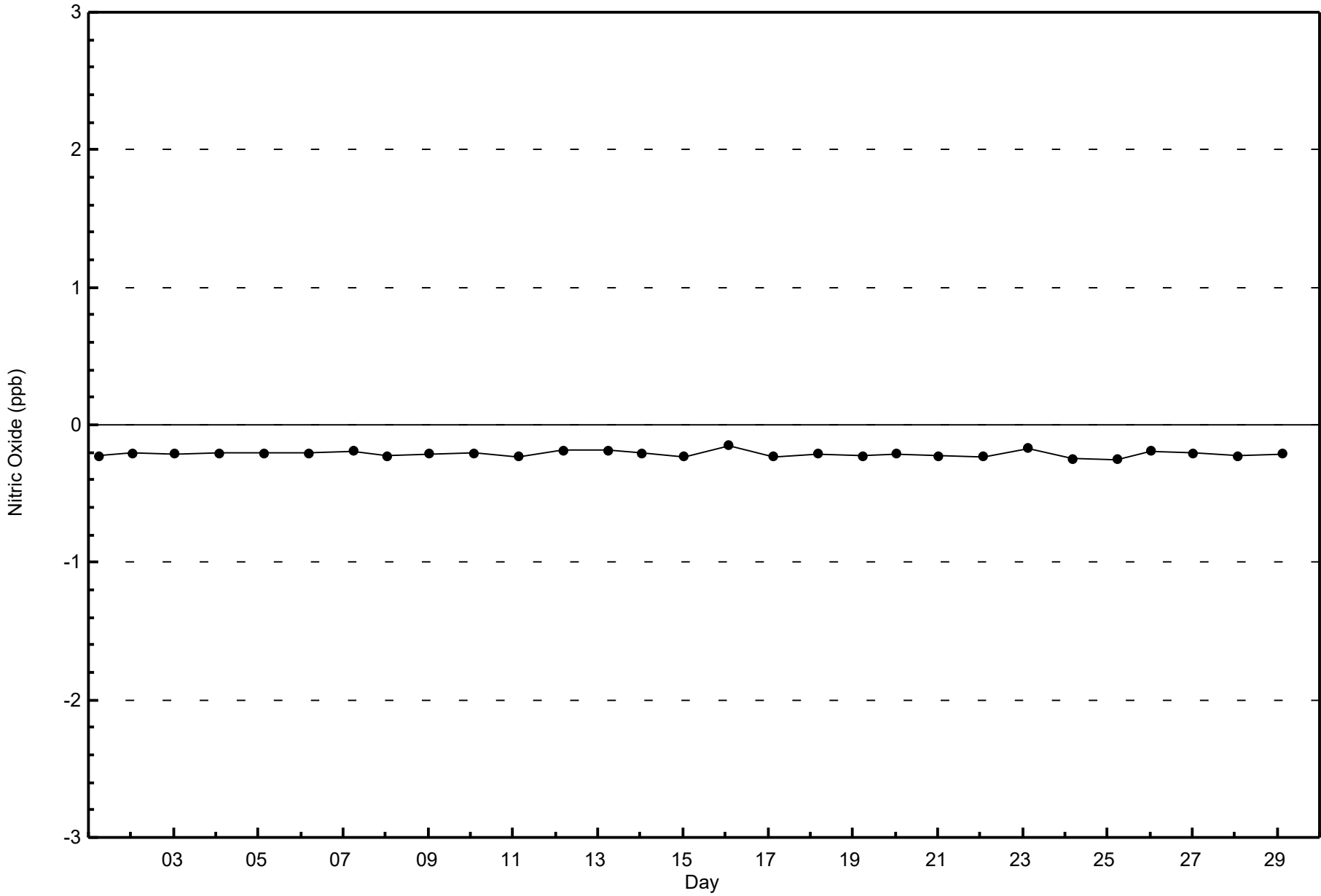
Nitric Oxide (NO) - ppb
Anzac





Wood Buffalo Environmental Association
Zero Responses

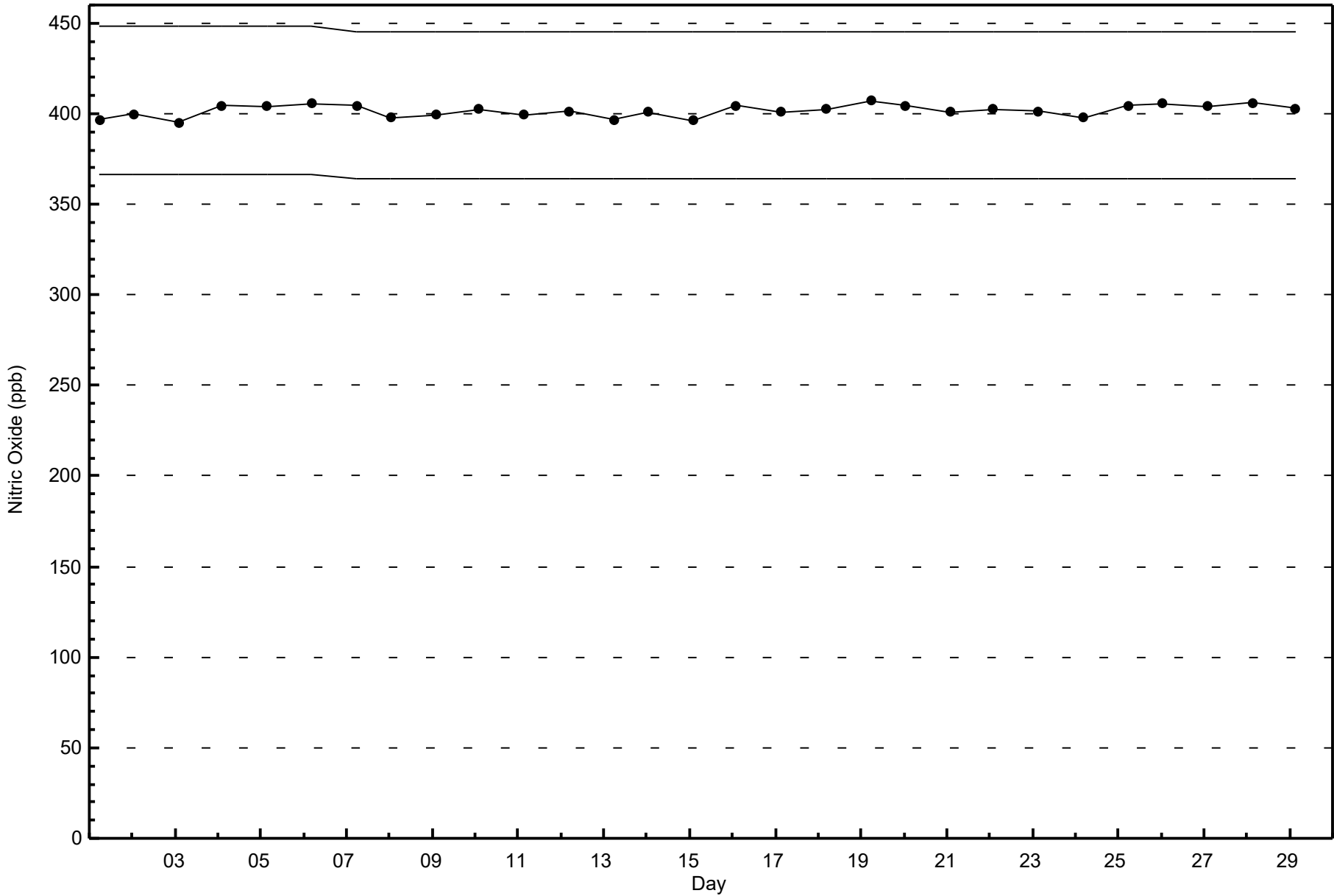
Nitric Oxide (NO) - ppb
Anzac - February 2024





Wood Buffalo Environmental Association
Span Responses

Nitric Oxide (NO) - ppb
Anzac - February 2024





Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

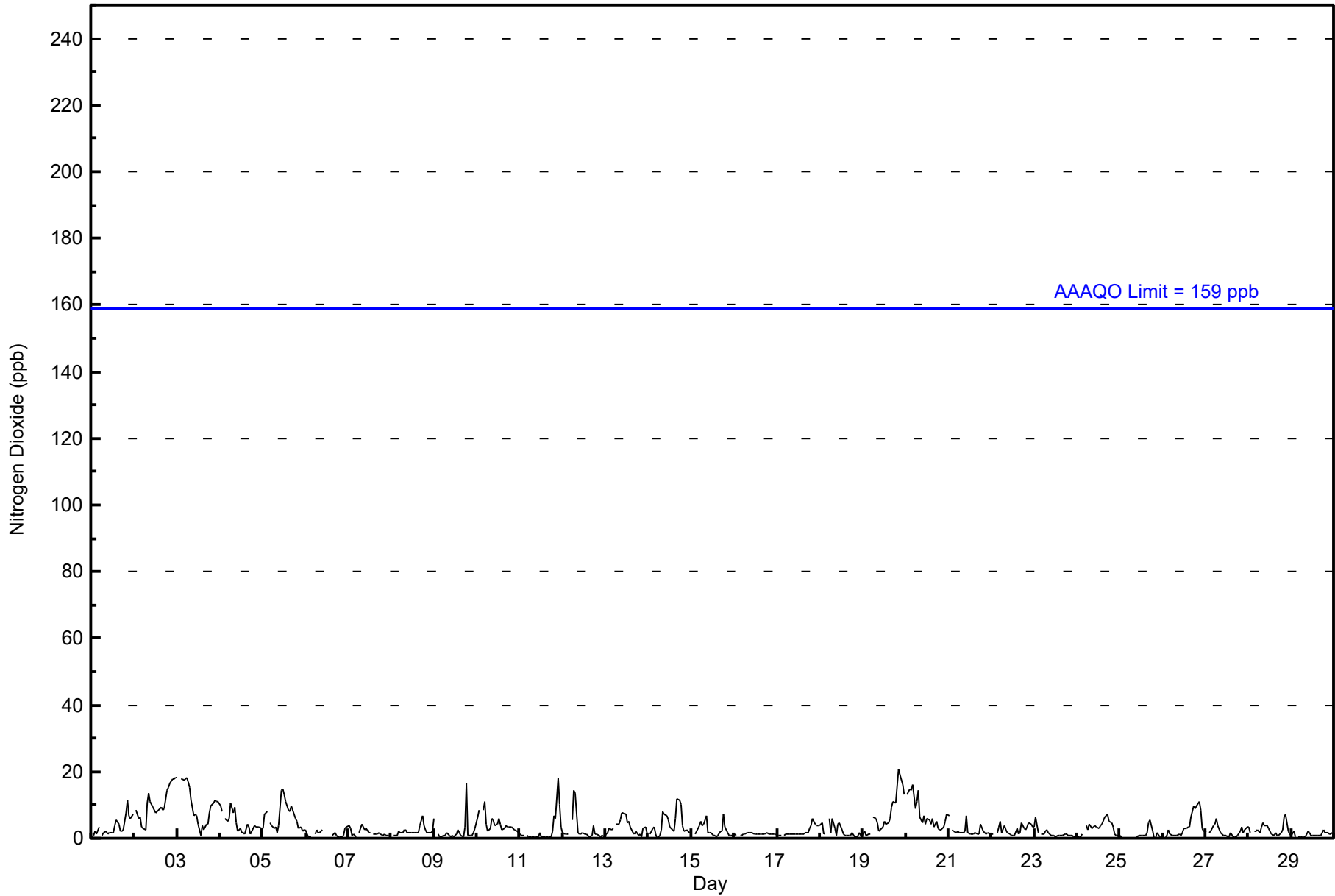
Anzac - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	696					
Maximum Value: 20.8 ppb on Feb 19 21:00		Maximum Daily Average: 10.2 ppb on Feb 3																	Hours of Data: 661							
Minimum Value: 0.1 ppb on Feb 14 06:00		Minimum Daily Average: 1.0 ppb on Feb 25																	Hours of Missing Data: 35							
Maximum Diurnal Average: 4.5 ppb at hour 22		Minimum Diurnal Average: 2.6 ppb at hour 15																	Hours of Calibration: 34							
Monthly Average: 3.53 ppb		Percentiles: P ₁ = 0.2 P ₁₀ = 0.7 Q ₁ = 1.1 Median = 2.0 Q ₃ = 4.3 P ₉₀ = 8.4 P ₉₉ = 17.9																	Percent Operational Time: 99.9							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.6	0.7	2.1	1.1	3.2	Z	0.8	1.7	2.3	1.1	1.7	1.8	1.9	4.0	5.4	4.3	2.1	2.2	2.4	7.7	11.4	6.7	6.0	7.2	3.4	11.4
2-Feb	Z	8.4	6.0	6.2	3.4	2.8	2.4	10.4	13.7	11.2	9.2	8.4	7.7	8.0	9.0	9.2	8.4	8.8	14.5	15.3	16.6	17.8	17.7	18.1	10.1	18.1
3-Feb	18.2	Z	17.9	17.9	17.3	18.1	16.9	15.1	11.4	6.7	7.2	6.8	4.3	1.0	3.7	2.4	4.4	4.3	7.8	9.7	10.6	11.5	11.1	10.9	10.2	18.2
4-Feb	9.7	8.2	Z	5.8	5.2	6.1	10.6	7.8	9.5	4.8	2.2	3.1	1.9	1.5	1.4	4.1	3.6	1.2	2.0	3.7	3.2	3.3	3.4	2.8	4.6	10.6
5-Feb	2.8	7.2	7.9	Z	4.7	4.0	3.0	3.4	1.9	3.9	14.2	14.9	13.2	10.9	8.3	7.9	9.6	7.0	6.0	5.2	3.0	3.4	2.3	2.7	6.4	14.9
6-Feb	2.7	0.6	0.3	0.3	Z	1.4	2.4	1.8	1.6	2.6	C	C	C	C	C	0.9	1.5	0.7	0.3	0.3	0.5	0.9	2.8	3.4	1.4	3.4
7-Feb	3.7	3.0	0.7	1.3	0.6	Z	1.5	4.4	3.4	2.4	2.9	1.9	1.8	M	1.3	1.3	1.3	1.5	1.3	1.0	1.1	0.9	0.8	0.7	1.8	4.4
8-Feb	Z	0.8	0.8	0.9	2.2	1.6	1.9	2.4	2.7	1.7	1.5	1.6	1.6	1.8	1.7	1.7	4.0	6.7	3.7	2.4	1.7	1.6	1.6	2.2	2.1	6.7
9-Feb	5.8	Z	1.4	0.5	0.6	0.7	0.9	1.6	0.8	0.6	0.7	0.5	1.3	2.4	1.7	0.8	0.5	3.5	16.7	1.0	0.7	0.8	1.7	3.0	2.1	16.7
10-Feb	6.5	8.4	Z	8.6	11.1	4.2	2.3	3.0	6.0	5.5	3.9	4.2	6.0	4.2	2.7	3.0	3.9	3.5	3.2	3.4	3.0	2.4	2.2	1.6	4.5	11.1
11-Feb	1.2	1.0	0.9	Z	0.7	0.5	0.6	0.5	0.6	0.5	0.5	1.8	0.4	0.5	0.6	0.5	0.4	0.4	2.2	6.6	5.8	18.4	10.2	3.5	2.5	18.4
12-Feb	1.9	1.1	1.2	1.1	Z	5.7	14.6	13.5	1.9	1.2	1.2	1.6	1.3	1.1	0.8	0.6	0.8	3.9	1.4	1.2	1.0	0.4	0.7	0.5	2.6	14.6
13-Feb	1.4	1.7	2.8	2.7	3.0	Z	4.2	4.4	5.4	7.5	7.7	7.0	4.8	4.9	3.2	1.8	1.3	2.2	0.9	1.1	0.6	2.8	3.5	1.4	3.3	7.7
14-Feb	Z	1.3	3.0	3.3	1.3	0.1	0.8	2.4	8.1	7.1	6.7	5.5	3.6	2.6	2.0	5.8	11.8	11.4	10.2	4.0	2.2	2.4	2.1	1.5	4.3	11.8
15-Feb	1.5	Z	1.1	2.1	3.9	5.2	3.8	4.4	6.7	1.8	1.7	1.5	0.9	0.7	0.5	0.8	2.1	2.3	7.0	3.6	1.9	0.8	0.8	0.9	2.4	7.0
16-Feb	1.1	0.9	Z	1.0	1.0	1.1	1.2	1.5	1.8	1.7	1.6	1.2	1.1	1.1	1.2	1.4	1.2	1.4	1.5	1.3	1.3	1.3	1.1	1.1	1.3	1.8
17-Feb	1.0	1.0	0.9	Z	1.0	1.2	1.1	1.2	1.4	1.1	1.3	1.2	1.3	1.4	1.4	1.4	1.8	1.6	3.1	3.8	5.9	4.4	3.7	3.8	2.0	5.9
18-Feb	3.7	4.6	1.3	1.9	Z	6.0	1.6	6.0	2.9	1.0	4.1	4.7	2.5	1.3	1.0	0.7	0.9	0.8	1.7	0.4	0.4	0.4	1.5	0.5	2.2	6.0
19-Feb	1.8	2.2	0.7	1.2	1.4	Z	6.4	6.1	4.6	2.3	2.4	3.6	5.1	4.4	4.6	5.8	9.3	10.9	10.6	15.7	20.8	19.0	16.0	13.3	7.3	20.8
20-Feb	Z	13.0	15.0	14.3	16.2	9.1	11.0	14.3	6.2	4.7	6.9	4.2	6.0	5.5	4.4	6.0	3.4	4.9	3.1	2.6	2.5	3.4	5.0	7.1	7.3	16.2
21-Feb	6.8	Z	2.6	2.3	1.8	2.0	1.5	1.8	1.8	2.3	6.8	1.7	1.3	1.1	1.3	1.5	1.4	1.3	4.4	2.3	1.7	1.4	1.6	1.4	2.3	6.8
22-Feb	1.3	1.2	Z	1.8	3.5	4.9	1.9	4.0	2.7	1.6	1.2	1.0	1.0	0.8	3.0	1.1	1.5	4.7	2.9	2.6	3.5	4.6	4.3	3.4	2.5	4.9
23-Feb	3.3	6.5	1.8	Z	1.2	1.2	2.3	2.5	1.7	0.9	0.7	0.7	0.6	0.7	0.8	1.0	0.9	1.2	1.1	0.8	1.0	0.7	0.5	0.5	1.4	6.5
24-Feb	0.4	0.6	0.4	1.3	Z	4.0	2.7	4.1	2.8	3.2	3.8	3.5	3.1	3.7	4.3	6.4	6.6	7.2	5.2	4.7	3.3	1.3	0.9	0.9	3.2	7.2
25-Feb	0.7	0.2	0.2	0.2	0.1	Z	0.2	0.1	0.2	0.2	0.7	0.7	0.9	1.0	1.0	1.9	4.5	5.3	2.3	0.1	0.2	1.6	0.6	0.2	1.0	5.3
26-Feb	Z	0.4	0.8	2.4	1.2	0.9	0.7	0.7	0.8	1.2	1.0	1.9	3.0	3.1	3.3	3.4	6.5	9.8	9.1	9.7	10.9	8.3	3.0	2.0	3.7	10.9
27-Feb	2.1	Z	1.7	2.0	3.9	4.2	6.1	3.8	1.8	1.4	0.9	0.7	0.4	0.5	1.5	0.5	0.4	0.6	0.7	2.3	3.4	1.7	2.4	3.2	2.0	6.1
28-Feb	3.5	1.8	Z	2.1	2.1	2.5	1.8	3.2	4.5	3.7	3.7	2.9	2.0	1.2	0.8	1.6	0.8	0.8	1.5	2.6	6.3	7.3	2.0	1.2	2.6	7.3
29-Feb	0.9	2.0	0.6	Z	0.5	0.5	0.5	0.5	0.6	2.0	1.6	0.9	1.0	1.0	1.0	0.8	1.0	1.6	2.6	1.7	1.6	1.3	1.4	1.5	1.2	2.6
3.4 3.2 3.0 3.4 3.6 3.7 3.6 4.4 3.8 3.0 3.5 3.2 2.9 2.6 2.6 2.7 3.3 3.9 4.5 4.0 4.3 4.5 3.8 3.5																								Diurnal Average		
18.2 13.0 17.9 17.9 17.3 18.1 16.9 15.1 13.7 11.2 14.2 14.9 13.2 10.9 9.0 9.2 11.8 11.4 16.7 15.7 20.8 19.0 17.7 18.1																								Diurnal Maximum		
Z - zerspan C - Calibration M - Maintenance																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb																										



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Anzac - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Dioxide (NO₂) - ppb
Anzac - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	660	99.85	99.85
21 - 40	1	0.15	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Anzac - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	15	11	16	24	70	79	36	8	16	11	38	136	74	65	33	28	660
21 - 40	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	15	11	16	24	70	79	36	8	16	11	39	136	74	65	33	28	661

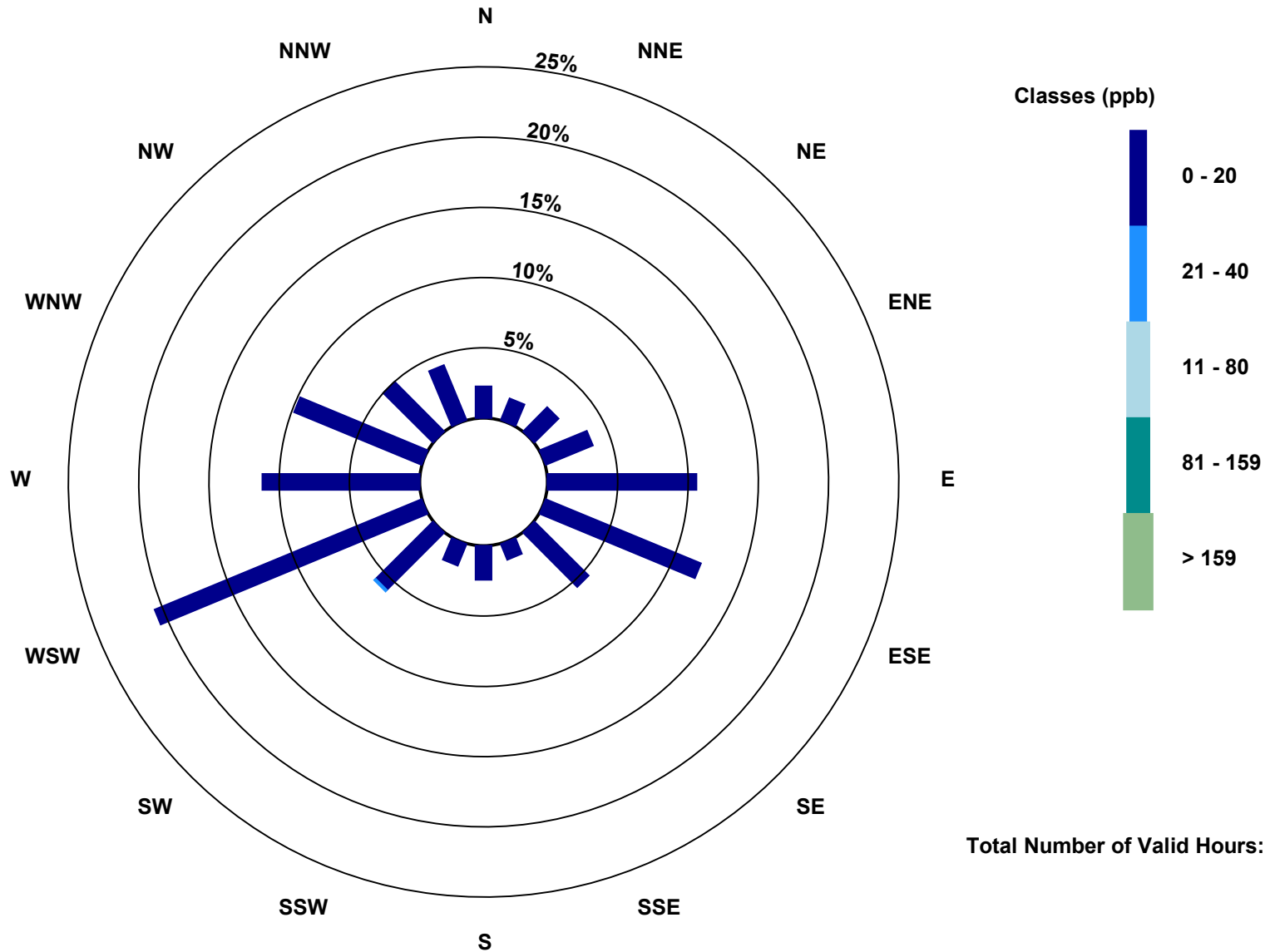
Total Number of Valid Hours: 661

Total Number of Hours: 696

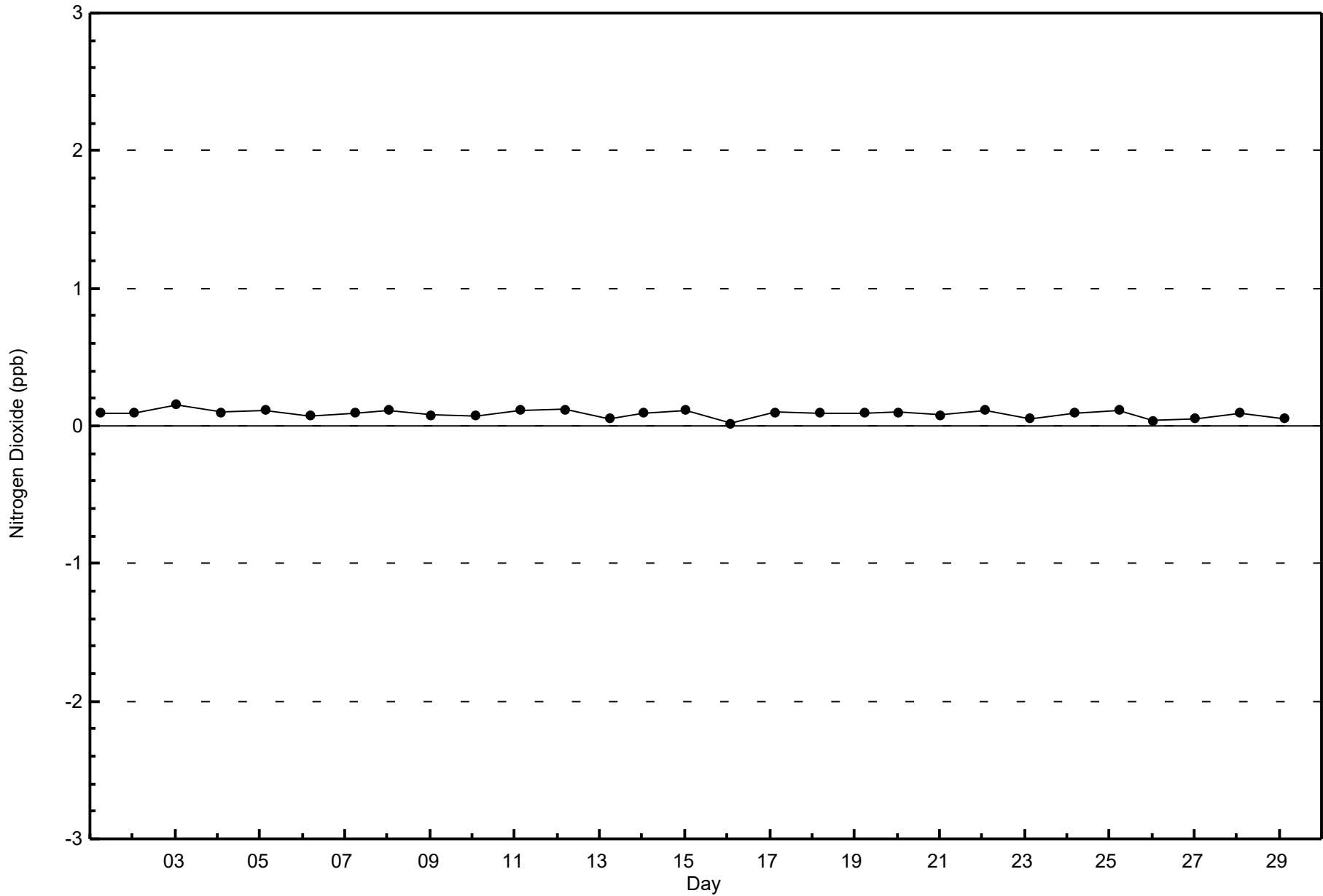


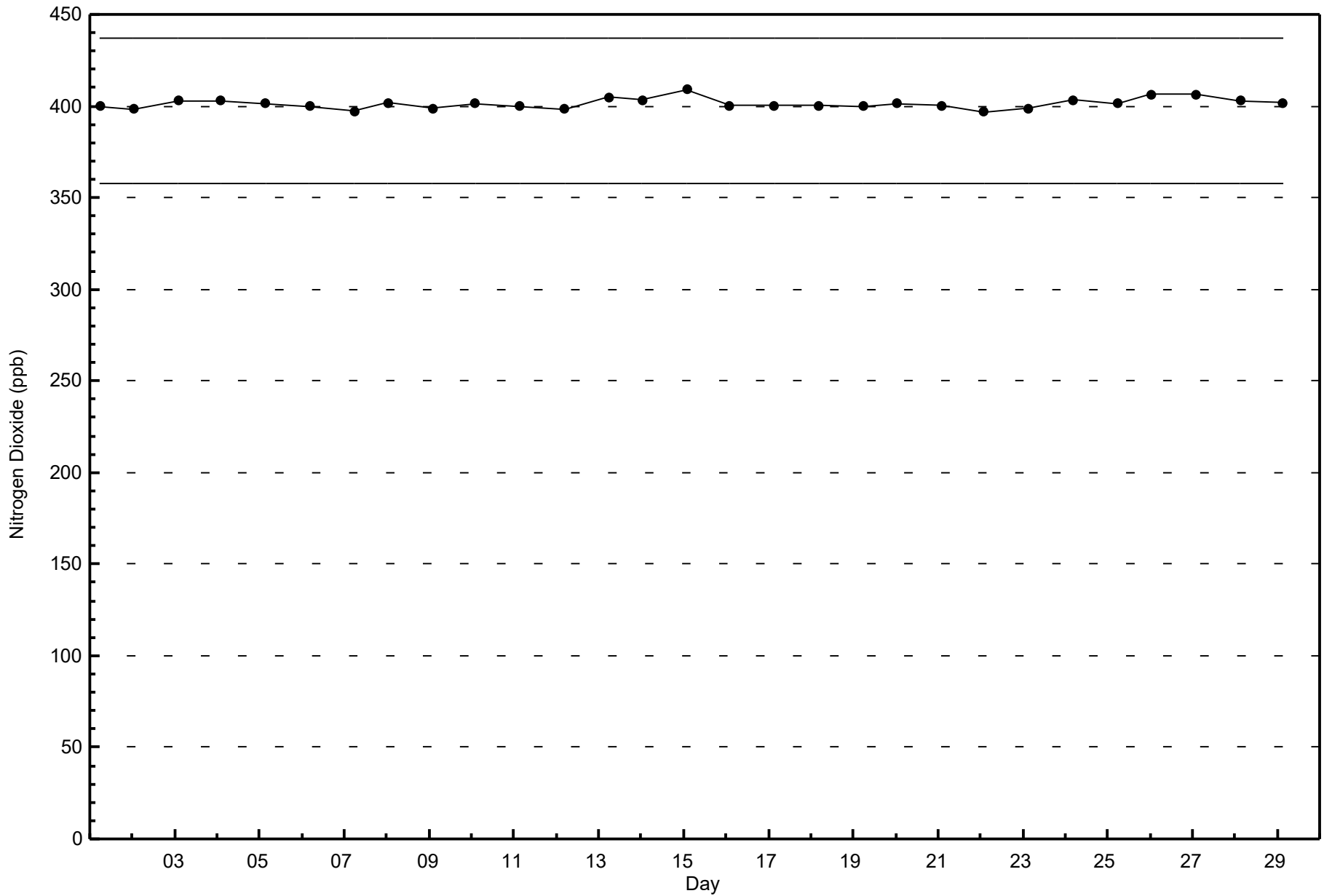
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Anzac



Total Number of Valid Hours: 661







Wood Buffalo Environmental Association
Summary of Hour Averages

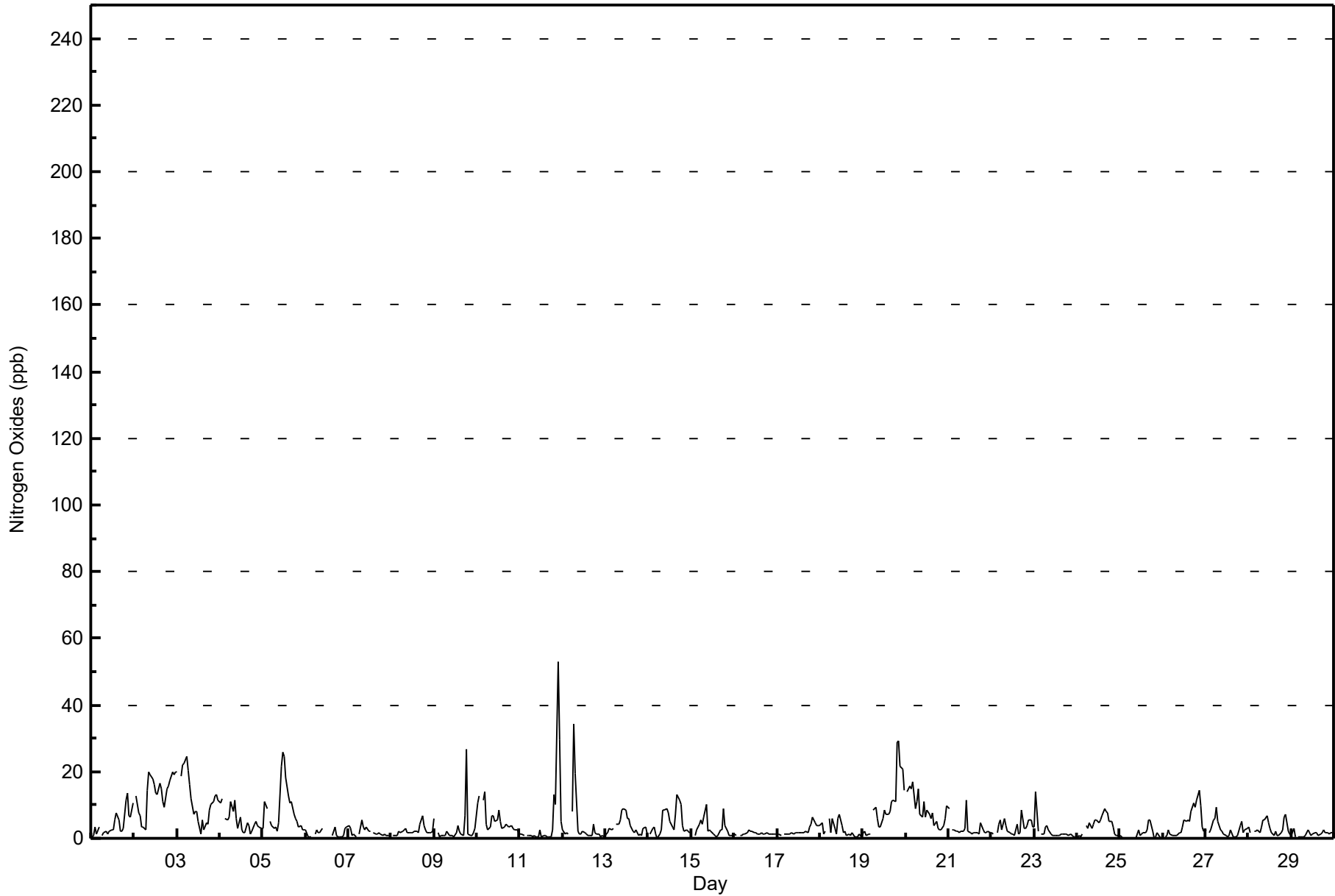
Nitrogen Oxides (NO_x) - ppb
Anzac - February 2024

Maximum Value: 53.2 ppb on Feb 11 22:00																					Maximum Daily Average: 13.4 ppb on Feb 2				Hours in Service: 696	
Minimum Value: 0.1 ppb on Feb 14 06:00																					Minimum Daily Average: 1.2 ppb on Feb 25				Hours of Data: 661	
Maximum Diurnal Average: 6.1 ppb at hour 22																					Minimum Diurnal Average: 3.3 ppb at hour 3				Hours of Missing Data: 35	
Monthly Average: 4.42 ppb																					Percentiles: P ₁ = 0.2 P ₁₀ = 0.7 Q ₁ = 1.3 Median = 2.4 Q ₃ = 5.5 P ₉₀ = 11.0 P ₉₉ = 25.3				Hours of Calibration: 34	
																									Percent Operational Time: 99.9	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.6	0.7	3.5	1.1	3.2	Z	0.8	1.7	2.3	1.2	2.1	2.3	2.5	5.6	7.6	5.4	2.2	2.2	2.8	11.3	13.5	6.8	6.3	10.8	4.2	13.5
2-Feb	Z	12.5	7.8	7.0	3.4	3.2	2.6	14.4	19.9	18.9	18.0	15.9	13.4	13.1	16.3	14.7	11.0	9.3	14.9	15.6	17.2	19.8	19.2	20.1	13.4	20.1
3-Feb	20.1	Z	18.9	21.9	22.4	24.8	20.5	16.0	11.8	7.2	8.1	7.9	5.0	1.2	5.4	2.7	4.6	4.4	8.3	10.0	11.0	12.6	13.2	11.3	11.7	24.8
4-Feb	10.6	12.0	Z	6.0	5.4	6.3	11.0	7.9	11.5	6.1	2.8	6.3	2.5	1.9	1.7	4.6	3.8	1.2	2.0	4.4	5.1	3.8	3.5	2.8	5.4	12.0
5-Feb	2.9	10.9	9.0	Z	5.2	4.0	3.0	3.5	2.0	4.6	21.7	26.0	24.4	18.1	12.7	10.4	11.0	7.1	6.0	5.2	3.2	3.8	2.3	2.7	8.7	26.0
6-Feb	2.7	0.6	0.3	0.3	Z	1.4	2.4	1.8	1.6	2.8	C	C	C	C	C	0.9	3.6	0.7	0.3	0.3	0.5	0.9	2.8	3.4	1.5	3.6
7-Feb	3.7	3.0	0.7	1.3	0.6	Z	1.5	5.4	3.5	2.6	3.4	2.3	2.2	M	1.5	1.4	1.3	1.5	1.3	1.0	1.1	0.9	0.8	0.7	1.9	5.4
8-Feb	Z	0.8	0.8	0.9	2.2	1.6	1.9	2.4	2.8	1.9	1.8	1.9	1.9	2.2	2.1	1.9	4.3	7.0	3.7	2.4	1.7	1.6	1.6	2.3	2.2	7.0
9-Feb	6.0	Z	1.5	0.6	0.7	0.8	1.0	2.3	0.9	0.7	0.9	0.6	1.8	3.7	2.2	1.1	0.6	6.8	26.5	1.2	0.8	0.8	1.8	3.1	2.9	26.5
10-Feb	10.5	12.8	Z	11.5	14.1	4.4	2.4	3.2	6.8	6.9	5.0	5.6	8.3	5.2	3.2	3.4	4.1	3.6	3.5	3.6	3.1	2.5	2.4	1.8	5.6	14.1
11-Feb	1.3	1.1	0.9	Z	0.8	0.6	0.7	0.5	0.7	0.6	0.6	2.7	0.5	0.7	0.8	0.6	0.4	0.4	2.4	13.2	10.2	53.2	29.5	5.2	5.5	53.2
12-Feb	2.3	1.1	1.6	1.1	Z	8.2	34.1	19.4	2.0	1.4	1.4	1.9	1.6	1.4	1.0	0.8	1.0	4.2	1.5	1.4	1.2	0.4	0.7	0.5	3.9	34.1
13-Feb	1.4	1.7	2.8	2.7	3.0	Z	4.2	4.4	5.6	8.3	9.0	8.5	5.9	6.0	3.9	2.1	1.5	2.4	0.9	1.3	0.7	2.8	3.5	1.4	3.7	9.0
14-Feb	Z	1.3	3.0	3.3	1.3	0.1	1.2	2.4	8.5	8.3	8.7	7.8	4.9	3.5	2.5	7.0	13.0	11.6	10.2	4.0	2.2	2.4	2.1	1.5	4.8	13.0
15-Feb	1.6	Z	1.1	2.3	4.2	5.7	4.1	6.2	10.3	2.3	2.5	2.2	1.3	0.9	0.6	0.9	2.7	2.7	8.8	3.6	2.0	0.9	0.9	1.0	3.0	10.3
16-Feb	1.2	0.9	Z	1.0	1.0	1.1	1.3	1.7	2.3	2.3	2.1	1.6	1.5	1.3	1.4	1.7	1.3	1.5	1.6	1.3	1.4	1.3	1.2	1.2	1.4	2.3
17-Feb	1.1	1.1	1.0	Z	1.1	1.3	1.2	1.4	1.6	1.4	1.6	1.5	1.7	1.8	1.7	1.6	2.0	1.6	3.2	4.2	6.5	4.7	3.8	3.9	2.2	6.5
18-Feb	3.7	4.6	1.3	1.9	Z	6.0	1.6	6.1	3.1	1.2	6.1	7.1	3.8	1.9	2.2	0.8	1.3	0.9	1.7	0.4	0.4	0.4	1.5	0.5	2.6	7.1
19-Feb	1.8	2.2	0.7	1.3	1.5	Z	8.4	9.1	5.9	3.4	3.6	5.8	8.4	7.0	7.0	8.0	11.1	11.4	10.9	28.7	29.2	21.7	20.7	14.5	9.7	29.2
20-Feb	Z	14.1	15.7	14.7	16.8	9.1	11.0	14.7	7.1	6.5	11.1	6.2	8.3	7.3	5.9	7.5	3.7	5.0	3.1	2.6	2.7	3.7	6.1	9.6	8.4	16.8
21-Feb	8.7	Z	2.6	2.4	1.9	2.3	1.6	2.2	2.1	2.9	11.4	2.2	1.6	1.3	1.5	1.7	1.5	1.4	4.5	2.3	1.7	1.6	2.0	1.8	2.7	11.4
22-Feb	1.5	1.4	Z	1.9	4.1	5.4	2.4	5.8	3.7	2.2	1.6	1.3	1.3	1.0	4.1	1.2	1.6	8.4	3.0	3.0	4.0	5.6	5.4	3.5	3.2	8.4
23-Feb	3.4	13.8	2.0	Z	1.2	1.2	3.2	3.7	2.5	1.1	0.8	0.9	0.7	0.8	1.0	1.3	1.2	1.4	1.2	0.8	1.1	0.7	0.6	0.6	2.0	13.8
24-Feb	0.5	0.8	0.5	1.3	Z	4.0	2.8	4.7	3.1	4.0	5.6	5.4	4.9	5.5	6.6	9.1	7.9	7.7	5.3	5.0	3.3	1.3	0.9	0.9	4.0	9.1
25-Feb	0.7	0.2	0.2	0.2	0.1	Z	0.2	0.1	0.2	0.2	2.5	0.9	1.4	1.5	1.5	2.6	5.4	5.6	2.3	0.1	0.2	1.6	0.6	0.2	1.2	5.6
26-Feb	Z	0.4	0.8	2.4	1.3	1.0	0.7	0.8	1.0	1.7	1.6	3.4	5.5	5.2	5.5	5.2	8.3	10.7	9.2	11.5	14.3	9.9	3.2	2.2	4.6	14.3
27-Feb	2.4	Z	1.9	2.5	5.5	6.0	9.2	5.1	2.5	2.2	1.5	1.0	0.6	0.7	2.7	0.6	0.4	0.6	1.0	3.7	5.2	1.7	2.4	3.2	2.7	9.2
28-Feb	3.5	1.8	Z	2.1	2.1	2.5	1.8	3.3	5.6	5.4	6.6	4.6	2.8	1.7	1.0	2.1	0.9	0.8	1.5	2.6	6.4	7.4	2.0	1.2	3.0	7.4
29-Feb	0.9	2.9	0.6	Z	0.5	0.5	0.5	0.5	0.6	2.4	1.9	1.0	1.2	1.5	1.7	0.9	1.2	1.6	2.7	1.7	1.7	1.4	1.5	1.7	1.4	2.9
3.9 4.3 3.3 3.8 4.1 4.2 4.7 5.2 4.5 3.8 5.1 4.8 4.3 3.8 3.8 3.5 3.9 4.3 5.0 5.1 5.2 6.1 4.9 3.9																								Diurnal Average		
20.1 14.1 18.9 21.9 22.4 24.8 34.1 19.4 19.9 18.9 21.7 26.0 24.4 18.1 16.3 14.7 13.0 11.6 26.5 28.7 29.2 53.2 29.5 20.1																								Diurnal Maximum		
Z - zerspan C - Calibration M - Maintenance																										



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Anzac - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Anzac - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	646	97.73	97.73
21 - 40	14	2.12	99.85
41 - 80	1	0.15	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Nitrogen Oxides (NO_x) - ppb
Anzac - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	15	11	16	24	70	79	36	7	15	10	36	134	70	62	33	28	646
21 - 40	0	0	0	0	0	0	0	1	1	1	2	2	4	3	0	0	14
11 - 80	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	15	11	16	24	70	79	36	8	16	11	39	136	74	65	33	28	661

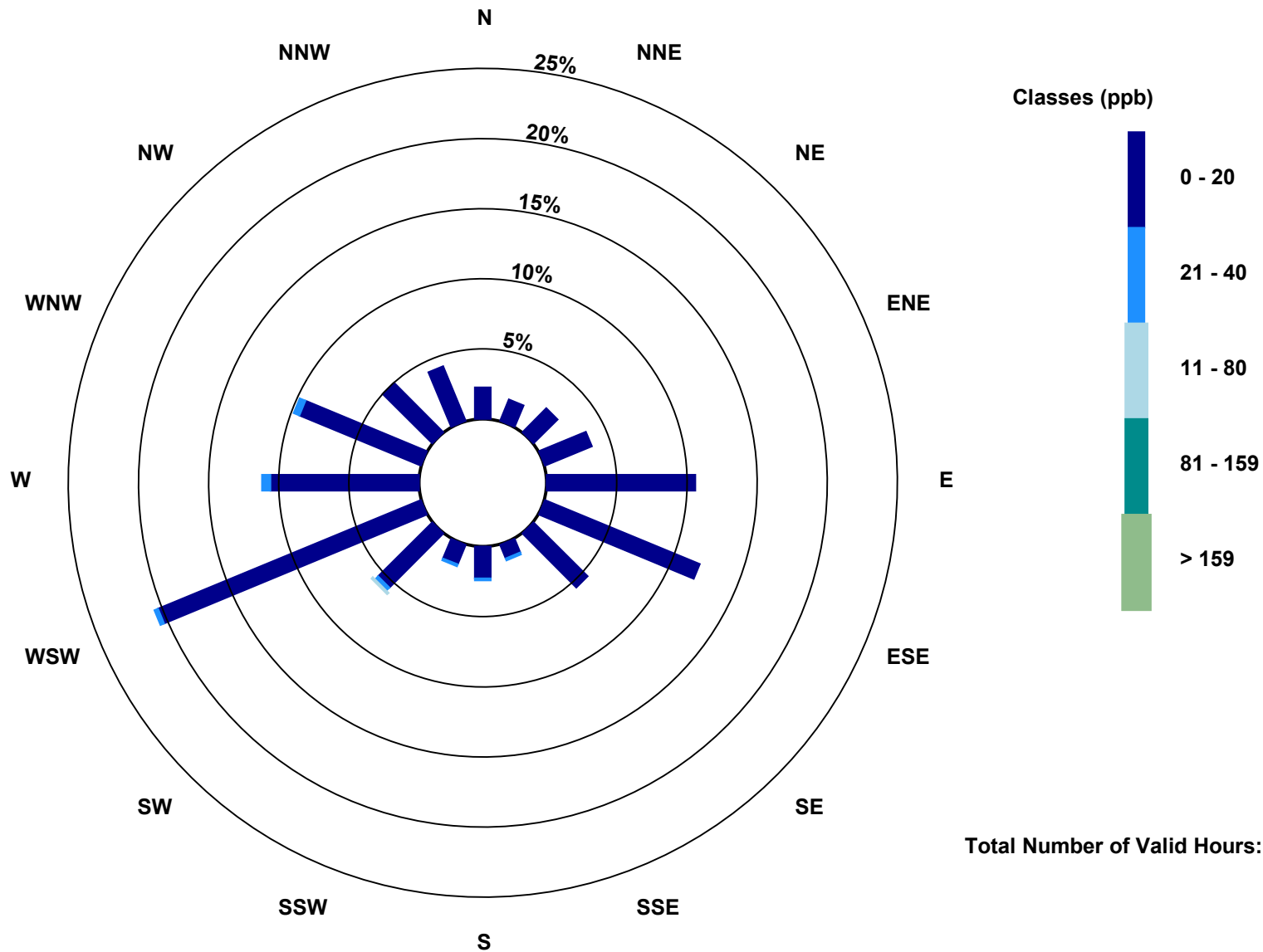
Total Number of Valid Hours: 661

Total Number of Hours: 696

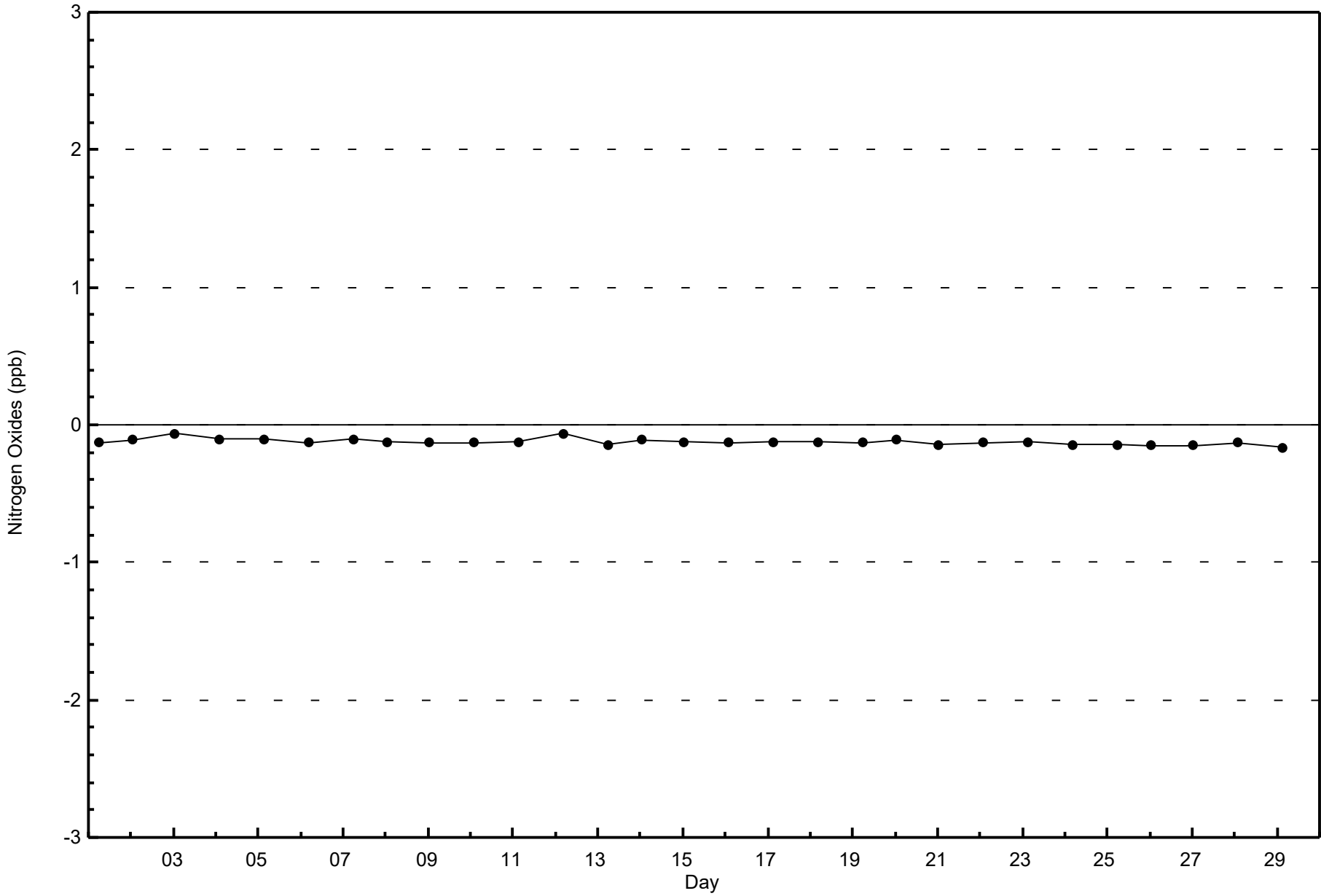


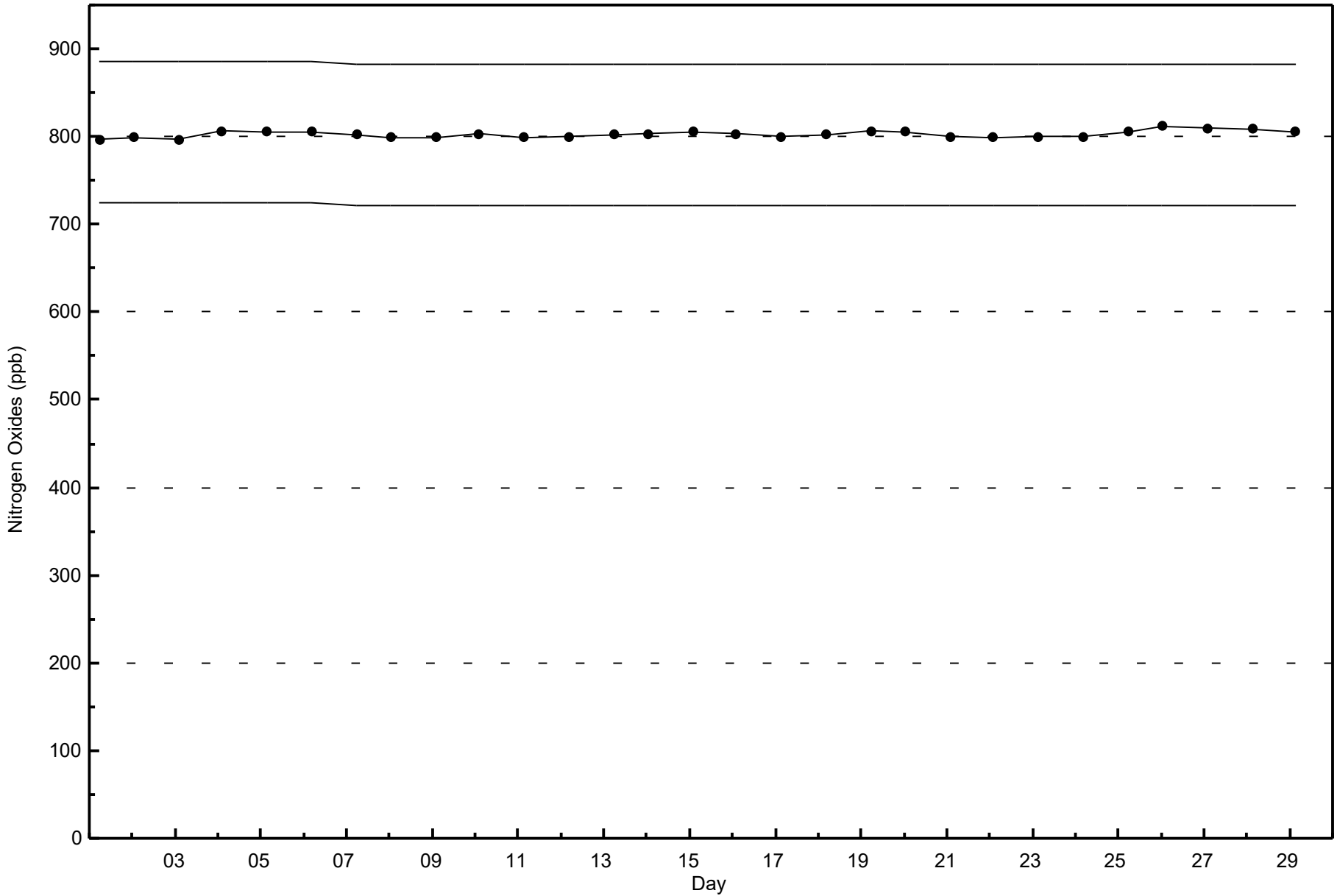
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Anzac



Total Number of Valid Hours: 661







Wood Buffalo Environmental Association

Summary of Hour Averages

Ozone (O₃) - ppb

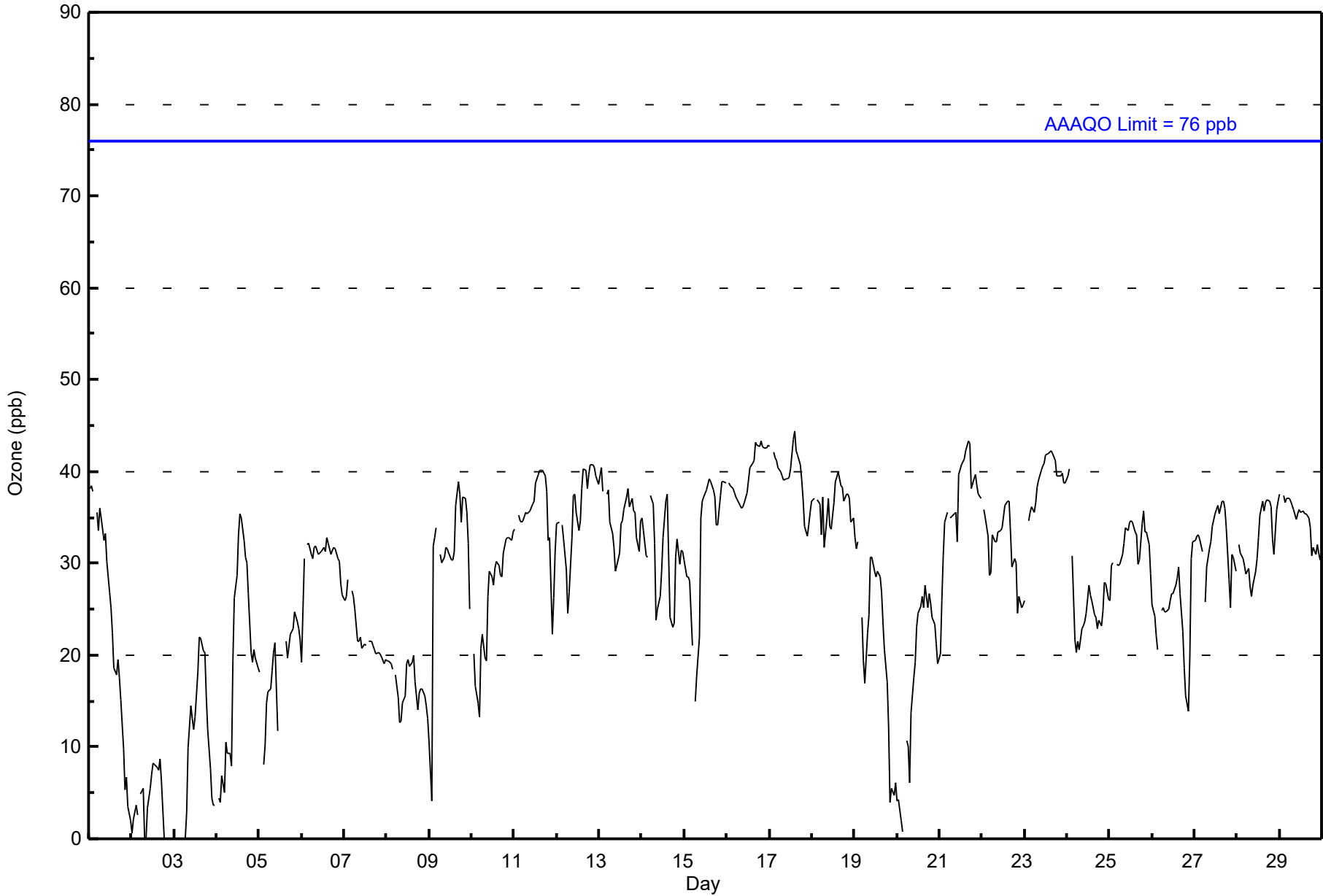
Anzac - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service:																	696																												
Maximum Value: 44.3 ppb on Feb 17 15:00		Maximum Daily Average: 39.7 ppb on Feb 16																	Hours of Data:		662																												
Minimum Value: 0.0 ppb on Feb 2 08:00		Minimum Daily Average: 3.6 ppb on Feb 2																	Hours of Missing Data:		34																												
Maximum Diurnal Average: 32.3 ppb at hour 15		Minimum Diurnal Average: 25.4 ppb at hour 8																	Hours of Calibration:		33																												
Monthly Average: 28.16 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 12.2 Q ₁ = 22.0 Median = 31.0 Q ₃ = 36.0 P ₉₀ = 39.3 P ₉₉ = 42.8																	Percent Operational Time:		99.9																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	38.1	38.4	37.9	Z	35.6	33.6	36.1	34.9	32.4	33.2	30.2	26.8	25.1	22.5	18.6	17.8	19.5	17.5	15.1	9.8	5.4	6.7	3.5	2.1	23.5	38.4																							
2-Feb	0.7	2.1	3.6	2.7	Z	4.8	5.5	0.0	0.0	3.3	5.5	7.0	8.2	8.1	7.7	7.5	8.7	6.3	0.0	0.0	0.0	0.0	0.0	0.0	3.6	8.7																							
3-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	2.8	10.0	14.5	13.0	11.8	13.3	18.2	21.9	21.8	20.5	20.3	15.6	11.9	7.6	4.5	3.7	3.6	9.4	21.9																							
4-Feb	Z	4.3	4.0	6.8	5.1	10.5	9.2	9.3	8.0	19.4	26.3	28.6	33.2	35.4	34.9	32.5	30.7	30.0	26.7	20.3	19.2	20.7	19.6	18.6	19.7	35.4																							
5-Feb	18.1	Z	8.1	10.3	14.8	16.1	16.4	18.2	20.3	21.4	11.7	C	C	C	C	21.6	19.7	22.2	22.6	22.8	24.7	23.7	22.9	21.6	18.8	24.7																							
6-Feb	19.3	30.5	Z	32.0	32.2	31.0	30.5	31.8	31.9	31.0	31.1	31.3	31.7	31.2	32.8	32.1	30.9	31.5	31.7	31.6	30.6	30.2	27.7	26.5	30.5	32.8																							
7-Feb	26.0	26.4	28.2	Z	27.1	26.4	25.0	21.6	21.5	21.9	20.7	21.3	21.1	M	21.5	21.5	21.1	20.5	20.1	20.2	20.2	19.9	19.1	19.5	22.3	28.2																							
8-Feb	19.3	19.4	19.1	18.5	Z	17.9	15.4	12.6	12.8	14.8	15.5	19.0	19.5	18.7	19.2	20.0	17.1	14.0	15.9	16.3	16.4	15.6	14.5	13.1	16.7	20.0																							
9-Feb	10.5	4.1	31.8	32.8	33.8	Z	31.0	30.0	30.6	31.7	31.6	31.2	30.4	30.3	31.2	36.4	38.9	37.6	34.5	37.3	37.1	35.5	32.2	25.0	30.7	38.9																							
10-Feb	Z	20.1	16.6	14.9	13.2	20.7	22.3	19.7	19.4	26.4	29.1	28.5	27.7	29.4	30.3	29.7	28.7	28.6	31.1	32.6	32.8	32.8	32.5	33.4	26.1	33.4																							
11-Feb	33.7	Z	35.2	34.7	34.5	34.7	35.6	35.3	35.5	35.7	36.4	36.7	38.8	39.7	40.1	40.1	40.1	39.6	37.9	32.6	32.8	22.3	26.2	31.3	35.2	40.1																							
12-Feb	34.3	34.5	Z	34.1	32.7	29.3	24.6	26.9	32.7	37.3	37.5	35.6	33.6	34.7	38.1	40.2	40.1	38.1	39.6	40.8	40.7	40.5	39.5	38.6	35.8	40.8																							
13-Feb	39.5	40.4	37.8	Z	37.5	37.9	34.4	33.3	31.7	29.2	29.8	31.1	34.3	34.7	35.9	37.2	38.2	36.1	37.1	35.7	35.6	32.7	31.3	34.6	35.0	40.4																							
14-Feb	35.0	33.5	30.8	30.6	Z	37.4	36.5	32.1	23.8	25.0	26.3	29.1	32.8	36.7	37.5	30.9	24.0	23.0	23.4	30.7	32.6	29.8	31.4	31.3	30.6	37.5																							
15-Feb	30.4	28.5	28.5	28.1	21.1	Z	15.0	17.8	22.0	34.9	36.8	37.2	38.0	38.6	39.2	38.9	37.9	37.3	34.1	34.1	37.4	38.8	38.9	38.8	32.7	39.2																							
16-Feb	Z	38.7	38.4	38.1	37.7	37.2	36.8	36.4	36.0	36.2	36.5	37.7	39.0	40.5	40.9	41.1	43.2	42.9	42.7	43.3	42.8	42.5	42.6	42.8	39.7	43.3																							
17-Feb	42.7	Z	42.1	41.6	41.1	40.4	39.9	39.5	39.0	39.3	39.3	39.4	40.3	43.5	44.3	42.2	41.8	40.7	39.0	36.9	34.0	32.9	34.2	35.6	39.6	44.3																							
18-Feb	36.8	37.0	Z	36.9	36.4	33.0	37.3	31.8	34.9	37.1	34.1	33.7	36.6	38.9	39.4	40.0	38.5	38.2	36.7	37.5	37.5	37.1	34.5	34.9	36.5	40.0																							
19-Feb	32.8	31.6	32.3	Z	24.1	19.3	17.0	22.4	24.4	30.6	30.7	29.1	28.5	29.1	28.5	26.8	23.4	20.7	17.1	12.1	3.9	5.5	4.8	6.1	21.8	32.8																							
20-Feb	4.0	4.2	2.0	0.7	Z	10.7	10.0	6.2	13.7	17.5	19.2	23.0	24.5	25.3	26.5	25.2	27.7	25.2	26.7	25.7	24.1	23.4	21.2	19.1	17.6	27.7																							
21-Feb	20.2	26.0	30.8	34.5	35.5	Z	34.9	35.2	35.4	35.5	32.4	39.6	40.8	41.0	41.3	42.2	43.3	43.0	38.1	39.3	39.7	38.5	37.6	37.1	36.6	43.3																							
22-Feb	Z	35.9	35.0	32.9	28.7	28.9	33.2	32.4	32.3	33.4	33.6	33.9	35.1	36.4	36.7	36.7	33.3	29.6	30.5	30.1	24.6	26.4	25.1	25.5	31.7	36.7																							
23-Feb	26.0	Z	34.7	35.5	36.2	35.6	36.6	38.3	39.0	40.2	40.6	40.9	41.7	41.9	42.2	42.3	42.0	41.2	39.6	39.5	39.5	39.8	38.7	38.7	38.7	42.3																							
24-Feb	39.6	40.3	Z	30.8	21.7	20.4	21.6	20.6	22.8	23.1	23.6	24.5	27.6	26.6	25.9	24.4	24.1	22.9	23.8	23.3	24.9	27.9	27.8	26.1	25.8	40.3																							
25-Feb	25.9	29.8	30.1	Z	30.0	29.8	29.9	31.0	32.2	33.8	33.6	34.5	34.6	34.5	33.5	33.1	29.9	30.4	34.3	35.7	33.4	33.3	32.1	28.8	31.9	35.7																							
26-Feb	25.4	24.3	22.1	20.6	Z	24.9	25.2	24.7	24.8	25.0	26.0	26.8	26.6	27.7	28.3	29.5	26.7	22.6	18.6	15.6	13.8	19.9	30.4	32.4	24.4	32.4																							
27-Feb	32.4	32.9	33.0	32.6	31.3	Z	25.8	29.6	31.6	32.4	34.0	35.5	35.8	36.3	35.4	36.8	36.8	36.0	33.8	28.2	25.2	30.9	30.6	29.2	32.4	36.8																							
28-Feb	Z	32.1	31.1	30.5	29.8	28.9	29.4	27.4	26.3	27.7	29.2	30.5	32.8	35.2	36.8	35.8	36.6	36.9	36.7	36.2	32.7	31.0	35.9	36.8	32.4	36.9																							
29-Feb	37.6	Z	37.4	36.6	37.0	37.1	36.7	36.4	35.8	34.8	35.4	35.9	35.6	35.7	35.4	35.4	34.9	33.8	30.9	31.7	31.0	32.0	31.1	30.4	34.7	37.6																							
																								26.2	25.6	26.0	25.7	28.2	26.9	25.9	25.4	26.2	28.5	28.6	30.0	31.0	32.2	32.3	31.7	31.0	29.9	28.8	28.0	26.9	26.7	26.5	26.3	Diurnal Average	
																								42.7	40.4	42.1	41.6	41.1	40.4	39.9	39.5	39.0	40.2	40.6	40.9	41.7	43.5	44.3	42.3	43.3	43.0	42.7	43.3	42.8	42.5	42.6	42.8	Diurnal Maximum	
Z - zerospan C - Calibration M - Maintenance																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 76 ppb																																																	



Wood Buffalo Environmental Association
Hourly Averages

Ozone (O₃) - ppb
Anzac - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ozone (O₃) - ppb
Anzac - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	142	21.45	21.45
21 - 50	520	78.55	100.00
51 - 82	0	0.00	100.00
> 83	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Ozone (O₃) - ppb
Anzac - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	3	9	3	8	9	16	23	2	2	3	5	8	25	15	7	4	142
21 - 50	13	3	11	19	63	64	15	6	13	6	35	125	45	51	27	24	520
51 - 82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	12	14	27	72	80	38	8	15	9	40	133	70	66	34	28	662

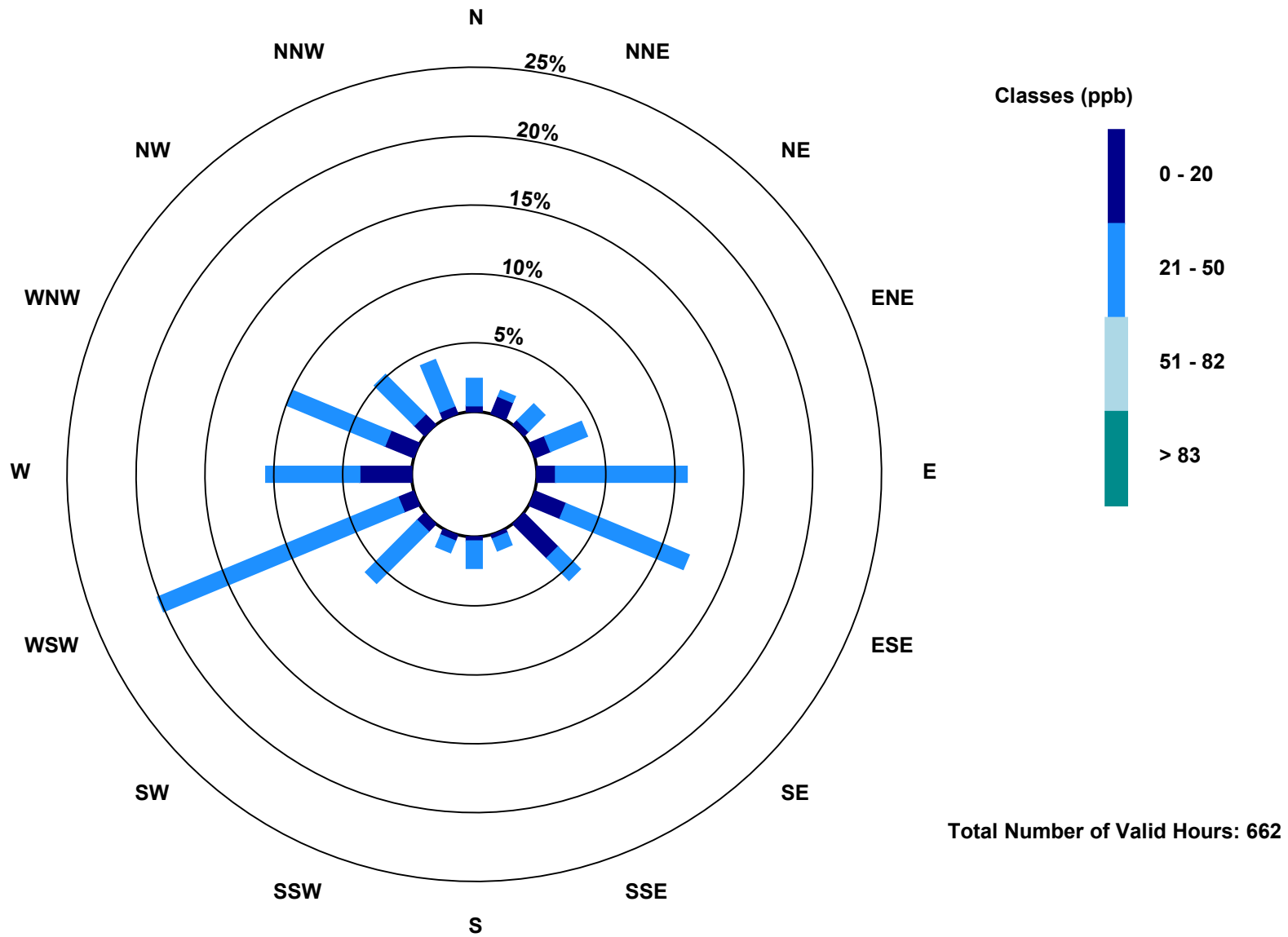
Total Number of Valid Hours: 662

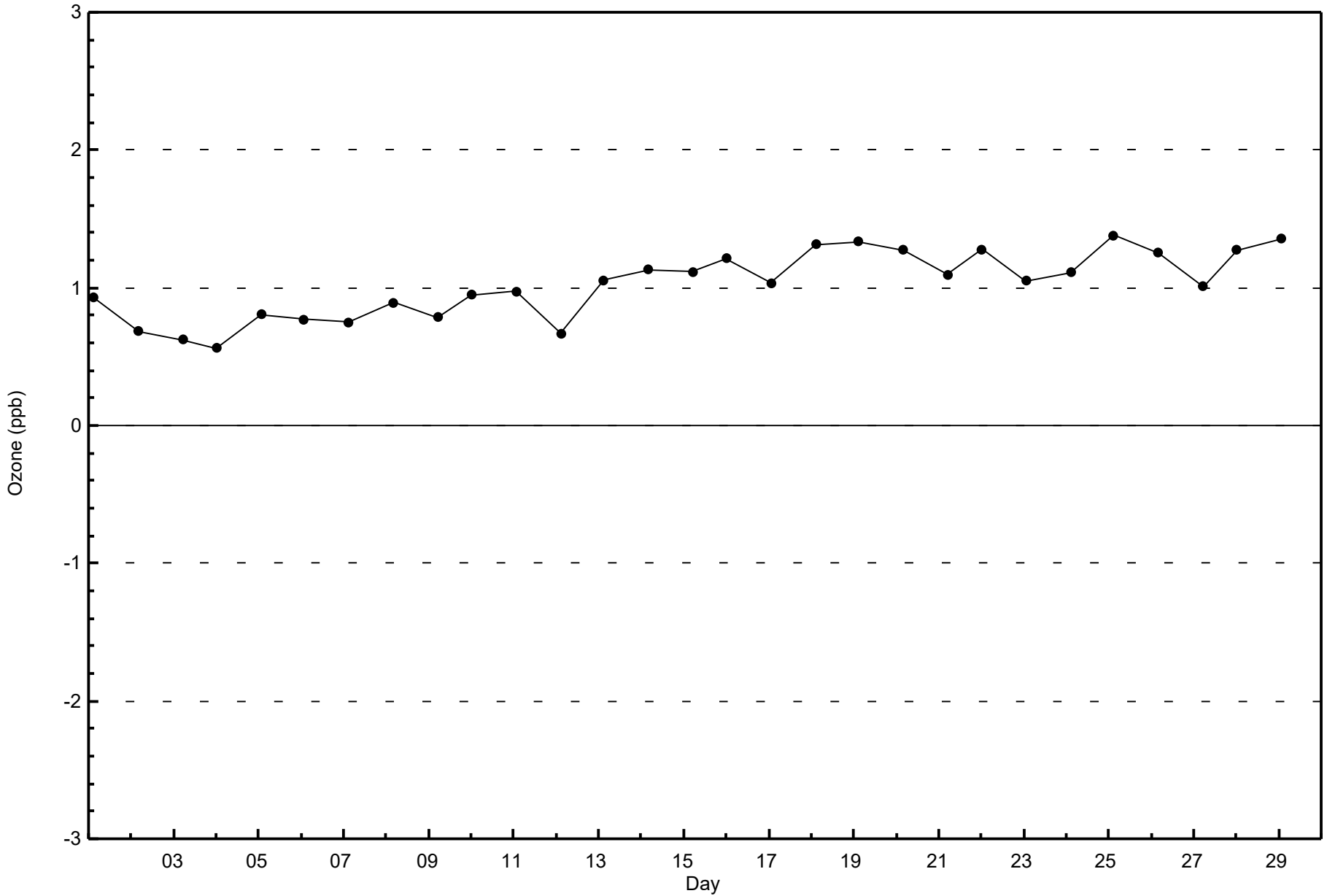
Total Number of Hours: 696

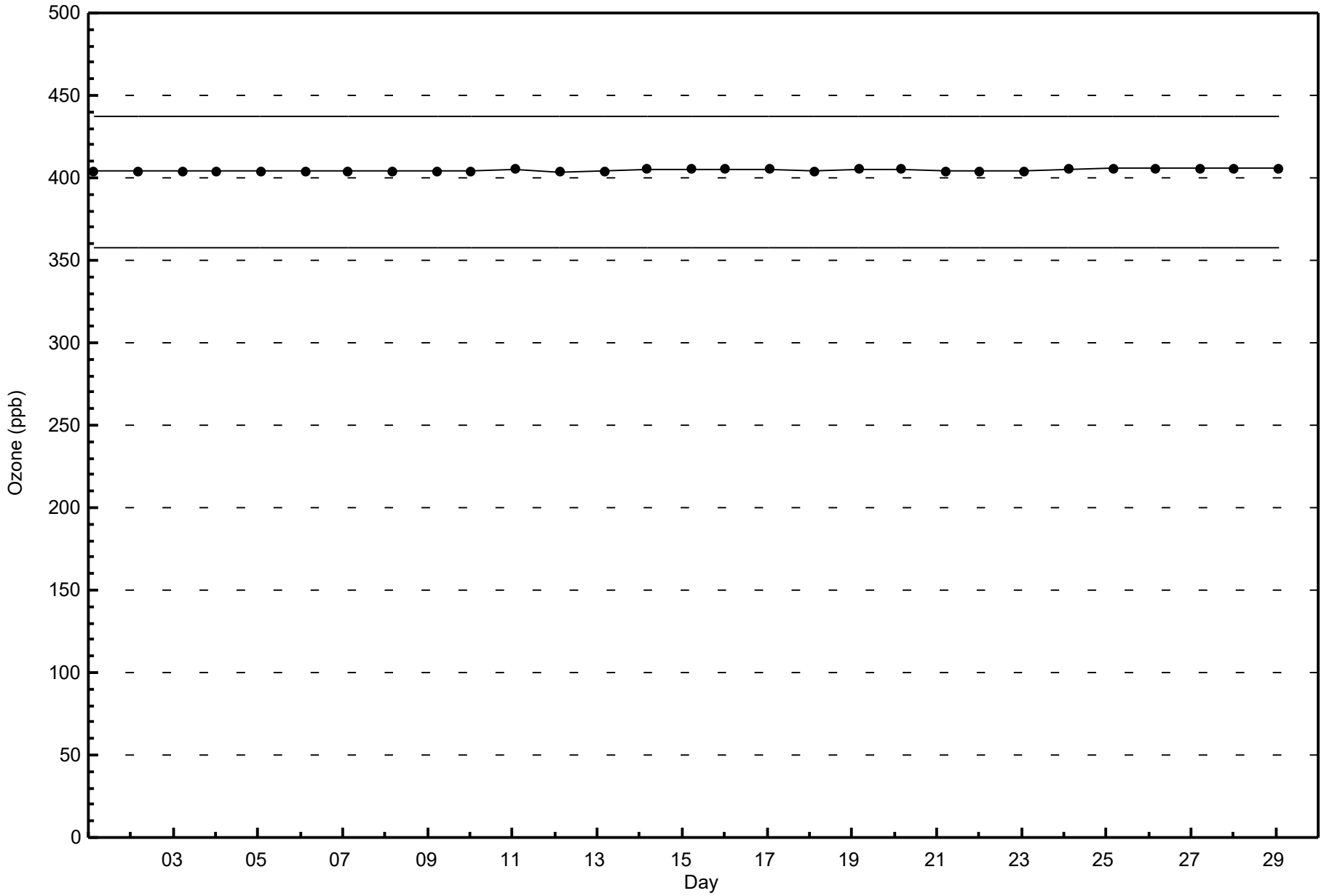


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Ozone (O₃) - ppb
Anzac





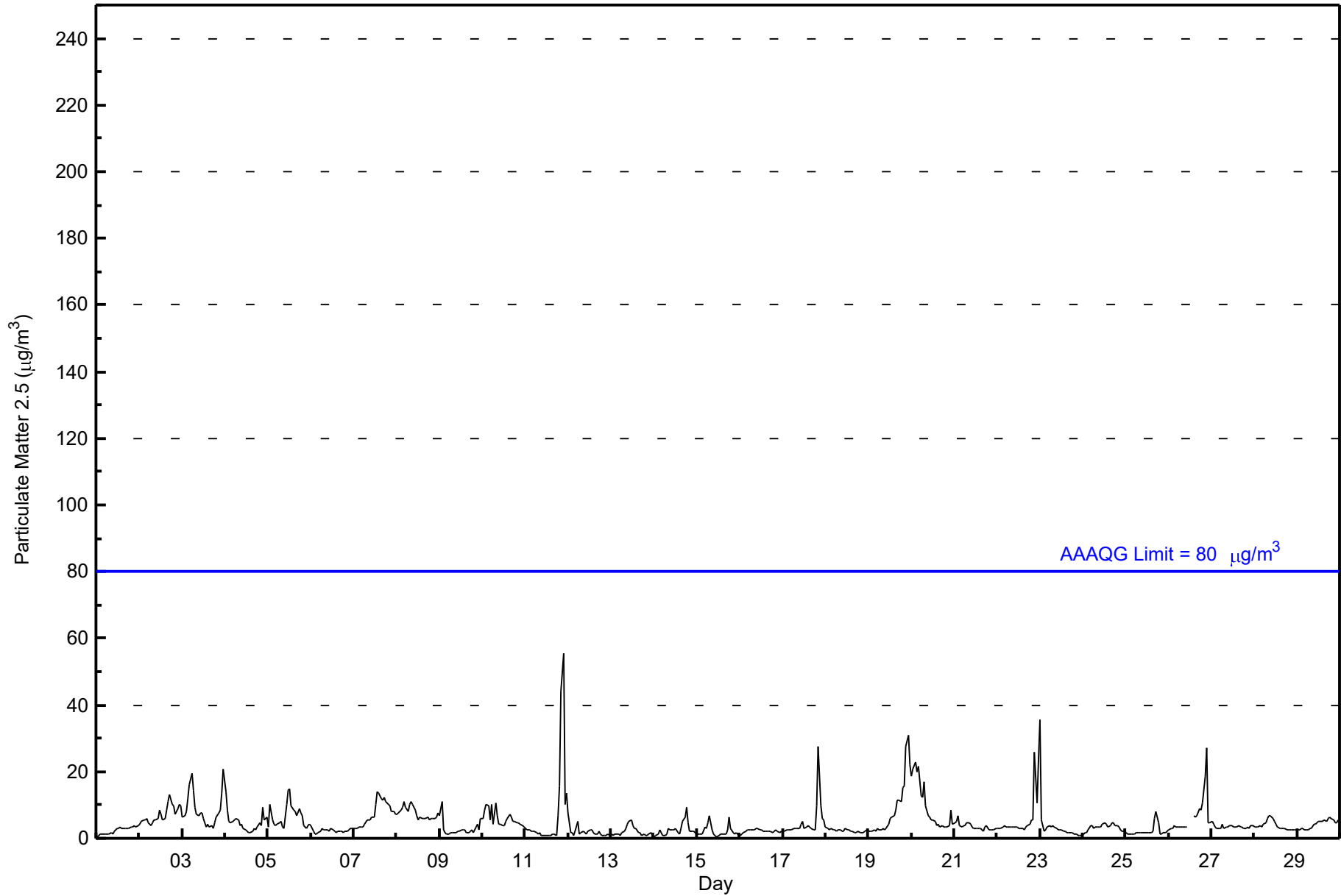




Summary of Hour Averages

Anzac - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	696					
Maximum Value: 55.5 µg/m ³ on Feb 11 22:00		Maximum Daily Average: 9.5 µg/m ³ on Feb 20																	Hours of Data: 693							
Minimum Value: 0.5 µg/m ³ on Feb 15 12:00		Minimum Daily Average: 2.0 µg/m ³ on Feb 12																	Hours of Missing Data: 3							
Maximum Diurnal Average: 8.1 µg/m ³ at hour 22		Minimum Diurnal Average: 3.7 µg/m ³ at hour 10																	Hours of Calibration: 3							
Monthly Average: 4.66 µg/m ³		Percentiles: P ₁ = 0.7 P ₁₀ = 1.4 Q ₁ = 2.2 Median = 3.2 Q ₃ = 5.5 P ₉₀ = 9.4 P ₉₉ = 25.8																	Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.6	0.9	1.2	1.3	1.3	1.1	1.3	1.4	1.8	1.4	2.2	2.9	3.0	3.3	3.0	3.0	2.8	2.8	2.9	3.6	3.6	3.6	3.6	3.9	2.4	3.9
2-Feb	4.4	4.9	5.6	5.5	5.8	4.6	3.7	4.8	5.3	5.6	5.8	8.4	7.2	5.5	5.9	8.3	11.0	13.2	10.1	9.7	7.2	9.1	10.2	9.7	7.1	13.2
3-Feb	6.6	6.9	8.1	11.8	16.1	19.5	14.6	9.4	7.1	6.6	7.5	7.5	5.8	3.3	4.1	3.2	4.0	3.1	4.8	6.3	7.7	8.3	13.4	20.7	8.6	20.7
4-Feb	14.1	8.5	5.2	4.5	4.9	5.6	6.0	5.5	4.0	4.1	2.9	2.5	2.0	1.9	1.8	2.2	2.8	2.5	3.5	4.8	3.8	9.3	5.4	6.4	4.8	14.1
5-Feb	3.6	10.3	5.3	4.1	3.7	4.4	4.7	5.0	3.2	3.2	10.2	14.3	14.8	9.8	8.4	7.9	6.9	8.9	7.5	6.6	3.9	2.9	3.6	4.1	6.6	14.8
6-Feb	4.0	2.0	1.4	1.3	1.5	2.2	2.8	2.7	2.5	2.7	2.2	3.2	2.4	2.1	1.8	1.9	2.2	2.3	1.9	2.0	2.2	2.4	2.8	3.0	2.3	4.0
7-Feb	3.1	3.0	3.0	3.4	3.4	3.5	4.0	5.3	5.5	5.4	6.5	6.5	10.4	14.0	13.7	12.0	11.4	12.4	11.2	10.3	9.8	8.1	7.8	7.3	7.5	14.0
8-Feb	7.1	7.5	8.5	9.1	10.9	9.4	8.3	10.1	11.2	10.1	8.6	6.6	5.7	6.3	6.0	5.8	5.9	6.2	5.6	6.0	5.7	5.8	6.2	7.8	7.5	11.2
9-Feb	6.8	11.2	2.6	1.8	1.4	1.5	1.8	1.9	1.9	1.8	2.0	2.2	2.4	2.7	2.6	1.7	1.8	1.9	2.4	1.8	3.3	4.1	2.5	5.9	2.9	11.2
10-Feb	5.8	8.3	10.0	9.8	5.4	10.2	4.4	10.6	6.9	4.4	4.2	3.9	3.9	5.0	6.1	7.2	6.5	5.2	5.3	4.6	4.6	4.4	3.9	3.4	6.0	10.6
11-Feb	3.0	2.7	2.4	2.2	2.2	2.0	1.7	1.4	1.7	1.0	1.0	1.0	0.7	0.7	0.8	1.2	1.4	1.0	6.6	15.7	44.2	55.5	10.2	13.7	7.3	55.5
12-Feb	7.4	1.8	1.6	0.9	1.9	5.2	1.3	1.8	2.0	1.6	1.3	2.3	2.8	2.7	1.7	1.1	1.1	2.2	1.2	0.9	0.9	1.0	1.1	1.0	2.0	7.4
13-Feb	1.2	0.7	1.3	1.3	1.1	0.8	1.7	2.3	2.8	4.2	4.9	5.3	3.8	3.0	2.9	1.6	1.6	0.8	1.2	0.9	0.9	1.4	1.7	0.6	2.0	5.3
14-Feb	0.6	0.7	1.4	2.5	1.8	0.9	1.0	1.4	2.9	2.6	2.5	2.7	2.9	1.7	1.4	2.8	5.2	6.4	9.5	4.6	2.2	2.3	2.0	1.8	2.7	9.5
15-Feb	1.5	1.3	1.1	1.2	3.3	3.1	4.5	6.8	2.6	1.4	0.6	0.5	0.7	1.2	1.2	1.3	1.2	2.6	6.3	2.8	1.9	1.3	1.5	0.9	2.1	6.8
16-Feb	0.9	1.3	1.8	2.3	2.5	2.5	2.5	2.6	2.7	2.8	2.8	2.6	2.5	2.3	2.3	2.0	2.0	1.9	1.9	2.3	2.4	2.0	1.9	1.9	2.2	2.8
17-Feb	2.1	2.3	2.4	2.5	2.6	2.7	2.8	2.8	2.9	3.0	4.3	5.2	2.8	3.3	3.9	3.4	2.9	2.4	2.3	9.9	27.6	9.7	6.0	5.6	4.8	27.6
18-Feb	3.5	3.0	2.7	2.8	2.7	2.6	2.3	2.7	2.3	1.9	2.3	2.8	2.4	2.3	2.0	2.2	1.6	1.7	1.9	1.7	1.7	1.5	2.1	2.4	2.3	3.5
19-Feb	2.3	2.2	2.1	2.4	2.2	2.9	2.6	2.6	2.8	2.6	3.0	4.2	5.8	6.2	6.8	8.7	11.4	11.3	10.8	15.1	15.5	27.4	31.0	21.9	8.5	31.0
20-Feb	18.5	20.8	22.9	19.9	21.5	12.8	12.4	16.9	9.8	6.9	6.4	5.6	5.5	5.2	3.8	4.3	3.6	3.9	3.5	3.3	3.2	3.6	8.7	4.1	9.5	22.9
21-Feb	4.5	5.0	6.6	4.0	3.6	3.8	4.0	4.6	4.6	4.3	3.6	2.8	2.8	2.9	3.0	3.0	2.1	3.3	3.8	2.6	2.5	2.7	2.7	2.8	3.6	6.6
22-Feb	2.9	3.0	3.1	3.3	3.7	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.0	2.9	2.6	3.3	3.9	4.1	5.4	5.5	25.7	10.6	23.8	5.5	25.7
23-Feb	35.4	5.5	2.1	2.7	3.2	3.8	3.3	3.6	3.6	2.8	2.7	2.6	2.4	2.2	2.1	1.9	1.6	1.5	1.9	1.3	1.3	1.0	0.9	1.0	3.8	35.4
24-Feb	1.1	1.7	1.6	2.6	3.8	3.9	3.2	3.3	3.2	3.2	3.5	4.2	4.6	4.2	3.5	3.8	4.5	4.5	3.8	3.7	3.4	2.5	2.1	2.1	3.3	4.6
25-Feb	1.9	1.4	1.5	1.4	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.8	2.0	5.8	8.0	4.5	1.2	1.3	1.7	1.8	2.1	2.2	8.0
26-Feb	2.5	2.8	2.9	3.6	3.6	3.5	3.3	3.3	3.4	3.4	3.3	C	C	C	6.6	6.5	6.9	8.8	8.4	10.7	18.7	27.0	4.5	4.8	6.6	27.0
27-Feb	5.2	4.2	3.4	2.8	3.1	2.8	4.3	3.1	3.4	3.4	3.7	3.6	3.5	3.5	3.5	3.9	3.4	3.4	2.9	3.1	3.5	3.1	3.7	3.6	3.5	5.2
28-Feb	3.5	3.3	3.2	3.6	3.5	4.1	4.7	6.0	6.9	6.6	5.8	5.1	4.1	3.5	2.9	2.9	2.8	2.8	2.7	2.4	2.4	2.6	2.7	2.6	3.8	6.9
29-Feb	2.5	2.7	2.8	2.9	2.7	2.6	2.6	2.8	3.2	4.0	4.4	4.6	4.9	5.1	5.3	5.3	5.1	5.7	6.4	6.1	5.5	4.9	4.5	5.5	4.3	6.4
5.4 4.5 4.1 4.1 4.3 4.4 4.0 4.5 4.0 3.7 3.9 4.2 4.1 3.9 3.9 3.9 4.2 4.6 4.8 5.2 6.8 8.1 5.5 6.0																								Diurnal Average		
35.4 20.8 22.9 19.9 21.5 19.5 14.6 16.9 11.2 10.1 10.2 14.3 14.8 14.0 13.7 12.0 11.4 13.2 11.2 15.7 44.2 55.5 31.0 23.8																								Diurnal Maximum		
C - Calibration																										
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Anzac - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	525	75.76	75.76
6 - 15	146	21.07	96.83
16 - 25	14	2.02	98.85
26 - 80	8	1.15	100.00
> 81.0	0	0.00	100.00

Total Number of Valid Hours: 693

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - μg/m³
Anzac - February 2024

Concentration Ranges (μg/m ³)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	11	3	13	22	67	61	22	4	11	4	33	131	49	44	25	25	525
6 - 15	4	10	2	4	8	23	14	2	5	2	4	8	27	19	10	4	146
16 - 25	1	0	1	1	0	1	2	1	0	2	2	0	0	2	0	1	14
26 - 80	0	0	0	0	0	0	1	1	1	3	1	1	0	0	0	0	8
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	13	16	27	75	85	39	8	17	11	40	140	76	65	35	30	693

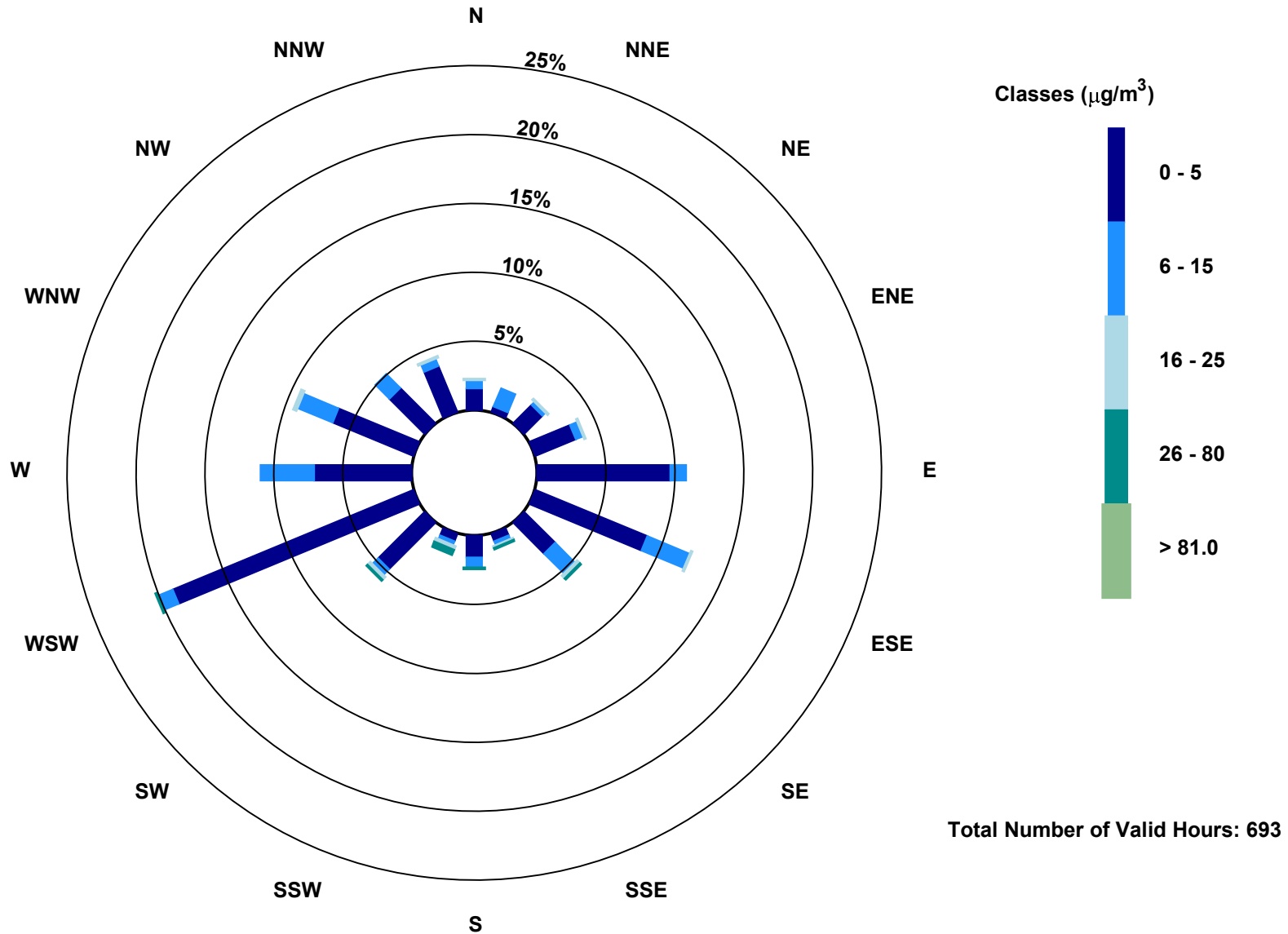
Total Number of Valid Hours: 693

Total Number of Hours: 696



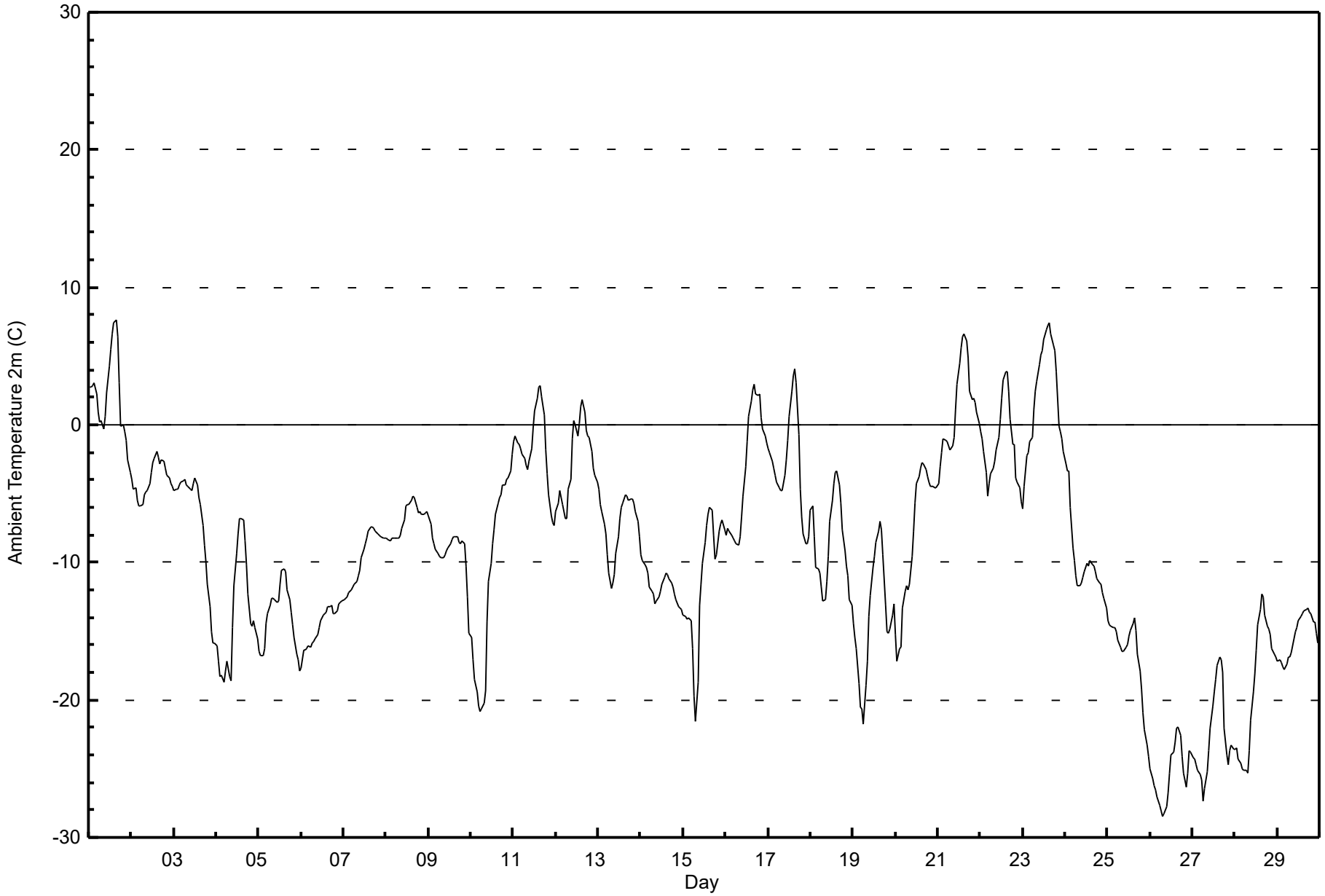
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Anzac





Maximum Value: 7.7 C on Feb 1 16:00		Maximum Daily Average: 2.1 C on Feb 1		Hours in Service: 696																						
Minimum Value: -28.5 C on Feb 26 08:00		Minimum Daily Average: -25.4 C on Feb 26		Hours of Data: 696																						
Maximum Diurnal Average: -5.3 C at hour 16		Minimum Diurnal Average: -11.9 C at hour 7		Hours of Missing Data: 0																						
Monthly Average: -9.21 C		Percentiles: P ₁ = -26.7 P ₁₀ = -19.0 Q ₁ = -14.3 Median = -8.5 Q ₃ = -3.9 P ₉₀ = 0.4 P ₉₉ = 6.6		Hours of Calibration: 0																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.8	2.7	2.8	3.1	2.2	0.9	0.2	0.3	-0.3	0.6	2.3	4.3	5.5	6.6	7.4	7.7	6.4	3.0	-0.1	0.0	-0.5	-1.1	-2.6	-3.4	2.1	7.7
2-Feb	-4.0	-4.6	-4.6	-5.5	-5.9	-5.9	-5.8	-5.1	-4.9	-4.8	-4.3	-3.4	-2.7	-2.5	-1.9	-2.4	-2.9	-2.5	-2.7	-3.1	-3.6	-3.9	-4.3	-4.5	-4.0	-1.9
3-Feb	-4.7	-4.7	-4.7	-4.3	-4.2	-4.0	-4.0	-4.4	-4.5	-4.6	-4.8	-4.3	-3.9	-4.4	-5.3	-5.8	-7.3	-8.8	-9.9	-11.6	-13.2	-15.1	-15.9	-15.9	-7.1	-3.9
4-Feb	-16.0	-17.2	-18.3	-18.2	-18.7	-17.9	-17.2	-18.3	-18.6	-14.7	-11.7	-9.4	-7.9	-6.9	-6.8	-6.9	-8.5	-10.1	-12.3	-14.4	-14.7	-14.2	-14.7	-15.6	-13.7	-6.8
5-Feb	-16.5	-16.8	-16.8	-16.3	-14.5	-13.7	-13.1	-12.7	-12.6	-12.8	-11.0	-12.9	-11.6	-10.5	-10.5	-10.7	-12.0	-12.7	-13.6	-14.5	-15.4	-16.6	-17.1	-17.9	-13.9	-10.5
6-Feb	-17.7	-16.4	-16.4	-16.3	-16.1	-16.1	-15.9	-15.8	-15.6	-15.3	-14.7	-14.3	-13.8	-13.7	-13.6	-13.2	-13.2	-13.2	-13.7	-13.7	-13.5	-13.0	-12.9	-12.8	-14.6	-12.8
7-Feb	-12.7	-12.6	-12.5	-12.2	-12.0	-11.8	-11.6	-11.4	-11.0	-10.6	-9.7	-9.0	-8.6	-8.2	-7.7	-7.5	-7.4	-7.6	-7.8	-7.9	-8.1	-8.1	-8.2	-8.2	-9.7	-7.4
8-Feb	-8.3	-8.4	-8.4	-8.3	-8.2	-8.2	-8.3	-8.3	-8.0	-7.6	-6.9	-5.9	-5.8	-5.8	-5.5	-5.2	-5.3	-6.0	-6.4	-6.3	-6.5	-6.5	-6.4	-6.4	-6.9	-5.2
9-Feb	-6.6	-7.2	-8.2	-8.7	-9.0	-9.3	-9.5	-9.7	-9.7	-9.4	-9.1	-8.9	-8.7	-8.4	-8.1	-8.1	-8.2	-8.5	-8.7	-8.4	-8.6	-10.3	-12.6	-15.2	-9.1	-6.6
10-Feb	-15.4	-17.1	-18.5	-19.4	-20.5	-20.9	-20.6	-20.3	-19.4	-14.3	-11.3	-10.0	-8.7	-7.7	-6.5	-5.7	-5.3	-5.0	-4.4	-4.4	-3.9	-3.9	-3.4	-2.1	-11.2	-2.1
11-Feb	-1.2	-0.8	-1.3	-1.5	-1.7	-2.1	-2.4	-3.0	-3.2	-2.6	-1.7	-0.2	1.0	2.0	2.7	2.8	2.0	0.7	-1.9	-3.5	-5.0	-6.6	-7.1	-7.3	-1.7	2.8
12-Feb	-6.3	-5.7	-4.8	-5.3	-5.8	-6.8	-6.8	-4.6	-4.0	-1.0	0.3	0.0	-0.9	0.1	1.3	1.8	0.9	-0.4	-0.8	-0.9	-2.0	-3.2	-3.7	-4.1	-2.6	1.8
13-Feb	-4.7	-5.8	-6.3	-7.2	-7.9	-9.4	-10.8	-11.8	-11.5	-10.9	-9.3	-8.1	-6.8	-6.0	-5.7	-5.1	-5.2	-5.4	-5.4	-5.4	-5.6	-6.3	-7.0	-8.1	-7.3	-4.7
14-Feb	-9.4	-9.8	-10.2	-10.4	-10.7	-11.8	-12.1	-12.3	-13.0	-12.9	-12.5	-12.1	-11.6	-11.0	-10.7	-10.9	-11.2	-11.5	-11.8	-12.3	-12.7	-13.2	-13.3	-13.5	-11.7	-9.4
15-Feb	-13.8	-14.0	-14.1	-14.0	-14.2	-16.2	-19.7	-21.5	-18.8	-13.1	-11.6	-10.0	-8.5	-7.3	-6.5	-6.0	-6.2	-8.0	-9.8	-9.5	-7.8	-7.2	-6.9	-7.6	-11.4	-6.0
16-Feb	-8.0	-7.5	-7.7	-8.0	-8.2	-8.5	-8.7	-8.7	-8.2	-6.7	-5.2	-3.1	-1.2	0.6	1.7	2.6	2.9	2.2	2.1	2.2	0.5	-0.3	-0.8	-1.4	-3.2	2.9
17-Feb	-1.7	-2.0	-2.7	-3.1	-3.6	-4.2	-4.6	-4.8	-4.8	-3.6	-2.6	-1.1	0.6	2.4	3.6	4.1	3.1	-0.7	-4.7	-6.7	-7.9	-8.7	-8.6	-8.1	-2.9	4.1
18-Feb	-6.2	-5.9	-8.2	-10.4	-10.5	-10.7	-11.8	-12.8	-12.7	-11.4	-9.5	-7.0	-5.4	-4.3	-3.5	-3.4	-4.4	-5.7	-7.6	-9.2	-10.3	-10.9	-12.7	-13.2	-8.7	-3.4
19-Feb	-14.4	-15.5	-16.3	-18.8	-20.5	-20.6	-21.7	-18.9	-17.2	-14.0	-12.4	-10.4	-9.5	-8.5	-7.7	-7.1	-7.6	-9.4	-13.1	-15.0	-15.1	-14.9	-13.8	-13.0	-14.0	-7.1
20-Feb	-15.2	-17.2	-16.3	-16.2	-13.3	-12.1	-11.7	-12.0	-11.6	-9.5	-7.7	-5.7	-4.2	-3.8	-3.2	-2.7	-2.8	-3.2	-3.7	-4.2	-4.5	-4.5	-4.6	-4.5	-8.1	-2.7
21-Feb	-4.3	-3.0	-2.1	-1.0	-1.1	-1.2	-1.5	-1.8	-1.6	-0.9	1.2	2.9	4.5	5.6	6.4	6.6	6.1	4.8	2.4	1.8	1.9	1.6	1.0	0.1	1.2	6.6
22-Feb	-0.5	-1.0	-1.9	-3.4	-5.2	-4.3	-3.6	-3.1	-2.6	-1.9	-0.9	0.4	1.9	3.2	3.9	3.9	2.4	0.4	-1.5	-1.4	-3.9	-4.1	-4.6	-5.6	-1.4	3.9
23-Feb	-6.1	-4.5	-2.3	-2.0	-1.2	-1.0	1.1	2.5	3.2	4.4	5.1	5.4	6.2	6.9	7.3	7.4	6.6	5.8	5.4	3.9	-0.1	-0.5	-1.1	-2.0	2.1	7.4
24-Feb	-2.9	-3.4	-3.3	-6.0	-8.9	-9.9	-11.0	-11.6	-11.7	-11.5	-11.1	-10.7	-10.0	-10.2	-9.9	-10.1	-10.3	-10.7	-11.2	-11.5	-11.6	-12.2	-12.6	-13.3	-9.8	-2.9
25-Feb	-14.2	-14.5	-14.6	-14.7	-14.8	-15.0	-15.7	-16.2	-16.5	-16.5	-16.2	-15.9	-15.3	-14.9	-14.4	-14.0	-15.0	-16.7	-17.9	-19.2	-21.0	-22.2	-23.3	-24.1	-16.8	-14.0
26-Feb	-25.0	-25.7	-26.2	-26.5	-27.1	-27.6	-28.1	-28.5	-28.3	-27.7	-26.7	-25.3	-24.0	-23.8	-23.1	-22.0	-21.9	-22.6	-24.1	-25.3	-26.4	-25.4	-23.7	-23.8	-25.4	-21.9
27-Feb	-24.2	-24.4	-24.7	-25.1	-25.5	-25.9	-27.4	-26.4	-25.2	-23.7	-22.1	-20.4	-19.4	-18.5	-17.5	-16.9	-17.1	-18.0	-22.1	-24.0	-24.7	-23.7	-23.3	-23.6	-22.7	-16.9
28-Feb	-23.6	-23.5	-24.3	-24.7	-25.0	-25.2	-25.1	-25.3	-23.7	-21.5	-19.4	-18.1	-16.4	-14.5	-13.5	-12.4	-12.5	-13.8	-14.6	-14.8	-15.2	-16.2	-16.7	-16.9	-19.0	-12.4
29-Feb	-17.2	-17.1	-17.3	-17.6	-17.8	-17.4	-16.9	-16.9	-16.6	-15.5	-15.1	-14.7	-14.3	-13.9	-13.7	-13.6	-13.5	-13.3	-13.6	-13.8	-14.4	-14.3	-15.1	-15.9	-15.4	-13.3
																								Diurnal Average		
																								Diurnal Maximum		





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 2m (AT 2m) - C
Anzac - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	64	9.20	9.20
-20 - 0	555	79.74	88.94
0 - 10	77	11.06	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Relative Humidity (RH) - %

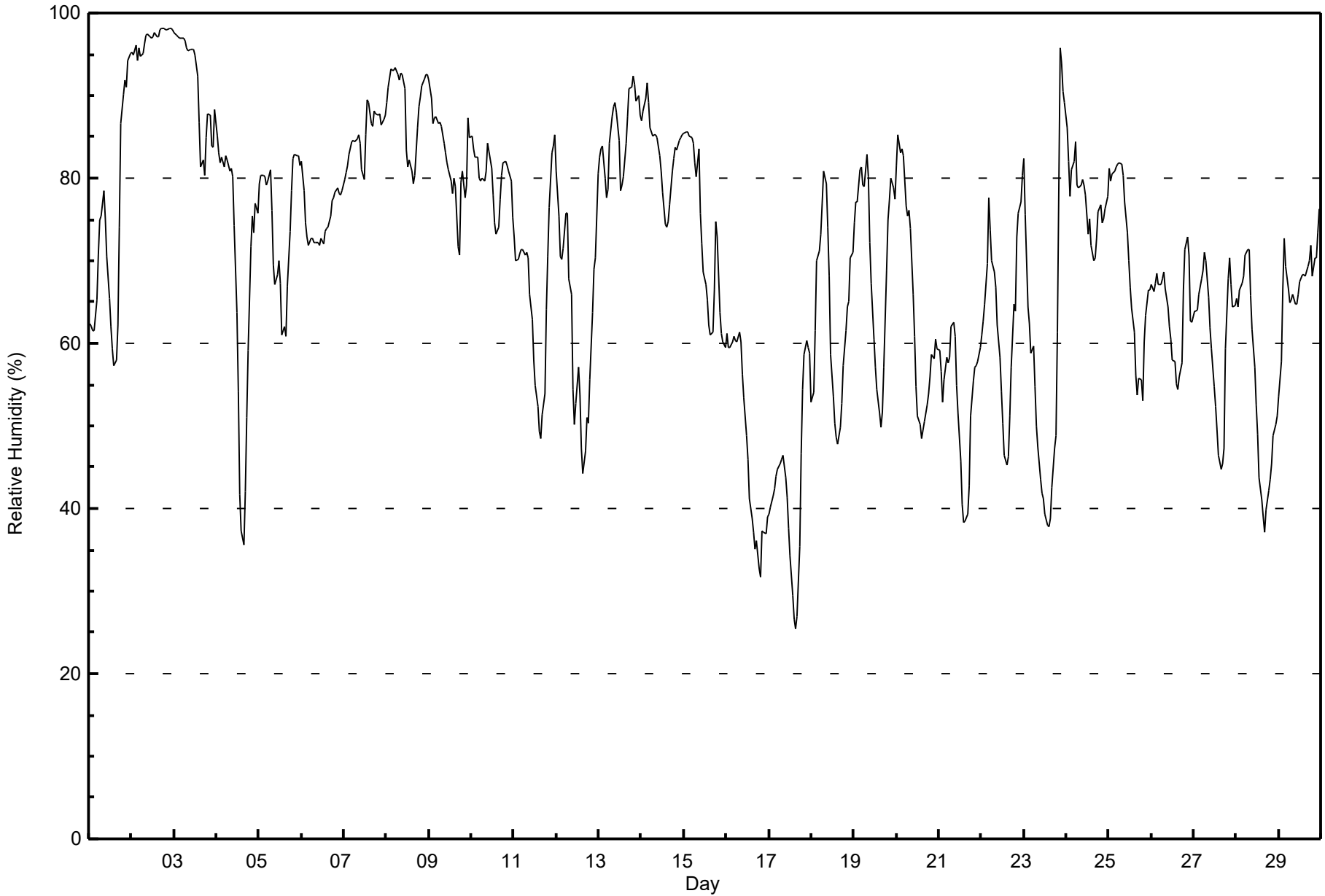
Anzac - February 2024

Maximum Value: 98.2 % on Feb 2 18:00 Maximum Daily Average: 96.9 % on Feb 2																						Hours in Service:	696			
Minimum Value: 25.4 % on Feb 17 16:00 Minimum Daily Average: 42.9 % on Feb 17																						Hours of Data:	696			
Maximum Diurnal Average: 75.9 % at hour 6 Minimum Diurnal Average: 58.8 % at hour 16																						Hours of Missing Data:	0			
Monthly Average: 70.51 % Percentiles: P ₁ = 35.0 P ₁₀ = 48.1 Q ₁ = 59.5 Median = 72.3 Q ₃ = 82.1 P ₉₀ = 89.5 P ₉₉ = 97.9																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	62.4	62.0	61.5	61.5	65.2	70.7	74.9	75.4	78.5	75.0	70.6	65.4	62.1	59.3	57.3	58.0	62.1	74.1	86.7	90.1	91.9	91.0	94.3	95.1	72.7	95.1
2-Feb	95.2	95.0	96.1	94.3	95.8	94.7	95.0	96.3	97.3	97.4	97.2	96.9	97.2	97.7	97.1	97.2	97.9	98.2	98.2	97.9	98.0	98.2	98.1	98.0	96.9	98.2
3-Feb	97.7	97.3	97.2	97.0	97.0	96.9	96.7	95.8	95.5	95.6	95.5	95.0	92.4	86.9	81.3	82.1	80.4	85.0	87.7	87.7	83.9	83.7	88.2	91.3	97.7	
4-Feb	85.0	83.0	81.9	82.6	81.4	82.7	82.2	80.9	81.2	80.2	74.2	63.7	54.2	41.7	37.3	35.7	42.0	51.0	59.1	71.7	75.5	73.4	76.9	75.8	68.9	85.0
5-Feb	79.3	80.3	80.3	80.1	79.2	79.7	81.0	76.1	69.6	67.2	68.3	70.0	67.3	61.0	62.1	60.8	66.9	73.6	78.4	82.3	82.9	82.7	82.7	81.5	74.7	82.9
6-Feb	82.1	78.5	74.6	72.9	71.9	72.7	72.8	72.1	72.2	72.3	71.9	72.7	72.0	73.5	73.9	74.1	75.4	77.3	77.6	78.3	78.8	78.2	78.0	78.5	75.1	82.1
7-Feb	79.8	80.7	81.6	82.9	84.3	84.5	84.5	84.8	85.3	84.2	81.1	79.8	85.2	89.5	89.1	86.6	86.3	88.2	87.7	87.6	87.7	86.5	87.1	87.6	85.1	89.5
8-Feb	89.2	91.0	93.2	93.0	93.1	93.3	92.6	91.9	92.7	92.6	90.8	83.5	81.4	82.2	80.8	79.4	80.3	86.1	88.6	89.9	91.2	92.0	92.5	92.5	88.9	93.3
9-Feb	91.8	89.6	86.6	87.3	87.4	86.6	86.9	86.2	84.3	83.0	81.8	81.0	79.6	78.1	80.0	78.9	71.7	70.7	79.4	80.8	77.6	79.2	87.3	84.9	82.5	91.8
10-Feb	85.0	83.5	82.6	82.5	80.1	79.7	80.0	79.7	80.9	84.3	83.2	81.1	78.0	74.5	73.3	74.1	77.5	80.3	81.8	82.0	81.5	80.8	79.7	75.3	80.1	85.0
11-Feb	72.8	70.0	70.1	70.8	71.3	71.4	70.7	71.0	70.3	66.0	62.8	58.0	55.0	52.3	49.4	48.5	51.3	54.0	64.0	70.5	76.4	83.0	84.0	85.3	66.6	85.3
12-Feb	80.8	75.5	70.5	70.2	71.5	75.8	75.7	67.8	66.0	54.4	50.1	52.8	57.0	53.8	47.3	44.2	47.0	51.1	50.3	55.5	63.6	69.0	70.3	80.5	62.5	80.8
13-Feb	82.5	83.6	83.8	80.0	77.6	78.6	84.3	87.5	88.7	89.1	88.0	84.5	78.4	79.1	80.2	84.3	87.5	90.9	91.0	92.3	91.4	89.4	90.1	87.7	85.4	92.3
14-Feb	86.9	88.1	89.7	91.5	89.1	86.1	85.0	85.3	85.0	82.7	80.8	78.3	74.5	74.1	74.7	76.7	80.9	82.5	83.8	83.5	84.5	85.0	85.2	83.3	91.5	83.3
15-Feb	85.4	85.6	85.6	85.1	84.9	84.3	81.8	80.1	83.5	75.7	72.0	68.6	67.2	65.3	62.1	61.0	61.4	66.5	74.7	72.9	63.7	61.2	60.2	59.5	72.8	85.6
16-Feb	61.2	59.5	59.5	60.2	60.8	60.3	60.1	61.3	60.2	56.3	53.4	48.9	45.9	41.1	38.8	37.0	35.0	36.0	32.8	31.7	37.2	37.2	37.0	39.0	47.9	61.3
17-Feb	39.4	40.1	41.5	42.4	43.9	44.8	45.5	45.9	46.4	43.8	41.3	37.7	34.3	29.5	26.7	25.4	26.9	35.4	46.6	54.5	58.7	60.3	59.4	58.8	42.9	60.3
18-Feb	52.9	54.0	61.5	70.1	71.1	73.2	76.9	80.9	79.3	74.0	68.2	58.7	53.5	50.4	48.6	47.7	49.8	52.7	57.2	61.5	64.4	65.1	70.3	71.0	63.1	80.9
19-Feb	74.6	77.0	77.0	81.0	81.3	79.1	78.9	83.0	80.1	72.2	67.2	60.6	57.2	54.5	51.5	49.8	51.7	57.1	68.8	75.0	77.3	80.1	78.8	77.5	70.5	83.0
20-Feb	81.6	85.3	83.0	83.6	82.7	76.6	75.4	76.1	73.8	65.9	60.8	54.7	51.2	50.1	48.5	49.6	50.6	52.5	53.9	55.9	58.6	58.1	60.5	59.3	64.5	85.3
21-Feb	59.2	56.6	52.9	55.6	58.3	57.7	58.2	62.0	62.5	60.8	55.0	51.6	45.7	40.5	38.4	38.5	39.3	42.8	51.2	55.5	57.1	57.3	57.8	59.4	53.1	62.5
22-Feb	61.0	62.7	64.7	69.7	77.6	73.7	70.0	68.6	66.8	62.1	58.3	54.2	50.4	46.5	45.3	46.2	51.1	57.1	64.7	64.0	72.9	75.7	77.2	80.4	63.4	80.4
23-Feb	82.4	75.6	64.5	62.5	58.9	59.6	54.7	50.1	47.4	43.6	41.9	41.2	39.4	37.9	37.8	38.8	42.6	47.2	48.8	61.4	95.7	93.8	90.6	89.2	58.6	95.7
24-Feb	86.1	82.0	77.8	81.1	82.0	84.4	79.1	78.8	79.1	79.8	79.1	78.0	73.2	75.0	71.9	69.9	70.4	72.7	76.0	76.8	74.7	75.1	76.3	77.8	77.4	86.1
25-Feb	81.2	79.6	80.5	80.9	81.4	81.7	81.8	81.6	80.4	77.2	73.4	69.9	66.8	64.3	61.3	56.2	53.7	55.8	55.6	53.1	60.2	63.4	66.4	66.5	69.7	81.8
26-Feb	67.2	66.2	67.3	68.5	67.2	67.1	67.9	68.6	66.7	64.4	62.0	60.5	57.9	57.8	55.2	54.5	55.9	57.7	66.5	71.4	72.8	70.6	62.7	62.6	64.1	72.8
27-Feb	63.9	63.8	64.1	65.9	67.8	68.9	71.1	70.0	65.7	61.8	59.3	54.8	52.3	49.5	46.4	44.8	45.4	47.3	59.3	67.7	70.3	67.1	64.4	64.5	60.7	71.1
28-Feb	65.4	64.4	66.5	67.3	68.1	70.7	71.3	71.4	65.8	61.7	57.0	52.5	49.1	43.8	41.0	38.9	37.2	39.8	42.2	43.6	45.5	48.9	50.2	51.2	54.7	71.4
29-Feb	53.5	57.8	66.5	72.8	69.3	66.6	64.9	65.3	65.9	64.7	64.8	66.0	67.5	68.4	68.4	68.1	69.2	70.1	71.8	68.1	70.4	70.3	73.3	76.3	67.5	76.3
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Anzac - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Anzac - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	30	4.31	4.31
40 - 60	147	21.12	25.43
60 - 80	288	41.38	66.81
80 - 100	231	33.19	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

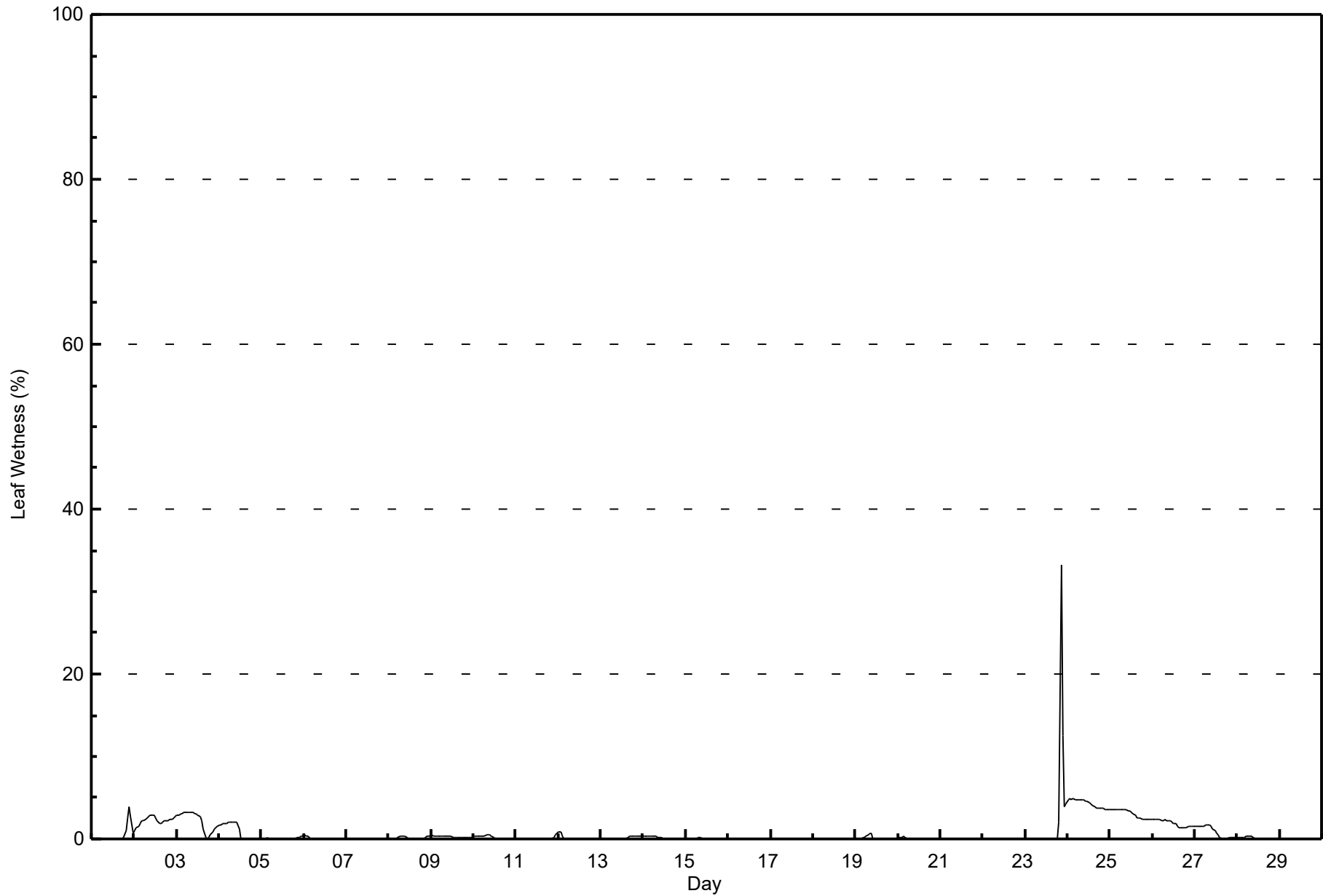
Leaf Wetness (LW) - %
Anzac - February 2024

Maximum Value: 33.2 % on Feb 23 21:00		Maximum Daily Average: 4.3 % on Feb 24		Hours in Service: 696																							
Minimum Value: 0.0 % on Feb 1 01:00		Minimum Daily Average: 0.0 % on Feb 7		Hours of Data: 696																							
Maximum Diurnal Average: 1.6 % at hour 21		Minimum Diurnal Average: 0.4 % at hour 18		Hours of Missing Data: 0																							
Monthly Average: 0.67 %		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.4 P ₉₀ = 2.5 P ₉₉ = 4.8		Hours of Calibration: 0																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0	2.5	3.9	2.7	0.7	0.5	3.9	
2-Feb	1.0	1.3	1.6	1.9	2.1	2.3	2.4	2.6	2.8	2.9	2.9	2.8	2.5	2.3	1.9	1.9	2.1	2.1	2.2	2.3	2.3	2.4	2.6	2.8	2.3	2.9	
3-Feb	2.9	2.9	3.0	3.1	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.0	2.9	2.7	2.2	1.2	0.1	0.0	0.2	0.6	0.9	1.2	1.3	1.5	2.2	3.2	
4-Feb	1.6	1.7	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.1	2.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.1	
5-Feb	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.4	0.1	0.4	
6-Feb	0.4	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	
7-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
8-Feb	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.1	0.4	
9-Feb	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	
10-Feb	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	
11-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.7	0.1	0.7	
12-Feb	0.9	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9	
13-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.1	0.4	
14-Feb	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	
15-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
16-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
17-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
18-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
19-Feb	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.5	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	
20-Feb	0.0	0.1	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
21-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
22-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
23-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	33.2	12.6	4.0	4.3	2.3	33.2
24-Feb	4.7	4.8	4.8	4.8	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.5	4.4	4.2	4.1	3.9	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	4.3	4.8
25-Feb	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.4	3.3	3.1	2.8	2.6	2.5	2.5	2.4	2.4	2.4	2.3	2.3	2.3	3.1	3.6	
26-Feb	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.0	1.9	1.8	1.6	1.4	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.9	2.3	
27-Feb	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.6	1.3	1.0	0.8	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.2	0.2	0.8	1.7	
28-Feb	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	
29-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.7	0.6	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.5	1.6	1.0	0.7	0.7	Diurnal Average	
		4.7	4.8	4.8	4.8	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.5	4.4	4.2	4.1	3.9	3.8	3.8	3.7	3.7	33.2	12.6	4.0	4.3	Diurnal Maximum	



Wood Buffalo Environmental Association
Hourly Averages

Leaf Wetness (LW) - %
Anzac - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Leaf Wetness (LW) - %
Anzac - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 0.3	504	72.41	72.41
0.4 - 0.5	35	5.03	77.44
0.6 - 0.7	5	0.72	78.16
0.8 - 1.4	18	2.59	80.75
1.5 - 10	126	18.10	98.85
> 10	2	0.29	99.14

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Speed (WS) - km/h
Anzac - February 2024

Maximum Speed: 30 km/h on Feb 16 20:00		Maximum Daily Speed Average: 19.6 km/h on Feb 16		Hours in Service: 696																							
Minimum Speed Value: 0 km/h on Feb 20 00:00		Minimum Daily Speed Average: 1.7 km/h on Feb 19		Hours of Data: 696																							
Maximum Diurnal Speed Average: 4.8 km/h at hour 13		Minimum Diurnal Speed Average: 1.4 km/h at hour 19		Hours of Missing Data: 0																							
Monthly Average Velocity: 3.0 km/h 251.1 deg		Percentiles: P ₁ = 1 P ₁₀ = 4 Q ₁ = 7 Median = 10 Q ₃ = 14 P ₉₀ = 19 P ₉₉ = 24		Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	ESE22	ESE14	ESE14	ESE14	ENE11	ENE9	ENE12	E10	ESE13	ESE9	ESE9	SE7	E6	ENE8	E9	E9	ENE9	E9	ENE5	ESE8	SE9	SE7	SSE3	NNW2	E8.8	ESE22	
2-Feb	ENE2	NNE1	ENE3	ENE2	NNW4	WNW5	NW5	WSW6	WSW5	W4	W3	W3	WNW5	WNW5	WSW4	WSW4	WSW4	W5	W8	W8	W9	W7	W7	W8	W4.0	W9	
3-Feb	W8	W7	W8	W7	WNW8	WNW9	WNW11	WNW12	W10	WNW11	WNW13	W11	WNW12	W16	W17	WNW21	NW18	WNW11	WNW9	WNW7	WNW4	W2	SSW1	SW4	WNW9.6	WNW21	
4-Feb	S3	SE4	SE4	SE5	SE5	SE7	SE7	SE7	SE10	SE12	ESE12	ESE13	ESE12	E13	ESE14	E9	ESE9	ESE10	E7	ESE7	ESE9	SE9	SE10	SE8	ESE8.3	ESE14	
5-Feb	ESE4	SE2	NW3	ENE2	ESE3	ENE2	NNW3	W5	W6	WNW9	WSW10	W10	W10	W13	W13	WNW13	W12	WNW10	WNW9	NW10	WNW8	WNW6	WNW5	NNW4	WNW5.8	W13	
6-Feb	NNE5	NNE8	NE7	ENE8	E7	E8	E9	E12	E12	E12	ESE14	E13	E14	ESE16	ESE16	E13	E13	E12	ENE14	E14	E11	E11	E12	E11	E10.9	ESE16	
7-Feb	ESE11	ESE12	ESE12	ESE11	ESE11	ESE9	ESE8	ESE8	ESE6	E5	E5	ENE4	ENE4	NNE2	N4	NNE4	N4	NNE4	N3	N4	NNE3	NNE4	NNE3	NNE3	E4.6	ESE12	
8-Feb	NNE4	NNE4	NE2	E3	ESE4	ESE6	E4	E3	ESE4	SE5	ESE3	WSW3	W6	NW5	NE4	E4	ESE7	E7	E8	ESE8	ESE7	SE6	SE5	SW4	E3.0	E8	
9-Feb	W12	WNW17	W16	W13	W13	W14	WSW14	W12	W11	W11	W12	WNW12	WNW13	W13	W9	W10	W11	WSW7	WSW8	WSW11	W11	W9	WNW7	WSW5	W11.0	WNW17	
10-Feb	W4	NW1	SE5	SE5	SE4	SSE3	SE4	SE6	SE6	ESE5	ESE5	ESE7	E11	ESE11	ESE10	ESE11	ESE10	ESE8	S9	S9	WSW11	WSW14	SW14	WSW19	SSE4.3	WSW19	
11-Feb	WSW21	WSW23	WSW22	WSW21	WSW23	WSW23	WSW22	WSW19	WSW18	WSW19	WSW18	WSW15	WSW17	WSW20	W19	W17	W13	W9	SW7	SSW6	SSW7	SW6	SW6	S7	WSW15.3	WSW23	
12-Feb	SSW8	S8	SSW10	S8	SE8	SSE6	SSE7	S9	S8	S11	S9	SW16	SW20	WSW21	WSW20	WSW21	WSW16	WNW10	W12	WNW18	W20	W18	W19	WNW18	WSW10.3	WSW21	
13-Feb	WNW25	WNW25	WNW23	WNW20	WNW23	WNW18	WNW16	WNW16	W12	W10	W11	W14	WNW12	W8	WSW6	WSW6	WSW9	SW7	WSW8	WSW10	W11	NW14	NW15	NW21	WNW13.2	WNW25	
14-Feb	NW17	WNW12	WNW12	NW14	NNW8	N7	NNW7	NW6	NW9	WNW7	W6	W8	WNW10	WNW12	WNW12	WNW13	WNW11	NW6	NW7	NNW5	NNW5	NW2	NW3	N4	NW8.0	NW17	
15-Feb	NE3	NNW3	NNW2	SW2	S2	SSW1	SW2	NW2	WSW6	WSW10	WSW12	WSW11	WSW12	WSW13	WSW15	WSW12	SW10	SW6	WSW6	WSW7	WSW11	WSW13	WSW13	WSW14	WSW7.1	WSW15	
16-Feb	WSW16	WSW18	WSW19	WSW18	WSW20	WSW18	WSW17	WSW20	WSW19	WSW19	WSW17	WSW17	WSW16	WSW18	WSW18	SW19	WSW20	SW22	SW24	SW30	WSW26	WSW23	WSW21	WSW21	WSW19.6	SW30	
17-Feb	WSW20	WSW19	WSW16	WSW16	WSW16	WSW16	WSW16	WSW16	WSW17	W13	WSW11	WSW11	WSW11	WSW8	WSW6	W3	NE3	E4	ESE6	SE8	ESE10	ESE9	ESE11	ESE11	WSW8.1	WSW20	
18-Feb	ESE13	E14	E13	E11	E13	E14	E14	E11	E14	ENE13	E13	E11	ENE11	E13	ENE12	E13	ENE11	E8	E9	ENE10	ENE11	E12	E8	E11	E11.5	E14	
19-Feb	E10	E9	E7	E5	ENE5	ESE4	NW3	WSW7	WSW6	W8	W7	WSW7	NW8	NW8	WNW8	NW7	NNW7	NNW5	NNW3	W4	SW2	SSW3	S3	SE0	WNW1.7	E10	
20-Feb	NNW3	N1	SE5	ENE1	ESE4	ESE5	NNE3	NE3	ESE5	ESE6	ESE7	ESE6	E6	ENE6	E6	ESE7	ESE6	E5	ENE5	E4	E5	SE7	SE7	SSE6	ESE4.3	ESE7	
21-Feb	SW6	SW7	SW6	WSW9	SW7	WSW12	WSW14	WSW17	WSW16	WSW15	WSW14	WSW16	WSW18	SW17	SW15	SW17	SW14	SW13	SW8	WSW11	WSW15	WSW17	WSW17	WSW16	WSW13.0	WSW18	
22-Feb	WSW14	WSW12	W9	WSW7	SW9	SW8	WSW10	WSW12	WSW12	WSW14	W14	WSW14	WSW11	W11	W8	NNW5	NE7	E5	ESE9	ESE9	SE7	SSW6	S5	SSE6	WSW6.1	WSW14	
23-Feb	SSE8	S9	S9	S11	SSW10	S9	SW14	SW21	SW23	SW25	SW24	SW23	SW22	SW17	SW20	WSW23	WSW22	WSW17	SW17	W17	WSW12	WSW17	WSW19	WSW16	SW15.6	SW25	
24-Feb	WSW16	WSW16	WSW19	WNW25	WNW22	WNW20	WNW20	NW15	WNW12	NW13	NW12	NW13	WNW12	NW13	NW11	NNW10	NNW6	NNW6	NNW7	N5	NE5	NE8	NE7	NE6	NW10.0	WNW25	
25-Feb	NE8	ENE8	NE8	NE8	NE8	N7	N8	N8	N10	N10	N10	N8	NNW10	NNW9	NNW10	NW11	WNW13	NNW11	NNW13	NNW14	NNW13	NNW12	NNW14	NNW14	NNW8.7	NNW14	
26-Feb	NW16	NNW15	NW18	NW16	NW18	NW16	NW19	WNW17	WNW18	WNW19	WNW17	WNW17	WNW17	WNW17	WNW17	WNW16	WNW16	WNW14	WNW8	W1	S5	SSW5	WSW9	WSW10	WSW11	WNW12.8	WNW19
27-Feb	WSW10	WSW10	WSW10	WSW11	WSW10	WSW9	WSW8	WSW9	WSW14	WSW14	WSW15	W15	W13	W12	W11	W9	WNW8	N5	NE6	E6	SE8	SE10	SE12	SE12	WSW6.2	WSW15	
28-Feb	ESE11	ESE11	ESE8	ESE9	ESE9	ESE11	ESE12	ESE14	ESE17	ESE19	ESE23	ESE22	ESE21	ESE22	ESE24	ESE21	ESE23	ESE19	ESE17	ESE20	E21	E21	E23	E22	ESE17.3	ESE24	
29-Feb	E23	E22	E21	E21	E22	E21	E22	E19	E19	E20	ESE21	ESE16	ESE14	ESE11	SE9	SE7	SE5	SSE3	WSW4	WNW7	WNW7	W7	W8	WSW8	E10.1	E23	
WSW2.3WSW2.2WSW2.4WSW2.3WSW2.1WSW2.1 W2.9WSW3.7WSW3.8WSW4.1WSW4.0WSW4.6WSW4.8 W4.7WSW4.2 W3.9 W2.9 W1.5WSW1.4WSW1.8WSW2.5WSW2.9WSW2.9WSW3.0																								Diurnal Average			
WNW25WNW25WNW23WNW25WSW23WSW23WSW22 SW21 SW23 SW25 SW24 SW23 SW22 ESE22 ESE24WSW23 ESE23 SW22 SW24 SW30WSW26WSW23 E23 E22																								Diurnal Maximum			
All monthly, daily, and diurnal averages have been calculated using vector methods																											



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

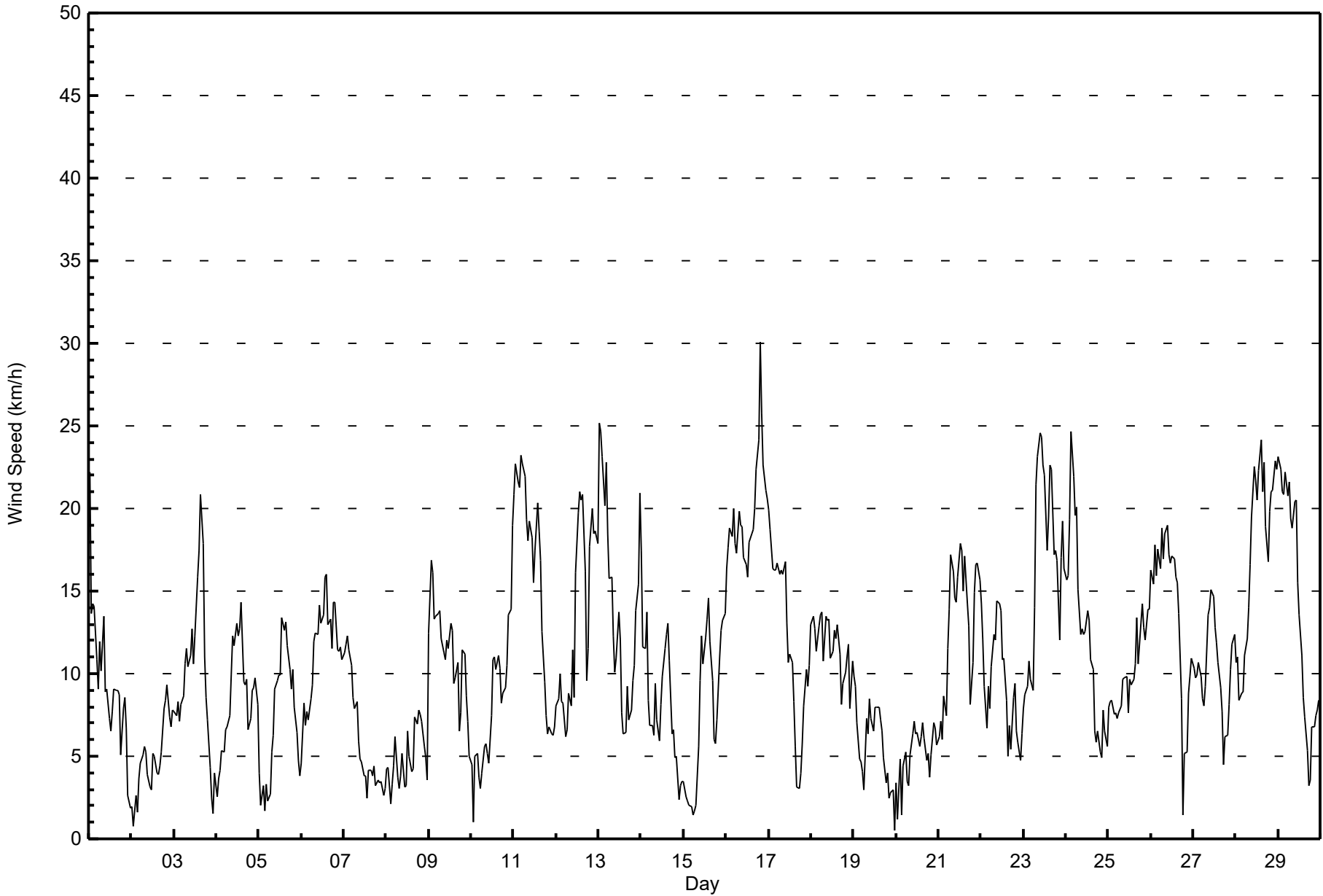
Wind Speed (WS) - km/h
Anzac - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 9 km/h on Feb 16 20:00 Minimum Value: 0 km/h on Feb 4 03:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 5 P ₉₉ = 6																	Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0										
Day	Hourly Period Ending At (MST)																								Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	4	4	3	3	4	3	3	6	2	2	2	2	2	2	2	2	2	2	2	1	1	2	1	2	6		
2-Feb	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	2	3	2	2	3		
3-Feb	2	3	2	1	2	2	2	2	2	3	3	3	2	4	4	5	4	3	2	1	3	1	1	1	5		
4-Feb	1	0	0	0	1	1	1	2	1	2	2	3	3	3	3	2	3	3	2	2	1	2	2	2	3		
5-Feb	2	2	1	1	2	1	1	1	2	3	2	2	3	3	3	3	2	2	2	2	1	1	1	1	3		
6-Feb	2	1	1	1	2	2	2	3	3	3	4	3	4	3	3	3	3	3	3	3	3	3	3	3	4		
7-Feb	3	3	3	2	2	2	2	2	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	3		
8-Feb	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	2	1	2	2	1	1	1	2	2		
9-Feb	3	4	4	3	3	3	3	3	3	3	3	3	3	3	2	3	2	2	2	3	3	1	1	1	4		
10-Feb	1	1	1	1	1	1	1	1	1	1	1	2	2	3	2	2	2	2	4	3	4	3	3	5	5		
11-Feb	5	6	5	6	6	6	6	5	4	4	5	4	4	5	5	4	4	2	1	1	1	1	1	1	6		
12-Feb	1	1	2	1	1	1	2	4	2	3	2	5	5	6	5	5	5	2	3	5	5	4	4	4	6		
13-Feb	8	6	5	4	5	4	4	3	3	2	3	3	3	2	2	2	2	2	2	2	4	3	3	5	8		
14-Feb	5	2	3	3	2	1	2	4	2	1	1	3	3	2	3	2	3	1	1	1	1	1	0	1	5		
15-Feb	2	1	2	1	1	1	1	1	2	3	3	3	3	3	4	3	2	1	1	2	3	3	3	3	4		
16-Feb	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	6	6	6	9	6	6	5	4	9		
17-Feb	5	4	4	4	4	4	3	3	3	3	3	2	2	2	2	2	1	1	1	1	1	1	1	2	5		
18-Feb	3	2	2	2	2	3	2	2	3	3	3	2	2	3	3	3	2	2	2	2	3	3	1	2	3		
19-Feb	2	2	2	2	2	2	1	2	2	3	2	2	2	2	2	2	2	1	1	1	1	2	1	1	3		
20-Feb	1	1	1	1	2	2	1	1	1	3	1	2	1	2	2	1	1	1	1	1	1	1	2	1	3		
21-Feb	1	1	2	2	1	4	3	5	4	3	3	4	5	5	4	5	4	4	2	3	4	4	4	4	5		
22-Feb	3	3	2	1	1	2	2	2	3	3	3	3	3	3	2	2	2	1	2	2	1	1	0	1	3		
23-Feb	1	1	1	2	3	2	5	6	6	6	7	6	6	5	5	7	7	5	4	6	4	6	4	4	7		
24-Feb	4	4	5	7	6	5	4	3	3	2	3	3	3	3	2	3	2	1	1	2	1	2	2	1	7		
25-Feb	1	2	2	1	1	2	2	2	2	2	2	2	2	3	3	2	3	2	3	3	3	3	3	3	3		
26-Feb	4	4	4	4	4	4	4	4	5	4	4	4	4	3	3	4	4	3	1	1	1	2	2	2	5		
27-Feb	2	2	2	2	1	2	2	2	3	3	4	4	3	3	3	3	3	2	1	1	1	1	1	1	4		
28-Feb	2	2	2	1	2	2	2	2	4	4	6	5	5	6	6	5	6	5	5	5	5	6	6	6	6		
29-Feb	6	6	6	5	6	6	5	5	5	6	5	4	3	3	2	2	2	1	2	1	1	1	1	2	6		
																	8 6 6 7 6 6 6 6 6 6 7 6 6 6 6 7 7 6 6 9 6 6 6 6 6										
Diurnal Maximum																											



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Anzac - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Anzac - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	133	19.11	19.11
6 - 11	284	40.80	59.91
12 - 19	213	30.60	90.52
20 - 28	65	9.34	99.86
29 - 38	1	0.14	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Anzac - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	8	12	6	11	12	11	14	3	4	5	5	7	10	5	7	13	133
6 - 11	8	1	10	11	29	42	22	5	13	6	13	43	38	22	11	10	284
12 - 19	0	0	0	5	22	22	3	0	0	0	11	69	27	31	16	7	213
20 - 28	0	0	0	0	12	10	0	0	0	0	10	21	1	10	1	0	65
29 - 38	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	13	16	27	75	85	39	8	17	11	40	140	76	68	35	30	696

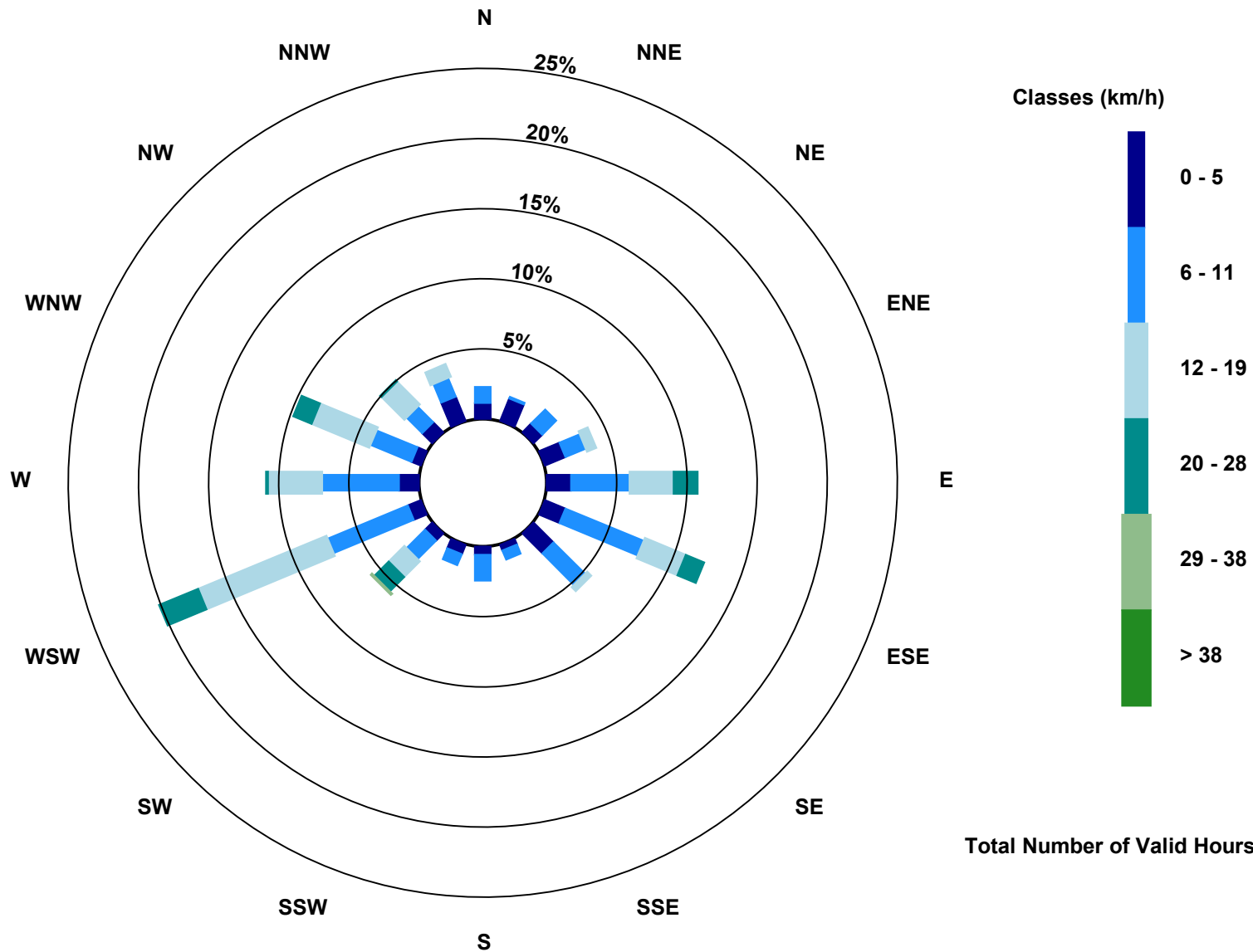
Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Anzac



Total Number of Valid Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Anzac - February 2024

Direction of Maximum Speed: 235 deg on Feb 16 20:00 Direction of Maximum Daily Speed Average: 244.7 deg on Feb 16																						Hours in Service: 696			
Direction of Minimum Speed: 128 deg on Feb 20 00:00 Direction of Minimum Daily Speed Average: 1.7 deg on Feb 19																						Hours of Data: 696			
Monthly Average Direction: 251.1 deg																						Hours of Missing Data: 0			
																						Percent Operational Time: 100.0			
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	115	104	103	105	78	69	78	95	122	114	116	125	96	75	79	83	68	83	75	117	134	145	155	346	100.0
2-Feb	58	29	76	77	333	299	307	240	258	274	279	275	285	299	248	242	239	267	279	279	281	272	266	277	276.7
3-Feb	276	272	276	274	288	286	285	282	280	283	282	280	290	280	279	295	319	303	283	283	285	271	206	226	285.1
4-Feb	180	144	140	139	133	132	131	126	124	126	121	113	107	101	107	95	104	110	92	115	122	126	133	137	118.8
5-Feb	116	136	310	74	112	63	330	279	277	285	256	265	266	281	275	284	281	294	294	311	300	302	293	340	285.9
6-Feb	25	30	54	60	82	87	84	87	95	89	103	90	86	105	103	93	87	83	76	79	81	97	93	94	86.0
7-Feb	102	102	106	107	108	110	103	103	108	99	82	57	60	25	11	27	356	16	351	3	12	15	14	16	80.9
8-Feb	30	33	44	95	107	107	99	84	115	131	121	252	276	318	46	93	110	84	79	112	119	126	143	224	99.6
9-Feb	275	282	270	265	265	260	258	262	273	272	275	290	287	279	274	261	266	254	244	256	269	279	292	241	269.8
10-Feb	271	325	133	134	145	155	143	134	138	120	106	106	98	103	104	106	114	121	175	186	247	242	230	242	156.1
11-Feb	250	249	255	248	250	257	252	252	246	245	248	245	248	254	259	263	264	275	224	199	210	214	217	190	248.3
12-Feb	203	172	199	187	145	163	167	189	183	183	183	235	232	241	254	256	258	286	261	286	278	268	273	282	240.5
13-Feb	298	303	295	290	293	298	289	284	279	259	270	278	284	271	244	242	239	234	249	255	264	314	308	316	285.9
14-Feb	309	299	299	310	334	354	330	306	304	296	266	265	297	297	294	291	303	320	325	341	334	320	326	358	307.1
15-Feb	38	336	340	234	191	195	231	316	252	252	249	250	244	245	252	238	230	235	239	238	247	248	246	248	246.9
16-Feb	241	247	247	252	250	251	251	250	251	251	249	248	246	242	245	231	237	234	228	235	247	250	251	247	244.7
17-Feb	253	249	248	251	251	252	254	254	251	252	260	252	244	248	250	249	275	46	80	107	129	122	112	106	243.1
18-Feb	107	86	89	92	99	92	92	97	81	78	94	89	73	84	70	83	62	83	86	57	72	92	100	101	86.0
19-Feb	89	88	91	89	61	113	310	250	256	271	261	243	306	304	302	318	337	343	339	278	227	206	190	128	300.7
20-Feb	333	360	125	71	105	120	30	44	102	110	110	117	96	68	98	121	110	88	67	83	85	125	134	152	101.7
21-Feb	218	234	229	241	235	240	248	248	250	248	251	252	240	235	227	233	232	234	230	250	248	251	248	251	242.1
22-Feb	252	255	269	258	227	234	258	250	247	252	261	255	252	273	279	332	39	94	119	119	139	200	185	164	244.1
23-Feb	156	170	169	184	196	190	215	222	222	225	229	228	236	228	232	238	247	239	223	270	253	248	249	249	228.3
24-Feb	246	250	244	301	297	300	301	314	302	307	316	313	301	316	317	334	334	345	327	357	35	42	51	34	305.5
25-Feb	42	60	50	51	34	10	2	357	351	1	5	353	344	329	327	322	300	305	336	345	332	330	335	329	347.6
26-Feb	324	327	317	313	306	306	308	303	303	298	298	295	289	297	291	291	301	296	278	182	209	247	258	248	297.3
27-Feb	246	252	251	244	242	247	237	242	242	249	257	259	267	261	262	266	293	352	48	100	131	131	126	129	241.8
28-Feb	118	116	114	112	107	106	110	110	109	110	115	115	115	114	119	106	112	114	102	103	101	96	92	89	107.9
29-Feb	89	92	82	80	82	83	80	79	81	100	106	109	122	121	124	129	129	161	258	295	295	270	275	258	93.8
251.0 258.0 249.2 256.4 255.9 256.7 267.4 252.1 242.3 239.9 238.0 245.3 256.0 259.5 255.7 260.0 269.4 264.5 242.9 251.3 242.7 236.7 238.9 245.4																									
Diurnal Average																									
All monthly, daily, and diurnal averages have been calculated using vector methods																									



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

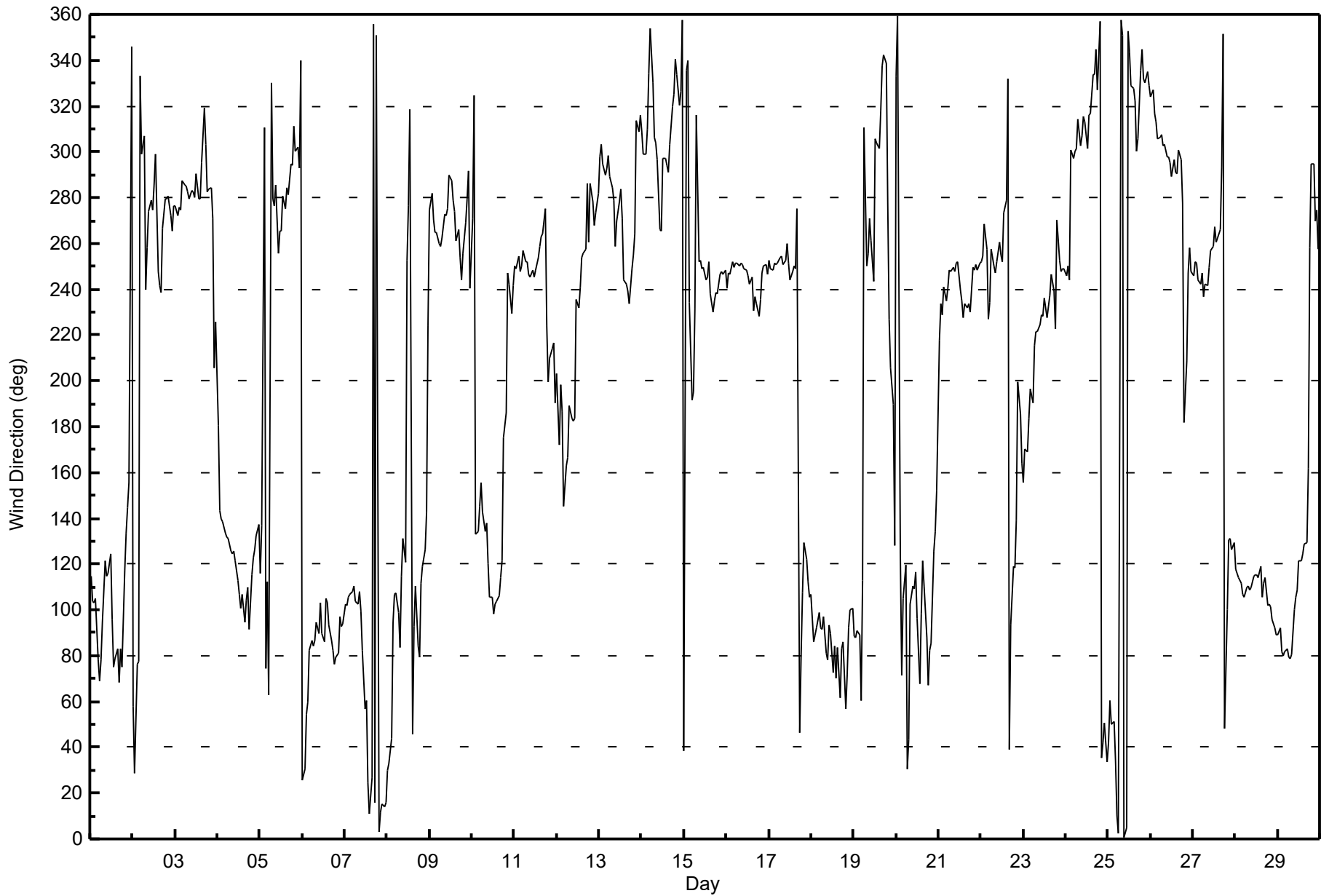
Wind Direction (WD) - deg
Anzac - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 82 deg on Feb 20 00:00 Minimum Value: 4 deg on Feb 4 03:00 Percentiles: P ₁ = 6 P ₁₀ = 11 Q ₁ = 13 Median = 15 Q ₃ = 18 P ₉₀ = 27 P ₉₉ = 66																			Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	11	16	13	17	23	28	9	35	10	15	12	16	22	17	17	15	10	9	23	11	8	7	63	49	63
2-Feb	36	77	46	62	20	19	27	13	17	20	22	35	32	23	21	23	20	15	14	13	14	20	18	16	77
3-Feb	17	17	14	16	13	12	12	12	13	12	13	14	13	15	15	17	12	12	10	8	24	14	66	11	66
4-Feb	33	6	4	5	6	6	5	7	7	8	11	12	14	15	14	17	17	18	14	13	8	8	7	5	33
5-Feb	20	73	13	70	25	25	29	11	13	14	15	15	22	15	16	15	14	12	11	11	9	8	12	24	73
6-Feb	18	9	15	13	15	13	14	14	17	15	14	15	16	13	14	16	13	16	13	13	14	15	15	15	18
7-Feb	14	14	13	13	14	13	13	15	16	19	16	23	29	52	54	27	23	16	19	18	30	20	16	10	54
8-Feb	14	13	28	21	12	16	36	25	20	23	58	59	29	36	34	30	21	18	14	14	11	12	12	45	59
9-Feb	16	15	15	15	16	15	15	17	16	15	15	15	13	15	21	17	16	18	17	16	16	13	13	15	21
10-Feb	11	80	10	5	11	16	13	7	11	9	19	14	14	15	14	13	12	12	27	16	22	18	14	16	80
11-Feb	17	17	16	16	17	19	17	17	16	15	16	17	17	16	17	16	16	15	9	11	15	6	9	8	19
12-Feb	11	14	10	14	7	8	10	20	13	18	19	18	16	17	16	17	17	15	17	13	15	14	14	13	20
13-Feb	15	12	13	12	14	13	12	11	14	16	18	15	17	29	18	22	15	17	17	17	19	17	11	12	29
14-Feb	13	12	14	13	20	19	14	28	14	15	30	38	19	18	16	14	12	12	11	16	12	24	15	18	38
15-Feb	22	25	23	51	37	63	67	46	15	16	18	17	18	17	17	18	16	14	12	12	14	14	13	16	67
16-Feb	15	15	15	15	14	14	14	13	13	13	15	15	16	16	17	16	17	16	16	17	16	16	15	14	17
17-Feb	16	15	15	14	15	15	13	13	13	13	16	16	15	17	23	21	31	58	19	14	10	7	13	10	58
18-Feb	11	13	13	13	11	15	13	13	14	15	17	20	18	14	18	15	16	13	15	13	11	13	11	12	20
19-Feb	13	13	13	39	25	42	49	15	18	17	25	35	26	24	26	21	17	14	20	12	43	54	29	82	82
20-Feb	42	71	28	60	13	16	29	26	30	44	14	22	25	31	32	15	14	18	23	31	28	7	7	19	71
21-Feb	16	22	13	15	15	18	16	16	15	16	16	18	17	17	18	16	17	17	14	16	16	17	15	15	22
22-Feb	15	13	11	21	9	13	15	13	15	14	15	15	18	23	20	51	20	19	9	9	14	12	27	12	51
23-Feb	10	10	11	17	19	13	16	14	15	16	18	17	17	17	18	19	17	18	15	38	29	17	16	16	38
24-Feb	16	17	17	20	12	14	13	12	13	12	15	16	17	15	21	15	21	18	15	30	13	14	14	15	30
25-Feb	11	14	14	17	13	16	15	14	15	16	16	27	25	23	27	17	16	12	18	14	12	12	13	14	27
26-Feb	12	13	12	12	13	13	12	12	13	13	15	19	18	14	18	18	19	12	50	9	22	12	11	11	50
27-Feb	9	12	12	11	9	11	13	13	14	17	19	20	23	23	22	28	21	33	15	17	7	9	6	7	33
28-Feb	10	8	9	9	10	11	11	11	12	13	13	14	15	14	14	15	14	13	14	14	15	15	15	14	15
29-Feb	14	14	14	14	14	15	13	14	14	17	15	15	21	16	21	19	24	29	28	17	18	15	11	14	29
Diurnal Maximum																									



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction (WD) - deg
Anzac - February 2024





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

**AMS17
WAPASU
FEBRUARY 2024**

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - WAPASU (AMS17)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	661	32	35	99.57	20.6	0	7.8	0
H2S (ppb) Average	658	34	38	99.43	1.9	0	0.4	0
THC (ppm) Average	661	32	35	99.57	3.1	-	2.5	-
O3 (ppb) Average	661	32	35	99.57	45.3	0	41.5	-
NO2 (ppb) Average	659	34	37	99.57	31	0	11.5	-
NO (ppb) Average	659	34	37	99.57	39.4	-	4.9	-
NOX (ppb) Average	659	34	37	99.57	61.6	-	16.4	-
PM2.5 (ug/m3) Average	692	2	4	99.71	18.2	0	10.6	0
Temperature 2 m (C) Average	696	0	0	100	7.2	-	2.8	-
Relative Humidity (%) Average	696	0	0	100	99.3	-	96.2	-
Wind Speed 10 m (km/h) Average	693	0	3	99.57	25	-	16	-
Wind Direction 10 m (deg) Average	693	0	3	99.57	-	-	-	-
Precipitation (mm) Total	695	0	1	99.86	1.2	-	3.1	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - WAPASU (AMS17)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	661	1.31	2.9	-	0	0	0	0.1	0.8	4.5	20.6
H2S (ppb) Average	658	0.13	0.2	-	0	0	0	0.1	0.2	0.3	1.9
THC (ppm) Average	661	2.3	0.1	-	2.2	2.2	2.3	2.3	2.3	2.4	3.1
O3 (ppb) Average	661	29.36	9.7	-	2.2	15.9	22.6	30.8	37.5	40.6	45.3
NO2 (ppb) Average	659	4.46	5	-	0.1	0.5	1	2.6	6.2	11.9	31
NO (ppb) Average	659	0.77	3.1	-	0	0	0	0	0.3	1.3	39.4
NOX (ppb) Average	659	5.23	7.2	-	0.1	0.5	1	2.7	6.8	13.2	61.6
PM2.5 (ug/m3) Average	692	3.64	2.6	-	0.4	1.2	1.8	3.1	4.5	6.6	18.2
Temperature 2 m (C) Average	696	-10.61	8	-	-36.6	-21	-15	-10.5	-5.3	-1.1	7.2
Relative Humidity (%) Average	696	74.11	15.5	-	33.5	50.3	63.1	75.2	87.5	92.2	99.3
Wind Speed 10 m (km/h) Average	693	7.9	4	-	1	3	5	7	10	13	25
Wind Direction 10 m (deg) Average	693	-	-	-	-	-	-	-	-	-	-
Precipitation (mm) Total	695	-	-	7.63	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - WAPASU (AMS17)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
SO2, H2S, THC, O3	13 Feb 2024 14:00	13 Feb 2024 14:00	1	Maintenance - sample manifold cleaned
SO2	15 Feb 2024 14:00	15 Feb 2024 15:00	2	Maintenance - WBEA internal audit
H2S	15 Feb 2024 12:00	15 Feb 2024 14:00	3	Maintenance - WBEA internal audit
THC	15 Feb 2024 15:00	15 Feb 2024 16:00	2	Maintenance - WBEA internal audit
O3	15 Feb 2024 15:00	15 Feb 2024 16:00	2	Maintenance - WBEA internal audit
NO2	15 Feb 2024 12:00	15 Feb 2024 14:00	3	Maintenance - WBEA internal audit
PM2.5	15 Feb 2024 16:00	15 Feb 2024 17:00	2	Maintenance - WBEA internal audit
Wind Speed, Wind Direction	08 Feb 2024 06:00	08 Feb 2024 08:00	3	Flat line in sensor output signal
Precipitation Collector	05 Feb 2024 13:00	05 Feb 2024 13:00	1	Maintenance - precipitation bucket emptied



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

Wapasu - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 20.6 ppb on Feb 21 12:00	Maximum Daily Average: 7.8 ppb on Feb 16		Hours of Data:	661
Minimum Value: 0.0 ppb on Feb 1 02:00	Minimum Daily Average: 0.0 ppb on Feb 3		Hours of Missing Data:	35
Maximum Diurnal Average: 2.7 ppb at hour 12	Minimum Diurnal Average: 0.7 ppb at hour 9		Hours of Calibration:	32
Monthly Average: 1.31 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.8 P ₉₀ = 4.5 P ₉₉ = 13.6		Percent Operational Time:	99.6

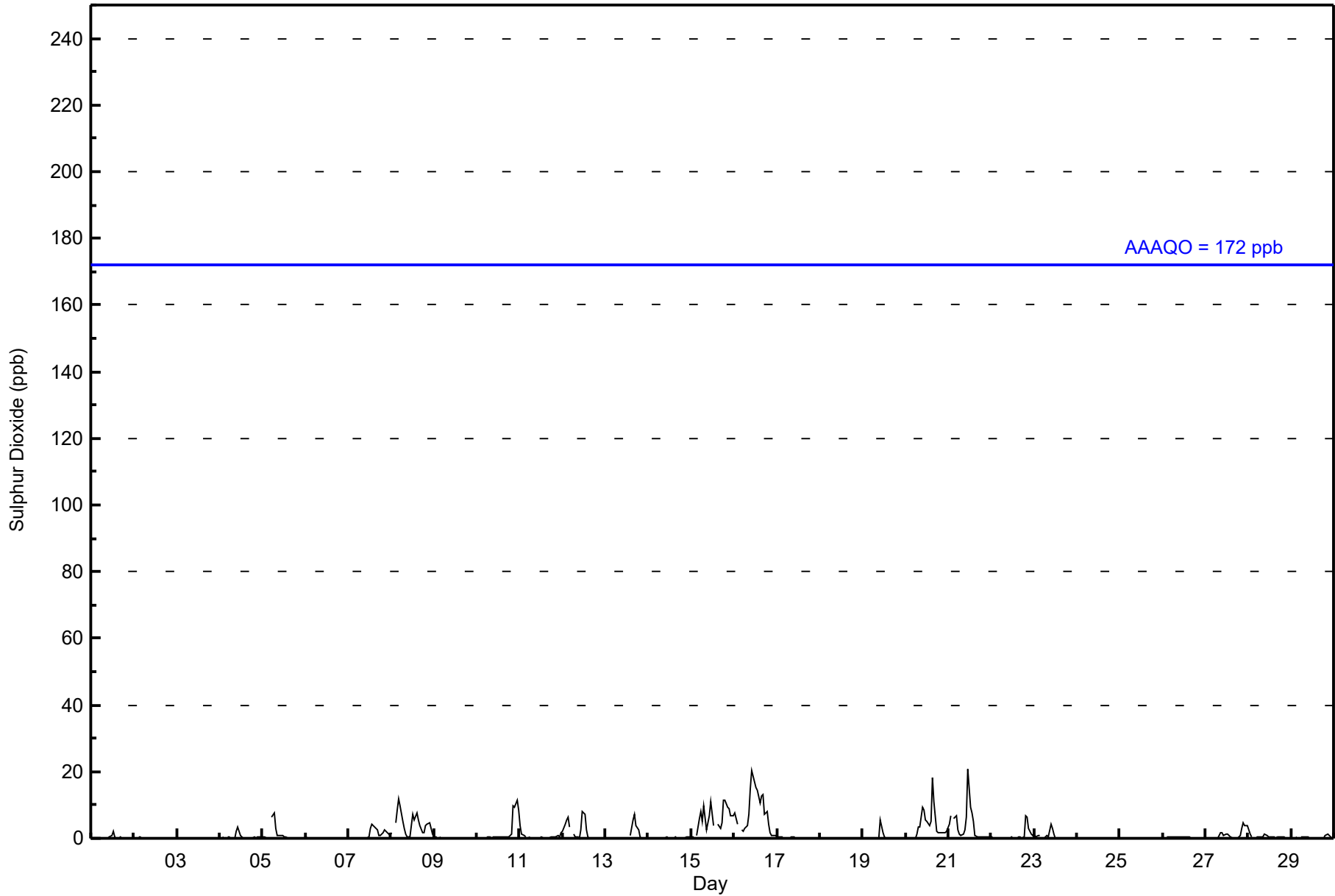
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.9	2.1	0.4	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.2	2.1	
2-Feb	0.2	Z	0.4	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	
3-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
4-Feb	0.0	0.0	0.2	Z	0.4	0.3	0.2	0.1	0.1	2.1	3.4	0.8	0.5	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.4	0.4	0.4	3.4	
5-Feb	0.4	0.3	0.1	0.2	Z	6.2	7.8	2.8	0.9	0.8	0.9	0.9	0.5	0.4	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.2	1.0	7.8	
6-Feb	0.3	0.1	0.2	0.1	0.1	Z	0.1	0.1	0.0	0.0	0.0	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
7-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.9	4.3	3.7	3.1	2.4	1.0	0.9	1.7	2.5	2.1	1.3	0.8	1.2	4.3	
8-Feb	1.6	Z	4.8	8.4	11.7	9.9	5.1	2.8	1.1	0.4	0.5	3.9	7.3	5.6	7.5	5.6	3.7	1.7	1.7	3.9	4.2	4.9	3.0	1.5	4.4	11.7	
9-Feb	0.6	0.3	Z	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	
10-Feb	0.0	0.0	0.0	Z	0.0	0.1	0.5	0.3	0.2	0.2	0.2	0.3	0.6	0.5	0.4	0.3	0.4	0.5	0.4	1.5	9.6	9.5	11.4	8.5	2.0	11.4	
11-Feb	3.9	1.3	0.8	0.4	Z	0.4	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.4	0.4	0.4	0.3	0.7	0.6	1.8	0.5	3.9	
12-Feb	2.2	4.3	5.6	6.3	3.4	Z	1.1	0.3	0.3	0.2	2.4	8.0	7.4	2.6	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	8.0	
13-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	M	0.8	5.6	7.3	3.9	2.7	0.5	0.2	0.2	0.0	0.1	1.0	7.3	
14-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
15-Feb	0.3	0.3	Z	1.0	6.0	8.0	5.2	9.6	2.6	4.6	6.9	10.9	3.8	M	M	4.1	3.2	4.5	11.4	11.4	9.1	8.9	7.0	6.6	6.0	11.4	
16-Feb	7.8	5.8	4.0	Z	2.6	2.1	2.8	3.9	7.3	14.7	20.5	17.0	15.3	14.4	10.7	12.9	13.1	7.3	8.2	4.1	1.7	0.8	1.0	0.8	7.8	20.5	
17-Feb	0.5	0.2	0.3	0.3	Z	0.2	0.1	0.1	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	
18-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
19-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	1.8	0.4	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3	5.3	
20-Feb	0.0	Z	0.0	0.0	0.0	0.2	1.2	3.3	3.5	9.3	8.7	5.6	5.0	4.0	5.2	18.0	11.1	1.9	1.7	1.5	1.7	1.7	1.9	2.2	3.8	18.0	
21-Feb	4.3	6.9	Z	6.1	6.8	2.4	1.3	0.7	1.1	2.8	6.2	20.6	9.3	7.7	4.9	0.8	0.2	0.3	0.2	0.2	0.4	0.4	0.3	0.2	3.7	20.6	
22-Feb	0.3	0.1	0.1	Z	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.3	0.2	0.1	0.1	0.5	0.2	0.1	0.2	7.0	6.2	2.9	1.3	1.0	0.9	7.0	
23-Feb	1.3	0.6	1.0	0.7	Z	0.1	0.5	1.0	0.5	4.1	3.0	1.1	0.2	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	4.1	
24-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
25-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	
26-Feb	0.0	Z	0.3	0.3	0.4	0.4	0.3	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	
27-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	1.5	1.7	0.9	1.4	1.3	0.9	0.5	0.2	0.2	0.0	0.0	0.9	3.0	4.5	3.7	4.0	1.1	4.5	
28-Feb	2.4	1.3	0.6	Z	0.2	0.3	0.4	0.3	0.2	1.1	0.8	0.4	0.4	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.5	2.4
29-Feb	0.0	0.1	0.1	0.2	Z	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.8	1.1	0.7	0.3	0.2	0.2	1.1	
1.1 0.9 0.8 1.0 1.3 1.2 0.9 0.9 0.7 1.5 2.1 2.7 2.1 1.6 1.3 1.8 1.5 0.8 1.0 1.2 1.4 1.3 1.1 1.0																								Diurnal Average			
7.8 6.9 5.6 8.4 11.7 9.9 7.8 9.6 7.3 14.7 20.5 20.6 15.3 14.4 10.7 18.0 13.1 7.3 11.4 11.4 9.6 9.5 11.4 8.5																								Diurnal Maximum			

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Wapasu - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Wapasu - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	645	97.58	97.58
11 - 20	15	2.27	99.85
21 - 60	1	0.15	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Wapasu - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	93	57	17	12	13	26	73	112	60	38	44	22	8	15	9	43	642
11 - 20	0	0	0	0	0	0	0	0	4	7	3	0	1	0	0	0	15
21 - 60	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	93	57	17	12	13	26	73	112	64	46	47	22	9	15	9	43	658

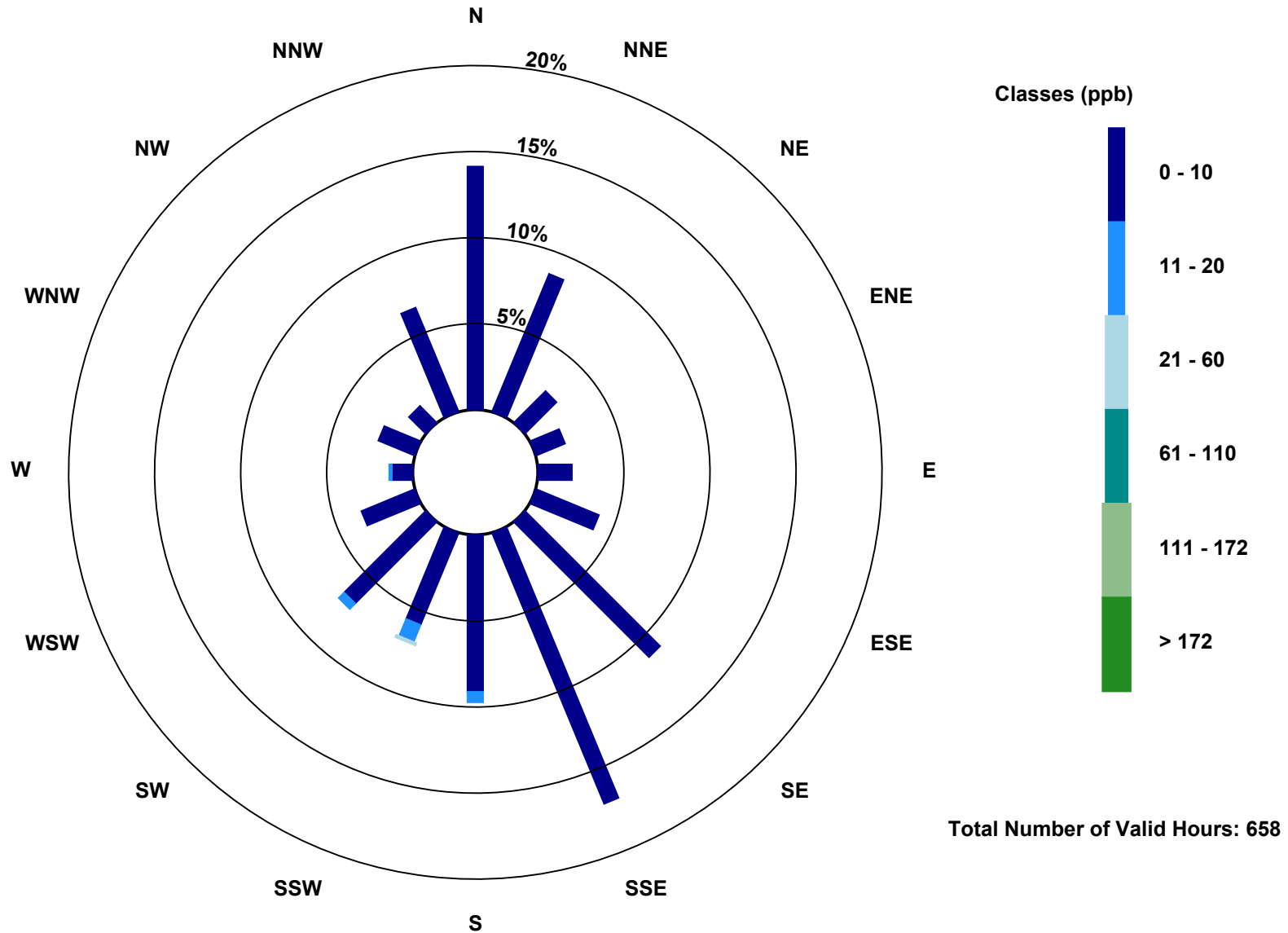
Total Number of Valid Hours: 658

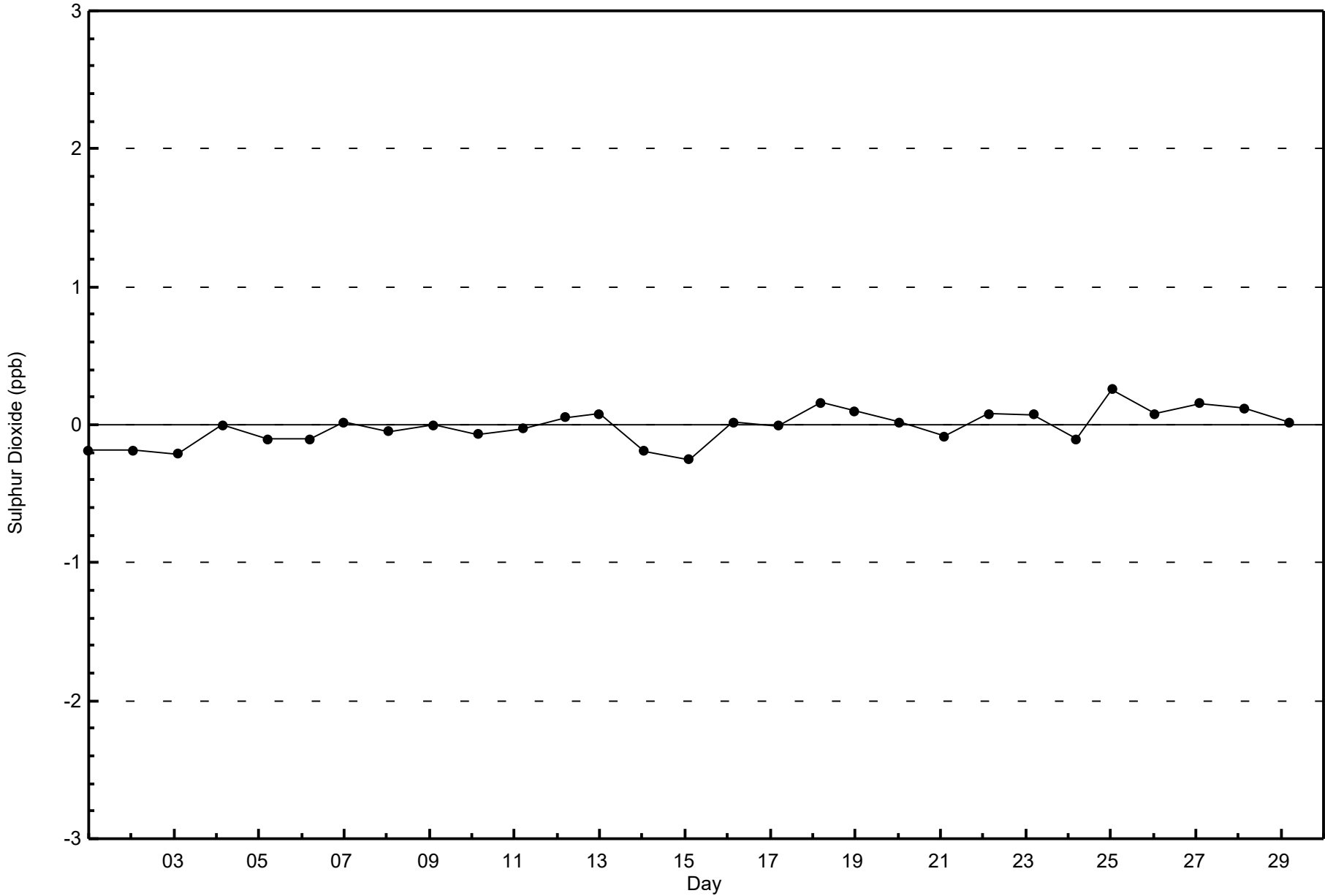
Total Number of Hours: 696

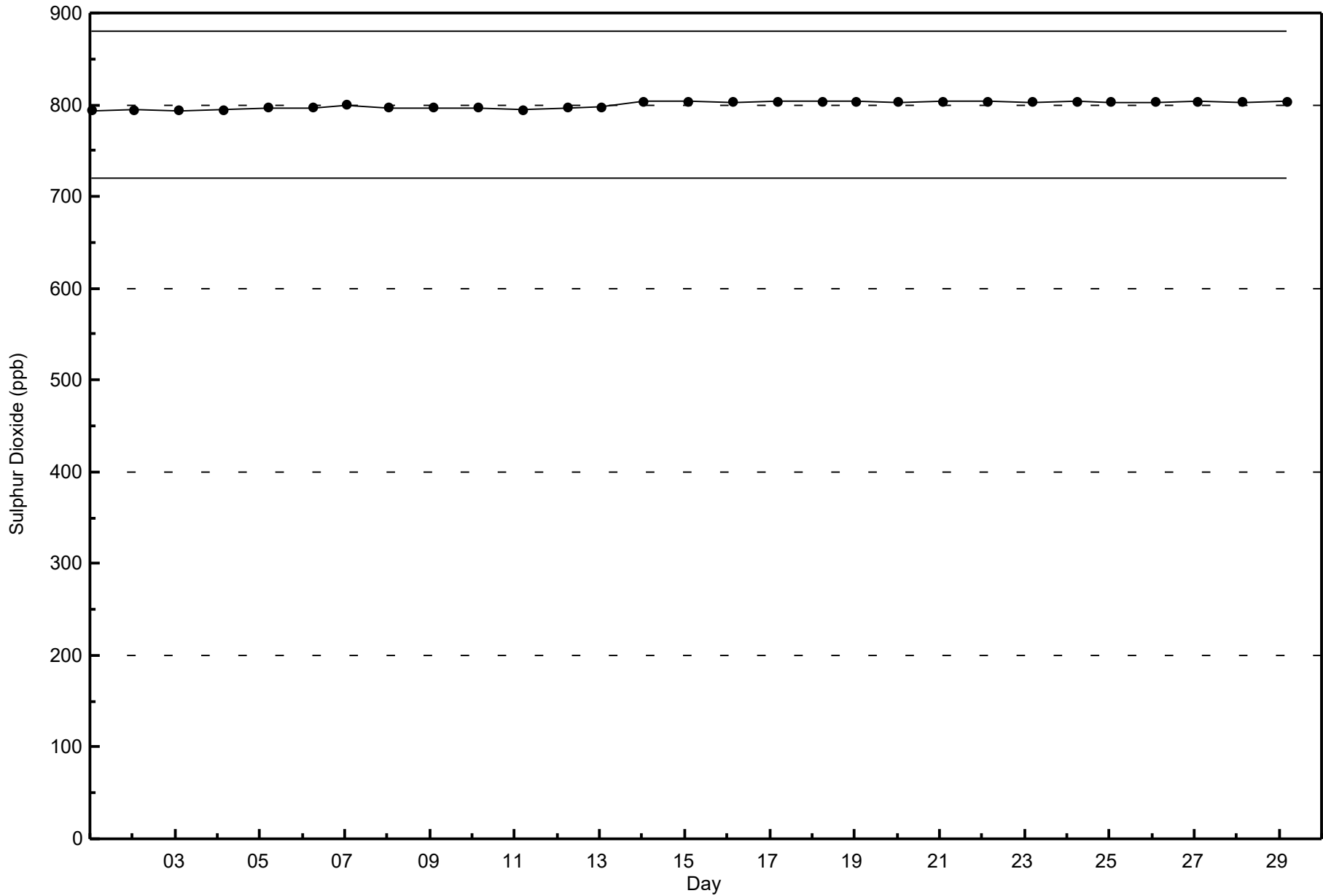


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Wapasu

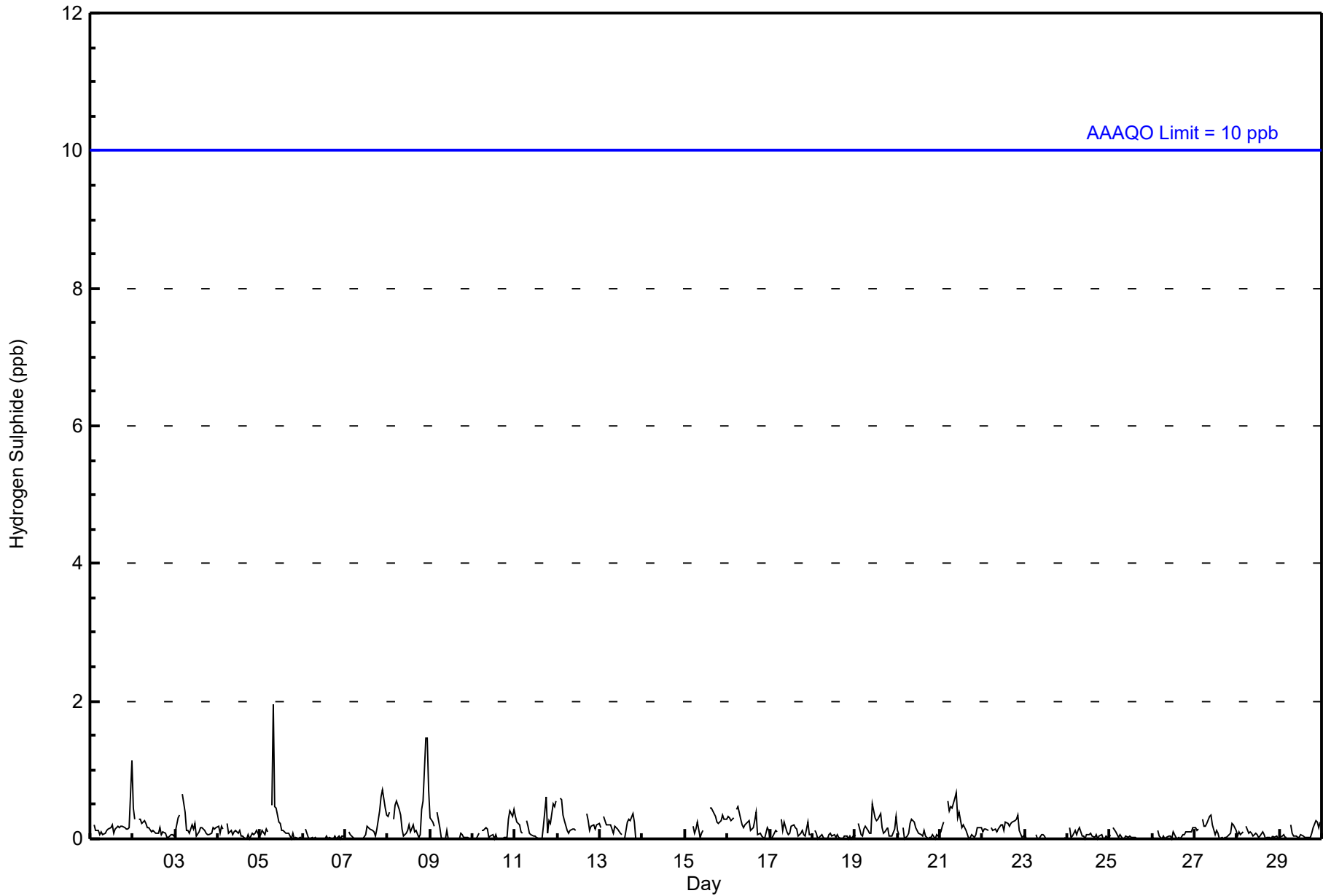








Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696							
Maximum Value: 1.9 ppb on Feb 5 08:00		Maximum Daily Average: 0.4 ppb on Feb 8														Hours of Data:		658									
Minimum Value: 0.0 ppb on Feb 5 18:00		Minimum Daily Average: 0.0 ppb on Feb 14														Hours of Missing Data:		38									
Maximum Diurnal Average: 0.2 ppb at hour 8		Minimum Diurnal Average: 0.1 ppb at hour 14														Hours of Calibration:		34									
Monthly Average: 0.13 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.3 P ₉₉ = 0.7														Percent Operational Time:		99.4									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	1.1	0.2	1.1	
2-Feb	0.5	0.3	Z	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.5	
3-Feb	0.1	0.3	0.3	Z	0.7	0.4	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.7	
4-Feb	0.2	0.1	0.2	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.2	
5-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.5	1.9	0.5	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	1.9	
6-Feb	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
7-Feb	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.4	0.6	0.7	0.5	0.4	0.2	0.7
8-Feb	0.3	0.4	Z	0.3	0.5	0.5	0.4	0.3	0.1	0.0	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.4	0.6	1.5	1.5	0.7	0.4	1.5	
9-Feb	0.3	0.2	0.2	Z	0.4	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.4	
10-Feb	0.0	0.0	0.0	0.1	Z	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.3	0.4	0.1	0.4	
11-Feb	0.3	0.3	0.2	0.1	0.1	Z	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.1	0.3	0.2	0.5	0.5	0.5	0.2	0.6	
12-Feb	Z	0.6	0.6	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	C	C	C	C	C	0.4	0.3	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.6	
13-Feb	0.2	Z	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	M	0.0	0.2	0.3	0.3	0.4	0.2	0.0	0.0	0.0	0.0	0.2	0.4	
14-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15-Feb	0.0	0.0	0.0	Z	0.2	0.1	0.1	0.2	0.0	0.1	0.1	M	M	M	0.4	0.4	0.4	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.4	
16-Feb	0.3	0.3	0.3	0.3	Z	0.4	0.5	0.3	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.3	0.4	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.2	0.5	
17-Feb	0.0	0.0	0.1	0.1	0.1	Z	0.3	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.3	0.1	0.1	0.1	0.3
18-Feb	Z	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	
19-Feb	0.0	Z	0.2	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.5	0.3	0.3	0.3	0.4	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.2	0.3	0.2	0.5	
20-Feb	0.1	0.1	Z	0.2	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.3	
21-Feb	0.1	0.2	0.2	Z	0.6	0.4	0.5	0.4	0.6	0.7	0.3	0.4	0.2	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.7	
22-Feb	0.1	0.1	0.2	0.1	Z	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.1	0.0	0.0	0.2	0.3
23-Feb	0.1	0.0	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
24-Feb	Z	0.2	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.2	
25-Feb	0.1	Z	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
26-Feb	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	
27-Feb	0.2	0.1	0.2	Z	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.3	
28-Feb	0.0	0.1	0.1	0.1	Z	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	
29-Feb	0.0	0.0	0.1	0.0	0.0	Z	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.3	
																								Diurnal Average		0.2	
																								Diurnal Maximum		1.1	
Z - zerospan C - Calibration M - Maintenance																											
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Hydrogen Sulphide (H₂S) - ppb
Wapasu - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	658	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 658

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Wapasu - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	91	56	21	11	13	25	74	114	65	44	44	23	8	13	9	44	655
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	91	56	21	11	13	25	74	114	65	44	44	23	8	13	9	44	655

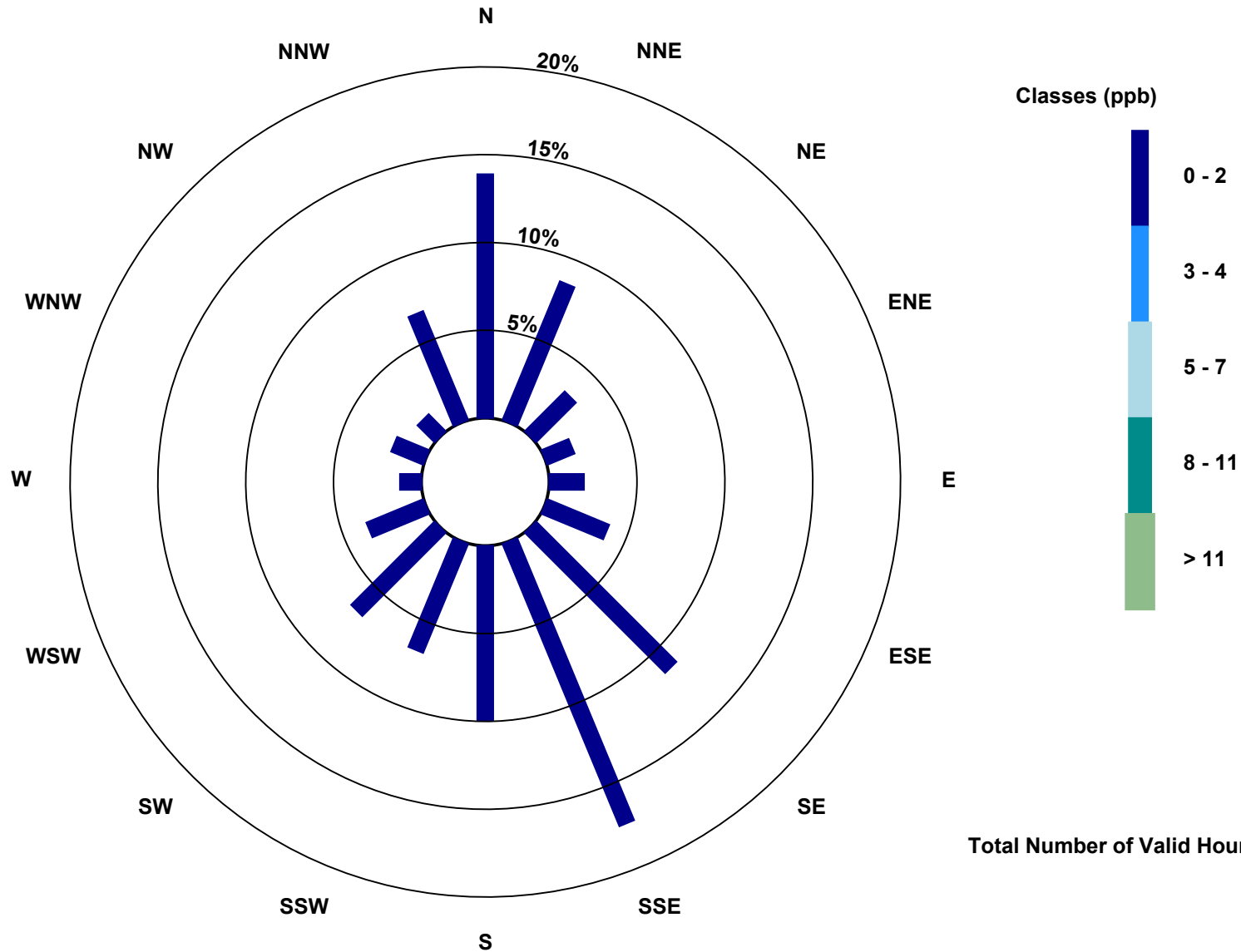
Total Number of Valid Hours: 655

Total Number of Hours: 696

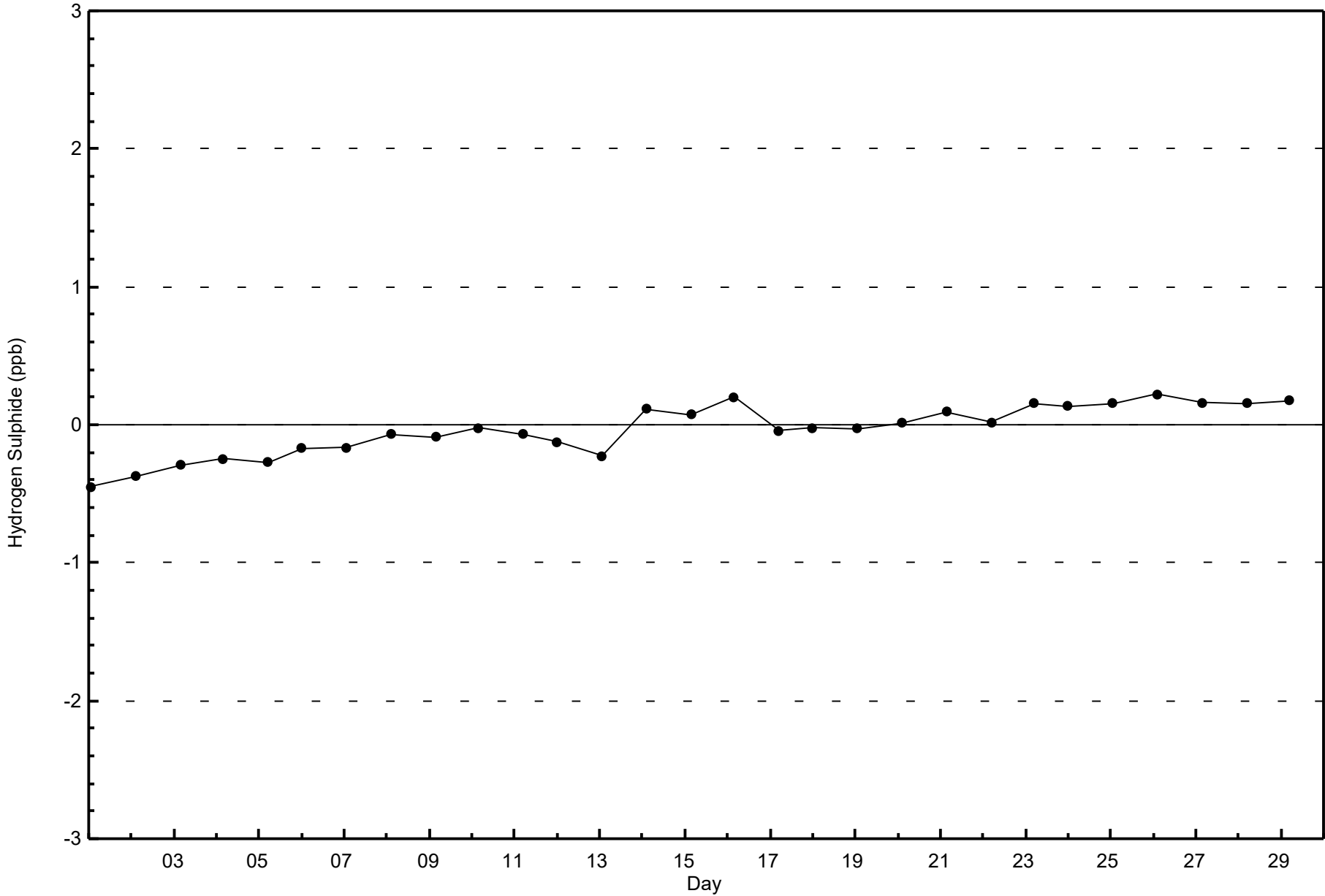


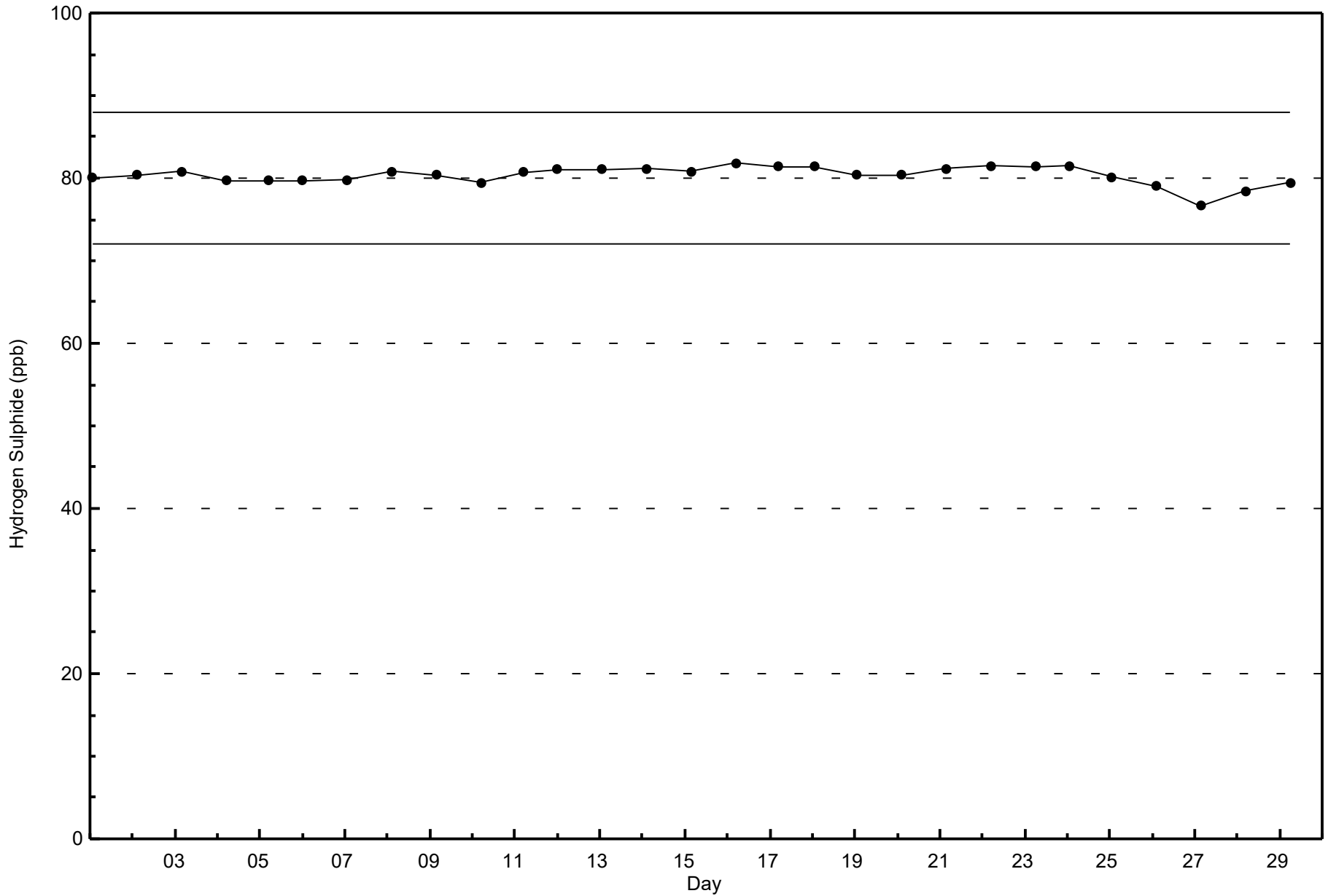
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Wapasu



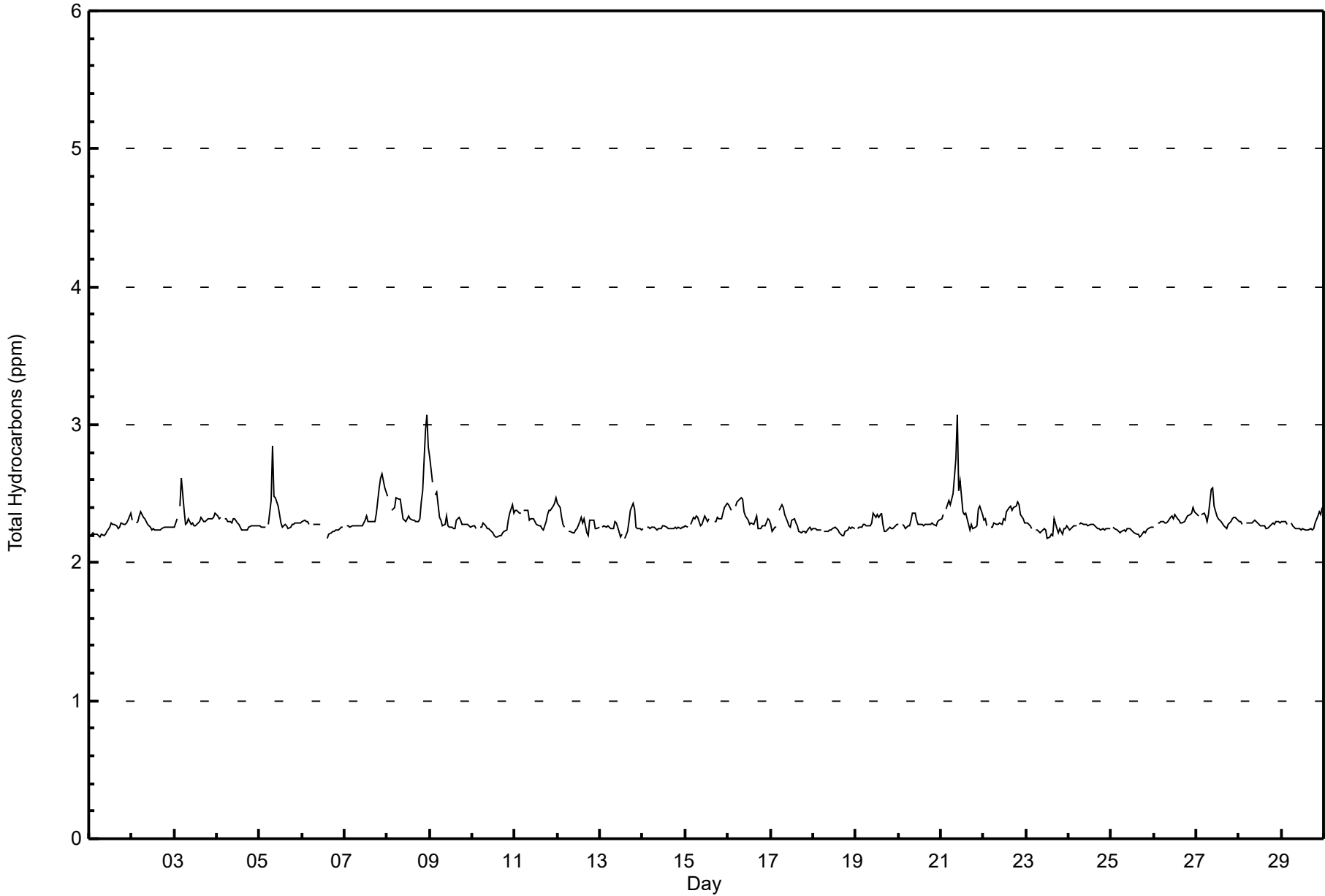
Total Number of Valid Hours: 655







Maximum Value: 3.1 ppm on Feb 21 10:00																				Maximum Daily Average: 2.5 ppm on Feb 8					Hours in Service: 696	
Minimum Value: 2.2 ppm on Feb 6 15:00																				Minimum Daily Average: 2.2 ppm on Feb 25					Hours of Data: 661	
Maximum Diurnal Average: 2.3 ppm at hour 23																				Minimum Diurnal Average: 2.3 ppm at hour 17					Hours of Missing Data: 35	
Monthly Average: 2.30 ppm																				Percentiles: P ₁ = 2.2 P ₁₀ = 2.2 Q ₁ = 2.3 Median = 2.3 Q ₃ = 2.3 P ₉₀ = 2.4 P ₉₉ = 2.7					Hours of Calibration: 32	
																									Percent Operational Time: 99.6	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.2	2.4
2-Feb	2.3	Z	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	
3-Feb	2.3	2.3	Z	2.4	2.6	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.6	
4-Feb	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
5-Feb	2.3	2.3	2.3	2.3	Z	2.3	2.4	2.8	2.5	2.5	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.8	
6-Feb	2.3	2.3	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	C	C	C	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	
7-Feb	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.6	2.6	2.5	2.5	2.4	2.6	
8-Feb	2.5	Z	2.4	2.4	2.4	2.5	2.5	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.5	3.0	3.1	2.5	3.1	
9-Feb	2.8	2.6	Z	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.8	
10-Feb	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.3	2.4	
11-Feb	2.4	2.4	2.4	2.4	Z	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.4	2.5	2.3	2.5	
12-Feb	2.4	2.4	2.3	2.3	2.3	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.3	2.4	
13-Feb	Z	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.2	2.2	M	2.2	2.2	2.3	2.4	2.4	2.4	2.3	2.2	2.3	2.2	2.3	2.4	
14-Feb	2.2	Z	2.3	2.3	2.2	2.3	2.3	2.2	2.2	2.3	2.2	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.2	2.3	2.2	2.3	2.3	2.3	2.3	
15-Feb	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	M	M	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.4	
16-Feb	2.4	2.4	2.4	Z	2.4	2.4	2.5	2.5	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.5	
17-Feb	2.3	2.2	2.3	2.3	Z	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.4	
18-Feb	2.2	2.3	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.2	2.3	
19-Feb	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.4	2.3	2.4	2.3	2.2	2.2	2.2	2.3	2.3	2.2	2.3	2.3	2.4	
20-Feb	2.3	Z	2.3	2.3	2.2	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	
21-Feb	2.3	2.3	Z	2.4	2.5	2.4	2.5	2.5	2.8	3.1	2.5	2.6	2.4	2.3	2.4	2.3	2.2	2.3	2.2	2.3	2.3	2.4	2.4	2.4	3.1	
22-Feb	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.4	
23-Feb	2.3	2.3	2.3	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3	
24-Feb	2.2	2.2	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.3	
25-Feb	Z	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.3	
26-Feb	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.3	2.4	
27-Feb	2.3	2.3	Z	2.3	2.4	2.3	2.3	2.4	2.5	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.5	
28-Feb	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
29-Feb	2.3	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.3	2.3	2.4	
2.3																								Diurnal Average		
2.8																								Diurnal Maximum		
Z - zerospan C - Calibration M - Maintenance																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Wapasu - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	0	0.00	0.00
2.1 - 3.0	659	99.70	99.70
3.1 - 10.0	2	0.30	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Wapasu - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.1 - 3.0	92	57	17	12	13	26	73	112	64	45	46	23	9	15	9	43	656
3.1 - 10.0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	93	57	17	12	13	26	73	112	64	46	46	23	9	15	9	43	658

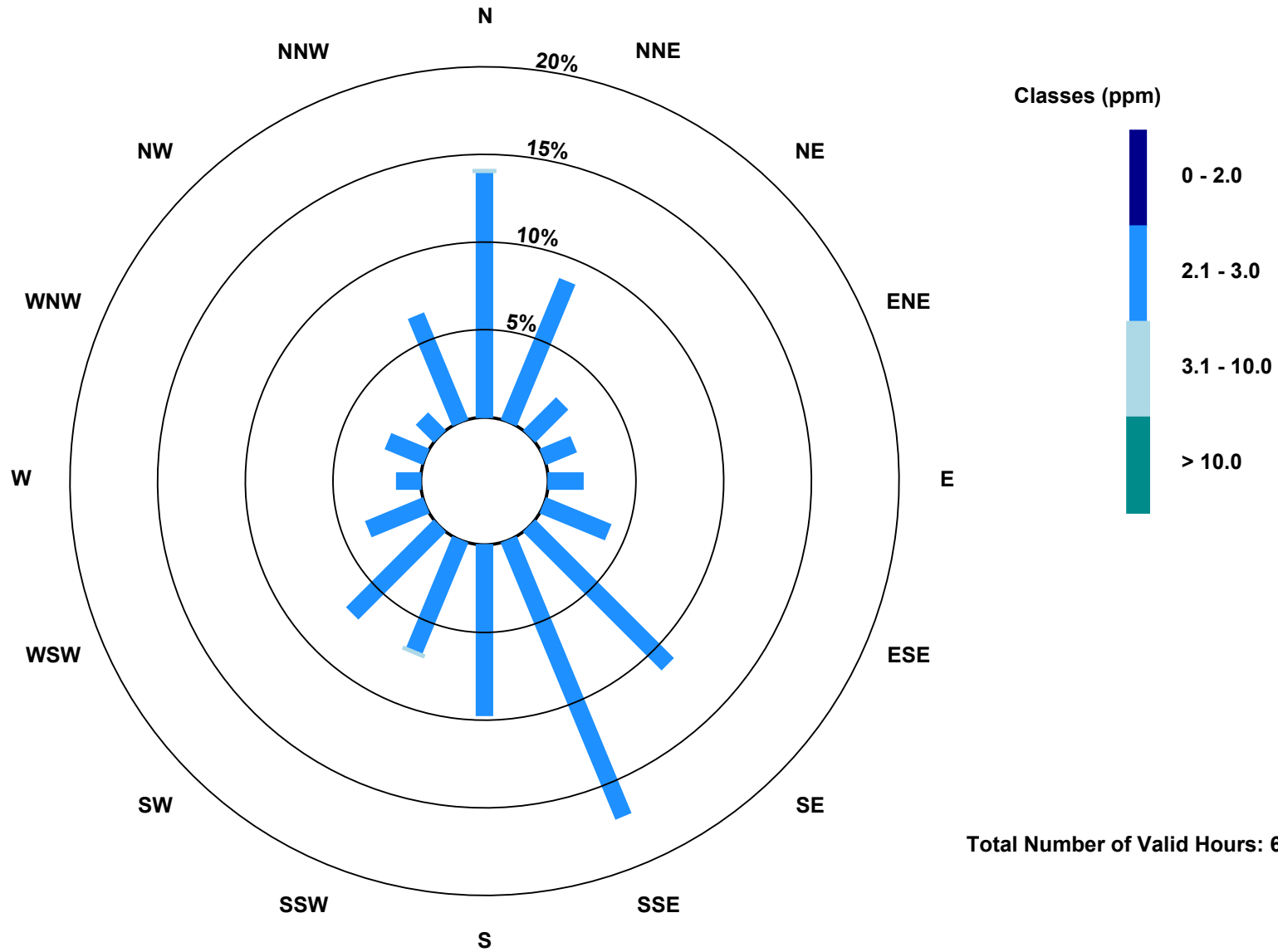
Total Number of Valid Hours: 658

Total Number of Hours: 696

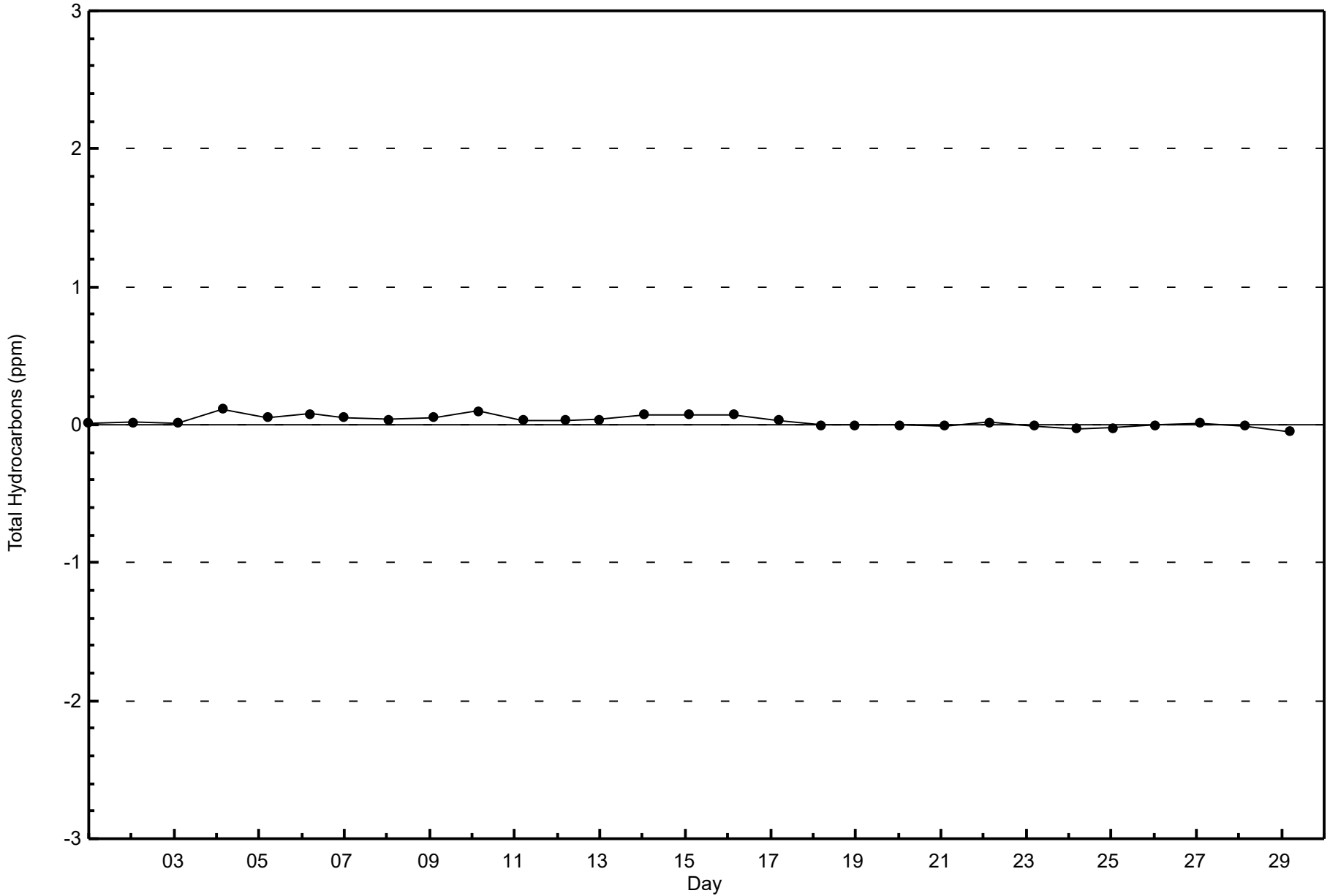


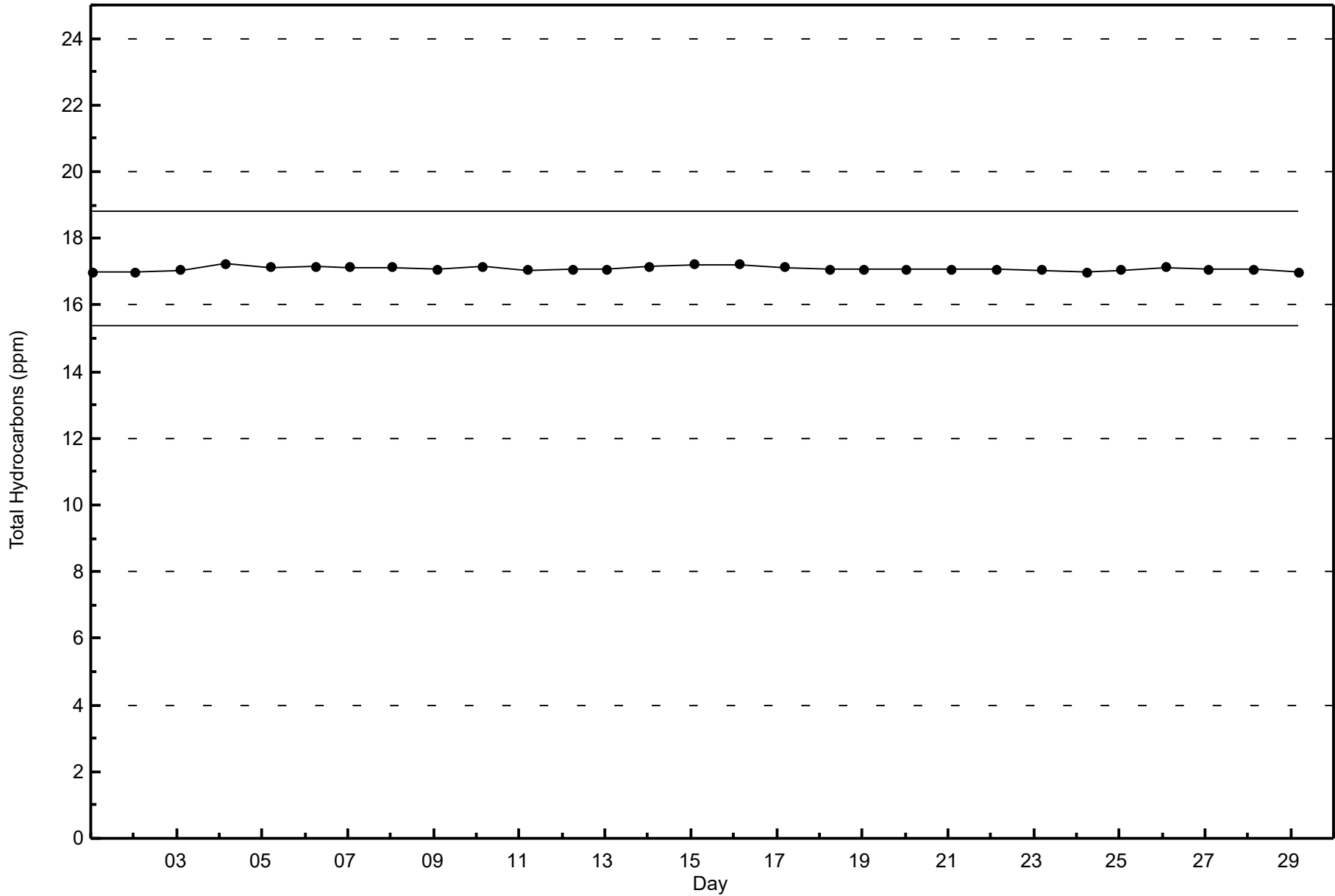
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Wapasu



Total Number of Valid Hours: 658







Wood Buffalo Environmental Association

Summary of Hour Averages

Ozone (O₃) - ppb

Wapasu - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 45.3 ppb on Feb 1 01:00	Maximum Daily Average: 41.5 ppb on Feb 18		Hours of Data:	661
Minimum Value: 2.2 ppb on Feb 8 23:00	Minimum Daily Average: 10.9 ppb on Feb 8		Hours of Missing Data:	35
Maximum Diurnal Average: 34.0 ppb at hour 15	Minimum Diurnal Average: 25.2 ppb at hour 3		Hours of Calibration:	32
Monthly Average: 29.36 ppb	Percentiles: P ₁ = 2.4 P ₁₀ = 15.9 Q ₁ = 22.6 Median = 30.8 Q ₃ = 37.5 P ₉₀ = 40.6 P ₉₉ = 43.7		Percent Operational Time:	99.6

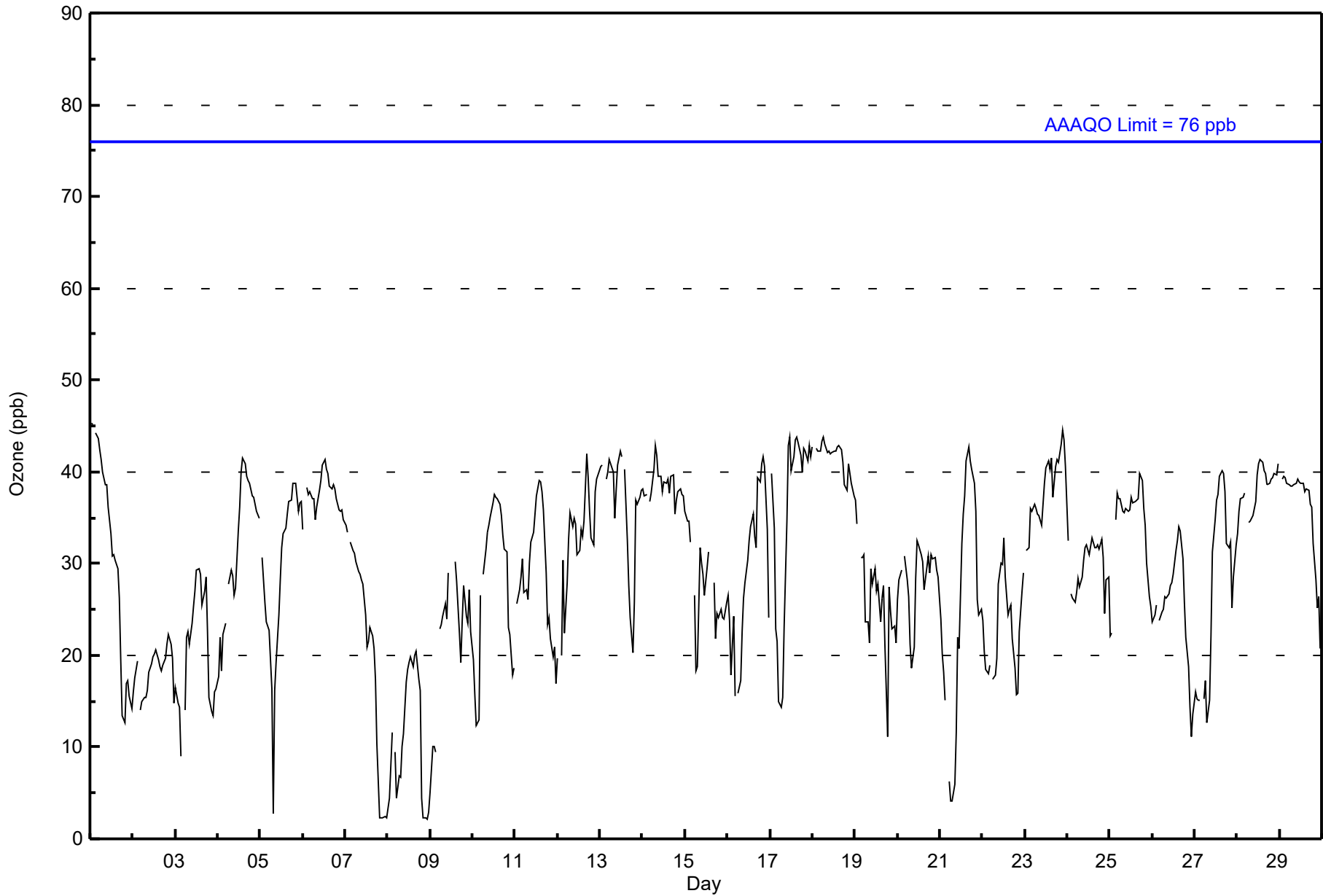
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	45.3	45.2	Z	44.3	43.7	42.3	41.4	40.0	38.6	38.6	36.2	33.2	30.9	31.0	30.3	29.5	26.3	19.5	13.4	12.7	17.0	17.3	15.5	14.2	30.7	45.3																							
2-Feb	16.0	17.5	19.3	Z	14.0	14.9	15.4	15.3	16.2	18.2	19.0	19.8	20.2	20.5	19.6	18.8	18.3	18.9	19.7	21.2	22.2	21.2	19.6	14.8	18.3	22.2																							
3-Feb	16.5	14.8	14.3	9.0	Z	14.0	22.0	22.6	21.1	23.6	25.3	27.0	29.3	29.5	28.8	25.5	27.0	28.5	22.5	15.4	14.0	13.5	16.1	16.4	20.7	29.5																							
4-Feb	17.7	21.9	18.3	22.2	23.5	Z	27.8	29.2	28.7	26.5	27.3	33.5	36.2	40.0	41.4	40.8	39.6	39.0	38.7	37.3	37.2	36.4	35.6	34.9	31.9	41.4																							
5-Feb	Z	30.7	25.8	23.7	23.1	22.7	16.4	2.8	16.1	19.3	24.4	28.2	31.7	33.2	33.9	35.4	36.7	36.9	38.8	38.8	38.8	35.7	36.5	36.8	29.0	38.8																							
6-Feb	33.7	Z	38.4	37.6	37.9	37.0	37.0	34.8	36.2	37.9	39.1	40.7	41.3	40.3	39.9	38.4	38.2	38.5	38.1	37.0	35.9	35.7	35.9	34.8	37.6	41.3																							
7-Feb	34.2	33.5	Z	32.3	31.5	31.1	30.2	29.2	28.8	28.3	27.8	24.5	21.0	21.4	23.1	22.2	20.7	17.4	10.3	2.2	2.3	2.3	2.4	2.3	20.8	34.2																							
8-Feb	3.4	4.4	11.6	Z	9.4	4.4	6.8	6.6	10.1	11.4	17.1	18.5	19.2	19.8	18.7	19.9	20.4	17.4	16.2	4.4	2.4	2.4	2.2	2.8	10.9	20.4																							
9-Feb	5.0	10.1	10.1	9.5	Z	22.8	23.3	24.3	25.6	23.9	29.0	C	C	C	30.3	28.1	22.5	19.2	23.9	27.6	24.3	23.5	27.2	22.6	21.6	30.3																							
10-Feb	19.6	15.6	12.4	12.9	26.5	Z	28.8	31.7	33.4	34.2	35.1	36.7	37.5	37.3	37.0	36.4	35.3	33.2	31.6	31.3	23.1	22.2	17.8	18.6	28.2	37.5																							
11-Feb	Z	25.6	27.1	28.5	30.5	26.8	27.2	26.1	30.0	32.3	33.3	35.4	37.4	39.0	38.9	37.8	35.8	29.0	23.4	24.0	21.9	19.8	20.9	17.0	29.0	39.0																							
12-Feb	19.7	Z	19.9	30.3	22.4	27.9	32.7	35.6	34.0	34.9	34.4	31.0	31.5	33.8	32.9	34.6	42.0	39.3	35.7	32.8	32.0	37.9	39.1	40.2	32.8	42.0																							
13-Feb	40.6	40.8	Z	39.2	40.0	41.3	40.8	40.0	34.9	38.0	40.8	42.3	41.6	M	40.2	32.5	27.6	24.1	20.3	25.8	36.9	36.5	37.2	38.0	36.3	42.3																							
14-Feb	38.1	37.4	37.6	Z	36.7	37.7	40.3	42.9	41.8	39.5	39.5	37.9	38.8	38.8	39.2	37.7	39.5	39.6	35.3	36.9	37.8	38.1	37.5	37.4	38.5	42.9																							
15-Feb	35.7	34.7	34.6	32.4	Z	26.5	18.4	18.8	31.7	30.1	28.8	26.5	29.6	31.3	M	M	28.0	21.8	24.6	24.1	25.0	24.0	24.0	25.8	27.4	35.7																							
16-Feb	26.6	23.8	17.9	24.2	15.6	Z	15.9	17.2	22.5	26.2	28.0	30.3	32.4	34.0	35.4	32.9	31.7	39.4	39.0	40.9	41.6	40.6	33.8	24.1	29.3	41.6																							
17-Feb	Z	39.9	33.9	22.8	21.6	15.0	14.4	15.4	23.0	34.7	42.8	43.8	40.1	41.6	43.5	43.8	43.1	41.9	39.9	42.5	42.2	41.2	42.8	41.6	35.3	43.8																							
18-Feb	42.7	Z	42.5	42.3	42.2	43.3	43.8	43.0	42.2	42.2	41.9	42.1	42.3	42.3	42.7	42.9	42.4	41.1	38.6	38.0	40.9	39.9	38.7	37.4	41.5	43.8																							
19-Feb	36.8	34.3	Z	30.7	30.7	30.9	23.6	23.6	21.4	29.4	27.7	29.5	27.0	27.7	23.6	26.3	27.5	21.1	11.1	27.4	24.9	22.9	23.1	21.3	26.2	36.8																							
20-Feb	26.1	28.2	29.3	Z	30.8	28.2	26.4	21.2	18.6	20.9	28.3	32.6	32.0	31.0	30.2	27.2	28.3	30.8	29.1	31.0	30.4	30.7	29.2	28.5	28.2	32.6																							
21-Feb	24.0	20.2	18.1	15.1	Z	6.3	4.1	4.1	6.0	11.6	22.0	20.8	32.2	35.4	37.4	41.2	42.6	41.1	40.3	38.8	35.7	26.1	24.4	25.0	24.9	42.6																							
22-Feb	23.8	20.4	18.5	18.0	18.9	Z	17.4	17.9	19.7	27.7	30.0	29.9	32.8	28.5	24.4	25.1	25.4	21.7	18.6	15.8	15.8	22.6	27.0	29.0	23.0	32.8																							
23-Feb	Z	31.4	31.7	36.0	35.7	36.5	36.0	35.4	35.2	34.2	36.4	38.8	40.4	41.3	40.3	41.5	37.2	40.5	41.3	41.0	43.1	44.5	43.5	40.6	38.4	44.5																							
24-Feb	32.5	Z	26.7	26.3	25.8	26.9	28.4	27.4	28.6	30.4	31.8	32.0	30.9	31.9	32.8	31.7	31.7	32.0	31.6	32.6	30.7	24.5	28.3	28.5	29.7	32.8																							
25-Feb	22.1	22.4	Z	34.8	37.7	37.1	37.0	35.7	35.6	36.0	35.7	35.9	37.3	36.6	36.8	36.8	37.0	39.7	39.0	36.0	34.1	30.1	26.4	25.3	34.1	39.7																							
26-Feb	23.7	24.4	25.5	Z	23.8	24.7	25.1	26.4	26.3	26.7	27.6	28.0	28.8	31.4	32.5	34.0	33.6	30.5	25.8	21.9	18.7	14.4	11.1	13.6	25.2	34.0																							
27-Feb	16.0	15.3	15.1	15.1	Z	15.3	17.3	12.6	15.0	22.2	31.2	34.7	36.9	37.5	39.6	40.2	39.8	37.8	32.2	31.7	32.4	25.1	28.5	32.0	27.1	40.2																							
28-Feb	33.3	35.7	37.1	37.3	37.7	Z	34.4	34.6	35.0	35.3	36.7	39.7	40.9	41.3	41.0	40.1	39.8	38.5	38.7	39.2	39.4	39.9	39.6	40.9	38.1	41.3																							
29-Feb	Z	39.2	39.5	39.3	38.8	38.7	38.5	38.5	38.6	38.7	39.1	38.9	38.7	38.7	37.9	38.2	38.0	36.4	36.1	32.1	28.2	25.1	26.4	20.7	35.8	39.5																							
																								26.4	26.7	25.2	27.7	29.1	27.2	26.6	26.0	27.4	29.4	31.6	32.6	33.5	33.9	34.0	33.6	33.0	31.6	29.4	29.0	28.6	27.4	27.3	26.4	Diurnal Average	
																								45.3	45.2	42.5	44.3	43.7	43.3	43.8	43.0	42.2	42.2	42.8	43.8	42.3	42.3	43.5	43.8	43.1	41.9	41.3	42.5	43.1	44.5	43.5	41.6	Diurnal Maximum	

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 76 ppb



Wood Buffalo Environmental Association
Hourly Averages

Ozone (O₃) - ppb
Wapasu - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ozone (O₃) - ppb
Wapasu - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	129	19.52	19.52
21 - 50	532	80.48	100.00
51 - 82	0	0.00	100.00
> 83	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Ozone (O₃) - ppb
Wapasu - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	15	16	5	3	3	6	22	19	13	8	4	0	1	1	2	8	126
21 - 50	74	38	14	9	11	21	53	95	52	36	41	24	8	14	6	36	532
51 - 82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	89	54	19	12	14	27	75	114	65	44	45	24	9	15	8	44	658

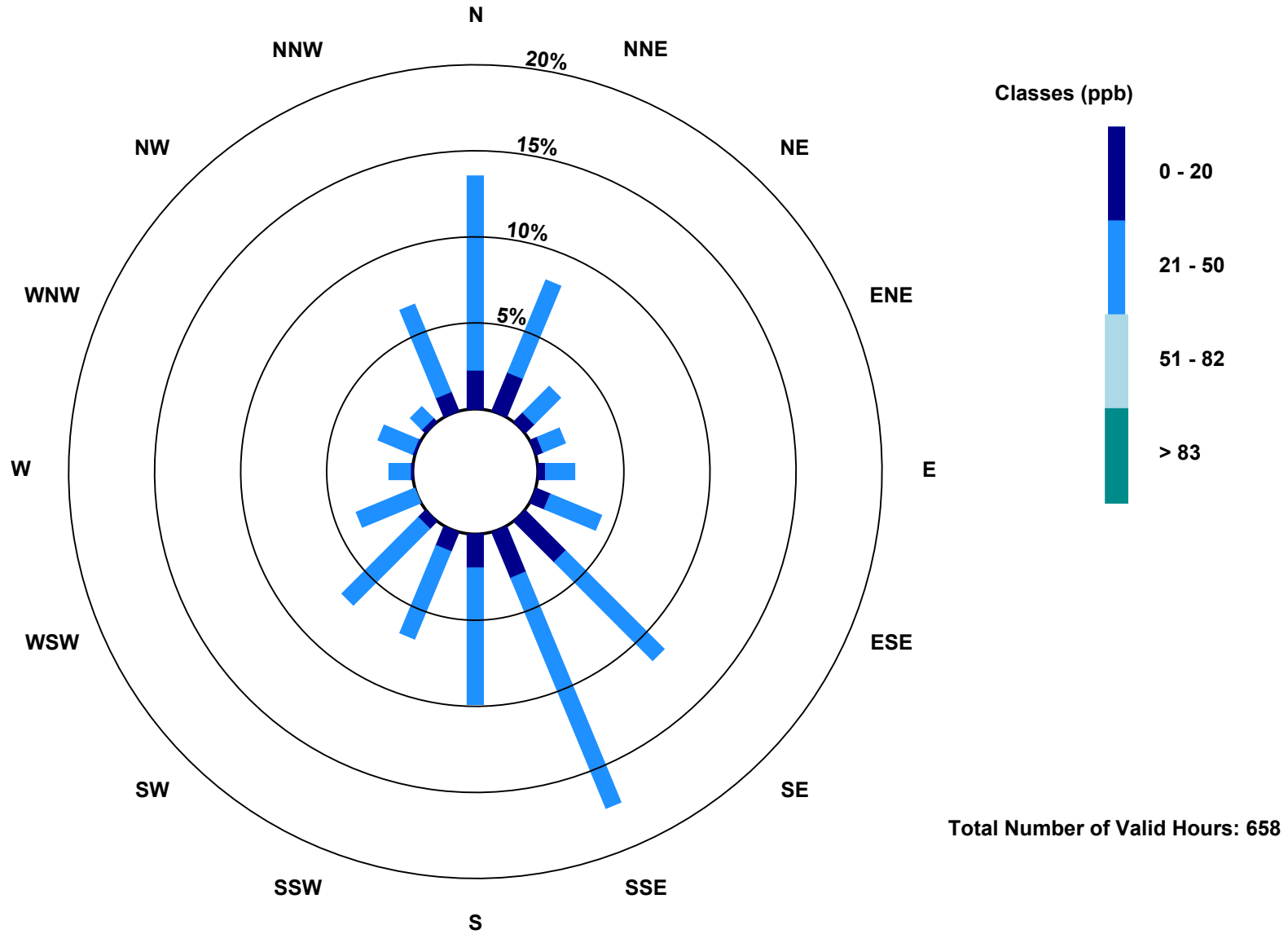
Total Number of Valid Hours: 658

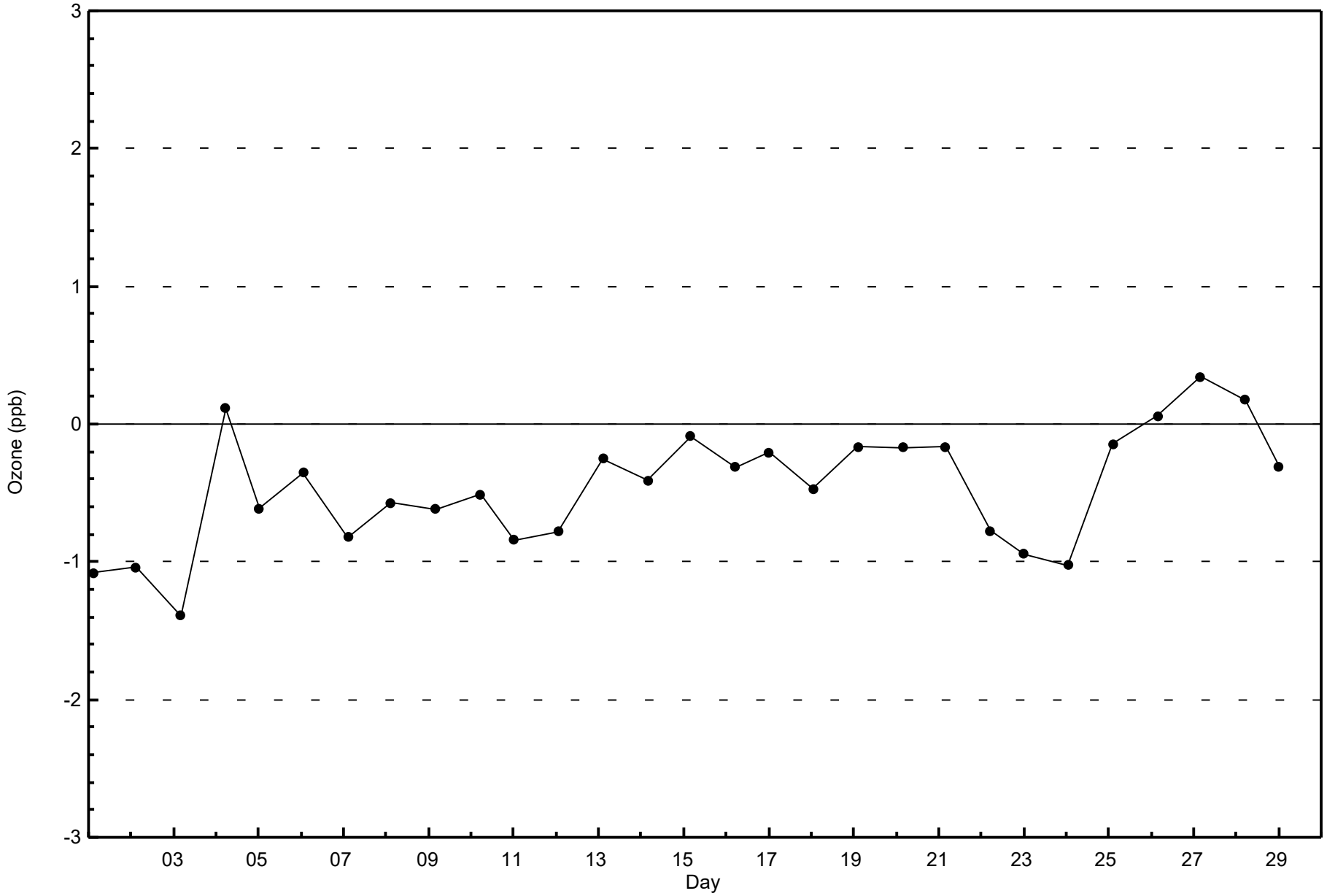
Total Number of Hours: 696

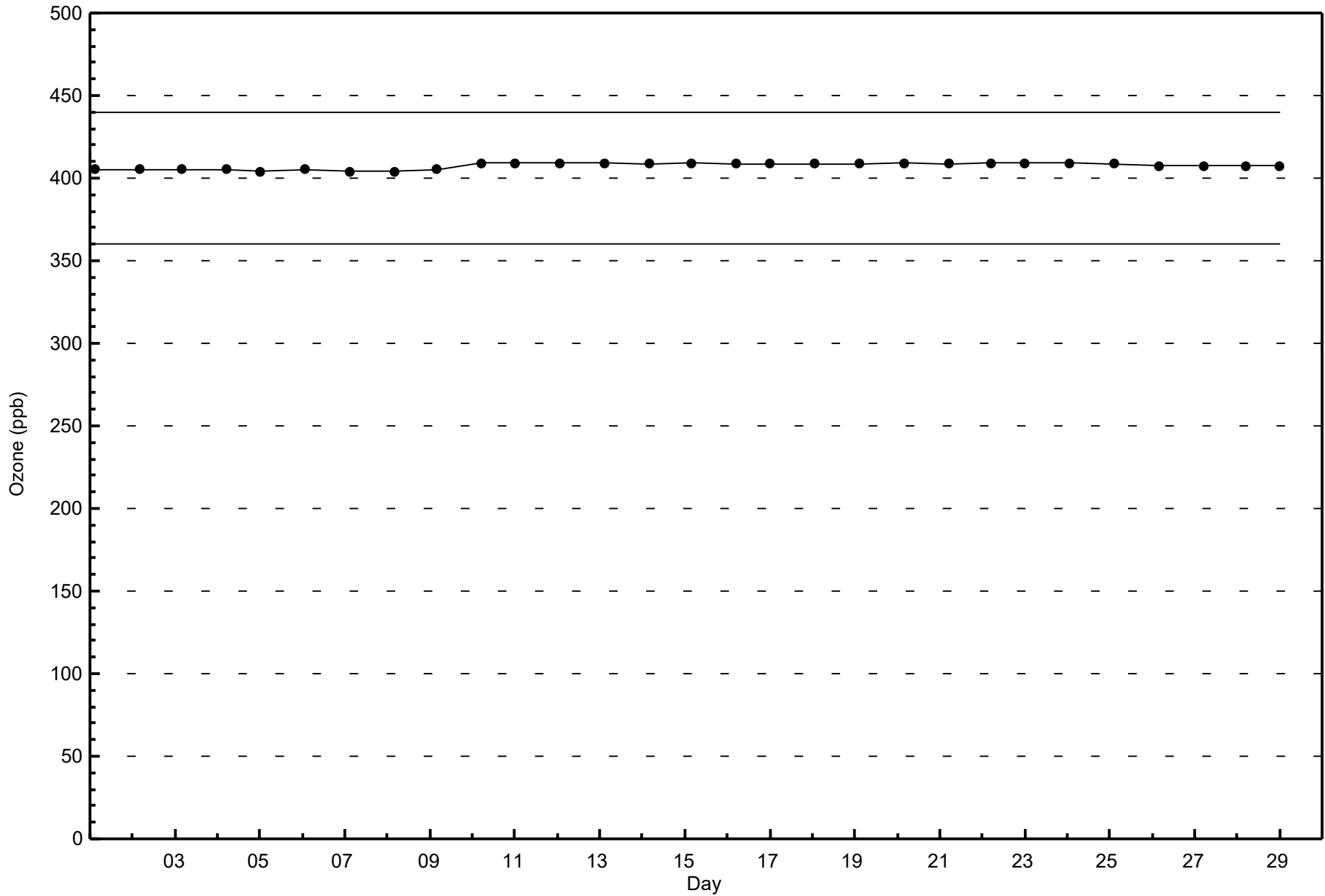


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Ozone (O₃) - ppb
Wapasu









Wood Buffalo Environmental Association
Summary of Hour Averages

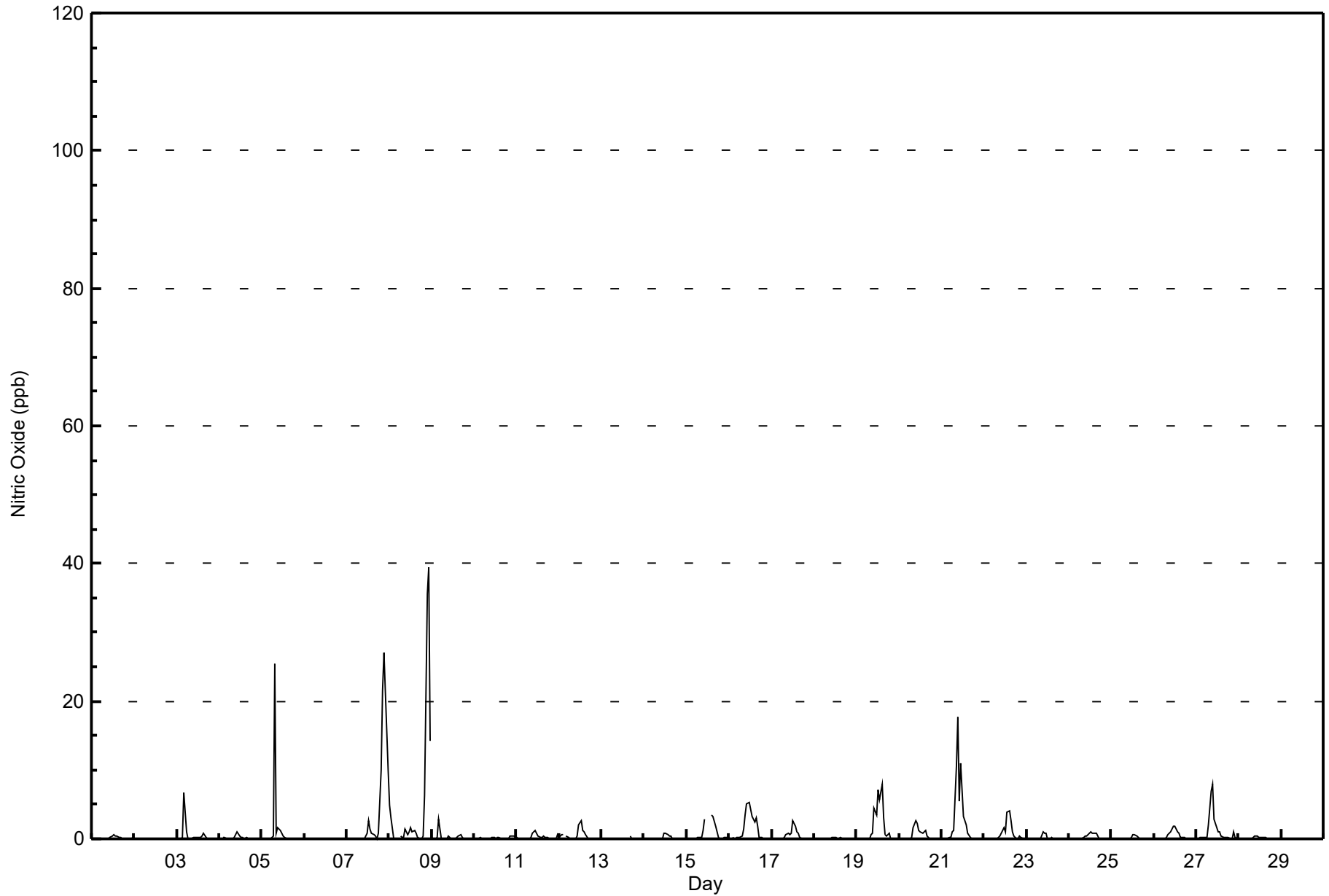
Nitric Oxide (NO) - ppb
Wapasu - February 2024

Maximum Value: 39.4 ppb on Feb 8 23:00		Maximum Daily Average: 4.9 ppb on Feb 8		Hours in Service: 696																											
Minimum Value: 0.0 ppb on Feb 1 01:00		Minimum Daily Average: 0.0 ppb on Feb 29		Hours of Data: 659																											
Maximum Diurnal Average: 2.2 ppb at hour 22		Minimum Diurnal Average: 0.0 ppb at hour 4		Hours of Missing Data: 37																											
Monthly Average: 0.77 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.3 P ₉₀ = 1.3 P ₉₉ = 14.8		Hours of Calibration: 34																											
				Percent Operational Time: 99.6																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
1-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.6					
2-Feb	0.1	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1				
3-Feb	Z	0.0	0.1	0.1	6.6	1.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.3	0.8	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	6.6					
4-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6	1.0	0.4	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	1.0					
5-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.5	25.5	0.9	1.6	1.2	0.9	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	25.5					
6-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
7-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.6	1.5	0.8	0.6	0.3	0.0	0.7	10.0	21.6	27.1	15.6	9.9	4.0	27.1					
8-Feb	4.9	3.0	0.1	0.1	0.1	Z	0.3	0.2	0.3	1.3	0.7	1.0	1.5	1.0	1.3	0.8	0.2	0.0	0.0	0.3	6.3	35.5	39.4	14.2	4.9	39.4					
9-Feb	Z	0.1	0.0	0.1	2.9	0.0	0.0	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.3	0.4	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.9					
10-Feb	0.0	Z	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.3	0.3	0.4	0.2	0.1	0.4					
11-Feb	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.2	0.8	1.2	0.8	0.4	0.2	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.7	0.2	1.2					
12-Feb	0.3	0.6	0.5	Z	0.5	0.1	0.0	0.0	0.0	0.1	0.5	2.1	2.7	1.2	1.0	0.6	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.5	2.7					
13-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	C	C	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5					
14-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.6	0.3	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9					
15-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	1.3	2.9	M	M	M	3.4	3.2	1.9	0.9	0.1	0.1	0.1	0.2	0.1	0.1	0.7	3.4					
16-Feb	0.1	Z	0.2	0.1	0.2	0.2	0.3	0.4	1.5	3.5	5.0	5.3	4.2	3.3	2.4	3.0	1.8	0.2	0.1	0.1	0.0	0.0	0.0	0.1	1.4	5.3					
17-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.7	0.9	0.7	0.8	2.6	1.9	1.1	0.8	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.4	2.6					
18-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3					
19-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.5	0.8	4.4	3.4	7.0	5.6	7.9	3.1	0.7	0.4	0.8	0.0	0.0	0.0	0.1	0.1	1.5	7.9					
20-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.2	1.6	2.6	2.2	1.2	1.1	0.8	1.0	1.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.6					
21-Feb	Z	0.0	0.0	0.0	0.2	0.1	1.1	1.2	10.6	17.8	5.5	11.0	3.3	2.7	2.0	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	17.8					
22-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.3	1.6	1.1	4.0	4.0	2.7	1.1	0.3	0.0	0.1	0.4	0.1	0.0	0.0	0.7	4.0					
23-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.8	0.8	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0					
24-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.4	0.5	0.6	0.9	0.9	0.8	0.9	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.9					
25-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.6	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6					
26-Feb	0.0	0.0	0.0	0.0	0.1	Z	0.1	0.1	0.6	1.0	1.5	1.8	1.8	1.1	0.9	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.4	1.8					
27-Feb	Z	0.1	0.1	0.1	0.2	0.2	0.3	2.0	6.9	8.0	2.9	1.6	0.9	0.9	0.3	0.2	0.2	0.1	0.1	0.1	0.1	1.0	0.1	0.1	1.1	8.0					
28-Feb	0.1	Z	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.5	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5					
29-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
		0.2	0.2	0.1	0.0	0.5	0.1	0.1	1.0	0.8	1.5	1.2	1.3	1.2	1.0	1.1	0.8	0.3	0.1	0.1	0.4	1.0	2.2	1.9	0.9	Diurnal Average					
		4.9	3.0	0.5	0.3	6.6	1.0	1.1	25.5	10.6	17.8	5.5	11.0	7.0	5.6	7.9	3.2	1.9	0.9	0.8	10.0	21.6	35.5	39.4	14.2	Diurnal Maximum					
Z - zerospan		C - Calibration			M - Maintenance																										



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Wapasu - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Wapasu - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	654	99.24	99.24
21 - 40	5	0.76	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Wapasu - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	89	54	20	11	14	25	75	114	65	43	43	22	9	15	9	44	652
21 - 40	2	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5
41 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	91	56	20	12	14	25	75	114	65	43	43	22	9	15	9	44	657

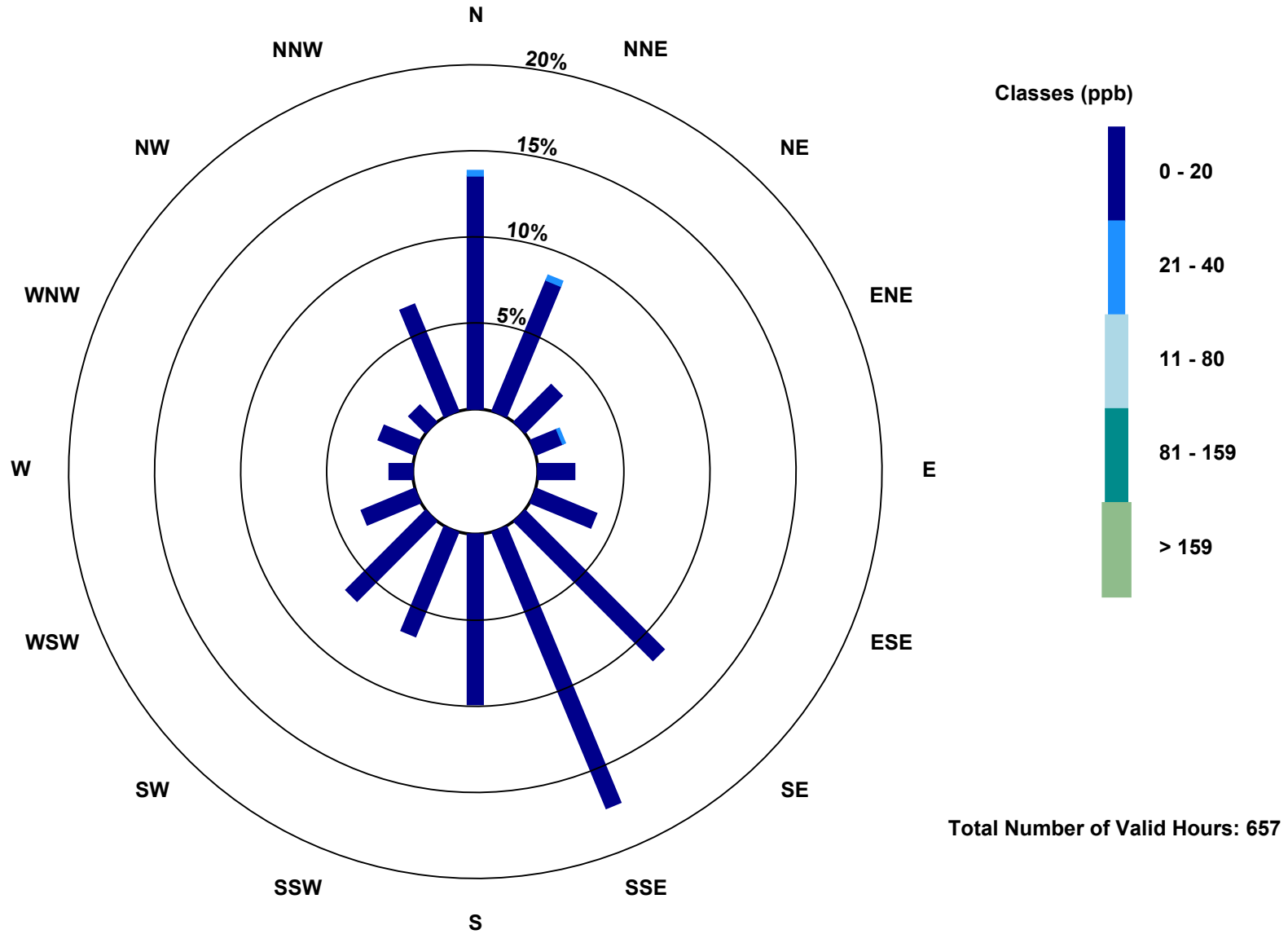
Total Number of Valid Hours: 657

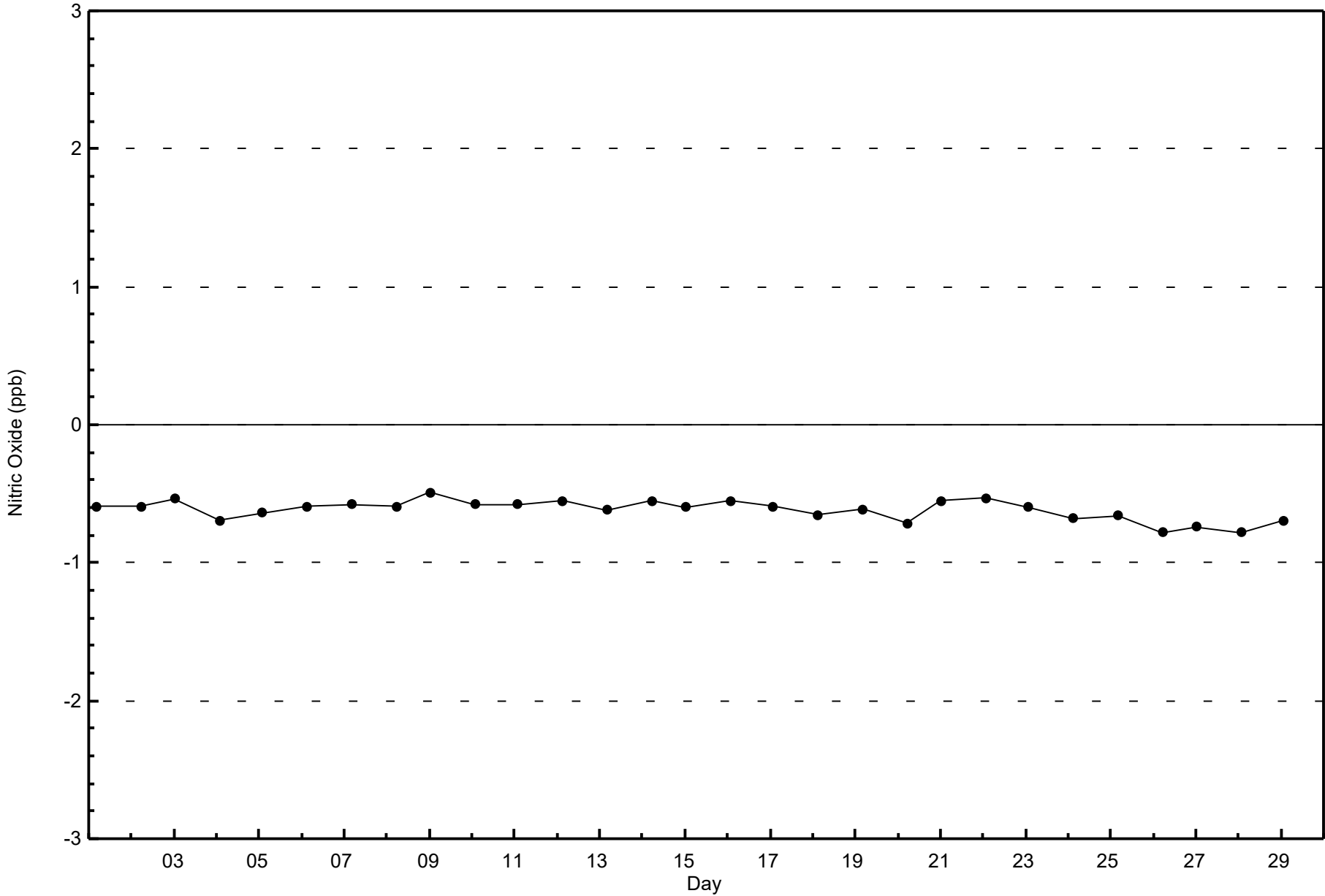
Total Number of Hours: 696

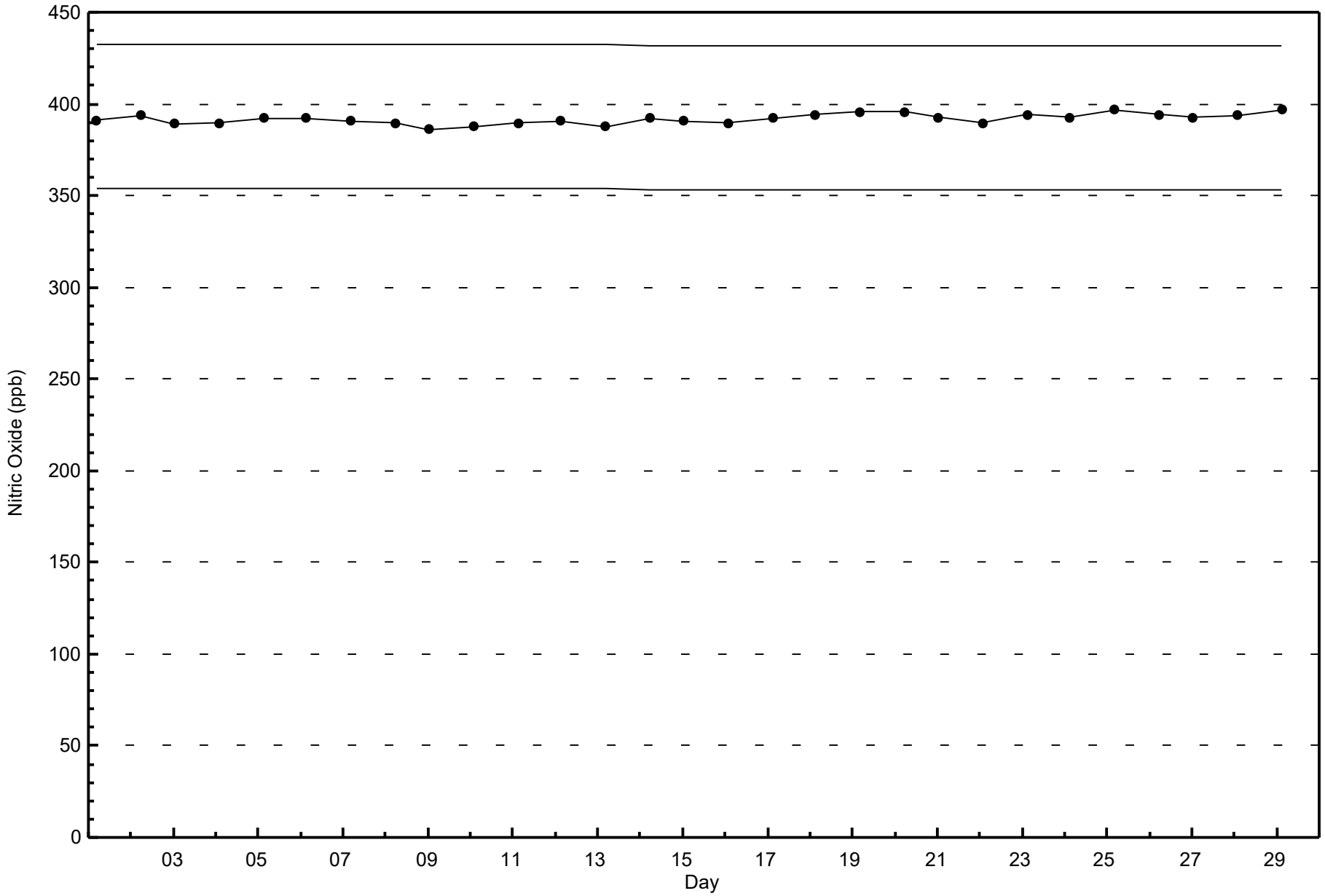


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Wapasu









Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

Wapasu - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 31.0 ppb on Feb 5 08:00	Maximum Daily Average: 11.5 ppb on Feb 8		Hours of Data:	659
Minimum Value: 0.1 ppb on Feb 3 19:00	Minimum Daily Average: 0.4 ppb on Feb 25		Hours of Missing Data:	37
Maximum Diurnal Average: 6.5 ppb at hour 5	Minimum Diurnal Average: 2.7 ppb at hour 14		Hours of Calibration:	34
Monthly Average: 4.46 ppb	Percentiles: P ₁ = 0.2 P ₁₀ = 0.5 Q ₁ = 1.0 Median = 2.6 Q ₃ = 6.2 P ₉₀ = 11.9 P ₉₉ = 22.2		Percent Operational Time:	99.6

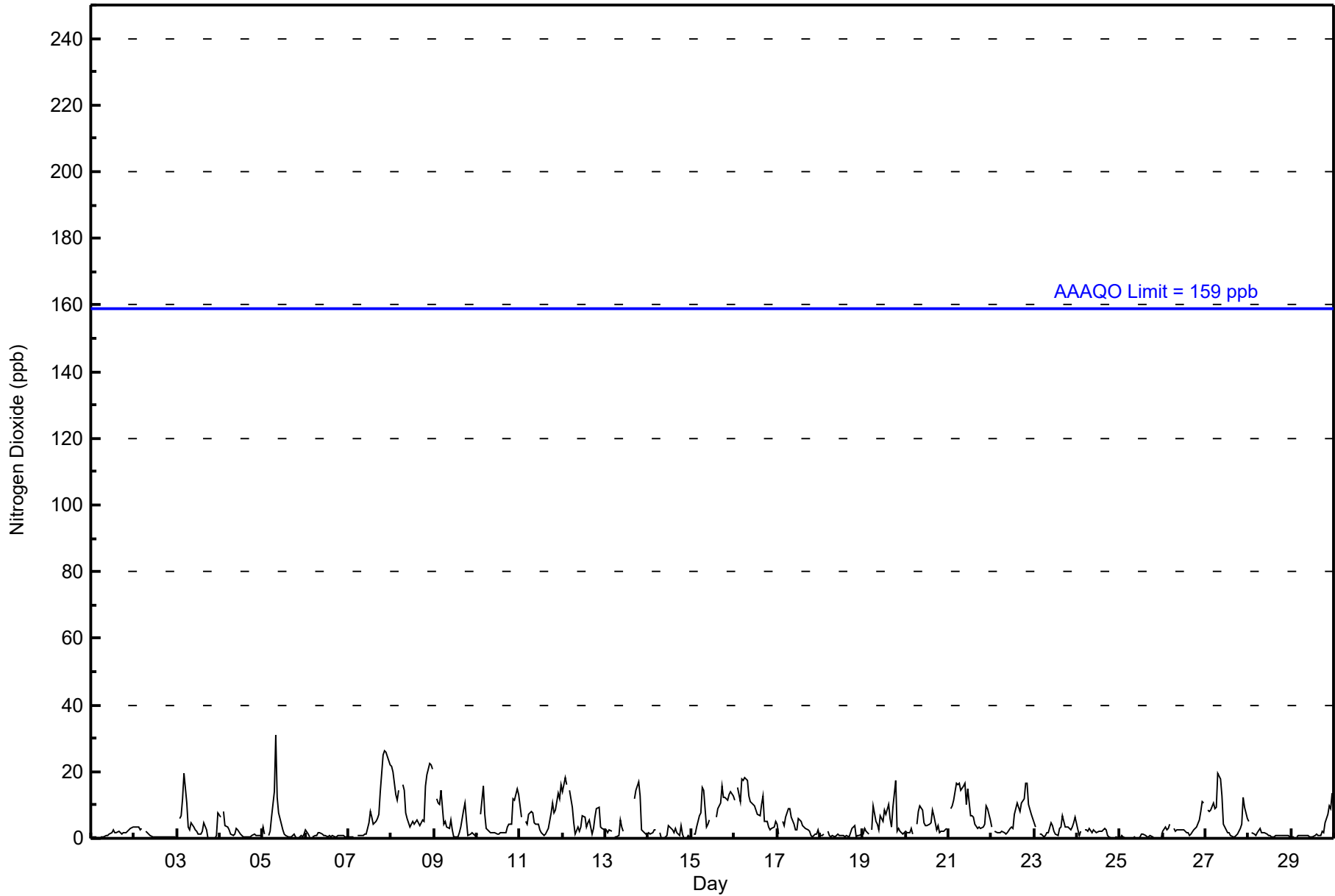
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.3	0.4	0.4	0.4	Z	0.5	0.5	0.6	0.9	0.8	1.2	1.8	2.4	1.5	1.8	2.0	1.8	1.4	1.6	1.6	2.3	2.4	3.0	3.6	1.4	3.6
2-Feb	3.5	3.3	3.2	2.4	3.0	Z	2.1	1.7	1.4	0.9	0.6	0.5	0.5	0.4	0.6	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.3	1.2	3.5
3-Feb	Z	6.0	6.7	11.7	19.6	10.5	3.2	2.6	4.7	3.5	2.7	2.1	1.3	1.4	2.2	4.8	2.5	0.2	0.1	0.1	0.2	0.1	1.0	7.8	4.1	19.6
4-Feb	6.5	Z	8.1	4.0	3.2	2.4	1.4	0.9	1.1	2.8	2.7	1.3	0.9	0.4	0.3	0.4	0.4	0.6	1.0	1.3	1.0	0.9	0.9	0.8	1.9	8.1
5-Feb	3.2	1.3	Z	0.9	2.3	6.2	13.8	31.0	12.2	7.7	4.3	2.6	1.3	0.7	0.5	0.4	0.4	1.3	0.3	0.2	0.2	0.8	0.6	1.4	4.1	31.0
6-Feb	2.7	1.3	0.6	Z	0.6	1.0	1.0	1.7	1.9	1.1	0.8	0.9	0.5	0.8	0.6	0.8	0.6	0.5	0.8	0.9	1.0	0.8	0.4	0.4	0.9	2.7
7-Feb	0.5	0.6	0.5	0.6	Z	0.7	0.9	0.7	0.9	1.1	1.1	4.5	8.0	6.3	4.4	5.0	5.9	7.3	14.1	24.9	26.2	25.8	23.5	22.2	8.1	26.2
8-Feb	21.4	19.8	13.3	11.5	14.5	Z	16.0	14.6	7.7	6.0	3.4	4.4	4.9	4.2	5.5	4.5	3.7	5.4	5.0	15.5	19.0	22.5	22.2	20.6	11.5	22.5
9-Feb	Z	12.0	10.6	10.0	14.5	4.1	5.0	3.6	2.9	5.3	2.4	0.6	0.3	0.4	1.6	3.4	8.6	10.7	5.4	1.0	1.3	1.8	1.2	0.9	4.7	14.5
10-Feb	1.1	Z	7.2	15.6	7.3	2.8	2.7	1.9	1.7	1.5	1.5	1.3	1.3	1.8	1.5	1.6	1.6	3.2	4.4	4.2	11.9	11.3	14.7	13.0	5.0	15.6
11-Feb	9.8	6.5	Z	5.1	4.2	7.4	7.9	7.5	4.8	4.3	4.1	2.6	1.6	1.0	1.2	2.1	3.1	7.6	10.7	7.8	8.3	13.4	11.8	16.2	6.5	16.2
12-Feb	14.0	18.1	16.1	Z	14.5	9.3	4.6	1.3	3.3	2.1	3.3	6.8	6.2	3.5	4.5	5.5	1.4	2.8	6.4	9.0	9.5	3.5	3.0	2.7	6.6	18.1
13-Feb	2.6	1.8	2.5	2.2	Z	0.3	0.4	0.7	5.3	3.4	2.1	C	C	C	C	C	11.7	14.2	16.8	12.5	2.6	2.1	1.4	1.4	4.7	16.8
14-Feb	1.6	1.4	1.5	2.5	2.7	Z	1.5	0.2	0.2	0.2	0.7	3.7	3.4	2.7	1.7	3.0	1.6	0.7	4.0	1.2	0.2	0.2	0.9	0.6	1.6	4.0
15-Feb	Z	1.3	1.2	3.2	6.6	7.7	15.2	14.5	3.6	4.4	5.3	M	M	M	6.5	8.9	10.8	15.8	12.4	12.4	11.6	13.1	13.8	12.5	9.0	15.8
16-Feb	11.5	Z	15.4	10.9	18.0	17.4	18.1	17.5	12.8	10.9	10.5	9.7	8.3	7.0	6.8	10.3	12.5	5.1	5.1	3.3	2.7	2.9	3.6	5.2	9.8	18.1
17-Feb	4.3	1.1	Z	5.2	3.7	6.5	8.9	8.9	6.5	4.4	2.7	2.4	6.1	4.9	3.7	3.6	3.1	2.5	2.1	0.8	0.3	1.3	1.2	2.6	3.8	8.9
18-Feb	0.9	0.7	1.4	Z	2.2	1.0	0.4	0.8	0.6	0.9	1.3	0.8	0.7	0.7	0.5	0.8	0.6	1.7	3.1	3.7	0.6	0.9	0.8	1.4	1.2	3.7
19-Feb	1.1	3.1	2.3	1.1	Z	2.4	9.9	5.2	4.1	2.4	6.6	5.0	8.4	7.4	10.2	5.9	3.3	9.2	17.4	2.1	2.8	2.0	1.2	1.9	5.0	17.4
20-Feb	2.2	1.7	1.7	2.8	1.1	Z	4.3	8.0	9.9	8.3	4.6	3.7	3.9	4.2	4.8	8.6	6.7	2.6	3.9	1.9	2.0	2.2	2.7	3.1	4.1	9.9
21-Feb	Z	9.0	9.6	11.4	16.4	16.0	16.7	14.4	15.6	16.7	10.2	14.9	6.9	6.8	6.5	4.2	2.9	3.6	3.1	3.3	4.3	9.9	8.8	5.5	9.4	16.7
22-Feb	3.5	Z	2.3	1.9	1.7	1.6	2.0	1.7	1.3	1.6	3.0	3.2	2.9	7.2	10.4	9.4	8.1	10.7	12.0	16.4	16.6	10.1	7.0	6.1	6.1	16.6
23-Feb	4.8	3.4	Z	1.2	1.4	0.6	1.0	1.6	1.8	4.8	3.8	2.3	1.3	1.0	2.8	3.2	6.6	3.2	3.3	3.2	2.4	3.2	4.6	6.3	2.9	6.6
24-Feb	2.4	0.8	2.1	Z	2.6	2.6	2.0	2.8	1.9	2.5	2.3	1.7	2.2	2.1	2.2	2.9	2.7	1.0	0.4	0.2	0.2	0.2	0.3	0.1	1.7	2.9
25-Feb	0.1	0.7	0.3	0.2	Z	0.2	0.2	0.2	0.4	0.2	0.2	0.6	1.1	1.3	0.9	0.5	0.3	1.0	0.4	0.2	0.2	0.2	0.2	0.2	0.4	1.3
26-Feb	2.3	3.3	2.6	2.9	4.4	Z	3.1	2.0	2.7	2.7	2.7	2.7	2.6	1.8	1.8	0.8	1.2	2.7	3.0	3.6	5.7	8.1	11.2	10.6	3.7	11.2
27-Feb	Z	8.5	8.0	8.6	10.4	8.7	9.4	19.7	17.7	12.9	4.4	2.4	1.6	1.6	0.7	0.6	0.6	1.0	1.1	3.1	4.3	12.2	9.2	5.9	6.6	19.7
28-Feb	4.9	Z	1.6	1.3	1.0	1.7	2.9	1.9	1.5	1.8	1.2	0.8	0.7	0.6	0.6	0.8	0.7	1.0	0.8	0.8	0.8	0.8	0.9	0.6	1.3	4.9
29-Feb	0.5	0.6	Z	0.6	0.7	0.7	0.9	0.7	0.7	0.7	0.6	0.6	0.6	0.8	1.2	0.8	0.9	2.2	1.6	4.6	7.3	9.6	8.7	13.5	2.6	13.5
4.4 4.4 5.0 4.7 6.5 4.7 5.4 5.8 4.5 4.0 3.1 3.1 3.0 2.7 3.1 3.4 3.6 4.1 4.8 4.8 5.0 5.6 5.5 5.8																								Diurnal Average		
21.4 19.8 16.1 15.6 19.6 17.4 18.1 31.0 17.7 16.7 10.5 14.9 8.4 7.4 10.4 10.3 12.5 15.8 17.4 24.9 26.2 25.8 23.5 22.2																								Diurnal Maximum		

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Wapasu - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Wapasu - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	649	98.48	98.48
21 - 40	10	1.52	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Wapasu - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	88	54	20	11	14	24	75	114	65	43	43	22	9	15	9	41	647
21 - 40	3	2	0	1	0	1	0	0	0	0	0	0	0	0	0	3	10
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	91	56	20	12	14	25	75	114	65	43	43	22	9	15	9	44	657

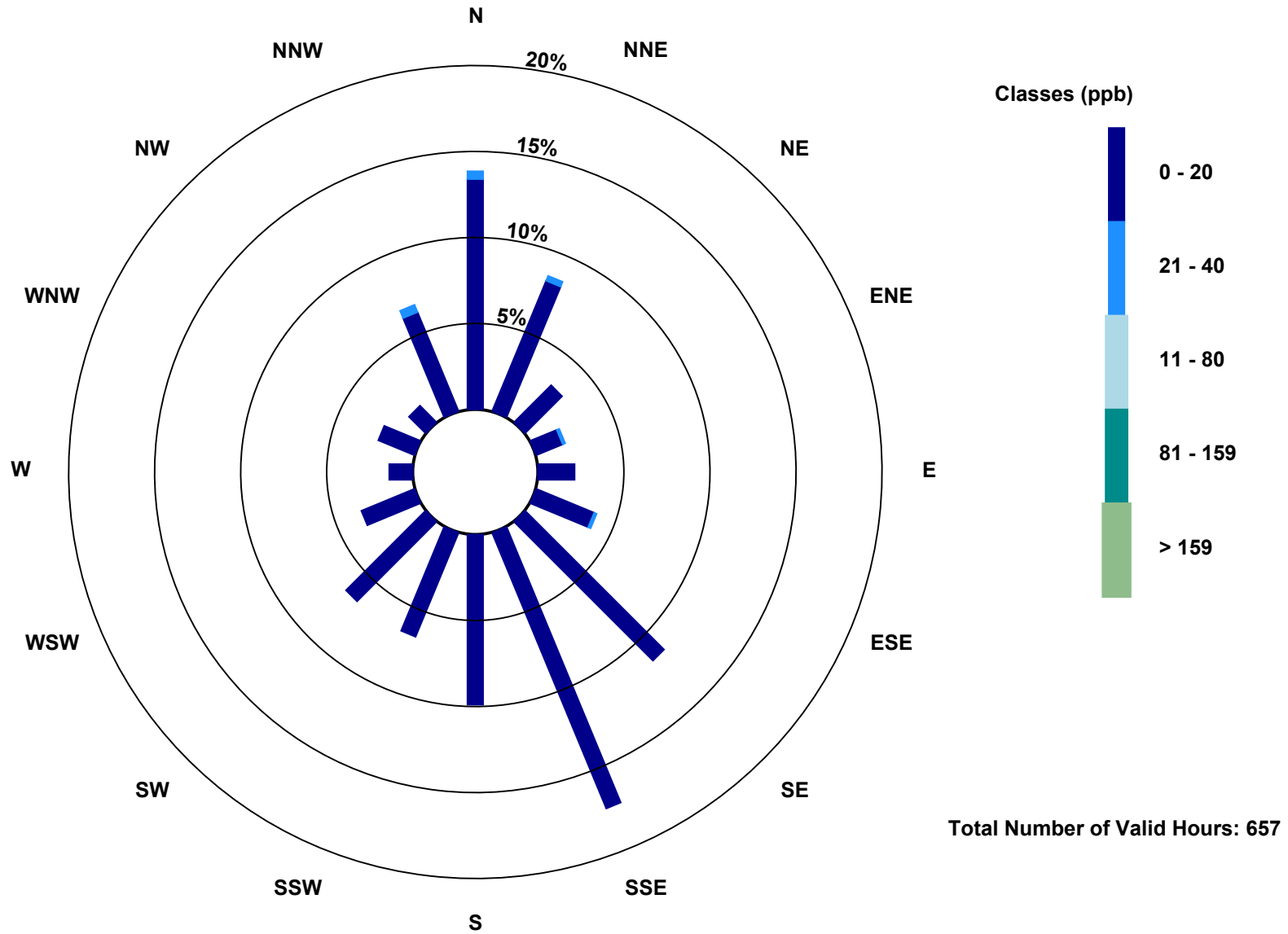
Total Number of Valid Hours: 657

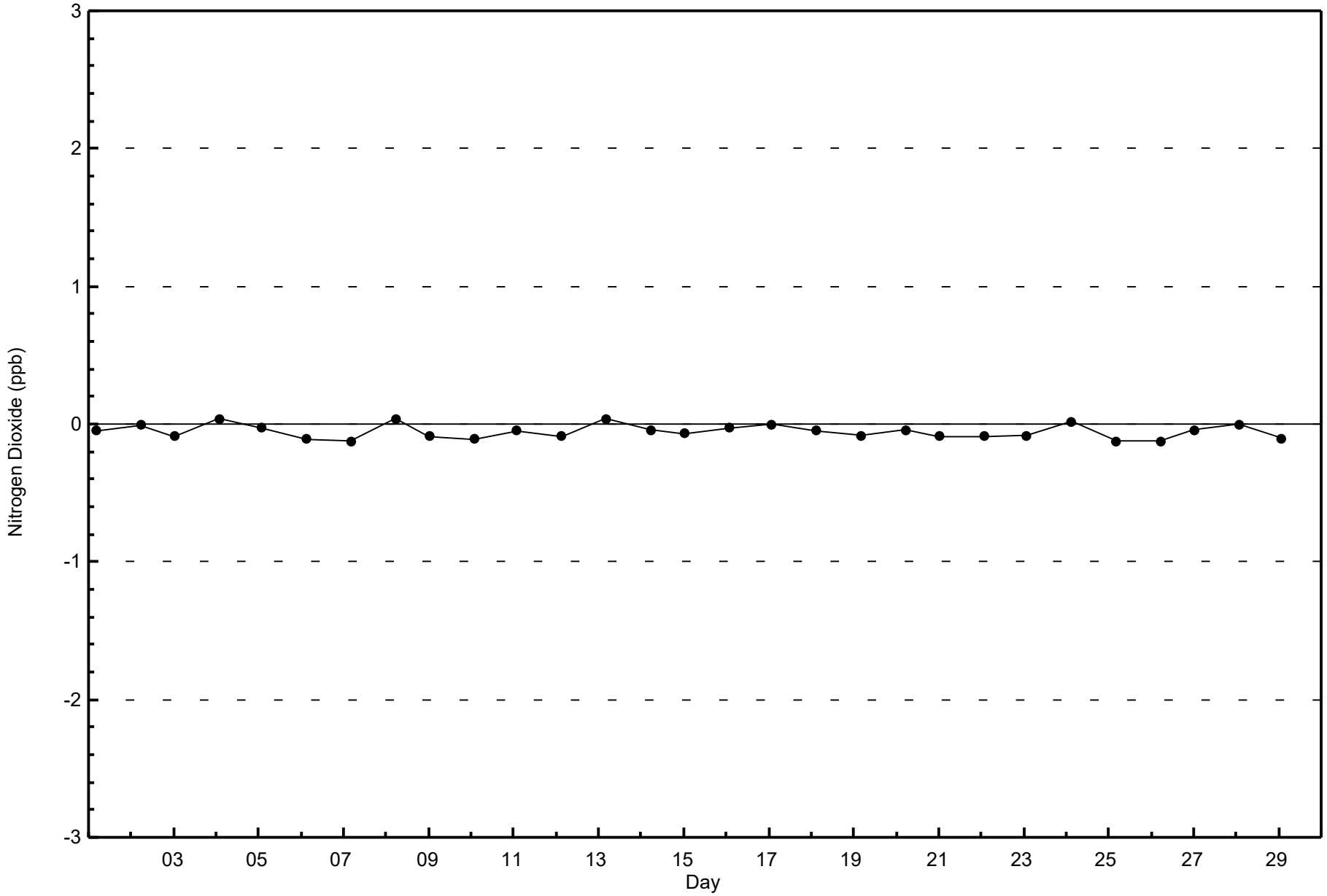
Total Number of Hours: 696

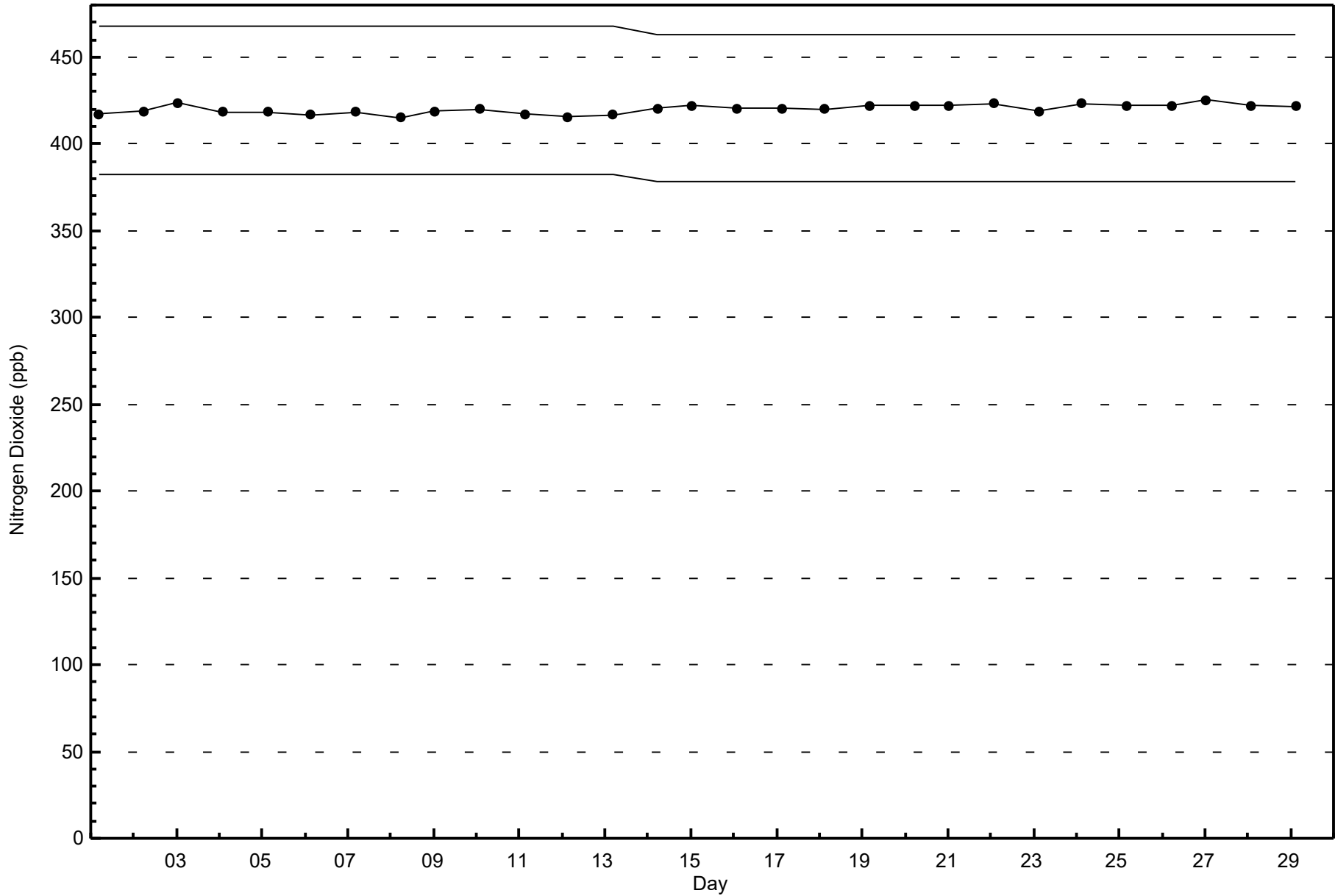


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Wapasu









Wood Buffalo Environmental Association
Summary of Hour Averages

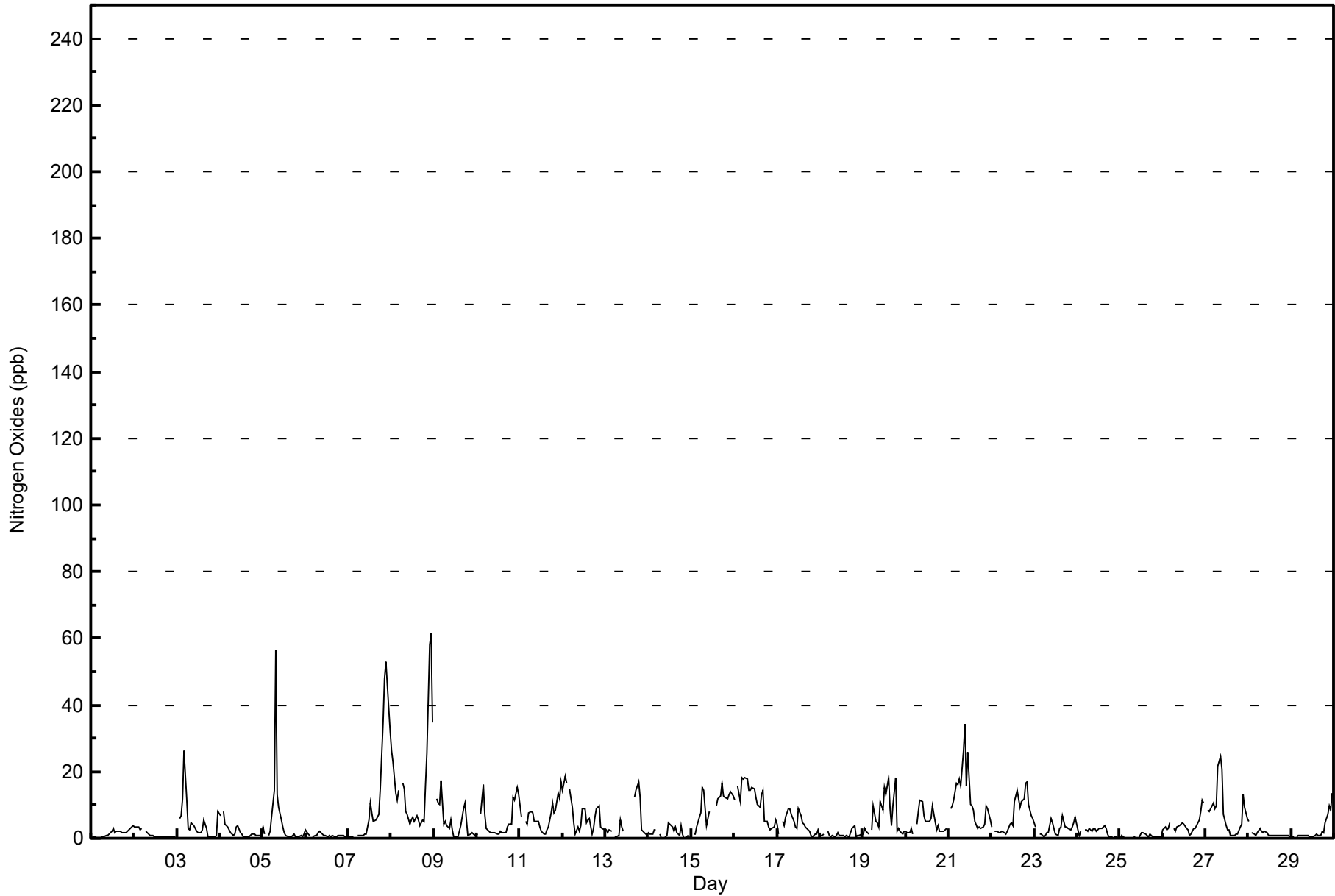
Nitrogen Oxides (NO_x) - ppb
Wapasu - February 2024

Maximum Value: 61.6 ppb on Feb 8 23:00		Maximum Daily Average: 16.4 ppb on Feb 8		Hours in Service: 696																																													
Minimum Value: 0.1 ppb on Feb 25 00:00		Minimum Daily Average: 0.5 ppb on Feb 25		Hours of Data: 659																																													
Maximum Diurnal Average: 7.8 ppb at hour 22		Minimum Diurnal Average: 3.7 ppb at hour 14		Hours of Missing Data: 37																																													
Monthly Average: 5.23 ppb		Percentiles: P ₁ = 0.2 P ₁₀ = 0.5 Q ₁ = 1.0 Median = 2.7 Q ₃ = 6.8 P ₉₀ = 13.2 P ₉₉ = 34.8		Hours of Calibration: 34																																													
				Percent Operational Time: 99.6																																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.3	0.4	0.4	0.4	Z	0.5	0.5	0.6	0.9	0.8	1.3	2.2	3.0	1.8	2.1	2.2	1.9	1.5	1.6	1.6	2.3	2.4	3.0	3.8	1.5	3.8																							
2-Feb	3.6	3.3	3.2	2.4	3.0	Z	2.1	1.7	1.4	1.0	0.7	0.6	0.5	0.5	0.4	0.6	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.3	1.2	3.6																							
3-Feb	Z	6.0	6.8	11.8	26.2	11.5	3.2	2.6	4.8	3.7	2.9	2.3	1.5	1.6	2.5	5.6	2.8	0.3	0.2	0.2	0.3	0.2	1.1	7.9	4.6	26.2																							
4-Feb	6.6	Z	8.2	4.1	3.3	2.5	1.5	1.0	1.2	3.4	3.7	1.7	1.2	0.5	0.4	0.5	0.5	0.7	1.1	1.3	1.0	0.9	0.9	0.8	2.0	8.2																							
5-Feb	3.2	1.3	Z	0.9	2.3	6.2	14.3	56.5	13.1	9.3	5.5	3.5	1.8	1.0	0.6	0.4	0.4	1.3	0.3	0.2	0.2	0.8	0.6	1.4	5.4	56.5																							
6-Feb	2.7	1.3	0.6	Z	0.6	1.0	1.0	1.7	1.9	1.1	0.8	0.9	0.5	0.8	0.6	0.8	0.6	0.5	0.8	0.9	1.0	0.8	0.4	0.4	0.9	2.7																							
7-Feb	0.5	0.6	0.5	0.6	Z	0.7	0.9	0.7	0.9	1.1	1.1	5.4	10.6	7.8	5.2	5.6	6.2	7.3	14.8	34.9	47.8	52.9	39.1	32.1	12.1	52.9																							
8-Feb	26.3	22.8	13.4	11.6	14.6	Z	16.3	14.8	8.0	7.3	4.1	5.4	6.4	5.2	6.8	5.3	3.9	5.4	5.0	15.8	25.3	58.0	61.6	34.8	16.4	61.6																							
9-Feb	Z	12.1	10.6	10.1	17.4	4.1	5.0	3.6	2.9	5.7	2.7	0.6	0.3	0.4	1.9	3.8	9.1	10.8	5.4	1.0	1.3	1.8	1.2	0.9	4.9	17.4																							
10-Feb	1.1	Z	7.3	15.9	7.3	2.8	2.7	1.9	1.7	1.6	1.7	1.4	1.4	2.1	1.7	1.7	1.6	3.2	4.4	4.2	12.2	11.6	15.1	13.2	5.1	15.9																							
11-Feb	9.9	6.5	Z	5.1	4.2	7.4	7.9	7.5	5.0	5.1	5.3	3.4	2.0	1.2	1.4	2.4	3.3	7.7	10.7	7.8	8.3	13.5	11.9	16.9	6.7	16.9																							
12-Feb	14.3	18.7	16.6	Z	15.0	9.4	4.6	1.3	3.3	2.2	3.8	8.9	8.9	4.7	5.5	6.1	1.4	2.8	6.4	9.0	9.6	3.5	3.0	2.7	7.0	18.7																							
13-Feb	2.6	1.8	2.5	2.2	Z	0.3	0.4	0.7	5.3	3.4	2.1	C	C	C	C	C	12.2	14.2	16.8	12.5	2.6	2.1	1.4	1.4	4.7	16.8																							
14-Feb	1.6	1.4	1.5	2.5	2.7	Z	1.5	0.2	0.2	0.7	4.6	4.3	3.3	2.0	3.4	1.7	0.7	4.0	1.2	0.2	0.2	0.9	0.6	1.7	4.6	16.8																							
15-Feb	Z	1.3	1.2	3.2	6.6	7.7	15.3	14.6	3.8	5.7	8.2	M	M	M	9.9	12.1	12.7	16.7	12.5	12.5	11.7	13.3	13.9	12.6	9.8	16.7																							
16-Feb	11.6	Z	15.6	11.0	18.2	17.6	18.4	17.9	14.3	14.4	15.5	15.0	12.5	10.3	9.2	13.3	14.3	5.3	5.2	3.4	2.7	2.9	3.6	5.3	11.2	18.4																							
17-Feb	4.3	1.1	Z	5.2	3.7	6.5	8.9	9.0	7.2	5.3	3.4	3.2	8.7	6.8	4.8	4.4	3.4	2.6	2.1	0.8	0.3	1.4	1.2	2.6	4.2	9.0																							
18-Feb	0.9	0.7	1.4	Z	2.2	1.0	0.4	0.8	0.6	1.0	1.6	1.0	0.8	0.8	0.5	0.9	0.6	1.8	3.1	3.7	0.6	0.9	0.8	1.4	1.2	3.7																							
19-Feb	1.1	3.1	2.3	1.1	Z	2.4	9.9	5.2	4.6	3.2	11.0	8.4	15.4	13.0	18.1	9.0	4.0	9.6	18.2	2.1	2.8	2.0	1.3	2.0	6.5	18.2																							
20-Feb	2.2	1.7	1.7	2.8	1.1	Z	4.3	8.2	11.5	10.9	6.8	4.9	5.0	5.0	5.8	9.9	7.2	2.6	3.9	1.9	2.0	2.2	2.7	3.1	4.7	11.5																							
21-Feb	Z	9.0	9.6	11.4	16.6	16.1	17.8	15.6	26.2	34.5	15.7	25.9	10.2	9.5	8.5	5.0	3.1	3.6	3.1	3.3	4.3	9.9	8.8	5.5	11.9	34.5																							
22-Feb	3.5	Z	2.3	1.9	1.7	1.6	2.0	1.7	1.4	2.0	4.3	4.8	4.0	11.2	14.4	12.1	9.2	11.0	12.0	16.5	17.0	10.2	7.0	6.1	6.9	17.0																							
23-Feb	4.8	3.4	Z	1.2	1.4	0.6	1.0	1.6	1.8	5.8	4.6	3.1	1.3	1.0	3.0	3.3	6.7	3.2	3.3	3.2	2.4	3.2	4.6	6.3	3.1	6.7																							
24-Feb	2.4	0.8	2.1	Z	2.6	2.6	2.0	2.8	2.0	2.9	2.8	2.3	3.1	3.0	3.0	3.8	3.2	1.1	0.4	0.2	0.2	0.2	0.3	0.1	1.9	3.8																							
25-Feb	0.1	0.7	0.3	0.2	Z	0.2	0.2	0.2	0.4	0.2	0.2	0.7	1.7	1.9	1.3	0.7	0.4	1.1	0.4	0.2	0.2	0.2	0.2	0.2	0.5	1.9																							
26-Feb	2.3	3.3	2.6	2.9	4.5	Z	3.2	2.1	3.3	3.7	4.2	4.5	4.4	2.9	2.7	1.0	1.4	2.9	3.1	3.7	5.7	8.2	11.3	10.6	4.1	11.3																							
27-Feb	Z	8.6	8.1	8.7	10.6	8.9	9.7	21.7	24.6	20.9	7.3	4.0	2.5	2.5	1.0	0.8	0.8	1.1	1.2	3.2	4.4	13.2	9.3	6.0	7.8	24.6																							
28-Feb	5.0	Z	1.7	1.4	1.0	1.7	2.9	2.0	1.7	2.3	1.6	1.0	0.9	0.7	0.7	0.9	0.8	1.0	0.8	0.8	0.8	0.8	0.9	0.6	1.4	5.0																							
29-Feb	0.5	0.6	Z	0.6	0.7	0.7	0.9	0.7	0.7	0.7	0.6	0.6	0.6	0.8	1.2	0.8	0.9	2.2	1.6	4.6	7.3	9.6	8.7	13.5	2.6	13.5																							
																								4.6	4.6	5.0	4.8	7.0	4.7	5.5	6.8	5.3	5.5	4.3	4.5	4.2	3.7	4.1	4.2	4.0	4.2	4.9	5.2	6.0	7.8	7.4	6.7	Diurnal Average	
																								26.3	22.8	16.6	15.9	26.2	17.6	18.4	56.5	26.2	34.5	15.7	25.9	15.4	13.0	18.1	13.3	14.3	16.7	18.2	34.9	47.8	58.0	61.6	34.8	Diurnal Maximum	
Z - zerospan		C - Calibration				M - Maintenance																																											



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Wapasu - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Oxides (NO_x) - ppb
Wapasu - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	640	97.12	97.12
21 - 40	14	2.12	99.24
41 - 80	5	0.76	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Wapasu - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	88	54	19	11	14	24	75	113	64	40	42	22	9	15	8	40	638
21 - 40	1	0	1	0	0	1	0	1	1	3	1	0	0	0	1	4	14
11 - 80	2	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	91	56	20	12	14	25	75	114	65	43	43	22	9	15	9	44	657

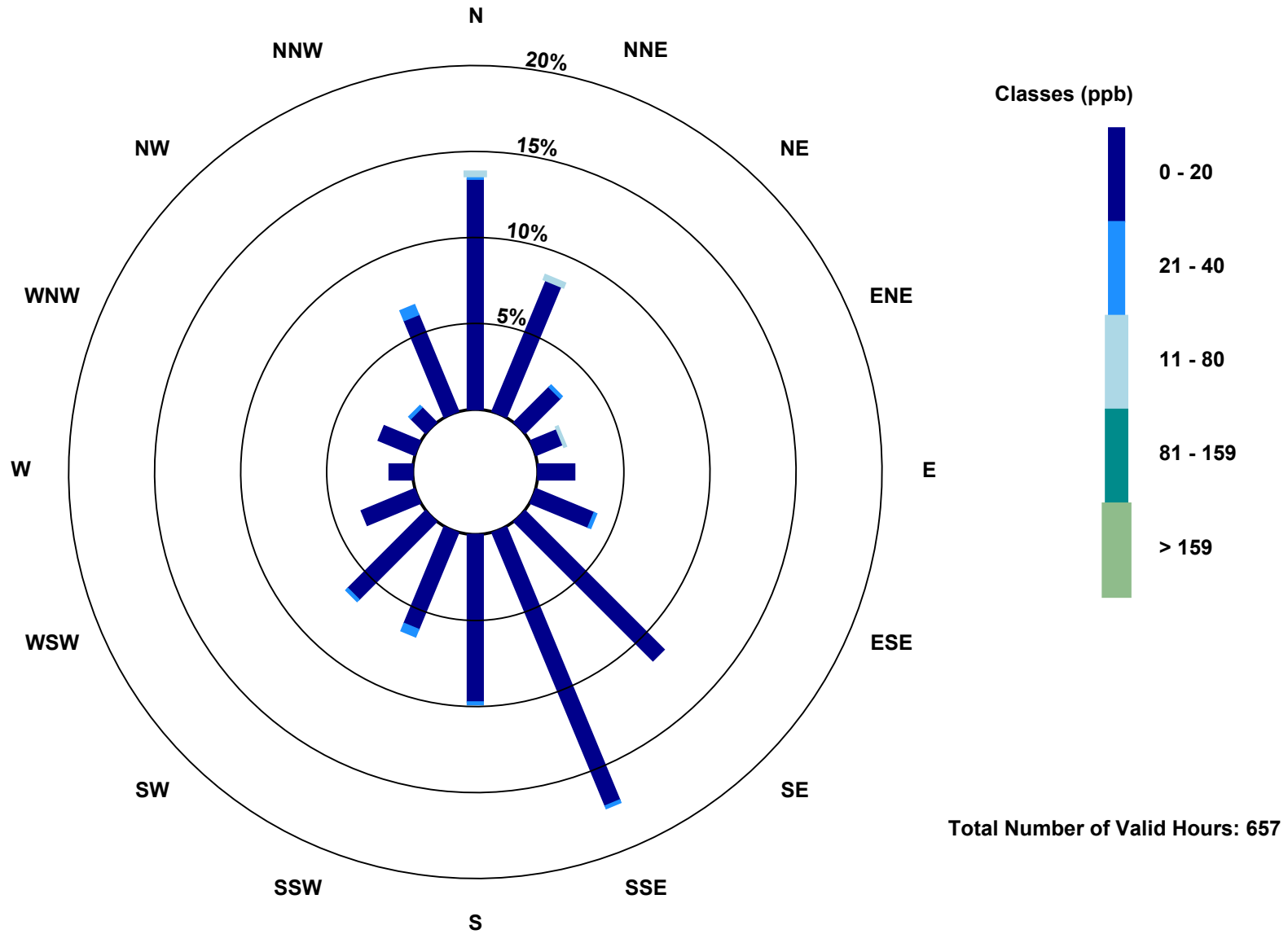
Total Number of Valid Hours: 657

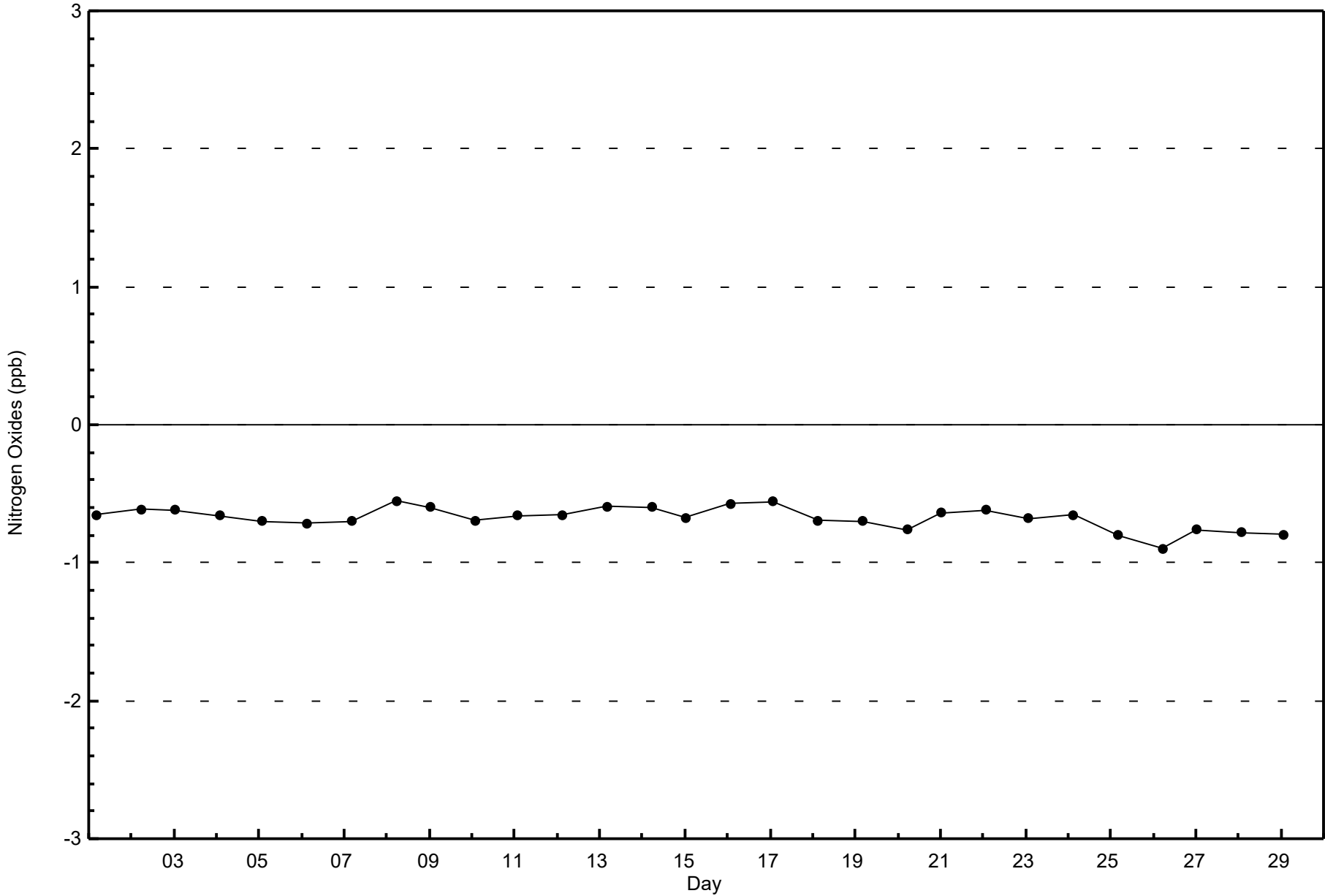
Total Number of Hours: 696

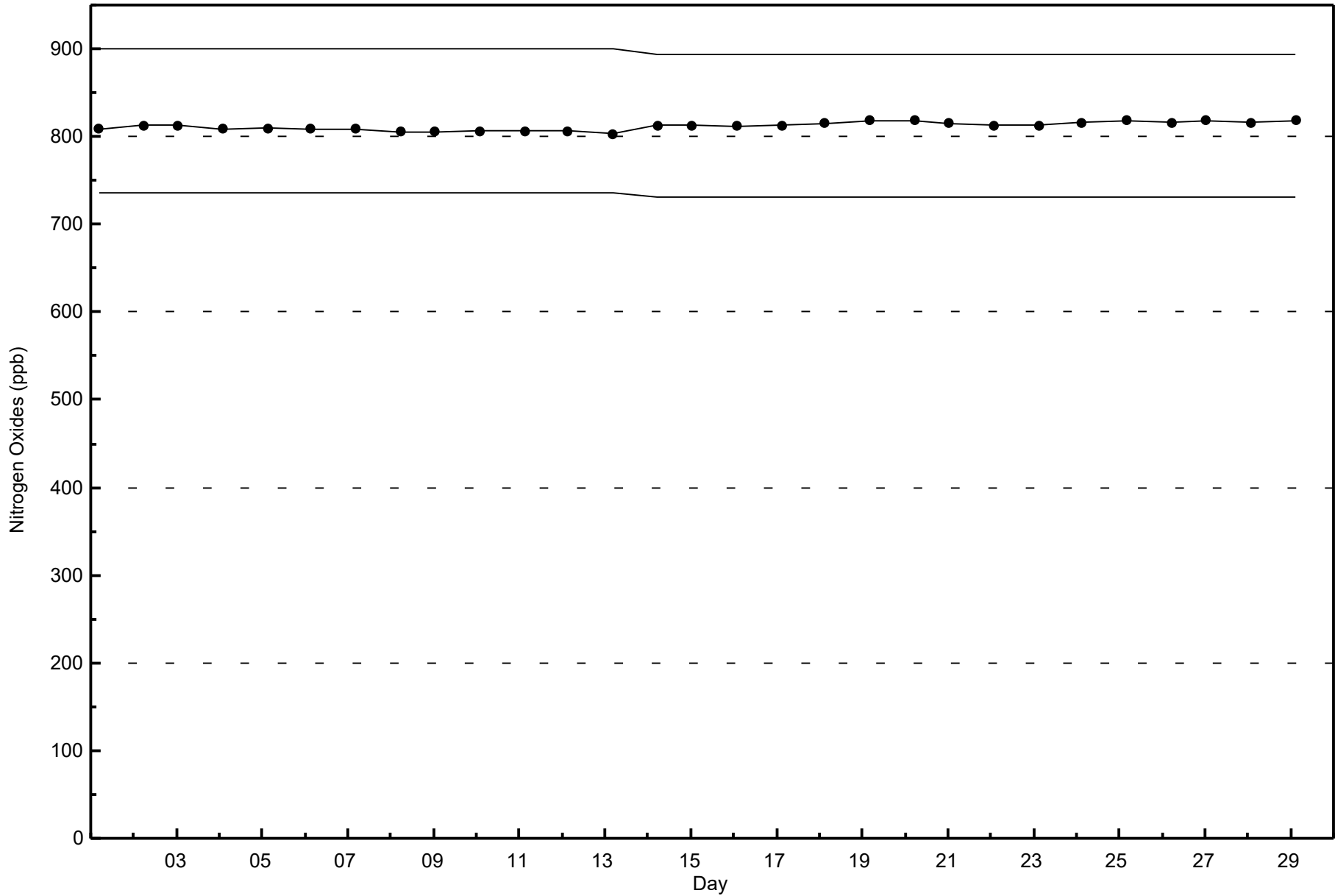


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Wapasu

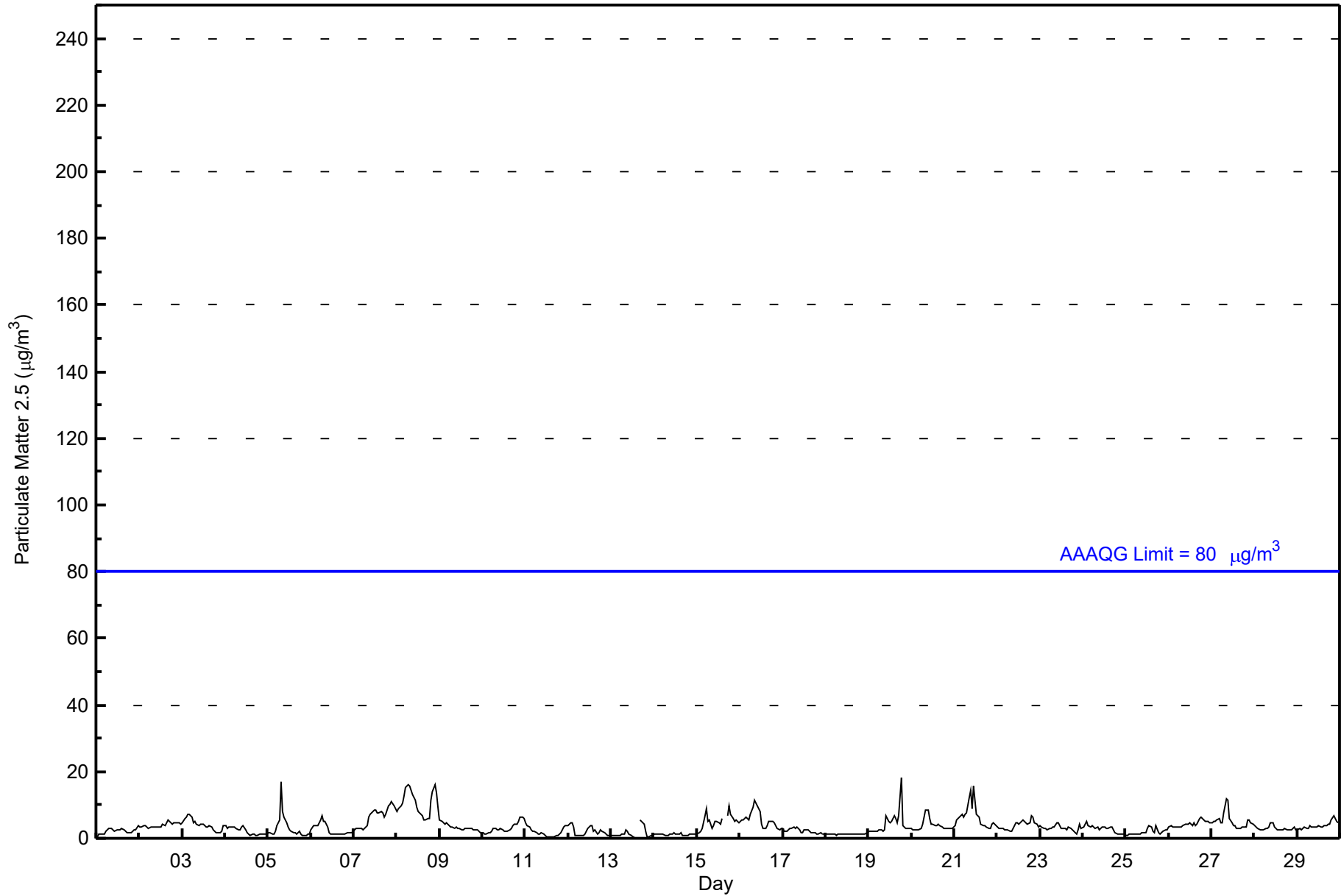








Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	692					
Maximum Value: 18.2 µg/m ³ on Feb 19 19:00		Maximum Daily Average: 10.6 µg/m ³ on Feb 8																	Hours of Data: 692							
Minimum Value: 0.4 µg/m ³ on Feb 11 15:00		Minimum Daily Average: 1.2 µg/m ³ on Feb 14																	Hours of Missing Data: 4							
Maximum Diurnal Average: 4.6 µg/m ³ at hour 10		Minimum Diurnal Average: 3.1 µg/m ³ at hour 1																	Hours of Calibration: 2							
Monthly Average: 3.64 µg/m ³		Percentiles: P ₁ = 0.6 P ₁₀ = 1.2 Q ₁ = 1.8 Median = 3.1 Q ₃ = 4.5 P ₉₀ = 6.6 P ₉₉ = 14.6																	Percent Operational Time: 99.7							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.5	1.1	1.1	1.2	1.4	2.2	2.6	2.8	2.9	2.5	2.3	2.6	2.7	2.7	2.8	2.5	2.1	1.8	1.8	1.8	2.1	2.3	2.6	4.0	2.2	4.0
2-Feb	3.4	3.5	3.8	3.8	3.5	3.1	3.2	3.5	3.6	3.3	3.4	3.2	3.4	4.1	3.9	4.7	5.5	4.9	4.1	4.7	4.6	4.8	4.5	4.3	3.9	5.5
3-Feb	4.8	5.9	6.5	7.0	7.2	6.2	4.6	4.9	4.4	4.0	4.2	4.2	4.0	3.6	3.2	3.6	3.5	2.6	2.2	1.9	1.7	1.7	2.3	4.0	4.1	7.2
4-Feb	4.0	3.0	3.4	3.6	3.4	3.3	3.1	2.6	2.5	3.2	3.7	2.4	1.7	1.2	1.0	1.2	1.1	1.0	1.0	1.2	1.2	1.2	1.4	1.5	2.2	4.0
5-Feb	1.6	1.5	1.4	1.3	2.2	4.0	5.3	17.1	8.1	6.3	4.7	3.6	2.7	1.9	1.8	1.6	1.4	2.1	1.1	1.0	1.0	1.0	1.1	1.4	3.1	17.1
6-Feb	2.6	3.8	3.9	3.7	3.6	5.4	6.9	5.2	5.0	3.2	1.7	1.4	1.1	1.3	1.3	1.4	1.3	1.3	1.2	1.4	1.6	1.7	1.8	1.8	2.6	6.9
7-Feb	2.5	2.9	3.0	2.9	2.9	2.7	2.8	3.7	6.2	7.1	7.7	8.3	8.4	7.6	7.5	7.9	7.8	6.6	7.0	9.8	10.2	11.0	9.7	8.8	6.5	11.0
8-Feb	7.9	8.9	9.8	10.6	12.9	15.3	15.9	15.5	14.4	13.1	11.4	9.2	8.1	7.8	6.8	5.6	5.6	5.9	5.8	11.6	14.0	16.0	13.5	9.2	10.6	16.0
9-Feb	5.6	5.1	4.7	4.4	4.7	3.9	3.4	3.2	3.1	3.3	3.1	2.8	2.6	2.6	2.8	2.9	3.1	3.1	2.8	2.4	2.5	2.5	2.1	1.7	3.3	5.6
10-Feb	1.6	1.3	1.4	1.9	1.8	2.0	3.1	2.9	2.5	2.6	2.8	2.6	2.3	2.1	2.1	2.5	3.0	3.9	4.2	4.1	5.0	6.2	6.4	5.9	3.1	6.4
11-Feb	4.5	4.0	3.5	2.7	2.3	1.9	1.7	1.3	1.2	1.9	1.3	0.8	0.6	0.5	0.4	0.5	0.4	0.8	0.7	1.3	1.6	3.5	3.7	4.0	1.9	4.5
12-Feb	3.7	4.8	4.6	3.5	1.0	1.1	0.9	0.7	0.9	1.4	2.1	2.9	3.9	3.7	2.2	2.5	1.4	1.7	2.5	2.1	1.8	1.4	0.8	0.9	2.2	4.8
13-Feb	0.8	0.8	0.8	0.8	0.9	1.0	1.1	1.2	2.4	2.0	1.4	0.8	0.6	0.4	C	C	5.5	5.2	4.0	2.2	0.6	0.5	0.8	0.9	1.6	5.5
14-Feb	1.1	1.1	1.1	1.1	1.3	1.1	1.0	0.8	0.9	1.4	1.4	1.6	1.3	1.2	1.3	1.5	0.8	0.9	1.0	1.0	1.1	1.2	1.4	1.3	1.2	1.6
15-Feb	1.5	1.8	2.0	2.9	6.8	8.8	5.2	5.5	2.8	3.6	4.9	5.3	4.5	4.3	5.9	M	M	7.0	9.7	7.2	5.7	5.0	5.4	4.7	5.0	9.7
16-Feb	5.2	5.5	5.7	6.3	5.8	5.7	7.0	9.3	11.5	10.7	9.7	8.0	4.3	3.2	2.9	3.8	4.9	5.2	5.1	4.7	3.8	2.9	2.7	3.0	5.7	11.5
17-Feb	3.0	2.3	2.2	2.6	3.0	3.1	3.3	3.0	3.3	2.6	1.9	1.8	2.5	2.5	2.4	2.2	1.8	1.7	1.7	1.4	1.3	1.5	1.2	1.4	2.2	3.3
18-Feb	1.4	1.2	1.2	1.2	1.1	1.1	1.0	1.1	1.1	1.3	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.3	1.4	1.3	1.1	1.3	1.4	1.7	1.3	1.7
19-Feb	2.0	2.1	2.2	1.9	2.1	2.3	2.7	2.4	2.2	2.7	6.8	5.1	4.8	5.0	6.7	5.9	4.5	6.6	18.2	3.6	3.2	3.0	2.9	3.0	4.2	18.2
20-Feb	2.8	2.6	2.6	2.7	2.4	2.8	4.1	6.5	8.7	8.5	6.0	4.3	4.1	3.8	3.9	4.0	4.0	3.3	3.1	3.0	2.9	2.8	2.9	3.1	4.0	8.7
21-Feb	3.8	5.3	5.9	6.5	7.2	6.4	7.1	7.6	12.3	14.5	8.7	15.6	7.3	6.7	6.3	4.3	3.7	3.7	3.4	2.9	3.0	4.4	4.7	3.9	6.5	15.6
22-Feb	3.4	3.1	2.9	2.8	2.7	2.5	2.4	2.3	2.3	2.8	4.7	4.7	4.3	4.8	5.5	4.9	4.5	4.1	4.5	6.6	6.2	4.8	4.1	3.6	3.9	6.6
23-Feb	3.7	3.5	3.1	2.8	2.6	2.8	3.1	3.4	3.3	4.5	4.6	4.0	3.1	2.8	3.0	2.6	3.2	3.1	2.7	2.1	1.3	2.4	4.4	2.9	3.1	4.6
24-Feb	3.2	4.1	4.9	3.9	3.6	3.6	3.6	2.8	3.2	2.7	2.9	3.2	3.2	3.0	3.1	3.5	3.3	2.5	1.7	1.4	1.4	1.1	1.2	1.2	2.9	4.9
25-Feb	1.0	0.9	1.2	1.3	1.3	1.2	1.2	1.2	1.3	1.5	1.5	1.8	2.8	3.7	3.2	2.0	1.6	3.9	1.6	1.4	1.7	2.1	2.4	2.4	1.8	3.9
26-Feb	3.3	4.0	3.6	3.2	3.5	3.4	3.4	3.3	3.9	4.1	4.1	4.4	4.8	4.0	4.8	4.0	4.1	6.0	6.2	5.8	5.3	5.2	4.9	4.5	4.3	6.2
27-Feb	4.5	4.9	5.1	5.6	5.8	4.8	4.6	7.7	12.0	11.6	6.0	4.7	4.0	3.9	3.2	2.8	3.1	3.3	3.3	3.6	5.6	5.6	4.5	4.4	5.2	12.0
28-Feb	3.9	3.4	3.0	2.7	2.6	2.7	3.0	3.1	3.6	4.5	4.8	3.3	2.9	2.6	2.6	2.5	2.6	2.8	2.6	2.5	2.6	2.7	3.6	2.7	3.1	4.8
29-Feb	2.7	2.8	2.6	3.2	3.6	3.1	3.1	3.7	3.4	3.4	3.2	3.4	3.7	3.6	3.6	3.7	3.7	4.3	4.1	5.6	6.7	6.0	4.9	4.7	3.9	6.7
3.1 3.3 3.3 3.4 3.6 3.7 3.8 4.4 4.6 4.6 4.2 4.0 3.5 3.3 3.4 3.2 3.2 3.5 3.8 3.4 3.5 3.7 3.6 3.3																								Diurnal Average		
7.9 8.9 9.8 10.6 12.9 15.3 15.9 17.1 14.4 14.5 11.4 15.6 8.4 7.8 7.5 7.9 7.8 7.0 18.2 11.6 14.0 16.0 13.5 9.2																								Diurnal Maximum		
C - Calibration M - Maintenance																										
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Wapasu - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	583	84.25	84.25
6 - 15	104	15.03	99.28
16 - 25	5	0.72	100.00
26 - 80	0	0.00	100.00
> 81.0	0	0.00	100.00

Total Number of Valid Hours: 692

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - μg/m³
Wapasu - February 2024

Concentration Ranges (μg/m ³)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	85	51	18	11	13	25	75	112	44	33	31	20	7	15	6	37	583
6 - 15	9	4	3	1	1	2	5	10	23	11	15	4	2	0	3	9	102
16 - 25	1	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
26 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	95	57	21	12	14	27	80	122	67	45	46	24	9	15	9	46	689

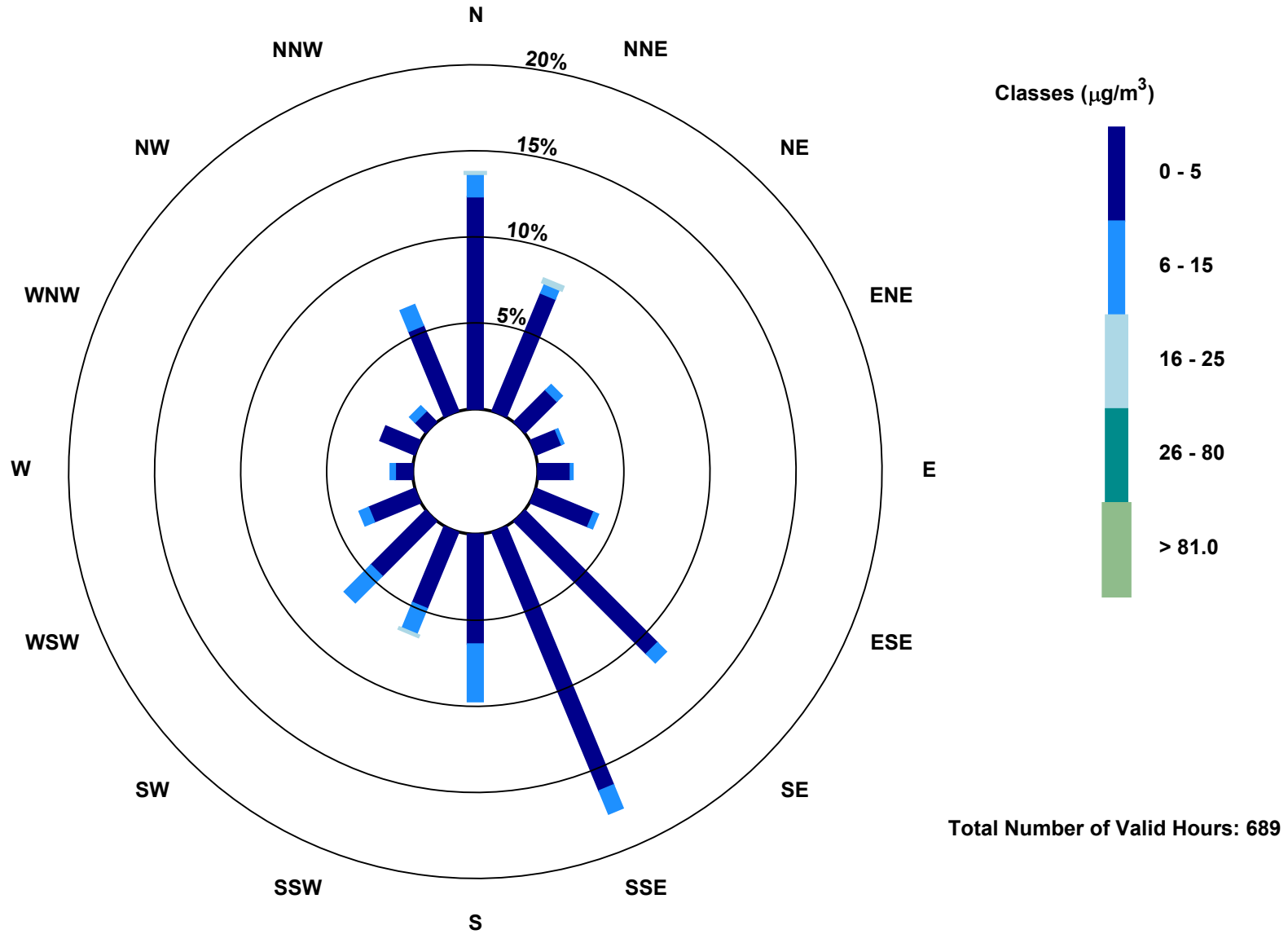
Total Number of Valid Hours: 689

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Wapasu

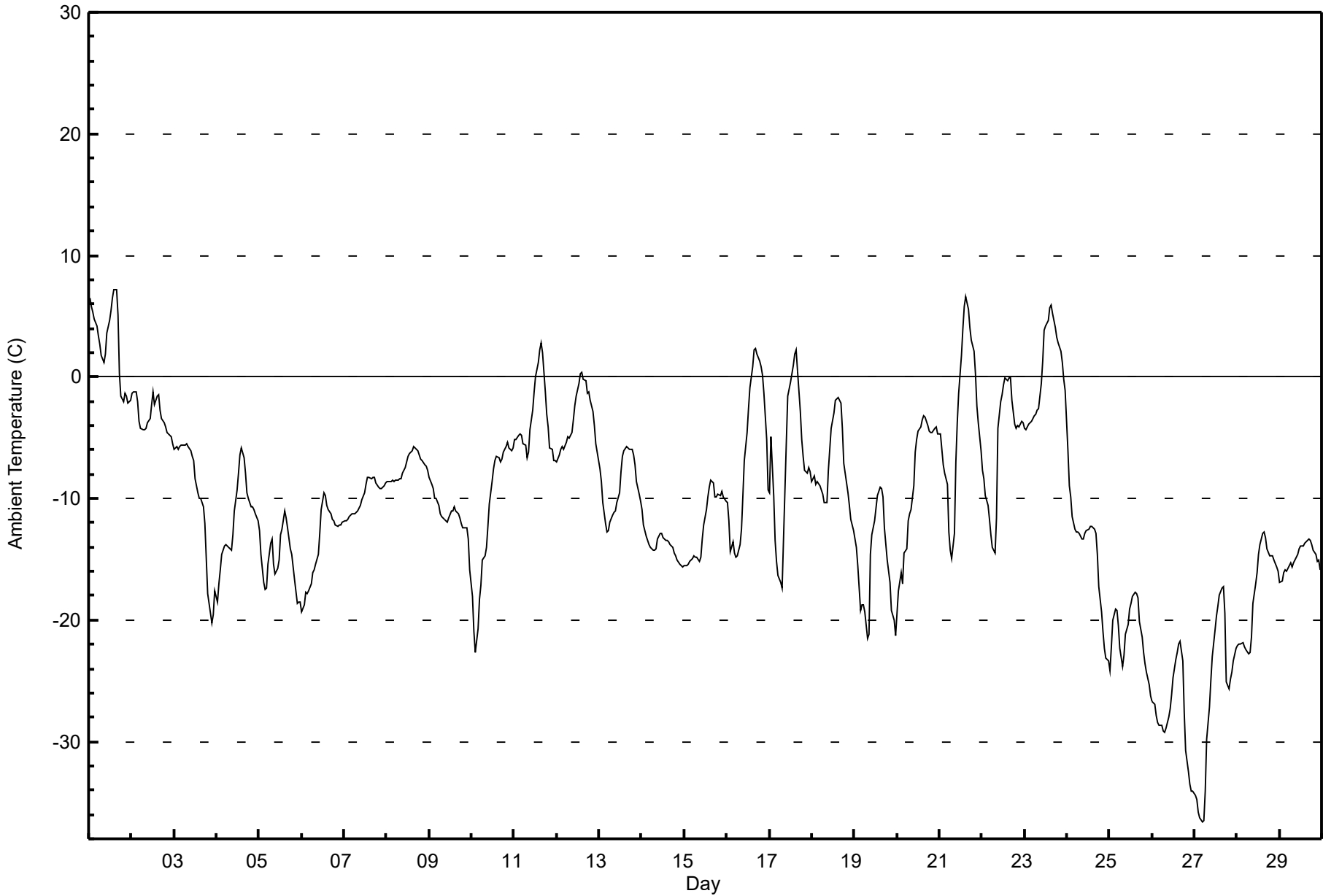




Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature (AT) - C
Wapasu - February 2024

Maximum Value: 7.2 C on Feb 1 16:00 Maximum Daily Average: 2.8 C on Feb 1																					Hours in Service: 696 Hours of Data: 696					
Minimum Value: -36.6 C on Feb 27 05:00 Minimum Daily Average: -27.8 C on Feb 26																					Hours of Missing Data: 0 Hours of Calibration: 0					
Maximum Diurnal Average: -6.3 C at hour 16 Minimum Diurnal Average: -13.5 C at hour 6																					Percent Operational Time: 100.0					
Monthly Average: -10.61 C Percentiles: P ₁ = -34.1 P ₁₀ = -21.0 Q ₁ = -15.0 Median = -10.5 Q ₃ = -5.3 P ₉₀ = -1.1 P ₉₉ = 5.8																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	6.5	5.8	5.3	4.7	4.2	3.4	2.7	1.8	1.2	1.9	3.6	4.6	5.4	6.5	7.2	7.2	5.1	0.3	-1.6	-2.0	-1.4	-1.6	-2.2	-1.9	2.8	7.2
2-Feb	-1.3	-1.3	-1.2	-2.1	-3.7	-4.2	-4.3	-4.3	-4.3	-3.8	-3.4	-2.2	-1.3	-2.2	-1.6	-1.4	-2.7	-3.4	-3.8	-4.1	-4.5	-4.9	-4.9	-5.5	-3.2	-1.2
3-Feb	-5.9	-5.7	-6.0	-5.7	-5.6	-5.6	-5.6	-5.5	-5.7	-6.0	-6.5	-6.9	-8.4	-9.6	-10.1	-10.0	-10.7	-12.1	-14.9	-17.9	-19.5	-20.2	-19.5	-17.6	-10.1	-5.5
4-Feb	-18.5	-17.1	-15.9	-14.6	-13.9	-13.8	-13.9	-14.2	-14.3	-13.0	-11.0	-9.3	-7.9	-6.5	-5.9	-6.6	-7.9	-9.6	-9.9	-10.7	-10.7	-10.9	-11.3	-11.8	-11.6	-5.9
5-Feb	-12.6	-14.7	-16.9	-17.4	-17.3	-15.4	-13.6	-13.3	-15.4	-16.2	-15.8	-15.1	-12.9	-12.5	-11.1	-11.6	-12.4	-14.1	-14.6	-15.6	-16.7	-18.7	-18.5	-18.5	-15.0	-11.1
6-Feb	-19.3	-18.8	-17.7	-17.8	-17.6	-17.0	-16.1	-15.9	-15.4	-14.6	-12.8	-11.0	-9.5	-9.7	-10.5	-10.9	-11.2	-11.7	-11.8	-12.1	-12.3	-12.2	-12.2	-12.0	-13.8	-9.5
7-Feb	-11.8	-11.8	-11.8	-11.5	-11.3	-11.3	-11.3	-11.1	-10.8	-10.5	-10.1	-9.5	-8.8	-8.3	-8.3	-8.4	-8.3	-8.3	-8.7	-9.1	-9.2	-9.2	-9.0	-8.7	-9.9	-8.3
8-Feb	-8.6	-8.6	-8.7	-8.5	-8.6	-8.5	-8.5	-8.4	-8.4	-8.0	-7.5	-7.0	-6.5	-6.2	-6.1	-5.8	-5.9	-6.1	-6.5	-6.8	-6.9	-7.2	-7.4	-7.7	-7.4	-5.8
9-Feb	-8.3	-8.9	-9.2	-10.0	-10.0	-10.6	-11.2	-11.4	-11.7	-11.9	-11.9	-11.6	-11.1	-11.0	-10.7	-11.0	-11.2	-11.6	-12.0	-12.4	-12.5	-12.4	-13.3	-15.9	-11.3	-8.3
10-Feb	-18.1	-21.0	-22.7	-20.8	-18.3	-17.2	-15.0	-14.7	-14.1	-12.3	-10.5	-8.6	-7.6	-6.9	-6.5	-6.7	-7.0	-6.8	-6.1	-5.7	-5.4	-5.8	-6.0	-5.9	-11.2	-5.4
11-Feb	-5.1	-5.1	-4.8	-4.7	-4.8	-5.6	-5.6	-6.6	-6.2	-4.3	-2.7	-1.2	0.1	1.2	2.2	2.8	2.0	-1.2	-3.1	-4.1	-5.9	-6.0	-6.9	-6.9	-3.4	2.8
12-Feb	-7.0	-6.5	-6.0	-5.7	-5.9	-5.4	-4.9	-5.0	-4.5	-3.5	-2.4	-1.6	-0.6	0.3	0.4	-0.2	-0.3	-1.4	-1.3	-1.9	-2.8	-4.0	-5.5	-6.9	-3.4	0.4
13-Feb	-7.6	-8.6	-10.3	-12.1	-12.8	-12.7	-11.9	-11.3	-11.2	-11.0	-10.3	-9.6	-7.8	-6.5	-6.0	-5.8	-5.8	-6.0	-6.0	-6.4	-7.2	-8.6	-9.7	-10.2	-9.0	-5.8
14-Feb	-11.0	-12.2	-13.2	-13.5	-13.8	-14.1	-14.2	-14.2	-14.1	-13.3	-12.9	-12.9	-13.2	-13.5	-13.5	-13.6	-13.8	-14.0	-14.5	-14.7	-15.1	-15.4	-15.6	-15.6	-13.8	-11.0
15-Feb	-15.5	-15.5	-15.4	-15.2	-15.0	-14.7	-14.9	-14.8	-15.2	-14.9	-13.4	-12.2	-10.9	-9.8	-9.1	-8.5	-8.8	-9.9	-9.9	-9.6	-9.7	-9.4	-9.9	-10.3	-12.2	-8.5
16-Feb	-10.3	-11.9	-14.4	-13.6	-14.5	-14.8	-14.7	-13.8	-12.6	-9.7	-6.9	-4.6	-2.6	-0.9	0.9	2.2	2.3	1.9	1.3	0.8	0.2	-1.4	-5.1	-9.3	-6.3	2.3
17-Feb	-9.6	-4.9	-9.8	-13.4	-15.2	-16.4	-17.0	-17.4	-13.3	-5.4	-1.6	-1.0	-0.4	1.0	1.8	2.2	0.5	-2.8	-5.1	-6.6	-7.7	-7.9	-7.5	-7.7	-6.9	2.2
18-Feb	-8.6	-8.2	-8.9	-8.6	-8.9	-9.3	-9.7	-10.3	-10.4	-7.7	-5.9	-4.3	-3.0	-1.9	-1.8	-1.7	-2.1	-4.2	-7.1	-8.8	-9.5	-10.5	-11.7	-12.7	-7.3	-1.7
19-Feb	-13.4	-14.1	-15.6	-19.2	-18.8	-18.8	-19.3	-21.5	-21.2	-14.6	-13.0	-11.9	-10.8	-9.8	-9.1	-9.2	-9.8	-12.4	-15.1	-15.9	-16.9	-19.2	-20.0	-21.3	-15.4	-9.1
20-Feb	-19.5	-17.6	-16.1	-17.0	-14.5	-14.1	-11.8	-11.2	-10.9	-8.9	-6.2	-5.2	-4.5	-4.1	-3.5	-3.2	-3.4	-4.0	-4.4	-4.6	-4.6	-4.2	-4.1	-4.6	-8.4	-3.2
21-Feb	-4.7	-6.0	-7.2	-7.9	-8.8	-12.8	-14.3	-15.0	-12.9	-7.0	-3.8	-1.3	1.8	4.0	5.8	6.6	5.5	4.1	3.1	2.1	0.3	-2.4	-3.8	-6.1	-3.4	6.6
22-Feb	-7.7	-8.4	-9.7	-10.6	-11.7	-13.0	-14.1	-14.5	-11.6	-4.2	-2.1	-1.5	-0.6	0.0	-0.3	-0.1	-0.1	-1.9	-3.9	-4.3	-4.0	-4.2	-3.7	-3.8	-5.7	0.0
23-Feb	-4.2	-4.3	-3.9	-3.8	-3.6	-3.2	-3.0	-2.8	-2.6	-0.5	1.3	3.9	4.1	4.7	5.6	5.9	5.2	4.1	3.2	2.8	2.1	1.2	-0.2	-1.2	0.4	5.9
24-Feb	-6.1	-8.9	-9.8	-11.5	-12.5	-12.7	-12.7	-12.9	-13.3	-13.4	-12.8	-12.7	-12.5	-12.4	-12.3	-12.5	-12.9	-14.6	-17.2	-19.4	-20.9	-22.3	-23.1	-23.4	-14.3	-6.1
25-Feb	-24.1	-22.2	-20.0	-19.1	-19.3	-20.4	-22.3	-23.9	-23.0	-21.1	-20.4	-19.1	-18.6	-18.1	-17.7	-17.8	-18.1	-20.1	-21.4	-22.7	-23.6	-24.3	-25.3	-26.3	-21.2	-17.7
26-Feb	-26.7	-26.9	-27.9	-28.4	-28.7	-28.7	-29.1	-29.3	-28.9	-28.0	-27.2	-26.2	-24.8	-23.3	-22.7	-22.0	-21.7	-23.4	-27.6	-30.8	-32.5	-33.5	-34.1	-34.1	-27.8	-21.7
27-Feb	-34.4	-34.8	-35.8	-36.3	-36.6	-36.5	-34.1	-29.9	-27.2	-25.0	-23.0	-20.9	-19.7	-18.8	-17.9	-17.4	-17.2	-19.5	-25.1	-25.7	-24.9	-24.3	-23.4	-22.4	-26.3	-17.2
28-Feb	-22.1	-22.0	-22.0	-21.9	-22.2	-22.4	-22.8	-22.7	-21.5	-18.6	-17.1	-16.1	-14.6	-13.8	-12.8	-12.7	-13.2	-14.2	-14.7	-14.7	-14.7	-15.1	-15.6	-16.0	-17.6	-12.7
29-Feb	-16.9	-16.8	-16.1	-15.8	-16.0	-15.5	-15.3	-15.6	-15.3	-14.8	-14.6	-14.1	-13.9	-13.9	-13.7	-13.5	-13.4	-13.5	-13.8	-14.2	-14.6	-15.2	-15.1	-15.8	-14.9	-13.4
																								Diurnal Average		
																								Diurnal Maximum		





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ambient Temperature (AT) - C
Wapasu - February 2024

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	79	11.35	11.35
-20 - 0	560	80.46	91.81
0 - 10	57	8.19	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Relative Humidity (RH) - %

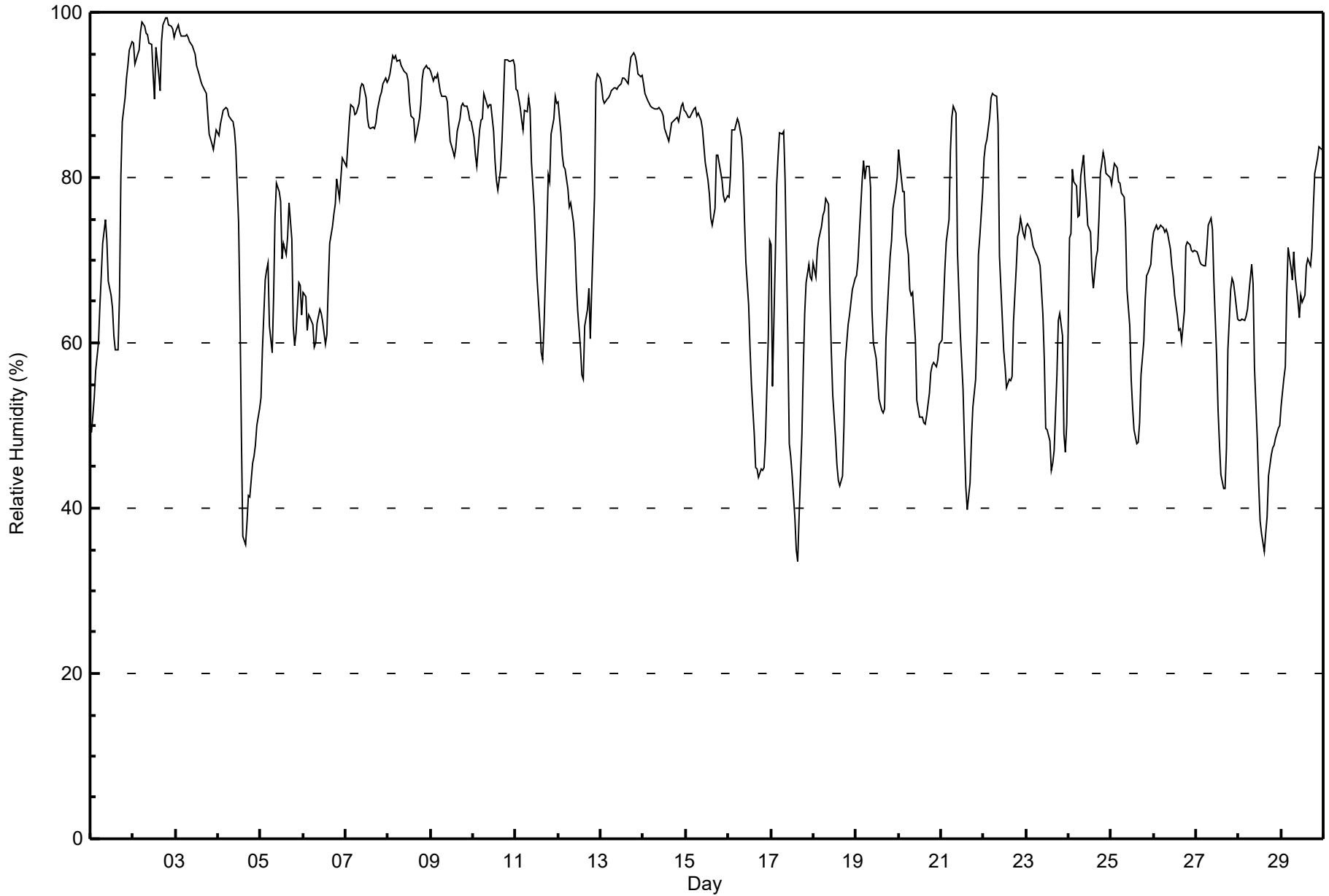
Wapasu - February 2024

Maximum Value: 99.3 % on Feb 2 20:00 Maximum Daily Average: 96.2 % on Feb 2																						Hours in Service: 696				
Minimum Value: 33.5 % on Feb 17 16:00 Minimum Daily Average: 52.1 % on Feb 28																						Hours of Data: 696				
Maximum Diurnal Average: 81.5 % at hour 8 Minimum Diurnal Average: 62.6 % at hour 15																						Hours of Missing Data: 0				
Monthly Average: 74.11 % Percentiles: P₁ = 38.2 P₁₀ = 50.3 Q₁ = 63.1 Median = 75.2 Q₃ = 87.5 P₉₀ = 92.2 P₉₉ = 98.2																						Hours of Calibration: 0				
																						Percent Operational Time: 100.0				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	49.1	51.3	53.4	56.7	60.0	64.4	68.1	72.0	74.9	72.3	67.4	65.8	64.3	60.9	59.2	59.2	65.5	80.2	86.8	89.7	92.1	93.6	95.4	96.5	70.8	96.5
2-Feb	96.3	93.8	94.9	95.4	97.6	98.8	98.2	97.5	97.2	96.3	96.1	92.5	89.6	95.8	92.6	90.6	96.5	98.5	99.3	99.3	98.5	98.3	98.0	96.9	96.2	99.3
3-Feb	97.6	98.5	97.7	97.1	97.1	97.1	97.3	96.9	96.4	96.0	95.5	94.8	93.5	92.4	91.7	91.1	90.5	90.1	87.6	85.3	84.1	83.5	84.6	85.7	92.6	98.5
4-Feb	85.0	86.4	87.3	88.2	88.5	88.4	87.5	86.9	86.9	85.7	83.5	74.6	63.8	48.9	36.7	35.6	38.3	41.5	41.4	45.4	46.3	47.7	50.0	52.0	65.7	88.5
5-Feb	53.3	59.1	67.7	68.9	69.6	62.1	58.9	65.6	75.2	79.3	78.3	77.2	70.2	72.1	70.7	72.8	76.9	72.5	62.1	59.7	61.1	67.3	67.0	63.4	68.0	79.3
6-Feb	66.2	65.6	61.5	63.4	63.0	62.2	59.4	59.9	62.4	64.1	63.6	62.5	59.8	60.9	66.9	72.0	74.1	75.6	76.8	79.9	77.5	80.1	82.3	82.0	68.4	82.3
7-Feb	81.4	84.2	86.7	88.9	88.5	87.7	87.7	89.0	90.8	91.4	91.2	89.7	87.1	86.0	85.9	86.1	86.0	86.6	88.1	89.9	90.4	91.3	92.0	91.5	88.3	92.0
8-Feb	91.8	92.5	94.7	94.4	94.7	94.0	94.2	93.6	93.3	92.8	92.6	91.6	89.2	87.5	87.1	84.6	85.3	87.1	88.8	91.8	93.0	93.6	93.3	93.3	91.4	94.7
9-Feb	92.8	91.7	92.2	92.1	92.5	90.3	89.8	89.9	89.8	89.2	86.6	84.5	83.2	82.5	83.6	85.6	87.0	88.6	89.1	88.7	88.6	88.0	87.0	86.7	88.3	92.8
10-Feb	85.0	82.8	81.4	85.7	87.0	87.2	90.1	89.0	88.5	88.8	88.8	85.6	82.1	79.7	78.5	81.1	84.7	89.3	94.2	94.3	94.1	94.0	94.3	93.6	87.5	94.3
11-Feb	90.7	90.5	88.6	86.9	85.8	88.2	87.9	89.6	88.4	81.9	76.2	71.8	67.8	62.4	58.8	57.9	62.2	73.8	80.3	79.4	85.3	87.1	89.9	89.0	80.0	90.7
12-Feb	89.1	85.4	82.7	81.3	80.9	78.7	76.5	77.0	74.6	72.2	67.2	63.9	59.4	56.1	55.6	62.1	64.0	66.7	60.5	66.5	77.6	91.5	92.6	92.1	73.9	92.6
13-Feb	91.2	89.4	89.1	89.5	89.6	90.1	90.5	90.8	90.8	90.8	91.0	91.3	92.1	92.1	91.8	91.3	93.2	94.6	95.0	94.8	93.9	92.5	92.2	92.4	91.7	95.0
14-Feb	91.4	90.1	89.3	89.0	88.6	88.5	88.4	88.3	88.3	88.6	88.0	87.4	85.9	84.9	84.4	85.4	86.5	86.9	87.1	87.3	86.8	88.6	88.9	88.1	87.8	91.4
15-Feb	88.0	87.2	87.2	87.7	88.3	88.5	87.5	87.8	87.0	86.0	83.9	81.9	79.6	77.9	75.0	74.2	76.2	82.7	82.6	81.6	79.7	77.9	77.1	77.7	82.6	88.5
16-Feb	77.6	80.2	85.8	85.8	86.4	87.1	86.7	84.8	81.8	75.2	69.8	64.6	59.3	54.9	48.9	44.9	44.7	43.8	44.8	44.6	45.0	48.3	60.6	72.4	65.8	87.1
17-Feb	71.9	54.7	70.1	79.2	82.6	85.4	85.2	85.7	79.8	60.1	47.7	46.3	44.1	38.8	35.0	33.5	38.9	48.8	57.0	63.5	67.2	69.4	68.0	67.6	61.7	85.7
18-Feb	69.7	68.0	71.3	72.5	74.1	75.5	76.0	77.4	76.8	65.9	59.1	53.7	48.6	45.3	43.4	42.7	44.0	49.8	57.8	62.2	63.4	64.8	66.4	67.8	62.3	77.4
19-Feb	68.2	69.8	73.1	79.6	82.0	79.9	81.3	81.3	78.8	64.1	60.0	58.1	55.7	53.2	51.9	51.5	52.0	60.4	67.5	70.6	72.3	76.2	78.5	79.9	68.6	82.0
20-Feb	83.3	81.6	78.3	78.3	73.2	70.7	66.5	65.8	66.1	60.4	53.0	52.0	51.0	51.0	50.4	50.1	51.2	53.8	56.5	57.3	57.7	57.1	58.0	59.8	61.8	83.3
21-Feb	60.4	64.5	68.8	72.1	74.9	83.2	87.2	88.6	87.7	71.2	66.2	61.3	54.4	48.1	42.5	39.8	43.1	48.4	52.2	55.6	61.3	70.7	73.0	78.3	64.7	88.6
22-Feb	82.4	83.9	84.6	87.3	89.7	90.1	90.1	89.8	86.4	70.5	63.0	59.2	57.2	54.6	55.6	55.4	56.0	62.6	69.2	72.8	73.6	75.0	73.2	72.8	73.1	90.1
23-Feb	74.1	74.4	73.7	72.6	71.8	70.9	70.5	70.1	69.3	63.4	58.0	49.7	49.5	48.1	44.6	45.4	46.9	56.0	62.7	63.5	60.9	49.0	46.8	50.2	60.1	74.4
24-Feb	72.7	73.3	81.0	79.4	79.0	75.2	75.5	80.1	82.7	79.6	77.2	74.2	73.4	68.7	66.6	70.3	71.1	75.1	80.5	83.0	82.1	80.5	80.3	79.9	76.7	83.0
25-Feb	79.2	80.6	81.6	81.2	79.5	79.4	78.2	77.6	73.9	66.4	62.1	55.6	52.2	49.5	47.8	48.0	50.4	56.2	60.2	65.2	68.2	68.5	69.4	72.0	66.8	81.6
26-Feb	73.4	74.2	73.7	73.9	74.3	73.9	73.5	73.8	73.1	71.3	69.4	68.0	65.7	63.3	61.6	61.8	60.2	64.0	71.6	72.3	71.9	71.3	71.0	71.2	69.9	74.3
27-Feb	70.9	70.6	69.8	69.5	69.3	69.3	71.5	74.2	75.1	73.7	67.4	58.3	51.9	47.8	44.1	42.4	42.5	47.3	59.2	66.5	67.8	67.3	65.9	62.9	62.7	75.1
28-Feb	62.7	62.7	62.9	62.7	63.2	64.1	67.8	69.5	67.1	56.9	48.3	42.8	38.4	37.0	34.8	37.0	39.0	43.9	46.5	47.2	47.6	48.4	49.6	50.0	52.1	69.5
29-Feb	52.3	55.8	57.1	65.7	71.6	69.1	67.6	71.1	68.1	65.1	63.1	65.8	64.9	65.7	69.3	70.1	69.4	71.4	76.4	80.5	82.3	83.8	83.6	83.4	69.7	83.8
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Wapasu - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Wapasu - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	13	1.87	1.87
40 - 60	124	17.82	19.68
60 - 80	264	37.93	57.61
80 - 100	295	42.39	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696

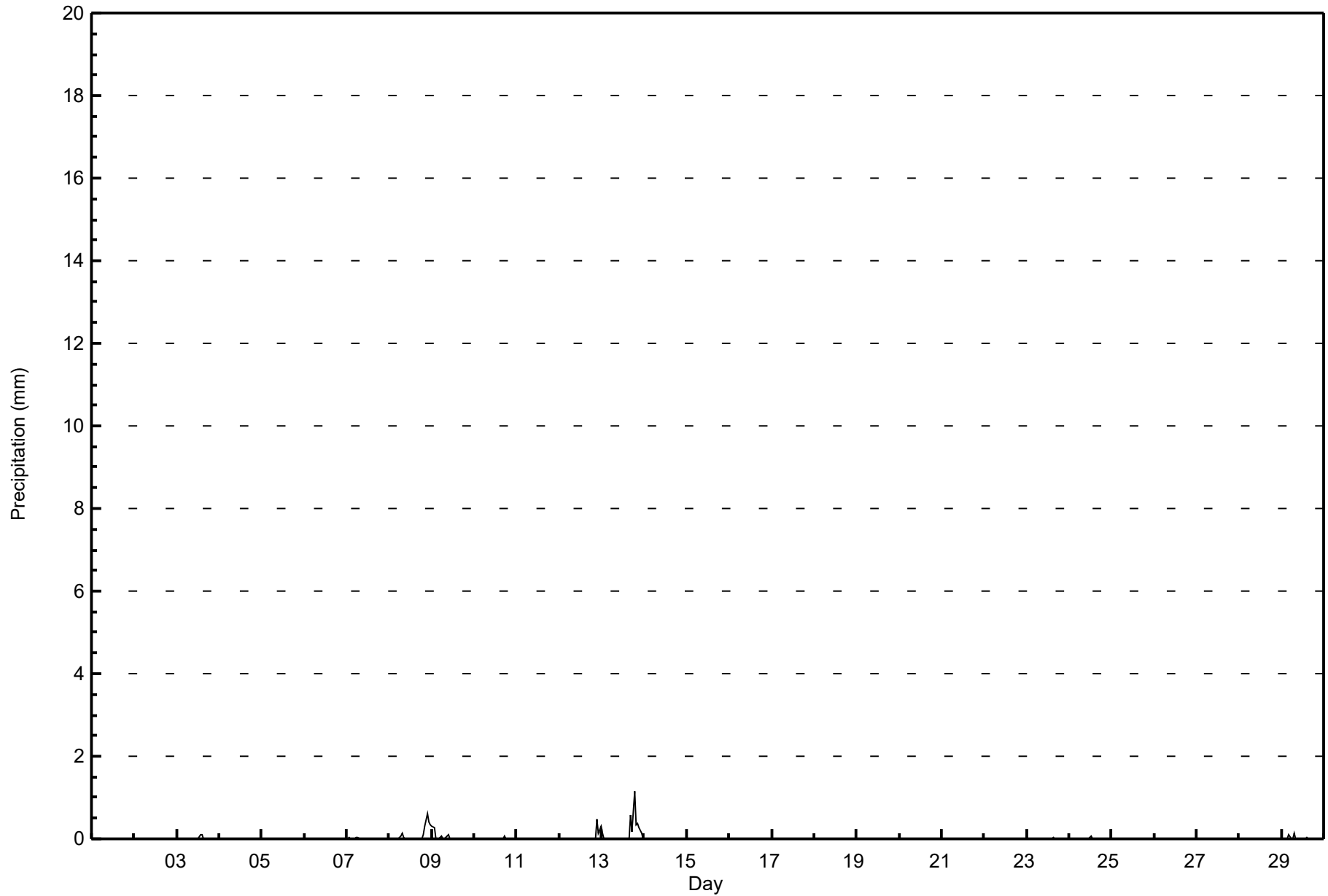


Maximum Value: 1.2 mm on Feb 13 19:00		Maximum Daily Total: 3.1 mm on Feb 13		Hours in Service: 696																															
Minimum Value: 0.0 mm on Feb 1 01:00		Minimum Daily Total: 0.0 mm on Feb 1		Hours of Data: 695																															
Maximum Diurnal Total: 1.4 mm at hour 22		Minimum Diurnal Total: 0.0 mm at hour 3		Hours of Missing Data: 1																															
Monthly Total: 7.63 mm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.3		Hours of Calibration: 0																															
				Percent Operational Time: 99.9																															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24											
1-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Feb	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.6	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Feb	0.3	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Feb	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.2	1.2	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Feb	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.4	0.3	0.0	0.0	0.1	0.1	0.1	0.3	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.6	0.2	1.2	0.4	0.7	1.4	0.6	0.6			Diurnal Average							
		0.3	0.3	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.6	0.2	1.2	0.4	0.4	0.6	0.4	0.3			Diurnal Maximum							
M - Maintenance																																			



Wood Buffalo Environmental Association
Hourly Averages

Precipitation (PC) - mm
Wapasu - February 2024





Maximum Speed: 25 km/h on Feb 1 01:00	Maximum Daily Speed Average: 16.3 km/h on Feb 28	Hours in Service: 696
Minimum Speed Value: 1 km/h on Feb 27 18:00	Minimum Daily Speed Average: 1.3 km/h on Feb 8	Hours of Data: 693
Maximum Diurnal Speed Average: 2.7 km/h at hour 7	Minimum Diurnal Speed Average: 1.3 km/h at hour 17	Hours of Missing Data: 3
Monthly Average Velocity: 1.5 km/h 155.6 deg	Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 5 Median = 7 Q ₃ = 10 P ₉₀ = 13 P ₉₉ = 21	Percent Operational Time: 99.6

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	SSE25	SSE21	SSE20	SSE18	SSE16	SSE15	SSE14	SSE12	SSE12	SSE11	S10	SSW11	SSW10	S8	SSW8	SSW6	S2	SE3	SE4	ESE4	ESE4	E5	ENE5	SSE9.2	SSE25	
2-Feb	NE5	NE8	ENE6	NNE5	NNE6	NNE6	NNE6	NNE6	NNE6	NNE7	NNE7	NNE6	N9	NNE8	N6	N7	N6	NNE7	NNE7	NNE6	NE6	NE5	NE4	N2	NNE6.0	N9
3-Feb	NNW4	NW4	NE1	N3	NNW5	N6	NNW9	N8	N9	N9	N10	N9	N10	N9	N9	N7	N5	NNE4	ENE3	SE3	ESE3	SE3	SSE5	SE4	N4.5	N10
4-Feb	SSE4	SSE5	SSE5	SSE5	SSE6	SSE6	SSE6	SSE7	SSE8	SSE9	S9	S10	S10	S11	S12	S11	S10	SSE12	SSE12	SSE9	S11	S9	S7	SSE7	S8.4	SSE12
5-Feb	SSE6	SE5	ESE4	E4	NE4	NE5	N6	NNE7	NNE9	NNE9	NNE10	NNE10	N12	NNE10	N11	NNE11	NNE7	NNE6	NNE8	NNE7	NNE6	NE4	E6	E5	NNE5.8	N12
6-Feb	ESE4	SE5	ESE8	ESE7	SE7	SE6	ESE5	SSW1	SE7	SE9	SSE9	SSE10	SSE12	SSE13	SSE12	SSE10	SSE9	SSE9	SSE11	SE12	SSE11	SSE8	SSE10	SSE12	SSE8.4	SSE13
7-Feb	SSE10	SSE10	SSE7	SSE6	SSE4	SSW4	S2	SSE5	S5	S4	S3	WSW1	SW3	NW1	NNW4	N3	NNE2	N2	NNW3	NNW3	NNE3	ENE1	ESE1	NNW2	SSE1.6	SSE10
8-Feb	NNW2	NE1	E1	NE1	W1	UO	UO	UO	SW2	S4	SW5	SSW5	SW6	SW6	SSW4	S4	S3	S3	S3	NNW3	NW3	N3	N3	N6	SW1.3	SW6
9-Feb	N8	N7	NNW3	NNW3	N6	N8	N6	N6	N6	NNW6	N7	NNE6	N4	NNW3	NW3	NNW3	N3	NNE3	NE4	E2	SE2	NNW1	NNW3	NE3	N4.0	N8
10-Feb	SE3	SE4	SE4	SE6	SSE6	SSE7	SSE10	SSE9	SSE10	SSE9	SSE9	SSE10	SSE12	SSE12	SSE12	SSE13	SSE13	S12	S10	SSW9	SW12	SW12	SSW10	SSW9	S8.5	SSE13
11-Feb	SW11	SW10	SW12	SW13	WSW10	SW8	SW7	SW7	SW8	SW9	SW9	SW10	SW10	SW10	SW8	SW8	SW7	SSW5	SSW5	SSW6	S5	SSE6	SSE6	SSE7	SW7.6	SW13
12-Feb	SSE7	SSE7	SSE8	S7	SSE8	SSE8	SSE10	S10	SSE10	S8	S10	SSW12	SW12	W10	WNW8	NW11	WNW7	W4	NW8	NNW8	NNW13	NNW18	NNW22	NNW21	WSW2.7	NNW22
13-Feb	N19	NNW21	N18	N17	N14	N10	N10	N8	NNW7	NNW9	NNW6	WSW1	SSE4	SW6	SW10	SW8	SW7	SW8	N8	N9	N12	N15	N11	N11	NNW7.5	NNW21
14-Feb	N11	N11	N10	N9	N8	N9	NNE8	NNE8	NNE7	NNE7	N8	N10	NNW12	N10	N9	N9	N6	N6	NNE4	NE5	NNE5	NNE3	ESE1	ESE1	N7.2	NNW12
15-Feb	SSW2	SSW2	S3	SSW3	SSW4	SSW5	SSW6	SSW5	SSW5	S5	S5	S5	SW6	SW6	WSW7	SW5	SW6	SSW5	SSE6	S6	S6	S6	SSW6	SSW6	SSW4.8	WSW7
16-Feb	SSW7	SSW6	S5	S5	SSE5	S5	SSE6	SSE7	S7	S8	SSW10	SSW12	SSW13	SSW13	SSW14	SW16	SW14	SW14	SW15	SW11	WSW8	SW6	SW4	NW3	SSW8.1	SW16
17-Feb	NW5	NNW7	SSW2	ESE4	SE3	SSE6	SE5	SE4	NNE5	NNE6	N9	N11	NNW10	N7	NNW5	NNE5	NE5	ENE4	E5	E6	ESE6	ESE6	SE7	SE6	NE2.7	N11
18-Feb	SE7	SE11	SE11	SE13	SE12	SE12	SE12	SE9	ESE7	ESE7	SE9	E8	ESE9	ESE10	ESE10	ESE8	ESE7	ESE5	SE8	SE9	SE10	SE11	SE12	SE11	SE9.3	SE13
19-Feb	SE10	SE9	NE2	ESE3	SE5	SSE5	SSE5	S2	SW2	N1	N5	N7	NNW7	NNW7	NNW7	NNW7	N6	N5	NNE4	NE5	ENE3	E4	E4	SE1	NE1.8	SE10
20-Feb	SE5	SSE5	SE6	S4	SSE7	SSE5	SSE7	SSE6	S5	SSE8	S7	S7	SSW7	SSW6	SSW7	SSW6	S6	S7	S6	SSE6	S6	S6	S6	S7	S5.8	SSE8
21-Feb	S5	S5	S5	S6	SSW4	SSE3	SSE3	S3	S4	SSW7	SW11	SSW10	SW13	SW15	SW14	SW15	WSW15	WSW12	WSW10	WSW8	WNW4	NNE5	ENE4	NNE3	SW6.0	WSW15
22-Feb	NNE2	SE3	SE3	SE5	SE3	SE4	SE4	E4	ESE4	SSE2	WNW4	WNW5	W4	W5	W5	SSW3	SE3	SE4	SSE4	SSE6	S7	SSE7	SSE9	SSE9	SSE2.5	SSE9
23-Feb	SSE10	SSE11	SSE10	S11	S12	S13	S13	S12	S11	SSW11	SW14	WSW15	WSW13	WSW12	WSW11	WSW9	NW6	NW10	WSW8	WSW11	WNW8	WNW14	W9	NNW9	SW7.3	WSW15
24-Feb	N16	N18	N19	NNW22	NNW22	NNW20	NNW19	NNW14	NNW16	NNW15	NNW13	NNW14	N12	NNW11	N10	N8	NNE6	NNE4	ENE4	E4	ENE3	ESE3	ENE4	ENE3	N10.6	NNW22
25-Feb	E3	E3	NNE4	NE4	NE7	NE7	NE6	NE6	NNE8	NNE10	N8	N10	N10	N10	N11	N11	NNE10	N13	NNE10	N13	NNE9	NNE8	NNE9	NNE7	NNE7.3	N13
26-Feb	N10	N14	N13	N11	N10	N12	N13	N12	N12	NNW12	N12	N11	N10	N10	NNW11	N6	WNW6	W3	SW1	SE4	SE4	SE5	SE6	SSE5	N6.7	N14
27-Feb	SSE2	WNW1	SE5	SE4	SE4	SE5	SSE5	SSE5	SSW5	SW7	SW9	WSW7	W7	WNW6	NW7	WNW7	WNW5	SE1	SE5	SE7	SE8	SE7	SSE8	SSE11	S2.9	SSE11
28-Feb	SSE11	SSE13	SSE13	SSE13	SSE13	SSE12	SSE12	SSE11	SSE15	SSE20	SSE22	SSE21	SSE18	SSE18	SSE19	SSE14	SSE16	SE16	SE18	SE19	SE19	SE20	SE20	SE21	SSE16.3	SSE22
29-Feb	SE17	SE12	SE14	SE15	SE14	SE15	SE17	SE14	SE15	SE16	SSE16	SSE14	SSE13	SSE11	S10	S8	S7	SSW7	WSW7	WSW5	WSW3	WSW3	WSW4	WSW3	SSE9.3	SE17

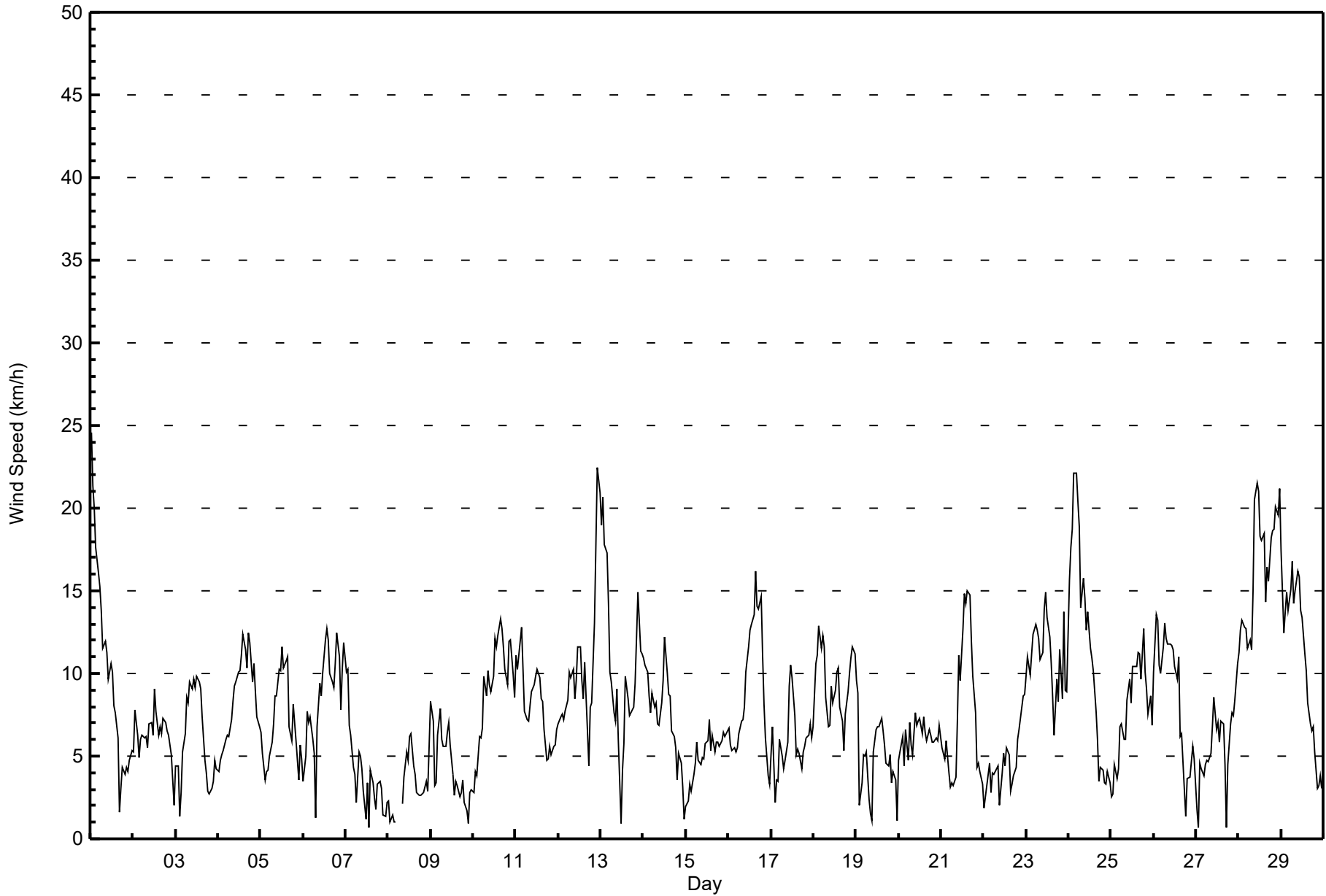
SE2.2	SE2.2	SE2.5	SE2.4	ESE2.3	ESE2.6	SE2.7	SE2.4	SE2.2	SSE1.9	SSW1.6	SW1.7	SW2.2	SW2.1	WSW2.2	WSW1.9	SSW1.3	S1.6	SSE1.6	SSE1.8	SE1.6	SE1.5	SE2.2	SE2.0	Diurnal Average
SSE2.5	SSE2.1	SSE2.0	NNW2.2	NNW2.2	NNW2.0	NNW1.9	SE1.4	NNW1.6	SSE2.0	SSE2.2	SSE2.1	SSE1.8	SSE1.8	SSE1.9	SW1.6	SSE1.6	SE1.6	SE1.8	SE1.9	SE1.9	SE2.0	NNW2.2	SE2.1	Diurnal Maximum

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Wapasu - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Wapasu - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	225	32.47	32.47
6 - 11	342	49.35	81.82
12 - 19	111	16.02	97.84
20 - 28	15	2.16	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 693

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Wapasu - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	12	17	15	11	11	15	34	21	26	17	7	7	6	6	5	15	225
6 - 11	65	40	6	1	3	12	24	62	36	24	29	11	3	8	4	14	342
12 - 19	18	0	0	0	0	0	19	33	5	5	13	6	0	1	0	11	111
20 - 28	0	0	0	0	0	0	3	6	0	0	0	0	0	0	0	6	15
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	95	57	21	12	14	27	80	122	67	46	49	24	9	15	9	46	693

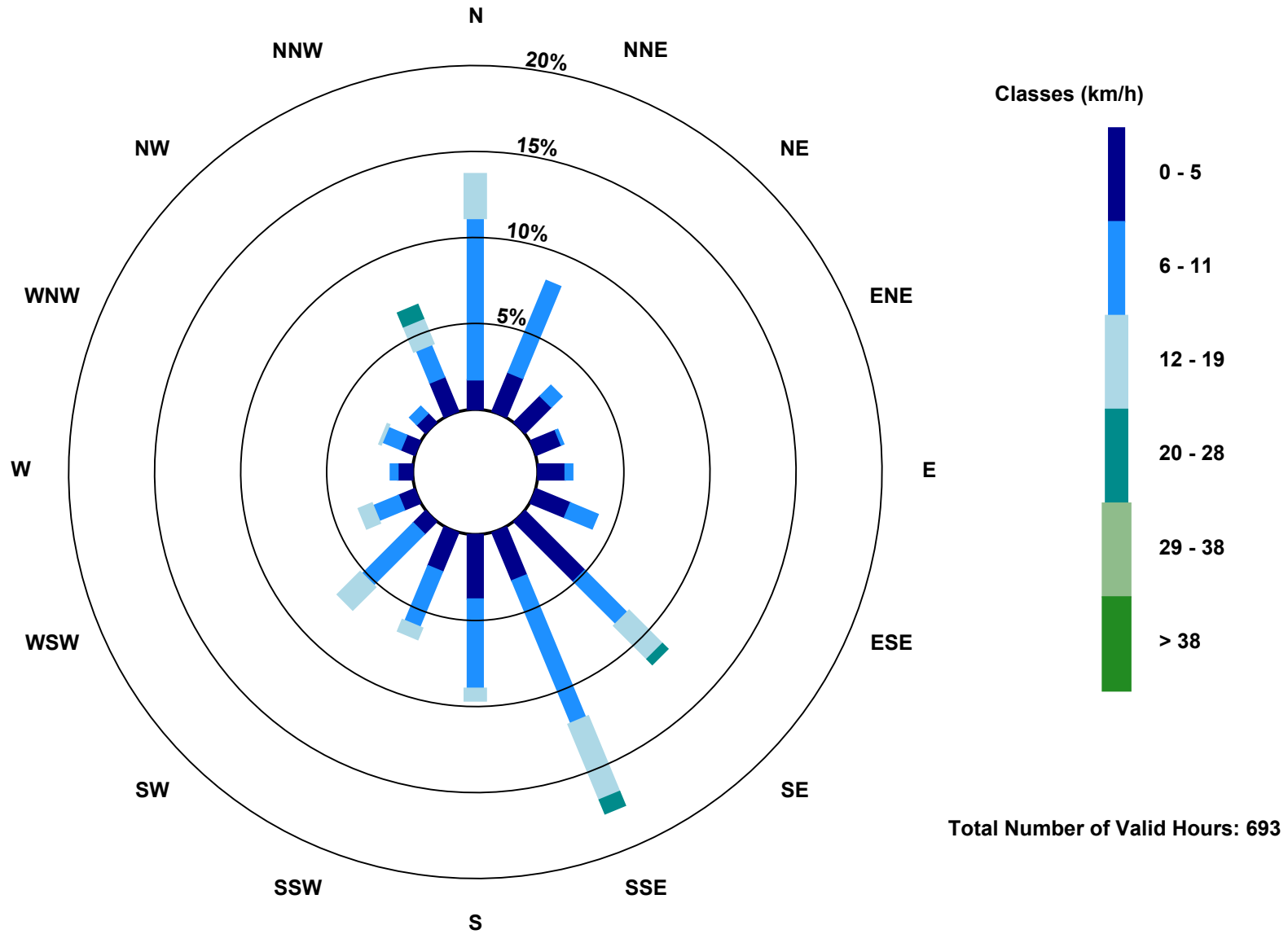
Total Number of Valid Hours: 693

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Wapasu





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Wapasu - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 1 01:00 Minimum Value: 0 km/h on Feb 3 22:00 Percentiles: P ₁ = 0 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																	Hours in Service: 696 Hours of Data: 693 Hours of Missing Data: 3 Hours of Calibration: 0 Percent Operational Time: 99.6								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	7	6	5	5	4	4	4	3	3	3	3	3	3	3	2	2	1	1	1	1	1	1	1	1	7
2-Feb	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2
3-Feb	1	1	1	1	2	2	2	3	3	3	3	3	3	3	2	2	1	1	0	1	0	0	0	3	
4-Feb	0	1	1	1	1	1	2	2	2	3	3	3	4	4	5	4	3	4	3	3	3	2	2	1	5
5-Feb	1	1	1	1	1	1	2	2	3	3	4	3	4	3	4	4	3	2	3	2	2	1	2	2	4
6-Feb	1	2	2	2	2	2	2	1	3	3	3	3	4	4	4	4	3	3	3	4	4	3	3	3	4
7-Feb	3	3	3	2	2	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	3
8-Feb	1	1	1	1	1	UO	UO	UO	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	2
9-Feb	2	3	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	3
10-Feb	1	1	1	1	1	1	3	2	3	2	3	3	4	4	4	4	4	4	3	3	3	4	3	3	4
11-Feb	3	2	3	3	2	2	2	2	1	2	2	3	3	2	2	2	1	1	1	1	1	1	1	1	3
12-Feb	1	1	1	2	2	2	3	3	3	3	3	4	3	4	2	4	3	2	3	2	3	6	6	6	6
13-Feb	5	6	5	5	5	3	3	3	3	2	2	1	1	2	3	2	2	2	3	3	3	5	3	3	6
14-Feb	4	3	3	2	2	2	3	3	2	3	2	3	3	3	2	3	3	2	2	1	2	2	1	1	4
15-Feb	1	1	1	1	2	2	2	1	1	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	2
16-Feb	2	2	1	1	1	1	1	1	2	2	3	3	4	4	4	5	4	3	4	3	2	2	1	1	5
17-Feb	2	3	1	1	1	1	1	1	2	3	3	3	3	2	2	2	1	1	1	1	1	1	2	1	3
18-Feb	2	3	3	3	3	3	3	3	2	2	3	2	3	3	3	3	2	1	2	2	2	3	3	3	3
19-Feb	3	2	2	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	2	2	1	3
20-Feb	1	1	1	2	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2
21-Feb	2	1	1	1	2	1	1	1	1	2	3	3	3	3	4	4	4	3	3	2	2	2	1	1	4
22-Feb	1	1	1	1	1	1	1	1	1	2	1	2	2	2	2	1	1	1	1	1	1	2	3	2	3
23-Feb	2	3	2	3	3	4	4	4	4	4	4	5	4	3	3	4	2	4	3	4	4	6	3	4	6
24-Feb	5	6	6	6	6	6	5	4	5	4	3	4	3	3	3	2	2	1	1	1	1	1	1	1	6
25-Feb	1	1	1	1	1	2	2	1	2	3	3	3	3	3	3	3	4	3	4	4	3	3	3	2	4
26-Feb	4	4	5	3	3	4	4	4	4	4	3	3	3	3	3	2	2	1	1	1	0	1	0	1	5
27-Feb	1	1	1	1	0	1	0	1	2	2	2	2	3	3	2	2	2	1	2	1	1	1	2	2	3
28-Feb	3	3	3	3	3	3	3	3	4	6	7	6	6	6	6	5	6	5	5	5	6	6	6	6	7
29-Feb	5	4	5	5	5	5	6	5	5	6	6	5	5	4	4	3	2	2	2	1	1	1	1	1	6
Diurnal Maximum																									
UO - Unstable Operation																									



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Wapasu - February 2024

Direction of Maximum Speed: 154 deg on Feb 1 01:00 Direction of Maximum Daily Speed Average: 148.3 deg on Feb 28	Hours in Service: 696 Hours of Data: 693 Hours of Missing Data: 3
Direction of Minimum Speed: 137 deg on Feb 27 18:00 Direction of Minimum Daily Speed Average: 1.3 deg on Feb 8	Percent Operational Time: 99.6
Monthly Average Direction: 155.6 deg	

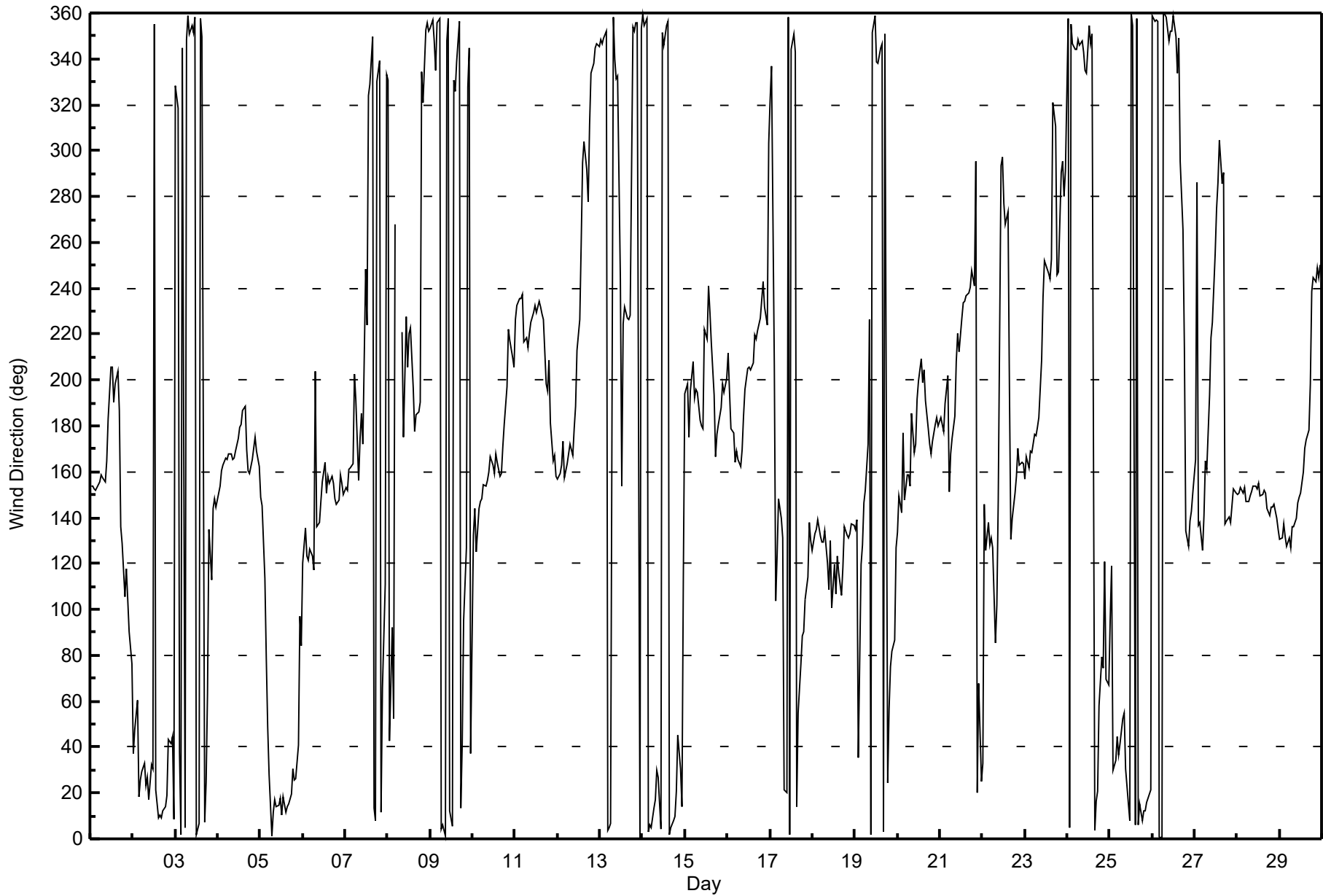
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	154	154	152	152	155	156	158	157	156	165	183	206	206	191	198	204	187	136	129	105	117	104	90	76	159.0
2-Feb	37	48	60	18	26	30	33	23	27	17	33	30	355	21	9	10	9	12	14	19	43	41	44	8	24.7
3-Feb	328	319	38	2	345	5	348	359	351	355	352	358	2	7	358	350	7	25	63	135	113	144	148	145	2.8
4-Feb	151	154	160	163	166	166	168	168	166	166	169	175	179	180	187	188	170	160	160	165	170	175	169	162	169.8
5-Feb	149	145	114	79	49	28	1	12	17	14	15	18	10	19	11	14	15	20	31	26	26	41	97	84	29.0
6-Feb	120	136	123	121	126	124	117	204	136	138	147	155	164	151	158	155	158	155	148	146	148	159	155	150	146.6
7-Feb	153	152	161	162	164	203	191	156	175	185	172	248	224	324	329	350	13	8	330	340	12	66	111	333	166.5
8-Feb	330	43	92	52	268	UO	UO	UO	221	175	228	206	220	223	197	178	185	186	190	335	321	353	356	352	227.9
9-Feb	353	357	348	335	356	358	5	6	1	348	357	12	6	331	326	339	356	13	41	95	127	328	345	37	359.6
10-Feb	132	144	125	144	147	148	155	154	156	160	167	163	159	168	164	158	159	171	181	197	222	217	210	206	170.6
11-Feb	226	232	236	236	237	216	219	214	220	225	229	232	229	234	232	229	226	199	195	208	181	165	167	158	220.3
12-Feb	157	159	163	173	157	163	168	172	167	179	189	213	226	259	295	304	292	277	311	334	338	345	346	345	257.9
13-Feb	349	347	349	352	3	5	7	358	340	331	333	244	154	224	232	227	227	228	354	352	356	356	1	353	342.3
14-Feb	359	354	358	3	6	5	13	17	30	27	5	351	346	355	356	2	5	8	10	21	45	30	14	115	5.9
15-Feb	194	198	175	195	208	192	196	195	182	180	179	222	218	241	229	216	194	167	176	180	188	198	195	201	197.7
16-Feb	212	195	179	177	164	169	166	162	169	184	196	205	206	204	208	220	218	222	227	235	243	232	224	304	206.7
17-Feb	322	337	206	104	124	148	140	131	21	20	358	2	344	351	343	14	55	76	89	90	105	114	138	130	50.0
18-Feb	125	133	135	139	132	129	129	134	120	109	130	101	119	107	123	116	106	118	136	133	131	133	138	137	126.9
19-Feb	135	139	35	120	128	147	152	172	226	2	352	359	338	338	345	347	3	351	25	56	75	82	86	127	49.7
20-Feb	134	150	142	177	148	159	159	154	186	168	172	191	200	209	199	205	191	179	172	168	173	181	184	180	175.2
21-Feb	184	181	178	190	202	151	168	174	184	208	220	212	227	233	235	236	238	241	248	241	295	20	68	25	222.6
22-Feb	33	146	126	138	128	131	127	86	102	147	293	297	277	268	273	196	131	140	151	158	171	163	164	164	161.3
23-Feb	157	166	162	169	169	177	176	179	184	209	236	252	250	246	244	252	321	311	246	247	291	296	280	291	225.4
24-Feb	358	5	355	346	344	344	348	346	348	343	335	334	354	346	351	3	17	21	58	80	75	121	69	67	354.4
25-Feb	96	119	30	34	44	37	41	52	55	31	15	8	360	355	6	357	6	15	8	12	12	16	20	21	18.3
26-Feb	359	357	357	357	1	0	359	359	358	348	352	352	359	350	334	349	295	265	214	134	128	139	143	151	355.8
27-Feb	166	286	136	138	125	141	165	161	193	219	225	255	274	286	304	285	290	137	138	140	138	146	153	151	185.3
28-Feb	150	151	153	151	153	147	147	149	151	154	154	153	155	150	150	152	151	144	141	145	144	146	140	135	148.3
29-Feb	130	131	137	132	127	131	127	136	136	140	147	149	151	160	170	174	178	198	239	244	243	249	244	250	149.2
127.4 126.2 126.6 132.9 123.6 123.0 126.7 129.9 135.7 155.1 194.5 220.3 228.9 233.5 238.3 236.5 203.6 179.1 159.2 153.5 137.4 137.3 134.1 131.1																									
Diurnal Average																									

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction (WD) - deg
Wapasu - February 2024





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Wapasu - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 85 deg on Feb 7 14:00 Minimum Value: 3 deg on Feb 26 23:00 Percentiles: P ₁ = 5 P ₁₀ = 14 Q ₁ = 18 Median = 23 Q ₃ = 28 P ₉₀ = 32 P ₉₉ = 70																	Hours in Service: 696 Hours of Data: 693 Hours of Missing Data: 3 Hours of Calibration: 0 Percent Operational Time: 99.6								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	21	21	20	19	20	19	20	20	19	24	28	24	26	29	29	26	60	14	22	15	19	15	13	13	60
2-Feb	28	19	18	26	29	27	26	28	31	27	27	29	21	31	26	27	26	26	29	28	25	29	22	45	45
3-Feb	20	22	57	41	26	25	20	27	21	24	22	27	26	27	24	21	27	25	14	15	8	8	5	5	57
4-Feb	8	8	10	15	18	18	19	22	25	24	23	28	27	30	28	28	28	21	21	22	22	24	17	19	30
5-Feb	8	6	21	21	14	16	22	27	29	27	29	30	28	30	29	29	27	23	22	24	22	33	31	25	33
6-Feb	41	23	18	20	19	19	29	74	24	17	21	23	26	22	24	25	23	23	20	21	23	28	22	20	74
7-Feb	21	21	28	29	30	28	49	17	31	28	60	84	42	85	34	30	18	44	17	19	34	29	70	27	85
8-Feb	26	59	35	40	31	UO	UO	UO	35	28	27	37	24	27	41	37	28	32	44	24	15	26	29	21	59
9-Feb	19	20	19	12	25	24	25	27	26	18	23	28	26	35	32	26	33	23	27	30	10	81	16	26	81
10-Feb	38	4	18	6	8	11	18	19	19	21	26	23	21	25	24	19	24	35	29	28	18	20	22	26	38
11-Feb	21	15	15	14	15	14	16	16	12	14	16	19	18	19	18	19	15	14	14	17	14	7	9	10	21
12-Feb	8	11	13	17	16	17	21	23	24	27	28	24	22	29	28	26	28	29	29	17	17	21	20	20	29
13-Feb	21	20	22	20	29	26	27	28	19	19	22	74	29	28	19	18	16	25	20	21	22	23	23	22	74
14-Feb	24	24	23	26	25	26	29	27	28	29	27	23	18	23	22	24	25	25	29	27	22	26	35	55	55
15-Feb	19	20	24	24	28	29	27	28	24	31	32	23	28	29	30	24	25	14	19	20	21	20	18	17	32
16-Feb	17	19	10	10	6	7	7	8	18	25	26	22	23	23	23	18	18	19	20	16	20	18	21	41	41
17-Feb	19	14	54	17	23	5	16	32	36	33	25	26	26	24	43	31	21	18	16	14	12	18	13	12	54
18-Feb	14	17	17	15	16	18	18	24	24	34	24	26	24	23	22	23	20	15	13	15	18	17	18	16	34
19-Feb	18	17	54	44	13	12	6	68	55	77	29	27	31	30	28	24	29	21	23	14	9	24	26	47	77
20-Feb	17	10	9	37	16	15	18	15	26	25	28	29	29	26	26	26	29	25	24	22	21	25	25	25	37
21-Feb	22	17	13	16	24	12	16	17	22	24	18	22	19	17	18	18	18	17	22	19	41	39	9	28	41
22-Feb	52	27	14	16	5	15	28	25	18	62	41	38	43	36	32	48	14	20	12	14	19	17	22	22	62
23-Feb	19	21	20	22	21	25	25	26	29	27	20	26	22	20	21	29	20	26	34	32	29	27	29	33	34
24-Feb	24	27	24	21	19	20	21	18	19	19	19	20	25	25	23	27	30	22	13	10	12	21	15	12	30
25-Feb	32	32	20	23	25	24	22	17	22	28	30	32	27	29	27	24	28	29	28	29	29	32	31	31	32
26-Feb	27	23	24	23	24	25	26	26	24	22	22	22	28	26	20	37	34	18	51	6	7	6	3	8	51
27-Feb	63	47	13	5	10	5	10	9	29	19	18	41	43	52	39	38	37	82	5	6	7	12	14	17	82
28-Feb	18	17	18	18	18	17	16	17	18	19	21	23	23	23	22	27	24	21	20	20	20	20	20	19	27
29-Feb	19	24	25	23	24	23	22	28	24	24	23	24	24	27	27	27	29	26	19	21	30	26	19	24	30
63 59 57 44 31 29 49 74 55 77 60 84 43 85 43 48 60 82 51 32 41 81 70 55																								Diurnal Maximum	
UO - Unstable Operation																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS18 STONY MOUNTAIN FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - STONY MOUNTAIN (AMS18)
 FEBRUARY 2024

MONTHLY SUMMARY for
 AMD SECTION III.B.1(c)

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2(ppb) Average	660	34	36	99.71	5.6	0	2.1	0
TRS(ppb) Average	660	34	36	99.71	0.5	0	0.3	0
THC(ppm) Average	627	32	69	94.68	2.4	-	2.2	-
NMHC(ppm) Average	627	32	69	94.68	0.119	-	0.051	-
CH4(ppm) Average	627	32	69	94.68	2.3	-	2.1	-
O3 (ppb) Average	661	33	35	99.71	44.6	0	40.3	-
NO2 (ppb) Average	661	35	35	100	11.9	0	5.4	-
NO (ppb) Average	661	35	35	100	4.4	-	1.1	-
NOX (ppb) Average	661	35	35	100	12.8	-	6.5	-
PM2.5 (ug/m3) Average	693	3	3	100	11.3	0	6.1	0
CO(ppm) Average	661	33	35	99.71	0.2	0	0.2	0
CO2(ppm) Average	660	34	36	99.71	467.6	0	451.1	0
Temperature 2 m (C) Average	696	0	0	100	10.3	-	4.3	-
Relative Humidity (%) Average	696	0	0	100	97.1	-	92.5	-
Wind Speed 20 m (km/h) Average	696	0	0	100	27	-	18	-
Wind Direction 20 m (deg) Average	696	0	0	100	-	-	-	-
Precipitation (mm) Total	696	0	0	100	0.9	-	2.3	-
Leaf Wetness (% of range) Average	696	0	0	100	18.6	-	5.1	-
Global Solar Radiation (W/m2) Average	696	0	0	100	498.2	-	123.1	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - STONY MOUNTAIN (AMS18)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	660	0.53	0.7	-	0	0.1	0.1	0.3	0.7	1.2	5.6
TRS (ppb) Average	660	0.25	0	-	0.1	0.2	0.2	0.2	0.3	0.3	0.5
THC (ppm) Average	627	2.05	0.1	-	2	2	2	2	2.1	2.1	2.4
NMHC(ppm) Average	627	0.009	0.017	-	0	0	0	0	0	0	0.119
CH4(ppm) Average	627	2.04	0	-	2	2	2	2	2.1	2.1	2.3
O3 (ppb) Average	661	31.22	8.1	-	5.8	18.9	26.1	33.4	37.5	39.7	44.6
NO2 (ppb) Average	661	1.74	1.7	-	0.2	0.3	0.5	1.2	2.3	3.9	11.9
NO (ppb) Average	661	0.14	0.4	-	0	0	0	0	0.1	0.3	4.4
NOX (ppb) Average	661	1.88	1.8	-	0.2	0.3	0.6	1.3	2.6	4.2	12.8
PM2.5 (ug/m3) Average	693	2.84	1.8	-	0.3	0.7	1.4	2.7	3.8	5.3	11.3
CO(ppm) Average	661	0.15	0	-	0.1	0.1	0.1	0.2	0.2	0.2	0.2
CO2(ppm) Average	660	442.37	4.6	-	433	437.9	439.8	441.6	444.7	447.6	467.6
Temperature 2 m (C) Average	696	-7.35	7.6	-	-27.1	-16.7	-12.1	-7.3	-1.6	2.4	10.3
Relative Humidity (%) Average	696	67.02	17.6	-	20.6	42	54	68.7	82.7	89.7	97.1
Wind Speed 20 m (km/h) Average	696	10.9	5	-	0	4	7	11	15	18	27
Wind Direction 20 m (deg) Average	696	-	-	-	-	-	-	-	-	-	-
Precipitation (mm) Total	696	-	-	7.37	-	-	-	-	-	-	-
Surface Wetness (% of range) Average	696	2.03	1.1	-	0.5	1.4	1.6	1.8	2.1	3	18.6
Global Solar Radiation (W/m2) Average	696	61.78	110.7	-	0	0	0	0.7	70.3	258.8	498.2

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - STONY MOUNTAIN (AMS18)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Period Start	Period End	Duration (Hours)	Notes
CO, CO2, O3, SO2, THC, TRS	21 Feb 2024 15:00	21 Feb 2024 16:00	2	Maintenance - sample manifold cleaned
THC/NMHC/CH4	01 Feb 2024 01:00	01 Feb 2024 12:00	12	Unstable Operations - excessive baseline drift
THC/NMHC/CH4	29 Feb 2024 02:00	01 Mar 2024 00:00	23	Unstable Operations - excessive baseline drift



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

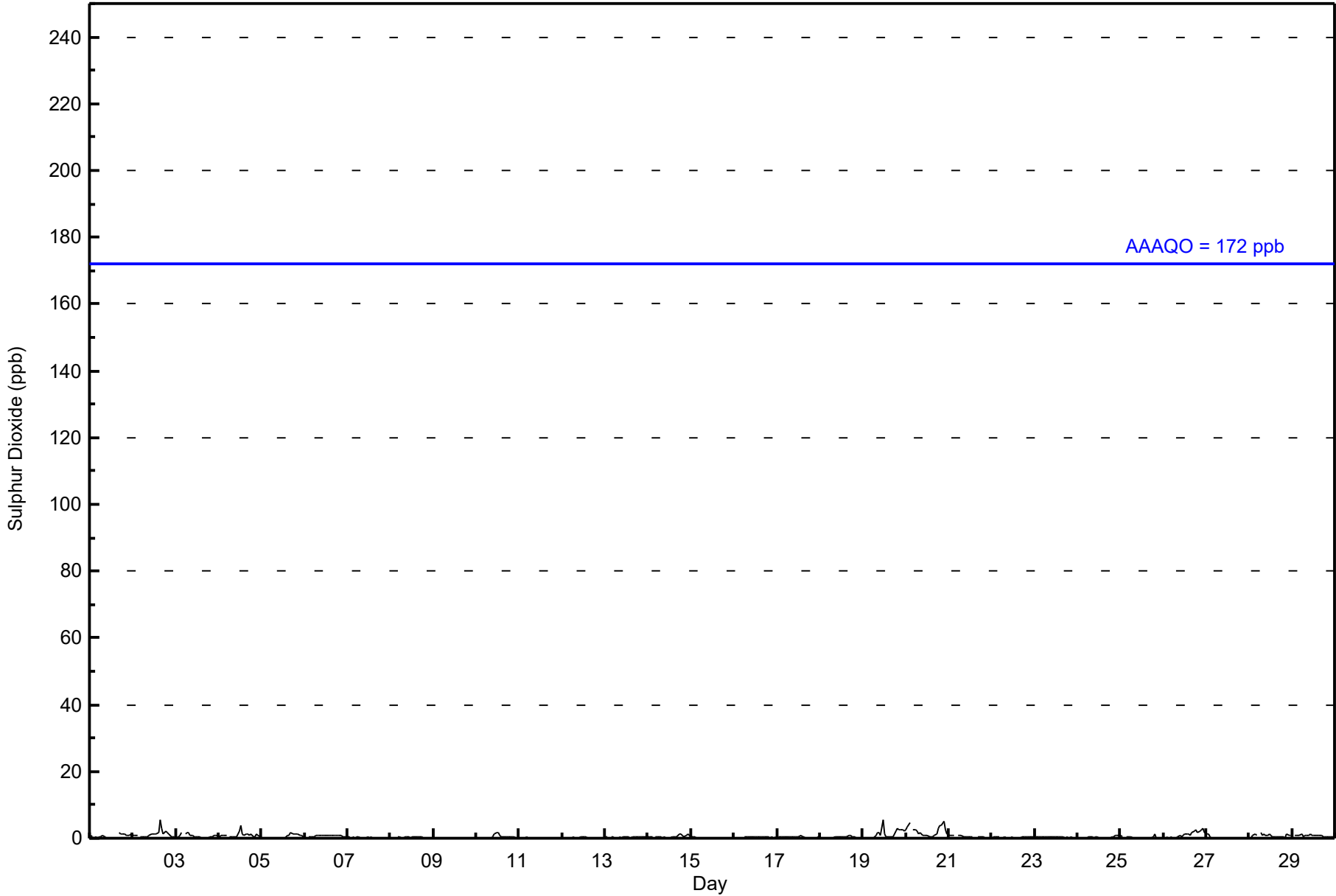
Stony Mountain - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:		696																																									
Maximum Value: 5.6 ppb on Feb 2 16:00		Maximum Daily Average: 2.1 ppb on Feb 20		Minimum Value: 0.0 ppb on Feb 8 00:00		Minimum Daily Average: 0.0 ppb on Feb 9		Hours of Data: 660																																									
Maximum Diurnal Average: 0.7 ppb at hour 19		Minimum Diurnal Average: 0.4 ppb at hour 4		Hours of Missing Data: 36		Hours of Calibration: 34		Percent Operational Time: 99.7																																									
Monthly Average: 0.53 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.3 Q ₃ = 0.7 P ₉₀ = 1.2 P ₉₉ = 3.4																																															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.7	0.6	Z	0.3	0.2	0.2	0.4	0.7	0.3	0.2	0.2	C	C	C	C	C	1.6	1.2	1.3	1.3	0.8	0.7	0.7	1.1	0.7	1.6																							
2-Feb	1.0	0.8	0.7	Z	0.6	0.4	0.4	0.6	0.5	0.7	1.1	1.4	1.2	1.5	1.9	5.6	2.8	1.3	2.1	1.7	1.2	0.5	0.3	0.3	1.2	5.6																							
3-Feb	0.2	0.3	0.8	1.7	Z	1.4	1.6	1.6	0.8	0.7	0.5	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.3	0.6	0.7	0.7	0.7	0.6	1.7																							
4-Feb	0.5	0.8	0.9	0.9	0.7	Z	0.3	0.6	0.3	0.4	0.3	2.2	3.7	1.3	1.1	1.3	1.4	1.1	1.2	0.5	0.5	1.3	0.8	0.4	1.0	3.7																							
5-Feb	Z	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.9	1.0	1.5	1.4	1.3	1.1	1.1	0.7	0.6	0.5	0.5	1.5																							
6-Feb	0.3	Z	0.3	0.2	0.4	0.3	0.7	0.8	0.8	0.7	0.8	0.8	1.0	1.0	0.9	0.8	0.7	0.8	0.9	0.7	0.7	0.4	0.3	0.3	0.6	1.0																							
7-Feb	0.3	0.3	Z	0.3	0.1	0.3	0.2	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.2	0.3																							
8-Feb	0.0	0.0	0.1	Z	0.6	0.5	0.2	0.1	0.5	0.4	0.3	0.2	0.3	0.4	0.4	0.5	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.2	0.6																							
9-Feb	0.1	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1																							
10-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.3	1.2	1.6	1.6	1.0	0.5	0.6	0.4	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.4	1.6																							
11-Feb	Z	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.2																							
12-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.4	0.4	0.4	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.4																							
13-Feb	0.3	0.3	Z	0.2	0.2	0.2	0.2	0.1	0.5	0.2	0.2	0.3	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.3	0.5																							
14-Feb	0.4	0.3	0.2	Z	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.5	0.4	0.6	1.5	1.4	0.8	0.6	1.0	1.4	1.0	0.5	1.5																							
15-Feb	0.6	0.5	0.2	0.2	Z	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.6																							
16-Feb	0.1	0.2	0.2	0.1	0.2	Z	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.4	0.3	0.5																							
17-Feb	Z	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.5	1.0	0.5	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.4	1.0																							
18-Feb	0.2	Z	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.4	0.5	0.3	0.4	0.6	0.6	0.5	0.7	0.8	0.6	0.4	0.2	0.0	0.0	0.0	0.3	0.8																							
19-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.1	1.0	1.7	1.8	0.9	5.5	1.4	0.4	0.4	0.4	0.5	0.6	2.3	3.1	2.6	2.7	2.5	2.3	1.3	5.5																							
20-Feb	2.4	3.2	4.7	Z	2.7	2.7	2.1	1.4	1.8	0.8	1.0	0.9	0.8	0.6	0.5	0.6	0.9	1.5	3.2	3.8	3.9	5.1	2.4	1.1	2.1	5.1																							
21-Feb	1.0	1.0	0.8	0.7	Z	0.7	0.7	0.8	0.6	0.5	0.5	0.3	0.3	0.3	M	M	0.3	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.5	1.0																							
22-Feb	0.2	0.3	0.3	0.4	0.4	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.4																							
23-Feb	Z	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.3	0.4																							
24-Feb	0.1	Z	0.1	0.0	0.1	0.1	0.5	0.5	0.5	0.2	0.3	0.4	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.7	1.0	0.9	0.3	1.0																							
25-Feb	0.7	0.6	Z	0.4	0.4	0.4	0.4	0.2	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.3	1.3	0.2	0.0	0.1	0.1	0.3	1.3																							
26-Feb	0.1	0.1	0.4	Z	0.4	0.2	0.1	0.1	0.2	0.6	0.6	0.6	1.5	1.2	1.1	0.9	1.7	2.2	2.4	1.7	2.0	2.7	3.1	1.6	1.1	3.1																							
27-Feb	1.3	1.2	0.4	0.2	Z	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.3																							
28-Feb	0.1	0.1	0.7	1.2	0.9	Z	1.6	0.9	1.3	1.0	0.8	1.2	0.9	0.5	0.5	0.5	0.5	0.5	0.4	0.2	0.4	0.2	1.1	0.9	0.6	0.7	1.6																						
29-Feb	Z	1.0	0.8	0.9	0.8	1.1	0.6	0.9	0.8	0.9	1.2	0.9	0.9	0.9	0.7	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.7	1.2																							
																								0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.7	0.6	0.5	0.5	0.6	0.6	0.5	0.7	0.7	0.6	0.7	0.6	0.5	Diurnal Average	
																								2.4	3.2	4.7	1.7	2.7	2.7	2.1	1.6	1.8	1.8	1.2	5.5	3.7	1.5	1.9	5.6	2.8	2.2	3.2	3.8	3.9	5.1	3.1	2.3	Diurnal Maximum	
Z - zerspan C - Calibration M - Maintenance																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																																																	



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Stony Mountain - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Stony Mountain - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	660	100.00	100.00
11 - 20	0	0.00	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Stony Mountain - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	37	45	41	17	24	23	28	25	22	27	38	22	110	100	54	47	660
11 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	37	45	41	17	24	23	28	25	22	27	38	22	110	100	54	47	660

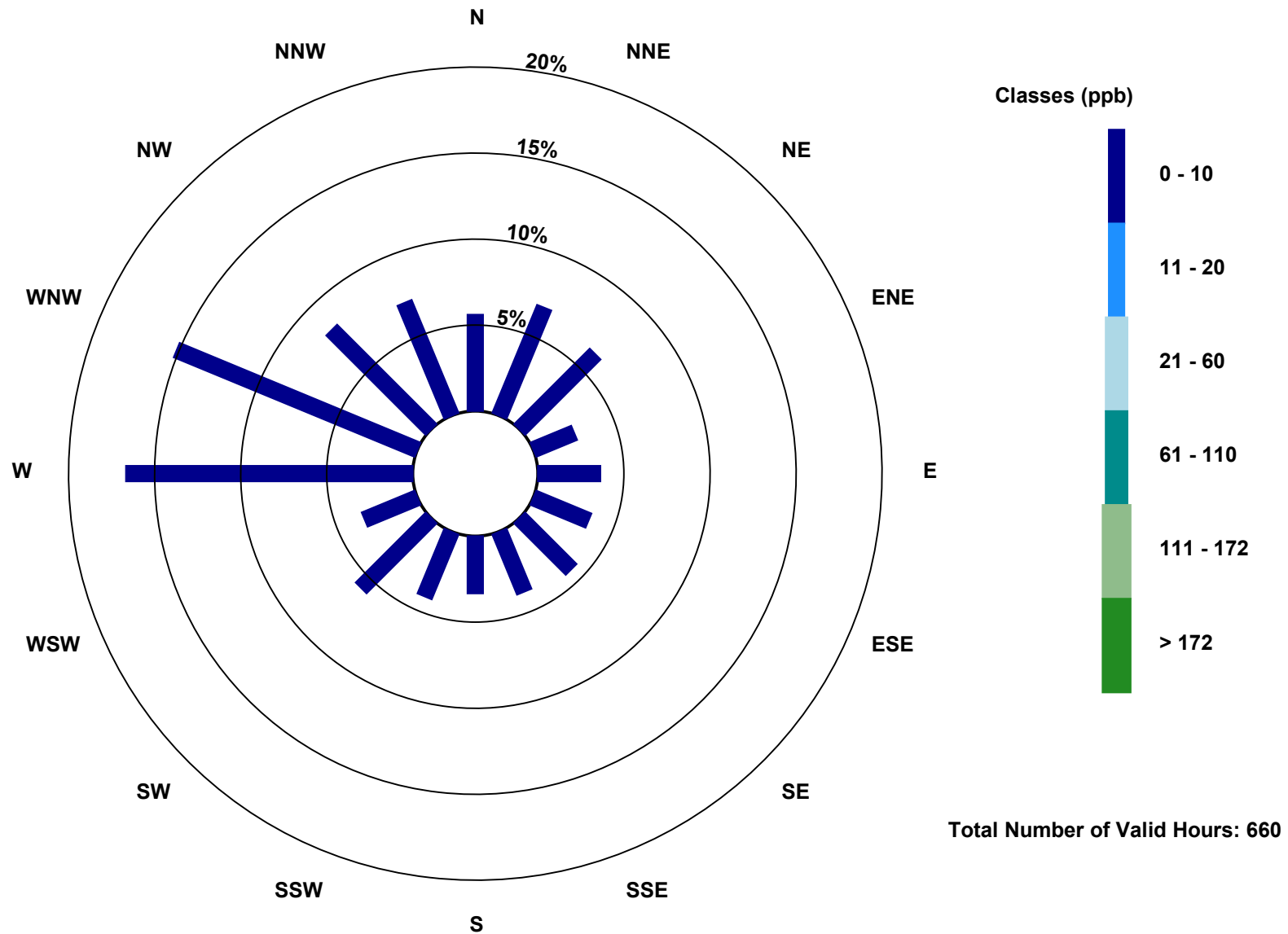
Total Number of Valid Hours: 660

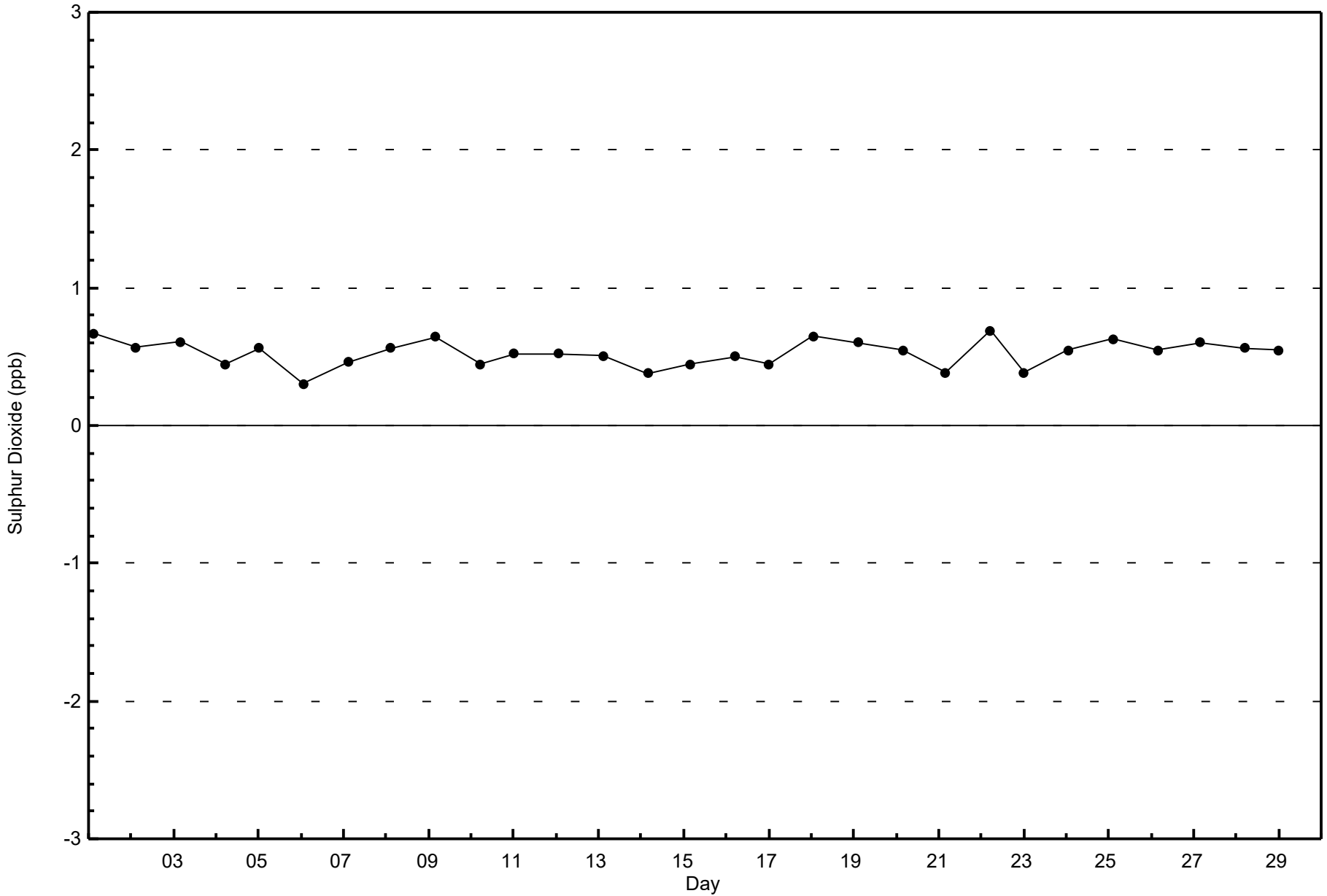
Total Number of Hours: 696

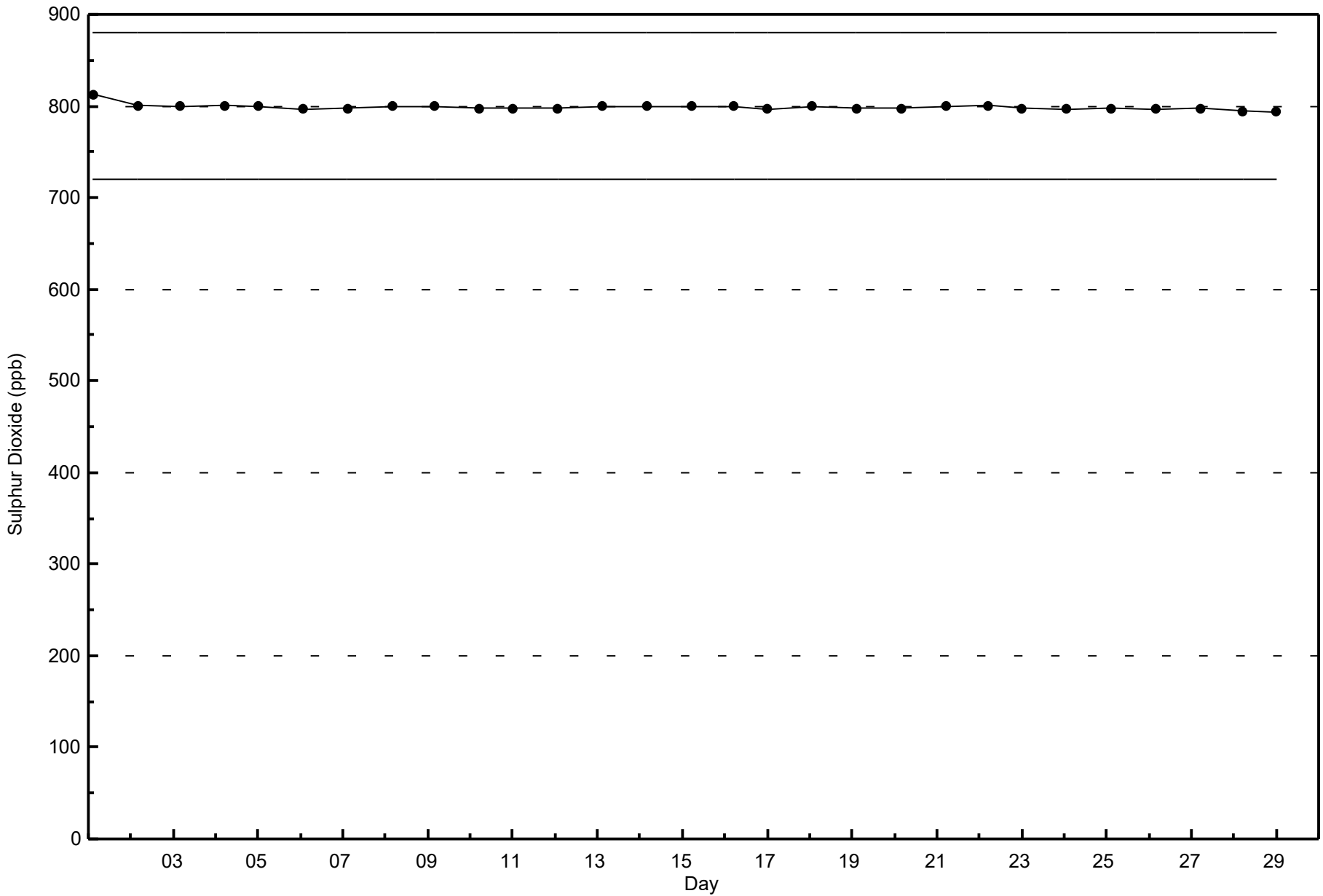


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Stony Mountain



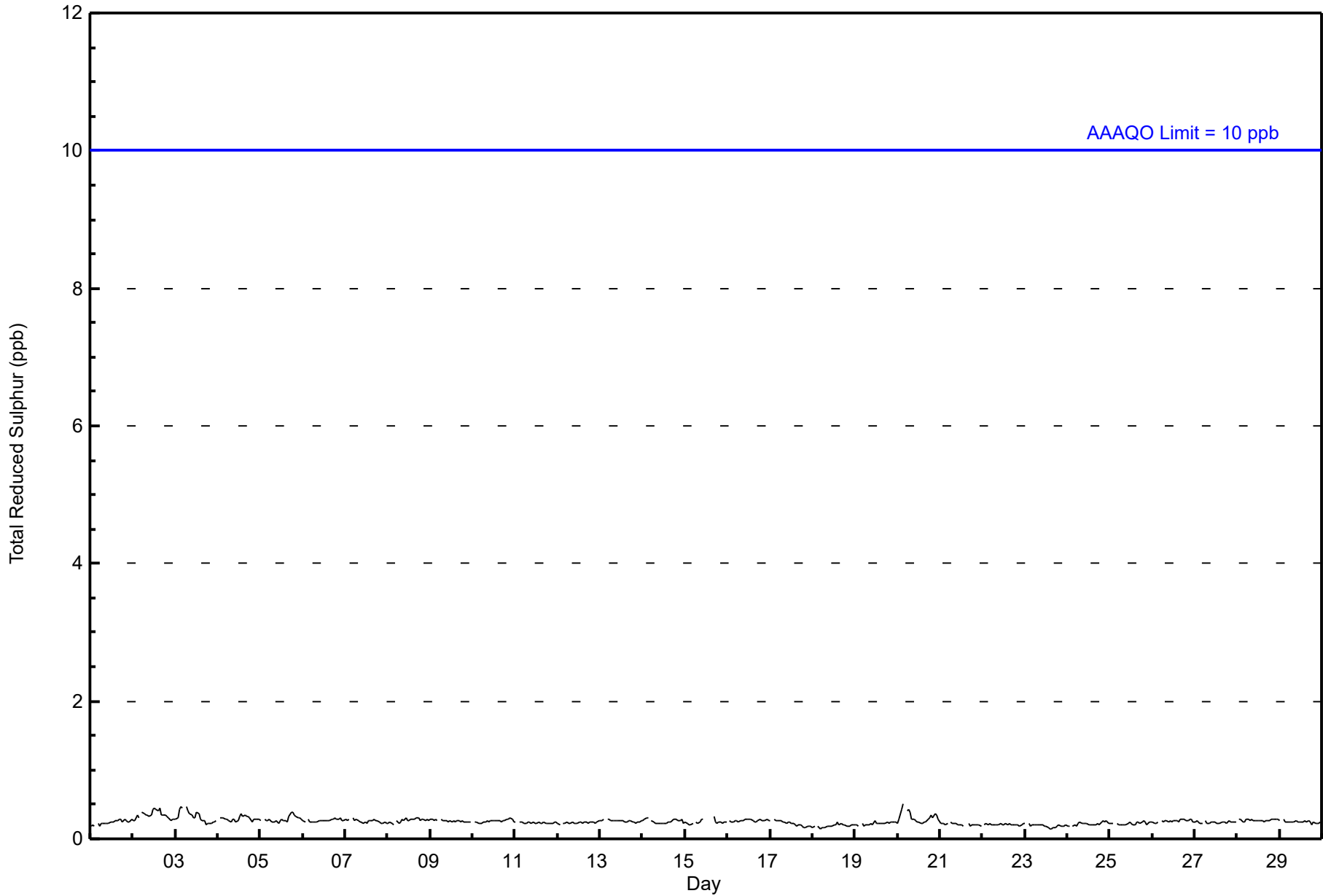






Wood Buffalo Environmental Association
Hourly Averages

Total Reduced Sulphur (TRS) - ppb
Stony Mountain - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Reduced Sulphur (TRS) - ppb
Stony Mountain - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	660	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Total Reduced Sulphur (TRS) - ppb
Stony Mountain - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	38	45	41	15	26	24	27	26	24	31	37	23	104	99	54	46	660
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	38	45	41	15	26	24	27	26	24	31	37	23	104	99	54	46	660

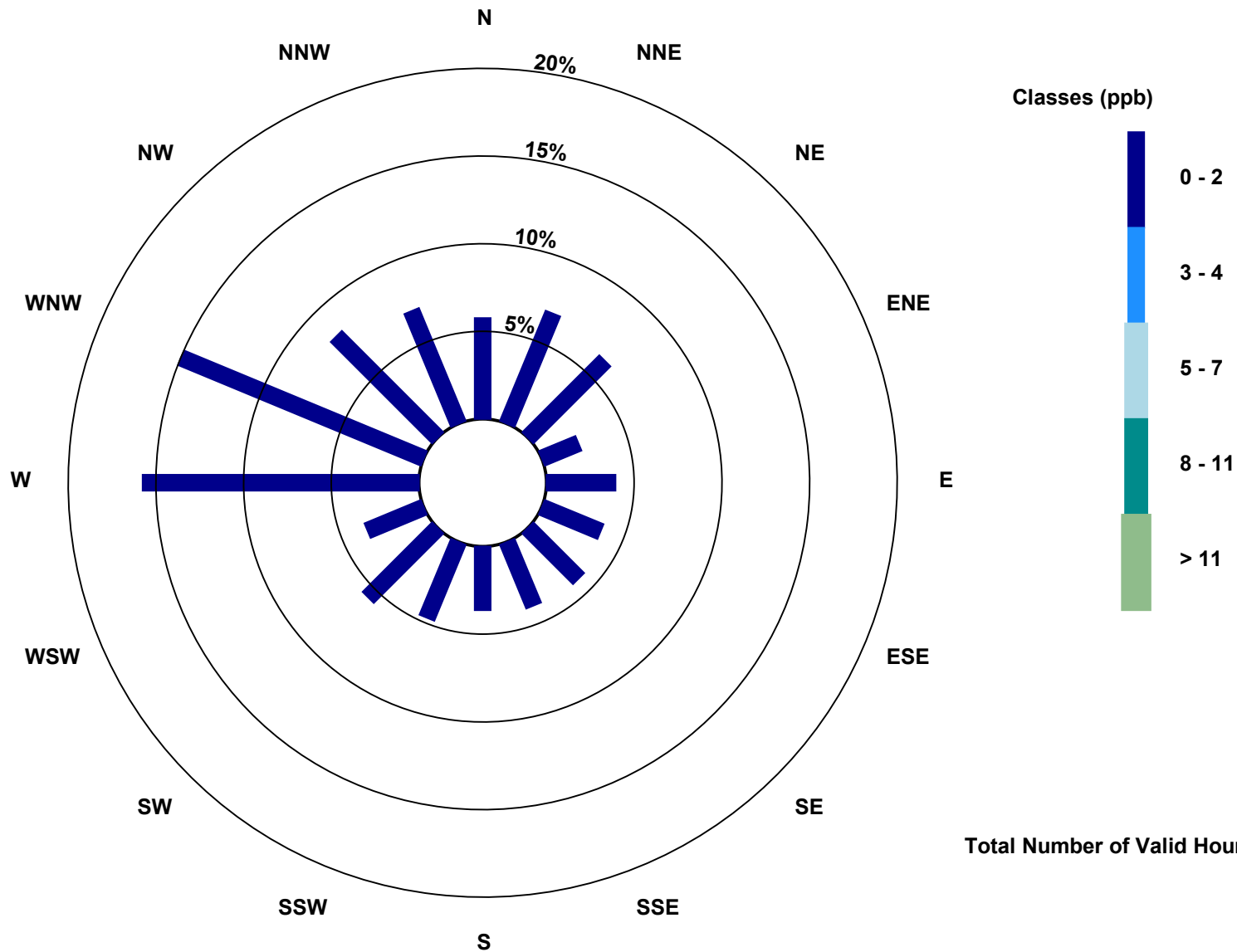
Total Number of Valid Hours: 660

Total Number of Hours: 696

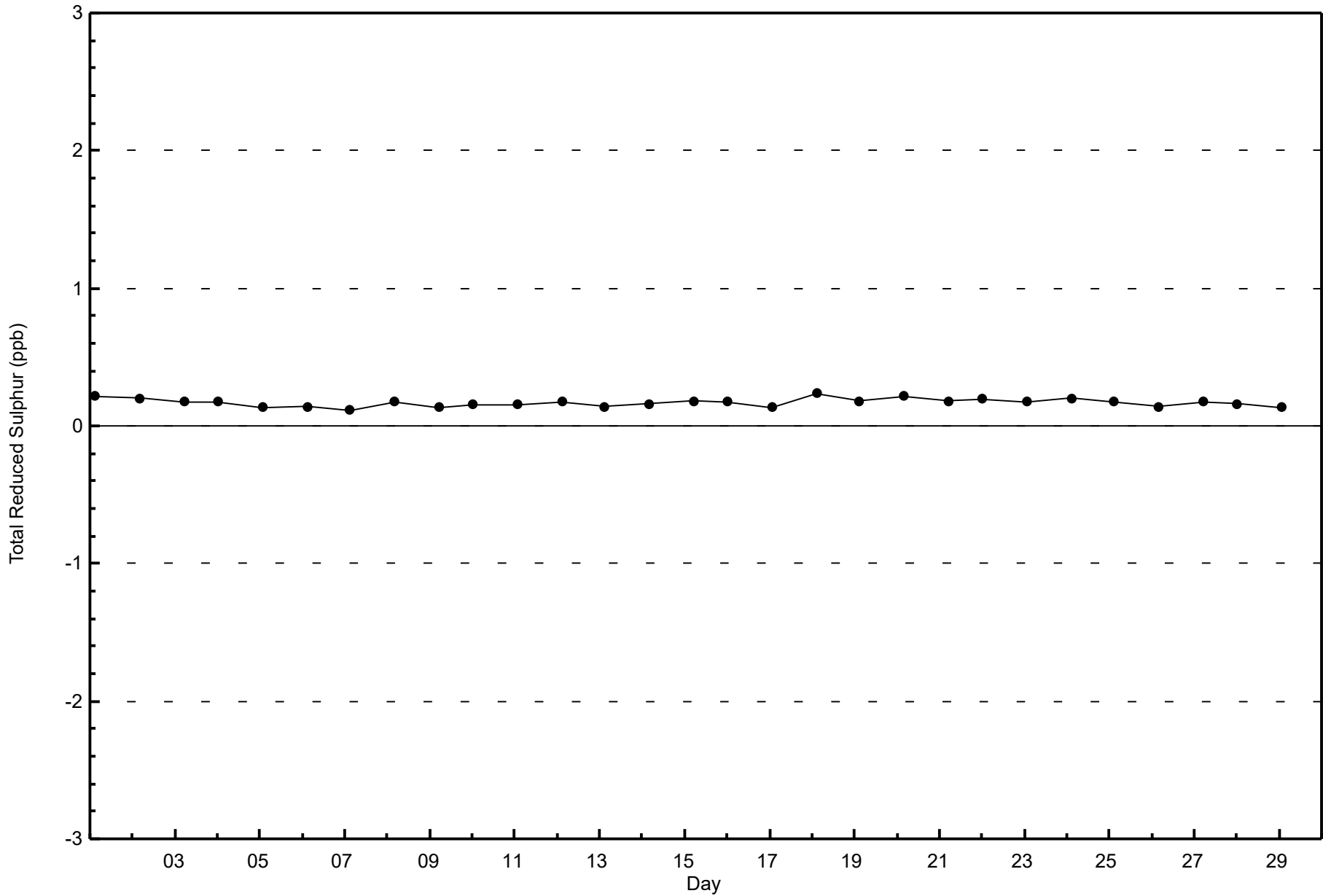


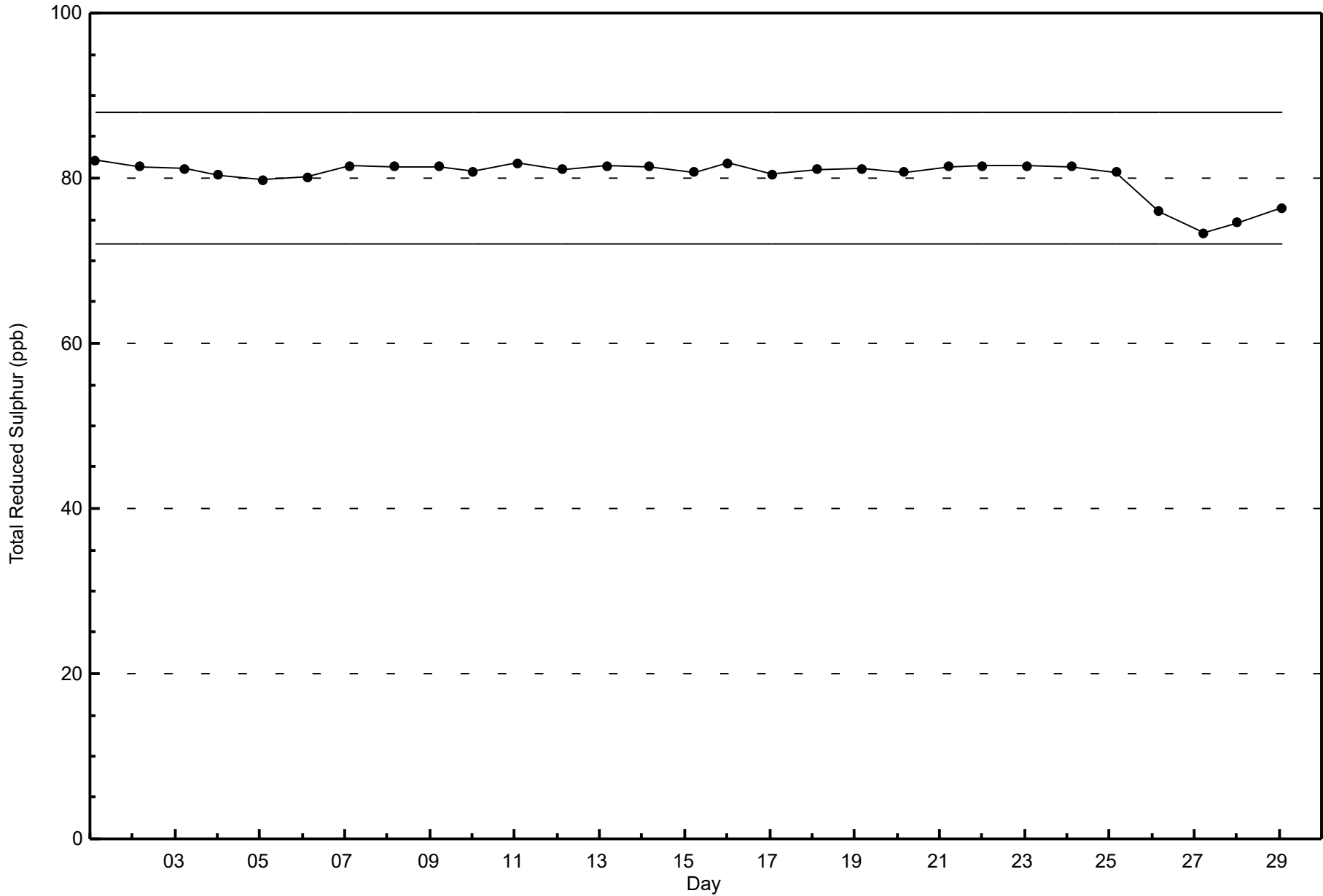
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Reduced Sulphur (TRS) - ppb
Stony Mountain



Total Number of Valid Hours: 660







Wood Buffalo Environmental Association
Summary of Hour Averages

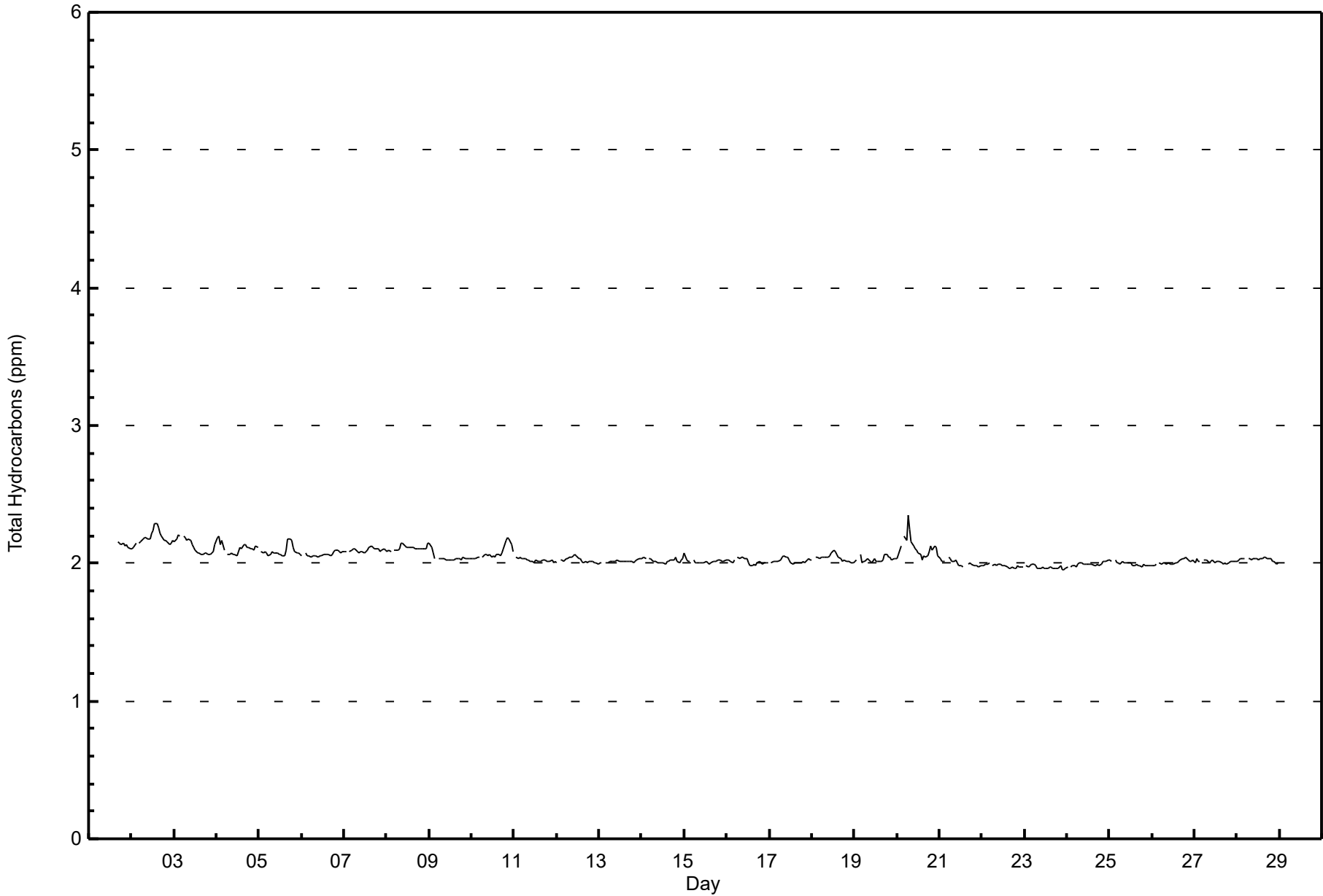
Total Hydrocarbons (THC) - ppm
Stony Mountain - February 2024

Maximum Value: 2.4 ppm on Feb 20 07:00		Maximum Daily Average: 2.2 ppm on Feb 2		Hours in Service: 696																							
Minimum Value: 2.0 ppm on Feb 23 22:00		Minimum Daily Average: 2.0 ppm on Feb 23		Hours of Data: 627																							
Maximum Diurnal Average: 2.1 ppm at hour 7		Minimum Diurnal Average: 2.0 ppm at hour 14		Hours of Missing Data: 69																							
Monthly Average: 2.05 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.0 Q ₃ = 2.1 P ₉₀ = 2.1 P ₉₉ = 2.2		Hours of Calibration: 32																							
				Percent Operational Time: 94.7																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	C	C	C	C	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	--	2.2
2-Feb	2.1	2.1	2.1	Z	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.3
3-Feb	2.2	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
4-Feb	2.2	2.2	2.1	2.2	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
5-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
6-Feb	2.1	Z	2.1	2.1	2.1	2.0	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
7-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
8-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
9-Feb	2.1	2.1	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
10-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2
11-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
13-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15-Feb	2.1	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
16-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
18-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
19-Feb	2.0	2.0	Z	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
20-Feb	2.0	2.1	2.1	Z	2.2	2.2	2.4	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.4
21-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	M	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
23-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
24-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
27-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
29-Feb	Z	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
2.0																								Diurnal Average			
2.2																								Diurnal Maximum			
Z - zerspan																											
C - Calibration																											
M - Maintenance																											
UO - Unstable Operation																											



Wood Buffalo Environmental Association
Hourly Averages

Total Hydrocarbons (THC) - ppm
Stony Mountain - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Stony Mountain - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	413	65.87	65.87
2.1 - 3.0	214	34.13	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 627

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Stony Mountain - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	17	12	23	9	10	2	10	8	6	10	26	20	100	95	34	31	413
2.1 - 3.0	19	32	16	7	14	10	18	16	10	14	12	2	10	5	13	16	214
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	36	44	39	16	24	12	28	24	16	24	38	22	110	100	47	47	627

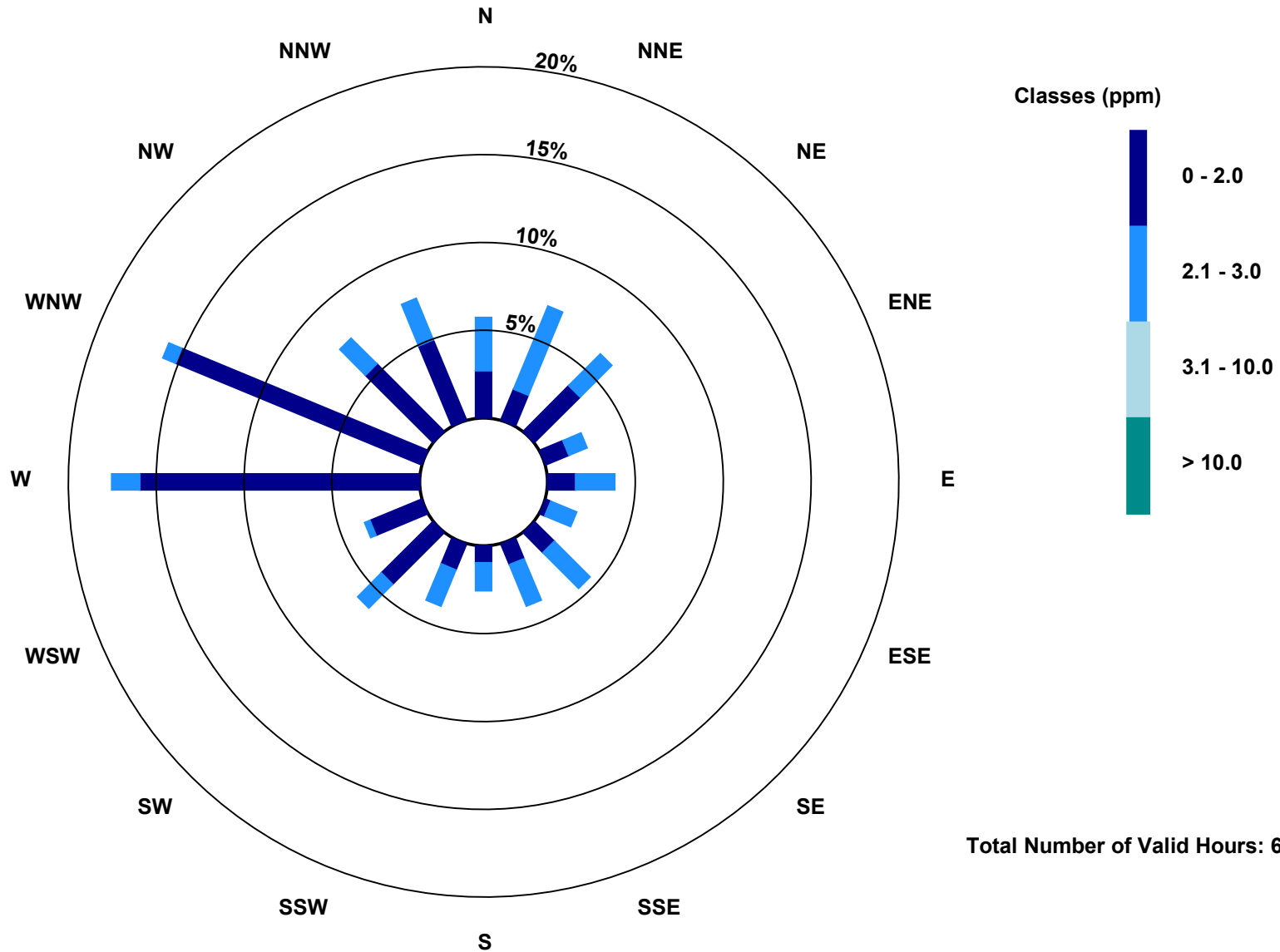
Total Number of Valid Hours: 627

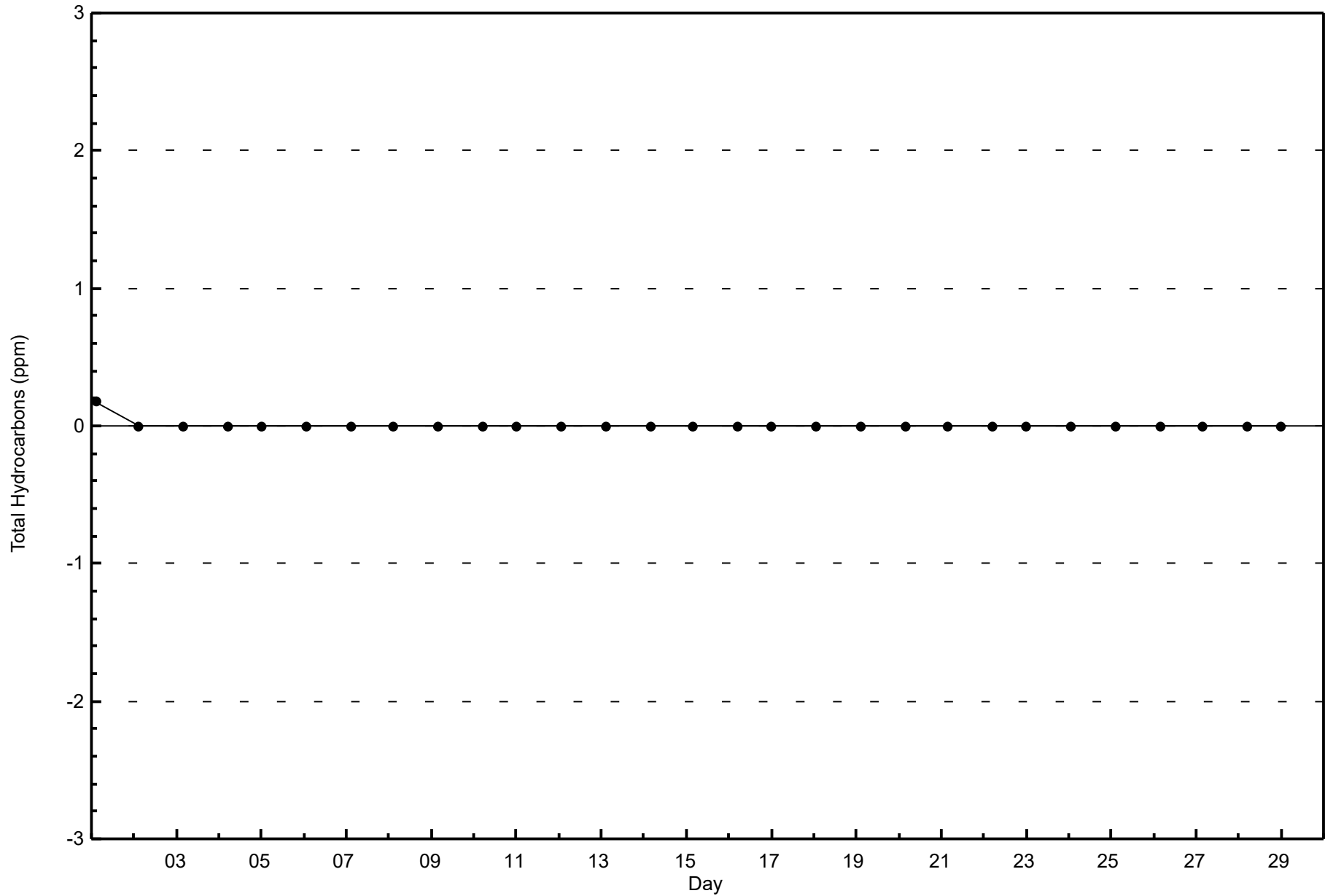
Total Number of Hours: 696

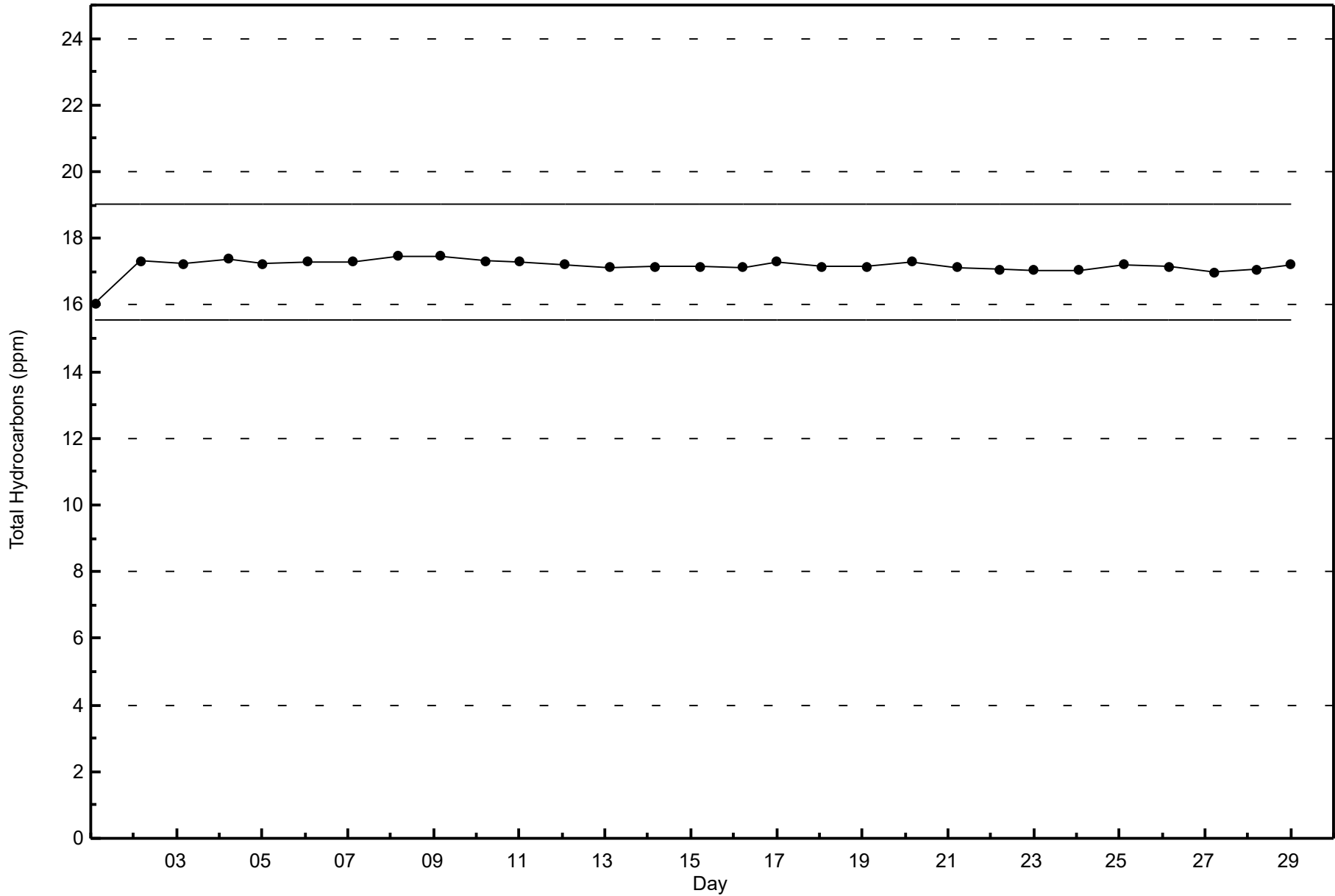


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Stony Mountain





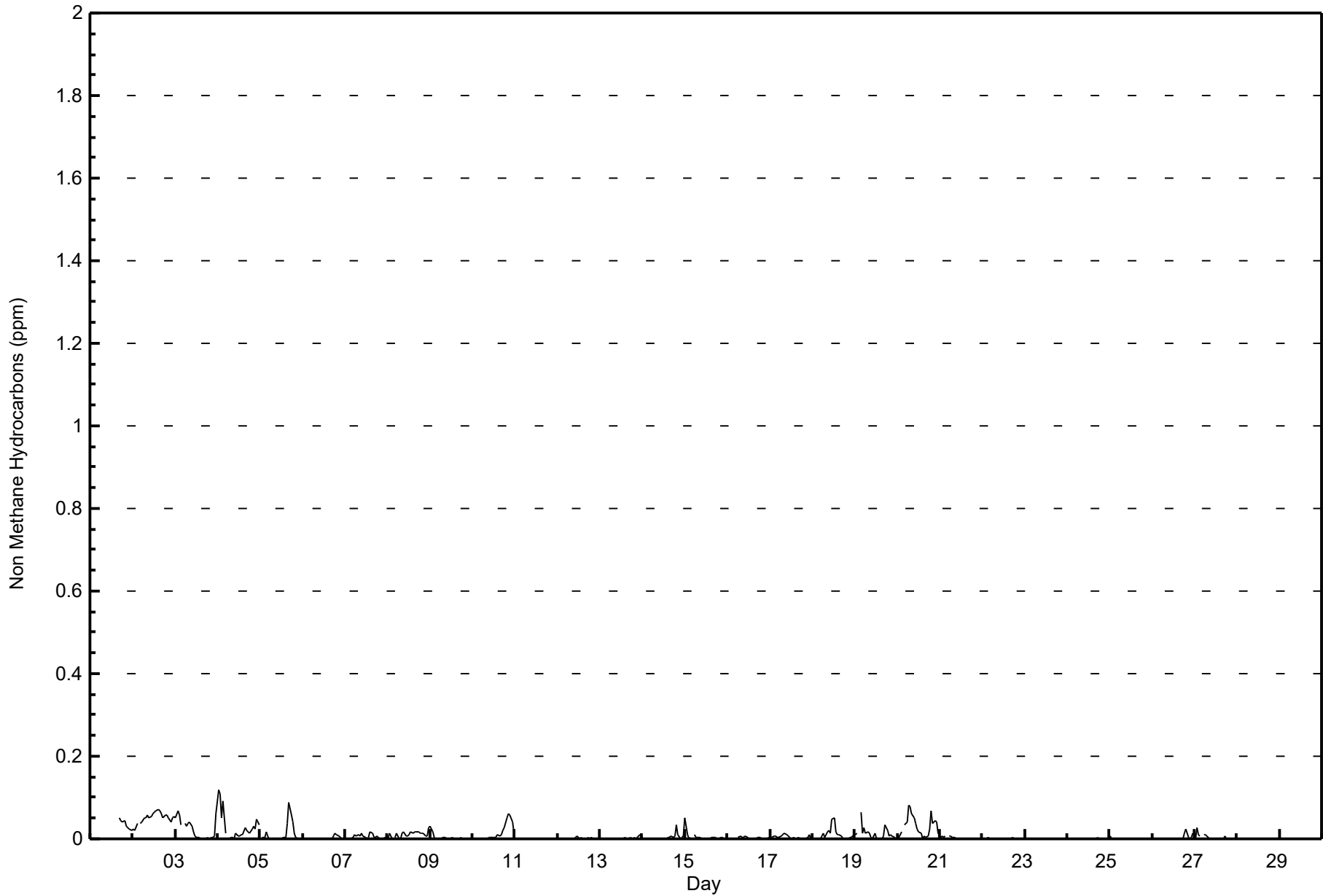




Summary of Hour Averages

Stony Mountain - February 2024

Maximum Value: 0.119 ppm on Feb 4 01:00		Maximum Daily Average: 0.051 ppm on Feb 2		Hours in Service: 696																									
Minimum Value: 0.000 ppm on Feb 3 20:00		Minimum Daily Average: 0.000 ppm on Feb 23		Hours of Data: 627																									
Maximum Diurnal Average: 0.013 ppm at hour 2		Minimum Diurnal Average: 0.005 ppm at hour 14		Hours of Missing Data: 69																									
Monthly Average: 0.009 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.1		Hours of Calibration: 32																									
				Percent Operational Time: 94.7																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	C	C	C	C	0.051	0.044	0.039	0.044	0.030	0.028	0.024	0.021	--	0.051			
2-Feb	0.023	0.019	0.036	Z	0.037	0.039	0.051	0.052	0.057	0.053	0.053	0.061	0.065	0.068	0.071	0.069	0.061	0.052	0.059	0.058	0.051	0.041	0.050	0.053	0.051	0.071			
3-Feb	0.050	0.068	0.056	0.035	Z	0.037	0.031	0.036	0.041	0.031	0.017	0.006	0.002	0.002	0.001	0.001	0.001	0.000	0.002	0.000	0.002	0.003	0.006	0.060	0.021	0.068			
4-Feb	0.119	0.110	0.051	0.091	0.015	Z	0.001	0.002	0.002	0.001	0.013	0.005	0.006	0.011	0.010	0.026	0.019	0.017	0.014	0.023	0.030	0.023	0.046	0.035	0.029	0.119			
5-Feb	Z	0.005	0.004	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.005	0.039	0.088	0.058	0.040	0.015	0.004	0.001	0.001	0.000	0.012	0.088			
6-Feb	0.000	Z	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000	0.000	0.005	0.015	0.011	0.007	0.005	0.001	0.002	0.002	0.015			
7-Feb	0.002	0.001	Z	0.000	0.004	0.012	0.007	0.009	0.006	0.014	0.007	0.002	0.001	0.004	0.017	0.012	0.004	0.004	0.008	0.001	0.000	0.000	0.004	0.000	0.005	0.017			
8-Feb	0.002	0.012	0.001	Z	0.003	0.015	0.001	0.000	0.013	0.015	0.008	0.008	0.010	0.017	0.015	0.015	0.017	0.018	0.015	0.013	0.013	0.008	0.006	0.028	0.011	0.028			
9-Feb	0.029	0.016	0.002	0.001	Z	0.001	0.001	0.003	0.002	0.000	0.000	0.000	0.002	0.000	0.000	0.001	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.029			
10-Feb	0.000	0.000	0.000	0.000	0.001	Z	0.000	0.001	0.001	0.003	0.003	0.003	0.003	0.004	0.010	0.008	0.009	0.019	0.028	0.051	0.062	0.059	0.040	0.014	0.014	0.062			
11-Feb	Z	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.002			
12-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.006	0.001	0.002	0.001	0.002	0.001	0.002	0.001	0.004	0.002	0.000	0.000	0.000	0.001	0.006			
13-Feb	0.000	0.000	Z	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.002	0.000	0.001	0.004	0.001	0.002	0.000	0.002	0.009	0.009	0.001	0.009			
14-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.003	0.003	0.007	0.005	0.007	0.036	0.010	0.000	0.005	0.008	0.004	0.036			
15-Feb	0.049	0.012	0.001	0.004	Z	0.009	0.002	0.002	0.003	0.000	0.001	0.000	0.000	0.001	0.000	0.003	0.002	0.002	0.000	0.003	0.003	0.002	0.001	0.000	0.004	0.049			
16-Feb	0.000	0.001	0.000	0.000	0.001	Z	0.005	0.005	0.005	0.005	0.006	0.003	0.001	0.000	0.000	0.000	0.000	0.003	0.002	0.000	0.000	0.000	0.003	0.003	0.002	0.006			
17-Feb	Z	0.003	0.006	0.005	0.004	0.004	0.007	0.009	0.013	0.010	0.007	0.003	0.001	0.003	0.001	0.001	0.002	0.000	0.000	0.000	0.001	0.003	0.010	0.000	0.004	0.013			
18-Feb	0.001	Z	0.000	0.001	0.000	0.007	0.014	0.005	0.018	0.020	0.015	0.046	0.050	0.018	0.011	0.011	0.006	0.000	0.000	0.000	0.001	0.003	0.004	0.010	0.010	0.050			
19-Feb	0.010	0.015	Z	0.066	0.014	0.026	0.014	0.017	0.015	0.004	0.001	0.013	0.000	0.001	0.001	0.001	0.007	0.033	0.020	0.007	0.011	0.006	0.002	0.001	0.012	0.066			
20-Feb	0.001	0.005	0.017	Z	0.033	0.039	0.083	0.077	0.060	0.049	0.036	0.022	0.017	0.014	0.001	0.005	0.004	0.008	0.023	0.069	0.037	0.045	0.041	0.012	0.030	0.083			
21-Feb	0.004	0.008	0.003	0.007	Z	0.008	0.007	0.004	0.003	0.001	0.000	0.000	0.000	0.000	M	M	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.008			
22-Feb	0.000	0.000	0.001	0.002	0.000	Z	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.001	0.001	0.000	0.001	0.001	0.004			
23-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
24-Feb	0.000	Z	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.002			
25-Feb	0.007	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007			
26-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.012	0.023	0.003	0.000	0.003	0.012	0.002	0.023			
27-Feb	0.000	0.028	0.009	0.007	Z	0.010	0.009	0.007	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.028			
28-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001			
29-Feb	Z	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	--		
		0.013		0.013		0.008		0.011		0.006		0.009		0.009		0.008		0.009		0.008		0.010		0.010		Diurnal Average			
		0.119		0.110		0.056		0.091		0.037		0.039		0.083		0.077		0.060		0.053		0.053		0.061		0.065		Diurnal Maximum	
Z - zerspan		C - Calibration				M - Maintenance				UO - Unstable Operation																			





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Stony Mountain - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	441	70.33	70.33
0.006 - 0.05	162	25.84	96.17
0.06 - 0.1	24	3.83	100.00
> 0.1	0	0.00	100.00

Total Number of Valid Hours: 627

Total Number of Hours: 696



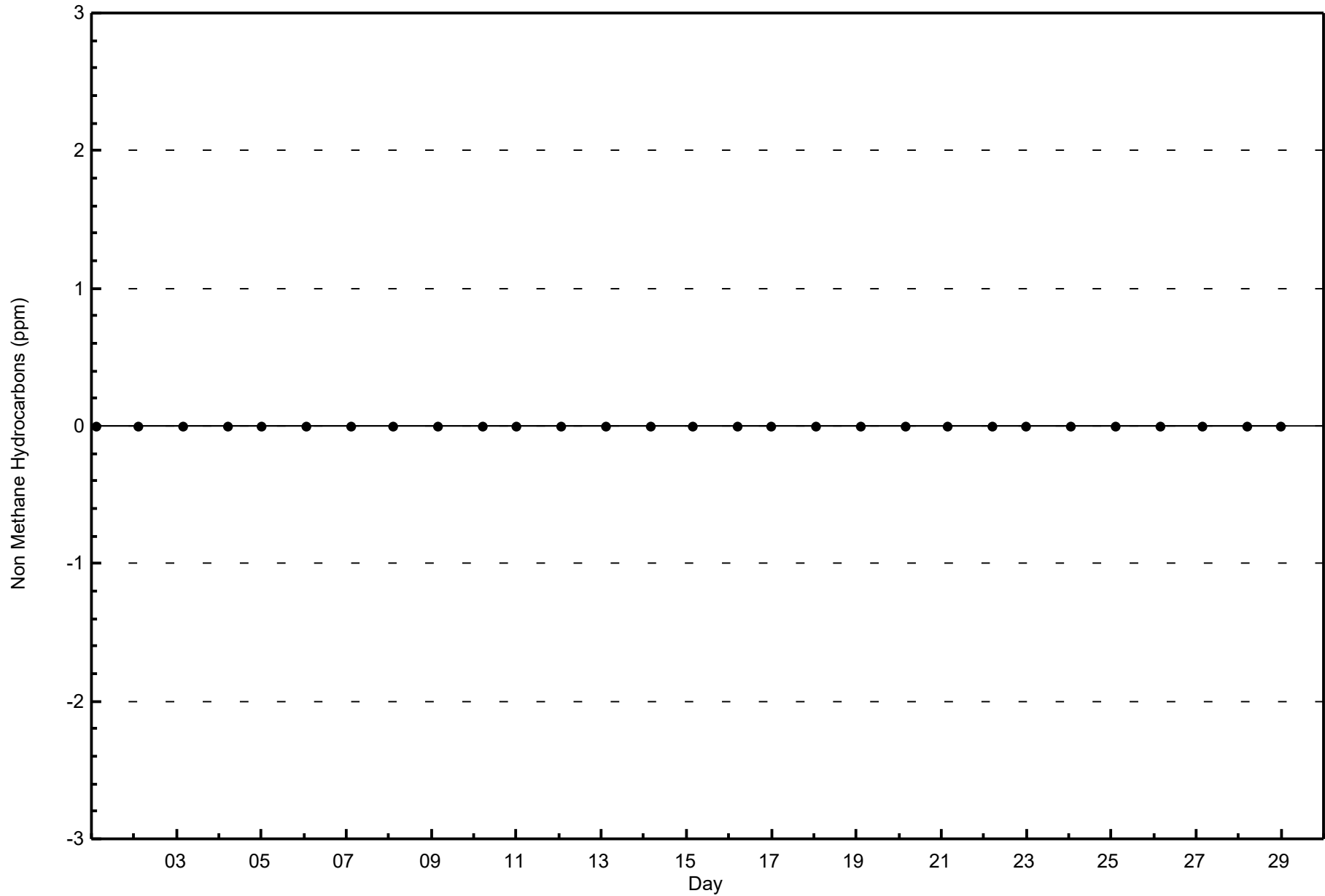
**Wood Buffalo Environmental Association
Frequency Distribution**

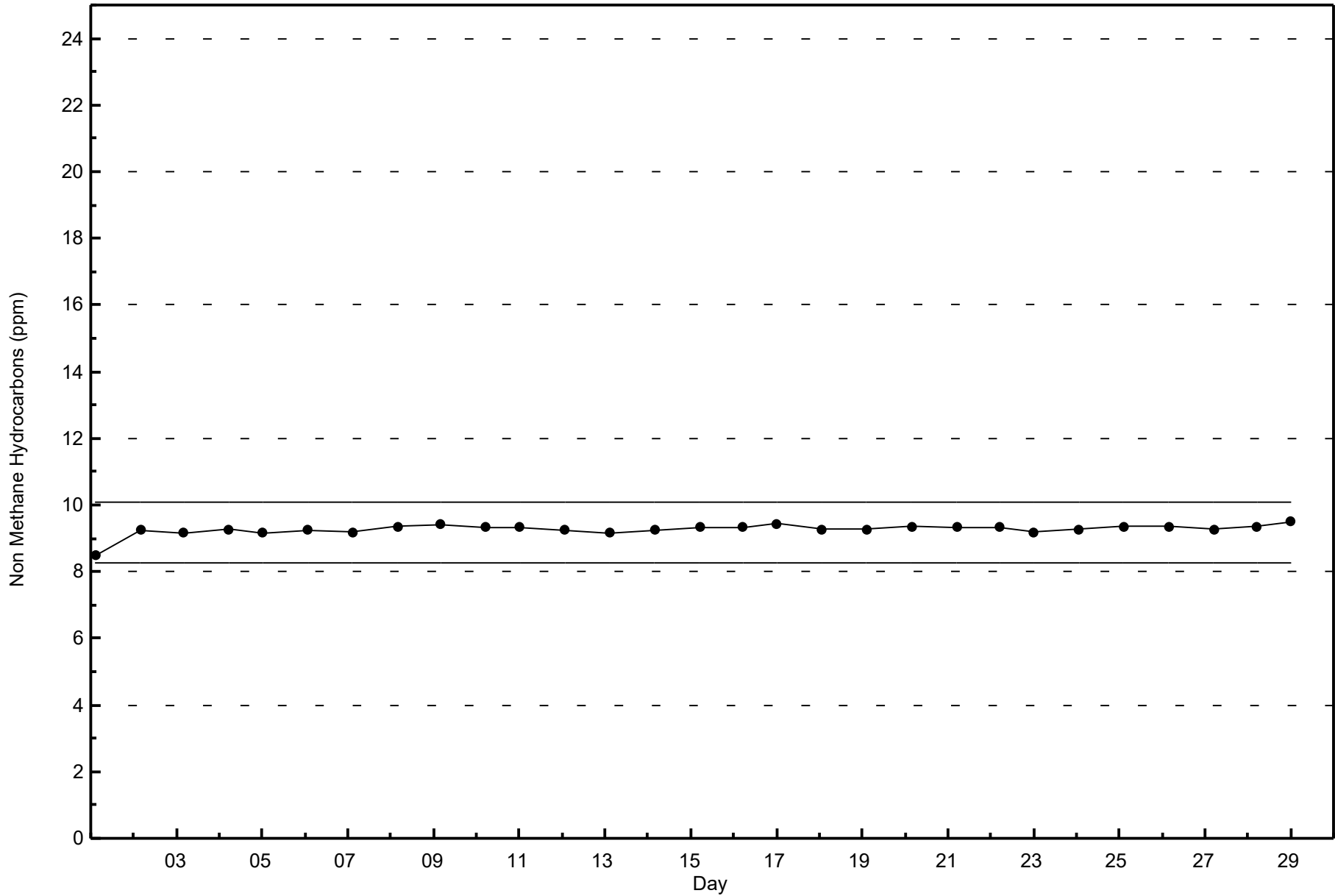
**Non Methane Hydrocarbons (NMHC) - ppm
Stony Mountain - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	26	25	29	10	17	7	14	16	6	13	27	18	94	77	27	35	441
0.006 - 0.05	9	14	6	5	6	5	12	8	10	10	10	4	13	21	19	10	162
0.06 - 0.1	1	5	4	1	1	0	2	0	0	1	1	0	3	2	1	2	24
> 0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	36	44	39	16	24	12	28	24	16	24	38	22	110	100	47	47	627

Total Number of Valid Hours: 627

Total Number of Hours: 696







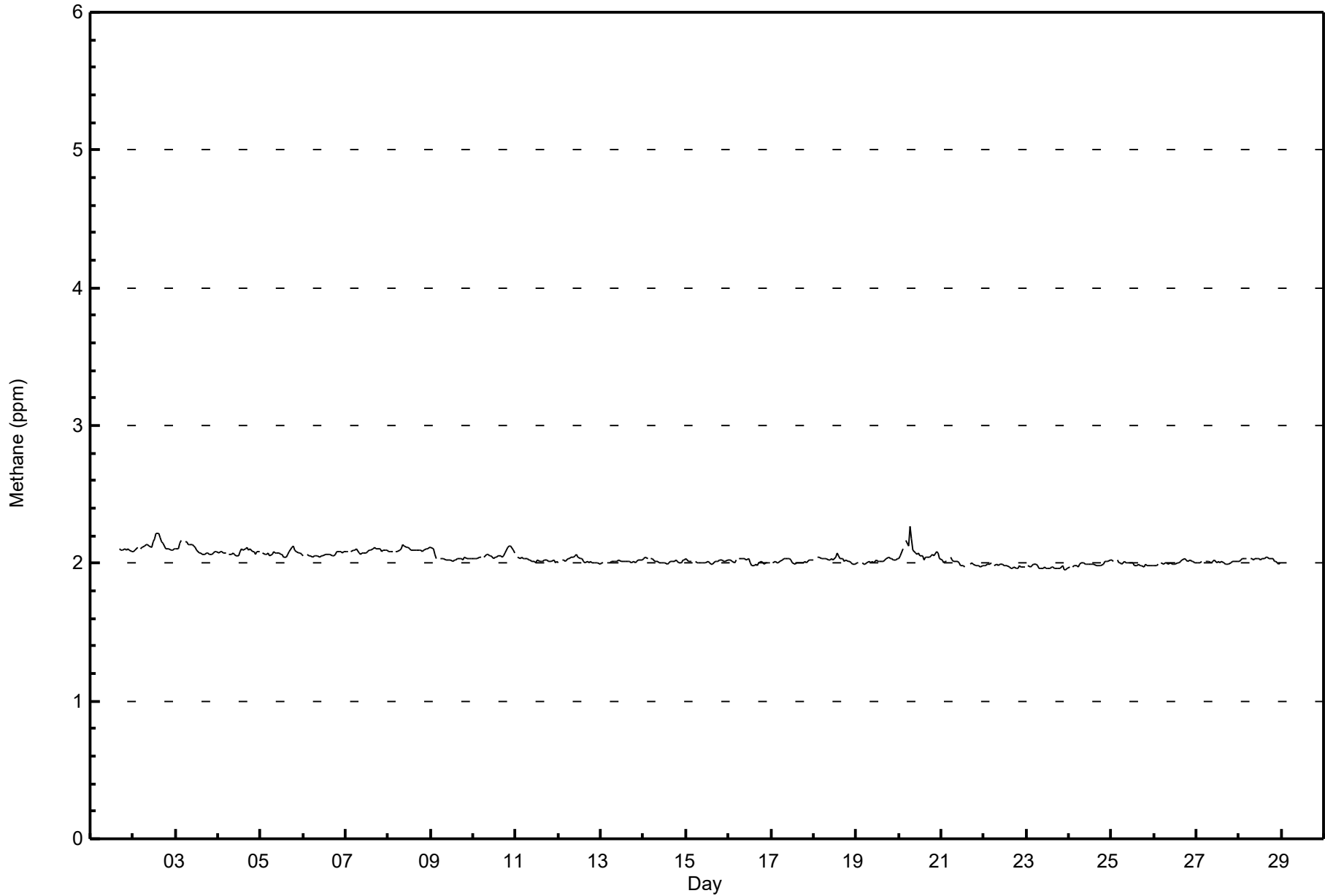
Wood Buffalo Environmental Association

Summary of Hour Averages

Methane (CH₄) - ppm

Stony Mountain - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														627							
Maximum Value: 2.3 ppm on Feb 20 07:00		Maximum Daily Average: 2.1 ppm on Feb 2		Hours of Data: 627														69									
Minimum Value: 2.0 ppm on Feb 23 22:00		Minimum Daily Average: 2.0 ppm on Feb 23		Hours of Missing Data: 69														32									
Maximum Diurnal Average: 2.0 ppm at hour 7		Minimum Diurnal Average: 2.0 ppm at hour 4		Hours of Calibration: 32														94.7									
Monthly Average: 2.04 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.0 Q ₃ = 2.1 P ₉₀ = 2.1 P ₉₉ = 2.2		Percent Operational Time: 94.7																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	C	C	C	C	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	--	2.1	
2-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
3-Feb	2.1	2.1	2.1	2.2	Z	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
4-Feb	2.1	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
5-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
6-Feb	2.1	Z	2.1	2.1	2.1	2.0	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
7-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
8-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
9-Feb	2.1	2.1	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
10-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
11-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
13-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
19-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20-Feb	2.0	2.1	2.1	Z	2.2	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.3
21-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	M	M	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
23-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
24-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25-Feb	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
27-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
29-Feb	Z	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--
2.0																								Diurnal Average			
2.1																								Diurnal Maximum			
Z - zerspan																											
C - Calibration																											
M - Maintenance																											
UO - Unstable Operation																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Stony Mountain - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	428	68.26	68.26
2.1 - 3.0	199	31.74	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 627

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Methane (CH₄) - ppm
Stony Mountain - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	19	15	24	9	11	2	11	8	7	11	26	20	101	97	36	31	428
2.1 - 3.0	17	29	15	7	13	10	17	16	9	13	12	2	9	3	11	16	199
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	36	44	39	16	24	12	28	24	16	24	38	22	110	100	47	47	627

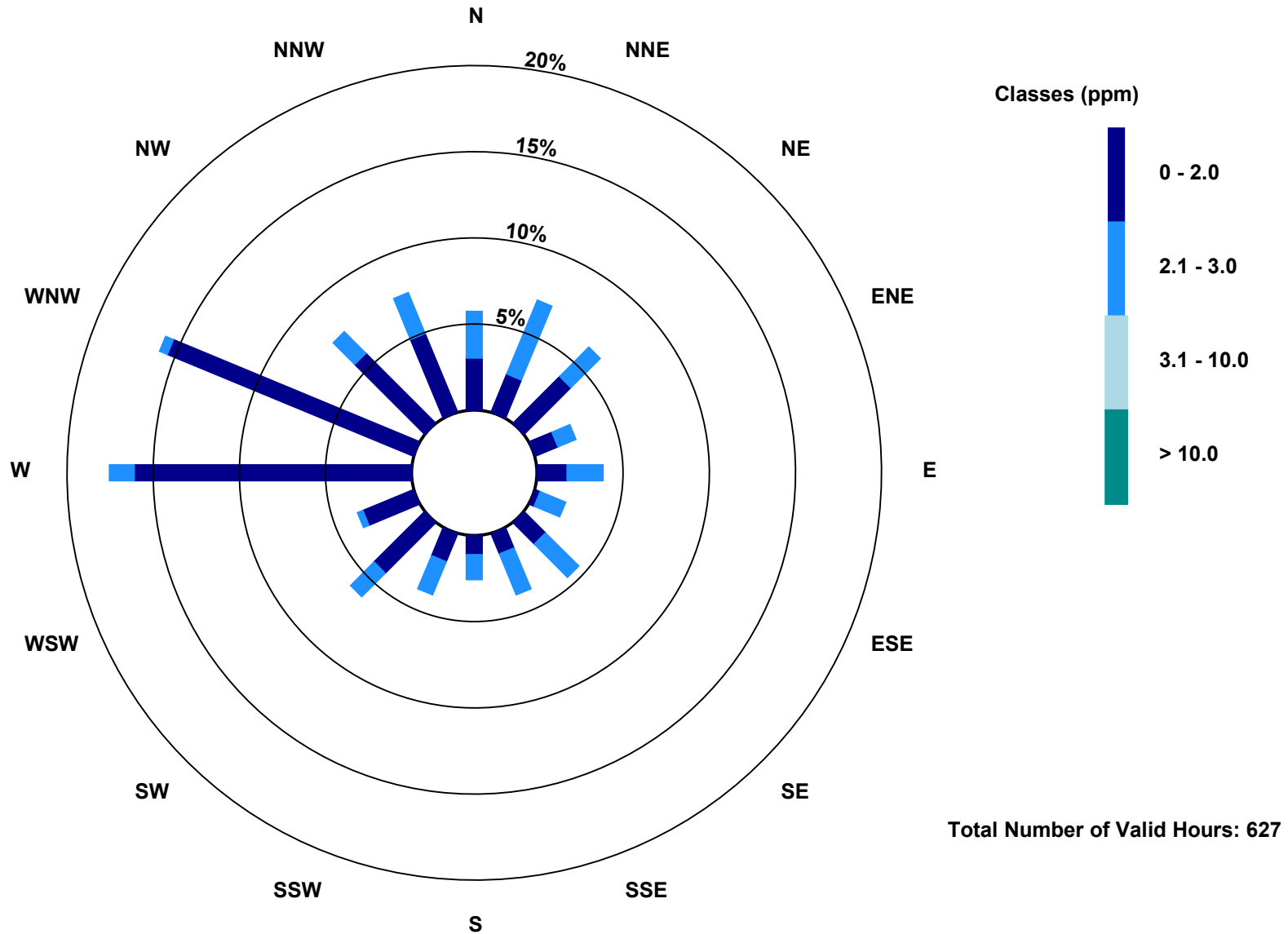
Total Number of Valid Hours: 627

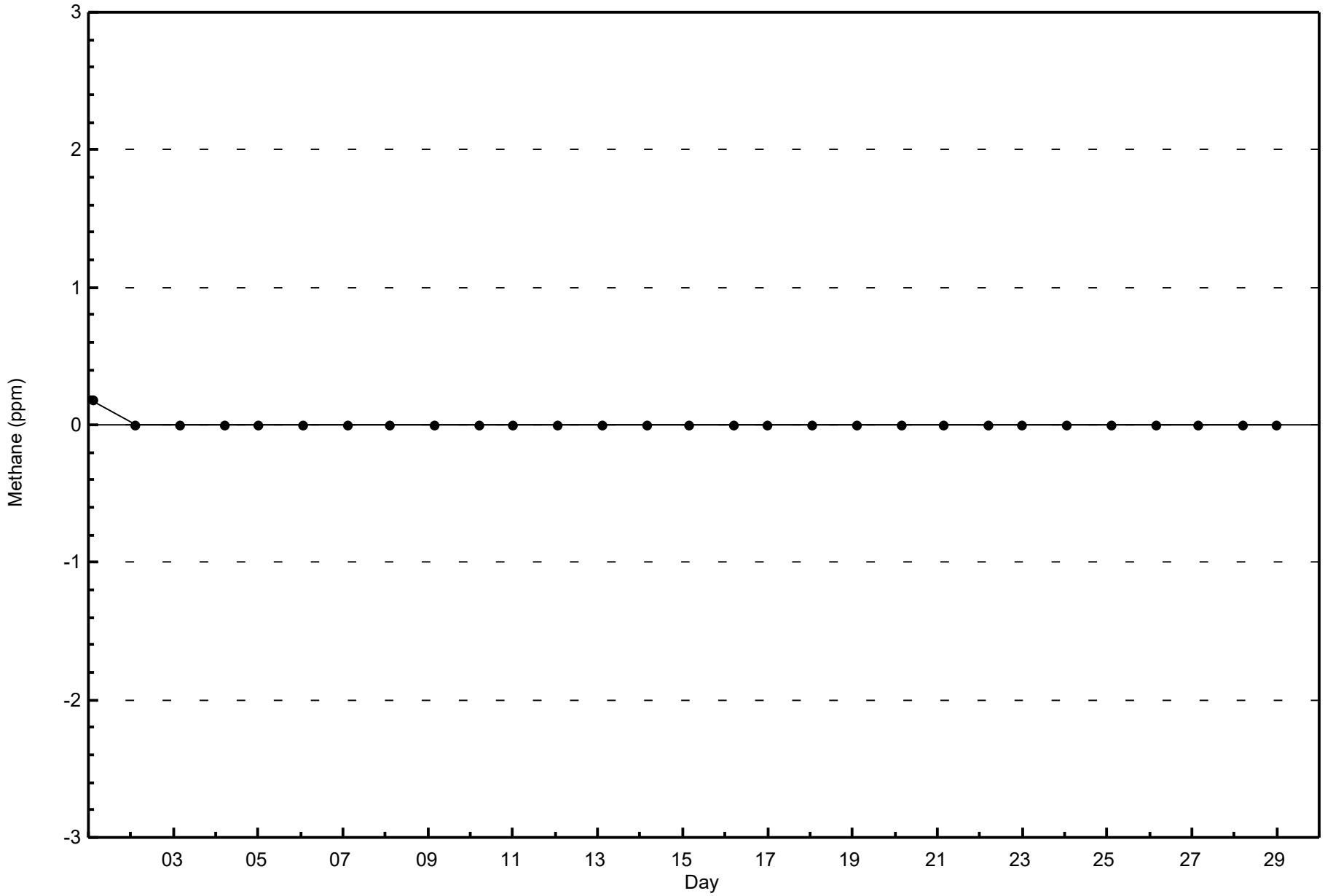
Total Number of Hours: 696

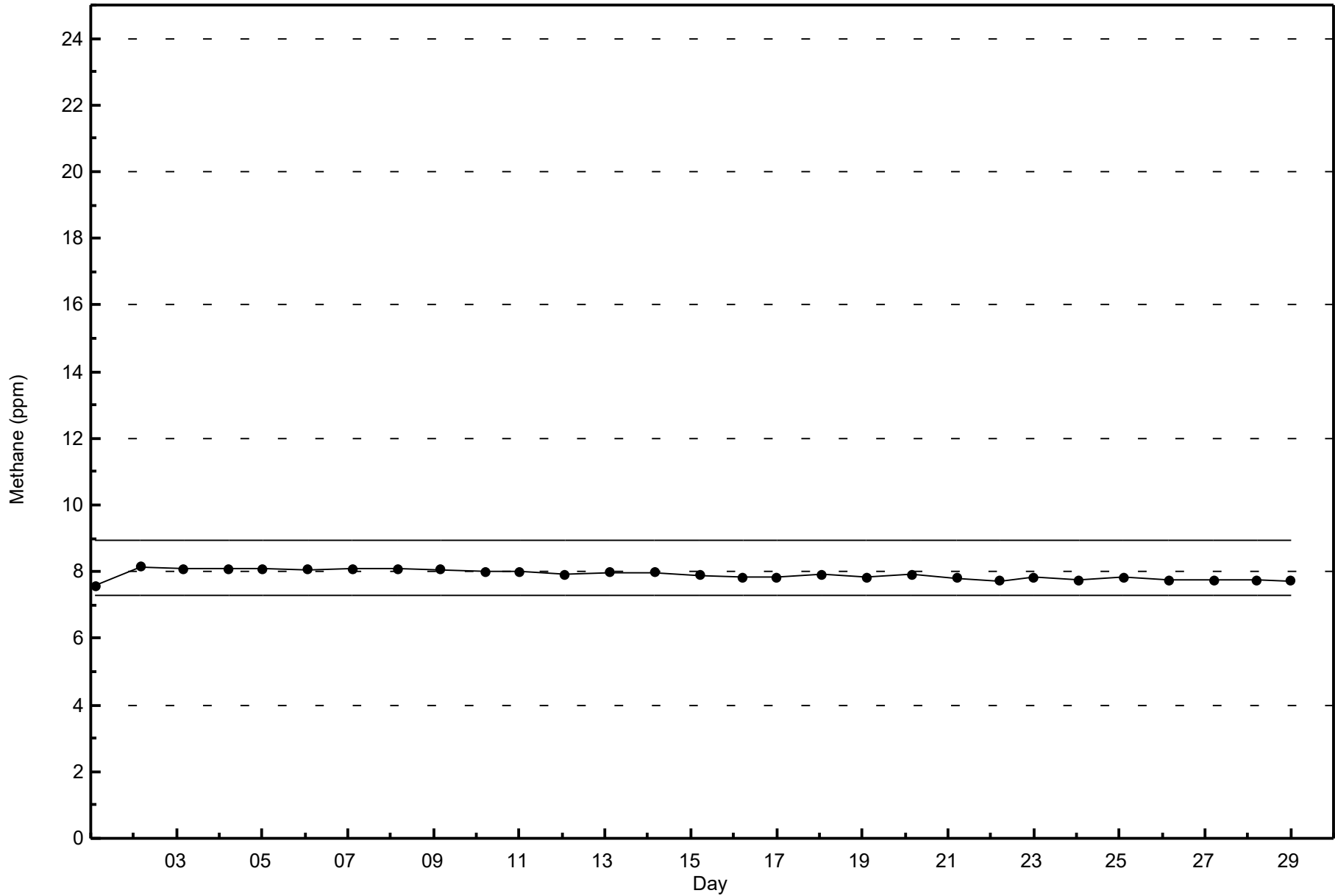


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Stony Mountain







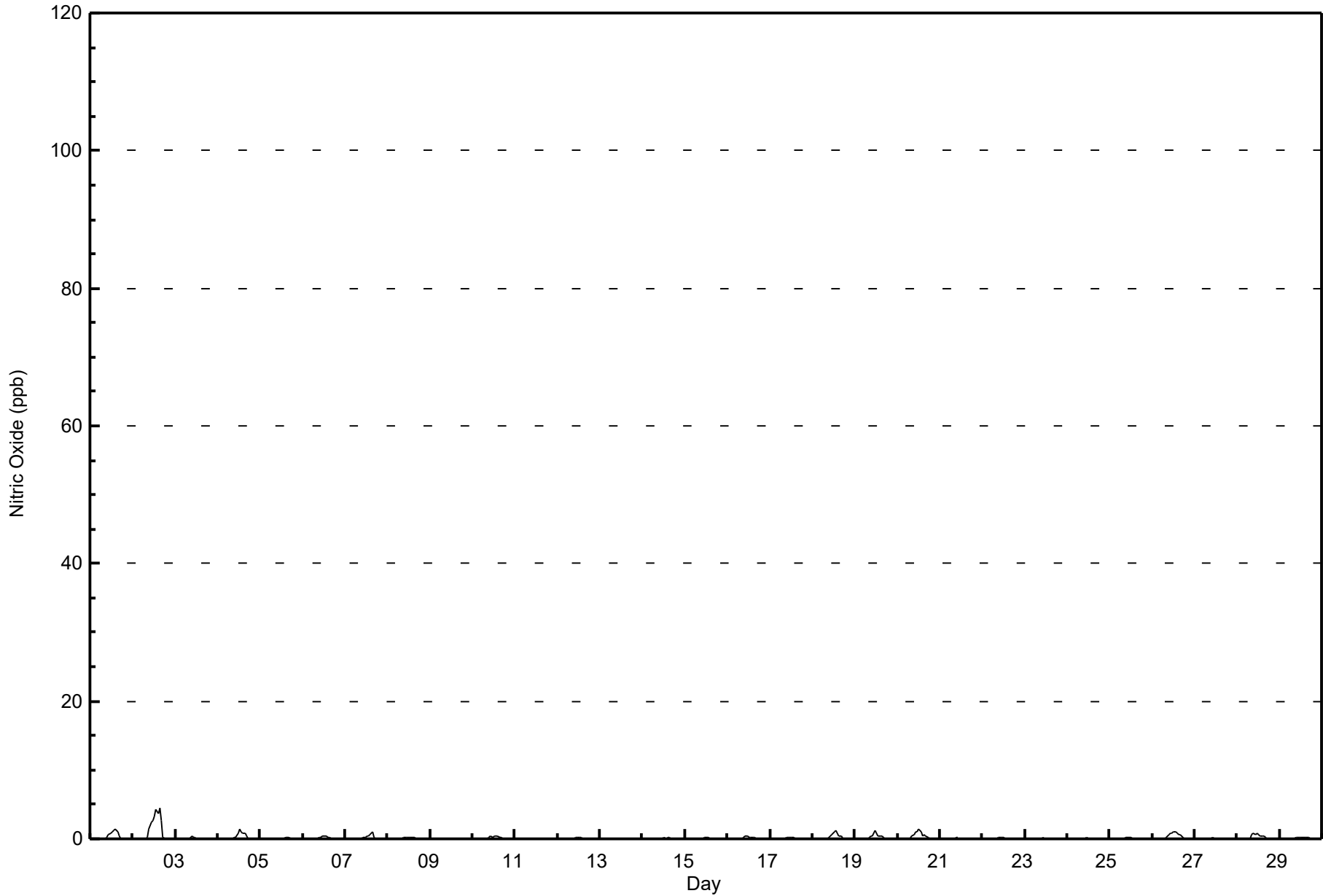


Maximum Value: 4.4 ppb on Feb 2 16:00		Maximum Daily Average: 1.1 ppb on Feb 2		Hours in Service: 696																						
Minimum Value: 0.0 ppb on Feb 3 17:00		Minimum Daily Average: 0.0 ppb on Feb 9		Hours of Data: 661																						
Maximum Diurnal Average: 0.5 ppb at hour 13		Minimum Diurnal Average: 0.0 ppb at hour 6		Hours of Missing Data: 35																						
Monthly Average: 0.14 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.1 P ₉₀ = 0.3 P ₉₉ = 1.8		Hours of Calibration: 35																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.2	0.5	0.8	1.1	1.3	1.4	1.1	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3	1.4
2-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.3	2.4	2.7	3.3	4.2	3.7	4.4	2.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.1	4.4
3-Feb	0.0	Z	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5
4-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.8	1.5	1.1	0.8	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.5
5-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
6-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4
7-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.4	0.6	1.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.1
8-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
9-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
11-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
12-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.3	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
13-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
14-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
15-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
16-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
17-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
18-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.4	0.7	1.0	1.1	0.8	0.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.1
19-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.4	0.3	1.2	0.7	0.5	0.4	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.2
20-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	1.0	1.0	1.4	1.0	0.4	0.7	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.4
21-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	C	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	0.2
22-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
23-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
24-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
25-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
26-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.8	0.8	1.1	1.0	0.9	0.7	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.1
27-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
28-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.6	0.8	0.7	0.8	0.6	0.4	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8
29-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
																								Diurnal Average		
																								Diurnal Maximum		
Z - zerospan C - Calibration																										



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Stony Mountain - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitric Oxide (NO) - ppb
Stony Mountain - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Nitric Oxide (NO) - ppb
Stony Mountain - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	38	44	41	15	26	24	27	26	26	29	35	22	108	98	56	46	661
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	38	44	41	15	26	24	27	26	26	29	35	22	108	98	56	46	661

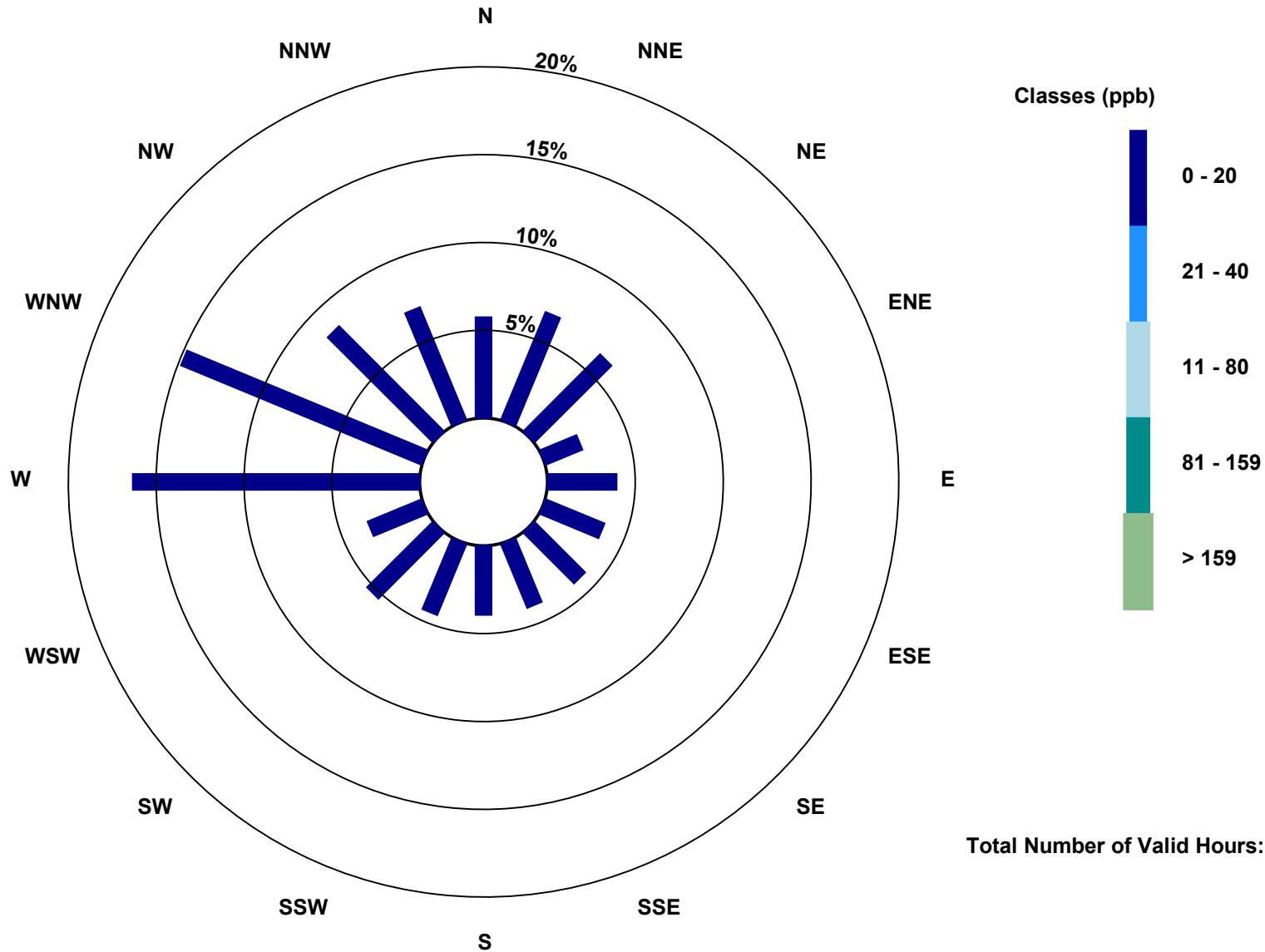
Total Number of Valid Hours: 661

Total Number of Hours: 696

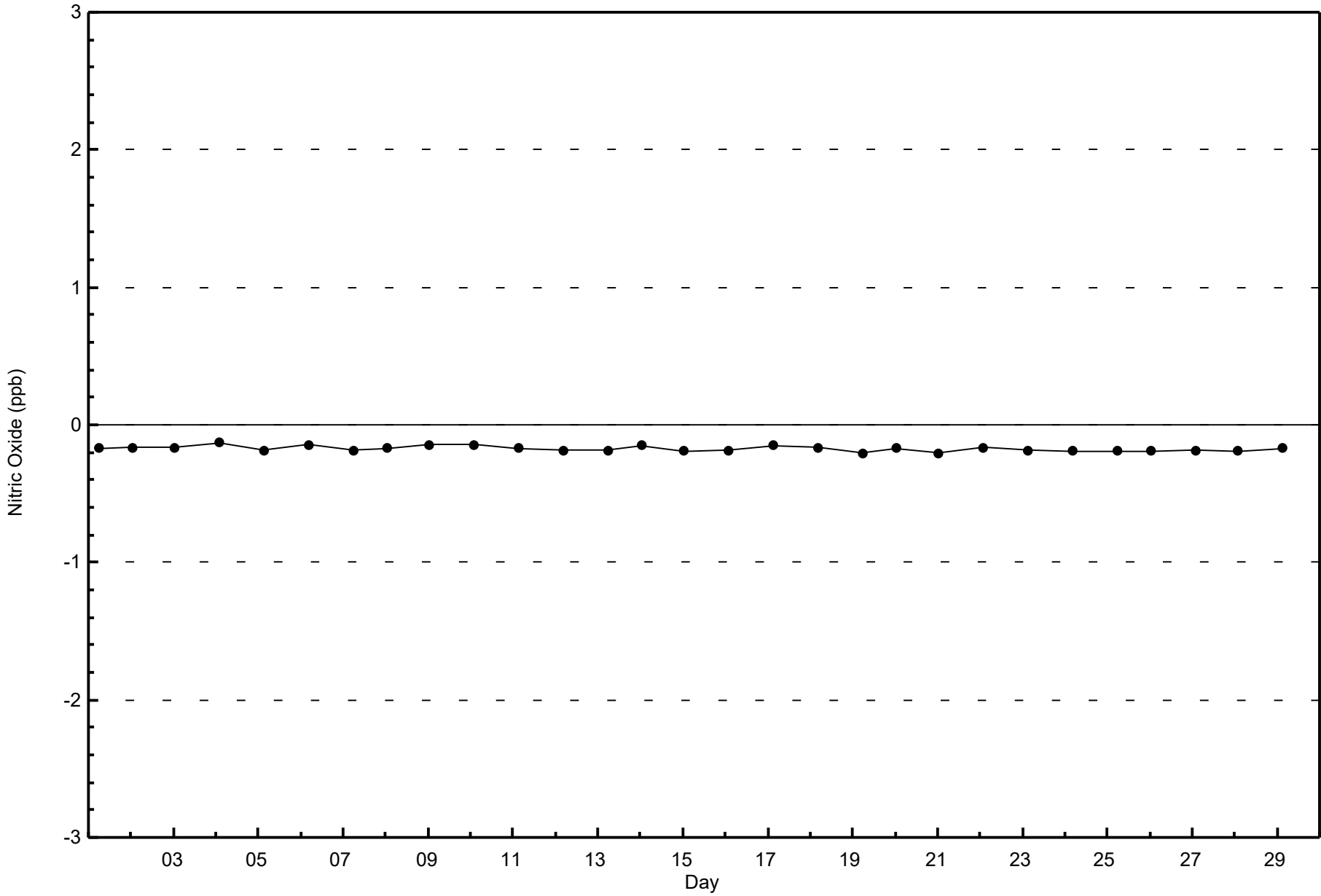


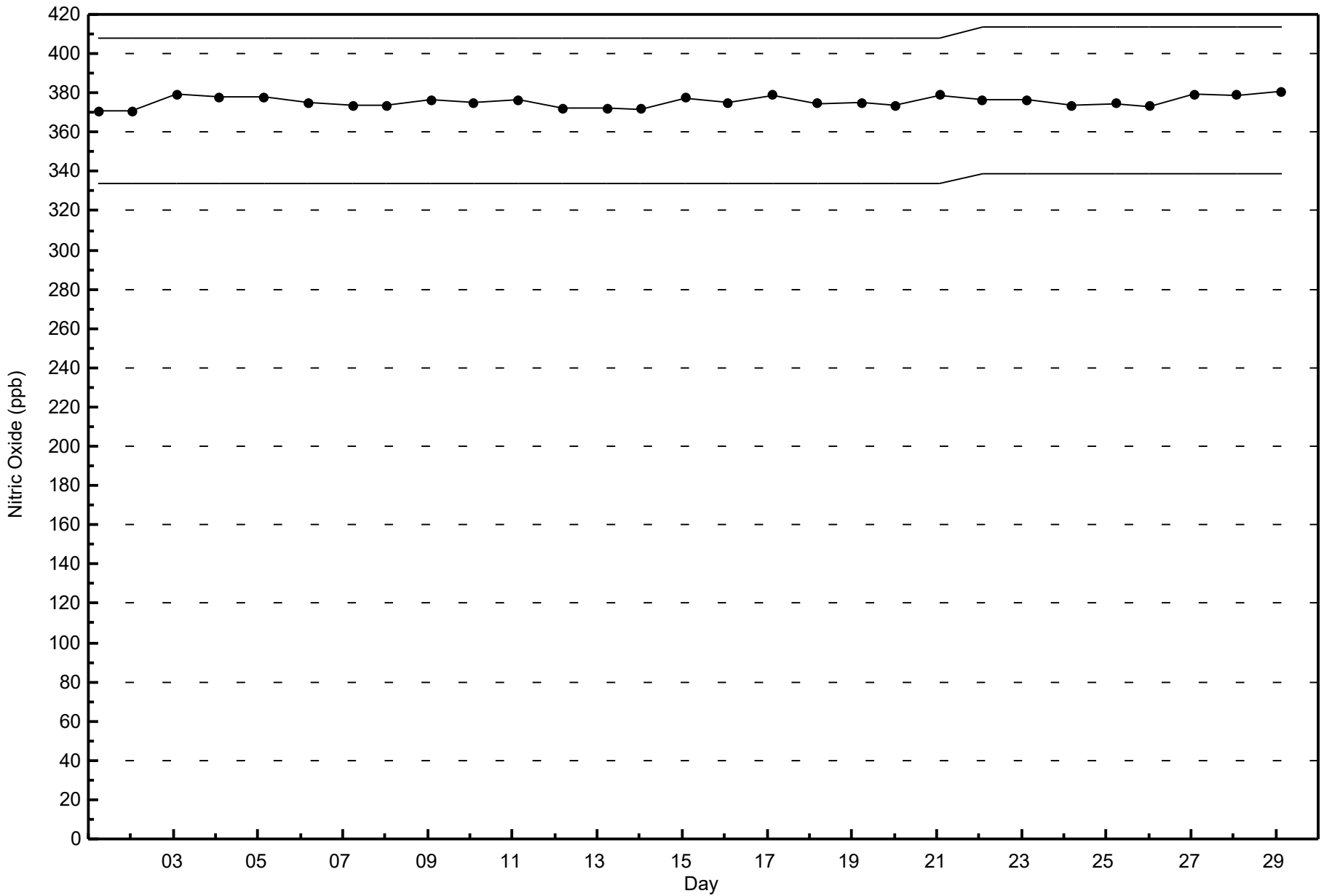
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Stony Mountain



Total Number of Valid Hours: 661







Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb
Stony Mountain - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 11.9 ppb on Feb 20 22:00	Maximum Daily Average: 5.4 ppb on Feb 2		Hours of Data:	661
Minimum Value: 0.2 ppb on Feb 15 10:00	Minimum Daily Average: 0.3 ppb on Feb 9		Hours of Missing Data:	35
Maximum Diurnal Average: 2.3 ppb at hour 19	Minimum Diurnal Average: 1.4 ppb at hour 11		Hours of Calibration:	35
Monthly Average: 1.74 ppb	Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.5 Median = 1.2 Q ₃ = 2.3 P ₉₀ = 3.9 P ₉₉ = 8.4		Percent Operational Time:	100.0

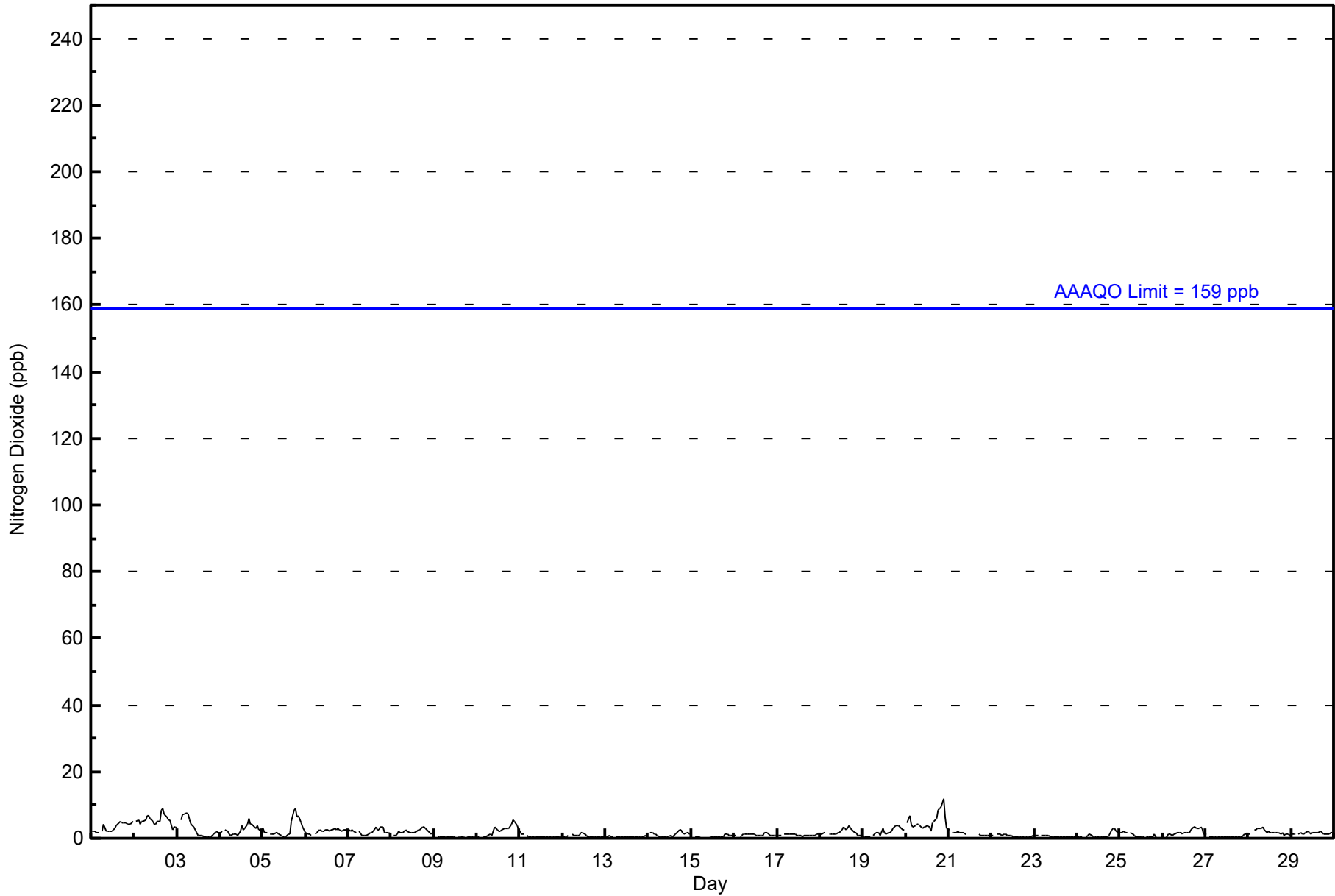
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	2.2	2.1	2.3	1.5	1.6	Z	2.2	4.2	2.1	2.0	2.0	2.3	2.6	3.0	3.9	4.7	4.9	4.6	4.6	4.8	4.2	4.3	4.3	4.9	3.3	4.9																						
2-Feb	Z	5.1	5.3	4.4	5.0	5.0	5.7	6.7	6.6	5.9	4.9	4.3	4.3	5.1	5.2	8.4	8.7	7.4	6.3	5.7	5.4	2.7	3.2	3.4	5.4	8.7																						
3-Feb	3.1	Z	5.4	7.3	7.3	7.5	7.1	5.6	4.1	3.3	2.6	1.8	0.9	0.8	0.7	0.6	0.4	0.3	0.3	0.6	1.4	1.7	2.0	1.7	2.9	7.5																						
4-Feb	1.9	2.2	Z	2.4	2.2	1.1	1.0	1.3	1.3	1.2	0.8	2.3	4.0	2.7	3.1	4.4	6.1	4.4	4.1	3.3	3.0	3.8	2.7	2.7	2.7	6.1																						
5-Feb	2.9	1.6	1.6	Z	1.3	1.2	1.1	1.5	1.6	1.1	0.9	0.6	0.5	0.6	1.2	1.2	5.0	8.6	8.8	6.3	6.6	4.6	3.3	2.6	2.8	8.8																						
6-Feb	1.8	1.2	1.3	1.0	Z	1.1	1.7	2.2	2.5	2.2	2.3	2.5	2.5	2.2	2.5	2.7	2.8	2.6	2.8	2.4	2.3	2.6	2.6	2.4	2.2	2.8																						
7-Feb	2.4	2.2	2.6	2.2	1.7	Z	2.0	1.0	0.9	1.0	1.0	1.1	1.6	1.7	2.1	3.4	2.7	2.7	3.4	3.2	1.9	1.6	1.6	1.4	2.0	3.4																						
8-Feb	Z	1.0	1.0	1.2	2.1	1.7	1.6	2.0	2.4	2.1	1.7	1.6	1.8	1.9	2.0	2.5	2.6	3.6	3.4	2.8	2.5	1.7	1.2	1.5	2.0	3.6																						
9-Feb	1.5	Z	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	1.5																						
10-Feb	0.3	0.3	Z	0.5	0.5	0.5	0.7	1.1	1.0	2.0	3.2	2.5	2.3	2.3	2.5	2.8	2.9	2.8	3.1	4.4	5.4	5.0	3.7	2.7	2.3	5.4																						
11-Feb	2.0	1.4	1.1	Z	0.7	0.6	0.5	0.5	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.6	2.0																						
12-Feb	0.4	0.4	0.4	0.7	Z	1.1	1.0	0.9	1.0	1.0	1.6	1.6	1.2	0.9	0.6	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.7	1.6																						
13-Feb	0.4	0.4	0.7	0.4	0.4	Z	0.4	0.4	0.6	0.3	0.3	0.4	0.4	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.8	0.8	0.4	0.8																						
14-Feb	Z	1.7	1.8	1.2	1.2	0.7	0.4	0.4	0.5	0.4	0.5	0.4	0.7	0.3	1.0	1.2	1.7	2.6	2.6	1.7	1.4	1.6	1.7	1.3	1.2	2.6																						
15-Feb	1.2	Z	0.6	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.5	0.5	0.4	0.4	0.5	0.5	0.6	1.1	1.3	1.0	1.0	0.9	0.6	1.3																						
16-Feb	0.9	0.9	Z	0.6	0.9	1.3	1.4	1.3	1.3	1.3	1.3	1.2	0.9	0.7	0.8	0.8	0.8	1.5	1.7	1.2	0.9	0.8	0.8	0.8	1.0	1.7																						
17-Feb	0.9	1.0	1.0	Z	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.9	0.8	0.8	0.6	0.7	0.7	0.7	0.7	0.9	1.0	0.9	1.1	1.4	0.9	1.4																						
18-Feb	1.2	1.2	1.8	1.7	Z	1.2	1.2	1.2	1.2	1.4	1.6	1.9	2.6	3.4	2.9	2.6	3.7	2.8	2.4	1.9	1.8	1.0	0.8	0.7	1.8	3.7																						
19-Feb	0.6	0.6	0.4	0.5	0.3	Z	0.8	1.7	1.9	1.8	1.0	2.8	1.8	1.3	1.5	1.7	2.3	3.0	3.9	3.9	4.0	3.3	2.6	2.7	1.9	4.0																						
20-Feb	Z	4.7	6.7	4.1	3.6	4.0	4.1	4.2	3.8	2.8	3.3	3.3	3.8	3.4	2.3	4.7	5.0	5.8	8.5	9.0	9.3	11.9	6.2	2.9	5.1	11.9																						
21-Feb	2.4	Z	1.9	1.6	1.9	2.1	1.8	1.5	1.5	1.3	1.2	C	C	C	C	C	C	1.2	0.9	0.8	0.7	0.8	0.9	0.9	--	2.4																						
22-Feb	0.9	0.9	Z	1.2	1.2	1.1	1.0	1.1	1.1	0.9	0.8	0.7	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.7	0.8	1.2																						
23-Feb	0.7	0.7	0.7	Z	1.0	1.0	0.8	0.8	0.7	0.5	0.6	0.5	0.5	0.4	0.4	0.4	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.6	1.0																						
24-Feb	0.3	0.3	0.3	0.3	Z	0.3	0.9	1.1	0.8	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.9	2.4	3.1	2.8	2.2	1.8	0.9	3.1																						
25-Feb	1.9	1.8	2.0	1.9	1.8	Z	1.6	1.1	0.7	0.5	0.6	0.5	0.4	0.3	0.2	0.3	0.4	0.4	0.6	1.4	0.4	0.2	0.2	0.2	0.8	2.0																						
26-Feb	Z	0.2	0.6	1.1	1.1	0.9	1.4	1.4	1.6	1.6	1.5	1.4	1.8	1.8	1.8	1.8	2.7	3.2	3.4	2.9	3.1	3.3	3.0	1.4	1.9	3.4																						
27-Feb	1.2	Z	0.5	0.6	0.6	0.6	0.5	0.4	0.3	0.4	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.7	1.1	1.2	0.5	1.2																						
28-Feb	1.3	1.4	Z	2.7	2.6	3.1	3.0	2.8	3.5	2.7	1.9	2.0	1.7	1.5	1.5	1.8	1.9	1.5	1.2	1.7	0.8	1.4	1.2	0.9	1.9	3.5																						
29-Feb	1.4	1.4	1.3	Z	1.3	1.5	1.3	1.3	1.6	2.0	1.7	1.4	1.7	1.8	1.8	1.8	2.2	1.7	1.4	1.3	1.3	1.4	1.5	1.5	1.5	2.2																						
																								1.4	1.4	1.7	1.7	1.7	1.6	1.6	1.7	1.6	1.5	1.4	1.4	1.5	1.4	1.5	1.8	2.2	2.2	2.3	2.3	2.2	2.1	1.8	1.5	Diurnal Average
																								3.1	5.1	6.7	7.3	7.3	7.5	7.1	6.7	6.6	5.9	4.9	4.3	4.3	5.1	5.2	8.4	8.7	8.6	8.8	9.0	9.3	11.9	6.2	4.9	Diurnal Maximum

Z - zerspan C - Calibration
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Stony Mountain - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Stony Mountain - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Stony Mountain - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	38	44	41	15	26	24	27	26	26	29	35	22	108	98	56	46	661
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	38	44	41	15	26	24	27	26	26	29	35	22	108	98	56	46	661

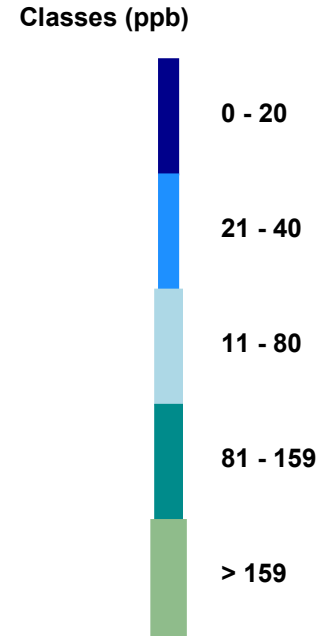
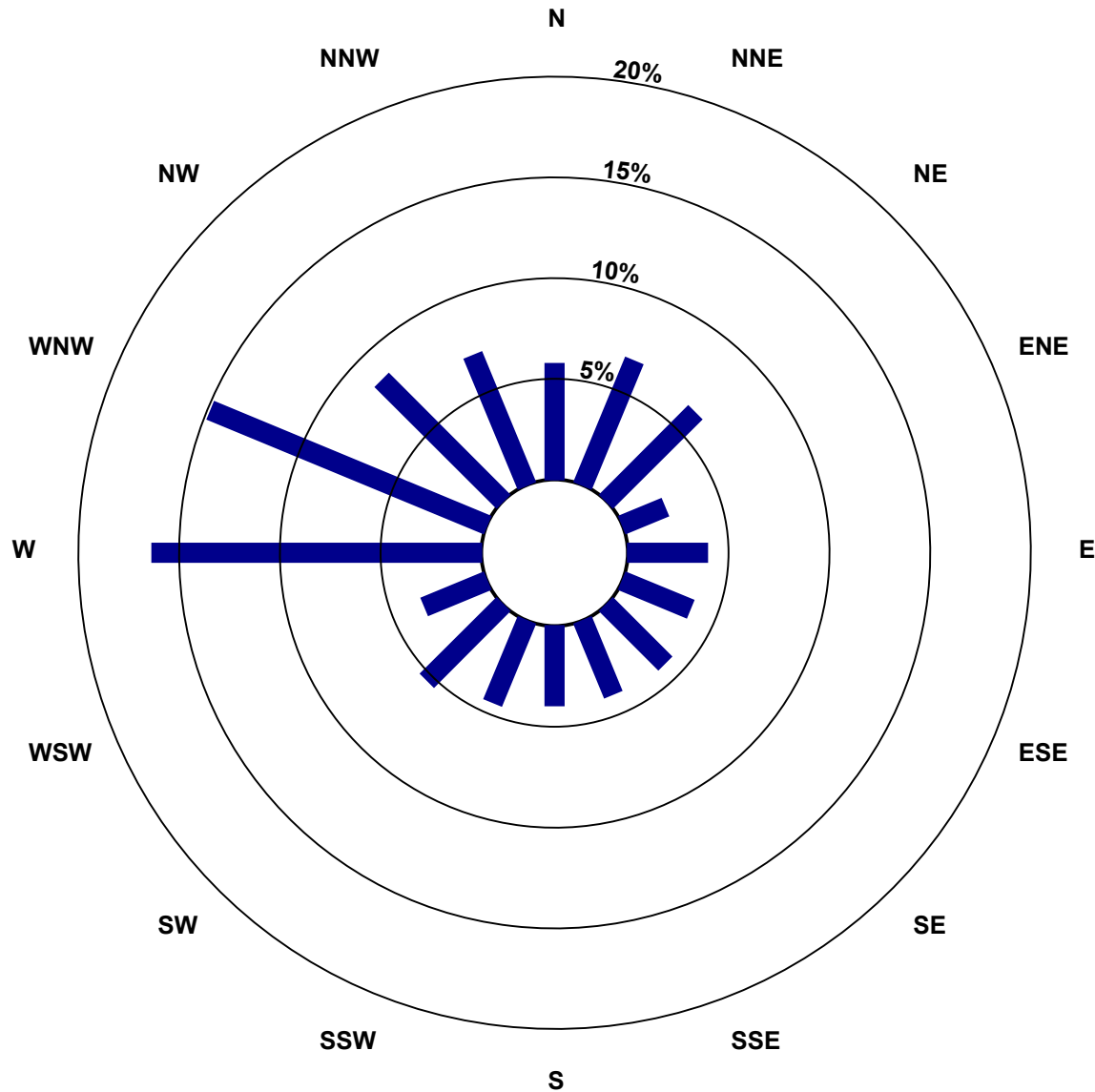
Total Number of Valid Hours: 661

Total Number of Hours: 696

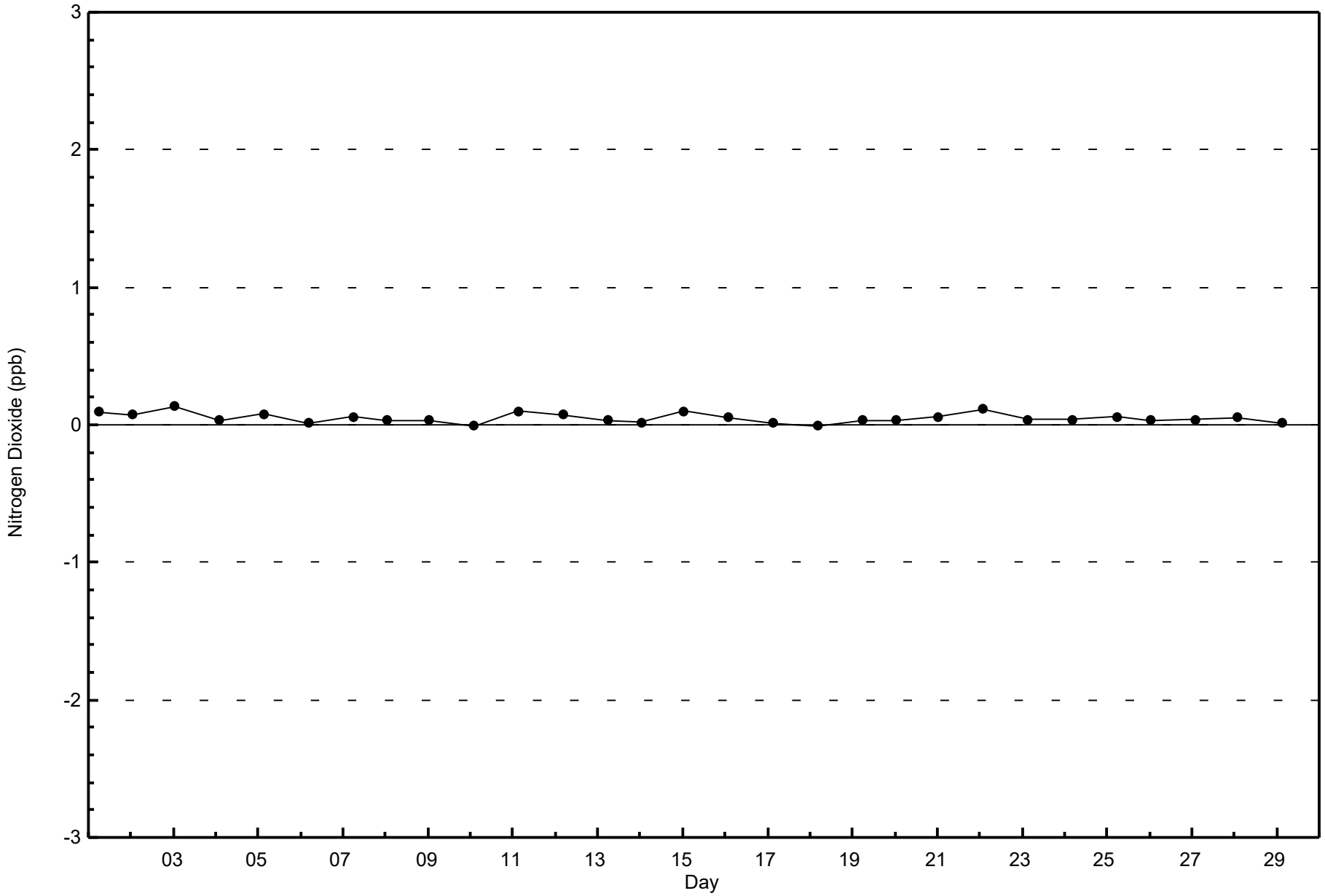


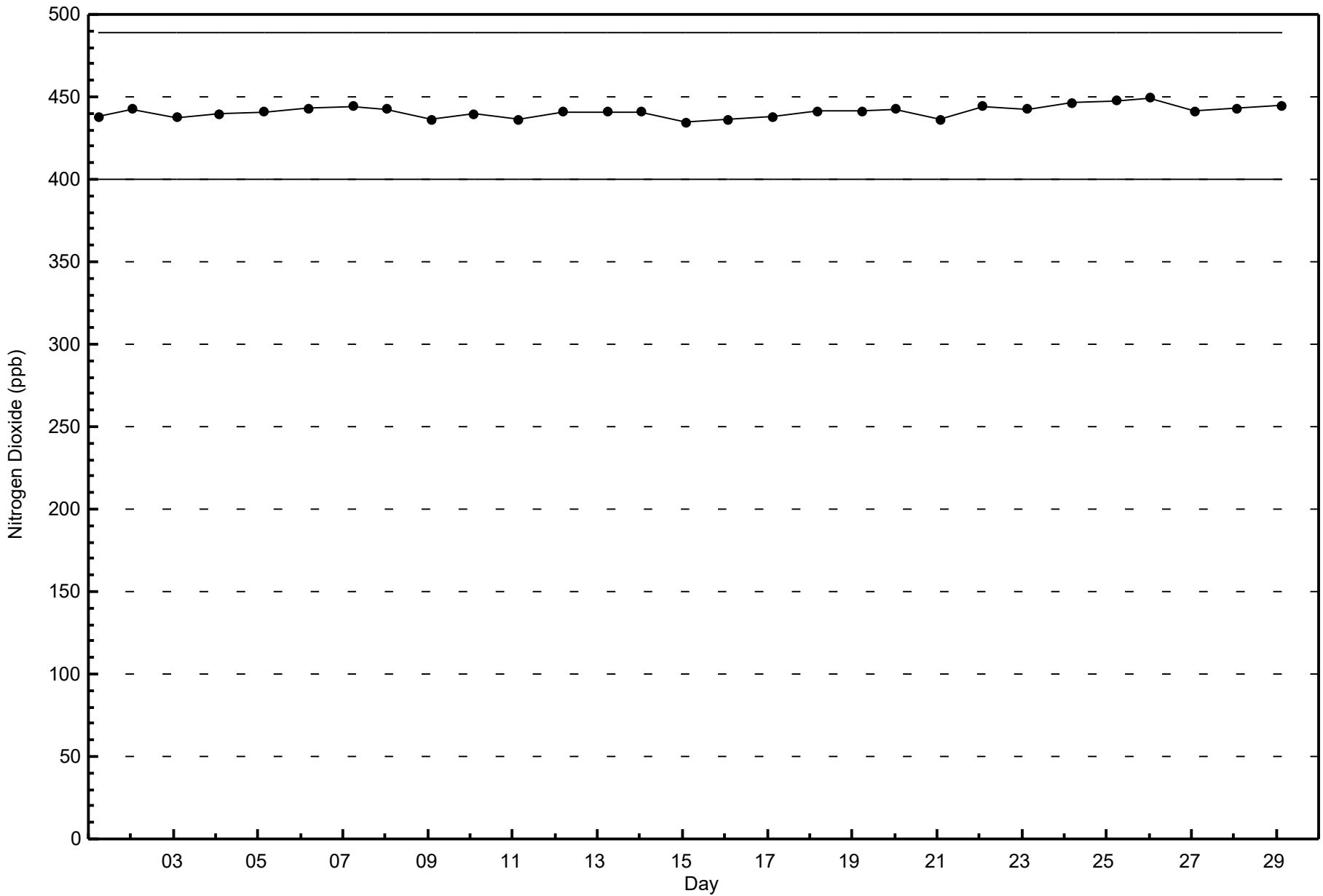
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Stony Mountain



Total Number of Valid Hours: 661







Wood Buffalo Environmental Association
Summary of Hour Averages

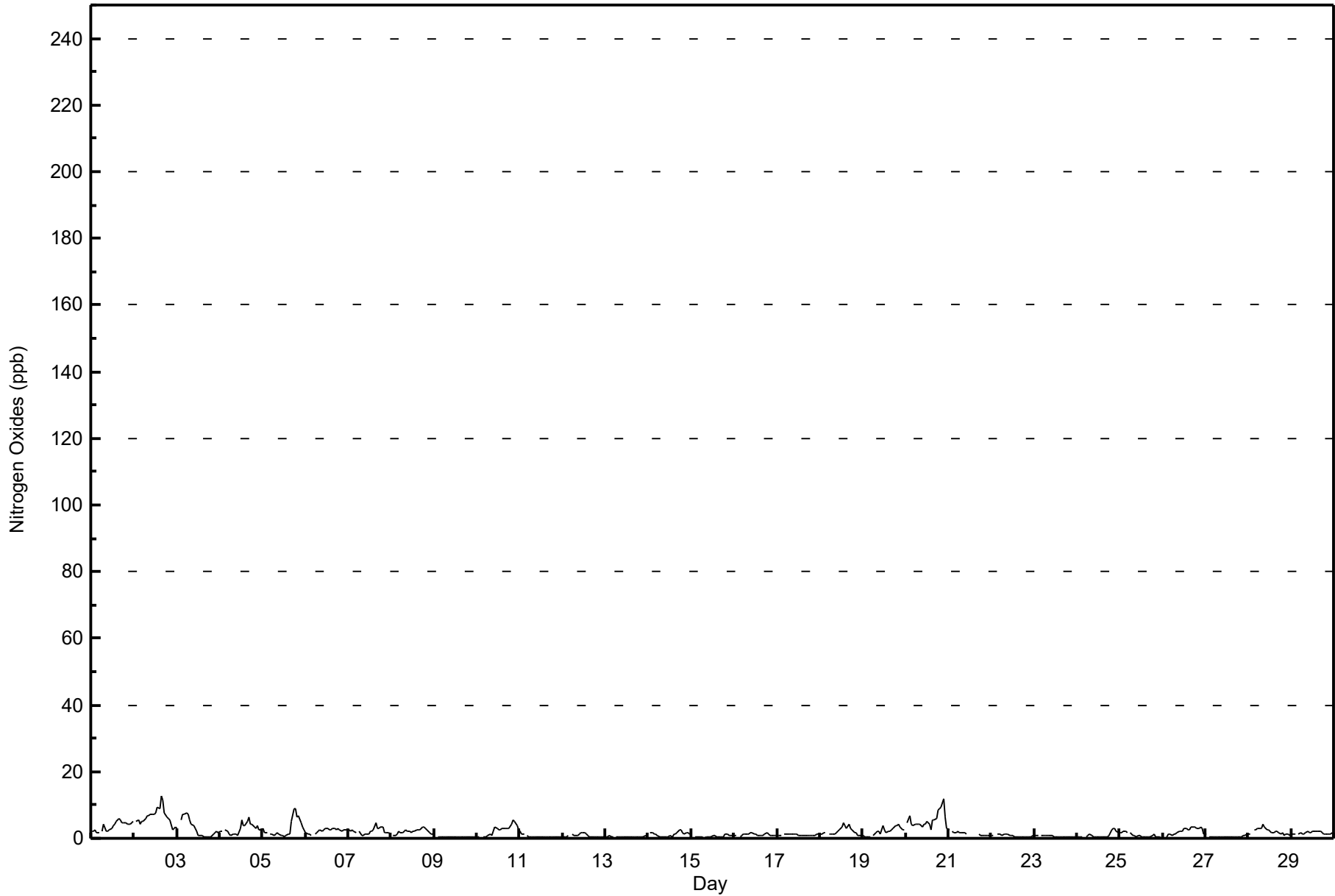
Nitrogen Oxides (NO_x) - ppb
Stony Mountain - February 2024

Maximum Value: 12.8 ppb on Feb 2 16:00		Maximum Daily Average: 6.5 ppb on Feb 2		Hours in Service: 696																																												
Minimum Value: 0.2 ppb on Feb 26 00:00		Minimum Daily Average: 0.3 ppb on Feb 9		Hours of Data: 661																																												
Maximum Diurnal Average: 2.4 ppb at hour 17		Minimum Diurnal Average: 1.4 ppb at hour 1		Hours of Missing Data: 35																																												
Monthly Average: 1.88 ppb		Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.6 Median = 1.3 Q ₃ = 2.6 P ₉₀ = 4.2 P ₉₉ = 8.8		Hours of Calibration: 35																																												
				Percent Operational Time: 100.0																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	2.2	2.1	2.3	1.5	1.6	Z	2.2	4.2	2.2	2.2	2.5	3.1	3.7	4.3	5.3	5.8	5.3	4.6	4.6	4.9	4.2	4.3	4.3	4.9	3.6	5.8																						
2-Feb	Z	5.1	5.3	4.4	5.0	5.0	5.7	6.7	6.9	7.2	7.3	7.0	7.6	9.3	8.9	12.8	11.4	7.6	6.3	5.7	5.4	2.7	3.2	3.4	6.5	12.8																						
3-Feb	3.1	Z	5.4	7.4	7.3	7.5	7.1	5.6	4.2	3.8	2.9	2.0	1.0	0.8	0.7	0.6	0.4	0.3	0.3	0.6	1.4	1.7	2.0	1.7	3.0	7.5																						
4-Feb	1.9	2.2	Z	2.4	2.2	1.1	1.0	1.3	1.3	1.3	1.0	3.1	5.5	3.8	3.9	5.3	6.5	4.4	4.1	3.3	3.0	3.8	2.7	2.7	2.9	6.5																						
5-Feb	2.9	1.6	1.6	Z	1.3	1.2	1.1	1.5	1.6	1.2	1.0	0.7	0.6	0.7	1.4	1.3	5.2	8.7	8.8	6.3	6.6	4.6	3.3	2.6	2.9	8.8																						
6-Feb	1.8	1.2	1.3	1.0	Z	1.1	1.7	2.2	2.5	2.3	2.5	2.9	2.9	2.6	2.7	2.8	2.9	2.6	2.8	2.4	2.3	2.6	2.6	2.4	2.3	2.9																						
7-Feb	2.4	2.2	2.6	2.2	1.7	Z	2.0	1.0	0.9	1.1	1.2	1.4	2.0	2.1	2.7	4.5	2.9	2.8	3.4	3.2	1.9	1.6	1.6	1.4	2.1	4.5																						
8-Feb	Z	1.0	1.0	1.2	2.1	1.7	1.6	2.0	2.5	2.2	1.9	1.9	2.1	2.1	2.3	2.7	2.7	3.6	3.4	2.8	2.5	1.7	1.2	1.5	2.1	3.6																						
9-Feb	1.5	Z	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	1.5																						
10-Feb	0.3	0.3	Z	0.5	0.5	0.5	0.7	1.1	1.0	2.1	3.5	2.8	2.6	2.6	2.8	3.0	3.0	2.8	3.1	4.4	5.4	5.0	3.7	2.7	2.4	5.4																						
11-Feb	2.0	1.4	1.1	Z	0.7	0.6	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.6	2.0																						
12-Feb	0.4	0.4	0.4	0.7	Z	1.1	1.0	0.9	1.0	1.1	1.9	1.8	1.5	1.1	0.7	0.4	0.3	0.5	0.3	0.3	0.3	0.3	0.3	0.4	0.8	1.9																						
13-Feb	0.4	0.4	0.7	0.4	0.4	Z	0.4	0.4	0.6	0.3	0.3	0.4	0.5	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.8	0.8	0.4	0.8																						
14-Feb	Z	1.7	1.8	1.2	1.2	0.7	0.4	0.4	0.5	0.4	0.5	0.5	0.8	0.4	1.2	1.4	1.8	2.6	2.6	1.7	1.4	1.6	1.7	1.3	1.2	2.6																						
15-Feb	1.2	Z	0.6	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.7	0.7	0.5	0.5	0.5	0.5	0.6	1.1	1.3	1.0	1.0	0.9	0.6	1.3																						
16-Feb	0.9	0.9	Z	0.6	0.9	1.3	1.4	1.3	1.4	1.5	1.6	1.5	1.1	0.9	0.9	0.9	0.8	1.5	1.7	1.2	0.9	0.8	0.8	0.8	1.1	1.7																						
17-Feb	0.9	1.0	1.0	Z	1.1	1.1	1.1	1.1	1.1	1.2	1.3	1.1	1.0	0.9	0.7	0.7	0.7	0.7	0.7	0.9	1.0	0.9	1.1	1.4	1.0	1.4																						
18-Feb	1.2	1.2	1.8	1.7	Z	1.2	1.2	1.2	1.2	1.6	2.0	2.6	3.6	4.5	3.7	3.1	4.1	2.9	2.4	1.9	1.8	1.0	0.8	0.7	2.1	4.5																						
19-Feb	0.6	0.6	0.4	0.5	0.3	Z	0.8	1.7	2.1	2.2	1.3	4.0	2.5	1.8	1.9	2.1	2.5	3.1	3.9	3.9	4.0	3.3	2.6	2.7	2.1	4.0																						
20-Feb	Z	4.7	6.7	4.1	3.6	4.0	4.1	4.2	4.1	3.4	4.3	4.3	5.2	4.4	2.7	5.4	5.4	5.9	8.5	9.0	9.3	11.9	6.2	2.9	5.4	11.9																						
21-Feb	2.4	Z	1.9	1.6	1.9	2.1	1.8	1.5	1.6	1.5	1.4	C	C	C	C	C	C	1.2	0.9	0.8	0.7	0.8	0.9	0.9	--	2.4																						
22-Feb	0.9	0.9	Z	1.2	1.2	1.1	1.0	1.1	1.2	1.1	1.0	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.7	0.8	1.2																						
23-Feb	0.7	0.7	0.7	Z	1.0	1.0	0.8	0.8	0.7	0.6	0.7	0.6	0.5	0.4	0.4	0.4	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.6	1.0																						
24-Feb	0.3	0.3	0.3	0.3	Z	0.3	0.9	1.1	0.9	0.4	0.4	0.5	0.3	0.3	0.3	0.3	0.3	0.4	0.9	2.4	3.1	2.8	2.2	1.8	0.9	3.1																						
25-Feb	1.9	1.8	2.0	1.9	1.8	Z	1.6	1.1	0.8	0.6	0.8	0.7	0.5	0.4	0.3	0.3	0.4	0.4	0.6	1.4	0.4	0.2	0.2	0.2	0.9	2.0																						
26-Feb	Z	0.2	0.6	1.1	1.1	0.9	1.4	1.4	1.8	2.2	2.3	2.2	2.9	2.8	2.7	2.5	3.3	3.3	3.4	2.9	3.1	3.3	3.0	1.4	2.2	3.4																						
27-Feb	1.2	Z	0.5	0.6	0.6	0.6	0.5	0.4	0.3	0.5	0.6	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.7	1.1	1.2	0.5	1.2																						
28-Feb	1.3	1.4	Z	2.7	2.6	3.1	3.0	2.9	4.1	3.5	2.6	2.8	2.3	1.9	1.9	2.2	2.1	1.5	1.2	1.7	0.8	1.4	1.2	0.9	2.1	4.1																						
29-Feb	1.4	1.4	1.3	Z	1.3	1.5	1.3	1.3	1.6	2.1	1.9	1.6	1.9	2.1	2.0	2.0	2.3	1.7	1.4	1.3	1.3	1.4	1.5	1.5	1.6	2.3																						
																								1.4	1.5	1.8	1.7	1.7	1.6	1.6	1.7	1.7	1.7	1.7	1.9	2.0	1.9	1.9	2.2	2.4	2.3	2.3	2.3	2.2	2.1	1.8	1.6	Diurnal Average
																								3.1	5.1	6.7	7.4	7.3	7.5	7.1	6.7	6.9	7.2	7.3	7.0	7.6	9.3	8.9	12.8	11.4	8.7	8.8	9.0	9.3	11.9	6.2	4.9	Diurnal Maximum
Z - zerospan C - Calibration																																																



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Stony Mountain - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Stony Mountain - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Stony Mountain - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	38	44	41	15	26	24	27	26	26	29	35	22	108	98	56	46	661
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	38	44	41	15	26	24	27	26	26	29	35	22	108	98	56	46	661

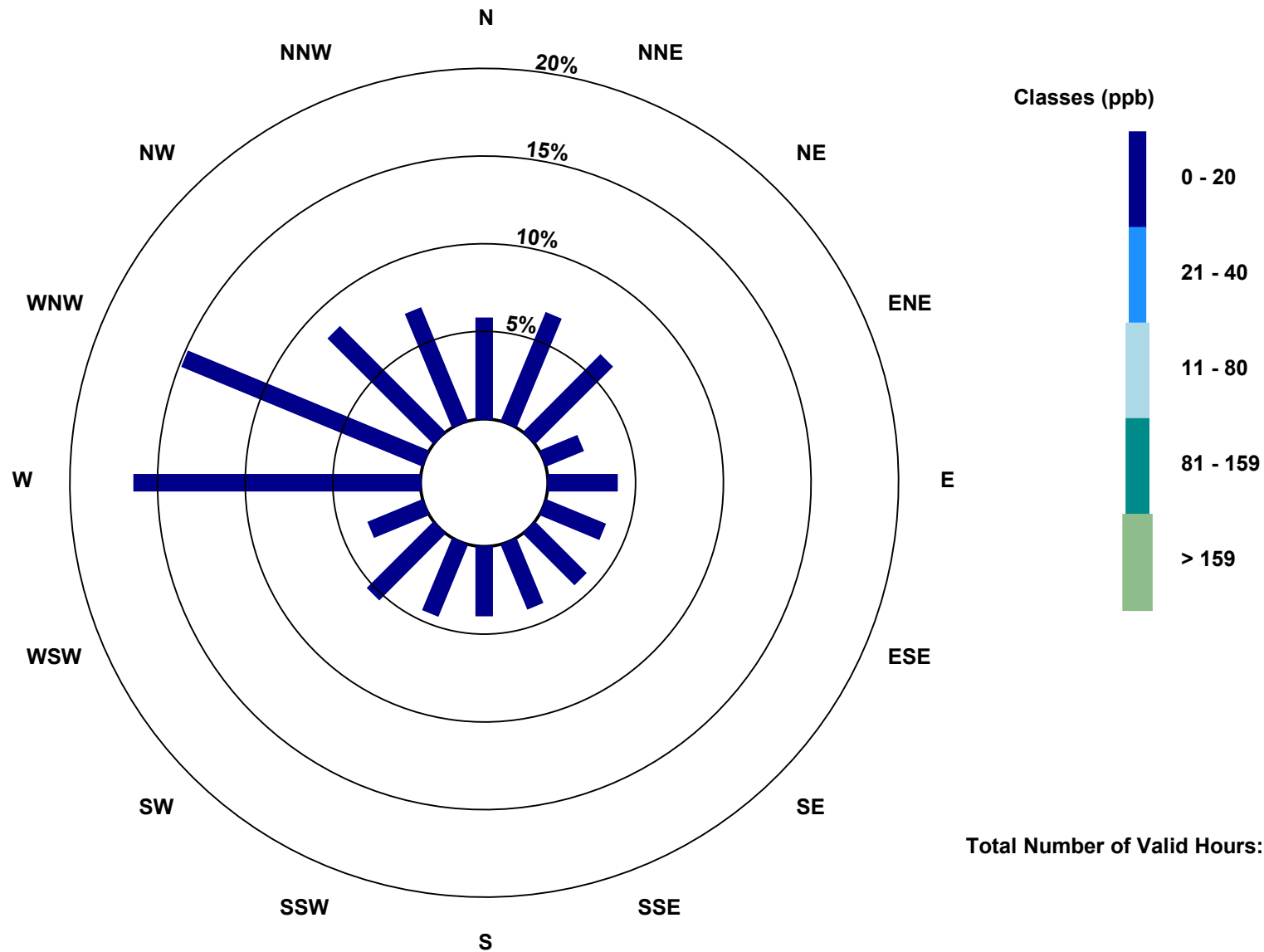
Total Number of Valid Hours: 661

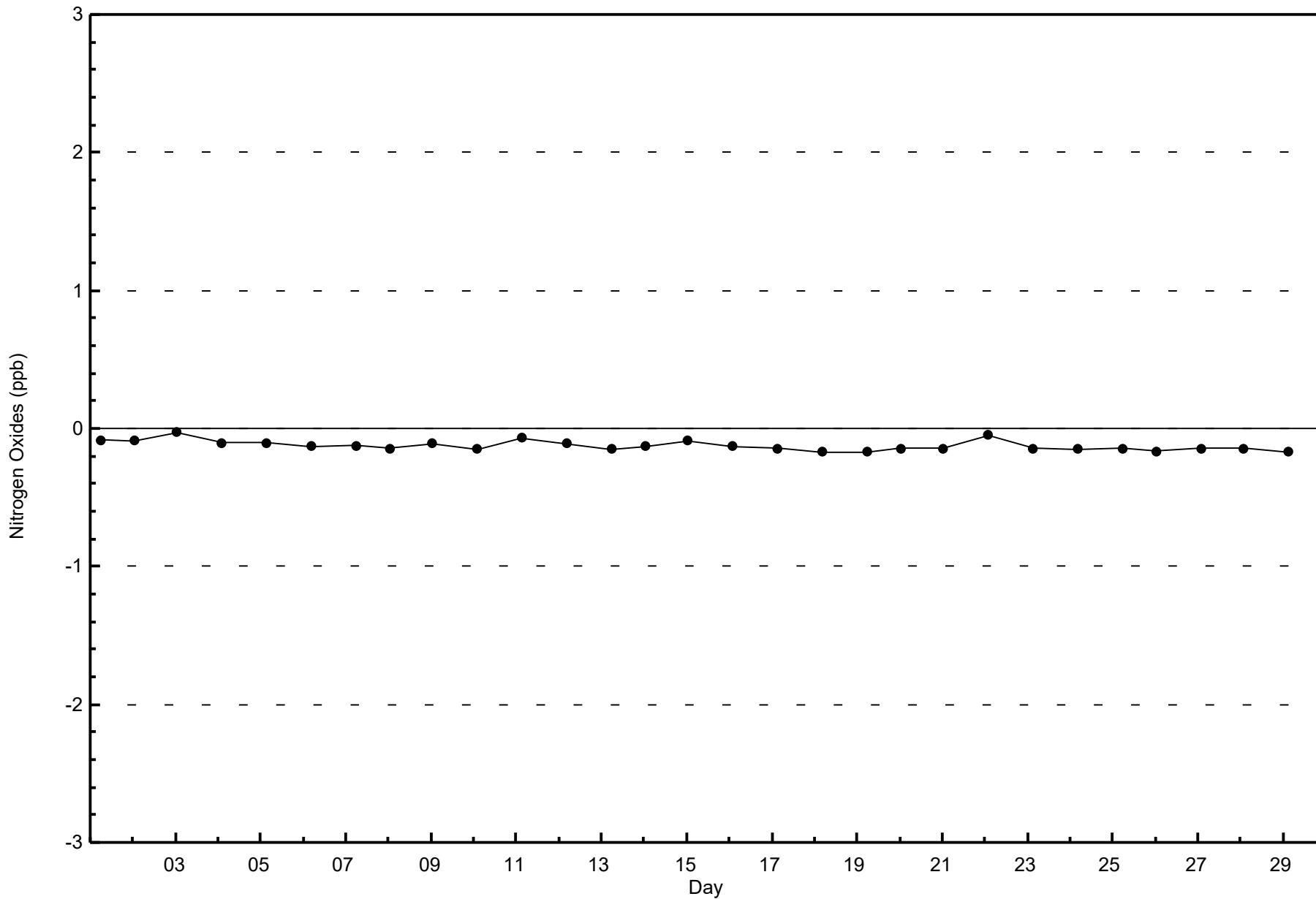
Total Number of Hours: 696

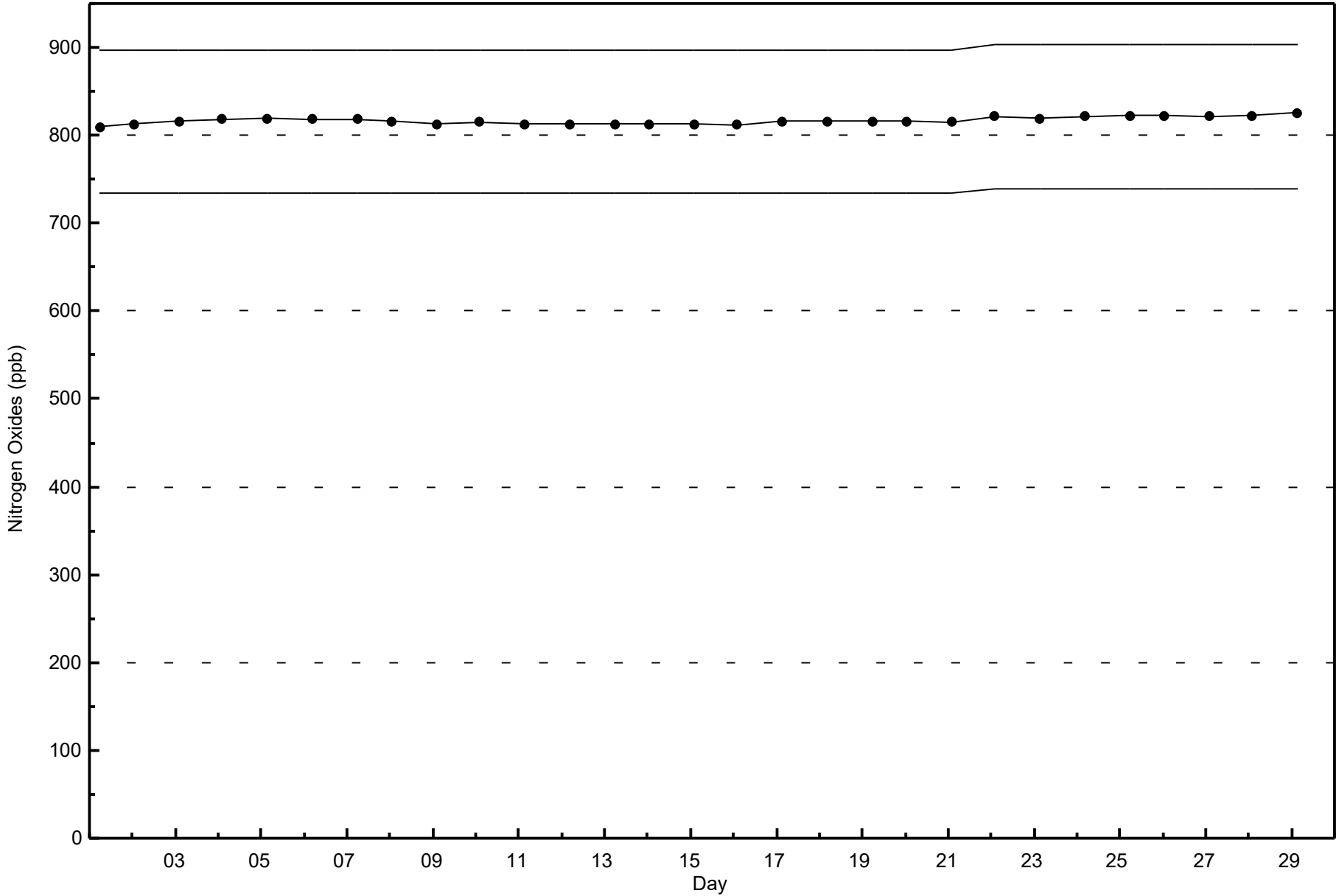


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Stony Mountain





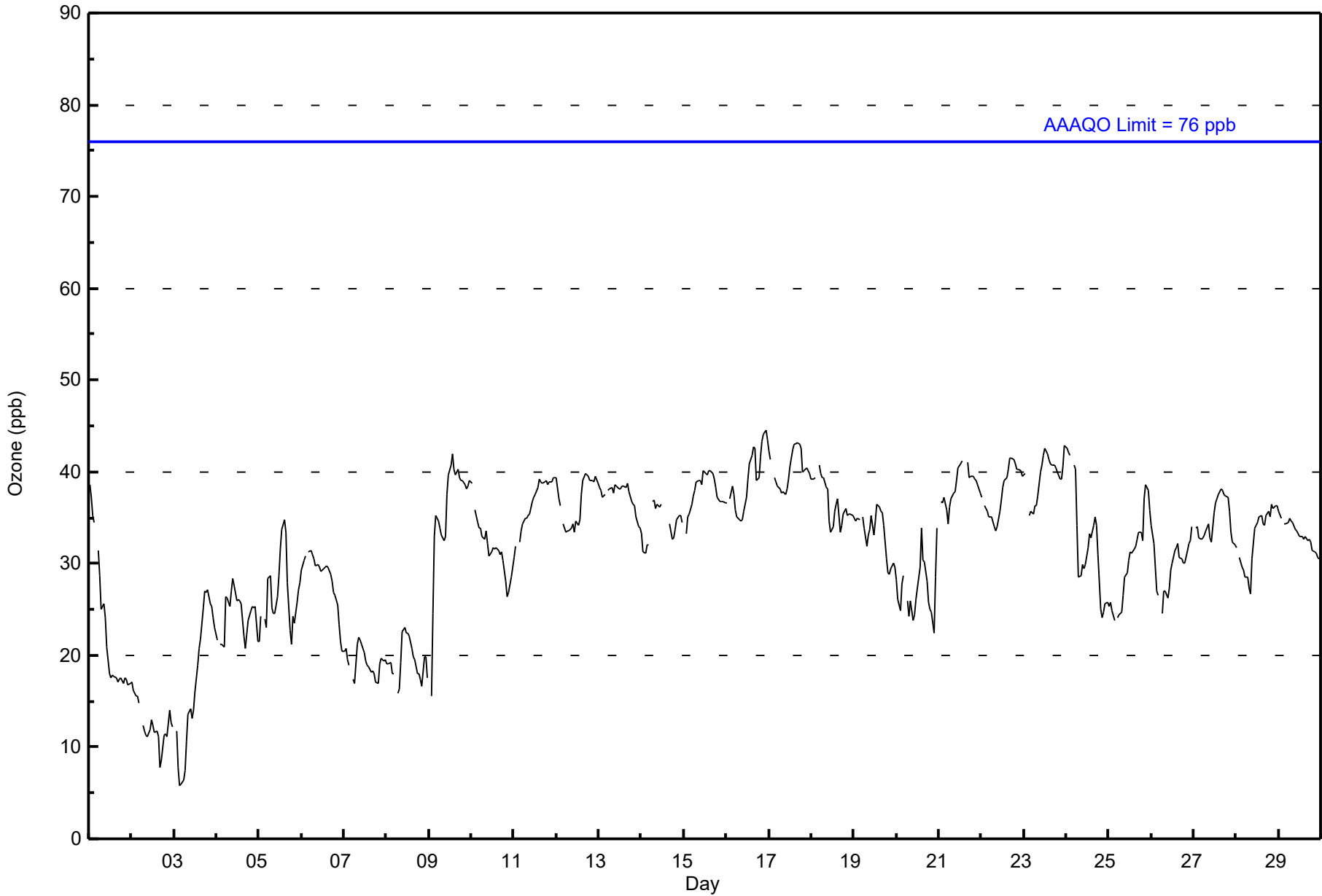




Summary of Hour Averages

Stony Mountain - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																		Hours in Service:	696																										
Maximum Value: 44.6 ppb on Feb 16 23:00		Maximum Daily Average: 40.3 ppb on Feb 17																	Hours of Data:	661																												
Minimum Value: 5.8 ppb on Feb 3 04:00		Minimum Daily Average: 12.4 ppb on Feb 2																	Hours of Missing Data:	35																												
Maximum Diurnal Average: 32.6 ppb at hour 15		Minimum Diurnal Average: 29.6 ppb at hour 4																	Hours of Calibration:	33																												
Monthly Average: 31.22 ppb		Percentiles: P ₁ = 9.8 P ₁₀ = 18.9 Q ₁ = 26.1 Median = 33.4 Q ₃ = 37.5 P ₉₀ = 39.7 P ₉₉ = 43.0																	Percent Operational Time:	99.7																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	38.5	37.2	35.3	34.5	Z	31.5	28.6	25.0	25.6	24.1	20.8	18.0	17.5	17.8	17.7	17.6	17.1	17.4	17.5	17.0	17.6	17.3	16.8	16.9	22.9	38.5																						
2-Feb	17.0	16.2	15.5	15.6	14.7	Z	12.3	11.8	11.2	11.1	11.9	12.9	12.3	11.6	11.7	11.1	7.8	8.6	11.3	11.4	11.2	14.0	12.6	12.1	12.4	17.0																						
3-Feb	Z	11.7	7.7	5.8	5.9	6.5	7.5	10.6	13.6	14.2	13.1	14.0	16.0	18.9	20.7	21.9	25.2	27.0	26.9	27.2	25.6	25.3	24.0	23.0	17.1	27.2																						
4-Feb	21.7	Z	21.2	21.2	20.8	26.4	26.3	25.4	27.0	28.3	27.6	25.9	26.1	26.0	25.6	22.2	20.7	22.3	23.7	24.8	25.3	25.2	25.4	21.4	24.4	28.3																						
5-Feb	21.5	24.2	Z	23.9	23.1	28.3	28.6	25.2	24.5	24.5	26.3	28.7	31.5	33.7	34.9	33.4	28.0	22.7	21.2	24.3	23.5	25.8	27.1	28.0	26.7	34.9																						
6-Feb	29.4	30.3	30.8	Z	31.3	31.4	30.9	30.5	29.7	29.9	29.7	29.1	29.4	29.7	29.8	29.6	28.8	28.1	26.9	26.5	25.5	23.3	21.4	20.5	28.4	31.4																						
7-Feb	20.4	20.7	19.5	18.9	Z	17.3	16.9	21.3	21.9	21.6	21.2	20.3	19.4	18.9	18.7	18.1	18.3	18.1	17.1	17.0	19.1	19.7	19.4	19.5	19.3	21.9																						
8-Feb	19.1	19.1	19.2	18.0	18.0	Z	15.9	16.3	19.3	22.5	23.1	22.4	22.4	22.2	20.7	19.8	19.5	18.0	18.1	17.4	16.7	19.8	19.8	17.5	19.3	23.1																						
9-Feb	Z	15.6	24.5	32.9	35.2	34.6	33.9	33.1	32.5	33.0	37.5	39.7	40.7	42.0	40.2	39.7	40.3	39.4	39.1	39.0	38.6	38.2	38.4	39.0	36.0	42.0																						
10-Feb	38.8	Z	35.8	34.5	33.9	33.9	33.0	32.6	33.5	32.2	30.9	31.3	31.7	31.6	31.7	31.3	30.9	31.3	30.4	28.0	26.4	26.9	28.5	29.5	31.7	38.8																						
11-Feb	30.6	31.8	Z	32.4	33.6	34.3	34.9	34.9	35.2	35.4	36.7	37.3	37.6	38.3	39.2	38.9	38.8	38.8	39.0	38.6	38.9	39.0	39.3	39.4	36.6	39.4																						
12-Feb	39.3	37.1	36.4	Z	34.3	33.4	33.6	33.6	33.8	34.4	33.4	34.6	34.1	34.8	37.6	39.1	39.9	39.7	39.5	39.0	39.1	38.9	39.5	38.8	36.7	39.9																						
13-Feb	38.2	37.9	37.3	37.6	Z	37.9	38.1	38.2	37.7	38.6	38.4	38.1	38.1	38.4	38.4	38.3	38.8	37.9	36.7	36.4	36.4	35.1	34.1	33.9	37.4	38.8																						
14-Feb	33.2	31.2	31.2	32.0	32.0	Z	36.8	37.0	36.0	36.4	36.1	36.4	C	C	C	C	34.3	32.6	32.7	33.7	34.8	35.2	35.2	34.4	34.3	37.0																						
15-Feb	Z	33.2	35.1	35.4	36.5	37.3	38.0	39.0	39.1	39.1	38.6	40.1	39.9	39.7	40.2	40.1	39.8	39.2	38.2	37.2	36.8	36.8	36.7	36.6	37.9	40.2																						
16-Feb	36.7	Z	37.1	38.4	37.5	35.9	35.1	34.7	34.7	34.8	35.7	37.1	39.3	40.9	41.8	42.7	42.5	39.0	39.3	41.7	43.3	44.1	44.6	43.4	39.2	44.6																						
17-Feb	42.2	41.3	Z	39.4	38.8	38.4	38.1	37.6	37.8	37.5	38.1	39.1	40.5	42.4	43.1	43.1	43.2	42.9	42.5	40.0	40.1	40.4	40.2	39.7	40.3	43.2																						
18-Feb	39.2	39.2	39.4	Z	40.7	39.9	39.3	39.4	38.3	38.1	34.7	33.4	34.1	35.7	36.4	37.1	33.4	34.1	35.4	35.9	35.2	35.4	35.3	35.3	36.7	40.7																						
19-Feb	34.9	34.6	34.9	34.8	Z	35.2	33.9	31.9	33.1	33.7	35.3	33.1	34.7	36.5	36.1	35.7	35.6	34.2	30.5	28.9	28.8	29.4	30.1	29.6	33.3	36.5																						
20-Feb	28.2	26.1	24.9	27.8	28.7	Z	26.0	24.3	26.0	23.8	24.4	26.1	27.3	29.6	33.9	30.4	30.2	28.1	25.8	25.0	24.7	22.5	28.5	33.9	27.2	33.9																						
21-Feb	Z	36.8	36.7	37.2	35.9	34.2	36.2	37.1	37.7	37.8	39.1	40.5	40.9	41.2	M	M	41.1	39.3	39.5	39.4	39.1	39.0	38.5	37.7	38.3	41.2																						
22-Feb	37.2	Z	36.3	35.7	35.1	35.0	35.1	34.0	33.5	34.0	35.7	36.9	38.3	39.0	39.3	40.3	41.4	41.5	41.3	40.9	40.3	40.3	40.1	39.5	37.9	41.5																						
23-Feb	39.6	39.7	Z	35.2	35.7	35.4	36.2	36.3	37.3	39.9	40.7	41.7	42.6	42.0	41.3	40.9	40.7	40.7	40.5	40.0	39.1	39.2	40.6	42.9	39.5	42.9																						
24-Feb	42.6	42.2	41.8	Z	40.8	40.3	34.2	28.4	28.7	29.9	29.4	29.9	31.7	33.2	32.8	34.2	35.1	34.1	31.0	25.0	24.1	24.7	25.6	25.8	32.4	42.6																						
25-Feb	25.4	25.7	24.8	23.8	Z	24.1	24.3	24.8	26.5	28.5	29.0	30.4	31.3	31.2	31.5	31.9	32.6	33.3	33.3	32.5	37.1	38.6	38.0	35.8	30.2	38.6																						
26-Feb	34.1	32.2	29.6	27.0	26.6	Z	24.5	27.0	27.0	26.2	27.4	29.2	30.0	31.4	31.8	32.1	30.7	30.5	30.1	30.1	31.4	32.2	32.5	34.1	29.9	34.1																						
27-Feb	Z	33.8	34.1	32.7	32.6	32.8	33.1	33.5	34.3	32.8	32.3	35.5	36.7	37.0	37.6	38.2	38.0	37.6	37.3	37.3	35.7	33.4	32.4	32.0	34.8	38.2																						
28-Feb	31.8	Z	30.6	29.6	29.2	28.5	28.5	27.3	26.7	30.6	33.9	34.1	34.5	35.1	35.2	34.4	34.2	35.3	35.7	35.1	36.5	36.0	36.3	36.3	32.8	36.5																						
29-Feb	35.7	34.9	Z	34.3	34.3	34.5	34.9	34.6	34.5	33.7	33.5	33.3	32.9	32.9	32.7	32.9	32.5	32.6	32.4	31.4	31.3	31.0	30.6	30.5	33.1	35.7																						
																								32.3	30.5	30.0	29.6	30.6	31.9	30.2	29.8	30.2	30.6	30.8	31.4	31.8	32.6	32.6	32.4	32.4	31.9	31.5	31.1	31.1	31.3	31.4	31.3	Diurnal Average
																								42.6	42.2	41.8	39.4	40.8	40.3	39.3	39.4	39.1	39.9	40.7	41.7	42.6	42.4	43.1	43.1	43.2	42.9	42.5	41.7	43.3	44.1	44.6	43.4	Diurnal Maximum
Z - zerospan C - Calibration M - Maintenance																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 76 ppb																																																





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ozone (O₃) - ppb
Stony Mountain - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	86	13.01	13.01
21 - 50	575	86.99	100.00
51 - 82	0	0.00	100.00
> 83	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Ozone (O₃) - ppb
Stony Mountain - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	7	11	8	2	2	2	4	7	10	10	4	1	3	2	9	4	86
21 - 50	29	31	34	13	23	21	23	19	16	20	31	20	107	97	47	44	575
51 - 82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	36	42	42	15	25	23	27	26	26	30	35	21	110	99	56	48	661

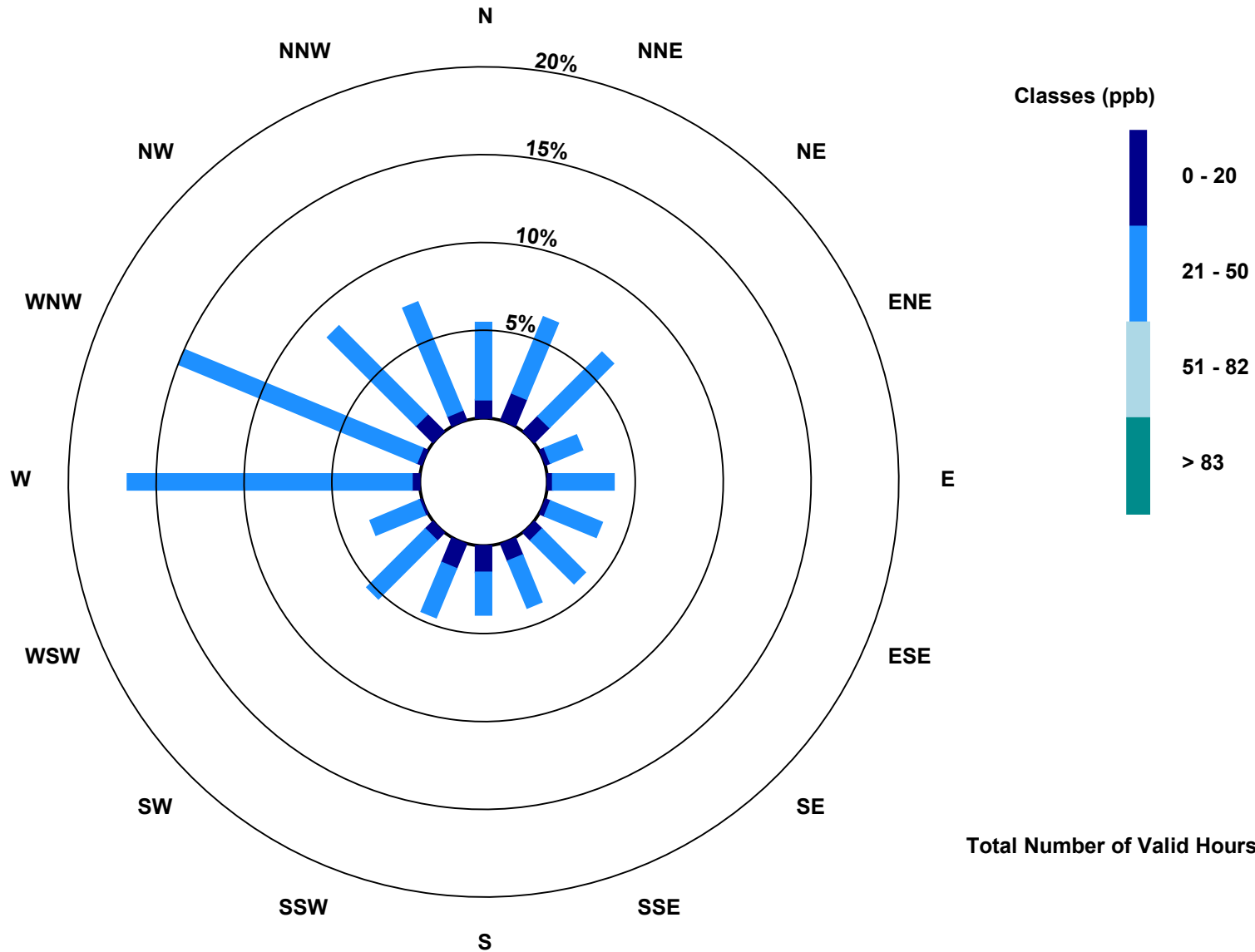
Total Number of Valid Hours: 661

Total Number of Hours: 696

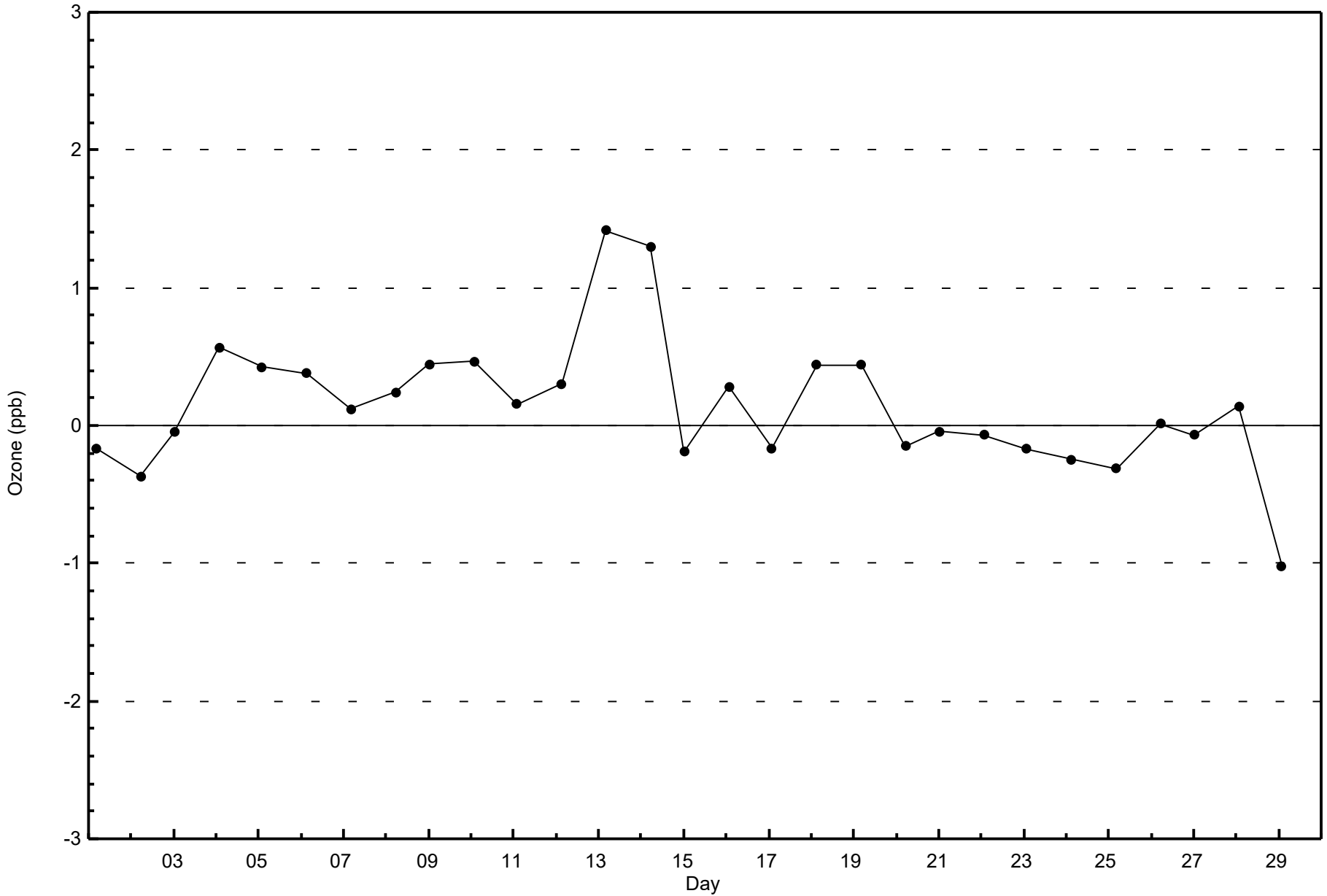


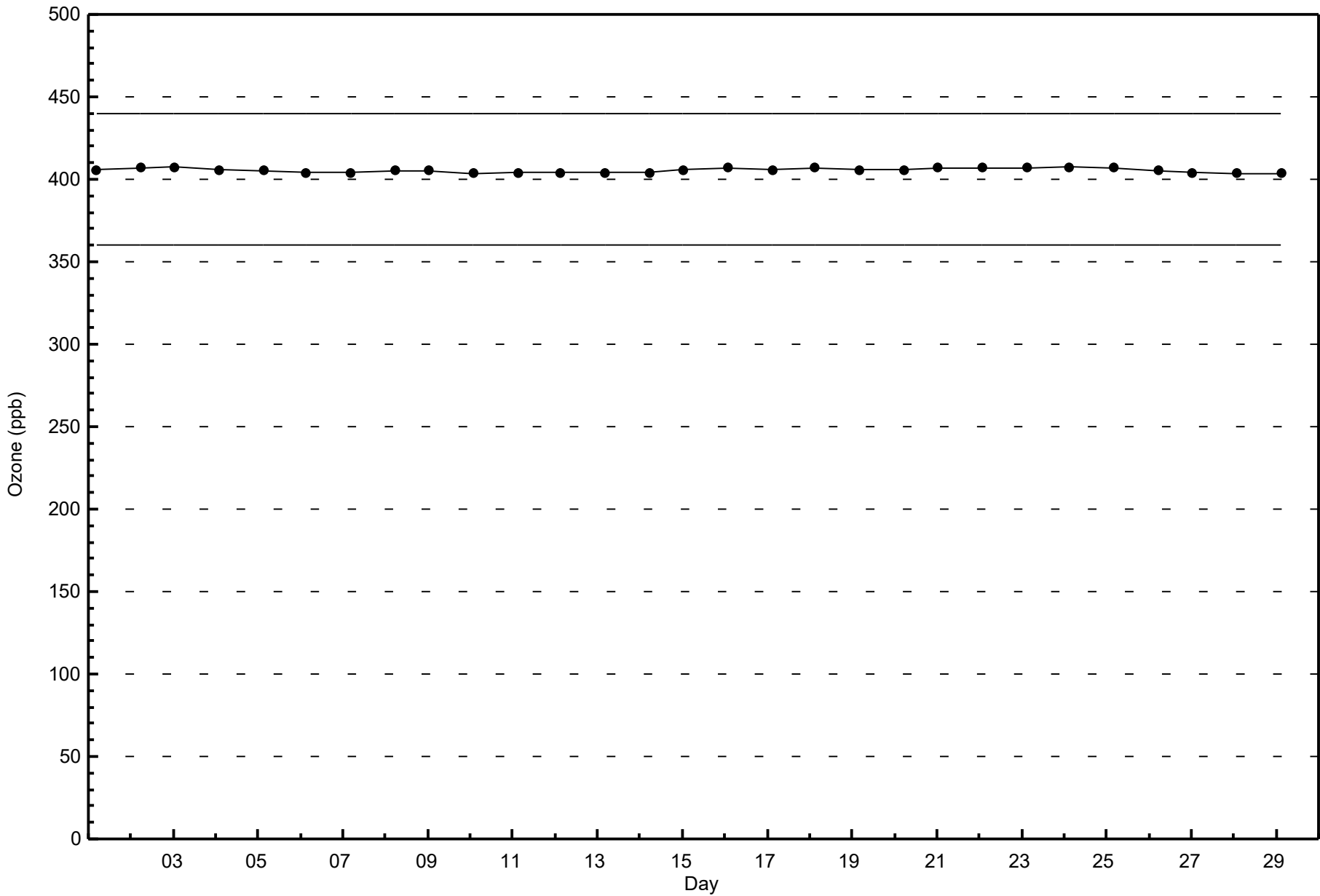
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Ozone (O₃) - ppb
Stony Mountain



Total Number of Valid Hours: 661







Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 11.3 µg/m ³ on Feb 3 09:00	Maximum Daily Average: 6.1 µg/m ³ on Feb 7		Hours of Data:	693
Minimum Value: 0.3 µg/m ³ on Feb 15 11:00	Minimum Daily Average: 0.6 µg/m ³ on Feb 13		Hours of Missing Data:	3
Maximum Diurnal Average: 3.2 µg/m ³ at hour 8	Minimum Diurnal Average: 2.6 µg/m ³ at hour 16		Hours of Calibration:	3
Monthly Average: 2.84 µg/m ³	Percentiles: P ₁ = 0.3 P ₁₀ = 0.7 Q ₁ = 1.4 Median = 2.7 Q ₃ = 3.8 P ₉₀ = 5.3 P ₉₉ = 8.4		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	0.7	0.9	1.2	1.4	1.7	2.2	2.8	3.2	3.5	3.6	4.3	5.2	5.8	5.6	5.0	3.2	2.8	2.7	2.7	2.8	2.8	2.9	3.0	2.9	3.0	5.8																						
2-Feb	3.1	3.3	3.6	3.8	4.6	4.9	6.0	7.1	7.8	7.5	6.6	5.8	4.7	4.1	3.5	3.8	3.4	3.1	3.8	3.7	3.4	3.2	3.3	3.5	4.5	7.8																						
3-Feb	3.7	3.9	4.9	5.7	5.8	5.8	6.1	7.8	11.3	8.4	6.2	5.7	4.5	3.2	3.0	3.1	2.8	2.2	1.9	1.7	2.8	3.0	3.2	3.4	4.6	11.3																						
4-Feb	3.5	3.8	3.9	3.9	3.8	2.5	2.5	2.6	3.2	3.2	2.7	2.8	3.1	4.4	5.4	4.7	4.1	4.6	4.4	4.3	3.4	4.0	4.0	3.8	3.7	5.4																						
5-Feb	3.7	2.8	2.5	2.7	2.8	2.6	2.1	2.8	2.6	2.4	2.3	3.0	2.1	1.9	1.8	1.6	3.5	5.0	5.5	4.7	4.3	3.9	3.5	3.0	3.0	5.5																						
6-Feb	2.5	2.2	1.9	1.7	1.5	1.7	1.6	1.5	1.6	1.6	1.8	2.5	2.8	3.6	3.9	3.8	2.5	1.7	2.1	2.8	3.1	3.2	3.4	3.9	2.5	3.9																						
7-Feb	5.5	5.4	5.9	6.2	6.0	6.0	6.5	3.1	3.5	4.6	5.3	5.4	6.0	6.1	6.2	6.2	6.3	6.8	6.9	7.5	7.7	8.4	8.0	7.5	6.1	8.4																						
8-Feb	7.1	6.5	5.9	6.2	6.1	6.0	6.9	7.1	4.7	4.1	4.3	4.8	4.7	4.5	4.9	5.4	5.5	5.5	5.4	5.3	5.1	4.7	4.1	5.4	5.4	7.1																						
9-Feb	8.6	9.3	4.3	1.4	1.0	1.4	1.4	1.4	1.5	1.4	0.9	0.6	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.7	9.3																						
10-Feb	0.7	0.9	1.7	2.3	2.3	2.0	4.1	5.9	5.6	6.8	8.3	6.0	4.6	4.0	3.9	3.7	4.2	4.8	5.8	8.6	11.2	10.6	7.1	5.2	5.0	11.2																						
11-Feb	4.0	3.0	2.4	1.9	1.4	1.2	1.0	1.0	1.1	1.0	0.9	0.7	0.7	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	1.0	4.0																						
12-Feb	0.3	0.6	0.5	1.0	1.8	3.0	3.5	4.3	2.8	2.2	3.3	2.8	2.5	2.0	1.5	0.9	0.7	0.7	0.7	0.6	0.6	0.7	0.9	0.8	1.6	4.3																						
13-Feb	0.6	0.7	0.8	0.4	0.4	0.5	0.7	0.5	0.3	0.6	0.9	1.1	0.9	0.6	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	1.1																						
14-Feb	0.6	0.7	0.5	0.5	0.6	0.9	0.8	0.8	0.9	1.0	0.8	0.9	0.8	0.8	0.9	0.9	1.0	1.3	1.2	1.1	1.0	1.1	1.5	1.9	0.9	1.9																						
15-Feb	1.9	1.5	0.9	0.6	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.7	0.9	1.0	1.2	1.0	0.8	0.8	0.8	0.8	1.3	1.5	1.5	1.7	0.9	1.9																						
16-Feb	1.7	1.8	1.7	1.4	1.7	2.5	2.8	2.9	3.0	2.9	2.7	2.3	1.8	1.5	1.4	1.2	1.2	1.5	1.7	1.5	1.3	1.2	1.2	1.3	1.8	3.0																						
17-Feb	1.7	2.1	2.4	2.7	2.8	2.9	2.8	2.9	2.9	2.9	2.8	2.7	2.5	2.1	2.1	2.3	2.3	2.2	2.3	2.6	2.8	3.0	3.1	3.1	2.6	3.1																						
18-Feb	3.0	3.0	3.2	3.2	2.9	3.5	3.5	3.6	3.4	3.5	3.4	4.4	4.6	4.2	3.9	3.5	3.9	3.5	2.8	2.5	1.9	1.5	1.4	1.3	3.1	4.6																						
19-Feb	1.4	1.4	1.4	1.3	1.3	1.5	1.9	2.2	1.8	1.6	1.6	4.9	3.3	2.6	3.0	3.2	3.3	3.5	3.3	2.8	2.7	2.8	2.8	2.8	2.4	4.9																						
20-Feb	2.9	3.6	4.4	4.3	3.7	4.2	3.7	3.9	3.5	3.4	3.4	3.6	4.4	4.7	4.1	4.8	4.7	4.5	4.1	4.1	4.3	5.2	4.6	3.9	4.1	5.2																						
21-Feb	4.3	4.6	4.1	4.0	4.2	5.5	4.8	4.1	3.7	3.4	2.9	1.8	1.4	1.2	C	C	C	2.4	2.2	2.0	2.0	2.1	2.3	2.7	3.1	5.5																						
22-Feb	3.0	3.2	3.8	3.6	3.1	3.0	2.8	3.0	3.1	3.0	2.7	2.3	1.9	1.6	1.4	1.2	1.1	1.1	1.1	1.1	1.3	1.2	1.4	1.8	2.2	3.8																						
23-Feb	1.7	2.3	2.4	2.5	2.7	2.8	2.9	2.8	2.5	1.8	1.6	1.5	1.7	1.4	1.2	1.0	1.3	1.9	1.0	0.9	1.2	0.8	0.6	0.6	1.7	2.9																						
24-Feb	0.7	1.0	0.7	0.5	0.6	1.0	2.2	2.7	2.7	2.1	2.1	2.0	2.1	2.3	2.2	2.1	2.0	2.1	2.3	2.6	2.8	3.1	3.0	3.0	2.0	3.1																						
25-Feb	3.1	2.7	3.1	3.0	2.8	2.7	2.3	1.6	1.2	1.1	1.2	1.3	1.3	1.2	1.3	1.3	1.3	1.2	1.4	1.7	0.9	0.9	0.8	1.0	1.7	3.1																						
26-Feb	1.2	1.4	1.7	2.2	2.5	2.5	3.0	3.4	3.5	3.7	3.7	3.3	3.0	3.0	2.8	3.0	3.4	4.0	4.2	3.8	3.8	3.6	3.3	2.7	3.0	4.2																						
27-Feb	2.6	2.7	2.1	2.2	2.1	2.1	2.0	2.0	2.0	2.1	2.2	2.3	2.3	2.2	2.1	2.0	2.0	1.8	2.0	2.0	2.3	2.9	3.1	3.0	2.3	3.1																						
28-Feb	3.4	3.8	5.0	5.0	4.9	5.1	4.9	4.3	4.0	3.5	2.8	2.7	2.7	2.9	2.9	3.4	3.3	3.1	2.6	3.1	2.7	2.4	2.6	2.5	3.5	5.1																						
29-Feb	2.6	2.6	2.8	3.0	3.1	3.1	3.5	3.4	3.6	4.0	4.4	4.9	4.9	4.9	5.1	5.4	5.6	5.7	5.4	5.1	4.5	3.9	3.8	3.5	4.1	5.7																						
																								2.7	2.8	2.8	2.7	2.7	2.9	3.1	3.2	3.2	3.0	3.0	3.0	2.8	2.7	2.7	2.6	2.7	2.7	2.7	2.8	2.9	2.9	2.7	2.7	Diurnal Average
																								8.6	9.3	5.9	6.2	6.1	6.0	6.9	7.8	11.3	8.4	8.3	6.0	6.0	6.1	6.2	6.2	6.3	6.8	6.9	8.6	11.2	10.6	8.0	7.5	Diurnal Maximum

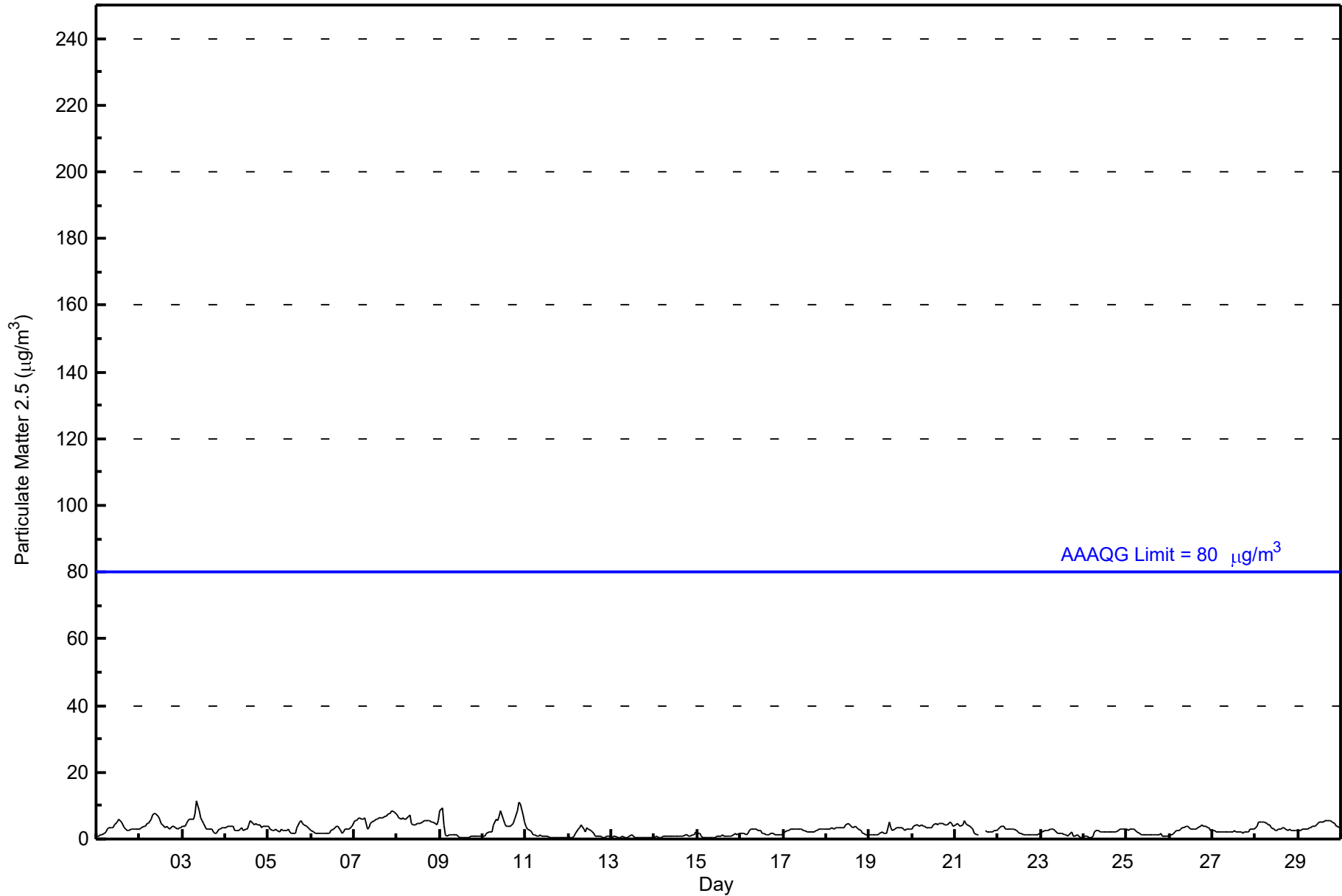
C - Calibration

Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m³ 24-hr 29 µg/m³



Wood Buffalo Environmental Association
Hourly Averages

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Stony Mountain - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Stony Mountain - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	635	91.63	91.63
6 - 15	58	8.37	100.00
16 - 25	0	0.00	100.00
26 - 80	0	0.00	100.00
> 81.0	0	0.00	100.00

Total Number of Valid Hours: 693

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - μg/m³
Stony Mountain - February 2024

Concentration Ranges (μg/m ³)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	35	37	38	17	25	23	25	23	21	26	34	22	113	102	47	47	635
6 - 15	4	8	4	0	1	2	3	4	6	6	4	0	3	1	10	2	58
16 - 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	39	45	42	17	26	25	28	27	27	32	38	22	116	103	57	49	693

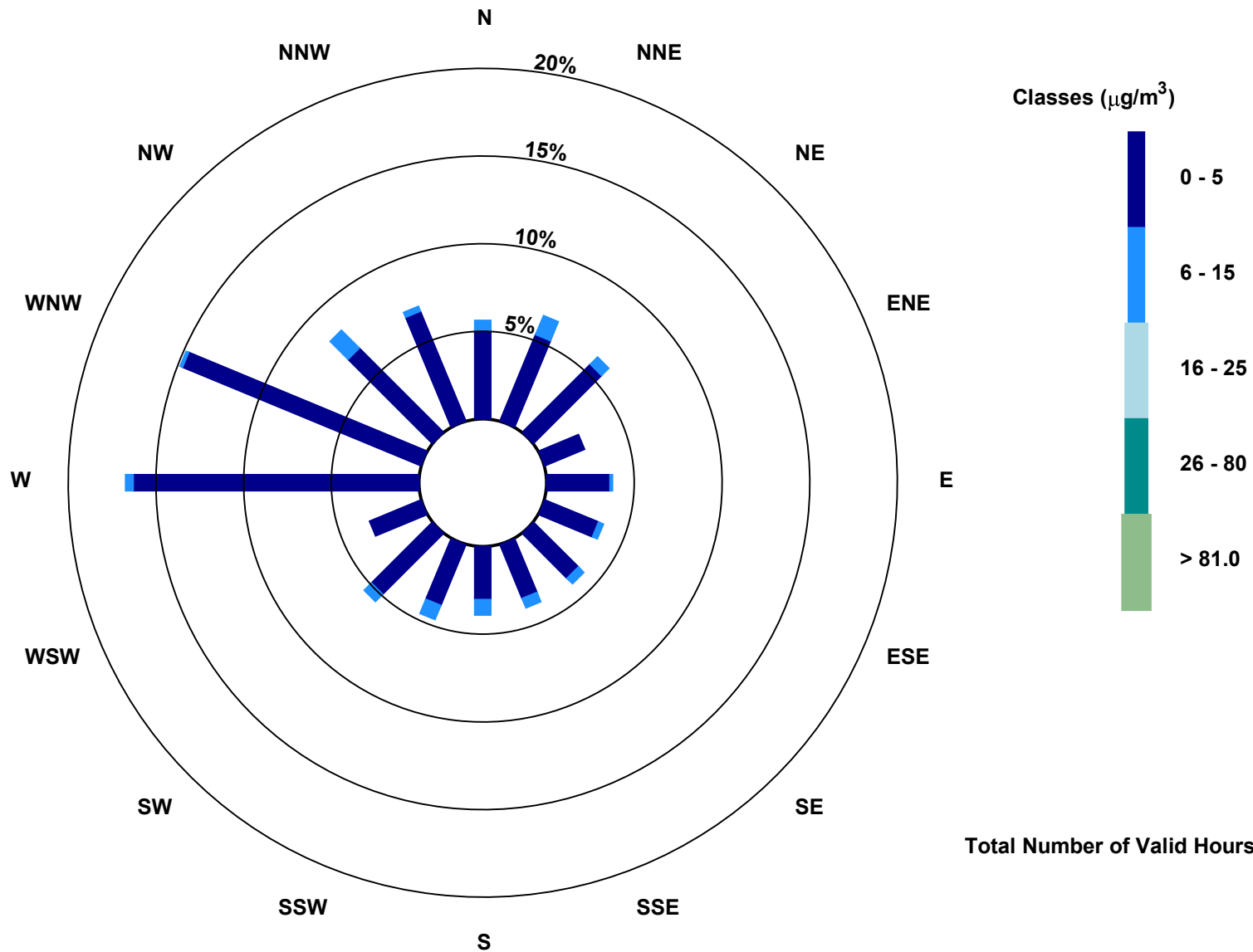
Total Number of Valid Hours: 693

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

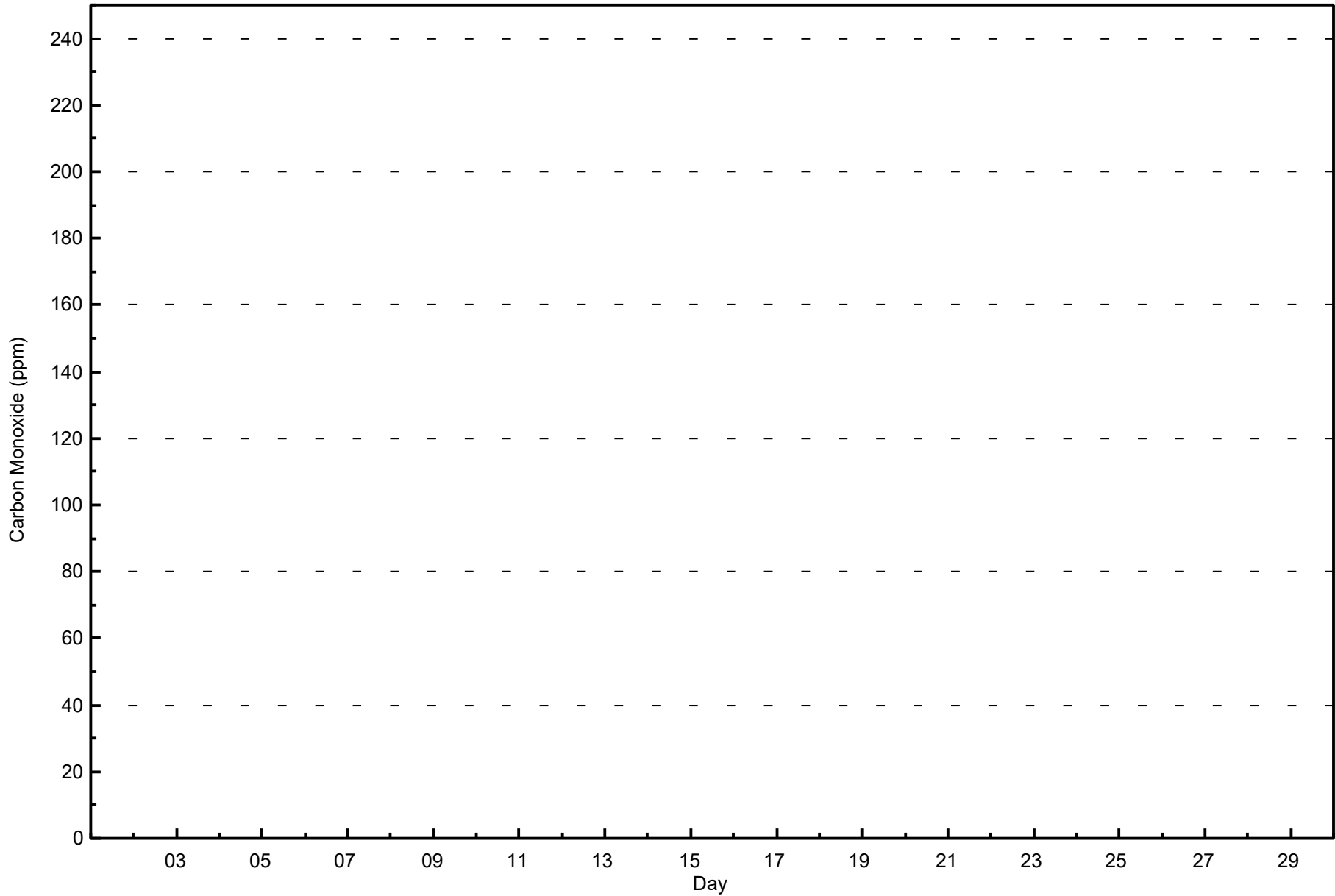
Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Stony Mountain





Wood Buffalo Environmental Association
Hourly Averages

Carbon Monoxide (CO) - ppm
Stony Mountain - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Carbon Monoxide (CO) - ppm
Stony Mountain - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.3	661	100.00	100.00
0.4 - 0.5	0	0.00	100.00
0.6 - 0.7	0	0.00	100.00
0.8 - 1.4	0	0.00	100.00
1.5 - 10	0	0.00	100.00
> 10	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Carbon Monoxide (CO) - ppm
Stony Mountain - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.3	37	40	41	16	25	24	28	25	25	31	34	23	111	100	55	46	661
0.4 - 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.6 - 0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.8 - 1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.5 - 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	37	40	41	16	25	24	28	25	25	31	34	23	111	100	55	46	661

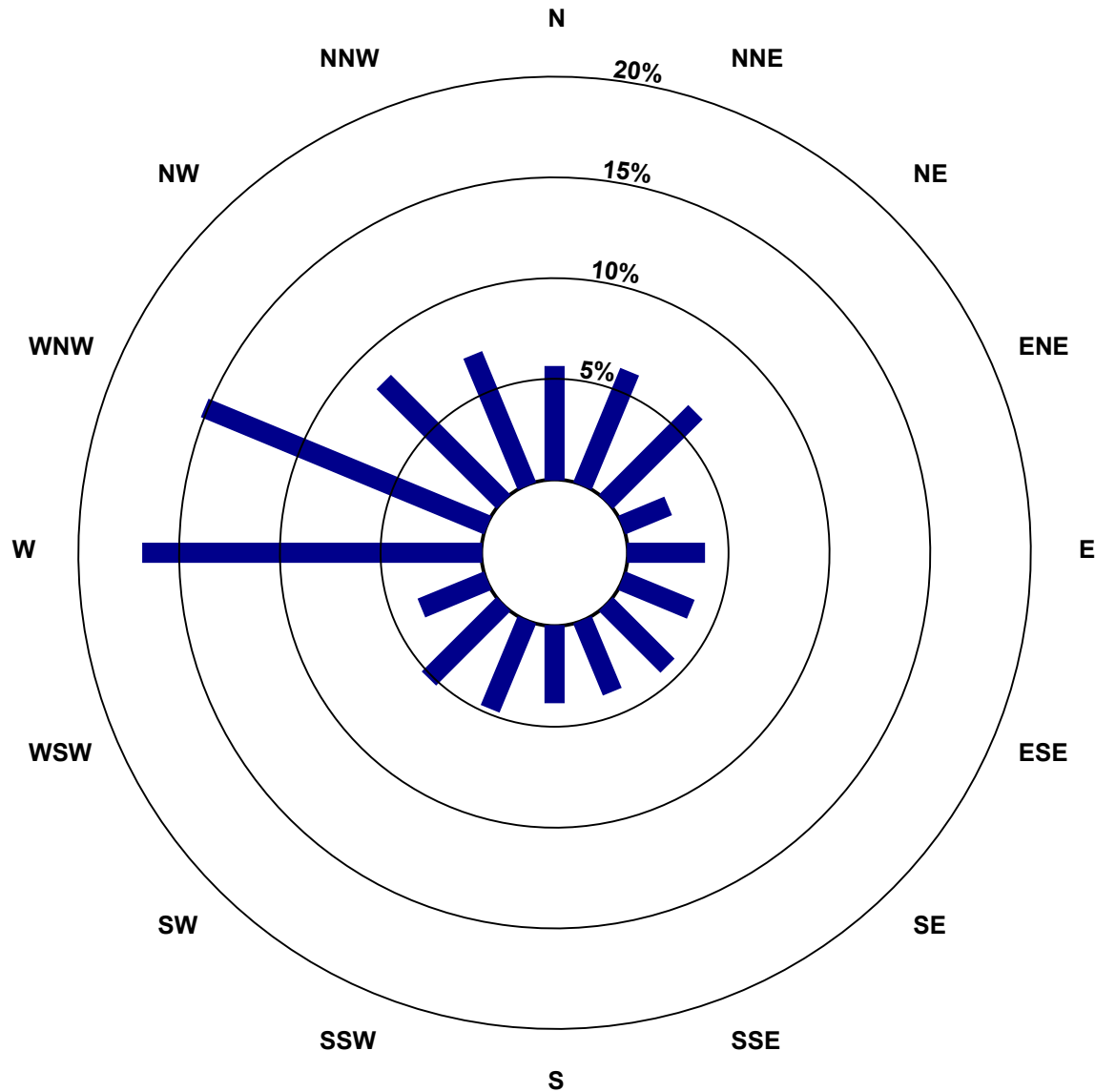
Total Number of Valid Hours: 661

Total Number of Hours: 696

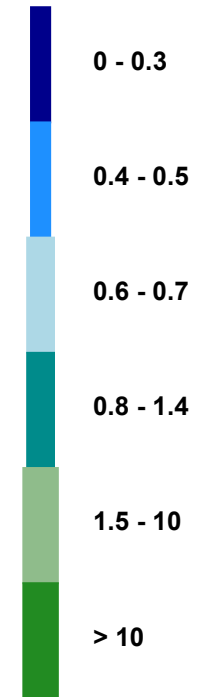


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Carbon Monoxide (CO) - ppm
Stony Mountain



Classes (ppm)



Total Number of Valid Hours: 661

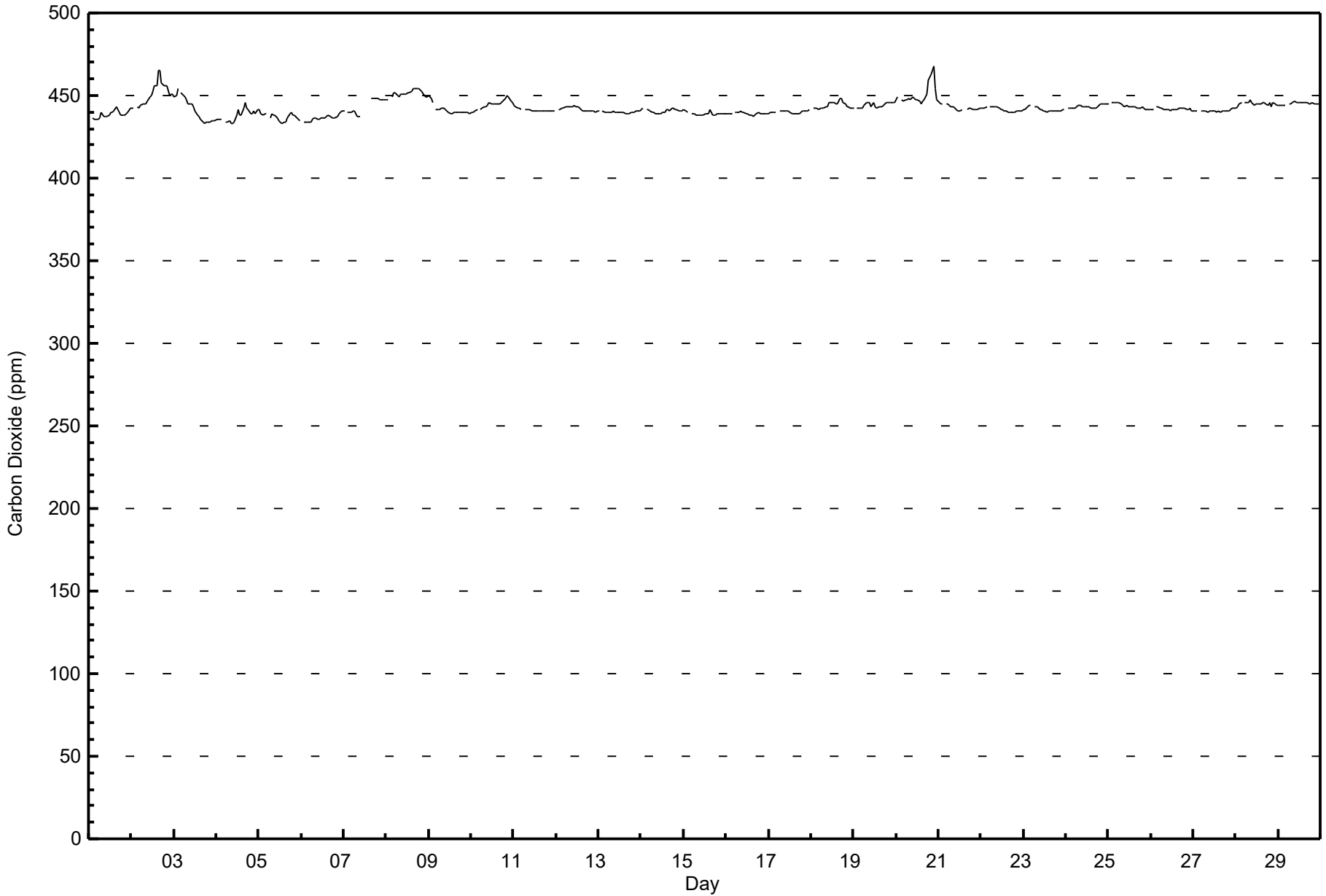


Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 467.6 ppm on Feb 20 22:00 Maximum Daily Average: 451.1 ppm on Feb 8																								Hours in Service: 696 Hours of Data: 660 Hours of Missing Data: 36 Hours of Calibration: 34 Percent Operational Time: 99.7		
Minimum Value: 433.0 ppm on Feb 5 14:00 Maximum Diurnal Average: 443.1 ppm at hour 20 Monthly Average: 442.37 ppm												Minimum Daily Average: 436.4 ppm on Feb 6 Minimum Diurnal Average: 441.7 ppm at hour 3 Percentiles: P ₁ = 433.7 P ₁₀ = 437.9 Q ₁ = 439.8 Median = 441.6 Q ₃ = 444.7 P ₉₀ = 447.6 P ₉₉ = 456.8														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	435.0	Z	436.1	435.4	435.4	435.6	436.3	439.6	437.6	437.4	437.0	438.5	439.5	439.7	440.7	443.1	441.2	439.8	438.5	438.2	438.0	439.1	439.8	442.3	438.4	443.1
2-Feb	442.6	442.5	Z	443.0	442.7	444.2	444.7	444.5	445.2	446.4	449.0	450.2	452.5	456.2	455.9	465.4	465.4	457.6	456.2	455.8	456.1	449.9	451.2	451.0	450.8	465.4
3-Feb	449.2	449.9	454.4	Z	451.4	450.2	449.1	447.6	444.9	444.6	445.1	443.5	440.6	438.3	437.0	436.0	434.3	433.5	433.9	433.5	434.2	434.4	434.7	434.9	441.5	454.4
4-Feb	435.7	435.7	435.7	435.8	Z	433.6	433.8	434.9	433.4	433.1	433.5	437.9	441.2	437.8	438.4	442.0	445.8	442.6	441.9	438.9	439.1	440.7	439.4	441.7	437.9	445.8
5-Feb	441.7	438.9	438.5	438.9	439.2	Z	436.2	438.8	438.5	438.0	436.3	434.9	434.0	433.0	433.7	434.0	436.6	438.8	439.9	438.5	438.3	436.8	436.0	435.1	437.2	441.7
6-Feb	Z	434.0	433.7	433.7	434.0	434.3	435.9	436.6	436.3	435.8	435.7	436.1	436.3	436.7	437.1	437.8	437.6	436.4	436.8	436.6	437.2	438.6	439.9	440.6	436.4	440.6
7-Feb	440.4	Z	440.1	440.1	439.8	440.4	440.6	437.2	437.0	437.0	C	C	C	C	C	448.3	448.2	448.4	448.7	448.2	447.7	447.5	447.5	447.3	443.6	448.7
8-Feb	447.5	447.5	Z	448.9	451.7	451.4	449.7	449.0	450.8	450.8	450.5	450.6	451.4	451.5	452.7	454.0	453.8	454.5	454.3	453.3	452.9	450.3	448.7	449.0	451.1	454.5
9-Feb	449.9	448.5	445.4	Z	441.6	441.7	441.9	442.0	442.0	441.7	440.3	440.2	439.3	439.2	439.6	439.5	439.4	439.5	439.4	439.5	439.6	439.6	439.6	439.4	441.2	449.9
10-Feb	439.6	440.2	440.7	441.1	Z	441.7	442.4	442.9	442.9	444.0	445.9	445.2	445.0	445.0	444.9	445.1	445.2	445.4	446.3	448.5	450.2	449.2	447.0	445.6	444.5	450.2
11-Feb	444.4	443.2	442.6	442.2	441.8	Z	441.6	441.6	441.5	441.4	441.0	440.9	440.9	440.7	440.6	440.6	440.6	440.6	440.5	440.6	440.8	440.7	440.5	440.4	441.3	444.4
12-Feb	Z	441.6	441.9	442.0	442.5	443.1	443.2	443.5	443.3	443.2	444.1	443.1	442.8	442.5	441.6	441.1	440.6	440.8	440.8	441.0	440.9	440.6	440.1	440.3	441.9	444.1
13-Feb	440.4	Z	440.6	440.1	439.9	440.0	439.9	439.8	440.4	439.5	439.4	439.6	439.7	439.9	439.4	439.3	439.3	439.7	440.1	439.9	440.3	440.8	440.9	439.9	440.9	440.9
14-Feb	441.2	442.1	Z	441.3	441.5	440.8	439.6	439.4	439.3	439.2	439.1	439.6	439.7	441.1	441.2	440.8	442.0	442.3	441.5	441.1	440.9	440.8	440.8	440.8	440.6	442.3
15-Feb	441.4	440.8	439.8	Z	439.3	438.9	438.9	438.5	438.3	438.3	438.3	438.5	438.6	438.8	438.7	441.5	438.0	438.2	438.5	438.7	438.8	438.9	439.0	439.2	439.0	441.5
16-Feb	439.2	439.2	439.2	438.8	Z	439.9	440.1	440.1	440.3	440.2	439.9	439.3	438.8	438.2	437.9	437.7	437.8	439.3	439.8	439.3	439.0	438.7	438.8	439.0	439.2	440.3
17-Feb	439.4	439.6	439.9	440.0	440.1	Z	440.4	440.5	440.5	440.8	440.8	440.3	439.8	439.3	439.1	439.2	439.1	439.1	439.6	440.7	441.0	440.9	441.0	441.6	440.1	441.6
18-Feb	Z	442.1	442.0	442.1	441.9	442.2	442.4	442.4	442.8	443.5	445.6	445.5	445.9	445.6	445.2	444.6	448.5	448.3	445.8	444.9	443.6	442.8	442.5	442.5	444.0	448.5
19-Feb	442.4	Z	442.4	442.2	442.1	442.3	443.7	446.0	445.8	445.5	443.3	445.9	443.6	442.8	443.2	443.2	443.3	443.8	445.4	446.0	445.8	445.9	445.4	445.9	444.2	446.0
20-Feb	447.1	449.4	Z	447.6	446.3	447.6	447.2	448.1	447.3	449.3	448.3	447.7	447.5	446.8	445.3	446.5	447.4	451.3	459.3	461.1	462.9	467.6	454.0	447.7	450.6	467.6
21-Feb	446.0	445.0	444.5	Z	444.6	445.1	443.9	443.4	443.1	442.7	441.8	441.0	440.9	441.3	M	M	441.1	442.0	442.2	441.8	441.6	441.6	441.8	442.2	442.8	446.0
22-Feb	442.5	442.6	442.7	442.8	Z	442.9	442.8	443.0	443.0	442.8	442.1	441.7	441.3	440.8	440.5	440.1	439.9	439.9	439.9	440.1	440.4	440.4	440.7	441.0	441.5	443.0
23-Feb	441.1	441.8	443.4	444.4	444.1	Z	443.2	443.6	442.9	441.6	441.3	440.9	440.4	440.3	440.3	440.4	440.7	440.4	440.5	440.8	441.0	440.9	441.2	441.5	441.6	444.4
24-Feb	Z	442.3	442.4	442.6	442.7	442.5	443.4	444.3	444.3	443.4	443.5	443.6	443.0	442.8	442.7	442.4	442.4	442.7	443.3	444.6	445.3	445.2	444.9	444.9	443.4	445.3
25-Feb	445.0	Z	445.8	446.0	446.0	446.1	446.0	445.2	444.3	443.5	443.9	443.6	443.3	443.1	443.0	442.8	442.7	442.4	442.8	443.1	442.1	441.7	441.6	441.3	443.7	446.1
26-Feb	441.2	441.1	Z	443.1	442.9	442.5	442.0	441.4	441.2	441.5	441.3	440.8	441.3	441.2	441.4	441.3	442.3	442.2	442.1	442.1	441.9	441.7	442.0	441.0	441.7	443.1
27-Feb	440.7	440.7	440.3	Z	440.6	440.5	440.4	440.3	440.1	440.3	440.6	440.5	440.4	440.1	440.3	440.2	440.3	440.6	440.5	440.5	440.8	441.6	442.0	442.3	440.6	442.3
28-Feb	442.6	442.8	444.6	446.2	Z	445.8	445.6	445.9	447.2	445.8	444.4	445.0	445.0	444.8	445.2	445.7	445.6	444.8	444.3	445.5	443.6	445.4	444.7	444.3	445.0	447.2
29-Feb	444.3	444.1	443.9	444.2	444.2	Z	444.7	444.5	445.4	446.7	445.4	445.4	445.7	445.9	445.7	445.6	445.7	445.3	445.1	445.5	445.1	445.0	445.1	445.2	445.1	446.7
442.4 442.3 441.7 441.8 442.3 442.2 442.1 442.2 442.1 442.0 442.1 442.1 442.1 441.9 441.9 442.8 442.9 442.7 443.0 443.1 443.1 443.0 442.4 442.4																								Diurnal Average		
449.9 449.9 454.4 448.9 451.7 451.4 449.7 449.0 450.8 450.8 450.5 450.6 452.5 456.2 455.9 465.4 465.4 457.6 459.3 461.1 462.9 467.6 454.0 451.0																								Diurnal Maximum		
Z - zerspan C - Calibration M - Maintenance																										



Wood Buffalo Environmental Association
Hourly Averages

Carbon Dioxide (CO₂) - ppm
Stony Mountain - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Carbon Dioxide (CO₂) - ppm
Stony Mountain - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
400 - 420	0	0.00	0.00
420 - 440	228	34.55	34.55
440 - 460	427	64.70	99.24
460 - 480	5	0.76	100.00
480 - 500	0	0.00	100.00
> 500	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Carbon Dioxide (CO₂) - ppm
Stony Mountain - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
400 - 420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
420 - 440	9	20	6	4	12	9	6	8	8	9	4	8	47	42	12	24	228
440 - 460	26	22	34	12	12	14	21	15	18	22	31	14	64	57	41	24	427
460 - 480	0	1	0	1	1	0	1	0	0	1	0	0	0	0	0	0	5
480 - 500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	35	43	40	17	25	23	28	23	26	32	35	22	111	99	53	48	660

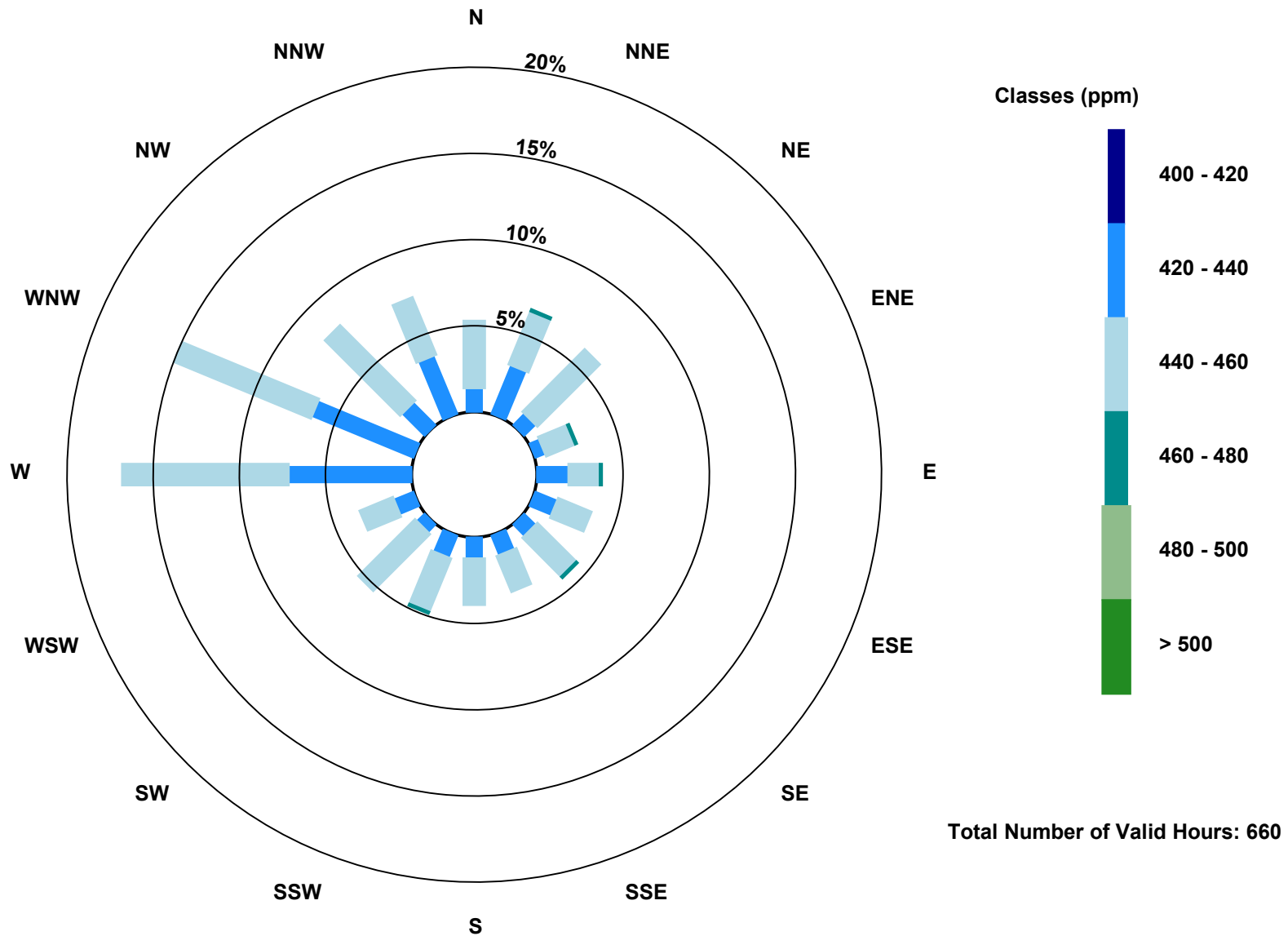
Total Number of Valid Hours: 660

Total Number of Hours: 696



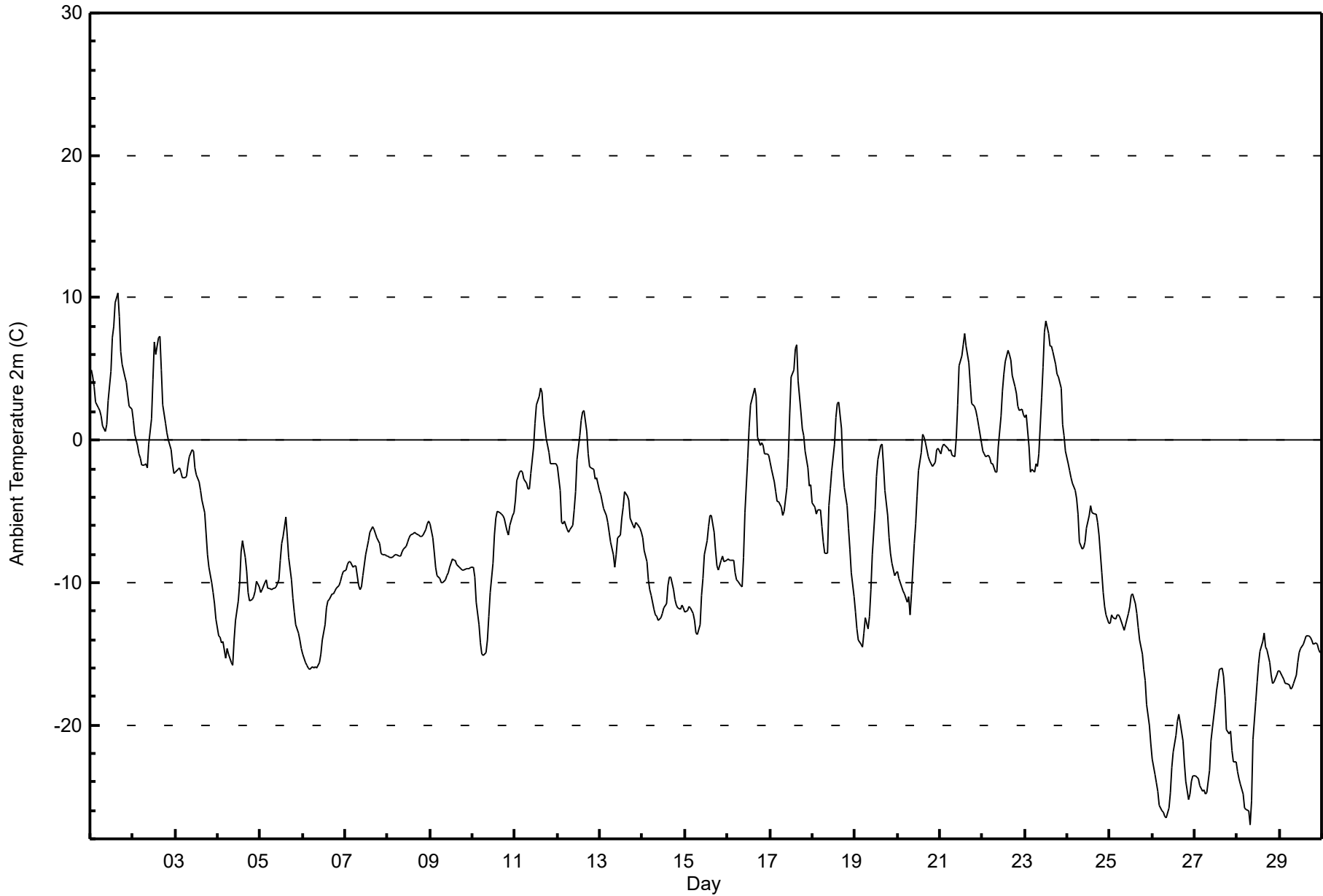
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Carbon Dioxide (CO₂) - ppm
Stony Mountain





Maximum Value: 10.3 C on Feb 1 16:00																				Maximum Daily Average: 4.3 C on Feb 1					Hours in Service: 696	
Minimum Value: -27.1 C on Feb 28 08:00																				Minimum Daily Average: -23.6 C on Feb 26					Hours of Data: 696	
Maximum Diurnal Average: -3.4 C at hour 15																				Minimum Diurnal Average: -10.4 C at hour 8					Hours of Missing Data: 0	
Monthly Average: -7.35 C																				Percentiles: P ₁ = -25.9 P ₁₀ = -16.7 Q ₁ = -12.1 Median = -7.3 Q ₃ = -1.6 P ₉₀ = 2.4 P ₉₉ = 7.5					Hours of Calibration: 0	
																									Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	4.9	4.4	3.7	2.7	2.2	2.0	1.7	1.0	0.6	1.1	2.8	4.8	7.2	8.0	9.6	10.3	8.6	6.2	5.4	4.4	4.1	3.2	2.3	2.2	4.3	10.3
2-Feb	1.4	0.4	-0.3	-1.0	-1.2	-1.8	-1.8	-1.6	-1.9	-0.3	1.5	4.2	6.9	6.0	7.2	7.3	4.9	2.4	1.2	0.5	0.0	-0.6	-1.6	-2.3	1.2	7.3
3-Feb	-2.2	-2.1	-2.0	-2.3	-2.6	-2.7	-2.5	-1.8	-1.1	-0.6	-0.8	-2.0	-2.5	-2.9	-3.5	-4.2	-5.1	-6.6	-8.0	-8.9	-10.0	-10.7	-11.4	-12.5	-4.6	-0.6
4-Feb	-13.8	-13.9	-14.3	-14.1	-15.3	-14.6	-15.0	-15.6	-15.8	-14.1	-12.7	-11.3	-10.0	-7.9	-7.1	-8.3	-9.2	-10.7	-11.2	-11.2	-11.0	-10.6	-9.9	-10.3	-12.0	-7.1
5-Feb	-10.7	-10.5	-10.0	-9.8	-10.4	-10.4	-10.5	-10.4	-10.3	-9.8	-8.4	-7.3	-6.8	-5.4	-6.7	-8.2	-9.8	-11.1	-12.1	-13.0	-13.5	-14.1	-14.7	-10.2	-5.4	
6-Feb	-15.0	-15.6	-15.8	-16.0	-16.1	-16.0	-16.0	-15.9	-16.0	-15.6	-15.0	-14.0	-12.9	-11.7	-11.3	-11.2	-10.8	-10.8	-10.6	-10.5	-10.2	-9.9	-9.5	-9.2	-13.1	-9.2
7-Feb	-9.1	-8.8	-8.5	-8.5	-9.0	-8.9	-8.9	-10.2	-10.5	-10.3	-9.5	-8.1	-7.5	-7.1	-6.5	-6.0	-6.3	-6.6	-6.8	-7.3	-7.9	-8.0	-8.1	-8.2	-8.2	-6.0
8-Feb	-8.2	-8.2	-8.2	-8.1	-8.0	-8.0	-8.2	-8.1	-7.9	-7.6	-7.4	-7.2	-6.9	-6.7	-6.5	-6.5	-6.5	-6.7	-6.8	-6.8	-6.7	-6.3	-5.9	-5.7	-7.2	-5.7
9-Feb	-5.9	-6.8	-7.9	-8.9	-9.6	-9.8	-10.0	-10.0	-9.9	-9.5	-9.3	-9.0	-8.4	-8.4	-8.4	-8.7	-9.0	-9.0	-9.1	-9.1	-9.1	-9.0	-9.0	-8.9	-8.9	-5.9
10-Feb	-8.9	-9.6	-11.4	-12.9	-14.2	-15.0	-15.1	-15.0	-14.0	-12.3	-10.7	-8.6	-6.6	-5.5	-5.0	-5.1	-5.2	-5.3	-5.5	-6.4	-6.7	-6.0	-5.3	-5.1	-9.0	-5.0
11-Feb	-4.2	-2.8	-2.2	-2.2	-2.3	-2.7	-3.0	-3.4	-3.5	-2.3	-0.5	1.2	2.5	3.0	3.7	3.4	1.8	0.1	-0.4	-0.8	-1.6	-1.6	-1.6	-1.7	-0.9	3.7
12-Feb	-1.8	-3.5	-5.7	-5.9	-5.7	-6.3	-6.5	-6.3	-5.9	-4.9	-3.7	-1.3	0.3	1.4	1.9	2.0	0.7	-0.9	-1.8	-2.0	-2.0	-2.7	-2.7	-3.5	-2.8	2.0
13-Feb	-3.8	-4.3	-4.8	-5.3	-5.8	-6.4	-7.1	-8.1	-9.0	-8.0	-6.8	-6.7	-5.5	-4.7	-3.6	-3.9	-4.2	-5.5	-6.0	-6.2	-5.8	-5.9	-6.2	-6.5	-5.8	-3.6
14-Feb	-6.8	-7.7	-8.6	-9.8	-10.5	-10.9	-11.9	-12.3	-12.3	-12.7	-12.5	-12.2	-11.7	-11.5	-10.2	-9.6	-9.6	-10.5	-11.2	-11.6	-11.8	-11.9	-11.6	-11.7	-10.9	-6.8
15-Feb	-12.0	-12.0	-11.7	-11.8	-12.2	-12.7	-13.6	-12.9	-10.9	-9.8	-8.0	-7.0	-6.1	-5.2	-5.3	-6.5	-7.8	-8.9	-9.2	-8.5	-8.2	-8.6	-8.5	-9.6	-5.2	-9.6
16-Feb	-8.4	-8.5	-8.4	-8.4	-9.3	-9.8	-9.9	-10.2	-10.3	-8.2	-5.1	-1.3	0.9	2.5	3.3	3.7	3.0	0.2	-0.4	-0.2	-0.3	-0.9	-1.0	-1.1	-3.7	3.7
17-Feb	-1.6	-2.0	-2.9	-3.6	-4.3	-4.3	-4.7	-5.3	-5.0	-3.3	-1.3	1.9	4.4	5.0	6.4	6.7	4.2	2.0	0.8	0.4	-0.8	-1.9	-3.2	-3.2	-0.7	6.7
18-Feb	-4.4	-4.7	-5.2	-4.9	-4.9	-6.1	-7.2	-7.9	-7.9	-4.6	-3.5	-2.1	-0.3	1.6	2.6	2.7	0.8	-2.0	-3.3	-4.6	-6.2	-7.7	-9.3	-11.0	-4.2	2.7
19-Feb	-12.1	-13.3	-14.1	-14.4	-14.6	-13.6	-12.5	-13.2	-12.4	-10.5	-8.1	-4.9	-2.5	-1.4	-0.4	-0.3	-1.7	-3.6	-5.3	-6.8	-8.0	-8.7	-9.5	-9.4	-8.4	-0.3
20-Feb	-9.3	-9.7	-10.3	-10.6	-10.8	-11.3	-11.0	-12.3	-10.8	-7.2	-5.9	-4.0	-2.1	-0.8	0.4	0.2	-0.2	-1.1	-1.4	-1.6	-1.8	-1.6	-0.7	-0.6	-5.2	0.4
21-Feb	-1.0	-0.5	-0.3	-0.3	-0.6	-0.8	-0.7	-1.1	-1.1	0.1	2.5	5.2	6.0	6.7	7.5	6.6	5.4	3.9	2.6	2.4	2.1	1.6	1.0	-0.2	2.0	7.5
22-Feb	-0.8	-1.0	-1.1	-1.1	-1.2	-1.6	-1.7	-2.2	-2.2	-0.5	1.7	3.5	4.7	5.5	6.3	6.0	5.6	4.5	3.8	3.2	2.4	2.1	2.2	1.8	1.7	6.3
23-Feb	1.6	1.7	-0.5	-2.3	-2.1	-2.3	-1.6	-1.9	-1.0	2.9	5.2	7.6	8.4	7.5	6.6	6.6	6.2	5.3	4.6	4.4	3.7	1.1	0.3	-0.8	2.6	8.4
24-Feb	-1.6	-2.1	-2.6	-3.0	-3.5	-4.1	-5.2	-7.2	-7.7	-7.6	-7.2	-6.2	-5.3	-4.7	-5.1	-5.2	-5.2	-5.8	-6.7	-9.3	-10.7	-11.7	-12.3	-12.8	-6.4	-1.6
25-Feb	-12.9	-12.3	-12.5	-12.5	-12.2	-12.2	-12.5	-13.0	-13.4	-12.9	-12.1	-11.7	-10.9	-10.8	-11.4	-12.1	-13.1	-14.0	-15.0	-16.1	-16.9	-18.6	-20.0	-21.3	-13.8	-10.8
26-Feb	-22.4	-23.4	-24.1	-24.7	-25.6	-26.0	-26.1	-26.4	-26.6	-25.9	-24.8	-23.0	-21.9	-20.7	-19.8	-19.2	-19.8	-21.1	-22.7	-24.0	-25.2	-24.9	-24.0	-23.5	-23.6	-19.2
27-Feb	-23.6	-23.6	-23.8	-24.2	-24.7	-24.6	-24.8	-24.8	-23.2	-21.1	-20.3	-18.6	-17.6	-16.9	-16.1	-16.0	-16.6	-18.0	-20.4	-20.6	-20.4	-21.8	-22.6	-22.6	-21.1	-16.0
28-Feb	-23.2	-23.8	-24.2	-24.8	-25.8	-26.0	-26.0	-27.1	-25.4	-21.0	-18.4	-17.0	-15.7	-14.8	-14.1	-13.6	-14.5	-14.7	-15.6	-16.5	-17.1	-17.0	-16.5	-16.2	-19.5	-13.6
29-Feb	-16.2	-16.6	-16.8	-17.0	-17.1	-17.2	-17.5	-17.3	-17.1	-16.5	-15.6	-14.9	-14.7	-14.3	-14.0	-13.7	-13.7	-13.8	-14.0	-14.3	-14.3	-14.4	-14.7	-14.9	-15.4	-13.7
																								Diurnal Average		
																								Diurnal Maximum		





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature 2m (AT 2m) - C
Stony Mountain - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	50	7.18	7.18
-20 - 0	532	76.44	83.62
0 - 10	113	16.24	99.86
10 - 20	1	0.14	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

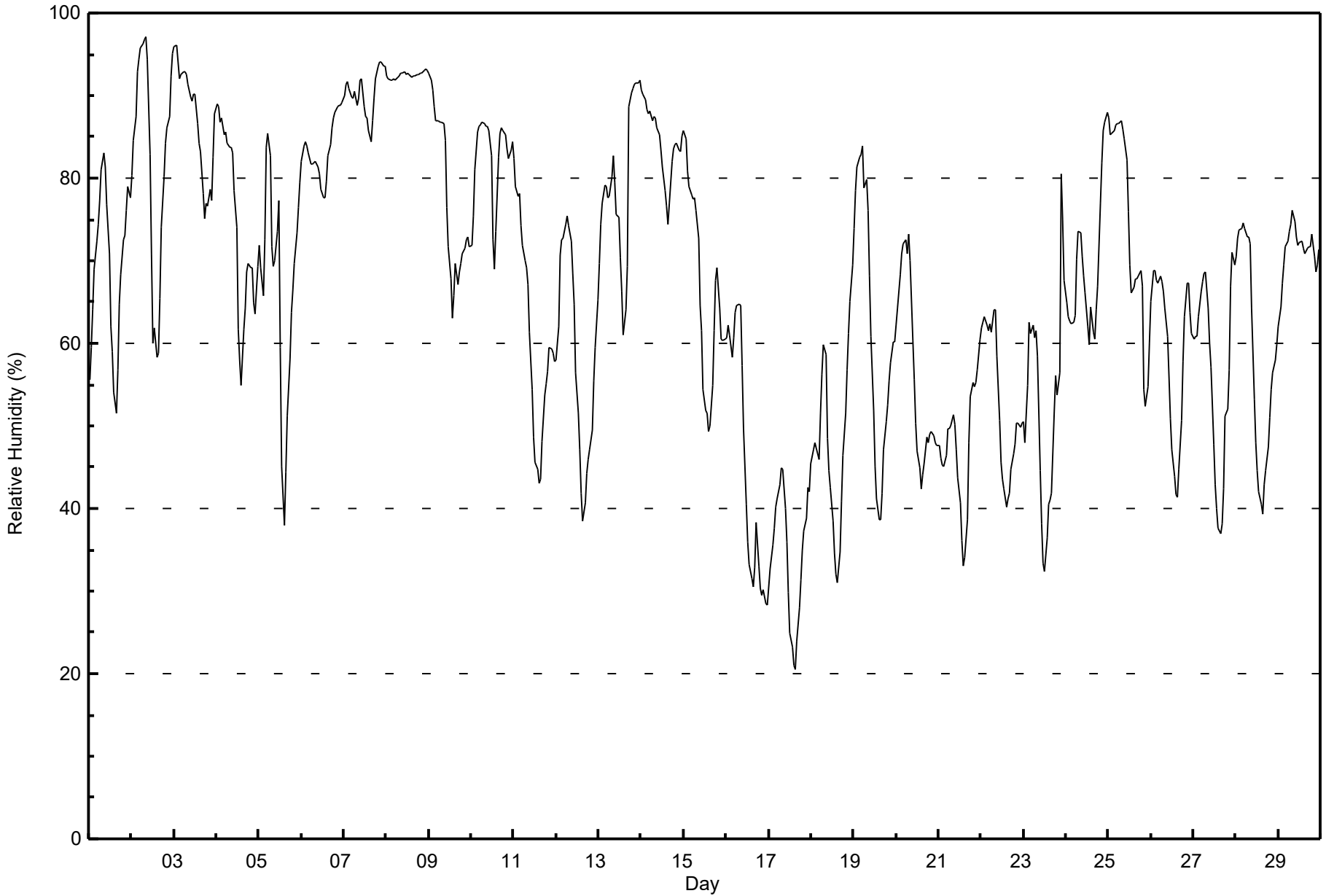
Relative Humidity (RH) - %
Stony Mountain - February 2024

Maximum Value: 97.1 % on Feb 2 09:00 Maximum Daily Average: 92.5 % on Feb 8																						Hours in Service:	696			
Minimum Value: 20.6 % on Feb 17 16:00 Minimum Daily Average: 34.4 % on Feb 17																						Hours of Data:	696			
Maximum Diurnal Average: 75.5 % at hour 8 Minimum Diurnal Average: 53.8 % at hour 15																						Hours of Missing Data:	0			
Monthly Average: 67.02 % Percentiles: P ₁ = 28.5 P ₁₀ = 42.0 Q ₁ = 54.0 Median = 68.7 Q ₃ = 82.7 P ₉₀ = 89.7 P ₉₉ = 94.5																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	55.6	59.4	64.1	68.9	72.3	74.4	77.3	81.0	83.1	81.3	76.7	70.8	62.1	58.9	54.0	51.5	56.8	64.8	68.3	72.5	73.0	76.1	79.0	77.6	69.2	83.1
2-Feb	80.3	84.6	87.4	92.9	94.4	95.8	96.3	96.7	97.1	94.5	82.9	70.9	60.0	61.8	58.3	58.8	65.4	74.1	80.2	84.2	86.2	87.5	92.4	95.0	82.4	97.1
3-Feb	96.0	96.1	94.0	92.0	92.5	92.8	92.9	92.5	91.3	89.9	89.3	90.1	90.2	86.6	84.3	83.2	78.2	75.1	77.0	76.7	78.6	77.3	82.5	87.8	87.0	96.1
4-Feb	89.0	88.6	86.8	87.3	85.3	85.6	84.3	83.8	83.7	83.1	78.5	74.0	61.7	58.0	55.0	61.7	64.2	68.7	69.6	69.2	69.1	64.9	63.6	69.4	74.4	89.0
5-Feb	71.8	69.2	65.8	72.5	83.7	85.5	82.6	71.7	69.4	70.0	73.5	77.4	59.5	45.1	38.0	44.4	51.2	58.2	63.8	66.4	69.7	73.5	76.5	79.6	67.5	85.5
6-Feb	82.0	84.0	84.4	83.9	83.1	81.8	81.6	81.9	82.1	81.4	80.5	78.7	77.6	77.6	79.6	82.7	84.0	86.1	87.3	87.9	88.7	88.8	88.9	89.1	83.5	89.1
7-Feb	90.0	91.4	91.7	90.9	89.8	89.7	90.5	88.8	89.6	91.8	92.0	88.7	87.4	87.2	85.8	84.5	86.9	89.7	92.1	93.5	94.0	94.2	93.6	93.5	90.3	94.2
8-Feb	92.4	92.1	91.9	91.9	92.0	91.9	92.1	92.3	92.6	92.8	92.8	92.6	92.7	92.5	92.2	92.4	92.4	92.6	92.6	92.7	92.8	93.0	93.3	93.1	92.5	93.3
9-Feb	92.7	91.8	90.6	88.6	87.0	87.0	86.8	86.7	86.6	84.5	76.4	71.7	67.7	63.1	65.7	69.6	67.1	68.7	69.6	70.8	71.6	72.6	72.9	71.6	77.6	92.7
10-Feb	71.9	75.4	81.0	85.5	86.4	86.4	86.7	86.6	86.3	86.2	85.8	82.6	72.5	69.1	73.5	82.6	85.3	86.0	85.7	85.3	83.5	82.4	83.4	84.3	82.3	86.7
11-Feb	82.3	78.9	77.9	78.2	74.2	71.8	69.9	69.2	67.1	61.4	54.5	48.6	45.6	44.7	43.1	43.6	48.1	53.7	55.1	56.6	59.5	59.3	58.8	57.8	60.8	82.3
12-Feb	57.9	62.1	70.7	72.6	72.8	74.4	75.4	74.2	72.4	68.6	64.7	56.4	51.5	47.0	41.8	38.6	40.6	44.2	45.9	47.1	49.4	55.4	59.5	65.3	58.7	75.4
13-Feb	69.7	74.4	76.9	79.1	79.0	77.7	77.9	80.1	82.7	79.5	75.5	75.2	70.3	66.3	61.0	64.0	69.4	88.7	90.3	90.9	91.4	91.6	91.5	91.9	79.0	91.9
14-Feb	90.6	90.1	89.4	88.2	87.7	88.2	86.9	87.4	87.3	86.2	85.3	83.4	81.3	78.5	76.6	74.5	77.0	82.1	83.5	84.1	84.2	83.4	83.2	85.1	84.3	90.6
15-Feb	85.7	84.8	80.8	78.9	78.0	77.5	77.6	76.1	72.6	64.7	61.6	54.4	51.8	51.5	49.4	50.0	55.0	61.6	67.7	69.2	64.2	60.5	60.3	60.5	66.4	85.7
16-Feb	60.7	62.2	61.0	58.3	60.7	63.8	64.6	64.8	64.6	57.2	49.6	40.5	36.0	33.2	31.6	30.6	32.8	38.3	33.1	30.4	29.4	30.2	28.5	28.2	45.4	64.8
17-Feb	30.5	32.8	35.5	37.6	40.2	41.2	42.9	44.9	44.7	40.0	36.0	29.9	24.9	23.2	20.9	20.6	24.0	28.0	31.3	35.0	37.3	38.8	42.6	42.1	34.4	44.9
18-Feb	45.4	47.1	48.0	47.3	46.0	51.5	56.3	59.8	58.6	48.4	44.6	42.6	38.5	34.5	32.0	31.0	34.8	40.9	46.4	51.5	56.7	61.3	65.0	69.6	48.2	69.6
19-Feb	73.9	78.5	81.3	82.6	82.9	83.9	78.8	79.8	76.0	68.2	60.9	51.8	45.1	41.1	38.6	38.6	41.9	47.1	50.6	52.6	55.4	57.6	60.1	60.2	62.0	83.9
20-Feb	62.2	64.3	68.4	70.9	72.0	72.6	70.9	73.1	70.1	60.3	55.6	50.3	47.0	44.9	42.4	44.1	45.4	48.6	48.0	49.0	49.3	48.9	47.9	47.5	56.4	73.1
21-Feb	47.7	46.0	45.3	45.1	46.4	49.6	49.7	50.0	51.3	50.1	47.1	43.7	40.6	36.2	33.0	34.1	38.6	48.0	53.6	55.3	54.7	55.2	56.7	60.6	47.4	60.6
22-Feb	61.9	62.5	63.3	62.3	61.6	62.3	61.3	64.0	64.1	58.4	50.7	45.6	43.5	42.3	40.2	41.3	41.8	44.7	46.6	47.7	50.3	50.4	49.8	50.4	52.8	64.1
23-Feb	50.6	47.9	55.0	62.6	61.2	62.2	60.6	61.6	58.5	44.6	38.1	33.4	32.4	36.4	40.5	41.0	41.9	51.7	56.1	53.7	56.4	80.4	74.9	67.6	52.9	80.4
24-Feb	64.9	63.2	62.7	62.3	62.5	63.4	70.1	73.6	73.4	70.5	68.2	66.1	62.0	59.8	64.4	61.3	60.5	64.1	67.0	77.0	81.9	85.7	86.8	88.0	69.1	88.0
25-Feb	87.2	85.2	85.4	85.8	86.4	86.6	86.6	87.0	86.0	84.7	82.3	75.9	69.4	66.0	66.8	67.8	67.8	68.2	68.9	66.9	54.4	52.3	54.8	60.1	74.3	87.2
26-Feb	65.0	68.7	68.7	67.7	67.3	68.1	67.5	66.3	64.3	60.9	55.9	50.8	47.1	43.8	41.6	41.4	44.7	50.8	57.7	63.3	67.2	67.3	63.7	61.2	59.2	68.7
27-Feb	60.5	60.8	60.9	63.3	66.3	67.5	68.5	68.7	64.3	60.1	57.1	47.8	42.9	39.9	37.7	36.9	38.1	42.4	51.2	52.1	56.7	67.0	71.1	69.5	56.3	71.1
28-Feb	70.4	72.6	73.7	73.9	74.6	73.9	72.9	72.8	72.1	64.2	53.3	47.9	44.6	42.0	40.5	39.3	42.9	44.5	47.5	51.1	54.5	56.4	57.9	59.8	58.5	74.6
29-Feb	62.0	64.4	67.3	69.5	71.7	72.3	73.6	74.5	76.1	74.7	72.8	71.8	72.1	72.4	71.5	70.8	71.5	71.7	71.6	73.2	70.4	68.6	69.6	71.4	71.1	76.1
70.7 71.7 72.8 73.8 74.4 75.2 75.3 75.5 74.8 71.0 67.0 62.5 57.9 55.3 53.8 54.5 56.8 61.5 64.1 65.7 66.6 68.3 69.3 70.3																								Diurnal Average		
96.0 96.1 94.0 92.9 94.4 95.8 96.3 96.7 97.1 94.5 92.8 92.6 92.7 92.5 92.2 92.4 92.4 92.6 92.6 93.5 94.0 94.2 93.6 95.0																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Stony Mountain - February 2024





Wood Buffalo Environmental Association

Summary of Hour Averages

Precipitation (PC) - mm

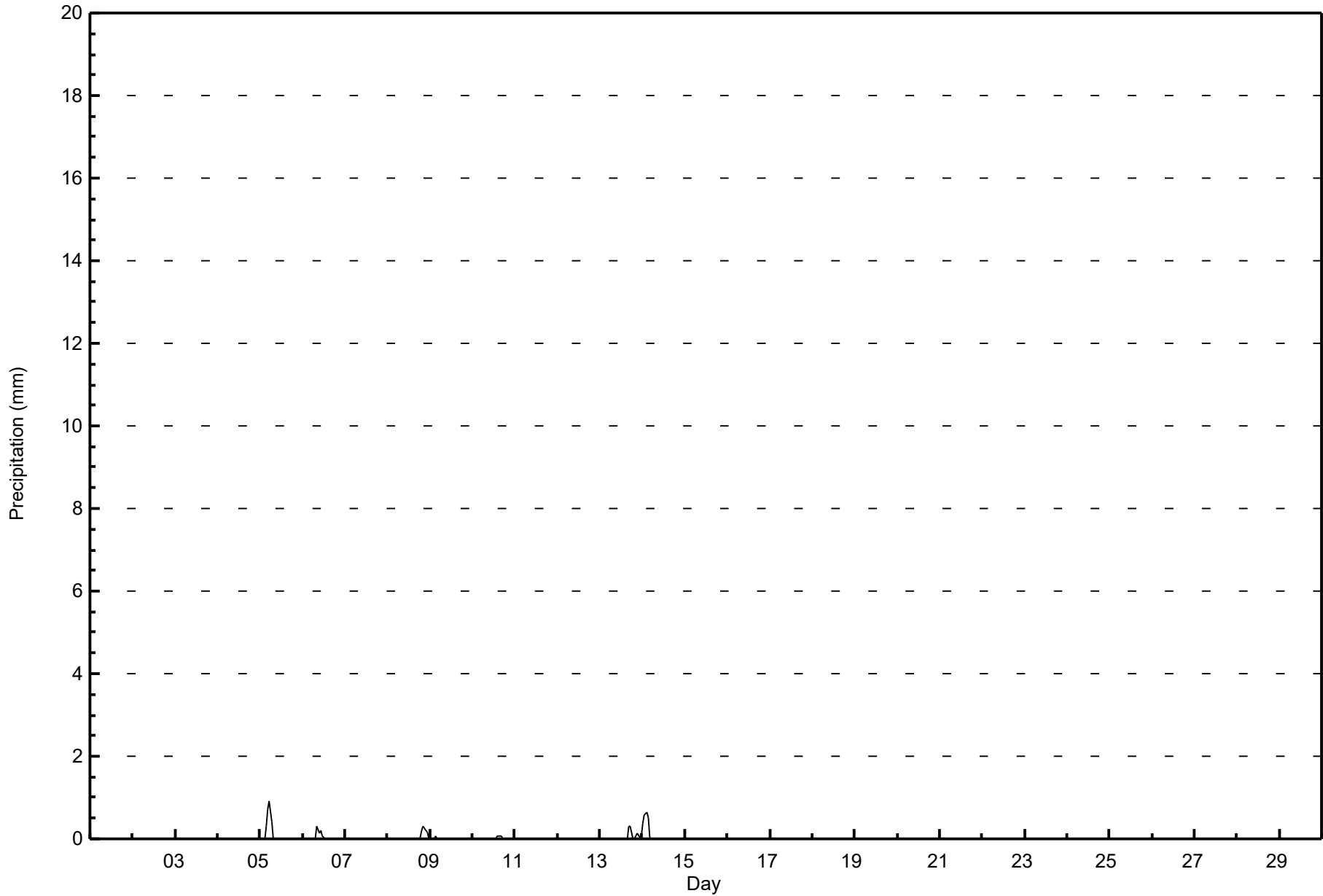
Stony Mountain - February 2024

Maximum Value: 0.9 mm on Feb 5 06:00		Maximum Daily Total: 2.3 mm on Feb 5		Hours in Service: 696																																
Minimum Value: 0.0 mm on Feb 1 01:00		Minimum Daily Total: 0.0 mm on Feb 1		Hours of Data: 696																																
Maximum Diurnal Total: 0.9 mm at hour 4		Minimum Diurnal Total: 0.0 mm at hour 8		Hours of Missing Data: 0																																
Monthly Total: 7.37 mm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.3		Hours of Calibration: 0																																
				Percent Operational Time: 100.0																																
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24												
1-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
3-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
4-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
5-Feb	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.9	
6-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.3	
7-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
8-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	
9-Feb	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	
10-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	
11-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
12-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
13-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
14-Feb	0.4	0.6	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.6
15-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
16-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
17-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
18-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
19-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
20-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
21-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
22-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
23-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
24-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
25-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
26-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
27-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
28-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
29-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		0.4	0.6	0.6	0.9	0.7	0.9	0.4	0.0	0.3	0.1	0.2	0.1	0.0	0.1	0.1	0.4	0.3	0.1	0.2	0.4	0.3	0.2	0.1					Diurnal Average							
		0.4	0.6	0.6	0.5	0.7	0.9	0.4	0.0	0.3	0.1	0.2	0.1	0.0	0.1	0.1	0.3	0.3	0.1	0.2	0.3	0.2	0.2	0.1					Diurnal Maximum							



Wood Buffalo Environmental Association
Hourly Averages

Precipitation (PC) - mm
Stony Mountain - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Precipitation (PC) - mm
Stony Mountain - February 2024

Concentration Ranges (mm)	Number of Hours	%	Cumulative %
0 - 0.3	689	98.99	98.99
0.4 - 0.5	3	0.43	99.43
0.6 - 0.7	3	0.43	99.86
0.8 - 1.4	1	0.14	100.00
1.5 - 10	0	0.00	100.00
> 10	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696

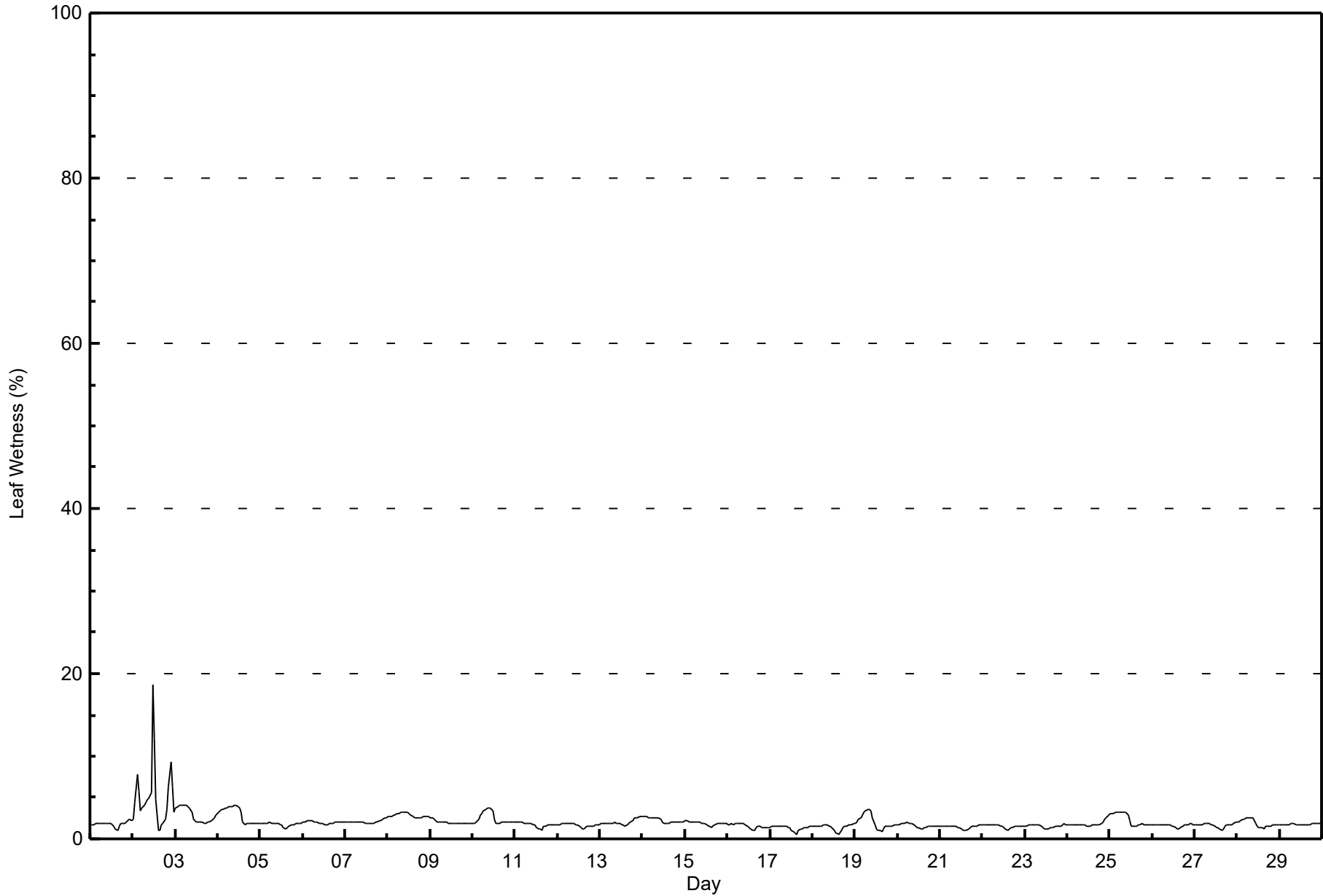


Maximum Value: 18.6 % on Feb 2 12:00 Maximum Daily Average: 5.1 % on Feb 2																				Hours in Service: 696 Hours of Data: 696							
Minimum Value: 0.5 % on Feb 18 16:00 Minimum Daily Average: 1.3 % on Feb 17 Maximum Diurnal Average: 2.4 % at hour 12 Minimum Diurnal Average: 1.4 % at hour 16 Monthly Average: 2.03 % Percentiles: P ₁ = 0.9 P ₁₀ = 1.4 Q ₁ = 1.6 Median = 1.8 Q ₃ = 2.1 P ₉₀ = 3.0 P ₉₉ = 5.6																				Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.8	1.6	1.5	1.2	1.1	1.6	1.8	1.9	1.9	2.0	2.2	2.4	2.2	1.8	2.4	
2-Feb	2.3	4.5	7.9	5.8	3.4	3.8	4.1	4.4	4.7	5.0	5.6	18.6	12.1	4.8	1.0	1.0	1.6	1.9	2.4	3.6	6.3	9.4	6.3	3.3	5.1	18.6	
3-Feb	3.7	4.0	4.1	4.1	4.0	4.0	4.0	4.0	3.7	3.1	2.4	2.1	2.1	2.0	2.0	2.0	1.9	1.9	2.0	2.1	2.2	2.4	2.6	2.9	2.9	4.1	
4-Feb	3.2	3.4	3.5	3.6	3.7	3.8	3.9	3.9	4.0	4.0	4.0	3.9	3.8	3.2	2.0	1.7	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.9	4.0	
5-Feb	1.9	1.8	1.8	1.8	1.9	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.6	1.4	1.2	1.4	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.8	2.0	
6-Feb	2.0	2.0	2.1	2.2	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.8	1.8	1.7	1.8	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	
7-Feb	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.9	2.0	2.1	2.1	2.2	2.3	2.5	2.6	2.1	2.6	
8-Feb	2.7	2.7	2.8	2.9	3.0	3.0	3.1	3.2	3.2	3.3	3.3	3.2	3.0	2.9	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.8	3.3
9-Feb	2.6	2.5	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.6	
10-Feb	1.9	1.9	2.1	2.4	2.8	3.1	3.4	3.6	3.7	3.8	3.7	3.4	2.4	1.8	1.8	1.9	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.5	3.8	
11-Feb	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.7	1.6	1.4	1.2	1.1	1.1	1.5	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	2.0	
12-Feb	1.7	1.8	1.9	1.9	1.8	1.9	1.9	1.9	1.8	1.8	1.7	1.7	1.6	1.4	1.2	1.2	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.8	1.7	1.9	
13-Feb	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.8	1.8	1.7	1.7	1.5	1.6	1.8	2.1	2.3	2.5	2.6	2.6	2.7	2.8	2.0	2.8	
14-Feb	2.8	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.4	2.1	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.8	
15-Feb	2.2	2.2	2.1	2.0	2.0	2.0	2.1	2.1	2.0	1.9	1.9	1.8	1.6	1.5	1.4	1.4	1.6	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.9	2.2	
16-Feb	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.6	1.4	1.2	1.1	1.0	1.3	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.5	1.8	
17-Feb	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.3	1.0	0.8	0.6	0.6	1.0	1.2	1.2	1.3	1.4	1.4	1.4	1.5	1.3	1.5	
18-Feb	1.5	1.5	1.6	1.6	1.5	1.6	1.7	1.7	1.7	1.6	1.4	1.4	1.0	0.7	0.6	0.5	1.0	1.4	1.5	1.6	1.7	1.7	1.7	1.8	1.4	1.8	
19-Feb	1.9	2.1	2.3	2.6	2.9	3.2	3.4	3.5	3.6	3.3	2.5	1.6	1.2	1.1	0.9	0.9	1.3	1.5	1.5	1.6	1.6	1.6	1.6	1.6	2.1	3.6	
20-Feb	1.6	1.7	1.8	1.9	1.9	2.0	1.9	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.2	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	2.0	
21-Feb	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.2	1.1	1.0	1.1	1.2	1.4	1.5	1.5	1.6	1.6	1.6	1.7	1.4	1.7	
22-Feb	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.5	1.3	1.2	1.1	1.2	1.3	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.5	1.7	
23-Feb	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.5	1.4	1.3	1.1	1.2	1.3	1.3	1.5	1.5	1.5	1.6	1.8	1.8	1.7	1.5	1.8	
24-Feb	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.8	1.9	2.0	2.3	2.6	2.8	1.8	2.8	
25-Feb	3.0	3.0	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.1	2.9	2.2	1.5	1.4	1.5	1.6	1.7	1.8	1.8	1.8	1.7	1.7	1.7	1.7	2.3	3.2	
26-Feb	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.7	1.7	1.7	1.6	1.6	1.5	1.3	1.2	1.1	1.4	1.6	1.7	1.7	1.8	1.8	1.8	1.8	1.6	1.8	
27-Feb	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.8	1.7	1.6	1.6	1.4	1.3	1.1	1.1	1.2	1.5	1.6	1.7	1.7	1.8	1.9	2.0	1.6	2.0	
28-Feb	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.6	2.6	2.5	1.9	1.6	1.4	1.3	1.3	1.1	1.4	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.9	2.6	
29-Feb	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.8	
2.0 2.1 2.3 2.3 2.2 2.3 2.3 2.3 2.3 2.3 2.1 2.4 2.0 1.6 1.4 1.4 1.6 1.7 1.8 1.9 2.0 2.1 2.1 2.0																								Diurnal Average			
3.7 4.5 7.9 5.8 4.0 4.0 4.1 4.4 4.7 5.0 5.6 18.6 12.1 4.8 2.7 2.6 2.6 2.6 2.6 3.6 6.3 9.4 6.3 3.3																								Diurnal Maximum			



Wood Buffalo Environmental Association
Hourly Averages

Leaf Wetness (LW) - %
Stony Mountain - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Leaf Wetness (LW) - %
Stony Mountain - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 0.3	0	0.00	0.00
0.4 - 0.5	1	0.14	0.14
0.6 - 0.7	4	0.57	0.72
0.8 - 1.4	91	13.07	13.79
1.5 - 10	575	82.61	96.41
> 10	2	0.29	96.70

Total Number of Valid Hours: 696

Total Number of Hours: 696



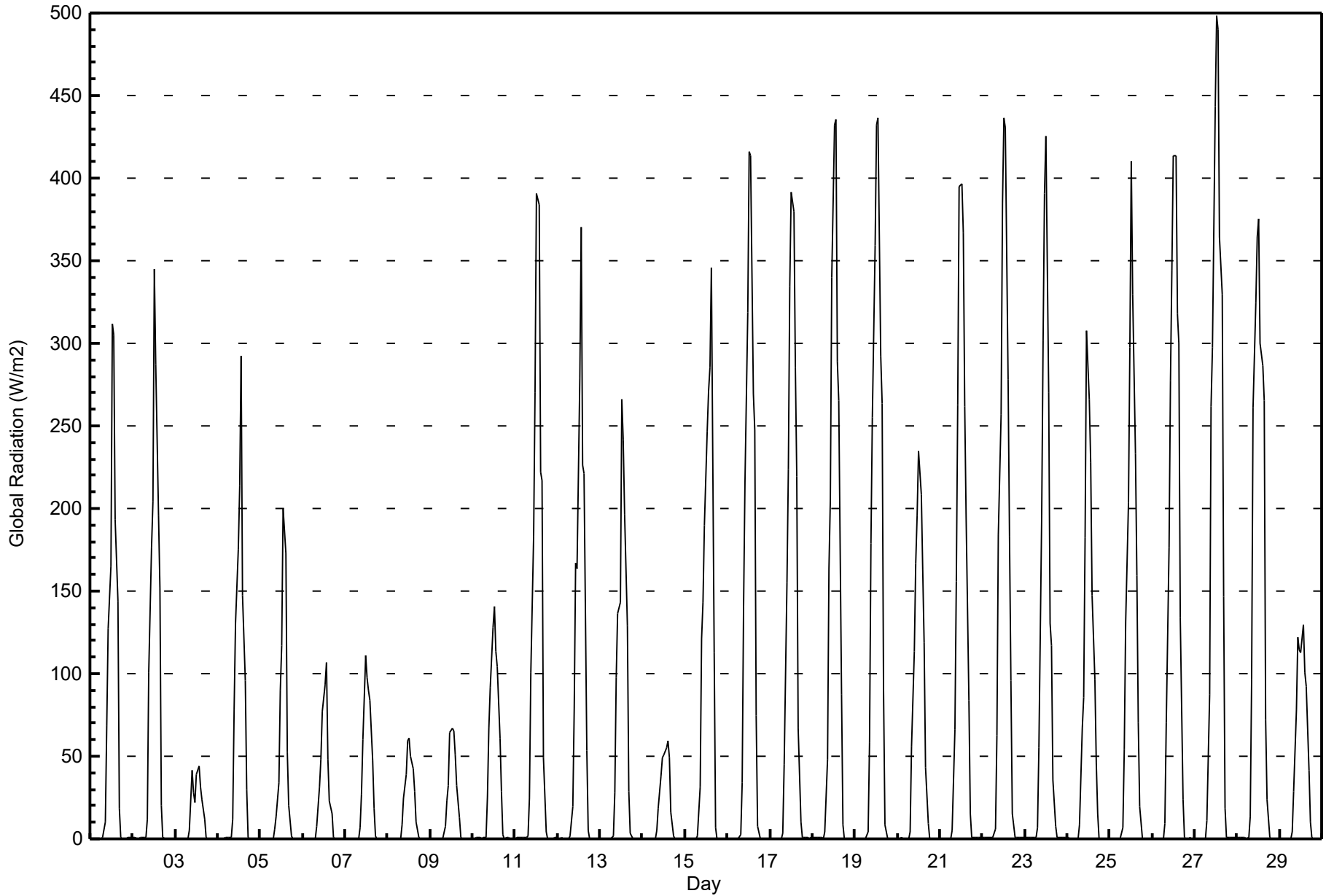
Wood Buffalo Environmental Association

Summary of Hour Averages

Global Radiation (GR) - W/m2

Stony Mountain - February 2024

Maximum Value: 498.2 W/m2 on Feb 27 13:00 Maximum Daily Average: 123.1 W/m2 on Feb 27																								Hours in Service:	696	
Minimum Value: 0.0 W/m2 on Feb 2 19:00 Minimum Daily Average: 10.4 W/m2 on Feb 3																								Hours of Data:	696	
Maximum Diurnal Average: 274.5 W/m2 at hour 13 Minimum Diurnal Average: 0.2 W/m2 at hour 2																								Hours of Missing Data:	0	
Monthly Average: 61.78 W/m2 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.7 Q ₃ = 70.3 P ₉₀ = 258.8 P ₉₉ = 432.0																								Hours of Calibration:	0	
																								Percent Operational Time:	100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.5	10.1	68.8	126.7	165.2	312.1	304.8	193.3	143.8	18.7	1.0	0.3	0.0	0.4	0.5	0.7	0.6	56.2	312.1
2-Feb	0.6	0.6	0.4	0.4	0.6	0.6	0.4	0.4	11.6	100.8	176.0	204.4	344.8	286.9	195.3	151.4	19.9	0.7	0.0	0.0	0.0	0.0	0.0	0.2	62.3	344.8
3-Feb	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.3	5.2	41.4	28.1	22.3	38.6	43.8	31.6	23.3	11.9	1.2	0.0	0.0	0.0	0.0	0.0	0.0	10.4	43.8
4-Feb	0.1	0.0	0.2	0.0	0.7	0.4	0.7	0.7	11.8	77.8	130.3	175.1	213.8	292.5	147.6	95.4	29.5	1.1	0.3	0.2	0.2	0.2	0.0	0.0	49.1	292.5
5-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	6.3	14.0	33.9	89.8	116.9	200.1	172.8	52.8	20.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	29.5	200.1
6-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	7.7	31.1	48.7	77.4	92.8	106.7	48.7	22.9	15.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	18.8	106.7
7-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	6.9	27.4	59.8	110.9	97.4	89.9	84.0	47.4	18.3	1.4	0.1	0.0	0.0	0.0	0.0	0.0	22.7	110.9
8-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	8.8	24.5	38.9	59.0	61.0	50.1	42.4	28.4	9.9	0.8	0.1	0.1	0.1	0.1	0.1	0.2	13.5	61.0
9-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	7.3	22.9	32.1	64.4	67.2	65.4	50.4	32.6	12.4	1.2	0.1	0.1	0.0	0.1	0.0	0.0	14.9	67.2
10-Feb	0.0	0.2	0.6	0.7	0.6	0.4	0.5	1.3	25.8	67.1	91.2	128.2	140.5	113.7	104.1	61.0	28.8	2.3	0.3	0.5	0.5	0.4	0.3	0.3	32.1	140.5
11-Feb	0.2	0.6	0.7	0.6	0.6	0.4	0.5	1.5	24.8	100.6	183.1	270.0	391.0	384.2	221.8	217.1	49.1	3.8	0.3	0.1	0.3	0.4	0.4	0.5	77.2	391.0
12-Feb	0.2	0.3	0.6	0.4	0.2	0.1	0.4	1.3	19.3	78.5	167.2	163.8	278.9	370.4	225.9	221.6	53.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	66.1	370.4
13-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	27.6	97.8	136.4	143.4	265.7	241.4	196.7	129.0	28.8	3.2	0.2	0.1	0.0	0.0	0.0	0.0	53.0	265.7
14-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	4.7	18.6	38.0	48.8	50.6	55.4	59.1	49.3	15.8	2.1	0.0	0.0	0.0	0.0	0.0	0.0	14.3	59.1
15-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.4	31.4	121.1	143.3	189.4	246.2	271.3	285.8	345.4	112.6	7.0	0.3	0.2	0.4	0.3	0.1	0.0	73.2	345.4
16-Feb	0.0	0.0	0.1	0.1	0.0	0.0	0.0	2.7	33.6	141.0	216.2	318.4	416.2	413.6	269.7	247.8	74.3	7.6	0.4	0.4	0.3	0.1	0.0	0.0	89.3	416.2
17-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	44.7	155.2	223.7	334.7	391.8	380.0	285.9	219.4	66.9	10.1	0.5	0.6	0.7	0.4	0.1	0.5	88.3	391.8
18-Feb	0.8	0.5	0.7	0.6	0.7	0.4	0.4	4.0	48.6	163.1	205.5	340.2	432.1	435.8	288.6	265.7	87.5	8.1	0.0	0.0	0.0	0.0	0.0	0.0	95.1	435.8
19-Feb	0.0	0.0	0.0	0.0	0.2	0.0	0.0	3.9	58.6	179.1	254.9	359.3	432.0	436.6	292.8	263.1	90.2	8.5	0.0	0.0	0.0	0.0	0.1	0.0	99.1	436.6
20-Feb	0.0	0.2	0.6	0.3	0.3	0.4	0.0	4.5	56.1	113.5	167.3	196.2	234.6	208.1	162.5	119.1	43.4	9.3	0.4	0.2	0.1	0.2	0.2	0.2	54.9	234.6
21-Feb	0.1	0.0	0.0	0.0	0.0	0.0	0.0	5.4	65.9	155.8	263.0	395.2	396.8	367.3	261.9	195.1	84.0	15.4	0.9	0.7	0.7	0.7	0.7	0.7	92.1	396.8
22-Feb	0.7	0.7	0.7	0.7	0.7	0.7	0.7	6.1	62.5	183.7	256.7	384.9	436.1	430.6	277.7	183.2	95.5	15.4	0.7	0.7	0.7	0.6	0.6	0.7	97.6	436.1
23-Feb	0.6	0.7	0.7	0.8	0.7	0.7	0.6	6.5	55.1	196.1	301.7	391.0	425.5	270.6	130.5	116.6	35.2	7.2	0.7	0.6	0.6	0.6	0.6	0.6	81.0	425.5
24-Feb	0.5	0.2	0.3	0.3	0.1	0.0	0.0	8.5	66.8	86.0	181.8	307.3	266.0	227.7	147.2	96.7	45.6	15.2	0.2	0.0	0.1	0.1	0.2	0.3	60.5	307.3
25-Feb	0.0	0.0	0.0	0.1	0.0	0.1	0.1	6.6	54.1	131.8	203.1	297.6	410.5	329.7	233.3	159.0	70.3	19.8	0.3	0.0	0.0	0.0	0.1	0.0	79.8	410.5
26-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.1	9.2	70.6	176.4	277.2	344.2	413.6	413.2	318.2	300.3	134.1	23.9	0.4	0.0	0.4	0.5	0.4	0.3	103.5	413.6
27-Feb	0.3	0.2	0.2	0.2	0.0	0.2	0.3	11.1	87.7	262.3	297.2	443.4	498.2	490.0	364.1	329.8	146.4	18.4	0.8	0.7	0.7	0.7	0.8	0.7	123.1	498.2
28-Feb	0.7	0.5	0.6	0.5	0.6	0.4	0.6	13.2	96.4	260.8	324.2	364.0	375.4	300.1	286.3	265.1	72.1	23.7	0.7	0.2	0.2	0.1	0.0	0.0	99.4	375.4
29-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.1	4.3	28.7	78.3	121.7	114.3	112.8	129.5	100.4	92.3	41.8	9.9	0.4	0.1	0.0	0.0	0.0	0.1	34.8	129.5
																								Diurnal Average		
																								Diurnal Maximum		





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Global Radiation (GR) - W/m2
Stony Mountain - February 2024

Concentration Ranges (W/m2)	Number of Hours	%	Cumulative %
0 - 20	455	65.37	65.37
21 - 100	92	13.22	78.59
101 - 300	106	15.23	93.82
301 - 600	43	6.18	100.00
601 - 900	0	0.00	100.00
> 900	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



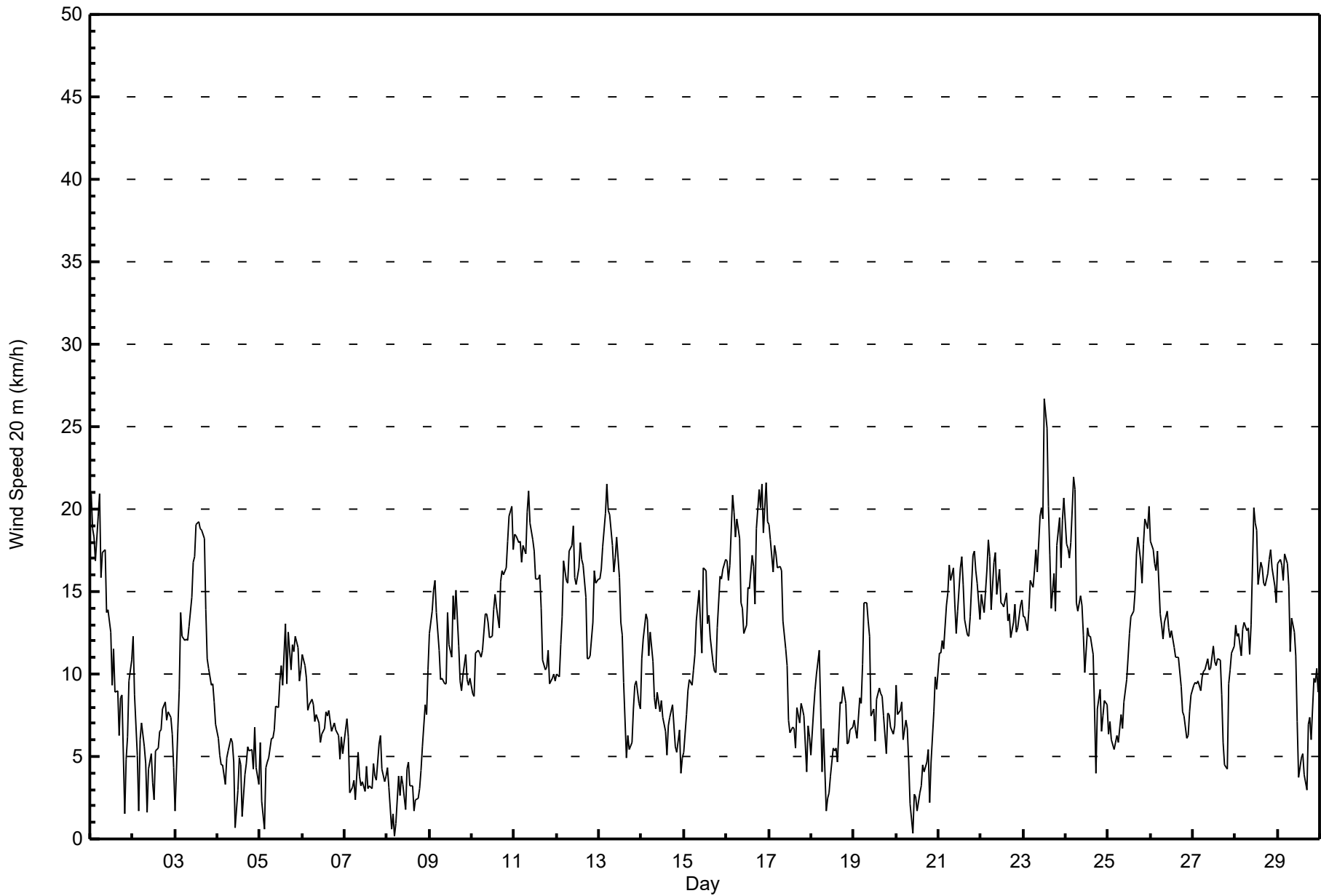
Maximum Speed: 27 km/h on Feb 23 13:00		Maximum Daily Speed Average: 17.0 km/h on Feb 16		Hours in Service: 696																							
Minimum Speed Value: 0 km/h on Feb 8 05:00		Minimum Daily Speed Average: 0.6 km/h on Feb 18		Hours of Data: 696																							
Maximum Diurnal Speed Average: 5.6 km/h at hour 14		Minimum Diurnal Speed Average: 2.6 km/h at hour 19		Hours of Missing Data: 0																							
Monthly Average Velocity: 4.6 km/h 286.0 deg		Percentiles: P ₁ = 1 P ₁₀ = 4 Q ₁ = 7 Median = 11 Q ₃ = 15 P ₉₀ = 18 P ₉₉ = 21		Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	S21	SSE19	SSE18	S17	S20	S21	S16	S17	SSW18	SSW14	SSW14	SSW13	SSW9	SSW12	S9	S9	S6	SSE9	S9	W1	SW5	SSW6	SSW10	SSW11	S12.2	S21	
2-Feb	SSW12	SSW9	SW5	E2	S6	SSE7	S6	S5	SSW2	SSE4	SSE5	SE3	NE2	NE5	NE5	ENE7	NNE7	NNE8	NE8	NNE7	N8	N7	N6	N4	ENE1.2	SSW12	
3-Feb	E2	WNW7	WNW9	NW14	NW12	NW12	NW12	NW12	NW13	NW15	NW17	NNW17	NNW19	NNW19	NW19	NNW19	NNW18	NNW14	NNW11	N10	N9	N9	N8	NNW7	NNW12.1	NNW19	
4-Feb	NNW6	N5	NE4	NNE4	SSE3	ESE5	SE5	SSE6	SSE6	SE5	ESE1	ESE3	SE5	SSE4	ENE1	NNE4	N5	N6	E5	E5	ESE4	SE7	SE4	NNE3	E2.3	SE7	
5-Feb	N6	NE2	SSW1	NNW4	NNW5	NNE5	N6	NNE6	NNE7	N8	N8	NNE10	NNE11	NNE9	NNE13	NE9	NNE13	NNE10	NNE12	NNE11	NNE12	NE12	NNE10	NNE10	NNE8.0	NNE13	
6-Feb	NE11	NE10	ENE10	ENE8	ENE8	E8	E8	E7	E8	E7	E6	E6	E7	E8	E7	E8	ESE7	ESE7	ESE7	ESE7	SE6	SE5	SSE6	SSE5	E6.6	NE11	
7-Feb	SSE7	SSE7	S6	SSE3	ESE3	SE4	E2	NNW5	NNW4	NNW3	NW4	N3	N4	NNE3	NE3	NNE3	NNE5	N4	NNE4	NNE6	NE6	NE4	NNE4	NE4	NE1.9	SSE7	
8-Feb	N4	NNW3	ESE1	S2	W0	NNE1	SE4	S3	SW4	WSW3	S2	S4	SW5	W3	NNW3	ENE2	NNE2	ESE2	SE3	SSE4	SSW6	SW8	WSW8	W10	SW1.5	W10	
9-Feb	WNW12	NW14	NW15	NW16	NW14	NW11	WNW10	WNW10	WNW9	NW9	NW14	WNW12	WNW11	WNW15	NW13	NW15	NW12	WNW10	W9	W10	W11	W10	W9	W10	WNW11.3	NW16	
10-Feb	W9	SW9	SW11	SW11	SW11	SSW11	SW11	SW14	SSW14	SSW13	SSW12	S12	SSW14	SSW15	SSW14	S13	S16	SSW16	SW16	SW16	SW18	W20	W20	W18	SW12.4	W20	
11-Feb	W18	W18	W18	W18	W17	W18	W17	W20	W21	WNW19	WNW18	WNW17	WNW16	WNW16	WNW16	WNW16	WNW14	WNW11	W10	WNW10	WNW11	W9	W10	W10	W10	W14.9	W21
12-Feb	WSW10	WSW10	SW12	SW14	SW17	SW16	SW15	SW17	SW18	SW19	SW16	W15	W16	WNW18	WNW17	WNW17	WNW15	WNW11	WNW11	WNW11	NW13	NW16	NW16	NW16	W11.6	SW19	
13-Feb	NNW16	NNW16	NNW18	NW20	NNW22	NNW20	NNW20	NNW18	NW16	NNW17	NNW18	NNW16	NNW13	NW12	NNW9	NNW5	WNW6	WNW5	W6	W8	WNW9	NNW10	NW8	NW8	NW12.7	NNW22	
14-Feb	NNW11	N12	N14	NNW13	NNW11	NNE13	NNE11	NNE9	NNE8	NE9	NNE8	NNE8	NNE7	N7	NW5	W7	NW7	NNW8	NNW7	NW6	WNW5	W7	W4	WNW5	N6.9	N14	
15-Feb	WNW5	W8	W9	WNW10	WNW9	WNW10	WNW11	W13	W15	W13	WNW11	WNW16	W16	W13	W14	W12	W11	W10	WSW10	W13	W16	W16	W16	W17	W12.1	W17	
16-Feb	W17	W16	W17	W21	W20	W18	W19	W18	W14	W14	WNW12	WNW13	W15	W15	W17	W16	WSW14	SW19	WSW21	WSW20	WSW22	W19	W22	WNW19	W17.0	W22	
17-Feb	WNW19	WNW18	WNW16	WNW18	WNW17	WNW16	WNW17	WNW16	WNW13	WNW12	WNW10	WNW7	WNW6	WNW7	WNW7	WNW5	WSW8	WSW7	WSW8	WSW8	WSW7	W4	WNW7	W6	WNW10.5	WNW19	
18-Feb	W5	SSW8	S9	SW10	SSW11	SW8	WSW4	SSW7	SSW2	SW2	S3	N4	NNE5	NE5	NNE6	NNE5	NE8	NE8	ENE9	ENE8	NE6	NNE6	N7	N7	ENE0.6	SSW11	
19-Feb	N7	NW7	NW6	NW9	WNW8	WNW11	NW14	NW14	NW13	NW12	NW7	NW8	WNW6	WNW8	WNW9	WNW9	WNW9	NW7	N5	NE8	E8	E7	E6	ESE7	NW5.9	NW14	
20-Feb	SSE9	SSE8	SSE8	SSE8	SE6	SE7	SE7	W5	W2	ENE0	NE3	SE3	NNE2	E3	SE3	NE5	ENE4	SE5	SE5	E2	SE5	SSW8	SW10	WSW9	SSE3.1	SW10	
21-Feb	WSW11	W11	W12	W12	W14	W15	W17	W16	W16	W14	W12	W14	W16	W17	W15	W13	WSW12	SW12	WSW14	WSW17	W17	W16	W16	W13	W14.1	W17	
22-Feb	W15	W14	W14	W16	W18	W17	W14	W17	WNW17	WNW15	NW16	WNW14	WNW14	WNW14	WNW15	WNW13	WNW14	WNW12	WNW13	WNW14	WNW13	WNW13	W14	W14	WNW14.4	W18	
23-Feb	W14	W13	WSW13	SW14	SW16	SW15	SW16	SW18	SW16	WSW20	WSW20	W19	WNW27	WNW25	W20	W17	W14	W16	W14	W18	W20	WNW16	WNW19	WNW21	W16.0	WNW27	
24-Feb	WNW18	WNW18	WNW17	W18	WNW22	NW21	NNW14	NNW14	NNW15	NNW14	NNW12	NNW10	NW13	NW12	NW12	NW11	NNW8	N4	NE8	NE9	E7	E7	E8	E8	NW9.1	WNW27	
25-Feb	ENE6	E7	E6	ENE5	ENE6	ENE6	ENE6	ENE8	NE8	NE7	NE8	NE10	NE11	NE12	NE13	NE14	NE15	NE17	NE18	NE17	NE15	NE18	NE19	NE19	NNE20	NE11.5	NNE20
26-Feb	NNE18	NNE18	N17	N16	N17	N14	N13	NNW12	N13	NNW14	NNW13	N12	N13	N12	N11	N11	NNW11	NNW9	NNW8	NNW7	NW6	WNW6	WNW8	WNW9	N11.1	NNE18	
27-Feb	W9	WNW9	WNW9	WNW10	W9	W10	W10	W11	WNW10	WNW10	NW12	W11	WNW10	WNW11	WNW11	WNW9	WNW6	NW5	SW4	SW9	SW10	SW11	SSW12	SSW12	W8.2	NW12	
28-Feb	SSW13	SSW12	SSW12	S11	S13	S13	S13	SSE13	SSE11	SSE13	SSE20	SSE19	SSE19	SE15	SE17	SE16	SSE15	SE15	SE16	SE17	SE18	SE16	SE15	ESE14	SSE13.8	SSE20	
29-Feb	ESE17	ESE17	ESE17	ESE16	ESE17	ESE17	ESE15	ESE11	ESE13	ESE13	ESE11	ESE7	ENE4	NNE5	NE5	NE4	N3	NW7	NW7	NW6	NW10	NW9	NW10	NW9	E5.3	ESE17	
WNW4.8 W4.7 W4.7 W5.5 W5.4 W4.6 W4.7 W5.6 W5.3WNW5.0WNW4.8WNW5.0WNW5.6WNW5.6NW5.5NW4.7NW4.3WNW3.4WNW2.8WNW3.1W3.8WNW4.0WNW5.1WNW5.3																								Diurnal Average			
S21 SSE19 SSE18 W21WNW22 NW21NNW20 W20 W21WSW20 SSE20 W19WNW27WNW25 W20NNW19NNW18 SW19WSW21WSW20WSW22 W20 W22WNW21																								Diurnal Maximum			
All monthly, daily, and diurnal averages have been calculated using vector methods																											



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed 20 m (WS20m) - km/h
Stony Mountain - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 10 km/h on Feb 23 13:00 Minimum Value: 0 km/h on Feb 27 19:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 2 Median = 3 Q ₃ = 4 P ₉₀ = 5 P ₉₉ = 7																		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	6	5	4	4	4	5	4	5	6	4	4	4	3	3	3	3	2	2	1	1	1	2	3	2	6
2-Feb	2	2	3	1	1	1	2	1	1	2	1	2	1	1	2	2	1	1	2	1	1	1	2	1	3
3-Feb	2	2	3	3	3	2	2	3	3	4	5	5	6	6	5	6	6	4	3	3	3	2	2	1	6
4-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	1	1	2	1	2	2	2	2
5-Feb	2	1	2	1	1	2	2	2	2	2	2	3	3	3	4	3	4	3	3	3	3	3	3	2	4
6-Feb	3	2	3	2	2	2	2	2	2	2	2	1	2	2	2	2	2	1	2	1	2	1	1	1	3
7-Feb	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	1	1	1	2
8-Feb	1	1	1	1	1	1	2	2	2	1	2	2	2	2	1	1	1	1	1	1	1	2	2	3	3
9-Feb	4	4	4	4	4	3	3	3	3	3	5	4	4	5	4	5	4	3	3	3	3	3	3	3	5
10-Feb	3	2	3	2	2	2	2	3	3	3	3	3	4	4	4	4	4	4	4	4	5	6	6	5	6
11-Feb	5	5	5	5	5	6	5	6	6	6	5	5	6	5	5	5	4	2	3	3	2	2	2	2	6
12-Feb	3	2	2	3	3	3	3	4	4	5	4	5	5	6	6	5	6	3	3	3	4	5	5	5	6
13-Feb	5	5	6	6	6	6	6	5	5	6	6	5	4	4	3	3	2	1	2	2	3	3	2	2	6
14-Feb	4	4	4	4	3	5	3	2	2	2	2	3	3	2	2	2	3	2	2	1	1	1	2	1	5
15-Feb	1	2	2	2	2	2	3	3	4	4	4	6	5	5	5	5	4	3	2	4	5	4	5	5	6
16-Feb	5	5	6	6	6	5	6	5	5	4	4	4	5	5	6	5	4	6	6	6	7	6	6	6	7
17-Feb	5	5	4	5	5	4	4	4	3	3	3	2	2	2	2	2	2	1	1	2	1	2	1	2	5
18-Feb	1	3	1	2	2	3	3	4	3	2	1	2	2	1	2	2	2	2	2	2	1	1	1	1	4
19-Feb	2	2	2	1	2	2	3	3	3	3	2	2	2	3	3	3	3	2	2	2	2	2	1	2	3
20-Feb	2	1	1	1	2	2	2	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	4
21-Feb	3	3	3	3	4	4	5	5	5	4	4	5	5	5	5	4	4	4	3	5	5	5	5	4	5
22-Feb	4	4	4	4	5	4	4	5	5	5	5	4	5	5	5	5	4	3	4	4	3	3	4	4	5
23-Feb	4	4	3	3	3	3	4	4	4	6	7	7	10	9	7	7	5	6	5	6	9	5	7	7	10
24-Feb	5	5	5	5	7	7	5	4	5	5	4	3	4	4	4	4	2	1	4	3	2	1	1	2	7
25-Feb	1	2	1	1	1	2	2	2	2	2	2	3	3	4	4	4	4	5	5	4	5	6	6	7	7
26-Feb	6	6	6	5	6	5	4	4	4	4	4	4	4	4	4	4	4	3	2	2	1	1	2	2	6
27-Feb	2	2	2	3	2	2	2	2	3	4	4	4	3	4	4	4	3	2	0	3	2	2	2	2	4
28-Feb	3	3	3	2	2	2	2	2	2	4	6	6	6	5	5	5	5	5	5	4	4	4	4	4	6
29-Feb	5	4	4	4	4	4	4	3	4	3	4	2	3	2	2	2	2	2	2	1	3	2	3	2	5
																		Diurnal Maximum							





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed 20 m (WS20m) - km/h
Stony Mountain - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	121	17.39	17.39
6 - 11	266	38.22	55.60
12 - 19	281	40.37	95.98
20 - 28	28	4.02	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed 20 m (WS20m) - km/h
Stony Mountain - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	11	15	13	6	7	7	14	7	6	3	6	2	8	5	3	8	121
6 - 11	17	22	17	11	19	8	5	12	9	11	12	11	30	46	22	14	266
12 - 19	11	7	12	0	0	10	9	7	9	18	20	5	71	48	31	23	281
20 - 28	0	1	0	0	0	0	0	1	3	0	0	5	9	4	1	4	28
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	39	45	42	17	26	25	28	27	27	32	38	23	118	103	57	49	696

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction 20 m (WD20m) - deg
Stony Mountain - February 2024

Direction of Maximum Speed: 287 deg on Feb 23 13:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 265.8 deg on Feb 16	Hours of Data: 696
Direction of Minimum Speed: 272 deg on Feb 8 05:00	Hours of Missing Data: 0
Direction of Minimum Daily Speed Average: 0.6 deg on Feb 18	Percent Operational Time: 100.0
Monthly Average Direction: 286.0 deg	

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	172	168	168	175	177	176	185	189	196	202	207	202	193	195	190	179	176	158	169	263	217	197	203	199	184.9
2-Feb	199	195	220	81	176	160	182	177	204	157	153	129	55	38	49	58	22	16	37	14	1	11	355	354	75.9
3-Feb	101	293	300	311	308	315	313	312	317	317	326	332	328	327	324	336	334	337	344	356	359	2	352	343	327.8
4-Feb	338	3	47	25	156	116	142	153	149	142	121	115	140	160	70	16	9	359	86	90	107	138	130	25	96.9
5-Feb	353	47	195	335	348	28	0	14	14	8	6	14	16	18	24	36	15	24	14	20	27	44	30	27	18.7
6-Feb	42	53	66	73	74	88	96	101	96	96	101	92	93	89	93	100	105	114	122	107	134	143	148	152	94.3
7-Feb	151	164	171	159	104	137	99	336	343	341	324	356	8	22	49	26	28	4	30	20	40	48	15	36	41.4
8-Feb	356	346	118	171	272	17	125	188	227	251	175	189	223	276	345	69	32	110	124	162	202	221	239	277	225.4
9-Feb	296	311	309	312	310	310	296	294	302	304	310	296	300	301	309	306	308	295	271	268	270	268	271	275	297.5
10-Feb	265	231	223	224	218	212	215	214	210	203	200	191	193	193	203	189	188	200	216	222	234	262	275	275	219.7
11-Feb	275	280	271	269	270	270	274	267	278	283	293	297	296	292	298	293	298	279	290	295	281	272	268	261	281.1
12-Feb	256	237	229	222	219	214	214	214	215	215	221	260	277	283	294	294	295	290	287	292	304	312	316	316	260.5
13-Feb	328	332	329	326	331	329	328	328	325	332	334	337	327	319	329	338	289	299	270	279	291	313	317	307	323.5
14-Feb	344	353	2	346	347	21	32	25	21	42	27	24	16	1	304	275	319	334	336	325	295	279	281	297	352.0
15-Feb	300	279	279	284	289	293	282	278	276	281	282	283	268	270	272	273	278	271	252	262	268	270	268	265	274.6
16-Feb	275	268	263	270	270	266	270	270	268	277	284	282	281	269	265	270	257	234	241	244	248	259	277	289	265.8
17-Feb	294	295	298	289	289	283	284	293	300	293	297	296	295	291	298	282	258	255	249	237	248	265	290	273	285.1
18-Feb	268	211	185	214	208	224	241	212	213	224	173	5	31	52	23	33	44	48	70	70	55	25	11	10	66.6
19-Feb	354	325	304	308	298	288	309	306	307	313	326	324	287	289	296	295	302	304	9	45	79	90	90	116	317.6
20-Feb	153	156	157	151	127	143	142	264	263	68	43	143	30	92	144	41	61	136	139	101	138	199	232	246	156.5
21-Feb	250	261	265	263	271	268	263	266	270	275	272	269	274	272	275	262	247	233	242	248	264	263	274	274	264.0
22-Feb	271	274	267	269	274	273	264	273	284	296	309	300	299	289	293	292	292	289	283	284	287	284	274	275	283.0
23-Feb	280	261	237	225	226	221	226	222	226	239	253	276	287	283	273	267	259	271	261	259	277	284	288	297	260.9
24-Feb	296	292	282	281	301	310	341	342	340	337	329	328	316	317	325	325	341	358	37	48	91	84	93	99	325.2
25-Feb	74	96	81	76	67	69	58	38	41	44	44	38	40	46	38	43	46	47	42	41	43	36	36	30	45.3
26-Feb	24	12	6	5	6	3	355	348	350	344	348	354	4	3	1	350	343	341	336	337	326	294	284	288	352.6
27-Feb	277	285	290	287	275	280	275	271	271	293	302	305	280	291	282	299	301	301	326	224	221	214	214	213	274.7
28-Feb	213	211	201	191	183	174	179	156	156	166	167	161	160	142	142	144	149	145	145	146	143	133	137	122	158.4
29-Feb	122	113	115	113	117	114	112	112	105	111	117	102	70	28	41	39	354	304	310	321	319	320	323	314	94.5
	282.5	277.7	268.3	274.8	270.9	267.6	269.8	270.1	277.4	284.3	291.6	299.7	299.1	299.7	304.3	305.8	308.9	295.4	286.7	288.1	280.7	284.1	286.6	291.5	
	Diurnal Average																								

All monthly, daily, and diurnal averages have been calculated using vector methods



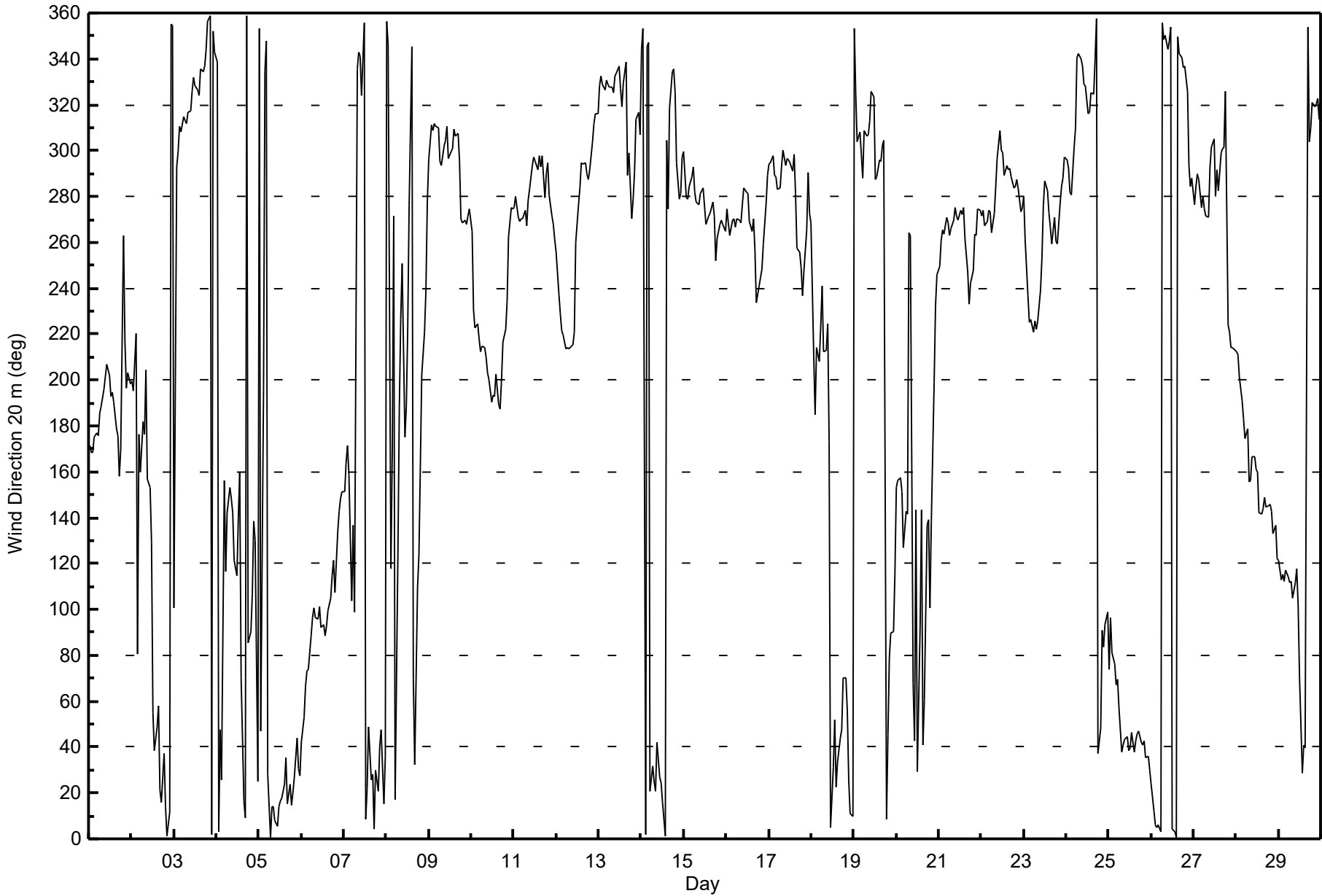
Wood Buffalo Environmental Association

Summary of Hour Standard Deviations

Wind Direction 20 m (WD20m) - deg

Stony Mountain - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 91 deg on Feb 8 03:00 Minimum Value: 4 deg on Feb 2 05:00 Percentiles: P ₁ = 9 P ₁₀ = 14 Q ₁ = 17 Median = 20 Q ₃ = 23 P ₉₀ = 33 P ₉₉ = 84																		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	18	17	16	14	16	18	19	19	20	22	23	24	27	21	22	19	15	12	11	74	35	12	11	11	74
2-Feb	9	12	51	63	4	22	24	17	70	44	23	60	60	29	31	20	17	15	19	16	18	18	19	14	70
3-Feb	89	13	15	15	15	13	14	14	14	16	19	18	18	19	19	19	18	18	18	18	16	14	11	89	
4-Feb	15	12	23	26	26	14	10	8	8	20	85	38	29	42	75	21	26	45	26	32	37	21	22	52	85
5-Feb	13	60	84	11	17	23	19	17	20	17	18	20	20	19	21	21	19	19	18	18	18	17	21	18	84
6-Feb	17	15	16	18	19	17	16	18	16	21	20	18	20	19	21	17	19	14	15	18	16	11	11	13	21
7-Feb	15	14	14	64	22	18	63	10	21	24	17	34	26	48	31	31	24	30	28	20	18	25	31	23	64
8-Feb	20	58	91	63	87	68	20	72	44	37	82	40	47	51	26	73	40	34	26	16	14	15	25	19	91
9-Feb	19	19	17	17	19	18	20	20	19	20	20	24	23	22	21	21	20	23	21	20	20	22	20	19	24
10-Feb	24	21	15	12	11	14	15	16	17	18	18	21	22	19	20	22	18	18	17	18	20	23	20	19	24
11-Feb	19	20	20	20	24	22	22	20	19	19	21	22	21	21	22	23	19	16	16	16	16	14	15	15	24
12-Feb	17	20	14	15	15	15	15	14	15	17	18	23	23	22	22	22	21	18	20	17	21	19	19	19	23
13-Feb	20	19	18	17	18	18	17	18	18	20	20	21	22	23	25	55	28	19	16	15	20	17	17	17	55
14-Feb	25	19	21	19	18	23	20	21	19	19	24	22	27	24	35	29	28	18	15	15	17	13	26	22	35
15-Feb	15	14	17	17	18	16	15	16	20	22	22	23	23	26	26	26	23	19	17	20	21	18	20	21	26
16-Feb	20	20	22	20	20	20	20	19	21	22	21	23	23	25	21	21	22	19	19	21	21	22	20	19	25
17-Feb	17	17	17	17	17	18	18	16	16	16	17	24	29	32	28	45	17	15	16	11	13	68	15	16	68
18-Feb	24	21	12	12	12	30	61	43	86	74	64	58	27	31	35	37	17	14	17	16	23	32	16	15	86
19-Feb	22	44	30	9	15	11	12	12	14	15	19	25	41	35	29	27	21	16	41	20	25	19	15	21	44
20-Feb	12	8	8	10	16	15	6	70	85	87	33	48	69	54	39	32	19	33	11	40	21	21	16	18	87
21-Feb	18	20	20	25	21	20	20	21	21	19	22	24	22	22	23	25	23	19	18	19	20	21	20	20	25
22-Feb	19	19	19	19	18	18	22	19	19	20	20	21	22	25	25	23	20	18	17	19	18	17	18	19	25
23-Feb	18	22	16	14	15	14	18	16	20	22	24	25	24	23	23	23	21	24	22	22	30	21	21	21	30
24-Feb	20	21	20	21	20	19	25	21	20	21	23	25	23	26	22	20	26	23	26	17	15	16	12	12	26
25-Feb	21	18	22	23	21	21	25	21	20	21	23	26	22	25	22	20	19	17	18	19	18	20	21	20	26
26-Feb	22	21	21	21	20	20	20	20	19	20	22	26	28	30	28	27	23	19	15	13	14	13	13	14	30
27-Feb	17	16	15	17	12	13	12	14	19	26	28	29	35	31	31	28	26	17	6	56	13	12	11	14	56
28-Feb	14	15	14	15	11	12	14	11	12	22	21	23	23	25	21	22	20	19	18	15	16	17	17	17	25
29-Feb	18	16	15	17	16	16	17	18	16	18	22	25	81	48	42	53	62	28	18	18	18	16	16	17	81
																		89 60 91 64 87 68 63 72 86 87 85 60 81 54 75 73 62 45 41 74 37 68 31 52							
Diurnal Maximum																									





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS19 FIREBAG FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FIREBAG (AMS19)
 FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	659	32	37	99.28	17.8	0	6.7	0
H2S (ppb) Average	657	35	39	99.43	6.5	0	0.4	0
THC (ppm) Average	659	32	37	99.28	2.8	-	2.4	-
NO2 (ppb) Average	656	35	40	99.28	36.1	0	14.8	-
NO (ppb) Average	656	35	40	99.28	41	-	6.4	-
NOX (ppb) Average	656	35	40	99.28	71.8	-	21.2	-
Temperature 2 m (C) Average	696	0	0	100	5.9	-	2.6	-
Relative Humidity (%) Average	696	0	0	100	96.5	-	90.4	-
Wind Speed 10 m (km/h) Average	684	0	12	98.28	31	-	23	-
Wind Direction 10 m (deg) Average	684	0	12	98.28	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FIREBAG (AMS19)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile							
					Min	P10	Q1	Median	Q3	P90	Max	
SO2 (ppb) Average	659	1.21	2.5	-	0	0	0.1	0.2	0.8	4.2	17.8	
H2S (ppb) Average	657	0.17	0.3	-	0	0	0.1	0.1	0.2	0.4	6.5	
THC (ppm) Average	659	2.28	0.1	-	2.1	2.2	2.2	2.3	2.3	2.4	2.8	
NO2 (ppb) Average	656	5.66	6	-	0.1	0.2	1.4	3.8	7.5	13.3	36.1	
NO (ppb) Average	656	1.6	3.5	-	0	0	0	0.5	1.8	4	41	
NOX (ppb) Average	656	7.26	8.8	-	0.1	0.2	1.6	4.7	9.6	16.3	71.8	
Temperature 2 m (C) Average	696	-10.6	7.7	-	-32.2	-20.6	-15.2	-10.8	-5.2	-0.7	5.9	
Relative Humidity (%) Average	696	72.54	14.1	-	35.6	50.8	62.6	73.5	84.7	89.6	96.5	
Wind Speed 10 m (km/h) Average	684	11.6	6	-	0	4	7	10	15	20	31	
Wind Direction 10 m (deg) Average	684	-	-	-	-	-	-	-	-	-	-	

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FIREBAG (AMS19)
FEBRUARY 2024

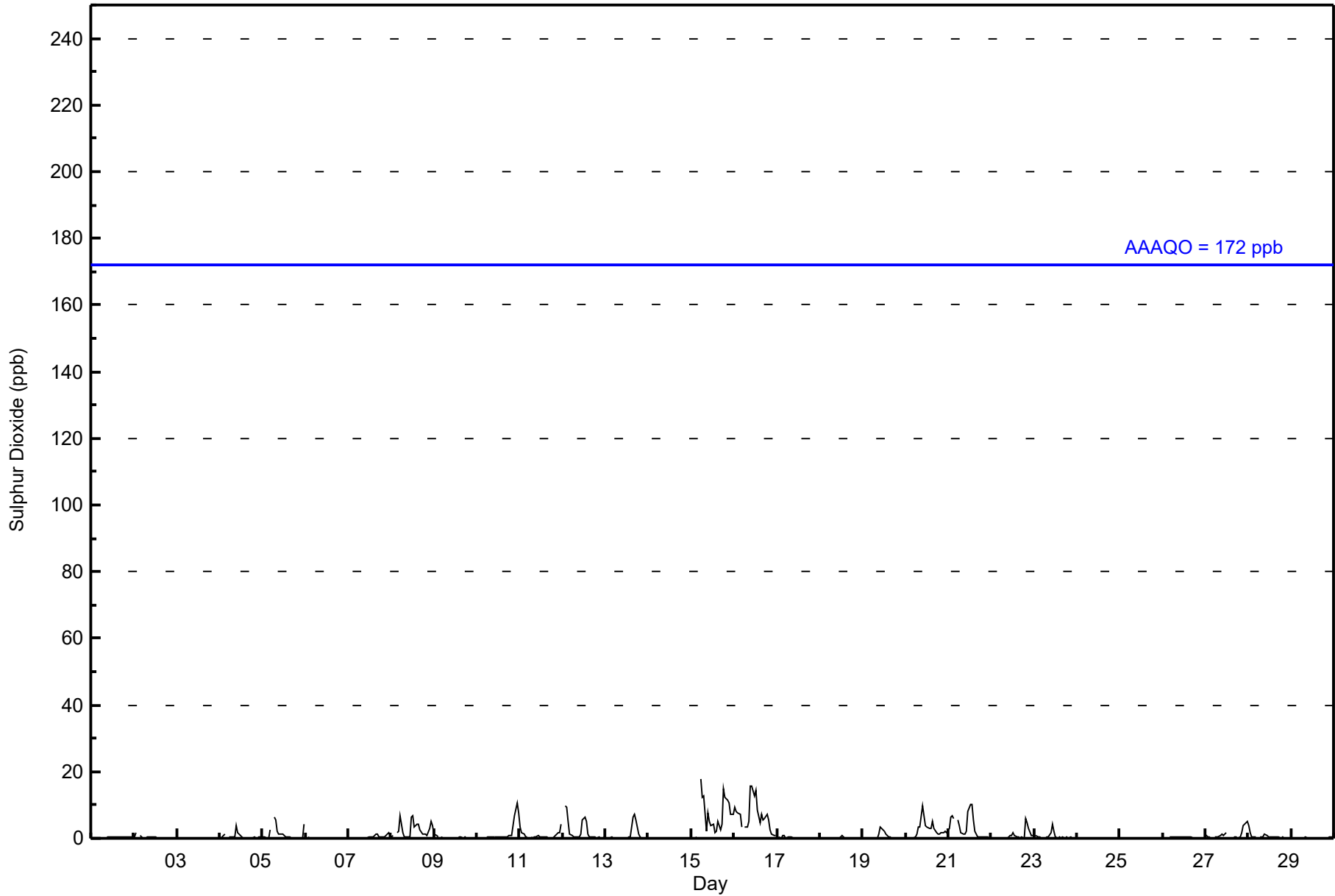
OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
ALL GASEOUS ANALYZERS	03 Feb 2024 12:00	03 Feb 2024 16:00	5	Station power failure
Wind Speed, Wind Direction	03 Feb 2024 21:00	04 Feb 2024 08:00	12	Flat line in sensor output signal



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Firebag - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Firebag - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	647	98.18	98.18
11 - 20	12	1.82	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



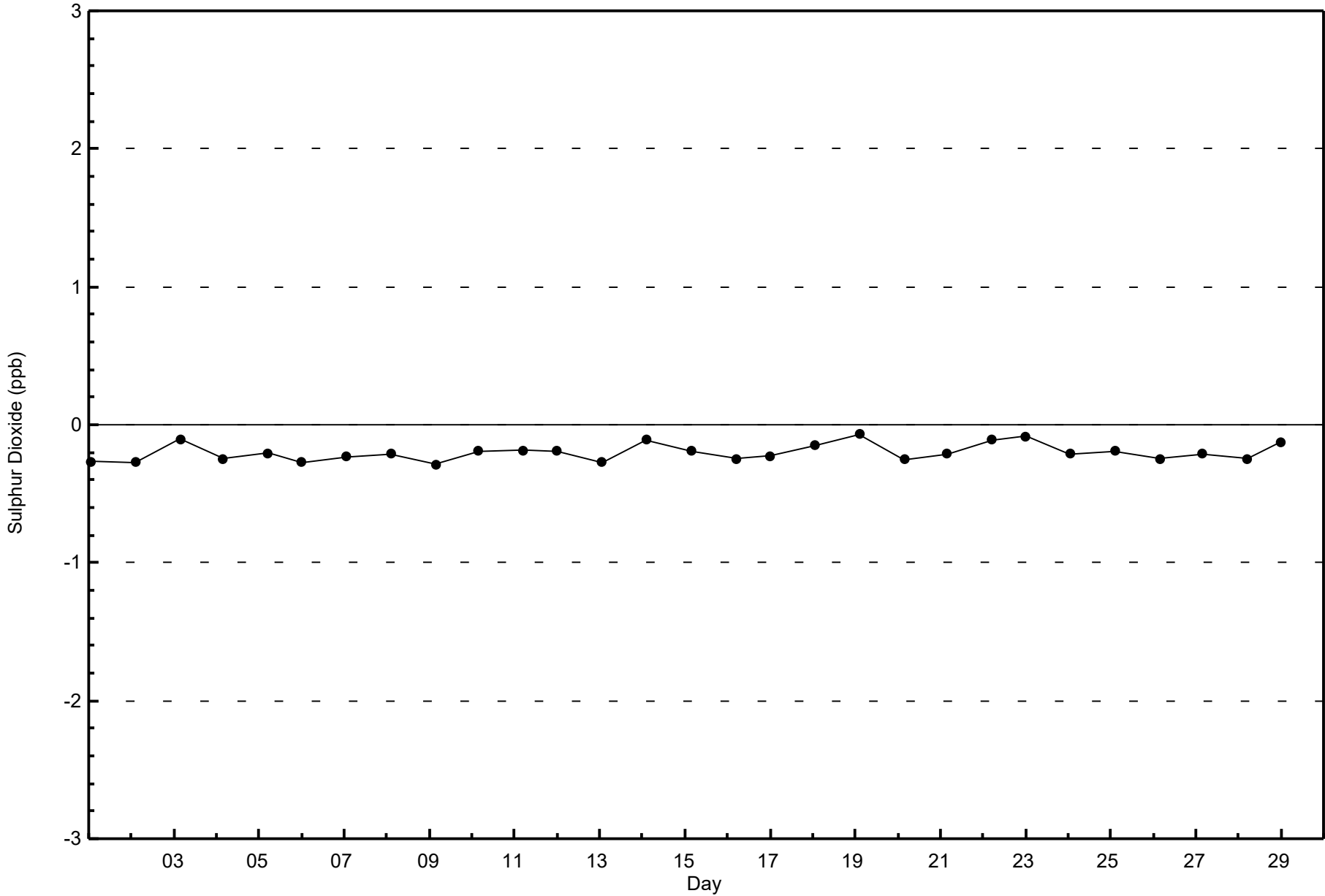
**Wood Buffalo Environmental Association
Frequency Distribution**

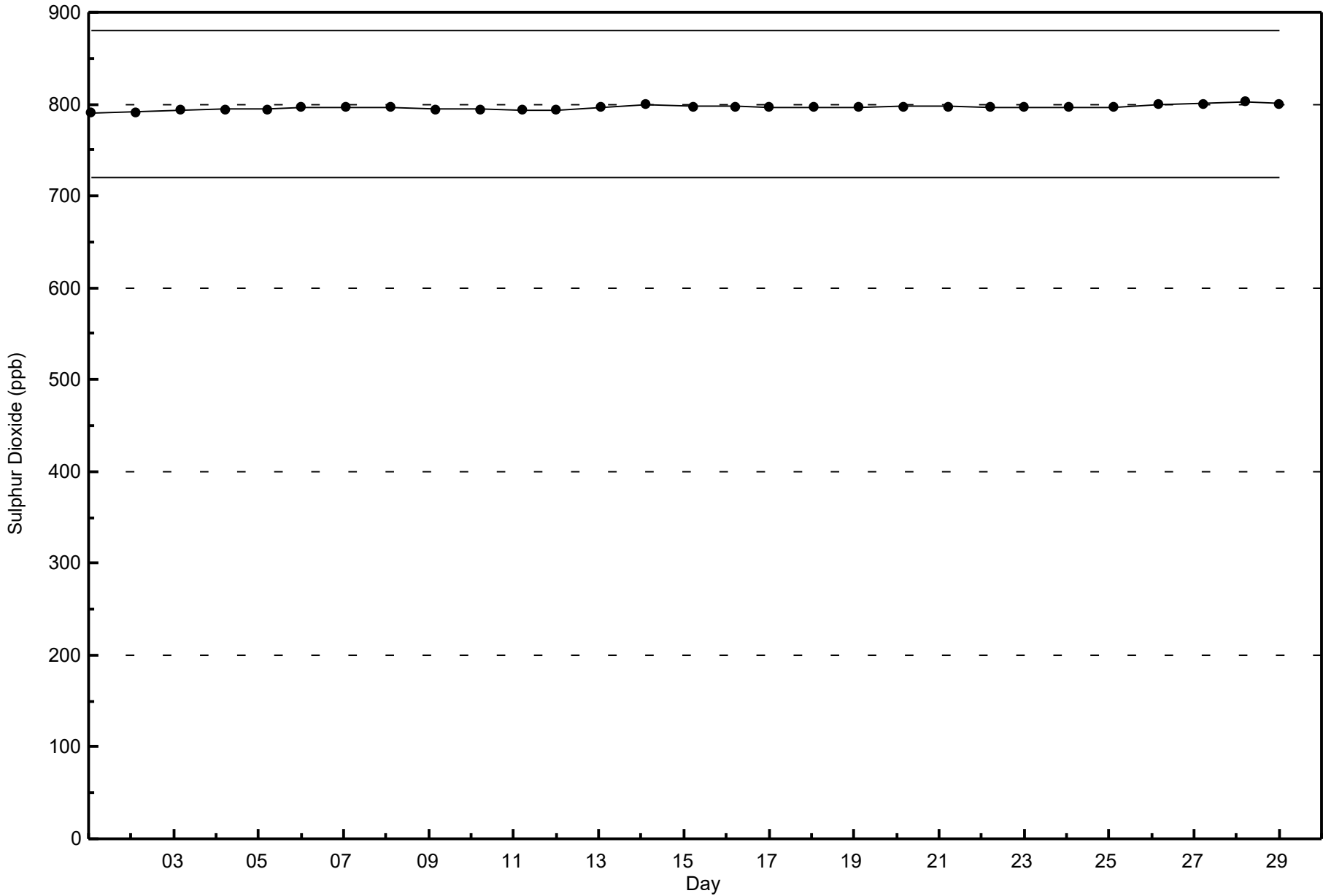
**Sulphur Dioxide (SO₂) - ppb
Firebag - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	73	44	26	8	5	36	48	61	57	37	44	61	37	20	19	60	636
11 - 20	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	12
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	73	44	26	8	5	36	48	61	57	37	56	61	37	20	19	60	648

Total Number of Valid Hours: 648

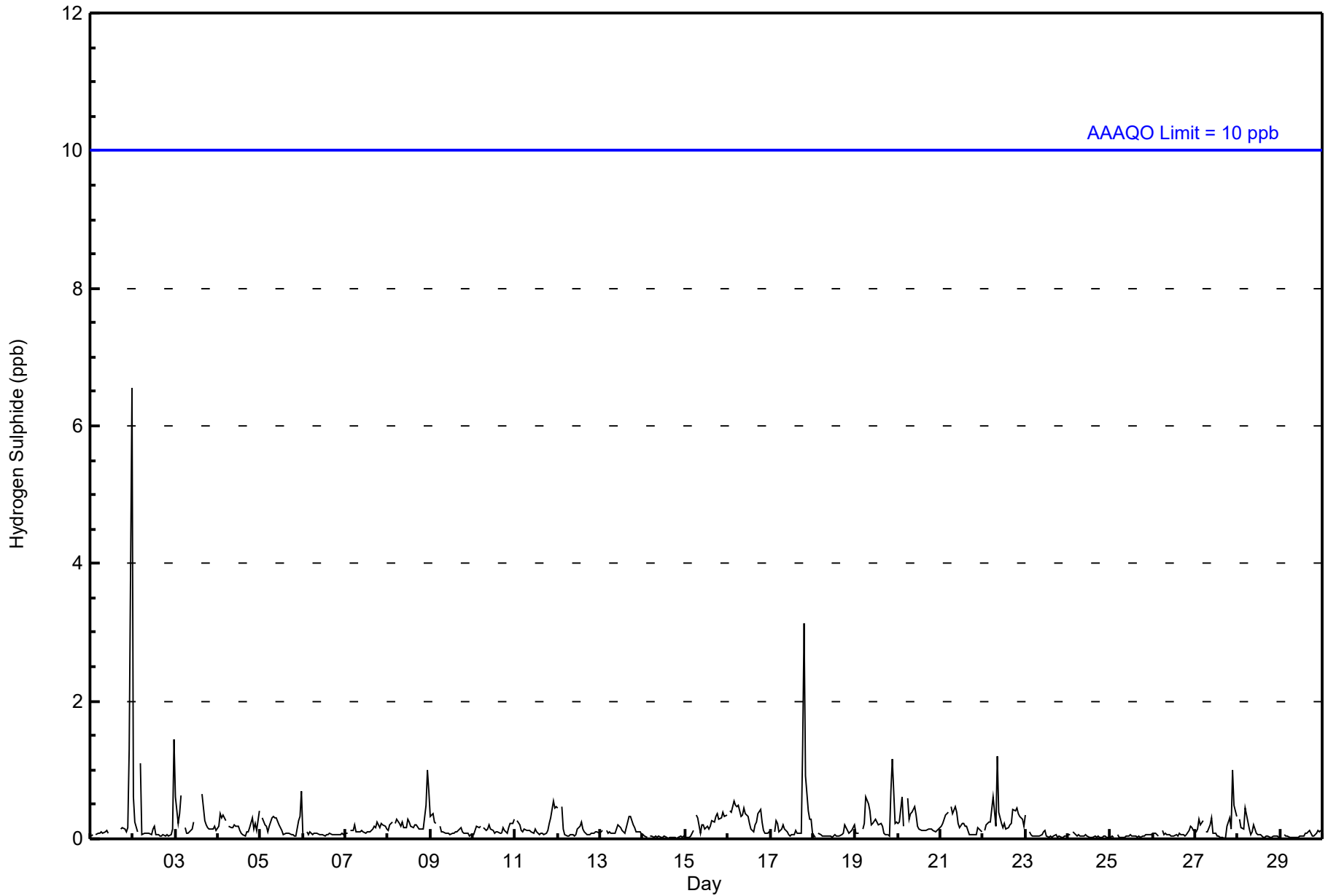
Total Number of Hours: 696







Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:		696																			
Maximum Value: 6.5 ppb on Feb 2 00:00		Maximum Daily Average: 0.4 ppb on Feb 17				Hours of Data:		657																			
Minimum Value: 0.0 ppb on Feb 14 20:00		Minimum Daily Average: 0.0 ppb on Feb 14				Hours of Missing Data:		39																			
Maximum Diurnal Average: 0.5 ppb at hour 24		Minimum Diurnal Average: 0.1 ppb at hour 15				Hours of Calibration:		35																			
Monthly Average: 0.17 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.4 P ₉₉ = 1.1				Percent Operational Time:		99.4																			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.0	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	C	C	C	C	C	C	0.1	0.2	0.1	0.1	0.2	1.3	6.5	--	6.5	
2-Feb	0.6	0.2	0.1	Z	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	1.4	0.2	1.4	
3-Feb	0.6	0.2	0.4	0.6	Z	0.2	0.1	0.1	0.1	0.1	0.2	PF	PF	PF	PF	0.7	0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.7	
4-Feb	0.2	0.4	0.3	0.4	0.3	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.3	0.1	0.2	0.1	0.4	0.2	0.4	
5-Feb	Z	0.3	0.2	0.2	0.1	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.3	0.3	0.7	0.2	0.7
6-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
7-Feb	0.1	0.1	Z	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.3	
8-Feb	0.1	0.2	0.2	Z	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.5	1.0	0.7	0.3	1.0	
9-Feb	0.3	0.4	0.2	0.2	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.4	
10-Feb	0.1	0.1	0.2	0.2	0.2	Z	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.1	0.3	
11-Feb	Z	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.4	0.5	0.2	0.5	
12-Feb	0.4	Z	0.5	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	
13-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.3	
14-Feb	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
15-Feb	0.0	0.0	0.0	0.0	0.1	Z	0.4	0.3	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.2	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.2	0.4	
16-Feb	Z	0.4	0.4	0.6	0.5	0.5	0.5	0.3	0.3	0.4	0.4	0.3	0.2	0.1	0.1	0.2	0.2	0.4	0.4	0.3	0.1	0.1	0.1	0.1	0.3	0.6	
17-Feb	0.1	Z	0.1	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	1.4	3.1	0.9	0.4	0.3	0.3	0.4	3.1	
18-Feb	0.1	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	
19-Feb	0.1	0.1	0.1	Z	0.1	0.2	0.6	0.5	0.4	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.7	1.2	0.2	0.3	0.3	1.2	
20-Feb	0.2	0.3	0.6	0.2	Z	0.6	0.3	0.4	0.4	0.5	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.6	
21-Feb	0.2	0.2	0.3	0.3	0.4	Z	0.5	0.4	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.5	
22-Feb	Z	0.1	0.2	0.2	0.2	0.4	0.6	0.2	1.2	0.4	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.4	0.4	0.5	0.4	0.3	0.3	0.2	0.3	1.2	
23-Feb	0.4	Z	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	
24-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
25-Feb	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	
26-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.2	
27-Feb	0.1	0.1	0.3	0.2	0.3	Z	0.1	0.1	0.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.1	1.0	0.5	0.3	0.2	1.0	
28-Feb	Z	0.3	0.2	0.1	0.4	0.4	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	
29-Feb	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	
		0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.5	Diurnal Average		
		0.6	0.4	0.6	0.6	1.1	0.6	0.6	0.5	1.2	0.5	0.4	0.3	0.2	0.3	0.2	0.7	0.3	0.4	1.4	3.1	0.9	1.2	1.3	6.5	Diurnal Maximum	
Z - zerspan		C - Calibration		PF - Power Failure																							
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 10 ppb		24-hr 3 ppb																							





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Firebag - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	655	99.70	99.70
3 - 4	1	0.15	99.85
5 - 7	1	0.15	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 657

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Firebag - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	73	44	27	7	4	36	48	62	54	33	54	61	38	22	21	60	644
3 - 4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5 - 7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	73	44	27	8	5	36	48	62	54	33	54	61	38	22	21	60	646

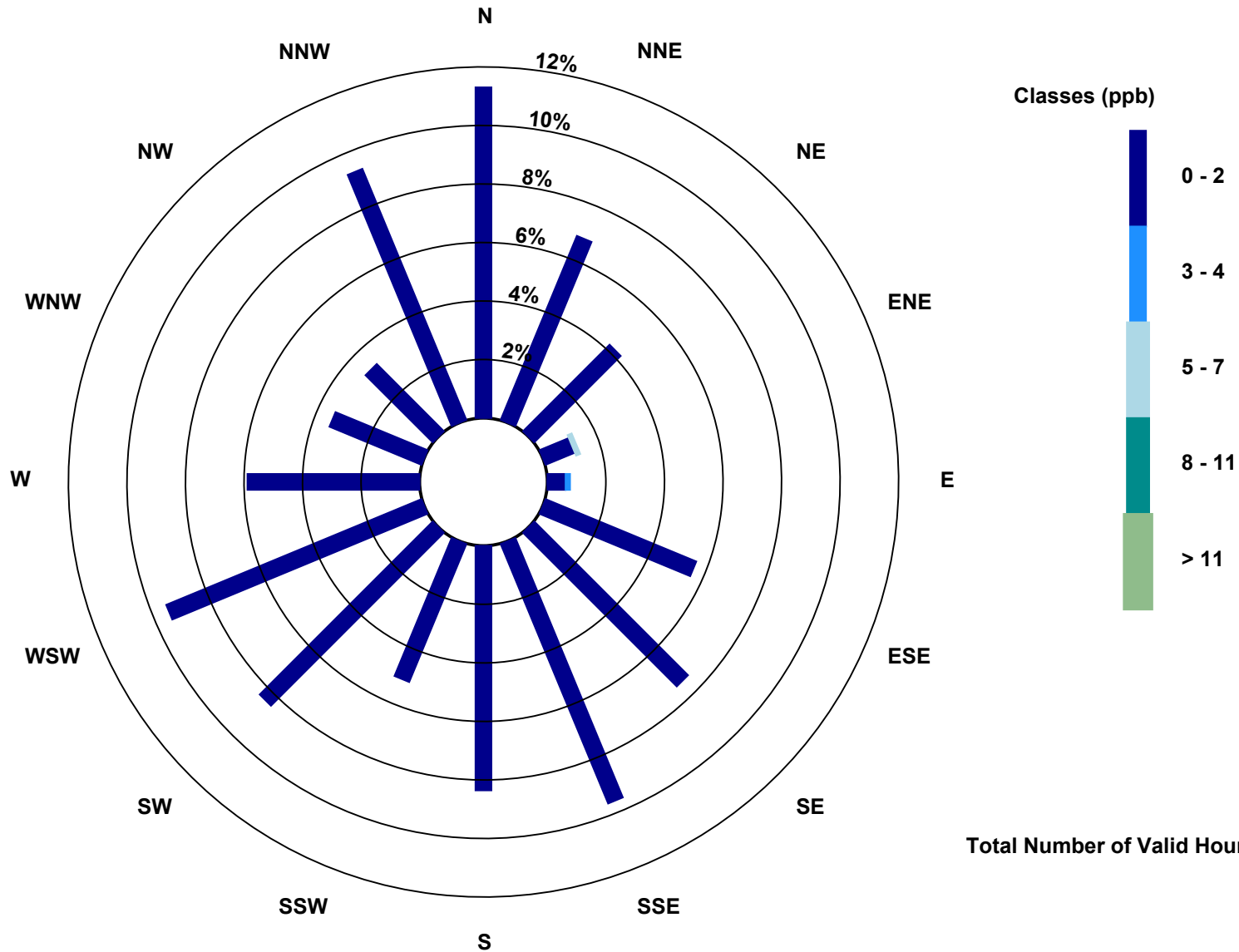
Total Number of Valid Hours: 646

Total Number of Hours: 696

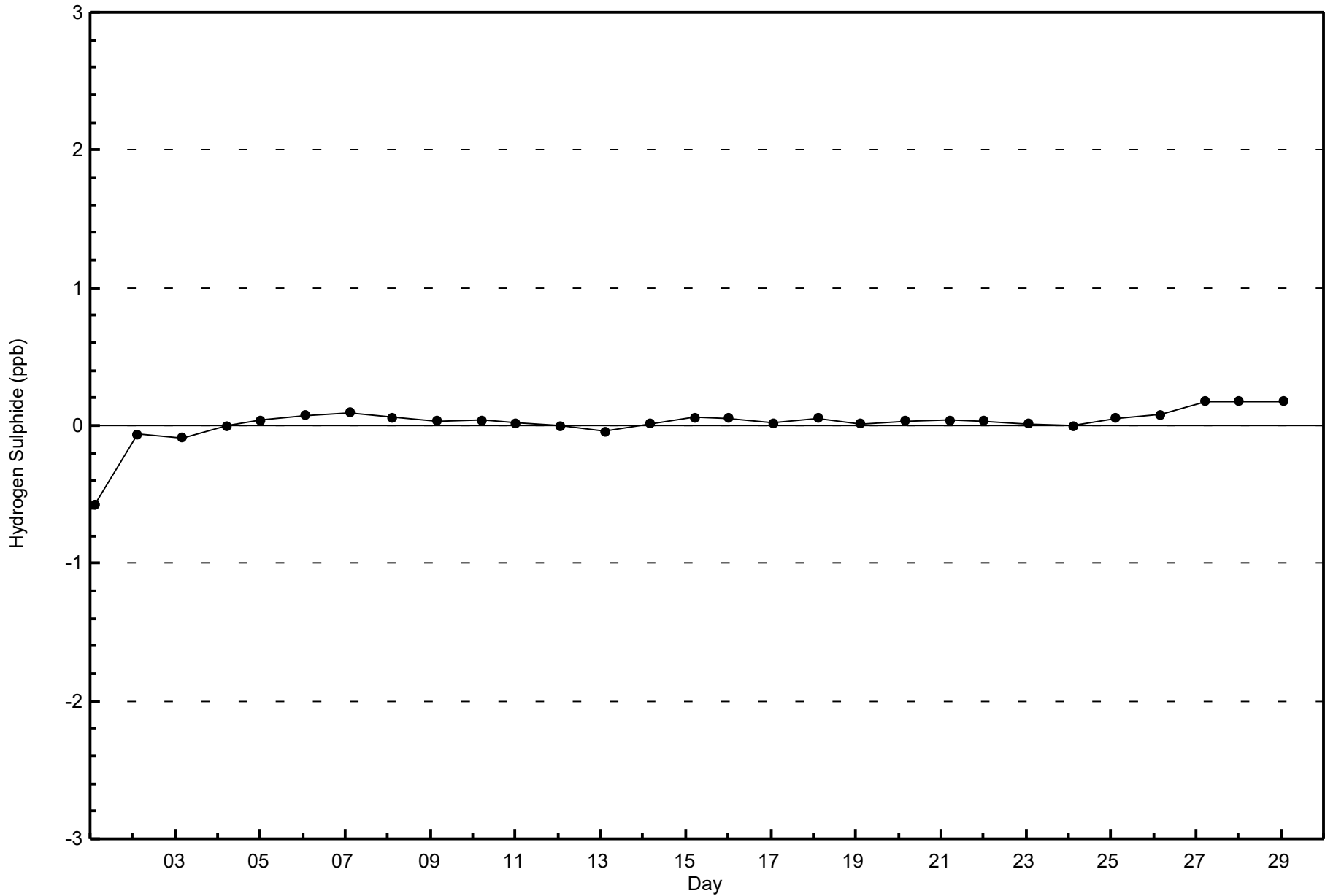


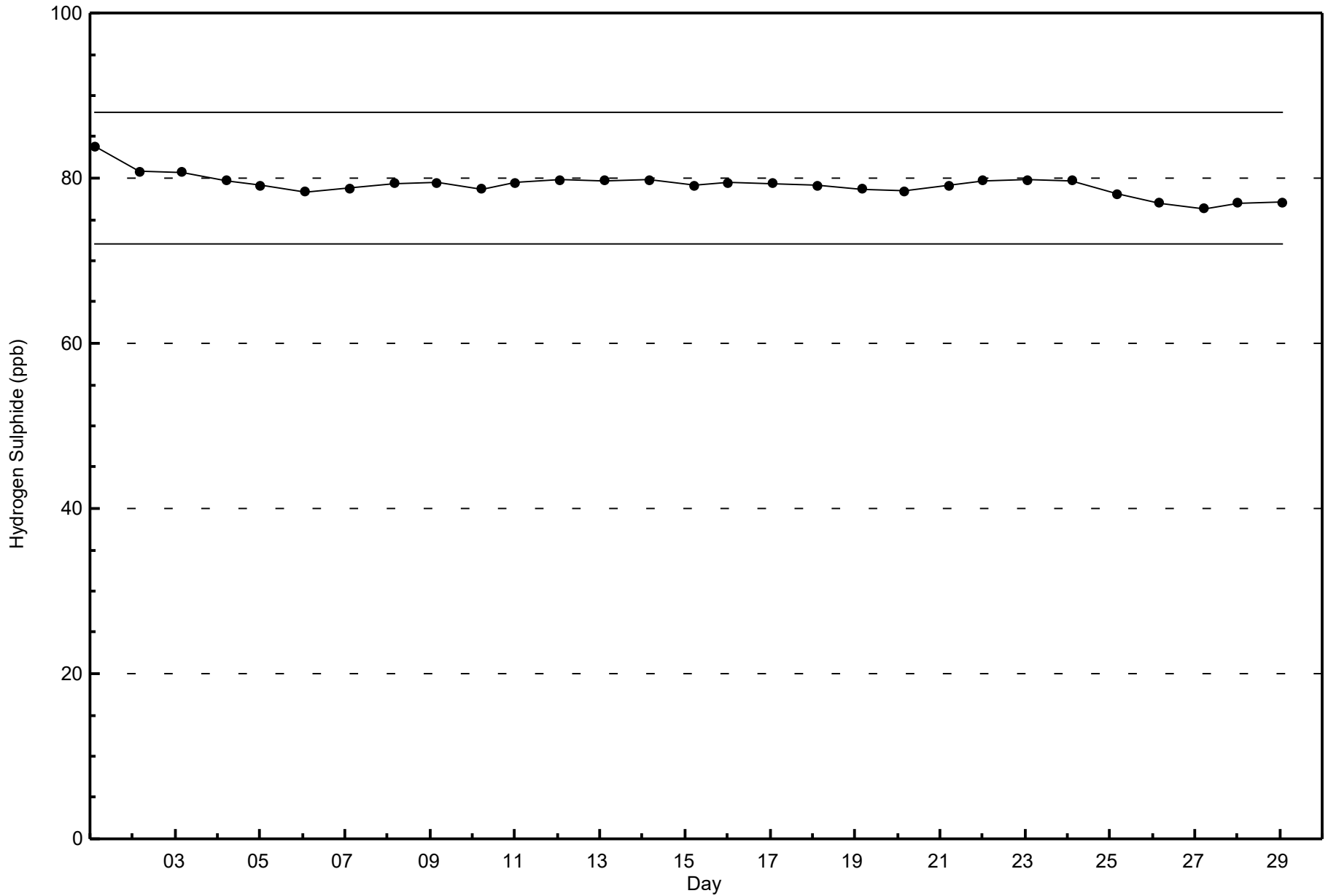
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Firebag



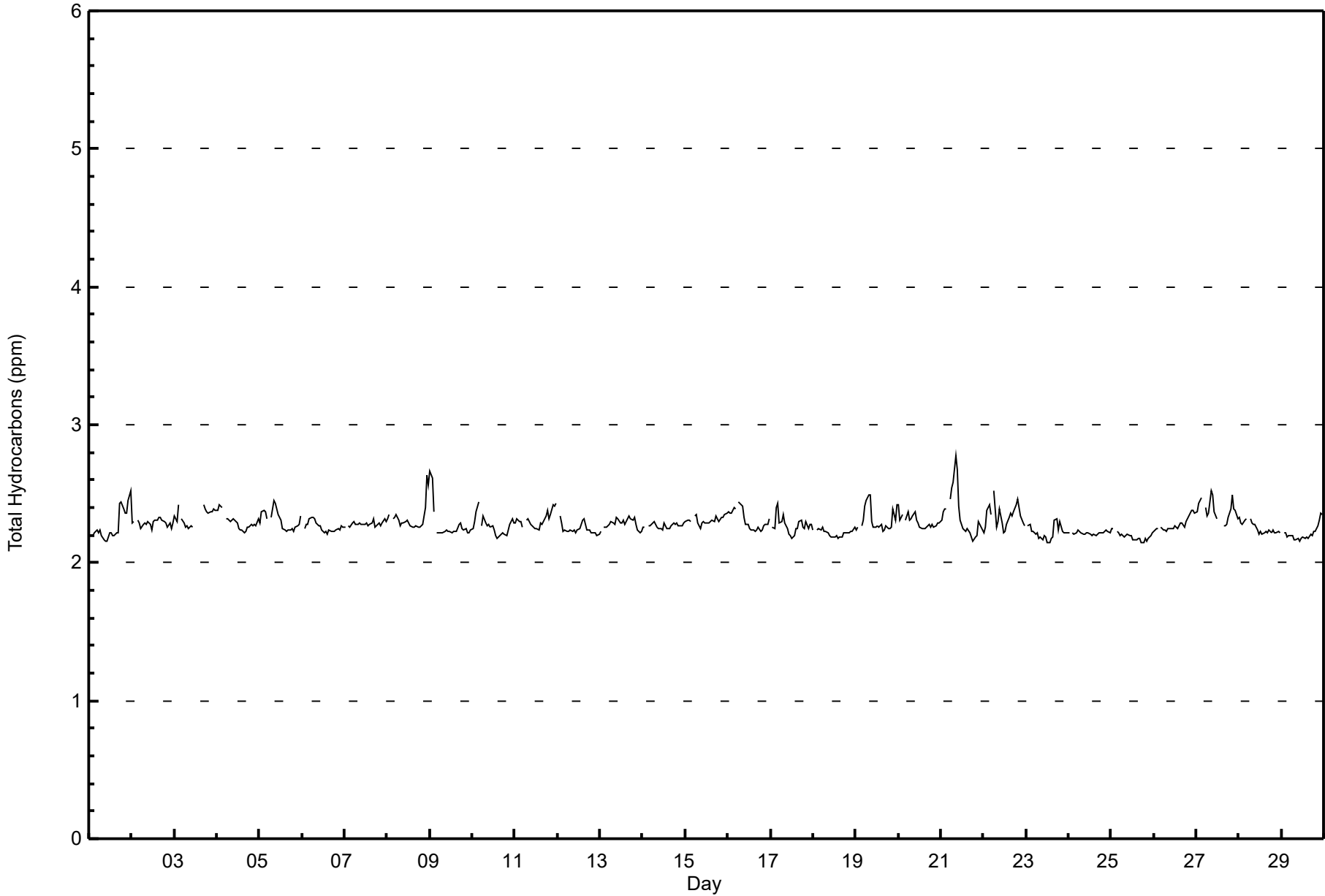
Total Number of Valid Hours: 646







Maximum Value: 2.8 ppm on Feb 21 09:00																				Maximum Daily Average: 2.4 ppm on Feb 27					Hours in Service:	696
Minimum Value: 2.1 ppm on Feb 25 19:00																				Minimum Daily Average: 2.2 ppm on Feb 25					Hours of Data:	659
Maximum Diurnal Average: 2.3 ppm at hour 2																				Minimum Diurnal Average: 2.2 ppm at hour 14					Hours of Missing Data:	37
Monthly Average: 2.28 ppm																				Percentiles: P ₁ = 2.2 P ₁₀ = 2.2 Q ₁ = 2.2 Median = 2.3 Q ₃ = 2.3 P ₉₀ = 2.4 P ₉₉ = 2.5					Hours of Calibration:	32
																									Percent Operational Time:	99.3
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.3	2.5
2-Feb	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3
3-Feb	2.3	2.3	2.4	Z	2.3	2.3	2.3	2.3	2.2	2.3	2.3	PF	PF	PF	PF	PF	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.4
4-Feb	2.4	2.4	2.4	2.4	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4
5-Feb	2.3	2.4	2.4	2.4	2.3	Z	2.3	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4
6-Feb	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3
7-Feb	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
8-Feb	2.3	2.4	Z	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.6	2.6	2.3	2.6
9-Feb	2.7	2.6	2.4	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.7
10-Feb	2.2	2.3	2.4	2.4	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4
11-Feb	2.3	2.3	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.4	2.3	2.4	2.4	2.4	2.4	2.3	2.4
12-Feb	Z	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3
13-Feb	2.2	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.3
14-Feb	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
15-Feb	2.3	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4
16-Feb	2.4	2.4	2.4	2.4	2.4	Z	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.4
17-Feb	Z	2.3	2.2	2.4	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.4
18-Feb	2.2	Z	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3
19-Feb	2.2	2.3	Z	2.3	2.3	2.4	2.4	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.2	2.2	2.3	2.4	2.3	2.4	2.3	2.5
20-Feb	2.4	2.3	2.4	Z	2.3	2.4	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4
21-Feb	2.3	2.4	2.4	2.4	Z	2.5	2.5	2.6	2.8	2.7	2.4	2.3	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.3	2.8
22-Feb	2.2	2.3	2.4	2.4	2.4	Z	2.5	2.3	2.3	2.4	2.3	2.2	2.2	2.3	2.3	2.4	2.3	2.4	2.4	2.4	2.5	2.4	2.3	2.3	2.3	2.5
23-Feb	Z	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.3
24-Feb	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
25-Feb	2.2	2.3	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3
26-Feb	2.2	2.2	2.2	Z	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.3	2.4
27-Feb	2.4	2.4	2.5	2.5	Z	2.4	2.3	2.4	2.5	2.5	2.4	2.3	C	C	C	2.3	2.3	2.3	2.3	2.4	2.5	2.4	2.4	2.3	2.4	2.5
28-Feb	2.3	2.3	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3
29-Feb	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.2	2.4
																								Diurnal Average		
																								Diurnal Maximum		
Z - zerspan																										
C - Calibration																										
PF - Power Failure																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Firebag - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	0	0.00	0.00
2.1 - 3.0	659	100.00	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Firebag - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.1 - 3.0	73	44	26	8	5	36	48	61	57	37	56	61	37	20	19	60	648
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	73	44	26	8	5	36	48	61	57	37	56	61	37	20	19	60	648

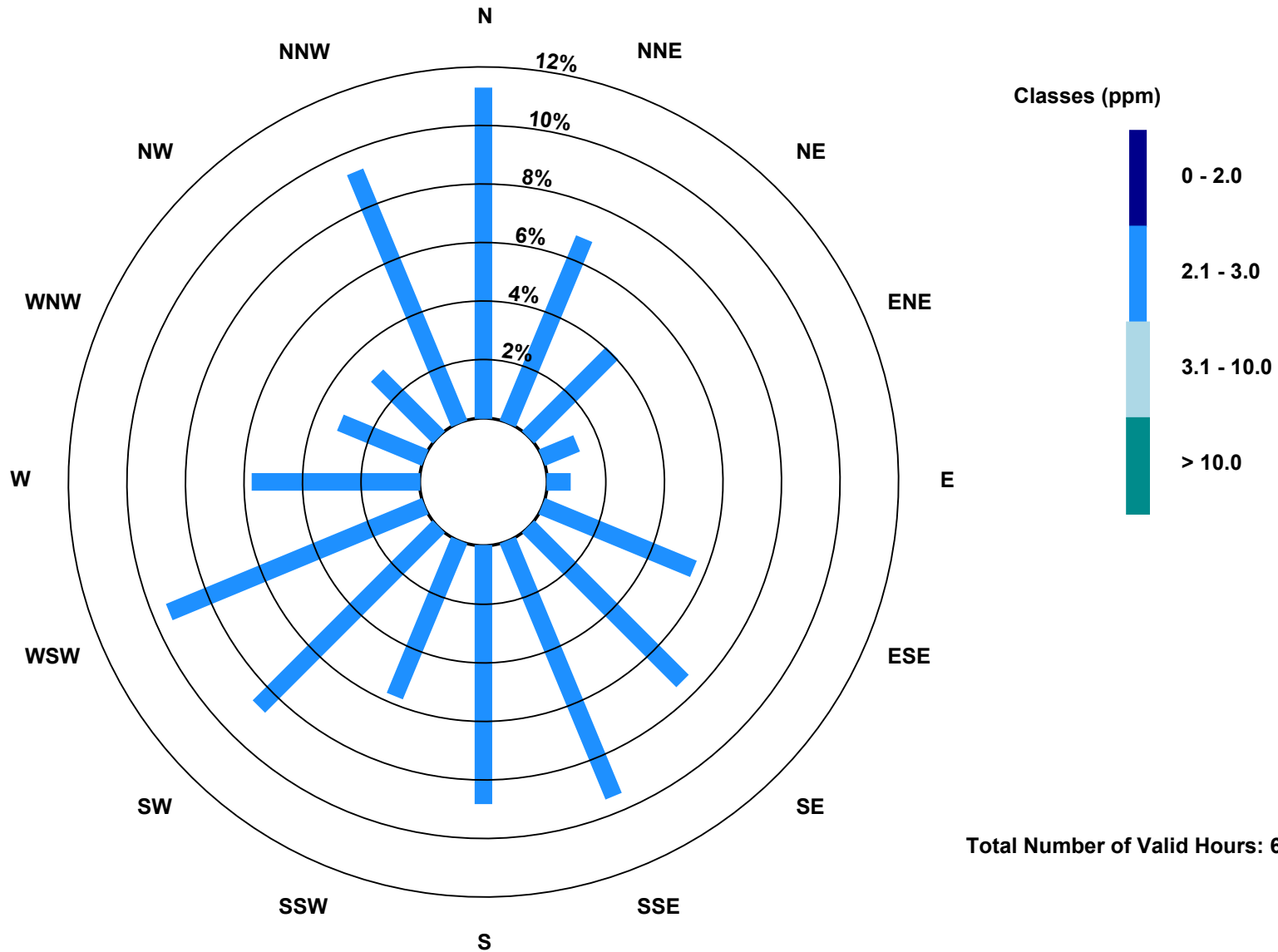
Total Number of Valid Hours: 648

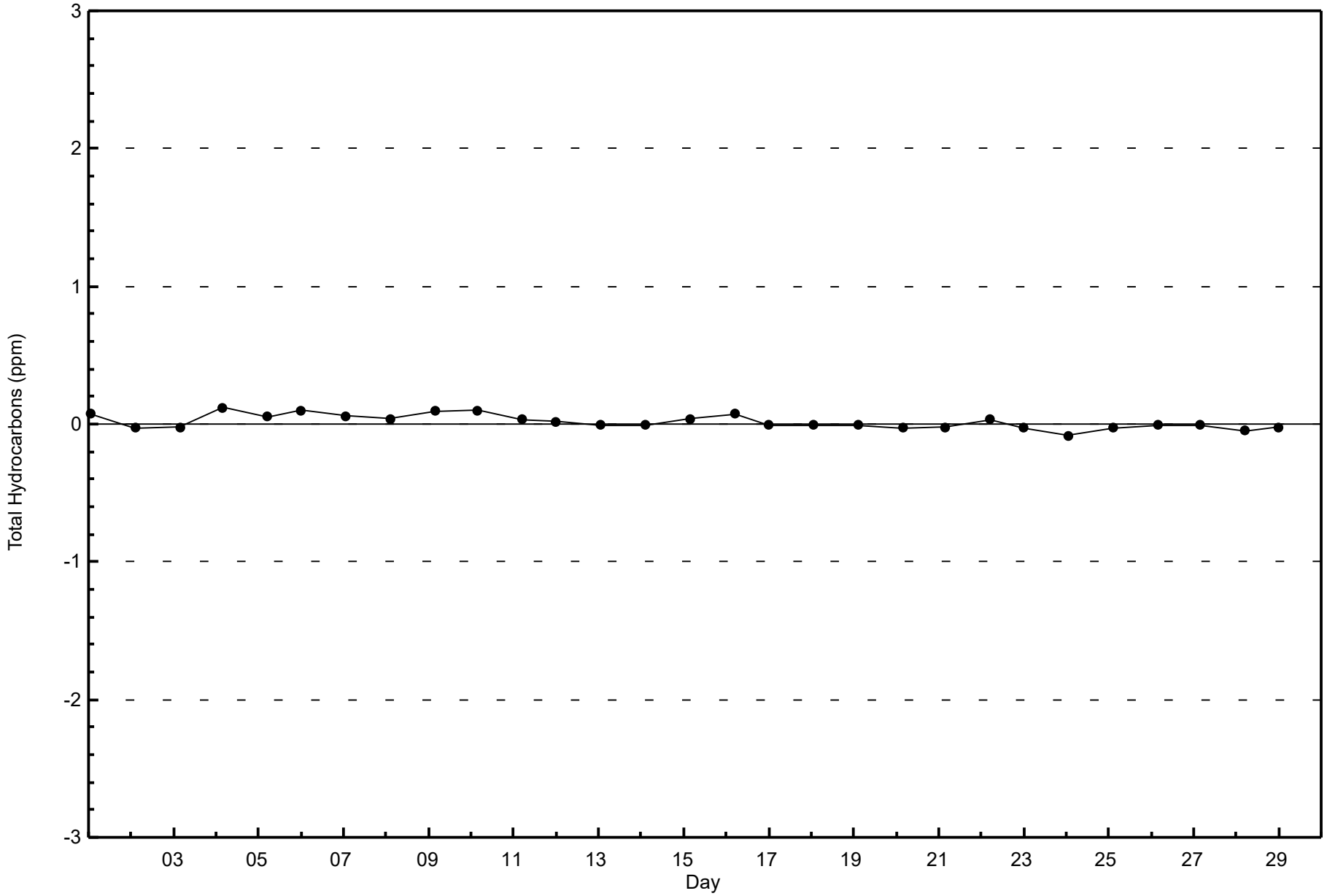
Total Number of Hours: 696

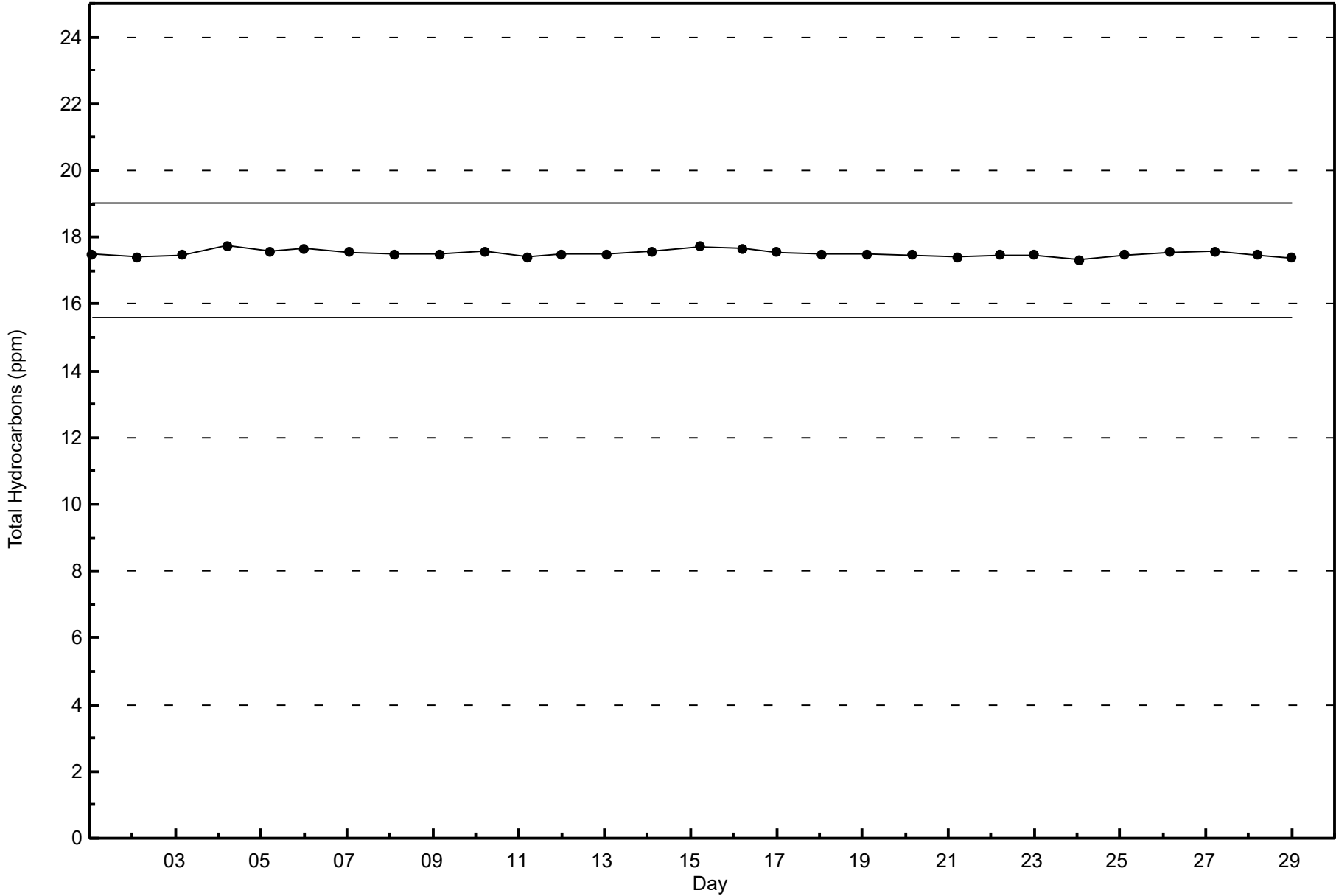


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Firebag









Wood Buffalo Environmental Association
Summary of Hour Averages

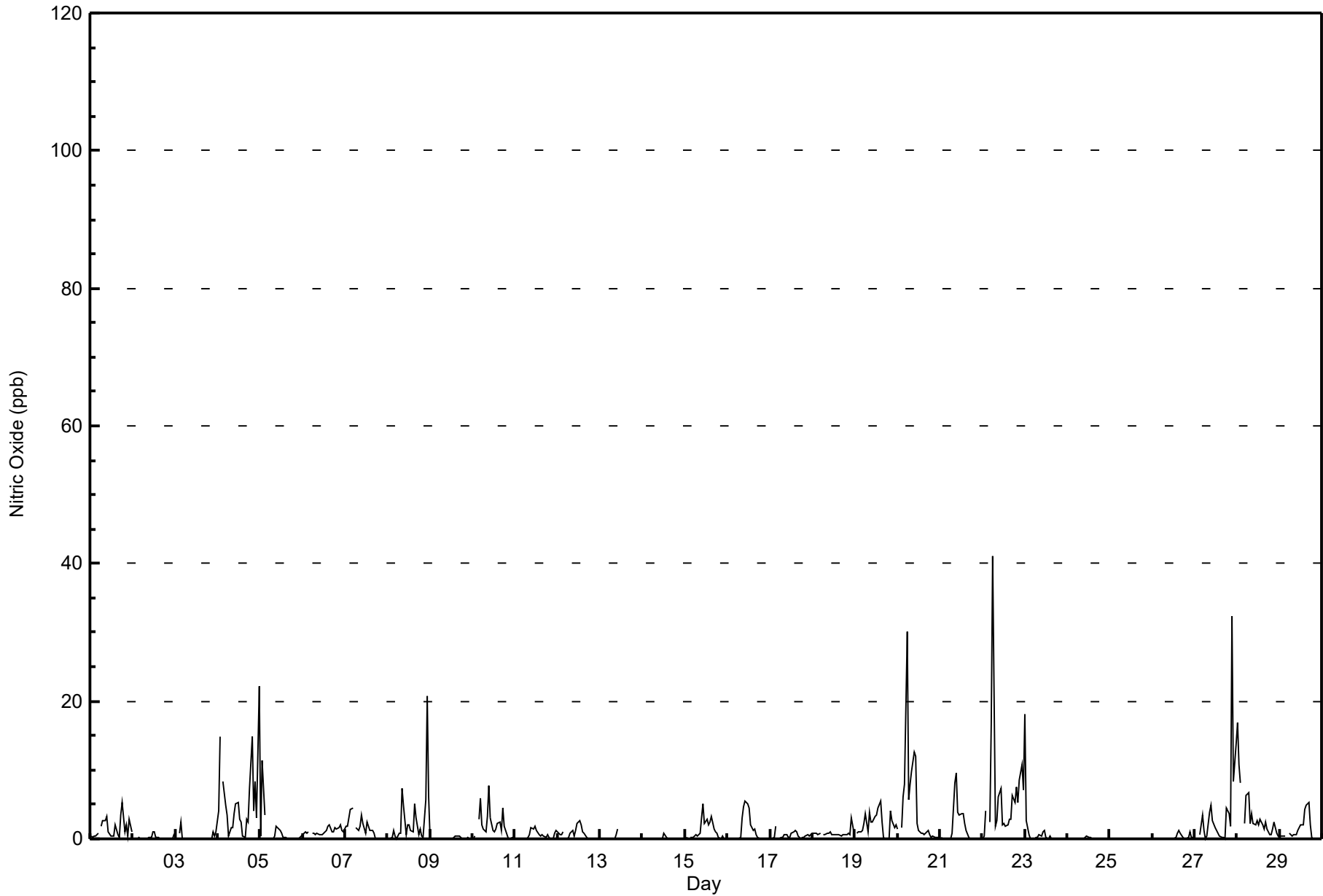
Nitric Oxide (NO) - ppb
Firebag - February 2024

Maximum Value: 41.0 ppb on Feb 22 07:00																					Maximum Daily Average: 6.4 ppb on Feb 22					Hours in Service: 696	
Minimum Value: 0.0 ppb on Feb 3 17:00																					Minimum Daily Average: 0.0 ppb on Feb 25					Hours of Data: 656	
Maximum Diurnal Average: 2.7 ppb at hour 6																					Minimum Diurnal Average: 0.8 ppb at hour 21					Hours of Missing Data: 40	
Monthly Average: 1.60 ppb																					Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.5 Q ₃ = 1.8 P ₉₀ = 4.0 P ₉₉ = 16.8					Hours of Calibration: 35	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.3	0.3	0.4	0.4	0.8	Z	1.9	2.6	2.6	3.2	1.0	0.4	0.3	0.4	2.0	0.6	0.2	3.4	5.2	1.0	2.0	0.5	2.9	1.0	1.4	5.2	
2-Feb	Z	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.9	1.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.2	1.1	
3-Feb	0.4	Z	0.9	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	PF	PF	PF	PF	PF	0.0	0.0	0.0	0.1	1.0	0.4	1.0	0.4	2.4		
4-Feb	4.1	14.8	Z	8.3	4.9	3.4	0.5	1.7	1.7	3.6	5.0	5.4	2.9	2.4	0.5	0.3	2.9	2.4	7.4	14.9	4.0	8.3	3.0	22.2	5.4	22.2	
5-Feb	0.3	11.4	3.4	Z	0.0	0.0	0.0	0.1	0.5	1.8	1.5	1.3	0.9	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.5	1.0	11.4	
6-Feb	0.5	1.0	0.9	0.9	Z	0.8	0.9	0.7	0.7	0.6	0.6	0.7	1.0	1.3	1.8	1.9	1.0	1.0	1.7	1.4	1.7	2.0	1.3	1.0	1.1	2.0	
7-Feb	1.8	1.9	3.1	4.3	4.4	Z	1.7	1.2	1.7	3.5	2.2	0.8	2.4	1.8	1.3	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.1	1.5	4.4		
8-Feb	Z	0.0	0.2	1.2	0.5	0.0	0.8	0.8	7.3	4.9	0.7	2.1	2.0	1.2	1.0	5.0	3.0	0.6	1.3	0.4	0.1	5.7	20.7	6.2	2.9	20.7	
9-Feb	0.1	Z	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.5	0.4	0.4	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.5	
10-Feb	0.0	0.4	Z	2.9	6.0	2.0	1.5	1.1	3.3	7.7	3.0	1.3	1.0	1.5	2.2	2.5	1.3	4.5	1.8	0.7	0.1	0.0	0.3	0.2	2.0	7.7	
11-Feb	0.0	0.0	0.0	Z	0.0	0.1	0.0	0.2	0.6	1.7	1.5	1.9	1.3	0.6	0.5	0.6	0.3	0.2	0.6	0.1	0.1	0.1	0.8	1.3	0.5	1.9	
12-Feb	1.0	0.6	0.6	1.0	Z	0.1	0.2	0.9	1.3	0.5	1.1	2.3	2.7	2.1	1.0	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	2.7	
13-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.7	1.3	C	C	C	C	C	C	0.1	0.0	0.0	0.0	0.0	0.0	0.0	--	1.3	
14-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	
15-Feb	0.0	0.2	Z	0.1	0.2	0.3	0.6	0.3	0.8	3.0	5.1	2.3	2.9	2.0	2.5	3.2	1.4	1.0	0.9	0.2	0.1	0.4	0.1	0.1	1.2	5.1	
16-Feb	0.0	0.1	0.1	Z	0.1	0.1	0.1	0.3	3.0	4.7	5.5	5.1	4.5	2.0	1.3	1.4	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.3	5.5	
17-Feb	0.0	0.0	0.2	1.9	Z	0.0	0.1	0.1	0.5	0.7	0.3	0.1	0.7	0.9	1.2	0.9	0.4	0.1	0.3	0.2	0.3	0.6	0.4	0.5	0.5	1.9	
18-Feb	0.8	0.7	0.8	0.7	0.7	Z	0.6	0.6	0.9	0.8	0.9	0.6	0.6	0.6	0.6	0.6	0.4	0.7	0.6	0.6	0.8	0.6	3.0	0.8	0.8	3.0	
19-Feb	Z	0.9	1.0	1.0	1.2	2.2	3.6	1.1	3.9	2.4	2.5	3.3	3.4	4.4	5.5	2.5	0.2	0.0	0.0	0.0	4.0	2.7	1.7	2.1	2.2	5.5	
20-Feb	1.4	Z	1.7	6.0	8.0	30.1	5.8	7.9	9.7	12.7	12.0	2.3	1.3	0.7	0.9	0.7	0.9	1.2	0.5	0.3	0.5	0.2	0.1	0.2	4.6	30.1	
21-Feb	0.1	0.3	Z	0.1	0.0	0.1	0.1	0.8	8.2	9.5	3.9	3.4	3.7	3.7	2.2	1.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.6	9.5	
22-Feb	0.0	0.4	4.0	Z	2.5	16.7	41.0	1.8	2.6	6.2	7.4	2.0	2.3	1.8	1.9	2.8	2.8	6.2	5.4	7.4	5.4	8.5	10.8	7.2	6.4	41.0	
23-Feb	18.0	2.6	0.6	0.0	Z	0.0	0.2	0.3	0.5	0.5	1.0	1.2	0.2	0.1	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	18.0	
24-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.3	0.4	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	
25-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	1.2	0.7	0.2	0.0	0.0	0.1	1.1	0.2	0.1	0.2	1.2	
27-Feb	0.0	0.0	Z	0.7	3.4	1.1	0.0	0.5	3.8	5.0	2.6	1.7	1.2	0.9	0.5	0.2	0.2	0.1	4.4	3.7	1.8	32.3	8.4	13.8	3.7	32.3	
28-Feb	16.9	10.8	8.2	Z	2.3	6.3	6.7	2.2	3.6	2.2	2.1	2.7	1.9	2.7	2.0	1.4	2.4	1.5	0.7	0.6	1.3	2.4	0.8	0.4	3.6	16.9	
29-Feb	0.5	0.4	0.4	0.4	Z	0.8	0.6	0.5	0.5	0.6	1.3	1.5	2.0	2.0	4.3	5.0	5.4	2.0	0.2	0.0	0.0	0.0	0.0	0.0	1.2	5.4	
1.9 1.9 1.1 1.3 1.5 2.7 2.3 0.9 2.0 2.6 2.2 1.6 1.5 1.3 1.3 1.3 0.9 0.9 1.1 1.1 0.8 2.3 1.9 2.0																								Diurnal Average			
18.0 14.8 8.2 8.3 8.0 30.1 41.0 7.9 9.7 12.7 12.0 5.4 4.5 4.4 5.5 5.0 5.4 6.2 7.4 14.9 5.4 32.3 20.7 22.2																								Diurnal Maximum			
Z - zerospan			C - Calibration			PF - Power Failure																					



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Firebag - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Firebag - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	651	99.24	99.24
21 - 40	4	0.61	99.85
41 - 80	1	0.15	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 656

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Firebag - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	71	44	26	9	5	35	46	62	54	36	55	58	36	22	20	61	640
21 - 40	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	4
11 - 80	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	72	44	26	9	5	36	46	63	56	36	55	58	36	22	20	61	645

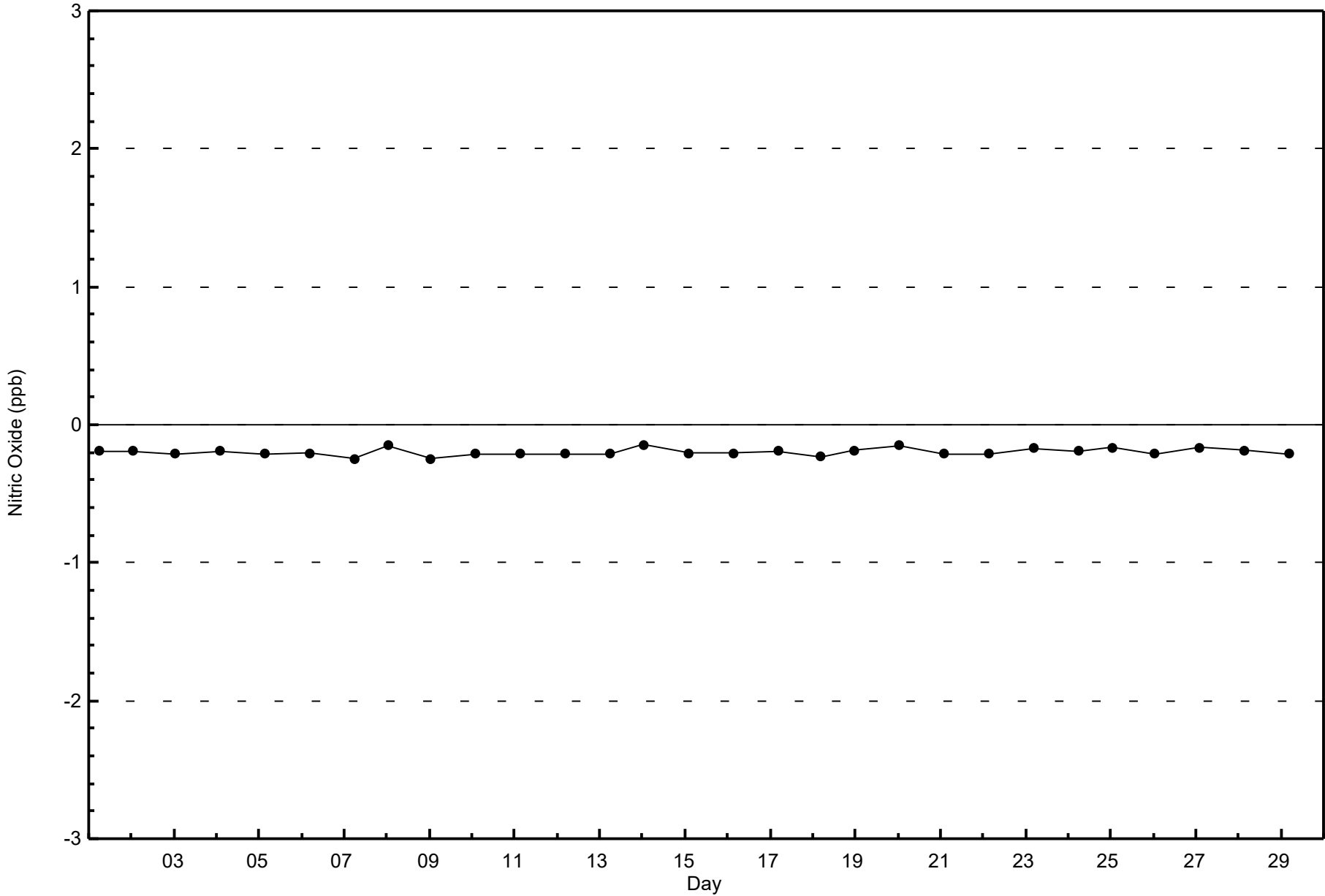
Total Number of Valid Hours: 645

Total Number of Hours: 696



Wood Buffalo Environmental Association
Zero Responses

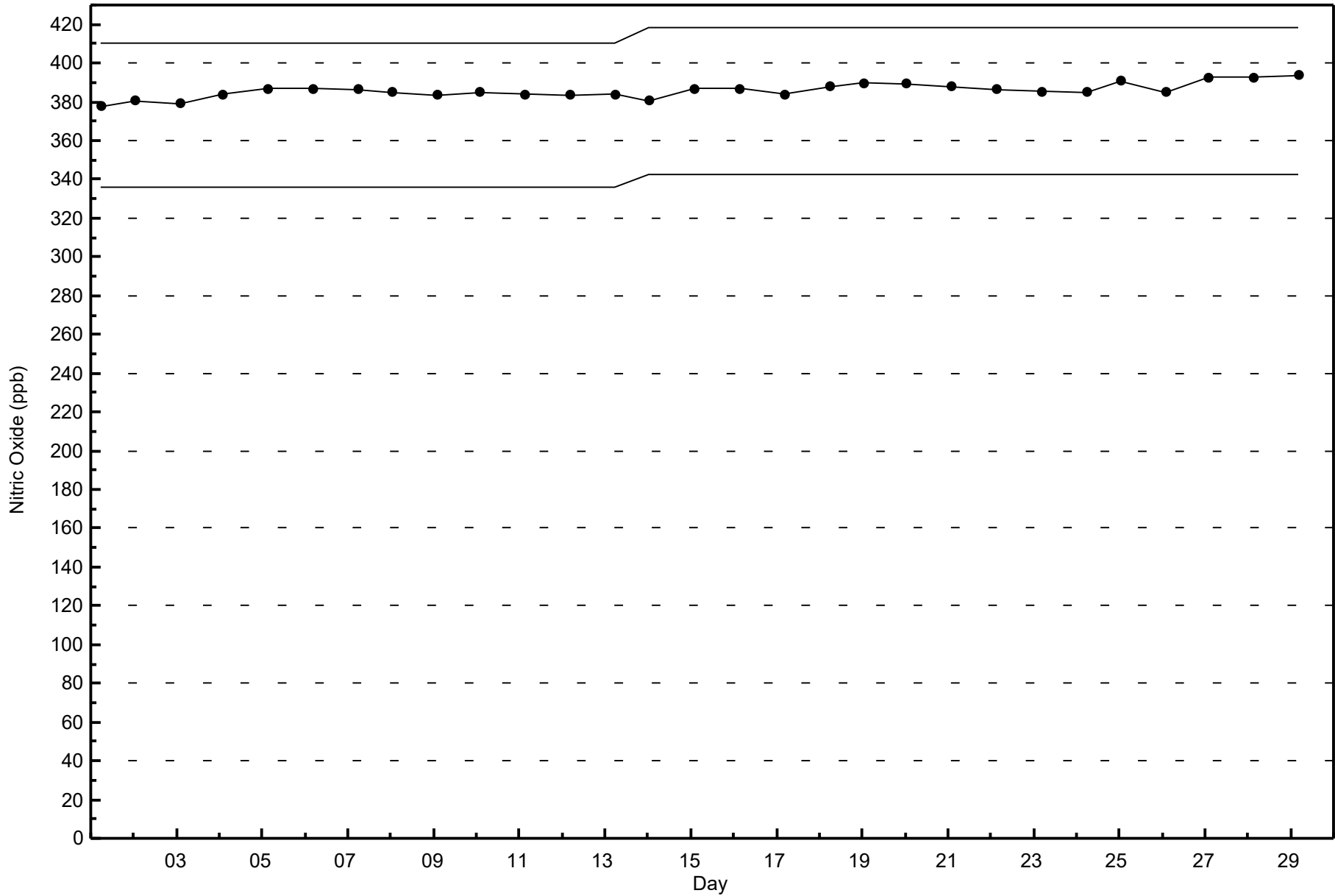
Nitric Oxide (NO) - ppb
Firebag - February 2024





Wood Buffalo Environmental Association
Span Responses

Nitric Oxide (NO) - ppb
Firebag - February 2024





Wood Buffalo Environmental Association
Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb
Firebag - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 696
Maximum Value: 36.1 ppb on Feb 27 22:00	Maximum Daily Average: 14.8 ppb on Feb 22
Minimum Value: 0.1 ppb on Feb 5 21:00	Hours of Data: 656
Maximum Diurnal Average: 8.7 ppb at hour 6	Hours of Missing Data: 40
Monthly Average: 5.66 ppb	Hours of Calibration: 35
Minimum Daily Average: 0.2 ppb on Feb 25	Percent Operational Time: 99.3
Minimum Diurnal Average: 2.6 ppb at hour 14	
Percentiles: P ₁ = 0.1 P ₁₀ = 0.2 Q ₁ = 1.4 Median = 3.8 Q ₃ = 7.5 P ₉₀ = 13.3 P ₉₉ = 26.4	

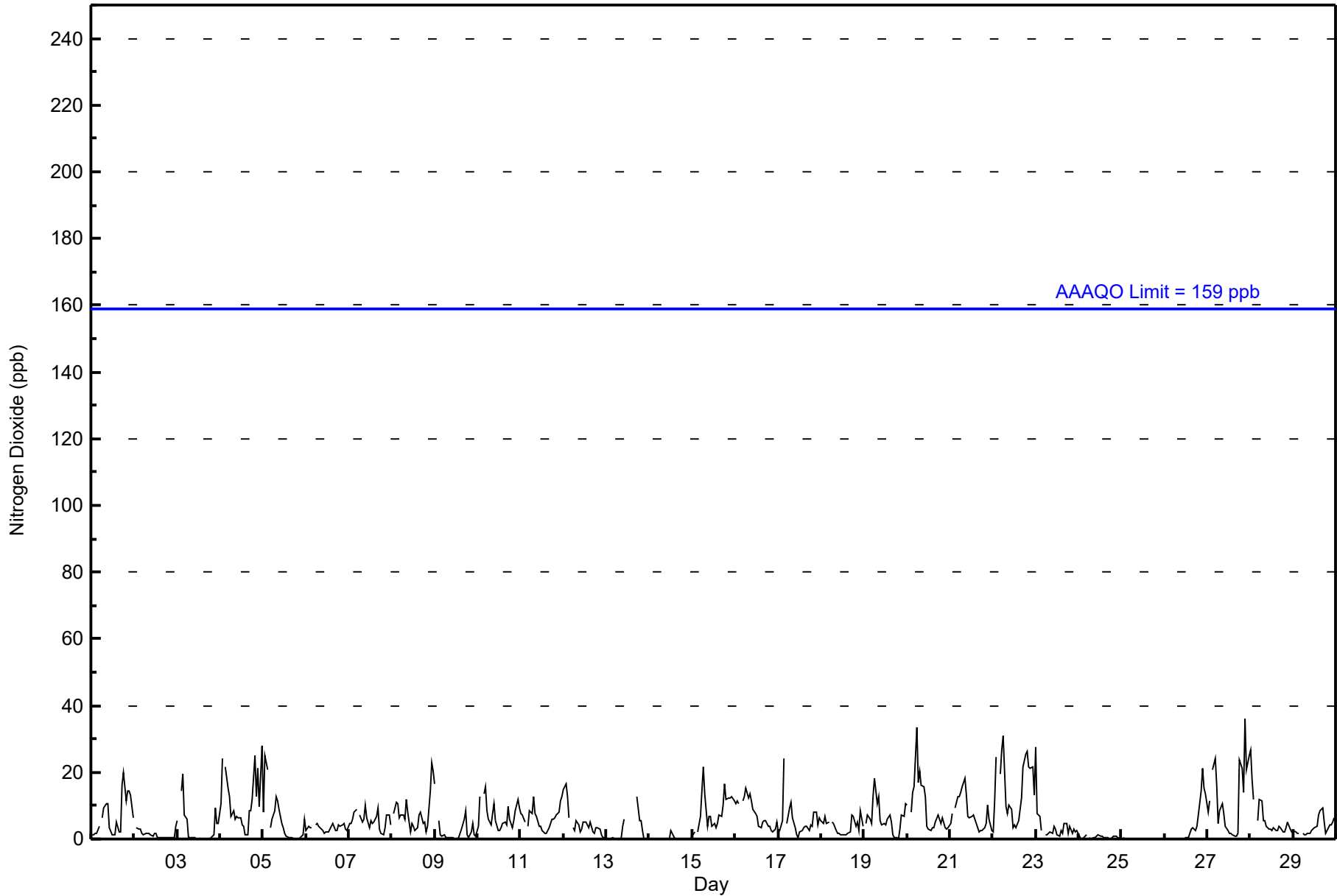
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	1.2	1.3	1.7	1.9	3.7	Z	6.4	9.3	10.4	10.4	3.5	1.4	1.3	1.4	4.9	2.2	2.3	15.9	20.0	11.5	14.4	14.4	13.1	6.5	6.9	20.0	
2-Feb	Z	3.6	3.0	3.1	1.7	1.4	1.6	1.6	1.6	1.3	1.0	1.6	1.8	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.4	3.7	1.4	3.7	
3-Feb	5.6	Z	14.3	19.3	7.3	6.0	0.4	0.4	0.3	0.3	0.3	PF	PF	PF	PF	PF	0.2	0.2	0.2	0.4	1.4	9.5	4.7	4.6	4.2	19.3	
4-Feb	10.6	24.3	Z	21.4	15.2	12.8	6.8	8.5	5.9	6.7	6.5	6.4	4.2	3.7	1.4	1.2	8.6	8.5	12.0	25.2	12.6	21.2	9.9	28.1	11.4	28.1	
5-Feb	8.0	24.9	20.6	Z	3.5	5.9	8.3	12.5	11.4	8.9	4.8	3.3	1.8	0.9	0.6	0.4	0.3	0.2	0.2	0.2	0.1	0.8	1.3	6.1	5.4	24.9	
6-Feb	2.7	3.9	3.4	3.3	Z	4.1	4.7	4.0	3.6	2.4	1.9	2.1	2.2	2.8	3.7	4.8	2.6	2.7	4.1	3.8	4.1	4.5	3.0	2.5	3.3	4.8	
7-Feb	4.7	4.5	6.1	8.1	9.1	Z	7.2	5.2	5.9	10.1	6.4	3.4	5.3	4.8	4.9	6.7	9.4	2.8	1.6	1.3	3.3	7.1	7.1	4.1	5.6	10.1	
8-Feb	Z	7.6	10.9	10.6	6.4	7.3	7.2	6.1	12.0	7.9	2.0	4.7	3.8	2.7	3.6	7.3	8.2	4.6	4.9	2.2	3.7	14.2	23.0	20.3	7.9	23.0	
9-Feb	16.6	Z	5.5	1.3	0.9	1.4	0.6	0.4	0.3	0.3	0.3	0.2	0.2	0.6	1.9	2.8	5.8	8.5	1.4	0.4	2.2	4.6	1.2	0.9	2.5	16.6	
10-Feb	3.7	12.5	Z	13.6	15.5	8.4	6.0	4.1	7.8	10.8	5.3	2.7	2.4	3.5	4.5	5.0	4.1	9.9	6.1	3.2	5.6	8.5	11.7	9.3	7.1	15.5	
11-Feb	7.7	7.0	5.2	Z	3.9	8.6	7.5	12.6	7.7	6.8	4.0	3.9	2.6	1.7	1.6	2.4	3.4	5.8	6.0	6.5	7.3	8.1	11.4	12.7	6.3	12.7	
12-Feb	14.9	16.5	12.8	6.4	Z	3.3	2.6	5.6	4.3	2.0	2.8	4.9	5.1	4.3	3.4	5.0	2.2	1.8	3.6	3.2	2.8	1.3	0.3	0.3	4.8	16.5	
13-Feb	0.2	0.2	0.2	0.3	0.2	Z	0.2	0.2	0.5	3.7	5.9	C	C	C	C	C	C	12.5	5.5	5.3	2.6	0.2	0.1	0.1	--	12.5	
14-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	2.5	1.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	2.5
15-Feb	0.7	2.3	Z	2.2	6.8	14.2	21.6	13.6	3.8	6.8	6.8	3.7	4.5	3.3	4.7	7.2	6.9	10.2	16.6	12.0	12.1	12.1	12.7	11.4	8.5	21.6	
16-Feb	10.7	11.4	10.4	Z	11.4	12.7	15.2	12.3	13.6	11.3	9.0	7.7	6.8	3.9	3.4	5.0	5.7	5.4	3.9	3.7	2.7	2.1	2.8	5.1	7.7	15.2	
17-Feb	2.0	2.6	5.4	24.3	Z	4.8	9.4	11.1	6.3	3.6	1.1	0.5	2.0	2.5	3.5	4.0	3.7	2.5	4.3	4.0	8.1	8.2	4.4	6.5	5.4	24.3	
18-Feb	5.6	4.5	6.8	4.8	4.9	Z	5.1	4.6	2.7	1.7	1.7	1.2	1.3	1.2	1.4	1.8	2.2	7.4	6.8	3.7	5.1	2.7	8.3	3.9	3.9	8.3	
19-Feb	Z	4.5	7.0	5.9	4.7	12.7	18.4	10.8	12.5	5.4	4.1	4.5	4.3	5.8	7.4	5.0	1.2	0.3	0.3	0.2	3.1	7.1	6.7	10.7	6.2	18.4	
20-Feb	10.2	Z	8.2	13.9	15.5	33.6	16.8	20.5	15.9	15.8	12.7	3.7	3.1	2.7	3.4	3.4	5.2	7.3	6.0	4.5	6.5	3.2	3.1	3.2	9.5	33.6	
21-Feb	4.6	7.8	Z	9.3	12.6	12.6	14.1	15.7	18.3	13.1	6.7	6.4	6.6	7.4	5.9	4.8	2.2	2.4	2.7	3.5	4.7	10.2	5.8	2.4	7.8	18.3	
22-Feb	2.2	11.5	24.5	Z	19.4	26.6	30.8	9.6	7.5	10.0	8.9	3.6	4.4	3.6	5.6	9.0	12.4	21.6	25.6	26.3	21.6	21.0	21.5	13.2	14.8	30.8	
23-Feb	27.7	7.7	6.7	2.7	Z	1.2	1.2	1.8	2.1	1.9	4.0	3.1	1.3	0.8	2.6	1.7	4.5	4.5	1.8	3.8	1.6	2.9	2.1	2.7	3.9	27.7	
24-Feb	0.9	0.2	0.2	0.3	1.2	Z	0.4	0.2	0.3	0.6	0.9	1.1	0.7	0.8	0.5	0.5	0.5	0.2	0.2	0.7	0.8	1.0	0.3	0.2	0.6	1.2	
25-Feb	Z	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	
26-Feb	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.5	1.5	2.9	3.4	2.5	3.9	7.0	14.2	21.0	15.1	13.4	3.8	21.0	
27-Feb	7.9	11.5	Z	20.9	24.0	16.0	4.8	8.4	10.5	7.7	3.7	2.4	1.8	1.5	1.1	0.7	0.9	1.8	23.8	21.0	14.1	36.1	20.6	24.8	11.6	36.1	
28-Feb	26.8	17.6	11.8	Z	5.5	11.8	11.3	5.3	5.7	3.7	3.0	3.0	2.6	3.3	2.6	2.5	3.9	3.6	2.3	2.1	3.2	5.0	2.9	2.0	6.2	26.8	
29-Feb	2.6	2.2	1.8	1.8	Z	1.8	1.4	1.4	1.9	1.8	2.5	3.1	3.6	3.8	7.3	8.5	9.5	5.2	1.5	2.5	4.3	4.4	5.1	6.4	3.7	9.5	
7.4 7.6 7.0 7.3 7.2 8.7 7.3 6.4 6.0 5.4 3.8 2.9 2.8 2.6 3.1 3.5 3.9 5.1 5.7 5.5 5.6 8.0 6.9 7.1																								Diurnal Average			
27.7 24.9 24.5 24.3 24.0 33.6 30.8 20.5 18.3 15.8 12.7 7.7 6.8 7.4 7.4 9.0 12.4 21.6 25.6 26.3 21.6 36.1 23.0 28.1																								Diurnal Maximum			

Z - zerospan C - Calibration PF - Power Failure
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Firebag - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Dioxide (NO₂) - ppb
Firebag - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	625	95.27	95.27
21 - 40	31	4.73	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 656

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Firebag - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	71	44	25	9	5	34	44	57	44	36	53	58	34	21	20	61	616
21 - 40	1	0	1	0	0	2	2	6	12	0	2	0	2	1	0	0	29
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	72	44	26	9	5	36	46	63	56	36	55	58	36	22	20	61	645

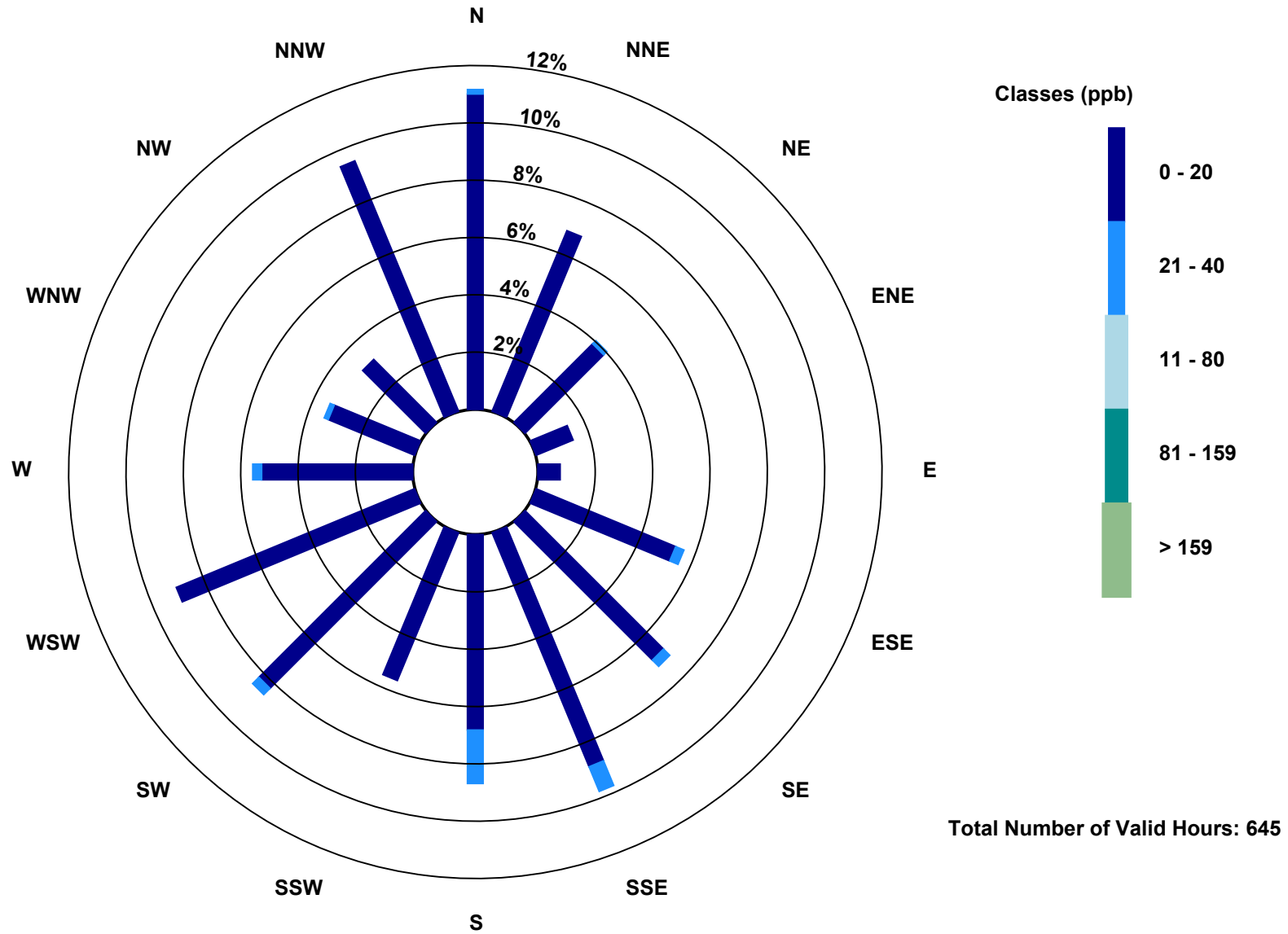
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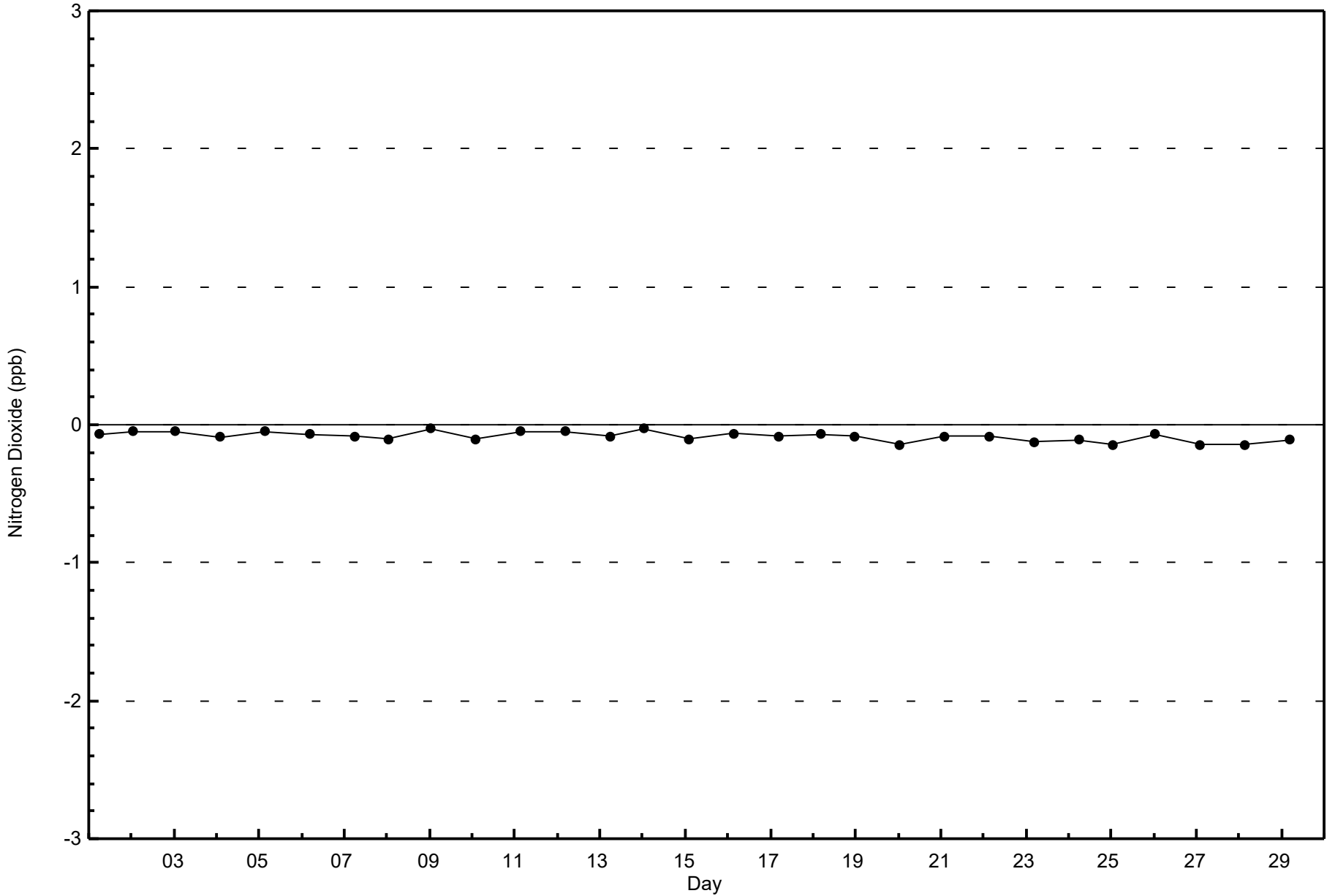
Total Number of Hours: 696

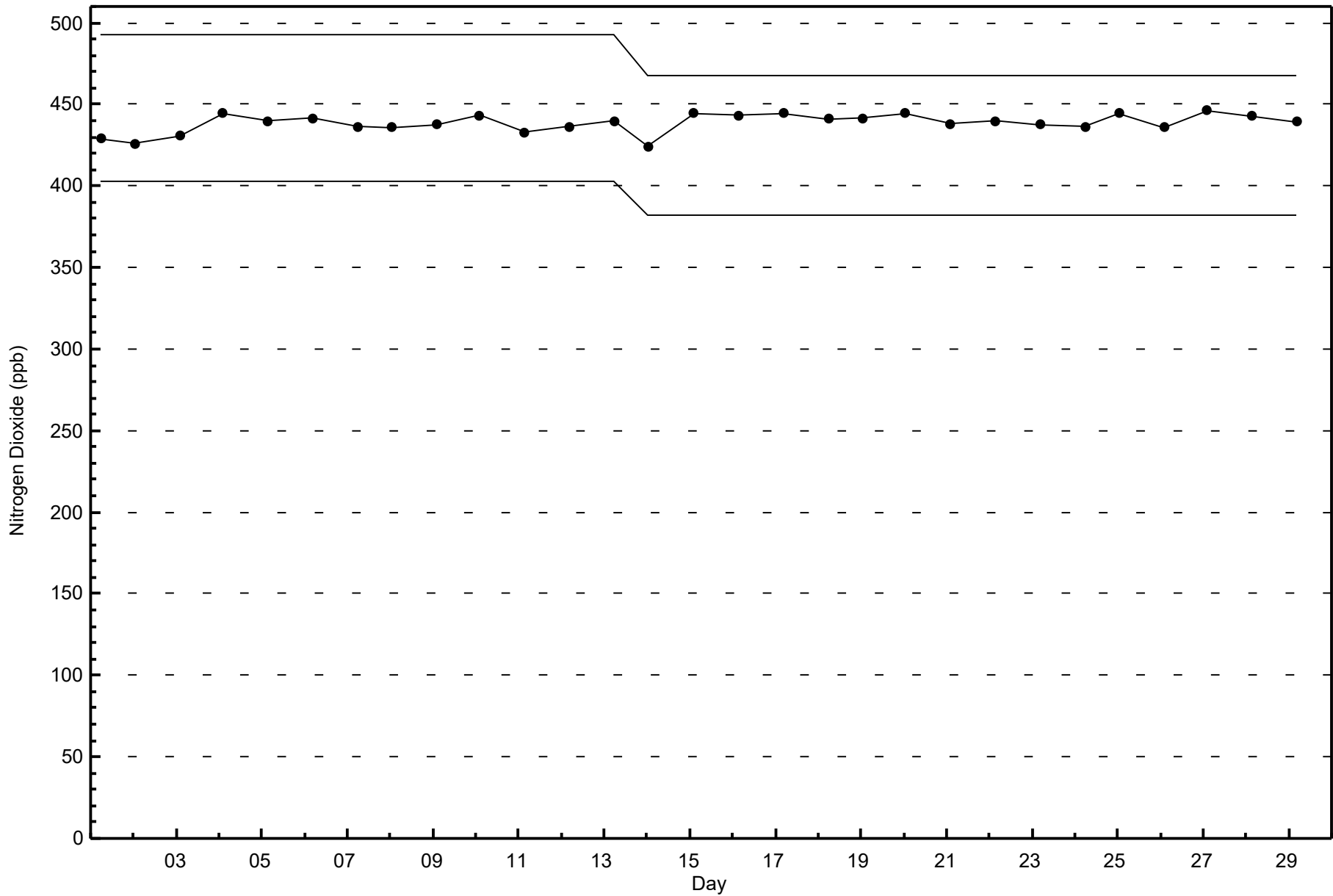


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Firebag









Wood Buffalo Environmental Association
Summary of Hour Averages

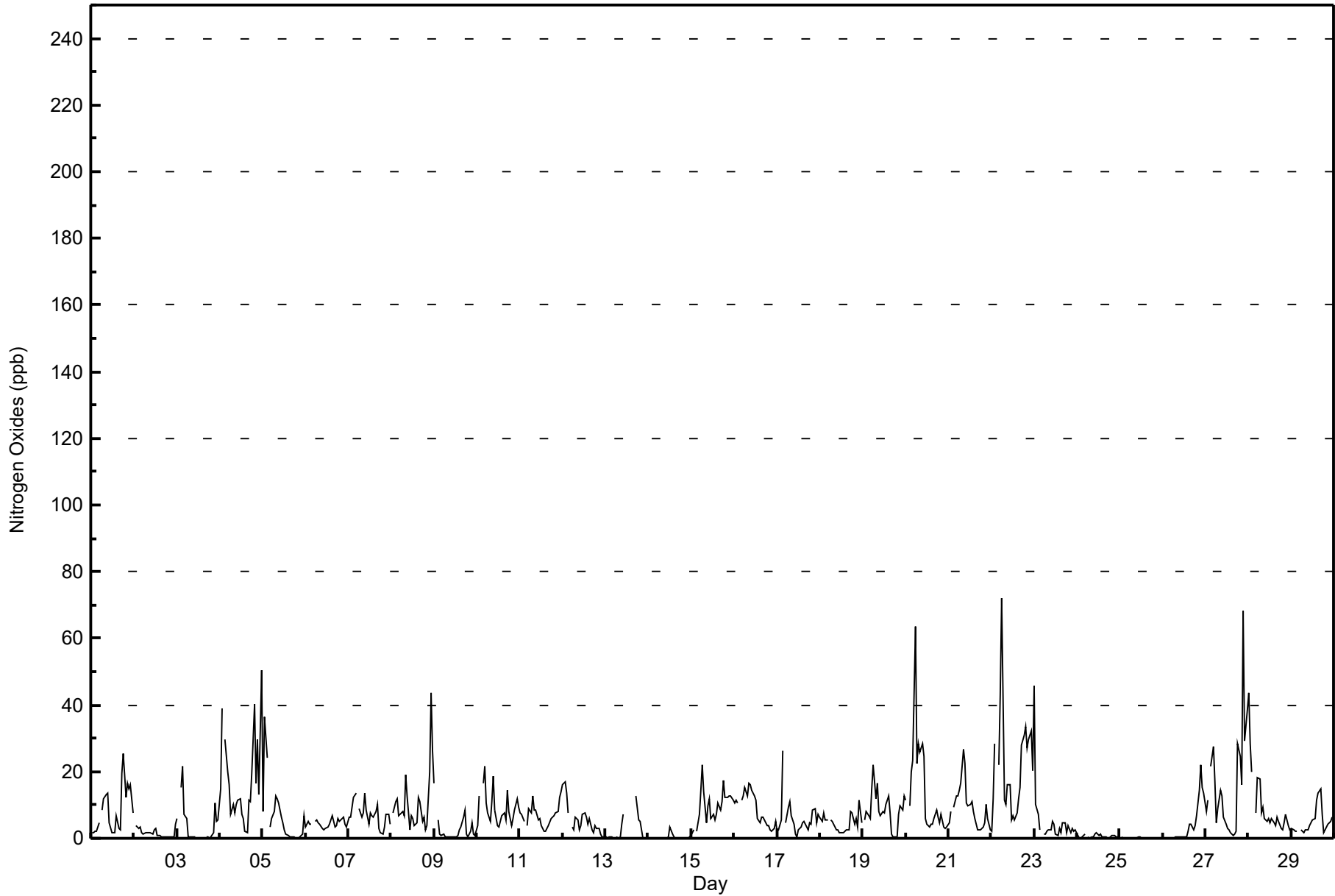
Nitrogen Oxides (NO_x) - ppb
Firebag - February 2024

Maximum Value: 71.8 ppb on Feb 22 07:00																					Maximum Daily Average: 21.2 ppb on Feb 22					Hours in Service: 696																							
Minimum Value: 0.1 ppb on Feb 14 03:00																					Minimum Daily Average: 0.2 ppb on Feb 25					Hours of Data: 656																							
Maximum Diurnal Average: 11.3 ppb at hour 6																					Minimum Diurnal Average: 3.8 ppb at hour 14					Hours of Missing Data: 40																							
Monthly Average: 7.26 ppb																					Percentiles: P ₁ = 0.1 P ₁₀ = 0.2 Q ₁ = 1.6 Median = 4.7 Q ₃ = 9.6 P ₉₀ = 16.3 P ₉₉ = 43.5					Hours of Calibration: 35																							
																										Percent Operational Time: 99.3																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	1.5	1.6	2.1	2.3	4.5	Z	8.3	11.9	13.0	13.6	4.5	1.8	1.6	1.8	6.9	2.8	2.5	19.3	25.2	12.5	16.4	14.9	16.0	7.5	8.4	25.2																							
2-Feb	Z	3.6	3.1	3.2	1.7	1.4	1.6	1.6	1.6	1.5	1.2	2.5	2.9	0.7	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.4	4.3	1.5	4.3																							
3-Feb	6.0	Z	15.2	21.7	7.3	6.0	0.4	0.4	0.3	0.3	0.3	PF	PF	PF	PF	PF	0.2	0.2	0.2	0.4	1.5	10.5	5.1	5.6	4.5	21.7																							
4-Feb	14.7	39.1	Z	29.7	20.1	16.2	7.3	10.2	7.6	10.3	11.5	11.8	7.1	6.1	1.9	1.5	11.5	10.9	19.4	40.1	16.6	29.5	12.9	50.3	16.8	50.3																							
5-Feb	8.3	36.3	24.0	Z	3.5	5.9	8.3	12.6	11.9	10.7	6.3	4.6	2.7	1.2	0.7	0.4	0.3	0.2	0.2	0.2	0.1	0.9	1.4	6.6	6.4	36.3																							
6-Feb	3.2	4.9	4.3	4.2	Z	4.9	5.6	4.7	4.3	3.0	2.5	2.8	3.2	4.1	5.5	6.7	3.6	3.7	5.8	5.2	5.8	6.5	4.3	3.5	4.4	6.7																							
7-Feb	6.5	6.4	9.2	12.4	13.5	Z	8.9	6.4	7.6	13.6	8.6	4.2	7.7	6.6	6.2	7.9	10.2	2.8	1.6	1.3	3.3	7.1	7.1	4.2	7.1	13.6																							
8-Feb	Z	7.6	11.1	11.8	6.9	7.3	8.0	6.9	19.3	12.8	2.7	6.8	5.8	3.9	4.6	12.3	11.2	5.2	6.2	2.6	3.8	19.9	43.7	26.5	10.7	43.7																							
9-Feb	16.7	Z	5.6	1.4	1.0	1.4	0.6	0.4	0.4	0.3	0.3	0.3	0.3	0.7	2.4	3.2	6.2	8.6	1.4	0.4	2.2	4.7	1.2	0.9	2.6	16.7																							
10-Feb	3.7	12.9	Z	16.5	21.5	10.4	7.5	5.2	11.1	18.5	8.3	4.0	3.4	5.0	6.7	7.5	5.4	14.4	7.9	3.9	5.7	8.5	12.0	9.5	9.1	21.5																							
11-Feb	7.7	7.0	5.2	Z	3.9	8.7	7.5	12.8	8.3	8.5	5.5	5.8	3.9	2.3	2.1	3.0	3.7	6.0	6.6	6.6	7.4	8.2	12.2	14.0	6.8	14.0																							
12-Feb	15.9	17.1	13.4	7.4	Z	3.4	2.8	6.5	5.6	2.5	3.9	7.2	7.8	6.4	4.4	5.8	2.4	1.8	3.6	3.2	2.8	1.3	0.3	0.3	5.5	17.1																							
13-Feb	0.2	0.2	0.2	0.3	0.2	Z	0.2	0.2	0.6	4.4	7.2	C	C	C	C	C	C	12.6	5.5	5.3	2.6	0.2	0.1	0.1	--	12.6																							
14-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	3.3	1.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	3.3																						
15-Feb	0.7	2.5	Z	2.3	7.0	14.5	22.2	13.9	4.6	9.8	11.9	6.0	7.4	5.3	7.2	10.4	8.3	11.2	17.5	12.2	12.2	12.5	12.8	11.5	9.7	22.2																							
16-Feb	10.7	11.5	10.5	Z	11.5	12.8	15.3	12.6	16.6	16.0	14.5	12.8	11.3	5.9	4.7	6.4	6.3	5.5	3.9	3.7	2.7	2.1	2.8	5.1	8.9	16.6																							
17-Feb	2.0	2.6	5.6	26.2	Z	4.8	9.5	11.2	6.8	4.3	1.4	0.6	2.7	3.4	4.7	4.9	4.1	2.6	4.6	4.2	8.4	8.8	4.8	7.0	5.9	26.2																							
18-Feb	6.4	5.2	7.6	5.5	5.6	Z	5.7	5.2	3.6	2.5	2.6	1.8	1.9	1.8	2.0	2.4	2.6	8.1	7.4	4.3	5.9	3.3	11.3	4.7	4.7	11.3																							
19-Feb	Z	5.4	8.0	6.9	5.9	14.9	22.0	11.9	16.4	7.8	6.6	7.8	7.7	10.2	12.9	7.5	1.4	0.3	0.3	0.2	7.1	9.8	8.4	12.8	8.4	22.0																							
20-Feb	11.6	Z	9.9	19.9	23.5	63.7	22.6	28.4	25.6	28.5	24.7	6.0	4.4	3.4	4.3	4.1	6.1	8.5	6.5	4.8	7.0	3.4	3.2	3.4	14.1	63.7																							
21-Feb	4.7	8.1	Z	9.4	12.6	12.7	14.2	16.5	26.5	22.6	10.6	9.8	10.3	11.1	8.1	6.0	2.4	2.5	2.7	3.5	4.7	10.2	5.8	2.4	9.4	26.5																							
22-Feb	2.2	11.9	28.5	Z	21.9	43.3	71.8	11.4	10.1	16.2	16.3	5.6	6.7	5.4	7.5	11.8	15.2	27.8	31.0	33.7	27.0	29.5	32.3	20.4	21.2	71.8																							
23-Feb	45.7	10.3	7.3	2.7	Z	1.2	1.4	2.1	2.6	2.4	5.0	4.3	1.5	0.9	3.0	1.8	4.6	4.5	1.8	3.8	1.6	2.9	2.1	2.7	5.1	45.7																							
24-Feb	0.9	0.2	0.2	0.3	1.2	Z	0.4	0.2	0.3	0.6	1.2	1.5	1.0	1.1	0.6	0.6	0.5	0.2	0.2	0.7	0.8	1.0	0.3	0.2	0.6	1.5																							
25-Feb	Z	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3																							
26-Feb	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.6	2.3	4.1	4.1	2.7	3.9	7.0	14.3	22.1	15.3	13.5	4.0	22.1																							
27-Feb	7.9	11.5	Z	21.6	27.4	17.1	4.8	8.9	14.3	12.7	6.3	4.1	3.0	2.4	1.6	0.9	1.1	1.9	28.2	24.7	15.9	68.4	29.0	38.6	15.3	68.4																							
28-Feb	43.7	28.4	20.0	Z	7.8	18.1	18.0	7.5	9.3	5.9	5.1	5.7	4.5	6.0	4.6	3.9	6.3	5.1	3.0	2.7	4.5	7.4	3.7	2.4	9.7	43.7																							
29-Feb	3.1	2.6	2.2	Z	2.6	2.0	1.9	2.4	2.4	3.8	4.6	5.6	5.8	11.6	13.5	14.9	7.2	1.7	2.5	4.3	4.4	5.1	6.4	4.9	14.9	4.9																							
																								9.3	9.5	8.1	8.7	8.7	11.3	9.6	7.3	8.0	8.0	6.0	4.6	4.4	3.8	4.3	4.8	4.9	6.0	6.8	6.6	6.4	10.3	8.8	9.1	Diurnal Average	
																								45.7	39.1	28.5	29.7	27.4	63.7	71.8	28.4	26.5	28.5	24.7	12.8	11.3	11.1	12.9	13.5	15.2	27.8	31.0	40.1	27.0	68.4	43.7	50.3	Diurnal Maximum	
Z - zerspan			C - Calibration			PF - Power Failure																																											



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Firebag - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Firebag - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	611	93.14	93.14
21 - 40	37	5.64	98.78
41 - 80	8	1.22	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 656

Total Number of Hours: 696



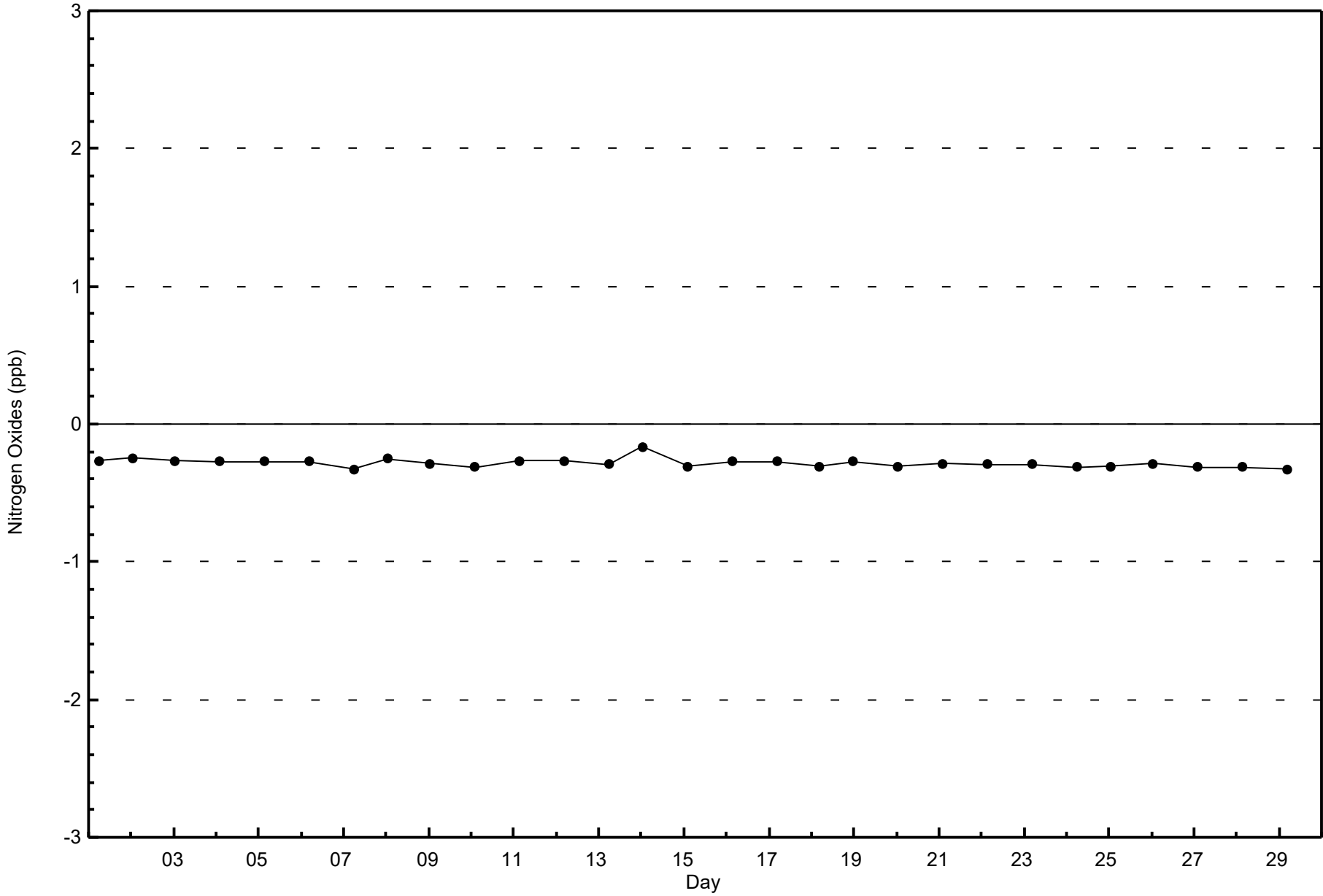
**Wood Buffalo Environmental Association
Frequency Distribution**

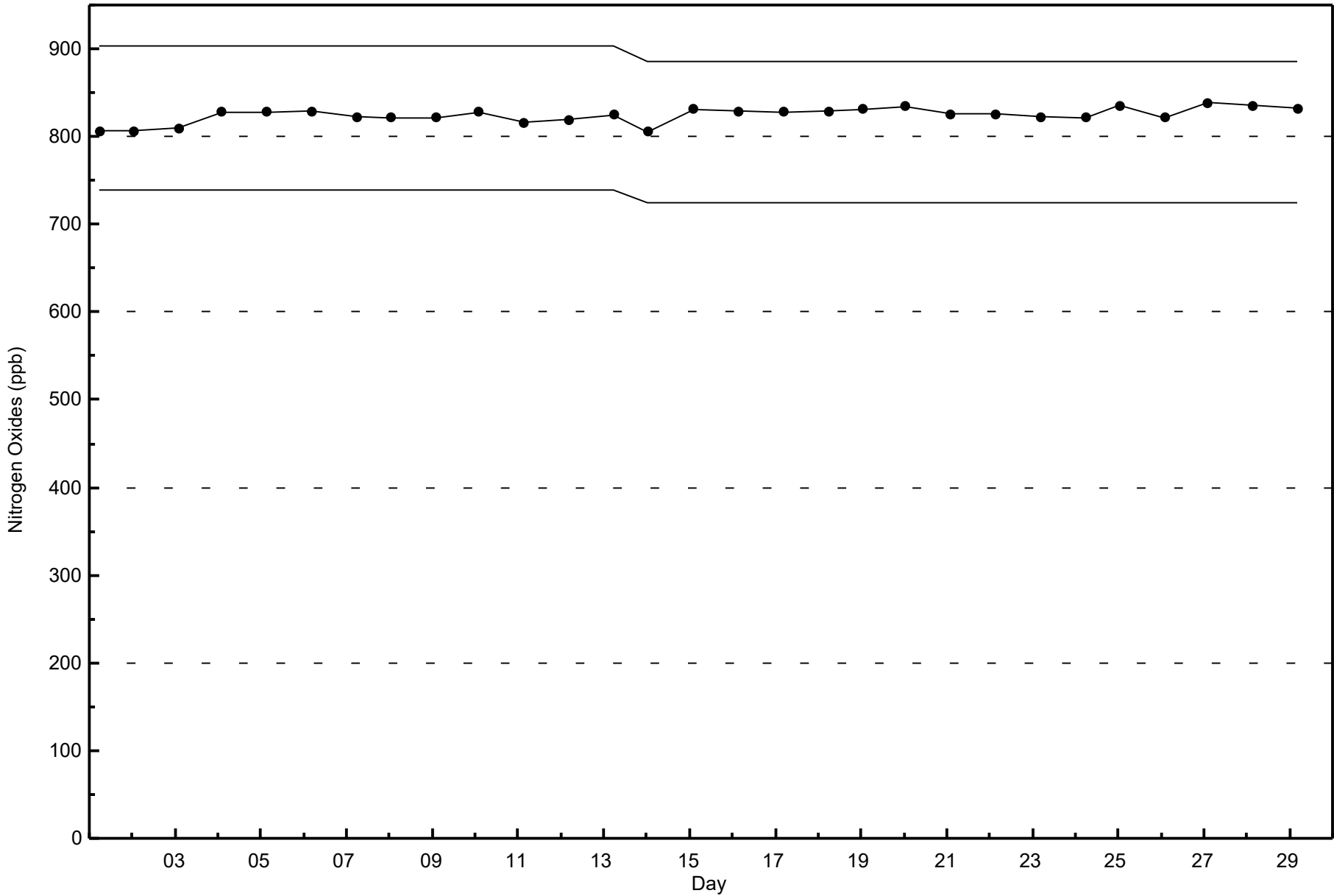
**Nitrogen Oxides (NO_x) - ppb
Firebag - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	70	44	25	9	5	34	42	54	39	36	53	56	34	21	20	60	602
21 - 40	1	0	0	0	0	1	4	8	13	0	2	2	2	1	0	1	35
11 - 80	1	0	1	0	0	1	0	1	4	0	0	0	0	0	0	0	8
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	72	44	26	9	5	36	46	63	56	36	55	58	36	22	20	61	645

Total Number of Valid Hours: 645

Total Number of Hours: 696







Wood Buffalo Environmental Association
Summary of Hour Averages

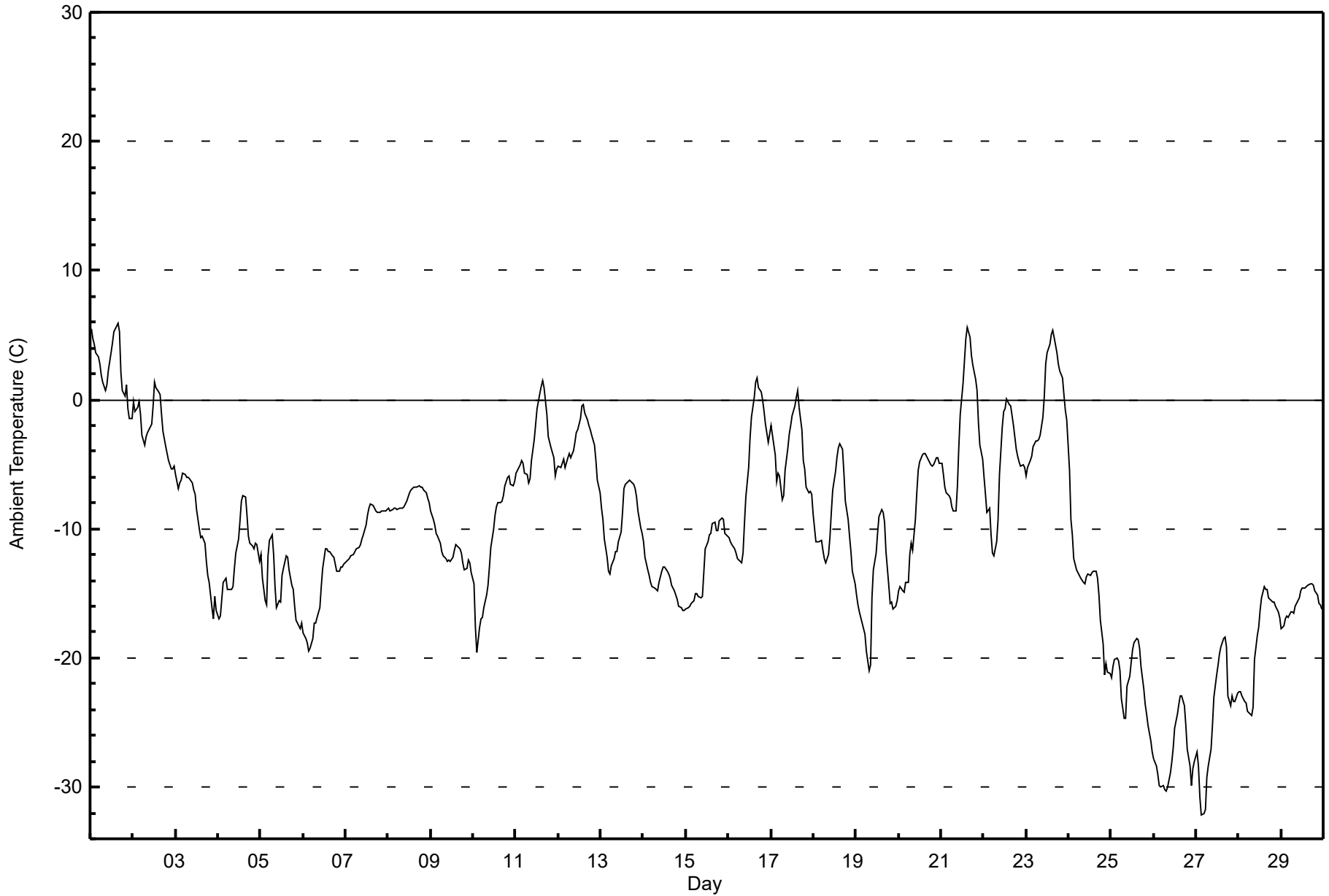
Ambient Temperature (AT) - C
Firebag - February 2024

Maximum Value: 5.9 C on Feb 1 16:00		Maximum Daily Average: 2.6 C on Feb 1		Hours in Service: 696																						
Minimum Value: -32.2 C on Feb 27 04:00		Minimum Daily Average: -27.5 C on Feb 26		Hours of Data: 696																						
Maximum Diurnal Average: -7.1 C at hour 16		Minimum Diurnal Average: -13.0 C at hour 8		Hours of Missing Data: 0																						
Monthly Average: -10.60 C		Percentiles: P ₁ = -29.9 P ₁₀ = -20.6 Q ₁ = -15.2 Median = -10.8 Q ₃ = -5.2 P ₉₀ = -0.7 P ₉₉ = 5.1		Hours of Calibration: 0																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	5.5	4.7	4.3	3.6	3.4	2.8	1.9	1.3	0.7	1.1	2.2	3.6	4.3	5.2	5.4	5.9	5.2	2.1	0.7	0.3	1.2	-0.7	-1.4	-1.5	2.6	5.9
2-Feb	-0.2	-0.9	-0.6	-0.1	-1.1	-2.8	-3.5	-2.9	-2.6	-2.4	-1.9	-0.4	1.4	0.9	0.6	0.4	-1.2	-2.4	-3.6	-4.1	-4.7	-5.4	-5.4	-5.2	-2.0	1.4
3-Feb	-5.8	-6.8	-6.5	-6.2	-5.7	-5.8	-6.1	-6.0	-6.1	-6.5	-6.9	-7.3	-8.6	-10.1	-10.6	-10.6	-11.1	-12.5	-13.6	-14.2	-16.1	-16.9	-15.3	-16.3	-9.7	-5.7
4-Feb	-17.0	-16.7	-15.5	-14.1	-13.8	-14.7	-14.6	-14.7	-14.5	-13.1	-11.8	-10.8	-9.4	-7.9	-7.4	-7.6	-8.9	-10.6	-11.1	-11.3	-11.5	-11.1	-11.2	-12.5	-12.2	-7.4
5-Feb	-12.0	-13.8	-15.6	-15.9	-12.0	-10.8	-10.5	-12.0	-14.5	-16.2	-15.5	-15.7	-13.7	-13.1	-12.1	-12.2	-13.2	-14.4	-14.7	-16.0	-17.1	-17.5	-17.7	-17.3	-14.3	-10.5
6-Feb	-18.0	-18.5	-18.8	-19.4	-19.3	-18.5	-17.3	-17.2	-16.9	-16.1	-14.5	-13.1	-11.5	-11.6	-11.7	-12.0	-12.2	-12.7	-13.3	-13.3	-13.0	-12.9	-12.8	-14.8	-11.5	-11.5
7-Feb	-12.5	-12.5	-12.4	-12.1	-12.0	-11.8	-11.5	-11.4	-11.3	-10.8	-10.5	-9.7	-9.0	-8.4	-8.0	-8.2	-8.4	-8.6	-8.7	-8.8	-8.7	-8.6	-8.6	-8.5	-10.0	-8.0
8-Feb	-8.4	-8.6	-8.5	-8.4	-8.4	-8.5	-8.4	-8.4	-8.4	-8.2	-7.8	-7.5	-7.2	-7.0	-6.8	-6.7	-6.7	-6.7	-6.8	-6.8	-7.0	-7.3	-7.6	-7.9	-7.7	-6.7
9-Feb	-8.6	-9.3	-9.7	-10.3	-10.6	-11.1	-11.8	-12.1	-12.3	-12.6	-12.4	-12.6	-12.2	-11.7	-11.3	-11.3	-11.5	-11.9	-12.6	-13.2	-13.1	-12.4	-12.6	-13.4	-11.7	-8.6
10-Feb	-14.3	-17.6	-19.6	-17.6	-16.9	-16.9	-16.1	-15.2	-14.4	-13.0	-11.4	-10.1	-9.0	-8.3	-8.0	-8.0	-7.9	-7.4	-6.6	-6.0	-5.9	-6.5	-6.7	-6.3	-11.2	-5.9
11-Feb	-5.7	-5.5	-5.0	-4.7	-5.0	-5.7	-5.8	-6.4	-6.2	-4.7	-3.0	-1.9	-0.8	0.5	1.0	1.5	0.9	-1.1	-2.8	-3.3	-3.7	-4.5	-6.0	-5.4	-3.5	1.5
12-Feb	-5.2	-5.2	-4.9	-4.6	-5.3	-4.5	-4.2	-4.5	-3.9	-3.3	-2.6	-2.3	-1.4	-0.5	-0.3	-1.0	-1.5	-2.0	-2.4	-2.8	-3.5	-4.7	-6.3	-7.3	-3.5	-0.3
13-Feb	-8.4	-9.3	-10.8	-12.2	-13.3	-13.5	-12.9	-12.3	-11.8	-11.7	-11.1	-10.3	-8.8	-6.9	-6.6	-6.3	-6.2	-6.4	-6.6	-6.9	-7.5	-8.6	-9.9	-10.3	-9.5	-6.2
14-Feb	-11.1	-12.2	-13.1	-13.6	-14.1	-14.5	-14.6	-14.7	-14.8	-14.1	-13.3	-13.0	-13.0	-13.3	-13.5	-13.8	-14.3	-14.8	-15.1	-15.5	-15.9	-16.1	-16.4	-16.4	-14.2	-11.1
15-Feb	-16.2	-16.1	-16.0	-15.8	-15.5	-15.0	-15.0	-15.3	-15.4	-15.3	-13.4	-11.5	-11.0	-10.5	-10.3	-9.6	-9.5	-10.1	-10.1	-9.3	-9.1	-9.3	-10.4	-10.5	-12.5	-9.1
16-Feb	-10.7	-11.0	-11.2	-11.6	-11.8	-12.3	-12.5	-12.6	-11.9	-9.6	-7.6	-5.3	-2.9	-1.3	0.2	1.3	1.7	0.9	0.6	0.0	-0.9	-1.8	-3.3	-2.6	-5.7	1.7
17-Feb	-2.0	-2.8	-4.3	-6.4	-5.7	-5.9	-7.7	-7.4	-5.5	-3.7	-2.7	-2.0	-1.3	-0.4	0.2	0.7	-0.6	-2.3	-4.7	-5.3	-6.8	-7.2	-7.0	-7.4	-4.1	0.7
18-Feb	-8.9	-11.0	-11.0	-11.0	-10.9	-11.6	-12.3	-12.7	-12.0	-10.7	-8.7	-7.0	-5.6	-4.5	-3.7	-3.4	-3.8	-5.7	-7.9	-9.3	-10.6	-11.7	-13.3	-14.3	-9.2	-3.4
19-Feb	-15.2	-15.9	-16.5	-17.3	-17.7	-18.2	-19.4	-21.0	-20.5	-15.3	-13.1	-11.9	-10.3	-9.0	-8.5	-8.7	-9.5	-11.7	-14.3	-15.8	-15.7	-16.2	-16.0	-15.5	-14.7	-8.5
20-Feb	-14.8	-14.4	-14.8	-14.9	-14.2	-14.2	-12.0	-11.1	-11.6	-9.2	-7.2	-5.5	-4.8	-4.3	-4.2	-4.1	-4.4	-4.9	-5.1	-5.1	-5.0	-4.5	-4.5	-4.9	-8.3	-4.1
21-Feb	-5.0	-5.7	-6.8	-7.2	-7.4	-7.7	-8.3	-8.7	-8.6	-6.6	-3.7	-1.1	1.3	3.0	4.8	5.6	4.9	3.4	2.7	1.6	0.7	-1.8	-3.6	-4.6	-2.4	5.6
22-Feb	-6.0	-7.3	-8.7	-8.4	-10.5	-11.9	-12.0	-11.0	-9.3	-5.8	-2.1	-0.9	-0.6	0.0	-0.3	-0.5	-1.2	-2.0	-3.8	-4.4	-4.8	-5.1	-5.1	-5.2	-5.3	0.0
23-Feb	-5.9	-5.3	-4.7	-4.4	-3.6	-3.2	-3.2	-3.1	-2.8	-1.4	0.3	2.8	3.7	4.3	5.1	5.3	4.9	3.7	2.7	2.2	1.7	0.4	-0.8	-1.6	-0.1	5.3
24-Feb	-5.5	-9.3	-10.5	-12.3	-13.2	-13.4	-13.7	-13.9	-14.2	-14.2	-13.7	-13.5	-13.6	-13.4	-13.3	-13.3	-13.8	-15.1	-17.1	-18.9	-21.3	-20.5	-21.1	-21.2	-14.6	-5.5
25-Feb	-21.6	-20.6	-20.2	-20.0	-20.2	-21.0	-23.2	-24.7	-24.6	-22.2	-21.4	-20.3	-19.4	-18.9	-18.5	-18.6	-19.3	-20.7	-22.4	-23.6	-24.3	-25.2	-26.4	-27.3	-21.9	-18.5
26-Feb	-27.8	-28.4	-29.0	-29.9	-30.0	-29.9	-30.2	-30.3	-29.9	-28.9	-28.0	-26.9	-25.5	-24.3	-23.6	-22.9	-22.9	-23.7	-25.3	-27.0	-28.4	-29.9	-28.6	-28.0	-27.5	-22.9
27-Feb	-27.3	-28.4	-30.7	-32.2	-32.1	-31.7	-29.2	-28.3	-27.0	-25.2	-23.0	-21.4	-20.5	-19.6	-19.2	-18.4	-18.4	-19.1	-22.9	-23.6	-22.9	-23.4	-23.3	-22.7	-24.6	-18.4
28-Feb	-22.6	-22.7	-23.0	-23.4	-23.5	-24.1	-24.3	-24.4	-23.8	-20.1	-18.3	-17.6	-16.3	-15.3	-14.5	-14.7	-14.7	-15.3	-15.6	-15.7	-15.7	-16.0	-16.4	-16.9	-19.0	-14.5
29-Feb	-17.8	-17.5	-16.9	-16.7	-16.8	-16.4	-16.5	-16.6	-16.0	-15.5	-15.3	-14.8	-14.6	-14.6	-14.5	-14.3	-14.2	-14.2	-14.4	-14.8	-15.2	-15.8	-15.9	-16.2	-15.6	-14.2
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Firebag - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Firebag - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	77	11.06	11.06
-20 - 0	561	80.60	91.67
0 - 10	58	8.33	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696

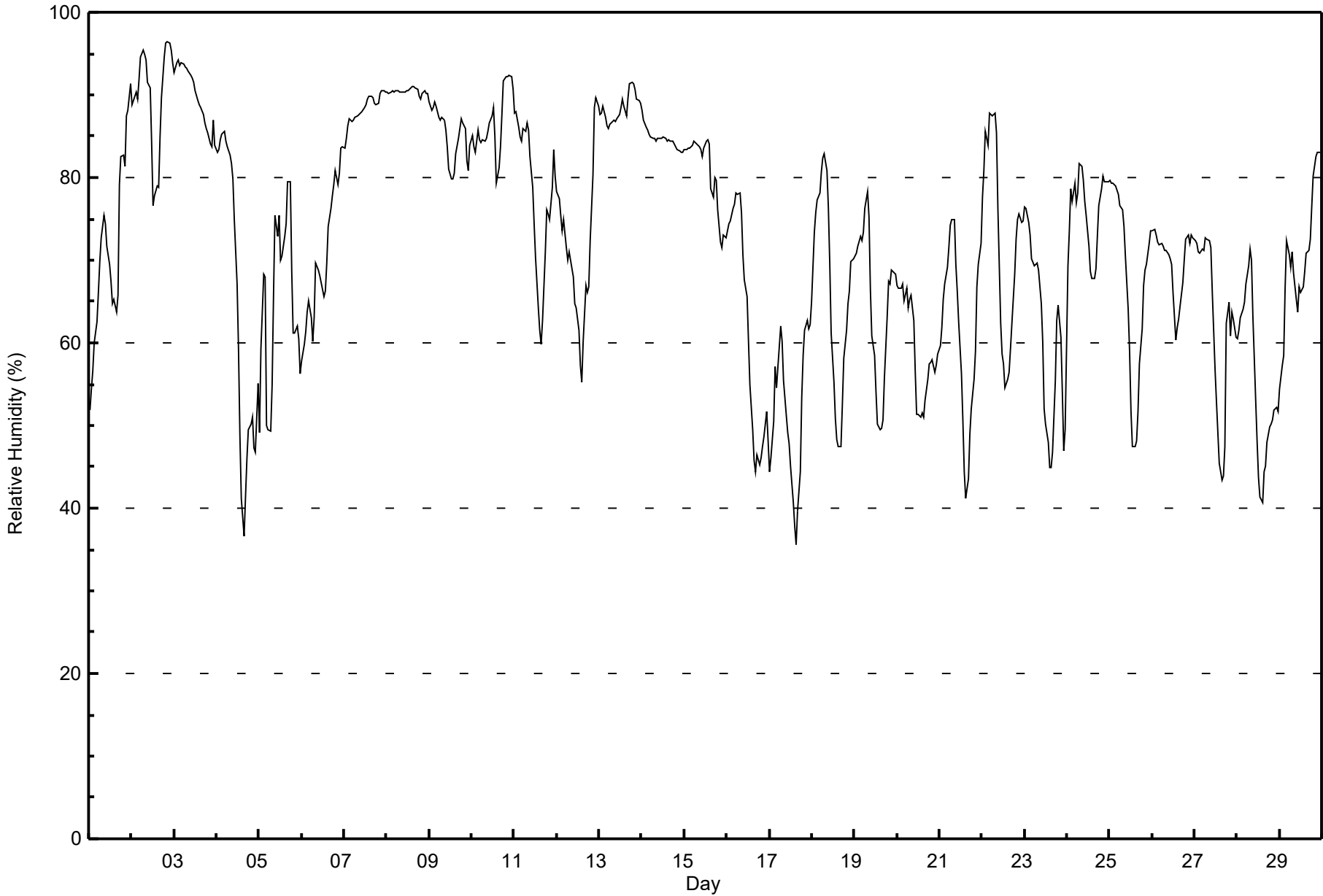


Maximum Value: 96.5 % on Feb 2 21:00 Maximum Daily Average: 90.4 % on Feb 8																						Hours in Service:	696			
Minimum Value: 35.6 % on Feb 17 16:00 Minimum Daily Average: 51.6 % on Feb 17																						Hours of Data:	696			
Maximum Diurnal Average: 78.1 % at hour 8 Minimum Diurnal Average: 63.5 % at hour 16																						Hours of Missing Data:	0			
Monthly Average: 72.54 % Percentiles: P ₁ = 41.2 P ₁₀ = 50.8 Q ₁ = 62.6 Median = 73.5 Q ₃ = 84.7 P ₉₀ = 89.6 P ₉₉ = 94.6																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	51.9	54.4	56.7	60.0	62.6	66.1	69.9	72.7	75.4	74.5	71.6	69.6	67.4	64.7	65.3	63.8	65.7	79.1	82.6	82.7	81.3	87.5	88.2	91.3	71.0	91.3
2-Feb	88.8	89.3	90.3	89.4	91.9	94.6	95.4	95.0	94.2	91.5	90.9	84.3	76.7	77.8	78.9	78.8	84.9	89.6	94.6	96.3	96.5	96.2	95.4	93.8	89.8	96.5
3-Feb	92.6	93.8	94.3	93.6	93.9	93.8	93.4	93.2	92.8	92.5	92.0	91.6	90.4	89.3	88.8	88.4	87.7	86.7	85.9	85.5	84.0	83.7	87.0	83.9	89.9	94.3
4-Feb	83.1	83.3	84.5	85.3	85.5	84.4	83.7	82.8	81.8	79.8	75.0	67.1	59.3	48.8	41.2	36.7	41.4	45.9	49.4	50.2	50.9	47.3	46.8	55.1	64.6	85.5
5-Feb	49.1	59.2	68.3	68.0	50.0	49.4	49.3	55.0	65.8	75.5	72.8	75.1	70.0	70.6	72.9	74.4	79.5	79.5	68.6	61.2	61.2	62.0	60.5	56.3	64.8	79.5
6-Feb	57.7	59.9	61.3	63.7	65.1	63.1	60.1	63.1	69.6	68.8	68.1	67.3	65.7	66.3	69.6	74.1	76.3	77.7	79.2	80.8	79.2	80.5	83.6	83.8	70.2	83.8
7-Feb	83.5	84.8	86.4	87.1	86.8	87.0	87.3	87.4	87.6	87.8	88.0	88.5	88.9	89.5	89.8	89.8	89.7	89.0	88.7	89.0	90.1	90.6	90.6	90.3	88.2	90.6
8-Feb	90.3	90.3	90.4	90.5	90.4	90.5	90.5	90.4	90.3	90.3	90.4	90.5	90.4	90.6	91.0	91.0	90.9	90.7	89.9	89.6	90.2	90.4	90.2	90.1	90.4	91.0
9-Feb	89.2	88.2	88.5	89.1	88.6	87.4	87.0	87.3	86.9	85.8	83.7	81.0	79.9	79.8	80.5	82.9	84.8	86.0	87.2	86.6	86.0	82.0	80.8	83.9	85.1	89.2
10-Feb	85.0	83.8	83.1	85.7	84.5	84.2	84.6	84.5	84.8	85.5	86.6	87.4	88.5	85.0	79.3	81.2	83.7	87.7	91.8	92.2	92.2	92.3	92.2	90.7	86.5	92.3
11-Feb	87.8	88.0	86.1	84.9	84.4	86.0	85.7	86.7	85.7	82.6	78.8	74.5	70.4	64.2	61.5	59.9	62.6	71.0	76.1	75.7	74.9	78.8	83.4	80.2	77.9	88.0
12-Feb	78.3	77.4	75.5	73.6	74.8	71.5	70.0	71.1	68.9	67.9	64.7	64.2	61.5	57.3	55.3	60.2	66.9	66.2	66.8	72.3	80.4	88.5	89.7	88.7	71.3	89.7
13-Feb	87.6	87.9	88.6	87.3	86.2	85.9	86.4	86.8	87.0	86.8	87.2	87.7	88.5	89.5	88.7	87.5	89.6	91.4	91.5	91.3	90.8	89.5	89.3	89.1	88.4	91.5
14-Feb	88.1	87.0	86.2	85.7	85.2	84.9	84.8	84.7	84.5	84.8	84.8	84.7	84.9	84.7	84.5	84.6	84.5	84.4	84.2	83.8	83.4	83.3	83.1	83.1	84.7	88.1
15-Feb	83.3	83.4	83.5	83.6	83.9	84.4	84.3	84.1	83.7	83.4	82.6	83.5	84.4	84.5	84.0	78.6	77.6	80.0	79.7	76.1	72.2	71.5	73.1	72.8	80.8	84.5
16-Feb	73.6	74.4	74.7	76.2	76.8	78.1	78.0	78.1	75.8	70.6	67.6	65.6	60.1	54.9	49.4	45.8	44.4	46.4	45.2	46.1	47.5	48.6	51.6	48.1	61.6	78.1
17-Feb	44.5	46.0	50.5	57.1	54.7	57.1	62.1	60.1	55.4	51.2	49.2	47.8	45.0	40.7	37.7	35.6	39.6	44.5	53.5	58.5	61.5	62.8	61.7	62.2	51.6	62.8
18-Feb	65.0	73.5	75.8	77.3	78.2	80.7	82.4	82.9	80.8	76.4	69.7	61.2	55.3	50.9	48.2	47.4	47.4	52.5	58.1	61.4	64.8	66.3	69.9	70.2	66.5	82.9
19-Feb	70.5	70.9	71.7	72.8	72.3	73.3	76.2	78.3	75.3	66.4	60.9	58.4	54.0	50.1	49.5	49.7	50.7	55.8	63.3	67.4	67.1	68.7	68.4	68.3	65.0	78.3
20-Feb	66.9	66.6	66.7	67.1	65.1	66.6	64.2	65.3	65.7	62.7	56.6	51.4	51.4	51.1	51.6	51.0	53.1	55.5	57.4	57.7	58.0	56.4	57.4	58.7	59.3	67.1
21-Feb	59.7	61.9	65.3	67.1	69.2	71.5	74.2	74.9	74.9	69.5	66.2	62.6	56.3	50.8	44.5	41.3	43.6	49.0	52.0	55.6	59.0	66.8	69.5	72.0	61.6	74.9
22-Feb	77.6	80.8	85.7	83.9	87.8	87.6	87.5	87.8	85.5	76.3	62.4	58.7	57.5	54.6	55.6	56.4	59.3	62.4	68.3	72.5	74.9	75.5	74.6	74.7	72.8	87.8
23-Feb	76.4	76.3	74.6	73.0	70.1	69.3	69.4	69.6	68.7	64.7	60.1	52.1	50.1	48.0	45.0	44.9	46.7	55.4	62.7	64.6	60.6	54.1	46.9	49.5	60.5	76.4
24-Feb	69.4	73.6	78.6	77.2	79.2	76.9	78.2	81.8	81.3	79.7	77.1	75.4	71.6	68.6	67.7	67.8	69.0	72.8	76.7	78.6	80.2	79.5	79.4	79.4	75.8	81.8
25-Feb	79.6	79.3	79.3	79.1	78.4	78.0	76.7	76.2	74.0	70.4	64.1	58.9	51.7	47.4	47.4	48.1	51.8	57.4	61.6	67.0	68.8	69.6	72.0	73.6	67.1	79.6
26-Feb	73.6	73.8	73.0	72.2	71.9	72.0	71.6	71.3	71.1	70.7	70.2	69.5	66.1	60.4	61.9	62.9	64.5	67.3	70.1	72.6	73.0	72.0	73.0	72.8	69.9	73.8
27-Feb	72.3	72.0	71.0	70.8	71.3	71.2	72.7	72.6	72.3	71.5	66.3	56.9	52.9	49.2	45.5	43.4	43.8	47.5	62.3	64.9	60.8	63.8	62.9	60.6	62.4	72.7
28-Feb	60.5	61.6	63.0	64.0	64.8	67.2	69.4	71.4	70.0	63.2	53.0	48.2	43.7	41.3	40.7	44.3	45.0	47.9	49.8	50.2	50.7	51.9	52.2	51.7	55.2	71.4
29-Feb	54.4	57.3	58.6	66.6	72.4	70.7	69.1	71.1	68.5	65.3	63.7	66.8	66.0	66.9	68.6	70.9	71.2	72.5	76.5	80.1	82.5	83.1	83.0	83.0	70.4	83.1
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Firebag - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Firebag - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	4	0.57	0.57
40 - 60	138	19.83	20.40
60 - 80	299	42.96	63.36
80 - 100	255	36.64	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Speed (WS) - km/h

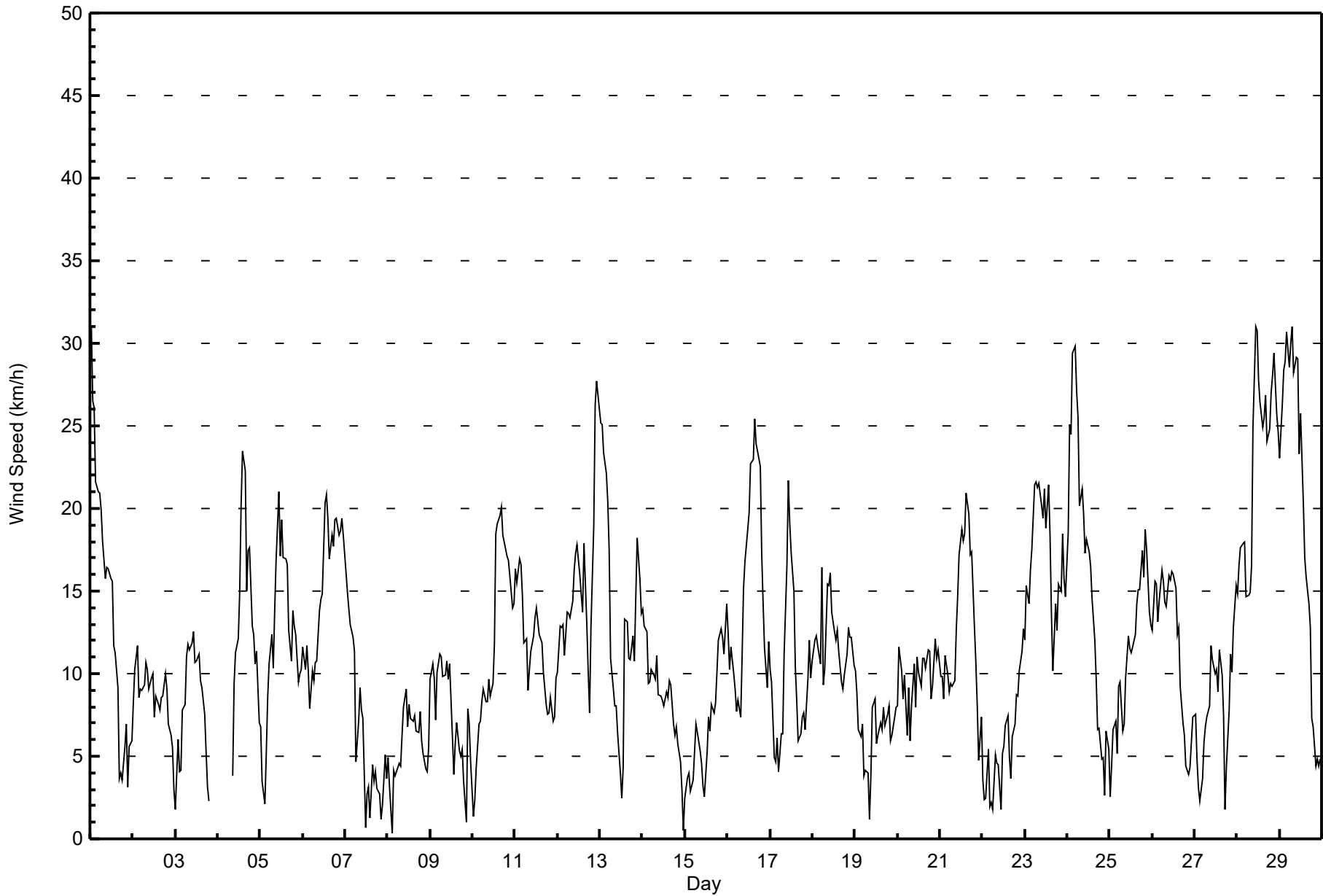
Firebag - February 2024

Maximum Speed: 31 km/h on Feb 1 01:00		Maximum Daily Speed Average: 22.4 km/h on Feb 28		Hours in Service: 696																						
Minimum Speed Value: 0 km/h on Feb 8 03:00		Minimum Daily Speed Average: 3.0 km/h on Feb 19		Hours of Data: 684																						
Maximum Diurnal Speed Average: 3.8 km/h at hour 14		Minimum Diurnal Speed Average: 0.8 km/h at hour 22		Hours of Missing Data: 12																						
Monthly Average Velocity: 1.6 km/h 208.7 deg		Percentiles: P ₁ = 1 P ₁₀ = 4 Q ₁ = 7 Median = 10 Q ₃ = 15 P ₉₀ = 20 P ₉₉ = 29		Percent Operational Time: 98.3																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	SSE31	SSE27	SSE26	SSE22	SSE21	SSE21	SSE20	S18	S16	S16	S16	SSW16	SSW16	SW12	S11	SSW9	WSW4	S4	SE4	ESE6	ESE7	E3	E6	ENE6	SSE12.4	SSE31
2-Feb	NE8	NE10	ENE12	ENE9	NE9	NE9	NE9	NE11	NE10	NE9	NE10	NE10	NE7	NNE9	NE8	NE8	NE9	NNE9	NNE10	NNE9	NNE7	NE6	ENE6	E3	NE8.3	ENE12
3-Feb	W2	NW6	NW4	NNW4	N8	N8	NNW11	N12	N11	NNW12	NNW13	N11	N11	N10	N9	N8	N5	N3	NNW2	UO	UO	UO	UO	N7.8	NNW13	
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	S4	S9	S11	S12	S15	S20	S23	SSW22	S15	S17	S18	S13	S12	S11	S11	S7	---	S23
5-Feb	SSW7	S3	SE2	NNE5	NNE9	NNE11	NNE12	NNE10	NNE14	NNE17	NNE21	NNE17	N19	N17	NNE17	N17	NNE13	NNE11	NNE14	NNE13	NE12	ENE10	ENE10	ESE10	NNE10.4	NNE21
6-Feb	ESE12	ESE10	ESE12	ESE10	SE8	SE10	SE10	SE11	SE11	SE14	SE14	SE15	SSE20	SSE21	SSE19	SSE17	SSE18	SSE18	SSE19	SE19	SSE18	SSE19	SSE19	SSE18	SE14.6	SSE21
7-Feb	SSE16	SSE15	SSE14	S13	SSE12	S11	S5	SSE7	S9	S8	S7	W1	SSW3	WSW3	N1	NW5	N3	NE4	NNE3	N3	NNW1	WSW2	WSW5	SW4	S4.5	SSE16
8-Feb	WSW5	W3	W0	S4	SW4	WSW4	SSW5	SSW4	S6	S8	SW9	SSW7	SW8	SW7	SSW7	SSE7	S7	SSW6	SSW8	SW6	WSW5	NW4	N4	N6	SSW4.2	SW9
9-Feb	N10	N11	NNW10	NNW7	NNW10	NNW11	N11	N10	NNW10	NNW11	N10	N11	N6	NW4	WNW6	NW7	NW5	NNW5	NNE5	NNE4	NNW1	NW8	NNW7	NNW5	NNW7.3	NNW11
10-Feb	NW1	SE2	SE4	SSE7	SSE7	SSE8	SSE9	SSE8	S8	S10	SSE9	SSE9	SSE12	SSE18	SSE19	SSE20	SSE20	S18	S18	SW17	SW17	SW16	SW14	SW14	S10.3	SSE20
11-Feb	WSW16	WSW15	W17	W17	W15	WSW12	WSW12	WSW9	WSW10	W11	W12	WSW13	WSW14	WSW12	WSW12	WSW12	WSW10	SW8	SW8	SW8	WSW9	SW7	SW7	SW10	WSW11.2	W17
12-Feb	SSW10	SSW13	SSW13	SSW13	SSW11	SSW14	S14	S13	S14	SSW16	SW17	SW18	WSW16	W15	NNW14	NW18	NNW13	NNW10	NNW8	NNW13	NNW19	NNW26	NNW28	NNW26	W7.7	NNW28
13-Feb	NNW25	N25	NNW23	NNW22	N20	N17	N11	NNW9	NNW8	NNW8	NW6	WNW4	SW2	WSW4	WSW13	WSW13	WSW11	WSW11	N12	N11	N15	N18	N16	N14	NNW10.7	NNW25
14-Feb	N14	N13	N13	N9	N10	N10	N10	N10	N11	NNE9	N9	N8	NNW8	NNW9	NNW9	N10	N9	N7	N6	NNE7	NNE6	NNE5	NNW3	W0	N8.3	N14
15-Feb	SSW2	SW4	SSW4	SSW3	SW4	SW5	SW7	SW6	SSW5	SW5	SSW3	WSW3	WNW5	W7	WSW7	SW8	SW8	SSW8	SW10	SW12	SW13	SW12	SW11	SW14	SW6.7	SW14
16-Feb	SW12	WSW10	WSW12	WSW10	WSW9	WSW8	WSW8	SW7	SW11	SW15	SW17	SW19	SW20	SW23	SW23	WSW25	WSW24	WSW23	WSW23	W17	W14	W11	W9	NW12	WSW14.5	WSW25
17-Feb	NW10	NNW9	W5	SW5	W6	WNW4	WSW6	WNW6	N11	N17	NNW22	NNW19	NNW17	NNW15	NW10	NNW8	NNE6	NE6	ENE7	E8	ESE7	SE10	SE12	SE10	NNW5.0	NNW22
18-Feb	ESE11	ESE12	ESE12	SE12	ESE11	ESE16	ESE9	ESE10	ESE15	ESE15	ESE16	ESE14	SE13	ESE12	SE13	SE11	ESE9	SE9	SE10	ESE11	ESE13	SE12	ESE12	ESE10	ESE12.0	ESE16
19-Feb	ESE10	SE9	ESE7	ESE6	ESE7	SE4	SE4	SSE4	W1	NNW4	N8	NNW8	NNW6	NNW6	N7	N7	N8	NNE7	NNE8	NE8	ENE6	ESE6	ESE7	SE8	ENE3.0	ESE10
20-Feb	SE8	SE12	SE10	SSE8	SSE10	S6	S9	SSE6	S8	S11	S8	SSW11	SSW10	SW9	SSW11	SW11	SSW10	SSW11	S11	SSW8	SSW9	SSW12	SW11	SW11	S8.6	SSW12
21-Feb	SW10	SW10	SW8	SW11	WSW10	WSW9	WSW9	WSW9	WSW10	WSW13	WSW15	WSW17	WSW19	WSW18	WSW19	WSW21	WSW20	WSW17	W17	W13	NNW11	N8	N5	N7	WSW11.2	WSW21
22-Feb	NNE4	SW2	SSE2	SSE5	S2	NE2	ESE2	ENE5	E5	SE4	SSE2	WNW5	WNW6	WSW7	W7	WSW5	ESE4	ESE6	SSE7	S9	S9	S10	S11	S13	S3.1	S13
23-Feb	S12	S15	S14	SSW16	S18	SSW21	SSW22	SSW21	SSW21	SSW20	WSW19	W21	W19	W21	W18	W14	NW10	NW14	W13	W15	NNW15	NNW18	NNW16	NNW15	WSW12.9	SSW22
24-Feb	N19	N25	N24	NNW29	NNW30	NNW27	NNW26	NNW20	NNW21	NNW20	NNW17	NNW17	NNW17	NNW17	N15	N12	N10	NNE7	NE7	NE5	NE5	NE3	NE7	NNE5	N15.4	NNW30
25-Feb	NNE3	NNE4	NNE7	NNE7	NE5	NNE9	NNE9	NE7	NNE7	NNE10	N12	NNE12	N11	N12	N12	N14	N15	NNE15	N17	N16	N19	NNE18	NNE14	NNE13	NNE11.0	N19
26-Feb	N13	N16	N15	NNW13	N14	N16	N16	N14	NNW14	NNW16	NNW16	N16	NNW16	NNW15	NNW12	NW13	NW9	WNW7	WNW6	W4	W4	W4	WSW6	WSW7	NNW10.5	N16
27-Feb	W8	NW5	NNW3	W2	WNW4	WNW6	W7	SW7	SW8	WSW12	WSW11	NNW10	W10	WNW9	NW11	NW10	W7	WNW2	SSE4	SE8	SE11	SSE10	SSE13	S15	WSW4.1	S15
28-Feb	S15	SSE17	SSE18	SSE18	SSE18	SSE15	SSE15	SE15	SSE17	SSE25	SSE31	SSE31	SSE28	SSE26	SE25	SE25	SE27	SE24	SE25	SE27	SE28	SE29	SE26	SE25	SSE22.4	SSE31
29-Feb	SE23	SE26	SE28	SE29	ESE31	ESE29	ESE30	ESE31	SE28	SE29	SE29	SE23	SSE26	SSE20	SSE17	S16	S14	S13	SW7	WSW7	W4	W5	WSW4	WSW5	SE17.1	ESE31
SSE1.6 SE1.4 SE1.8 SSE2.0 SSE1.1 SE0.9 S1.0 SSE1.5 SSE1.6SSW2.1 SW1.9WSW2.4WSW3.4WSW3.8WSW3.6WSW3.6 SW2.1SSW2.3SSW1.6SSW1.3SSW1.1 SW0.8 S1.4SSW1.5																								Diurnal Average		
SSE31 SSE27 SE28NNW29 ESE31 ESE29 ESE30 ESE31 SE28 SE29 SSE31 SSE31 SSE28 SSE26 SE25 SE25 SE27 SE24 SE25 SE27 SE28 SE29NNW28 NNW26																								Diurnal Maximum		
UO - Unstable Operation																										
All monthly, daily, and diurnal averages have been calculated using vector methods																										



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Firebag - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Firebag - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	110	16.08	16.08
6 - 11	284	41.52	57.60
12 - 19	212	30.99	88.60
20 - 28	65	9.50	98.10
29 - 38	13	1.90	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 684

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Firebag - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	7	9	6	1	3	2	7	5	6	8	9	12	13	6	7	9	110
6 - 11	38	23	20	7	2	20	16	15	24	16	29	23	9	11	10	21	284
12 - 19	33	13	1	1	0	13	9	27	26	9	15	23	14	6	4	18	212
20 - 28	3	1	0	0	0	0	13	16	2	5	4	6	2	0	0	13	65
29 - 38	0	0	0	0	0	4	4	3	0	0	0	0	0	0	0	2	13
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	81	46	27	9	5	39	49	66	58	38	57	64	38	23	21	63	684

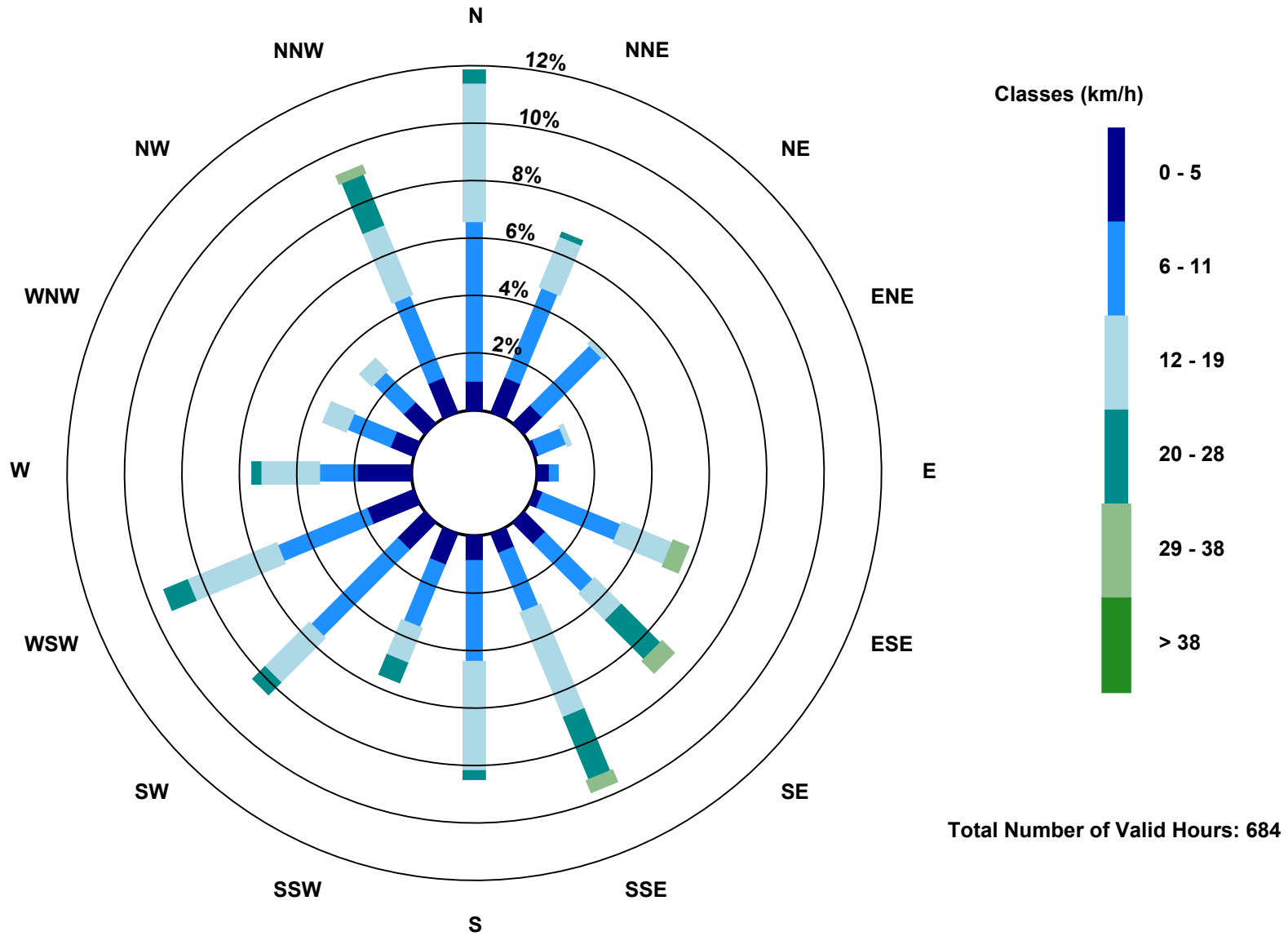
Total Number of Valid Hours: 684

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Firebag





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Firebag - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 12 23:00 Minimum Value: 0 km/h on Feb 15 02:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6														Hours in Service: 696 Hours of Data: 684 Hours of Missing Data: 12 Hours of Calibration: 0 Percent Operational Time: 98.3											
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	5	4	4	4	3	3	4	3	3	3	2	3	3	2	2	3	2	2	1	1	3	1	2	1	5
2-Feb	1	1	1	1	2	1	2	1	2	1	1	2	1	2	1	1	2	3	2	2	1	2	1	1	3
3-Feb	2	2	1	1	2	2	2	3	2	3	3	2	2	2	2	2	2	1	0	1	UO	UO	UO	UO	3
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	3	2	2	2	2	4	4	4	2	3	2	3	2	3	3	2	4
5-Feb	2	1	1	2	1	2	2	3	3	4	5	3	4	4	4	3	3	2	2	2	2	2	2	2	5
6-Feb	2	2	2	3	2	2	2	2	2	3	3	3	4	4	3	4	3	3	3	4	3	3	3	2	4
7-Feb	3	2	2	2	2	2	2	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	3
8-Feb	1	2	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	2	1	1	1	1	2	2
9-Feb	2	3	2	2	2	2	3	2	2	2	2	2	1	1	1	2	1	1	1	2	2	3	2	1	3
10-Feb	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	2	3	3
11-Feb	4	3	3	3	3	2	2	1	2	2	3	3	3	3	3	2	1	1	1	1	1	1	1	1	4
12-Feb	1	1	1	2	2	1	1	2	2	3	3	4	3	4	3	5	4	3	2	3	5	6	7	6	7
13-Feb	6	6	5	5	4	4	2	2	2	2	2	1	1	3	3	3	2	2	3	3	4	3	3	6	
14-Feb	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	3
15-Feb	1	0	1	1	2	1	1	1	1	1	1	1	2	2	2	1	1	1	1	2	2	2	1	2	2
16-Feb	2	2	1	1	1	1	1	1	2	2	3	3	3	4	4	4	4	4	5	3	3	2	1	3	5
17-Feb	3	2	1	1	1	1	1	1	2	4	4	5	4	3	3	2	1	2	1	1	2	2	2	2	5
18-Feb	2	2	2	2	2	3	3	2	3	3	3	3	2	2	3	3	2	2	2	2	2	2	2	2	3
19-Feb	2	2	1	2	3	1	1	1	2	3	2	2	1	2	2	1	2	1	1	2	2	2	2	2	3
20-Feb	2	2	2	1	2	1	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1	2
21-Feb	1	1	1	1	2	1	2	1	2	2	3	3	4	4	4	5	4	3	4	2	2	2	3	1	5
22-Feb	2	1	1	1	2	2	1	2	1	2	1	3	2	3	2	3	2	1	1	1	1	2	1	2	3
23-Feb	2	2	1	2	2	3	3	3	3	4	4	5	5	5	4	4	2	4	3	4	5	5	4	4	5
24-Feb	4	6	6	6	7	6	6	5	5	4	4	4	4	4	3	2	2	1	1	1	2	2	1	1	7
25-Feb	1	2	1	2	1	3	2	1	2	2	2	3	3	3	3	3	3	3	3	4	3	4	3	3	4
26-Feb	3	4	4	3	3	3	3	3	3	4	4	3	4	4	3	3	3	2	1	1	1	1	1	1	4
27-Feb	1	2	1	1	1	1	1	1	2	2	2	3	3	3	3	3	2	2	1	1	1	1	2	2	3
28-Feb	2	2	2	2	2	2	2	2	3	5	5	5	5	5	5	5	5	5	5	5	6	6	5	5	6
29-Feb	5	5	5	6	7	6	6	7	6	7	6	5	5	4	3	2	2	2	2	2	2	1	1	0	7
Diurnal Maximum																									
6 6 6 6 7 6 6 7 6 7 6 5 5 5 5 5 5 5 5 5 5 6 6 7 6																									
UO - Unstable Operation																									



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Firebag - February 2024

Direction of Maximum Speed: 155 deg on Feb 1 01:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 149.7 deg on Feb 28	Hours of Data: 684
Direction of Minimum Speed: 268 deg on Feb 8 03:00	Hours of Missing Data: 12
Direction of Minimum Daily Speed Average: 3.0 deg on Feb 19	Percent Operational Time: 98.3
Monthly Average Direction: 208.7 deg	

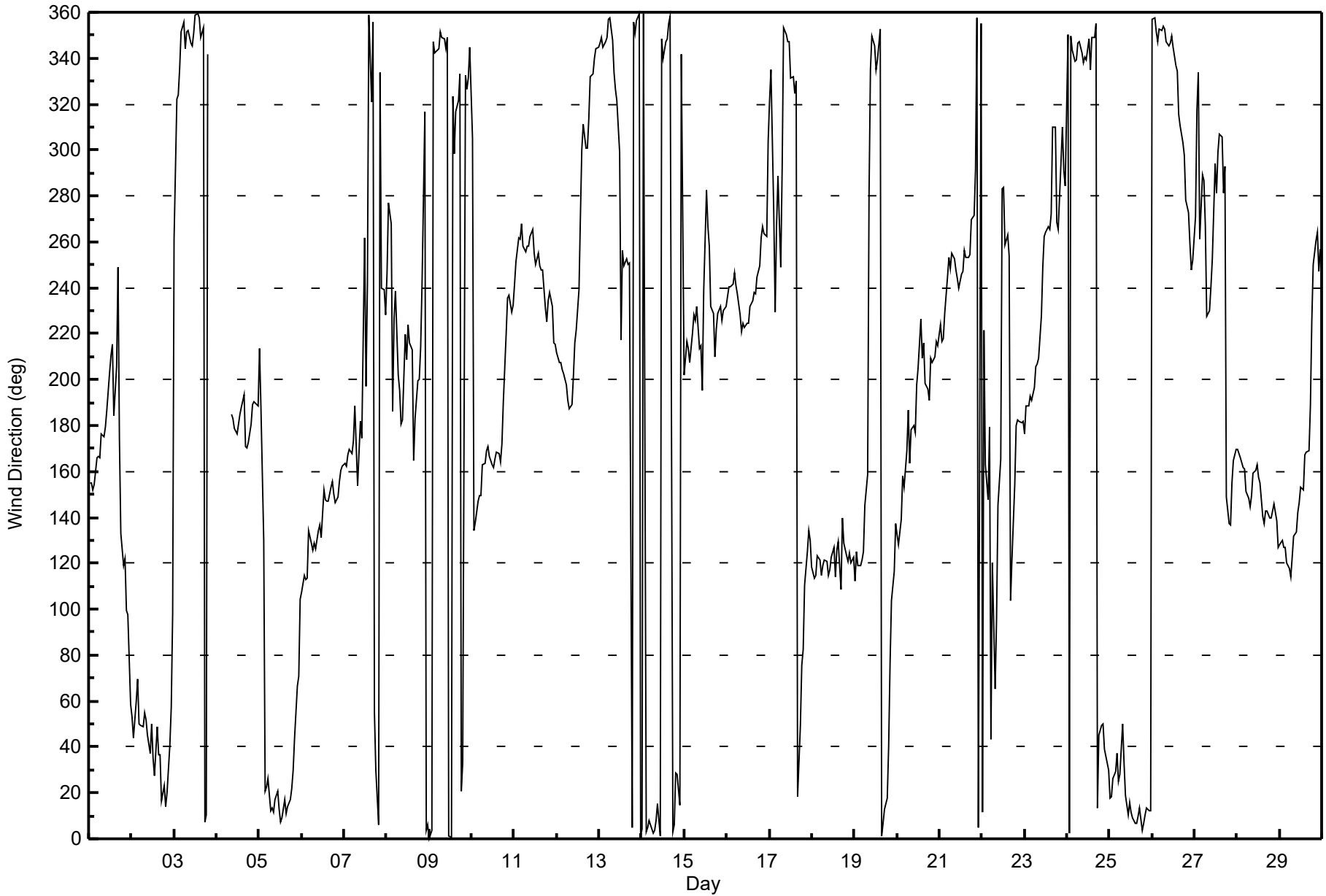
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	155	155	152	155	166	166	166	176	175	180	186	203	210	216	184	205	249	175	133	119	122	99	98	59	168.3
2-Feb	53	44	60	70	50	50	49	55	52	45	37	50	36	27	49	36	37	16	23	14	20	41	57	98	43.3
3-Feb	261	322	324	336	351	356	344	352	352	347	345	351	358	359	358	349	353	8	10	342	UO	UO	UO	UO	349.6
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	185	183	179	177	181	185	188	193	171	170	172	180	189	190	190	189	--
5-Feb	213	188	130	21	23	26	12	13	12	17	21	13	7	9	17	11	14	17	22	30	44	67	71	104	23.4
6-Feb	107	115	113	114	135	129	126	129	126	134	136	131	152	148	147	153	155	150	146	149	155	160	162	142.0	
7-Feb	164	162	167	169	168	173	189	153	169	182	174	262	197	242	359	321	356	55	30	6	334	240	239	228	173.8
8-Feb	247	277	268	186	227	239	202	195	181	183	220	209	224	216	213	165	183	200	200	214	242	317	3	6	212.3
9-Feb	0	4	347	342	343	344	351	349	348	344	349	1	1	324	299	317	322	333	20	33	332	326	331	345	345.7
10-Feb	305	134	138	147	149	150	163	164	169	171	167	163	162	165	168	168	164	172	190	219	235	236	230	232	182.5
11-Feb	242	252	262	261	268	258	256	258	258	262	265	255	250	255	250	247	248	232	225	234	238	232	216	215	250.1
12-Feb	212	208	208	205	202	198	191	187	189	202	216	222	239	271	300	311	301	301	314	332	333	340	344	345	264.7
13-Feb	347	349	345	347	349	357	358	348	334	327	321	299	217	256	249	252	250	251	5	356	351	356	360	1	337.4
14-Feb	4	360	3	5	8	6	2	4	8	15	1	349	340	347	348	355	358	3	6	29	28	14	341	273	2.1
15-Feb	202	216	213	207	221	228	226	232	213	215	195	239	283	267	258	232	229	210	222	229	232	226	230	232	229.3
16-Feb	236	240	240	242	247	241	238	228	221	224	223	225	225	232	234	238	238	245	249	262	267	264	262	304	241.0
17-Feb	322	335	273	229	267	289	249	292	353	350	347	347	332	332	325	330	18	49	76	83	111	125	134	130	346.6
18-Feb	119	114	115	124	121	114	119	122	121	115	117	123	127	114	126	129	109	140	129	123	121	124	120	123	120.7
19-Feb	112	125	119	119	121	125	145	159	281	335	350	345	335	339	353	1	6	13	18	40	76	104	117	138	60.9
20-Feb	132	128	139	158	153	169	187	163	178	180	177	198	205	227	209	216	198	196	191	209	208	210	217	214	188.4
21-Feb	224	216	218	229	245	253	249	255	252	247	244	240	246	247	257	253	253	254	269	272	292	358	5	355	253.7
22-Feb	12	222	163	148	179	43	120	65	96	145	165	283	284	258	263	254	104	122	154	180	182	182	181	182	180.7
23-Feb	176	188	188	193	191	196	206	207	209	227	249	262	264	267	266	272	310	310	269	266	295	310	291	284	243.4
24-Feb	350	2	349	343	339	339	347	347	342	338	340	339	348	335	349	349	355	14	45	50	50	39	36	30	349.6
25-Feb	17	18	26	29	37	25	28	50	33	19	11	16	11	9	7	7	10	14	3	7	11	13	12	12	14.7
26-Feb	357	358	351	347	353	352	354	353	347	345	346	350	345	337	334	316	311	303	298	278	273	259	248	252	337.9
27-Feb	271	317	334	261	289	287	267	228	230	240	253	294	281	299	307	306	281	293	149	137	137	155	165	170	246.4
28-Feb	170	168	166	162	161	152	149	145	150	159	160	163	157	155	140	137	143	143	140	140	143	146	138	127	149.7
29-Feb	128	130	127	127	120	118	114	122	132	134	142	146	153	152	167	169	169	189	226	250	260	264	247	257	140.3
	165.2	138.6	143.7	161.2	163.9	135.9	172.7	153.5	168.4	198.2	221.8	244.2	238.5	247.4	242.6	248.6	233.7	211.6	197.8	206.6	211.1	221.6	182.9	193.3	
	Diurnal Average																								

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction (WD) - deg
Firebag - February 2024





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Firebag - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0										Hours in Service: 696															
Maximum Value: 92 deg on Feb 7 12:00										Hours of Data: 684															
Minimum Value: 4 deg on Feb 26 19:00										Hours of Missing Data: 12															
Percentiles: P ₁ = 6 P ₁₀ = 8 Q ₁ = 10 Median = 13 Q ₃ = 15 P ₉₀ = 23 P ₉₉ = 62										Hours of Calibration: 0															
										Percent Operational Time: 98.3															
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	11	10	10	10	10	8	11	9	10	8	9	12	11	19	8	15	32	28	34	8	17	24	9	25	34
2-Feb	5	8	8	9	12	12	12	9	7	9	11	10	12	14	11	11	11	15	11	14	13	12	10	26	26
3-Feb	68	12	14	14	14	15	13	14	15	15	15	16	17	17	16	15	16	14	13	16	UO	UO	UO	UO	68
4-Feb	UO	UO	UO	UO	UO	UO	UO	UO	6	7	9	9	10	8	9	8	7	7	10	8	7	7	23	23	
5-Feb	16	26	45	23	6	12	11	12	12	10	11	13	13	15	17	13	10	8	10	11	9	15	13	13	45
6-Feb	10	13	12	14	16	11	14	13	13	12	11	12	12	13	12	11	11	10	11	10	10	9	8	16	
7-Feb	9	9	9	9	8	8	20	13	8	9	11	92	46	30	82	22	33	15	16	26	50	59	12	17	92
8-Feb	27	21	79	22	20	15	17	9	14	13	17	20	18	21	17	17	15	13	15	11	17	31	15	12	79
9-Feb	13	12	12	12	15	15	13	13	15	12	14	15	22	38	22	14	15	17	19	49	63	14	13	12	63
10-Feb	51	19	13	10	7	8	8	8	8	9	10	8	10	10	8	9	9	10	14	13	12	10	10	12	51
11-Feb	13	12	13	13	15	12	12	12	12	14	14	14	14	17	14	12	10	8	7	7	8	11	6	7	17
12-Feb	7	6	7	8	14	4	7	7	8	10	10	15	17	21	16	13	15	15	22	11	12	13	14	14	22
13-Feb	13	14	13	14	14	15	15	14	13	14	13	27	34	49	12	12	12	24	14	14	13	14	15	15	49
14-Feb	14	15	15	14	13	12	13	14	13	13	16	15	15	15	15	14	14	14	14	13	18	15	22	62	62
15-Feb	12	13	12	16	12	13	10	13	11	18	23	46	35	31	27	14	14	7	9	9	8	8	7	8	46
16-Feb	8	9	8	9	8	8	8	8	8	8	9	10	10	11	10	10	10	10	13	12	13	12	12	16	16
17-Feb	13	10	42	19	26	17	11	34	13	11	12	14	14	13	20	20	11	11	9	10	12	9	12	10	42
18-Feb	10	10	11	12	14	10	14	15	12	12	12	16	19	17	16	15	12	17	12	14	13	13	13	13	19
19-Feb	10	14	16	23	24	21	20	14	61	40	17	17	23	20	22	17	17	13	11	12	15	12	18	11	61
20-Feb	11	9	11	14	11	14	7	23	14	8	12	11	14	18	10	10	9	7	7	12	9	9	10	8	23
21-Feb	9	7	10	8	12	11	9	10	11	11	10	10	12	12	14	13	13	12	15	14	24	17	46	11	46
22-Feb	12	44	39	14	54	47	47	33	27	32	61	53	35	32	22	50	29	11	14	12	10	8	6	6	61
23-Feb	7	7	5	5	6	7	8	9	10	14	13	14	16	14	14	17	16	13	26	23	17	13	18	17	26
24-Feb	16	16	15	14	14	14	15	15	15	14	13	12	15	13	18	15	14	12	8	11	7	50	6	10	50
25-Feb	16	10	6	10	15	10	9	8	9	15	15	18	20	21	20	17	14	12	13	14	13	12	12	12	21
26-Feb	14	15	14	12	14	13	14	14	14	15	14	15	17	18	17	20	24	19	4	11	9	21	7	8	24
27-Feb	11	13	20	22	17	8	13	7	9	10	17	23	27	35	23	26	28	81	12	10	9	7	7	6	81
28-Feb	7	7	8	7	8	10	8	9	10	9	10	11	11	13	14	13	12	12	12	12	12	11	12	12	14
29-Feb	13	12	13	13	12	12	12	14	13	13	14	13	12	14	13	10	11	10	16	15	24	15	12	13	24
										68 44 79 23 54 47 47 34 61 40 61 92 46 49 82 50 33 81 34 49 63 59 46 62															
Diurnal Maximum																									
UO - Unstable Operation																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS20 MACKAY RIVER FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MACKAY RIVER (AMS20)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	663	32	33	99.86	27.6	0	4.7	0
H2S (ppb) Average	662	33	34	99.86	1.5	0	0.3	0
THC (ppm) Average	663	32	33	99.86	3.5	-	2.5	-
NO2 (ppb) Average	661	34	35	99.86	31.9	0	14.9	-
NO (ppb) Average	661	34	35	99.86	40.5	-	6.3	-
NOX (ppb) Average	661	34	35	99.86	69.1	-	21.2	-
Temperature 2 m (C) Average	696	0	0	100	8.1	-	1.9	-
Relative Humidity (%) Average	696	0	0	100	99.4	-	97.4	-
Wind Speed 10 m (km/h) Average	694	0	2	99.71	17	-	10	-
Wind Direction 10 m (deg) Average	694	0	2	99.71	-	-	-	-
Precipitation (mm) Total	695	0	1	99.86	0.7	-	2.5	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MACKAY RIVER (AMS20)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	663	0.82	2.1	-	0	0	0.1	0.2	0.5	2	27.6
H2S (ppb) Average	662	0.13	0.1	-	0	0	0	0.1	0.2	0.3	1.5
THC (ppm) Average	663	2.27	0.1	-	2.1	2.1	2.2	2.2	2.3	2.4	3.5
NO2 (ppb) Average	661	3.25	5.3	-	0.1	0.3	0.5	1	3.4	10	31.9
NO (ppb) Average	661	0.51	2.4	-	0	0	0	0	0.1	0.7	40.5
NOX (ppb) Average	661	3.76	6.9	-	0.1	0.3	0.5	1	3.6	11.2	69.1
Temperature 2 m (C) Average	696	-9.79	8.1	-	-29.8	-21	-15.9	-8.8	-3.8	-0.3	8.1
Relative Humidity (%) Average	696	72.02	16.5	-	23	47.2	61.9	74.5	84	91.8	99.4
Wind Speed 10 m (km/h) Average	694	6.1	3	-	0	2	4	6	8	11	17
Wind Direction 10 m (deg) Average	694	-	-	-	-	-	-	-	-	-	-
Precipitation (mm) Total	695	-	-	6.88	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION -MACKAY RIVER (AMS20)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
ALL GASEOUS ANALYZERS	20 Feb 2024 09:00	20 Feb 2024 09:00	1	Maintenance - sample manifold cleaned
Wind Speed, Wind Direction	08 Feb 2024 20:00	08 Feb 2024 20:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction	15 Feb 2024 00:00	15 Feb 2024 00:00	1	Flat line in sensor output signal
Precipitation Collector	20 Feb 2024 09:00	20 Feb 2024 09:00	1	Maintenance - precipitation bucket emptied



Wood Buffalo Environmental Association

Summary of Hour Averages

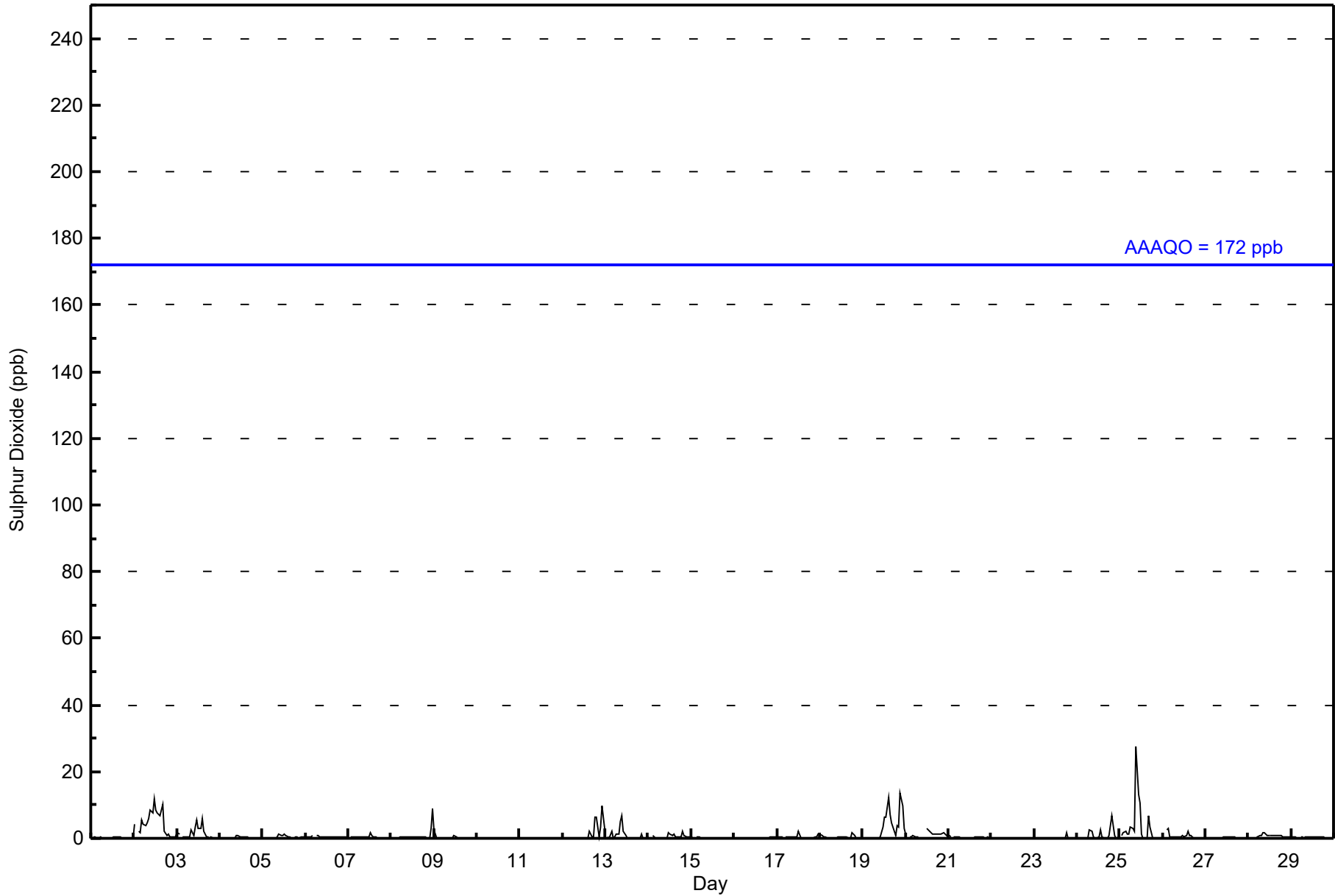
Sulphur Dioxide (SO₂) - ppb

Mackay River - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 27.6 ppb on Feb 25 10:00	Maximum Daily Average: 4.7 ppb on Feb 2		Hours of Data:	663
Minimum Value: 0.0 ppb on Feb 4 06:00	Minimum Daily Average: 0.0 ppb on Feb 11		Hours of Missing Data:	33
Maximum Diurnal Average: 1.8 ppb at hour 10	Minimum Diurnal Average: 0.3 ppb at hour 2		Hours of Calibration:	32
Monthly Average: 0.82 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.5 P ₉₀ = 2.0 P ₉₉ = 9.9		Percent Operational Time:	99.9

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	Z	0.3	0.3	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.1	0.3
2-Feb	4.3	Z	2.1	1.9	5.7	4.3	3.8	4.5	5.8	8.6	7.7	12.1	8.3	7.8	6.8	8.6	10.0	2.1	1.0	1.1	0.4	0.3	0.3	0.3	4.7	12.1
3-Feb	1.8	1.3	Z	0.4	0.4	0.4	0.4	0.4	2.8	0.8	3.5	5.6	3.1	3.1	6.1	1.9	0.4	0.2	0.2	0.3	0.2	0.2	0.1	0.1	1.5	6.1
4-Feb	0.1	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.8	0.9	0.6	0.3	0.2	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.9
5-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.4	1.1	0.8	0.7	1.1	0.7	0.3	0.3	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	1.1
6-Feb	0.3	0.4	0.5	0.5	0.8	Z	0.9	0.7	0.6	0.5	0.6	0.5	0.6	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.3	0.4	0.3	0.4	0.5	0.9
7-Feb	Z	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.2	0.3	0.3	0.4	1.8	0.8	0.5	0.2	0.2	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.3	1.8
8-Feb	0.0	Z	0.1	0.1	0.2	0.3	0.2	0.2	0.3	0.5	0.6	0.5	0.4	0.5	0.5	0.5	0.6	0.5	0.3	0.2	0.1	0.2	3.2	9.0	0.8	9.0
9-Feb	2.7	0.2	Z	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.7	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	2.7
10-Feb	0.1	0.1	0.0	Z	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.2
11-Feb	0.1	0.1	0.0	0.1	Z	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
12-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	2.1	0.3	0.6	6.4	6.5	0.3	3.3	9.9	2.4	1.4	9.9
13-Feb	Z	0.3	0.1	1.9	0.0	0.3	1.3	1.5	5.2	6.6	2.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1	0.1	0.1	0.2	0.9	6.6
14-Feb	0.3	Z	0.9	0.3	0.1	0.0	0.1	0.0	0.1	0.0	0.1	1.5	1.3	0.6	1.1	0.5	0.5	0.2	0.4	2.1	0.9	0.6	0.5	0.4	0.5	2.1
15-Feb	0.2	0.1	Z	0.2	0.3	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
16-Feb	0.0	0.1	0.0	Z	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.3
17-Feb	0.3	0.4	0.4	0.5	Z	0.3	0.4	0.3	0.3	0.3	0.2	0.3	2.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.3	0.5	1.1	0.4	2.1
18-Feb	1.1	0.9	0.5	0.3	0.2	Z	0.2	0.0	0.0	0.2	0.4	0.3	0.5	0.5	0.5	0.4	0.2	0.1	1.9	0.7	0.1	0.1	0.0	0.0	0.4	1.9
19-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	3.2	6.3	6.5	12.4	7.1	4.8	3.3	0.9	3.7	3.3	13.7	9.7	3.1	3.4	13.7
20-Feb	1.2	Z	0.4	0.5	0.7	0.6	0.3	0.2	M	C	C	C	2.9	2.2	1.7	1.4	1.3	1.1	1.1	1.3	1.5	1.5	1.3	1.0	1.2	2.9
21-Feb	0.8	0.6	Z	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.8
22-Feb	0.2	0.1	0.2	Z	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.2
23-Feb	0.0	0.1	0.0	0.1	Z	0.1	0.2	0.1	0.2	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2	1.6	0.1	0.0	0.0	0.0	0.0	0.1	1.6
24-Feb	0.0	0.0	0.0	0.1	0.0	Z	0.0	2.5	2.3	0.5	0.0	0.2	0.4	2.6	0.3	0.0	0.0	0.1	1.0	6.6	3.7	1.0	0.2	0.4	1.0	6.6
25-Feb	Z	0.7	1.5	2.1	1.2	1.2	3.4	3.1	2.2	27.6	13.0	10.7	1.2	0.1	0.0	0.1	7.0	3.5	0.1	0.1	0.0	0.1	0.0	0.0	3.4	27.6
26-Feb	0.0	Z	2.6	2.8	0.3	0.2	0.6	0.4	0.4	0.2	0.4	0.6	0.5	1.0	2.1	1.0	0.8	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.6	2.8
27-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.4
28-Feb	0.1	0.1	0.2	Z	0.1	0.4	0.7	1.0	1.5	1.6	1.1	0.8	0.7	0.6	0.9	0.8	0.9	1.0	0.9	0.3	0.4	0.4	0.3	0.5	0.7	1.6
29-Feb	0.3	0.3	0.3	0.2	Z	0.3	0.3	0.2	0.2	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.3	0.4
0.6 0.3 0.4 0.5 0.5 0.4 0.5 0.5 0.8 1.8 1.2 1.5 1.1 1.0 1.2 0.9 1.0 0.5 0.6 0.9 0.5 0.8 1.0 0.7																								Diurnal Average		
4.3 1.3 2.6 2.8 5.7 4.3 3.8 4.5 5.8 27.6 13.0 12.1 8.3 7.8 12.4 8.6 10.0 3.5 6.4 6.6 3.7 13.7 9.9 9.0																								Diurnal Maximum		

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Mackay River - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	657	99.10	99.10
11 - 20	5	0.75	99.85
21 - 60	1	0.15	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



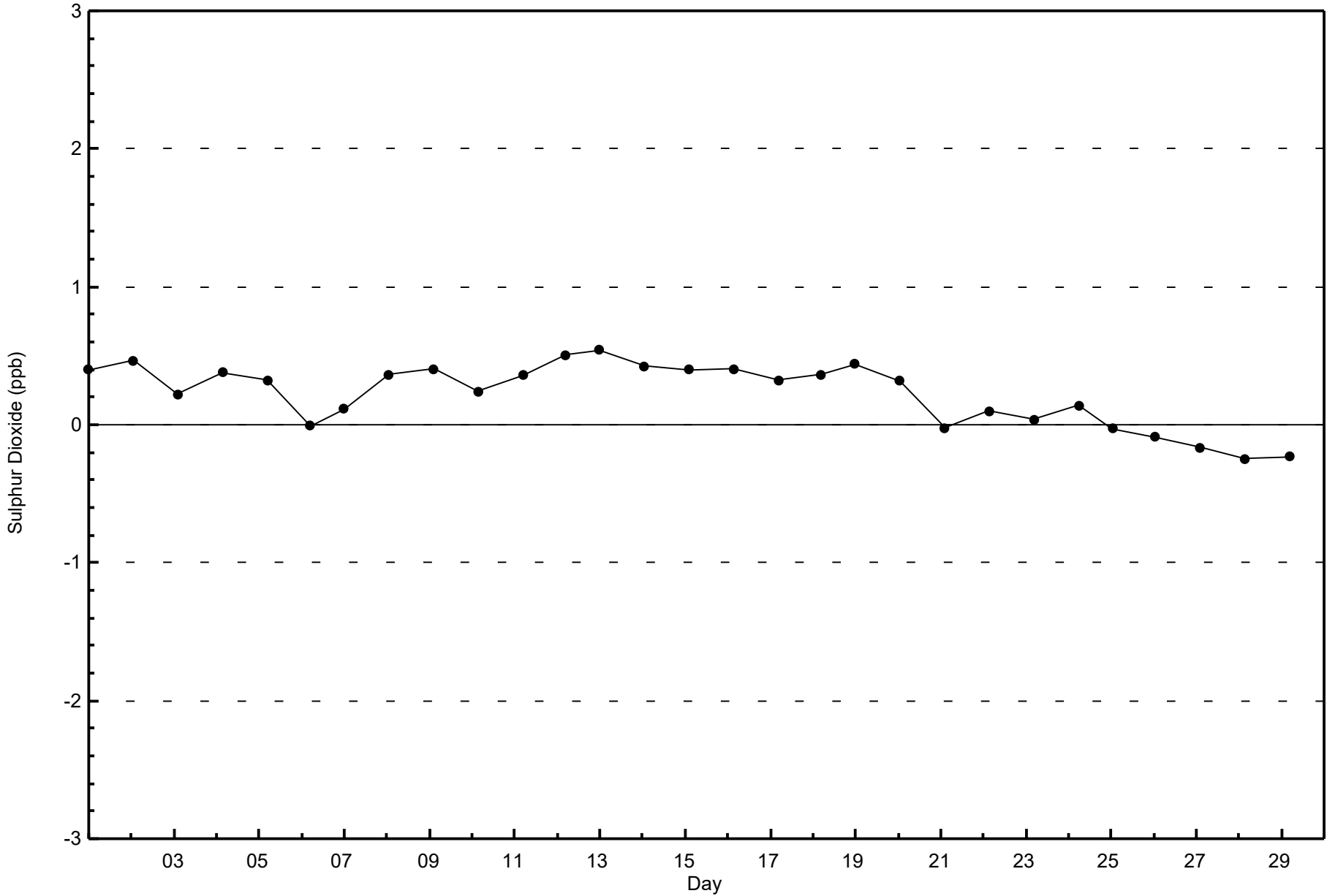
**Wood Buffalo Environmental Association
Frequency Distribution**

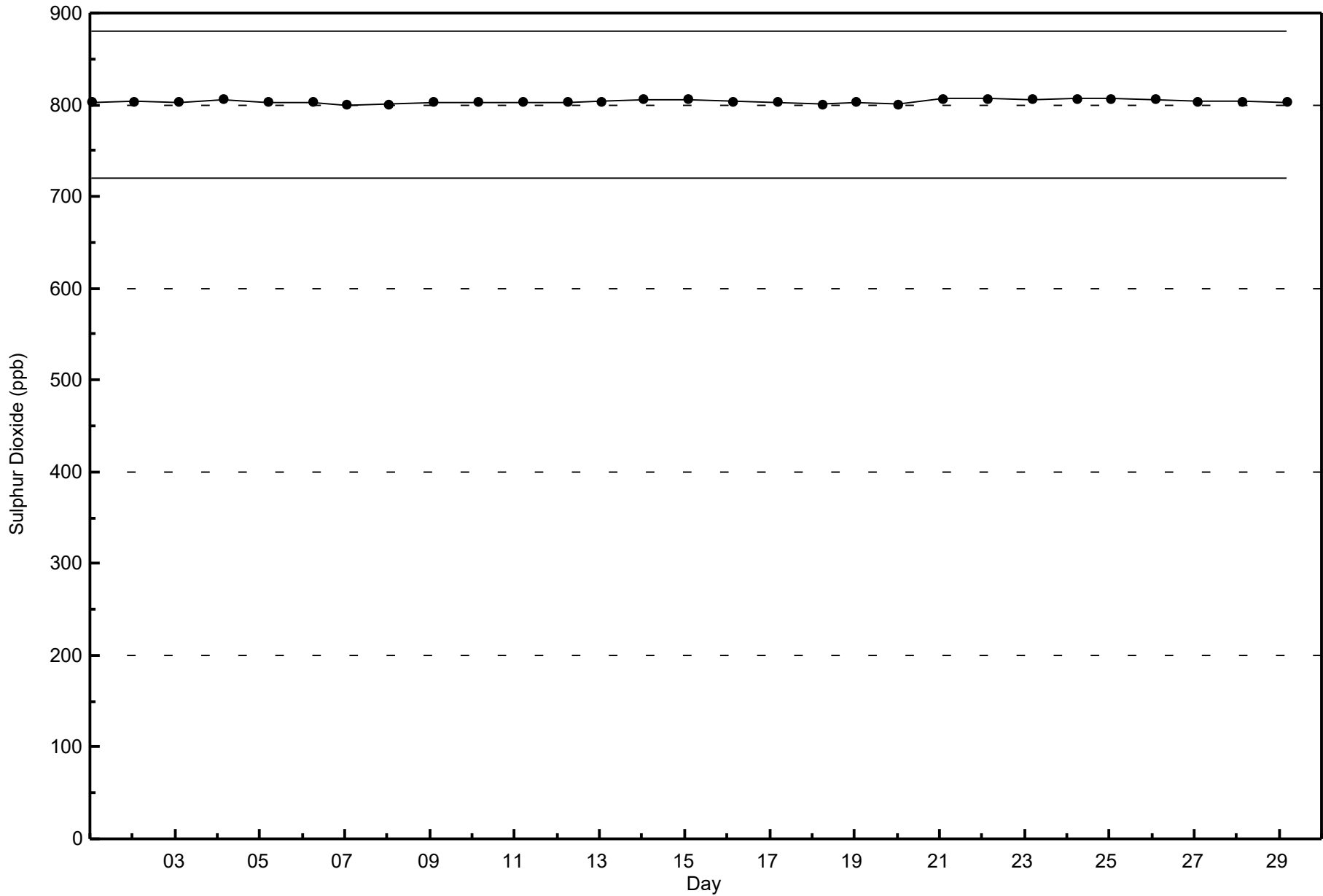
**Sulphur Dioxide (SO₂) - ppb
Mackay River - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	19	87	24	19	23	44	44	38	41	19	36	113	61	30	39	18	655
11 - 20	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	5
21 - 60	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	20	89	26	19	23	44	44	38	41	19	36	113	61	30	39	19	661

Total Number of Valid Hours: 661

Total Number of Hours: 696



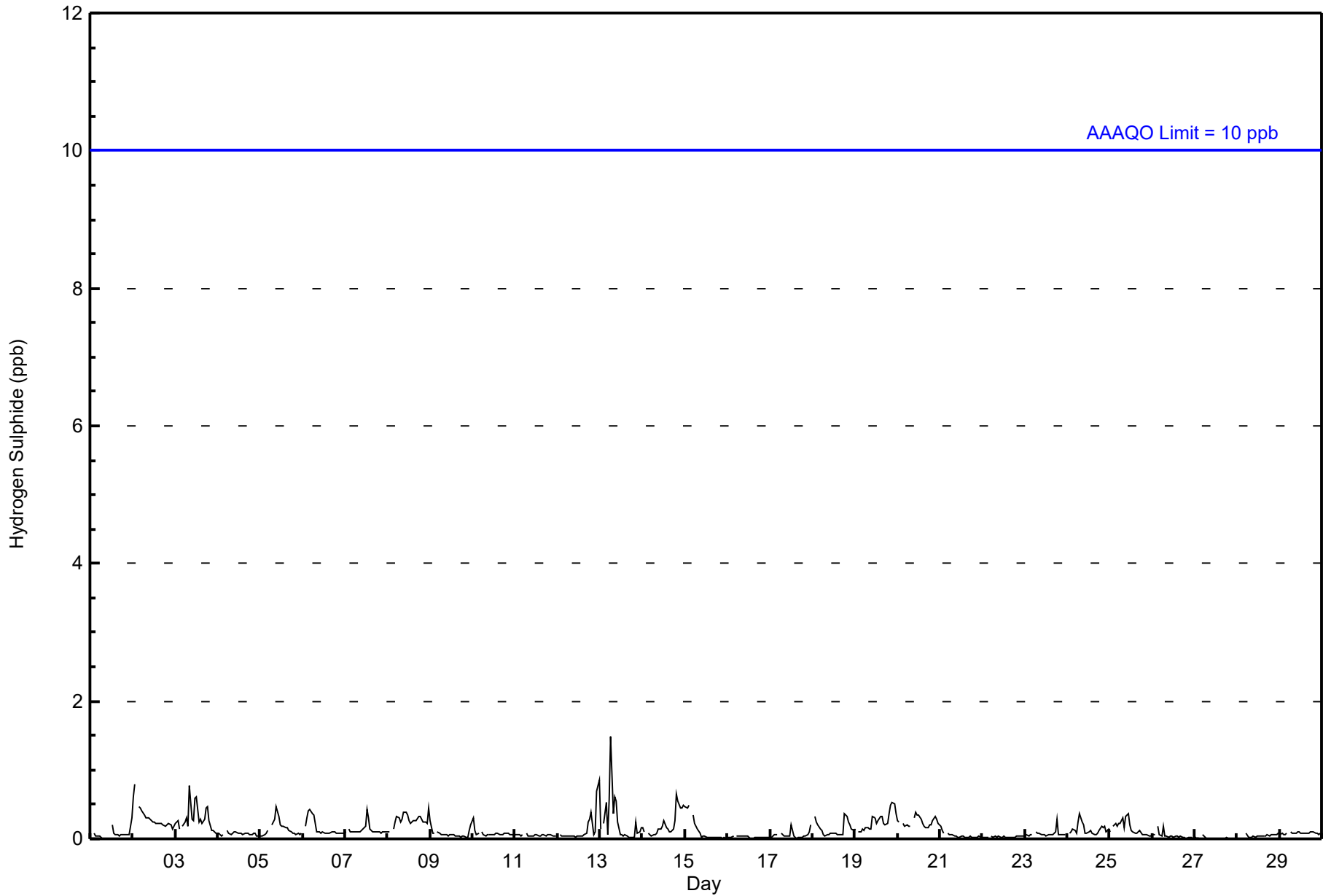




Wood Buffalo Environmental Association
Summary of Hour Averages

Hydrogen Sulphide (H₂S) - ppb
Mackay River - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:		696																			
Maximum Value: 1.5 ppb on Feb 13 07:00		Maximum Daily Average: 0.3 ppb on Feb 2				Hours of Data:		662																			
Minimum Value: 0.0 ppb on Feb 1 08:00		Minimum Daily Average: 0.0 ppb on Feb 27				Hours of Missing Data:		34																			
Maximum Diurnal Average: 0.2 ppb at hour 7		Minimum Diurnal Average: 0.1 ppb at hour 17				Hours of Calibration:		33																			
Monthly Average: 0.13 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.3 P ₉₉ = 0.6				Percent Operational Time:		99.9																			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.0	C	C	C	C	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.3
2-Feb	0.6	0.8	Z	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.8
3-Feb	0.2	0.3	0.2	Z	0.2	0.2	0.3	0.2	0.8	0.3	0.3	0.6	0.6	0.3	0.3	0.2	0.3	0.4	0.5	0.3	0.1	0.1	0.1	0.1	0.3	0.3	0.8
4-Feb	0.1	0.1	0.0	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1
5-Feb	0.0	0.0	0.1	0.1	0.1	Z	0.2	0.2	0.3	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
6-Feb	Z	0.2	0.3	0.4	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4
7-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4
8-Feb	0.1	0.1	Z	0.1	0.2	0.3	0.3	0.2	0.3	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.5	0.3	0.5	
9-Feb	0.3	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.3	
10-Feb	0.3	0.1	0.1	0.1	Z	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.3	
11-Feb	0.1	0.1	0.1	0.0	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	
12-Feb	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.4	0.1	0.1	0.7	0.9	0.1	0.9		
13-Feb	0.1	Z	0.2	0.5	0.1	0.6	1.5	0.4	0.6	0.6	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.2	0.2	1.5		
14-Feb	0.2	0.1	Z	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.3	0.7	0.5	0.4	0.4	0.5	0.2	0.7	
15-Feb	0.5	0.4	0.5	Z	0.3	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	
16-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
17-Feb	0.0	0.0	0.1	0.1	0.1	Z	0.1	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.2	
18-Feb	Z	0.3	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.4	
19-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.4	0.5	0.5	0.5	0.4	0.3	0.5	
20-Feb	0.3	0.2	Z	0.2	0.2	0.2	0.2	0.2	M	0.3	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.4	
21-Feb	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
22-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
23-Feb	0.0	0.1	0.0	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.3	
24-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.4	
25-Feb	0.1	Z	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.4	
26-Feb	0.1	0.1	Z	0.2	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
27-Feb	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
28-Feb	0.0	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	
29-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
																								Diurnal Average			
																								Diurnal Maximum			
Z - zerspan C - Calibration M - Maintenance Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																											





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Mackay River - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	662	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Mackay River - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	20	87	27	18	23	44	45	37	43	17	37	112	60	30	40	20	660
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	20	87	27	18	23	44	45	37	43	17	37	112	60	30	40	20	660

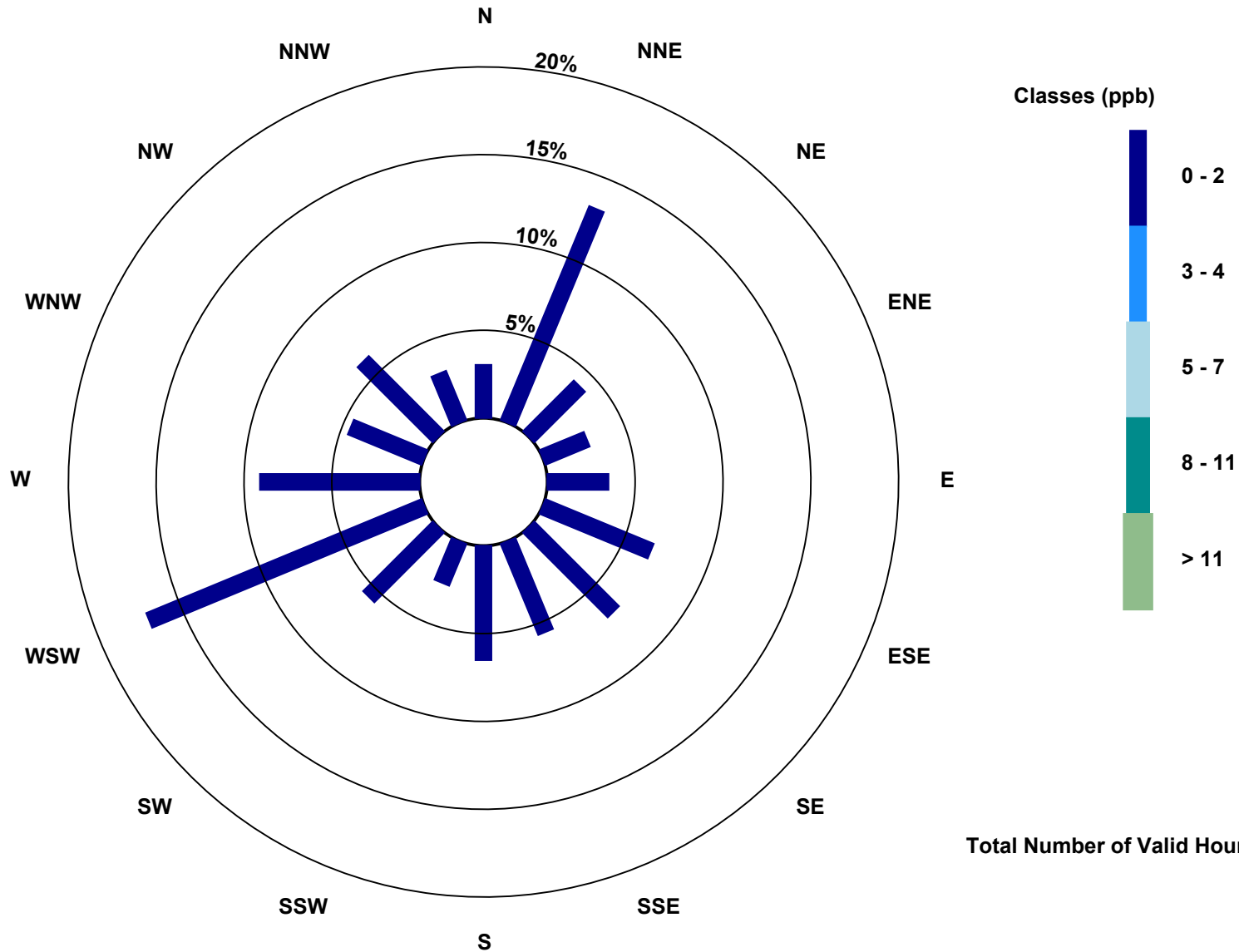
Total Number of Valid Hours: 660

Total Number of Hours: 696

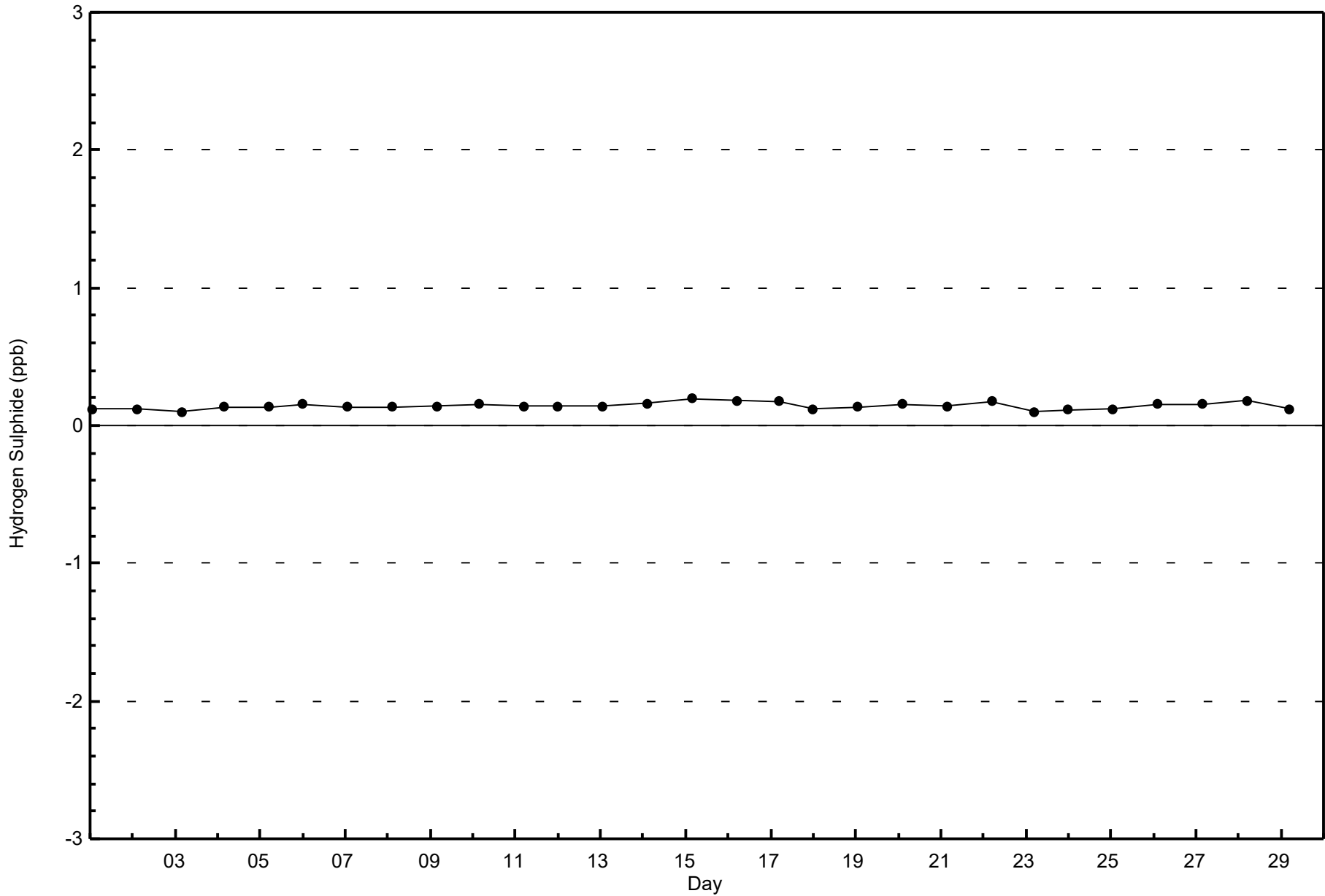


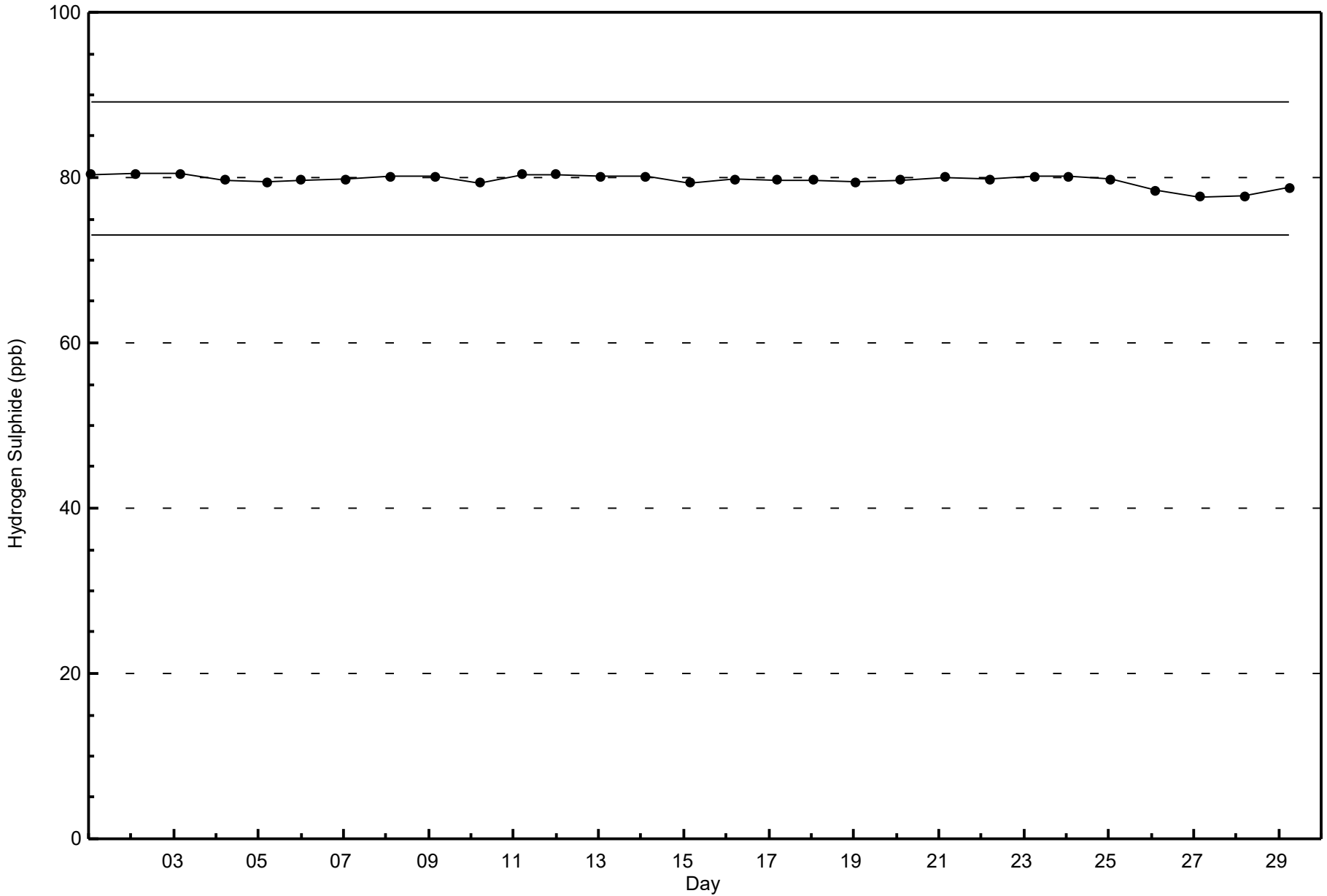
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Mackay River



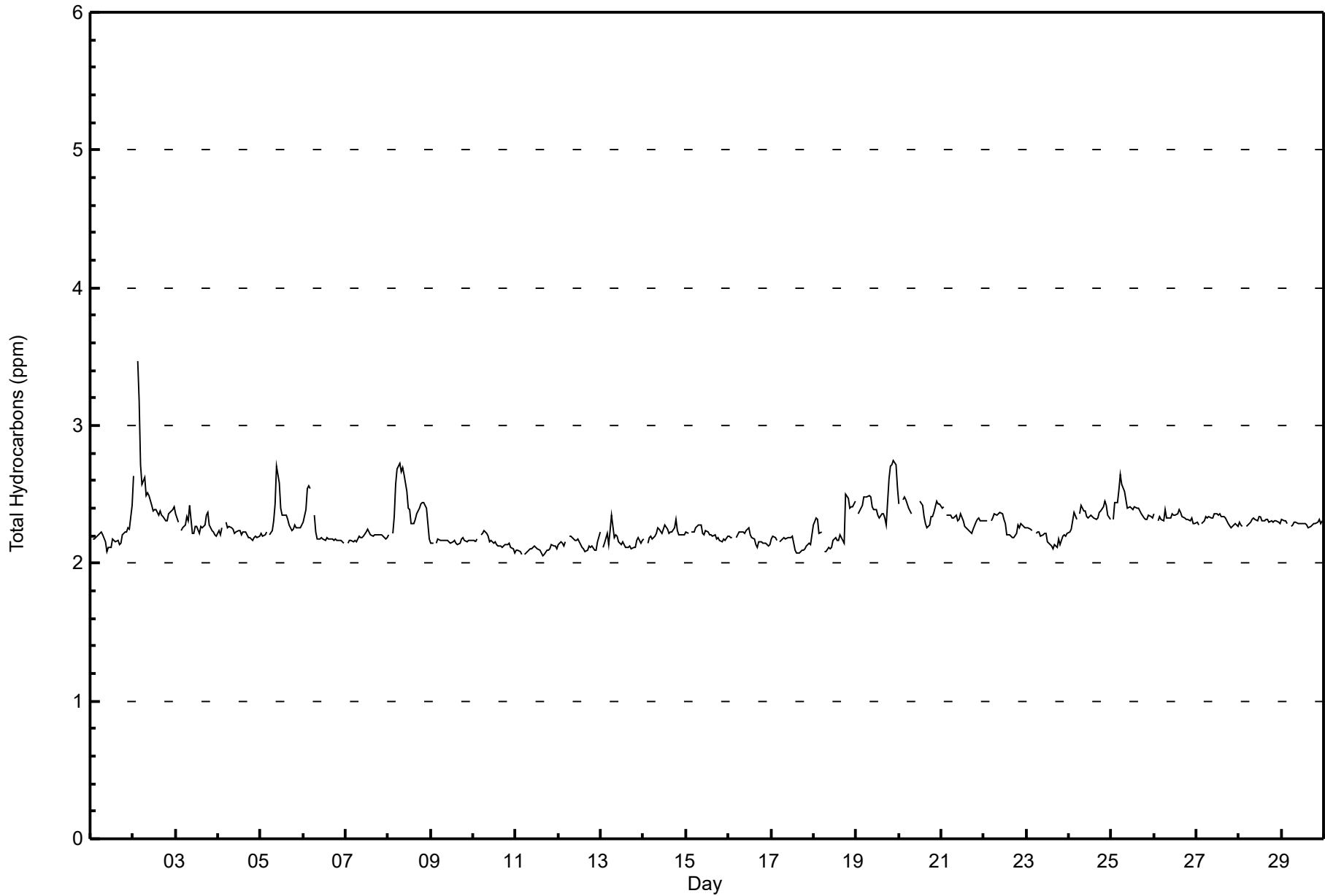
Total Number of Valid Hours: 660







Maximum Value: 3.5 ppm on Feb 2 03:00		Maximum Daily Average: 2.5 ppm on Feb 2		Hours in Service: 696																							
Minimum Value: 2.1 ppm on Feb 11 16:00		Minimum Daily Average: 2.1 ppm on Feb 11		Hours of Data: 663																							
Maximum Diurnal Average: 2.3 ppm at hour 5		Minimum Diurnal Average: 2.2 ppm at hour 17		Hours of Missing Data: 33																							
Monthly Average: 2.27 ppm		Percentiles: P ₁ = 2.1 P ₁₀ = 2.1 Q ₁ = 2.2 Median = 2.2 Q ₃ = 2.3 P ₉₀ = 2.4 P ₉₉ = 2.7		Hours of Calibration: 32																							
				Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.4	2.2	2.4	
2-Feb	2.6	Z	3.5	3.2	2.7	2.6	2.6	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.5	3.5	
3-Feb	2.4	2.3	Z	2.2	2.3	2.3	2.3	2.3	2.4	2.2	2.2	2.3	2.3	2.2	2.3	2.3	2.3	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.3	2.4	
4-Feb	2.2	2.2	2.3	Z	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	
5-Feb	2.2	2.2	2.2	2.2	Z	2.2	2.2	2.3	2.4	2.7	2.6	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.7	
6-Feb	2.3	2.4	2.5	2.6	2.5	Z	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.6	
7-Feb	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	
8-Feb	2.2	Z	2.2	2.3	2.6	2.7	2.7	2.7	2.7	2.6	2.5	2.4	2.4	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.4	2.7	
9-Feb	2.1	2.1	Z	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	
10-Feb	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	
11-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
12-Feb	2.1	2.2	2.1	2.1	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	
13-Feb	Z	2.1	2.1	2.2	2.1	2.2	2.4	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.4	
14-Feb	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	
15-Feb	2.2	2.2	Z	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	
16-Feb	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.3
17-Feb	2.2	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2
18-Feb	2.3	2.3	2.3	2.2	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.5	2.5	2.4	2.4	2.4	2.4	2.2	2.5
19-Feb	Z	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.3	2.3	2.6	2.7	2.7	2.7	2.7	2.6	2.5	2.7	
20-Feb	2.4	Z	2.5	2.5	2.5	2.4	2.4	2.4	M	C	C	C	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.5	
21-Feb	2.4	2.4	Z	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4
22-Feb	2.3	2.3	2.3	Z	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.4
23-Feb	2.3	2.3	2.3	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3
24-Feb	2.2	2.2	2.3	2.4	2.3	Z	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.4	2.3	2.3	2.4	2.5	
25-Feb	Z	2.3	2.4	2.4	2.5	2.6	2.6	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.6
26-Feb	2.4	Z	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4
27-Feb	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4
28-Feb	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
29-Feb	2.3	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
2.3																								Diurnal Average			
2.6																								Diurnal Maximum			
Z - zerospan		C - Calibration				M - Maintenance																					





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Mackay River - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	0	0.00	0.00
2.1 - 3.0	661	99.70	99.70
3.1 - 10.0	2	0.30	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Mackay River - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.1 - 3.0	20	87	26	19	23	44	44	38	41	19	36	113	61	30	39	19	659
3.1 - 10.0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	20	89	26	19	23	44	44	38	41	19	36	113	61	30	39	19	661

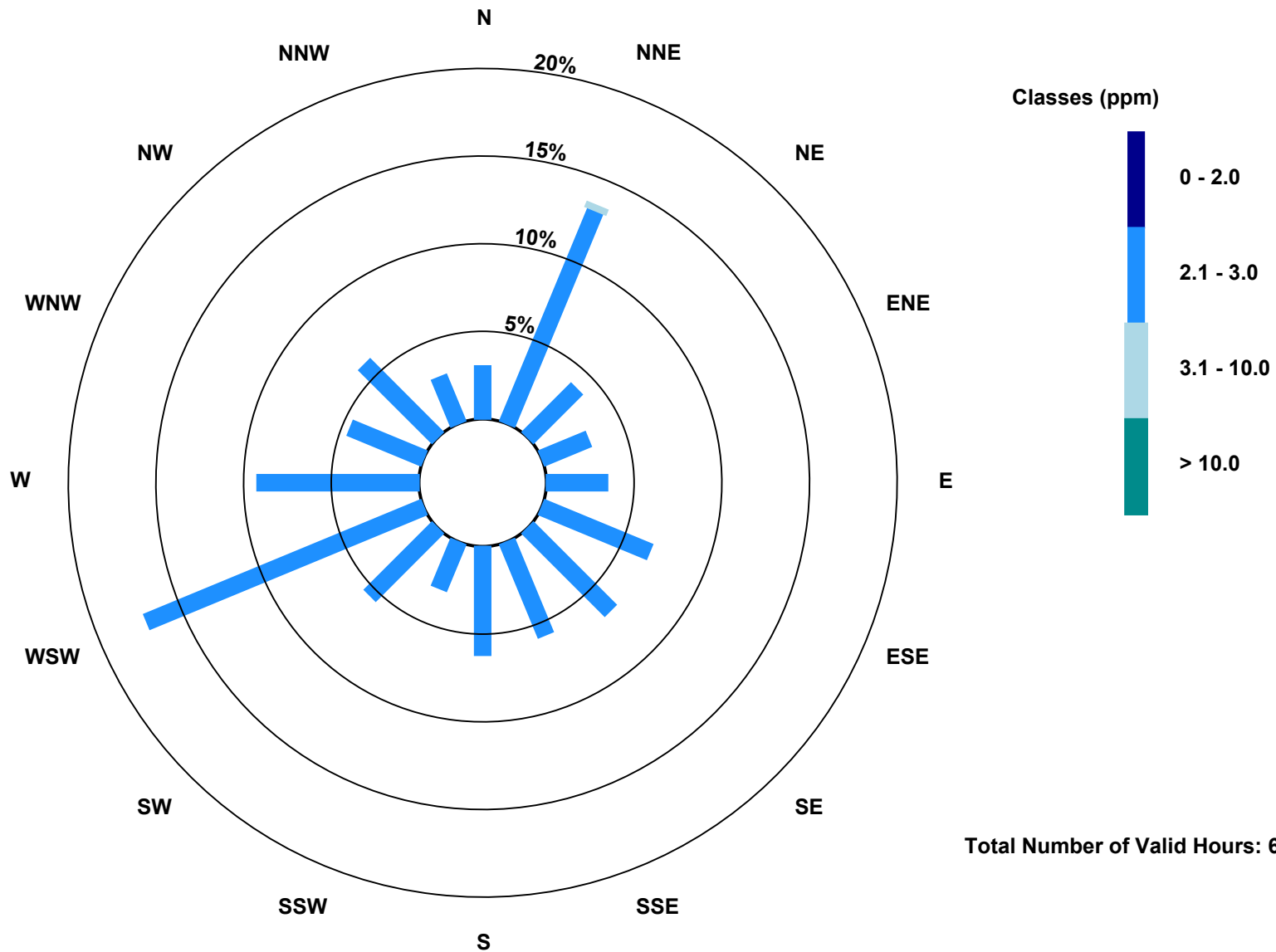
Total Number of Valid Hours: 661

Total Number of Hours: 696

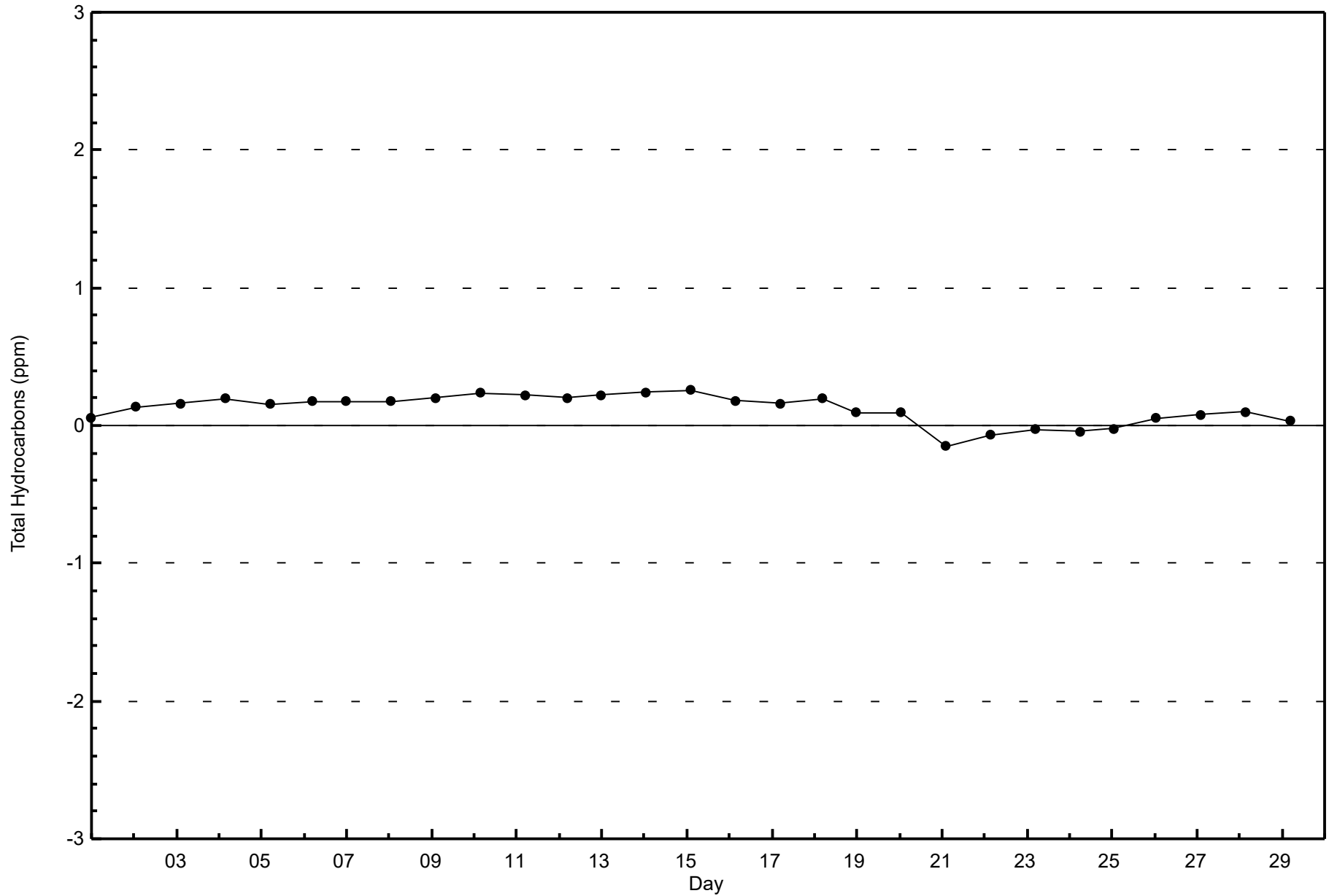


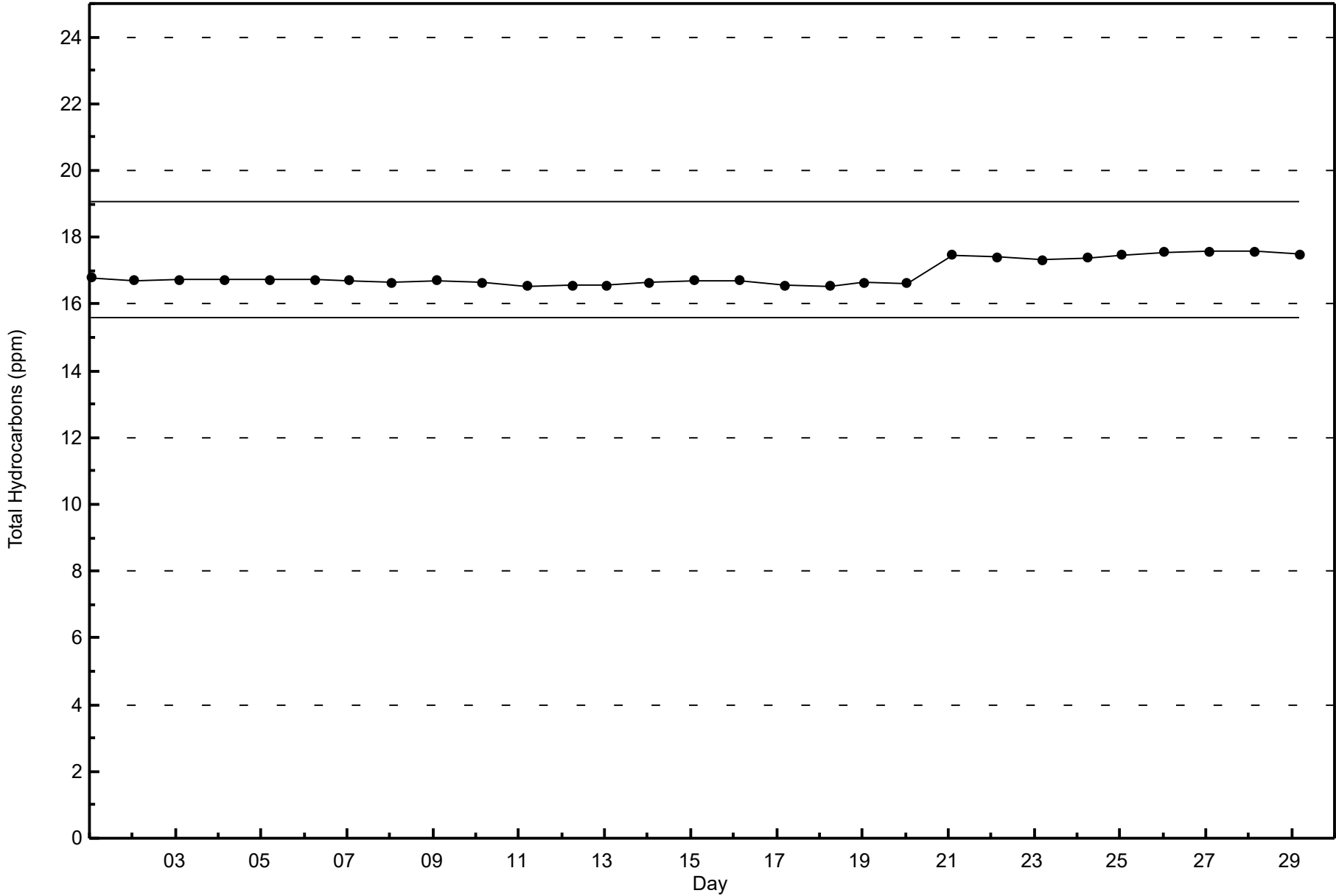
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Mackay River



Total Number of Valid Hours: 661





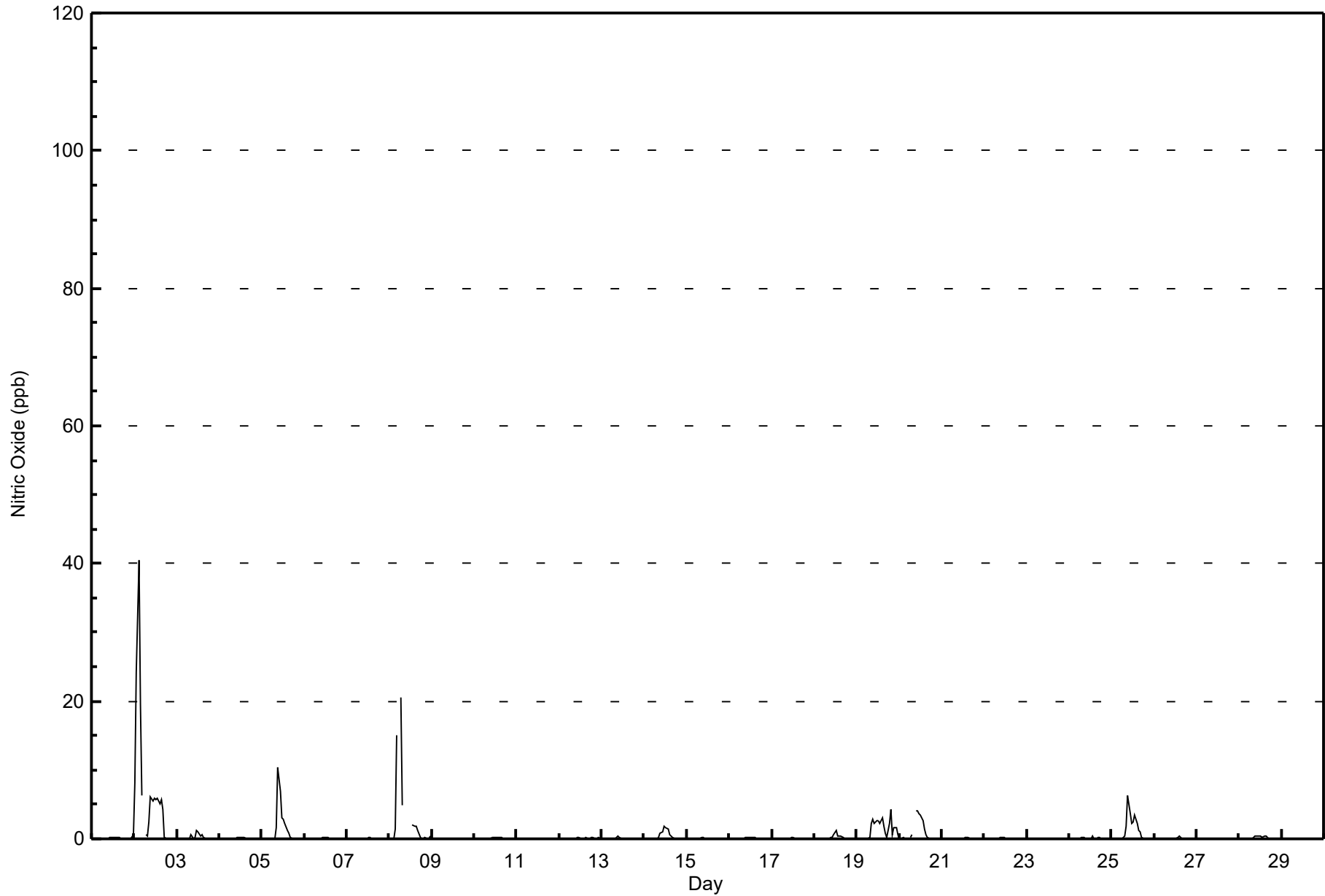


Maximum Value: 40.5 ppb on Feb 2 03:00 Maximum Daily Average: 6.3 ppb on Feb 2																				Hours in Service: 696 Hours of Data: 661 Hours of Missing Data: 35 Hours of Calibration: 34 Percent Operational Time: 99.9									
Minimum Value: 0.0 ppb on Feb 1 01:00 Minimum Daily Average: 0.0 ppb on Feb 11 Maximum Diurnal Average: 1.7 ppb at hour 3 Minimum Diurnal Average: 0.0 ppb at hour 6 Monthly Average: 0.51 ppb Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.1 P ₉₀ = 0.7 P ₉₉ = 7.3																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1	0.7			
2-Feb	8.0	24.2	40.5	19.4	6.2	Z	0.7	0.3	2.5	6.0	5.4	5.9	5.7	5.9	5.2	5.6	4.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	6.3	40.5			
3-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.1	1.3	1.0	0.4	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.3			
4-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
5-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	1.6	10.5	6.8	3.1	2.8	2.3	1.3	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	10.5			
6-Feb	0.0	0.0	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
7-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
8-Feb	0.0	0.0	0.0	1.3	15.1	Z	20.6	5.0	C	C	C	C	C	2.0	1.8	1.9	1.3	0.2	0.0	0.0	0.2	0.0	0.1	0.3	2.8	20.6			
9-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
10-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
11-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
12-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.3	0.0	0.1	0.3			
13-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3			
14-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.8	1.1	1.8	1.7	1.3	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.8			
15-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
16-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2			
17-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
18-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.7	1.2	0.4	0.4	0.4	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	1.2			
19-Feb	0.0	0.0	0.0	0.0	Z	0.1	0.1	0.3	2.3	2.8	2.3	2.7	2.7	2.3	3.1	1.8	0.8	0.2	2.2	4.2	0.7	1.6	1.6	0.5	1.4	4.2			
20-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.2	0.7	M	4.1	4.0	3.6	3.4	2.6	1.4	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.1			
21-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1			
22-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
23-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
24-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3			
25-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.3	1.9	6.2	3.7	2.2	2.5	3.4	2.2	1.1	1.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1.1	6.2			
26-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4			
27-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
28-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4			
29-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1			
																								Diurnal Average			Diurnal Maximum		
0.3 1.0 1.7 0.8 0.9 0.0 0.7 0.2 0.4 1.2 0.9 0.8 0.8 0.8 0.6 0.5 0.3 0.0 0.1 0.2 0.0 0.1 0.1 0.1 0.1 8.0 24.2 40.5 19.4 15.1 0.1 20.6 5.0 2.5 10.5 6.8 5.9 5.7 5.9 5.2 5.6 4.3 0.3 2.2 4.2 0.7 1.6 1.6 0.7																													
Z - zerospan C - Calibration M - Maintenance																													



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Mackay River - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitric Oxide (NO) - ppb
Mackay River - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	658	99.55	99.55
21 - 40	3	0.45	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Mackay River - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	20	86	27	17	21	45	43	41	42	18	37	114	59	28	41	17	656
21 - 40	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	21	88	27	17	21	45	43	41	42	18	37	114	59	28	41	17	659

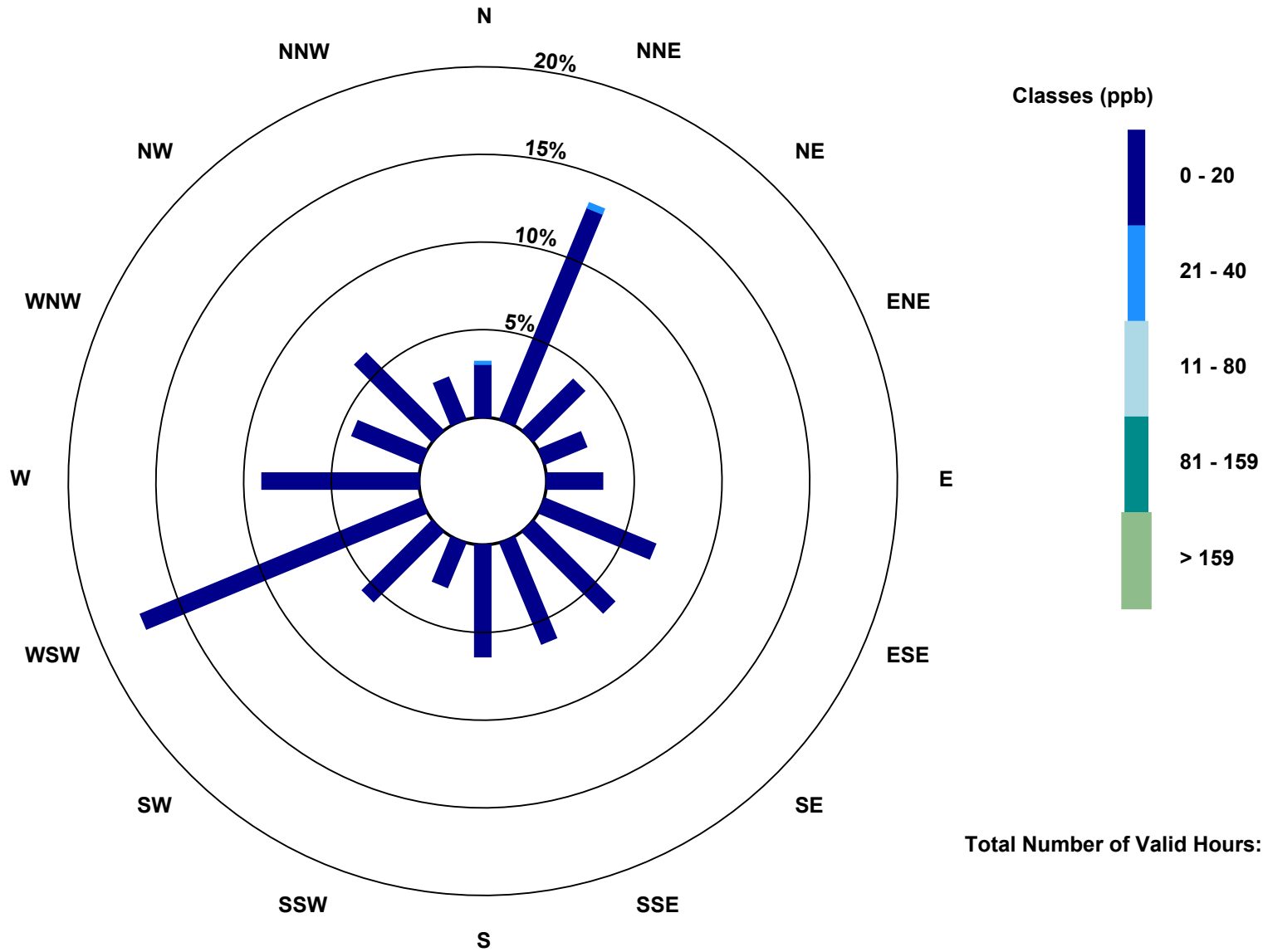
Total Number of Valid Hours: 659

Total Number of Hours: 696

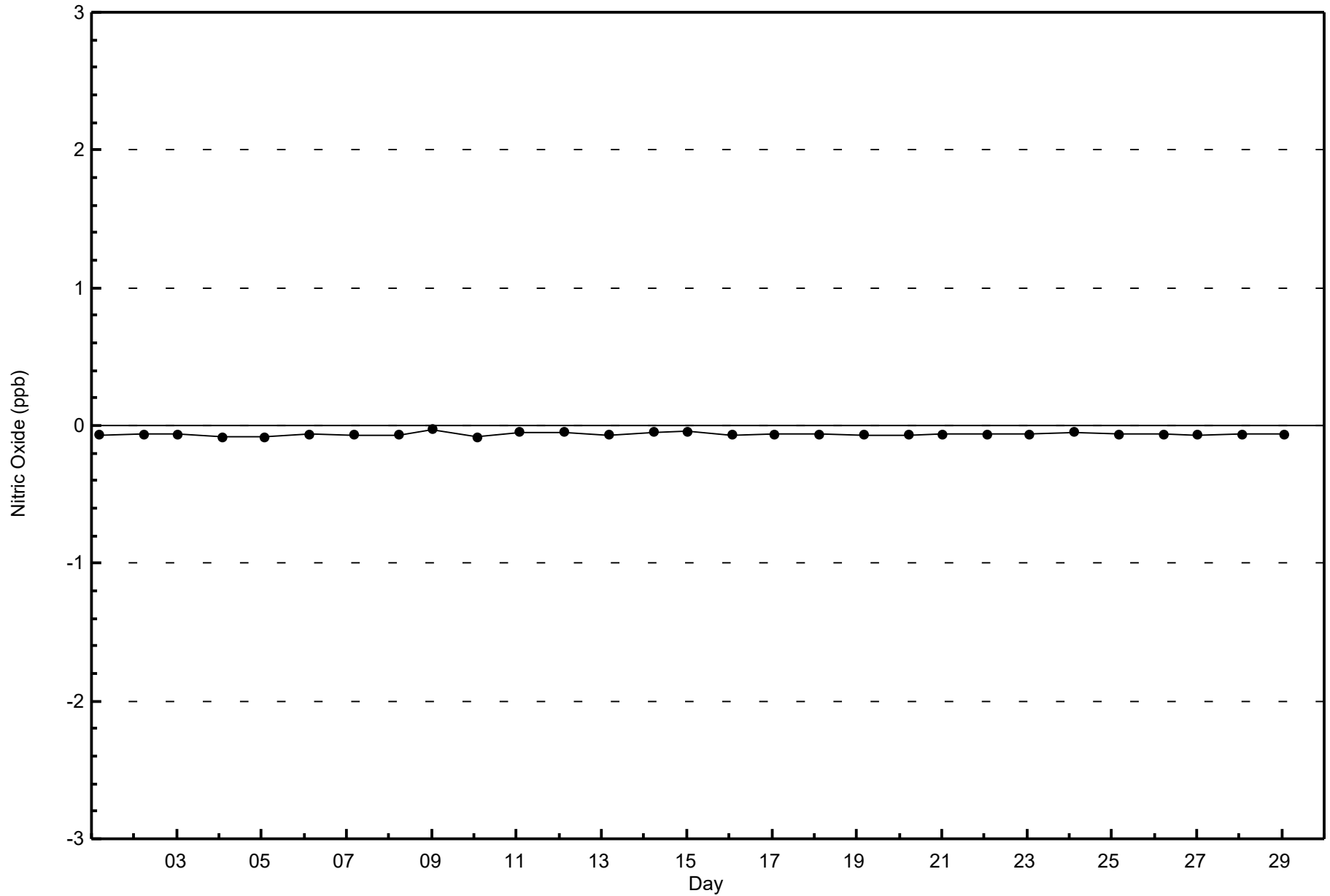


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Mackay River



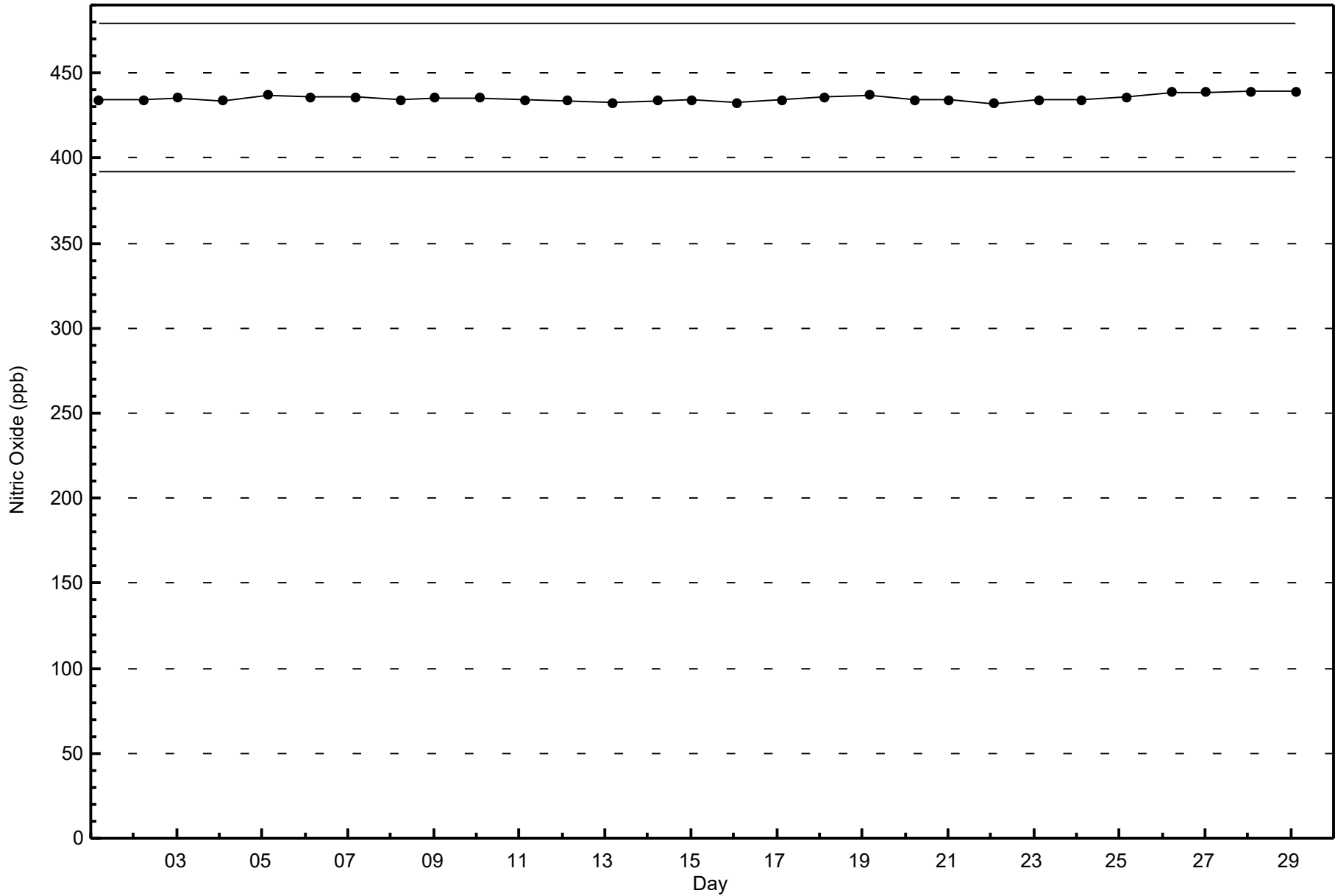
Total Number of Valid Hours: 659





Wood Buffalo Environmental Association
Span Responses

Nitric Oxide (NO) - ppb
Mackay River - February 2024





Wood Buffalo Environmental Association
Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb
Mackay River - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 31.9 ppb on Feb 19 20:00	Maximum Daily Average: 14.9 ppb on Feb 2		Hours of Data:	661
Minimum Value: 0.1 ppb on Feb 4 01:00	Minimum Daily Average: 0.3 ppb on Feb 9		Hours of Missing Data:	35
Maximum Diurnal Average: 5.2 ppb at hour 3	Minimum Diurnal Average: 2.0 ppb at hour 14		Hours of Calibration:	34
Monthly Average: 3.25 ppb	Percentiles: P ₁ = 0.1 P ₁₀ = 0.3 Q ₁ = 0.5 Median = 1.0 Q ₃ = 3.4 P ₉₀ = 10.0 P ₉₉ = 25.7		Percent Operational Time:	99.9

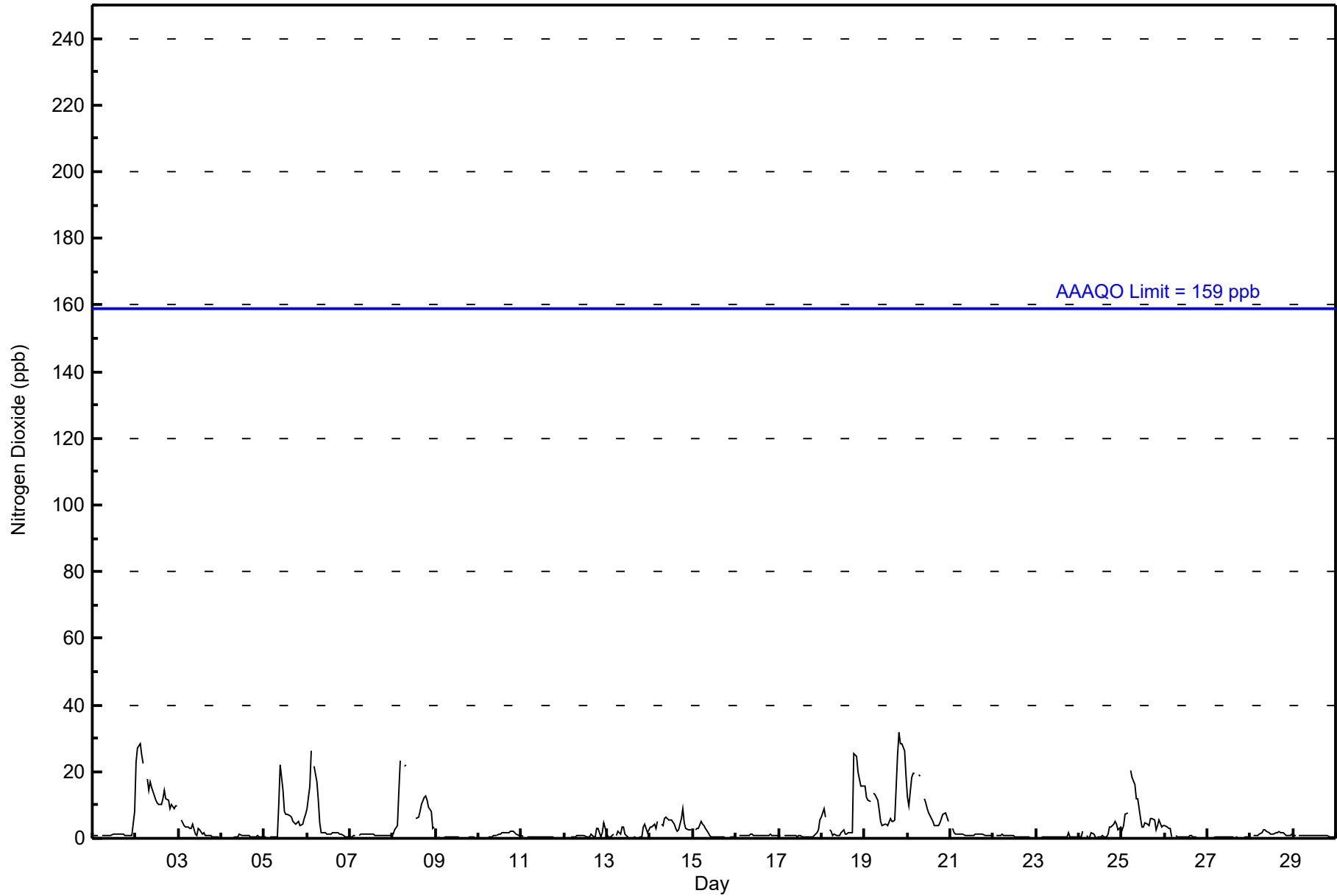
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	1.0	1.0	1.0	0.8	Z	0.9	0.8	0.7	0.8	0.9	1.0	1.1	1.2	1.2	1.3	1.4	1.4	1.1	1.0	0.9	0.8	0.8	0.9	8.2	1.3	8.2	
2-Feb	22.8	27.0	28.6	25.2	22.4	Z	17.7	14.6	17.0	15.4	12.5	11.6	10.7	10.1	10.1	11.7	14.2	11.9	11.6	9.1	10.0	8.9	9.6	9.9	14.9	28.6	
3-Feb	Z	5.4	4.6	3.8	3.5	3.4	3.1	3.0	4.4	1.2	0.9	3.1	2.5	1.1	1.7	0.9	0.7	0.7	0.7	0.6	0.6	0.5	0.3	0.2	2.0	5.4	
4-Feb	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.4	0.3	0.6	1.1	0.9	0.8	0.8	0.9	0.8	0.6	0.5	0.4	0.5	0.7	0.6	0.5	0.4	0.5	1.1	
5-Feb	0.4	0.4	Z	0.4	0.3	0.3	0.3	0.5	10.2	22.2	14.6	8.1	7.3	7.1	6.6	6.2	4.9	4.4	4.5	5.0	4.0	4.3	5.9	7.0	5.4	22.2	
6-Feb	8.7	15.5	26.1	Z	21.8	16.9	11.5	4.7	1.6	1.7	1.5	1.4	1.2	1.4	1.5	1.5	1.5	1.9	1.4	1.2	0.8	0.6	0.6	0.6	5.5	26.1	
7-Feb	0.5	0.6	0.7	0.8	Z	1.0	1.1	1.2	1.4	1.4	1.2	1.1	1.4	1.4	1.0	0.9	0.9	0.8	0.8	0.9	0.9	0.9	1.0	1.2	1.0	1.4	
8-Feb	1.4	2.5	3.9	13.8	23.1	Z	21.7	21.9	C	C	C	C	C	5.8	6.3	8.2	10.2	12.1	12.5	11.3	9.3	8.2	2.9	3.3	9.9	23.1	
9-Feb	Z	0.5	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.2	0.3	0.5	
10-Feb	0.2	Z	0.2	0.2	0.1	0.1	0.3	0.6	0.8	0.9	1.0	1.1	1.3	1.5	1.7	1.9	1.9	1.7	2.0	2.2	1.8	1.3	1.0	0.9	1.1	2.2	
11-Feb	0.8	0.6	Z	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.8	
12-Feb	0.2	0.2	0.2	Z	0.4	0.5	0.6	0.8	0.7	0.9	1.0	0.9	0.6	0.5	0.4	1.1	0.5	0.6	2.9	3.0	0.3	1.6	4.6	1.7	1.1	4.6	
13-Feb	0.3	0.4	0.4	1.3	Z	1.0	2.3	1.2	3.2	3.3	1.2	0.4	0.2	0.2	0.3	0.2	0.2	0.3	0.4	3.4	4.4	1.5	2.4	1.2	4.4		
14-Feb	3.4	3.2	4.1	3.1	5.1	Z	4.3	3.9	5.9	6.4	5.7	5.6	5.3	4.3	2.8	2.3	2.5	5.8	8.8	4.5	3.1	2.7	2.6	2.7	4.3	8.8	
15-Feb	Z	2.5	2.8	3.0	4.9	4.4	3.8	2.8	1.5	0.8	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.2	0.2	0.3	0.4	0.5	1.4	4.9		
16-Feb	0.5	Z	0.7	0.7	0.7	0.7	0.8	0.9	1.1	1.1	1.0	0.9	0.8	0.8	0.8	0.8	0.9	0.9	1.0	1.1	1.0	1.0	0.9	0.8	0.9	1.1	
17-Feb	0.7	0.8	Z	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.9	0.4	0.3	0.4	0.4	0.3	0.3	0.3	1.0	1.7	2.5	5.6	1.0	5.6	
18-Feb	6.5	8.8	6.3	Z	2.6	2.1	0.9	1.1	0.8	0.9	0.9	1.7	2.6	1.3	1.4	1.9	1.9	1.5	25.4	24.4	19.9	17.9	15.5	15.5	7.0	25.4	
19-Feb	15.8	12.2	11.5	11.0	Z	13.5	13.2	11.4	8.3	4.9	4.0	4.3	4.2	4.0	5.9	4.9	4.9	5.5	25.0	31.9	28.3	28.6	26.2	18.5	13.0	31.9	
20-Feb	12.1	9.9	18.3	19.7	19.3	Z	19.2	18.8	M	11.8	10.6	8.7	7.8	5.9	4.9	4.0	3.8	3.9	4.8	5.8	7.0	7.5	6.5	5.0	9.8	19.7	
21-Feb	Z	2.9	1.9	1.4	1.2	1.2	1.2	1.2	1.0	0.9	0.8	0.7	0.7	1.0	1.1	1.2	1.1	1.3	1.1	1.0	0.9	0.9	0.9	0.9	1.2	2.9	
22-Feb	0.9	Z	1.0	0.9	1.0	1.1	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.6	0.6	0.5	0.4	0.5	0.4	0.3	0.4	0.3	0.2	0.2	0.2	0.6	1.1
23-Feb	0.3	0.4	Z	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	1.8	0.5	0.4	0.3	0.3	0.3	0.5	1.8	
24-Feb	0.3	0.3	2.1	Z	0.8	0.2	0.4	1.6	1.1	0.5	0.2	0.3	0.3	1.0	0.4	0.5	1.2	3.2	3.6	4.4	5.0	4.1	2.5	3.4	1.6	5.0	
25-Feb	2.5	3.8	7.0	7.8	Z	20.4	18.2	16.0	11.9	11.7	6.1	3.3	3.3	4.7	4.4	3.8	6.1	5.9	5.3	2.6	4.0	5.3	3.5	3.9	7.0	20.4	
26-Feb	4.0	3.2	2.9	3.1	0.6	Z	0.8	0.3	0.3	0.3	0.3	0.4	0.4	0.5	1.0	0.7	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.9	4.0	
27-Feb	Z	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.4	0.5	0.4	0.3	0.5	
28-Feb	0.3	Z	0.7	0.8	0.9	1.2	1.7	2.5	2.5	2.1	1.5	1.4	1.3	1.2	1.5	1.7	2.3	1.8	1.8	1.2	1.0	1.0	0.9	1.1	1.4	2.5	
29-Feb	0.9	0.8	Z	0.7	0.7	0.7	0.7	0.8	0.7	0.8	1.0	1.0	0.8	0.7	0.8	0.7	0.8	0.7	0.9	0.9	0.5	0.5	0.5	0.5	0.7	1.0	
3.5 4.3 5.2 4.0 4.7 3.0 4.4 3.9 2.9 3.3 2.6 2.2 2.1 2.0 2.0 2.1 2.3 2.4 4.1 4.0 3.7 3.6 3.2 3.3																								Diurnal Average			
22.8 27.0 28.6 25.2 23.1 20.4 21.7 21.9 17.0 22.2 14.6 11.6 10.7 10.1 10.1 11.7 14.2 12.1 25.4 31.9 28.3 28.6 26.2 18.5																								Diurnal Maximum			

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Mackay River - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Mackay River - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	643	97.28	97.28
21 - 40	18	2.72	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Mackay River - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	20	77	23	16	21	44	43	41	42	18	37	114	59	28	41	17	641
21 - 40	1	11	4	1	0	1	0	0	0	0	0	0	0	0	0	0	18
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	21	88	27	17	21	45	43	41	42	18	37	114	59	28	41	17	659

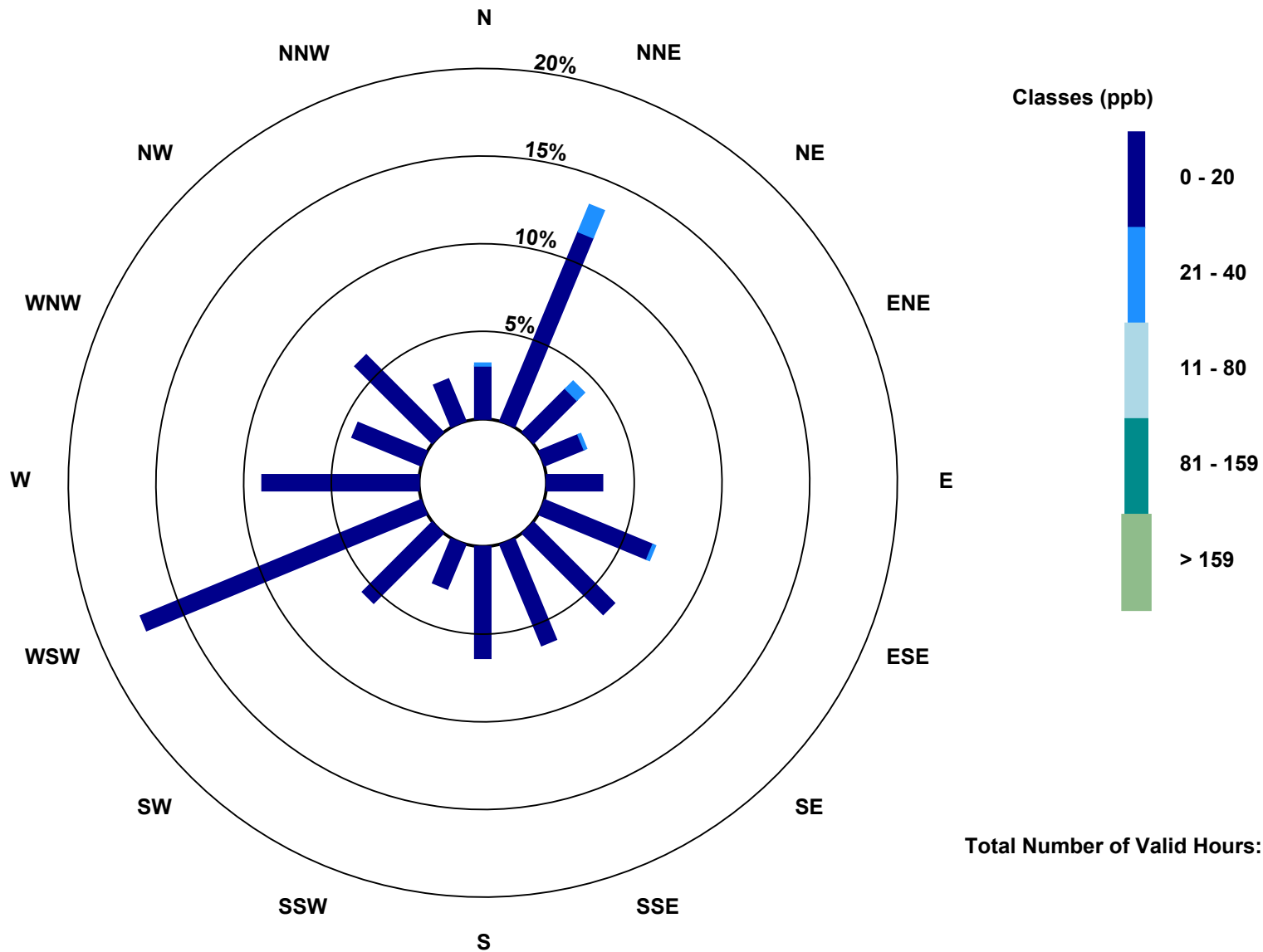
Total Number of Valid Hours: 659

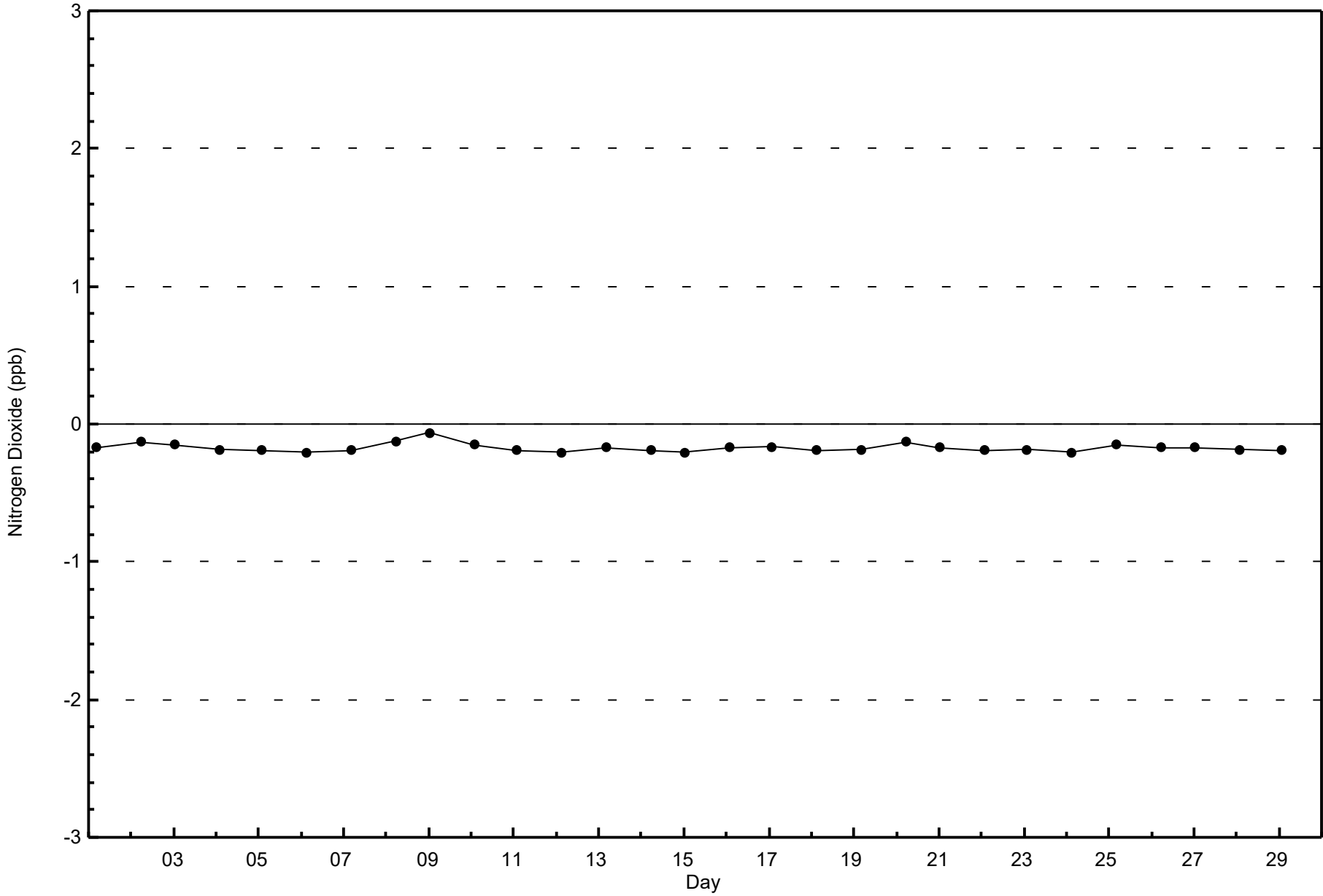
Total Number of Hours: 696

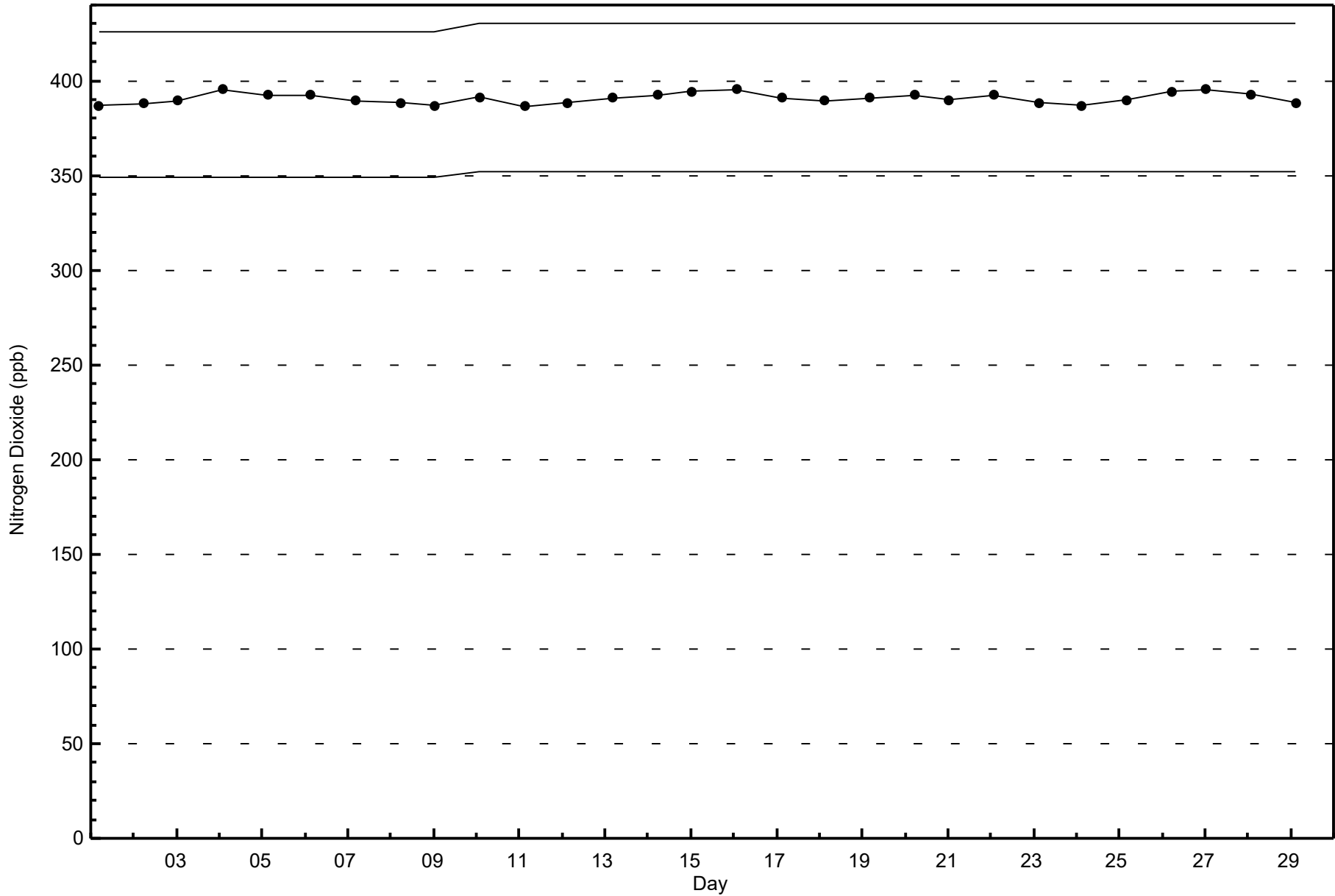


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Mackay River









Wood Buffalo Environmental Association
Summary of Hour Averages

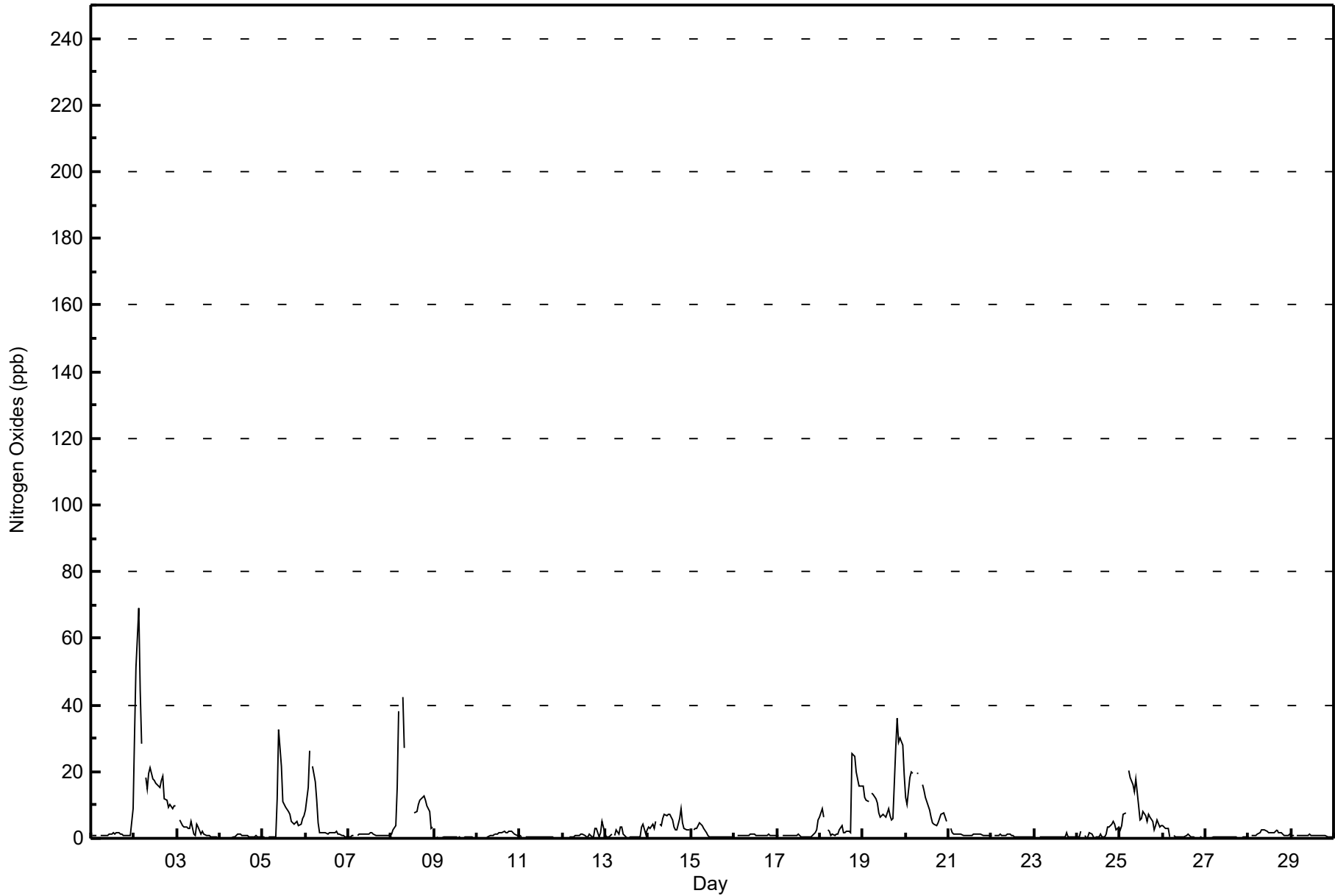
Nitrogen Oxides (NO_x) - ppb
Mackay River - February 2024

Maximum Value: 69.1 ppb on Feb 2 03:00																				Maximum Daily Average: 21.2 ppb on Feb 2					Hours in Service:	696					
Minimum Value: 0.1 ppb on Feb 4 05:00																				Minimum Daily Average: 0.3 ppb on Feb 9					Hours of Data:	661					
Maximum Diurnal Average: 6.9 ppb at hour 3																				Minimum Diurnal Average: 2.4 ppb at hour 18					Hours of Missing Data:	35					
Monthly Average: 3.76 ppb																				Percentiles: P ₁ = 0.1 P ₁₀ = 0.3 Q ₁ = 0.5 Median = 1.0 Q ₃ = 3.6 P ₉₀ = 11.2 P ₉₉ = 31.6					Hours of Calibration:	34					
																									Percent Operational Time:	99.9					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
1-Feb	1.0	1.0	1.0	0.8	Z	0.9	0.8	0.7	0.8	1.0	1.2	1.3	1.5	1.4	1.5	1.5	1.4	1.1	1.0	0.9	0.8	0.8	0.9	8.9	1.4	8.9					
2-Feb	30.8	51.2	69.1	44.6	28.6	Z	18.4	14.9	19.5	21.4	17.9	17.5	16.4	16.0	15.3	17.3	18.5	12.0	11.6	9.1	10.0	8.9	9.6	9.9	21.2	69.1					
3-Feb	Z	5.4	4.6	3.8	3.5	3.4	3.1	3.0	5.1	1.2	1.0	4.4	3.5	1.5	2.3	1.1	0.7	0.7	0.7	0.6	0.6	0.5	0.3	0.2	2.2	5.4					
4-Feb	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.4	0.3	0.7	1.3	1.1	1.0	1.0	0.8	0.6	0.5	0.4	0.5	0.7	0.6	0.5	0.4	0.4	0.5	1.3					
5-Feb	0.4	0.4	Z	0.4	0.3	0.3	0.3	0.5	11.8	32.7	21.4	11.2	10.1	9.4	7.9	7.0	5.1	4.4	4.5	5.0	4.0	4.3	5.9	7.0	6.7	32.7					
6-Feb	8.7	15.5	26.2	Z	21.8	16.9	11.5	4.7	1.6	1.8	1.6	1.5	1.3	1.6	1.6	1.6	1.5	1.9	1.4	1.2	0.8	0.6	0.6	0.6	5.5	26.2					
7-Feb	0.5	0.6	0.7	0.8	Z	1.0	1.1	1.2	1.4	1.4	1.3	1.2	1.6	1.5	1.1	0.9	0.9	0.8	0.8	0.9	0.9	0.9	1.0	1.2	1.0	1.6					
8-Feb	1.4	2.5	3.9	15.1	38.2	Z	42.3	26.9	C	C	C	C	C	7.8	8.1	10.1	11.5	12.3	12.5	11.3	9.5	8.2	3.0	3.6	12.7	42.3					
9-Feb	Z	0.5	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.2	0.3	0.5					
10-Feb	0.2	Z	0.2	0.2	0.1	0.1	0.3	0.6	0.8	1.0	1.1	1.3	1.5	1.7	1.9	2.0	1.9	1.7	2.0	2.2	1.8	1.3	1.0	0.9	1.1	2.2					
11-Feb	0.8	0.6	Z	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.8					
12-Feb	0.2	0.2	0.2	Z	0.4	0.5	0.6	0.8	0.7	0.9	1.1	1.1	0.7	0.5	0.4	1.3	0.5	0.6	3.1	3.1	0.3	1.7	4.9	1.7	1.1	4.9					
13-Feb	0.3	0.4	0.4	1.3	Z	1.0	2.3	1.2	3.3	3.6	1.4	0.4	0.2	0.2	0.3	0.2	0.2	0.3	0.4	3.4	4.4	1.5	2.4	1.3	1.3	4.4					
14-Feb	3.4	3.2	4.1	3.1	5.1	Z	4.3	3.9	6.1	7.2	6.8	7.4	7.0	5.6	3.4	2.7	2.6	5.8	8.8	4.5	3.1	2.7	2.6	2.7	4.6	8.8					
15-Feb	Z	2.5	2.8	3.0	4.9	4.4	3.8	2.8	1.7	0.9	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.2	0.2	0.3	0.4	0.5	1.4	1.4	4.9					
16-Feb	0.5	Z	0.7	0.7	0.7	0.7	0.8	0.9	1.1	1.2	1.2	1.1	1.0	0.9	0.9	0.9	0.9	0.9	1.0	1.1	1.0	1.0	0.9	0.8	0.9	1.2					
17-Feb	0.7	0.8	Z	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.8	1.1	0.4	0.3	0.4	0.4	0.3	0.3	0.3	1.0	1.7	2.5	5.6	1.0	5.6					
18-Feb	6.5	8.8	6.3	Z	2.6	2.1	0.9	1.1	0.9	1.1	1.2	2.4	3.8	1.7	1.8	2.3	2.1	1.5	25.5	24.5	19.9	17.9	15.5	15.5	7.2	25.5					
19-Feb	15.8	12.2	11.5	11.0	Z	13.6	13.3	11.7	10.6	7.7	6.3	7.0	6.9	6.3	9.0	6.7	5.7	5.7	27.2	36.1	29.0	30.2	27.8	19.0	14.4	36.1					
20-Feb	12.2	10.0	18.4	19.8	19.4	Z	19.4	19.5	M	15.9	14.6	12.3	11.2	8.5	6.3	4.6	4.1	4.0	4.8	5.8	7.0	7.5	6.5	5.0	10.8	19.8					
21-Feb	Z	2.9	1.9	1.4	1.2	1.2	1.2	1.2	1.0	1.0	0.9	0.8	0.8	1.1	1.2	1.3	1.1	1.3	1.1	1.0	0.9	0.9	0.9	0.9	1.2	2.9					
22-Feb	0.9	Z	1.0	0.9	1.0	1.1	0.9	0.9	1.0	1.1	1.1	0.9	0.7	0.6	0.5	0.4	0.5	0.4	0.3	0.4	0.3	0.2	0.2	0.2	0.7	1.1					
23-Feb	0.3	0.4	Z	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5	1.8	0.5	0.4	0.3	0.3	0.3	0.5	1.8					
24-Feb	0.3	0.3	2.1	Z	0.8	0.2	0.4	1.7	1.3	0.5	0.2	0.3	0.4	1.3	0.4	0.5	1.3	3.3	3.6	4.4	5.0	4.1	2.5	3.4	1.7	5.0					
25-Feb	2.5	3.8	7.0	7.8	Z	20.4	18.2	16.3	13.8	17.9	9.8	5.5	5.8	8.1	6.6	4.9	7.2	6.2	5.3	2.6	4.0	5.3	3.5	3.9	8.1	20.4					
26-Feb	4.0	3.2	2.9	3.1	0.6	Z	0.8	0.3	0.3	0.3	0.3	0.5	0.4	0.7	1.4	0.9	0.6	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.9	4.0					
27-Feb	Z	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.4	0.5	0.4	0.3	0.5				
28-Feb	0.3	Z	0.7	0.8	0.9	1.2	1.7	2.5	2.7	2.5	1.9	1.8	1.7	1.5	1.8	2.0	2.6	1.8	1.8	1.2	1.0	1.0	0.9	1.1	1.5	2.7					
29-Feb	0.9	0.8	Z	0.7	0.7	0.7	0.7	0.8	0.7	0.8	1.1	1.0	0.8	0.8	0.8	0.8	0.8	0.7	0.9	0.9	0.5	0.5	0.5	0.5	0.8	1.1					
																								Diurnal Average				Diurnal Maximum			
3.9 5.3 6.9 4.9 5.5 3.0 5.2 4.2 3.3 4.5 3.5 3.0 2.9 2.8 2.7 2.6 2.6 2.4 4.2 4.1 3.7 3.7 3.3 3.3																															
30.8 51.2 69.1 44.6 38.2 20.4 42.3 26.9 19.5 32.7 21.4 17.5 16.4 16.0 15.3 17.3 18.5 12.3 27.2 36.1 29.0 30.2 27.8 19.0																															
Z - zerspan			C - Calibration			M - Maintenance																									



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Mackay River - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Mackay River - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	641	96.97	96.97
21 - 40	16	2.42	99.39
41 - 80	4	0.61	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Mackay River - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	20	75	23	16	21	44	43	41	42	18	37	114	59	28	41	17	639
21 - 40	0	10	4	1	0	1	0	0	0	0	0	0	0	0	0	0	16
11 - 80	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	21	88	27	17	21	45	43	41	42	18	37	114	59	28	41	17	659

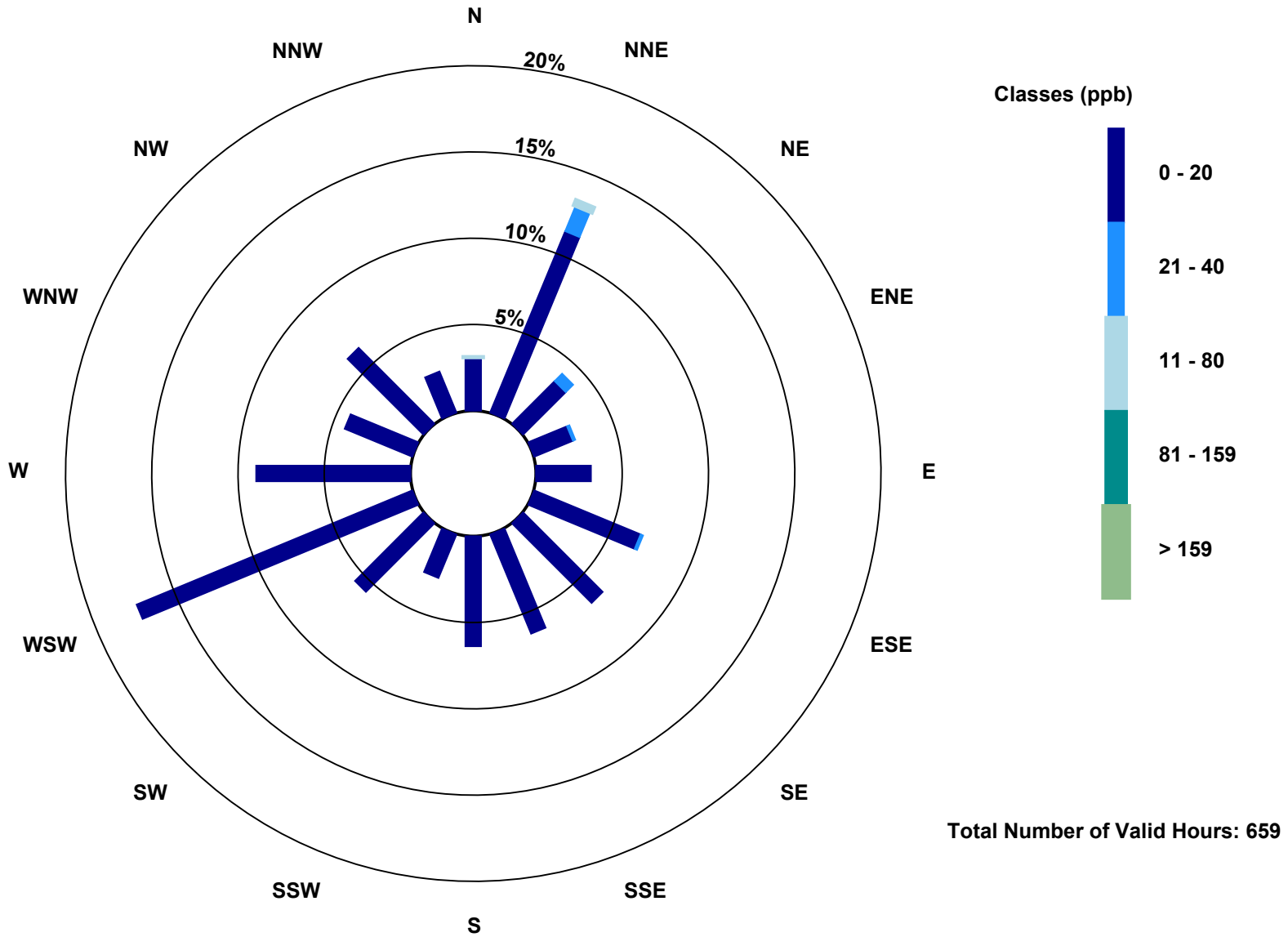
Total Number of Valid Hours: 659

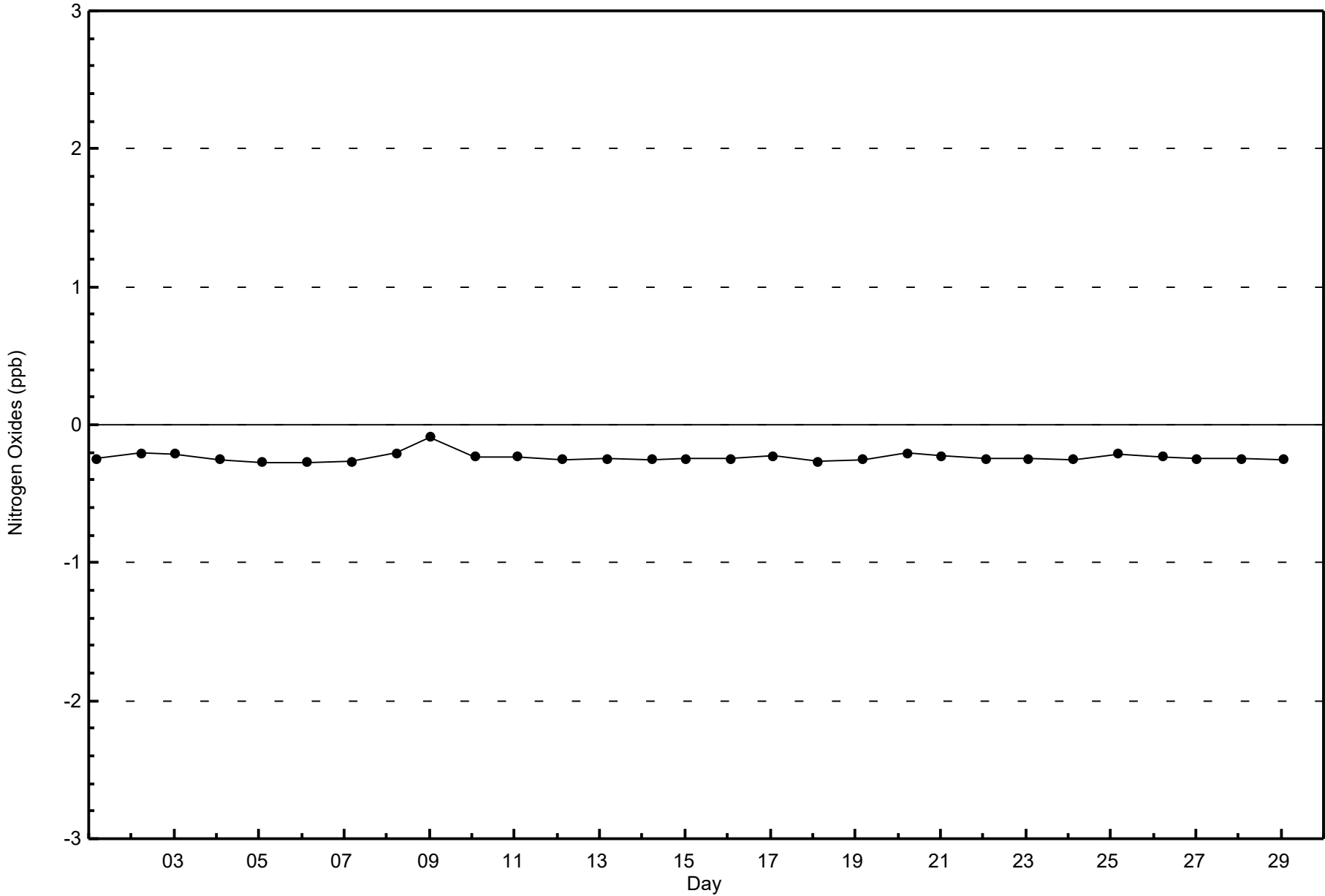
Total Number of Hours: 696

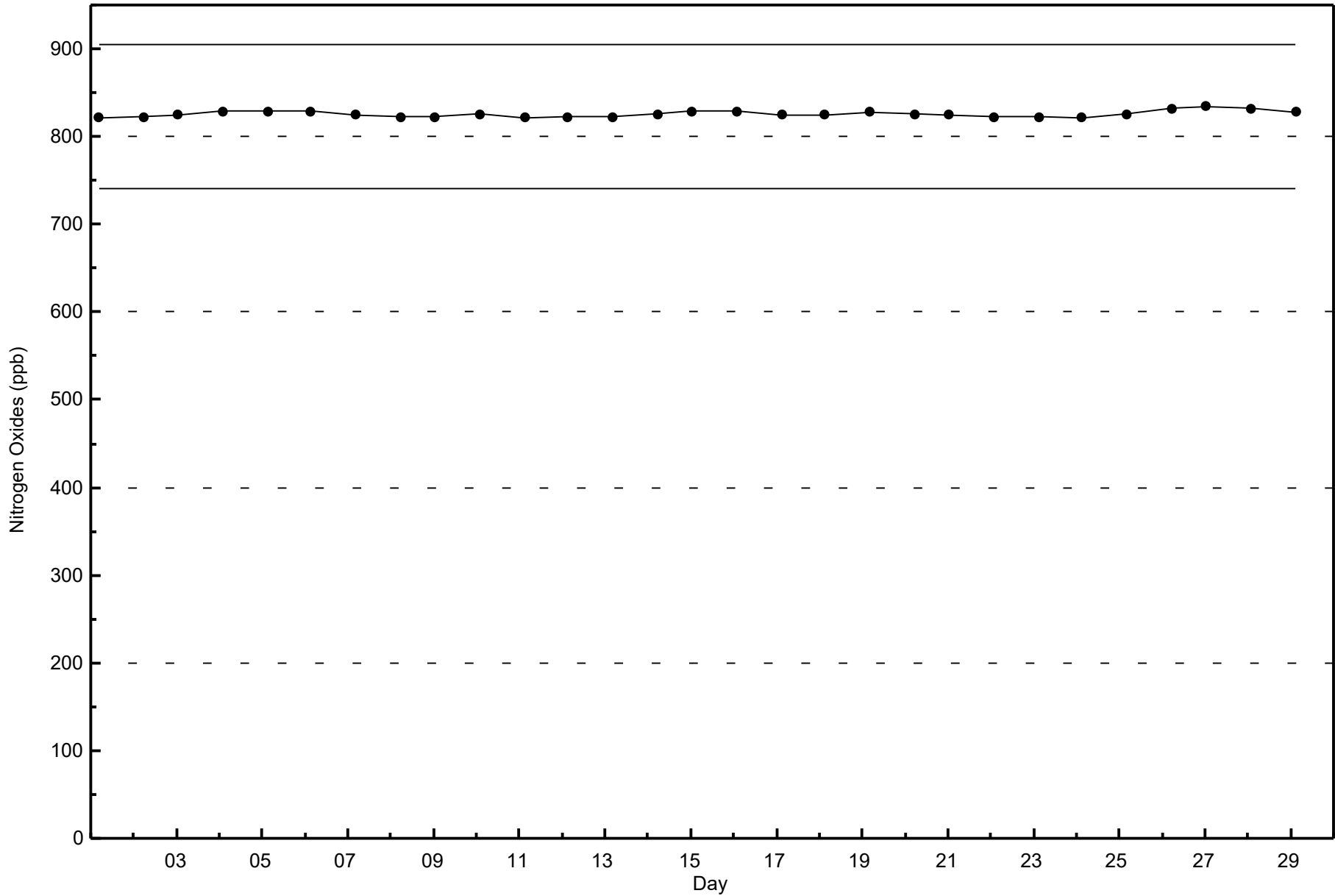


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Mackay River









Wood Buffalo Environmental Association
Summary of Hour Averages

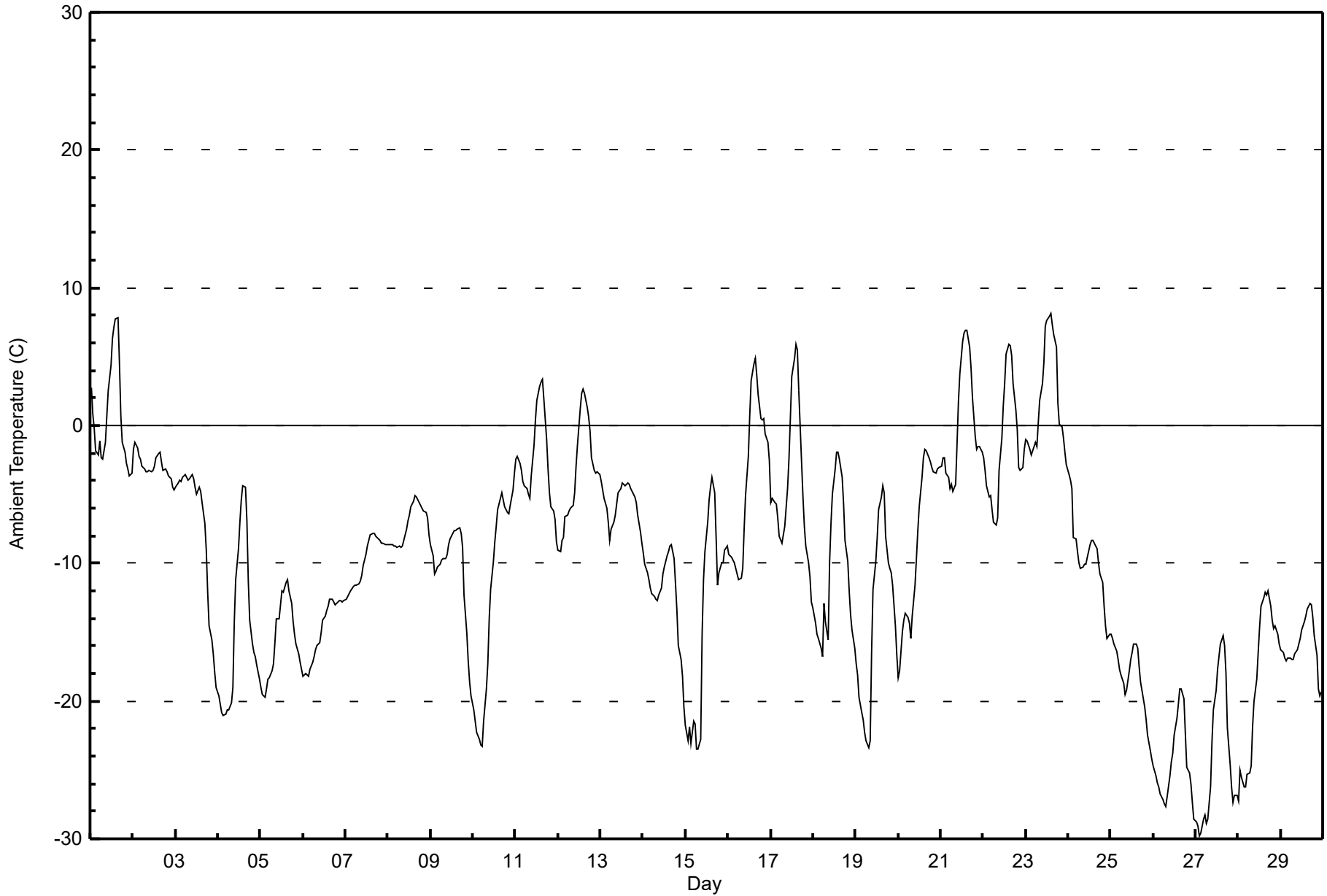
Ambient Temperature (AT) - C
Mackay River - February 2024

Maximum Value: 8.1 C on Feb 23 15:00		Maximum Daily Average: 1.9 C on Feb 23		Hours in Service: 696																						
Minimum Value: -29.8 C on Feb 27 03:00		Minimum Daily Average: -24.5 C on Feb 26		Hours of Data: 696																						
Maximum Diurnal Average: -4.4 C at hour 16		Minimum Diurnal Average: -13.1 C at hour 7		Hours of Missing Data: 0																						
Monthly Average: -9.79 C		Percentiles: P ₁ = -28.6 P ₁₀ = -21.0 Q ₁ = -15.9 Median = -8.8 Q ₃ = -3.8 P ₉₀ = -0.3 P ₉₉ = 7.1		Hours of Calibration: 0																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.8	0.8	-0.2	-1.8	-2.2	-1.1	-2.3	-2.5	-1.2	0.7	2.5	4.4	6.3	7.1	7.8	7.8	4.5	0.7	-1.3	-2.0	-2.8	-3.1	-3.6	-3.5	0.7	7.8
2-Feb	-1.8	-1.2	-1.7	-2.3	-2.5	-2.9	-3.2	-3.4	-3.3	-3.3	-3.4	-3.2	-3.0	-2.3	-2.1	-2.0	-2.7	-3.2	-3.2	-3.4	-3.7	-3.9	-4.5	-4.7	-2.9	-1.2
3-Feb	-4.5	-4.1	-4.0	-4.1	-3.8	-3.6	-3.8	-4.0	-3.9	-3.6	-3.9	-4.5	-5.0	-4.4	-4.8	-5.6	-7.1	-9.0	-12.1	-14.6	-15.5	-16.5	-17.9	-19.0	-7.5	-3.6
4-Feb	-19.7	-20.3	-20.8	-21.1	-21.0	-20.7	-20.6	-20.1	-19.0	-14.2	-11.2	-9.0	-7.0	-5.4	-4.3	-4.5	-6.9	-11.3	-14.1	-15.8	-16.5	-16.8	-17.4	-18.4	-14.8	-4.3
5-Feb	-19.0	-19.6	-19.7	-19.1	-18.4	-18.3	-17.8	-17.3	-15.7	-14.0	-14.1	-13.0	-12.0	-12.1	-11.4	-11.2	-12.0	-12.9	-14.2	-15.2	-15.9	-16.6	-17.2	-17.7	-15.6	-11.2
6-Feb	-18.2	-18.0	-18.1	-18.2	-17.7	-17.2	-16.7	-16.3	-16.0	-15.8	-15.0	-14.1	-13.8	-13.4	-13.1	-12.6	-12.6	-12.8	-13.0	-12.9	-12.7	-12.8	-12.8	-12.7	-14.9	-12.6
7-Feb	-12.6	-12.4	-12.2	-12.0	-11.7	-11.6	-11.6	-11.5	-11.3	-10.9	-10.2	-9.3	-8.8	-8.3	-7.9	-7.8	-7.8	-8.1	-8.2	-8.3	-8.5	-8.6	-8.7	-8.7	-9.9	-7.8
8-Feb	-8.6	-8.6	-8.6	-8.7	-8.8	-8.8	-8.8	-8.8	-8.7	-8.3	-7.6	-6.9	-6.5	-5.9	-5.5	-5.1	-5.2	-5.6	-5.8	-6.0	-6.2	-6.3	-6.7	-7.9	-7.2	-5.1
9-Feb	-8.6	-9.4	-10.8	-10.6	-10.3	-10.1	-9.8	-9.7	-9.7	-9.3	-8.7	-8.3	-7.8	-7.6	-7.6	-7.5	-7.4	-7.8	-8.8	-12.3	-15.1	-17.1	-18.6	-19.7	-10.5	-7.4
10-Feb	-20.6	-21.5	-22.2	-22.8	-23.2	-23.2	-21.5	-19.1	-17.3	-14.0	-11.9	-9.8	-8.4	-7.3	-6.1	-5.3	-4.9	-5.4	-5.9	-6.3	-6.4	-5.8	-4.7	-3.5	-12.4	-3.5
11-Feb	-2.5	-2.3	-2.7	-3.2	-4.0	-4.4	-4.6	-4.9	-5.3	-3.6	-1.4	0.4	1.8	2.9	3.2	3.4	1.9	-1.0	-3.2	-4.9	-5.9	-6.2	-6.8	-8.4	-2.6	3.4
12-Feb	-9.0	-9.2	-8.4	-8.1	-6.6	-6.5	-6.2	-6.0	-5.8	-4.9	-2.9	-1.4	1.2	2.4	2.7	2.3	1.4	0.7	-0.4	-2.3	-3.2	-3.5	-3.4	-3.5	-3.4	2.7
13-Feb	-4.1	-4.7	-5.3	-6.0	-7.0	-8.3	-7.6	-7.0	-6.5	-5.7	-4.9	-4.5	-4.2	-4.3	-4.4	-4.2	-4.2	-4.6	-4.9	-5.2	-5.5	-6.6	-7.8	-8.5	-5.7	-4.1
14-Feb	-9.3	-10.1	-10.6	-11.2	-11.8	-12.2	-12.4	-12.6	-12.7	-12.3	-11.8	-10.8	-10.3	-9.5	-9.1	-8.8	-8.6	-9.7	-11.5	-13.4	-16.0	-17.0	-18.2	-20.4	-12.1	-8.6
15-Feb	-21.8	-22.8	-21.9	-23.1	-21.4	-21.7	-23.5	-23.5	-22.8	-15.2	-11.2	-9.1	-7.0	-5.4	-4.5	-3.7	-4.9	-8.1	-11.6	-10.7	-10.0	-10.0	-9.1	-8.7	-13.8	-3.7
16-Feb	-9.4	-9.5	-9.6	-10.0	-10.3	-10.8	-11.1	-11.1	-10.3	-7.5	-5.1	-2.2	0.7	3.2	4.5	4.9	3.7	2.3	0.5	0.4	0.5	-0.6	-1.2	-2.5	-3.8	4.9
17-Feb	-5.6	-5.3	-5.6	-5.6	-6.7	-8.1	-8.6	-7.9	-7.3	-4.6	-2.4	0.6	3.6	4.9	5.9	5.5	2.5	-2.6	-5.2	-7.4	-8.8	-9.9	-11.0	-12.8	-4.3	5.9
18-Feb	-13.2	-14.4	-15.1	-15.5	-16.1	-16.8	-12.9	-14.3	-15.6	-10.0	-7.1	-4.9	-3.2	-2.0	-1.9	-2.5	-3.8	-5.7	-8.3	-9.8	-12.0	-13.7	-14.9	-16.2	-10.4	-1.9
19-Feb	-17.2	-18.1	-19.7	-20.9	-21.4	-22.3	-22.9	-23.3	-22.9	-16.4	-11.9	-9.9	-8.2	-6.1	-5.2	-4.4	-4.9	-8.1	-9.9	-10.4	-10.7	-11.6	-14.5	-16.7	-14.1	-4.4
20-Feb	-18.3	-17.8	-14.9	-14.1	-13.6	-13.9	-14.3	-15.5	-13.8	-11.6	-9.7	-7.6	-5.9	-3.8	-2.3	-1.7	-1.8	-2.3	-2.7	-3.1	-3.3	-3.4	-3.2	-3.0	-8.4	-1.7
21-Feb	-2.9	-2.4	-2.3	-3.4	-3.8	-4.5	-4.2	-4.8	-4.2	-1.3	1.7	3.7	6.1	6.7	7.0	6.9	5.6	4.2	2.1	-0.8	-1.7	-1.5	-1.6	-2.0	0.1	7.0
22-Feb	-2.3	-3.2	-4.4	-5.2	-5.1	-6.1	-7.0	-7.2	-6.7	-3.2	-0.9	1.4	3.1	5.2	5.9	5.8	5.0	3.0	1.1	-0.4	-3.0	-3.3	-3.0	-1.7	-1.3	5.9
23-Feb	-1.0	-1.1	-1.7	-2.1	-1.9	-1.2	-1.5	0.2	1.8	3.0	4.5	7.2	7.6	7.9	8.1	7.4	6.6	5.7	1.6	0.1	-0.1	-0.9	-1.9	-2.9	1.9	8.1
24-Feb	-3.5	-4.0	-4.5	-8.1	-8.2	-9.1	-9.9	-10.4	-10.3	-10.1	-10.1	-9.5	-8.7	-8.4	-8.3	-8.7	-9.0	-9.9	-10.8	-11.4	-13.2	-14.6	-15.4	-15.1	-9.6	-3.5
25-Feb	-15.1	-15.5	-15.9	-16.4	-17.0	-17.7	-18.1	-18.7	-19.5	-19.2	-17.8	-16.9	-16.5	-15.9	-15.9	-16.1	-17.5	-18.6	-19.9	-20.4	-21.4	-22.5	-23.6	-24.2	-18.3	-15.1
26-Feb	-24.7	-25.4	-26.0	-26.3	-26.7	-27.1	-27.5	-27.7	-27.0	-25.4	-24.4	-23.8	-22.5	-21.3	-20.3	-19.2	-19.1	-19.9	-22.4	-24.8	-25.2	-26.0	-27.3	-28.6	-24.5	-19.1
27-Feb	-28.8	-29.1	-29.8	-29.6	-28.6	-28.3	-28.8	-28.6	-26.3	-23.0	-20.6	-19.2	-17.7	-16.8	-15.9	-15.3	-15.9	-18.0	-22.0	-24.6	-26.3	-27.4	-26.8	-26.8	-23.9	-15.3
28-Feb	-27.3	-25.0	-25.5	-26.2	-26.3	-25.3	-25.2	-24.7	-21.8	-20.0	-18.4	-16.4	-14.6	-13.2	-12.5	-12.1	-12.3	-12.0	-13.2	-14.2	-14.7	-14.6	-15.2	-15.9	-18.6	-12.0
29-Feb	-16.3	-16.5	-16.9	-17.1	-16.9	-16.9	-17.0	-16.9	-16.6	-16.3	-15.9	-15.5	-14.9	-14.2	-13.8	-13.3	-12.9	-13.1	-13.9	-15.2	-16.7	-19.2	-19.7	-19.3	-16.0	-12.9
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Mackay River - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Mackay River - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	82	11.78	11.78
-20 - 0	546	78.45	90.23
0 - 10	68	9.77	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Relative Humidity (RH) - %

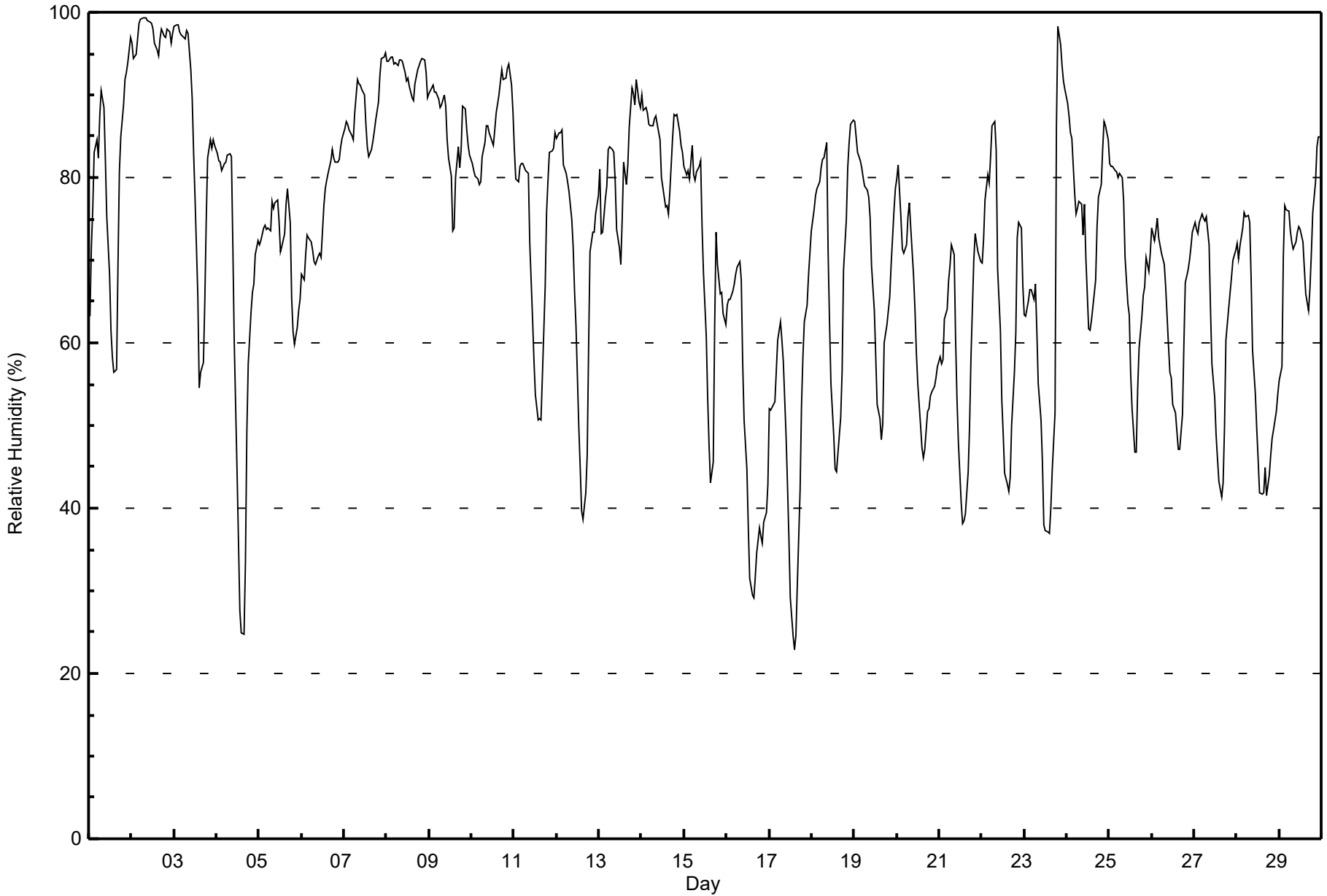
Mackay River - February 2024

Maximum Value: 99.4 % on Feb 2 08:00 Maximum Daily Average: 97.4 % on Feb 2																						Hours in Service:	696			
Minimum Value: 23.0 % on Feb 17 15:00 Minimum Daily Average: 49.2 % on Feb 16																						Hours of Data:	696			
Maximum Diurnal Average: 80.1 % at hour 8 Minimum Diurnal Average: 56.6 % at hour 15																						Hours of Missing Data:	0			
Monthly Average: 72.02 % Percentiles: P ₁ = 29.1 P ₁₀ = 47.2 Q ₁ = 61.9 Median = 74.5 Q ₃ = 84.0 P ₉₀ = 91.8 P ₉₉ = 98.6																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	63.2	71.6	76.2	83.0	84.6	82.4	87.5	90.4	88.5	82.2	75.3	68.2	61.5	58.3	56.5	56.7	69.4	80.7	85.0	88.8	91.9	92.7	94.0	97.0	78.6	97.0
2-Feb	96.3	94.5	95.0	96.8	98.6	99.2	99.3	99.4	99.3	99.0	98.8	98.6	97.9	96.3	95.4	94.7	96.8	97.9	97.1	96.9	98.0	97.6	96.3	97.4	97.4	99.4
3-Feb	98.3	98.5	98.5	97.6	97.3	96.9	96.8	97.9	97.5	93.1	89.5	83.1	77.7	65.8	54.6	56.4	57.7	65.1	74.8	82.3	84.5	83.5	84.5	84.0	84.0	98.5
4-Feb	82.9	82.1	81.8	80.8	81.7	81.9	82.7	82.9	82.5	71.8	60.2	44.6	36.2	27.7	24.9	24.7	33.5	49.2	57.5	63.7	66.1	67.1	70.6	72.3	62.9	82.9
5-Feb	71.9	72.3	73.8	74.3	73.8	73.9	73.6	77.0	76.2	76.9	77.4	74.8	71.0	71.7	73.2	76.8	78.6	74.5	65.3	61.4	59.9	61.9	64.0	65.3	71.6	78.6
6-Feb	68.2	67.6	70.6	73.0	72.8	72.1	71.3	69.8	69.5	70.6	70.9	70.4	76.6	78.7	79.7	80.5	82.0	83.4	82.4	81.9	81.9	82.1	83.7	84.8	76.0	84.8
7-Feb	85.9	86.7	86.4	85.7	85.0	84.7	87.8	91.9	91.4	91.1	90.7	90.0	86.4	83.7	82.6	83.4	84.3	85.6	86.9	89.1	92.4	94.4	94.5	95.1	88.2	95.1
8-Feb	94.1	94.1	94.5	94.6	93.8	94.0	93.5	94.2	94.2	94.0	92.8	91.8	92.0	91.0	89.7	89.3	91.4	93.0	93.6	94.1	94.3	94.3	92.7	89.7	92.9	94.6
9-Feb	90.3	90.8	91.3	90.4	90.3	89.6	88.5	88.8	90.0	88.6	84.6	82.3	80.1	73.6	74.0	79.9	83.7	81.1	83.3	88.7	88.3	85.8	83.9	82.7	85.4	91.3
10-Feb	81.7	80.9	80.2	79.8	79.2	79.4	82.5	84.3	86.3	86.3	85.4	84.4	83.9	85.8	87.7	89.9	91.5	93.1	91.8	92.0	93.2	93.7	91.3	87.9	86.3	93.7
11-Feb	83.3	79.8	79.5	81.4	81.7	81.7	80.9	80.7	80.5	72.0	62.9	57.9	53.8	50.6	50.8	50.7	55.9	66.7	75.8	79.6	83.0	83.2	83.5	85.3	72.5	85.3
12-Feb	84.8	85.4	85.4	85.8	81.5	80.5	79.4	78.3	75.0	71.6	66.1	62.0	49.8	44.9	39.6	38.6	41.9	46.4	59.3	71.1	73.4	73.3	75.6	77.9	67.8	85.8
13-Feb	81.0	73.2	73.4	77.5	79.0	83.4	83.7	83.3	83.1	79.4	73.8	71.6	69.5	75.1	81.9	79.1	81.5	86.2	90.9	90.2	88.8	91.9	89.2	88.6	81.5	91.9
14-Feb	90.1	88.1	88.4	87.8	86.4	86.2	86.3	87.0	87.4	86.4	84.5	80.1	78.7	76.4	76.6	75.6	78.3	84.9	87.6	87.5	87.6	85.6	83.9	83.1	84.4	90.1
15-Feb	81.4	80.3	80.8	79.8	83.8	80.3	79.7	80.6	81.3	82.0	74.1	68.5	60.9	53.4	47.6	43.1	45.6	62.0	73.5	69.5	65.9	66.2	63.6	62.3	69.4	83.8
16-Feb	64.6	65.3	65.3	66.4	67.2	68.3	69.1	69.8	67.7	57.7	50.6	44.8	37.7	31.6	29.5	29.1	31.8	34.6	37.6	36.5	35.8	38.3	39.4	42.9	49.2	69.8
17-Feb	52.1	51.9	52.5	52.8	56.7	60.3	62.6	60.3	57.9	48.6	42.8	36.5	29.1	24.6	23.0	24.6	30.6	42.2	52.3	58.3	62.5	64.5	68.1	70.9	49.4	70.9
18-Feb	73.6	76.0	77.7	78.6	79.5	81.2	82.2	82.5	84.3	71.1	62.5	55.0	48.8	44.8	44.4	46.5	51.1	56.7	68.8	74.9	81.2	84.3	86.4	87.0	70.0	87.0
19-Feb	86.7	84.9	83.0	82.0	81.1	80.0	78.9	78.4	77.7	75.1	69.3	63.9	58.4	52.6	50.8	48.3	50.1	60.0	62.2	63.9	65.6	69.5	76.0	78.6	69.9	86.7
20-Feb	79.8	81.5	75.0	71.4	70.8	71.8	75.3	77.0	74.0	68.2	64.1	58.9	55.1	50.0	47.2	46.1	47.2	51.8	52.1	53.5	54.1	54.7	55.7	57.2	62.2	81.5
21-Feb	58.3	57.4	58.0	62.9	64.1	67.5	69.3	71.9	70.6	60.5	53.3	48.0	40.6	38.1	38.5	39.2	44.5	50.0	58.3	70.0	73.3	72.0	71.0	69.9	58.6	73.3
22-Feb	69.6	72.6	77.3	80.4	79.3	82.6	86.2	86.8	83.2	68.9	61.5	53.1	49.0	44.3	42.9	42.0	43.7	50.0	56.4	61.2	72.8	74.6	73.9	66.9	65.8	86.8
23-Feb	63.4	63.3	65.0	66.4	66.4	65.2	67.2	61.5	55.1	50.6	45.6	38.0	37.3	37.2	36.9	40.0	44.5	51.6	86.2	98.4	96.1	93.6	91.6	90.7	63.0	98.4
24-Feb	88.9	87.4	85.5	84.8	78.1	75.6	76.2	77.1	76.7	73.0	76.9	70.4	61.6	61.6	62.7	65.9	67.7	74.0	77.6	79.2	83.3	86.8	86.3	84.6	76.7	88.9
25-Feb	81.7	81.4	81.4	80.9	80.7	79.9	80.4	79.9	77.2	70.4	64.8	63.5	56.2	52.0	46.8	46.9	54.5	59.3	63.3	65.8	66.8	70.4	68.6	70.9	68.5	81.7
26-Feb	73.8	72.4	73.5	75.1	72.7	70.8	70.1	69.5	66.8	59.6	56.4	55.8	52.5	51.5	49.3	47.1	47.1	51.4	59.9	67.3	68.7	70.1	71.5	73.3	63.6	75.1
27-Feb	74.5	73.6	73.2	74.5	75.5	75.1	74.7	75.2	71.9	64.1	57.5	53.4	48.7	45.9	43.2	41.4	43.0	49.9	60.4	64.2	66.1	68.0	70.0	71.1	63.1	75.5
28-Feb	72.1	70.2	71.7	73.9	75.7	75.3	75.4	74.6	67.8	59.2	53.9	49.7	45.9	41.9	41.7	41.8	44.9	41.6	44.1	46.4	48.4	49.4	51.6	53.6	57.1	75.7
29-Feb	55.4	57.1	70.5	76.6	76.1	75.9	73.5	72.2	71.4	72.2	73.4	74.0	73.8	72.2	69.1	65.9	64.0	66.6	70.8	75.7	79.5	83.7	85.0	84.8	72.5	85.0
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Mackay River - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Mackay River - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	32	4.60	4.60
40 - 60	129	18.53	23.13
60 - 80	272	39.08	62.21
80 - 100	263	37.79	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696

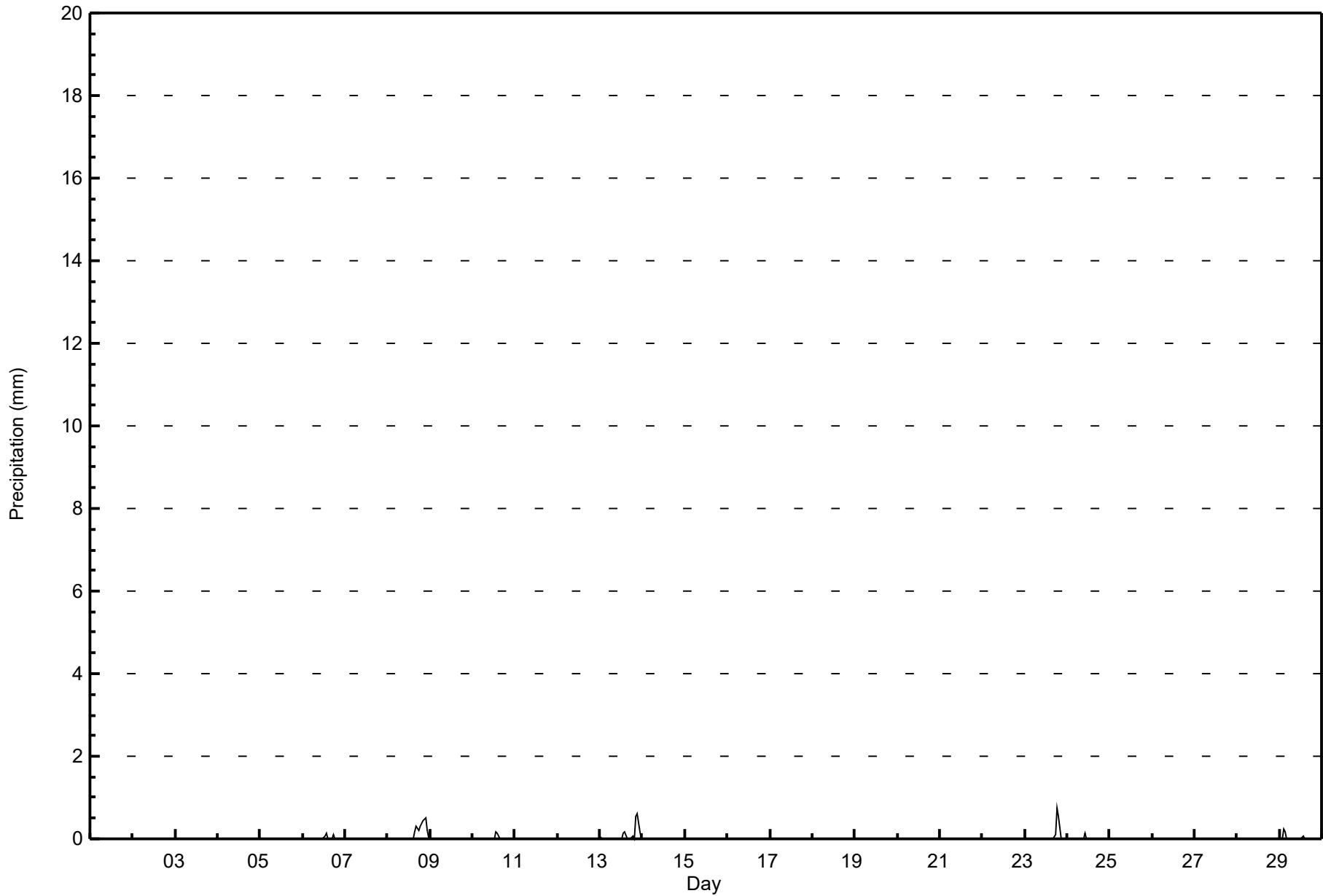


Maximum Value: 0.7 mm on Feb 23 19:00		Maximum Daily Total: 2.5 mm on Feb 8		Hours in Service: 696																								
Minimum Value: 0.0 mm on Feb 1 01:00		Minimum Daily Total: 0.0 mm on Feb 1		Hours of Data: 695																								
Maximum Diurnal Total: 1.1 mm at hour 22		Minimum Diurnal Total: 0.0 mm at hour 2		Hours of Missing Data: 1																								
Monthly Total: 6.88 mm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.3		Hours of Calibration: 0																								
				Percent Operational Time: 99.9																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
1-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.3	0.4	0.4	0.5	0.2	0.1	0.0	0.0	0.0	0.0
9-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Feb	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.6	0.6	0.2	0.0	0.0	0.0	0.0	0.0
14-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Feb	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
																								Diurnal Average				
																								Diurnal Maximum				
M - Maintenance																												



Wood Buffalo Environmental Association
Hourly Averages

Precipitation (PC) - mm
Mackay River - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Precipitation (PC) - mm
Mackay River - February 2024

Concentration Ranges (mm)	Number of Hours	%	Cumulative %
0 - 0.3	688	98.99	98.99
0.4 - 0.5	4	0.58	99.57
0.6 - 0.7	3	0.43	100.00
0.8 - 1.4	0	0.00	100.00
1.5 - 10	0	0.00	100.00
> 10	0	0.00	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Speed (WS) - km/h

Mackay River - February 2024

Maximum Speed: 17 km/h on Feb 29 01:00	Maximum Daily Speed Average: 9.6 km/h on Feb 28	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 8 11:00	Minimum Daily Speed Average: 0.7 km/h on Feb 8	Hours of Data: 694
Maximum Diurnal Speed Average: 2.9 km/h at hour 15	Minimum Diurnal Speed Average: 0.2 km/h at hour 3	Hours of Missing Data: 2
Monthly Average Velocity: 1.0 km/h 272.7 deg	Percentiles: P ₁ = 1 P ₁₀ = 2 Q ₁ = 4 Median = 6 Q ₃ = 8 P ₉₀ = 11 P ₉₉ = 15	Percent Operational Time: 99.7

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	SE6	ESE5	ESE3	ESE2	ESE4	SE5	SE3	SSE4	SSE5	S7	SSW6	SSW6	SSW3	S7	S6	SSE4	SSE2	SE2	ESE2	ESE2	E1	ENE0	NNE2	NNE3	SSE2.8	S7
2-Feb	NNE5	NNE6	NNE6	NNE6	NNE7	NNE7	NNE7	NNE7	NNE7	NNE8	NNE8	N7	NNE7	NNE6	N5	NNE5	NNW6	N6	N6	NNE7	NNE4	NNE4	NNE4	NW3	NNE5.9	NNE8
3-Feb	WNW4	WNW2	SSE2	S2	SW2	NE2	N3	NNW5	NW8WNW12WNW13	NW15	NW15WNW14	NW15	NW13	NW10	NW6	WNW2	SW2	WSW2	SE3	SE2	SE3			NW5.2	NW15	
4-Feb	SE3	SE3	SE4	SE4	SSE5	SSE5	S5	S5	SSE6	S8	S12	S11	S10	S12	S9	S6	S4	SSE3	SE4	SE4	SSE4	SSE5	SE4	SE2	SSE5.6	S12
5-Feb	SSE2	SE3	SE1	SSE2	SSE1	SE1	ENE0	N3	NNE7	NNE11	NNE11	NNE10	NNE9	NNE8	N10	NNE11	NNE11	NNE9	NNE7	NNE6	NNE7	NNE5	NNE5	NNE5.6	NNE11	
6-Feb	NE4	NNE6	NNE6	NNE4	NNE4	NNE3	NE3	ENE4	E6	ESE8	ESE8	E7	ESE8	ESE8	ESE7	E7	ESE8	ESE9	ESE9	ESE8	ESE8	ESE8	ESE8	ESE7	E5.8	ESE9
7-Feb	ESE5	ESE5	E4	ESE3	ENE2	NNE2	NE2	SE1	SW2	WSW1	S1	W3	NW4	NNW3	NNW3	N4	NNE4	NNE4	NE3	NNE4	NNE4	NE3	NNE3	NE3	NE1.7	ESE5
8-Feb	ENE3	NE2	N1	N3	NNE2	NE3	N3	NE2	E2	S1	W0	ENE1	SW2	SSE3	SSE3	ESE4	SE4	SE3	ESE1	UO	NNW2	NW5	WNW8	NW11	N0.7	NW11
9-Feb	WNW7	W5	WSW5	W5	W5	W6	W7	W5	WNW5	WNW5	WNW8	WNW9	WNW8	WNW8	W6	SW6	W6	WNW8	W5	W3	SSE2	SE2	SE3	SSE3	W4.7	WNW9
10-Feb	SSE3	SE3	SSE3	SSE4	SSE4	SE4	SSE5	SSE5	SSE5	SSE6	SSE8	SSE8	S9	S9	SSE9	S7	S6	SSW6	SSW9	SSW7	SW5	SW5	WSW7	WSW9	S5.3	SSW9
11-Feb	WSW10	W11	W10	W10	WSW8	WSW8	WSW7	WSW8	WSW8	W10	WSW9	WSW9	WSW9	W9	W8	W8	W7	WSW4	SW4	SW5	SW5	SW5	SW5	SSW5	WSW7.2	W11
12-Feb	SSE4	S5	S6	SSE6	S7	S7	S10	S10	S10	SSW8	WSW7	W9	W11	W13WNW15WNW14WNW10	WNW8	NW16WNW11	WNW9WNW10	NW11	NW12					W5.9	NW16	
13-Feb	NW14	NW14	NW11	NW10	NNW11	NW7	NW9	NW9	NW7	NW9	WNW9	WNW8	WSW5	WSW6	WSW6	WSW6	WSW5	W4	W3	W5	N7	NNE9	NNE12	NNE10	NW6.4	NW14
14-Feb	NNE9	N9	NNE9	NNE9	NNE11	NNE11	NNE9	N10	NNE6	NNE5	N5	WSW2	NNW5	N3	NW4	SSE2	ENE2	NE4	NE4	ENE4	E2	E1	E1	UO	NNE4.8	NNE11
15-Feb	S1	SE1	SSE2	SSE4	S5	SW2	W2	WSW3	W2	WSW4	WSW6	WSW7	WSW6	WSW8	W8	WSW6	WSW6	SW4	SSW5	SW6	SW5	SW6	WSW7	WSW6	SW4.1	W8
16-Feb	WSW7	WSW8	WSW7	WSW7	WSW6	WSW7	WSW7	WSW7	WSW7	WSW8	WSW9WSW10WSW11WSW12WSW13	SW12	SW11	SSW9	SSW8WSW10	W13WSW11	WSW8	WSW4						WSW8.7	W13	
17-Feb	WSW4	WSW6	WSW6	WSW6	SW5	WSW4	WSW5	WSW5	WSW5	WSW3	W4	WSW3	WSW3	W4	WSW5	WSW4	W2	SSE2	SE3	ESE5	SE2	NE3	E2	ENE2	WSW2.5	WSW6
18-Feb	ENE2	ENE2	ESE3	E3	E3	ESE5	ESE7	E3	ENE3	E3	ENE6	N4	NNE4	E6	ENE8	NE9	NE7	ENE4	NNE5	NE4	NNE4	NE4	NNE3	NNE3	ENE3.8	NE9
19-Feb	N4	NNE2	N1	NW0	SSW1	S1	SE2	SSE1	ESE2	W2	SW2	WNW2	NW4	WNW2	NNW5	NNW2	N3	NNE3	NE4	ENE5	NNE6	NE4	ESE1	SSE1	NNE1.2	NNE6
20-Feb	ESE2	NNW1	NNE2	NNE2	NW0	N2	S1	SSE1	SE1	S4	S3	S1	SSW2	S3	W2	SSW4	SSW3	SSE2	S6	S6	S6	S7	S6	SSW4	S2.2	S7
21-Feb	SSW4	SW5	SW5	SW5	SW6	WSW5	WSW6	WSW5	WSW5	SW6	WSW8	WSW9WSW10WSW11WSW12WSW11WSW10	SW8	SW5	SW5	SW5	WSW5	WSW6	WSW6					WSW6.8	WSW12	
22-Feb	WSW6	WSW5	WSW3	WSW4	WSW6	W4	WSW4	W4	W3	W5	W5	W6	W6	WSW8	WSW8	WNW9	W5	W5	W5	W3	SSW3	SW4	SW4	SW5	WSW4.8	WNW9
23-Feb	SW6	S7	S8	S8	SSW8	SSW8	S7	SW10	SW12WSW12WSW12	W15	W13WSW15WSW17	W14WSW10	W10	NW10	W7	WSW8	W10	W9	W8					WSW8.8	WSW17	
24-Feb	WSW8	W8	NW7	NNW8	NW13	NW12	NW10	NW8	NW8	NNW9	NNW8	NNW9	NW10	NW9	N7	NNE7	NNE5	NE6	ENE5	ENE4	ENE3	NE4	NE4	NE4	NNW5.5	NW13
25-Feb	NE5	NNE6	NNE7	NNE8	NNE8	NNE8	NNE8	NNE8	NE8	NE9	NNE8	NNE9	NE10	NNE10	NNE11	NE10	NE11	NNE9	NNE7	NNE10	NNE11	NNE11	NNE13	NNE12	NNE9.1	NNE13
26-Feb	NNE9	NNE8	N8	NNW7	NNW8	NNW8	NW7	NW8	NW10	NNW9	NW7	NW7	NW8	NW6	WNW6	WNW6	WNW6	W5	SW2	W1	W3	WSW2	WSW1	WSW2	NW5.1	NNW10
27-Feb	WSW3	WSW3	WSW3	WSW4	WSW4	WSW4	WSW4	WSW5	WSW4	WSW5	WSW7	W7	WSW7	W7	WSW7	WSW6	WSW4	WSW2	SE2	SSE3	SSE3	SE4	SE5	SE5	WSW3.3	W7
28-Feb	SE5	SE5	SE5	SE4	SE5	SE7	SE8	ESE8	SE10	SE11	SE12	ESE11	SE12	SE14	ESE15	ESE13	ESE11	SE10	SE10	ESE10	ESE11	ESE11	ESE11	ESE14	ESE9.6	ESE15
29-Feb	ESE17	ESE16	E14	E13	E13	E11	E14	E12	E10	E10	E8	ESE7	ESE5	ESE6	SSE5	S4	SW6	WSW6	W5	W2	WSW3	WSW3	WSW4	WSW4	ESE5.6	ESE17
NW0.2 NW0.4NNW0.2 NW0.3NNW0.5 NW0.6 W0.5 W0.9 W1.0 W1.4 W2.0 W2.8 W2.7WSW2.8 W2.9 W2.1 W1.5 W0.8WNW0.3 S0.2WSW0.3WNW0.2 NW0.4 NW0.7																								Diurnal Average		
ESE17 ESE16 E14 E13 E13 NW12 E14 E12 SW12WSW12WNW13 W15 NW15WSW15WSW17 W14 NNE11 NNE11 NW16WNW11 W13 NNE11 NNE13 ESE14																								Diurnal Maximum		

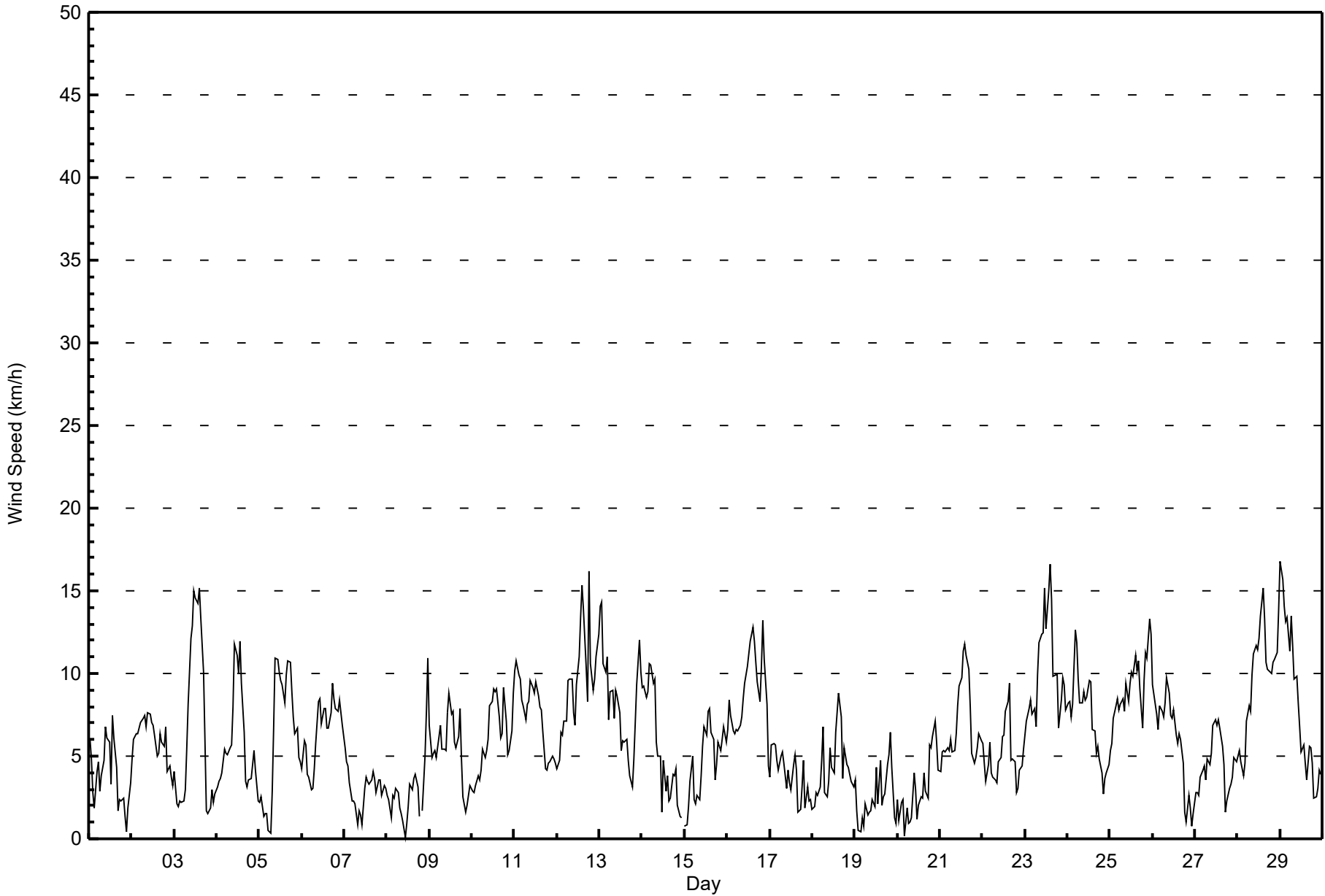
UO - Unstable Operation

All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Mackay River - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed (WS) - km/h
Mackay River - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	338	48.70	48.70
6 - 11	309	44.52	93.23
12 - 19	47	6.77	100.00
20 - 28	0	0.00	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 694

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Mackay River - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	14	31	20	17	11	18	38	36	16	10	26	48	31	7	7	8	338
6 - 11	8	58	8	2	8	23	7	6	27	10	10	63	25	18	24	12	309
12 - 19	0	3	0	0	5	5	3	0	2	0	2	7	5	5	10	0	47
20 - 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	22	92	28	19	24	46	48	42	45	20	38	118	61	30	41	20	694

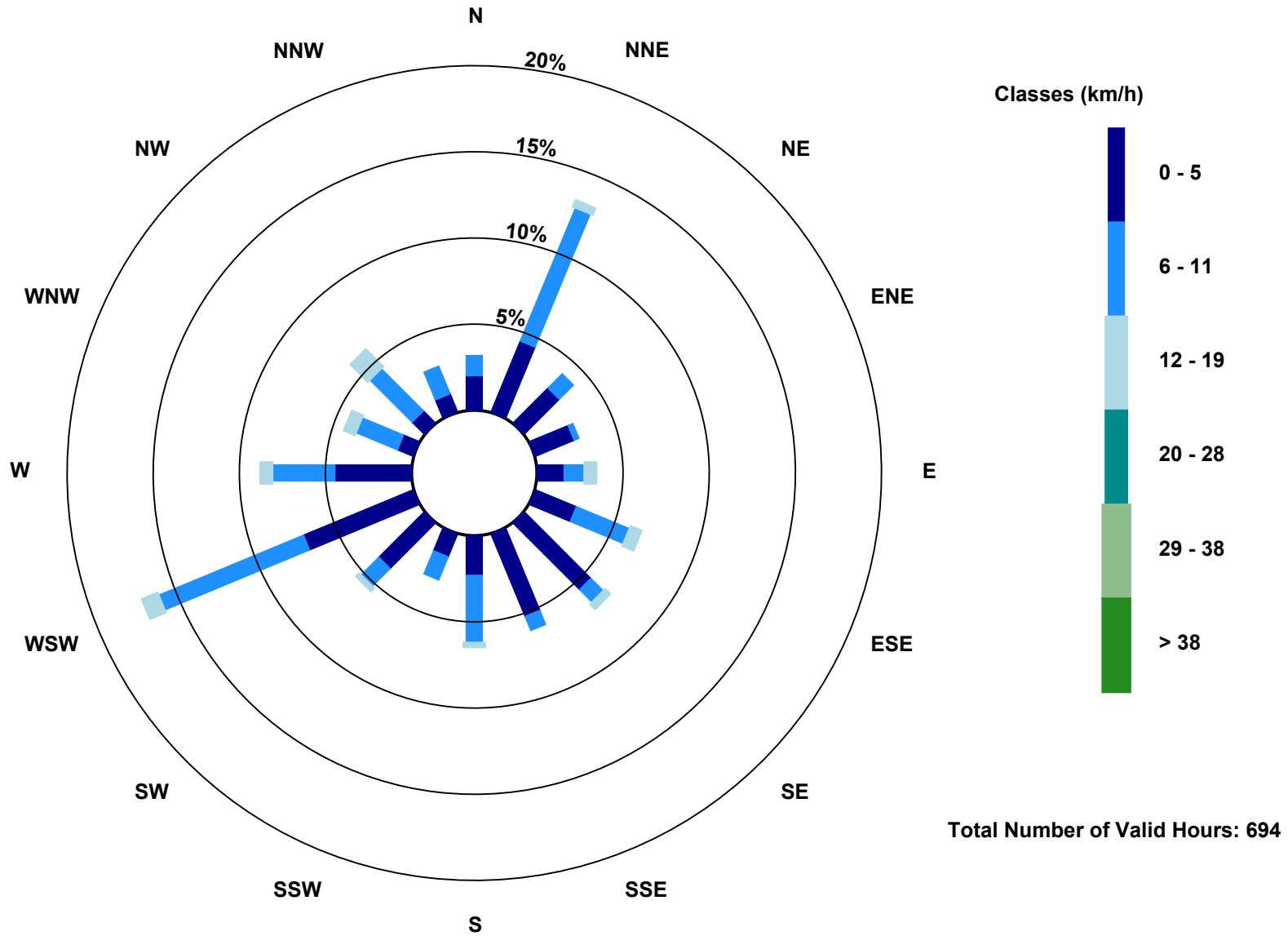
Total Number of Valid Hours: 694

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Mackay River





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Mackay River - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 23 15:00 Minimum Value: 0 km/h on Feb 10 01:00 Percentiles: P ₁ = 0 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																	Hours in Service: 696 Hours of Data: 694 Hours of Missing Data: 2 Hours of Calibration: 0 Percent Operational Time: 99.7									
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2	1	2	2	2	2	1	1	1	2	2	2	2	2	3	1	1	0	1	1	1	1	1	1	1	3
2-Feb	1	2	2	2	2	2	2	2	2	3	2	2	2	2	2	1	2	2	2	2	1	1	1	1	1	3
3-Feb	1	1	1	1	1	1	1	1	3	4	4	5	4	5	5	4	3	1	1	1	1	1	1	0	5	
4-Feb	0	0	1	0	1	1	1	1	1	3	3	3	3	4	3	3	2	2	1	1	1	1	1	1	4	
5-Feb	1	1	1	1	1	1	1	1	4	3	4	4	4	3	3	3	4	4	3	2	2	2	2	1	4	
6-Feb	1	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	3	
7-Feb	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	
8-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	UO	1	1	4	3	4	
9-Feb	2	2	2	2	2	2	2	2	2	2	3	3	3	3	2	2	3	2	2	1	0	1	0	0	3	
10-Feb	0	0	0	1	1	1	1	1	1	2	3	3	3	3	3	2	2	2	3	2	2	2	2	4	4	
11-Feb	4	4	4	4	3	3	3	3	3	4	4	4	4	4	3	3	3	1	1	1	1	1	1	1	4	
12-Feb	1	1	2	2	2	2	2	2	3	2	3	4	4	6	6	5	4	3	6	4	3	3	4	4	6	
13-Feb	4	5	3	3	4	2	3	3	3	3	3	2	2	2	3	2	1	1	1	2	3	3	4	4	5	
14-Feb	3	3	3	3	4	4	3	3	2	2	1	1	1	1	1	2	2	2	1	1	1	1	1	UO	4	
15-Feb	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	2	1	1	2	1	2	2	2	3	
16-Feb	3	3	3	3	2	2	2	2	3	3	4	4	5	4	5	5	4	3	2	4	5	4	3	2	5	
17-Feb	1	2	2	2	2	1	2	2	1	1	1	1	1	2	2	2	1	1	1	1	2	1	1	1	2	
18-Feb	1	1	2	1	1	2	1	2	1	1	2	2	2	2	2	3	3	1	1	1	1	1	1	1	3	
19-Feb	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	2	2	2	2	2	1	1	2	
20-Feb	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	2	1	2	2	2	1	2	
21-Feb	1	2	2	1	2	2	2	2	2	2	3	4	4	5	5	5	4	3	2	1	1	2	2	2	5	
22-Feb	2	1	1	2	2	1	1	1	1	2	2	2	3	3	3	3	2	2	2	1	1	1	1	1	3	
23-Feb	2	2	1	2	2	2	2	3	4	5	6	7	5	6	7	7	4	5	4	4	3	4	4	3	7	
24-Feb	3	3	4	3	4	4	3	3	3	3	2	2	3	3	2	2	2	2	2	1	1	1	1	1	4	
25-Feb	2	2	2	2	3	3	3	3	3	3	3	3	3	4	4	3	3	3	2	3	4	4	5	4	5	
26-Feb	3	2	2	2	2	2	2	2	3	3	3	2	3	2	3	2	3	2	1	1	1	1	1	1	3	
27-Feb	1	1	1	1	1	2	1	2	2	3	3	3	3	3	3	3	2	2	1	1	1	1	1	1	3	
28-Feb	1	1	1	1	1	2	2	2	3	4	4	3	4	4	4	4	4	4	3	3	3	3	3	4	4	
29-Feb	5	5	5	5	5	4	5	4	3	4	3	2	2	2	2	2	2	2	2	1	1	1	1	1	5	
Diurnal Maximum																										
UO - Unstable Operation																										



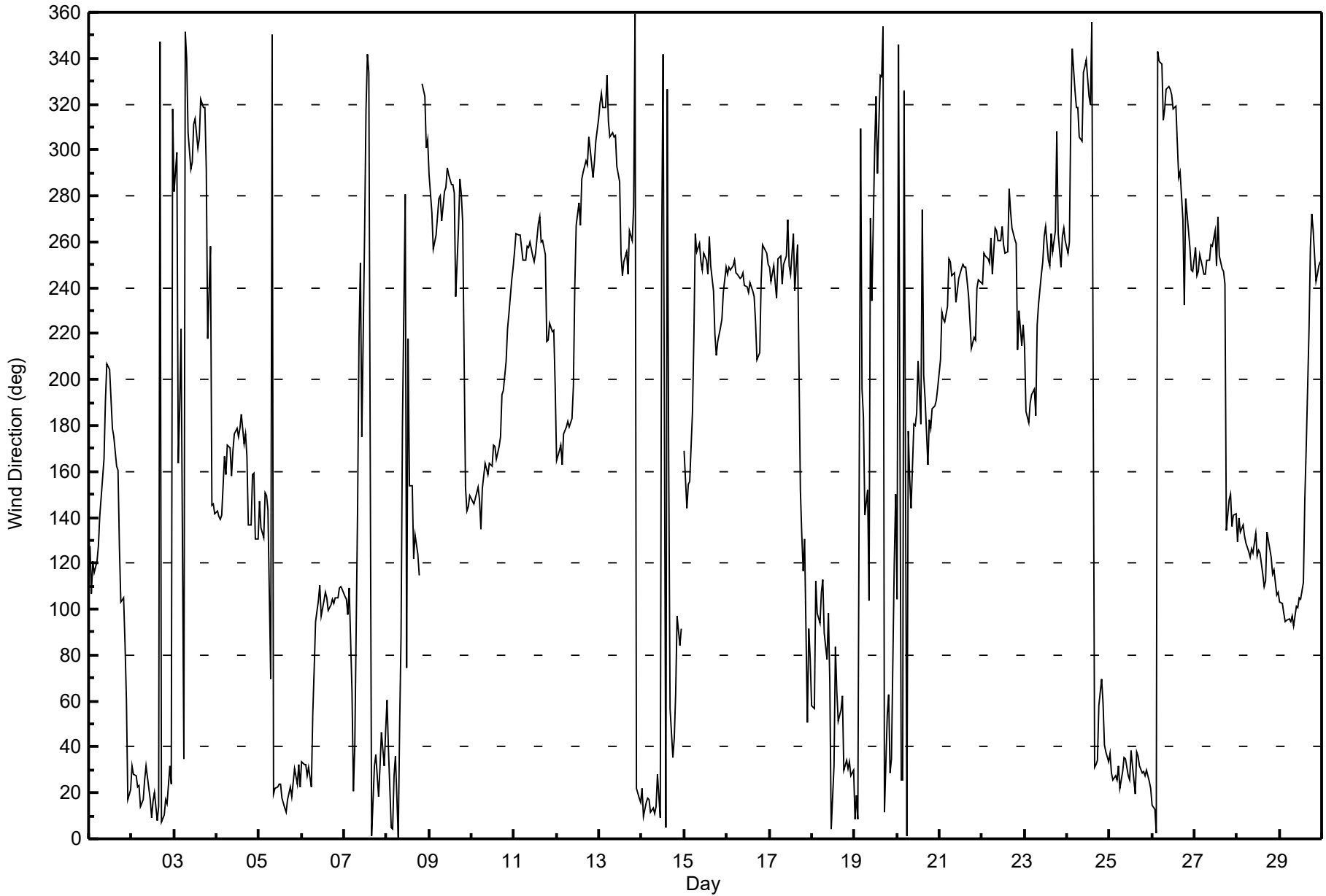
Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Mackay River - February 2024

Direction of Maximum Speed: 103 deg on Feb 29 01:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 121.8 deg on Feb 28	Hours of Data: 694
Direction of Minimum Speed: 280 deg on Feb 8 11:00	Direction of Minimum Daily Speed Average: 0.7 deg on Feb 8
Direction of Minimum Daily Speed Average: 0.7 deg on Feb 8	Hours of Missing Data: 2
Monthly Average Direction: 272.7 deg	Percent Operational Time: 99.7

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	128	107	121	116	121	128	141	149	165	190	207	204	192	179	175	163	161	127	103	105	85	61	17	21	152.4
2-Feb	32	28	28	22	23	14	17	25	32	27	17	9	16	20	8	14	347	7	10	17	15	32	24	318	17.3
3-Feb	282	299	163	187	222	35	351	340	307	292	295	311	314	301	305	322	318	318	292	218	258	145	146	142	305.0
4-Feb	143	140	139	141	166	159	171	170	158	169	176	179	175	179	185	172	177	166	137	136	159	159	131	130	165.4
5-Feb	147	136	131	150	149	143	70	350	20	22	23	24	24	18	13	11	17	22	18	24	30	24	32	22	24.0
6-Feb	34	32	32	28	31	22	54	74	95	104	110	97	104	107	105	99	102	104	102	105	105	109	110	109	92.1
7-Feb	105	104	97	109	64	21	41	145	219	251	175	264	318	342	334	1	16	31	37	18	32	46	32	47	38.7
8-Feb	60	39	5	4	28	36	0	50	88	180	280	74	218	154	154	122	133	124	115	UO	329	323	301	304	9.3
9-Feb	289	273	257	260	263	279	280	269	282	284	292	289	285	285	281	236	266	287	281	268	153	143	145	150	273.4
10-Feb	147	146	148	153	148	135	153	164	161	159	163	162	171	171	165	171	175	193	195	208	222	229	243	249	179.1
11-Feb	256	264	263	263	258	252	252	258	257	260	254	251	255	268	271	260	261	254	217	217	225	221	221	197	252.7
12-Feb	165	169	172	163	176	179	182	179	183	197	240	267	277	267	287	291	295	294	306	300	288	295	304	313	261.4
13-Feb	320	324	318	318	332	312	306	308	306	306	293	286	255	245	252	256	246	265	261	275	359	22	18	16	313.2
14-Feb	22	10	16	18	17	12	13	11	14	28	9	258	342	5	326	165	57	35	44	63	97	84	91	UO	18.3
15-Feb	169	144	154	156	186	219	264	256	260	251	248	255	252	246	263	250	238	220	211	216	223	226	238	249	235.1
16-Feb	246	249	247	250	252	247	246	244	245	247	241	240	238	242	238	236	225	208	212	243	259	257	255	250	242.0
17-Feb	249	243	249	242	235	253	254	242	250	254	270	249	246	264	239	249	259	152	133	116	130	50	91	78	239.5
18-Feb	58	57	112	98	94	108	113	89	78	98	68	5	32	84	64	51	56	62	30	34	31	34	27	30	62.1
19-Feb	9	19	9	309	196	184	141	152	104	270	234	300	323	290	332	332	354	12	54	63	29	35	120	150	13.0
20-Feb	104	346	26	26	326	1	177	157	144	181	180	185	208	181	274	202	192	163	183	179	188	188	191	197	184.7
21-Feb	209	229	227	225	232	253	252	245	247	234	239	244	249	250	249	249	237	226	214	219	217	240	243	242	238.6
22-Feb	242	255	254	253	251	262	246	266	265	260	260	266	259	255	256	283	273	266	261	259	213	230	215	224	255.0
23-Feb	214	186	181	190	194	196	184	224	233	246	251	262	267	252	249	264	256	265	308	263	249	262	266	260	244.1
24-Feb	255	260	316	344	326	319	318	306	304	334	336	339	323	319	356	31	32	34	58	69	59	41	38	34	335.6
25-Feb	37	29	26	27	25	32	22	30	36	35	28	26	38	32	19	38	36	31	29	30	28	30	25	22	29.3
26-Feb	15	13	3	343	338	338	313	318	326	328	326	324	318	319	303	288	291	270	232	279	265	258	247	247	324.1
27-Feb	258	245	247	254	249	246	246	252	252	258	258	265	250	271	254	248	247	242	134	148	150	136	141	142	239.0
28-Feb	129	140	133	136	132	129	125	122	126	125	133	123	126	124	116	110	112	134	126	122	115	117	106	107	121.8
29-Feb	103	103	98	95	95	96	95	97	92	101	101	105	105	112	148	170	221	258	272	265	243	246	250	251	108.4
318.1 312.7 333.3 304.7 292.5 309.8 272.8 269.5 261.6 261.4 261.3 273.8 275.6 257.9 267.6 270.2 276.8 274.6 282.2 177.1 248.5 282.1 308.2 309.2																									
Diurnal Average																									

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Mackay River - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 100 deg on Feb 8 11:00 Minimum Value: 6 deg on Feb 4 04:00 Percentiles: P ₁ = 10 P ₁₀ = 17 Q ₁ = 22 Median = 27 Q ₃ = 40 P ₉₀ = 50 P ₉₉ = 85																			Hours in Service: 696 Hours of Data: 694 Hours of Missing Data: 2 Hours of Calibration: 0 Percent Operational Time: 99.7						
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	21	15	52	59	16	31	22	21	20	22	30	30	68	26	36	25	55	16	19	18	41	59	33	17	68
2-Feb	24	23	23	24	22	22	24	23	25	24	25	25	27	26	26	26	23	23	24	27	24	24	34	27	34
3-Feb	30	70	39	29	49	64	38	20	19	22	22	20	20	23	22	21	17	14	56	43	62	11	21	14	70
4-Feb	7	11	11	6	11	9	10	13	18	24	21	24	27	25	25	16	29	14	15	15	11	14	14	44	44
5-Feb	15	26	44	58	17	57	77	18	25	24	23	24	27	24	27	24	23	26	25	27	28	21	20	19	77
6-Feb	18	22	24	21	22	28	28	30	25	22	19	26	25	23	23	21	22	17	19	19	19	18	19	19	30
7-Feb	26	22	23	28	37	36	50	63	47	58	66	38	34	28	33	38	22	22	34	25	24	31	25	30	66
8-Feb	30	38	38	34	27	26	28	64	76	79	100	92	61	36	59	32	21	21	36	UO	18	18	20	20	100
9-Feb	24	35	43	41	41	30	24	32	25	27	26	29	30	30	34	38	42	24	28	30	37	14	9	8	43
10-Feb	13	15	8	17	18	10	16	15	20	26	26	26	22	23	23	23	22	18	20	25	23	32	43	42	43
11-Feb	41	40	40	43	44	42	46	42	43	38	39	46	44	45	45	42	39	29	19	17	17	16	18	16	46
12-Feb	20	17	15	15	17	19	16	15	20	22	43	44	37	40	29	28	23	25	22	23	21	22	20	19	44
13-Feb	18	21	19	19	20	17	20	23	23	21	32	30	44	39	45	51	46	41	41	26	42	23	25	25	51
14-Feb	25	27	26	25	23	24	23	24	29	32	43	89	35	52	35	36	68	26	19	22	22	38	29	UO	89
15-Feb	82	63	25	20	16	26	22	21	25	42	50	48	46	40	46	56	42	24	14	21	22	24	40	51	82
16-Feb	44	42	46	43	43	43	40	42	40	41	40	37	40	38	36	37	31	23	23	39	38	38	41	40	46
17-Feb	30	34	34	42	31	33	37	47	45	48	40	50	65	53	51	50	33	60	21	21	78	23	33	41	78
18-Feb	43	56	32	45	32	19	13	58	33	44	36	51	59	37	29	25	27	32	18	16	14	15	18	15	59
19-Feb	15	25	50	67	69	49	18	54	31	57	69	85	48	89	54	93	41	31	34	28	20	31	78	63	93
20-Feb	30	79	55	46	95	60	89	74	67	31	42	76	77	82	49	41	45	31	18	20	19	17	22	36	95
21-Feb	31	28	29	23	31	34	47	38	36	36	36	42	46	41	43	42	37	29	23	19	21	37	36	36	47
22-Feb	38	30	29	33	36	28	35	39	31	50	40	41	49	47	44	31	31	29	28	42	17	21	17	21	50
23-Feb	21	16	14	16	17	19	18	31	36	45	48	40	40	41	42	41	46	48	22	42	39	39	36	41	48
24-Feb	42	40	51	25	19	18	19	21	23	25	25	26	26	26	37	33	26	21	32	29	19	23	16	27	51
25-Feb	27	25	25	24	29	22	22	23	24	24	31	28	31	33	27	27	23	22	22	22	23	22	23	23	33
26-Feb	23	23	23	25	21	21	19	19	20	24	32	31	36	48	48	38	42	30	28	79	28	28	77	46	79
27-Feb	21	15	17	23	33	35	39	40	44	49	46	49	50	44	50	55	57	68	14	12	11	15	13	13	68
28-Feb	15	17	16	18	20	18	18	16	20	22	24	23	28	27	22	22	26	23	22	22	20	21	19	17	28
29-Feb	18	19	23	27	26	25	27	23	26	24	23	28	26	39	41	58	41	41	32	27	24	16	25	38	58
																			82 79 55 67 95 64 89 74 76 79 100 92 77 89 59 93 68 68 56 79 78 59 78 63						
Diurnal Maximum																									
UO - Unstable Operation																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

**AMS21
CONKLIN
FEBRUARY 2024**

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CONKLIN (AMS21)
 FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2(ppb) Average	663	33	33	100	6.1	0	0.9	0
TRS(ppb) Average	661	35	35	100	0.7	0	0.5	0
THC(ppm) Average	663	33	33	100	2.5	-	2.3	-
NMHC(ppm) Average	663	33	33	100	0.183	-	0.017	-
CH4(ppm) Average	663	33	33	100	2.4	-	2.3	-
O3 (ppb) Average	663	33	33	100	46.1	0	39.9	-
NO2 (ppb) Average	661	35	35	100	19.2	0	7.5	-
NO (ppb) Average	661	35	35	100	15.8	-	2.1	-
NOX (ppb) Average	661	35	35	100	35	-	8.5	-
PM2.5 (ug/m3) Average	695	1	1	100	92.5	1	15	0
Temperature 2 m (C) Average	696	0	0	100	10.9	-	3.2	-
Relative Humidity (%) Average	696	0	0	100	95	-	90.6	-
Wind Speed 10 m (km/h) Average	693	0	3	99.57	18	-	11	-
Wind Direction 10 m (deg) Average	693	0	3	99.57	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CONKLIN (AMS21)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	663	0.37	0.5	-	0	0	0.1	0.2	0.4	0.9	6.1
TRS (ppb) Average	661	0.4	0.1	-	0.3	0.3	0.4	0.4	0.4	0.5	0.7
THC (ppm) Average	663	2.12	0.1	-	2	2.1	2.1	2.1	2.2	2.2	2.5
NMHC(ppm) Average	663	0.003	0.014	-	0	0	0	0	0	0	0.183
CH4(ppm) Average	663	2.12	0.1	-	2	2.1	2.1	2.1	2.2	2.2	2.4
O3 (ppb) Average	663	28.67	10.9	-	1.8	13.3	20.6	31.3	37.4	41.2	46.1
NO2 (ppb) Average	661	2.74	2.4	-	0.2	0.7	1.2	2	3.3	5.8	19.2
NO (ppb) Average	661	0.53	1.3	-	0	0	0	0.1	0.5	1.5	15.8
NOX (ppb) Average	661	3.27	3.3	-	0.2	0.7	1.3	2.3	3.9	6.8	35
PM2.5 (ug/m3) Average	695	4.76	6	-	0.3	1	1.9	3.4	5.3	9.1	92.5
Temperature 2 m (C) Average	696	-8.26	8	-	-30.2	-18.9	-12.9	-7.7	-3.2	2.1	10.9
Relative Humidity (%) Average	696	69.69	16.7	-	21.5	44	59	72.5	83.2	88.4	95
Wind Speed 10 m (km/h) Average	693	5.9	4	-	0	1	3	5	9	12	18
Wind Direction 10 m (deg) Average	693	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CONKLIN (AMS 21)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
Wind Speed, Wind Direction	04 Feb 2024 02:00	04 Feb 2024 02:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction	15 Feb 2024 00:00	15 Feb 2024 00:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction	18 Feb 2024 23:00	18 Feb 2024 23:00	1	Flat line in sensor output signal - Sensor frozen

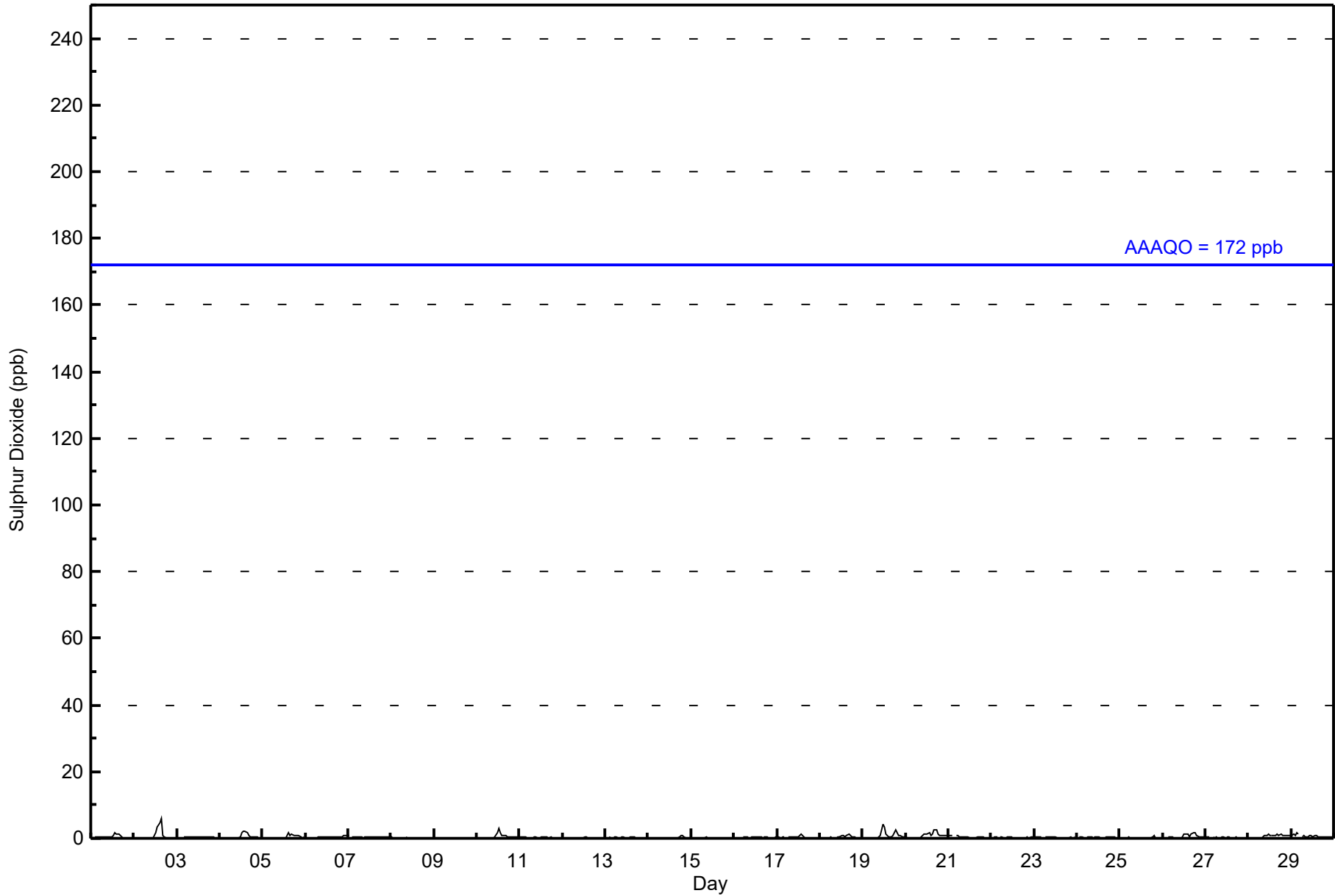


Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696							
Maximum Value: 6.1 ppb on Feb 2 16:00		Maximum Daily Average: 0.9 ppb on Feb 20														Hours of Data:		663									
Minimum Value: 0.0 ppb on Feb 2 04:00		Minimum Daily Average: 0.1 ppb on Feb 15														Hours of Missing Data:		33									
Maximum Diurnal Average: 0.7 ppb at hour 14		Minimum Diurnal Average: 0.2 ppb at hour 8														Hours of Calibration:		33									
Monthly Average: 0.37 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.4 P ₉₀ = 0.9 P ₉₉ = 2.6														Percent Operational Time:		100.0									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.4	Z	0.3	0.4	0.5	0.4	0.5	0.3	0.4	0.6	0.5	0.6	1.0	1.6	1.2	1.1	0.9	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.5	1.6	
2-Feb	0.0	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9	1.6	3.3	4.5	6.1	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.8	6.1	
3-Feb	0.0	0.0	0.0	Z	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.2	0.4	0.3	0.5	0.4	0.5	0.3	0.2	0.1	0.1	0.3	0.5	
4-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.0	0.0	0.1	0.0	0.2	0.3	1.5	2.2	2.0	1.9	1.0	0.4	0.2	0.2	0.3	0.2	0.1	0.1	0.5	2.2	
5-Feb	0.1	0.1	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.6	1.0	1.3	1.0	1.0	0.8	0.8	0.6	0.2	0.2	0.4	1.6		
6-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.4	0.3	0.4	0.4	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.8	0.9	0.9	0.4	0.9	
7-Feb	0.9	Z	0.6	0.5	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.4	0.5	0.4	0.3	0.4	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.9	
8-Feb	0.2	0.2	Z	0.1	0.1	0.0	0.1	0.1	0.1	0.4	C	C	C	C	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	
9-Feb	0.1	0.0	0.1	Z	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.2	
10-Feb	0.1	0.2	0.1	0.1	Z	0.1	0.1	0.2	0.1	0.2	0.3	1.6	3.0	1.8	0.9	0.8	0.7	0.6	0.5	0.5	0.6	0.4	0.3	0.3	0.6	3.0	
11-Feb	0.3	0.3	0.2	0.3	0.1	Z	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.2	0.3	
12-Feb	Z	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.3
13-Feb	0.2	Z	0.5	0.2	0.1	0.3	0.3	0.2	0.2	0.3	0.4	0.2	0.2	0.1	0.3	0.3	0.3	0.1	0.1	0.0	0.1	0.2	0.1	0.1	0.2	0.5	
14-Feb	0.1	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.4	0.7	0.8	0.4	0.2	0.1	0.1	0.2	0.8	
15-Feb	0.1	0.1	0.1	Z	0.0	0.0	0.0	0.1	0.5	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.5	
16-Feb	0.1	0.1	0.0	0.2	Z	0.5	0.3	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.2	0.2	0.1	0.3	0.3	0.2	0.1	0.0	0.1	0.2	0.2	0.5	
17-Feb	0.2	0.2	0.2	0.3	0.3	Z	0.4	0.3	0.3	0.4	0.5	0.6	0.5	1.1	1.0	0.4	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.3	1.1	
18-Feb	Z	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.5	0.8	0.7	0.6	0.7	1.3	0.8	0.4	0.3	0.2	0.1	0.1	0.1	0.3	1.3	
19-Feb	0.1	Z	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.4	0.8	4.1	3.5	1.4	0.4	0.4	0.5	1.0	2.6	1.6	0.9	0.8	0.4	0.4	0.9	4.1	
20-Feb	0.3	0.3	Z	0.1	0.0	0.0	0.0	0.2	0.2	0.8	1.3	1.5	1.4	1.7	1.0	1.2	2.7	2.6	1.3	0.9	0.7	0.7	0.6	0.8	0.9	2.7	
21-Feb	0.8	0.8	0.7	Z	0.7	0.7	0.6	0.6	0.5	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.4	0.4	0.3	0.1	0.0	0.1	0.0	0.4	0.8	
22-Feb	0.1	0.2	0.2	0.2	Z	0.2	0.3	0.1	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.3
23-Feb	0.3	0.2	0.3	0.3	0.3	Z	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.4	
24-Feb	Z	0.2	0.3	0.2	0.1	0.2	0.5	0.3	0.4	0.2	0.3	0.3	0.4	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.5	0.2	0.1	0.0	0.3	0.5	
25-Feb	0.1	Z	0.1	0.2	0.2	0.3	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	1.0	0.1	0.0	0.0	0.0	0.1	1.0	
26-Feb	0.0	0.0	Z	0.4	0.5	0.6	0.1	0.1	0.1	0.1	0.2	0.6	1.4	1.2	1.1	0.6	1.4	1.8	1.7	0.8	0.5	0.3	0.6	0.3	0.6	1.8	
27-Feb	0.4	0.3	0.4	Z	0.4	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.4	
28-Feb	0.1	0.1	0.0	0.0	Z	0.1	0.1	0.0	0.4	1.0	0.9	1.3	1.0	0.9	1.0	1.0	1.2	0.8	1.1	0.8	0.8	0.8	0.8	0.7	0.7	0.6	1.3
29-Feb	1.0	1.4	0.9	1.5	1.2	Z	0.6	0.8	0.5	0.5	1.0	0.7	0.6	0.8	0.7	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.4	0.7	1.5	
																								Diurnal Average		0.2	
																								Diurnal Maximum		1.0	
Z - zerspan C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																											



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Conklin - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Conklin - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	663	100.00	100.00
11 - 20	0	0.00	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Conklin - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	52	44	10	8	10	35	23	46	57	39	30	27	54	79	60	86	660
11 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	52	44	10	8	10	35	23	46	57	39	30	27	54	79	60	86	660

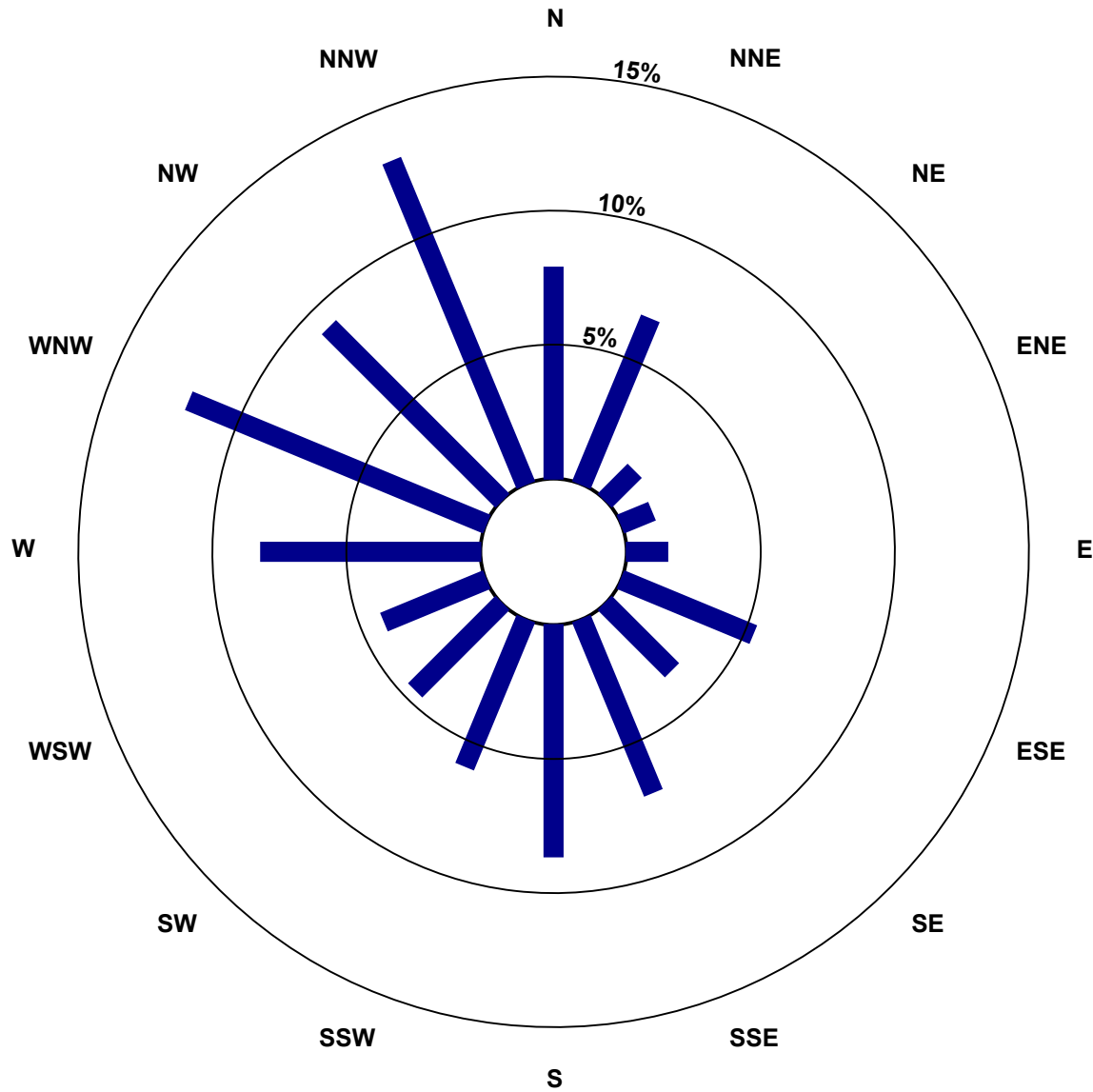
Total Number of Valid Hours: 660

Total Number of Hours: 696

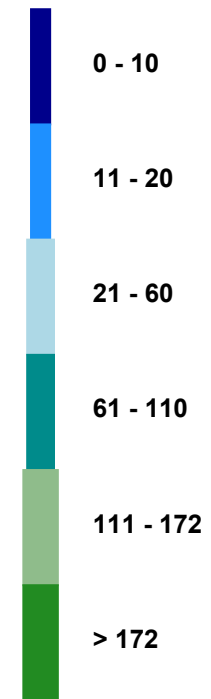


Wood Buffalo Environmental Association
Wind Rose Feb 2024

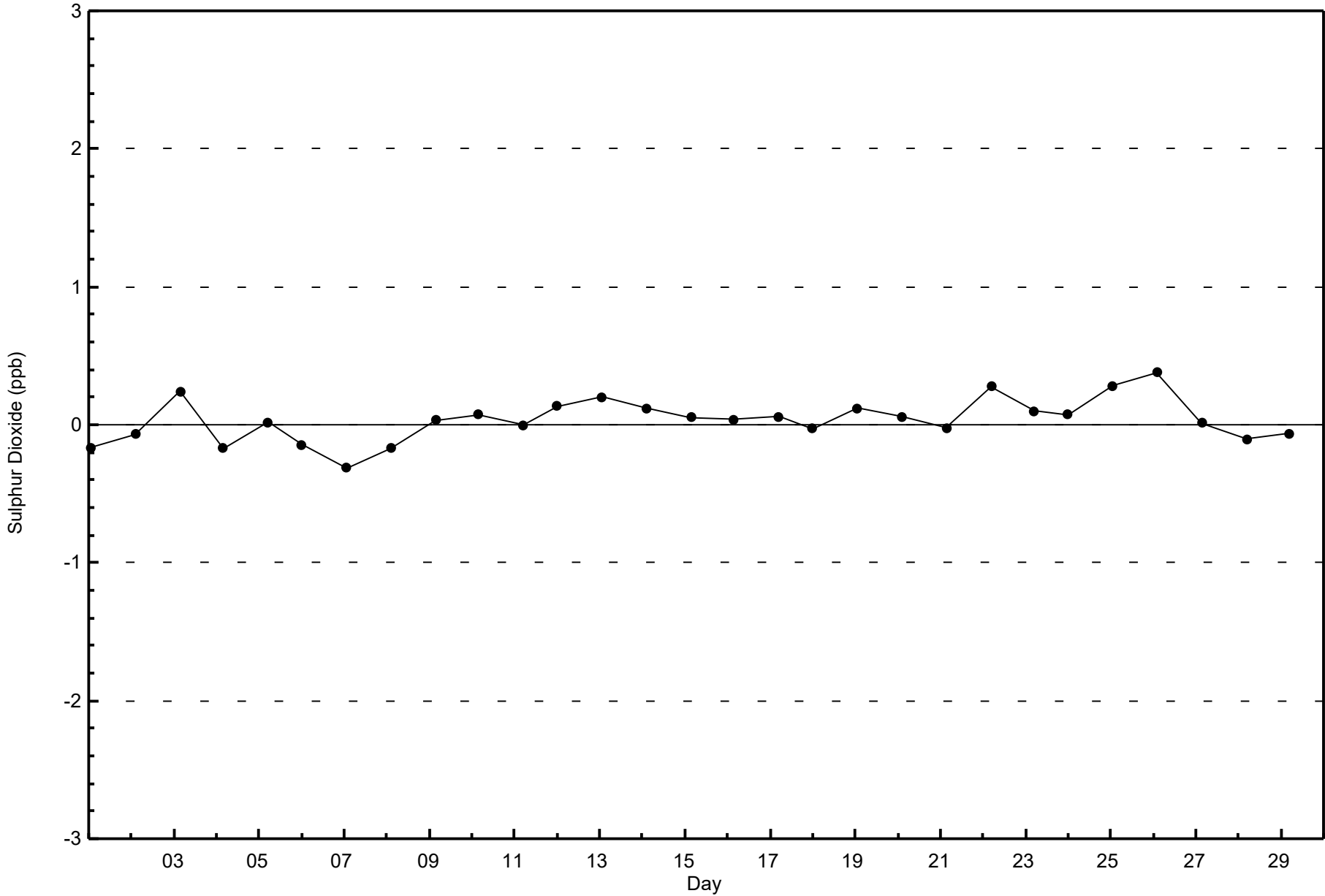
Sulphur Dioxide (SO₂) - ppb
Conklin

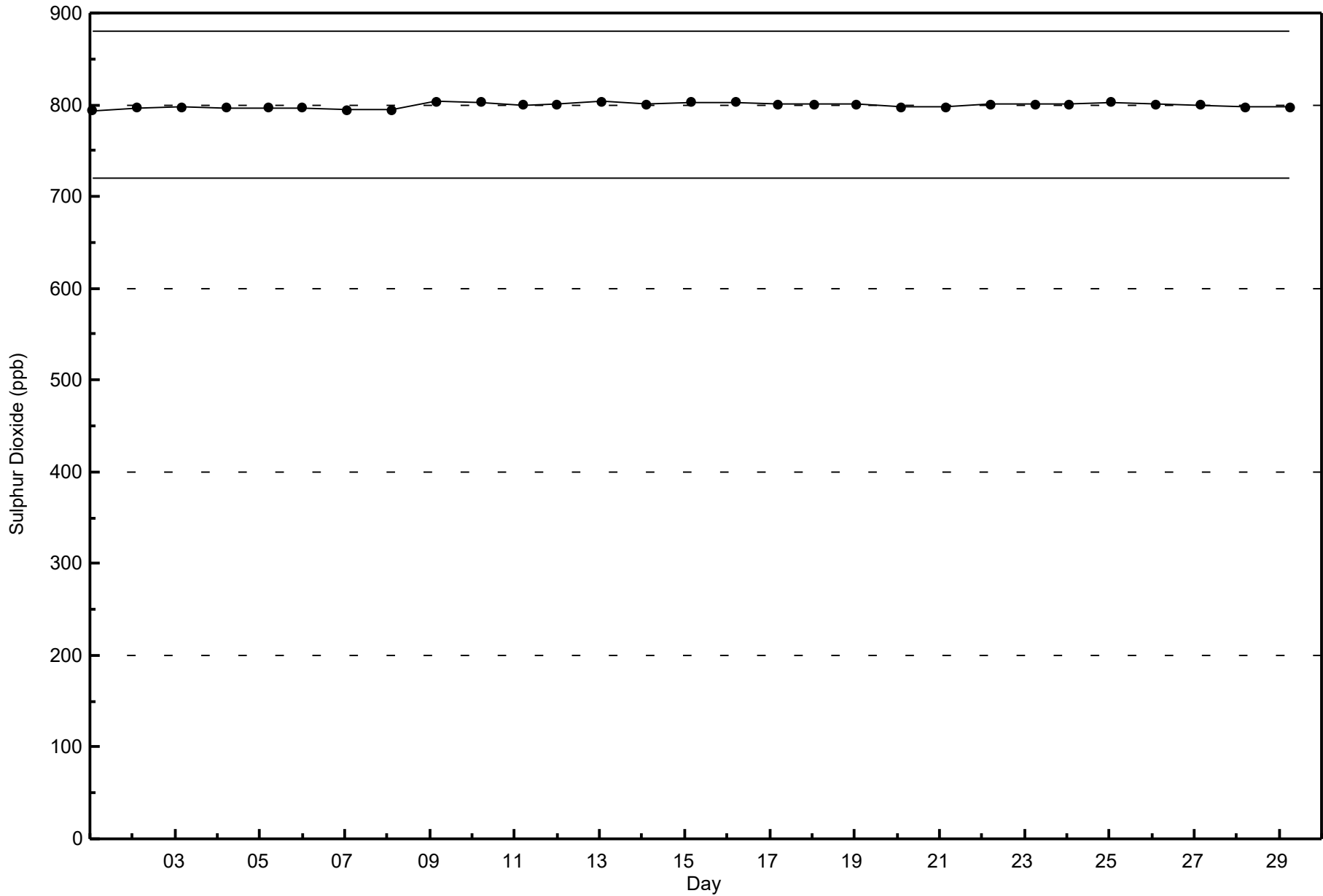


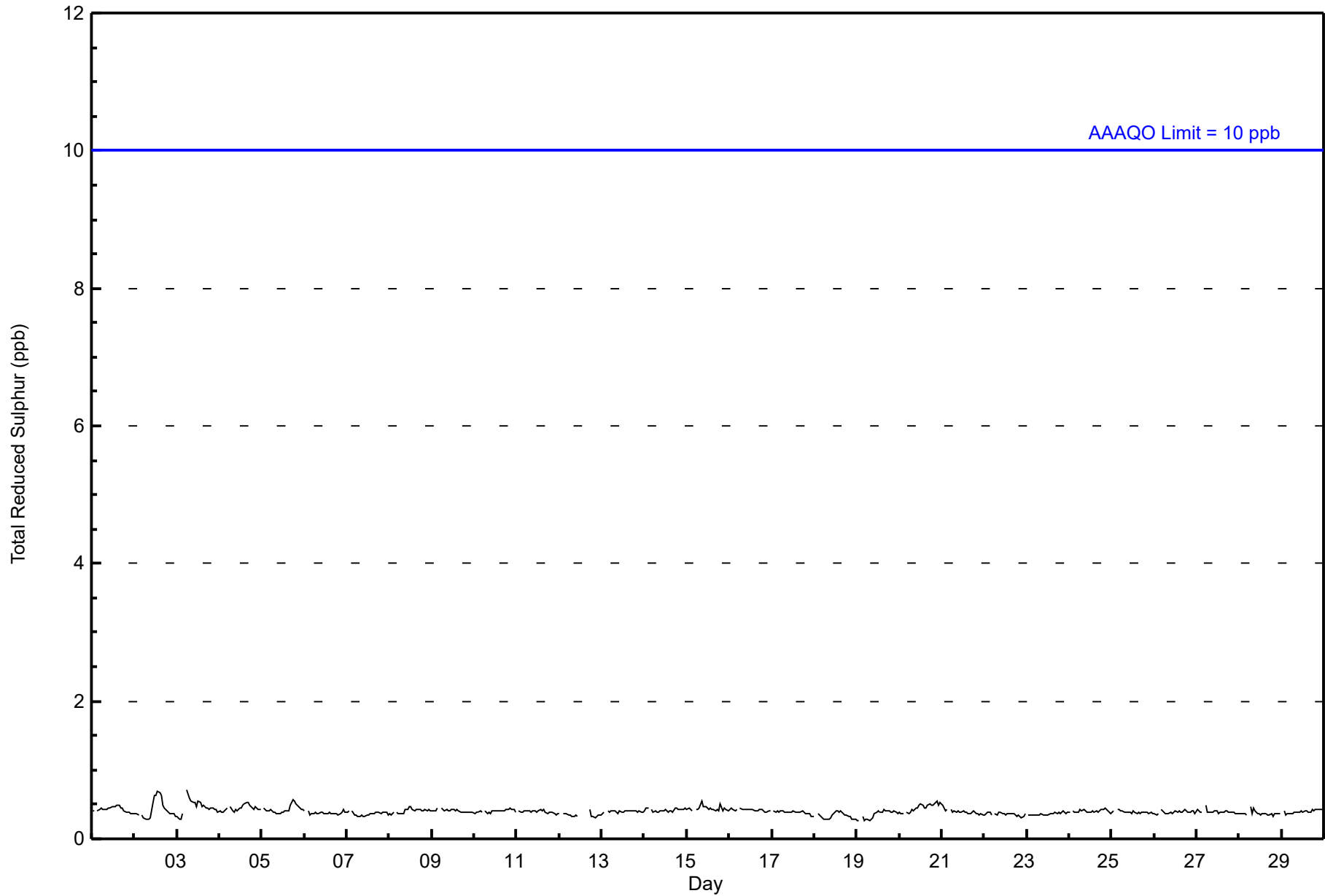
Classes (ppb)



Total Number of Valid Hours: 660









Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Reduced Sulphur (TRS) - ppb
Conklin - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	661	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Conklin - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	54	42	10	8	9	37	22	44	57	46	31	27	54	73	59	85	658
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	54	42	10	8	9	37	22	44	57	46	31	27	54	73	59	85	658

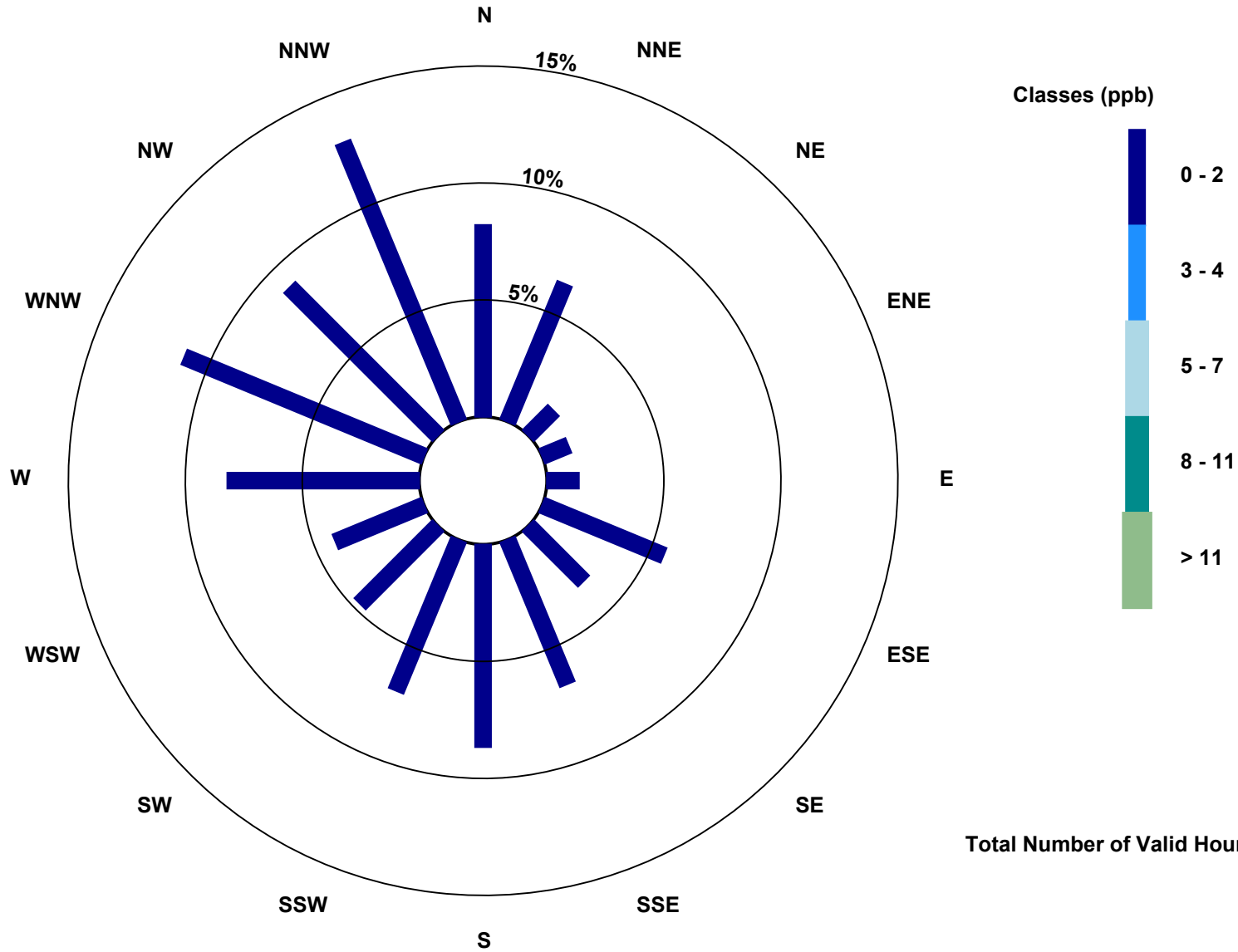
Total Number of Valid Hours: 658

Total Number of Hours: 696

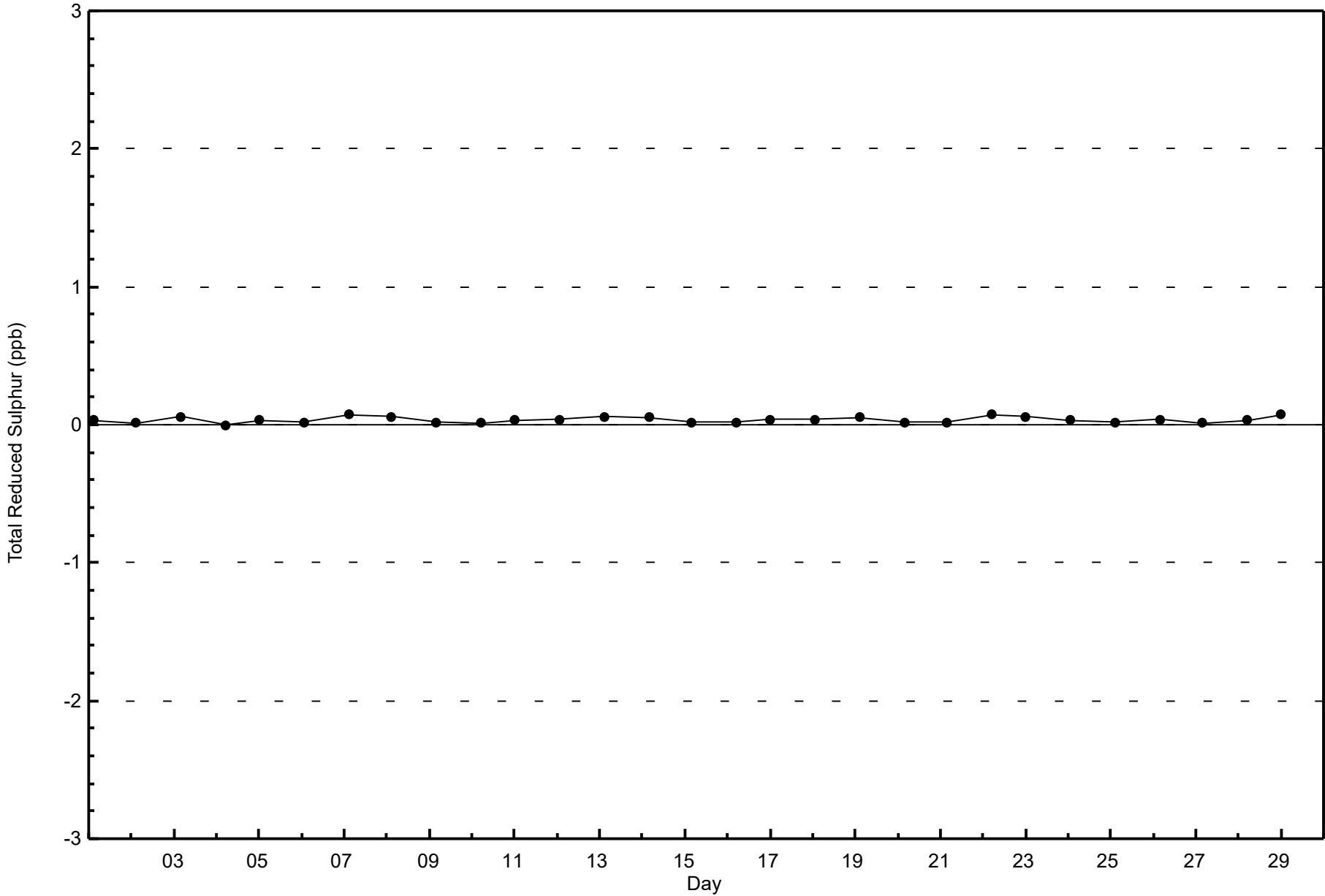


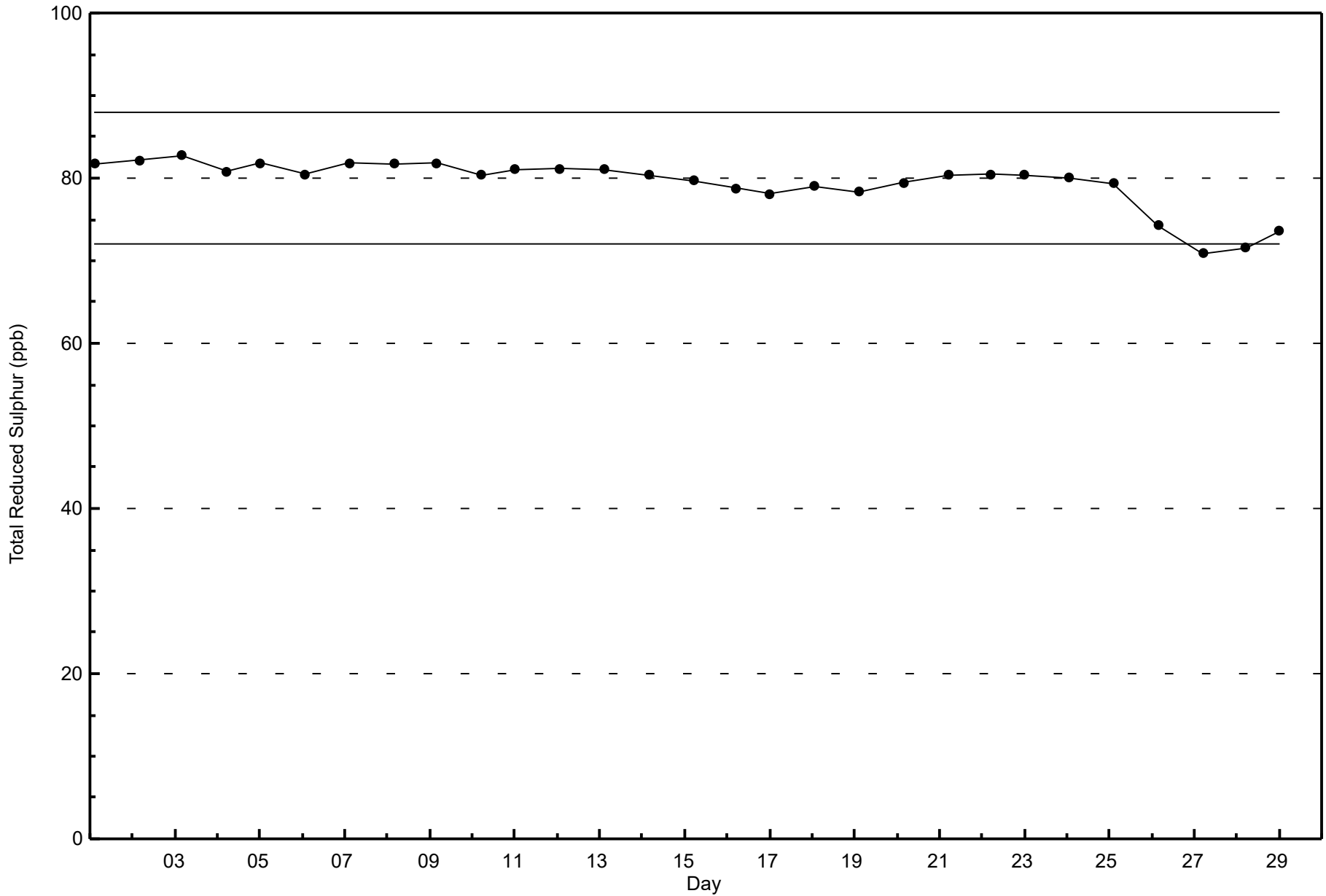
Wood Buffalo Environmental Association
Wind Rose Feb 2024

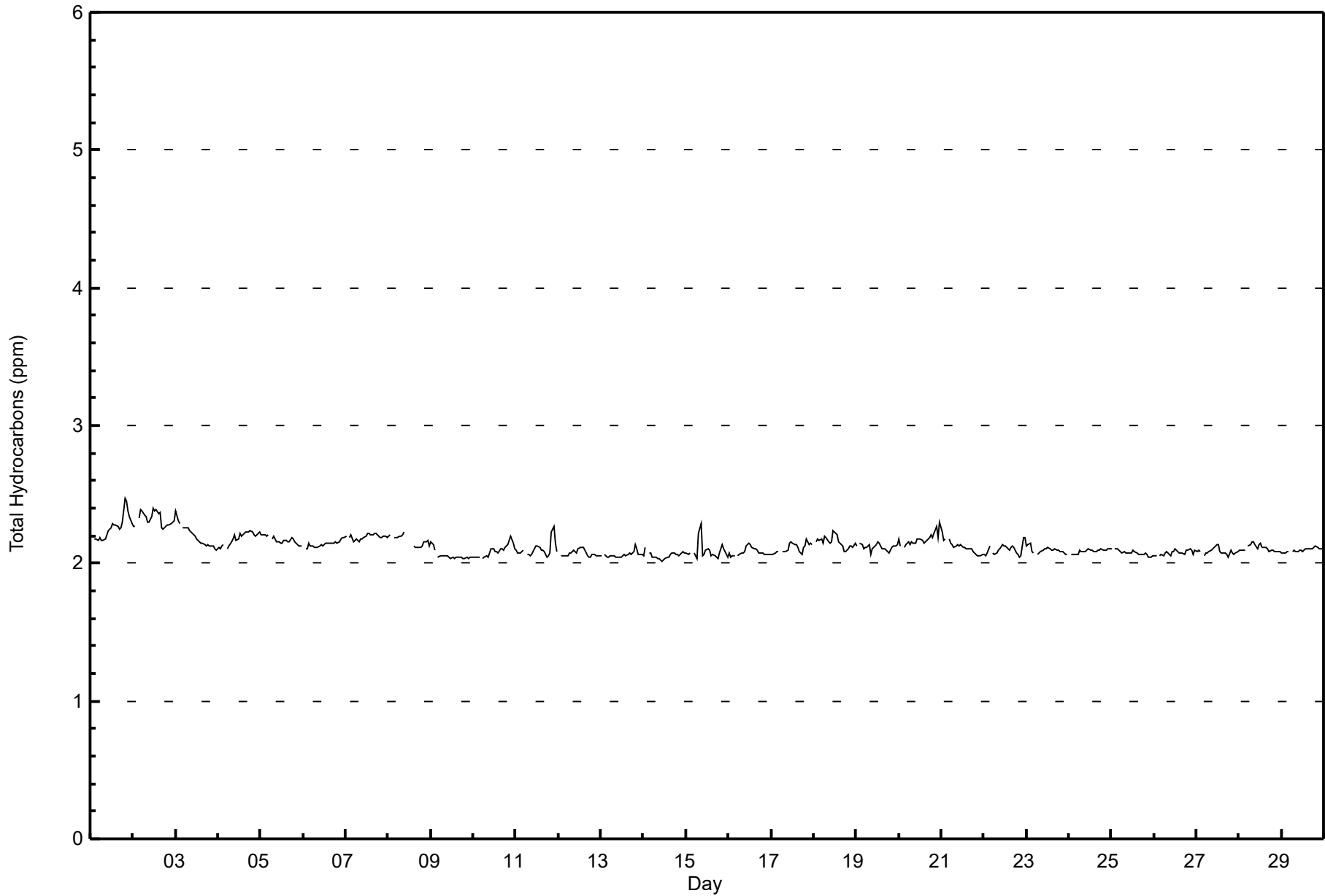
Total Reduced Sulphur (TRS) - ppb
Conklin



Total Number of Valid Hours: 658









Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Conklin - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	55	8.30	8.30
2.1 - 3.0	608	91.70	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Conklin - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	2	9	0	0	0	1	0	0	2	2	3	6	9	9	7	5	55
2.1 - 3.0	50	35	10	8	10	34	23	46	55	37	27	21	45	70	53	81	605
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	52	44	10	8	10	35	23	46	57	39	30	27	54	79	60	86	660

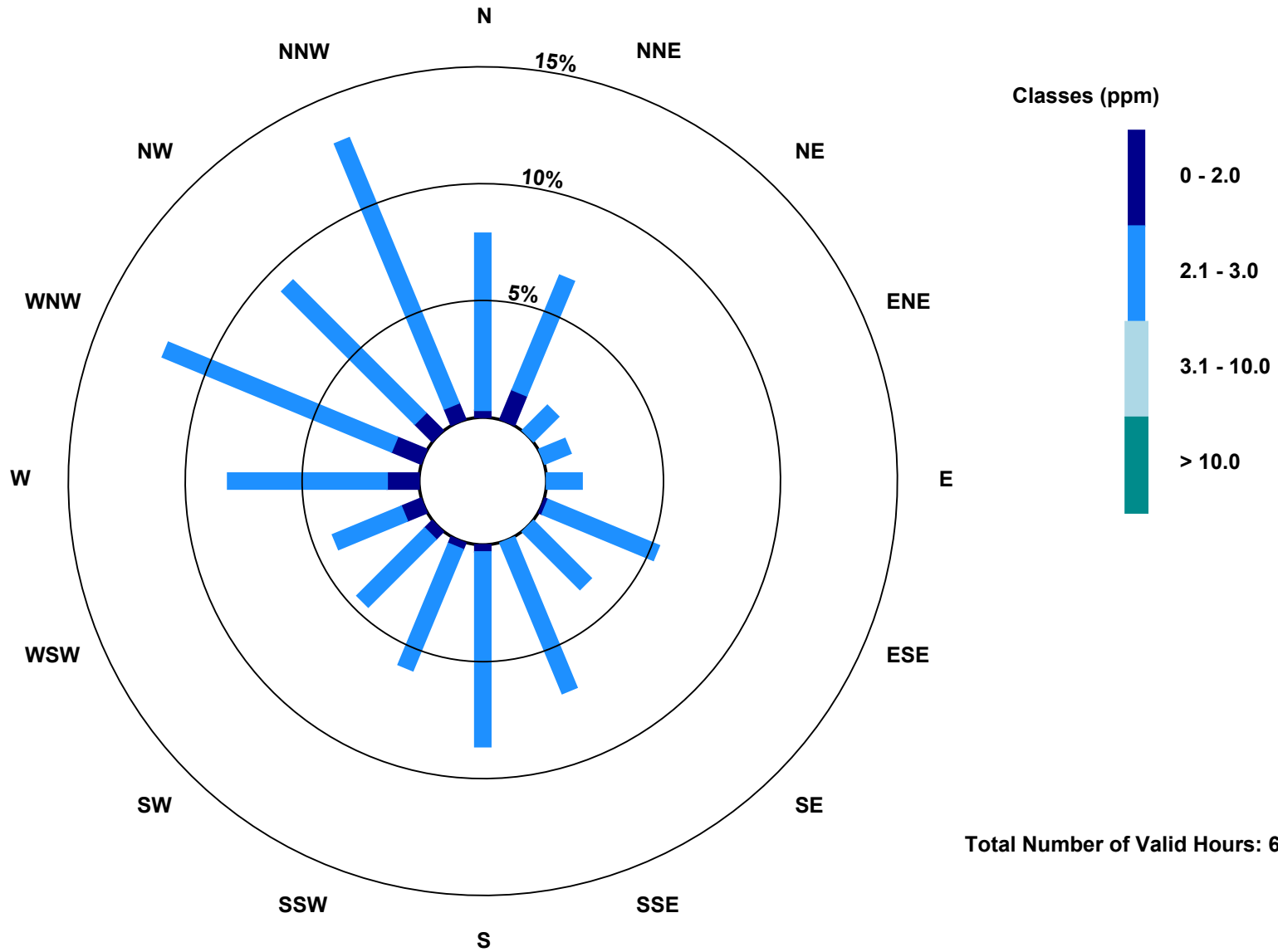
Total Number of Valid Hours: 660

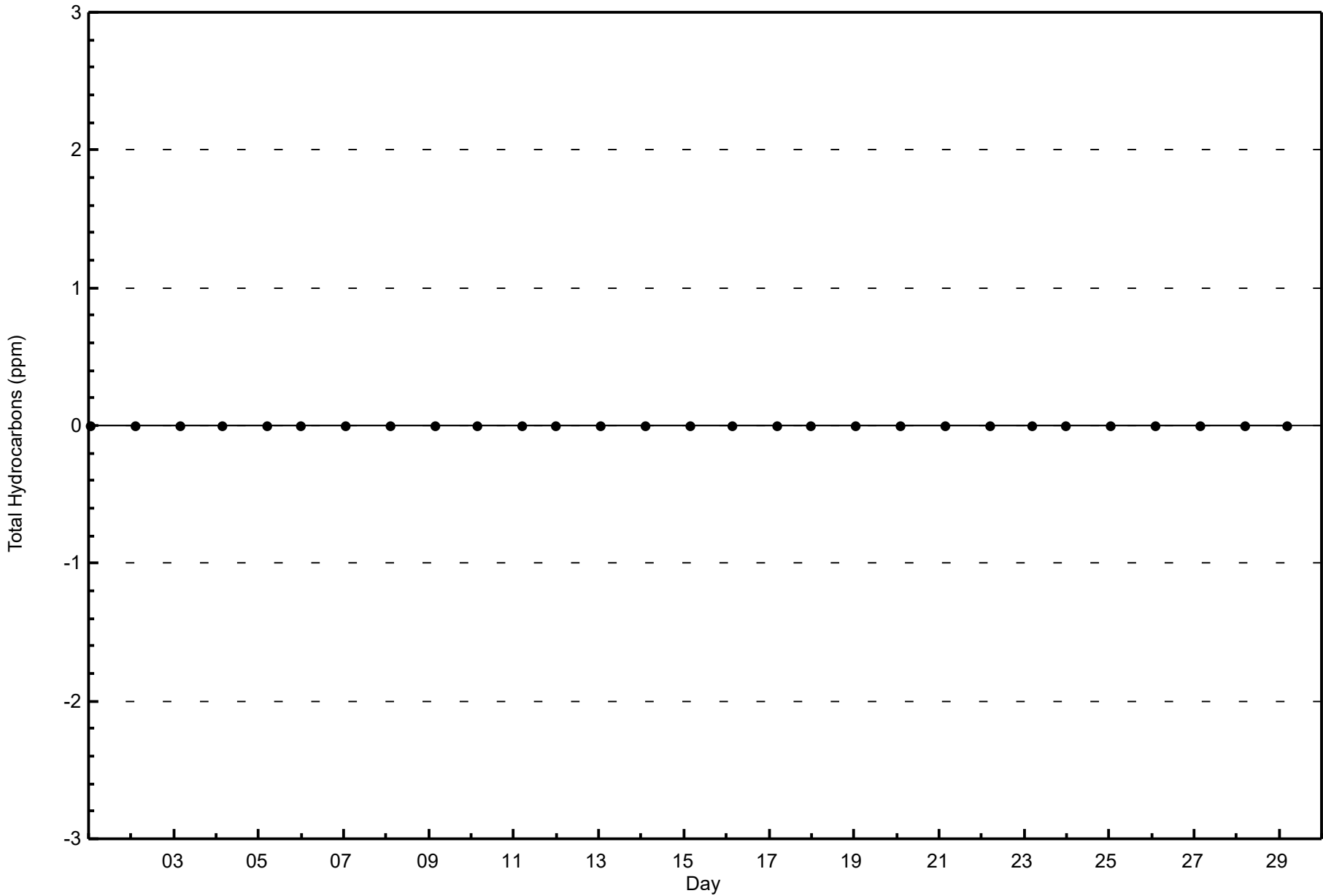
Total Number of Hours: 696

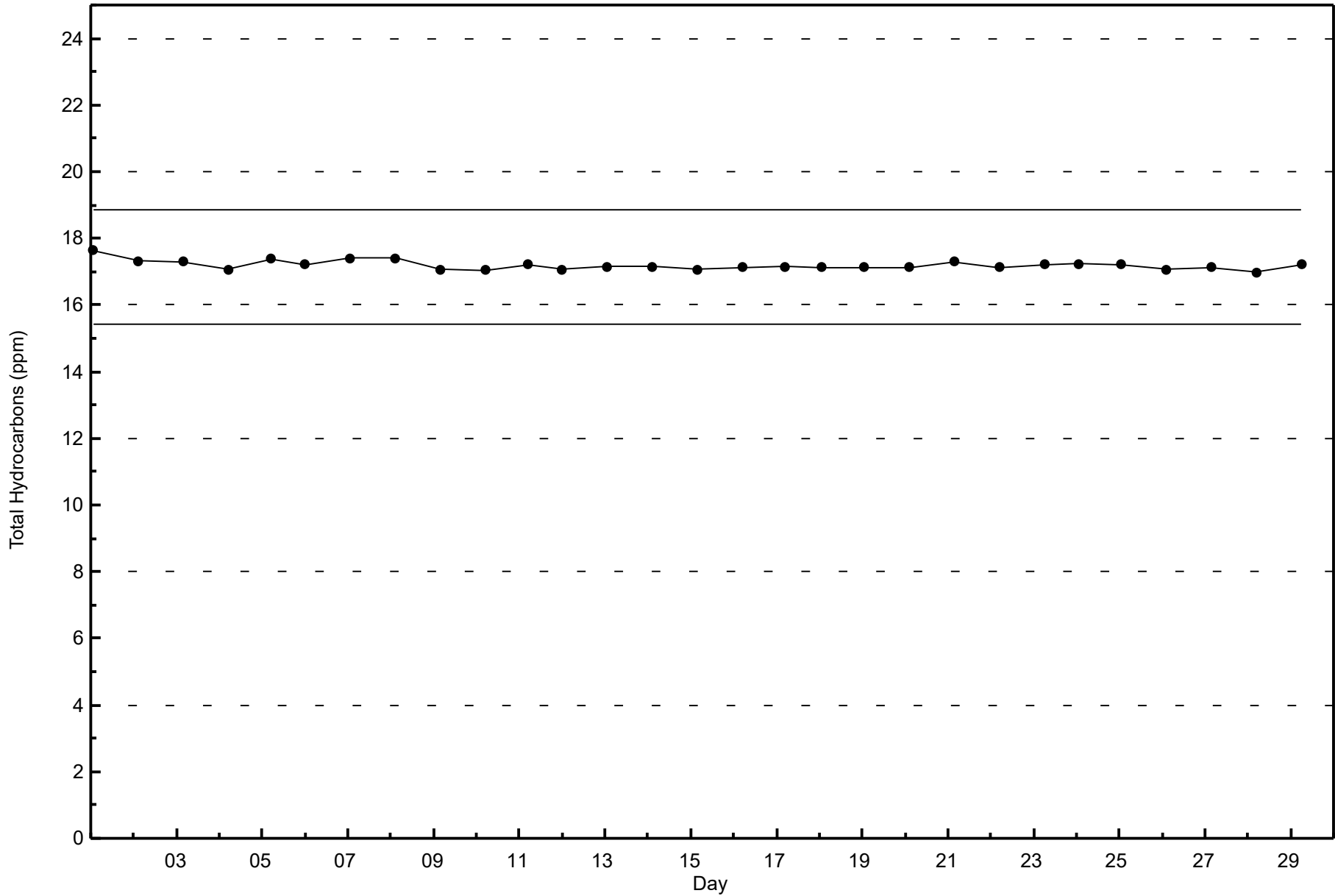


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Conklin

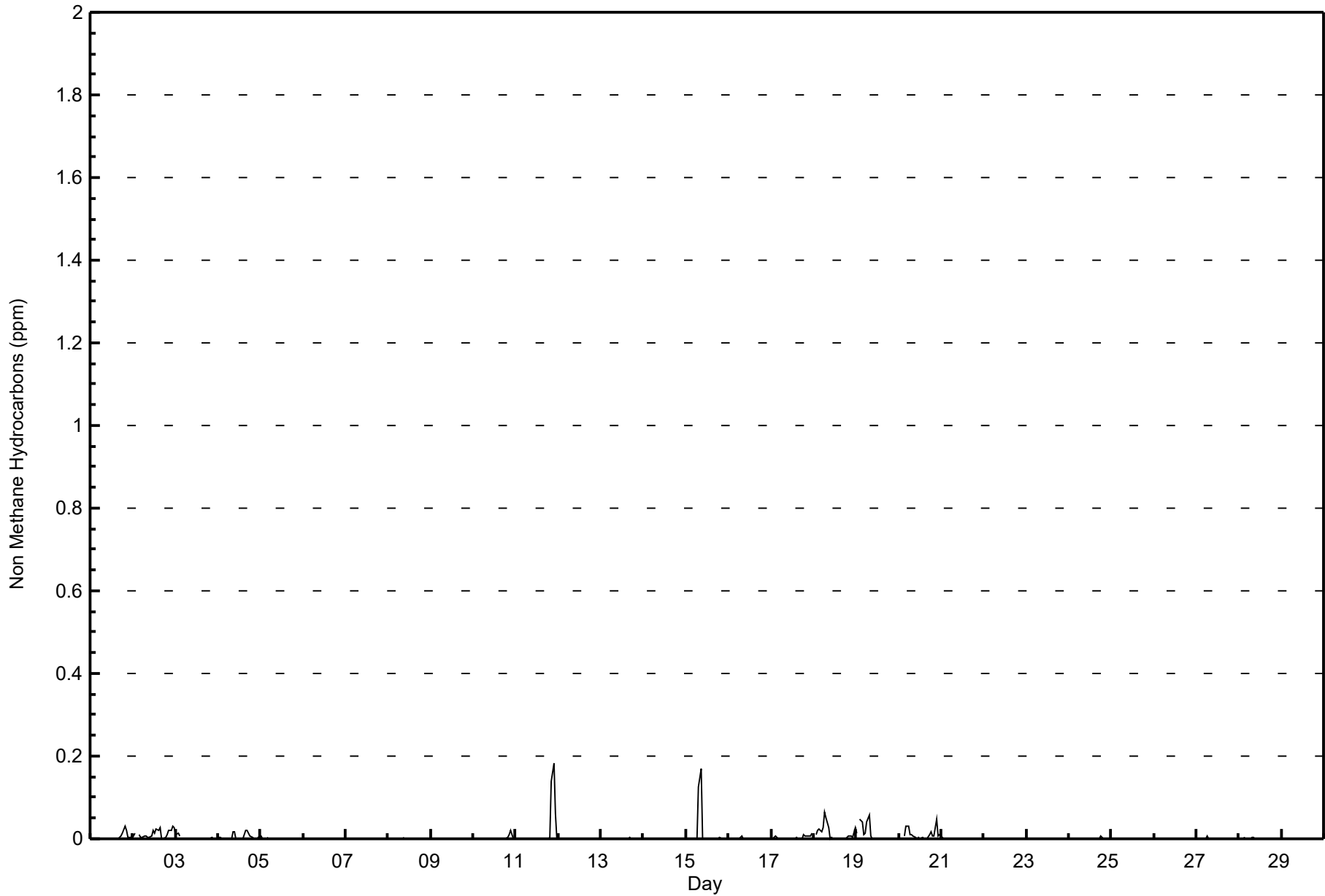








Maximum Value: 0.183 ppm on Feb 11 22:00 Maximum Daily Average: 0.017 ppm on Feb 11		Hours in Service: 696 Hours of Data: 663 Hours of Missing Data: 33 Hours of Calibration: 33 Percent Operational Time: 100.0																								
Minimum Value: 0.000 ppm on Feb 1 01:00 Minimum Daily Average: 0.000 ppm on Feb 12 Maximum Diurnal Average: 0.010 ppm at hour 22 Minimum Diurnal Average: 0.000 ppm at hour 11 Monthly Average: 0.003 ppm Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.1																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.008	0.015	0.030	0.021	0.005	0.002	0.004	0.004	0.030	
2-Feb	0.007	0.013	Z	0.009	0.003	0.004	0.006	0.007	0.003	0.002	0.007	0.019	0.014	0.024	0.019	0.028	0.001	0.000	0.002	0.009	0.019	0.021	0.031	0.026	0.012	0.031
3-Feb	0.012	0.015	0.008	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.001	0.001	0.000	0.002	0.015
4-Feb	0.004	0.003	0.000	0.001	Z	0.000	0.000	0.001	0.016	0.016	0.000	0.000	0.000	0.000	0.001	0.019	0.021	0.013	0.005	0.003	0.000	0.000	0.000	0.007	0.005	0.021
5-Feb	0.006	0.000	0.000	0.000	0.002	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.006
6-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.002
7-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
8-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.004	C	C	C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004
9-Feb	0.001	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
10-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.004	0.010	0.020	0.002	0.000	0.002	0.020
11-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.138	0.183	0.060	0.000	0.017	0.183
12-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
14-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.125	0.168	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.013	0.168
16-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005
17-Feb	0.000	0.000	0.005	0.002	0.000	Z	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.001	0.009	0.005	0.008	0.007	0.005	0.013	0.003	0.013
18-Feb	Z	0.010	0.020	0.022	0.016	0.026	0.066	0.052	0.026	0.001	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.006	0.008	0.007	0.004	0.028	0.013	0.066	
19-Feb	0.012	Z	0.048	0.042	0.009	0.012	0.041	0.059	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.010	0.059	
20-Feb	0.002	0.000	Z	0.006	0.032	0.032	0.009	0.010	0.008	0.005	0.001	0.004	0.001	0.002	0.000	0.000	0.000	0.010	0.015	0.007	0.007	0.048	0.007	0.011	0.009	0.048
21-Feb	0.002	0.001	0.000	Z	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
22-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001
23-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.001	0.000	0.001	0.000	0.008
25-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.002	0.000	0.002
27-Feb	0.001	0.000	0.000	Z	0.000	0.000	0.008	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.008
28-Feb	0.001	0.001	0.001	0.002	Z	0.001	0.000	0.005	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.005
29-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
																								Diurnal Average		
																								Diurnal Maximum		
Z - zerospan		C - Calibration																								





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Non Methane Hydrocarbons (NMHC) - ppm
Conklin - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	589	88.84	88.84
0.006 - 0.05	67	10.11	98.94
0.06 - 0.1	5	0.75	99.70
> 0.1	2	0.30	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Non Methane Hydrocarbons (NMHC) - ppm
Conklin - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	50	43	9	4	10	35	22	29	42	33	28	24	53	78	54	72	586
0.006 - 0.05	2	1	1	4	0	0	1	14	14	4	2	3	1	1	5	14	67
0.06 - 0.1	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	5
> 0.1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Totals	52	44	10	8	10	35	23	46	57	39	30	27	54	79	60	86	660

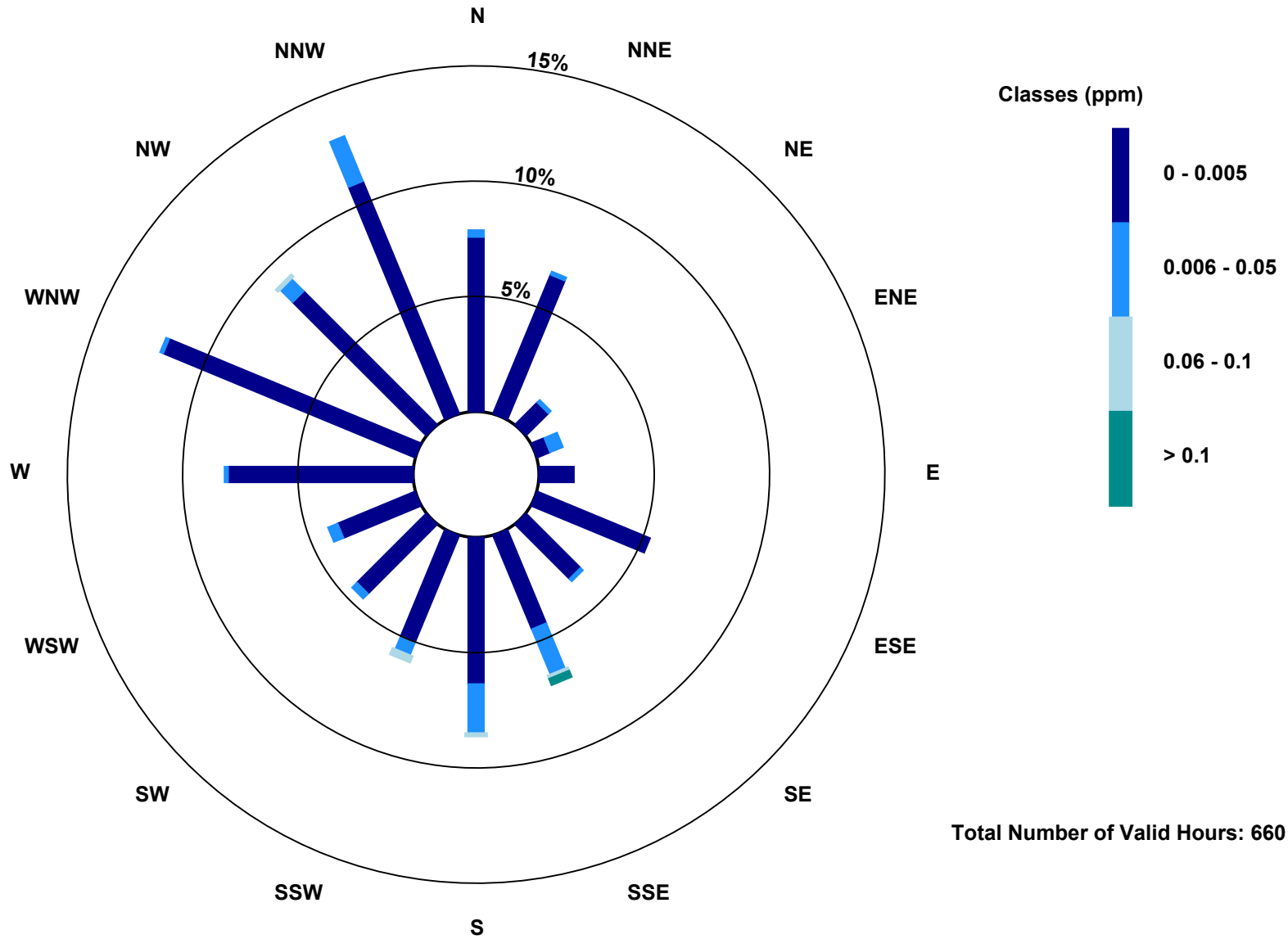
Total Number of Valid Hours: 660

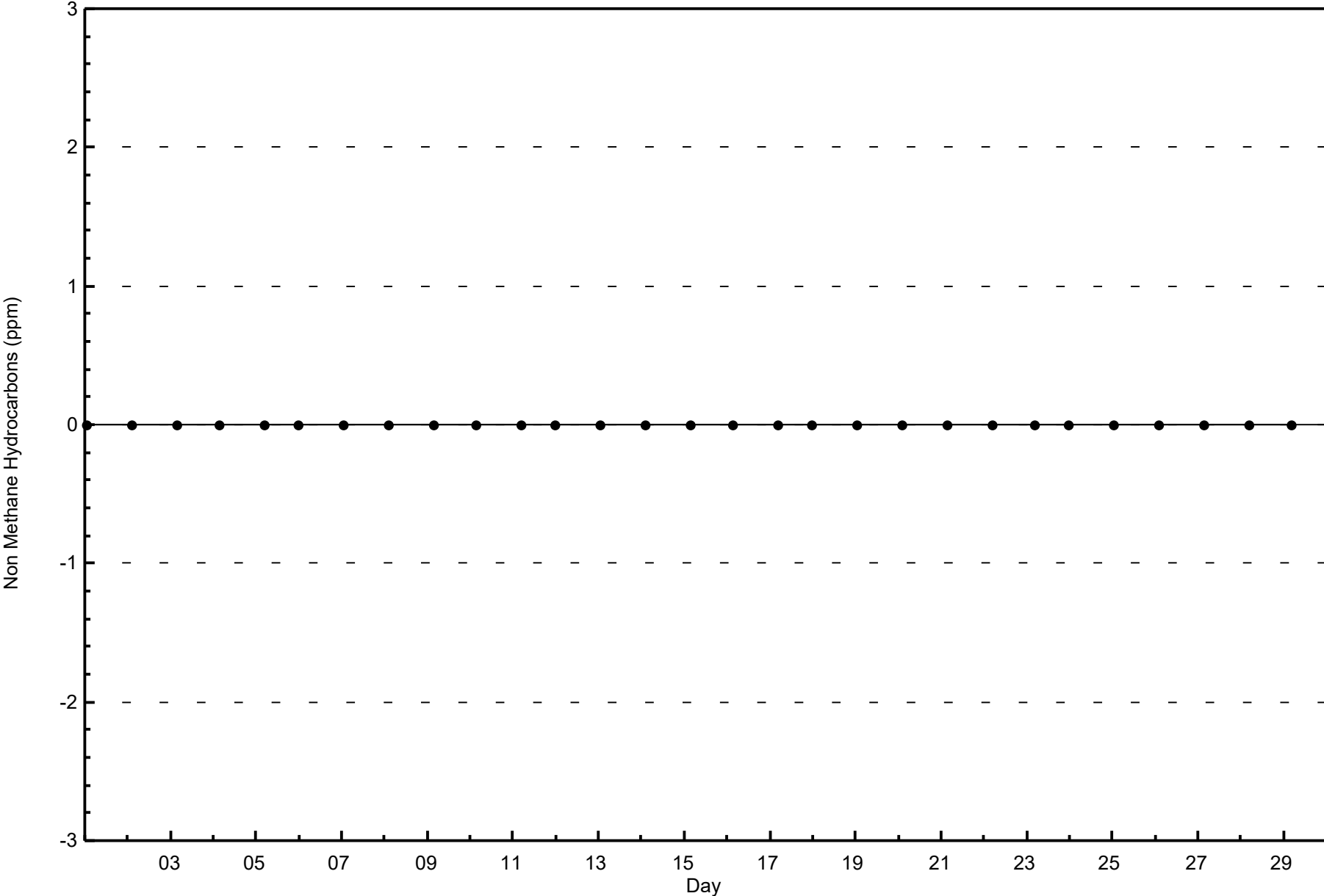
Total Number of Hours: 696

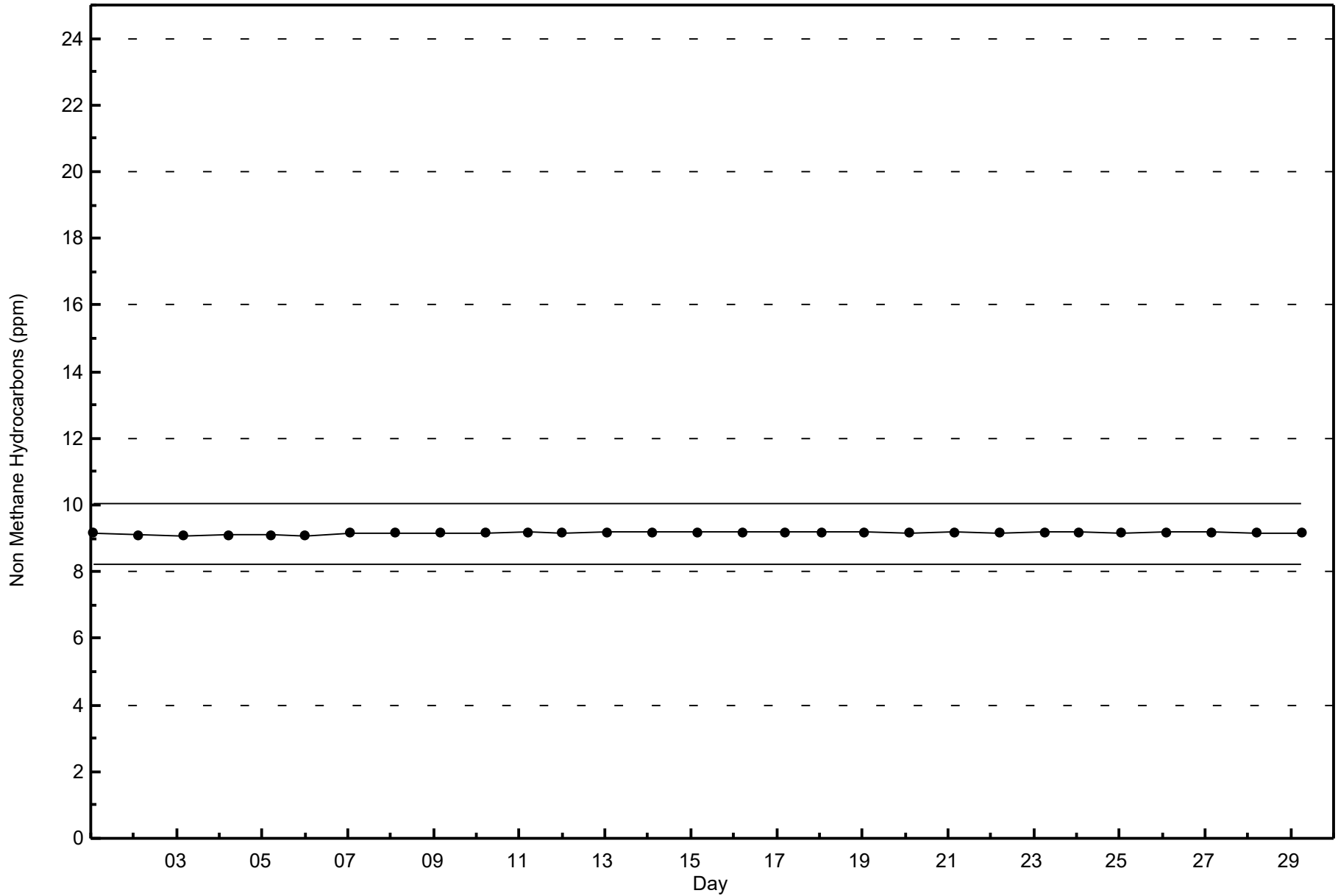


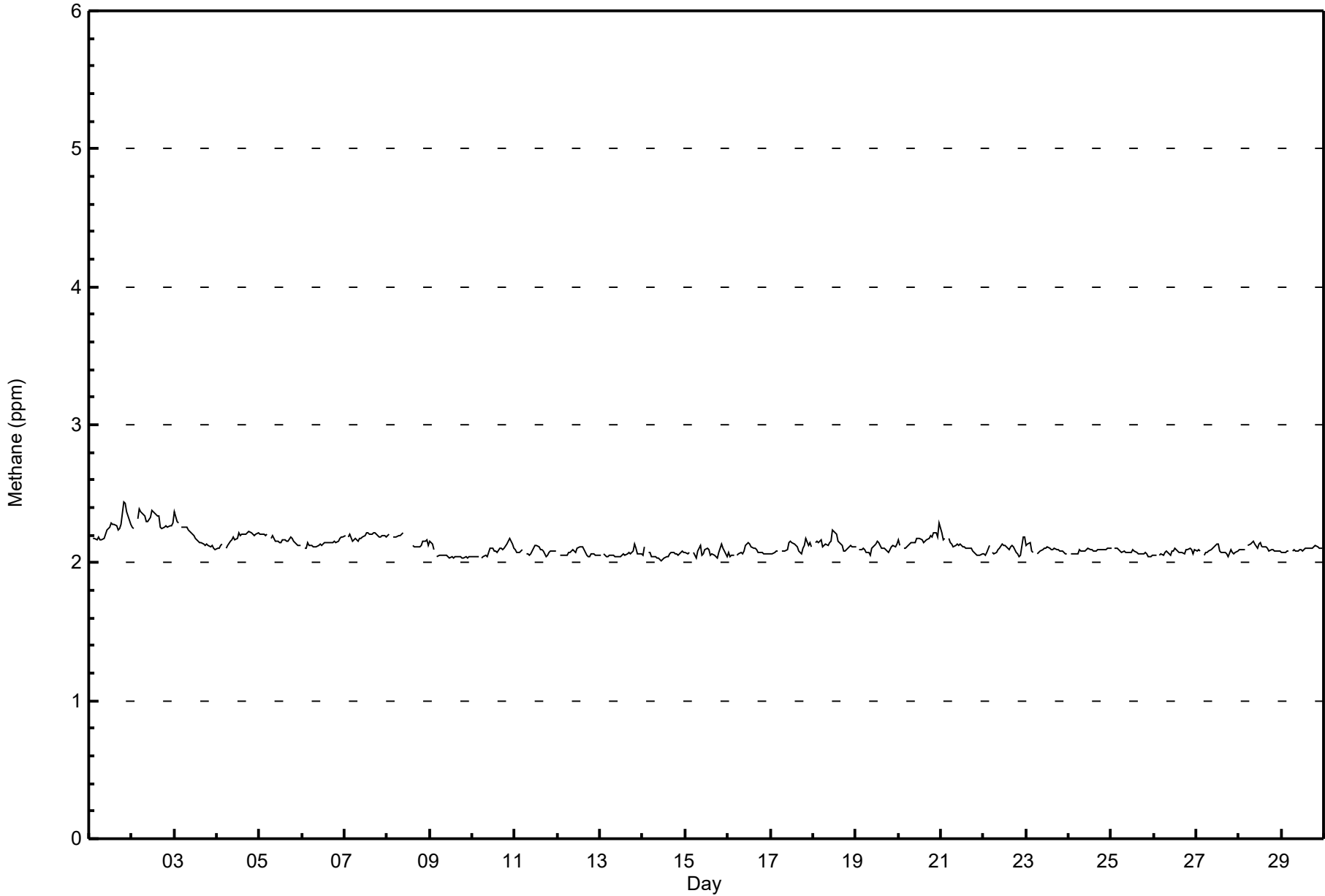
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Conklin











Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Conklin - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	55	8.30	8.30
2.1 - 3.0	608	91.70	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Methane (CH₄) - ppm
Conklin - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	2	9	0	0	0	1	0	0	2	2	3	6	9	9	7	5	55
2.1 - 3.0	50	35	10	8	10	34	23	46	55	37	27	21	45	70	53	81	605
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	52	44	10	8	10	35	23	46	57	39	30	27	54	79	60	86	660

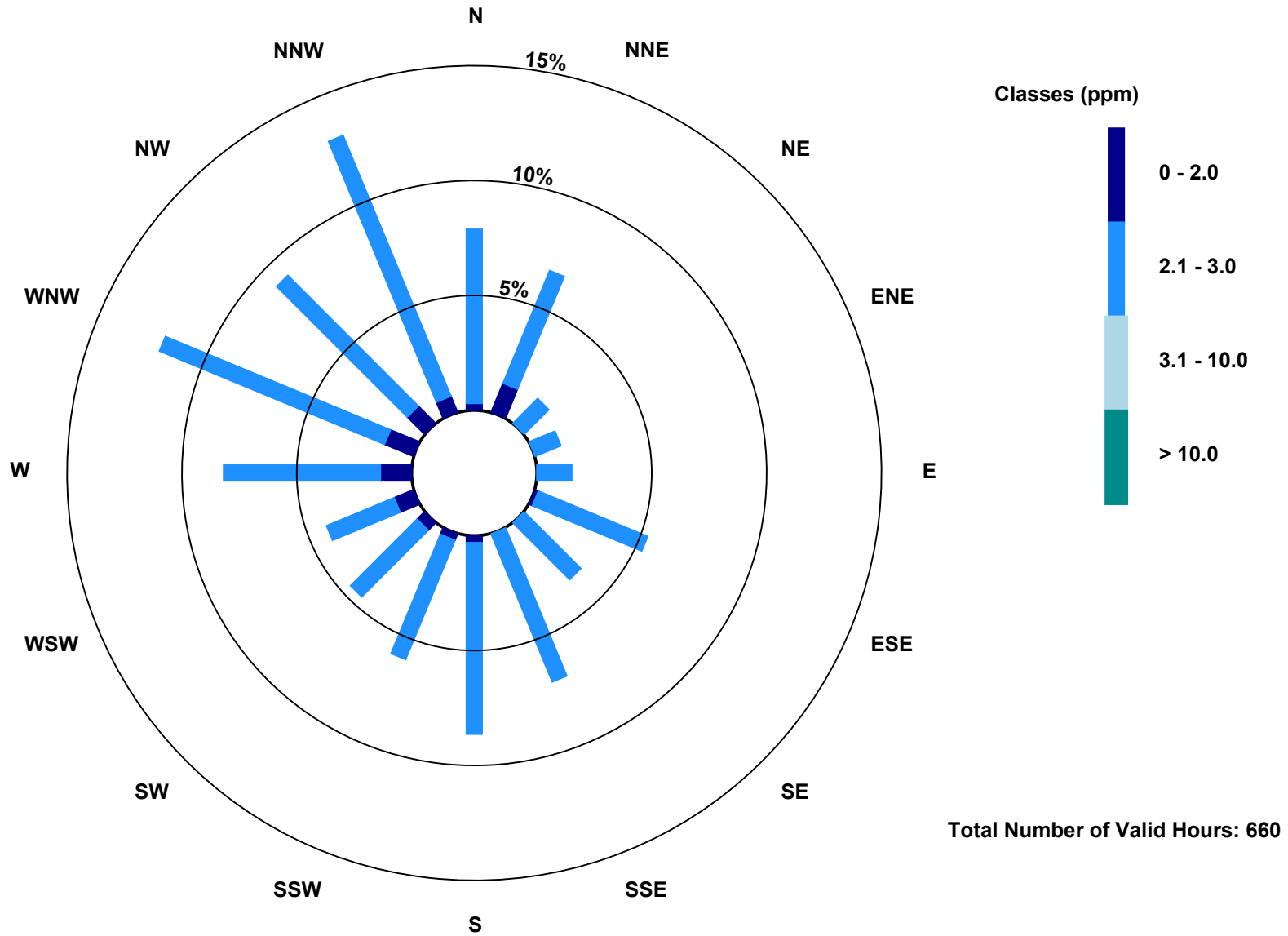
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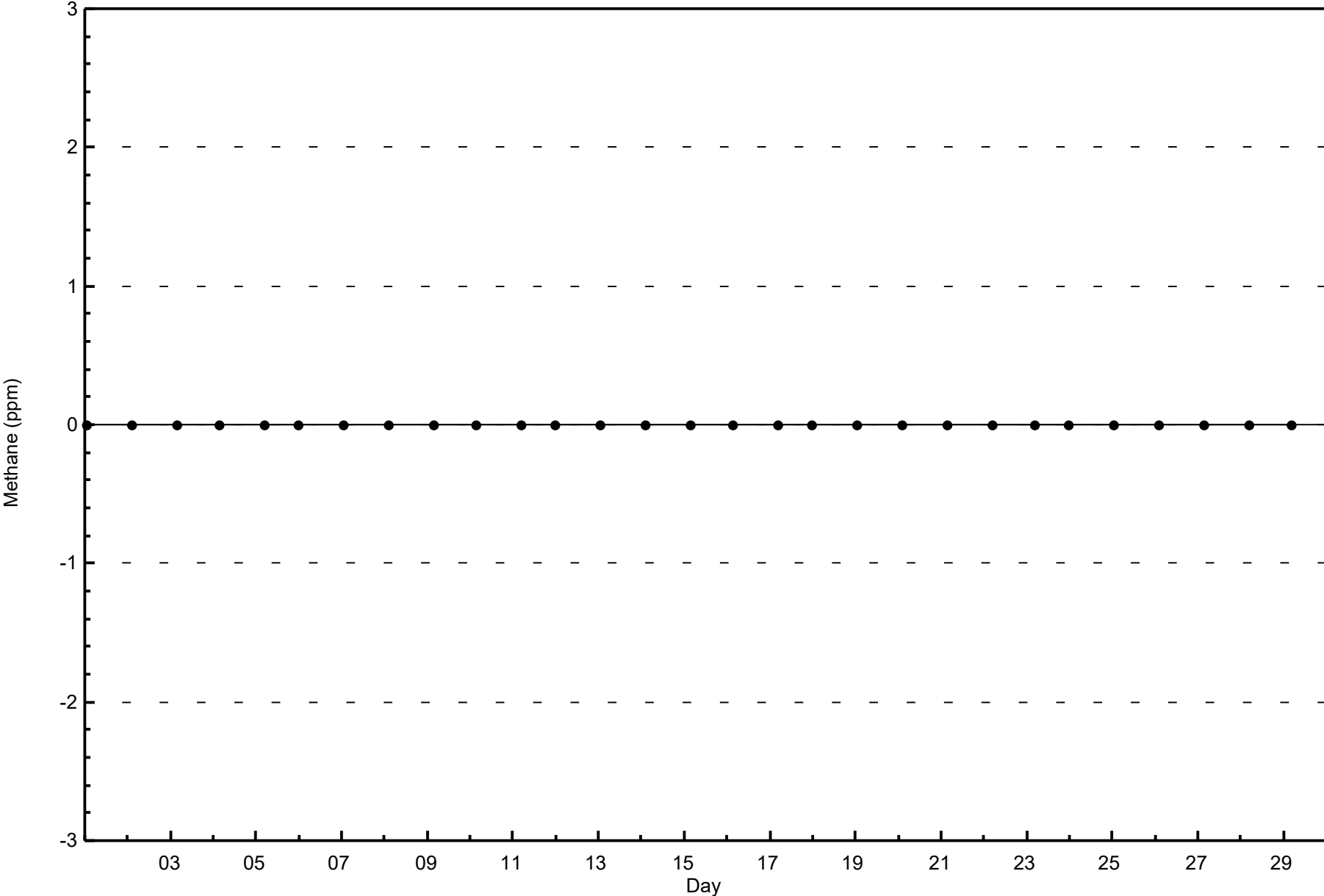
Total Number of Hours: 696

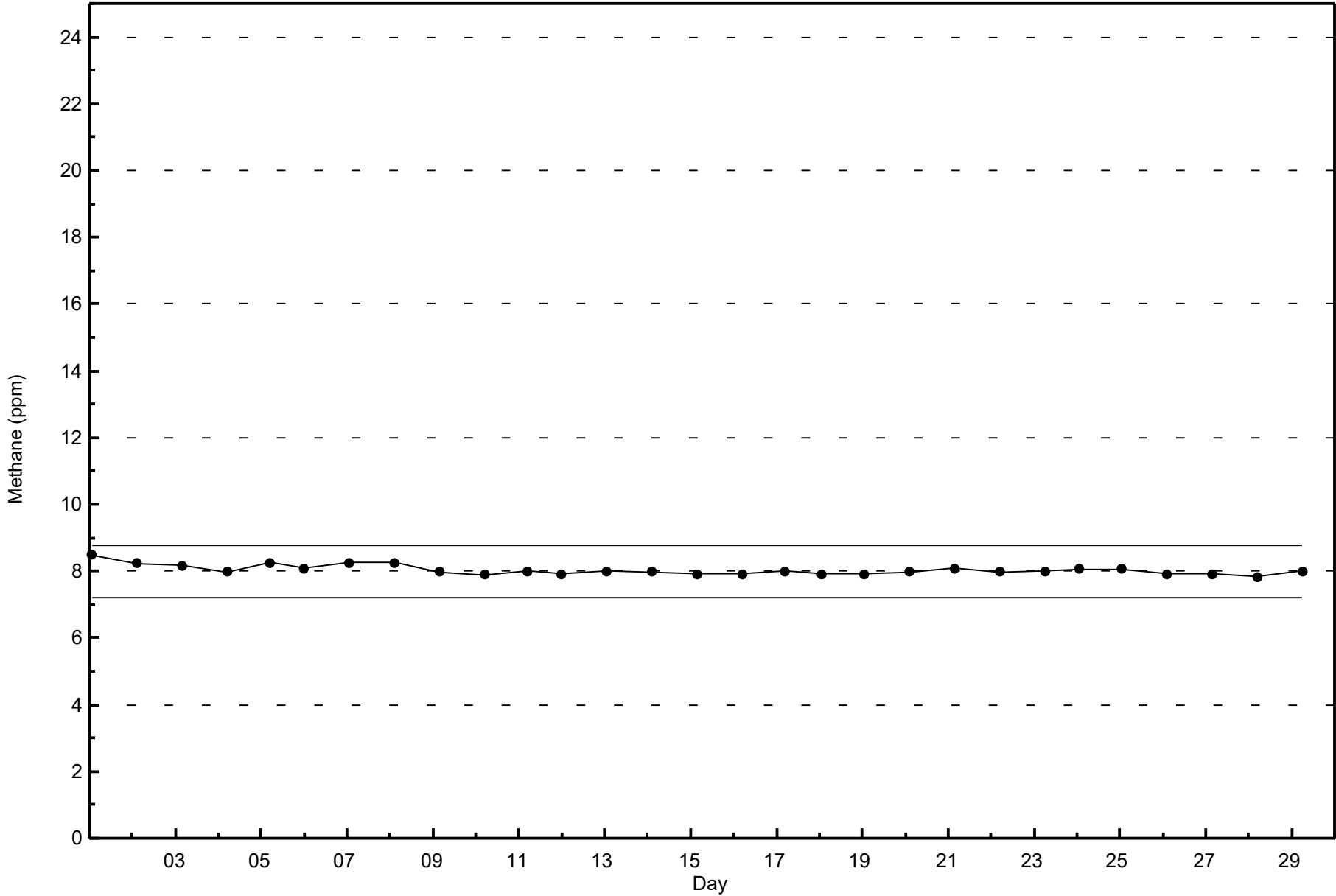


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Conklin









Wood Buffalo Environmental Association
Summary of Hour Averages

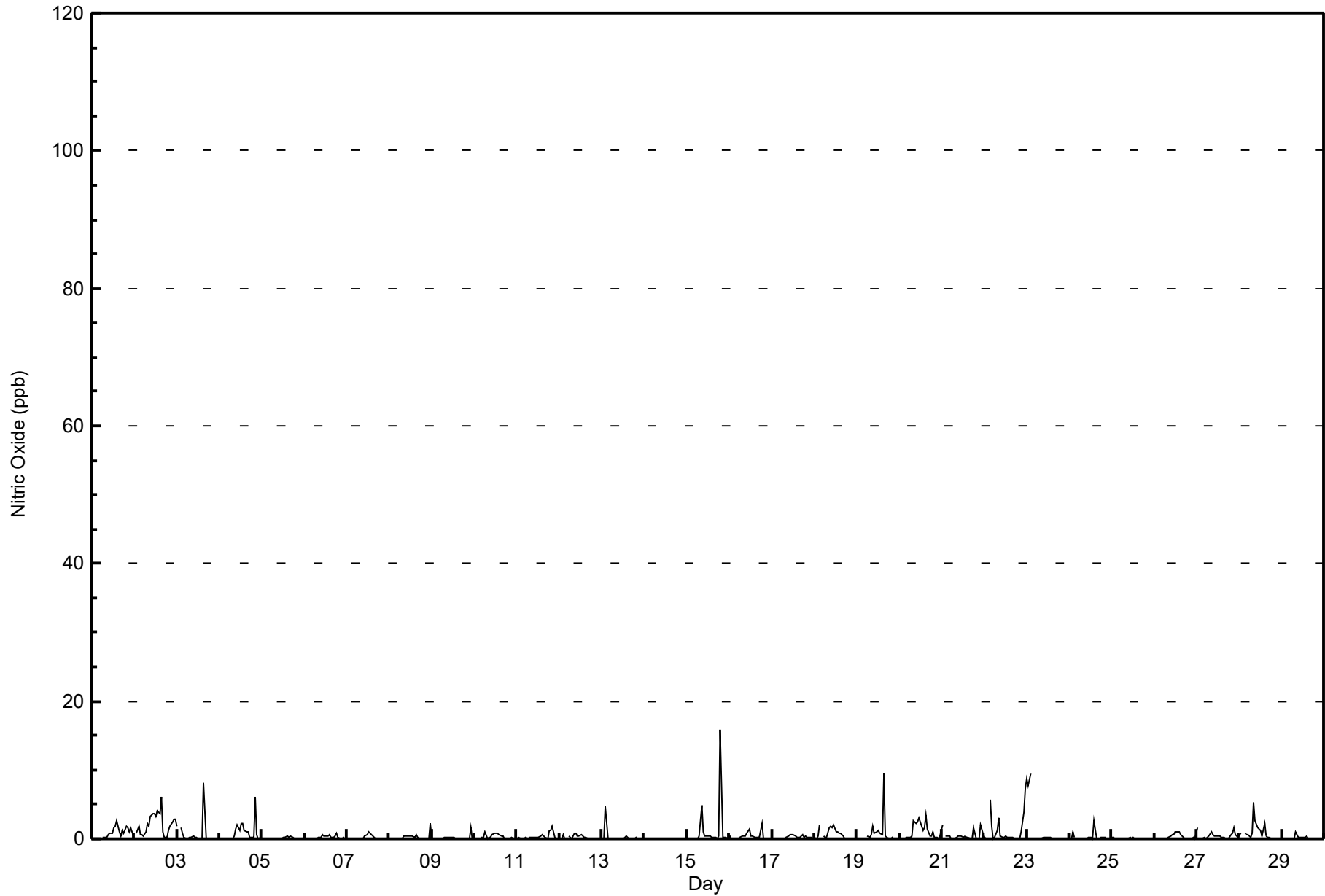
Nitric Oxide (NO) - ppb
Conklin - February 2024

Maximum Value: 15.8 ppb on Feb 15 20:00																				Maximum Daily Average: 2.1 ppb on Feb 2					Hours in Service: 696				
Minimum Value: 0.0 ppb on Feb 3 17:00																				Minimum Daily Average: 0.0 ppb on Feb 25					Hours of Data: 661				
Maximum Diurnal Average: 1.2 ppb at hour 16																				Minimum Diurnal Average: 0.1 ppb at hour 6					Hours of Missing Data: 35				
Monthly Average: 0.53 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.5 P ₉₀ = 1.5 P ₉₉ = 6.6					Hours of Calibration: 35				
																				Percent Operational Time: 100.0									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Feb	0.1	0.1	0.0	0.0	0.1	Z	0.1	0.1	0.2	0.5	0.7	0.9	1.6	1.9	2.6	1.0	0.4	1.2	0.8	1.9	1.6	1.0	1.7	0.5	0.8	2.6			
2-Feb	Z	0.9	1.7	0.6	0.7	0.4	1.0	2.1	1.9	3.3	3.6	3.6	3.3	4.0	3.7	6.0	1.0	0.1	0.3	1.1	1.8	2.4	2.8	2.8	2.1	6.0			
3-Feb	1.8	Z	1.5	0.8	0.2	0.1	0.1	0.1	0.2	0.5	0.3	0.2	0.0	0.0	0.0	8.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	8.1			
4-Feb	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.3	1.4	2.1	1.3	2.3	2.2	1.3	1.0	1.0	0.1	0.2	0.1	6.1	0.6	0.1	0.1	0.9	6.1			
5-Feb	0.1	0.1	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.3	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3			
6-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.3	0.6	0.4	0.5	0.5	0.6	0.2	0.3	0.4	0.8	0.2	0.0	0.0	0.2	0.0	0.2	0.8			
7-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.3	0.6	1.0	0.7	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.0			
8-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.5	0.3	0.5	0.3	0.2	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.3	2.3			
9-Feb	0.2	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.1	1.6			
10-Feb	0.0	0.0	Z	0.2	0.2	0.3	1.0	0.0	0.2	0.3	0.6	0.9	0.8	0.7	0.5	0.3	0.4	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.3	1.0			
11-Feb	0.1	0.1	0.1	Z	0.0	0.1	0.0	0.3	0.1	0.2	0.2	0.3	0.2	0.4	0.7	0.4	0.1	0.0	1.3	1.2	1.8	0.3	0.1	0.0	0.3	1.8			
12-Feb	0.0	0.1	0.7	0.1	Z	0.3	0.1	0.1	0.8	0.7	0.4	0.4	0.7	0.4	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.8			
13-Feb	0.0	0.0	4.6	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.3	4.6			
14-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	0.0			
15-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.5	5.0	1.1	0.4	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.4	15.8	0.2	0.2	0.2	0.1	1.1	15.8			
16-Feb	0.4	0.0	Z	0.0	0.1	0.0	0.1	0.3	0.5	0.4	0.9	1.5	0.5	0.4	0.3	0.2	0.2	0.1	2.2	0.0	0.0	0.0	0.0	0.0	0.3	2.2			
17-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.4	0.5	0.6	0.5	0.4	0.3	0.2	0.2	0.6	0.2	0.3	0.2	0.1	0.2	0.0	0.2	0.6			
18-Feb	0.3	0.1	0.3	1.9	Z	0.4	0.1	0.2	1.6	1.8	1.7	2.0	1.1	1.1	0.8	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	2.0			
19-Feb	0.1	0.0	0.0	0.1	0.1	Z	0.3	0.2	0.5	1.8	0.9	1.1	1.3	0.8	0.6	9.6	0.4	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.8	9.6			
20-Feb	Z	0.1	0.0	0.1	0.1	0.1	0.1	0.3	2.6	2.2	2.4	3.0	2.4	1.3	1.7	3.4	1.4	0.4	0.4	1.0	0.1	0.2	0.1	0.5	1.0	3.4			
21-Feb	2.0	Z	0.4	0.4	0.5	0.0	0.0	0.0	0.2	0.4	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.0	1.7	0.0	0.0	0.0	2.1	0.5	0.4	2.1			
22-Feb	0.1	0.0	Z	5.7	1.8	0.0	0.3	1.3	3.1	0.4	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.9	3.8	7.3	1.1	7.3			
23-Feb	8.8	7.6	9.5	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	1.2	9.5			
24-Feb	0.1	0.1	1.0	0.1	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	2.5	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.2	2.5			
25-Feb	0.2	0.1	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
26-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.6	1.0	1.0	1.0	0.5	0.4	0.1	0.0	0.0	0.0	0.1	0.3	0.0	0.3	1.0			
27-Feb	1.6	Z	0.0	0.0	0.1	0.0	0.1	0.4	1.0	0.7	0.4	0.3	0.4	0.4	0.2	0.2	0.1	0.0	0.0	0.6	0.9	1.7	0.6	0.3	0.4	1.7			
28-Feb	0.6	0.8	Z	0.8	0.6	0.6	0.2	0.8	5.3	2.6	1.6	1.5	1.2	0.5	2.2	0.5	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.9	5.3			
29-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	1.1	0.1	0.3	0.2	0.2	0.2	0.5	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1			
																								Diurnal Average					
																								Diurnal Maximum					
0.7 0.4 0.8 0.5 0.2 0.1 0.1 0.2 0.9 0.7 0.7 0.8 0.8 0.7 0.8 1.2 0.3 0.1 0.3 0.8 0.5 0.3 0.5 0.5																													
8.8 7.6 9.5 5.7 1.8 0.6 1.0 2.1 5.3 3.3 3.6 3.6 3.3 4.0 3.7 9.6 1.4 1.2 2.2 15.8 6.1 2.4 3.8 7.3																													
Z - zerospan C - Calibration																													



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Conklin - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Conklin - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



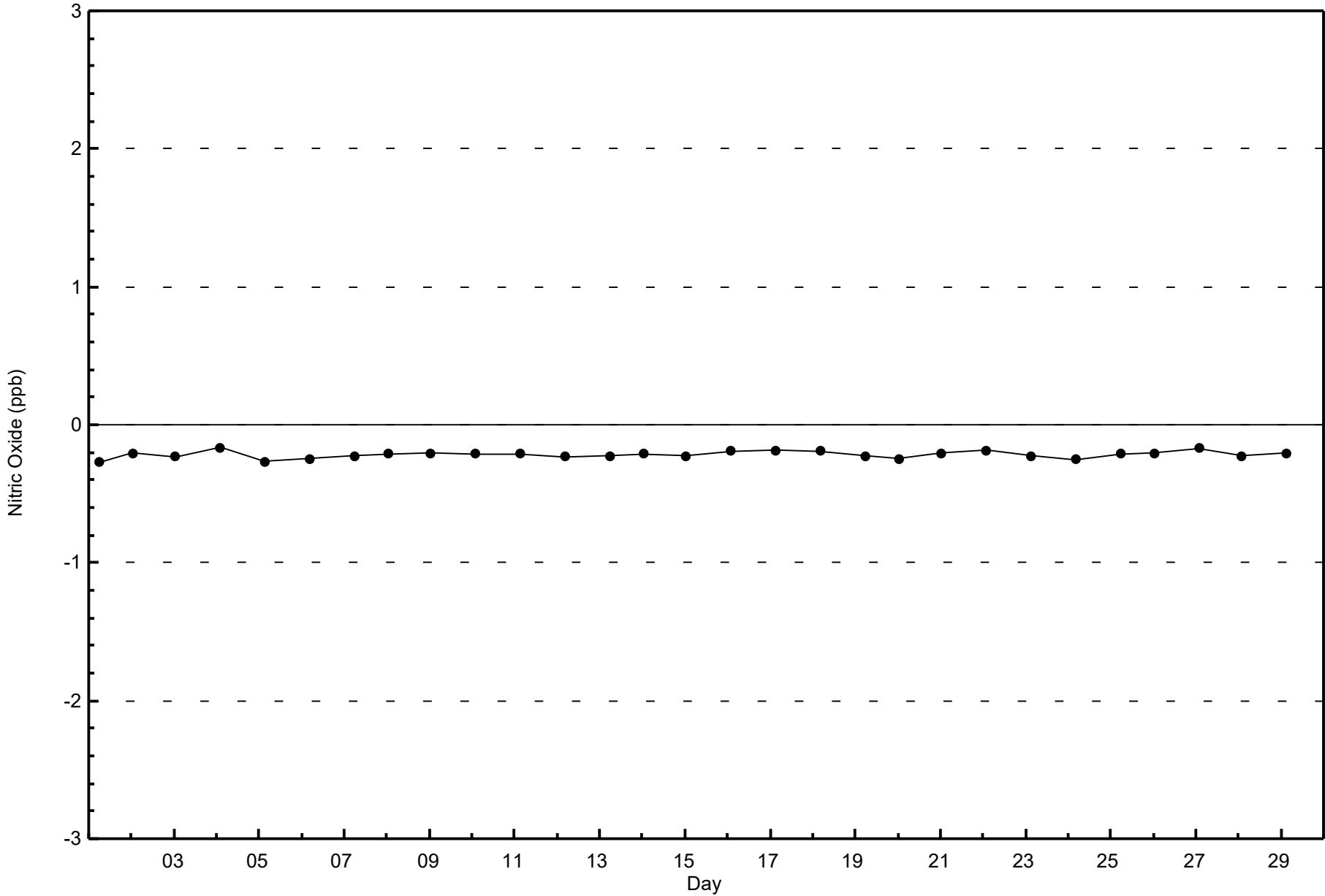
**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Conklin - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	52	39	9	7	10	37	21	47	56	42	32	26	55	79	62	84	658
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	52	39	9	7	10	37	21	47	56	42	32	26	55	79	62	84	658

Total Number of Valid Hours: 658

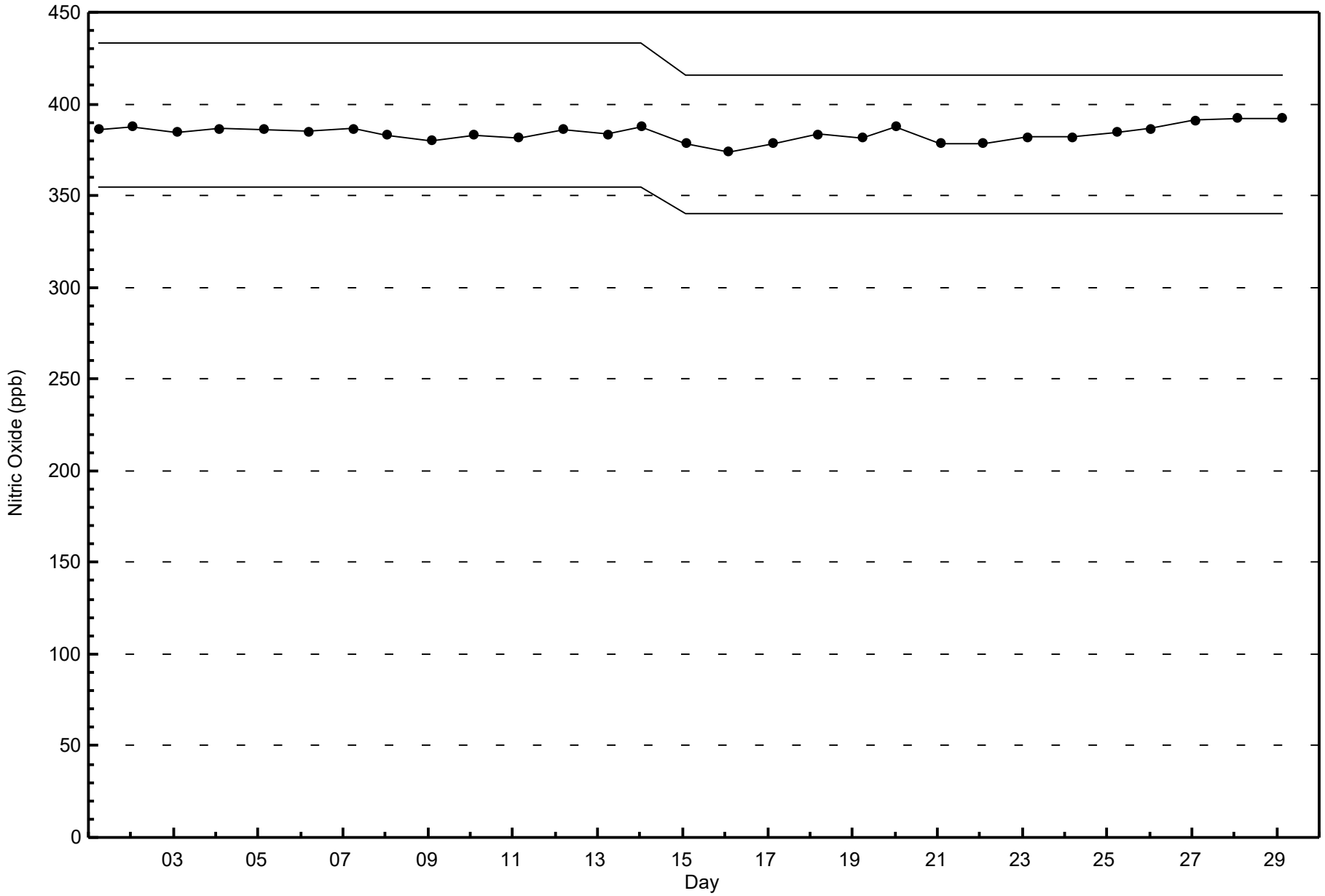
Total Number of Hours: 696





Wood Buffalo Environmental Association
Span Responses

Nitric Oxide (NO) - ppb
Conklin - February 2024





Wood Buffalo Environmental Association

Summary of Hour Averages

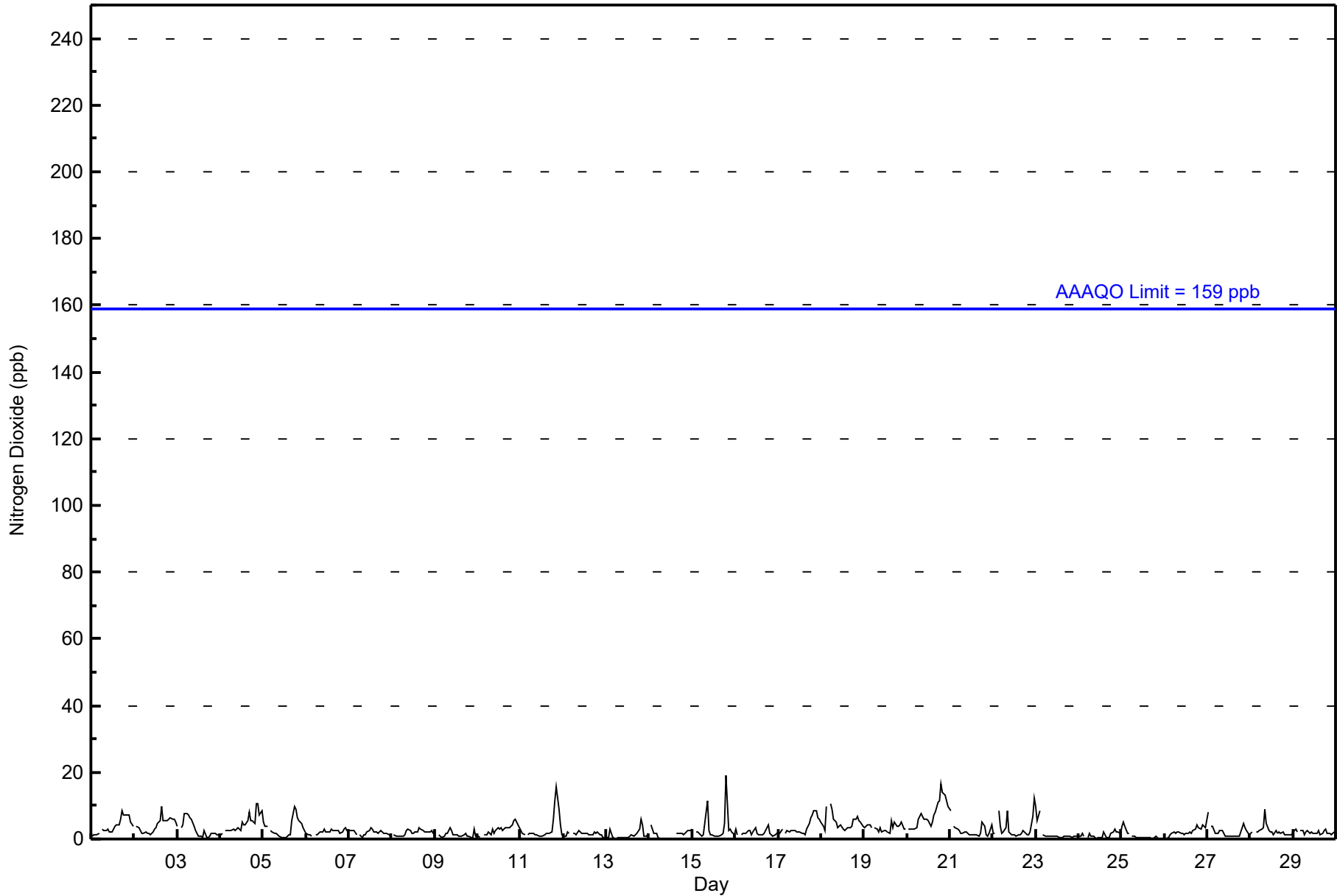
Nitrogen Dioxide (NO₂) - ppb

Conklin - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 19.2 ppb on Feb 15 20:00	Maximum Daily Average: 7.5 ppb on Feb 20		Hours of Data:	661
Minimum Value: 0.2 ppb on Feb 14 07:00	Minimum Daily Average: 1.1 ppb on Feb 25		Hours of Missing Data:	35
Maximum Diurnal Average: 4.5 ppb at hour 20	Minimum Diurnal Average: 1.8 ppb at hour 14		Hours of Calibration:	35
Monthly Average: 2.74 ppb	Percentiles: P ₁ = 0.2 P ₁₀ = 0.7 Q ₁ = 1.2 Median = 2.0 Q ₃ = 3.3 P ₉₀ = 5.8 P ₉₉ = 11.6		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	1.0	1.1	1.2	1.4	1.7	Z	2.8	2.5	2.6	2.9	2.2	2.1	2.8	3.7	4.1	4.2	5.8	8.5	7.4	7.2	7.0	7.1	5.1	4.0	3.8	8.5																						
2-Feb	Z	3.9	3.5	2.4	1.8	1.7	2.2	1.9	1.8	1.4	2.1	3.1	3.2	4.6	5.7	9.8	5.4	5.7	5.4	6.1	6.3	6.0	5.9	4.9	4.1	9.8																						
3-Feb	3.7	Z	3.4	4.4	7.5	7.5	7.1	6.2	5.8	3.7	2.5	1.9	0.9	0.7	0.6	2.5	0.4	0.3	1.0	1.7	1.6	1.7	1.2	1.2	2.9	7.5																						
4-Feb	1.3	1.6	Z	2.4	2.5	2.6	2.6	2.9	2.6	2.8	3.2	2.4	4.9	4.1	4.4	5.6	8.1	5.7	5.3	4.8	10.4	10.4	7.1	8.6	4.6	10.4																						
5-Feb	4.9	3.8	3.8	Z	2.7	2.3	1.9	1.6	1.2	0.7	0.5	0.4	0.4	0.5	1.2	1.1	5.4	9.6	9.1	6.2	5.6	4.5	3.4	2.7	3.2	9.6																						
6-Feb	1.7	1.1	1.1	1.0	Z	1.3	1.1	1.6	2.0	2.3	2.8	2.2	2.2	2.1	3.0	2.7	2.5	2.6	2.6	1.8	2.0	2.9	3.6	2.7	2.1	3.6																						
7-Feb	2.6	2.5	2.4	2.4	1.1	Z	1.1	0.6	1.4	1.4	2.2	2.5	3.3	2.8	2.2	2.0	1.9	2.2	2.4	1.8	1.5	1.6	1.3	0.9	1.9	3.3																						
8-Feb	Z	1.1	0.9	1.0	0.8	0.8	0.8	1.2	2.5	3.1	2.5	1.7	1.9	2.1	2.2	3.2	2.8	2.5	2.0	2.1	2.0	2.3	2.6	1.6	1.9	3.2																						
9-Feb	1.9	Z	1.1	0.7	0.5	0.8	1.8	1.9	3.5	2.6	1.3	1.1	1.2	0.8	0.7	0.8	1.2	1.9	0.9	0.7	0.5	0.5	3.0	0.7	1.3	3.5																						
10-Feb	0.7	0.5	Z	1.1	1.3	1.2	2.3	1.1	2.8	1.9	2.6	3.2	3.0	3.2	2.7	3.3	3.6	3.2	3.2	4.3	5.4	5.8	4.1	3.3	2.8	5.8																						
11-Feb	2.6	1.9	1.4	Z	1.3	1.6	1.8	1.9	1.2	1.1	0.9	1.0	0.9	1.4	1.9	1.7	1.9	2.2	6.1	11.3	15.8	9.0	4.1	1.4	3.2	15.8																						
12-Feb	0.9	0.7	2.1	1.8	Z	1.8	1.5	1.3	2.7	2.2	1.6	1.9	1.9	1.5	1.1	1.3	1.3	2.2	1.9	2.0	1.3	1.1	0.4	0.3	1.5	2.7																						
13-Feb	0.3	0.4	2.8	0.3	0.4	Z	0.5	0.3	0.3	0.3	0.4	0.4	0.3	1.0	1.4	0.9	1.2	1.7	3.1	5.8	4.2	0.9	0.9	1.7	1.3	5.8																						
14-Feb	Z	4.2	1.8	1.5	1.6	0.3	0.2	0.2	0.2	C	C	C	C	C	C	1.5	1.9	1.9	1.7	1.3	1.7	2.5	2.6	2.7	--	4.2																						
15-Feb	3.0	Z	2.0	2.0	1.3	0.8	1.1	4.6	11.3	2.4	1.3	1.1	1.0	1.0	0.7	0.9	1.2	1.9	4.5	19.2	2.6	3.0	2.0	1.2	3.0	19.2																						
16-Feb	2.8	1.2	Z	1.2	1.5	1.6	1.9	2.5	2.6	1.4	2.3	3.5	1.6	1.3	1.2	1.3	1.9	2.7	4.4	1.9	1.1	1.0	1.3	1.7	1.9	4.4																						
17-Feb	2.0	1.8	3.0	Z	1.9	2.4	2.2	2.7	2.7	2.4	2.2	2.0	2.2	1.9	1.8	1.4	3.0	4.7	6.4	7.0	8.5	8.4	6.4	5.9	3.6	8.5																						
18-Feb	5.0	3.8	2.5	9.8	Z	10.8	9.1	6.0	5.1	3.5	4.0	4.2	2.9	2.7	2.9	3.5	3.3	3.7	6.1	5.8	6.6	5.6	4.9	3.8	5.0	10.8																						
19-Feb	3.6	3.7	4.1	4.4	3.2	Z	3.6	2.8	2.2	3.3	2.1	2.5	2.7	2.1	1.9	5.4	3.2	5.0	3.7	3.7	4.2	5.0	3.0	3.1	3.4	5.4																						
20-Feb	Z	3.1	2.9	2.8	3.1	3.6	6.0	6.7	7.6	6.0	6.1	5.8	5.5	4.0	5.1	7.3	8.2	10.9	11.6	16.6	14.0	13.3	11.6	9.6	7.5	16.6																						
21-Feb	8.4	Z	3.9	3.2	3.1	2.7	1.9	1.8	2.0	2.1	1.6	1.2	1.2	1.4	1.1	1.1	1.0	1.6	5.0	3.7	1.1	0.9	1.7	4.2	2.4	8.4																						
22-Feb	1.9	1.8	Z	8.4	4.0	1.7	2.0	3.5	8.3	2.2	1.1	1.2	1.2	0.9	1.1	1.1	1.8	2.6	1.6	1.2	1.2	2.3	6.6	12.4	3.0	12.4																						
23-Feb	9.8	5.6	8.5	Z	1.2	1.0	0.9	1.0	1.0	0.8	0.8	0.8	0.7	0.6	0.6	0.5	0.7	0.7	0.7	0.7	0.6	1.0	0.9	0.8	1.7	9.8																						
24-Feb	1.0	1.0	1.7	0.9	Z	0.6	1.8	0.9	0.7	0.5	0.2	0.5	0.5	0.3	2.0	0.5	0.6	0.6	1.7	2.3	3.1	2.2	2.1	1.9	1.2	3.1																						
25-Feb	3.9	5.1	3.7	1.9	1.5	Z	1.0	0.9	0.5	0.5	0.6	0.4	0.6	0.3	0.3	0.3	0.3	0.2	0.6	1.0	0.3	0.2	0.2	0.2	1.1	5.1																						
26-Feb	Z	0.3	0.3	1.1	1.7	2.1	1.5	2.1	2.2	1.6	1.5	1.4	1.8	1.9	2.0	1.7	2.5	3.1	4.1	3.6	2.9	4.3	4.0	3.5	2.2	4.3																						
27-Feb	8.1	Z	3.9	4.0	1.9	1.7	1.9	2.5	2.7	1.5	1.0	0.8	0.8	0.9	0.8	0.7	0.7	0.7	0.7	3.3	4.8	3.6	2.5	1.2	2.2	8.1																						
28-Feb	1.6	2.0	Z	2.3	2.3	2.7	2.9	3.6	8.9	4.5	2.4	2.3	2.1	1.4	2.6	1.7	2.1	1.7	2.1	1.1	1.1	1.2	1.1	1.4	2.4	8.9																						
29-Feb	2.2	3.1	2.0	Z	2.6	2.4	1.4	2.0	2.6	1.5	2.2	1.8	1.6	1.9	2.4	1.4	1.5	2.5	2.9	1.7	1.6	1.1	1.7	2.3	2.0	3.1																						
																								3.1	2.3	2.7	2.6	2.1	2.3	2.3	2.4	3.1	2.2	1.9	1.9	1.9	1.8	2.1	2.4	2.6	3.2	3.7	4.5	4.1	3.8	3.3	3.1	Diurnal Average
																								9.8	5.6	8.5	9.8	7.5	10.8	9.1	6.7	11.3	6.0	6.1	5.8	5.5	4.6	5.7	9.8	8.2	10.9	11.6	19.2	15.8	13.3	11.6	12.4	Diurnal Maximum

Z - zerospan C - Calibration
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Dioxide (NO₂) - ppb
Conklin - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Conklin - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	52	39	9	7	10	37	21	47	56	42	32	26	55	79	62	84	658
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	52	39	9	7	10	37	21	47	56	42	32	26	55	79	62	84	658

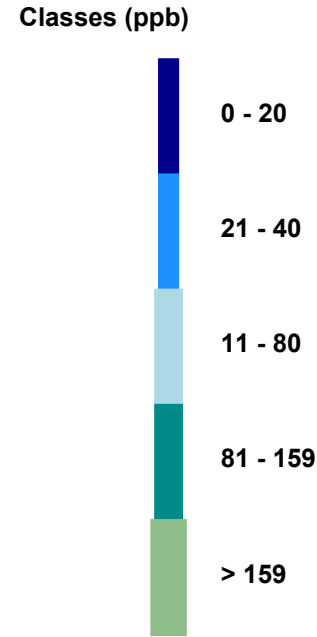
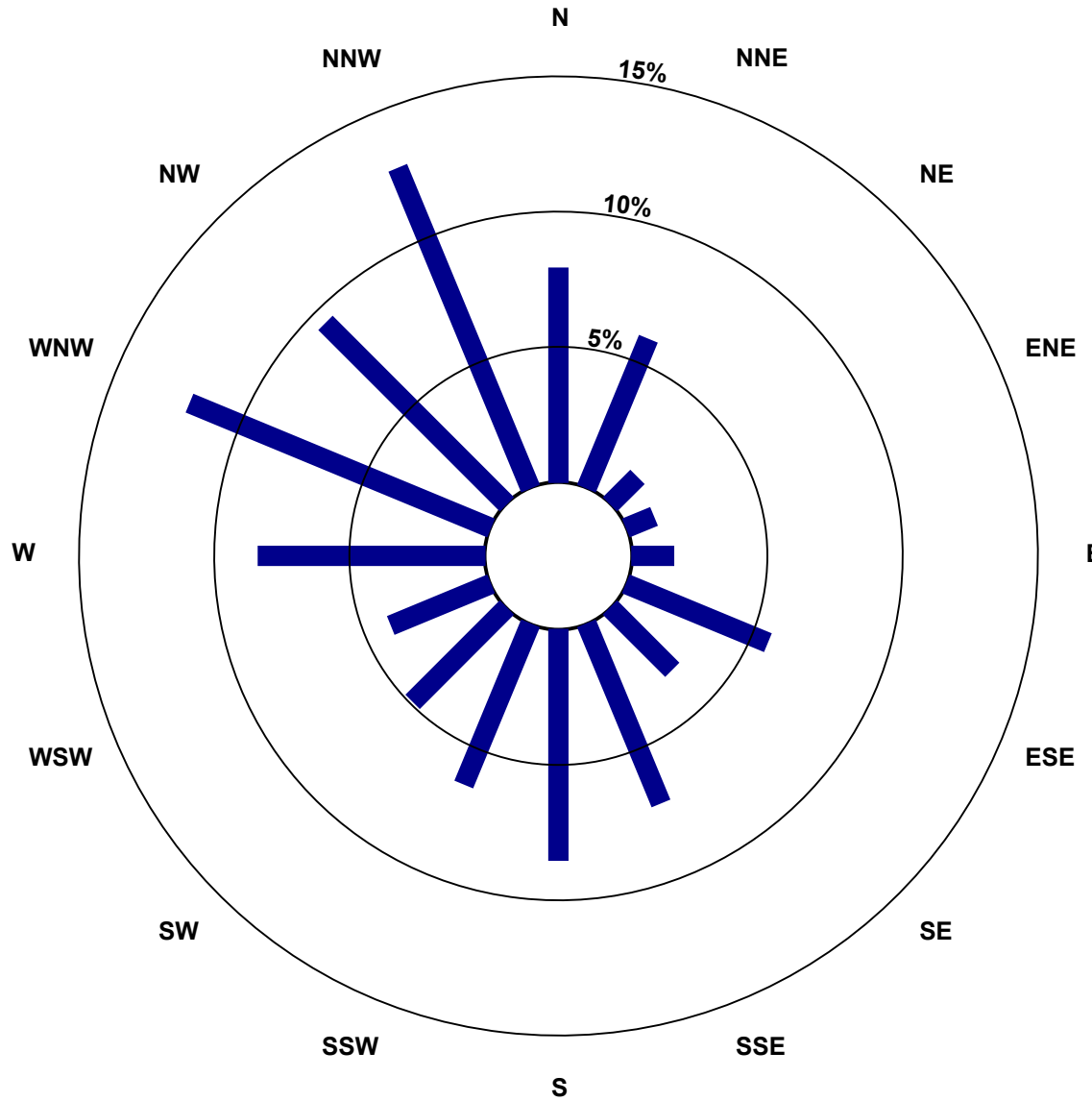
Total Number of Valid Hours: 658

Total Number of Hours: 696

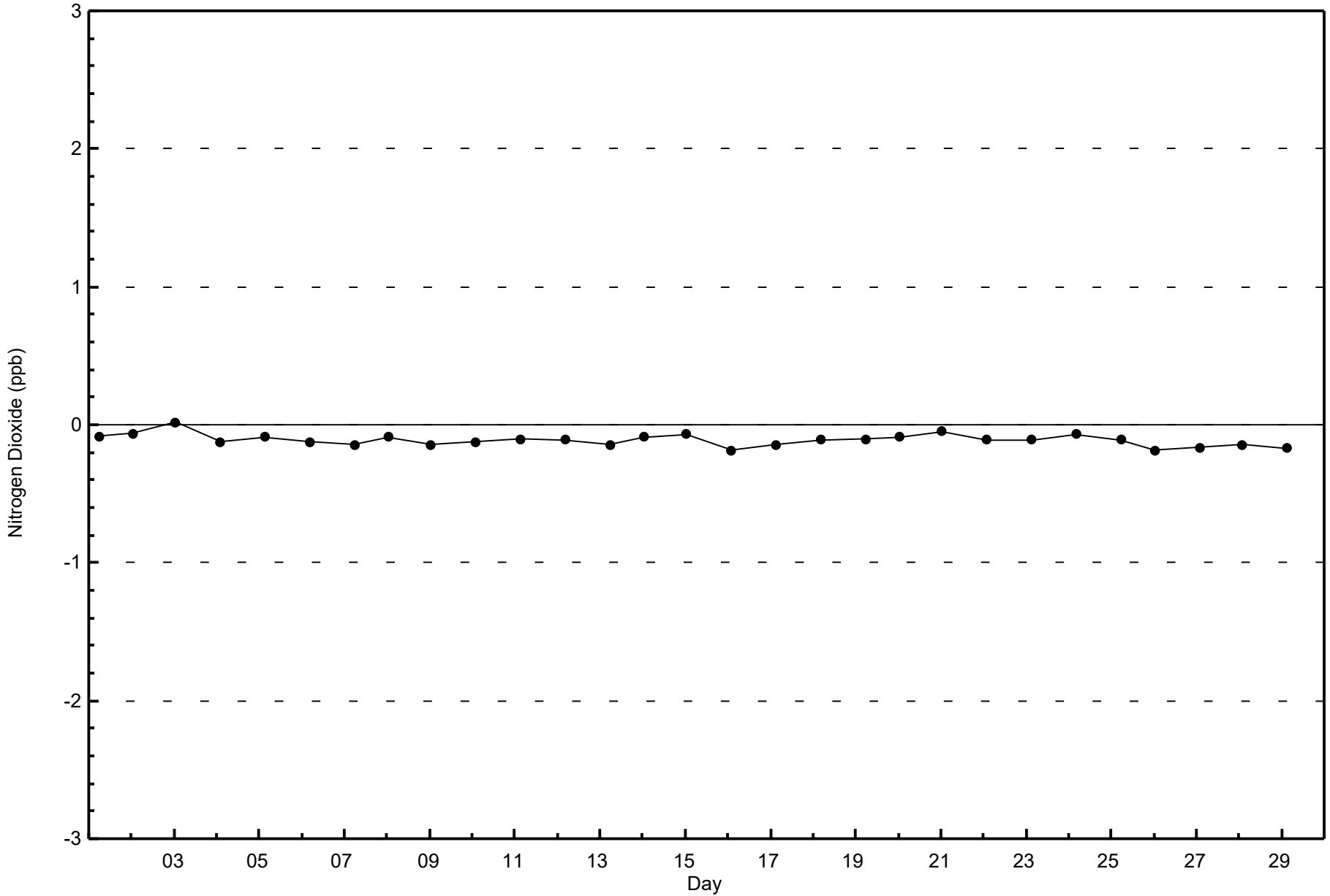


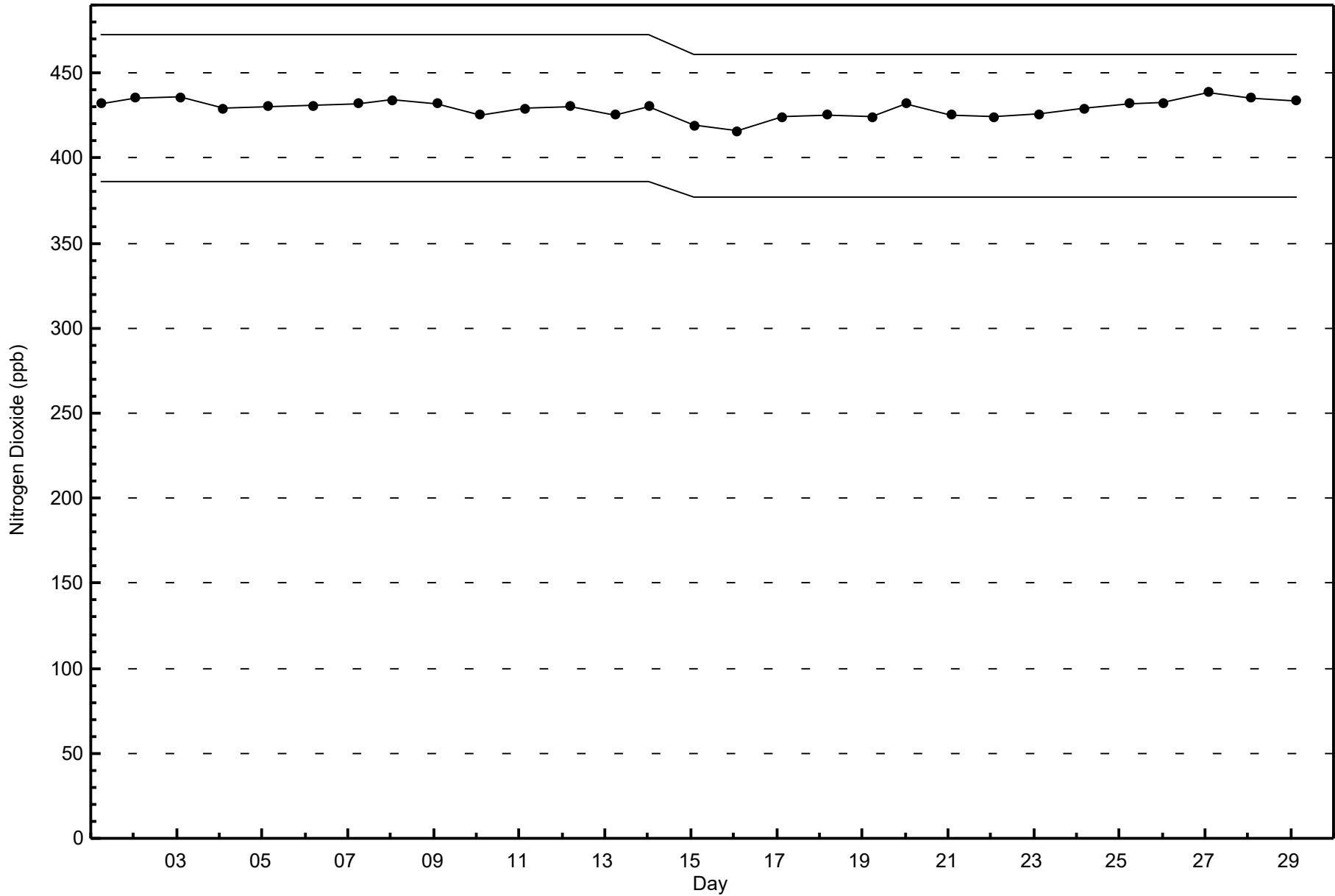
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Conklin



Total Number of Valid Hours: 658



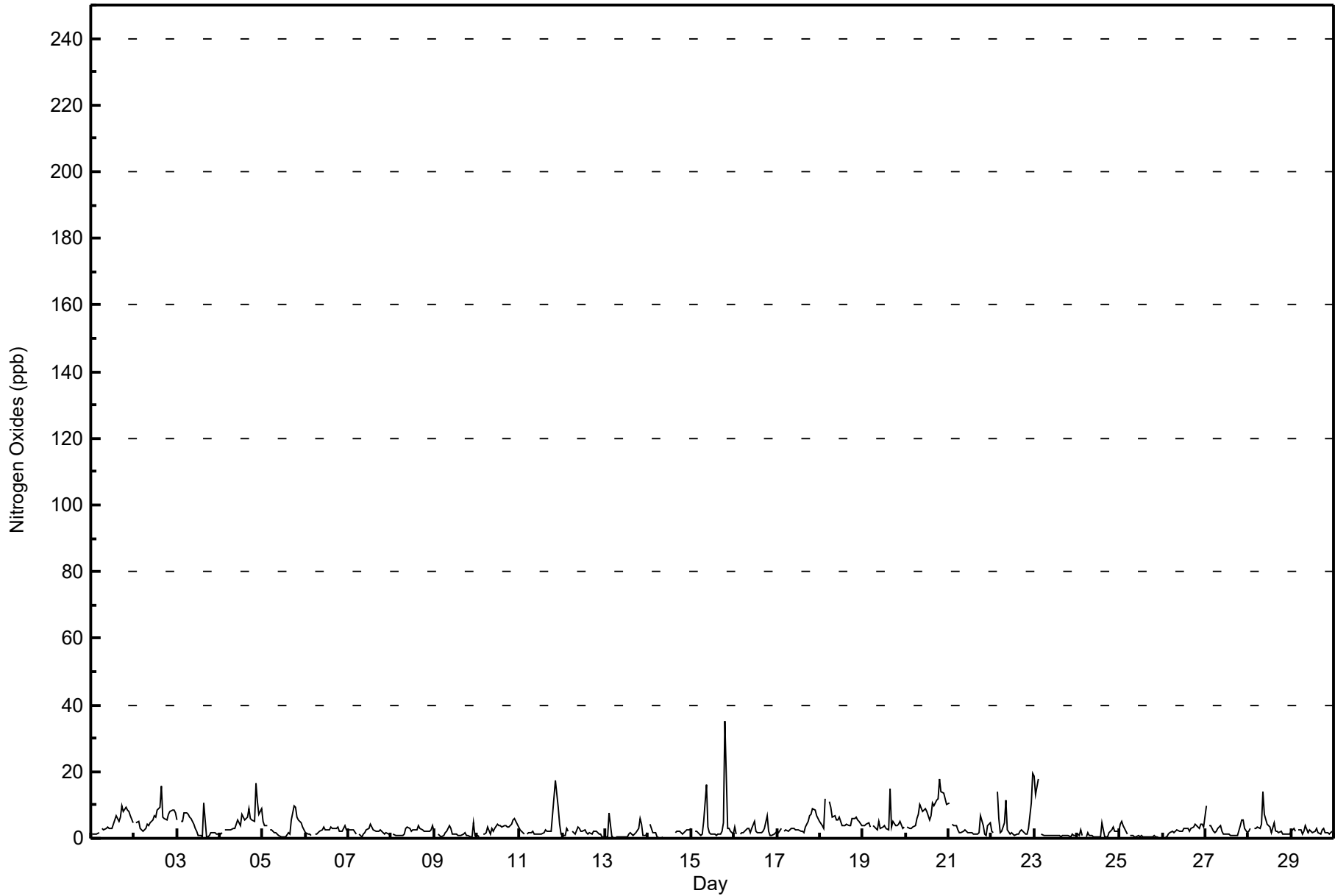




Wood Buffalo Environmental Association
Summary of Hour Averages

Nitrogen Oxides (NO_x) - ppb
Conklin - February 2024

Maximum Value: 35.0 ppb on Feb 15 20:00																				Maximum Daily Average: 8.5 ppb on Feb 20					Hours in Service: 696	
Minimum Value: 0.2 ppb on Feb 14 08:00																				Minimum Daily Average: 1.1 ppb on Feb 25					Hours of Data: 661	
Maximum Diurnal Average: 5.3 ppb at hour 20																				Minimum Diurnal Average: 2.3 ppb at hour 5					Hours of Missing Data: 35	
Monthly Average: 3.27 ppb																				Percentiles: P ₁ = 0.2 P ₁₀ = 0.7 Q ₁ = 1.3 Median = 2.3 Q ₃ = 3.9 P ₉₀ = 6.8 P ₉₉ = 16.4					Hours of Calibration: 35	
																									Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	1.1	1.2	1.2	1.4	1.8	Z	2.9	2.6	2.8	3.4	2.9	3.0	4.4	5.6	6.7	5.2	6.2	9.7	8.2	9.1	8.6	8.1	6.8	4.5	4.7	9.7
2-Feb	Z	4.8	5.2	3.0	2.5	2.1	3.2	4.0	3.7	4.7	5.7	6.7	6.5	8.6	9.4	15.8	6.4	5.8	5.7	7.2	8.1	8.4	8.7	7.7	6.3	15.8
3-Feb	5.5	Z	4.9	5.2	7.7	7.6	7.2	6.3	6.0	4.2	2.8	2.1	0.9	0.7	0.6	10.6	0.4	0.3	1.0	1.7	1.6	1.7	1.2	1.2	3.5	10.6
4-Feb	1.3	1.6	Z	2.5	2.6	2.6	2.6	2.9	2.9	4.2	5.3	3.7	7.2	6.3	5.7	6.6	9.1	5.8	5.5	4.9	16.5	11.0	7.2	8.7	5.5	16.5
5-Feb	5.0	3.9	3.9	Z	2.7	2.3	1.9	1.6	1.2	0.7	0.6	0.5	0.5	0.6	1.5	1.2	5.7	9.7	9.1	6.2	5.6	4.5	3.4	2.7	3.3	9.7
6-Feb	1.7	1.1	1.1	1.0	Z	1.3	1.1	1.7	2.1	2.6	3.4	2.6	2.7	2.6	3.6	2.9	2.8	3.0	3.4	2.0	2.0	2.9	3.8	2.7	2.4	3.8
7-Feb	2.6	2.5	2.4	2.4	1.1	Z	1.1	0.6	1.4	1.5	2.5	3.1	4.3	3.5	2.7	2.3	2.0	2.2	2.4	1.8	1.5	1.6	1.3	0.9	2.1	4.3
8-Feb	Z	1.1	0.9	1.0	0.8	0.8	0.8	1.2	2.9	3.5	3.0	2.0	2.4	2.4	2.4	3.7	3.0	2.5	2.0	2.1	2.0	2.3	2.6	3.9	2.2	3.9
9-Feb	2.1	Z	1.1	0.7	0.5	0.8	1.8	2.0	3.7	2.8	1.4	1.3	1.4	0.9	0.7	0.8	1.2	1.9	0.9	0.7	0.5	0.5	4.6	0.7	1.4	4.6
10-Feb	0.7	0.5	Z	1.3	1.5	1.5	3.3	1.1	3.0	2.2	3.2	4.1	3.8	3.9	3.2	3.6	4.0	3.3	3.2	4.3	5.5	5.9	4.2	3.4	3.1	5.9
11-Feb	2.7	2.0	1.5	Z	1.3	1.7	1.8	2.2	1.3	1.3	1.1	1.3	1.1	1.8	2.6	2.1	2.0	2.2	7.4	12.5	17.6	9.3	4.2	1.4	3.6	17.6
12-Feb	0.9	0.8	2.8	1.9	Z	2.1	1.6	1.4	3.5	2.9	2.0	2.3	2.6	1.9	1.3	1.5	1.4	2.2	1.9	2.0	1.4	1.1	0.4	0.3	1.8	3.5
13-Feb	0.3	0.4	7.4	0.3	0.4	Z	0.5	0.3	0.3	0.3	0.4	0.4	0.4	1.3	1.7	1.0	1.3	1.8	3.1	5.9	4.3	0.9	0.9	1.7	1.5	7.4
14-Feb	Z	4.2	1.8	1.5	1.6	0.3	0.2	0.2	0.2	C	C	C	C	C	C	1.5	1.9	1.9	1.7	1.3	1.7	2.5	2.6	2.7	--	4.2
15-Feb	3.0	Z	2.0	2.0	1.3	0.8	1.1	5.1	16.3	3.5	1.7	1.5	1.4	1.3	0.9	1.1	1.3	2.0	4.9	35.0	2.8	3.2	2.2	1.3	4.2	35.0
16-Feb	3.2	1.2	Z	1.2	1.6	1.6	2.0	2.8	3.1	1.8	3.2	5.0	2.1	1.7	1.5	1.5	2.1	2.8	6.6	1.9	1.1	1.0	1.3	1.7	2.3	6.6
17-Feb	2.0	1.8	3.0	Z	1.9	2.4	2.2	2.7	2.8	2.8	2.7	2.6	2.7	2.3	2.1	1.6	3.2	5.3	6.6	7.3	8.7	8.5	6.6	5.9	3.8	8.7
18-Feb	5.3	3.9	2.8	11.7	Z	11.2	9.2	6.2	6.7	5.3	5.7	6.2	4.0	3.8	3.7	4.3	3.7	3.7	6.1	5.8	6.6	5.6	4.9	3.9	5.7	11.7
19-Feb	3.7	3.7	4.1	4.5	3.3	Z	3.9	3.0	2.7	5.1	3.0	3.6	4.0	2.9	2.5	15.0	3.6	5.2	3.7	3.7	4.3	5.1	3.1	3.2	4.2	15.0
20-Feb	Z	3.2	2.9	2.9	3.2	3.7	6.1	7.0	10.2	8.2	8.5	8.8	7.9	5.3	6.8	10.7	9.6	11.3	12.0	17.6	14.1	13.5	11.7	10.1	8.5	17.6
21-Feb	10.4	Z	4.3	3.6	3.6	2.7	1.9	1.8	2.2	2.5	2.0	1.5	1.5	1.7	1.3	1.2	1.1	1.6	6.7	3.7	1.1	0.9	3.8	4.7	2.9	10.4
22-Feb	2.0	1.8	Z	14.1	5.8	1.7	2.3	4.8	11.4	2.6	1.3	1.5	1.5	1.1	1.3	1.2	1.9	2.7	1.6	1.2	1.2	3.2	10.4	19.7	4.2	19.7
23-Feb	18.6	13.2	18.0	Z	1.2	1.0	0.9	1.0	1.1	0.9	1.0	1.0	0.9	0.8	0.7	0.6	0.8	0.7	0.7	0.7	0.6	1.1	1.0	0.8	2.9	18.6
24-Feb	1.1	1.1	2.7	1.0	Z	0.6	1.8	0.9	0.8	0.5	0.2	0.6	0.6	0.4	4.5	0.5	0.6	0.6	1.8	2.4	3.3	2.2	2.1	1.9	1.4	4.5
25-Feb	4.1	5.2	3.7	1.9	1.5	Z	1.0	0.9	0.5	0.6	0.7	0.5	0.8	0.3	0.3	0.3	0.3	0.2	0.6	1.0	0.3	0.2	0.2	0.2	1.1	5.2
26-Feb	Z	0.3	0.3	1.1	1.7	2.1	1.5	2.1	2.5	2.1	2.2	2.0	2.8	2.9	3.0	2.2	2.9	3.2	4.1	3.6	2.9	4.4	4.3	3.5	2.5	4.4
27-Feb	9.7	Z	3.9	4.0	2.0	1.7	2.0	2.9	3.7	2.2	1.4	1.1	1.2	1.3	1.0	0.9	0.8	0.7	0.7	3.9	5.7	5.3	3.1	1.5	2.6	9.7
28-Feb	2.2	2.8	Z	3.1	2.9	3.3	3.1	4.4	14.2	7.1	4.0	3.8	3.3	1.9	4.8	2.2	2.3	1.8	2.2	1.1	1.1	1.2	1.1	1.4	3.3	14.2
29-Feb	2.2	3.1	2.0	Z	2.6	2.4	1.4	2.0	3.7	1.6	2.5	2.0	1.8	2.1	2.9	1.5	1.5	2.6	2.9	1.7	1.6	1.1	1.7	2.3	2.1	3.7
3.8 2.7 3.5 3.1 2.3 2.4 2.4 2.6 4.0 2.9 2.6 2.7 2.7 2.5 2.8 3.6 2.9 3.3 4.0 5.3 4.6 4.0 3.8 3.6																								Diurnal Average		
18.6 13.2 18.0 14.1 7.7 11.2 9.2 7.0 16.3 8.2 8.5 8.8 7.9 8.6 9.4 15.8 9.6 11.3 12.0 35.0 17.6 13.5 11.7 19.7																								Diurnal Maximum		
Z - zerospan C - Calibration																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Oxides (NO_x) - ppb
Conklin - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	660	99.85	99.85
21 - 40	1	0.15	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Conklin - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	52	39	9	7	10	37	21	47	56	41	32	26	55	79	62	84	657
21 - 40	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	52	39	9	7	10	37	21	47	56	42	32	26	55	79	62	84	658

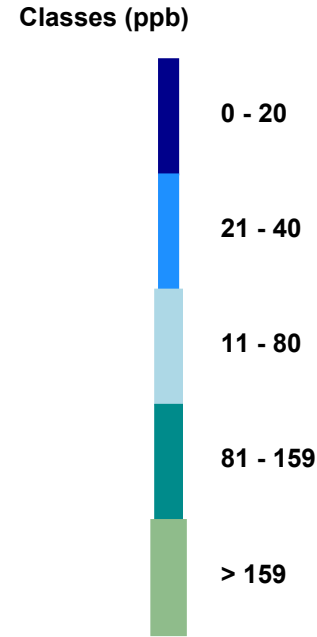
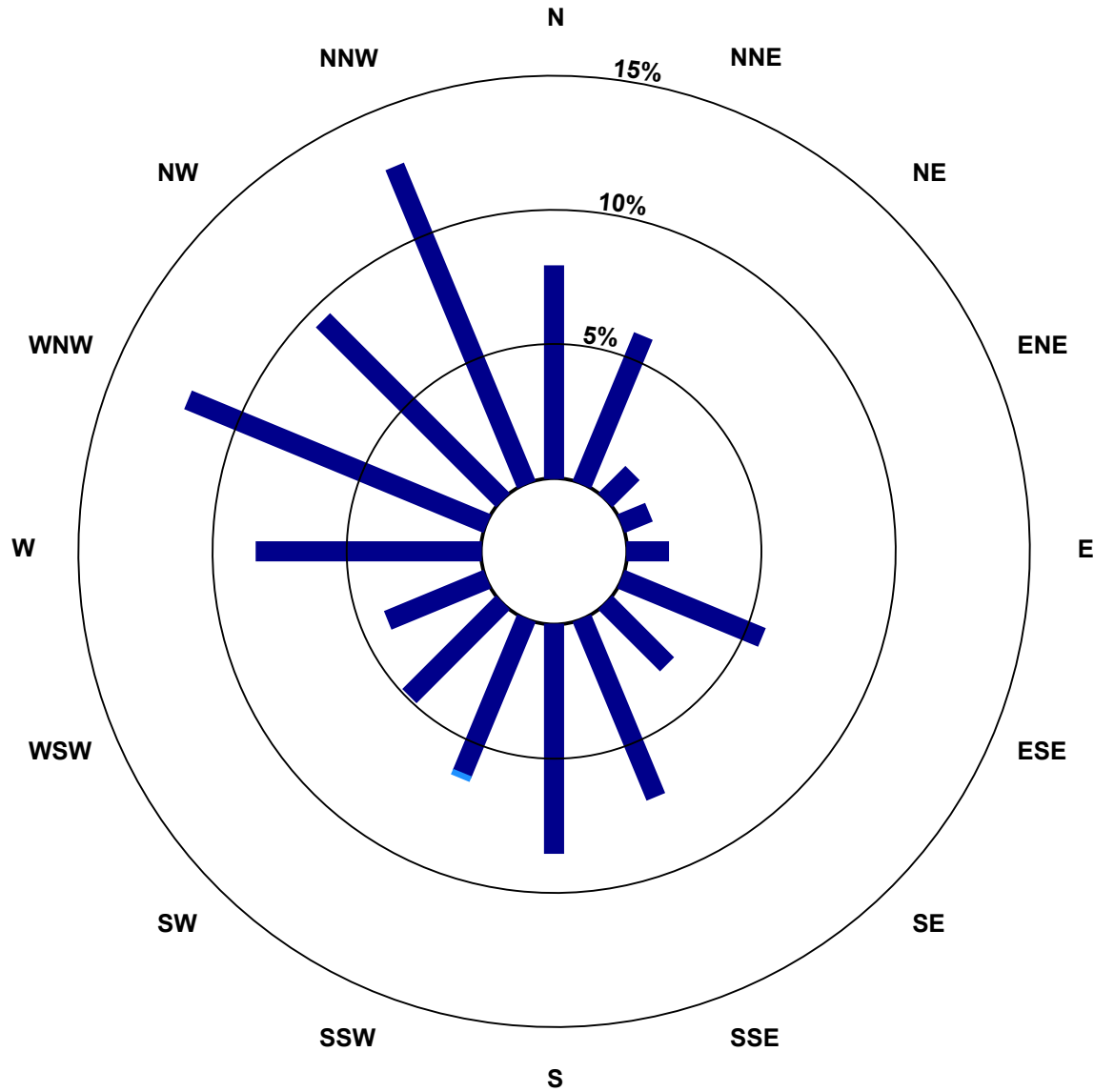
Total Number of Valid Hours: 658

Total Number of Hours: 696

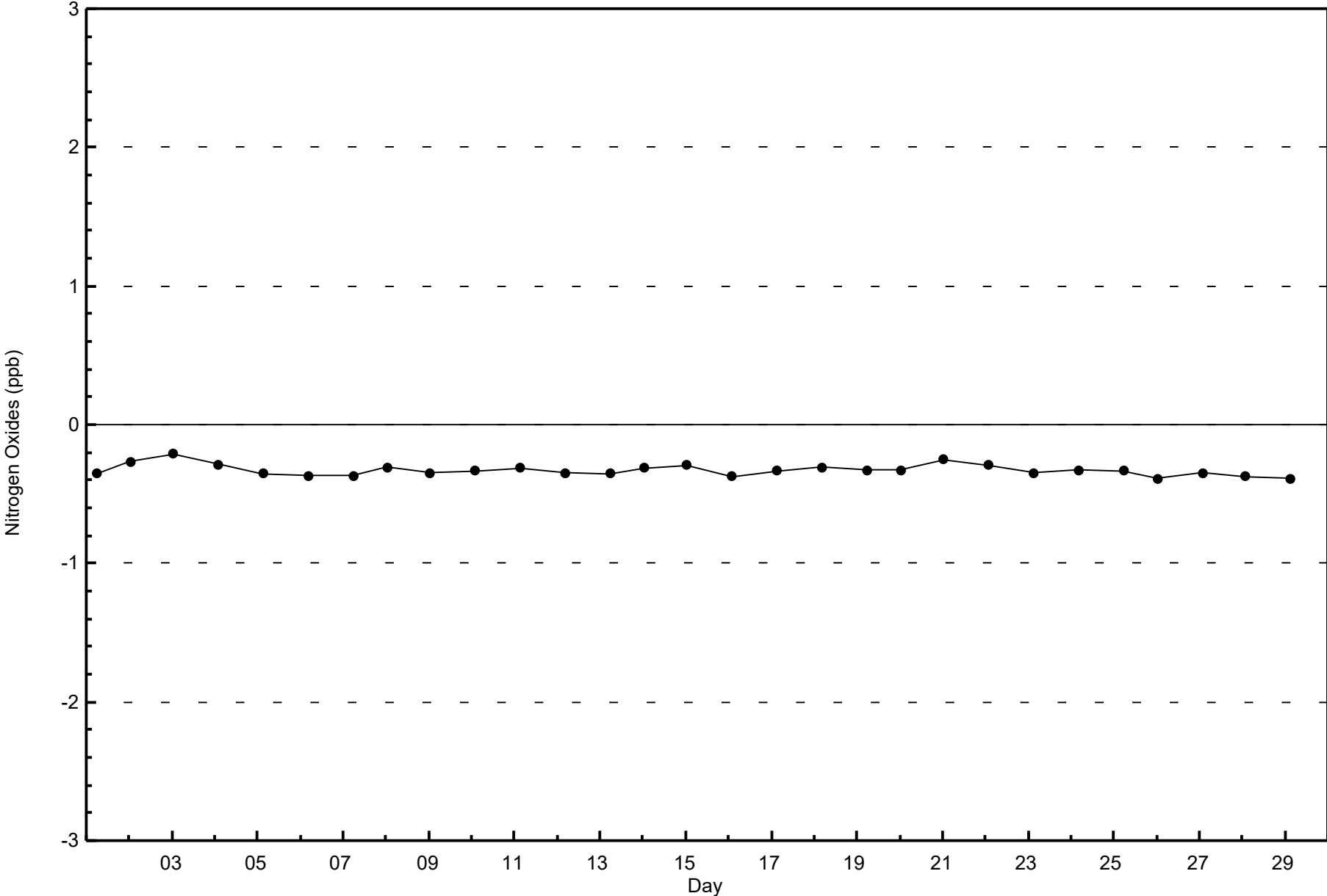


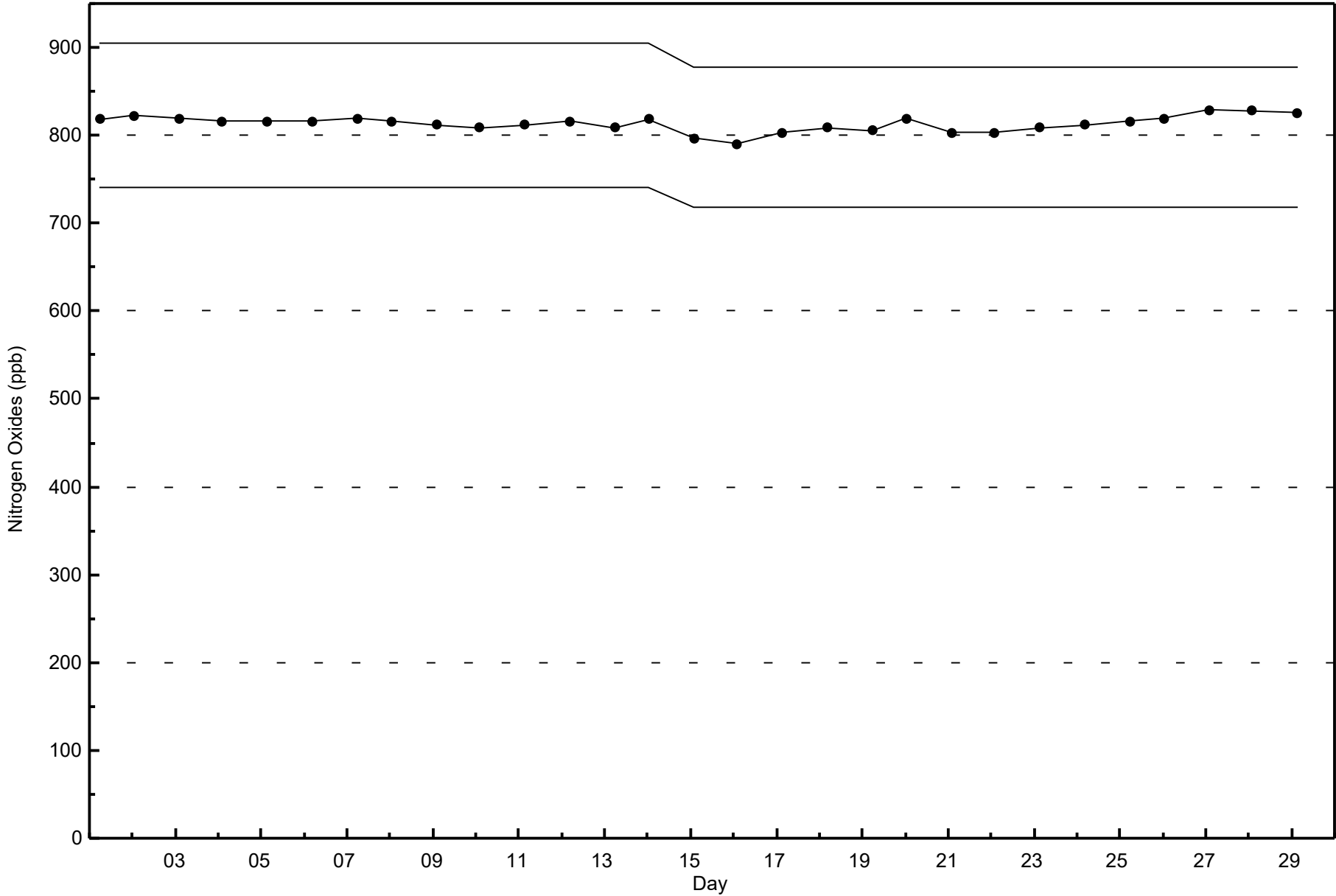
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Conklin



Total Number of Valid Hours: 658







Wood Buffalo Environmental Association

Summary of Hour Averages

Ozone (O₃) - ppb

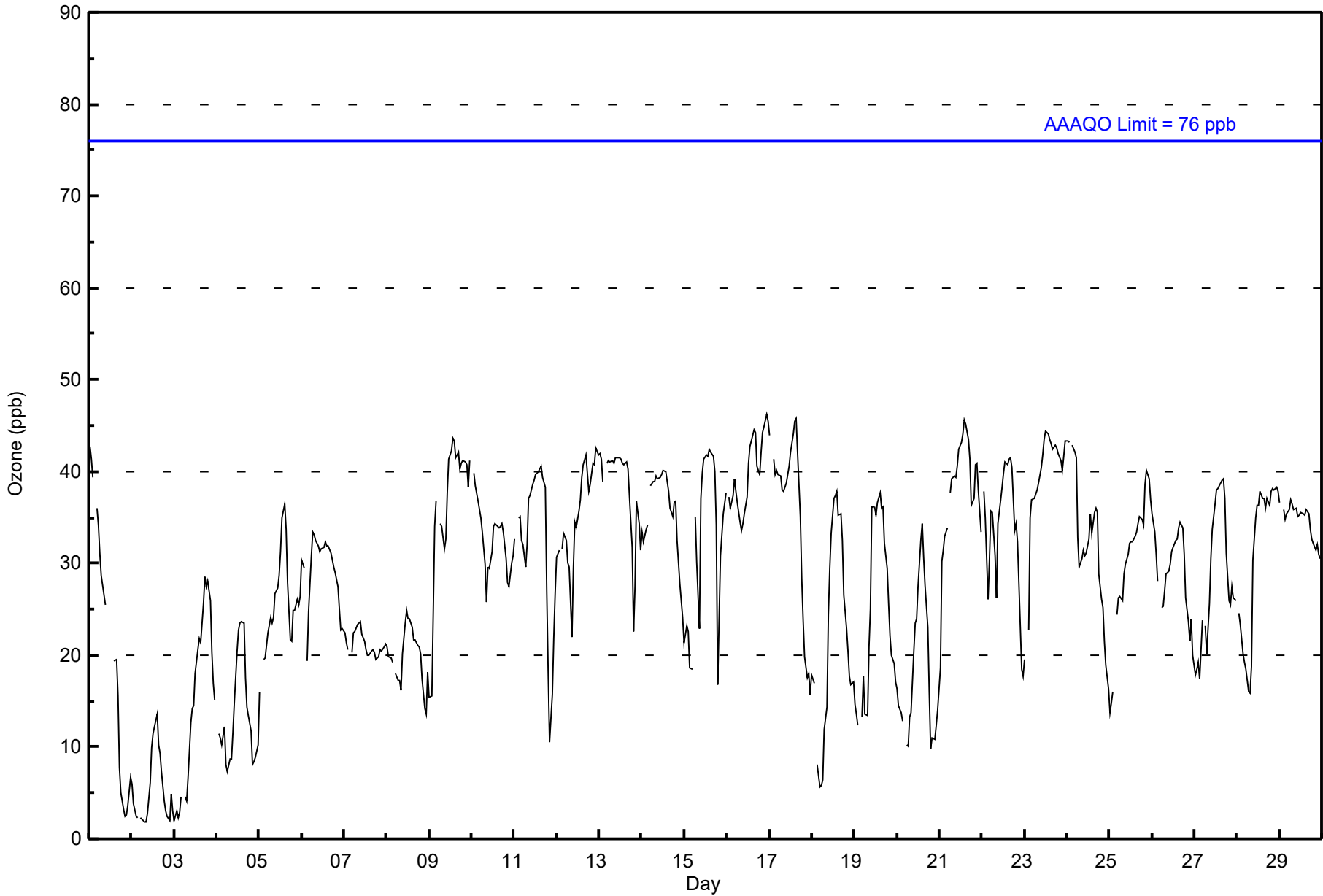
Conklin - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	663					
Maximum Value: 46.1 ppb on Feb 16 23:00		Maximum Daily Average: 39.9 ppb on Feb 16																	Hours of Data: 663							
Minimum Value: 1.8 ppb on Feb 2 08:00		Minimum Daily Average: 5.4 ppb on Feb 2																	Hours of Missing Data: 33							
Maximum Diurnal Average: 34.9 ppb at hour 14		Minimum Diurnal Average: 24.7 ppb at hour 1																	Hours of Calibration: 33							
Monthly Average: 28.67 ppb		Percentiles: P ₁ = 2.3 P ₁₀ = 13.3 Q ₁ = 20.6 Median = 31.3 Q ₃ = 37.4 P ₉₀ = 41.2 P ₉₉ = 44.7																	Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	42.7	41.3	39.3	Z	36.0	34.1	31.2	28.7	26.5	25.5	C	C	C	C	19.4	19.6	15.6	7.7	5.1	3.2	2.5	2.5	3.6	6.6	20.6	42.7
2-Feb	5.9	3.7	2.5	2.3	Z	2.2	1.9	1.8	1.9	2.8	6.1	9.9	11.4	12.2	13.6	10.2	9.4	7.3	4.1	3.1	2.5	1.9	4.9	3.0	5.4	13.6
3-Feb	2.0	3.0	2.2	2.9	4.6	Z	4.6	4.2	6.8	12.7	14.2	14.5	18.0	20.7	21.8	21.3	25.6	28.6	27.4	28.1	25.9	20.3	16.9	15.1	14.8	28.6
4-Feb	Z	11.5	11.0	10.2	12.2	8.0	7.3	8.6	8.7	11.6	14.8	20.5	22.7	23.5	23.7	23.5	17.5	14.4	13.4	11.7	8.0	8.3	8.9	10.2	13.5	23.7
5-Feb	16.0	Z	19.5	19.7	21.0	22.5	24.1	23.5	24.1	26.7	27.3	28.6	31.3	34.9	36.5	33.8	28.0	21.7	21.4	24.9	24.8	26.1	25.5	26.4	25.6	36.5
6-Feb	30.3	29.4	Z	19.4	24.8	30.8	33.4	33.1	32.5	32.0	31.3	31.6	31.8	32.3	31.9	31.9	31.2	30.3	29.7	29.0	27.4	25.0	22.8	22.8	29.3	33.4
7-Feb	22.5	21.3	20.6	Z	20.3	22.4	22.6	23.4	23.6	23.7	22.2	21.6	20.5	20.0	20.0	20.4	20.6	20.4	19.5	19.9	20.6	20.5	21.0	21.2	21.2	23.7
8-Feb	20.9	19.9	19.7	19.2	Z	18.1	17.2	17.3	16.2	20.1	23.5	24.8	24.0	23.9	23.0	21.7	21.6	21.1	20.9	20.2	17.4	14.2	13.6	18.2	19.9	24.8
9-Feb	15.4	15.6	24.7	34.0	36.8	Z	34.3	34.0	31.5	32.6	37.6	41.4	42.3	43.7	43.3	41.5	42.1	40.2	40.9	41.2	41.0	40.7	38.3	41.2	36.3	43.7
10-Feb	Z	39.9	38.5	36.7	35.8	35.0	33.5	30.0	25.8	29.6	29.5	31.3	33.9	34.4	34.2	33.8	34.0	34.3	33.4	30.6	27.9	27.5	30.1	30.9	32.6	39.9
11-Feb	32.6	Z	34.9	35.1	32.4	32.0	29.6	32.0	37.1	37.3	38.6	39.1	39.7	40.0	40.3	40.6	39.4	38.3	27.1	18.3	10.5	15.7	21.7	26.7	32.1	40.6
12-Feb	30.7	31.5	Z	31.5	33.3	32.6	30.1	29.6	22.0	29.5	34.5	33.9	35.6	36.8	39.4	40.7	41.8	39.9	37.8	38.7	40.9	40.8	42.5	41.8	35.5	42.5
13-Feb	41.9	41.3	38.9	Z	40.9	41.1	41.1	41.1	40.9	41.5	41.5	41.6	41.4	41.0	40.7	41.0	40.2	37.4	31.7	22.6	27.5	36.7	34.3	31.4	38.2	41.9
14-Feb	33.5	32.3	33.7	34.1	Z	38.4	38.8	39.0	39.5	39.3	39.4	39.7	40.2	40.0	38.9	37.8	36.0	35.1	36.6	36.8	32.5	27.7	25.9	24.1	35.6	40.2
15-Feb	21.4	23.2	22.5	18.6	18.4	Z	35.0	30.2	22.9	37.1	39.7	41.4	41.7	41.6	42.3	42.1	41.6	40.0	34.2	16.8	30.8	33.1	35.5	37.6	32.5	42.3
16-Feb	Z	37.2	35.9	37.4	39.3	37.8	36.6	34.4	33.5	34.4	35.3	37.3	40.9	42.7	43.9	44.6	44.3	40.5	39.6	42.0	44.3	44.9	46.1	45.5	39.9	46.1
17-Feb	43.9	Z	41.4	39.7	40.1	39.6	39.5	38.1	37.8	38.8	39.7	40.6	42.1	44.1	45.4	45.7	42.1	35.1	28.4	23.9	19.8	17.5	18.0	15.7	35.5	45.7
18-Feb	17.9	16.9	Z	8.0	5.7	5.7	6.3	11.8	14.4	24.4	29.4	33.2	37.1	37.3	37.9	35.3	35.4	32.5	26.5	22.8	20.4	17.7	16.8	17.1	22.2	37.9
19-Feb	14.7	13.6	12.3	Z	13.3	17.7	13.6	13.4	20.8	25.1	36.2	36.1	35.3	36.6	37.7	36.0	36.1	32.1	29.4	25.7	22.1	19.9	19.1	17.2	24.5	37.7
20-Feb	16.3	14.6	13.7	12.8	Z	10.2	10.1	13.3	13.7	20.4	23.4	24.0	27.5	32.4	34.3	30.6	27.6	23.0	16.0	9.7	10.9	10.9	12.3	14.0	18.3	34.3
21-Feb	18.6	30.2	31.5	33.0	33.9	Z	37.7	39.2	39.5	39.3	40.6	42.4	43.1	44.0	45.5	45.1	43.4	41.3	36.3	37.1	40.7	40.9	37.9	33.4	38.0	45.5
22-Feb	Z	37.9	34.9	26.2	30.4	35.8	35.6	30.7	26.3	34.3	36.9	38.3	39.7	41.0	40.7	41.3	41.4	40.5	33.5	34.2	32.3	27.8	18.5	17.7	33.7	41.4
23-Feb	19.6	Z	22.7	35.0	37.0	37.1	37.5	38.0	38.7	40.4	41.9	43.5	44.3	44.0	43.5	43.1	42.4	42.8	42.5	42.0	41.2	40.1	41.7	43.3	39.2	44.3
24-Feb	43.4	43.2	Z	42.8	42.1	41.5	32.8	29.6	30.5	31.4	30.8	31.1	32.7	35.4	33.3	35.5	35.9	35.6	28.8	26.2	25.2	21.4	18.9	16.3	32.4	43.4
25-Feb	13.7	14.8	15.9	Z	24.4	26.2	26.4	25.9	28.8	29.9	30.9	32.2	32.3	32.4	32.9	33.4	34.3	35.1	34.8	34.2	38.7	40.1	39.2	37.0	30.2	40.1
26-Feb	35.3	33.5	31.0	28.0	Z	25.2	25.3	27.0	28.9	29.2	29.9	31.3	31.7	32.4	32.7	33.8	34.5	33.9	30.9	26.3	23.6	21.5	23.9	19.9	29.1	35.3
27-Feb	17.8	18.5	19.3	17.4	23.8	Z	23.1	20.1	25.6	30.5	33.7	36.5	38.0	38.1	38.5	39.0	39.2	37.1	31.1	25.9	25.5	27.5	26.2	26.0	28.6	39.2
28-Feb	Z	24.6	23.3	20.2	19.3	18.4	16.0	15.9	18.8	30.4	35.0	36.2	36.3	37.9	37.1	37.0	36.1	37.1	36.3	37.9	38.2	38.1	38.3	37.9	30.7	38.3
29-Feb	36.7	Z	35.9	34.7	35.4	35.9	36.9	36.5	35.8	36.1	35.1	35.3	35.6	35.3	35.3	35.8	35.5	33.8	32.7	32.2	31.4	32.0	31.0	30.6	34.6	36.9
24.7 24.9 25.0 25.0 27.6 27.0 26.3 25.9 26.0 29.2 31.4 32.8 34.0 34.9 34.7 34.3 33.5 31.6 28.6 26.4 26.0 25.6 25.3 25.1																								Diurnal Average		
43.9 43.2 41.4 42.8 42.1 41.5 41.1 41.1 40.9 41.5 41.9 43.5 44.3 44.1 45.5 45.7 44.3 42.8 42.5 42.0 44.3 44.9 46.1 45.5																								Diurnal Maximum		
Z - zerospan C - Calibration																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 76 ppb																										



Wood Buffalo Environmental Association
Hourly Averages

Ozone (O₃) - ppb
Conklin - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ozone (O₃) - ppb
Conklin - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	162	24.43	24.43
21 - 50	501	75.57	100.00
51 - 82	0	0.00	100.00
> 83	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Ozone (O₃) - ppb
Conklin - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	12	6	1	4	1	2	7	20	28	17	3	4	4	5	13	33	160
21 - 50	40	37	9	4	9	35	15	25	28	26	29	22	50	75	43	53	500
51 - 82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	52	43	10	8	10	37	22	45	56	43	32	26	54	80	56	86	660

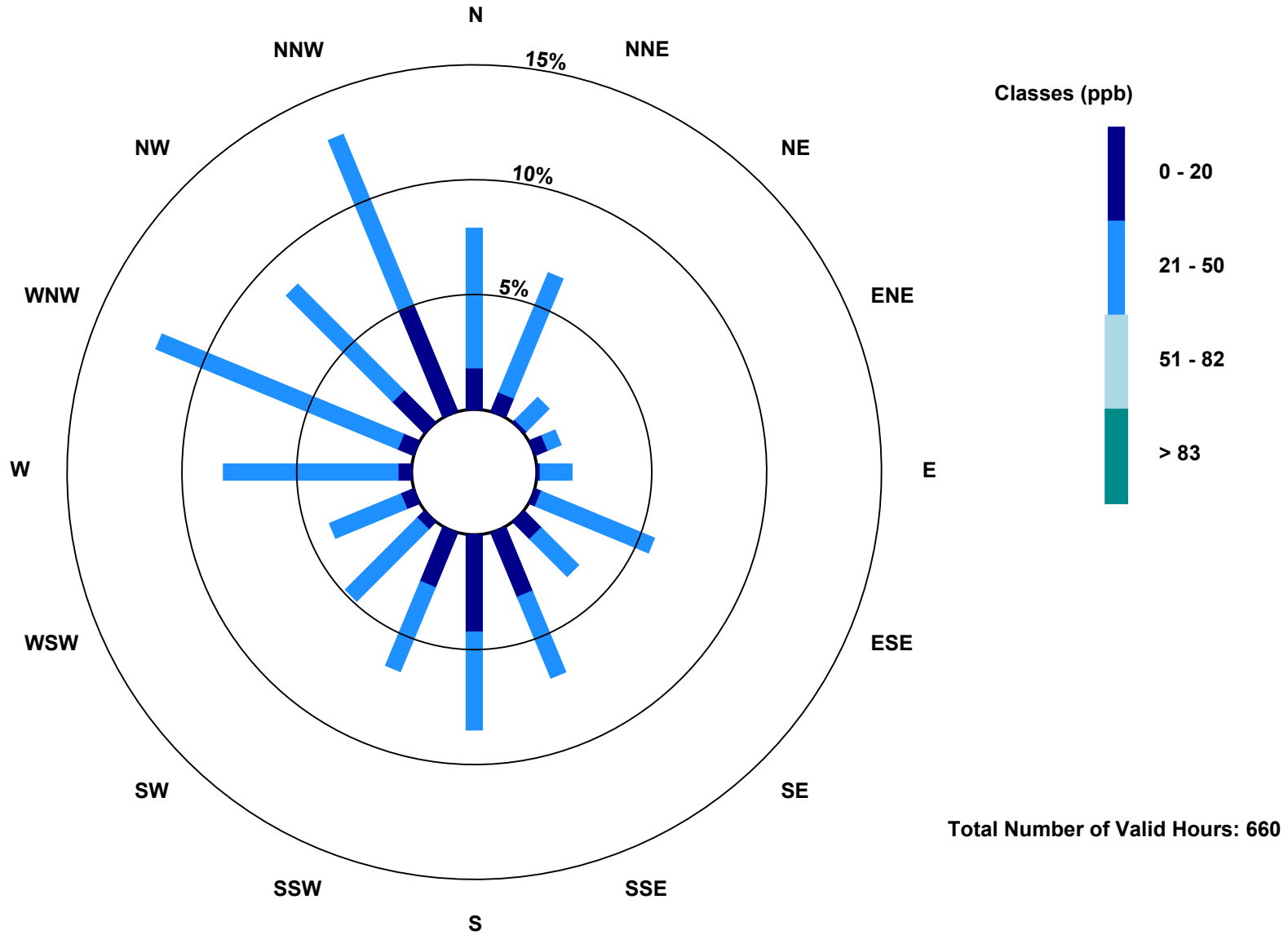
Total Number of Valid Hours: 660

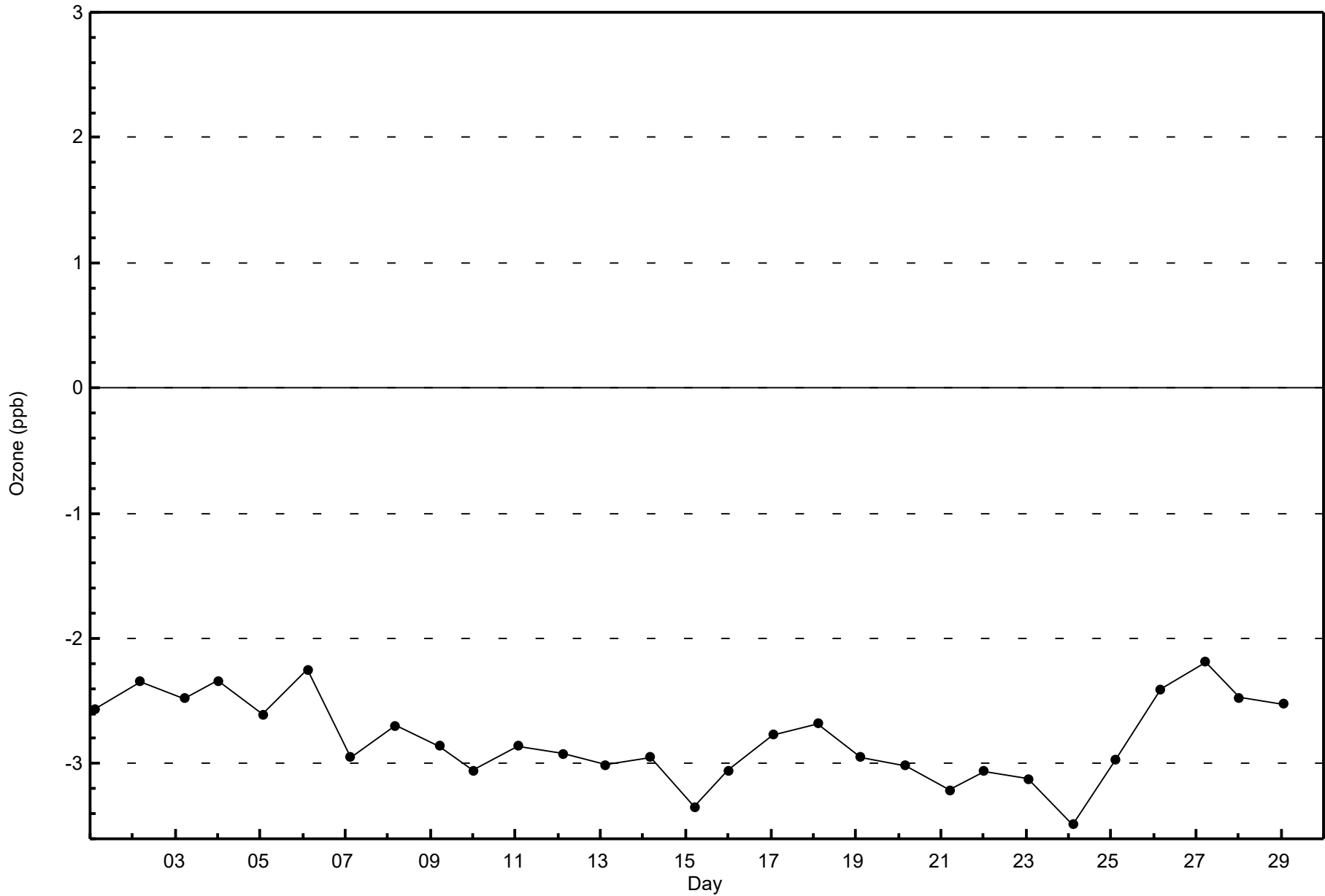
Total Number of Hours: 696

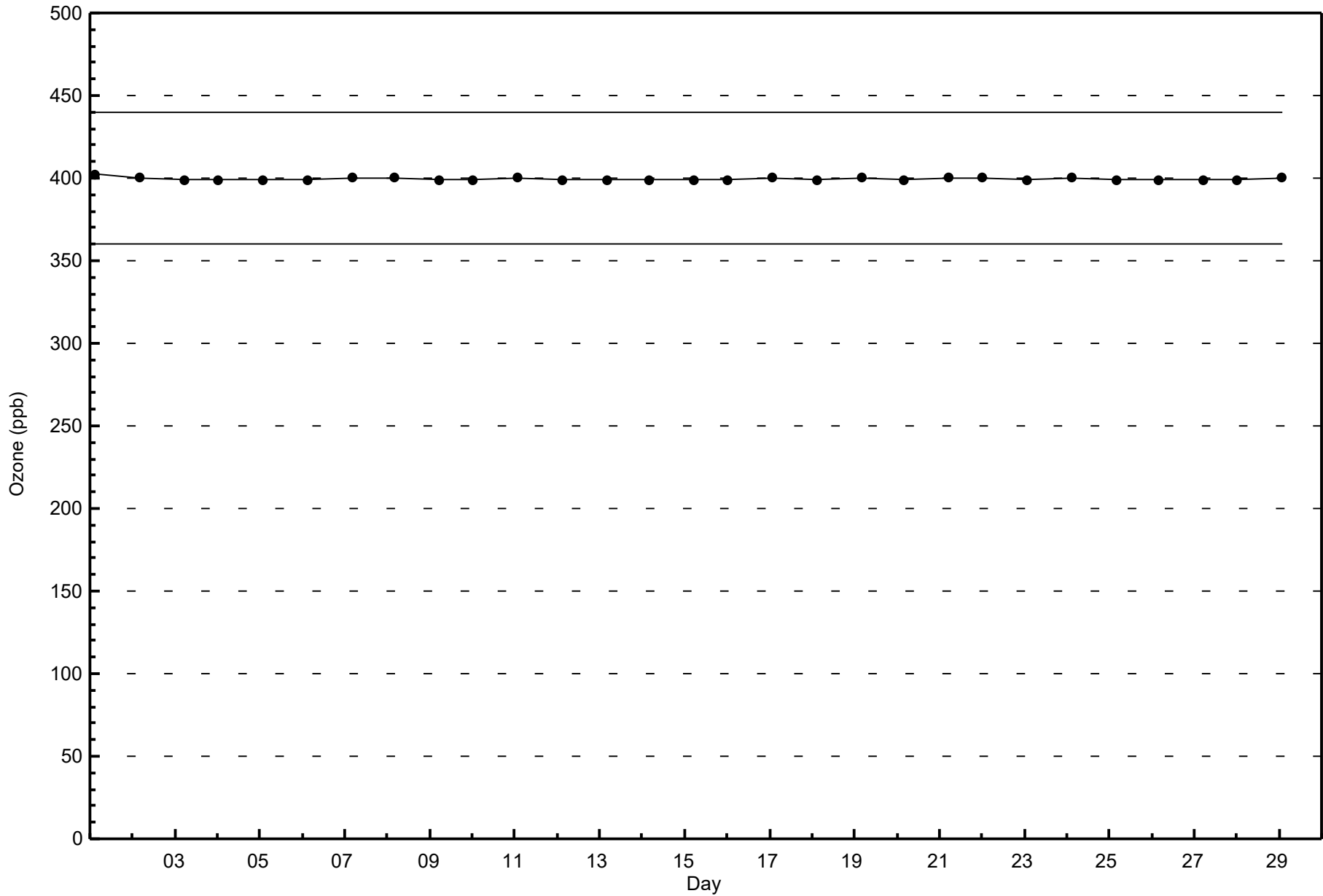


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Ozone (O₃) - ppb
Conklin





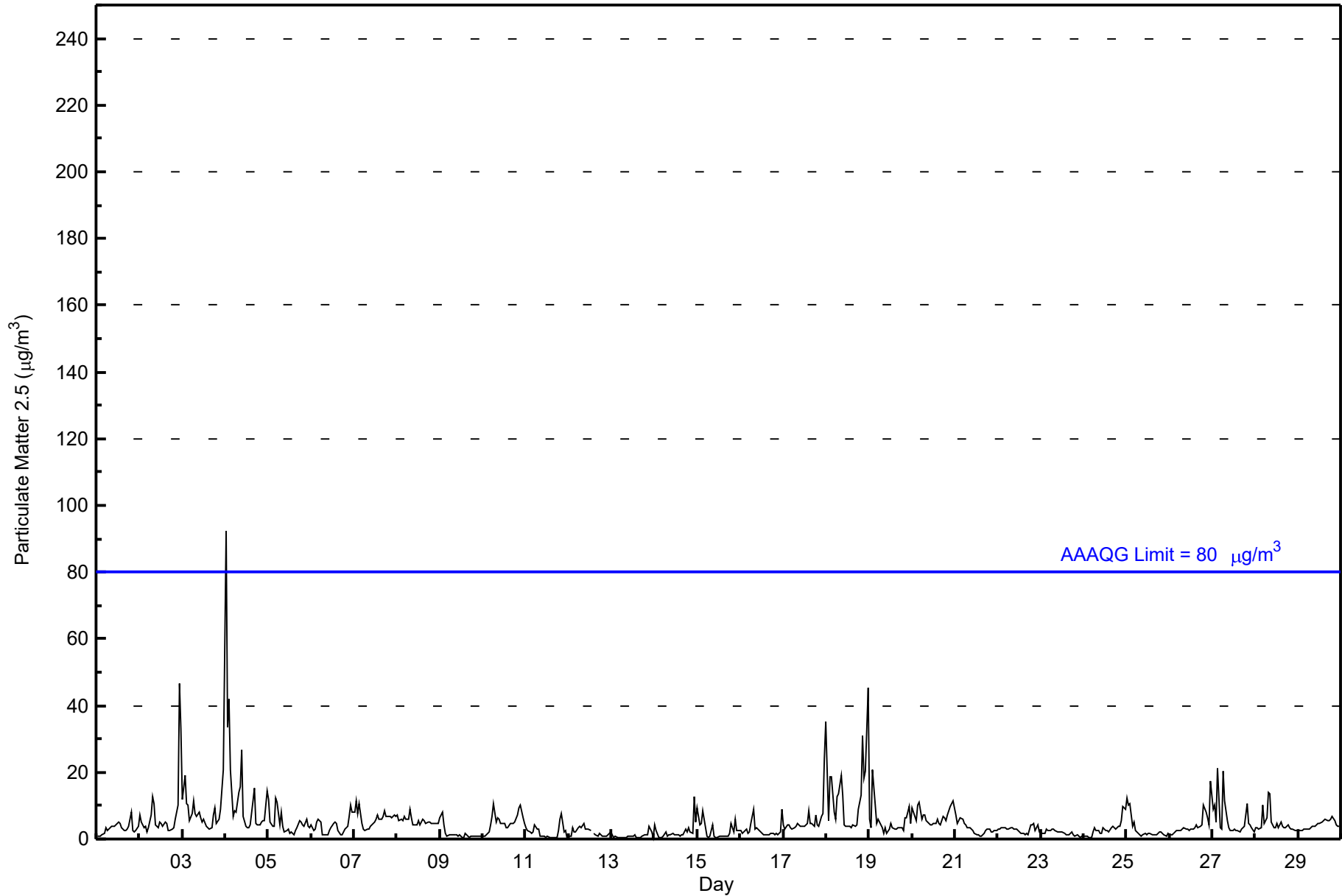




Summary of Hour Averages

Conklin - February 2024

Number of Exceedences (AAAQO):		1-hr: 1	24-hr: 0																		Hours in Service:	696					
Maximum Value: 92.5 µg/m ³ on Feb 4 01:00		Maximum Daily Average: 15.0 µg/m ³ on Feb 4																	Hours of Data:	695							
Minimum Value: 0.3 µg/m ³ on Feb 15 11:00		Minimum Daily Average: 0.9 µg/m ³ on Feb 13																	Hours of Missing Data:	1							
Maximum Diurnal Average: 9.3 µg/m ³ at hour 1		Minimum Diurnal Average: 3.0 µg/m ³ at hour 14																	Hours of Calibration:	1							
Monthly Average: 4.76 µg/m ³		Percentiles: P ₁ = 0.4 P ₁₀ = 1.0 Q ₁ = 1.9 Median = 3.4 Q ₃ = 5.3 P ₉₀ = 9.1 P ₉₉ = 31.2																	Percent Operational Time:	100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.8	1.0	1.0	1.3	1.8	3.6	2.7	3.1	3.7	3.8	3.9	4.5	5.0	4.6	3.5	2.7	2.7	3.1	3.7	8.0	2.8	2.1	2.7	3.8	3.2	8.0	
2-Feb	7.2	5.3	3.2	3.7	2.2	3.6	7.1	12.7	10.5	4.4	3.2	5.1	4.7	4.0	4.9	4.6	2.7	2.6	2.9	3.2	5.9	10.1	46.6	32.9	8.0	46.6	
3-Feb	11.8	19.2	10.4	10.1	5.3	7.8	11.6	7.6	6.9	8.2	6.2	5.3	5.9	3.8	3.4	3.1	3.5	7.4	9.5	4.7	6.0	9.0	15.0	20.8	8.4	20.8	
4-Feb	92.5	33.5	42.0	20.6	6.8	8.5	7.9	13.8	15.6	26.9	6.8	3.7	3.6	3.3	4.2	11.4	15.2	4.8	4.1	4.0	5.2	5.7	5.3	14.3	15.0	92.5	
5-Feb	11.8	4.9	3.6	3.7	12.3	10.9	4.2	8.0	3.6	2.0	2.6	2.8	1.9	2.0	1.4	2.6	3.2	5.5	5.1	4.1	3.8	5.9	3.9	3.5	4.7	12.3	
6-Feb	4.1	2.6	3.1	5.1	5.9	5.3	1.2	1.2	1.3	1.3	2.6	3.3	4.8	5.2	4.7	2.7	1.5	1.2	2.2	3.0	3.7	6.9	10.1	8.2	3.8	10.1	
7-Feb	8.3	11.6	7.8	10.5	4.6	2.8	2.5	3.0	3.1	3.6	4.3	5.3	6.0	7.1	6.1	6.1	6.6	8.5	6.6	6.7	7.0	6.5	7.2	6.9	6.2	11.6	
8-Feb	7.3	5.4	6.1	5.6	7.0	5.9	5.7	8.9	6.3	4.2	4.1	4.4	5.3	4.2	5.7	5.5	4.8	5.0	5.2	4.6	4.6	4.7	4.8	4.5	5.4	8.9	
9-Feb	6.3	8.1	4.4	1.5	0.9	1.2	1.3	1.2	1.4	1.4	1.0	1.2	0.6	0.5	1.9	1.4	0.6	0.7	1.0	0.9	0.8	1.0	0.9	0.7	1.7	8.1	
10-Feb	0.9	0.9	1.4	2.0	4.4	6.6	10.7	5.3	6.3	6.1	4.5	4.6	4.5	3.5	3.5	4.6	4.7	4.5	5.0	7.0	9.4	10.1	6.4	4.8	5.1	10.7	
11-Feb	3.4	2.6	2.0	1.6	2.2	4.0	2.8	3.1	1.0	0.9	0.7	0.6	0.7	0.5	0.5	0.4	0.5	0.5	2.3	5.8	7.8	2.2	2.5	0.6	2.0	7.8	
12-Feb	1.0	0.9	3.5	2.3	2.2	3.2	3.7	3.2	4.5	2.9	3.0	3.2	2.5	C	1.5	1.1	1.0	1.6	1.4	0.9	0.7	0.8	1.4	2.1	2.1	4.5	
13-Feb	1.2	0.6	0.9	0.4	0.4	0.4	0.4	0.3	0.3	0.7	0.9	0.8	0.7	1.2	0.6	0.6	0.6	0.7	1.1	1.1	1.4	3.9	2.3	0.6	0.9	3.9	
14-Feb	4.2	2.7	0.5	0.5	0.5	0.7	2.1	0.8	1.3	1.5	1.6	1.4	1.1	1.2	0.7	1.2	1.5	2.8	2.3	3.5	2.0	1.6	12.8	5.1	2.2	12.8	
15-Feb	9.3	4.4	4.5	8.5	3.5	0.8	0.3	1.0	4.0	0.8	0.3	0.5	0.7	0.8	1.0	1.0	0.7	0.7	1.7	4.5	2.2	6.0	2.7	2.6	2.6	9.3	
16-Feb	2.6	1.7	2.3	3.0	1.7	2.1	4.7	9.1	3.1	3.3	2.9	2.1	1.6	1.4	1.4	1.2	1.2	1.6	1.8	1.5	1.7	1.4	2.2	9.0	2.7	9.1	
17-Feb	4.4	2.8	4.2	4.0	3.3	3.1	3.6	3.8	4.5	4.0	3.9	3.9	3.9	4.6	8.7	4.6	4.7	3.6	7.3	4.4	3.9	6.7	7.7	24.1	5.4	24.1	
18-Feb	35.3	5.7	18.8	18.6	8.1	5.7	12.7	13.7	19.0	13.1	4.3	3.8	4.0	3.7	3.3	4.3	3.7	4.2	8.7	13.1	31.1	18.2	20.5	45.4	13.3	45.4	
19-Feb	5.9	3.3	20.9	10.2	4.7	6.0	5.1	3.3	1.7	3.5	1.8	2.9	4.6	3.4	2.9	3.0	3.3	3.3	3.3	2.5	6.6	6.3	9.8	4.6	5.1	20.9	
20-Feb	9.1	8.1	5.3	10.4	11.1	6.0	7.4	7.0	5.7	4.5	4.1	4.3	4.6	4.5	5.9	4.6	4.1	7.0	6.3	5.5	7.1	9.6	10.7	11.4	6.8	11.4	
21-Feb	7.3	4.5	5.7	6.3	6.1	4.6	4.4	3.6	3.3	3.1	2.6	1.8	1.3	1.4	1.0	1.0	1.7	2.7	3.0	3.0	2.2	1.9	2.5	2.7	3.2	7.3	
22-Feb	3.0	2.9	3.5	3.4	3.4	3.0	2.9	3.5	3.4	2.8	2.8	2.7	2.2	1.6	1.7	1.5	1.5	1.3	4.4	4.1	4.7	2.7	4.3	2.3	2.9	4.7	
23-Feb	1.8	1.6	1.9	3.0	2.6	2.7	2.8	2.8	2.5	2.0	2.0	1.9	2.1	1.9	1.3	1.1	1.5	1.9	1.2	1.0	1.2	0.8	0.6	0.6	1.8	3.0	
24-Feb	0.7	1.0	0.8	0.6	0.6	1.9	3.3	2.7	2.4	1.8	1.8	3.3	2.6	2.5	2.3	3.6	4.0	3.3	2.9	3.7	3.8	5.5	9.9	8.8	3.1	9.9	
25-Feb	12.5	10.3	10.4	3.7	5.2	2.6	2.0	1.4	1.0	1.4	1.5	1.4	1.8	1.7	1.4	1.3	1.4	1.3	2.1	2.3	1.6	1.3	1.0	1.5	3.0	12.5	
26-Feb	1.5	1.4	1.7	2.1	2.4	2.5	2.6	2.8	3.5	3.0	2.9	2.6	3.2	3.1	3.4	4.4	3.2	3.9	4.3	10.2	8.2	6.4	4.0	17.3	4.2	17.3	
27-Feb	8.8	10.3	4.9	21.3	3.5	2.9	20.2	11.3	5.5	3.5	2.6	2.5	3.0	2.7	2.7	2.2	3.1	3.5	3.8	10.8	4.6	4.4	3.4	2.2	6.0	21.3	
28-Feb	3.2	3.2	2.8	3.3	10.3	4.8	6.2	14.1	13.6	5.2	3.4	3.5	4.7	3.6	5.2	4.0	3.2	3.3	4.2	3.3	3.1	2.8	2.3	2.3	4.8	14.1	
29-Feb	2.5	2.7	2.7	2.9	2.9	2.9	3.1	3.4	3.9	3.9	4.3	4.5	4.6	4.9	5.7	6.1	5.5	5.5	5.9	6.7	5.4	4.2	3.8	3.7	4.3	6.7	
		9.3	5.6	6.2	5.9	4.3	4.0	5.0	5.4	4.9	4.3	3.0	3.0	3.2	3.0	3.1	3.2	3.2	3.3	3.9	4.6	5.1	5.1	7.2	8.5	Diurnal Average	
		92.5	33.5	42.0	21.3	12.3	10.9	20.2	14.1	19.0	26.9	6.8	5.3	6.0	7.1	8.7	11.4	15.2	8.5	9.5	13.1	31.1	18.2	46.6	45.4	Diurnal Maximum	
C - Calibration																											
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Conklin - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	527	75.83	75.83
6 - 15	145	20.86	96.69
16 - 25	14	2.01	98.71
26 - 80	8	1.15	99.86
> 81.0	1	0.14	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Conklin - February 2024**

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	35	35	9	6	9	30	18	37	34	32	26	24	55	73	51	52	526
6 - 15	19	9	1	1	1	8	5	8	23	12	7	2	2	6	11	30	145
16 - 25	0	0	0	1	0	0	0	2	1	3	0	1	0	1	0	4	13
26 - 80	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3	7
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Totals	55	44	10	8	10	38	23	49	59	47	33	27	57	80	63	89	692

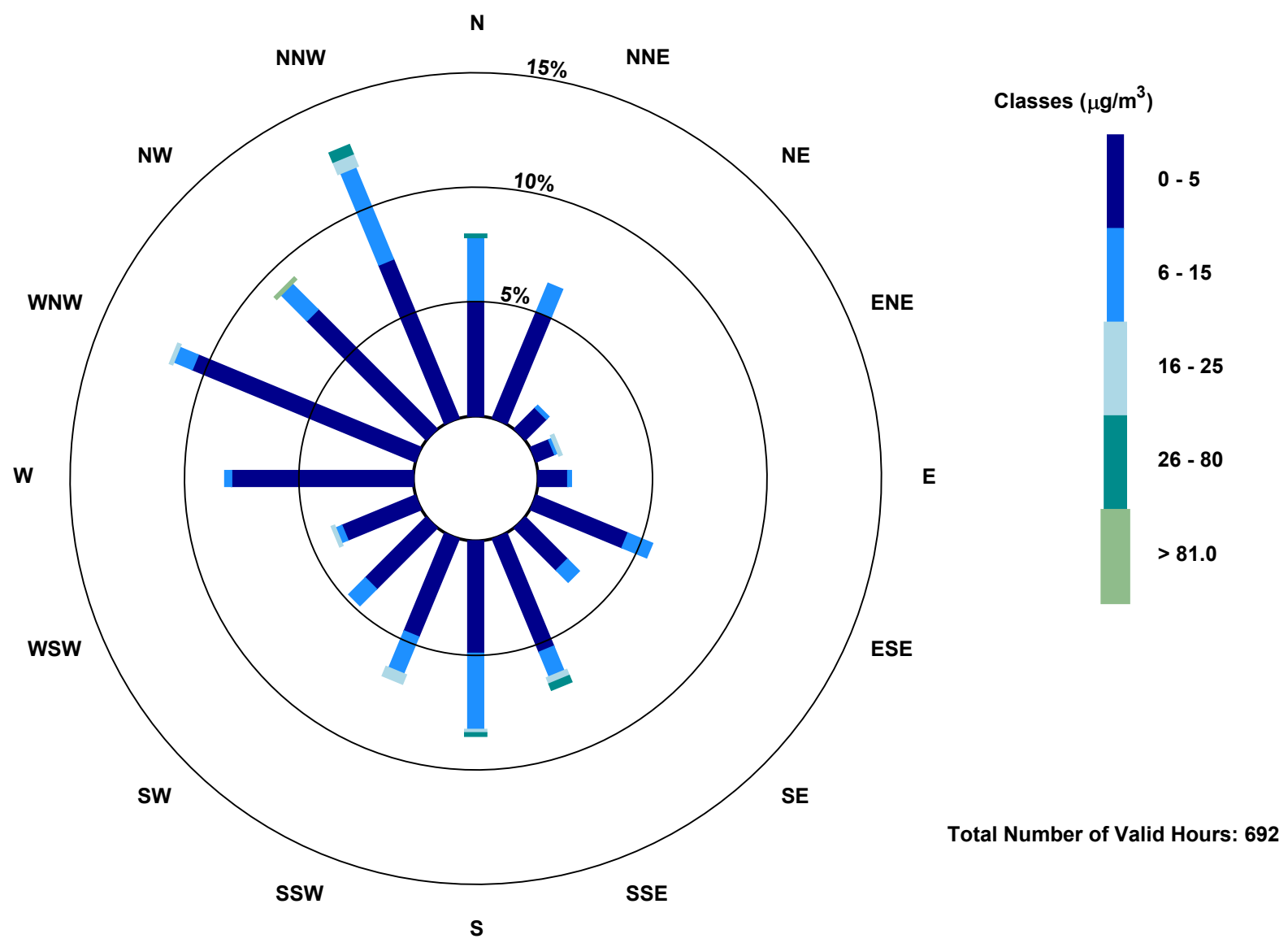
Total Number of Valid Hours: 692

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Conklin



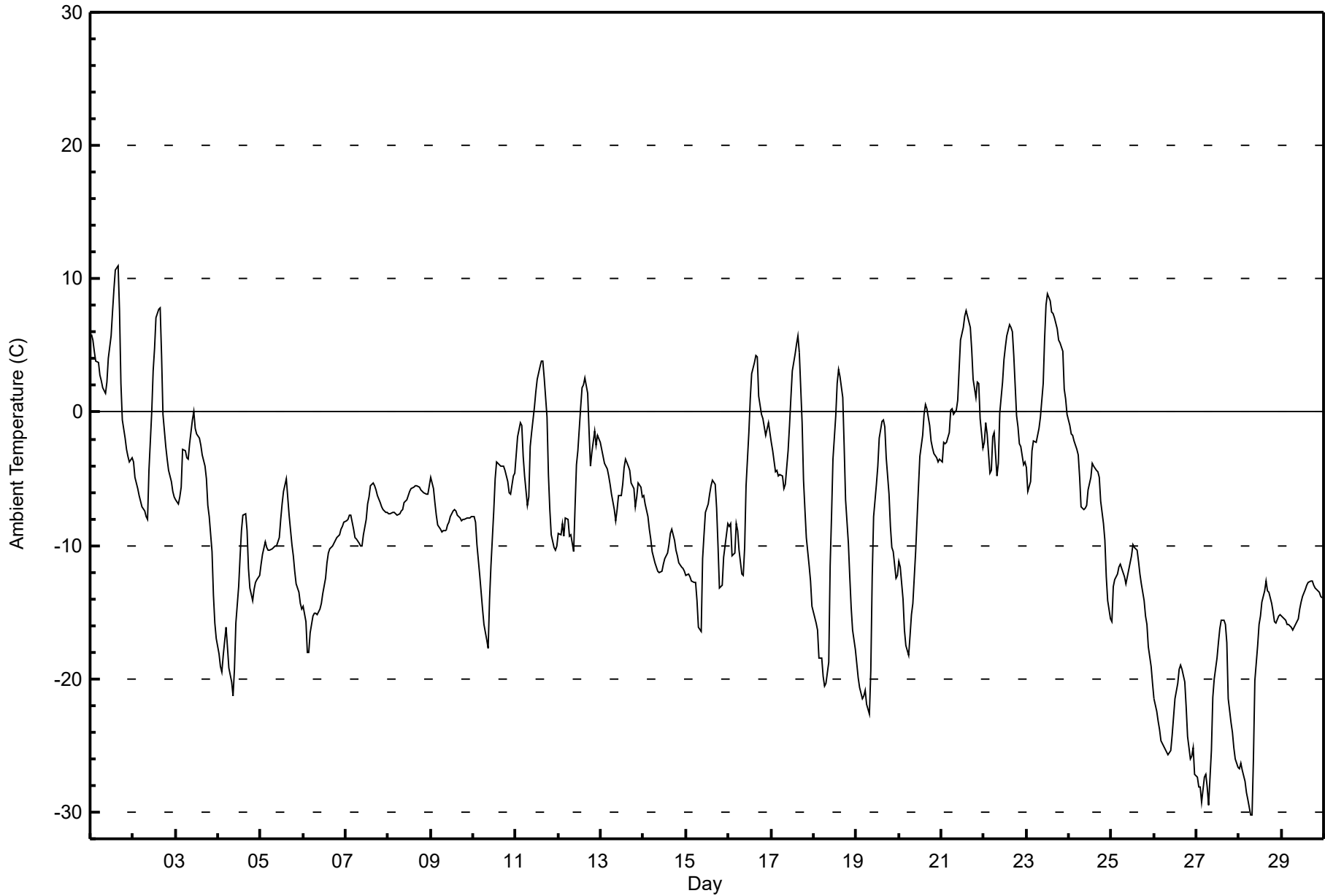


Maximum Value: 10.9 C on Feb 1 16:00																				Maximum Daily Average: 3.2 C on Feb 1					Hours in Service: 696	
Minimum Value: -30.2 C on Feb 28 08:00																				Minimum Daily Average: -23.3 C on Feb 26					Hours of Data: 696	
Maximum Diurnal Average: -2.9 C at hour 16																				Minimum Diurnal Average: -12.1 C at hour 8					Hours of Missing Data: 0	
Monthly Average: -8.26 C																				Percentiles: P ₁ = -28.1 P ₁₀ = -18.9 Q ₁ = -12.9 Median = -7.7 Q ₃ = -3.2 P ₉₀ = 2.1 P ₉₉ = 7.7					Hours of Calibration: 0	
																									Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	5.8	5.4	4.5	3.9	3.7	2.8	2.4	1.8	1.4	2.3	4.1	5.7	7.5	9.2	10.7	10.9	7.6	2.1	-0.5	-1.9	-2.8	-3.3	-3.8	-3.4	3.2	10.9
2-Feb	-3.8	-4.9	-5.7	-6.3	-6.7	-7.1	-7.4	-7.9	-8.0	-4.3	0.1	3.1	4.8	7.1	7.7	7.9	4.3	-0.1	-2.6	-3.5	-4.4	-5.2	-5.9	-6.4	-2.3	7.9
3-Feb	-6.6	-6.9	-6.4	-5.6	-2.8	-2.8	-3.4	-3.5	-2.3	-0.6	0.0	-1.2	-1.6	-1.9	-2.5	-3.2	-4.1	-5.0	-7.0	-7.8	-10.4	-13.7	-15.8	-17.0	-5.5	0.0
4-Feb	-18.1	-19.1	-19.5	-18.2	-16.2	-17.6	-19.2	-20.2	-21.3	-19.3	-15.8	-13.1	-10.8	-8.8	-7.7	-7.7	-8.9	-11.7	-13.2	-14.1	-13.3	-12.8	-12.6	-12.3	-14.6	-7.7
5-Feb	-11.4	-10.7	-9.7	-10.2	-10.4	-10.4	-10.3	-10.1	-10.1	-10.0	-9.5	-8.0	-6.9	-5.9	-5.0	-6.4	-7.8	-9.9	-10.8	-11.9	-12.8	-13.5	-14.3	-14.8	-10.0	-5.0
6-Feb	-14.6	-15.7	-18.0	-18.0	-16.6	-15.3	-15.1	-15.1	-15.2	-14.8	-14.4	-13.6	-12.4	-11.3	-10.6	-10.2	-10.0	-9.8	-9.7	-9.5	-9.1	-8.8	-8.5	-8.3	-12.7	-8.3
7-Feb	-8.2	-8.1	-7.7	-7.7	-8.8	-9.4	-9.5	-9.8	-10.0	-10.0	-9.2	-8.0	-6.9	-6.3	-5.5	-5.3	-5.5	-5.8	-6.2	-6.8	-7.1	-7.3	-7.5	-7.5	-7.7	-5.3
8-Feb	-7.6	-7.6	-7.6	-7.6	-7.7	-7.7	-7.6	-7.4	-7.3	-6.8	-6.6	-6.3	-5.9	-5.8	-5.6	-5.5	-5.5	-5.6	-5.8	-6.0	-6.1	-6.1	-6.1	-5.5	-6.6	-5.5
9-Feb	-4.8	-5.7	-6.8	-7.7	-8.5	-8.7	-9.0	-8.9	-8.9	-8.5	-8.2	-7.8	-7.4	-7.3	-7.4	-7.7	-8.0	-8.1	-8.1	-8.0	-8.0	-7.9	-7.9	-7.8	-7.8	-4.8
10-Feb	-7.8	-8.3	-10.0	-12.2	-13.5	-14.8	-16.0	-17.1	-17.7	-14.0	-11.5	-7.5	-5.0	-3.8	-3.9	-4.1	-4.0	-4.0	-4.3	-5.2	-6.0	-6.2	-4.8	-4.6	-8.6	-3.8
11-Feb	-3.2	-1.8	-0.8	-1.0	-3.3	-4.8	-7.0	-6.4	-2.6	-1.5	0.4	1.6	2.5	3.4	3.9	3.9	2.6	-0.4	-4.7	-7.3	-9.2	-10.2	-10.4	-10.0	-2.8	3.9
12-Feb	-9.1	-9.2	-8.4	-9.3	-7.9	-8.0	-9.3	-9.2	-10.5	-7.1	-3.9	-2.9	0.4	1.9	2.0	2.5	1.5	-1.4	-4.0	-3.0	-1.4	-2.5	-1.8	-2.3	-4.3	2.5
13-Feb	-2.8	-3.4	-3.8	-4.3	-4.8	-5.4	-6.2	-7.3	-8.2	-7.3	-6.3	-6.2	-5.4	-4.1	-3.5	-4.1	-4.3	-5.3	-5.8	-7.1	-6.4	-5.3	-5.7	-6.3	-5.4	-2.8
14-Feb	-6.2	-6.9	-7.8	-8.8	-9.5	-10.4	-11.3	-11.6	-11.9	-12.1	-11.9	-11.4	-11.0	-10.5	-9.9	-9.1	-8.8	-9.6	-10.4	-10.8	-11.3	-11.6	-11.7	-11.9	-10.3	-6.2
15-Feb	-12.2	-12.2	-12.3	-12.6	-12.8	-12.7	-14.1	-16.1	-16.4	-11.0	-9.2	-7.6	-6.8	-6.1	-5.5	-5.1	-5.4	-7.2	-10.1	-13.2	-12.9	-10.9	-10.0	-8.4	-10.5	-5.1
16-Feb	-8.6	-8.4	-10.8	-10.5	-8.3	-8.9	-10.4	-12.2	-12.3	-10.2	-5.5	-1.5	1.0	2.9	3.7	4.2	4.1	1.2	-0.2	-0.5	-1.1	-1.7	-0.7	-1.5	-4.0	4.2
17-Feb	-2.2	-2.9	-4.4	-4.4	-4.8	-4.7	-4.8	-5.7	-5.4	-2.9	-1.1	1.1	3.1	4.4	5.1	5.7	4.5	-0.8	-5.1	-7.3	-9.4	-11.5	-12.7	-14.6	-3.4	5.7
18-Feb	-15.0	-15.8	-16.4	-18.4	-18.4	-19.8	-20.6	-20.4	-18.7	-11.5	-7.7	-3.5	-0.2	2.1	3.2	2.7	1.1	-2.6	-6.6	-9.9	-12.4	-14.7	-16.3	-17.9	-10.7	3.2
19-Feb	-18.9	-20.0	-20.7	-21.5	-21.3	-20.8	-21.9	-22.6	-19.4	-12.4	-7.9	-5.4	-4.0	-1.9	-0.7	-0.6	-1.1	-3.4	-6.1	-8.5	-10.2	-10.4	-12.5	-12.3	-11.9	-0.6
20-Feb	-11.1	-11.6	-14.1	-16.3	-17.5	-18.2	-16.8	-15.2	-14.3	-10.4	-8.0	-5.6	-3.3	-1.7	-0.2	0.6	0.2	-1.0	-2.2	-2.7	-3.1	-3.4	-3.8	-3.5	-7.6	0.6
21-Feb	-3.7	-2.3	-2.4	-2.2	-1.5	0.2	0.3	-0.2	0.2	0.9	3.2	5.5	6.3	7.2	7.6	7.2	6.3	4.7	2.5	1.1	2.2	2.1	-0.4	-2.7	1.8	7.6
22-Feb	-2.2	-0.8	-1.6	-4.6	-4.3	-1.8	-1.5	-4.8	-3.8	-0.1	2.2	4.0	4.8	5.7	6.6	6.3	6.1	4.2	-0.3	-1.1	-2.4	-2.6	-3.9	-3.7	0.0	6.6
23-Feb	-4.1	-5.9	-5.2	-2.9	-2.2	-2.3	-1.8	-1.3	-0.4	2.2	5.5	8.0	8.9	8.4	7.5	7.5	7.1	6.2	5.4	5.2	4.5	1.8	1.0	-0.2	2.2	8.9
24-Feb	-1.0	-1.6	-1.8	-2.2	-2.8	-3.2	-4.9	-7.1	-7.3	-7.2	-7.0	-5.8	-4.8	-3.9	-4.0	-4.4	-4.5	-4.9	-6.7	-8.4	-9.6	-12.4	-14.1	-15.5	-6.0	-1.0
25-Feb	-15.7	-13.1	-12.6	-12.2	-11.6	-11.4	-11.7	-12.3	-12.8	-12.3	-11.3	-10.8	-9.9	-10.1	-10.3	-11.2	-12.1	-12.9	-14.1	-15.3	-16.0	-17.7	-19.1	-20.3	-13.2	-9.9
26-Feb	-21.5	-22.5	-23.2	-23.8	-24.6	-25.1	-25.3	-25.5	-25.7	-25.4	-24.2	-22.9	-21.5	-20.3	-19.3	-19.0	-19.3	-20.2	-22.1	-24.3	-26.1	-25.8	-25.2	-27.2	-23.3	-19.0
27-Feb	-27.4	-28.1	-28.1	-29.2	-27.3	-27.2	-28.1	-29.5	-25.4	-21.4	-20.1	-18.5	-17.3	-16.3	-15.6	-15.6	-15.9	-17.3	-21.4	-23.3	-24.0	-25.1	-26.0	-26.6	-23.1	-15.6
28-Feb	-26.7	-26.4	-26.8	-27.7	-28.5	-29.1	-30.2	-30.2	-25.9	-20.1	-17.4	-15.9	-15.3	-14.2	-13.4	-12.7	-13.4	-13.5	-14.3	-15.0	-15.7	-15.8	-15.3	-15.2	-20.0	-12.7
29-Feb	-15.3	-15.5	-15.6	-15.9	-15.9	-16.1	-16.3	-16.1	-16.0	-15.6	-14.7	-14.2	-13.8	-13.3	-13.0	-12.7	-12.7	-12.7	-12.9	-13.2	-13.4	-13.5	-13.9	-13.9	-14.4	-12.7
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Conklin - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Conklin - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	59	8.48	8.48
-20 - 0	543	78.02	86.49
0 - 10	92	13.22	99.71
10 - 20	2	0.29	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696

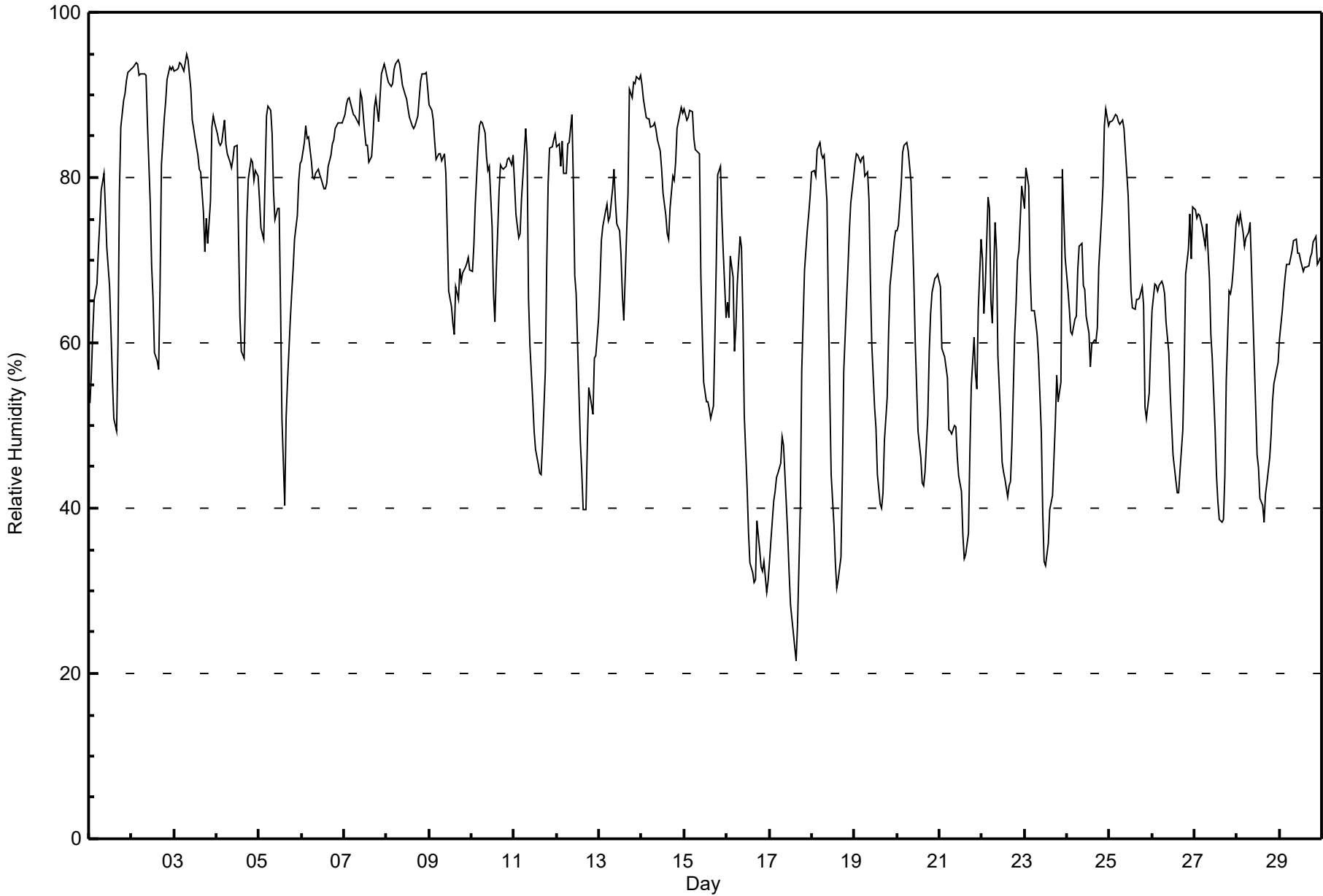


Maximum Value: 95.0 % on Feb 3 08:00 Maximum Daily Average: 90.6 % on Feb 8																						Hours in Service:	696			
Minimum Value: 21.5 % on Feb 17 16:00 Minimum Daily Average: 44.6 % on Feb 17																						Hours of Data:	696			
Maximum Diurnal Average: 78.3 % at hour 8 Minimum Diurnal Average: 53.1 % at hour 15																						Hours of Missing Data:	0			
Monthly Average: 69.69 % Percentiles: P ₁ = 30.9 P ₁₀ = 44.0 Q ₁ = 59.0 Median = 72.5 Q ₃ = 83.2 P ₉₀ = 88.4 P ₉₉ = 93.7																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	52.7	56.4	61.4	65.3	67.1	71.4	74.6	78.5	80.5	76.4	71.6	66.8	61.3	55.7	50.8	49.4	59.9	78.1	86.1	89.3	90.2	91.6	92.8	93.0	71.7	93.0
2-Feb	93.3	93.4	93.9	93.7	92.4	92.5	92.6	92.5	92.3	86.6	76.9	69.3	65.5	58.8	57.7	56.8	66.8	81.6	87.2	89.2	91.9	93.3	93.0	93.5	83.5	93.9
3-Feb	92.9	93.1	93.3	93.9	93.7	92.9	93.9	95.0	94.3	90.6	87.0	86.0	84.7	82.6	81.0	80.7	75.8	71.0	75.0	72.0	77.1	86.1	87.4	86.6	86.1	95.0
4-Feb	85.3	84.2	83.9	84.3	86.9	84.1	82.8	81.9	81.1	82.3	83.8	84.0	73.1	63.3	58.9	58.2	65.7	75.1	79.8	82.3	81.9	79.7	80.8	80.2	78.5	86.9
5-Feb	77.3	73.9	72.5	80.4	87.4	88.6	88.2	85.3	78.3	75.0	76.3	76.3	64.8	50.9	40.3	51.0	55.4	62.8	66.2	69.0	72.5	75.4	79.7	81.7	72.0	88.6
6-Feb	82.1	84.3	86.2	84.8	84.9	82.0	80.0	79.8	80.6	81.0	80.4	79.9	78.7	78.7	79.3	81.3	82.7	84.0	84.7	85.9	86.6	86.7	86.6	86.7	82.8	86.7
7-Feb	87.6	88.8	89.4	89.7	88.3	87.7	87.5	86.8	86.4	90.3	89.6	85.6	84.0	83.9	81.9	82.6	85.0	88.5	89.6	86.7	89.7	92.5	93.7	93.1	87.9	93.7
8-Feb	92.2	91.5	91.0	91.4	93.1	93.7	94.2	93.7	92.5	91.1	90.0	89.5	88.3	87.2	86.2	86.0	86.2	87.4	89.6	91.7	92.6	92.6	92.7	90.9	90.6	94.2
9-Feb	88.8	88.2	87.0	84.4	82.2	82.9	82.9	82.1	82.8	80.6	73.6	66.3	64.4	62.3	61.0	66.7	65.3	68.9	67.5	68.4	69.1	69.7	70.4	68.7	74.3	88.8
10-Feb	68.7	71.9	76.8	83.8	86.3	86.7	86.7	85.4	82.6	80.8	81.3	74.0	65.9	62.5	68.6	78.5	81.5	81.2	81.0	81.3	82.2	82.4	81.5	82.8	78.9	86.7
11-Feb	79.3	75.7	72.7	73.2	77.5	80.2	86.0	82.9	65.5	59.6	53.1	49.3	47.2	45.2	44.3	44.1	47.9	56.6	69.5	79.3	83.6	83.7	84.6	85.3	67.8	86.0
12-Feb	83.7	84.0	81.3	84.5	80.6	80.5	84.0	84.3	87.7	79.6	68.1	65.9	53.9	47.9	44.4	39.9	39.8	47.9	54.6	53.6	51.4	58.2	58.5	62.8	65.7	87.7
13-Feb	67.4	72.3	74.1	75.9	76.8	74.8	75.2	78.7	81.0	77.2	74.4	73.6	70.6	65.7	62.6	73.2	78.0	90.6	89.7	91.5	91.4	92.3	91.9	92.4	78.8	92.4
14-Feb	91.1	89.6	87.3	87.1	87.1	86.1	86.2	86.7	85.7	84.6	83.2	81.0	78.1	75.4	73.2	72.6	76.3	80.2	79.7	81.8	86.0	87.6	88.5	87.9	83.5	91.1
15-Feb	88.3	86.9	87.3	88.1	88.0	84.7	83.4	83.2	83.0	68.1	61.2	55.3	52.8	52.9	52.1	50.8	52.4	60.6	69.7	80.4	81.4	75.3	70.8	63.0	71.6	88.3
16-Feb	64.9	63.1	70.6	67.9	59.0	61.8	67.1	72.8	71.4	63.5	51.2	42.5	37.2	33.4	32.2	31.0	31.3	38.5	34.9	32.8	32.4	33.6	29.9	31.2	48.1	72.8
17-Feb	33.6	36.1	40.9	42.1	43.8	44.2	45.4	48.6	47.7	40.5	36.8	32.2	28.3	24.9	23.2	21.5	26.0	40.1	56.6	62.8	68.8	73.8	75.5	77.7	44.6	77.7
18-Feb	80.7	80.8	80.1	83.3	84.3	82.8	82.5	82.7	77.1	64.6	54.1	44.0	37.9	33.4	30.3	31.4	34.2	44.0	56.5	65.0	69.2	73.6	77.0	79.9	63.7	84.3
19-Feb	81.6	82.8	82.7	81.9	82.4	82.5	80.1	80.6	77.4	67.5	59.8	52.3	49.7	44.1	40.5	40.1	41.9	48.2	53.4	61.2	66.9	68.7	72.3	73.5	65.5	82.8
20-Feb	73.6	74.2	79.1	83.0	83.9	84.3	83.3	81.3	79.6	67.7	60.1	54.8	49.4	46.1	43.1	42.7	44.4	51.3	59.0	63.5	66.2	67.9	68.0	68.2	65.6	84.3
21-Feb	66.7	59.3	58.9	58.2	55.8	49.4	49.3	49.0	50.1	49.9	46.3	44.0	42.1	36.7	33.8	34.4	37.0	46.7	54.7	60.7	56.2	54.4	64.1	72.6	51.3	72.6
22-Feb	70.2	63.5	66.8	77.7	76.3	65.0	62.3	74.6	71.2	58.4	50.7	45.6	44.4	43.6	41.3	42.6	43.2	47.6	61.1	64.9	70.1	71.1	79.0	77.6	61.2	79.0
23-Feb	76.2	81.2	79.0	68.7	63.9	63.9	62.5	61.1	58.1	49.1	39.5	33.6	33.0	35.7	39.9	40.7	41.5	50.3	56.2	52.9	55.2	81.0	75.6	70.3	57.0	81.2
24-Feb	66.4	64.1	61.4	61.1	62.8	63.2	68.8	71.7	72.1	67.0	66.5	63.2	61.3	57.0	59.8	60.3	60.1	61.9	69.1	75.3	79.0	86.3	88.4	86.3	68.0	88.4
25-Feb	86.8	86.8	86.9	87.7	87.5	86.7	86.5	86.9	85.9	83.2	77.8	72.0	66.3	64.3	64.1	65.2	65.3	65.5	66.7	64.5	52.3	50.9	53.9	59.2	73.0	87.7
26-Feb	63.8	67.1	67.0	66.3	66.9	67.4	67.0	66.0	62.5	58.8	53.9	50.2	46.5	43.4	41.9	41.9	44.6	49.4	57.1	68.2	71.3	75.6	70.2	76.5	60.1	76.5
27-Feb	76.1	75.1	75.6	75.4	73.8	72.8	71.6	74.4	67.8	61.1	58.1	49.6	44.0	40.9	38.7	38.2	38.6	43.9	55.5	66.3	66.0	67.0	69.0	74.5	61.4	76.1
28-Feb	75.2	74.3	75.5	73.5	71.7	72.8	73.4	74.5	69.2	63.3	52.2	46.4	45.0	41.2	40.4	38.3	41.7	43.0	46.1	48.9	53.0	55.1	56.8	57.7	57.9	75.5
29-Feb	60.5	63.9	66.1	68.0	69.5	69.5	70.3	71.1	72.4	72.5	70.9	70.9	70.0	68.7	69.1	69.2	69.3	70.4	70.8	72.1	72.8	69.5	69.8	70.3	69.5	72.8
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Conklin - February 2024





Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Speed (WS) - km/h

Conklin - February 2024

Maximum Speed: 18 km/h on Feb 28 12:00	Maximum Daily Speed Average: 9.9 km/h on Feb 23	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 2 08:00	Minimum Daily Speed Average: 0.2 km/h on Feb 20	Hours of Data: 693
Maximum Diurnal Speed Average: 4.0 km/h at hour 15	Minimum Diurnal Speed Average: 0.9 km/h at hour 1	Hours of Missing Data: 3
Monthly Average Velocity: 1.9 km/h 292.9 deg	Percentiles: P ₁ = 0 P ₁₀ = 1 Q ₁ = 3 Median = 5 Q ₃ = 9 P ₉₀ = 12 P ₉₉ = 16	Percent Operational Time: 99.6

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	SSE11	SSE9	SSE9	SSE8	SSE10	SSE9	SSE8	S9	S7	S6	SSW9	S10	S9	SSW8	S6	S6	SSE2	S1	SSE2	SSE2	SSE3	S3	S4	S6	S6.4	SSE11	
2-Feb	SSE4	S2	S1	SSE2	SE3	SSE1	S1	WSW0	NNW1	SSE2	SSE1	NW1	NNE3	ENE3	NE3	ENE4	N6	NNW4	NW2	NNW0	WNW0	NW1	NNW1	SSE1	ENE0.4	N6	
3-Feb	S1	NNW1	S1	NW2	NW5	NW4	NNW1	NNW2	NNW5	NW8	NW12	NNW14	NNW14	NNW13	NW14	NNW15	NNW14	NNW11	NNW7	N8	NNW4	N4	N4	NNW1	NNW6.7	NNW15	
4-Feb	NW2	UO	S1	NNW1	SSW2	WNW2	NNW2	NNW1	NNW1	N1	NNW3	WNW1	ESE3	SE4	NE3	N3	NNW3	NNW2	NNW2	NNW1	SSW2	S2	NW1	NNW3	NNW0.8	SE4	
5-Feb	NNW3	NNW1	WSW1	NNW3	NNW4	NNW3	NNW3	NNW2	N4	N4	NNE4	N6	NNE8	NNE7	NNE10	NNE5	NNE8	N5	N7	NNE5	N6	N4	NNW4	NNW6	N4.5	NNE10	
6-Feb	N6	NNE2	NW1	N1	N1	E3	ESE6	ESE6	ESE6	ESE5	ESE6	ENE5	E4	E6	ESE6	ESE6	ESE6	ESE5	ESE5	E4	ESE5	ESE5	ESE5	ESE3	E3.8	ESE6	
7-Feb	ESE3	ESE3	SE4	N1	NW4	NNW4	NNW4	NNW5	NNW4	N3	NNW4	NNW3	N4	NNW3	N1	N3	N4	N5	NNE4	N5	NNE4	NNE3	N3	N3	N2.8	NNW5	
8-Feb	N3	NNE3	ESE1	NNE1	NNE1	NNE1	SE3	SSW1	SW2	W2	SSW3	SSW3	SW5	W3	NNW4	NE2	NNE2	E2	ESE3	SE3	SSE2	SE3	S2	WSW5	S0.3	SW5	
9-Feb	WNW7	NW10	NW9	NW8	NW8	NW6	WNW5	WNW5	WNW4	WNW5	NW8	WNW7	WNW7	WNW8	NW8	NW8	WNW6	WNW4	W6	W6	W7	WSW7	WSW6	W7	WNW6.3	NW10	
10-Feb	W6	SW6	SSW7	SSW7	SSW8	S7	S5	SE4	ESE3	ESE3	ESE3	S5	SSW10	SSW11	SSW12	S10	S11	SSW11	SW10	SW12	SW12	WSW7	WNW7	WNW7	SSW6.2	SW12	
11-Feb	WNW8	NNW10	W11	W11	WSW9	SW8	SW8	SW7	WNW10	WNW8	WNW9	WNW9	WNW9	WNW8	WNW9	WNW8	WNW5	W4	SE1	S2	SSE2	SSE3	S4	SSE5	W5.3	W11	
12-Feb	SSE5	SSE6	S6	SSE4	SSW9	S7	S4	SSE5	ESE3	S6	SW12	SW7	W10	NNW11	NNW10	WNW9	WNW7	W4	WNW4	WNW4	WNW7	NW7	NW9	NW10	WSW3.8	SW12	
13-Feb	NNW14	NW14	NW14	NW14	NW14	NNW13	NW13	NNW10	NNW9	NNW12	NNW13	NNW15	NNW12	NW9	NW7	N5	ESE3	SE1	S2	S3	SW2	NW4	NW3	NW2	NNW7.8	NNW15	
14-Feb	NNW9	N10	N12	NNW10	NNW8	NNE9	NNE6	N6	NNE6	NNE6	NNE7	NNE6	NNE6	N5	W4	W3	NW4	NNW6	NNW6	NNW3	W0	S1	S1	UO	N5.1	N12	
15-Feb	SW1	SSW1	SSW1	NNW2	NNW3	NW4	NW4	NW3	NW1	SSE4	W4	WNW7	WNW9	W11	W10	W12	W9	W8	W5	SW4	SSW4	S5	SSW4	SSW6	SW8	W4.0	W12
16-Feb	SW4	WSW7	SW8	WSW7	W10	W7	SSW6	SSW6	SW6	SSW7	SW4	WNW6	W9	W9	W12	W10	WSW9	SW11	WSW14	WSW14	WSW14	WSW11	W8	WNW6	WSW7.8	WSW14	
17-Feb	WNW5	NW5	WNW4	WNW6	NW6	WNW6	WNW5	NW5	NW5	WNW5	WNW6	WNW5	WNW5	WNW5	WNW5	NW4	W4	SW2	S3	SSE2	SSE4	SW1	S2	ENE0	WNW3.2	WNW6	
18-Feb	SSE3	SSE3	SSE1	WSW1	S3	S1	SSW1	SSE2	S2	SSE2	W1	NNW3	NNE1	SE5	N3	N6	NNE7	NNW3	NNW2	NNW4	NNW3	NNW4	UO	NNW3	N0.6	NNE7	
19-Feb	NW1	W0	SSE1	S1	S1	S3	SSW1	SSW3	SSW4	SSW2	WNW4	WNW5	WNW5	NW4	WNW5	NW5	WNW4	NNW3	NNW5	NNW3	NNW1	N1	NNW2	S1	WNW1.6	WNW5	
20-Feb	ENE1	N1	NNW2	NW1	NNW1	SSW1	S1	NNW2	SE1	SSW1	N2	S2	SW2	SSE2	E1	E4	E3	SSE1	NNW1	NW1	S0	W0	SSW0	SSE3	SE0.2	E4	
21-Feb	S3	SSW4	S5	SSW3	SW3	W7	W9	W9	W8	WNW7	W8	W9	WNW9	W9	W10	W9	WSW9	WSW7	SW5	SW8	WSW10	WSW9	WSW6	SW6	WSW6.4	W10	
22-Feb	WSW5	WNW6	WSW3	SE5	SSW4	W6	W6	S5	W1	WNW7	NW10	WNW8	WNW9	WNW9	WNW8	WNW8	WNW6	W4	WNW3	NW4	WNW4	WNW3	SE3	ESE0	WNW4.0	NW10	
23-Feb	E2	SSE4	S6	SSW8	SW11	SW12	SW14	SW12	SW13	WSW16	WSW15	W14	NNW15	W16	W15	W14	W9	W12	WSW10	WSW13	W13	W9	WNW10	NNW10	WSW9.9	W16	
24-Feb	WNW8	WNW8	W10	W10	NNW10	NW12	NNW16	NNW15	NNW13	NNW16	NNW12	NNW7	NW10	NW12	NW10	NW9	NNW8	N4	ENE6	NE4	E3	NNE2	W1	N1	NW7.4	NNW16	
25-Feb	SW1	SSW0	NNW2	N2	NE2	NE3	NNE3	N4	N5	NNE6	NNE8	NNE9	NNE9	NNE9	NNE11	NNE11	NNE12	NE13	NE12	NNE12	NNE11	NNE12	NNE14	NNE15	NNE13	NNE7.7	NNE15
26-Feb	NNE15	NNE13	N13	N13	N11	N11	N9	N11	NNW13	N13	N12	N10	N9	NNW9	NNW11	N11	N8	NNW5	NW2	NNW2	S3	SSW3	SSW2	N8.1	NNE15		
27-Feb	SSW3	SE1	SSW3	SSW2	SSW4	SSW3	SSW3	SSW3	S4	NW2	WNW8	WNW9	WNW7	WNW7	WNW7	WNW7	WNW6	NW3	WSW0	S3	S5	S5	S4	SSE5	WSW2.6	WNW9	
28-Feb	SSE5	SSE4	SE3	SSE2	S2	S2	SSW1	S2	SE2	SSE10	SSE17	SSE18	SSE17	SSE15	SE14	SSE15	SE14	SSE12	SE12	SE12	SE11	SE11	SE12	ESE10	SE9.2	SSE18	
29-Feb	ESE12	ESE12	ESE13	ESE13	ESE16	ESE15	ESE13	ESE10	ESE11	ESE11	ESE11	ESE7	ENE4	ENE4	NNE4	NE3	N3	NW4	NW4	NNW3	NW4	NW5	NW5	NW4	ESE5.2	ESE16	

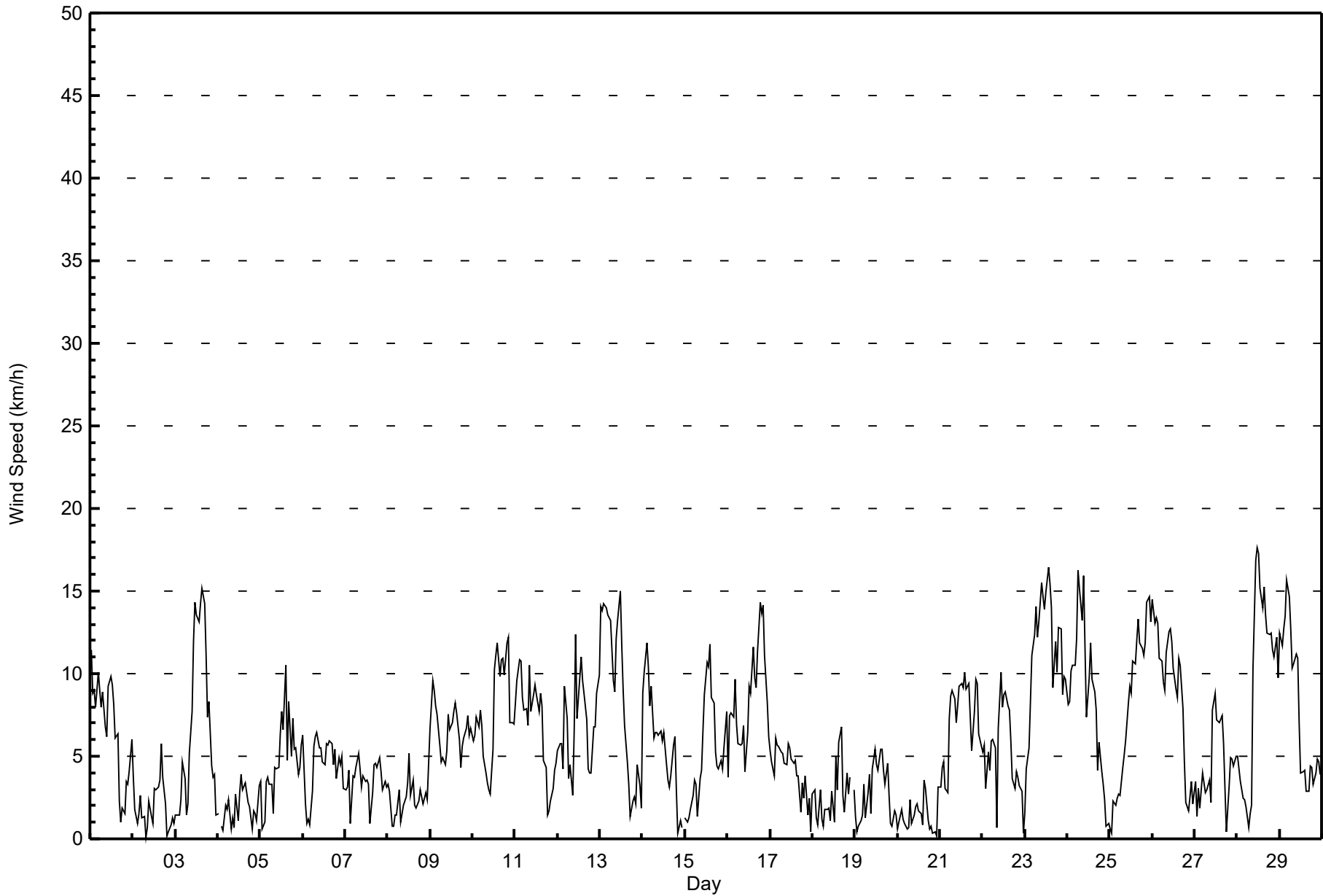
WNW0.9	NNW1.1	WSW1.2	NNW1.4	W1.8	W1.5	W1.4	W1.1	NW1.4	NW1.8	NNW3.0	NW3.4	NNW3.5	NNW3.4	NNW4.0	NW3.2	NW2.7	NNW2.0	NNW1.2	W1.3	WSW1.6	W1.2	W1.1	NNW1.3	Diurnal Average
NNE15	NW14	NW14	NW14	ESE16	ESE15	NNW16	NNW15	NNW13	NNW16	SSE17	SSE18	SSE17	W16	W15	SSE15	NNW14	SSE12	WSW14	WSW14	WSW14	NNE14	NNE15	NNE13	Diurnal Maximum

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Conklin - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Conklin - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	375	54.11	54.11
6 - 11	236	34.05	88.17
12 - 19	82	11.83	100.00
20 - 28	0	0.00	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 693

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Conklin - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	32	18	7	7	9	18	16	34	45	31	13	7	16	28	36	58	375
6 - 11	18	18	1	1	1	13	2	9	14	15	13	14	33	52	19	13	236
12 - 19	5	8	2	0	0	7	5	6	0	1	7	6	8	1	8	18	82
20 - 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	55	44	10	8	10	38	23	49	59	47	33	27	57	81	63	89	693

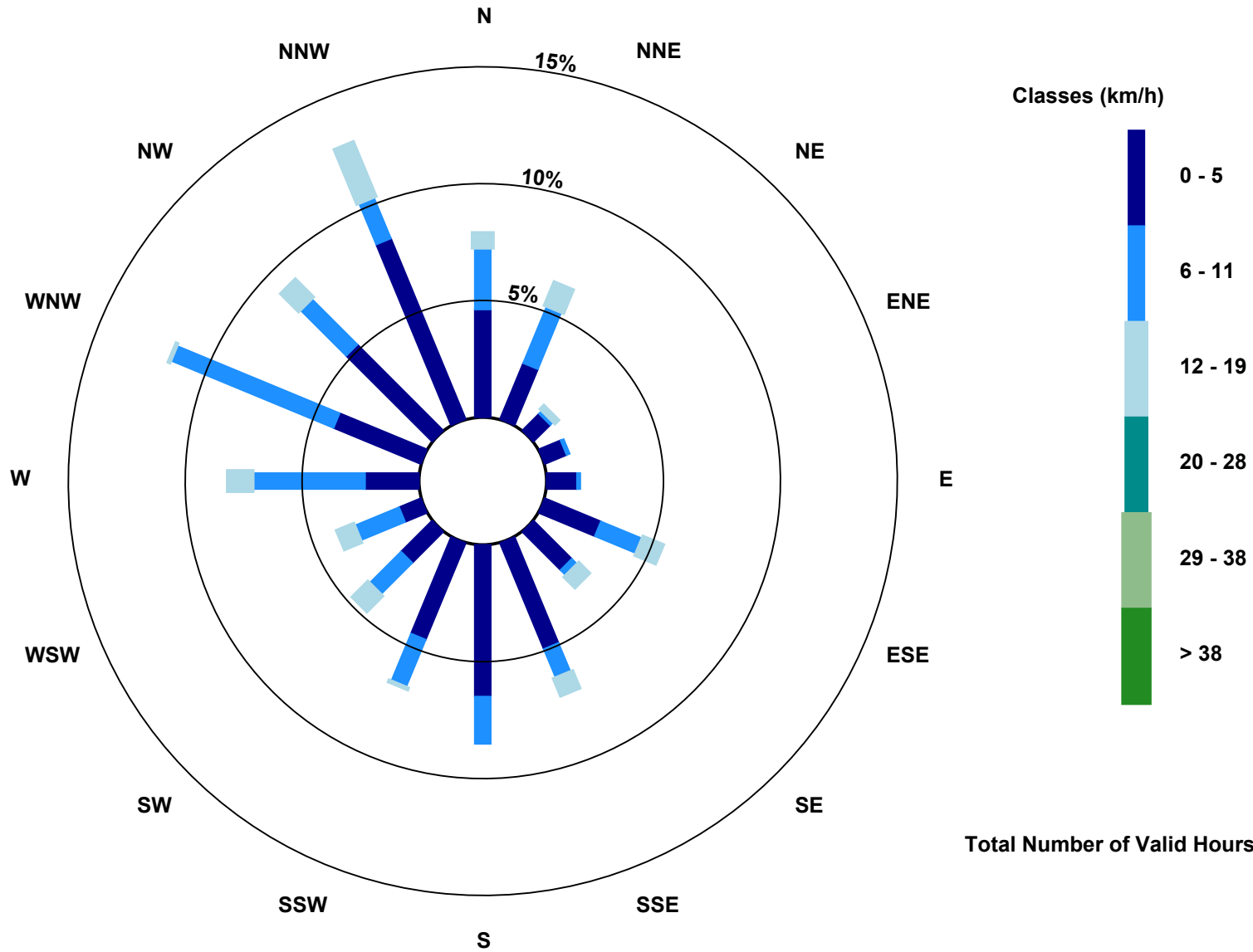
Total Number of Valid Hours: 693

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Conklin





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Conklin - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 23 14:00 Minimum Value: 0 km/h on Feb 15 04:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 5																	Hours in Service: 696 Hours of Data: 693 Hours of Missing Data: 3 Hours of Calibration: 0 Percent Operational Time: 99.6								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	3	2	2	2	3	2	2	2	3	2	3	2	3	2	2	2	2	1	1	1	1	1	1	2	3
2-Feb	2	1	1	1	0	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	2
3-Feb	1	1	1	2	2	1	1	1	1	3	4	5	5	4	5	5	5	4	3	3	1	1	1	1	5
4-Feb	2	UO	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	2
5-Feb	1	1	1	1	1	1	1	1	1	1	1	2	3	3	3	2	3	1	2	2	2	2	1	1	3
6-Feb	2	2	1	1	1	2	2	2	2	2	2	1	2	2	2	2	1	2	1	1	1	1	1	1	2
7-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-Feb	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2
9-Feb	3	4	4	3	3	2	2	2	2	2	3	3	3	3	4	3	3	2	2	2	2	2	2	2	4
10-Feb	2	2	2	1	2	1	1	1	1	1	1	3	3	3	3	3	3	3	3	4	4	3	3	3	4
11-Feb	4	4	4	4	3	3	2	3	4	3	4	4	3	3	3	3	2	2	1	1	1	1	1	1	4
12-Feb	1	1	2	1	3	2	1	1	1	3	4	2	4	5	4	4	4	2	1	1	3	3	3	4	5
13-Feb	5	5	5	5	5	4	4	3	3	5	4	4	4	3	3	3	2	1	1	1	1	1	1	1	5
14-Feb	4	3	4	4	2	3	2	2	2	2	2	2	1	1	1	1	2	1	2	2	1	1	1	1	4
15-Feb	1	2	1	0	1	1	1	1	1	3	3	4	5	4	4	4	3	2	1	2	1	1	2	3	5
16-Feb	3	2	2	3	4	3	2	1	1	1	2	3	4	4	5	4	3	4	4	4	5	3	4	2	5
17-Feb	2	2	1	2	2	2	2	2	2	2	2	2	2	1	1	1	2	1	1	1	1	1	1	1	2
18-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	UO	2	2
19-Feb	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	2
20-Feb	1	1	1	1	1	1	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
21-Feb	1	2	1	2	2	3	3	3	4	3	3	3	4	4	5	4	4	2	1	2	3	3	2	2	5
22-Feb	2	2	2	1	3	3	3	1	2	3	4	3	4	4	3	3	3	2	1	1	1	1	1	2	4
23-Feb	1	1	1	2	3	3	4	3	3	4	5	7	7	7	7	6	3	5	4	4	6	4	4	7	
24-Feb	3	4	4	4	5	5	5	5	4	5	4	3	4	4	4	3	3	2	2	1	1	1	1	1	5
25-Feb	1	1	1	1	1	1	1	1	1	2	2	3	3	4	4	4	4	4	4	4	4	5	5	5	5
26-Feb	5	5	4	4	4	4	3	3	3	4	4	4	4	3	3	4	4	2	1	0	1	1	1	1	5
27-Feb	2	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	2	1	1	1	1	2	1	1	3
28-Feb	1	1	1	1	1	0	1	1	1	4	5	4	4	5	4	4	4	4	3	4	3	3	3	3	5
29-Feb	3	3	4	4	5	5	4	3	3	3	4	2	3	2	2	1	1	1	2	1	2	1	1	1	5
																	Diurnal Maximum								
UO - Unstable Operation																									



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Conklin - February 2024

Direction of Maximum Speed: 153 deg on Feb 28 12:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 255.3 deg on Feb 23	Hours of Data: 693
Direction of Minimum Speed: 255 deg on Feb 2 08:00	Direction of Minimum Daily Speed Average: 0.2 deg on Feb 20
Direction of Minimum Speed: 255 deg on Feb 2 08:00	Hours of Missing Data: 3
Monthly Average Direction: 292.9 deg	Percent Operational Time: 99.6

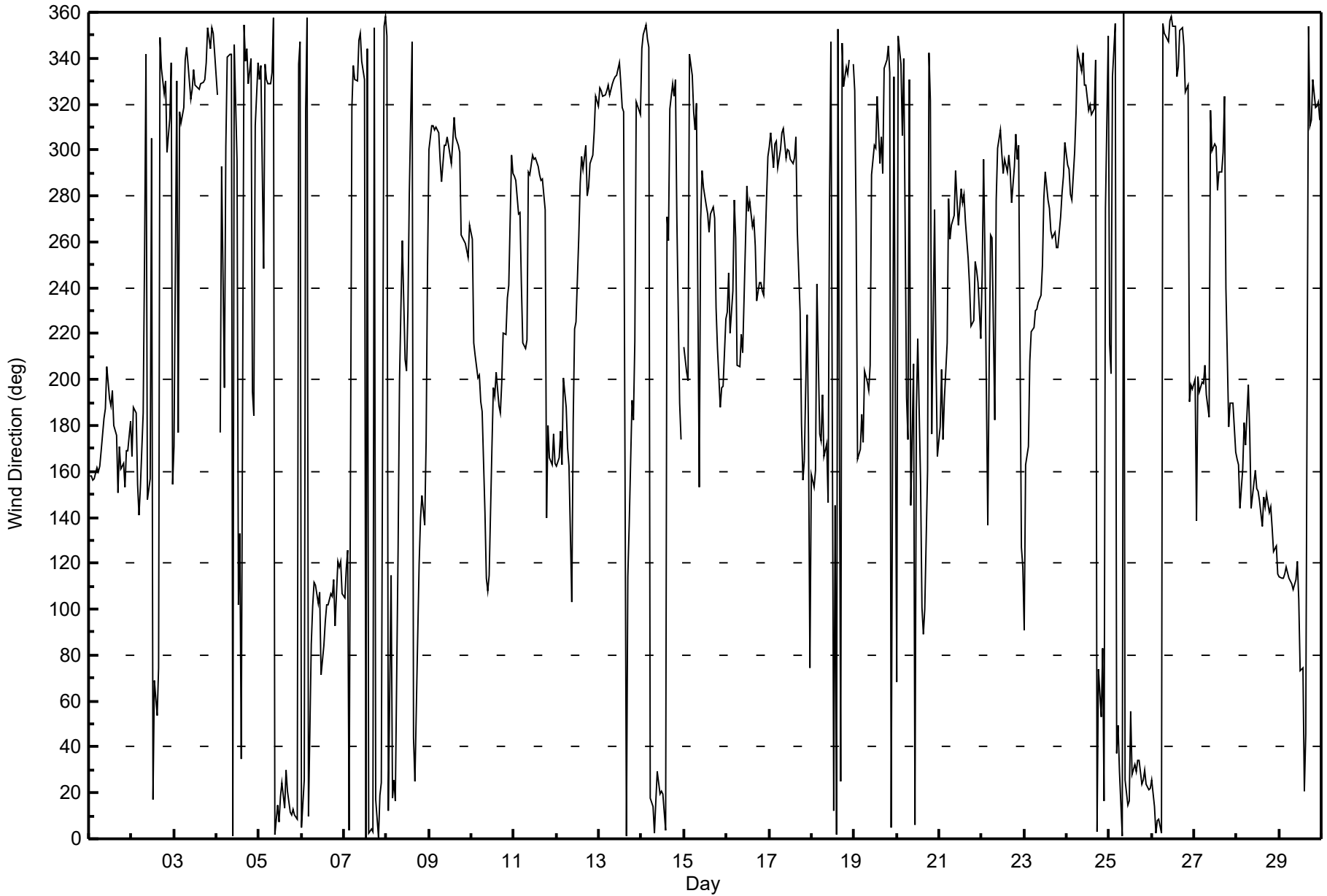
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	158	158	156	157	162	160	162	169	183	187	206	191	188	195	180	176	151	171	161	164	153	169	169	182	172.5
2-Feb	167	188	186	154	141	153	186	255	342	148	157	305	17	69	54	74	349	336	325	330	299	313	338	154	60.6
3-Feb	171	330	177	317	312	319	339	345	338	322	326	335	328	327	326	329	329	331	338	353	344	353	351	342	331.2
4-Feb	324	UO	177	293	197	302	340	342	342	1	346	296	102	133	35	354	338	344	329	340	195	184	310	338	344.6
5-Feb	331	337	248	337	331	329	333	357	2	15	7	18	24	14	30	21	11	11	13	10	8	337	347	3.6	
6-Feb	5	26	317	358	10	85	102	112	111	102	108	71	84	95	102	102	107	105	113	93	121	118	121	107	97.2
7-Feb	105	117	126	4	318	337	331	330	348	351	339	331	0	344	2	4	3	353	17	0	19	24	354	358	358.6
8-Feb	350	12	115	17	26	16	127	200	231	261	208	204	230	281	347	44	25	89	120	140	149	137	173	249	190.8
9-Feb	300	311	311	309	310	308	295	286	302	302	306	302	294	303	314	306	302	299	263	261	260	256	253	267	294.0
10-Feb	261	216	210	201	202	190	186	142	114	108	115	171	197	193	203	188	185	199	221	220	236	241	298	290	207.0
11-Feb	289	287	272	273	242	216	214	217	290	289	298	296	297	293	289	287	288	274	140	180	166	163	176	163	268.0
12-Feb	163	166	177	163	201	188	170	162	103	182	222	225	262	285	297	292	302	280	284	294	298	308	323	319	252.5
13-Feb	327	326	323	324	326	328	324	329	331	332	333	338	329	318	317	1	114	137	191	182	216	321	317	316	326.9
14-Feb	344	350	354	348	345	18	14	2	17	30	19	21	19	3	271	261	318	329	323	331	271	190	174	UO	354.6
15-Feb	214	203	200	341	333	316	309	320	153	270	291	284	276	272	264	272	275	271	231	213	188	196	197	227	260.3
16-Feb	229	246	220	239	278	262	206	205	219	211	236	285	273	278	267	270	258	234	242	242	238	237	278	297	249.5
17-Feb	302	307	292	302	304	293	300	307	309	296	300	299	296	294	296	306	265	230	181	156	165	228	175	75	290.0
18-Feb	158	153	160	242	176	173	193	166	172	147	278	347	12	145	2	352	25	346	328	336	333	339	UO	337	2.4
19-Feb	326	269	166	169	185	173	204	199	195	206	290	302	301	323	294	306	290	336	339	345	334	5	332	189	290.5
20-Feb	68	350	338	307	340	192	174	331	145	207	6	187	218	156	101	89	100	160	342	322	176	274	208	167	132.3
21-Feb	179	205	174	192	216	279	261	267	271	291	278	267	283	277	281	269	253	240	223	226	252	247	242	218	255.4
22-Feb	246	296	253	137	208	263	262	183	278	301	309	298	290	296	291	298	291	277	293	307	296	302	127	119	281.7
23-Feb	91	163	171	208	221	223	230	230	233	237	249	279	290	278	275	265	262	264	258	257	271	281	289	303	255.3
24-Feb	294	291	281	278	299	316	344	341	334	342	328	328	317	319	315	318	339	3	74	53	83	16	274	350	325.1
25-Feb	216	203	332	355	37	49	29	1	360	26	15	17	56	28	32	30	34	34	24	26	30	24	21	22	25.7
26-Feb	26	14	2	8	8	2	355	351	350	347	357	358	354	354	332	336	352	353	345	325	328	190	197	196	356.3
27-Feb	200	139	201	194	199	198	206	193	183	317	299	303	301	283	290	290	299	323	240	179	190	190	190	168	249.6
28-Feb	166	163	144	161	181	171	198	177	144	150	161	153	151	147	136	149	145	150	142	145	136	125	128	115	145.6
29-Feb	114	113	113	115	119	114	112	111	109	113	121	104	73	75	20	46	354	310	313	331	319	319	321	313	101.5
300.1 292.5 258.2 282.8 264.4 277.2 280.2 273.8 306.6 305.1 300.3 306.7 301.2 299.1 302.5 306.0 317.6 299.0 284.0 267.2 248.9 268.0 280.8 287.9																									
Diurnal Average																									

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction (WD) - deg
Conklin - February 2024





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Conklin - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 104 deg on Feb 7 15:00 Minimum Value: 8 deg on Feb 18 22:00 Percentiles: P ₁ = 12 P ₁₀ = 17 Q ₁ = 20 Median = 28 Q ₃ = 39 P ₉₀ = 69 P ₉₉ = 93																			Hours in Service: 696 Hours of Data: 693 Hours of Missing Data: 3 Hours of Calibration: 0 Percent Operational Time: 99.6						
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	16	17	14	16	18	15	16	17	35	23	21	20	20	23	29	25	66	80	68	66	13	20	15	16	80
2-Feb	31	47	46	18	16	63	40	95	38	21	69	85	50	56	71	49	18	18	45	98	72	73	79	82	98
3-Feb	76	71	39	68	24	21	48	35	17	18	19	20	22	21	22	21	21	18	17	17	13	18	10	54	76
4-Feb	45	UO	63	77	20	50	21	72	70	79	25	78	48	64	44	24	53	64	63	98	37	62	60	12	98
5-Feb	18	92	69	20	16	17	26	61	20	21	26	24	25	28	23	29	21	20	20	22	21	30	20	15	92
6-Feb	20	22	66	57	81	65	26	21	20	27	25	34	36	31	27	22	19	24	16	35	14	16	16	28	81
7-Feb	30	42	16	68	16	17	14	19	26	34	27	35	40	39	104	44	23	21	25	20	30	39	27	25	104
8-Feb	30	38	85	92	51	52	28	89	70	61	66	40	38	58	42	58	48	25	28	22	10	25	39	29	92
9-Feb	31	25	28	30	27	26	31	32	29	30	31	33	33	31	29	29	30	31	20	24	23	21	23	23	33
10-Feb	23	17	17	17	15	15	18	20	14	23	21	42	20	19	20	20	17	19	24	21	27	37	35	35	42
11-Feb	35	33	28	26	29	32	16	33	34	37	33	35	32	35	33	33	30	29	74	29	21	18	14	17	74
12-Feb	15	19	24	27	17	16	31	25	29	37	22	21	30	35	33	34	30	27	25	23	30	26	22	21	37
13-Feb	20	20	19	19	19	19	21	19	20	22	21	21	25	29	32	44	55	66	30	15	58	23	19	27	66
14-Feb	20	18	19	22	24	23	24	20	24	27	29	28	26	43	43	47	42	18	16	14	68	44	69	UO	69
15-Feb	69	75	52	32	17	19	23	81	29	63	36	37	34	33	27	35	30	20	24	24	16	22	22	31	81
16-Feb	56	28	20	30	31	36	24	16	18	15	46	36	32	35	29	31	29	21	19	19	18	16	40	33	56
17-Feb	29	27	25	25	28	30	31	25	27	38	30	30	38	35	30	25	26	49	18	24	22	72	44	70	72
18-Feb	16	39	75	70	17	78	85	57	63	66	81	67	90	41	84	31	22	26	64	17	49	8	UO	48	90
19-Feb	60	70	66	17	71	20	59	23	16	61	36	38	46	63	35	34	32	43	19	34	88	88	65	56	88
20-Feb	49	70	17	61	86	83	85	86	77	77	68	57	77	70	92	35	28	77	71	77	86	82	71	16	92
21-Feb	35	30	26	71	66	35	29	25	33	32	34	31	34	34	35	33	26	19	20	18	24	23	34	20	71
22-Feb	39	32	63	15	55	46	46	29	92	32	27	34	35	33	35	33	30	24	26	23	28	29	32	99	99
23-Feb	72	22	22	22	19	19	18	19	18	19	25	33	33	33	30	27	24	28	24	23	34	33	33	30	72
24-Feb	31	33	30	29	31	27	17	18	21	21	24	36	31	25	29	24	26	32	34	43	35	37	52	71	71
25-Feb	93	97	30	31	35	46	43	24	19	28	27	33	37	28	29	24	22	24	24	22	23	23	22	23	97
26-Feb	23	23	22	22	23	22	21	19	20	22	23	26	32	37	34	24	23	17	10	28	38	15	16	15	38
27-Feb	12	82	27	12	11	13	33	17	20	100	33	35	39	41	43	36	35	36	75	15	14	14	11	21	100
28-Feb	17	20	16	17	18	28	73	33	42	22	21	19	17	22	18	20	16	16	15	14	16	17	15	20	73
29-Feb	19	21	20	20	17	20	20	20	21	21	20	27	71	55	61	68	56	31	26	26	20	19	20	25	71
																			93 97 85 92 86 83 85 95 92 100 81 85 90 70 104 68 66 80 75 98 88 88 79 99						
Diurnal Maximum																									
UO - Unstable Operation																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS22
JANVIER
FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - JANVIER (AMS22)
FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2(ppb) Average	663	33	33	100	5	0	1.3	0
TRS(ppb) Average	662	34	34	100	0.7	0	0.4	0
THC(ppm) Average	659	33	37	99.43	2.3	-	2.1	-
NMHC(ppm) Average	659	33	37	99.43	0.031	-	0.005	-
CH4(ppm) Average	659	33	37	99.43	2.3	-	2.1	-
O3 (ppb) Average	663	33	33	100	49.6	0	43.5	-
NO2 (ppb) Average	661	35	35	100	11.1	0	5.3	-
NO (ppb) Average	661	35	35	100	8.2	-	1.3	-
NOX (ppb) Average	661	35	35	100	13.4	-	6.3	-
PM2.5 (ug/m3) Average	694	2	2	100	20.9	0	4.9	0
Temperature 2 m (C) Average	696	0	0	100	10.1	-	3.4	-
Relative Humidity (%) Average	696	0	0	100	96.8	-	90	-
Wind Speed 10 m (km/h) Average	695	0	1	99.86	18	-	12	-
Wind Speed 20 m (km/h) Average	690	0	6	99.14	24	-	16	-
Wind Direction 10 m (deg) Average	695	0	1	99.86	-	-	-	-
Wind Direction 20 m (deg) Average	690	0	6	99.14	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - JANVIER (AMS22)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	663	0.42	0.7	-	0	0	0	0.2	0.5	1.1	5
TRS (ppb) Average	662	0.27	0.1	-	0.1	0.2	0.2	0.3	0.3	0.3	0.7
THC (ppm) Average	659	2.06	0	-	2	2	2	2.1	2.1	2.1	2.3
NMHC(ppm) Average	659	0.001	0.003	-	0	0	0	0	0	0	0.031
CH4(ppm) Average	659	2.06	0	-	2	2	2	2.1	2.1	2.1	2.3
O3 (ppb) Average	663	32.5	10.4	-	3	18.2	25.6	35.1	40.4	44.4	49.6
NO2 (ppb) Average	661	1.85	2	-	0	0.2	0.5	1.2	2.6	4.4	11.1
NO (ppb) Average	661	0.32	0.7	-	0	0	0	0.1	0.3	0.8	8.2
NOX (ppb) Average	661	2.17	2.3	-	0	0.3	0.6	1.3	3	5.2	13.4
PM2.5 (ug/m3) Average	694	2.69	1.8	-	0.3	0.8	1.5	2.5	3.4	4.5	20.9
Temperature 2 m (C) Average	696	-8.1	7.8	-	-30	-16.6	-12.7	-7.5	-3	1.7	10.1
Relative Humidity (%) Average	696	69.68	16.5	-	20.3	45.1	58.6	72.8	82.7	88.2	96.8
Wind Speed 10 m (km/h) Average	695	5.6	4	-	0	1	3	5	8	10	18
Wind Speed 20 m (km/h) Average	690	7.7	5	-	0	2	4	7	11	14	24
Wind Direction 10 m (deg) Average	695	-	-	-	-	-	-	-	-	-	-
Wind Direction 20 m (deg) Average	690	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - JANVIER (AMS22)
FEBRUARY 2024

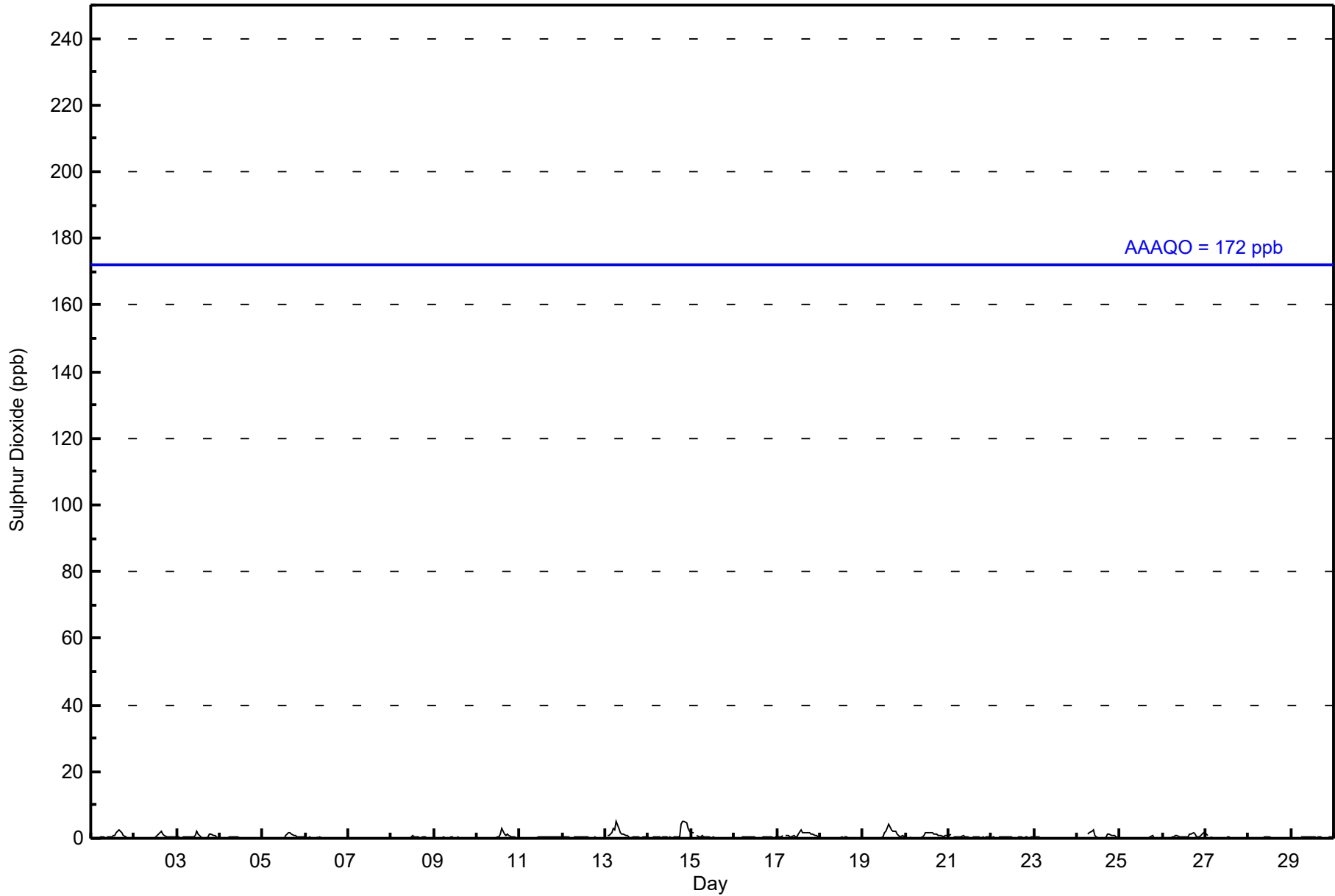
OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
THC/NMHC/CH4	29 Feb 2024 13:00	29 Feb 2024 16:00	4	Maintenance - retention timing adjusted
Wind Speed, Wind Direction	15 Feb 2024 00:00	15 Feb 2024 00:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction 20m	04 Feb 2024 00:00	04 Feb 2024 00:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction 20m	04 Feb 2024 21:00	04 Feb 2024 21:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction 20m	09 Feb 2024 00:00	09 Feb 2024 00:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction 20m	15 Feb 2024 01:00	15 Feb 2024 01:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction 20m	18 Feb 2024 06:00	18 Feb 2024 06:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction 20m	20 Feb 2024 00:00	20 Feb 2024 00:00	1	Flat line in sensor output signal - Sensor frozen



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Janvier - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Janvier - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	663	100.00	100.00
11 - 20	0	0.00	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Janvier - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	63	100	44	27	13	16	18	21	23	73	89	35	45	50	22	19	658
11 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	63	100	44	27	13	16	18	21	23	73	89	35	45	50	22	19	658

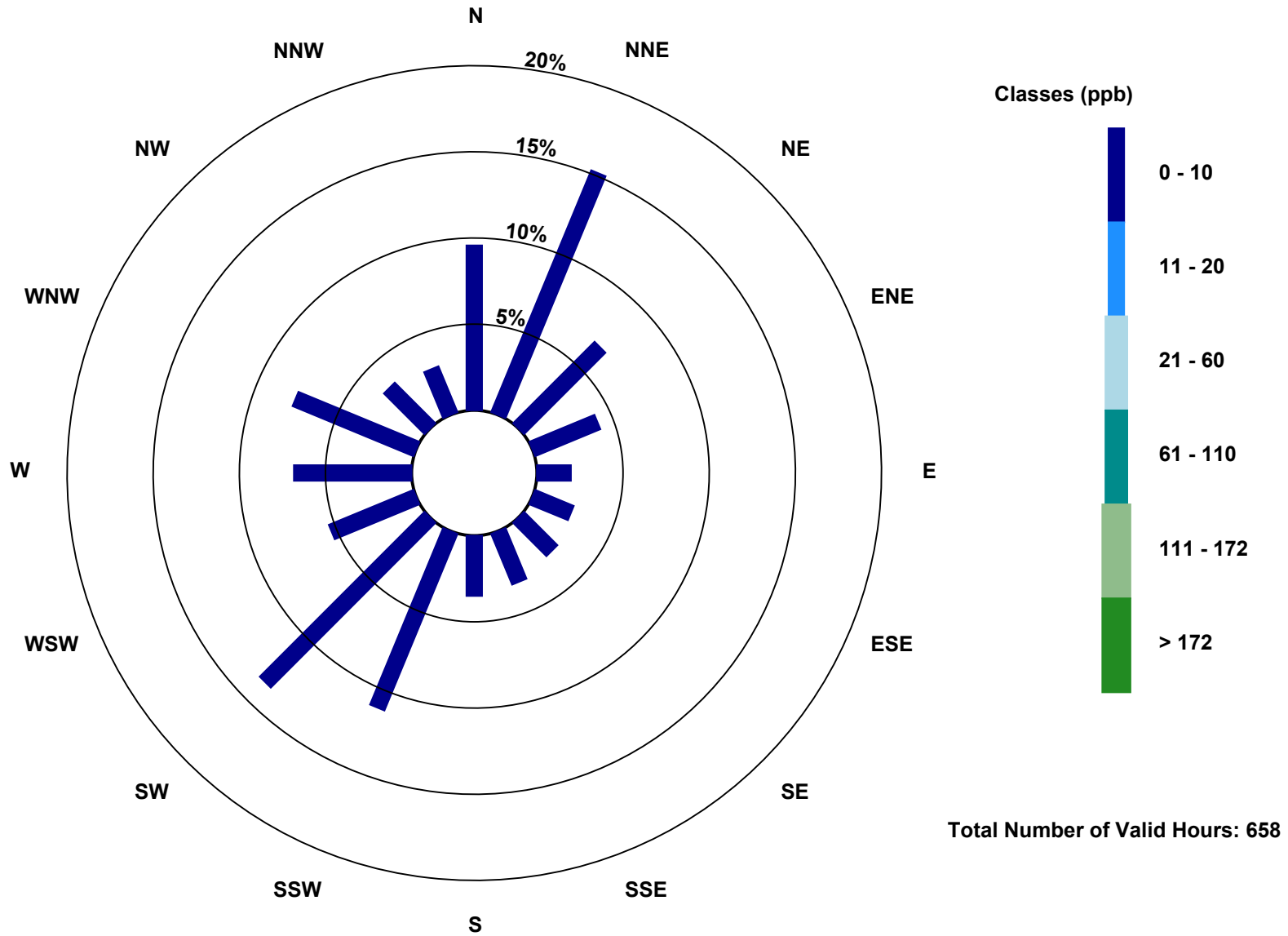
Total Number of Valid Hours: 658

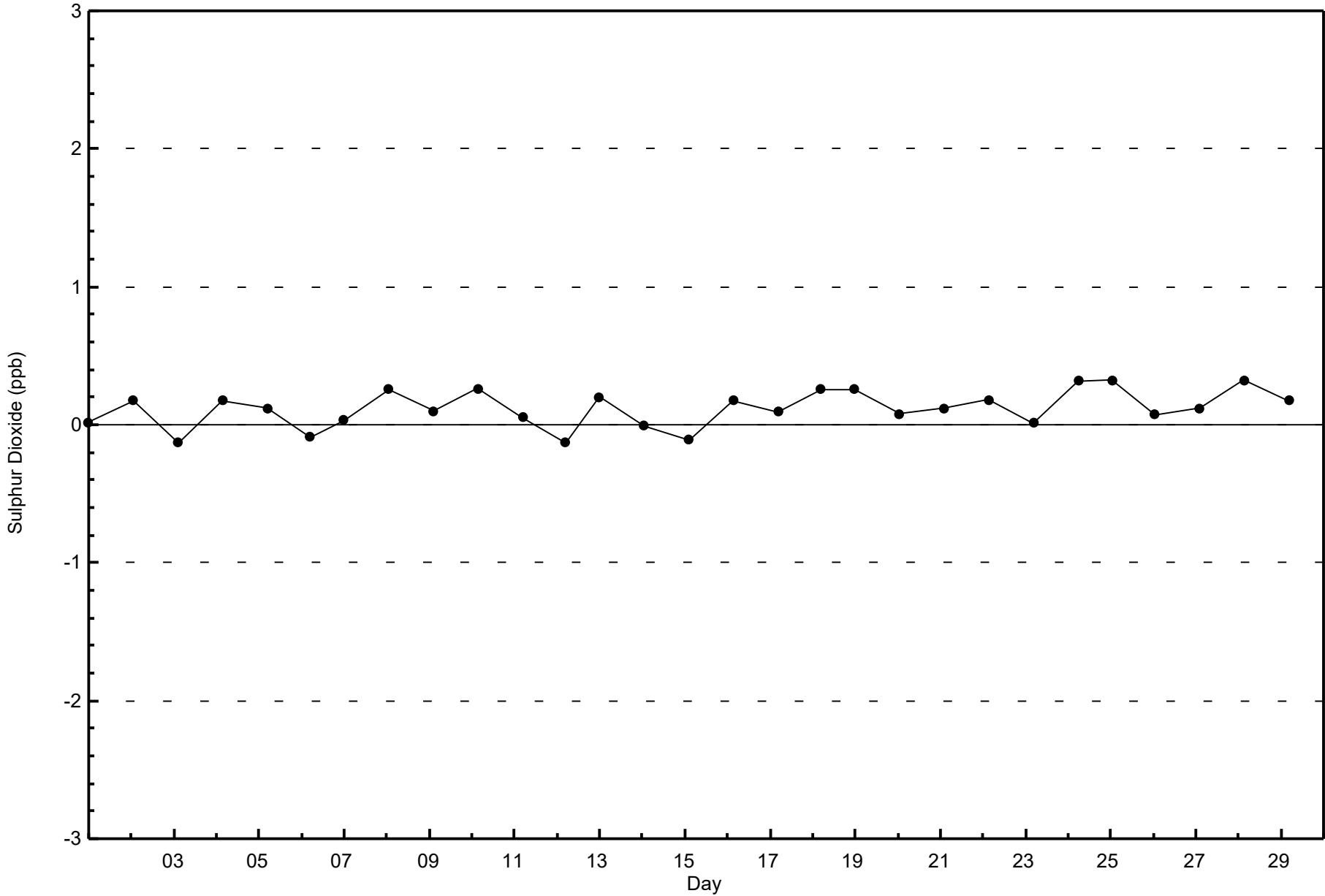
Total Number of Hours: 696

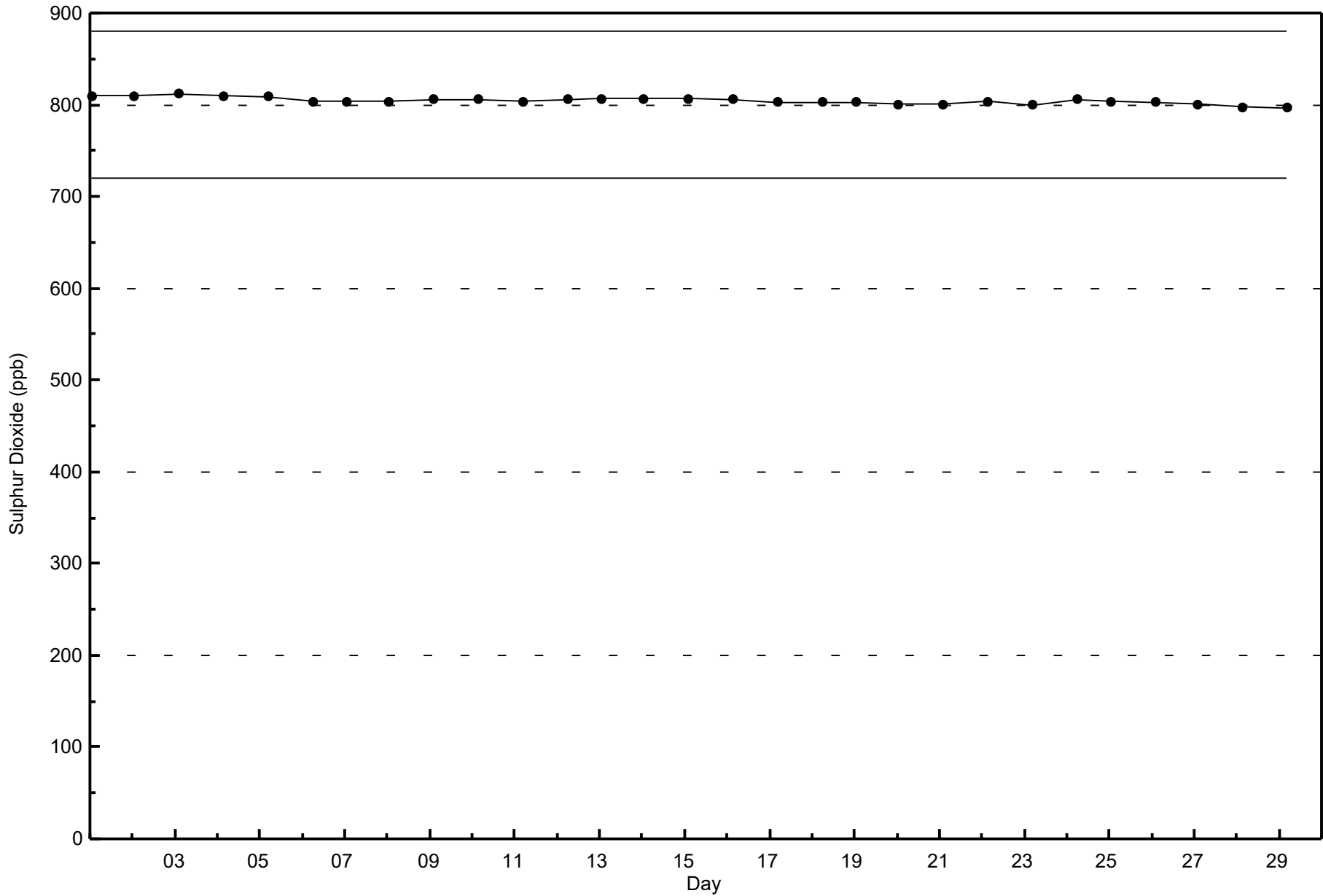


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Janvier

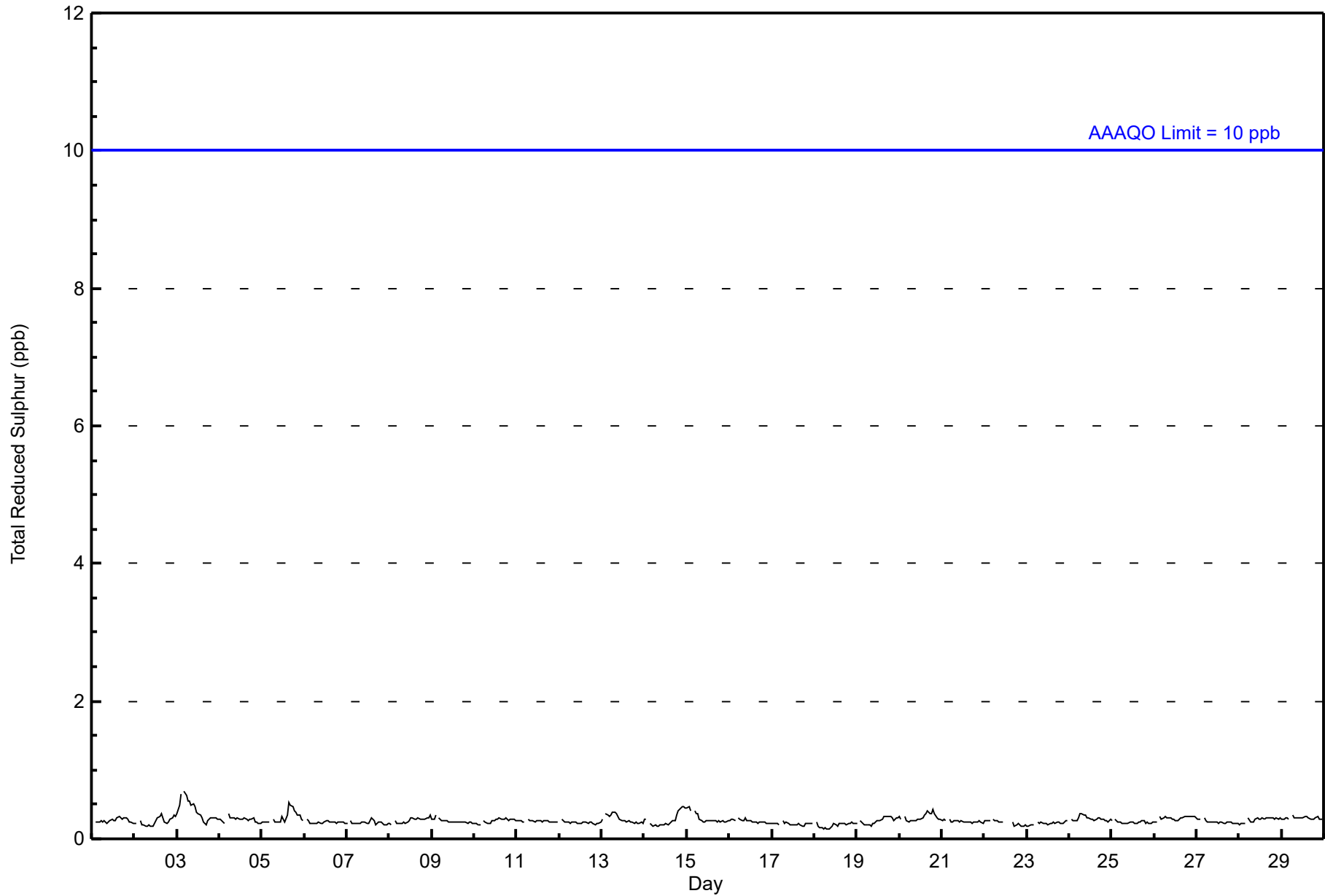








Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:																696													
Maximum Value: 0.7 ppb on Feb 3 05:00		Maximum Daily Average: 0.4 ppb on Feb 3		Hours of Data:																662															
Minimum Value: 0.1 ppb on Feb 18 06:00		Minimum Daily Average: 0.2 ppb on Feb 18		Hours of Missing Data:																34															
Maximum Diurnal Average: 0.3 ppb at hour 3		Minimum Diurnal Average: 0.3 ppb at hour 4		Hours of Calibration:																34															
Monthly Average: 0.27 ppb		Percentiles: P ₁ = 0.2 P ₁₀ = 0.2 Q ₁ = 0.2 Median = 0.3 Q ₃ = 0.3 P ₉₀ = 0.3 P ₉₉ = 0.5		Percent Operational Time:																100.0															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24											
1-Feb	0.2	Z	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3									
2-Feb	0.2	0.2	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3								
3-Feb	0.4	0.5	0.6	Z	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.7							
4-Feb	0.3	0.3	0.2	0.2	Z	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4							
5-Feb	0.2	0.2	0.2	0.2	0.2	Z	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.5							
6-Feb	Z	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3						
7-Feb	0.2	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3					
8-Feb	0.2	0.2	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3					
9-Feb	0.3	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3					
10-Feb	0.2	0.2	0.2	0.2	Z	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3					
11-Feb	0.3	0.3	0.3	0.2	0.2	Z	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3					
12-Feb	Z	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3				
13-Feb	0.3	Z	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4					
14-Feb	0.3	0.3	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3				
15-Feb	0.5	0.5	0.4	Z	0.4	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3				
16-Feb	0.3	0.3	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3				
17-Feb	0.2	0.2	0.2	0.2	0.2	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3			
18-Feb	Z	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2			
19-Feb	0.2	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
20-Feb	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
21-Feb	0.3	0.3	0.3	Z	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3			
22-Feb	0.3	0.3	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.2	0.2	C	C	C	C	C	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3		
23-Feb	0.2	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
24-Feb	Z	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
25-Feb	0.3	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	
26-Feb	0.2	0.2	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
27-Feb	0.3	0.3	0.3	Z	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
28-Feb	0.2	0.2	0.2	0.2	Z	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
29-Feb	0.3	0.3	0.3	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.3																								Diurnal Average											
0.5																								Diurnal Maximum											
Z - zerospan C - Calibration																																			
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																																			





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Reduced Sulphur (TRS) - ppb
Janvier - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	662	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Janvier - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	64	99	44	28	13	16	18	21	23	72	90	34	49	45	22	18	656
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	64	99	44	28	13	16	18	21	23	72	90	34	49	45	22	18	656

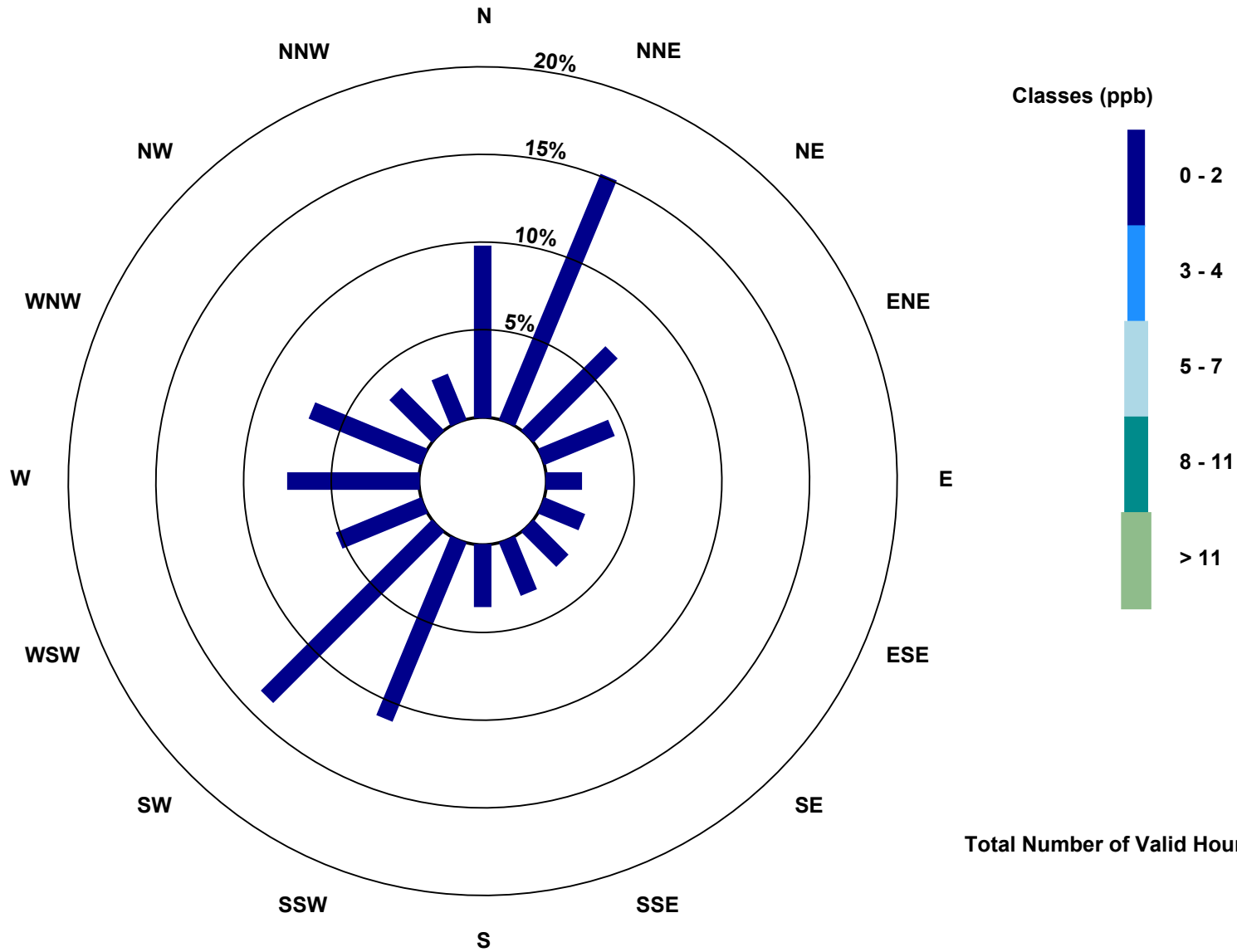
Total Number of Valid Hours: 656

Total Number of Hours: 696

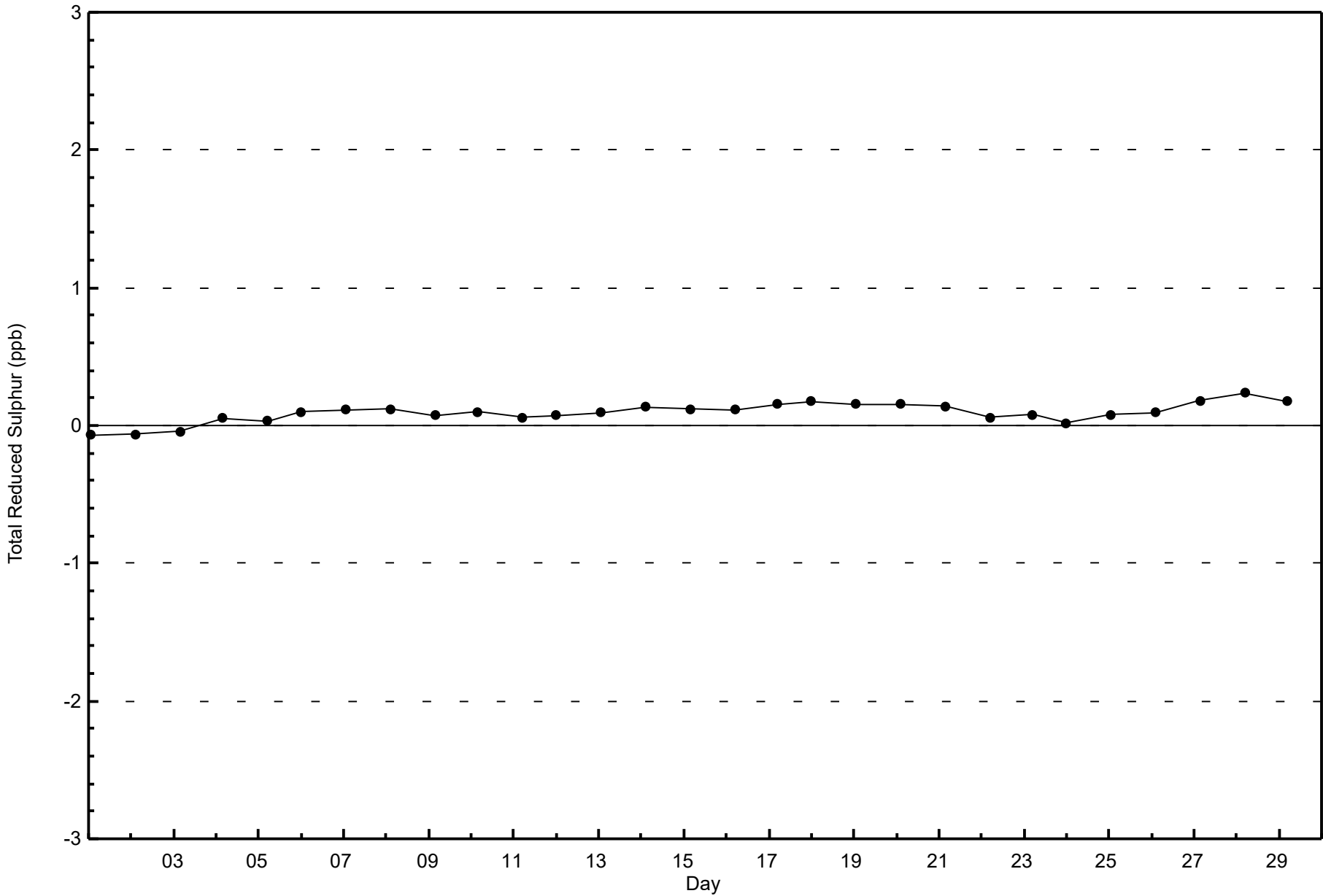


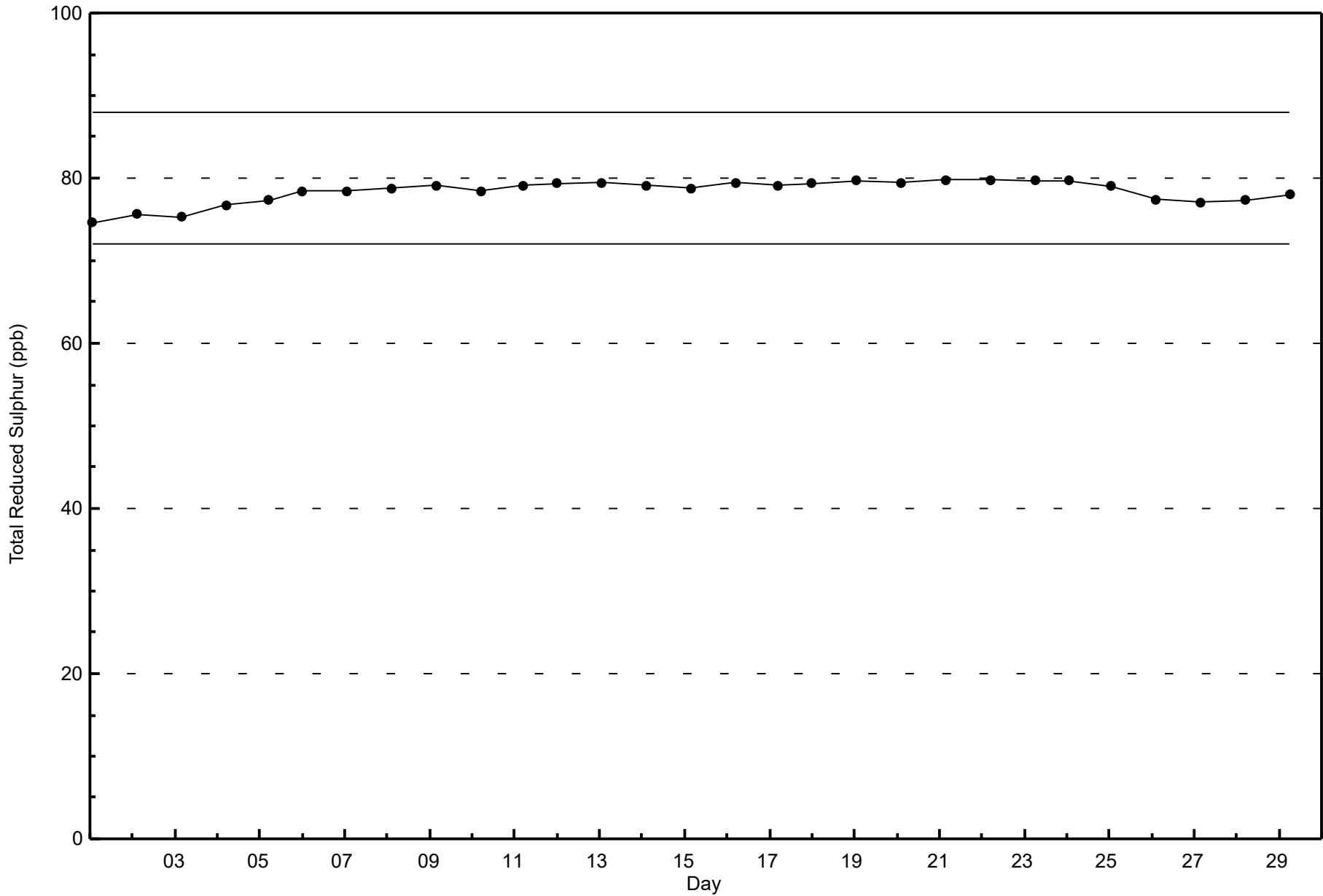
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Reduced Sulphur (TRS) - ppb
Janvier



Total Number of Valid Hours: 656







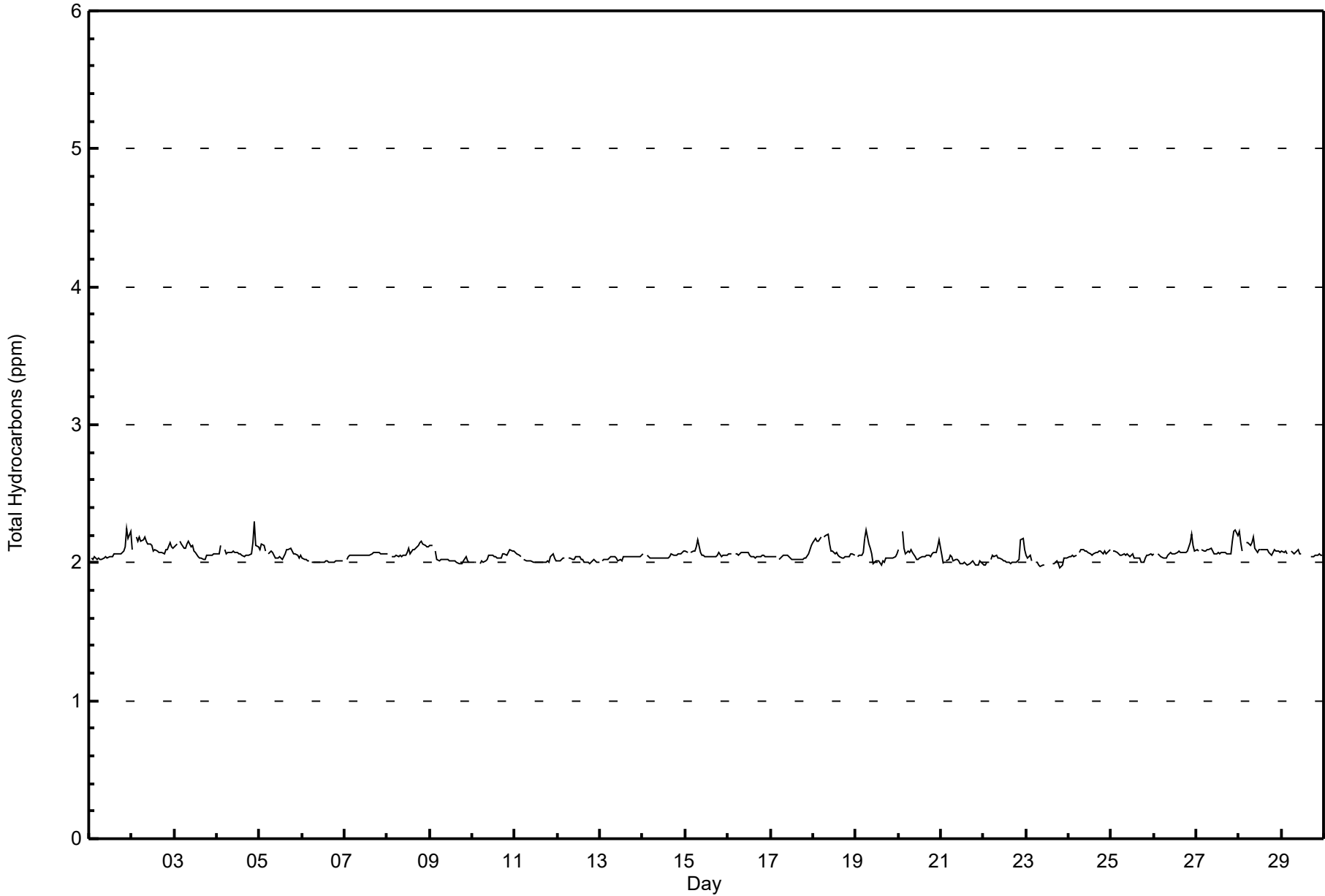
Wood Buffalo Environmental Association

Summary of Hour Averages

Total Hydrocarbons (THC) - ppm

Janvier - February 2024

Maximum Value: 2.3 ppm on Feb 4 22:00		Maximum Daily Average: 2.1 ppm on Feb 2		Hours in Service: 696																							
Minimum Value: 2.0 ppm on Feb 23 20:00		Minimum Daily Average: 2.0 ppm on Feb 23		Hours of Data: 659																							
Maximum Diurnal Average: 2.1 ppm at hour 22		Minimum Diurnal Average: 2.0 ppm at hour 16		Hours of Missing Data: 37																							
Monthly Average: 2.06 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.1 Q ₃ = 2.1 P ₉₀ = 2.1 P ₉₉ = 2.2		Hours of Calibration: 33																							
				Percent Operational Time: 99.4																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.2	
2-Feb	2.1	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
3-Feb	2.1	2.1	Z	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	
4-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.3	2.1	2.1	2.1	2.3	
5-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	
6-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
7-Feb	Z	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
8-Feb	2.1	Z	2.0	2.0	2.0	2.1	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	
9-Feb	2.1	2.1	Z	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
10-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	
11-Feb	2.1	2.1	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.1	
12-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
13-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	
14-Feb	2.1	Z	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
15-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.2	
16-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.1	
17-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	
18-Feb	2.1	2.2	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	
19-Feb	Z	2.0	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	
20-Feb	2.1	Z	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.2	
21-Feb	2.1	2.0	Z	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
22-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.1	2.0	2.2	
23-Feb	2.1	2.0	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	C	C	C	C	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1		
24-Feb	2.0	2.0	2.0	2.0	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
25-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	
26-Feb	2.1	Z	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	
27-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	
28-Feb	2.2	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	
29-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	M	M	M	M	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.1 2.1 2.1 2.1																								Diurnal Average			
2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.2 2.2 2.3 2.2 2.2																								Diurnal Maximum			
Z - zerospan		C - Calibration				M - Maintenance																					





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Janvier - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	308	46.74	46.74
2.1 - 3.0	351	53.26	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Total Hydrocarbons (THC) - ppm
Janvier - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	18	40	19	18	5	3	2	3	6	26	44	23	37	43	11	10	308
2.1 - 3.0	45	60	25	8	7	12	15	18	17	47	45	12	8	7	11	9	346
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	63	100	44	26	12	15	17	21	23	73	89	35	45	50	22	19	654

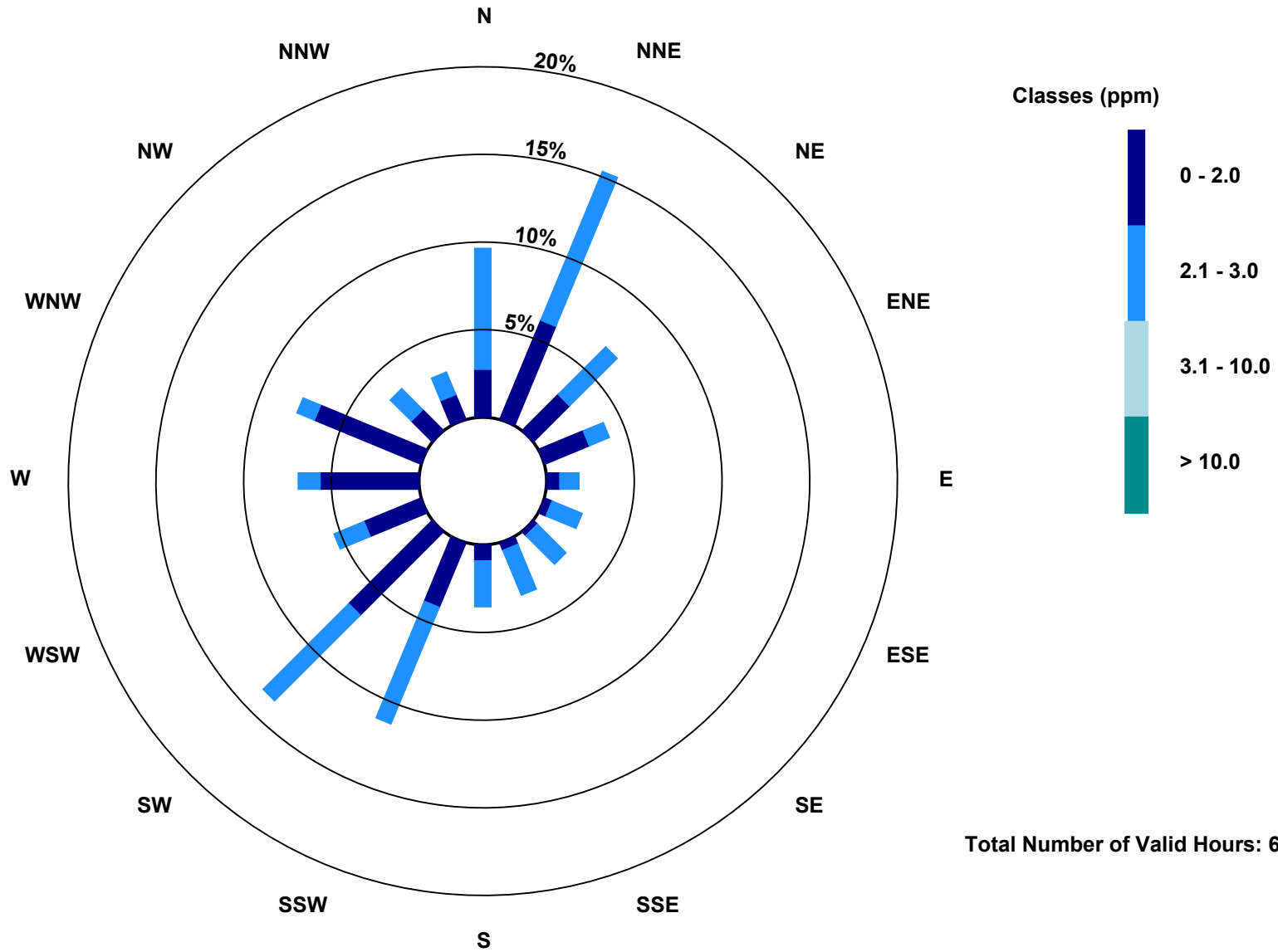
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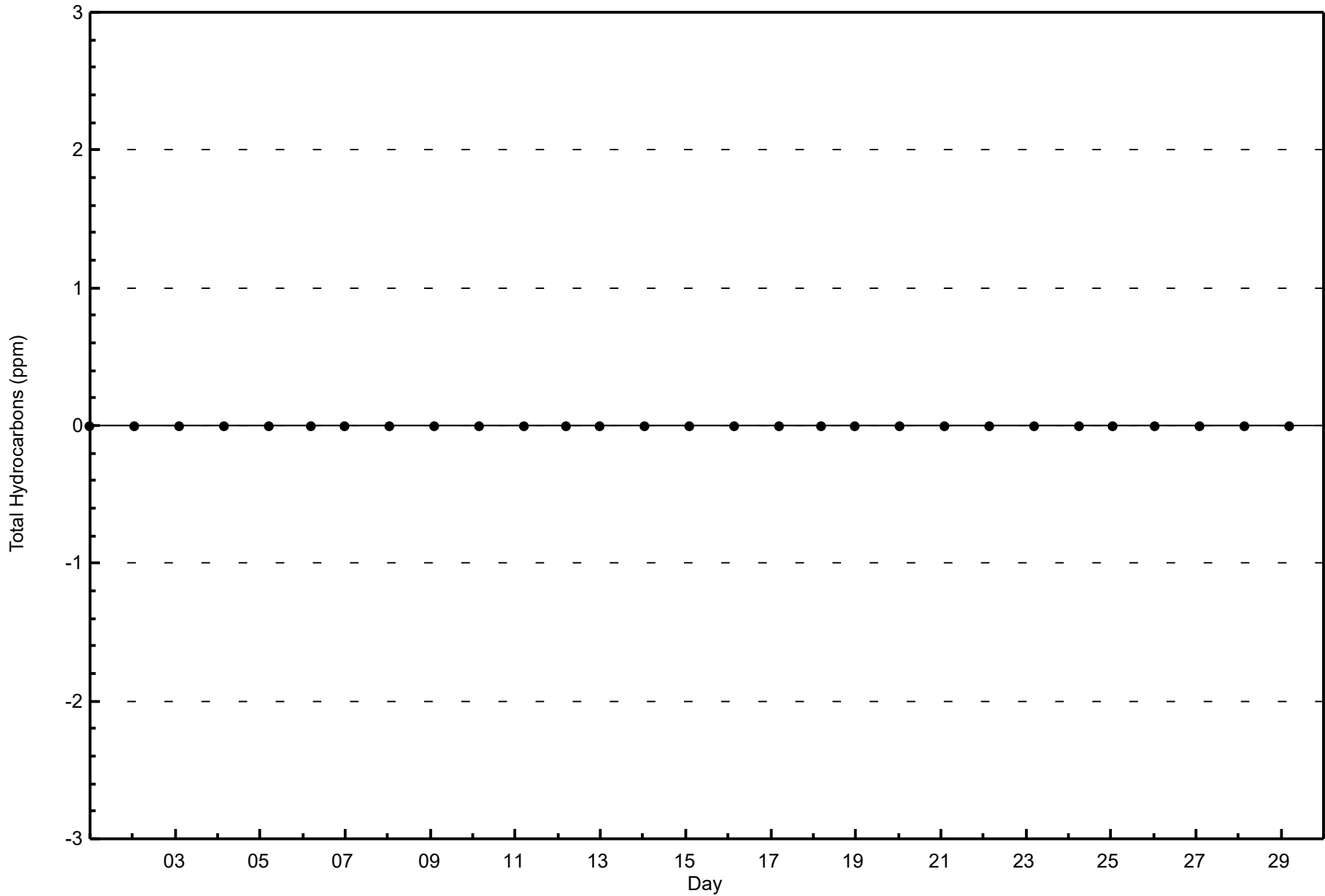
Total Number of Hours: 696

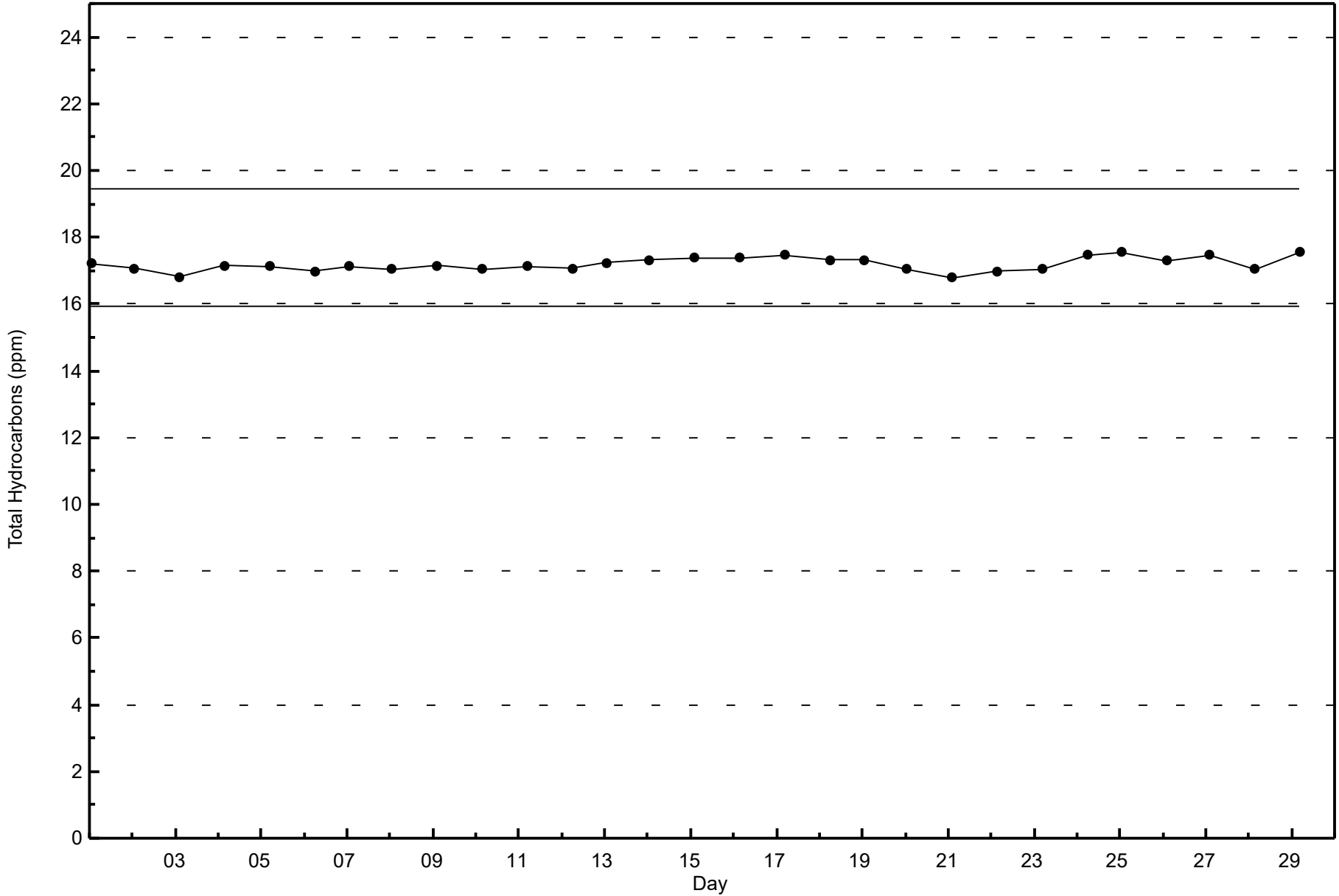


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Janvier

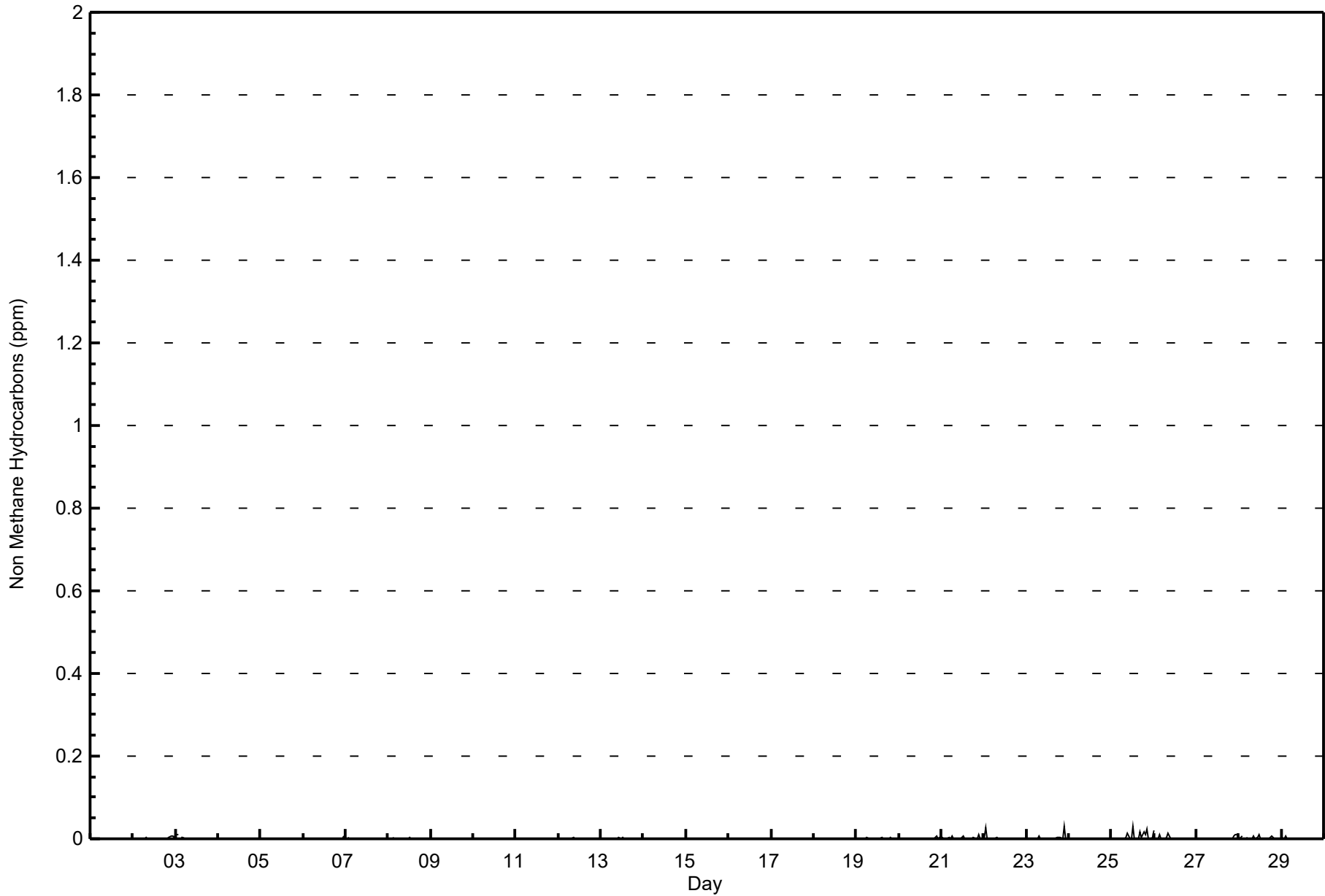








Maximum Value: 0.031 ppm on Feb 23 22:00		Maximum Daily Average: 0.005 ppm on Feb 25		Hours in Service: 696																													
Minimum Value: 0.000 ppm on Feb 1 02:00		Minimum Daily Average: 0.000 ppm on Feb 1		Hours of Data: 659																													
Maximum Diurnal Average: 0.002 ppm at hour 22		Minimum Diurnal Average: 0.000 ppm at hour 16		Hours of Missing Data: 37																													
Monthly Average: 0.001 ppm		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.0		Hours of Calibration: 33																													
				Percent Operational Time: 99.4																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
1-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.004	0.006	0.005	0.004	0.000	0.001	0.000	0.001	0.006	0.000	0.001	0.006	
3-Feb	0.009	0.009	Z	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.009	0.000	0.001	0.009	
4-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
5-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001	0.001	
6-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.007	
7-Feb	Z	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	
8-Feb	0.000	Z	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	
9-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
10-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	
11-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
12-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	
13-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	
14-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
15-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
16-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
17-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
18-Feb	0.001	0.001	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	
19-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.002	0.002	0.000	0.000	0.002	0.000	0.000	0.002	0.000	0.002	0.000	0.001	0.005		
20-Feb	0.005	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.001	0.002	0.001	0.007	
21-Feb	0.002	0.000	Z	0.001	0.003	0.000	0.006	0.002	0.000	0.001	0.000	0.001	0.005	0.000	0.001	0.000	0.000	0.000	0.002	0.000	0.000	0.010	0.000	0.000	0.000	0.001	0.000	0.001	0.010	0.000	0.001	0.010	
22-Feb	0.003	0.028	0.000	Z	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.028		
23-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.006	0.001	0.000	0.000	C	C	C	C	0.000	0.001	0.004	0.004	0.002	0.000	0.031	0.000	0.000	0.000	0.003	0.000	0.003	0.003	0.003	0.031		
24-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
25-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.014	0.000	0.000	0.030	0.000	0.000	0.000	0.016	0.002	0.017	0.010	0.024	0.000	0.000	0.000	0.004	0.005	0.000	0.005	0.030	0.000	0.030		
26-Feb	0.020	Z	0.000	0.010	0.001	0.000	0.001	0.005	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.002	0.000	0.002	0.020		
27-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.007	0.011	0.009	0.000	0.001	0.000	0.001	0.011	0.000	0.011		
28-Feb	0.000	0.005	0.008	Z	0.003	0.000	0.000	0.000	0.005	0.000	0.004	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.003	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.002	0.011	0.000	0.011		
29-Feb	0.003	0.000	0.008	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	M	M	M	M	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.008	0.000	0.008		
																								Diurnal Average									
																								Diurnal Maximum									
																								Z - zerospan C - Calibration M - Maintenance									





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Janvier - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	634	96.21	96.21
0.006 - 0.05	25	3.79	100.00
0.06 - 0.1	0	0.00	100.00
> 0.1	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Janvier - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	61	93	42	25	11	14	17	19	20	72	86	34	44	50	22	19	629
0.006 - 0.05	2	7	2	1	1	1	0	2	3	1	3	1	1	0	0	0	25
0.06 - 0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	63	100	44	26	12	15	17	21	23	73	89	35	45	50	22	19	654

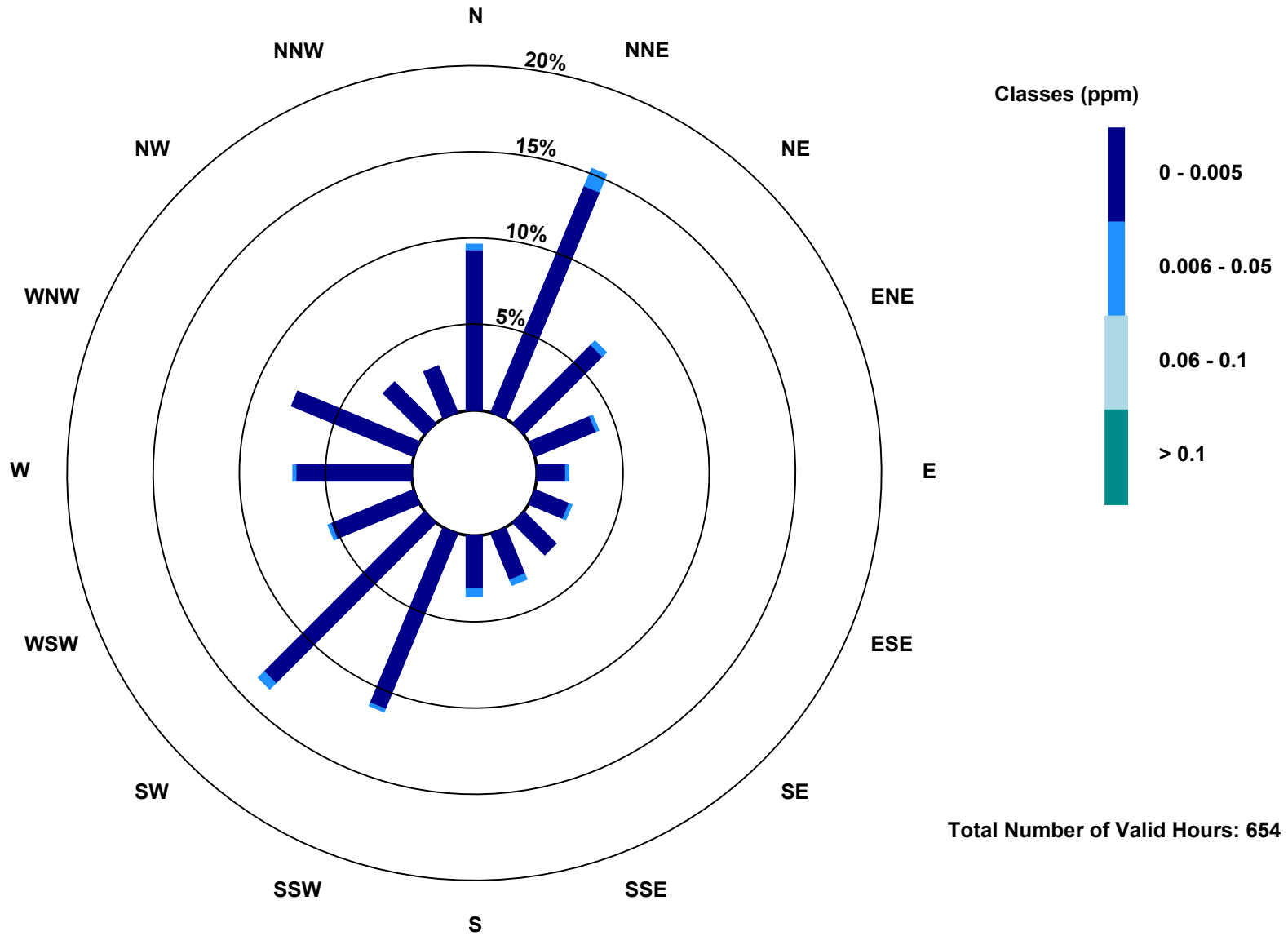
Total Number of Valid Hours: 654

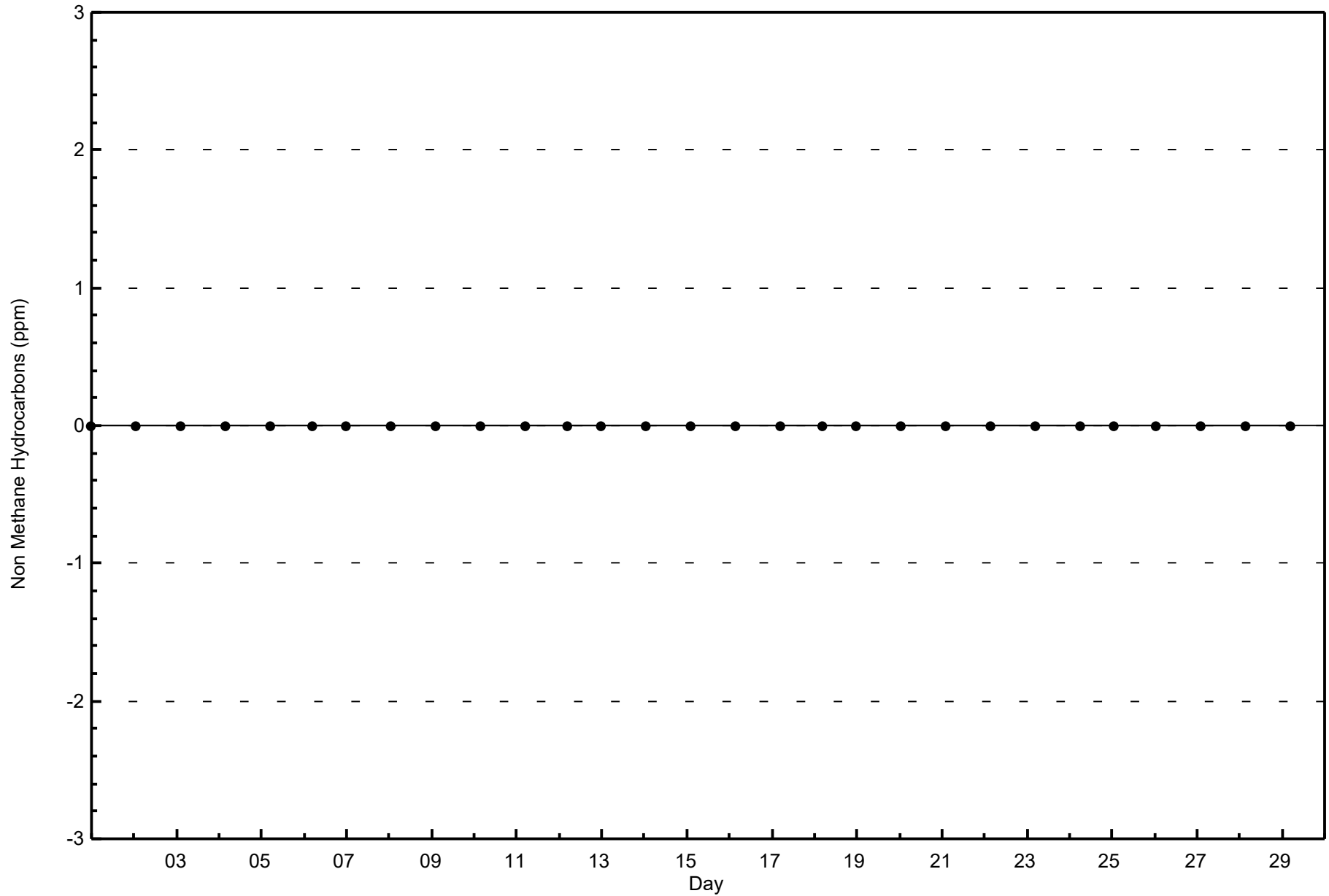
Total Number of Hours: 696

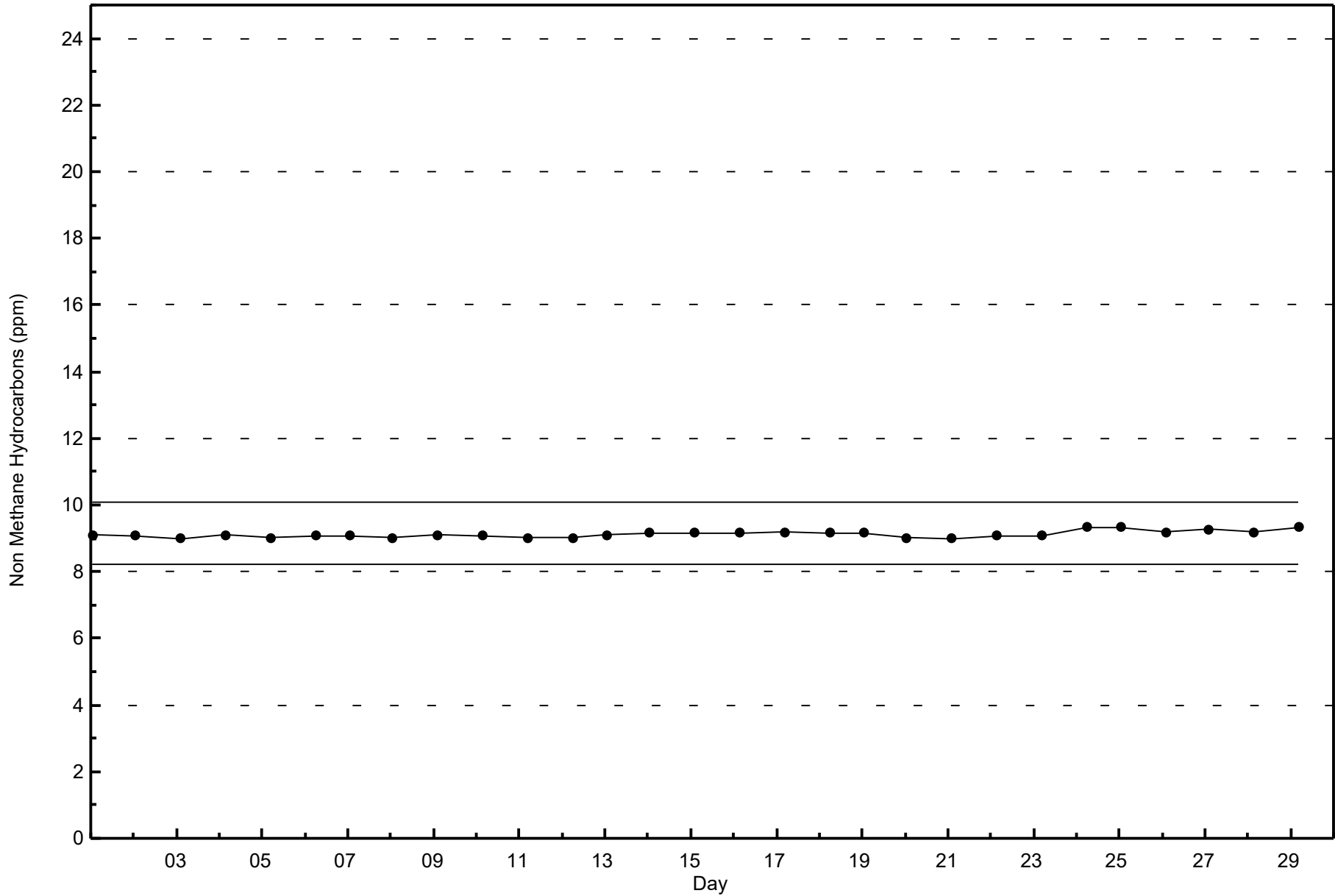


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Janvier









Wood Buffalo Environmental Association

Summary of Hour Averages

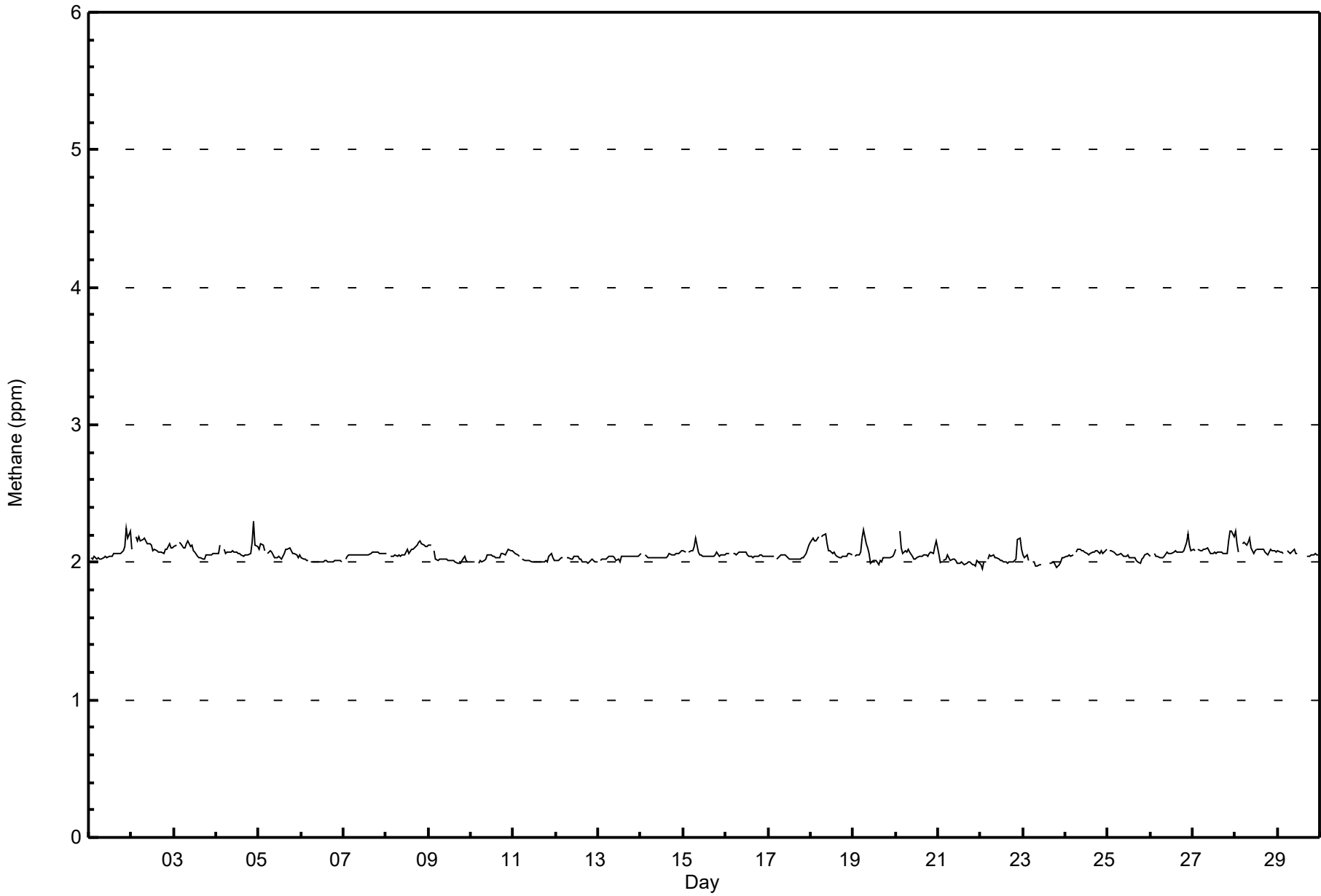
Methane (CH₄) - ppm
Janvier - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696							
Maximum Value: 2.3 ppm on Feb 4 22:00		Maximum Daily Average: 2.1 ppm on Feb 2		Hours of Data:														659									
Minimum Value: 2.0 ppm on Feb 22 02:00		Minimum Daily Average: 2.0 ppm on Feb 23		Hours of Missing Data:														37									
Maximum Diurnal Average: 2.1 ppm at hour 22		Minimum Diurnal Average: 2.0 ppm at hour 16		Hours of Calibration:														33									
Monthly Average: 2.06 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.0 Median = 2.1 Q ₃ = 2.1 P ₉₀ = 2.1 P ₉₉ = 2.2														Percent Operational Time:		99.4									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.2	
2-Feb	2.1	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
3-Feb	2.1	2.1	Z	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
4-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.3	2.1	2.1	2.1	2.3	
5-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	
6-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7-Feb	Z	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
8-Feb	2.1	Z	2.0	2.0	2.0	2.1	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2
9-Feb	2.1	2.1	Z	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
10-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
11-Feb	2.1	2.1	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1
12-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13-Feb	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
14-Feb	2.1	Z	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
15-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.2
16-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1
17-Feb	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1
18-Feb	2.1	2.2	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2
19-Feb	Z	2.0	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2
20-Feb	2.1	Z	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
21-Feb	2.1	2.0	Z	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
22-Feb	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.1	2.0	2.0	2.2
23-Feb	2.1	2.0	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	C	C	C	C	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	
24-Feb	2.0	2.0	2.0	2.0	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
25-Feb	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1
26-Feb	2.0	Z	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.2
27-Feb	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2
28-Feb	2.2	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
29-Feb	2.1	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	M	M	M	M	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
2.1																								Diurnal Average			
2.2																								Diurnal Maximum			
Z - zerospan		C - Calibration				M - Maintenance																					



Wood Buffalo Environmental Association
Hourly Averages

Methane (CH₄) - ppm
Janvier - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Methane (CH₄) - ppm
Janvier - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	314	47.65	47.65
2.1 - 3.0	345	52.35	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Methane (CH₄) - ppm
Janvier - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	19	44	20	18	5	3	2	3	6	26	44	23	37	43	11	10	314
2.1 - 3.0	44	56	24	8	7	12	15	18	17	47	45	12	8	7	11	9	340
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	63	100	44	26	12	15	17	21	23	73	89	35	45	50	22	19	654

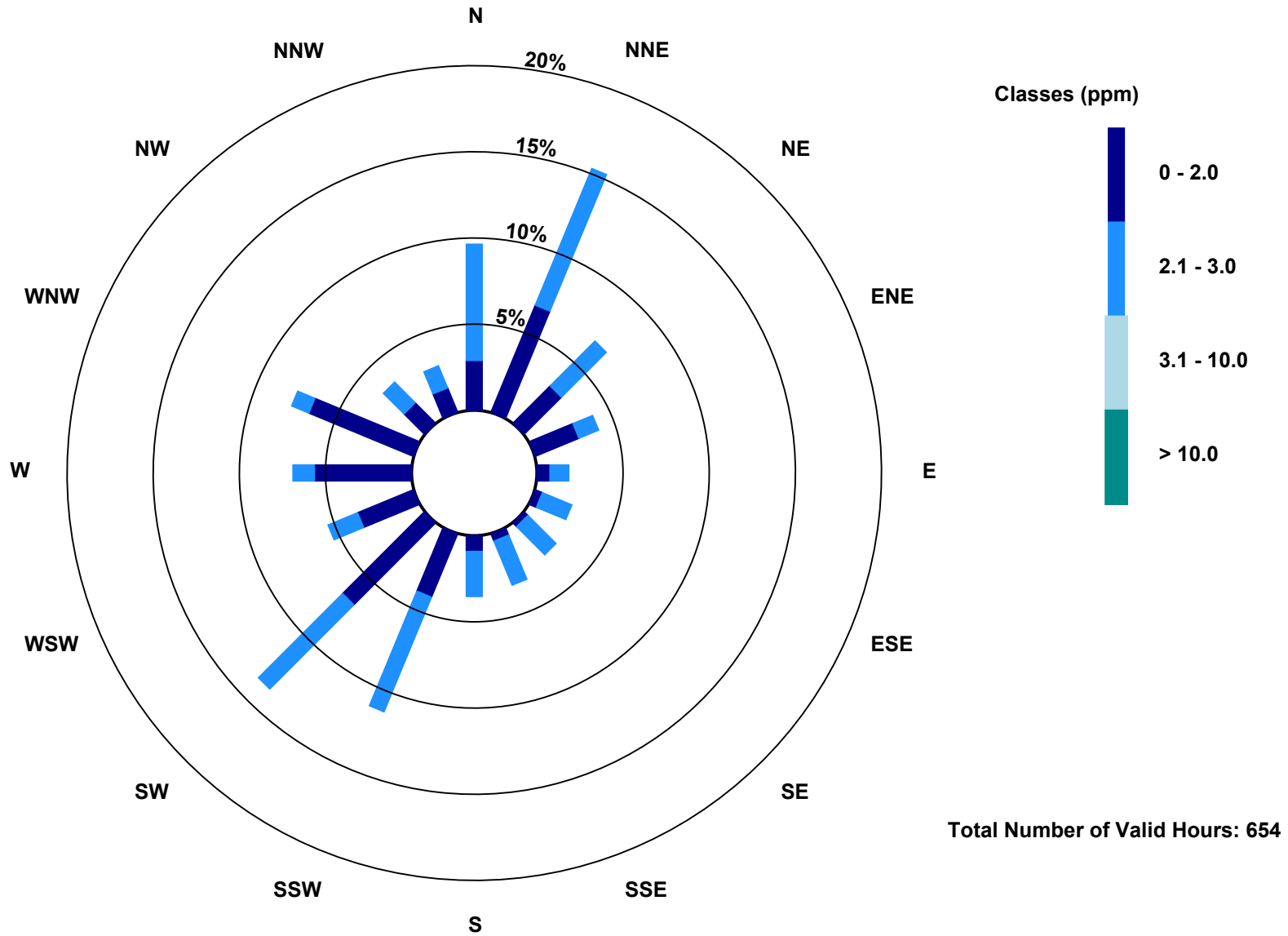
Total Number of Valid Hours: 654

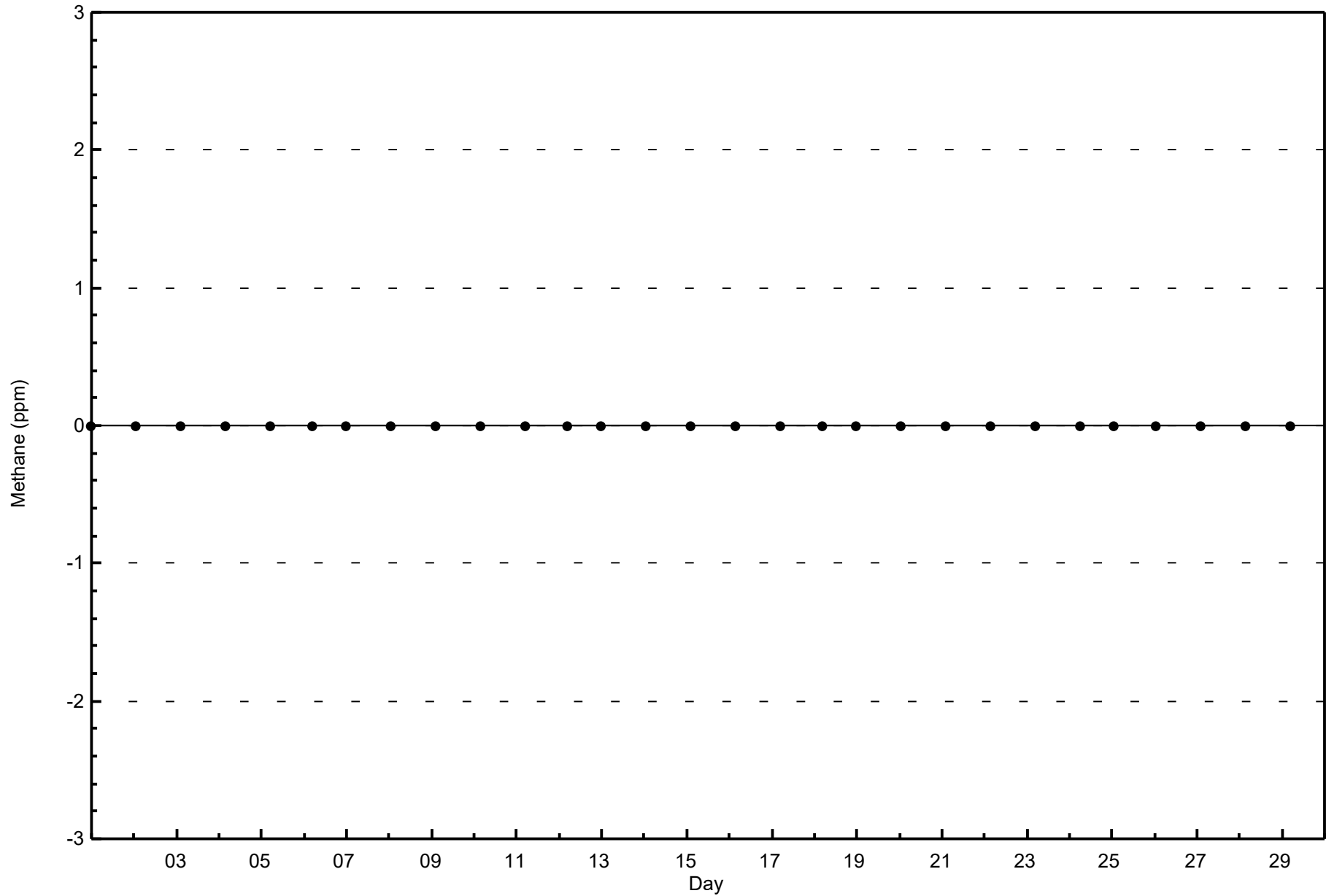
Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Janvier

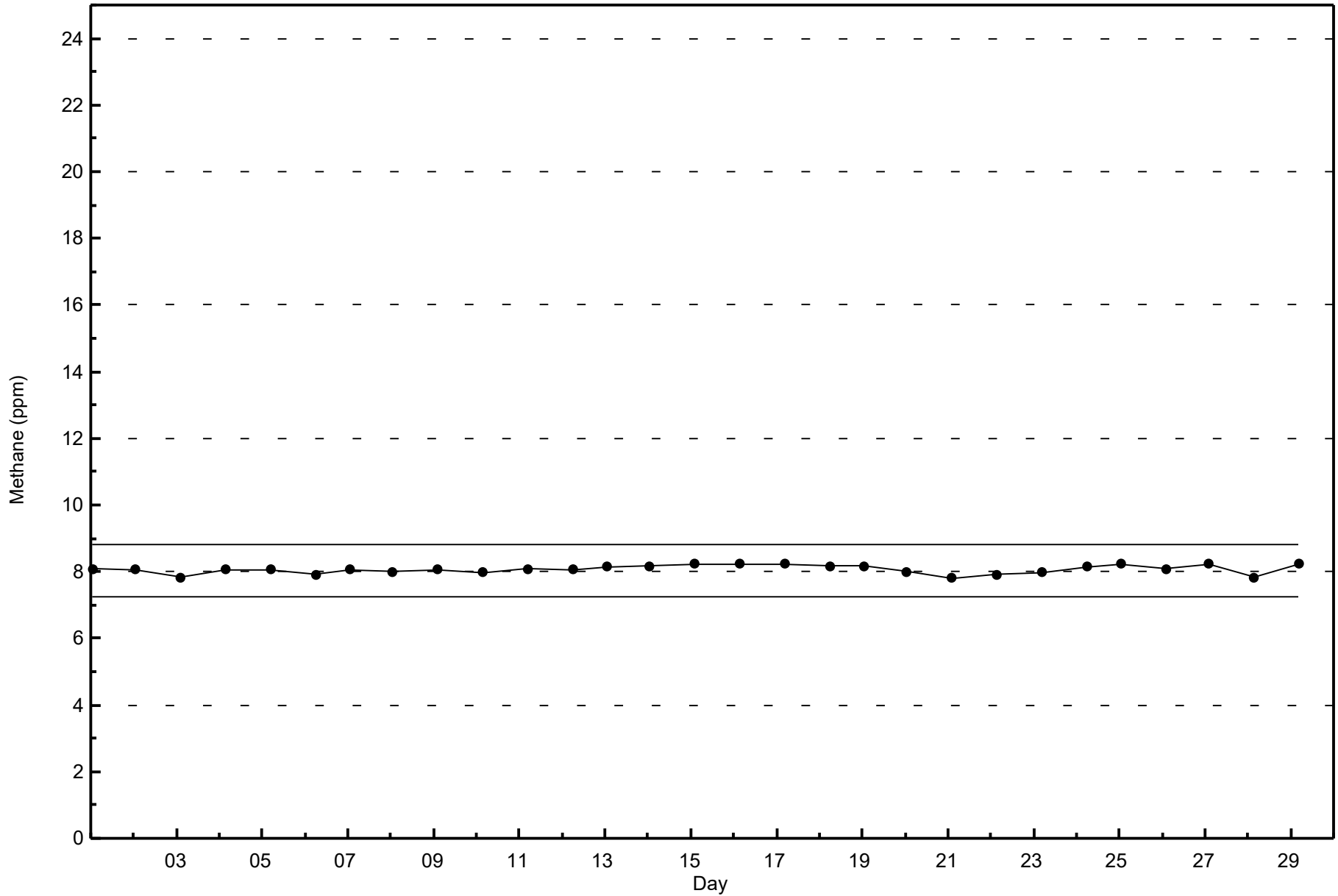






Wood Buffalo Environmental Association
Span Responses

Methane (CH₄) - ppm
Janvier - February 2024





Wood Buffalo Environmental Association
Summary of Hour Averages

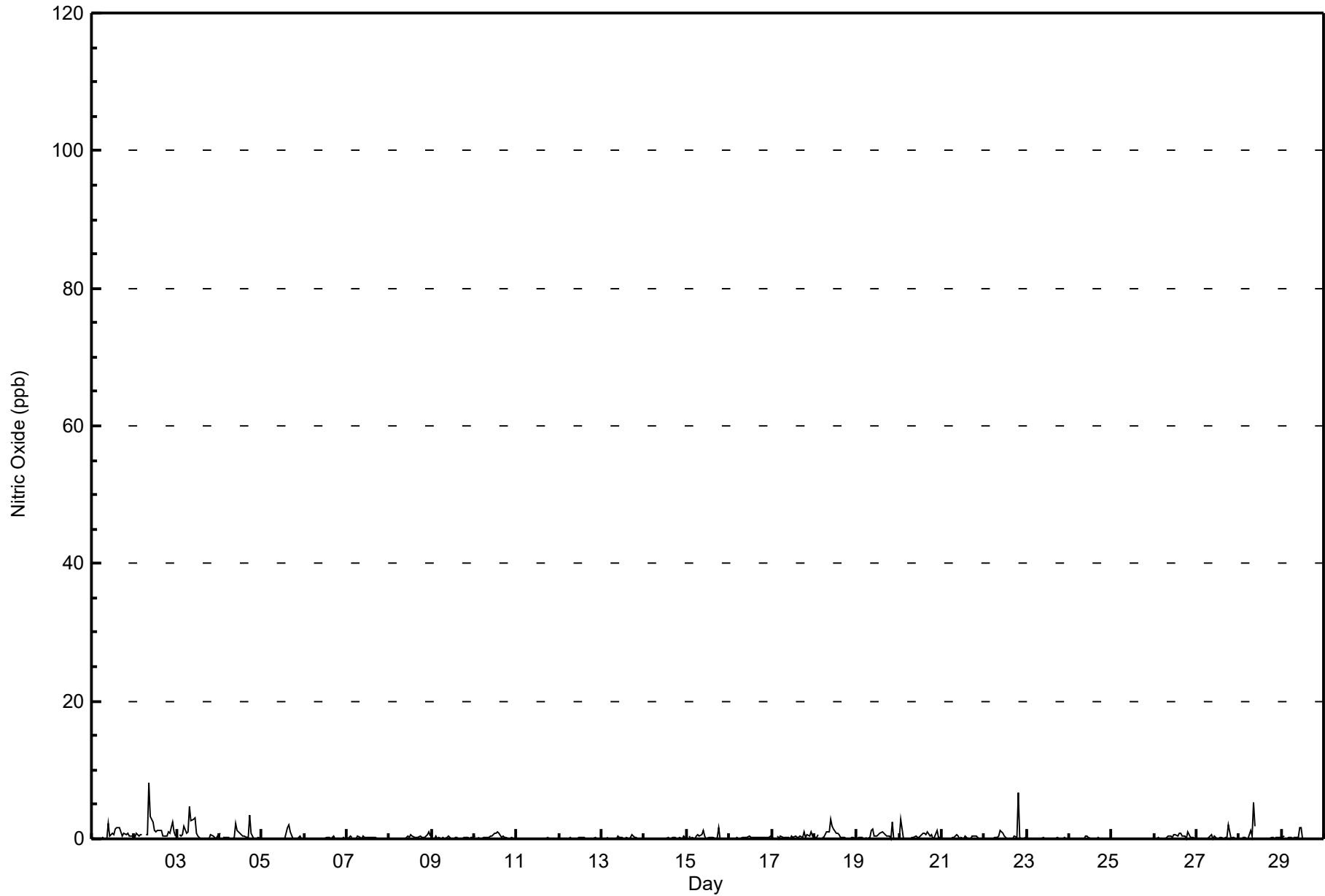
Nitric Oxide (NO) - ppb
Janvier - February 2024

Maximum Value: 8.2 ppb on Feb 2 09:00		Maximum Daily Average: 1.3 ppb on Feb 2		Hours in Service: 696																							
Minimum Value: 0.0 ppb on Feb 1 02:00		Minimum Daily Average: 0.0 ppb on Feb 25		Hours of Data: 661																							
Maximum Diurnal Average: 0.8 ppb at hour 10		Minimum Diurnal Average: 0.1 ppb at hour 1		Hours of Missing Data: 35																							
Monthly Average: 0.32 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.3 P ₉₀ = 0.8 P ₉₉ = 3.0		Hours of Calibration: 35																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.2	0.0	0.0	0.0	Z	0.0	0.2	0.1	0.1	2.3	0.4	0.7	0.7	1.4	1.6	1.5	1.0	0.4	0.8	0.7	0.9	0.4	0.4	0.4	0.6	2.3	
2-Feb	0.2	0.7	0.5	0.7	0.7	Z	0.5	0.6	8.2	3.2	2.4	1.2	1.1	1.2	1.3	1.2	0.5	0.5	0.3	1.0	0.8	2.5	1.0	0.4	1.3	8.2	
3-Feb	Z	0.6	0.5	0.6	1.9	0.8	1.0	4.7	2.7	2.8	3.1	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.2	0.0	0.4	0.9	4.7	
4-Feb	0.8	Z	0.1	0.1	0.2	0.1	0.1	0.1	0.3	2.2	1.1	0.9	0.6	0.5	0.4	0.2	0.3	3.5	0.7	0.0	0.1	0.0	0.1	0.0	0.5	3.5	
5-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	2.0	1.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.2	2.0	
6-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.3	0.3
7-Feb	0.1	0.1	0.3	0.2	Z	0.1	0.4	0.3	0.0	0.3	0.2	0.2	0.2	0.1	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.4
8-Feb	0.0	0.0	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.4	0.3	0.5	0.3	0.1	0.3	0.2	0.3	0.2	0.2	0.3	0.7	1.0	0.5	0.2	1.0	
9-Feb	Z	0.0	0.3	0.0	0.1	0.1	0.2	0.0	0.1	0.3	0.2	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.1	0.2	0.2	0.0	0.3	0.2	0.1	0.3	0.3
10-Feb	0.3	Z	0.1	0.0	0.1	0.3	0.3	0.3	0.1	0.3	0.4	0.8	0.8	1.0	0.8	0.3	0.4	0.1	0.1	0.0	0.0	0.2	0.0	0.1	0.3	1.0	1.0
11-Feb	0.0	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
12-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.2	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.2	0.2
13-Feb	0.0	0.1	0.0	0.2	Z	0.1	0.0	0.0	0.0	0.4	0.1	0.2	0.0	0.0	0.1	0.0	0.1	0.7	0.3	0.2	0.0	0.0	0.0	0.0	0.1	0.7	0.7
14-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.1	0.4	0.1	0.1	0.4	0.4
15-Feb	Z	0.4	0.1	0.2	0.0	0.4	0.7	0.4	0.5	1.2	0.5	0.0	0.1	0.1	0.1	0.2	0.1	0.1	1.7	0.0	0.0	0.0	0.0	0.0	0.3	1.7	1.7
16-Feb	0.1	Z	0.1	0.0	0.1	0.1	0.0	0.2	0.3	0.3	0.3	0.5	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.4	0.2	0.5	0.5
17-Feb	0.4	0.0	Z	0.4	0.1	0.4	0.2	0.2	0.3	0.3	0.1	0.3	0.1	0.5	0.2	0.3	0.5	0.3	0.9	0.2	0.6	0.4	1.0	0.4	0.3	1.0	1.0
18-Feb	0.2	0.2	0.7	Z	0.2	0.3	0.6	1.0	1.1	2.9	1.8	1.4	0.8	0.7	0.7	0.2	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.6	2.9	2.9
19-Feb	0.0	0.2	0.2	0.1	Z	0.1	0.0	0.2	1.3	1.5	0.5	0.3	0.5	0.9	1.1	0.7	0.5	0.3	0.5	0.0	2.5	0.0	0.0	0.0	0.5	2.5	2.5
20-Feb	0.0	2.8	0.0	0.1	0.1	Z	0.0	0.1	0.1	0.3	0.2	0.2	0.4	0.9	0.8	0.5	1.1	0.3	0.6	0.1	0.3	1.1	0.2	0.3	0.5	2.8	2.8
21-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.6	0.4	0.1	0.3	0.0	0.4	0.2	0.1	0.0	0.4	0.4	0.5	0.3	0.0	0.0	0.1	0.2	0.6	0.6
22-Feb	0.0	Z	0.0	0.1	0.0	0.0	0.2	0.3	0.4	1.1	0.8	0.4	0.1	0.0	0.0	0.0	0.0	0.3	0.1	6.7	0.2	0.0	0.1	0.3	0.5	6.7	6.7
23-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.3
24-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.3	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.4
25-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1
26-Feb	0.0	0.1	0.2	0.0	0.1	Z	0.1	0.1	0.3	0.3	0.3	0.5	0.6	0.4	0.8	0.9	0.4	0.4	0.0	0.9	0.1	0.2	0.2	0.0	0.3	0.9	0.9
27-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.3	0.1	2.0	0.0	0.2	0.1	0.0	0.0	0.2	2.0	2.0
28-Feb	0.0	Z	0.2	0.1	0.0	0.0	1.2	0.3	5.2	1.8	C	C	C	C	C	C	0.1	0.1	0.3	0.2	0.0	0.3	0.2	0.1	--	5.2	5.2
29-Feb	0.3	0.3	Z	0.1	0.3	0.3	0.1	0.2	0.1	0.2	1.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.7	1.7
																								Diurnal Average			
																								Diurnal Maximum			
																								0.1 0.2 0.1 0.1 0.2 0.1 0.2 0.3 0.8 0.8 0.6 0.4 0.3 0.3 0.4 0.3 0.3 0.3 0.3 0.4 0.3 0.2 0.2 0.1			
																								0.8 2.8 0.7 0.7 1.9 0.8 1.2 4.7 8.2 3.2 3.1 1.7 1.1 1.4 1.6 2.0 1.1 3.5 2.0 6.7 2.5 2.5 1.0 0.5			
Z - zerospan																								C - Calibration			



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Janvier - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Janvier - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Janvier - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	64	101	46	28	12	16	18	20	17	71	90	35	46	49	23	20	656
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	64	101	46	28	12	16	18	20	17	71	90	35	46	49	23	20	656

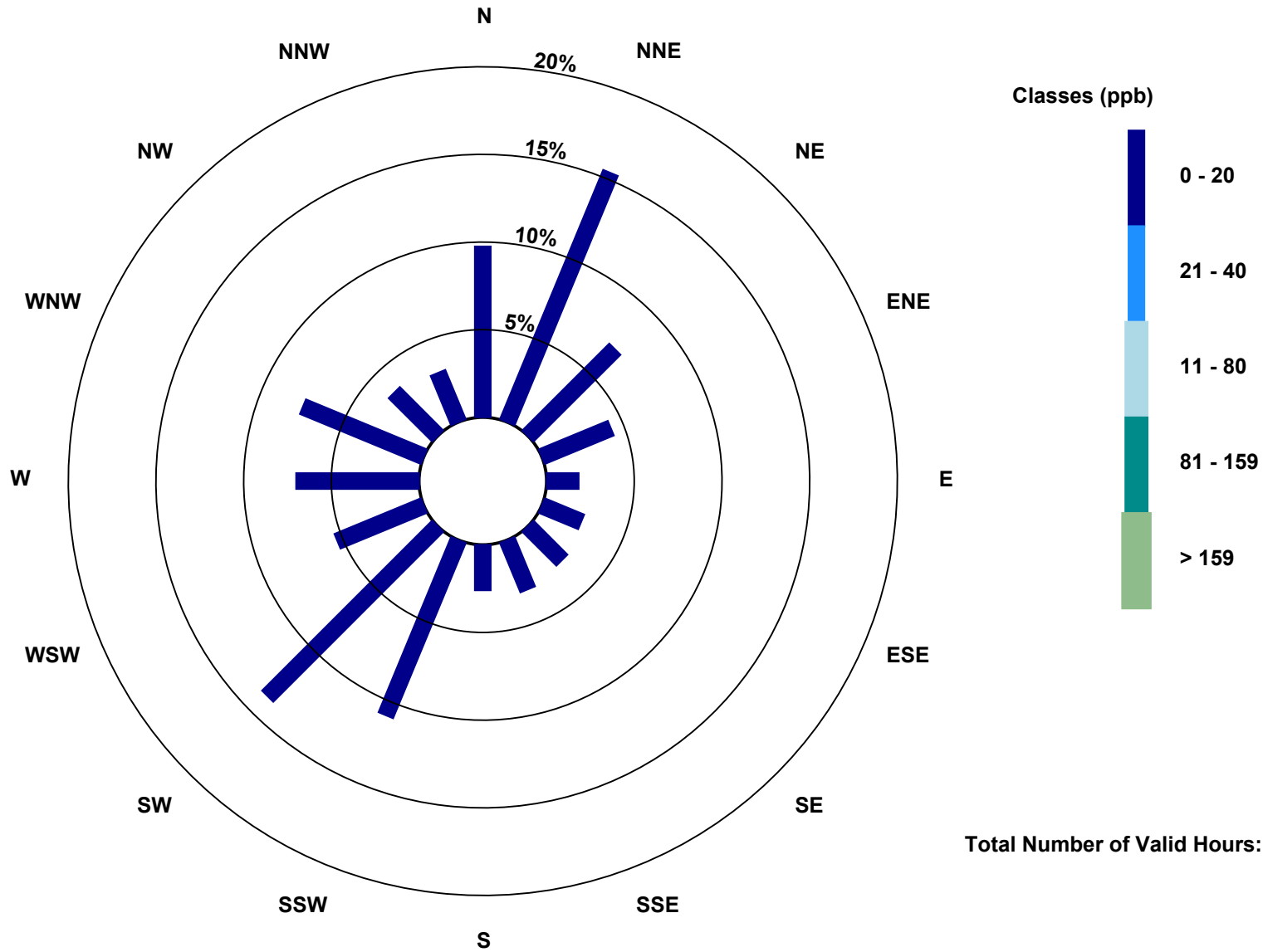
Total Number of Valid Hours: 656

Total Number of Hours: 696

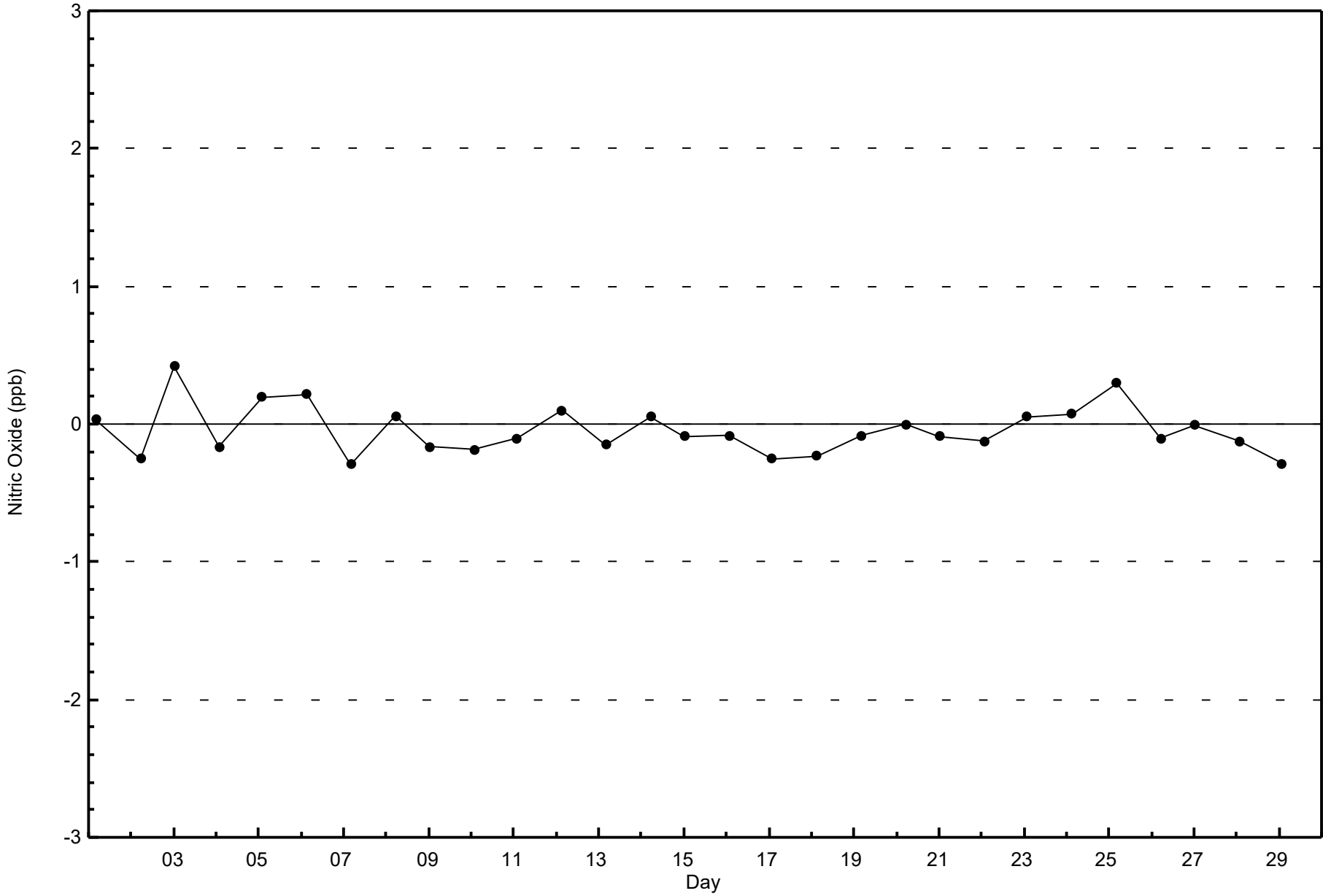


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Janvier



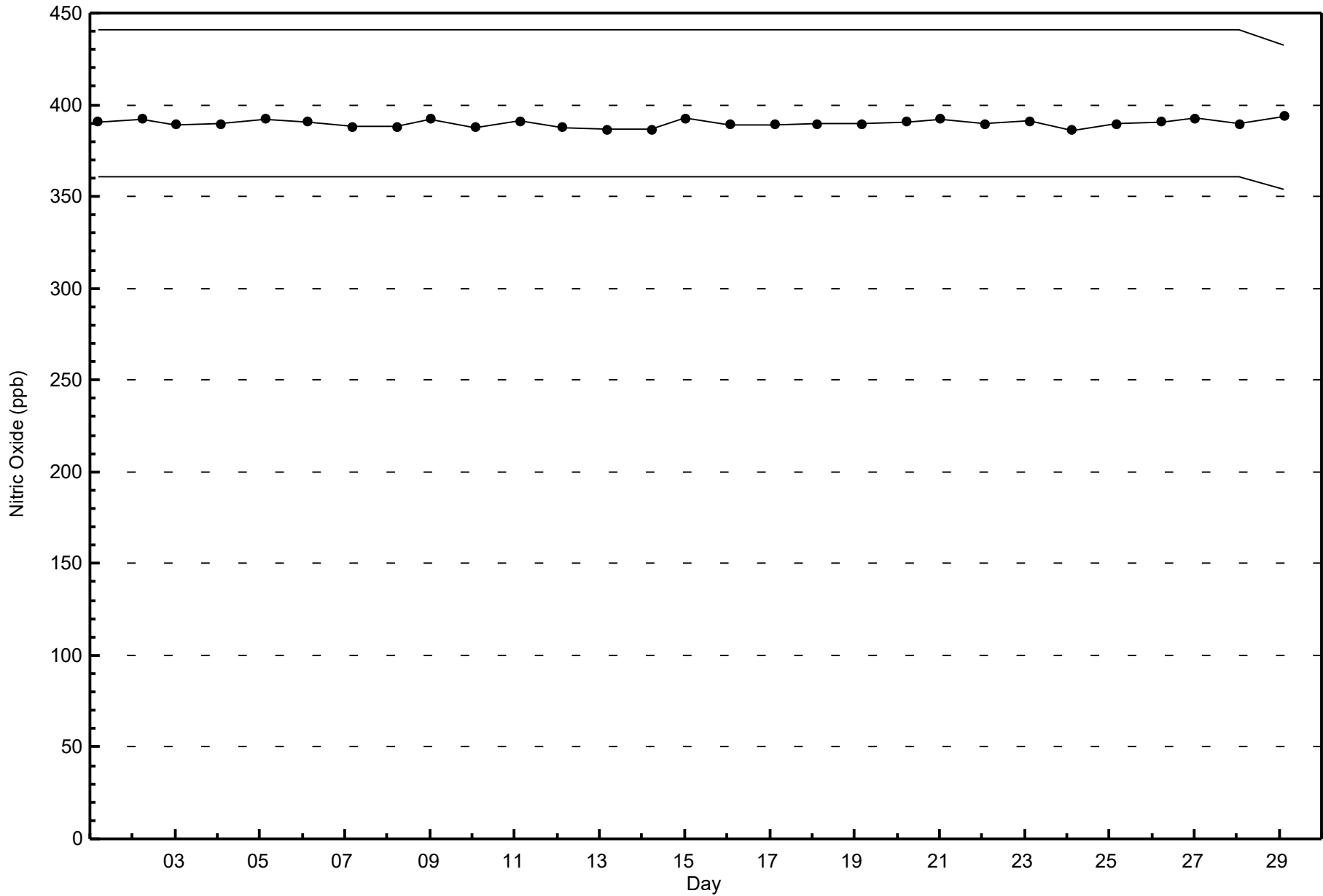
Total Number of Valid Hours: 656





Wood Buffalo Environmental Association
Span Responses

Nitric Oxide (NO) - ppb
Janvier - February 2024





Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

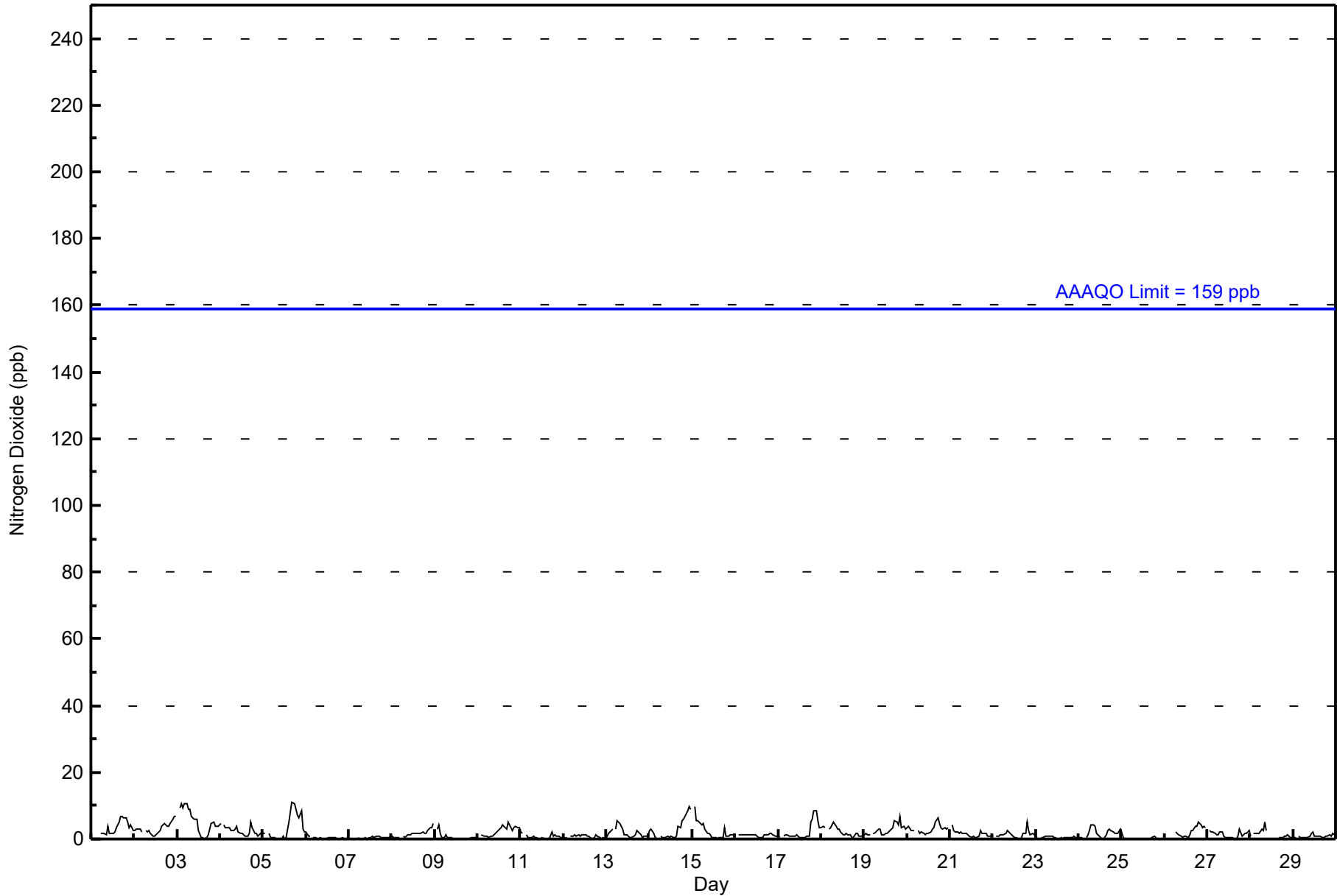
Janvier - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696																												
Maximum Value: 11.1 ppb on Feb 5 17:00		Maximum Daily Average: 5.3 ppb on Feb 3														Hours of Data:		661																														
Minimum Value: 0.0 ppb on Feb 1 01:00		Minimum Daily Average: 0.2 ppb on Feb 25														Hours of Missing Data:		35																														
Maximum Diurnal Average: 2.7 ppb at hour 19		Minimum Diurnal Average: 0.9 ppb at hour 14														Hours of Calibration:		35																														
Monthly Average: 1.85 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.2 Q ₁ = 0.5 Median = 1.2 Q ₃ = 2.6 P ₉₀ = 4.4 P ₉₉ = 9.7														Percent Operational Time:		100.0																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	0.0	0.0	0.0	0.0	Z	1.8	1.7	1.8	1.3	3.9	1.8	1.5	1.6	2.0	3.3	5.2	6.6	6.7	6.3	6.5	5.1	3.5	4.4	2.6	2.9	6.7																						
2-Feb	2.7	3.1	2.9	3.1	2.3	Z	2.4	2.1	2.7	1.6	1.0	1.0	1.3	1.7	2.5	4.0	4.4	4.7	3.9	3.9	4.5	5.9	6.7	6.6	3.3	6.7																						
3-Feb	Z	9.3	10.8	9.5	10.7	10.8	9.1	8.7	6.8	5.8	6.1	5.8	2.5	0.4	0.4	0.1	0.3	1.3	2.9	4.7	5.1	4.0	3.8	3.9	5.3	10.8																						
4-Feb	4.8	Z	4.4	3.6	3.3	3.5	2.4	2.7	2.8	3.7	2.1	1.6	1.5	1.3	1.0	1.0	1.5	5.0	3.2	1.8	1.8	1.0	1.4	2.2	2.5	5.0																						
5-Feb	1.5	1.5	Z	1.5	0.5	0.3	0.4	0.1	0.1	0.1	0.0	0.7	0.2	0.6	4.9	7.9	11.1	10.6	9.0	7.4	6.3	8.6	2.8	2.3	3.4	11.1																						
6-Feb	2.2	1.0	0.7	Z	0.6	0.3	0.2	0.2	0.3	0.2	0.1	0.1	0.5	0.5	0.4	0.4	0.5	0.2	0.1	0.2	0.3	0.2	0.1	0.2	0.4	2.2																						
7-Feb	0.0	0.1	0.0	0.1	Z	0.3	0.0	0.0	0.0	0.4	0.1	0.3	0.6	1.0	0.6	0.7	0.7	0.8	0.6	0.6	0.6	0.6	0.4	0.7	0.4	1.0																						
8-Feb	0.7	0.5	0.6	0.3	0.4	Z	0.8	0.6	0.9	1.1	1.3	1.7	1.9	1.5	1.6	1.7	1.8	2.2	1.9	1.7	2.6	3.2	3.2	4.5	1.6	4.5																						
9-Feb	Z	2.8	4.4	1.5	0.3	0.3	1.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.6	0.6	0.7	4.4																						
10-Feb	0.6	Z	1.1	0.9	0.7	0.7	0.5	0.8	1.0	1.2	1.5	2.5	2.8	3.3	4.3	3.4	3.1	5.0	4.4	2.6	3.2	3.8	3.6	3.3	2.4	5.0																						
11-Feb	2.3	1.9	Z	1.3	0.6	0.4	0.5	0.7	0.4	0.4	0.2	0.2	0.3	0.1	0.0	0.0	0.0	2.0	0.9	1.1	0.7	0.8	0.5	0.6	0.7	2.3																						
12-Feb	0.1	0.4	0.2	Z	1.0	0.9	1.3	1.0	1.2	0.9	1.1	1.2	1.4	0.8	0.7	0.4	0.2	0.3	1.3	0.8	0.3	0.1	0.3	0.2	0.7	1.4																						
13-Feb	1.0	1.6	2.2	2.8	Z	3.1	5.4	4.6	4.0	2.8	1.3	1.2	0.7	0.4	0.5	0.7	1.2	2.5	1.8	1.1	0.6	0.8	1.0	1.1	1.8	5.4																						
14-Feb	2.7	3.0	1.7	0.5	0.3	Z	0.7	0.4	0.4	0.6	0.8	0.5	0.7	0.4	0.5	0.9	3.7	3.6	5.3	6.1	6.8	8.3	9.9	8.7	2.9	9.9																						
15-Feb	Z	9.9	5.7	5.6	4.6	4.3	4.5	3.1	1.5	1.8	1.1	0.5	0.5	0.4	0.2	0.3	0.5	0.6	3.6	0.9	0.8	1.1	1.1	1.2	2.3	9.9																						
16-Feb	1.2	Z	1.3	1.1	1.2	1.1	1.1	1.2	1.3	1.3	1.3	1.1	0.8	0.5	0.6	0.6	1.1	1.2	1.2	1.5	1.7	1.1	0.9	1.0	1.1	1.7																						
17-Feb	0.6	0.9	Z	0.7	1.1	1.3	1.0	0.9	0.9	1.0	1.1	0.7	0.6	0.6	0.5	0.6	1.0	1.0	5.0	6.1	8.4	8.4	5.7	3.5	2.2	8.4																						
18-Feb	3.3	4.0	3.3	Z	3.1	3.4	4.3	5.1	4.0	2.9	2.8	2.3	1.3	1.2	1.8	1.2	1.2	0.6	0.6	1.8	1.8	1.0	0.7	0.7	2.3	5.1																						
19-Feb	1.1	1.9	1.1	1.3	Z	1.5	1.6	2.5	3.0	2.9	1.3	1.1	1.5	1.8	2.7	2.9	3.3	5.3	5.1	4.2	6.7	3.4	3.7	2.9	2.7	6.7																						
20-Feb	3.3	3.7	2.5	2.7	2.6	Z	2.5	1.9	2.0	1.8	1.2	1.5	1.6	2.3	2.8	3.6	5.1	6.5	4.8	3.4	3.0	3.6	2.9	3.3	3.0	6.5																						
21-Feb	Z	4.3	2.7	2.2	2.2	1.8	2.0	1.8	1.9	1.6	1.2	0.7	0.5	0.8	0.6	0.5	0.7	2.4	1.9	1.7	1.5	1.0	1.0	1.0	1.6	4.3																						
22-Feb	0.9	Z	0.9	0.9	1.2	1.3	1.3	1.5	2.4	2.2	1.4	0.8	0.6	0.3	0.1	0.2	0.3	1.5	1.5	5.1	2.4	1.4	1.5	1.4	1.4	5.1																						
23-Feb	0.7	0.5	Z	0.6	0.6	0.9	0.9	0.7	0.7	0.7	0.5	0.4	0.2	0.2	0.3	0.2	0.3	0.6	0.3	0.4	0.5	0.9	0.5	0.5	0.5	0.9																						
24-Feb	0.4	0.4	0.3	Z	0.6	1.4	2.5	4.2	4.1	3.8	1.9	1.3	0.5	0.1	0.0	1.4	2.6	3.0	2.5	2.2	1.7	1.8	1.7	2.8	1.8	4.2																						
25-Feb	1.5	0.6	0.1	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.9	0.3	0.0	0.0	0.0	0.0	0.2	1.5																						
26-Feb	0.0	0.0	0.0	0.0	0.0	Z	2.1	1.7	1.2	0.7	0.6	0.7	0.8	0.6	1.3	2.6	2.6	3.7	3.9	4.9	4.4	3.4	3.7	3.2	1.8	4.9																						
27-Feb	Z	2.7	2.1	2.0	1.5	1.4	1.4	2.0	2.1	0.9	0.6	0.3	0.6	0.5	0.4	0.0	0.2	0.7	2.8	0.9	1.2	1.5	1.6	2.4	1.3	2.8																						
28-Feb	0.9	Z	1.8	1.6	1.6	1.5	3.1	2.6	5.1	2.7	C	C	C	C	C	C	0.6	0.5	0.5	0.8	0.8	1.1	0.6	0.6	--	5.1																						
29-Feb	0.4	0.4	Z	0.7	0.5	0.5	0.4	0.4	0.5	0.7	1.8	2.2	0.8	0.8	0.8	0.8	0.6	0.6	0.8	1.0	1.2	0.8	1.7	1.1	0.8	2.2																						
1.4																								2.3	2.1	1.8	1.7	1.8	1.9	1.8	1.8	1.7	1.2	1.1	1.0	0.9	1.2	1.5	1.9	2.5	2.7	2.5	2.6	2.5	2.3	2.2	Diurnal Average	
4.8																								9.9	10.8	9.5	10.7	10.8	9.1	8.7	6.8	5.8	6.1	5.8	2.8	3.3	4.9	7.9	11.1	10.6	9.0	7.4	8.4	8.6	9.9	8.7	Diurnal Maximum	
Z - zerospan C - Calibration																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb																																																



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Janvier - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Janvier - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Janvier - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	64	101	46	28	12	16	18	20	17	71	90	35	46	49	23	20	656
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	64	101	46	28	12	16	18	20	17	71	90	35	46	49	23	20	656

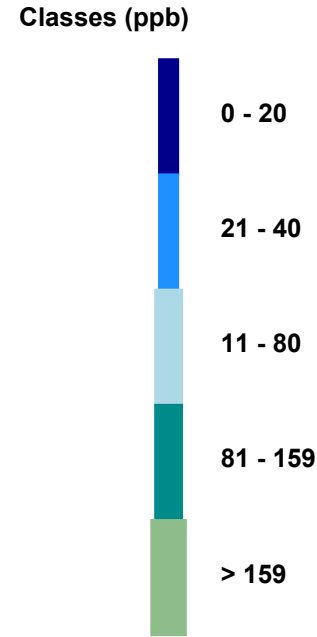
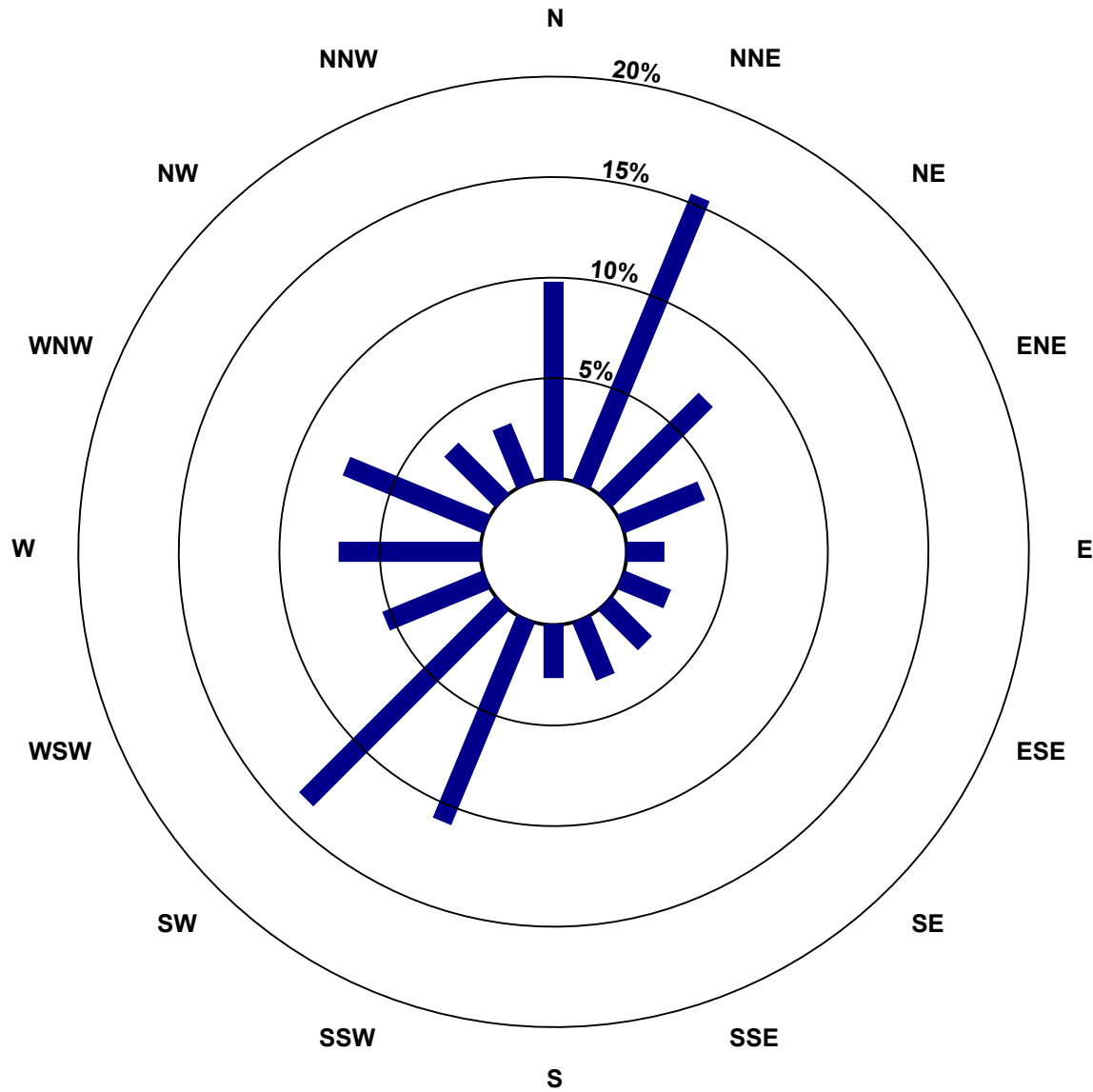
Total Number of Valid Hours: 656

Total Number of Hours: 696

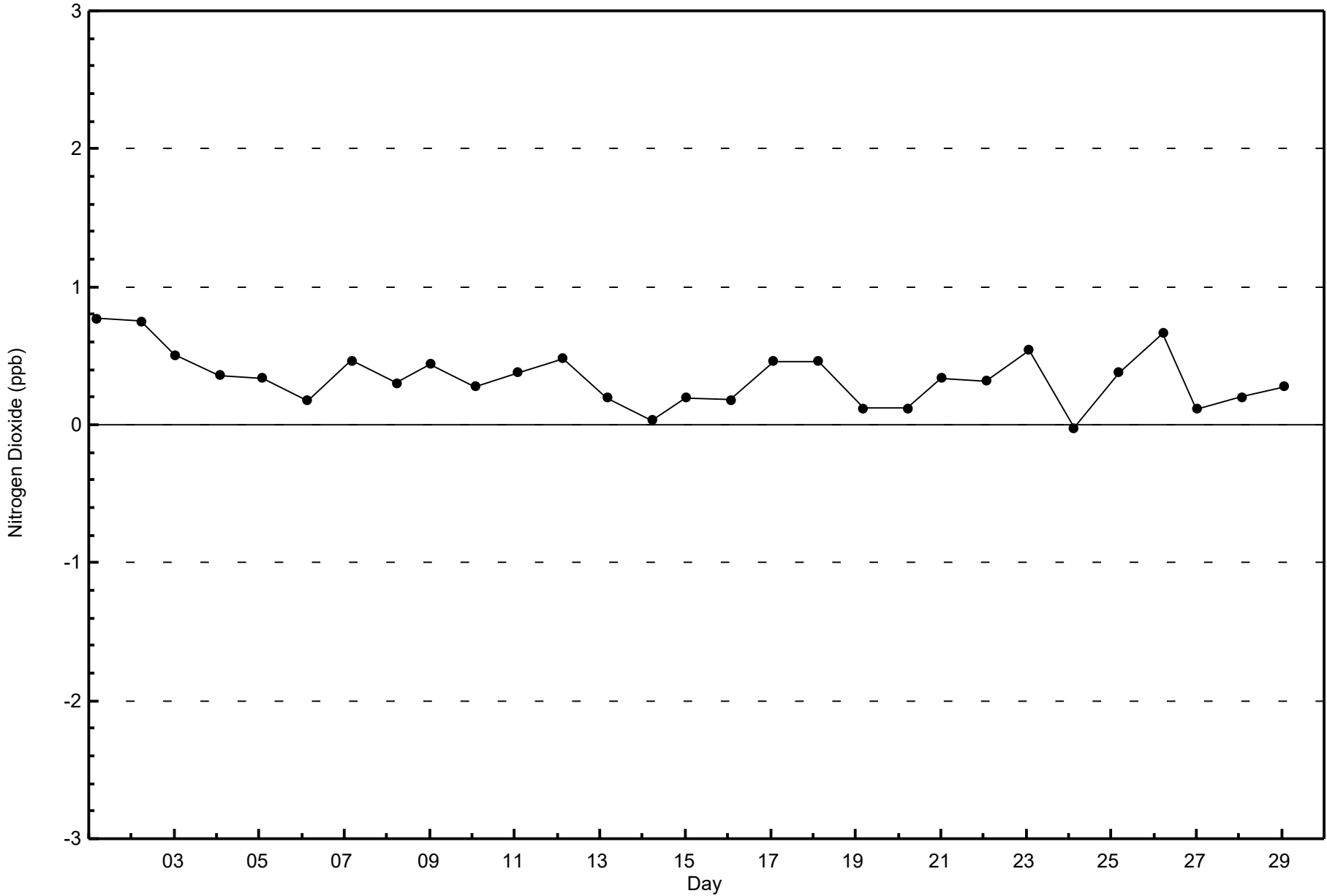


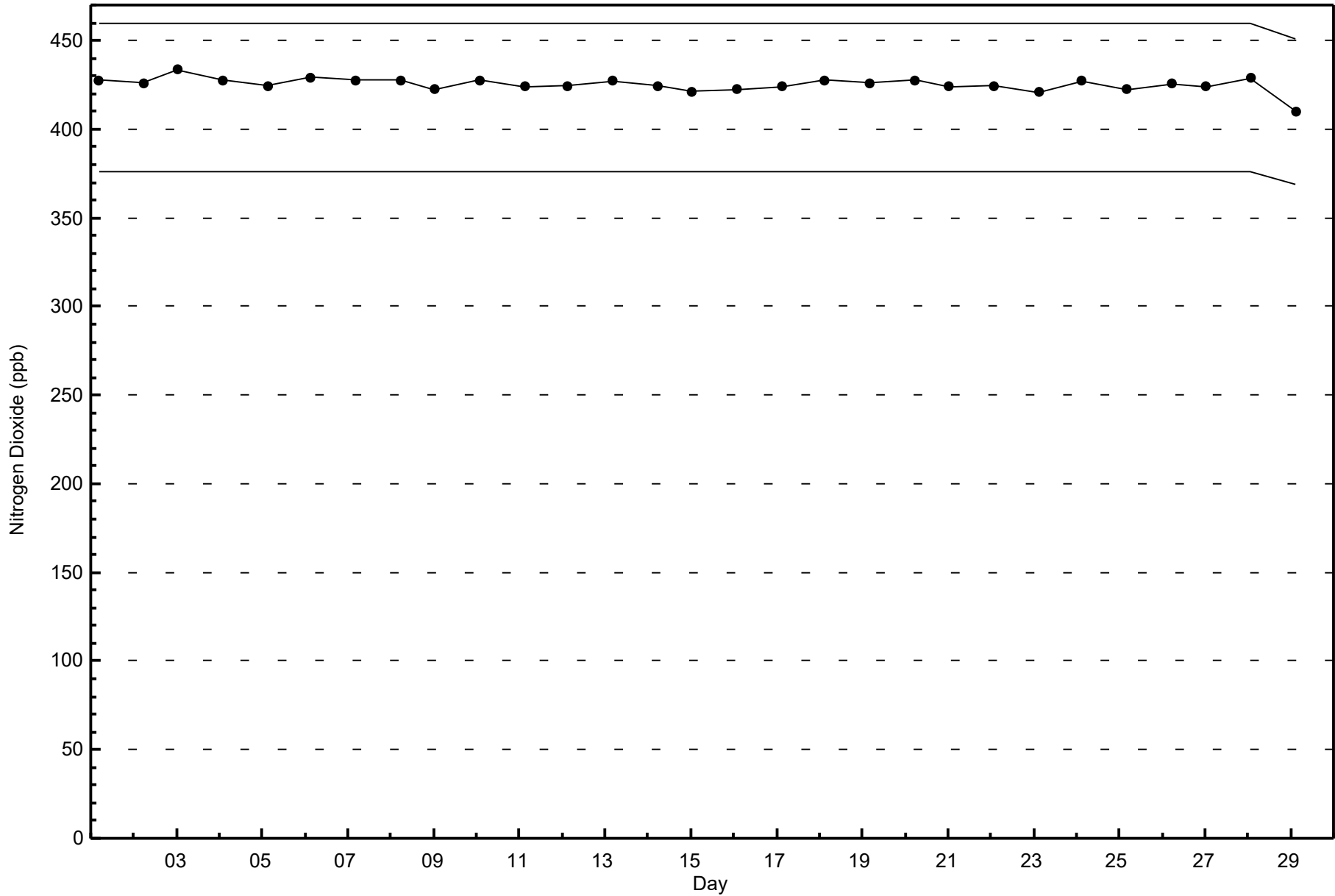
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Janvier



Total Number of Valid Hours: 656







Wood Buffalo Environmental Association
Summary of Hour Averages

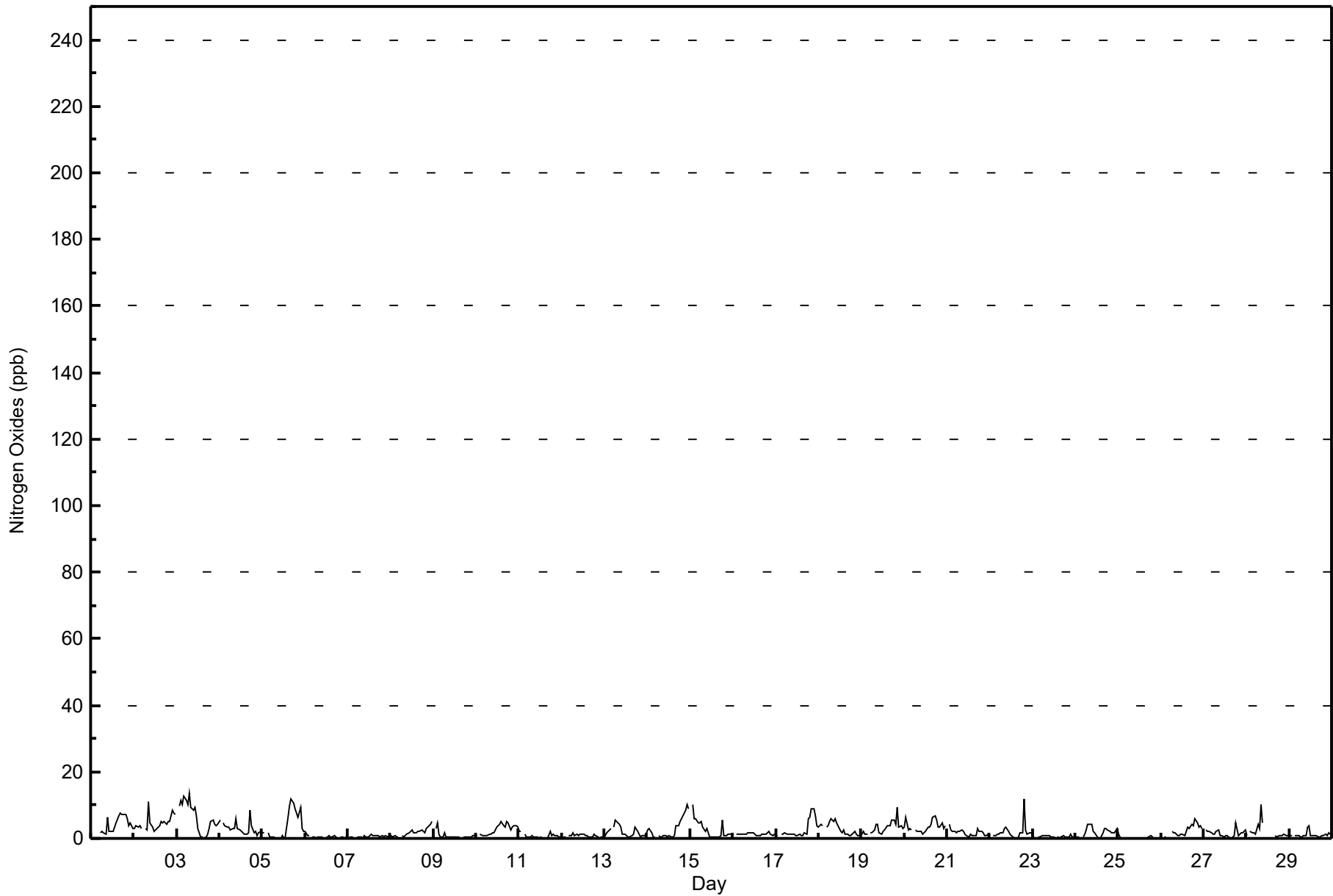
Nitrogen Oxides (NO_x) - ppb
Janvier - February 2024

Maximum Value: 13.4 ppb on Feb 3 08:00		Maximum Daily Average: 6.3 ppb on Feb 3		Hours in Service: 696																						
Minimum Value: 0.0 ppb on Feb 1 02:00		Minimum Daily Average: 0.2 ppb on Feb 25		Hours of Data: 661																						
Maximum Diurnal Average: 3.0 ppb at hour 19		Minimum Diurnal Average: 1.2 ppb at hour 14		Hours of Missing Data: 35																						
Monthly Average: 2.17 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.3 Q ₁ = 0.6 Median = 1.3 Q ₃ = 3.0 P ₉₀ = 5.2 P ₉₉ = 10.7		Hours of Calibration: 35																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.2	0.0	0.0	0.0	Z	1.8	1.9	1.9	1.4	6.2	2.2	2.2	2.3	3.4	4.9	6.7	7.6	7.1	7.1	7.2	6.0	3.9	4.8	3.0	3.6	7.6
2-Feb	2.9	3.8	3.4	3.8	3.0	Z	2.9	2.7	10.9	4.8	3.4	2.2	2.4	2.9	3.8	5.2	4.9	5.2	4.2	4.9	5.3	8.4	7.7	7.0	4.6	10.9
3-Feb	Z	9.9	11.3	10.1	12.6	11.6	10.1	13.4	9.5	8.6	9.2	6.6	2.9	0.4	0.4	0.1	0.3	1.3	2.9	5.3	5.5	4.2	3.8	4.3	6.3	13.4
4-Feb	5.6	Z	4.5	3.7	3.5	3.6	2.5	2.8	3.1	5.9	3.2	2.5	2.1	1.8	1.4	1.2	1.8	8.5	3.9	1.8	1.9	1.0	1.5	2.2	3.0	8.5
5-Feb	1.5	1.5	Z	1.5	0.5	0.3	0.4	0.1	0.1	0.1	0.0	0.7	0.2	0.6	6.5	9.9	12.1	10.6	9.0	7.4	6.3	9.1	2.8	2.3	3.6	12.1
6-Feb	2.2	1.0	0.7	Z	0.6	0.3	0.2	0.2	0.3	0.2	0.2	0.1	0.6	0.6	0.5	0.5	0.8	0.3	0.2	0.2	0.4	0.2	0.2	0.3	0.5	2.2
7-Feb	0.1	0.2	0.3	0.3	Z	0.4	0.4	0.3	0.0	0.7	0.3	0.5	0.8	1.1	0.9	0.9	0.8	0.8	0.6	0.6	0.6	0.6	0.4	0.7	0.5	1.1
8-Feb	0.7	0.5	0.7	0.3	0.4	Z	0.8	0.6	0.9	1.1	1.7	2.0	2.4	1.8	1.7	2.0	2.0	2.5	2.1	1.9	2.9	3.9	4.2	5.0	1.8	5.0
9-Feb	Z	2.8	4.7	1.5	0.4	0.4	1.5	0.3	0.4	0.6	0.4	0.3	0.3	0.4	0.4	0.2	0.2	0.2	0.3	0.4	0.5	0.4	0.9	0.8	0.8	4.7
10-Feb	0.9	Z	1.2	0.9	0.8	1.0	0.8	1.1	1.1	1.5	1.9	3.3	3.6	4.3	5.1	3.7	3.5	5.1	4.5	2.6	3.2	4.0	3.6	3.4	2.7	5.1
11-Feb	2.3	2.0	Z	1.3	0.6	0.4	0.5	0.7	0.5	0.4	0.3	0.2	0.3	0.1	0.0	0.0	0.0	2.2	0.9	1.1	0.7	0.8	0.5	0.6	0.7	2.3
12-Feb	0.1	0.4	0.2	Z	1.0	0.9	1.5	1.0	1.3	0.9	1.1	1.4	1.5	1.0	0.9	0.5	0.2	0.3	1.3	0.8	0.5	0.1	0.3	0.2	0.8	1.5
13-Feb	1.0	1.7	2.2	3.0	Z	3.2	5.4	4.6	4.0	3.2	1.4	1.4	0.7	0.4	0.6	0.7	1.3	3.2	2.1	1.3	0.6	0.8	1.0	1.1	1.9	5.4
14-Feb	2.7	3.0	1.7	0.5	0.3	Z	0.7	0.4	0.4	0.7	0.9	0.5	0.7	0.5	0.5	0.9	3.9	3.7	5.3	6.1	6.9	8.4	10.3	8.8	2.9	10.3
15-Feb	Z	10.3	5.8	5.8	4.6	4.7	5.2	3.5	2.0	3.0	1.6	0.5	0.6	0.5	0.3	0.5	0.6	0.7	5.3	0.9	0.8	1.1	1.1	1.2	2.6	10.3
16-Feb	1.3	Z	1.4	1.1	1.3	1.2	1.1	1.4	1.6	1.6	1.6	1.6	1.1	0.7	0.7	0.7	1.3	1.4	1.4	1.8	1.9	1.3	1.1	1.4	1.3	1.9
17-Feb	1.0	0.9	Z	1.1	1.2	1.7	1.2	1.1	1.2	1.3	1.2	1.0	0.7	1.1	0.7	0.9	1.5	1.3	5.9	6.3	9.0	8.8	6.7	3.9	2.6	9.0
18-Feb	3.5	4.2	4.0	Z	3.3	3.7	4.9	6.1	5.1	5.8	4.6	3.7	2.1	1.9	2.5	1.4	1.3	0.8	0.7	1.8	1.9	1.1	0.8	0.8	2.9	6.1
19-Feb	1.1	2.1	1.3	1.4	Z	1.6	1.6	2.7	4.3	4.4	1.8	1.4	2.0	2.7	3.8	3.6	3.8	5.6	5.6	4.2	9.2	3.4	3.7	2.9	3.2	9.2
20-Feb	3.3	6.5	2.5	2.8	2.7	Z	2.5	2.0	2.1	2.1	1.4	1.7	2.0	3.2	3.6	4.1	6.2	6.8	5.4	3.5	3.3	4.7	3.1	3.6	3.4	6.8
21-Feb	Z	4.3	2.7	2.2	2.2	1.8	2.2	2.0	2.5	2.0	1.3	1.0	0.5	1.2	0.8	0.6	0.7	2.8	2.3	2.2	1.8	1.0	1.0	1.1	1.7	4.3
22-Feb	0.9	Z	0.9	1.0	1.2	1.3	1.5	1.8	2.8	3.3	2.2	1.2	0.7	0.3	0.1	0.2	0.3	1.8	1.6	11.8	2.6	1.4	1.6	1.7	1.8	11.8
23-Feb	0.7	0.5	Z	0.6	0.6	0.9	0.9	0.7	0.7	0.8	0.5	0.4	0.2	0.2	0.3	0.2	0.3	0.7	0.3	0.4	0.5	1.2	0.5	0.5	0.5	1.2
24-Feb	0.4	0.4	0.3	Z	0.6	1.4	2.5	4.2	4.1	4.2	2.2	1.6	0.5	0.1	0.0	1.5	2.9	3.0	2.5	2.2	1.7	1.8	1.7	2.8	1.9	4.2
25-Feb	1.5	0.6	0.1	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.9	0.3	0.0	0.0	0.1	0.1	0.2	1.5
26-Feb	0.0	0.1	0.2	0.0	0.1	Z	2.2	1.8	1.5	1.0	0.9	1.2	1.4	1.0	2.1	3.5	3.0	4.1	3.9	5.8	4.5	3.6	3.9	3.2	2.1	5.8
27-Feb	Z	2.7	2.1	2.0	1.5	1.4	1.4	2.3	2.6	1.0	0.9	0.3	0.6	0.7	0.5	0.0	0.5	0.8	4.8	0.9	1.4	1.6	1.6	2.4	1.5	4.8
28-Feb	0.9	Z	2.0	1.7	1.6	1.5	4.3	2.9	10.3	4.5	C	C	C	C	C	C	0.7	0.6	0.8	1.0	0.8	1.4	0.8	0.7	--	10.3
29-Feb	0.7	0.7	Z	0.8	0.8	0.8	0.5	0.6	0.6	0.9	3.5	3.9	0.8	0.8	0.8	0.8	0.6	0.6	0.8	1.0	1.2	0.8	1.7	1.1	1.1	3.9
																								Diurnal Average		
																								Diurnal Maximum		
1.5 2.5 2.3 1.9 1.9 1.9 2.1 2.2 2.6 2.4 1.8 1.6 1.2 1.2 1.6 1.8 2.2 2.8 3.0 3.0 2.8 2.7 2.5 2.3																										
5.6 10.3 11.3 10.1 12.6 11.6 10.1 13.4 10.9 8.6 9.2 6.6 3.6 4.3 6.5 9.9 12.1 10.6 9.0 11.8 9.2 9.1 10.3 8.8																										
Z - zerospan C - Calibration																										



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Janvier - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Janvier - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Janvier - February 2024**

Concentration Ranges (ppb)	Wind Direction																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
0 - 20	64	101	46	28	12	16	18	20	17	71	90	35	46	49	23	20	656
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	64	101	46	28	12	16	18	20	17	71	90	35	46	49	23	20	656

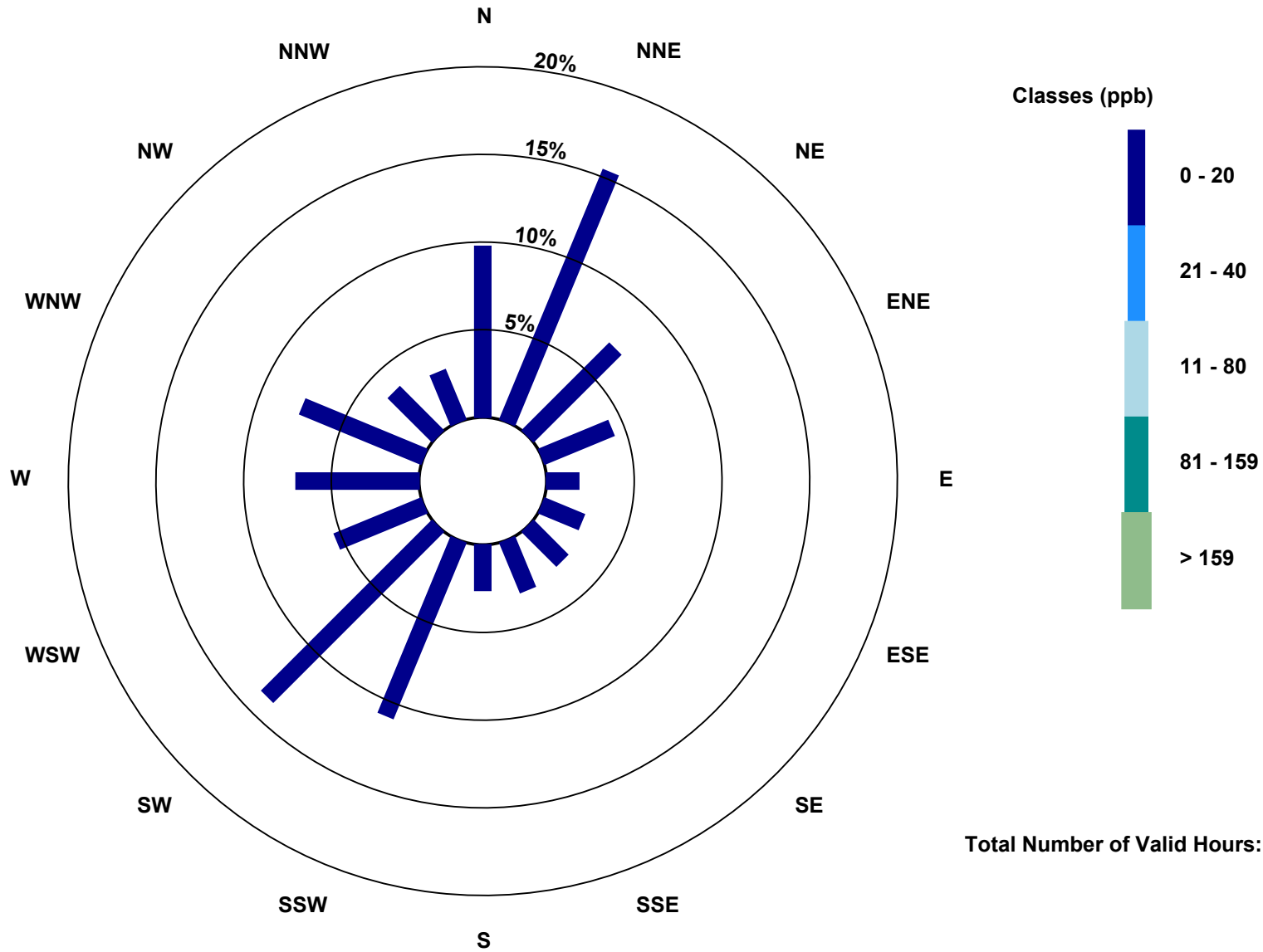
Total Number of Valid Hours: 656

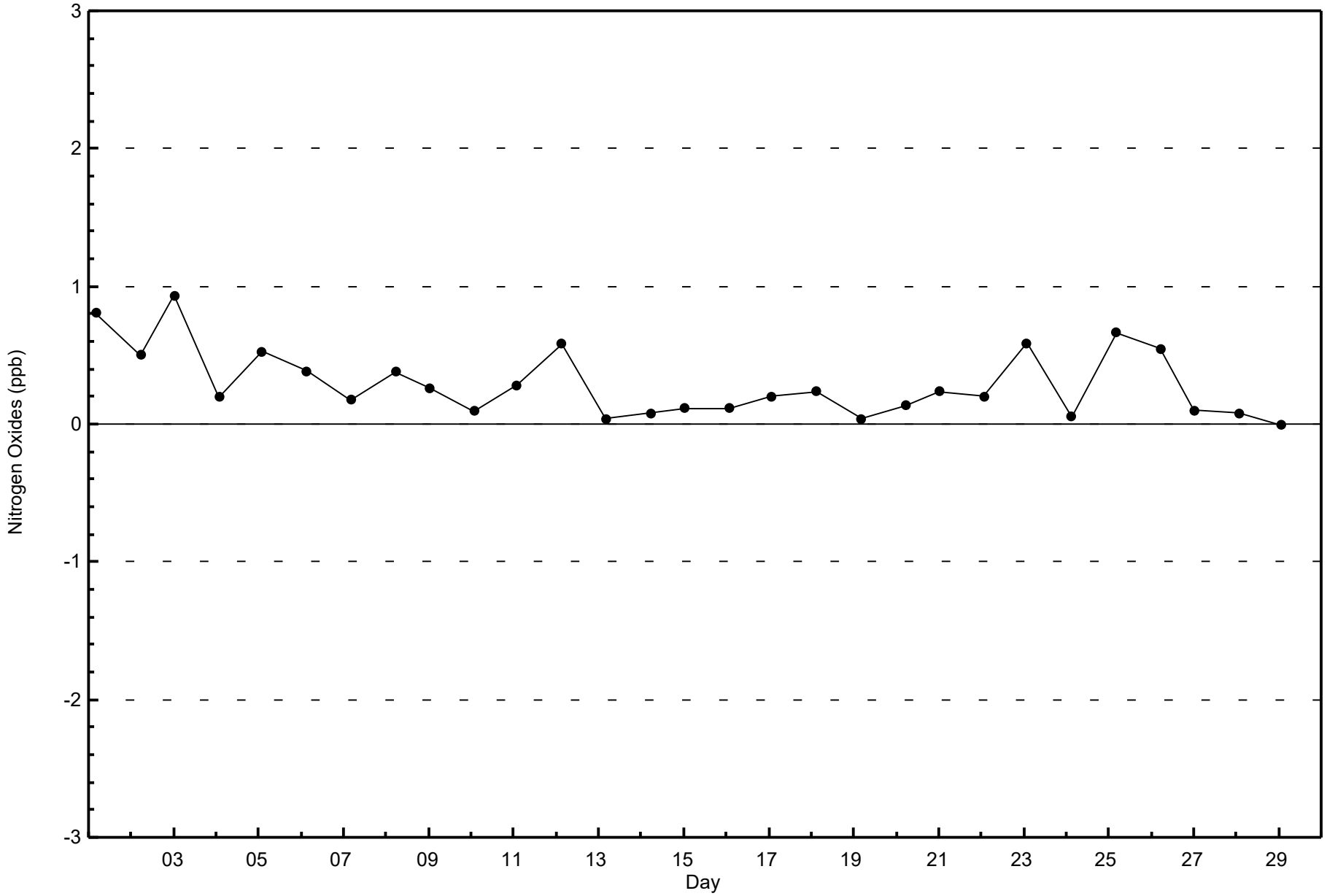
Total Number of Hours: 696

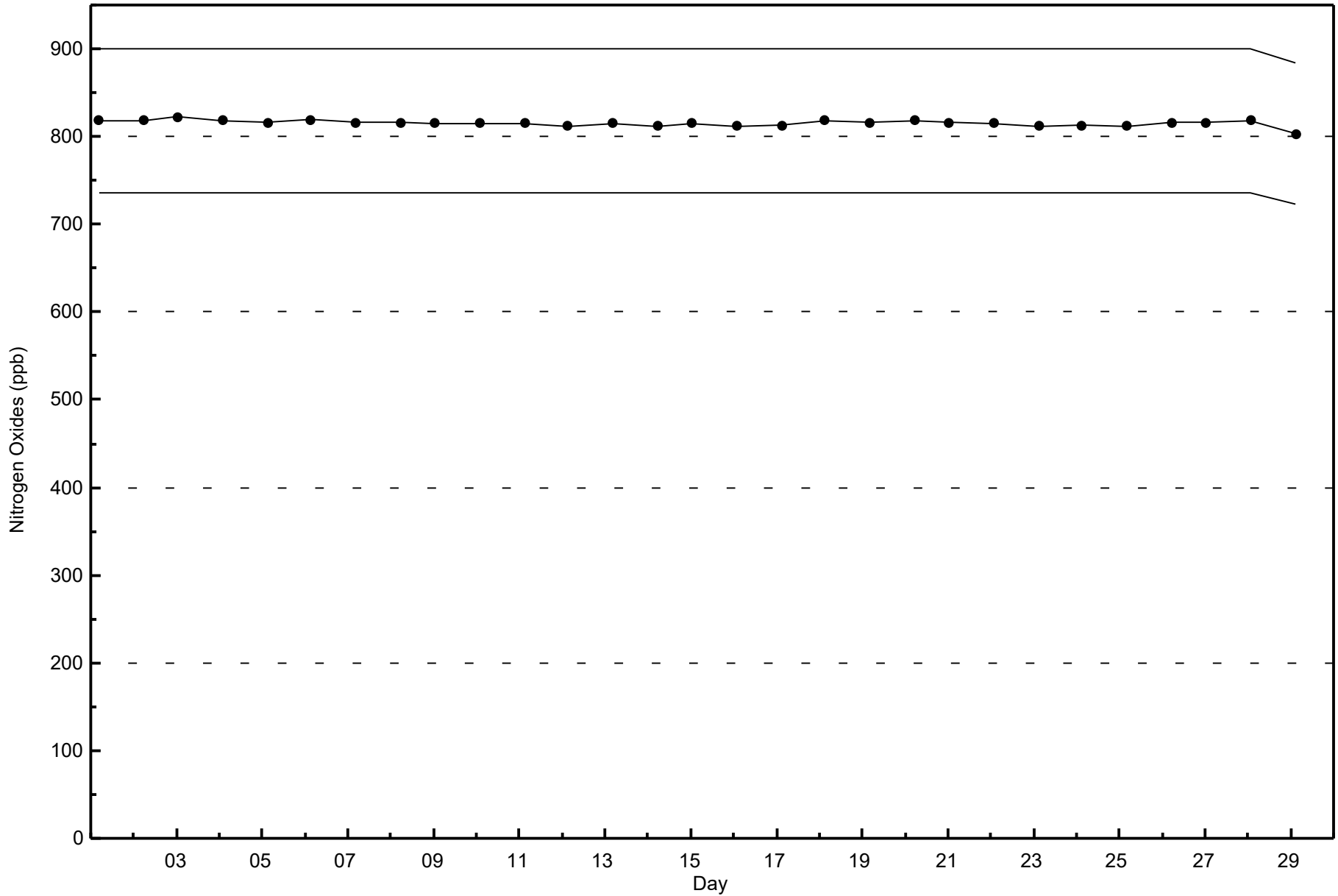


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Janvier









Wood Buffalo Environmental Association

Summary of Hour Averages

Ozone (O₃) - ppb

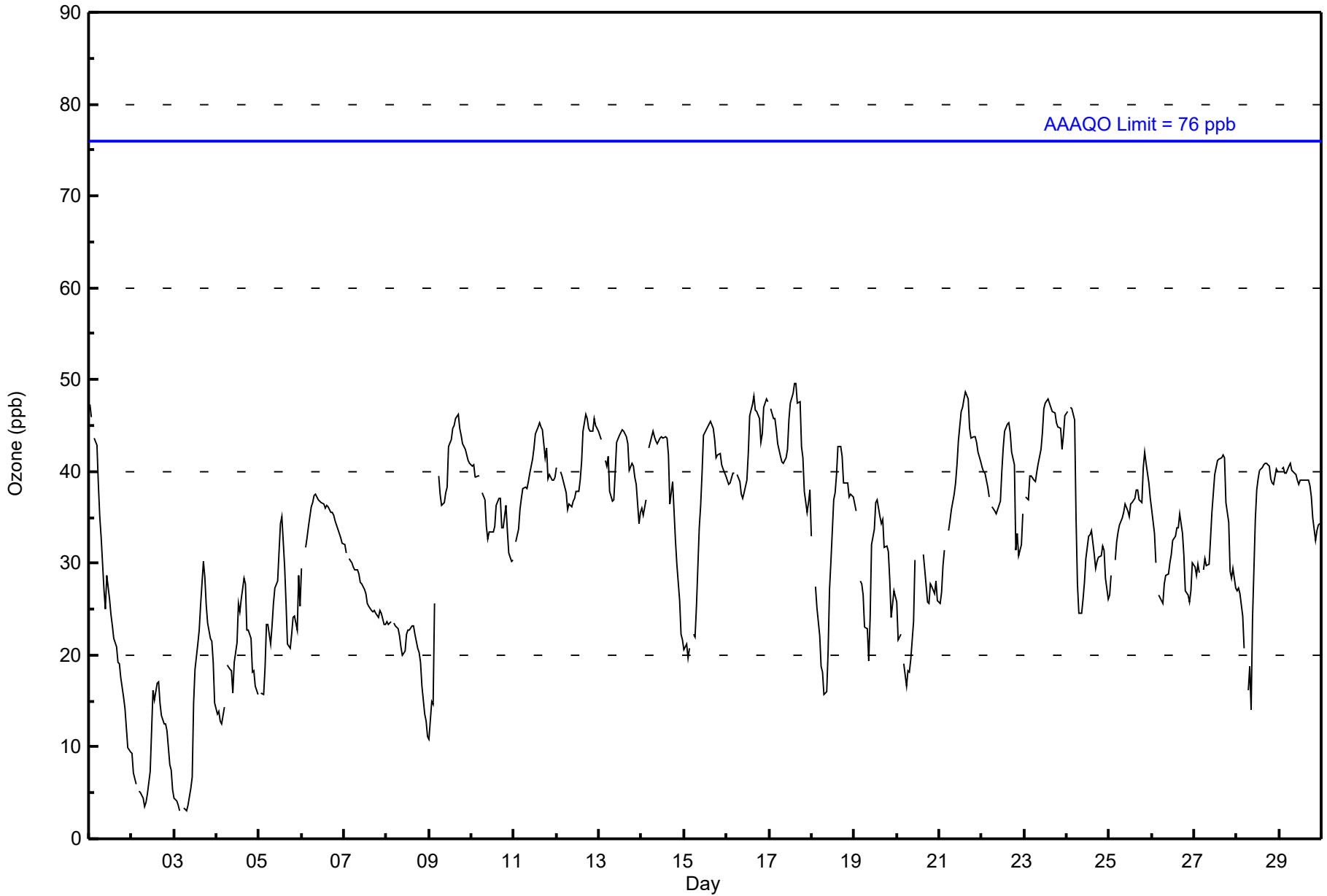
Janvier - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service:																	696						
Maximum Value: 49.6 ppb on Feb 17 16:00		Maximum Daily Average: 43.5 ppb on Feb 17																	Hours of Data:		663						
Minimum Value: 3.0 ppb on Feb 3 04:00		Minimum Daily Average: 9.5 ppb on Feb 2																	Hours of Missing Data:		33						
Maximum Diurnal Average: 37.2 ppb at hour 15		Minimum Diurnal Average: 28.9 ppb at hour 3																	Hours of Calibration:		33						
Monthly Average: 32.50 ppb		Percentiles: P ₁ = 3.9 P ₁₀ = 18.2 Q ₁ = 25.6 Median = 35.1 Q ₃ = 40.4 P ₉₀ = 44.4 P ₉₉ = 47.9																	Percent Operational Time:		100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	47.2	46.0	Z	43.6	42.8	38.6	35.1	32.8	27.1	25.1	28.7	26.0	24.3	23.1	21.8	20.9	19.3	19.1	17.5	15.5	14.2	12.0	9.9	9.4	26.1	47.2	
2-Feb	9.3	7.1	6.0	Z	5.1	5.0	4.5	3.5	4.0	4.8	7.4	11.8	16.2	15.1	16.9	17.0	14.7	13.5	12.5	12.6	11.7	8.1	7.5	5.3	9.5	17.0	
3-Feb	4.4	4.1	3.7	3.0	Z	3.4	3.3	3.1	3.7	5.5	6.7	14.8	18.4	21.2	22.7	25.5	30.2	28.5	25.5	23.5	21.8	21.5	19.2	14.8	14.3	30.2	
4-Feb	13.6	13.9	12.8	12.5	14.3	Z	18.9	18.5	18.2	15.9	19.2	21.4	25.6	24.8	26.1	28.4	27.7	22.8	22.7	21.8	18.2	18.3	16.7	15.6	19.5	28.4	
5-Feb	Z	15.8	15.8	18.6	23.3	Z	23.4	21.2	23.2	25.7	27.3	28.1	31.3	34.3	35.0	29.7	25.6	21.2	20.8	22.3	24.1	24.2	22.8	28.7	25.3	24.7	35.0
6-Feb	29.4	31.1	Z	31.8	32.8	34.0	36.1	36.6	37.4	37.5	37.0	36.8	36.7	36.5	36.0	36.3	36.2	35.6	35.5	35.3	34.6	33.8	33.3	32.9	32.1	35.0	37.5
7-Feb	32.1	31.1	Z	30.5	30.1	29.7	29.3	29.3	28.9	27.9	27.8	27.2	26.7	25.6	25.4	24.8	24.8	24.8	24.6	24.0	24.8	24.6	23.4	23.3	27.0	32.1	
8-Feb	23.7	23.4	23.6	Z	23.5	23.3	22.8	22.1	20.9	20.0	20.5	22.2	22.7	22.8	23.2	23.2	22.3	20.7	20.2	19.3	16.7	13.6	12.8	11.1	20.6	23.7	
9-Feb	10.8	15.0	14.6	25.6	Z	39.5	37.5	36.4	36.6	37.7	38.3	42.7	43.4	44.7	45.0	45.7	46.2	44.6	43.9	43.1	42.4	41.8	41.2	40.9	37.3	46.2	
10-Feb	40.6	40.7	39.4	39.5	39.5	Z	37.7	36.9	34.0	32.7	33.4	33.5	33.9	36.3	37.1	37.0	33.9	33.9	36.3	33.6	31.2	30.2	30.4	35.5	40.7	47.2	
11-Feb	Z	32.3	33.7	35.8	37.1	38.1	38.3	38.1	39.0	39.8	41.3	42.6	44.1	44.9	45.3	44.9	44.6	41.5	42.5	39.3	39.7	39.1	39.0	39.4	40.0	45.3	
12-Feb	40.4	Z	39.9	39.4	38.8	37.8	35.8	36.4	36.1	36.8	37.0	37.9	37.8	39.1	41.1	44.4	46.2	45.7	44.7	44.3	44.4	45.8	45.0	44.3	40.8	46.2	
13-Feb	44.0	43.4	Z	41.1	40.6	41.7	37.8	36.8	37.0	40.0	43.1	43.9	44.2	44.6	44.4	43.9	43.0	40.1	41.0	40.6	39.4	38.5	34.4	35.6	40.8	44.6	
14-Feb	36.0	35.2	36.9	Z	42.6	43.2	44.4	43.9	43.3	43.0	43.6	43.8	43.6	43.8	43.6	41.8	36.5	38.9	35.7	32.5	29.9	25.9	22.3	21.7	37.9	44.4	
15-Feb	20.6	21.3	19.7	20.7	Z	22.3	22.0	25.4	33.9	36.3	39.8	43.6	44.9	45.2	45.4	44.8	43.5	41.4	41.8	42.0	40.7	40.3	39.5	35.6	45.4	47.2	
16-Feb	39.1	38.6	38.7	39.8	39.7	Z	39.7	38.9	37.5	37.0	37.7	39.1	42.0	46.0	47.3	48.2	46.8	46.6	45.7	43.1	44.1	46.9	47.9	47.6	42.5	48.2	
17-Feb	Z	46.8	45.7	45.7	44.6	43.0	41.7	41.0	40.8	41.4	42.4	45.7	47.5	48.5	49.6	49.6	47.4	47.6	42.7	41.5	37.9	35.5	36.7	38.0	43.5	49.6	
18-Feb	33.0	Z	27.5	25.2	22.1	18.8	18.1	15.7	16.1	20.4	27.2	30.2	36.9	37.6	39.7	42.7	42.8	41.6	38.8	38.7	38.7	37.3	37.4	37.2	31.5	42.8	
19-Feb	36.5	35.6	Z	28.0	27.7	26.5	23.1	22.9	19.4	24.2	32.0	33.7	36.6	37.0	35.1	34.3	34.8	31.7	31.9	31.3	28.3	24.2	26.9	26.5	29.9	37.0	
20-Feb	25.7	21.7	22.3	Z	19.1	16.6	18.2	18.2	19.6	23.6	30.3	C	C	C	C	31.0	29.2	25.8	25.6	27.8	27.4	26.8	28.1	26.0	24.4	31.0	
21-Feb	25.7	26.8	29.7	31.4	Z	33.5	34.6	35.9	37.6	38.8	40.7	43.3	46.5	46.9	47.8	48.7	47.8	44.6	43.7	43.7	43.7	43.1	42.1	41.0	39.9	48.7	
22-Feb	40.4	40.0	39.8	38.3	37.2	Z	36.2	35.6	35.3	35.8	36.7	40.0	42.5	44.3	45.1	45.3	44.3	42.1	40.8	31.4	33.2	30.8	32.0	35.4	38.4	45.3	
23-Feb	Z	37.3	36.9	39.5	39.5	39.1	38.8	40.0	40.9	42.5	44.2	46.8	47.4	47.9	47.4	46.9	46.5	46.4	45.3	44.9	44.7	42.4	44.0	46.1	43.3	47.9	
24-Feb	46.6	Z	47.0	46.8	45.6	34.9	27.7	24.5	24.6	26.0	27.9	30.6	32.9	33.1	33.5	31.0	29.5	30.2	30.7	30.8	31.8	31.4	28.4	26.1	32.7	47.0	
25-Feb	26.5	28.6	Z	30.3	32.4	33.4	34.1	34.9	35.6	36.4	35.8	35.1	36.5	36.6	37.0	37.9	38.0	36.9	36.6	40.4	42.1	40.9	38.7	37.1	35.7	42.1	
26-Feb	35.9	33.2	30.1	Z	26.6	25.9	25.6	27.7	28.7	28.9	30.1	30.9	32.5	32.9	33.8	33.9	35.4	33.2	30.8	27.0	26.5	25.8	26.9	30.1	30.1	35.9	
27-Feb	29.6	28.6	29.9	28.9	Z	29.4	30.5	29.8	29.8	32.6	35.5	39.6	40.4	41.2	41.4	41.5	41.8	41.4	36.7	34.5	29.2	28.3	29.4	27.4	33.8	41.8	
28-Feb	27.0	27.3	26.6	24.3	20.8	Z	16.2	18.8	14.0	24.0	34.7	37.9	39.2	40.2	40.4	40.7	40.9	40.9	40.6	39.2	38.8	38.6	40.3	40.0	32.7	40.9	
29-Feb	Z	40.2	40.4	39.8	39.9	40.6	40.8	40.2	39.9	39.6	39.1	38.7	39.0	39.1	39.1	39.1	39.1	39.1	38.5	37.3	34.9	32.5	33.6	34.1	34.3	38.2	40.8
		29.9	29.4	28.9	31.7	32.0	30.2	29.3	29.2	30.4	32.6	34.7	36.3	36.8	37.2	37.1	36.5	35.2	34.2	33.2	32.3	31.1	30.9	30.4	Diurnal Average		
		47.2	46.8	47.0	46.8	45.6	43.2	44.4	43.9	43.3	43.0	44.2	46.8	47.5	48.5	49.6	49.6	47.8	47.6	45.7	44.9	44.7	46.9	47.9	47.6	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 76 ppb																									



Wood Buffalo Environmental Association
Hourly Averages

Ozone (O₃) - ppb
Janvier - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ozone (O₃) - ppb
Janvier - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	88	13.27	13.27
21 - 50	575	86.73	100.00
51 - 82	0	0.00	100.00
> 83	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Ozone (O₃) - ppb
Janvier - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	6	13	6	3	2	1	7	6	6	17	1	4	4	0	4	4	84
21 - 50	56	86	38	25	10	16	10	17	14	55	88	32	42	49	18	17	573
51 - 82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	62	99	44	28	12	17	17	23	20	72	89	36	46	49	22	21	657

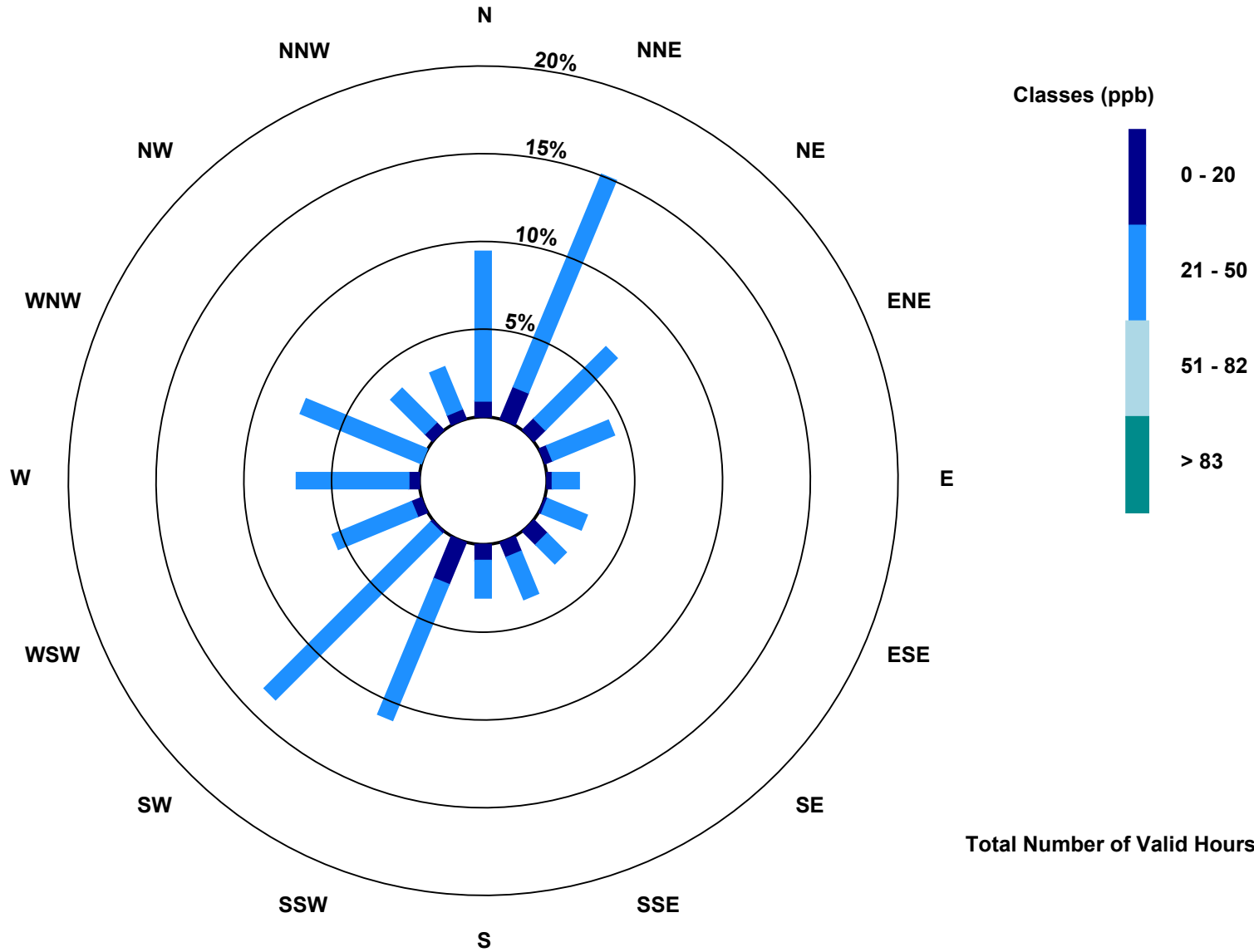
Total Number of Valid Hours: 657

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

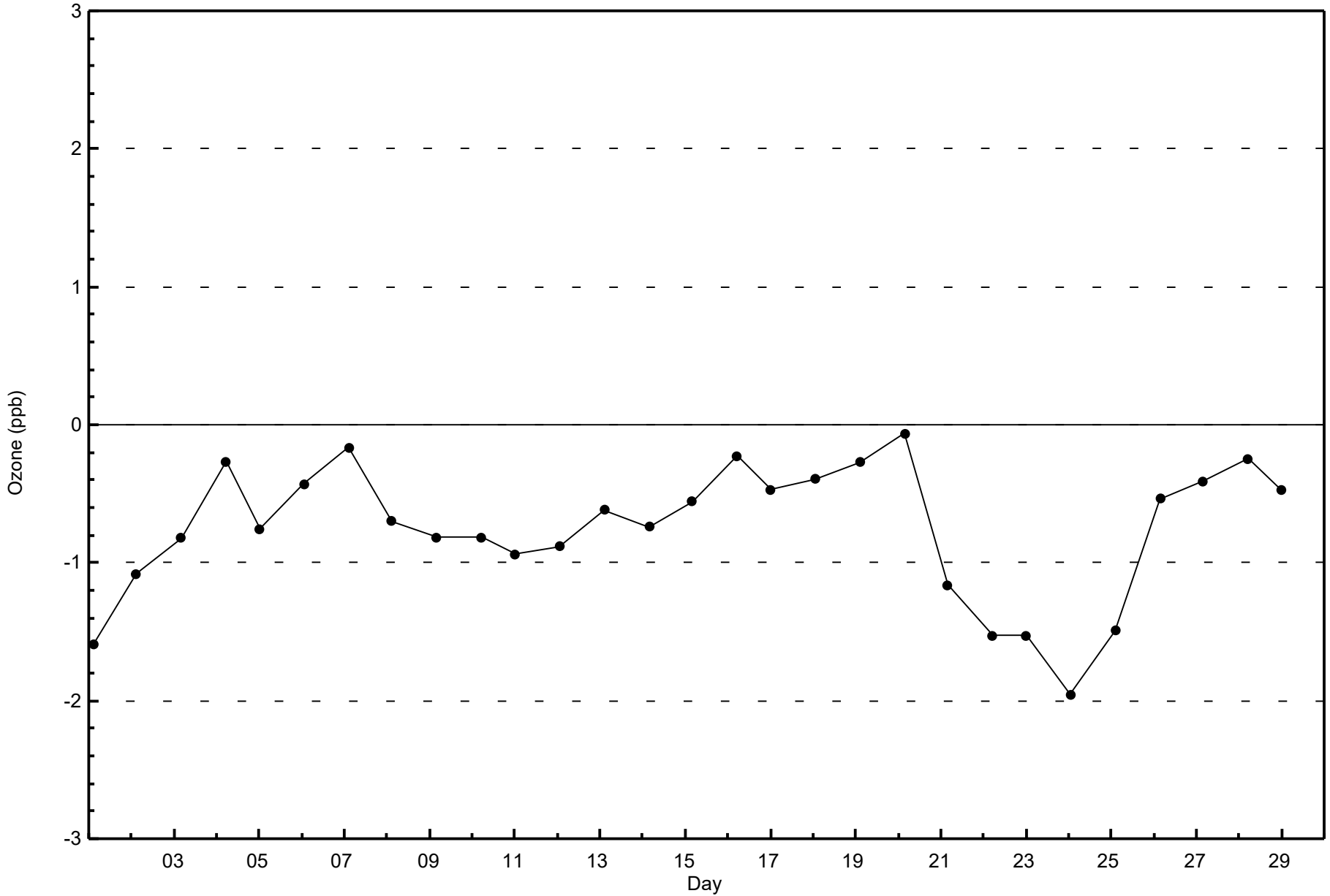
Ozone (O₃) - ppb
Janvier

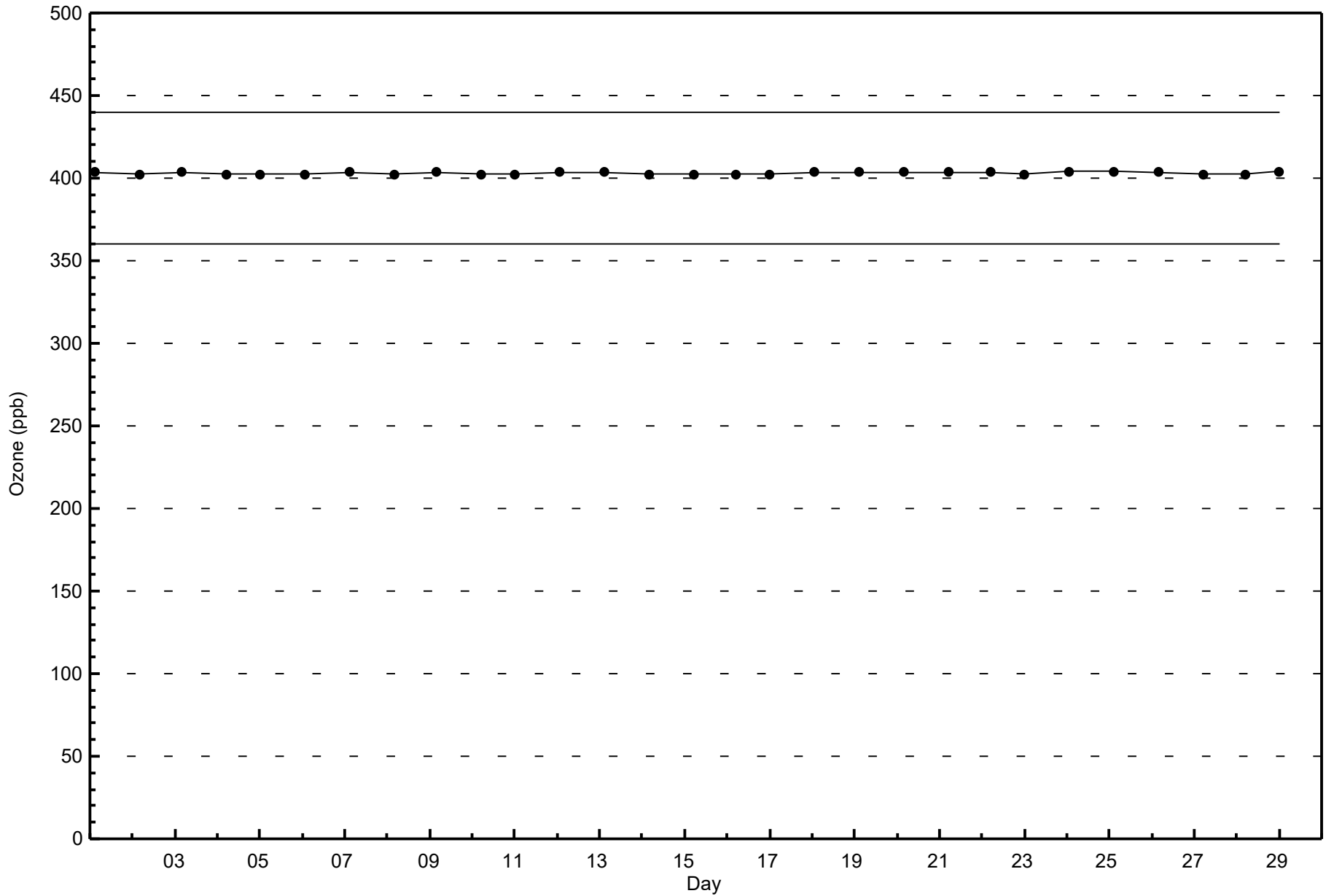




Wood Buffalo Environmental Association
Zero Responses

Ozone (O₃) - ppb
Janvier - February 2024







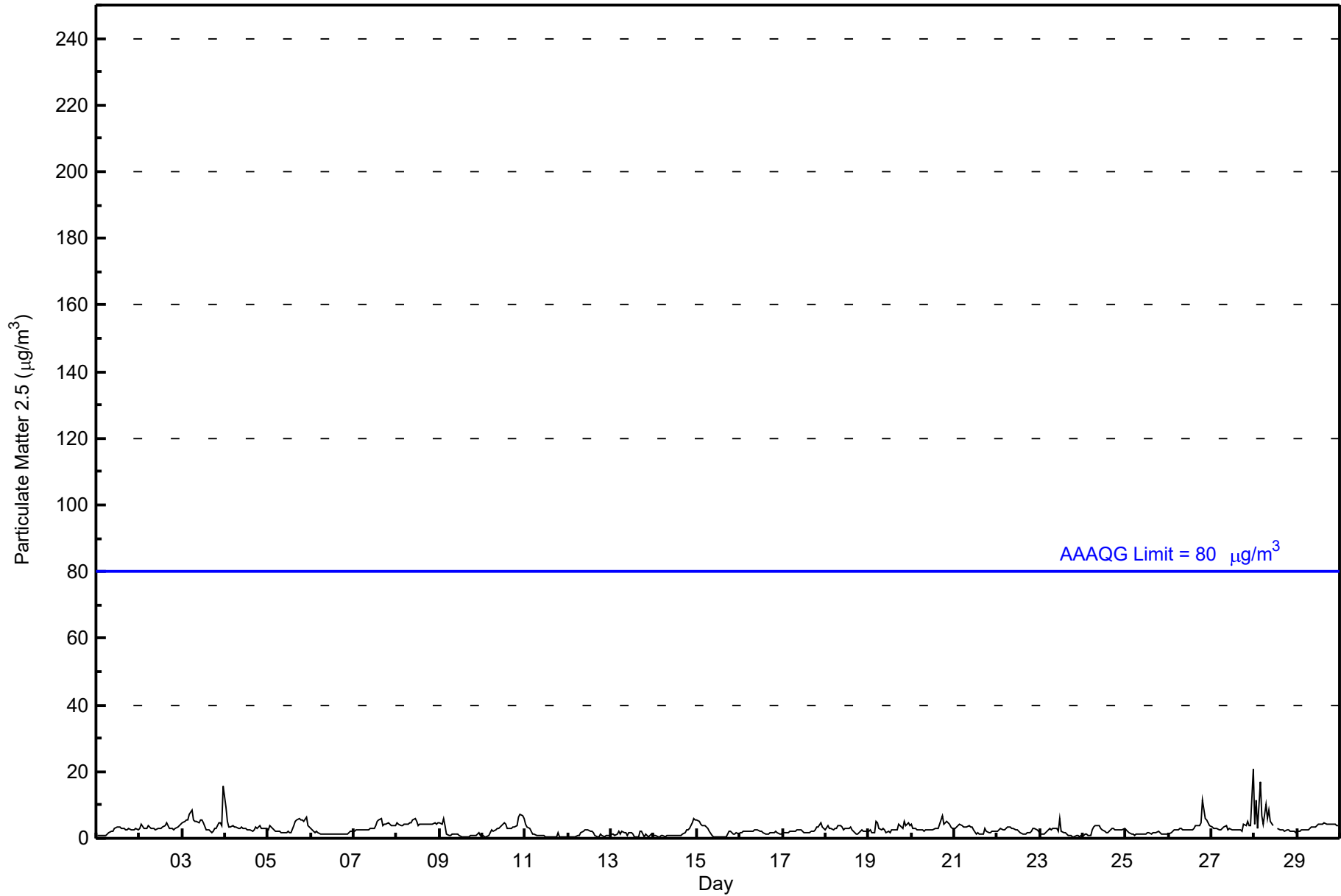
Wood Buffalo Environmental Association

Summary of Hour Averages

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Janvier - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														Daily Average		Daily Maximum					
Maximum Value: 20.9 µg/m ³ on Feb 28 00:00		Maximum Daily Average: 4.9 µg/m ³ on Feb 3		Hours of Data: 694														Hours of Missing Data: 2		Hours of Calibration: 2							
Minimum Value: 0.3 µg/m ³ on Feb 15 12:00		Minimum Daily Average: 1.1 µg/m ³ on Feb 11		Hours of Calibration: 2														Percent Operational Time: 100.0									
Maximum Diurnal Average: 3.7 µg/m ³ at hour 24		Minimum Diurnal Average: 2.2 µg/m ³ at hour 15		Percentiles: P ₁ = 0.4 P ₁₀ = 0.8 Q ₁ = 1.5 Median = 2.5 Q ₃ = 3.4 P ₉₀ = 4.5 P ₉₉ = 8.7																							
Monthly Average: 2.69 µg/m ³																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.8	0.9	0.9	0.8	0.9	1.0	1.3	1.9	2.0	2.0	2.8	3.5	3.5	3.3	3.0	2.8	2.6	2.4	2.8	2.6	2.6	2.6	2.8	2.6	2.2	3.5	
2-Feb	2.8	4.1	2.9	2.9	3.1	3.7	3.0	3.0	2.8	2.7	2.8	3.1	3.2	3.5	3.8	4.5	3.8	3.1	2.8	2.7	3.0	3.2	4.0	4.2	3.3	4.5	
3-Feb	4.6	5.1	5.6	5.4	7.1	8.6	5.6	5.2	5.0	4.8	5.4	5.5	4.8	2.7	2.6	2.3	1.5	2.2	2.8	3.1	4.6	4.5	3.8	15.6	4.9	15.6	
4-Feb	9.4	5.0	3.4	3.2	3.7	3.5	3.4	3.0	2.8	3.4	3.1	2.9	2.6	2.6	2.5	2.3	2.7	3.4	3.1	3.7	2.9	3.0	2.9	3.0	3.4	9.4	
5-Feb	2.7	3.7	3.2	2.7	2.2	2.2	2.1	1.9	1.8	1.6	1.8	2.3	1.9	1.9	3.7	5.2	5.6	5.9	5.6	5.3	5.1	6.5	3.8	3.4	3.4	6.5	
6-Feb	2.9	2.3	1.9	2.0	1.5	1.1	1.1	1.3	1.4	1.4	1.2	1.1	1.1	1.2	1.1	1.1	1.2	1.1	1.2	1.2	1.4	1.9	1.9	2.0	1.5	2.9	
7-Feb	2.3	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.9	2.9	3.1	4.0	5.1	5.3	6.0	4.0	4.2	4.4	4.8	4.2	4.0	3.6	4.0	3.6	6.0	
8-Feb	4.6	4.3	3.8	3.8	4.1	4.2	4.3	4.5	4.7	5.3	5.7	5.1	4.0	4.1	4.4	4.2	4.2	4.1	4.1	4.1	4.4	4.6	4.4	4.7	4.4	5.7	
9-Feb	4.5	4.4	6.1	3.9	1.1	1.0	1.0	1.2	1.5	1.2	1.1	0.7	0.6	0.6	0.6	0.6	0.5	0.7	0.8	0.8	0.7	1.5	1.8	0.9	1.6	6.1	
10-Feb	0.8	0.6	0.6	0.8	1.5	2.3	2.3	2.5	2.8	3.1	3.4	4.1	4.5	4.3	3.0	2.8	2.9	3.2	3.4	4.0	6.5	7.3	7.0	6.1	3.3	7.3	
11-Feb	4.3	3.5	2.8	2.1	1.5	1.3	1.0	0.9	0.8	0.8	0.7	0.6	0.4	0.4	0.4	0.4	0.4	0.4	1.7	0.4	0.4	0.4	0.4	0.4	1.1	4.3	
12-Feb	0.4	0.3	0.4	0.4	0.4	0.6	1.1	1.6	1.9	2.4	2.4	2.4	2.3	1.9	1.6	0.9	0.6	0.6	1.1	0.8	0.6	0.6	0.7	0.7	1.1	2.4	
13-Feb	1.1	1.1	1.0	1.2	2.1	1.4	2.1	1.7	1.5	1.1	1.5	1.8	1.3	0.6	0.5	0.6	2.3	2.2	0.5	1.3	0.8	0.4	1.3	1.2	1.3	2.3	
14-Feb	0.9	0.7	0.4	0.6	0.7	0.7	0.6	0.7	0.9	1.0	0.7	0.7	0.7	0.7	0.7	0.8	1.2	1.7	2.6	2.6	3.0	4.8	5.7	5.6	1.6	5.7	
15-Feb	5.6	4.9	4.2	3.9	3.7	3.2	3.1	2.1	0.9	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.5	1.1	2.2	1.9	1.2	1.3	1.7	1.4	1.9	5.6	
16-Feb	1.7	1.6	2.0	2.1	2.2	2.1	2.1	2.3	2.4	2.4	2.4	2.1	2.0	1.5	1.3	1.2	1.4	1.8	1.6	1.6	2.0	1.9	1.2	1.2	1.8	2.4	
17-Feb	1.5	1.6	1.6	1.7	2.0	2.3	2.2	2.3	2.4	2.5	2.6	1.9	1.7	1.6	1.6	1.8	2.1	1.9	2.7	3.3	3.5	4.6	3.4	2.8	2.3	4.6	
18-Feb	2.7	3.9	2.9	2.8	2.7	2.8	2.9	3.8	3.8	3.4	2.5	2.9	3.0	3.1	3.3	2.6	1.9	1.3	1.1	2.1	2.7	2.2	2.2	2.2	2.7	3.9	
19-Feb	2.2	2.4	1.7	1.6	5.0	4.7	3.1	2.5	3.0	2.6	1.9	2.0	1.9	2.4	2.7	2.6	2.5	4.4	3.6	3.1	5.1	3.8	4.7	4.0	3.1	5.1	
20-Feb	4.2	3.1	2.8	2.7	2.7	2.4	2.4	2.2	2.6	2.7	2.4	2.7	2.7	2.9	3.0	2.9	4.2	6.7	4.3	4.6	5.0	4.2	3.2	3.0	3.3	6.7	
21-Feb	2.9	3.2	3.9	4.1	3.9	3.4	3.5	3.6	3.6	3.5	3.2	2.4	1.4	1.6	1.2	1.1	1.1	2.8	2.1	1.6	1.7	2.1	2.0	2.1	2.6	4.1	
22-Feb	2.2	2.5	3.0	2.5	2.6	2.9	3.2	3.3	3.0	2.9	2.7	2.5	2.0	1.5	1.1	1.2	1.4	1.9	1.6	2.1	2.8	2.9	2.7	2.0	2.4	3.3	
23-Feb	1.3	1.3	1.4	1.8	2.1	3.1	2.7	2.8	3.0	2.9	2.2	6.0	2.2	1.5	1.8	1.4	0.8	0.8	0.5	0.5	0.7	1.0	0.6	0.8	1.8	6.0	
24-Feb	0.9	1.3	1.4	0.9	0.7	2.3	3.2	3.9	3.6	3.6	2.9	2.6	2.1	1.8	1.7	2.6	2.8	3.0	2.7	2.6	2.4	2.5	2.6	2.9	2.4	3.9	
25-Feb	2.7	2.1	1.6	1.4	1.2	1.0	1.1	1.2	1.1	1.1	1.1	1.2	1.5	1.5	1.3	1.6	1.5	1.9	2.1	1.8	1.3	1.3	1.1	1.2	1.5	2.7	
26-Feb	1.3	1.6	1.9	2.4	2.4	2.5	2.9	2.8	2.7	2.7	2.7	2.7	2.6	2.4	3.1	3.9	3.7	4.0	4.5	11.5	6.1	5.4	4.6	3.9	3.5	11.5	
27-Feb	3.3	3.1	2.8	2.8	2.4	2.5	3.1	3.4	3.8	2.7	2.9	2.4	2.4	2.6	2.4	2.4	2.7	2.3	4.4	3.6	5.2	3.7	3.8	20.9	3.8	20.9	
28-Feb	4.3	11.4	3.1	17.1	6.8	4.3	10.0	6.1	8.3	5.1	3.8	C	C	3.0	2.4	2.4	2.4	2.2	2.4	2.4	2.3	2.3	1.9	1.9	4.8	17.1	
29-Feb	2.0	2.2	2.5	2.5	2.5	2.5	2.6	2.9	3.2	3.5	3.5	3.8	4.1	4.3	4.4	4.5	4.4	4.4	4.4	4.3	4.2	4.2	4.0	3.6	3.5	4.5	
																								Diurnal Average		Diurnal Maximum	
																								2.8 2.9 2.5 2.9 2.6 2.6 2.7 2.7 2.8 2.6 2.5 2.6 2.3 2.2 2.2 2.3 2.3 2.6 2.7 2.9 3.0 3.1 2.9 3.7		9.4 11.4 6.1 17.1 7.1 8.6 10.0 6.1 8.3 5.3 5.7 6.0 4.8 5.1 5.3 6.0 5.6 6.7 5.6 11.5 6.5 7.3 7.0 20.9	
C - Calibration																											
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																											





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Janvier - February 2024**

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	662	95.39	95.39
6 - 15	29	4.18	99.57
16 - 25	3	0.43	100.00
26 - 80	0	0.00	100.00
> 81.0	0	0.00	100.00

Total Number of Valid Hours: 694

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Janvier - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	62	99	45	27	13	17	16	22	17	76	88	35	48	51	22	20	658
6 - 15	4	4	2	1	0	0	2	1	3	1	6	1	1	0	1	1	28
16 - 25	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
26 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	66	103	47	28	13	17	18	24	21	77	94	36	49	51	23	21	688

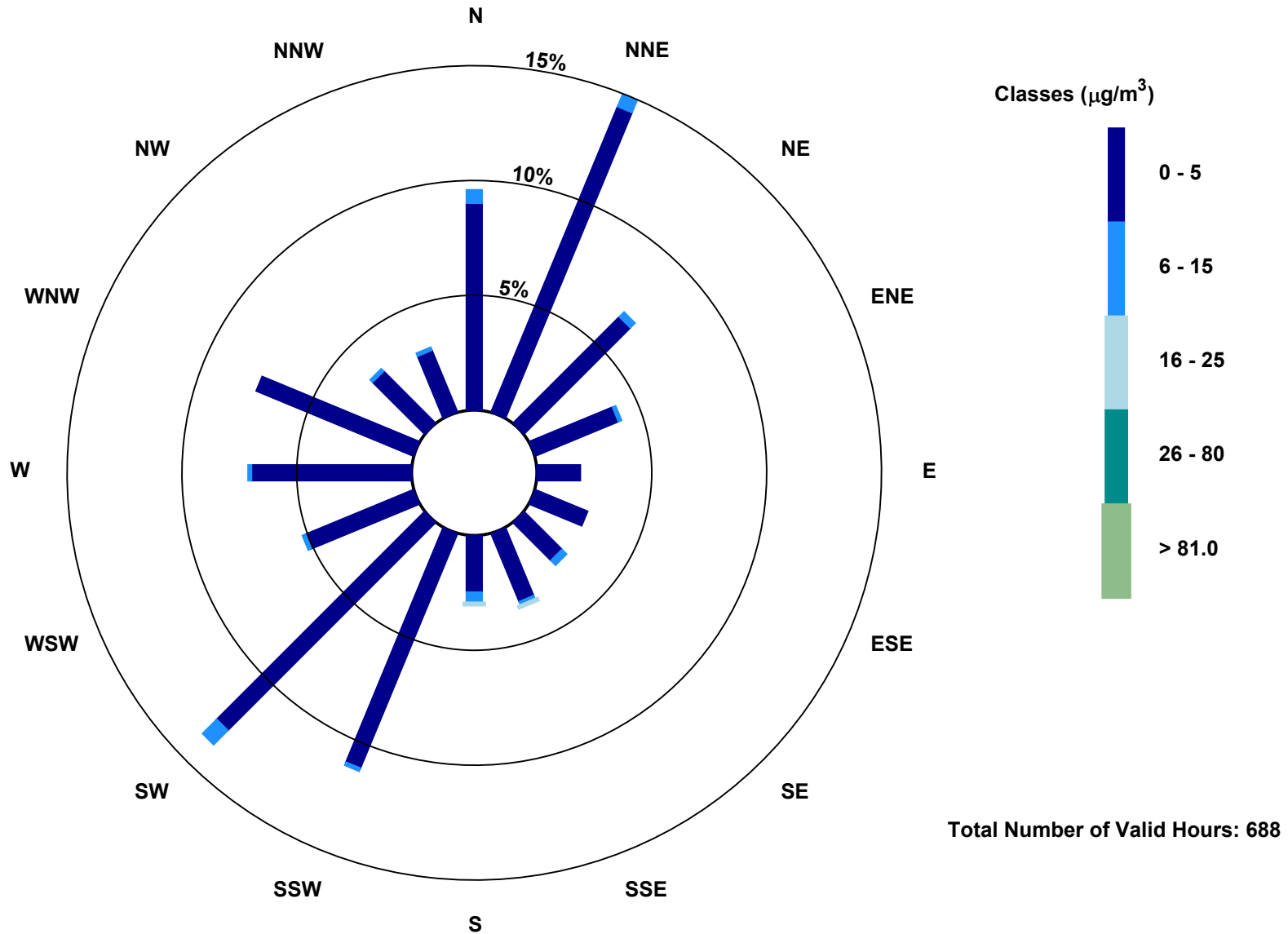
Total Number of Valid Hours: 688

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Janvier





Wood Buffalo Environmental Association
Summary of Hour Averages

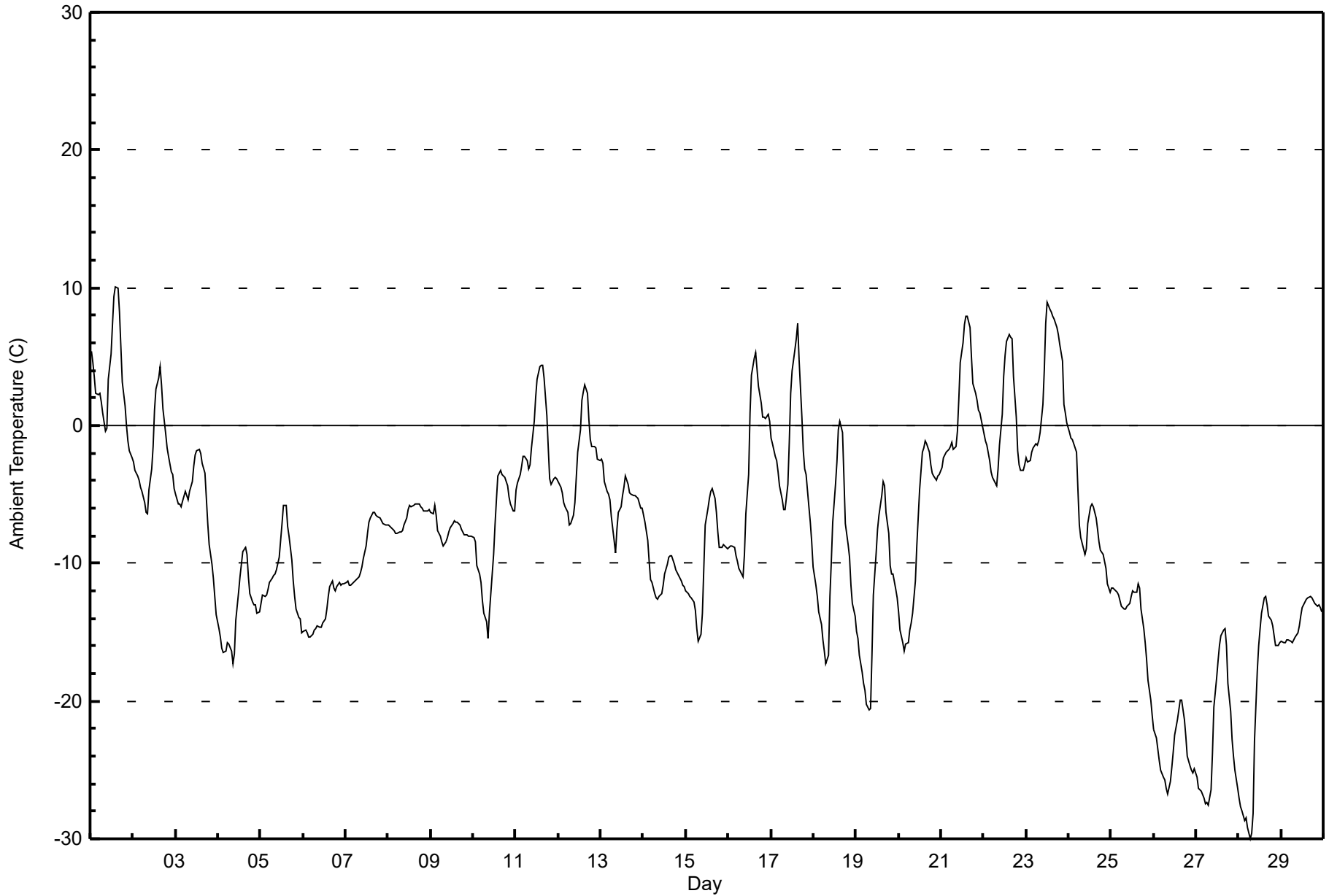
Ambient Temperature (AT) - C
Janvier - February 2024

Maximum Value: 10.1 C on Feb 1 15:00 Maximum Daily Average: 3.4 C on Feb 1																					Hours in Service: 696 Hours of Data: 696					
Minimum Value: -30.0 C on Feb 28 07:00 Minimum Daily Average: -23.7 C on Feb 26 Maximum Diurnal Average: -3.4 C at hour 16 Minimum Diurnal Average: -11.7 C at hour 8 Monthly Average: -8.10 C Percentiles: P ₁ = -27.7 P ₁₀ = -16.6 Q ₁ = -12.7 Median = -7.5 Q ₃ = -3.0 P ₉₀ = 1.7 P ₉₉ = 8.0																					Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	5.4	4.6	3.6	2.4	2.2	2.3	1.7	0.9	-0.5	-0.2	3.3	5.1	7.3	9.3	10.1	10.0	8.3	5.7	3.2	1.4	0.0	-1.2	-1.9	-2.3	3.4	10.1
2-Feb	-2.7	-3.3	-3.7	-4.0	-4.5	-4.7	-5.6	-6.3	-6.4	-4.7	-3.2	-1.5	1.1	2.7	3.4	4.3	3.0	1.3	-0.6	-1.6	-2.2	-3.4	-3.5	-4.5	-2.1	4.3
3-Feb	-5.0	-5.7	-5.7	-5.9	-5.5	-4.8	-5.1	-5.4	-4.8	-4.1	-3.0	-2.1	-1.8	-1.7	-2.1	-2.7	-3.5	-5.3	-7.1	-8.7	-10.1	-11.1	-12.4	-13.8	-5.7	-1.7
4-Feb	-14.7	-15.4	-16.2	-16.5	-16.3	-15.8	-15.9	-16.4	-17.3	-16.6	-14.2	-12.1	-10.9	-10.1	-9.1	-8.8	-9.4	-11.0	-12.2	-12.8	-13.0	-13.0	-13.7	-13.5	-13.5	-8.8
5-Feb	-13.0	-12.3	-12.4	-12.3	-11.9	-11.4	-11.1	-10.9	-10.8	-10.5	-9.6	-8.4	-7.2	-5.8	-5.8	-7.3	-8.0	-9.7	-11.2	-12.4	-13.3	-13.9	-14.1	-15.0	-10.8	-5.8
6-Feb	-15.0	-14.9	-15.1	-15.3	-15.4	-15.1	-14.9	-14.8	-14.6	-14.7	-14.7	-14.4	-14.0	-13.3	-12.4	-11.7	-11.3	-11.8	-12.0	-11.7	-11.4	-11.6	-11.5	-11.5	-13.4	-11.3
7-Feb	-11.4	-11.3	-11.6	-11.5	-11.4	-11.3	-11.1	-11.0	-10.7	-10.2	-9.6	-8.8	-7.8	-7.1	-6.7	-6.3	-6.3	-6.5	-6.6	-6.7	-6.9	-7.1	-7.2	-7.2	-8.8	-6.3
8-Feb	-7.3	-7.3	-7.5	-7.7	-7.8	-7.8	-7.7	-7.7	-7.6	-7.2	-6.7	-6.1	-5.8	-5.9	-5.8	-5.7	-5.7	-5.7	-5.9	-5.9	-6.2	-6.2	-6.2	-6.1	-6.6	-5.7
9-Feb	-6.3	-6.4	-5.8	-6.5	-7.6	-8.0	-8.5	-8.7	-8.5	-8.1	-7.7	-7.4	-7.2	-7.0	-7.0	-7.1	-7.2	-7.5	-7.8	-7.9	-7.9	-8.0	-8.0	-8.1	-7.5	-5.8
10-Feb	-8.2	-8.5	-10.2	-10.8	-11.4	-12.7	-13.6	-14.3	-15.4	-13.7	-12.2	-9.4	-7.3	-5.4	-3.7	-3.3	-3.5	-3.7	-3.7	-4.4	-5.2	-5.6	-6.2	-6.2	-8.3	-3.3
11-Feb	-4.7	-4.1	-3.6	-2.9	-2.2	-2.2	-2.6	-3.2	-2.8	-1.6	0.3	2.0	3.4	4.3	4.4	4.4	3.4	0.7	-1.7	-3.8	-4.3	-3.9	-3.7	-3.9	-1.2	4.4
12-Feb	-4.1	-4.5	-4.9	-5.6	-5.8	-6.4	-7.2	-7.1	-6.5	-5.6	-3.8	-1.9	-0.3	1.8	2.4	3.0	2.3	0.4	-1.0	-1.5	-1.5	-1.6	-2.4	-2.5	-2.7	3.0
13-Feb	-2.5	-2.8	-4.1	-4.7	-5.0	-5.4	-6.6	-8.3	-9.3	-7.6	-6.3	-5.9	-5.1	-4.5	-3.7	-4.2	-4.9	-4.9	-5.1	-5.1	-5.2	-5.2	-6.0	-6.0	-5.3	-2.5
14-Feb	-6.6	-7.0	-8.3	-9.9	-11.2	-11.3	-12.2	-12.5	-12.6	-12.5	-12.2	-11.6	-10.8	-10.1	-9.5	-9.4	-9.5	-10.1	-10.4	-10.7	-10.9	-11.3	-11.6	-11.7	-10.6	-6.6
15-Feb	-12.0	-12.2	-12.4	-12.6	-12.8	-13.4	-14.7	-15.7	-15.2	-13.7	-10.3	-7.3	-6.0	-5.3	-4.8	-4.6	-5.3	-6.3	-7.7	-8.8	-8.8	-8.7	-8.8	-9.0	-9.8	-4.6
16-Feb	-8.8	-8.7	-8.7	-8.8	-9.5	-9.9	-10.4	-10.7	-11.0	-9.4	-6.4	-3.5	0.9	3.7	4.9	5.3	4.0	2.8	1.6	0.6	0.6	0.5	0.8	0.3	-3.3	5.3
17-Feb	-0.9	-1.3	-2.3	-2.6	-3.3	-4.4	-5.3	-6.1	-6.1	-4.2	-1.3	2.4	4.0	5.5	6.3	7.4	4.8	0.6	-1.8	-3.2	-3.6	-5.9	-7.0	-8.4	-1.5	7.4
18-Feb	-10.3	-11.5	-12.4	-13.5	-14.5	-15.6	-16.4	-17.2	-16.7	-12.4	-9.9	-7.0	-4.3	-2.7	-0.3	0.3	-0.5	-3.8	-7.1	-8.6	-9.6	-11.6	-12.9	-13.9	-9.7	0.3
19-Feb	-15.0	-15.4	-16.7	-17.9	-18.7	-19.2	-20.2	-20.7	-20.6	-16.7	-12.3	-9.3	-7.5	-6.5	-5.1	-4.0	-4.4	-6.3	-7.8	-10.1	-10.8	-10.8	-11.9	-12.5	-12.5	-4.0
20-Feb	-13.5	-14.9	-15.7	-16.4	-15.8	-15.8	-14.8	-14.4	-13.6	-11.3	-8.7	-6.7	-4.7	-2.0	-1.6	-1.1	-1.3	-2.0	-2.8	-3.4	-3.7	-4.0	-3.7	-3.5	-8.1	-1.1
21-Feb	-3.1	-2.3	-2.1	-2.0	-1.8	-1.6	-1.3	-1.7	-1.5	-0.4	1.9	4.6	6.0	7.3	8.0	7.9	7.1	5.0	3.1	2.4	1.8	1.1	1.0	-0.1	1.6	8.0
22-Feb	-0.6	-1.1	-1.4	-2.6	-3.3	-3.7	-4.0	-4.3	-3.2	-1.4	0.8	3.5	5.1	6.1	6.6	6.4	6.3	3.5	0.6	-1.8	-2.8	-3.3	-3.2	-2.8	0.0	6.6
23-Feb	-2.3	-2.6	-2.5	-1.9	-1.6	-1.4	-1.5	-1.1	-0.5	1.5	4.0	7.4	8.9	8.4	8.2	7.9	7.7	7.1	6.6	5.9	4.7	1.5	0.9	0.2	2.7	8.9
24-Feb	-0.5	-0.9	-1.0	-1.3	-2.0	-4.6	-7.3	-8.2	-9.0	-9.4	-8.9	-7.1	-5.9	-5.7	-5.9	-6.8	-7.5	-8.4	-9.0	-9.4	-9.9	-10.4	-11.5	-12.1	-6.8	-0.5
25-Feb	-11.8	-11.8	-11.9	-12.1	-12.3	-12.7	-13.1	-13.4	-13.3	-13.1	-12.9	-12.5	-12.0	-12.1	-12.1	-11.5	-11.8	-13.4	-14.8	-15.8	-17.0	-18.6	-19.9	-21.1	-13.8	-11.5
26-Feb	-22.1	-22.7	-23.5	-24.3	-25.0	-25.5	-25.8	-26.4	-26.7	-25.9	-24.8	-23.7	-22.5	-21.3	-20.7	-19.9	-20.0	-21.4	-22.5	-24.0	-24.7	-25.0	-25.2	-25.0	-23.7	-19.9
27-Feb	-25.5	-26.3	-26.4	-26.6	-27.1	-27.5	-27.3	-27.6	-26.4	-23.8	-20.4	-18.3	-17.1	-16.0	-15.2	-14.8	-14.8	-16.0	-18.7	-20.8	-22.8	-24.0	-25.1	-26.4	-22.3	-14.8
28-Feb	-27.0	-27.7	-28.0	-28.7	-28.5	-29.2	-30.0	-29.6	-28.2	-22.9	-17.8	-16.0	-14.7	-13.6	-12.5	-12.4	-13.1	-13.8	-14.1	-14.5	-15.3	-16.0	-16.0	-15.7	-20.2	-12.4
29-Feb	-15.7	-15.7	-15.8	-15.6	-15.6	-15.7	-15.8	-15.6	-15.3	-15.0	-14.6	-13.9	-13.2	-12.8	-12.6	-12.5	-12.4	-12.5	-12.7	-12.9	-13.1	-13.1	-13.2	-13.6	-14.1	-12.4
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Janvier - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Janvier - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	52	7.47	7.47
-20 - 0	549	78.88	86.35
0 - 10	94	13.51	99.86
10 - 20	1	0.14	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Relative Humidity (RH) - %

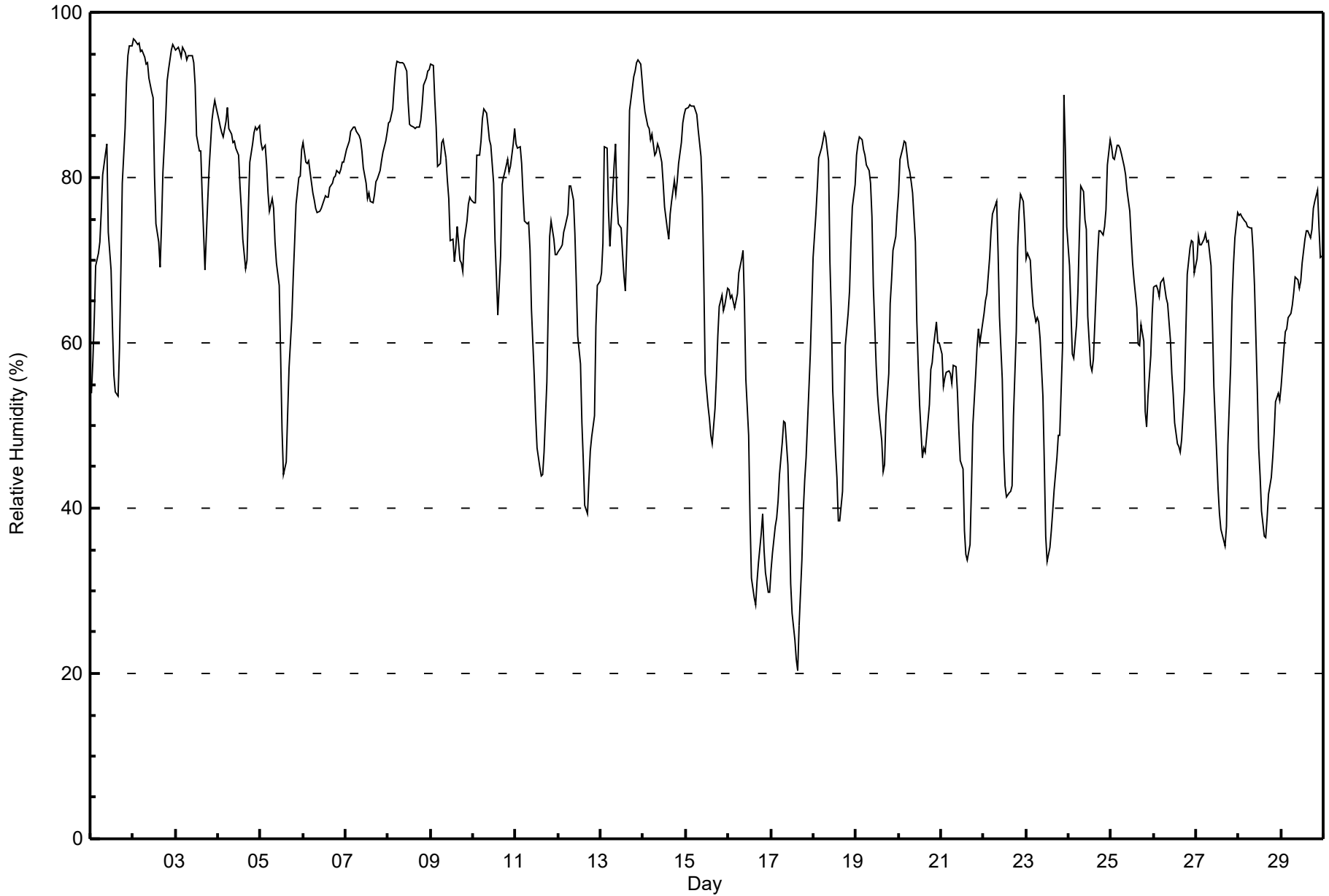
Janvier - February 2024

Maximum Value: 96.8 % on Feb 2 01:00 Maximum Daily Average: 90.0 % on Feb 8																						Hours in Service:	696			
Minimum Value: 20.3 % on Feb 17 16:00 Minimum Daily Average: 39.6 % on Feb 17																						Hours of Data:	696			
Maximum Diurnal Average: 78.0 % at hour 8 Minimum Diurnal Average: 55.0 % at hour 15																						Hours of Missing Data:	0			
Monthly Average: 69.68 % Percentiles: P ₁ = 29.8 P ₁₀ = 45.1 Q ₁ = 58.6 Median = 72.8 Q ₃ = 82.7 P ₉₀ = 88.2 P ₉₉ = 95.8																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	53.9	57.9	62.9	69.3	70.9	72.2	76.0	80.4	82.9	84.1	73.3	68.8	61.9	56.0	54.0	53.6	59.3	68.8	79.3	85.9	91.5	94.8	95.9	96.0	72.9	96.0
2-Feb	96.8	96.6	96.1	96.3	95.3	95.4	94.5	93.7	94.0	92.0	90.3	89.6	80.2	74.4	72.1	69.1	74.3	80.7	87.3	91.7	93.1	95.4	96.2	95.7	89.2	96.8
3-Feb	95.4	95.8	95.2	94.5	95.8	95.1	94.3	94.7	94.8	94.7	94.0	91.2	85.1	83.2	83.2	77.9	68.8	73.0	77.2	81.1	87.0	88.4	89.3	88.4	88.3	95.8
4-Feb	87.0	86.0	85.4	85.0	86.8	88.5	86.0	85.2	84.2	84.4	83.6	82.8	79.0	76.1	72.5	69.0	70.1	76.4	81.9	84.0	85.4	86.0	85.8	86.3	82.4	88.5
5-Feb	84.3	83.5	83.8	81.5	78.2	75.9	77.5	76.3	72.2	69.7	67.0	58.5	49.5	44.1	45.6	51.4	57.0	63.1	67.9	72.3	76.8	79.9	80.3	83.4	70.0	84.3
6-Feb	84.2	81.8	81.7	82.0	80.7	78.2	77.3	76.2	75.8	76.0	76.3	76.7	77.8	77.7	77.6	78.8	79.4	80.1	80.2	80.9	80.5	81.1	81.8	81.9	79.4	84.2
7-Feb	83.4	84.0	84.4	85.6	86.1	86.0	85.6	85.1	84.5	83.2	81.2	79.3	77.5	78.2	77.1	76.9	77.9	79.5	79.8	80.8	82.0	83.1	84.4	85.5	82.1	86.1
8-Feb	86.7	86.9	88.4	90.9	93.1	94.1	93.9	93.9	93.9	93.7	93.0	89.2	86.4	86.3	86.1	86.0	86.2	86.1	86.9	88.8	91.3	92.1	92.8	93.0	90.0	94.1
9-Feb	93.7	93.5	89.5	86.0	81.4	81.6	84.3	84.6	82.4	79.7	77.5	72.4	72.6	69.9	71.5	74.0	70.1	69.7	68.6	72.3	74.7	76.8	77.6	77.2	78.4	93.7
10-Feb	76.9	76.9	82.7	82.7	84.4	87.2	88.3	87.8	86.3	84.5	83.9	79.3	72.4	67.9	63.4	70.5	79.1	80.0	80.6	82.2	80.6	81.4	84.1	86.0	80.4	88.3
11-Feb	84.1	83.6	83.7	81.7	77.9	74.7	74.4	74.6	71.3	64.1	55.9	51.0	47.3	45.0	43.9	44.1	46.7	55.2	64.4	72.9	74.7	72.5	70.7	70.7	66.0	84.1
12-Feb	71.0	71.5	71.9	73.4	74.1	75.6	79.0	78.9	77.3	73.2	67.3	60.9	57.4	50.3	45.8	40.3	39.3	43.3	47.0	48.7	51.2	62.0	67.0	67.5	62.2	79.0
13-Feb	68.4	72.0	83.8	83.5	75.9	71.7	74.9	81.6	84.1	77.1	74.3	73.9	70.9	68.1	66.3	76.9	88.2	89.6	92.2	92.9	94.0	94.2	93.7	91.7	80.8	94.2
14-Feb	89.5	88.0	86.3	85.9	84.7	85.2	82.6	83.0	84.1	83.6	81.9	79.2	76.5	73.7	72.5	75.6	77.1	79.6	78.0	79.5	81.7	84.2	86.6	87.6	81.9	89.5
15-Feb	88.3	88.5	88.7	88.7	88.7	88.1	87.7	85.7	82.5	77.6	67.7	56.3	52.4	50.9	48.8	47.8	52.0	56.0	60.8	64.5	65.8	63.9	64.6	66.6	70.1	88.7
16-Feb	66.5	65.5	65.7	64.3	65.1	65.9	68.4	70.2	71.2	64.7	55.6	48.8	38.6	31.5	29.1	28.3	31.2	33.4	36.9	39.3	35.0	32.2	29.8	29.9	48.6	71.2
17-Feb	32.5	34.5	37.7	38.8	40.8	44.1	48.0	50.5	50.4	45.3	38.9	30.9	27.2	24.1	21.8	20.3	25.7	33.8	39.6	43.5	46.1	54.4	58.6	64.2	39.6	64.2
18-Feb	70.3	75.6	78.8	82.3	83.5	84.5	85.4	84.8	82.0	69.8	63.6	54.2	46.7	43.8	38.4	38.4	42.1	50.2	59.7	63.5	66.3	72.0	76.4	79.2	66.3	85.4
19-Feb	82.8	84.0	85.0	84.6	83.4	82.6	81.5	80.8	79.3	75.3	66.7	57.2	53.7	51.5	48.2	44.5	45.3	51.2	56.3	64.7	67.7	71.2	72.9	75.8	68.6	85.0
20-Feb	78.1	82.2	83.6	84.5	84.3	81.4	80.6	79.6	78.1	72.2	62.8	57.4	52.5	46.1	47.2	46.8	48.7	52.5	56.7	57.6	59.7	62.6	60.0	60.0	65.6	84.5
21-Feb	58.7	54.8	55.7	56.5	56.5	56.2	55.1	57.3	57.2	54.0	49.5	45.8	44.8	37.4	34.4	33.8	35.6	42.3	50.0	56.1	59.5	61.7	60.0	62.3	51.5	62.3
22-Feb	63.5	65.0	65.9	70.4	73.6	75.5	76.1	77.1	71.1	63.2	55.6	46.9	42.7	41.4	41.9	42.1	42.8	51.2	61.4	71.5	76.0	77.9	77.1	74.2	62.7	77.9
23-Feb	70.2	70.9	70.0	66.8	64.4	62.5	63.1	62.5	60.5	53.5	45.5	36.7	33.6	35.2	37.2	39.7	42.2	46.1	48.9	48.8	59.4	90.1	83.6	74.1	56.9	90.1
24-Feb	69.3	63.9	58.6	58.1	62.3	66.3	72.8	79.0	78.2	75.0	73.7	63.3	57.3	56.5	58.0	66.3	70.5	73.6	73.0	74.1	76.1	81.6	84.6	84.6	69.4	84.6
25-Feb	83.7	82.4	82.3	83.9	83.9	83.6	82.8	81.4	80.3	78.4	75.9	72.8	69.7	67.6	64.2	59.8	59.6	62.1	60.2	51.7	49.8	53.6	58.5	63.5	70.5	83.9
26-Feb	66.8	66.9	66.5	65.5	67.2	67.8	66.7	65.4	64.8	60.3	56.3	53.8	50.3	47.7	47.5	46.9	48.4	54.5	61.3	68.3	71.5	72.3	72.3	68.5	61.6	72.3
27-Feb	70.1	72.8	71.8	71.9	72.5	73.1	72.2	72.5	69.3	62.3	54.7	46.6	42.3	39.4	37.5	36.0	35.3	37.8	47.7	57.2	65.1	69.4	72.7	75.7	59.4	75.7
28-Feb	75.4	75.6	75.2	74.8	74.6	74.1	73.9	73.9	71.2	66.9	54.5	47.3	43.9	39.7	36.6	36.4	38.8	41.7	43.7	46.1	49.0	52.9	53.9	53.1	57.2	75.6
29-Feb	54.7	59.3	61.4	61.7	63.1	63.6	64.5	66.2	67.9	67.6	66.7	67.5	69.7	72.6	73.6	73.5	72.8	73.7	76.2	77.1	78.5	74.0	70.3	70.4	68.6	78.5
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Janvier - February 2024





Wood Buffalo Environmental Association
Summary of Hour Averages

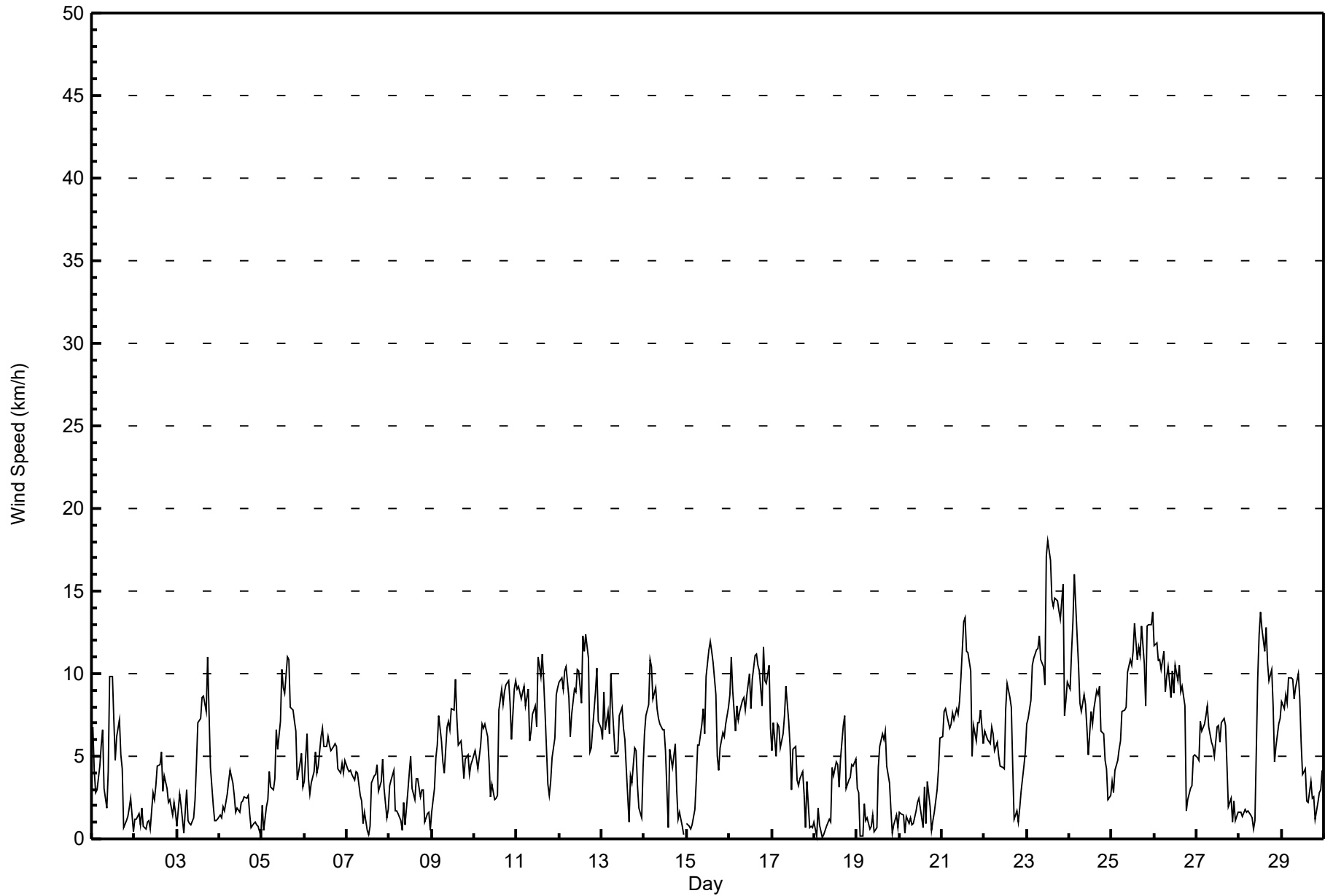
Wind Speed (WS) - km/h
Janvier - February 2024

Maximum Speed: 18 km/h on Feb 23 13:00 Minimum Speed Value: 0 km/h on Feb 18 05:00 Maximum Diurnal Speed Average: 3.4 km/h at hour 14 Monthly Average Velocity: 1.2 km/h 273.7 deg		Maximum Daily Speed Average: 10.3 km/h on Feb 23 Minimum Daily Speed Average: 0.6 km/h on Feb 20 Minimum Diurnal Speed Average: 0.4 km/h at hour 19 Percentiles: P ₁ = 0 P ₁₀ = 1 Q ₁ = 3 Median = 5 Q ₃ = 8 P ₉₀ = 10 P ₉₉ = 14		Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	SSE7	SSE4	SSE3	SE3	SSE4	S6	SSW7	S3	S2	S4	SSW10	SW10	SW7	SW5	S6	S7	S5	SE4	E1	SE1	S1	SSW2	SSW2	SSE0	S3.9	SW10	
2-Feb	S1	S1	SSW2	E1	SW2	SSE1	N1	NNW1	NE1	NNE1	N3	NNE2	NE3	NNE4	NNE4	NNE5	NNE3	NNE4	NNE3	NNE2	NE2	NNW1	NE2	NNW2	NNE1.5	NNE5	
3-Feb	ENE1	NNE3	ENE2	NW1	NNE0	SSE3	WSW1	NNE1	WVW1	NW1	NNW2	NW5	NW7	NW7	NW9	NW9	N8	NNE11	NNE8	NNE4	NNE2	ESE1	ESE1	SW1	NNW2.7	NNE11	
4-Feb	SSW1	SSW1	SSW2	SSW2	SSW3	SSW3	SSW4	SSW3	SSW3	SSW2	SSW2	SW2	WSW2	NE2	N3	NNE2	NE3	ESE1	S1	SSE1	S1	SE1	NNE1	NNE0	SSW0.9	SSW4	
5-Feb	NNE2	NW0	W2	NNW2	N4	NNE3	NNE3	NNE4	NNE7	NNE5	NNE7	NNE10	NNE9	NNE9	NNE11	NNE4	N8	N7	NNE7	NNE4	NNE5	NNE5	N3	NNE5.5	NNE11		
6-Feb	NNE4	NNE6	N4	N3	NNE3	NE4	ENE5	E4	ESE4	E6	ENE7	ENE6	ENE6	NE6	ENE6	NE5	ENE6	ENE6	ENE6	ENE4	ENE4	ENE5	ENE4	ENE5	ENE4.5	ENE7	
7-Feb	NE4	NNE4	N4	NNE4	N4	N4	N4	NNE3	N2	N1	NW2	WNW0	SSE0	NE1	ENE3	NE4	N4	NE4	NE3	NNE3	NE5	NNE3	NNW1	N2	NNE2.7	NE5	
8-Feb	NNE3	NE4	NE4	N2	NNE2	W2	ESE1	SSW1	WSW2	E1	SSE3	SSW4	SSW5	SSW3	SSE2	SSE4	S4	SSE3	S3	SSE3	SW1	ESE2	ESE2	ESE1	SSE1.0	SSW5	
9-Feb	W2	WSW3	WNW5	WNW6	WNW7	WNW6	W5	W4	W7	W7	W7	WNW8	WNW8	WNW10	WNW7	WNW6	W6	WNW5	WSW4	SW5	WSW5	SW4	SW5	SW5	W5.2	WNW10	
10-Feb	SW5	SW5	SW4	SW6	SW7	SSW7	SSW7	SSW6	SSW5	WSW3	W3	WSW2	WNW2	W3	SSW8	SSW9	SSW8	SSW9	SSW9	SSW9	SSW10	SW8	SW6	SSW9	SSW10	SSW6.0	SSW10
11-Feb	SW9	SSW9	SW8	WSW9	W9	WSW8	WSW9	SW6	WSW6	W8	WNW8	W7	WNW11	WNW10	W11	W10	WNW8	W3	SW3	S4	SSW5	SSW6	SSW9	SSW9	WSW6.4	W11	
12-Feb	SSW10	SSW10	SSW9	SSW10	SSW10	SSW9	SSW6	SSW8	SSW9	SW9	SW10	SW10	SW8	W12	W11	WNW12	WNW11	WNW5	W6	W7	W9	NW10	NW7	NW7	WSW7.0	WNW12	
13-Feb	NNW6	N9	N7	N8	NNW6	N10	N8	N5	NNE5	N5	NNW7	NNW8	NNW7	NNW6	NNW4	NE1	SE4	S3	SSW6	SSW5	WSW3	WNW2	WSW1	N4	N3.6	N10	
14-Feb	NNE6	NNE7	NNE8	NE11	NNE10	NE9	NE9	NE8	NE7	NE7	NNE7	NE7	NNE5	WNW1	NNE5	NNE5	NNE4	NNE6	N3	NNW1	NNE2	ENE1	SSW0	UO	NNE5.5	NE11	
15-Feb	SE1	NE1	NNE1	S1	SSW2	SSW4	SSW6	SSW6	SSW7	SSW8	SW6	W10	W11	W12	W11	W11	W9	W5	WSW4	SW6	SW6	SW6	SW7	SSW8	WSW5.2	W12	
16-Feb	SW9	SSW11	SW9	SW7	SW8	SW7	SW8	SW8	SSW9	SW8	SSW9	SSW10	SW8	WSW10	WSW11	WSW11	SW10	SW10	SW8	SW12	SW10	WSW9	WSW11	W7	SW8.7	SW12	
17-Feb	W5	W7	WSW5	WSW7	WSW7	SW6	SW6	SSW7	SSW9	SW7	SW6	WSW3	WNW5	NW6	NNW4	W3	E4	SE4	NE3	NE1	NE3	SW1	SSW1	E1	WSW2.8	SSW9	
18-Feb	WSW1	W0	SW2	SSW1	S0	ENE0	SSE1	SE1	WSW1	WSW1	NNE4	NNE4	ENE5	NNE5	NE3	NE5	NE7	NNE7	N3	N4	NNE4	N4	NNE4	NNE5	NNE2.3	NNE7	
19-Feb	NNE3	NE3	S0	N0	S2	SE1	SSW1	NE1	SSW1	WSW1	SE0	SSE1	NE4	ENE6	NNE6	NNE6	NNE7	NE4	NE3	NNE2	SE0	N1	SSE1	S1	NE1.6	NNE7	
20-Feb	SE2	SSW2	SSE1	SE0	SE1	NW1	S1	NNW1	WSW1	NNE2	E2	S2	W2	NNE1	NE3	N1	ENE4	NE2	WNW1	SSW1	S2	S3	SSW4	SSW6	SSE0.6	SSW6	
21-Feb	SSW6	SSW8	SSW8	SSW7	SW7	SSW7	SW8	SW7	SW8	SW8	SW8	WSW10	W13	W13	W11	W11	WSW10	SW5	SSW7	SSW6	SW7	SW7	WSW8	SW6	WSW7.5	W13	
22-Feb	SW7	SW6	WSW6	SSW6	SSW7	SSW6	SW5	SW6	SW5	SSW4	S4	W4	W8	WNW9	WNW9	WNW8	WNW4	E1	E2	SSE1	SE2	S3	SSW4	SSW5	SW3.7	WNW9	
23-Feb	SSW7	SSW7	SSW8	SSW11	SSW11	SW11	SW12	SW12	SW11	SW10	WSW9	W17	W18	W17	W14	W14	W15	W14	W14	W13	W15	W7	WNW8	WNW10	WSW10.3	W18	
24-Feb	WNW9	WNW11	WNW13	WNW16	WNW12	N11	NNE8	NNE8	NNE9	NNE8	NE7	N5	NW8	NNW7	N8	NE9	NE9	NE9	NE7	NE6	ENE5	NE4	NE2	NNE3	N5.5	WNW16	
25-Feb	N4	NNE3	N4	NNE5	NNE5	NNE6	NNE8	NNE8	NNE8	NNE10	NNE11	NNE11	NE11	NE13	NNE11	NE12	NE11	NNE13	NNE11	NNE8	NNE13	NNE13	NNE13	NNE14	NNE9.2	NNE14	
26-Feb	NNE12	NNE12	NNE11	NNE11	NNE10	NNE11	N9	NNE10	NNE10	N9	NNE10	N9	NNE11	NNE10	NNE11	NNE9	NNE9	NNE8	NNE2	SSE2	SSW3	S3	SSW5	SSW5	NNE6.8	NNE12	
27-Feb	SSW5	SSW5	SSW7	SSW7	SSW7	SSW7	SSW8	SSW7	SSW6	SW6	WSW5	WNW7	W7	W6	WNW7	W7	W7	W4	SE2	SSE2	S1	S2	SSE1	S2	SW3.9	SSW8	
28-Feb	S2	S2	S1	S2	SE2	SE2	SSE1	ESE1	WNW1	W1	S10	S12	S14	SSE13	SSE11	SSE13	SE11	SE10	SE10	SE8	ESE5	ENE6	ENE7	E7	SE5.4	S14	
29-Feb	E8	E8	E9	ESE8	E10	ESE10	ESE10	ESE8	ESE9	ESE10	ESE9	ESE6	ESE4	ESE4	ENE2	E2	NE3	WNW2	W3	NW1	W2	WNW3	WNW3	WNW4	ESE4.1	ESE10	
SW1.0WSW1.0WSW1.4WSW1.4WSW1.5 SW1.0 SW1.2SSW1.0 SW1.2WSW1.0WSW0.9WNW2.1WNW3.0 NW3.4 NW2.9 NW2.5NNW1.6 N1.3 NW0.4 SW0.8 W1.1 W0.9WSW1.2WSW1.1																								Diurnal Average			
NNE12 NNE12WNW13WNW16WNW12 SW11 SW12 SSW12 SW11 SW10 NNE11 W17 W18 W17 W14 W14 W15 W14 W14 W13 W15 NNE13 NNE13 NNE14																								Diurnal Maximum			
UO - Unstable Operation All monthly, daily, and diurnal averages have been calculated using vector methods																											



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Janvier - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Janvier - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	354	50.94	50.94
6 - 11	307	44.17	95.11
12 - 19	34	4.89	100.00
20 - 28	0	0.00	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Janvier - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	27	58	33	15	10	12	18	22	32	39	18	20	17	17	6	10	354
6 - 11	9	54	16	10	6	8	4	2	4	62	50	17	26	23	9	7	307
12 - 19	0	7	2	0	0	0	0	2	2	1	2	0	14	4	0	0	34
20 - 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	36	119	51	25	16	20	22	26	38	102	70	37	57	44	15	17	695

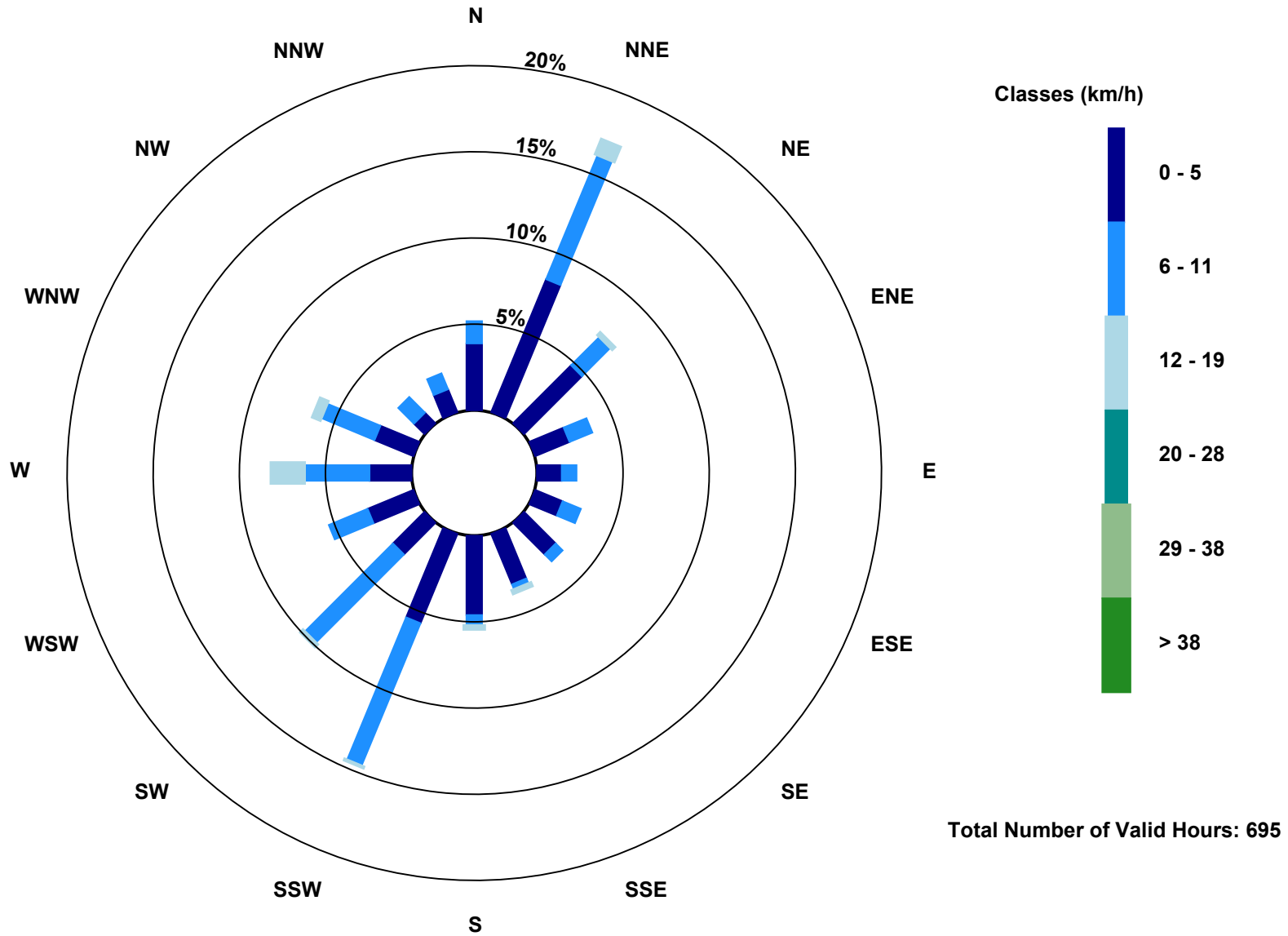
Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Janvier





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Janvier - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 23 13:00 Minimum Value: 0 km/h on Feb 4 02:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 5																	Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9									
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	3	2	1	1	1	2	2	1	2	3	3	4	3	2	2	2	2	1	1	1	1	1	1	1	4	
2-Feb	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3-Feb	1	1	1	1	1	1	1	1	1	1	1	3	3	4	4	4	4	4	3	1	1	1	1	1	4	
4-Feb	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5-Feb	1	1	1	1	1	1	1	1	2	2	2	3	3	3	4	4	3	3	2	2	1	1	2	2	4	
6-Feb	1	3	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	2	2	1	1	1	1	1	3	
7-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8-Feb	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	0	1	1	2	
9-Feb	1	1	2	2	3	2	1	2	2	2	2	3	3	4	3	3	2	3	1	1	2	1	1	1	4	
10-Feb	2	1	1	1	2	1	2	1	1	1	1	1	1	2	2	3	2	2	2	3	3	2	2	2	3	
11-Feb	2	2	2	3	3	2	3	2	4	3	3	2	4	3	4	3	3	1	1	1	1	1	1	2	4	
12-Feb	2	2	2	2	2	3	2	2	2	3	3	3	3	4	5	5	4	3	2	2	3	4	3	3	5	
13-Feb	3	5	3	4	3	4	3	2	2	2	4	4	3	3	2	1	1	1	1	1	1	1	1	2	5	
14-Feb	2	3	3	3	3	2	3	2	2	2	2	2	1	2	2	2	2	2	2	1	1	1	1	1	3	
15-Feb	1	1	1	1	0	1	1	1	1	1	2	4	4	4	4	4	3	2	1	1	2	2	2	1	4	
16-Feb	2	3	3	2	3	2	2	2	2	2	3	3	2	4	4	4	3	4	3	4	4	3	3	3	4	
17-Feb	2	2	1	2	2	1	1	1	2	2	2	1	2	2	2	1	1	1	1	1	1	1	1	1	2	
18-Feb	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2	1	3	2	1	1	1	1	1	1	3	
19-Feb	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2	1	1	1	1	1	1	1	2	
20-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
21-Feb	1	2	3	2	2	2	2	2	2	2	2	4	5	5	4	4	4	2	2	2	2	2	3	1	5	
22-Feb	2	1	2	2	1	1	2	2	1	2	1	2	3	4	3	3	2	1	2	1	1	1	1	1	4	
23-Feb	1	1	2	2	2	4	3	3	3	3	4	6	7	6	5	5	6	5	5	5	7	3	4	4	7	
24-Feb	4	4	5	6	6	5	3	3	3	3	2	3	3	3	3	2	2	2	2	1	1	1	1	1	6	
25-Feb	1	2	1	1	1	2	2	2	2	3	3	3	3	3	3	3	3	4	3	3	4	4	4	4	4	
26-Feb	4	4	4	4	4	4	4	4	4	4	4	3	4	3	4	3	3	3	2	1	1	1	1	1	4	
27-Feb	1	1	1	1	1	1	1	1	2	2	3	3	3	3	3	3	3	2	1	1	1	1	1	0	3	
28-Feb	1	1	1	1	1	1	1	1	1	2	4	5	5	5	4	4	4	3	3	3	2	2	2	3	5	
29-Feb	3	3	4	3	4	4	4	3	3	4	4	2	3	2	2	2	2	1	1	1	1	1	1	1	4	
																	Diurnal Maximum									
UO - Unstable Operation																										



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Janvier - February 2024

Direction of Maximum Speed: 277 deg on Feb 23 13:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 250.5 deg on Feb 23	Hours of Data: 695
Direction of Minimum Speed: 182 deg on Feb 18 05:00	Hours of Missing Data: 1
Direction of Minimum Daily Speed Average: 0.6 deg on Feb 20	Percent Operational Time: 99.9
Monthly Average Direction: 273.7 deg	

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	162	162	167	136	168	183	196	176	184	191	207	217	217	232	191	185	185	136	86	126	173	213	197	161	188.1
2-Feb	171	179	205	96	215	158	359	328	34	20	8	25	53	31	18	26	22	33	14	23	49	331	48	343	26.9
3-Feb	59	14	78	315	15	148	238	27	288	321	339	325	313	324	321	318	357	15	15	24	22	105	113	232	347.6
4-Feb	194	202	208	207	209	199	200	200	204	208	198	220	245	37	359	20	34	108	169	150	175	140	12	22	197.7
5-Feb	32	317	267	339	9	25	13	27	24	20	20	30	28	25	12	16	15	11	11	16	14	26	18	4	17.3
6-Feb	17	29	8	10	24	34	58	88	115	89	70	67	60	47	63	44	61	58	63	60	65	65	69	57	57.2
7-Feb	41	30	10	17	10	7	7	16	6	6	323	290	163	47	75	37	11	39	52	30	38	30	340	11	24.0
8-Feb	25	37	41	2	23	277	109	205	253	91	167	201	198	210	149	149	169	161	169	161	216	109	117	115	155.5
9-Feb	263	246	293	299	291	285	274	277	273	281	280	287	286	289	288	287	281	289	251	234	244	236	227	224	274.8
10-Feb	224	225	222	214	218	209	213	208	204	237	259	241	293	261	198	196	195	195	202	209	229	216	209	208	212.7
11-Feb	215	208	218	249	263	249	253	215	258	259	282	273	284	288	278	279	289	278	220	172	195	204	201	202	247.6
12-Feb	202	205	207	205	207	210	209	204	208	217	217	221	227	266	278	284	288	298	274	271	281	305	304	316	243.7
13-Feb	330	356	9	0	342	8	11	11	13	9	345	332	332	336	339	35	127	173	198	211	246	296	244	10	349.0
14-Feb	13	12	16	34	31	36	34	41	45	40	32	36	32	302	33	25	21	19	4	344	13	63	200	UO	28.8
15-Feb	145	34	21	188	195	200	200	204	203	199	217	275	265	270	269	270	267	259	242	216	220	234	220	203	238.9
16-Feb	215	210	215	226	226	232	229	220	211	218	213	202	228	249	256	253	230	220	216	223	231	238	258	261	228.6
17-Feb	266	273	248	255	247	230	215	205	204	222	226	245	286	309	329	272	92	131	34	55	39	216	203	98	242.3
18-Feb	255	261	222	200	182	69	158	134	248	241	26	29	59	26	48	36	36	23	353	11	13	10	17	19	24.4
19-Feb	26	34	183	356	190	141	211	46	209	255	131	165	49	58	30	27	24	34	51	16	133	10	152	190	41.3
20-Feb	137	201	158	133	127	304	183	338	237	22	88	176	271	22	34	9	70	35	282	203	170	190	196	203	166.3
21-Feb	201	205	211	212	219	212	221	227	232	230	224	258	271	270	262	270	257	235	213	210	224	224	257	224	236.7
22-Feb	226	231	239	206	201	199	227	218	215	200	183	280	280	294	285	295	299	79	95	157	142	177	194	200	234.9
23-Feb	199	198	199	201	206	220	216	214	216	223	237	275	277	275	265	268	262	270	273	265	275	266	295	290	250.5
24-Feb	288	283	283	284	303	355	17	21	14	18	43	355	312	332	11	34	40	34	35	34	58	41	46	31	351.4
25-Feb	3	19	5	17	22	23	24	27	28	25	28	31	36	34	33	40	40	24	27	24	22	22	17	21	26.4
26-Feb	20	15	14	15	15	12	10	12	14	8	16	9	22	14	22	17	17	21	16	163	192	191	202	209	15.3
27-Feb	198	194	196	195	195	199	199	195	209	223	244	299	279	273	285	274	268	270	128	149	188	183	155	173	226.1
28-Feb	176	176	173	186	140	137	155	111	292	261	171	174	173	158	160	149	139	133	133	131	115	77	78	88	145.1
29-Feb	92	94	100	103	100	109	105	103	105	113	119	112	123	106	68	83	55	282	281	306	275	295	295	284	102.1

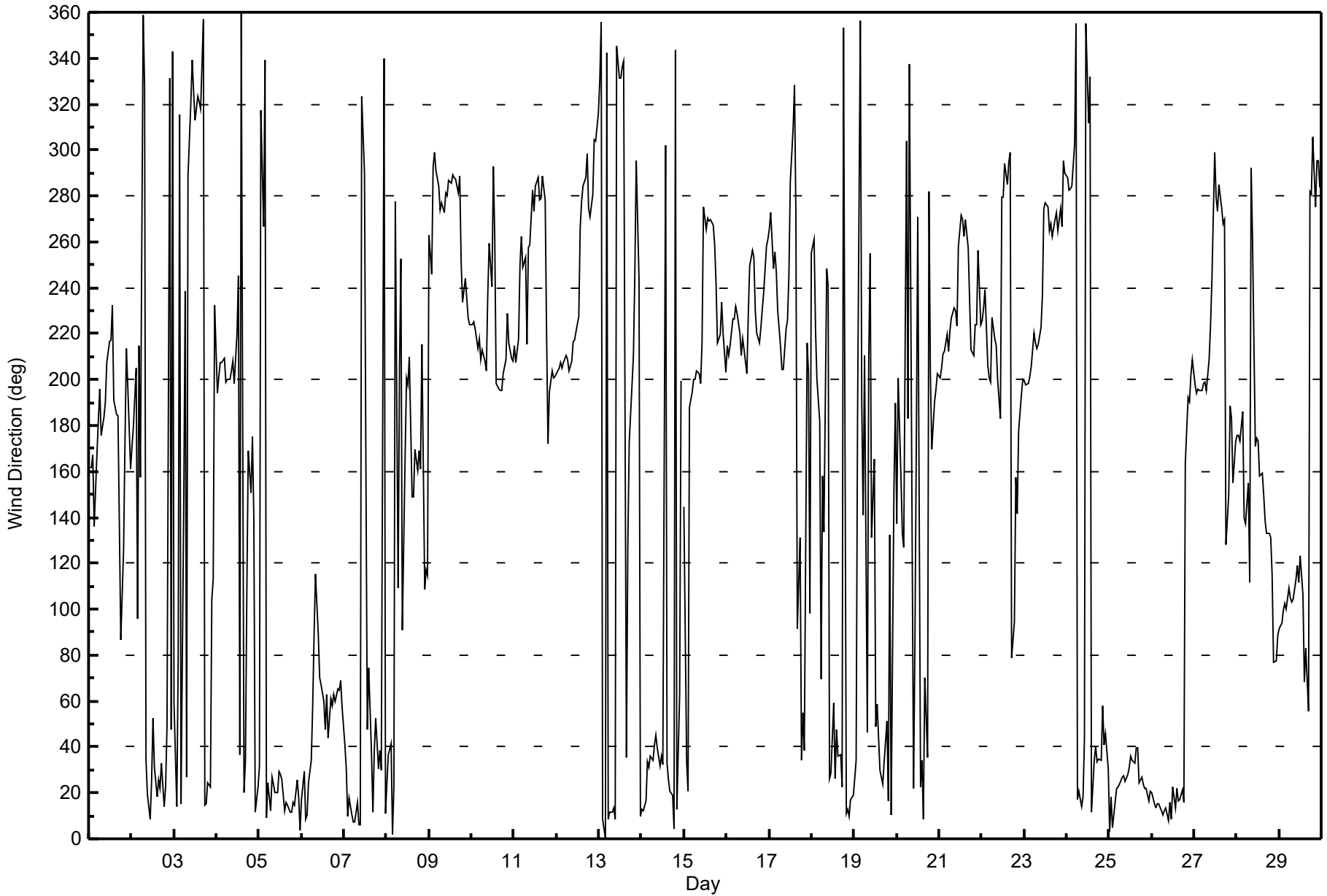
228.5 245.0 243.9 255.4 247.4 235.4 225.0 203.4 225.4 242.4 245.7 281.8 290.4 304.5 310.6 311.4 329.4 1.4 310.0 225.1 261.7 266.1 252.0 252.2
 Diurnal Average

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction (WD) - deg
Janvier - February 2024





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Janvier - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 103 deg on Feb 7 13:00 Minimum Value: 7 deg on Feb 11 23:00 Percentiles: P ₁ = 8 P ₁₀ = 15 Q ₁ = 20 Median = 25 Q ₃ = 43 P ₉₀ = 68 P ₉₉ = 96																		Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9																								
Day	Hourly Period Ending At (MST)																								Daily Maximum																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																		
1-Feb	28	36	47	17	25	30	23	56	70	34	19	23	27	39	28	20	23	14	83	82	49	33	39	94	94																	
2-Feb	60	59	45	96	39	75	73	39	59	70	45	56	28	37	28	20	34	14	24	44	29	40	44	67	96																	
3-Feb	78	31	49	46	69	26	79	62	72	53	50	55	45	52	48	50	55	24	27	20	25	51	56	63	79																	
4-Feb	47	43	20	23	22	10	11	14	10	53	29	52	51	70	65	31	42	59	77	85	75	65	68	94	94																	
5-Feb	30	89	34	42	21	31	31	24	18	23	20	18	23	24	25	20	21	24	19	19	17	15	20	35	89																	
6-Feb	40	27	29	25	23	21	25	36	28	23	30	29	28	20	25	19	20	22	22	28	25	25	32	22	40																	
7-Feb	21	24	19	20	21	23	27	36	39	77	82	102	103	90	29	24	28	15	28	27	15	28	42	44	103																	
8-Feb	26	21	20	45	61	61	90	89	55	90	54	43	36	56	51	31	27	23	21	23	62	19	11	58	90																	
9-Feb	40	26	30	33	23	18	19	24	16	18	20	22	26	25	23	38	24	27	21	21	20	21	21	19	40																	
10-Feb	19	21	17	14	17	12	16	13	13	24	18	45	41	54	20	18	16	15	15	19	23	28	17	14	54																	
11-Feb	22	15	19	25	21	21	19	34	58	21	19	23	21	29	23	21	22	22	34	16	13	11	7	10	58																	
12-Feb	11	12	14	11	14	16	14	12	15	20	21	21	24	22	23	22	23	33	15	16	24	34	36	48	48																	
13-Feb	62	51	38	47	62	39	31	32	24	36	54	46	50	48	52	85	22	28	11	18	29	61	54	53	85																	
14-Feb	27	32	31	18	14	13	17	17	15	15	18	17	22	92	26	41	23	23	44	44	25	44	93	UO	93																	
15-Feb	48	48	74	52	18	10	7	9	10	9	22	27	24	26	25	23	21	20	17	13	18	24	20	13	74																	
16-Feb	17	15	18	19	21	21	20	19	16	20	22	17	27	26	24	24	23	24	34	25	28	22	20	26	34																	
17-Feb	23	16	18	17	20	17	12	12	10	19	24	50	36	48	57	48	37	36	29	73	12	90	67	80	90																	
18-Feb	64	86	23	83	96	84	98	82	69	78	44	41	42	51	62	31	27	15	22	24	20	17	14	13	98																	
19-Feb	14	18	86	96	30	73	64	92	82	64	90	98	36	27	20	20	14	20	23	43	94	69	52	74	98																	
20-Feb	35	58	57	89	71	77	76	85	82	65	61	49	66	97	29	71	22	25	75	52	26	23	15	12	97																	
21-Feb	11	13	20	22	19	21	18	19	21	22	22	26	23	25	24	24	23	28	15	16	19	18	20	25	28																	
22-Feb	17	19	21	17	10	13	20	16	26	31	29	47	28	30	27	29	34	62	76	97	43	29	18	13	97																	
23-Feb	8	8	11	11	15	19	18	16	18	20	25	21	22	22	25	24	24	20	21	20	29	30	37	29	37																	
24-Feb	28	21	20	20	40	51	27	23	25	28	20	63	44	52	43	17	18	16	16	19	21	17	56	31	63																	
25-Feb	26	39	30	26	20	19	18	19	19	18	17	21	19	16	22	20	21	18	16	19	18	18	19	20	39																	
26-Feb	21	23	24	23	25	25	30	26	27	35	26	41	26	31	24	24	24	18	70	15	16	13	11	14	70																	
27-Feb	14	8	7	9	9	7	7	9	20	24	39	43	47	56	45	42	34	25	58	25	77	17	78	28	78																	
28-Feb	45	38	32	24	30	39	44	58	83	81	39	28	26	29	34	30	27	25	23	25	26	22	23	26	83																	
29-Feb	26	31	30	27	27	28	28	28	26	25	34	38	60	43	81	85	41	59	33	61	54	57	43	24	85																	
																		78	89	86	96	96	84	98	92	83	90	90	102	103	97	81	85	55	62	83	97	94	90	93	94	
Diurnal Maximum																																										
UO - Unstable Operation																																										



Maximum Speed: 24 km/h on Feb 23 13:00	Maximum Daily Speed Average: 14.0 km/h on Feb 23	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 15 04:00	Minimum Daily Speed Average: 1.0 km/h on Feb 4	Hours of Data: 690
Maximum Diurnal Speed Average: 5.0 km/h at hour 14	Minimum Diurnal Speed Average: 1.3 km/h at hour 20	Hours of Missing Data: 6
Monthly Average Velocity: 2.1 km/h 283.0 deg	Percentiles: P ₁ = 1 P ₁₀ = 2 Q ₁ = 4 Median = 7 Q ₃ = 11 P ₉₀ = 14 P ₉₉ = 19	Percent Operational Time: 99.1

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	SSE9	SSE6	S5	SSE5	SSE7	S9	SSW10	S6	SSW5	SSW6	SSW12	SW12	SW9	SW6	S7	S9	S8	SE6	S0	NE2	NE1	SSW2	SSW5	SSE2	S5.5	SW12	
2-Feb	SSE2	SSE2	SSW2	S1	SSW3	S1	SSW0	NNE1	NNE2	NNE2	N3	N3	NE3	NNE5	N5	NNE6	NNE5	NNE6	NNE7	N5	NE5	NNE4	NE4	NNE3	NNE2.3	NNE7	
3-Feb	E2	N4	ENE3	NNW2	NNE1	SE4	SSW2	ENE1	W1	NW2	NNW5	NNW7	NW11	NW11	NW13	NW13	NNW12	N15	N11	NNE7	N5	NNE3	NE3	UO	NNW4.8	N15	
4-Feb	WSW3	SSW1	SSW3	SSW3	SSW4	SSW4	SSW5	SSW5	SSW4	SSW3	S2	SSW1	WSW2	NNE2	N3	NNE3	NNE4	ENE3	WVW2	NW1	UO	SE1	NNE2	NNE1	SSW11.0	SSW5	
5-Feb	NE3	ENE2	W2	NNW3	N5	NNE4	N3	NNE4	NNE8	NNE7	NNE9	NNE12	NNE11	NNE10	N14	N14	NNE11	N12	N11	NNE10	NNE6	NNE7	NNE9	NNE7	NNE7.5	N14	
6-Feb	NNE6	NNE9	NNE5	NNE4	NNE5	NE5	ENE6	E5	ESE6	E8	ENE8	ENE7	ENE7	NE7	ENE7	NE6	ENE7	ENE7	ENE7	ENE5	ENE5	ENE6	ENE5	ENE6	ENE5.7	NNE9	
7-Feb	NE5	NNE5	N5	NNE5	N4	N5	N5	N3	N3	N1	NNW2	NW1	SSW1	NE1	ENE4	NE4	N5	NE6	ENE4	NE5	NE6	NNE4	NNW2	N2	NNE3.3	NE6	
8-Feb	NNE4	NE4	NE5	N2	NNE2	WVW2	ESE1	SW1	W2	E1	S3	SSW4	SSW6	SW4	SE2	SSE4	SSE4	SSE3	S4	SSE4	SSW2	SE2	ESE3	UO	SSE1.3	SSW6	
9-Feb	W2	WSW5	NW7	NW8	WVW11	WVW9	W7	W6	W9	WVW10	WVW9	WVW11	WVW11	WVW14	WVW10	WVW8	WVW9	WVW7	WSW5	WSW8	WSW8	WSW6	SW7	SW7	WVW7.5	WVW14	
10-Feb	SW8	SW7	SW7	SW8	SW10	SW9	SW10	SW9	SSW7	SW4	WSW4	SW3	WVW3	WSW3	SSW9	SSW11	SSW10	SSW11	SSW11	SSW11	SSW12	SW12	SW8	SW12	SW13	SW8.2	SW13
11-Feb	SW12	SW12	SW12	WSW13	W13	WSW12	WSW13	SW8	W9	W10	WVW11	W9	WVW15	WVW14	WVW15	WVW13	WVW12	WVW7	W5	SSW6	SSW8	SW8	SSW10	SSW11	WSW9.3	WVW15	
12-Feb	SSW12	SSW12	SSW12	SSW13	SSW14	SW11	SW9	SSW10	SW12	SW12	SW13	SW13	SW11	W16	W15	WVW18	WVW16	NW9	WVW9	W10	WVW13	NW16	NW11	NW10	WSW9.4	WVW18	
13-Feb	NNW10	NNW13	N10	NNW12	NNW10	N14	N12	N8	N8	N8	NNW12	NNW12	NNW10	NNW9	NNW6	N1	SE4	S5	SSW7	SW7	WSW5	WVW4	WVW2	N7	NNW6.1	N14	
14-Feb	N9	N11	N11	NE14	NNE13	NE10	NE11	NE9	NE9	NE8	NNE8	NE8	NNE6	WVW1	NNE6	NNE6	NNE5	NNE7	N5	N3	N3	NNE2	N2	N2	NNE6.6	NE14	
15-Feb	UO	NNE2	N2	NNW0	SW3	SW5	SW8	SW8	SW9	SSW9	SW8	W13	W15	W16	W15	W14	W12	W7	WSW7	SW8	SW9	WSW9	NW10	SSW10	WSW7.5	W16	
16-Feb	SW12	SW14	SW12	SW10	SW11	SW11	SW12	SW12	SW11	SW10	SW10	SSW11	SW10	WSW12	WSW14	WSW15	SW14	SW14	SW11	SW15	WSW13	WSW14	W14	W10	SW11.7	SW15	
17-Feb	W8	WVW10	W8	W10	WSW10	WSW9	SW9	SW9	SSW11	SW10	SW7	W4	WVW8	NW8	NW6	WVW4	E5	SE5	NNE5	N3	NNE6	NNE2	NNE1	SSE0	W3.8	SSW11	
18-Feb	NE1	W2	SW4	SSW2	SE1	UO	W0	SSE1	SW1	WSW2	NNE4	NNE4	ENE5	NNE5	NE4	NNE6	NE9	NNE10	NNE6	NNE7	NNE7	N7	NNE7	NNE8	NNE3.3	NNE10	
19-Feb	NNE6	NNE5	NNE3	N3	S2	SSW3	SSW2	SE1	WSW1	WSW2	ESE1	SSW1	ENE5	ENE6	NNE7	NNE7	NNE8	NE7	NE6	NNE5	NE2	N3	NNE0	UO	NE2.6	NNE8	
20-Feb	S2	SSW3	SSE2	SE0	SE2	SSW1	SE2	NW1	S1	NE2	E3	S3	W2	NW1	NE3	NNE1	ENE5	NE3	NNE1	WSW1	SW3	SSW5	SSW6	SSW8	S1.0	SSW8	
21-Feb	SSW9	SSW10	SW10	SW10	SW9	SW9	SW11	SW11	SW12	SW10	SW11	W12	W17	W17	W15	W15	WSW13	WSW8	SW10	SW9	SW11	SW11	W11	SW9	WSW10.5	W17	
22-Feb	WSW10	WSW9	WSW9	SW8	SSW9	SSW9	WSW8	SW9	SW7	SSW5	S5	WVW5	WVW10	WVW13	WVW12	WVW12	NW7	NNW3	E3	N2	N1	SSW4	SSW7	SSW8	WSW5.2	WVW13	
23-Feb	SSW9	SSW10	SSW11	SSW13	SSW14	SW16	SW16	SW16	SW15	SW14	WSW13	W23	WVW24	W23	W19	W19	W19	W19	W19	W17	W21	W11	WVW12	WVW14	WSW14.0	WVW24	
24-Feb	WVW13	WVW16	WVW19	WVW23	NW19	NNW15	N11	NNE10	N11	N10	NE7	N7	NNW11	NNW11	N11	NE10	NE10	NE11	NE8	NE7	ENE6	NE5	ENE4	NE4	NNW7.7	WVW23	
25-Feb	NNE4	NE4	N5	NNE6	NNE7	NNE7	NNE9	NNE9	NNE10	NNE12	NNE13	NNE12	NE13	NE15	NE13	NE14	NE13	NE16	NNE13	NNE11	NNE16	NNE17	NNE17	NNE17	NNE11.3	NNE17	
26-Feb	NNE15	NNE16	N14	N14	N14	N15	N12	N13	N13	N12	NNE13	N11	NNE12	N11	NNE12	N10	NNE11	NNE11	N4	SW4	SW6	SW6	SW7	SW8	N8.7	NNE16	
27-Feb	SW7	SSW8	SSW9	SSW9	SSW10	SSW10	SSW10	SSW9	SW7	SW7	WSW6	NW9	WVW9	WVW8	WVW9	W9	W10	W6	N1	ESE1	ENE1	S2	SSE2	S2	WSW5.1	SSW10	
28-Feb	SSE2	S3	SSE3	SSE3	SSE4	SSE4	S2	SE3	NNE1	SSW2	S12	S15	S17	SSE15	SSE14	SSE16	SE13	SE12	SE13	SE10	ESE7	E8	E9	E9	SE7.2	S17	
29-Feb	E11	E10	ESE11	ESE10	ESE12	ESE12	ESE12	ESE11	ESE12	ESE12	ESE11	ESE7	SE5	ESE5	ENE3	E3	ENE4	WVW4	WVW4	NW3	WVW4	NW6	NW5	WVW7	E4.9	ESE12	

WSW1.6	W1.8	W2.3	W2.4	WSW2.4	WSW2.3	WSW2.3	SW1.9	WSW1.9	WSW1.7	W1.4	WVW3.2	WVW4.3	NW5.0	NW4.3	NW3.7	NW2.5	N2.3	NNW1.4	W1.3	WVW2.0	WVW1.6	W1.8	W2.0	Diurnal Average	
NNE15	WVW16	WVW19	WVW23	NW19	SW16	SW16	SW16	SW15	SW14	NNE13	W23	WVW24	W23	W19	W19	W19	W19	W19	W19	W17	W21	NNE17	NNE17	NNE17	Diurnal Maximum

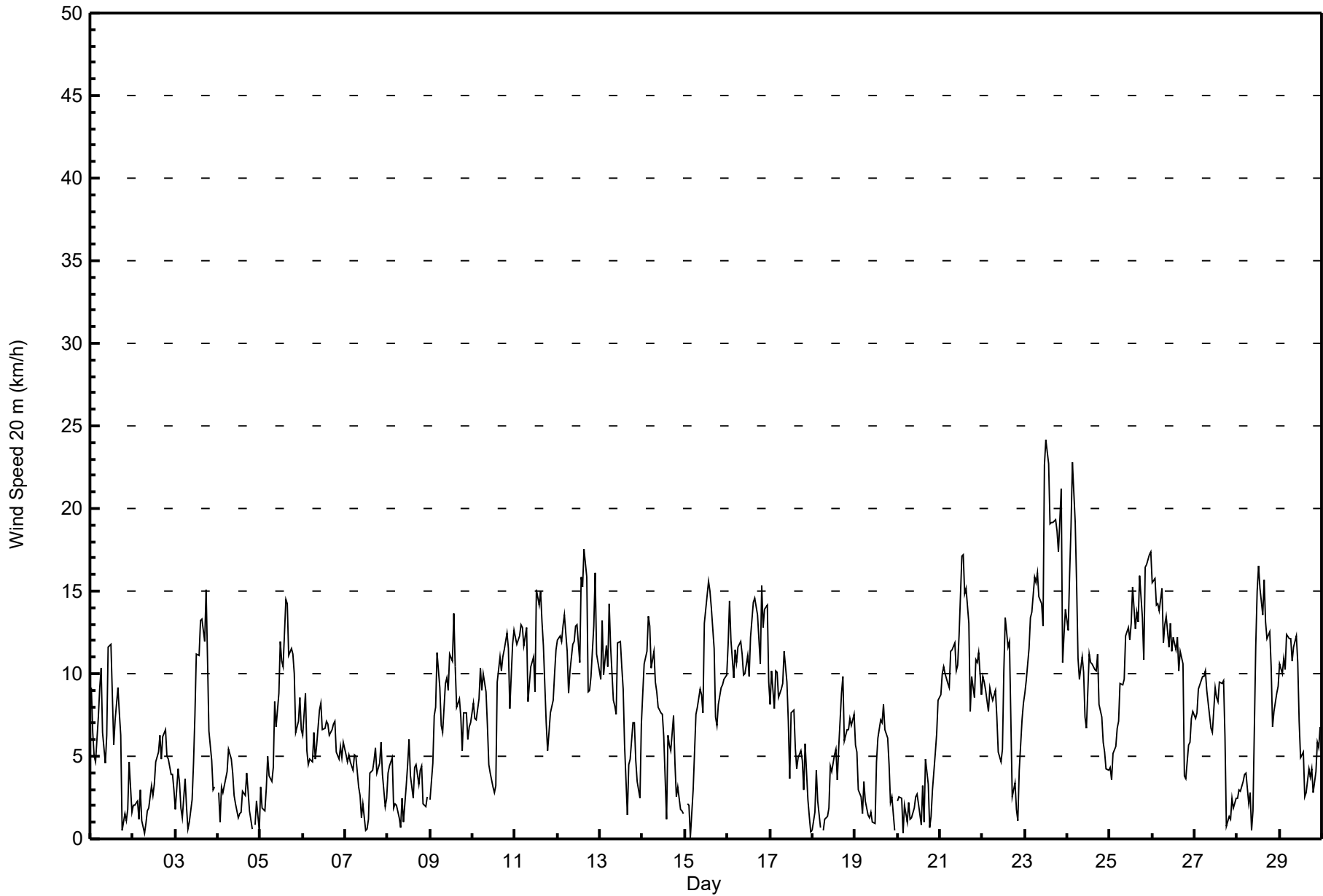
UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed 20 m (WS20m) - km/h
Janvier - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 9 km/h on Feb 23 21:00 Minimum Value: 1 km/h on Feb 4 09:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																	Hours in Service: 696 Hours of Data: 690 Hours of Missing Data: 6 Hours of Calibration: 0 Percent Operational Time: 99.1										
Day	Hourly Period Ending At (MST)																								Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	4	2	2	1	2	2	3	2	3	4	3	4	3	2	2	2	2	1	2	1	1	1	2	2	4		
2-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1		
3-Feb	2	1	1	2	1	2	1	2	1	2	2	4	4	5	5	5	5	4	4	2	1	1	1	1	UO		
4-Feb	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	UO	1	1	1	1		
5-Feb	1	1	1	1	1	1	2	2	2	2	2	3	3	3	4	4	3	3	3	3	1	1	2	2	4		
6-Feb	2	3	2	1	1	2	2	2	2	2	3	2	2	2	2	1	2	2	2	2	1	1	1	1	3		
7-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2		
8-Feb	1	1	1	1	1	1	1	1	2	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	UO		
9-Feb	1	1	2	3	3	2	1	2	2	2	2	3	3	4	4	3	2	3	1	2	2	1	1	1	4		
10-Feb	2	2	1	2	2	2	2	2	1	1	1	1	1	3	2	3	3	2	3	3	3	2	3	2	3		
11-Feb	3	2	3	3	3	3	3	3	4	3	3	2	5	4	4	4	3	1	1	2	1	1	1	2	5		
12-Feb	2	2	2	2	3	3	2	2	3	3	3	4	3	5	5	6	5	3	2	2	3	6	4	4	6		
13-Feb	5	6	4	6	4	6	4	3	2	3	5	5	4	4	3	2	1	1	1	1	2	1	1	3	6		
14-Feb	3	3	4	3	3	2	3	2	2	2	2	2	1	2	2	2	2	2	2	1	1	1	1	1	4		
15-Feb	UO	1	1	1	1	1	1	1	1	1	2	5	4	5	4	4	3	2	1	2	2	2	2	2	5		
16-Feb	3	3	3	2	3	2	3	3	2	3	3	3	3	4	4	4	3	5	4	5	4	4	4	3	5		
17-Feb	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	1	1	1	1	1	1	2	1	2	3		
18-Feb	1	1	1	1	1	UO	1	1	1	1	2	2	2	2	2	1	3	2	1	1	1	2	1	1	3		
19-Feb	1	1	2	1	1	1	2	2	1	1	1	1	2	1	1	2	2	1	2	1	1	1	1	1	UO		
20-Feb	2	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2		
21-Feb	1	2	3	2	2	2	3	2	3	3	3	4	5	5	4	5	4	2	2	2	2	2	3	2	5		
22-Feb	2	2	2	2	1	1	2	2	2	2	1	3	3	4	3	4	3	2	3	1	1	1	2	1	4		
23-Feb	1	2	2	2	3	4	4	4	3	4	4	7	8	7	6	6	6	6	6	5	9	4	4	5	9		
24-Feb	4	5	5	7	7	6	4	3	4	3	2	4	4	4	3	2	2	2	2	3	1	1	1	1	7		
25-Feb	1	2	2	2	1	2	2	2	2	3	3	3	3	3	3	3	3	4	3	3	5	5	5	5	5		
26-Feb	5	5	5	5	4	5	4	4	5	4	4	4	4	4	4	3	3	3	2	1	1	1	1	1	5		
27-Feb	1	1	1	1	1	1	1	1	2	2	4	3	4	4	4	3	3	2	1	1	2	2	2	1	4		
28-Feb	1	1	1	1	1	1	1	2	1	3	5	5	5	5	4	5	4	4	3	4	2	2	3	3	5		
29-Feb	3	3	4	3	4	4	4	4	3	4	4	3	3	2	2	3	2	2	1	1	2	2	2	2	4		
																	Diurnal Maximum										
																	5 6 5 7 7 6 4 4 5 4 5 7 8 7 6 6 6 6 6 5 9 6 5 5										
UO - Unstable Operation																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed 20 m (WS20m) - km/h
Janvier - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	258	37.39	37.39
6 - 11	285	41.30	78.70
12 - 19	142	20.58	99.28
20 - 28	5	0.72	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 690

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed 20 m (WS20m) - km/h
Janvier - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	34	41	23	16	7	5	13	18	16	30	9	12	9	11	6	8	258
6 - 11	19	44	19	12	6	7	2	3	4	38	61	13	17	20	13	7	285
12 - 19	13	18	5	0	0	5	3	3	3	9	24	11	20	18	4	6	142
20 - 28	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	5
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	66	103	47	28	13	17	18	24	23	77	94	36	49	51	23	21	690

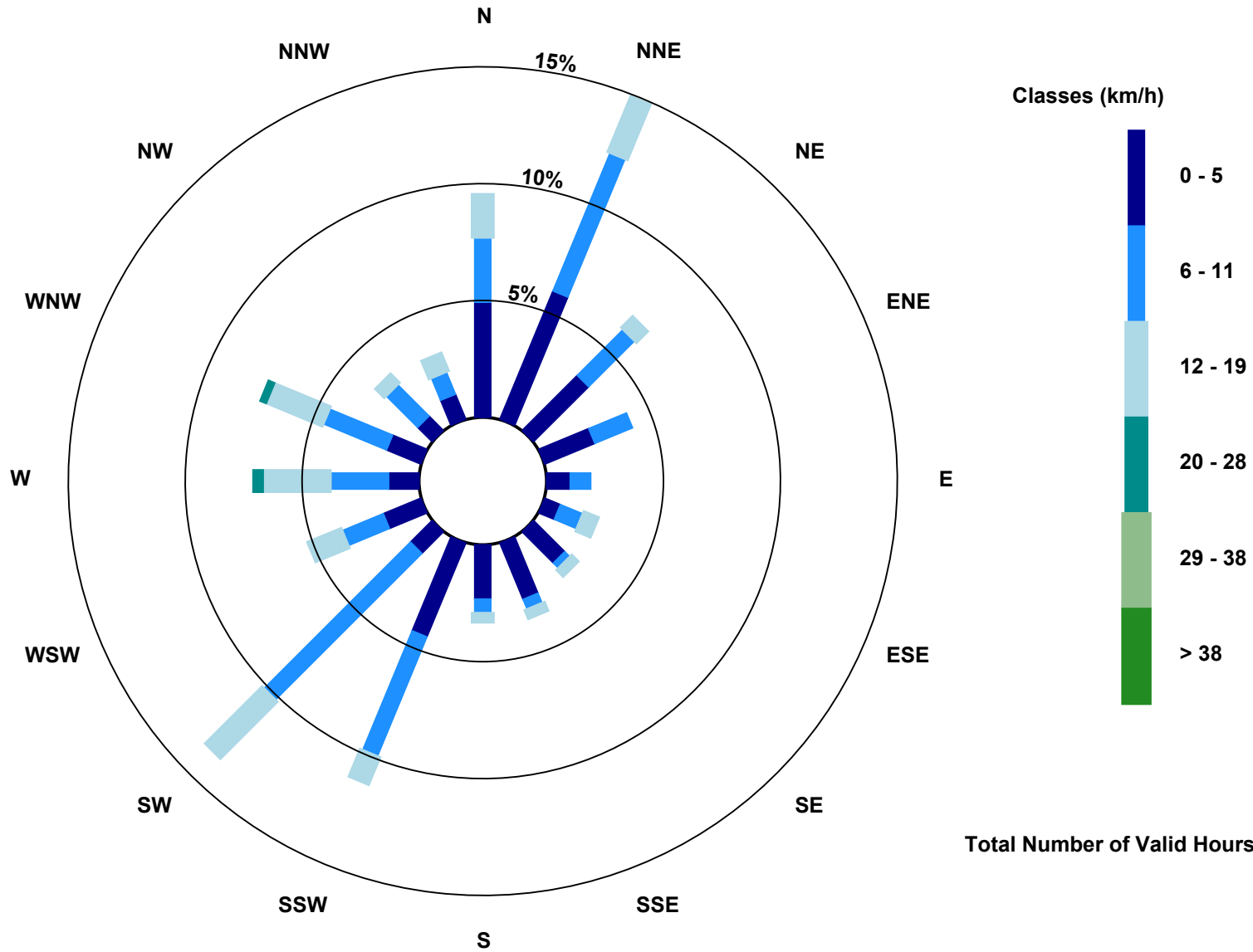
Total Number of Valid Hours: 690

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed 20 m (WS20m) - km/h
Janvier





Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Direction 20 m (WD20m) - deg

Janvier - February 2024

Direction of Maximum Speed: 282 deg on Feb 23 13:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 254.6 deg on Feb 23	Hours of Data: 690
Direction of Minimum Speed: 330 deg on Feb 15 04:00	Hours of Missing Data: 6
Direction of Minimum Daily Speed Average: 1.0 deg on Feb 4	Percent Operational Time: 99.1
Monthly Average Direction: 283.0 deg	

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	156	157	175	163	167	179	195	189	194	199	210	217	217	234	189	183	191	143	169	41	45	212	204	159	188.4
2-Feb	157	168	199	187	203	180	196	18	18	32	359	11	41	23	11	21	13	23	20	8	39	24	35	26	24.5
3-Feb	84	10	65	338	28	142	200	77	272	317	340	331	318	323	324	323	347	9	7	13	11	14	40	UC	347.6
4-Feb	245	206	208	194	211	207	208	203	201	206	179	208	244	30	357	20	27	78	291	323	UC	142	27	24	210.6
5-Feb	49	74	262	339	5	19	6	28	25	17	15	26	25	21	7	11	12	5	10	15	14	27	23	15	15.9
6-Feb	16	31	19	21	29	40	63	92	114	90	74	72	65	53	67	51	70	66	67	69	72	71	78	63	61.1
7-Feb	46	33	9	12	6	4	1	10	1	5	329	326	196	35	77	35	7	40	58	35	39	32	346	358	22.7
8-Feb	24	39	44	4	16	286	114	236	261	81	170	206	200	219	144	147	166	160	169	163	211	129	123	UC	159.3
9-Feb	273	256	308	308	302	293	279	279	277	288	285	293	294	295	294	294	290	300	258	238	249	242	233	230	281.6
10-Feb	231	231	235	225	226	218	220	215	210	217	242	235	284	257	199	196	195	196	206	213	232	218	216	218	217.4
11-Feb	223	217	228	253	265	255	257	229	266	259	289	278	291	294	286	285	295	298	271	203	205	216	211	209	256.5
12-Feb	209	212	213	210	212	217	220	211	214	220	219	223	231	267	281	292	296	309	287	279	286	314	314	319	252.5
13-Feb	333	345	355	347	342	353	357	359	5	354	338	332	332	338	334	0	132	185	203	216	251	303	298	352	338.9
14-Feb	4	358	1	34	33	37	35	45	48	42	31	35	28	291	31	19	17	15	355	356	9	23	350	349	24.0
15-Feb	UC	23	353	330	228	217	217	223	216	209	224	281	269	271	271	274	270	264	250	227	227	239	225	212	247.8
16-Feb	220	216	220	234	230	234	233	225	216	223	219	209	235	252	257	255	232	225	222	228	237	240	260	267	233.2
17-Feb	275	282	260	260	255	244	226	218	211	228	231	259	295	318	324	284	90	124	31	9	29	13	25	168	260.8
18-Feb	53	274	230	210	139	UC	268	168	221	244	16	33	61	18	42	33	40	25	14	16	19	11	13	16	21.3
19-Feb	17	24	27	357	177	205	205	143	245	241	105	204	57	60	29	27	26	35	53	31	41	4	28	UC	35.2
20-Feb	191	205	162	136	132	213	141	323	185	35	93	183	266	310	39	18	77	42	18	245	215	206	210	212	183.9
21-Feb	205	211	216	218	226	221	227	232	236	235	228	262	272	273	262	272	258	243	224	222	232	230	261	236	241.0
22-Feb	237	244	248	217	205	203	239	227	225	205	189	286	286	303	293	301	311	343	81	10	1	199	209	204	248.9
23-Feb	212	208	202	208	213	224	221	217	219	228	238	277	282	278	267	264	271	275	264	279	272	299	300		254.6
24-Feb	296	288	290	290	305	346	8	18	8	8	42	351	315	331	1	35	42	36	36	62	50	66	48		346.7
25-Feb	19	35	6	12	21	21	25	29	27	26	30	29	37	36	34	41	41	25	30	25	23	23	18	18	27.1
26-Feb	19	12	8	11	8	6	5	7	6	358	13	2	16	6	13	11	15	23	10	225	227	215	225	232	5.2
27-Feb	219	206	206	204	203	209	209	206	220	228	254	305	287	284	287	279	274	276	351	105	68	187	165	173	237.6
28-Feb	160	172	153	155	154	166	174	130	13	205	171	172	170	157	160	147	138	131	134	132	118	89	85	93	144.7
29-Feb	93	98	104	102	103	113	109	102	104	115	119	110	126	107	67	81	62	294	294	323	298	308	309	301	99.5
253.2 263.8 258.9 265.1 257.0 249.5 240.9 224.0 240.4 252.0 263.1 288.7 295.0 305.3 309.2 310.7 325.7 351.6 326.6 270.6 287.0 287.0 278.7 275.6																									
Diurnal Average																									

UC - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



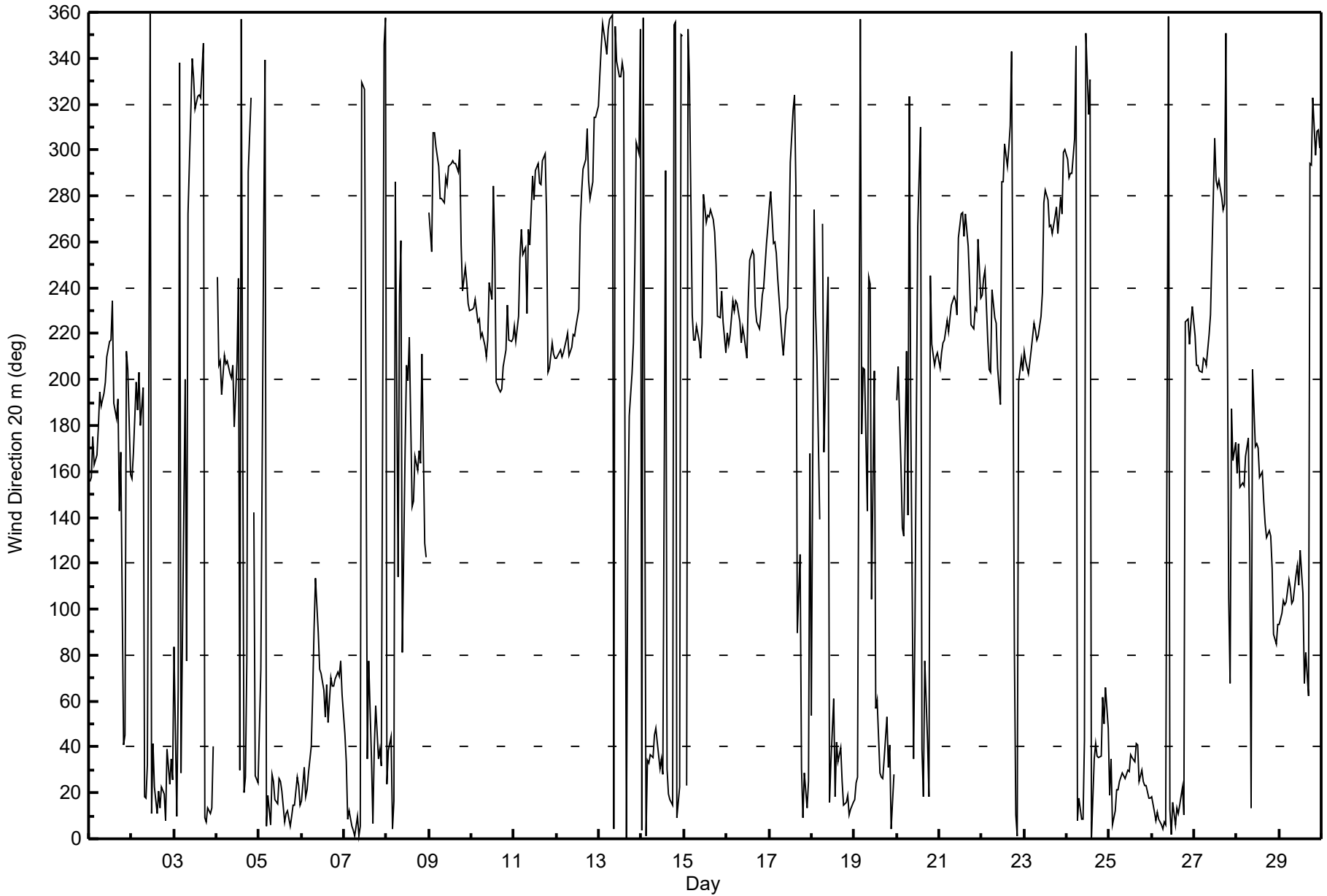
Wood Buffalo Environmental Association

Summary of Hour Standard Deviations

Wind Direction 20 m (WD20m) - deg

Janvier - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 103 deg on Feb 20 08:00 Minimum Value: 5 deg on Feb 27 03:00 Percentiles: P ₁ = 7 P ₁₀ = 12 Q ₁ = 16 Median = 21 Q ₃ = 32 P ₉₀ = 56 P ₉₉ = 91																			Hours in Service: 696 Hours of Data: 690 Hours of Missing Data: 6 Hours of Calibration: 0 Percent Operational Time: 99.1						
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	23	27	23	15	19	21	14	20	39	23	18	21	23	34	29	17	13	13	91	36	70	77	20	89	91
2-Feb	56	48	40	56	36	63	87	44	19	44	38	55	29	30	28	19	22	11	10	20	12	19	28	45	87
3-Feb	64	20	34	22	41	24	71	80	75	30	30	38	28	37	34	31	37	20	23	16	15	15	16	UO	80
4-Feb	19	33	9	17	12	10	9	9	8	34	30	55	53	65	49	28	35	49	52	83	UO	75	35	54	83
5-Feb	21	51	48	34	18	29	26	21	14	19	19	16	18	20	22	19	18	20	17	16	13	9	12	14	51
6-Feb	17	15	18	14	15	19	21	27	24	22	25	23	23	17	23	17	17	18	18	24	23	22	29	19	29
7-Feb	20	25	16	19	21	24	23	30	32	70	72	97	82	86	20	24	25	13	19	20	13	24	38	28	97
8-Feb	21	19	17	44	66	57	90	90	62	81	50	44	32	52	56	27	21	19	16	16	38	27	7	UO	90
9-Feb	33	23	21	25	18	14	14	18	14	14	19	17	20	20	19	30	20	22	19	14	15	17	15	16	33
10-Feb	14	16	12	13	14	11	13	11	9	17	16	41	42	55	18	17	15	15	13	17	18	23	15	13	55
11-Feb	18	14	15	20	18	17	15	29	36	18	16	21	18	23	20	18	17	12	14	9	11	11	7	10	36
12-Feb	10	11	12	11	12	14	13	12	14	17	18	18	23	18	20	18	18	22	13	14	20	24	23	30	30
13-Feb	41	36	28	33	39	30	27	22	19	30	36	33	37	36	43	81	21	27	11	14	23	43	26	29	81
14-Feb	24	26	28	17	11	12	17	14	13	14	15	13	20	84	32	27	22	21	29	24	17	17	24	13	84
15-Feb	UO	19	42	74	12	10	9	9	13	12	19	25	19	22	22	20	18	18	13	12	15	16	16	13	74
16-Feb	16	13	16	15	17	16	15	15	14	17	20	18	23	22	20	21	18	21	26	21	24	16	17	21	26
17-Feb	17	15	14	15	16	15	11	12	10	16	19	48	27	36	49	37	30	35	20	23	7	56	79	85	85
18-Feb	93	44	12	50	79	UO	91	85	75	77	42	40	41	40	53	32	25	12	12	12	11	12	12	11	93
19-Feb	11	7	9	18	65	21	14	64	78	72	67	102	41	22	18	17	11	11	10	15	60	43	87	UO	102
20-Feb	31	50	46	91	72	72	54	103	98	69	46	44	63	102	28	68	15	20	88	69	17	20	13	9	103
21-Feb	11	12	17	17	16	17	14	14	15	17	17	24	20	21	21	22	21	21	12	14	15	14	17	20	24
22-Feb	14	14	16	18	8	10	17	14	21	30	32	40	24	24	21	21	21	60	46	75	65	43	13	11	75
23-Feb	9	10	9	11	14	16	15	15	15	17	20	19	20	19	22	20	19	18	19	20	27	27	28	21	28
24-Feb	22	16	16	17	31	38	22	21	22	23	22	53	35	38	32	16	15	13	13	19	17	14	27	24	53
25-Feb	28	35	24	21	16	20	15	16	16	15	14	19	17	14	19	18	19	16	14	16	16	15	17	18	35
26-Feb	18	20	24	22	22	22	24	23	23	28	22	33	26	29	27	26	22	15	46	19	10	10	11	13	46
27-Feb	13	6	5	6	7	8	8	8	17	20	35	32	40	45	36	36	28	22	77	51	79	55	72	33	79
28-Feb	45	32	31	24	17	22	61	46	86	86	32	25	23	27	30	26	23	20	21	21	20	19	21	22	86
29-Feb	23	25	24	23	24	22	24	23	22	22	29	35	57	35	81	87	30	44	22	31	34	25	21	18	87
																			93 51 48 91 79 72 91 103 98 86 72 102 82 102 81 87 37 60 91 83 79 77 87 89						
Diurnal Maximum																									
UO - Unstable Operation																									





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS23 FORT HILLS FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT HILLS (AMS23)
 FEBRUARY 2024

MONTHLY SUMMARY for
 AMD SECTION III.B.1(c)

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2(ppb) Average	664	32	32	100	15.2	0	2.6	0
TRS(ppb) Average	663	33	33	100	2.1	0	0.5	0
THC(ppm) Average	664	32	32	100	7.9	-	3.4	-
NMHC(ppm) Average	664	32	32	100	1.045	-	0.441	-
CH4(ppm) Average	664	32	32	100	6.9	-	3	-
NO2 (ppb) Average	662	34	34	100	52.5	0	35.1	-
NO (ppb) Average	662	34	34	100	238.5	-	67.8	-
NOX (ppb) Average	662	34	34	100	291	-	95.3	-
PM2.5 (ug/m3) Average	694	2	2	100	87.3	2	28.9	0
Temperature 2 m (C) Average	696	0	0	100	8.1	-	1.2	-
Relative Humidity (%) Average	696	0	0	100	97.6	-	91.3	-
Wind Speed 10 m (km/h) Average	696	0	0	100	31	-	18	-
Wind Direction 10 m (deg) Average	696	0	0	100	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT HILLS (AMS23)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	664	0.58	1.3	-	0	0	0	0.2	0.6	1.3	15.2
TRS (ppb) Average	663	0.33	0.2	-	0	0.1	0.2	0.2	0.4	0.6	2.1
THC (ppm) Average	664	2.47	0.6	-	1.9	2	2.1	2.3	2.7	3.1	7.9
NMHC(ppm) Average	664	0.144	0.175	-	0	0	0	0.1	0.2	0.4	1.045
CH4(ppm) Average	664	2.33	0.4	-	1.9	2	2.1	2.2	2.5	2.8	6.9
NO2 (ppb) Average	662	17.21	10.7	-	0.6	3.5	8.2	16.3	25.2	31	52.5
NO (ppb) Average	662	15.95	27.9	-	0	0	0.9	4.3	18.4	48.7	238.5
NOX (ppb) Average	662	33.16	35.8	-	0.7	4.5	10.3	20.3	42.4	79.1	291
PM2.5 (ug/m3) Average	694	9.59	10.3	-	0.3	2.1	3.5	6	11.7	21	87.3
Temperature 2 m (C) Average	696	-9.89	7.2	-	-28.2	-19.1	-14.3	-10.2	-5.2	-0.2	8.1
Relative Humidity (%) Average	696	72.1	14.1	-	30.2	50.9	63.1	74.6	83.5	87.2	97.6
Wind Speed 10 m (km/h) Average	696	9.6	6	-	1	3	5	8	13	18	31
Wind Direction 10 m (deg) Average	696	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT HILLS (AMS23)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
<hr/>				
No operational issues to report				



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

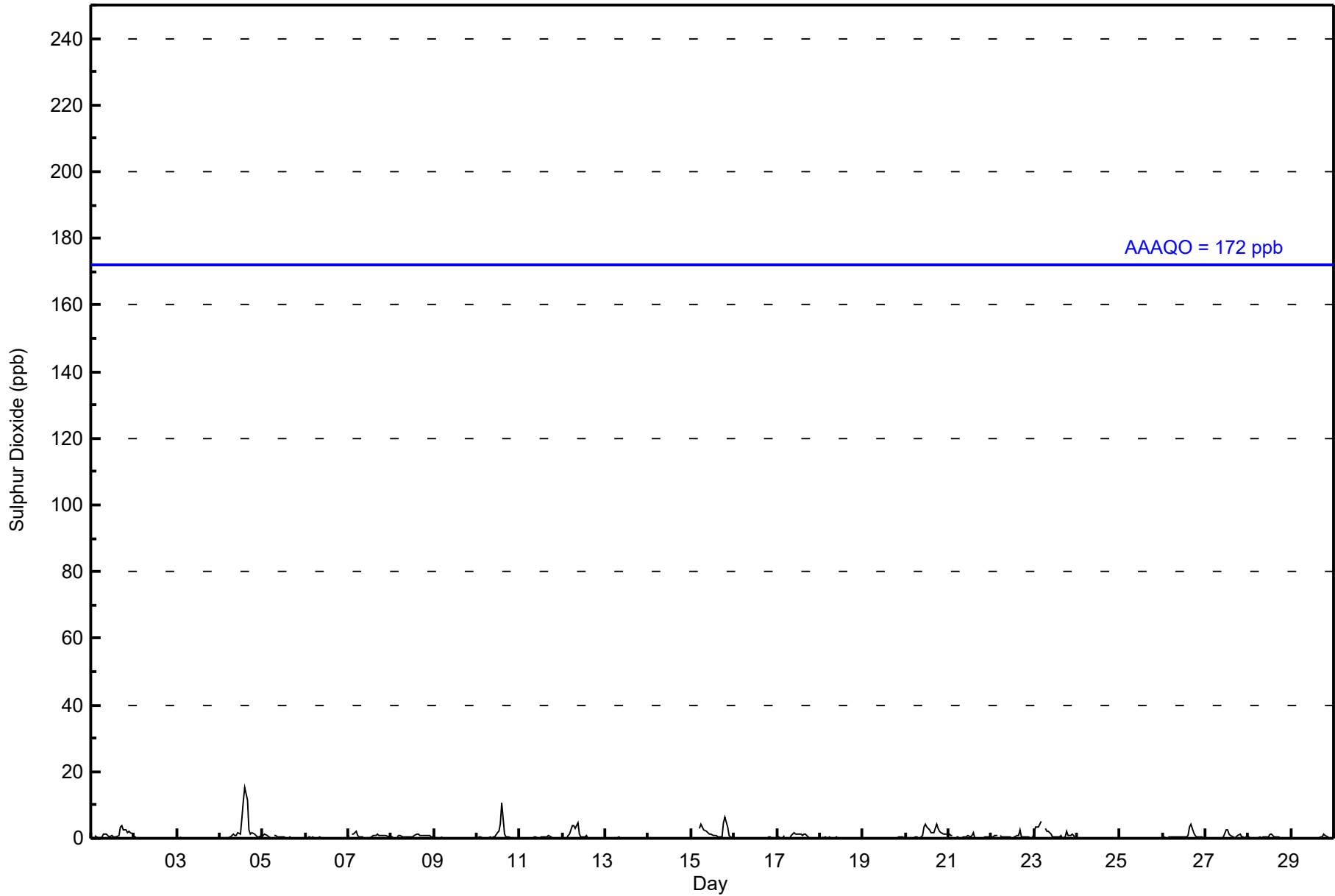
Fort Hills - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696																				
Maximum Value: 15.2 ppb on Feb 4 15:00		Maximum Daily Average: 2.6 ppb on Feb 4		Hours of Data: 664																						
Minimum Value: 0.0 ppb on Feb 2 20:00		Minimum Daily Average: 0.0 ppb on Feb 14		Hours of Missing Data: 32																						
Maximum Diurnal Average: 1.3 ppb at hour 15		Minimum Diurnal Average: 0.3 ppb at hour 24		Hours of Calibration: 32																						
Monthly Average: 0.58 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.2 Q ₃ = 0.6 P ₉₀ = 1.3 P ₉₉ = 4.7		Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	1.2	Z	0.6	0.2	0.2	0.2	0.6	1.3	1.1	0.9	0.4	0.7	0.5	0.5	0.7	3.3	3.7	2.5	2.4	1.8	2.0	1.7	1.2	1.2	3.7	
2-Feb	0.5	0.3	Z	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.5	
3-Feb	0.1	0.0	0.3	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
4-Feb	0.0	0.0	0.0	0.0	Z	0.6	0.5	1.2	1.0	0.9	1.6	1.1	6.1	11.0	15.2	11.5	2.5	1.4	1.6	1.4	0.7	0.5	0.4	0.7	15.2	
5-Feb	1.0	1.2	0.9	0.6	0.3	Z	0.8	1.0	0.5	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	1.2	
6-Feb	Z	0.3	0.3	0.2	0.3	0.2	0.1	0.1	0.3	0.2	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.3	
7-Feb	0.7	Z	1.1	1.2	2.3	1.0	0.5	0.4	0.4	C	C	C	0.3	0.5	0.9	1.1	1.2	1.0	0.7	0.9	0.6	0.7	0.3	0.8	2.3	
8-Feb	0.6	0.5	Z	0.5	0.7	0.9	0.4	0.3	0.4	0.4	0.4	0.2	0.5	0.7	1.2	1.2	1.0	1.0	0.8	0.8	0.8	0.7	0.6	0.3	1.2	
9-Feb	0.3	0.2	0.1	Z	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.3	
10-Feb	0.0	0.4	0.5	0.1	Z	0.0	0.1	0.4	0.2	0.3	0.3	1.6	2.0	4.1	10.6	1.1	0.6	0.4	0.3	0.1	0.2	0.1	0.1	0.1	10.6	
11-Feb	0.1	0.1	0.2	0.1	0.1	Z	0.2	0.1	0.4	0.3	0.2	0.1	0.2	0.5	0.4	0.4	0.7	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.7	
12-Feb	Z	0.1	0.1	0.7	1.4	3.7	3.6	2.9	4.6	1.2	0.4	0.3	0.3	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	
13-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.5	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.5	
14-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15-Feb	0.0	0.0	0.0	Z	3.0	4.3	3.3	2.5	2.2	1.7	1.3	1.2	1.0	0.9	0.9	0.5	0.3	0.4	4.5	6.3	3.6	0.7	0.3	0.2	6.3	
16-Feb	0.1	0.1	0.1	0.2	Z	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.1	0.1	0.1	0.4	
17-Feb	0.2	0.2	0.1	0.1	0.8	Z	0.0	0.0	0.9	1.6	1.2	1.1	1.1	1.2	1.0	1.5	1.4	0.6	0.1	0.0	0.1	0.2	0.2	0.1	1.6	
18-Feb	Z	0.4	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	
19-Feb	0.0	Z	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.5	
20-Feb	0.0	0.1	Z	0.1	0.0	0.5	0.3	0.0	0.1	0.8	3.2	4.2	3.3	2.6	1.9	1.8	1.6	4.0	3.1	2.3	1.8	1.1	1.2	1.1	4.2	
21-Feb	1.4	0.9	0.8	Z	0.6	0.3	0.0	0.0	0.5	0.6	0.6	0.7	0.4	0.8	1.8	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.5	0.6	1.8	
22-Feb	0.6	0.5	1.0	0.8	Z	0.7	0.3	0.4	0.3	0.2	0.4	0.1	0.1	0.5	0.8	0.9	2.6	0.4	0.4	0.5	0.4	0.2	0.1	0.3	2.6	
23-Feb	1.8	3.5	3.3	4.3	4.9	Z	3.0	2.1	2.1	1.2	0.5	0.3	0.3	0.2	0.5	0.9	0.2	0.4	2.2	1.0	0.7	1.4	0.8	0.1	4.9	
24-Feb	Z	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
25-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	
26-Feb	0.2	0.2	Z	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.4	1.0	3.6	4.4	1.6	1.0	0.5	0.5	0.4	0.3	0.2	4.4	
27-Feb	0.2	0.2	0.2	Z	0.2	0.1	0.2	0.1	0.1	0.2	0.3	2.6	2.5	1.2	0.8	0.3	0.2	0.4	0.7	1.2	0.6	0.3	0.2	0.8	2.6	
28-Feb	0.4	0.2	0.2	0.2	Z	0.1	0.3	0.2	0.3	0.3	0.5	0.6	1.1	1.2	0.5	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	1.2	
29-Feb	0.1	0.0	0.0	0.0	0.1	Z	0.1	0.0	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.5	1.2	0.8	0.3	0.2	0.2	0.1	1.2	
0.4 0.4 0.4 0.4 0.7 0.6 0.5 0.5 0.6 0.4 0.5 0.6 0.7 1.0 1.3 0.9 0.7 0.6 0.7 0.7 0.5 0.3 0.3 0.3																								Diurnal Average		
1.8 3.5 3.3 4.3 4.9 4.3 3.6 2.9 4.6 1.7 3.2 4.2 6.1 11.0 15.2 11.5 4.4 4.0 4.5 6.3 3.6 2.0 1.7 1.2																								Diurnal Maximum		
Z - zerspan C - Calibration																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																										



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Fort Hills - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Fort Hills - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	660	99.40	99.40
11 - 20	4	0.60	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 664

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Fort Hills - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	114	88	41	7	7	16	58	78	77	45	36	16	11	14	19	33	660
11 - 20	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	4
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	114	88	41	7	7	16	58	80	78	45	36	17	11	14	19	33	664

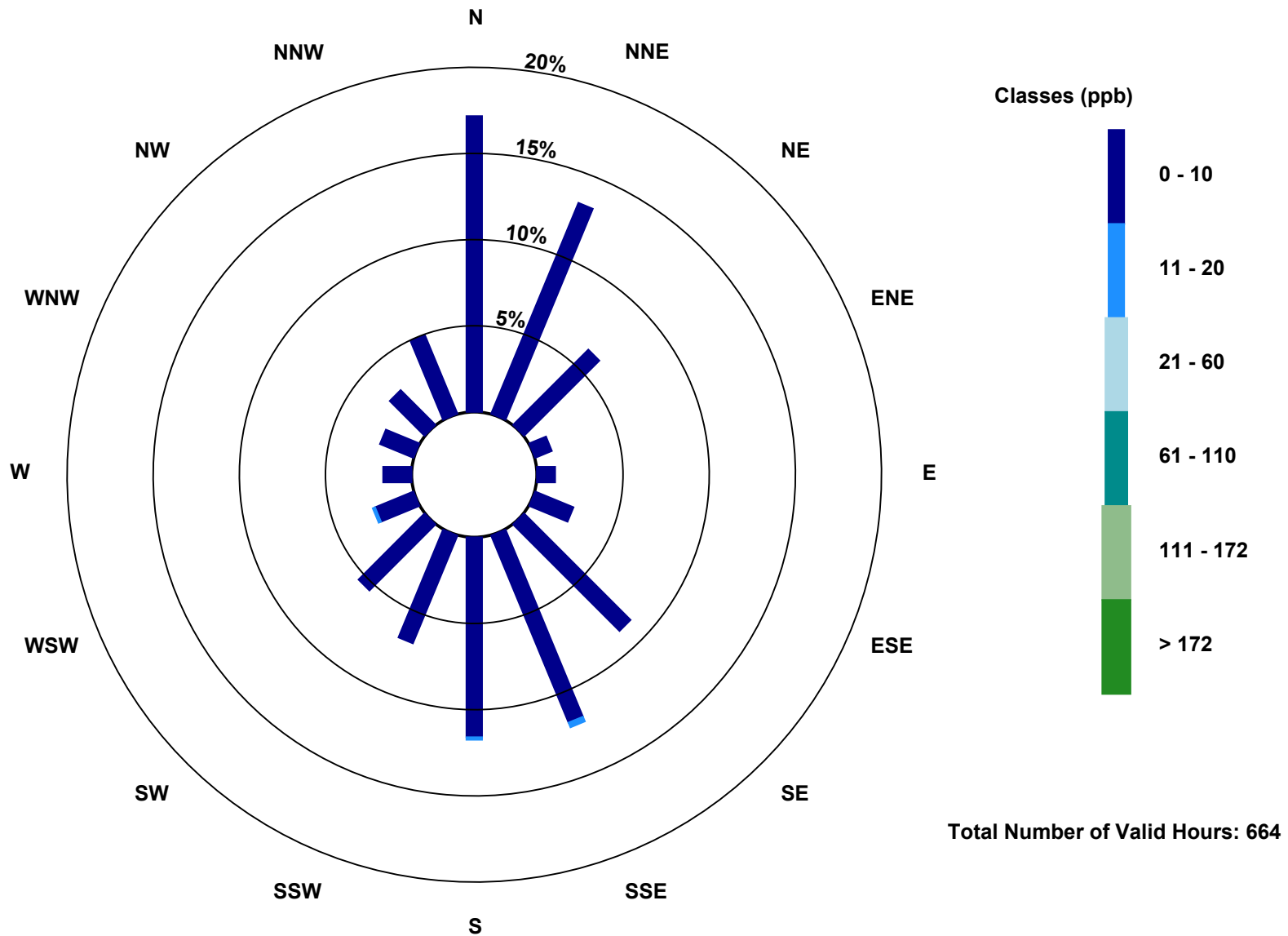
Total Number of Valid Hours: 664

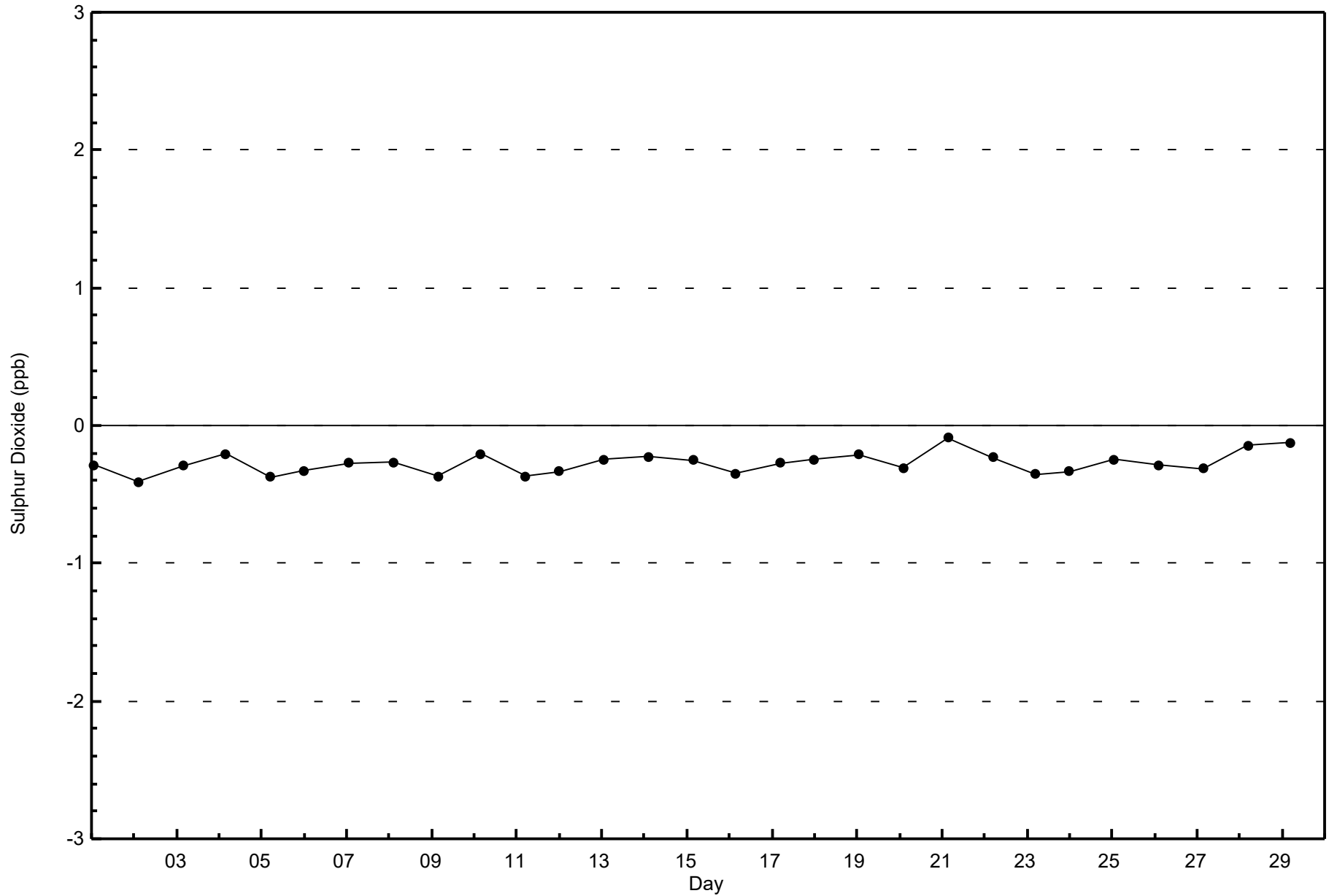
Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Fort Hills

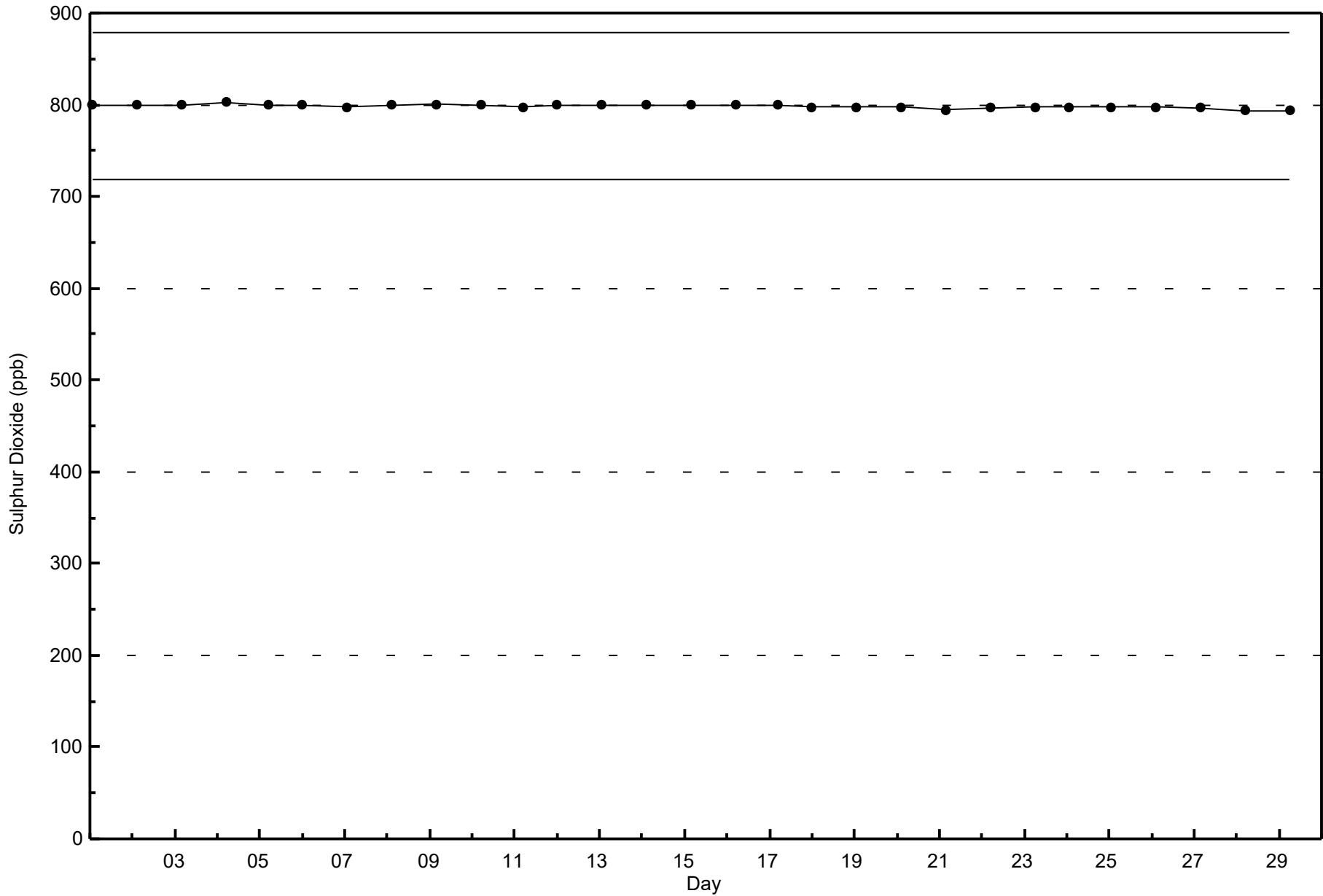






Wood Buffalo Environmental Association
Span Responses

Sulphur Dioxide (SO₂) - ppb
Fort Hills - February 2024





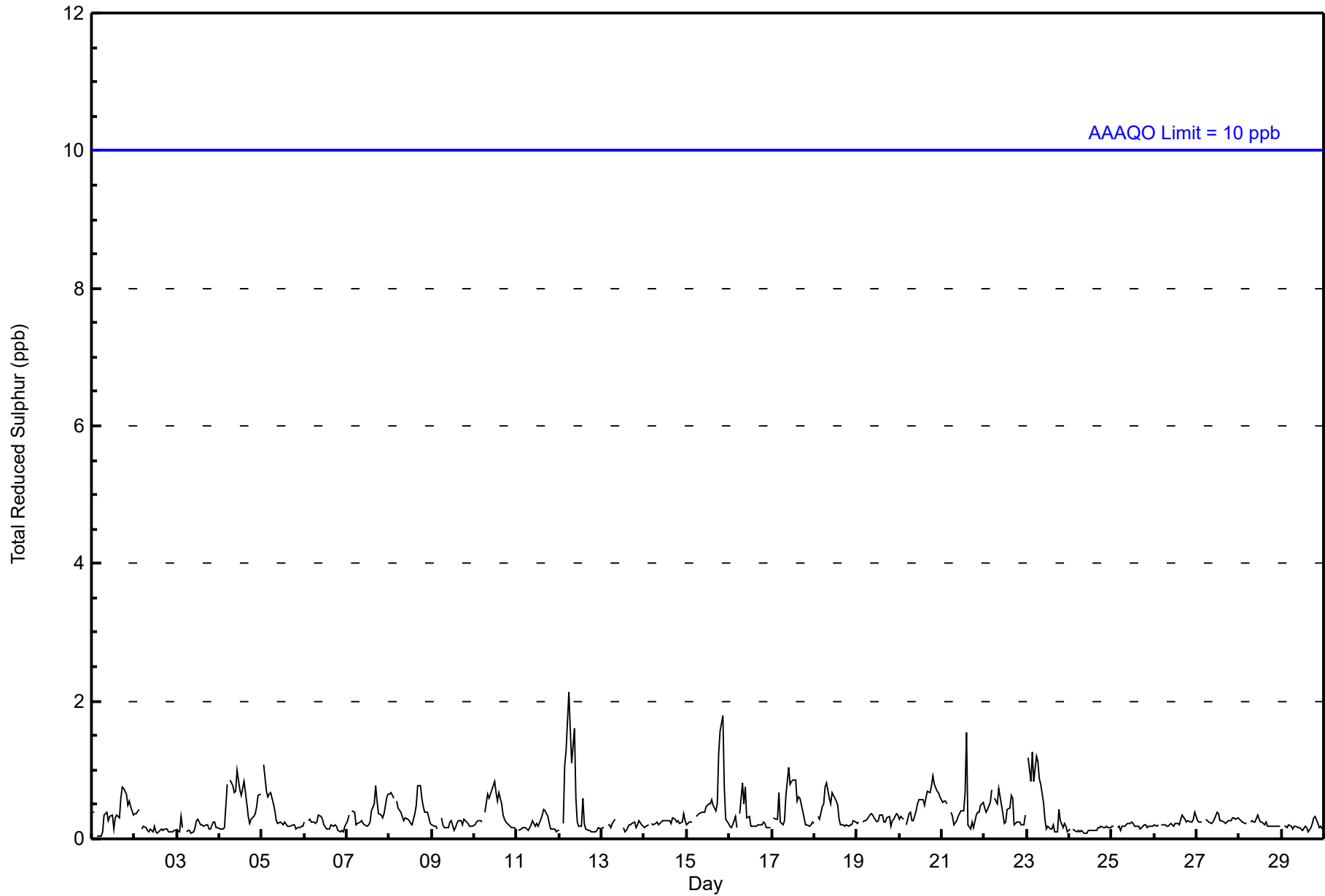
Wood Buffalo Environmental Association

Summary of Hour Averages

Total Reduced Sulphur (TRS) - ppb

Fort Hills - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696							
Maximum Value: 2.1 ppb on Feb 12 06:00		Maximum Daily Average: 0.5 ppb on Feb 15														Hours of Data:		663									
Minimum Value: 0.0 ppb on Feb 1 05:00		Minimum Daily Average: 0.1 ppb on Feb 24														Hours of Missing Data:		33									
Maximum Diurnal Average: 0.4 ppb at hour 9		Minimum Diurnal Average: 0.3 ppb at hour 1														Hours of Calibration:		33									
Monthly Average: 0.33 ppb		Percentiles: P ₁ = 0.1 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.2 Q ₃ = 0.4 P ₉₀ = 0.6 P ₉₉ = 1.3														Percent Operational Time:		100.0									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.4	0.4	Z	0.0	0.0	0.0	0.1	0.3	0.4	0.3	0.3	0.3	0.1	0.3	0.3	0.3	0.6	0.7	0.7	0.7	0.5	0.5	0.5	0.3	0.4	0.7	
2-Feb	0.4	0.4	0.4	Z	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	
3-Feb	0.1	0.1	0.3	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	
4-Feb	0.1	0.1	0.1	0.2	0.8	Z	0.9	0.8	0.7	0.7	1.0	0.7	0.6	0.7	0.8	0.5	0.3	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.5	1.0	
5-Feb	Z	1.1	0.7	0.6	0.7	0.7	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	1.1		
6-Feb	0.2	Z	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.3		
7-Feb	0.3	0.3	Z	0.4	0.4	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.4	0.5	0.8	0.5	0.4	0.3	0.3	0.4	0.6	0.6	0.8		
8-Feb	0.7	0.7	0.6	Z	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.4	0.5	0.8	0.8	0.6	0.5	0.4	0.4	0.3	0.2	0.8		
9-Feb	0.2	0.2	0.2	0.1	Z	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3		
10-Feb	0.2	0.3	0.3	0.3	0.3	Z	0.4	0.7	0.6	0.6	0.7	0.8	0.7	0.6	0.7	0.5	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.8		
11-Feb	Z	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.4		
12-Feb	0.1	Z	0.2	1.1	1.3	2.1	1.6	1.1	1.6	0.6	0.2	0.2	0.2	0.6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	2.1		
13-Feb	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.3	C	C	C	C	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3		
14-Feb	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.4	0.3	0.4		
15-Feb	0.2	0.2	0.2	0.2	Z	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.5	0.4	0.5	1.2	1.6	1.8	0.8	0.3	0.2	1.8		
16-Feb	0.2	0.2	0.2	0.3	0.2	Z	0.4	0.8	0.5	0.7	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.8		
17-Feb	Z	0.3	0.3	0.3	0.7	0.2	0.2	0.3	0.6	1.0	0.8	0.8	0.9	0.8	0.6	0.6	0.6	0.4	0.3	0.2	0.2	0.2	0.2	0.2	1.0		
18-Feb	0.2	Z	0.3	0.3	0.5	0.5	0.7	0.8	0.6	0.5	0.7	0.6	0.6	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.8		
19-Feb	0.2	0.3	Z	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.3	0.3	0.4	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.4	0.4	0.4		
20-Feb	0.3	0.3	0.3	Z	0.2	0.4	0.4	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.5	0.6	0.7	0.7	0.8	0.9	0.8	0.7	0.7	0.6	0.9		
21-Feb	0.5	0.5	0.6	0.5	Z	0.4	0.3	0.2	0.3	0.3	0.4	0.4	0.4	0.7	1.5	0.2	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.5	1.5		
22-Feb	0.4	0.4	0.4	0.5	0.7	Z	0.6	0.5	0.7	0.6	0.4	0.2	0.2	0.4	0.4	0.6	0.6	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.7		
23-Feb	Z	1.2	0.8	1.3	0.8	1.2	1.1	0.9	0.8	0.5	0.3	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.4	0.3	0.2	0.2	0.2	0.1	1.3		
24-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
25-Feb	0.2	0.2	Z	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
26-Feb	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.4	0.4		
27-Feb	0.3	0.3	0.2	0.2	Z	0.3	0.3	0.2	0.2	0.2	0.3	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4		
28-Feb	0.3	0.3	0.3	0.2	0.2	Z	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3		
29-Feb	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3		
																								Diurnal Average		0.3	
																								Diurnal Maximum		0.7	
Z - zerspan C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Reduced Sulphur (TRS) - ppb
Fort Hills - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	663	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Fort Hills - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	114	89	40	7	7	16	55	81	82	44	34	16	11	15	18	34	663
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	114	89	40	7	7	16	55	81	82	44	34	16	11	15	18	34	663

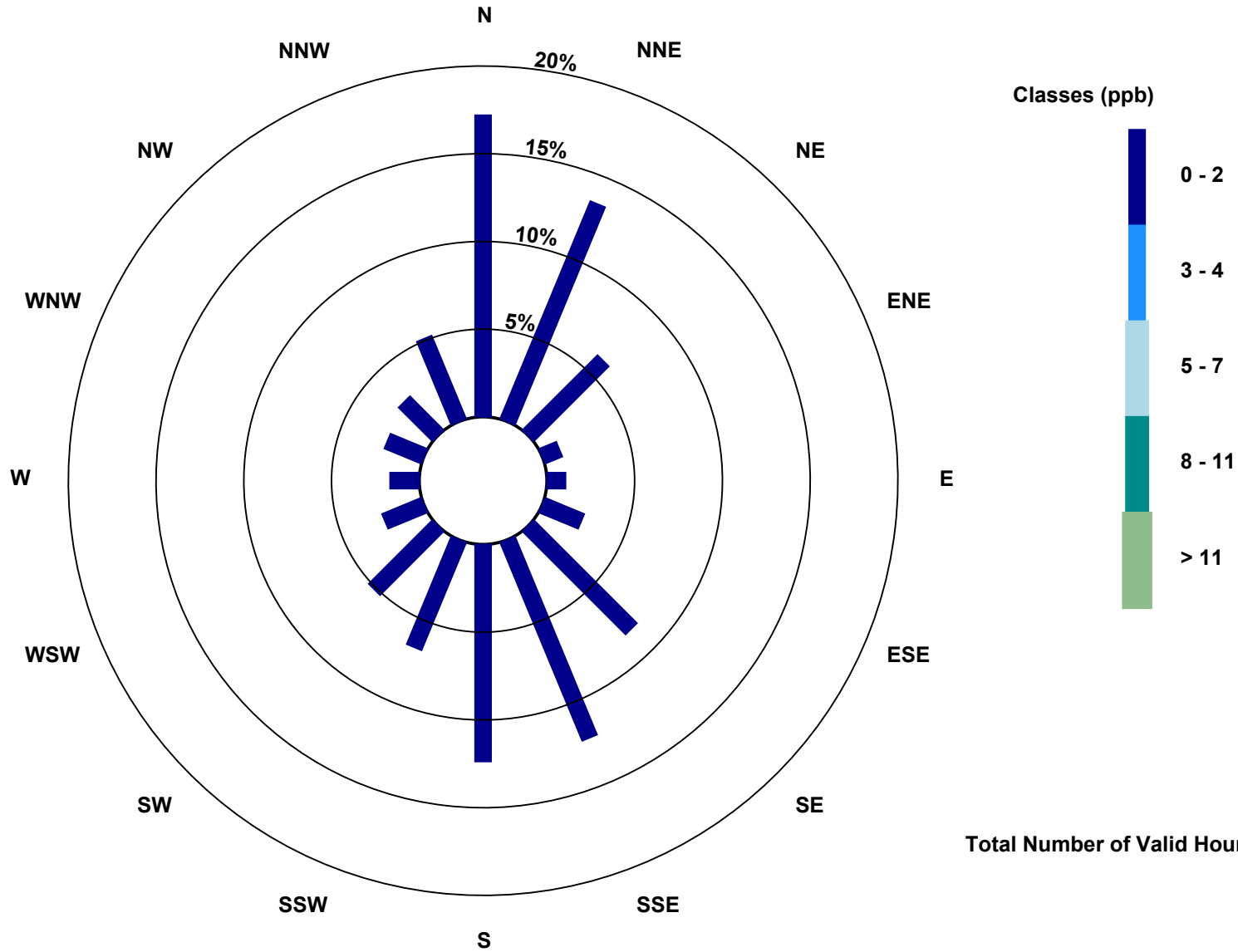
Total Number of Valid Hours: 663

Total Number of Hours: 696

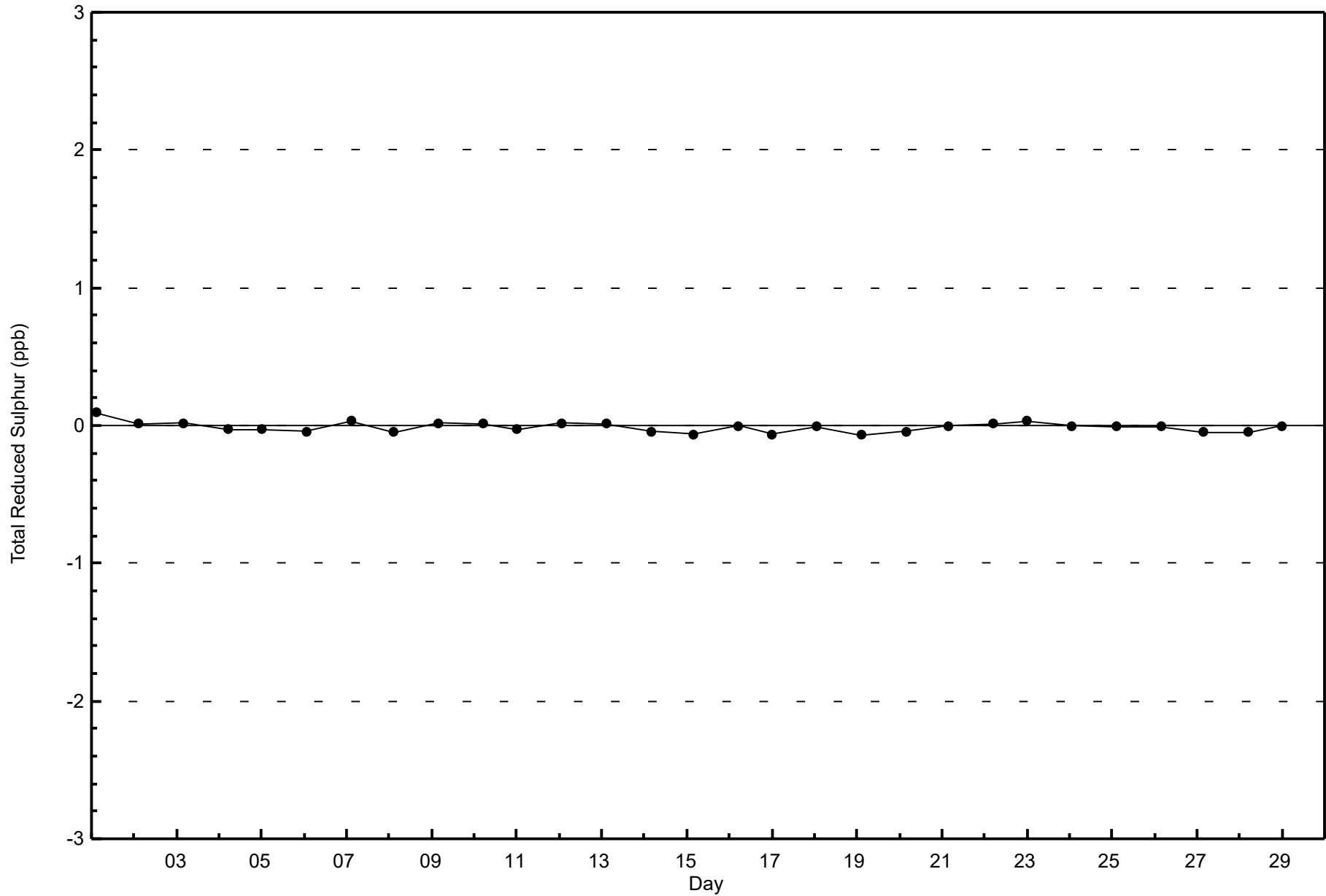


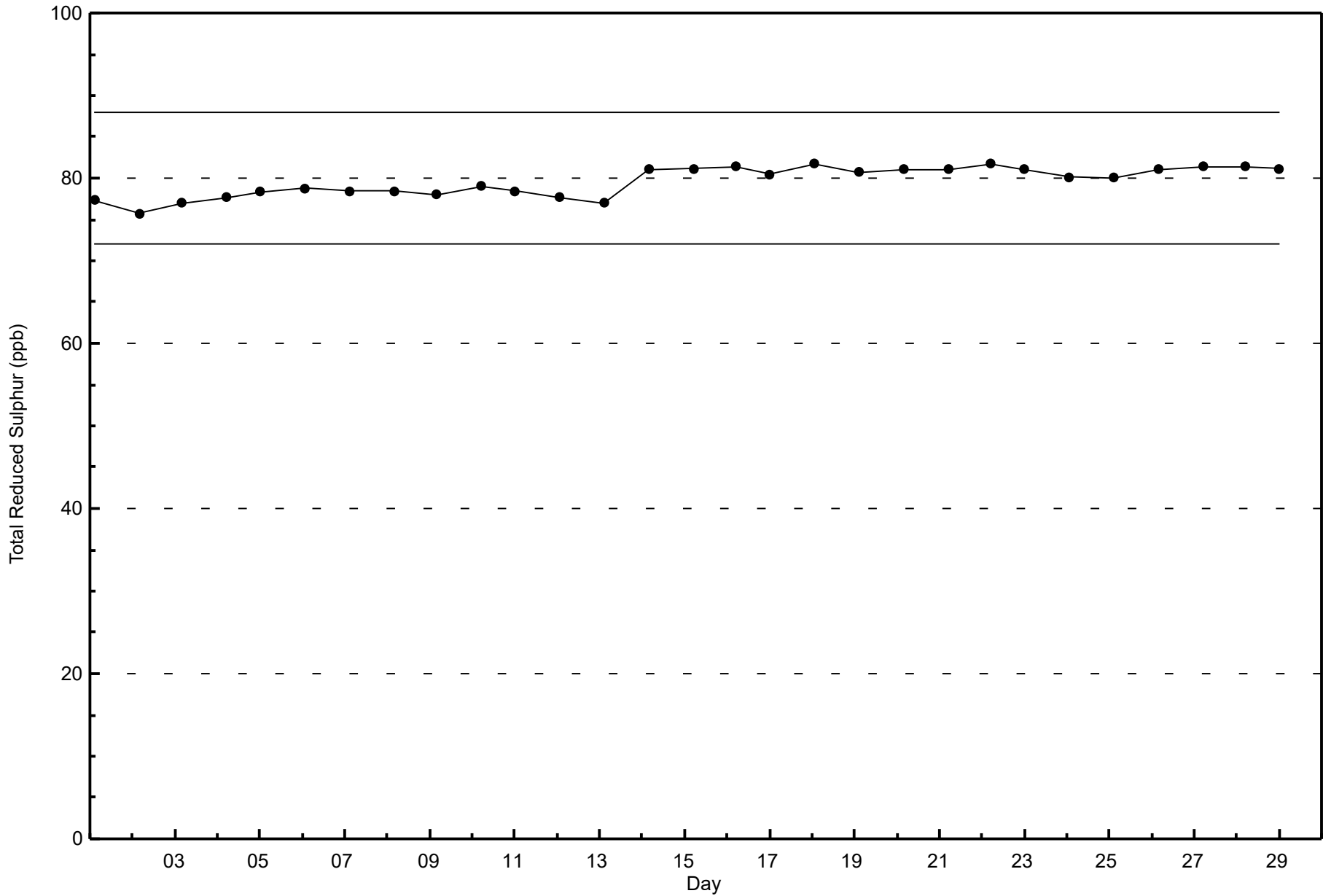
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Reduced Sulphur (TRS) - ppb
Fort Hills



Total Number of Valid Hours: 663







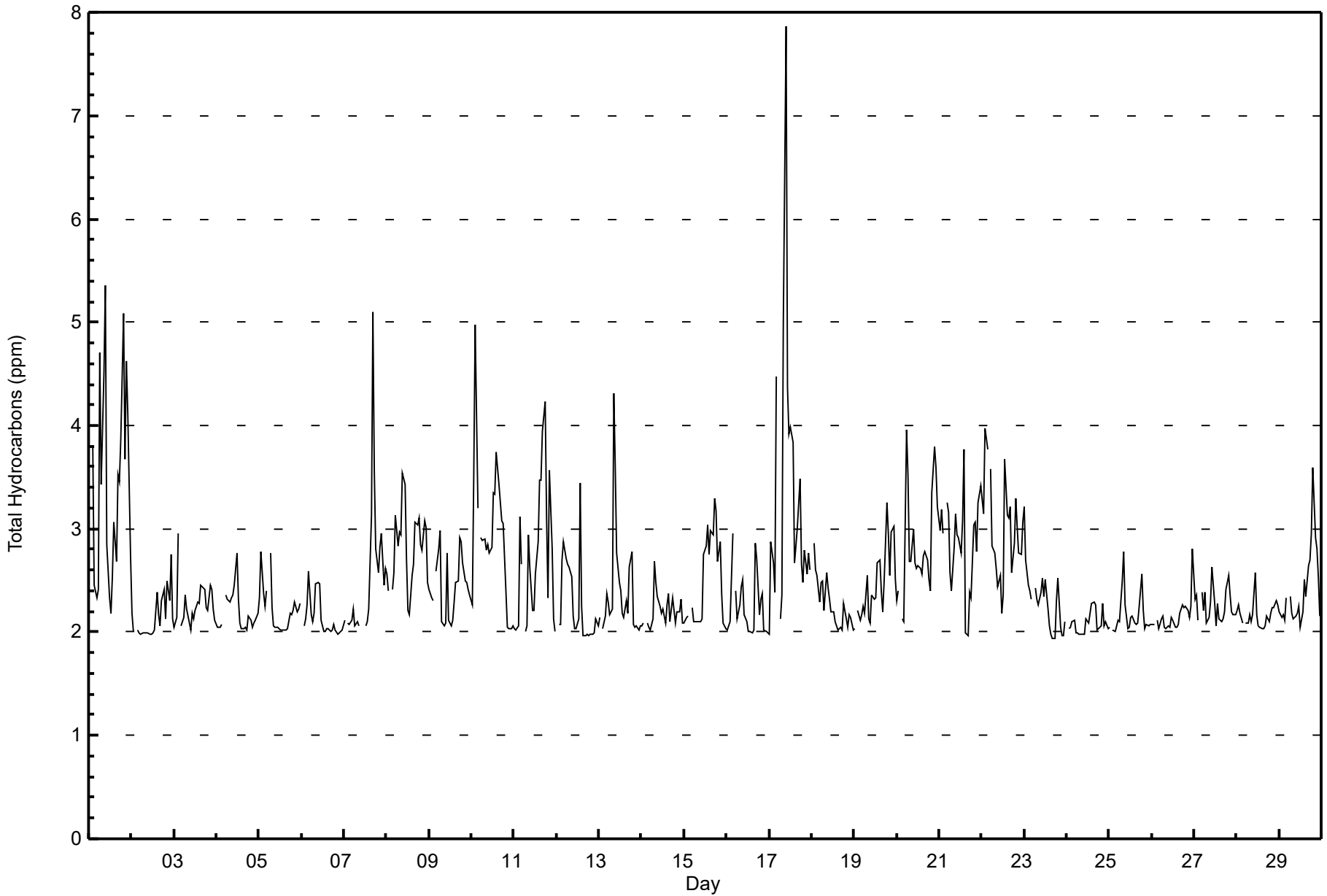
Wood Buffalo Environmental Association

Summary of Hour Averages

Total Hydrocarbons (THC) - ppm

Fort Hills - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														696							
Maximum Value: 7.9 ppm on Feb 17 10:00		Maximum Daily Average: 3.4 ppm on Feb 1		Hours of Data: 664														664									
Minimum Value: 1.9 ppm on Feb 23 18:00		Minimum Daily Average: 2.1 ppm on Feb 24		Hours of Missing Data: 32														32									
Maximum Diurnal Average: 2.7 ppm at hour 10		Minimum Diurnal Average: 2.3 ppm at hour 24		Hours of Calibration: 32														32									
Monthly Average: 2.47 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.1 Median = 2.3 Q ₃ = 2.7 P ₉₀ = 3.1 P ₉₉ = 4.7		Percent Operational Time: 100.0														100.0									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	3.6	Z	3.8	2.5	2.3	2.4	4.7	3.4	4.5	5.4	2.9	2.3	2.2	2.5	3.1	2.7	3.5	3.5	3.9	5.1	3.7	4.6	4.1	2.7	3.4	5.4	
2-Feb	2.2	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.2	2.1	2.3	2.4	2.1	2.5	2.3	2.7	2.1	2.1	2.1	2.7	2.7
3-Feb	2.0	2.1	3.0	Z	2.1	2.1	2.4	2.2	2.2	2.0	2.2	2.1	2.2	2.3	2.3	2.5	2.4	2.4	2.2	2.2	2.5	2.4	2.2	2.1	2.3	3.0	
4-Feb	2.0	2.0	2.0	2.1	Z	2.4	2.3	2.3	2.3	2.4	2.4	2.8	2.3	2.1	2.0	2.0	2.0	2.0	2.2	2.1	2.0	2.1	2.1	2.2	2.2	2.8	
5-Feb	2.3	2.8	2.4	2.3	2.4	Z	2.8	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.2	2.8	
6-Feb	Z	2.1	2.1	2.3	2.6	2.2	2.1	2.2	2.5	2.5	2.5	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.6	
7-Feb	2.1	Z	2.1	2.1	2.1	2.2	2.1	2.1	2.1	C	C	C	2.1	2.1	2.2	3.1	5.1	3.6	2.8	2.6	2.8	3.0	2.5	2.6	2.6	5.1	
8-Feb	2.6	2.4	Z	2.4	2.6	3.1	2.8	3.0	2.9	3.5	3.4	2.7	2.2	2.2	2.5	2.7	3.1	3.0	3.1	2.9	2.8	3.1	3.0	2.5	2.8	3.5	
9-Feb	2.4	2.3	2.3	Z	2.6	2.8	3.0	2.1	2.1	2.1	2.8	2.1	2.1	2.1	2.3	2.5	2.5	2.9	2.9	2.7	2.5	2.5	2.4	2.4	2.4	3.0	
10-Feb	2.3	3.5	5.0	3.2	Z	2.9	2.9	2.9	2.8	2.8	2.8	2.8	3.3	3.3	3.7	3.4	3.3	3.1	3.0	2.4	2.1	2.0	2.0	2.1	2.9	5.0	
11-Feb	2.0	2.0	2.1	3.1	2.7	Z	2.0	2.1	2.9	2.6	2.2	2.2	2.6	2.9	3.5	3.5	3.9	4.2	3.1	2.3	3.6	2.8	2.1	2.0	2.7	4.2	
12-Feb	Z	2.1	2.1	2.7	2.9	2.7	2.7	2.6	2.5	2.1	2.0	2.0	2.1	3.4	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.3	3.4	
13-Feb	2.1	Z	2.0	2.2	2.4	2.3	2.2	2.2	4.3	3.6	2.8	2.5	2.4	2.2	2.1	2.3	2.2	2.6	2.8	2.1	2.0	2.1	2.0	2.1	2.4	4.3	
14-Feb	2.1	2.1	Z	2.1	2.0	2.0	2.1	2.7	2.5	2.3	2.3	2.2	2.2	2.1	2.3	2.4	2.1	2.3	2.2	2.1	2.2	2.2	2.3	2.1	2.2	2.7	
15-Feb	2.1	2.1	2.2	Z	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	3.0	2.7	3.0	2.9	3.3	3.2	2.7	2.9	2.4	2.1	2.0	2.5	3.3	
16-Feb	2.0	2.1	2.1	3.0	Z	2.4	2.1	2.3	2.4	2.5	2.2	2.1	2.0	2.0	2.0	2.0	2.9	2.7	2.2	2.3	2.4	2.0	2.0	2.0	2.2	3.0	
17-Feb	2.0	2.9	2.7	2.4	4.5	Z	2.1	2.4	5.0	7.9	4.4	3.9	4.0	3.8	2.7	2.8	3.0	3.5	2.7	2.5	2.8	2.6	2.8	2.6	3.3	7.9	
18-Feb	Z	2.9	2.6	2.6	2.3	2.5	2.5	2.2	2.6	2.4	2.3	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.3	2.1	2.0	2.2	2.1	2.0	2.3	2.9	
19-Feb	2.0	Z	2.2	2.1	2.2	2.3	2.2	2.6	2.1	2.1	2.4	2.3	2.3	2.7	2.7	2.4	2.2	2.5	3.3	3.0	2.5	3.0	3.0	2.5	2.5	3.3	
20-Feb	2.3	2.4	Z	2.1	2.1	4.0	3.5	2.7	2.7	3.0	2.7	2.6	2.6	2.6	2.7	2.8	2.7	2.5	2.4	3.4	3.8	3.6	3.2	2.8	4.0		
21-Feb	3.0	3.2	3.0	Z	3.2	3.2	2.6	2.4	2.8	3.2	2.9	2.9	2.8	3.1	3.8	2.0	2.0	2.4	2.3	3.0	3.1	2.8	3.3	3.4	2.9	3.8	
22-Feb	3.3	3.1	4.0	3.8	Z	3.6	2.8	2.8	2.6	2.4	2.6	2.2	2.4	3.7	3.1	3.1	3.2	2.6	2.9	3.3	3.0	2.8	2.7	3.1	3.0	4.0	
23-Feb	3.2	2.7	2.5	2.4	2.3	Z	2.4	2.3	2.3	2.4	2.5	2.4	2.5	2.2	2.1	2.0	1.9	1.9	2.3	2.5	2.1	2.0	2.0	2.1	2.3	3.2	
24-Feb	Z	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.3	2.3	2.3	2.0	2.0	2.1	2.3	2.1	2.1	2.0	2.1	2.3	
25-Feb	2.0	Z	2.0	2.0	2.1	2.1	2.1	2.5	2.8	2.3	2.0	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.6	2.2	2.0	2.1	2.1	2.1	2.2	2.8	
26-Feb	2.1	2.1	Z	2.1	2.0	2.1	2.2	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.0	2.1	2.2	2.3	2.2	2.2	2.2	2.1	2.3	2.8	2.2	2.8	
27-Feb	2.3	2.4	2.1	Z	2.4	2.2	2.4	2.1	2.1	2.3	2.6	2.3	2.1	2.3	2.1	2.1	2.1	2.2	2.4	2.6	2.4	2.2	2.2	2.2	2.3	2.6	
28-Feb	2.2	2.3	2.2	2.1	Z	2.1	2.1	2.2	2.1	2.2	2.6	2.2	2.1	2.0	2.0	2.0	2.1	2.2	2.1	2.2	2.2	2.2	2.3	2.3	2.2	2.6	
29-Feb	2.2	2.1	2.2	2.1	2.3	Z	2.3	2.2	2.1	2.2	2.2	2.3	2.0	2.2	2.5	2.3	2.6	2.7	3.0	3.6	2.9	2.8	2.5	2.2	2.4	3.6	
2.3 2.4 2.5 2.4 2.4 2.5 2.5 2.4 2.6 2.7 2.5 2.4 2.3 2.5 2.5 2.4 2.6 2.6 2.6 2.5 2.5 2.5 2.4 2.3																								Diurnal Average			
3.6 3.5 5.0 3.8 4.5 4.0 4.7 3.4 5.0 7.9 4.4 3.9 4.0 3.8 3.8 3.5 5.1 4.2 3.9 5.1 3.7 4.6 4.1 3.4																								Diurnal Maximum			
Z - zerospan C - Calibration																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Fort Hills - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	109	16.42	16.42
2.1 - 3.0	474	71.39	87.80
3.1 - 10.0	81	12.20	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 664

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Fort Hills - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	15	27	1	1	0	0	0	10	17	10	3	1	1	7	6	10	109
2.1 - 3.0	83	58	35	5	3	11	46	63	56	30	27	10	10	6	13	18	474
3.1 - 10.0	16	3	5	1	4	5	12	7	5	5	6	6	0	1	0	5	81
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	114	88	41	7	7	16	58	80	78	45	36	17	11	14	19	33	664

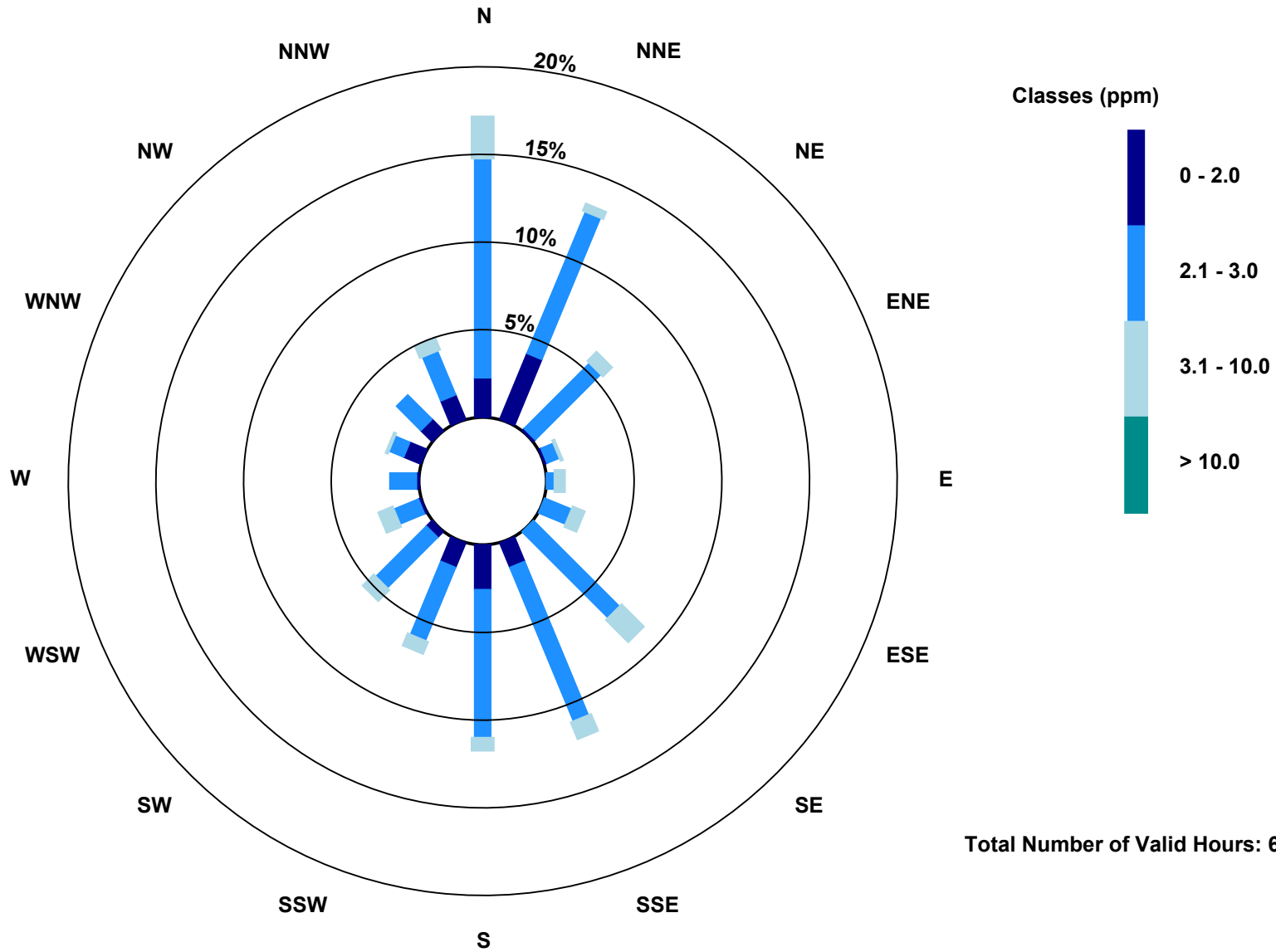
Total Number of Valid Hours: 664

Total Number of Hours: 696

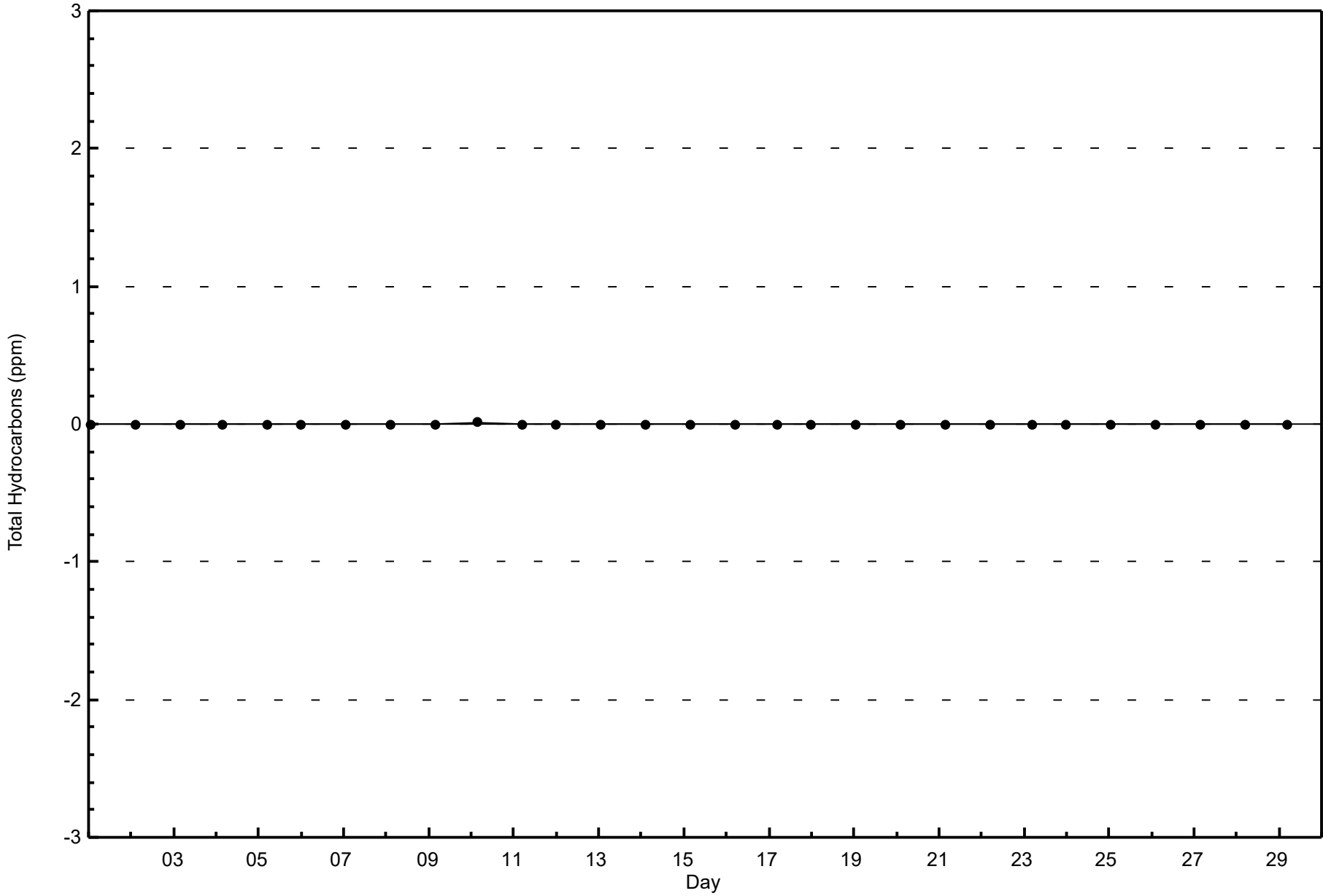


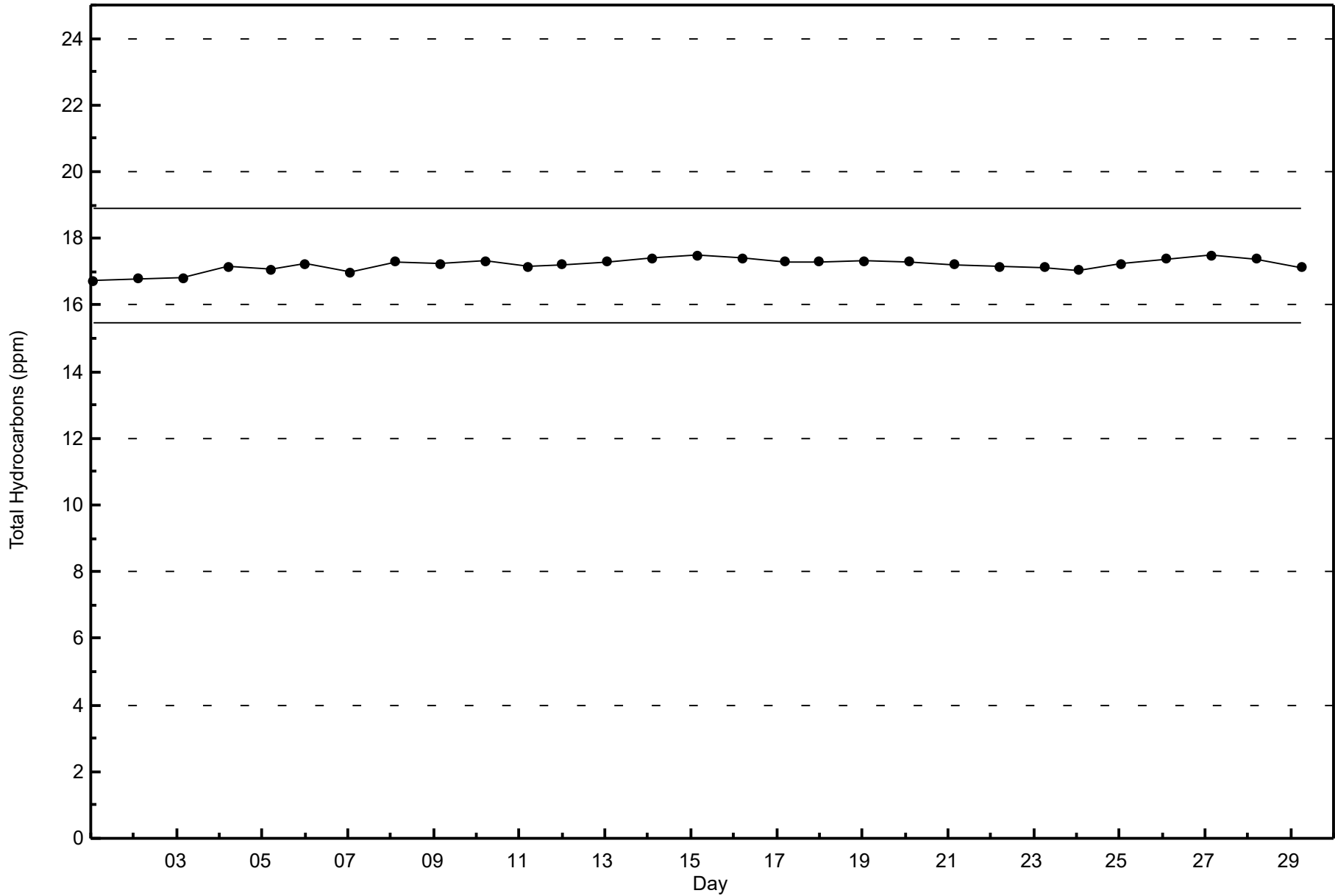
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Fort Hills



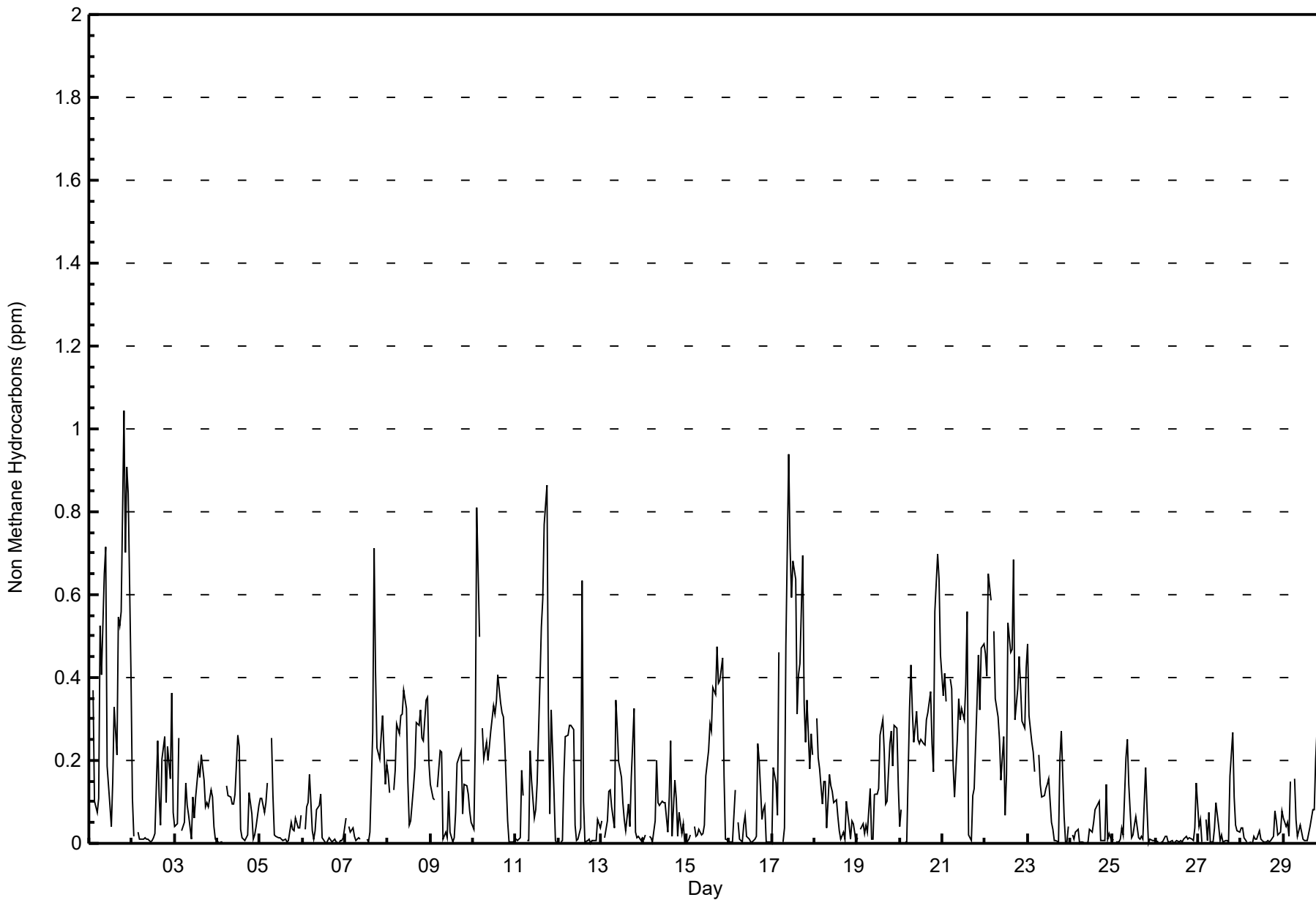
Total Number of Valid Hours: 664







Maximum Value: 1.045 ppm on Feb 1 20:00 Maximum Daily Average: 0.441 ppm on Feb 1																				Hours in Service: 696 Hours of Data: 664							
Minimum Value: 0.000 ppm on Feb 15 01:00 Minimum Daily Average: 0.014 ppm on Feb 26 Maximum Diurnal Average: 0.196 ppm at hour 18 Minimum Diurnal Average: 0.108 ppm at hour 2 Monthly Average: 0.144 ppm Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.4 P ₉₉ = 0.7																				Hours of Missing Data: 32 Hours of Calibration: 32 Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.654	Z	0.371	0.103	0.074	0.107	0.524	0.407	0.649	0.717	0.186	0.090	0.041	0.149	0.330	0.215	0.544	0.525	0.560	1.045	0.701	0.909	0.845	0.402	0.441	1.045	
2-Feb	0.110	0.018	Z	0.026	0.009	0.011	0.011	0.013	0.011	0.009	0.004	0.006	0.014	0.024	0.246	0.116	0.046	0.202	0.256	0.099	0.234	0.154	0.363	0.073	0.089	0.363	
3-Feb	0.041	0.047	0.255	Z	0.030	0.052	0.146	0.091	0.068	0.011	0.112	0.063	0.114	0.187	0.159	0.212	0.153	0.089	0.099	0.087	0.130	0.112	0.041	0.009	0.100	0.255	
4-Feb	0.002	0.001	0.005	0.004	Z	0.138	0.115	0.112	0.095	0.096	0.117	0.260	0.235	0.034	0.014	0.006	0.013	0.020	0.122	0.070	0.009	0.021	0.040	0.092	0.070	0.260	
5-Feb	0.110	0.110	0.076	0.100	0.145	Z	0.255	0.114	0.020	0.016	0.015	0.014	0.009	0.008	0.012	0.004	0.008	0.051	0.033	0.030	0.060	0.037	0.037	0.066	0.058	0.255	
6-Feb	Z	0.033	0.087	0.097	0.166	0.032	0.009	0.030	0.081	0.091	0.118	0.013	0.003	0.000	0.006	0.014	0.004	0.006	0.010	0.004	0.001	0.005	0.008	0.014	0.036	0.166	
7-Feb	0.061	Z	0.040	0.026	0.037	0.018	0.007	0.012	0.010	0.010	C	C	C	0.009	0.004	0.026	0.267	0.710	0.414	0.231	0.202	0.257	0.308	0.141	0.191	0.149	0.710
8-Feb	0.166	0.122	Z	0.129	0.175	0.288	0.266	0.308	0.311	0.370	0.326	0.151	0.044	0.055	0.135	0.184	0.290	0.286	0.321	0.255	0.246	0.346	0.352	0.193	0.231	0.370	
9-Feb	0.142	0.108	0.105	Z	0.135	0.223	0.221	0.011	0.026	0.015	0.125	0.026	0.005	0.014	0.075	0.195	0.212	0.223	0.072	0.144	0.141	0.117	0.077	0.050	0.107	0.223	
10-Feb	0.034	0.255	0.809	0.497	Z	0.277	0.203	0.244	0.200	0.233	0.270	0.331	0.313	0.343	0.407	0.339	0.315	0.307	0.237	0.053	0.003	0.005	0.003	0.006	0.247	0.809	
11-Feb	0.009	0.005	0.012	0.177	0.114	Z	0.006	0.008	0.224	0.152	0.061	0.080	0.147	0.391	0.522	0.589	0.769	0.865	0.322	0.072	0.323	0.122	0.007	0.000	0.216	0.865	
12-Feb	Z	0.004	0.006	0.159	0.259	0.263	0.285	0.285	0.275	0.043	0.005	0.010	0.036	0.633	0.101	0.005	0.006	0.009	0.000	0.007	0.006	0.006	0.056	0.037	0.109	0.633	
13-Feb	0.053	Z	0.015	0.053	0.126	0.128	0.087	0.039	0.345	0.277	0.195	0.159	0.099	0.056	0.032	0.094	0.041	0.160	0.325	0.027	0.012	0.018	0.007	0.014	0.103	0.345	
14-Feb	0.009	0.020	Z	0.015	0.014	0.005	0.055	0.199	0.099	0.093	0.102	0.097	0.098	0.027	0.111	0.247	0.018	0.153	0.110	0.016	0.075	0.024	0.049	0.003	0.071	0.247	
15-Feb	0.000	0.009	0.020	Z	0.039	0.017	0.019	0.033	0.021	0.024	0.043	0.161	0.225	0.289	0.272	0.377	0.358	0.475	0.385	0.392	0.447	0.162	0.011	0.007	0.165	0.475	
16-Feb	0.005	0.003	0.005	0.129	Z	0.051	0.010	0.004	0.043	0.066	0.017	0.009	0.005	0.004	0.010	0.019	0.241	0.199	0.057	0.083	0.092	0.004	0.002	0.003	0.046	0.241	
17-Feb	0.000	0.184	0.147	0.068	0.460	Z	0.003	0.037	0.479	0.938	0.713	0.594	0.680	0.636	0.313	0.406	0.433	0.695	0.341	0.244	0.345	0.181	0.263	0.213	0.364	0.938	
18-Feb	Z	0.302	0.208	0.179	0.095	0.149	0.150	0.036	0.167	0.140	0.126	0.098	0.105	0.064	0.029	0.010	0.026	0.011	0.103	0.045	0.010	0.054	0.047	0.005	0.094	0.302	
19-Feb	0.014	Z	0.034	0.047	0.023	0.045	0.027	0.133	0.010	0.009	0.119	0.118	0.132	0.262	0.299	0.221	0.096	0.101	0.241	0.270	0.185	0.284	0.278	0.139	0.134	0.299	
20-Feb	0.040	0.082	Z	0.002	0.005	0.325	0.431	0.320	0.245	0.318	0.249	0.240	0.250	0.241	0.237	0.297	0.317	0.365	0.241	0.173	0.558	0.700	0.639	0.456	0.293	0.700	
21-Feb	0.358	0.411	0.343	Z	0.396	0.374	0.189	0.111	0.249	0.350	0.297	0.325	0.299	0.382	0.559	0.020	0.006	0.117	0.134	0.339	0.454	0.322	0.471	0.482	0.304	0.559	
22-Feb	0.457	0.404	0.650	0.585	Z	0.513	0.349	0.307	0.251	0.152	0.257	0.066	0.166	0.533	0.461	0.467	0.684	0.297	0.374	0.451	0.380	0.295	0.277	0.425	0.383	0.684	
23-Feb	0.481	0.310	0.244	0.221	0.172	Z	0.212	0.142	0.111	0.115	0.132	0.141	0.155	0.052	0.033	0.007	0.006	0.002	0.204	0.271	0.063	0.002	0.002	0.039	0.136	0.481	
24-Feb	Z	0.019	0.009	0.029	0.034	0.002	0.002	0.002	0.002	0.000	0.002	0.035	0.026	0.053	0.083	0.093	0.103	0.008	0.005	0.007	0.141	0.009	0.025	0.003	0.030	0.141	
25-Feb	0.011	Z	0.004	0.003	0.010	0.037	0.020	0.208	0.250	0.143	0.014	0.019	0.044	0.063	0.012	0.010	0.016	0.009	0.182	0.085	0.000	0.010	0.005	0.006	0.051	0.250	
26-Feb	0.006	0.003	Z	0.002	0.004	0.017	0.018	0.003	0.003	0.008	0.002	0.004	0.007	0.002	0.005	0.003	0.009	0.016	0.009	0.013	0.012	0.007	0.036	0.145	0.014	0.145	
27-Feb	0.042	0.058	0.005	Z	0.059	0.008	0.074	0.004	0.005	0.037	0.098	0.039	0.007	0.022	0.002	0.006	0.005	0.004	0.164	0.267	0.111	0.043	0.031	0.029	0.049	0.267	
28-Feb	0.037	0.037	0.014	0.005	Z	0.004	0.001	0.017	0.011	0.010	0.032	0.011	0.008	0.003	0.002	0.008	0.002	0.008	0.016	0.077	0.054	0.021	0.029	0.077	0.021	0.077	
29-Feb	0.059	0.042	0.050	0.018	0.148	Z	0.155	0.059	0.016	0.042	0.027	0.011	0.005	0.008	0.024	0.042	0.080	0.083	0.205	0.278	0.145	0.157	0.185	0.020	0.081	0.278	
																								Diurnal Average			
																								Diurnal Maximum			
Z - zerospan C - Calibration																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Non Methane Hydrocarbons (NMHC) - ppm
Fort Hills - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	79	11.90	11.90
0.006 - 0.05	222	33.43	45.33
0.06 - 0.1	135	20.33	65.66
> 0.1	228	34.34	100.00

Total Number of Valid Hours: 664

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Non Methane Hydrocarbons (NMHC) - ppm
Fort Hills - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	9	6	1	0	0	0	9	10	17	6	1	2	2	6	2	8	79
0.006 - 0.05	38	43	11	2	1	3	18	28	27	20	8	3	3	3	6	8	222
0.06 - 0.1	20	17	13	0	0	1	10	10	18	7	12	3	4	3	10	7	135
> 0.1	47	22	16	5	6	12	21	32	16	12	15	9	2	2	1	10	228
Totals	114	88	41	7	7	16	58	80	78	45	36	17	11	14	19	33	664

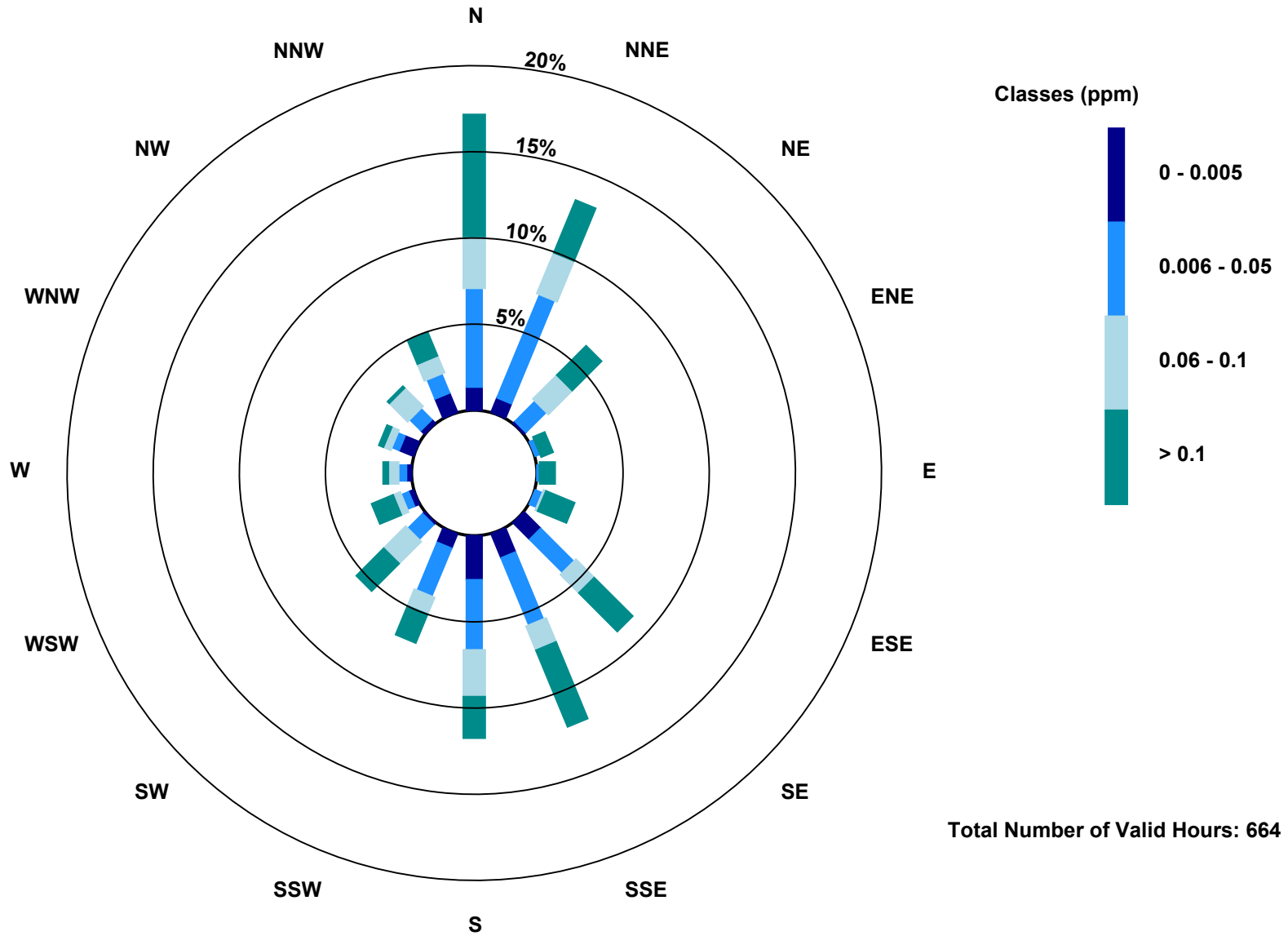
Total Number of Valid Hours: 664

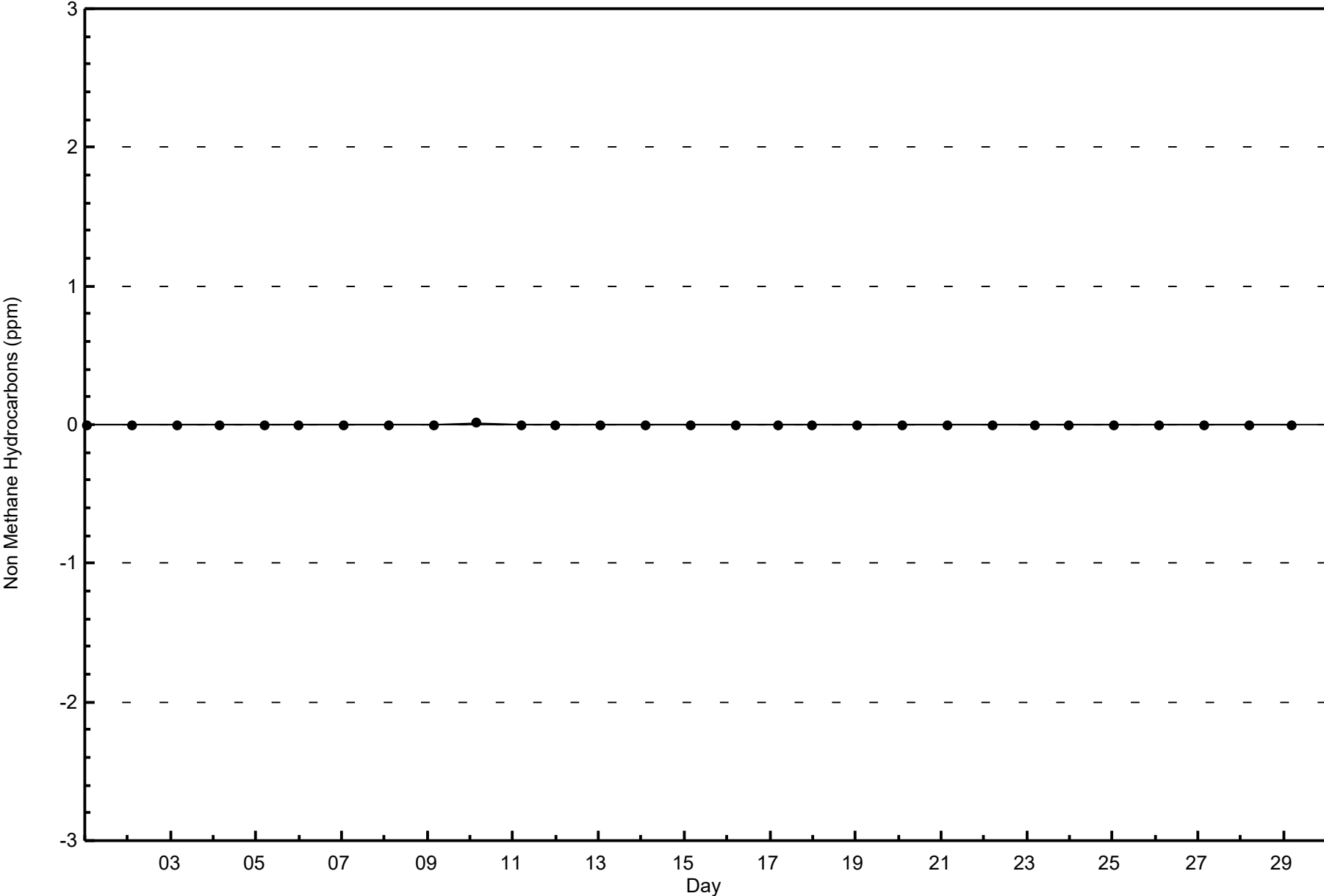
Total Number of Hours: 696

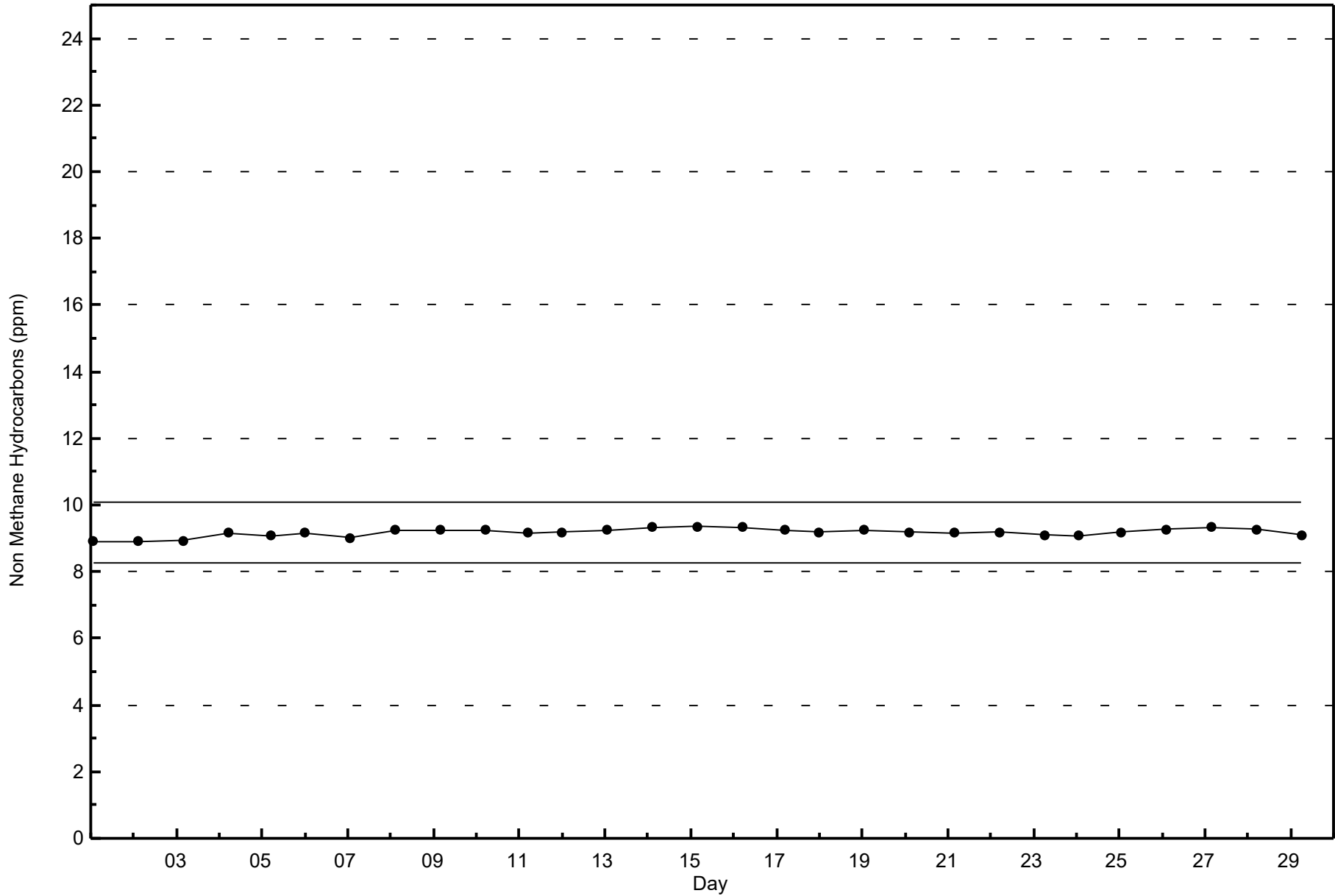


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Fort Hills









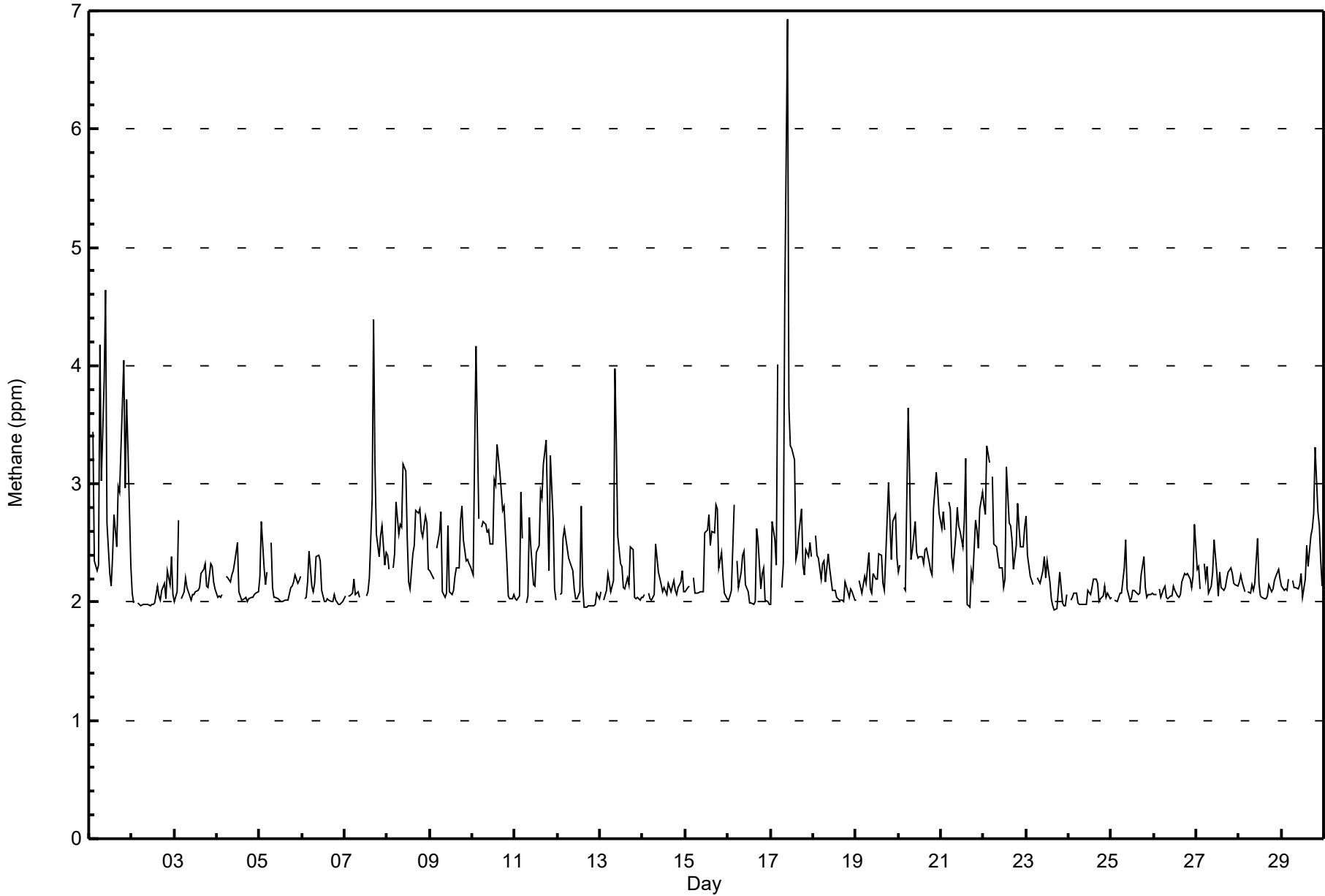
Wood Buffalo Environmental Association

Summary of Hour Averages

Methane (CH₄) - ppm

Fort Hills - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696																												
Maximum Value: 6.9 ppm on Feb 17 10:00		Maximum Daily Average: 3.0 ppm on Feb 1		Hours of Data:														664																														
Minimum Value: 1.9 ppm on Feb 23 17:00		Minimum Daily Average: 2.1 ppm on Feb 2		Hours of Missing Data:														32																														
Maximum Diurnal Average: 2.6 ppm at hour 10		Minimum Diurnal Average: 2.2 ppm at hour 24		Hours of Calibration:														32																														
Monthly Average: 2.33 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.1 Median = 2.2 Q ₃ = 2.5 P ₉₀ = 2.8 P ₉₉ = 4.0		Percent Operational Time:														100.0																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	2.9	Z	3.4	2.3	2.3	2.3	4.2	3.0	3.9	4.6	2.7	2.2	2.1	2.4	2.7	2.5	3.0	2.9	3.3	4.0	3.0	3.7	3.3	2.3	3.0	4.6																						
2-Feb	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.2	2.0	2.3	2.1	2.4	2.1	2.1	2.1	2.4	4.4																					
3-Feb	2.0	2.1	2.7	Z	2.0	2.1	2.2	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.1	2.1	2.3	2.3	2.2	2.1	2.1	2.1	2.7	4.4																					
4-Feb	2.0	2.0	2.0	2.1	Z	2.2	2.2	2.2	2.2	2.2	2.3	2.5	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.5	4.4																					
5-Feb	2.2	2.7	2.3	2.2	2.3	Z	2.5	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.7	4.4																					
6-Feb	Z	2.0	2.0	2.2	2.4	2.1	2.1	2.2	2.4	2.4	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	4.4																					
7-Feb	2.1	Z	2.0	2.0	2.1	2.2	2.1	2.1	2.0	C	C	C	2.0	2.1	2.2	2.9	4.4	3.2	2.6	2.4	2.6	2.6	2.3	2.4	2.4	4.4	4.4																					
8-Feb	2.4	2.3	Z	2.3	2.4	2.8	2.6	2.7	2.6	3.2	3.1	2.5	2.2	2.1	2.4	2.5	2.8	2.8	2.8	2.6	2.5	2.7	2.7	2.3	2.6	3.2	4.4																					
9-Feb	2.3	2.2	2.2	Z	2.5	2.6	2.8	2.1	2.0	2.1	2.6	2.1	2.1	2.1	2.2	2.3	2.3	2.7	2.8	2.5	2.4	2.4	2.3	2.3	2.3	2.8	4.4																					
10-Feb	2.2	3.3	4.2	2.7	Z	2.6	2.7	2.7	2.6	2.6	2.5	2.5	3.0	3.0	3.3	3.1	2.9	2.8	2.8	2.3	2.0	2.0	2.0	2.1	2.7	4.2	4.2																					
11-Feb	2.0	2.0	2.1	2.9	2.5	Z	2.0	2.0	2.7	2.5	2.1	2.1	2.4	2.5	2.9	2.9	3.2	3.4	2.8	2.3	3.2	2.7	2.1	2.0	2.5	3.4	4.2																					
12-Feb	Z	2.1	2.1	2.5	2.6	2.5	2.4	2.3	2.3	2.1	2.0	2.0	2.1	2.8	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.2	2.8	4.2																					
13-Feb	2.1	Z	2.0	2.1	2.2	2.2	2.1	2.2	4.0	3.3	2.6	2.3	2.3	2.1	2.1	2.2	2.1	2.5	2.4	2.0	2.0	2.0	2.0	2.0	2.3	4.0	4.2																					
14-Feb	2.0	2.1	Z	2.1	2.0	2.0	2.1	2.5	2.4	2.3	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.3	2.1	2.1	2.5	4.2																					
15-Feb	2.1	2.1	2.1	Z	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.7	2.5	2.6	2.6	2.8	2.8	2.3	2.4	2.2	2.1	2.0	2.3	2.8	4.2																					
16-Feb	2.0	2.1	2.1	2.8	Z	2.4	2.1	2.3	2.4	2.4	2.1	2.1	2.0	2.0	2.0	2.0	2.6	2.5	2.1	2.2	2.3	2.0	2.0	2.0	2.2	2.8	4.2																					
17-Feb	2.0	2.7	2.5	2.3	4.0	Z	2.1	2.3	4.5	6.9	3.7	3.3	3.3	3.2	2.4	2.4	2.6	2.8	2.3	2.2	2.4	2.4	2.5	2.4	2.9	6.9	4.2																					
18-Feb	Z	2.6	2.4	2.4	2.2	2.3	2.3	2.2	2.4	2.3	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.2	2.1	2.0	2.1	2.1	2.0	2.2	2.6	4.2																					
19-Feb	2.0	Z	2.2	2.1	2.2	2.2	2.2	2.4	2.1	2.1	2.2	2.2	2.2	2.4	2.4	2.2	2.1	2.4	3.0	2.7	2.4	2.7	2.7	2.4	2.3	3.0	4.2																					
20-Feb	2.3	2.3	Z	2.1	2.1	3.6	3.1	2.4	2.4	2.7	2.4	2.4	2.4	2.4	2.3	2.4	2.5	2.3	2.3	2.2	2.8	3.1	3.0	2.8	2.5	3.6	4.2																					
21-Feb	2.6	2.8	2.6	Z	2.9	2.8	2.4	2.3	2.6	2.8	2.6	2.6	2.5	2.7	3.2	2.0	2.0	2.3	2.2	2.7	2.6	2.5	2.8	2.9	2.6	3.2	4.2																					
22-Feb	2.8	2.7	3.3	3.2	Z	3.1	2.5	2.5	2.4	2.3	2.3	2.1	2.2	3.1	2.7	2.6	2.5	2.3	2.5	2.8	2.6	2.5	2.5	2.6	2.6	3.3	4.2																					
23-Feb	2.7	2.4	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.3	2.4	2.2	2.4	2.2	2.0	2.0	1.9	1.9	2.1	2.3	2.0	2.0	2.0	2.1	2.2	2.7	4.2																					
24-Feb	Z	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.0	2.0	2.1	2.1	2.0	2.1	2.0	2.1	2.2	4.2																					
25-Feb	2.0	Z	2.0	2.0	2.0	2.1	2.1	2.3	2.5	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.1	2.0	2.1	2.1	2.1	2.1	2.5	4.2																					
26-Feb	2.1	2.1	Z	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.7	2.1	2.7	4.2																					
27-Feb	2.3	2.3	2.1	Z	2.3	2.2	2.3	2.1	2.1	2.2	2.5	2.2	2.1	2.3	2.1	2.1	2.1	2.2	2.2	2.3	2.2	2.2	2.1	2.1	2.2	2.5	4.2																					
28-Feb	2.2	2.2	2.2	2.1	Z	2.1	2.1	2.1	2.1	2.2	2.5	2.2	2.1	2.0	2.0	2.0	2.1	2.2	2.1	2.1	2.2	2.2	2.3	2.2	2.1	2.5	4.2																					
29-Feb	2.1	2.1	2.1	2.1	2.2	Z	2.2	2.1	2.1	2.1	2.2	2.2	2.0	2.2	2.5	2.3	2.6	2.6	2.8	3.3	2.8	2.6	2.3	2.1	2.3	3.3	4.2																					
2.2																								2.3	2.4	2.3	2.3	2.4	2.3	2.3	2.5	2.6	2.4	2.3	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.2	Diurnal Average	
2.9																								3.3	4.2	3.2	4.0	3.6	4.2	3.0	4.5	6.9	3.7	3.3	3.3	3.2	3.3	3.1	4.4	3.4	3.3	4.0	3.2	3.7	3.3	2.9	Diurnal Maximum	
Z - zerospan																								C - Calibration																								





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Methane (CH₄) - ppm
Fort Hills - February 2024**

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	137	20.63	20.63
2.1 - 3.0	490	73.80	94.43
3.1 - 10.0	37	5.57	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 664

Total Number of Hours: 696



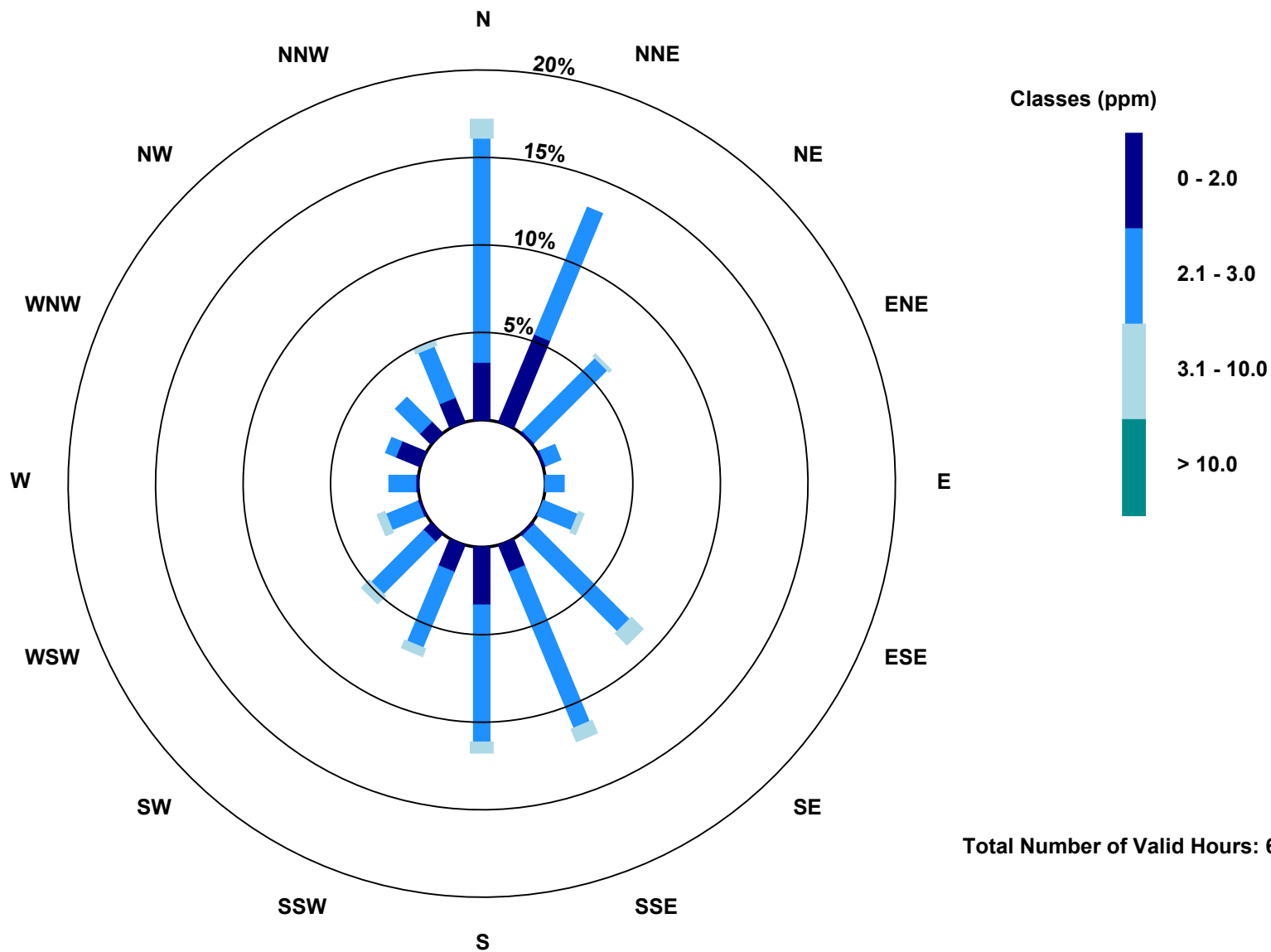
**Wood Buffalo Environmental Association
Frequency Distribution**

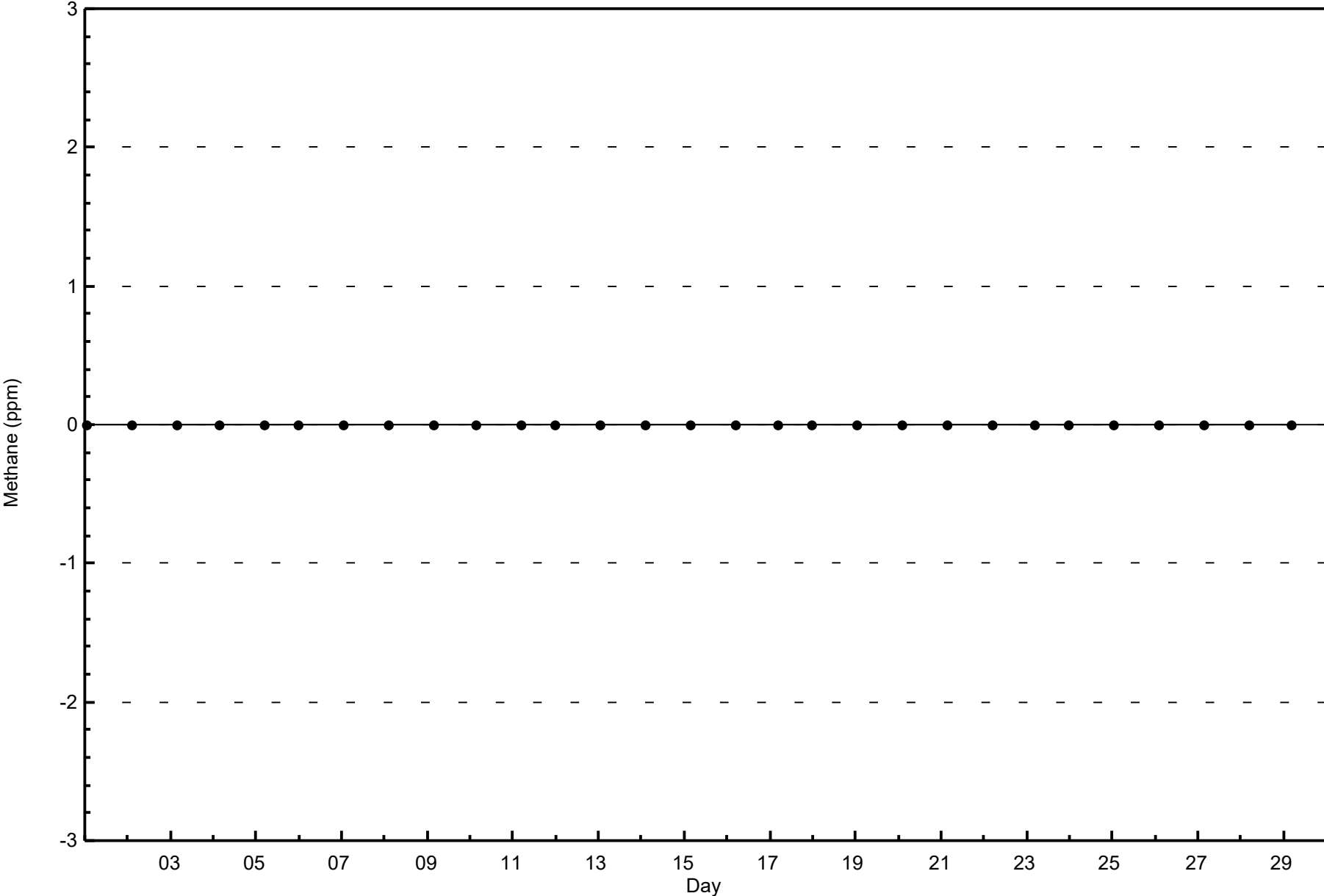
**Methane (CH₄) - ppm
Fort Hills - February 2024**

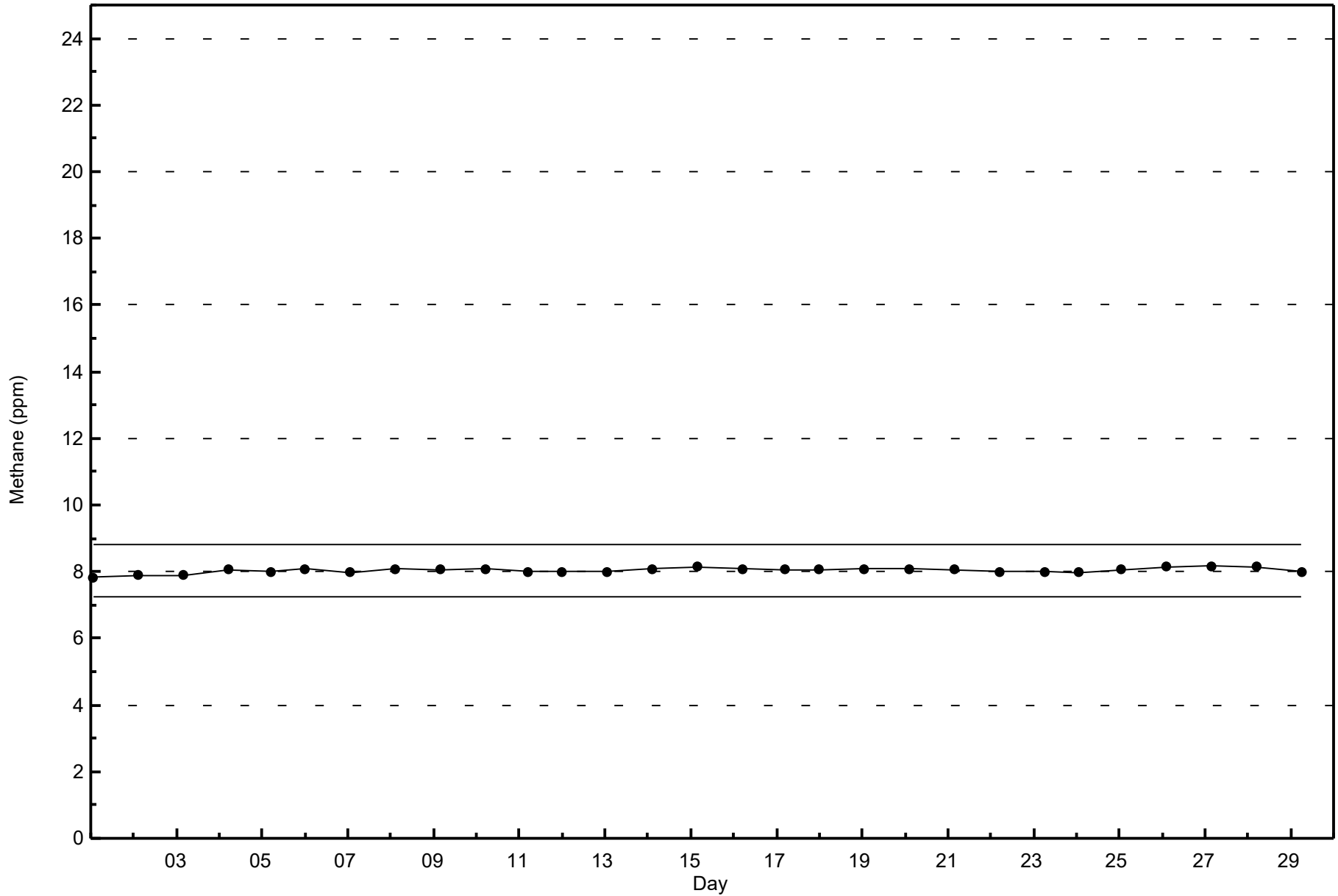
Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	22	36	1	1	0	0	1	11	22	11	4	1	1	10	6	10	137
2.1 - 3.0	85	52	39	6	7	14	51	64	52	31	28	13	10	4	13	21	490
3.1 - 10.0	7	0	1	0	0	2	6	5	4	3	4	3	0	0	0	2	37
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	114	88	41	7	7	16	58	80	78	45	36	17	11	14	19	33	664

Total Number of Valid Hours: 664

Total Number of Hours: 696









Wood Buffalo Environmental Association

Summary of Hour Averages

Nitric Oxide (NO) - ppb

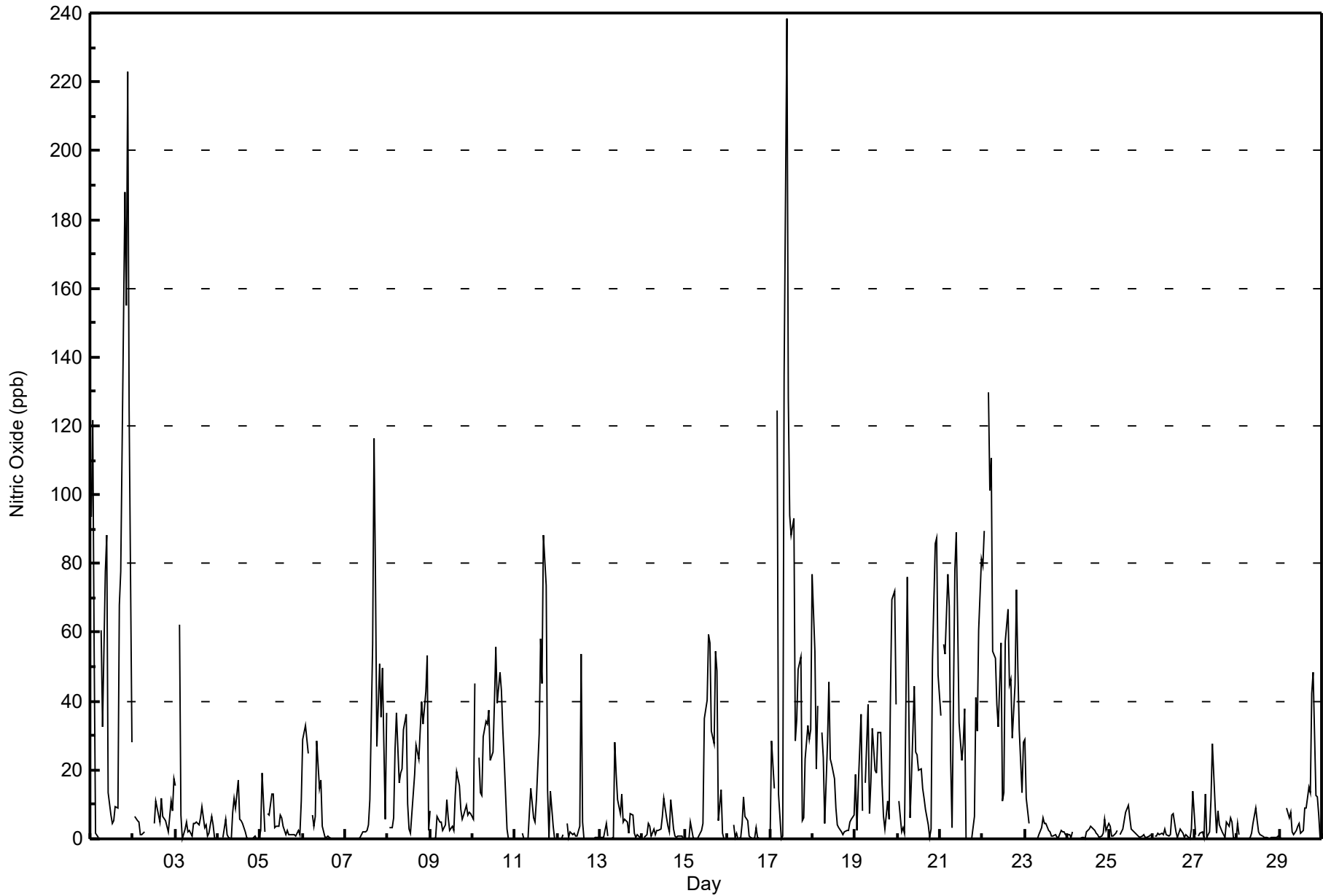
Fort Hills - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	Hours of Data: 662						
Maximum Value: 238.5 ppb on Feb 17 10:00		Maximum Daily Average: 67.8 ppb on Feb 1																	Hours of Missing Data: 34								
Minimum Value: 0.0 ppb on Feb 4 01:00		Minimum Daily Average: 1.5 ppb on Feb 28																	Hours of Calibration: 34								
Maximum Diurnal Average: 26.8 ppb at hour 10		Minimum Diurnal Average: 8.2 ppb at hour 8																	Percent Operational Time: 100.0								
Monthly Average: 15.95 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.9 Median = 4.3 Q ₃ = 18.4 P ₉₀ = 48.7 P ₉₉ = 126.0																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	93.5	121.7	54.9	1.8	0.6	Z	60.7	32.5	77.6	88.3	13.6	6.9	4.4	5.2	9.5	8.8	67.9	77.5	114.2	188.1	155.2	222.9	124.6	28.2	67.8	222.9	
2-Feb	Z	6.7	5.3	5.1	1.1	1.2	2.1	C	C	C	C	C	4.6	11.1	6.7	5.0	11.7	6.5	5.2	3.6	2.1	10.9	8.3	17.3	6.4	17.3	
3-Feb	15.3	Z	62.2	6.9	0.1	2.9	4.8	2.2	2.5	0.8	4.5	4.4	4.8	4.2	6.2	9.5	3.4	4.0	0.7	1.8	6.5	4.2	0.2	0.0	6.6	62.2	
4-Feb	0.0	0.2	Z	0.3	5.7	1.3	0.3	0.2	7.7	11.7	8.9	16.9	5.8	5.4	4.4	2.1	0.3	0.0	0.0	0.0	0.5	0.8	0.0	0.3	3.2	16.9	
5-Feb	2.3	19.3	1.9	Z	7.5	7.0	12.9	12.9	3.1	3.5	3.8	7.1	6.3	3.6	1.2	2.5	1.3	1.1	1.4	1.2	0.7	2.3	1.1	11.2	5.0	19.3	
6-Feb	28.7	33.1	28.8	24.8	Z	6.9	3.7	6.7	28.4	14.8	17.0	3.8	0.6	0.6	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7	33.1	
7-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.4	1.4	2.0	2.1	2.3	3.9	11.5	56.6	116.2	76.2	26.9	50.7	35.3	49.5	5.9	36.5	20.8	116.2	
8-Feb	Z	3.3	3.3	5.9	26.1	36.6	16.5	19.1	20.2	31.6	36.0	10.1	2.7	1.5	12.9	18.7	27.2	23.1	31.7	40.1	33.4	42.6	53.4	2.4	21.7	53.4	
9-Feb	8.0	Z	0.0	0.3	6.6	4.9	4.7	2.3	3.9	11.5	5.9	2.4	3.7	2.5	12.5	19.4	15.3	8.4	5.5	7.1	9.8	6.8	7.8	7.5	6.8	19.4	
10-Feb	5.8	45.2	Z	23.5	13.5	12.7	29.8	34.3	33.2	37.4	22.7	25.3	39.7	55.7	39.3	48.2	43.2	31.7	22.6	2.8	0.0	0.0	0.0	0.0	24.6	55.7	
11-Feb	0.0	0.0	0.0	Z	1.6	0.0	0.0	0.0	7.7	14.6	6.2	4.9	11.5	30.3	58.0	45.0	88.3	73.8	14.1	0.3	13.9	3.8	0.0	0.0	16.3	88.3	
12-Feb	0.0	0.0	0.0	1.3	Z	4.4	0.2	2.1	1.4	1.5	0.8	0.9	3.8	53.7	4.8	0.2	0.1	0.0	0.1	0.0	0.0	0.3	0.4	0.2	3.3	53.7	
13-Feb	0.4	0.2	0.3	4.4	0.9	Z	0.1	0.4	28.1	18.8	11.3	7.2	12.9	4.9	5.9	5.0	1.6	7.5	6.7	1.6	0.4	1.4	0.5	0.3	5.2	28.1	
14-Feb	Z	0.3	1.2	4.6	3.8	0.9	2.8	1.3	2.5	2.6	3.0	6.4	11.7	5.9	3.8	2.0	11.4	2.8	0.8	0.5	0.7	0.6	0.9	0.0	3.1	11.7	
15-Feb	0.0	Z	0.0	4.8	0.6	0.0	0.0	0.0	1.8	2.6	4.6	34.9	40.4	59.4	56.9	31.5	27.5	54.4	48.7	5.3	14.3	1.5	0.0	0.0	16.9	59.4	
16-Feb	0.0	0.0	Z	4.1	0.3	1.8	0.0	0.4	4.6	12.4	6.4	5.4	0.6	0.4	0.1	0.2	3.4	0.4	0.0	0.0	0.1	0.0	0.0	0.0	1.8	12.4	
17-Feb	0.0	28.5	14.7	Z	124.6	13.2	0.0	0.6	134.4	238.5	128.2	93.9	88.2	93.1	28.5	34.6	49.0	53.0	5.1	6.1	23.0	32.8	28.8	31.7	54.4	238.5	
18-Feb	76.9	54.6	20.2	38.6	Z	30.8	23.8	4.5	28.2	45.5	23.1	21.5	17.4	9.0	4.1	3.4	1.9	1.2	2.2	2.6	2.6	4.8	5.8	6.9	18.7	76.9	
19-Feb	18.7	2.5	15.4	36.3	8.3	Z	16.2	39.1	7.2	16.8	32.3	20.1	19.2	30.8	31.1	15.9	6.3	2.9	11.1	5.6	42.2	69.6	72.0	39.2	24.3	72.0	
20-Feb	Z	11.2	2.2	3.3	1.6	76.1	41.2	6.1	17.8	44.4	25.1	24.4	19.9	20.5	14.6	12.0	8.6	3.9	0.3	2.9	52.1	85.8	87.4	47.6	26.5	87.4	
21-Feb	35.8	Z	56.6	53.7	76.8	67.5	22.7	3.4	78.1	89.1	63.1	33.8	22.7	27.8	38.0	0.2	0.0	0.1	0.0	6.4	41.0	31.4	60.7	81.2	38.7	89.1	
22-Feb	79.3	89.3	Z	129.7	101.2	110.8	54.5	52.4	39.0	32.5	57.0	11.1	13.4	57.3	66.8	44.6	46.2	29.5	44.8	72.4	49.6	31.9	13.5	28.0	54.6	129.7	
23-Feb	28.8	11.7	4.4	Z	0.1	0.1	0.0	0.1	1.2	3.2	6.2	4.6	4.3	2.3	2.0	0.7	0.9	1.2	0.3	0.6	2.4	1.9	2.0	1.4	3.5	28.8	
24-Feb	1.3	1.0	0.5	2.1	Z	0.2	0.0	0.2	0.4	0.5	0.1	2.0	2.8	3.7	3.3	2.6	1.5	1.1	0.5	0.7	1.7	5.9	2.5	4.3	1.7	5.9	
25-Feb	3.5	1.0	0.8	1.6	2.6	Z	1.4	2.8	5.4	7.8	9.7	6.0	2.6	2.3	1.4	1.4	1.0	0.6	0.6	1.4	0.5	0.5	0.8	1.2	2.5	9.7	
26-Feb	Z	1.0	0.9	1.6	1.0	1.6	1.3	3.0	1.4	0.8	1.1	7.1	7.3	2.0	0.5	1.5	2.7	1.7	0.6	1.0	0.6	0.0	2.9	13.7	2.4	13.7	
27-Feb	1.3	Z	1.0	1.8	2.0	0.5	13.1	0.2	2.2	11.4	27.5	9.3	1.7	8.0	4.0	1.9	1.1	0.4	4.7	3.7	6.2	4.9	0.2	0.2	4.7	27.5	
28-Feb	4.5	1.3	Z	0.0	0.0	0.0	0.0	0.4	1.6	4.6	9.1	5.4	1.9	1.2	0.9	0.5	0.4	0.4	0.2	0.3	0.5	0.2	0.4	0.6	1.5	9.1	
29-Feb	0.3	0.1	0.1	Z	9.1	5.9	7.7	2.1	1.2	2.2	3.7	4.4	1.6	2.6	8.9	8.9	15.1	13.6	42.1	48.4	12.5	12.3	6.7	0.1	9.1	48.4	
		16.8	18.0	11.4	14.9	15.8	16.1	11.1	8.2	19.3	26.8	19.0	13.6	12.4	17.5	15.1	13.2	19.1	16.4	13.5	15.7	17.5	21.7	16.8	12.4	Diurnal Average	
		93.5	121.7	62.2	129.7	124.6	110.8	60.7	52.4	134.4	238.5	128.2	93.9	88.2	93.1	66.8	56.6	116.2	77.5	114.2	188.1	155.2	222.9	124.6	81.2	Diurnal Maximum	
Z - zerospan		C - Calibration																									



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Fort Hills - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Fort Hills - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	507	76.59	76.59
21 - 40	72	10.88	87.46
41 - 80	58	8.76	96.22
81 - 159	21	3.17	99.40
> 159	3	0.45	99.85

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Fort Hills - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	58	79	35	4	1	4	46	66	74	37	28	11	9	14	18	23	507
21 - 40	22	3	1	2	0	4	5	9	6	4	5	2	1	0	0	8	72
11 - 80	23	2	3	1	4	6	2	3	2	3	4	3	0	0	0	2	58
81 - 159	7	1	1	0	1	1	4	2	2	0	0	0	0	1	0	1	21
> 159	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	3
Totals	111	85	41	7	6	15	58	80	84	44	37	16	10	15	18	34	661

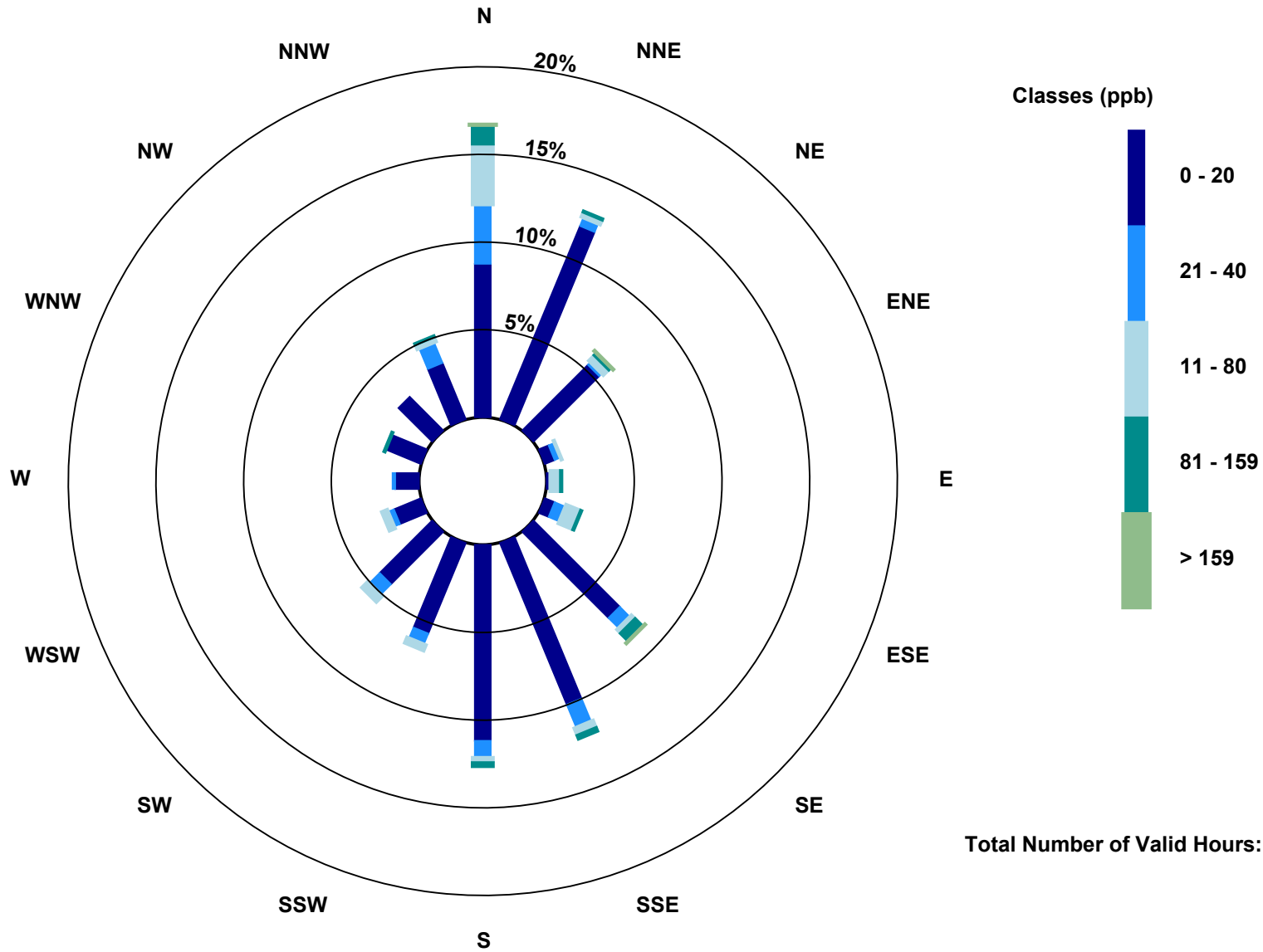
Total Number of Valid Hours: 662

Total Number of Hours: 696

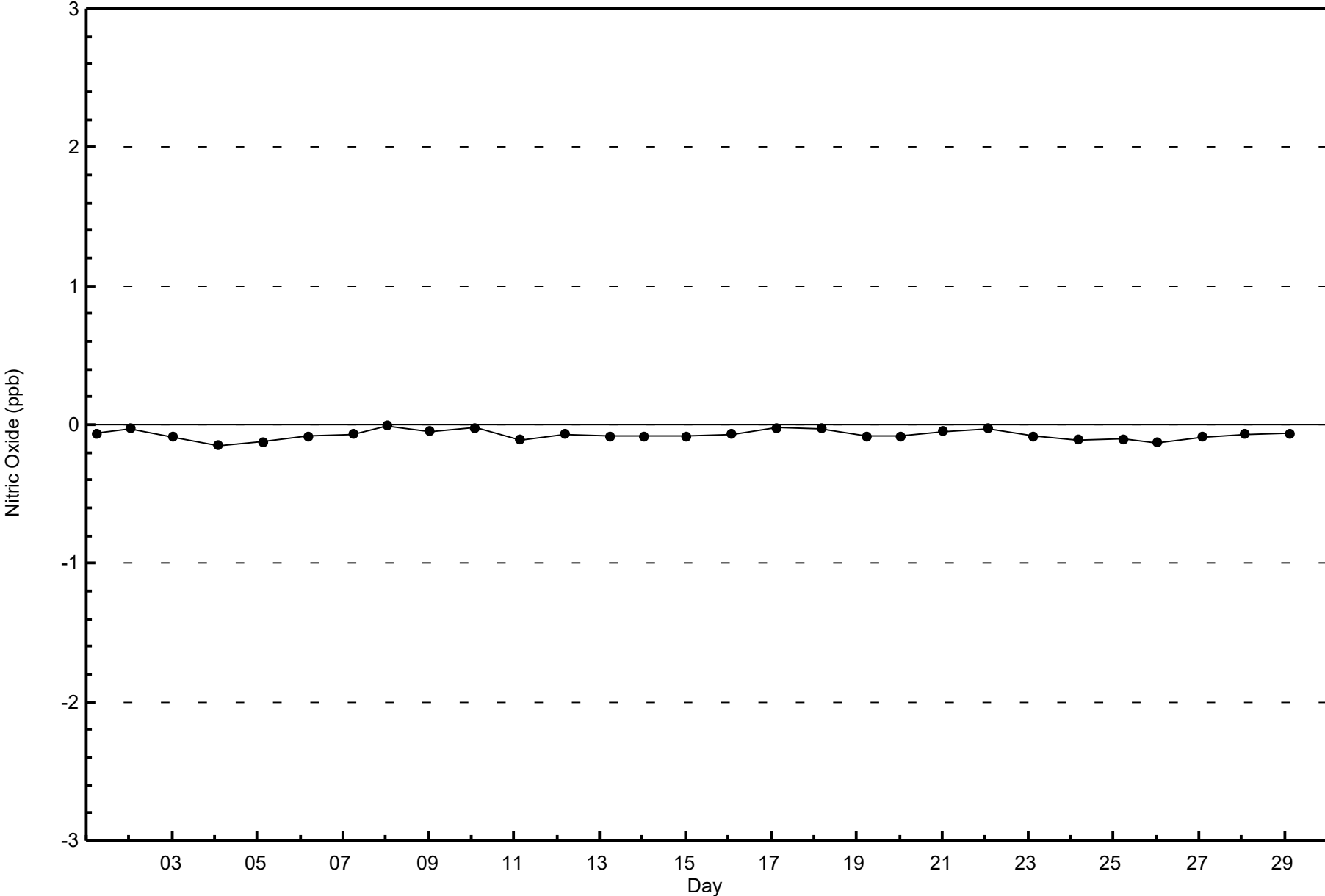


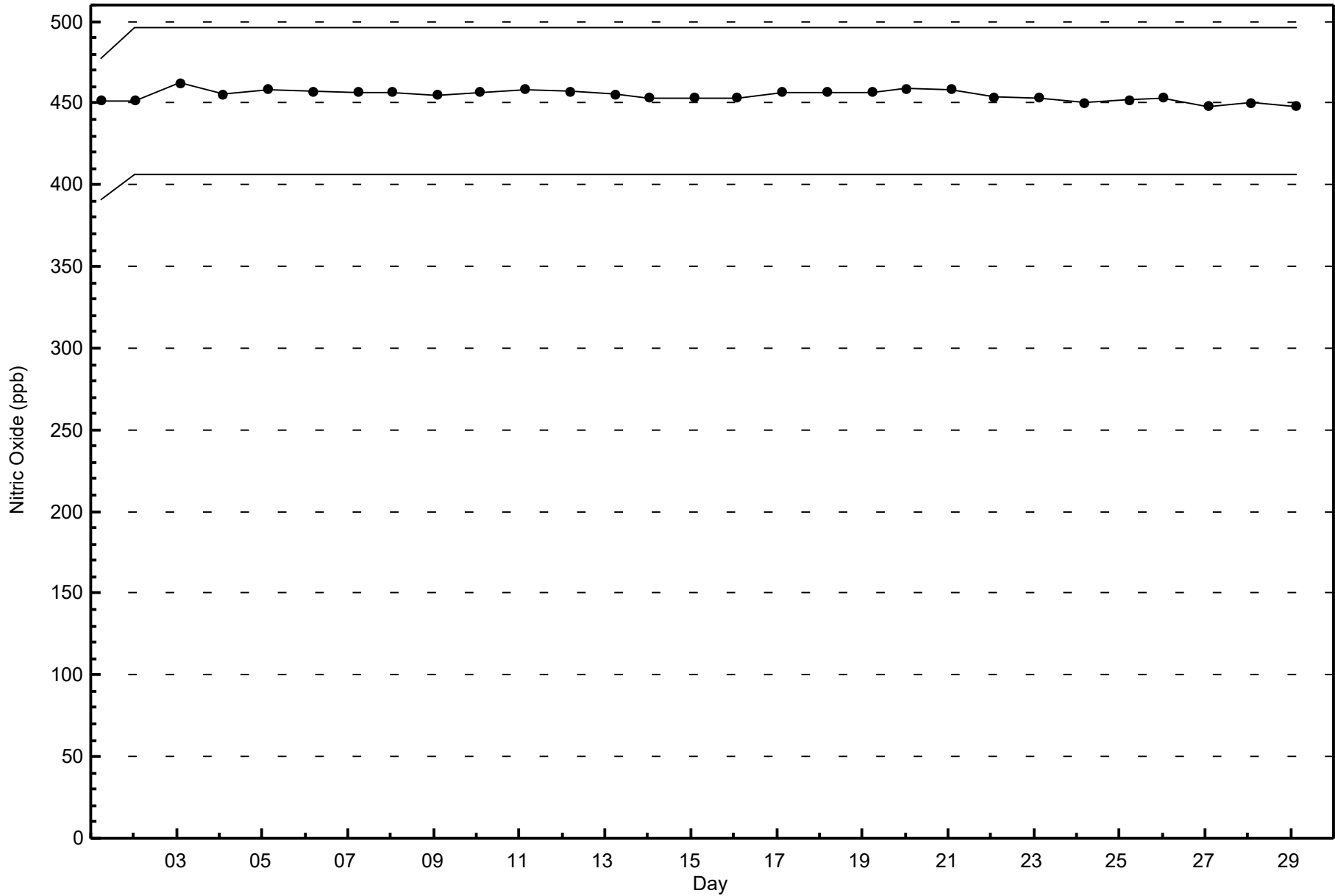
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Fort Hills



Total Number of Valid Hours: 662







Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

Fort Hills - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 52.5 ppb on Feb 17 10:00	Maximum Daily Average: 35.1 ppb on Feb 17		Hours of Data:	662
Minimum Value: 0.6 ppb on Feb 24 11:00	Minimum Daily Average: 8.8 ppb on Feb 26		Hours of Missing Data:	34
Maximum Diurnal Average: 20.4 ppb at hour 19	Minimum Diurnal Average: 11.4 ppb at hour 13		Hours of Calibration:	34
Monthly Average: 17.21 ppb	Percentiles: P ₁ = 0.9 P ₁₀ = 3.5 Q ₁ = 8.2 Median = 16.3 Q ₃ = 25.2 P ₉₀ = 31.0 P ₉₉ = 43.8		Percent Operational Time:	100.0

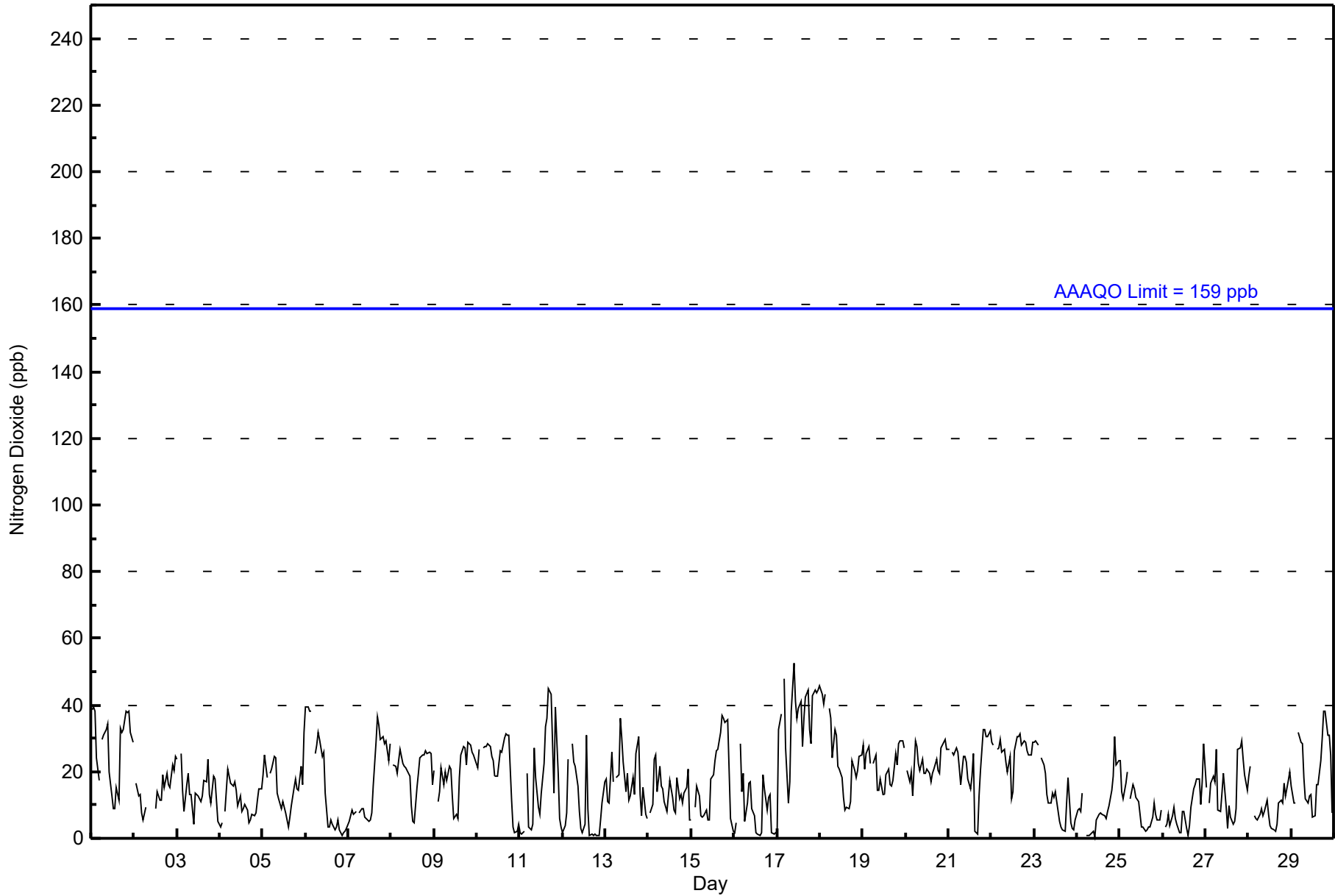
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	38.5	39.4	38.1	24.1	17.5	Z	29.5	30.8	32.7	34.4	19.8	12.5	8.7	9.0	15.4	11.5	33.1	31.7	32.8	38.0	37.8	38.3	31.8	28.8	27.6	39.4																							
2-Feb	Z	16.5	12.9	13.3	7.8	5.5	9.5	C	C	C	C	C	8.7	14.0	11.6	11.5	19.1	15.1	19.7	16.3	15.1	21.9	20.4	24.6	14.6	24.6																							
3-Feb	23.8	Z	25.4	14.3	7.9	16.2	19.6	13.1	13.0	4.2	13.4	13.1	12.5	10.9	12.8	17.3	16.9	23.7	13.0	10.7	18.7	17.9	11.3	5.1	14.6	25.4																							
4-Feb	3.4	4.8	Z	8.1	20.9	18.7	16.6	15.5	16.8	14.6	9.6	12.5	8.0	8.9	10.2	8.5	4.6	5.4	7.2	6.9	7.7	11.3	14.7	14.7	10.9	20.9																							
5-Feb	19.0	24.9	18.4	Z	19.7	20.8	24.4	24.0	13.6	11.7	8.9	11.0	9.3	7.5	3.3	6.3	9.7	15.1	17.7	15.0	14.5	21.8	16.3	31.6	15.8	31.6																							
6-Feb	39.4	39.2	38.3	38.2	Z	25.4	28.0	31.7	29.6	24.5	25.7	13.6	3.3	3.5	5.4	4.2	2.6	3.4	5.4	2.4	0.8	1.5	2.2	2.8	16.1	39.4																							
7-Feb	5.2	6.8	8.3	7.1	8.1	Z	7.5	8.8	8.7	6.3	5.8	5.2	5.5	7.6	15.7	29.0	36.5	34.0	29.8	30.6	28.6	29.4	23.2	28.6	16.4	36.5																							
8-Feb	Z	22.0	21.5	19.6	23.5	26.5	22.4	21.6	21.1	20.3	18.6	9.8	5.2	4.5	15.1	19.6	24.2	25.2	25.1	26.2	25.6	25.8	25.4	16.3	20.2	26.5																							
9-Feb	20.4	Z	10.9	13.8	21.1	16.2	19.9	17.5	21.5	20.7	12.7	5.8	7.4	5.9	18.2	25.0	27.4	27.3	22.1	29.0	28.1	25.8	24.8	23.9	19.4	29.0																							
10-Feb	21.2	26.9	Z	27.1	27.6	27.7	28.4	27.4	24.5	23.4	18.5	18.5	22.3	26.3	25.8	30.2	31.5	31.1	30.9	11.5	3.4	1.7	2.0	4.4	21.4	31.5																							
11-Feb	1.9	1.3	2.0	Z	19.7	3.2	2.6	4.1	27.3	18.2	9.2	7.1	13.5	22.6	33.6	35.9	44.8	43.3	28.4	13.6	39.4	19.6	5.8	3.5	17.4	44.8																							
12-Feb	1.8	3.7	7.7	23.9	Z	28.4	23.0	21.4	15.6	8.1	2.9	1.9	4.4	30.8	8.8	1.0	1.1	0.7	1.1	0.7	0.9	5.7	10.4	17.0	9.6	30.8																							
13-Feb	17.6	10.9	10.8	25.7	16.8	Z	18.1	18.9	35.9	30.1	22.9	13.9	19.5	11.3	12.7	18.1	13.2	25.6	30.7	13.1	6.7	15.1	7.2	6.1	17.4	35.9																							
14-Feb	Z	7.8	10.2	23.7	25.2	14.0	21.6	15.5	15.0	11.0	8.2	12.5	17.4	12.1	8.4	7.8	18.3	12.0	13.1	10.5	13.6	15.3	20.7	5.6	13.9	25.2																							
15-Feb	5.3	Z	9.3	15.5	12.5	6.8	6.5	6.6	8.3	5.3	5.3	17.7	19.1	23.2	26.4	26.9	31.7	36.7	36.0	34.8	35.4	20.9	6.0	2.1	17.3	36.7																							
16-Feb	1.7	4.5	Z	28.2	14.1	19.5	4.9	10.7	16.5	17.0	9.0	6.7	1.5	1.2	0.9	1.6	18.9	14.9	8.3	12.1	13.3	1.9	1.1	1.9	9.1	28.2																							
17-Feb	1.3	32.5	37.5	Z	47.7	27.3	10.7	16.8	38.1	52.5	41.0	36.0	38.9	41.2	27.4	36.0	42.2	44.7	32.6	28.6	42.7	44.5	43.5	44.3	35.1	52.5																							
18-Feb	45.7	43.1	40.4	43.3	Z	38.9	36.2	24.2	32.5	31.1	21.4	20.7	18.4	12.2	8.3	9.3	9.1	10.9	23.4	20.2	18.2	20.3	24.7	25.0	25.1	45.7																							
19-Feb	27.8	20.9	25.4	27.6	22.4	Z	22.6	24.9	14.4	14.2	17.6	13.2	13.3	18.9	20.9	16.3	15.5	17.3	25.3	22.0	28.2	29.1	29.3	27.3	21.5	29.3																							
20-Feb	Z	20.2	16.9	19.8	12.7	29.4	27.7	22.3	20.5	23.9	19.3	19.7	20.6	19.3	17.0	19.4	20.9	23.6	20.4	19.6	27.1	29.0	29.5	26.7	22.0	29.5																							
21-Feb	26.7	Z	25.7	25.2	27.0	26.0	21.2	16.2	24.4	24.5	23.0	17.7	15.0	18.5	25.4	2.1	1.2	12.6	20.3	32.5	32.7	30.6	30.7	32.0	22.2	32.7																							
22-Feb	28.8	27.9	Z	26.7	27.2	29.5	26.0	26.8	22.8	20.0	24.6	12.0	13.8	26.4	30.3	30.4	31.2	27.8	29.4	29.0	26.4	24.8	24.9	28.7	25.9	31.2																							
23-Feb	29.0	29.2	27.9	Z	24.2	22.1	19.7	13.2	10.5	10.8	13.5	12.3	13.8	8.2	5.1	3.4	2.4	2.3	10.5	18.3	4.5	2.9	2.6	5.6	12.7	29.2																							
24-Feb	8.5	8.7	7.9	13.5	Z	0.9	0.7	0.7	1.9	2.0	0.6	5.4	7.0	7.8	7.1	6.8	6.1	8.0	9.7	14.4	18.5	30.3	22.2	23.1	9.2	30.3																							
25-Feb	23.1	13.9	11.7	16.5	19.9	Z	11.9	15.9	14.8	12.2	11.0	7.2	3.4	3.3	2.3	2.7	3.2	3.5	6.4	10.4	7.3	5.4	5.4	8.5	9.6	23.1																							
26-Feb	Z	3.5	4.4	7.1	3.8	6.6	9.5	6.1	4.3	1.5	1.9	8.2	8.1	2.8	1.0	3.7	9.3	14.9	16.1	17.6	17.7	10.1	16.8	28.3	8.8	28.3																							
27-Feb	15.3	Z	10.7	16.4	18.6	16.8	26.8	8.3	7.9	13.4	19.4	9.4	2.8	9.8	6.3	4.3	5.1	8.9	26.7	27.3	29.1	23.9	18.9	14.5	14.8	29.1																							
28-Feb	18.7	21.8	Z	6.7	5.8	5.7	7.0	8.8	6.7	8.2	11.3	7.3	3.8	2.8	2.5	2.1	4.2	10.5	11.6	10.4	16.6	12.8	17.5	20.0	9.7	21.8																							
29-Feb	15.6	10.4	10.6	Z	31.6	28.8	28.5	18.2	11.7	10.4	12.7	13.2	6.3	6.7	15.9	16.1	23.1	30.1	38.0	38.0	31.1	31.0	25.1	7.8	20.0	38.0																							
																								18.3	18.4	18.0	20.2	19.3	19.2	18.3	16.8	18.2	16.9	14.6	12.3	11.4	13.0	13.6	14.0	17.5	19.3	20.4	19.3	20.3	19.6	17.7	17.5	Diurnal Average	
																								45.7	43.1	40.4	43.3	47.7	38.9	36.2	31.7	38.1	52.5	41.0	36.0	38.9	41.2	33.6	36.0	44.8	44.7	38.0	38.0	42.7	44.5	43.5	44.3	Diurnal Maximum	

Z - zerspan C - Calibration
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Fort Hills - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Fort Hills - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	420	63.44	63.44
21 - 40	227	34.29	97.73
41 - 80	15	2.27	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Fort Hills - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	45	62	29	1	0	3	41	54	71	33	24	10	5	12	10	20	420
21 - 40	62	21	10	6	6	11	14	26	12	10	13	6	5	3	8	14	227
11 - 80	5	2	2	0	0	1	3	0	1	1	0	0	0	0	0	0	15
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	112	85	41	7	6	15	58	80	84	44	37	16	10	15	18	34	662

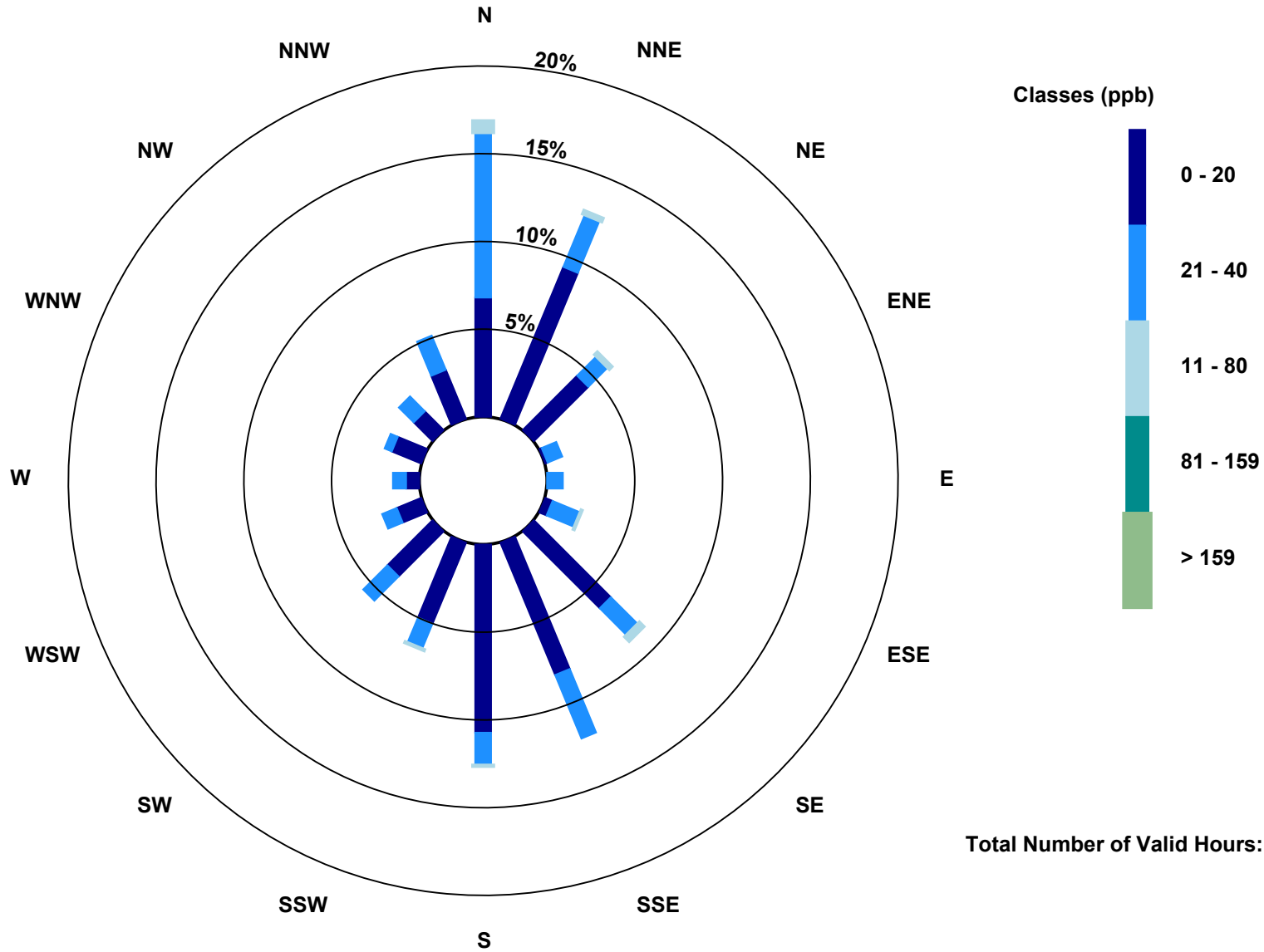
Total Number of Valid Hours: 662

Total Number of Hours: 696

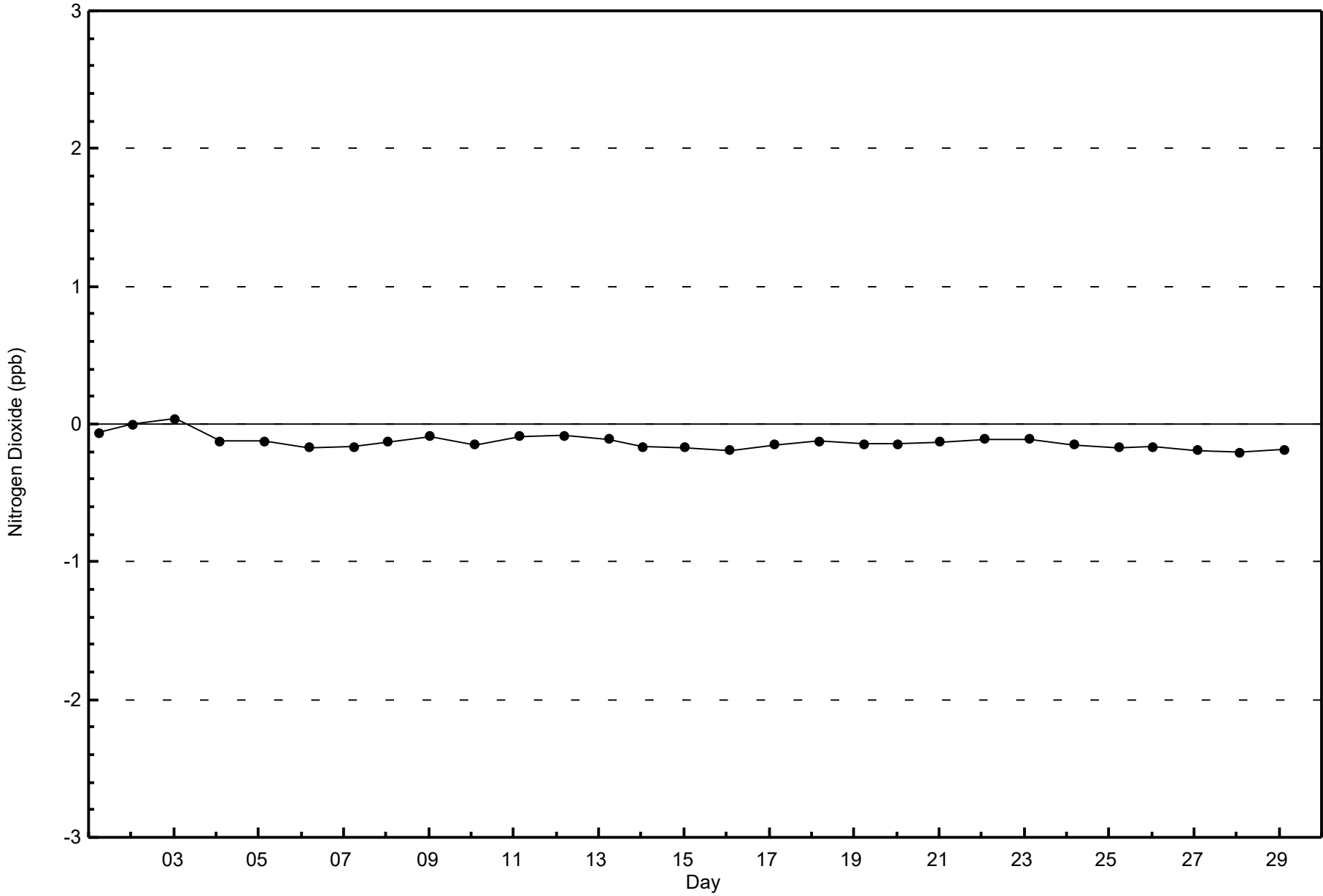


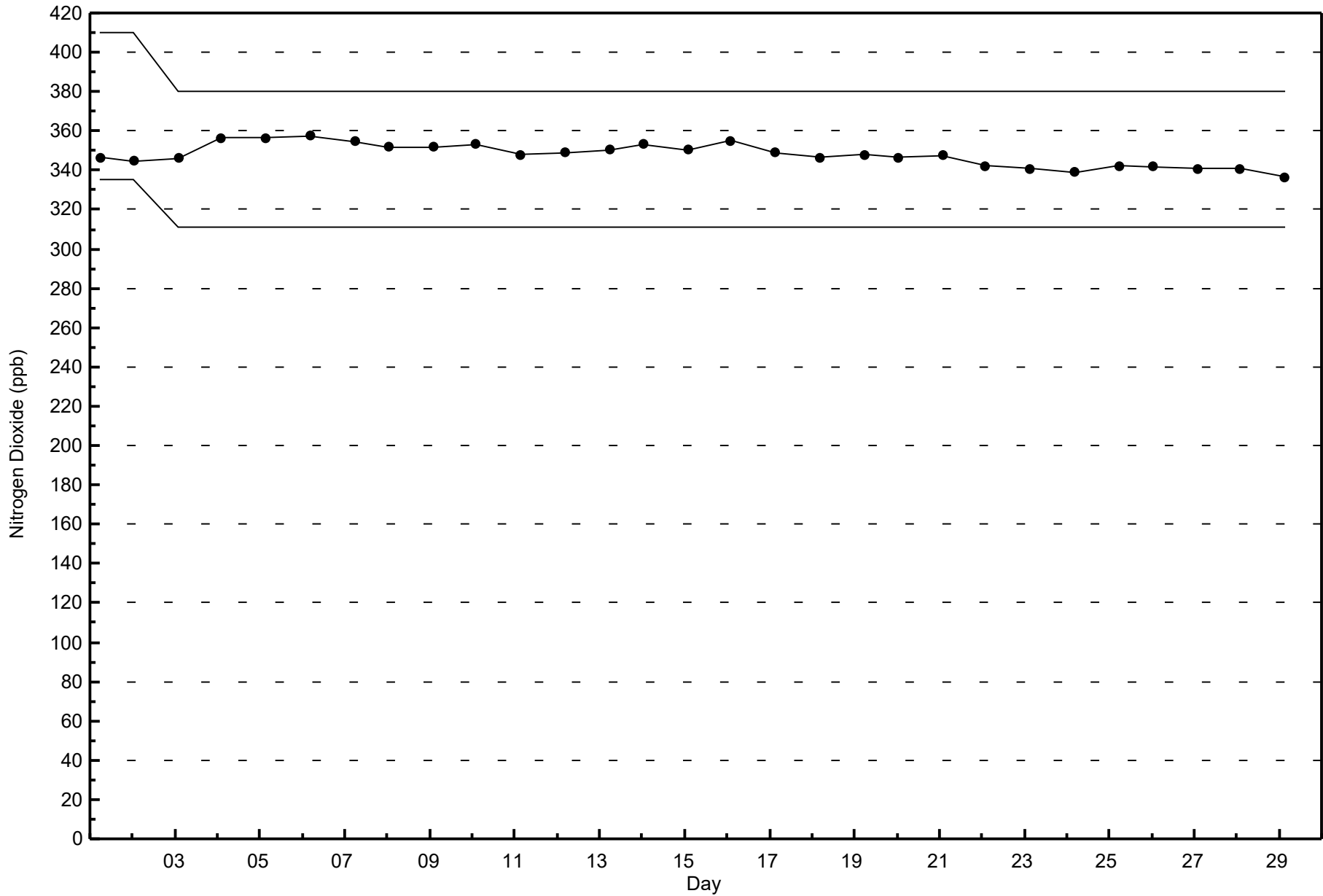
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Fort Hills



Total Number of Valid Hours: 662







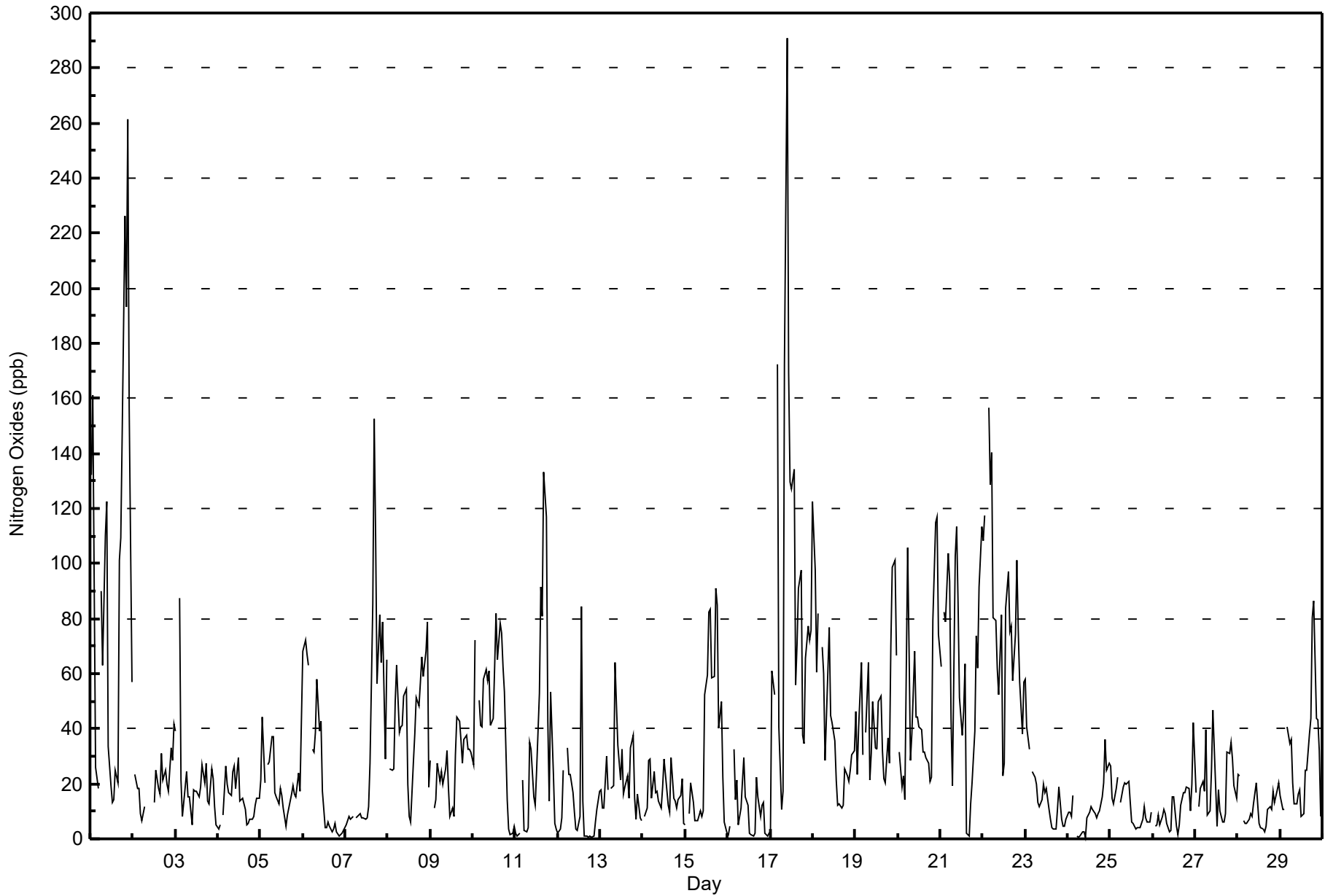
Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Oxides (NO_x) - ppb

Fort Hills - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:																696					
Maximum Value: 291.0 ppb on Feb 17 10:00		Maximum Daily Average: 95.3 ppb on Feb 1																Hours of Data:		662							
Minimum Value: 0.7 ppb on Feb 12 20:00		Minimum Daily Average: 10.9 ppb on Feb 16																Hours of Missing Data:		34							
Maximum Diurnal Average: 43.8 ppb at hour 10		Minimum Diurnal Average: 23.8 ppb at hour 13																Hours of Calibration:		34							
Monthly Average: 33.16 ppb		Percentiles: P ₁ = 1.0 P ₁₀ = 4.5 Q ₁ = 10.3 Median = 20.3 Q ₃ = 42.4 P ₉₀ = 79.1 P ₉₉ = 164.3																Percent Operational Time:		100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	132.0	161.1	93.0	25.9	18.1	Z	90.2	63.3	110.3	122.7	33.4	19.4	13.1	14.2	24.9	20.3	101.0	109.2	147.0	226.1	193.0	261.2	156.4	57.0	95.3	261.2	
2-Feb	Z	23.2	18.2	18.4	8.9	6.7	11.6	C	C	C	C	C	13.3	25.1	18.3	16.5	30.8	21.6	24.9	19.9	17.2	32.8	28.7	41.9	21.0	41.9	
3-Feb	39.1	Z	87.6	21.2	8.0	19.1	24.4	15.3	15.5	5.0	17.9	17.5	17.3	15.1	19.0	26.8	20.3	27.7	13.7	12.5	25.2	22.1	11.5	5.1	21.2	87.6	
4-Feb	3.4	5.0	Z	8.4	26.6	20.0	16.9	15.7	24.5	26.3	18.5	29.4	13.8	14.3	14.6	10.6	4.9	5.4	7.2	6.9	8.2	12.1	14.7	15.0	14.0	29.4	
5-Feb	21.3	44.2	20.3	Z	27.2	27.8	37.3	36.9	16.7	15.2	12.7	18.1	15.6	11.1	4.5	8.8	11.0	16.2	19.1	16.2	15.2	24.1	17.4	42.8	20.9	44.2	
6-Feb	68.1	72.3	67.1	63.0	Z	32.3	31.7	38.4	58.0	39.3	42.7	17.4	3.9	4.1	6.2	4.5	2.6	3.4	5.4	2.4	0.8	1.5	2.2	2.8	24.8	72.3	
7-Feb	5.2	6.8	8.3	7.1	8.1	Z	7.5	8.8	9.1	7.7	7.8	7.3	7.8	11.5	27.2	85.6	152.7	110.2	56.7	81.3	63.9	78.9	29.1	65.1	37.1	152.7	
8-Feb	Z	25.3	24.8	25.5	49.6	63.1	38.9	40.7	41.3	51.9	54.6	19.9	7.9	6.0	28.0	38.3	51.4	48.3	56.8	66.3	59.0	68.4	78.8	18.7	41.9	78.8	
9-Feb	28.4	Z	10.9	14.1	27.7	21.1	24.6	19.8	25.4	32.2	18.6	8.2	11.1	8.4	30.7	44.4	42.7	35.7	27.6	36.1	37.9	32.6	32.6	31.4	26.2	44.4	
10-Feb	27.0	72.1	Z	50.6	41.1	40.4	58.2	61.7	57.7	60.8	41.2	43.8	62.0	82.0	65.1	78.4	74.7	62.8	53.5	14.3	3.4	1.7	2.0	4.4	46.0	82.0	
11-Feb	1.9	1.3	2.0	Z	21.3	3.2	2.6	4.1	35.0	32.8	15.4	12.0	25.0	52.9	91.6	80.9	133.1	117.1	42.5	13.9	53.3	23.4	5.8	3.5	33.7	133.1	
12-Feb	1.8	3.7	7.7	25.2	Z	32.8	23.2	23.5	17.0	9.6	3.7	2.8	8.2	84.5	13.6	1.2	1.2	0.7	1.2	0.7	0.9	6.0	10.8	17.2	12.9	84.5	
13-Feb	18.0	11.1	11.1	30.1	17.7	Z	18.2	19.3	64.0	48.9	34.2	21.1	32.4	16.2	18.6	23.1	14.8	33.1	37.4	14.7	7.1	16.5	7.7	6.4	22.7	64.0	
14-Feb	Z	8.1	11.4	28.3	29.0	14.9	24.4	16.8	17.5	13.6	11.2	18.9	29.1	18.0	12.2	9.8	29.7	14.8	13.9	11.0	14.3	15.9	21.6	5.6	16.9	29.7	
15-Feb	5.3	Z	9.3	20.3	13.1	6.8	6.5	6.6	10.1	7.9	9.9	52.6	59.5	82.6	83.3	58.4	59.2	91.1	84.7	40.1	49.7	22.4	6.0	2.1	34.2	91.1	
16-Feb	1.7	4.5	Z	32.3	14.4	21.3	4.9	11.1	21.1	29.4	15.4	12.1	2.1	1.6	1.0	1.8	22.3	15.3	8.3	12.1	13.4	1.9	1.1	1.9	10.9	32.3	
17-Feb	1.3	61.0	52.2	Z	172.3	40.5	10.7	17.4	172.5	291.0	169.2	129.9	127.1	134.3	55.9	70.6	91.2	97.7	37.7	34.7	65.7	77.3	72.3	76.0	89.5	291.0	
18-Feb	122.6	97.7	60.6	81.9	Z	69.7	60.0	28.7	60.7	76.6	44.5	42.2	35.8	21.2	12.4	12.7	11.0	12.1	25.6	22.8	20.8	25.1	30.5	31.9	43.8	122.6	
19-Feb	46.5	23.4	40.8	63.9	30.7	Z	38.8	64.0	21.6	31.0	49.9	33.3	32.5	49.7	52.0	32.2	21.8	20.2	36.4	27.6	70.4	98.7	101.3	66.5	45.8	101.3	
20-Feb	Z	31.4	19.1	23.1	14.3	105.5	68.9	28.4	38.3	68.3	44.4	44.1	40.5	39.8	31.6	31.4	29.5	27.5	20.7	22.5	79.2	114.8	116.9	74.3	48.5	116.9	
21-Feb	62.5	Z	82.3	78.9	103.8	93.5	43.9	19.6	102.5	113.6	86.1	51.5	37.7	46.3	63.4	2.3	1.2	12.7	20.3	38.9	73.7	62.0	91.4	113.2	60.9	113.6	
22-Feb	108.1	117.2	Z	156.4	128.4	140.3	80.5	79.2	61.8	52.5	81.6	23.1	27.2	83.7	97.1	75.0	77.4	57.3	74.2	101.4	76.0	56.7	38.4	56.7	80.5	156.4	
23-Feb	57.8	40.9	32.3	Z	24.3	22.2	19.7	13.3	11.7	14.0	19.7	16.9	18.1	10.5	7.1	4.1	3.3	3.5	10.8	18.9	6.9	4.8	4.6	7.0	16.2	57.8	
24-Feb	9.8	9.7	8.4	15.6	Z	1.1	0.7	0.9	2.3	2.5	0.7	7.4	9.8	11.5	10.4	9.4	7.6	9.1	10.2	15.1	20.2	36.2	24.7	27.4	10.9	36.2	
25-Feb	26.6	14.9	12.5	18.1	22.5	Z	13.3	18.7	20.2	20.0	20.7	13.2	6.0	5.6	3.7	4.1	4.2	4.1	7.0	11.8	7.8	5.9	6.2	9.7	12.0	26.6	
26-Feb	Z	4.5	5.3	8.7	4.8	8.2	10.8	9.1	5.7	2.3	3.0	15.3	15.4	4.8	1.5	5.2	12.0	16.6	16.7	18.6	18.3	10.1	19.7	42.0	11.3	42.0	
27-Feb	16.6	Z	11.7	18.2	20.6	17.3	39.9	8.5	10.1	24.8	46.9	18.7	4.5	17.8	10.3	6.2	6.2	9.3	31.4	31.0	35.3	28.8	19.1	14.7	19.5	46.9	
28-Feb	23.2	23.1	Z	6.7	5.8	5.7	7.0	9.2	8.3	12.8	20.4	12.7	5.7	4.0	3.4	2.6	4.6	10.9	11.8	10.7	17.1	13.0	17.9	20.6	11.2	23.2	
29-Feb	15.9	10.5	10.7	Z	40.7	34.7	36.2	20.3	12.9	12.6	16.4	17.6	7.9	9.3	24.8	25.0	38.2	43.7	80.1	86.4	43.6	43.3	31.8	7.9	29.2	86.4	
																								Diurnal Average		35.2 36.4 29.5 35.1 35.2 35.4 29.4 25.0 37.6 43.8 33.6 25.9 23.8 30.6 28.7 27.2 36.6 35.8 33.9 35.0 37.8 41.3 34.5 30.0	
																								Diurnal Maximum		132.0 161.1 93.0 156.4 172.3 140.3 90.2 79.2 172.5 291.0 169.2 129.9 127.1 134.3 97.1 85.6 152.7 117.1 147.0 226.1 193.0 261.2 156.4 113.2	
Z - zerospan C - Calibration																											





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Fort Hills - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	337	50.91	50.91
21 - 40	148	22.36	73.26
41 - 80	113	17.07	90.33
81 - 159	53	8.01	98.34
> 159	8	1.21	99.55

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Fort Hills - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	35	50	25	1	0	1	29	40	59	29	20	8	5	12	8	15	337
21 - 40	18	28	10	1	1	3	15	25	14	3	5	3	3	1	10	8	148
41 - 80	36	5	2	4	0	4	7	11	9	10	9	4	2	1	0	9	113
81 - 159	20	1	3	1	5	6	4	3	1	2	3	1	0	1	0	2	53
> 159	1	1	1	0	0	0	3	1	1	0	0	0	0	0	0	0	8
Totals	110	85	41	7	6	14	58	80	84	44	37	16	10	15	18	34	659

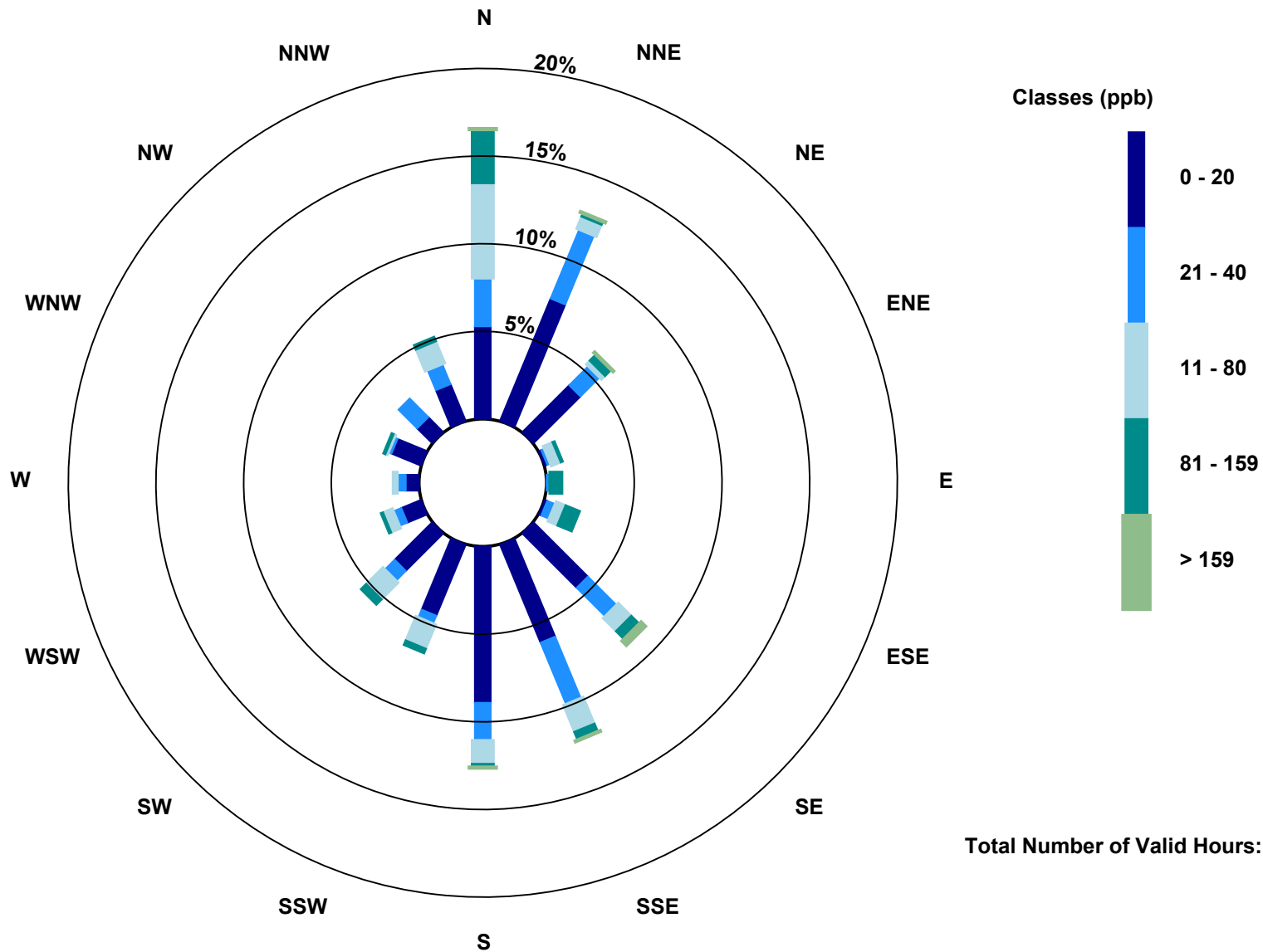
Total Number of Valid Hours: 662

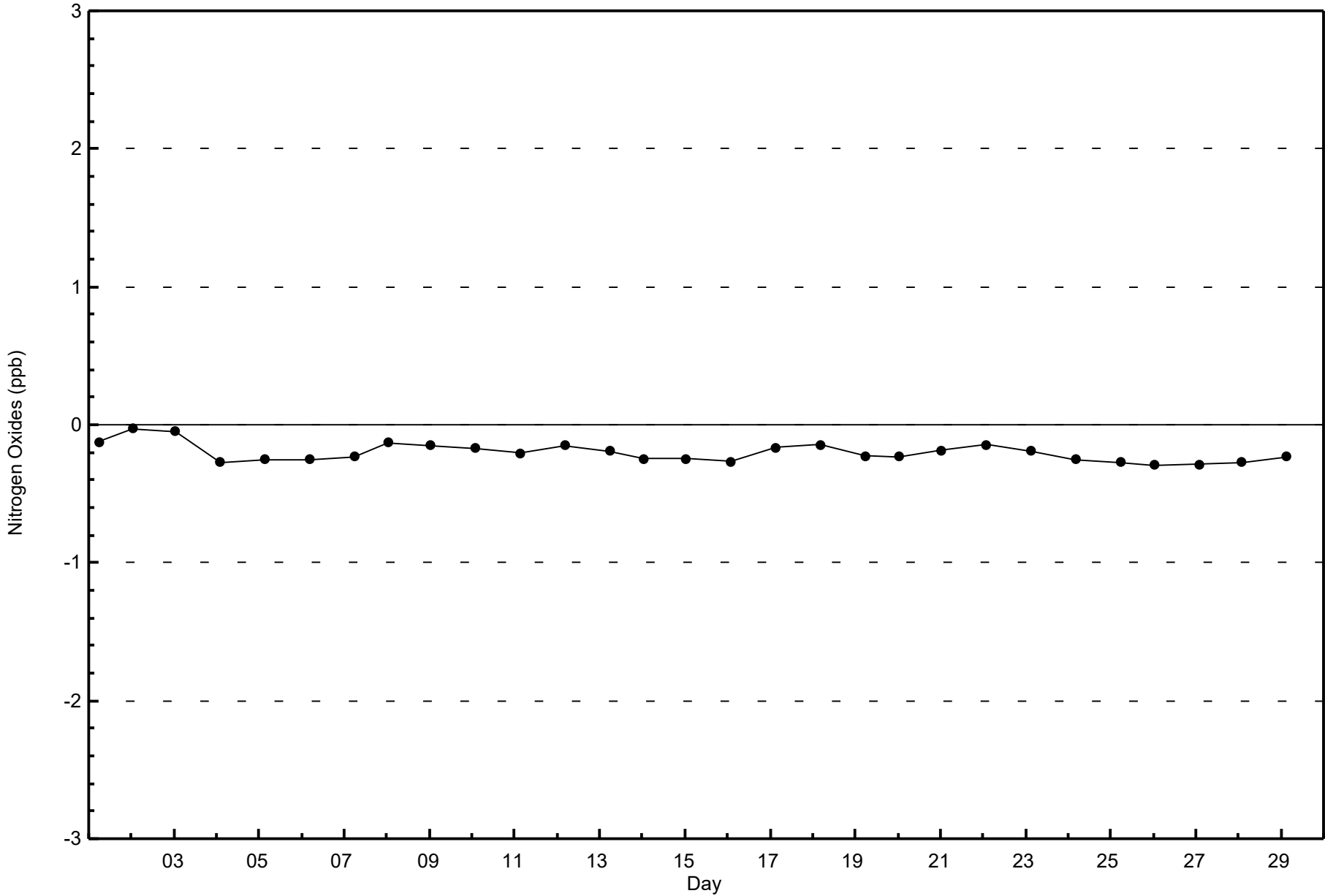
Total Number of Hours: 696

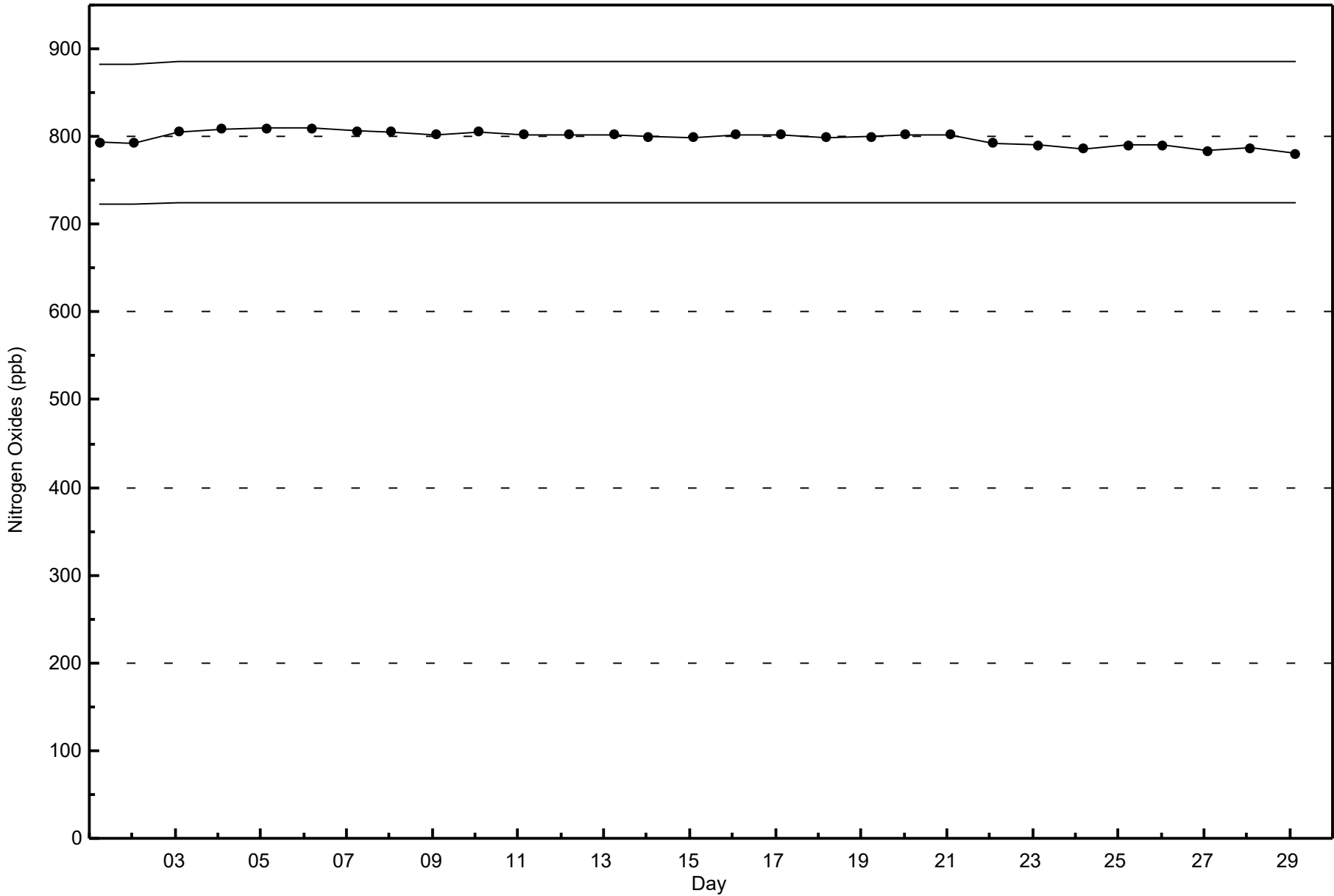


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Fort Hills





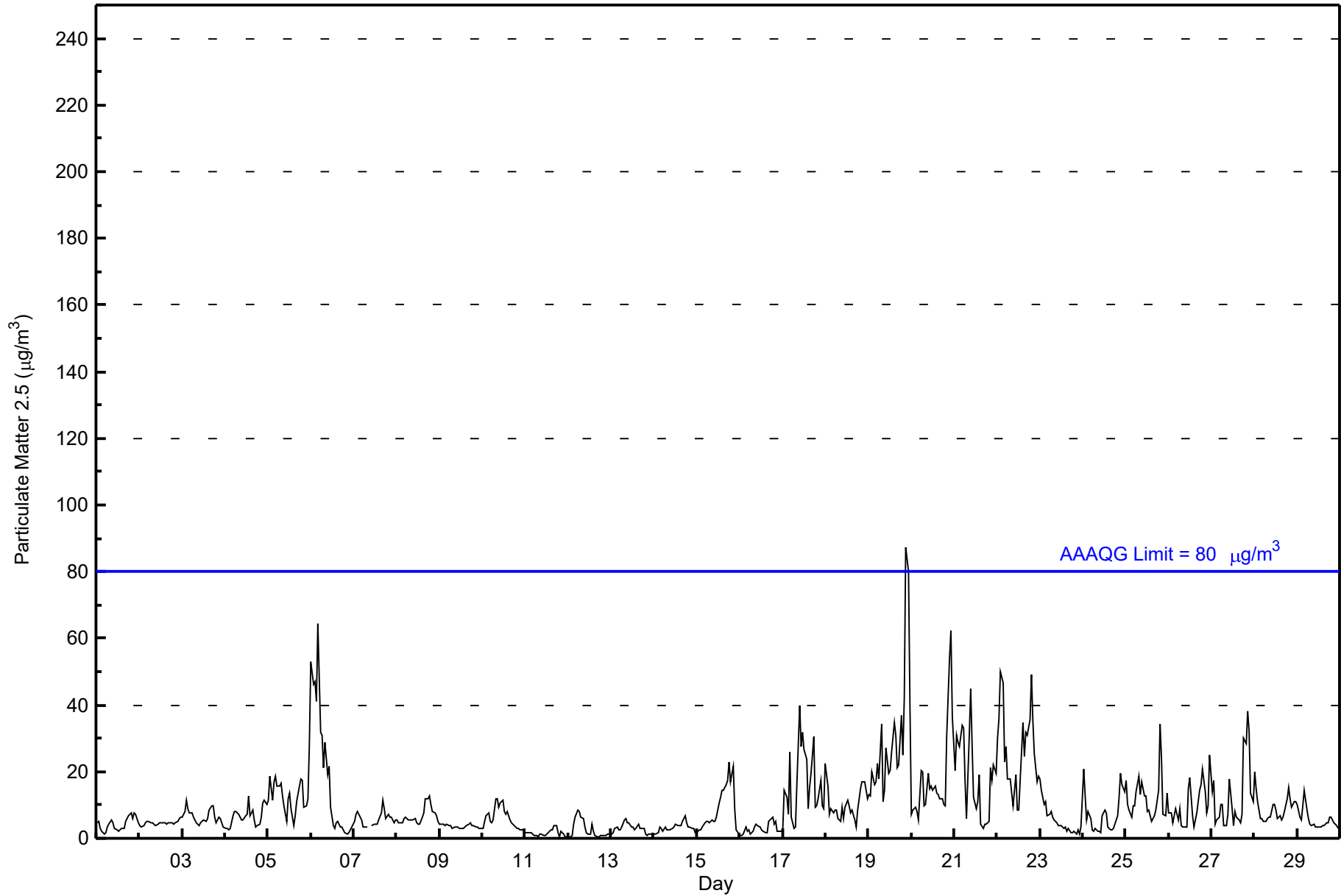




Summary of Hour Averages

Fort Hills - February 2024

Number of Exceedences (AAAQO):		1-hr: 2	24-hr: 0																		Hours in Service:	696					
Maximum Value: 87.3 µg/m ³ on Feb 19 22:00		Maximum Daily Average: 28.9 µg/m ³ on Feb 19																	Hours of Data:	694							
Minimum Value: 0.3 µg/m ³ on Feb 12 01:00		Minimum Daily Average: 1.6 µg/m ³ on Feb 11																	Hours of Missing Data:	2							
Maximum Diurnal Average: 13.0 µg/m ³ at hour 22		Minimum Diurnal Average: 7.5 µg/m ³ at hour 16																	Hours of Calibration:	2							
Monthly Average: 9.59 µg/m ³		Percentiles: P ₁ = 0.6 P ₁₀ = 2.1 Q ₁ = 3.5 Median = 6.0 Q ₃ = 11.7 P ₉₀ = 21.0 P ₉₉ = 49.1																	Percent Operational Time:	100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	4.5	5.0	2.9	2.0	1.5	1.9	3.6	4.3	5.3	4.6	2.8	2.5	2.1	2.5	3.1	2.8	5.3	6.1	6.6	7.8	6.0	7.5	7.1	4.6	4.3	7.8	
2-Feb	3.6	3.4	4.0	4.8	4.9	5.0	4.7	4.7	4.4	4.0	4.4	4.6	4.8	4.6	4.7	4.4	4.6	4.6	4.8	4.3	4.6	5.1	6.0	6.2	4.6	6.2	
3-Feb	6.5	7.9	11.2	9.0	7.8	7.6	6.4	5.7	4.5	3.7	4.8	5.0	5.5	5.0	5.8	8.4	9.7	9.9	6.3	4.8	6.4	5.8	4.5	3.3	6.5	11.2	
4-Feb	2.9	3.1	2.4	2.9	7.0	8.0	7.4	6.5	5.4	5.5	7.0	7.4	12.7	7.0	8.3	5.4	3.5	3.8	4.0	6.2	10.6	11.4	10.2	6.5	12.7		
5-Feb	11.4	18.5	11.5	17.1	18.6	15.7	15.7	16.6	12.6	9.8	5.0	12.1	13.6	9.1	3.8	6.9	11.1	15.8	17.9	17.4	9.2	9.7	12.0	27.9	13.3	27.9	
6-Feb	52.8	46.1	46.9	41.3	64.5	31.9	31.0	21.1	28.8	18.9	21.4	9.5	3.8	3.2	4.5	5.2	3.5	3.2	2.5	1.6	1.3	1.7	2.5	3.5	18.8	64.5	
7-Feb	5.2	7.3	7.9	7.3	5.7	3.6	3.3	3.5	C	C	3.8	4.1	4.1	4.4	5.4	7.5	11.4	8.9	5.8	7.0	6.4	6.4	4.7	5.6	5.9	11.4	
8-Feb	5.4	4.6	4.6	4.8	5.8	6.4	5.6	5.7	5.5	5.7	6.1	4.5	4.1	4.1	6.3	7.8	11.8	12.1	12.7	10.0	8.2	7.4	6.9	5.2	6.7	12.7	
9-Feb	4.3	4.2	4.1	3.8	4.2	4.0	3.7	3.0	3.2	3.5	3.5	3.0	3.0	2.9	3.4	3.9	4.2	4.5	3.7	3.8	3.5	3.4	3.1	3.1	3.6	4.5	
10-Feb	3.1	5.1	7.0	7.6	5.0	4.5	5.7	11.9	11.7	9.2	10.4	11.3	8.1	7.2	8.2	5.6	4.5	4.1	4.0	3.2	2.8	2.6	2.4	2.3	6.1	11.9	
11-Feb	1.8	1.7	1.6	1.8	1.4	0.8	0.6	0.6	1.3	1.4	0.8	0.9	1.1	2.1	2.7	2.7	3.7	3.9	1.7	0.6	2.3	1.2	0.4	0.3	1.6	3.9	
12-Feb	0.3	0.4	0.6	4.2	6.5	8.7	8.0	6.4	6.1	3.3	1.7	1.4	1.4	4.4	2.2	0.8	0.6	0.6	0.8	0.7	0.7	0.8	1.2	1.3	2.6	8.7	
13-Feb	1.2	1.9	2.8	3.6	2.6	2.5	3.4	5.5	5.9	4.7	4.7	3.3	3.3	2.6	3.0	4.4	3.2	3.2	3.0	1.1	0.6	1.3	1.3	1.2	2.9	5.9	
14-Feb	1.3	1.4	1.9	3.2	2.8	2.0	3.4	2.7	2.7	2.6	2.8	3.5	4.1	3.7	3.7	3.8	5.1	7.0	4.6	3.2	3.3	2.9	3.1	1.8	3.2	7.0	
15-Feb	1.8	2.4	2.6	3.2	4.7	5.1	4.9	4.8	5.4	5.3	4.9	6.3	10.6	12.1	14.4	14.3	16.1	17.4	22.7	17.0	21.6	8.9	2.6	1.1	8.7	22.7	
16-Feb	0.9	1.0	1.4	3.3	2.3	2.7	1.4	2.3	3.5	4.2	3.8	3.2	2.5	2.2	1.8	1.9	5.2	5.5	6.4	4.4	5.2	2.0	2.0	2.2	3.0	6.4	
17-Feb	2.4	14.3	12.2	7.2	26.1	6.5	3.1	3.6	16.5	39.8	27.7	31.8	26.8	23.7	8.8	15.2	19.4	30.5	9.1	9.6	11.8	17.3	9.7	8.9	15.9	39.8	
18-Feb	22.6	15.6	7.0	9.1	7.5	8.4	8.6	6.0	5.3	9.1	6.0	9.4	11.6	9.7	7.7	8.3	5.4	3.4	8.5	14.8	17.0	16.9	17.0	11.7	10.3	22.6	
19-Feb	13.2	12.5	19.8	16.2	17.1	22.5	17.6	34.5	11.0	14.4	27.2	19.7	20.4	25.8	34.8	31.1	21.4	22.1	36.7	25.1	41.8	87.3	80.2	40.1	28.9	87.3	
20-Feb	7.3	8.5	9.2	8.0	5.4	20.2	20.1	9.5	10.4	19.6	14.7	15.6	14.6	15.8	13.5	13.0	11.9	12.0	10.3	9.9	30.3	53.8	62.2	36.4	18.0	62.2	
21-Feb	20.5	31.1	29.0	27.7	33.8	33.2	17.4	5.8	31.1	45.0	28.0	12.1	9.1	11.1	19.3	4.3	3.0	4.3	4.1	4.9	21.1	17.3	22.0	19.6	18.9	45.0	
22-Feb	30.3	36.1	50.2	46.8	22.7	27.5	17.7	17.6	13.7	9.9	19.1	8.3	8.4	17.3	34.9	24.7	31.6	30.9	35.8	49.0	35.3	25.4	16.9	18.7	26.2	50.2	
23-Feb	17.9	14.3	10.2	10.8	6.7	7.2	7.9	6.4	5.7	4.8	3.9	3.8	3.8	2.8	3.4	2.1	2.9	1.6	1.7	2.0	1.1	2.4	1.1	3.3	5.3	17.9	
24-Feb	20.8	12.5	5.5	8.2	5.9	2.7	2.3	2.8	2.1	2.0	1.7	6.8	8.4	7.7	3.5	2.7	2.8	2.9	4.4	6.7	12.3	19.4	16.1	14.0	7.3	20.8	
25-Feb	17.3	10.1	8.4	6.5	9.6	9.7	14.1	18.4	13.3	16.9	12.7	12.5	8.1	8.4	5.0	5.9	6.8	8.6	14.4	34.3	24.1	7.2	6.6	13.4	12.2	34.3	
26-Feb	7.7	7.5	4.8	6.7	9.1	5.7	8.7	3.9	3.5	3.3	3.5	14.9	18.0	6.9	3.5	5.3	7.4	14.2	16.0	21.0	13.8	7.4	9.6	24.8	9.5	24.8	
27-Feb	13.9	17.4	4.0	5.5	6.3	10.3	10.2	3.6	4.0	7.2	17.9	8.8	3.8	8.1	6.5	5.6	4.8	7.1	29.9	28.4	38.0	32.4	13.5	11.1	12.4	38.0	
28-Feb	20.1	15.0	10.8	5.9	5.7	5.3	5.2	6.0	6.2	6.3	10.3	10.3	8.6	6.0	6.7	5.4	6.2	8.2	11.9	15.4	11.9	9.4	11.0	11.2	9.1	20.1	
29-Feb	10.2	6.2	5.3	9.6	14.3	8.4	6.0	4.1	3.8	4.0	3.4	3.5	3.4	3.4	3.8	3.9	4.5	4.9	6.5	6.3	4.8	4.2	3.9	3.0	5.5	14.3	
		10.7	10.9	10.0	9.9	10.9	9.6	8.6	7.9	8.4	9.6	9.1	8.3	7.7	7.9	8.0	7.5	8.1	9.0	10.2	11.0	12.1	13.0	11.8	10.2	Diurnal Average	
		52.8	46.1	50.2	46.8	64.5	33.2	31.0	34.5	31.1	45.0	28.0	31.8	26.8	25.8	34.9	31.1	31.6	30.9	36.7	49.0	41.8	87.3	80.2	40.1	Diurnal Maximum	
C - Calibration																											
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Fort Hills - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	320	46.11	46.11
6 - 15	249	35.88	81.99
16 - 25	72	10.37	92.36
26 - 80	52	7.49	99.86
> 81.0	1	0.14	100.00

Total Number of Valid Hours: 694

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - μg/m³
Fort Hills - February 2024

Concentration Ranges (μg/m ³)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	18	49	22	4	1	7	24	29	54	31	26	8	8	14	15	10	320
6 - 15	53	32	12	2	3	6	24	44	25	14	9	7	1	0	1	16	249
16 - 25	24	10	5	0	0	2	9	9	4	0	0	2	2	1	2	2	72
26 - 80	24	2	2	1	3	1	3	2	1	2	2	0	0	1	1	7	52
> 81.0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Totals	120	93	41	7	7	16	60	84	84	47	37	17	11	16	19	35	694

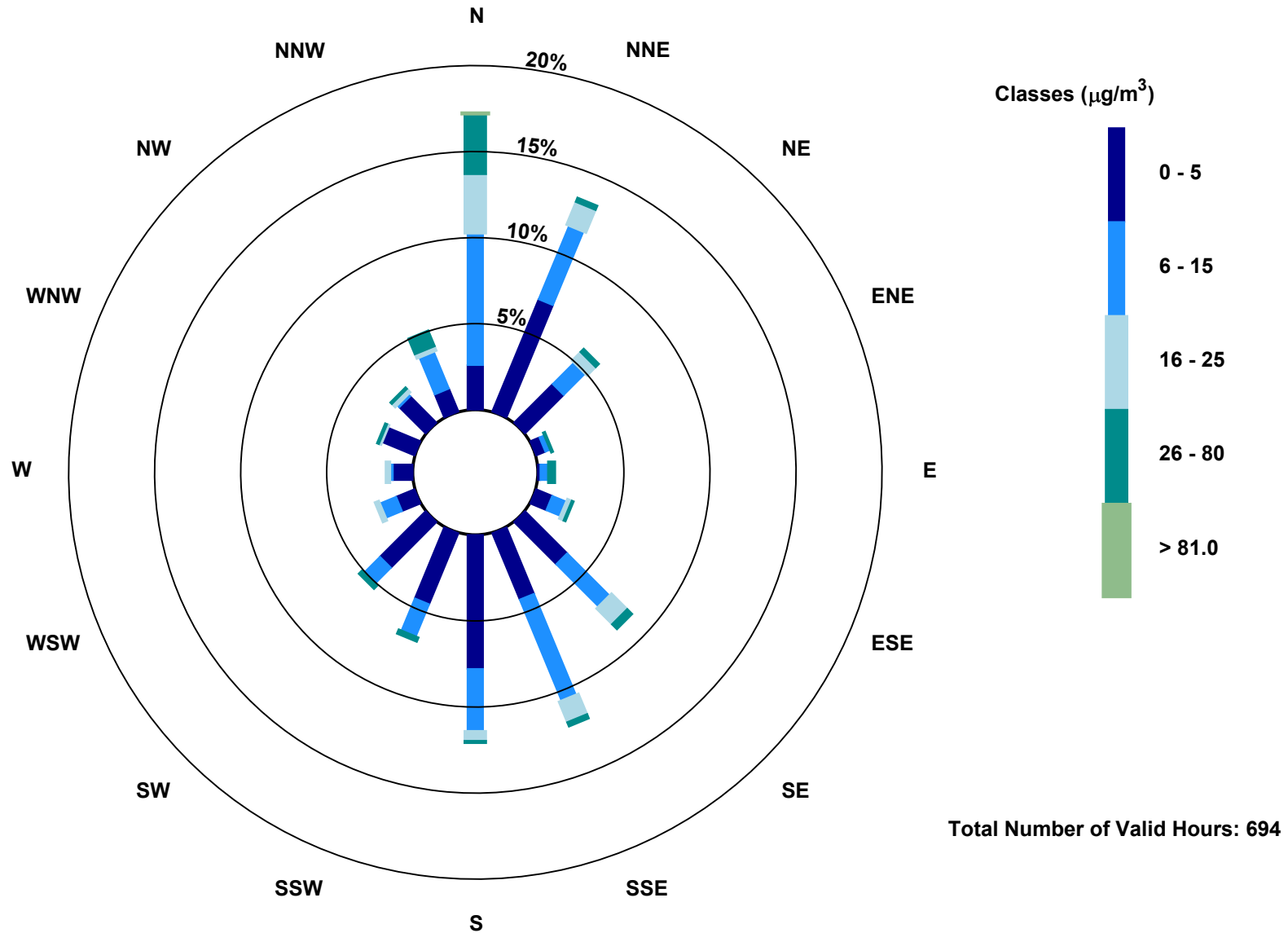
Total Number of Valid Hours: 694

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Fort Hills





Wood Buffalo Environmental Association
Summary of Hour Averages

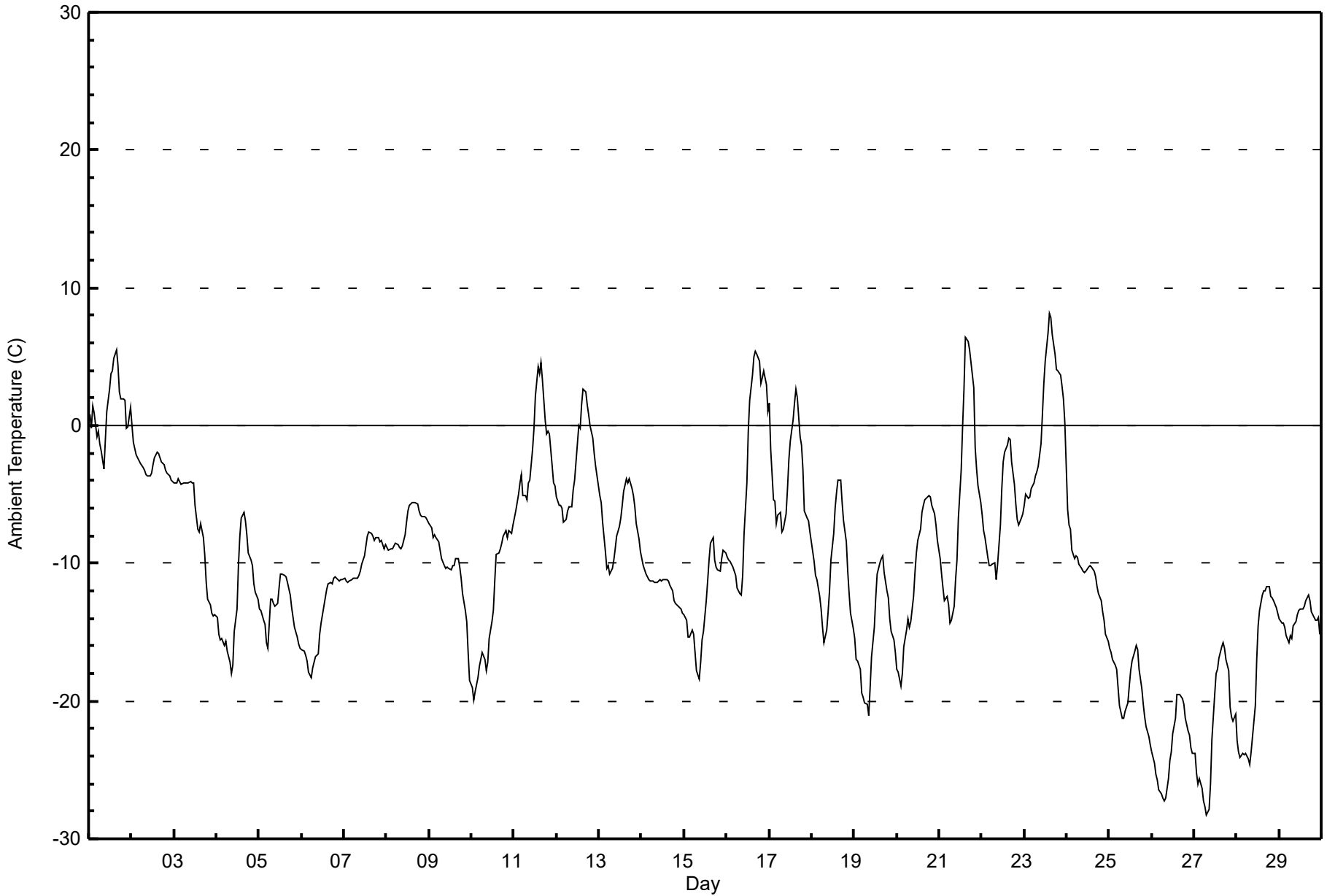
Ambient Temperature (AT) - C
Fort Hills - February 2024

Maximum Value: 8.1 C on Feb 23 15:00 Maximum Daily Average: 1.2 C on Feb 1																						Hours in Service:	696			
Minimum Value: -28.2 C on Feb 27 08:00 Minimum Daily Average: -23.5 C on Feb 26																						Hours of Data:	696			
Maximum Diurnal Average: -5.7 C at hour 16 Minimum Diurnal Average: -13.1 C at hour 8																						Hours of Missing Data:	0			
Monthly Average: -9.89 C Percentiles: P ₁ = -26.8 P ₁₀ = -19.1 Q ₁ = -14.3 Median = -10.2 Q ₃ = -5.2 P ₉₀ = -0.2 P ₉₉ = 5.5																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.8	-0.2	1.5	0.9	-0.8	-0.4	-1.4	-1.8	-3.1	-1.0	1.0	2.6	3.8	4.0	4.8	5.5	4.4	2.4	2.0	1.9	1.8	-0.2	-0.1	1.3	1.2	5.5
2-Feb	0.0	-1.2	-2.2	-2.4	-2.5	-2.7	-3.1	-3.3	-3.6	-3.6	-3.7	-3.4	-2.8	-2.3	-2.0	-2.0	-2.3	-2.7	-2.9	-3.3	-3.4	-3.7	-4.0	-4.1	-2.8	0.0
3-Feb	-4.1	-4.1	-3.8	-4.1	-4.3	-4.2	-4.1	-4.2	-4.2	-4.1	-4.1	-4.2	-5.8	-7.5	-7.7	-7.1	-8.1	-9.4	-11.3	-12.6	-13.0	-13.7	-13.8	-13.7	-7.2	-3.8
4-Feb	-14.0	-15.1	-15.5	-15.5	-15.9	-15.6	-16.3	-17.2	-18.0	-17.4	-14.9	-13.4	-10.2	-8.0	-6.7	-6.3	-6.9	-8.0	-9.3	-9.7	-10.2	-11.5	-12.1	-12.6	-12.5	-6.3
5-Feb	-13.3	-13.5	-14.1	-14.4	-15.8	-16.2	-12.6	-12.6	-12.9	-13.1	-13.0	-11.8	-10.7	-10.8	-11.0	-11.4	-12.3	-13.2	-14.0	-14.7	-15.3	-15.9	-16.1	-13.3	-10.7	
6-Feb	-16.2	-16.4	-16.6	-17.1	-17.9	-18.3	-17.6	-17.2	-16.8	-16.6	-15.2	-14.3	-13.1	-12.5	-11.9	-11.5	-11.4	-11.5	-11.1	-11.0	-11.2	-11.3	-11.2	-11.1	-14.1	-11.0
7-Feb	-11.1	-11.3	-11.4	-11.3	-11.2	-11.1	-11.1	-11.1	-10.9	-10.6	-10.1	-9.4	-8.7	-8.0	-7.8	-7.8	-8.1	-8.3	-8.2	-8.2	-8.5	-8.4	-8.9	-8.6	-9.6	-7.8
8-Feb	-8.8	-9.0	-9.0	-9.0	-8.8	-8.6	-8.7	-8.8	-8.9	-8.7	-7.9	-7.1	-6.2	-5.7	-5.6	-5.6	-5.6	-5.7	-6.2	-6.5	-6.6	-6.7	-6.7	-6.9	-7.4	-5.6
9-Feb	-7.1	-7.5	-8.1	-7.9	-8.1	-8.4	-9.0	-9.7	-10.2	-10.4	-10.3	-10.4	-10.5	-10.2	-10.1	-9.7	-9.6	-10.2	-11.1	-12.2	-13.4	-14.3	-16.5	-18.5	-10.6	-7.1
10-Feb	-19.1	-19.9	-19.3	-18.3	-17.5	-17.0	-16.5	-16.9	-17.8	-17.1	-15.5	-14.3	-13.4	-11.3	-9.4	-9.2	-9.0	-8.6	-8.0	-7.6	-8.1	-7.6	-7.8	-7.2	-13.2	-7.2
11-Feb	-6.7	-6.2	-5.0	-4.2	-3.6	-5.1	-5.1	-5.4	-4.2	-4.0	-1.8	-0.2	2.1	4.2	3.8	4.5	3.4	0.4	-0.6	-0.4	-0.6	-2.9	-4.2	-4.4	-1.9	4.5
12-Feb	-5.2	-5.8	-5.8	-6.0	-7.0	-6.8	-6.3	-5.8	-5.8	-4.6	-4.0	-2.7	0.0	-0.2	1.5	2.6	2.4	1.5	0.8	0.0	-0.9	-2.1	-3.0	-4.4	-2.8	2.6
13-Feb	-5.1	-5.6	-7.0	-9.1	-10.4	-10.2	-10.8	-10.4	-9.8	-8.9	-8.0	-7.3	-6.8	-5.8	-4.8	-3.9	-4.2	-3.9	-4.6	-5.1	-5.9	-7.1	-8.2	-9.2	-7.2	-3.9
14-Feb	-9.6	-10.2	-10.7	-11.0	-11.2	-11.2	-11.3	-11.4	-11.4	-11.4	-11.2	-11.3	-11.2	-11.2	-11.2	-11.3	-11.6	-12.0	-12.7	-13.0	-13.1	-13.3	-13.3	-13.6	-11.6	-9.6
15-Feb	-13.7	-14.1	-15.4	-15.4	-14.8	-15.2	-16.5	-17.8	-18.4	-17.2	-15.5	-14.9	-12.8	-11.3	-9.8	-8.5	-8.1	-9.8	-10.3	-10.5	-10.6	-9.6	-9.1	-9.3	-12.9	-8.1
16-Feb	-9.5	-9.7	-9.9	-10.2	-10.5	-10.9	-11.8	-12.2	-12.3	-10.8	-7.8	-4.1	-0.4	1.8	3.6	5.0	5.4	5.2	4.7	3.1	3.5	3.9	2.9	1.1	-3.3	5.4
17-Feb	1.7	-1.7	-5.4	-5.5	-7.1	-6.5	-6.3	-7.8	-7.5	-6.4	-4.6	-2.4	-1.1	0.4	1.6	2.6	2.0	-0.8	-1.4	-3.1	-6.2	-6.7	-6.9	-7.7	-3.6	2.6
18-Feb	-8.4	-9.9	-10.9	-11.2	-12.4	-13.3	-14.7	-15.8	-14.9	-13.5	-12.0	-9.8	-7.8	-6.0	-4.8	-4.0	-4.0	-5.5	-6.9	-8.5	-10.6	-12.3	-13.6	-14.8	-10.2	-4.0
19-Feb	-15.5	-17.0	-17.1	-17.7	-19.4	-19.7	-20.2	-20.2	-21.1	-19.0	-16.8	-14.6	-12.5	-10.7	-9.9	-9.7	-9.4	-10.7	-12.0	-12.5	-14.0	-14.9	-15.6	-16.5	-15.3	-9.4
20-Feb	-17.6	-17.9	-18.9	-18.0	-16.1	-14.8	-14.0	-14.7	-14.2	-12.4	-10.7	-9.3	-8.4	-7.5	-6.3	-5.8	-5.4	-5.2	-5.1	-5.2	-5.8	-6.4	-7.2	-8.3	-10.6	-5.1
21-Feb	-9.6	-10.8	-11.8	-12.7	-12.4	-13.1	-14.3	-14.1	-13.1	-11.2	-9.7	-6.7	-3.2	-0.1	2.7	6.4	6.1	5.5	4.6	2.8	-1.6	-3.1	-4.4	-5.6	-5.4	6.4
22-Feb	-6.5	-7.6	-8.1	-9.6	-10.2	-10.2	-10.1	-10.0	-11.1	-10.1	-7.3	-4.5	-2.6	-1.9	-1.4	-0.9	-1.0	-2.7	-4.3	-5.7	-6.8	-7.2	-6.7	-6.4	-6.4	-0.9
23-Feb	-5.8	-5.0	-5.3	-5.2	-4.5	-4.2	-3.7	-3.4	-3.0	-1.3	0.8	3.1	4.7	6.7	8.1	7.8	6.6	5.2	4.1	3.9	3.7	2.8	1.9	0.2	0.8	8.1
24-Feb	-6.1	-7.2	-7.5	-9.0	-9.6	-9.4	-9.6	-10.1	-10.4	-10.6	-10.7	-10.6	-10.3	-10.2	-10.3	-10.5	-11.0	-11.7	-12.2	-12.7	-13.5	-14.2	-15.2	-15.7	-10.8	-6.1
25-Feb	-16.2	-16.5	-17.0	-17.4	-17.7	-19.1	-20.3	-21.2	-21.2	-20.8	-20.1	-18.9	-17.8	-17.0	-16.4	-16.0	-16.3	-17.7	-19.1	-20.2	-21.1	-21.9	-22.6	-23.1	-19.0	-16.0
26-Feb	-23.7	-24.6	-25.3	-25.7	-26.5	-26.7	-27.0	-27.2	-27.0	-25.6	-24.3	-23.7	-22.4	-21.2	-19.6	-19.5	-19.5	-19.8	-20.2	-21.3	-22.2	-22.5	-23.4	-23.8	-23.5	-19.5
27-Feb	-23.8	-25.2	-26.0	-25.6	-26.4	-27.3	-27.6	-28.2	-27.8	-26.0	-22.7	-19.5	-18.0	-17.7	-16.9	-16.1	-15.7	-16.1	-17.0	-17.8	-20.4	-21.1	-21.5	-21.0	-21.9	-15.7
28-Feb	-22.9	-23.7	-24.1	-23.8	-23.9	-23.8	-24.2	-24.6	-23.7	-22.5	-20.4	-17.0	-14.5	-13.4	-12.3	-12.0	-12.0	-11.7	-11.7	-12.4	-12.5	-12.7	-13.2	-13.7	-17.8	-11.7
29-Feb	-14.0	-14.4	-14.4	-14.7	-15.2	-15.7	-15.3	-15.4	-14.5	-14.3	-13.7	-13.4	-13.3	-13.3	-13.1	-12.7	-12.3	-12.7	-13.6	-13.7	-14.1	-14.2	-14.0	-15.1	-14.0	-12.3
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Fort Hills - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Fort Hills - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	59	8.48	8.48
-20 - 0	574	82.47	90.95
0 - 10	63	9.05	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

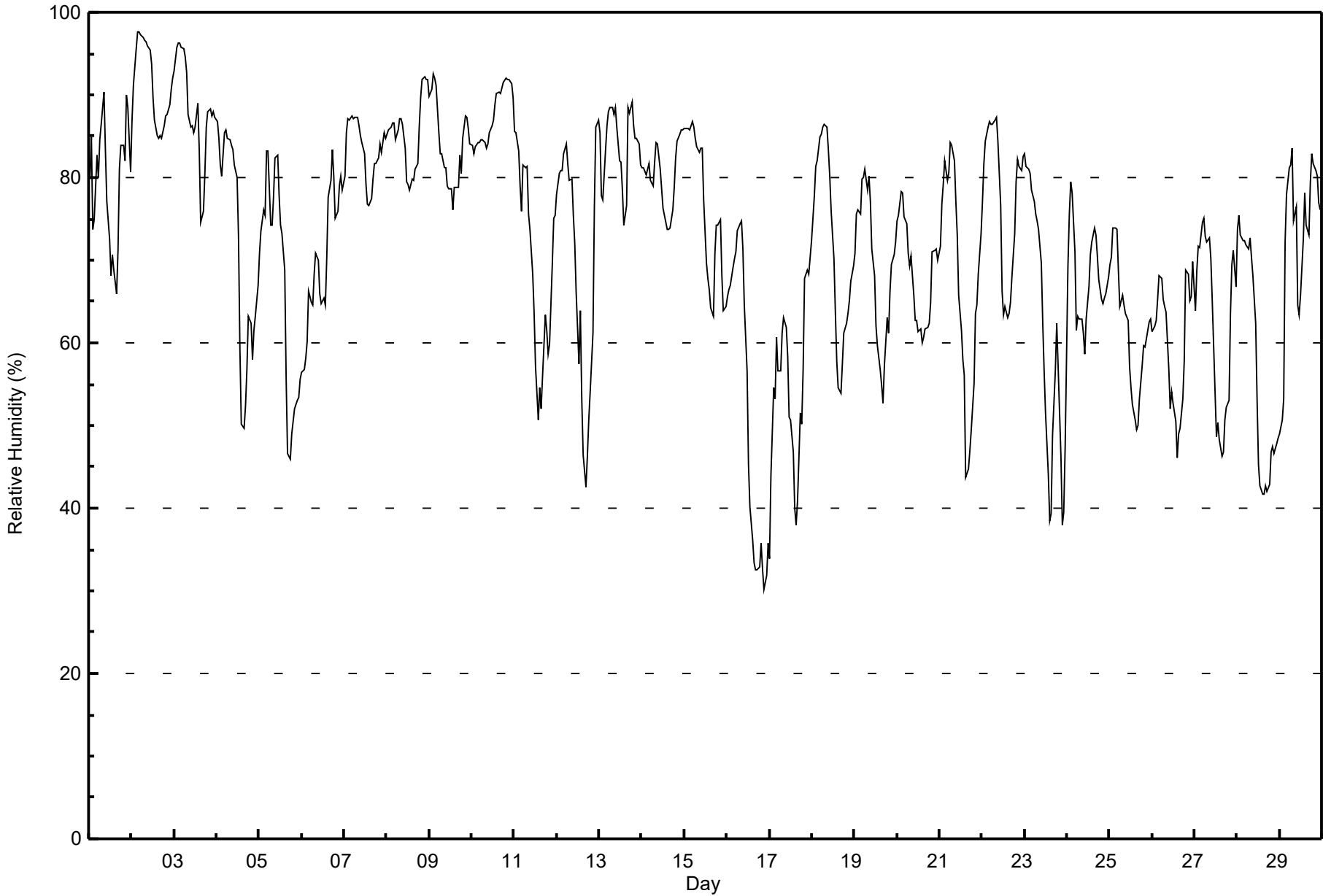
Relative Humidity (RH) - %
Fort Hills - February 2024

Maximum Value: 97.6 % on Feb 2 04:00 Maximum Daily Average: 91.3 % on Feb 2																						Hours in Service:	696			
Minimum Value: 30.2 % on Feb 16 22:00 Minimum Daily Average: 51.8 % on Feb 16																						Hours of Data:	696			
Maximum Diurnal Average: 80.3 % at hour 5 Minimum Diurnal Average: 61.0 % at hour 16																						Hours of Missing Data:	0			
Monthly Average: 72.10 % Percentiles: P ₁ = 33.9 P ₁₀ = 50.9 Q ₁ = 63.1 Median = 74.6 Q ₃ = 83.5 P ₉₀ = 87.2 P ₉₉ = 96.2																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	79.9	84.8	73.7	74.9	82.7	80.0	84.6	86.4	90.3	83.4	77.0	72.5	68.2	70.6	68.9	65.9	71.2	81.0	84.0	83.9	82.1	89.9	88.5	80.6	79.4	90.3
2-Feb	87.0	91.2	95.6	97.6	97.6	97.2	96.9	96.6	96.4	96.0	95.5	93.7	89.7	87.0	85.2	84.8	85.1	84.8	86.3	87.4	87.7	88.8	90.7	92.1	91.3	97.6
3-Feb	92.9	95.7	96.3	96.2	95.7	95.5	94.7	92.7	87.6	86.1	86.3	85.4	86.2	88.9	83.2	74.6	75.9	80.6	86.0	87.9	88.3	87.4	87.9	87.3	88.3	96.3
4-Feb	86.8	84.7	81.5	80.2	85.5	85.7	84.7	84.6	83.9	83.4	81.5	80.0	72.9	59.3	50.2	49.7	52.4	56.8	63.2	62.3	58.0	61.5	63.2	67.0	71.6	86.8
5-Feb	70.9	73.6	76.2	75.4	83.1	83.2	74.2	74.2	77.6	82.4	82.6	77.8	74.3	73.3	68.8	55.8	46.6	45.9	49.0	50.6	52.0	53.1	53.3	55.6	67.1	83.2
6-Feb	56.4	56.7	58.2	60.2	66.3	64.9	64.5	68.4	70.8	70.1	66.0	64.8	65.4	64.5	70.3	77.6	79.6	83.5	80.2	75.1	76.0	78.9	80.1	78.5	69.9	83.5
7-Feb	80.2	85.4	87.1	86.9	87.4	87.1	87.2	87.2	86.2	85.1	84.2	83.0	79.2	76.7	76.6	77.5	79.9	81.7	81.6	82.3	84.1	83.1	85.4	84.8	83.3	87.4
8-Feb	85.2	85.8	86.1	86.6	86.6	84.6	85.8	87.2	87.1	86.4	83.5	79.4	79.1	78.5	79.8	79.7	81.0	81.7	86.1	89.7	91.8	92.2	91.8	91.9	85.3	92.2
9-Feb	89.9	90.7	92.5	92.0	91.2	85.4	82.8	82.9	81.2	81.2	79.0	78.7	78.6	76.2	78.8	78.8	78.9	82.8	80.6	84.7	87.4	87.3	85.9	84.0	83.8	92.5
10-Feb	83.9	82.8	83.8	84.3	84.2	84.5	84.6	84.2	83.5	84.1	85.4	86.2	87.0	88.9	90.1	90.3	90.2	90.9	91.5	92.0	91.9	91.8	91.3	89.6	87.4	92.0
11-Feb	85.6	85.5	83.2	79.0	75.9	81.6	81.2	81.3	75.6	73.8	68.3	63.5	57.1	50.7	54.6	52.0	55.9	63.4	61.6	58.7	59.8	69.6	75.0	75.5	69.5	85.6
12-Feb	78.0	80.5	80.9	80.8	82.9	84.2	81.6	79.7	79.9	75.4	72.0	66.0	57.4	64.0	53.3	46.4	42.6	46.3	50.7	54.0	61.3	76.5	86.2	87.0	69.5	87.0
13-Feb	85.5	77.7	77.3	83.4	86.2	87.9	88.6	88.5	87.6	88.5	86.1	82.0	81.9	78.4	74.2	76.6	88.4	87.7	89.1	86.2	84.8	84.7	84.0	81.6	84.0	89.1
14-Feb	81.2	81.1	80.4	81.1	81.7	79.7	79.0	81.9	84.3	84.1	81.1	78.6	76.3	74.6	73.7	73.8	73.8	76.1	78.8	82.3	84.4	85.2	85.7	85.8	80.2	85.8
15-Feb	86.0	85.9	85.9	85.7	86.7	86.1	84.8	83.8	83.0	83.6	83.6	77.3	69.7	67.8	66.4	64.2	63.2	70.7	74.2	74.2	74.9	68.1	63.8	64.4	76.4	86.7
16-Feb	65.6	66.5	67.0	69.1	70.2	71.0	73.6	74.5	74.8	71.3	64.5	56.6	45.3	40.2	36.1	33.4	32.6	32.5	32.9	35.7	32.6	30.2	31.8	35.8	51.8	74.8
17-Feb	34.0	43.9	54.6	53.2	60.7	56.7	56.6	61.2	63.0	61.9	58.3	51.0	50.6	46.8	40.1	38.0	40.9	51.5	50.2	56.9	67.8	68.9	68.3	70.4	54.4	70.4
18-Feb	72.4	77.8	81.4	82.0	84.9	85.3	86.1	86.5	86.0	83.3	80.2	75.9	70.1	63.7	57.7	54.5	53.9	57.4	61.3	62.3	63.6	65.0	67.4	69.4	72.0	86.5
19-Feb	70.8	75.6	76.0	75.7	79.8	80.0	81.0	78.5	80.2	77.1	71.3	68.1	62.0	59.6	56.8	54.9	52.8	57.4	63.0	61.2	66.4	69.5	70.7	72.2	69.2	81.0
20-Feb	74.7	75.5	78.4	78.2	75.3	74.5	70.8	69.3	70.4	65.8	62.7	62.8	61.4	61.7	60.0	60.7	61.6	61.9	62.3	65.0	71.1	71.2	71.3	70.0	68.2	78.4
21-Feb	71.7	76.8	79.1	82.0	79.6	80.7	84.2	84.0	82.0	77.1	73.1	65.7	61.5	57.9	56.1	43.7	44.7	47.0	49.6	55.1	63.6	64.6	68.4	73.2	67.6	84.2
22-Feb	77.1	81.8	84.4	86.1	86.7	86.4	86.5	87.0	87.3	84.3	76.6	66.2	63.4	64.4	63.1	63.6	65.0	67.9	73.2	79.4	82.2	81.4	80.9	82.5	77.4	87.3
23-Feb	82.9	81.4	81.0	80.6	78.6	77.2	75.7	74.8	73.7	69.6	62.5	56.6	51.6	44.1	38.5	39.3	48.8	56.6	62.3	57.1	46.3	38.0	39.5	47.2	61.0	82.9
24-Feb	69.4	75.6	79.4	78.2	71.0	61.6	63.2	62.8	62.9	61.2	58.7	62.9	66.8	70.7	72.2	73.9	73.0	70.5	67.6	65.3	64.7	65.5	65.9	68.0	68.0	79.4
25-Feb	69.5	70.3	73.9	73.9	73.8	68.7	64.4	65.8	64.6	63.5	62.7	57.1	54.6	52.6	50.7	49.5	50.0	53.2	57.2	59.6	59.5	60.6	62.5	62.9	61.7	73.9
26-Feb	61.4	62.1	62.7	65.3	68.2	67.8	65.2	64.5	63.8	56.8	52.1	54.1	52.7	50.5	46.0	49.0	49.6	53.2	57.8	68.9	68.3	65.0	65.7	69.8	60.0	69.8
27-Feb	63.9	68.8	71.8	71.5	74.5	75.1	73.0	72.2	72.8	70.2	65.1	54.1	48.6	50.3	48.2	46.3	46.8	50.6	52.2	53.0	63.5	69.4	71.3	66.8	62.5	75.1
28-Feb	73.8	75.4	73.0	72.3	72.3	71.9	71.4	72.7	70.4	68.1	62.4	53.0	45.3	42.8	41.7	41.8	42.7	42.0	43.0	46.7	47.5	46.6	47.8	48.4	57.2	75.4
29-Feb	49.0	50.7	53.2	72.1	78.0	81.2	81.5	83.6	74.7	76.4	64.6	63.5	65.8	72.5	78.1	74.2	73.1	79.3	82.8	81.6	80.8	80.1	77.0	76.0	72.9	83.6
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Fort Hills - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Fort Hills - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	16	2.30	2.30
40 - 60	120	17.24	19.54
60 - 80	306	43.97	63.51
80 - 100	254	36.49	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

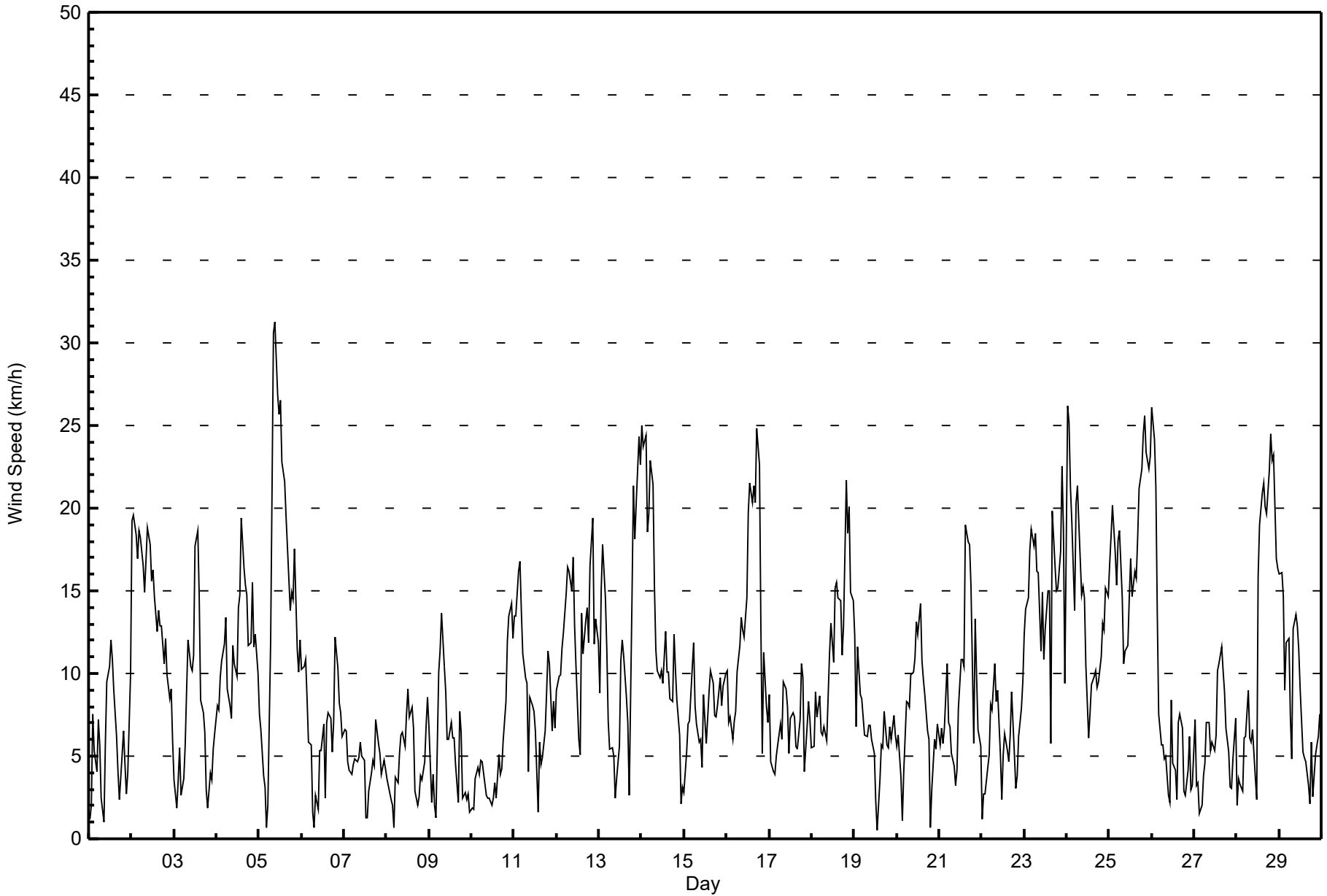
Wind Speed (WS) - km/h
Fort Hills - February 2024

Maximum Speed: 31 km/h on Feb 5 10:00 Maximum Daily Speed Average: 17.7 km/h on Feb 25		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Percent Operational Time: 100.0																								
Minimum Speed Value: 1 km/h on Feb 19 14:00 Minimum Daily Speed Average: 0.5 km/h on Feb 7 Maximum Diurnal Speed Average: 3.7 km/h at hour 1 Minimum Diurnal Speed Average: 0.3 km/h at hour 11 Monthly Average Velocity: 1.6 km/h 49.3 deg Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 5 Median = 8 Q ₃ = 13 P ₉₀ = 18 P ₉₉ = 26																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	NE1	SSE2	S8	S5	SSW4	SSE7	SSW6	SSW2	WSW1	S6	S10	S10	S12	SE11	SE9	SE6	ESE4	E2	N4	N7	NNE5	NE3	N4	NNE10	SSE2.8	S12
2-Feb	NNE19	NNE20	NNE18	NNE17	NNE19	NNE18	NNE17	NNE15	NNE17	NNE19	NNE18	NNE16	NNE16	NNE15	NE13	NNE14	NNE13	NE13	NNE11	NNE12	NE10	NNE9	NNE9	N6	NNE14.5	NNE20
3-Feb	NW4	E2	E4	SE6	SE3	N4	N6	N9	N12	N10	NNE10	NNE11	NNE18	NNE19	NNE15	NNE8	NE8	NE6	SSE3	SW2	S4	S4	SSE5	SSE6	NNE4.6	NNE19
4-Feb	S8	SSE8	SSE10	S11	SSE12	SSE13	SSE9	SSE8	S7	SSW12	SW11	SSW10	S14	S15	S19	SSE16	S15	S15	S12	S12	SSE15	S12	S12	SSE10	S11.6	SSE19
5-Feb	SE8	SE7	SSW4	S3	WSW1	SE2	NE12	N21	NNE31	N31	N27	NNE26	NNE27	NNE23	N22	N19	NNE18	N14	N15	N14	N18	N11	N10	N12	NNE13.7	N31
6-Feb	N10	N10	N11	N8	N6	NNW6	NW2	N1	SW3	W2	W5	SW5	S7	WSW2	SSW7	SSW8	S7	S5	S7	S12	S10	S8	S8	SSW6	SW1.8	S12
7-Feb	S7	S7	S5	S4	SSW4	SSW4	S5	S5	SSE5	S6	S5	S5	SW1	N1	NNE3	NNE4	N5	NNW4	N7	N6	N5	N4	NW5	N4	S0.5	N7
8-Feb	WNW4	NW3	WNW2	NW2	ENE1	SE4	SSE3	SSE5	SSW6	SSW6	S6	SSW8	S9	SSW7	SE8	SE7	SE3	NE2	NNW3	NNW4	N4	N5	N7	N9	SSW1.1	S9
9-Feb	N7	W2	SW4	SW2	NNW1	NE10	NNE11	NNE14	NNE10	NNE9	NE6	SE6	SE7	ESE6	SE6	ENE4	ENE2	NNE8	NE6	E2	NW3	NW2	NW3	W2	NE3.1	NNE14
10-Feb	SW2	S2	SSE4	S4	SSE4	SE5	SSE5	S3	S3	SSW2	SSE2	SW2	WSW2	SW3	WSW2	WSW5	WSW4	SW4	SW6	S8	S12	S13	SSE14	S12	S4.6	SSE14
11-Feb	SW13	SSW14	SW16	WSW17	SW14	SSW11	S10	SSW9	SSW4	SSE9	S8	S8	SW7	W2	E6	E5	ESE5	SSW7	SSW9	SW11	SW11	S7	S8	S7	SSW7.6	WSW17
12-Feb	SSE9	SE10	SSE10	SE12	SE12	SE15	SSE16	SSE16	SSE15	S17	S13	S10	SSE6	ESE5	NW14	NNW11	NW13	NW14	NW12	NNW17	NNW19	N12	N13	NNE12	SSE1.3	NNW19
13-Feb	N9	NNE15	NNE18	NNE15	NE11	NNE7	W5	WSW6	SW5	SW2	SW4	S6	SSE11	S12	S11	S9	S7	NW3	NNE15	NNE21	N18	NNE20	NNE24	N23	NNE5.4	NNE24
14-Feb	N25	NNE24	NNE24	NE19	NNE20	NNE23	NNE21	NNE15	NE11	NE10	NNE10	NNE10	NNE9	NNE13	NNE10	NE10	NE8	NE8	NE12	NE10	NE8	NE6	ENE2	SSE3	NNE12.5	N25
15-Feb	S3	SSW5	S7	SSW7	SSW10	SSW12	S8	SSE7	SSE6	S6	SSE4	SE9	ESE6	ESE7	ESE9	ESE10	ESE9	SE7	SE7	SSE8	SE10	S8	SSW9	SSW10	SSE6.6	SSW12
16-Feb	SSW10	SSE7	SE7	SSE6	S7	SSE8	SSE10	SE12	SE13	SE13	SSE12	SSE15	S20	S22	SSW20	SW21	SW20	SW25	WSW23	SW13	WNW5	NW11	WNW8	W7	SSW9.4	SW25
17-Feb	WNW9	N5	SSW4	SSE4	S5	S6	SE7	SSE6	SE10	SE9	SE8	SSE5	SE7	SE8	ESE7	ENE6	NE5	NE7	NE11	NNE10	NNE4	N7	N8	N7	E2.8	NE11
18-Feb	N6	N6	N9	N7	N9	N6	NNW6	N7	N6	N9	N11	N13	N11	N15	N15	N15	N14	N11	N13	N22	N18	NNE20	N15	N14	N11.5	N22
19-Feb	N12	NNW7	N12	N9	N8	N7	N6	NNW6	NNW7	N7	NNW6	NW5	NNW2	SSW1	N4	N6	NE6	NE8	NE6	NNE6	N7	N6	N7	N6	N6.1	N12
20-Feb	N6	NNW6	NNW4	S1	SSE4	SE8	SSE8	SSE8	SSE10	S10	SSE11	SSE13	SSE12	SSE14	SSE11	SSE10	SSE9	SSE6	S6	N1	N3	N6	N5	NNW7	SSE4.3	SSE14
21-Feb	N6	NNW7	N6	N7	N11	N7	NNW7	NNW5	N4	WNW3	SW4	S8	SSE11	SE11	SE10	SSW19	SW18	SW18	SW15	WSW6	N13	N10	N7	N6	W2.3	SSW19
22-Feb	ENE1	E3	N3	NNW4	N5	N8	N8	N11	NNW8	NNW9	N5	NNE2	SE5	ESE6	E5	NE5	NNE6	N9	N5	N3	SSW4	SSE6	S8	SE9	NNE2.7	N11
23-Feb	SSE12	SSE14	SSE15	SSE17	SSE19	SSE18	S19	S16	SSE16	S11	SW15	SW11	SW13	SW15	WNW15	WNW6	NW20	NNW17	WSW15	WSW15	WNW17	WNW23	WNW19	NW9	SW8.0	WNW23
24-Feb	NNE26	NNE25	N21	NNE19	N14	NNW20	NNW21	NNW19	N15	NNW15	NNW15	N11	NNE6	NE8	NE9	NE10	NE10	ENE9	NE9	NE11	NNE13	NNE13	NNE15	NNE15	NNE13.4	NNE26
25-Feb	NNE17	NNE18	NNE20	NNE17	NNE15	NNE18	NNE19	NNE15	NNE11	NNE11	N12	NNE15	NE17	NNE15	NE16	NE16	NE18	NE21	NNE22	NNE25	NNE26	N23	N22	N23	NNE17.7	NNE26
26-Feb	N26	N24	N21	N14	NNW8	NNW6	NNW6	WNW5	SW5	WNW3	NNW2	N8	N5	WSW4	SSW2	SE7	SE8	SSE7	SE3	WSW3	SW4	SSW6	SSW3	WNW3	N3.5	N26
27-Feb	NNW7	NW3	W3	WNW2	WSW2	SSW4	S5	S7	S7	SSE5	S6	SSE5	SE6	SE10	SE11	SE12	SE10	SE9	ESE7	E5	NNW3	SSE3	SSE5	SSE7	SSE4.1	SE12
28-Feb	SSE2	S4	S3	SSW3	S6	SSW6	SSW9	SSW6	S6	W7	W4	SSW2	SSE16	SSE19	SSE21	SSE22	SSE20	SE20	SE22	SE24	SE23	SSE23	SSE17	SE16	SSE11.3	SE24
29-Feb	SE16	SE16	SE15	ESE9	NNE12	N12	NNE7	NW5	SE13	SE14	SE13	SE11	SSE9	SE5	SSE5	ESE5	SE3	SSW2	SW6	SW3	SSW5	SW6	W6	W8	SE4.3	SE16
NNE3.7 NNE3.4 NNE2.9 NE1.9 NE1.8 NE1.8 NE1.6 NE1.3 ENE1.8 ENE0.9 E0.3 ESE1.3 SE3.1 ESE3.3 ESE2.7 ESE2.2 E1.5 NE0.8 NNE1.3 NNE2.5 NNE3.2 N2.6 N2.5 NNE2.9																								Diurnal Average		
NNE26 NNE25 NNE24 NNE19 NNE20 NNE23 NNE21 N21 NNE31 N31 N27 NNE26 NNE27 NNE23 N22 SSE22 SW20 SW25 WSW23 NNE25 NNE26 N23 NNE24 N23																								Diurnal Maximum		
All monthly, daily, and diurnal averages have been calculated using vector methods																										



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Fort Hills - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Fort Hills - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	184	26.44	26.44
6 - 11	293	42.10	68.53
12 - 19	165	23.71	92.24
20 - 28	52	7.47	99.71
29 - 38	2	0.29	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Wind Speed (WS) - km/h
Fort Hills - February 2024

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	23	5	5	5	6	6	9	21	20	19	17	10	8	8	12	10	184
6 - 11	57	24	26	2	1	10	33	36	45	22	8	3	3	3	2	18	293
12 - 19	26	44	9	0	0	0	14	24	18	5	9	3	0	4	4	5	165
20 - 28	13	19	1	0	0	0	4	4	2	1	3	1	0	1	1	2	52
29 - 38	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	120	93	41	7	7	16	60	85	85	47	37	17	11	16	19	35	696

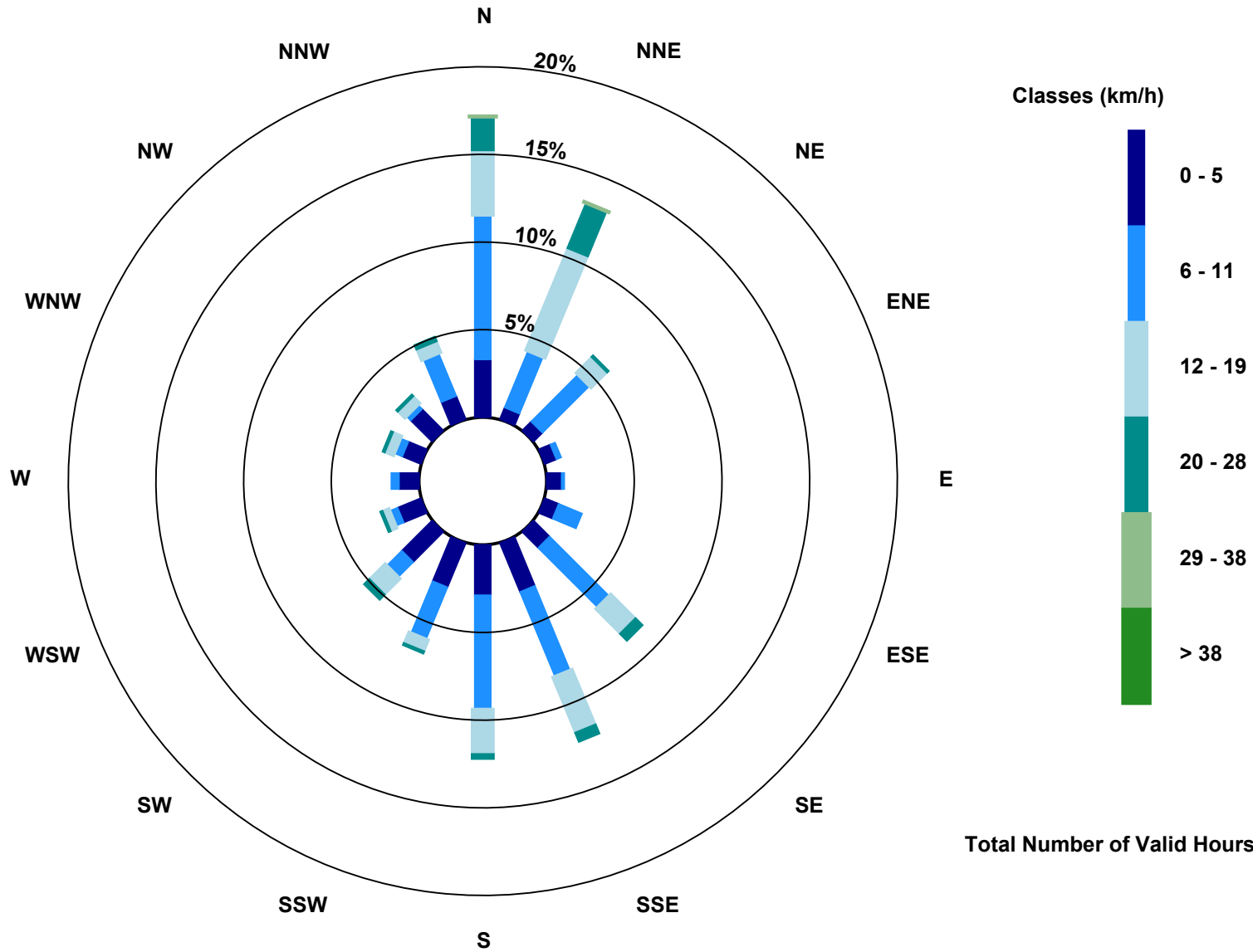
Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Fort Hills



Total Number of Valid Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Fort Hills - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 28 13:00														Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0											
Minimum Value: 0 km/h on Feb 8 04:00																									
Percentiles: P ₁ = 0 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																									
Day	Hourly Period Ending At (MST)																							Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24
1-Feb	1	3	2	2	1	3	1	2	1	1	2	3	2	1	1	2	1	1	1	2	2	2	2	3	3
2-Feb	5	4	4	3	3	3	4	3	3	3	3	3	3	3	2	3	2	3	2	2	2	2	1	2	5
3-Feb	1	1	1	1	1	2	1	1	2	2	2	3	3	3	3	2	1	2	1	1	1	0	1	1	3
4-Feb	1	1	2	2	2	2	3	2	1	1	3	2	2	3	3	2	2	1	3	3	2	2	2	2	3
5-Feb	2	2	1	2	1	2	3	6	5	5	5	4	4	4	4	4	3	3	3	2	3	3	2	2	6
6-Feb	2	1	2	1	1	1	2	1	1	1	1	1	2	1	2	1	1	1	2	3	1	1	1	1	3
7-Feb	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	2
8-Feb	1	1	0	0	1	1	1	1	1	2	2	2	2	2	1	1	2	1	1	1	0	1	1	1	2
9-Feb	2	1	0	1	2	2	2	2	2	2	1	1	1	1	1	1	1	2	3	1	1	1	1	1	3
10-Feb	1	1	1	1	0	1	1	0	0	0	0	0	0	1	1	1	1	1	1	2	2	2	2	1	2
11-Feb	2	2	2	3	2	2	3	3	3	2	2	2	2	1	2	2	1	1	1	2	2	1	1	1	3
12-Feb	1	1	1	2	2	2	2	2	2	2	3	2	2	1	6	6	4	5	4	4	4	3	2	2	6
13-Feb	2	3	3	2	2	2	1	1	2	1	1	1	1	1	2	2	1	6	2	4	4	5	5	4	6
14-Feb	5	4	4	4	4	4	4	3	3	2	2	1	2	2	2	2	1	1	2	2	1	1	1	1	5
15-Feb	0	1	1	1	2	2	1	1	1	1	2	1	1	1	2	2	1	1	1	2	1	3	2	2	3
16-Feb	4	2	1	1	1	1	1	1	1	1	1	2	3	3	3	3	3	4	5	4	3	3	3	2	5
17-Feb	2	2	3	1	1	2	1	2	2	2	1	2	1	1	2	1	1	1	2	3	2	1	2	2	3
18-Feb	3	1	2	2	2	2	2	2	3	3	2	2	2	3	2	3	2	2	2	6	4	3	3	2	6
19-Feb	3	1	3	2	1	1	1	2	1	1	1	1	1	1	2	1	1	2	1	2	1	1	1	2	3
20-Feb	1	1	2	1	1	1	1	1	2	3	1	1	1	2	2	2	2	2	1	1	1	3	1	2	3
21-Feb	2	1	2	2	2	2	1	1	1	1	1	2	2	1	2	3	2	3	2	3	3	3	1	2	3
22-Feb	2	1	1	1	2	3	2	2	2	2	1	1	2	2	1	1	1	1	1	2	2	2	1	1	3
23-Feb	1	1	1	3	3	2	2	2	2	2	4	3	3	3	5	5	5	4	3	4	5	6	4	5	6
24-Feb	5	5	4	5	4	5	5	4	3	4	3	3	2	2	2	2	2	1	2	2	2	3	2	2	5
25-Feb	3	3	3	3	3	3	3	3	3	3	2	2	3	3	4	3	3	4	4	4	5	5	4	4	5
26-Feb	5	5	4	4	2	1	1	1	1	1	2	3	2	2	2	2	2	2	1	1	1	1	2	2	5
27-Feb	1	1	1	1	2	1	2	1	2	1	1	2	3	2	2	2	1	2	1	2	2	2	2	3	3
28-Feb	1	1	1	2	2	2	1	2	1	1	2	3	7	3	3	4	3	4	4	4	4	4	3	3	7
29-Feb	3	3	3	4	2	2	3	2	6	3	2	2	2	2	1	1	1	2	1	2	1	1	1	2	6
														Diurnal Maximum											
														5 5 4 5 4 5 5 6 6 5 5 4 7 4 6 6 5 6 5 6 5 6 5 5 5											



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Fort Hills - February 2024

Direction of Maximum Speed: 11 deg on Feb 5 10:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 23.4 deg on Feb 25	Hours of Data: 696
Direction of Minimum Speed: 205 deg on Feb 19 14:00	Hours of Missing Data: 0
Direction of Minimum Daily Speed Average: 0.5 deg on Feb 7	Percent Operational Time: 100.0
Monthly Average Direction: 49.3 deg	

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	34	162	169	179	198	159	207	204	249	181	186	173	184	139	132	125	102	92	2	8	23	47	355	19	151.5
2-Feb	15	12	19	18	14	16	18	13	12	17	16	13	15	23	38	27	24	38	25	25	45	20	27	8	19.7
3-Feb	320	99	100	145	134	0	9	4	3	351	20	12	28	29	27	48	51	152	229	173	188	165	159	30.9	
4-Feb	171	165	168	176	149	165	164	163	178	202	214	199	176	174	169	165	176	179	187	174	158	169	180	160	173.7
5-Feb	141	145	206	185	248	144	42	7	13	11	11	20	18	15	6	9	12	8	7	4	9	4	4	9	13.7
6-Feb	10	7	10	1	351	338	323	355	233	278	266	233	181	257	213	212	191	177	183	176	181	179	179	198	215.2
7-Feb	190	188	170	174	197	196	171	172	159	177	179	182	235	1	14	19	8	341	8	8	2	359	326	6	179.2
8-Feb	303	314	302	306	77	126	153	168	194	211	187	206	184	197	134	141	139	51	328	328	356	349	353	357	194.3
9-Feb	1	267	215	229	327	36	22	13	14	19	51	127	141	117	125	74	66	16	55	101	306	314	318	279	36.6
10-Feb	225	170	161	175	148	138	164	186	186	203	166	226	250	222	250	246	245	234	223	182	180	185	163	190	189.1
11-Feb	214	209	231	244	222	203	189	199	193	168	186	178	222	264	95	101	118	196	192	218	233	188	185	172	202.9
12-Feb	149	141	156	140	139	140	150	153	157	180	190	188	163	107	317	329	304	316	314	335	345	355	7	15	157.7
13-Feb	8	14	14	27	48	29	269	242	231	231	216	185	156	173	170	186	172	308	30	12	4	17	13	5	18.7
14-Feb	7	12	23	34	20	17	25	32	42	39	26	15	20	23	32	34	56	44	49	49	47	48	62	163	28.2
15-Feb	177	194	176	202	207	197	183	168	168	171	152	135	118	117	117	115	116	146	168	152	138	182	192	195	162.3
16-Feb	203	165	144	160	180	159	152	139	138	140	151	158	180	189	205	215	223	225	243	219	287	325	301	280	195.7
17-Feb	283	6	210	147	172	188	141	147	133	126	134	160	131	134	120	72	40	46	46	26	17	1	2	11	93.6
18-Feb	10	2	4	353	355	357	346	349	1	353	1	3	2	3	4	5	4	358	358	3	9	19	11	10	3.4
19-Feb	9	341	3	5	349	349	354	347	345	351	342	310	340	205	349	6	40	39	34	26	360	1	3	351	360.0
20-Feb	350	346	333	173	147	144	161	163	157	175	159	150	152	150	157	149	153	157	184	352	2	350	353	335	152.9
21-Feb	350	348	353	350	1	352	342	340	359	288	229	191	158	144	146	213	216	234	236	257	1	359	350	359	275.2
22-Feb	58	96	10	334	4	358	354	4	345	342	356	28	128	111	83	52	19	4	1	349	192	157	174	141	25.1
23-Feb	147	148	151	155	154	165	172	179	158	176	222	222	217	221	283	291	312	291	257	257	291	287	283	309	221.0
24-Feb	27	19	10	13	355	343	337	341	353	347	337	4	33	47	39	34	41	58	49	46	27	23	20	21	12.1
25-Feb	18	13	12	16	29	24	24	24	27	20	10	28	40	33	38	41	39	40	32	25	14	9	11	11	23.4
26-Feb	7	4	6	4	341	338	333	297	234	303	335	358	352	250	204	135	144	160	136	237	220	206	210	303	350.2
27-Feb	342	320	262	289	239	193	178	184	183	167	174	166	128	136	136	133	141	145	111	99	340	149	157	151	151.3
28-Feb	160	181	191	207	179	193	196	196	176	259	273	205	158	161	162	167	155	142	131	129	139	149	150	132	155.9
29-Feb	132	126	125	112	18	6	24	316	133	126	135	143	158	143	149	121	128	210	231	218	197	230	265	271	133.5
18.5 28.6 31.8 42.1 42.8 49.3 56.2 34.4 76.9 59.5 85.3 122.3 129.1 120.1 106.5 104.5 85.2 48.3 27.3 22.6 12.5 5.3 0.9 11.6																									
Diurnal Average																									

All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Fort Hills - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 97 deg on Feb 19 14:00 Minimum Value: 5 deg on Feb 16 10:00 Percentiles: P ₁ = 7 P ₁₀ = 9 Q ₁ = 11 Median = 13 Q ₃ = 22 P ₉₀ = 38 P ₉₉ = 73																	Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	51	47	20	13	15	20	35	68	54	15	15	19	13	8	12	27	22	40	17	13	26	58	56	15	68
2-Feb	10	11	10	10	9	10	12	11	10	9	9	11	11	11	12	12	10	13	15	15	12	11	13	16	16
3-Feb	43	63	24	12	45	57	24	11	12	12	15	12	10	10	12	20	11	12	45	54	14	11	13	11	63
4-Feb	6	9	7	12	8	7	9	10	11	7	25	24	13	12	8	9	7	7	10	11	9	12	14	16	25
5-Feb	13	8	20	8	72	64	13	14	11	12	11	10	10	12	14	13	10	10	11	11	11	12	12	9	72
6-Feb	8	8	7	11	14	19	43	64	55	33	16	22	24	61	21	14	12	13	18	10	9	9	10	9	64
7-Feb	10	11	10	10	15	23	22	15	10	12	18	47	56	70	32	19	11	16	9	12	18	27	17	33	70
8-Feb	43	11	29	34	46	19	15	24	12	25	21	18	25	27	14	16	17	31	14	11	13	11	14	14	46
9-Feb	11	59	9	30	51	13	11	8	9	11	25	22	12	22	17	26	56	18	23	46	32	31	22	33	59
10-Feb	47	53	21	15	13	8	13	12	16	18	25	27	16	22	36	10	17	24	19	23	10	10	8	15	53
11-Feb	8	10	14	7	11	9	28	24	45	29	38	25	28	91	26	26	28	12	10	12	10	27	13	18	91
12-Feb	9	9	16	8	8	6	8	14	10	9	12	26	37	35	24	15	14	12	14	11	13	13	13	9	37
13-Feb	13	10	10	10	13	22	13	12	28	37	28	33	9	8	11	13	7	72	12	12	13	12	12	13	72
14-Feb	12	12	11	12	10	10	9	10	12	14	10	13	12	16	12	14	13	9	9	13	14	52	16	16	52
15-Feb	11	9	6	22	9	8	11	9	8	8	32	11	17	17	18	18	13	15	12	8	12	30	10	28	32
16-Feb	16	25	16	13	12	22	9	8	6	5	11	15	14	11	10	8	7	8	14	19	67	14	23	21	67
17-Feb	12	37	78	47	24	27	15	20	19	14	14	28	16	20	16	23	20	15	14	19	52	10	11	21	78
18-Feb	48	13	9	14	10	13	14	13	18	16	11	12	12	14	12	10	11	12	12	15	12	8	9	10	48
19-Feb	9	17	12	17	11	12	9	18	10	11	17	40	67	97	47	25	34	10	13	23	12	15	15	24	97
20-Feb	12	21	51	61	20	12	13	12	10	12	17	7	8	8	14	7	11	14	14	92	34	17	13	12	92
21-Feb	14	10	15	11	11	14	10	10	13	29	24	26	16	20	26	8	8	8	9	66	13	12	9	13	66
22-Feb	68	30	47	26	20	13	18	13	24	18	23	74	26	22	20	23	29	12	12	29	43	15	8	12	74
23-Feb	7	8	7	6	8	8	9	7	17	22	19	21	14	9	20	44	17	22	14	13	14	12	13	49	49
24-Feb	11	12	11	13	18	12	11	12	16	17	13	29	29	21	16	12	14	10	9	9	11	9	9	11	29
25-Feb	10	10	10	10	10	9	10	9	15	14	14	17	13	15	15	13	12	10	10	11	12	12	12	11	17
26-Feb	12	15	13	15	12	14	18	13	31	44	73	18	42	48	65	24	20	10	14	38	16	10	58	38	73
27-Feb	11	43	24	32	67	20	29	10	13	13	18	26	49	20	16	14	13	13	20	33	37	71	12	13	71
28-Feb	36	24	29	18	17	17	9	10	20	17	43	86	45	14	14	13	10	11	10	9	11	7	8	8	86
29-Feb	9	12	12	33	10	10	17	22	51	13	11	11	14	19	22	18	37	80	12	46	15	10	15	10	80
Diurnal Maximum																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS25 WASKŌW OHCI PIMÂTISIWIN FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - WASKŌW OHCI PIMĀTISIWIN (AMS25)
 FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2(ppb) Average	663	32	33	99.86	15.6	0	2.3	0
H2S(ppb) Average	660	35	36	99.86	3.1	0	0.9	0
Temperature 2 m (C) Average	696	0	0	100	10.1	0	0.6	0
Relative Humidity (%) Average	696	0	0	100	98.4	-	91.8	-
Wind Speed 10 m (km/h) Average	689	0	7	98.99	14	0	8	0
Wind Direction 10 m (deg) Average	689	0	7	98.99	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - WASKŌW OHCI PIMĀTISIWIN (AMS25)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	663	0.75	1.7	-	0	0	0.1	0.2	0.5	1.6	15.6
H2S (ppb) Average	660	0.37	0.4	-	0	0.1	0.1	0.2	0.5	0.8	3.1
Temperature 2 m (C) Average	696	-10.21	7.6	-	-31.5	-19.8	-15	-10.2	-5.2	-1	10.1
Relative Humidity (%) Average	696	72.81	14.4	-	29.1	50.8	63.2	76.2	83.8	87.6	98.4
Wind Speed 10 m (km/h) Average	689	4.3	3	-	0	1	2	4	6	9	14
Wind Direction 10 m (deg) Average	689	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - WASKŌW OHCI PIMĀTISIWIN (AMS25)

FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
SO2, H2S	27 Feb 2024 08:00	27 Feb 2024 08:00	1	Maintenance - sample manifold cleaned
Wind Speed, Wind Direction	01 Feb 2024 10:00	01 Feb 2024 10:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction	07 Feb 2024 05:00	07 Feb 2024 05:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction	08 Feb 2024 05:00	08 Feb 2024 07:00	3	Flat line in sensor output signal
Wind Speed, Wind Direction	10 Feb 2024 03:00	10 Feb 2024 03:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction	27 Feb 2024 05:00	27 Feb 2024 05:00	1	Flat line in sensor output signal

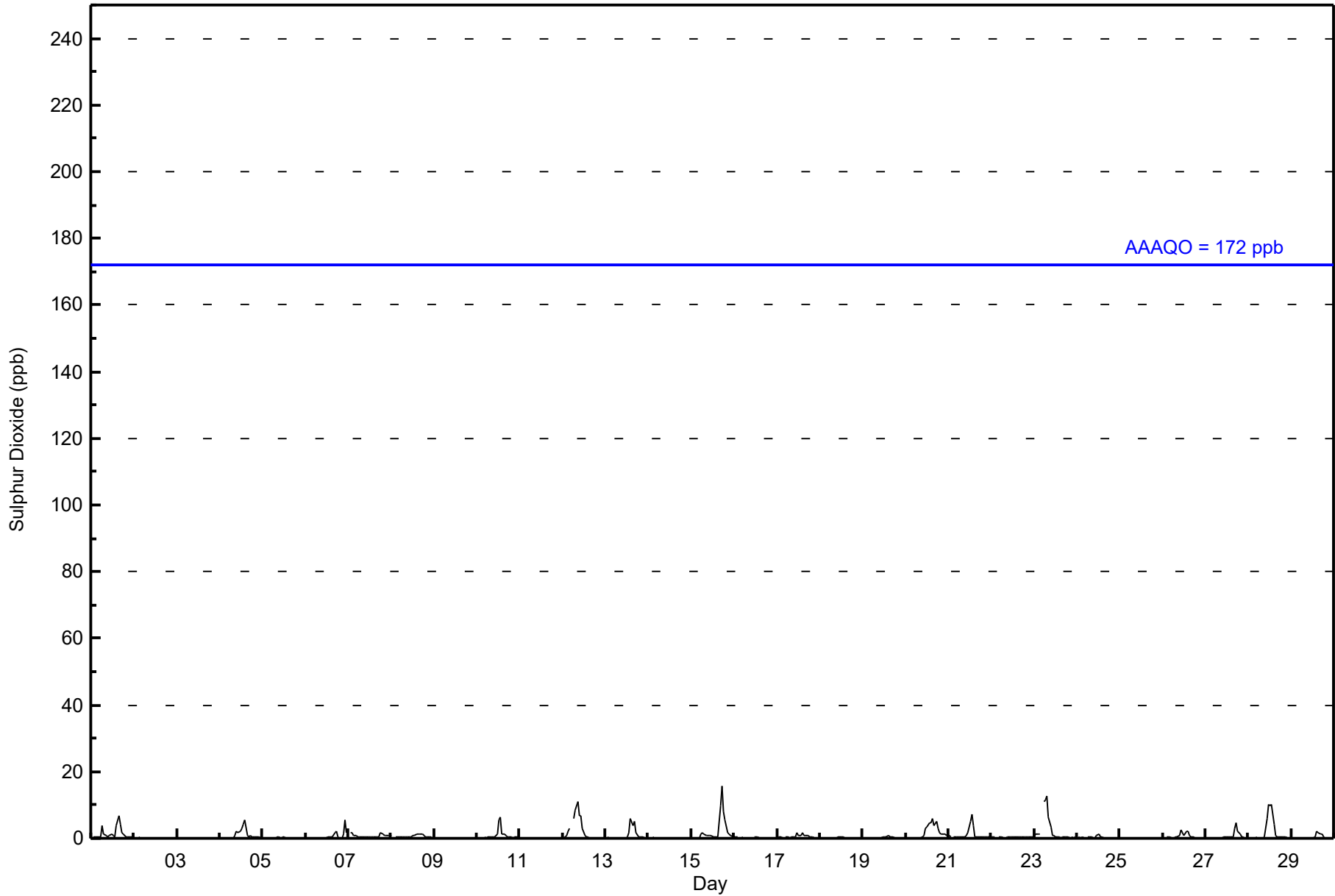


Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	696						
Maximum Value: 15.6 ppb on Feb 15 18:00		Maximum Daily Average: 2.3 ppb on Feb 23																	Hours of Data: 663								
Minimum Value: 0.0 ppb on Feb 3 19:00		Minimum Daily Average: 0.0 ppb on Feb 25																	Hours of Missing Data: 33								
Maximum Diurnal Average: 1.5 ppb at hour 14		Minimum Diurnal Average: 0.2 ppb at hour 1																	Hours of Calibration: 32								
Monthly Average: 0.75 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.5 P ₉₀ = 1.6 P ₉₉ = 9.9																	Percent Operational Time: 99.9								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	Z	0.5	0.5	0.5	0.6	0.5	3.9	1.4	0.7	0.5	0.8	1.4	0.7	0.5	4.0	6.8	4.2	1.9	1.1	0.6	0.4	0.3	0.3	0.4	1.4	6.8	
2-Feb	0.5	Z	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.5	
3-Feb	0.0	0.1	Z	0.2	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
4-Feb	0.0	0.0	0.0	Z	0.1	0.1	0.0	0.1	0.8	2.2	1.5	2.0	2.9	4.4	5.4	0.9	0.6	0.7	0.6	0.4	0.3	0.3	0.2	0.2	1.0	5.4	
5-Feb	0.2	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.4	0.4	0.2	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	
6-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.4	0.3	0.6	1.9	2.1	0.3	0.2	0.2	1.1	5.5	1.8	0.6	5.5	
7-Feb	Z	1.8	1.6	0.8	0.6	0.5	0.5	0.4	0.3	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.5	0.6	1.5	1.3	0.9	0.7	0.8	0.7	0.7	1.8	
8-Feb	0.7	Z	0.6	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.8	1.0	1.3	1.4	1.4	1.2	0.7	0.6	0.4	0.3	0.3	0.2	0.6	1.4	
9-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
10-Feb	0.1	0.0	0.1	Z	0.2	0.2	0.4	0.3	0.3	0.3	0.4	1.1	5.5	6.4	1.2	1.1	0.8	0.5	0.6	0.3	0.2	0.2	0.2	0.2	0.9	6.4	
11-Feb	0.2	0.2	0.1	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	
12-Feb	0.1	0.4	1.0	1.9	2.8	Z	5.9	8.5	10.9	7.0	6.8	2.8	0.6	0.3	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.1	2.2	10.9	
13-Feb	Z	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.2	0.1	0.2	1.6	6.0	3.8	4.9	1.5	0.5	0.4	0.3	0.2	0.2	0.2	0.9	6.0	
14-Feb	0.2	Z	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.3	
15-Feb	0.0	0.1	Z	0.1	0.2	1.1	1.7	1.2	0.7	0.7	0.8	0.7	0.6	0.3	0.4	0.4	9.8	15.6	7.9	5.5	1.7	1.2	0.8	0.5	2.3	15.6	
16-Feb	0.4	0.4	0.3	Z	0.2	0.1	0.0	0.0	C	C	C	0.6	0.5	0.3	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.6	
17-Feb	0.2	0.2	0.2	0.2	Z	0.3	0.2	0.2	0.3	0.3	0.6	1.5	0.9	0.8	1.5	0.8	0.8	0.7	0.4	0.3	0.3	0.2	0.1	0.1	0.5	1.5	
18-Feb	0.1	0.1	0.1	0.1	0.2	Z	0.2	0.1	0.1	0.1	0.3	0.6	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	
19-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.6	0.6	0.5	0.3	0.3	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.6	
20-Feb	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.9	2.9	3.5	4.8	4.7	5.9	3.7	5.1	3.0	1.8	1.3	1.2	1.4	0.9	1.9	5.9	
21-Feb	0.7	0.4	Z	0.5	0.5	0.5	0.4	0.3	0.4	0.3	1.0	1.5	5.2	7.3	3.7	0.6	0.4	0.4	0.5	0.4	0.3	0.3	0.4	0.4	1.1	7.3	
22-Feb	0.5	0.3	0.3	Z	0.4	0.3	0.3	0.2	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.6	0.5	0.6	0.5	0.4	0.4	0.3	0.3	0.4	0.6	
23-Feb	0.5	1.3	1.2	1.2	Z	11.0	11.3	12.6	6.5	3.4	1.1	0.7	0.4	0.4	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	2.3	12.6	
24-Feb	0.2	0.3	0.1	0.3	0.2	Z	0.4	0.3	0.2	0.1	0.1	0.8	1.3	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.3	
25-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
26-Feb	0.1	Z	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.8	2.7	1.8	0.7	2.1	2.0	1.0	0.5	0.4	0.2	0.1	0.2	0.0	0.1	0.1	0.6	2.7	
27-Feb	0.1	0.1	Z	0.2	0.1	0.1	0.1	M	0.1	0.2	0.2	0.4	0.5	0.4	0.3	0.4	2.9	4.9	2.3	1.1	0.4	0.3	0.2	0.1	0.7	4.9	
28-Feb	0.1	0.2	0.1	Z	0.2	0.1	0.2	0.1	0.2	0.3	5.9	10.1	9.5	10.2	4.2	0.7	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.1	1.9	10.2
29-Feb	0.1	0.0	0.1	0.0	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	2.2	1.6	1.4	1.1	0.3	0.2	0.1	0.2	0.1	0.1	0.4	2.2	
																								Diurnal Average			
																								Diurnal Maximum			
																								0.2 0.3 0.3 0.3 0.3 0.6 0.9 1.0 0.8 0.7 0.9 1.1 1.3 1.5 1.4 1.0 1.2 1.3 0.7 0.5 0.3 0.3 0.4 0.2			
																								0.7 1.8 1.6 1.9 2.8 11.0 11.3 12.6 10.9 7.0 6.8 10.1 9.5 10.2 6.0 6.8 9.8 15.6 7.9 5.5 1.7 1.2 5.5 1.8			
Z - zerospan C - Calibration M - Maintenance																											
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																											



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Waskow ohci Pimatisiwin - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Waskow ohci Pimatisiwin - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	658	99.25	99.25
11 - 20	5	0.75	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Waskow ohci Pimatisiwin - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	77	46	36	13	17	26	82	84	28	17	23	37	27	30	49	59	651
11 - 20	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	5
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	77	46	36	13	17	26	83	88	28	17	23	37	27	30	49	59	656

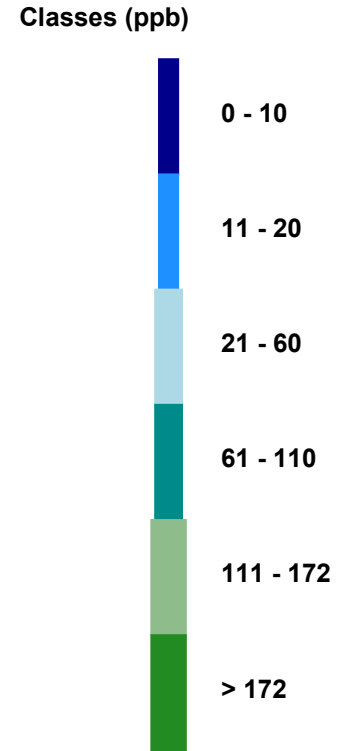
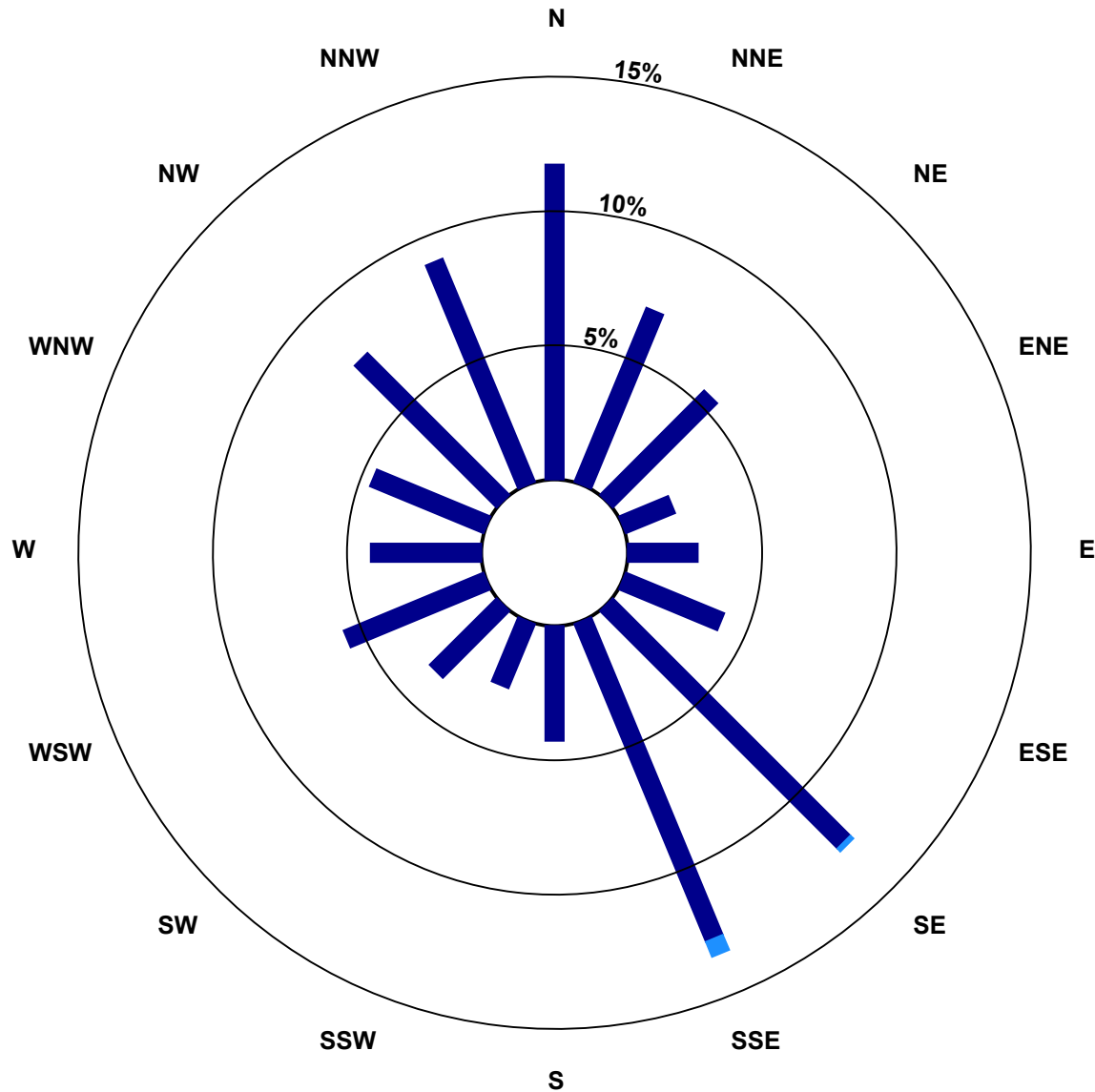
Total Number of Valid Hours: 656

Total Number of Hours: 696

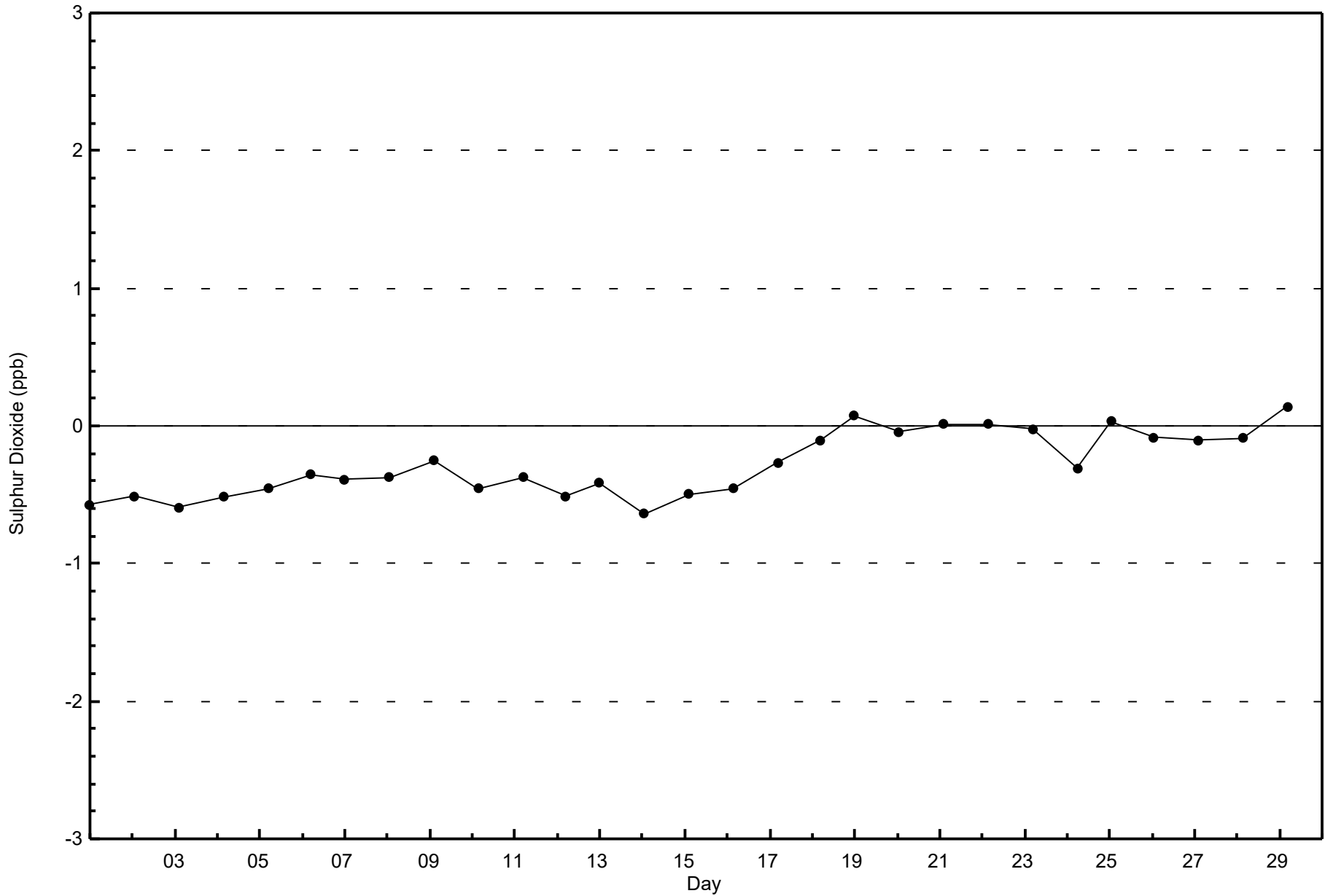


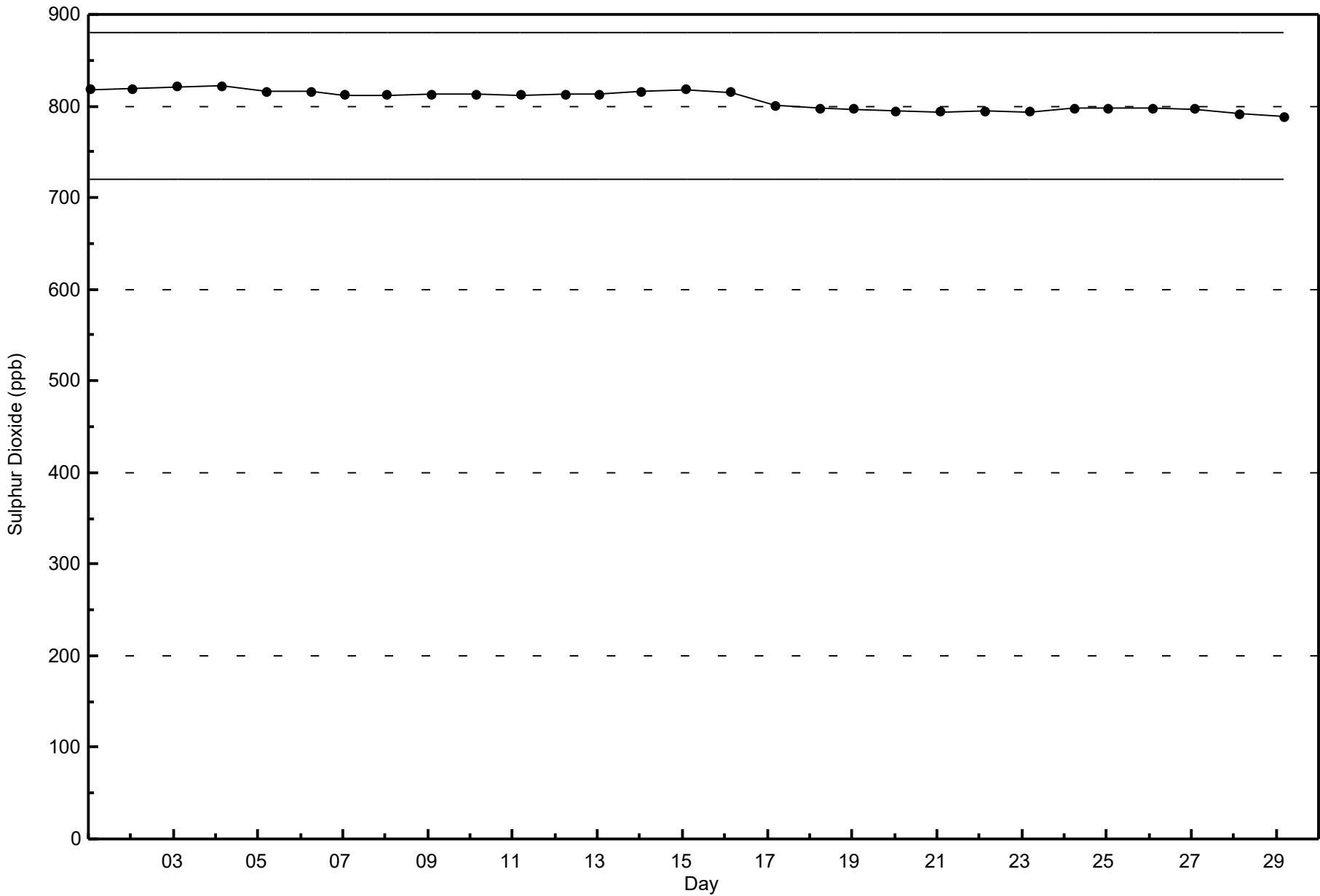
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Waskow ohci Pimatisiwin



Total Number of Valid Hours: 656





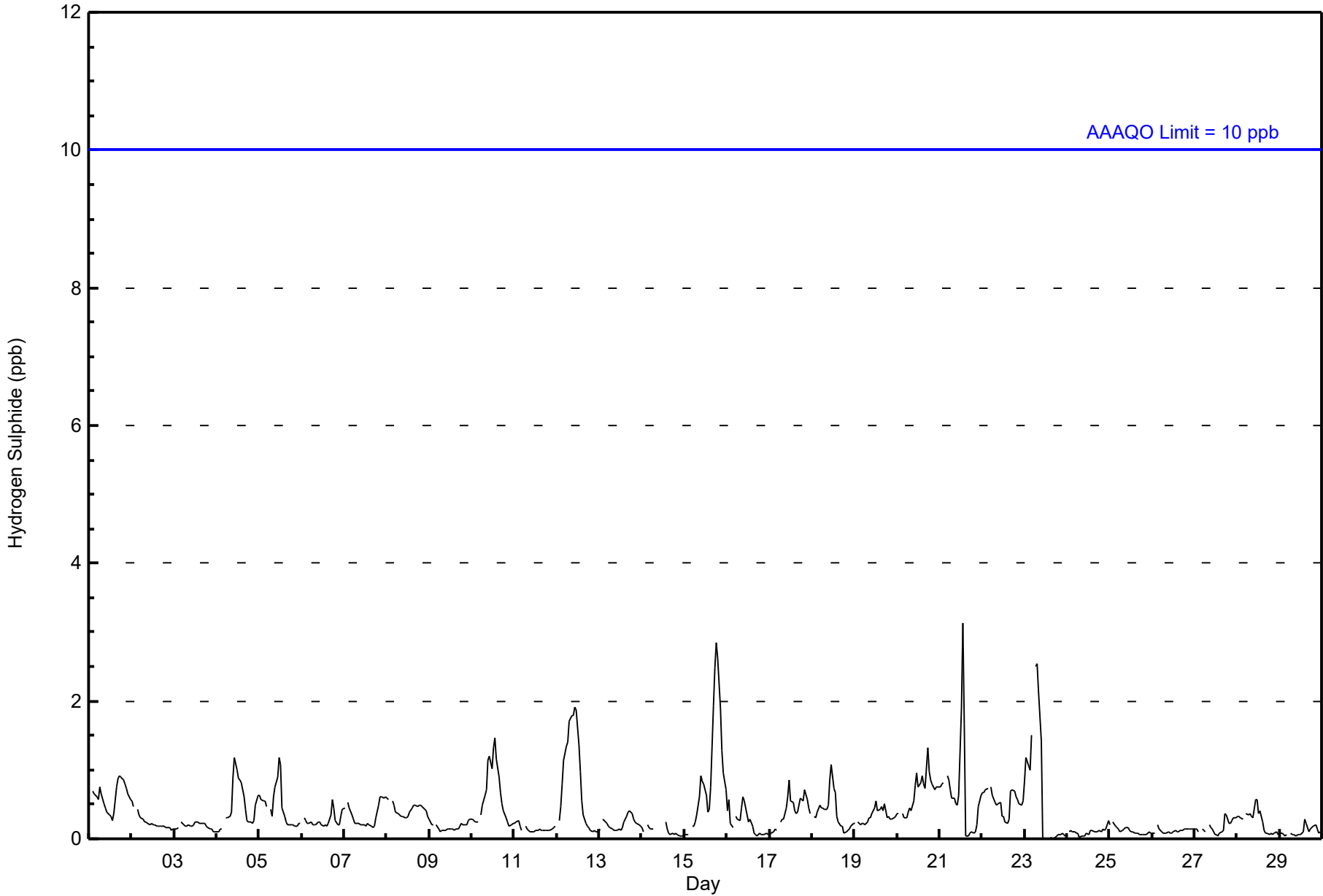


Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0																		Hours in Service:	696																											
Maximum Value: 3.1 ppb on Feb 21 14:00		Maximum Daily Average: 0.9 ppb on Feb 15																	Hours of Data:	660																													
Minimum Value: 0.0 ppb on Feb 23 12:00		Minimum Daily Average: 0.1 ppb on Feb 24																	Hours of Missing Data:	36																													
Maximum Diurnal Average: 0.5 ppb at hour 12		Minimum Diurnal Average: 0.3 ppb at hour 22																	Hours of Calibration:	35																													
Monthly Average: 0.37 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.5 P ₉₀ = 0.8 P ₉₉ = 2.0																	Percent Operational Time:	99.9																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.7	Z	0.7	0.6	0.6	0.6	0.8	0.6	0.5	0.4	0.4	0.4	0.3	0.3	0.4	0.7	0.9	0.9	0.9	0.9	0.8	0.7	0.6	0.6	0.6	0.9																							
2-Feb	0.5	0.5	Z	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.5																							
3-Feb	0.1	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2																							
4-Feb	0.1	0.1	0.1	0.1	Z	0.3	0.3	0.3	0.4	0.9	1.2	1.0	0.9	0.8	0.8	0.6	0.4	0.3	0.2	0.2	0.2	0.3	0.5	0.6	0.5	1.2																							
5-Feb	0.6	0.6	0.6	0.5	0.5	Z	0.4	0.3	0.6	0.8	0.9	1.2	1.1	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	1.2																							
6-Feb	Z	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.6	0.4	0.3	0.2	0.2	0.3	0.4	0.3	0.6																							
7-Feb	0.5	Z	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.6	0.6	0.6	0.6	0.3	0.6																							
8-Feb	0.6	0.6	Z	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.4	0.6																							
9-Feb	0.3	0.2	0.2	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.3																							
10-Feb	0.3	0.3	0.2	0.2	Z	0.3	0.5	0.6	0.7	1.1	1.2	1.0	1.3	1.5	1.2	0.9	0.7	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.6	1.5																							
11-Feb	0.2	0.2	0.3	0.2	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.3																							
12-Feb	Z	0.3	0.5	0.8	1.1	1.3	1.4	1.7	1.8	1.8	1.9	1.9	1.4	1.0	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.8	1.9																							
13-Feb	0.1	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.4																							
14-Feb	0.2	0.1	Z	0.2	0.2	0.2	0.1	C	C	C	C	C	C	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	--	0.2																							
15-Feb	0.1	0.1	0.1	Z	0.2	0.2	0.3	0.4	0.6	0.9	0.8	0.8	0.6	0.4	0.4	0.7	1.9	2.5	2.8	2.6	1.9	1.3	1.0	0.7	0.9	2.8																							
16-Feb	0.4	0.6	0.2	0.2	Z	0.3	0.3	0.3	0.4	0.6	0.5	0.4	0.2	0.3	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.6																							
17-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.2	0.3	0.3	0.4	0.6	0.9	0.5	0.5	0.4	0.4	0.4	0.6	0.6	0.6	0.7	0.6	0.4	0.4	0.4	0.9																							
18-Feb	Z	0.3	0.3	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.9	1.1	0.7	0.7	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.4	1.1																							
19-Feb	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.4	0.4	0.5	0.4	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5																							
20-Feb	0.4	0.4	Z	0.4	0.3	0.3	0.4	0.5	0.4	0.6	0.8	1.0	0.8	0.8	0.9	0.8	0.7	1.3	1.0	0.8	0.8	0.7	0.8	0.8	0.7	1.3																							
21-Feb	0.7	0.8	0.8	Z	0.9	0.9	0.7	0.6	0.6	0.5	0.5	0.6	1.9	3.1	1.7	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.5	0.6	0.7	3.1																							
22-Feb	0.7	0.7	0.7	0.7	Z	0.7	0.6	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.2	0.3	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.7																							
23-Feb	0.8	1.2	1.1	1.0	1.5	Z	2.5	2.5	2.1	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.6	2.5																							
24-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.3																							
25-Feb	0.2	Z	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2																							
26-Feb	0.1	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2																							
27-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.1	M	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.4	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.4																							
28-Feb	0.3	0.3	0.3	0.3	Z	0.4	0.3	0.4	0.3	0.3	0.6	0.6	0.4	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.6																							
29-Feb	0.1	0.1	0.1	0.0	0.1	Z	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.3																							
																								0.3	0.3	0.3	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	Diurnal Average
																								0.8	1.2	1.1	1.0	1.5	1.3	2.5	2.5	2.1	1.8	1.9	1.9	1.9	3.1	1.7	0.9	1.9	2.5	2.8	2.6	1.9	1.3	1.0	0.8	0.8	Diurnal Maximum
Z - zerospan C - Calibration M - Maintenance																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																																																	



Wood Buffalo Environmental Association
Hourly Averages

Hydrogen Sulphide (H₂S) - ppb
Waskow ohci Pimatisiwin - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Waskow ohci Pimatisiwin - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	656	99.39	99.39
3 - 4	4	0.61	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Waskow ohci Pimatisiwin - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	77	46	32	12	18	26	81	85	27	20	25	37	26	30	50	57	649
3 - 4	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	4
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	77	46	32	12	18	26	82	88	27	20	25	37	26	30	50	57	653

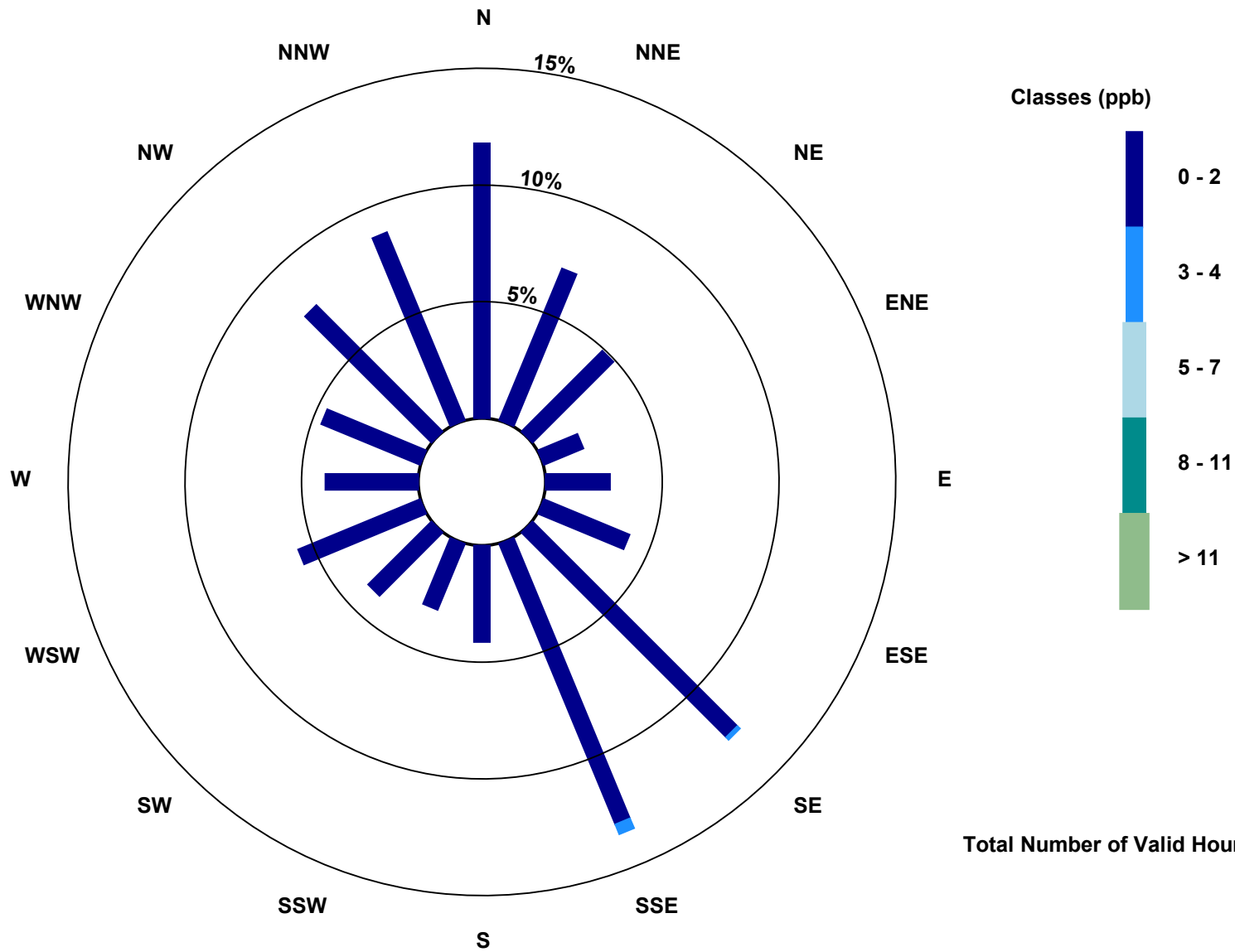
Total Number of Valid Hours: 653

Total Number of Hours: 696

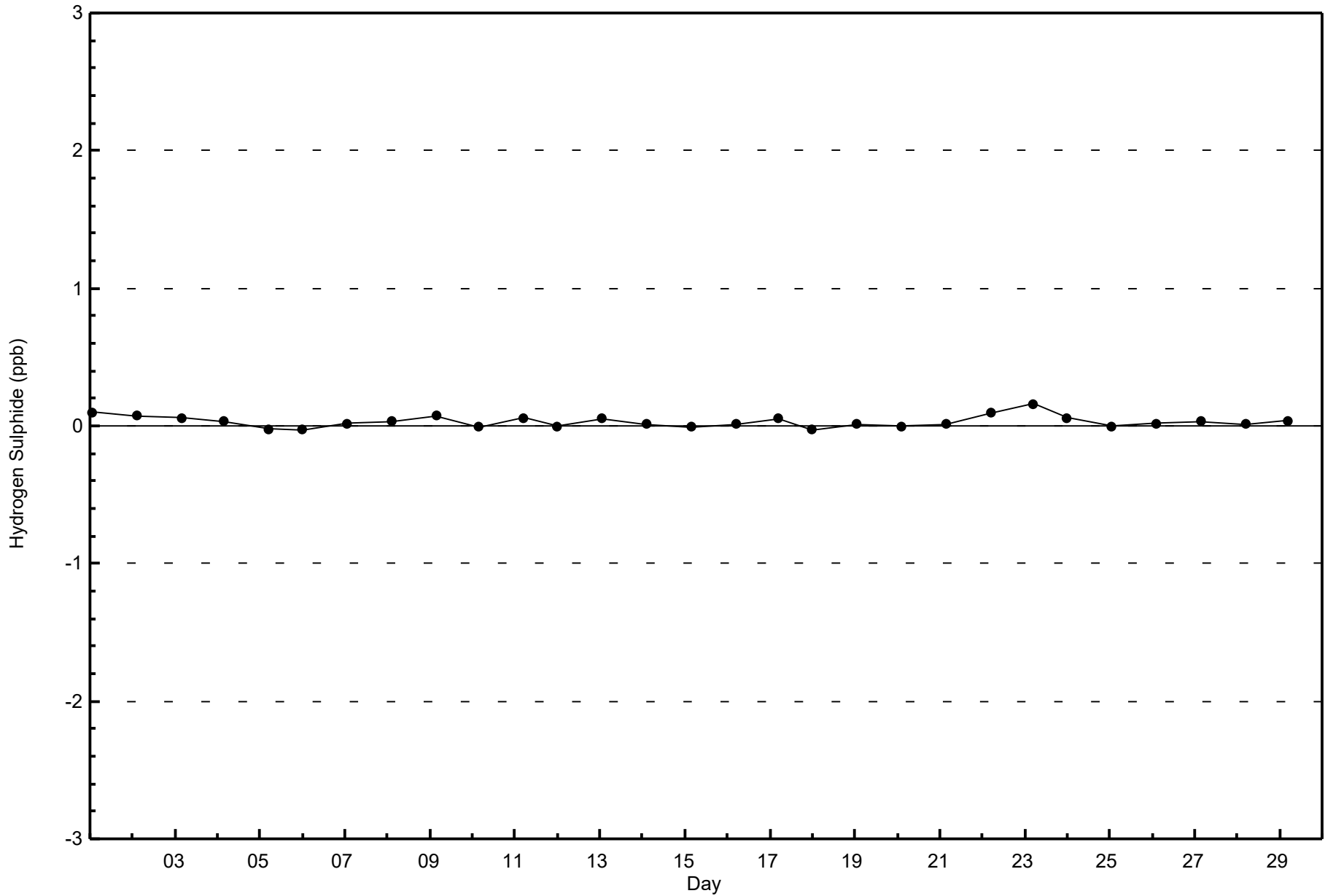


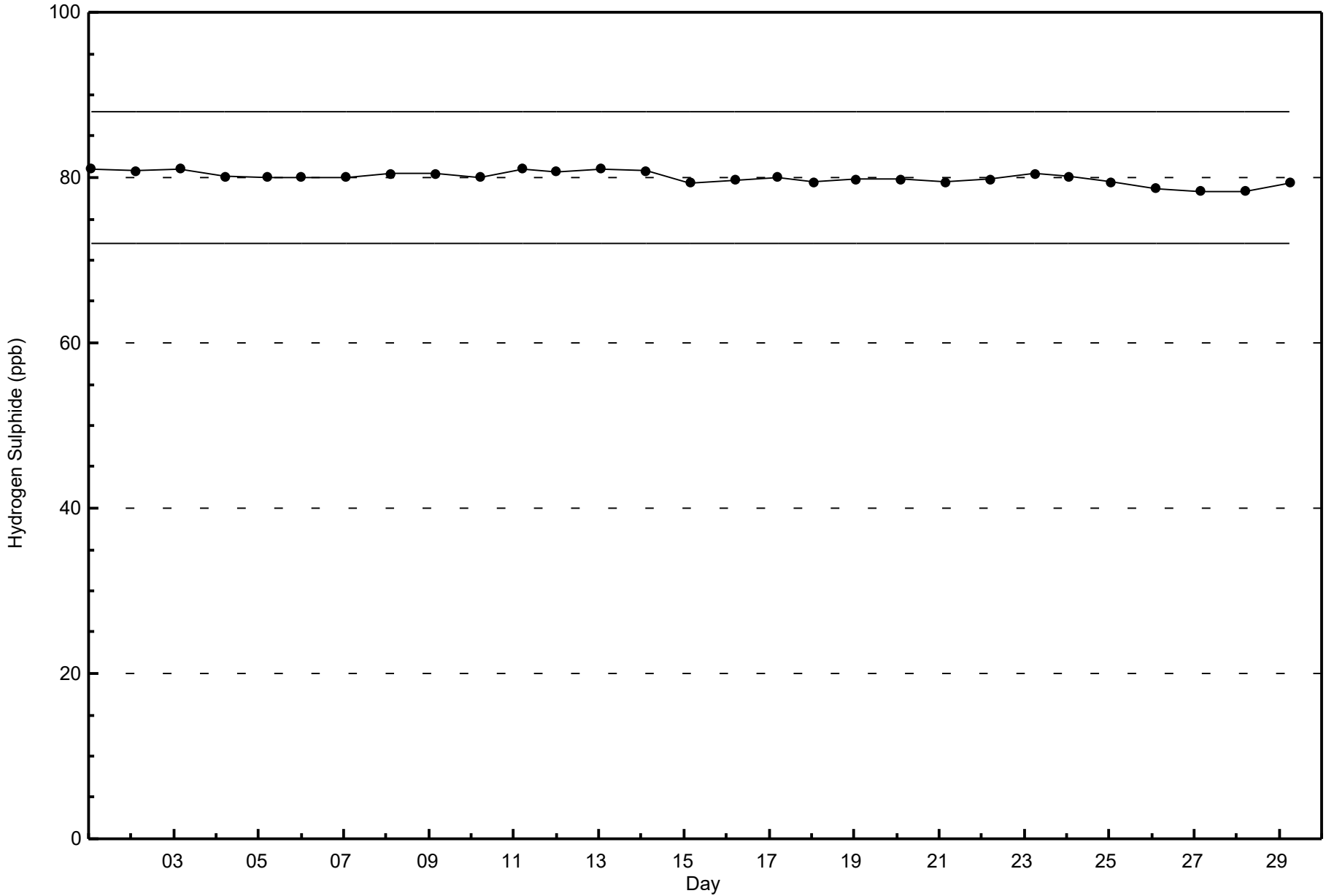
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Waskow ohci Pimatisiwin



Total Number of Valid Hours: 653





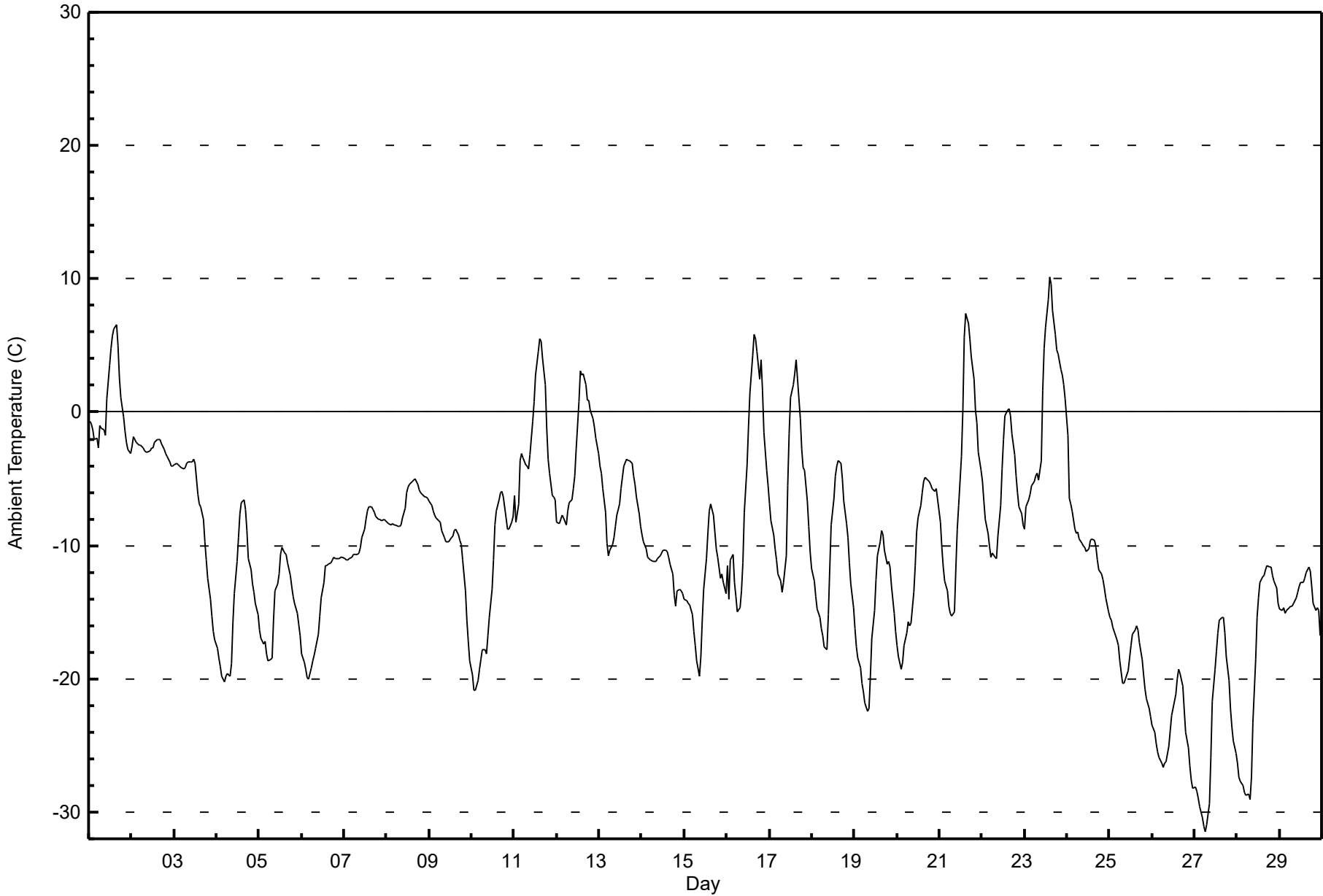


Maximum Value: 10.1 C on Feb 23 15:00 Maximum Daily Average: 0.6 C on Feb 23																						Hours in Service: 696 Hours of Data: 696				
Minimum Value: -31.5 C on Feb 27 07:00 Minimum Daily Average: -24.1 C on Feb 26 Maximum Diurnal Average: -5.1 C at hour 16 Minimum Diurnal Average: -14.0 C at hour 8 Monthly Average: -10.21 C Percentiles: P ₁ = -28.9 P ₁₀ = -19.8 Q ₁ = -15.0 Median = -10.2 Q ₃ = -5.2 P ₉₀ = -1.0 P ₉₉ = 6.3																						Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	-0.7	-0.9	-1.4	-2.0	-1.9	-2.6	-1.0	-1.2	-1.4	-1.7	1.0	3.6	4.8	5.7	6.3	6.5	5.0	2.6	1.1	-0.3	-1.4	-2.3	-2.7	-3.1	0.5	6.5
2-Feb	-2.6	-1.9	-2.2	-2.4	-2.4	-2.4	-2.6	-2.9	-3.0	-3.0	-2.9	-2.7	-2.7	-2.2	-2.0	-2.0	-2.1	-2.4	-2.8	-3.1	-3.3	-3.7	-4.0	-4.0	-2.7	-1.9
3-Feb	-4.0	-3.8	-3.9	-4.1	-4.2	-4.2	-4.1	-3.8	-3.7	-3.7	-3.7	-3.5	-3.9	-6.1	-6.8	-7.1	-8.0	-9.7	-11.1	-12.5	-14.1	-15.3	-16.5	-17.1	-7.3	-3.5
4-Feb	-17.7	-18.5	-19.1	-19.8	-20.2	-19.8	-19.6	-19.9	-18.9	-15.8	-13.6	-11.2	-9.4	-7.7	-6.8	-6.6	-7.3	-8.9	-11.0	-11.8	-12.8	-13.5	-14.4	-15.1	-14.1	-6.6
5-Feb	-16.4	-17.0	-17.4	-17.2	-18.1	-18.7	-18.5	-18.4	-15.6	-13.3	-12.9	-12.2	-10.6	-10.2	-10.6	-10.7	-11.3	-12.2	-13.1	-13.8	-14.4	-15.1	-15.9	-16.8	-14.6	-10.2
6-Feb	-18.2	-18.8	-19.2	-19.9	-20.1	-19.2	-18.7	-18.2	-17.7	-16.6	-15.3	-13.9	-12.7	-11.5	-11.5	-11.4	-11.3	-11.1	-10.9	-11.0	-11.0	-10.9	-10.9	-10.9	-14.6	-10.9
7-Feb	-11.0	-11.1	-11.1	-11.0	-10.9	-10.7	-10.7	-10.7	-10.6	-10.1	-9.4	-8.8	-8.1	-7.5	-7.1	-7.1	-7.3	-7.5	-7.9	-8.0	-8.0	-8.1	-8.1	-8.2	-9.1	-7.1
8-Feb	-8.3	-8.4	-8.5	-8.4	-8.5	-8.5	-8.6	-8.6	-8.5	-8.0	-7.2	-6.1	-5.6	-5.4	-5.2	-5.1	-5.0	-5.4	-5.8	-6.0	-6.2	-6.3	-6.4	-6.4	-6.9	-5.0
9-Feb	-6.7	-6.9	-7.5	-7.7	-7.9	-8.1	-8.3	-8.8	-9.4	-9.7	-9.7	-9.7	-9.4	-9.3	-8.9	-8.8	-9.2	-9.6	-9.9	-11.1	-13.4	-15.6	-17.1	-18.6	-10.1	-6.7
10-Feb	-19.7	-20.8	-20.9	-20.2	-19.3	-18.5	-17.8	-17.8	-18.1	-16.7	-15.4	-13.3	-11.1	-8.5	-7.4	-6.6	-6.1	-6.0	-6.4	-7.9	-8.8	-8.8	-8.3	-7.8	-13.0	-6.0
11-Feb	-6.3	-8.2	-6.9	-3.6	-3.1	-3.4	-3.9	-4.0	-4.3	-3.2	-0.7	0.8	2.8	4.6	5.5	5.4	4.0	2.0	-1.2	-3.5	-4.6	-6.2	-6.4	-6.6	-2.1	5.5
12-Feb	-8.2	-8.4	-8.0	-7.7	-8.0	-8.4	-7.4	-6.8	-6.6	-5.7	-4.8	-2.8	0.8	3.1	2.8	2.9	2.1	0.9	0.9	0.1	-0.5	-1.1	-2.0	-3.1	-3.2	3.1
13-Feb	-4.1	-4.6	-5.7	-7.5	-9.8	-10.8	-10.3	-9.9	-9.4	-8.6	-7.7	-6.9	-5.7	-4.9	-4.0	-3.5	-3.7	-3.6	-3.8	-4.8	-5.4	-6.4	-7.6	-8.5	-6.5	-3.5
14-Feb	-9.2	-9.7	-10.2	-10.8	-11.0	-11.1	-11.2	-11.2	-11.2	-11.0	-10.7	-10.6	-10.3	-10.4	-10.5	-10.9	-11.4	-12.2	-13.7	-14.6	-13.4	-13.2	-13.4	-13.6	-11.5	-9.2
15-Feb	-14.0	-14.1	-14.4	-14.4	-15.2	-16.4	-17.5	-18.7	-19.8	-18.3	-15.6	-13.3	-11.0	-9.0	-7.4	-6.9	-7.7	-9.0	-10.2	-10.9	-12.5	-12.1	-12.7	-13.7	-13.1	-6.9
16-Feb	-11.5	-14.1	-11.1	-10.7	-12.7	-13.8	-15.0	-14.7	-13.4	-11.3	-7.5	-4.0	-1.1	1.4	4.3	5.9	5.5	4.5	2.5	3.9	1.7	-1.6	-4.3	-5.6	-5.1	5.9
17-Feb	-6.9	-8.1	-9.2	-10.2	-11.1	-12.1	-12.7	-13.6	-12.7	-10.8	-5.5	-1.6	1.1	2.0	2.9	4.0	2.5	-0.4	-2.8	-4.2	-4.3	-6.7	-8.6	-10.5	-5.8	4.0
18-Feb	-11.7	-12.7	-13.8	-14.8	-15.4	-16.2	-16.7	-17.6	-17.8	-15.2	-11.8	-8.5	-6.4	-4.8	-4.0	-3.6	-3.9	-5.0	-6.6	-8.4	-9.5	-11.3	-12.9	-14.6	-11.0	-3.6
19-Feb	-16.2	-17.6	-18.4	-19.2	-20.3	-20.9	-21.8	-22.5	-22.2	-19.8	-17.0	-14.9	-12.6	-10.8	-9.7	-8.9	-9.2	-10.4	-11.4	-11.2	-11.6	-12.9	-15.1	-16.4	-15.5	-8.9
20-Feb	-17.5	-18.4	-19.3	-18.7	-17.5	-16.5	-15.7	-16.0	-15.9	-13.5	-11.5	-9.0	-8.0	-7.0	-6.0	-5.2	-4.9	-5.1	-5.2	-5.4	-5.7	-5.9	-5.7	-6.6	-10.8	-4.9
21-Feb	-8.3	-10.1	-11.7	-12.7	-13.4	-14.5	-15.1	-15.3	-14.9	-11.7	-8.8	-7.0	-3.3	0.1	5.7	7.4	6.7	5.5	4.1	2.5	0.2	-0.8	-3.0	-4.4	-5.1	7.4
22-Feb	-5.2	-6.7	-8.0	-9.1	-10.1	-10.9	-10.6	-10.9	-11.0	-9.3	-7.0	-4.2	-2.1	-0.3	0.1	0.3	-0.2	-1.6	-3.2	-4.8	-6.1	-7.1	-7.6	-8.5	-6.0	0.3
23-Feb	-8.8	-7.1	-6.6	-6.1	-5.6	-5.2	-4.8	-4.6	-5.1	-3.6	1.6	4.8	6.3	8.5	10.1	9.6	7.7	5.8	4.7	4.3	3.2	2.8	2.0	1.0	0.6	10.1
24-Feb	-1.7	-6.4	-6.9	-7.5	-8.8	-9.1	-9.0	-9.5	-9.8	-10.0	-10.2	-10.5	-10.2	-9.7	-9.5	-9.6	-10.1	-11.1	-11.9	-12.1	-12.5	-13.2	-13.9	-15.0	-9.9	-1.7
25-Feb	-15.4	-15.6	-16.2	-16.7	-17.1	-17.5	-18.7	-20.3	-20.4	-20.0	-19.4	-18.5	-17.5	-16.7	-16.3	-16.1	-16.4	-17.3	-18.6	-19.7	-20.7	-21.5	-22.2	-22.8	-18.4	-15.4
26-Feb	-23.4	-24.0	-24.9	-25.5	-25.9	-26.3	-26.6	-26.3	-26.2	-25.0	-23.9	-22.8	-22.3	-21.2	-20.0	-19.3	-19.6	-20.6	-22.4	-24.0	-25.2	-26.5	-27.6	-28.2	-24.1	-19.3
27-Feb	-28.1	-28.4	-28.9	-29.6	-30.4	-31.0	-31.5	-30.9	-29.3	-25.9	-21.7	-19.3	-17.9	-16.5	-15.6	-15.4	-15.4	-16.6	-18.4	-20.1	-22.2	-23.6	-24.7	-25.6	-23.6	-15.4
28-Feb	-26.4	-27.4	-27.7	-28.0	-28.5	-28.8	-28.6	-29.0	-27.4	-23.3	-18.5	-15.4	-13.9	-12.7	-12.3	-12.3	-11.8	-11.6	-11.6	-11.6	-12.2	-12.7	-13.2	-14.3	-19.1	-11.6
29-Feb	-14.8	-14.9	-14.6	-15.0	-14.9	-14.6	-14.5	-14.5	-14.4	-14.0	-13.5	-13.1	-12.8	-12.8	-12.5	-12.0	-11.6	-11.9	-13.1	-14.4	-14.9	-14.7	-14.8	-16.8	-14.0	-11.6
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Waskow ohci Pimatisiwin - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Waskow ohci Pimatisiwin - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	65	9.34	9.34
-20 - 0	570	81.90	91.24
0 - 10	60	8.62	99.86
10 - 20	1	0.14	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696

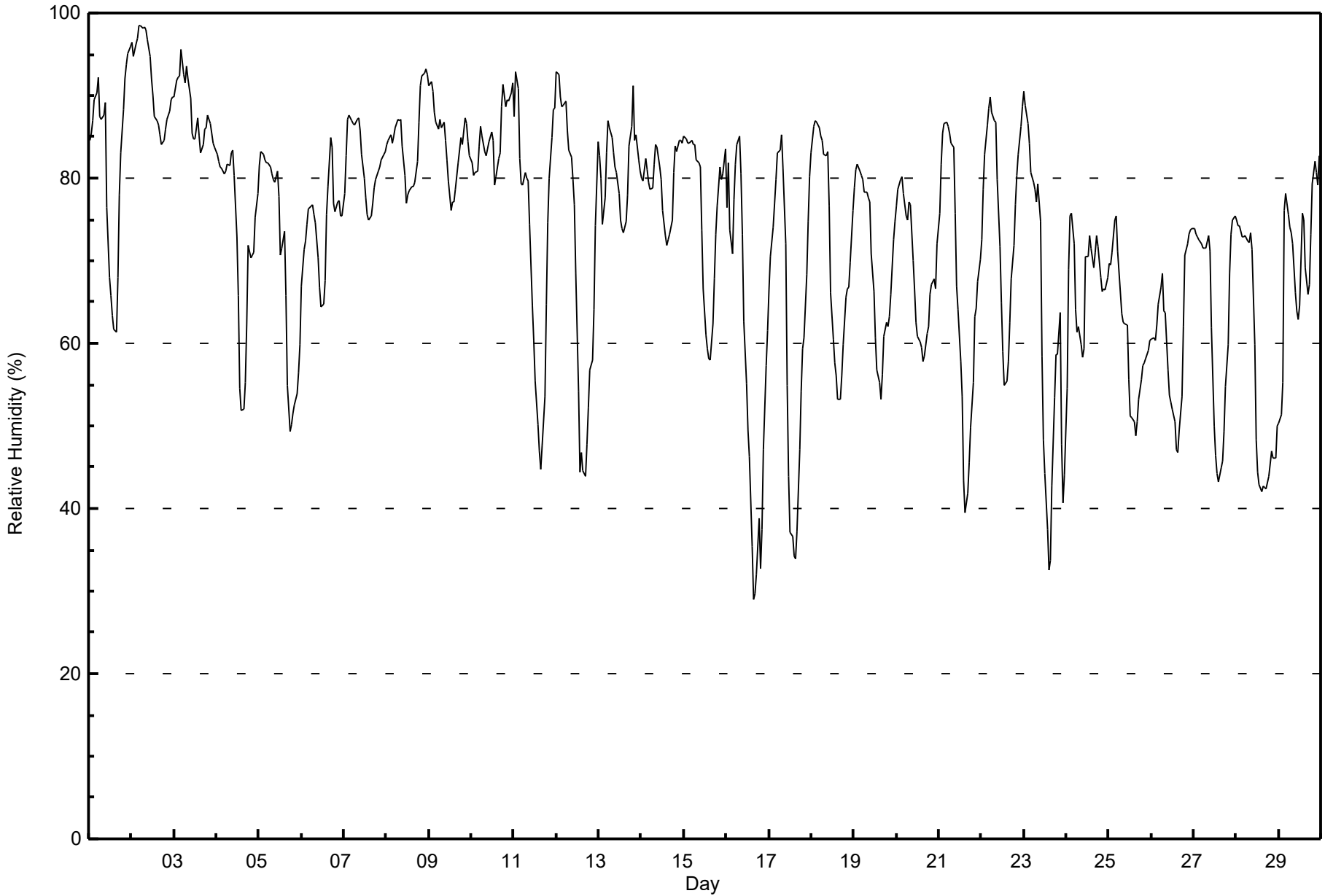


Maximum Value: 98.4 % on Feb 2 05:00																						Maximum Daily Average: 91.8 % on Feb 2																						Hours in Service: 696				
Minimum Value: 29.1 % on Feb 16 16:00																						Minimum Daily Average: 57.3 % on Feb 28																						Hours of Data: 696				
Maximum Diurnal Average: 81.9 % at hour 5																						Minimum Diurnal Average: 59.2 % at hour 16																						Hours of Missing Data: 0				
Monthly Average: 72.81 %																						Percentiles: P ₁ = 34.2 P ₁₀ = 50.8 Q ₁ = 63.2 Median = 76.2 Q ₃ = 83.8 P ₉₀ = 87.6 P ₉₉ = 96.5																						Hours of Calibration: 0				
																																												Percent Operational Time: 100.0				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	84.6	85.3	86.9	89.6	90.4	92.2	87.4	87.2	87.6	89.1	76.4	67.9	65.8	63.4	61.7	61.3	68.0	78.0	83.1	88.4	92.0	93.8	95.1	96.0	82.1	96.0																						
2-Feb	96.5	94.8	96.2	96.9	98.4	98.4	98.2	98.2	97.9	96.8	94.8	92.0	90.1	87.5	87.0	86.4	85.2	84.0	84.5	85.9	87.1	88.1	89.6	89.8	91.8	98.4																						
3-Feb	89.8	91.9	92.2	92.4	95.5	92.6	91.5	93.6	92.0	89.6	85.4	84.8	84.7	87.3	85.0	83.1	84.1	85.9	86.0	87.7	86.7	85.4	84.2	83.8	88.1	95.5																						
4-Feb	83.0	82.1	81.4	81.3	80.5	80.8	81.6	81.6	81.6	83.1	83.4	80.3	72.9	65.8	54.6	51.8	52.0	55.3	62.4	71.8	70.4	70.7	71.0	75.3	78.2	73.0	83.4																					
5-Feb	81.6	83.2	82.8	82.2	81.9	81.9	81.4	80.4	79.9	79.4	80.9	77.8	70.7	71.6	73.5	65.8	54.9	49.3	50.1	51.6	52.6	54.0	56.5	59.8	70.2	83.2																						
6-Feb	67.0	71.4	72.4	74.5	76.3	76.5	76.8	75.7	74.5	70.4	66.8	64.3	64.8	67.7	75.6	79.0	84.9	83.7	77.0	76.0	77.1	77.4	75.5	75.4	74.2	84.9																						
7-Feb	78.1	82.7	87.2	87.6	86.9	86.6	86.5	87.1	87.3	85.7	82.9	80.0	77.7	75.6	74.9	75.5	76.9	78.7	79.9	80.9	81.3	82.3	82.8	83.2	82.0	87.6																						
8-Feb	84.1	84.6	85.2	84.3	85.1	86.0	87.0	86.9	87.1	84.0	80.4	77.0	77.9	78.4	78.9	78.9	79.5	82.0	86.7	91.2	92.3	92.7	93.2	92.6	84.8	93.2																						
9-Feb	91.2	91.6	90.6	87.9	86.7	85.9	87.2	86.2	86.8	84.6	82.2	79.7	76.1	77.1	77.1	78.7	81.9	83.4	85.0	84.1	87.4	86.6	84.4	82.7	84.4	91.6																						
10-Feb	81.8	80.3	80.7	80.9	83.9	86.2	85.0	83.2	82.7	83.6	84.4	85.5	84.6	79.1	80.2	82.3	83.1	88.6	91.3	88.7	89.5	89.4	90.3	91.5	84.9	91.5																						
11-Feb	87.4	92.9	90.8	82.4	79.3	79.1	80.7	80.0	79.7	74.4	64.5	60.4	55.5	50.1	46.9	44.7	47.6	53.6	64.8	74.6	80.0	84.9	88.3	88.5	72.1	92.9																						
12-Feb	92.9	92.5	89.9	88.6	88.9	89.4	85.8	83.5	82.5	79.8	76.8	68.5	54.2	44.4	46.8	44.6	43.9	47.7	52.2	56.9	58.0	64.1	74.2	84.5	70.4	92.9																						
13-Feb	82.8	79.9	74.4	77.7	83.0	86.9	86.0	84.9	83.0	81.4	80.6	78.2	74.9	73.8	73.3	74.8	78.0	83.8	86.3	91.2	84.6	85.3	82.1	80.9	81.2	91.2																						
14-Feb	80.1	79.7	82.4	81.0	79.4	78.6	78.9	81.7	84.1	83.7	81.4	79.9	76.2	73.0	71.8	72.6	73.3	75.0	80.7	83.9	83.2	84.5	84.6	84.3	79.7	84.6																						
15-Feb	85.2	84.8	84.2	84.3	84.7	84.1	84.0	82.2	81.8	81.3	73.8	66.6	61.0	59.3	58.1	58.0	62.3	67.8	73.3	76.6	81.4	79.8	80.5	83.6	75.8	85.2																						
16-Feb	76.5	81.8	73.8	70.8	77.4	81.6	84.0	85.1	80.5	73.3	62.7	55.1	49.5	46.3	35.5	29.1	29.7	32.1	38.9	32.8	37.4	47.1	57.2	61.5	58.3	85.1																						
17-Feb	66.5	70.4	74.1	76.9	79.9	83.0	83.4	85.2	81.2	72.0	54.9	43.9	37.1	36.7	34.3	33.9	37.3	47.1	54.3	59.3	60.7	68.3	74.8	80.2	62.3	85.2																						
18-Feb	83.1	86.2	86.9	86.8	86.1	85.0	84.5	83.0	82.7	83.2	76.5	66.0	60.4	57.5	56.1	53.2	53.2	56.1	59.9	65.6	66.6	66.8	69.9	76.1	72.1	86.9																						
19-Feb	78.9	81.0	81.8	80.8	80.3	79.8	78.2	78.3	77.7	77.1	70.9	66.4	60.6	56.8	55.2	53.2	56.3	60.9	62.6	62.0	63.3	65.9	72.6	74.7	69.8	81.8																						
20-Feb	76.7	78.7	79.8	80.1	78.2	75.4	74.9	77.1	76.8	70.0	66.4	62.5	60.8	60.1	59.4	57.7	58.5	61.1	62.0	66.0	67.1	67.8	66.6	72.1	69.0	80.1																						
21-Feb	75.7	81.7	85.4	86.7	86.7	86.3	85.4	84.2	83.7	75.8	66.9	64.0	57.9	53.5	43.5	39.5	41.9	45.5	49.8	55.2	63.3	64.3	67.4	70.1	67.3	86.7																						
22-Feb	72.6	78.7	82.9	86.4	88.5	89.9	87.9	87.0	86.7	79.8	71.7	64.8	58.9	55.0	55.4	57.7	62.6	67.8	71.8	76.8	80.4	82.9	86.2	88.7	75.9	89.9																						
23-Feb	90.4	88.8	86.5	84.2	80.7	79.4	78.7	77.2	79.4	74.7	58.5	48.3	44.2	37.5	32.6	33.7	42.7	53.3	58.6	58.6	63.8	47.8	40.6	44.1	61.8	90.4																						
24-Feb	54.6	68.9	75.4	75.7	72.0	64.1	61.4	62.1	59.8	58.4	59.3	70.6	70.5	73.0	71.5	69.1	71.1	73.0	71.7	68.0	66.2	66.5	66.5	68.0	67.4	75.7																						
25-Feb	69.7	69.5	71.0	74.9	75.3	71.1	68.7	63.5	62.6	62.3	62.3	55.6	51.1	51.1	50.5	48.9	50.6	53.2	55.5	57.2	57.6	58.2	59.2	60.3	60.8	75.3																						
26-Feb	60.5	60.8	60.3	62.3	64.7	66.7	68.5	63.8	63.7	56.8	53.8	52.9	52.0	50.5	47.1	46.8	49.5	53.5	62.1	70.7	72.0	73.3	73.7	73.9	60.8	73.9																						
27-Feb	73.9	73.3	72.9	72.5	72.1	71.6	71.6	71.5	73.0	71.3	61.9	50.0	46.4	44.2	43.2	44.8	45.8	49.4	54.7	59.8	68.4	73.3	75.0	75.5	63.2	75.5																						
28-Feb	74.9	74.3	74.2	72.8	72.9	73.1	72.3	72.3	73.3	71.3	59.9	48.3	44.4	42.9	42.0	42.8	42.6	42.4	43.9	45.5	47.0	46.1	46.1	50.0	57.3	74.9																						
29-Feb	50.3	51.3	55.3	76.1	78.2	75.6	74.0	73.4	72.1	66.1	63.8	62.9	64.5	75.8	74.9	69.1	65.9	67.1	73.2	79.3	82.0	80.7	79.1	82.8	70.6	82.8																						
																								78.3	80.1	80.6	81.3	81.9	81.7	81.1	80.6	80.1	77.2	71.8	67.1	63.4	61.5	60.1	59.2	60.9	64.4	68.0	70.5	72.4	73.4	74.9	77.0	Diurnal Average
																								96.5	94.8	96.2	96.9	98.4	98.4	98.2	98.2	97.9	96.8	94.8	92.0	90.1	87.5	87.0	86.4	85.2	88.6	91.3	91.2	92.3	93.8	95.1	96.0	Diurnal Maximum



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Waskow ohci Pimatisiwin - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Waskow ohci Pimatisiwin - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	16	2.30	2.30
40 - 60	125	17.96	20.26
60 - 80	283	40.66	60.92
80 - 100	272	39.08	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696

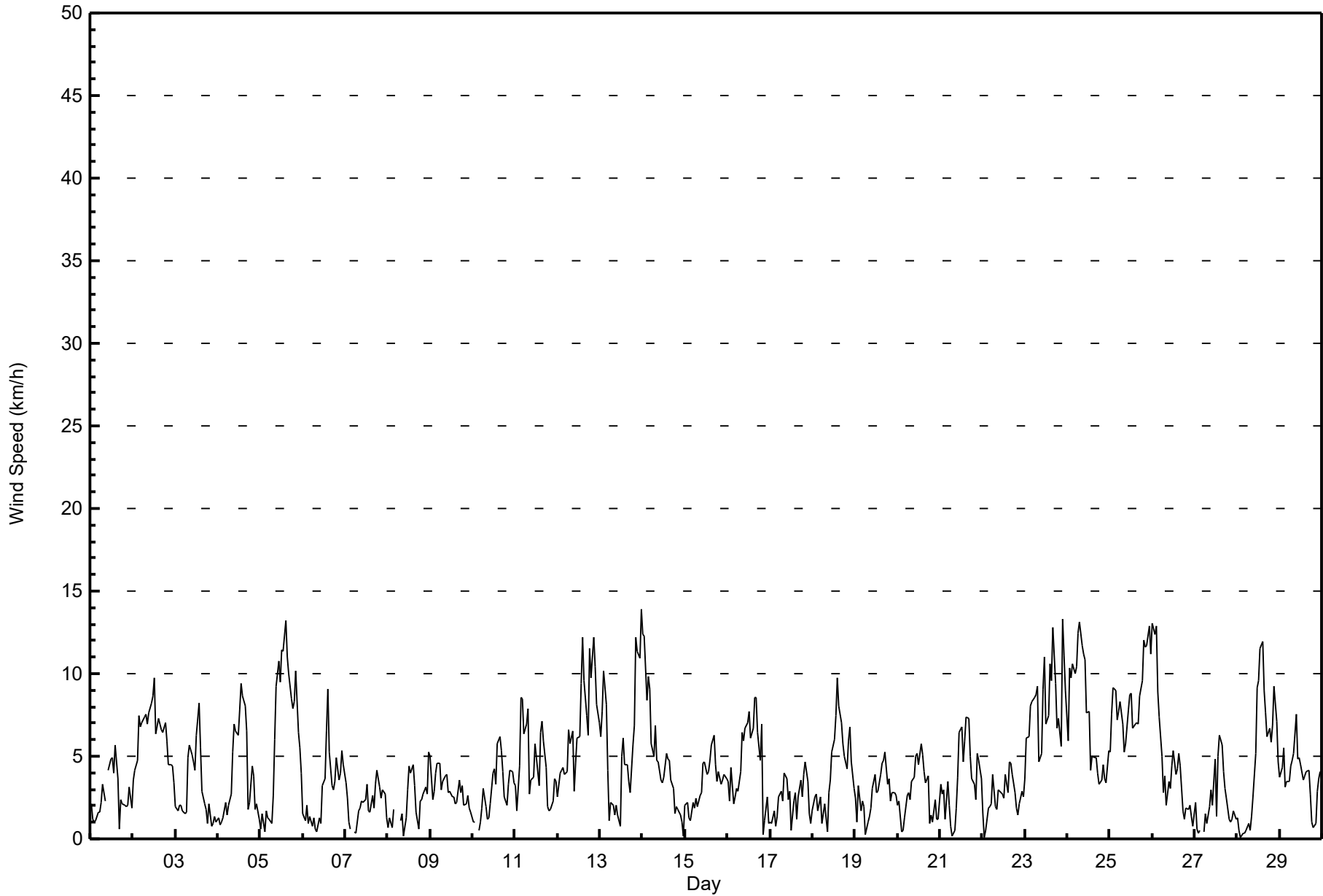


Maximum Speed: 14 km/h on Feb 14 00:00		Maximum Daily Speed Average: 8.1 km/h on Feb 25		Hours in Service: 696																						
Minimum Speed Value: 0 km/h on Feb 28 03:00		Minimum Daily Speed Average: 0.1 km/h on Feb 8		Hours of Data: 689																						
Maximum Diurnal Speed Average: 2.2 km/h at hour 14		Minimum Diurnal Speed Average: 0.3 km/h at hour 8		Hours of Missing Data: 7																						
Monthly Average Velocity: 0.7 km/h 10.9 deg		Percentiles: P ₁ = 0 P ₁₀ = 1 Q ₁ = 2 Median = 4 Q ₃ = 6 P ₉₀ = 9 P ₉₉ = 13		Percent Operational Time: 99.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	NW2	NNW1	NNE1	ENE1	ENE2	ENE2	SSE2	SSE3	S2	UO	SSE4	SE5	SE5	SE4	SE6	SSE4	SSW1	WNW2	NW2	WNW2	W2	W2	WNW3	NW2	SSE0.9	SE6
2-Feb	N4	N4	N5	NNW7	N7	NNE7	N7	N8	N7	NNW8	N8	N9	N10	N6	NNE7	N7	N7	N6	N7	N6	N4	NNW4	N4	NNW3	N6.3	N10
3-Feb	NW2	N2	E2	ENE2	ENE2	NE2	NW2	NW5	NNW6	NW5	NNW5	NNW4	N6	NNE8	NNE6	NE3	NE2	ENE2	NW1	WSW2	SSW1	SW1	SSW1	SW1	N2.0	NNE8
4-Feb	WSW1	SW1	SSW1	SSW1	SSE2	SE1	SSW2	SSE3	SSE5	SSE7	SSE7	SSE6	SSE8	SSE9	SSE9	SSE8	SSE6	SE2	S2	SSE4	SE4	SE2	S2	ESE1	SSE3.8	SSE9
5-Feb	S1	SSE1	NNW0	WNW2	SW1	WSW1	W1	W3	NNW6	N9	N11	N10	NNE11	N11	N13	N11	NNW10	NNW8	NNW8	NNW8	NNW10	NNW6	NW6	NNW4	N5.8	N13
6-Feb	WNW2	N1	NW2	WSW1	W1	ENE1	E1	ESE1	E0	N1	N1	SSE3	SE4	SSE7	SSE9	SE5	SSE3	SE3	SE3	SE5	SE4	SE4	SE5	SE4	SE2.2	SSE9
7-Feb	SSE3	SSE2	SE1	ESE1	UO	E0	ESE0	S2	S2	SSE2	SE2	E2	ESE3	E2	NNW2	NNE3	NE2	N3	NNW4	NNW3	NNW2	NNW3	NW3	NNW1	NE0.5	NNW4
8-Feb	WNW1	WNW1	WNW1	WNW2	UO	UO	UO	ESE1	SSE2	NE0	SSE1	E3	SE4	SE4	SE5	SSE3	SSE2	N1	NW2	NW2	NNW3	NW3	NW3	NW5	S0.1	NW5
9-Feb	NW5	W2	WSW3	W4	W5	W5	NNE3	NNE3	NNE4	NNE4	NE3	ENE3	NE3	NE3	ENE2	NE2	NNE4	NNE3	N3	NNE2	WNW2	W3	WSW2	W2	NNW1.6	NW5
10-Feb	WSW1	SW1	UO	SE0	SE1	SSE2	SSE3	S2	SW1	ESE1	SE2	SE4	S4	SE3	SE6	SSE6	SSE5	SSE4	WSW3	SW2	SSE3	S4	SSE4	SSE3	SSE2.6	SSE6
11-Feb	SW3	SE2	SW4	WSW9	WSW8	WSW6	WSW7	WSW8	S3	WSW4	SW4	WSW6	WSW5	WSW3	WSW6	WSW7	WSW6	WSW4	S2	S2	SE2	SSE2	SSE4	SSE3	SW3.9	WSW9
12-Feb	SE3	SSE4	SSE4	S4	SSE4	SE4	SSE7	SSE6	SSE7	S3	SSE5	S6	WSW6	WNW9	NW12	NW10	NW7	WNW6	WNW12	WNW10	NW12	NW10	N8	N7	WNW2.4	NW12
13-Feb	N6	N8	N10	NNE8	NE4	SE1	SSW2	SSW2	SSW1	NW2	ENE1	SE1	SSE5	SSE6	SSE4	SSE4	SSE3	SSW3	N6	N7	N12	N11	N11	NNW14	N2.8	NNW14
14-Feb	N12	N12	N8	NNE10	NNE9	NNE6	NE5	NNE7	NE5	NE5	NE4	ENE3	NE4	NE5	NE5	NE4	NNE3	NNE2	NNW2	N2	E1	E1	W0	NNE4.6	N12	
15-Feb	WSW2	WSW2	SSW1	SSE1	WSW2	SW2	SSW2	SSE2	SSE3	SE3	SE5	ESE5	SE4	SE4	SE5	SE6	SSE6	SE5	SSE3	SSE4	SE3	SSE4	SSE4	SSE4	SSE2.9	SSE6
16-Feb	S3	SE2	WSW4	SW2	SE3	SE3	SE3	SSE4	SSE6	SSE6	SSE7	SE7	SE8	SE6	S7	SW9	SSW9	S6	SSE5	W7	NNE0	W1	S3	S1	S3.7	SSW9
17-Feb	S1	S1	S2	SSE1	SSW1	S3	SSE3	SSE2	SSE4	SSE4	SSE2	SSE3	NE1	NE2	ENE3	NNE1	NNE3	NNW4	NW3	NW4	NNW5	WNW3	WNW2	N1	ESE0.1	NNW5
18-Feb	NW2	WNW3	NW3	NW2	NNW3	WNW1	NW2	NW2	N0	N3	NNE4	NNE5	NNE6	N7	N10	NNW8	NNW7	NW6	NW5	NW4	NNW6	NNW7	NNW5	NNW3	NNW3.9	N10
19-Feb	NNW2	W1	NW3	NNW2	W2	W2	NNE0	WSW1	NNW1	N2	N3	N4	N3	N3	NNW4	N5	NNE5	NNW5	N3	N4	NNE2	NNW3	NW3	NW3	NNW2.4	NNW5
20-Feb	NW2	WNW2	SE0	SW1	ESE1	SSE3	SSE3	SSE2	SSE3	SE4	SE5	SE5	SE5	SE6	SE5	SE4	SSE3	SSE4	SE1	NW1	SSW1	SSE2	SE1	NNW1	SSE2.2	SE6
21-Feb	NW3	WNW3	W3	WNW1	NW3	NW2	NW1	S0	N0	E2	SE4	SE6	SSE7	SE5	SSW6	SW7	SW7	SW5	SSW4	SW3	W2	NNW5	WNW5	NW4	SW1.5	SW7
22-Feb	NNW2	SSW0	SW1	WNW2	NNW2	NW2	N4	N2	NNW2	NNE3	N3	NE3	E2	SE4	NNE3	NNE5	N5	NW4	NW3	W2	SW1	SSE2	SSE3	SSE3	N1.1	NNE5
23-Feb	SE4	SSE6	SE6	SE8	SE8	SSE9	SSE9	SSE9	S5	S5	WSW9	WSW11	WSW7	SW7	WSW11	SW10	WNW13	WNW9	WSW7	SW7	WSW6	WNW13	W11	W9	SW4.8	WNW13
24-Feb	N6	NNE10	N10	N11	N10	NNW10	NNW12	NNW13	NNW11	NNW11	NNW11	N8	N8	NE4	NE5	NE5	NE5	NE4	NE3	NE4	NE5	ENE4	NE3	N5	N6.7	NNW13
25-Feb	N5	N8	NNW9	NNW9	N7	N8	NNE8	NNE7	NNE5	NNE6	NNE8	NNE9	NNE9	NE7	NE7	NE7	NE7	NE9	NNE10	N12	N12	N12	N13	N11	NNE8.1	N13
26-Feb	N13	N12	N13	N9	NNW7	NNW5	WNW3	NW4	WSW2	NW3	NNE3	NNE4	NNE5	E4	ESE4	SE5	SE4	SSE2	SW1	WSW2	WSW2	WSW2	WSW1	E1	N2.7	N13
27-Feb	WNW2	NNW1	NW0	WNW1	UO	E0	SSE2	SE1	SE2	SE3	S2	W5	NNE1	ESE5	SE6	SE6	ESE4	E3	SE2	ESE1	SSW1	WNW1	WNW2	WNW1	SE1.1	SE6
28-Feb	WNW1	W0	NW0	NNE0	NNW0	W1	NW1	NW1	NNW1	SE3	SE5	SE9	SE10	SE12	SE12	SE9	SE8	ESE6	ESE7	ESE6	ESE7	SE9	SE7	ESE5	SE4.4	SE12
29-Feb	ESE4	E4	ESE6	E3	ENE3	ENE4	E4	ESE5	ESE5	ESE8	ESE5	ESE5	SE5	ESE4	SSE4	SE4	SE4	SSW3	W1	SSE1	SW1	W3	W4	W4	ESE2.5	ESE8
NNW1.7 N1.5NNW1.5NNW1.4NNW1.2 N0.6 NE0.3NNE0.3 E0.4 NE0.9ENE1.0 E1.2 E1.4 E2.2 ESE1.4 ESE0.9 NE0.4 N0.9NNW1.2 NW1.5NNW1.6NNW1.7 NW1.2NNW1.5																								Diurnal Average		
N13 N12 N13 N11 N10 NNW10 NNW12 NNW13 NNW12 NNW11 WSW11 NNE11 SE12 N13 N11 NNW13 NNW9 NNW12 N12 NW12 NNW13 N13 NNW14																								Diurnal Maximum		
UO - Unstable Operation																										
All monthly, daily, and diurnal averages have been calculated using vector methods																										



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Waskow ohci Pimatisiwin - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed (WS) - km/h
Waskow ohci Pimatisiwin - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	493	71.55	71.55
6 - 11	175	25.40	96.95
12 - 19	21	3.05	100.00
20 - 28	0	0.00	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 689

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Wind Speed (WS) - km/h
Waskow ohci Pimatisiwin - February 2024

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	30	28	31	15	18	20	66	68	25	18	19	23	25	27	44	36	493
6 - 11	41	19	5	0	0	6	20	24	3	2	6	16	3	4	5	21	175
12 - 19	11	0	0	0	0	0	1	0	0	0	0	0	0	3	2	4	21
20 - 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	82	47	36	15	18	26	87	92	28	20	25	39	28	34	51	61	689

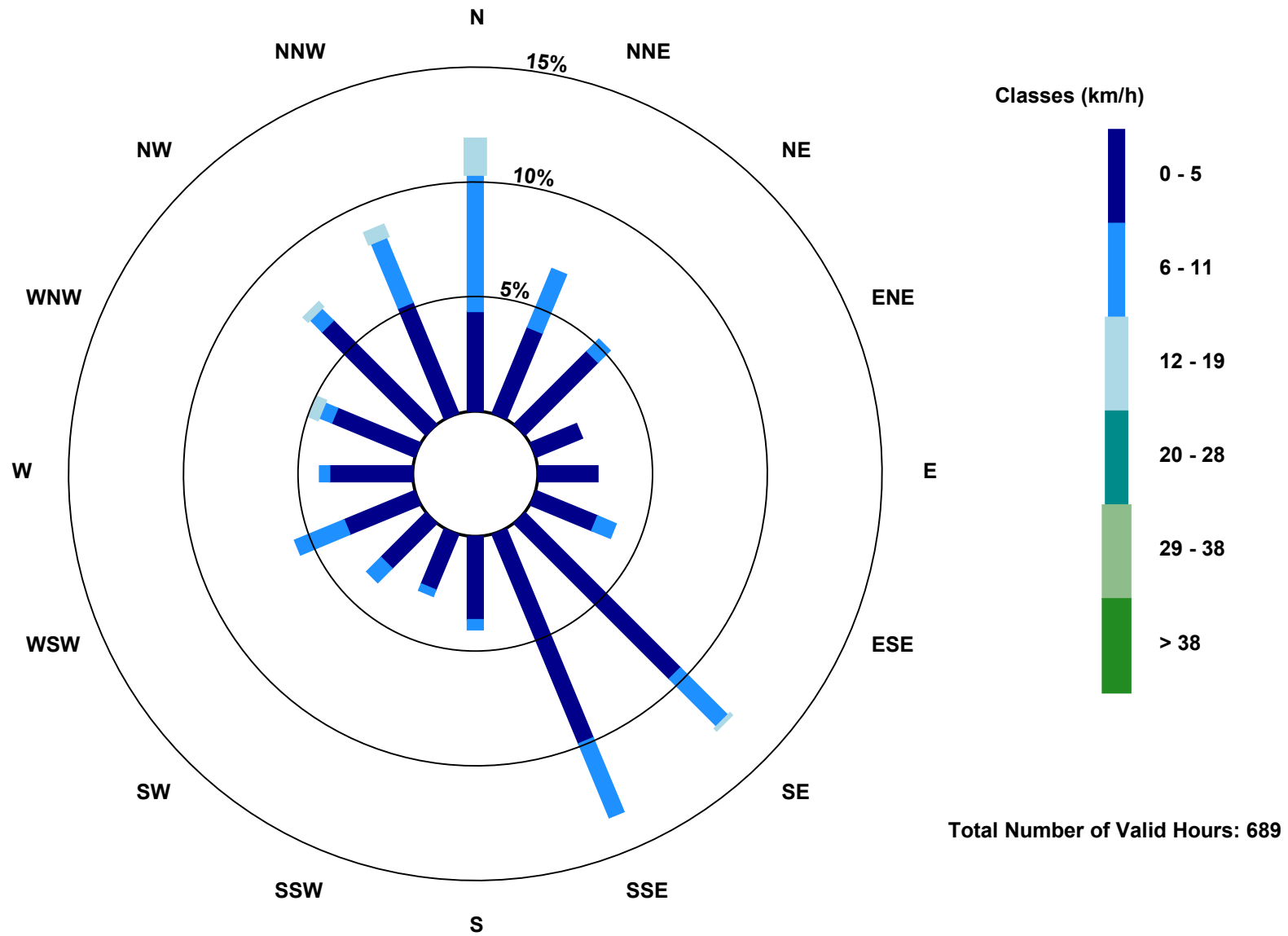
Total Number of Valid Hours: 689

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Waskow ohci Pimatisiwin





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h

Waskow ohci Pimatisiwin - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 6 km/h on Feb 23 22:00 Minimum Value: 0 km/h on Feb 9 22:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 1 Q ₃ = 2 P ₉₀ = 3 P ₉₉ = 5																	Hours in Service: 696 Hours of Data: 689 Hours of Missing Data: 7 Hours of Calibration: 0 Percent Operational Time: 99.0									
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	1	1	1	1	1	1	1	1	1	UO	1	2	2	1	2	1	1	1	1	2	1	1	1	1	2	2
2-Feb	2	1	1	2	2	3	2	2	2	2	3	2	3	2	2	2	2	2	2	2	2	1	1	1	1	3
3-Feb	1	1	1	0	1	1	2	1	1	1	1	1	2	3	2	1	1	1	1	1	1	1	1	1	1	3
4-Feb	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	2	2	2	1	1	1	1	1	1	1	3
5-Feb	1	1	1	1	1	1	1	1	1	2	3	4	3	4	4	4	3	2	2	2	3	2	1	1	1	4
6-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	2	1	2	1	2	1	1	2	2	2	3
7-Feb	1	1	1	1	UO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-Feb	1	1	1	1	UO	UO	UO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9-Feb	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	2
10-Feb	1	1	UO	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	2	1	1	1	1	1	2
11-Feb	2	1	3	3	3	2	3	3	2	2	1	2	2	2	3	3	2	1	1	1	1	1	1	1	2	3
12-Feb	0	1	1	1	1	2	2	2	3	1	1	2	3	6	4	4	2	2	4	3	4	3	3	2	2	6
13-Feb	2	3	3	3	2	1	1	1	1	1	1	2	2	2	2	1	1	1	4	2	4	4	4	4	4	4
14-Feb	4	4	2	3	3	2	2	3	2	2	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	4
15-Feb	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	1	1	1	1	2
16-Feb	1	1	2	1	1	1	1	1	1	2	2	2	2	2	3	3	4	2	2	3	2	1	1	1	1	4
17-Feb	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2
18-Feb	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	2	2	2	2	1	1	2	2	1	1	3
19-Feb	1	1	1	1	1	0	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
20-Feb	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	1	1	1	1	1	1	1	1	1	1	2
21-Feb	1	1	1	1	1	1	1	1	1	1	2	2	2	1	3	3	3	2	2	2	2	1	1	1	1	3
22-Feb	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
23-Feb	1	2	2	3	2	3	3	3	2	2	4	5	3	4	5	5	5	5	3	3	2	6	4	3	6	6
24-Feb	3	4	4	4	3	3	4	4	3	4	3	2	2	2	1	2	2	1	1	1	2	1	2	1	4	4
25-Feb	2	2	2	2	2	2	3	2	2	2	3	3	3	3	3	2	3	4	4	4	4	4	5	3	5	5
26-Feb	4	5	4	3	2	1	1	1	1	2	1	2	2	1	2	2	2	1	1	1	1	1	1	1	1	5
27-Feb	1	1	1	1	UO	1	1	1	1	1	2	2	1	2	2	2	1	1	1	1	1	1	1	1	1	2
28-Feb	1	1	1	1	1	1	1	1	1	1	2	3	3	4	4	3	3	2	2	2	3	4	3	2	4	4
29-Feb	2	2	2	1	1	1	1	2	2	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	3
Diurnal Maximum																										
4 5 4 4 3 3 4 4 3 4 4 5 4 6 5 5 5 5 5 4 4 4 6 5 4																										
UO - Unstable Operation																										



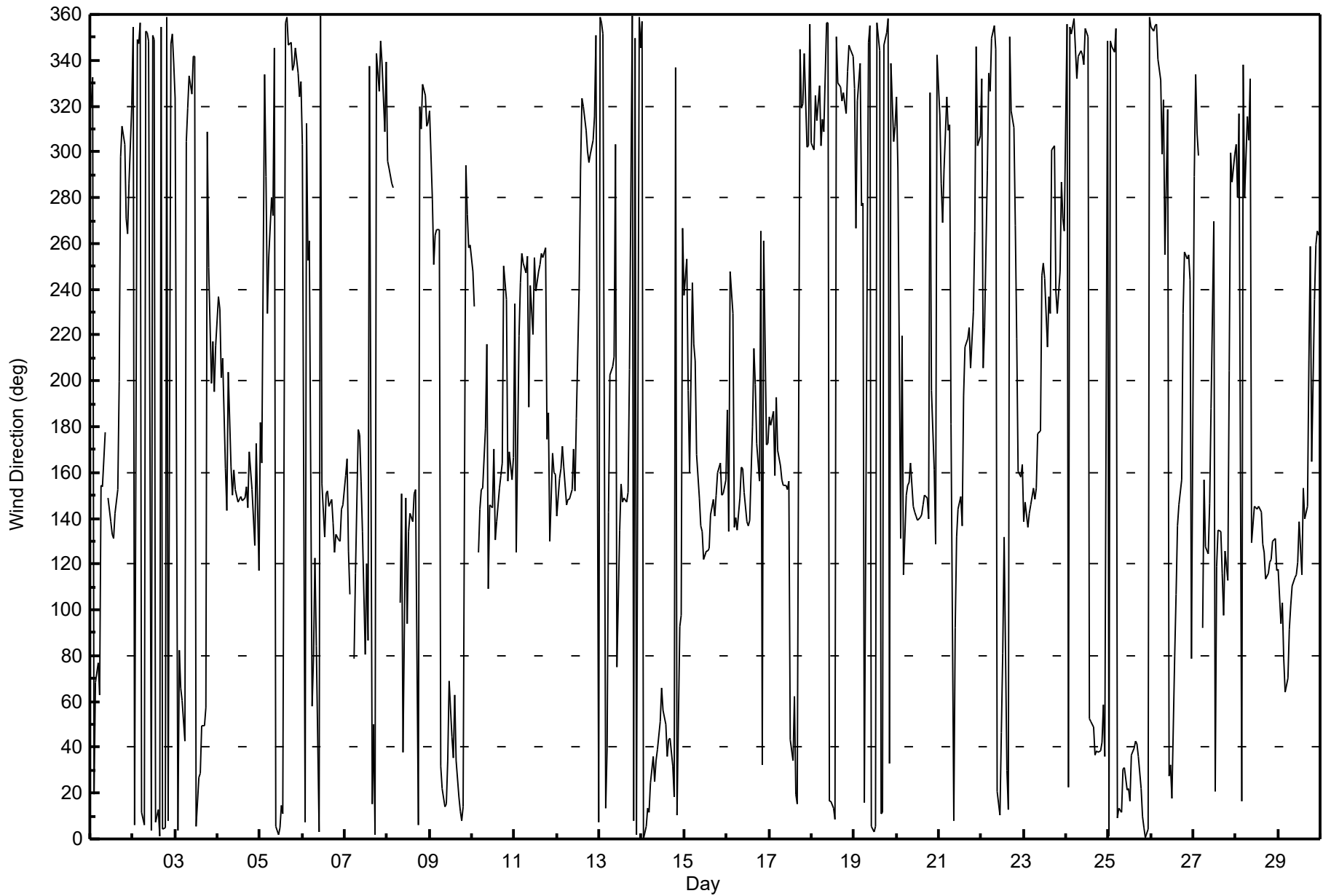
Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Direction (WD) - deg

Waskow ohci Pimatisiwin - February 2024

Direction of Maximum Speed: 345 deg on Feb 14 00:00																						Hours in Service: 696			
Direction of Maximum Daily Speed Average: 12.6 deg on Feb 25																						Hours of Data: 689			
Direction of Minimum Speed: 317 deg on Feb 28 03:00											Direction of Minimum Daily Speed Average: 0.1 deg on Feb 8											Hours of Missing Data: 7			
Monthly Average Direction: 10.9 deg																								Percent Operational Time: 99.0	
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	320	333	19	69	77	63	154	154	178	UO	149	138	133	131	142	153	200	298	311	303	271	264	286	320	155.1
2-Feb	354	6	349	347	356	12	6	353	352	348	3	351	349	7	13	1	355	5	5	359	8	347	352	339	357.6
3-Feb	323	4	82	66	60	43	304	319	333	325	341	342	5	27	29	50	49	57	309	250	199	218	196	215	0.5
4-Feb	237	231	201	210	162	143	204	162	150	161	153	147	148	149	148	149	154	144	169	152	140	128	173	117	154.4
5-Feb	182	164	333	289	230	254	280	272	345	5	2	5	15	11	356	359	346	348	335	338	345	335	324	330	350.1
6-Feb	303	8	312	253	261	58	80	123	84	3	359	155	132	151	152	145	148	138	125	133	131	130	144	146	140.3
7-Feb	159	166	126	107	UO	79	116	179	177	156	134	81	120	86	337	15	50	2	343	327	348	338	309	339	43.6
8-Feb	296	293	286	284	UO	UO	UO	103	151	38	149	94	134	142	139	150	152	6	319	310	330	325	311	313	173.8
9-Feb	318	279	250	264	266	266	32	22	14	15	34	69	44	35	63	34	18	12	8	14	294	273	258	259	342.9
10-Feb	248	232	UO	125	144	153	153	179	216	109	146	145	170	130	139	153	159	164	250	235	156	169	157	167	161.4
11-Feb	234	125	220	243	256	251	247	255	189	241	220	254	239	248	251	256	254	258	174	186	130	168	160	159	236.2
12-Feb	141	158	162	171	163	146	148	148	153	170	152	184	240	292	323	320	309	300	296	299	305	315	351	7	284.5
13-Feb	359	356	352	13	40	143	203	206	211	304	75	135	155	147	149	147	151	205	359	8	349	2	359	345	5.7
14-Feb	357	0	6	13	12	24	36	25	34	39	51	66	56	50	36	44	44	32	18	337	10	93	98	267	23.4
15-Feb	237	253	196	160	243	216	208	168	149	137	134	122	125	126	127	142	148	141	150	160	164	150	151	157	152.4
16-Feb	187	134	248	229	136	140	135	149	163	162	151	138	137	139	180	214	198	173	156	265	32	261	172	173	172.1
17-Feb	184	181	187	159	193	170	163	157	155	155	152	156	44	34	62	19	15	344	319	321	343	302	303	356	116.5
18-Feb	304	301	325	314	329	303	314	309	356	356	16	17	13	9	350	330	329	322	326	316	335	347	345	342	340.7
19-Feb	328	267	322	339	276	278	16	247	348	355	6	3	5	356	344	11	12	347	352	358	33	339	304	311	344.8
20-Feb	324	293	131	220	115	150	155	156	164	145	143	141	139	140	142	146	150	149	139	326	196	161	129	342	148.1
21-Feb	316	286	269	292	324	310	312	181	8	92	132	144	149	136	193	215	219	223	206	230	265	346	303	307	225.6
22-Feb	332	206	223	292	335	326	350	355	345	21	10	46	81	132	30	13	350	318	311	268	219	161	158	164	358.4
23-Feb	138	147	136	142	146	153	149	153	177	178	246	251	245	215	237	230	301	303	239	230	248	287	271	265	224.4
24-Feb	355	23	355	352	358	345	332	342	344	342	338	354	350	52	51	49	36	39	38	38	42	59	36	349	1.0
25-Feb	1	349	346	344	354	9	14	12	30	31	21	22	17	37	39	43	41	36	22	10	5	1	4	359	12.6
26-Feb	354	353	355	356	340	332	299	323	255	319	27	32	18	80	107	137	146	157	230	256	253	255	244	79	355.4
27-Feb	289	334	308	299	UO	92	157	128	125	146	188	270	21	119	135	134	116	98	126	113	204	300	287	299	139.6
28-Feb	303	280	317	17	338	280	315	305	332	129	145	145	144	145	143	129	125	114	116	121	122	130	131	117	132.3
29-Feb	118	94	103	79	64	70	91	102	111	114	116	121	139	115	153	140	145	209	259	165	235	259	265	264	120.6
337.4	357.3	345.0	342.5	347.0	2.5	42.0	12.7	79.8	48.6	73.6	92.6	90.1	99.5	104.8	116.0	43.3	350.3	336.1	320.2	340.8	330.4	322.5	328.9		
Diurnal Average																									
UO - Unstable Operation																									
All monthly, daily, and diurnal averages have been calculated using vector methods																									





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Waskow ohci Pimatisiwin - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 112 deg on Feb 16 21:00		Hours in Service: 696 Hours of Data: 689 Hours of Missing Data: 7 Hours of Calibration: 0 Percent Operational Time: 99.0																							
Minimum Value: 9 deg on Feb 9 22:00																									
Percentiles: P ₁ = 14 P ₁₀ = 19 Q ₁ = 23 Median = 29 Q ₃ = 43 P ₉₀ = 68 P ₉₉ = 96																									
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	66	72	55	76	20	67	58	29	28	UO	29	28	28	20	22	31	81	52	39	37	38	36	21	39	81
2-Feb	26	24	18	17	20	25	23	21	20	18	22	21	20	27	24	23	20	21	21	22	26	20	19	27	27
3-Feb	54	48	18	18	33	64	67	22	19	20	29	29	27	23	30	36	28	34	77	26	63	52	27	74	77
4-Feb	41	78	56	36	24	42	34	22	19	21	21	25	30	22	19	19	22	39	42	19	22	43	30	71	78
5-Feb	96	72	83	32	53	53	77	21	26	23	23	24	26	24	22	23	18	15	18	16	16	19	19	18	96
6-Feb	51	30	31	64	49	75	35	76	58	47	78	40	38	27	21	27	31	37	26	23	30	26	25	23	78
7-Feb	23	58	58	73	UO	37	80	29	42	34	43	35	35	69	69	34	19	20	19	20	39	19	25	14	80
8-Feb	72	37	68	28	UO	UO	UO	32	39	102	73	40	27	28	26	26	34	53	20	15	16	16	18	15	102
9-Feb	19	30	38	28	24	31	27	25	21	22	31	28	35	34	34	42	27	25	30	45	32	9	33	30	45
10-Feb	50	54	UO	73	50	40	25	28	48	44	41	26	32	36	31	24	23	35	57	74	25	29	27	41	74
11-Feb	88	68	53	27	23	29	25	36	67	60	55	39	66	68	39	36	26	15	52	68	27	36	32	14	88
12-Feb	16	26	29	15	18	19	23	20	28	49	24	41	48	35	27	23	17	16	22	21	18	18	20	21	49
13-Feb	20	20	19	24	35	56	28	48	64	39	74	96	29	27	34	24	19	50	55	26	21	24	23	21	96
14-Feb	22	21	21	21	24	29	26	22	29	26	26	22	24	22	30	22	20	18	22	29	28	34	57	63	63
15-Feb	24	18	70	59	37	48	24	24	20	22	24	24	34	30	23	22	21	22	24	12	30	18	25	30	70
16-Feb	49	51	50	80	42	26	24	16	13	21	22	20	22	25	37	39	41	35	56	47	112	91	56	89	112
17-Feb	70	72	51	71	42	43	42	61	26	22	28	46	92	42	24	60	24	24	37	25	18	22	51	86	92
18-Feb	27	34	36	76	66	83	67	33	95	38	23	29	22	21	24	19	17	14	20	24	17	17	20	20	95
19-Feb	26	80	28	42	36	33	97	76	55	44	30	31	59	57	37	27	20	15	27	27	30	32	27	30	97
20-Feb	57	40	90	96	57	29	29	35	21	23	23	26	24	22	23	26	42	36	79	46	83	28	55	77	96
21-Feb	30	40	40	74	20	35	38	96	72	42	32	22	22	18	47	41	41	46	40	42	71	23	17	19	96
22-Feb	16	97	85	38	38	54	29	30	61	33	42	36	55	41	34	19	22	16	41	39	70	25	26	32	97
23-Feb	33	23	22	23	22	21	22	22	33	40	38	37	48	48	44	43	30	26	42	45	37	29	29	31	48
24-Feb	54	27	26	21	23	19	20	19	20	20	21	24	23	32	26	27	27	19	24	26	24	18	29	19	54
25-Feb	23	22	19	17	19	21	24	19	25	29	29	26	29	31	29	25	23	22	23	24	23	23	24	23	31
26-Feb	22	22	22	22	20	16	46	24	67	45	66	55	42	35	47	33	24	30	68	68	69	42	41	72	72
27-Feb	46	87	72	41	UO	43	56	59	34	24	77	49	86	38	31	26	28	23	28	44	61	56	23	36	87
28-Feb	32	69	96	68	25	48	49	57	43	50	36	25	27	25	23	26	26	27	25	28	26	24	26	28	96
29-Feb	30	25	25	25	17	17	22	26	28	26	27	34	35	36	39	34	38	54	74	76	85	18	12	14	85
	96	97	96	96	66	83	97	96	95	102	78	96	92	69	69	60	81	54	79	76	112	91	57	89	
	Diurnal Maximum																								
UO - Unstable Operation																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS26 CHRISTINA LAKE FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CHRISTINA LAKE (AMS26)
 FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	607	30	89	91.52	10.8	0	2.2	0
H2S (ppb) Average	659	34	37	99.57	10.2	1	1.4	0
NO2 (ppb) Average	659	35	37	99.71	27.7	0	17	-
NO (ppb) Average	659	35	37	99.71	27.3	-	6.6	-
NOX (ppb) Average	659	35	37	99.71	42.6	-	23.6	-
Temperature 2 m (C) Average	696	0	0	100	10.8	-	4	-
Relative Humidity (%) Average	696	0	0	100	95.6	-	92.8	-
Wind Speed 10 m (km/h) Average	696	0	0	100	28	-	18	-
Wind Direction 10 m (deg) Average	696	0	0	100	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CHRISTINA LAKE (AMS26)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	607	0.81	1.4	-	0	0	0.1	0.3	0.8	2.1	10.8
H2S (ppb) Average	659	0.22	0.5	-	0	0	0	0.2	0.3	0.4	10.2
NO2 (ppb) Average	659	4.73	3.9	-	0.3	1.2	2	3.5	6.6	9.7	27.7
NO (ppb) Average	659	1.65	2.7	-	0	0	0.2	0.6	1.8	4.9	27.3
NOX (ppb) Average	659	6.38	6	-	0.3	1.4	2.3	4.2	8.5	14.2	42.6
Temperature 2 m (C) Average	696	-7.44	7.6	-	-27	-17.2	-11.8	-7.4	-2.1	2.6	10.8
Relative Humidity (%) Average	696	68.37	17.1	-	20	42.9	56.9	70.4	82.1	89.3	95.6
Wind Speed 10 m (km/h) Average	696	10.2	6	-	1	3	5	10	14	19	28
Wind Direction 10 m (deg) Average	696	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CHRISTINA LAKE (AMS26)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
SO2	01 Feb 2024 03:00	03 Feb 2024 11:00	57	Analyzer Failure - communication issues
SO2	03 Feb 2024 12:00	03 Feb 2024 13:00	2	Maintenance - analyzer replaced
H2S, NO2	02 Feb 2024 15:00	02 Feb 2024 15:00	1	Maintenance - station logger/modem reset
H2S	03 Feb 2024 12:00	03 Feb 2024 13:00	2	Maintenance - reinitiated daily QA check
NO2	03 Feb 2024 13:00	03 Feb 2024 13:00	1	Maintenance - reinitiated daily QA check



Wood Buffalo Environmental Association

Summary of Hour Averages

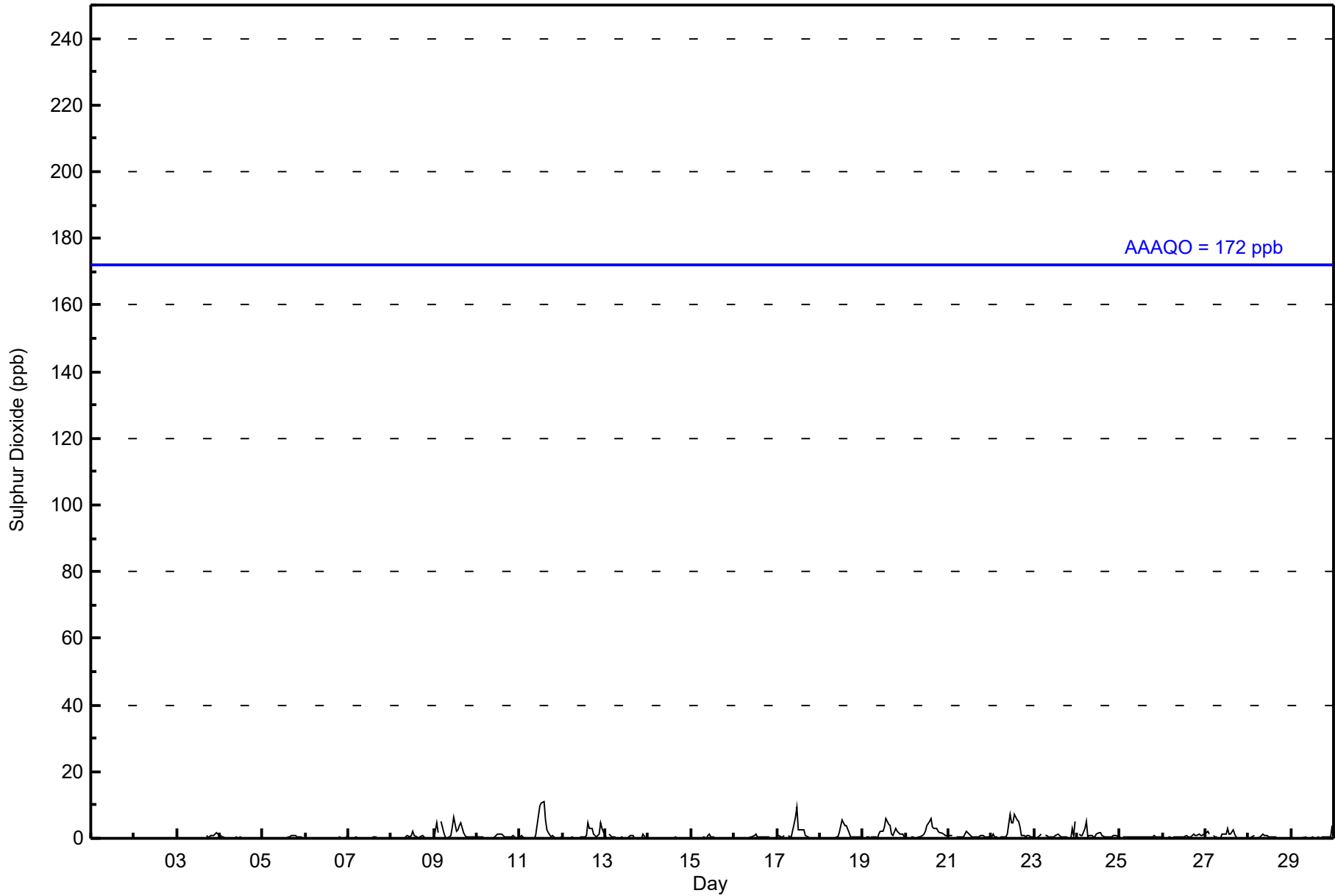
Sulphur Dioxide (SO₂) - ppb Christina Lake - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	Daily Average		Daily Maximum				
Maximum Value: 10.8 ppb on Feb 11 14:00		Maximum Daily Average: 2.2 ppb on Feb 11																	Hours of Data: 607		Hours of Missing Data: 89						
Minimum Value: 0.0 ppb on Feb 4 19:00		Minimum Daily Average: 0.0 ppb on Feb 14																	Hours of Calibration: 30		Percent Operational Time: 91.5						
Maximum Diurnal Average: 1.9 ppb at hour 14		Minimum Diurnal Average: 0.2 ppb at hour 8																									
Monthly Average: 0.81 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.3 Q ₃ = 0.8 P ₉₀ = 2.1 P ₉₉ = 6.6																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.3	Z	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	0.3	
2-Feb	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--	
3-Feb	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	M	M	C	C	C	0.7	0.5	0.2	0.7	1.0	1.1	1.6	1.3	--	1.6	
4-Feb	1.0	0.6	0.3	0.2	Z	0.1	0.1	0.2	0.1	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	1.0	
5-Feb	0.1	0.0	0.0	0.1	0.1	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.5	0.5	0.8	1.1	0.7	0.5	0.5	0.3	0.2	0.2	0.2	1.1	
6-Feb	Z	0.1	0.1	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.3	
7-Feb	0.3	Z	0.2	0.2	0.3	0.1	0.2	0.1	0.2	0.0	0.1	0.1	0.1	0.2	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	
8-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.3	1.0	0.6	0.7	2.1	0.9	0.2	0.2	0.6	1.0	0.3	0.1	0.0	0.0	0.0	0.0	0.4	2.1	
9-Feb	0.1	4.8	1.8	Z	5.1	1.9	0.6	0.2	0.3	1.0	3.2	6.6	2.2	2.6	3.7	4.8	1.6	0.7	0.4	0.3	0.3	0.3	0.3	0.5	1.9	6.6	
10-Feb	0.6	0.5	0.3	0.2	Z	0.1	0.2	0.0	0.1	0.1	0.3	1.1	1.2	1.2	1.2	0.6	0.5	0.3	0.4	0.3	0.8	0.3	0.2	0.2	0.5	1.2	
11-Feb	0.4	0.8	0.1	0.0	0.0	Z	0.0	0.0	0.1	0.9	6.6	9.7	10.4	10.8	5.3	2.6	1.6	0.6	0.8	0.5	0.2	0.1	0.1	0.2	2.2	10.8	
12-Feb	Z	0.2	0.1	0.1	0.1	0.3	0.1	0.0	0.1	0.0	0.5	0.6	0.5	1.1	4.7	2.8	2.9	1.1	0.7	0.3	1.2	4.8	3.0	0.7	1.1	4.8	
13-Feb	0.3	Z	1.3	0.6	0.3	0.2	0.2	0.1	0.0	0.2	0.0	0.1	0.2	0.5	0.9	0.7	0.2	0.0	0.0	0.0	0.0	1.4	0.1	0.2	0.3	1.4	
14-Feb	0.0	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	
15-Feb	0.0	0.1	0.2	Z	0.1	0.0	0.1	0.2	0.0	0.7	1.4	0.5	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.4	
16-Feb	0.0	0.0	0.1	0.0	Z	0.2	0.1	0.2	0.2	0.3	0.4	0.8	1.1	0.6	0.3	0.4	0.3	0.5	0.6	0.3	0.1	0.1	0.2	0.2	0.3	1.1	
17-Feb	0.6	0.7	0.5	0.6	0.8	Z	1.0	0.6	0.6	4.1	6.5	9.5	2.4	2.6	2.4	2.4	0.9	0.5	0.2	0.1	0.2	0.1	0.0	0.0	1.6	9.5	
18-Feb	Z	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.3	1.6	5.6	4.7	3.9	4.0	1.9	0.6	0.4	0.3	0.3	0.3	0.3	0.2	1.1	5.6	
19-Feb	0.2	Z	0.3	0.3	0.2	0.3	0.3	0.2	0.2	1.4	2.3	2.2	3.4	6.0	4.2	3.8	1.2	0.8	3.0	2.3	1.7	1.4	1.1	0.5	1.6	6.0	
20-Feb	0.5	0.5	Z	0.3	0.3	0.2	0.2	0.2	0.4	0.7	1.4	2.3	3.7	5.2	6.0	3.3	3.0	3.1	2.2	1.7	1.6	1.3	1.1	1.0	1.7	6.0	
21-Feb	0.7	0.7	0.7	Z	0.6	0.5	0.5	0.5	0.6	1.1	2.2	1.8	0.9	0.5	0.5	0.6	0.4	0.6	0.9	0.9	0.4	0.3	0.3	0.3	0.7	2.2	
22-Feb	0.4	1.2	0.5	0.4	Z	0.3	0.4	0.3	0.5	1.3	7.0	4.5	4.6	7.2	5.5	5.2	3.5	0.8	0.7	0.5	0.6	0.9	0.4	0.2	2.0	7.2	
23-Feb	0.3	0.2	0.5	0.7	1.3	Z	0.9	0.8	0.5	0.4	0.4	0.4	1.0	1.4	0.8	0.5	0.3	0.3	0.5	0.2	0.2	3.0	1.0	4.9	0.9	4.9	
24-Feb	Z	1.3	0.8	0.8	3.1	5.3	0.6	0.7	0.7	0.6	0.4	1.1	1.7	1.7	0.7	0.6	0.6	0.6	0.6	0.5	0.8	0.8	0.7	0.5	1.1	5.3	
25-Feb	0.5	Z	0.6	0.5	0.5	0.5	0.4	0.3	0.5	0.4	0.5	0.4	0.6	0.6	0.6	0.4	0.3	0.5	0.4	0.8	0.5	0.3	0.3	0.2	0.5	0.8	
26-Feb	0.2	0.2	Z	0.2	0.2	0.2	0.3	0.3	0.4	0.6	0.4	0.4	0.5	0.7	0.6	0.5	0.6	1.2	0.9	1.0	1.2	0.9	0.9	1.3	0.6	1.3	
27-Feb	1.5	2.1	1.5	Z	0.7	0.4	0.2	0.2	0.2	1.1	1.4	1.4	2.8	1.1	1.4	2.5	1.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.8	
28-Feb	0.0	0.0	0.6	0.9	Z	0.0	0.3	0.9	1.1	0.9	0.6	0.6	0.5	0.4	0.2	0.3	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.3	1.1	
29-Feb	0.0	0.0	0.0	0.1	0.2	Z	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.0	0.3	0.4	0.3	0.3	0.3	0.3	3.8	0.3	3.8	
		0.4	0.6	0.5	0.3	0.7	0.5	0.3	0.2	0.3	0.7	1.4	1.8	1.8	1.9	1.7	1.5	0.9	0.6	0.5	0.4	0.4	0.7	0.5	0.6	Diurnal Average	
		1.5	4.8	1.8	0.9	5.1	5.3	1.0	0.9	1.1	4.1	7.0	9.7	10.4	10.8	6.0	5.2	3.5	3.1	3.0	2.3	1.7	4.8	3.0	4.9	Diurnal Maximum	
Z - zerspan		C - Calibration				M - Maintenance				AF - Analyzer Failure																	
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 172 ppb				24-hr 48 ppb																					



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Christina Lake - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Christina Lake - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	606	99.84	99.84
11 - 20	1	0.16	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 607

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Christina Lake - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	2	45	75	18	23	38	17	29	28	45	42	87	65	40	27	25	606
11 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	2	45	75	18	23	38	17	29	28	45	42	87	65	41	27	25	607

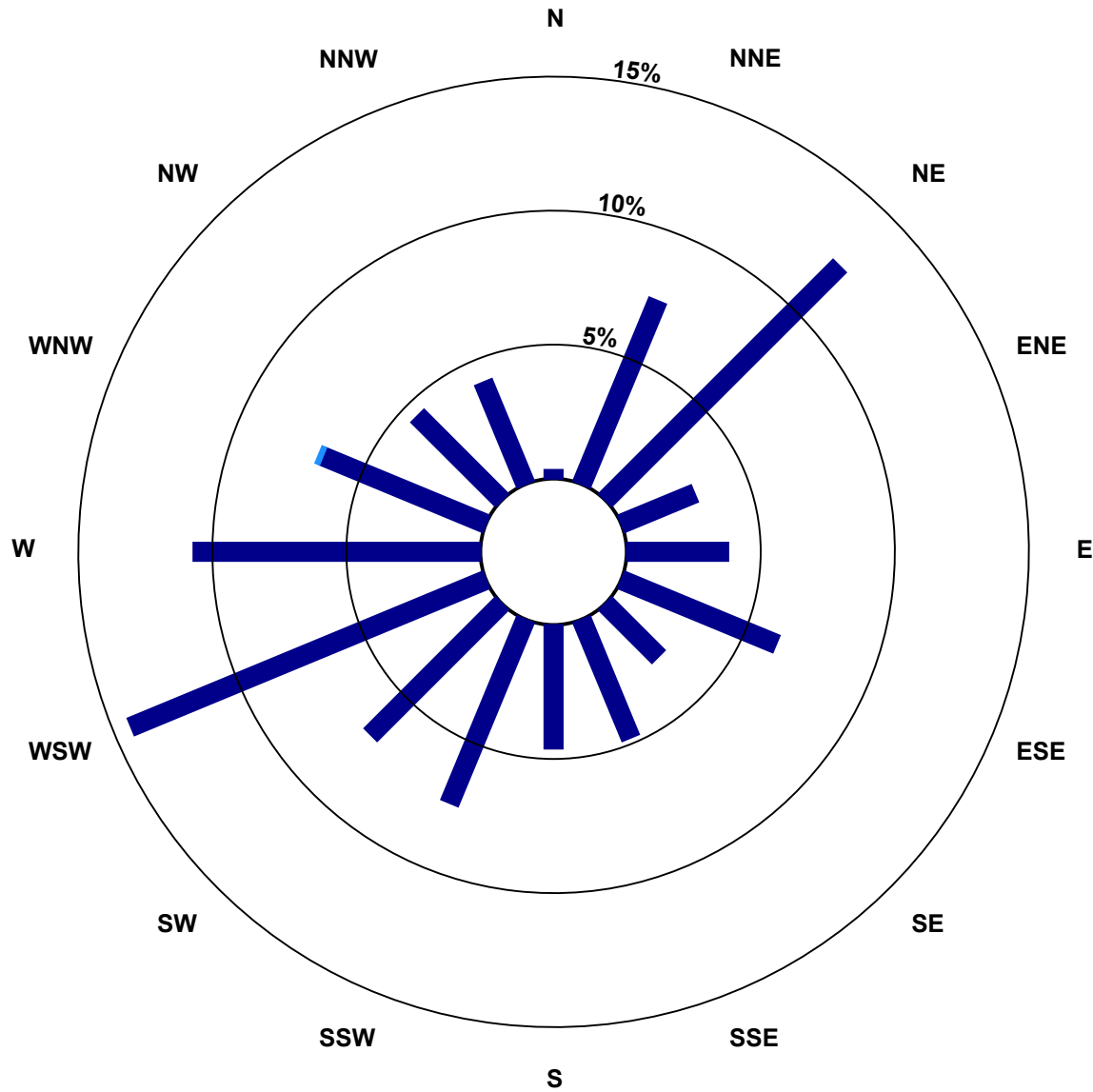
Total Number of Valid Hours: 607

Total Number of Hours: 696

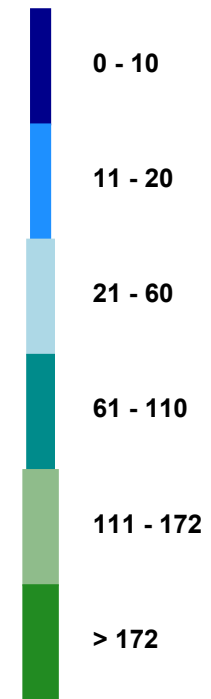


Wood Buffalo Environmental Association
Wind Rose Feb 2024

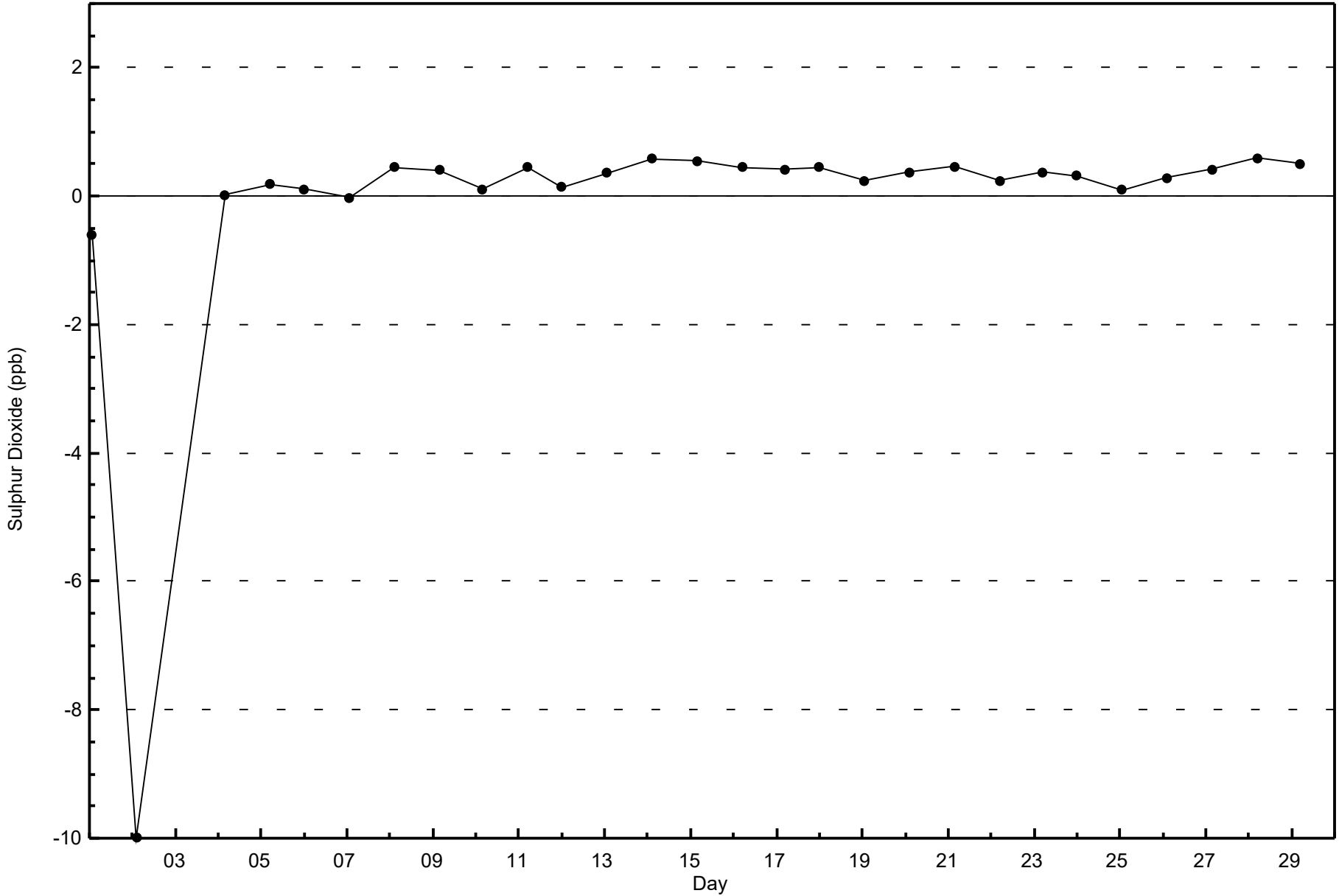
Sulphur Dioxide (SO₂) - ppb
Christina Lake

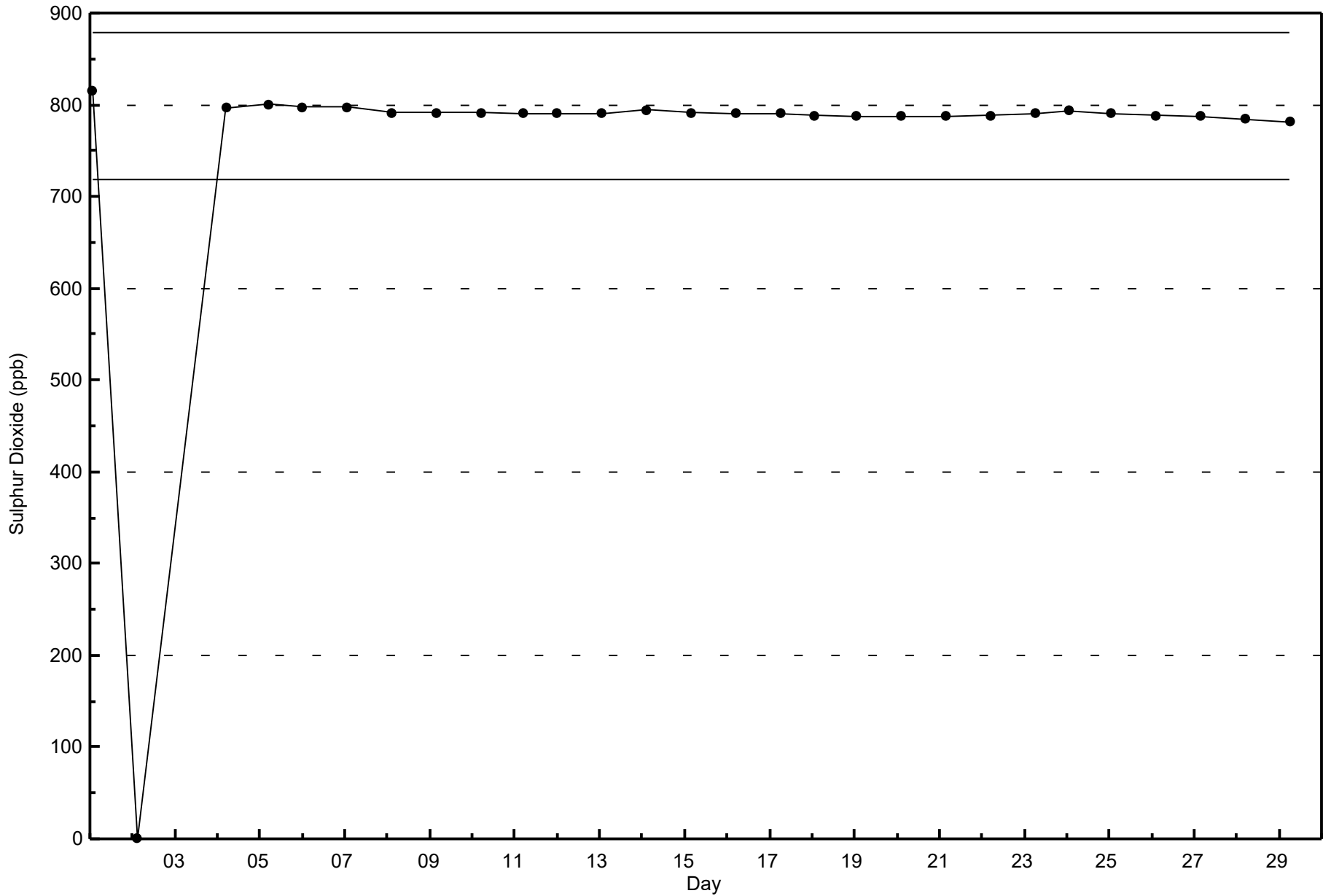


Classes (ppb)



Total Number of Valid Hours: 607



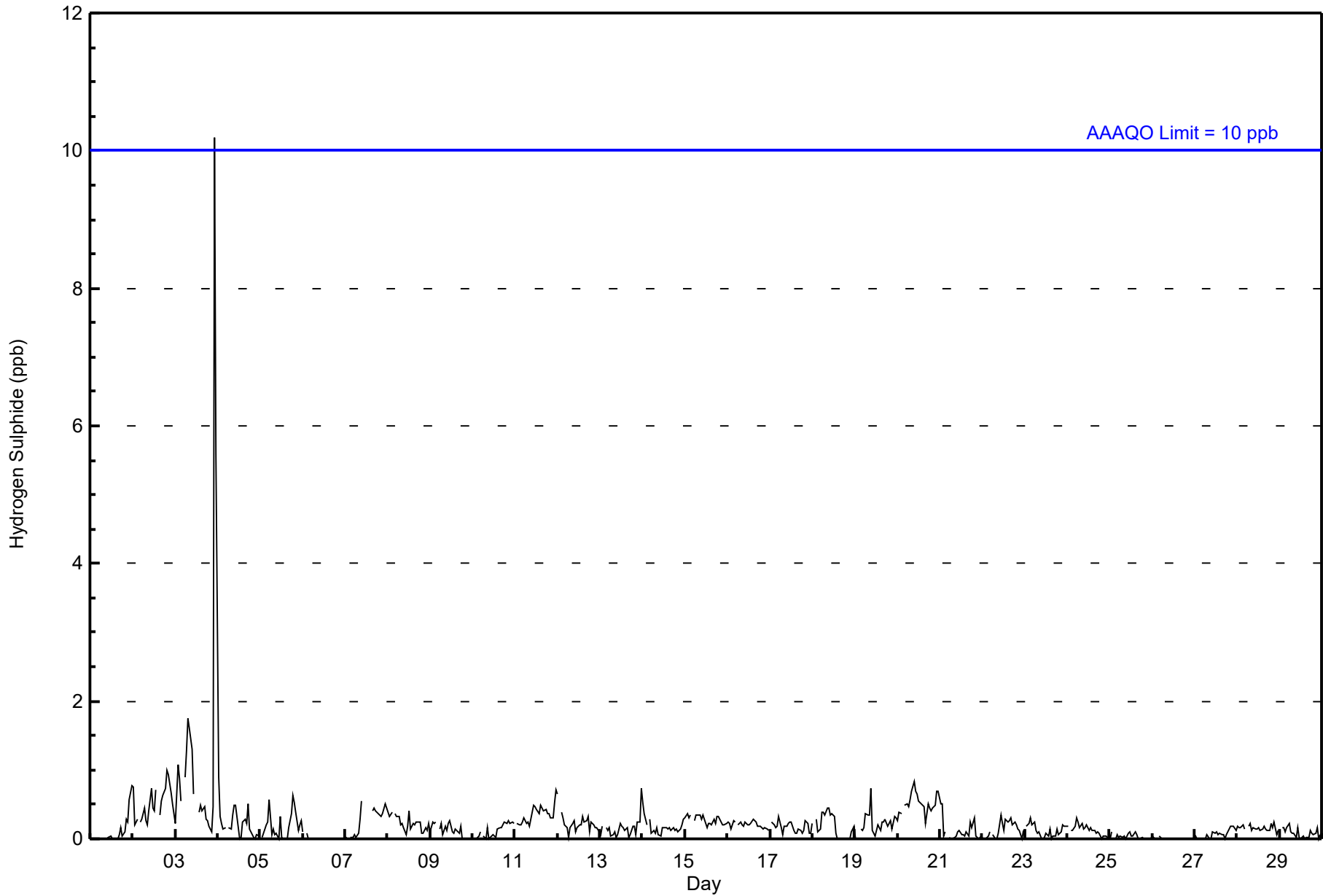




Wood Buffalo Environmental Association
Summary of Hour Averages

Hydrogen Sulphide (H₂S) - ppb
Christina Lake - February 2024

Number of Exceedences (AAAQO):		1-hr: 1	24-hr: 0																		Hours in Service:	696																											
Maximum Value: 10.2 ppb on Feb 3 23:00		Maximum Daily Average: 1.4 ppb on Feb 3																	Hours of Data:	659																													
Minimum Value: 0.0 ppb on Feb 1 01:00		Minimum Daily Average: 0.0 ppb on Feb 26																	Hours of Missing Data:	37																													
Maximum Diurnal Average: 0.5 ppb at hour 23		Minimum Diurnal Average: 0.2 ppb at hour 4																	Hours of Calibration:	34																													
Monthly Average: 0.22 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.2 Q ₃ = 0.3 P ₉₀ = 0.4 P ₉₉ = 1.0																	Percent Operational Time:	99.6																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.1	0.3	0.2	0.6	0.8	0.1	0.8																								
2-Feb	0.7	0.2	0.3	Z	0.2	0.3	0.4	0.3	0.2	0.4	0.7	0.4	0.4	0.7	M	0.4	0.6	0.6	0.7	1.0	0.9	0.7	0.5	0.4	0.5	1.0																							
3-Feb	0.2	1.1	0.9	0.5	Z	0.9	1.3	1.8	1.6	1.3	0.6	M	M	0.4	0.5	0.4	0.5	0.3	0.3	0.2	0.1	0.5	10.2	5.6	1.4	10.2																							
4-Feb	0.9	0.3	0.2	0.1	0.2	Z	0.2	0.2	0.4	0.5	0.5	0.2	0.0	0.0	0.2	0.3	0.2	0.5	0.1	0.1	0.0	0.0	0.1	0.0	0.2	0.9																							
5-Feb	Z	0.0	0.1	0.2	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.5	0.4	0.1	0.2	0.3	0.2	0.6																							
6-Feb	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1																							
7-Feb	0.0	0.0	Z	0.0	0.0	0.1	0.0	0.1	0.3	0.6	C	C	C	C	C	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.5	0.4	0.3	0.6																							
8-Feb	0.4	0.3	0.4	Z	0.4	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.4	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.4																							
9-Feb	0.1	0.2	0.2	0.2	Z	0.1	0.2	0.1	0.2	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3																							
10-Feb	0.0	0.0	0.0	0.0	0.1	Z	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.3																							
11-Feb	Z	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.5	0.7	0.4	0.7																							
12-Feb	0.7	Z	0.4	0.3	0.2	0.2	0.0	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.7																							
13-Feb	0.1	0.2	Z	0.2	0.1	0.2	0.0	0.1	0.1	0.0	0.1	0.2	0.2	0.2	0.1	0.2	0.0	0.1	0.2	0.2	0.1	0.2	0.2	0.7	0.2	0.7																							
14-Feb	0.5	0.4	0.2	Z	0.3	0.1	0.1	0.1	0.2	0.1	0.0	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.5																							
15-Feb	0.3	0.4	0.3	0.3	Z	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.4																							
16-Feb	0.2	0.2	0.1	0.3	0.3	Z	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.3																							
17-Feb	Z	0.2	0.2	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.2	0.3																							
18-Feb	0.2	Z	0.3	0.1	0.1	0.4	0.4	0.3	0.4	0.5	0.3	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.5																							
19-Feb	0.0	0.0	Z	0.1	0.1	0.2	0.4	0.3	0.3	0.7	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.7																							
20-Feb	0.3	0.4	0.4	Z	0.5	0.5	0.5	0.6	0.7	0.8	0.7	0.7	0.5	0.5	0.5	0.5	0.2	0.5	0.4	0.4	0.5	0.5	0.7	0.7	0.5	0.8																							
21-Feb	0.5	0.5	0.0	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.2	0.2	0.3	0.0	0.0	0.0	0.0	0.1	0.5																							
22-Feb	0.0	0.0	0.0	0.0	0.1	Z	0.1	0.0	0.0	0.1	0.3	0.2	0.1	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.3																							
23-Feb	Z	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.3																							
24-Feb	0.2	Z	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.3																							
25-Feb	0.0	0.1	Z	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1																							
26-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																							
27-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2																							
28-Feb	0.2	0.2	0.2	0.2	0.1	Z	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2																							
29-Feb	Z	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.2																							
																								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.4	Diurnal Average		
																								0.9	1.1	0.9	0.5	0.5	0.9	1.3	1.8	1.6	1.3	0.7	0.7	0.5	0.7	0.5	0.5	0.6	0.6	0.7	1.0	0.9	0.7	10.2	5.6	Diurnal Maximum	
Z - zerospan C - Calibration M - Maintenance																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																																																	





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Hydrogen Sulphide (H₂S) - ppb
Christina Lake - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	657	99.70	99.70
3 - 4	0	0.00	99.70
5 - 7	1	0.15	99.85
8 - 11	1	0.15	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Christina Lake - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	2	43	76	18	25	37	18	37	38	55	47	86	69	41	36	29	657
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8 - 11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	2	45	76	18	25	37	18	37	38	55	47	86	69	41	36	29	659

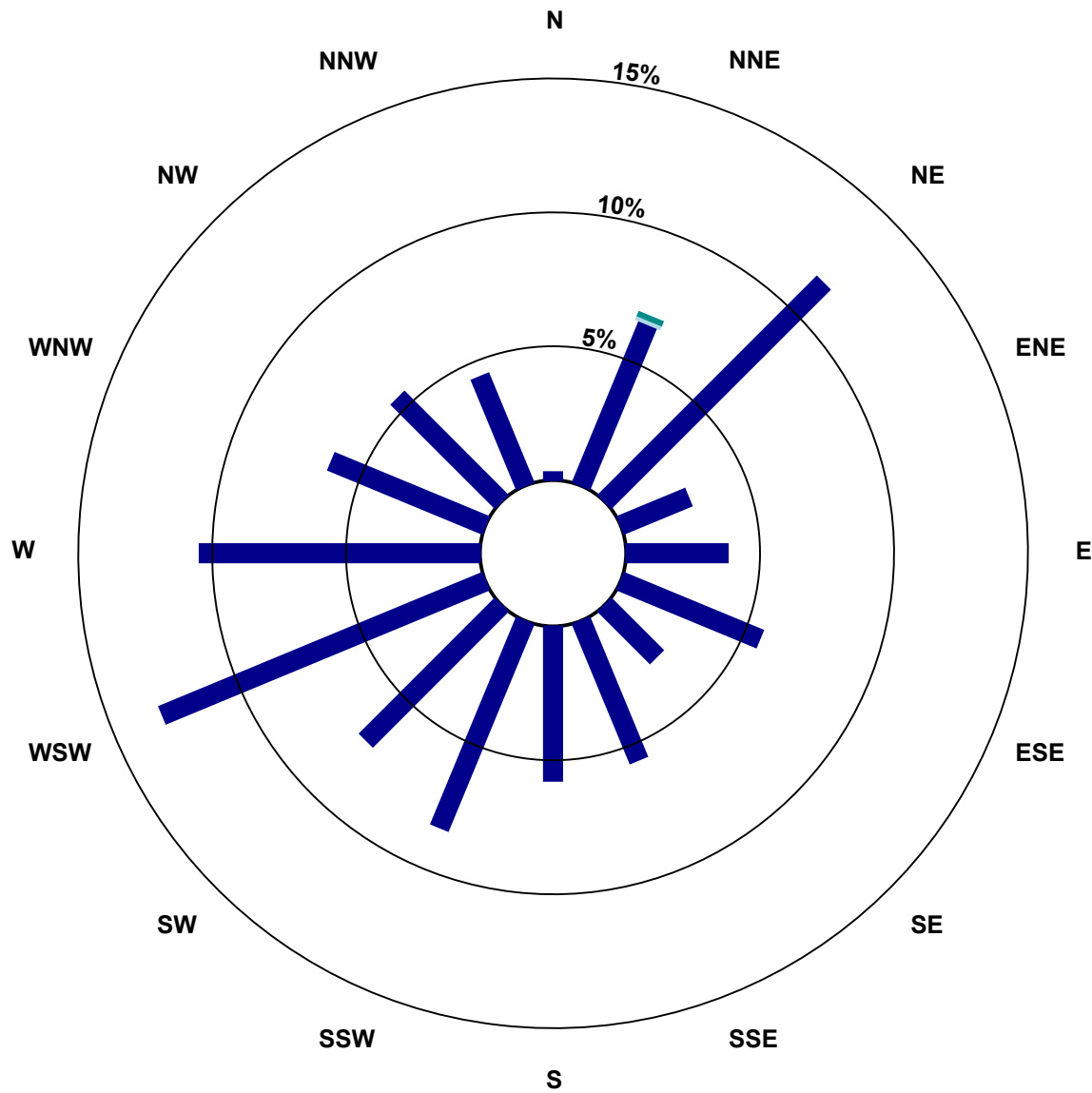
Total Number of Valid Hours: 659

Total Number of Hours: 696

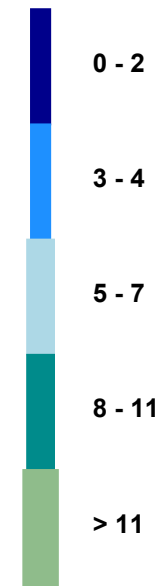


Wood Buffalo Environmental Association
Wind Rose Feb 2024

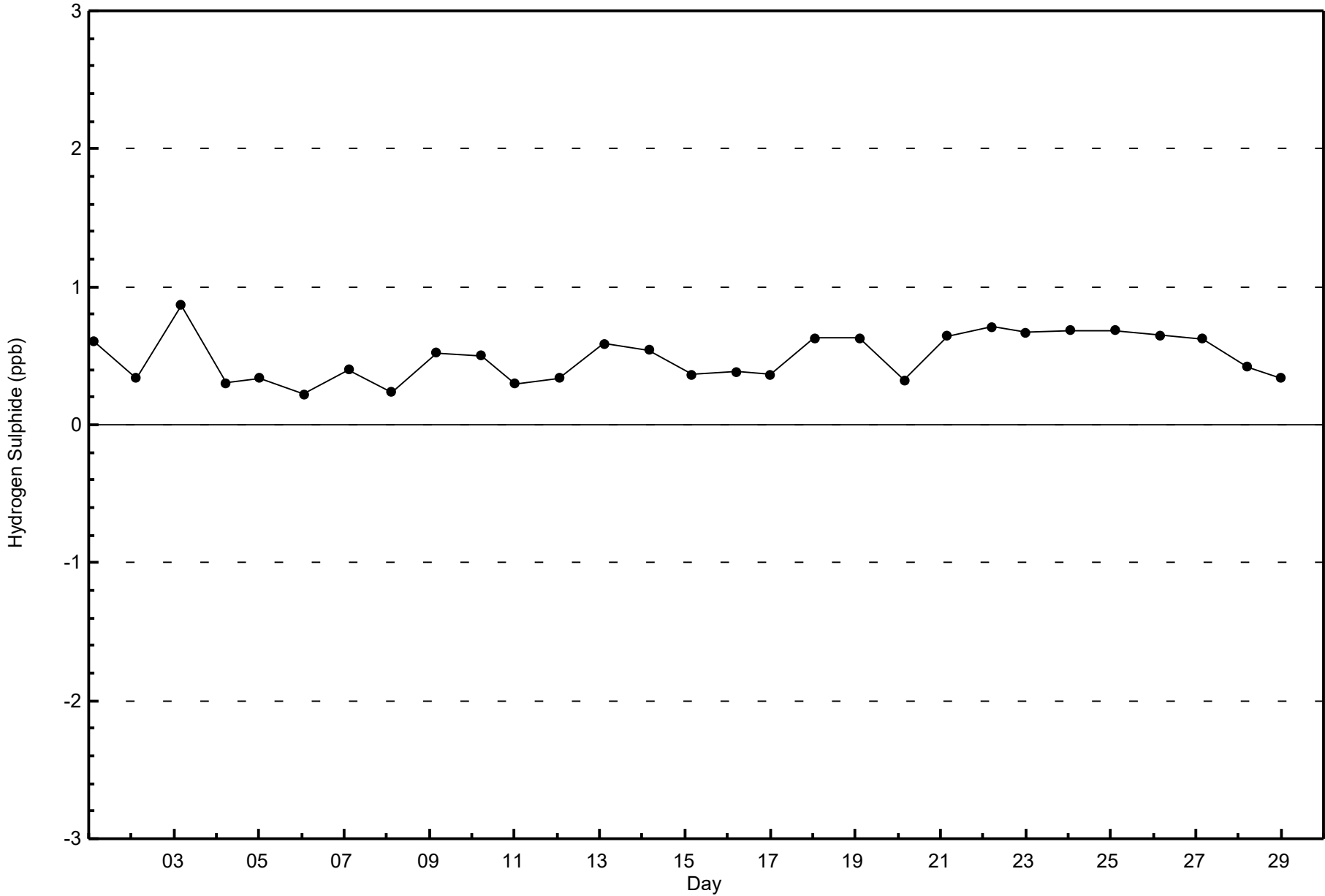
Hydrogen Sulphide (H₂S) - ppb
Christina Lake

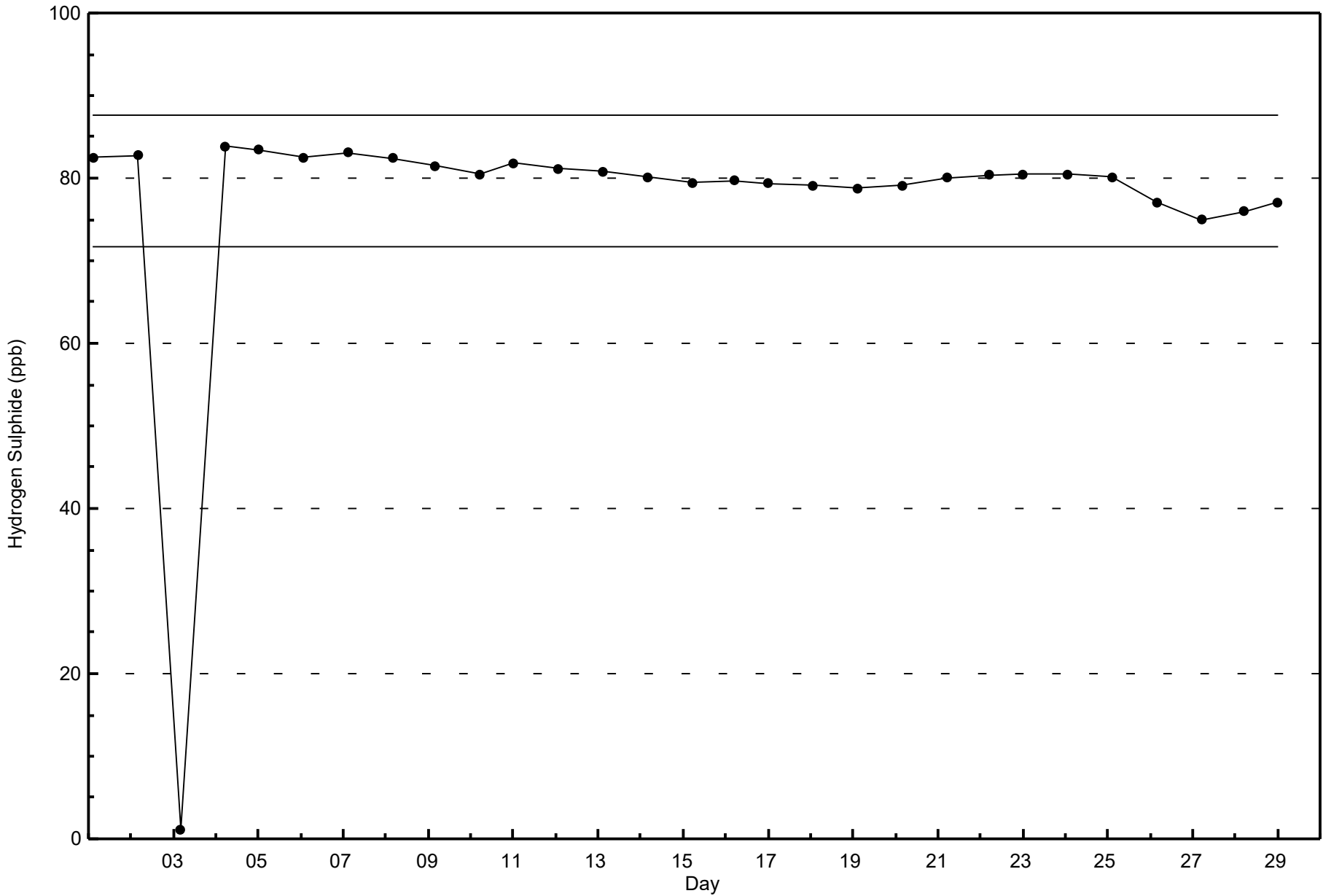


Classes (ppb)



Total Number of Valid Hours: 659







Wood Buffalo Environmental Association
Summary of Hour Averages

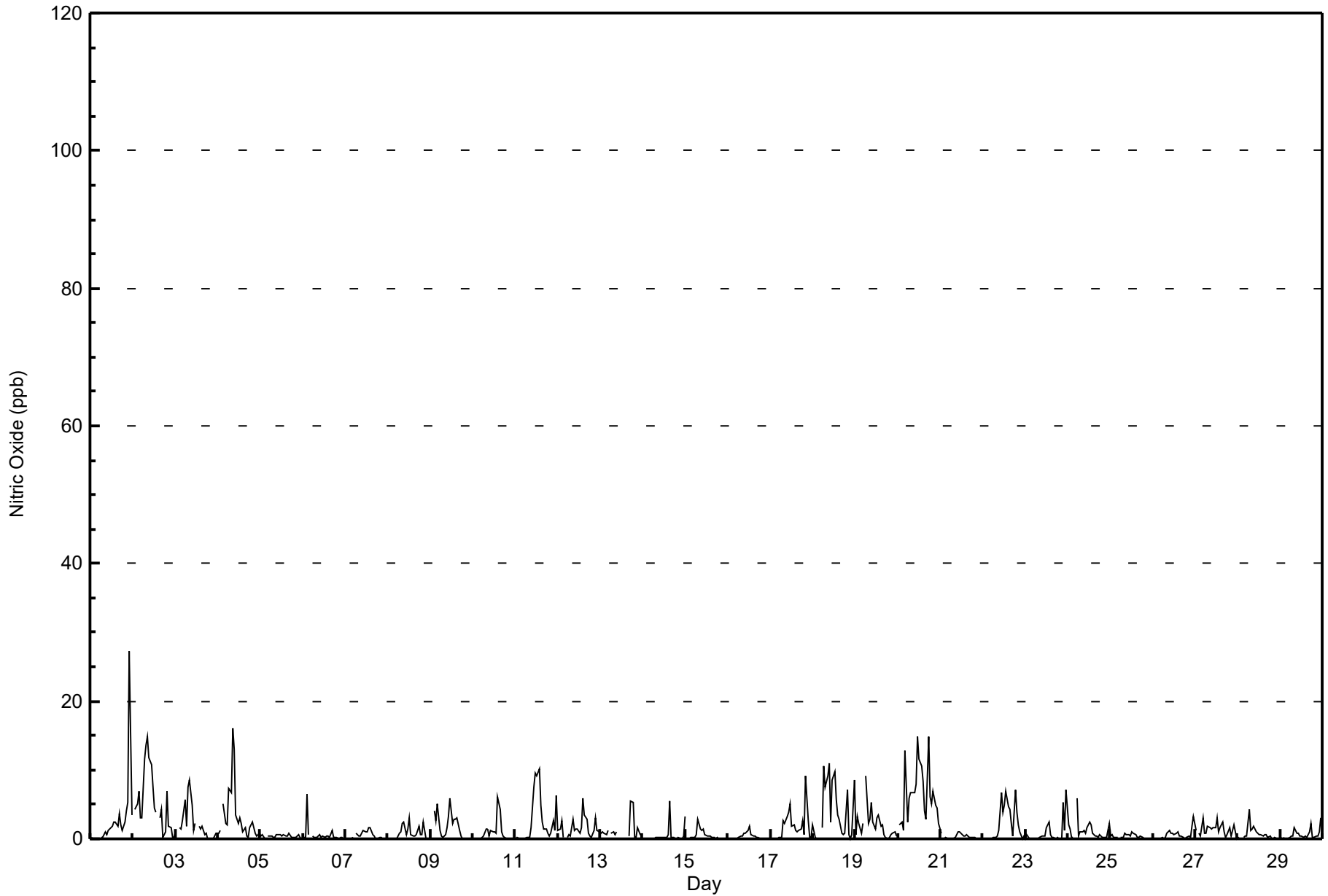
Nitric Oxide (NO) - ppb
Christina Lake - February 2024

Maximum Value: 27.3 ppb on Feb 1 23:00		Maximum Daily Average: 6.6 ppb on Feb 20		Hours in Service: 696																						
Minimum Value: 0.0 ppb on Feb 7 02:00		Minimum Daily Average: 0.3 ppb on Feb 21		Hours of Data: 659																						
Maximum Diurnal Average: 2.8 ppb at hour 12		Minimum Diurnal Average: 0.7 ppb at hour 1		Hours of Missing Data: 37																						
Monthly Average: 1.65 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 0.6 Q ₃ = 1.8 P ₉₀ = 4.9 P ₉₉ = 12.9		Hours of Calibration: 35																						
				Percent Operational Time: 99.7																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.3	0.0	0.0	0.1	0.1	Z	0.1	0.2	1.0	0.5	1.1	1.7	1.8	2.4	2.4	1.8	3.7	2.0	1.2	2.4	4.0	5.3	27.3	3.4	2.7	27.3
2-Feb	Z	4.2	5.0	6.8	3.1	3.1	11.6	13.7	14.8	11.8	10.9	7.5	4.4	3.9	M	3.0	4.2	0.3	1.1	6.9	1.9	1.6	0.2	0.2	5.5	14.8
3-Feb	0.9	Z	1.6	1.4	2.7	5.8	1.8	7.6	8.5	4.8	1.2	2.1	M	1.8	1.5	1.9	0.7	0.8	0.1	0.0	0.0	0.1	0.5	0.9	2.1	8.5
4-Feb	0.7	1.3	Z	5.2	2.2	2.0	7.3	6.7	16.0	13.1	3.5	2.3	3.1	2.3	1.1	1.7	0.5	0.2	1.6	2.4	1.7	0.8	0.3	0.8	3.3	16.0
5-Feb	0.5	0.5	0.0	Z	0.3	0.3	0.4	0.2	0.2	0.6	0.6	0.5	0.3	0.6	0.4	0.4	0.8	0.2	0.2	0.2	0.1	0.6	0.2	0.1	0.4	0.8
6-Feb	0.1	0.2	6.6	0.5	Z	0.3	0.1	0.3	0.3	0.6	0.2	0.4	0.3	0.3	0.3	0.2	1.2	0.2	0.2	0.1	0.0	0.2	0.3	0.1	0.6	6.6
7-Feb	0.1	0.0	0.0	0.1	0.2	Z	0.8	0.5	0.4	0.8	1.2	1.1	1.0	1.7	1.6	0.6	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.5	1.7
8-Feb	Z	0.1	0.0	0.1	0.1	0.1	0.9	1.1	2.2	2.5	0.6	1.4	3.1	0.7	0.4	0.5	0.5	1.8	0.5	0.5	2.5	0.0	0.0	0.0	0.9	3.1
9-Feb	0.3	Z	4.0	2.6	5.0	1.3	0.4	0.1	0.6	1.7	3.3	5.9	2.2	2.8	2.9	3.1	1.2	0.4	0.1	0.0	0.0	0.0	0.0	0.0	1.7	5.9
10-Feb	0.0	0.0	Z	0.0	0.1	0.3	0.5	1.4	1.5	0.3	1.3	0.9	1.0	0.8	6.2	4.3	1.0	0.4	0.1	0.0	0.1	0.1	0.0	0.0	0.9	6.2
11-Feb	0.1	0.2	0.1	Z	0.0	0.1	0.2	0.1	0.2	1.6	7.5	9.6	9.1	10.3	4.9	2.5	1.4	1.4	0.9	0.4	0.8	2.7	1.2	6.2	2.7	10.3
12-Feb	1.3	1.4	2.6	0.2	Z	0.1	0.6	0.4	2.9	1.3	1.5	1.4	0.9	1.6	5.9	3.4	2.9	0.8	0.4	0.2	1.1	3.0	1.2	1.0	1.6	5.9
13-Feb	0.9	1.0	0.7	0.6	1.2	Z	0.9	1.0	0.7	1.0	C	C	C	C	C	C	0.5	5.5	5.3	0.1	0.1	1.7	0.6	0.6	--	5.5
14-Feb	Z	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.6	5.4	0.3	0.3	0.1	0.0	0.1	0.0	0.0	0.0	0.3	0.4	5.4
15-Feb	3.3	Z	0.1	0.2	0.1	0.2	0.6	2.8	1.5	1.2	1.4	0.7	0.4	0.5	0.5	0.3	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.6	3.3
16-Feb	0.0	0.0	Z	0.1	0.0	0.1	0.1	0.4	0.3	0.9	0.8	1.2	1.8	0.6	0.3	0.3	0.3	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.3	1.8
17-Feb	0.0	0.1	0.1	Z	0.1	0.2	0.3	2.7	2.2	3.2	3.9	5.1	1.8	1.9	1.2	1.1	1.1	1.4	2.6	0.6	9.2	2.6	0.2	0.2	1.8	9.2
18-Feb	2.1	0.1	0.0	0.1	Z	1.7	10.6	7.6	9.1	11.0	2.5	8.6	9.8	5.7	3.5	2.9	0.8	0.6	0.9	7.1	0.7	0.0	0.7	8.5	4.1	11.0
19-Feb	0.6	3.2	2.3	0.7	2.3	Z	9.2	2.2	2.8	5.2	2.4	1.5	3.0	3.4	1.9	2.1	0.5	0.2	0.1	0.2	0.7	0.9	1.0	0.5	2.0	9.2
20-Feb	Z	2.0	2.4	1.2	12.8	2.5	5.9	6.7	6.6	6.7	8.0	14.8	11.6	10.6	8.3	4.1	2.9	14.9	6.1	5.0	6.9	4.8	4.4	2.2	6.6	14.9
21-Feb	0.8	Z	0.0	0.1	0.0	0.0	0.1	0.1	0.3	0.6	1.0	1.1	0.6	0.4	0.5	0.6	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.3	1.1
22-Feb	0.1	0.0	Z	0.0	0.1	0.0	0.1	0.2	0.5	1.2	6.6	3.8	4.9	6.8	4.7	4.4	2.2	0.4	7.1	3.9	2.0	1.1	0.1	0.3	2.2	7.1
23-Feb	0.0	0.7	0.1	Z	0.0	0.1	0.0	0.1	0.1	0.4	0.3	0.4	1.5	2.4	0.5	0.2	0.1	0.1	0.2	0.1	0.1	5.3	1.2	7.1	0.9	7.1
24-Feb	2.0	1.5	0.1	0.1	Z	5.9	0.5	1.0	1.0	1.3	0.8	1.7	2.4	2.0	0.8	0.5	0.3	0.2	0.6	0.1	0.1	0.2	0.2	2.2	1.1	5.9
25-Feb	0.5	0.5	0.3	0.2	0.2	Z	0.2	0.3	0.9	0.6	0.5	0.4	1.0	0.8	0.6	0.2	0.1	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.4	1.0
26-Feb	Z	0.0	0.0	0.1	0.0	0.1	0.1	0.3	0.8	1.3	0.8	0.9	0.7	0.7	1.0	0.5	0.5	0.3	0.0	0.2	0.4	0.2	1.8	3.2	0.6	3.2
27-Feb	1.3	Z	0.9	0.5	3.0	0.7	0.9	1.9	1.7	1.5	1.7	1.5	3.1	1.1	1.7	2.4	0.9	0.2	0.6	1.7	0.3	1.2	2.1	0.1	1.3	3.1
28-Feb	0.3	0.0	Z	0.1	0.5	0.4	4.3	1.2	1.5	1.8	1.0	0.7	0.7	0.6	0.5	0.5	0.6	0.3	0.4	0.0	0.0	0.1	0.1	0.0	0.7	4.3
29-Feb	0.2	0.1	0.2	Z	0.1	0.1	0.4	0.5	1.5	0.7	0.7	0.5	0.3	0.2	0.4	0.2	0.9	2.3	0.2	0.2	0.3	0.3	1.0	3.0	0.6	3.0
																								Diurnal Average		
																								Diurnal Maximum		
																								Diurnal Average		
																								Diurnal Maximum		
Z - zerspan C - Calibration M - Maintenance																										



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Christina Lake - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Christina Lake - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	658	99.85	99.85
21 - 40	1	0.15	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Christina Lake - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	2	49	78	19	23	39	20	36	36	53	45	90	67	42	35	24	658
21 - 40	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
41 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	2	49	78	19	23	39	20	36	36	54	45	90	67	42	35	24	659

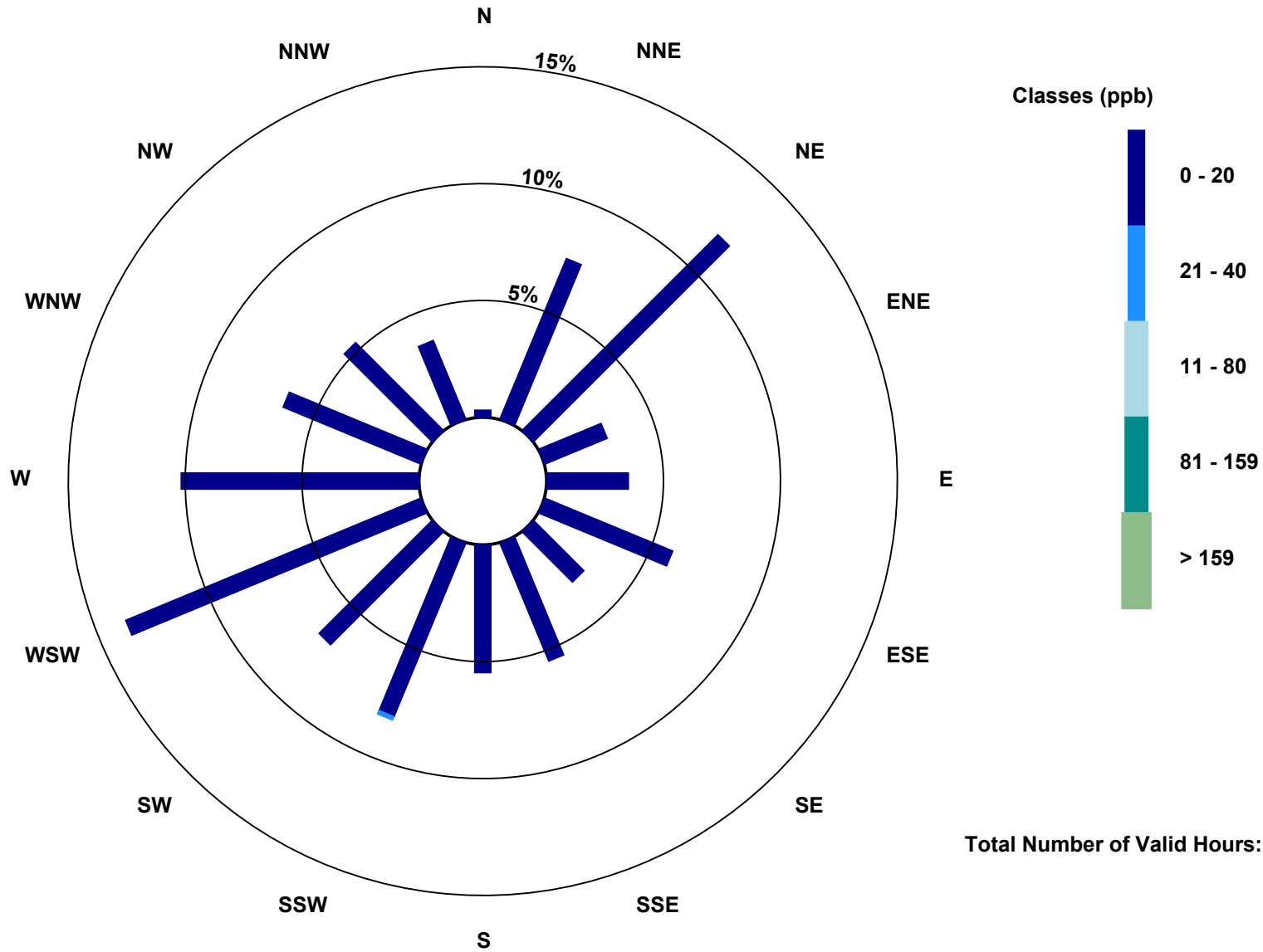
Total Number of Valid Hours: 659

Total Number of Hours: 696

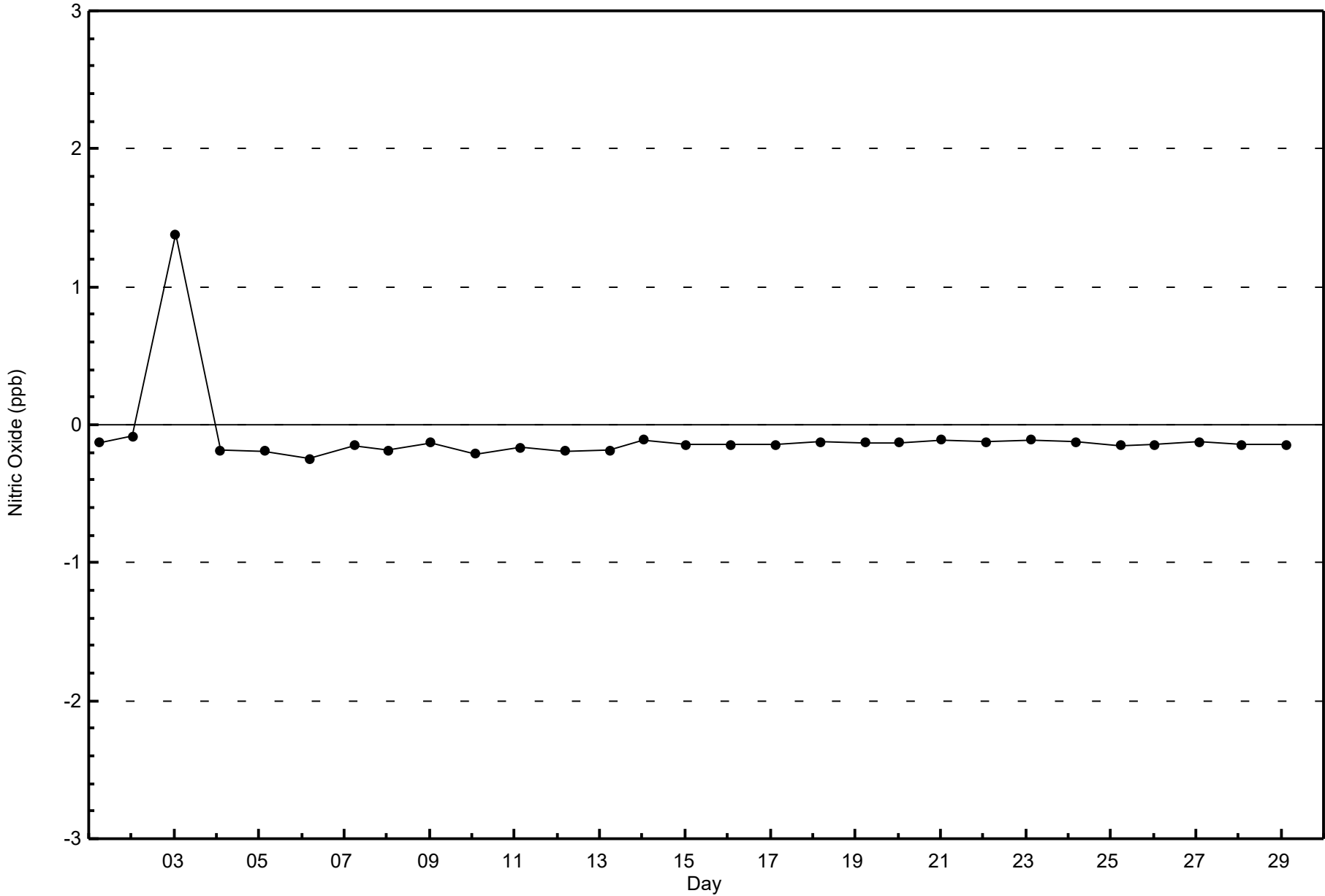


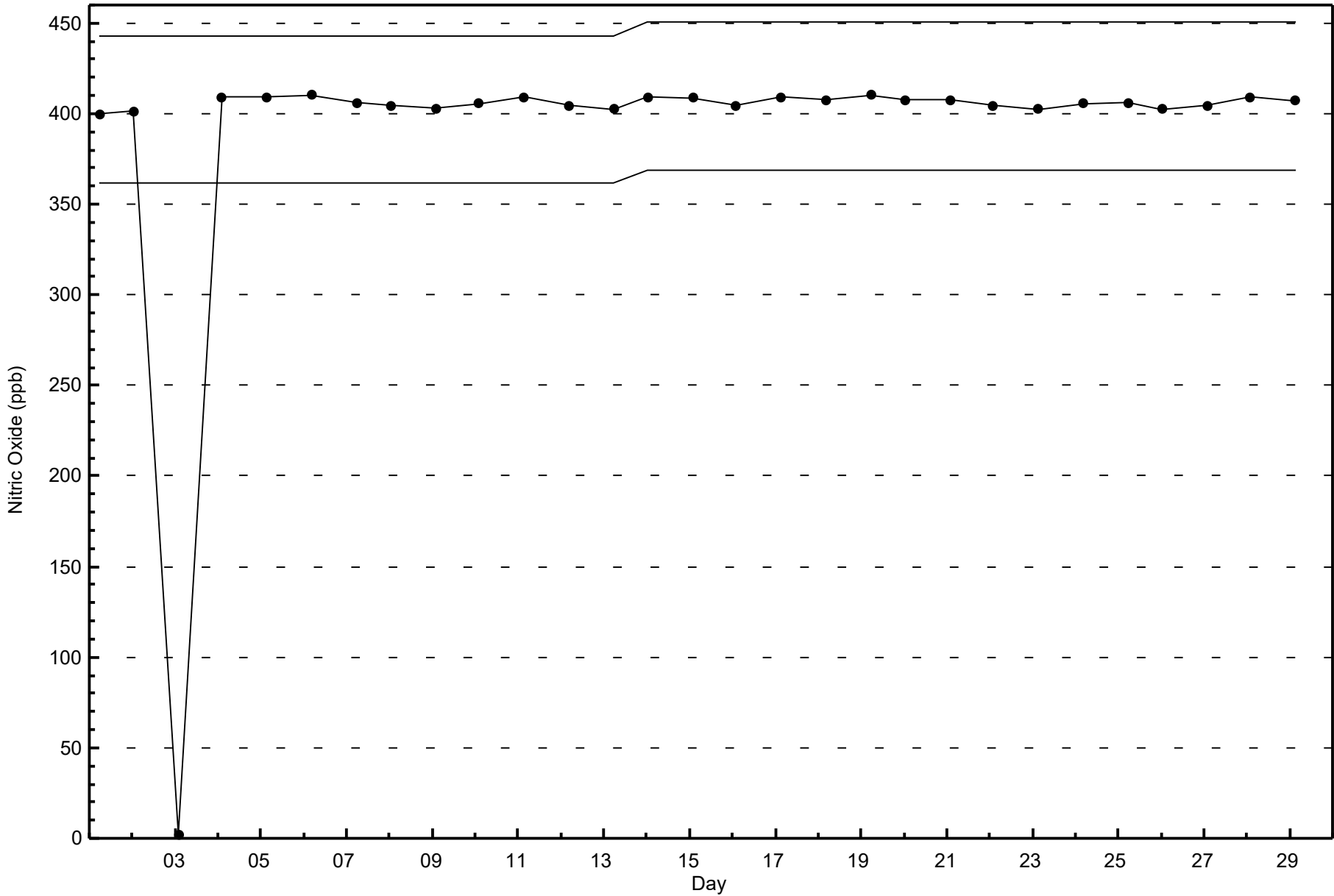
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Christina Lake



Total Number of Valid Hours: 659







Wood Buffalo Environmental Association
Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb
Christina Lake - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 696
Maximum Value: 27.7 ppb on Feb 20 18:00	Maximum Daily Average: 17.0 ppb on Feb 20
Minimum Value: 0.3 ppb on Feb 25 23:00	Hours of Data: 659
Maximum Diurnal Average: 6.3 ppb at hour 8	Hours of Missing Data: 37
Monthly Average: 4.73 ppb	Hours of Calibration: 35
Minimum Daily Average: 1.8 ppb on Feb 29	Percent Operational Time: 99.7
Minimum Diurnal Average: 3.6 ppb at hour 11	
Percentiles: P ₁ = 0.5 P ₁₀ = 1.2 Q ₁ = 2.0 Median = 3.5 Q ₃ = 6.6 P ₉₀ = 9.7 P ₉₉ = 18.8	

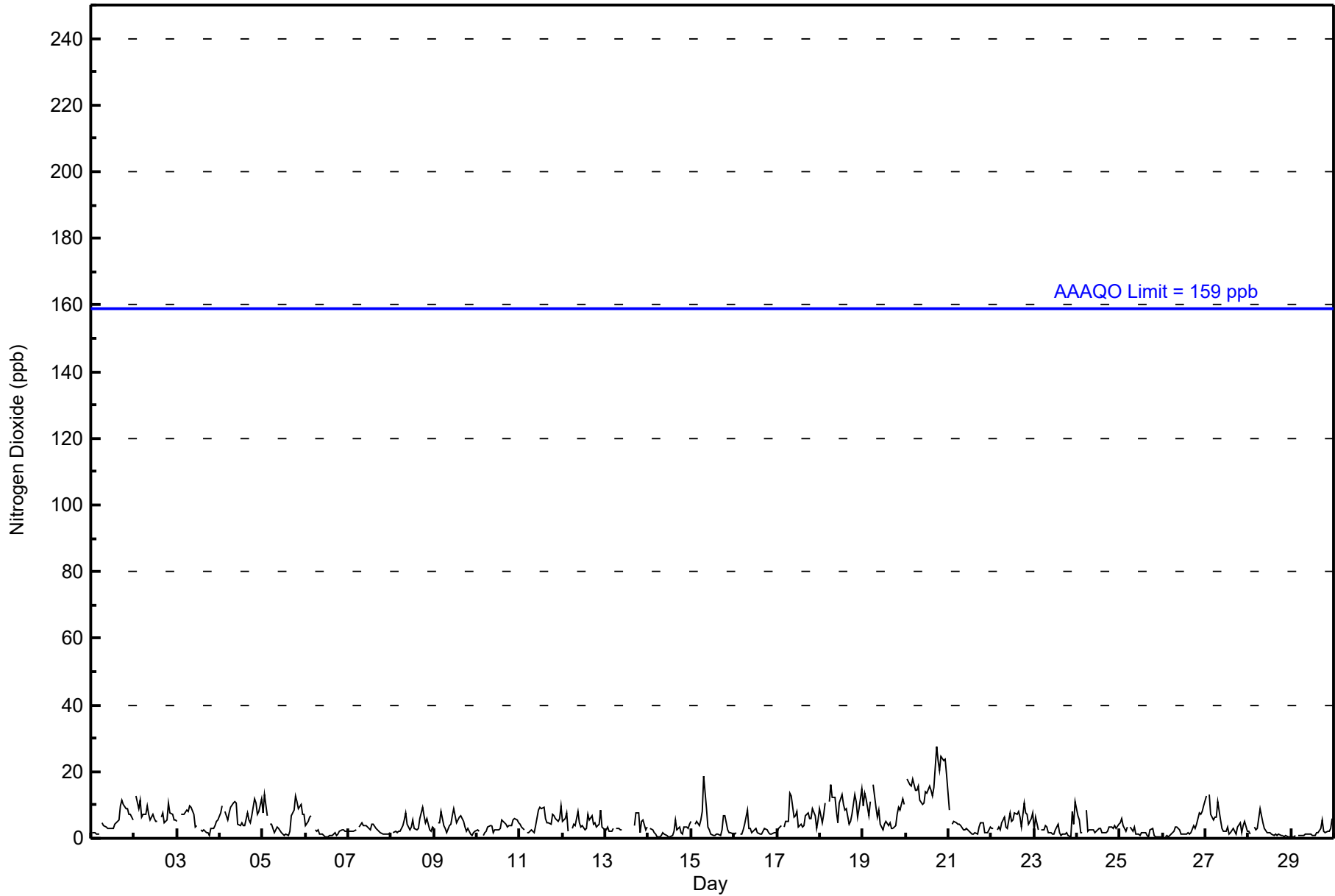
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	1.9	1.5	1.7	1.2	1.4	Z	4.7	3.9	3.4	3.0	2.8	3.1	3.0	4.1	4.8	5.4	9.6	11.4	10.1	9.0	8.7	7.0	7.4	5.3	5.0	11.4
2-Feb	Z	12.5	8.7	11.3	6.5	7.0	7.0	9.9	7.3	5.5	7.1	6.0	5.0	4.9	M	6.2	7.8	4.6	5.3	10.5	7.6	7.0	5.4	5.4	7.2	12.5
3-Feb	4.9	Z	7.1	7.0	7.4	8.5	8.0	9.7	9.3	7.0	3.6	4.0	M	2.4	2.0	2.4	1.5	1.8	0.8	2.9	2.9	4.0	5.2	5.7	4.9	9.7
4-Feb	7.8	9.9	Z	8.1	5.7	7.5	9.3	10.4	10.9	10.5	4.4	3.7	4.6	4.0	3.8	7.7	5.6	4.6	6.9	11.8	10.5	7.0	8.0	11.8	7.6	11.8
5-Feb	7.5	13.3	6.6	Z	4.3	4.3	1.9	2.4	3.2	3.0	1.7	1.2	0.9	1.3	0.9	2.0	6.7	8.5	12.8	11.2	8.9	10.0	7.4	7.1	5.5	13.3
6-Feb	3.8	4.9	6.2	6.8	Z	2.6	2.0	2.6	1.4	1.3	0.7	0.6	0.6	0.9	0.7	0.7	1.8	0.8	1.1	2.1	2.4	2.5	2.3	2.3	2.2	6.8
7-Feb	2.1	2.1	2.1	2.2	2.4	Z	3.5	4.8	3.9	3.8	3.7	2.8	2.7	4.1	4.4	2.9	2.5	2.0	1.8	1.4	1.2	1.1	1.4	1.7	2.6	4.8
8-Feb	Z	1.5	2.1	1.7	2.1	2.0	4.0	5.4	7.5	4.4	2.6	3.5	5.4	2.9	2.6	3.0	5.8	9.2	6.9	4.5	5.8	2.6	2.1	3.2	3.9	9.2
9-Feb	2.8	Z	4.5	4.8	8.0	3.7	2.9	1.6	4.0	4.4	6.6	8.7	4.6	5.6	6.2	6.8	5.1	3.2	2.3	3.1	1.4	1.0	1.5	2.3	4.1	8.7
10-Feb	2.5	2.0	Z	0.7	1.9	2.1	3.5	3.7	3.9	1.7	2.7	2.6	2.5	2.8	5.7	4.7	4.3	3.4	3.8	3.9	5.7	5.8	5.6	4.5	3.5	5.8
11-Feb	4.3	3.6	2.4	Z	1.6	1.9	2.7	2.1	1.7	3.8	8.4	9.5	9.1	9.5	5.8	4.8	4.8	4.3	7.2	6.6	5.8	5.1	5.8	9.7	5.2	9.7
12-Feb	5.2	6.0	7.7	2.0	Z	2.9	4.1	3.8	8.1	4.5	3.6	3.8	2.6	3.1	7.0	5.7	6.9	4.2	4.6	3.4	4.4	8.5	3.4	2.7	4.7	8.5
13-Feb	2.4	3.2	2.2	2.1	3.1	Z	2.8	3.0	2.4	2.6	C	C	C	C	C	C	3.7	7.5	7.6	1.9	4.9	5.5	2.5	3.3	--	7.6
14-Feb	Z	3.0	2.7	1.7	1.4	0.5	0.5	0.7	1.5	1.1	0.9	0.6	0.6	0.7	2.1	5.6	2.5	3.4	1.5	1.3	3.5	3.6	3.1	4.2	2.0	5.6
15-Feb	5.1	Z	4.2	5.0	3.8	5.4	7.9	18.8	9.1	3.5	2.6	1.3	0.9	1.0	1.2	1.1	1.0	2.6	6.7	6.8	2.4	1.8	1.9	1.3	4.1	18.8
16-Feb	1.3	1.8	Z	1.3	1.3	2.7	4.4	8.6	3.1	2.9	1.8	2.4	2.8	1.5	1.1	1.4	2.3	3.1	2.6	1.8	1.4	1.2	1.6	1.5	2.3	8.6
17-Feb	1.9	3.0	4.0	Z	3.4	5.0	4.9	13.4	12.6	6.5	6.6	7.9	3.3	4.4	3.2	3.9	6.9	7.8	5.9	5.9	9.1	6.6	2.9	5.3	5.8	13.4
18-Feb	9.0	4.8	7.1	10.8	Z	11.2	16.1	12.2	12.1	8.0	4.6	10.4	13.3	10.0	8.3	9.1	4.4	4.9	7.1	13.0	11.2	6.3	8.9	14.7	9.5	16.1
19-Feb	9.6	13.4	11.9	6.6	10.9	Z	16.2	9.2	6.3	8.5	4.1	2.5	4.3	5.1	3.9	4.6	2.8	2.9	3.9	7.1	9.3	8.5	11.9	10.0	7.5	16.2
20-Feb	Z	17.9	16.2	15.7	17.7	14.4	14.5	15.5	11.5	10.1	10.6	13.9	13.6	15.7	14.6	12.7	15.3	27.7	23.5	20.2	24.5	23.1	23.6	18.9	17.0	27.7
21-Feb	8.3	Z	4.4	5.1	4.5	4.4	4.3	4.0	2.7	2.7	2.9	2.7	1.7	1.3	1.4	1.9	1.4	3.6	4.5	4.7	1.9	1.5	1.9	3.2	3.3	8.3
22-Feb	2.8	2.9	Z	2.6	3.3	2.4	4.8	6.4	3.3	3.1	7.8	5.0	5.7	7.8	7.4	8.2	6.5	3.5	10.8	7.6	7.1	4.2	6.0	7.6	5.5	10.8
23-Feb	2.7	6.5	2.5	Z	2.5	2.7	3.9	3.6	1.9	1.7	1.2	1.3	2.5	4.2	1.8	1.0	1.3	1.1	1.6	0.8	0.6	8.2	4.1	11.0	3.0	11.0
24-Feb	6.7	5.6	1.6	1.8	Z	8.3	2.1	2.6	2.6	2.4	1.7	2.0	2.8	2.9	1.9	1.5	1.5	2.1	3.5	3.3	3.0	3.8	3.0	4.2	3.1	8.3
25-Feb	4.6	6.1	3.7	2.1	3.5	Z	3.4	2.0	3.5	1.3	1.2	0.8	1.8	1.6	1.5	0.7	0.5	2.6	2.8	0.9	0.5	0.4	0.3	0.3	2.0	6.1
26-Feb	Z	0.4	0.7	0.6	0.8	1.7	2.1	3.2	3.4	2.5	1.3	1.3	1.1	1.3	1.6	1.1	1.7	3.8	3.1	4.1	7.5	7.1	8.0	9.7	3.0	9.7
27-Feb	12.9	Z	13.3	7.0	5.6	6.2	6.3	11.0	5.4	3.0	2.1	2.1	3.3	1.3	1.8	3.1	2.1	1.4	3.4	4.8	1.5	3.7	5.0	2.2	4.7	13.3
28-Feb	2.1	1.2	Z	3.5	2.4	2.9	8.7	6.9	4.5	2.9	1.7	1.5	1.5	1.2	1.0	1.3	1.0	1.2	0.8	0.7	0.6	0.7	0.5	0.5	2.1	8.7
29-Feb	0.5	0.6	0.8	Z	0.7	0.7	0.9	0.9	1.3	1.1	1.1	1.1	0.9	0.9	1.9	1.5	2.9	5.7	2.3	1.9	2.1	2.0	3.1	6.0	1.8	6.0
4.7 5.3 5.2 4.7 4.2 4.6 5.4 6.3 5.2 4.0 3.6 3.8 3.7 3.8 3.7 4.0 4.1 4.9 5.4 5.4 5.4 5.2 5.0 5.7																								Diurnal Average		
12.9 17.9 16.2 15.7 17.7 14.4 16.2 18.8 12.6 10.5 10.6 13.9 13.6 15.7 14.6 12.7 15.3 27.7 23.5 20.2 24.5 23.1 23.6 18.9																								Diurnal Maximum		

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Christina Lake - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Christina Lake - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	654	99.24	99.24
21 - 40	5	0.76	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Christina Lake - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	2	49	78	19	23	39	20	36	35	53	42	90	67	42	35	24	654
21 - 40	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	0	5
41 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	2	49	78	19	23	39	20	36	36	54	45	90	67	42	35	24	659

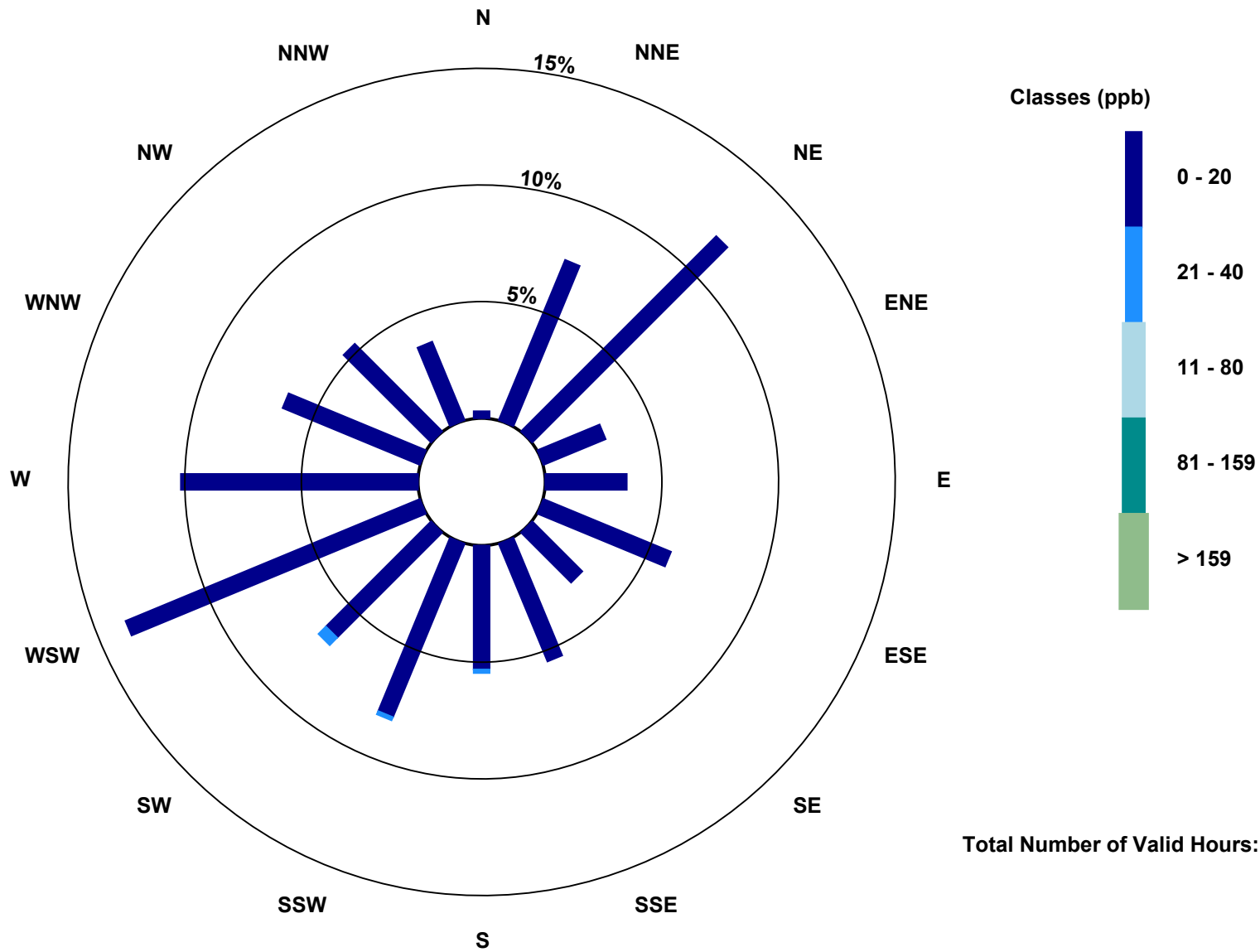
Total Number of Valid Hours: 659

Total Number of Hours: 696

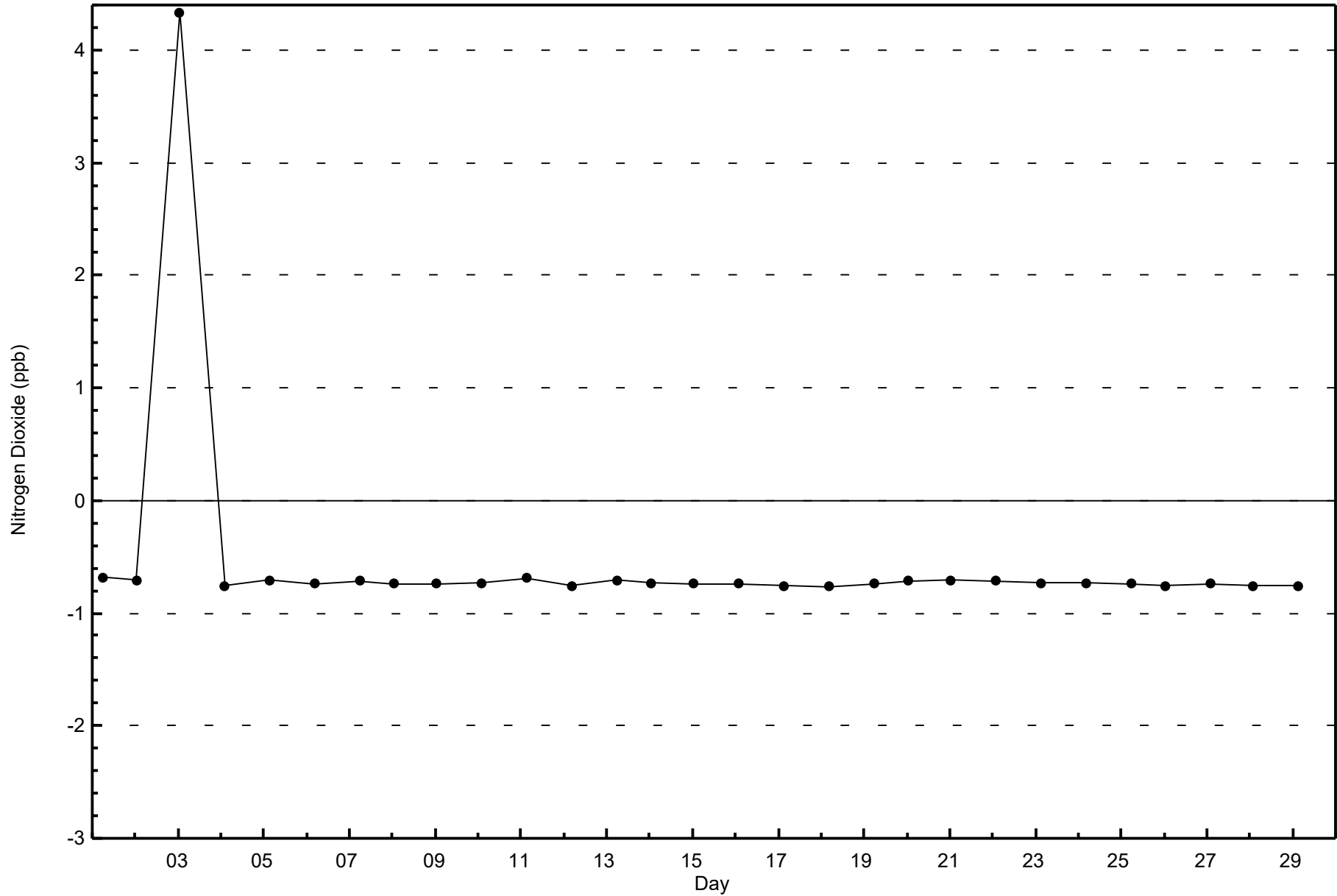


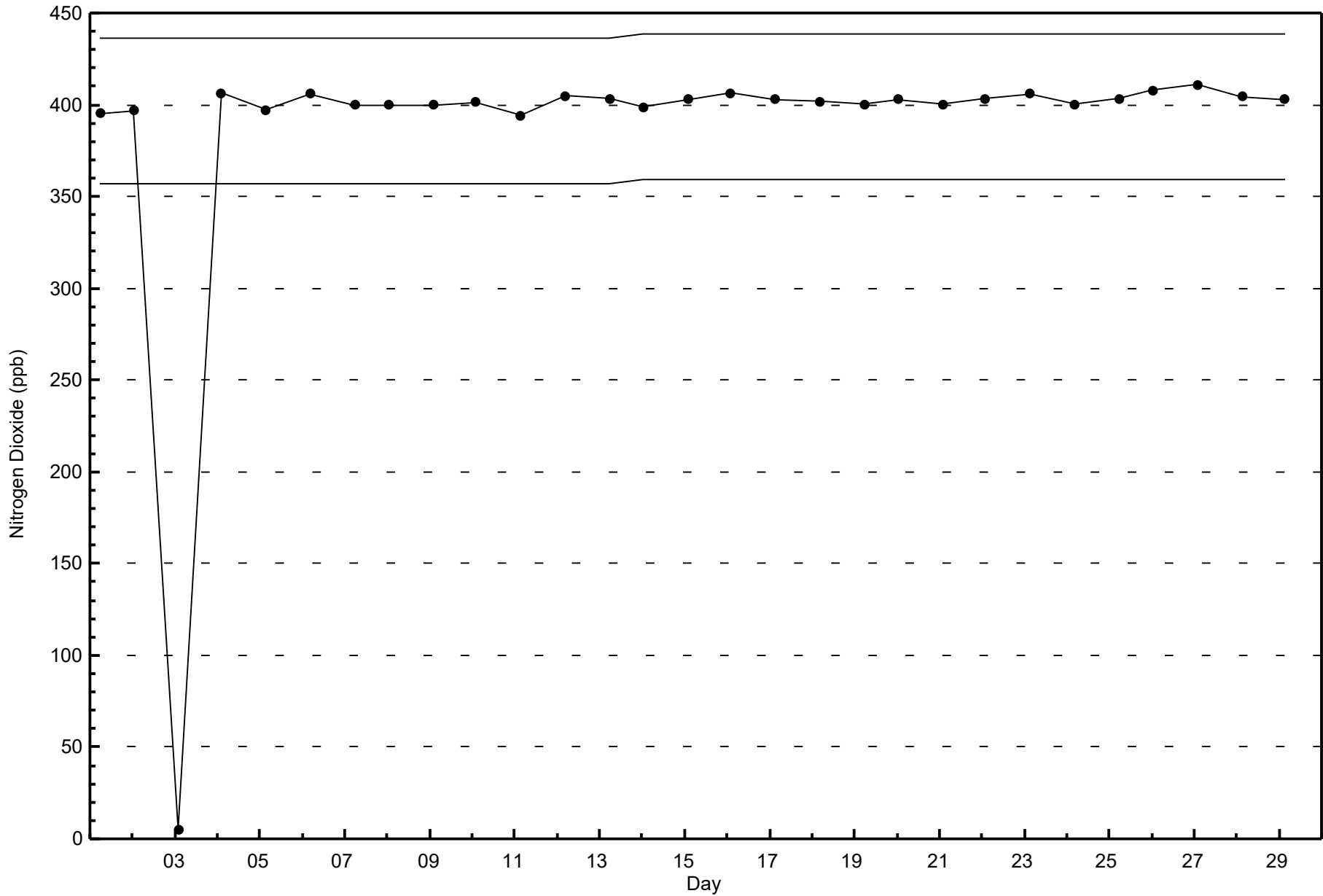
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Christina Lake



Total Number of Valid Hours: 659







Wood Buffalo Environmental Association
Summary of Hour Averages

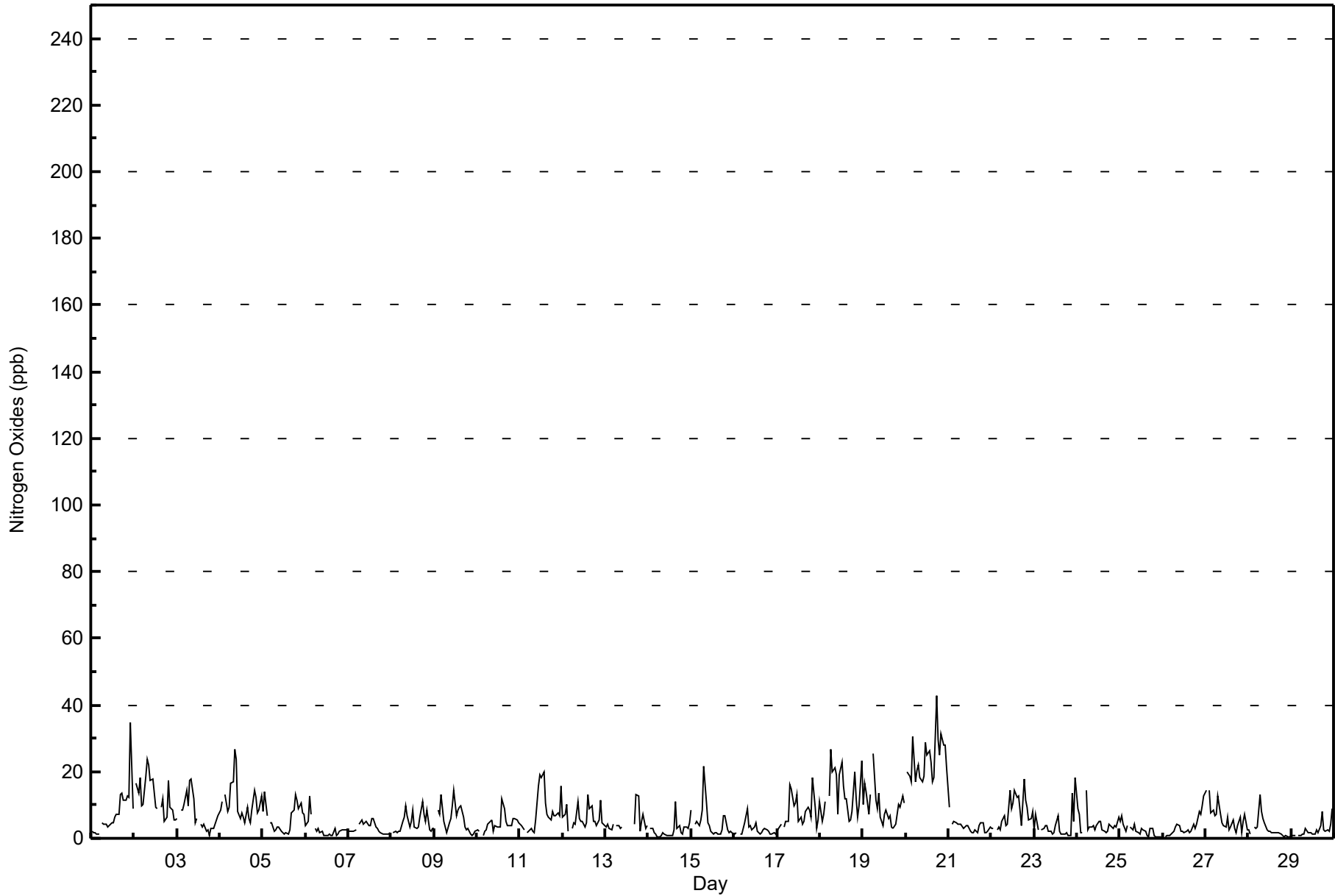
Nitrogen Oxides (NO_x) - ppb
Christina Lake - February 2024

Maximum Value: 42.6 ppb on Feb 20 18:00																				Maximum Daily Average: 23.6 ppb on Feb 20					Hours in Service: 696	
Minimum Value: 0.3 ppb on Feb 25 23:00																				Minimum Daily Average: 2.4 ppb on Feb 25					Hours of Data: 659	
Maximum Diurnal Average: 8.4 ppb at hour 8																				Minimum Diurnal Average: 5.2 ppb at hour 17					Hours of Missing Data: 37	
Monthly Average: 6.38 ppb																				Percentiles: P ₁ = 0.5 P ₁₀ = 1.4 Q ₁ = 2.3 Median = 4.2 Q ₃ = 8.5 P ₉₀ = 14.2 P ₉₉ = 28.0					Hours of Calibration: 35	
																									Percent Operational Time: 99.7	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.2	1.5	1.7	1.3	1.5	Z	4.8	4.1	4.4	3.5	3.9	4.8	4.8	6.5	7.2	7.2	13.3	13.4	11.3	11.4	12.7	12.3	34.7	8.7	7.7	34.7
2-Feb	Z	16.7	13.7	18.1	9.6	10.1	18.6	23.6	22.1	17.3	18.0	13.5	9.4	8.8	M	9.2	12.0	4.9	6.4	17.4	9.5	8.6	5.6	5.6	12.7	23.6
3-Feb	5.8	Z	8.7	8.4	10.1	14.3	9.8	17.3	17.8	11.8	4.8	6.1	M	4.2	3.5	4.3	2.2	2.6	0.9	2.9	2.9	4.1	5.7	6.6	7.0	17.8
4-Feb	8.5	11.2	Z	13.3	7.9	9.5	16.6	17.1	26.9	23.6	7.9	6.0	7.7	6.3	4.9	9.4	6.1	4.8	8.5	14.2	12.2	7.8	8.3	12.6	10.9	26.9
5-Feb	8.0	13.8	6.6	Z	4.6	4.6	2.3	2.6	3.4	3.6	2.3	1.7	1.2	1.9	1.3	2.4	7.5	8.7	13.0	11.4	9.0	10.6	7.6	7.2	5.9	13.8
6-Feb	3.9	5.1	12.8	7.3	Z	2.9	2.1	2.9	1.7	1.9	0.9	1.0	0.9	1.2	1.0	0.9	3.0	1.0	1.3	2.2	2.4	2.7	2.6	2.4	2.8	12.8
7-Feb	2.2	2.1	2.1	2.3	2.6	Z	4.3	5.3	4.3	4.6	4.9	3.9	3.7	5.8	6.0	3.5	2.8	2.1	1.9	1.5	1.3	1.1	1.4	1.7	3.1	6.0
8-Feb	Z	1.6	2.1	1.8	2.2	2.1	4.9	6.5	9.7	6.9	3.2	4.9	8.5	3.6	3.0	3.5	6.3	11.0	7.4	5.0	8.3	2.6	2.1	3.2	4.8	11.0
9-Feb	3.1	Z	8.5	7.4	13.0	5.0	3.3	1.7	4.6	6.1	9.9	14.6	6.8	8.4	9.1	9.9	6.3	3.6	2.4	3.1	1.4	1.0	1.5	2.3	5.8	14.6
10-Feb	2.5	2.0	Z	0.7	2.0	2.4	4.0	5.1	5.4	2.0	4.0	3.5	3.5	3.6	11.9	9.0	5.3	3.8	3.9	3.9	5.8	5.9	5.6	4.5	4.4	11.9
11-Feb	4.4	3.8	2.5	Z	1.6	2.0	2.9	2.2	1.9	5.4	15.9	19.1	18.2	19.8	10.7	7.3	6.2	5.7	8.1	7.0	6.6	7.8	7.0	15.9	7.9	19.8
12-Feb	6.5	7.4	10.3	2.2	Z	3.0	4.7	4.2	11.0	5.8	5.1	5.2	3.5	4.7	12.9	9.1	9.8	5.0	5.0	3.6	5.5	11.5	4.6	3.7	6.3	12.9
13-Feb	3.3	4.2	2.9	2.7	4.3	Z	3.7	4.0	3.1	3.6	C	C	C	C	C	C	4.2	13.0	12.9	2.0	5.0	7.2	3.1	3.9	--	13.0
14-Feb	Z	3.1	2.8	1.8	1.4	0.5	0.5	0.8	1.6	1.3	1.1	0.8	0.8	0.8	2.7	11.0	2.8	3.7	1.6	1.3	3.6	3.6	3.1	4.5	2.4	11.0
15-Feb	8.4	Z	4.3	5.2	3.9	5.6	8.5	21.6	10.6	4.7	4.0	2.0	1.3	1.5	1.7	1.4	1.1	2.7	6.9	6.9	2.4	1.8	1.9	1.3	4.8	21.6
16-Feb	1.3	1.8	Z	1.4	1.3	2.8	4.5	9.0	3.4	3.8	2.6	3.6	4.6	2.1	1.4	1.7	2.6	3.2	2.7	1.9	1.4	1.2	1.7	1.5	2.7	9.0
17-Feb	1.9	3.1	4.1	Z	3.5	5.2	5.2	16.1	14.8	9.7	10.5	13.0	5.1	6.3	4.4	5.0	8.0	9.2	8.5	6.5	18.3	9.2	3.1	5.5	7.7	18.3
18-Feb	11.1	4.9	7.1	10.9	Z	12.9	26.7	19.8	21.2	19.0	7.1	19.0	23.1	15.7	11.8	12.0	5.2	5.5	8.0	20.1	11.9	6.3	9.6	23.2	13.6	26.7
19-Feb	10.2	16.6	14.2	7.3	13.2	Z	25.4	11.4	9.1	13.7	6.5	4.0	7.3	8.5	5.8	6.7	3.3	3.1	4.0	7.3	10.0	9.4	12.9	10.5	9.6	25.4
20-Feb	Z	19.9	18.6	16.9	30.5	16.9	20.4	22.2	18.1	16.8	18.6	28.7	25.2	26.3	22.9	16.8	18.2	42.6	29.6	25.2	31.4	27.9	28.0	21.1	23.6	42.6
21-Feb	9.1	Z	4.4	5.2	4.5	4.4	4.4	4.1	3.0	3.3	3.9	3.8	2.3	1.7	1.9	2.5	1.6	3.8	4.6	4.8	1.9	1.5	1.9	3.3	3.6	9.1
22-Feb	2.9	2.9	Z	2.6	3.4	2.4	4.9	6.6	3.8	4.3	14.4	8.8	10.6	14.6	12.1	12.6	8.7	3.9	17.9	11.5	9.1	5.3	6.1	7.9	7.7	17.9
23-Feb	2.7	7.2	2.6	Z	2.5	2.8	3.9	3.7	2.0	2.1	1.5	1.7	4.0	6.6	2.3	1.2	1.4	1.2	1.8	0.9	0.7	13.5	5.3	18.1	3.9	18.1
24-Feb	8.7	7.1	1.7	1.9	Z	14.2	2.6	3.6	3.6	3.7	2.5	3.7	5.2	4.9	2.7	2.0	1.8	2.3	4.1	3.4	3.1	4.0	3.2	6.4	4.2	14.2
25-Feb	5.1	6.6	4.0	2.3	3.7	Z	3.6	2.3	4.4	1.9	1.7	1.2	2.8	2.4	2.1	0.9	0.6	3.0	3.0	0.9	0.5	0.4	0.3	0.3	2.4	6.6
26-Feb	Z	0.4	0.7	0.7	0.8	1.8	2.2	3.5	4.2	3.8	2.1	2.2	1.8	2.0	2.6	1.6	2.2	4.1	3.1	4.3	7.9	7.3	9.8	12.9	3.6	12.9
27-Feb	14.2	Z	14.2	7.5	8.6	6.9	7.2	12.9	7.1	4.5	3.8	3.6	6.4	2.4	3.5	5.5	3.0	1.6	4.0	6.5	1.8	4.9	7.1	2.3	6.1	14.2
28-Feb	2.4	1.2	Z	3.6	2.9	3.3	13.0	8.1	6.0	4.7	2.7	2.2	2.2	1.8	1.5	1.8	1.6	1.5	1.2	0.7	0.6	0.8	0.6	0.5	2.8	13.0
29-Feb	0.7	0.7	1.0	Z	0.8	0.8	1.3	1.4	2.8	1.8	1.8	1.6	1.2	1.1	2.3	1.7	3.8	8.0	2.5	2.1	2.4	2.3	4.1	9.0	2.4	9.0
																								Diurnal Average		
																								Diurnal Maximum		
5.4 6.0 6.3 5.5 5.6 5.7 7.5 8.4 8.0 6.7 5.9 6.6 6.4 6.2 5.7 5.7 5.2 6.2 6.4 6.5 6.5 6.3 6.5 7.1																										
14.2 19.9 18.6 18.1 30.5 16.9 26.7 23.6 26.9 23.6 18.6 28.7 25.2 26.3 22.9 16.8 18.2 42.6 29.6 25.2 31.4 27.9 34.7 23.2																										
Z - zerospan C - Calibration M - Maintenance																										



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Christina Lake - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Christina Lake - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	635	96.36	96.36
21 - 40	23	3.49	99.85
41 - 80	1	0.15	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 659

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Christina Lake - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	2	49	74	19	21	37	20	34	33	49	41	89	66	42	35	24	635
21 - 40	0	0	4	0	2	2	0	2	3	5	3	1	1	0	0	0	23
11 - 80	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	2	49	78	19	23	39	20	36	36	54	45	90	67	42	35	24	659

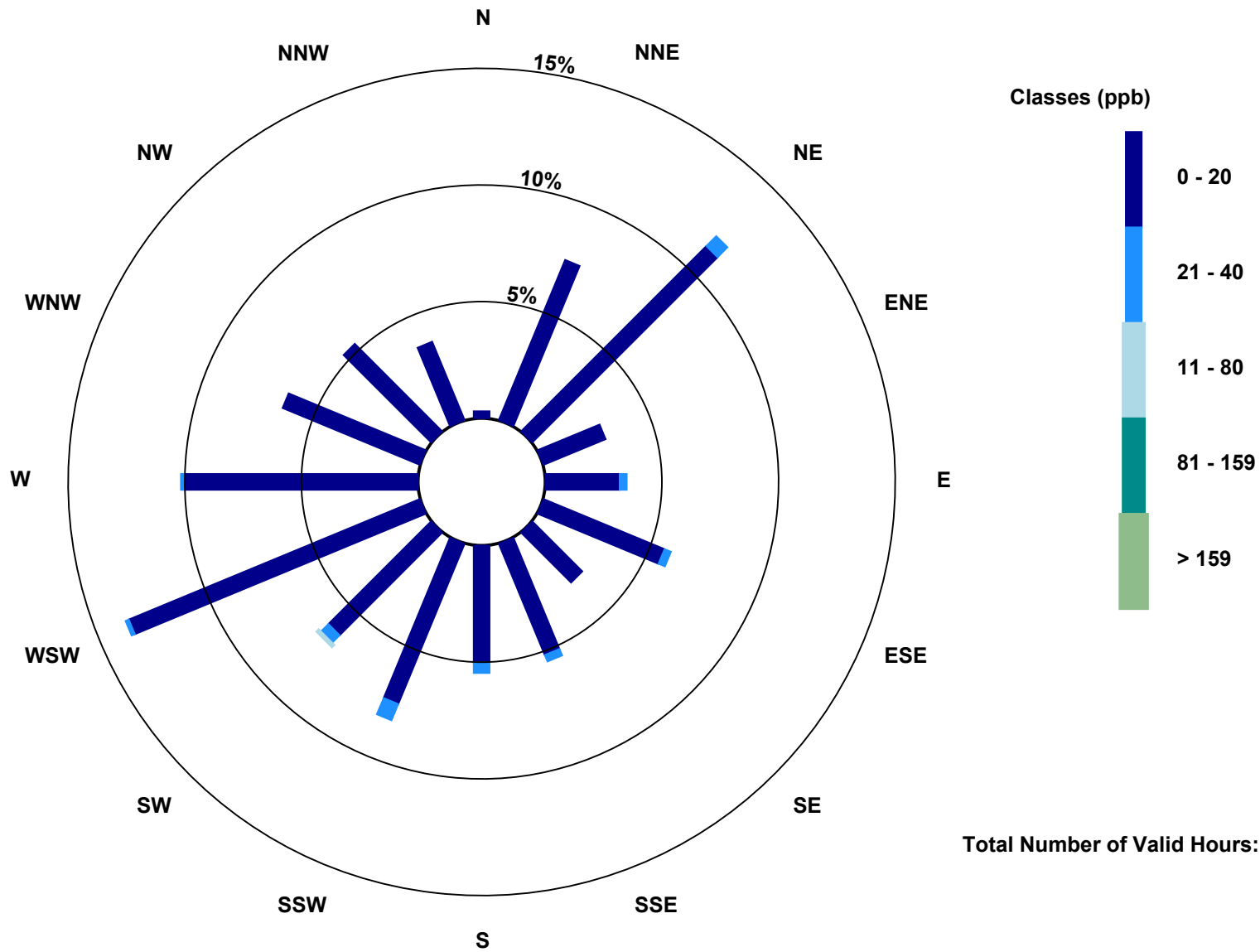
Total Number of Valid Hours: 659

Total Number of Hours: 696

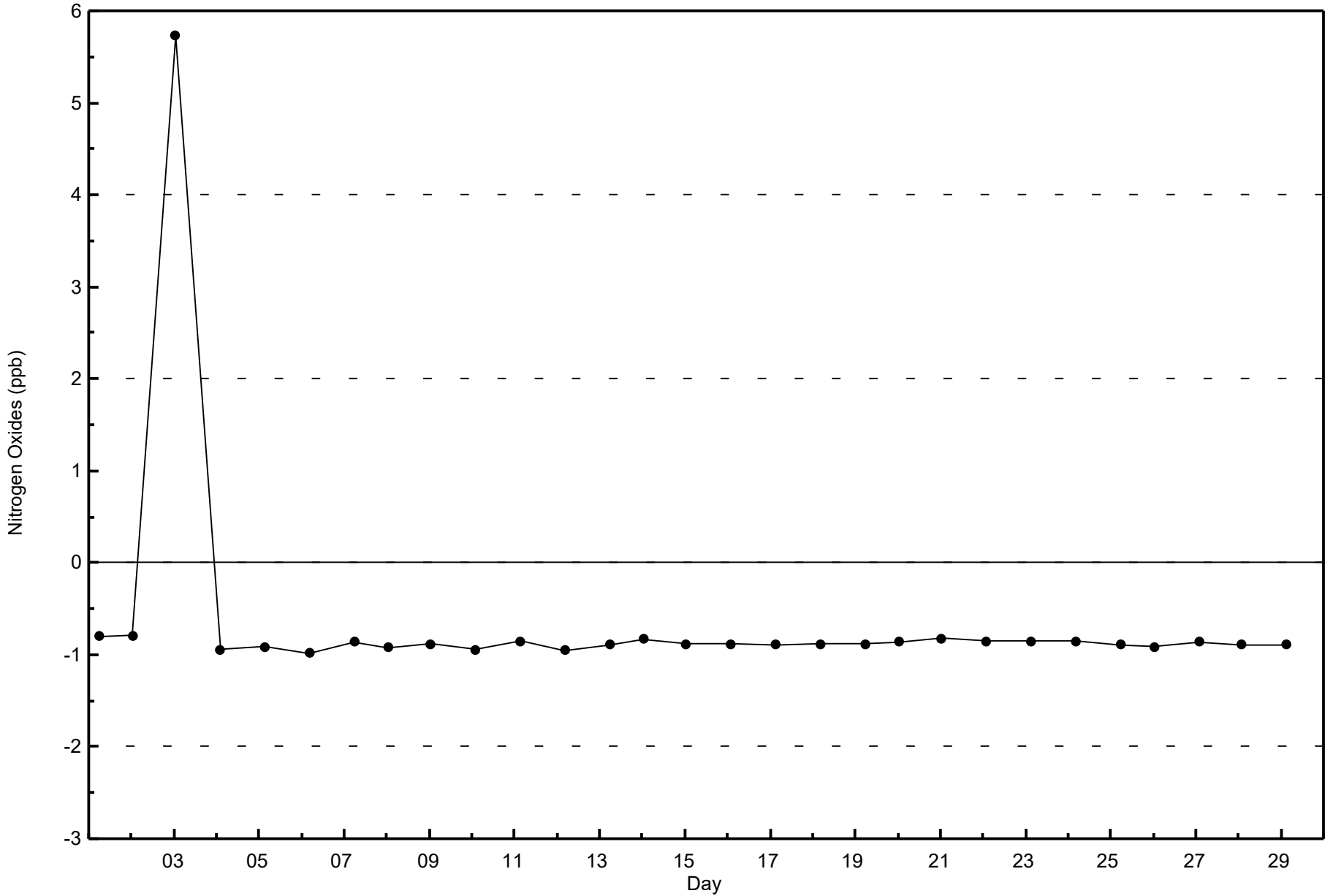


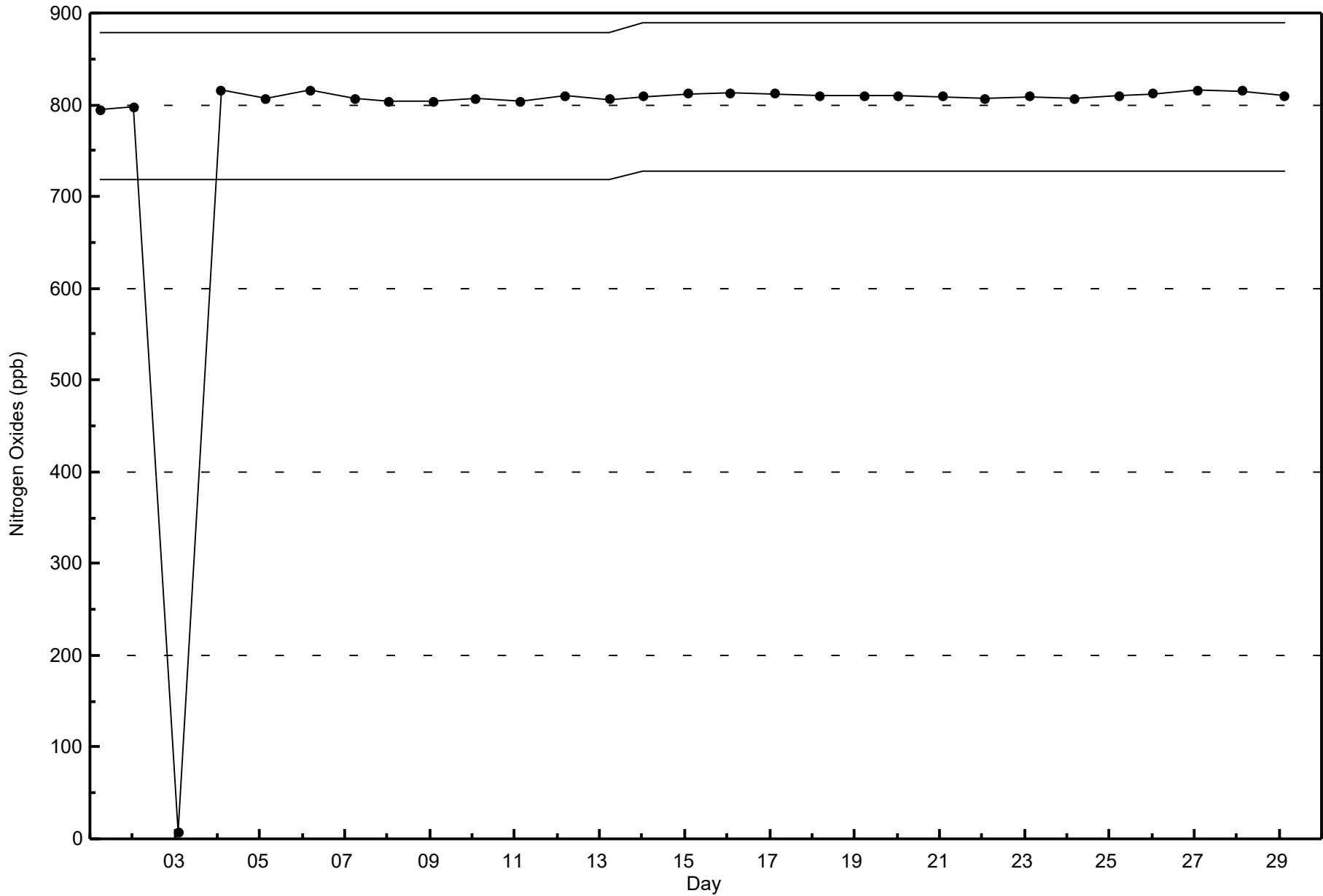
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Christina Lake



Total Number of Valid Hours: 659



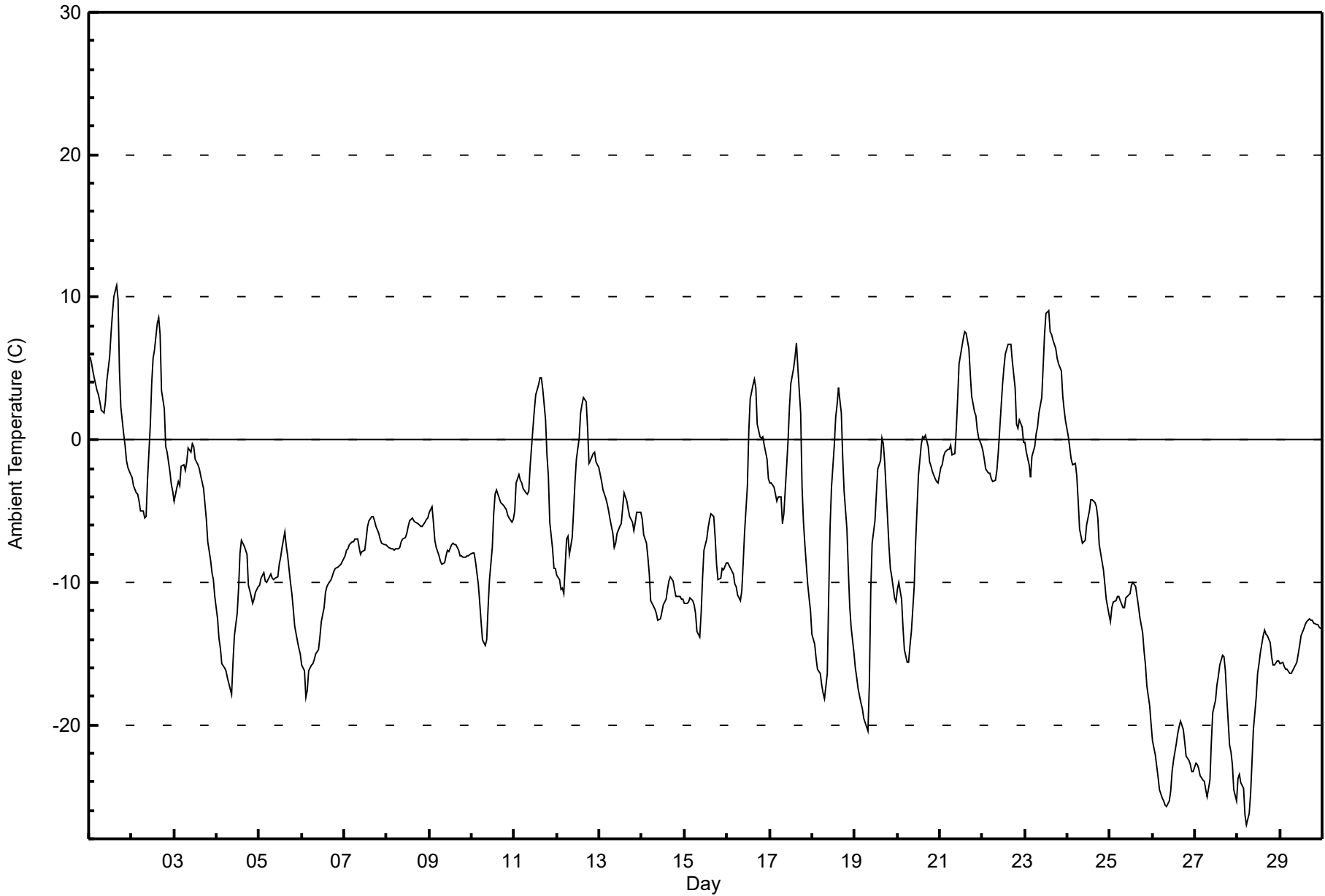




Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature (AT) - C
Christina Lake - February 2024

Maximum Value: 10.8 C on Feb 1 16:00 Maximum Daily Average: 4.0 C on Feb 1																				Hours in Service: 696 Hours of Data: 696						
Minimum Value: -27.0 C on Feb 28 06:00 Minimum Daily Average: -22.9 C on Feb 26 Maximum Diurnal Average: -2.9 C at hour 16 Minimum Diurnal Average: -10.8 C at hour 8 Monthly Average: -7.44 C Percentiles: P ₁ = -25.3 P ₁₀ = -17.2 Q ₁ = -11.8 Median = -7.4 Q ₃ = -2.1 P ₉₀ = 2.6 P ₉₉ = 8.2																				Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	5.9	5.5	4.8	4.3	3.5	3.2	2.7	2.1	1.8	2.7	4.1	5.8	7.4	8.9	10.0	10.8	9.9	4.8	2.3	0.4	-0.4	-1.5	-1.9	-2.4	4.0	10.8
2-Feb	-2.6	-3.2	-3.7	-3.8	-4.3	-5.0	-5.0	-5.5	-5.3	-2.9	1.0	3.9	5.8	6.3	8.2	8.6	7.4	3.4	2.2	-0.4	-0.9	-2.2	-3.1	-3.7	-0.2	8.6
3-Feb	-4.3	-3.3	-3.0	-3.2	-1.9	-1.8	-2.1	-1.6	-0.6	-0.8	-0.2	-0.5	-1.3	-1.8	-2.0	-2.6	-3.4	-4.5	-5.6	-7.2	-8.4	-9.4	-9.8	-11.0	-3.8	-0.2
4-Feb	-12.6	-13.9	-14.7	-15.7	-16.0	-16.2	-16.7	-17.5	-17.9	-15.6	-13.7	-12.2	-10.4	-8.0	-7.1	-7.5	-7.8	-8.0	-10.2	-11.0	-11.5	-11.2	-10.7	-10.3	-12.3	-7.1
5-Feb	-10.2	-9.8	-9.3	-9.9	-10.0	-9.8	-9.4	-9.7	-9.8	-9.7	-8.7	-8.2	-7.6	-6.5	-7.5	-8.1	-10.0	-10.8	-11.9	-13.1	-14.2	-14.6	-15.0	-10.1	-6.5	
6-Feb	-15.8	-16.2	-18.1	-17.6	-16.2	-15.8	-15.7	-15.4	-15.1	-14.7	-13.8	-12.8	-11.8	-10.7	-10.3	-10.1	-9.8	-9.5	-9.2	-9.0	-9.0	-8.8	-8.7	-8.5	-12.6	-8.5
7-Feb	-8.1	-7.8	-7.6	-7.4	-7.2	-7.2	-6.9	-6.9	-7.5	-8.0	-7.9	-7.7	-6.9	-6.1	-5.7	-5.4	-5.4	-5.7	-6.1	-6.6	-7.0	-7.3	-7.4	-7.4	-7.0	-5.4
8-Feb	-7.4	-7.6	-7.6	-7.6	-7.7	-7.7	-7.6	-7.5	-7.2	-7.0	-6.9	-6.6	-6.1	-5.7	-5.5	-5.7	-5.7	-5.9	-6.0	-6.0	-6.1	-5.8	-5.6	-5.5	-6.6	-5.5
9-Feb	-5.1	-4.7	-5.7	-7.0	-7.6	-8.1	-8.5	-8.7	-8.6	-8.2	-7.8	-7.8	-7.4	-7.2	-7.4	-7.4	-7.7	-8.1	-8.2	-8.3	-8.3	-8.2	-8.1	-8.1	-7.6	-4.7
10-Feb	-8.0	-8.0	-8.5	-10.1	-11.4	-12.8	-14.0	-14.4	-14.0	-11.7	-9.8	-7.5	-5.2	-3.8	-3.6	-4.1	-4.4	-4.5	-4.6	-4.9	-5.3	-5.5	-5.8	-5.6	-7.8	-3.6
11-Feb	-5.0	-3.0	-2.5	-2.9	-3.0	-3.4	-3.7	-3.9	-3.6	-1.9	0.8	2.1	3.2	3.8	4.3	4.4	3.6	1.4	-1.1	-2.5	-5.7	-7.7	-9.0	-9.1	-1.8	4.4
12-Feb	-9.5	-9.8	-10.5	-10.4	-10.8	-6.9	-6.8	-8.0	-6.8	-5.0	-2.9	-1.3	0.1	1.9	2.5	2.9	2.7	0.8	-1.6	-1.5	-1.0	-0.9	-1.6	-2.0	-3.6	2.9
13-Feb	-2.4	-2.9	-3.5	-4.1	-4.5	-5.0	-5.6	-6.6	-7.6	-7.3	-6.6	-6.1	-5.9	-4.8	-3.8	-4.3	-4.9	-5.4	-5.8	-6.3	-5.8	-5.1	-5.1	-5.1	-5.2	-2.4
14-Feb	-5.6	-6.7	-7.3	-8.2	-9.4	-11.3	-11.7	-11.8	-12.2	-12.6	-12.6	-12.1	-11.6	-11.2	-10.5	-9.9	-9.6	-9.9	-10.5	-10.9	-11.0	-11.0	-11.2	-11.2	-10.4	-5.6
15-Feb	-11.5	-11.5	-11.4	-11.1	-11.3	-11.5	-12.2	-13.5	-13.8	-12.1	-9.7	-7.8	-6.9	-6.2	-5.6	-5.2	-5.4	-6.9	-8.8	-9.8	-9.7	-9.1	-9.1	-8.7	-9.5	-5.2
16-Feb	-8.7	-8.8	-9.0	-9.4	-10.1	-10.3	-10.9	-11.3	-10.6	-8.7	-6.5	-3.3	0.6	2.8	3.8	4.3	3.6	1.1	0.2	0.1	0.2	-0.3	-1.4	-2.8	-4.0	4.3
17-Feb	-3.0	-3.0	-3.3	-3.8	-4.3	-4.0	-4.0	-5.9	-5.2	-1.9	0.0	2.3	4.0	5.1	5.8	6.8	5.0	1.9	-3.3	-5.7	-7.3	-10.1	-11.1	-12.0	-2.4	6.8
18-Feb	-13.6	-14.3	-15.3	-16.1	-16.4	-17.1	-17.8	-18.2	-16.4	-11.0	-6.1	-3.3	-0.4	1.6	2.5	3.7	1.9	-1.3	-3.6	-6.3	-9.1	-11.6	-13.1	-15.0	-9.0	3.7
19-Feb	-16.0	-16.7	-17.5	-18.5	-18.8	-19.6	-19.8	-20.5	-17.2	-10.6	-7.3	-5.7	-3.8	-2.0	-1.4	0.1	-0.3	-1.7	-5.5	-7.4	-9.0	-9.6	-11.1	-11.4	-10.5	0.1
20-Feb	-10.5	-10.0	-11.2	-13.1	-14.7	-15.7	-15.6	-14.4	-13.4	-10.3	-7.3	-4.9	-2.5	-0.4	0.2	0.1	0.3	-0.5	-1.5	-1.9	-2.3	-2.7	-2.9	-3.0	-6.6	0.3
21-Feb	-1.9	-1.7	-1.2	-0.9	-0.7	-0.7	-0.4	-1.1	-1.0	0.7	2.9	5.3	6.5	7.1	7.6	7.5	6.4	4.6	3.1	2.0	1.7	0.7	0.2	-0.4	1.9	7.6
22-Feb	-0.7	-1.4	-2.1	-2.3	-2.4	-2.8	-2.9	-2.8	-2.1	-0.8	2.3	3.8	5.1	6.0	6.7	6.7	6.7	5.5	3.6	1.1	0.8	1.4	0.9	-0.2	1.3	6.7
23-Feb	-0.2	-0.9	-1.7	-2.7	-1.2	-0.5	0.4	0.9	1.9	3.0	5.2	7.4	8.9	9.0	7.6	7.3	7.0	6.4	5.7	5.3	4.8	3.0	2.1	1.3	3.3	9.0
24-Feb	0.2	-0.6	-1.4	-1.8	-1.7	-2.5	-4.3	-6.3	-7.3	-7.2	-7.0	-5.9	-5.0	-4.2	-4.4	-4.7	-5.5	-7.3	-8.6	-9.1	-10.1	-11.1	-12.3	-5.5	0.2	
25-Feb	-12.8	-11.8	-11.4	-11.3	-11.0	-11.0	-11.3	-11.7	-11.8	-11.1	-10.9	-10.8	-10.2	-10.1	-10.3	-11.0	-11.7	-12.4	-13.5	-14.8	-15.8	-17.3	-18.6	-19.9	-12.6	-10.1
26-Feb	-21.1	-22.1	-22.9	-23.6	-24.5	-25.1	-25.4	-25.6	-25.7	-25.3	-24.6	-23.3	-22.5	-21.4	-20.7	-20.1	-19.8	-20.3	-21.3	-22.2	-22.5	-22.8	-23.3	-23.3	-22.9	-19.8
27-Feb	-22.7	-22.8	-23.1	-23.6	-23.9	-23.9	-24.6	-25.1	-23.8	-21.2	-19.1	-18.3	-17.2	-16.6	-15.8	-15.1	-15.3	-16.2	-18.1	-21.4	-21.9	-22.8	-24.6	-25.4	-20.9	-15.1
28-Feb	-23.8	-23.5	-24.0	-24.4	-26.3	-27.0	-26.2	-24.8	-22.6	-20.3	-18.1	-16.4	-15.7	-14.9	-13.7	-13.4	-13.6	-13.7	-14.3	-15.2	-15.8	-15.8	-15.5	-15.5	-18.9	-13.4
29-Feb	-15.7	-15.7	-15.9	-16.1	-16.1	-16.4	-16.4	-16.2	-16.0	-15.6	-15.0	-14.4	-13.8	-13.2	-13.0	-12.7	-12.6	-12.7	-12.7	-12.9	-12.9	-13.0	-13.1	-13.3	-14.4	-12.6
																								Diurnal Average		
																								Diurnal Maximum		





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Christina Lake - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	49	7.04	7.04
-20 - 0	534	76.72	83.76
0 - 10	111	15.95	99.71
10 - 20	2	0.29	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

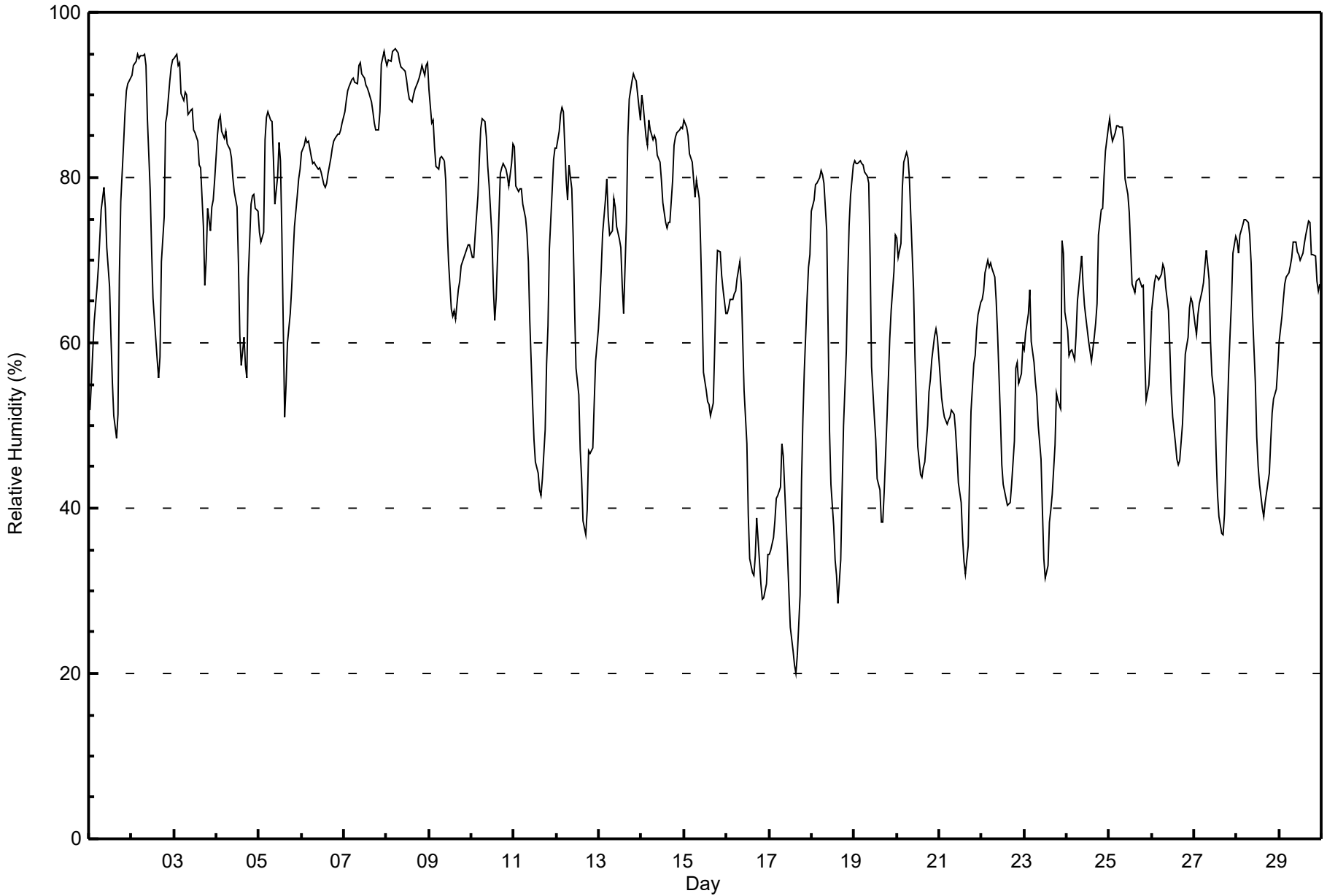
Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

Relative Humidity (RH) - %
Christina Lake - February 2024

Maximum Value: 95.6 % on Feb 8 06:00 Maximum Daily Average: 92.8 % on Feb 8																						Hours in Service: 696 Hours of Data: 696																										
Minimum Value: 20.0 % on Feb 17 16:00 Minimum Daily Average: 40.1 % on Feb 17 Maximum Diurnal Average: 76.8 % at hour 8 Minimum Diurnal Average: 54.0 % at hour 15 Monthly Average: 68.37 % Percentiles: P ₁ = 29.1 P ₁₀ = 42.9 Q ₁ = 56.9 Median = 70.4 Q ₃ = 82.1 P ₉₀ = 89.3 P ₉₉ = 94.9																						Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	51.9	55.1	59.1	62.6	66.7	69.1	72.5	76.1	78.9	76.3	71.5	66.7	60.6	55.3	51.3	48.5	51.4	68.1	77.1	84.1	87.7	90.5	91.3	92.1	69.4	92.1																						
2-Feb	92.5	93.5	94.1	94.9	94.5	94.8	94.8	94.9	93.5	87.1	78.5	71.4	65.5	62.8	58.0	55.8	58.4	69.8	75.2	86.5	87.7	91.8	93.4	94.3	82.7	94.9																						
3-Feb	94.5	94.9	93.5	93.9	90.2	89.4	90.4	90.0	87.7	88.2	88.3	85.8	85.5	84.4	81.6	81.2	74.1	66.9	70.1	76.4	73.5	76.4	77.2	79.7	83.9	94.9																						
4-Feb	85.1	86.9	87.5	85.7	84.7	85.5	84.1	83.4	82.4	80.1	78.4	76.5	69.7	60.8	57.3	60.7	57.3	55.7	67.9	76.7	77.7	78.0	76.3	76.0	75.6	87.5																						
5-Feb	73.5	72.3	73.3	84.5	87.3	87.9	87.0	86.8	82.1	76.7	80.2	84.3	82.1	73.2	51.0	54.9	60.0	63.5	66.6	70.6	74.1	77.9	79.9	80.9	75.4	87.9																						
6-Feb	83.1	84.0	84.7	84.2	84.4	82.5	81.7	81.8	81.6	81.1	81.2	80.6	79.2	78.9	79.3	80.5	82.3	83.5	84.5	84.7	85.2	85.2	85.7	86.6	82.8	86.6																						
7-Feb	88.1	89.4	90.6	91.0	91.8	92.0	91.5	91.3	93.5	93.9	92.6	92.0	91.3	90.9	90.3	89.1	88.0	86.7	85.7	85.7	88.0	93.7	95.3	94.2	90.7	95.3																						
8-Feb	93.5	94.2	94.0	95.3	95.5	95.6	95.2	94.1	93.4	93.2	92.9	91.9	90.5	89.4	89.1	90.0	90.7	91.5	92.1	92.7	93.5	92.4	93.6	93.9	92.8	95.6																						
9-Feb	90.7	86.6	87.0	83.8	81.3	81.0	82.4	82.6	82.0	79.7	74.0	69.8	64.1	63.3	63.8	62.9	66.4	67.5	69.4	69.9	70.8	71.3	71.9	71.8	74.8	90.7																						
10-Feb	70.4	70.3	73.0	77.8	82.2	86.0	87.1	86.7	84.9	81.3	78.9	72.8	66.5	62.6	65.4	75.4	80.4	81.1	81.7	81.1	80.1	79.0	81.7	84.1	78.0	87.1																						
11-Feb	83.7	78.9	78.3	78.7	78.6	76.8	75.2	73.2	69.8	62.7	52.6	48.3	45.6	44.3	42.2	41.6	43.6	49.5	57.4	62.0	71.3	78.5	82.2	83.6	64.9	83.7																						
12-Feb	83.5	85.6	87.6	88.5	88.0	79.7	77.3	81.5	78.7	72.8	64.2	56.9	53.7	47.1	43.5	38.6	36.8	39.9	47.0	46.7	47.4	52.7	57.9	61.6	63.2	88.5																						
13-Feb	64.9	68.8	73.1	77.3	79.9	75.3	73.1	73.5	77.5	76.5	74.1	72.5	71.5	67.0	63.6	74.6	85.0	89.5	91.7	92.5	92.0	91.7	88.4	86.9	78.4	92.5																						
14-Feb	89.9	88.6	85.0	83.9	87.0	85.7	84.6	85.1	84.6	82.6	81.8	79.7	76.9	74.6	73.9	74.5	74.6	79.7	83.8	84.9	85.4	85.8	86.2	85.9	82.7	89.9																						
15-Feb	87.0	86.1	85.0	82.9	81.8	79.7	77.7	79.6	77.4	71.6	64.8	56.4	54.3	52.8	52.5	51.2	52.7	59.1	66.9	71.2	71.1	68.1	66.5	63.6	69.2	87.0																						
16-Feb	63.6	64.3	65.2	65.2	65.9	66.2	67.9	69.9	67.2	60.5	54.2	47.7	39.2	33.9	32.2	31.8	34.2	38.8	33.5	30.8	29.0	29.1	30.8	34.4	48.1	69.9																						
17-Feb	34.4	34.9	36.5	38.5	41.2	41.6	42.5	47.7	46.4	38.3	34.4	29.8	25.6	22.6	20.9	20.0	22.2	29.5	43.2	50.8	56.7	65.3	69.1	70.6	40.1	70.6																						
18-Feb	75.9	77.3	79.1	79.4	80.0	80.8	80.4	79.4	73.5	61.6	49.3	42.8	37.7	33.8	31.8	28.5	33.7	42.2	50.1	59.0	67.8	74.2	77.8	81.6	61.6	81.6																						
19-Feb	82.0	81.7	81.8	82.1	81.8	81.5	80.7	80.3	79.3	70.1	57.1	51.1	48.3	43.5	42.2	38.3	38.4	41.9	50.7	55.5	60.6	63.8	68.6	73.0	63.9	82.1																						
20-Feb	72.7	70.3	72.0	78.8	81.9	83.1	82.4	80.0	75.4	66.4	58.4	52.7	47.5	44.0	43.8	45.0	45.7	49.9	54.1	55.5	58.0	60.8	61.7	60.7	62.5	83.1																						
21-Feb	56.0	53.4	52.0	51.0	50.1	50.7	51.0	51.8	51.4	49.4	46.5	43.1	40.7	36.4	33.6	32.1	35.4	44.0	51.8	57.4	58.5	61.6	63.4	64.8	49.4	64.8																						
22-Feb	65.2	66.2	68.5	69.9	69.1	69.7	69.0	67.9	65.1	61.1	51.0	45.2	42.9	42.0	40.3	40.5	40.7	42.8	48.1	56.9	57.6	55.2	56.3	59.7	56.3	69.9																						
23-Feb	59.2	61.1	63.6	66.4	60.1	57.6	55.2	53.5	49.9	45.9	39.6	33.9	31.6	33.0	38.3	39.9	41.7	47.7	54.0	53.1	52.1	72.4	70.8	63.7	51.8	72.4																						
24-Feb	61.6	58.5	59.0	59.2	58.0	60.9	65.0	66.7	70.5	67.1	64.6	63.0	60.1	59.0	57.7	60.7	62.4	64.7	73.0	76.1	76.2	80.2	83.2	85.9	66.4	85.9																						
25-Feb	87.1	85.5	84.4	85.4	86.3	86.3	86.1	86.1	84.5	79.9	78.0	75.8	71.3	67.1	66.2	67.5	67.6	67.7	66.8	66.9	58.8	53.0	54.9	58.5	73.8	87.1																						
26-Feb	63.9	67.3	68.2	68.0	67.7	68.3	69.4	68.9	66.7	63.9	59.1	53.9	50.9	47.8	46.0	45.2	45.8	50.1	54.4	58.7	60.8	64.3	65.4	64.9	60.0	69.4																						
27-Feb	62.2	61.1	63.4	64.7	66.3	67.2	69.3	71.2	67.6	60.1	56.0	53.2	46.6	41.7	38.9	36.9	36.8	39.2	45.6	56.8	61.2	65.0	70.8	73.0	57.3	73.0																						
28-Feb	72.4	70.9	73.1	74.3	75.0	75.0	74.6	73.1	69.6	63.6	55.3	48.6	45.2	42.9	40.0	39.0	40.7	41.9	44.3	48.1	51.4	53.3	54.4	56.9	57.6	75.0																						
29-Feb	60.1	63.2	65.2	67.2	68.0	68.5	69.4	70.4	72.2	72.2	71.0	70.7	70.1	70.9	72.1	73.0	74.7	74.6	70.7	70.7	70.6	67.4	66.2	67.1	69.4	74.7																						
																								74.1	74.2	75.1	76.4	76.7	76.5	76.5	76.8	75.4	71.2	66.5	62.7	59.1	56.1	54.0	54.4	55.9	59.6	64.0	67.7	69.1	71.7	73.1	74.1	Diurnal Average
																								94.5	94.9	94.1	95.3	95.5	95.6	95.2	94.9	93.5	93.9	92.9	92.0	91.3	90.9	90.3	90.0	90.7	91.5	92.1	92.7	93.5	93.7	95.3	94.3	Diurnal Maximum





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Christina Lake - February 2024

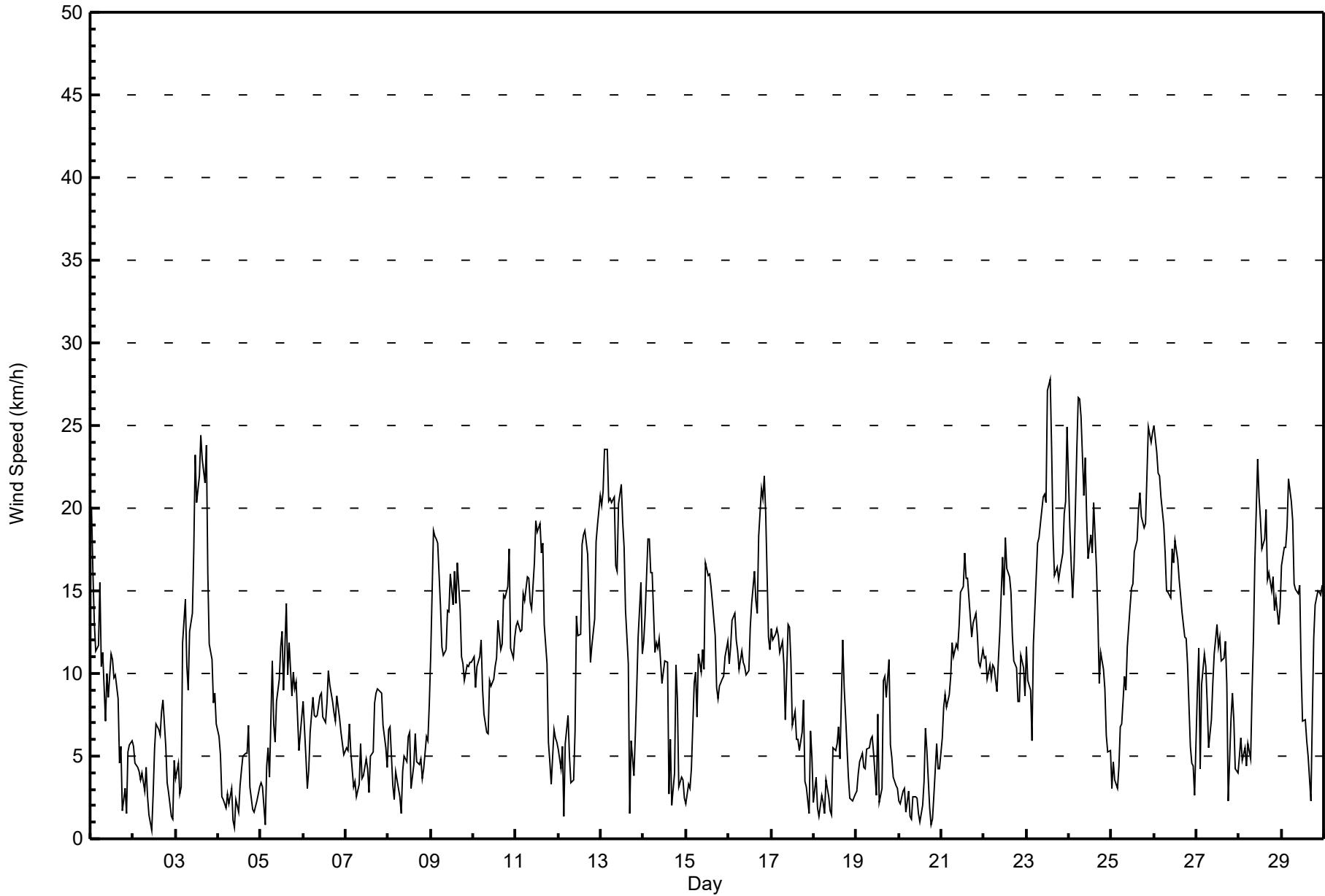
Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	1	0.14	0.14
20 - 40	50	7.18	7.33
40 - 60	154	22.13	29.45
60 - 80	279	40.09	69.54
80 - 100	212	30.46	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Maximum Speed: 28 km/h on Feb 23 14:00		Maximum Daily Speed Average: 16.3 km/h on Feb 23		Hours in Service: 696																							
Minimum Speed Value: 1 km/h on Feb 2 11:00		Minimum Daily Speed Average: 0.9 km/h on Feb 20		Hours of Data: 696																							
Maximum Diurnal Speed Average: 5.5 km/h at hour 14		Minimum Diurnal Speed Average: 0.7 km/h at hour 19		Hours of Missing Data: 0																							
Monthly Average Velocity: 3.0 km/h 286.4 deg		Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 5 Median = 10 Q ₃ = 14 P ₉₀ = 19 P ₉₉ = 25		Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	SSE20	SSE16	SSE13	S11	SSE12	SSE16	S10	S11	SSW7	SSW10	SW9	SSW11	SSW11	SSW10	S10	S8	S5	SSE6	SSE2	S3	S1	SSW5	SSW6	SSW6	S8.7	SSE20	
2-Feb	SSE6	SSE5	ENE4	SE4	S4	SSE4	SW3	ESE4	SSW3	SE1	S1	NE3	NE5	NNE7	ENE7	NE6	NE8	NNE8	NNE6	WNW3	NW3	NNW1	SW1	SSW5	ENE1.6	NNE8	
3-Feb	SW4	W5	W3	WSW3	WNW12	NW14	NW10	NW9	NW13	NW14	NW18	NW23	NNW20	NNW22	NW24	NNW23	NNW21	NNW24	NNE16	NNE12	NE11	NE8	NNE9	NNE7	NNW11.5	NW24	
4-Feb	NNE6	NE5	ESE3	SSE2	S2	SE3	SSE2	SSE3	SSE1	ESE1	NE2	E2	E3	NE4	NE5	NE5	NNE5	NNE7	ESE3	SW2	SE2	SE2	S2	ENE3	ENE1.9	NNE7	
5-Feb	NE3	S3	SSW1	NNE4	N6	NNW4	N11	NNE7	NE6	NNE8	NNE10	NNE12	NNE13	NE9	NE14	NE10	NNE12	NNE9	NNE10	NNE9	NNE9	NE5	NNE6	NNE7	NNE7.3	NE14	
6-Feb	NE8	NE5	ESE3	ESE4	E6	E9	E7	ENE7	E7	ESE9	ESE9	ESE7	E7	E8	ESE10	ESE9	ESE8	ESE8	ESE7	SE9	SSE7	SSE6	SE6	ESE5	ESE6.5	ESE10	
7-Feb	SE6	SSE5	SSE7	SSE5	SSE3	SSE3	SE3	ENE3	NNE6	NNE4	NNE4	NNE5	NNE4	NE3	NE5	NE5	NE8	NE9	NE9	NE9	NE9	NE7	NNE6	NE4	NE3.6	NE9	
8-Feb	NE7	NE7	E3	ENE2	NE4	NE4	ESE3	SE1	SW4	SW5	SW5	SSW6	SSW6	SSW3	NE5	ENE6	ENE5	ESE4	E5	SSE4	SSW4	S6	SSW6	SW8	SSE1.4	SW8	
9-Feb	W11	WNW19	WNW18	NW18	WNW18	WNW14	W12	W11	W11	WNW14	WNW14	WNW16	WNW14	WNW16	WNW14	NW17	WNW14	W11	WSW11	WSW10	WSW10	WSW10	WSW11	WSW11	WNW12.7	WNW19	
10-Feb	WSW11	WSW9	SW10	SW11	SW12	SW9	SSW8	S6	S6	S10	S9	S10	S10	SSW11	SSW13	SSW11	SSW12	SSW15	SW15	SW15	SW18	W11	WSW11	WSW12	SW10.1	SW18	
11-Feb	WSW13	W13	WSW13	W13	WSW15	WSW14	WSW16	W16	W14	W14	WNW17	WNW19	WNW19	WNW19	WNW17	WNW18	W13	WSW11	WSW6	SW5	S3	SSW7	SSW6	SSW6	W11.6	WNW19	
12-Feb	SSW5	S4	SSW6	S1	SSW6	SSW7	SSW5	S3	SW4	SW7	SW13	WSW12	W12	W18	WNW18	WNW19	WNW17	W14	WSW11	W12	W13	WNW18	NW19	NNW21	W8.6	NNW21	
13-Feb	NNW20	NW21	NW24	NW24	NNW20	NW21	NNW20	NNW21	NNW17	NNW16	NNW20	NNW21	NNW19	NNW18	NW14	NW11	SSE2	SSW6	S4	SSW6	WSW9	WNW12	NNW16	NNW11	NW13.8	NW24	
14-Feb	N12	NNE14	NNE18	NNE18	NNE16	NE16	NNE11	NE12	NNE12	NE12	NE9	NE10	NE11	NE11	W3	WSW6	SW2	ENE4	NE11	NE8	S3	SE4	S4	ESE2	NNE7.6	NNE18	
15-Feb	ESE2	SSW3	SW3	W4	WSW9	WSW10	W7	WSW11	WSW10	WSW11	WSW10	W17	W16	W16	W15	W14	W12	WSW9	SW9	WSW9	WSW10	W10	WSW11	W12	WSW9.7	W17	
16-Feb	W11	WSW12	WSW13	W14	W12	W11	WSW10	WSW11	WSW11	WSW10	WSW10	WSW10	WSW10	WSW13	W14	WSW16	WSW14	WSW14	WSW18	WSW21	WSW21	W22	W20	W12	WSW11	WSW13.7	W22
17-Feb	WSW13	WSW12	W12	W13	WSW12	W11	WSW12	WSW11	W7	WNW13	NW13	NW11	NNW7	WNW8	WSW6	WNW6	WSW5	SW6	SW8	SSW3	S3	S2	SSW7	SSW5	W7.2	WNW13	
18-Feb	SSW2	SSW4	SSE2	E1	SW3	S2	S2	SSW4	SSE3	SSW2	SSW1	NE5	NE5	ENE6	NE7	NE5	NE12	NE9	ENE7	ENE4	ESE2	E2	SSW2	SSW3	ENE1.9	NE12	
19-Feb	SW3	WSW4	SSW5	SSW5	SW4	SSW4	SW5	SW6	SW6	WNW6	NW5	NE3	W8	W2	SSE3	NW10	NW10	NW9	NE11	NE6	ENE5	E4	ENE3	SSW3	W1.7	NE11	
20-Feb	S2	ENE2	E3	ESE3	E2	S3	SSE1	W1	SSW3	S3	NE2	NE2	E1	NE2	NE4	NE7	ENE5	SW2	S1	S1	SSW3	SW6	SW4	SSW4	SE0.9	NE7	
21-Feb	SW6	SW8	WSW9	WSW8	WSW9	WSW10	WSW12	WSW11	WSW12	W12	W13	W15	W15	W17	W16	W16	WSW13	SW12	SW13	SW14	WSW12	WSW11	W10	WSW11	WSW11.6	W17	
22-Feb	W11	WSW11	WSW10	WSW11	WSW10	WSW10	W10	WSW9	WSW11	W12	NW17	NW15	WNW18	WNW16	WNW16	WNW15	WNW12	W11	WSW10	WSW8	WSW8	WSW11	WSW10	WSW9	W10.9	WNW18	
23-Feb	WSW12	SW10	SSW9	S6	SW12	SW16	SW18	SW18	WSW19	WSW21	WSW21	W20	W27	WNW28	W24	W18	WSW16	W16	W16	W16	W17	WNW20	WNW20	WNW25	W16.3	WNW28	
24-Feb	WNW19	W17	W15	W17	WNW24	NW27	NNW27	NNW25	NNW21	NNW23	NNW19	NW17	NW18	NW17	NW20	NNW16	NNW13	NE9	ENE11	ENE10	E9	E6	ESE5	ESE5	NNW11.9	NW27	
25-Feb	ESE3	ESE5	ESE4	SE3	E4	E7	ENE7	NE10	NE9	ENE12	NE14	NNE15	NE15	NE17	NE18	NE20	NE21	NE20	NE19	NE19	NE22	NE25	NE24	NE25	NE13.3	NE25	
26-Feb	NE25	NNE23	NNE22	NNE22	NNE21	NNE19	NNE17	NNE15	NNE15	NNE15	NNE18	NNE17	NNE18	NNE17	NNE16	NE15	NE14	NE12	NE12	NE10	NE6	SSW5	SSW4	S3	NNE13.9	NE25	
27-Feb	WSW9	WSW12	WSW4	WSW9	WSW11	WSW10	SW8	SW6	SW7	WSW9	NW11	NW13	WNW12	W12	W11	WNW11	NW12	WNW9	SW2	SSW7	SW9	SSW7	SSE4	SSE4	WSW7.0	NW13	
28-Feb	SSW5	S6	S5	SSE6	SE4	ESE6	SE5	SE9	SSE12	S17	SSE23	SSE21	SSE19	SE18	SSE18	SSE20	SSE16	SSE16	SE15	SE16	SE14	SE15	ESE13	ESE14	SSE12.4	SSE23	
29-Feb	ESE17	ESE18	ESE18	ESE19	ESE22	ESE20	ESE19	ESE15	ESE15	ESE15	SE15	ESE10	E7	E7	E6	E5	E2	W7	WNW12	NW14	NW15	NW15	NNW15	NW15	ESE6.0	ESE22	
W2.5 W2.7 WSW2.6 W2.6 W3.5 W3.0 W2.7 W2.2 W2.7 W3.6 WNW4.2 NW5.3 NW5.2 NW5.5 NW4.9 NW4.8 NW3.5 WNW2.3 WNW0.7 WSW1.6 W2.4 W2.9 W2.7 W2.9																								Diurnal Average			
NE25 NNE23 NW24 NW24 WNW24 NW27 NNW27 NNW25 NNW21 NNW23 SSE23 NW23 W27 WNW28 NW24 NNW23 NNW21 NNW24 WSW21 WSW21 W22 NE25 NE24 WNW25																								Diurnal Maximum			
All monthly, daily, and diurnal averages have been calculated using vector methods																											





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Christina Lake - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	190	27.30	27.30
6 - 11	242	34.77	62.07
12 - 19	208	29.89	91.95
20 - 28	56	8.05	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Christina Lake - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	0	6	25	11	13	18	11	19	26	28	17	5	6	1	2	2	190
6 - 11	2	19	32	8	12	10	4	6	13	26	19	58	18	5	8	2	242
12 - 19	0	21	15	1	0	11	5	10	0	3	12	26	41	33	20	10	208
20 - 28	0	4	8	0	0	2	0	4	0	0	0	4	5	5	8	16	56
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	2	50	80	20	25	41	20	39	39	57	48	93	70	44	38	30	696

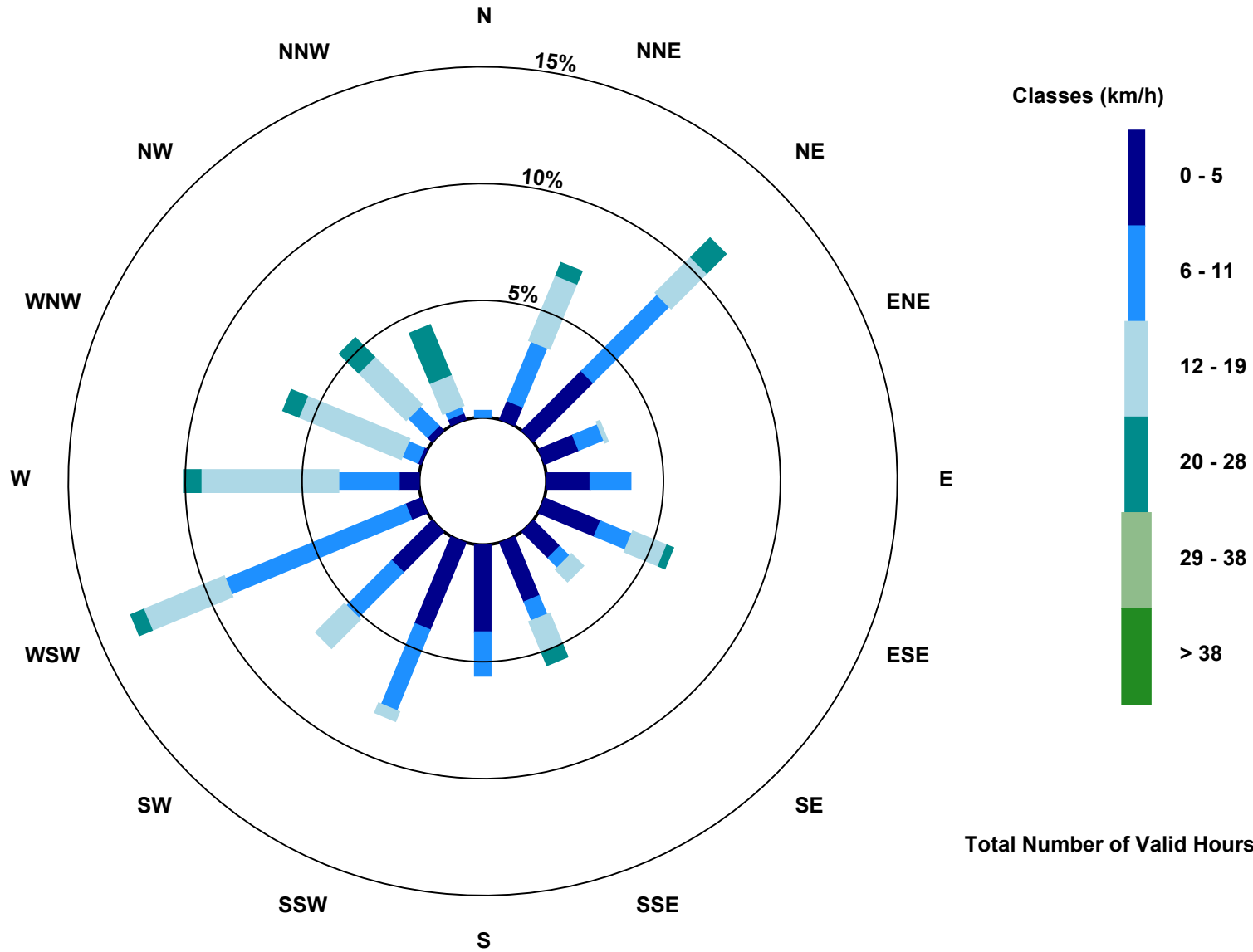
Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Christina Lake





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Christina Lake - February 2024

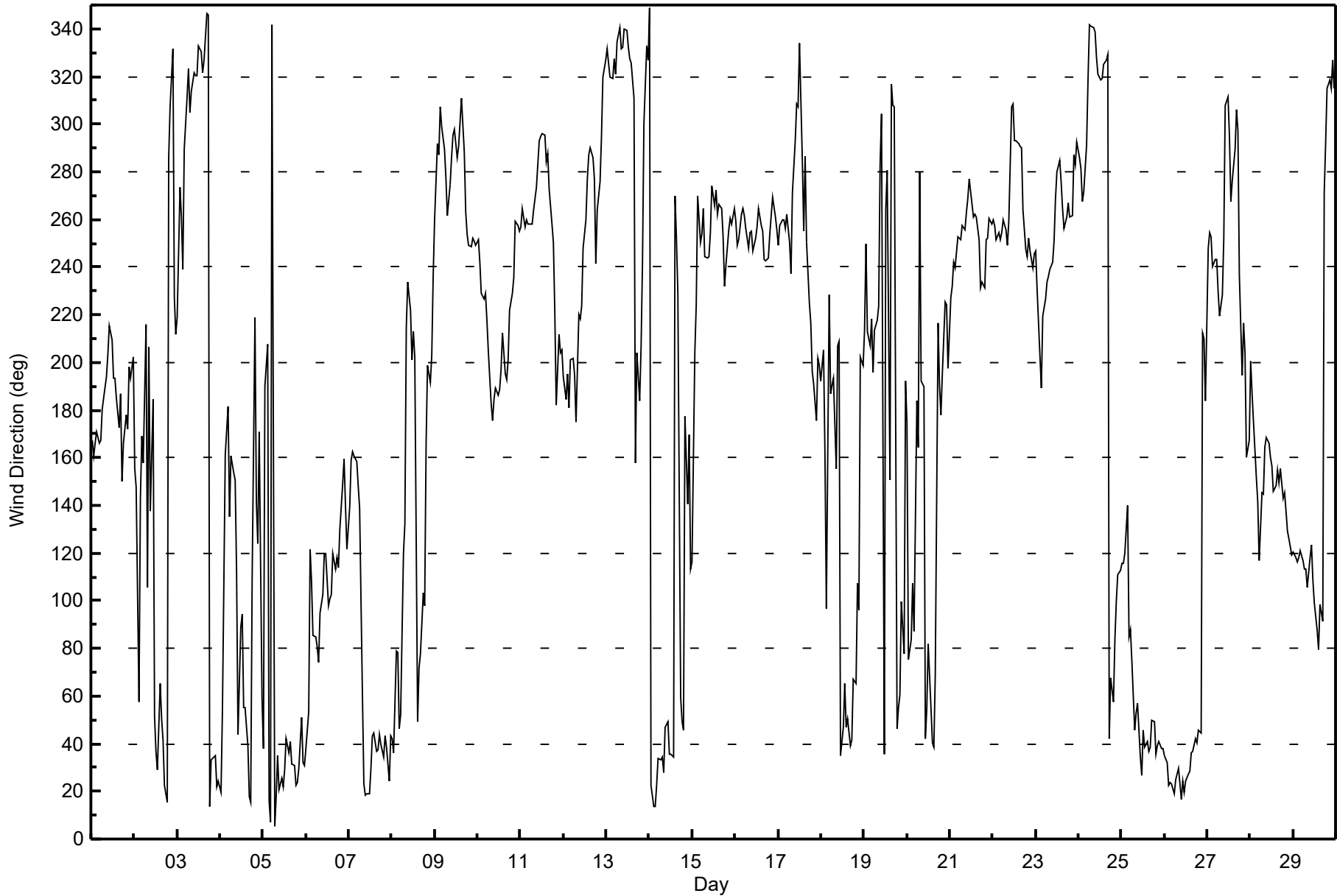
Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8 km/h on Feb 23 13:00																	Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0								
Minimum Value: 0 km/h on Feb 24 23:00																									
Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 4 P ₉₀ = 5 P ₉₉ = 6																									
Day	Hourly Period Ending At (MST)																							Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24
1-Feb	4	4	4	3	3	4	4	3	2	4	2	2	2	2	2	2	2	2	1	2	2	1	1	1	4
2-Feb	2	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	2	3	1	1	2	2	1	3
3-Feb	1	3	2	2	5	4	2	3	3	3	3	5	5	5	5	5	6	4	3	2	2	1	1	2	6
4-Feb	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2
5-Feb	2	2	2	1	1	2	3	3	1	3	2	3	3	2	4	2	2	2	2	2	2	2	2	2	4
6-Feb	2	2	1	1	2	2	1	1	1	1	2	1	1	2	2	2	3	2	1	2	2	2	1	1	3
7-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-Feb	1	1	2	2	1	1	1	1	1	2	2	1	2	2	2	2	1	1	1	1	1	1	1	2	2
9-Feb	3	6	5	5	5	4	3	3	3	4	4	5	5	4	4	4	4	2	2	2	2	2	2	2	6
10-Feb	2	2	2	2	2	1	1	1	1	2	2	2	2	2	3	2	3	3	3	3	3	3	2	2	3
11-Feb	3	3	3	3	4	4	4	4	4	4	5	5	5	5	5	5	4	2	3	2	2	2	2	1	5
12-Feb	1	1	2	1	1	2	2	1	2	1	3	4	4	6	5	5	5	4	1	3	4	4	4	6	6
13-Feb	5	5	4	4	5	4	4	4	4	4	4	6	4	4	4	3	1	1	1	2	2	5	4	4	6
14-Feb	4	3	4	4	3	3	2	2	2	2	2	2	2	2	3	3	2	2	1	3	2	1	1	1	4
15-Feb	1	2	3	2	2	2	2	1	2	2	2	5	5	4	4	4	3	2	1	1	2	3	2	3	5
16-Feb	2	2	3	3	3	3	2	3	3	2	2	3	4	4	4	4	3	4	4	5	6	6	3	2	6
17-Feb	1	2	2	2	2	2	2	3	5	4	4	3	2	2	2	2	2	1	1	2	1	1	2	4	5
18-Feb	2	2	1	1	1	1	2	2	1	1	1	2	2	2	2	2	2	2	1	1	1	2	2	2	2
19-Feb	1	1	1	1	2	1	1	2	1	3	2	2	3	3	2	3	3	3	1	1	2	2	1	1	3
20-Feb	1	2	1	1	1	1	1	5	2	1	2	1	1	1	1	1	1	2	2	1	1	1	1	1	5
21-Feb	1	1	2	2	2	2	3	3	3	3	3	4	4	5	5	4	4	2	2	2	3	2	2	3	5
22-Feb	2	2	1	2	2	2	2	2	2	3	4	4	5	5	5	5	4	3	1	2	3	1	2	1	5
23-Feb	1	1	2	2	3	2	3	3	4	4	5	6	8	8	8	6	4	5	5	5	6	8	7	6	8
24-Feb	5	5	4	5	7	6	5	6	5	6	5	5	5	5	5	4	3	4	2	2	2	1	0	1	7
25-Feb	1	1	1	1	1	1	1	2	1	2	2	2	3	3	3	3	4	4	4	3	4	5	5	5	5
26-Feb	5	5	4	4	4	4	3	3	3	3	3	4	3	3	3	3	3	2	2	2	4	2	2	1	5
27-Feb	3	3	2	3	1	2	3	2	2	2	3	4	4	3	4	4	4	2	3	1	1	1	1	1	4
28-Feb	2	1	1	1	1	1	2	3	4	4	5	4	4	4	4	5	4	4	3	4	3	4	3	4	5
29-Feb	4	4	4	4	5	5	4	3	3	4	4	2	6	3	2	2	2	3	3	3	3	3	3	3	6
																	5 6 5 5 7 6 5 6 5 6 5 6 8 8 8 6 6 5 5 5 6 8 7 6								
Diurnal Maximum																									



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Christina Lake - February 2024

Direction of Maximum Speed: 285 deg on Feb 23 14:00																						Hours in Service: 696			
Direction of Maximum Daily Speed Average: 259.3 deg on Feb 23																						Hours of Data: 696			
Direction of Minimum Speed: 185 deg on Feb 2 11:00											Direction of Minimum Daily Speed Average: 0.9 deg on Feb 20											Hours of Missing Data: 0			
Monthly Average Direction: 286.4 deg																						Percent Operational Time: 100.0			
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	167	161	166	171	166	167	181	185	194	203	215	209	193	194	185	173	187	150	166	178	172	198	193	202	180.9
2-Feb	155	148	58	143	169	158	216	106	206	138	185	52	37	29	65	51	42	23	15	286	307	332	227	212	70.8
3-Feb	219	274	261	239	289	311	323	305	314	321	320	320	333	330	322	327	347	346	14	33	34	35	22	24	333.7
4-Feb	20	54	107	162	181	135	161	154	150	112	44	89	94	55	55	39	18	15	109	219	141	124	171	59	73.1
5-Feb	38	190	208	16	7	342	5	18	35	21	25	22	29	42	36	41	31	31	23	23	30	51	32	31	27.3
6-Feb	38	53	121	108	86	85	81	74	95	103	120	120	98	101	103	120	113	118	114	130	149	160	140	122	106.2
7-Feb	139	159	163	161	158	148	139	60	23	19	19	19	30	43	44	37	37	44	40	35	43	39	24	43	54.6
8-Feb	42	36	79	78	46	52	120	132	215	234	222	201	213	202	49	72	78	103	98	166	199	191	203	236	146.5
9-Feb	260	292	287	307	299	289	277	261	275	286	295	298	286	291	301	311	288	263	254	249	249	252	251	249	281.9
10-Feb	252	242	229	227	229	218	205	183	176	185	189	186	189	197	212	195	193	201	222	229	235	259	258	255	217.6
11-Feb	257	265	257	260	258	258	258	264	269	273	293	295	296	295	284	288	273	258	250	221	182	212	204	205	268.8
12-Feb	194	185	195	181	201	201	195	175	220	218	224	248	260	277	287	290	286	277	241	264	276	295	320	327	268.3
13-Feb	332	326	320	319	327	321	335	340	332	332	340	339	332	328	326	311	158	204	184	207	242	300	333	327	324.4
14-Feb	349	22	13	14	23	34	33	35	28	47	49	36	35	34	270	252	229	59	49	46	178	141	169	114	30.0
15-Feb	116	204	224	270	250	254	265	244	244	254	274	266	273	262	266	265	253	232	241	256	260	258	265	265	256.8
16-Feb	259	249	252	262	265	262	256	248	255	255	247	252	257	265	257	255	243	243	244	254	261	269	261	255	255.4
17-Feb	249	257	260	260	256	262	250	237	271	293	309	307	334	286	255	286	250	225	216	196	191	176	202	199	260.2
18-Feb	192	205	162	96	229	187	191	193	155	207	209	35	47	65	47	50	39	42	67	65	107	96	202	199	74.9
19-Feb	214	250	213	207	219	196	214	218	224	283	304	36	264	280	151	317	308	307	46	55	60	100	78	192	268.4
20-Feb	174	75	84	107	87	184	164	280	192	190	42	54	82	55	41	39	69	217	190	178	195	226	224	197	135.1
21-Feb	227	232	242	240	253	252	251	258	256	263	269	277	266	261	262	261	252	232	234	231	252	252	261	258	253.4
22-Feb	260	257	252	254	252	254	260	256	249	259	307	308	293	293	292	291	290	264	247	244	252	247	240	246	269.5
23-Feb	247	231	203	189	219	227	234	236	239	242	251	269	280	285	276	264	256	261	267	261	261	287	283	293	259.3
24-Feb	286	281	268	272	291	318	341	341	340	339	328	321	319	319	325	327	329	42	68	58	84	100	111	113	326.3
25-Feb	116	115	120	140	85	88	75	46	53	57	34	27	46	39	41	37	38	50	49	36	39	41	38	38	45.5
26-Feb	35	32	23	24	23	19	25	27	30	16	25	20	24	27	28	36	37	42	40	46	45	212	210	184	28.5
27-Feb	248	255	253	240	243	243	229	219	229	252	308	312	295	267	276	290	306	297	236	195	216	204	160	167	258.5
28-Feb	201	187	175	152	142	117	145	145	164	169	166	160	157	146	148	155	149	155	143	145	138	129	123	119	150.4
29-Feb	120	118	116	118	121	117	114	114	106	118	124	108	99	88	80	99	91	271	292	315	319	315	327	315	102.6
259.8	260.8	255.3	264.5	269.3	269.5	278.8	274.4	274.0	278.8	298.9	308.9	305.6	306.5	305.9	307.8	316.0	291.3	285.9	255.8	259.0	268.0	278.3	280.0		
Diurnal Average																									
All monthly, daily, and diurnal averages have been calculated using vector methods																									





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Christina Lake - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 91 deg on Feb 19 14:00		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: 6 deg on Feb 14 19:00 Percentiles: P ₁ = 7 P ₁₀ = 10 Q ₁ = 13 Median = 16 Q ₃ = 23 P ₉₀ = 42 P ₉₉ = 77																										
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	11	13	14	18	13	12	18	14	18	14	16	17	15	18	17	11	21	15	41	34	60	20	16	12	60	
2-Feb	21	21	23	15	22	23	36	13	46	36	84	52	22	17	9	19	21	16	17	35	49	71	74	24	84	
3-Feb	20	39	69	54	20	17	12	23	15	11	10	13	16	16	13	15	22	17	20	10	10	10	11	9	69	
4-Feb	11	22	36	29	61	19	20	16	66	67	21	53	41	24	22	9	26	10	59	53	62	29	47	39	67	
5-Feb	39	24	86	32	20	34	16	20	15	14	14	12	19	12	9	11	10	10	10	10	11	14	16	11	86	
6-Feb	11	20	33	23	15	11	10	8	13	12	15	16	20	19	13	12	13	14	10	13	14	14	11	10	33	
7-Feb	15	14	12	14	24	16	32	19	20	16	26	17	22	50	17	18	12	8	7	8	11	11	12	17	50	
8-Feb	10	12	31	48	13	13	44	63	19	29	38	23	24	69	57	12	21	13	15	25	9	10	10	14	69	
9-Feb	16	16	14	23	15	16	17	16	18	17	17	20	18	17	23	20	21	18	14	12	13	14	12	11	23	
10-Feb	13	15	10	9	9	9	10	12	13	12	12	14	13	16	13	14	12	11	12	10	12	19	15	14	19	
11-Feb	14	17	17	17	17	16	16	18	16	19	19	15	18	17	18	17	20	14	43	39	45	28	38	16	45	
12-Feb	11	16	12	51	12	10	15	25	30	14	14	15	21	20	18	16	15	19	10	16	19	19	10	15	51	
13-Feb	14	16	10	10	15	13	17	12	16	18	14	14	17	17	22	23	77	8	29	17	12	35	13	12	77	
14-Feb	29	12	13	13	13	11	10	11	10	11	13	13	12	90	41	72	72	6	31	29	32	35	26	26	90	
15-Feb	36	47	72	54	20	13	25	7	11	10	16	18	18	18	19	18	17	13	8	10	16	18	16	18	72	
16-Feb	17	13	14	17	17	16	15	13	15	16	14	17	21	18	17	18	12	11	13	16	18	17	18	14	21	
17-Feb	8	15	14	15	14	17	15	31	71	17	19	20	42	29	40	34	14	6	12	25	39	60	12	43	71	
18-Feb	28	10	38	64	35	52	62	64	37	65	83	30	29	26	24	21	10	13	13	32	34	45	72	29	83	
19-Feb	25	11	13	11	28	16	25	17	31	33	44	72	31	91	70	35	19	41	7	22	22	22	26	23	91	
20-Feb	28	22	30	38	66	34	60	85	53	48	75	71	76	39	22	14	16	62	78	56	59	10	10	26	85	
21-Feb	7	14	10	24	16	14	18	17	16	17	18	16	19	18	19	18	17	10	10	9	15	15	16	16	24	
22-Feb	16	14	12	13	13	15	15	14	12	19	20	25	16	21	19	19	20	17	11	25	33	11	6	9	33	
23-Feb	8	11	15	13	10	8	10	10	11	13	17	18	16	16	17	18	16	17	18	17	18	19	16	15	19	
24-Feb	15	16	17	16	16	12	14	13	14	14	17	16	20	21	14	17	17	39	14	13	12	11	10	10	39	
25-Feb	14	13	20	20	19	14	18	10	13	15	13	13	16	13	14	11	10	10	9	9	10	9	11	11	20	
26-Feb	11	11	13	13	12	13	12	12	10	23	14	17	14	16	16	12	12	9	8	8	64	46	46	51	64	
27-Feb	41	17	64	19	7	10	16	28	21	17	32	24	30	31	34	33	25	18	77	14	9	11	17	20	77	
28-Feb	14	10	16	19	13	18	23	19	22	14	15	16	14	17	17	16	15	13	14	13	12	13	14	12	23	
29-Feb	12	12	12	12	13	13	11	12	11	13	15	20	61	28	29	37	72	31	23	10	11	11	15	12	72	
		41	47	86	64	66	52	62	85	71	67	84	72	76	91	90	41	77	72	78	56	64	71	74	51	
		Diurnal Maximum																								



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS27
JACKFISH 2/3
FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - JACKFISH 2/3 (AMS27)
 FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	639	36	57	96.98	11.3	0	1.8	0
H2S (ppb) Average	660	34	36	99.71	1.4	0	0.5	0
NO2 (ppb) Average	661	34	35	99.86	14.7	0	4.8	-
NO (ppb) Average	661	34	35	99.86	5.9	-	1.1	-
NOX (ppb) Average	661	34	35	99.86	19.5	-	5.4	-
Temperature 2 m (C) Average	696	0	0	100	9.8	-	3.7	-
Relative Humidity (%) Average	696	0	0	100	94.5	-	92.5	-
Wind Speed 10 m (km/h) Average	696	0	0	100	22	-	14	-
Wind Direction 10 m (deg) Average	696	0	0	100	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - JACKFISH 2/3 (AMS27)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	639	0.74	1.1	-	0	0.1	0.2	0.3	0.8	1.8	11.3
H2S (ppb) Average	660	0.21	0.2	-	0	0	0.1	0.2	0.3	0.4	1.4
NO2 (ppb) Average	661	1.63	1.8	-	0	0.1	0.5	1.1	2.1	3.7	14.7
NO (ppb) Average	661	0.24	0.5	-	0	0	0	0.1	0.3	0.5	5.9
NOX (ppb) Average	661	1.86	2.1	-	0	0.2	0.6	1.2	2.4	4	19.5
Temperature 2 m (C) Average	696	-7.64	7.5	-	-27.1	-16.8	-12	-7.4	-2.1	1.6	9.8
Relative Humidity (%) Average	696	68.78	17.1	-	20.6	42.6	56.7	70.6	83.8	90.9	94.5
Wind Speed 10 m (km/h) Average	696	6.9	4	-	0	3	4	6	9	12	22
Wind Direction 10 m (deg) Average	696	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - JACKFISH 2/3 (AMS27)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
SO2	13 Feb 2024 16:00	14 Feb 2024 11:00	20	Maintenance - stabilization post maintenace
NO2, SO2	22 Feb 2024 15:00	22 Feb 2024 15:00	1	Maintenance - sample manifold cleaned
H2S	25 Feb 2024 21:00	25 Feb 2024 22:00	2	Unstable Operation - excessive baseline drift



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

Jackfish 2/3 - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 11.3 ppb on Feb 24 00:00	Maximum Daily Average: 1.8 ppb on Feb 9		Hours of Data:	639
Minimum Value: 0.0 ppb on Feb 14 16:00	Minimum Daily Average: 0.3 ppb on Feb 7		Hours of Missing Data:	57
Maximum Diurnal Average: 1.3 ppb at hour 15	Minimum Diurnal Average: 0.3 ppb at hour 4		Hours of Calibration:	36
Monthly Average: 0.74 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.3 Q ₃ = 0.8 P ₉₀ = 1.8 P ₉₉ = 5.7		Percent Operational Time:	97.0

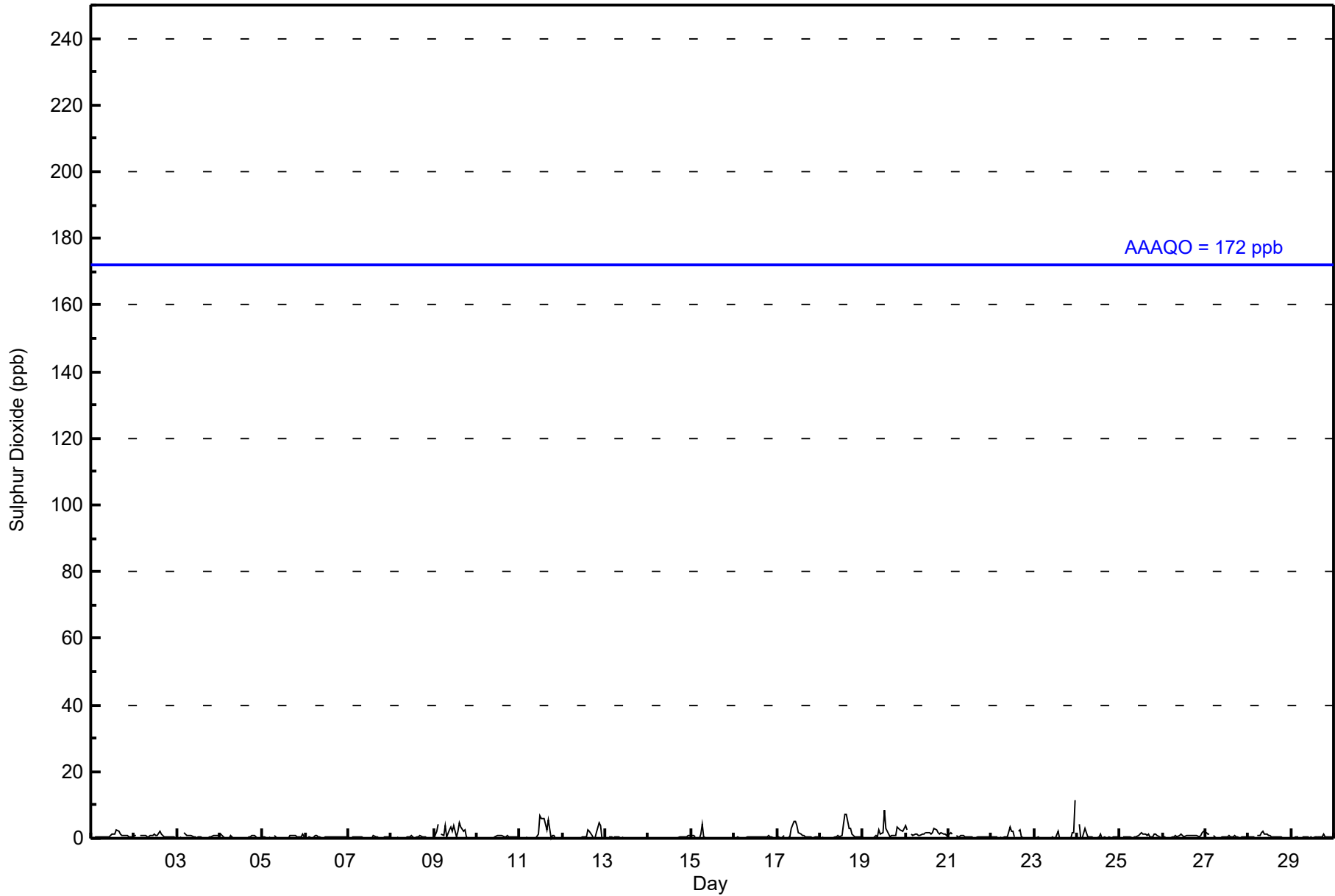
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	0.3	Z	0.4	0.3	0.4	0.6	0.5	0.6	0.5	0.4	0.6	1.1	1.2	1.3	2.4	1.9	1.1	1.0	0.8	0.9	0.8	0.6	0.4	0.5	0.8	2.4																						
2-Feb	0.9	0.9	Z	0.8	0.9	0.8	0.7	0.3	0.2	0.7	0.9	1.1	0.8	1.0	2.0	1.5	0.7	0.6	0.6	0.5	0.5	0.6	0.4	0.2	0.8	2.0																						
3-Feb	0.1	0.1	0.2	Z	1.7	1.0	0.8	0.9	0.9	0.6	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.5	0.5	0.9	0.7	0.7	0.9	0.5	1.7																						
4-Feb	1.1	0.7	0.5	0.2	Z	0.1	0.8	0.1	0.0	0.1	0.1	0.2	0.2	0.0	0.0	0.2	0.2	0.3	0.9	0.7	0.2	0.2	0.2	0.2	0.3	1.1																						
5-Feb	0.2	0.5	0.2	0.2	0.6	Z	0.6	0.6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.6	0.9	0.7	0.5	0.4	0.5	1.1	0.3	0.4	1.1																						
6-Feb	Z	0.5	0.2	0.2	0.2	1.0	1.0	0.4	0.4	0.2	0.1	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	1.0																						
7-Feb	0.3	Z	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.7	0.5	0.6	0.2	0.2	0.1	0.2	0.4	0.3	0.3	0.3	0.7																						
8-Feb	0.1	0.1	Z	0.4	0.2	0.1	0.1	0.1	0.1	0.5	0.4	0.9	0.2	0.1	0.3	0.5	0.7	0.4	0.5	0.4	0.2	0.1	0.1	0.1	0.3	0.9																						
9-Feb	0.1	2.3	4.3	Z	1.1	0.9	3.8	0.3	2.4	3.3	2.0	4.0	0.6	2.2	4.5	3.3	1.9	2.7	0.4	0.1	0.1	0.1	0.0	0.1	1.8	4.5																						
10-Feb	0.2	0.0	0.1	0.0	Z	0.1	0.0	0.0	0.1	0.1	0.3	0.9	0.9	1.0	0.8	0.5	0.6	0.7	0.4	0.4	0.4	0.5	0.2	0.2	0.4	1.0																						
11-Feb	0.1	0.2	0.1	0.2	0.3	Z	0.2	0.1	0.1	0.1	1.3	6.9	6.1	5.9	4.4	2.7	5.4	0.2	1.0	0.8	0.1	0.1	0.1	0.1	1.6	6.9																						
12-Feb	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.5	0.5	0.5	2.7	1.9	0.8	0.1	0.0	1.7	4.6	4.0	0.2	0.2	0.8	4.6																						
13-Feb	0.2	Z	0.6	0.4	0.2	0.3	0.2	0.2	0.1	0.2	0.2	C	C	C	C	M	M	M	M	M	M	M	M	M	M	0.6																						
14-Feb	M	M	M	M	M	M	M	M	M	M	M	C	C	C	C	0.0	0.0	0.4	0.4	0.4	0.5	0.5	0.7	0.9	--	0.9																						
15-Feb	0.8	0.7	0.4	Z	0.1	1.4	4.4	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.4	4.4																						
16-Feb	0.1	0.2	0.4	0.2	Z	0.1	0.1	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.5	0.3	0.6	0.2	0.4	0.8	0.3	0.4	0.0	0.1	0.3	0.8																						
17-Feb	0.1	0.2	0.1	0.5	0.9	Z	0.2	0.3	2.9	5.2	5.0	3.9	1.9	1.2	0.7	0.6	0.3	0.2	0.3	0.2	0.2	0.3	0.3	0.3	1.1	5.2																						
18-Feb	Z	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.7	0.6	0.8	4.1	7.2	7.4	3.0	3.0	1.4	0.4	0.4	0.4	0.4	0.3	1.4	7.4																						
19-Feb	0.3	Z	0.1	0.1	0.1	0.1	0.2	0.8	0.6	2.7	1.4	1.8	8.4	2.8	1.1	0.6	0.7	0.9	0.7	3.4	2.9	2.5	2.1	3.0	1.6	8.4																						
20-Feb	3.8	2.6	Z	1.1	0.9	1.3	1.1	1.0	0.9	1.2	1.2	1.8	1.6	1.5	1.3	1.6	3.1	2.5	1.8	1.3	1.6	1.4	1.5	0.9	1.6	3.8																						
21-Feb	1.1	1.7	1.1	Z	0.8	0.6	0.6	0.7	0.7	0.5	0.3	0.3	0.3	0.2	0.1	0.2	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.5	1.7																						
22-Feb	0.3	0.4	0.4	0.5	Z	0.3	0.2	0.3	0.2	0.6	3.2	1.9	2.3	0.2	M	2.3	2.6	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.8	3.2																						
23-Feb	0.2	0.1	0.4	0.2	0.2	Z	0.1	0.1	0.1	0.1	0.2	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.7	1.9	11.3	0.8	11.3																						
24-Feb	Z	4.1	0.0	0.0	3.0	1.6	0.3	0.4	0.3	0.1	0.0	0.2	0.5	1.2	0.0	0.5	0.0	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.6	4.1																						
25-Feb	0.3	Z	0.3	0.3	0.2	0.4	0.3	0.2	0.2	0.5	0.7	1.3	1.5	1.5	1.3	0.8	1.1	0.5	0.3	1.1	1.4	1.1	0.4	0.2	0.7	1.5																						
26-Feb	0.3	0.3	Z	0.2	0.2	0.2	0.6	0.7	0.6	0.8	1.1	0.8	0.5	1.0	0.8	0.9	0.7	0.7	0.7	0.7	0.6	0.6	1.6	2.2	0.7	2.2																						
27-Feb	1.9	1.4	1.2	Z	0.8	0.4	0.1	0.2	0.2	0.2	0.6	0.2	0.3	1.0	0.5	0.5	1.0	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.5	1.9																						
28-Feb	0.2	0.3	0.2	0.4	Z	0.9	1.1	1.9	1.9	1.3	1.1	0.9	0.6	0.5	0.5	0.6	0.6	0.5	0.4	0.2	0.2	0.2	0.1	0.1	0.6	1.9																						
29-Feb	0.1	0.2	0.3	0.3	0.4	Z	0.5	0.2	0.5	0.3	0.2	0.4	0.2	0.3	0.3	0.3	0.2	0.5	1.2	0.3	0.2	0.3	0.3	0.3	0.3	1.2																						
																								0.5	0.8	0.5	0.3	0.6	0.6	0.7	0.4	0.5	0.7	0.8	1.1	1.1	1.1	1.3	1.1	1.0	0.7	0.5	0.6	0.7	0.7	0.5	0.9	Diurnal Average
																								3.8	4.1	4.3	1.1	3.0	1.6	4.4	1.9	2.9	5.2	5.0	6.9	8.4	5.9	7.2	7.4	5.4	3.0	1.8	3.4	4.6	4.0	2.1	11.3	Diurnal Maximum

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Jackfish 2/3 - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Jackfish 2/3 - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	638	99.84	99.84
11 - 20	1	0.16	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 639

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Jackfish 2/3 - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	2	43	72	19	23	39	19	36	37	53	46	86	66	40	34	23	638
11 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	2	43	72	19	23	39	19	36	37	53	46	86	66	41	34	23	639

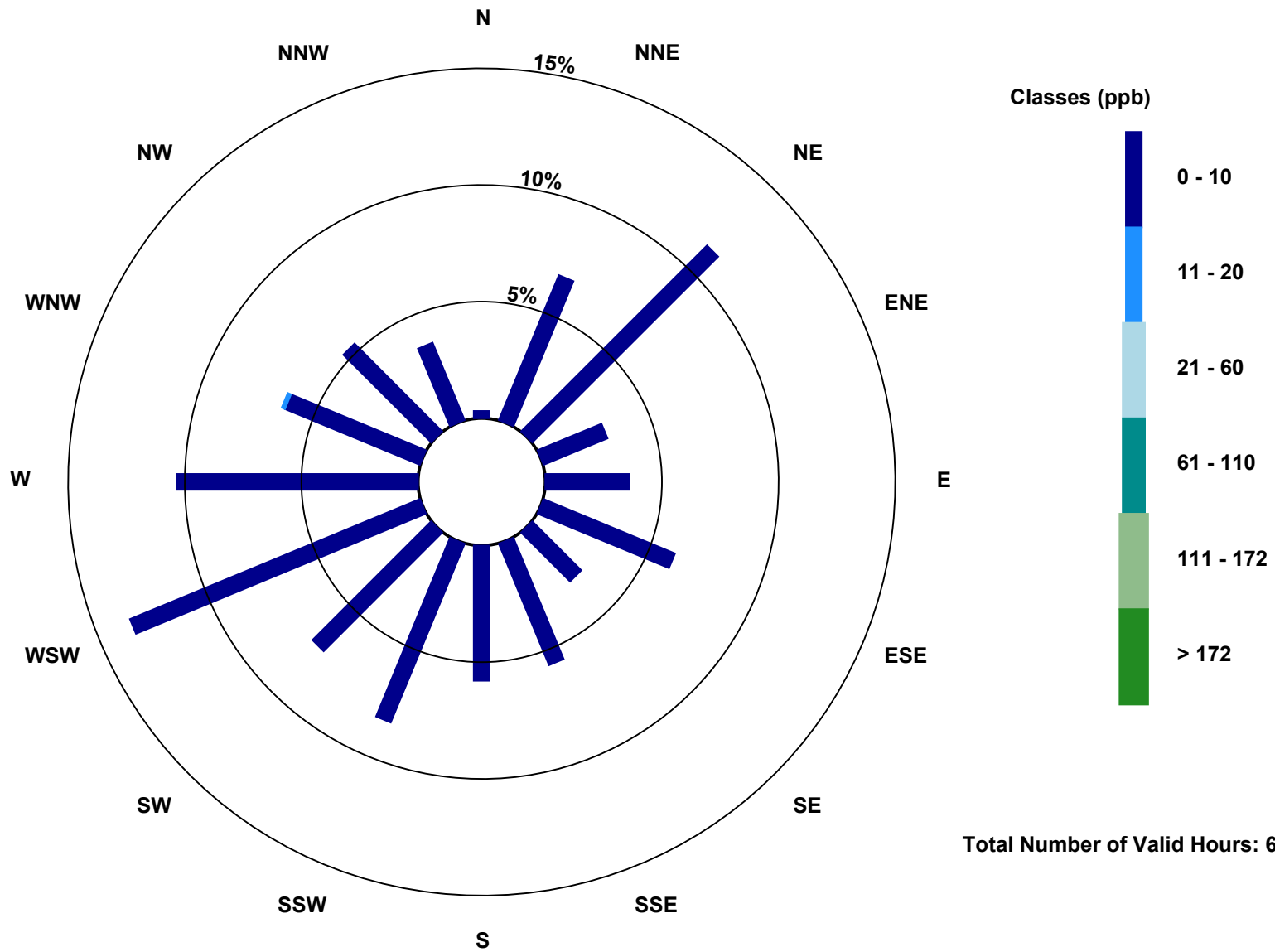
Total Number of Valid Hours: 639

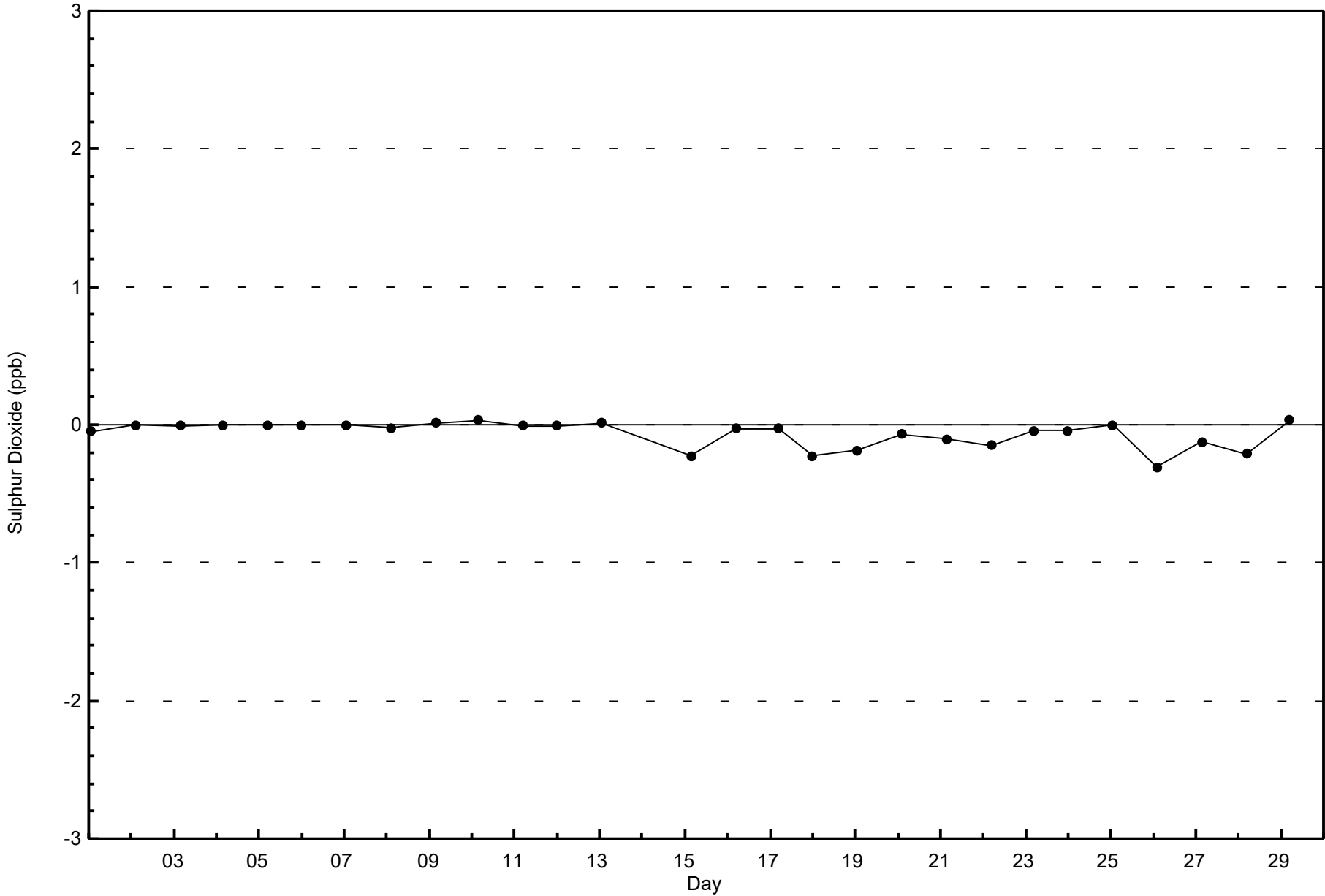
Total Number of Hours: 696

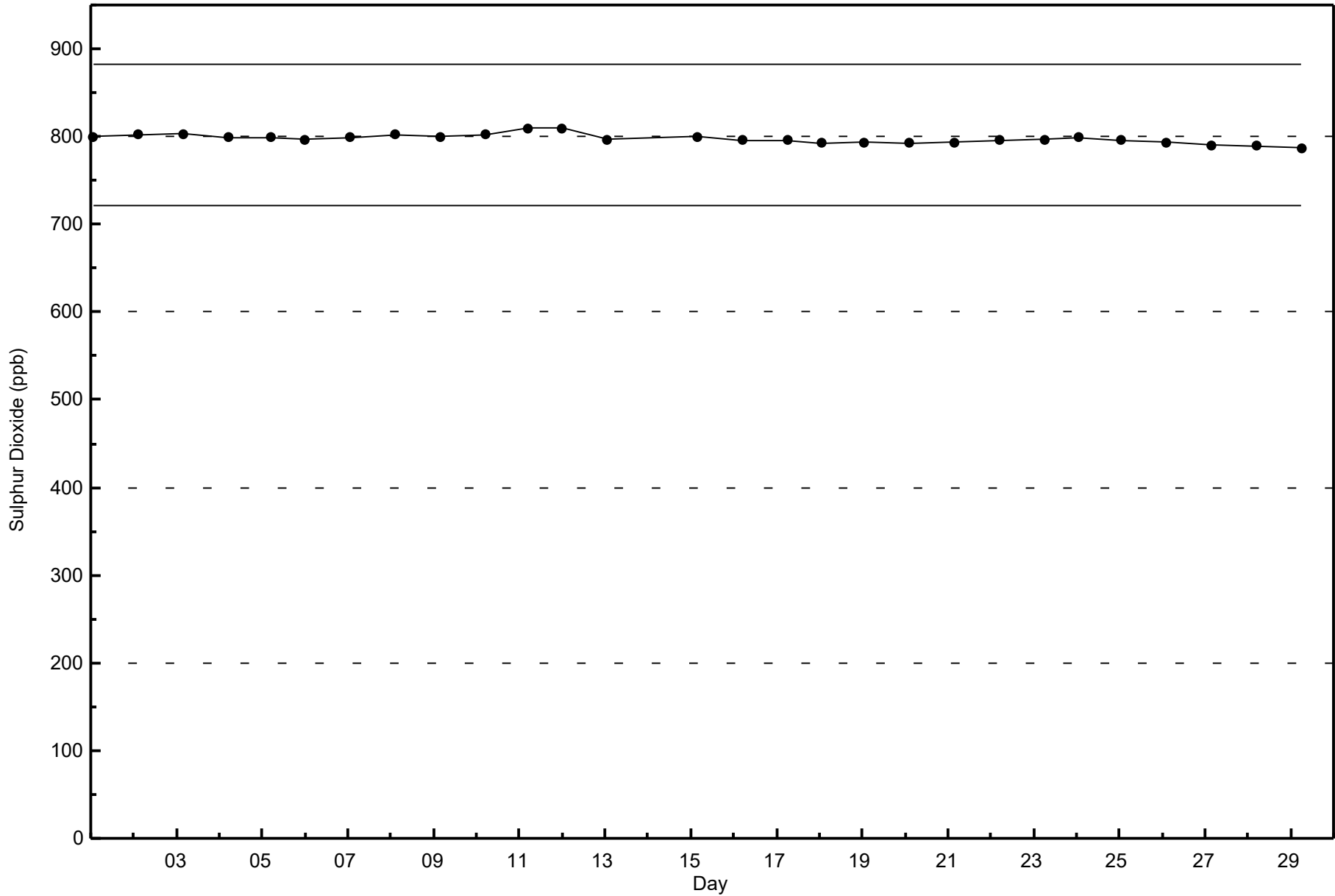


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Jackfish 2/3









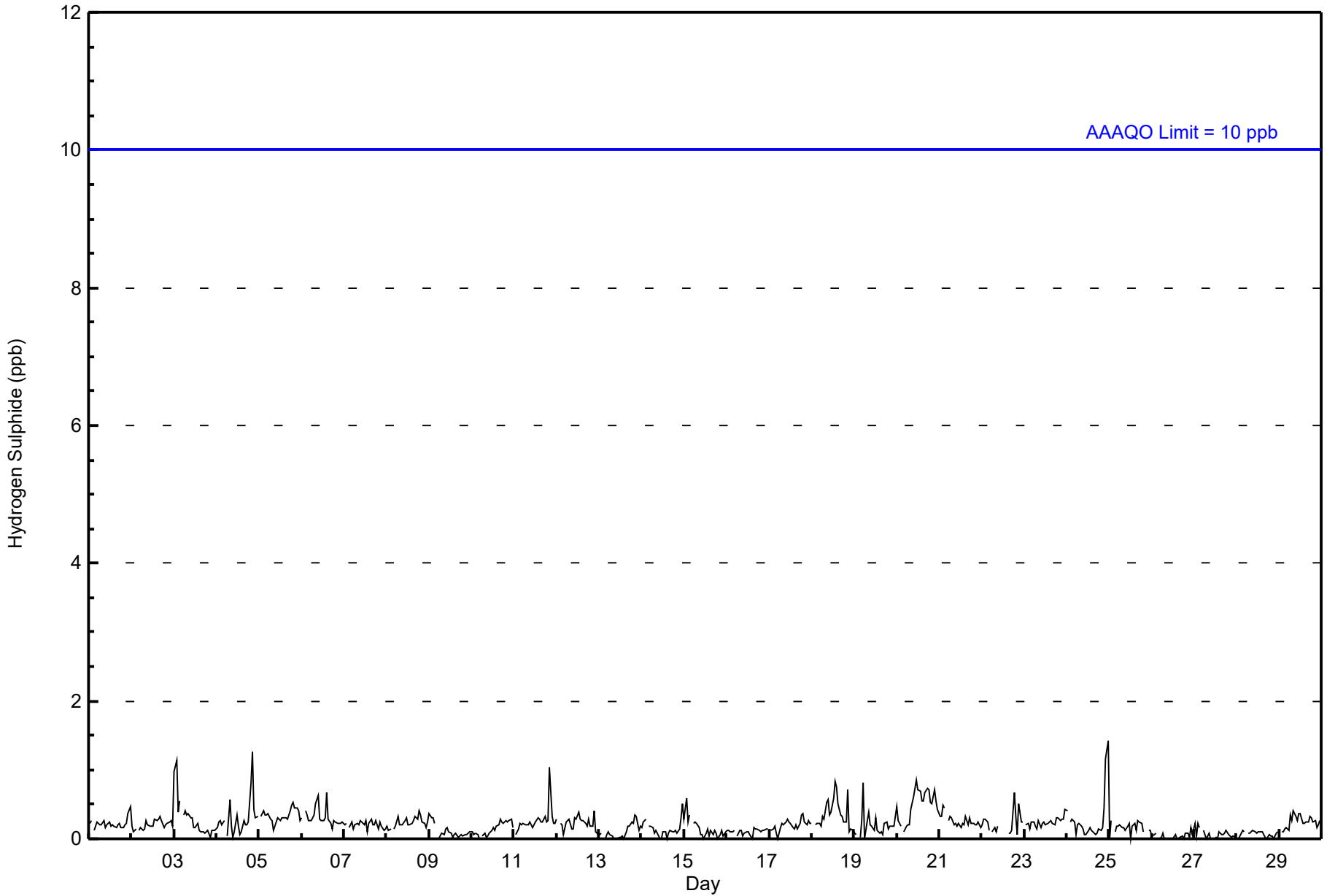
Wood Buffalo Environmental Association

Summary of Hour Averages

Hydrogen Sulphide (H2S) - ppb

Jackfish 2/3 - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696																Daily Average		Daily Maximum			
Maximum Value: 1.4 ppb on Feb 25 00:00		Maximum Daily Average: 0.5 ppb on Feb 20		Hours of Data: 660																Hours of Missing Data: 36		Hours of Calibration: 34		Percent Operational Time: 99.7			
Minimum Value: 0.0 ppb on Feb 9 06:00		Minimum Daily Average: 0.0 ppb on Feb 26		Hours of Calibration: 34																Hours of Calibration: 34		Percent Operational Time: 99.7					
Maximum Diurnal Average: 0.3 ppb at hour 21		Minimum Diurnal Average: 0.2 ppb at hour 5		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.3 P ₉₀ = 0.4 P ₉₉ = 0.8																Percent Operational Time: 99.7		Percent Operational Time: 99.7					
Monthly Average: 0.21 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.3 P ₉₀ = 0.4 P ₉₉ = 0.8		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.3 P ₉₀ = 0.4 P ₉₉ = 0.8																Percent Operational Time: 99.7		Percent Operational Time: 99.7					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.2	0.3	Z	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.5	0.2	0.5	
2-Feb	0.2	0.1	0.2	Z	0.1	0.2	0.1	0.1	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3
3-Feb	1.0	1.1	0.4	0.5	Z	0.3	0.4	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.3	1.1	
4-Feb	0.2	0.2	0.3	0.2	0.3	Z	0.0	0.6	0.2	0.0	0.1	0.4	0.2	0.1	0.1	0.3	0.2	0.2	0.3	0.8	1.3	0.4	0.3	0.3	0.3	1.3	
5-Feb	Z	0.3	0.4	0.4	0.3	0.4	0.3	0.3	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.5	
6-Feb	0.3	Z	0.4	0.3	0.3	0.3	0.3	0.3	0.5	0.6	0.3	0.3	0.3	0.3	0.7	0.3	0.2	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.7	
7-Feb	0.2	0.2	Z	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.1	0.2	0.3	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.1	0.2	0.3
8-Feb	0.2	0.1	0.1	Z	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.4
9-Feb	0.4	0.3	0.3	0.2	Z	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.4
10-Feb	0.1	0.1	0.1	0.1	0.0	Z	0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.3	
11-Feb	Z	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.3	1.0	0.3	0.2	0.2	0.3	1.0	
12-Feb	0.3	Z	0.2	0.2	0.1	0.2	0.3	0.3	0.1	0.1	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.4	0.1	0.1	0.2	0.4	
13-Feb	0.1	0.1	Z	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.2	0.1	0.1	0.3	
14-Feb	0.2	0.2	0.3	Z	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.5	0.1	0.5	
15-Feb	0.3	0.6	0.2	0.3	Z	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.6	
16-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	
17-Feb	Z	0.1	0.1	0.2	0.1	0.0	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.4	0.4	0.2	0.2	0.3	0.2	0.2	0.4	
18-Feb	0.2	Z	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.6	0.4	0.4	0.6	0.8	0.8	0.5	0.4	0.3	0.2	0.3	0.7	0.1	0.1	0.1	0.4	0.8	
19-Feb	0.1	0.1	Z	0.0	0.3	0.8	0.0	0.3	0.4	0.2	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.2	0.8	
20-Feb	0.5	0.3	0.2	Z	0.1	0.2	0.2	0.2	0.4	0.6	0.7	0.9	0.7	0.7	0.5	0.5	0.7	0.7	0.7	0.5	0.5	0.7	0.6	0.4	0.5	0.9	
21-Feb	0.3	0.3	0.5	0.4	Z	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	
22-Feb	0.2	0.3	0.3	0.2	0.1	Z	0.1	0.2	0.1	0.2	C	C	C	C	C	0.1	0.1	0.1	0.7	0.3	0.1	0.5	0.2	0.3	0.2	0.7	
23-Feb	Z	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.2	0.4	
24-Feb	0.4	Z	0.2	0.3	0.3	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.5	1.2	1.4	0.3	
25-Feb	0.0	0.3	Z	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.0	0.2	0.2	0.1	0.3	0.2	0.2	0.1	UO	UO	0.1	0.1	0.2	0.3	
26-Feb	0.0	0.1	0.1	Z	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.2	0.1	0.0	0.2	
27-Feb	0.2	0.0	0.2	0.2	Z	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	
28-Feb	0.0	0.0	0.0	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	
29-Feb	Z	0.1	0.1	0.1	0.2	0.1	0.3	0.3	0.4	0.3	0.3	0.4	0.4	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.2	0.4	
		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	Diurnal Average	
		1.0	1.1	0.5	0.5	0.3	0.8	0.4	0.6	0.5	0.6	0.7	0.9	0.7	0.8	0.8	0.5	0.7	0.7	0.7	0.8	1.3	0.7	1.2	1.4	Diurnal Maximum	
Z - zerspan		C - Calibration		UO - Unstable Operation																							
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 10 ppb		24-hr 3 ppb																							





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Hydrogen Sulphide (H₂S) - ppb
Jackfish 2/3 - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	660	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Jackfish 2/3 - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	16	53	58	30	14	26	18	16	49	44	43	104	78	45	24	42	660
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	53	58	30	14	26	18	16	49	44	43	104	78	45	24	42	660

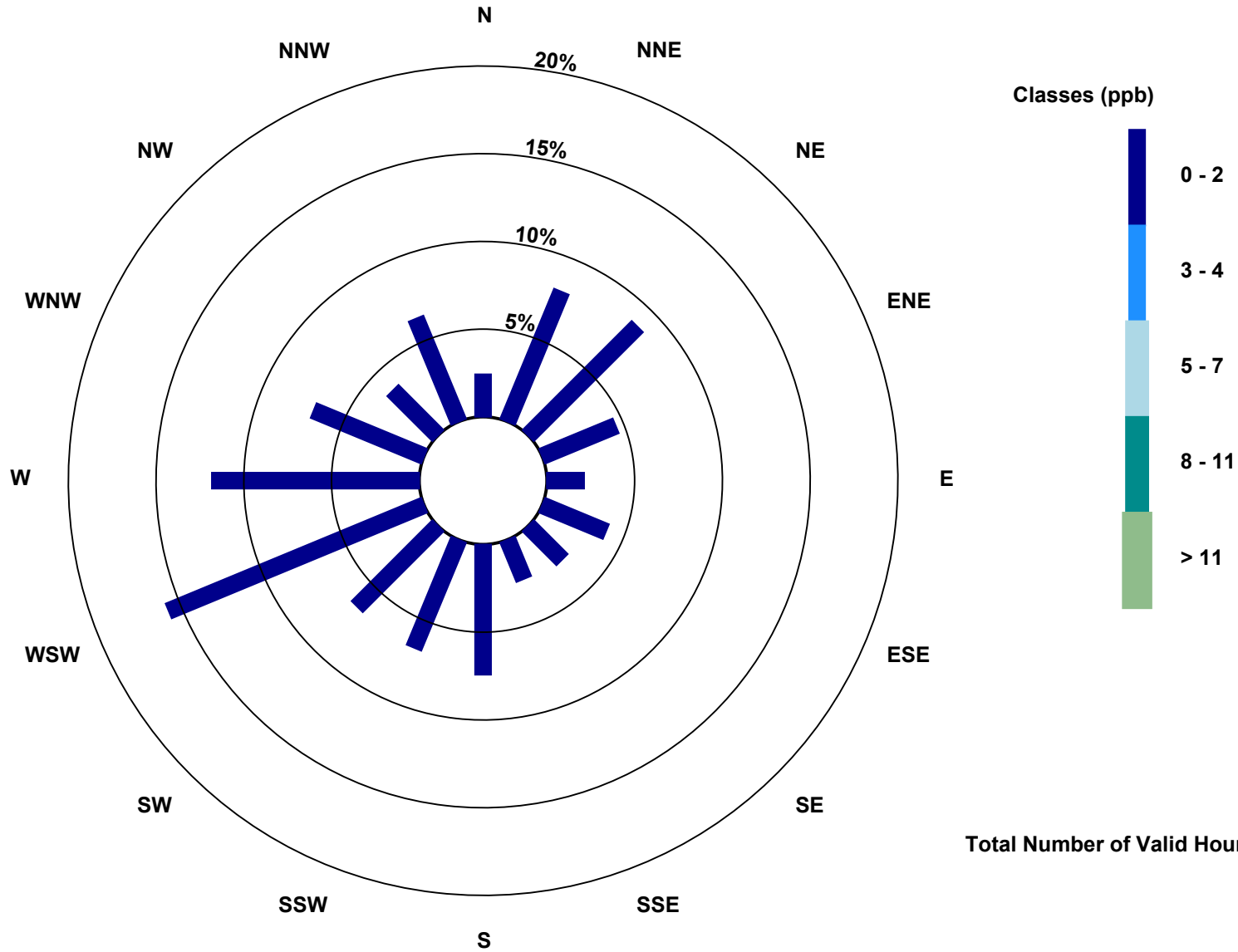
Total Number of Valid Hours: 660

Total Number of Hours: 696

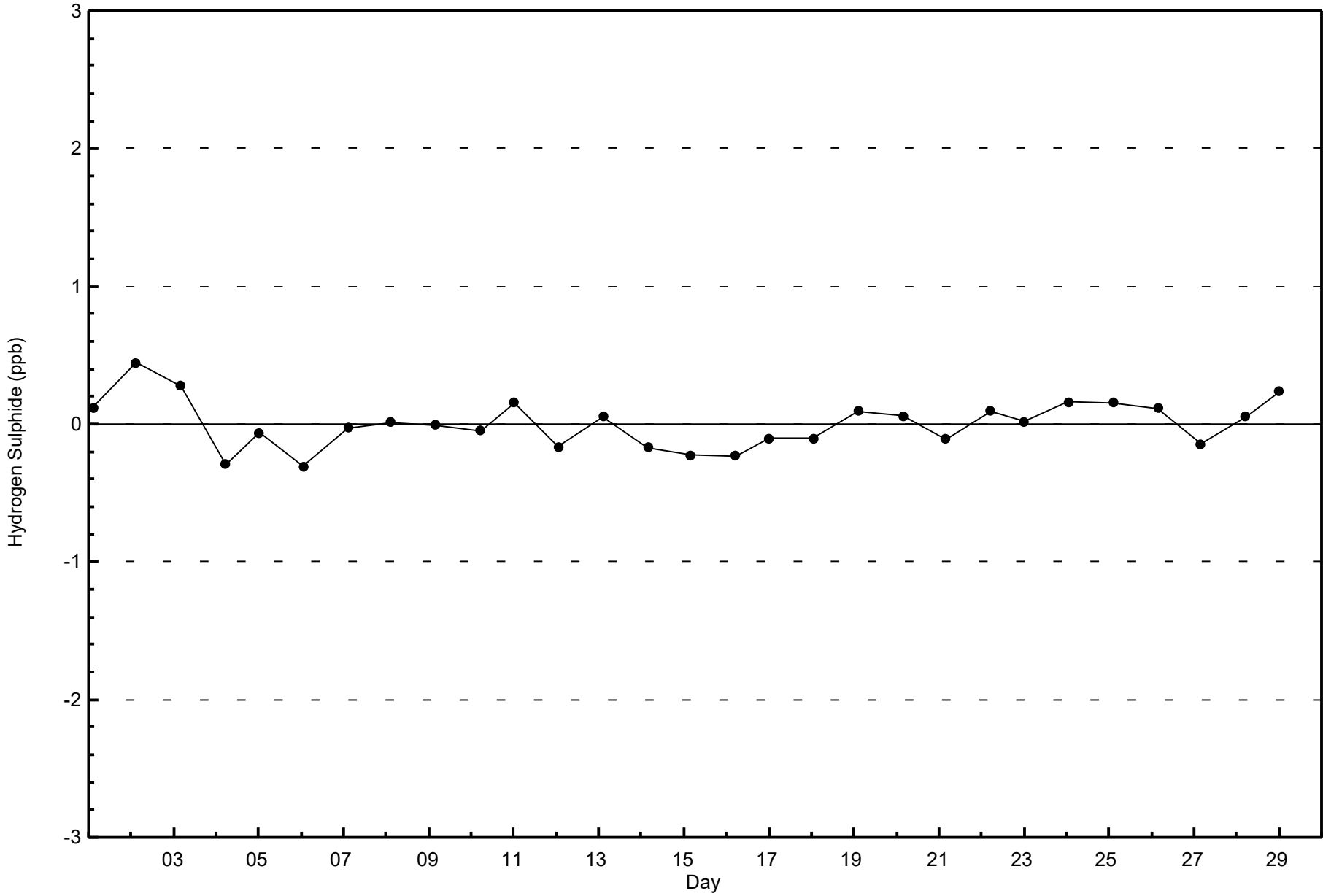


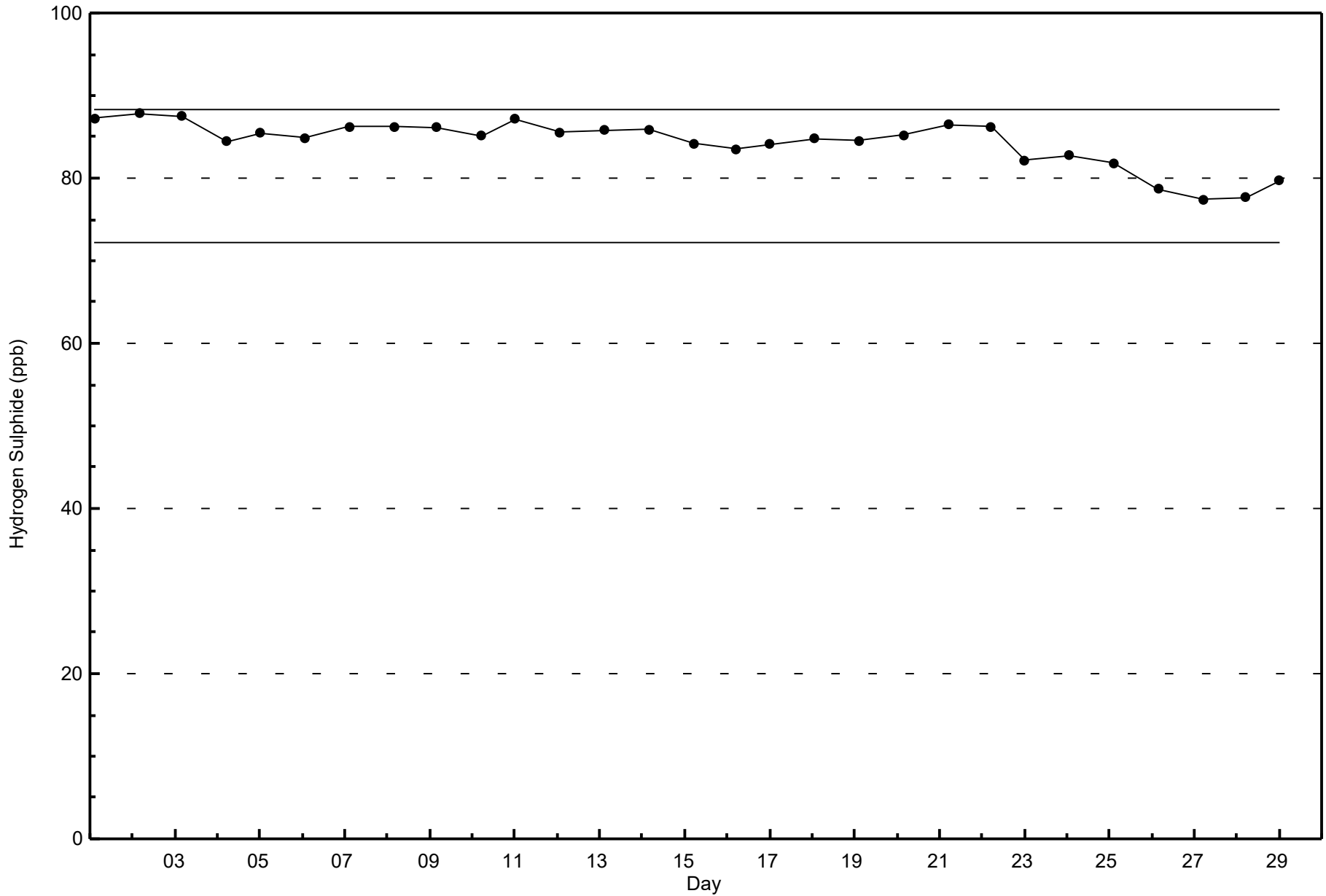
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Jackfish 2/3



Total Number of Valid Hours: 660







Wood Buffalo Environmental Association

Summary of Hour Averages

Nitric Oxide (NO) - ppb

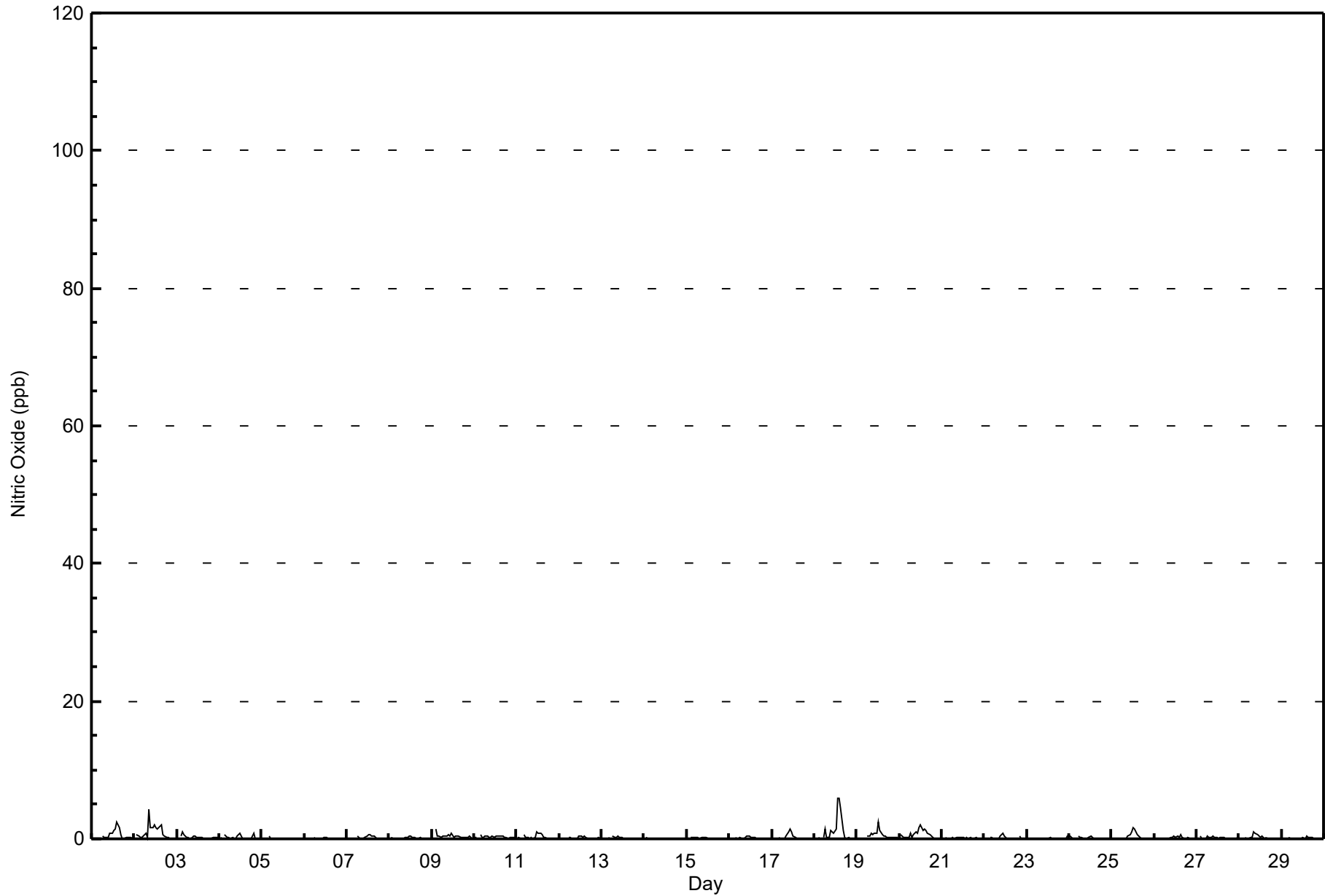
Jackfish 2/3 - February 2024

Maximum Value: 5.9 ppb on Feb 18 15:00		Maximum Daily Average: 1.1 ppb on Feb 18		Hours in Service: 696																						
Minimum Value: 0.0 ppb on Feb 1 01:00		Minimum Daily Average: 0.0 ppb on Feb 14		Hours of Data: 661																						
Maximum Diurnal Average: 0.6 ppb at hour 14		Minimum Diurnal Average: 0.0 ppb at hour 1		Hours of Missing Data: 35																						
Monthly Average: 0.24 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.3 P ₉₀ = 0.5 P ₉₉ = 2.1		Hours of Calibration: 34																						
				Percent Operational Time: 99.9																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.4	0.1	0.1	0.3	0.8	0.8	1.3	1.5	2.4	1.7	0.7	0.1	0.1	0.2	0.3	0.2	0.2	0.1	0.5	2.4
2-Feb	Z	0.5	0.4	0.3	0.3	0.4	0.8	0.3	4.4	1.5	1.6	2.1	1.7	1.5	1.8	2.0	0.7	0.4	0.1	0.2	0.0	0.0	0.1	0.0	0.9	4.4
3-Feb	0.1	Z	0.4	1.0	0.5	0.2	0.2	0.1	0.1	0.4	0.4	0.2	0.2	0.2	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.2	0.2	0.1	0.2	1.0
4-Feb	0.0	0.2	Z	0.6	0.2	0.2	0.0	0.1	0.1	0.1	0.4	0.9	0.3	0.1	0.0	0.1	0.1	0.0	0.0	0.8	0.1	0.0	0.0	0.0	0.2	0.9
5-Feb	0.0	0.0	0.0	Z	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
6-Feb	0.0	0.0	0.0	0.0	Z	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
7-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.4	0.1	0.0	0.1	0.3	0.3	0.5	0.5	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5
8-Feb	Z	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.5	0.3	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.5
9-Feb	0.1	Z	1.5	0.4	0.3	0.2	0.4	0.4	0.3	0.5	0.4	0.7	0.2	0.4	0.3	0.5	0.2	0.2	0.1	0.2	0.2	0.3	0.1	0.1	0.4	1.5
10-Feb	0.1	0.3	Z	0.5	0.2	0.3	0.4	0.3	0.2	0.3	0.3	0.2	0.3	0.4	0.4	0.3	0.4	0.2	0.2	0.1	0.3	0.2	0.2	0.0	0.3	0.5
11-Feb	0.0	0.1	0.1	Z	0.5	0.3	0.2	0.1	0.3	0.0	0.2	1.1	0.8	0.8	0.6	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.1
12-Feb	0.0	0.0	0.0	0.0	Z	0.3	0.1	0.1	0.0	0.0	0.0	0.4	0.4	0.2	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.4
13-Feb	0.0	0.0	0.0	0.1	0.2	Z	0.4	0.3	0.2	0.3	0.3	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4
14-Feb	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
15-Feb	0.0	Z	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.2
16-Feb	0.0	0.0	Z	0.3	0.1	0.1	0.2	0.0	0.0	0.2	0.4	0.3	0.2	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4
17-Feb	0.0	0.0	0.0	Z	0.2	0.0	0.0	0.1	0.3	1.0	1.5	1.1	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.5
18-Feb	0.0	0.0	0.0	0.1	Z	0.1	1.4	0.2	0.1	1.1	0.9	0.9	1.3	5.8	5.9	4.4	1.1	0.3	0.0	0.1	0.0	0.1	0.1	0.1	1.1	5.9
19-Feb	0.1	0.0	0.0	0.0	0.0	Z	0.4	0.4	0.9	0.7	0.7	0.8	2.5	1.3	0.6	0.5	0.5	0.2	0.3	0.1	0.2	0.2	0.1	0.2	0.5	2.5
20-Feb	Z	0.5	0.3	0.2	0.1	0.3	0.8	0.2	0.5	1.0	0.8	1.6	1.9	1.2	1.4	1.1	0.9	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.6	1.9
21-Feb	0.0	Z	0.2	0.1	0.1	0.1	0.2	0.0	0.1	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.3
22-Feb	0.0	0.1	Z	0.2	0.1	0.1	0.0	0.1	0.1	0.3	0.7	0.3	0.2	0.1	M	C	C	C	C	C	0.5	0.0	0.0	0.0	--	0.7
23-Feb	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
24-Feb	0.4	0.2	0.0	0.1	Z	0.4	0.2	0.2	0.1	0.0	0.0	0.1	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4
25-Feb	0.0	0.0	0.0	0.1	0.0	Z	0.1	0.0	0.1	0.5	0.5	1.1	1.6	1.3	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.6
26-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.1	0.4	0.3	0.5	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.5
27-Feb	0.0	Z	0.4	0.1	0.0	0.0	0.4	0.3	0.2	0.4	0.3	0.2	0.0	0.2	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.4
28-Feb	0.0	0.0	Z	0.2	0.1	0.0	0.1	0.2	1.1	0.9	0.6	0.4	0.1	0.3	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.1
29-Feb	0.0	0.0	0.0	Z	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.4	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4
																								Diurnal Average		
																								Diurnal Maximum		
Z - zerospan C - Calibration M - Maintenance																										



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Jackfish 2/3 - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitric Oxide (NO) - ppb
Jackfish 2/3 - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Jackfish 2/3 - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	16	54	60	29	14	27	17	16	48	46	43	104	76	42	29	40	661
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	54	60	29	14	27	17	16	48	46	43	104	76	42	29	40	661

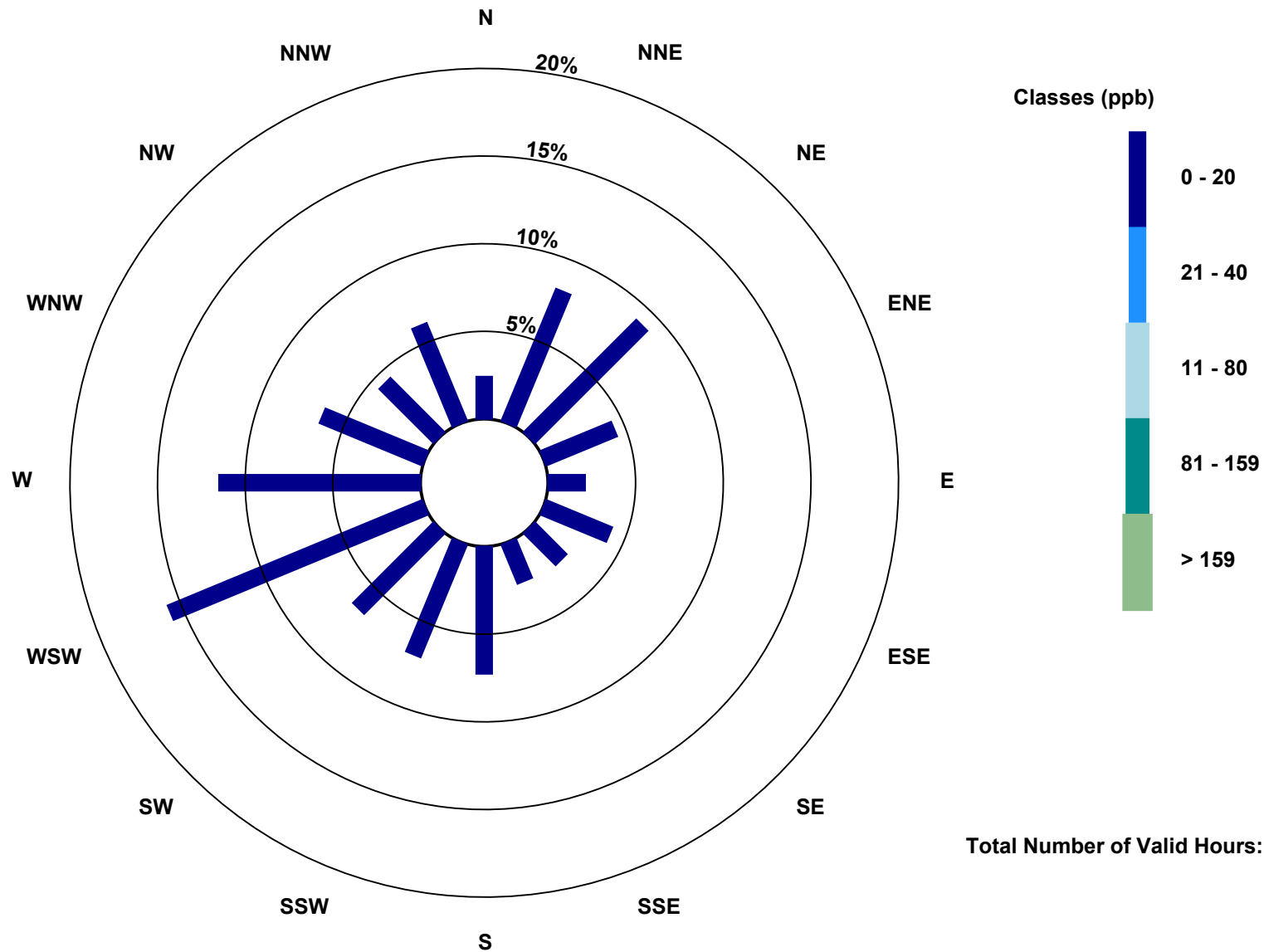
Total Number of Valid Hours: 661

Total Number of Hours: 696

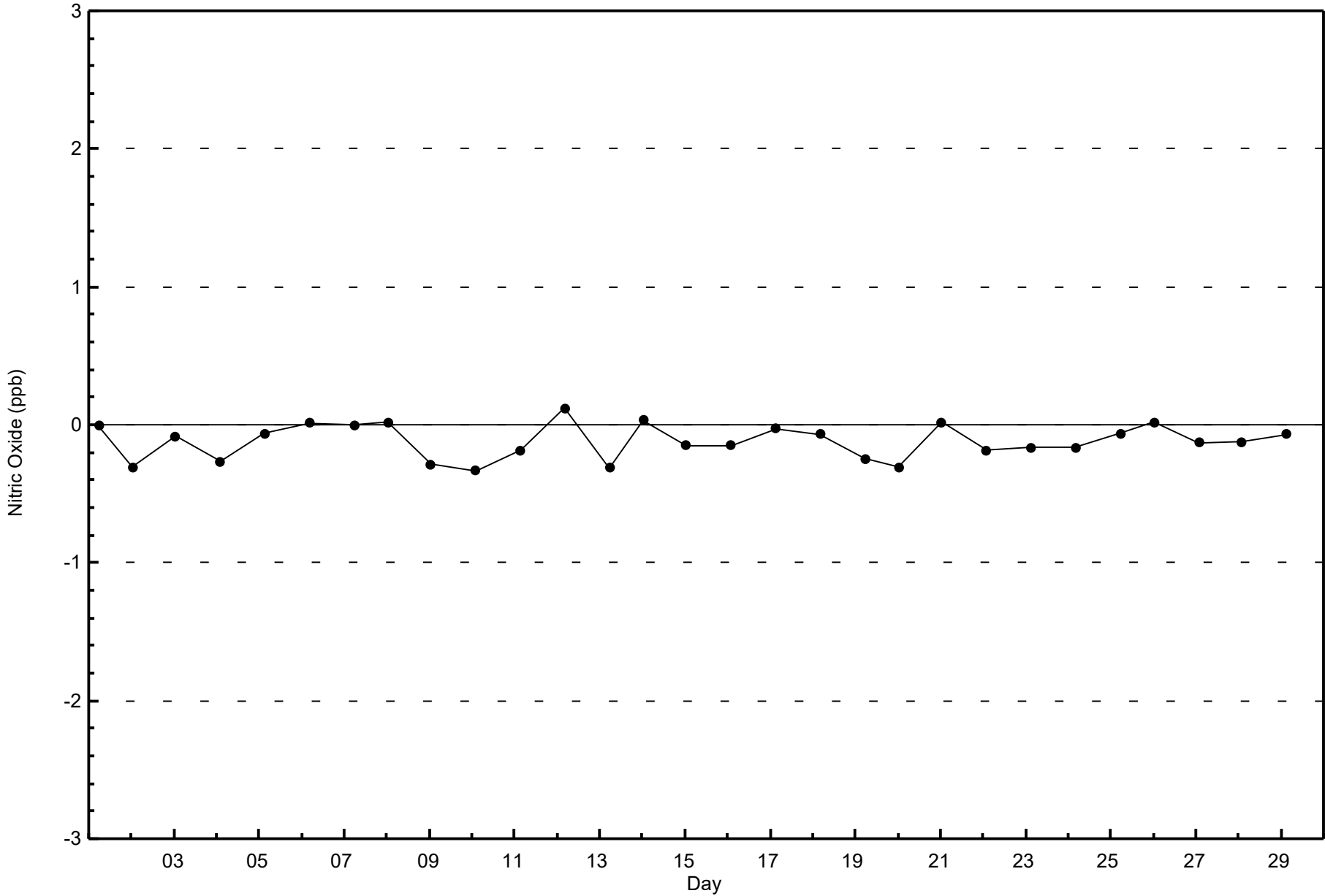


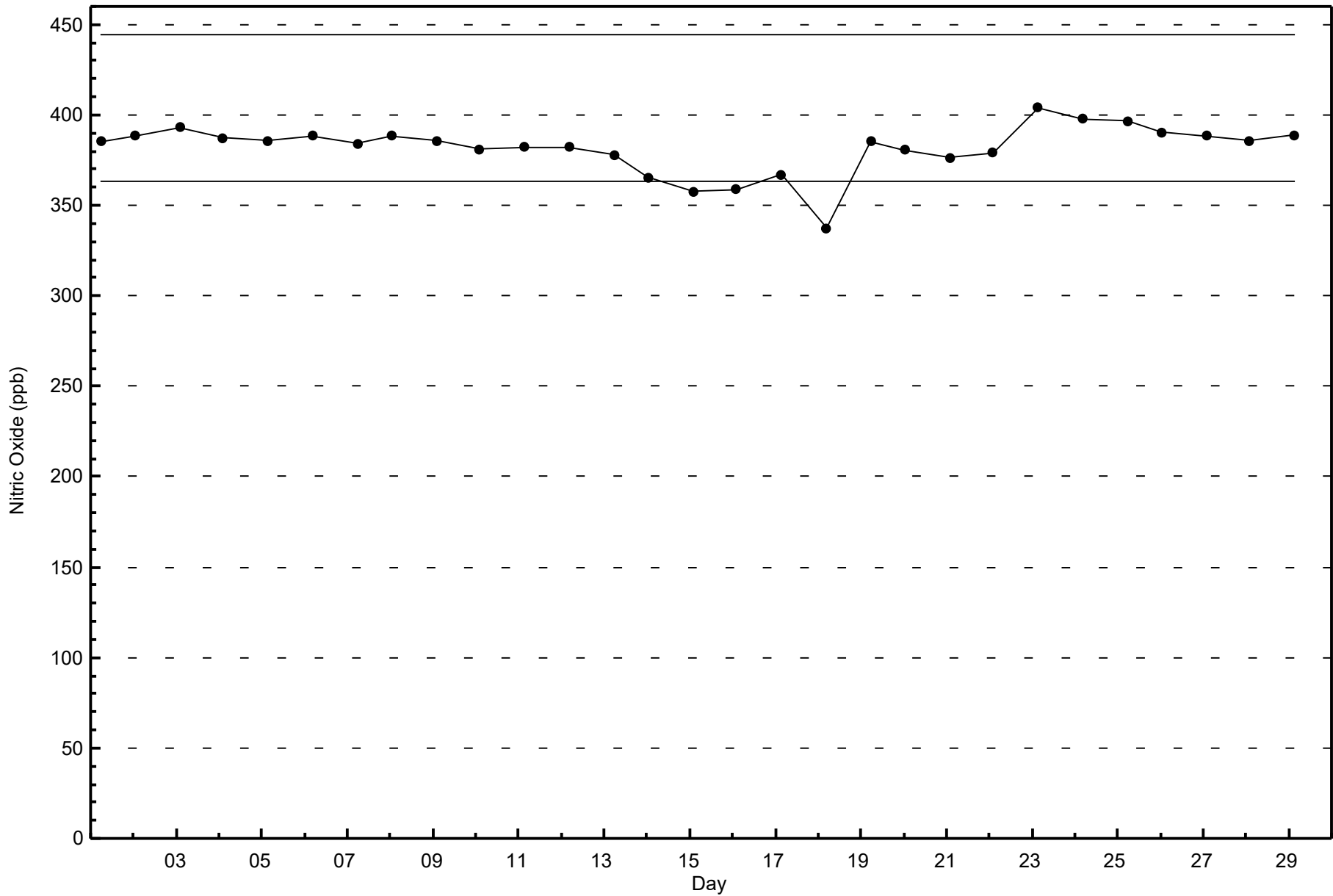
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Jackfish 2/3



Total Number of Valid Hours: 661







Wood Buffalo Environmental Association
Summary of Hour Averages

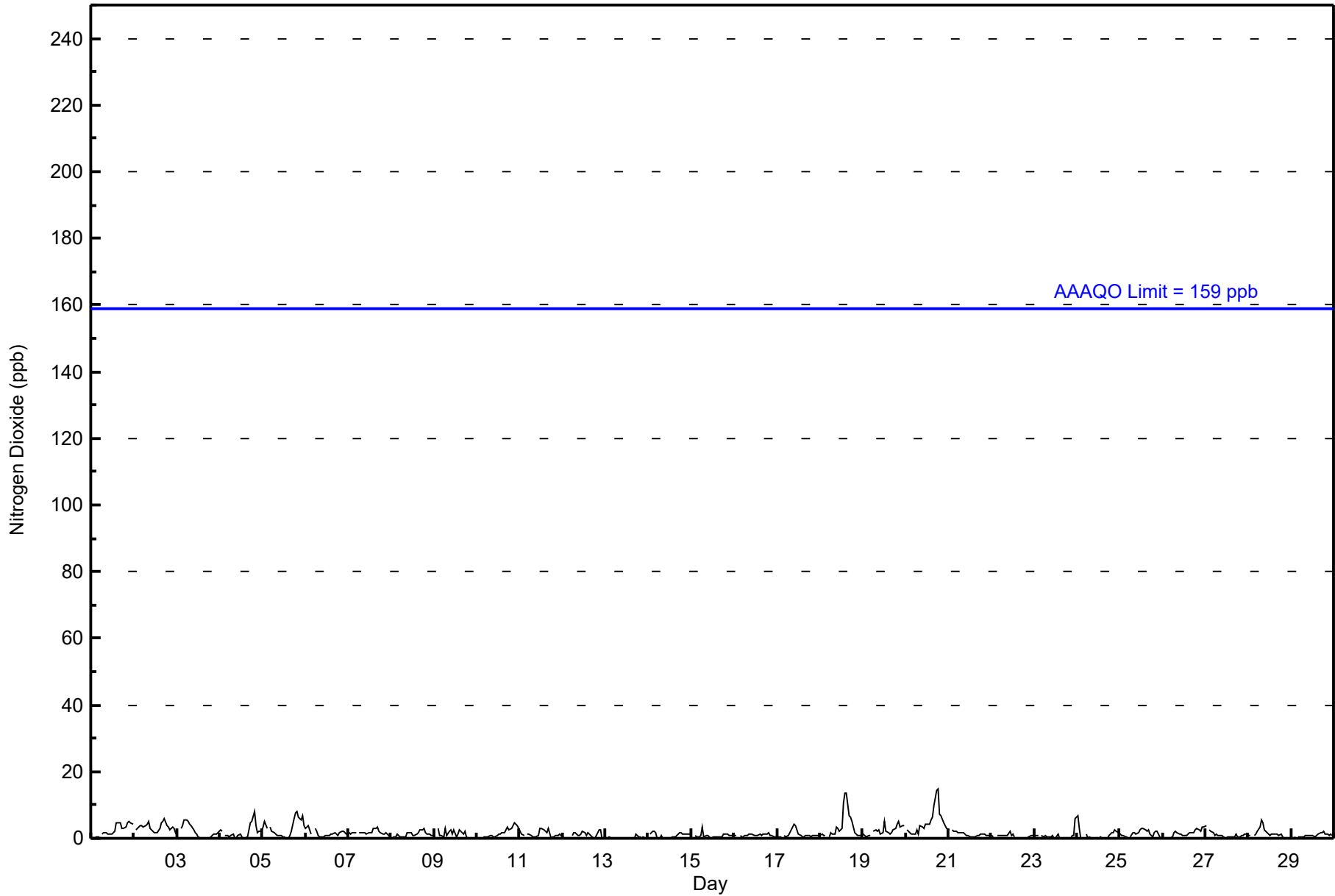
Nitrogen Dioxide (NO₂) - ppb
Jackfish 2/3 - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0		Hours in Service: 696																																														
Maximum Value: 14.7 ppb on Feb 20 19:00		Maximum Daily Average: 4.8 ppb on Feb 20																																														
Minimum Value: 0.0 ppb on Feb 1 01:00		Hours of Data: 661																																														
Maximum Diurnal Average: 2.4 ppb at hour 18		Hours of Missing Data: 35																																														
Monthly Average: 1.63 ppb		Hours of Calibration: 34																																														
Minimum Daily Average: 0.1 ppb on Feb 13		Percent Operational Time: 99.9																																														
Minimum Diurnal Average: 1.2 ppb at hour 4		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.5 Median = 1.1 Q ₃ = 2.1 P ₉₀ = 3.7 P ₉₉ = 8.0																																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	0.0	0.1	0.1	0.3	0.3	Z	1.1	1.7	1.8	1.4	1.4	1.4	1.9	2.3	4.6	4.5	4.6	3.1	2.9	3.5	4.6	4.9	4.5	4.2	2.4	4.9																						
2-Feb	Z	2.6	3.3	3.7	4.0	3.6	3.9	4.3	5.0	3.1	2.1	1.9	1.6	1.6	2.8	4.8	4.9	6.1	3.9	3.3	2.6	3.3	3.0	1.7	3.4	6.1																						
3-Feb	2.6	Z	3.1	3.9	5.6	5.5	4.9	4.2	3.8	2.5	1.5	1.1	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.4	1.1	1.2	1.3	1.6	1.9	5.6																						
4-Feb	2.4	2.1	Z	0.8	0.9	0.4	1.0	1.2	0.0	0.1	0.9	1.3	0.5	0.0	0.4	2.6	4.7	5.0	8.1	3.7	1.9	2.2	2.1	1.8	8.1																							
5-Feb	3.4	5.1	3.0	Z	3.3	2.0	1.7	1.1	0.9	0.7	0.8	0.6	0.3	0.2	0.1	0.8	2.2	6.1	7.8	7.9	6.4	5.3	6.7	3.8	3.1	7.9																						
6-Feb	2.9	3.7	2.5	1.4	Z	3.0	2.2	0.8	0.5	0.4	0.3	1.0	0.9	0.8	1.4	1.4	1.5	1.4	0.9	1.7	2.2	2.2	1.5	1.2	1.6	3.7																						
7-Feb	1.5	1.3	1.5	1.6	1.5	Z	1.6	1.5	1.5	1.5	1.1	1.7	1.8	1.6	2.8	3.1	3.6	2.1	1.9	1.2	1.2	1.7	1.0	0.5	1.7	3.6																						
8-Feb	Z	0.4	0.5	1.2	0.7	0.5	0.6	0.4	0.3	1.7	1.6	1.7	1.0	0.9	1.2	1.8	2.5	2.6	3.0	1.6	1.2	1.1	1.0	1.0	1.2	3.0																						
9-Feb	0.9	Z	3.1	1.0	0.7	0.5	3.1	0.7	2.3	2.5	1.4	2.4	0.5	1.1	2.6	2.0	1.3	2.1	0.3	0.0	0.0	0.0	0.0	0.0	1.2	3.1																						
10-Feb	0.0	0.0	Z	0.3	0.3	0.3	0.5	0.9	0.7	0.4	0.5	0.8	1.2	1.4	1.8	1.9	2.7	3.5	2.5	3.0	3.7	4.6	3.7	2.8	1.6	4.6																						
11-Feb	2.1	1.4	1.0	Z	1.1	1.4	1.0	0.6	0.5	0.5	0.8	3.0	2.8	2.4	2.1	1.5	3.0	0.1	0.5	0.6	0.7	0.7	1.2	1.0	1.3	3.0																						
12-Feb	0.5	0.2	0.1	0.2	Z	0.9	1.7	1.8	0.7	0.7	1.4	2.2	1.6	1.0	1.6	1.2	0.4	0.2	0.1	1.0	2.7	2.4	0.0	0.1	1.0	2.7																						
13-Feb	0.1	0.2	0.3	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1	0.4	0.3	0.0	0.6	0.0	0.0	0.1	1.1																						
14-Feb	Z	1.4	2.1	2.1	1.5	0.0	0.1	0.7	0.0	0.0	0.0	0.0	0.0	0.6	0.5	0.9	1.6	1.6	1.3	1.4	1.4	1.4	1.4	1.3	0.9	2.1																						
15-Feb	1.1	Z	0.8	0.5	0.5	1.0	3.5	0.6	0.9	0.7	0.4	0.2	0.3	0.3	0.4	0.4	0.6	0.5	1.2	1.1	1.1	0.9	0.7	0.8	0.8	3.5																						
16-Feb	0.7	0.8	Z	0.9	0.4	0.5	1.0	0.9	1.2	1.2	1.1	1.0	0.8	0.7	1.1	1.0	1.4	1.1	1.3	1.7	1.0	1.0	0.4	0.3	0.9	1.7																						
17-Feb	0.4	0.4	0.3	Z	1.0	0.5	0.8	1.6	2.5	4.4	3.8	2.7	1.1	0.9	0.6	0.4	0.9	1.0	0.7	0.6	0.7	1.0	1.0	1.0	1.2	4.4																						
18-Feb	0.8	1.1	0.8	1.0	Z	0.4	1.6	1.3	1.4	3.5	3.0	2.3	3.0	10.8	13.6	13.4	6.8	6.5	5.0	1.9	1.1	0.7	0.8	1.0	3.6	13.6																						
19-Feb	1.1	0.9	0.6	0.7	0.8	Z	2.3	2.7	2.2	2.5	1.2	1.6	5.0	2.3	1.5	1.4	1.9	2.4	2.8	4.4	4.9	3.6	3.7	3.7	2.4	5.0																						
20-Feb	Z	2.5	1.7	1.3	1.3	1.4	2.4	1.4	3.8	3.3	2.9	4.1	4.1	4.4	5.3	6.4	9.7	14.2	14.7	7.0	6.7	4.6	3.7	2.9	4.8	14.7																						
21-Feb	2.5	Z	2.5	2.1	2.1	1.8	1.9	1.6	1.7	1.3	1.0	0.7	0.5	0.5	0.4	0.3	0.9	1.0	1.3	1.3	1.1	0.7	0.8	0.7	1.2	2.5																						
22-Feb	0.7	0.5	Z	0.8	0.8	0.7	0.7	0.8	0.9	0.9	2.0	0.9	1.4	0.3	M	C	C	C	C	C	0.0	0.4	0.7	0.8	--	2.0																						
23-Feb	0.6	0.7	0.8	Z	0.7	0.4	0.7	0.3	0.6	0.6	0.7	0.2	0.1	1.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.9	0.9	6.1	0.7	6.1																						
24-Feb	6.6	2.8	0.0	0.0	Z	1.1	0.1	0.4	0.2	0.1	0.0	0.0	0.0	0.5	0.0	0.1	0.0	0.0	1.0	1.8	1.9	2.6	2.0	1.6	1.0	6.6																						
25-Feb	1.1	0.8	0.7	0.4	0.5	Z	0.5	1.8	1.7	1.4	1.6	2.4	2.8	3.1	2.6	2.0	2.5	1.2	0.4	1.7	2.0	2.3	0.4	0.2	1.5	3.1																						
26-Feb	Z	0.2	0.1	0.2	0.1	0.3	1.7	2.1	1.7	1.3	1.3	1.0	0.7	0.9	1.1	1.6	1.5	1.7	2.7	3.0	2.7	2.3	3.4	3.4	1.5	3.4																						
27-Feb	3.8	Z	2.5	2.2	1.7	0.9	1.3	0.9	0.9	0.9	0.5	0.2	0.3	0.6	0.5	0.3	0.6	1.1	0.5	0.4	0.9	0.8	1.2	1.2	1.1	3.8																						
28-Feb	0.7	0.7	Z	0.9	1.2	2.2	3.2	5.3	4.7	2.6	1.5	1.3	1.0	1.1	1.1	1.2	1.1	0.9	1.1	0.3	0.2	0.2	0.1	0.0	1.4	5.3																						
29-Feb	0.2	0.2	0.4	Z	0.5	0.4	0.6	0.4	1.0	0.8	0.7	0.7	0.8	0.5	0.7	1.3	1.5	1.8	2.1	1.3	1.4	1.0	1.1	1.0	0.9	2.1																						
																								1.5	1.3	1.3	1.2	1.3	1.2	1.6	1.4	1.5	1.4	1.2	1.3	1.3	1.4	1.8	1.9	2.1	2.4	2.3	2.2	2.0	1.9	1.7	1.6	Diurnal Average
																								6.6	5.1	3.3	3.9	5.6	5.5	4.9	5.3	5.0	4.4	3.8	4.1	5.0	10.8	13.6	13.4	9.7	14.2	14.7	8.1	6.7	5.3	6.7	6.1	Diurnal Maximum
Z - zerspan C - Calibration M - Maintenance																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb																																																



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Jackfish 2/3 - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Dioxide (NO₂) - ppb
Jackfish 2/3 - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Jackfish 2/3 - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	16	54	60	29	14	27	17	16	48	46	43	104	76	42	29	40	661
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	54	60	29	14	27	17	16	48	46	43	104	76	42	29	40	661

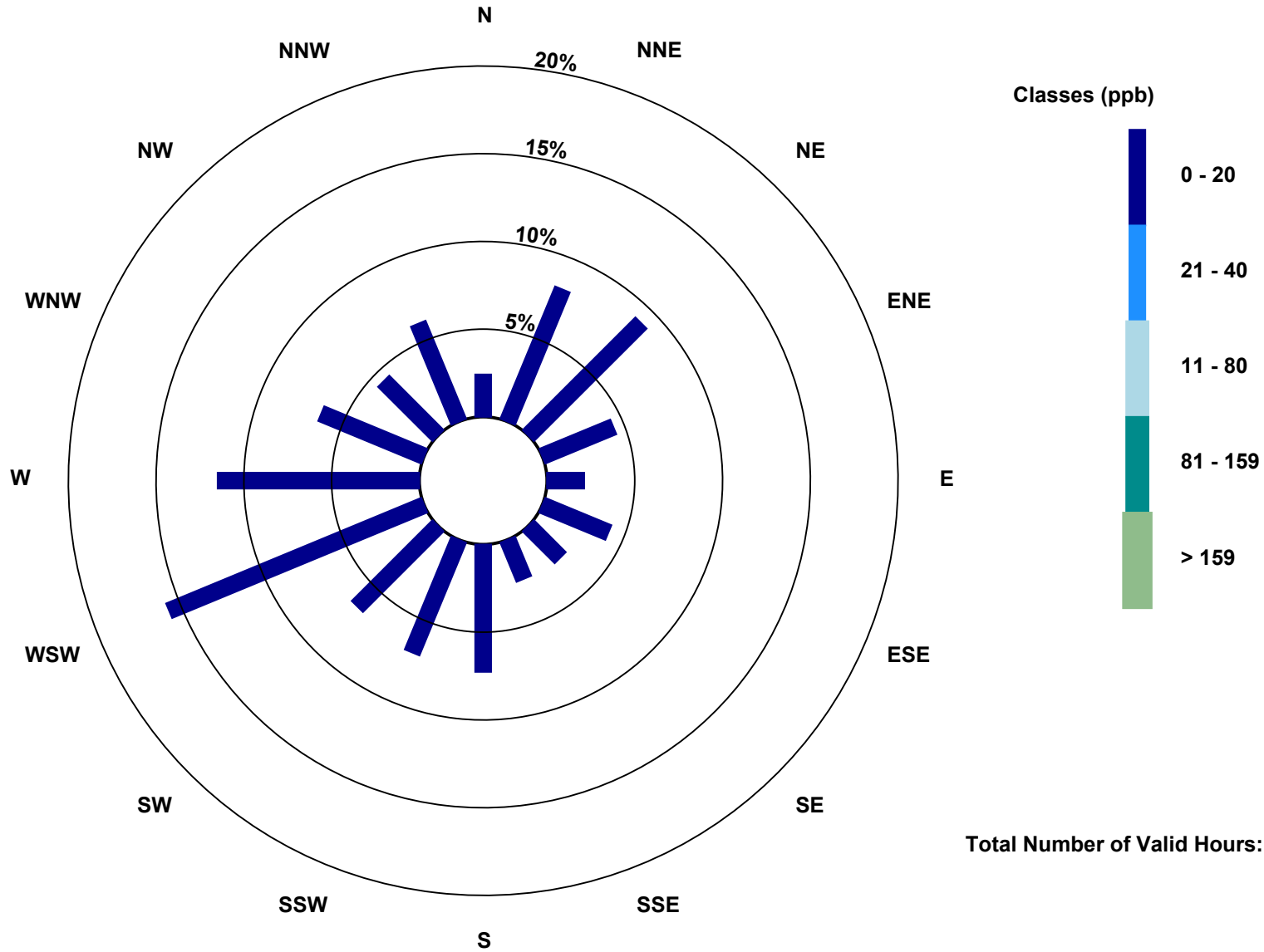
Total Number of Valid Hours: 661

Total Number of Hours: 696

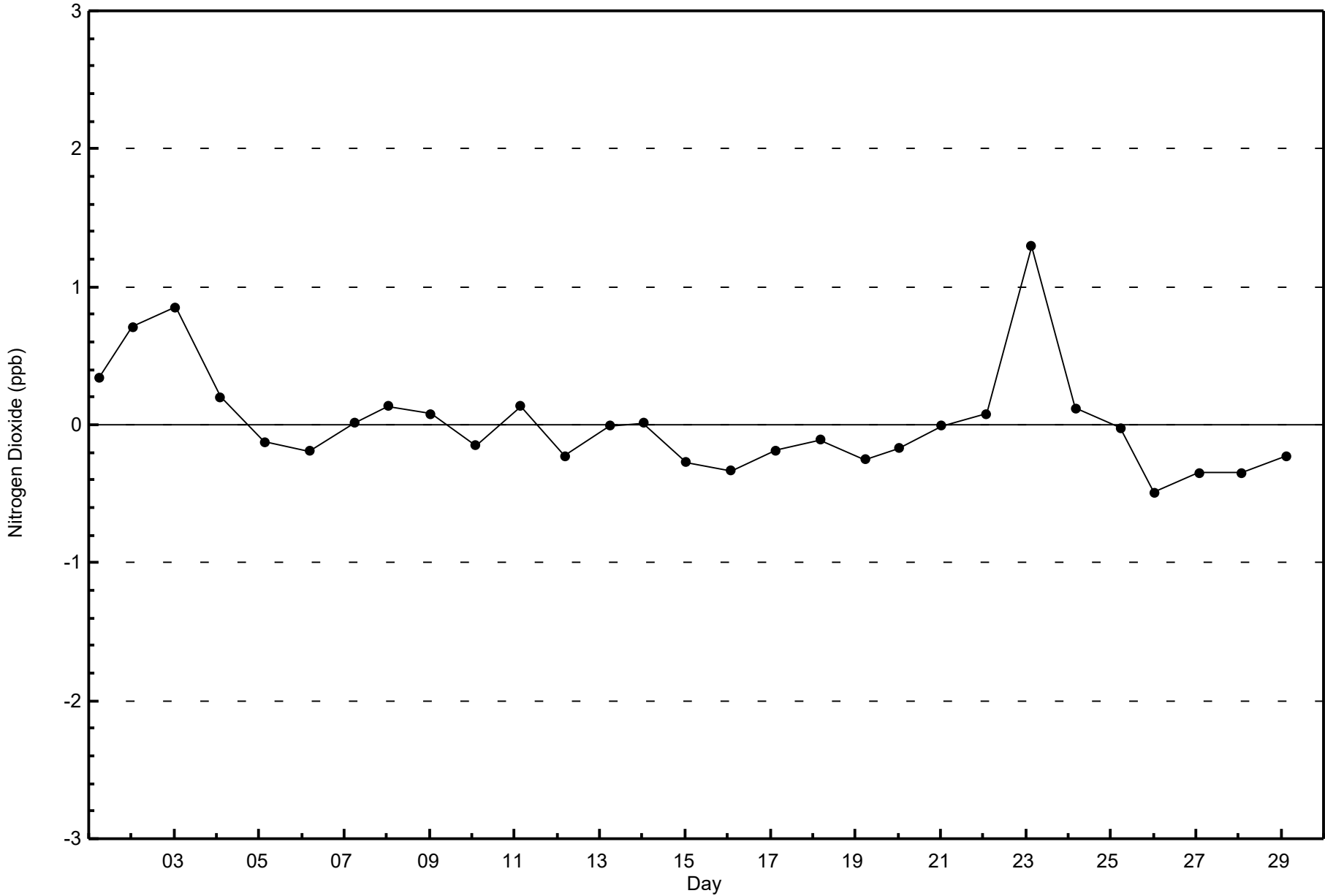


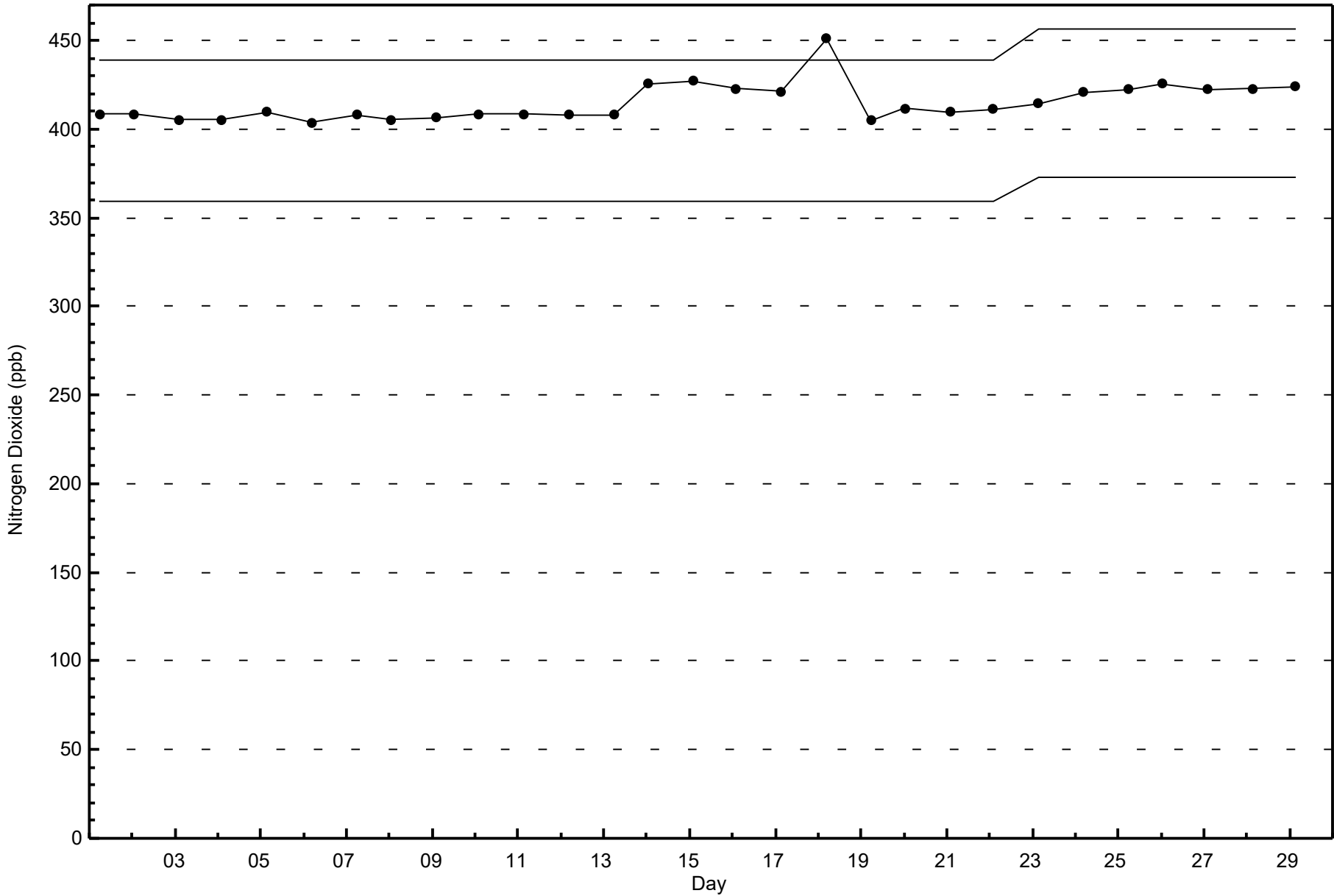
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Jackfish 2/3



Total Number of Valid Hours: 661







Wood Buffalo Environmental Association
Summary of Hour Averages

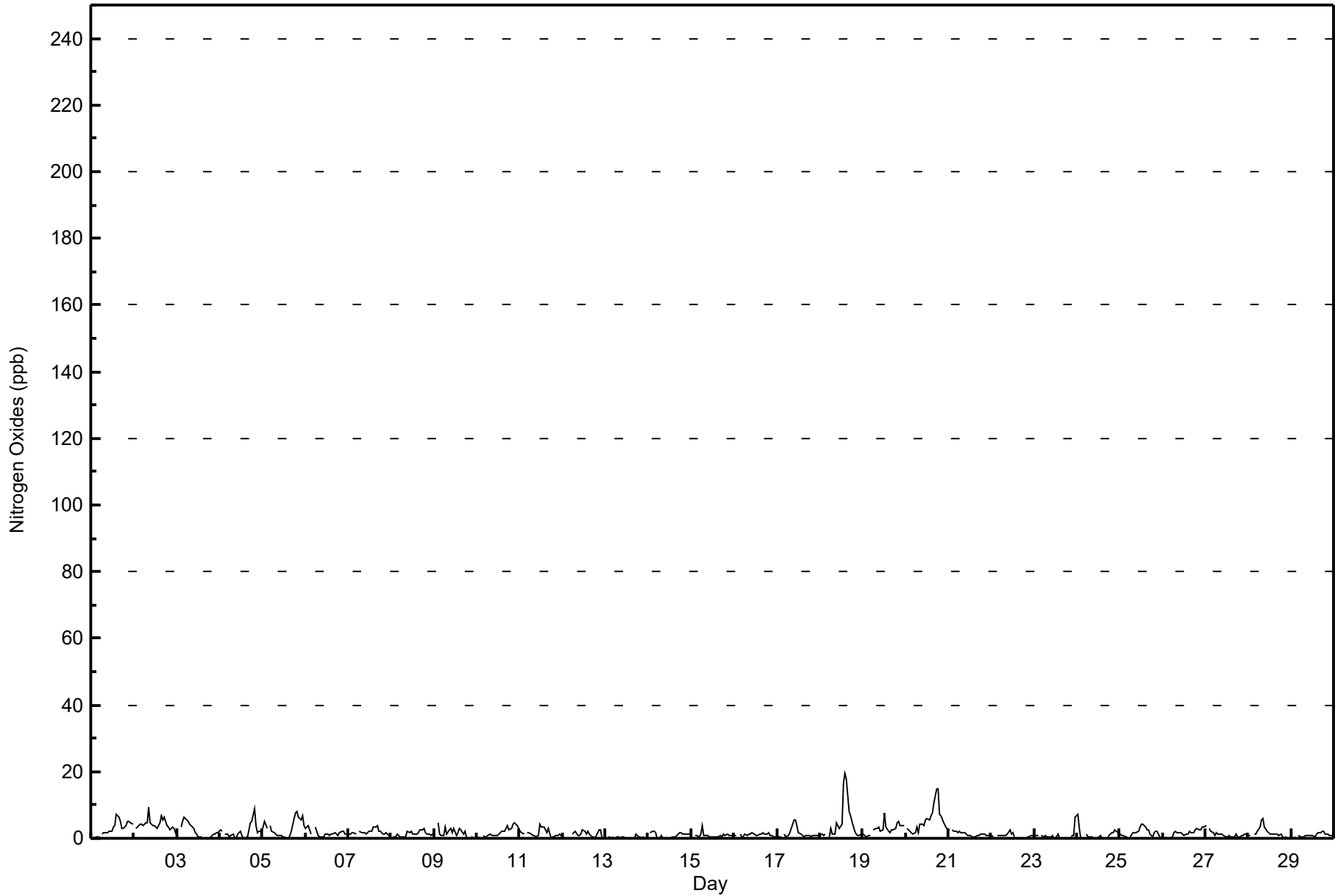
Nitrogen Oxides (NO_x) - ppb
Jackfish 2/3 - February 2024

Maximum Value: 19.5 ppb on Feb 18 15:00		Maximum Daily Average: 5.4 ppb on Feb 20		Hours in Service: 696																							
Minimum Value: 0.0 ppb on Feb 1 01:00		Minimum Daily Average: 0.2 ppb on Feb 13		Hours of Data: 661																							
Maximum Diurnal Average: 2.5 ppb at hour 18		Minimum Diurnal Average: 1.3 ppb at hour 4		Hours of Missing Data: 35																							
Monthly Average: 1.86 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.2 Q ₁ = 0.6 Median = 1.2 Q ₃ = 2.4 P ₉₀ = 4.0 P ₉₉ = 9.1		Hours of Calibration: 34																							
				Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.0	0.1	0.1	0.3	0.3	Z	1.5	1.8	1.9	1.7	2.2	2.2	3.2	3.8	7.0	6.2	5.3	3.2	3.0	3.7	4.9	5.1	4.7	4.3	2.9	7.0	
2-Feb	Z	3.1	3.7	4.0	4.3	4.0	4.7	4.6	9.4	4.6	3.7	4.0	3.3	3.1	4.6	6.8	5.6	6.5	4.0	3.5	2.6	3.3	3.1	1.7	4.3	9.4	
3-Feb	2.7	Z	3.5	4.9	6.1	5.7	5.1	4.3	3.9	2.9	1.9	1.3	0.6	0.3	0.1	0.0	0.0	0.1	0.1	0.4	1.2	1.4	1.5	1.7	2.2	6.1	
4-Feb	2.4	2.3	Z	1.4	1.1	0.6	1.0	1.3	0.1	0.2	1.3	2.2	0.8	0.1	0.0	0.5	2.7	4.7	5.0	8.9	3.8	1.9	2.2	2.1	2.0	8.9	
5-Feb	3.4	5.1	3.0	Z	3.7	2.0	1.7	1.1	0.9	0.7	0.8	0.6	0.3	0.2	0.1	0.8	2.2	6.1	7.8	7.9	6.4	5.3	6.7	3.8	3.1	7.9	
6-Feb	2.9	3.7	2.5	1.4	Z	3.2	2.2	0.8	0.5	0.4	0.3	1.1	1.1	0.9	1.4	1.4	1.5	1.4	0.9	1.7	2.2	2.2	1.5	1.2	1.6	3.7	
7-Feb	1.5	1.3	1.5	1.6	1.5	Z	2.0	1.6	1.5	1.6	1.4	2.0	2.3	2.1	3.2	3.5	3.8	2.1	1.9	1.2	1.2	1.7	1.0	0.5	1.8	3.8	
8-Feb	Z	0.6	0.5	1.2	0.7	0.5	0.6	0.4	0.3	2.0	1.8	2.2	1.3	1.1	1.3	1.9	2.5	2.7	3.1	1.6	1.2	1.1	1.0	1.1	1.3	3.1	
9-Feb	1.0	Z	4.6	1.4	1.0	0.7	3.5	1.1	2.6	3.0	1.8	3.1	0.7	1.5	2.9	2.5	1.5	2.3	0.4	0.2	0.2	0.3	0.1	0.1	1.6	4.6	
10-Feb	0.1	0.3	Z	0.8	0.5	0.6	0.9	1.2	0.9	0.7	0.8	1.0	1.5	1.8	2.2	2.2	3.1	3.7	2.7	3.1	4.0	4.8	3.9	2.8	1.9	4.8	
11-Feb	2.1	1.5	1.1	Z	1.6	1.7	1.2	0.7	0.8	0.5	1.0	4.1	3.6	3.2	2.7	1.7	3.2	0.1	0.5	0.6	0.7	0.7	1.2	1.0	1.5	4.1	
12-Feb	0.5	0.2	0.1	0.2	Z	1.2	1.8	1.9	0.7	0.7	1.4	2.6	2.0	1.2	2.0	1.3	0.5	0.2	0.1	1.0	2.7	2.5	0.1	0.1	1.1	2.7	
13-Feb	0.1	0.2	0.3	0.2	0.2	Z	0.4	0.3	0.2	0.3	0.3	0.1	0.0	0.1	0.0	0.1	0.1	1.1	0.4	0.3	0.0	0.6	0.0	0.0	0.2	1.1	
14-Feb	Z	1.5	2.1	2.1	1.5	0.0	0.1	0.7	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.5	0.9	1.6	1.6	1.3	1.4	1.4	1.4	1.3	0.9	2.1	
15-Feb	1.1	Z	1.0	0.7	0.6	1.2	3.6	0.7	1.0	0.9	0.6	0.3	0.3	0.3	0.4	0.4	0.7	0.5	1.3	1.1	1.1	1.0	0.7	0.8	0.9	3.6	
16-Feb	0.7	0.8	Z	1.2	0.5	0.6	1.2	0.9	1.2	1.4	1.5	1.3	1.0	1.0	1.4	1.1	1.5	1.1	1.3	1.7	1.0	1.0	0.4	0.3	1.0	1.7	
17-Feb	0.4	0.4	0.3	Z	1.2	0.5	0.8	1.7	2.8	5.4	5.3	3.8	1.5	1.1	0.7	0.4	0.9	1.0	0.7	0.6	0.7	1.0	1.0	1.0	1.4	5.4	
18-Feb	0.8	1.1	0.8	1.1	Z	0.5	3.0	1.5	1.5	4.6	3.9	3.2	4.3	16.6	19.5	17.8	7.9	6.8	5.0	2.0	1.1	0.8	0.9	1.1	4.6	19.5	
19-Feb	1.2	0.9	0.6	0.7	0.8	Z	2.7	3.1	3.1	3.2	1.9	2.4	7.5	3.6	2.1	1.9	2.4	2.6	3.1	4.5	5.1	3.8	3.8	3.9	2.8	7.5	
20-Feb	Z	3.0	2.0	1.5	1.4	1.7	3.2	1.6	4.3	4.3	3.7	5.7	6.0	5.6	6.7	7.5	10.6	14.8	15.0	7.1	6.7	4.6	3.7	2.9	5.4	15.0	
21-Feb	2.5	Z	2.7	2.2	2.2	1.9	2.1	1.6	1.8	1.6	1.2	0.9	0.7	0.6	0.5	0.3	1.0	1.0	1.3	1.4	1.1	0.7	0.8	0.7	1.3	2.7	
22-Feb	0.7	0.6	Z	1.0	0.9	0.8	0.7	0.9	1.0	1.2	2.7	1.2	1.6	0.4	M	C	C	C	C	C	0.5	0.4	0.7	0.8	--	2.7	
23-Feb	0.6	0.7	0.8	Z	0.8	0.4	0.7	0.3	0.6	0.6	0.7	0.2	0.1	1.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.9	0.9	6.5	0.7	6.5	
24-Feb	7.0	3.0	0.0	0.1	Z	1.5	0.3	0.6	0.3	0.1	0.0	0.1	0.3	0.8	0.0	0.1	0.0	0.0	1.0	1.8	1.9	2.6	2.0	1.6	1.1	7.0	
25-Feb	1.1	0.8	0.7	0.5	0.5	Z	0.6	1.8	1.8	1.9	2.1	3.5	4.4	4.4	3.2	2.4	2.6	1.2	0.4	1.7	2.0	2.3	0.4	0.2	1.8	4.4	
26-Feb	Z	0.2	0.1	0.2	0.1	0.3	1.7	2.1	1.7	1.5	1.6	1.4	0.8	1.3	1.4	2.1	1.7	1.7	2.7	3.1	2.7	2.3	3.4	3.4	1.6	3.4	
27-Feb	3.8	Z	2.9	2.3	1.7	0.9	1.7	1.2	1.1	1.3	0.8	0.4	0.3	0.8	0.6	0.5	0.6	1.1	0.6	0.4	0.9	0.8	1.2	1.3	1.2	3.8	
28-Feb	0.7	0.7	Z	1.1	1.3	2.2	3.3	5.5	5.8	3.5	2.1	1.7	1.1	1.4	1.2	1.4	1.2	0.9	1.1	0.3	0.2	0.2	0.1	0.0	1.6	5.8	
29-Feb	0.2	0.2	0.4	Z	0.7	0.4	0.6	0.4	1.0	0.8	0.7	0.7	1.0	0.5	1.1	1.5	1.7	1.9	2.1	1.3	1.4	1.0	1.1	1.0	0.9	2.1	
		1.6	1.3	1.5	1.3	1.4	1.4	1.8	1.6	1.8	1.8	1.6	1.8	1.8	2.1	2.4	2.4	2.4	2.5	2.4	2.2	2.0	1.9	1.7	1.6	Diurnal Average	
		7.0	5.1	4.6	4.9	6.1	5.7	5.1	5.5	9.4	5.4	5.3	5.7	7.5	16.6	19.5	17.8	10.6	14.8	15.0	8.9	6.7	5.3	6.7	6.5	Diurnal Maximum	
Z - zerspan		C - Calibration			M - Maintenance																						



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Jackfish 2/3 - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Oxides (NO_x) - ppb
Jackfish 2/3 - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Jackfish 2/3 - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	16	54	60	29	14	27	17	16	48	46	43	104	76	42	29	40	661
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	54	60	29	14	27	17	16	48	46	43	104	76	42	29	40	661

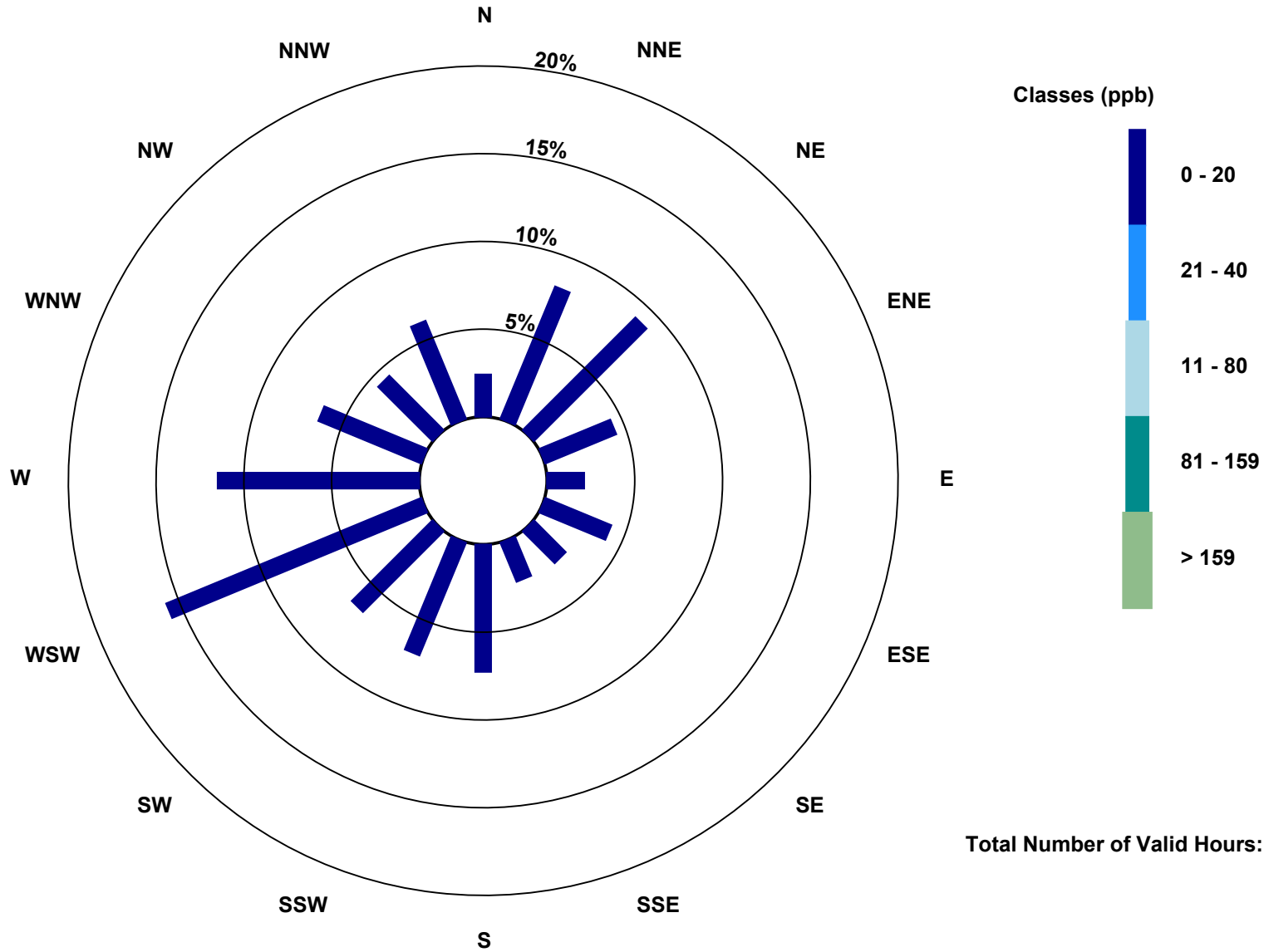
Total Number of Valid Hours: 661

Total Number of Hours: 696

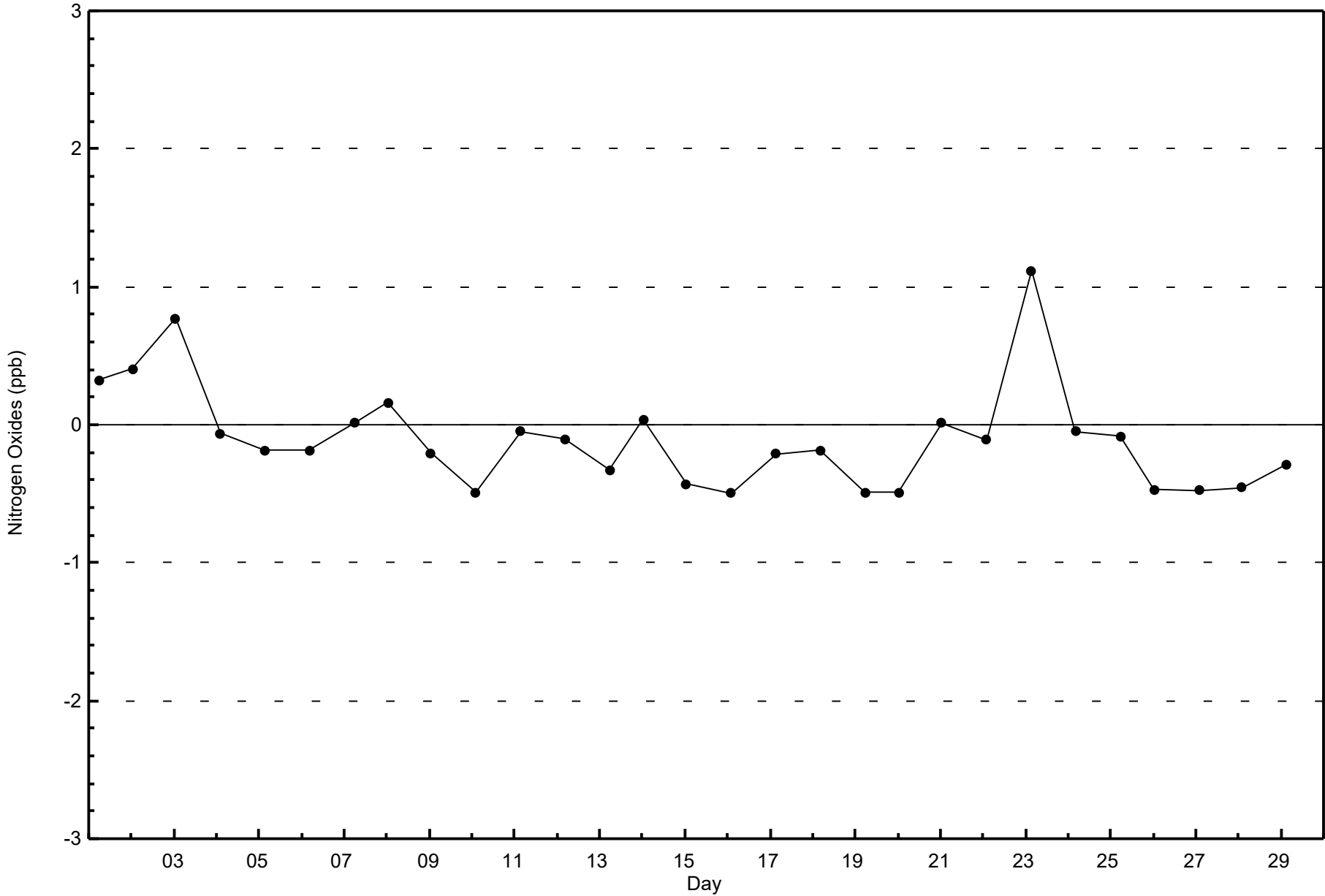


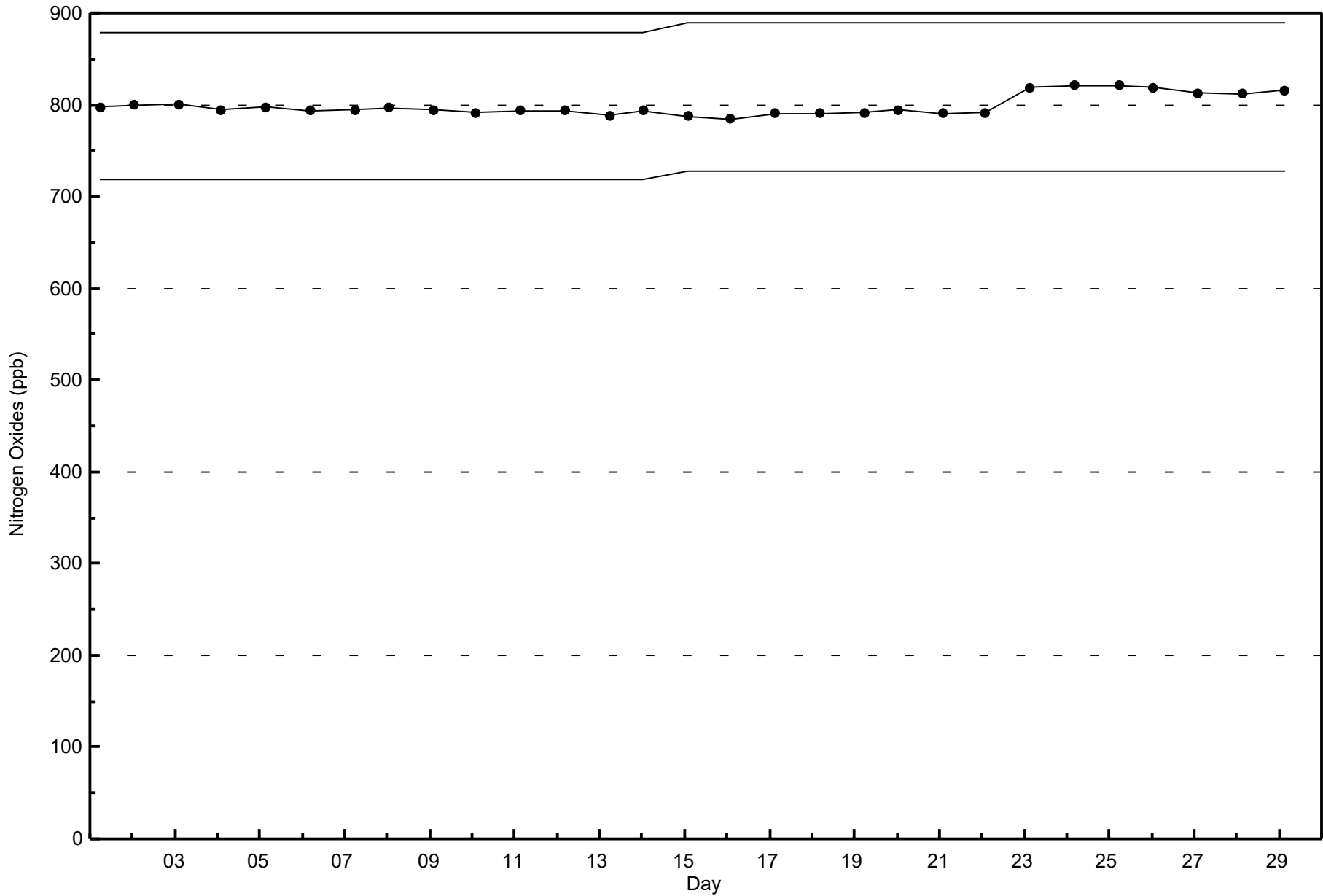
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Jackfish 2/3



Total Number of Valid Hours: 661







Wood Buffalo Environmental Association
Summary of Hour Averages

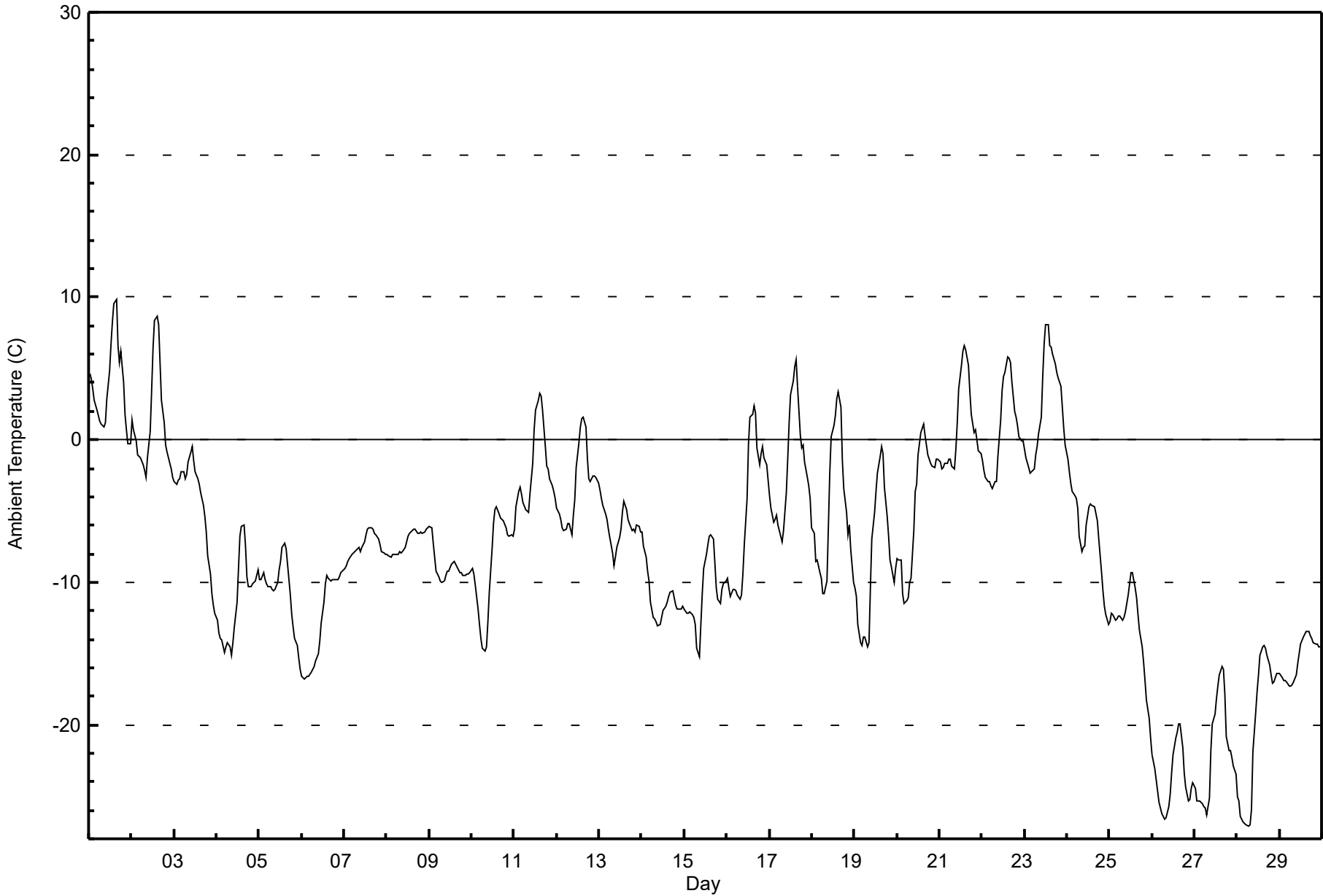
Ambient Temperature (AT) - C
Jackfish 2/3 - February 2024

Maximum Value: 9.8 C on Feb 1 16:00																				Maximum Daily Average: 3.7 C on Feb 1					Hours in Service:	696
Minimum Value: -27.1 C on Feb 28 07:00																				Minimum Daily Average: -23.8 C on Feb 26					Hours of Data:	696
Maximum Diurnal Average: -3.5 C at hour 16																				Minimum Diurnal Average: -10.6 C at hour 8					Hours of Missing Data:	0
Monthly Average: -7.64 C																				Percentiles: P ₁ = -26.4 P ₁₀ = -16.8 Q ₁ = -12.0 Median = -7.4 Q ₃ = -2.1 P ₉₀ = 1.6 P ₉₉ = 8.0					Hours of Calibration:	0
																									Percent Operational Time:	100.0
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	4.7	4.2	3.6	2.8	2.1	1.7	1.3	1.1	0.9	1.2	2.8	4.9	6.7	8.3	9.5	9.8	6.6	5.4	6.2	4.1	1.8	0.7	-0.3	-0.2	3.7	9.8
2-Feb	1.4	0.7	0.0	-1.0	-1.2	-1.3	-1.8	-2.2	-2.6	-1.3	0.6	3.5	6.5	8.4	8.6	8.1	5.4	2.8	1.2	-0.4	-0.9	-1.6	-2.1	-2.6	1.2	8.6
3-Feb	-2.9	-3.1	-2.8	-2.7	-2.2	-2.2	-2.7	-2.4	-1.6	-0.9	-0.4	-1.5	-2.2	-2.8	-3.1	-3.7	-4.6	-5.4	-6.5	-8.1	-9.5	-10.8	-11.6	-12.2	-4.4	-0.4
4-Feb	-12.7	-13.5	-14.0	-14.1	-14.9	-14.6	-14.2	-14.6	-15.1	-14.3	-13.2	-11.4	-9.0	-6.8	-6.1	-6.0	-7.4	-9.6	-10.3	-10.3	-10.1	-10.0	-10.0	-9.2	-11.3	-6.0
5-Feb	-9.8	-9.9	-9.3	-9.8	-10.2	-10.3	-10.3	-10.5	-10.6	-10.5	-10.0	-9.2	-8.5	-7.5	-7.3	-7.6	-8.7	-10.9	-12.3	-13.1	-13.9	-14.5	-15.3	-16.1	-10.7	-7.3
6-Feb	-16.6	-16.8	-16.7	-16.6	-16.6	-16.3	-16.1	-15.9	-15.5	-15.1	-14.2	-12.8	-11.4	-10.1	-9.5	-9.7	-9.9	-9.8	-9.8	-9.8	-9.9	-9.6	-9.4	-9.2	-12.8	-9.2
7-Feb	-9.0	-8.8	-8.6	-8.3	-8.1	-7.9	-7.8	-7.7	-7.6	-7.8	-7.5	-7.2	-6.7	-6.3	-6.2	-6.2	-6.3	-6.5	-6.6	-6.9	-7.4	-7.9	-8.0	-8.1	-7.5	-6.2
8-Feb	-8.0	-8.1	-8.2	-8.0	-8.1	-8.1	-8.0	-7.8	-8.0	-7.9	-7.5	-7.1	-6.8	-6.6	-6.4	-6.3	-6.3	-6.5	-6.6	-6.5	-6.6	-6.5	-6.3	-6.1	-7.2	-6.1
9-Feb	-6.1	-6.2	-7.3	-8.3	-9.3	-9.6	-9.9	-10.0	-9.9	-9.5	-9.2	-9.2	-8.8	-8.6	-8.6	-8.7	-9.1	-9.3	-9.4	-9.5	-9.5	-9.4	-9.4	-9.3	-8.9	-6.1
10-Feb	-9.1	-9.4	-10.2	-11.8	-13.0	-13.9	-14.6	-14.8	-14.5	-12.7	-10.7	-7.6	-5.9	-4.9	-4.7	-5.2	-5.5	-5.6	-5.7	-6.2	-6.7	-6.7	-6.7	-6.7	-8.9	-4.7
11-Feb	-6.3	-4.7	-3.6	-3.4	-3.8	-4.4	-4.9	-5.0	-5.1	-3.8	-1.7	0.7	2.1	2.8	3.3	3.1	2.1	-0.5	-1.9	-2.0	-2.7	-3.3	-3.6	-4.1	-2.1	3.3
12-Feb	-4.8	-5.2	-5.6	-6.2	-6.4	-6.3	-5.9	-5.9	-6.6	-5.3	-4.2	-2.0	-0.2	0.9	1.5	1.5	0.9	-1.2	-2.7	-2.9	-2.6	-2.5	-2.6	-3.1	-3.2	1.5
13-Feb	-3.6	-4.1	-4.6	-5.2	-5.6	-6.3	-6.9	-8.0	-8.8	-8.2	-7.5	-6.9	-6.3	-5.1	-4.3	-4.9	-5.6	-5.9	-6.4	-6.3	-6.5	-6.0	-6.1	-6.5	-6.1	-3.6
14-Feb	-6.5	-7.4	-8.2	-9.2	-9.9	-11.4	-12.4	-12.6	-12.8	-13.1	-13.0	-12.5	-12.0	-11.7	-11.4	-11.0	-10.7	-10.6	-11.1	-11.6	-11.9	-11.9	-11.9	-11.7	-11.1	-6.5
15-Feb	-11.9	-12.2	-12.2	-12.1	-12.3	-12.5	-13.0	-14.7	-15.2	-12.9	-10.8	-9.1	-8.1	-7.4	-6.8	-6.7	-7.0	-8.7	-10.4	-11.2	-11.5	-10.5	-10.2	-10.0	-10.7	-6.7
16-Feb	-9.7	-10.4	-11.0	-10.5	-10.5	-10.6	-10.9	-11.2	-10.9	-9.5	-7.4	-4.2	-0.3	1.6	1.8	2.3	1.9	-0.5	-1.7	-0.9	-0.5	-1.3	-1.7	-2.8	-5.0	2.3
17-Feb	-3.9	-4.8	-5.7	-5.6	-5.3	-6.0	-6.8	-7.2	-6.3	-3.7	-1.4	1.2	3.2	4.1	5.1	5.6	3.7	0.3	-0.5	-0.4	-1.5	-2.6	-3.2	-4.1	-1.9	5.6
18-Feb	-6.2	-6.5	-8.5	-8.4	-9.3	-9.7	-10.8	-10.8	-9.9	-6.2	-2.3	0.2	1.0	1.7	2.9	3.4	2.3	-1.5	-3.5	-5.1	-6.7	-6.0	-7.8	-10.0	-4.9	3.4
19-Feb	-10.4	-11.0	-12.9	-14.3	-14.4	-13.8	-13.8	-14.5	-14.3	-10.4	-6.9	-5.1	-3.6	-2.4	-1.2	-0.5	-1.0	-3.3	-5.4	-6.8	-8.4	-8.9	-10.0	-9.1	-8.4	-0.5
20-Feb	-8.4	-8.4	-8.4	-10.8	-11.5	-11.3	-11.1	-10.1	-9.7	-6.4	-3.6	-3.1	-1.1	0.5	0.8	1.1	0.3	-1.1	-1.4	-1.7	-1.9	-2.0	-1.4	-1.4	-4.7	1.1
21-Feb	-1.6	-2.0	-1.9	-1.7	-1.6	-1.4	-1.3	-1.9	-2.1	-0.7	1.2	3.6	5.3	6.2	6.6	6.3	5.2	3.3	1.8	0.5	0.7	0.0	-0.8	-1.0	0.9	6.6
22-Feb	-1.5	-2.1	-2.6	-2.9	-2.9	-3.2	-3.5	-2.9	-2.9	-1.2	1.4	3.4	4.4	4.8	5.8	5.7	5.4	4.0	2.0	1.6	1.0	0.2	-0.1	-0.1	0.6	5.8
23-Feb	-0.6	-1.3	-1.9	-2.3	-2.3	-2.0	-1.1	-0.4	0.4	1.6	4.5	6.7	8.0	8.1	6.6	6.5	6.1	5.3	4.7	4.4	3.8	2.3	0.8	-0.4	2.4	8.1
24-Feb	-1.3	-2.2	-3.0	-3.6	-3.9	-4.1	-4.8	-6.8	-7.9	-7.6	-7.4	-6.0	-4.7	-4.6	-4.6	-4.7	-5.2	-5.7	-7.0	-9.3	-10.6	-11.7	-12.3	-13.0	-6.3	-1.3
25-Feb	-12.7	-12.1	-12.3	-12.6	-12.6	-12.4	-12.4	-12.7	-12.5	-12.1	-10.9	-10.1	-9.3	-9.4	-10.4	-11.1	-12.3	-13.3	-14.5	-15.6	-16.9	-18.3	-19.6	-20.9	-13.2	-9.3
26-Feb	-22.1	-23.1	-23.9	-24.6	-25.5	-26.2	-26.4	-26.7	-26.5	-25.8	-24.8	-23.4	-22.1	-20.9	-20.5	-19.9	-19.9	-21.6	-23.3	-24.4	-25.4	-25.2	-24.5	-24.1	-23.8	-19.9
27-Feb	-24.5	-25.4	-25.4	-25.3	-25.6	-25.8	-25.8	-26.3	-25.1	-21.8	-20.0	-19.2	-18.1	-17.3	-16.5	-15.9	-16.1	-17.9	-20.9	-21.8	-21.9	-22.3	-22.9	-23.4	-21.9	-15.9
28-Feb	-25.1	-25.4	-26.4	-26.8	-26.9	-27.0	-27.1	-27.0	-25.9	-21.9	-19.1	-17.7	-16.5	-15.2	-14.6	-14.5	-14.6	-15.1	-15.8	-16.5	-17.1	-17.0	-16.4	-16.4	-20.3	-14.5
29-Feb	-16.4	-16.6	-16.9	-16.9	-17.0	-17.2	-17.3	-17.2	-17.0	-16.5	-15.8	-15.0	-14.3	-13.9	-13.7	-13.5	-13.5	-13.7	-13.9	-14.2	-14.3	-14.3	-14.5	-14.6	-15.3	-13.5
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Jackfish 2/3 - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Jackfish 2/3 - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	49	7.04	7.04
-20 - 0	545	78.30	85.34
0 - 10	102	14.66	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Relative Humidity (RH) - %

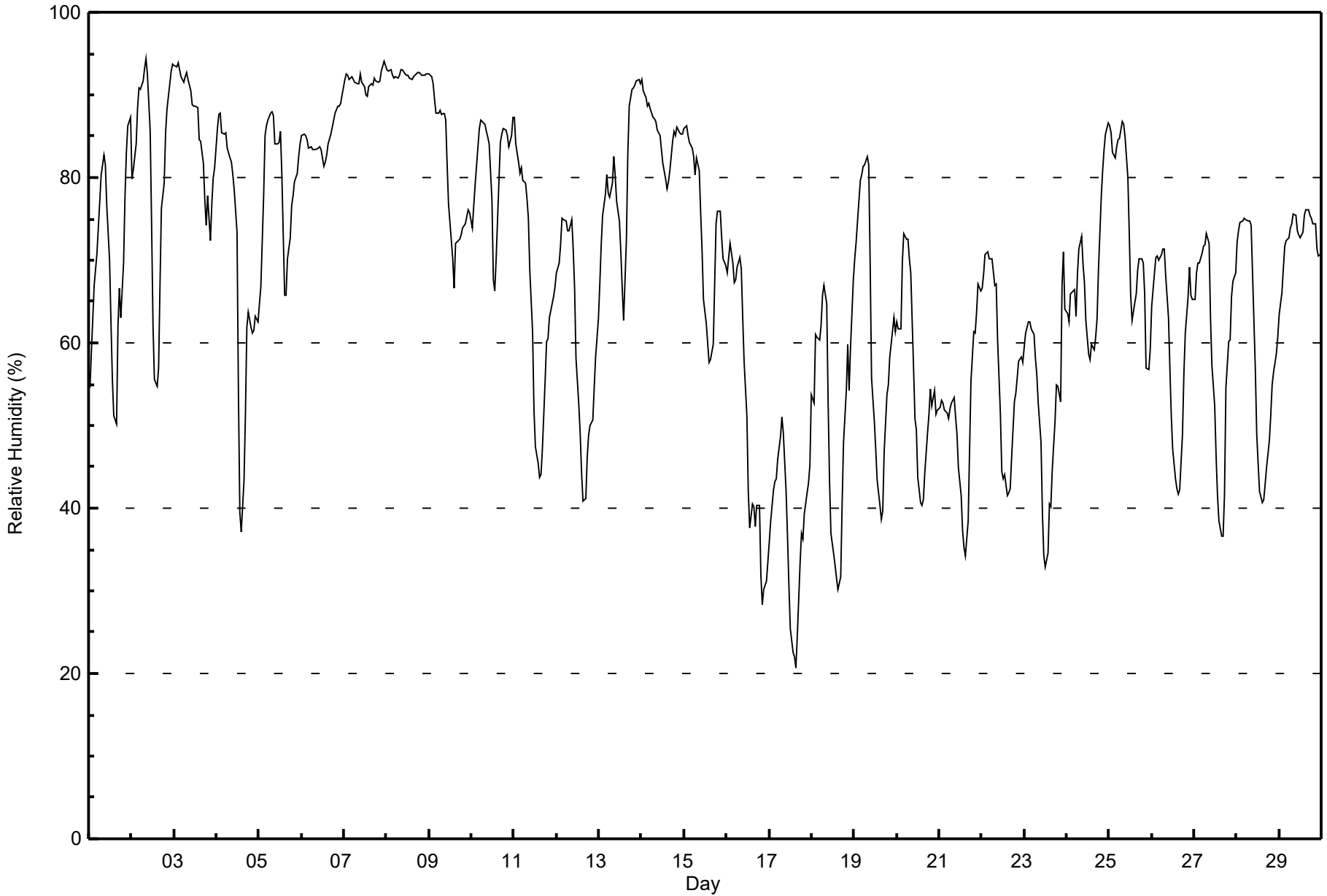
Jackfish 2/3 - February 2024

Maximum Value: 94.5 % on Feb 2 09:00 Maximum Daily Average: 92.5 % on Feb 8																						Hours in Service:	696			
Minimum Value: 20.6 % on Feb 17 16:00 Minimum Daily Average: 37.5 % on Feb 17																						Hours of Data:	696			
Maximum Diurnal Average: 77.5 % at hour 8 Minimum Diurnal Average: 55.1 % at hour 15																						Hours of Missing Data:	0			
Monthly Average: 68.78 % Percentiles: P ₁ = 30.2 P ₁₀ = 42.6 Q ₁ = 56.7 Median = 70.6 Q ₃ = 83.8 P ₉₀ = 90.9 P ₉₉ = 93.2																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	54.6	58.8	62.8	67.0	70.9	74.1	77.1	80.4	82.6	81.5	76.6	69.9	62.5	55.5	51.2	50.2	62.0	66.6	63.0	69.7	77.7	83.0	86.3	87.2	69.6	87.2
2-Feb	79.8	81.0	84.1	88.4	90.9	90.7	91.7	93.2	94.5	92.5	85.6	74.4	62.3	55.6	54.8	56.9	67.0	76.2	79.3	85.5	88.2	91.4	92.9	93.8	81.3	94.5
3-Feb	93.5	93.4	94.0	93.1	92.3	91.5	92.2	92.8	91.8	90.5	88.8	88.6	88.7	88.4	84.5	84.5	81.7	77.3	74.3	77.7	72.3	76.8	80.0	81.3	86.2	94.0
4-Feb	86.0	87.7	87.7	85.4	85.3	85.4	83.5	82.3	81.8	80.3	78.5	73.5	53.8	39.5	37.1	43.4	51.3	61.8	63.7	61.9	61.1	61.6	63.2	62.5	69.1	87.7
5-Feb	64.7	66.9	77.9	85.1	86.3	86.9	87.8	88.0	87.4	84.1	84.1	84.3	85.6	80.4	65.8	65.8	70.3	72.7	76.6	77.8	79.5	80.5	82.5	84.1	79.4	88.0
6-Feb	85.2	85.2	85.1	84.5	83.6	83.7	83.4	83.3	83.4	83.6	83.8	83.4	81.4	81.8	82.7	84.1	85.3	86.2	87.0	87.8	88.7	88.6	88.9	89.9	85.0	89.9
7-Feb	91.9	92.5	92.3	91.9	92.2	91.8	91.5	91.3	91.4	92.5	91.5	91.1	90.1	89.8	90.9	91.3	91.2	92.0	91.7	91.4	91.7	92.8	94.0	93.6	91.8	94.0
8-Feb	93.1	92.8	93.0	92.4	92.1	92.2	92.0	92.3	93.0	93.0	92.5	92.4	92.3	92.1	91.9	92.2	92.4	92.7	92.7	92.5	92.4	92.4	92.6	92.6	92.5	93.1
9-Feb	92.6	92.3	91.3	89.5	87.8	87.9	88.1	87.6	87.8	86.9	81.5	76.7	72.3	70.2	66.6	72.1	72.4	72.6	73.0	73.9	74.4	75.2	76.1	75.7	80.2	92.6
10-Feb	74.0	76.6	79.2	83.7	86.0	87.0	86.8	86.4	85.7	84.9	84.0	77.3	67.6	66.2	70.2	79.6	84.2	85.3	86.0	85.8	85.0	83.7	85.0	87.3	81.6	87.3
11-Feb	87.3	84.0	81.9	80.6	81.2	79.6	79.3	77.4	75.1	68.9	61.3	51.8	47.4	45.4	43.7	44.1	47.1	55.6	60.1	60.5	63.1	64.8	65.5	66.9	65.5	87.3
12-Feb	68.4	69.6	71.8	75.0	75.0	74.7	73.5	73.5	75.0	71.3	66.7	58.2	52.6	49.1	44.2	40.8	41.1	46.1	48.8	50.0	50.7	54.6	58.3	62.9	60.5	75.0
13-Feb	67.2	71.9	75.4	77.9	80.3	78.1	77.6	79.4	82.5	80.2	77.2	74.7	71.0	66.6	62.8	72.6	82.9	88.6	90.7	90.8	91.2	91.7	91.8	91.4	79.8	91.8
14-Feb	91.9	90.6	89.7	88.7	89.0	88.4	87.3	87.2	86.8	85.7	85.1	83.4	81.8	79.9	78.7	79.5	80.8	84.4	85.6	85.1	86.2	85.4	85.3	85.2	85.5	91.9
15-Feb	86.0	86.2	85.1	84.2	83.6	82.6	80.3	82.4	80.9	75.8	71.2	65.2	62.3	60.0	57.6	58.0	59.8	67.1	74.4	75.9	76.0	72.8	70.1	69.4	73.6	86.2
16-Feb	68.5	70.4	72.0	69.7	67.3	67.7	69.1	70.3	69.0	63.2	57.7	51.3	42.0	37.6	40.6	40.1	37.9	40.4	40.4	31.9	28.3	30.2	31.2	33.6	51.3	72.0
17-Feb	35.9	38.5	42.2	43.2	43.5	46.0	48.6	51.1	49.2	42.0	36.6	30.7	25.4	22.6	22.1	20.6	24.6	33.4	37.0	36.3	39.3	41.8	43.0	45.3	37.5	51.1
18-Feb	53.8	52.7	60.9	60.7	60.3	62.3	65.8	67.0	64.8	52.9	43.4	37.0	34.4	33.1	31.5	30.1	31.7	40.5	48.0	54.2	59.9	54.2	59.5	67.7	51.1	67.7
19-Feb	70.2	72.3	74.8	79.6	80.3	81.4	81.5	82.5	81.5	69.9	55.7	50.5	47.1	43.3	40.4	38.7	39.7	46.8	53.6	55.0	58.3	59.9	63.1	61.4	62.0	82.5
20-Feb	62.5	61.7	61.7	69.9	73.1	72.5	72.6	70.2	68.5	57.0	50.9	49.5	43.7	40.6	40.4	41.0	44.2	49.1	51.4	54.4	52.4	54.2	51.3	51.8	56.0	73.1
21-Feb	52.2	53.1	52.8	51.9	51.6	50.8	52.0	52.7	53.5	51.0	48.9	44.9	41.5	37.3	35.3	34.3	38.5	47.0	55.5	61.4	61.1	63.7	67.1	66.3	51.0	67.1
22-Feb	66.6	68.3	70.6	71.1	70.1	70.2	70.1	66.9	67.0	60.3	51.3	44.4	43.6	44.1	41.5	41.8	42.4	46.1	52.9	53.9	55.7	57.8	58.3	57.7	57.2	71.1
23-Feb	59.4	61.2	62.5	62.6	61.7	61.1	58.1	56.1	52.7	48.0	39.4	34.2	32.9	34.5	40.5	40.2	44.6	50.5	54.9	54.8	52.9	67.0	71.1	64.0	52.7	71.1
24-Feb	63.5	62.5	65.9	66.1	66.5	63.2	68.3	71.4	73.0	69.5	67.3	62.7	58.6	58.0	59.8	59.2	60.7	62.8	68.8	77.6	80.9	83.4	85.2	86.7	68.4	86.7
25-Feb	86.3	85.4	83.0	82.3	83.7	84.5	84.8	86.8	86.4	84.8	80.1	73.2	65.8	62.7	64.9	65.9	68.8	70.2	70.1	69.6	66.0	57.0	56.8	59.3	74.1	86.8
26-Feb	64.4	68.4	70.4	70.5	70.1	70.7	71.4	71.3	68.1	63.0	56.9	51.2	47.0	43.5	42.3	41.7	42.2	49.0	56.3	61.2	65.7	69.2	65.7	65.2	60.2	71.4
27-Feb	65.2	68.4	69.6	69.6	70.9	71.7	71.9	73.2	72.1	63.0	57.2	52.4	46.2	41.5	38.5	36.5	36.6	41.7	54.6	60.1	60.3	65.5	67.5	68.5	59.3	73.2
28-Feb	72.3	73.5	74.6	74.7	75.0	75.0	74.8	74.7	74.2	68.4	56.8	49.0	45.4	42.0	40.7	41.0	42.8	45.0	48.1	51.3	54.9	56.4	58.6	60.7	59.6	75.0
29-Feb	63.4	66.0	69.0	71.6	72.3	72.7	73.9	74.5	75.7	75.4	73.5	73.0	72.6	73.4	75.4	76.1	76.1	75.4	75.1	74.4	74.4	71.4	70.5	70.7	72.8	76.1
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Jackfish 2/3 - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Jackfish 2/3 - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	41	5.89	5.89
40 - 60	162	23.28	29.17
60 - 80	265	38.07	67.24
80 - 100	228	32.76	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Speed (WS) - km/h

Jackfish 2/3 - February 2024

Maximum Speed: 22 km/h on Feb 16 21:00	Maximum Daily Speed Average: 14.1 km/h on Feb 16	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 19 03:00	Minimum Daily Speed Average: 1.0 km/h on Feb 8	Hours of Data: 696
Maximum Diurnal Speed Average: 3.8 km/h at hour 14	Minimum Diurnal Speed Average: 1.7 km/h at hour 19	Hours of Missing Data: 0
Monthly Average Velocity: 2.7 km/h 263.7 deg	Percentiles: $P_1 = 1$ $P_{10} = 3$ $Q_1 = 4$ Median = 6 $Q_3 = 9$ $P_{90} = 12$ $P_{99} = 17$	Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	S10	SSE10	S10	S9	S10	S11	SSW11	SSW9	SW11	SSW11	SW10	SSW10	SSW9	SSW7	SSW7	SSW5	SSW2	S4	S7	S4	SW2	SSW3	SSW3	SSW5	SSW7.2	SSW11
2-Feb	S8	S9	S8	S4	S5	S7	S6	SSE3	S3	S5	S5	SSW4	SE2	NE3	ENE6	ENE6	ENE4	NE3	NE3	NW0	NNE2	NNE2	NNE2	SSW1	SSE2.1	S9
3-Feb	WSW2	W2	W2	WNW5	NW6	NW5	NNW5	NNW4	NNW5	NNW7	NNW8	NNW9	NNW8	NW9	NNW9	NNW9	NNW9	NNW8	N7	NNE6	NNE6	NNE4	NNE3	NNE4	NNW5.3	NNW9
4-Feb	NNE3	NE2	ENE3	ENE4	ENE1	E4	E5	ESE4	SE3	ENE2	NE2	NE3	SE4	SSE5	SE3	ENE3	NE4	NNE4	ENE4	SE2	ESE3	ENE1	NE1	NE2	E2.4	E5
5-Feb	NE3	ENE2	WSW2	N3	N3	N3	N4	NNE5	NNE4	NNE6	NNE6	NNE6	NNE7	NNE7	NNE8	NE9	NE8	NNE8	NNE5	NNE5	NE6	NE5	NE4	NE4	NNE4.9	NE9
6-Feb	NE4	ENE5	ENE6	ENE6	ENE6	ENE5	E5	E4	E4	E5	ESE5	ESE4	SE5	ESE5	ESE5	SSE5	SE5	SE5	SSE5	SSE6	S5	S5	S5	S5	ESE3.7	ENE6
7-Feb	S6	S5	S5	S4	S4	S4	S3	SW2	NE3	NE3	NE3	NE3	NE3	NNE4	NNE3	NNE4	NNE4	NNE3	NNE3	NE4	NE5	NE4	N3	NE3	ENE1.2	S6
8-Feb	NNE3	NNE4	ENE2	NNE1	NE1	NE2	ESE1	SSW2	SW4	SW4	WSW2	SW3	SW5	WSW4	NNW1	ENE2	ENE2	ENE3	E2	SSW2	SSW4	SSW4	SSW5	WSW6	SSW1.0	WSW6
9-Feb	W6	WNW8	WNW9	NW7	NW6	NW5	WNW6	W5	WNW6	WNW6	NW7	WNW8	WNW7	WNW8	WNW8	WNW7	NW6	WNW6	W5	WSW7	W7	W7	WSW7	W6	WNW6.4	WNW9
10-Feb	W6	WSW6	SW6	SW7	SW7	SSW7	SSW8	SSW7	SSW7	SSW6	SSW6	SSW8	SSW11	SSW9	SW8	SSW8	SSW8	SSW8	SW10	SW11	SW12	WSW13	WSW13	W12	SW7.9	WSW13
11-Feb	W12	W12	WSW14	WSW14	WSW15	WSW14	WSW15	W14	W12	W10	NNW10	NNW11	NNW10	NNW10	NNW11	NNW11	WNW8	W5	W5	W5	WSW5	WSW6	WSW7	WSW8	W9.7	WSW15
12-Feb	SW8	SW8	SSW8	SSW8	SSW8	SSW8	SW7	SSW7	SSW7	SW8	SW12	WSW12	W12	W12	WNW11	WNW11	WNW10	WNW8	W6	WNW6	WNW8	NW7	NW8	NW8	WSW6.8	W12
13-Feb	NNW9	NNW9	NW8	NW9	NNW9	NNW9	NNW8	NNW7	NNW6	NNW7	NNW8	NNW8	NNW8	NNW7	NW6	N3	ESE3	SW3	SSW2	WSW6	W4	NW5	NNW4	NNW3	NNW5.5	NNW9
14-Feb	NNW4	NNE7	N8	N8	N7	NNE9	NNE6	NNE6	NNE6	NNE7	NE7	NNE6	NNE5	N4	NNW2	WSW6	W3	NW3	NNW4	NNW3	WNW1	WNW3	W4	W3	N3.9	NNE9
15-Feb	W3	WSW4	W4	W4	W5	W5	WNW5	W5	WSW8	WSW8	W7	W11	W12	W12	WSW12	WSW12	WSW9	WSW8	WSW8	WSW9	WSW11	WSW10	WSW11	WSW12	WSW7.9	W12
16-Feb	WSW12	WSW12	WSW12	WSW14	WSW15	WSW15	WSW15	WSW13	WSW13	WSW12	WSW11	W10	W11	W12	WSW13	WSW12	WSW14	WSW16	WSW18	WSW21	WSW22	W20	W16	WSW12	WSW14.1	WSW22
17-Feb	WSW8	W7	W5	W8	W8	W7	W8	W7	WNW6	WNW5	WNW6	NW5	WNW4	W6	W6	W6	WSW6	SW5	SW7	SW8	SW7	SW7	SW7	SW7	WSW5.8	W8
18-Feb	SSW5	SSW6	S6	S7	S7	S5	S4	SSW5	E1	SW3	SW4	N3	NE5	ENE5	NE5	NE4	NE5	NE5	NE6	E4	ESE3	S8	ESE2	SE2	SE1.7	S8
19-Feb	SE3	S3	SW0	S2	WSW4	WSW6	WSW5	W5	WSW5	WNW5	NW4	NW5	WNW5	W6	W7	W7	W6	WNW3	NE0	NE5	ENE5	ENE4	NE4	E4	WNW2.1	W7
20-Feb	SE3	S2	S3	SSW1	SSE1	S3	S5	S5	SSE1	NE2	NE1	NNE3	NNE3	NE4	E3	ENE4	ENE4	E1	SSE2	SE0	SE1	SSW3	SW6	SW7	SSE1.0	SW7
21-Feb	WSW8	WSW8	WSW7	WSW9	WSW10	WSW12	WSW12	WSW12	WSW13	WSW12	WSW12	WSW11	WSW12	W12	WSW13	WSW13	WSW10	SW9	SW9	SW10	WSW12	WSW10	W8	WSW10	WSW10.4	WSW13
22-Feb	WSW10	WSW10	WSW9	WSW10	WSW12	WSW12	WSW11	WSW12	WSW8	W8	NW8	NW8	WNW10	W11	WNW10	WNW10	WNW9	WNW7	W5	W6	W5	WSW6	WSW9	WSW9	W8.3	WSW12
23-Feb	WSW7	WSW8	SW9	SW9	SW9	SW10	SW12	WSW14	WSW15	WSW17	WSW17	W16	W15	NNW15	W15	W14	WSW16	W14	W13	W15	WSW17	W12	WNW12	WNW14	WSW12.4	WSW17
24-Feb	WNW11	WNW10	W10	W10	NNW11	NW12	NNW9	NNW8	NNW9	NNW9	NNW7	NNW7	NW8	NW9	NW7	NW8	NNW5	NNE4	NE5	NE7	ENE5	E4	ESE4	ESE4	NW5.2	NW12
25-Feb	ENE3	E4	ESE4	ESE4	ENE4	E5	ENE4	NNE4	NE6	ENE6	NE7	NE8	NE10	NNE10	NE11	NE12	NE13	NE13	NE14	NE13	NE12	NE14	NE13	NE13	NE8.2	NE14
26-Feb	NE14	NE14	NNE11	NNE11	NNE11	NNE8	NNE8	NNE7	NNE8	N8	N9	N9	NNE9	N8	NNE10	NNE6	NNE6	NNE3	NNE2	N1	W1	SW2	WSW5	W4	NNE6.3	NE14
27-Feb	W4	W3	W3	WSW5	WSW4	WSW6	WSW6	WSW7	WSW8	WSW9	W9	W10	W9	W9	W8	W8	W7	WSW4	SW4	SW4	SW5	SSW6	SSW6	S6	WSW5.6	W10
28-Feb	S6	S6	S6	S5	S6	S7	S8	S8	S8	S10	S11	S12	SSE11	SSE10	SSE10	SSE9	SSE10	SSE8	SE7	SSE9	SE9	SE10	SE9	ESE9	SSE8.0	S12
29-Feb	ESE9	ESE10	ESE10	ESE10	ESE12	ESE11	ESE11	ESE9	ESE11	ESE8	ESE8	ESE6	SE2	ESE3	ENE2	NE4	N3	WNW3	NW5	NNW4	NNW4	NNW5	NNW5	NW5	E4.1	ESE12

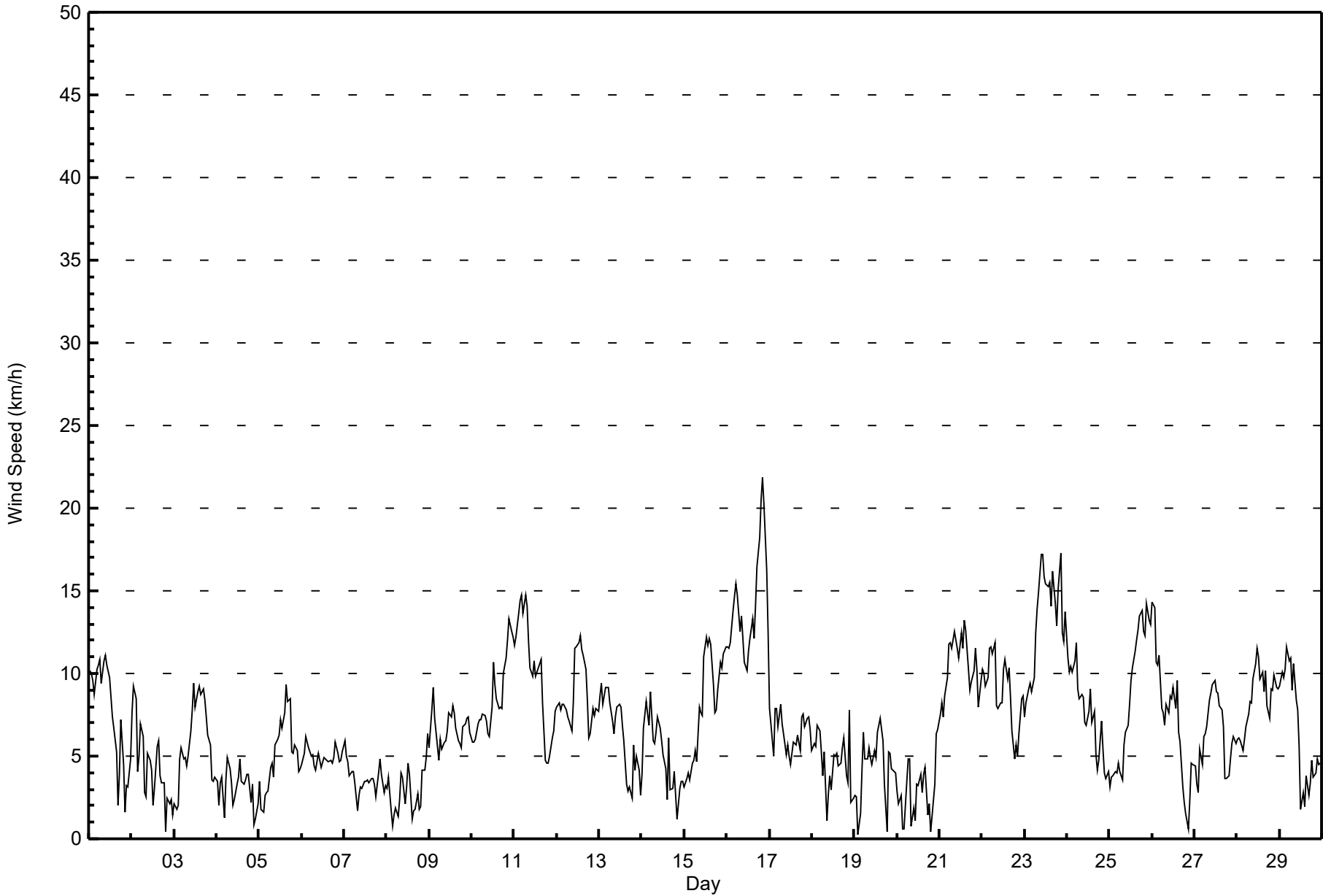
WSW2.5	WSW2.4	WSW2.7	WSW2.8	WSW2.9	WSW2.9	WSW3.0	WSW3.1	WSW2.9	W2.9	W3.1	NNW3.4	NNW3.5	NNW3.8	NNW3.2	NNW3.0	NNW2.4	W1.8	WSW1.7	WSW2.2	WSW2.5	WSW2.7	W2.8	W2.8	Diurnal Average
NE14	NE14	WSW14	WSW14	WSW15	WSW15	WSW15	W14	WSW15	WSW17	WSW17	W16	W15	NNW15	W15	W14	WSW16	WSW16	WSW18	WSW21	WSW22	W20	W16	NNW14	Diurnal Maximum

All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Jackfish 2/3 - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed (WS) - km/h
Jackfish 2/3 - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	285	40.95	40.95
6 - 11	322	46.26	87.21
12 - 19	86	12.36	99.57
20 - 28	3	0.43	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Jackfish 2/3 - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	9	28	38	25	15	15	14	7	27	17	15	13	25	11	10	16	285
6 - 11	8	27	12	6	0	12	4	9	25	30	27	48	36	34	18	26	322
12 - 19	0	0	11	0	0	1	0	0	1	0	3	47	19	3	1	0	86
20 - 28	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	17	55	61	31	15	28	18	16	53	47	45	110	81	48	29	42	696

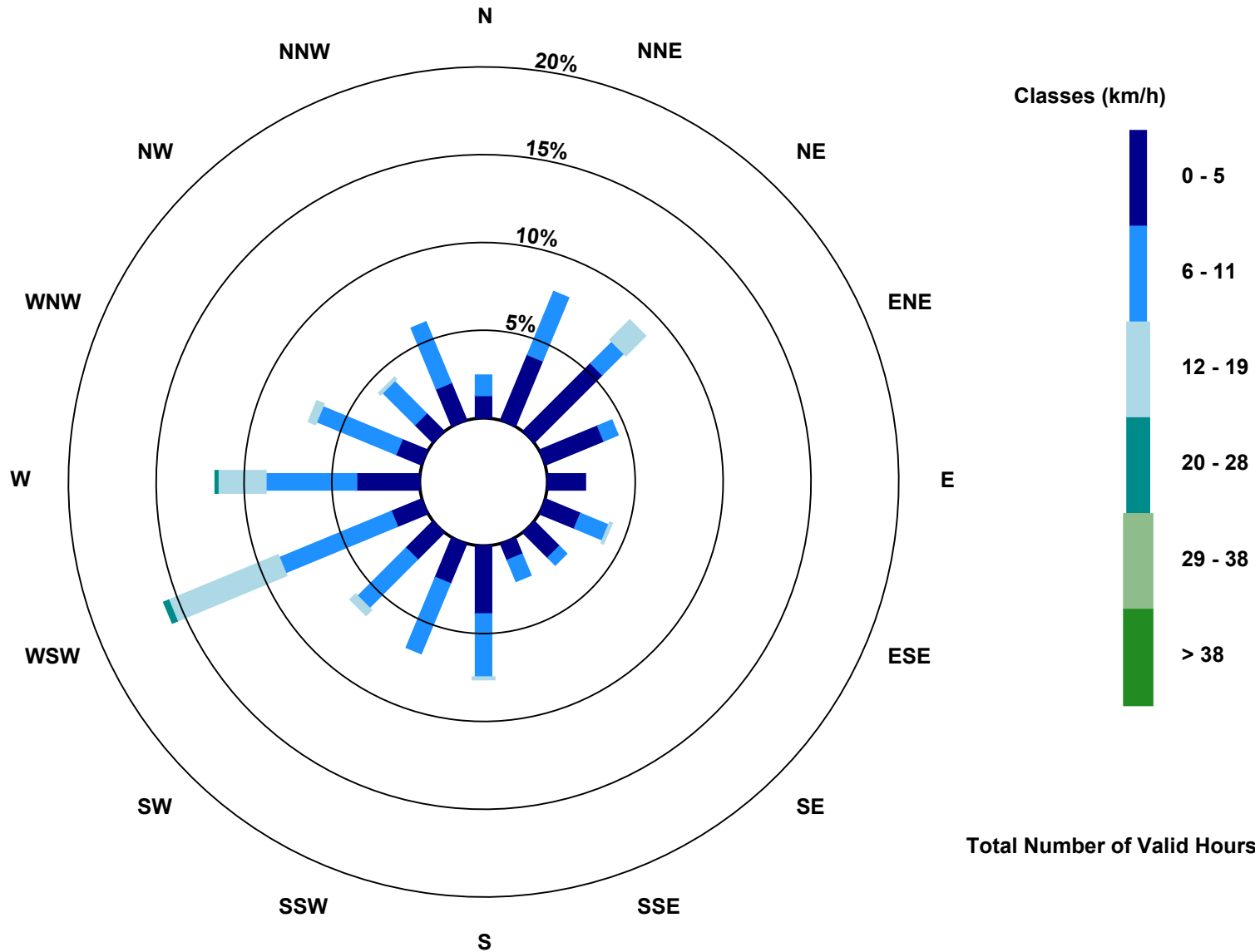
Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Jackfish 2/3





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Jackfish 2/3 - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 23 15:00 Minimum Value: 0 km/h on Feb 26 22:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 5																	Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	4	3	3	3	4	4	4	3	3	3	3	3	2	2	2	1	2	2	2	1	1	1	1	1	4
2-Feb	1	2	2	2	2	2	2	2	1	2	1	2	1	2	2	1	2	1	1	1	1	1	1	1	2
3-Feb	1	1	1	1	2	2	2	2	2	3	4	4	4	4	4	4	4	3	3	3	2	1	1	1	4
4-Feb	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	2	1	1	1	2
5-Feb	1	1	1	1	1	1	2	1	1	2	2	2	2	2	3	3	3	3	2	2	2	2	1	1	3
6-Feb	1	1	2	2	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7-Feb	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2
8-Feb	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2
9-Feb	2	3	4	3	3	2	2	2	2	2	3	4	3	3	3	3	3	2	2	2	2	2	2	2	4
10-Feb	2	2	2	2	2	2	2	1	1	2	2	2	3	3	3	2	3	3	3	3	3	4	3	3	4
11-Feb	3	3	3	3	3	3	3	4	3	4	4	5	4	4	4	4	3	2	1	1	1	2	2	2	5
12-Feb	2	2	1	1	2	2	2	2	2	2	3	3	4	5	5	4	4	3	2	2	3	3	3	3	5
13-Feb	4	4	4	4	4	4	4	3	3	3	4	3	3	3	2	2	1	1	2	1	1	2	2	1	4
14-Feb	2	3	3	3	3	3	2	2	2	3	2	2	2	2	1	2	1	1	2	2	1	1	1	1	3
15-Feb	1	1	1	1	1	2	2	2	2	2	2	4	4	4	4	4	3	2	2	2	2	2	2	2	4
16-Feb	2	2	3	3	3	3	3	3	3	4	3	3	4	4	4	3	4	4	5	5	6	5	5	4	6
17-Feb	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	1	1	1	1	1	2
18-Feb	1	1	1	1	1	1	2	2	1	1	1	2	2	2	2	1	1	1	2	2	1	2	2	1	2
19-Feb	1	2	1	1	1	1	1	1	1	2	2	2	2	2	2	3	2	2	2	1	1	1	1	1	3
20-Feb	1	1	2	1	1	1	1	2	2	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	2
21-Feb	2	1	2	2	2	2	2	2	3	3	3	3	4	4	4	4	3	3	2	3	3	2	2	2	4
22-Feb	2	2	2	2	2	2	2	2	3	3	3	3	4	4	4	4	3	2	2	2	2	2	2	2	4
23-Feb	1	2	2	2	2	3	3	4	4	4	5	5	6	7	7	4	5	4	4	5	5	5	5	5	7
24-Feb	4	4	3	3	5	5	4	4	4	4	3	3	3	4	3	3	2	2	3	2	2	1	1	1	5
25-Feb	1	1	1	1	1	1	2	2	2	2	2	3	3	4	3	4	4	5	5	4	5	5	5	5	5
26-Feb	5	5	4	4	5	4	3	3	3	3	3	4	4	3	4	2	2	1	1	1	1	0	1	1	5
27-Feb	2	1	1	2	2	1	1	1	2	3	3	4	3	3	3	3	3	2	1	1	1	1	1	1	4
28-Feb	1	1	1	1	2	2	3	3	3	4	4	5	4	4	4	4	4	4	3	4	4	4	4	3	5
29-Feb	3	4	3	4	4	4	4	3	4	3	3	2	3	2	2	2	1	1	2	1	2	2	2	2	4
																	5 5 4 4 5 5 4 4 4 4 5 5 6 7 7 4 5 4 5 5 6 5 5 5 5								
Diurnal Maximum																									



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Jackfish 2/3 - February 2024

Direction of Maximum Speed: 256 deg on Feb 16 21:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 252.5 deg on Feb 16	Hours of Data: 696
Direction of Minimum Speed: 222 deg on Feb 19 03:00	Hours of Missing Data: 0
Direction of Minimum Daily Speed Average: 1.0 deg on Feb 8	Percent Operational Time: 100.0
Monthly Average Direction: 263.7 deg	

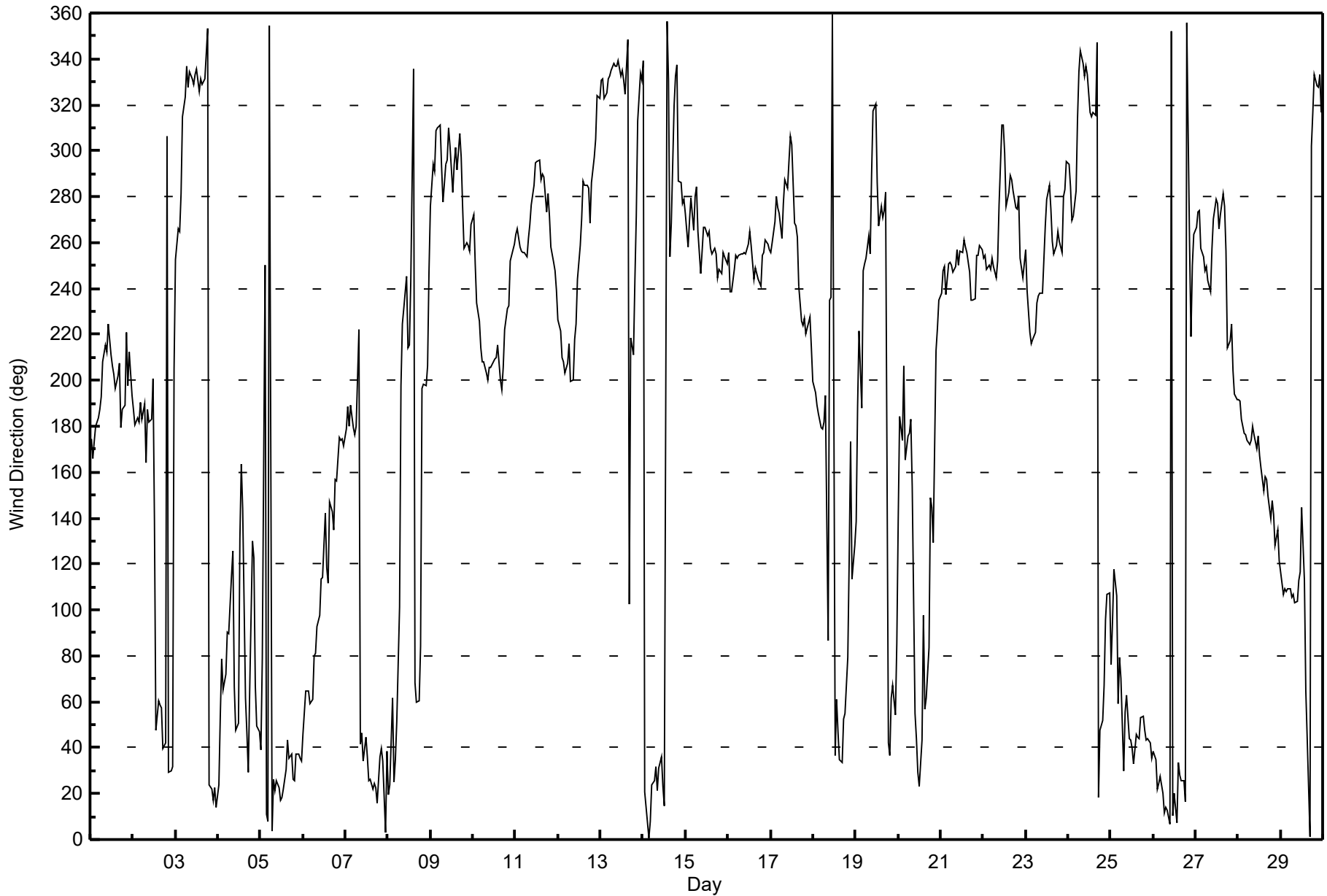
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	175	166	173	180	184	188	193	208	215	213	224	211	206	202	196	202	207	179	188	189	221	198	212	193	195.6
2-Feb	187	181	184	182	191	183	190	164	187	182	183	201	138	47	61	59	57	40	42	307	29	30	31	205	159.2
3-Feb	253	266	265	282	315	324	337	327	334	332	329	333	336	326	331	329	331	343	353	24	22	17	22	14	335.8
4-Feb	24	54	78	66	72	90	90	115	126	67	48	51	131	163	144	61	46	29	65	130	123	67	50	47	83.8
5-Feb	39	78	250	11	8	354	3	26	21	26	22	17	18	22	30	44	36	37	26	26	37	37	35	34	27.5
6-Feb	46	64	65	65	59	61	80	81	93	98	114	114	142	119	112	147	143	135	157	156	175	174	174	172	113.7
7-Feb	179	189	180	189	179	176	180	222	42	46	34	45	36	26	26	22	25	22	16	36	39	34	3	39	61.9
8-Feb	20	24	62	25	35	51	102	198	224	232	245	214	215	243	336	69	60	60	84	197	199	198	206	247	213.5
9-Feb	276	294	291	309	310	311	293	278	294	296	310	302	282	294	302	292	307	297	276	258	260	259	257	268	288.0
10-Feb	272	251	234	225	214	208	208	203	200	206	206	208	210	210	215	200	196	205	222	231	232	252	257	260	223.5
11-Feb	263	266	258	256	256	256	254	262	268	276	285	295	295	296	287	290	289	274	281	271	258	251	248	239	269.1
12-Feb	226	222	210	208	203	207	216	199	200	218	225	244	259	270	287	285	285	284	268	286	297	305	324	323	252.9
13-Feb	331	331	323	325	331	333	335	338	337	337	339	332	335	331	325	349	103	218	211	243	272	313	334	331	326.5
14-Feb	339	21	7	1	8	24	26	32	22	31	36	23	14	357	331	254	268	320	332	337	286	286	277	279	359.9
15-Feb	273	258	270	279	266	280	284	265	247	256	267	267	263	265	258	255	258	255	245	248	247	256	254	251	258.7
16-Feb	256	238	238	249	254	253	254	255	255	256	255	259	265	259	244	249	247	244	241	255	256	261	259	257	252.5
17-Feb	255	260	269	280	275	273	262	277	287	284	295	307	302	269	267	262	241	226	224	227	220	225	227	214	257.8
18-Feb	199	194	189	186	179	179	182	193	87	235	236	359	37	61	47	35	34	53	55	79	122	173	114	128	139.5
19-Feb	138	189	222	188	248	251	253	263	255	290	317	320	286	267	276	271	274	282	42	37	61	67	54	85	281.6
20-Feb	139	184	174	206	166	176	177	183	154	55	44	29	23	43	98	57	62	83	149	144	129	213	223	235	149.7
21-Feb	238	248	249	237	251	251	250	247	250	257	250	256	256	261	258	256	247	235	235	235	255	255	259	257	250.3
22-Feb	253	254	248	250	249	253	250	245	252	276	311	311	299	276	282	289	287	283	275	275	280	253	245	251	266.9
23-Feb	257	239	221	216	218	221	234	237	238	238	253	267	279	285	275	260	255	259	265	261	256	280	283	295	256.1
24-Feb	294	284	270	272	283	314	334	344	338	332	337	333	317	315	316	315	347	18	48	52	67	96	107	107	323.3
25-Feb	76	95	118	106	59	80	70	30	55	63	44	43	40	33	46	45	44	53	54	47	43	44	42	35	49.8
26-Feb	39	34	22	24	27	20	12	14	13	7	352	11	20	7	33	28	25	26	16	356	260	219	250	264	17.5
27-Feb	267	273	274	258	254	247	250	243	239	258	270	279	277	266	272	281	276	257	214	217	224	204	194	191	253.2
28-Feb	191	191	183	177	177	174	172	174	180	177	170	176	167	161	152	158	157	150	140	148	142	128	135	121	161.0
29-Feb	116	107	109	108	109	109	106	107	103	104	113	116	144	113	65	44	1	302	317	333	328	328	333	317	95.3
250.6	243.3	236.9	246.1	249.3	246.5	244.9	244.8	254.0	264.6	277.2	289.1	285.2	285.9	288.9	288.7	288.2	280.1	257.5	255.6	254.2	256.1	260.1	259.9		
Diurnal Average																									

All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction (WD) - deg
Jackfish 2/3 - February 2024





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Jackfish 2/3 - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 98 deg on Feb 8 04:00 Minimum Value: 6 deg on Feb 18 04:00 Percentiles: P ₁ = 12 P ₁₀ = 15 Q ₁ = 20 Median = 31 Q ₃ = 41 P ₉₀ = 49 P ₉₉ = 89																			Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	35	33	31	34	32	29	30	26	23	20	21	24	27	29	31	25	47	37	24	44	81	16	24	12	81
2-Feb	15	15	14	55	33	18	17	41	37	31	21	23	67	59	24	18	21	31	27	73	28	37	38	61	73
3-Feb	37	49	73	23	42	56	38	35	31	39	40	46	46	44	42	47	42	44	44	40	42	36	36	37	73
4-Feb	41	32	21	19	67	21	19	20	24	37	27	19	60	43	38	26	18	19	36	51	33	76	54	43	76
5-Feb	34	62	49	36	36	31	40	37	37	31	36	38	39	40	31	26	29	25	30	35	27	23	23	25	62
6-Feb	20	20	21	21	21	25	25	29	30	26	43	41	38	41	34	38	42	39	49	41	33	37	30	37	49
7-Feb	32	37	29	30	32	27	31	49	40	24	34	38	46	41	42	36	40	35	44	31	25	34	44	43	49
8-Feb	49	38	85	98	55	39	72	55	37	36	79	56	34	46	74	54	46	23	36	44	19	20	18	22	98
9-Feb	37	38	36	44	46	47	32	39	33	34	42	40	37	38	42	37	41	34	34	17	20	18	16	26	47
10-Feb	31	20	19	19	20	18	17	15	16	20	22	23	23	25	26	27	29	28	22	18	19	20	17	16	31
11-Feb	19	23	16	15	14	17	14	19	24	33	34	37	41	40	37	35	33	23	24	18	16	16	16	14	41
12-Feb	15	16	15	13	15	18	20	19	20	20	19	20	29	33	38	36	33	27	23	27	35	40	43	41	43
13-Feb	45	45	46	46	47	49	41	42	42	41	53	47	41	47	51	66	42	49	68	18	30	41	44	51	68
14-Feb	43	41	40	47	46	40	37	36	39	32	32	39	43	46	76	24	49	44	40	50	64	26	22	27	76
15-Feb	25	22	22	41	23	28	28	26	14	20	33	30	30	28	26	20	20	15	14	14	13	14	13	14	41
16-Feb	14	15	14	16	14	14	14	16	14	22	22	24	29	27	20	19	17	17	16	16	17	19	18	20	29
17-Feb	16	12	15	22	20	23	13	19	28	34	39	48	52	41	41	32	14	15	16	15	15	15	15	14	52
18-Feb	14	16	7	6	9	7	16	15	72	41	24	76	40	45	37	37	23	16	16	27	36	28	64	42	76
19-Feb	59	80	91	39	30	12	20	16	14	46	47	54	49	42	37	39	30	34	91	21	18	23	14	27	91
20-Feb	49	43	53	91	92	14	9	60	89	58	92	51	62	46	42	35	25	50	31	87	58	47	17	15	92
21-Feb	14	13	15	18	17	15	15	14	14	18	18	24	24	29	25	25	19	20	19	18	21	15	16	13	29
22-Feb	13	14	14	13	13	14	14	15	29	33	42	40	39	32	37	35	31	25	19	23	22	16	14	12	42
23-Feb	12	17	17	18	19	21	19	18	18	19	23	30	36	37	34	27	20	25	28	25	19	35	33	34	37
24-Feb	37	32	28	30	35	40	45	41	40	46	48	46	45	42	43	46	49	44	30	22	23	25	20	20	49
25-Feb	36	40	39	35	24	29	32	40	23	28	40	43	39	36	30	30	28	26	26	28	27	28	31	33	43
26-Feb	30	33	42	40	39	42	41	40	42	44	41	50	43	51	40	42	44	29	31	65	75	18	12	20	75
27-Feb	18	27	29	14	22	15	13	13	13	25	35	38	42	40	42	38	37	42	16	16	20	20	15	18	42
28-Feb	12	15	13	16	22	27	36	32	31	41	42	40	42	44	42	45	41	43	43	42	44	41	45	38	45
29-Feb	36	31	31	30	32	33	29	32	31	34	40	40	88	77	89	47	67	45	40	40	38	45	40	39	89
Diurnal Maximum																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS29 SURMONT 2 FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SURMONT2 (AMS29)
 FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	658	34	38	99.43	8.9	0	2.3	0
H2S (ppb) Average	658	34	38	99.43	0.7	0	0.3	0
THC(ppm) Average	574	31	122	86.93	2.4	-	2.2	-
NO2 (ppb) Average	657	35	39	99.43	21	0	6.6	-
NO (ppb) Average	657	35	39	99.43	7.2	-	2.3	-
NOX (ppb) Average	657	35	39	99.43	23.3	-	7.6	-
PM2.5 (ug/m3) Average	690	2	6	99.43	85.2	1	14.7	0
Temperature 2 m (C) Average	696	0	0	100	7.6	-	2.2	-
Relative Humidity (%) Average	696	0	0	100	98.2	-	91.2	-
Wind Speed 10 m (km/h) Average	682	0	14	97.99	16	-	10	-
Wind Direction 10 m (deg) Average	682	0	14	97.99	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SURMONT 2 (AMS29)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	658	0.62	1	-	0	0	0.1	0.3	0.6	1.7	8.9
H2S (ppb) Average	658	0.1	0.1	-	0	0	0	0.1	0.1	0.2	0.7
THC (ppm) Average	574	2.02	0.1	-	1.8	1.9	1.9	2	2.1	2.2	2.4
NO2 (ppb) Average	657	2.8	2.7	-	0.1	0.5	0.9	1.8	3.7	6.7	21
NO (ppb) Average	657	0.62	1	-	0	0	0.1	0.2	0.8	2	7.2
NOX (ppb) Average	657	3.43	3.1	-	0.2	0.6	1.1	2.4	4.8	7.8	23.3
PM2.5 (ug/m3) Average	690	4.3	7	-	0.2	0.8	1.4	2.7	4.6	7.4	85.2
Temperature 2 m (C) Average	696	-8.83	7.9	-	-30.2	-18.2	-13.9	-8.4	-3.4	1.3	7.6
Relative Humidity (%) Average	696	71.59	16.4	-	24.2	47.3	60.6	75.8	83.8	89.6	98.2
Wind Speed 10 m (km/h) Average	682	5.5	4	-	0	1	2	5	8	11	16
Wind Direction 10 m (deg) Average	682	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SURMONT 2 (AMS29)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
AIR QUALITY ANALYZERS	07 Feb 2024 11:00	07 Feb 2024 14:00	4	Station power failure
THC	23 Feb 2024 02:00	26 Feb 2024 12:00	83	Unstable Operation - faulty zero-air generator
THC	26 Feb 2024 13:00	26 Feb 2024 16:00	4	Maintenance - zero-air generator replaced
Wind Speed, Wind Direction	02 Feb 2024 08:00	02 Feb 2024 08:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction	09 Feb 2024 01:00	09 Feb 2024 01:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction	15 Feb 2024 00:00	15 Feb 2024 04:00	5	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction	19 Feb 2024 06:00	19 Feb 2024 06:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction	19 Feb 2024 09:00	19 Feb 2024 09:00	1	Flat line in sensor output signal - Sensor frozen
Wind Speed, Wind Direction	23 Feb 2024 23:00	24 Feb 2024 03:00	5	Flat line in sensor output signal - Sensor frozen



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

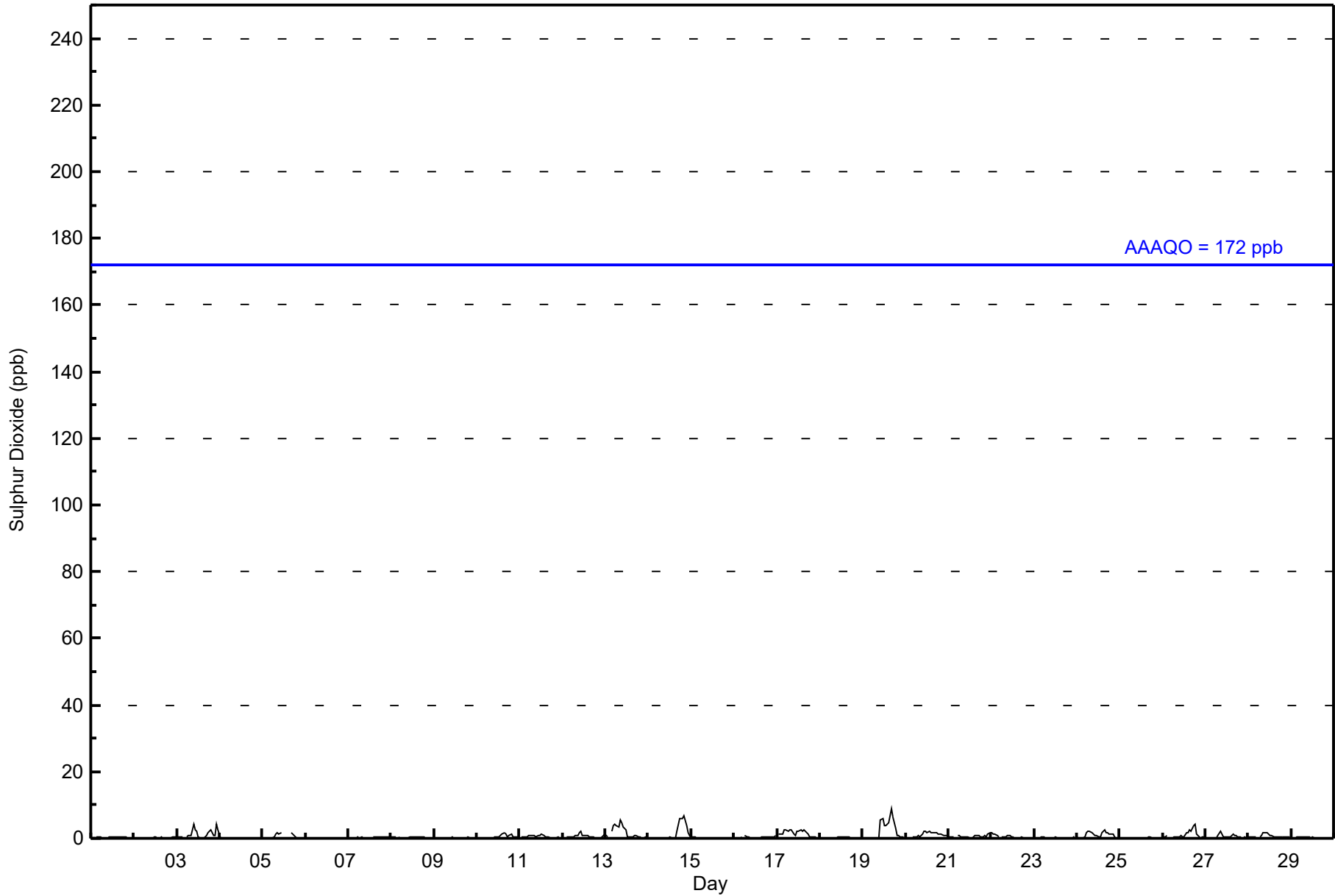
Surmont 2 - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														696							
Maximum Value: 8.9 ppb on Feb 19 17:00				Maximum Daily Average: 2.3 ppb on Feb 19		Hours of Data: 658														658							
Minimum Value: 0.0 ppb on Feb 2 06:00				Minimum Daily Average: 0.0 ppb on Feb 4		Hours of Missing Data: 38														38							
Maximum Diurnal Average: 1.0 ppb at hour 17				Minimum Diurnal Average: 0.3 ppb at hour 1		Hours of Calibration: 34														34							
Monthly Average: 0.62 ppb				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.3 Q ₃ = 0.6 P ₉₀ = 1.7 P ₉₉ = 5.9		Percent Operational Time: 99.4														99.4							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.2	0.2	Z	0.3	0.3	0.2	0.1	0.1	0.2	0.1	0.3	0.5	0.6	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.3	0.6	
2-Feb	0.1	0.2	0.1	Z	0.1	0.0	0.0	0.1	0.0	0.1	0.2	0.3	0.4	0.2	0.2	0.3	0.1	0.0	0.0	0.1	0.0	0.5	0.3	0.3	0.2	0.5	
3-Feb	0.5	0.4	0.4	0.3	Z	0.4	0.7	0.6	1.0	4.2	2.4	2.0	0.3	0.0	0.1	0.1	0.9	1.5	2.1	2.6	1.0	0.8	4.0	2.6	1.3	4.2	
4-Feb	0.2	0.0	0.0	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.2	
5-Feb	Z	0.1	0.2	0.1	0.1	0.1	0.3	1.2	1.7	1.2	1.9	C	C	C	C	C	1.6	0.8	0.2	0.2	0.2	0.1	0.1	0.0	0.6	1.9	
6-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	
7-Feb	0.1	0.1	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	PF	PF	PF	PF	0.4	0.3	0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.3	0.3	0.4
8-Feb	0.3	0.3	0.3	Z	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.5	0.6	0.5	0.5	0.5	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.3	0.6	
9-Feb	0.1	0.1	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.4	0.2	0.1	0.1	0.1	0.1	0.4	
10-Feb	0.1	0.1	0.2	0.2	0.1	Z	0.2	0.2	0.2	0.1	0.3	0.3	0.4	0.8	1.2	1.6	1.2	0.6	1.0	1.3	0.4	0.4	0.3	0.4	0.5	1.6	
11-Feb	Z	0.4	0.3	0.3	0.5	0.7	1.0	1.0	0.9	0.6	0.8	0.9	1.1	0.8	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.3	0.2	0.1	0.5	1.1	
12-Feb	0.4	Z	0.5	0.2	0.3	0.6	0.5	0.8	0.8	1.7	1.9	0.6	0.7	0.7	0.6	0.4	0.3	0.2	0.0	0.0	0.1	0.0	0.5	1.5	0.6	1.9	
13-Feb	0.9	0.5	Z	1.9	3.7	4.0	3.7	3.4	5.6	4.8	3.4	2.4	0.6	0.6	0.6	0.4	0.8	0.8	0.3	0.3	0.1	0.0	0.4	0.2	1.7	5.6	
14-Feb	0.1	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.2	0.1	0.0	0.1	0.0	2.1	5.9	6.0	6.7	3.6	1.6	0.9	1.5	6.7
15-Feb	0.5	0.3	0.3	0.1	Z	0.2	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	
16-Feb	0.0	0.1	0.0	0.1	0.4	Z	0.8	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.4	0.4	0.3	0.2	0.6	0.8	0.3	0.8	
17-Feb	Z	1.4	1.4	1.5	2.4	2.4	2.1	2.6	2.6	1.4	1.0	1.9	2.3	2.3	1.9	2.6	2.2	1.1	0.6	0.4	0.2	0.3	0.2	0.2	1.5	2.6	
18-Feb	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.2	0.3	0.3	0.4	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.4	
19-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.0	0.0	0.0	0.1	5.6	6.0	3.7	3.9	4.6	6.7	8.9	6.4	2.9	1.0	0.8	0.5	0.2	0.2	2.3	8.9	
20-Feb	0.3	0.1	0.1	Z	0.4	0.4	0.6	0.7	0.6	1.4	2.2	2.0	1.9	2.1	1.8	1.6	1.6	1.7	1.5	1.3	1.1	0.8	0.8	0.6	1.1	2.2	
21-Feb	0.5	0.4	0.5	0.5	Z	0.7	0.8	0.4	0.4	0.6	0.3	0.4	0.1	0.2	0.3	0.7	0.9	0.8	0.6	0.6	0.6	0.3	1.1	1.6	0.6	1.6	
22-Feb	1.5	1.4	1.2	0.7	0.3	Z	0.4	0.3	0.3	0.9	0.9	0.6	0.3	0.2	0.1	0.1	0.2	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.4	1.5	
23-Feb	Z	0.1	0.1	0.1	0.3	0.3	0.1	0.2	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.1	0.3	
24-Feb	0.2	Z	0.0	0.0	0.3	1.7	2.0	2.3	1.7	1.1	1.0	0.6	0.4	0.4	1.9	2.6	1.7	1.6	1.4	1.4	1.1	0.4	0.2	0.0	1.0	2.6	
25-Feb	0.0	0.1	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3	
26-Feb	0.3	0.4	0.7	Z	0.2	0.2	0.5	0.5	0.5	0.4	0.9	0.4	0.4	1.9	1.6	2.3	2.3	3.6	4.1	1.2	0.3	0.2	0.4	0.4	1.0	4.1	
27-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.0	1.0	2.3	1.3	0.5	0.4	0.4	0.4	0.6	1.1	1.0	0.8	0.3	0.3	0.2	0.2	0.2	0.2	0.5	2.3	
28-Feb	0.2	0.3	0.2	0.3	0.3	Z	0.5	0.7	1.8	1.7	1.7	1.4	0.9	0.8	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.6	1.8	
29-Feb	Z	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.2	0.3	
		0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.8	1.0	0.8	0.6	0.6	0.7	0.9	1.0	1.0	0.8	0.7	0.5	0.3	0.4	0.4	Diurnal Average	
		1.5	1.4	1.4	1.9	3.7	4.0	3.7	3.4	5.6	4.8	5.6	6.0	3.7	3.9	4.6	6.7	8.9	6.4	5.9	6.0	6.7	3.6	4.0	2.6	Diurnal Maximum	
Z - zerspan		C - Calibration		PF - Power Failure																							
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 172 ppb		24-hr 48 ppb																							



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Surmont 2 - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Surmont 2 - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	658	100.00	100.00
11 - 20	0	0.00	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 658

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Surmont 2 - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	20	23	4	5	5	65	50	11	10	26	89	71	106	56	44	60	645
11 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	20	23	4	5	5	65	50	11	10	26	89	71	106	56	44	60	645

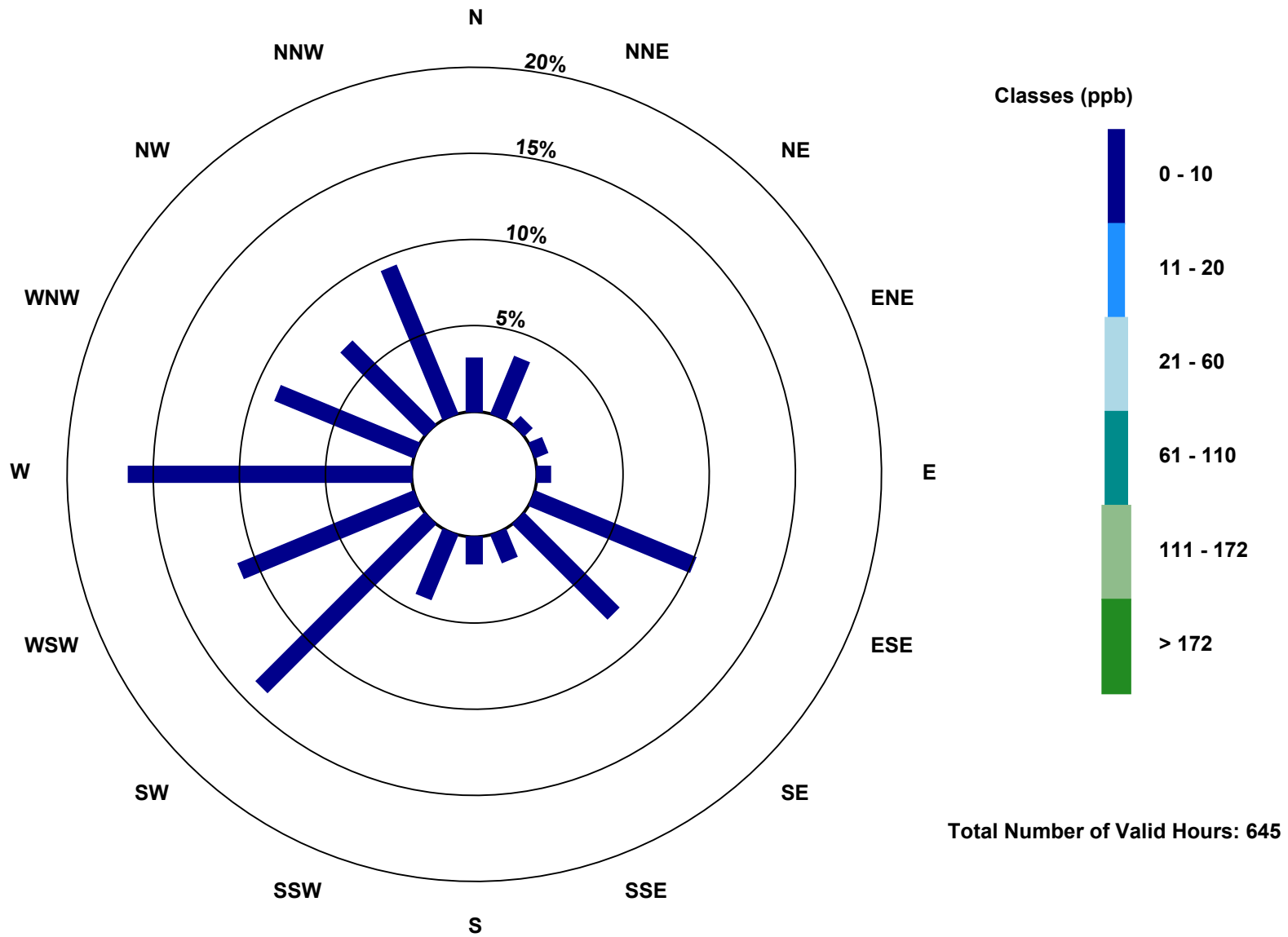
Total Number of Valid Hours: 645

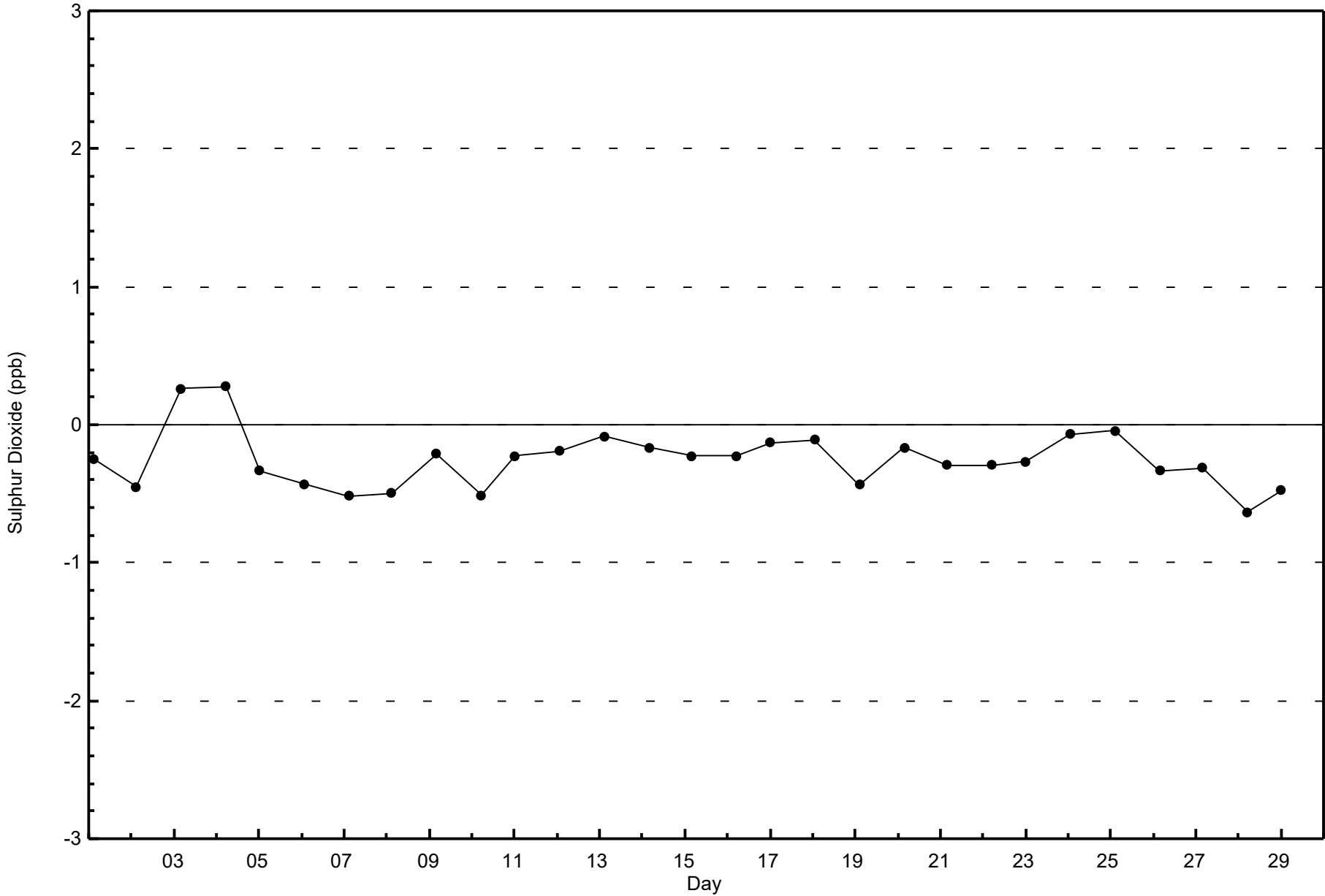
Total Number of Hours: 696

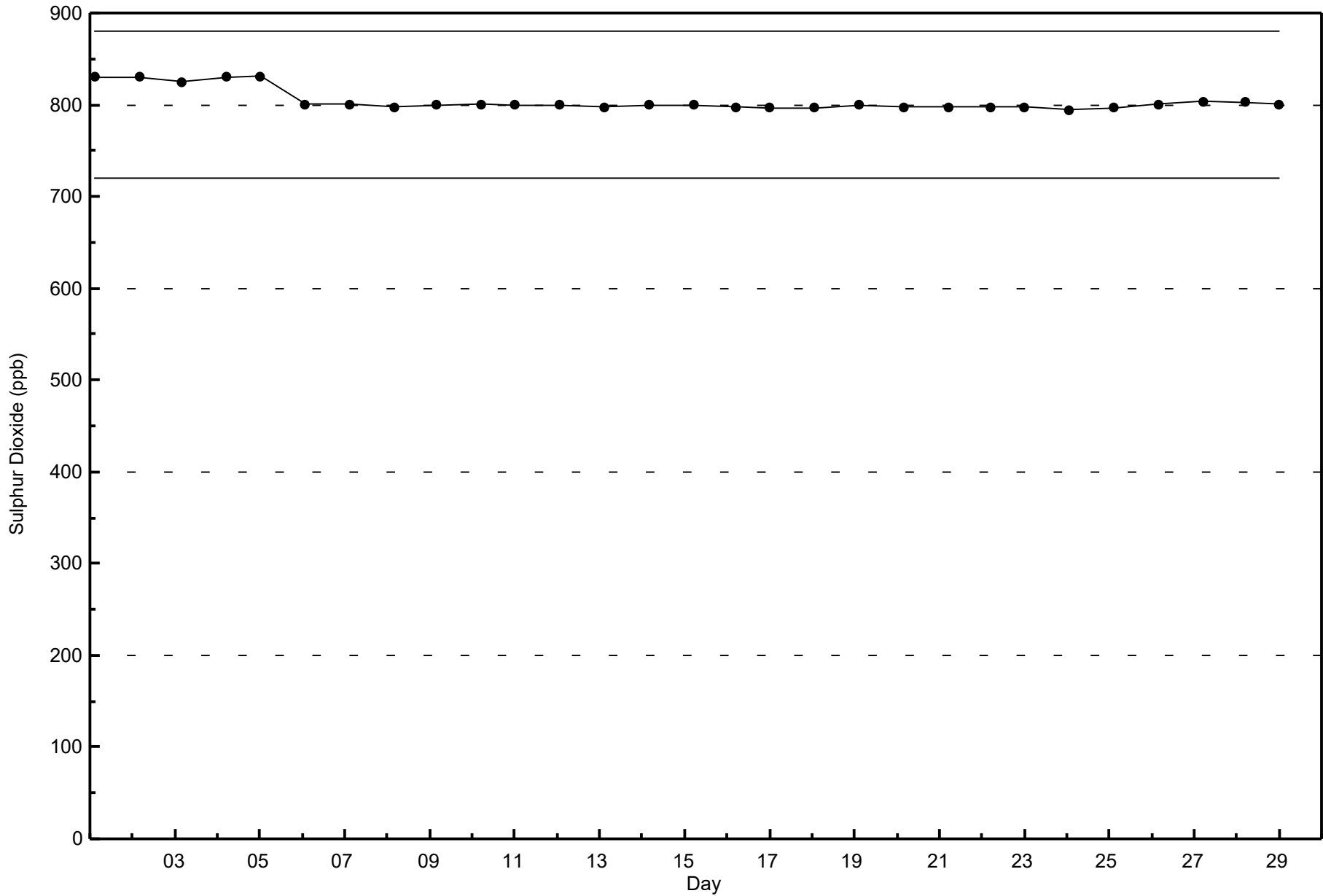


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Surmont 2

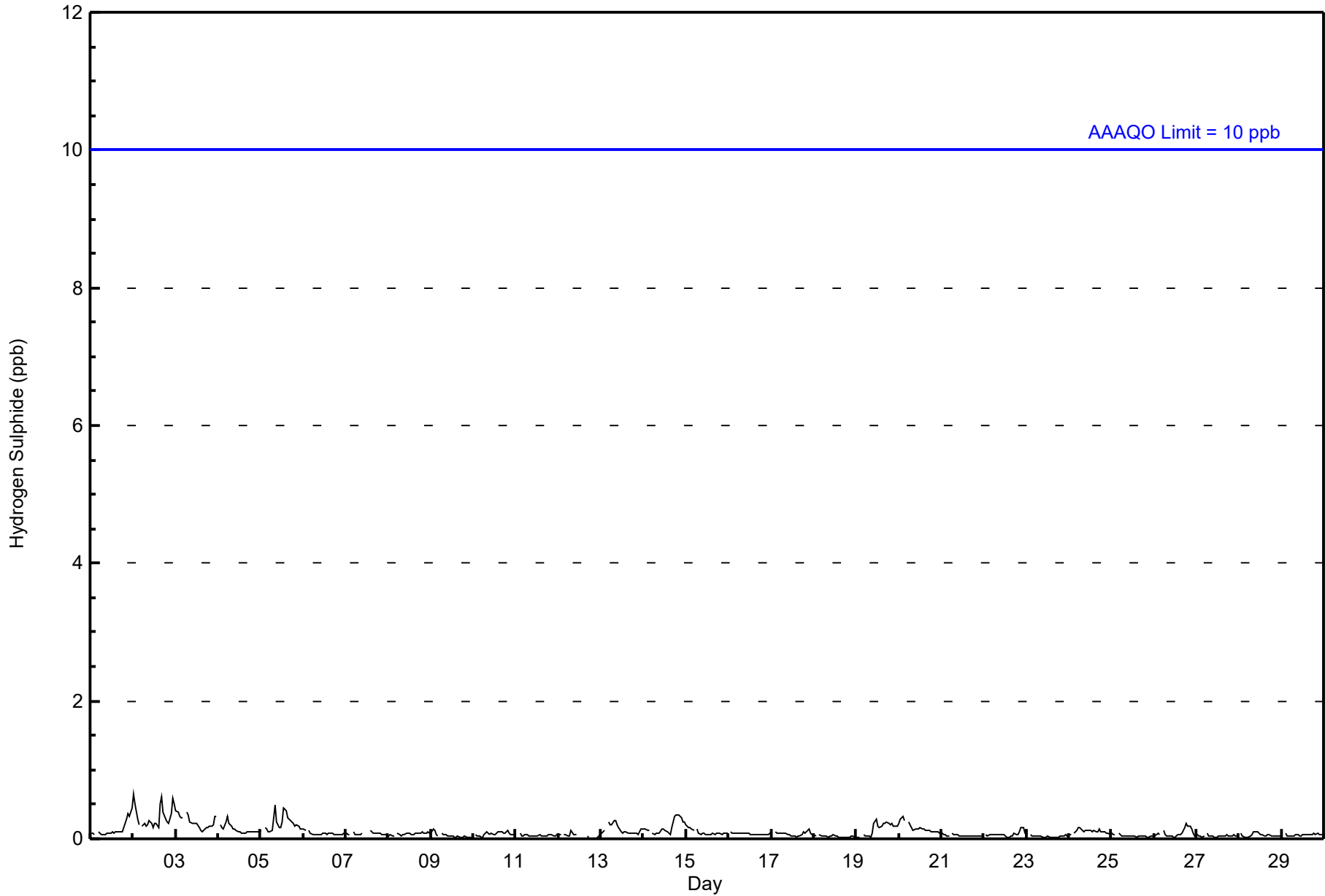








Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:																696				
Maximum Value: 0.7 ppb on Feb 2 01:00		Maximum Daily Average: 0.3 ppb on Feb 2																Hours of Data:		658						
Minimum Value: 0.0 ppb on Feb 12 20:00		Minimum Daily Average: 0.0 ppb on Feb 23																Hours of Missing Data:		38						
Maximum Diurnal Average: 0.1 ppb at hour 2		Minimum Diurnal Average: 0.1 ppb at hour 15																Hours of Calibration:		34						
Monthly Average: 0.10 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.1 P ₉₀ = 0.2 P ₉₉ = 0.5																Percent Operational Time:		99.4						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.3	0.4	0.1	0.4
2-Feb	0.7	0.5	0.3	0.2	Z	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.5	0.6	0.4	0.3	0.3	0.2	0.4	0.6	0.5	0.3	0.7
3-Feb	0.4	0.4	0.3	0.3	0.3	Z	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.4
4-Feb	Z	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
5-Feb	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.3	0.5	0.2	0.2	0.2	0.3	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.5
6-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
7-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	PF	PF	PF	PF	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
8-Feb	0.0	0.1	0.0	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
9-Feb	0.1	0.1	0.1	0.1	0.0	Z	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
10-Feb	Z	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
11-Feb	0.1	Z	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
12-Feb	0.1	0.1	Z	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
13-Feb	0.1	0.1	0.1	Z	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
14-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.4
15-Feb	0.2	0.2	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
16-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
17-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
18-Feb	0.1	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
19-Feb	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
20-Feb	0.2	0.3	0.3	0.3	Z	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
21-Feb	0.1	0.1	0.1	0.0	0.0	Z	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
22-Feb	Z	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2
23-Feb	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1
24-Feb	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
25-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
26-Feb	0.0	0.1	0.1	0.1	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.2
27-Feb	0.1	0.0	0.0	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
28-Feb	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
29-Feb	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.1																								Diurnal Average		
0.7																								Diurnal Maximum		
Z - zerspan C - Calibration PF - Power Failure																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																										





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Surmont 2 - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	658	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 658

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Surmont 2 - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	20	23	4	5	5	64	51	11	11	28	85	71	101	55	46	65	645
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	20	23	4	5	5	64	51	11	11	28	85	71	101	55	46	65	645

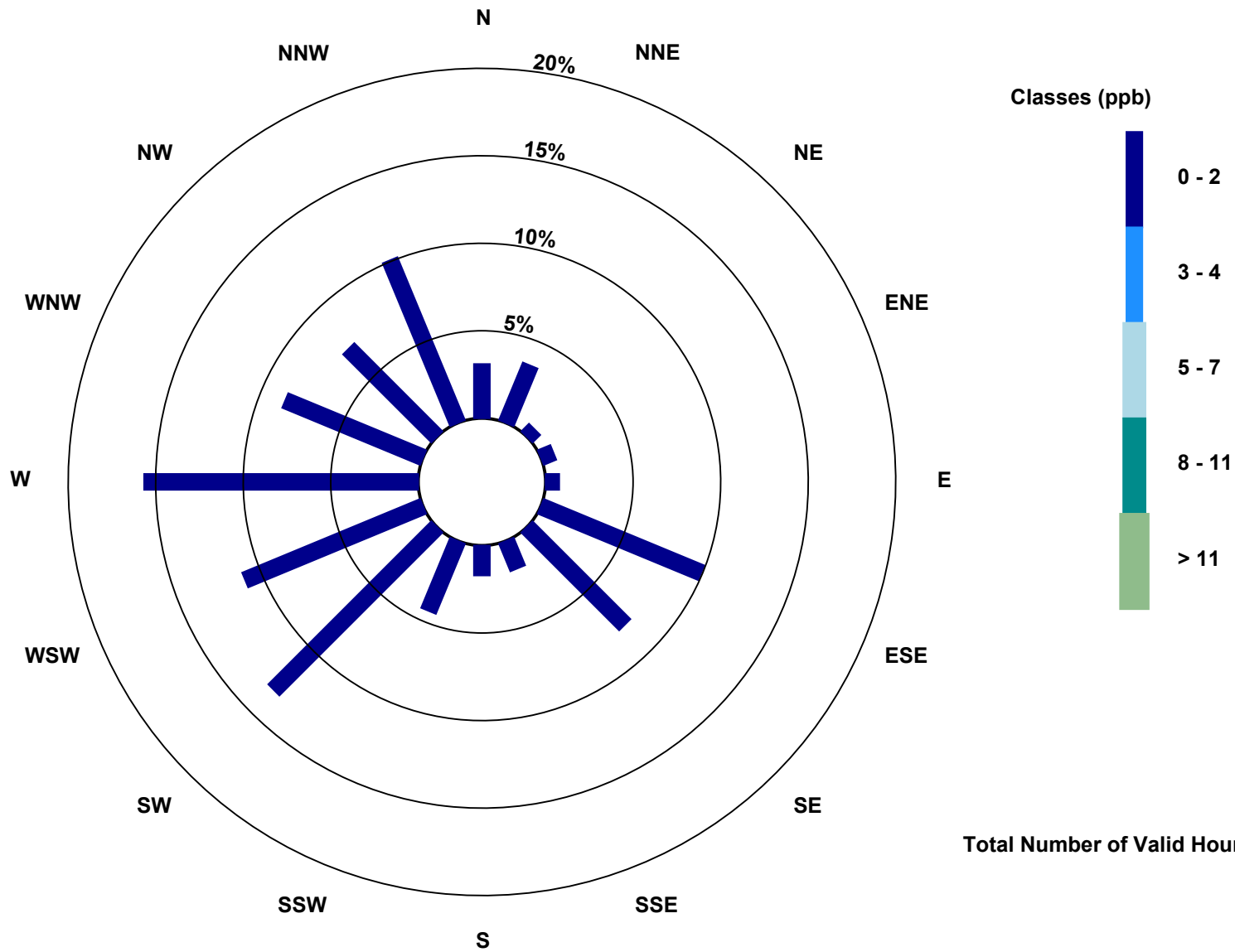
Total Number of Valid Hours: 645

Total Number of Hours: 696

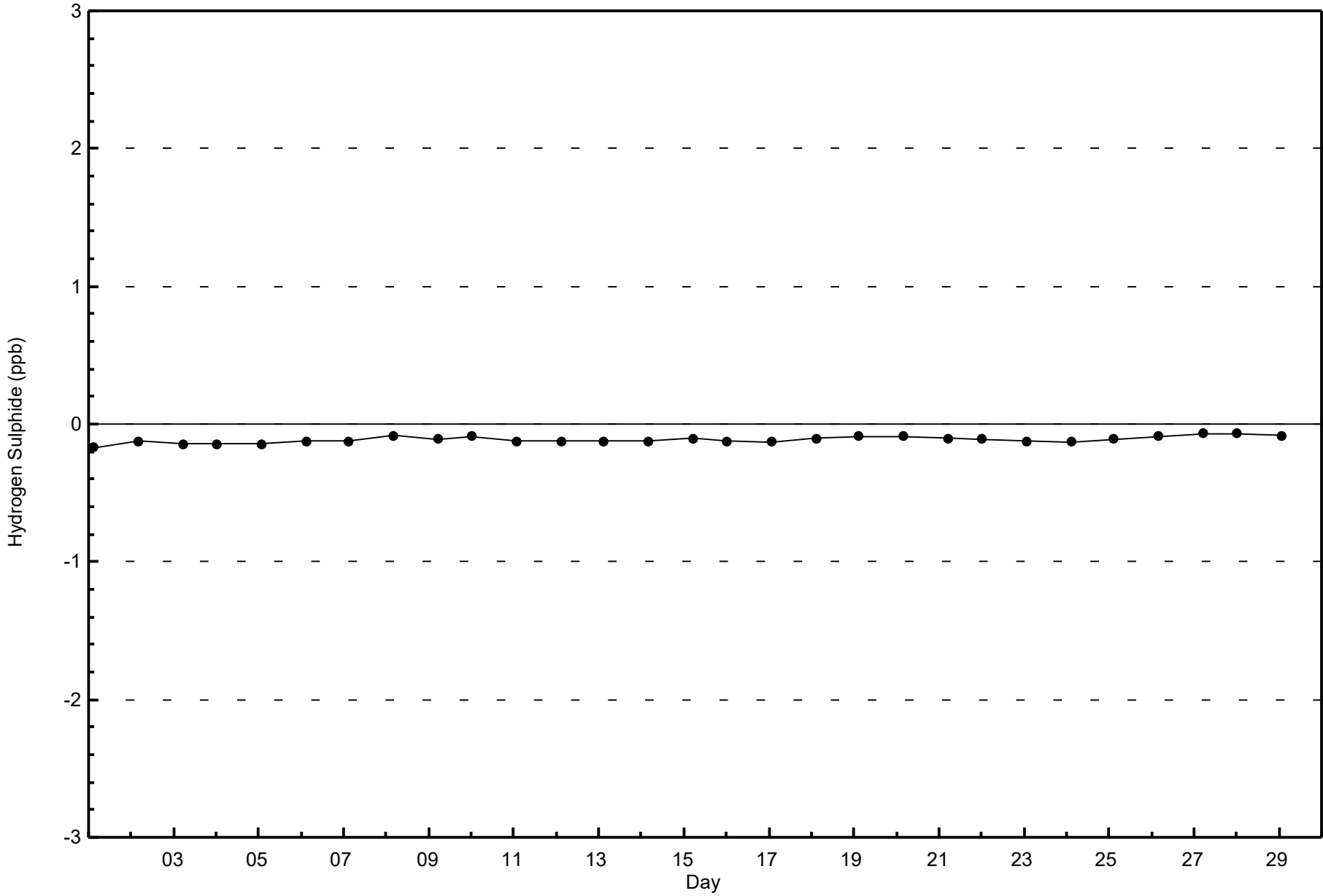


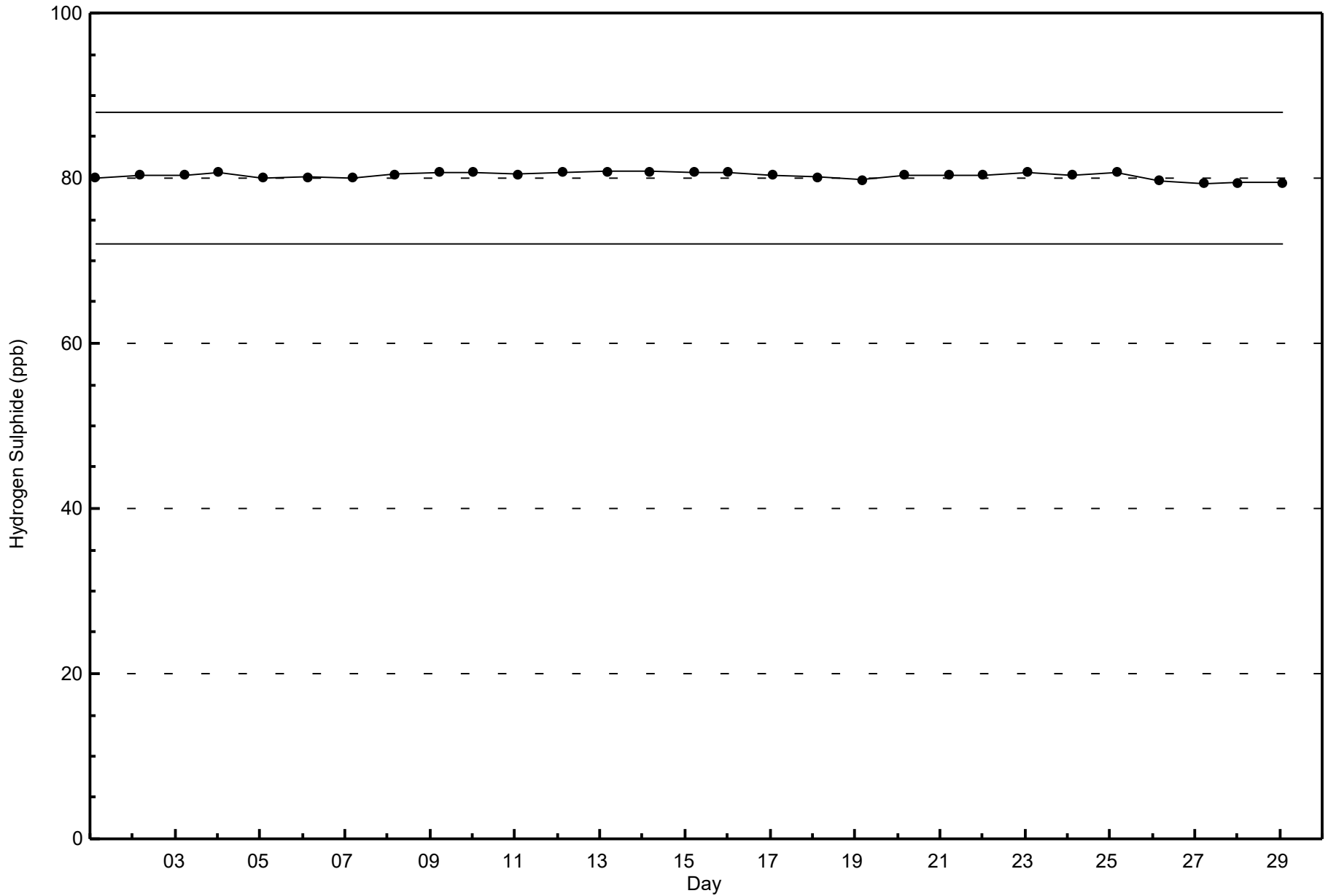
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Surmont 2



Total Number of Valid Hours: 645







Wood Buffalo Environmental Association

Summary of Hour Averages

Total Hydrocarbons (THC) - ppm

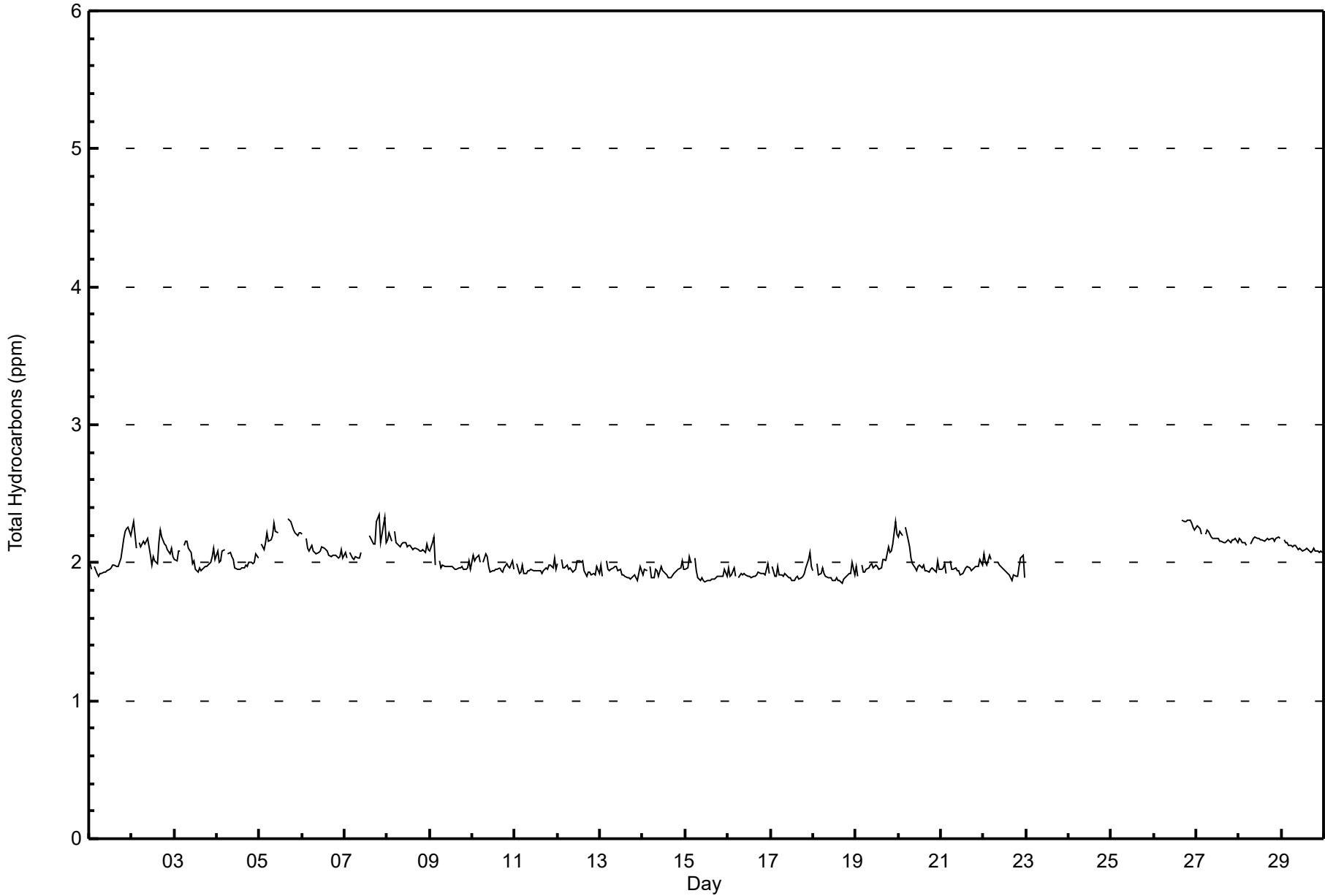
Surmont 2 - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696						
Maximum Value: 2.4 ppm on Feb 7 20:00		Maximum Daily Average: 2.2 ppm on Feb 5		Hours of Data:														574								
Minimum Value: 1.8 ppm on Feb 18 17:00		Minimum Daily Average: 1.9 ppm on Feb 18		Hours of Missing Data:														122								
Maximum Diurnal Average: 2.1 ppm at hour 23		Minimum Diurnal Average: 2.0 ppm at hour 14		Hours of Calibration:														31								
Monthly Average: 2.02 ppm		Percentiles: P ₁ = 1.9 P ₁₀ = 1.9 Q ₁ = 1.9 Median = 2.0 Q ₃ = 2.1 P ₉₀ = 2.2 P ₉₉ = 2.3		Percent Operational Time:														86.9								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.0	1.9	Z	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.3	2.2	2.0	2.3	
2-Feb	2.2	2.3	2.1	Z	2.1	2.1	2.2	2.1	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.3
3-Feb	2.0	2.0	2.1	2.1	Z	2.1	2.2	2.2	2.1	2.1	2.0	2.0	2.0	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.2	
4-Feb	2.1	2.0	2.0	2.1	2.1	Z	2.1	2.1	2.1	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	
5-Feb	Z	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.2	C	C	C	C	C	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	
6-Feb	2.2	Z	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.2	
7-Feb	2.1	2.0	Z	2.1	2.0	2.0	2.0	2.0	2.0	2.1	PF	PF	PF	PF	2.2	2.2	2.1	2.1	2.3	2.4	2.1	2.2	2.3	2.1	2.4	
8-Feb	2.2	2.2	2.2	Z	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	
9-Feb	2.1	2.2	2.2	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.2	
10-Feb	2.0	2.0	2.0	2.1	2.0	Z	2.0	2.1	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	1.9	2.0	2.1	
11-Feb	Z	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
12-Feb	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	
13-Feb	2.0	1.9	Z	2.0	2.0	1.9	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	
14-Feb	1.9	2.0	1.9	Z	2.0	1.9	1.9	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	
15-Feb	2.0	2.0	2.0	2.0	Z	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.0	
16-Feb	2.0	1.9	1.9	2.0	1.9	Z	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	2.0	
17-Feb	Z	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.0	2.1	
18-Feb	1.9	Z	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	
19-Feb	2.0	1.9	Z	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.3	2.2	2.0	2.3	
20-Feb	2.2	2.2	2.2	Z	2.3	2.2	2.1	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	1.9	1.9	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.3	
21-Feb	2.0	2.0	2.0	1.9	Z	2.0	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
22-Feb	2.1	2.0	2.0	2.1	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	1.9	2.1	
23-Feb	Z	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	--
24-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	--
25-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	--	--
26-Feb	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	M	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3
27-Feb	2.3	2.3	2.3	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.3
28-Feb	2.2	2.2	2.1	2.1	2.1	Z	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
29-Feb	Z	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
		2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	Diurnal Average		
		2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.2	Diurnal Maximum	
Z - zerspan		C - Calibration				M - Maintenance				UO - Unstable Operation				PF - Power Failure												



Wood Buffalo Environmental Association
Hourly Averages

Total Hydrocarbons (THC) - ppm
Surmont 2 - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Surmont 2 - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	366	63.76	63.76
2.1 - 3.0	208	36.24	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 574

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Total Hydrocarbons (THC) - ppm
Surmont 2 - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	7	7	1	2	4	19	29	7	8	16	49	42	74	37	28	29	359
2.1 - 3.0	4	1	3	1	1	45	20	4	2	7	38	19	23	16	14	8	206
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	11	8	4	3	5	64	49	11	10	23	87	61	97	53	42	37	565

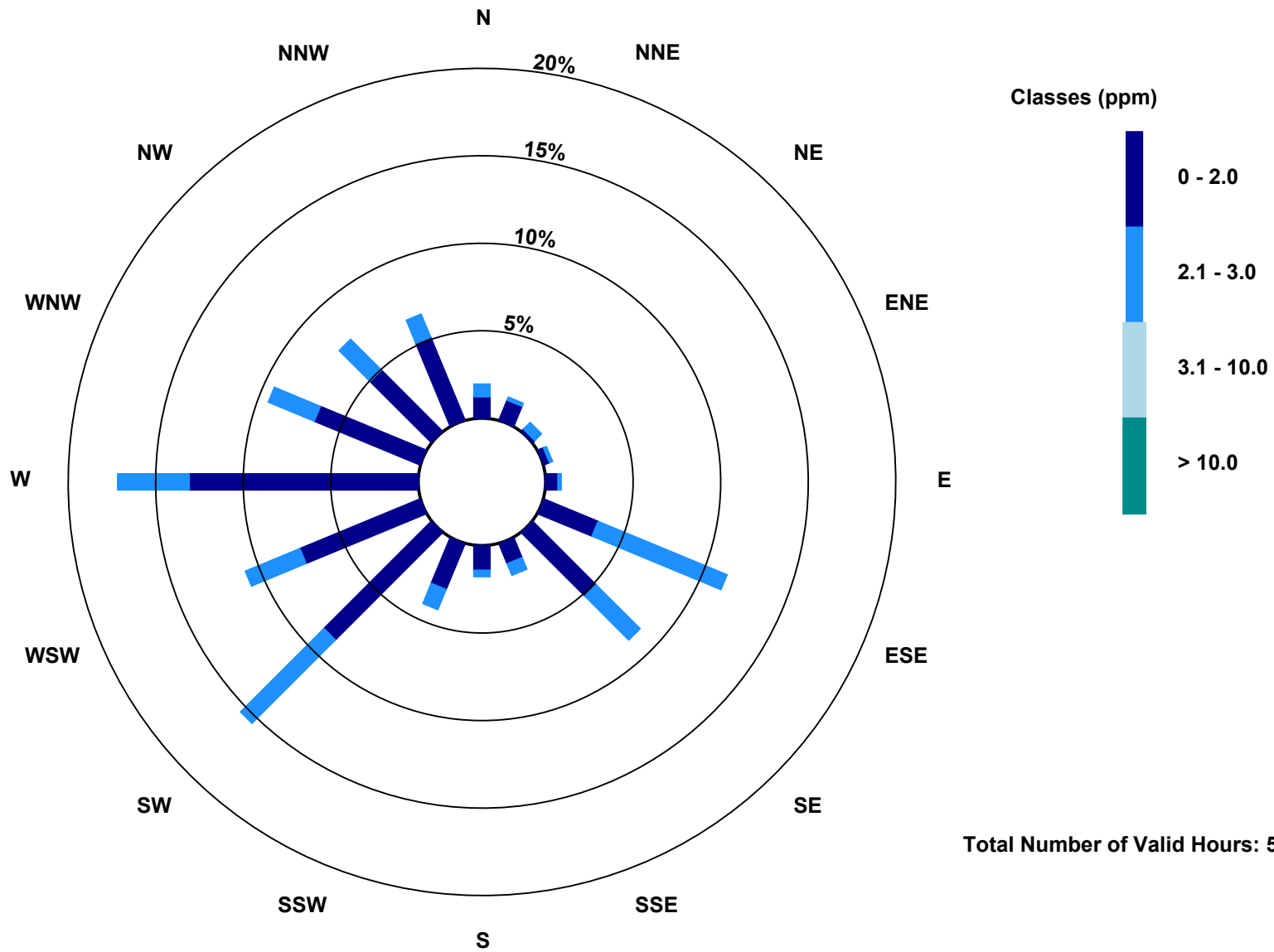
Total Number of Valid Hours: 565

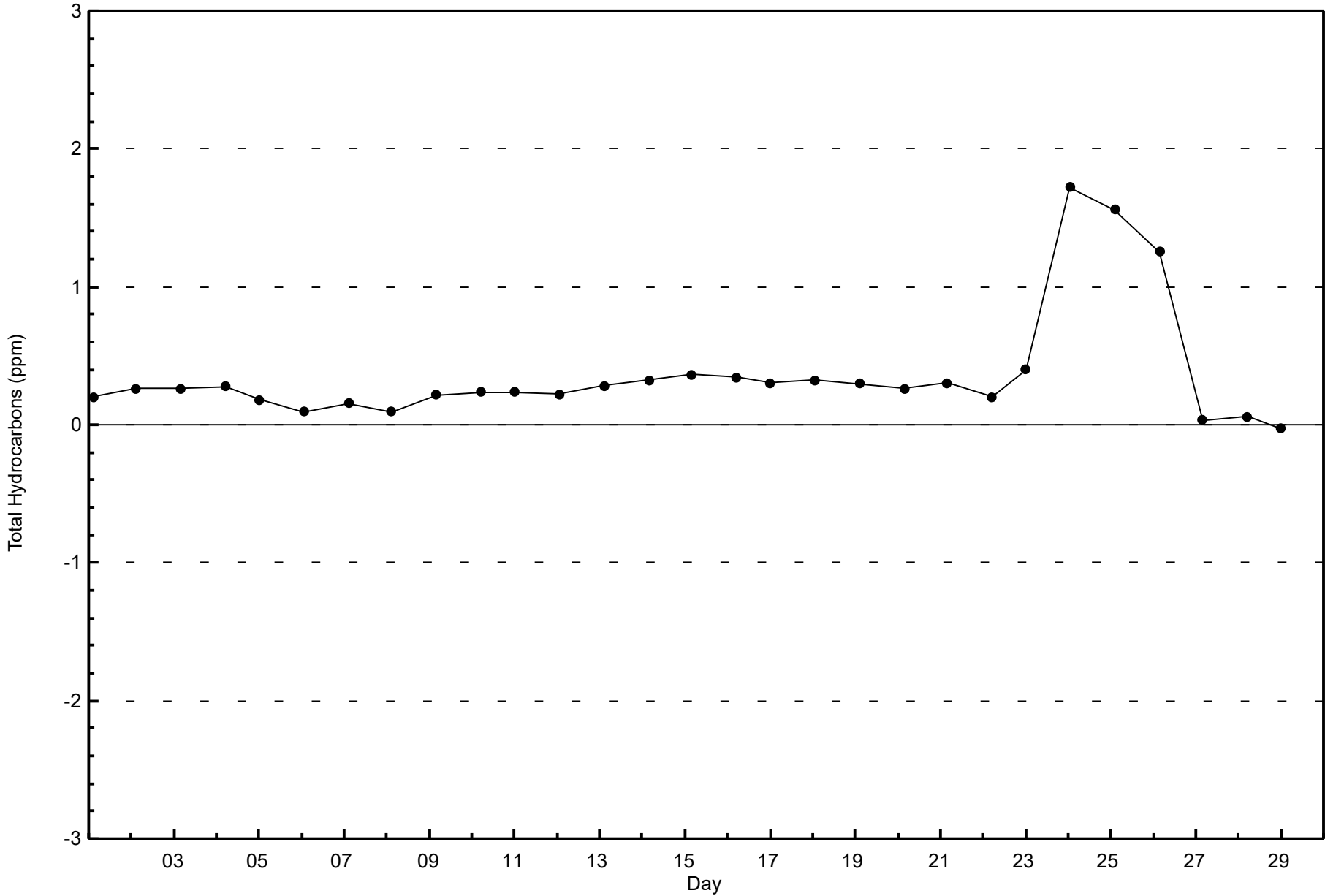
Total Number of Hours: 696

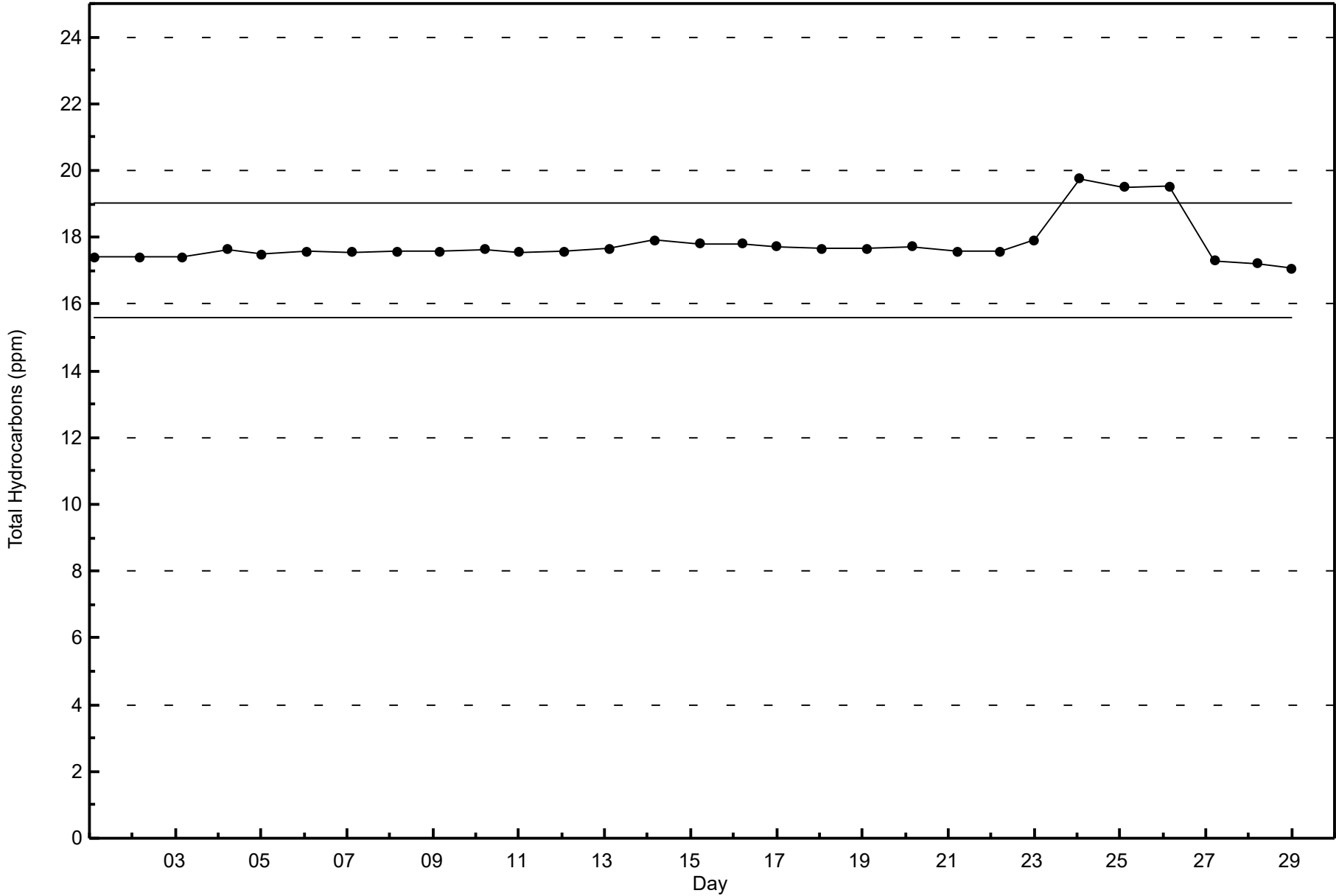


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Surmont 2









Wood Buffalo Environmental Association

Summary of Hour Averages

Nitric Oxide (NO) - ppb

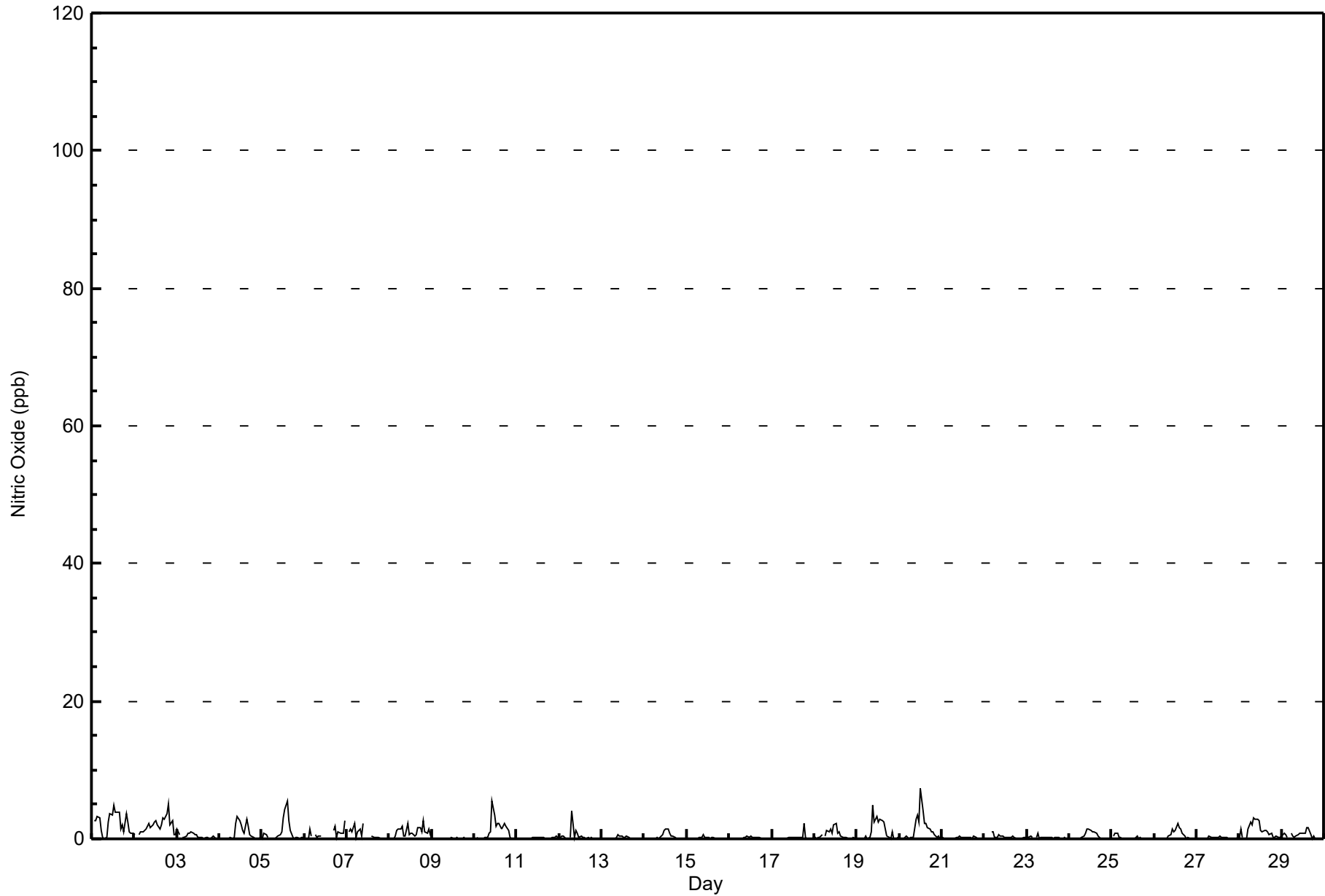
Surmont 2 - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696							
Maximum Value: 7.2 ppb on Feb 20 13:00		Maximum Daily Average: 2.3 ppb on Feb 1														Hours of Data:		657									
Minimum Value: 0.0 ppb on Feb 16 22:00		Minimum Daily Average: 0.1 ppb on Feb 9														Hours of Missing Data:		39									
Maximum Diurnal Average: 1.3 ppb at hour 13		Minimum Diurnal Average: 0.2 ppb at hour 1														Hours of Calibration:		35									
Monthly Average: 0.62 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.8 P ₉₀ = 2.0 P ₉₉ = 4.2														Percent Operational Time:		99.4									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	Z	2.7	2.7	3.3	3.1	1.3	0.2	0.1	0.2	2.5	3.7	3.5	4.9	3.9	3.9	3.8	1.5	2.1	0.9	3.7	2.4	1.0	0.8	0.8	2.3	4.9	
2-Feb	0.6	Z	0.6	1.0	1.1	1.0	1.4	1.9	2.2	1.6	2.1	2.5	2.7	2.0	1.5	2.1	3.0	2.8	3.7	5.1	2.0	2.7	0.5	0.5	1.9	5.1	
3-Feb	1.4	0.7	Z	0.2	0.2	0.3	0.8	0.9	0.9	0.9	0.6	0.7	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.1	0.1	0.1	0.4	1.4	
4-Feb	0.1	0.1	0.1	Z	0.0	0.1	0.2	0.0	0.2	2.3	3.3	2.7	2.0	1.2	0.9	2.9	1.8	0.5	0.4	0.1	0.0	0.0	0.0	0.1	0.8	3.3	
5-Feb	0.0	0.7	0.7	0.2	Z	0.0	0.0	0.1	0.1	0.3	0.5	1.0	3.1	4.3	5.5	2.6	1.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.9	5.5	
6-Feb	0.0	0.0	0.1	1.4	0.5	Z	0.7	0.2	0.4	0.4	C	C	C	C	C	C	1.3	1.8	0.3	1.0	0.8	0.8	0.8	2.6	--	2.6	
7-Feb	Z	1.1	1.5	1.0	2.1	0.3	1.0	1.5	0.4	2.2	PF	PF	PF	PF	0.5	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.7	2.2	
8-Feb	0.1	Z	0.1	0.4	1.3	1.4	1.4	1.8	0.4	0.5	2.2	0.5	0.8	0.8	0.5	0.6	1.6	1.7	1.1	2.5	1.1	0.7	1.5	0.5	1.0	2.5	
9-Feb	0.1	0.1	Z	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
10-Feb	0.1	0.0	0.1	Z	0.1	0.0	0.1	0.2	0.9	1.0	5.5	3.5	1.9	2.2	2.2	1.4	1.9	2.3	1.9	1.2	0.1	0.1	0.1	0.1	1.2	5.5	
11-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.3	0.1	0.4	
12-Feb	0.1	0.3	0.5	0.1	0.0	Z	0.1	4.1	0.3	1.3	0.8	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.4	4.1	
13-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.5	0.4	0.4	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.5	
14-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.7	1.3	1.4	1.3	0.8	0.5	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.3	1.4	
15-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.1	0.7	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.7	
16-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	
17-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	2.3	0.3	0.1	0.1	0.1	0.1	0.2	2.3	
18-Feb	0.3	0.1	0.1	0.2	0.6	Z	0.3	1.2	1.0	1.5	0.7	1.9	2.2	0.7	1.0	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.0	0.6	2.2	
19-Feb	Z	0.0	0.0	0.1	0.0	0.3	0.1	0.2	1.0	4.8	2.4	3.2	2.5	2.8	2.7	2.4	1.4	0.4	0.1	0.1	1.1	0.0	0.0	0.2	1.1	4.8	
20-Feb	0.1	Z	0.1	0.2	0.5	0.1	0.2	0.1	0.3	2.8	3.5	2.5	7.2	4.0	2.2	2.3	1.6	1.5	1.0	1.1	0.6	0.3	0.3	0.0	1.4	7.2	
21-Feb	0.2	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.5	0.2	0.1	0.1	0.1	0.0	0.1	0.5	
22-Feb	0.0	0.0	0.0	Z	1.0	1.0	0.2	0.3	0.7	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	1.0	
23-Feb	0.2	0.2	0.5	0.2	Z	0.2	0.8	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.8	
24-Feb	0.1	0.0	0.0	0.0	0.0	Z	0.1	0.2	0.3	0.9	1.4	1.5	1.2	1.0	0.9	0.7	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.4	1.5	
25-Feb	Z	0.5	0.9	0.8	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.4	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.9	
26-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.6	1.4	1.0	1.3	2.2	1.6	1.4	0.9	0.4	0.1	0.1	0.1	0.1	0.0	0.0	0.5	2.2	
27-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.3	0.2	0.3	0.2	0.1	0.1	0.4	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.4
28-Feb	0.1	1.4	0.1	Z	0.1	1.4	2.5	2.0	3.0	2.9	2.9	2.6	1.2	1.0	1.2	1.2	1.0	0.7	0.9	0.2	0.1	0.5	0.2	0.2	1.2	3.0	
29-Feb	0.4	0.8	0.7	0.3	Z	0.7	0.4	0.2	0.4	0.7	0.9	0.8	0.8	0.9	1.6	1.6	0.6	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.5	1.6	
		0.2	0.4	0.4	0.4	0.5	0.3	0.4	0.5	0.5	1.0	1.3	1.2	1.3	1.1	1.0	0.9	0.7	0.6	0.5	0.6	0.3	0.2	0.2	0.2	Diurnal Average	
		1.4	2.7	2.7	3.3	3.1	1.4	2.5	4.1	3.0	4.8	5.5	3.5	7.2	4.3	5.5	3.8	3.0	2.8	3.7	5.1	2.4	2.7	1.5	2.6	Diurnal Maximum	
Z - zerospan		C - Calibration				PF - Power Failure																					



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Surmont 2 - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitric Oxide (NO) - ppb
Surmont 2 - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	657	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 657

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Surmont 2 - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	19	23	4	5	5	60	50	11	12	27	85	74	104	56	44	65	644
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	19	23	4	5	5	60	50	11	12	27	85	74	104	56	44	65	644

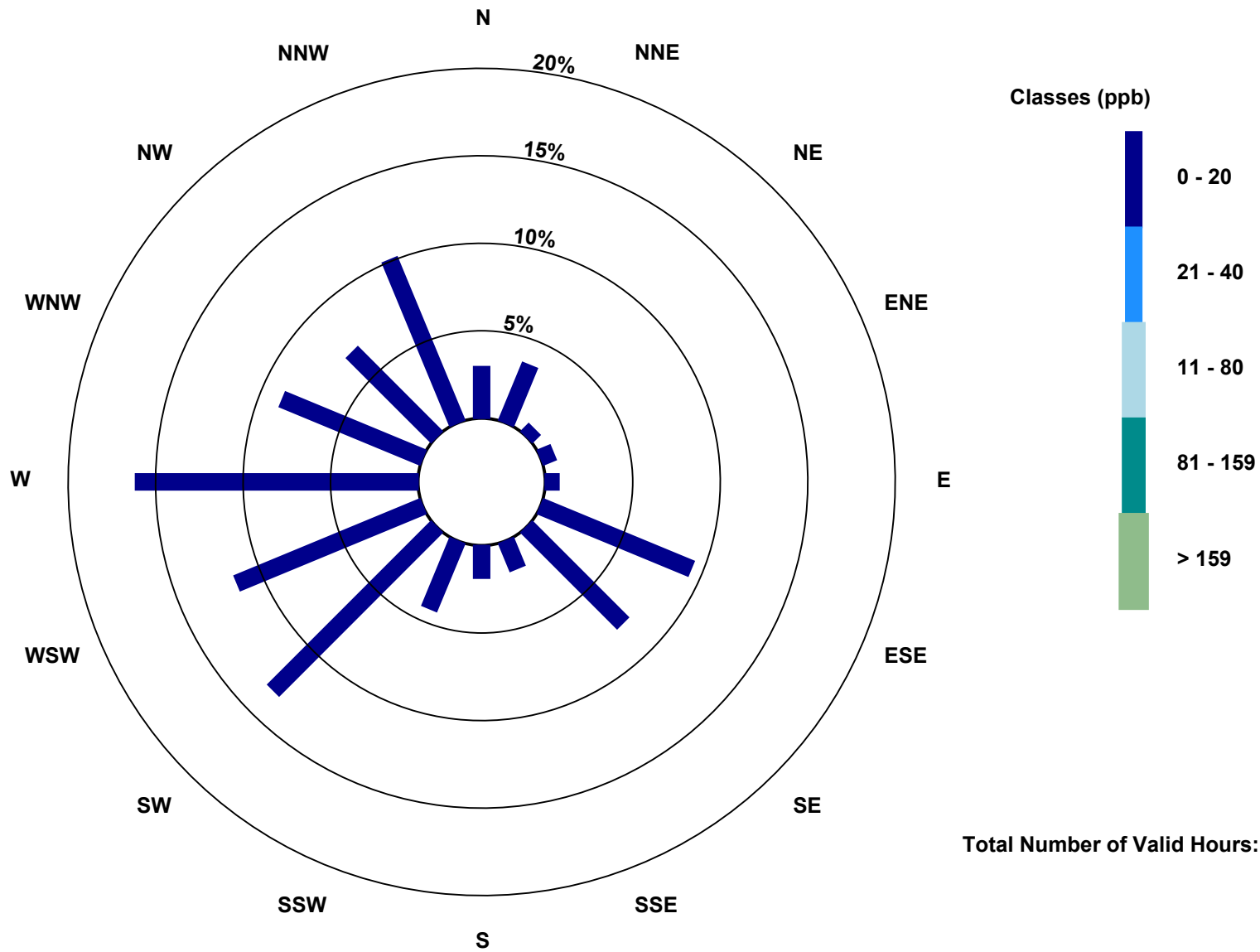
Total Number of Valid Hours: 644

Total Number of Hours: 696

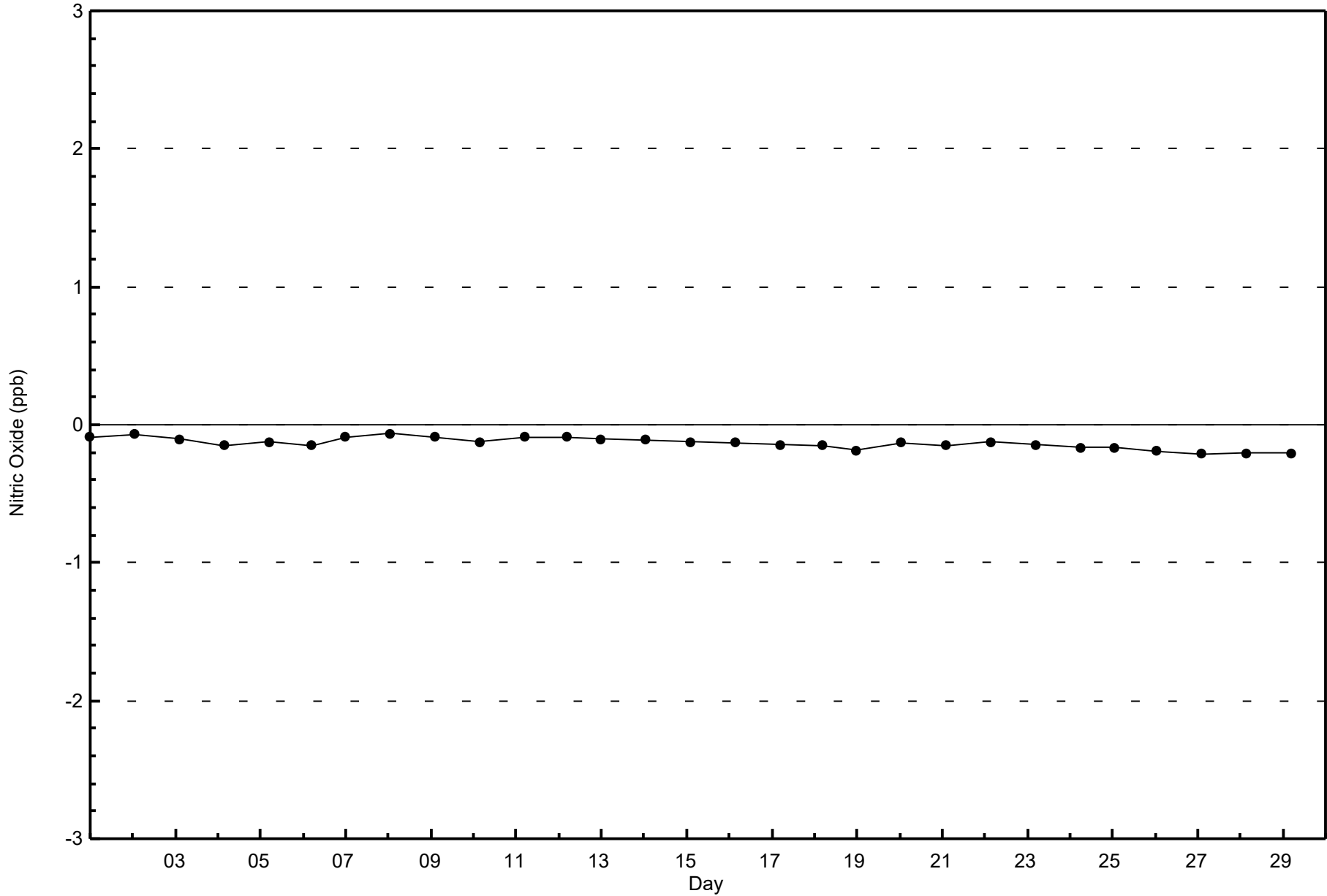


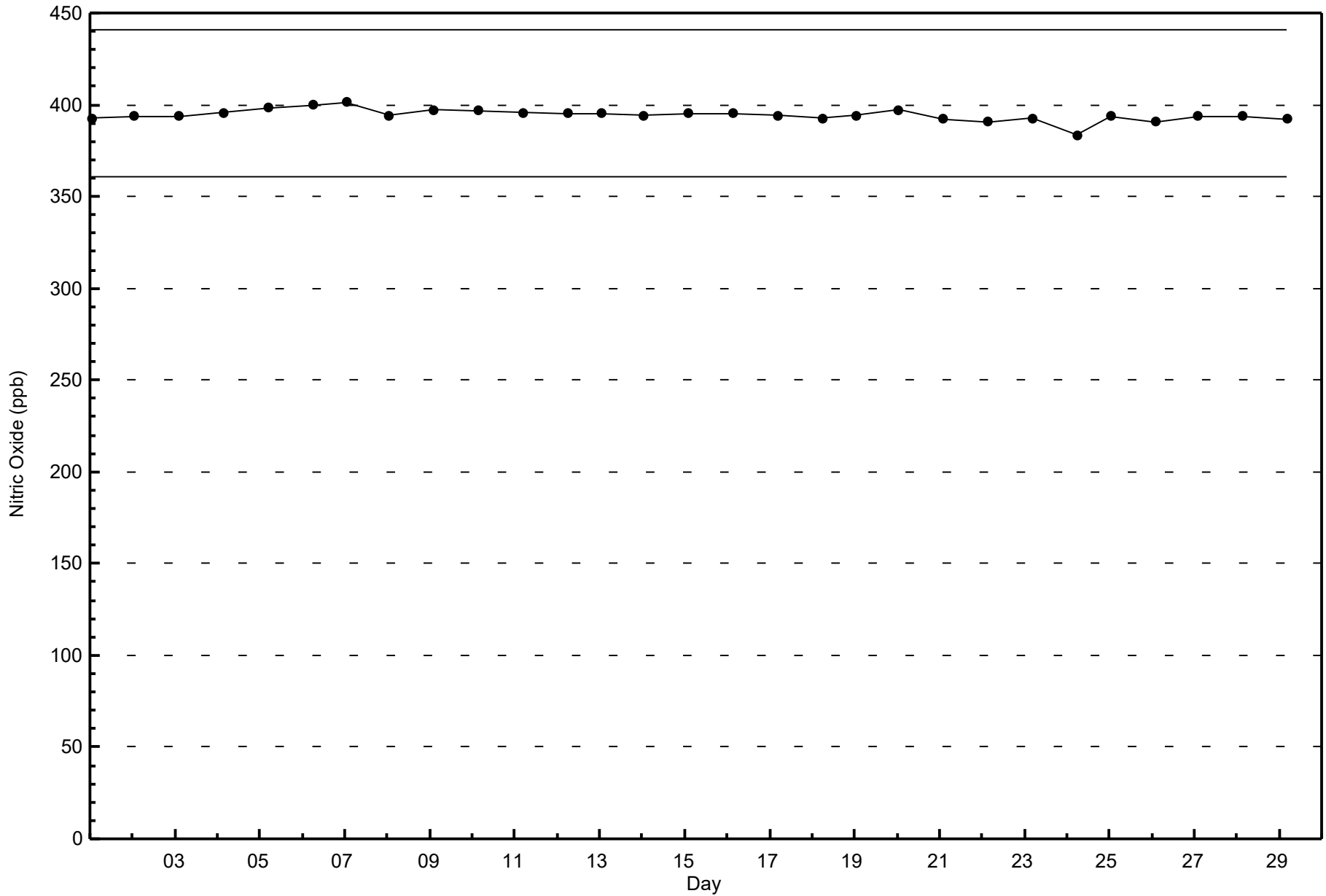
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Surmont 2



Total Number of Valid Hours: 644







Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

Surmont 2 - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 21.0 ppb on Feb 17 19:00	Maximum Daily Average: 6.6 ppb on Feb 3		Hours of Data:	657
Minimum Value: 0.1 ppb on Feb 25 12:00	Minimum Daily Average: 0.7 ppb on Feb 25		Hours of Missing Data:	39
Maximum Diurnal Average: 4.5 ppb at hour 19	Minimum Diurnal Average: 1.9 ppb at hour 15		Hours of Calibration:	35
Monthly Average: 2.80 ppb	Percentiles: P ₁ = 0.3 P ₁₀ = 0.5 Q ₁ = 0.9 Median = 1.8 Q ₃ = 3.7 P ₉₀ = 6.7 P ₉₉ = 11.6		Percent Operational Time:	99.4

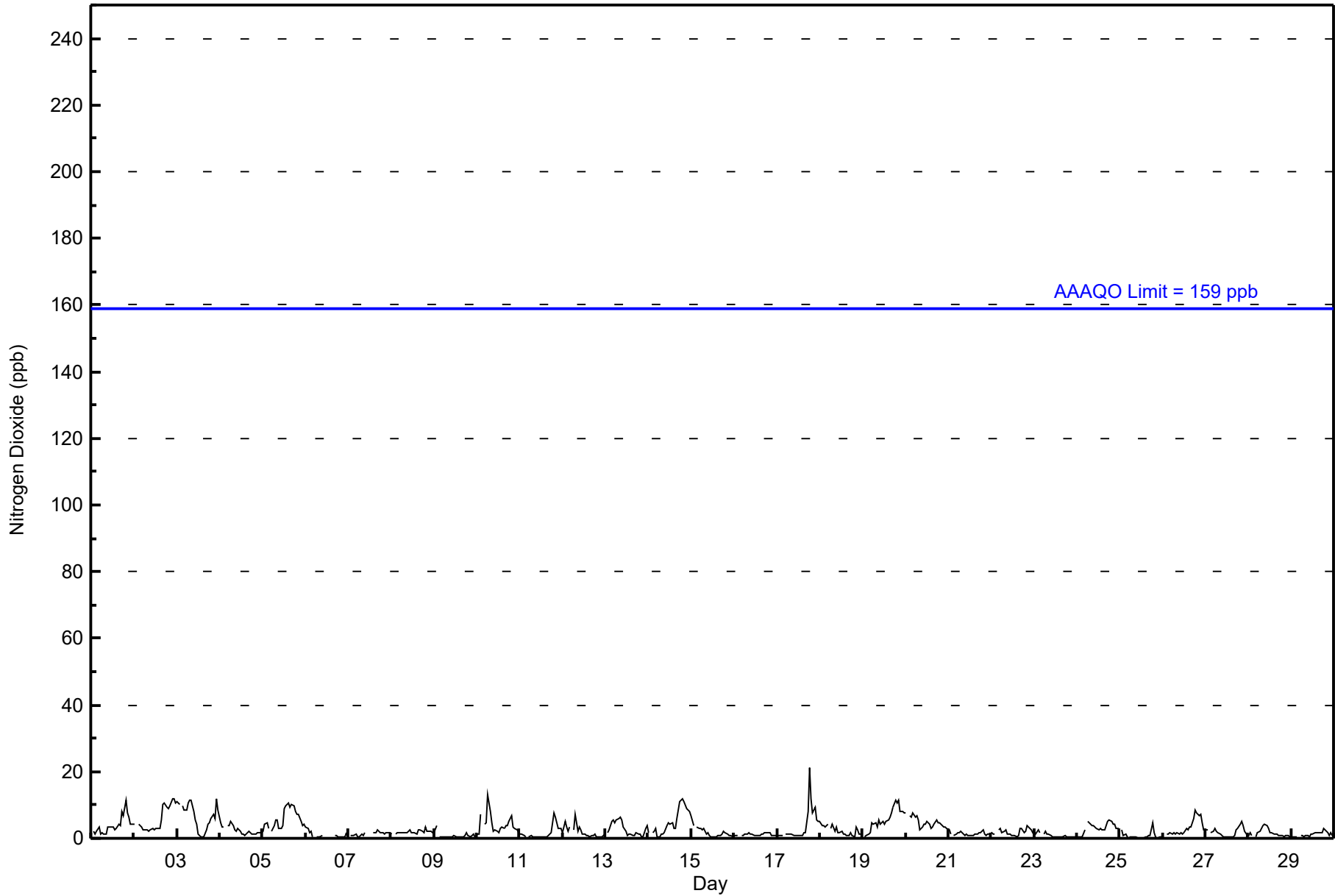
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	Z	2.3	1.3	2.3	3.2	1.3	1.9	1.1	1.3	3.5	3.5	3.6	3.5	2.5	2.8	4.1	4.0	7.9	6.7	11.3	7.8	6.4	4.4	4.3	4.0	11.3
2-Feb	4.2	Z	4.3	3.7	3.4	2.6	2.6	2.5	2.3	2.4	2.8	2.6	2.9	2.9	3.0	5.7	10.1	10.5	9.4	8.8	9.8	11.9	11.8	10.5	5.7	11.9
3-Feb	11.2	10.0	Z	9.8	8.3	8.6	10.8	11.4	11.3	8.1	5.3	4.4	1.2	0.5	0.6	0.4	2.5	4.2	4.6	5.8	7.2	5.8	12.0	8.5	6.6	12.0
4-Feb	4.6	3.4	3.6	Z	3.8	4.0	4.9	3.9	2.4	2.2	2.8	2.0	1.1	1.3	0.9	1.7	2.3	1.6	1.2	1.1	1.3	1.8	1.5	1.5	2.4	4.9
5-Feb	2.0	4.1	4.7	3.0	Z	2.1	3.9	5.6	5.5	3.1	2.8	3.7	9.0	9.9	10.6	9.3	10.3	9.6	8.0	7.1	7.1	5.1	3.9	4.2	5.9	10.6
6-Feb	3.5	2.8	1.9	2.0	0.6	Z	0.5	0.4	0.6	0.9	C	C	C	C	C	C	1.0	0.9	0.3	0.5	0.4	0.3	0.5	1.7	--	3.5
7-Feb	Z	0.8	0.9	0.9	1.4	0.4	0.6	1.1	0.8	1.6	PF	PF	PF	PF	1.8	1.7	2.5	2.3	1.7	1.6	1.3	1.6	1.5	1.5	1.4	2.5
8-Feb	1.4	Z	1.3	1.8	1.7	1.9	1.5	1.6	1.6	1.8	2.5	1.5	1.9	1.5	1.3	2.5	2.5	2.0	1.9	3.2	2.2	2.1	2.1	1.9	1.9	3.2
9-Feb	1.6	3.8	Z	0.4	0.3	0.4	0.4	0.5	0.3	0.4	0.4	0.7	0.4	0.3	0.5	0.3	0.4	1.0	1.6	1.0	0.4	0.9	1.1	0.3	0.8	3.8
10-Feb	1.4	1.2	7.4	Z	4.1	4.7	13.1	8.0	4.8	2.1	2.7	2.1	1.9	3.0	3.2	2.9	3.8	3.9	5.0	6.8	3.3	2.8	2.5	1.8	4.0	13.1
11-Feb	1.2	1.1	1.0	0.5	Z	0.6	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.6	1.0	1.5	4.8	7.7	6.5	3.1	2.9	2.8	1.8	7.7
12-Feb	1.6	5.1	3.2	2.3	3.2	Z	2.6	7.3	2.2	3.3	2.7	1.4	1.4	1.0	0.7	0.5	0.8	0.7	1.1	0.4	0.3	0.3	0.4	1.4	1.9	7.3
13-Feb	Z	1.8	2.6	4.9	5.7	4.8	5.4	6.1	6.5	5.5	3.4	2.2	0.9	1.2	1.4	0.9	0.9	1.8	1.3	1.3	0.5	0.4	3.0	3.7	2.9	6.5
14-Feb	1.8	Z	1.8	2.1	3.1	0.4	0.4	1.2	1.3	1.9	3.8	4.7	4.1	4.7	3.1	3.0	5.8	11.0	11.6	11.7	10.9	8.7	8.3	8.0	4.9	11.7
15-Feb	6.6	3.8	Z	3.6	2.8	2.8	2.6	2.9	1.3	1.6	0.8	0.6	0.5	0.4	0.5	0.7	0.9	1.3	2.2	1.5	1.1	0.7	0.8	0.5	1.8	6.6
16-Feb	0.8	0.7	0.9	Z	1.0	1.0	1.1	1.3	1.7	1.2	1.2	0.9	0.9	0.7	0.8	1.3	1.2	1.7	1.7	1.6	1.5	1.0	1.0	1.0	1.1	1.7
17-Feb	0.9	0.9	0.9	0.9	Z	1.1	1.2	1.1	1.1	1.0	0.9	0.9	0.9	0.9	0.8	1.5	1.9	8.2	21.0	12.0	7.8	9.3	5.4	5.0	3.7	21.0
18-Feb	4.9	3.7	3.7	3.3	4.3	Z	2.9	4.3	2.1	3.3	1.8	1.6	2.0	1.4	1.3	0.8	0.8	1.5	0.9	0.6	3.4	2.4	1.4	1.2	2.3	4.9
19-Feb	Z	0.6	0.8	1.4	1.8	4.6	4.4	4.5	3.5	5.6	4.3	5.1	4.2	5.0	5.3	6.2	7.7	9.4	11.5	10.8	11.4	8.0	8.0	7.6	5.7	11.5
20-Feb	7.5	Z	6.8	6.3	7.5	6.5	6.7	5.3	2.7	3.6	4.1	4.1	5.2	4.1	3.1	3.6	4.1	5.4	4.8	4.5	4.3	3.4	3.6	3.0	4.8	7.5
21-Feb	2.6	1.3	Z	1.0	1.1	1.5	1.9	2.3	1.3	0.9	1.2	0.9	0.7	0.7	1.0	1.3	1.4	1.6	1.8	2.7	1.2	1.0	1.1	1.3	1.4	2.7
22-Feb	1.5	1.2	1.1	Z	2.4	3.0	1.8	2.2	2.5	1.4	1.2	0.9	0.8	0.8	0.6	0.9	2.9	3.0	1.8	2.1	3.7	3.5	2.6	1.9	1.9	3.7
23-Feb	2.0	1.3	2.7	1.6	Z	1.1	2.0	1.1	1.1	0.9	0.6	0.5	0.5	0.6	0.5	0.4	0.5	0.7	0.6	0.4	0.5	0.5	0.5	0.3	0.9	2.7
24-Feb	0.3	0.6	0.3	0.4	2.7	Z	5.0	4.5	3.8	3.9	3.6	3.0	2.4	2.8	2.5	2.7	3.9	5.2	5.5	4.9	4.4	4.3	2.8	3.0	3.2	5.5
25-Feb	Z	2.6	0.7	1.3	0.3	0.2	0.4	0.5	0.3	0.3	0.2	0.1	0.1	0.2	0.4	0.3	0.7	0.8	4.6	1.6	0.3	0.2	0.4	0.3	0.7	4.6
26-Feb	0.3	Z	1.2	1.2	1.7	1.3	1.9	1.4	1.7	1.3	1.9	1.3	1.5	2.9	2.6	3.3	3.6	5.9	8.3	7.8	6.9	7.4	4.8	2.5	3.2	8.3
27-Feb	2.6	2.4	Z	1.9	2.1	2.9	2.2	1.7	1.2	0.9	0.5	0.5	0.5	0.6	0.5	0.6	0.7	2.5	3.1	4.4	5.2	3.9	2.0	1.0	1.9	5.2
28-Feb	0.9	1.5	0.7	Z	0.6	1.9	2.3	3.0	3.9	4.2	3.8	2.9	1.9	1.8	1.3	1.3	1.3	1.0	0.8	0.7	0.6	0.7	0.8	0.5	1.7	4.2
29-Feb	0.5	0.5	0.5	0.5	Z	0.8	0.8	0.5	0.8	0.7	0.5	1.2	1.3	1.6	1.5	1.9	1.8	1.9	2.9	2.5	1.5	0.9	1.5	0.7	1.2	2.9
2.7 2.4 2.3 2.4 2.8 2.4 3.0 3.0 2.4 2.4 2.2 2.0 1.9 2.0 1.9 2.2 2.8 3.8 4.5 4.4 3.9 3.4 3.2 2.8																								Diurnal Average		
11.2 10.0 7.4 9.8 8.3 8.6 13.1 11.4 11.3 8.1 5.3 5.1 9.0 9.9 10.6 9.3 10.3 11.0 21.0 12.0 11.4 11.9 12.0 10.5																								Diurnal Maximum		

Z - zerspan C - Calibration PF - Power Failure
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Surmont 2 - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Surmont 2 - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	656	99.85	99.85
21 - 40	1	0.15	100.00
11 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 657

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Surmont 2 - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	19	23	4	5	5	60	50	11	12	27	84	74	104	56	44	65	643
21 - 40	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	19	23	4	5	5	60	50	11	12	27	85	74	104	56	44	65	644

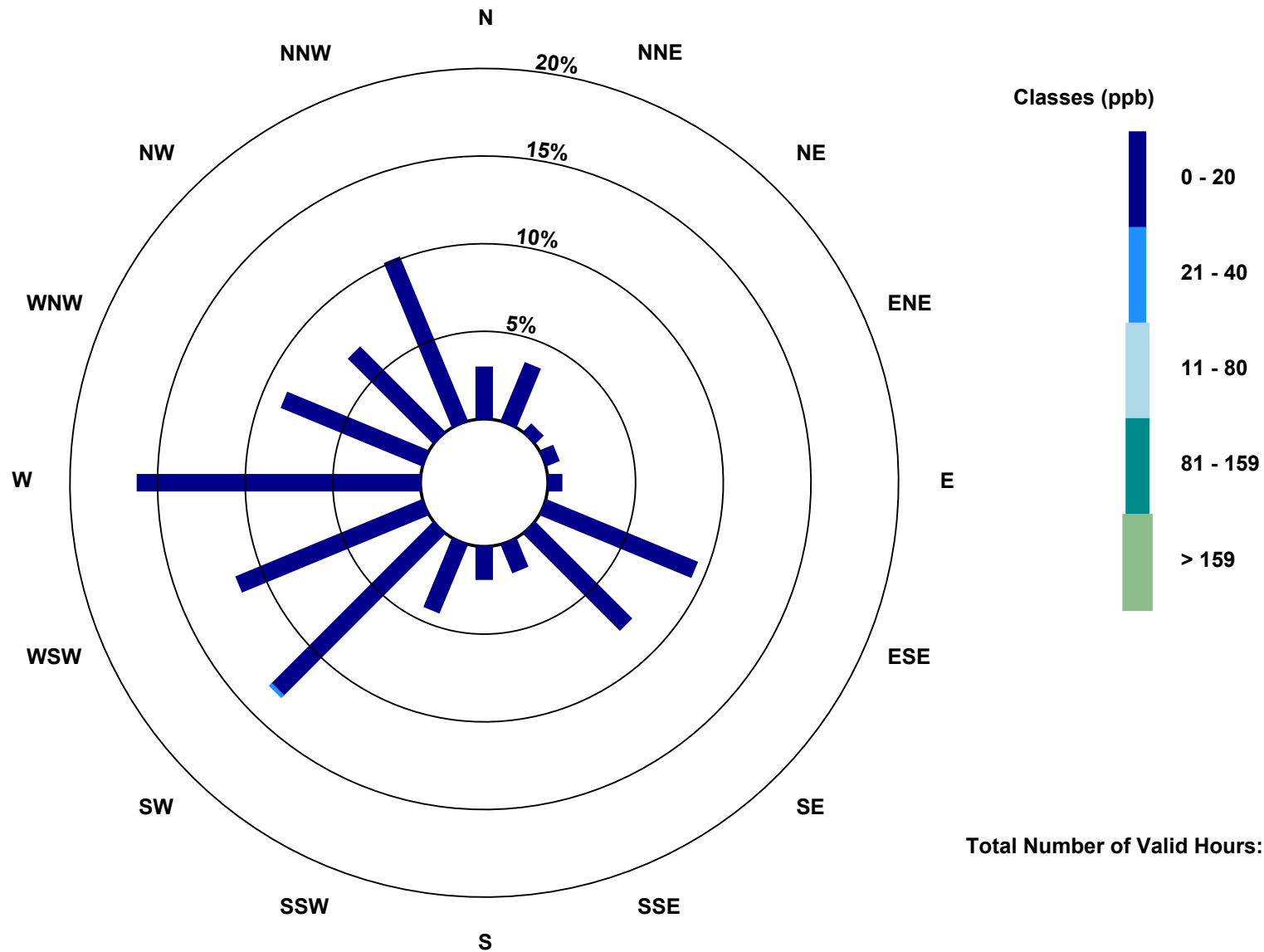
Total Number of Valid Hours: 644

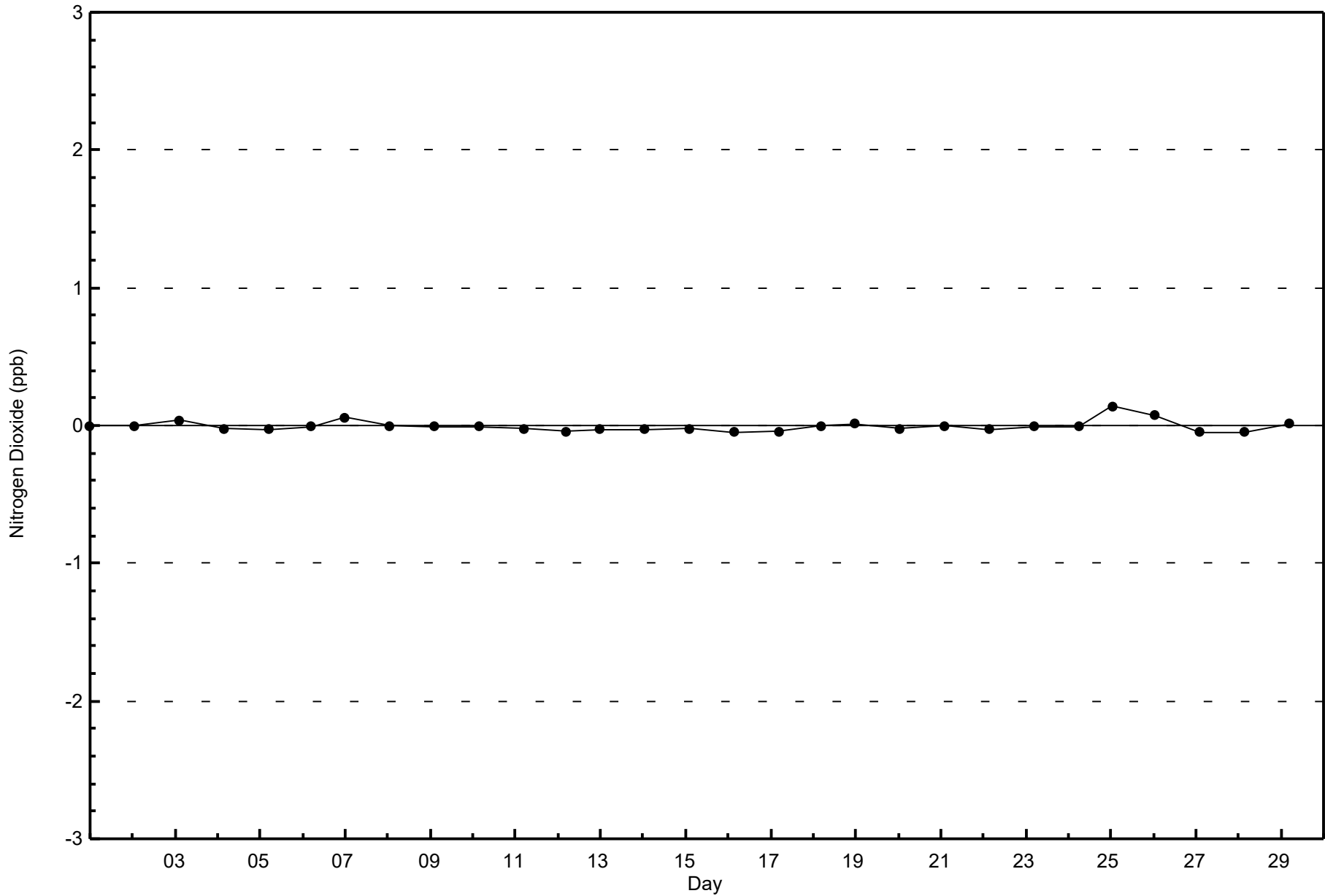
Total Number of Hours: 696

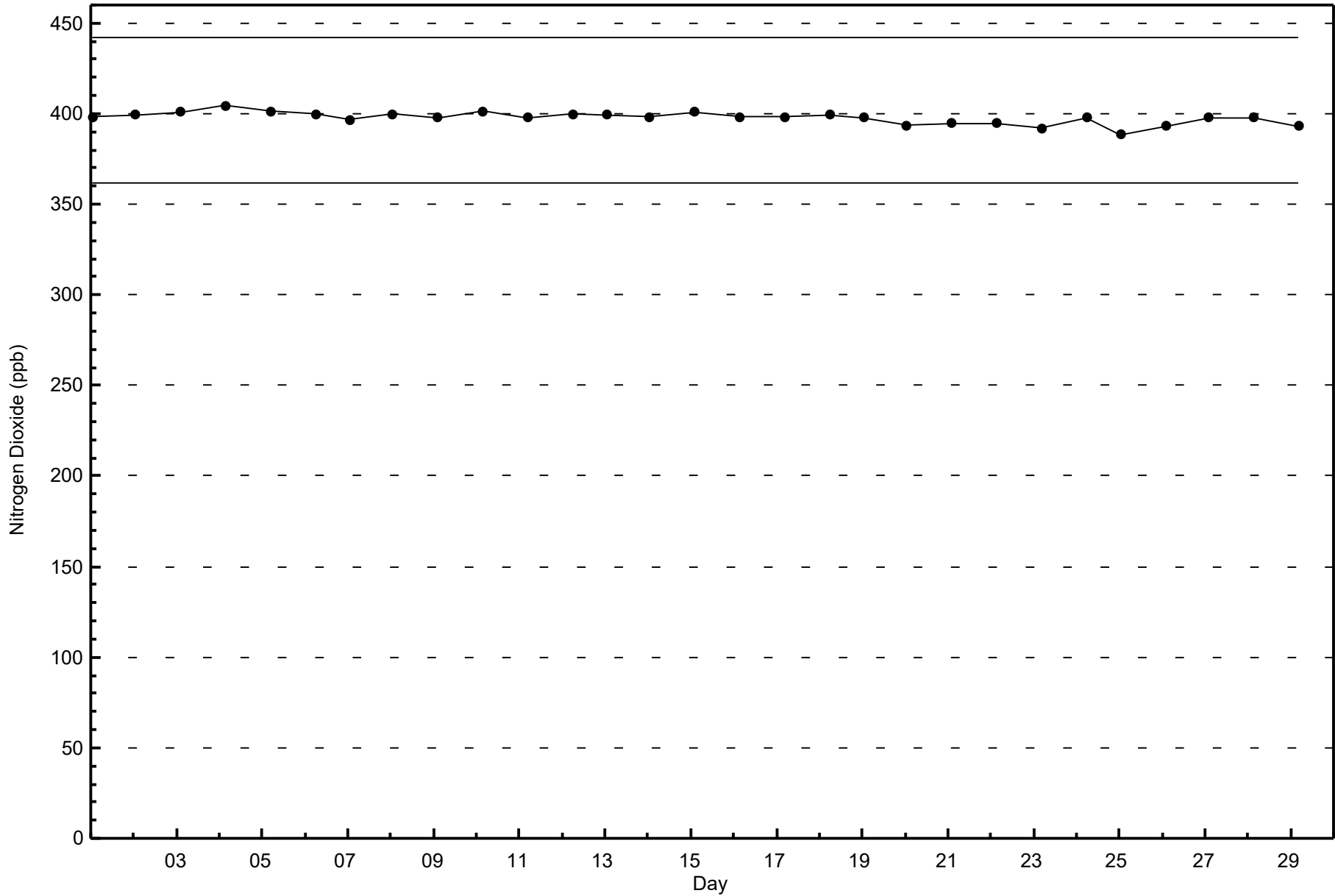


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Surmont 2









Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Oxides (NO_x) - ppb

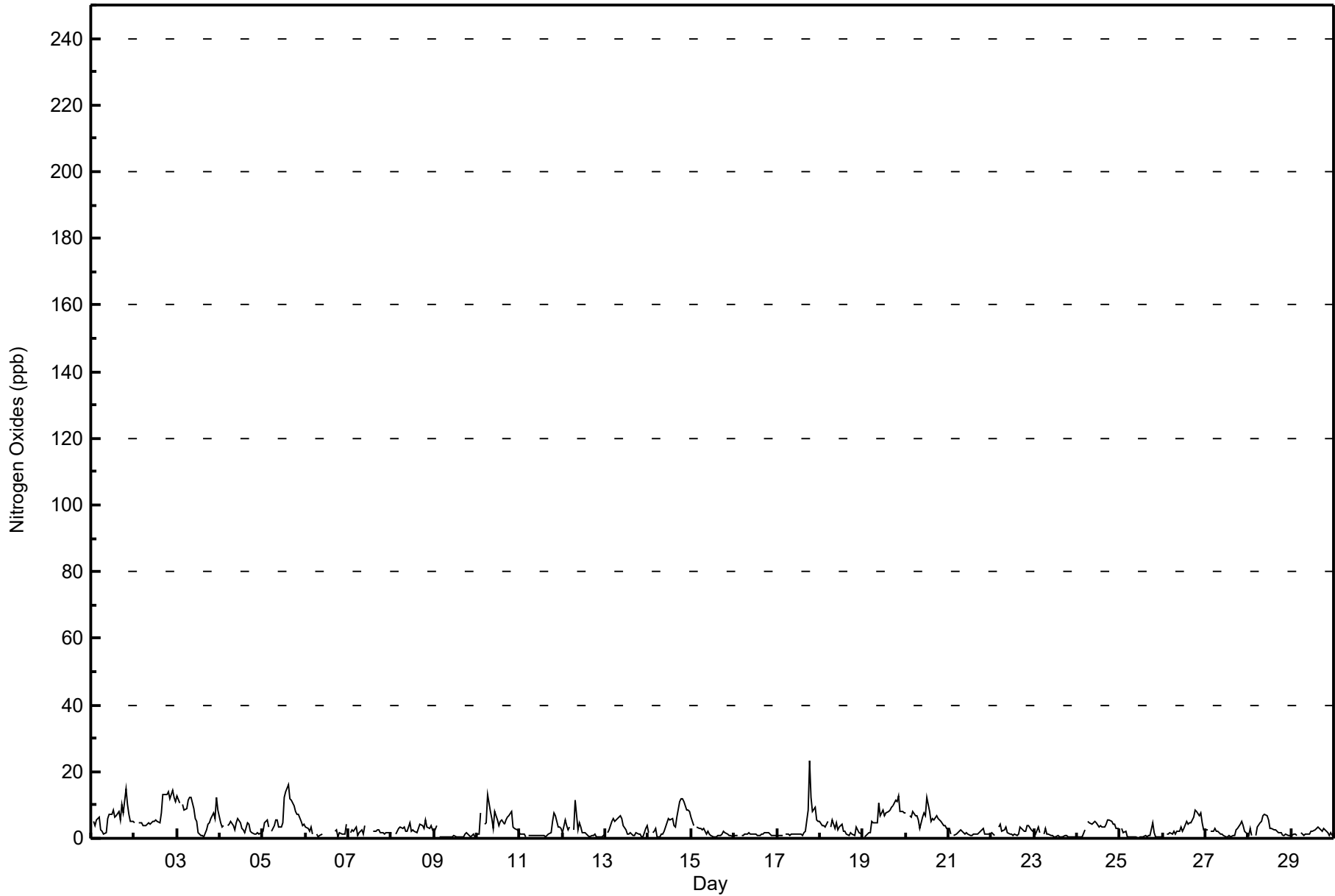
Surmont 2 - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	696					
Maximum Value: 23.3 ppb on Feb 17 19:00		Maximum Daily Average: 7.6 ppb on Feb 2																	Hours of Data: 657							
Minimum Value: 0.2 ppb on Feb 25 11:00		Minimum Daily Average: 0.8 ppb on Feb 9																	Hours of Missing Data: 39							
Maximum Diurnal Average: 5.0 ppb at hour 19		Minimum Diurnal Average: 2.6 ppb at hour 3																	Hours of Calibration: 35							
Monthly Average: 3.43 ppb		Percentiles: P ₁ = 0.3 P ₁₀ = 0.6 Q ₁ = 1.1 Median = 2.4 Q ₃ = 4.8 P ₉₀ = 7.8 P ₉₉ = 13.2																	Percent Operational Time: 99.4							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	Z	5.0	4.0	5.6	6.3	2.6	2.1	1.2	1.5	6.0	7.2	7.1	8.4	6.4	6.7	7.9	5.5	10.0	7.6	15.0	10.2	7.4	5.2	5.1	6.3	15.0
2-Feb	4.8	Z	4.9	4.7	4.5	3.6	4.0	4.4	4.5	4.0	4.9	5.1	5.6	4.9	4.5	7.8	13.1	13.3	13.1	13.9	11.8	14.6	12.3	11.0	7.6	14.6
3-Feb	12.6	10.7	Z	10.0	8.5	8.9	11.6	12.3	12.2	9.0	5.9	5.1	1.5	0.6	0.7	0.5	2.6	4.4	4.7	5.9	7.5	5.9	12.1	8.6	7.0	12.6
4-Feb	4.7	3.5	3.7	Z	3.8	4.1	5.1	3.9	2.6	4.5	6.1	4.7	3.1	2.5	1.8	4.6	4.1	2.1	1.6	1.2	1.3	1.8	1.5	1.6	3.2	6.1
5-Feb	2.0	4.8	5.4	3.2	Z	2.1	3.9	5.7	5.6	3.4	3.3	4.7	12.1	14.2	16.1	11.9	11.4	9.8	8.1	7.2	7.2	5.2	4.0	4.3	6.8	16.1
6-Feb	3.5	2.8	2.0	3.4	1.1	Z	1.2	0.6	1.0	1.3	C	C	C	C	C	C	2.3	2.7	0.6	1.5	1.2	1.1	1.3	4.3	--	4.3
7-Feb	Z	1.9	2.4	1.9	3.5	0.7	1.6	2.6	1.2	3.8	PF	PF	PF	PF	2.3	2.0	2.8	2.5	1.9	1.7	1.4	1.7	1.6	1.6	2.1	3.8
8-Feb	1.5	Z	1.4	2.2	3.0	3.3	2.9	3.4	2.0	2.3	4.7	2.0	2.7	2.3	1.8	3.1	4.1	3.7	3.0	5.7	3.3	2.8	3.6	2.4	2.9	5.7
9-Feb	1.7	3.9	Z	0.5	0.4	0.4	0.5	0.5	0.3	0.5	0.5	0.8	0.5	0.4	0.6	0.3	0.5	1.1	1.7	1.1	0.5	1.0	1.2	0.4	0.8	3.9
10-Feb	1.5	1.2	7.5	Z	4.2	4.7	13.2	8.2	5.7	3.1	8.2	5.6	3.8	5.2	5.4	4.3	5.7	6.2	6.9	8.0	3.4	2.9	2.6	1.9	5.2	13.2
11-Feb	1.3	1.2	1.1	0.6	Z	0.7	0.8	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.5	0.8	1.1	1.6	4.9	7.8	6.6	3.2	3.3	3.1	1.9	7.8
12-Feb	1.7	5.4	3.7	2.4	3.2	Z	2.7	11.4	2.5	4.6	3.5	1.7	1.7	1.3	0.9	0.6	0.9	0.8	1.2	0.4	0.3	0.3	0.4	1.4	2.3	11.4
13-Feb	Z	1.9	2.7	5.0	5.8	4.9	5.5	6.2	6.8	6.0	3.8	2.6	1.1	1.5	1.7	1.0	1.9	1.4	1.4	0.5	0.4	3.1	3.7	3.0	3.0	6.8
14-Feb	1.8	Z	1.8	2.1	3.1	0.4	0.4	1.3	1.3	2.1	4.5	6.0	5.5	6.0	3.9	3.5	6.2	11.2	11.7	11.8	11.0	8.7	8.3	8.0	5.2	11.8
15-Feb	6.6	3.8	Z	3.6	2.8	2.8	2.7	3.1	1.4	2.3	1.1	0.7	0.6	0.5	0.6	0.9	1.0	1.3	2.3	1.5	1.1	0.7	0.8	0.5	1.9	6.6
16-Feb	0.8	0.7	0.9	Z	1.0	1.0	1.1	1.3	1.9	1.4	1.5	1.2	1.2	0.9	1.0	1.5	1.3	1.8	1.7	1.6	1.5	1.0	1.0	1.0	1.2	1.9
17-Feb	0.9	0.9	0.9	0.9	Z	1.1	1.2	1.1	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1.7	2.1	8.5	23.3	12.3	7.9	9.4	5.5	5.1	3.9	23.3
18-Feb	5.2	3.8	3.8	3.5	4.9	Z	3.2	5.5	3.1	4.8	2.5	3.5	4.2	2.1	2.3	1.2	1.0	1.7	1.1	0.7	3.5	2.5	1.6	1.2	2.9	5.5
19-Feb	Z	0.6	0.8	1.5	1.8	4.9	4.5	4.7	4.5	10.4	6.7	8.3	6.7	7.8	8.0	8.6	9.1	9.8	11.6	10.9	12.5	8.0	8.0	7.8	6.8	12.5
20-Feb	7.6	Z	6.9	6.5	8.0	6.6	6.9	5.4	3.0	6.4	7.6	6.6	12.4	8.1	5.3	5.9	5.7	6.9	5.8	5.6	4.9	3.7	3.9	3.0	6.2	12.4
21-Feb	2.8	1.3	Z	1.0	1.1	1.5	2.0	2.4	1.5	1.1	1.6	1.1	0.9	0.9	1.2	1.5	1.5	1.7	2.3	2.9	1.3	1.1	1.2	1.3	1.5	2.9
22-Feb	1.5	1.2	1.1	Z	3.4	4.0	2.0	2.5	3.2	1.7	1.5	1.1	1.0	1.1	0.8	1.1	3.2	3.1	1.9	2.2	3.8	3.6	2.7	2.1	2.2	4.0
23-Feb	2.2	1.5	3.2	1.8	Z	1.3	2.8	1.2	1.3	1.0	0.7	0.6	0.6	0.7	0.6	0.5	0.6	0.8	0.8	0.5	0.6	0.6	0.6	0.4	1.1	3.2
24-Feb	0.4	0.6	0.3	0.4	2.7	Z	5.1	4.7	4.1	4.8	5.0	4.5	3.6	3.8	3.4	3.4	4.3	5.4	5.6	5.0	4.4	4.3	2.8	3.0	3.5	5.6
25-Feb	Z	3.1	1.6	2.1	0.5	0.4	0.4	0.5	0.3	0.3	0.2	0.2	0.2	0.3	0.8	0.4	0.8	0.8	4.7	1.6	0.3	0.2	0.4	0.3	0.9	4.7
26-Feb	0.3	Z	1.2	1.2	1.7	1.3	1.9	1.4	2.1	1.9	3.3	2.3	2.8	5.1	4.2	4.7	4.5	6.3	8.4	7.9	7.0	7.5	4.8	2.5	3.7	8.4
27-Feb	2.6	2.4	Z	1.9	2.1	2.9	2.2	2.0	1.4	1.2	0.7	0.6	0.6	1.0	0.6	0.7	0.8	2.7	3.1	4.4	5.2	3.9	2.1	1.1	2.0	5.2
28-Feb	1.0	2.9	0.8	Z	0.7	3.3	4.8	5.0	6.9	7.1	6.7	5.5	3.1	2.8	2.5	2.5	2.3	1.7	1.7	0.9	0.7	1.2	1.0	0.7	2.9	7.1
29-Feb	0.9	1.3	1.2	0.8	Z	1.5	1.2	0.7	1.2	1.4	1.4	2.0	2.1	2.5	3.1	3.5	2.4	2.0	3.2	2.5	1.5	0.9	1.5	0.7	1.7	3.5
2.9 2.8 2.6 2.8 3.3 2.8 3.4 3.6 2.9 3.4 3.5 3.2 3.3 3.1 2.9 3.1 3.5 4.3 5.0 4.9 4.2 3.6 3.4 3.0																								Diurnal Average		
12.6 10.7 7.5 10.0 8.5 8.9 13.2 12.3 12.2 10.4 8.2 8.3 12.4 14.2 16.1 11.9 13.1 13.3 23.3 15.0 12.5 14.6 12.3 11.0																								Diurnal Maximum		
Z - zerspan		C - Calibration				PF - Power Failure																				



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Surmont 2 - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Surmont 2 - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	656	99.85	99.85
21 - 40	1	0.15	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 657

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Surmont 2 - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	19	23	4	5	5	60	50	11	12	27	84	74	104	56	44	65	643
21 - 40	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	19	23	4	5	5	60	50	11	12	27	85	74	104	56	44	65	644

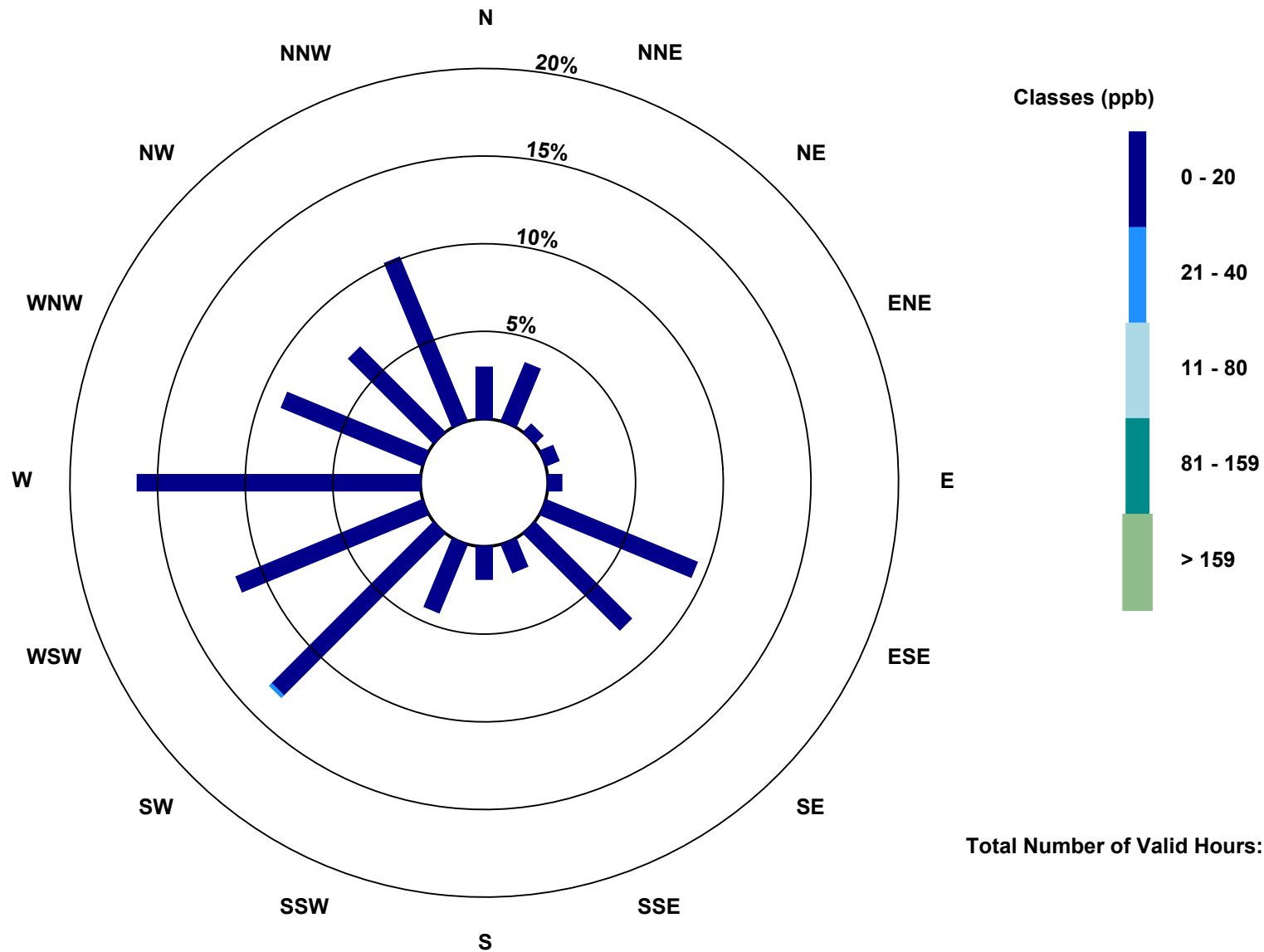
Total Number of Valid Hours: 644

Total Number of Hours: 696

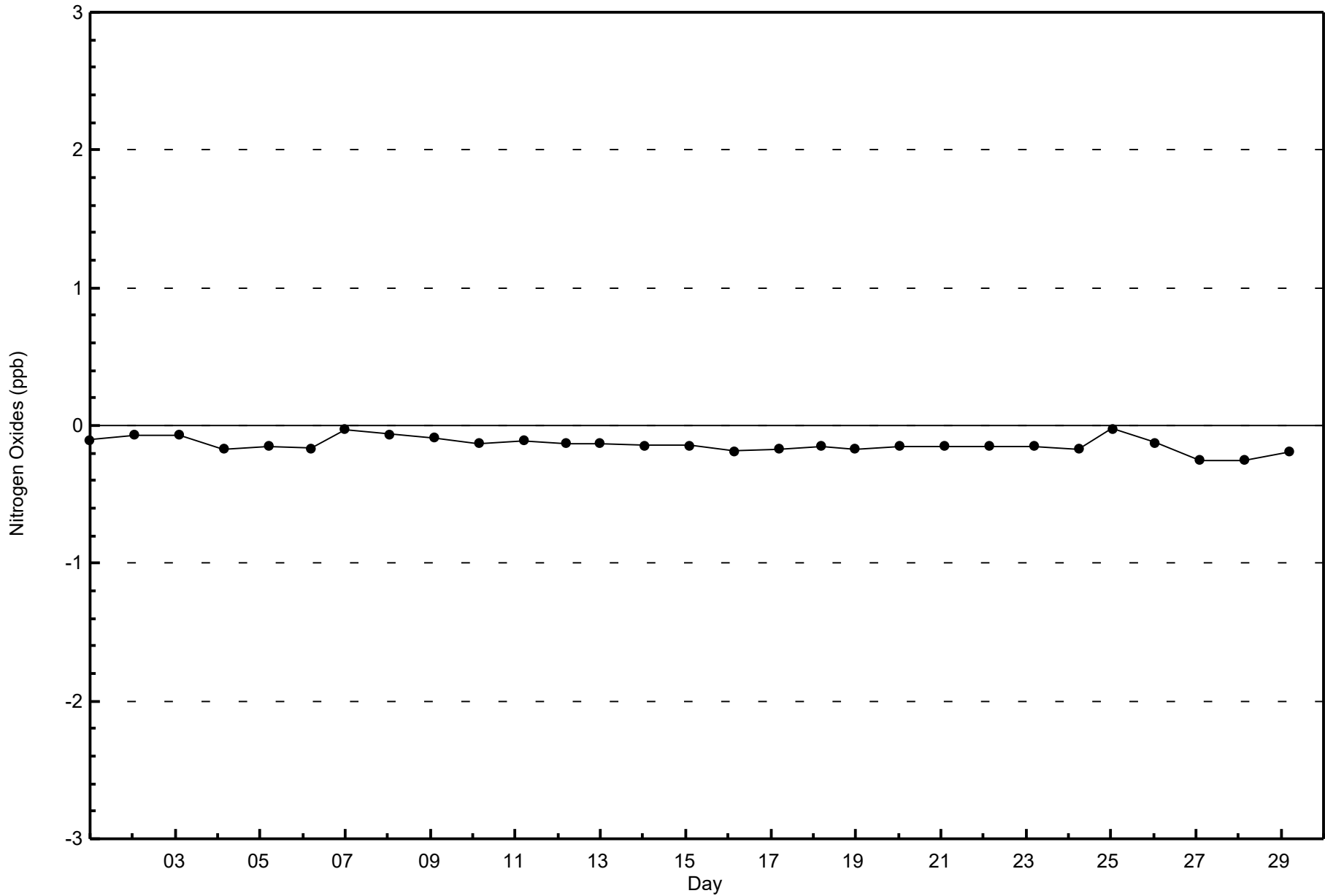


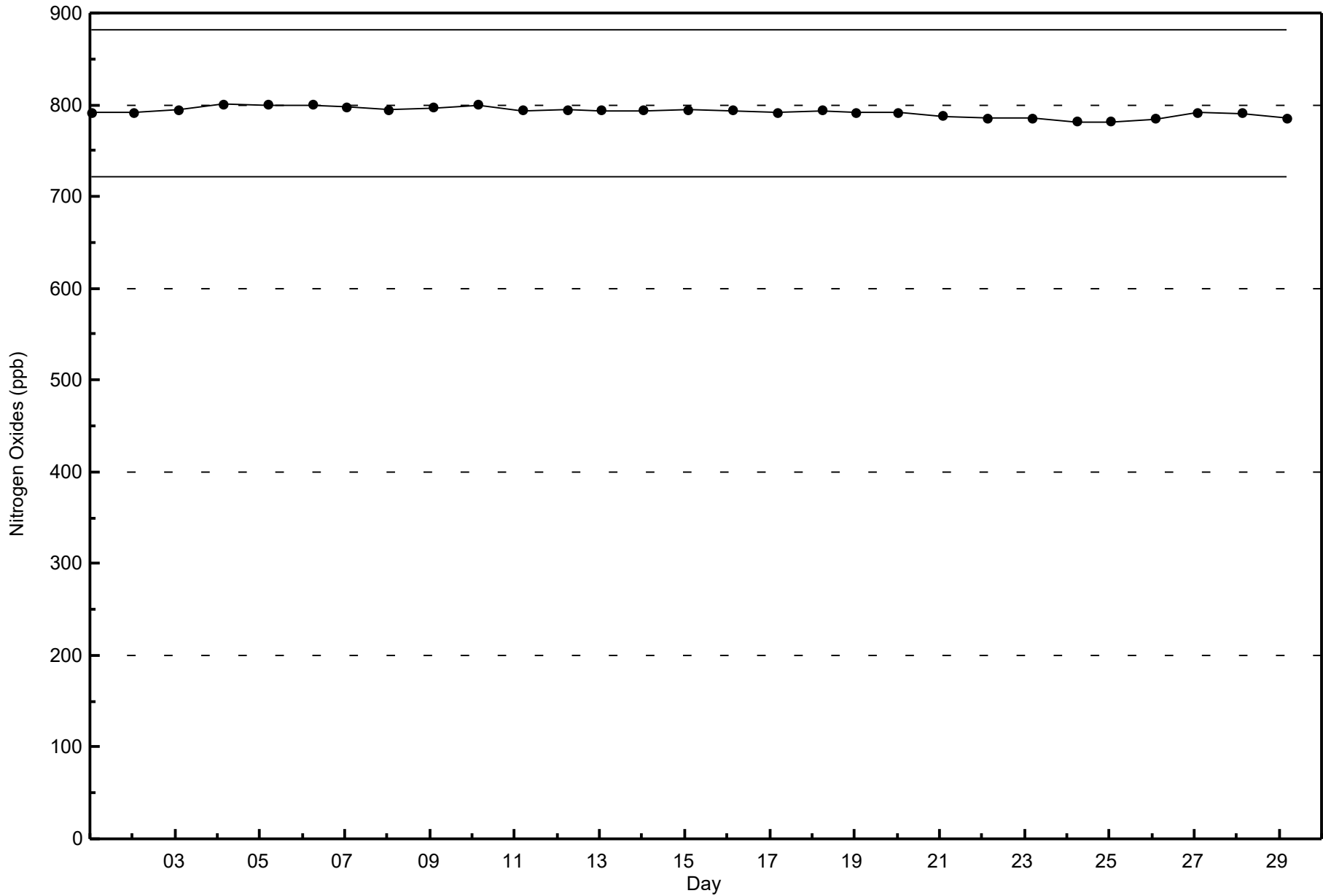
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Surmont 2



Total Number of Valid Hours: 644



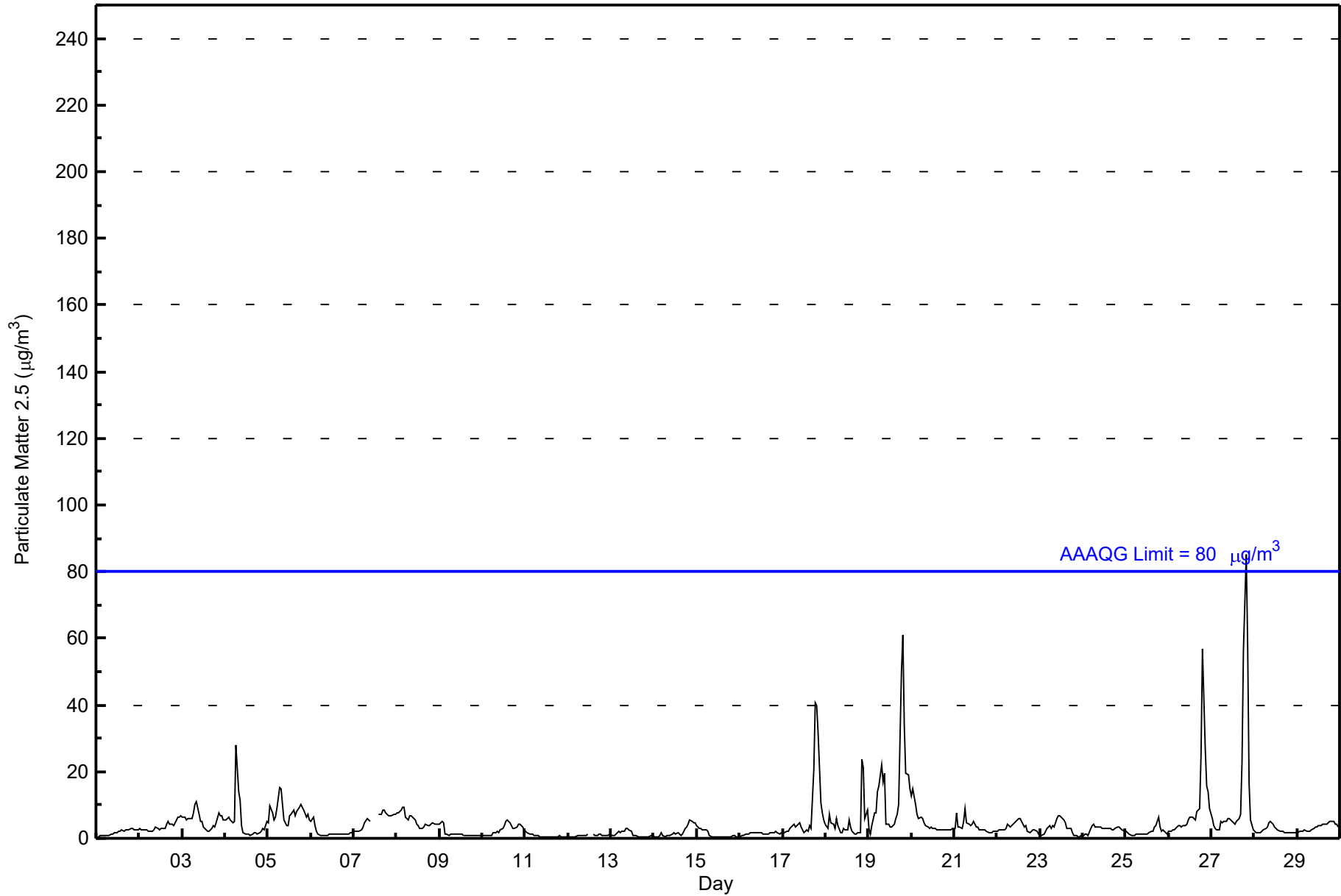




Summary of Hour Averages

Surmont 2 - February 2024

Number of Exceedences (AAAQO):		1-hr: 1		24-hr: 0		Hours in Service: 696														690						
Maximum Value: 85.2 µg/m ³ on Feb 27 20:00		Maximum Daily Average: 14.7 µg/m ³ on Feb 19		Hours of Data: 690														6								
Minimum Value: 0.2 µg/m ³ on Feb 12 01:00		Minimum Daily Average: 0.7 µg/m ³ on Feb 11		Hours of Missing Data: 6														2								
Maximum Diurnal Average: 10.8 µg/m ³ at hour 20		Minimum Diurnal Average: 2.9 µg/m ³ at hour 16		Hours of Calibration: 2														99.4								
Monthly Average: 4.30 µg/m ³		Percentiles: P ₁ = 0.3 P ₁₀ = 0.8 Q ₁ = 1.4 Median = 2.7 Q ₃ = 4.6 P ₉₀ = 7.4 P ₉₉ = 40.0																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.5	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.1	1.2	1.7	1.9	2.0	2.3	2.3	2.4	2.5	2.6	3.1	2.9	2.7	2.5	2.4	1.8	3.1	
2-Feb	2.8	2.4	2.5	2.4	2.4	2.3	2.3	2.3	2.7	3.3	2.9	2.7	2.9	2.8	3.0	4.1	5.1	4.3	4.0	3.9	4.6	6.5	6.4	6.7	3.5	6.7
3-Feb	6.5	6.2	5.6	5.9	5.9	5.9	7.5	10.3	11.1	7.1	4.9	5.1	3.3	2.4	2.1	2.1	3.0	3.9	3.5	4.5	7.8	6.6	6.7	5.5	5.6	11.1
4-Feb	5.5	6.1	6.3	5.7	4.6	5.2	28.1	14.1	11.5	3.8	1.5	1.3	1.4	1.1	0.9	1.3	1.5	1.4	1.6	1.9	2.8	2.7	5.2	4.9	28.1	
5-Feb	4.7	9.8	7.6	5.6	6.5	8.7	15.2	14.7	10.1	5.4	3.6	3.7	7.0	7.2	8.7	6.6	8.0	9.3	10.0	9.2	8.6	6.5	7.4	5.3	7.9	15.2
6-Feb	5.0	6.3	3.7	2.0	1.2	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.4	1.6	1.8	1.7	6.3	
7-Feb	1.9	2.0	2.1	2.2	2.6	3.3	4.8	5.8	5.6	5.2	PF	PF	PF	PF	7.3	7.3	8.3	8.3	7.5	6.8	6.7	7.1	7.4	5.5	8.3	
8-Feb	7.6	7.7	8.4	9.2	9.4	6.2	5.7	6.7	6.6	6.3	5.4	4.3	3.7	3.1	3.0	3.4	4.4	4.0	3.7	4.3	4.5	4.4	4.3	4.0	5.4	9.4
9-Feb	4.2	5.3	4.6	1.4	1.1	1.0	1.3	1.5	1.2	1.2	1.2	1.2	1.1	0.9	0.6	0.7	0.7	0.8	0.9	0.7	0.8	0.8	0.7	0.8	1.4	5.3
10-Feb	0.8	0.8	0.8	0.7	0.6	0.9	1.8	1.9	2.0	1.8	2.4	2.9	3.7	5.3	5.4	4.5	3.8	3.1	2.9	3.5	4.2	4.1	3.2	2.6	2.6	5.4
11-Feb	2.0	1.7	1.3	1.1	1.2	1.0	0.9	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.6	0.7	0.5	0.4	0.3	0.3	0.7	2.0
12-Feb	0.2	0.3	0.4	0.4	0.6	0.8	1.0	1.0	0.9	1.0	1.0	1.4	C	C	1.4	1.0	0.9	1.2	1.3	1.0	0.8	0.7	0.8	1.3	0.9	1.4
13-Feb	0.9	0.7	1.0	1.8	2.2	1.5	1.9	2.0	2.9	2.8	2.6	2.1	0.9	0.9	0.9	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.8	1.0	1.2	2.9
14-Feb	0.4	0.4	0.6	0.9	1.6	0.8	0.6	0.6	0.7	0.8	1.4	1.7	1.5	1.7	1.2	0.9	1.4	2.8	3.5	4.4	5.5	4.9	4.6	4.5	2.0	5.5
15-Feb	3.6	2.8	2.8	2.7	2.4	2.5	2.2	0.8	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.6	0.5	1.1	3.6
16-Feb	0.6	0.8	1.0	1.3	1.4	1.5	1.9	1.7	1.7	1.8	1.6	1.6	1.5	1.2	1.3	1.3	1.4	1.5	1.5	1.7	2.0	1.7	1.5	1.7	1.5	2.0
17-Feb	1.6	1.6	2.3	2.1	2.8	3.2	4.4	3.4	4.0	4.7	3.3	2.5	1.8	2.5	2.2	3.7	3.0	20.6	40.9	39.9	31.8	10.7	7.5	5.7	8.6	40.9
18-Feb	4.1	3.1	7.1	4.9	4.1	2.8	6.1	3.9	1.9	1.9	2.9	2.5	2.7	5.7	3.2	2.0	1.2	1.1	1.6	1.7	23.9	21.3	6.0	8.6	5.2	23.9
19-Feb	2.8	1.4	4.0	7.7	7.7	14.1	15.7	21.8	16.8	19.4	4.4	4.2	3.5	3.5	4.4	6.1	7.3	10.3	49.9	60.9	33.8	19.7	19.0	14.7	14.7	60.9
20-Feb	12.8	14.8	10.1	7.3	6.0	6.4	5.8	4.5	3.7	3.3	3.1	3.3	3.1	2.9	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.8	4.7	14.8
21-Feb	2.8	7.6	3.6	3.6	3.0	5.1	8.9	4.6	4.3	3.8	4.1	5.3	3.4	3.6	2.6	2.7	2.5	2.6	2.1	1.8	1.7	1.9	2.1	2.1	3.6	8.9
22-Feb	2.0	2.4	2.5	2.5	2.5	3.0	4.1	3.4	3.6	4.3	5.2	5.5	5.8	6.0	4.4	3.5	3.8	2.1	1.8	2.0	2.7	2.5	2.0	1.2	3.3	6.0
23-Feb	1.0	0.9	1.5	2.3	2.9	3.6	3.1	4.0	3.2	5.9	6.6	7.0	6.2	5.3	4.6	3.1	2.9	3.1	1.6	0.9	1.0	0.4	0.6	0.7	3.0	7.0
24-Feb	0.8	1.3	1.2	0.9	2.9	3.8	4.0	3.5	3.5	3.3	3.4	3.1	2.9	2.9	2.8	2.8	2.5	2.7	3.0	3.3	3.2	2.9	2.6	2.3	2.7	4.0
25-Feb	2.3	1.9	1.2	1.0	1.0	1.1	1.4	1.3	1.4	1.3	1.3	1.4	1.4	1.6	2.0	1.9	3.4	3.8	6.3	3.6	2.2	2.5	1.5	1.5	2.0	6.3
26-Feb	2.0	2.1	2.7	2.6	2.9	3.7	3.8	3.3	3.9	3.8	4.3	5.4	6.4	6.2	5.8	5.6	8.0	9.0	25.0	56.6	26.6	15.7	13.9	9.0	9.5	56.6
27-Feb	5.8	3.7	2.8	2.4	2.8	5.1	4.6	5.0	5.1	6.1	5.8	5.3	4.8	4.1	4.9	6.1	7.1	22.7	56.6	85.2	57.4	16.6	5.4	2.6	13.7	85.2
28-Feb	2.1	1.7	1.7	1.7	2.0	2.4	3.1	3.5	4.6	5.0	4.3	3.5	2.8	2.6	2.2	2.0	2.0	1.9	1.8	1.7	1.6	1.7	1.7	1.9	2.5	5.0
29-Feb	1.8	2.3	2.3	2.3	2.6	2.1	2.2	2.3	2.7	3.0	3.2	3.4	3.6	3.9	4.1	4.1	4.2	4.6	5.0	5.0	4.9	4.3	4.2	3.3	3.4	5.0
																								Diurnal Average		
																								Diurnal Maximum		
3.1 3.4 3.2 2.9 3.0 3.4 5.0 4.5 4.1 3.8 3.0 3.0 2.9 3.0 3.0 2.9 3.2 4.6 8.4 10.8 8.5 5.3 4.1 3.7																								Diurnal Average		
12.8 14.8 10.1 9.2 9.4 14.1 28.1 21.8 16.8 19.4 6.6 7.0 7.0 7.2 8.7 7.3 8.3 22.7 56.6 85.2 57.4 21.3 19.0 14.7																								Diurnal Maximum		
C - Calibration PF - Power Failure																										
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Surmont 2 - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	555	80.43	80.43
6 - 15	110	15.94	96.38
16 - 25	13	1.88	98.26
26 - 80	11	1.59	99.86
> 81.0	1	0.14	100.00

Total Number of Valid Hours: 690

Total Number of Hours: 696



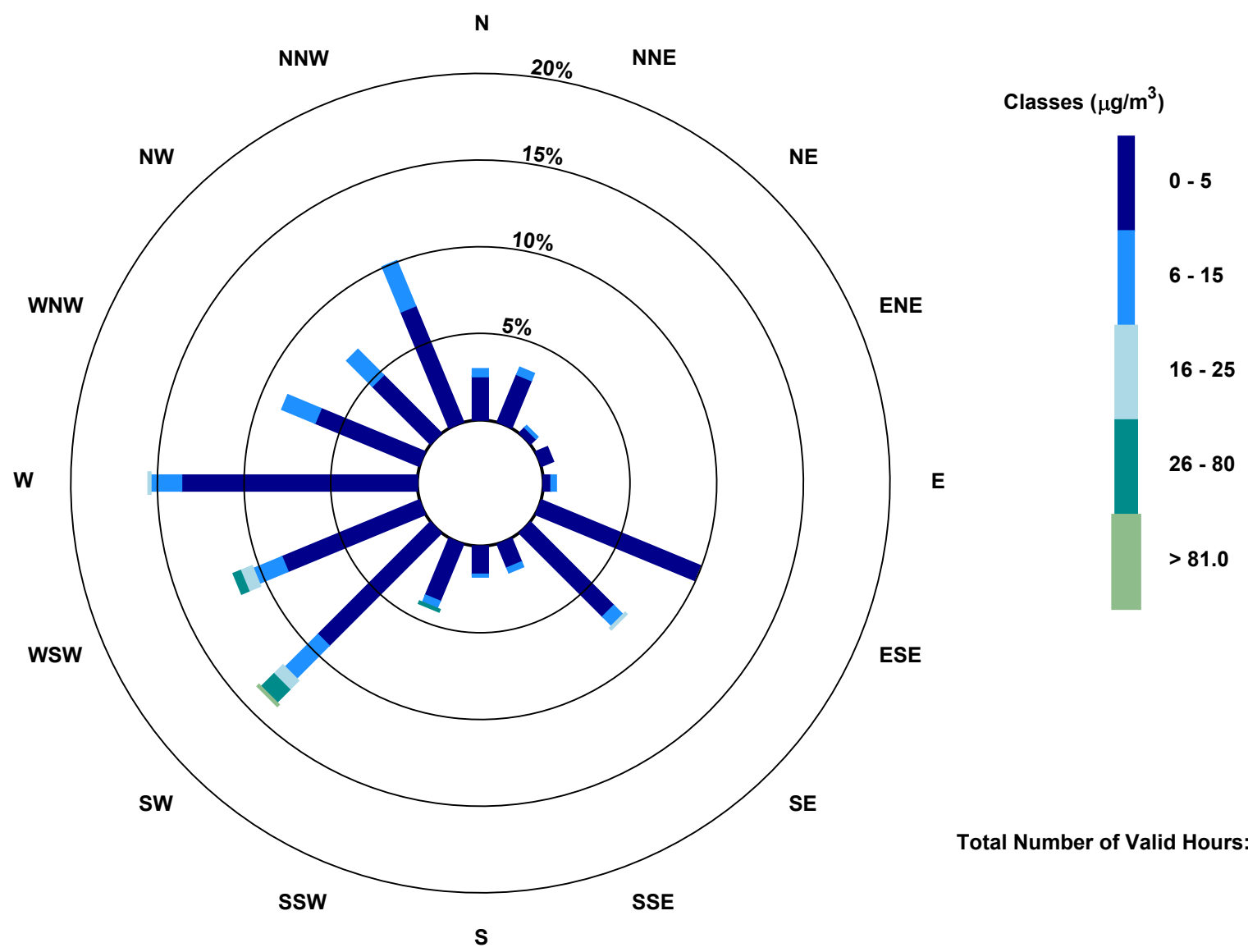
Wood Buffalo Environmental Association
Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - μg/m³
Surmont 2 - February 2024

Concentration Ranges (μg/m ³)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	17	20	3	5	3	67	46	10	11	24	62	58	92	44	32	49	543
6 - 15	3	3	1	0	2	0	5	2	1	3	18	12	12	14	14	19	109
16 - 25	0	0	0	0	0	0	1	0	0	0	5	5	1	0	0	0	12
26 - 80	0	0	0	0	0	0	0	0	0	1	7	3	0	0	0	0	11
> 81.0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Totals	20	23	4	5	5	67	52	12	12	28	93	78	105	58	46	68	676

Total Number of Valid Hours: 676

Total Number of Hours: 696



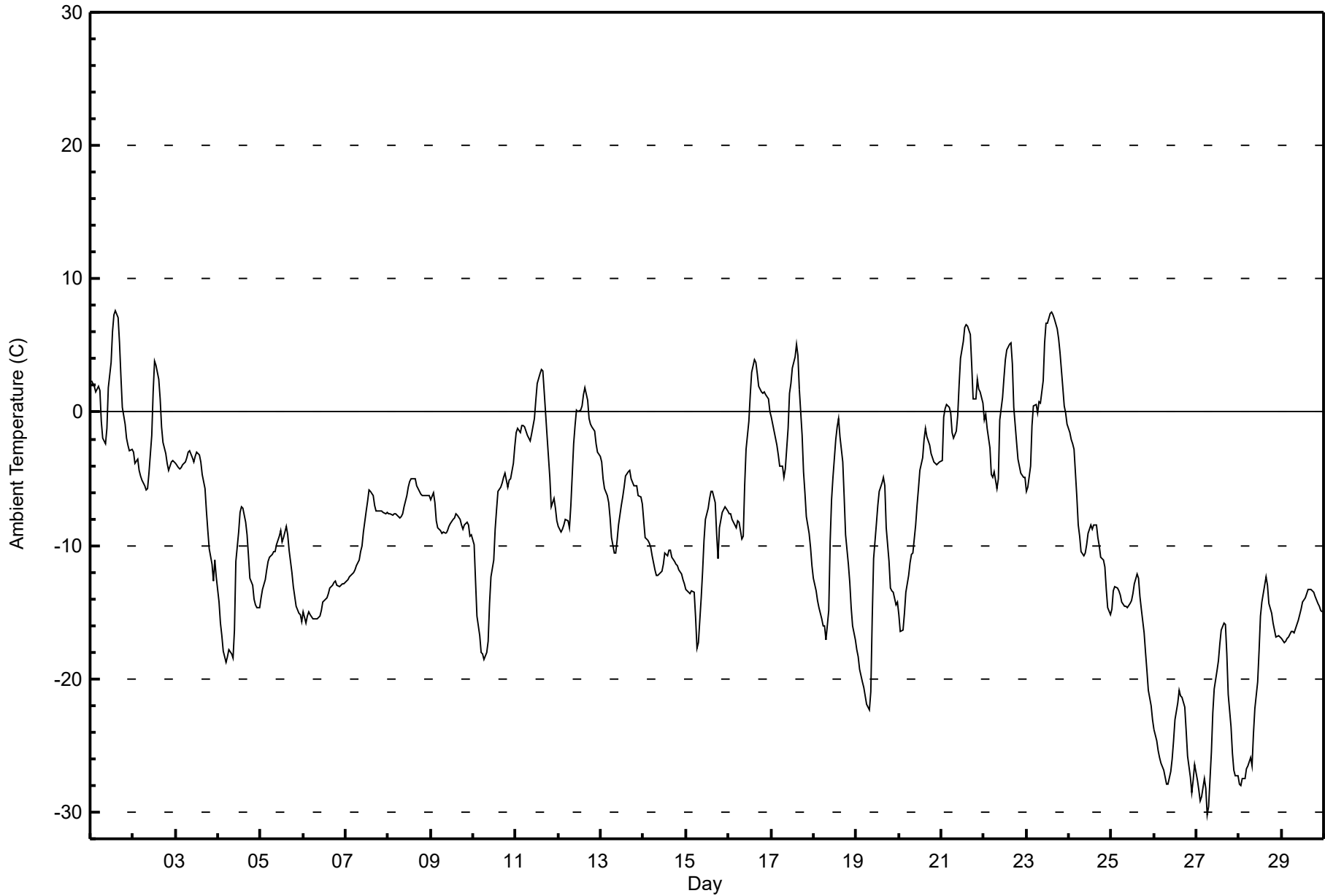
Total Number of Valid Hours: 676



Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature (AT) - C
Surmont 2 - February 2024

Maximum Value: 7.6 C on Feb 1 15:00 Maximum Daily Average: 2.2 C on Feb 23																				Hours in Service:	696					
Minimum Value: -30.2 C on Feb 27 07:00 Minimum Daily Average: -25.2 C on Feb 26																				Hours of Data:	696					
Maximum Diurnal Average: -4.4 C at hour 15 Minimum Diurnal Average: -12.0 C at hour 8																				Hours of Missing Data:	0					
Monthly Average: -8.83 C Percentiles: P ₁ = -28.1 P ₁₀ = -18.2 Q ₁ = -13.9 Median = -8.4 Q ₃ = -3.4 P ₉₀ = 1.3 P ₉₉ = 6.7																				Hours of Calibration:	0					
																				Percent Operational Time:	100.0					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2.4	2.1	2.0	1.5	1.9	1.6	-0.7	-1.9	-2.4	-1.2	1.8	3.8	6.1	7.3	7.6	7.1	5.2	2.7	0.3	-0.9	-1.9	-2.4	-2.9	-2.8	1.5	7.6
2-Feb	-3.0	-3.9	-3.6	-4.3	-4.8	-5.1	-5.5	-5.8	-5.8	-4.5	-1.8	1.5	3.9	3.5	2.5	0.9	-1.2	-2.3	-3.1	-3.8	-4.4	-3.7	-3.6	-3.8	-2.6	3.9
3-Feb	-3.9	-4.1	-4.3	-4.2	-3.9	-3.8	-3.4	-3.0	-2.8	-3.4	-3.7	-3.4	-3.0	-3.2	-3.8	-4.6	-5.7	-7.4	-8.9	-10.2	-11.4	-12.7	-11.1	-12.4	-5.8	-2.8
4-Feb	-14.3	-15.8	-16.8	-17.9	-18.8	-18.3	-17.8	-18.2	-18.4	-16.3	-11.2	-9.0	-7.6	-7.1	-7.2	-8.2	-9.2	-10.8	-12.5	-13.0	-14.0	-14.5	-14.7	-14.6	-13.6	-7.1
5-Feb	-14.0	-13.3	-12.6	-11.8	-11.2	-10.9	-10.7	-10.4	-10.4	-10.0	-9.3	-8.8	-9.7	-9.4	-8.5	-9.2	-10.4	-12.0	-13.1	-13.9	-14.5	-15.1	-15.2	-15.7	-11.7	-8.5
6-Feb	-15.0	-15.9	-15.3	-14.9	-15.1	-15.5	-15.5	-15.5	-15.5	-15.3	-14.8	-14.2	-14.0	-13.9	-13.6	-13.2	-13.0	-12.8	-12.7	-13.0	-13.1	-13.0	-12.9	-12.8	-14.2	-12.7
7-Feb	-12.7	-12.5	-12.4	-12.3	-12.0	-11.8	-11.5	-11.1	-10.5	-10.1	-9.0	-7.4	-6.7	-5.8	-6.0	-6.2	-7.0	-7.4	-7.4	-7.4	-7.4	-7.5	-7.6	-7.5	-9.0	-5.8
8-Feb	-7.6	-7.6	-7.7	-7.6	-7.6	-7.8	-7.9	-7.9	-7.6	-7.1	-6.2	-5.7	-5.2	-5.0	-5.0	-5.0	-5.5	-5.9	-6.2	-6.3	-6.2	-6.3	-6.3	-6.3	-6.6	-5.0
9-Feb	-6.5	-6.1	-6.8	-8.1	-8.7	-8.9	-9.1	-9.0	-9.1	-8.9	-8.6	-8.3	-8.1	-7.9	-7.6	-7.7	-8.1	-8.5	-8.7	-8.4	-8.3	-8.5	-9.3	-9.2	-8.3	-6.1
10-Feb	-9.9	-12.7	-15.3	-16.7	-18.0	-18.1	-18.5	-18.0	-17.2	-14.4	-12.3	-11.1	-8.8	-7.3	-6.0	-5.6	-5.3	-4.9	-4.6	-5.7	-5.1	-5.0	-3.9	-2.6	-10.3	-2.6
11-Feb	-1.5	-1.2	-1.5	-1.0	-1.0	-1.1	-1.7	-2.0	-2.1	-1.7	-0.4	0.9	2.1	2.9	3.2	3.0	1.6	-1.7	-3.3	-4.9	-7.1	-6.5	-7.2	-8.1	-1.7	3.2
12-Feb	-8.5	-9.0	-8.7	-8.4	-8.1	-8.2	-8.7	-7.0	-2.3	-1.0	0.2	0.0	0.2	0.5	1.3	1.8	0.9	-0.4	-0.9	-1.1	-1.4	-2.4	-3.0	-3.3	-3.2	1.8
13-Feb	-3.7	-5.0	-5.8	-6.2	-6.8	-7.9	-9.4	-10.6	-10.6	-9.6	-8.4	-7.0	-6.4	-5.6	-4.8	-4.5	-4.4	-5.0	-5.5	-5.5	-5.5	-6.3	-6.3	-6.9	-6.6	-3.7
14-Feb	-8.1	-9.4	-9.7	-9.8	-10.1	-10.8	-11.8	-12.3	-12.2	-12.1	-12.0	-11.4	-10.6	-10.7	-10.3	-10.4	-10.8	-11.2	-11.4	-11.5	-11.8	-12.2	-12.6	-12.9	-11.1	-8.1
15-Feb	-13.2	-13.5	-13.6	-13.4	-13.5	-15.4	-17.7	-17.3	-13.9	-12.0	-9.6	-8.1	-7.2	-6.5	-6.0	-5.9	-6.8	-9.1	-11.0	-8.7	-7.5	-7.4	-7.1	-7.4	-10.5	-5.9
16-Feb	-7.6	-7.6	-8.0	-8.5	-8.6	-8.2	-8.3	-9.5	-9.3	-5.5	-2.8	-0.7	1.3	3.0	4.0	3.8	2.9	2.0	1.5	1.4	1.6	1.3	1.0	0.1	-2.5	4.0
17-Feb	-0.4	-0.9	-1.9	-2.4	-3.2	-4.1	-4.1	-4.9	-4.3	-1.3	1.4	2.1	3.3	4.1	5.1	4.3	1.7	-1.8	-4.4	-6.1	-7.9	-9.1	-10.2	-11.5	-2.3	5.1
18-Feb	-12.4	-13.4	-14.2	-14.7	-15.5	-16.0	-16.1	-17.1	-14.9	-9.7	-6.5	-4.9	-2.1	-1.1	-0.5	-1.8	-3.7	-6.4	-9.2	-11.4	-12.8	-14.6	-16.1	-17.0	-10.5	-0.5
19-Feb	-17.9	-18.3	-19.3	-20.2	-20.7	-21.3	-22.0	-22.4	-21.0	-15.5	-11.0	-8.3	-7.0	-5.9	-5.3	-4.8	-5.5	-8.7	-11.2	-13.2	-13.3	-13.6	-14.4	-14.2	-14.0	-4.8
20-Feb	-15.2	-16.4	-16.4	-15.1	-13.5	-12.2	-11.3	-10.6	-10.6	-8.5	-7.0	-5.7	-4.4	-3.4	-2.1	-1.2	-1.9	-2.4	-3.1	-3.4	-3.8	-3.9	-3.9	-3.8	-7.5	-1.2
21-Feb	-3.6	-0.4	0.3	0.6	0.4	-0.1	-1.5	-2.0	-1.4	-0.3	2.0	4.0	5.3	6.3	6.5	6.5	5.8	3.5	1.0	1.0	2.5	1.8	1.6	0.6	1.7	6.5
22-Feb	-0.5	-0.2	-1.2	-2.7	-4.6	-4.9	-4.5	-5.7	-5.0	-0.6	1.1	2.6	3.9	4.7	5.1	5.2	3.6	0.3	-2.3	-3.5	-4.1	-4.6	-4.9	-4.9	-1.2	5.2
23-Feb	-5.9	-5.7	-4.0	-1.0	0.5	0.5	0.0	0.8	0.7	2.3	5.2	6.7	6.7	7.4	7.5	7.3	7.0	6.2	5.6	4.4	1.8	0.5	-0.1	-0.9	2.2	7.5
24-Feb	-1.6	-2.1	-2.4	-2.7	-6.3	-8.5	-9.3	-10.5	-10.8	-10.6	-9.9	-9.1	-8.4	-8.8	-8.5	-8.4	-9.4	-10.0	-10.8	-11.1	-11.6	-13.2	-14.6	-15.2	-8.9	-1.6
25-Feb	-14.8	-13.4	-13.0	-13.2	-13.4	-13.8	-14.2	-14.5	-14.6	-14.7	-14.3	-14.1	-13.6	-12.8	-12.1	-12.5	-13.8	-14.8	-16.6	-18.0	-19.4	-20.8	-22.1	-23.1	-15.3	-12.1
26-Feb	-23.8	-24.7	-25.4	-25.9	-26.3	-26.8	-27.4	-27.9	-27.9	-27.0	-26.0	-24.7	-23.1	-21.8	-20.9	-21.3	-21.4	-22.2	-23.9	-25.9	-27.4	-28.5	-27.5	-26.5	-25.2	-20.9
27-Feb	-27.6	-28.4	-29.2	-28.9	-27.5	-28.2	-30.2	-29.6	-25.5	-22.6	-20.8	-19.4	-18.7	-17.4	-16.4	-15.9	-15.9	-18.1	-21.2	-23.6	-25.6	-26.9	-27.3	-27.2	-23.8	-15.9
28-Feb	-27.9	-28.0	-27.5	-27.5	-26.8	-26.5	-25.9	-26.5	-24.1	-22.3	-20.3	-17.9	-15.3	-14.3	-12.9	-12.3	-13.0	-14.3	-15.1	-15.8	-16.4	-16.8	-16.8	-16.9	-20.1	-12.3
29-Feb	-17.0	-17.3	-17.2	-17.0	-16.8	-16.5	-16.5	-16.5	-16.2	-15.6	-15.2	-14.7	-14.3	-13.9	-13.6	-13.3	-13.3	-13.4	-13.5	-13.9	-14.3	-14.6	-14.8	-14.9	-15.2	-13.3
																								Diurnal Average		
																								Diurnal Maximum		





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Surmont 2 - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	61	8.76	8.76
-20 - 0	541	77.73	86.49
0 - 10	94	13.51	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

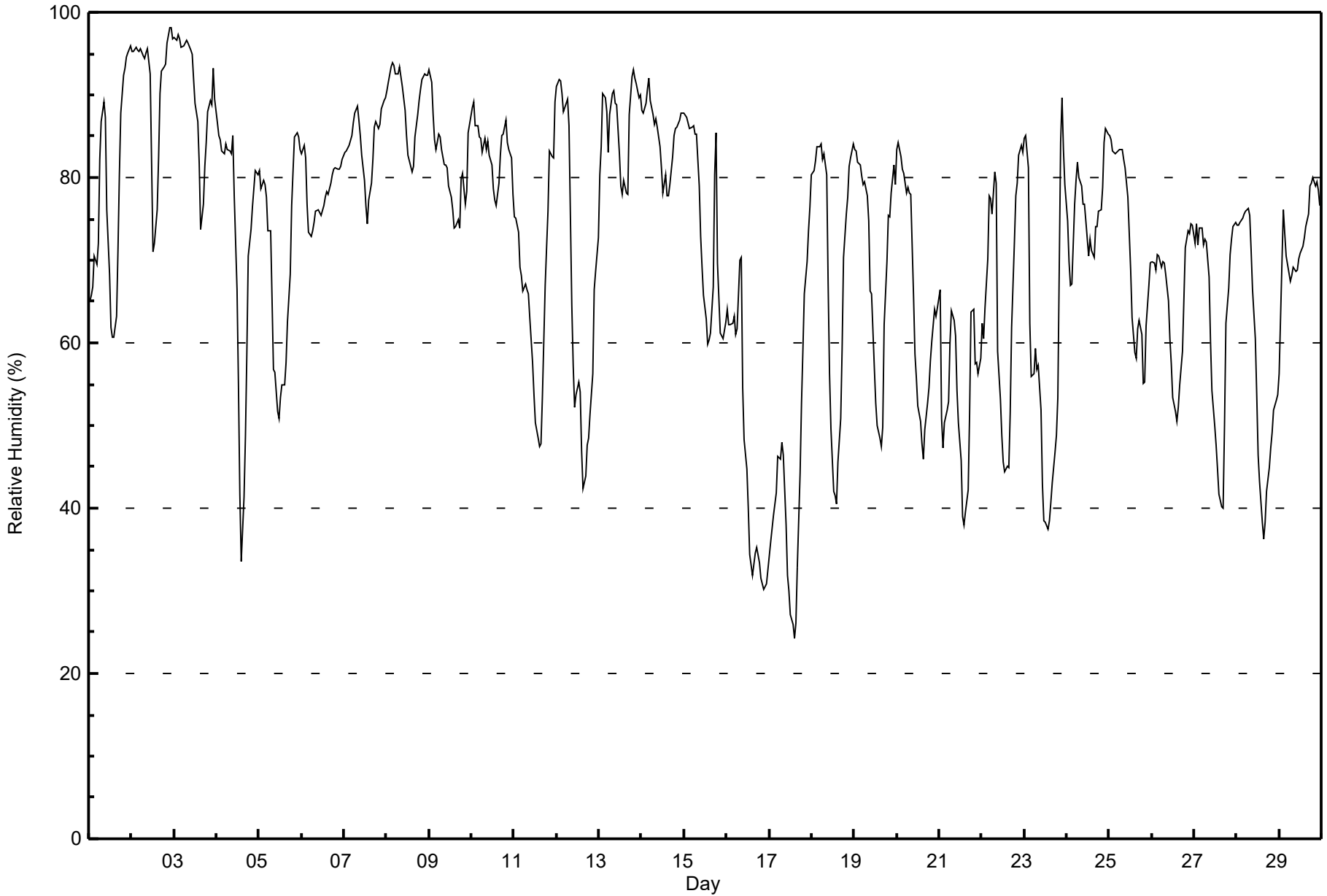
Relative Humidity (RH) - %
Surmont 2 - February 2024

Maximum Value: 98.2 % on Feb 2 22:00 Maximum Daily Average: 91.2 % on Feb 2																						Hours in Service: 696 Hours of Data: 696																										
Minimum Value: 24.2 % on Feb 17 15:00 Minimum Daily Average: 44.0 % on Feb 17 Maximum Diurnal Average: 78.5 % at hour 1 Minimum Diurnal Average: 57.0 % at hour 15 Monthly Average: 71.59 % Percentiles: P ₁ = 30.8 P ₁₀ = 47.3 Q ₁ = 60.6 Median = 75.8 Q ₃ = 83.8 P ₉₀ = 89.6 P ₉₉ = 96.6																						Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	65.1	65.7	66.8	70.5	69.5	72.1	82.2	86.8	89.2	87.4	76.2	68.2	61.8	60.7	60.7	63.3	71.1	80.4	87.8	92.4	93.2	94.6	95.1	96.0	77.4	96.0																						
2-Feb	95.3	95.3	95.7	95.4	95.3	95.6	94.8	94.3	95.1	95.6	92.5	81.8	71.1	72.1	76.1	82.3	90.1	92.9	93.4	93.7	96.3	98.2	98.1	96.7	91.2	98.2																						
3-Feb	96.9	96.6	97.2	96.7	95.8	95.9	96.3	96.6	96.3	95.4	94.9	91.9	89.0	86.8	81.7	73.7	76.8	81.3	84.2	88.0	89.4	88.8	93.1	89.5	90.5	97.2																						
4-Feb	86.5	85.1	84.5	83.2	82.8	84.0	83.5	83.2	82.9	85.1	77.9	66.4	55.2	41.6	33.5	41.3	48.7	58.6	70.6	73.7	76.5	78.7	80.8	80.3	71.9	86.5																						
5-Feb	80.8	78.6	79.7	79.1	77.6	73.6	73.5	65.2	56.8	56.4	51.8	50.9	53.4	54.9	54.9	57.7	62.5	68.3	76.5	80.8	84.9	85.5	85.0	83.4	69.7	85.5																						
6-Feb	82.8	83.9	82.3	76.7	73.4	72.9	73.5	74.5	75.9	76.1	75.7	75.4	76.6	77.6	78.3	78.0	79.3	80.4	81.1	81.2	81.0	81.0	81.4	82.2	78.4	83.9																						
7-Feb	83.0	83.3	83.5	83.9	85.0	86.7	87.8	88.6	86.9	85.1	82.8	79.7	76.7	74.4	77.2	79.3	82.2	86.0	86.8	86.0	86.4	88.3	89.3	89.6	84.1	89.6																						
8-Feb	90.4	91.5	93.4	93.9	93.6	92.6	92.6	93.4	92.3	91.1	88.1	85.0	82.8	82.1	80.7	81.4	84.9	87.7	89.3	90.7	91.8	92.5	92.3	92.4	89.4	93.9																						
9-Feb	93.1	91.5	87.6	84.6	83.4	85.3	85.0	83.4	81.5	81.5	81.2	79.0	77.7	76.1	73.8	74.0	74.9	74.0	79.9	80.5	76.8	78.3	85.5	86.5	81.4	93.1																						
10-Feb	88.5	89.2	86.2	86.3	84.9	84.8	83.0	84.7	83.3	84.4	82.8	81.5	78.6	77.3	76.6	79.3	82.7	85.1	85.3	86.9	84.2	83.3	82.3	78.0	83.3	89.2																						
11-Feb	75.3	75.1	73.5	69.2	68.1	66.2	67.2	66.5	65.9	63.1	57.6	53.7	50.4	48.4	47.4	47.7	53.3	66.9	71.6	76.0	83.2	82.5	82.4	89.2	66.7	89.2																						
12-Feb	91.0	91.8	91.8	90.2	87.9	89.0	89.5	86.2	64.5	57.2	52.2	53.7	55.3	54.0	47.0	42.4	43.8	47.7	48.4	51.4	56.3	66.5	68.7	72.7	66.6	91.8																						
13-Feb	80.3	83.8	90.1	89.6	87.9	83.0	87.7	90.2	90.5	89.0	88.8	82.8	78.9	78.0	79.6	78.1	77.9	87.6	92.2	93.0	92.0	91.4	89.6	89.9	86.3	93.0																						
14-Feb	88.1	87.8	89.0	90.7	92.0	89.3	87.7	86.5	87.1	86.1	83.7	81.3	78.2	80.3	77.7	77.8	79.1	82.5	85.1	85.9	86.0	87.0	87.8	87.8	85.2	92.0																						
15-Feb	87.7	87.2	86.7	85.9	86.1	86.3	85.3	85.2	79.0	72.8	69.2	65.8	62.8	59.8	60.3	61.1	66.9	80.3	85.5	69.6	61.2	60.9	60.6	62.6	73.7	87.7																						
16-Feb	64.0	62.3	62.3	62.3	63.2	61.0	61.6	70.1	70.4	54.5	48.4	44.7	40.0	34.5	31.9	33.2	34.6	35.2	33.3	31.5	30.8	30.2	30.8	32.6	46.8	70.4																						
17-Feb	34.2	35.9	39.1	40.6	41.9	46.3	45.9	48.1	46.4	38.0	31.9	30.0	27.1	25.9	24.2	26.1	32.8	44.2	52.7	59.1	65.9	69.8	73.5	76.5	44.0	76.5																						
18-Feb	80.3	80.9	82.1	83.7	83.8	84.2	82.3	83.0	80.4	67.3	56.2	49.6	42.0	41.6	40.5	45.7	50.8	59.4	70.3	75.7	77.7	81.3	82.5	84.1	69.4	84.2																						
19-Feb	83.3	83.2	81.9	81.5	80.2	79.1	79.5	77.8	74.8	66.3	65.9	56.9	52.8	50.1	48.5	47.5	49.8	62.1	69.8	75.4	75.2	78.2	81.6	79.1	70.0	83.3																						
20-Feb	83.3	84.2	82.6	81.0	80.5	78.2	78.7	78.2	77.9	65.7	58.7	55.8	52.4	50.5	47.9	45.8	49.5	52.7	54.6	57.9	60.1	64.0	63.2	64.3	65.3	84.2																						
21-Feb	66.5	50.8	47.3	50.3	51.9	52.9	60.1	63.9	62.7	60.8	54.3	50.4	45.8	39.0	38.0	39.5	42.2	51.4	63.6	64.1	57.4	57.7	56.3	58.2	53.5	66.5																						
22-Feb	62.4	60.4	64.2	70.2	77.8	77.5	75.5	80.6	79.3	59.0	53.3	48.8	45.6	44.4	45.1	44.9	51.6	61.9	72.1	77.8	79.3	82.7	83.8	83.1	65.9	83.8																						
23-Feb	84.8	85.2	81.2	62.4	55.9	56.2	59.3	56.7	57.3	51.8	42.9	38.5	38.3	37.5	38.4	40.7	43.1	46.7	48.9	53.4	84.3	89.7	83.4	79.2	59.0	89.7																						
24-Feb	74.7	69.9	67.0	67.1	76.8	79.7	81.9	80.0	79.0	76.8	74.8	70.6	72.5	71.3	70.3	74.0	74.0	75.9	76.2	78.8	84.3	85.9	85.2	85.2	76.0	85.9																						
25-Feb	85.2	84.5	83.3	82.9	83.0	83.2	83.5	83.3	82.2	81.1	77.6	73.2	68.8	63.1	58.7	58.2	61.8	62.6	61.1	55.0	55.3	62.0	66.9	69.6	71.9	85.2																						
26-Feb	69.9	69.7	68.9	70.7	70.6	69.1	69.8	69.7	68.3	65.0	60.5	57.5	53.3	51.7	50.5	52.2	54.9	59.1	65.3	71.5	73.5	73.2	74.4	74.3	65.1	74.4																						
27-Feb	72.0	74.3	71.8	73.8	73.8	71.9	72.6	72.2	68.0	60.2	54.2	49.9	47.6	44.7	41.7	40.1	40.1	49.9	62.4	66.6	70.6	72.6	74.0	74.6	62.5	74.6																						
28-Feb	74.3	74.3	74.6	75.1	75.6	75.9	76.3	75.5	71.2	66.4	60.5	53.8	46.4	43.2	38.3	36.3	38.3	42.1	44.9	47.3	49.2	51.8	53.1	53.8	58.3	76.3																						
29-Feb	56.3	69.7	76.2	73.2	70.5	68.5	67.4	68.1	69.1	68.6	68.8	70.1	70.9	71.8	72.7	74.0	75.6	78.9	79.4	80.0	78.9	79.6	78.5	76.5	72.6	80.0																						
																								78.5	78.3	78.3	77.6	77.5	77.3	78.1	78.4	76.3	72.0	67.8	63.8	60.3	58.4	57.0	57.7	61.1	66.9	71.4	73.2	75.1	77.1	77.9	78.2	Diurnal Average
																								96.9	96.6	97.2	96.7	95.8	95.9	96.3	96.6	96.3	95.6	94.9	91.9	89.0	86.8	81.7	82.3	90.1	92.9	93.4	93.7	96.3	98.2	98.1	96.7	Diurnal Maximum



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Surmont 2 - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Surmont 2 - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	33	4.74	4.74
40 - 60	134	19.25	23.99
60 - 80	261	37.50	61.49
80 - 100	268	38.51	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Speed (WS) - km/h

Surmont 2 - February 2024

Maximum Speed: 16 km/h on Feb 29 06:00	Maximum Daily Speed Average: 10.0 km/h on Feb 16	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 8 04:00	Minimum Daily Speed Average: 0.7 km/h on Feb 2	Hours of Data: 682
Maximum Diurnal Speed Average: 2.7 km/h at hour 22	Minimum Diurnal Speed Average: 1.1 km/h at hour 7	Hours of Missing Data: 14
Monthly Average Velocity: 1.9 km/h 280.6 deg	Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 2 Median = 5 Q ₃ = 8 P ₉₀ = 11 P ₉₉ = 14	Percent Operational Time: 98.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	SSE7	SE8	SE8	ESE6	SE8	ESE6	SSW2	WSW2	SSW2	SE2	SE5	SSE4	SE6	SE7	SE6	SE5	SSW2	WSW3	SW2	SW2	SW2	SW2	SW2	SW3	SSE3.4	SE8
2-Feb	SW2	SW1	SW3	SW2	SW1	SW1	SW1	UO	W2	SE1	NE2	ESE2	NE3	NNE6	NNE3	N3	W1	WSW1	WSW1	WSW1	NNW2	NW3	WNW3	NNW2	NW0.7	NNE6
3-Feb	NNW2	NNW3	NW4	NW4	NW2	WNW3	WNW2	NW4	NNW6	NNW8	NW9	NW9	NW9	NNW10	NNW10	NNW13	NNW11	NNW8	NW5	W3	WSW3	W3	NW4	NW2	NW5.3	NNW13
4-Feb	WSW2	WSW2	SW2	SW1	SW2	SW2	WSW3	SW2	WSW1	S2	SE4	ESE5	ESE7	ESE8	ESE6	SE6	SSE4	SSW3	S3	SSW2	SW2	SW2	SW2	WSW2	S2.0	ESE8
5-Feb	SW2	WSW1	SW1	SW1	W1	W1	W1	WNW2	WNW5	NW5	NNW8	NNW8	NNW8	NNW9	NNW8	NNW8	NNW8	NNW5	WNW5	WNW4	W4	W4	W3	W2	NW3.7	NNW9
6-Feb	WNW2	WSW1	WSW1	ESE3	ESE5	ESE6	ESE7	ESE6	ESE7	ESE8	ESE8	ESE9	ESE8	ESE9	ESE8	SE7	ESE7	ESE6	ESE6	ESE8	ESE6	ESE6	ESE7	SE6	ESE5.7	ESE9
7-Feb	SE5	SE6	SE5	SE5	SE4	ESE3	SE4	SE4	SE3	SE2	SSE2	SE3	SSE2	E4	NE3	NNE4	N4	NNW3	NW1	NW1	NW2	NW1	WNW2	WNW1	ESE1.6	ESE6
8-Feb	N2	N2	NNW1	NNW0	SSE2	SE2	SE3	SE2	S2	E0	SSE2	SE3	ENE1	W2	NE2	ESE3	ESE5	SE5	ESE5	SE4	SE2	SE3	SE3	ESE1	ESE1.8	ESE5
9-Feb	UO	NW5	WNW7	WNW8	WNW8	WNW5	WNW5	WNW6	WNW6	WNW5	WNW6	NW5	NW7	WNW7	WNW6	NW5	WNW6	W4	WSW4	W5	WNW5	W4	WSW1	SW1	WNW5.1	WNW8
10-Feb	SW0	SW2	SSW1	SW1	SW1	SW2	SW2	SW3	SSW2	ESE4	SE6	SE7	SE8	SE6	SE6	SE7	SE5	SSE4	SSW4	S3	W7	W9	W12	W10	SSW2.3	W12
11-Feb	WSW13	WSW12	W8	W8	WNW10	WNW10	NW8	WNW8	W12	W13	W12	WNW10	WNW12	W12	WNW11	W9	W6	WSW3	WSW4	SW2	SW3	WSW4	WSW3	SSW1	W7.8	WSW13
12-Feb	S1	SSW1	S1	SSW1	SW2	SW2	SW2	SW3	WSW8	SSW6	SW5	W8	W11	W12	W13	WNW12	W10	W8	W8	W8	W7	NW8	WNW9	NW9	W5.7	W13
13-Feb	NNW11	NNW12	NW11	NNW11	NNW11	NNW10	NNW7	NNW7	NW7	NW7	NW8	NW8	NNW10	NNW6	NW2	W3	W4	SW1	SSW1	W2	W2	WNW2	NNW6	NNW6	NW6.1	NNW12
14-Feb	NNW9	NNW7	NNW7	NNW7	NNW6	NNE5	NNE4	NNW5	N4	N3	NNW5	NNW4	NW3	NNW6	NNW7	NNW7	NNW6	NW3	WNW2	NW2	NW2	WNW2	W1	UO	NNW4.3	NNW9
15-Feb	UO	UO	UO	UO	S1	SW2	SW2	W4	W7	WNW0	W6	W9	WSW11	W11	WSW10	W9	WSW6	WSW4	WSW3	W8	W9	W12	WNW8	WNW6	W6.2	W12
16-Feb	WSW8	W8	W9	W11	W10	WNW7	W7	WSW4	W5	W8	WNW8	WSW9	W10	W9	W10	W9	W13	W13	W15	W14	W16	WNW15	WNW13	W12	W10.0	W16
17-Feb	W11	W10	W7	W8	W8	WSW6	WSW7	W7	W7	W7	NW6	NW6	NW6	NW5	NW5	WNW4	NW2	WSW3	SW3	SW3	SW2	SW3	SW3	SW2	W4.8	W11
18-Feb	SW3	SW2	SW2	SW2	SW2	SW2	SW1	SW2	SSE1	ESE4	E5	ESE6	ESE4	E6	E6	ENE7	ENE5	E2	SSW2	SW1	WSW3	SW2	SW1	SW2	SE1.3	ENE7
19-Feb	SW2	SW2	WSW2	SW2	SW1	UO	WSW1	SW1	UO	SE1	N2	N5	N7	N6	N6	NNE5	NNE4	NW1	WSW2	SW3	SSW1	SW2	SW1	SSW1	NNW1.1	N7
20-Feb	SW1	SW2	SW2	SSW1	SW1	SSE1	SSW1	S1	SW1	SSE4	SE5	ESE4	SE5	SE6	ESE5	ESE5	SE3	SE2	SSE2	SE3	S2	SSW2	S2	SW1	SSE2.1	SE6
21-Feb	SW2	WSW7	WSW8	WSW9	WSW9	WSW9	WSW6	WSW8	W9	WNW8	W7	WSW11	WSW12	WSW12	W11	W11	WSW8	WSW5	SW3	W5	W9	W9	W9	W8	W7.9	WSW12
22-Feb	W5	W7	WSW6	WSW3	SW2	WSW4	WSW4	SW3	WSW1	W8	W8	WNW6	WNW9	W9	WNW9	WNW5	NNE1	SW2	SW3	SSW2	SW2	SSW1	SSW1	SW2	W3.8	W9
23-Feb	S2	SW4	SW2	WSW9	WSW10	WSW7	SSW2	WSW12	WSW9	WSW9	WSW12	W14	W15	W12	W14	W14	W14	W12	W12	WSW10	WNW10	WNW8	UO	UO	WSW9.4	W15
24-Feb	UO	UO	UO	WNW12	NW13	NNW12	NNW11	NNW8	N6	NNW7	NNW7	N7	NNW7	NNW8	N7	NNE6	NNE5	N4	N2	NW1	W1	SSW1	WSW2	WSW2	NNW5.3	NW13
25-Feb	SSW1	SE2	ESE3	ESE4	ENE3	ENE3	NNE4	NNE4	NNE4	NNE5	NNE6	NNE7	N7	NNE7	NNE7	NNE7	NNE6	NNE5	NNW5	NNE7	NNE7	N6	NNW7	N7	NNE4.4	NNE7
26-Feb	N8	NNW10	NNW9	NNW9	NNW8	NNW10	NNW10	NNW9	NNW9	NNW9	NNW11	NNW10	NNW9	NNW10	NNW9	NNW9	NNW7	NW5	WSW3	SW3	WSW0	WSW2	W3	WSW4	NNW6.7	NNW11
27-Feb	WSW3	WSW3	WSW3	WSW4	WSW4	WSW2	SW1	W4	W6	WNW7	WNW9	NW7	W7	WNW6	WNW7	WNW6	W5	W3	SW2	SW3	SW3	SW2	SW3	SW3	W3.9	WNW9
28-Feb	SW3	SSW2	SW2	SW2	SSW2	SSE2	S3	SE3	ESE7	ESE10	SE12	SE11	ESE12	SE13	SE14	SE13	ESE14	ESE10	ESE10	ESE10	ESE10	ESE12	ESE13	ESE13	ESE7.8	SE14
29-Feb	ESE13	ESE13	ESE12	ESE11	ESE14	ESE16	ESE16	ESE13	ESE14	ESE16	ESE12	ESE9	ESE6	ESE6	SE4	SSE3	SSW2	W2	WSW2	W1	W2	W2	W2	W4	ESE6.8	ESE16

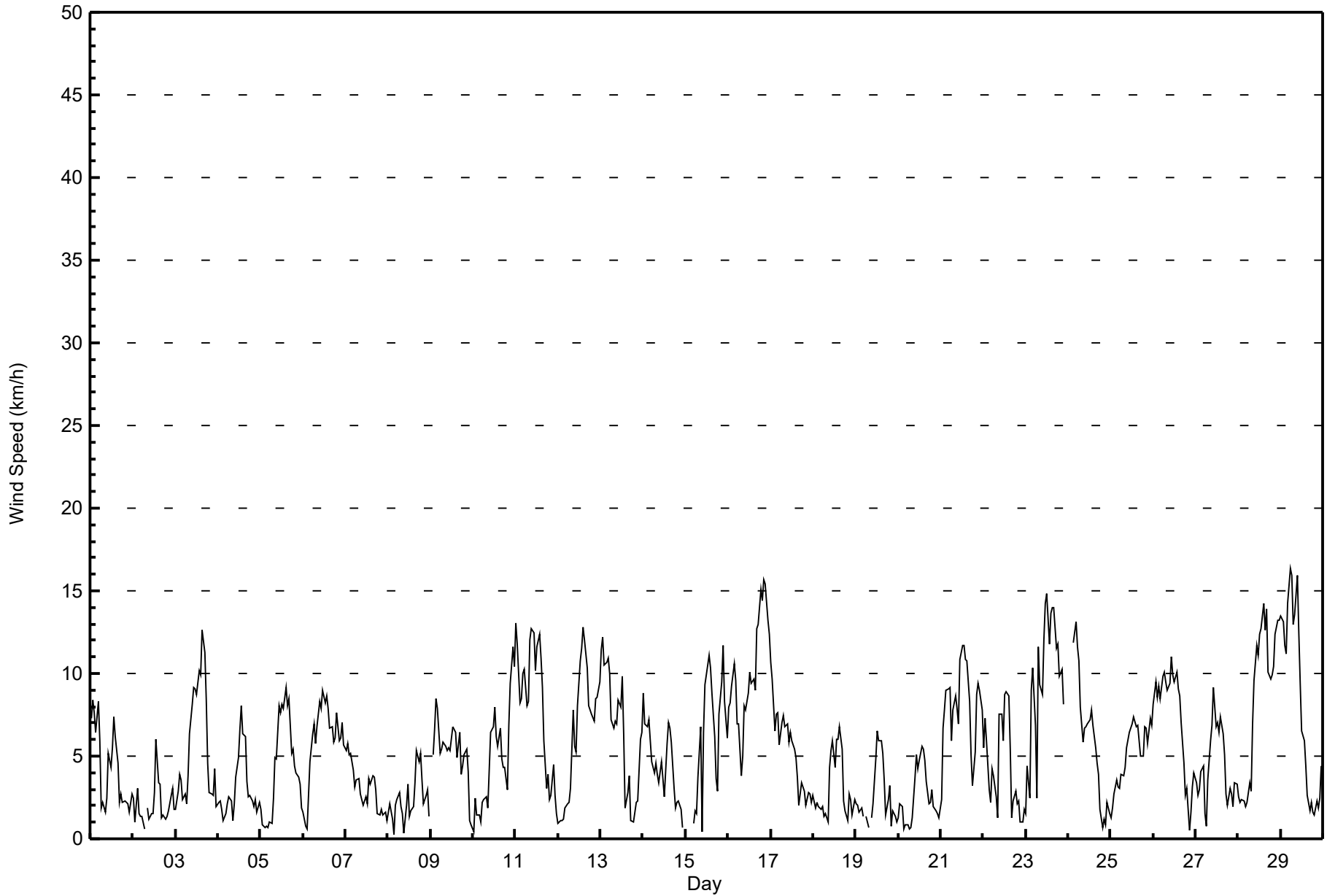
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ESE13	ESE13	ESE12	WNW12	ESE14	ESE16	ESE16	ESE13	ESE14	ESE16	W12	W14	W15	SE13	SE14	W14	W14	W13	W15	W14	W16	WNW15	WNW13	ESE13	Diurnal Maximum	

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Surmont 2 - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Surmont 2 - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	372	54.55	54.55
6 - 11	254	37.24	91.79
12 - 19	56	8.21	100.00
20 - 28	0	0.00	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 682

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Surmont 2 - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	10	13	4	4	4	18	32	13	12	27	93	48	34	21	28	11	372
6 - 11	10	10	0	1	2	34	17	1	0	1	0	24	51	32	17	54	254
12 - 19	0	0	0	0	0	15	4	0	0	0	0	6	22	5	1	3	56
20 - 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	20	23	4	5	6	67	53	14	12	28	93	78	107	58	46	68	682

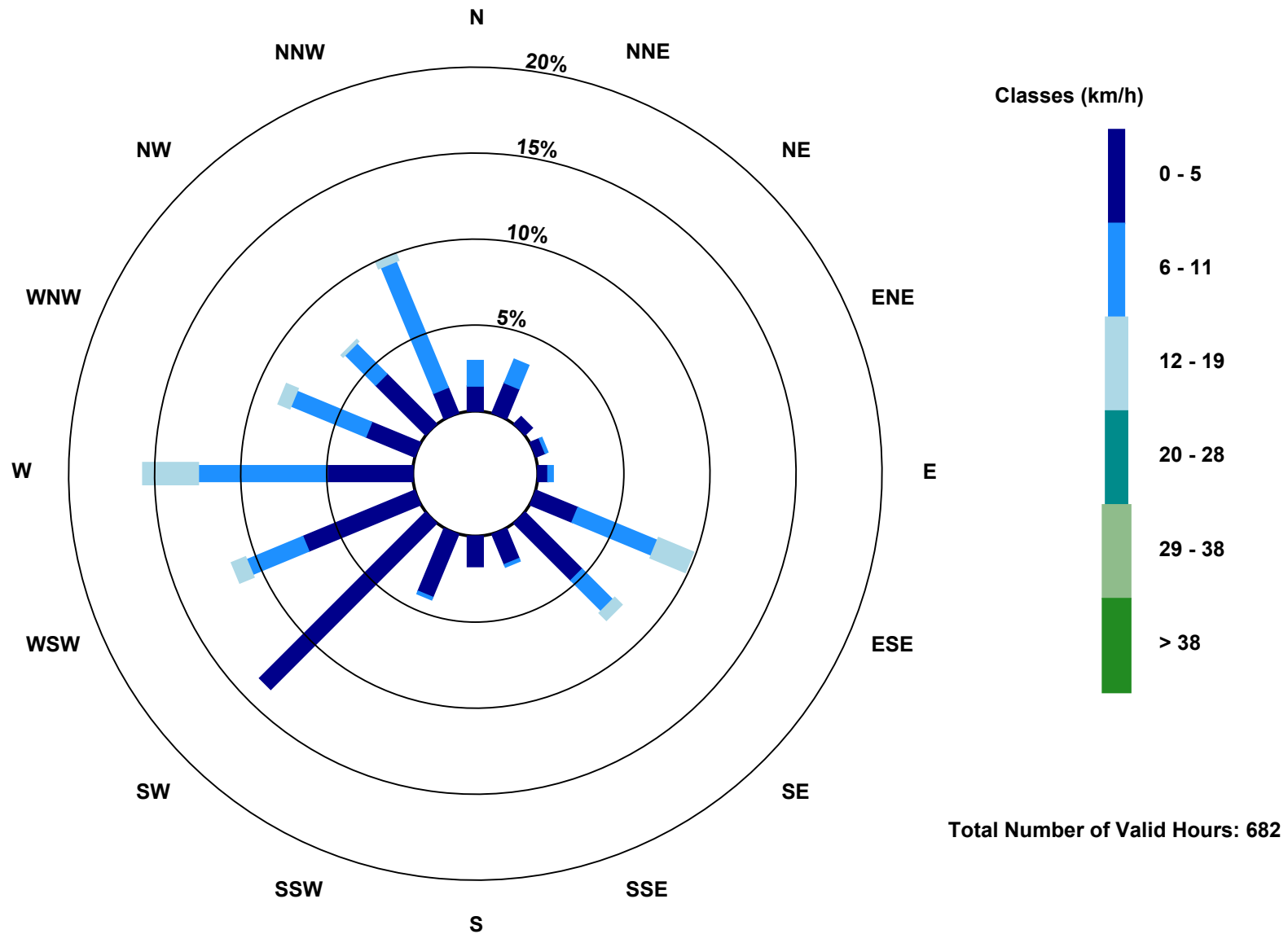
Total Number of Valid Hours: 682

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Surmont 2





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Surmont 2 - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 23 21:00														Hours in Service: 696 Hours of Data: 682 Hours of Missing Data: 14 Hours of Calibration: 0 Percent Operational Time: 98.0													
Minimum Value: 1 km/h on Feb 8 22:00																											
Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																											
Day	Hourly Period Ending At (MST)																								Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	3	3	3	2	3	4	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	4		
2-Feb	1	1	2	1	1	1	1	UO	1	1	2	1	2	2	2	1	1	1	1	1	1	1	2	1	2		
3-Feb	1	1	1	1	1	1	1	1	3	3	3	3	4	4	4	5	4	3	2	1	1	1	2	1	5		
4-Feb	1	1	1	1	1	1	1	1	1	2	1	1	2	2	2	2	2	2	1	1	1	1	1	1	2		
5-Feb	1	1	1	1	1	1	1	1	1	2	3	3	3	3	3	3	3	2	2	1	1	1	1	1	3		
6-Feb	1	1	1	1	2	2	2	2	2	3	2	3	3	3	2	2	2	2	2	2	2	2	2	2	3		
7-Feb	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2		
8-Feb	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	2	1	1	2	1	1	1	1	2		
9-Feb	UO	2	3	3	3	2	2	2	2	2	2	2	3	3	3	2	3	1	1	2	2	2	1	1	3		
10-Feb	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	3	3	3	4	4		
11-Feb	4	4	3	3	4	5	4	3	4	4	4	4	4	5	4	3	3	1	1	1	1	2	2	1	5		
12-Feb	1	1	1	1	1	1	1	2	4	3	3	3	4	4	5	4	4	3	2	3	3	4	3	4	5		
13-Feb	5	6	4	5	5	4	3	3	3	3	4	4	2	2	1	2	1	1	1	1	2	2	3	6			
14-Feb	4	3	3	2	2	2	2	2	1	2	1	2	2	2	2	2	2	1	1	1	1	1	1	UO	4		
15-Feb	UO	UO	UO	UO	1	1	1	1	3	1	3	3	4	4	3	3	2	1	1	3	3	3	4	2	4		
16-Feb	2	3	3	4	3	2	3	2	3	3	3	3	3	3	4	4	5	5	6	5	6	5	5	4	6		
17-Feb	3	3	2	2	2	2	2	2	2	2	3	2	2	2	2	2	1	1	2	1	2	1	1	1	3		
18-Feb	1	2	1	1	2	2	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2		
19-Feb	1	1	1	1	1	UO	1	1	UO	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2		
20-Feb	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	2		
21-Feb	2	3	2	2	3	3	2	2	3	3	3	4	4	4	4	4	3	2	2	4	3	3	3	3	4		
22-Feb	2	3	2	2	1	2	2	2	1	3	3	2	3	3	4	3	1	1	1	1	1	1	1	1	4		
23-Feb	1	2	1	4	4	3	2	5	5	3	5	6	5	4	5	5	5	4	4	4	7	4	UO	UO	7		
24-Feb	UO	UO	UO	6	6	5	5	4	2	3	3	2	3	3	2	2	2	1	1	1	1	1	1	1	6		
25-Feb	1	1	1	1	1	1	1	1	2	2	2	2	3	3	3	3	2	2	2	3	3	2	3	3	3		
26-Feb	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	3	3	2	1	1	1	2	1	1	4		
27-Feb	1	1	1	1	1	2	1	2	2	3	3	3	3	3	3	3	2	1	1	1	1	1	1	1	3		
28-Feb	1	1	1	1	1	1	2	2	3	3	5	4	4	4	5	4	4	3	3	3	3	3	3	4	5		
29-Feb	4	4	3	3	4	5	5	4	5	6	4	3	4	2	2	1	1	1	1	1	1	1	1	1	6		
														5 6 4 6 6 5 5 5 5 5 6 5 6 5 5 5 5 5 5 6 5 7 5 5 4													
														Diurnal Maximum													
UO - Unstable Operation																											



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Surmont 2 - February 2024

Direction of Maximum Speed: 110 deg on Feb 29 06:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 271.9 deg on Feb 16	Hours of Data: 682
Direction of Minimum Speed: 346 deg on Feb 8 04:00	Hours of Missing Data: 14
Direction of Minimum Daily Speed Average: 0.7 deg on Feb 2	Percent Operational Time: 98.0
Monthly Average Direction: 280.6 deg	

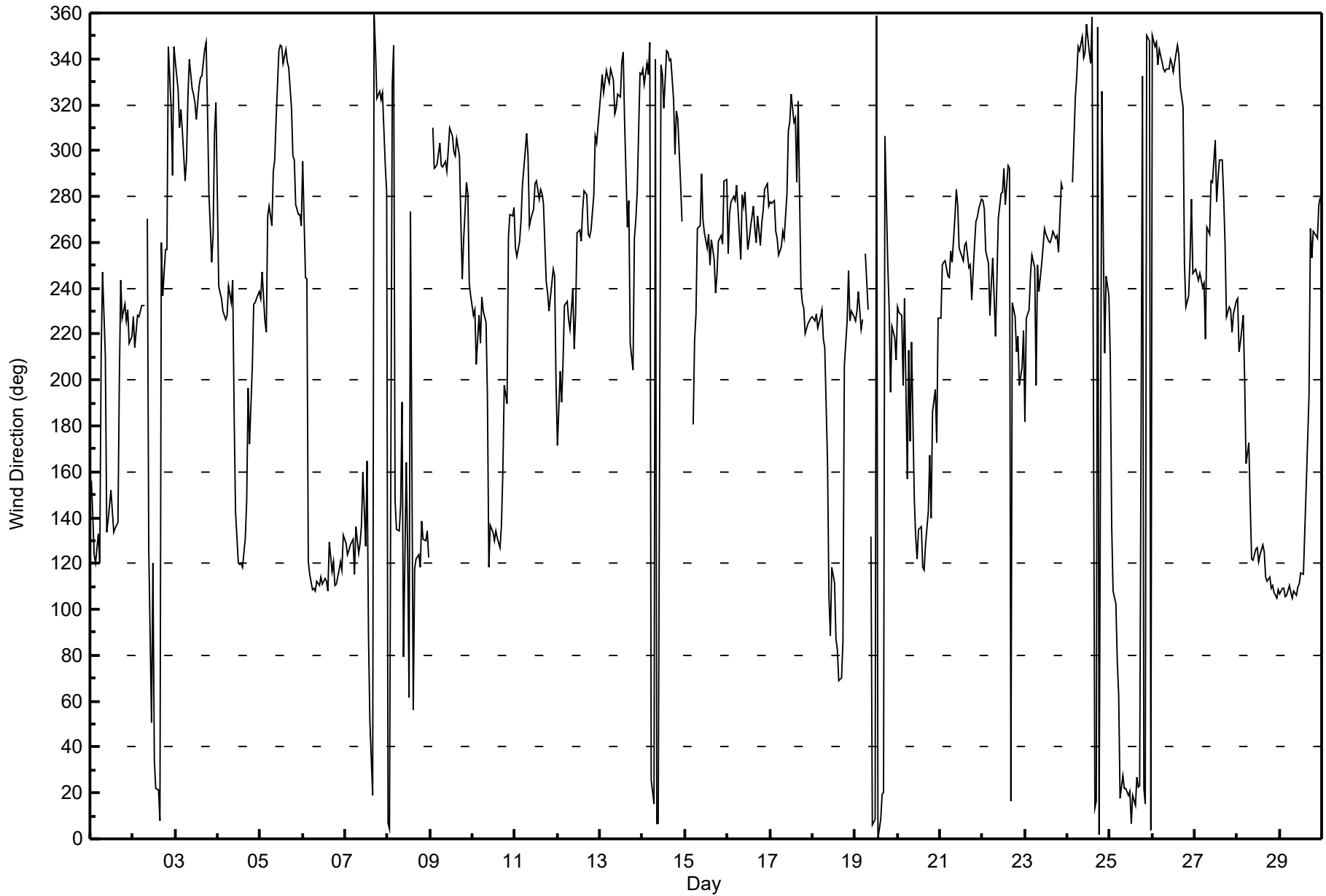
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	156	141	124	120	133	120	210	247	210	133	139	152	143	134	135	138	200	244	227	233	226	231	216	219	152.1
2-Feb	227	214	228	227	230	232	232	UO	270	127	51	120	34	22	22	8	260	237	257	257	345	319	289	345	313.3
3-Feb	338	327	310	318	309	287	296	323	340	327	325	321	314	328	332	332	344	347	317	281	252	264	308	321	323.5
4-Feb	241	238	236	230	227	228	241	234	243	186	143	120	120	120	118	131	147	197	172	206	233	234	236	238	168.8
5-Feb	236	247	226	221	272	276	267	291	296	314	344	346	345	338	344	339	336	319	298	296	277	272	272	267	318.8
6-Feb	295	245	244	121	115	109	110	108	112	111	114	111	113	112	108	130	117	121	111	111	117	121	117	132	115.1
7-Feb	128	124	126	128	130	115	136	124	129	137	160	128	165	89	51	19	359	344	323	326	322	325	294	282	108.6
8-Feb	7	4	329	346	148	135	134	146	191	79	164	124	62	273	56	118	122	124	118	138	131	130	134	123	123.6
9-Feb	UO	310	292	293	294	303	293	293	295	291	300	310	306	300	298	305	298	270	244	261	286	281	242	236	292.3
10-Feb	228	231	207	228	216	236	230	225	192	119	137	134	130	134	131	127	137	160	198	189	263	272	272	275	193.2
11-Feb	258	254	260	270	285	292	307	298	267	270	275	286	287	279	283	281	277	243	238	230	236	249	245	199	273.3
12-Feb	171	204	190	208	232	234	227	222	240	213	229	264	265	261	274	282	281	264	262	265	281	306	303	318	267.9
13-Feb	325	333	325	335	332	329	336	331	316	318	325	323	339	343	312	267	278	216	204	262	269	282	334	333	324.8
14-Feb	335	329	338	333	347	26	15	340	7	7	338	333	318	343	343	339	340	322	298	317	313	285	269	UO	339.7
15-Feb	UO	UO	UO	UO	181	217	229	266	267	290	270	264	257	264	250	261	253	238	246	261	263	259	287	288	261.5
16-Feb	255	273	277	280	278	285	275	253	281	276	282	257	261	267	276	266	260	271	259	268	274	283	286	276	271.9
17-Feb	278	277	278	265	262	255	258	265	262	281	309	313	325	312	314	286	321	240	234	232	220	224	226	227	274.4
18-Feb	227	226	229	223	228	231	218	214	164	106	89	118	111	87	82	69	70	86	206	226	248	226	230	227	127.2
19-Feb	226	230	239	222	226	UO	255	231	UO	132	6	9	359	0	9	20	20	306	251	231	195	224	218	209	330.1
20-Feb	232	229	228	198	235	157	213	174	216	148	131	122	135	136	118	117	128	143	167	140	186	196	173	227	149.3
21-Feb	227	250	251	252	245	245	256	251	271	283	277	258	254	252	259	260	249	250	235	259	269	271	274	279	258.9
22-Feb	278	274	256	251	228	242	253	219	243	270	281	282	292	277	293	293	17	234	228	212	219	197	206	222	267.2
23-Feb	182	227	231	246	255	249	198	250	239	251	258	266	264	261	260	262	265	262	263	256	285	283	UO	UO	258.1
24-Feb	UO	UO	UO	286	323	332	345	343	349	340	343	355	343	338	358	13	17	354	2	326	261	212	245	237	336.6
25-Feb	210	137	108	102	78	63	18	28	22	22	19	21	6	19	15	27	23	23	333	22	15	350	348	4	19.6
26-Feb	350	345	347	337	344	339	335	334	335	336	340	338	334	342	346	342	328	319	251	232	237	253	279	246	334.0
27-Feb	248	246	244	247	241	242	218	267	263	287	286	305	278	288	296	296	280	259	228	232	231	221	229	234	268.4
28-Feb	235	212	217	228	200	164	173	145	122	122	126	127	121	124	128	125	114	112	114	109	110	108	105	109	122.4
29-Feb	107	109	109	106	106	110	107	105	108	106	110	111	116	115	135	154	193	266	253	265	263	262	277	279	112.1
	266.5	269.8	269.7	274.5	277.4	283.3	290.4	280.6	277.3	290.6	302.7	300.8	297.1	304.3	310.8	308.3	300.1	268.6	244.6	246.8	265.2	266.9	276.7	274.9	
	Diurnal Average																								

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction (WD) - deg
Surmont 2 - February 2024





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Surmont 2 - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 107 deg on Feb 15 10:00 Minimum Value: 10 deg on Feb 10 00:00 Percentiles: P ₁ = 13 P ₁₀ = 21 Q ₁ = 28 Median = 37 Q ₃ = 45 P ₉₀ = 57 P ₉₉ = 89																			Hours in Service: 696 Hours of Data: 682 Hours of Missing Data: 14 Hours of Calibration: 0 Percent Operational Time: 98.0						
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	48	44	41	36	45	45	55	41	45	59	36	41	39	32	41	49	61	39	38	30	34	39	42	16	61
2-Feb	24	56	30	51	53	36	53	UO	54	62	71	67	67	29	71	45	59	59	42	37	55	58	35	67	71
3-Feb	79	43	40	40	54	51	48	36	40	44	41	40	42	42	40	42	41	40	38	36	15	26	43	37	79
4-Feb	15	21	16	50	51	16	13	16	17	43	48	27	28	29	27	36	48	50	31	25	37	16	22	20	51
5-Feb	39	57	58	48	30	54	58	27	24	31	36	42	31	35	34	37	30	39	35	30	28	18	22	25	58
6-Feb	37	61	68	40	21	22	23	22	25	23	27	25	27	27	24	34	31	32	28	25	32	29	25	38	68
7-Feb	35	32	30	29	38	37	27	32	35	41	38	47	51	45	53	45	39	52	79	82	50	52	32	63	82
8-Feb	76	69	70	104	47	59	49	75	55	105	84	56	88	68	73	72	30	30	27	46	57	29	28	52	105
9-Feb	UO	38	40	31	34	39	39	35	36	38	40	41	40	40	40	44	37	34	20	25	36	33	38	10	44
10-Feb	91	14	33	15	27	11	14	22	30	28	24	35	33	45	44	39	56	66	61	82	44	27	26	34	91
11-Feb	26	24	25	31	38	39	46	41	25	26	28	33	34	31	29	29	30	17	21	30	42	20	58	40	58
12-Feb	35	52	51	14	13	16	42	58	38	56	54	38	31	29	29	32	32	24	24	26	32	41	39	44	58
13-Feb	42	45	40	41	43	39	39	42	45	44	39	47	38	38	100	35	38	25	23	32	42	51	40	38	100
14-Feb	37	38	39	36	49	39	55	49	51	55	36	51	73	40	35	41	45	47	33	49	42	41	29	UO	73
15-Feb	UO	UO	UO	UO	37	26	35	25	28	107	39	32	30	28	28	30	25	18	29	28	28	25	35	32	107
16-Feb	23	35	28	32	24	30	30	42	57	32	36	28	30	33	38	38	37	37	32	35	32	34	34	31	57
17-Feb	29	29	29	25	23	24	24	21	21	28	48	43	46	46	49	43	53	12	18	20	45	32	10	14	53
18-Feb	20	41	27	46	52	49	84	60	71	34	40	36	48	40	36	33	31	66	34	40	15	16	40	15	84
19-Feb	14	20	52	16	68	UO	71	54	UO	70	89	50	43	52	51	47	61	61	25	19	66	41	26	51	89
20-Feb	58	43	41	62	48	66	80	93	35	33	30	34	37	33	37	33	39	47	38	38	25	41	41	53	93
21-Feb	43	28	25	23	22	22	21	20	27	35	40	28	28	27	28	29	27	25	34	51	30	28	32	35	51
22-Feb	35	34	21	56	41	39	43	43	65	32	31	43	34	32	41	39	90	24	26	34	18	10	43	25	90
23-Feb	51	25	53	29	28	44	86	36	29	33	32	33	30	31	30	28	31	30	28	30	43	35	UO	UO	86
24-Feb	UO	UO	UO	38	43	38	36	31	29	36	35	36	45	40	39	56	54	49	66	89	40	53	13	48	89
25-Feb	74	63	32	28	40	46	38	44	43	45	41	43	46	47	54	43	46	46	41	45	46	46	43	46	74
26-Feb	46	39	44	35	38	38	31	36	41	46	36	41	42	42	40	35	41	44	17	14	49	46	22	16	49
27-Feb	15	19	18	19	15	21	44	41	29	44	38	49	46	70	51	45	42	25	22	23	17	19	20	19	70
28-Feb	15	23	19	15	26	54	55	44	35	30	37	40	36	36	38	38	26	27	25	21	19	20	21	21	55
29-Feb	21	22	22	20	21	23	22	20	23	23	26	26	53	36	46	64	62	31	35	24	23	20	28	28	64
91 69 70 104 68 66 86 93 71 107 89 67 88 70 100 72 90 66 79 89 66 58 58 67																								Diurnal Maximum	
UO - Unstable Operation																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS30 ELLS RIVER FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ELLS RIVER (AMS30)
FEBRUARY 2024

MONTHLY SUMMARY for
AMD SECTION III.B.1(c)

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	663	33	33	100	17.3	0	3.1	0
TRS (ppb) Average	661	35	35	100	2.4	0	0.8	0
THC (ppm) Average	661	33	35	99.71	5.9	-	3	-
NMHC (ppm) Average	661	33	35	99.71	0.354	-	0.056	-
CH4 (ppm) Average	661	33	35	99.71	5.6	-	2.9	-
NO2 (ppb) Average	660	35	36	99.86	46.7	0	23.3	-
NO (ppb) Average	660	35	36	99.86	143.1	-	34.1	-
NOX (ppb) Average	660	35	36	99.86	171.8	-	57.4	-
PM2.5 (ug/m3) Average	695	1	1	100	38.9	0	18.1	0
Temperature 2 m (C) Average	696	0	0	100	9.8	-	0.8	-
Relative Humidity (%) Average	696	0	0	100	94.9	-	90	-
Wind Speed 10 m (km/h) Average	691	0	5	99.28	25	-	16	-
Wind Direction 10 m (deg) Average	691	0	5	99.28	-	-	-	-
Global Solar Radiation (W/m2) Average	696	0	0	100	409.4	-	97.4	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ELLS RIVER (AMS30)
FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	663	0.56	1.4	-	0	0	0.1	0.2	0.4	1.2	17.3
TRS (ppb) Average	661	0.58	0.2	-	0.4	0.4	0.4	0.5	0.6	0.9	2.4
THC (ppm) Average	661	2.3	0.4	-	2	2	2.1	2.1	2.4	2.9	5.9
NMHC(ppm) Average	661	0.009	0.04	-	0	0	0	0	0	0	0.354
CH4(ppm) Average	661	2.3	0.4	-	2	2	2.1	2.1	2.4	2.9	5.6
NO2 (ppb) Average	660	11.32	9.6	-	0.3	0.7	3	9	17.8	25	46.7
NO (ppb) Average	660	7.07	14.6	-	0	0	0.1	0.9	6.6	24.6	143.1
NOX (ppb) Average	660	18.39	21.7	-	0.3	0.7	3.4	10.4	26.2	51.4	171.8
PM2.5 (ug/m3) Average	695	6.46	5.8	-	0.2	1.6	2.8	4.8	8.1	13.5	38.9
Temperature 2 m (C) Average	696	-10.1	8	-	-32.2	-19.8	-15.3	-9.7	-4.9	-0.4	9.8
Relative Humidity (%) Average	696	68.57	14.6	-	27.6	47.1	58.8	71.5	80.1	84.4	94.9
Wind Speed 10 m (km/h) Average	691	8.4	5	-	0	2	4	7	11	16	25
Wind Direction 10 m (deg) Average	691	262.1	-	-	-	-	-	-	-	-	-
Global Solar Radiation (W/m2) Average	696	55.5	97.4	-	0	0	0	0.2	75	218.5	409.4

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ELLS RIVER (AMS30)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
THC/NMHC/CH4	27 Feb 2024 10:00	27 Feb 2024 11:00	2	Maintenance - replaced support gas cylinder
NO2	04 Feb 2024 13:00	04 Feb 2024 13:00	1	Maintenance - calibration gas cylinder replaced
Wind Speed, Wind Direction	08 Feb 2024 18:00	08 Feb 2024 18:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction	10 Feb 2024 01:00	10 Feb 2024 01:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction	27 Feb 2024 04:00	27 Feb 2024 04:00	1	Flat line in sensor output signal
Wind Speed, Wind Direction	27 Feb 2024 22:00	27 Feb 2024 23:00	2	Flat line in sensor output signal



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

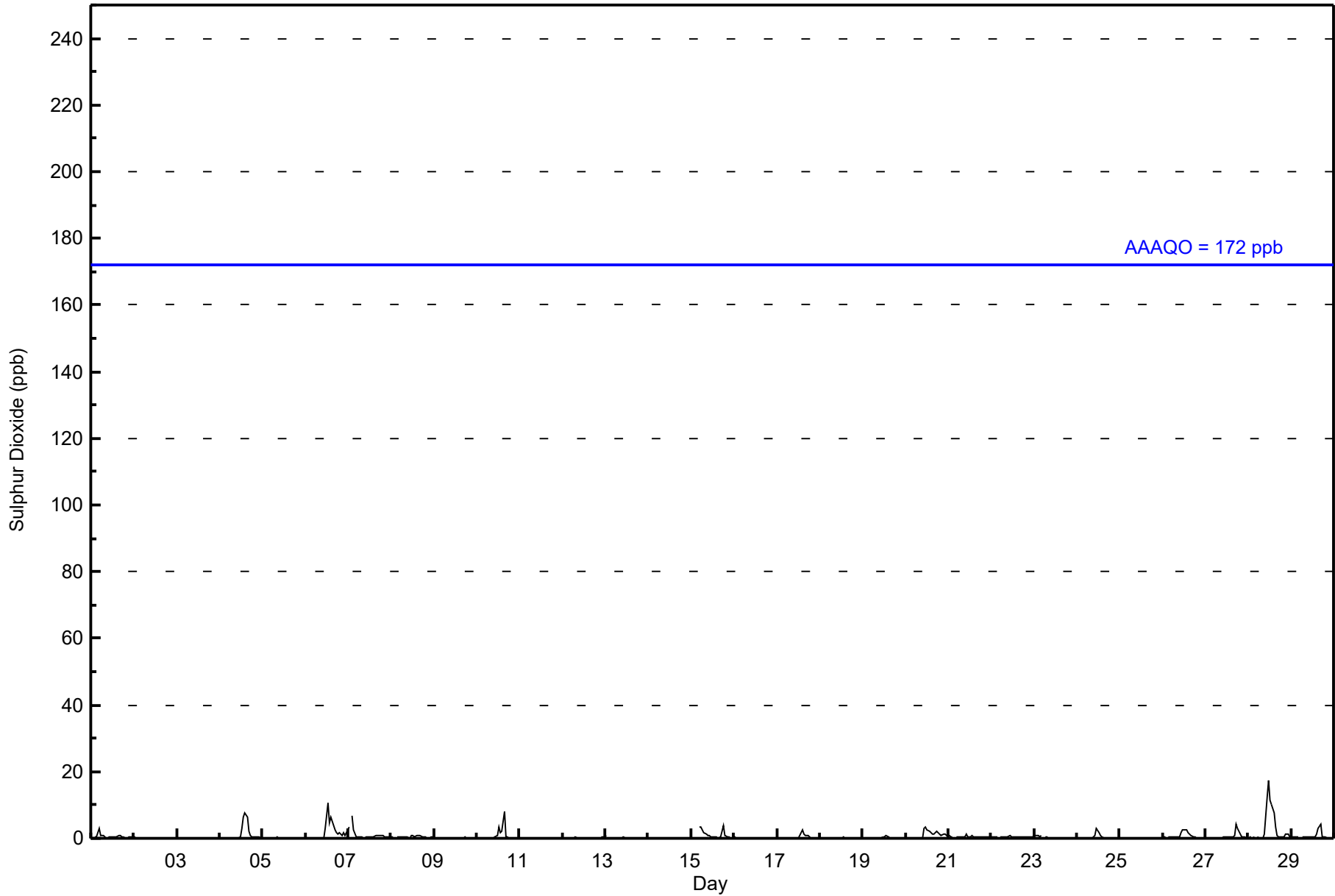
Ells River - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	696						
Maximum Value: 17.3 ppb on Feb 28 12:00		Maximum Daily Average: 3.1 ppb on Feb 28																	Hours of Data: 663								
Minimum Value: 0.0 ppb on Feb 5 11:00		Minimum Daily Average: 0.0 ppb on Feb 14																	Hours of Missing Data: 33								
Maximum Diurnal Average: 1.5 ppb at hour 13		Minimum Diurnal Average: 0.2 ppb at hour 2																	Hours of Calibration: 33								
Monthly Average: 0.56 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.4 P ₉₀ = 1.2 P ₉₉ = 7.6																	Percent Operational Time: 100.0								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.8	Z	0.5	0.3	2.8	0.7	0.6	0.7	0.1	0.2	0.3	0.3	0.4	0.3	0.3	0.8	1.0	0.5	0.2	0.1	0.2	0.3	0.3	0.5	0.5	2.8	
2-Feb	0.4	0.2	Z	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	
3-Feb	0.1	0.2	0.1	Z	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	
4-Feb	0.1	0.0	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.2	3.2	6.3	7.5	6.4	2.0	0.7	0.5	0.3	0.3	0.3	0.4	0.2	1.3	7.5	
5-Feb	0.2	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.4	0.1	0.0	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	
6-Feb	Z	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	3.0	10.5	4.7	6.4	5.0	2.5	1.5	1.4	1.5	1.1	1.6	1.0	1.6	1.8	10.5	
7-Feb	3.3	Z	6.8	2.4	0.6	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.5	0.8	0.7	0.7	1.0	0.7	0.5	0.6	0.5	0.5	1.0	6.8	
8-Feb	0.4	0.4	Z	0.5	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.8	0.8	0.6	0.7	0.8	0.7	0.6	0.4	0.3	0.2	0.2	0.2	0.3	0.4	0.8	
9-Feb	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2
10-Feb	0.1	0.1	0.2	0.1	Z	0.1	0.1	0.2	0.2	0.1	0.5	1.0	3.2	1.8	2.0	7.9	0.5	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.8	7.9	
11-Feb	0.1	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
12-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.1	0.6	
13-Feb	0.8	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.8	
14-Feb	0.0	0.0	Z	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
15-Feb	0.0	0.0	0.0	Z	3.4	3.6	2.4	1.5	1.3	1.0	0.8	0.5	0.4	0.3	0.3	0.2	0.3	2.3	3.9	1.0	0.4	0.3	0.2	0.2	1.1	3.9	
16-Feb	0.2	0.2	0.2	0.2	Z	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	
17-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.7	2.5	1.4	0.9	0.9	0.5	0.1	0.0	0.0	0.1	0.1	0.4	2.5	
18-Feb	Z	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
19-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.6	0.7	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.7	
20-Feb	0.1	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.1	0.2	3.2	3.3	2.6	2.1	1.5	1.2	1.5	1.9	1.8	1.2	1.0	1.2	1.1	0.9	1.1	3.3	
21-Feb	0.6	0.6	0.5	Z	0.4	0.4	0.4	0.3	0.2	0.6	1.2	0.5	0.5	0.7	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.6	0.5	0.5	1.2	
22-Feb	0.5	0.4	0.4	0.3	Z	0.4	0.4	0.3	0.4	0.5	0.8	0.6	0.6	0.4	0.3	0.5	0.5	0.4	0.5	0.3	0.3	0.3	0.5	0.6	0.4	0.8	
23-Feb	0.8	1.0	0.9	0.5	0.6	Z	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.0	
24-Feb	Z	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.7	3.1	1.9	1.0	0.4	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.4	3.1	
25-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	
26-Feb	0.2	0.3	Z	0.3	0.3	0.3	0.3	0.2	0.3	0.4	1.6	2.4	2.4	2.3	1.9	1.2	0.7	0.4	0.2	0.1	0.1	0.1	0.1	0.0	0.7	2.4	
27-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.3	0.5	0.4	0.3	0.2	0.8	4.3	2.8	1.2	0.5	0.3	0.2	0.2	0.6	4.3	
28-Feb	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	1.4	12.2	17.3	11.6	10.1	7.6	3.2	0.8	0.6	0.5	0.6	0.6	1.1	1.3	0.4	3.1	17.3	
29-Feb	0.3	0.3	0.3	0.2	0.2	Z	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.3	1.4	2.9	4.3	0.5	0.3	0.2	0.2	0.2	0.2	0.1	0.6	4.3	
																								Diurnal Average			
																								Diurnal Maximum			
																								0.4 0.2 0.4 0.2 0.4 0.3 0.2 0.2 0.2 0.2 0.8 1.3 1.5 1.3 1.3 1.2 0.7 0.6 0.5 0.3 0.2 0.3 0.3 0.3 0.3			
																								3.3 1.0 6.8 2.4 3.4 3.6 2.4 1.5 1.3 1.4 12.2 17.3 11.6 10.1 7.6 7.9 4.3 4.3 3.9 1.5 1.1 1.6 1.3 1.6			
Z - zerospan C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																											



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Ells River - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Ells River - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	659	99.40	99.40
11 - 20	4	0.60	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Ells River - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	80	68	32	6	9	22	40	59	72	51	46	42	28	30	40	30	655
11 - 20	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	80	68	32	6	9	22	44	59	72	51	46	42	28	30	40	30	659

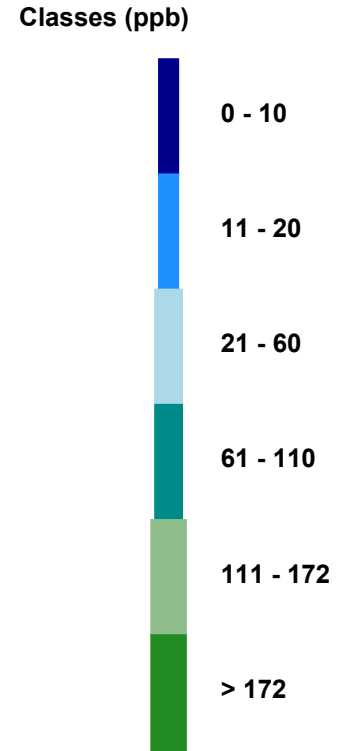
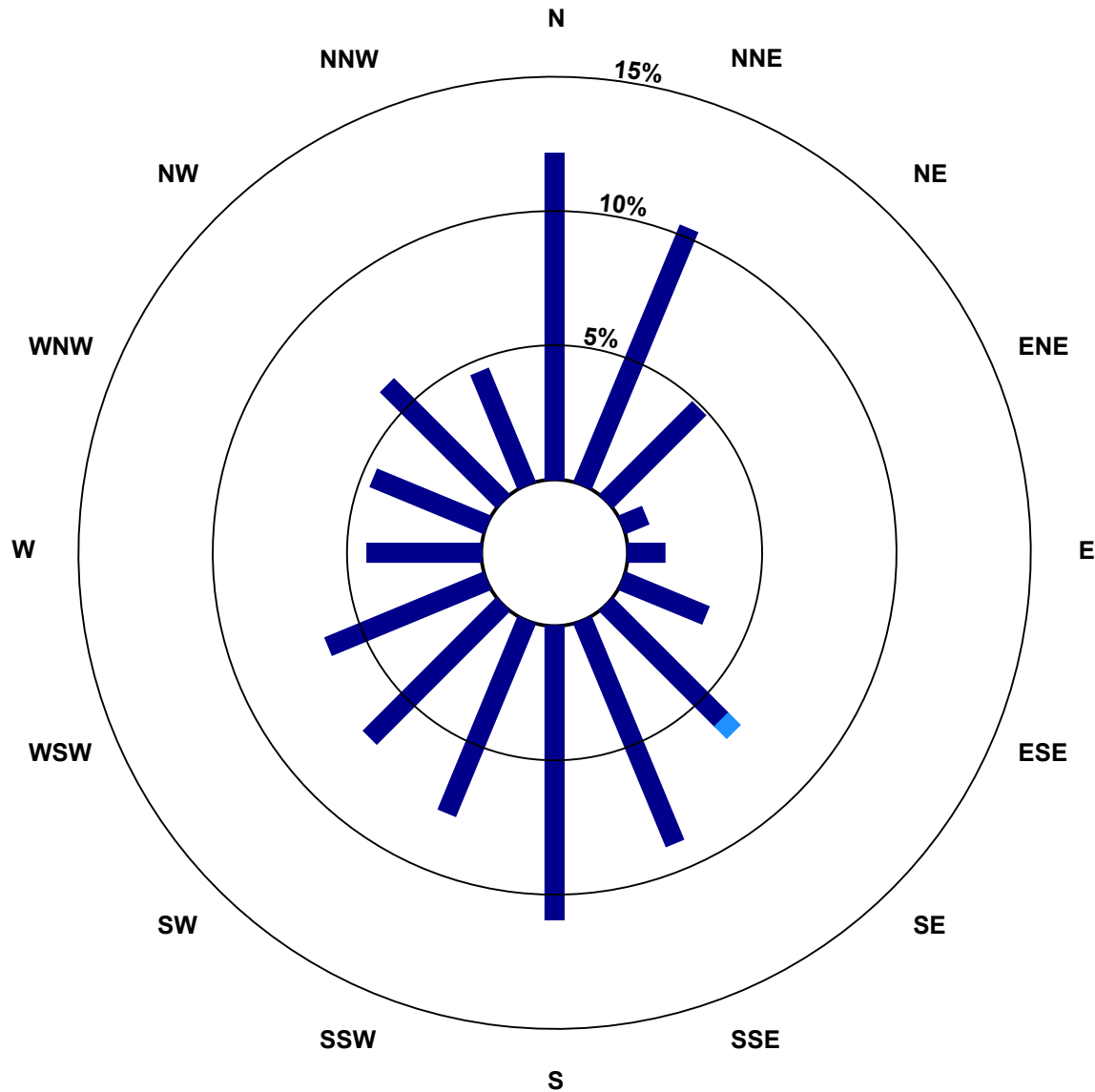
Total Number of Valid Hours: 659

Total Number of Hours: 696

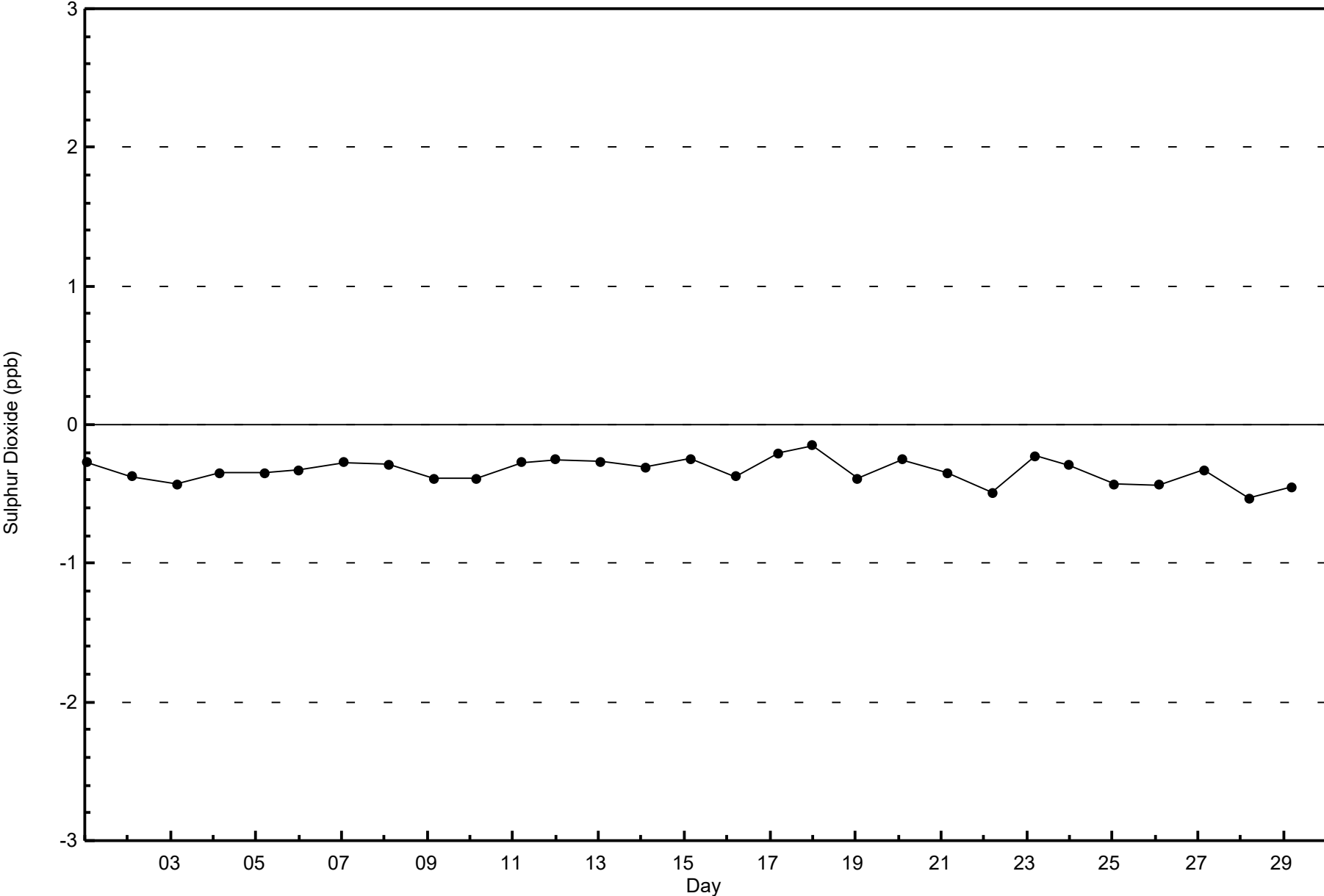


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Ells River



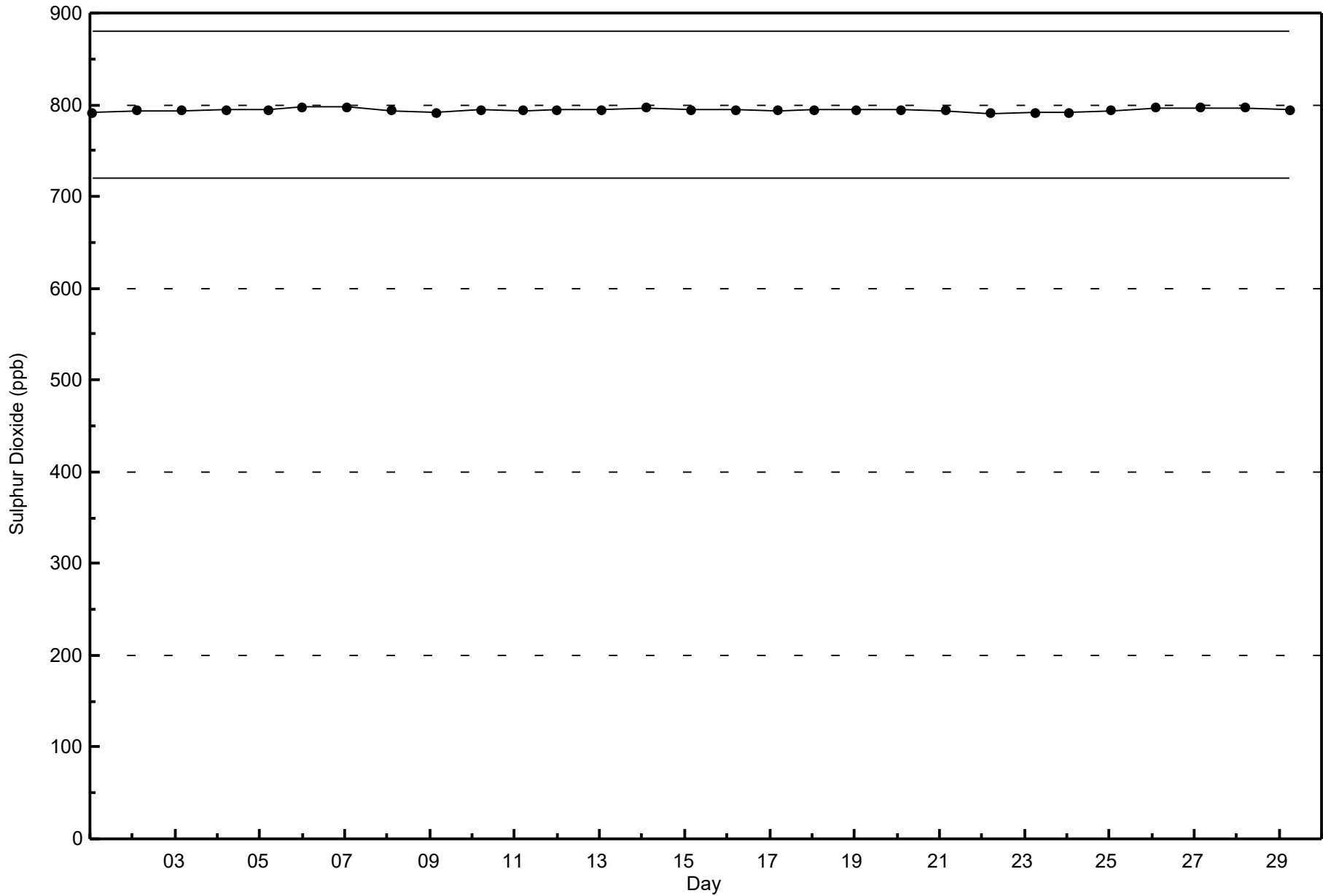
Total Number of Valid Hours: 659





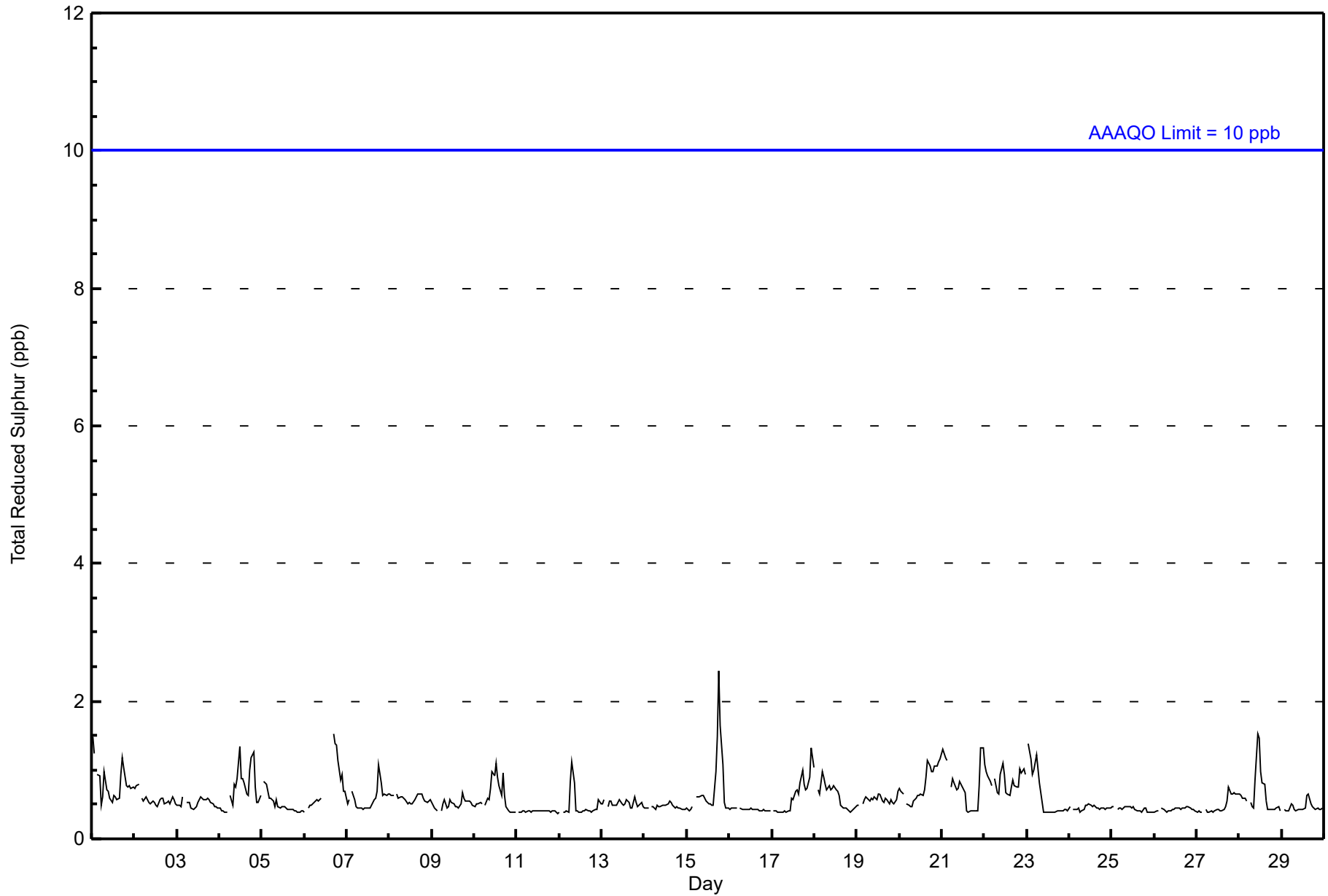
Wood Buffalo Environmental Association
Span Responses

Sulphur Dioxide (SO₂) - ppb
Ells River - February 2024





Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														661						
Maximum Value: 2.4 ppb on Feb 15 19:00		Maximum Daily Average: 0.8 ppb on Feb 22														Hours of Data: 661										
Minimum Value: 0.4 ppb on Feb 12 00:00		Minimum Daily Average: 0.4 ppb on Feb 11														Hours of Missing Data: 35										
Maximum Diurnal Average: 0.7 ppb at hour 19		Minimum Diurnal Average: 0.5 ppb at hour 16														Hours of Calibration: 35										
Monthly Average: 0.58 ppb		Percentiles: P ₁ = 0.4 P ₁₀ = 0.4 Q ₁ = 0.4 Median = 0.5 Q ₃ = 0.6 P ₉₀ = 0.9 P ₉₉ = 1.4														Percent Operational Time: 100.0										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	1.5	1.2	Z	0.9	0.9	0.5	0.6	1.0	0.7	0.7	0.6	0.5	0.6	0.6	0.6	0.6	0.9	1.2	1.0	0.8	0.7	0.8	0.7	0.8	0.8	1.5
2-Feb	0.7	0.8	0.8	Z	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.8
3-Feb	0.5	0.5	0.5	0.6	Z	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.6
4-Feb	0.4	0.4	0.4	0.4	0.4	Z	0.6	0.5	0.8	0.8	0.9	1.3	0.9	0.9	0.8	0.6	0.6	1.0	1.2	1.3	0.8	0.5	0.5	0.6	0.6	1.3
5-Feb	Z	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8
6-Feb	0.4	Z	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.4	0.4	C	C	C	C	C	1.5	1.4	1.4	1.1	0.8	0.9	0.7	0.7	1.5	
7-Feb	0.5	0.6	Z	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.6	0.7	1.1	0.8	0.6	0.6	0.6	0.6	1.1	
8-Feb	0.6	0.6	0.6	Z	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.6	0.5	0.5	0.5	0.6	0.7	
9-Feb	0.5	0.5	0.4	0.4	Z	0.4	0.5	0.6	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.7	
10-Feb	0.5	0.5	0.5	0.5	0.5	Z	0.5	0.6	0.6	0.7	1.0	0.9	1.1	0.9	0.8	0.6	1.0	0.6	0.5	0.4	0.4	0.4	0.4	0.4	1.1	
11-Feb	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
12-Feb	0.4	Z	0.4	0.4	0.4	0.4	0.8	1.1	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.5	0.5	1.1	
13-Feb	0.5	0.6	Z	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.5	0.4	0.6	0.5	0.5	0.5	0.5	0.5	0.6	
14-Feb	0.4	0.4	0.4	Z	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	
15-Feb	0.4	0.4	0.4	0.5	Z	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	1.0	1.5	2.4	1.7	1.1	0.5	0.4	0.4	2.4	
16-Feb	0.4	0.5	0.4	0.4	0.4	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	
17-Feb	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.7	0.7	0.6	0.8	1.0	0.8	0.7	0.7	0.9	1.3	1.2	1.3	
18-Feb	1.0	Z	0.7	0.6	1.0	0.9	0.8	0.7	0.8	0.7	0.7	0.8	0.7	0.7	0.6	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.5	1.0	
19-Feb	0.5	0.5	Z	0.5	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	0.6	0.7	0.7	
20-Feb	0.7	0.7	0.6	Z	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.9	1.1	1.1	1.0	1.0	1.1	1.1	1.1	1.2	1.2	
21-Feb	1.3	1.2	1.2	1.1	Z	0.8	0.9	0.8	0.7	0.7	0.8	0.8	0.7	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.8	1.3	1.3	1.3	1.3	
22-Feb	1.1	1.0	0.9	0.8	0.8	Z	0.9	0.7	0.7	0.9	1.1	0.9	0.7	0.7	0.6	0.8	0.9	0.8	0.8	0.7	1.0	1.0	1.0	0.9	1.1	
23-Feb	Z	1.4	1.2	0.9	1.0	1.2	1.0	0.8	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	1.4	
24-Feb	0.5	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.5	
25-Feb	0.5	0.5	Z	0.4	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.5	
26-Feb	0.4	0.4	0.4	Z	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	
27-Feb	0.4	0.4	0.4	0.4	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.8	0.7	0.7	0.7	0.7	0.6	0.8	
28-Feb	0.6	0.6	0.6	0.6	0.5	Z	0.5	0.5	0.4	0.9	1.5	1.5	1.0	0.8	0.8	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	1.5	
29-Feb	Z	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.6	
																								Diurnal Average		
																								Diurnal Maximum		
Z - zerspan C - Calibration																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Reduced Sulphur (TRS) - ppb
Ells River - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	661	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Reduced Sulphur (TRS) - ppb
Ells River - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	83	69	32	6	9	21	42	55	70	49	47	43	28	32	40	30	656
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	83	69	32	6	9	21	42	55	70	49	47	43	28	32	40	30	656

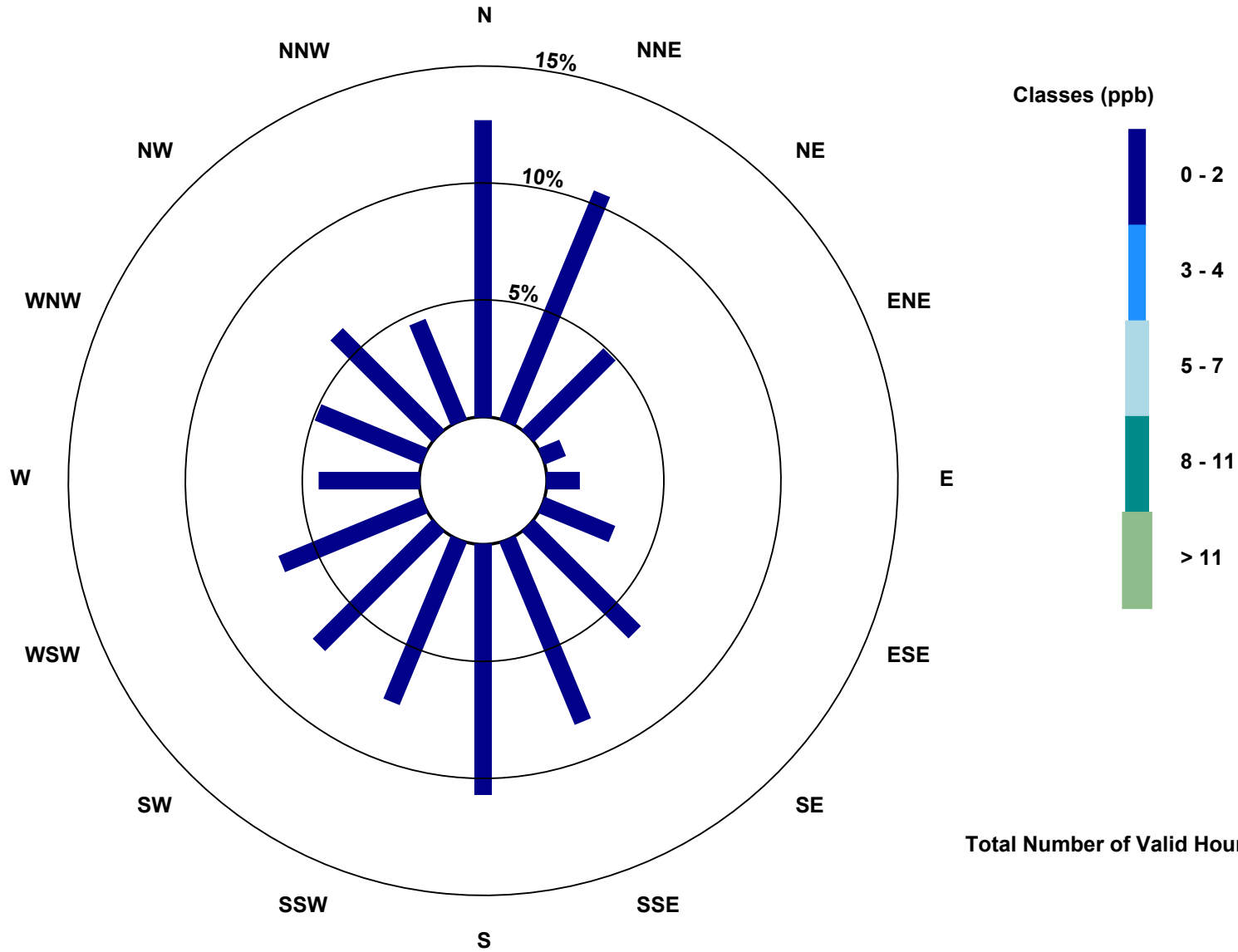
Total Number of Valid Hours: 656

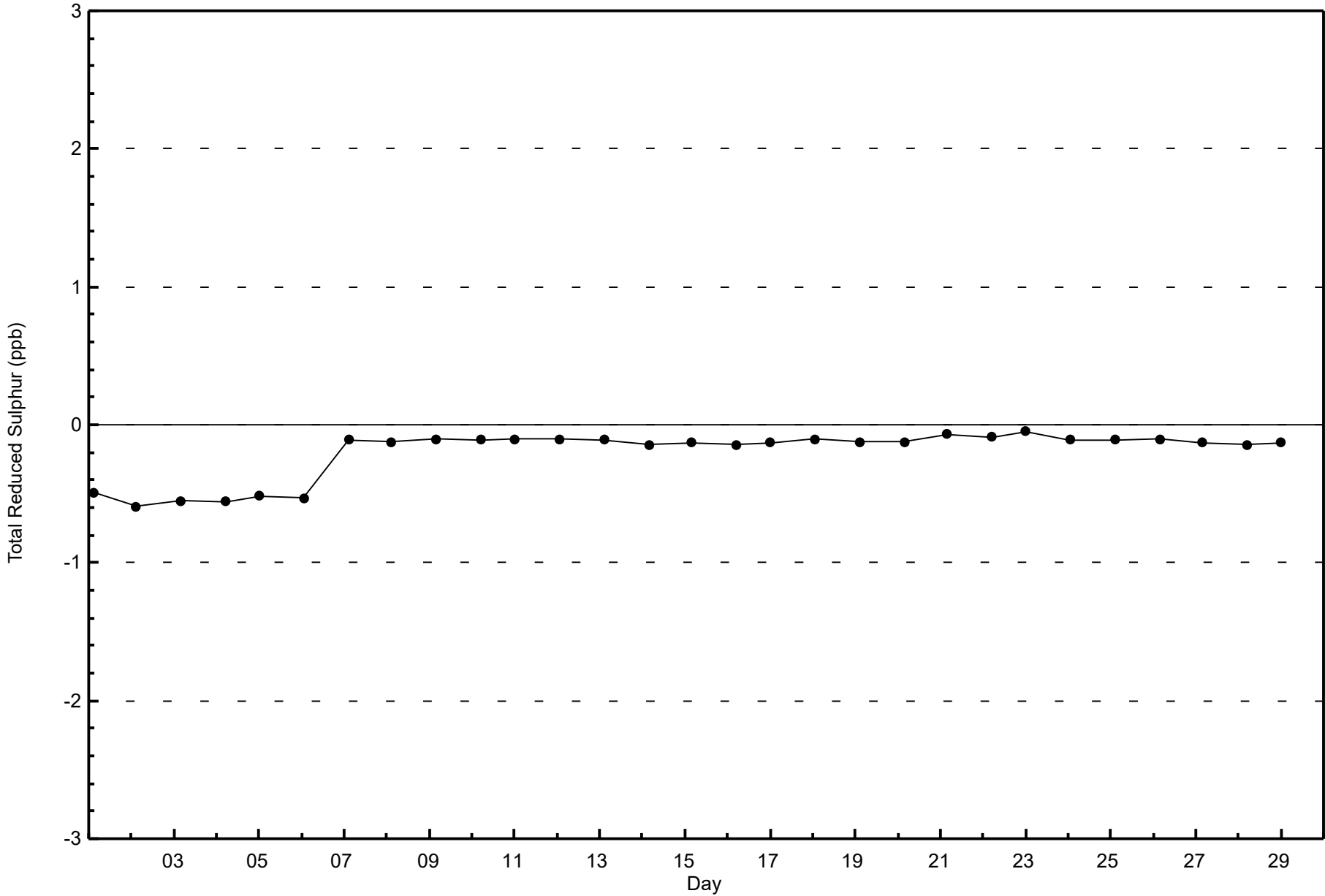
Total Number of Hours: 696

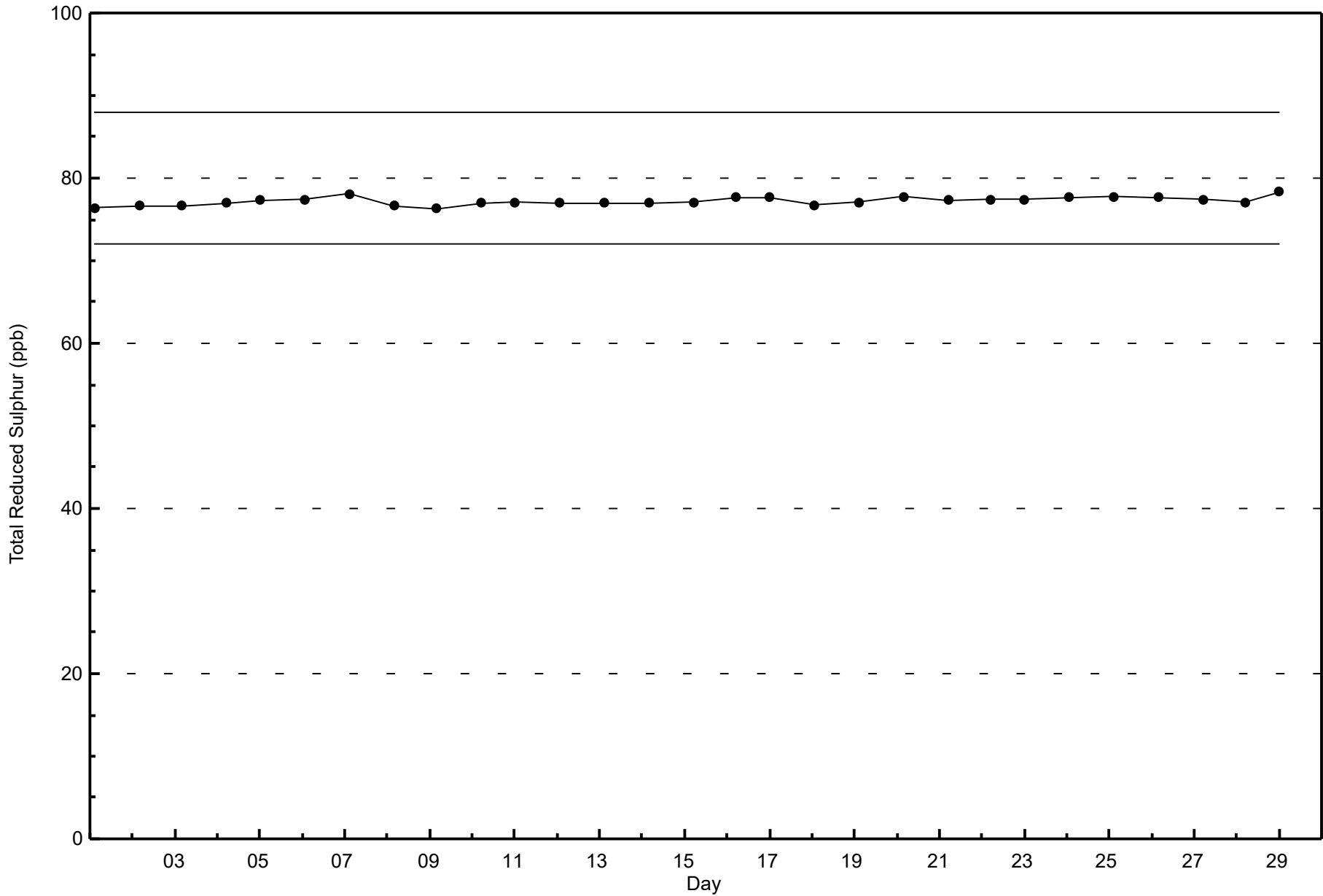


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Reduced Sulphur (TRS) - ppb
Ells River

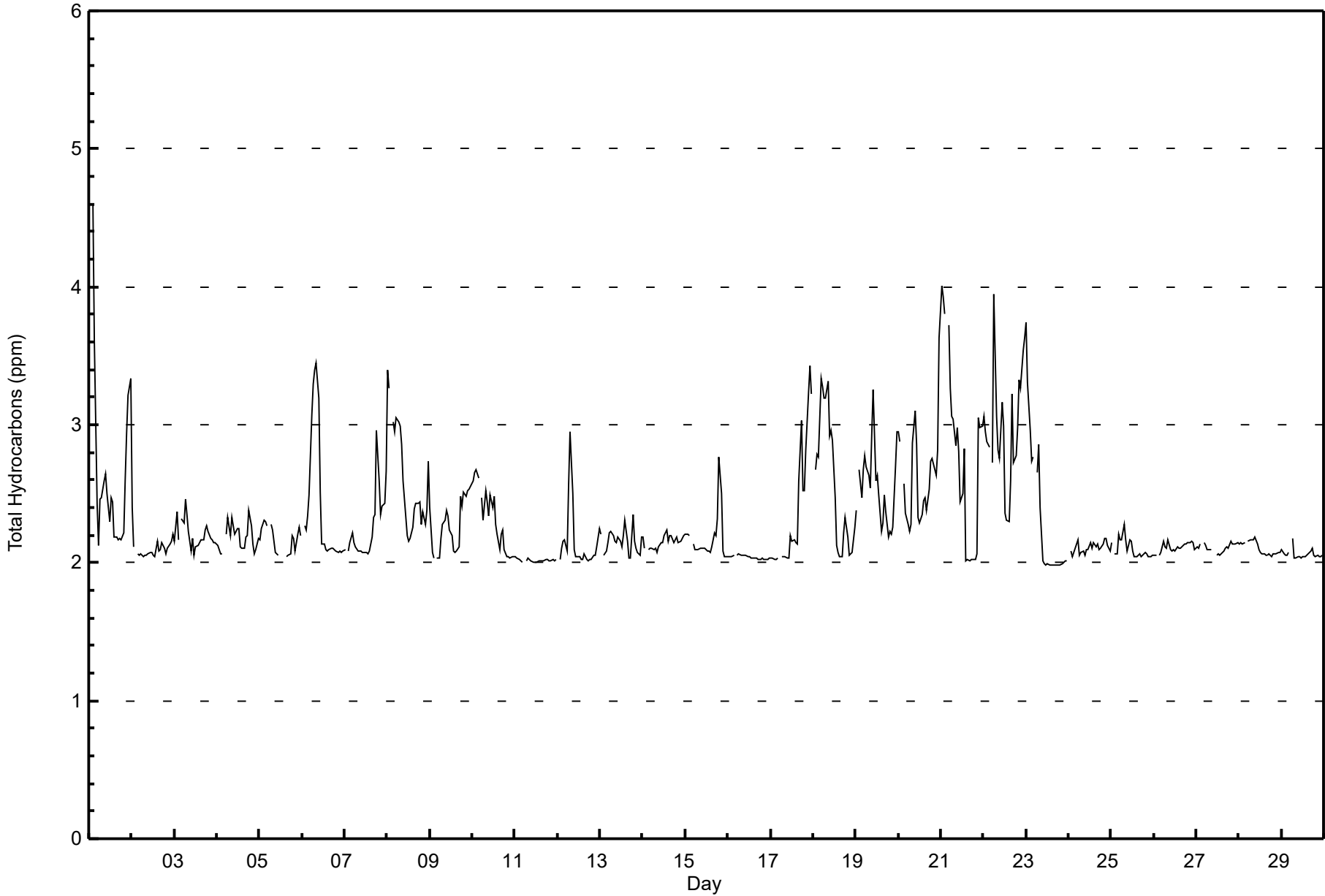








Maximum Value: 5.9 ppm on Feb 1 01:00																				Maximum Daily Average: 3.0 ppm on Feb 22					Hours in Service: 696	
Minimum Value: 2.0 ppm on Feb 23 15:00																				Minimum Daily Average: 2.0 ppm on Feb 11					Hours of Data: 661	
Maximum Diurnal Average: 2.6 ppm at hour 1																				Minimum Diurnal Average: 2.1 ppm at hour 15					Hours of Missing Data: 35	
Monthly Average: 2.30 ppm																				Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.1 Median = 2.1 Q ₃ = 2.4 P ₉₀ = 2.9 P ₉₉ = 3.7					Hours of Calibration: 33	
																									Percent Operational Time: 99.7	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	5.9	Z	4.6	3.6	2.4	2.1	2.5	2.5	2.6	2.6	2.5	2.3	2.5	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.9	3.2	3.3	2.8	5.9
2-Feb	2.4	2.1	Z	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.4
3-Feb	2.2	2.4	2.2	Z	2.3	2.3	2.5	2.4	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.2	2.5
4-Feb	2.1	2.1	2.1	2.1	Z	2.2	2.2	2.3	2.2	2.3	2.2	2.3	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.4	2.3	2.1	2.1	2.1	2.2	2.4
5-Feb	2.2	2.2	2.3	2.3	2.3	Z	2.3	2.2	2.2	2.1	2.1	C	C	C	C	2.0	2.1	2.1	2.2	2.2	2.1	2.2	2.3	2.2	2.2	2.3
6-Feb	Z	2.3	2.2	2.3	2.5	3.1	3.3	3.4	3.4	3.2	2.5	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	3.4
7-Feb	2.1	Z	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.4	3.0	2.6	2.4	2.4	2.4	2.7	2.2	3.0
8-Feb	3.4	3.3	Z	3.0	3.0	3.0	3.0	3.0	2.9	2.6	2.3	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.3	2.4	2.3	2.4	2.7	2.6	3.4
9-Feb	2.4	2.1	2.0	Z	2.0	2.0	2.2	2.3	2.3	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.5	2.4	2.5	2.5	2.5	2.5	2.6	2.3	2.6
10-Feb	2.6	2.7	2.7	2.6	Z	2.5	2.3	2.5	2.4	2.3	2.5	2.4	2.5	2.3	2.2	2.1	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.3	2.7
11-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12-Feb	Z	2.0	2.1	2.2	2.2	2.1	2.6	2.9	2.5	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.9
13-Feb	2.2	Z	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.2	2.3	2.2	2.0	2.0	2.4	2.2	2.1	2.1	2.1	2.2	2.2	2.4
14-Feb	2.2	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.1	2.2
15-Feb	2.2	2.2	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.8	2.5	2.1	2.0	2.0	2.2	2.8
16-Feb	2.0	2.0	2.0	2.0	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
17-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.1	2.1	2.6	3.0	2.5	2.5	2.8	3.2	3.4	3.2	2.4	3.4
18-Feb	Z	2.7	2.8	2.8	3.3	3.3	3.2	3.2	3.3	2.9	3.0	2.9	2.5	2.1	2.1	2.0	2.0	2.2	2.3	2.2	2.1	2.1	2.1	2.3	2.6	3.3
19-Feb	2.4	Z	2.7	2.5	2.7	2.8	2.7	2.6	2.5	2.9	3.3	2.6	2.6	2.5	2.2	2.3	2.5	2.4	2.2	2.2	2.2	2.3	2.7	3.0	2.5	3.3
20-Feb	2.9	2.9	Z	2.6	2.4	2.3	2.2	2.3	2.9	3.1	2.9	2.3	2.3	2.3	2.4	2.5	2.4	2.5	2.7	2.8	2.7	2.6	2.8	3.6	2.6	3.6
21-Feb	4.0	3.9	3.8	Z	3.7	3.3	3.1	3.0	2.8	3.0	2.8	2.4	2.5	2.8	2.0	2.0	2.0	2.0	2.0	2.0	2.1	3.1	3.0	3.0	2.8	4.0
22-Feb	3.1	3.0	2.9	2.8	Z	2.7	3.9	3.1	2.8	2.8	3.2	3.0	2.4	2.3	2.3	2.6	3.2	2.7	2.8	3.0	3.3	3.3	3.5	3.6	3.0	3.9
23-Feb	3.7	3.3	3.0	2.7	2.8	Z	2.7	2.9	2.4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	3.7
24-Feb	Z	2.1	2.0	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2
25-Feb	2.2	Z	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.1	2.2	2.2	2.1	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.3
26-Feb	2.1	2.1	Z	2.1	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2
27-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	M	M	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2
28-Feb	2.1	2.1	2.1	2.1	Z	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.2
29-Feb	2.1	2.1	2.1	2.1	2.1	Z	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.1	2.1	2.2
																								Diurnal Average		
																								Diurnal Maximum		
Z - zerospan C - Calibration M - Maintenance																										





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Ells River - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	115	17.40	17.40
2.1 - 3.0	505	76.40	93.80
3.1 - 10.0	41	6.20	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Total Hydrocarbons (THC) - ppm
Ells River - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	5	4	2	0	2	4	3	1	6	22	25	25	5	4	7	0	115
2.1 - 3.0	73	63	30	6	7	18	41	54	62	25	21	17	19	18	23	24	501
3.1 - 10.0	2	1	0	0	0	0	0	4	4	3	0	0	3	8	10	6	41
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	80	68	32	6	9	22	44	59	72	50	46	42	27	30	40	30	657

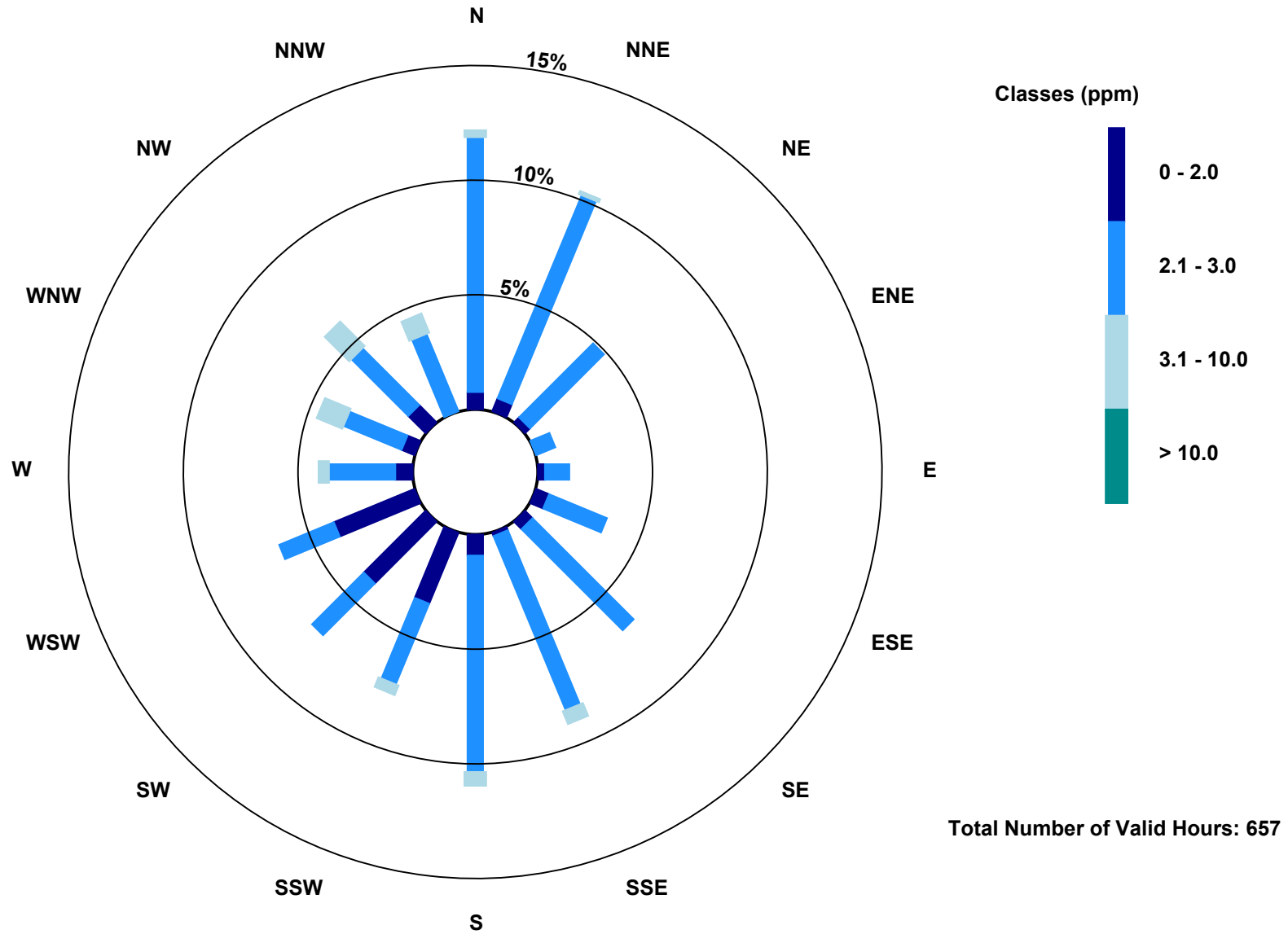
Total Number of Valid Hours: 657

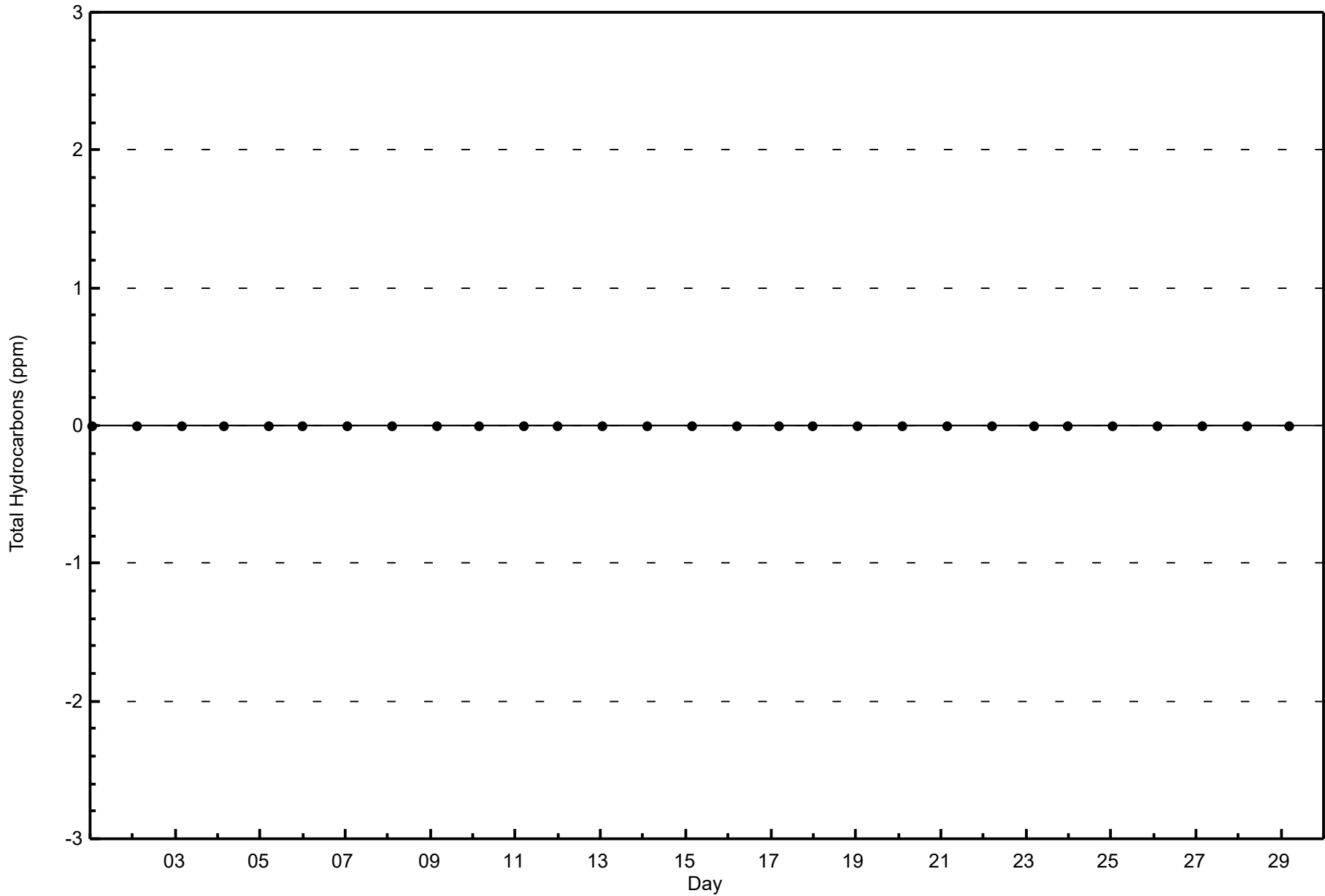
Total Number of Hours: 696

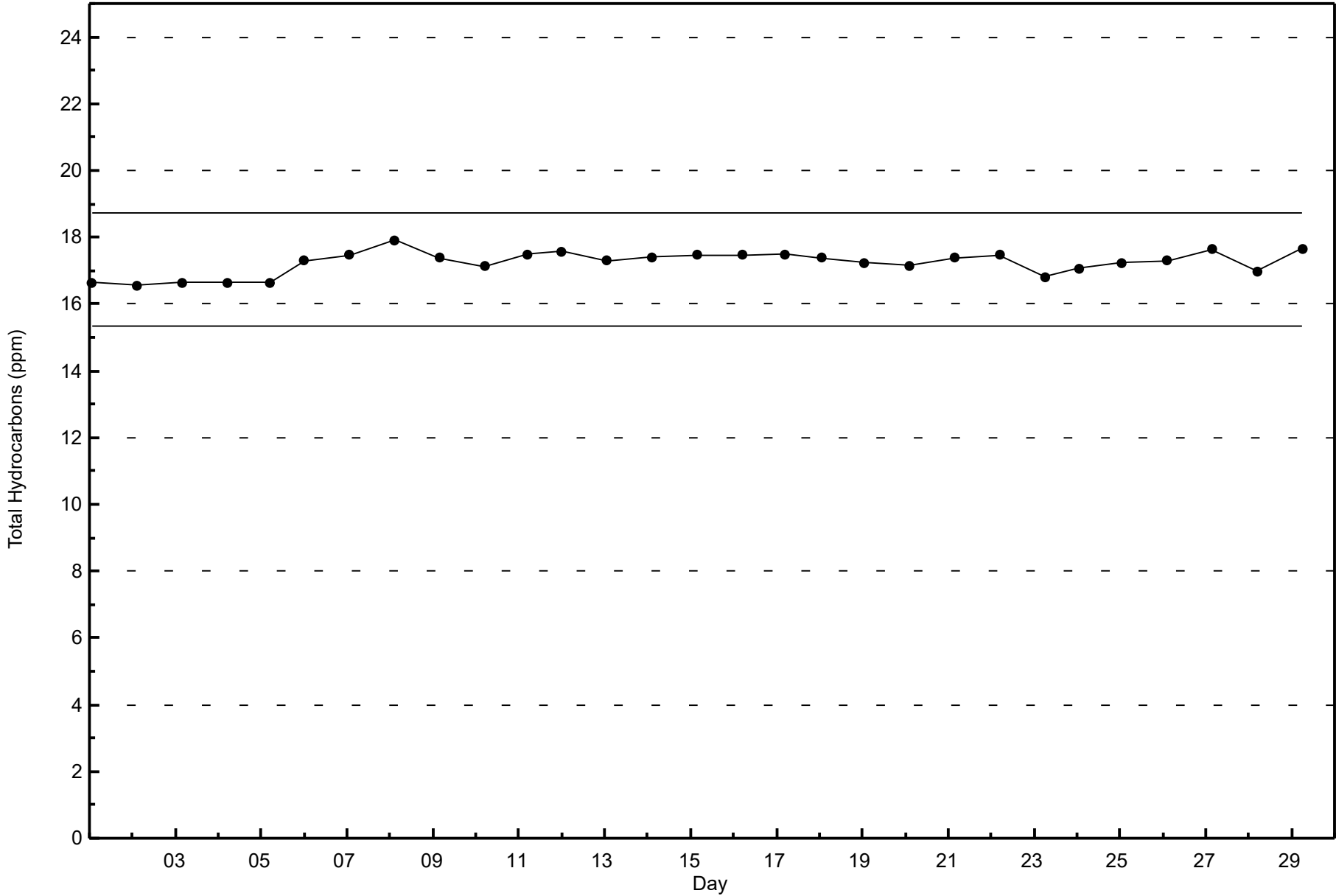


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Ells River

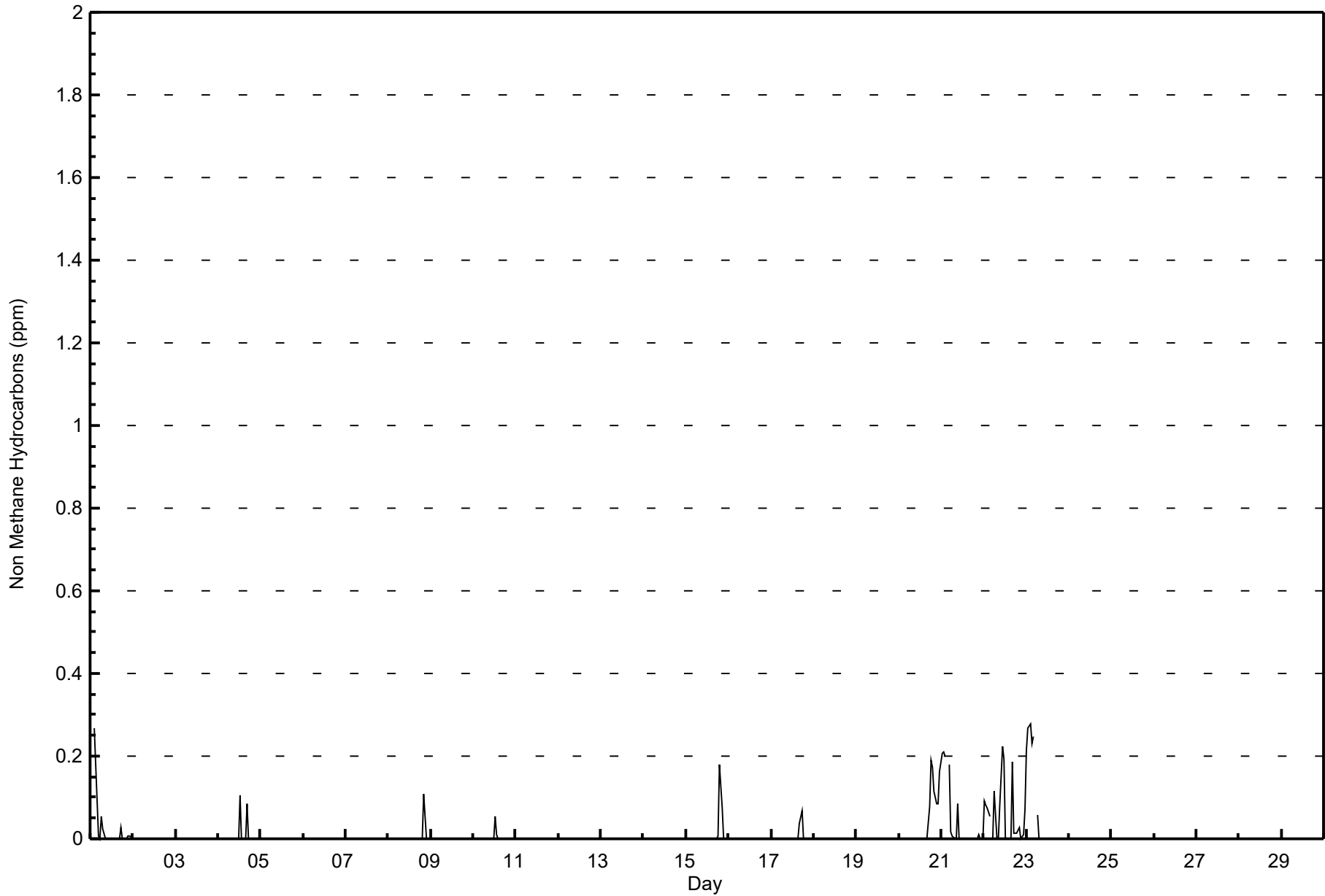








Maximum Value: 0.354 ppm on Feb 1 01:00																				Maximum Daily Average: 0.056 ppm on Feb 23					Hours in Service: 696		
Minimum Value: 0.000 ppm on Feb 1 06:00																				Minimum Daily Average: 0.000 ppm on Feb 2					Hours of Data: 661		
Maximum Diurnal Average: 0.035 ppm at hour 1																				Minimum Diurnal Average: 0.000 ppm at hour 9					Hours of Missing Data: 35		
Monthly Average: 0.009 ppm																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.0 P ₉₉ = 0.2					Hours of Calibration: 33		
																									Percent Operational Time: 99.7		
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.354	Z	0.268	0.179	0.005	0.000	0.055	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.026	0.000	0.000	0.000	0.007	0.008	0.003	0.040	0.354	
2-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.105	0.000	0.000	0.086	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.105	0.000
5-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	C	C	C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.109	0.000	0.000	0.005	0.109	0.000
9-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.054	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.054	0.000
11-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.179	0.074	0.000	0.000	0.011	0.179	0.000	
16-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.038	0.067	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.067	0.000	
18-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.079	0.190	0.172	0.114	0.086	0.084	0.164	0.039	0.190	0.000
21-Feb	0.207	0.210	0.200	Z	0.178	0.018	0.006	0.004	0.000	0.086	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.040	0.210	0.000
22-Feb	0.090	0.082	0.075	0.054	Z	0.000	0.116	0.000	0.000	0.082	0.224	0.193	0.005	0.000	0.000	0.186	0.013	0.014	0.021	0.029	0.000	0.009	0.072	0.055	0.224	0.000	
23-Feb	0.213	0.267	0.279	0.231	0.246	Z	0.059	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.056	0.279	0.000	
24-Feb	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25-Feb	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26-Feb	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27-Feb	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	M	M	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28-Feb	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29-Feb	0.000	0.000	0.000	0.000	0.000	Z	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.035 0.023 0.034 0.019 0.018 0.001 0.008 0.001 0.000 0.006 0.008 0.007 0.006 0.000 0.000 0.011 0.006 0.007 0.013 0.011 0.004 0.003 0.008																								Diurnal Average			
0.354 0.267 0.279 0.231 0.246 0.018 0.116 0.025 0.000 0.086 0.224 0.193 0.105 0.011 0.000 0.000 0.186 0.079 0.190 0.179 0.114 0.086 0.084 0.164																								Diurnal Maximum			
Z - zerospan		C - Calibration				M - Maintenance																					





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Non Methane Hydrocarbons (NMHC) - ppm
Ells River - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 0.005	607	91.83	91.83
0.006 - 0.05	17	2.57	94.40
0.06 - 0.1	18	2.72	97.13
> 0.1	19	2.87	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Non Methane Hydrocarbons (NMHC) - ppm
Ells River - February 2024

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 0.005	75	63	32	6	9	22	42	49	63	47	43	42	25	21	37	27	603
0.006 - 0.05	2	1	0	0	0	0	0	0	3	2	1	0	1	4	0	3	17
0.06 - 0.1	2	2	0	0	0	0	1	4	4	0	2	0	1	1	1	0	18
> 0.1	1	2	0	0	0	0	1	6	2	1	0	0	0	4	2	0	19
Totals	80	68	32	6	9	22	44	59	72	50	46	42	27	30	40	30	657

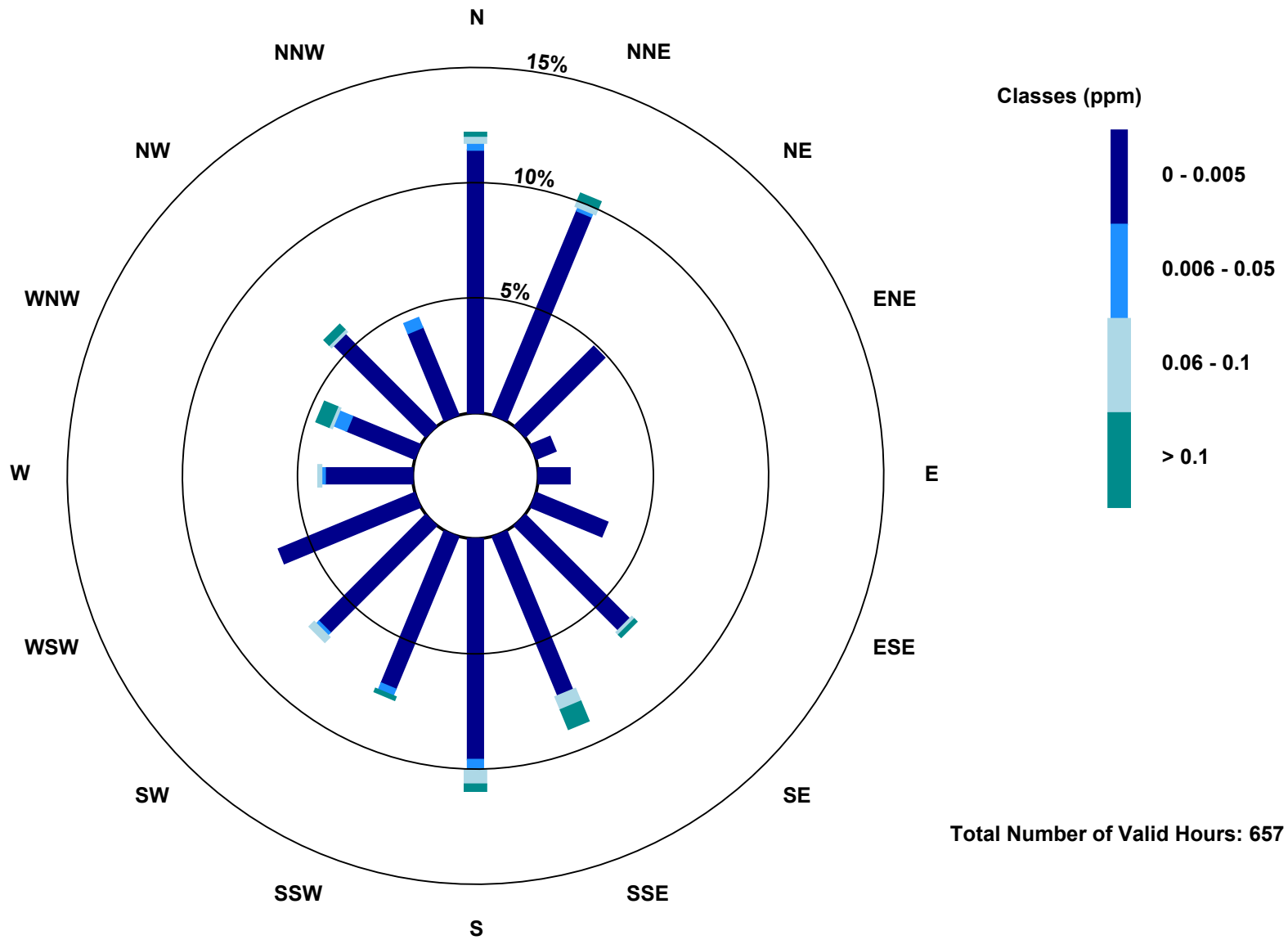
Total Number of Valid Hours: 657

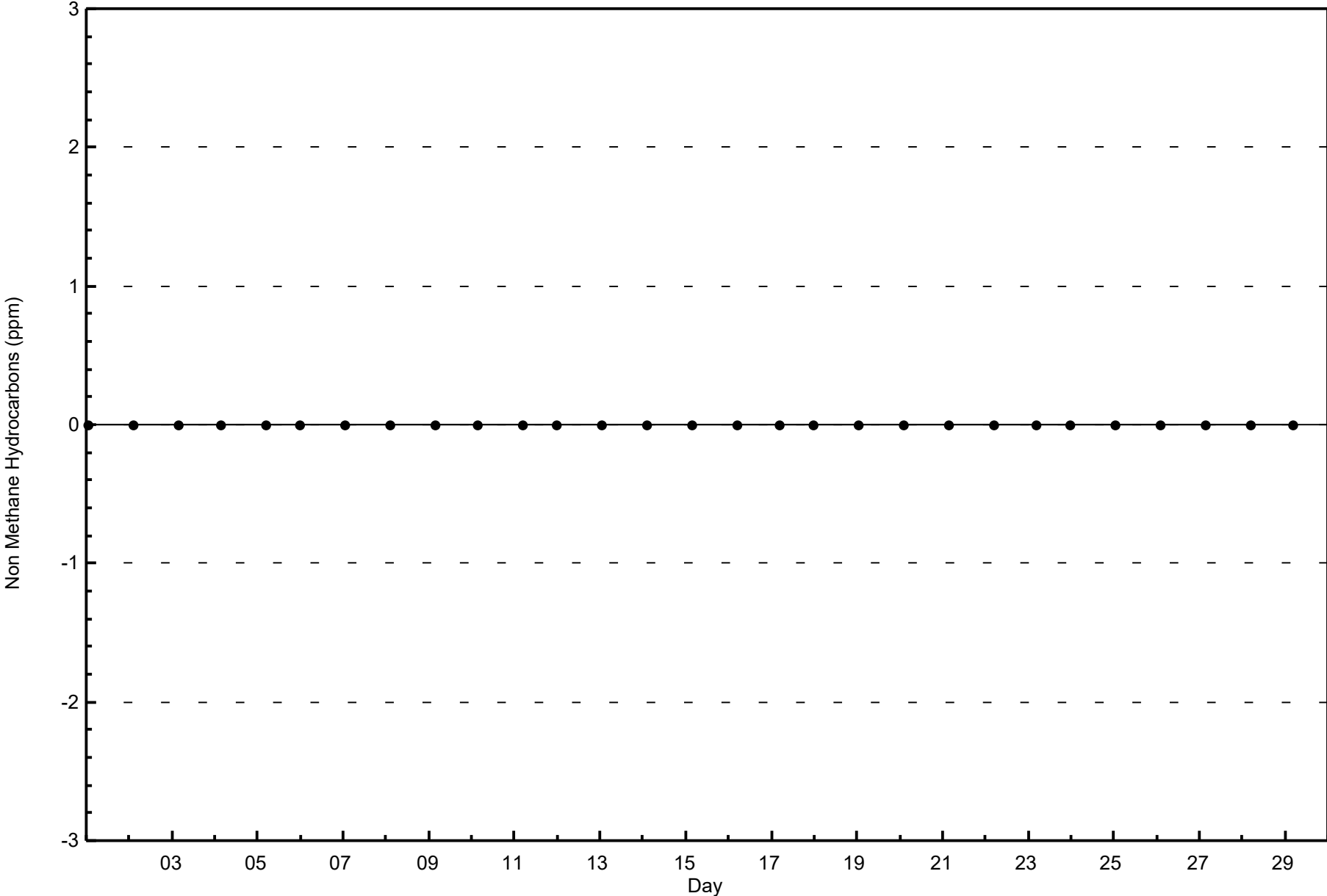
Total Number of Hours: 696

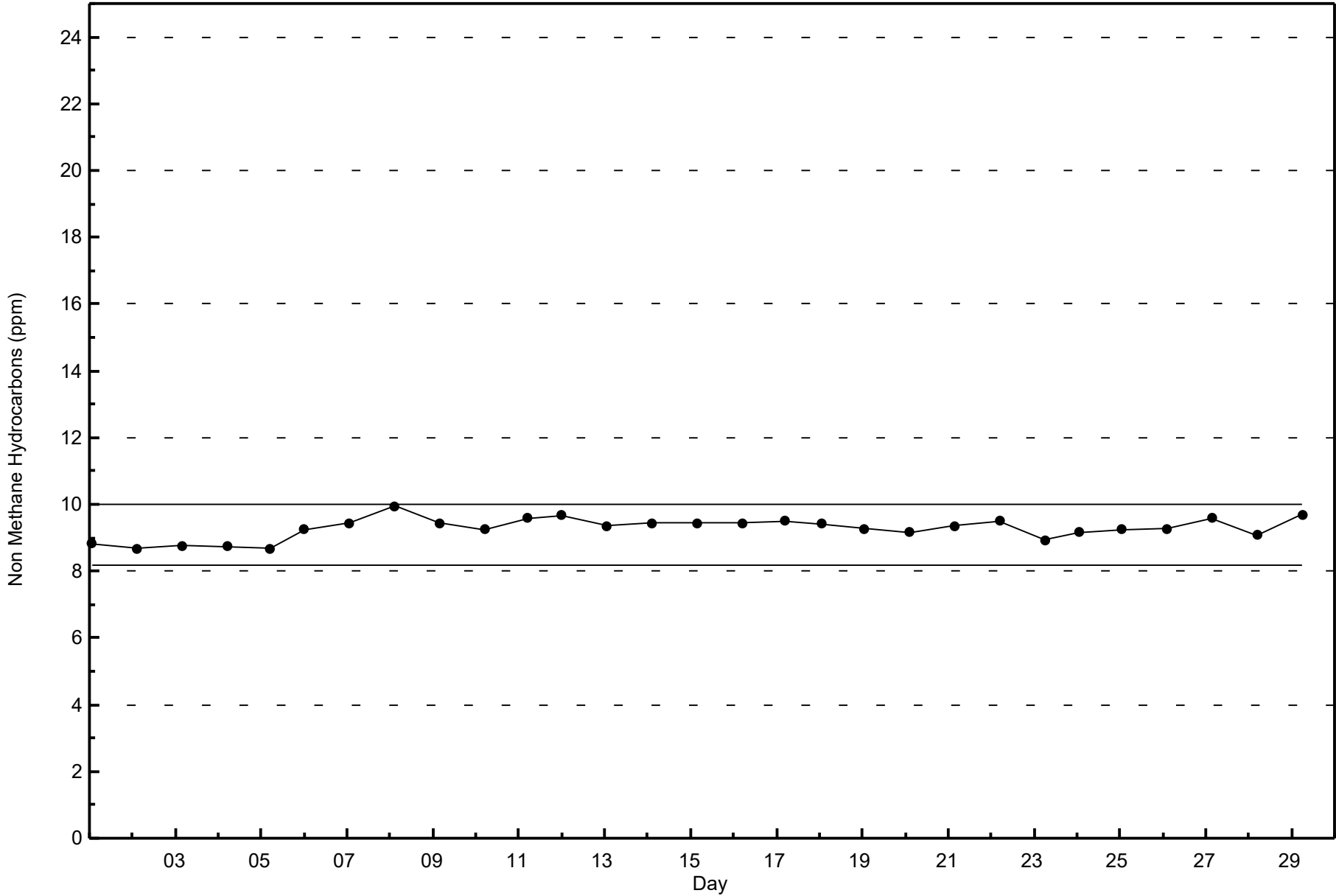


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Non Methane Hydrocarbons (NMHC) - ppm
Ells River







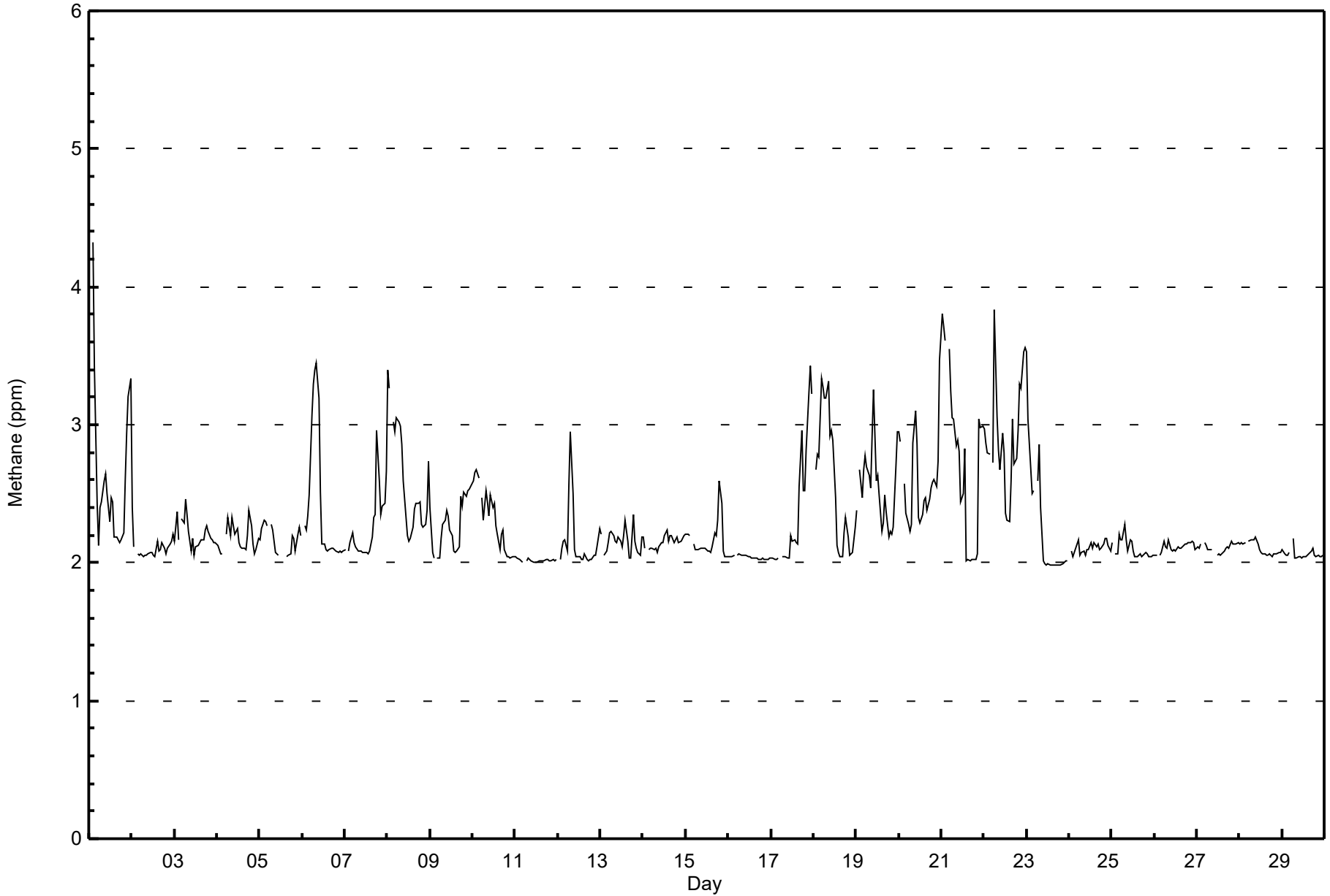


Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														Daily Average		Daily Maximum					
Maximum Value: 5.6 ppm on Feb 1 01:00		Maximum Daily Average: 2.9 ppm on Feb 22		Hours of Data: 661														2.7		5.6							
Minimum Value: 2.0 ppm on Feb 23 15:00		Minimum Daily Average: 2.0 ppm on Feb 11		Hours of Missing Data: 35														2.1		2.4							
Maximum Diurnal Average: 2.6 ppm at hour 1		Minimum Diurnal Average: 2.1 ppm at hour 15		Hours of Calibration: 33														2.2		2.5							
Monthly Average: 2.30 ppm		Percentiles: P ₁ = 2.0 P ₁₀ = 2.0 Q ₁ = 2.1 Median = 2.1 Q ₃ = 2.4 P ₉₀ = 2.9 P ₉₉ = 3.6		Percent Operational Time: 99.7														2.2		2.4							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	5.6	Z	4.3	3.4	2.4	2.1	2.4	2.4	2.6	2.6	2.5	2.3	2.5	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.9	3.2	3.3	2.7	5.6	
2-Feb	2.4	2.1	Z	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.4	
3-Feb	2.2	2.4	2.2	Z	2.3	2.3	2.5	2.4	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.2	2.5	
4-Feb	2.1	2.1	2.1	2.1	Z	2.2	2.2	2.3	2.2	2.3	2.2	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.3	2.1	2.1	2.1	2.2	2.4	
5-Feb	2.2	2.2	2.3	2.3	2.3	Z	2.3	2.2	2.2	2.1	2.1	C	C	C	C	2.0	2.1	2.1	2.2	2.2	2.1	2.2	2.3	2.2	2.2	2.3	
6-Feb	Z	2.3	2.2	2.3	2.5	3.1	3.3	3.4	3.4	3.2	2.5	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	3.4	
7-Feb	2.1	Z	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.4	3.0	2.6	2.4	2.4	2.4	2.7	2.2	3.0	
8-Feb	3.4	3.3	Z	3.0	3.0	3.0	3.0	3.0	2.9	2.6	2.3	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.4	2.7	2.6	3.4	
9-Feb	2.4	2.1	2.0	Z	2.0	2.0	2.2	2.3	2.3	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.5	2.4	2.5	2.5	2.5	2.5	2.6	2.3	2.6	
10-Feb	2.6	2.7	2.7	2.6	Z	2.5	2.3	2.5	2.4	2.3	2.5	2.4	2.4	2.3	2.2	2.1	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.3	2.7	
11-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12-Feb	Z	2.0	2.1	2.2	2.2	2.1	2.6	2.9	2.5	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.9	
13-Feb	2.2	Z	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.2	2.3	2.2	2.0	2.0	2.4	2.2	2.1	2.1	2.1	2.2	2.2	2.4	
14-Feb	2.2	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.1	2.2	
15-Feb	2.2	2.2	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.6	2.4	2.1	2.0	2.0	2.2	2.6	
16-Feb	2.0	2.0	2.0	2.0	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1
17-Feb	2.0	2.0	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.1	2.1	2.6	3.0	2.5	2.5	2.8	3.2	3.4	3.2	2.4	3.4	
18-Feb	Z	2.7	2.8	2.8	3.3	3.3	3.2	3.2	3.3	2.9	3.0	2.9	2.5	2.1	2.1	2.0	2.0	2.2	2.3	2.2	2.1	2.1	2.1	2.3	2.6	3.3	
19-Feb	2.4	Z	2.7	2.5	2.7	2.8	2.7	2.6	2.5	2.9	3.3	2.6	2.6	2.5	2.2	2.3	2.5	2.4	2.2	2.2	2.2	2.3	2.7	3.0	2.5	3.3	
20-Feb	2.9	2.9	Z	2.6	2.4	2.3	2.2	2.3	2.9	3.1	2.9	2.3	2.3	2.3	2.4	2.5	2.4	2.5	2.5	2.6	2.6	2.6	2.7	3.5	2.6	3.5	
21-Feb	3.8	3.7	3.6	Z	3.5	3.2	3.1	3.0	2.8	2.9	2.8	2.4	2.5	2.8	2.0	2.0	2.0	2.0	2.0	2.0	2.1	3.0	3.0	3.0	2.8	3.8	
22-Feb	3.0	2.9	2.8	2.8	Z	2.7	3.8	3.1	2.8	2.7	2.9	2.8	2.4	2.3	2.3	2.6	3.0	2.7	2.8	3.0	3.3	3.3	3.5	3.6	2.9	3.8	
23-Feb	3.5	3.0	2.7	2.5	2.5	Z	2.6	2.9	2.4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	3.5	
24-Feb	Z	2.1	2.0	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	
25-Feb	2.2	Z	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.1	2.2	2.2	2.1	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.3	
26-Feb	2.1	2.1	Z	2.1	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	
27-Feb	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	M	M	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	
28-Feb	2.1	2.1	2.1	2.1	Z	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.2	
29-Feb	2.1	2.1	2.1	2.1	2.1	Z	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.1	2.1	2.2	
2.6 2.4 2.4 2.3 2.4 2.4 2.4 2.4 2.4 2.3 2.3 2.2 2.2 2.2 2.1 2.1 2.2 2.2 2.2 2.2 2.2 2.3 2.3 2.4																								Diurnal Average			
5.6 3.7 4.3 3.4 3.5 3.3 3.8 3.4 3.4 3.2 3.3 2.9 2.6 2.8 2.4 2.6 3.0 3.0 3.0 3.0 3.3 3.3 3.5 3.6																								Diurnal Maximum			
Z - zerspan		C - Calibration				M - Maintenance																					



Wood Buffalo Environmental Association
Hourly Averages

Methane (CH₄) - ppm
Ells River - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Methane (CH₄) - ppm
Ells River - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	115	17.40	17.40
2.1 - 3.0	510	77.16	94.55
3.1 - 10.0	36	5.45	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Methane (CH₄) - ppm
Ells River - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	5	4	2	0	2	4	3	1	6	22	25	25	5	4	7	0	115
2.1 - 3.0	74	64	30	6	7	18	41	55	62	25	21	17	20	18	23	25	506
3.1 - 10.0	1	0	0	0	0	0	0	3	4	3	0	0	2	8	10	5	36
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	80	68	32	6	9	22	44	59	72	50	46	42	27	30	40	30	657

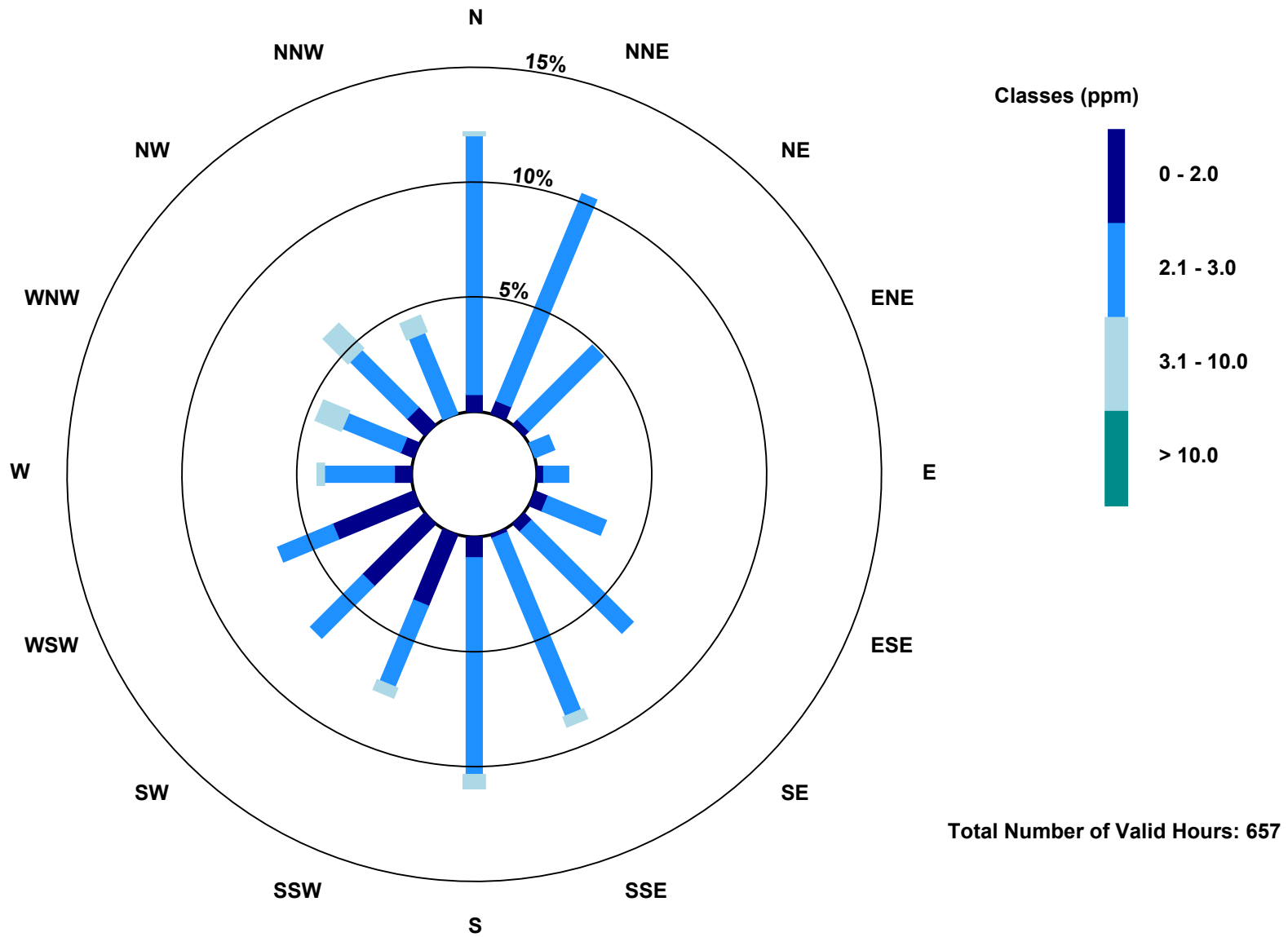
Total Number of Valid Hours: 657

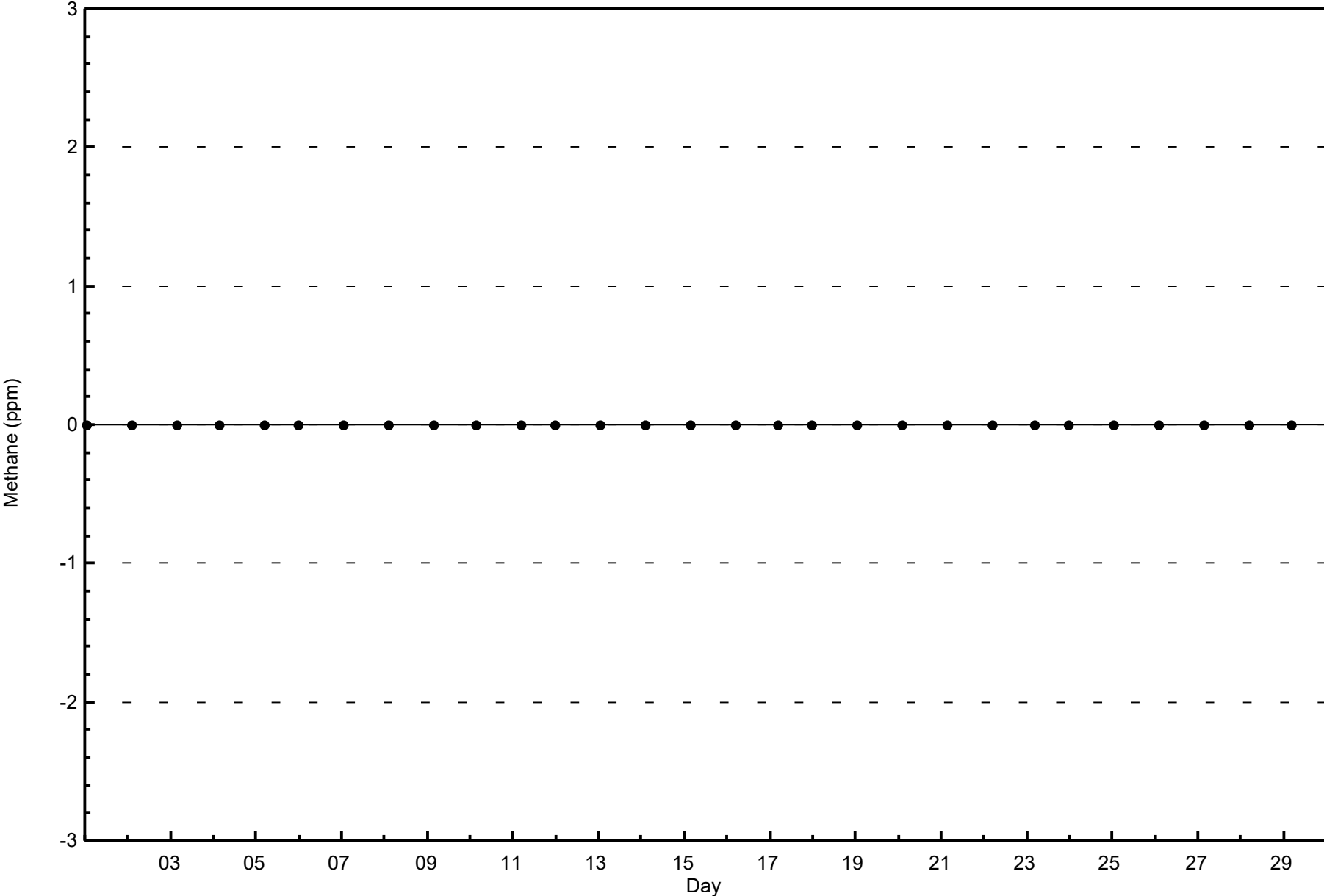
Total Number of Hours: 696

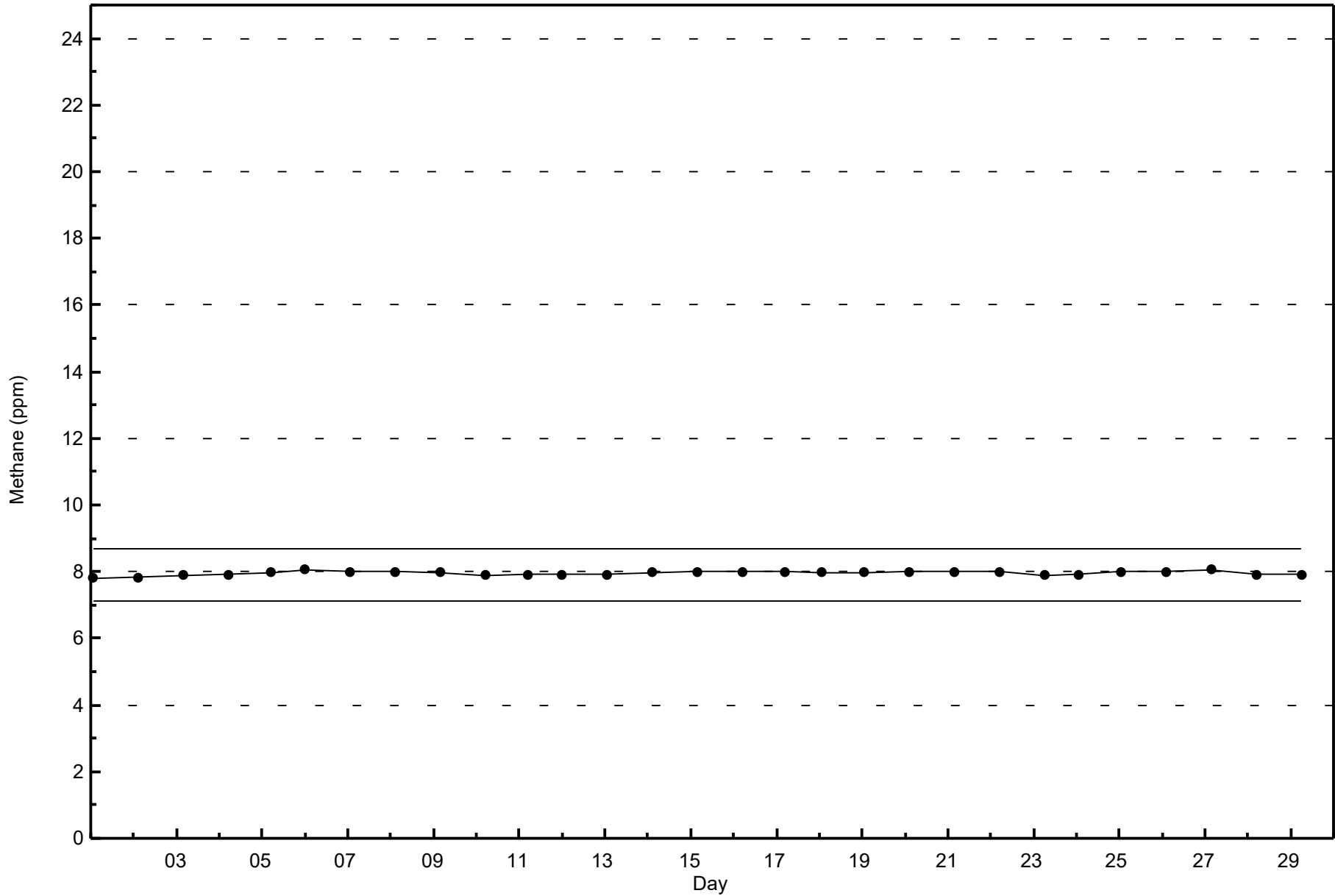


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Methane (CH₄) - ppm
Ells River







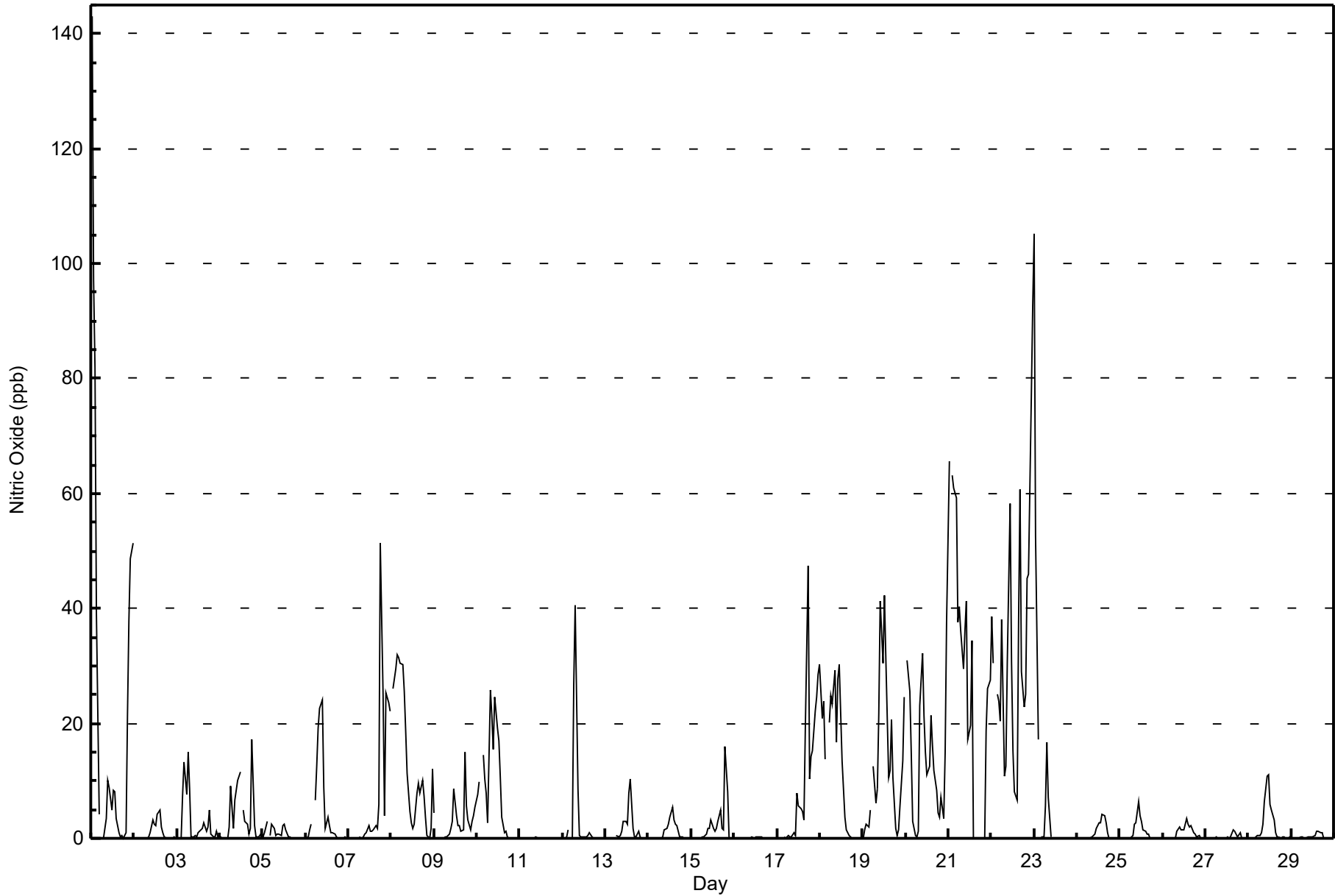


Maximum Value: 143.1 ppb on Feb 1 01:00																				Maximum Daily Average: 34.1 ppb on Feb 22					Hours in Service:	696
Minimum Value: 0.0 ppb on Feb 1 19:00																				Minimum Daily Average: 0.0 ppb on Feb 11					Hours of Data:	660
Maximum Diurnal Average: 16.5 ppb at hour 1																				Minimum Diurnal Average: 3.3 ppb at hour 20					Hours of Missing Data:	36
Monthly Average: 7.07 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.9 Q ₃ = 6.6 P ₉₀ = 24.6 P ₉₉ = 64.1					Hours of Calibration:	35
																									Percent Operational Time:	99.9
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	143.1	97.2	81.8	39.0	4.2	Z	0.0	0.1	3.3	10.0	8.7	5.0	8.3	8.1	3.4	1.0	0.3	0.5	0.0	1.0	21.4	37.8	48.7	51.4	25.0	143.1
2-Feb	Z	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.3	1.0	3.1	2.5	2.1	4.3	4.8	2.0	1.1	0.2	0.0	0.0	0.0	0.1	0.2	0.1	1.0	4.8
3-Feb	0.4	Z	0.1	7.5	13.2	7.5	15.0	8.7	0.2	0.2	0.5	0.4	1.1	1.5	1.8	2.6	1.3	2.1	5.0	0.7	0.2	0.1	1.2	0.2	3.1	15.0
4-Feb	0.1	0.0	Z	0.0	0.1	2.0	9.2	1.6	6.6	8.3	10.0	11.6	M	4.9	3.0	2.6	0.8	1.7	17.2	2.2	0.2	0.2	0.2	0.9	3.8	17.2
5-Feb	0.2	1.0	2.8	Z	0.6	2.6	1.8	0.6	0.7	0.7	0.6	2.1	2.4	1.4	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.8	2.8
6-Feb	0.1	0.2	1.5	2.4	Z	6.6	12.6	19.2	22.6	24.0	8.9	1.7	3.7	2.1	1.1	1.0	0.8	0.3	0.1	0.1	0.1	0.1	0.3	0.1	4.8	24.0
7-Feb	0.0	0.1	0.1	0.1	0.1	Z	0.2	0.0	0.2	0.9	1.0	2.1	1.2	1.1	1.5	2.2	1.8	6.0	51.4	24.8	3.8	25.3	23.7	22.2	7.4	51.4
8-Feb	Z	26.0	29.6	32.1	31.4	30.5	30.2	25.7	18.7	11.2	4.7	2.8	1.7	2.4	7.9	9.5	7.9	10.1	7.5	3.6	0.6	0.1	1.8	12.1	13.4	32.1
9-Feb	4.5	Z	0.1	0.1	0.0	0.1	0.2	0.1	0.7	1.8	2.9	8.6	3.9	2.2	2.1	1.3	1.4	14.9	5.6	3.1	1.5	2.9	3.9	5.4	2.9	14.9
10-Feb	7.7	9.8	Z	14.4	10.4	7.8	2.7	25.8	21.3	15.5	24.6	19.2	16.8	10.5	3.7	0.9	1.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	8.4	25.8
11-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
12-Feb	0.0	0.0	0.2	1.6	Z	0.1	26.9	40.7	8.7	0.4	0.2	0.2	0.2	0.1	0.4	0.9	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	3.5	40.7
13-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.5	0.2	0.5	1.3	3.1	3.0	2.4	7.8	10.2	1.7	0.2	0.1	1.3	0.2	0.1	0.0	0.0	0.0	1.4	10.2
14-Feb	Z	0.0	0.1	0.1	0.1	0.1	0.1	0.3	1.4	1.8	2.4	3.6	5.5	3.1	2.6	2.2	0.2	0.2	0.2	0.0	0.1	0.0	0.0	0.0	1.0	5.5
15-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.2	0.7	1.7	1.8	3.2	1.8	1.2	1.8	2.9	4.8	1.7	1.5	15.9	8.1	0.1	0.0	0.0	2.1	15.9
16-Feb	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2
17-Feb	0.0	0.0	0.0	Z	0.2	0.1	0.4	0.2	0.3	0.9	0.4	7.9	5.7	5.1	4.6	3.2	19.5	47.4	10.4	14.3	15.3	22.0	24.7	28.5	9.2	47.4
18-Feb	30.3	20.9	23.9	13.7	Z	20.3	24.9	23.4	29.3	16.7	27.9	30.3	13.6	8.7	3.6	1.6	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.0	12.6	30.3
19-Feb	0.1	1.4	2.3	2.0	5.0	Z	12.6	6.2	8.6	21.6	41.3	30.4	42.4	31.2	10.5	11.7	20.7	10.6	1.7	0.4	1.4	5.5	13.5	24.6	13.3	42.4
20-Feb	Z	31.0	25.7	14.8	3.0	0.4	0.2	1.2	23.0	32.2	21.3	15.0	10.9	12.4	21.3	16.2	11.8	8.4	4.3	3.6	7.2	3.5	15.1	37.7	13.9	37.7
21-Feb	65.5	Z	63.1	60.8	59.3	37.7	40.3	36.1	29.4	36.2	41.3	17.3	19.7	34.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.8	26.0	27.6	26.7	65.5
22-Feb	38.5	30.4	Z	25.0	23.9	20.5	38.0	10.8	12.5	30.7	58.3	30.7	15.3	8.0	6.6	37.9	60.6	28.9	22.7	25.0	45.1	46.1	76.7	92.6	34.1	92.6
23-Feb	105.3	52.7	17.3	Z	0.3	0.2	5.7	16.6	7.0	0.3	C	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	--	105.3
24-Feb	0.1	0.1	0.0	0.0	Z	0.1	0.0	0.1	0.3	0.6	0.8	1.8	2.8	2.8	4.3	4.0	2.6	1.1	0.1	0.1	0.1	0.0	0.1	0.0	0.9	4.3
25-Feb	0.1	0.0	0.0	0.0	0.1	Z	0.1	0.4	2.5	2.7	6.5	4.0	2.9	1.6	1.2	0.9	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	6.5
26-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	2.1	1.6	1.6	1.5	3.6	2.4	2.0	2.3	1.0	0.8	0.3	0.4	0.0	0.0	0.0	0.9	3.6
27-Feb	0.0	Z	0.1	0.0	0.0	0.1	0.3	0.1	0.0	0.1	0.1	0.0	0.2	0.1	0.2	1.5	1.3	0.7	0.3	1.0	0.1	0.1	0.1	0.1	0.3	1.5
28-Feb	0.1	0.1	Z	0.1	0.1	0.4	0.6	0.9	2.3	6.4	10.7	11.0	5.8	4.9	3.2	1.1	0.4	0.2	0.1	0.2	0.2	0.1	0.1	0.2	2.1	11.0
29-Feb	0.0	0.0	0.0	Z	0.0	0.2	0.2	0.0	0.1	0.1	0.3	0.3	0.3	0.6	1.2	1.2	1.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.2
																								Diurnal Average		
																								Diurnal Maximum		
16.5 11.3 10.4 8.9 6.1 5.7 7.7 7.6 6.9 7.9 10.1 7.7 6.3 6.0 3.7 4.0 5.0 4.8 4.5 3.3 3.7 5.6 8.2 10.5 143.1 97.2 81.8 60.8 59.3 37.7 40.3 40.7 29.4 36.2 58.3 30.7 42.4 34.5 21.3 37.9 60.6 47.4 51.4 25.0 45.1 46.1 76.7 92.6																										
Z - zerspan C - Calibration M - Maintenance																										



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Ells River - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitric Oxide (NO) - ppb
Ells River - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	575	87.12	87.12
21 - 40	62	9.39	96.52
41 - 80	18	2.73	99.24
81 - 159	5	0.76	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



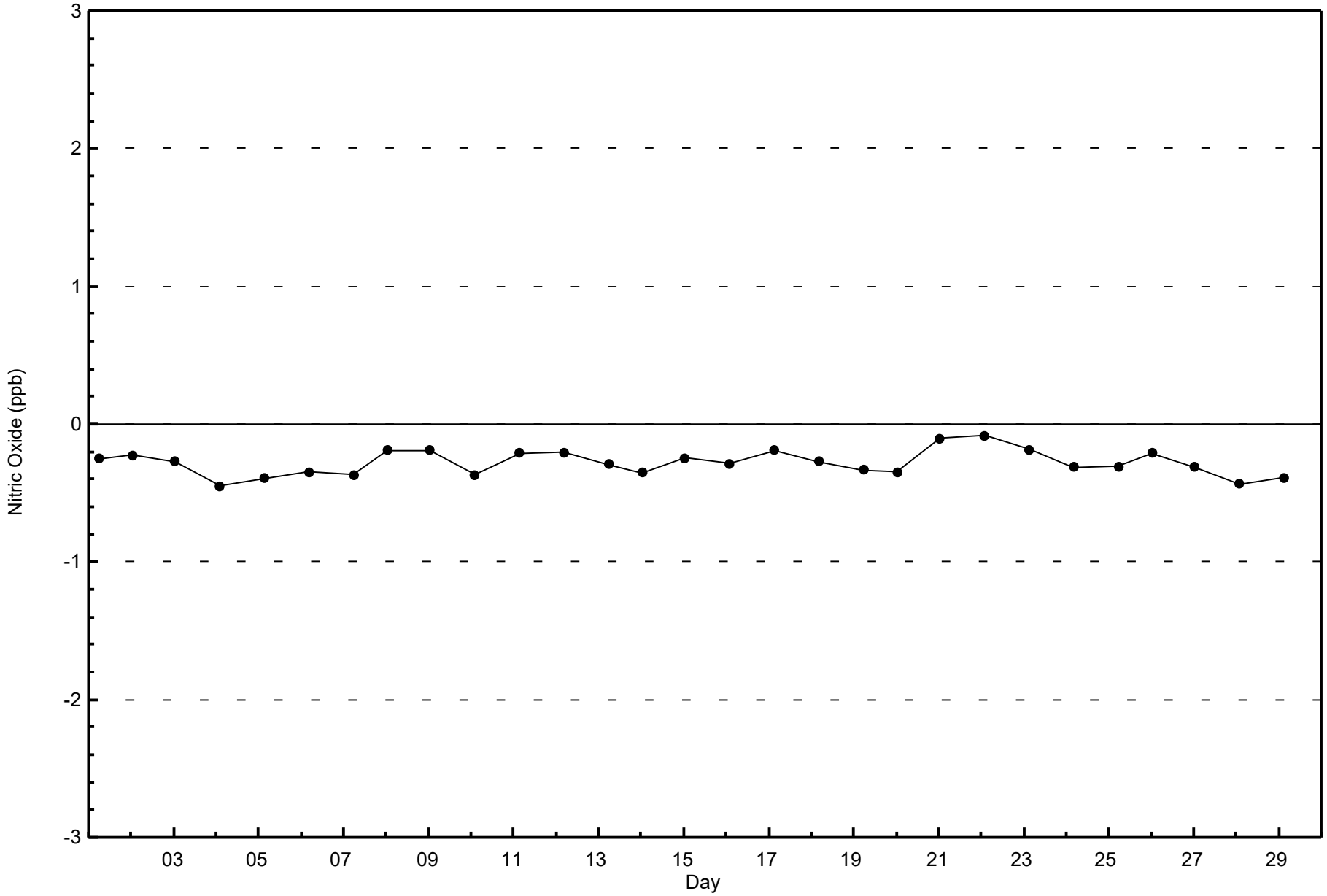
**Wood Buffalo Environmental Association
Frequency Distribution**

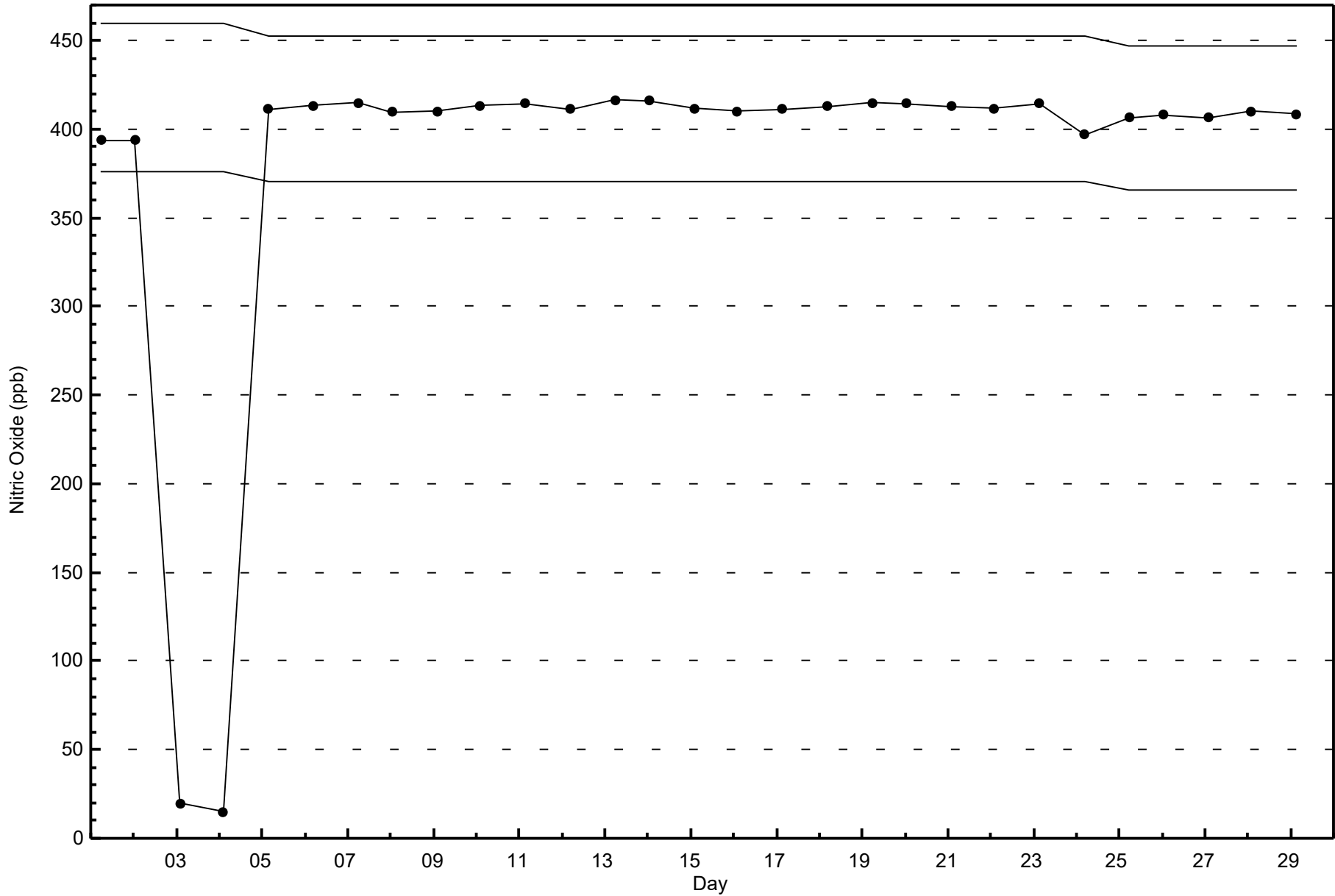
**Nitric Oxide (NO) - ppb
Ells River - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	74	67	32	6	8	21	42	52	63	44	41	37	18	19	27	19	570
21 - 40	8	3	0	0	0	0	0	4	9	1	4	1	7	6	12	7	62
41 - 80	2	2	0	0	0	0	1	2	1	2	0	0	0	4	1	3	18
81 - 159	0	0	0	0	0	0	0	1	1	1	0	0	0	2	0	0	5
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	84	72	32	6	8	21	43	59	74	48	45	38	25	31	40	29	655

Total Number of Valid Hours: 655

Total Number of Hours: 696







Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

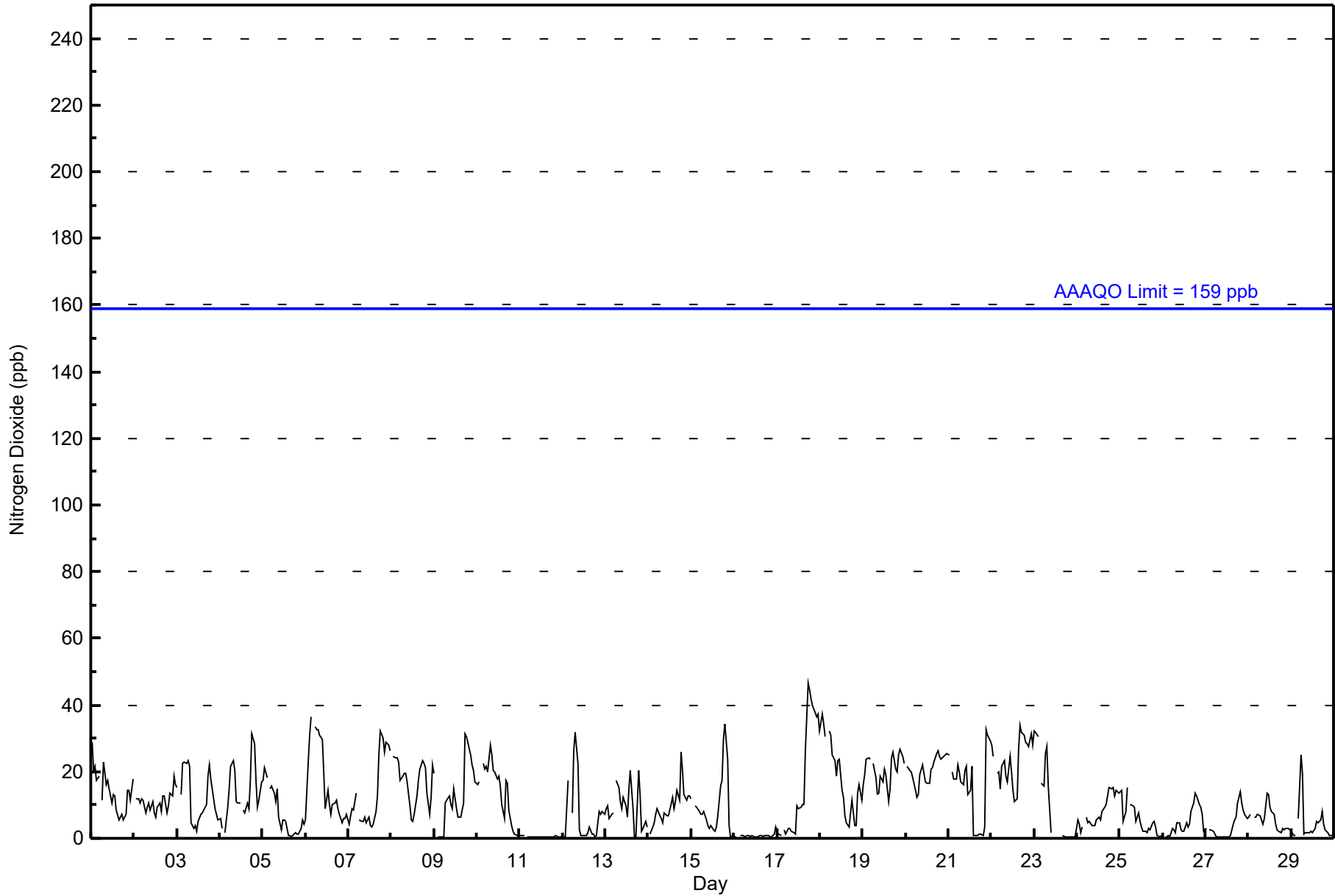
Ells River - February 2024

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:														696																													
Maximum Value: 46.7 ppb on Feb 17 18:00		Maximum Daily Average: 23.3 ppb on Feb 22		Hours of Data:														660																															
Minimum Value: 0.3 ppb on Feb 11 17:00		Minimum Daily Average: 0.5 ppb on Feb 11		Hours of Missing Data:														36																															
Maximum Diurnal Average: 15.0 ppb at hour 19		Minimum Diurnal Average: 7.1 ppb at hour 15		Hours of Calibration:														35																															
Monthly Average: 11.32 ppb		Percentiles: P ₁ = 0.3 P ₁₀ = 0.7 Q ₁ = 3.0 Median = 9.0 Q ₃ = 17.8 P ₉₀ = 25.0 P ₉₉ = 36.7		Percent Operational Time:														99.9																															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	28.7	20.3	21.4	17.4	18.5	Z	11.4	22.9	16.0	17.4	15.0	10.8	13.3	12.9	8.6	5.6	6.4	7.0	5.5	7.2	14.2	14.3	11.6	17.9	14.1	28.7																							
2-Feb	Z	11.7	12.0	10.4	12.0	11.4	7.6	9.5	10.8	8.6	11.0	7.7	6.5	9.5	10.7	8.0	12.6	12.9	7.6	9.9	13.6	12.5	18.8	16.3	10.9	18.8																							
3-Feb	15.2	Z	13.2	22.3	22.8	22.6	23.1	21.8	4.7	3.0	3.8	2.1	5.2	7.4	7.6	8.6	10.2	18.6	22.0	17.9	11.9	9.0	7.2	5.6	12.4	23.1																							
4-Feb	5.8	3.0	Z	1.8	9.3	14.7	21.6	23.2	20.4	11.1	10.5	10.7	M	8.5	7.8	10.4	9.1	17.2	31.2	28.2	17.2	9.5	11.6	17.1	13.6	31.2																							
5-Feb	17.2	21.1	18.1	Z	14.8	15.6	13.6	11.2	14.9	6.2	2.4	5.3	5.3	4.9	1.0	1.0	0.6	1.4	1.9	1.4	1.1	3.0	5.6	4.3	7.5	21.1																							
6-Feb	5.4	22.7	31.0	36.3	Z	33.3	32.6	32.8	30.8	29.5	19.4	8.9	14.3	10.3	7.1	10.3	10.7	11.3	8.8	7.2	4.5	5.8	6.0	7.2	16.8	36.3																							
7-Feb	4.2	6.8	9.1	8.5	13.6	Z	5.7	5.2	5.2	6.2	4.6	6.3	3.8	3.3	4.2	8.0	12.5	24.8	32.4	30.0	26.0	29.0	28.1	26.4	13.2	32.4																							
8-Feb	Z	24.6	24.2	24.0	22.7	17.5	18.8	19.4	19.7	16.9	9.9	5.3	5.2	7.4	12.9	17.4	20.7	23.1	22.6	21.1	13.7	7.3	12.2	22.0	16.9	24.6																							
9-Feb	19.7	Z	0.6	0.4	0.4	0.5	10.5	11.5	12.6	10.3	9.0	14.7	8.7	6.3	6.4	6.2	10.7	31.4	30.7	29.0	25.0	22.1	20.4	17.1	13.2	31.4																							
10-Feb	16.3	17.0	Z	22.5	20.8	21.5	20.0	27.8	25.0	20.4	20.1	18.0	18.5	15.8	10.1	6.1	17.3	16.6	8.4	3.8	2.2	1.1	0.9	0.8	14.4	27.8																							
11-Feb	0.9	0.9	0.7	Z	0.6	0.6	0.5	0.4	0.5	0.4	0.4	0.3	0.4	0.3	0.4	0.4	0.3	0.4	0.4	0.4	0.9	0.4	0.3	0.3	0.5	0.9																							
12-Feb	0.3	0.3	9.1	17.4	Z	7.5	26.2	31.9	22.6	2.7	0.7	0.8	0.7	0.8	1.6	3.4	1.4	1.2	0.4	0.7	7.9	7.2	8.0	7.4	7.0	31.9																							
13-Feb	8.7	9.9	6.0	7.3	7.7	Z	17.4	15.4	11.1	9.0	12.3	9.6	6.2	14.6	20.3	8.8	0.5	0.5	20.3	12.7	2.0	3.0	5.0	3.2	9.2	20.3																							
14-Feb	Z	1.4	3.4	4.8	7.4	9.0	6.8	5.9	4.6	7.6	6.9	6.9	8.6	12.2	9.1	11.1	14.3	11.5	26.0	20.4	13.1	11.3	12.9	12.5	9.9	26.0																							
15-Feb	12.0	Z	9.6	9.3	8.0	7.1	7.0	8.1	5.5	3.8	2.9	3.9	2.6	2.2	3.4	6.7	15.5	17.5	29.8	34.5	23.9	4.0	0.6	0.9	9.5	34.5																							
16-Feb	0.6	0.6	Z	0.7	0.7	0.7	0.6	0.7	0.7	0.6	0.8	0.6	0.6	0.6	0.8	0.7	0.6	0.7	0.7	0.7	0.6	0.6	1.3	3.2	0.8	3.2																							
17-Feb	1.7	1.2	0.8	Z	2.5	1.1	2.8	2.9	2.0	1.8	1.4	9.8	8.9	9.5	10.0	10.3	26.3	46.7	44.5	42.0	39.8	37.7	36.3	37.2	16.4	46.7																							
18-Feb	32.4	37.5	34.3	30.7	Z	32.1	30.9	25.1	23.4	18.7	23.3	23.7	14.6	12.1	6.6	4.6	3.5	7.7	11.6	3.8	3.8	13.4	16.3	11.6	18.3	37.5																							
19-Feb	16.1	19.2	23.7	24.2	23.8	Z	22.5	18.3	13.3	13.7	18.8	16.8	20.9	19.2	11.1	14.7	24.3	26.0	20.8	19.9	24.9	26.5	24.5	22.6	20.3	26.5																							
20-Feb	Z	21.4	20.3	20.1	18.1	14.5	12.4	13.1	19.2	22.2	19.4	17.0	16.4	16.6	20.6	21.2	23.0	25.4	26.3	24.6	23.9	24.6	25.1	25.6	20.5	26.3																							
21-Feb	25.1	Z	20.0	17.7	17.6	22.1	20.1	17.1	16.3	20.3	21.5	13.1	14.5	21.8	1.0	0.9	1.0	1.2	1.2	0.9	3.4	32.6	31.1	29.4	15.2	32.6																							
22-Feb	27.9	24.5	Z	19.6	20.0	14.8	21.5	23.1	18.7	16.9	24.7	19.9	14.6	11.0	11.9	26.5	33.8	31.8	31.1	28.9	28.2	27.6	31.3	28.0	23.3	33.8																							
23-Feb	32.2	31.6	30.6	Z	16.4	15.5	25.6	27.4	15.6	1.5	C	C	C	C	C	C	0.7	0.5	0.4	0.4	0.4	0.3	0.3	0.3	--	32.2																							
24-Feb	5.3	4.4	1.9	3.4	Z	6.3	4.5	5.0	4.0	3.8	3.7	5.5	6.3	5.3	8.2	9.5	10.2	12.5	15.2	14.7	15.1	12.7	14.2	13.4	8.0	15.2																							
25-Feb	14.0	14.3	4.9	8.2	15.1	Z	10.2	9.8	9.3	5.0	7.6	4.9	3.6	2.2	2.2	1.9	3.1	2.4	4.8	5.2	3.4	0.7	0.3	0.7	5.8	15.1																							
26-Feb	Z	0.5	0.5	0.8	0.6	3.0	2.7	1.8	4.6	4.6	2.6	2.3	2.2	4.5	3.4	4.1	8.2	10.4	13.7	12.7	10.1	9.2	7.1	2.3	4.9	13.7																							
27-Feb	2.8	Z	2.7	2.5	2.1	1.3	0.6	0.5	0.3	0.4	0.3	0.3	0.4	0.3	0.9	4.2	5.4	6.3	10.6	13.8	10.8	8.4	7.2	6.1	3.8	13.8																							
28-Feb	6.3	7.1	Z	6.4	6.5	7.0	6.6	5.5	4.1	5.9	13.5	13.2	9.3	7.9	7.1	4.3	2.5	2.3	1.7	3.0	2.7	3.0	2.8	2.7	5.7	13.5																							
29-Feb	2.0	1.0	1.0	Z	6.0	24.9	19.6	1.4	1.5	1.5	1.8	2.0	1.9	2.8	4.9	4.8	5.5	8.0	4.2	2.6	1.9	1.0	0.9	0.9	4.4	24.9																							
																								12.5	12.6	12.5	13.2	11.5	12.7	13.9	13.7	11.6	9.3	9.6	8.6	7.9	8.2	7.1	7.8	10.0	13.0	15.0	13.7	11.9	11.6	12.0	11.8	Diurnal Average	
																								32.4	37.5	34.3	36.3	23.8	33.3	32.6	32.8	30.8	29.5	24.7	23.7	20.9	21.8	20.6	26.5	33.8	46.7	44.5	42.0	39.8	37.7	36.3	37.2	Diurnal Maximum	
Z - zerospan C - Calibration M - Maintenance																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb																																																	



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Ells River - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Ells River - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	536	81.21	81.21
21 - 40	121	18.33	99.55
41 - 80	3	0.45	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Ells River - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	65	59	30	6	8	19	39	43	58	42	42	37	20	21	26	17	532
21 - 40	18	11	2	0	0	2	4	16	16	6	3	1	5	10	14	12	120
41 - 80	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	84	72	32	6	8	21	43	59	74	48	45	38	25	31	40	29	655

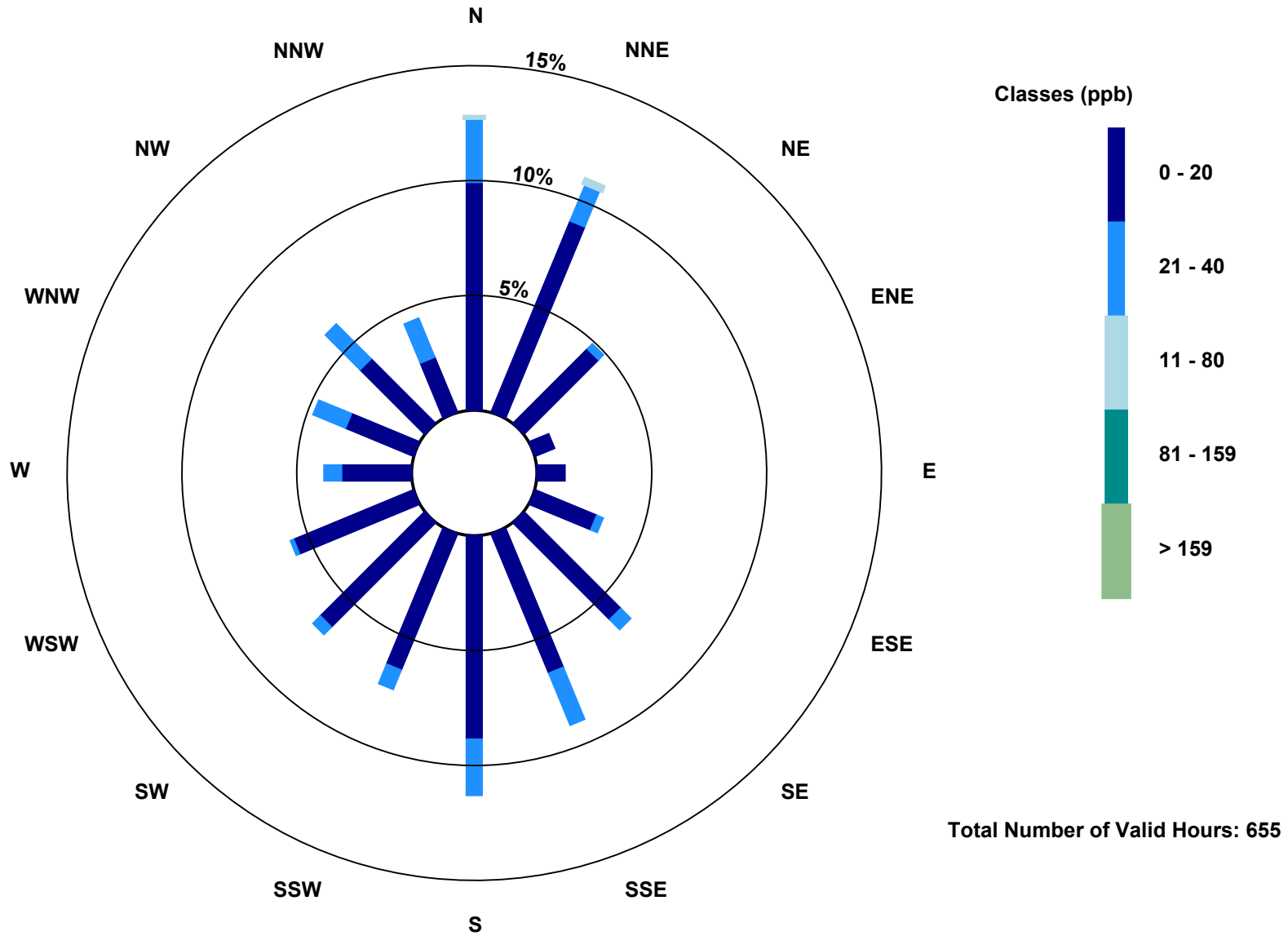
Total Number of Valid Hours: 655

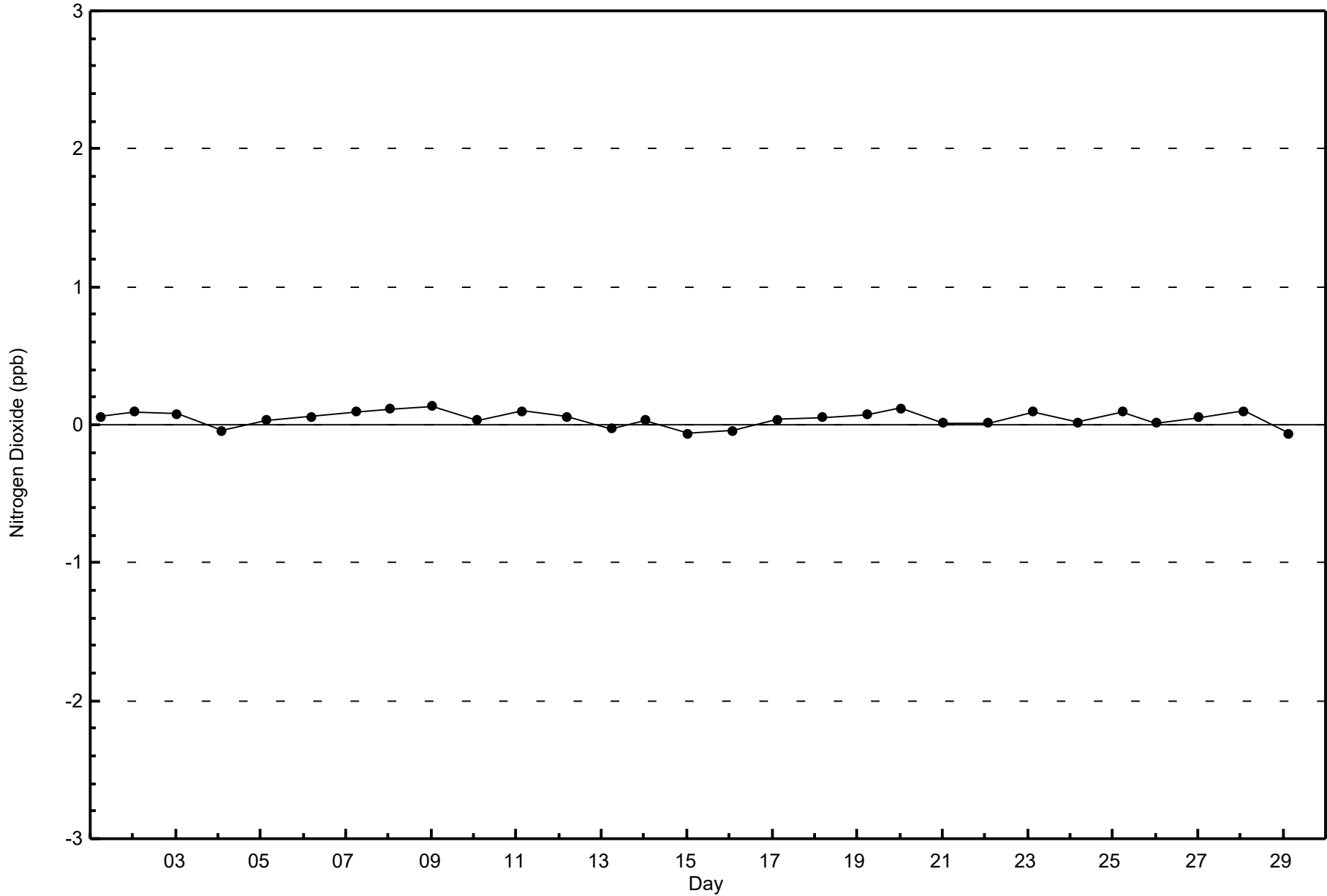
Total Number of Hours: 696

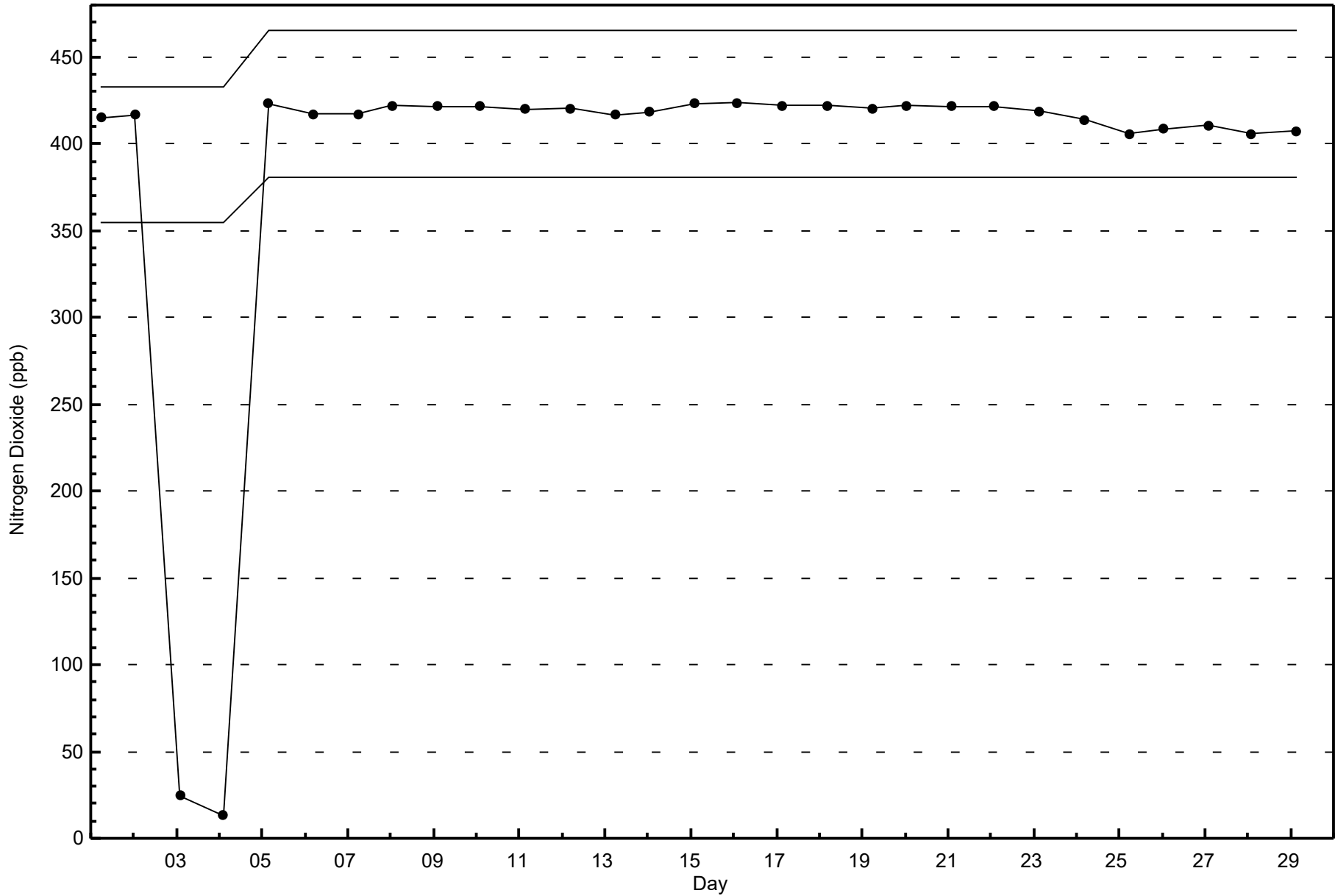


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Ells River









Wood Buffalo Environmental Association
Summary of Hour Averages

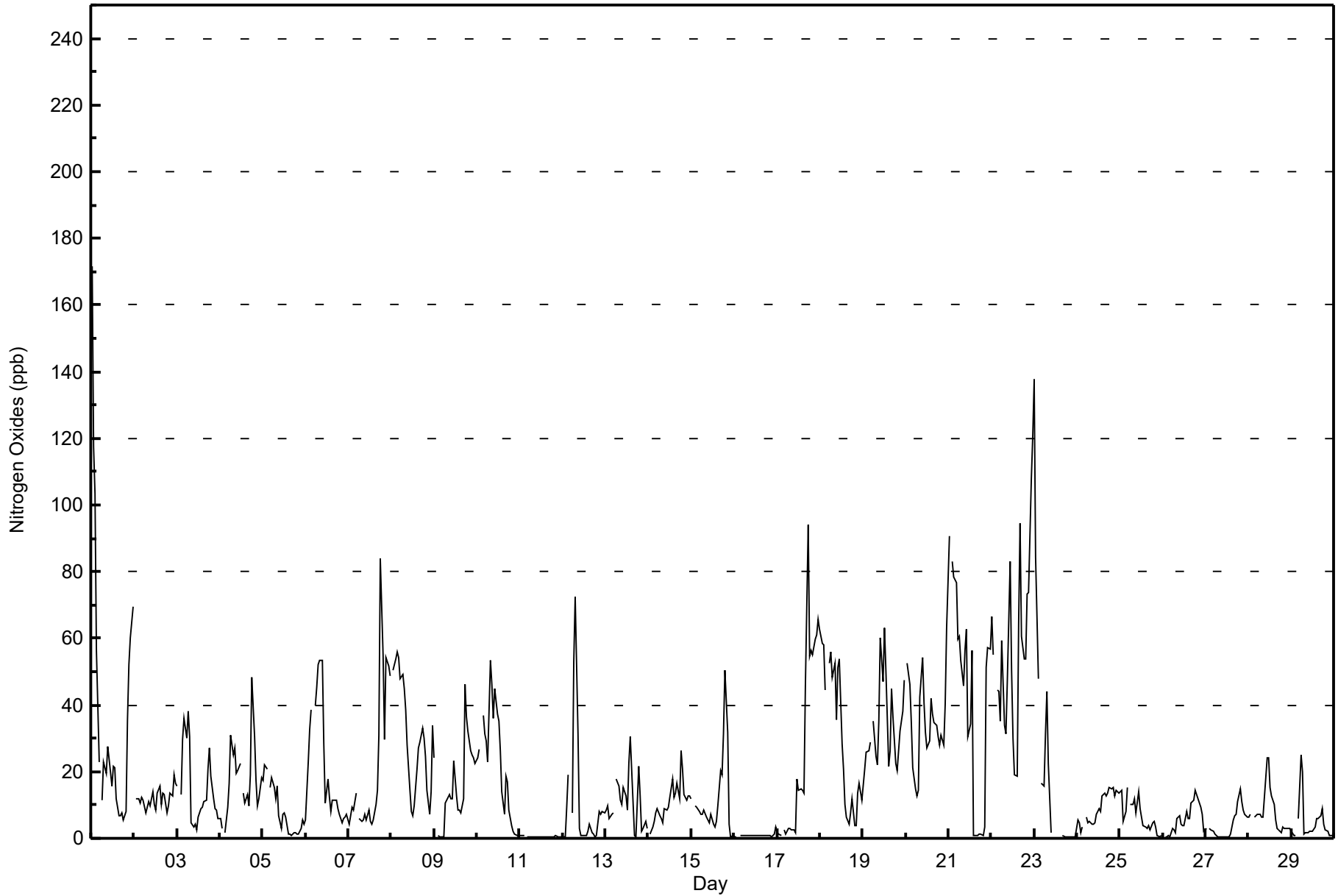
Nitrogen Oxides (NO_x) - ppb
Ells River - February 2024

Maximum Value: 171.8 ppb on Feb 1 01:00																						Maximum Daily Average: 57.4 ppb on Feb 22																						Hours in Service: 696					
Minimum Value: 0.3 ppb on Feb 27 09:00																						Minimum Daily Average: 0.5 ppb on Feb 11																						Hours of Data: 660					
Maximum Diurnal Average: 29.0 ppb at hour 1																						Minimum Diurnal Average: 10.9 ppb at hour 15																						Hours of Missing Data: 36					
Monthly Average: 18.39 ppb																						Percentiles: P ₁ = 0.3 P ₁₀ = 0.7 Q ₁ = 3.4 Median = 10.4 Q ₃ = 26.2 P ₉₀ = 51.4 P ₉₉ = 94.2																						Hours of Calibration: 35					
																																												Percent Operational Time: 99.9					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	171.8	117.5	103.2	56.4	22.7	Z	11.4	23.0	19.3	27.4	23.7	15.8	21.6	21.0	12.0	6.6	6.7	7.5	5.5	8.2	35.6	52.1	60.3	69.3	39.1	171.8																							
2-Feb	Z	11.8	12.0	10.4	12.1	11.4	7.6	9.5	11.1	9.6	14.1	10.2	8.6	13.8	15.5	10.0	13.7	13.1	7.6	9.9	13.6	12.6	19.0	16.4	11.9	19.0																							
3-Feb	15.6	Z	13.3	29.8	36.0	30.1	38.1	30.5	4.9	3.2	4.3	2.5	6.3	8.9	9.4	11.2	11.5	20.7	27.0	18.6	12.1	9.1	8.4	5.8	15.5	38.1																							
4-Feb	5.9	3.0	Z	1.8	9.4	16.7	30.8	24.8	27.0	19.4	20.5	22.3	M	13.4	10.8	13.0	9.9	18.9	48.4	30.4	17.4	9.7	11.8	18.0	17.4	48.4																							
5-Feb	17.4	22.1	20.9	Z	15.4	18.2	15.4	11.8	15.6	6.9	3.0	7.4	7.7	6.3	1.2	1.2	0.7	1.5	1.9	1.5	1.2	3.1	5.7	4.4	8.3	22.1																							
6-Feb	5.5	22.9	32.5	38.7	Z	39.9	45.2	52.0	53.4	53.5	28.3	10.6	18.0	12.4	8.2	11.3	11.5	11.6	8.9	7.3	4.6	5.9	6.3	7.3	21.6	53.5																							
7-Feb	4.2	6.9	9.2	8.6	13.7	Z	5.9	5.2	5.4	7.1	5.6	8.4	5.0	4.4	5.7	10.2	14.3	30.8	83.8	54.8	29.8	54.3	51.8	48.6	20.6	83.8																							
8-Feb	Z	50.6	53.8	56.1	54.1	48.0	49.0	45.1	38.4	28.1	14.6	8.1	6.9	9.8	20.8	26.9	28.6	33.2	30.1	24.7	14.3	7.4	14.0	34.1	30.3	56.1																							
9-Feb	24.2	Z	0.7	0.5	0.4	0.6	10.7	11.6	13.3	12.1	11.9	23.3	12.6	8.5	8.5	7.5	12.1	46.3	36.3	32.1	26.5	25.0	24.3	22.5	16.2	46.3																							
10-Feb	24.0	26.8	Z	36.9	31.2	29.3	22.7	53.6	46.3	35.9	44.7	37.2	35.3	26.3	13.8	7.0	18.5	16.9	8.5	3.8	2.2	1.1	0.9	0.8	22.8	53.6																							
11-Feb	0.9	0.9	0.7	Z	0.6	0.6	0.5	0.4	0.5	0.6	0.4	0.4	0.5	0.4	0.5	0.4	0.3	0.5	0.4	0.4	0.4	0.9	0.4	0.3	0.3	0.5	0.9																						
12-Feb	0.3	0.3	9.3	19.0	Z	7.6	53.1	72.6	31.3	3.1	0.9	1.0	0.9	0.9	2.0	4.3	1.6	1.3	0.5	0.8	8.0	7.3	8.1	7.4	10.5	72.6																							
13-Feb	8.7	9.9	6.0	7.3	7.7	Z	17.9	15.6	11.6	10.3	15.4	12.6	8.6	22.4	30.5	10.5	0.7	0.6	21.6	12.9	2.1	3.0	5.0	3.2	10.6	30.5																							
14-Feb	Z	1.4	3.5	4.9	7.5	9.1	6.9	6.0	4.9	9.0	8.7	9.3	12.2	17.7	12.2	13.7	16.5	11.7	26.2	20.6	13.1	11.4	12.9	12.5	11.0	26.2																							
15-Feb	12.0	Z	9.6	9.3	8.0	7.1	7.2	8.3	6.2	5.5	4.7	7.1	4.4	3.4	5.2	9.6	20.3	19.2	31.3	50.4	32.0	4.1	0.6	0.9	11.6	50.4																							
16-Feb	0.6	0.6	Z	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.9	0.7	0.7	0.8	1.0	0.9	0.7	0.7	0.7	0.7	0.6	0.6	1.3	3.3	0.9	3.3																							
17-Feb	1.7	1.2	0.8	Z	2.7	1.2	3.2	3.1	2.3	2.7	1.8	17.7	14.6	14.6	14.6	13.5	45.8	94.1	54.9	56.3	55.1	59.7	61.0	65.7	25.6	94.1																							
18-Feb	62.7	58.4	58.2	44.4	Z	52.4	55.8	48.5	52.7	35.4	51.2	54.0	28.2	20.8	10.2	6.2	4.0	7.8	11.7	3.9	3.8	13.4	16.3	11.6	30.9	62.7																							
19-Feb	16.2	20.6	26.0	26.2	28.8	Z	35.1	24.5	21.9	35.3	60.1	47.2	63.3	50.4	21.6	26.4	45.0	36.6	22.5	20.3	26.3	32.0	38.0	47.2	33.6	63.3																							
20-Feb	Z	52.4	46.0	34.9	21.1	14.9	12.6	14.3	42.2	54.4	40.7	32.0	27.3	29.0	41.9	37.4	34.8	33.8	30.6	28.2	31.1	28.1	40.2	63.3	34.4	63.3																							
21-Feb	90.6	Z	83.1	78.5	76.9	59.8	60.4	53.2	45.7	56.5	62.8	30.4	34.2	56.3	1.0	0.9	1.0	1.2	1.2	0.9	3.4	51.4	57.1	57.0	41.9	90.6																							
22-Feb	66.4	54.9	Z	44.6	43.9	35.3	59.5	33.9	31.2	47.6	83.0	50.6	29.9	19.0	18.5	64.4	94.4	60.7	53.8	53.9	73.3	73.7	108.0	120.6	57.4	120.6																							
23-Feb	137.5	84.3	47.9	Z	16.7	15.7	31.3	44.0	22.6	1.8	C	C	C	C	C	C	0.7	0.5	0.4	0.4	0.4	0.3	0.4	0.4	--	137.5																							
24-Feb	5.4	4.5	1.9	3.4	Z	6.4	4.5	5.1	4.3	4.4	4.5	7.3	9.1	8.1	12.5	13.5	12.8	13.6	15.3	14.8	15.2	12.7	14.3	13.4	9.0	15.3																							
25-Feb	14.1	14.3	4.9	8.2	15.2	Z	10.3	10.2	11.8	7.7	14.1	8.9	6.5	3.8	3.4	2.8	3.9	2.5	4.8	5.2	3.4	0.7	0.3	0.7	6.9	15.2																							
26-Feb	Z	0.5	0.5	0.8	0.6	3.0	2.7	1.8	5.9	6.7	4.2	3.9	3.7	8.1	5.8	6.1	10.5	11.4	14.5	13.0	10.5	9.2	7.1	2.3	5.8	14.5																							
27-Feb	2.8	Z	2.8	2.5	2.1	1.4	0.9	0.6	0.3	0.5	0.4	0.3	0.6	0.4	1.1	5.7	6.7	7.0	10.9	14.8	10.9	8.5	7.3	6.2	4.1	14.8																							
28-Feb	6.4	7.2	Z	6.5	6.6	7.4	7.2	6.4	6.4	12.3	24.2	24.2	15.1	12.8	10.3	5.4	2.9	2.5	1.8	3.2	2.9	3.1	2.9	2.9	7.9	24.2																							
29-Feb	2.0	1.0	1.0	Z	6.0	25.1	19.8	1.4	1.6	1.6	2.1	2.3	2.2	3.4	6.1	6.0	6.6	8.9	4.2	2.6	1.9	1.0	0.9	0.9	4.7	25.1																							
																								29.0	23.9	22.8	22.1	17.6	18.4	21.6	21.3	18.6	17.2	19.7	16.3	14.2	14.2	10.9	11.9	15.1	17.8	19.5	17.1	15.6	17.3	20.2	22.3	Diurnal Average	
																								171.8	117.5	103.2	78.5	76.9	59.8	60.4	72.6	53.4	56.5	83.0	54.0	63.3	56.3	41.9	64.4	94.4	94.1	83.8	56.3	73.3	73.7	108.0	120.6	Diurnal Maximum	
Z - zerospan																								C - Calibration						M - Maintenance																			



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Ells River - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Oxides (NO_x) - ppb
Ells River - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	457	69.24	69.24
21 - 40	106	16.06	85.30
41 - 80	84	12.73	98.03
81 - 159	12	1.82	99.85
> 159	1	0.15	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Ells River - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	59	57	29	5	7	18	36	26	45	39	38	36	18	8	21	12	454
21 - 40	12	8	3	1	1	3	6	24	15	5	3	1	0	10	7	5	104
11 - 80	11	5	0	0	0	0	1	7	13	2	4	1	7	9	12	12	84
81 - 159	2	2	0	0	0	0	0	2	1	2	0	0	0	3	0	0	12
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Totals	84	72	32	6	8	21	43	59	74	48	45	38	25	31	40	29	655

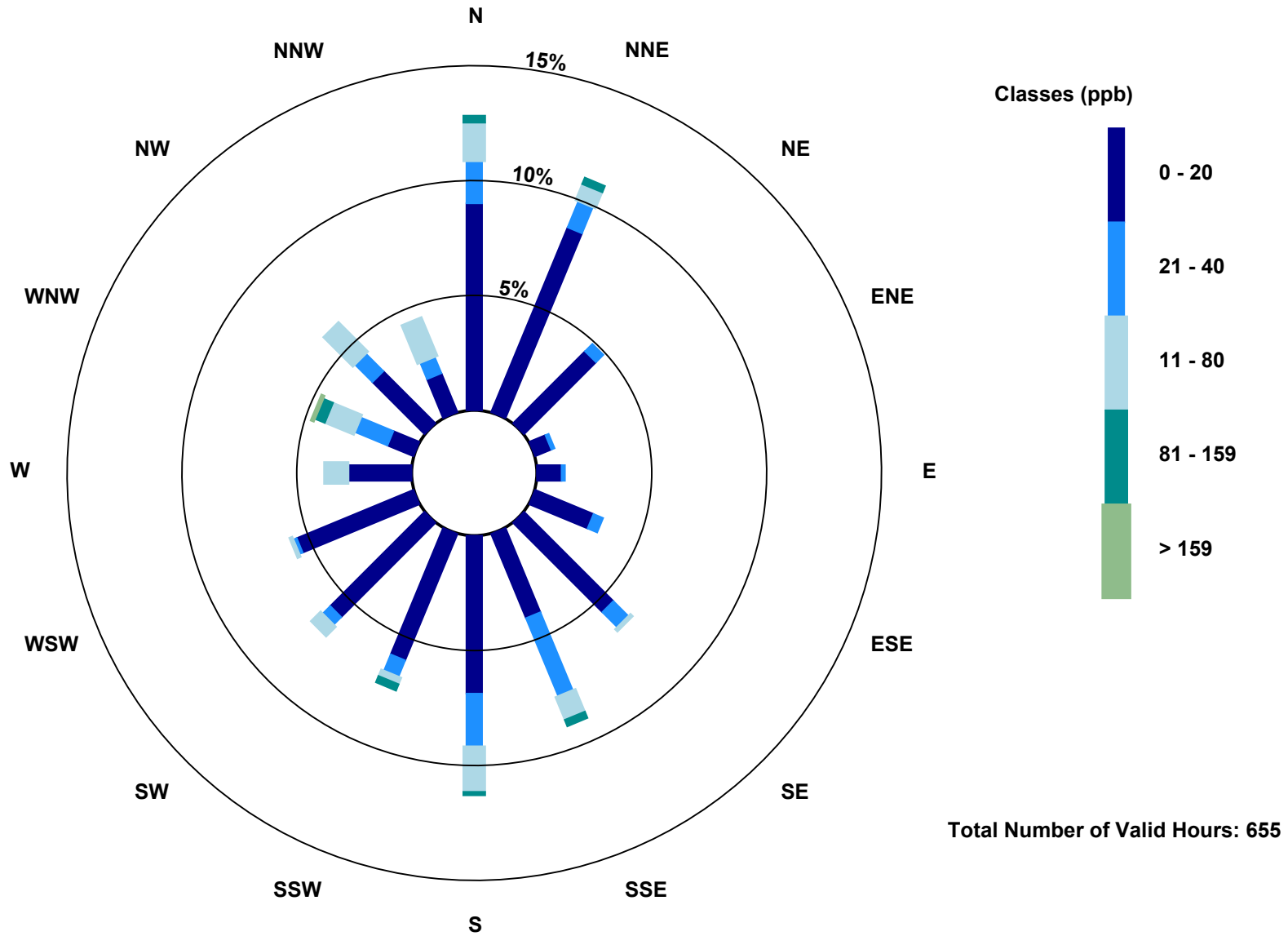
Total Number of Valid Hours: 655

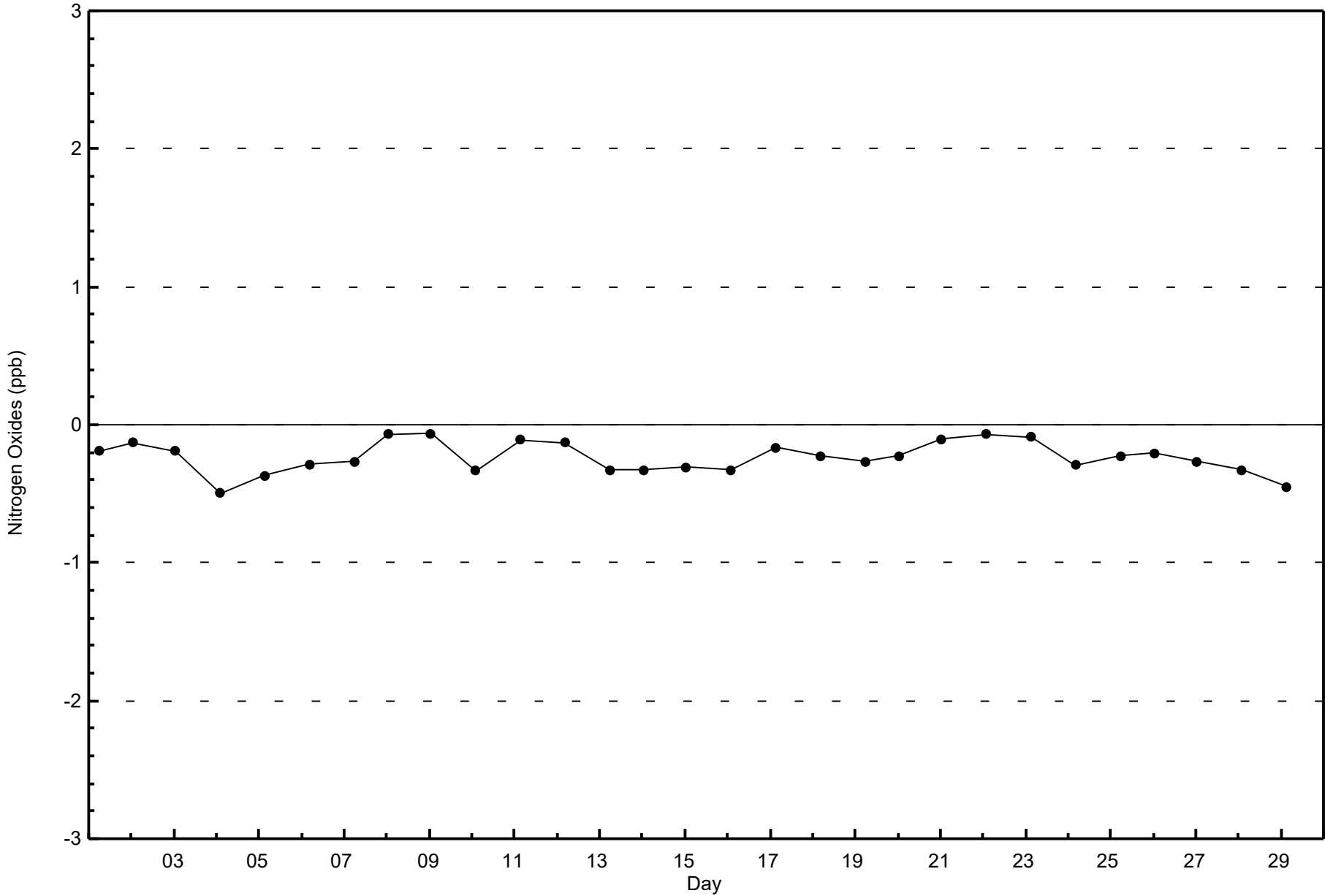
Total Number of Hours: 696

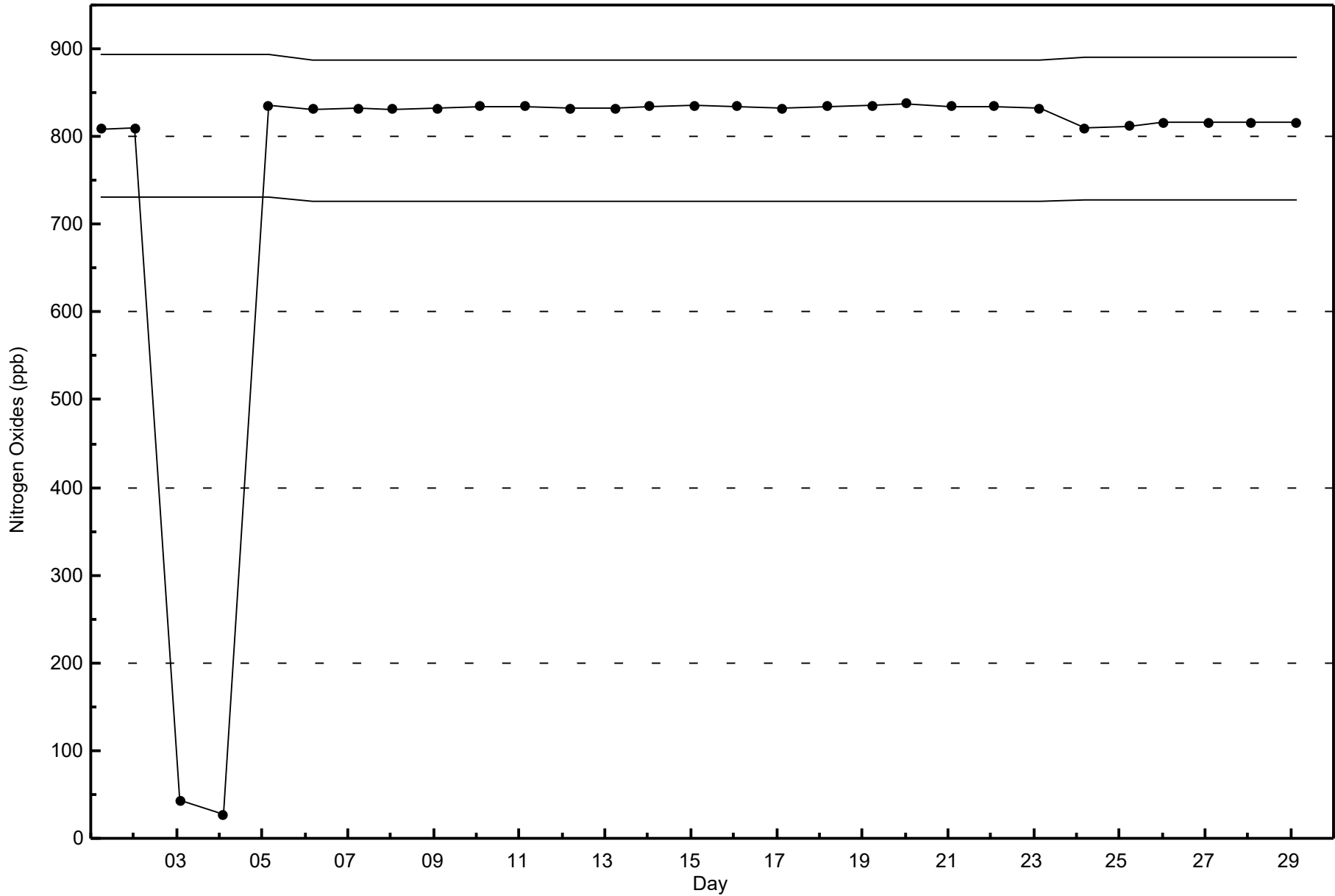


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Ells River

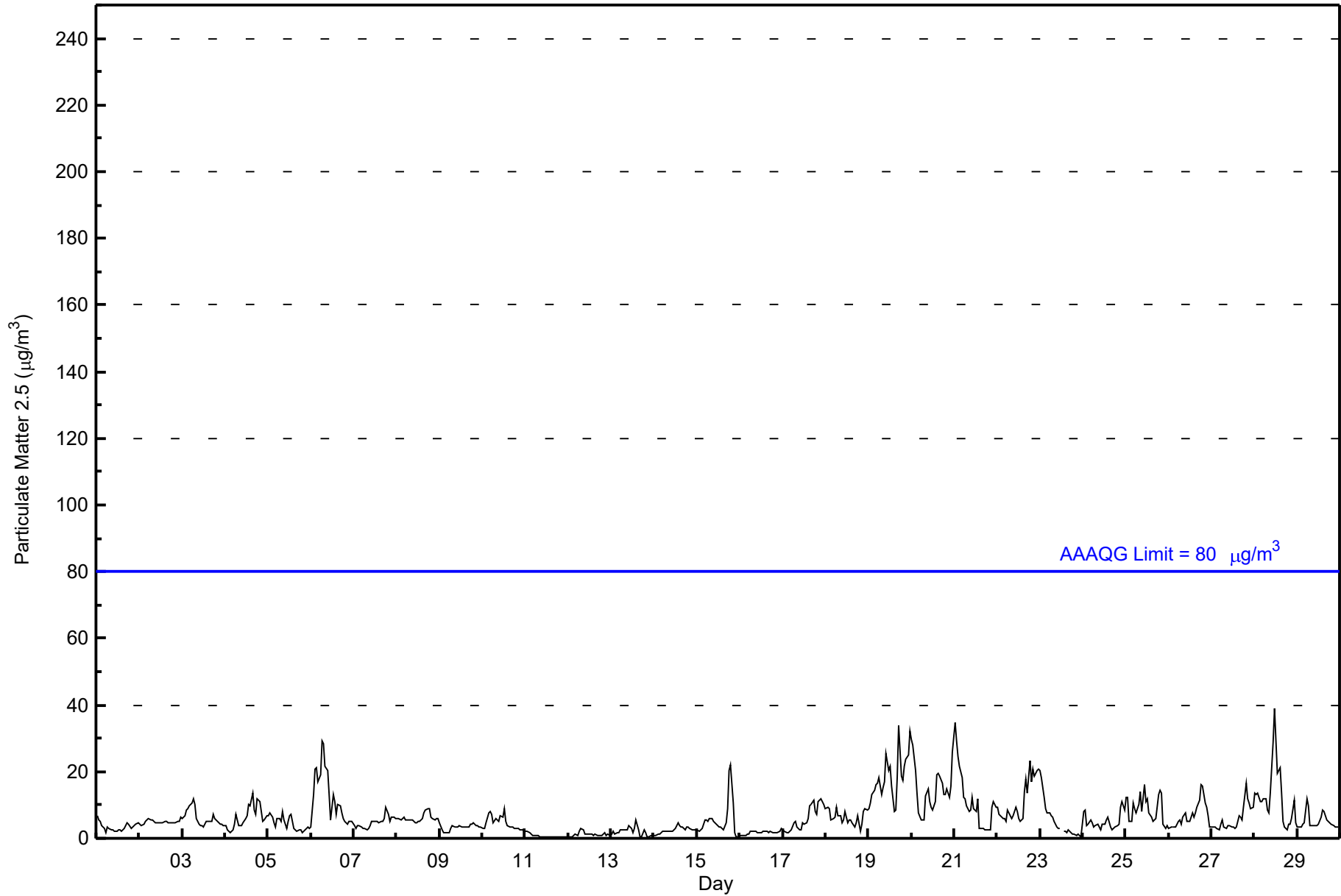








Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service: 696														696							
Maximum Value: 38.9 µg/m ³ on Feb 28 12:00		Maximum Daily Average: 18.1 µg/m ³ on Feb 19														Hours of Data: 695											
Minimum Value: 0.2 µg/m ³ on Feb 11 17:00		Minimum Daily Average: 0.7 µg/m ³ on Feb 11														Hours of Missing Data: 1											
Maximum Diurnal Average: 7.4 µg/m ³ at hour 1		Minimum Diurnal Average: 5.8 µg/m ³ at hour 15														Hours of Calibration: 1											
Monthly Average: 6.46 µg/m ³		Percentiles: P ₁ = 0.3 P ₁₀ = 1.6 Q ₁ = 2.8 Median = 4.8 Q ₃ = 8.1 P ₉₀ = 13.5 P ₉₉ = 29.2														Percent Operational Time: 100.0											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	6.8	5.5	5.2	3.9	3.1	1.8	3.2	3.1	2.6	2.5	2.1	2.1	2.5	2.5	2.2	2.8	3.9	4.8	4.1	3.1	3.4	3.8	4.1	4.6	3.5	6.8	
2-Feb	4.3	3.7	4.0	5.2	5.7	5.9	5.6	5.4	5.0	4.7	4.8	4.8	4.7	4.8	5.0	4.9	4.6	4.5	4.7	4.5	4.7	5.0	5.2	6.2	4.9	6.2	
3-Feb	6.1	6.8	8.4	8.7	9.8	10.7	11.8	10.3	5.8	4.2	3.8	3.8	3.6	5.2	5.1	5.2	5.1	7.0	6.1	5.4	4.7	4.2	4.2	4.0	6.2	11.8	
4-Feb	3.7	2.4	1.9	1.6	2.5	4.2	7.3	3.6	4.0	4.0	4.7	5.7	7.0	10.1	9.9	13.5	8.5	7.1	11.8	10.8	8.2	5.0	5.4	6.6	6.2	13.5	
5-Feb	6.7	7.8	6.3	4.6	3.5	5.8	6.0	5.3	8.2	5.4	2.9	5.0	7.0	7.1	2.8	2.4	2.0	2.6	2.7	1.7	2.3	3.0	3.4	3.0	4.5	8.2	
6-Feb	3.5	13.1	20.9	21.3	16.7	19.2	29.4	28.5	21.5	20.5	13.1	5.6	13.1	10.9	7.1	10.1	9.6	7.7	5.9	4.9	4.1	5.2	4.9	5.0	12.6	29.4	
7-Feb	3.8	2.9	3.6	3.8	3.2	2.9	2.8	2.7	2.9	3.9	5.0	5.0	5.0	5.1	4.8	5.2	5.0	6.0	9.2	7.1	5.2	6.3	6.2	5.9	4.7	9.2	
8-Feb	5.9	5.8	5.5	6.1	6.2	5.7	5.6	5.6	5.7	5.6	4.7	4.7	5.1	5.1	6.0	7.6	8.4	8.9	8.9	6.3	6.1	5.6	5.7	6.1	6.1	8.9	
9-Feb	4.6	2.5	1.6	1.6	1.6	1.6	2.9	3.6	3.2	3.2	3.6	3.7	3.6	3.2	3.2	3.2	3.2	4.2	4.4	4.8	3.9	3.7	3.6	3.3	3.2	4.8	
10-Feb	3.1	3.2	4.8	7.5	8.1	7.1	4.6	5.8	5.6	4.9	7.0	6.1	8.8	5.0	3.7	3.3	3.6	3.6	3.1	2.8	2.9	2.7	2.4	2.1	4.7	8.8	
11-Feb	2.0	2.0	1.9	1.3	1.0	0.8	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.7	2.0	
12-Feb	0.3	0.2	0.5	0.8	1.1	0.7	1.9	3.0	2.6	1.2	1.3	1.4	1.4	1.3	1.0	1.3	0.6	0.7	0.7	1.0	1.8	1.0	1.3	1.0	1.2	3.0	
13-Feb	1.3	1.9	1.4	1.8	1.6	2.3	2.6	2.4	2.4	2.6	3.7	2.8	1.7	3.0	5.5	2.5	0.5	0.4	2.5	1.6	0.5	0.6	1.0	1.0	2.0	5.5	
14-Feb	1.0	1.0	1.2	1.4	1.8	1.9	2.0	2.1	2.0	2.2	2.3	2.7	2.8	4.8	3.6	3.2	3.2	2.6	3.5	3.3	2.8	2.5	2.6	2.6	2.5	4.8	
15-Feb	2.4	2.3	2.5	3.2	5.4	5.7	5.3	6.0	5.9	5.0	4.5	4.3	3.5	3.2	2.9	2.6	4.7	9.1	20.3	22.0	10.5	1.8	0.5	0.6	5.6	22.0	
16-Feb	0.7	0.7	0.7	0.9	1.1	1.4	1.9	2.2	2.0	2.1	1.9	1.8	1.8	2.0	2.1	2.1	1.8	2.1	1.8	1.6	1.6	1.8	1.9	3.2	1.7	3.2	
17-Feb	2.4	2.3	1.9	1.8	2.2	2.4	4.6	4.9	3.5	2.5	2.5	4.6	4.1	4.6	6.1	9.6	10.2	11.3	8.1	7.4	10.9	12.0	11.0	10.3	5.9	12.0	
18-Feb	9.1	9.1	8.7	5.5	6.0	6.5	9.3	7.0	6.6	4.5	5.5	8.0	4.7	5.7	5.5	4.6	3.5	4.7	6.8	2.2	4.1	8.0	9.1	8.4	6.4	9.3	
19-Feb	9.0	10.4	12.9	14.5	16.2	16.6	18.4	13.1	15.2	17.1	25.5	20.4	21.8	15.6	8.0	8.4	18.1	33.9	18.8	17.5	21.8	23.7	25.0	32.0	18.1	33.9	
20-Feb	29.9	27.9	20.5	13.6	7.5	5.7	5.6	5.7	12.6	14.8	11.0	9.4	8.6	11.1	19.2	19.4	18.7	16.3	12.9	13.3	14.7	12.1	15.7	25.9	14.7	29.9	
21-Feb	34.7	29.2	24.8	21.5	18.2	12.2	11.8	9.8	7.9	8.4	12.4	8.9	7.8	12.1	3.1	3.2	3.1	2.7	2.6	2.4	2.4	9.4	11.2	9.5	11.2	34.7	
22-Feb	9.3	7.3	6.6	6.0	6.1	5.3	8.4	6.6	6.0	6.9	9.4	8.2	6.0	5.1	6.0	14.2	17.7	13.5	23.2	16.8	20.6	18.6	20.3	20.7	11.2	23.2	
23-Feb	20.5	18.4	12.5	8.9	7.6	7.7	6.8	6.1	4.9	3.2	3.0	3.0	C	2.2	2.2	1.8	2.4	1.6	1.3	1.1	0.9	1.1	0.6	0.6	5.2	20.5	
24-Feb	7.9	8.6	3.7	4.1	5.4	4.8	3.4	3.6	4.1	3.2	2.7	4.2	4.4	5.6	6.4	3.4	2.6	2.8	3.3	3.7	4.1	9.5	11.0	8.6	5.0	11.0	
25-Feb	12.1	12.4	5.2	5.1	10.5	9.1	7.7	10.1	14.1	8.2	16.2	11.1	11.9	7.7	6.4	5.1	5.5	6.0	13.0	14.4	13.4	4.2	3.1	3.6	9.0	16.2	
26-Feb	3.1	3.2	3.2	3.4	3.3	5.2	5.6	4.4	6.2	7.5	5.0	5.3	5.3	7.8	6.5	7.5	9.4	11.4	16.1	15.6	10.5	9.5	6.8	3.4	6.9	16.1	
27-Feb	3.6	3.3	3.3	3.2	2.7	4.0	5.4	3.2	2.8	3.9	3.6	3.4	3.3	3.2	3.3	6.6	6.3	5.6	9.5	16.4	11.8	10.5	9.0	9.3	5.7	16.4	
28-Feb	13.6	13.1	13.5	11.0	10.9	12.0	11.9	8.4	7.7	13.6	28.9	38.9	29.3	19.6	21.4	13.4	5.1	3.3	2.6	4.1	4.2	5.8	11.5	4.6	12.9	38.9	
29-Feb	3.2	3.4	3.4	4.2	4.7	11.7	9.7	3.9	3.8	4.0	3.9	3.9	4.4	6.2	8.6	8.1	5.7	5.2	4.7	4.3	3.9	3.5	3.4	3.2	5.0	11.7	
		7.4	7.3	6.6	6.1	6.0	6.2	7.0	6.1	6.1	5.9	6.7	6.5	6.6	6.2	5.8	6.0	6.0	6.5	7.3	6.9	6.4	6.2	6.6	6.7	Diurnal Average	
		34.7	29.2	24.8	21.5	18.2	19.2	29.4	28.5	21.5	20.5	28.9	38.9	29.3	19.6	21.4	19.4	18.7	33.9	23.2	22.0	21.8	23.7	25.0	32.0	Diurnal Maximum	
C - Calibration																											
Alberta Ambient Air Quality Guideline/Objectives: 1-hr 80 µg/m ³ 24-hr 29 µg/m ³																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Ells River - February 2024

Concentration Ranges ($\mu\text{g}/\text{m}^3$)	Number of Hours	%	Cumulative %
0 - 5	408	58.71	58.71
6 - 15	229	32.95	91.65
16 - 25	46	6.62	98.27
26 - 80	12	1.73	100.00
> 81.0	0	0.00	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Particulate Matter 2.5 (PM_{2.5}) - μg/m³
Ells River - February 2024

Concentration Ranges (μg/m ³)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	52	42	24	3	7	14	17	18	48	46	42	41	11	11	17	13	406
6 - 15	32	24	8	3	2	9	22	34	22	4	7	3	15	12	18	11	226
16 - 25	3	6	0	0	0	0	2	9	4	2	0	0	3	5	5	7	46
26 - 80	0	1	0	0	0	0	3	0	1	0	0	0	1	5	1	0	12
> 81.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	87	73	32	6	9	23	44	61	75	52	49	44	30	33	41	31	690

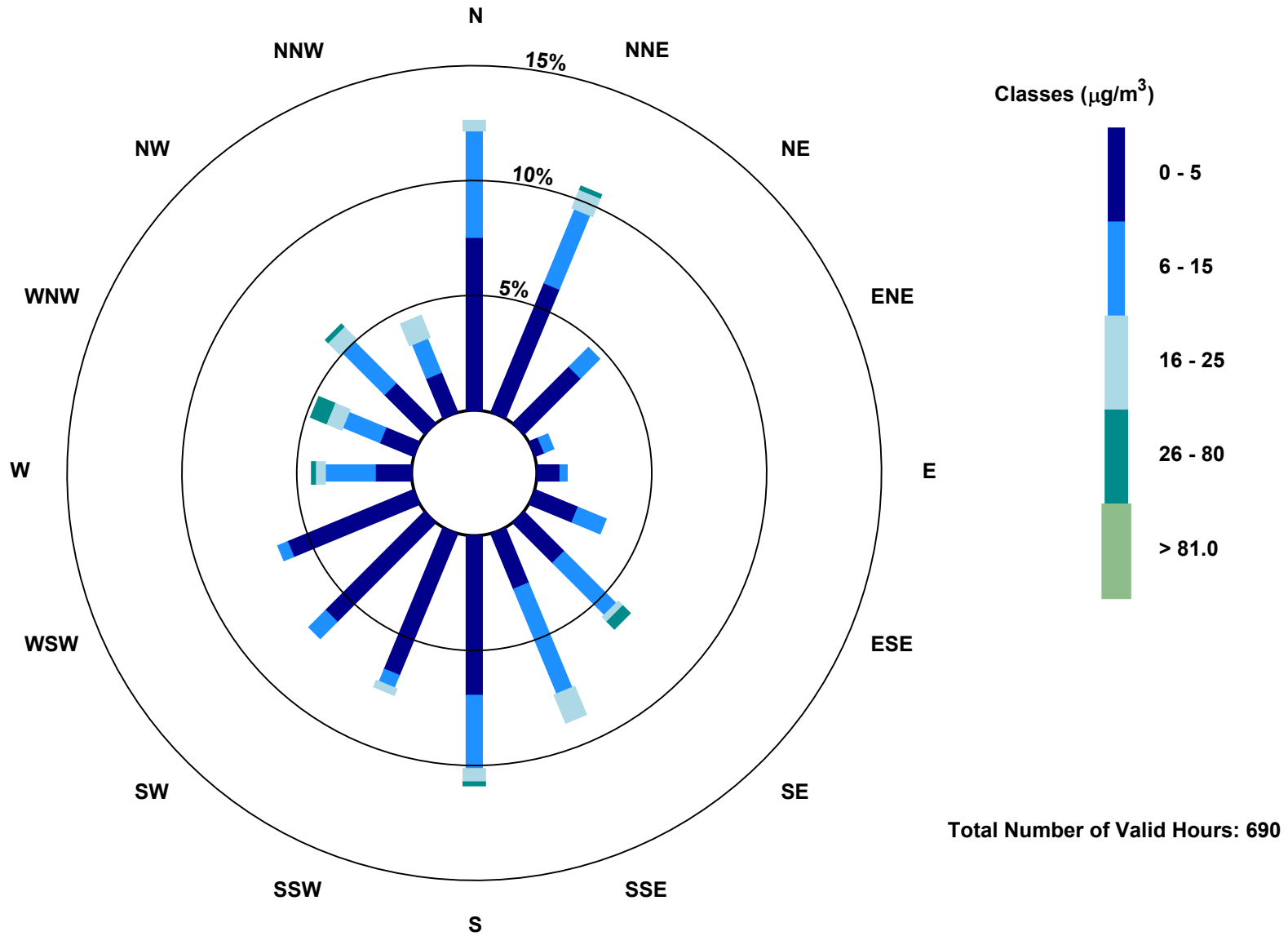
Total Number of Valid Hours: 690

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Ells River

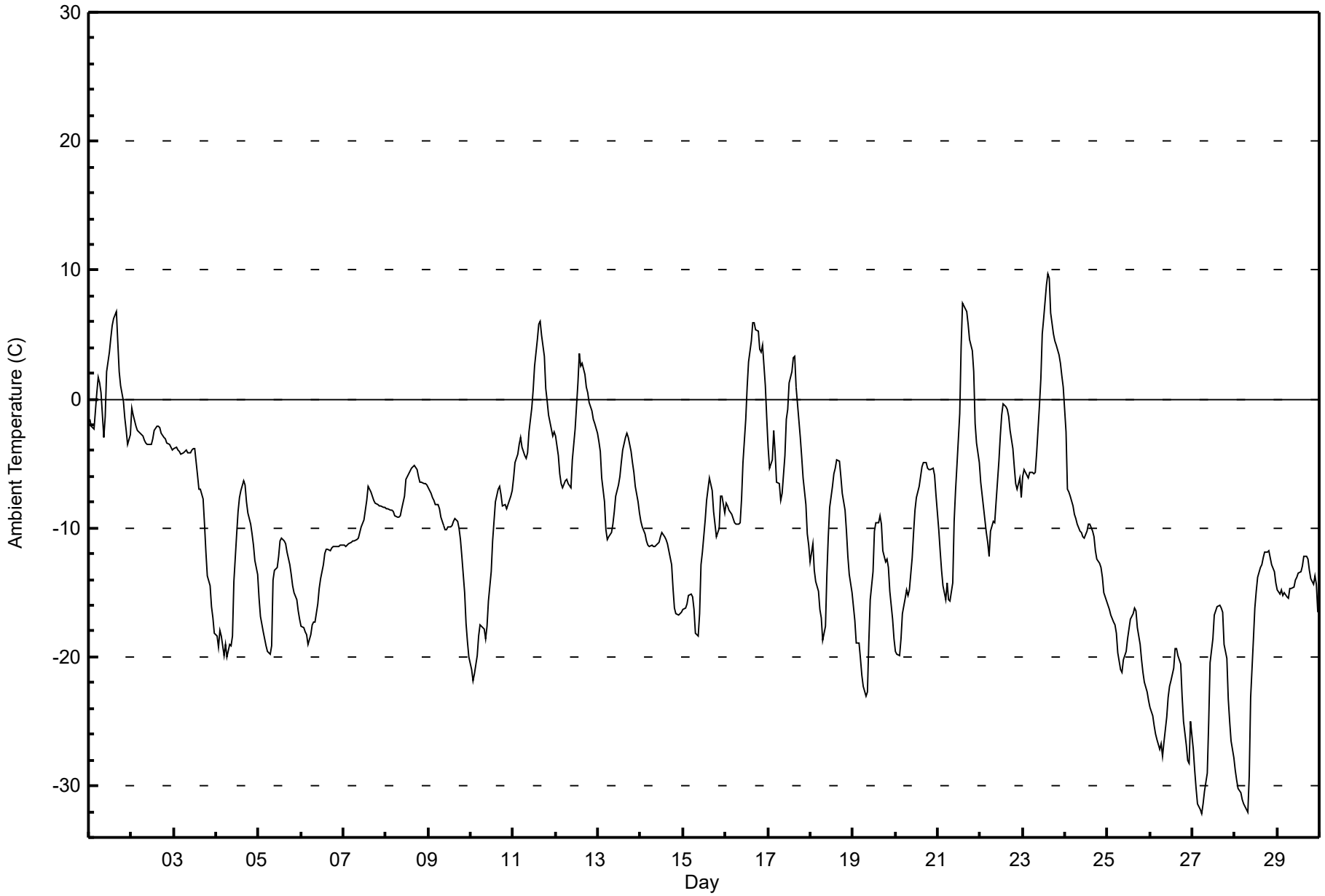




Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature (AT) - C
Ells River - February 2024

Maximum Value: 9.8 C on Feb 23 15:00 Maximum Daily Average: 0.8 C on Feb 23		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																																														
Minimum Value: -32.2 C on Feb 27 06:00 Minimum Daily Average: -24.3 C on Feb 26 Maximum Diurnal Average: -5.3 C at hour 16 Minimum Diurnal Average: -13.8 C at hour 8 Monthly Average: -10.10 C Percentiles: P ₁ = -31.1 P ₁₀ = -19.8 Q ₁ = -15.3 Median = -9.7 Q ₃ = -4.9 P ₉₀ = -0.4 P ₉₉ = 6.6																																																
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	-1.5	-2.1	-2.3	-2.4	0.5	1.7	1.3	0.5	-3.0	-1.3	2.1	3.7	4.7	5.7	6.2	6.7	4.4	2.1	1.0	-0.2	-1.4	-2.4	-3.5	-2.7	0.7	6.7																						
2-Feb	-0.7	-1.2	-2.1	-2.5	-2.5	-2.6	-2.9	-3.1	-3.4	-3.6	-3.5	-3.5	-3.1	-2.5	-2.1	-2.1	-2.3	-2.6	-3.0	-3.1	-3.4	-3.6	-3.8	-3.9	-2.8	-0.7																						
3-Feb	-3.9	-3.8	-3.9	-4.1	-4.3	-4.2	-4.1	-4.0	-4.2	-4.1	-4.0	-3.8	-3.8	-5.9	-6.9	-7.0	-7.7	-9.7	-11.9	-13.7	-14.5	-16.1	-17.0	-18.2	-7.5	-3.8																						
4-Feb	-18.4	-19.2	-18.0	-18.4	-19.9	-19.0	-20.0	-19.0	-19.1	-18.4	-14.1	-10.4	-8.8	-7.7	-7.1	-6.4	-6.7	-7.9	-8.9	-9.7	-10.4	-11.4	-12.5	-13.6	-13.5	-6.4																						
5-Feb	-15.4	-16.9	-18.1	-18.6	-19.1	-19.6	-19.8	-19.2	-14.0	-13.3	-13.1	-12.2	-11.0	-10.8	-11.0	-11.2	-11.9	-12.9	-13.6	-14.4	-15.0	-15.6	-16.4	-17.1	-15.0	-10.8																						
6-Feb	-17.6	-17.8	-18.0	-18.3	-19.0	-18.3	-17.6	-17.3	-17.3	-15.9	-14.7	-14.0	-12.9	-12.0	-11.6	-11.7	-11.7	-11.6	-11.4	-11.5	-11.5	-11.5	-11.3	-11.3	-14.4	-11.3																						
7-Feb	-11.4	-11.4	-11.3	-11.2	-11.1	-11.0	-11.0	-10.9	-10.8	-10.4	-9.9	-9.4	-8.6	-7.9	-6.8	-7.2	-7.5	-7.9	-8.1	-8.2	-8.3	-8.3	-8.4	-8.4	-9.4	-6.8																						
8-Feb	-8.5	-8.5	-8.6	-8.6	-8.8	-9.1	-9.1	-9.1	-9.0	-8.5	-7.5	-6.3	-6.0	-5.7	-5.4	-5.3	-5.2	-5.5	-6.1	-6.4	-6.5	-6.5	-6.6	-6.7	-7.2	-5.2																						
9-Feb	-6.8	-7.3	-7.6	-7.9	-8.1	-8.2	-8.5	-9.2	-9.8	-10.2	-10.1	-9.9	-9.9	-9.8	-9.5	-9.2	-9.5	-10.1	-10.9	-12.2	-15.0	-17.4	-18.8	-20.1	-10.7	-6.8																						
10-Feb	-21.0	-21.9	-21.3	-20.0	-18.4	-17.5	-17.6	-17.9	-18.6	-17.6	-15.7	-13.4	-11.1	-9.5	-8.0	-6.9	-6.8	-7.5	-8.3	-8.2	-8.5	-8.2	-7.5	-7.1	-13.3	-6.8																						
11-Feb	-6.2	-5.0	-4.3	-3.5	-3.0	-3.7	-4.4	-4.6	-4.2	-2.5	-0.7	0.7	2.6	4.7	5.8	6.0	4.9	3.3	0.8	-0.2	-1.3	-2.3	-2.9	-2.6	-0.9	6.0																						
12-Feb	-2.9	-4.3	-5.8	-6.6	-6.9	-6.4	-6.2	-6.6	-6.9	-4.7	-3.5	-2.3	1.2	3.5	2.6	2.8	1.9	0.9	0.5	-0.3	-0.9	-1.6	-1.9	-2.7	-2.4	3.5																						
13-Feb	-3.3	-4.0	-6.1	-8.0	-10.2	-10.9	-10.7	-10.3	-9.7	-8.7	-7.6	-6.7	-6.0	-5.0	-3.9	-3.0	-2.6	-2.9	-4.1	-5.0	-5.7	-6.7	-8.0	-8.8	-6.6	-2.6																						
14-Feb	-9.4	-9.9	-10.5	-11.0	-11.3	-11.4	-11.3	-11.5	-11.5	-11.3	-11.2	-10.7	-10.3	-10.7	-10.9	-11.2	-11.7	-12.8	-14.7	-16.2	-16.7	-16.7	-16.7	-16.5	-12.3	-9.4																						
15-Feb	-16.4	-16.3	-15.9	-15.3	-15.1	-15.3	-16.4	-18.2	-18.4	-16.7	-12.8	-11.9	-9.4	-7.9	-7.0	-6.1	-7.1	-8.7	-9.7	-10.6	-10.0	-7.5	-7.5	-8.8	-12.0	-6.1																						
16-Feb	-8.1	-8.3	-8.6	-9.0	-9.3	-9.6	-9.8	-9.7	-9.6	-7.8	-4.9	-1.6	0.9	2.9	4.5	5.9	5.9	5.4	5.3	3.8	3.6	4.2	1.0	-1.5	-2.3	5.9																						
17-Feb	-3.7	-5.4	-4.7	-2.4	-4.2	-6.4	-6.6	-7.9	-7.3	-4.4	-1.5	-0.8	1.3	2.1	3.2	3.3	0.9	-1.6	-3.0	-4.5	-6.1	-8.2	-10.5	-11.3	-3.7	3.3																						
18-Feb	-12.6	-11.2	-13.3	-14.1	-14.9	-16.3	-16.9	-18.7	-17.6	-13.6	-10.7	-8.4	-6.8	-5.8	-5.3	-4.7	-4.8	-6.0	-7.3	-8.6	-10.2	-12.2	-13.6	-15.0	-11.2	-4.7																						
19-Feb	-16.1	-17.2	-18.9	-18.9	-20.1	-21.5	-22.3	-23.0	-22.8	-18.8	-15.6	-13.4	-10.3	-9.6	-9.6	-9.1	-9.7	-11.8	-12.6	-12.4	-13.0	-14.9	-17.1	-18.6	-15.7	-9.1																						
20-Feb	-19.5	-19.8	-19.8	-18.6	-16.6	-15.4	-14.8	-15.3	-14.8	-12.3	-10.4	-8.6	-7.6	-6.7	-6.0	-5.2	-4.9	-4.9	-5.3	-5.5	-5.5	-5.3	-5.9	-7.4	-10.7	-4.9																						
21-Feb	-10.1	-11.8	-13.2	-14.4	-15.5	-14.2	-15.5	-15.7	-14.2	-9.5	-7.2	-5.1	-1.2	4.0	7.4	7.2	6.8	5.8	4.6	3.7	2.1	-1.9	-3.4	-5.0	-4.8	7.4																						
22-Feb	-6.5	-7.4	-8.4	-10.4	-11.1	-12.1	-10.3	-9.5	-9.6	-8.0	-4.8	-2.9	-1.2	-0.4	-0.6	-0.8	-1.4	-2.5	-3.8	-5.3	-6.6	-7.0	-6.1	-7.6	-6.0	-0.4																						
23-Feb	-6.0	-5.5	-5.9	-6.1	-5.7	-5.7	-5.8	-5.7	-4.2	-0.5	1.5	5.0	6.2	8.8	9.8	9.4	6.6	5.0	4.5	4.1	3.5	2.7	1.8	1.0	0.8	9.8																						
24-Feb	-2.6	-7.0	-7.3	-7.5	-8.3	-9.0	-9.3	-9.7	-10.2	-10.4	-10.7	-10.7	-10.2	-9.7	-9.6	-10.2	-10.7	-11.8	-12.5	-12.8	-13.1	-13.9	-15.0	-15.7	-10.3	-2.6																						
25-Feb	-16.0	-16.3	-16.8	-17.2	-17.5	-18.2	-19.7	-21.0	-21.2	-20.2	-19.5	-18.6	-17.9	-17.1	-16.6	-16.2	-16.4	-17.7	-19.0	-20.3	-21.2	-22.0	-22.7	-23.4	-18.9	-16.0																						
26-Feb	-23.9	-24.5	-25.3	-26.0	-26.4	-27.2	-26.8	-27.7	-26.6	-24.6	-23.1	-22.3	-21.9	-20.8	-19.4	-19.4	-19.8	-20.6	-23.0	-25.0	-26.8	-28.0	-28.2	-25.0	-24.3	-19.4																						
27-Feb	-27.2	-28.7	-30.2	-31.3	-31.8	-32.2	-31.4	-30.5	-29.0	-25.1	-20.5	-18.6	-16.8	-16.4	-16.1	-16.0	-16.3	-16.5	-19.0	-20.1	-23.3	-25.0	-26.5	-27.8	-24.0	-16.0																						
28-Feb	-28.7	-29.6	-30.2	-30.5	-31.1	-31.4	-31.8	-32.0	-29.2	-23.2	-18.6	-16.3	-14.9	-13.8	-13.1	-12.8	-12.3	-11.9	-11.8	-11.8	-12.3	-12.8	-13.4	-14.2	-20.3	-11.8																						
29-Feb	-14.8	-15.1	-14.8	-15.2	-15.0	-15.4	-15.4	-14.7	-14.7	-14.6	-14.0	-13.8	-13.5	-13.4	-13.0	-12.2	-12.2	-12.4	-13.3	-13.9	-14.4	-13.8	-14.3	-16.5	-14.2	-12.2																						
																								-11.7	-12.3	-12.8	-13.0	-13.3	-13.5	-13.6	-13.8	-13.5	-11.7	-9.9	-8.5	-7.1	-6.1	-5.5	-5.3	-5.8	-6.7	-7.7	-8.6	-9.4	-10.1	-10.9	-11.6	Diurnal Average
																								-0.7	-1.2	-2.1	-2.4	0.5	1.7	1.3	0.5	-3.0	-0.5	2.1	5.0	6.2	8.8	9.8	9.4	6.8	5.8	5.3	4.1	3.6	4.2	1.8	1.0	Diurnal Maximum





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Ells River - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	64	9.20	9.20
-20 - 0	566	81.32	90.52
0 - 10	66	9.48	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

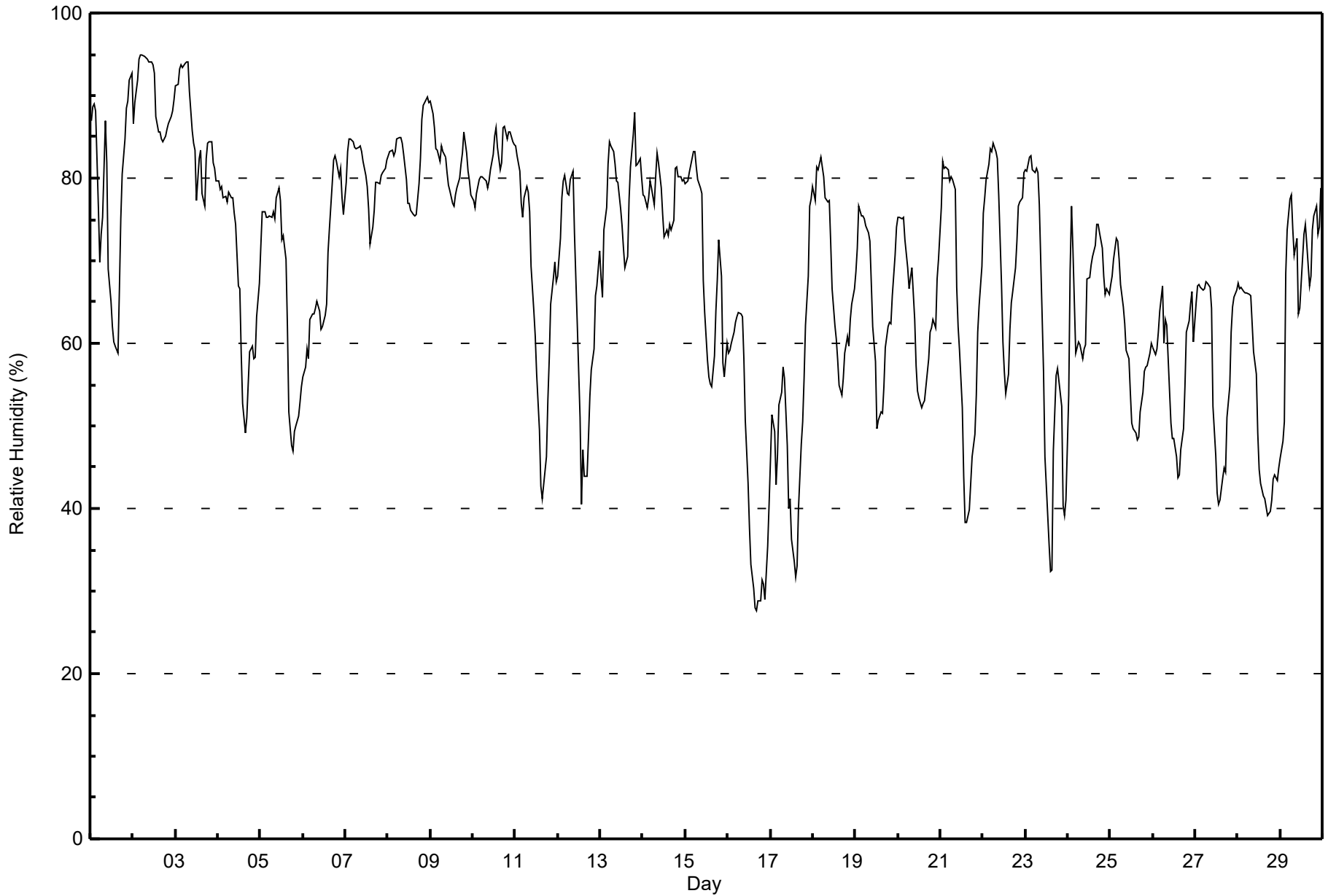
Relative Humidity (RH) - %
Ells River - February 2024

Maximum Value: 94.9 % on Feb 2 06:00 Maximum Daily Average: 90.0 % on Feb 2																						Hours in Service:	696			
Minimum Value: 27.6 % on Feb 16 17:00 Minimum Daily Average: 45.4 % on Feb 16																						Hours of Data:	696			
Maximum Diurnal Average: 75.9 % at hour 6 Minimum Diurnal Average: 57.8 % at hour 16																						Hours of Missing Data:	0			
Monthly Average: 68.57 % Percentiles: P ₁ = 31.3 P ₁₀ = 47.1 Q ₁ = 58.8 Median = 71.5 Q ₃ = 80.1 P ₉₀ = 84.4 P ₉₉ = 94.1																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	87.0	88.7	89.0	88.1	76.4	69.9	73.2	75.3	86.9	81.9	68.9	65.0	62.1	60.1	59.7	58.8	66.5	75.1	80.5	84.8	88.6	89.4	91.9	92.8	77.5	92.8
2-Feb	86.6	89.2	91.9	94.4	94.9	94.9	94.8	94.6	94.4	94.1	94.0	93.8	92.8	87.4	85.5	85.5	84.7	84.5	85.1	85.9	86.6	87.4	88.2	89.6	90.0	94.9
3-Feb	91.2	91.4	93.2	93.7	93.4	93.9	94.1	94.0	90.4	85.7	84.3	83.3	77.4	82.4	83.3	78.2	76.6	82.4	84.3	84.4	84.3	81.8	81.3	79.6	86.0	94.1
4-Feb	79.7	78.7	79.0	77.6	77.7	77.2	78.3	77.7	77.7	75.8	74.4	66.9	66.5	58.8	52.7	49.1	51.1	55.0	59.0	59.6	58.1	58.4	63.2	67.4	67.5	79.7
5-Feb	71.8	75.9	75.9	75.3	75.2	75.5	75.3	75.9	75.1	77.6	78.8	77.2	72.6	73.1	70.2	62.0	51.6	47.6	46.9	49.3	50.0	51.1	52.9	54.7	66.3	78.8
6-Feb	56.0	57.0	59.3	58.1	62.9	63.6	63.6	64.3	65.1	63.9	61.8	62.1	63.5	64.7	71.0	73.9	79.4	82.2	82.6	82.1	80.1	81.2	77.6	75.7	68.8	82.6
7-Feb	79.4	83.3	84.7	84.8	84.3	83.7	83.6	83.7	83.9	83.2	82.1	80.3	78.9	76.3	72.0	74.0	76.1	79.5	79.5	79.4	80.3	80.8	81.2	82.2	80.7	84.8
8-Feb	82.7	83.2	83.3	82.7	83.2	84.7	85.0	84.9	84.3	82.8	79.9	76.9	77.0	76.2	75.6	75.4	75.6	79.3	82.4	87.1	88.9	89.4	89.8	89.2	82.5	89.8
9-Feb	89.3	87.8	86.2	83.5	83.5	82.0	83.8	83.3	82.6	80.7	79.1	78.5	76.9	76.6	78.0	78.9	80.0	81.6	83.0	85.6	83.1	80.8	79.6	78.0	81.8	89.3
10-Feb	77.3	76.5	78.2	79.8	80.2	80.1	80.0	79.6	78.9	79.7	81.1	82.9	85.0	86.1	83.7	81.1	81.9	86.1	86.3	84.8	85.5	85.7	84.4	84.0	82.0	86.3
11-Feb	83.8	82.8	80.9	76.9	75.2	77.7	79.0	78.3	76.0	69.3	64.0	60.8	56.3	49.5	42.7	41.2	42.9	46.3	53.0	58.2	64.7	68.0	69.8	67.5	65.2	83.8
12-Feb	68.1	72.7	77.7	79.7	80.3	78.2	77.9	79.8	80.8	73.4	67.9	62.3	51.0	40.6	47.0	43.9	43.9	48.5	53.6	56.7	59.4	65.7	66.9	71.2	64.5	80.8
13-Feb	68.0	65.6	73.7	76.4	81.8	84.4	83.9	83.2	81.7	79.7	79.5	76.3	74.2	71.5	69.2	70.5	77.4	81.4	85.2	87.9	81.6	81.8	82.4	80.0	78.2	87.9
14-Feb	78.0	77.8	76.5	77.6	79.6	78.8	76.7	80.2	83.0	81.9	78.8	75.7	72.8	73.7	73.0	74.4	73.7	74.9	81.2	81.4	80.2	80.1	79.6	79.8	77.9	83.0
15-Feb	79.3	79.7	80.7	81.4	83.2	83.3	81.3	79.9	78.8	78.2	67.7	63.7	58.0	55.9	55.1	54.7	58.5	63.9	67.7	72.5	68.2	57.6	55.9	60.0	69.4	83.3
16-Feb	58.7	59.2	60.0	61.4	62.5	63.2	63.8	63.6	63.2	58.2	50.6	43.1	37.7	33.2	30.3	27.9	27.6	28.9	28.8	31.3	30.8	29.0	35.5	40.5	45.4	63.8
17-Feb	46.0	51.3	49.3	42.9	46.5	52.6	54.1	57.2	55.8	47.6	40.0	41.2	36.2	33.6	31.7	33.0	40.0	47.9	50.5	55.7	62.2	68.2	76.7	77.5	49.9	77.5
18-Feb	79.1	77.3	81.4	81.0	82.6	81.3	80.2	77.7	77.2	77.4	72.3	66.5	62.3	60.6	58.0	54.8	53.7	55.8	58.7	60.8	59.7	62.9	64.8	66.6	68.9	82.6
19-Feb	68.7	71.5	76.5	75.4	75.3	75.1	74.3	73.5	72.3	67.2	62.0	57.7	49.6	50.6	51.7	51.5	54.8	59.5	62.1	62.6	62.4	65.8	70.6	74.1	65.2	76.5
20-Feb	75.3	75.3	75.0	75.2	72.5	69.2	66.7	68.0	69.1	62.8	57.3	54.3	53.4	52.1	52.8	53.0	54.8	58.1	61.3	61.8	63.0	61.8	67.7	70.1	63.8	75.3
21-Feb	76.5	82.0	81.2	81.3	80.9	79.7	80.1	79.8	78.6	66.7	62.0	59.1	52.3	44.0	38.4	38.3	39.8	43.0	46.2	48.9	53.7	61.3	64.7	69.3	62.8	82.0
22-Feb	75.8	77.7	79.8	81.8	83.6	83.2	84.3	83.2	82.4	78.0	67.2	60.2	56.5	53.9	56.2	61.8	64.9	66.2	69.2	72.4	76.7	77.2	77.7	80.6	72.9	84.3
23-Feb	81.0	80.9	82.5	82.7	81.1	80.8	81.2	80.7	76.7	63.4	56.6	46.2	42.8	35.7	32.5	32.6	47.0	56.1	56.9	55.5	52.4	40.3	39.1	41.0	59.4	82.7
24-Feb	53.7	68.7	76.6	71.3	58.8	59.6	60.1	59.9	58.1	59.4	59.8	67.8	68.0	69.4	70.5	71.9	74.5	74.4	73.4	71.5	68.2	66.0	66.6	65.9	66.4	76.6
25-Feb	67.1	68.1	70.2	72.6	72.4	70.3	67.2	64.4	62.4	59.2	58.2	54.1	50.4	49.6	49.1	48.3	48.7	51.6	54.1	56.6	57.1	57.3	58.9	60.0	59.5	72.6
26-Feb	59.4	58.7	59.3	61.4	64.0	67.0	59.9	62.9	62.2	54.3	50.3	48.5	48.5	46.2	43.7	44.0	47.1	49.7	54.8	61.3	62.8	64.8	66.2	60.2	56.5	67.0
27-Feb	64.8	67.0	67.1	66.7	66.5	66.5	67.5	67.2	66.7	64.3	52.3	46.4	41.9	40.5	41.1	43.7	45.0	44.5	51.0	54.7	61.3	64.3	65.6	66.4	57.6	67.5
28-Feb	67.3	66.6	66.8	66.2	66.2	66.1	66.0	65.7	62.4	59.0	56.2	49.2	44.7	43.0	41.5	41.2	40.2	39.2	39.6	41.0	43.5	44.1	43.3	45.0	52.7	67.3
29-Feb	46.0	48.1	50.5	68.5	73.7	77.5	78.0	73.8	70.7	72.7	63.5	64.3	67.3	73.2	74.3	72.0	66.9	68.2	73.7	75.5	76.5	73.2	74.1	78.8	69.2	78.8
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Ells River - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Ells River - February 2024

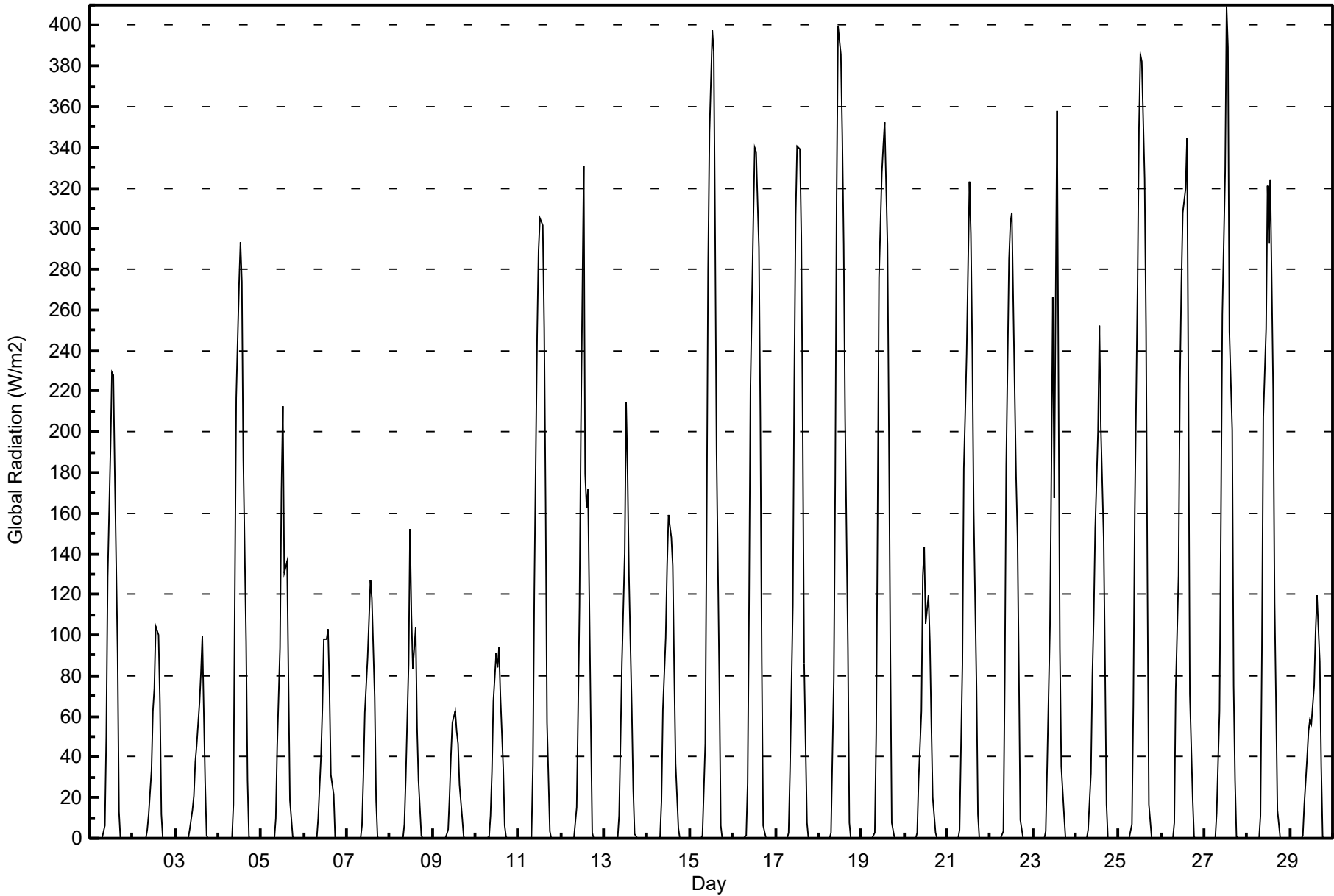
Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	25	3.59	3.59
40 - 60	172	24.71	28.30
60 - 80	321	46.12	74.43
80 - 100	178	25.57	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Maximum Value: 409.4 W/m2 on Feb 27 13:00																								Maximum Daily Average: 97.4 W/m2 on Feb 25																								Hours in Service: 696	
Minimum Value: 0.0 W/m2 on Feb 1 01:00																								Minimum Daily Average: 13.4 W/m2 on Feb 9																								Hours of Data: 696	
Maximum Diurnal Average: 230.6 W/m2 at hour 13																								Minimum Diurnal Average: 0.0 W/m2 at hour 5																								Hours of Missing Data: 0	
Monthly Average: 55.50 W/m2																								Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.2 Q ₃ = 75.0 P ₉₀ = 218.5 P ₉₉ = 382.3																								Hours of Calibration: 0	
																								Percent Operational Time: 100.0																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	6.3	49.9	128.7	191.5	229.2	227.7	180.4	91.0	13.5	0.3	0.0	0.0	0.0	0.1	0.0	0.0	46.6	229.2																							
2-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	11.7	33.7	62.6	73.5	104.0	100.1	66.5	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	104.0																							
3-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	14.0	20.8	37.2	45.6	66.5	81.5	99.2	28.0	1.2	0.2	0.2	0.2	0.2	0.2	0.2	16.6	99.2																							
4-Feb	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.3	16.8	120.9	216.8	272.3	293.0	273.7	186.9	96.8	28.2	1.0	0.2	0.1	0.0	0.1	0.2	0.1	62.8	293.0																							
5-Feb	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	44.8	93.7	171.0	212.5	130.4	136.1	77.1	18.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0	37.3	212.5																							
6-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	40.5	64.1	98.1	98.2	103.2	73.4	31.3	21.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	22.5	103.2																							
7-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	30.6	61.9	88.9	107.9	127.5	118.4	69.5	18.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	26.2	127.5																							
8-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	29.8	85.6	152.0	109.9	83.6	103.7	54.5	28.7	1.1	0.0	0.0	0.0	0.0	0.0	0.0	27.3	152.0																							
9-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	20.5	41.1	57.0	62.8	52.7	46.7	26.5	9.7	0.6	0.0	0.2	0.2	0.1	0.1	0.1	13.4	62.8																							
10-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	11.5	32.4	67.7	91.1	84.3	93.6	70.1	34.6	6.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	20.5	93.6																							
11-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	36.2	122.4	247.5	288.7	305.0	301.5	250.6	165.1	57.0	3.5	0.3	0.2	0.1	0.2	0.2	0.0	74.1	305.0																							
12-Feb	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	15.0	62.7	114.3	202.8	330.8	179.0	162.3	171.9	56.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	54.1	330.8																							
13-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	46.9	86.3	140.4	214.8	181.6	129.3	64.2	24.3	2.4	0.0	0.0	0.0	0.0	0.0	0.0	37.6	214.8																							
14-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	18.3	63.0	98.8	134.1	159.3	148.1	133.9	83.6	37.0	4.8	0.1	0.0	0.0	0.0	0.0	0.0	36.7	159.3																							
15-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.5	46.5	153.6	280.0	347.4	397.7	386.7	295.8	189.8	75.2	5.9	0.2	0.1	0.0	0.0	0.2	0.1	90.9	397.7																							
16-Feb	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.4	27.0	114.2	222.4	303.4	339.6	337.5	290.6	206.5	86.8	6.5	0.0	0.0	0.0	0.1	0.1	0.2	80.7	339.6																							
17-Feb	0.2	0.2	0.0	0.0	0.1	0.2	0.1	2.8	33.4	114.7	224.7	306.6	340.4	339.0	296.2	199.6	86.5	7.8	0.1	0.1	0.1	0.0	0.0	0.0	81.4	340.4																							
18-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	78.4	175.3	315.9	399.6	385.3	345.5	291.9	206.2	92.8	7.9	0.0	0.0	0.0	0.0	0.0	0.0	95.9	399.6																							
19-Feb	0.0	0.1	0.0	0.0	0.1	0.1	0.1	2.8	51.3	156.3	275.8	327.4	340.4	352.6	291.9	199.5	92.9	7.4	0.0	0.0	0.0	0.2	0.1	0.0	87.5	352.6																							
20-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	28.6	62.8	129.1	143.4	105.3	119.4	96.9	57.0	20.0	3.1	0.0	0.0	0.0	0.0	0.0	0.2	32.0	143.4																							
21-Feb	0.1	0.0	0.0	0.0	0.0	0.0	0.0	4.2	85.3	182.0	208.9	238.3	322.8	297.6	240.6	161.0	74.0	11.5	0.3	0.2	0.1	0.1	0.1	0.1	76.1	322.8																							
22-Feb	0.1	0.1	0.1	0.1	0.0	0.0	0.0	3.5	78.7	183.4	284.6	303.0	308.0	263.7	177.7	148.9	81.0	9.2	0.1	0.1	0.0	0.0	0.0	0.0	76.8	308.0																							
23-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	35.7	103.9	181.7	266.3	167.8	357.9	226.6	93.7	35.6	10.9	0.0	0.0	0.0	0.0	0.0	0.0	61.8	357.9																							
24-Feb	0.2	0.0	0.0	0.0	0.0	0.0	0.0	4.4	32.2	79.8	109.6	152.2	199.9	252.0	202.4	148.0	84.1	16.9	0.0	0.0	0.0	0.0	0.0	0.0	53.4	252.0																							
25-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	65.4	158.8	272.4	349.5	385.8	382.1	324.6	250.9	123.7	17.0	0.2	0.0	0.0	0.0	0.0	0.0	97.4	385.8																							
26-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.6	73.0	129.4	224.0	272.5	308.1	319.3	345.0	221.7	71.1	19.7	0.6	0.2	0.2	0.1	0.0	0.0	83.0	345.0																							
27-Feb	0.0	0.2	0.3	0.3	0.2	0.2	0.0	12.8	62.5	156.6	257.5	328.1	409.4	389.2	249.8	200.9	75.0	28.8	0.6	0.2	0.2	0.3	0.2	0.1	90.6	409.4																							
28-Feb	0.1	0.1	0.0	0.1	0.0	0.0	0.1	11.2	91.9	207.2	250.6	321.4	292.9	324.1	220.2	116.2	67.1	14.1	0.2	0.0	0.0	0.0	0.0	0.0	79.9	324.1																							
29-Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	16.5	39.3	52.7	58.4	56.1	75.4	101.6	119.6	86.5	35.4	0.9	0.0	0.0	0.0	0.2	0.0	26.8	119.6																							
																								Diurnal Average																									
																								Diurnal Maximum																									





Maximum Speed: 25 km/h on Feb 25 21:00	Maximum Daily Speed Average: 15.7 km/h on Feb 25	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 15 01:00	Minimum Daily Speed Average: 0.1 km/h on Feb 7	Hours of Data: 691
Maximum Diurnal Speed Average: 2.8 km/h at hour 1	Minimum Diurnal Speed Average: 0.4 km/h at hour 11	Hours of Missing Data: 5
Monthly Average Velocity: 0.7 km/h 351.6 deg	Percentiles: P ₁ = 1 P ₁₀ = 2 Q ₁ = 4 Median = 7 Q ₃ = 11 P ₉₀ = 16 P ₉₉ = 23	Percent Operational Time: 99.3

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	WNW4	WNW2	SSW1	SSE5	SSE9	SSE9	S9	S8	WSW3	S5	SSE7	S9	S11	SSE8	SSE11	SSE6	SE3	N1	NW2	NW3	NW3	WNW2	WNW4	NNW7	S3.4	SSE11
2-Feb	N15	N18	N16	N15	N16	N16	N17	NNE14	N15	N15	N16	N15	N14	NNE14	NNE13	NNE12	NNE13	NNE13	NNE10	N12	NNE9	N8	N9	N6	NNE13.2	N18
3-Feb	NW4	ESE2	ESE6	ESE4	ESE4	NE1	NE2	NNW6	N10	N7	NNE6	N5	NNW13	NNE14	NE11	NNE7	NNE4	ENE4	SE1	SSW2	S5	S4	S6	S4	NNE2.6	NNE14
4-Feb	SSW5	SSW6	SSW8	SSW8	S9	S8	SSW6	SSW9	S10	SSW3	S4	SSE2	SE7	SE15	SE16	SSE15	S11	S10	S11	SSE11	SSE12	SSE10	S10	SSE7	S8.4	SE16
5-Feb	S8	S7	WNW4	WSW1	SSW2	S4	WNW3	NNW5	NNE14	NNE22	NNE22	N21	NNE24	NNE23	N23	N22	N17	N13	N15	N14	N16	N15	N11	N9	N11.0	NNE24
6-Feb	N6	N6	N6	NNW5	NNW3	NW3	WNW2	S1	SSE2	NW2	SSE0	SSE7	SE11	SE11	SSE13	SSE9	SE6	SE5	SSE5	SSE6	SSE5	SSE5	SSE8	SSE7	SSE2.9	SSE13
7-Feb	S6	S6	S6	S3	WSW2	SSW2	S2	S2	S4	SSW4	S4	ESE4	SSE4	NNE3	NW2	N4	NNE6	N6	N6	NNW5	N6	N4	NW3	NW3	W0.1	N6
8-Feb	W3	W3	SW3	WSW4	SW2	S2	S4	S7	SSW5	SW4	SW5	SSW6	S9	S7	SE5	SSE4	SE2	UO	NW2	WNW6	WNW4	NW2	NW5	NW8	SW2.4	S9
9-Feb	WNW4	WSW5	SW6	WSW7	W7	WSW5	NE7	NNE8	NE8	NE7	NE6	ESE6	ESE6	ESE5	ESE5	E4	NE6	N6	NNE7	NNE3	WNW2	WNW3	WSW1	SW1	NNE1.5	NNE8
10-Feb	UO	SSW2	SSW3	S4	SSE3	SSE3	SSE4	S3	SSW3	S4	S5	SSE4	SW3	S8	S7	S10	S9	WSW6	WSW6	SSW6	S10	S10	S10	S8	S5.3	S10
11-Feb	SSW9	SSW13	SSW14	SW14	SSW11	SW11	SSW10	SW12	WSW14	WSW11	WSW10	SW10	WSW11	WSW12	WSW12	WSW9	SW8	SW8	SSW7	SSW7	SW6	SW7	SW6	SW11	SW9.6	SSW14
12-Feb	SW12	S7	S7	S7	S8	S11	S9	SSE8	S8	S11	SSW12	SSW11	SW9	NW17	NW17	NW14	NW14	NW13	WNW17	NW15	NW17	NW15	NNW20	N17	W5.2	NNW20
13-Feb	NNW19	N17	NNE14	NNE13	NE9	ESE2	SW3	SW5	SW4	W0	S1	SE3	SE9	S12	S10	S7	WSW6	WSW7	NNE15	NNE16	N21	N23	NNE21	N23	NNE5.4	N23
14-Feb	N22	NNE20	NNE23	NNE23	NNE16	NNE15	NNE17	NNE11	NNE8	NE9	NE7	NE6	ENE5	NE10	NE10	NE11	ENE9	NE7	NNE1	N2	NW1	WSW2	WSW1	WSW2	NNE9.1	NNE23
15-Feb	W0	SSW2	SSW6	SW5	SW7	SSW10	S7	SSE5	S5	S3	NNW0	SE6	ENE2	SE3	SE8	SE10	SE10	SSE6	S6	S9	S8	SSW8	SSW9	S10	S5.1	SE10
16-Feb	SSW12	SW11	WSW13	WSW13	WSW14	SW11	SW11	SW10	SW9	SSW9	SSW13	SSW15	SSW14	SSW17	SSW15	SSW13	SW17	WSW20	WSW22	WSW16	WSW11	NW7	WNW4	SSE3	SW11.5	WSW22
17-Feb	SSW3	SW4	WSW8	WSW11	SSW4	SSW5	SW6	SSW4	SSW6	WSW8	E2	NE3	E6	SE6	ESE7	E7	NNE9	NNE6	NNE4	N6	N5	NW5	NW5	WNW1	WSW0.7	WSW11
18-Feb	NNW4	N5	N5	NW5	NW5	NNW3	NW3	NW4	NW2	N7	N6	N7	N8	N13	N14	N12	N10	N10	NNW10	N14	N16	N12	N11	N12	N8.0	N16
19-Feb	N9	NW5	NNW5	N6	WNW5	W3	WNW1	WNW3	WNW4	NW3	NNW4	NNW5	NNW2	NNW6	N8	NE8	NNE9	NNE8	NNE6	NNE7	N6	N2	NW3	WNW4	N4.1	N9
20-Feb	WNW5	W5	W2	SSE2	SSE3	SSE6	SSE8	S6	S8	S8	SSE9	SSE9	SSE8	SSE11	SSE11	SSE8	SSE11	SSE6	SE4	SSE3	SSE7	S8	NNE4	NW3	S5.1	SSE11
21-Feb	WNW4	WNW3	WNW2	WNW3	NW6	NNW6	WNW5	W3	SW1	N1	SE3	SSE7	SSE10	S10	SW14	SW14	SW13	WSW10	SSW9	SW9	W7	NNW8	NNW5	W3	WSW4.0	SW14
22-Feb	W2	SW2	SW2	WNW3	WNW2	WNW4	N7	NNW7	NNW9	NW7	N3	NNE4	E3	ESE7	ENE9	NNE8	NNE7	N6	NNW5	W3	SSW4	S6	SSW8	SSE8	N1.6	ENE9
23-Feb	S13	SSE10	SSE11	SSE11	SSE11	SSE10	SSE10	SSE10	SSW9	SW15	SW15	WSW16	SW13	SW14	W13	WSW14	NW22	WNW14	SW12	WSW12	W12	WNW21	W15	W15	SW8.9	NW22
24-Feb	N17	NNE24	N19	N18	NNW22	NNW19	NNW21	NNW19	NNW19	N16	N15	NNE8	N7	NNE6	NE10	NE12	NE11	NE9	NE6	NE6	NNE9	NNE11	N10	NNE9	N12.2	NNE24
25-Feb	NNE12	N13	N15	N13	NNE15	NNE15	NNE10	N10	NNE9	NNE11	NNE14	NE17	NE15	NE17	NE15	NE17	NNE19	NNE21	NNE21	NNE25	N25	NNE22	N17	NNE15.7	NNE25	
26-Feb	N21	N21	N16	N10	N8	NW3	N8	WSW4	W4	NW4	NE2	NNE8	NNE5	NE4	ESE6	SE9	SE9	ESE5	SSE2	WNW1	WSW3	S2	W5	WSW7	N3.4	N21
27-Feb	WNW5	W5	WSW1	UO	SW2	SW3	SSW7	S6	SSE4	SSW3	W8	WSW5	E3	SE4	SE8	SE11	SE13	ESE8	SE8	SSE7	NW3	UO	UO	W2	SSE3.0	SE13
28-Feb	NW2	WSW2	W3	W2	W3	W2	W3	W2	W2	SW3	SE16	SE16	SE19	SE21	SE23	SE22	SE18	ESE13	ESE13	SE13	SE16	SE20	SE19	SE10	SE9.3	SE23
29-Feb	ESE8	E8	ESE12	E8	NE10	NNE9	ENE8	E10	ESE10	ESE8	ESE10	SE8	SE3	SE5	SE7	ESE2	S6	SW5	SW4	SW4	SW4	WSW5	WSW5	W6	ESE3.9	ESE12

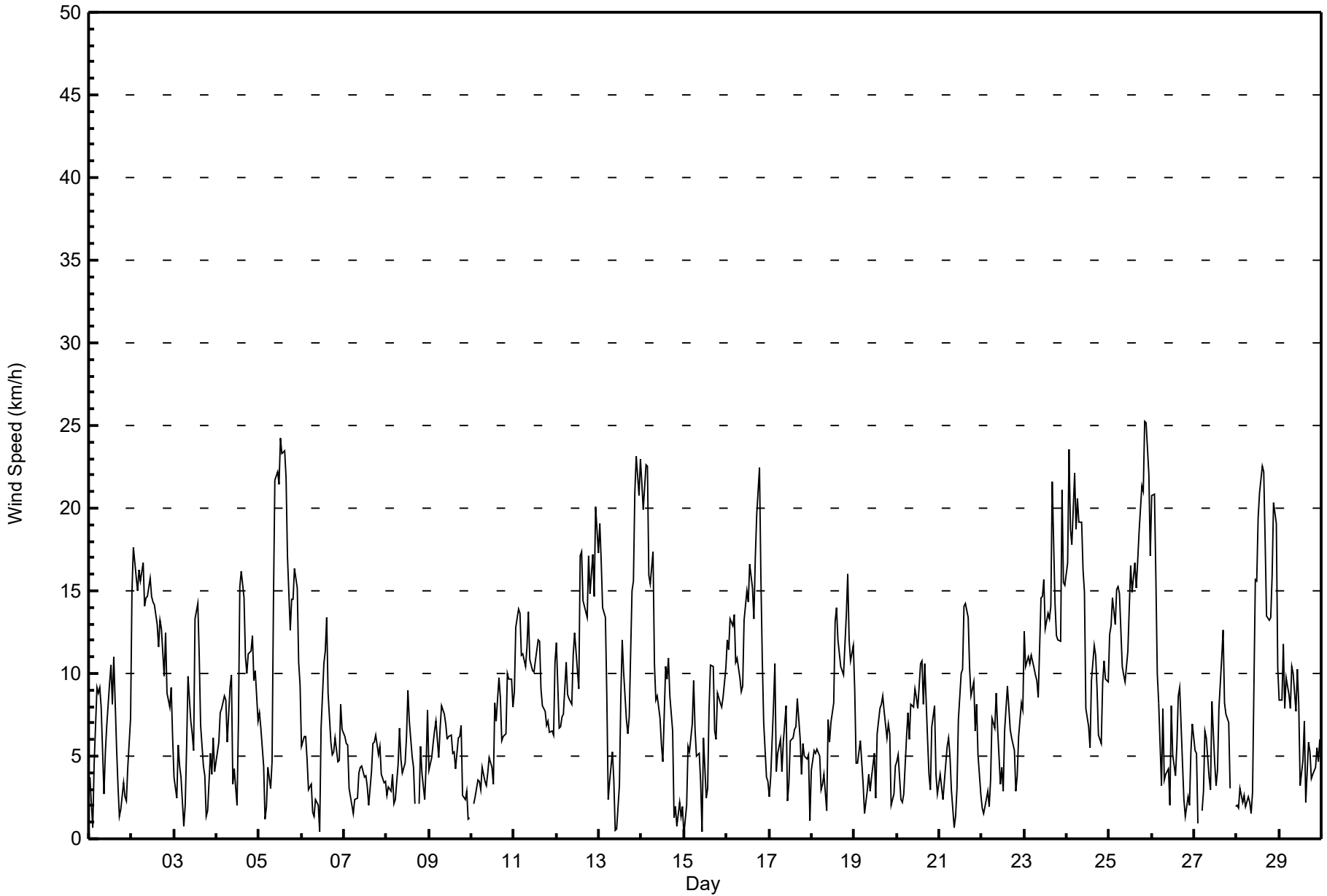
NNW2.8	NNW2.1	NNW1.5	NW1.6	NW1.2	W0.8	WNW0.6	WSW0.9	WNW0.8	NW1.3	E0.4	ESE1.1	ESE1.9	ESE2.2	ESE2.4	ESE2.2	ENE1.5	N1.4	NNW1.3	NNW1.5	NNW2.0	NNW2.5	NW2.3	NW2.3	Diurnal Average
N22	NNE24	NNE23	NNE23	NNW22	NNW19	NNW21	NNW19	NNW19	NNE22	NNE22	NNE21	NNE24	NNE23	N23	SE22	NW22	WSW20	WSW22	NNE21	NNE25	NNE25	NNE22	N23	Diurnal Maximum

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Ells River - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Ells River - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	242	35.02	35.02
6 - 11	281	40.67	75.69
12 - 19	134	19.39	95.08
20 - 28	34	4.92	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 691

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Ells River - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	11	8	5	3	4	9	12	20	22	19	20	17	22	29	28	13	242
6 - 11	33	27	21	3	5	11	18	38	51	23	18	15	4	1	4	9	281
12 - 19	35	23	6	0	0	3	10	3	2	10	12	10	4	2	8	6	134
20 - 28	8	15	0	0	0	0	4	0	0	0	0	2	0	1	1	3	34
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	87	73	32	6	9	23	44	61	75	52	50	44	30	33	41	31	691

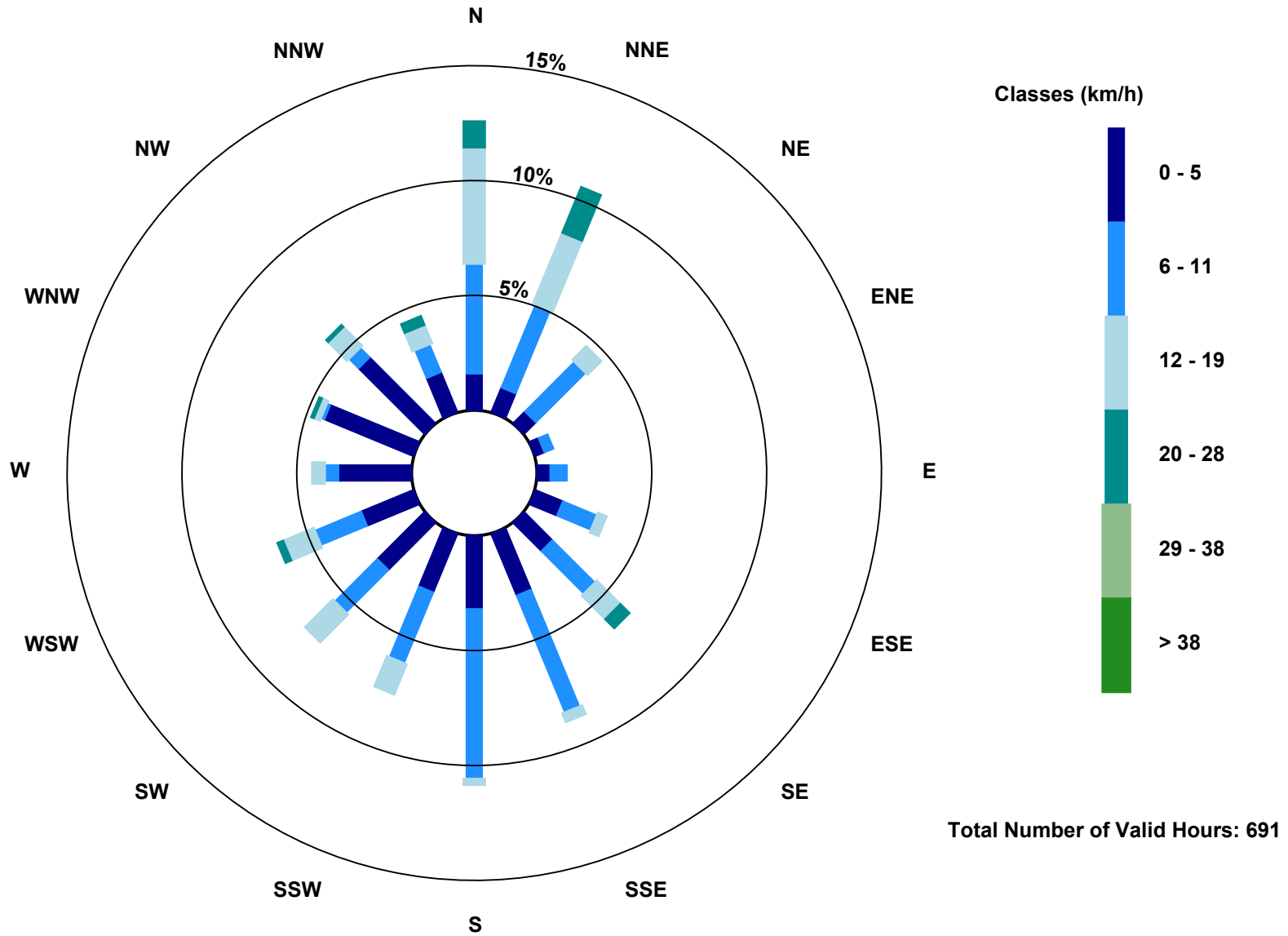
Total Number of Valid Hours: 691

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Ells River





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Ells River - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8 km/h on Feb 24 01:00																	Hours in Service: 696 Hours of Data: 691 Hours of Missing Data: 5 Hours of Calibration: 0 Percent Operational Time: 99.3								
Minimum Value: 0 km/h on Feb 6 09:00																									
Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																									
Day	Hourly Period Ending At (MST)																							Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24
1-Feb	1	1	1	1	2	2	1	1	1	1	2	2	2	2	2	4	1	2	2	1	1	1	1	2	4
2-Feb	2	2	3	2	2	3	2	2	2	2	2	2	2	3	3	2	2	2	2	2	3	1	1	1	3
3-Feb	2	2	1	1	1	1	2	1	2	2	1	1	6	3	2	2	1	1	1	1	1	1	1	1	6
4-Feb	1	1	2	1	1	1	1	2	1	2	2	4	3	3	2	2	3	1	2	1	1	3	3	2	4
5-Feb	2	1	1	1	1	1	1	4	4	4	3	4	4	3	3	3	3	2	2	2	2	2	2	2	4
6-Feb	1	1	1	1	0	1	1	1	0	1	1	2	2	2	3	3	1	1	1	1	2	1	2	2	3
7-Feb	1	1	2	2	1	1	1	2	1	1	2	1	2	1	1	2	1	1	1	1	1	1	1	1	2
8-Feb	1	0	1	1	1	1	1	1	1	2	1	2	2	2	2	1	1	UO	1	0	1	1	1	1	2
9-Feb	1	1	1	2	1	2	2	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	2
10-Feb	UO	1	1	1	1	1	1	1	1	1	1	1	1	3	2	2	2	1	1	1	2	2	2	2	3
11-Feb	2	2	2	3	3	2	3	3	3	3	3	3	3	3	3	3	2	1	2	2	2	2	2	2	3
12-Feb	2	2	1	1	1	2	2	1	2	2	3	3	3	4	4	4	3	3	5	4	4	2	5	6	6
13-Feb	4	3	2	3	2	1	1	1	1	2	1	2	2	2	2	2	2	2	6	2	4	5	3	3	6
14-Feb	3	5	4	3	3	3	3	3	2	2	1	2	2	2	2	1	2	2	1	1	1	1	1	1	5
15-Feb	1	2	0	1	2	3	1	1	1	1	1	1	1	2	2	2	1	2	1	2	3	2	2	3	
16-Feb	2	2	3	3	3	3	2	2	2	2	3	3	3	4	4	4	5	5	6	4	5	4	2	3	6
17-Feb	2	1	3	2	3	2	2	2	2	4	1	1	3	1	2	1	1	1	1	1	1	1	1	2	4
18-Feb	2	2	1	1	2	1	1	1	1	1	2	2	2	3	2	1	2	3	2	5	2	2	2	1	5
19-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	2	1	1	1	2
20-Feb	1	1	2	2	1	1	2	1	2	1	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2
21-Feb	1	1	2	1	1	2	1	1	1	1	2	2	2	3	4	4	4	3	2	2	3	3	1	2	4
22-Feb	2	1	1	1	1	1	2	1	2	2	1	1	3	2	2	1	1	1	1	1	2	2	1	1	3
23-Feb	1	2	2	2	2	1	2	1	2	4	4	4	4	4	5	6	6	4	3	3	4	6	4	4	6
24-Feb	8	4	3	7	5	3	4	4	5	3	3	3	2	2	3	2	2	2	1	1	1	1	1	2	8
25-Feb	3	2	2	2	3	2	3	2	2	2	2	3	3	4	4	3	3	3	3	4	4	4	4	3	4
26-Feb	3	3	2	2	2	3	2	1	1	2	1	4	3	2	2	2	2	1	1	1	1	2	2	2	4
27-Feb	2	2	1	UO	1	2	1	1	1	1	2	3	2	2	4	3	2	1	1	1	1	UO	UO	1	4
28-Feb	1	1	1	1	1	1	1	1	1	2	4	3	3	4	4	4	4	3	2	3	3	4	4	3	4
29-Feb	2	4	3	2	2	1	2	2	2	3	3	3	1	2	3	2	2	2	1	1	1	1	1	1	4
																	Diurnal Maximum								
UO - Unstable Operation																									



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Ells River - February 2024

Direction of Maximum Speed: 18 deg on Feb 25 21:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 21.5 deg on Feb 25	Hours of Data: 691
Direction of Minimum Speed: 277 deg on Feb 15 01:00	Hours of Missing Data: 5
Direction of Minimum Daily Speed Average: 0.1 deg on Feb 7	Percent Operational Time: 99.3
Monthly Average Direction: 351.6 deg	

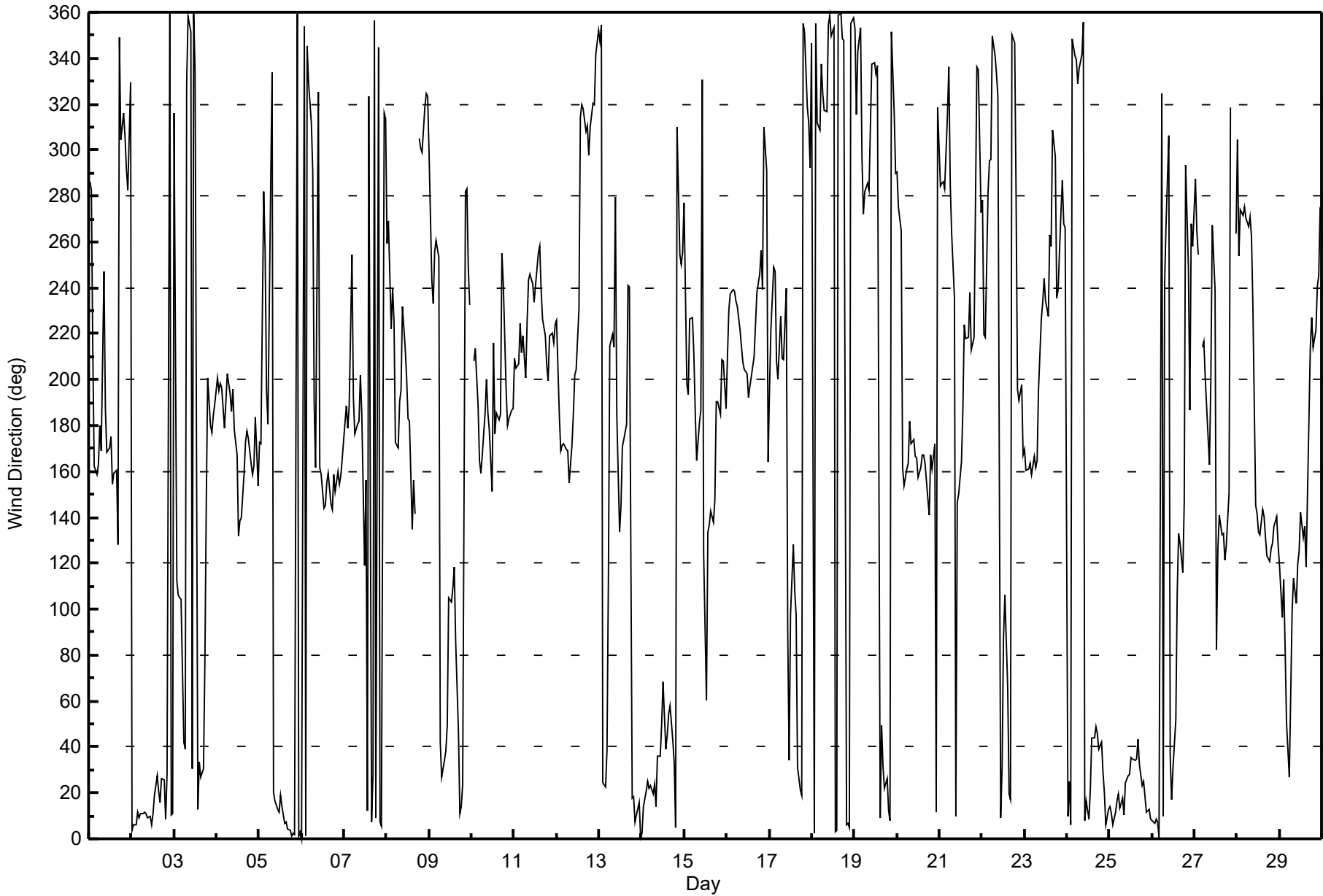
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	286	283	213	162	159	163	180	169	247	187	168	170	175	154	159	161	128	349	305	316	306	291	282	330	180.6
2-Feb	4	6	6	11	9	11	11	12	11	9	10	6	11	19	28	21	16	26	26	8	28	359	10	11	12.4
3-Feb	316	112	106	105	104	42	39	329	358	352	31	359	335	13	34	27	30	76	146	201	180	177	184	189	24.3
4-Feb	201	195	198	197	179	190	203	194	186	196	178	167	132	138	140	159	173	177	175	164	158	162	184	154	170.9
5-Feb	173	172	282	256	195	181	286	334	20	16	13	11	19	14	7	7	4	4	1	2	2	359	1	3	7.4
6-Feb	0	354	1	345	329	311	291	191	162	325	161	158	144	145	155	159	146	143	159	151	160	154	158	165	149.5
7-Feb	181	188	179	189	255	192	176	180	182	202	185	119	156	12	324	7	28	356	9	345	7	5	316	314	266.1
8-Feb	259	269	222	240	225	173	170	190	195	232	214	201	183	182	135	156	142	UO	305	301	299	318	325	323	218.6
9-Feb	299	243	233	256	261	253	42	27	34	38	49	105	103	109	118	86	46	11	14	24	282	283	249	232	28.5
10-Feb	UO	208	213	188	165	159	167	186	200	185	178	151	216	176	186	182	185	255	242	196	180	183	187	187	188.6
11-Feb	209	205	207	225	212	219	201	225	244	246	242	234	241	255	258	239	226	219	206	200	219	220	216	224	225.8
12-Feb	226	184	169	171	172	169	169	155	171	185	202	205	231	314	320	318	308	310	298	310	320	320	342	352	279.7
13-Feb	347	354	25	22	38	112	215	220	214	280	185	134	145	171	174	180	241	241	18	18	7	10	16	0	11.3
14-Feb	3	14	21	25	22	23	19	24	14	36	36	49	68	39	45	55	58	42	33	5	310	254	250	256	25.7
15-Feb	277	198	193	226	227	211	186	165	181	187	331	124	61	134	137	143	138	148	190	190	185	209	208	187	178.6
16-Feb	210	231	237	239	239	234	232	222	214	207	204	202	192	197	205	210	224	238	246	256	239	310	291	164	225.2
17-Feb	196	222	249	247	208	200	228	209	208	240	91	34	97	128	108	98	31	21	19	355	351	318	312	292	240.9
18-Feb	347	2	355	312	309	337	324	318	317	354	359	350	353	3	4	359	360	349	348	6	7	5	355	358	354.3
19-Feb	353	315	343	353	296	272	282	286	282	310	337	338	333	337	9	49	32	22	26	12	8	352	316	290	349.7
20-Feb	290	275	265	161	154	161	164	182	172	174	166	166	157	162	167	167	164	148	141	167	161	172	12	318	169.5
21-Feb	285	285	286	283	315	336	285	264	236	10	146	150	164	187	224	218	218	238	213	218	276	336	335	273	236.7
22-Feb	279	220	219	282	296	296	349	341	333	323	9	31	87	106	66	20	17	350	346	279	196	191	197	167	350.1
23-Feb	169	160	161	163	159	167	162	165	196	227	233	244	234	227	263	258	309	297	236	239	273	287	268	266	234.5
24-Feb	10	25	6	349	341	339	329	336	342	356	8	17	8	22	44	44	49	46	39	42	29	20	6	13	5.5
25-Feb	14	11	6	11	16	20	13	18	10	25	28	28	35	35	34	35	44	32	23	25	18	11	13	8	21.5
26-Feb	8	7	9	7	1	325	10	242	267	306	35	17	31	52	107	133	129	116	147	293	248	187	268	258	11.0
27-Feb	287	265	254	UO	214	217	201	188	163	200	267	239	82	126	141	133	133	121	128	151	319	UO	UO	263	168.6
28-Feb	305	254	274	272	275	270	267	271	263	232	145	142	134	133	144	141	131	123	121	126	129	136	140	128	138.8
29-Feb	119	96	113	84	51	27	63	99	114	103	119	125	142	131	136	118	182	214	227	214	222	240	245	275	117.8
	332.6	345.2	346.7	324.3	322.0	264.7	298.7	236.4	283.8	313.4	89.7	120.0	117.9	109.9	109.3	109.8	75.2	356.7	336.4	333.6	343.6	333.5	323.2	317.7	
	Diurnal Average																								

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction (WD) - deg
Ells River - February 2024





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Ells River - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 95 deg on Feb 6 11:00 Minimum Value: 4 deg on Feb 19 18:00 Percentiles: P ₁ = 6 P ₁₀ = 9 Q ₁ = 11 Median = 16 Q ₃ = 25 P ₉₀ = 44 P ₉₉ = 81																		Hours in Service: 696 Hours of Data: 691 Hours of Missing Data: 5 Hours of Calibration: 0 Percent Operational Time: 99.3							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	28	39	81	26	7	10	9	9	32	15	15	14	16	16	14	28	26	41	37	24	66	55	15	20	81
2-Feb	8	10	9	8	9	8	8	9	8	9	10	11	10	11	10	11	10	8	12	9	15	13	8	11	15
3-Feb	40	36	11	12	20	75	45	22	11	12	18	12	27	18	10	14	14	31	29	18	8	7	7	16	75
4-Feb	13	11	11	10	5	8	9	9	9	55	52	86	23	8	9	12	10	7	6	6	7	8	14	17	86
5-Feb	14	9	33	65	62	34	52	34	9	8	8	9	10	11	12	11	10	8	10	8	10	10	8	7	65
6-Feb	8	16	11	8	21	28	44	58	23	37	95	22	12	13	12	16	11	17	13	10	13	12	11	13	95
7-Feb	15	12	14	37	42	48	44	52	16	22	32	24	42	26	40	17	12	8	9	10	15	14	33	10	52
8-Feb	22	14	40	17	37	54	22	10	19	42	26	25	19	23	27	23	35	UO	32	8	10	29	13	14	54
9-Feb	23	25	16	18	15	40	23	9	12	12	22	16	15	15	16	29	9	17	9	31	19	13	38	50	50
10-Feb	UO	35	52	15	21	25	13	16	21	18	24	18	35	23	26	17	18	27	24	21	14	15	13	16	52
11-Feb	20	13	12	15	19	17	18	18	13	20	19	20	20	20	18	20	16	13	13	30	36	21	17	11	36
12-Feb	13	26	10	6	5	7	11	8	28	14	15	15	25	15	15	17	9	11	13	14	11	12	14	15	28
13-Feb	17	15	12	11	16	43	30	18	27	82	85	48	18	15	13	27	24	21	42	9	10	11	8	14	85
14-Feb	12	12	8	7	9	7	8	13	9	15	18	21	22	11	17	12	14	6	41	47	50	32	52	35	52
15-Feb	68	52	8	21	18	21	14	12	9	35	93	15	61	65	21	12	5	28	9	7	16	28	22	20	93
16-Feb	16	15	13	13	14	15	15	17	16	15	15	15	15	14	16	21	18	19	19	20	40	63	70	66	70
17-Feb	50	42	30	17	63	32	27	56	32	19	63	24	39	14	21	18	16	12	24	14	13	18	13	87	87
18-Feb	19	19	15	26	18	43	26	17	57	19	21	14	9	12	9	11	9	9	8	12	11	7	11	11	57
19-Feb	9	17	29	21	19	22	58	17	9	19	13	18	30	18	20	17	12	4	12	12	13	43	28	15	58
20-Feb	21	15	74	45	44	15	13	18	11	14	14	17	18	11	13	14	9	16	19	29	13	16	36	57	74
21-Feb	22	31	47	28	18	13	10	18	58	50	83	17	16	23	19	18	19	20	13	15	53	15	13	46	83
22-Feb	49	65	54	44	58	29	11	14	21	21	31	11	49	21	13	16	11	14	17	24	36	11	8	11	65
23-Feb	8	10	8	9	7	11	8	7	27	18	19	19	21	21	29	32	13	23	19	21	22	15	19	17	32
24-Feb	42	11	12	19	12	11	11	11	15	14	14	21	24	18	21	14	12	8	8	9	8	7	7	7	42
25-Feb	9	11	8	11	7	8	9	6	9	18	14	15	13	19	16	13	12	9	7	7	9	10	8	10	19
26-Feb	10	10	7	9	13	54	12	38	26	35	45	32	33	40	28	21	15	18	32	81	36	50	25	13	81
27-Feb	38	18	48	UO	32	29	20	15	17	43	23	66	65	69	50	15	7	8	5	16	37	UO	UO	18	69
28-Feb	40	17	13	10	16	36	11	21	64	51	11	12	10	9	11	11	11	10	10	10	9	8	11	10	64
29-Feb	10	19	12	23	12	12	31	14	12	25	17	16	46	26	20	68	42	24	12	16	15	17	16	20	68
68 65 81 65 63 75 58 58 64 82 95 86 65 69 50 68 42 41 42 81 66 63 70 87																								Diurnal Maximum	
UO - Unstable Operation																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

**AMS501
LEISMER
FEBRUARY 2024**

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LEISMER (AMS501)
 FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	660	32	36	99.43	31.5	0	4	0
H2S (ppb) Average	658	34	38	99.43	0.5	0	0.2	0
NO2 (ppb) Average	658	34	38	99.43	17.7	0	3.9	-
NO (ppb) Average	658	34	38	99.43	15.4	-	2.4	-
NOX (ppb) Average	658	34	38	99.43	31.2	-	5.8	-
Temperature 2 m (C) Average	692	0	4	99.43	8.8	-	3.6	-
Relative Humidity (%) Average	692	0	4	99.43	95.7	-	92.4	-
Wind Speed 10 m (km/h) Average	691	0	5	99.28	37	-	19	-
Wind Direction 10 m (deg) Average	691	0	5	99.28	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LEISMER (AMS501)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	660	1.02	2.3	-	0	0	0.1	0.4	0.9	2.4	31.5
H2S (ppb) Average	658	0.09	0.1	-	0	0	0.1	0.1	0.1	0.2	0.5
NO2 (ppb) Average	658	2.17	1.8	-	0.1	0.6	1	1.8	2.7	4	17.7
NO (ppb) Average	658	0.75	1.6	-	0	0	0	0.2	0.8	1.8	15.4
NOX (ppb) Average	658	2.92	3.1	-	0.2	0.6	1.1	2.2	3.5	5.3	31.2
Temperature 2 m (C) Average	692	-8.05	7.5	-	-27.8	-17	-12.3	-7.7	-2.8	1.7	8.8
Relative Humidity (%) Average	692	69.57	16.7	-	23.7	44.5	57.6	72	83.3	90.5	95.7
Wind Speed 10 m (km/h) Average	691	10.1	7	-	0	3	5	9	15	20	37
Wind Direction 10 m (deg) Average	691	356.4	0	-	0	-	-	-	-	-	0

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LEISMER (AMS501)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
ALL PARAMETERS	20 Feb 2024 18:00	20 Feb 2024 21:00	4	DAS Failure - data not recorded
Wind Speed, Wind Direction	05 Feb 2024 04:00	05 Feb 2024 04:00	1	Flat line in sensor output signal - Sensor frozen



Wood Buffalo Environmental Association

Summary of Hour Averages

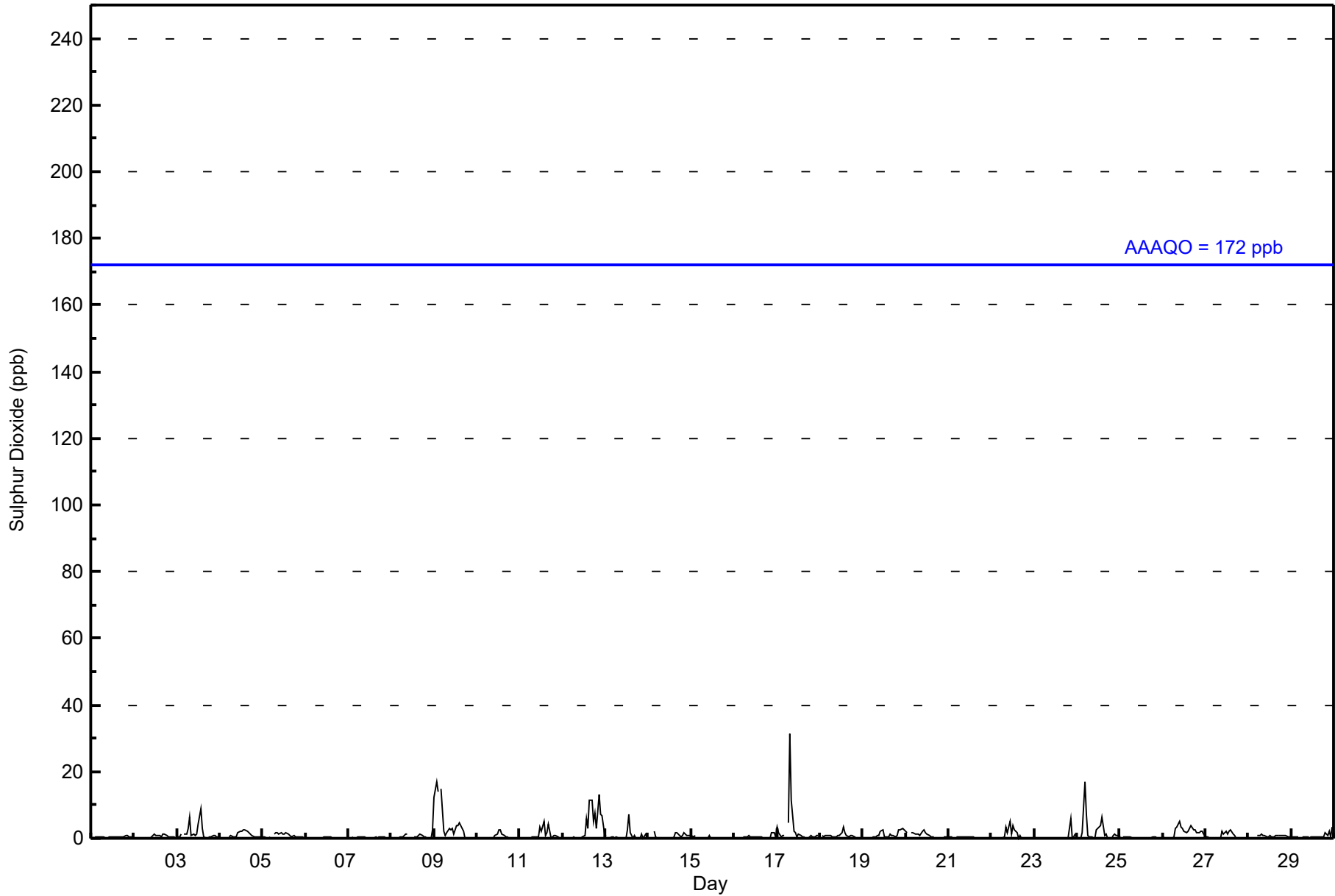
Sulphur Dioxide (SO₂) - ppb

Leismer - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 31.5 ppb on Feb 17 08:00	Maximum Daily Average: 4.0 ppb on Feb 9		Hours of Data:	660
Minimum Value: 0.0 ppb on Feb 6 05:00	Minimum Daily Average: 0.1 ppb on Feb 6		Hours of Missing Data:	36
Maximum Diurnal Average: 2.0 ppb at hour 14	Minimum Diurnal Average: 0.4 ppb at hour 4		Hours of Calibration:	32
Monthly Average: 1.02 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.4 Q ₃ = 0.9 P ₉₀ = 2.4 P ₉₉ = 11.9		Percent Operational Time:	99.4

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	0.3	Z	0.4	0.3	0.4	0.5	0.5	0.4	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.5	0.5	0.7	0.9	0.6	0.4	0.3	0.5	0.9																						
2-Feb	0.2	0.1	Z	0.1	0.1	0.1	0.1	0.0	0.0	0.2	0.7	1.3	0.9	0.9	0.6	0.6	1.1	1.1	1.0	0.5	0.5	0.4	0.3	0.2	0.5	1.3																						
3-Feb	0.4	0.6	1.2	Z	1.1	1.2	2.8	6.4	1.0	1.1	0.9	1.3	4.3	9.0	2.8	0.3	0.1	0.2	0.4	0.6	0.9	0.7	0.4	0.2	1.6	9.0																						
4-Feb	0.1	0.1	0.1	0.0	Z	0.6	1.0	0.5	0.2	0.4	1.8	2.3	1.9	2.4	2.6	2.1	1.7	1.2	0.8	0.6	0.4	0.4	0.4	0.5	1.0	2.6																						
5-Feb	0.4	0.4	0.2	0.2	Z	1.2	1.7	1.6	1.2	1.8	1.4	1.4	1.9	1.1	0.9	0.6	0.7	0.6	0.6	0.5	0.5	0.2	0.2	0.8	1.9																							
6-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.2	0.3	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.4																						
7-Feb	0.1	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.5	0.1	0.4	0.2	0.6	0.3	0.1	0.1	0.1	0.2	0.6																						
8-Feb	0.1	0.1	Z	0.0	0.1	0.2	0.6	0.9	1.3	1.5	C	C	C	0.4	0.2	0.8	1.4	0.9	0.5	0.3	0.1	0.2	0.0	2.6	0.6	2.6																						
9-Feb	12.5	16.8	14.2	Z	14.9	2.2	1.0	1.6	3.1	2.6	2.8	1.1	4.0	3.9	4.5	4.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	16.8																						
10-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.7	1.3	2.7	2.5	1.1	0.7	0.4	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.4	2.7																						
11-Feb	0.2	0.1	0.1	0.1	0.1	Z	0.2	0.2	0.2	0.3	0.5	3.4	2.0	5.0	0.8	1.6	4.2	0.2	0.3	0.9	0.9	0.3	0.1	0.0	0.9	5.0																						
12-Feb	Z	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.3	0.7	6.0	3.0	11.5	11.4	5.3	7.8	3.1	13.3	7.3	6.9	1.0	3.4	13.3																						
13-Feb	0.7	Z	0.2	0.3	0.3	0.1	0.2	0.1	0.0	0.1	0.0	0.2	2.4	7.4	1.6	0.2	0.8	0.1	0.0	0.0	1.3	0.0	1.3	0.2	0.8	7.4																						
14-Feb	0.0	0.0	Z	1.9	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.6	1.6	0.7	0.6	0.9	1.5	0.8	0.8	0.8	0.5	1.9																						
15-Feb	0.6	0.5	0.9	Z	0.1	0.0	0.0	0.1	0.1	0.1	0.9	0.2	0.1	0.0	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.2	0.9																						
16-Feb	0.1	0.0	0.1	0.1	Z	0.4	0.5	0.5	1.0	0.6	0.3	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.1	1.8	1.6	0.6	0.4	1.8																						
17-Feb	3.3	1.5	0.4	0.7	0.8	Z	4.6	31.5	11.6	2.2	1.7	0.4	1.4	1.0	0.4	0.5	0.1	0.2	0.6	0.8	0.3	0.2	0.9	0.9	2.9	31.5																						
18-Feb	Z	0.9	0.6	1.0	0.7	0.7	0.7	0.5	0.4	0.4	1.0	0.8	1.8	3.5	1.5	0.9	0.6	0.8	0.6	0.3	0.2	0.1	0.1	0.1	0.8	3.5																						
19-Feb	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.4	0.8	0.7	2.2	2.5	0.6	0.5	0.5	1.3	1.0	0.7	0.5	0.7	2.4	2.4	3.0	2.7	1.0	3.0																						
20-Feb	2.0	1.7	Z	1.9	1.7	1.2	1.3	1.4	0.8	2.2	2.6	1.5	1.1	0.7	0.4	0.4	0.5	DF	DF	DF	DF	0.4	0.4	0.5	1.2	2.6																						
21-Feb	0.4	0.4	0.5	Z	0.5	0.4	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.5																						
22-Feb	0.0	0.1	0.1	0.1	Z	0.1	0.0	0.4	3.5	1.5	5.0	1.4	3.8	2.4	1.8	0.0	0.7	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.9	5.0																						
23-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	6.1	0.2	0.3	1.3	0.4	6.1																						
24-Feb	Z	0.2	0.1	1.9	17.0	7.1	0.7	0.2	0.3	0.1	0.1	2.5	3.2	3.7	6.2	0.9	1.2	0.0	0.1	0.1	0.9	1.1	0.8	0.7	2.1	17.0																						
25-Feb	0.6	Z	0.5	0.4	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.0	0.2	0.1	0.2	0.6																						
26-Feb	0.2	0.1	Z	0.2	0.1	0.1	0.6	2.8	3.5	5.1	3.5	3.0	2.1	1.8	2.0	3.2	3.7	2.5	2.5	1.6	1.5	2.3	2.3	1.1	2.0	5.1																						
27-Feb	0.6	0.2	0.1	Z	0.1	0.1	0.1	0.0	0.0	2.2	1.3	2.0	1.3	2.1	2.4	1.4	0.9	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.7	2.4																						
28-Feb	0.0	0.0	0.0	0.2	Z	0.8	0.9	1.1	1.0	0.9	0.5	0.4	0.8	0.6	0.6	0.7	0.7	0.8	0.9	0.8	0.7	0.7	0.5	0.4	0.6	1.1																						
29-Feb	0.4	0.3	0.3	0.2	0.3	Z	0.3	0.3	0.4	0.3	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.4	0.5	1.7	0.9	2.0	0.5	3.3	0.6	3.3																						
																								0.9	1.0	0.8	0.4	1.7	0.7	0.7	1.8	1.1	0.9	1.1	1.0	1.4	2.0	1.3	1.2	1.2	0.6	0.7	0.6	1.2	0.8	0.8	0.6	Diurnal Average
																								12.5	16.8	14.2	1.9	17.0	7.1	4.6	31.5	11.6	5.1	5.0	3.4	4.3	9.0	6.2	11.5	11.4	5.3	7.8	3.1	13.3	7.3	6.9	3.3	Diurnal Maximum

Z - zerospan C - Calibration DF - DAS Failure
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Leismer - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	650	98.48	98.48
11 - 20	9	1.36	99.85
21 - 60	1	0.15	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Leismer - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	43	25	19	21	30	74	38	35	22	18	8	18	96	111	37	54	649
11 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	0	9
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	43	25	19	21	30	74	38	35	22	18	8	18	96	113	45	54	659

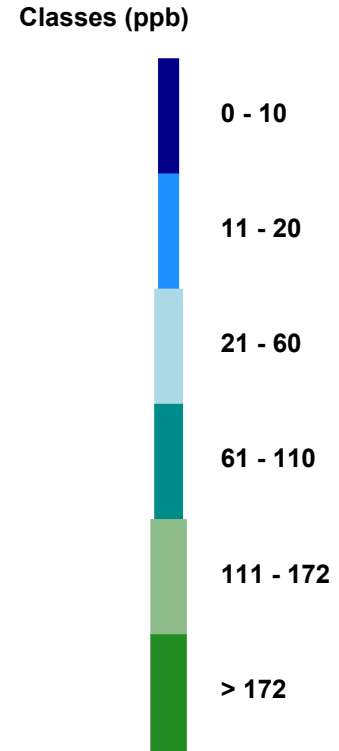
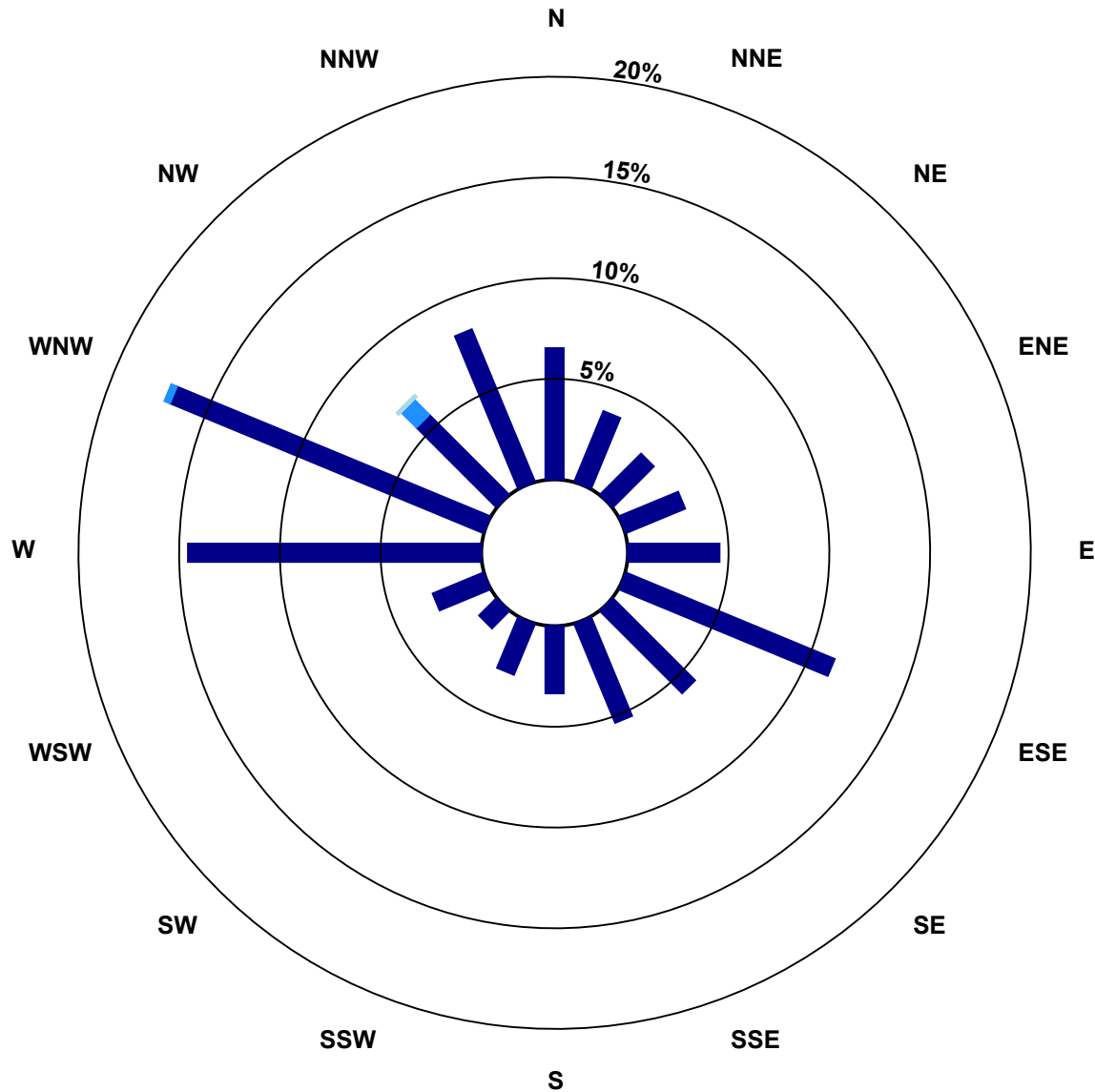
Total Number of Valid Hours: 659

Total Number of Hours: 696

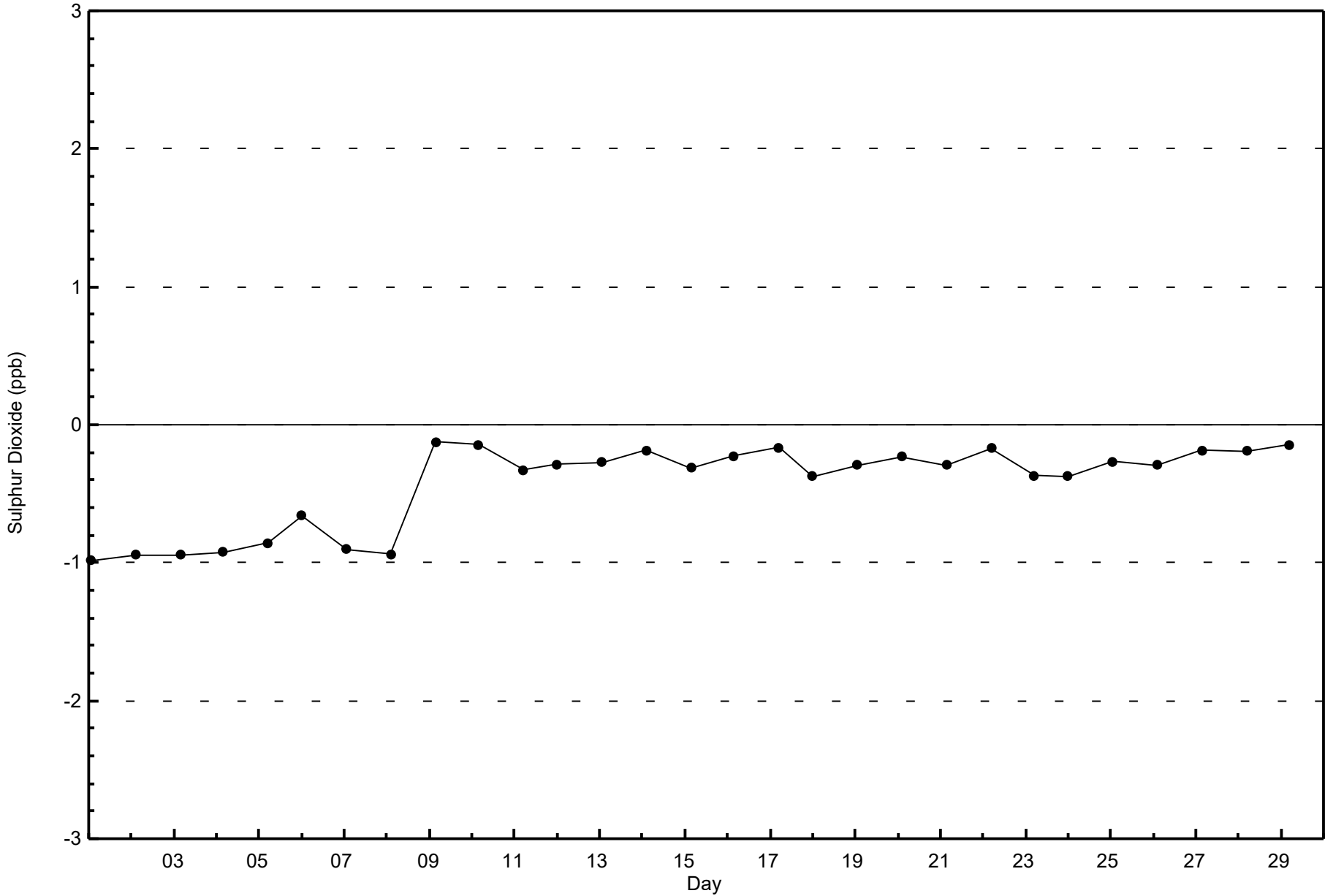


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Leismer



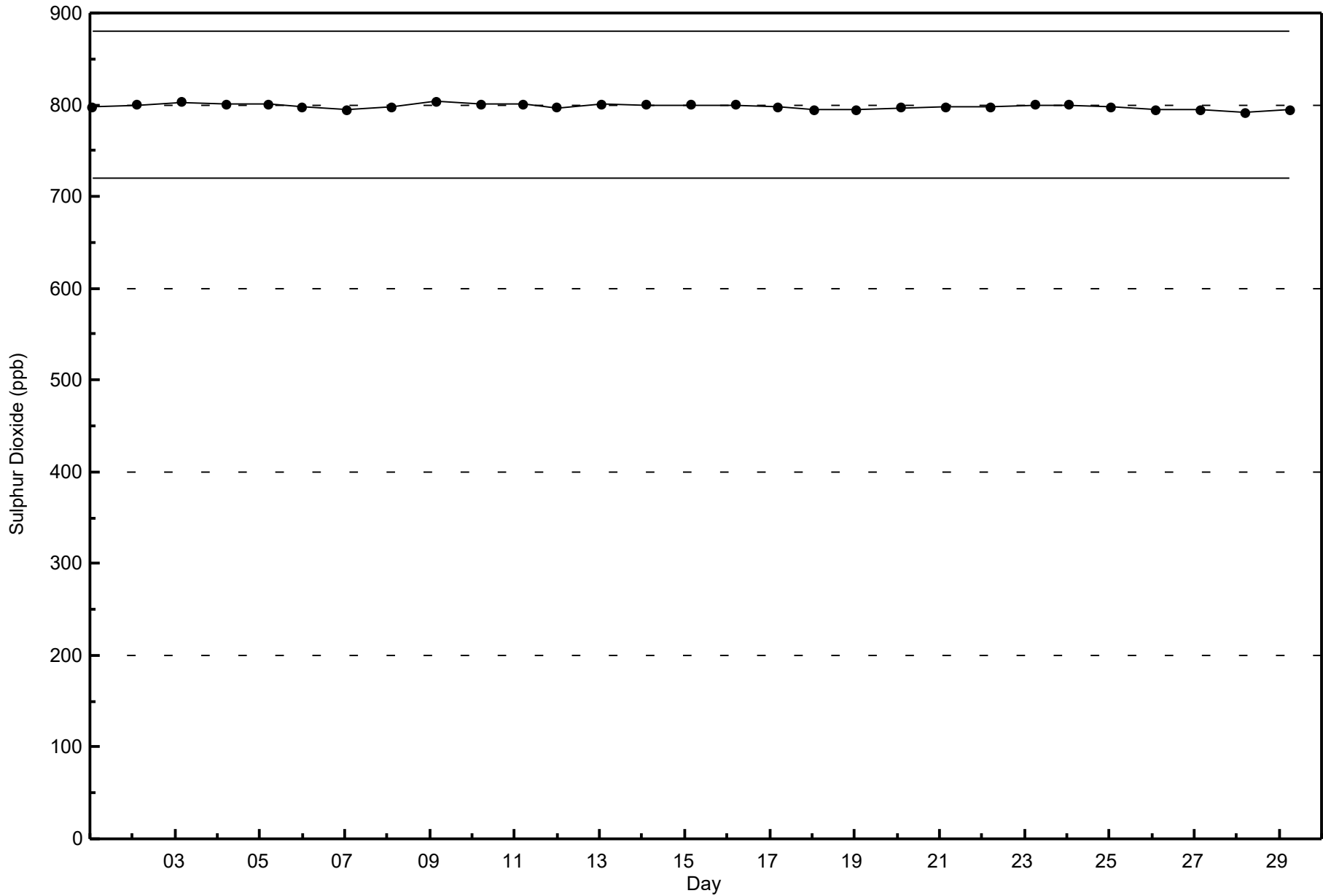
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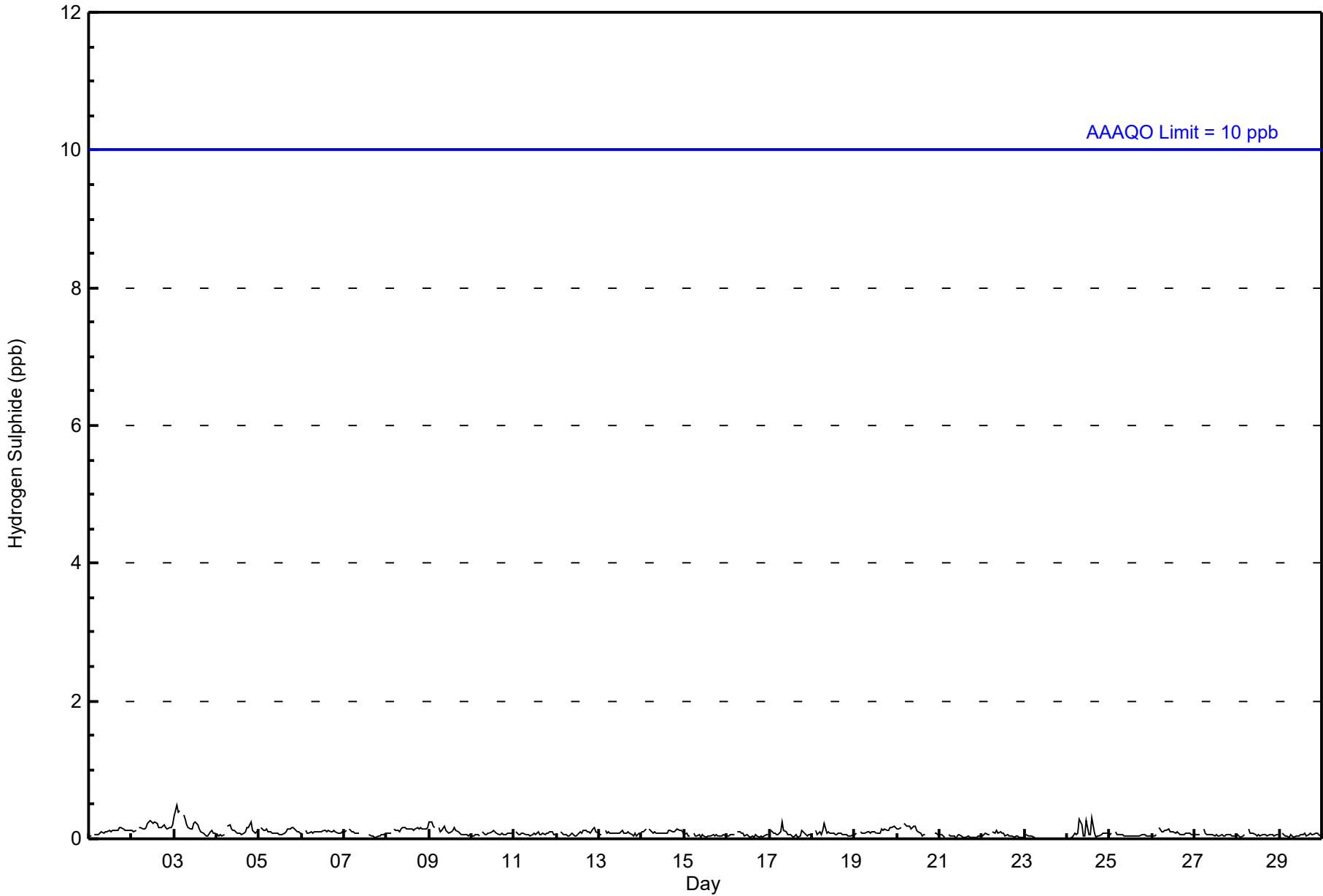




Wood Buffalo Environmental Association
Span Responses

Sulphur Dioxide (SO₂) - ppb
Leismer - February 2024







Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Hydrogen Sulphide (H₂S) - ppb
Leismer - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	658	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 658

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Leismer - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	44	23	18	20	32	72	37	34	23	20	8	19	96	111	47	53	657
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	44	23	18	20	32	72	37	34	23	20	8	19	96	111	47	53	657

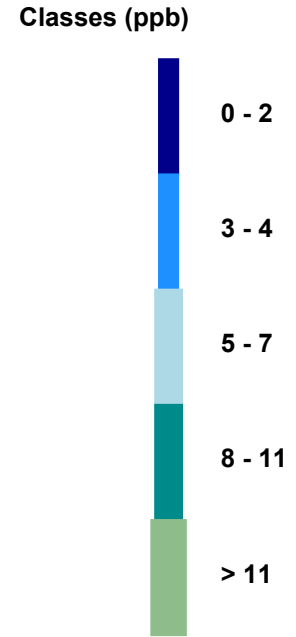
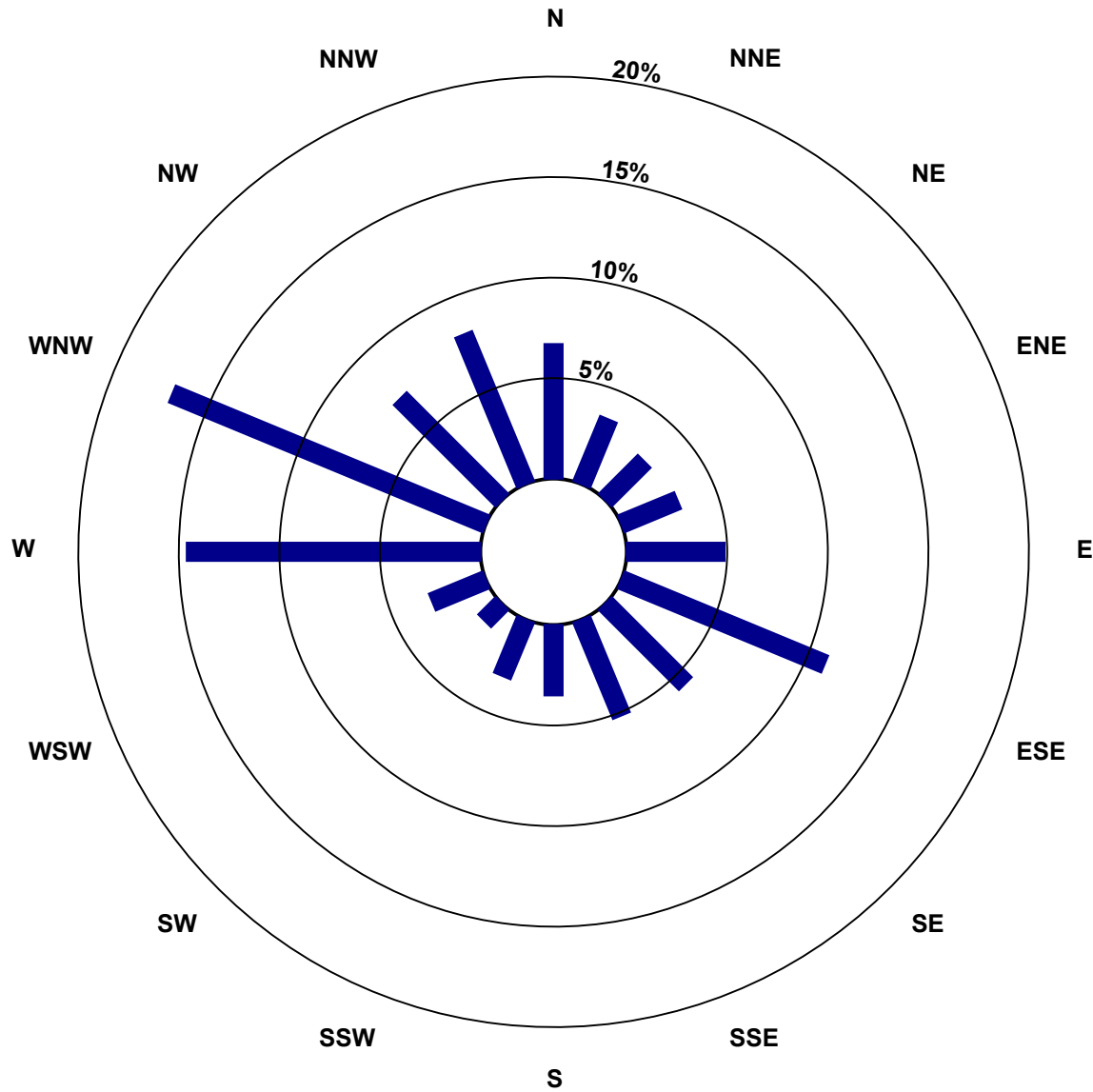
Total Number of Valid Hours: 657

Total Number of Hours: 696

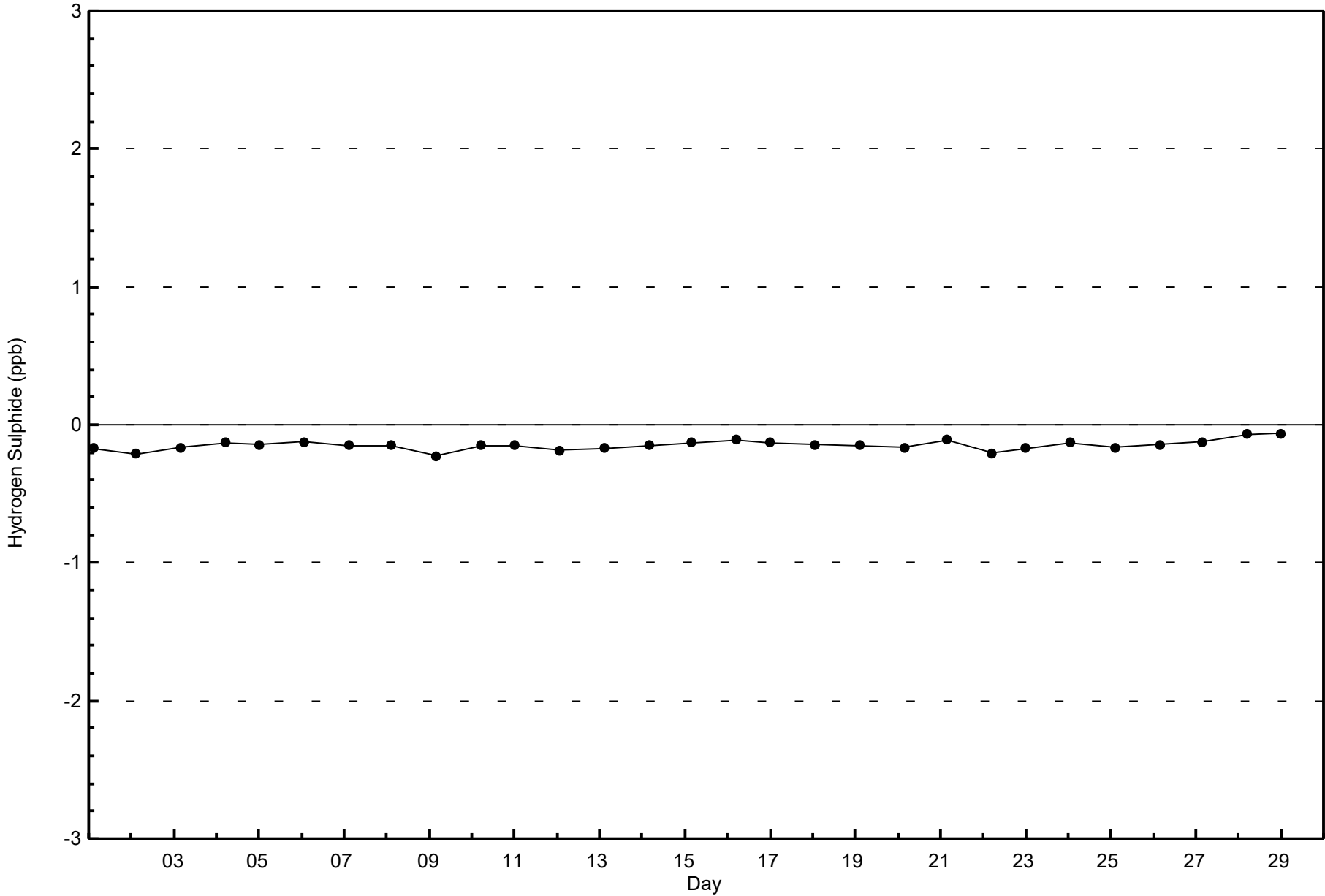


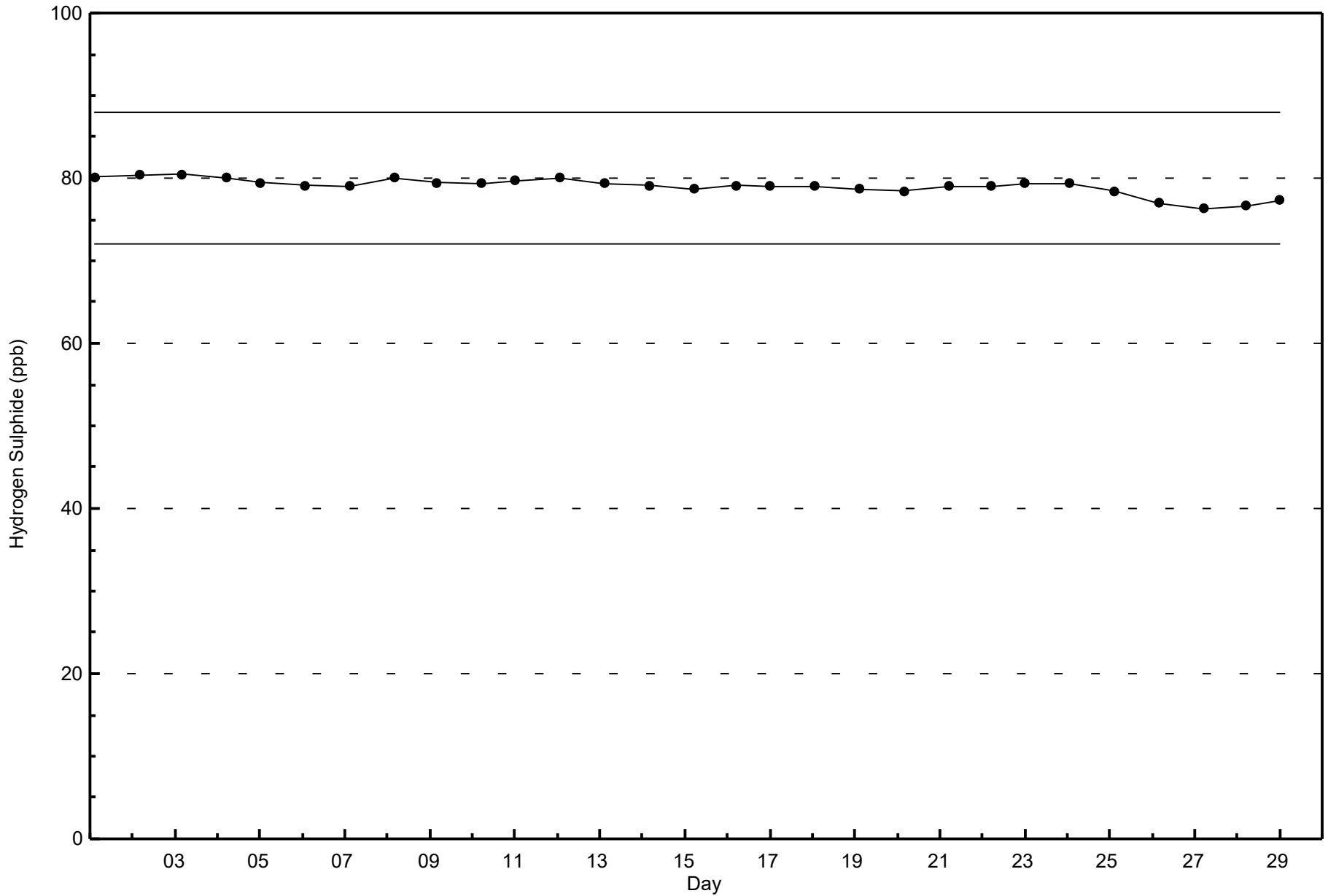
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Leismer



Total Number of Valid Hours: 657







Wood Buffalo Environmental Association

Summary of Hour Averages

Nitric Oxide (NO) - ppb

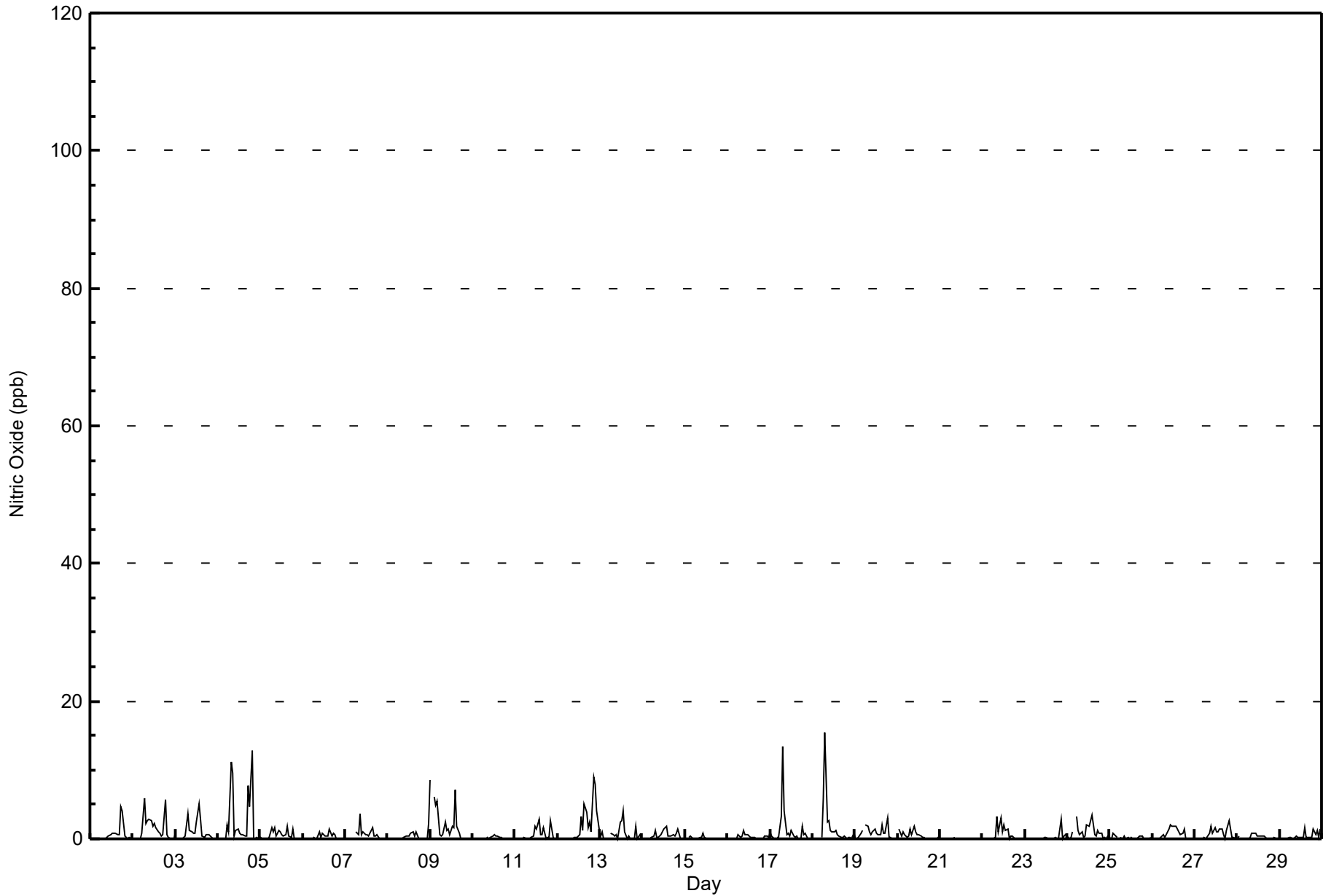
Leismer - February 2024

Maximum Value: 15.4 ppb on Feb 18 08:00																				Maximum Daily Average: 2.4 ppb on Feb 4					Hours in Service:	696	
Minimum Value: 0.0 ppb on Feb 2 00:00																				Minimum Daily Average: 0.0 ppb on Feb 21					Hours of Data:	658	
Maximum Diurnal Average: 1.9 ppb at hour 8																				Minimum Diurnal Average: 0.2 ppb at hour 2					Hours of Missing Data:	38	
Monthly Average: 0.75 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.2 Q ₃ = 0.8 P ₉₀ = 1.8 P ₉₉ = 8.1					Hours of Calibration:	34	
																									Percent Operational Time:	99.4	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.2	0.4	0.6	0.8	0.9	0.8	0.6	0.6	4.7	4.0	0.5	0.2	0.0	0.1	0.0	0.6	4.7	
2-Feb	Z	0.1	0.0	0.0	0.0	0.9	5.9	2.2	2.7	2.8	2.6	1.8	2.2	1.5	1.1	0.9	0.5	0.5	5.7	0.5	0.2	0.0	0.0	0.0	1.4	5.9	
3-Feb	0.9	Z	0.1	0.0	0.1	0.4	2.0	3.6	1.3	1.0	0.8	0.9	2.4	5.1	2.9	0.4	0.3	0.5	0.6	0.6	0.1	0.1	0.0	0.0	1.1	5.1	
4-Feb	0.0	0.0	Z	0.0	0.0	2.0	1.1	11.2	9.5	0.5	1.2	1.4	0.8	0.6	0.6	0.3	0.4	7.8	4.6	12.9	0.0	0.0	0.2	0.0	2.4	12.9	
5-Feb	0.1	0.1	0.0	Z	0.0	0.2	1.7	1.0	1.6	0.4	1.3	1.1	0.5	0.3	0.6	1.8	0.4	0.1	1.4	0.1	0.1	0.0	0.0	0.0	0.6	1.8	
6-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.1	0.0	0.1	1.0	0.3	0.9	0.4	0.5	0.4	1.4	0.3	0.9	0.5	0.0	0.0	0.0	0.0	0.1	0.3	1.4	
7-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.9	0.6	3.6	0.7	0.9	0.6	0.7	0.3	0.9	1.5	0.4	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.5	3.6	
8-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.5	0.4	0.8	0.9	0.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.3	2.3	
9-Feb	8.5	Z	6.1	4.8	5.5	0.7	0.4	0.6	2.5	1.2	1.3	0.6	1.9	1.7	7.2	1.8	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	8.5	
10-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.3	0.4	0.6	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	
11-Feb	0.0	0.0	0.0	Z	0.0	0.1	0.0	0.0	0.1	0.2	0.3	1.8	1.5	2.7	0.6	0.6	1.6	0.0	0.3	0.1	2.7	0.1	0.0	0.0	0.6	2.7	
12-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.1	0.0	0.1	0.1	0.3	0.3	0.6	3.3	1.3	5.1	3.9	1.6	2.4	1.0	9.0	7.9	4.1	1.2	1.8	9.0	
13-Feb	0.5	1.0	0.0	0.0	0.0	Z	0.7	0.7	0.5	0.7	0.1	2.4	2.7	4.0	1.1	0.0	0.4	0.0	0.0	0.0	1.9	0.1	0.5	0.0	0.8	4.0	
14-Feb	Z	0.1	0.0	0.0	0.0	0.2	0.3	1.3	0.2	0.3	0.5	0.9	1.4	1.8	0.5	0.4	0.3	0.5	0.3	0.8	1.3	0.0	0.0	0.1	0.5	1.8	
15-Feb	0.1	Z	0.3	0.4	0.0	0.0	0.0	0.0	0.1	0.1	0.8	0.2	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	
16-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.6	0.1	0.5	1.3	0.6	0.7	0.4	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.4	0.4	0.2	0.3	1.3	
17-Feb	1.0	0.4	0.1	Z	0.2	0.2	3.3	13.5	4.1	0.7	0.9	0.4	1.3	0.3	0.2	0.3	0.1	0.0	1.9	0.7	0.8	0.1	0.0	0.1	1.3	13.5	
18-Feb	0.0	0.0	0.0	0.1	Z	0.2	5.8	15.4	2.5	2.6	1.1	0.9	1.1	1.3	0.6	0.4	0.3	0.2	0.3	0.1	0.2	0.1	0.0	0.9	1.5	15.4	
19-Feb	0.1	0.0	0.3	0.8	1.1	Z	2.1	1.8	0.9	0.6	1.0	1.4	0.9	0.7	0.6	2.0	0.8	0.7	3.1	0.2	0.1	0.1	0.0	0.1	0.8	3.1	
20-Feb	Z	1.3	0.4	1.0	0.6	0.2	0.3	1.4	0.7	1.8	1.1	0.7	0.7	0.4	0.2	0.2	0.1	DF	DF	DF	DF	0.0	0.0	0.1	0.6	1.8	
21-Feb	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.1	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
22-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.2	3.2	1.1	3.1	0.9	2.1	1.2	1.3	0.1	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.6	3.2	
23-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	2.9	0.0	0.3	0.7	0.2	2.9	
24-Feb	0.3	0.0	0.1	1.0	Z	3.3	1.1	0.6	0.9	0.2	0.3	1.9	1.9	2.7	3.5	0.7	0.5	1.1	0.8	0.7	0.0	0.3	0.0	0.6	1.0	3.5	
25-Feb	0.0	0.1	0.7	0.4	0.1	Z	0.2	0.0	0.4	0.0	0.2	0.0	0.2	0.1	0.1	0.1	0.2	0.5	0.3	0.0	0.0	0.0	0.0	0.2	0.2	0.7	
26-Feb	Z	0.0	0.0	0.0	0.0	0.3	0.7	0.1	0.7	1.5	2.1	1.9	1.8	1.7	1.5	1.0	0.6	0.8	1.5	0.0	0.0	0.0	0.0	0.0	0.7	2.1	
27-Feb	0.1	Z	0.0	0.0	0.1	0.2	0.0	0.2	0.8	1.8	0.9	1.5	0.9	1.0	1.3	1.5	0.7	0.0	1.2	2.7	1.5	0.1	0.2	0.0	0.7	2.7	
28-Feb	0.0	0.4	Z	0.0	0.0	0.0	0.0	0.2	0.7	0.8	0.7	0.4	0.5	0.4	0.5	0.4	0.2	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.8	
29-Feb	0.0	0.0	0.1	Z	0.0	0.1	0.2	0.1	0.0	0.3	0.2	0.1	0.2	0.1	1.5	0.2	0.1	0.3	0.3	1.4	0.7	1.3	0.2	1.4	0.4	1.5	
																								Diurnal Average			
																								Diurnal Maximum			
0.5 0.2 0.3 0.4 0.3 0.4 1.0 1.9 1.3 0.8 0.9 0.9 1.0 1.2 1.1 0.8 0.5 0.8 1.1 0.8 0.8 0.4 0.2 0.3																											
8.5 1.3 6.1 4.8 5.5 3.3 5.9 15.4 9.5 2.8 3.1 2.4 2.7 5.1 7.2 5.1 3.9 7.8 5.7 12.9 9.0 7.9 4.1 2.3																											
Z - zerospan C - Calibration DF - DAS Failure																											



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Leismer - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitric Oxide (NO) - ppb
Leismer - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	658	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 658

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitric Oxide (NO) - ppb
Leismer - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	44	24	18	21	32	74	40	33	23	20	7	19	90	114	45	54	658
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	44	24	18	21	32	74	40	33	23	20	7	19	90	114	45	54	658

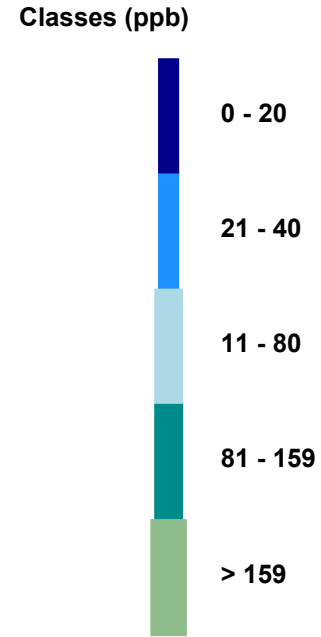
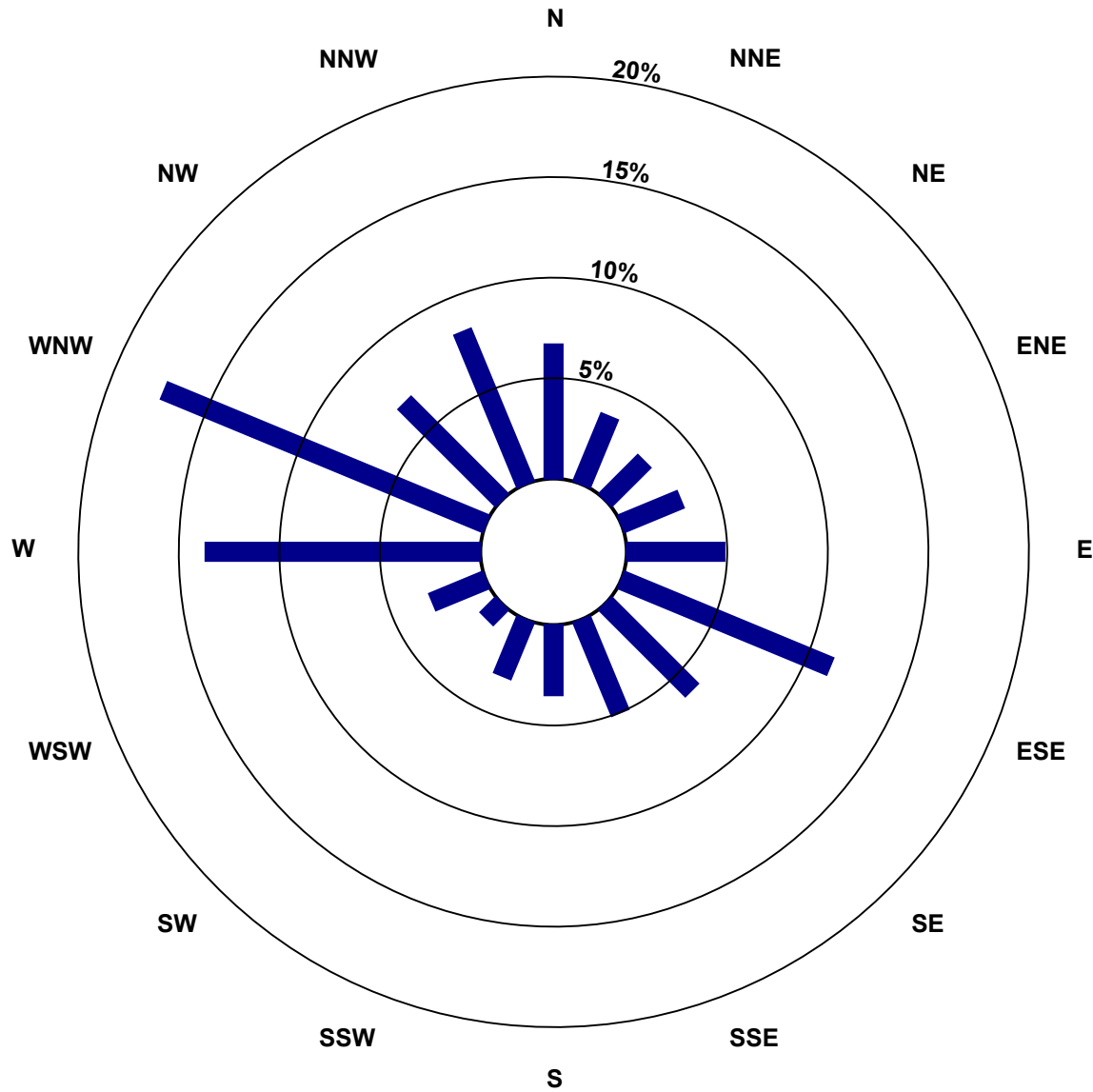
Total Number of Valid Hours: 658

Total Number of Hours: 696

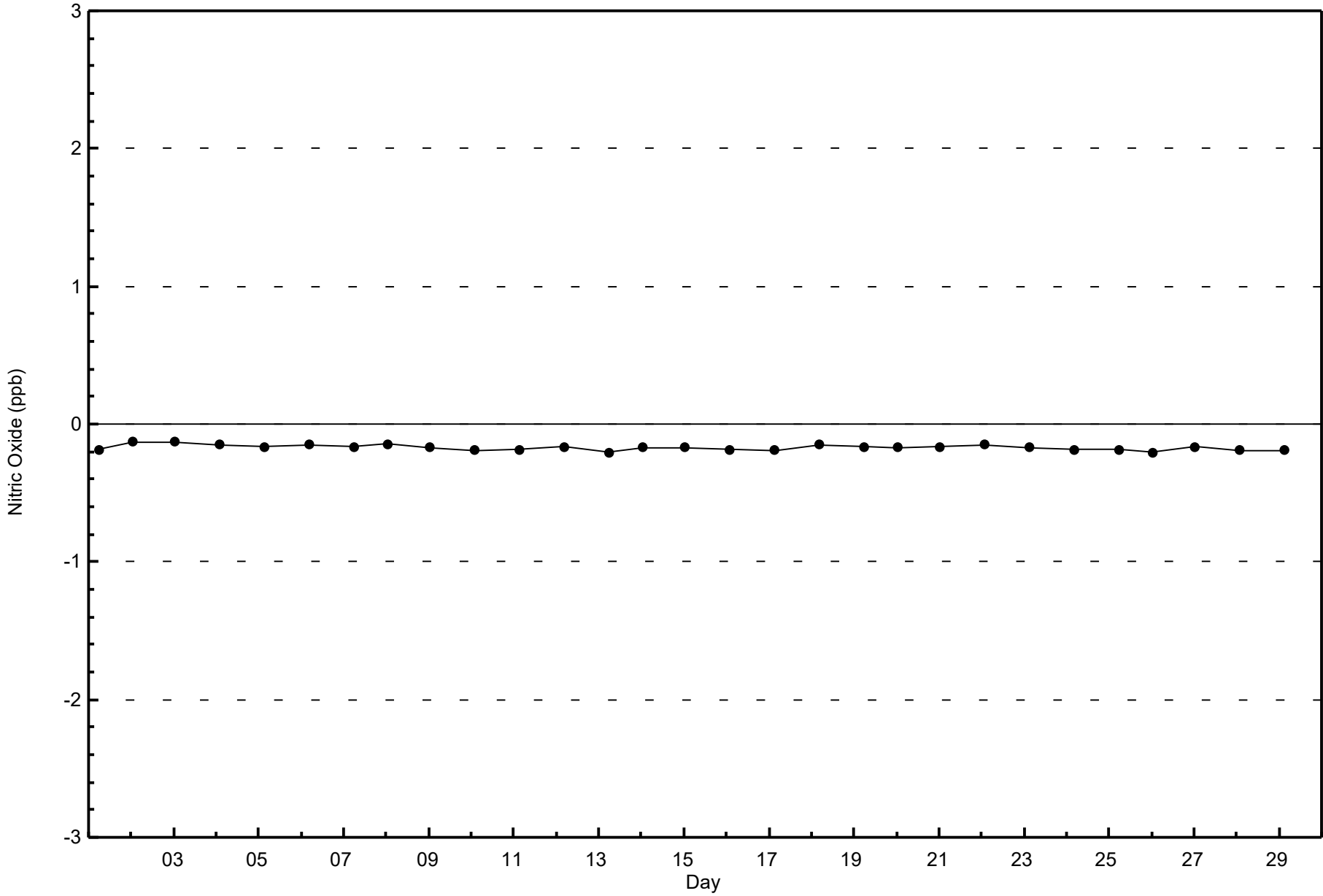


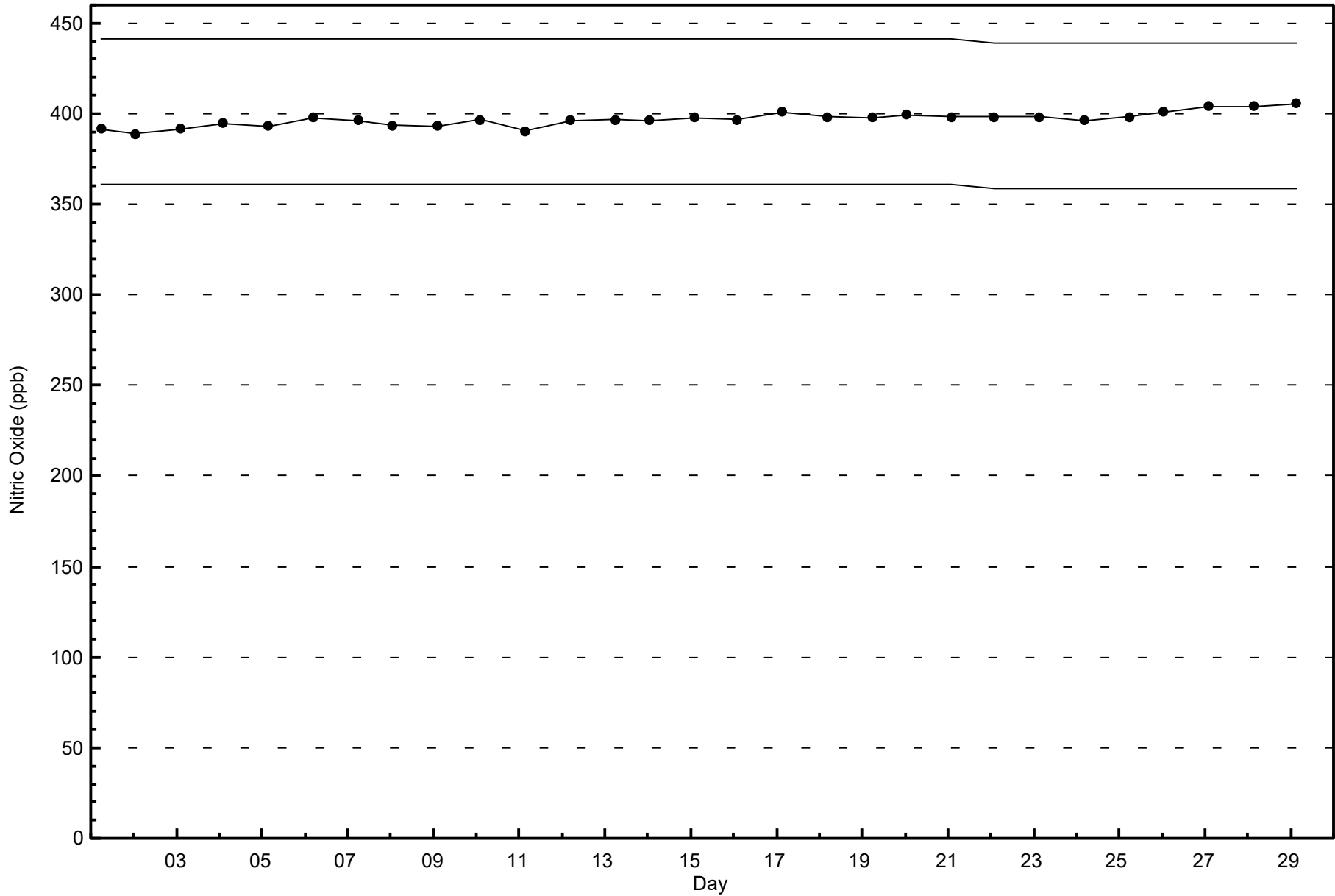
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Leismer



Total Number of Valid Hours: 658







Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

Leismer - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 696
Maximum Value: 17.7 ppb on Feb 17 08:00	Maximum Daily Average: 3.9 ppb on Feb 17
Minimum Value: 0.1 ppb on Feb 25 14:00	Hours of Data: 658
Maximum Diurnal Average: 3.3 ppb at hour 19	Hours of Missing Data: 38
Monthly Average: 2.17 ppb	Hours of Calibration: 34
Minimum Daily Average: 0.8 ppb on Feb 23	Percent Operational Time: 99.4
Minimum Diurnal Average: 1.3 ppb at hour 2	
Percentiles: P ₁ = 0.3 P ₁₀ = 0.6 Q ₁ = 1.0 Median = 1.8 Q ₃ = 2.7 P ₉₀ = 4.0 P ₉₉ = 9.1	

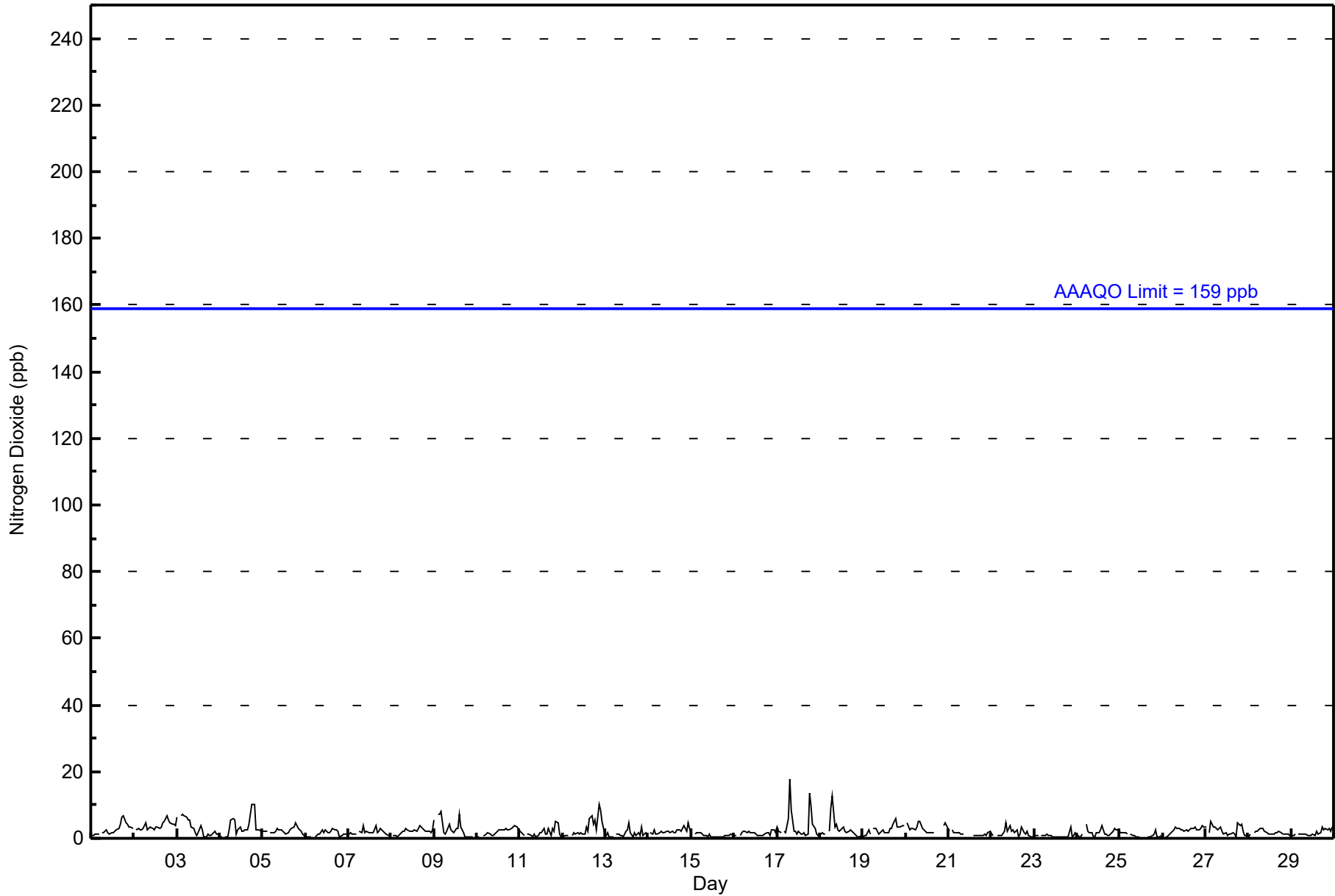
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.8	1.0	1.1	1.1	1.3	Z	1.9	1.6	2.5	1.8	1.4	1.6	1.9	2.2	2.6	2.9	4.4	6.3	6.7	4.5	4.2	3.6	3.4	3.1	2.7	6.7																							
2-Feb	Z	2.7	2.9	2.6	2.6	2.9	4.6	2.7	3.1	3.3	3.1	2.6	3.2	3.3	3.0	3.6	4.5	5.2	6.9	5.6	4.8	4.4	4.1	3.9	3.7	6.9																							
3-Feb	6.5	Z	6.8	7.4	6.8	6.3	5.7	5.5	3.6	2.9	1.9	1.0	1.8	3.7	2.6	0.5	0.5	1.2	1.0	0.9	1.8	2.0	1.2	1.1	3.2	7.4																							
4-Feb	0.4	0.4	Z	0.4	0.4	2.4	5.3	6.1	5.3	1.3	2.7	3.2	2.3	2.2	2.4	2.5	4.1	7.1	10.3	10.1	2.7	2.4	2.7	2.1	3.4	10.3																							
5-Feb	2.0	2.1	2.1	Z	1.8	1.5	1.9	2.0	3.1	2.5	2.6	2.2	1.8	1.4	1.6	2.7	3.1	3.5	4.6	3.8	3.0	2.1	1.2	0.7	2.3	4.6																							
6-Feb	0.5	0.4	0.3	0.3	Z	0.5	0.9	1.1	1.4	2.7	1.7	2.4	1.7	1.7	2.0	3.1	2.4	2.6	2.0	0.6	0.8	1.3	1.2	1.4	1.4	3.1																							
7-Feb	1.2	1.5	1.4	1.4	1.3	Z	2.0	1.9	3.9	1.6	2.1	1.7	1.7	1.6	1.7	3.8	1.6	2.2	2.9	2.3	1.6	1.2	1.0	0.9	1.8	3.9																							
8-Feb	Z	0.8	0.7	0.6	0.7	1.1	2.0	2.3	3.0	2.7	2.3	2.0	2.0	2.6	2.1	2.8	3.9	2.9	2.4	2.3	2.2	2.1	1.9	2.6	2.1	3.9																							
9-Feb	5.3	Z	7.3	7.0	8.0	1.8	1.3	2.1	4.1	2.6	2.2	1.5	2.9	2.8	7.1	3.2	1.9	0.4	0.3	0.3	0.3	0.3	0.2	0.2	2.7	8.0																							
10-Feb	0.3	0.5	Z	0.8	0.7	1.3	1.9	1.2	1.0	0.7	1.4	2.3	2.6	2.5	2.6	2.7	2.8	2.7	2.7	2.9	3.5	3.9	3.5	2.6	2.0	3.9																							
11-Feb	2.1	1.8	0.9	Z	1.1	1.1	0.7	0.4	1.4	0.6	0.9	1.8	1.8	2.9	1.1	1.2	3.0	1.0	3.1	2.2	5.1	4.5	1.3	0.6	1.8	5.1																							
12-Feb	0.5	0.8	0.8	0.8	Z	1.0	1.6	1.3	1.5	1.4	1.7	1.1	1.2	3.5	2.0	5.9	6.8	4.1	5.7	2.7	10.3	8.3	5.1	1.4	3.0	10.3																							
13-Feb	0.9	1.7	0.4	0.4	0.4	Z	1.3	1.4	0.7	0.9	0.3	2.2	2.7	4.8	1.5	0.6	1.5	0.9	1.5	1.0	3.3	0.7	1.7	1.1	1.4	4.8																							
14-Feb	Z	1.5	1.2	2.4	1.2	1.4	1.7	2.1	1.7	1.7	2.0	2.3	1.9	2.3	1.5	1.9	2.5	2.5	2.3	3.1	4.0	2.2	4.7	2.8	2.2	4.7																							
15-Feb	1.7	Z	1.4	1.7	1.6	1.7	1.2	0.8	0.8	0.5	1.4	0.5	0.3	0.4	0.3	0.4	0.3	0.4	0.6	0.7	0.8	1.0	1.2	1.0	0.9	1.7																							
16-Feb	0.9	0.7	Z	0.7	1.6	2.0	2.0	1.8	2.0	1.6	1.5	1.8	1.2	0.9	0.8	0.8	1.0	1.3	1.8	1.8	1.0	2.5	2.5	1.8	1.5	2.5																							
17-Feb	3.4	2.0	1.7	Z	2.3	1.8	5.9	17.7	8.4	2.2	2.1	1.4	2.0	1.1	1.1	1.6	0.9	1.1	13.4	9.6	4.3	2.8	1.3	1.0	3.9	17.7																							
18-Feb	0.8	1.7	1.4	1.1	Z	2.3	8.7	12.7	3.6	4.3	2.4	2.3	2.8	3.3	2.2	1.9	2.2	2.4	2.3	1.3	0.8	0.5	0.5	0.7	2.7	12.7																							
19-Feb	0.6	1.0	0.9	2.6	1.1	Z	2.9	3.0	2.3	1.3	1.8	2.4	1.6	1.6	1.7	3.0	2.8	4.4	6.0	3.6	3.4	3.4	3.8	3.7	2.6	6.0																							
20-Feb	Z	4.5	2.7	2.9	2.8	2.4	3.5	4.9	4.9	2.9	2.7	2.1	1.8	1.6	1.5	1.8	1.5	DF	DF	DF	DF	3.8	4.6	4.0	3.0	4.9																							
21-Feb	2.1	Z	2.4	1.7	1.6	1.6	1.6	1.4	1.3	C	C	C	C	C	0.9	0.7	0.8	0.7	0.7	1.0	1.1	0.9	1.8	2.3	1.4	2.4																							
22-Feb	1.1	0.8	Z	0.9	1.0	0.9	0.9	2.0	4.5	2.0	3.8	2.1	2.5	1.6	2.6	0.5	1.1	3.2	1.8	1.2	2.1	0.7	0.5	0.6	1.7	4.5																							
23-Feb	0.8	0.7	0.9	Z	0.9	1.0	0.9	1.1	1.0	0.7	0.4	0.5	0.5	0.3	0.3	0.4	0.5	0.4	0.5	0.4	0.5	3.6	0.5	0.9	1.5	0.8	3.6																						
24-Feb	1.0	0.4	0.4	1.4	Z	4.4	2.2	1.7	1.8	0.5	0.4	1.7	1.6	2.5	3.8	1.3	1.3	1.0	0.9	1.5	2.2	2.8	2.5	2.5	1.7	4.4																							
25-Feb	1.9	1.7	1.8	1.5	1.2	Z	1.2	0.7	0.8	0.3	0.3	0.2	0.2	0.1	0.1	0.2	0.3	0.4	1.0	1.4	2.5	0.5	0.5	0.7	0.8	2.5																							
26-Feb	Z	0.5	0.6	0.8	1.1	2.1	2.6	3.6	3.1	3.0	2.7	2.5	2.2	2.4	2.2	2.4	2.8	2.8	3.4	2.6	2.5	3.0	3.9	3.5	2.4	3.9																							
27-Feb	3.5	Z	1.7	5.2	3.6	3.4	2.9	2.7	3.6	2.0	1.2	1.6	1.0	1.3	1.4	1.6	1.2	0.6	4.6	3.9	4.4	2.3	0.9	0.7	2.4	5.2																							
28-Feb	0.6	1.4	Z	1.5	2.1	2.2	2.8	3.1	3.1	2.1	1.7	1.1	1.3	1.1	1.3	1.5	1.9	2.0	1.5	1.4	1.3	1.4	1.1	0.8	1.7	3.1																							
29-Feb	0.7	0.7	1.3	Z	1.1	1.2	1.1	1.1	1.1	0.9	1.0	1.0	1.1	1.0	2.1	1.4	1.6	3.3	2.5	3.1	2.6	2.9	2.2	3.3	1.7	3.3																							
																								1.7	1.3	1.8	2.0	1.9	2.0	2.5	3.1	2.7	1.8	1.8	1.8	1.8	2.0	1.9	2.0	2.2	2.4	3.3	2.7	2.9	2.3	2.1	1.8	Diurnal Average	
																								6.5	4.5	7.3	7.4	8.0	6.3	8.7	17.7	8.4	4.3	3.8	3.2	3.2	4.8	7.1	5.9	6.8	7.1	13.4	10.1	10.3	8.3	5.1	4.0	Diurnal Maximum	

Z - zerospan C - Calibration DF - DAS Failure
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Leismer - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Dioxide (NO₂) - ppb
Leismer - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	658	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 658

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Leismer - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	44	24	18	21	32	74	40	33	23	20	7	19	90	114	45	54	658
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	44	24	18	21	32	74	40	33	23	20	7	19	90	114	45	54	658

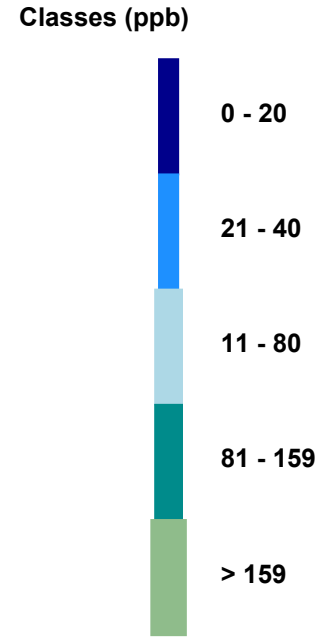
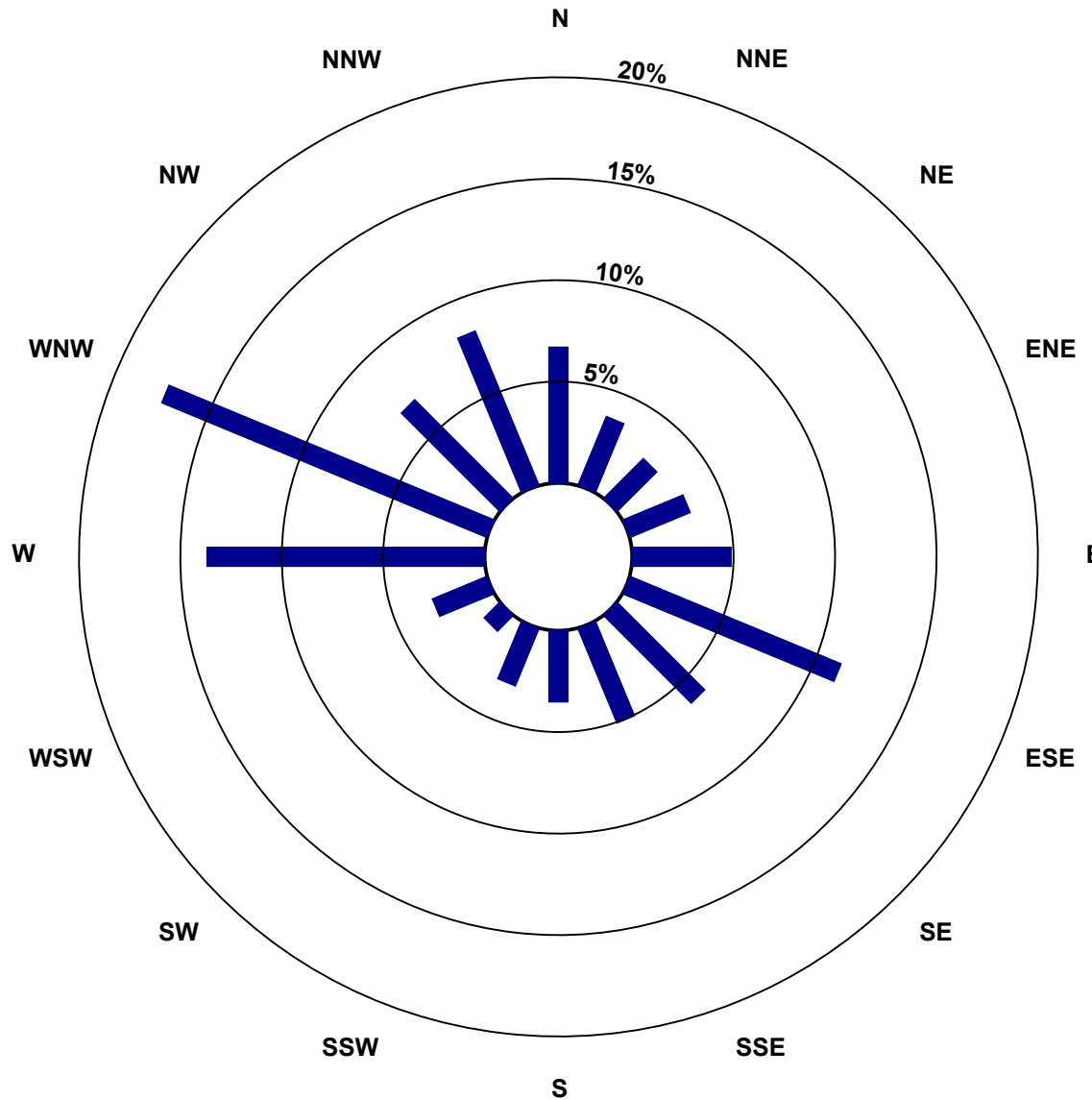
Total Number of Valid Hours: 658

Total Number of Hours: 696

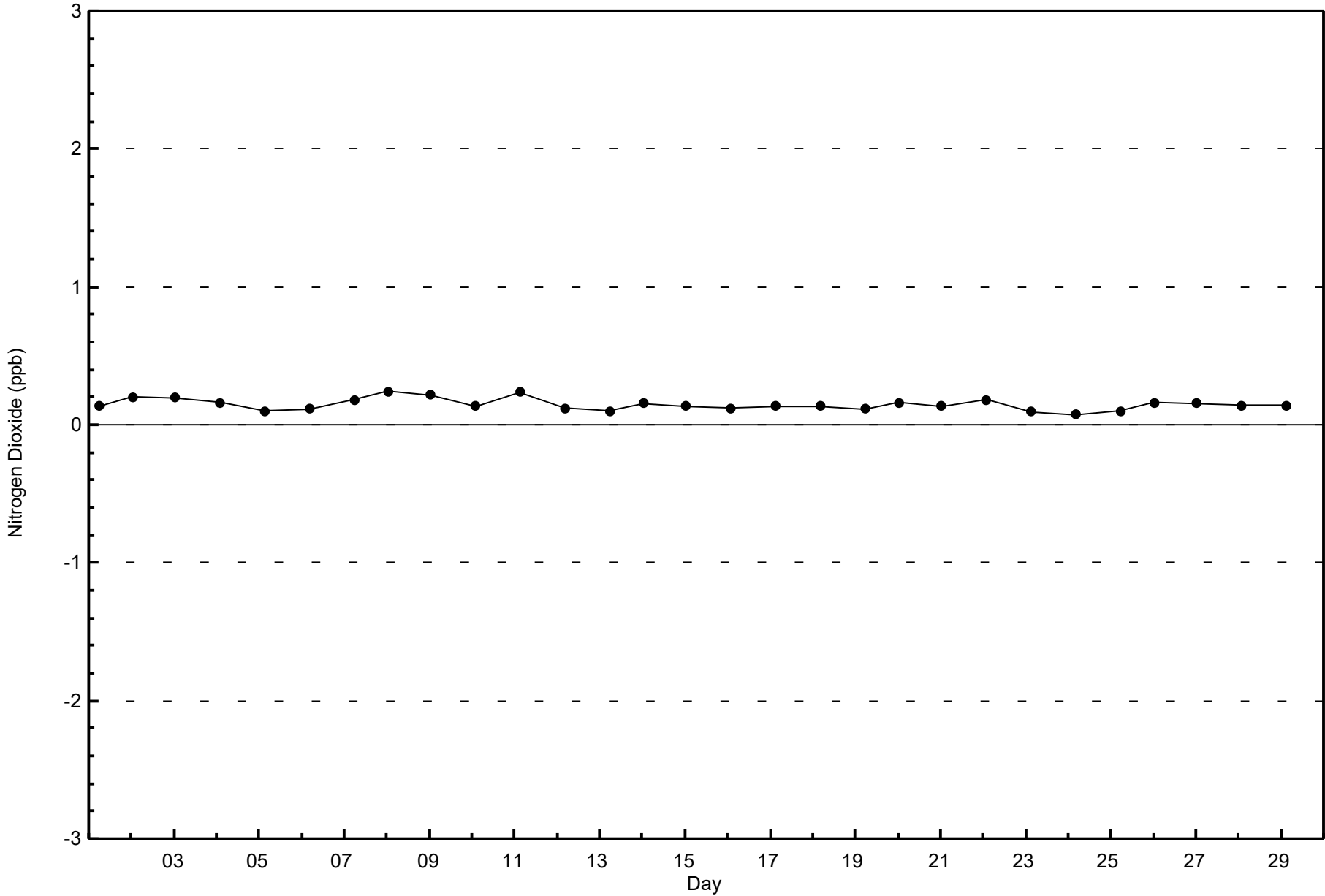


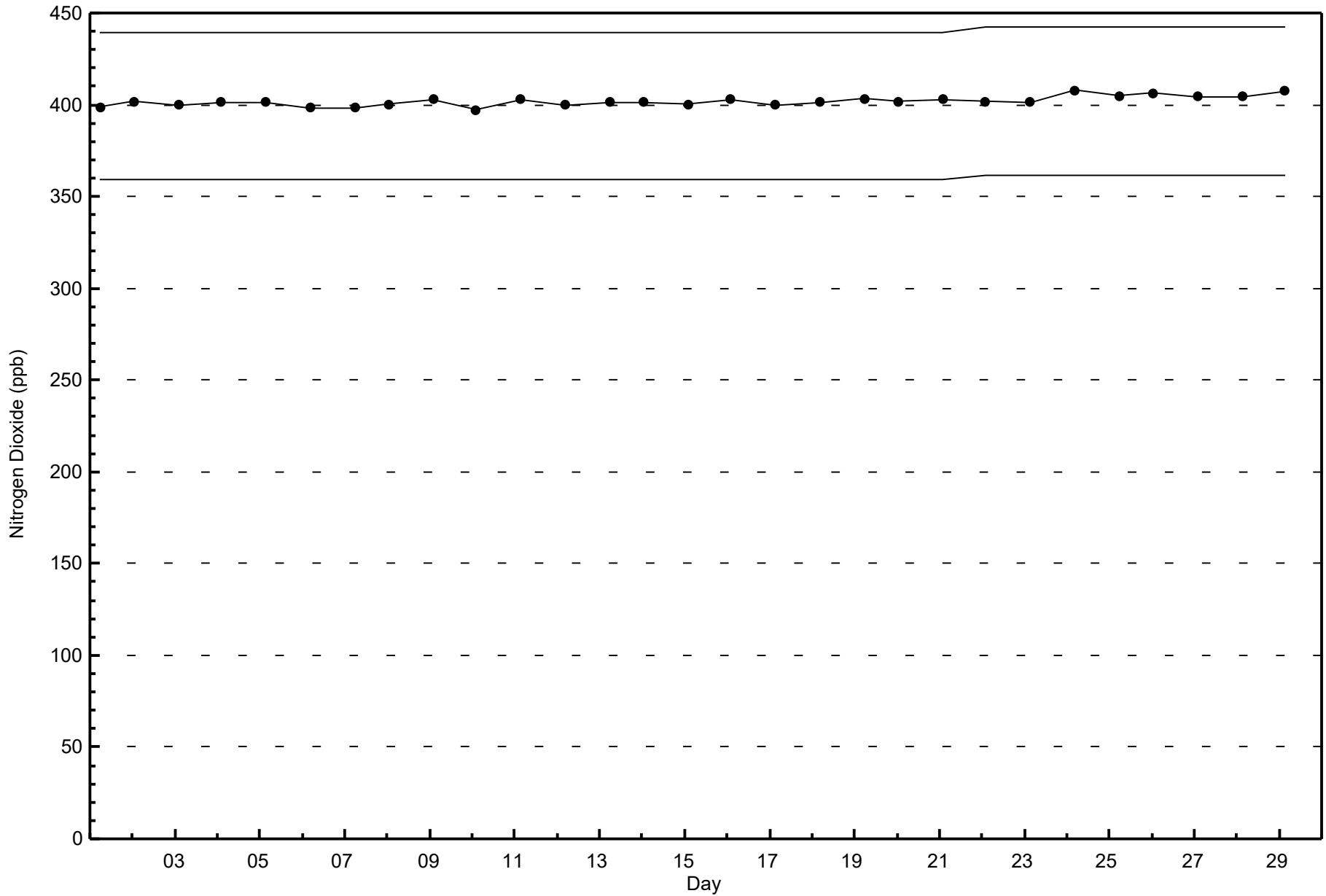
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Leismer



Total Number of Valid Hours: 658







Wood Buffalo Environmental Association
Summary of Hour Averages

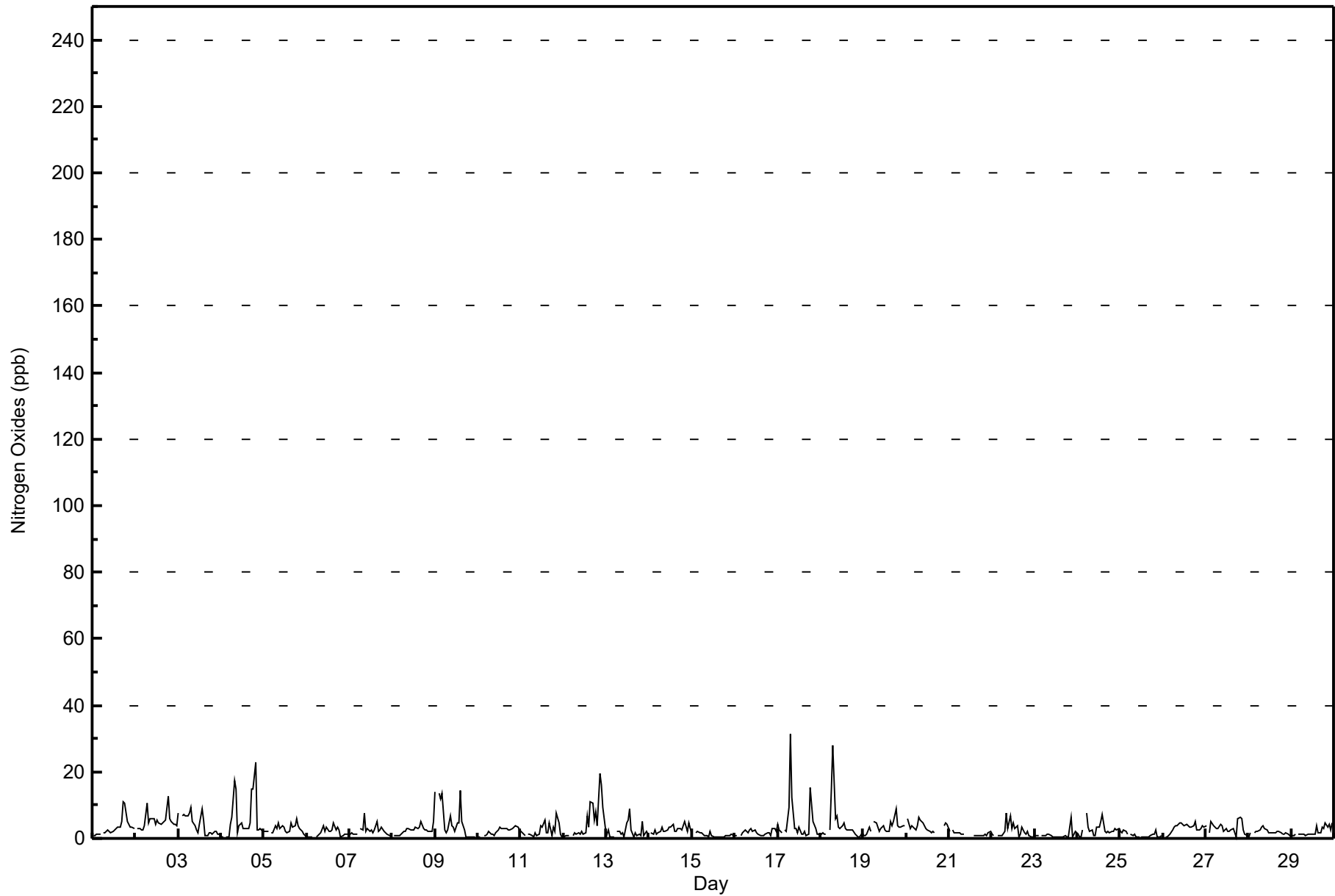
Nitrogen Oxides (NO_x) - ppb
Leismer - February 2024

Maximum Value: 31.2 ppb on Feb 17 08:00 Maximum Daily Average: 5.8 ppb on Feb 4																				Hours in Service: 696 Hours of Data: 658																													
Minimum Value: 0.2 ppb on Feb 25 12:00 Minimum Daily Average: 1.0 ppb on Feb 15 Maximum Diurnal Average: 5.0 ppb at hour 8 Minimum Diurnal Average: 1.4 ppb at hour 2 Monthly Average: 2.92 ppb Percentiles: P ₁ = 0.3 P ₁₀ = 0.6 Q ₁ = 1.1 Median = 2.2 Q ₃ = 3.5 P ₉₀ = 5.3 P ₉₉ = 15.1																				Hours of Missing Data: 38 Hours of Calibration: 34 Percent Operational Time: 99.4																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	0.8	1.0	1.1	1.1	1.3	Z	1.9	1.6	2.6	2.0	1.8	2.2	2.7	3.1	3.4	3.5	5.0	11.0	10.7	5.0	4.4	3.6	3.5	3.1	3.3	11.0																							
2-Feb	Z	2.8	2.9	2.6	2.6	3.8	10.5	4.9	5.8	6.1	5.7	4.4	5.4	4.8	4.1	4.5	5.0	5.7	12.6	6.1	5.0	4.4	4.1	3.9	5.1	12.6																							
3-Feb	7.4	Z	6.9	7.4	6.9	6.7	7.7	9.1	4.9	3.9	2.7	1.9	4.2	8.8	5.5	0.9	0.8	1.7	1.6	1.5	1.9	2.1	1.2	1.1	4.2	9.1																							
4-Feb	0.4	0.4	Z	0.4	0.4	4.4	6.4	17.3	14.8	1.8	3.9	4.6	3.1	2.8	3.0	2.8	4.5	14.9	14.9	23.0	2.7	2.4	2.9	2.1	5.8	23.0																							
5-Feb	2.1	2.2	2.1	Z	1.8	1.7	3.6	3.0	4.7	2.9	3.9	3.3	2.3	1.7	2.2	4.5	3.5	3.6	6.0	3.9	3.1	2.1	1.2	0.7	2.9	6.0																							
6-Feb	0.5	0.4	0.3	0.3	Z	0.5	1.0	1.1	1.5	3.7	2.0	3.3	2.1	2.2	2.4	4.5	2.7	3.5	2.5	0.6	0.8	1.3	1.2	1.5	1.7	4.5																							
7-Feb	1.2	1.5	1.4	1.4	1.3	Z	2.9	2.5	7.5	2.3	3.0	2.3	2.4	1.9	2.6	5.3	2.0	2.6	3.4	2.3	1.6	1.2	1.0	0.9	2.4	7.5																							
8-Feb	Z	0.8	0.7	0.6	0.7	1.1	2.0	2.3	3.1	2.9	2.7	2.5	2.4	3.4	3.0	3.2	5.0	2.9	2.4	2.3	2.2	2.1	1.9	4.9	2.4	5.0																							
9-Feb	13.8	Z	13.4	11.8	13.5	2.5	1.7	2.7	6.6	3.8	3.5	2.1	4.8	4.5	14.3	5.0	2.6	0.4	0.3	0.3	0.3	0.3	0.2	0.2	4.7	14.3																							
10-Feb	0.3	0.5	Z	0.8	0.7	1.3	2.0	1.3	1.1	0.8	1.7	2.7	3.2	2.9	2.9	2.9	2.9	2.7	2.7	2.9	3.5	3.9	3.5	2.6	2.2	3.9																							
11-Feb	2.1	1.8	0.9	Z	1.1	1.2	0.7	0.4	1.5	0.8	1.2	3.6	3.3	5.6	1.7	1.8	4.6	1.0	3.4	2.3	7.8	4.6	1.3	0.6	2.3	7.8																							
12-Feb	0.5	0.8	0.8	0.8	Z	1.0	1.7	1.3	1.6	1.5	2.0	1.4	1.8	6.8	3.3	11.0	10.7	5.7	8.1	3.7	19.3	16.2	9.2	2.6	4.9	19.3																							
13-Feb	1.4	2.7	0.4	0.4	0.4	Z	2.0	2.1	1.2	1.6	0.4	4.6	5.4	8.8	2.6	0.6	1.9	0.9	1.5	1.0	5.2	0.8	2.2	1.1	2.1	8.8																							
14-Feb	Z	1.6	1.2	2.4	1.2	1.6	2.0	3.4	1.9	2.0	2.5	3.2	3.3	4.1	2.0	2.3	2.8	3.0	2.6	3.9	5.3	2.2	4.7	2.9	2.7	5.3																							
15-Feb	1.8	Z	1.7	2.1	1.6	1.7	1.2	0.8	0.9	0.6	2.2	0.7	0.3	0.5	0.3	0.5	0.3	0.4	0.6	0.7	0.8	1.0	1.2	1.0	1.0	2.2																							
16-Feb	0.9	0.7	Z	0.7	1.6	2.0	2.6	1.9	2.5	2.9	2.1	2.5	1.6	1.1	1.0	0.9	1.1	1.3	1.8	1.8	1.0	2.9	2.9	2.0	1.7	2.9																							
17-Feb	4.4	2.4	1.8	Z	2.5	2.0	9.2	31.2	12.5	2.9	3.0	1.8	3.3	1.4	1.3	1.9	1.0	1.1	15.3	10.3	5.1	2.9	1.3	1.1	5.2	31.2																							
18-Feb	0.8	1.7	1.4	1.2	Z	2.5	14.5	28.1	6.1	6.9	3.5	3.2	3.9	4.6	2.8	2.3	2.5	2.6	2.6	1.4	1.0	0.6	0.5	1.6	4.2	28.1																							
19-Feb	0.7	1.0	1.2	3.4	2.2	Z	5.0	4.8	3.2	1.9	2.8	3.8	2.5	2.3	2.3	5.0	3.6	5.1	9.1	3.8	3.5	3.5	3.8	3.8	3.4	9.1																							
20-Feb	Z	5.8	3.1	3.9	3.4	2.6	3.8	6.3	5.6	4.7	3.8	2.8	2.5	2.0	1.7	2.0	1.6	DF	DF	DF	DF	3.8	4.6	4.1	3.6	6.3																							
21-Feb	2.1	Z	2.5	1.7	1.6	1.6	1.6	1.4	1.4	C	C	C	C	C	0.9	0.7	0.8	0.7	0.7	1.0	1.1	0.9	1.8	2.3	1.4	2.5																							
22-Feb	1.1	0.8	Z	0.9	1.0	0.9	0.9	2.2	7.7	3.1	6.9	3.0	4.6	2.8	3.9	0.6	1.4	3.5	1.8	1.2	2.1	0.7	0.5	0.6	2.3	7.7																							
23-Feb	0.8	0.7	0.9	Z	0.9	1.0	0.9	1.1	1.1	0.8	0.5	0.6	0.6	0.3	0.3	0.4	0.4	0.6	0.4	0.5	6.5	0.5	1.2	2.2	1.0	6.5																							
24-Feb	1.3	0.4	0.5	2.4	Z	7.7	3.3	2.3	2.7	0.7	0.7	3.6	3.5	5.2	7.3	2.0	1.8	2.1	1.7	2.2	2.2	3.1	2.5	3.1	2.7	7.7																							
25-Feb	1.9	1.8	2.5	1.9	1.3	Z	1.4	0.7	1.2	0.3	0.5	0.2	0.4	0.2	0.2	0.3	0.5	0.9	1.3	1.4	2.5	0.5	0.5	0.9	1.0	2.5																							
26-Feb	Z	0.5	0.6	0.8	1.1	2.4	3.3	3.7	3.8	4.5	4.8	4.4	4.0	4.1	3.7	3.4	3.4	3.6	4.9	2.6	2.5	3.0	3.9	3.5	3.1	4.9																							
27-Feb	3.6	Z	1.7	5.2	3.7	3.6	2.9	2.9	4.4	3.8	2.1	3.1	1.9	2.3	2.7	3.1	1.9	0.6	5.8	6.6	5.9	2.4	1.1	0.7	3.1	6.6																							
28-Feb	0.6	1.8	Z	1.5	2.1	2.2	2.8	3.3	3.8	2.9	2.4	1.5	1.8	1.5	1.8	1.9	2.1	2.1	1.5	1.4	1.3	1.7	1.1	0.8	1.9	3.8																							
29-Feb	0.7	0.7	1.4	Z	1.1	1.3	1.3	1.2	1.1	1.2	1.2	1.1	1.3	1.1	3.6	1.6	1.7	3.6	2.8	4.5	3.3	4.2	2.4	4.7	2.0	4.7																							
																								2.1	1.4	2.1	2.3	2.2	2.4	3.5	5.0	4.0	2.6	2.6	2.6	2.8	3.2	3.0	2.7	2.7	3.1	4.4	3.5	3.6	2.7	2.3	2.1	Diurnal Average	
																								13.8	5.8	13.4	11.8	13.5	7.7	14.5	31.2	14.8	6.9	6.9	4.6	5.4	8.8	14.3	11.0	10.7	14.9	15.3	23.0	19.3	16.2	9.2	4.9	Diurnal Maximum	
Z - zerspan C - Calibration DF - DAS Failure																																																	



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Leismer - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Leismer - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	655	99.54	99.54
21 - 40	3	0.46	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 658

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Leismer - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	44	24	18	21	32	73	39	33	23	20	7	19	90	114	44	54	655
21 - 40	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	3
41 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	44	24	18	21	32	74	40	33	23	20	7	19	90	114	45	54	658

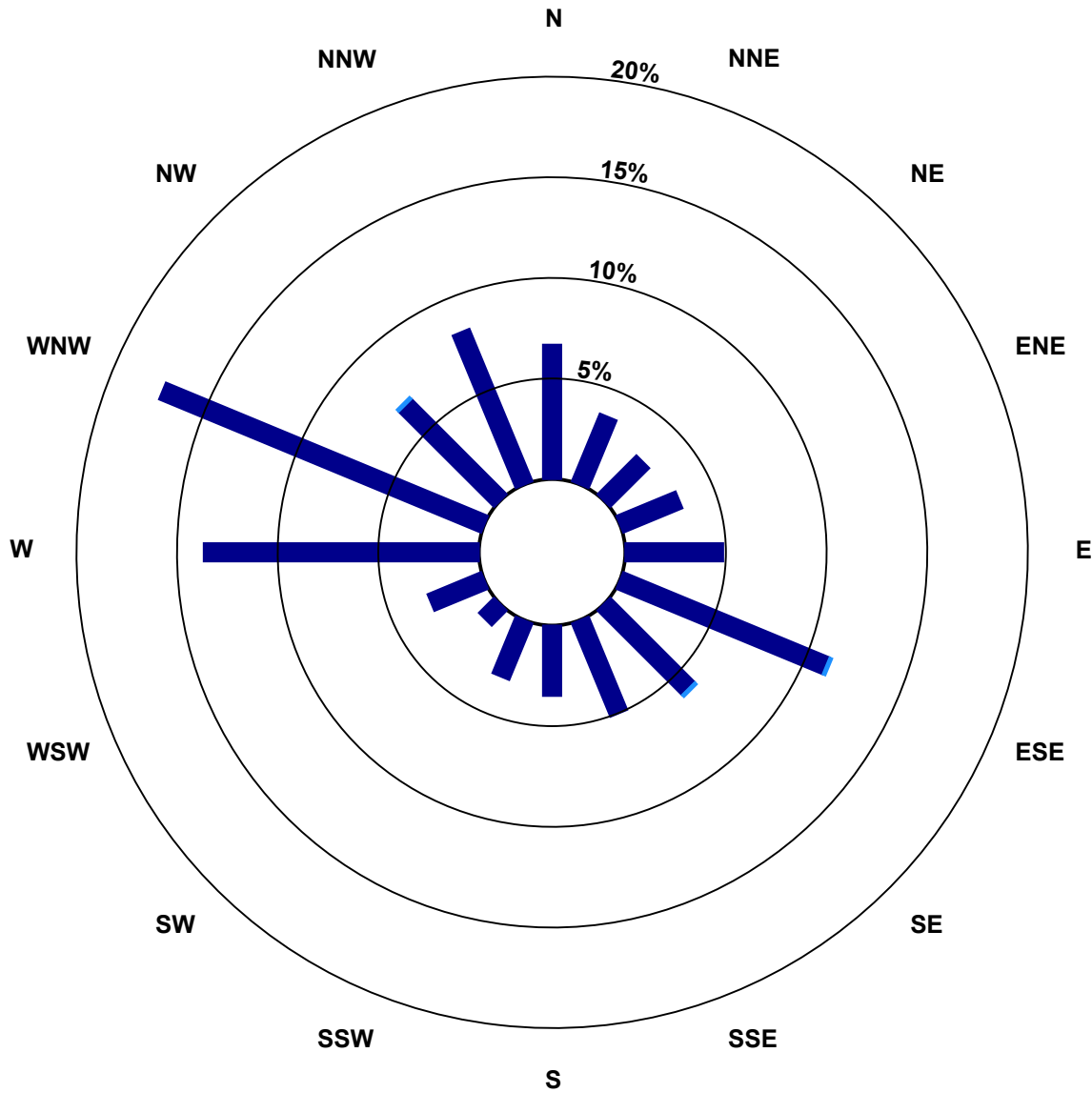
Total Number of Valid Hours: 658

Total Number of Hours: 696

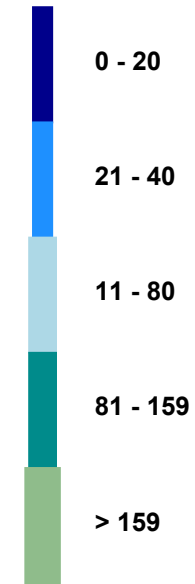


Wood Buffalo Environmental Association
Wind Rose Feb 2024

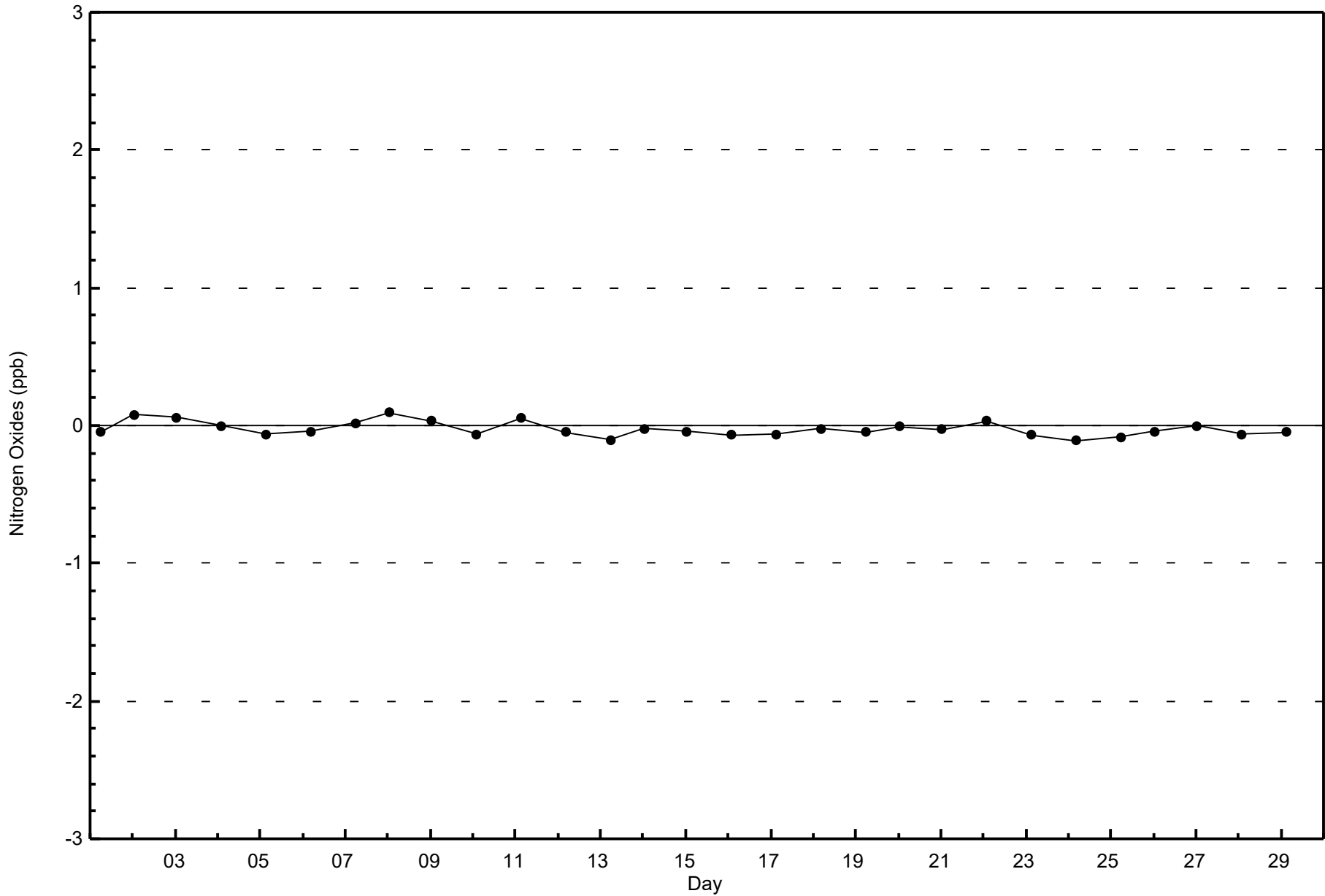
Nitrogen Oxides (NO_x) - ppb
Leismer

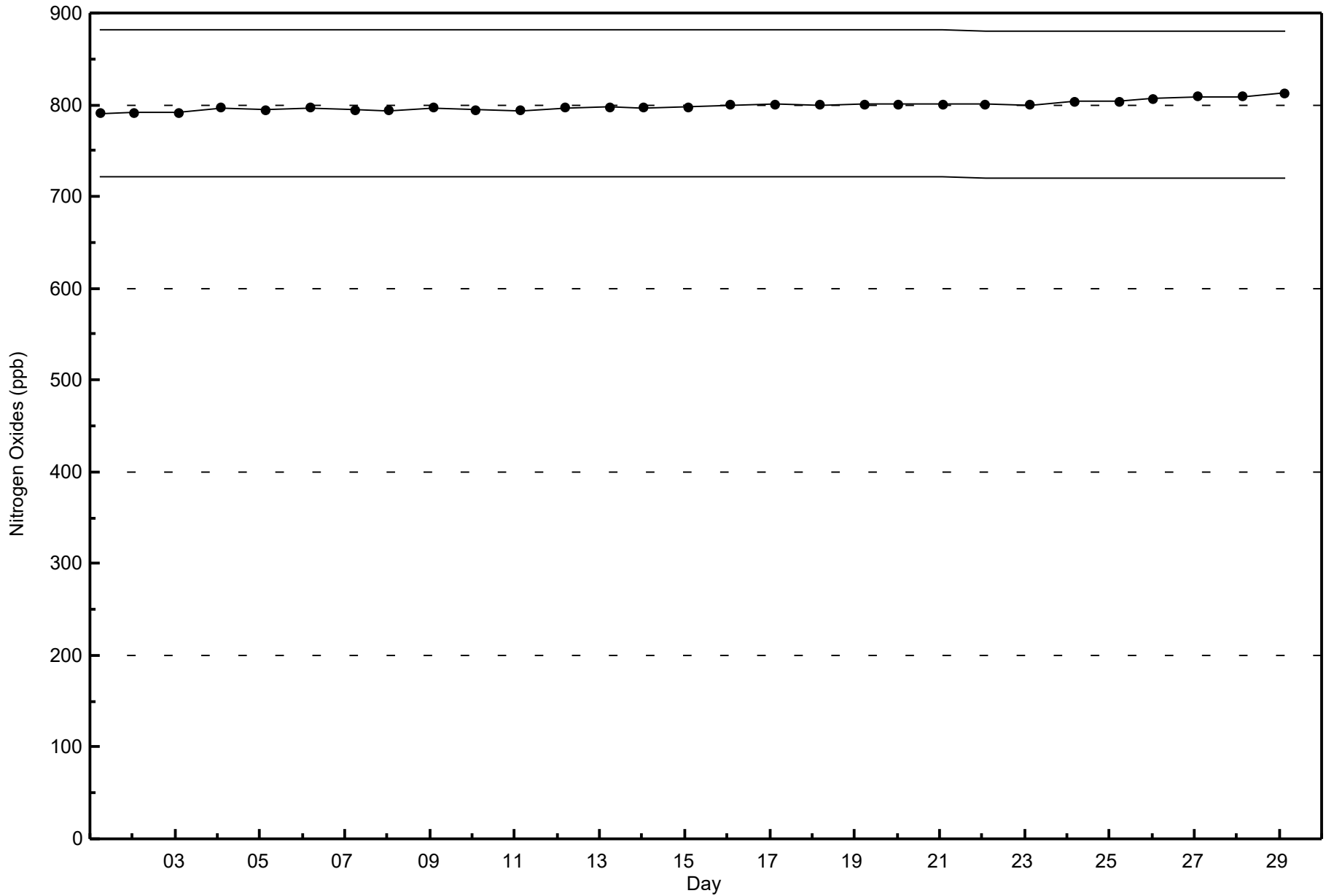


Classes (ppb)



Total Number of Valid Hours: 658



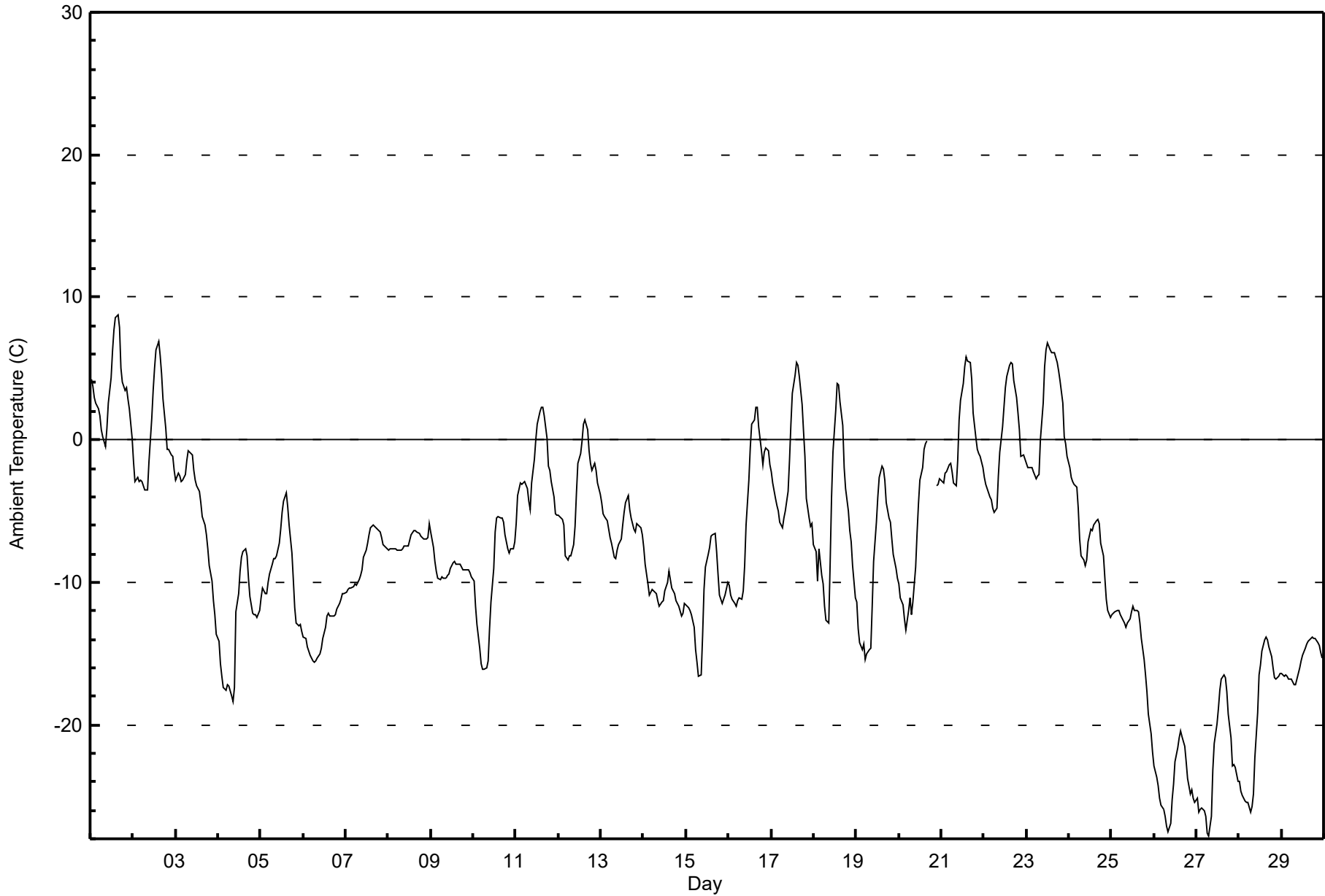




Wood Buffalo Environmental Association
Summary of Hour Averages

Ambient Temperature (AT) - C
Leismer - February 2024

Maximum Value: 8.8 C on Feb 1 16:00		Maximum Daily Average: 3.6 C on Feb 1		Hours in Service: 696																							
Minimum Value: -27.8 C on Feb 27 08:00		Minimum Daily Average: -24.1 C on Feb 26		Hours of Data: 692																							
Maximum Diurnal Average: -4.0 C at hour 15		Minimum Diurnal Average: -11.1 C at hour 8		Hours of Missing Data: 4																							
Monthly Average: -8.05 C		Percentiles: P ₁ = -26.4 P ₁₀ = -17.0 Q ₁ = -12.3 Median = -7.7 Q ₃ = -2.8 P ₉₀ = 1.7 P ₉₉ = 6.3		Hours of Calibration: 0																							
				Percent Operational Time: 99.4																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	4.2	3.8	3.0	2.6	2.2	1.6	0.7	0.2	-0.5	0.8	2.6	4.3	6.2	7.7	8.6	8.8	7.9	5.1	4.1	3.5	3.6	2.8	2.2	0.1	3.6	8.8	
2-Feb	-1.5	-3.0	-2.6	-2.9	-2.8	-2.9	-3.5	-3.6	-3.5	-1.6	1.5	3.5	5.0	6.4	6.9	5.9	4.7	2.8	0.8	-0.6	-0.7	-1.0	-1.2	-2.1	0.2	6.9	
3-Feb	-2.8	-2.4	-2.6	-3.0	-2.8	-2.4	-1.5	-0.8	-0.9	-1.0	-2.2	-2.8	-3.2	-3.7	-4.4	-5.4	-6.0	-6.7	-7.6	-8.8	-9.9	-11.3	-12.2	-13.6	-4.9	-0.8	
4-Feb	-14.2	-15.7	-16.6	-17.4	-17.6	-17.2	-17.3	-18.0	-18.4	-17.4	-12.0	-10.8	-9.3	-8.2	-7.8	-7.6	-8.1	-9.7	-11.0	-12.2	-12.3	-12.3	-12.5	-11.9	-13.1	-7.6	
5-Feb	-11.1	-10.4	-10.8	-10.8	-10.0	-9.5	-8.7	-8.4	-8.3	-8.1	-7.2	-6.3	-5.1	-4.3	-3.8	-4.7	-6.0	-7.9	-9.8	-11.7	-12.8	-13.1	-12.9	-13.4	-9.0	-3.8	
6-Feb	-13.9	-13.9	-14.5	-14.9	-15.2	-15.6	-15.6	-15.5	-15.4	-15.0	-14.6	-14.0	-13.2	-12.4	-12.2	-12.4	-12.4	-12.4	-12.3	-11.9	-11.5	-11.1	-10.8	-10.8	-13.4	-10.8	
7-Feb	-10.7	-10.5	-10.4	-10.4	-10.3	-10.1	-10.2	-9.9	-9.5	-9.1	-8.2	-7.8	-7.2	-6.7	-6.2	-6.0	-6.1	-6.2	-6.3	-6.5	-6.8	-7.4	-7.6	-7.7	-8.2	-6.0	
8-Feb	-7.7	-7.7	-7.7	-7.7	-7.7	-7.8	-7.8	-7.7	-7.6	-7.5	-7.4	-7.4	-7.0	-6.6	-6.3	-6.3	-6.4	-6.6	-6.8	-6.9	-7.0	-7.0	-6.8	-5.9	-7.1	-5.9	
9-Feb	-6.5	-7.6	-8.5	-9.2	-9.7	-9.8	-9.6	-9.7	-9.7	-9.5	-9.4	-9.0	-8.6	-8.5	-8.7	-8.8	-8.7	-9.0	-9.1	-9.1	-9.1	-9.1	-9.4	-9.6	-9.0	-6.5	
10-Feb	-9.9	-11.6	-13.0	-14.7	-15.7	-16.1	-16.1	-16.0	-15.5	-13.3	-11.4	-9.0	-6.5	-5.5	-5.4	-5.5	-5.5	-5.8	-6.6	-7.7	-7.9	-7.7	-7.6	-7.2	-10.0	-5.4	
11-Feb	-5.8	-3.9	-3.1	-3.1	-3.0	-2.9	-3.4	-4.3	-4.9	-3.1	-1.4	0.0	1.1	1.9	2.3	2.3	1.7	0.1	-1.9	-2.1	-2.9	-4.1	-5.2	-5.3	-2.1	2.3	
12-Feb	-5.3	-5.5	-5.6	-5.9	-8.1	-8.4	-8.2	-8.1	-7.4	-6.1	-3.7	-1.7	-0.9	0.0	1.1	1.3	0.7	-0.8	-1.6	-2.2	-1.6	-2.1	-3.0	-3.9	-3.6	1.3	
13-Feb	-4.4	-5.2	-5.3	-5.7	-6.3	-6.8	-7.3	-8.2	-8.3	-7.7	-7.4	-7.0	-6.0	-5.1	-4.4	-3.9	-4.9	-5.5	-6.2	-6.4	-5.9	-6.0	-6.1	-6.7	-6.1	-3.9	
14-Feb	-7.5	-8.7	-10.1	-10.9	-10.7	-10.5	-10.7	-10.8	-11.3	-11.7	-11.4	-11.3	-10.6	-10.0	-9.3	-9.9	-10.4	-10.8	-11.3	-11.5	-11.7	-12.3	-12.1	-11.4	-10.7	-7.5	
15-Feb	-11.6	-11.8	-12.0	-12.3	-13.2	-14.7	-15.6	-16.6	-16.5	-13.7	-10.5	-8.9	-8.1	-7.5	-6.8	-6.6	-6.6	-7.8	-9.4	-10.9	-11.5	-11.1	-10.9	-10.0	-11.0	-6.6	
16-Feb	-10.2	-10.9	-11.1	-11.5	-11.6	-11.2	-11.1	-11.2	-10.6	-8.8	-6.0	-2.9	-0.6	1.1	1.4	2.3	2.3	0.9	-0.8	-1.7	-0.9	-0.6	-0.8	-1.7	-4.8	2.3	
17-Feb	-2.2	-3.0	-4.2	-4.6	-5.0	-5.8	-6.2	-5.5	-5.0	-3.7	-1.4	1.1	3.2	4.5	5.5	5.2	4.5	2.5	0.6	-1.1	-4.1	-5.5	-6.1	-5.9	-1.8	5.5	
18-Feb	-7.3	-7.8	-10.0	-7.6	-9.6	-10.1	-11.7	-12.7	-12.8	-8.7	-4.0	-0.9	2.1	3.9	3.9	2.7	1.0	-1.9	-3.4	-5.0	-6.4	-7.2	-8.9	-11.1	-5.6	3.9	
19-Feb	-11.4	-13.3	-14.3	-14.7	-14.3	-15.4	-15.0	-14.7	-14.6	-11.7	-8.5	-5.8	-4.0	-2.6	-1.8	-2.0	-2.8	-4.4	-5.5	-5.8	-6.9	-8.0	-9.1	-9.7	-9.0	-1.8	
20-Feb	-10.1	-11.1	-11.6	-12.6	-13.3	-12.0	-11.1	-12.2	-11.3	-8.9	-6.6	-4.5	-2.8	-2.0	-0.7	-0.3	-0.1	DF	DF	DF	DF	-3.2	-3.2	-2.7	-7.0	-0.1	
21-Feb	-3.0	-3.0	-2.3	-2.3	-1.8	-1.6	-2.2	-3.1	-3.3	-1.5	1.3	2.8	4.0	5.2	5.8	5.5	5.4	4.3	1.9	0.1	-0.7	-1.0	-1.1	-1.9	0.3	5.8	
22-Feb	-2.6	-3.2	-3.5	-4.0	-4.2	-4.8	-5.1	-4.8	-2.5	-0.9	0.9	2.3	3.6	4.5	5.2	5.4	5.3	4.1	3.0	1.9	0.7	-1.1	-1.1	-1.4	-0.1	5.4	
23-Feb	-1.6	-1.9	-1.9	-1.9	-2.2	-2.7	-2.6	-2.5	0.0	2.5	5.1	6.3	6.8	6.3	6.2	6.1	6.1	5.4	4.9	4.1	2.5	0.2	-0.3	-1.2	1.8	6.8	
24-Feb	-2.0	-2.6	-2.9	-3.1	-3.4	-4.8	-6.9	-8.1	-8.4	-8.8	-8.5	-7.2	-6.2	-6.3	-6.0	-5.7	-5.6	-5.9	-7.2	-8.1	-9.8	-11.2	-11.9	-12.4	-6.8	-2.0	
25-Feb	-12.2	-12.2	-12.1	-12.0	-12.0	-12.3	-12.4	-12.9	-13.1	-12.8	-12.5	-12.1	-11.7	-12.0	-12.0	-12.0	-12.8	-13.9	-15.4	-16.5	-17.7	-19.2	-20.6	-21.9	-13.9	-11.7	
26-Feb	-22.9	-23.6	-24.3	-25.2	-25.6	-25.9	-26.4	-27.1	-27.6	-26.9	-25.2	-24.2	-22.6	-21.7	-20.9	-20.5	-20.8	-21.5	-22.6	-23.7	-24.8	-24.6	-25.1	-25.5	-24.1	-20.5	
27-Feb	-25.2	-26.1	-25.9	-25.9	-26.0	-26.5	-27.6	-27.8	-26.4	-23.2	-21.3	-19.9	-18.8	-17.6	-16.8	-16.5	-16.7	-17.6	-19.3	-20.9	-22.9	-22.7	-23.0	-23.9	-22.4	-16.5	
28-Feb	-23.9	-24.7	-25.0	-25.3	-25.4	-25.4	-26.1	-25.7	-24.9	-22.3	-19.1	-16.5	-15.8	-14.8	-14.0	-13.9	-14.1	-14.5	-15.2	-16.0	-16.7	-16.8	-16.6	-16.4	-19.5	-13.9	
29-Feb	-16.4	-16.6	-16.5	-16.6	-16.8	-16.8	-17.0	-17.2	-17.2	-16.4	-16.0	-15.5	-15.1	-14.6	-14.3	-14.1	-13.9	-13.9	-13.9	-13.9	-14.2	-14.5	-15.0	-15.3	-15.5	-13.9	
		-9.0	-9.4	-9.8	-10.1	-10.4	-10.6	-10.9	-11.1	-10.9	-9.5	-7.7	-6.4	-5.2	-4.4	-4.0	-4.0	-4.4	-5.6	-6.7	-7.6	-8.2	-8.6	-8.9	-9.3	Diurnal Average	
		4.2	3.8	3.0	2.6	2.2	1.6	0.7	0.2	0.0	2.5	5.1	6.3	6.8	7.7	8.6	8.8	7.9	5.4	4.9	4.1	3.6	2.8	2.2	0.1	Diurnal Maximum	
DF - DAS Failure																											





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Ambient Temperature (AT) - C
Leismer - February 2024

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	52	7.51	7.51
-20 - 0	547	79.05	86.56
0 - 10	93	13.44	100.00
10 - 20	0	0.00	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 692

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

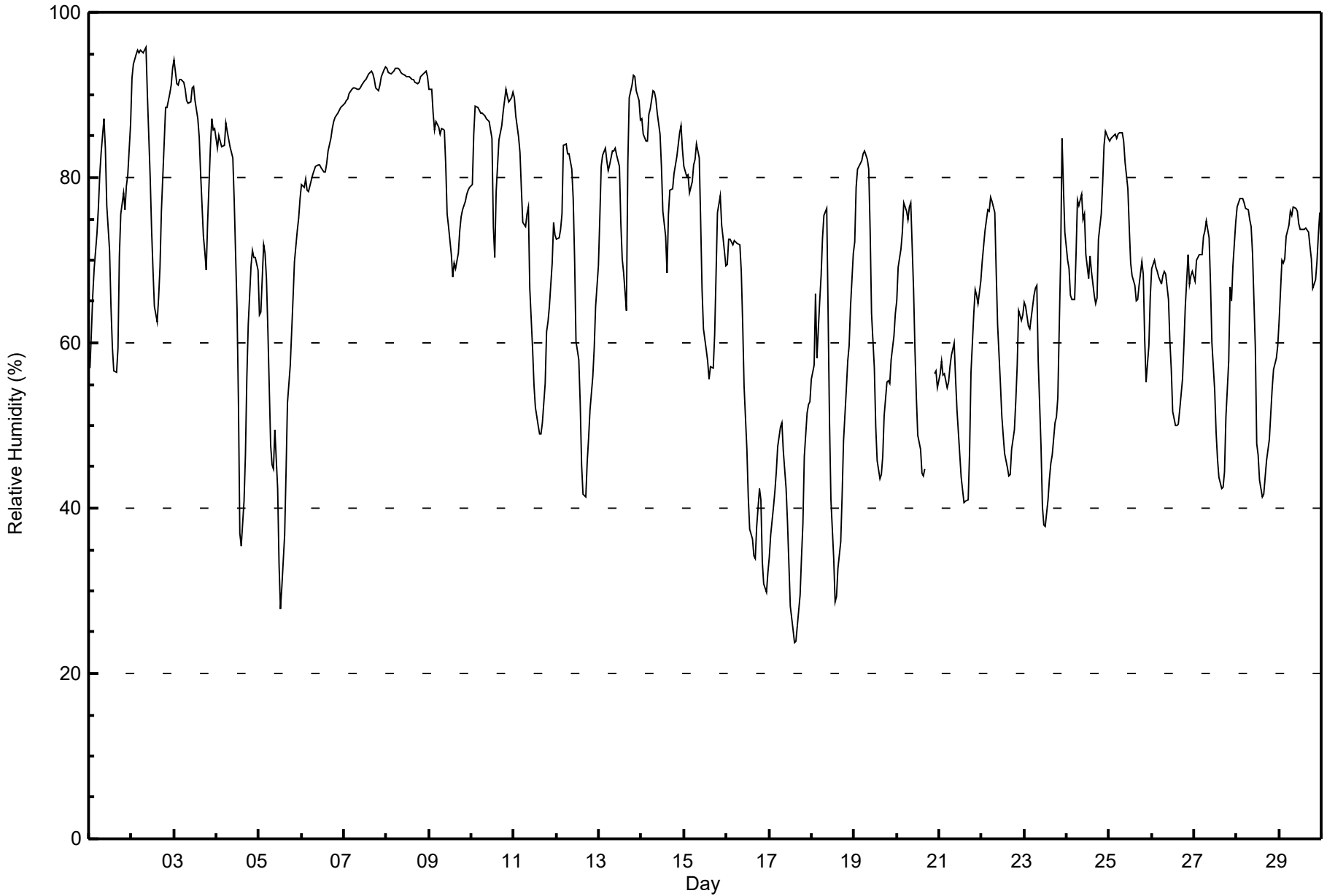
Relative Humidity (RH) - %
Leismer - February 2024

Maximum Value: 95.7 % on Feb 2 09:00 Maximum Daily Average: 92.4 % on Feb 8																						Hours in Service: 696 Hours of Data: 692				
Minimum Value: 23.7 % on Feb 17 15:00 Minimum Daily Average: 39.1 % on Feb 17 Maximum Diurnal Average: 78.1 % at hour 8 Minimum Diurnal Average: 56.1 % at hour 15 Monthly Average: 69.57 % Percentiles: P ₁ = 29.3 P ₁₀ = 44.5 Q ₁ = 57.6 Median = 72.0 Q ₃ = 83.3 P ₉₀ = 90.5 P ₉₉ = 94.2																						Hours of Missing Data: 4 Hours of Calibration: 0 Percent Operational Time: 99.4				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	57.0	61.2	65.8	69.1	73.2	76.3	80.3	83.1	87.1	83.5	76.7	71.1	64.4	59.4	56.7	56.5	59.3	70.6	75.6	78.2	76.2	79.1	80.4	86.4	72.0	87.1
2-Feb	92.1	93.7	94.9	95.4	95.2	95.5	95.2	95.4	95.7	90.0	80.0	73.7	68.9	64.3	62.6	65.4	69.1	76.0	84.3	88.4	88.5	90.1	91.1	93.3	84.9	95.7
3-Feb	94.2	91.4	91.3	91.9	91.9	91.6	90.7	89.4	89.0	89.2	90.9	91.0	89.4	87.1	84.9	80.5	72.9	71.0	68.8	74.5	83.7	87.2	85.8	85.9	86.0	94.2
4-Feb	83.6	85.1	84.4	83.7	83.9	86.5	85.5	83.7	83.1	82.4	77.1	64.1	52.8	36.9	35.5	40.8	46.5	55.8	62.3	69.4	71.2	70.4	70.4	68.8	69.3	86.5
5-Feb	63.5	63.7	71.9	70.8	67.9	61.8	47.7	45.3	44.7	49.5	42.4	33.3	27.8	30.6	36.9	44.4	52.7	57.3	61.4	65.5	69.8	73.6	75.2	77.5	55.6	77.5
6-Feb	79.2	78.9	79.8	78.4	78.3	79.6	80.3	80.8	81.3	81.6	81.5	81.3	80.6	80.7	81.8	83.2	84.8	85.9	86.7	87.3	87.7	88.1	88.6	88.7	82.7	88.7
7-Feb	88.9	89.4	89.5	90.3	90.7	90.9	90.9	90.6	90.7	90.8	91.2	91.6	91.9	92.2	92.5	92.9	92.6	91.8	90.9	90.5	91.2	92.2	93.1	93.3	91.3	93.3
8-Feb	93.2	92.7	92.6	92.7	92.8	93.2	93.3	93.1	92.8	92.5	92.3	92.2	92.3	92.2	91.9	91.8	91.6	91.3	91.5	92.1	92.4	92.6	92.8	92.2	92.4	93.3
9-Feb	90.7	90.6	87.8	85.7	86.8	86.2	85.3	86.0	85.7	81.5	75.7	74.1	70.6	68.1	69.6	69.0	70.8	73.6	75.3	76.1	77.2	78.0	78.5	78.8	79.2	90.7
10-Feb	79.2	85.3	88.6	88.5	88.1	87.8	87.8	87.5	87.2	87.0	86.8	84.7	74.1	70.4	78.2	84.5	85.5	86.2	88.0	90.6	89.8	89.1	89.7	90.4	85.6	90.6
11-Feb	89.7	87.4	84.9	83.1	78.6	74.6	74.1	75.6	76.5	66.6	59.3	54.9	52.2	50.0	49.0	49.0	50.3	55.1	61.4	62.5	64.4	69.7	74.6	73.1	67.4	89.7
12-Feb	72.5	72.7	73.7	75.6	84.0	84.0	82.9	82.9	81.0	77.5	70.2	60.2	58.0	52.7	45.2	41.6	41.4	45.5	48.5	51.9	55.9	59.3	64.3	69.4	64.6	84.0
13-Feb	75.0	81.4	82.8	83.5	82.0	80.8	81.5	83.3	83.3	83.5	82.7	81.3	74.5	70.2	68.5	63.9	81.7	89.7	91.2	92.4	92.2	90.5	89.4	87.0	82.2	92.4
14-Feb	87.1	85.2	84.4	84.4	87.7	88.3	90.5	90.3	89.5	87.8	85.3	81.3	75.9	72.9	68.4	75.6	78.4	78.6	80.5	81.6	82.5	85.4	86.3	83.3	83.0	90.5
15-Feb	81.4	80.2	80.3	78.1	79.5	81.6	82.2	84.1	82.5	74.8	66.4	61.7	59.1	57.8	55.7	57.2	57.0	61.0	68.2	75.8	77.8	74.3	72.7	69.3	71.6	84.1
16-Feb	69.5	72.5	72.5	71.9	72.4	72.2	72.0	71.8	68.7	62.4	54.8	47.0	41.3	37.5	36.2	34.2	33.8	37.8	42.4	41.0	33.6	30.9	29.9	32.2	51.6	72.5
17-Feb	34.0	36.8	40.1	42.1	44.4	47.5	49.9	50.3	47.0	42.3	38.3	33.2	28.2	25.2	23.7	23.9	25.7	29.4	34.0	38.1	46.2	51.5	52.6	52.8	39.1	52.8
18-Feb	55.6	57.3	65.9	58.2	65.0	68.2	72.6	75.5	76.2	63.6	50.4	41.0	33.9	28.7	29.3	32.7	36.0	41.6	48.2	54.4	57.8	59.7	64.4	70.8	54.5	76.2
19-Feb	72.2	78.8	81.0	81.7	82.0	82.9	83.2	82.2	80.9	73.6	63.5	56.9	49.8	45.7	43.5	44.1	46.4	51.2	55.3	55.4	55.1	58.0	60.9	63.6	64.5	83.2
20-Feb	65.2	69.1	71.3	73.4	76.9	75.9	75.0	76.4	76.9	66.4	59.2	53.5	48.9	47.1	44.2	43.9	44.8	DF	DF	DF	DF	56.3	56.5	54.7	61.8	76.9
21-Feb	56.4	57.7	56.1	56.3	54.7	55.3	57.1	58.5	60.0	55.6	51.9	49.1	43.8	42.2	40.6	40.9	41.1	46.9	56.5	63.5	66.4	65.8	64.8	67.4	54.5	67.4
22-Feb	69.9	71.7	73.5	76.2	75.9	77.6	77.1	75.8	68.7	62.2	55.0	51.1	48.9	46.5	45.0	43.9	44.1	47.1	49.5	53.0	57.2	63.9	62.7	63.4	60.8	77.6
23-Feb	64.8	64.4	62.1	61.7	63.1	65.8	66.6	66.9	57.9	47.5	40.1	38.0	37.9	41.0	43.6	45.4	46.4	50.3	51.1	53.5	70.1	84.7	78.8	73.3	57.3	84.7
24-Feb	70.1	69.1	65.8	65.2	65.3	70.8	77.3	76.5	78.0	75.0	75.6	70.7	67.9	70.5	68.6	65.8	64.8	65.4	72.6	75.6	79.3	83.9	85.6	84.7	72.7	85.6
25-Feb	84.5	84.8	84.9	85.2	84.8	85.3	85.4	85.4	84.3	81.9	78.7	73.9	69.6	68.2	66.9	65.1	65.2	66.9	69.8	68.3	60.5	55.3	59.6	65.6	74.2	85.4
26-Feb	69.0	70.1	69.1	68.7	67.9	67.1	68.1	68.7	68.2	65.3	60.2	56.7	51.8	50.0	50.1	50.2	51.9	55.6	59.6	64.4	70.6	67.2	68.2	68.6	62.8	70.6
27-Feb	67.5	70.0	70.3	70.6	70.7	72.8	73.5	74.8	72.6	67.1	60.1	54.3	49.1	45.9	43.7	42.4	42.5	44.5	51.0	57.8	66.9	65.0	69.4	74.6	61.5	74.8
28-Feb	76.4	76.9	77.4	77.5	76.9	76.3	76.2	75.0	74.1	70.9	59.5	47.8	46.5	43.4	41.4	41.7	43.7	45.8	48.3	51.4	54.3	56.8	58.2	59.7	60.7	77.5
29-Feb	62.8	69.9	69.6	70.2	72.9	74.2	75.8	75.5	76.5	76.3	75.9	74.3	73.7	73.7	73.7	73.8	73.3	71.7	70.2	66.6	67.6	69.9	73.0	75.7	72.4	76.5
																								Diurnal Average		
																								Diurnal Maximum		
DF - DAS Failure																										



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Leismer - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Leismer - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	34	4.91	4.91
40 - 60	160	23.12	28.03
60 - 80	275	39.74	67.77
80 - 100	223	32.23	100.00

Total Number of Valid Hours: 692

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Speed (WS) - km/h

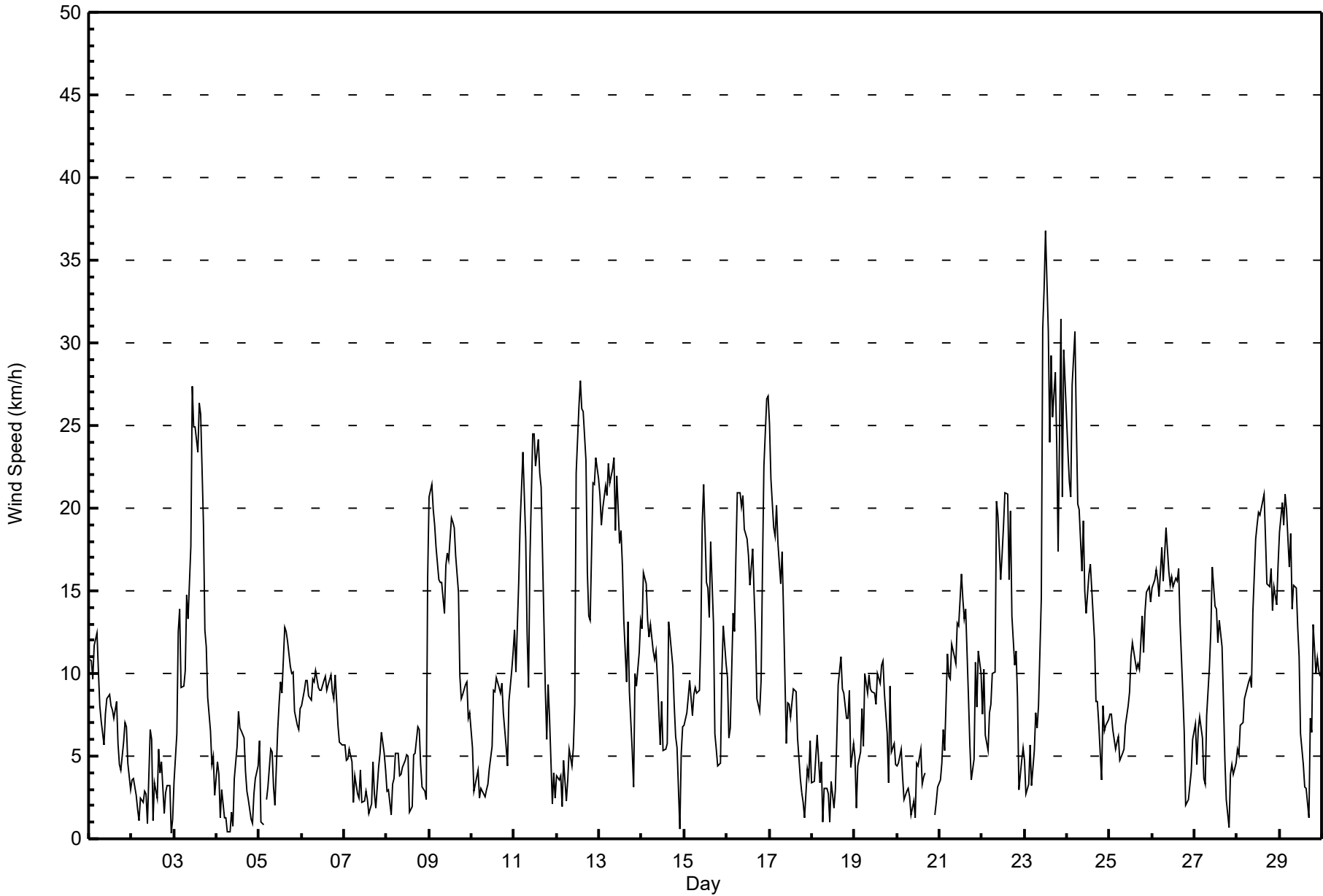
Leismer - February 2024

Maximum Speed: 37 km/h on Feb 23 13:00	Maximum Daily Speed Average: 17.9 km/h on Feb 23	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 2 23:00	Minimum Daily Speed Average: 1.7 km/h on Feb 2	Hours of Data: 691
Maximum Diurnal Speed Average: 7.3 km/h at hour 13	Minimum Diurnal Speed Average: 1.6 km/h at hour 20	Hours of Missing Data: 5
Monthly Average Velocity: 4.2 km/h 304.1 deg	Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 5 Median = 9 Q ₃ = 15 P ₉₀ = 20 P ₉₉ = 29	Percent Operational Time: 99.3

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	SSE11	SE11	SE10	SSE12	SSE12	SSE10	SSE8	S7	SSW6	SSW8	SW8	SSW9	SSW8	SSW8	S7	SSE8	S6	SE5	SE4	SE6	SSE7	SE7	SE5	E3	SSE7.0	SSE12	
2-Feb	NE4	NE4	ESE3	ENE2	NE1	NE2	ESE2	N3	ENE3	W1	ESE7	SE6	WNW1	NW3	E2	ESE5	E4	E5	N2	NNE3	N3	NNW3	NNW0	SSW1	ENE1.7	ESE7	
3-Feb	NW3	NW6	NNW13	NNW14	NNW9	NNW9	NW10	NW15	NW13	NW18	NNW27	NW25	NW25	NW23	NW26	NNW26	NNW19	NNW13	N12	N9	N6	N5	NNW5	NNW3	NNW13.7	NNW27	
4-Feb	N5	NNE4	N1	N3	ESE1	SE1	SSE0	ENE0	ESE2	ESE1	SSE4	SSE6	SSE8	SSE7	SSE6	SSE6	SE4	E3	E2	ESE1	E1	ESE3	NNE4	NE4	ESE1.9	SSE8	
5-Feb	NE6	ESE1	WSW1	UO	N2	N3	NNE5	NNE5	NNE3	ESE2	NE7	NE8	NE9	NNE13	NNE13	NE12	NNE10	NNE10	NNE10	NE8	ENE7	E7	ENE8	NE6.5	NNE13		
6-Feb	ENE8	E9	E10	ESE9	ESE8	ESE10	ESE10	ESE10	ESE9	ESE9	ESE9	ESE10	ESE10	SE9	ESE9	ESE10	ESE9	ESE8	ESE10	SE7	SE6	ESE6	ESE6	ESE8.5	ESE10		
7-Feb	ESE6	ESE5	ESE5	ESE5	SE5	ESE2	NE4	NE3	ENE2	NNE4	NNE2	ENE2	ESE3	ESE2	N2	N2	N5	N3	ESE2	ESE4	ESE5	ESE6	ESE5	ESE4	E2.6	ESE6	
8-Feb	ENE3	ENE3	E1	SSE3	SSW4	SSE5	SSE5	S4	W4	SW4	SSW5	S5	WSW5	WNW2	N2	SSE5	SE5	SSE7	SSE7	S4	S3	S3	SW2	WNW16	S2.3	WNW16	
9-Feb	NW21	NW21	NW20	NW19	NW18	WNW16	WNW16	WNW16	WNW14	WNW16	WNW17	WNW17	WNW19	WNW19	WNW19	WNW19	WNW17	WNW15	W10	W8	W9	W9	W9	W7	W8	WNW14.7	NW21
10-Feb	W5	SW3	SW3	SSW4	S2	S3	S3	S3	S3	S3	S4	S6	S9	S9	SSW10	S9	S9	SSW9	SSW8	SSW6	WSW4	W8	W10	W11	SSW4.9	W11	
11-Feb	WNW13	W10	W16	WNW19	WNW21	WNW23	WNW18	W12	W9	WNW17	WNW25	WNW25	WNW23	WNW24	WNW22	WNW21	WNW17	W9	WNW6	WNW9	WNW7	WNW2	SSW4	WSW2	WNW14.5	WNW25	
12-Feb	WNW4	W4	W4	SW2	S5	S2	SSW4	SSW5	S4	S5	WSW8	W22	WNW26	WNW28	WNW26	WNW26	WNW23	WNW16	NW13	WNW13	NW22	NW21	NW23	NW22	WNW11.8	WNW28	
13-Feb	NW21	NW19	NNW20	NNW21	NNW21	NNW23	NNW22	NNW22	NNW23	NNW19	NNW22	NNW18	NW19	NW17	WNW13	WNW9	WNW13	W9	W5	WSW3	NW10	NNW9	NW11	NNW13	NW15.2	NNW23	
14-Feb	N13	N16	N15	N13	NNE12	N13	NNE11	N11	N11	N10	N6	NNW8	N5	NNW5	NW6	N13	NNW12	NNW10	NNW8	NNW6	NW5	WNW1	W5	NNW7	N8.8	N16	
15-Feb	NW7	WNW8	NW9	NW10	WNW7	WNW9	W9	W9	WNW9	WNW12	WNW19	WNW21	W16	W15	W13	WNW18	W13	W6	W5	W4	WSW5	WNW10	WNW13	WNW11	WNW10.5	WNW21	
16-Feb	W10	W6	W7	W14	W13	WNW17	WNW21	WNW21	WNW20	WNW21	WNW19	WNW18	W17	W15	W18	W15	W12	W9	WSW8	W10	W16	WNW23	WNW27	WNW27	WNW15.6	WNW27	
17-Feb	WNW25	WNW22	WNW19	WNW18	WNW20	WNW18	WNW15	NW17	NW14	WNW6	WNW8	WNW8	NW7	NW9	WNW9	WNW9	W6	W4	WNW3	N2	E1	ESE4	SE4	E6	WNW9.2	WNW25	
18-Feb	E3	ESE4	ESE5	ESE6	ESE3	ESE5	E1	SE3	ESE3	SSE3	WSW1	SSE3	NW2	NW3	SE6	SE9	ESE11	E9	E9	ESE7	E7	E9	E4	NNE6	ESE4.3	ESE11	
19-Feb	E5	NNW2	NNW4	NNW5	NNW8	NNW6	NNW10	NNW9	NNW10	NNW9	NNW9	NNW9	W8	WNW10	WNW9	NW10	NNW11	NNW9	NNW6	E3	ESE9	ESE5	ESE6	ESE5	NNW4.6	NNW11	
20-Feb	ESE4	SE5	ESE5	ESE4	E2	NE3	ESE3	N3	E1	NNE2	ENE1	SSE5	SSE4	SSE5	SSE3	ESE4	SSE4	DF	DF	DF	DF	SW1	SSW2	WSW3	SE2.2	ESE5	
21-Feb	WSW4	W5	W7	W5	W11	W10	W10	W12	W11	W11	W13	W13	W16	W14	W13	W14	W9	WSW6	WSW4	W5	W11	W8	WNW11	WNW10	W9.5	W16	
22-Feb	W8	W10	W6	WSW5	W8	W8	W10	W10	WNW20	WNW20	WNW16	WNW17	WNW19	WNW21	WNW21	W16	WNW20	WNW14	WNW11	WNW11	WNW9	SW3	W5	W5	WNW11.9	WNW27	
23-Feb	W5	WSW3	W3	W6	WSW3	SSW5	SSW8	SSW7	WSW8	W15	W31	WNW33	WNW37	W31	W24	W29	W26	W28	W24	W17	WNW31	WNW21	WNW30	WNW28	W17.9	WNW37	
24-Feb	WNW23	WNW22	WNW21	WNW27	NW31	NW25	NNW20	NNW20	NNW16	NNW19	NNW15	NW14	NW16	NW17	NW15	NW12	NNW8	N8	NNE7	ENE4	ESE8	ESE7	E7	E7	NW12.0	NW31	
25-Feb	ESE8	E8	ESE7	E5	E6	E6	E5	ENE5	E5	ENE7	ENE8	ENE9	ENE11	ENE12	ENE11	ENE10	ENE11	ENE10	NE13	NE11	NE14	NNE15	NNE15	NNE14	ENE8.6	NNE15	
26-Feb	NNE15	NNE16	N16	N16	N15	N18	N16	N17	N19	N16	N15	N16	N15	N16	N16	NNW16	N13	N9	NNE6	NE2	W2	NW3	WNW4	W6	N12.0	N19	
27-Feb	WNW7	W4	W7	W7	WNW6	NW4	W3	W7	W10	WNW13	WNW16	WNW14	WNW14	WNW12	WNW13	WNW12	WNW8	WSW5	WSW2	NNE1	SE4	SE4	SE4	SE5	WNW6.2	WNW16	
28-Feb	SSE5	SE5	SSE7	SE7	SE8	SE9	SE10	SE10	SE9	SSE14	SSE18	SSE19	SSE20	SSE20	SE20	SSE21	SE18	SE15	SE15	SE16	SE14	ESE15	ESE14	ESE17	SE13.3	SSE21	
29-Feb	ESE19	ESE20	ESE19	ESE21	ESE20	ESE16	ESE18	ESE14	ESE15	ESE15	SE13	ESE11	SE6	SE4	E3	ESE3	W1	W7	WNW6	NNW13	NW10	NW11	NNW10	NW10	ESE6.5	ESE21	

NW3.3	NW2.9	NW3.2	NW3.7	NW3.7	NW3.8	NW3.6	NW4.5	NW4.7	WNW5.1	WNW6.3	WNW6.5	WNW7.3	WNW7.1	WNW6.8	WNW5.9	WNW4.7	WNW3.2	NW2.2	NW1.6	NW2.6	NW2.0	NW3.3	NW4.1	Diurnal Average	
WNW25	WNW22	WNW21	WNW27	NW31	NW25	NNW22	NNW22	NNW23	WNW21	W31	WNW33	WNW37	W31	NW26	W29	W26	W28	W24	W17	WNW31	WNW23	WNW30	WNW28	Diurnal Maximum	

DF - DAS Failure UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Leismer - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	221	31.98	31.98
6 - 11	239	34.59	66.57
12 - 19	151	21.85	88.42
20 - 28	72	10.42	98.84
29 - 38	8	1.16	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 691

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Leismer - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	17	10	9	10	20	35	16	14	16	9	7	15	21	7	7	8	221
6 - 11	8	7	7	11	13	31	17	13	8	11	1	4	47	26	14	21	239
12 - 19	21	8	3	1	0	10	6	5	0	0	0	0	24	45	13	15	151
20 - 28	0	0	0	0	0	3	1	3	0	0	0	0	5	35	13	12	72
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	3	4	1	0	8
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	46	25	19	22	33	79	40	35	24	20	8	19	100	117	48	56	691

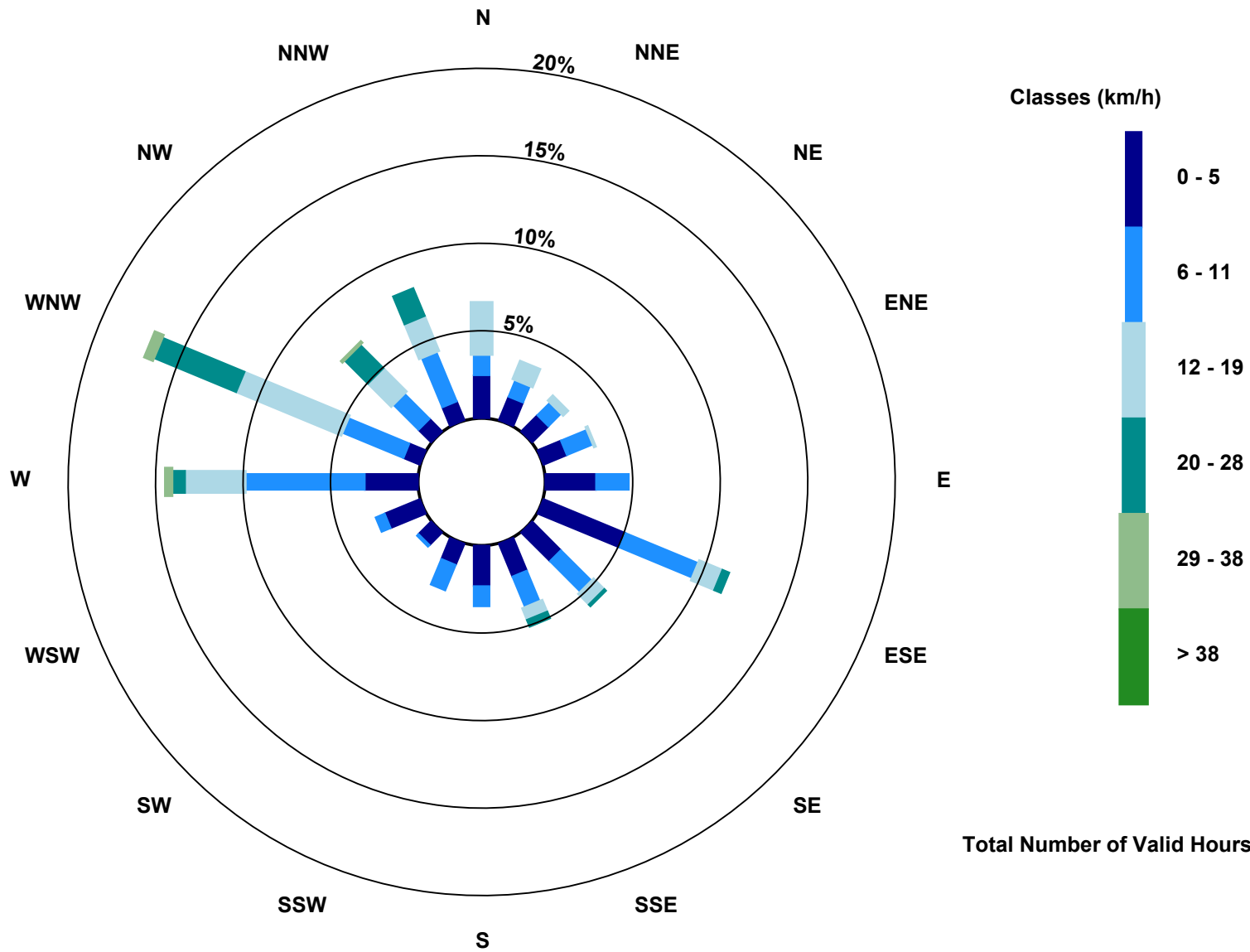
Total Number of Valid Hours: 691

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Leismer





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Leismer - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 11 km/h on Feb 23 21:00 Minimum Value: 0 km/h on Feb 8 22:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 8																		Hours in Service: 696 Hours of Data: 691 Hours of Missing Data: 5 Hours of Calibration: 0 Percent Operational Time: 99.3								
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	2	2	2	2	2	2	2	2	2	2	3	2	3	2	2	2	2	1	2	2	2	1	2	1	3	3
2-Feb	1	2	2	1	1	1	2	2	1	1	2	2	1	1	2	1	2	1	1	1	2	1	1	1	2	2
3-Feb	2	1	3	3	2	1	3	4	2	5	5	5	6	5	5	5	4	2	2	2	1	1	3	2	6	
4-Feb	1	1	1	2	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	2	2	2	2	
5-Feb	2	1	1	UO	2	2	1	1	1	1	2	2	3	3	4	3	5	3	3	3	3	2	3	3	5	
6-Feb	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	3	
7-Feb	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	2	
8-Feb	1	1	1	1	1	1	1	1	2	1	2	2	2	1	1	1	1	1	1	1	1	0	1	6	6	
9-Feb	4	4	3	3	3	2	3	3	2	3	3	3	4	4	4	3	3	2	2	2	2	2	2	2	4	
10-Feb	2	1	1	1	1	1	0	0	1	1	1	2	2	2	3	2	2	2	2	1	2	3	2	2	3	
11-Feb	3	3	4	3	3	4	6	3	2	5	4	4	4	5	4	4	4	3	3	2	3	2	1	1	6	
12-Feb	1	1	1	1	1	1	1	1	1	1	6	5	5	6	5	6	6	3	4	4	4	4	4	4	6	
13-Feb	4	4	4	4	4	5	4	4	4	4	4	3	3	3	3	2	4	2	1	1	2	3	3	5	5	
14-Feb	3	3	3	3	4	3	3	3	2	3	2	2	2	2	4	2	2	2	1	1	1	2	1	4	4	
15-Feb	2	1	2	2	2	2	2	1	1	3	4	4	5	5	5	4	4	3	2	2	1	4	2	3	5	
16-Feb	4	2	3	3	2	4	3	3	4	3	4	4	4	5	5	5	4	3	3	5	4	5	4	4	5	
17-Feb	4	3	3	3	3	3	3	3	4	2	2	2	2	2	2	2	2	1	1	1	1	2	1	2	4	
18-Feb	2	2	2	2	2	2	2	2	2	1	1	2	1	1	3	2	2	2	2	2	2	3	3	1	3	
19-Feb	3	2	1	1	1	2	2	1	1	2	2	2	2	3	3	2	2	1	1	2	2	1	1	1	3	
20-Feb	1	1	1	2	1	1	3	2	1	1	1	1	1	1	2	1	1	DF	DF	DF	DF	1	1	1	3	
21-Feb	1	2	3	2	2	4	3	2	3	3	4	4	5	5	5	5	3	2	1	2	2	3	2	1	5	
22-Feb	2	1	2	2	2	2	1	3	3	4	4	4	4	4	4	5	5	3	1	1	3	2	1	1	5	
23-Feb	2	1	2	2	1	2	2	2	3	5	9	8	9	9	8	9	10	10	7	5	11	4	6	5	11	
24-Feb	4	4	4	5	6	6	4	4	3	3	3	4	4	3	3	3	2	2	1	2	2	2	2	2	6	
25-Feb	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	4	4	3	4	4	4	4	4	
26-Feb	5	4	4	4	4	5	4	4	4	3	3	4	4	4	4	4	3	2	1	2	2	1	2	1	5	
27-Feb	2	2	1	1	2	2	2	1	3	3	4	4	4	4	5	4	3	2	1	1	2	1	1	1	5	
28-Feb	1	1	1	1	1	2	2	2	2	3	4	5	6	5	5	5	5	4	4	4	3	4	4	4	6	
29-Feb	5	5	5	5	6	4	5	4	4	4	4	3	3	2	2	1	1	2	3	3	2	3	2	3	6	
																		Diurnal Maximum								
DF - DAS Failure																		UO - Unstable Operation								



Wood Buffalo Environmental Association
Summary of Hour Averages

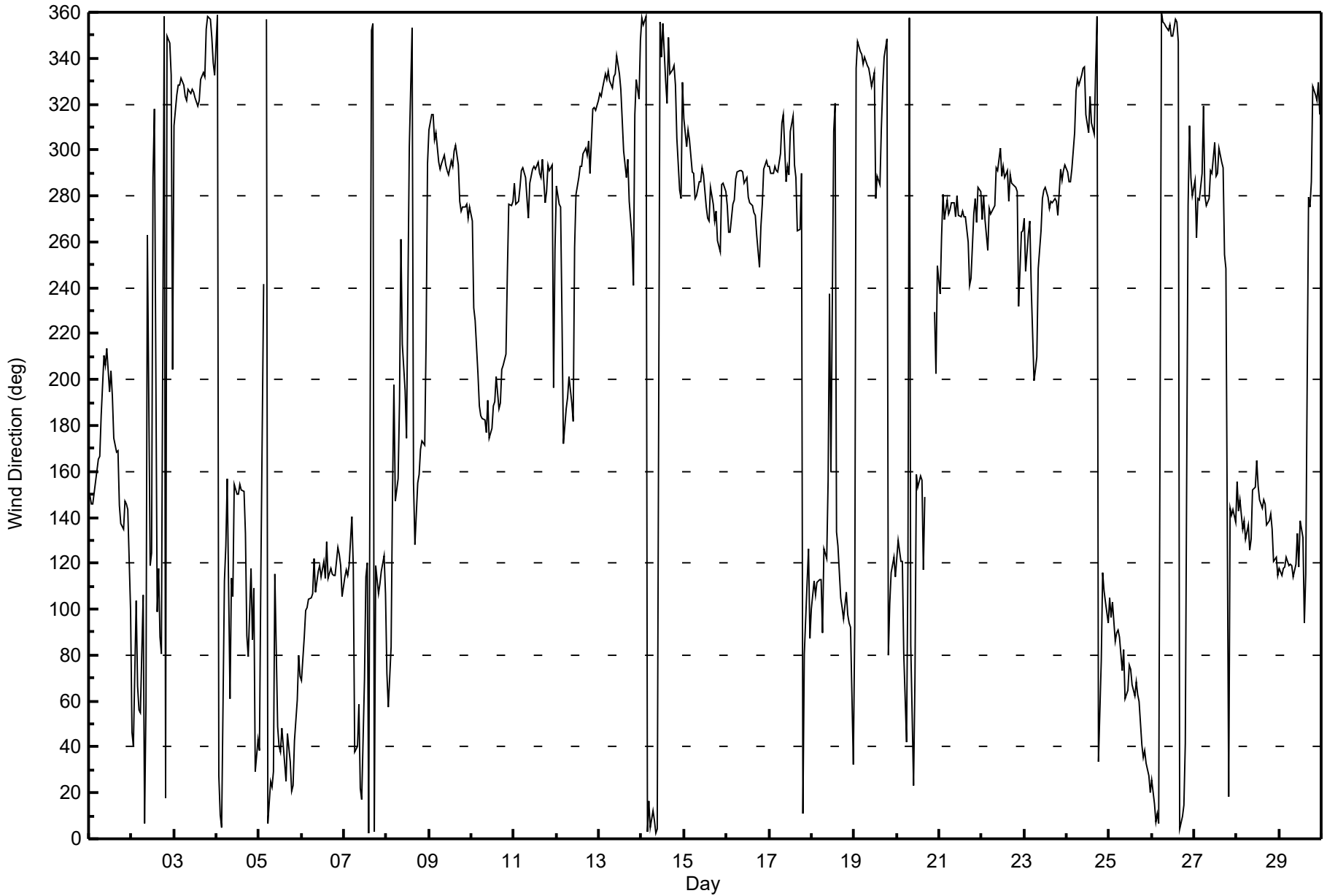
Wind Direction (WD) - deg
Leismer - February 2024

Direction of Maximum Speed: 284 deg on Feb 23 13:00 Direction of Maximum Daily Speed Average: 277.6 deg on Feb 23																							Hours in Service: 696 Hours of Data: 691 Hours of Missing Data: 5 Percent Operational Time: 99.3		
Direction of Minimum Speed: 332 deg on Feb 2 23:00											Direction of Minimum Daily Speed Average: 1.7 deg on Feb 2														
Monthly Average Direction: 304.1 deg																									
Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	150	146	146	151	161	165	166	184	211	206	214	195	204	193	174	168	169	145	137	135	147	146	143	100	166.6
2-Feb	47	40	104	67	56	55	106	6	59	263	119	124	288	318	99	118	88	80	358	17	349	347	332	204	68.8
3-Feb	310	324	328	328	331	328	323	322	326	324	327	325	323	319	321	331	334	332	352	358	357	349	338	333	328.6
4-Feb	359	27	10	5	113	128	157	61	113	105	155	150	150	154	152	152	133	88	79	118	87	109	29	43	114.8
5-Feb	38	115	242	UO	357	7	25	23	29	116	49	40	38	48	33	25	46	33	20	23	43	61	80	71	39.1
6-Feb	69	88	100	101	104	105	107	122	107	117	119	114	121	114	129	113	118	115	114	115	127	124	119	105	111.1
7-Feb	114	117	115	119	140	119	38	40	59	22	17	69	114	120	2	352	355	3	119	107	111	117	123	107	92.7
8-Feb	72	57	84	150	198	147	157	190	261	216	195	174	239	301	353	155	128	155	158	170	173	172	218	294	184.4
9-Feb	309	315	316	305	307	295	292	294	298	293	291	289	295	293	300	302	293	277	273	275	275	277	271	275	295.7
10-Feb	269	231	226	202	189	184	183	183	177	191	174	179	189	190	201	187	190	205	206	211	247	276	276	277	213.8
11-Feb	286	277	277	284	291	292	288	279	270	285	292	293	292	295	290	288	296	277	282	294	291	293	196	257	287.2
12-Feb	284	277	275	227	172	187	192	201	190	182	258	281	288	293	293	298	301	298	304	290	318	318	318	322	294.1
13-Feb	325	323	327	333	331	334	330	327	332	333	341	333	326	313	300	288	296	277	262	241	315	331	322	348	324.1
14-Feb	358	354	358	3	16	5	12	8	2	4	356	340	355	330	320	349	333	335	337	328	305	283	279	330	350.5
15-Feb	314	302	309	304	290	290	279	280	286	286	292	289	275	271	269	284	276	269	273	261	256	285	286	282	284.2
16-Feb	276	264	264	276	278	287	290	291	291	290	286	288	280	277	276	272	272	263	249	267	276	291	295	293	282.8
17-Feb	293	290	290	293	291	290	298	312	315	286	293	289	308	315	294	288	265	265	290	11	80	111	126	87	296.1
18-Feb	100	112	106	112	113	113	89	126	122	156	237	160	308	320	133	127	105	100	96	107	98	94	92	32	106.5
19-Feb	92	336	347	343	342	337	340	337	336	332	327	334	279	289	285	309	328	341	348	80	103	116	123	114	336.0
20-Feb	122	130	121	121	81	42	121	358	85	23	70	158	153	158	156	117	149	DF	DF	DF	DF	230	203	250	131.4
21-Feb	237	262	281	270	278	272	274	277	277	271	280	272	271	273	271	271	260	241	244	272	279	268	284	282	272.2
22-Feb	270	280	270	256	275	272	274	276	293	291	301	289	293	288	291	278	289	285	284	284	282	232	264	265	284.0
23-Feb	270	247	263	269	240	199	204	210	248	265	279	282	284	280	274	278	277	279	278	272	292	287	291	294	277.6
24-Feb	291	286	286	292	308	326	330	328	333	336	336	315	307	324	312	307	335	358	33	78	116	108	103	94	318.5
25-Feb	105	96	103	86	90	91	88	73	82	61	65	76	74	67	62	69	63	60	41	35	39	33	27	20	59.9
26-Feb	25	15	7	11	7	360	356	355	354	352	354	350	349	357	355	347	4	10	15	42	276	310	288	280	357.8
27-Feb	287	262	279	278	290	319	280	276	279	291	290	303	289	290	301	295	292	254	249	18	144	141	144	138	284.7
28-Feb	156	143	148	135	138	131	137	126	130	152	153	165	154	148	144	147	146	137	139	142	135	121	123	115	141.0
29-Feb	118	115	118	118	123	119	120	119	114	120	133	118	139	131	94	115	279	275	286	327	324	321	330	315	113.4
318.7 318.2 314.0 310.1 308.6 316.2 311.9 311.1 314.3 302.6 300.8 294.8 290.6 293.7 293.3 295.1 302.2 298.4 308.9 306.2 307.0 315.8 304.1 316.2																							Diurnal Average		
DF - DAS Failure UO - Unstable Operation All monthly, daily, and diurnal averages have been calculated using vector methods																									



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction (WD) - deg
Leismer - February 2024





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Leismer - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 97 deg on Feb 14 22:00 Minimum Value: 6 deg on Feb 15 09:00 Percentiles: P ₁ = 8 P ₁₀ = 10 Q ₁ = 13 Median = 17 Q ₃ = 24 P ₉₀ = 43 P ₉₉ = 78																		Hours in Service: 696 Hours of Data: 691 Hours of Missing Data: 5 Hours of Calibration: 0 Percent Operational Time: 99.3							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	10	11	10	10	10	12	14	15	19	19	24	22	25	25	20	14	14	14	20	9	11	8	11	33	33
2-Feb	21	22	49	43	42	19	53	37	21	69	13	27	78	19	71	14	26	18	78	32	47	22	81	65	81
3-Feb	68	20	9	10	11	11	15	11	11	11	13	12	12	12	12	12	10	14	14	13	12	13	32	68	
4-Feb	12	16	59	22	70	61	82	58	54	65	16	18	17	21	18	14	15	30	42	67	67	45	23	19	82
5-Feb	14	86	69	UO	15	18	15	17	20	43	27	23	25	25	23	22	24	22	16	17	21	32	28	21	86
6-Feb	23	22	20	20	21	17	17	17	16	20	17	14	18	18	19	15	14	15	18	15	17	19	16	19	23
7-Feb	22	16	13	15	21	30	20	35	39	28	37	50	31	50	71	37	14	52	65	20	19	16	19	20	71
8-Feb	37	37	51	16	27	22	16	43	35	30	34	35	41	72	55	22	21	14	12	14	13	10	44	14	72
9-Feb	14	12	11	14	13	11	10	12	13	12	14	10	12	14	15	20	17	13	15	14	16	13	16	17	20
10-Feb	23	26	24	10	14	13	15	19	18	19	19	19	23	20	23	17	17	18	16	17	36	17	12	12	36
11-Feb	9	17	15	10	7	8	11	12	15	14	10	10	11	11	13	12	16	16	26	13	48	73	21	26	73
12-Feb	13	34	16	44	13	23	21	14	17	17	37	12	11	13	12	13	15	14	19	18	10	11	11	11	44
13-Feb	11	11	12	11	11	12	11	10	12	12	16	16	14	17	21	15	17	12	20	41	16	9	9	23	41
14-Feb	15	15	16	16	19	20	17	18	17	18	27	14	27	21	40	16	13	11	10	14	16	97	18	24	97
15-Feb	23	14	15	14	12	9	12	8	6	8	9	12	20	23	23	15	15	30	16	29	21	15	8	13	30
16-Feb	22	21	25	12	12	10	7	8	8	8	9	11	13	18	16	20	19	28	30	29	16	11	9	8	30
17-Feb	9	8	8	8	8	9	10	10	13	29	19	18	23	21	21	17	27	22	23	41	25	39	32	17	41
18-Feb	49	54	44	15	47	12	77	45	65	40	82	71	71	43	59	20	16	17	18	19	15	16	46	17	82
19-Feb	50	65	9	14	8	19	10	11	7	12	14	18	24	16	24	27	16	14	14	42	16	18	17	16	65
20-Feb	17	13	10	14	25	25	54	54	62	38	75	20	35	20	50	26	23	DF	DF	DF	DF	40	17	23	75
21-Feb	23	28	34	45	14	25	19	13	13	17	15	21	21	21	22	22	31	34	33	35	10	18	10	8	45
22-Feb	13	7	21	21	13	14	9	17	9	10	17	14	15	13	12	14	11	8	7	8	21	52	20	18	52
23-Feb	20	53	37	29	49	16	13	19	30	25	15	13	13	14	17	14	17	16	14	20	16	10	9	9	53
24-Feb	9	9	10	10	14	16	11	12	17	14	15	22	19	14	17	26	24	24	20	43	17	16	14	19	43
25-Feb	16	17	19	25	19	22	33	26	27	29	31	31	32	27	29	29	26	26	20	20	19	18	18	19	33
26-Feb	18	18	18	19	19	18	16	16	17	17	17	19	20	22	22	21	18	15	14	77	29	20	29	12	77
27-Feb	14	32	10	11	14	35	38	11	13	16	16	25	22	21	24	27	30	29	43	71	8	14	11	15	71
28-Feb	16	10	10	9	11	13	10	14	16	15	15	18	16	16	16	15	15	16	14	14	15	16	18	15	18
29-Feb	16	15	16	16	18	17	18	18	17	19	20	20	34	45	56	56	90	16	27	12	15	14	11	13	90
Diurnal Maximum																									
DF - DAS Failure UO - Unstable Operation																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS505 SAWBONES BAY FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SAWBONES BAY (AMS505)
 FEBRUARY 2024

MONTHLY SUMMARY for
 AMD SECTION III.B.1(c)

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	663	33	33	100	18.3	0	7.4	0
H2S (ppb) Average	662	34	34	100	1.5	0	0.7	0
NO2 (ppb) Average	662	34	34	100	28.2	0	11	-
NO (ppb) Average	662	34	34	100	27.5	-	4.4	-
NOX (ppb) Average	662	34	34	100	43	-	15.3	-
Temperature 2 m (C) Average	696	0	0	100	10.8	-	4.2	-
Relative Humidity (%) Average	664	0	32	95.4	100	-	99.6	-
Wind Speed 10 m (km/h) Average	693	0	3	99.57	32	-	18	-
Wind Direction 10 m (deg) Average	693	0	3	99.57	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SAWBONES BAY (AMS505)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	663	1.63	3.1	-	0	0	0.1	0.4	1.2	5.1	18.3
H2S (ppb) Average	662	0.21	0.3	-	0	0.1	0.1	0.1	0.2	0.6	1.5
NO2 (ppb) Average	662	4.42	4.9	-	0	0.3	0.8	2.7	6.1	11.3	28.2
NO (ppb) Average	662	1.04	2.3	-	0	0	0	0	0.9	3.6	27.5
NOX (ppb) Average	662	5.46	6.7	-	0	0.3	0.9	3	7	14.1	43
Temperature 2 m (C) Average	696	-7.99	7.7	-	-27	-17.4	-12.6	-8	-2.7	2	10.8
Relative Humidity (%) Average	664	70.21	17.2	-	25.4	45.6	57.3	71.5	83.9	91.6	100
Wind Speed 10 m (km/h) Average	693	10	6	-	1	3	5	9	14	18	32
Wind Direction 10 m (deg) Average	693	318.8	0	-	0	-	-	-	-	-	0

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SAWBONES BAY (AMS505)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
Relative Humidity	02 Feb 2024 03:00	02 Feb 2024 09:00	7	Sensor operated out of range
Relative Humidity	02 Feb 2024 22:00	03 Feb 2024 12:00	15	Sensor operated out of range
Relative Humidity	07 Feb 2024 10:00	07 Feb 2024 10:00	1	Sensor operated out of range
Relative Humidity	07 Feb 2024 13:00	07 Feb 2024 13:00	1	Sensor operated out of range
Relative Humidity	07 Feb 2024 21:00	07 Feb 2024 23:00	3	Sensor operated out of range
Relative Humidity	08 Feb 2024 23:00	09 Feb 2024 01:00	3	Sensor operated out of range
Relative Humidity	13 Feb 2024 20:00	13 Feb 2024 21:00	2	Sensor operated out of range
Wind Speed, Wind Direction	04 Feb 2024 03:00	04 Feb 2024 05:00	3	Flat line in sensor output signal - Sensor frozen



Wood Buffalo Environmental Association
Summary of Hour Averages

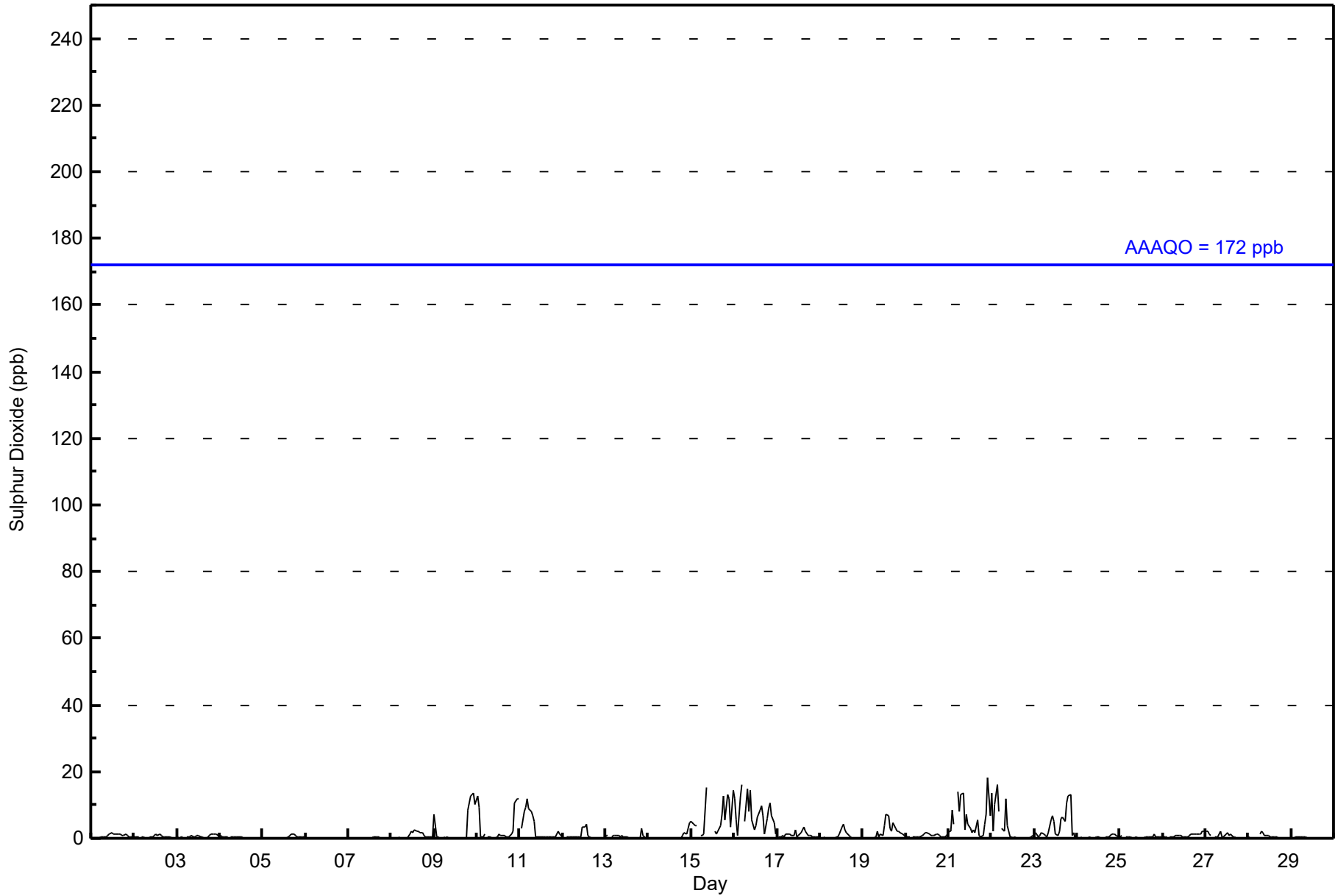
Sulphur Dioxide (SO₂) - ppb
Sawbones Bay - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0		Hours in Service: 696																																														
Maximum Value: 18.3 ppb on Feb 21 23:00		Maximum Daily Average: 7.4 ppb on Feb 16																																														
Minimum Value: 0.0 ppb on Feb 6 10:00		Hours of Data: 663																																														
Maximum Diurnal Average: 2.5 ppb at hour 1		Hours of Missing Data: 33																																														
Monthly Average: 1.63 ppb		Hours of Calibration: 33																																														
Minimum Daily Average: 0.0 ppb on Feb 6		Percent Operational Time: 100.0																																														
Minimum Diurnal Average: 1.0 ppb at hour 18																																																
Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.4 Q ₃ = 1.2 P ₉₀ = 5.1 P ₉₉ = 14.0																																																
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	0.1	0.2	Z	0.2	0.1	0.2	0.4	0.5	0.5	0.7	1.1	1.6	1.4	1.5	1.4	1.3	1.1	0.9	1.0	1.3	0.8	0.6	0.5	0.4	0.8	1.6																						
2-Feb	0.3	0.6	0.4	Z	0.2	0.3	0.2	0.1	0.2	0.4	0.6	0.9	1.1	1.1	1.4	0.9	0.5	0.5	0.4	0.4	0.3	0.1	0.2	0.1	0.5	1.4																						
3-Feb	0.2	0.2	0.2	0.5	Z	0.3	0.5	0.3	0.7	0.5	0.6	1.0	0.9	0.4	0.5	0.2	0.1	0.2	0.9	1.1	1.1	1.2	1.3	0.7	0.6	1.3																						
4-Feb	0.7	0.5	0.3	0.2	0.3	Z	0.4	0.2	0.3	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.2	0.7																						
5-Feb	Z	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.4	0.8	1.2	1.1	0.8	0.6	0.6	0.5	0.4	0.3	0.3	1.2																						
6-Feb	0.2	Z	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2																						
7-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.5																						
8-Feb	0.1	0.2	0.1	Z	0.3	0.1	0.1	0.1	0.0	0.1	1.2	2.3	1.6	2.6	2.3	2.1	1.7	1.7	0.8	0.3	0.3	0.2	0.2	0.3	0.8	2.6																						
9-Feb	7.4	0.4	0.3	0.2	Z	0.3	0.2	0.2	0.2	0.2	0.2	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	8.7	12.5	13.3	13.4	10.4	3.0	13.4																						
10-Feb	12.7	9.5	0.5	0.6	1.5	Z	0.4	0.4	0.1	0.0	0.1	0.4	1.1	0.9	0.8	0.9	0.4	0.3	0.6	1.2	2.2	10.7	11.7	12.0	3.0	12.7																						
11-Feb	Z	2.8	8.0	9.2	11.9	9.1	8.1	6.9	5.1	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.2	0.2	0.3	0.4	0.3	2.1	1.2	0.7	3.0	11.9																						
12-Feb	0.5	Z	0.6	0.5	0.3	0.2	0.3	0.4	0.2	0.2	0.6	3.5	3.4	4.1	0.8	0.2	0.1	0.1	0.1	0.0	0.1	0.2	0.1	0.2	0.7	4.1																						
13-Feb	0.7	1.0	Z	0.3	0.8	0.8	0.8	0.9	0.5	0.7	0.5	0.4	0.3	0.0	0.0	0.1	0.2	0.0	0.0	0.0	2.8	0.6	0.0	0.0	0.5	2.8																						
14-Feb	0.2	0.2	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	1.0	1.5	1.5	2.9	4.8	0.5	4.8																						
15-Feb	5.1	4.2	3.9	3.7	Z	1.0	1.0	1.5	15.3	C	C	C	C	2.1	1.1	2.1	3.9	7.0	12.6	5.6	13.2	12.0	3.4	14.2	5.9	15.3																						
16-Feb	11.7	5.3	0.7	12.3	15.9	Z	5.2	14.8	8.2	14.6	5.3	2.4	3.9	6.2	8.4	9.6	7.0	1.1	6.1	8.7	10.7	6.7	4.8	1.2	7.4	15.9																						
17-Feb	Z	0.5	0.5	1.0	0.6	1.1	1.3	1.2	1.0	0.6	2.6	0.6	0.6	1.8	2.4	3.4	2.1	1.0	0.8	1.0	0.6	0.5	0.5	0.6	1.2	3.4																						
18-Feb	0.4	Z	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	1.3	3.3	4.4	2.4	1.7	1.0	0.4	0.2	0.2	0.1	0.1	0.0	0.1	0.7	4.4																						
19-Feb	0.1	0.2	Z	0.1	0.0	0.1	0.0	0.4	2.3	0.3	1.2	1.0	4.0	7.4	6.6	3.0	2.1	4.5	2.8	2.1	2.0	1.6	1.3	0.8	1.9	7.4																						
20-Feb	0.7	0.4	0.3	Z	0.4	0.4	0.4	0.4	0.4	0.9	1.2	1.9	1.8	1.2	0.7	0.9	0.9	1.3	1.1	0.8	0.6	0.6	0.5	1.0	0.8	1.9																						
21-Feb	2.2	2.0	8.4	4.4	Z	13.9	8.3	13.2	13.8	2.5	7.2	4.4	2.8	1.8	2.7	1.7	5.5	1.0	0.6	1.0	4.3	7.2	18.3	6.7	5.8	18.3																						
22-Feb	13.7	2.3	10.2	16.0	7.9	Z	2.9	2.0	11.7	3.6	0.3	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.8	3.2	16.0																						
23-Feb	Z	1.7	0.2	0.9	1.6	1.3	1.0	0.3	1.5	5.6	6.9	5.2	1.2	1.0	2.2	6.0	6.3	5.1	10.6	12.8	13.2	0.8	1.7	0.1	3.8	13.2																						
24-Feb	0.0	Z	0.5	0.2	0.2	0.1	0.2	0.3	0.2	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.3	0.3	0.4	1.2	1.4	1.1	0.7	0.5	0.4	1.4																						
25-Feb	0.6	0.6	Z	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	1.2	0.5	0.3	0.3	0.3	0.4	1.2																						
26-Feb	0.4	0.3	0.4	Z	0.6	0.4	0.4	0.7	1.0	1.0	0.8	0.6	0.6	0.6	0.6	0.7	1.1	1.2	1.1	1.3	1.5	1.2	2.3	1.9	0.9	2.3																						
27-Feb	2.3	2.0	1.4	1.0	Z	0.5	0.6	0.5	2.3	0.4	0.4	1.2	1.5	0.9	1.1	0.5	0.4	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.8	2.3																						
28-Feb	0.2	0.0	0.1	0.0	0.2	Z	1.1	2.0	1.5	0.9	0.8	0.9	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.0	0.0	0.4	2.0																					
29-Feb	Z	0.1	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3																					
																								2.5	1.4	1.6	2.2	1.8	1.3	1.2	1.6	2.3	1.2	1.2	1.1	1.1	1.4	1.3	1.3	1.3	1.0	1.5	1.8	2.5	2.2	2.3	2.0	Diurnal Average
																								13.7	9.5	10.2	16.0	15.9	13.9	8.3	14.8	15.3	14.6	7.2	5.2	4.0	7.4	8.4	9.6	7.0	7.0	12.6	12.8	13.2	13.3	18.3	14.2	Diurnal Maximum
Z - zerspan C - Calibration																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																																																



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Sawbones Bay - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Sawbones Bay - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	634	95.63	95.63
11 - 20	29	4.37	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Sawbones Bay - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	58	62	25	20	34	46	30	37	44	16	24	26	50	80	38	41	631
11 - 20	0	0	0	0	0	0	0	0	0	0	0	20	9	0	0	0	29
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	58	62	25	20	34	46	30	37	44	16	24	46	59	80	38	41	660

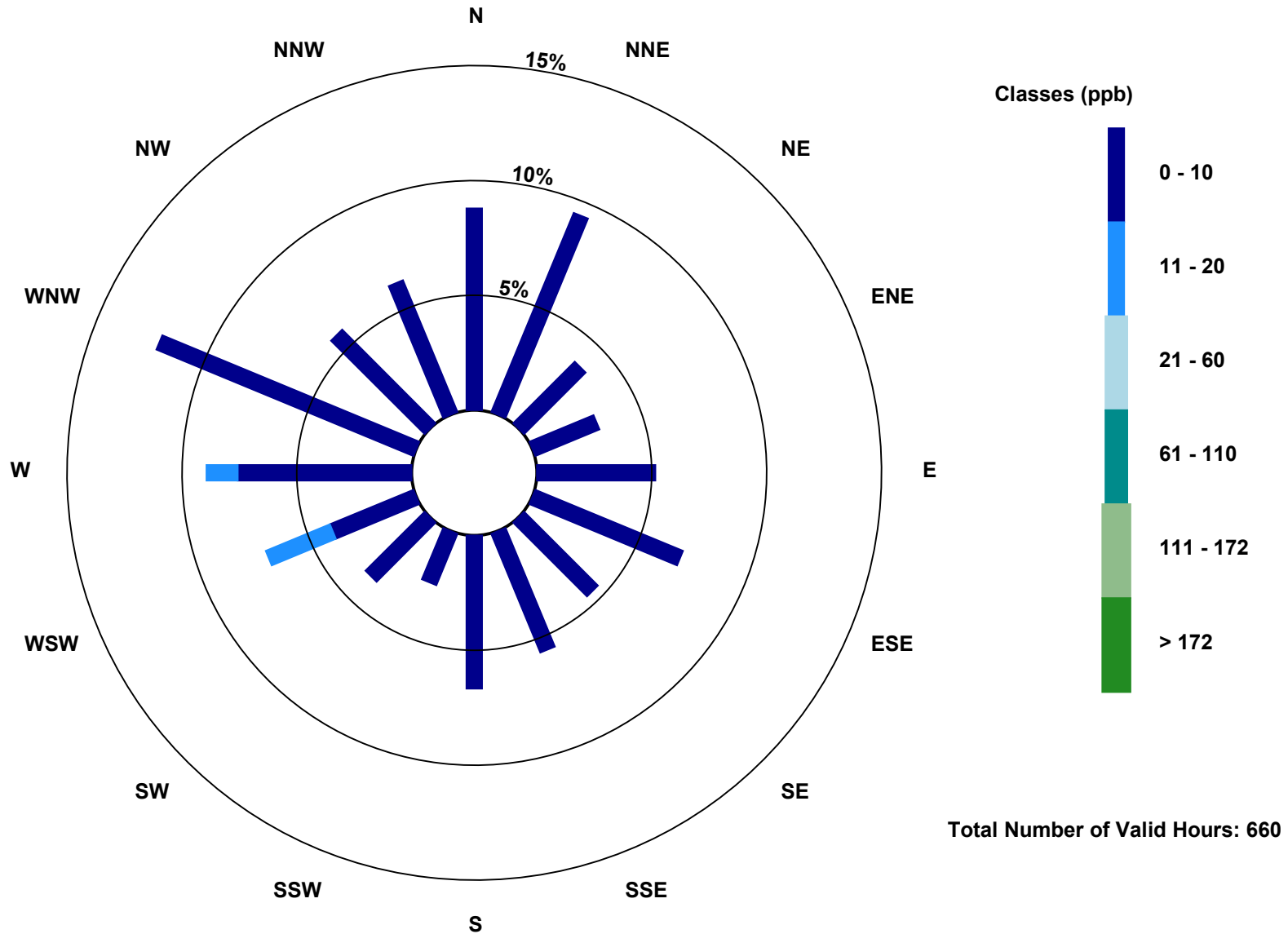
Total Number of Valid Hours: 660

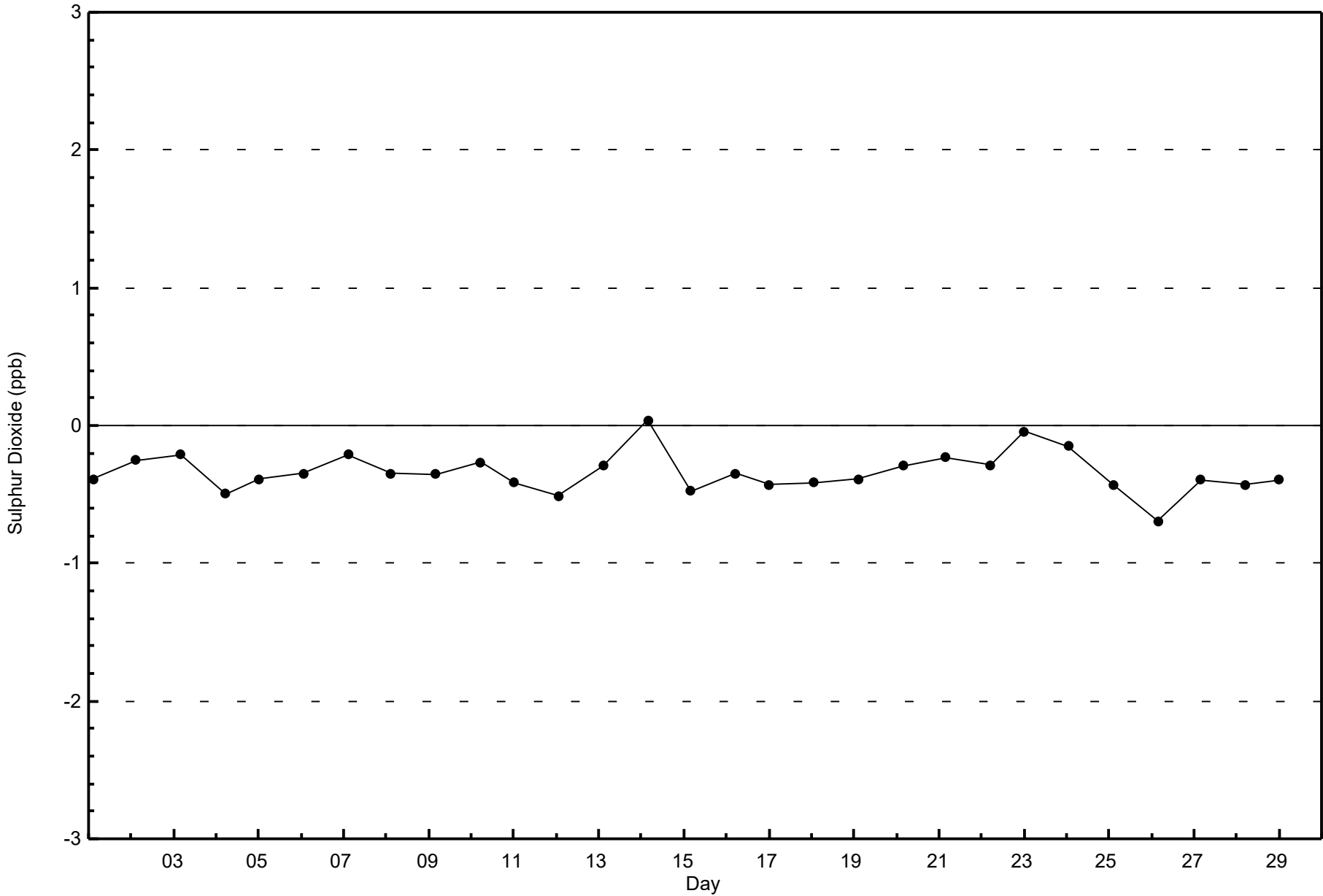
Total Number of Hours: 696

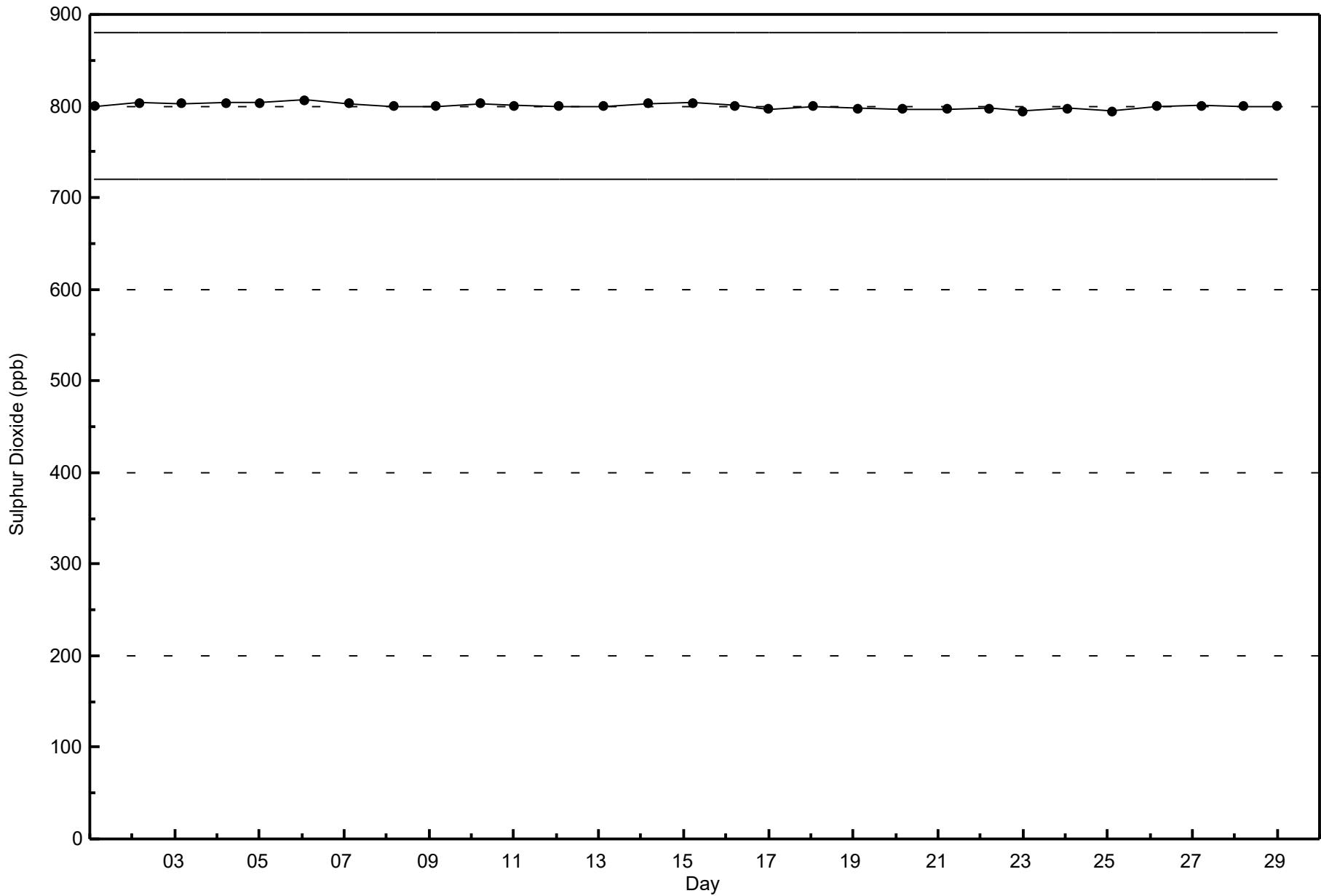


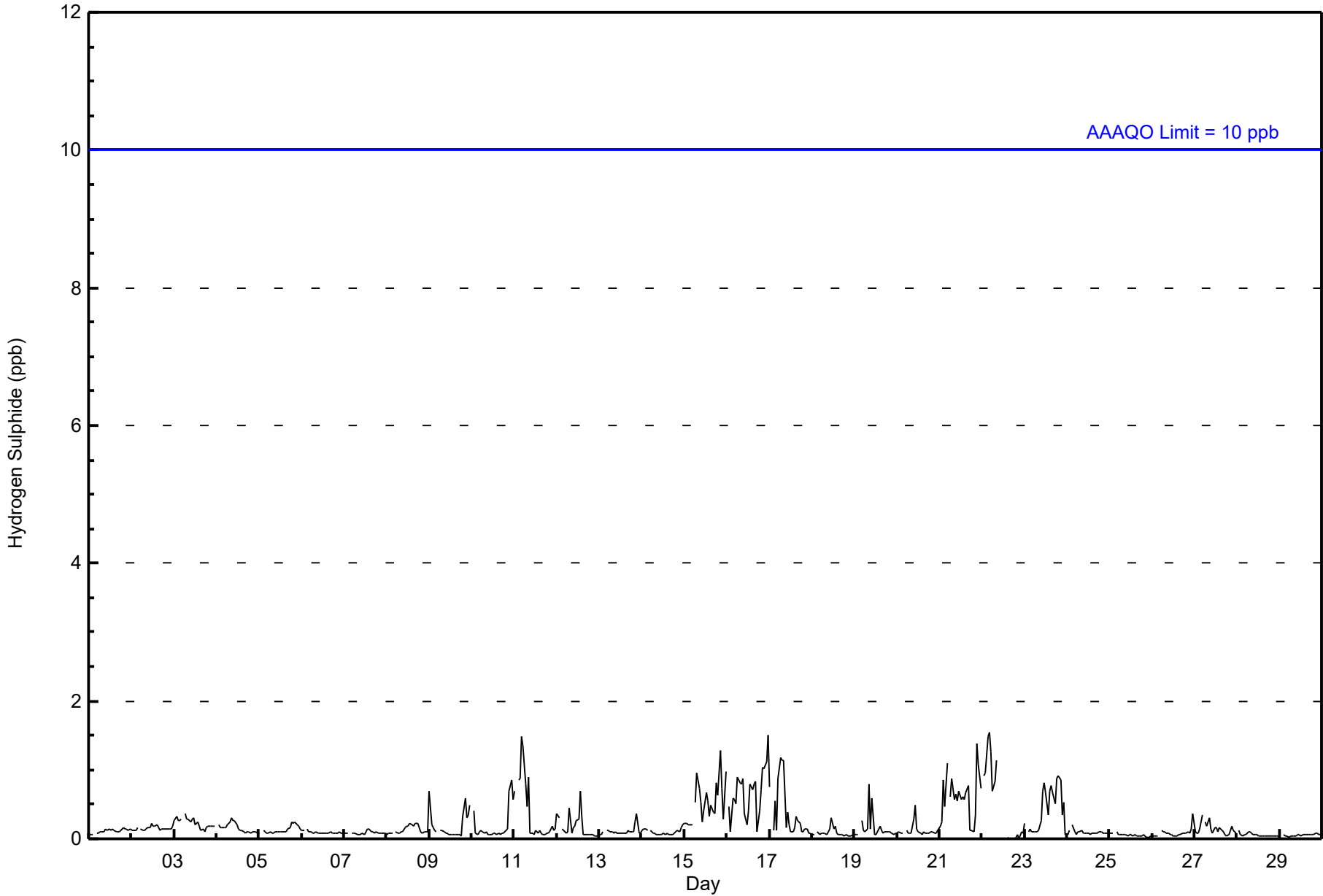
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Sawbones Bay











Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Hydrogen Sulphide (H₂S) - ppb
Sawbones Bay - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	662	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Sawbones Bay - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	58	64	24	21	33	45	31	36	45	16	24	44	65	73	40	40	659
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	58	64	24	21	33	45	31	36	45	16	24	44	65	73	40	40	659

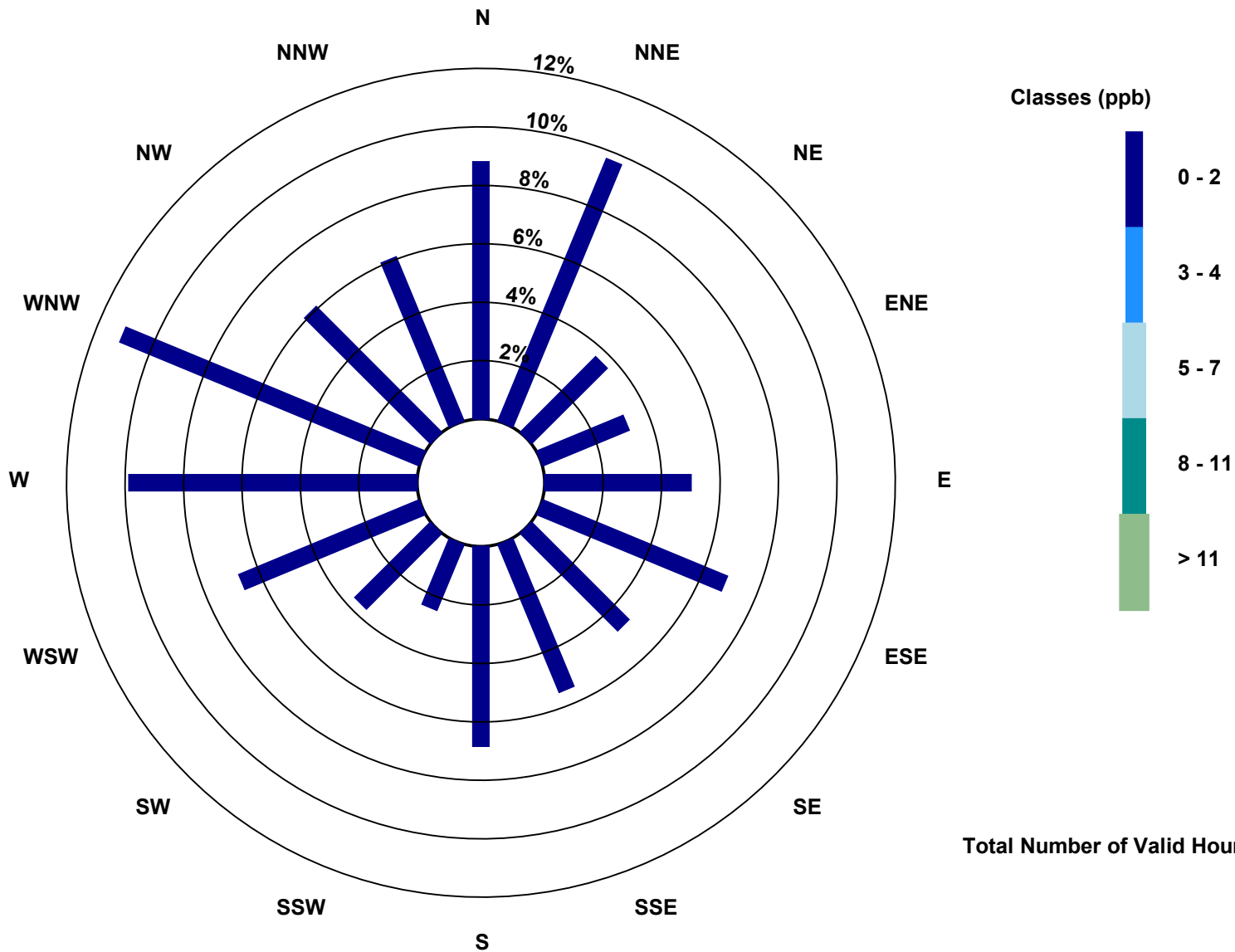
Total Number of Valid Hours: 659

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

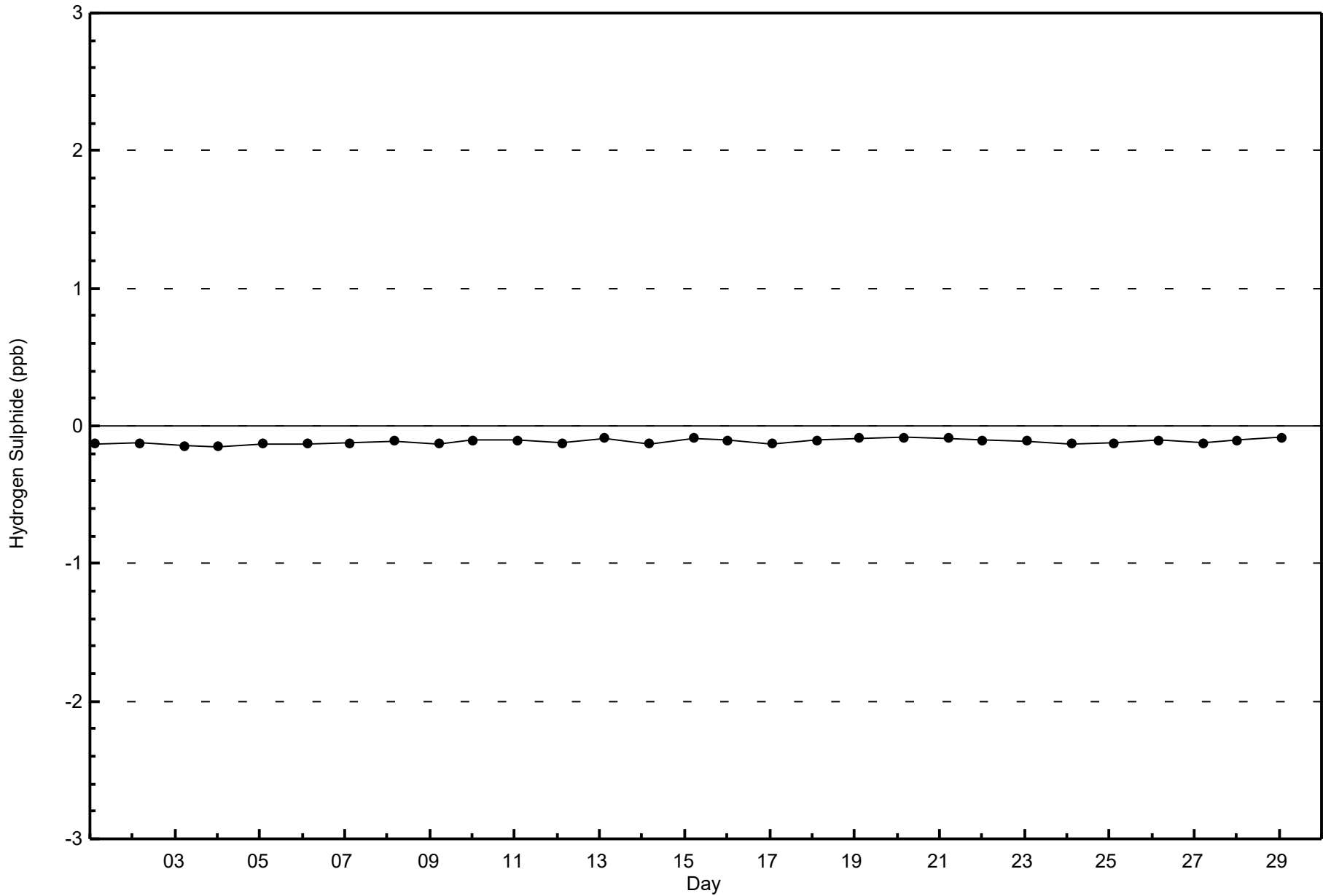
Hydrogen Sulphide (H₂S) - ppb
Sawbones Bay

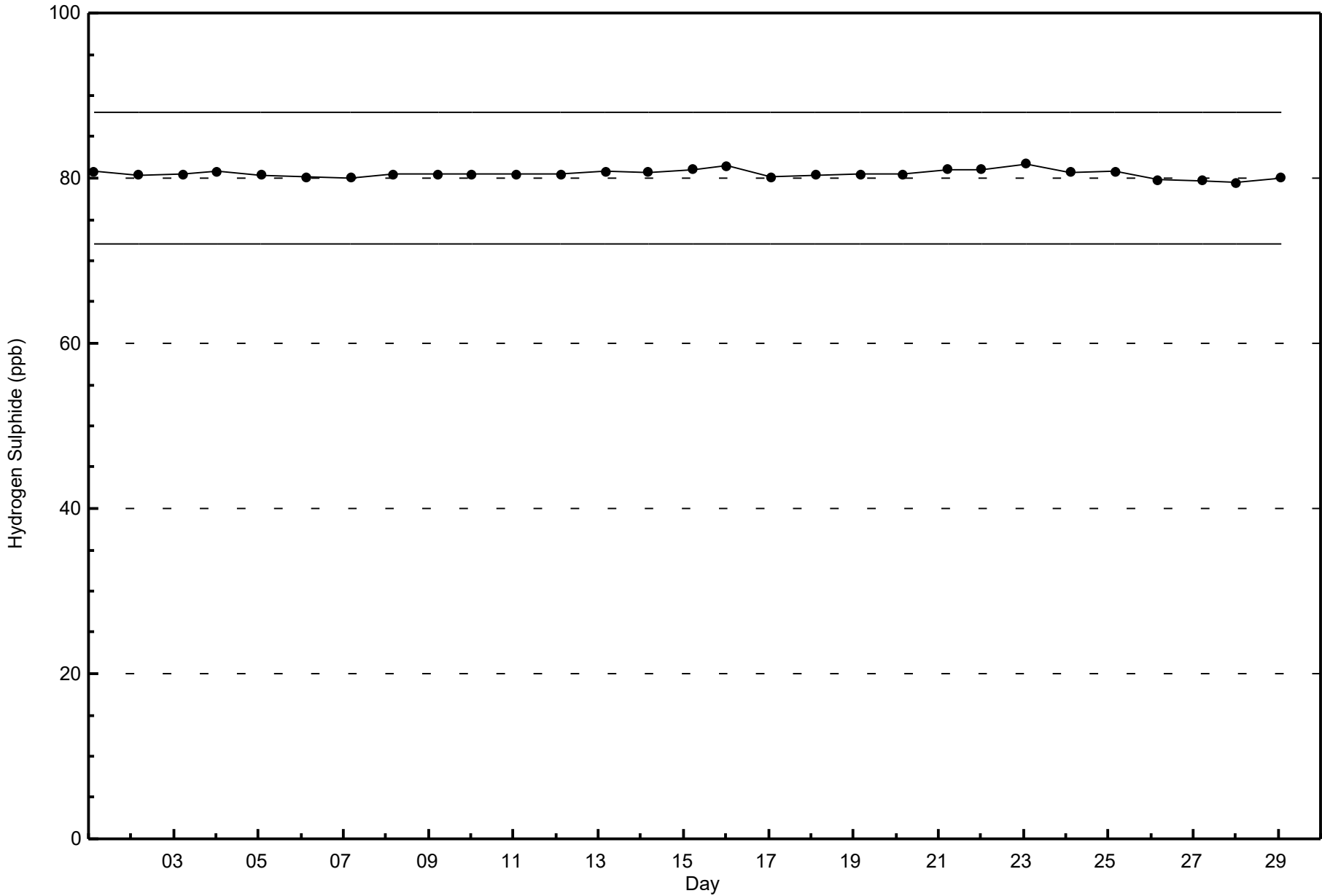




Wood Buffalo Environmental Association
Zero Responses

Hydrogen Sulphide (H₂S) - ppb
Sawbones Bay - February 2024







Wood Buffalo Environmental Association

Summary of Hour Averages

Nitric Oxide (NO) - ppb

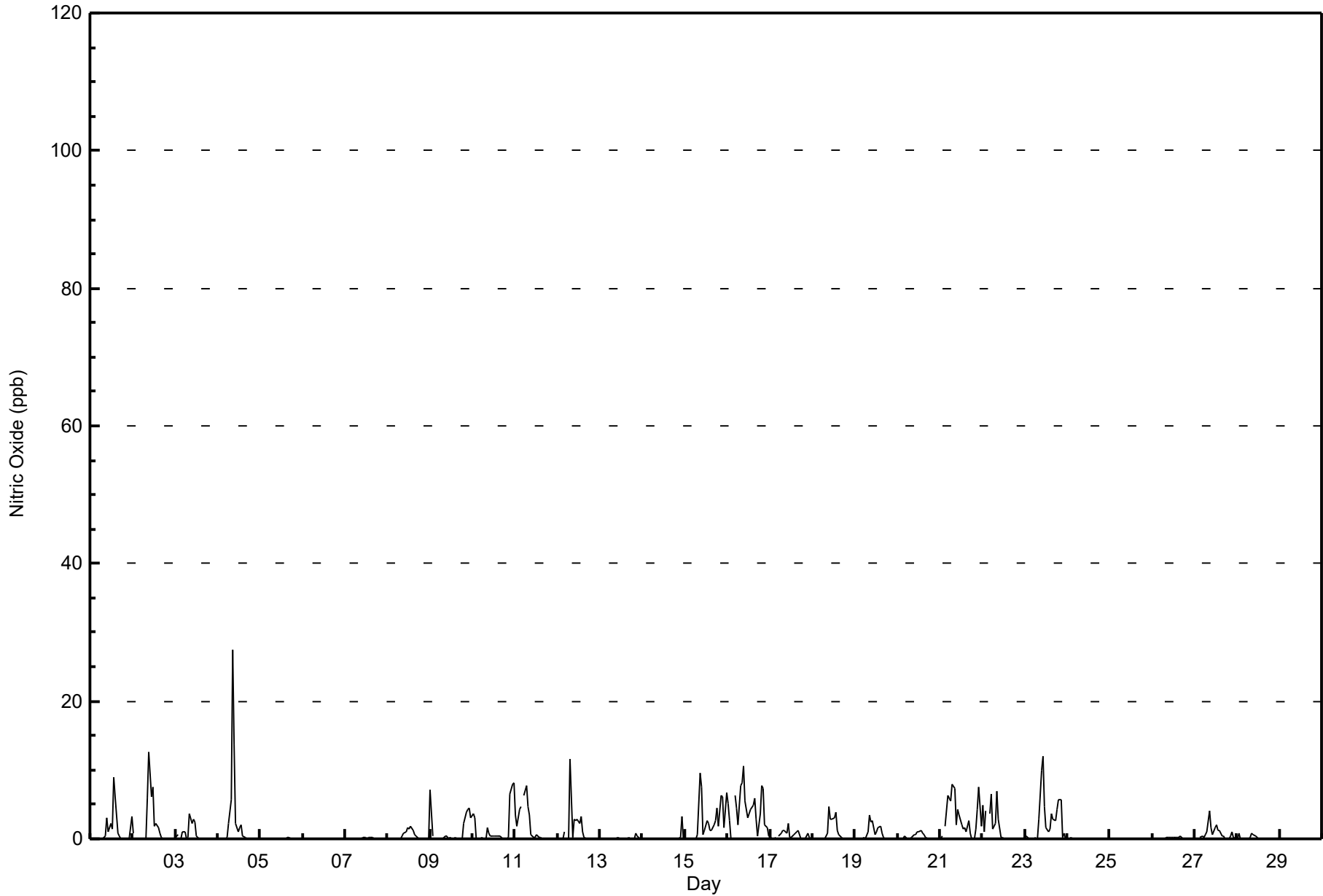
Sawbones Bay - February 2024

Maximum Value: 27.5 ppb on Feb 4 09:00		Maximum Daily Average: 4.4 ppb on Feb 16		Hours in Service: 696																						
Minimum Value: 0.0 ppb on Feb 1 02:00		Minimum Daily Average: 0.0 ppb on Feb 25		Hours of Data: 662																						
Maximum Diurnal Average: 3.1 ppb at hour 9		Minimum Diurnal Average: 0.2 ppb at hour 18		Hours of Missing Data: 34																						
Monthly Average: 1.04 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.9 P ₉₀ = 3.6 P ₉₉ = 9.7		Hours of Calibration: 34																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	3.1	1.1	2.2	1.5	9.0	6.1	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	3.2	1.2	9.0
2-Feb	0.8	Z	0.0	0.0	0.0	0.0	0.0	0.0	5.8	12.7	6.2	7.5	1.9	2.2	1.6	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.7	12.7
3-Feb	0.1	0.5	Z	0.0	0.9	1.0	0.0	0.2	3.6	2.3	2.8	2.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	3.6
4-Feb	0.0	0.0	0.0	Z	0.1	0.3	2.3	5.7	27.5	13.7	2.2	1.1	1.7	2.0	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	27.5
5-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
6-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
7-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
8-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.8	1.0	1.7	1.4	1.9	1.1	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.9
9-Feb	7.2	0.3	Z	0.0	0.0	0.0	0.0	0.1	0.4	0.3	0.1	0.2	0.1	0.0	0.2	0.0	0.0	0.0	0.0	2.3	3.8	4.4	4.5	3.1	1.2	7.2
10-Feb	3.6	3.0	0.1	Z	0.0	0.3	0.1	0.0	1.6	0.8	0.4	0.5	0.5	0.4	0.5	0.4	0.2	0.0	0.0	0.0	0.3	6.4	7.9	8.1	1.5	8.1
11-Feb	3.5	1.9	4.2	4.7	Z	6.3	7.7	4.7	3.4	0.7	0.3	0.1	0.5	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.7	7.7
12-Feb	0.0	0.1	0.0	0.0	1.1	Z	0.0	11.7	0.3	2.8	2.5	2.8	2.2	3.2	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	11.7
13-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.9	0.5	0.0	0.0	0.1	0.9
14-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	C	C	0.1	0.0	0.0	0.0	0.0	0.0	0.2	3.2	0.0	0.0	0.2	3.2
15-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.5	9.5	7.5	0.7	1.3	2.7	2.2	1.2	1.3	2.0	2.6	4.4	1.7	6.3	6.2	1.6	6.6	2.5	9.5
16-Feb	5.0	2.7	0.0	Z	6.4	4.4	2.0	7.8	8.0	10.6	5.5	3.1	3.7	4.2	4.8	5.9	2.8	0.4	3.7	7.8	7.4	2.1	1.7	0.5	4.4	10.6
17-Feb	0.5	0.0	0.0	0.2	Z	0.4	0.8	1.3	1.2	0.9	2.3	0.3	0.2	0.6	0.9	1.0	1.3	0.0	0.0	0.0	0.0	0.7	0.1	0.0	0.5	2.3
18-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.1	0.0	0.9	4.7	2.9	2.8	3.0	3.9	1.2	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	4.7
19-Feb	Z	0.0	0.0	0.0	0.0	0.2	0.0	0.9	3.4	2.4	2.6	0.7	0.9	1.5	1.8	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	3.4
20-Feb	0.0	Z	0.0	0.0	0.3	0.0	0.0	0.0	0.2	0.6	0.6	0.9	1.0	1.2	0.8	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.2
21-Feb	0.0	0.4	Z	1.8	6.3	5.8	5.6	7.9	7.4	2.1	4.3	3.5	2.0	1.4	1.7	1.1	2.6	0.8	0.0	0.1	1.4	4.2	7.5	1.9	3.0	7.9
22-Feb	4.8	1.1	4.2	Z	3.8	6.6	1.4	2.2	6.9	2.8	0.3	0.3	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	1.5	6.9
23-Feb	0.3	0.3	0.0	0.0	Z	0.1	0.0	0.0	2.9	10.0	11.9	4.8	1.6	0.9	1.4	3.6	2.9	2.7	4.4	5.6	5.8	0.2	0.8	0.0	2.6	11.9
24-Feb	0.0	0.0	0.2	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
25-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4
27-Feb	0.0	0.0	Z	0.1	0.5	0.2	0.7	1.1	4.1	1.7	0.6	1.7	2.0	1.2	1.3	0.5	0.3	0.0	0.0	0.0	0.4	1.0	0.3	0.0	0.8	4.1
28-Feb	0.0	0.8	0.0	Z	0.0	0.0	0.0	0.1	0.8	0.6	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8
29-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
																								Diurnal Average		
																								Diurnal Maximum		
																								1.1 0.5 0.4 0.3 0.8 1.0 0.7 1.5 3.1 2.9 1.8 1.4 1.0 1.3 0.9 0.7 0.5 0.2 0.4 0.6 0.9 0.9 1.0 0.8		
																								7.2 3.0 4.2 4.7 6.4 6.6 7.7 11.7 27.5 13.7 11.9 7.5 3.7 9.0 6.1 5.9 2.9 2.7 4.4 7.8 7.4 6.4 7.9 8.1		
Z - zerospan C - Calibration																										



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Sawbones Bay - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitric Oxide (NO) - ppb
Sawbones Bay - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	99.85	99.85
21 - 40	1	0.15	100.00
11 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



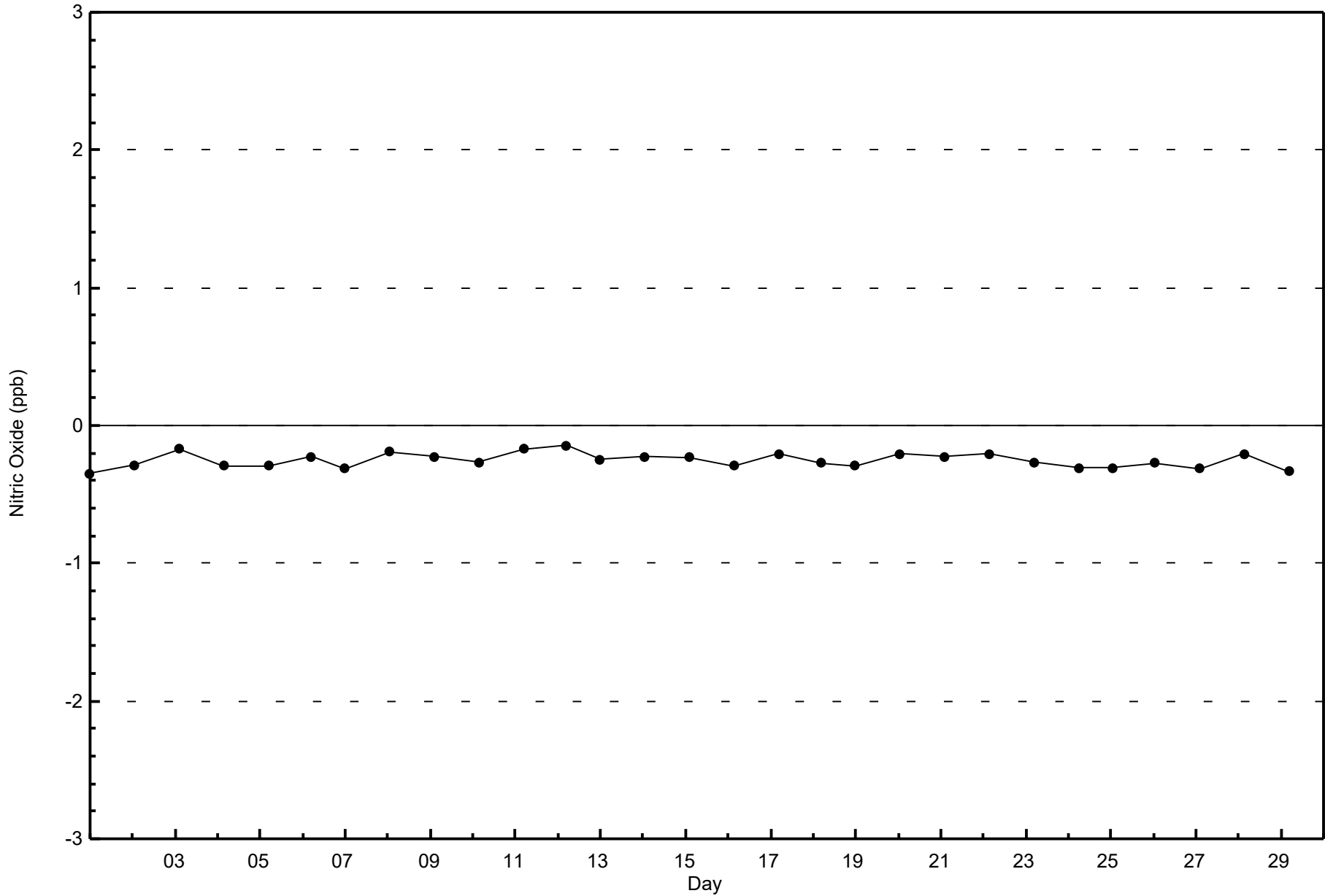
**Wood Buffalo Environmental Association
Frequency Distribution**

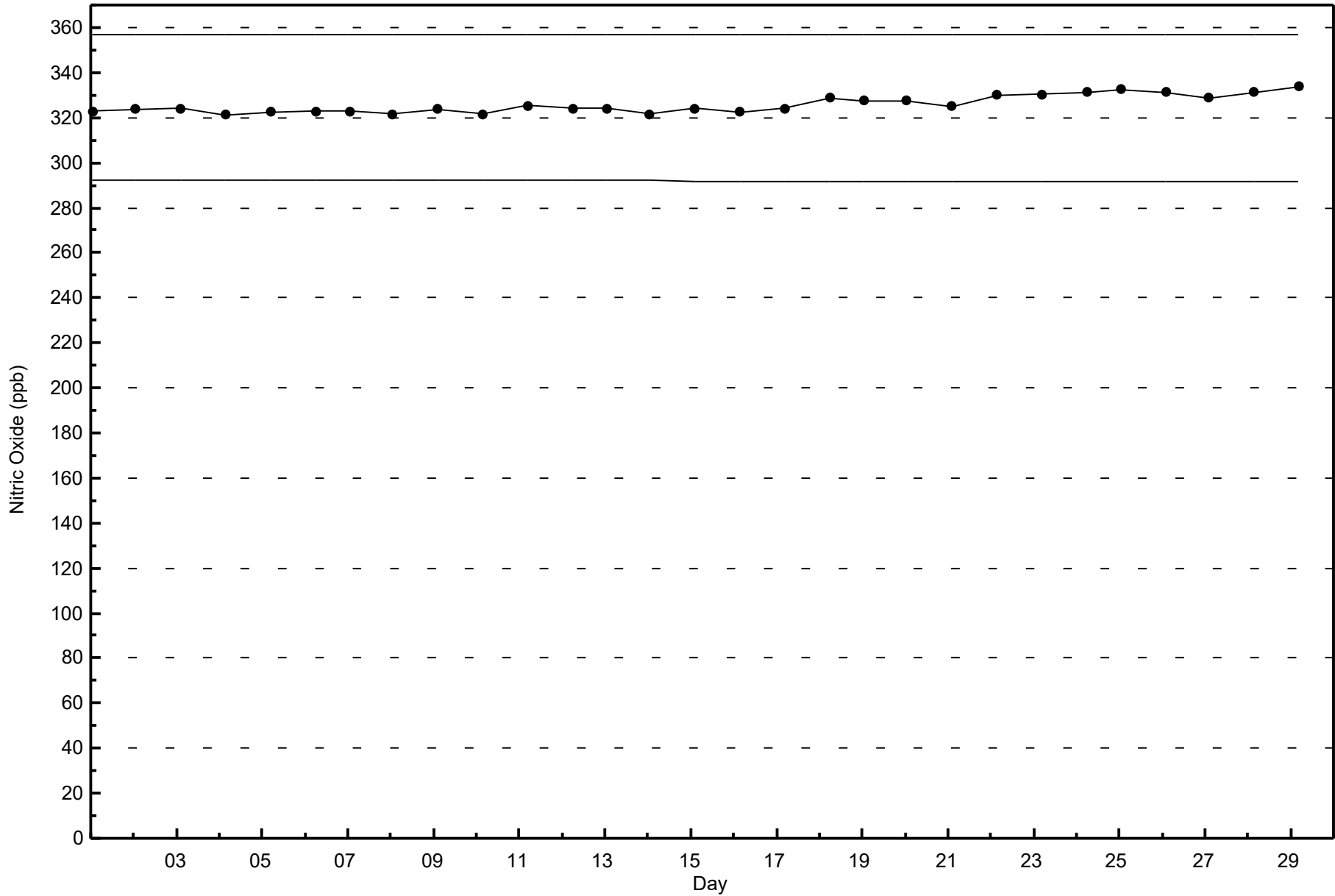
**Nitric Oxide (NO) - ppb
Sawbones Bay - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	54	63	24	19	33	47	30	36	44	17	23	44	66	80	38	41	659
21 - 40	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	54	63	24	19	33	47	30	36	45	17	23	44	66	80	38	41	660

Total Number of Valid Hours: 660

Total Number of Hours: 696







Wood Buffalo Environmental Association
Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb
Sawbones Bay - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 696
Maximum Value: 28.2 ppb on Feb 12 08:00	Maximum Daily Average: 11.0 ppb on Feb 16
Minimum Value: 0.0 ppb on Feb 5 01:00	Hours of Data: 662
Maximum Diurnal Average: 6.6 ppb at hour 9	Hours of Missing Data: 34
Monthly Average: 4.42 ppb	Hours of Calibration: 34
Minimum Daily Average: 0.2 ppb on Feb 25	Percent Operational Time: 100.0
Minimum Diurnal Average: 2.3 ppb at hour 13	
Percentiles: P ₁ = 0.0 P ₁₀ = 0.3 Q ₁ = 0.8 Median = 2.7 Q ₃ = 6.1 P ₉₀ = 11.3 P ₉₉ = 20.5	

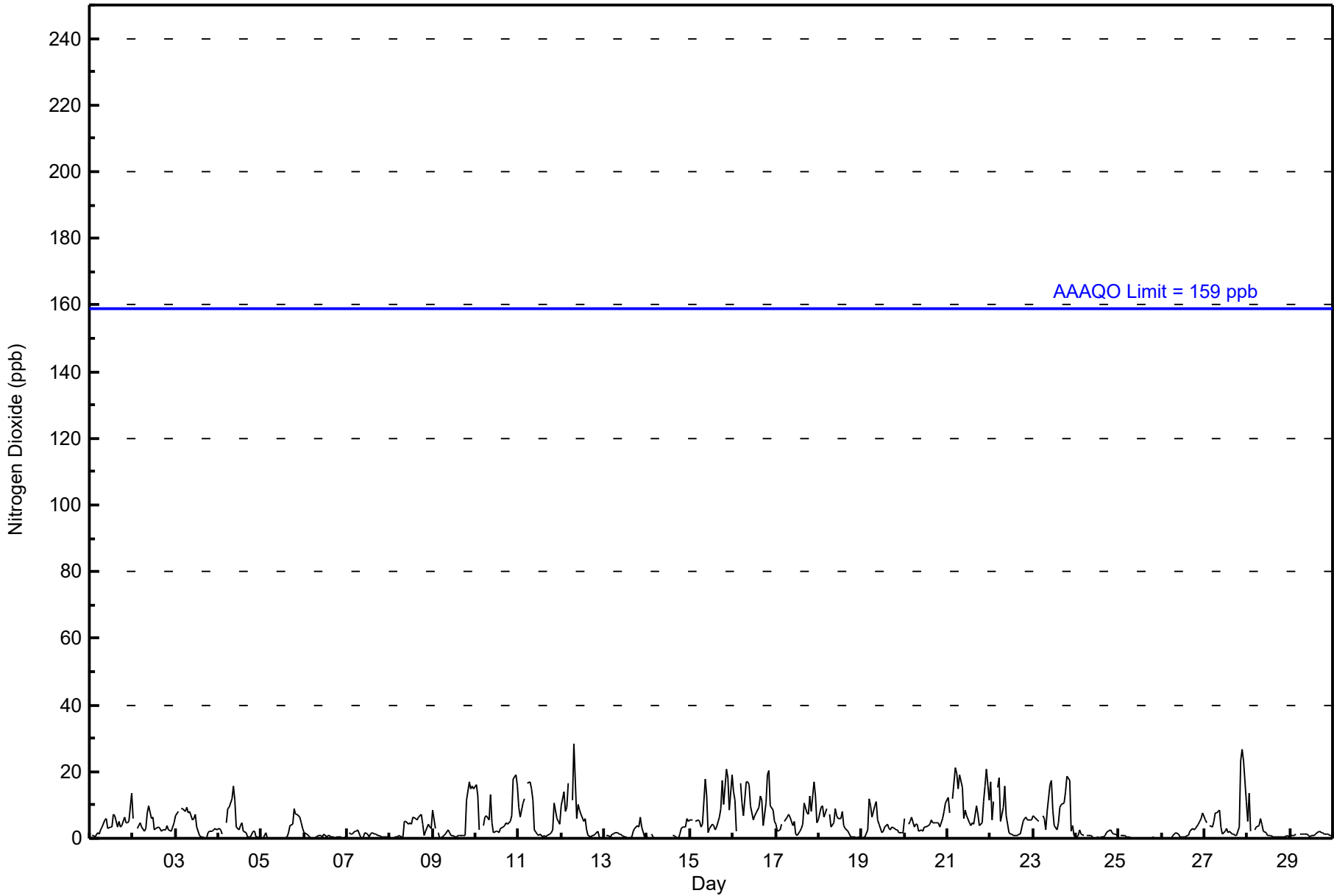
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	Z	0.7	0.7	0.6	1.6	1.2	2.5	3.3	5.3	5.8	3.1	3.6	3.2	7.2	6.6	3.5	5.1	3.4	4.0	6.2	4.8	4.7	5.1	13.4	4.2	13.4
2-Feb	6.1	Z	2.9	3.8	4.6	3.3	2.3	3.0	7.5	9.6	6.1	6.5	2.7	3.1	3.5	2.9	2.2	2.6	2.7	3.7	2.6	2.0	3.6	4.7	4.0	9.6
3-Feb	6.9	8.1	Z	8.8	8.9	8.0	9.3	7.8	8.2	5.7	6.0	7.4	3.3	0.8	0.5	0.3	0.2	0.2	1.7	2.2	2.1	2.4	2.8	2.4	4.5	9.3
4-Feb	3.0	2.6	1.4	Z	4.6	8.9	9.2	12.0	15.5	11.3	3.6	2.4	3.7	4.5	2.3	1.5	0.3	0.3	0.6	2.0	2.3	0.4	0.5	0.1	4.0	15.5
5-Feb	0.0	0.1	1.8	0.0	Z	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.3	1.8	3.9	4.3	8.7	7.1	7.3	6.3	4.8	2.9	2.2	8.7
6-Feb	1.7	1.2	0.8	0.4	0.2	Z	0.5	0.6	0.9	0.9	0.6	1.3	0.5	0.7	0.7	0.5	0.3	0.1	0.3	0.4	0.3	0.2	0.1	0.4	0.6	1.7
7-Feb	Z	1.6	1.2	1.2	2.1	2.0	2.6	0.6	0.0	0.3	1.6	1.2	0.6	1.2	1.5	1.4	1.4	0.9	0.8	0.6	0.6	0.5	0.5	0.5	1.1	2.6
8-Feb	0.5	Z	0.6	0.6	0.6	0.7	0.6	0.6	5.0	5.0	4.3	4.6	4.2	6.4	6.0	5.7	6.5	7.0	4.3	0.8	2.1	4.2	3.6	2.8	3.3	7.0
9-Feb	8.5	3.0	Z	1.5	0.2	0.5	0.7	1.3	2.6	1.9	0.9	1.0	0.4	0.4	0.9	0.7	1.0	0.7	0.7	11.4	16.9	14.9	15.7	14.8	4.4	16.9
10-Feb	16.3	12.5	2.7	Z	4.0	6.5	6.6	5.4	13.3	4.6	1.7	2.0	2.0	1.7	2.9	3.4	3.9	4.5	4.1	4.9	6.6	17.9	18.9	15.7	7.0	18.9
11-Feb	9.2	6.3	10.6	12.0	Z	16.6	16.9	14.8	11.5	2.4	1.1	0.7	1.2	0.6	0.9	0.6	0.8	1.3	1.5	2.5	10.6	5.9	5.2	4.1	6.0	16.9
12-Feb	9.6	13.9	8.1	9.2	16.4	Z	11.4	28.2	5.8	10.3	8.6	7.2	5.1	5.9	2.4	0.8	0.6	0.9	0.7	1.2	2.2	0.4	0.0	0.3	6.5	28.2
13-Feb	Z	0.8	0.8	0.5	1.2	1.2	1.6	1.6	1.2	1.2	0.8	0.6	0.5	0.2	0.1	0.3	2.0	2.9	4.0	3.3	6.5	3.5	0.3	0.2	1.5	6.5
14-Feb	0.9	Z	1.4	0.6	0.0	0.0	0.0	0.0	0.0	C	C	C	C	C	1.0	0.7	0.5	0.2	1.2	2.8	3.2	3.6	6.1	4.9	1.5	6.1
15-Feb	5.3	5.3	Z	5.0	5.7	5.2	3.2	4.4	17.6	12.9	1.9	2.8	4.4	4.0	2.7	3.6	6.4	8.8	17.5	10.0	20.6	18.1	8.6	18.9	8.4	20.6
16-Feb	13.8	11.4	2.0	Z	16.4	10.7	6.8	16.8	17.0	16.3	9.6	5.7	6.6	7.8	9.3	12.8	11.6	3.9	10.7	19.1	20.4	9.7	8.5	5.1	11.0	20.4
17-Feb	4.3	2.2	2.7	4.2	Z	5.0	6.3	7.1	6.5	3.7	5.1	1.3	1.0	2.1	3.0	4.4	10.7	7.6	7.4	12.5	7.9	17.0	12.5	4.5	6.0	17.0
18-Feb	5.7	9.4	9.9	6.2	9.0	Z	7.2	3.3	4.5	9.0	6.8	5.9	6.0	8.1	3.7	3.1	2.2	1.1	0.4	0.4	0.4	0.2	0.3	0.2	4.5	9.9
19-Feb	Z	0.6	0.5	2.6	12.0	9.8	6.3	9.6	11.0	5.4	4.3	1.7	2.1	3.3	4.1	3.1	2.7	3.6	2.8	2.4	2.4	1.9	1.7	1.6	4.2	12.0
20-Feb	6.1	Z	4.3	5.1	6.3	3.5	4.2	4.1	2.2	2.6	2.3	3.2	3.3	3.8	4.1	5.3	4.8	4.8	4.6	4.5	3.4	6.1	7.9	10.5	4.7	10.5
21-Feb	12.4	7.5	Z	12.0	21.1	19.4	14.9	18.9	15.4	5.9	8.6	6.9	4.6	3.8	4.5	4.1	9.9	7.1	3.9	4.5	11.1	15.5	20.9	11.5	10.6	21.1
22-Feb	17.1	5.5	11.1	Z	15.2	18.1	5.2	9.4	15.6	6.7	1.7	1.3	1.1	0.9	0.8	1.0	1.3	1.3	4.9	5.9	6.3	5.6	5.3	5.6	6.4	18.1
23-Feb	6.6	6.3	5.6	5.0	Z	6.8	5.8	2.7	7.9	16.1	17.4	8.3	3.7	2.7	4.7	9.2	10.0	10.4	14.1	18.7	17.3	2.0	3.9	0.7	8.1	18.7
24-Feb	0.5	1.0	2.4	1.4	0.8	Z	0.7	0.7	0.9	0.5	0.2	0.2	0.3	0.1	0.3	0.3	0.9	1.6	2.2	2.5	1.7	1.2	1.1	1.0	1.0	2.5
25-Feb	Z	1.0	0.9	0.8	0.6	0.5	0.3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.1	0.0	0.0	0.0	0.2	1.0
26-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.7	1.3	1.6	1.1	0.6	0.6	0.6	0.6	0.7	0.9	2.3	2.9	2.6	3.0	4.1	4.9	6.1	7.7	1.8	7.7
27-Feb	5.5	4.6	Z	3.8	3.2	5.2	7.6	7.6	8.6	3.4	1.2	2.3	2.8	1.8	2.3	1.2	1.3	1.0	0.7	3.3	23.4	26.9	23.2	10.9	6.6	26.9
28-Feb	5.2	13.6	2.2	Z	2.4	3.3	4.0	5.9	4.1	2.1	1.5	1.0	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.5	0.8	0.3	2.3	13.6
29-Feb	1.0	0.9	0.7	1.4	Z	1.1	1.4	1.2	1.2	1.2	0.7	0.6	0.9	0.8	1.3	1.5	2.1	1.6	1.7	1.1	1.4	1.1	0.8	1.0	1.2	2.1
6.1 5.0 3.1 3.6 5.7 5.5 4.8 5.9 6.6 5.2 3.6 2.9 2.3 2.6 2.5 2.6 3.3 2.9 3.8 4.8 6.5 6.1 5.8 5.1																								Diurnal Average		
17.1 13.9 11.1 12.0 21.1 19.4 16.9 28.2 17.6 16.3 17.4 8.3 6.6 8.1 9.3 12.8 11.6 10.4 17.5 19.1 23.4 26.9 23.2 18.9																								Diurnal Maximum		

Z - zerspan C - Calibration
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Sawbones Bay - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Dioxide (NO₂) - ppb
Sawbones Bay - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	655	98.94	98.94
21 - 40	7	1.06	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Sawbones Bay - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	54	63	24	19	33	47	30	34	43	17	23	41	66	80	38	41	653
21 - 40	0	0	0	0	0	0	0	2	2	0	0	3	0	0	0	0	7
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	54	63	24	19	33	47	30	36	45	17	23	44	66	80	38	41	660

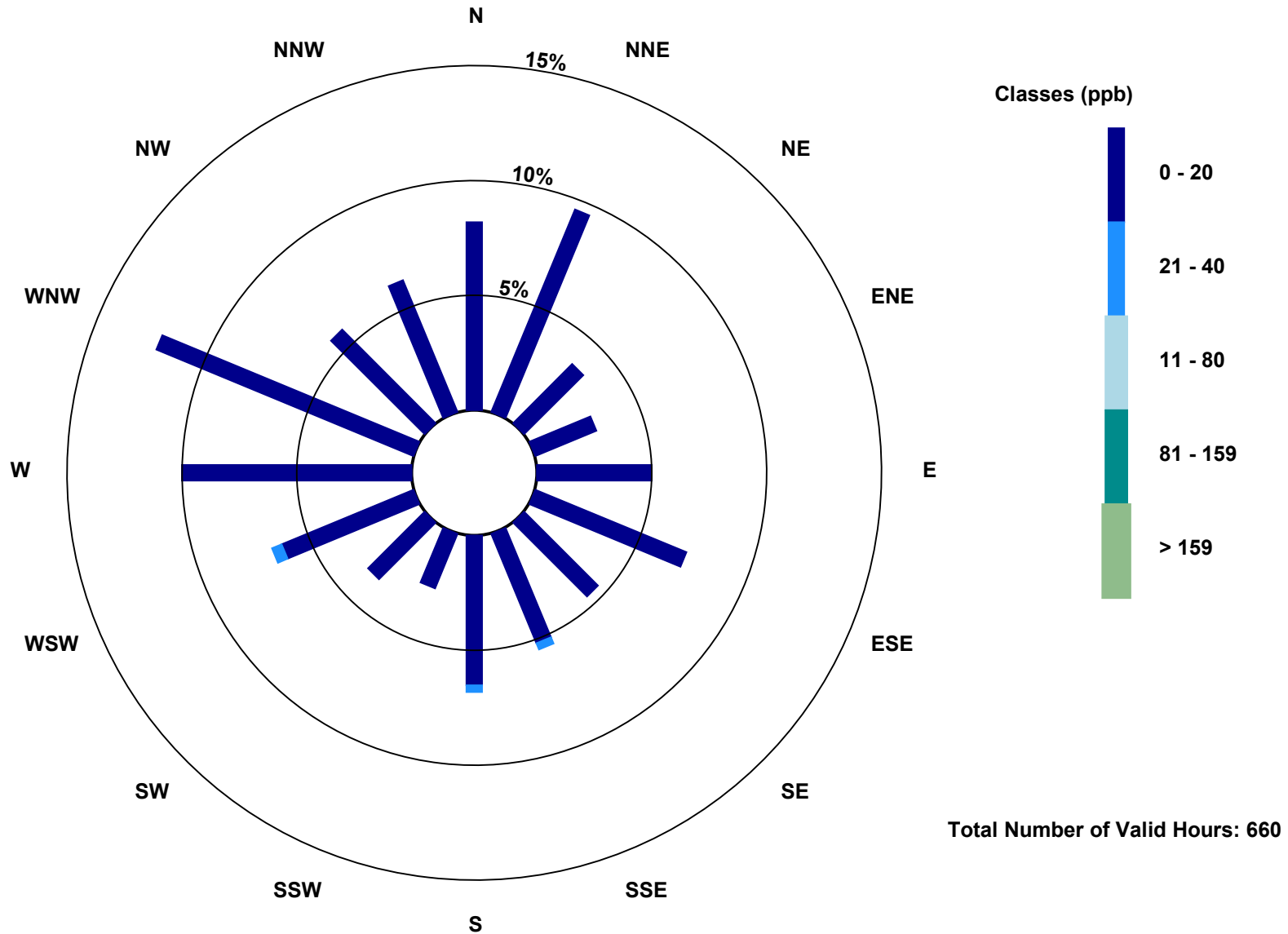
Total Number of Valid Hours: 660

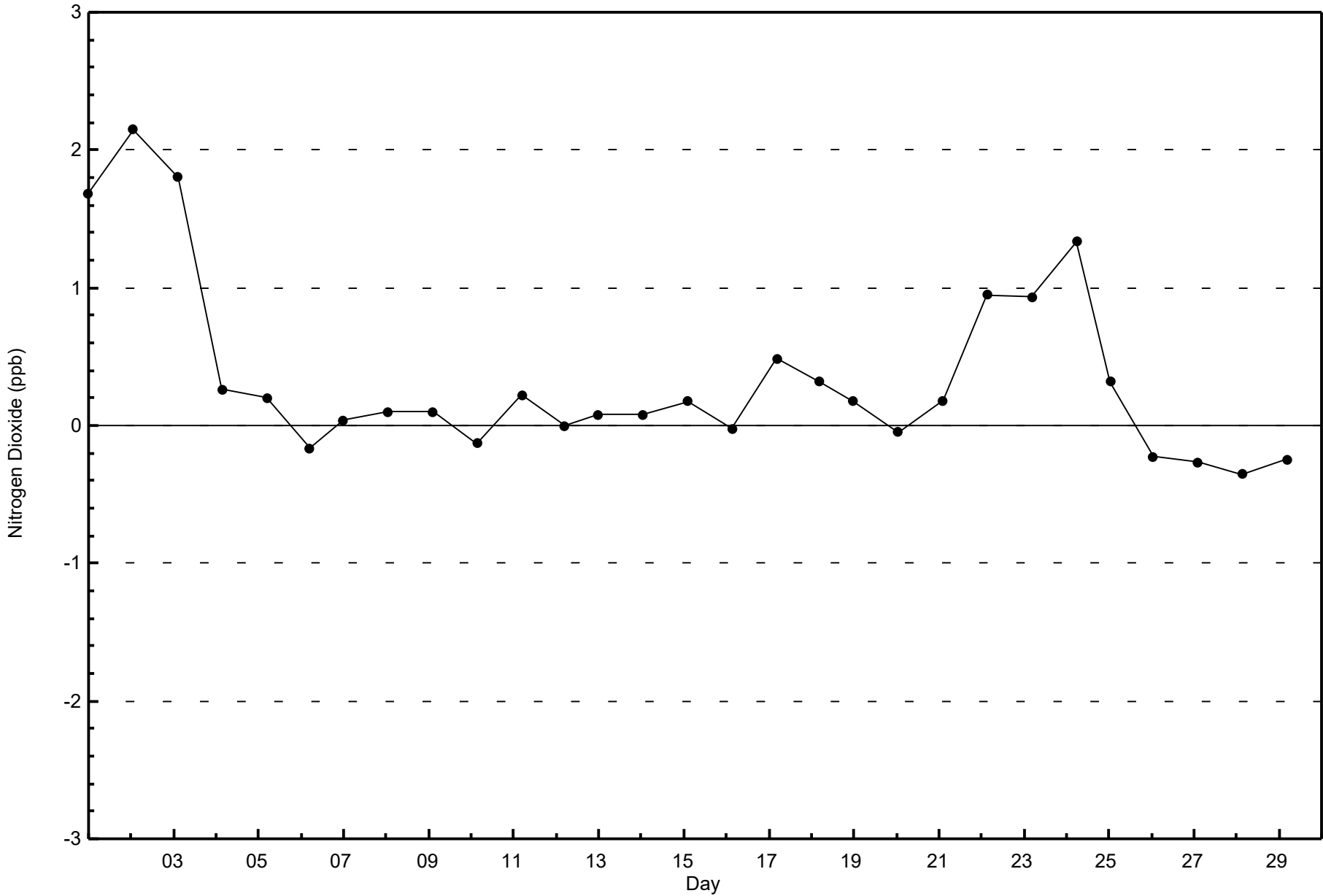
Total Number of Hours: 696

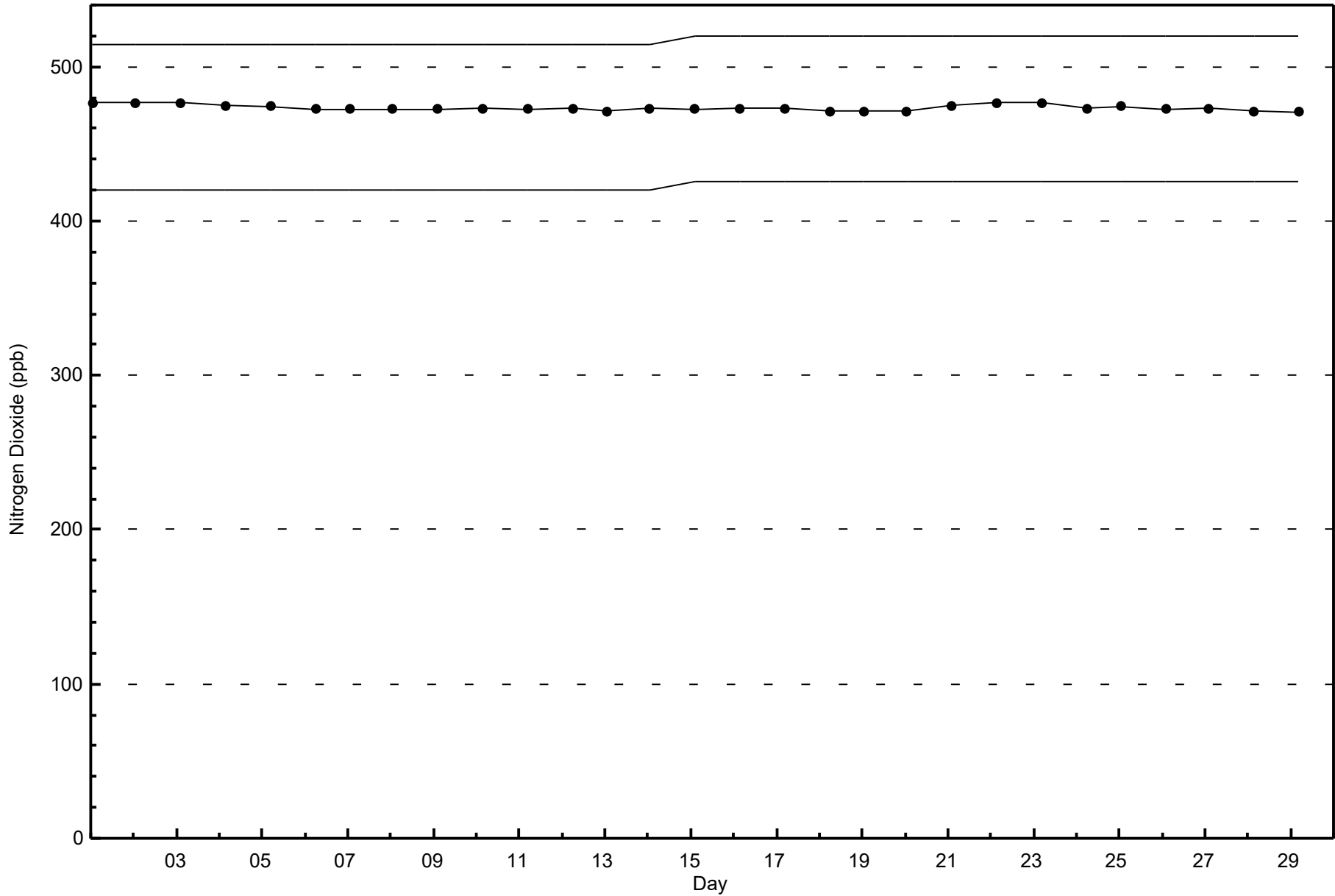


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Sawbones Bay









Wood Buffalo Environmental Association
Summary of Hour Averages

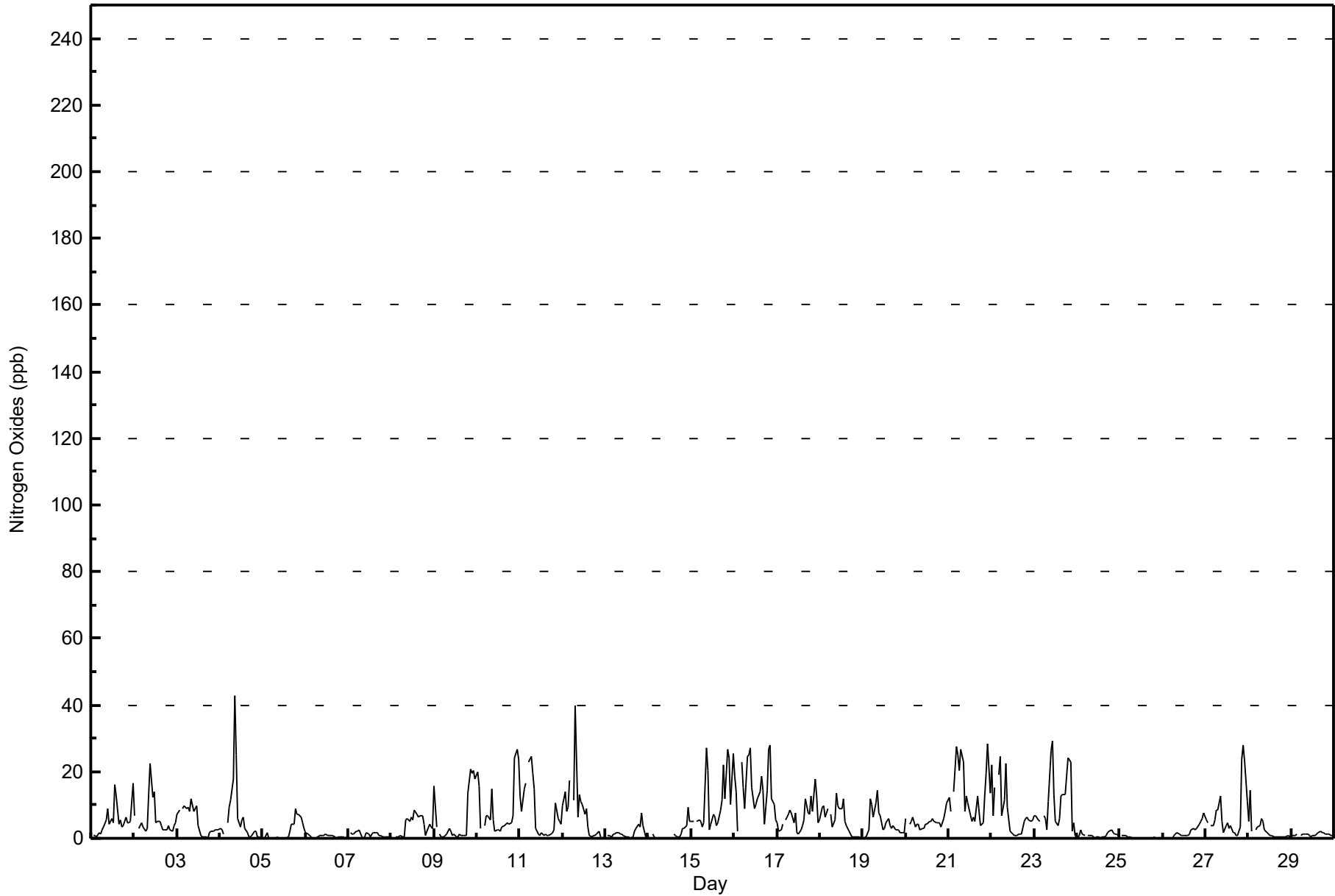
Nitrogen Oxides (NO_x) - ppb
Sawbones Bay - February 2024

Maximum Value: 43.0 ppb on Feb 4 09:00		Maximum Daily Average: 15.3 ppb on Feb 16		Hours in Service: 696																						
Minimum Value: 0.0 ppb on Feb 5 01:00		Minimum Daily Average: 0.2 ppb on Feb 25		Hours of Data: 662																						
Maximum Diurnal Average: 9.7 ppb at hour 9		Minimum Diurnal Average: 3.2 ppb at hour 18		Hours of Missing Data: 34																						
Monthly Average: 5.46 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.3 Q ₁ = 0.9 Median = 3.0 Q ₃ = 7.0 P ₉₀ = 14.1 P ₉₉ = 27.2		Hours of Calibration: 34																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	Z	0.7	0.7	0.6	1.6	1.2	2.5	3.3	5.7	8.9	4.2	5.8	4.7	16.2	12.7	4.3	5.4	3.4	4.0	6.2	4.8	4.7	5.1	16.6	5.4	16.6
2-Feb	6.9	Z	2.9	3.8	4.6	3.3	2.3	3.0	13.3	22.3	12.3	14.0	4.6	5.3	5.1	3.7	2.4	2.6	2.7	3.7	2.6	2.0	3.7	4.7	5.7	22.3
3-Feb	7.0	8.6	Z	8.8	9.8	9.0	9.3	8.0	11.8	8.0	8.8	9.9	3.8	0.8	0.5	0.3	0.2	0.2	1.7	2.2	2.1	2.4	2.8	2.4	5.2	11.8
4-Feb	3.0	2.6	1.4	Z	4.7	9.2	11.5	17.7	43.0	25.0	5.8	3.5	5.4	6.5	2.8	1.7	0.3	0.3	0.6	2.0	2.3	0.4	0.5	0.1	6.5	43.0
5-Feb	0.0	0.1	1.8	0.0	Z	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.3	2.1	4.1	4.3	8.7	7.1	7.3	6.3	4.8	2.9	2.2	8.7
6-Feb	1.7	1.2	0.8	0.4	0.2	Z	0.5	0.6	0.9	0.9	0.6	1.4	0.6	0.7	0.7	0.6	0.3	0.1	0.3	0.4	0.3	0.2	0.1	0.4	0.6	1.7
7-Feb	Z	1.6	1.2	1.2	2.1	2.0	2.6	0.6	0.0	0.3	1.8	1.4	0.6	1.4	1.8	1.5	1.5	0.9	0.8	0.6	0.6	0.5	0.5	0.5	1.1	2.6
8-Feb	0.5	Z	0.6	0.6	0.6	0.7	0.6	0.6	5.5	5.8	5.3	6.3	5.6	8.3	7.1	6.3	6.9	7.0	4.3	0.8	2.1	4.2	3.6	2.8	3.7	8.3
9-Feb	15.7	3.3	Z	1.5	0.2	0.5	0.7	1.4	3.0	2.2	1.0	1.2	0.5	0.4	1.1	0.7	1.0	0.7	0.7	13.7	20.7	19.3	20.2	17.9	5.5	20.7
10-Feb	19.9	15.5	2.8	Z	4.0	6.8	6.7	5.4	14.9	5.4	2.1	2.5	2.5	2.1	3.4	3.8	4.1	4.5	4.1	4.9	6.9	24.3	26.8	23.8	8.6	26.8
11-Feb	12.7	8.2	14.8	16.7	Z	22.9	24.6	19.5	14.9	3.1	1.4	0.8	1.7	0.8	1.1	0.7	0.9	1.3	1.5	2.5	10.7	5.9	5.2	4.1	7.7	24.6
12-Feb	9.6	14.0	8.1	9.2	17.5	Z	11.4	39.9	6.1	13.1	11.1	10.0	7.3	9.1	3.3	0.9	0.6	0.9	0.7	1.2	2.2	0.4	0.0	0.3	7.7	39.9
13-Feb	Z	0.8	0.8	0.5	1.2	1.2	1.6	1.6	1.2	1.3	0.9	0.6	0.5	0.2	0.1	0.3	2.1	2.9	4.0	3.3	7.4	4.0	0.3	0.2	1.6	7.4
14-Feb	0.9	Z	1.4	0.6	0.0	0.0	0.0	0.0	0.0	C	C	C	C	C	1.1	0.7	0.5	0.2	1.2	2.8	3.2	3.8	9.3	4.9	1.7	9.3
15-Feb	5.3	5.3	Z	5.0	5.7	5.2	3.3	4.9	27.1	20.4	2.6	4.1	7.1	6.2	3.9	4.9	8.4	11.4	21.9	11.7	26.9	24.3	10.2	25.5	10.9	27.1
16-Feb	18.8	14.1	2.0	Z	22.8	15.1	8.8	24.6	25.0	26.9	15.1	8.8	10.3	12.0	14.1	18.7	14.4	4.3	14.4	26.9	27.8	11.8	10.2	5.6	15.3	27.8
17-Feb	4.8	2.2	2.7	4.4	Z	5.4	7.1	8.4	7.7	4.6	7.4	1.6	1.2	2.7	3.9	5.4	12.0	7.6	7.4	12.6	7.9	17.7	12.6	4.5	6.6	17.7
18-Feb	5.7	9.4	9.9	6.2	9.0	Z	7.3	3.3	5.4	13.7	9.7	8.7	9.0	12.0	4.9	3.8	2.3	1.1	0.4	0.4	0.4	0.2	0.3	0.2	5.4	13.7
19-Feb	Z	0.6	0.5	2.6	12.0	10.0	6.3	10.5	14.4	7.8	6.9	2.4	3.0	4.8	5.9	3.9	3.0	3.6	2.8	2.4	2.4	1.9	1.7	1.6	4.8	14.4
20-Feb	6.1	Z	4.3	5.1	6.6	3.5	4.2	4.1	2.4	3.2	2.9	4.1	4.3	5.0	4.9	6.0	5.1	4.8	4.6	4.5	3.4	6.1	7.9	10.5	4.9	10.5
21-Feb	12.4	7.9	Z	13.8	27.4	25.2	20.5	26.8	22.8	8.0	12.9	10.4	6.6	5.2	6.2	5.2	12.5	7.9	3.9	4.6	12.5	19.7	28.4	13.4	13.7	28.4
22-Feb	21.9	6.6	15.3	Z	19.0	24.7	6.6	11.6	22.5	9.5	2.0	1.6	1.1	1.0	0.8	1.1	1.3	1.3	4.9	5.9	6.4	5.7	5.3	5.6	7.9	24.7
23-Feb	6.9	6.6	5.6	5.0	Z	6.9	5.8	2.7	10.8	26.1	29.3	13.1	5.3	3.6	6.1	12.8	12.9	13.1	18.5	24.3	23.1	2.2	4.7	0.7	10.7	29.3
24-Feb	0.5	1.0	2.6	1.4	0.8	Z	0.7	0.7	0.9	0.5	0.2	0.2	0.3	0.1	0.3	0.3	0.9	1.6	2.2	2.5	1.7	1.2	1.1	1.0	1.0	2.6
25-Feb	Z	1.0	0.9	0.8	0.6	0.5	0.3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.1	0.0	0.0	0.0	0.2	1.0
26-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.7	1.3	1.7	1.4	0.9	0.9	0.9	0.8	0.9	1.1	2.7	3.0	2.6	3.0	4.1	4.9	6.1	7.7	1.9	7.7
27-Feb	5.5	4.6	Z	3.9	3.7	5.4	8.3	8.7	12.7	5.1	1.8	4.0	4.8	3.0	3.6	1.7	1.6	1.0	0.7	3.3	23.8	27.9	23.5	10.9	7.4	27.9
28-Feb	5.2	14.4	2.2	Z	2.4	3.3	4.0	6.0	4.9	2.7	1.9	1.2	0.9	0.8	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.5	0.8	0.3	2.4	14.4
29-Feb	1.0	0.9	0.7	1.4	Z	1.1	1.4	1.2	1.2	1.2	0.7	0.6	0.9	0.8	1.3	1.6	2.1	1.6	1.7	1.1	1.4	1.1	0.8	1.0	1.2	2.1
																								Diurnal Average		
																								Diurnal Maximum		
																								7.2 5.5 3.5 3.9 6.5 6.5 5.5 7.5 9.7 8.1 5.3 4.3 3.3 3.9 3.4 3.3 3.8 3.2 4.2 5.4 7.4 7.0 6.8 5.9		
																								21.9 15.5 15.3 16.7 27.4 25.2 24.6 39.9 43.0 26.9 29.3 14.0 10.3 16.2 14.1 18.7 14.4 13.1 21.9 26.9 27.8 27.9 28.4 25.5		
Z - zerspan C - Calibration																										



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Sawbones Bay - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Sawbones Bay - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	625	94.41	94.41
21 - 40	36	5.44	99.85
41 - 80	1	0.15	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Sawbones Bay - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	54	63	24	19	33	47	30	33	42	17	21	22	60	80	37	41	623
21 - 40	0	0	0	0	0	0	0	3	2	0	2	22	6	0	1	0	36
11 - 80	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	54	63	24	19	33	47	30	36	45	17	23	44	66	80	38	41	660

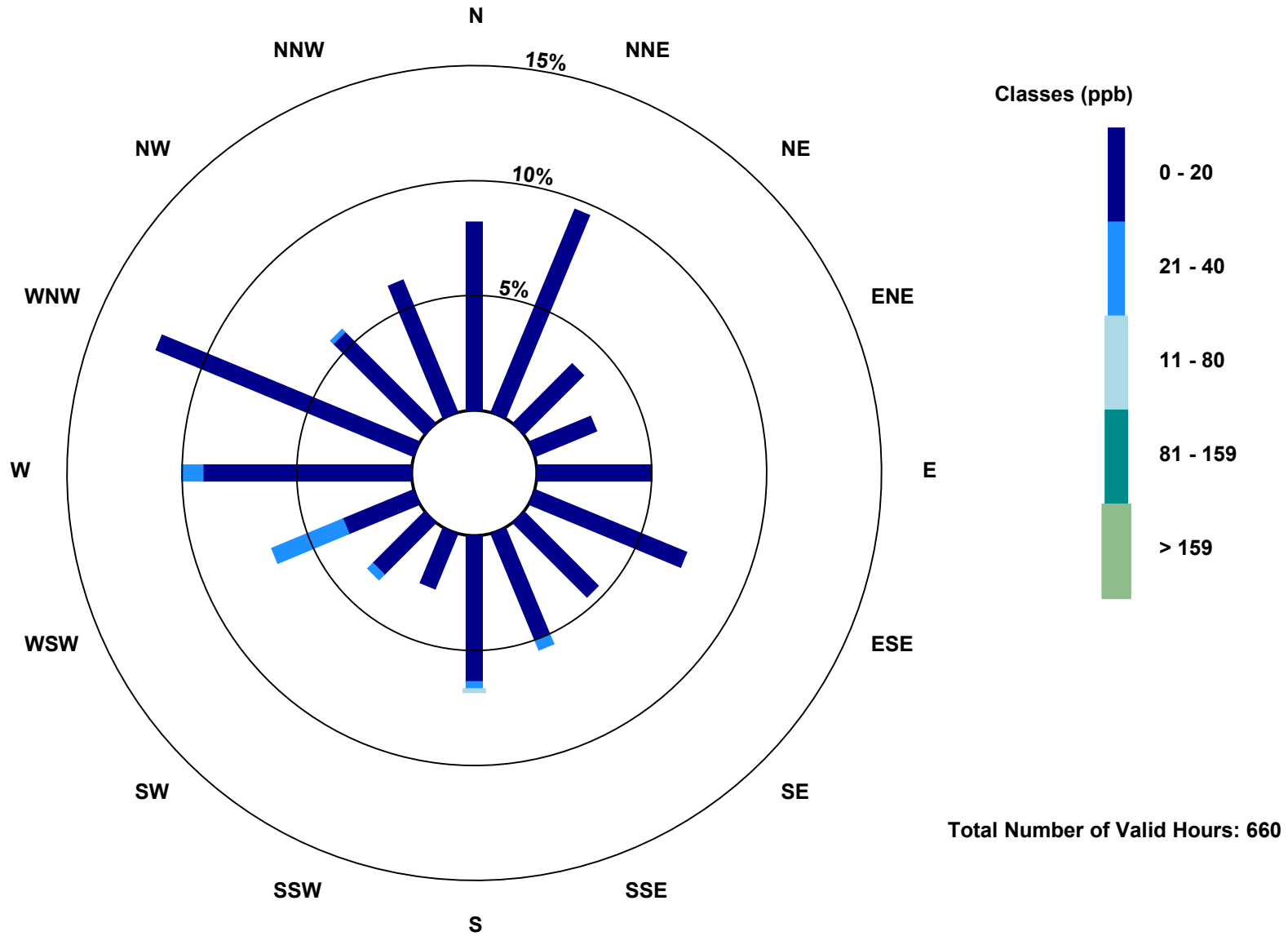
Total Number of Valid Hours: 660

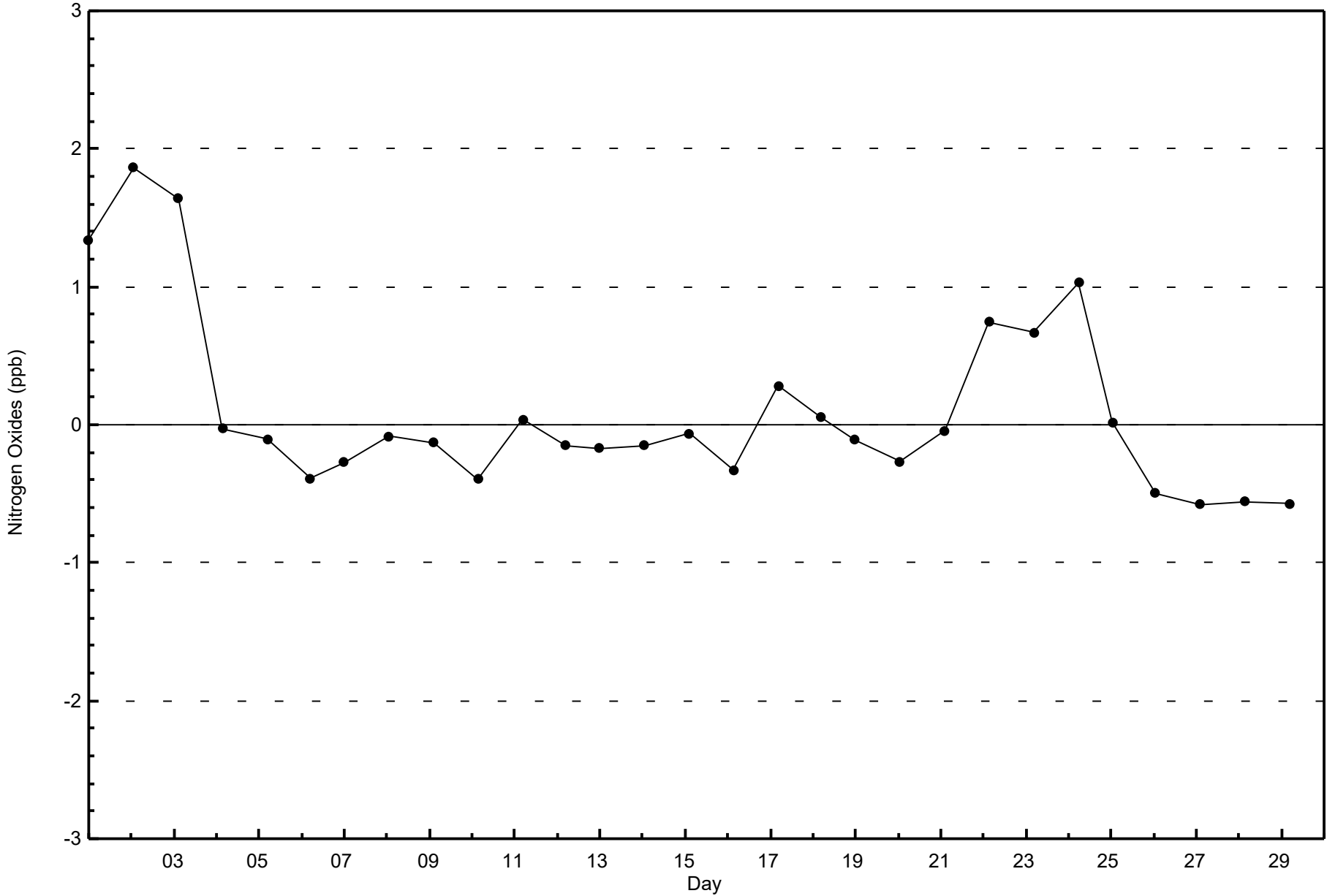
Total Number of Hours: 696

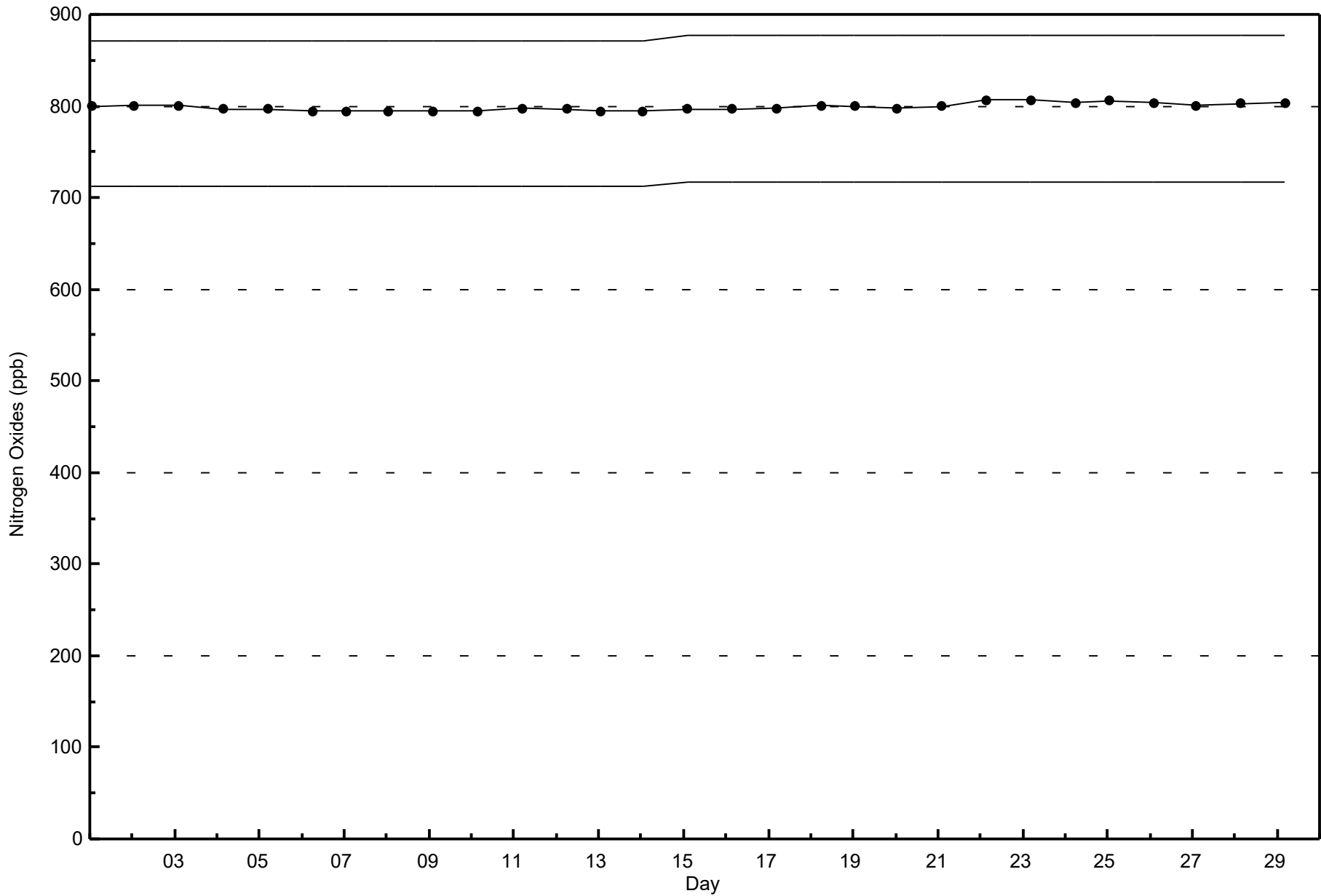


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Sawbones Bay









Wood Buffalo Environmental Association
Summary of Hour Averages

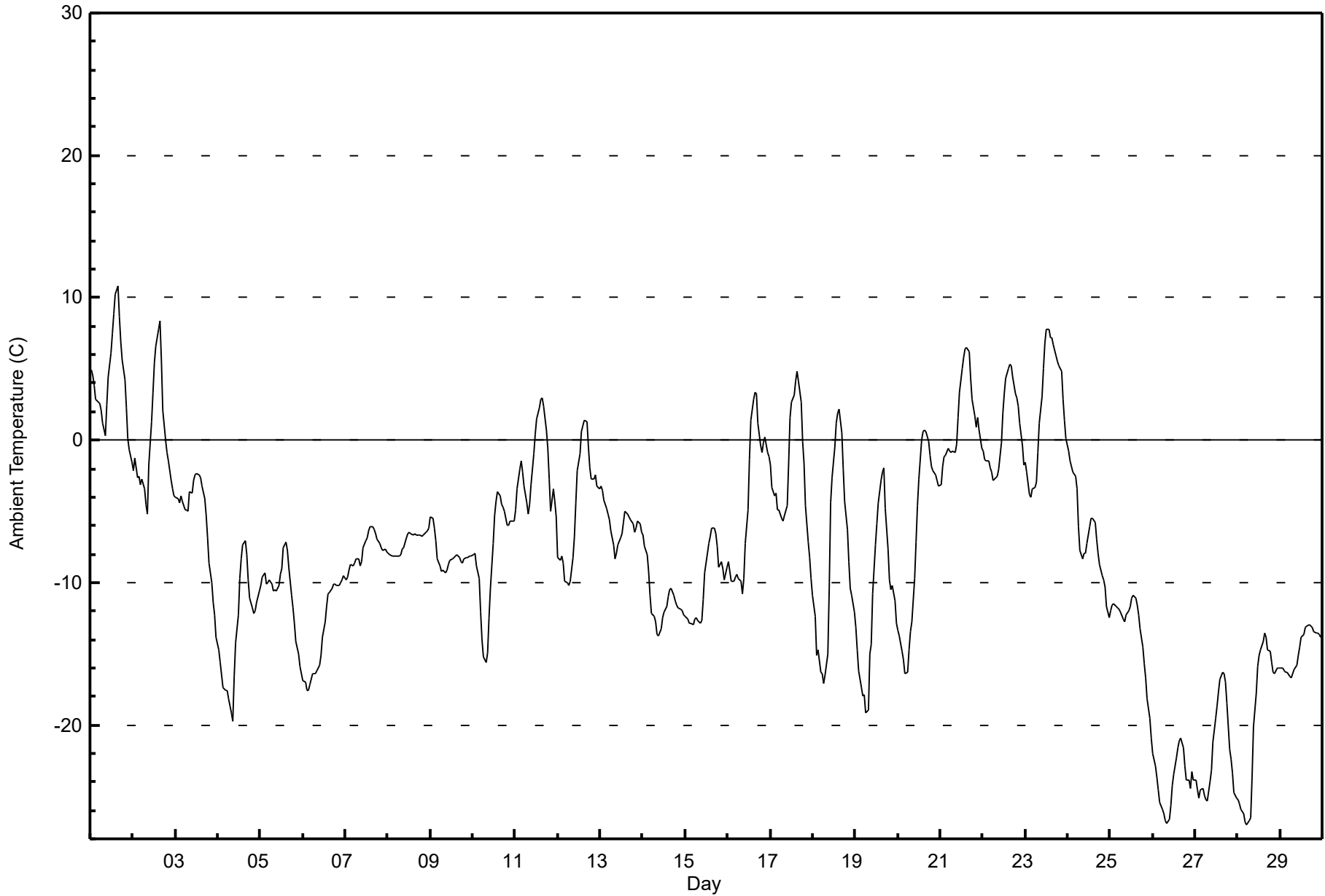
Ambient Temperature (AT) - C
Sawbones Bay - February 2024

Maximum Value: 10.8 C on Feb 1 16:00 Maximum Daily Average: 4.2 C on Feb 1																						Hours in Service: 696 Hours of Data: 696				
Minimum Value: -27.0 C on Feb 28 06:00 Minimum Daily Average: -23.9 C on Feb 26 Maximum Diurnal Average: -3.6 C at hour 16 Minimum Diurnal Average: -11.3 C at hour 8 Monthly Average: -7.99 C Percentiles: P ₁ = -26.3 P ₁₀ = -17.4 Q ₁ = -12.6 Median = -8.0 Q ₃ = -2.7 P ₉₀ = 2.0 P ₉₉ = 7.7																						Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	4.9	4.5	3.9	2.9	2.6	2.6	2.1	1.2	0.4	2.4	4.4	6.1	7.5	8.9	10.2	10.8	8.7	6.9	5.6	4.2	2.2	0.1	-0.7	-1.5	4.2	10.8
2-Feb	-2.2	-1.2	-2.6	-2.5	-3.1	-2.7	-3.5	-4.5	-5.2	-1.8	1.3	3.4	5.4	6.6	7.7	8.4	5.7	2.1	0.0	-0.9	-1.5	-2.8	-3.4	-3.9	-0.1	8.4
3-Feb	-4.0	-4.1	-4.4	-4.0	-4.3	-4.9	-4.9	-5.0	-3.7	-3.7	-2.9	-2.5	-2.3	-2.4	-2.7	-3.2	-4.1	-5.2	-6.8	-8.7	-10.0	-11.4	-12.2	-13.9	-5.5	-2.3
4-Feb	-14.8	-15.6	-16.5	-17.4	-17.6	-17.6	-18.1	-19.2	-19.8	-16.6	-14.3	-12.3	-9.7	-8.3	-7.3	-7.0	-8.0	-9.8	-11.1	-11.7	-12.2	-12.0	-11.4	-10.6	-13.3	-7.0
5-Feb	-10.2	-9.6	-9.3	-10.1	-10.0	-9.8	-10.1	-10.6	-10.5	-10.6	-10.2	-9.5	-9.1	-7.6	-7.1	-7.7	-8.9	-10.9	-11.8	-12.8	-14.1	-15.0	-15.9	-16.4	-10.7	-7.1
6-Feb	-16.9	-17.0	-17.6	-17.6	-17.1	-16.4	-16.4	-16.4	-16.2	-15.8	-15.1	-13.9	-12.8	-11.7	-10.8	-10.7	-10.4	-10.1	-10.1	-10.2	-10.2	-10.0	-9.8	-9.5	-13.5	-9.5
7-Feb	-9.8	-9.6	-9.2	-8.7	-8.9	-8.6	-8.4	-8.4	-8.8	-8.5	-7.6	-7.0	-6.9	-6.4	-6.1	-6.1	-6.2	-6.5	-6.9	-7.3	-7.6	-7.7	-7.7	-7.8	-7.8	-6.1
8-Feb	-7.9	-8.1	-8.2	-8.1	-8.2	-8.2	-8.1	-8.1	-7.7	-7.5	-6.9	-6.6	-6.5	-6.6	-6.7	-6.6	-6.6	-6.7	-6.7	-6.8	-6.6	-6.5	-6.3	-6.2	-7.2	-6.2
9-Feb	-5.3	-5.5	-6.1	-7.0	-8.3	-8.8	-9.2	-9.2	-9.3	-9.1	-8.7	-8.5	-8.3	-8.2	-8.1	-8.1	-8.3	-8.5	-8.7	-8.3	-8.3	-8.2	-8.1	-8.2	-8.1	-5.3
10-Feb	-8.0	-8.0	-8.8	-9.7	-12.0	-14.0	-15.2	-15.6	-15.0	-12.5	-10.4	-7.2	-5.3	-4.3	-3.6	-4.0	-4.5	-4.7	-5.0	-5.9	-6.0	-5.7	-5.7	-5.6	-8.2	-3.6
11-Feb	-4.9	-3.4	-2.0	-1.4	-2.2	-3.2	-4.4	-5.1	-4.5	-3.2	-1.0	0.4	1.5	2.3	2.9	3.0	2.3	0.7	-0.6	-2.7	-5.0	-3.4	-4.3	-5.4	-1.8	3.0
12-Feb	-8.2	-8.5	-8.2	-8.6	-9.9	-10.0	-10.3	-10.0	-8.2	-6.7	-4.5	-2.1	-1.0	0.6	1.0	1.4	1.3	-0.5	-1.9	-2.7	-2.8	-2.5	-3.2	-3.4	-4.5	1.4
13-Feb	-3.2	-3.5	-4.2	-4.8	-5.2	-5.6	-6.4	-7.4	-8.3	-7.9	-7.3	-6.9	-6.6	-5.8	-5.0	-5.2	-5.4	-5.6	-5.9	-6.5	-6.1	-5.7	-5.9	-6.4	-5.9	-3.2
14-Feb	-6.6	-7.4	-8.1	-9.2	-10.9	-12.2	-12.4	-12.8	-13.6	-13.8	-13.3	-12.5	-12.1	-11.7	-11.0	-10.5	-10.4	-10.9	-11.3	-11.6	-11.8	-11.9	-12.0	-12.2	-11.3	-6.6
15-Feb	-12.3	-12.6	-12.8	-12.9	-13.0	-12.6	-12.5	-12.7	-12.9	-12.6	-11.2	-9.3	-7.9	-7.3	-6.7	-6.2	-6.2	-6.6	-7.5	-8.9	-8.6	-9.0	-9.8	-8.9	-10.0	-6.2
16-Feb	-8.5	-9.2	-10.0	-9.9	-9.6	-9.4	-9.7	-10.0	-10.8	-9.8	-7.3	-4.9	-1.4	1.4	2.9	3.4	3.2	1.2	-0.4	-0.9	-0.1	0.2	-0.9	-1.2	-4.2	3.4
17-Feb	-1.8	-3.3	-3.9	-3.7	-4.9	-4.9	-5.5	-5.7	-5.3	-4.6	-1.6	1.6	2.7	3.1	4.1	4.8	4.2	2.7	0.0	-1.6	-4.6	-7.1	-8.2	-9.7	-2.2	4.8
18-Feb	-10.9	-12.4	-15.1	-14.8	-16.3	-16.4	-17.1	-16.5	-15.0	-10.4	-4.4	-2.7	-0.5	1.2	1.9	2.2	0.5	-2.1	-4.3	-6.3	-8.5	-10.4	-10.9	-12.1	-8.4	2.2
19-Feb	-13.2	-14.8	-16.2	-17.3	-18.0	-17.9	-19.1	-18.9	-15.0	-14.3	-10.8	-7.3	-5.9	-4.4	-2.8	-2.2	-1.9	-4.8	-7.7	-9.8	-10.5	-10.2	-11.3	-12.8	-11.1	-1.9
20-Feb	-13.4	-13.7	-14.8	-15.4	-16.4	-16.3	-14.7	-13.4	-12.8	-9.7	-7.2	-4.6	-2.7	0.1	0.6	0.7	0.6	-0.1	-1.1	-1.9	-2.2	-2.5	-2.8	-3.2	-7.0	0.7
21-Feb	-3.1	-1.9	-1.2	-1.0	-0.6	-0.8	-0.8	-0.8	-0.9	-0.3	1.6	3.4	5.0	5.8	6.4	6.5	6.2	4.3	2.9	1.7	0.9	1.5	0.7	-0.6	1.5	6.5
22-Feb	-0.7	-1.4	-1.5	-1.5	-2.0	-2.3	-2.8	-2.6	-2.6	-2.0	-0.2	1.9	3.2	4.3	5.1	5.3	5.3	4.5	3.3	3.0	2.4	1.2	-0.3	-1.7	0.7	5.3
23-Feb	-1.6	-2.2	-3.8	-4.0	-3.5	-3.4	-2.9	-0.9	1.2	3.0	5.0	6.8	7.8	7.7	7.2	7.2	6.7	6.0	5.5	5.2	4.8	2.8	1.4	0.1	2.3	7.8
24-Feb	-0.8	-1.4	-1.8	-2.2	-2.5	-3.4	-6.0	-7.7	-8.4	-8.0	-7.9	-7.3	-6.0	-5.5	-5.5	-5.8	-6.9	-7.9	-8.7	-9.5	-9.8	-10.3	-11.7	-12.5	-6.6	-0.8
25-Feb	-11.9	-11.6	-11.5	-11.7	-11.8	-11.8	-12.1	-12.6	-12.7	-12.2	-12.0	-11.6	-11.1	-10.9	-11.1	-11.6	-12.2	-13.2	-14.5	-15.7	-16.7	-18.2	-19.6	-20.9	-13.3	-10.9
26-Feb	-22.0	-22.9	-23.7	-24.5	-25.5	-26.0	-26.3	-26.7	-26.9	-26.6	-25.6	-24.2	-23.5	-22.3	-21.6	-21.1	-21.0	-21.6	-22.8	-23.9	-23.8	-24.5	-23.3	-23.9	-23.9	-21.0
27-Feb	-23.8	-24.5	-25.2	-24.6	-24.5	-25.0	-25.2	-25.4	-24.0	-23.1	-21.2	-19.6	-18.6	-17.7	-16.8	-16.3	-16.4	-17.0	-18.5	-21.7	-22.4	-23.4	-24.8	-25.1	-21.9	-16.3
28-Feb	-25.2	-25.6	-26.0	-26.3	-26.8	-27.0	-26.7	-26.6	-23.7	-20.1	-17.8	-15.9	-15.1	-14.8	-14.2	-13.5	-13.9	-14.7	-14.9	-15.6	-16.3	-16.4	-16.0	-16.0	-19.5	-13.5
29-Feb	-16.0	-16.0	-16.2	-16.3	-16.3	-16.6	-16.7	-16.4	-16.1	-15.8	-15.2	-14.5	-13.9	-13.6	-13.2	-13.0	-13.0	-13.0	-13.2	-13.4	-13.5	-13.5	-13.6	-13.8	-14.7	-13.0
																						Diurnal Average				
																						Diurnal Maximum				



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Sawbones Bay - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Sawbones Bay - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	51	7.33	7.33
-20 - 0	542	77.87	85.20
0 - 10	101	14.51	99.71
10 - 20	2	0.29	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

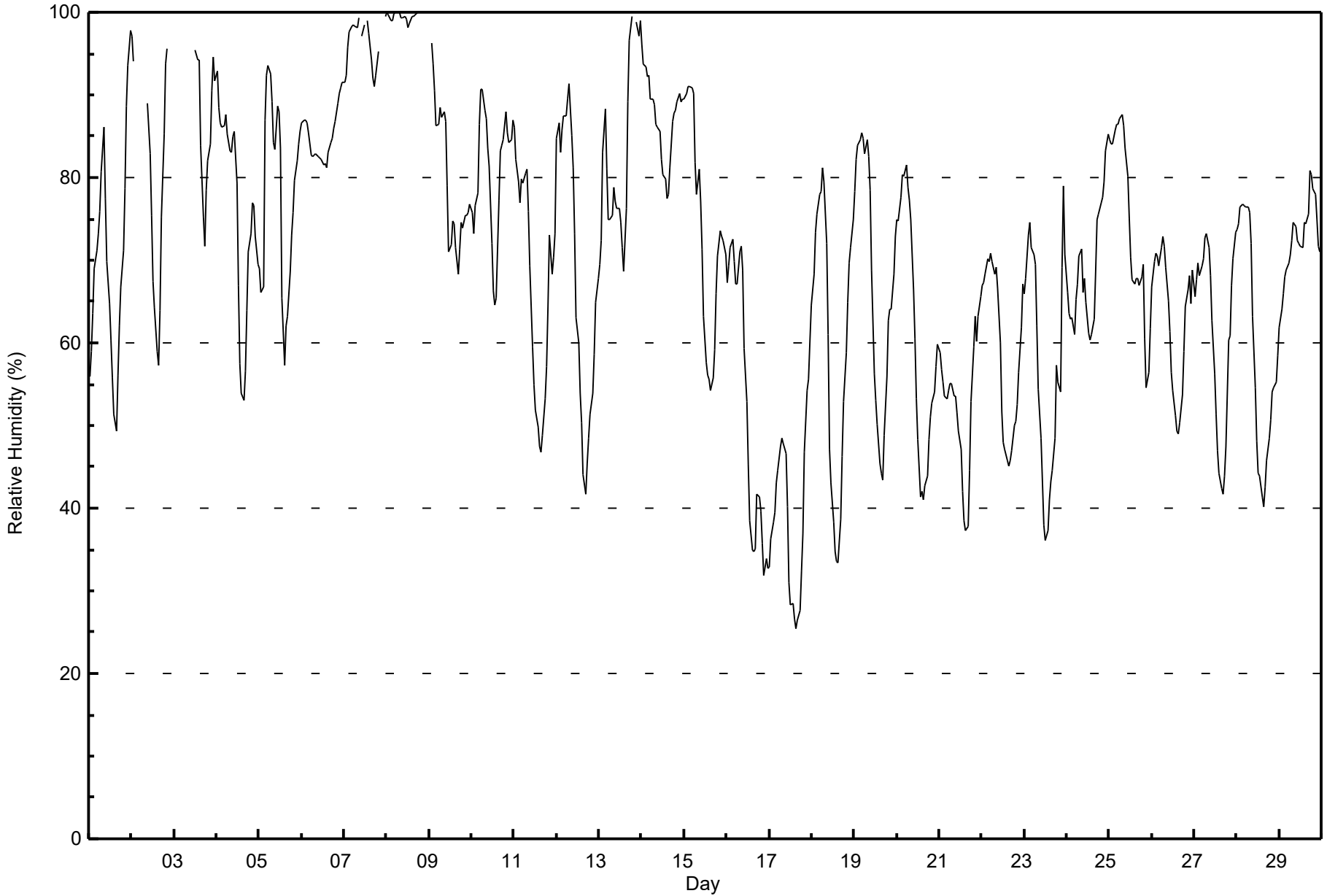
Relative Humidity (RH) - %
Sawbones Bay - February 2024

Maximum Value: 100.0 % on Feb 8 06:00		Maximum Daily Average: 99.6 % on Feb 8		Hours in Service:	696																						
Minimum Value: 25.4 % on Feb 17 16:00		Minimum Daily Average: 39.4 % on Feb 17		Hours of Data:	664																						
Maximum Diurnal Average: 78.8 % at hour 7		Minimum Diurnal Average: 57.6 % at hour 16		Hours of Missing Data:	32																						
Monthly Average: 70.21 %		Percentiles: P ₁ = 31.6 P ₁₀ = 45.6 Q ₁ = 57.3 Median = 71.5 Q ₃ = 83.9 P ₉₀ = 91.6 P ₉₉ = 100.0		Hours of Calibration:	0																						
				Percent Operational Time:	95.4																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	55.9	59.0	63.5	68.9	71.2	73.3	75.9	80.7	86.1	77.5	69.9	64.7	60.4	55.8	51.4	49.3	56.0	62.0	66.8	71.2	78.6	88.7	93.5	97.9	69.9	97.9	
2-Feb	97.2	94.0	OR	OR	OR	OR	OR	OR	OR	OR	89.0	82.9	75.5	67.4	64.2	58.9	57.2	63.9	75.3	85.3	93.7	95.6	OR	OR	OR	--	97.2
3-Feb	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	95.4	94.2	94.2	83.9	75.3	71.8	78.5	82.0	84.0	90.6	94.5	91.7	--	95.4	
4-Feb	92.9	88.5	86.6	86.2	86.2	87.7	85.3	83.3	83.1	85.0	85.6	79.3	67.0	57.4	53.9	53.1	56.6	63.9	71.0	73.2	76.9	76.7	72.9	69.5	75.9	92.9	
5-Feb	68.9	66.0	66.8	86.9	92.3	93.5	92.6	89.1	84.3	83.4	88.6	88.0	83.6	65.5	57.3	62.0	63.2	68.6	73.1	75.7	79.6	82.0	84.1	85.5	78.4	93.5	
6-Feb	86.6	87.0	87.0	86.6	85.5	82.7	82.5	82.7	82.8	82.5	82.3	82.2	81.6	81.7	81.3	83.1	84.2	84.7	85.9	86.8	89.0	90.1	90.9	91.5	85.0	91.5	
7-Feb	91.6	92.3	95.7	97.7	98.3	98.4	98.4	98.1	99.4	OR	97.2	98.4	OR	98.9	97.4	94.2	92.0	91.0	92.3	95.3	OR	OR	OR	99.5	96.1	99.5	
8-Feb	99.9	99.7	98.9	98.9	99.8	100.0	100.0	100.0	99.4	99.4	99.6	99.2	98.2	98.6	99.5	99.5	99.7	100.0	100.0	100.0	100.0	100.0	OR	OR	99.6	100.0	
9-Feb	OR	96.3	93.7	90.6	86.2	86.5	88.4	87.2	88.0	86.7	79.0	71.1	71.9	74.7	74.5	71.5	68.3	71.4	74.6	73.9	75.4	75.4	75.8	76.8	79.9	96.3	
10-Feb	75.8	73.2	76.5	78.2	86.5	90.8	90.6	88.1	87.1	83.5	81.4	72.0	66.2	64.6	65.5	77.3	83.2	83.8	84.6	88.0	85.5	84.2	84.6	87.0	80.8	90.8	
11-Feb	86.0	82.2	79.5	76.9	79.8	79.3	80.5	81.0	75.9	69.3	59.5	54.9	51.8	49.9	47.5	46.8	48.9	53.3	57.1	64.4	73.1	68.3	70.3	73.2	67.1	86.0	
12-Feb	84.7	86.7	83.0	85.7	87.4	87.5	89.5	91.3	85.1	81.1	73.2	63.0	60.0	53.9	50.3	44.1	41.7	45.5	48.4	51.4	53.9	58.7	64.8	67.9	68.3	91.3	
13-Feb	69.5	72.4	83.0	88.4	81.1	74.9	75.0	75.5	78.8	77.2	76.3	76.3	74.6	71.5	68.7	76.3	89.2	96.7	99.5	OR	OR	98.9	97.1	98.9	81.8	99.5	
14-Feb	96.2	93.8	93.4	92.3	92.3	89.5	89.5	88.9	86.4	86.1	85.7	82.1	80.4	79.8	77.5	78.0	81.2	86.7	87.7	88.2	89.1	90.2	89.2	89.5	87.2	96.2	
15-Feb	89.5	90.2	91.0	90.9	90.8	90.1	81.8	78.0	81.0	77.1	71.4	63.3	57.6	56.2	55.7	54.3	55.8	59.1	66.0	70.6	73.6	72.9	72.4	70.7	73.3	91.0	
16-Feb	67.3	69.3	71.6	72.5	69.9	67.1	67.2	71.0	71.7	68.9	59.3	52.9	45.2	38.4	34.9	34.7	35.1	41.7	41.4	39.7	35.8	31.9	33.8	32.8	52.3	72.5	
17-Feb	32.9	36.3	38.4	39.5	43.1	44.6	47.4	48.4	47.8	46.6	40.1	31.0	28.3	28.5	26.6	25.4	26.4	27.5	32.3	37.0	46.8	54.2	55.7	60.1	39.4	60.1	
18-Feb	64.6	68.3	73.4	75.7	78.0	78.3	81.1	79.6	72.0	61.0	47.1	43.1	38.3	34.8	33.5	33.4	38.6	46.2	52.9	58.8	64.8	69.6	71.6	74.9	60.0	81.1	
19-Feb	78.4	82.2	83.9	84.7	85.4	84.7	83.0	84.5	82.6	78.4	68.9	56.2	53.1	50.2	45.5	44.3	43.3	48.8	55.9	62.7	64.1	64.1	68.2	72.9	67.8	85.4	
20-Feb	75.0	74.7	77.7	80.3	80.1	81.5	78.9	77.3	74.9	66.4	60.5	53.2	48.3	41.3	42.0	41.0	42.7	44.0	48.4	50.9	52.8	54.1	57.0	59.9	61.0	81.5	
21-Feb	58.8	56.8	55.3	53.6	53.3	54.2	55.0	55.0	53.6	53.5	51.5	49.3	47.1	42.0	38.4	37.3	37.8	44.6	52.9	59.4	63.2	60.2	63.2	65.6	52.6	65.6	
22-Feb	66.9	67.2	68.4	70.2	69.8	70.8	69.9	68.3	69.2	66.6	60.1	51.7	48.0	47.0	45.7	45.0	45.7	47.0	50.1	50.5	52.5	56.5	61.9	67.1	59.0	70.8	
23-Feb	65.9	67.8	73.1	74.6	71.5	70.6	69.4	62.0	54.4	48.5	43.3	38.0	36.2	37.3	41.0	43.2	44.6	48.5	57.3	55.3	54.1	69.2	78.9	70.8	57.3	78.9	
24-Feb	66.0	63.6	62.9	63.0	60.9	65.3	67.1	70.6	71.3	66.2	67.8	64.9	61.2	60.3	61.1	62.9	68.6	74.9	75.6	77.0	77.6	79.5	83.2	85.3	69.0	85.3	
25-Feb	84.5	84.0	84.1	85.8	86.5	86.5	87.1	87.6	86.2	83.6	80.1	75.1	70.3	67.6	67.0	67.8	67.8	66.9	68.0	69.5	60.5	54.6	56.4	61.8	74.6	87.6	
26-Feb	66.7	69.7	70.8	70.5	69.4	71.5	72.9	71.6	69.1	65.1	61.4	56.4	54.2	51.2	49.4	49.0	50.3	53.8	58.9	64.4	66.5	68.1	64.7	68.8	63.1	72.9	
27-Feb	65.7	67.6	69.7	68.1	69.3	70.1	72.7	73.2	71.5	68.2	62.7	56.2	51.3	47.0	44.2	42.3	41.7	43.9	47.4	60.4	60.9	67.0	70.3	73.5	61.0	73.5	
28-Feb	73.8	74.4	76.4	76.7	76.6	76.5	76.4	75.7	72.0	63.3	54.6	48.1	44.2	43.8	41.4	40.2	42.6	45.8	48.4	50.8	54.1	54.6	55.3	58.5	59.3	76.7	
29-Feb	61.8	64.1	65.9	67.9	68.8	69.6	70.7	72.4	74.6	74.1	72.3	72.1	71.8	71.5	74.5	74.5	75.7	80.8	80.3	78.7	78.0	74.9	71.7	71.1	72.4	80.8	
		74.9	76.0	76.7	78.2	78.5	78.7	78.8	78.6	77.3	73.6	70.1	64.9	61.2	59.6	57.9	57.6	59.3	63.0	66.9	68.9	69.9	71.7	72.4	74.9	Diurnal Average	
		99.9	99.7	98.9	98.9	99.8	100.0	100.0	100.0	99.4	99.4	99.6	99.2	98.2	98.9	99.5	99.5	99.7	100.0	100.0	100.0	100.0	100.0	97.1	99.5	Diurnal Maximum	
OR - Out of Range																											



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Sawbones Bay - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Sawbones Bay - February 2024

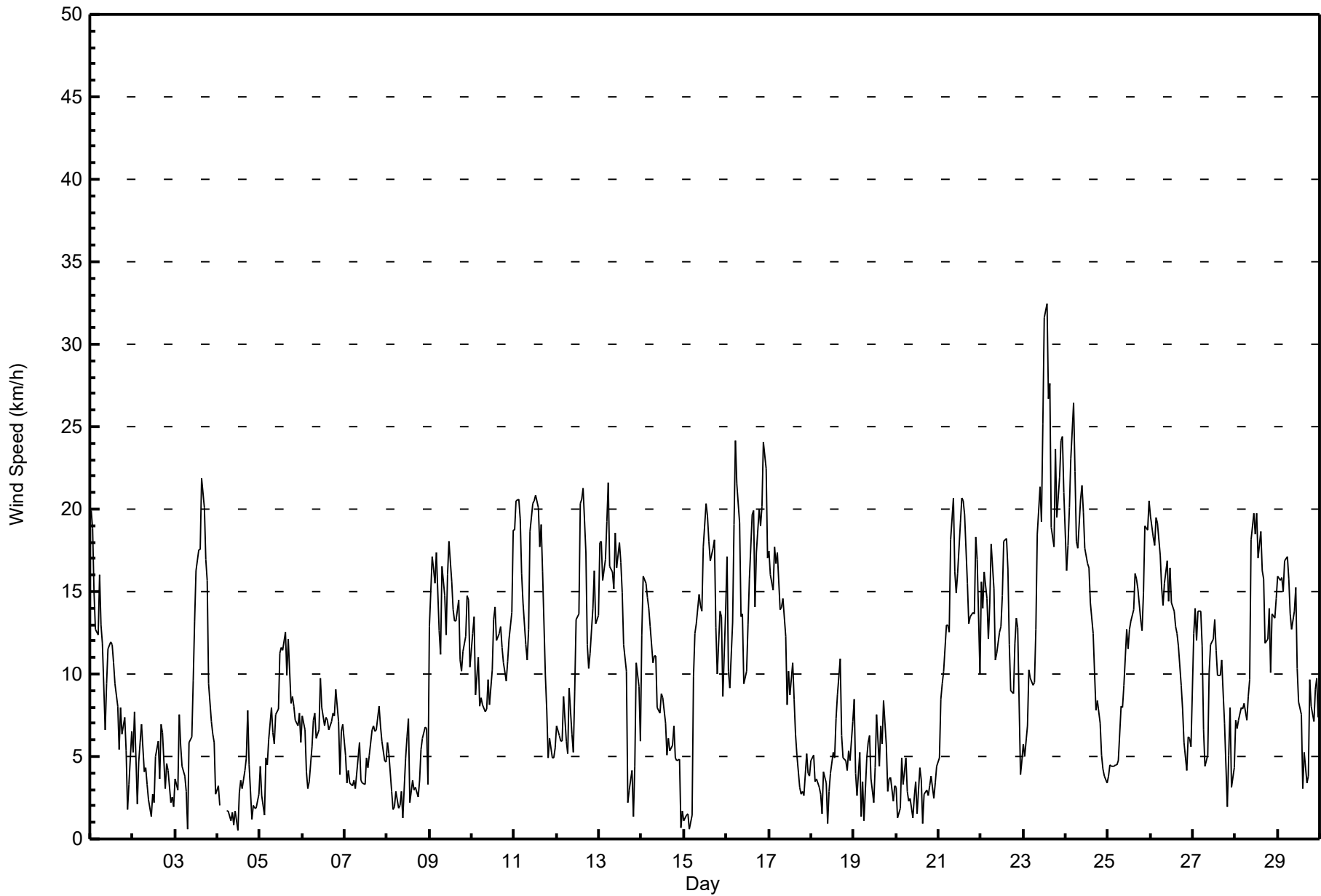
Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	33	4.97	4.97
40 - 60	149	22.44	27.41
60 - 80	269	40.51	67.92
80 - 100	205	30.87	98.80

Total Number of Valid Hours: 664

Total Number of Hours: 696



Maximum Speed: 32 km/h on Feb 23 14:00		Maximum Daily Speed Average: 16.3 km/h on Feb 16		Hours in Service: 696																																												
Minimum Speed Value: 1 km/h on Feb 4 12:00		Minimum Daily Speed Average: 1.1 km/h on Feb 19		Hours of Data: 693																																												
Maximum Diurnal Speed Average: 6.5 km/h at hour 14		Minimum Diurnal Speed Average: 1.7 km/h at hour 20		Hours of Missing Data: 3																																												
Monthly Average Velocity: 3.6 km/h 290.1 deg		Percentiles: P ₁ = 1 P ₁₀ = 3 Q ₁ = 5 Median = 9 Q ₃ = 14 P ₉₀ = 18 P ₉₉ = 24		Percent Operational Time: 99.6																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	SSE20	SSE19	SSE15	SSE13	SSE12	SSE16	S13	S12	S7	SSW9	S12	S12	S12	S11	S9	SSE8	SE5	SE8	SE6	ESE7	ESE5	E2	SSE3	SSE7	SSE9.5	SSE20																						
2-Feb	ESE5	SE8	NE2	E5	ESE6	SE7	SE4	ESE4	SE3	SSE2	SSE1	SSE3	E2	NE5	E6	ENE4	NNE7	NNE6	N3	NW5	NNW4	N2	WNW3	WSW2	E2.0	SE8																						
3-Feb	NNW4	WNW3	NW8	NNW6	NW4	N4	NNW3	N1	NW6	NNW6	NNW10	NNW13	NNW16	NW18	NW18	NNW22	NNW20	NNW17	N16	N9	N7	N6	N6	N3	NNW8.9	NNW22																						
4-Feb	NNW3	NNW2	UO	UO	UO	NNW2	S2	SSE1	S2	NW1	NW2	N1	SSE3	SE4	NE3	NNE4	NNE5	N8	E5	NE1	NNW2	ENE2	NE2	ENE3	NNE1.4	N8																						
5-Feb	NNE4	E3	NE1	NNW5	N5	NNW6	N8	N6	N6	N8	N8	N11	N12	N11	N13	N10	N12	N8	N9	N8	N7	NNE7	NNE8	N6	N7.3	N13																						
6-Feb	NNE7	NNE7	NNE4	NNE3	NE3	ENE6	E7	E8	E6	E7	E10	ESE8	E7	E7	ESE7	E7	ESE7	ESE8	ESE7	ESE9	ESE7	SE4	ESE7	ESE7	E5.8	E10																						
7-Feb	E5	E3	E4	E3	ENE3	E4	ENE3	NNE5	NNE6	ENE4	E3	NNW3	N5	NNE4	NNE5	NNE7	NNE7	NNE7	NNE7	NNE8	NNE7	NNE6	N5	NNE5	NNE4.1	NNE8																						
8-Feb	NNE6	N5	NNE3	NNE2	NNW2	NNW3	NE2	ESE2	S3	N1	SSW5	S6	S7	SW2	NNE4	ENE3	ENE3	ENE3	SE4	SE5	S6	S7	S7	SSW3	SE1.3	S7																						
9-Feb	WSW13	WNW17	WNW16	WNW15	WNW17	WNW13	WNW11	WNW17	WNW15	WNW12	WNW16	WNW18	WNW16	WNW14	NW13	WNW13	WNW15	WNW11	WNW10	W11	WSW12	W15	W14	WSW10	WNW13.4	WNW18																						
10-Feb	WSW12	WSW13	SSW9	SW11	SSW8	S9	S8	S8	SSE8	SSE10	SSE8	SSE10	S13	S14	S12	S12	S13	S12	SSW11	SSW10	SW11	WSW12	WSW14	W19	SSW9.2	W19																						
11-Feb	W19	W20	W21	W19	WSW16	WSW14	WSW12	SW11	W13	WNW19	WNW20	WNW21	WNW21	WNW20	WNW18	WNW19	WNW16	WNW10	WNW8	NW5	S6	SSW5	S5	S6	W12.6	WNW21																						
12-Feb	S7	S6	S6	S6	SSE9	SSE6	SSE5	S9	SSE6	S5	SSW9	SW13	SW14	W20	WNW21	WNW21	WNW17	WNW12	WNW10	WNW11	WNW14	NW16	NW13	NW14	W6.9	WNW21																						
13-Feb	NW18	NW18	NW16	NW17	NNW19	NNW22	NNW17	NNW16	NW15	NNW19	NNW16	NNW18	NNW17	NNW15	NNW12	NW10	NW2	SE3	S4	E1	SW4	WNW11	NNW9	NW6	NW11.6	NNW22																						
14-Feb	NNW12	N16	N16	N15	NNE14	NNE13	NNE11	NNE11	NNE11	NNE8	NNE8	N9	N9	NNW7	WNW5	NW6	N5	NNE6	N7	N5	NNW5	NNW5	ESE1	E2	N8.0	N16																						
15-Feb	NE1	ESE1	NE2	N1	NW1	WNW10	W12	W13	W15	W14	WNW14	W18	W20	W20	W18	W17	W18	W18	WSW13	WSW10	WSW14	WSW13	SW9	WSW14	W11.2	W20																						
16-Feb	WSW17	SW10	SW9	WSW13	W19	W24	W21	WSW19	WSW13	WSW14	SW9	SW10	WSW13	WSW16	WSW20	WSW20	WSW14	SW17	SW20	SW19	WSW20	W24	W22	W17	WSW16.3	W24																						
17-Feb	W17	WNW16	WNW15	WNW18	WNW17	WNW17	W14	W14	W15	WNW12	W8	NNW10	NW9	WNW11	W8	W6	WSW5	SW3	S3	S3	SSE3	SSE5	E4	ESE4	W8.1	WNW18																						
18-Feb	E5	SE5	ESE3	ESE4	SE3	E3	ENE2	ESE4	ESE3	SSW1	S3	NNE4	NNE5	NNE5	NNE7	NNE9	NNE11	NE6	ENE5	E5	E4	NE5	ENE5	E7	ENE3.5	NNE11																						
19-Feb	E8	E4	NNE3	SSE5	W1	S3	WNW1	SSW5	WSW6	W6	W4	W2	NW4	WNW8	WNW4	NW7	NNW6	NNE8	NNE6	NE3	NE4	E4	E2	E3	NNW1.1	E8																						
20-Feb	SSE3	NE1	NE2	ESE5	E3	ESE5	ESE3	ENE2	N2	ESE1	E3	ESE3	SE2	S4	S4	NE1	E3	NE3	NE3	NE3	ESE4	SE2	SSE3	SSE4	ESE2.0	ESE5																						
21-Feb	S5	SW9	WSW9	SW10	WSW13	WSW13	WSW13	WSW18	W21	W16	W15	W16	W19	W21	W21	W20	WSW15	SW13	SW13	SW14	SW14	WSW18	WSW17	WSW10	WSW13.8	W21																						
22-Feb	WSW16	W14	W16	WSW15	WSW12	WSW14	W18	WSW15	W11	WNW11	WNW13	WNW13	WNW15	WNW18	WNW18	WNW16	WNW12	WNW9	WNW9	WNW12	WNW13	WNW13	WSW4	S5	W12.1	WNW18																						
23-Feb	SSW6	SSW5	S7	S10	S10	SSW9	S9	SSW13	SW18	SW21	WSW19	W25	W32	W32	W27	W28	W19	WSW18	W24	WSW20	W22	WNW24	W24	WNW21	WSW16.1	W32																						
24-Feb	WNW16	WNW18	WNW20	WNW23	WNW26	NW22	NNW18	NW18	NW21	NW21	NW20	NW18	NW17	NNW16	NNW14	NNW12	NNE10	NE8	NNE8	NE7	ENE5	ENE4	ENE4	ENE3	NW12.0	WNW26																						
25-Feb	ENE4	ENE5	ENE4	NE4	NE4	NE5	NE5	NNE8	NNE8	NNE9	NNE13	NNE12	NNE13	NNE13	NNE14	NNE16	NNE16	NNE15	NNE13	NNE13	NNE15	NNE19	NNE19	NNE21	NNE10.9	NNE21																						
26-Feb	NNE20	N18	N18	N19	N19	N17	N15	N14	N15	N17	N14	N16	N14	N14	N13	N12	N12	N9	N8	N6	NW4	WNW6	WNW6	W6	N12.5	NNE20																						
27-Feb	WNW12	WNW14	WNW12	WNW14	W14	WNW12	W7	WSW4	SW5	WNW10	WNW12	W12	W13	W11	W10	WNW10	WNW11	WNW9	NW7	SSE2	SSE5	S8	SSE3	SSE4	W7.6	WNW14																						
28-Feb	SE7	SSE7	SE7	SE8	SE8	SE8	SE7	SE9	SE10	SSE18	SSE20	SSE18	SSE20	SE17	SE19	SE16	SE16	ESE12	SE12	SE14	SE10	ESE14	ESE13	ESE15	SE12.3	SSE20																						
29-Feb	ESE16	ESE16	ESE16	ESE15	ESE17	ESE17	ESE16	ESE14	ESE13	ESE14	ESE15	ESE10	SE8	ESE8	ESE3	ESE5	E3	NW4	NW10	NW8	NW7	NW9	NW10	NW7	E6.6	ESE17																						
W2.5																								WNW3.0	WNW3.1	W3.3	WNW3.4	WNW3.0	WNW2.6	W2.7	W3.7	WNW4.1	WNW3.8	WNW5.0	WNW5.9	WNW6.5	WNW6.0	WNW6.3	NW4.4	NW2.7	NW2.4	WNW1.7	W2.7	WNW3.7	WNW2.8	WNW2.1	Diurnal Average	
SSE20																								W20	W21	WNW23	WNW26	W24	W21	WSW19	W21	NW21	WNW20	W25	W32	W32	W27	W28	NNW20	W18	W24	WSW20	W22	WNW24	W24	WNW21	Diurnal Maximum	
UO - Unstable Operation																																																
All monthly, daily, and diurnal averages have been calculated using vector methods																																																





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Wind Speed (WS) - km/h
Sawbones Bay - February 2024

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	207	29.87	29.87
6 - 11	205	29.58	59.45
12 - 19	231	33.33	92.78
20 - 28	48	6.93	99.71
29 - 38	2	0.29	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 693

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Wind Speed (WS) - km/h
Sawbones Bay - February 2024

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	14	18	22	20	26	19	12	17	14	6	4	4	3	5	10	13	207
6 - 11	24	31	3	1	10	14	14	10	22	10	9	5	10	21	13	8	205
12 - 19	22	15	0	0	0	15	6	8	10	1	9	35	32	46	14	18	231
20 - 28	0	2	0	0	0	0	0	3	0	0	2	4	19	11	4	3	48
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	60	66	25	21	36	48	32	38	46	17	24	48	66	83	41	42	693

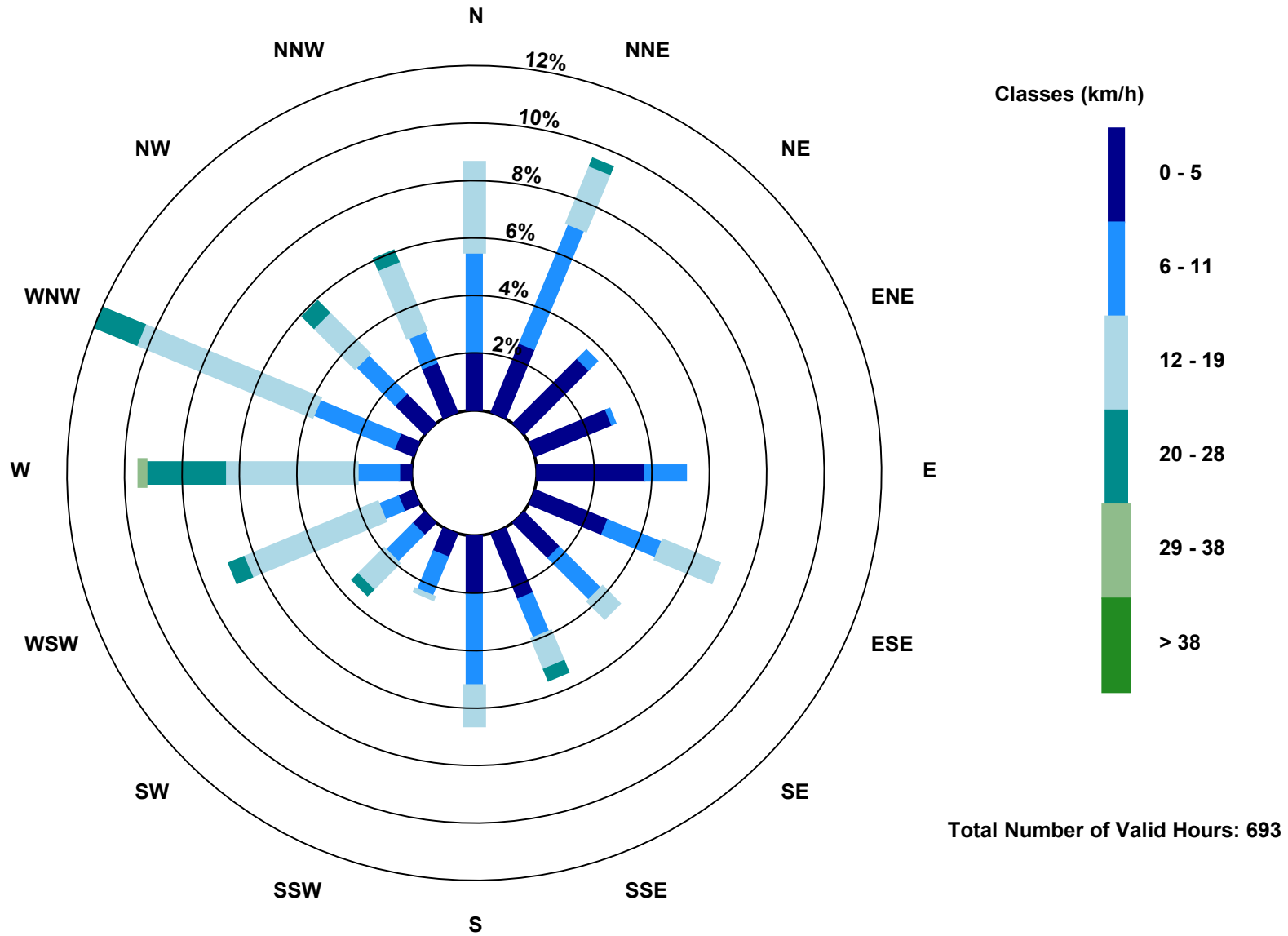
Total Number of Valid Hours: 693

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Sawbones Bay





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Sawbones Bay - February 2024

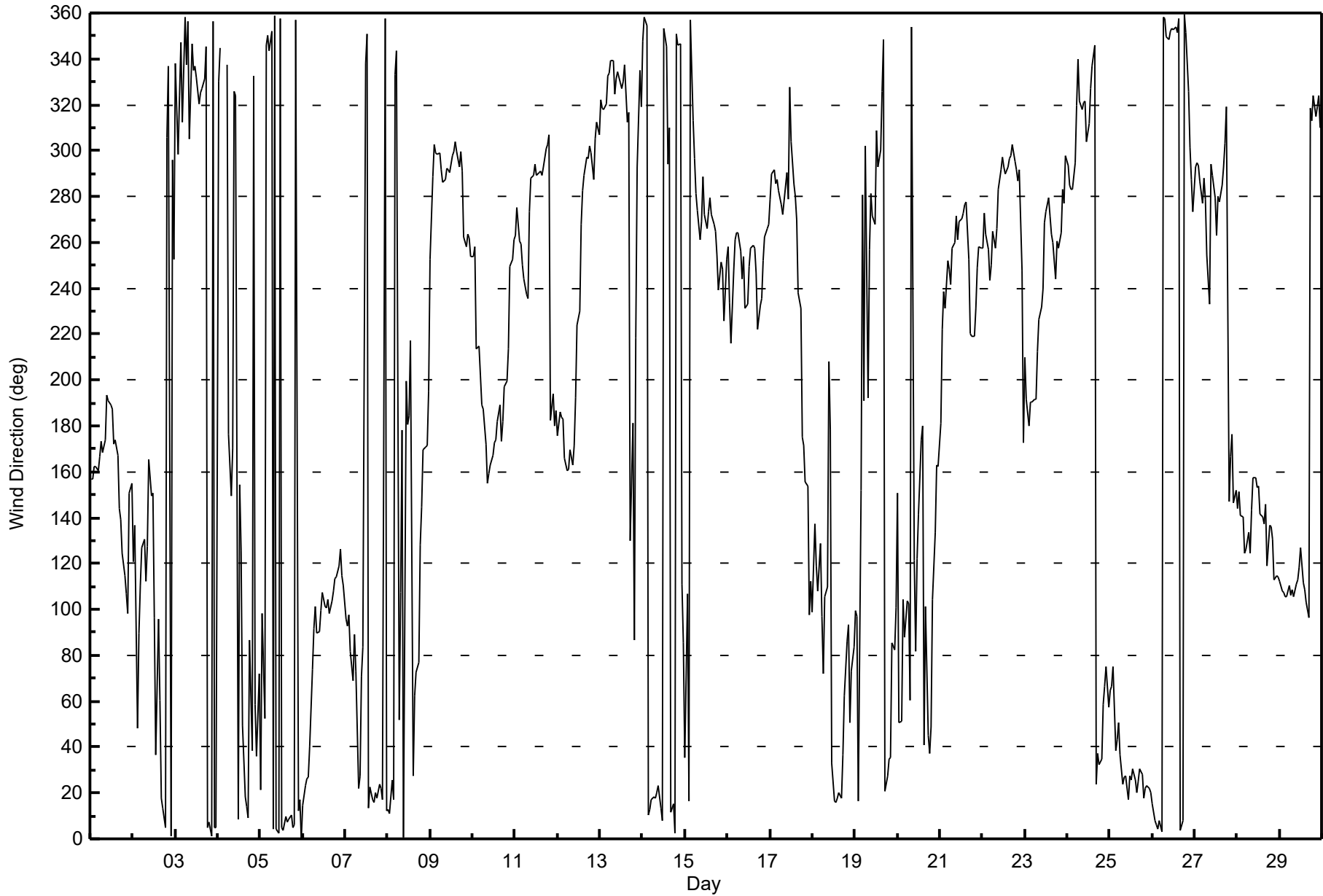
Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8 km/h on Feb 23 18:00 Minimum Value: 0 km/h on Feb 14 22:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																	Hours in Service: 696 Hours of Data: 693 Hours of Missing Data: 3 Hours of Calibration: 0 Percent Operational Time: 99.6								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	4	4	3	2	2	3	3	2	2	3	3	3	3	2	2	2	2	2	2	3	1	1	2	2	4
2-Feb	1	2	1	2	1	1	2	1	2	2	1	2	1	2	2	1	2	1	2	3	2	1	1	2	3
3-Feb	2	2	1	1	2	1	1	1	2	2	2	3	4	4	5	6	5	5	3	2	2	1	1	6	
4-Feb	1	2	UO	UO	UO	1	2	1	2	1	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
5-Feb	1	1	1	1	1	1	2	2	1	2	2	3	3	3	3	3	3	2	1	1	1	1	2	3	
6-Feb	1	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	
7-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	
8-Feb	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	2	
9-Feb	5	3	3	3	4	3	2	3	3	2	3	3	3	3	3	3	3	2	2	3	4	3	3	5	
10-Feb	3	5	3	3	1	1	1	1	1	2	2	3	3	3	3	3	3	3	3	2	3	4	4	5	
11-Feb	5	5	4	5	4	4	2	2	4	5	4	4	3	3	4	4	3	2	1	2	2	3	1	5	
12-Feb	2	2	2	1	1	2	2	1	2	1	3	3	3	5	5	5	4	3	2	2	3	4	3	5	
13-Feb	4	4	3	3	4	5	4	4	4	4	4	4	3	3	2	3	1	2	1	3	4	2	1	5	
14-Feb	4	3	3	3	3	3	2	2	3	2	2	2	2	2	2	2	2	1	2	1	1	0	1	4	
15-Feb	1	1	1	1	2	1	2	3	3	3	2	5	4	4	4	4	4	4	3	3	3	3	4	5	
16-Feb	5	3	3	4	5	5	5	5	4	4	2	2	4	4	5	5	4	4	5	5	5	5	4	5	
17-Feb	3	3	3	4	3	4	3	3	3	3	2	3	3	3	3	2	2	2	2	1	2	1	1	4	
18-Feb	1	2	1	2	1	1	1	3	2	1	2	2	2	2	2	2	2	2	2	1	1	1	1	3	
19-Feb	1	3	1	2	2	1	1	2	3	3	1	2	2	2	2	2	3	1	2	1	1	1	1	3	
20-Feb	1	1	1	1	2	1	1	2	1	2	1	1	1	2	1	1	1	1	2	1	2	2	1	2	
21-Feb	2	3	3	3	4	3	4	4	3	4	3	3	4	4	5	5	4	2	3	3	3	5	4	5	
22-Feb	6	3	4	4	3	4	4	6	3	3	2	2	3	4	3	4	2	1	1	3	2	2	3	6	
23-Feb	2	2	3	2	2	1	2	4	4	6	6	7	8	7	7	8	6	8	6	5	5	6	6	8	
24-Feb	4	4	4	5	6	6	4	4	5	5	5	4	4	4	3	3	2	2	2	2	1	1	1	6	
25-Feb	1	1	1	1	1	1	2	1	1	2	3	3	3	3	4	4	3	4	3	3	4	4	5	5	
26-Feb	5	4	4	4	4	5	4	3	4	4	4	4	3	4	3	3	3	2	1	1	1	1	3	5	
27-Feb	2	2	2	2	3	2	3	3	2	3	3	3	4	4	4	4	3	3	1	2	3	2	2	4	
28-Feb	1	2	1	1	1	1	1	2	3	4	5	5	5	5	5	5	4	3	4	4	3	3	4	5	
29-Feb	3	4	4	4	5	5	4	3	3	4	4	3	4	2	2	3	2	2	2	2	1	2	2	5	
Diurnal Maximum																								6	
UO - Unstable Operation																									



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Sawbones Bay - February 2024

Direction of Maximum Speed: 280 deg on Feb 23 14:00																				Hours in Service: 696							
Direction of Maximum Daily Speed Average: 251.5 deg on Feb 16																				Hours of Data: 693							
Direction of Minimum Speed: 9 deg on Feb 4 12:00										Direction of Minimum Daily Speed Average: 1.1 deg on Feb 19										Hours of Missing Data: 3							
Monthly Average Direction: 290.1 deg																								Percent Operational Time: 99.6			
Day	Hourly Period Ending At (MST)																								Daily Average		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	157	157	162	162	160	167	173	169	174	194	191	189	187	172	174	167	144	139	124	115	107	98	151	155	163.7		
2-Feb	121	137	48	89	111	127	130	112	128	165	149	151	96	37	96	60	18	13	5	306	337	1	296	253	84.1		
3-Feb	338	298	324	347	313	358	337	357	305	346	335	337	332	320	325	327	331	345	5	7	1	356	5	5	337.7		
4-Feb	330	345	UO	UO	UO	338	176	149	170	326	324	9	155	126	49	18	14	9	87	39	333	59	36	72	33.4		
5-Feb	21	99	53	346	350	343	352	4	359	5	2	358	5	4	10	8	8	10	5	6	357	12	17	0	4.8		
6-Feb	15	23	27	27	40	74	92	101	90	90	100	107	101	101	104	98	104	108	114	114	119	126	115	110	93.7		
7-Feb	96	93	98	82	69	89	73	22	27	71	84	338	351	13	23	17	16	20	18	24	22	17	358	12	32.9		
8-Feb	13	11	25	17	333	344	52	107	178	0	199	180	184	217	28	62	72	77	128	145	170	171	171	195	140.3		
9-Feb	253	289	302	299	299	299	292	286	287	292	292	290	298	299	304	300	293	299	291	262	258	263	262	254	287.0		
10-Feb	254	258	213	215	202	189	187	172	155	160	163	167	173	174	182	189	173	182	197	199	214	249	252	261	202.1		
11-Feb	263	275	261	260	250	244	237	235	273	288	289	294	290	290	291	289	293	301	303	307	182	194	180	187	272.7		
12-Feb	176	186	183	183	166	160	161	170	163	171	192	224	230	268	283	289	297	296	302	299	287	305	312	307	260.9		
13-Feb	322	318	318	321	332	334	339	339	324	331	335	329	327	330	338	312	317	130	181	86	219	293	335	319	326.2		
14-Feb	348	358	354	10	13	17	18	17	20	23	13	8	353	345	294	310	11	15	3	351	346	347	111	86	3.4		
15-Feb	36	106	17	357	313	297	281	274	261	269	288	272	266	273	279	272	268	265	254	239	252	248	226	252	267.2		
16-Feb	258	234	216	248	261	264	264	257	244	254	231	233	250	258	258	257	247	222	233	236	252	263	266	268	251.5		
17-Feb	279	290	292	285	287	283	277	272	278	290	279	328	304	285	280	270	238	231	175	172	156	154	98	112	280.5		
18-Feb	99	137	119	108	129	97	72	106	110	208	178	33	17	16	18	20	17	37	62	86	93	51	73	84	63.8		
19-Feb	100	97	17	152	281	191	302	192	257	281	272	268	309	293	300	326	348	21	27	35	35	85	82	101	345.2		
20-Feb	151	51	51	104	88	104	103	60	354	122	82	122	141	174	180	41	101	45	37	49	105	134	163	162	107.7		
21-Feb	181	222	239	231	252	248	242	257	260	272	261	269	270	273	277	277	253	220	219	219	231	249	258	257	252.9		
22-Feb	257	273	263	257	243	250	265	258	266	283	291	297	293	290	293	296	298	303	295	292	287	292	248	173	277.2		
23-Feb	210	192	180	191	190	192	191	212	226	232	240	269	273	280	272	263	260	244	260	258	264	283	277	298	255.0		
24-Feb	294	285	283	283	295	320	340	322	318	321	322	304	312	327	337	346	24	37	32	35	59	66	75	58	320.7		
25-Feb	65	66	75	39	44	50	37	24	27	28	17	28	26	31	26	20	25	31	28	18	22	23	22	20	27.2		
26-Feb	15	8	6	4	8	3	358	357	349	349	352	353	353	354	352	358	4	8	359	351	326	301	288	274	356.1		
27-Feb	293	295	294	287	277	288	279	254	233	294	289	280	263	280	277	285	293	303	319	147	166	176	147	152	279.3		
28-Feb	144	152	141	140	125	126	134	124	143	157	157	153	154	141	141	137	146	119	136	136	130	113	114	114	138.3		
29-Feb	112	108	107	105	106	110	106	109	105	111	113	119	127	112	109	103	96	319	313	324	315	319	324	310	100.1		
280.6 285.7 286.5 279.6 285.1 287.2 284.5 271.3 278.6 288.9 285.6 290.0 286.4 294.1 299.1 302.6 313.2 320.8 306.4 286.1 268.8 285.5 285.9 281.4																								Diurnal Average			
UO - Unstable Operation																											
All monthly, daily, and diurnal averages have been calculated using vector methods																											





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Sawbones Bay - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 99 deg on Feb 3 08:00 Minimum Value: 5 deg on Feb 12 05:00 Percentiles: P ₁ = 8 P ₁₀ = 11 Q ₁ = 13 Median = 16 Q ₃ = 23 P ₉₀ = 44 P ₉₉ = 77																	Hours in Service: 696 Hours of Data: 693 Hours of Missing Data: 3 Hours of Calibration: 0 Percent Operational Time: 99.6								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	13	13	13	11	13	12	14	11	20	15	16	18	16	16	16	17	31	12	15	26	17	71	60	19	71
2-Feb	13	14	47	15	16	14	21	10	29	28	59	66	59	32	32	30	16	9	20	27	14	48	51	54	66
3-Feb	22	51	9	11	43	31	22	99	18	13	12	13	15	14	14	15	18	15	14	11	8	10	19	99	
4-Feb	15	12	UO	UO	UO	19	74	74	84	24	37	86	46	40	47	11	8	13	39	75	33	53	60	39	86
5-Feb	21	27	36	11	12	12	12	15	13	14	14	16	16	15	16	19	14	11	12	15	12	9	9	17	36
6-Feb	13	12	17	18	25	30	23	16	23	23	17	18	21	19	25	16	16	14	15	13	15	24	15	15	30
7-Feb	13	23	15	15	18	21	18	19	11	34	35	29	22	27	22	12	12	14	12	11	13	13	17	15	35
8-Feb	14	15	39	54	27	19	59	43	47	70	35	21	25	69	28	45	28	28	18	12	13	10	11	40	70
9-Feb	20	10	13	12	12	11	10	8	9	10	11	12	13	14	16	15	11	12	10	18	17	13	13	19	20
10-Feb	14	17	21	15	13	10	10	11	11	12	14	14	15	14	17	16	13	15	15	14	20	17	18	12	21
11-Feb	14	15	12	13	15	18	15	17	19	11	10	10	11	13	13	12	10	9	9	25	33	50	20	16	50
12-Feb	13	11	22	9	5	14	20	9	10	15	18	18	19	16	13	11	11	10	10	9	8	15	11	13	22
13-Feb	13	14	12	13	15	14	13	15	12	13	15	14	15	16	20	23	97	24	44	60	52	16	13	8	97
14-Feb	19	15	15	16	13	13	13	12	14	18	18	18	20	23	52	22	21	10	12	11	8	5	69	38	69
15-Feb	40	92	79	59	65	10	11	12	14	16	11	17	16	16	19	19	15	10	15	19	15	19	22	17	92
16-Feb	14	20	22	18	11	11	12	13	20	14	18	17	19	19	16	16	21	14	17	16	18	12	13	13	22
17-Feb	15	9	9	13	10	12	11	11	12	9	20	32	28	21	27	30	25	61	72	57	71	23	24	29	72
18-Feb	17	23	34	24	39	23	47	67	56	75	71	51	30	34	23	17	12	23	33	24	18	19	26	18	75
19-Feb	10	62	32	37	77	22	75	33	30	26	42	76	58	22	59	26	50	9	14	25	28	29	21	25	77
20-Feb	26	19	16	11	39	20	33	75	56	85	61	26	69	26	32	65	37	15	32	31	37	74	34	18	85
21-Feb	23	19	19	22	16	18	20	13	11	16	15	17	18	15	17	16	22	15	13	14	15	16	12	28	28
22-Feb	15	13	11	12	21	20	12	22	24	16	11	14	13	12	11	14	12	9	6	7	9	10	55	39	55
23-Feb	42	43	24	11	11	12	12	17	14	16	19	16	15	15	15	19	27	14	14	17	16	15	13	43	
24-Feb	13	11	12	10	16	18	17	13	14	17	16	18	17	15	18	17	21	24	18	22	30	31	22	32	32
25-Feb	34	29	29	22	22	27	25	11	13	14	15	20	17	19	20	14	14	16	15	12	13	13	14	14	34
26-Feb	14	15	16	17	15	17	15	15	16	17	19	20	20	23	22	23	18	13	12	12	11	8	49	47	49
27-Feb	10	10	9	11	14	9	52	48	38	14	21	24	22	28	35	33	23	19	10	76	35	21	40	16	76
28-Feb	16	15	12	11	11	13	15	15	18	14	16	19	18	21	21	20	18	18	18	18	18	15	16	16	21
29-Feb	15	15	16	15	18	16	15	16	16	17	16	22	30	24	58	24	62	64	12	15	15	13	14	16	64
42 92 79 59 77 31 75 99 84 85 71 86 69 69 59 65 97 64 72 76 71 74 69 54																								Diurnal Maximum	
UO - Unstable Operation																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS507
KIRBY SOUTH
FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - KIRBY SOUTH (AMS 507)
 FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	639	36	57	96.98	12	0	2.3	0
H2S (ppb) Average	660	36	36	100	0.8	0	0.3	0
THC (ppm) Average	619	32	77	93.53	3	-	2.5	-
NO2 (ppb) Average	661	35	35	100	38.3	0	10.3	-
NO (ppb) Average	661	35	35	100	83.1	-	14.9	-
NOX (ppb) Average	661	35	35	100	116.6	-	25.2	-
Temperature 2 m (C) Average	696	0	0	100	10.5	-	4	-
Relative Humidity (%) Average	696	0	0	100	94.5	-	92.7	-
Wind Speed 10 m (km/h) Average	696	0	0	100	28	-	21	-
Wind Direction 10 m (deg) Average	696	0	0	100	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - KIRBY SOUTH(AMS507)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	639	0.76	1.2	-	0	0	0.2	0.4	0.9	1.8	12
H2S (ppb) Average	660	0.13	0.1	-	0	0	0.1	0.1	0.1	0.2	0.8
THC (ppm) Average	619	2.37	0.1	-	2	2.2	2.3	2.4	2.4	2.5	3
NO2 (ppb) Average	661	3.51	4.6	-	0.2	0.7	1.2	2.3	4	6.2	38.3
NO (ppb) Average	661	2.1	7.6	-	0	0	0	0	0.7	3.3	83.1
NOX (ppb) Average	661	5.61	11.7	-	0.2	0.7	1.2	2.6	4.7	9.7	116.6
Temperature 2 m (C) Average	696	-7.44	7.4	-	-26.2	-17.3	-11.8	-7	-2.3	2.1	10.5
Relative Humidity (%) Average	696	68.13	17.3	-	19	43.4	55.6	70.1	83.7	89.5	94.5
Wind Speed 10 m (km/h) Average	696	11.2	6	-	0	5	7	10	15	18	28
Wind Direction 10 m (deg) Average	696	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - KIRBY SOUTH (AMS507)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
SO2	14 Feb 2024 17:00	15 Feb 2024 13:00	21	Maintenance - field troubleshootig, analyzer replaced
THC	15 Feb 2024 10:00	15 Feb 2024 16:00	7	Unstable Operation - excessive baseline drift
THC	15 Feb 2024 17:00	16 Feb 2024 18:00	26	Maintenance - replaced support gas cylinder / troubleshooting
THC	22 Feb 2024 05:00	22 Feb 2024 13:00	9	Unstable Operation - as-founds not within compliance
THC	22 Feb 2024 14:00	22 Feb 2024 16:00	3	Maintenance - zero/span adjustment



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

Kirby South - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 12.0 ppb on Feb 23 18:00	Maximum Daily Average: 2.3 ppb on Feb 23		Hours of Data:	639
Minimum Value: 0.0 ppb on Feb 3 01:00	Minimum Daily Average: 0.1 ppb on Feb 24		Hours of Missing Data:	57
Maximum Diurnal Average: 1.1 ppb at hour 21	Minimum Diurnal Average: 0.4 ppb at hour 2		Hours of Calibration:	36
Monthly Average: 0.76 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 0.4 Q ₃ = 0.9 P ₉₀ = 1.8 P ₉₉ = 5.6		Percent Operational Time:	97.0

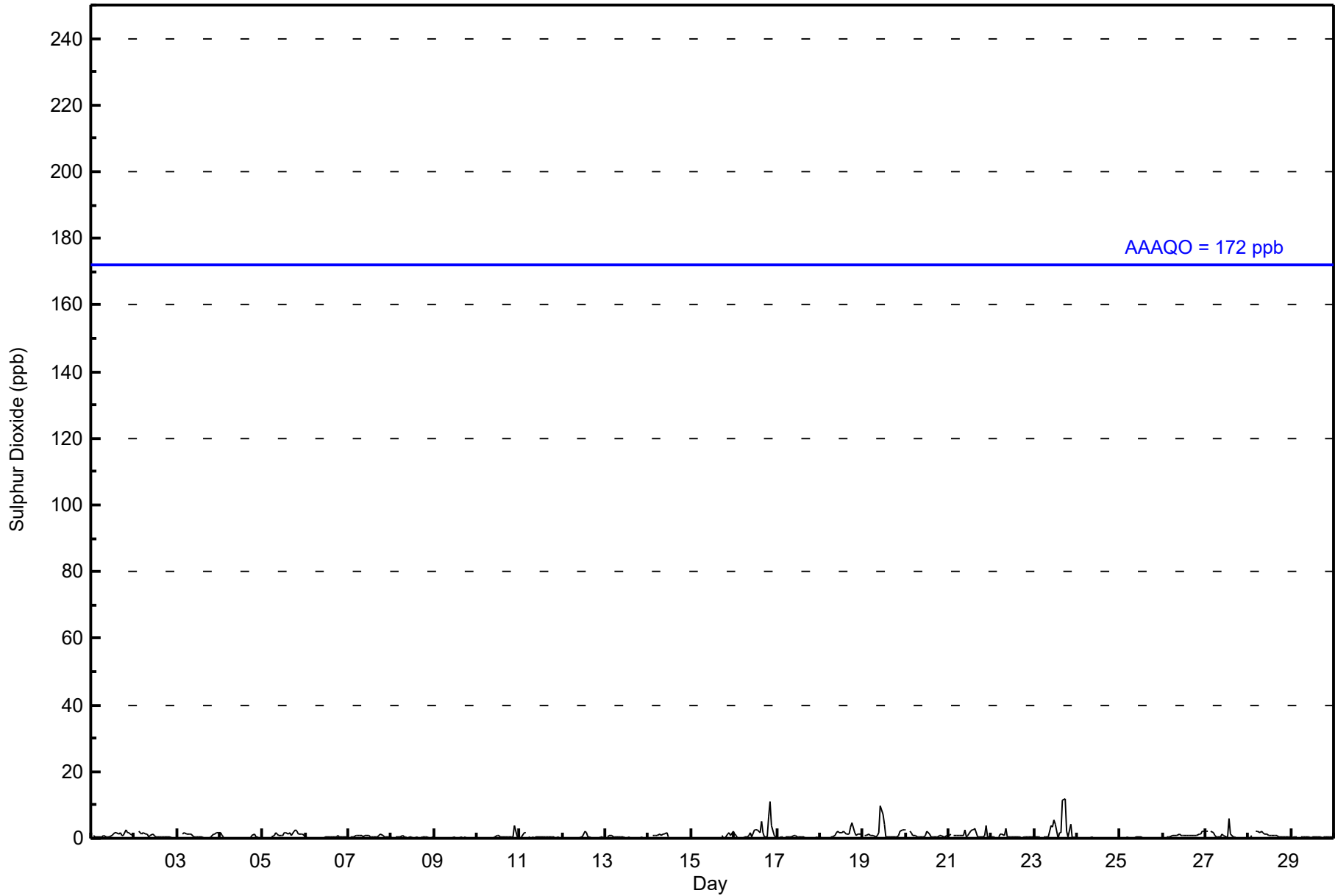
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	Z	0.7	0.5	0.6	0.5	0.4	0.6	0.8	0.6	0.4	0.3	0.6	1.3	1.6	1.7	1.4	1.7	0.9	0.8	2.5	1.6	1.6	1.1	1.0	1.0	2.5																						
2-Feb	1.0	Z	2.2	1.8	1.3	1.8	1.4	1.1	0.6	0.9	1.4	1.0	0.4	0.3	0.3	0.4	0.3	0.6	0.6	0.4	0.2	0.1	0.0	0.0	0.8	2.2																						
3-Feb	0.0	0.0	Z	1.2	1.8	1.3	1.2	1.2	1.2	0.6	0.5	0.4	0.5	0.4	0.4	0.0	0.1	0.0	0.4	1.2	1.2	1.8	1.5	0.7	1.8	1.8																						
4-Feb	1.5	1.0	0.3	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.2	0.6	0.3	0.1	0.1	0.3	1.5	1.5																						
5-Feb	0.1	0.1	0.2	0.0	Z	0.3	0.8	1.8	1.4	0.8	0.7	1.0	1.6	1.7	1.3	1.7	1.0	2.1	2.4	2.3	1.5	1.3	1.1	0.7	1.1	2.4																						
6-Feb	0.3	0.1	0.1	0.0	0.0	Z	0.2	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.3	0.3	0.5	0.7	0.5	0.4	0.5	0.6	0.5	0.3	0.7	0.7																						
7-Feb	Z	0.5	0.4	0.6	0.7	0.8	0.7	0.7	0.6	0.8	0.8	0.7	0.5	0.5	0.4	0.3	0.4	0.7	1.4	0.7	0.5	0.5	0.4	0.5	0.6	1.4																						
8-Feb	0.4	Z	0.4	0.3	0.2	0.3	0.9	0.3	0.5	0.2	0.3	0.4	0.1	0.2	0.2	0.2	0.1	0.3	0.5	0.3	0.2	0.2	0.2	0.5	0.3	0.9																						
9-Feb	0.2	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.1	0.2	0.2	0.3	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4																						
10-Feb	0.0	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.0	0.7	0.6	0.3	0.3	0.4	0.5	0.4	0.3	0.4	3.6	0.3	0.2	0.4	3.6																						
11-Feb	0.2	0.2	1.6	1.8	Z	0.2	0.1	0.2	0.1	0.2	0.3	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.3	0.2	0.3	0.2	0.2	0.4	1.8																						
12-Feb	0.2	0.1	0.2	0.2	0.2	Z	0.2	0.1	0.2	0.2	0.3	0.4	2.1	1.7	0.4	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.2	0.4	2.1																						
13-Feb	Z	0.4	0.7	0.7	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.0	0.1	0.0	0.2	0.2	0.0	0.1	0.1	0.2	0.7																						
14-Feb	0.1	Z	1.0	1.0	1.0	0.8	1.4	0.7	1.1	1.2	1.9	0.6	C	C	C	C	M	M	M	M	M	M	M	M	--	1.9																						
15-Feb	M	M	M	M	M	M	M	M	M	M	M	M	M	C	C	C	C	M	M	M	M	M	M	M	--	2.1																						
16-Feb	1.4	0.9	0.1	Z	0.2	0.2	0.3	0.5	0.8	1.9	0.3	2.6	2.8	2.6	1.8	5.0	1.6	0.3	0.5	6.5	10.9	3.8	0.8	0.4	2.0	10.9																						
17-Feb	0.2	0.2	0.2	0.2	Z	0.4	0.3	0.4	0.4	0.8	0.7	0.5	0.4	0.6	0.5	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.3	0.2	0.3	0.8																						
18-Feb	0.2	0.1	0.2	0.2	0.2	Z	0.2	0.4	0.9	1.7	2.3	1.8	1.5	2.0	1.9	1.3	1.1	3.2	4.8	1.6	0.9	1.1	1.1	1.4	1.3	4.8																						
19-Feb	Z	0.9	1.0	1.1	0.9	0.8	0.7	0.6	0.7	1.6	9.5	7.2	4.3	0.6	0.5	0.4	0.4	0.3	0.3	0.4	0.9	2.2	2.6	2.6	1.8	9.5																						
20-Feb	2.5	Z	2.2	1.6	1.0	0.9	0.6	0.3	0.2	0.3	0.3	0.7	2.0	1.2	0.5	0.4	0.5	0.6	0.6	0.7	0.6	0.5	0.6	0.7	0.8	2.5																						
21-Feb	0.8	1.2	Z	1.0	0.9	0.8	1.0	0.9	0.9	2.4	0.6	0.7	1.9	2.7	2.5	3.2	0.4	0.4	0.3	0.3	0.7	3.7	0.4	0.3	1.2	3.7																						
22-Feb	0.3	0.4	0.4	Z	0.5	1.5	1.2	1.0	2.8	0.4	0.3	0.4	0.2	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.5	2.8																						
23-Feb	0.3	0.4	0.2	0.2	Z	0.2	0.2	0.4	0.3	3.8	3.4	5.3	4.2	0.2	1.7	1.9	11.2	12.0	1.9	0.6	4.1	0.2	0.4	0.1	2.3	12.0																						
24-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.2	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.4																						
25-Feb	Z	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.1	0.0	0.1	0.2	0.4																						
26-Feb	0.0	Z	0.4	0.5	0.5	0.7	0.7	0.7	1.0	1.2	0.7	0.8	0.8	0.7	1.0	1.0	0.9	0.9	0.7	0.7	1.2	1.4	1.9	2.0	0.9	2.0																						
27-Feb	2.2	2.2	Z	2.0	1.6	0.9	0.5	0.3	0.3	1.2	0.8	0.4	0.2	5.7	1.2	0.4	0.5	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.9	5.7																						
28-Feb	0.2	0.2	0.9	Z	2.0	2.1	1.7	1.9	1.8	1.2	1.2	0.9	0.8	0.8	0.9	0.7	0.7	0.5	0.2	0.3	0.3	0.5	0.5	0.3	0.9	2.1																						
29-Feb	0.2	0.3	0.4	0.5	Z	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.4	0.4	0.2	0.2	0.6	0.5	0.4	0.3	0.2	0.3	0.3	0.6																						
																								0.5	0.4	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.8	1.0	1.1	1.0	1.0	0.7	0.8	0.9	0.9	0.7	0.8	1.1	0.9	0.6	0.6	Diurnal Average
																								2.5	2.2	2.2	2.0	2.0	2.1	1.7	1.9	2.8	3.8	9.5	7.2	4.3	5.7	2.5	5.0	11.2	12.0	4.8	6.5	10.9	3.8	2.6	2.6	Diurnal Maximum

Z - zerospan C - Calibration M - Maintenance
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Kirby South - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Kirby South - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	636	99.53	99.53
11 - 20	3	0.47	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 639

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Kirby South - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	18	23	50	34	22	22	19	20	37	39	52	53	78	81	48	40	636
11 - 20	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	18	23	50	34	22	22	19	20	37	39	52	53	81	81	48	40	639

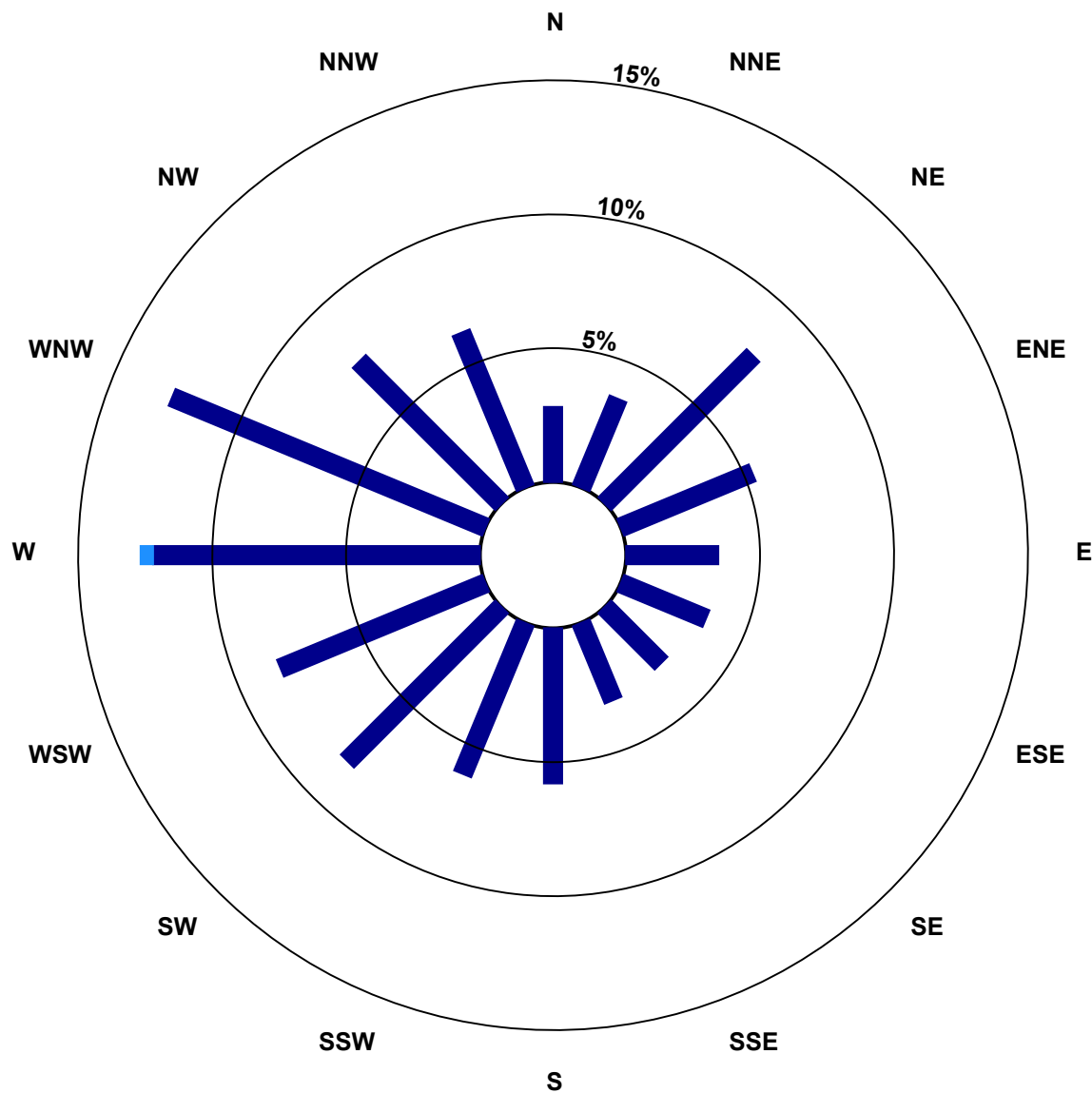
Total Number of Valid Hours: 639

Total Number of Hours: 696

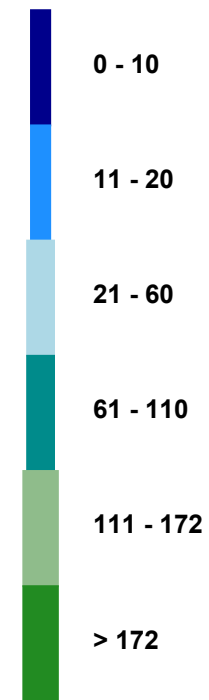


Wood Buffalo Environmental Association
Wind Rose Feb 2024

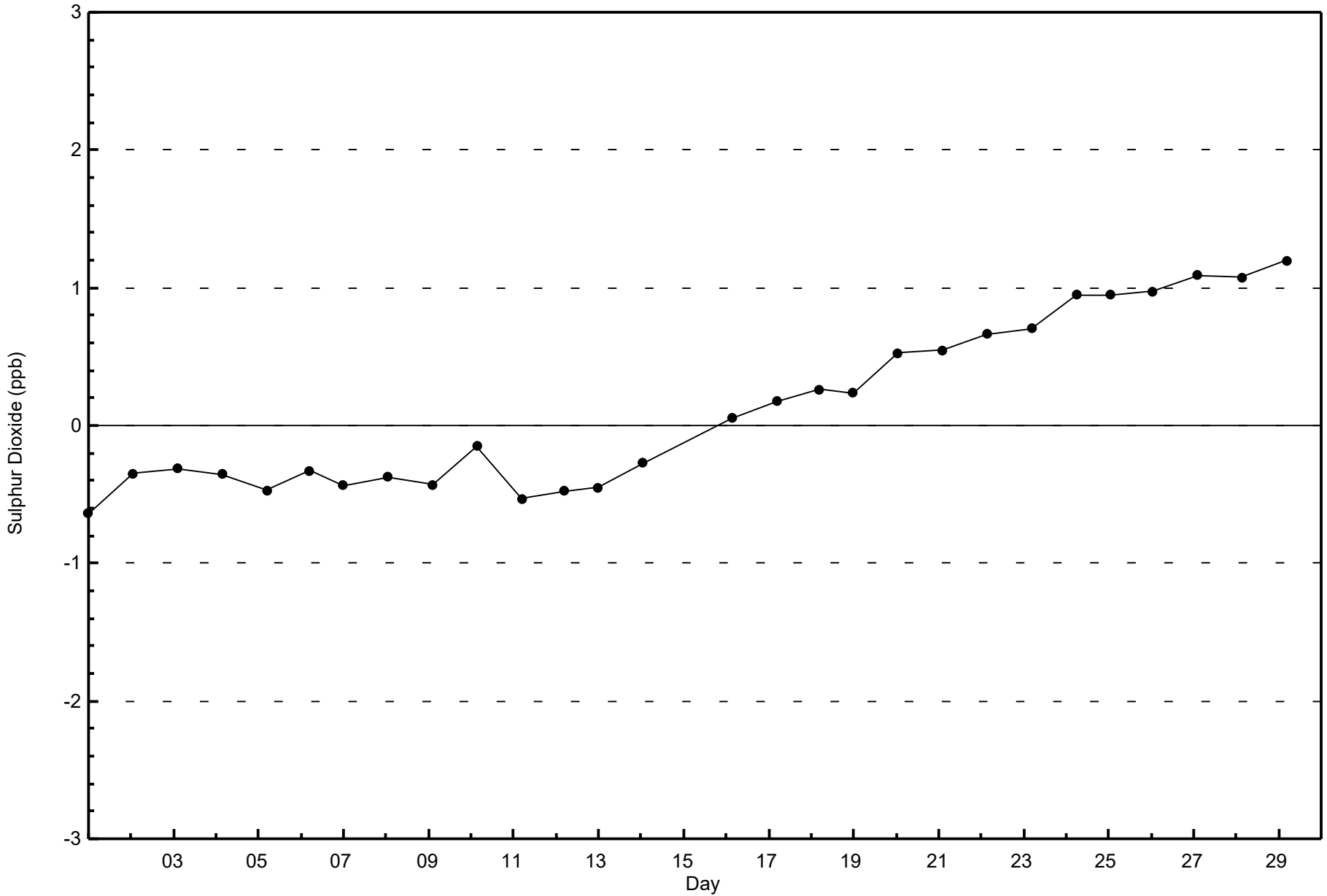
Sulphur Dioxide (SO₂) - ppb
Kirby South

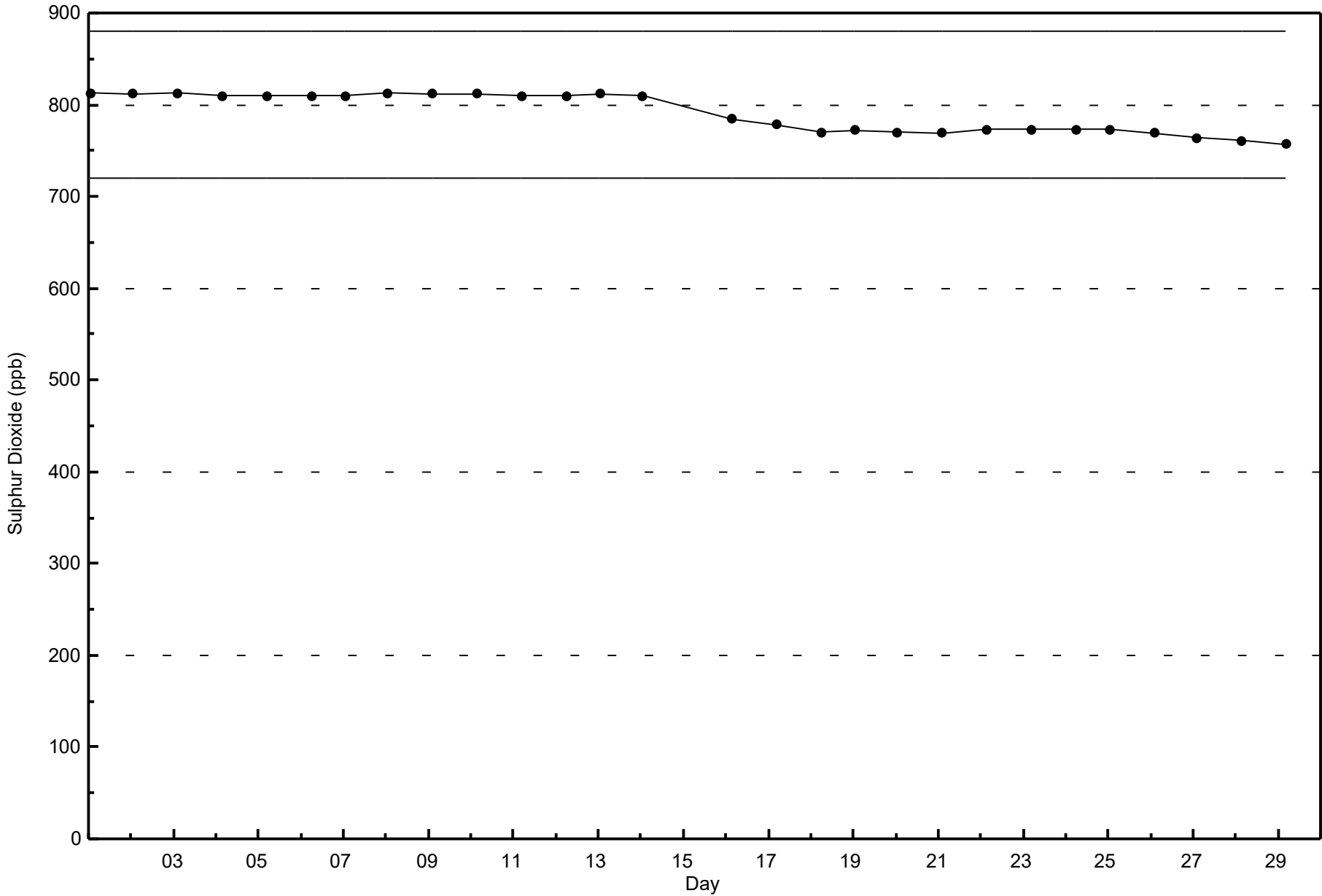


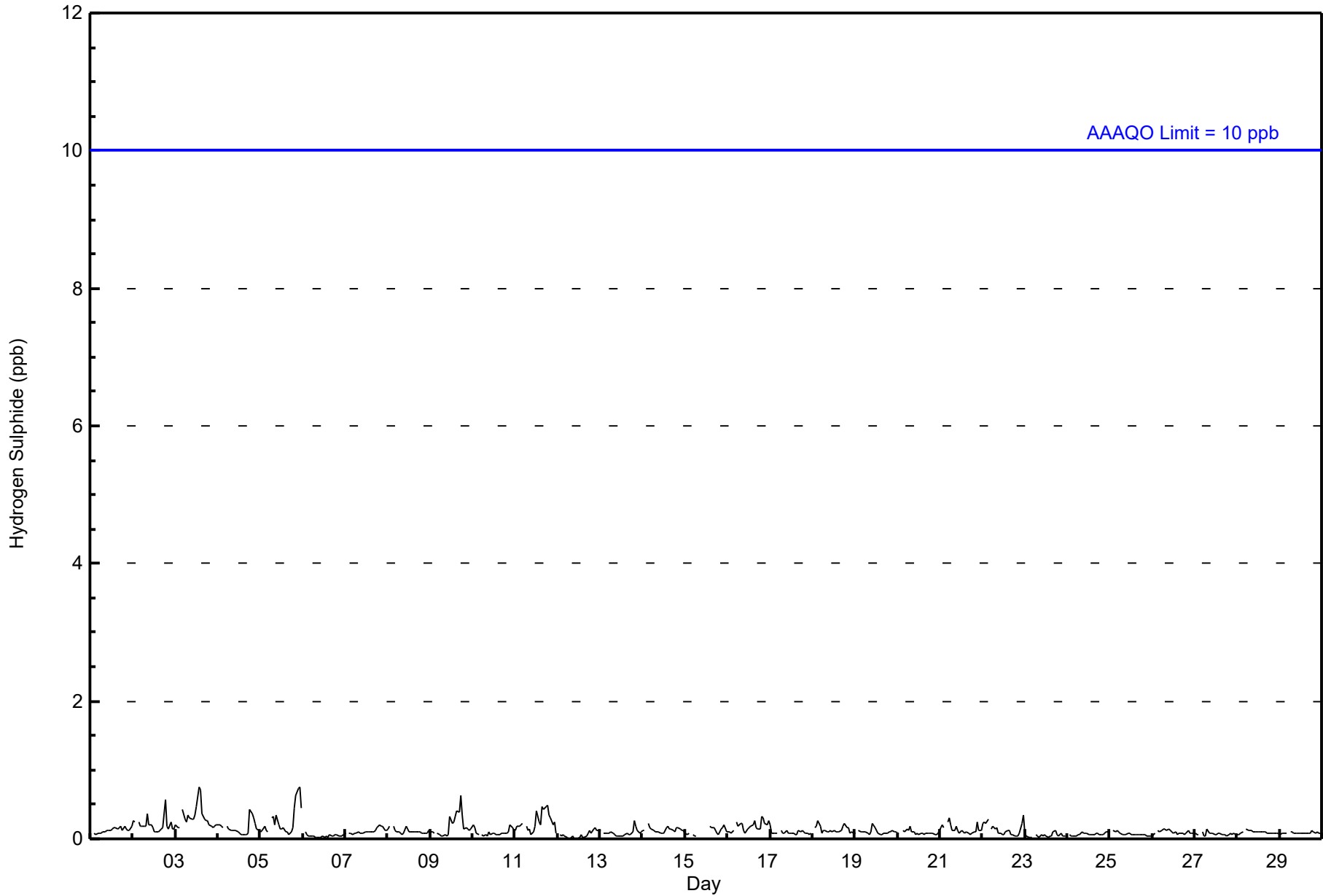
Classes (ppb)



Total Number of Valid Hours: 639









Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Hydrogen Sulphide (H₂S) - ppb
Kirby South - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	660	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 660

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Hydrogen Sulphide (H₂S) - ppb
Kirby South - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	21	24	49	33	23	23	19	20	37	39	53	51	84	90	53	41	660
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	21	24	49	33	23	23	19	20	37	39	53	51	84	90	53	41	660

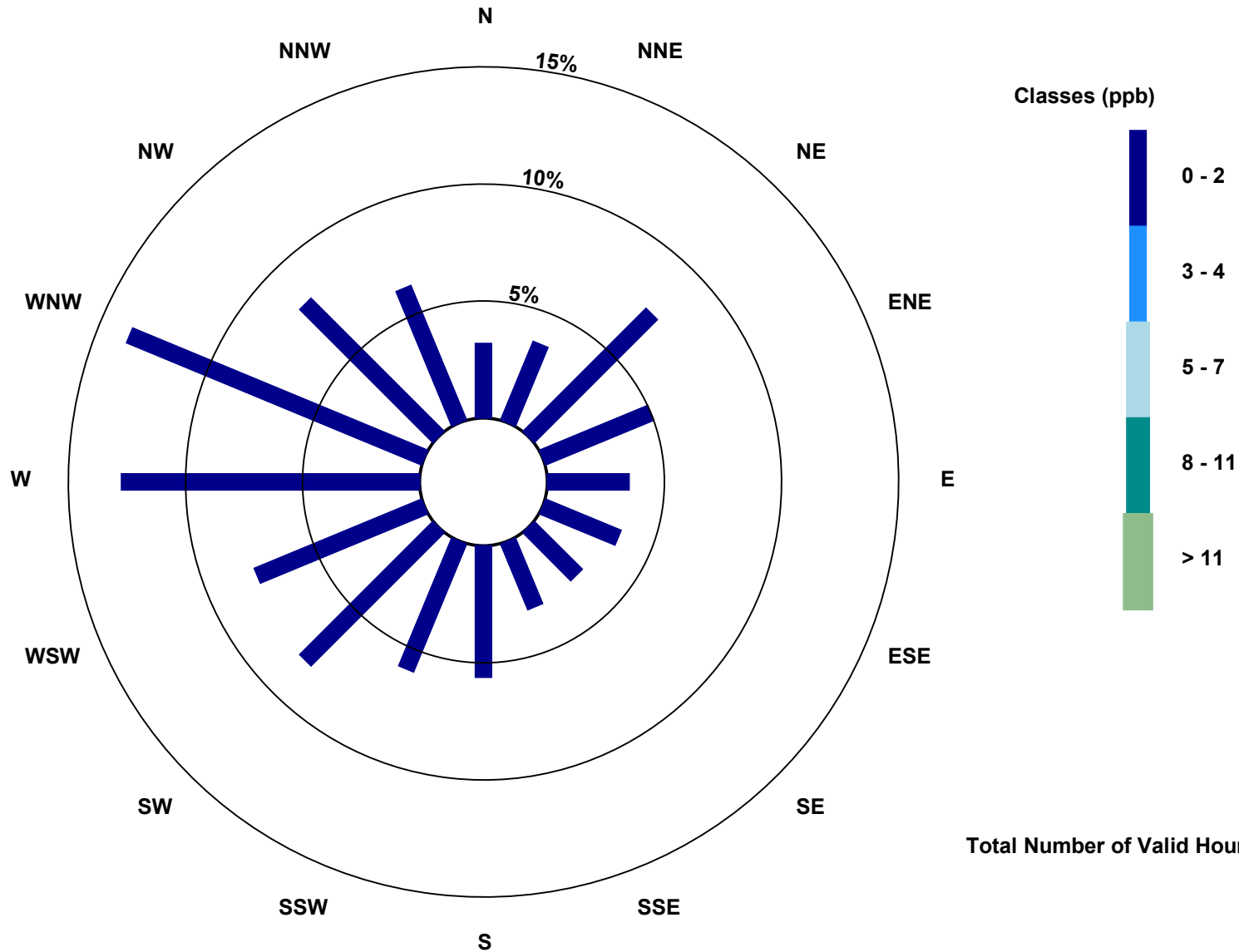
Total Number of Valid Hours: 660

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Kirby South

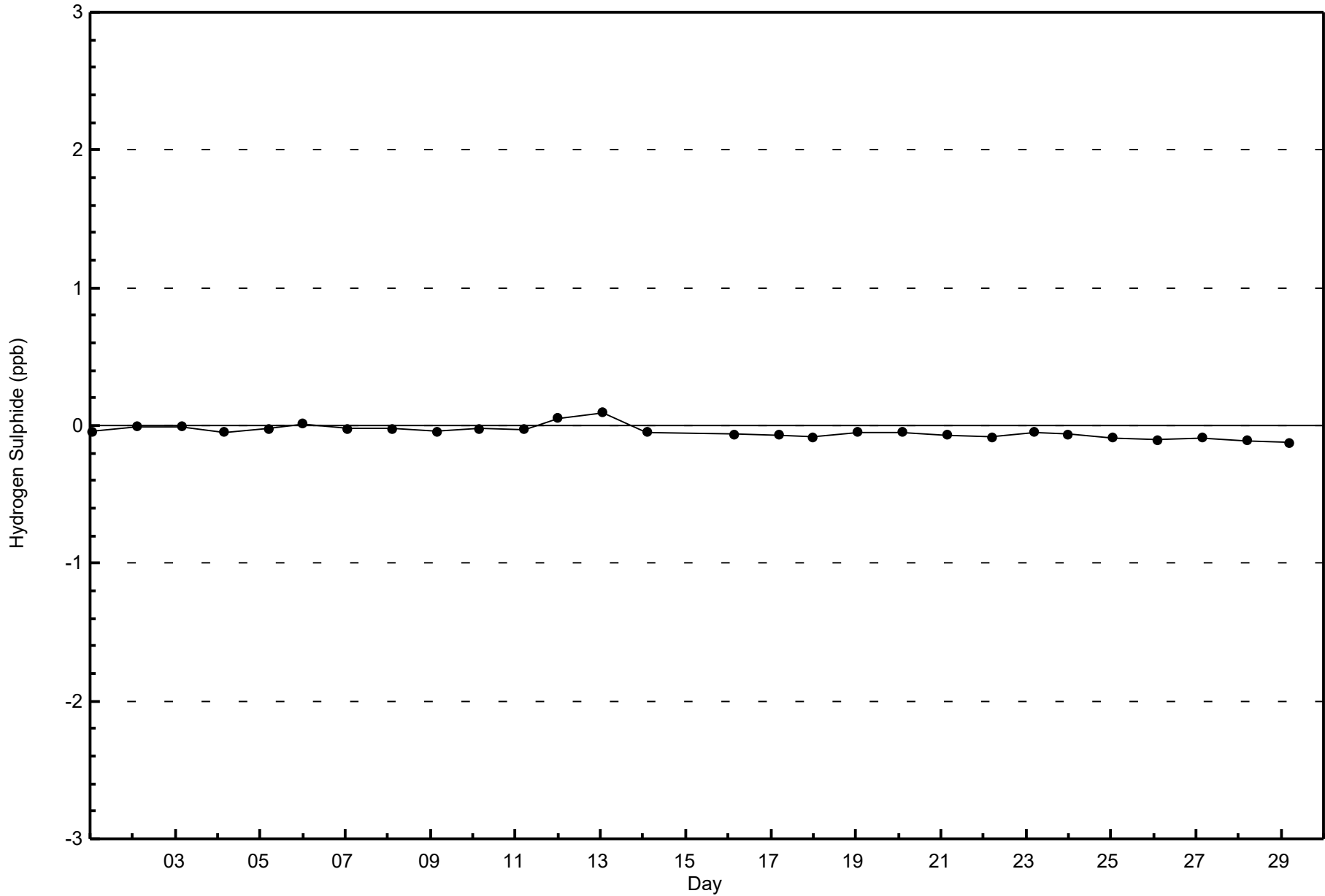


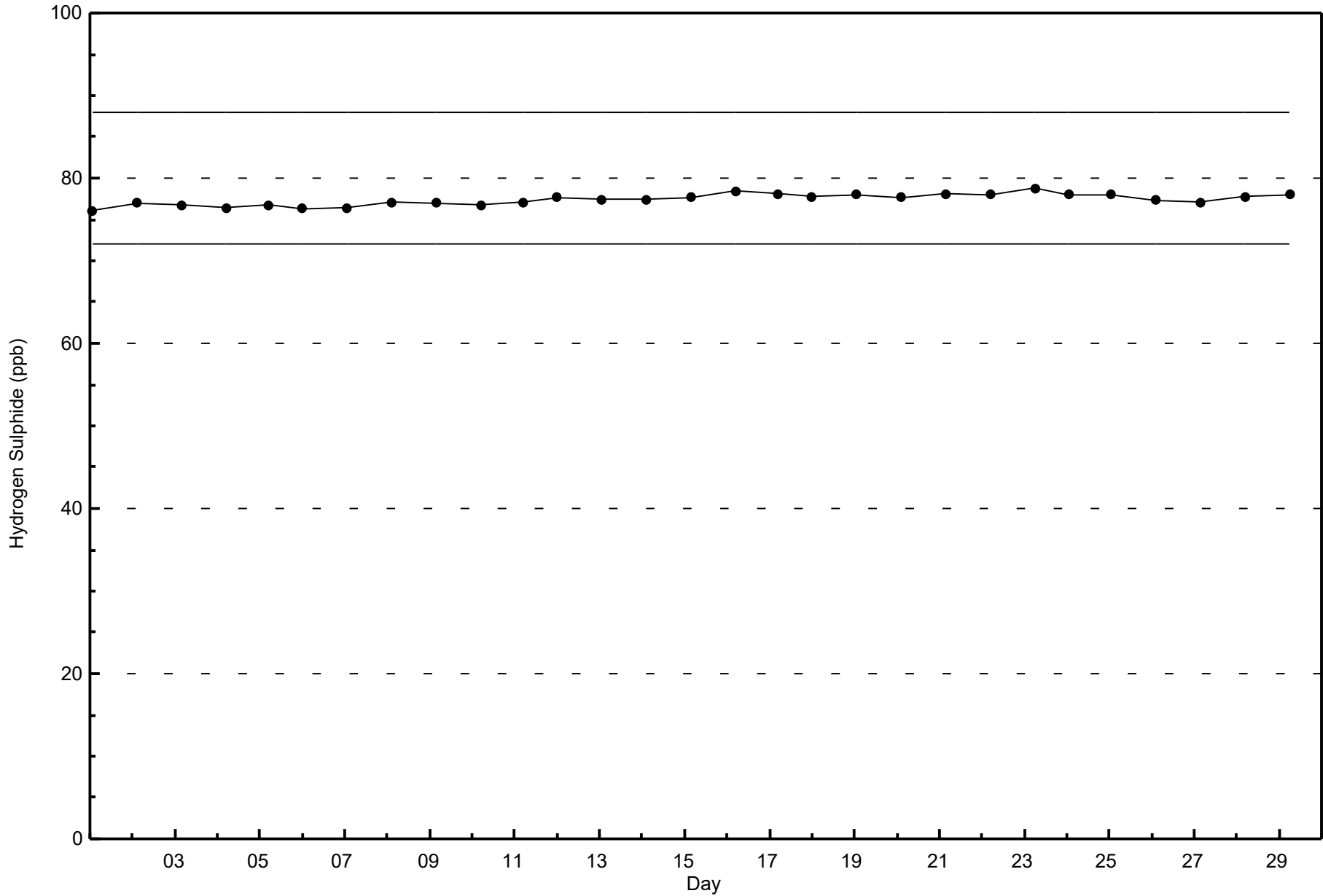
Total Number of Valid Hours: 660



Wood Buffalo Environmental Association
Zero Responses

Hydrogen Sulphide (H₂S) - ppb
Kirby South - February 2024







Wood Buffalo Environmental Association
Summary of Hour Averages

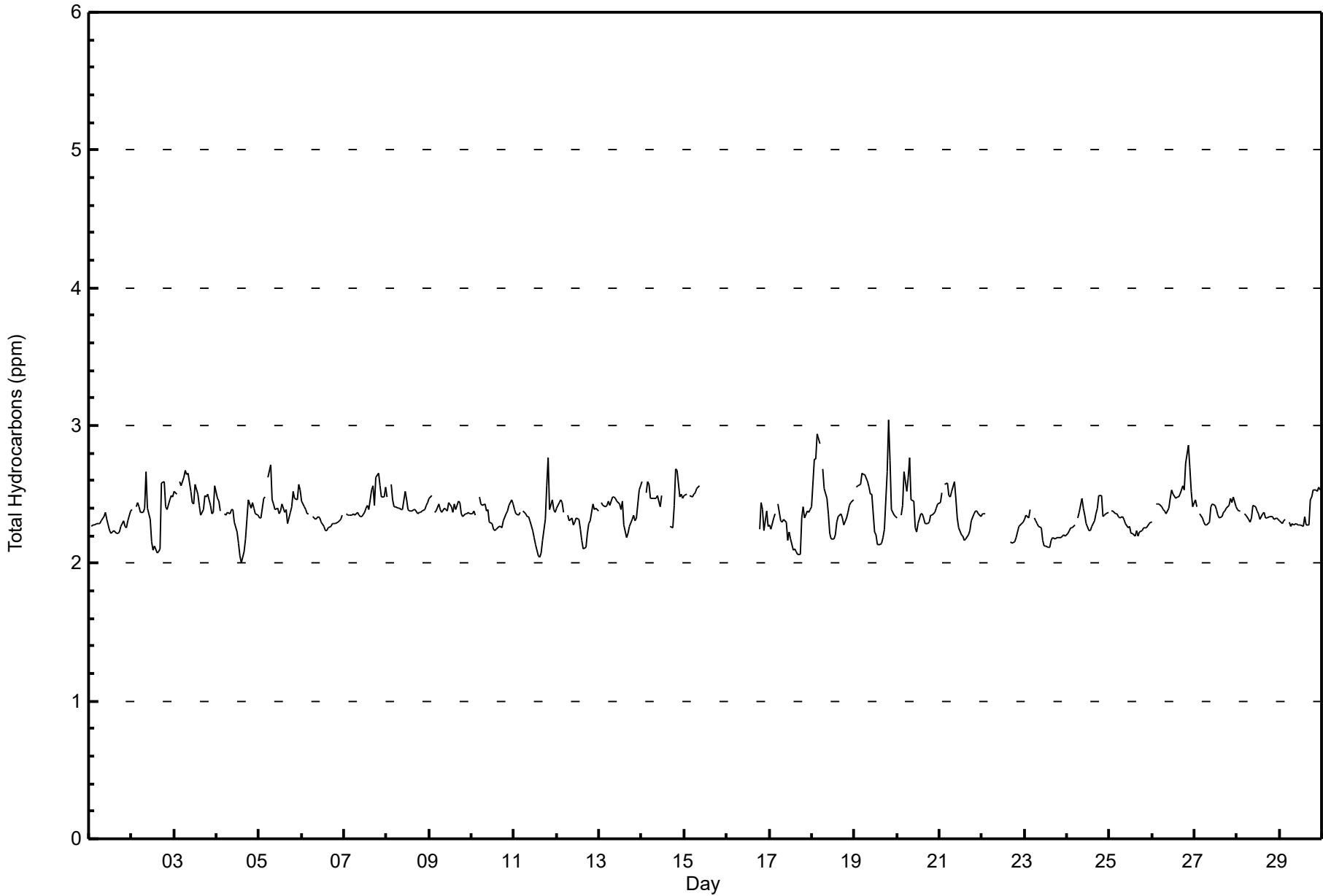
Total Hydrocarbons (THC) - ppm
Kirby South - February 2024

Maximum Value: 3.0 ppm on Feb 19 20:00		Maximum Daily Average: 2.5 ppm on Feb 3		Hours in Service: 696																								
Minimum Value: 2.0 ppm on Feb 4 15:00		Minimum Daily Average: 2.2 ppm on Feb 23		Hours of Data: 619																								
Maximum Diurnal Average: 2.5 ppm at hour 5		Minimum Diurnal Average: 2.3 ppm at hour 15		Hours of Missing Data: 77																								
Monthly Average: 2.37 ppm		Percentiles: P ₁ = 2.1 P ₁₀ = 2.2 Q ₁ = 2.3 Median = 2.4 Q ₃ = 2.4 P ₉₀ = 2.5 P ₉₉ = 2.8		Hours of Calibration: 32																								
				Percent Operational Time: 93.5																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
1-Feb	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.4		
2-Feb	2.4	Z	2.4	2.4	2.4	2.4	2.4	2.4	2.7	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.4	2.4	2.5	2.5	2.5	2.4	2.7		
3-Feb	2.5	2.5	Z	2.6	2.6	2.6	2.7	2.6	2.7	2.5	2.4	2.4	2.6	2.5	2.4	2.3	2.4	2.5	2.5	2.4	2.4	2.4	2.4	2.6	2.5	2.7		
4-Feb	2.5	2.4	2.4	Z	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.0	2.0	2.1	2.2	2.3	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.5		
5-Feb	2.3	2.3	2.5	2.5	Z	2.6	2.7	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.1	2.3	2.4	2.4	2.5	2.5	2.5	2.6	2.5	2.4	2.7		
6-Feb	2.5	2.4	2.4	2.4	2.4	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.5		
7-Feb	Z	2.4	2.3	2.3	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.5	2.6	2.4	2.6	2.7	2.6	2.5	2.5	2.6	2.4	2.7	
8-Feb	2.5	Z	2.6	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.6	
9-Feb	2.5	2.5	Z	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.4	2.4	2.4	2.5	
10-Feb	2.4	2.4	2.3	Z	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.4	2.4	2.5	2.5	
11-Feb	2.4	2.4	2.3	2.4	Z	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.0	2.1	2.2	2.3	2.6	2.8	2.4	2.5	2.4	2.4	2.4	2.3	2.8	
12-Feb	2.4	2.4	2.5	2.4	2.4	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.2	2.3	2.3	2.4	2.4	2.4	2.4	2.3	2.5	
13-Feb	Z	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.4	2.4	2.4	2.5	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.5	2.6	2.4	2.6	
14-Feb	2.6	Z	2.5	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.5	C	C	C	C	2.2	2.3	2.3	2.4	2.7	2.7	2.5	2.5	2.5	2.5	2.7	
15-Feb	2.5	2.5	Z	2.5	2.5	2.5	2.5	2.5	2.6	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	M	M	M	M	M	M	2.6	
16-Feb	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	2.2	2.4	2.4	2.2	2.4	2.3	2.4	2.4
17-Feb	2.3	2.2	2.3	2.4	Z	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.4	2.3	2.4	2.4	2.4	2.4
18-Feb	2.4	2.8	2.8	2.9	2.9	Z	2.7	2.5	2.5	2.4	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.4	2.9	
19-Feb	Z	2.6	2.6	2.6	2.7	2.6	2.6	2.6	2.6	2.5	2.5	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.7	3.0	2.7	2.4	2.4	2.3	2.5	3.0	
20-Feb	2.3	Z	2.3	2.4	2.7	2.5	2.6	2.8	2.5	2.5	2.3	2.2	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.8	
21-Feb	2.4	2.5	Z	2.6	2.6	2.5	2.5	2.5	2.6	2.5	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.3	2.4	2.6	
22-Feb	2.4	2.4	2.4	Z	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	M	M	M	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4
23-Feb	2.3	2.4	2.3	2.4	Z	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	
24-Feb	2.2	2.2	2.3	2.3	2.3	Z	2.3	2.4	2.5	2.4	2.3	2.3	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.3	2.3	2.3	2.4	2.4	2.3	2.5	
25-Feb	Z	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.4	
26-Feb	2.3	Z	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.5	2.7	2.9	2.7	2.5	2.4	2.5	2.9	
27-Feb	2.5	2.4	Z	2.4	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.4	2.4	2.4	2.4	2.5	2.4	2.5	2.4	2.4	2.5	
28-Feb	2.4	2.4	2.4	Z	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	
29-Feb	2.3	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
2.4																								Diurnal Average				
2.6																								Diurnal Maximum				
Z - zerspan			C - Calibration			M - Maintenance			UO - Unstable Operation																			



Wood Buffalo Environmental Association
Hourly Averages

Total Hydrocarbons (THC) - ppm
Kirby South - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbons (THC) - ppm
Kirby South - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	3	0.48	0.48
2.1 - 3.0	616	99.52	100.00
3.1 - 10.0	0	0.00	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 619

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbons (THC) - ppm
Kirby South - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	3
2.1 - 3.0	18	23	50	34	22	22	17	20	37	39	52	48	59	85	48	42	616
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	18	23	50	34	22	22	19	20	37	39	52	48	59	86	48	42	619

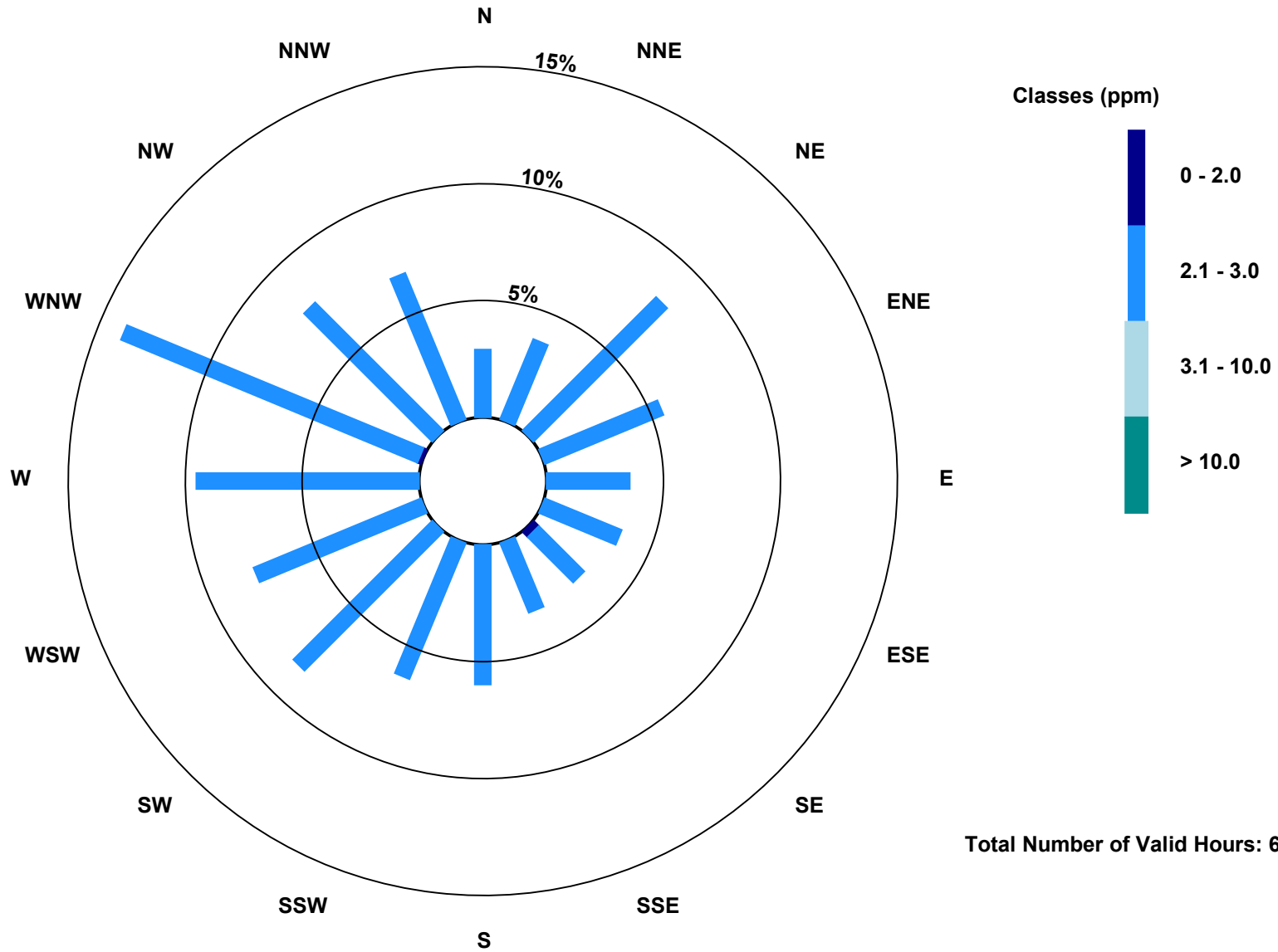
Total Number of Valid Hours: 619

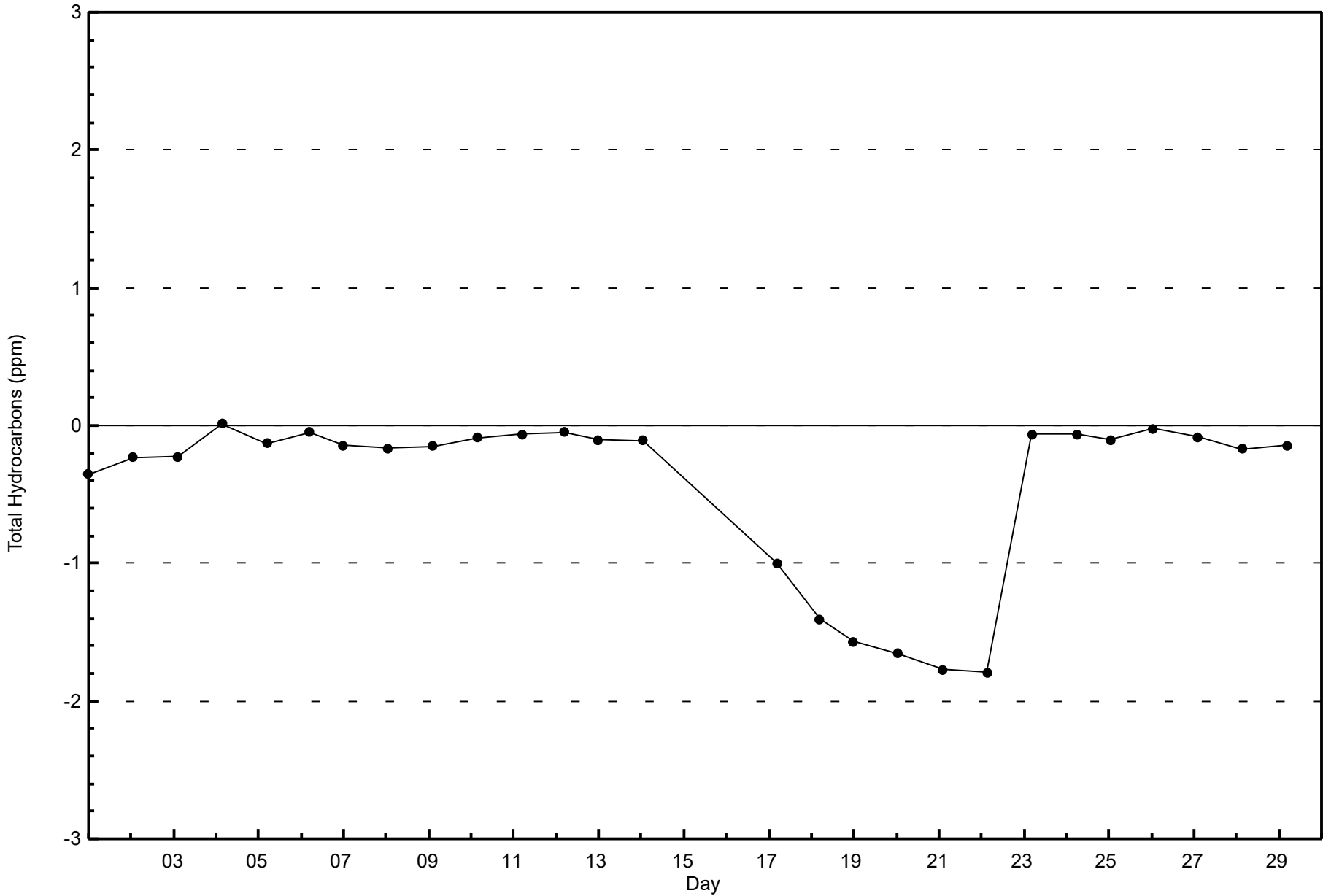
Total Number of Hours: 696

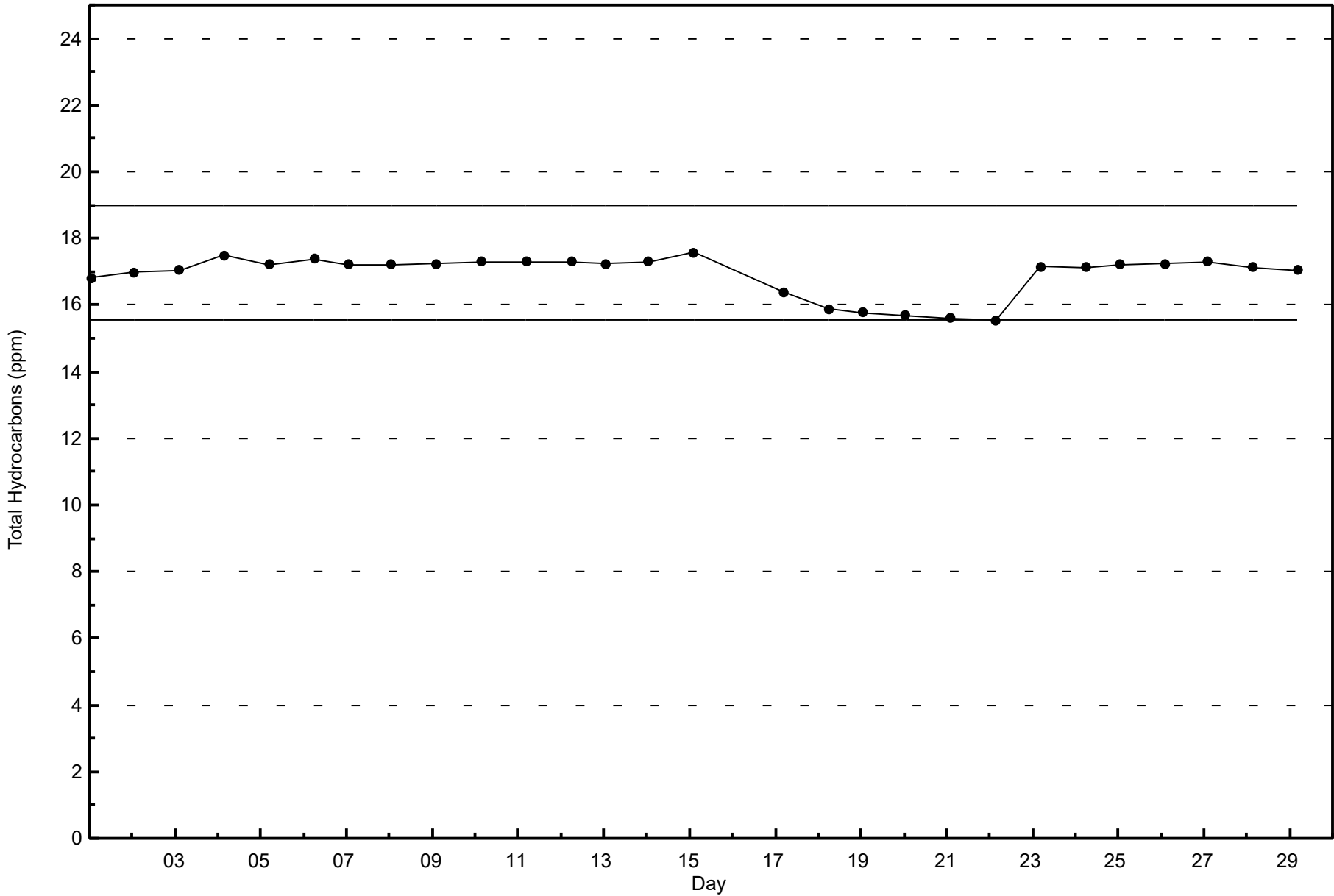


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbons (THC) - ppm
Kirby South







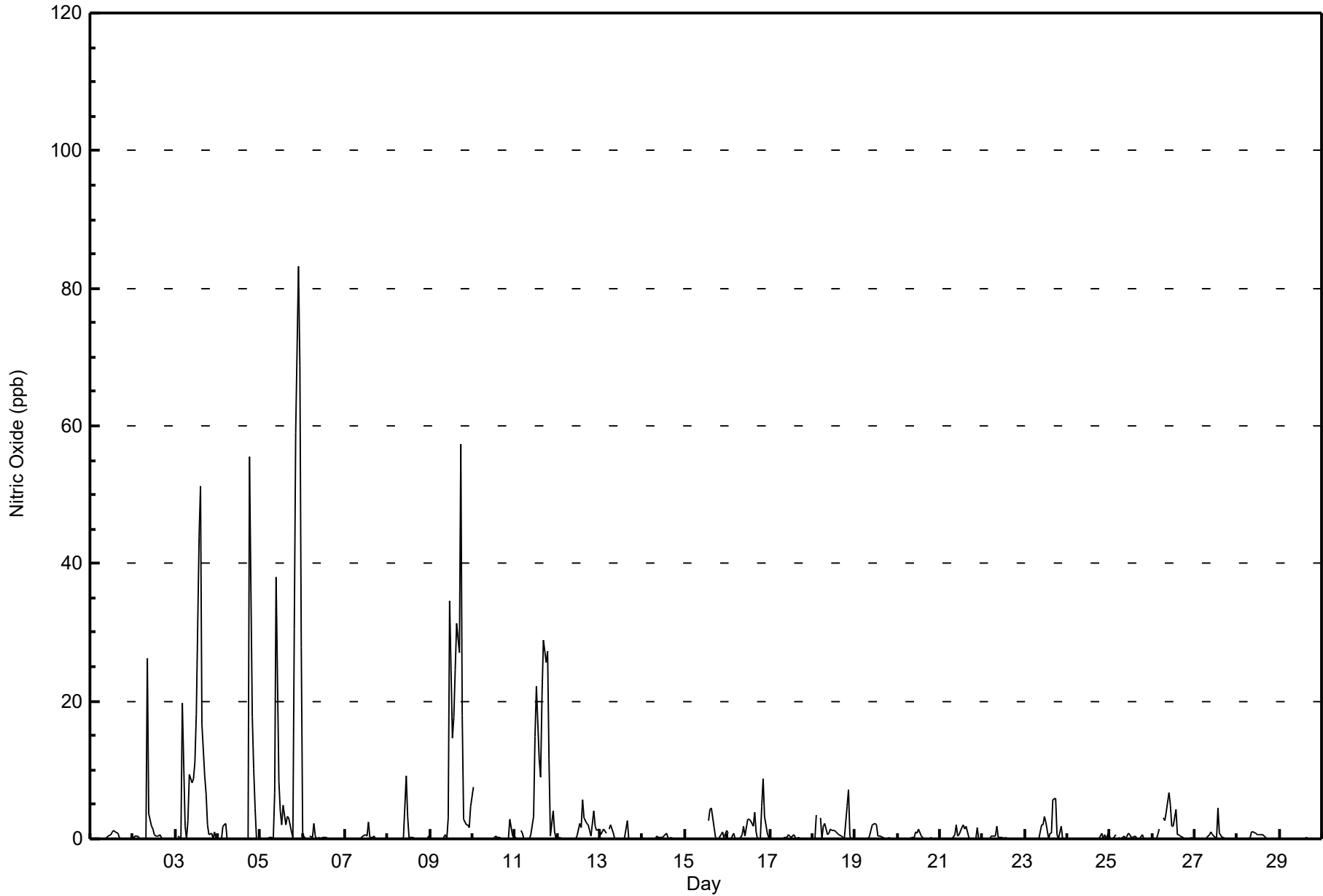


Maximum Value: 83.1 ppb on Feb 5 22:00																				Maximum Daily Average: 14.9 ppb on Feb 5					Hours in Service:	696												
Minimum Value: 0.0 ppb on Feb 1 01:00																				Minimum Daily Average: 0.0 ppb on Feb 29					Hours of Data:	661												
Maximum Diurnal Average: 3.7 ppb at hour 15																				Minimum Diurnal Average: 0.1 ppb at hour 2					Hours of Missing Data:	35												
Monthly Average: 2.10 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.7 P ₉₀ = 3.3 P ₉₉ = 40.5					Hours of Calibration:	35												
																									Percent Operational Time:	100.0												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24														
1-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.4	0.6	1.1	1.3	1.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.3												
2-Feb	0.0	0.5	0.5	0.1	0.0	Z	0.0	0.0	26.3	3.6	1.8	1.3	0.6	0.3	0.4	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	26.3												
3-Feb	Z	0.4	0.1	0.0	19.7	1.9	0.0	2.7	9.3	8.2	8.8	11.2	18.1	43.9	51.2	16.7	9.2	6.6	2.0	0.6	0.9	0.0	1.0	0.0	9.2	51.2												
4-Feb	0.5	Z	0.0	1.8	2.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	55.6	17.6	10.2	4.5	0.0	0.0	4.0	55.6												
5-Feb	0.0	0.0	Z	0.0	0.0	0.1	0.2	0.0	6.7	38.1	8.4	4.1	2.0	4.9	2.1	3.3	3.0	1.1	0.1	30.5	59.0	83.1	68.8	27.8	14.9	83.1												
6-Feb	0.6	0.0	0.0	Z	0.4	0.3	2.2	0.5	0.0	0.1	0.0	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.2												
7-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.3	0.4	0.6	0.4	2.4	0.3	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.4												
8-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	9.1	3.3	0.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	9.1												
9-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	3.1	34.6	14.6	17.6	24.7	31.4	27.0	57.3	18.0	2.8	2.0	2.0	1.5	4.7	10.5	57.3												
10-Feb	7.5	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	2.9	0.4	0.5	0.5	7.5												
11-Feb	0.2	0.0	Z	1.2	0.8	0.0	0.0	0.0	0.1	0.6	3.3	14.8	22.2	11.6	9.0	20.7	28.9	25.6	27.3	11.7	0.4	4.0	0.9	0.0	8.0	28.9												
12-Feb	0.0	0.3	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.2	1.7	5.8	3.0	2.3	2.1	1.2	0.5	4.0	1.8	1.2	1.5	1.2	5.8												
13-Feb	0.7	1.0	1.3	0.7	Z	1.5	2.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.6												
14-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.4	0.1	0.3	0.2	0.5	0.7	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7												
15-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	C	C	C	2.7	4.3	4.4	1.7	0.3	0.0	0.0	0.6	1.0	0.3	1.2	--	4.4												
16-Feb	0.7	Z	0.0	0.8	0.0	0.0	0.0	0.3	0.6	1.7	0.4	2.9	2.9	2.6	1.9	3.9	1.0	0.0	0.0	4.7	8.7	3.2	0.7	0.2	1.6	8.7												
17-Feb	0.2	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.6	0.4	0.1	0.5	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6												
18-Feb	0.0	0.0	3.4	Z	3.1	0.0	1.9	2.2	0.6	0.9	1.5	1.1	1.2	1.0	0.8	0.5	0.5	0.1	0.1	4.7	7.1	0.4	0.0	0.0	1.4	7.1												
19-Feb	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.5	1.3	2.1	2.3	2.0	0.4	0.4	0.3	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.4	2.3												
20-Feb	0.3	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.3	1.0	0.9	1.5	0.5	0.2	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.2	1.5												
21-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	2.1	0.5	0.5	1.6	1.9	1.5	1.8	0.1	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.5	2.1												
22-Feb	0.0	Z	0.0	0.0	0.0	0.5	0.4	0.3	1.8	0.2	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.2	1.8												
23-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	3.2	2.4	0.0	0.8	0.8	5.8	5.9	0.6	0.1	1.9	0.0	0.0	0.0	1.1	5.9												
24-Feb	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.6	0.0	1.0	0.1	1.0												
25-Feb	0.0	0.0	0.0	0.6	Z	0.3	0.0	0.1	0.4	0.0	0.8	0.6	0.3	0.1	0.4	0.0	0.1	0.1	0.7	0.0	0.0	0.0	0.0	0.0	0.2	0.8												
26-Feb	0.0	0.0	0.0	0.5	1.5	Z	3.1	2.5	3.8	6.8	5.0	1.9	1.9	4.3	0.6	0.6	0.5	0.1	0.0	0.0	0.0	0.0	0.2	0.0	1.4	6.8												
27-Feb	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.9	0.5	0.2	0.2	4.4	0.8	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	4.4												
28-Feb	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.2	0.9	0.9	0.7	0.7	0.7	0.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.9												
29-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1											
																								Diurnal Average					Diurnal Maximum									
																								0.4 0.1 0.2 0.2 1.2 0.2 0.3 0.3 1.9 2.5 1.8 3.1 2.7 3.6 3.7 3.2 2.8 3.4 3.6 2.6 3.3 3.6 2.6 1.3					7.5 1.0 3.4 1.8 19.7 1.9 3.1 2.7 26.3 38.1 9.1 34.6 22.2 43.9 51.2 31.4 28.9 57.3 55.6 30.5 59.0 83.1 68.8 27.8									
Z - zerospan C - Calibration																																						



Wood Buffalo Environmental Association
Hourly Averages

Nitric Oxide (NO) - ppb
Kirby South - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitric Oxide (NO) - ppb
Kirby South - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	641	96.97	96.97
21 - 40	13	1.97	98.94
41 - 80	6	0.91	99.85
81 - 159	1	0.15	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



Wood Buffalo Environmental Association
Frequency Distribution

Nitric Oxide (NO) - ppb
Kirby South - February 2024

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	21	25	43	32	23	22	19	20	36	39	55	49	85	86	46	40	641
21 - 40	0	0	4	0	0	0	0	0	0	0	0	0	0	2	7	0	13
11 - 80	0	0	2	1	0	0	0	0	0	0	0	0	0	0	1	2	6
81 - 159	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	21	25	49	34	23	22	19	20	36	39	55	49	85	88	54	42	661

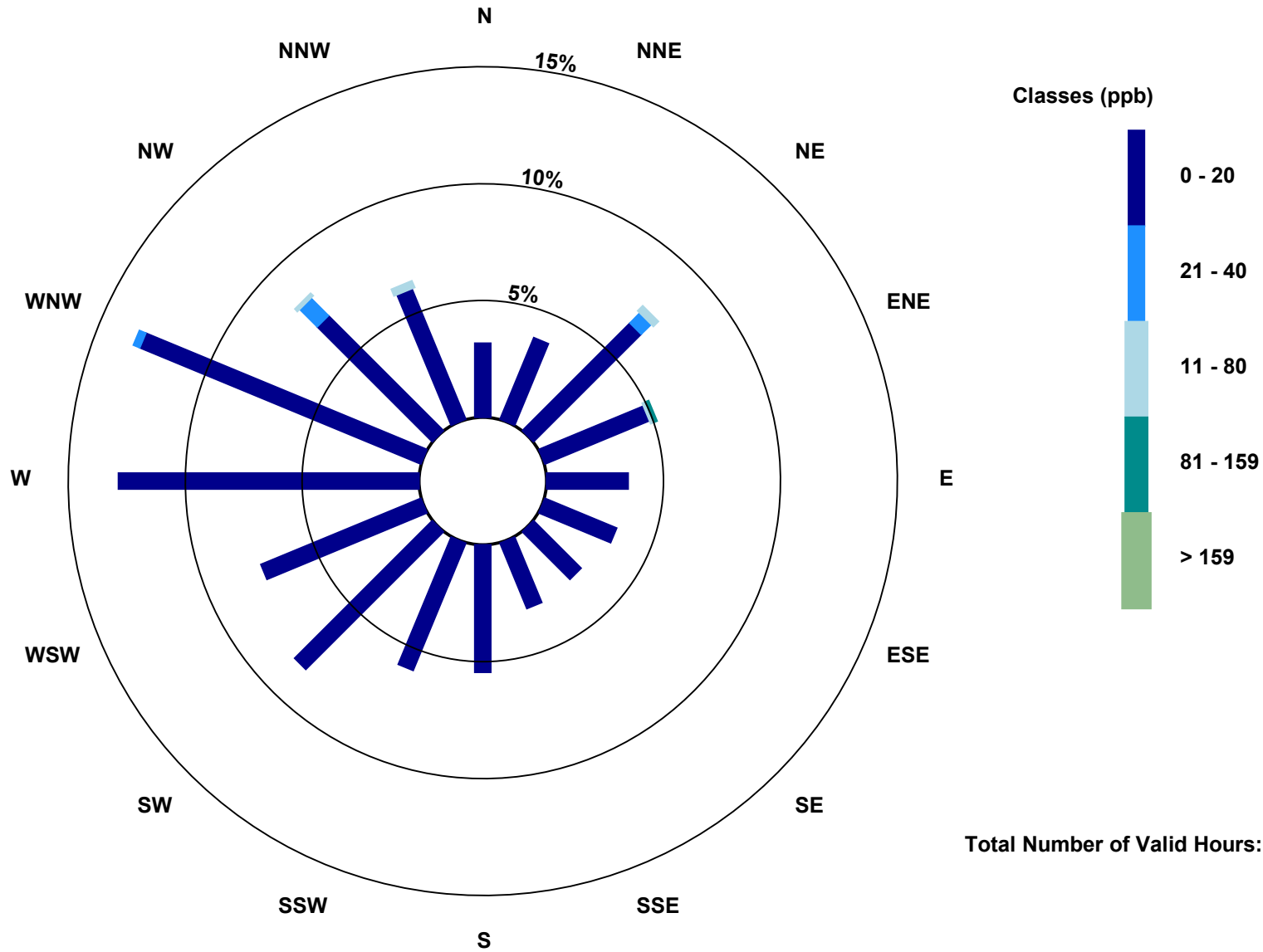
Total Number of Valid Hours: 661

Total Number of Hours: 696

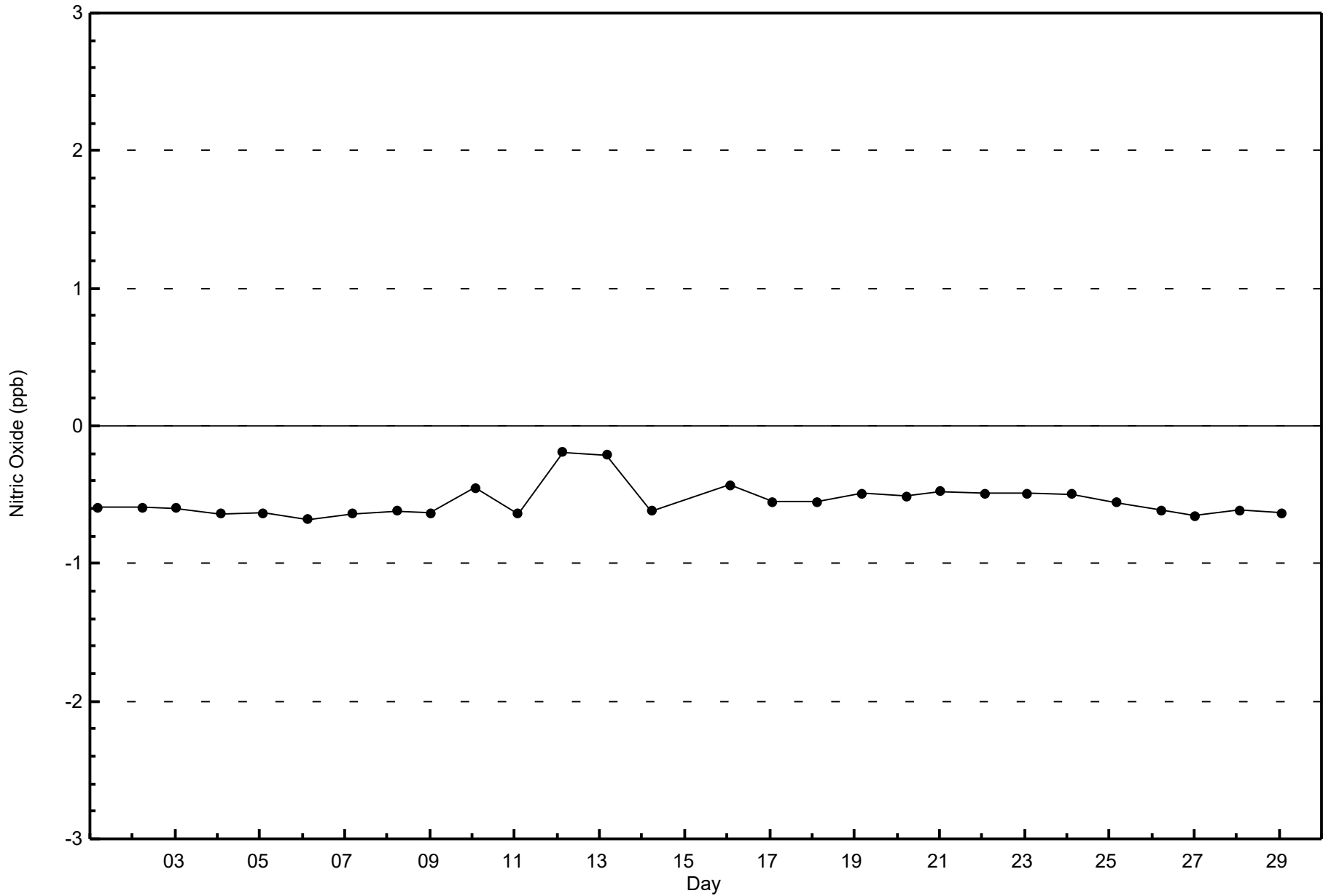


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitric Oxide (NO) - ppb
Kirby South



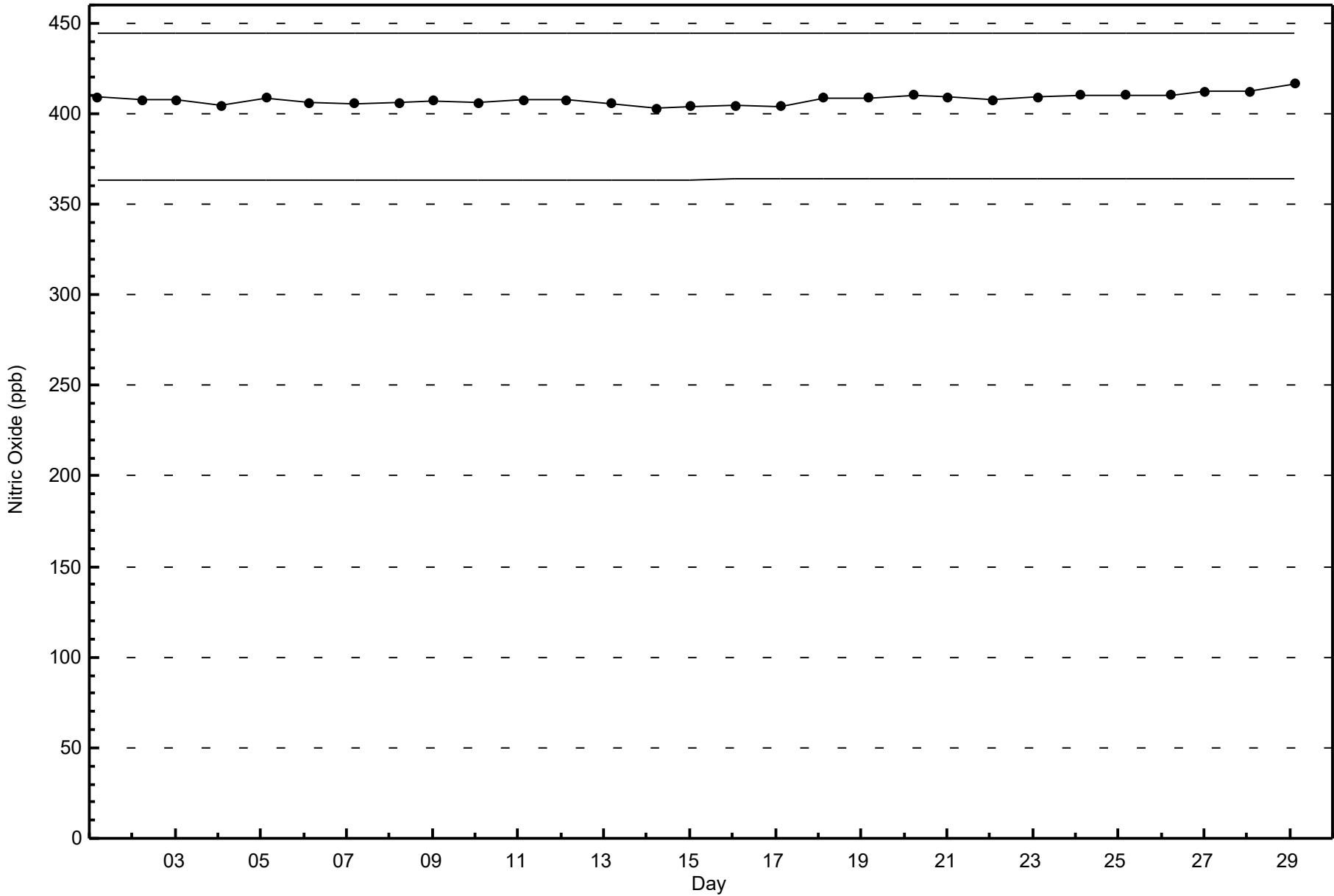
Total Number of Valid Hours: 661





Wood Buffalo Environmental Association
Span Responses

Nitric Oxide (NO) - ppb
Kirby South - February 2024





Wood Buffalo Environmental Association
Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb
Kirby South - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 38.3 ppb on Feb 5 23:00	Maximum Daily Average: 10.3 ppb on Feb 5		Hours of Data:	661
Minimum Value: 0.2 ppb on Feb 13 12:00	Minimum Daily Average: 0.9 ppb on Feb 29		Hours of Missing Data:	35
Maximum Diurnal Average: 5.1 ppb at hour 18	Minimum Diurnal Average: 2.3 ppb at hour 6		Hours of Calibration:	35
Monthly Average: 3.51 ppb	Percentiles: P ₁ = 0.3 P ₁₀ = 0.7 Q ₁ = 1.2 Median = 2.3 Q ₃ = 4.0 P ₉₀ = 6.2 P ₉₉ = 24.8		Percent Operational Time:	100.0

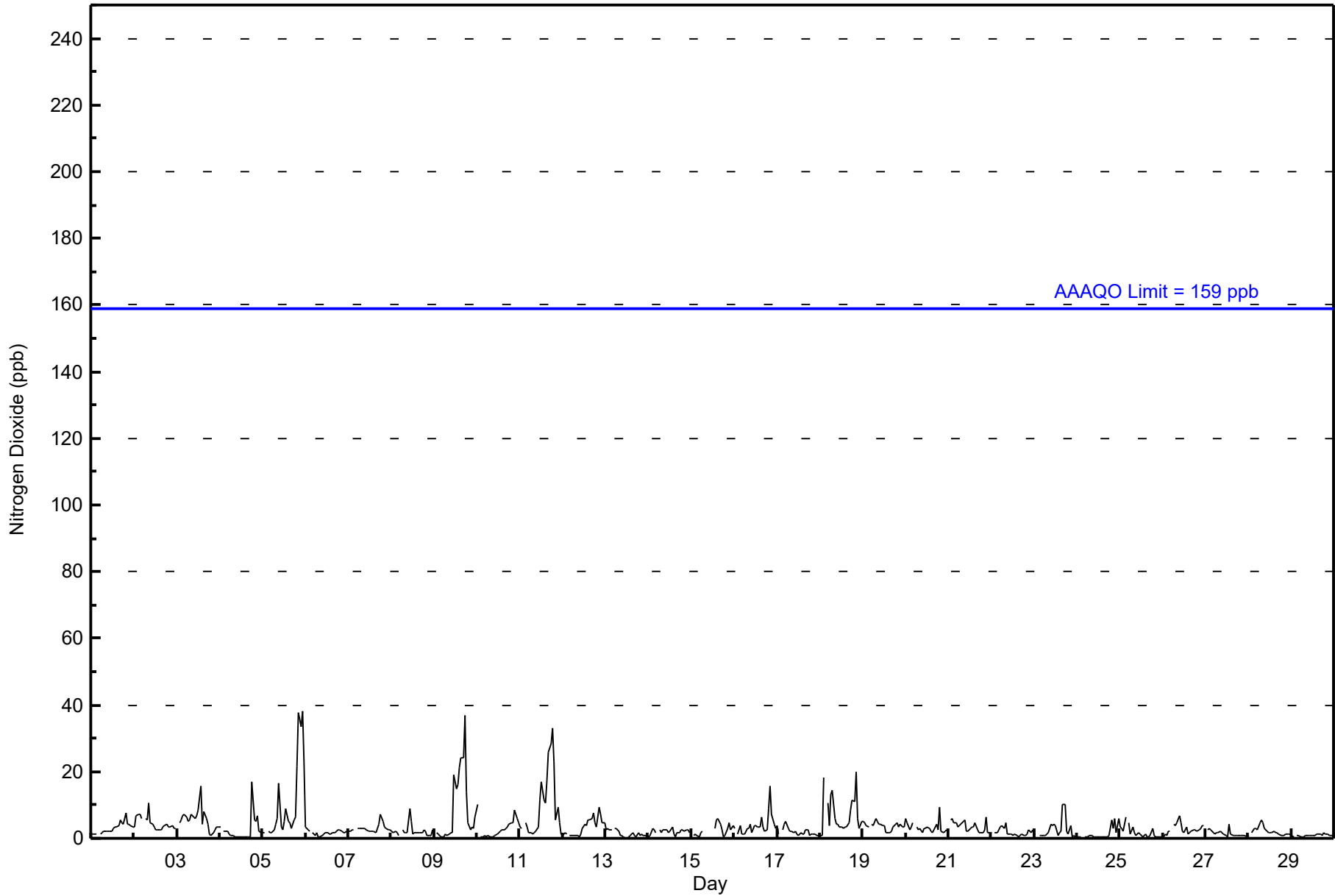
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	1.1	1.2	1.1	1.3	Z	1.3	1.6	2.1	2.3	2.2	2.0	2.1	2.8	3.4	3.6	4.0	5.4	4.7	4.4	7.6	4.4	4.3	3.9	3.6	3.1	7.6																							
2-Feb	3.4	6.7	7.4	7.2	5.9	Z	5.9	5.5	10.6	4.6	4.1	3.3	2.7	2.4	2.4	2.7	3.6	3.7	4.2	3.5	3.2	3.7	2.9	2.8	4.5	10.6																							
3-Feb	Z	4.7	5.7	6.8	7.4	6.2	4.9	5.7	7.0	6.4	5.8	6.6	8.4	15.8	4.2	8.0	6.0	4.1	1.4	0.7	1.7	2.4	3.6	3.2	5.5	15.8																							
4-Feb	3.3	Z	2.2	2.3	2.1	1.2	0.9	0.7	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	17.1	5.7	4.9	6.7	2.1	1.7	2.4	17.1																							
5-Feb	1.8	1.5	Z	2.0	1.6	1.8	2.7	4.2	5.9	16.7	3.5	2.6	5.2	8.9	5.1	4.6	3.0	5.4	6.5	21.4	37.7	33.5	38.3	22.7	10.3	38.3																							
6-Feb	3.5	2.5	2.1	Z	1.5	1.0	1.5	0.6	0.5	0.7	1.2	1.8	1.5	1.4	1.4	1.7	1.7	2.1	2.7	2.5	2.1	1.7	1.9	2.1	1.7	3.5																							
7-Feb	2.2	2.2	2.4	2.6	Z	2.9	3.0	3.0	3.1	2.8	2.4	2.3	2.0	2.2	2.1	1.9	3.0	4.3	7.3	5.2	3.5	3.0	2.7	2.5	3.0	7.3																							
8-Feb	2.2	1.8	2.1	1.6	1.0	Z	2.6	1.5	1.6	1.5	8.7	5.2	1.1	1.5	1.5	1.6	1.7	1.8	2.4	2.0	0.9	0.8	1.0	2.6	2.1	8.7																							
9-Feb	Z	1.5	1.3	1.0	0.4	0.5	1.4	0.7	1.2	1.7	1.5	19.1	14.8	16.3	21.0	24.2	24.0	36.8	14.0	4.7	2.4	3.6	2.8	6.5	8.8	36.8																							
10-Feb	10.3	Z	0.4	0.5	0.7	0.4	0.9	0.3	0.5	0.4	0.7	1.2	1.5	2.2	2.4	2.5	2.8	3.4	4.4	4.6	4.5	8.6	5.8	4.5	2.8	10.3																							
11-Feb	3.4	2.9	Z	4.5	3.4	1.8	1.8	1.1	1.6	2.2	3.4	11.5	16.8	11.3	10.5	17.4	25.7	28.5	33.0	23.0	5.4	9.2	4.5	1.2	9.7	33.0																							
12-Feb	0.8	1.7	1.4	Z	0.9	0.8	0.8	0.9	0.9	0.5	1.4	2.8	4.4	3.9	5.7	5.3	5.8	7.6	4.5	3.5	9.3	7.1	4.5	4.6	3.4	9.3																							
13-Feb	2.7	2.9	2.6	2.6	Z	3.0	3.1	2.2	1.0	1.0	0.3	0.2	0.2	0.4	1.0	1.7	0.9	0.5	1.5	1.0	1.1	0.7	0.7	0.4	1.4	3.1																							
14-Feb	0.4	0.8	2.8	2.5	1.7	Z	2.5	1.6	2.4	2.6	2.5	1.9	2.3	3.2	1.1	0.6	1.6	1.6	2.4	2.4	2.0	2.7	2.7	1.5	2.0	3.2																							
15-Feb	Z	1.0	1.1	0.7	0.5	1.8	2.3	C	C	C	C	C	C	3.1	5.5	6.0	4.3	2.6	0.5	0.8	3.0	4.5	2.4	3.9	--	6.0																							
16-Feb	3.1	Z	1.3	3.7	1.2	1.2	1.4	3.1	3.0	4.1	1.5	3.8	3.9	3.6	3.3	6.3	3.2	2.2	2.6	8.8	15.7	7.4	4.1	3.0	4.0	15.7																							
17-Feb	3.7	1.3	Z	2.5	4.3	5.0	3.1	2.3	2.2	1.8	2.0	1.4	1.0	1.9	1.4	1.1	2.4	2.5	1.0	1.1	1.1	1.1	1.0	1.0	2.0	5.0																							
18-Feb	1.0	0.8	18.4	Z	10.6	3.8	13.2	14.6	6.1	4.1	4.2	3.2	3.3	3.1	3.2	3.2	4.6	8.5	11.6	11.1	20.1	5.9	3.1	5.1	7.1	20.1																							
19-Feb	5.2	4.6	4.0	3.5	Z	4.2	3.9	5.9	5.0	4.2	4.2	4.0	3.7	1.6	1.6	1.7	2.3	3.2	4.4	4.8	3.5	4.1	3.4	3.2	3.7	5.9																							
20-Feb	5.9	4.6	2.5	3.2	4.6	Z	3.3	2.6	3.1	1.8	2.8	2.8	3.6	2.8	2.3	1.8	2.4	4.2	2.6	9.5	2.0	1.9	2.1	2.5	3.3	9.5																							
21-Feb	Z	5.4	5.9	4.5	4.7	3.5	3.8	4.2	5.2	5.7	2.3	2.2	3.0	3.3	3.3	4.5	2.7	1.8	1.7	1.8	2.7	6.3	1.9	1.7	3.6	6.3																							
22-Feb	1.8	Z	1.7	1.5	2.4	3.5	3.7	3.1	4.6	1.4	1.3	1.2	0.9	1.1	0.8	0.6	0.7	1.3	1.0	0.9	1.1	2.5	1.5	2.5	1.8	4.6																							
23-Feb	1.4	1.2	Z	0.8	0.8	0.8	0.9	1.1	1.5	4.3	3.8	4.3	3.7	0.7	1.7	2.1	10.2	10.2	2.3	1.2	3.8	0.6	0.8	0.6	2.6	10.2																							
24-Feb	0.5	0.5	0.4	Z	0.5	0.5	0.5	0.8	1.0	0.4	0.5	0.6	0.3	0.4	0.4	0.5	0.5	0.5	1.0	5.5	3.1	6.1	1.6	6.0	1.4	6.1																							
25-Feb	3.3	2.8	2.2	6.2	Z	4.6	1.1	3.3	1.8	0.7	1.8	1.4	0.8	0.6	1.2	0.5	0.5	0.9	2.9	0.7	0.5	0.6	0.3	0.3	1.7	6.2																							
26-Feb	0.2	1.3	0.8	2.1	2.2	Z	4.2	3.8	4.5	6.8	4.8	2.1	1.9	3.6	1.3	1.5	2.0	2.4	2.7	2.3	2.7	2.9	3.7	3.8	2.8	6.8																							
27-Feb	Z	2.5	3.1	2.4	1.7	1.3	1.7	1.7	2.1	1.7	1.1	0.7	0.6	4.1	1.4	0.8	0.8	0.7	1.0	0.9	1.0	1.0	0.8	0.6	1.5	4.1																							
28-Feb	0.7	Z	1.7	3.0	2.8	2.7	4.7	5.5	4.5	2.9	2.1	1.8	1.9	1.9	2.1	1.9	1.5	1.2	0.7	0.8	1.0	1.4	1.3	1.1	2.1	5.5																							
29-Feb	0.7	0.6	Z	0.8	0.7	0.6	0.6	0.6	0.7	0.8	0.7	0.9	1.0	1.0	1.1	1.4	1.2	1.0	1.8	1.4	1.3	0.9	0.9	0.9	0.9	0.9	1.8																						
																								2.6	2.4	3.1	2.8	2.7	2.3	2.8	3.0	3.0	3.0	2.5	3.3	3.4	3.7	3.2	3.8	4.3	5.1	5.0	4.8	5.0	4.7	3.7	3.3	Diurnal Average	
																								10.3	6.7	18.4	7.2	10.6	6.2	13.2	14.6	10.6	16.7	8.7	19.1	16.8	16.3	21.0	24.2	25.7	36.8	33.0	23.0	37.7	33.5	38.3	22.7	Diurnal Maximum	

Z - zerspan C - Calibration
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Kirby South - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Kirby South - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	648	98.03	98.03
21 - 40	13	1.97	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Kirby South - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	21	25	46	32	23	22	19	20	36	39	55	49	85	85	49	42	648
21 - 40	0	0	3	2	0	0	0	0	0	0	0	0	0	3	5	0	13
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	21	25	49	34	23	22	19	20	36	39	55	49	85	88	54	42	661

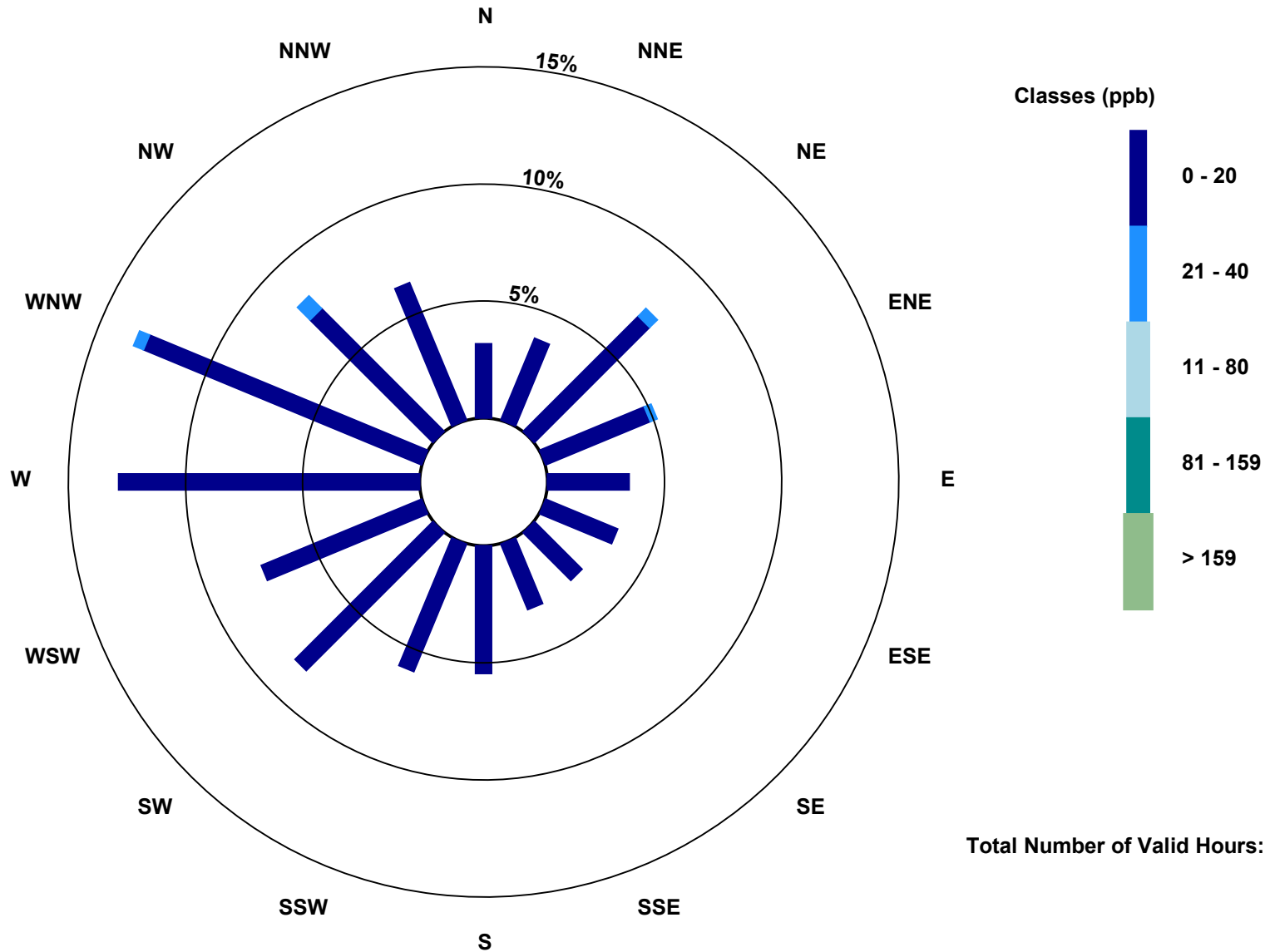
Total Number of Valid Hours: 661

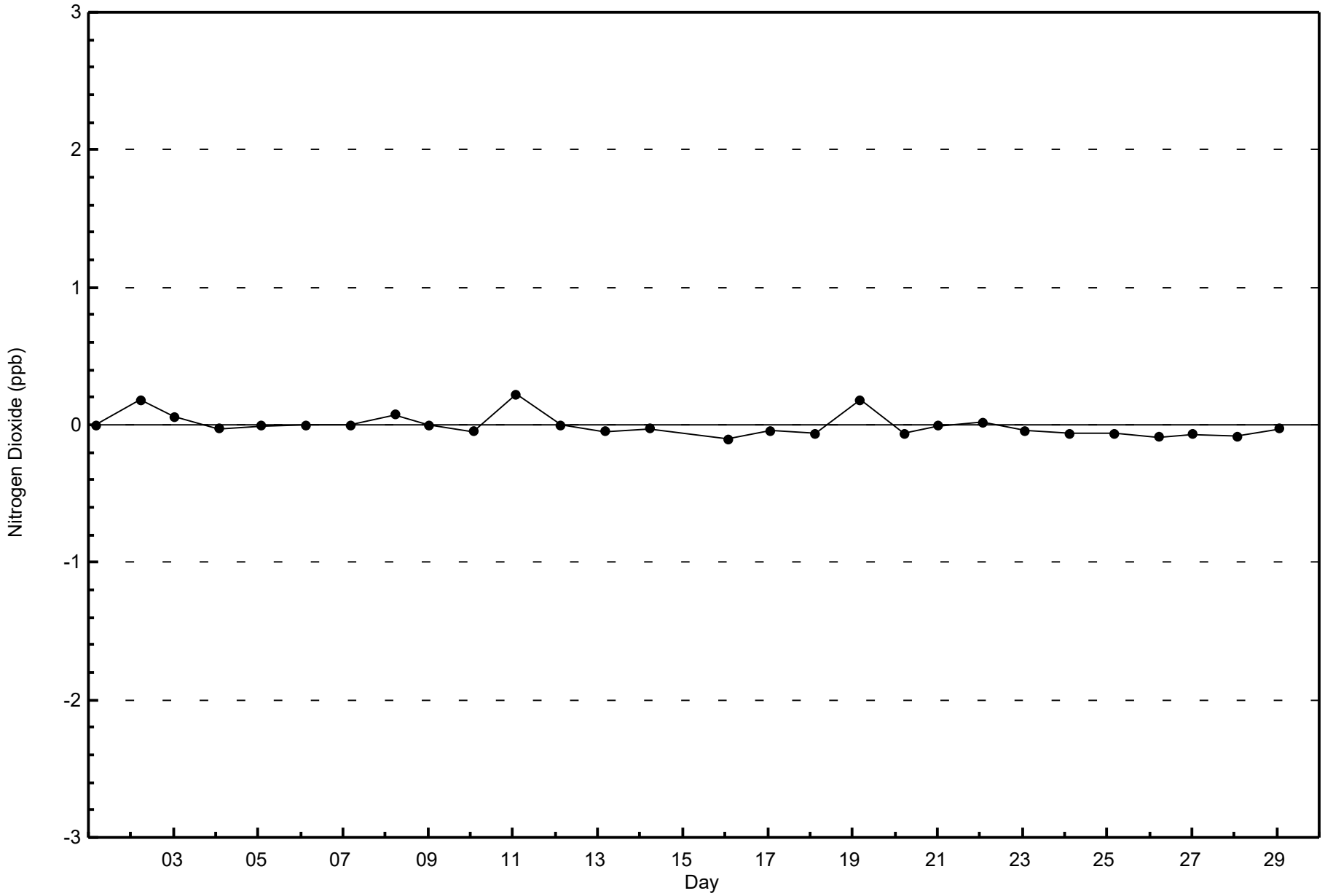
Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Kirby South

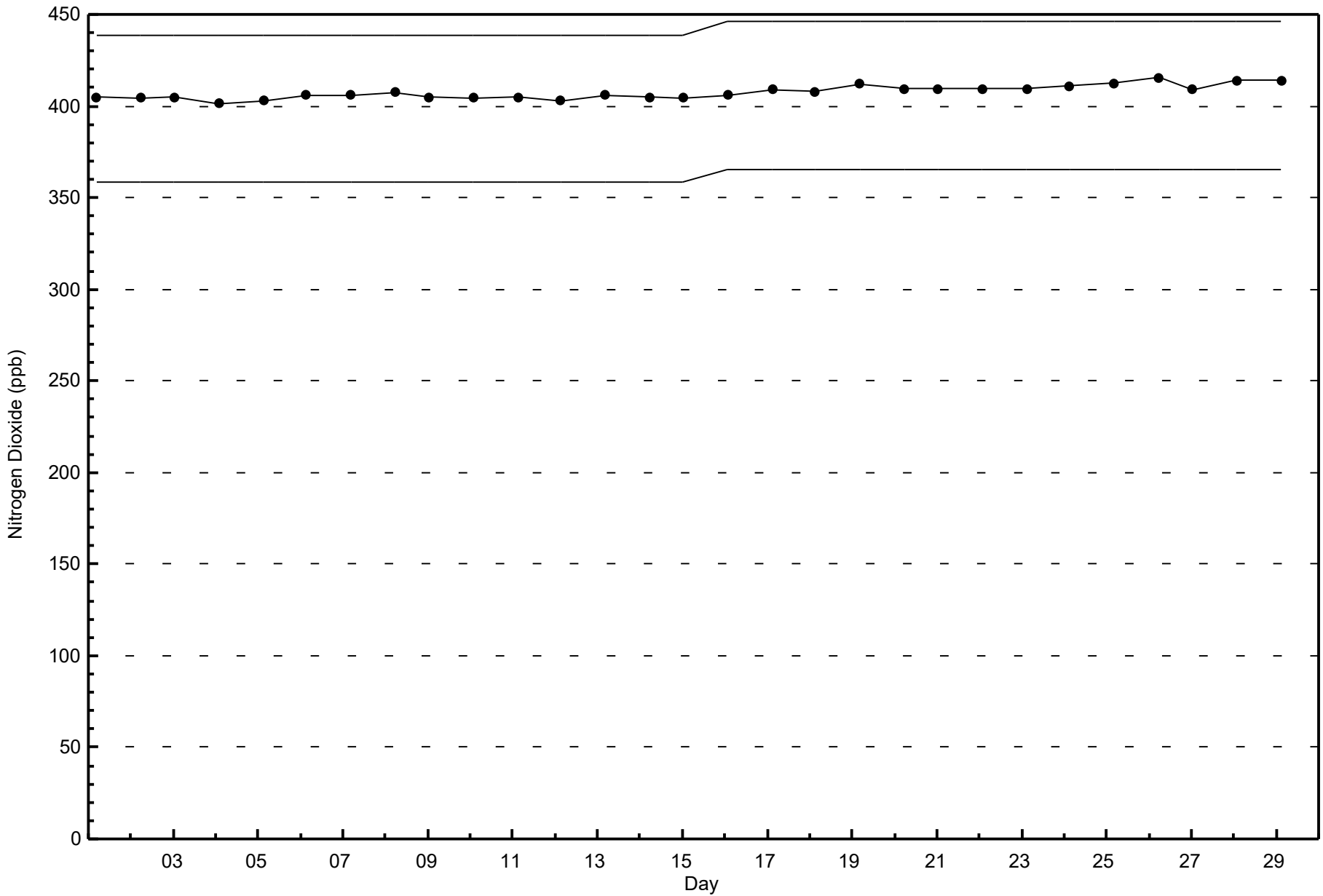






Wood Buffalo Environmental Association
Span Responses

Nitrogen Dioxide (NO₂) - ppb
Kirby South - February 2024





Wood Buffalo Environmental Association
Summary of Hour Averages

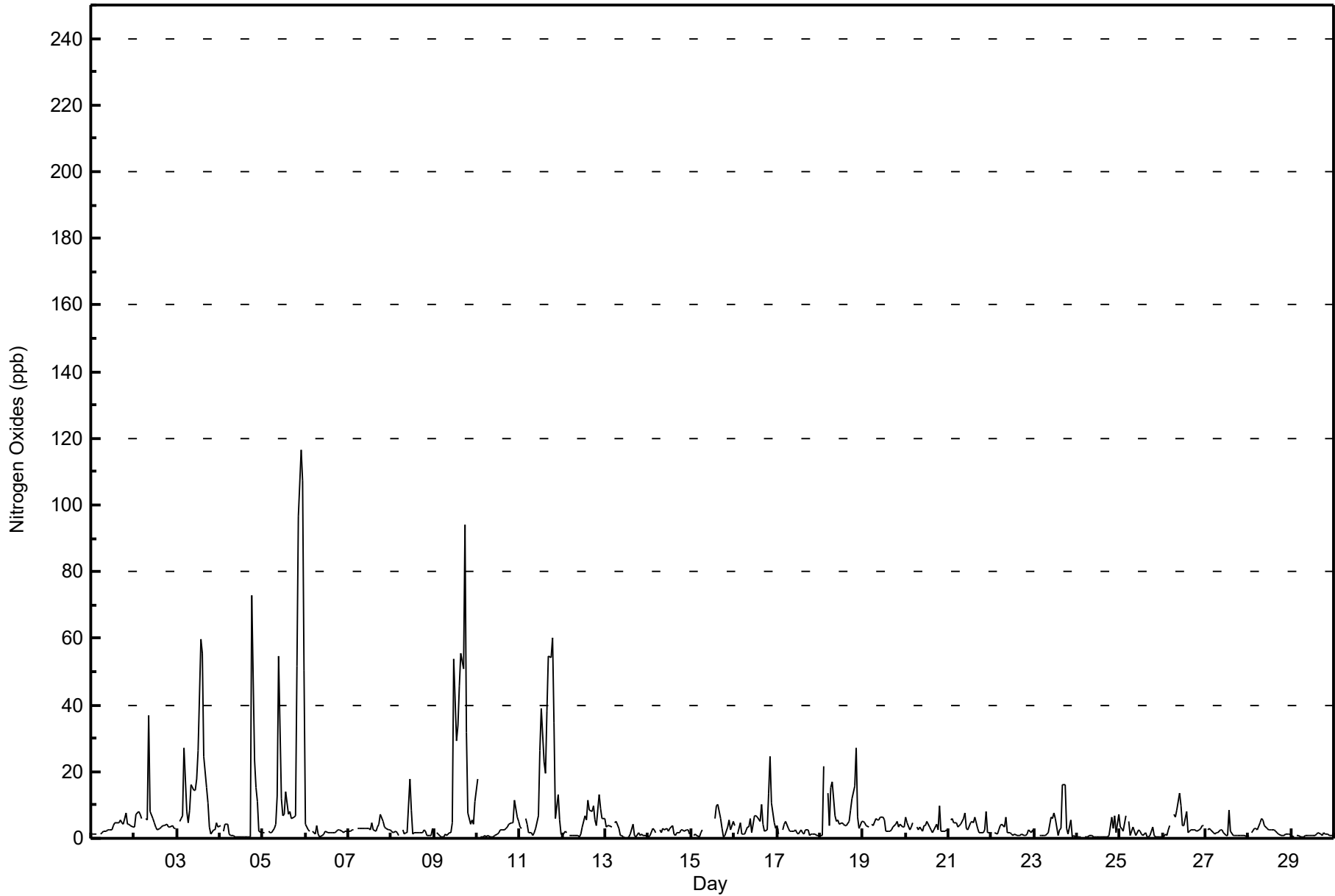
Nitrogen Oxides (NO_x) - ppb
Kirby South - February 2024

Maximum Value: 116.6 ppb on Feb 5 22:00																				Maximum Daily Average: 25.2 ppb on Feb 5					Hours in Service: 696		
Minimum Value: 0.2 ppb on Feb 13 12:00																				Minimum Daily Average: 0.9 ppb on Feb 29					Hours of Data: 661		
Maximum Diurnal Average: 8.6 ppb at hour 19																				Minimum Diurnal Average: 2.5 ppb at hour 2					Hours of Missing Data: 35		
Monthly Average: 5.61 ppb																				Percentiles: P ₁ = 0.3 P ₁₀ = 0.7 Q ₁ = 1.2 Median = 2.6 Q ₃ = 4.7 P ₉₀ = 9.7 P ₉₉ = 57.3					Hours of Calibration: 35		
																									Percent Operational Time: 100.0		
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	1.1	1.2	1.1	1.3	Z	1.3	1.6	2.1	2.3	2.4	2.4	2.7	3.9	4.7	4.6	4.7	5.7	4.7	4.4	7.6	4.4	4.3	3.9	3.6	3.3	7.6	
2-Feb	3.4	7.2	7.9	7.3	5.9	Z	5.9	5.5	36.9	8.2	5.9	4.6	3.3	2.7	2.8	3.2	3.7	3.7	4.2	3.5	3.2	3.7	2.9	2.8	6.0	36.9	
3-Feb	Z	5.1	5.8	6.8	27.1	8.1	4.9	8.4	16.3	14.6	14.6	17.8	26.5	59.7	55.4	24.7	15.2	10.7	3.4	1.3	2.6	2.4	4.6	3.2	14.7	59.7	
4-Feb	3.8	Z	2.2	4.1	4.4	1.3	0.9	0.7	0.5	0.4	0.4	0.5	0.4	0.5	0.4	0.4	0.4	0.4	72.7	23.3	15.1	11.2	2.1	1.7	6.4	72.7	
5-Feb	1.8	1.5	Z	2.0	1.6	1.9	2.9	4.2	12.6	54.8	11.9	6.7	7.2	13.8	7.2	7.9	6.0	6.5	6.6	51.9	96.7	116.6	107.1	50.5	25.2	116.6	
6-Feb	4.1	2.5	2.1	Z	1.9	1.3	3.7	1.1	0.5	0.8	1.2	2.0	1.7	1.5	1.5	1.7	1.7	2.1	2.7	2.5	2.1	1.7	1.9	2.1	1.9	4.1	
7-Feb	2.2	2.2	2.4	2.6	Z	2.9	3.0	3.0	3.1	3.1	2.8	2.9	2.4	4.6	2.4	2.1	3.4	4.3	7.3	5.2	3.5	3.0	2.7	2.5	3.2	7.3	
8-Feb	2.2	1.8	2.1	1.6	1.0	Z	2.6	1.5	1.6	1.6	17.8	8.5	1.3	1.8	1.6	1.7	1.7	1.8	2.4	2.0	0.9	0.8	1.0	2.9	2.7	17.8	
9-Feb	Z	1.5	1.3	1.0	0.4	0.5	1.4	0.7	1.7	1.7	4.6	53.7	29.4	33.9	45.7	55.6	51.0	94.1	32.0	7.5	4.4	5.6	4.3	11.2	19.3	94.1	
10-Feb	17.8	Z	0.4	0.5	0.7	0.4	0.9	0.3	0.5	0.4	0.7	1.2	1.6	2.5	2.6	2.6	2.8	3.4	4.4	4.6	4.5	11.5	6.2	5.0	3.3	17.8	
11-Feb	3.6	2.9	Z	5.7	4.2	1.8	1.8	1.1	1.7	2.8	6.7	26.3	39.0	22.9	19.5	38.1	54.6	54.1	60.3	34.7	5.8	13.2	5.4	1.2	17.7	60.3	
12-Feb	0.8	2.0	1.5	Z	0.9	0.8	0.8	0.9	0.9	0.5	1.4	3.2	6.6	5.6	11.5	8.3	8.1	9.7	5.7	4.0	13.3	8.9	5.7	6.1	4.7	13.3	
13-Feb	3.4	3.9	3.9	3.3	Z	4.5	5.1	2.9	1.0	1.0	0.3	0.2	0.2	0.4	1.2	4.3	0.9	0.5	1.5	1.0	1.1	0.7	0.7	0.4	1.8	5.1	
14-Feb	0.4	0.8	2.8	2.5	1.7	Z	2.5	1.6	2.8	2.7	2.8	2.1	2.8	3.9	1.3	0.7	1.8	1.6	2.4	2.4	2.0	2.7	2.7	1.5	2.1	3.9	
15-Feb	Z	1.0	1.1	0.7	0.5	1.8	2.3	C	C	C	C	C	C	5.8	9.8	10.4	6.0	2.9	0.5	0.8	3.6	5.5	2.7	5.1	--	10.4	
16-Feb	3.8	Z	1.3	4.5	1.2	1.2	1.4	3.4	3.6	5.8	1.9	6.7	6.8	6.2	5.2	10.2	4.2	2.2	2.6	13.5	24.4	10.6	4.8	3.2	5.6	24.4	
17-Feb	3.9	1.3	Z	2.5	4.3	5.0	3.1	2.3	2.3	2.1	2.6	1.8	1.1	2.4	1.6	1.2	2.5	2.5	1.0	1.1	1.1	1.1	1.0	1.0	2.1	5.0	
18-Feb	1.0	0.8	21.8	Z	13.7	3.8	15.1	16.8	6.7	5.0	5.7	4.3	4.5	4.1	4.0	3.7	5.1	8.6	11.7	15.8	27.2	6.3	3.1	5.1	8.4	27.2	
19-Feb	5.2	4.6	4.0	3.5	Z	4.2	3.9	5.9	5.5	5.5	6.3	6.3	5.7	2.0	2.0	2.0	2.5	3.2	4.4	5.0	3.5	4.1	3.4	3.2	4.2	6.3	
20-Feb	6.2	4.6	2.5	3.2	4.6	Z	3.3	2.6	3.3	2.1	3.8	3.7	5.1	3.3	2.5	1.8	2.4	4.3	2.6	9.7	2.0	1.9	2.1	2.5	3.5	9.7	
21-Feb	Z	5.4	5.9	4.5	4.7	3.5	3.8	4.2	5.8	7.8	2.8	2.7	4.6	5.2	4.8	6.3	2.8	1.8	1.7	1.8	2.7	7.9	1.9	1.7	4.1	7.9	
22-Feb	1.8	Z	1.7	1.5	2.4	4.0	4.1	3.4	6.4	1.6	1.6	1.4	1.0	1.2	0.8	0.6	0.7	1.4	1.0	0.9	1.1	2.6	1.5	2.5	2.0	6.4	
23-Feb	1.4	1.2	Z	0.8	0.8	0.8	0.9	1.1	1.5	6.3	5.8	7.5	6.1	0.7	2.5	2.9	16.0	16.1	2.9	1.3	5.7	0.6	0.8	0.6	3.7	16.1	
24-Feb	0.5	0.5	0.4	Z	0.5	0.5	0.5	0.8	1.0	0.4	0.5	0.6	0.3	0.4	0.4	0.5	0.5	0.5	1.0	6.3	3.1	6.7	1.6	7.0	1.5	7.0	
25-Feb	3.3	2.8	2.2	6.8	Z	4.9	1.1	3.4	2.2	0.7	2.6	2.0	1.1	0.7	1.6	0.5	0.6	1.0	3.6	0.7	0.5	0.6	0.3	0.3	1.9	6.8	
26-Feb	0.2	1.3	0.8	2.6	3.7	Z	7.3	6.3	8.3	13.6	9.8	4.0	3.8	7.9	1.9	2.1	2.5	2.5	2.7	2.3	2.7	2.9	3.9	3.8	4.2	13.6	
27-Feb	Z	2.5	3.1	2.4	1.7	1.3	1.7	1.8	2.6	2.6	1.6	0.9	0.8	8.5	2.2	1.0	1.0	0.7	1.0	0.9	1.0	1.0	0.8	0.6	1.8	8.5	
28-Feb	0.7	Z	1.7	3.0	2.8	2.7	4.7	5.7	5.4	3.8	2.8	2.5	2.6	2.6	2.7	2.2	1.6	1.2	0.7	0.8	1.0	1.4	1.3	1.1	2.4	5.7	
29-Feb	0.7	0.6	Z	0.8	0.7	0.6	0.6	0.6	0.7	0.8	0.7	0.9	1.0	1.0	1.2	1.5	1.2	1.0	1.8	1.4	1.3	0.9	0.9	0.9	0.9	0.9	1.8
3.0 2.5 3.3 3.0 3.8 2.5 3.2 3.3 4.9 5.5 4.4 6.3 6.1 7.2 6.9 7.0 7.1 8.5 8.6 7.4 8.3 8.3 6.2 4.6																								Diurnal Average			
17.8 7.2 21.8 7.3 27.1 8.1 15.1 16.8 36.9 54.8 17.8 53.7 39.0 59.7 55.4 55.6 54.6 94.1 72.7 51.9 96.7 116.6 107.1 50.5																								Diurnal Maximum			
Z - zerspan C - Calibration																											



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Kirby South - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Oxides (NO_x) - ppb
Kirby South - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	628	95.01	95.01
21 - 40	16	2.42	97.43
41 - 80	13	1.97	99.39
81 - 159	4	0.61	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 661

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Kirby South - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	21	25	43	32	22	21	19	20	36	39	54	49	84	82	44	37	628
21 - 40	0	0	1	0	1	1	0	0	0	0	1	0	1	4	4	3	16
11 - 80	0	0	4	0	0	0	0	0	0	0	0	0	0	2	5	2	13
81 - 159	0	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	4
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	21	25	49	34	23	22	19	20	36	39	55	49	85	88	54	42	661

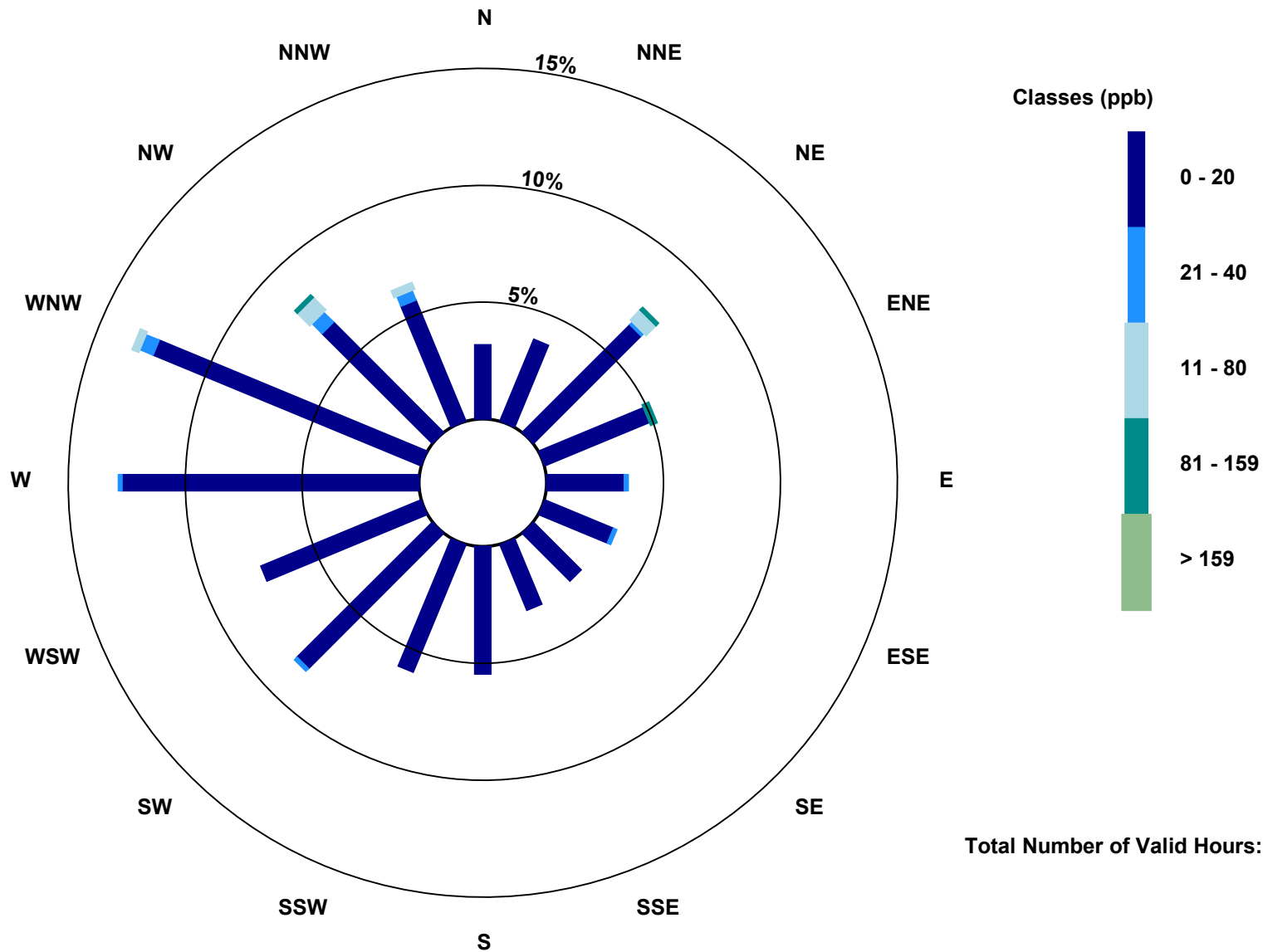
Total Number of Valid Hours: 661

Total Number of Hours: 696

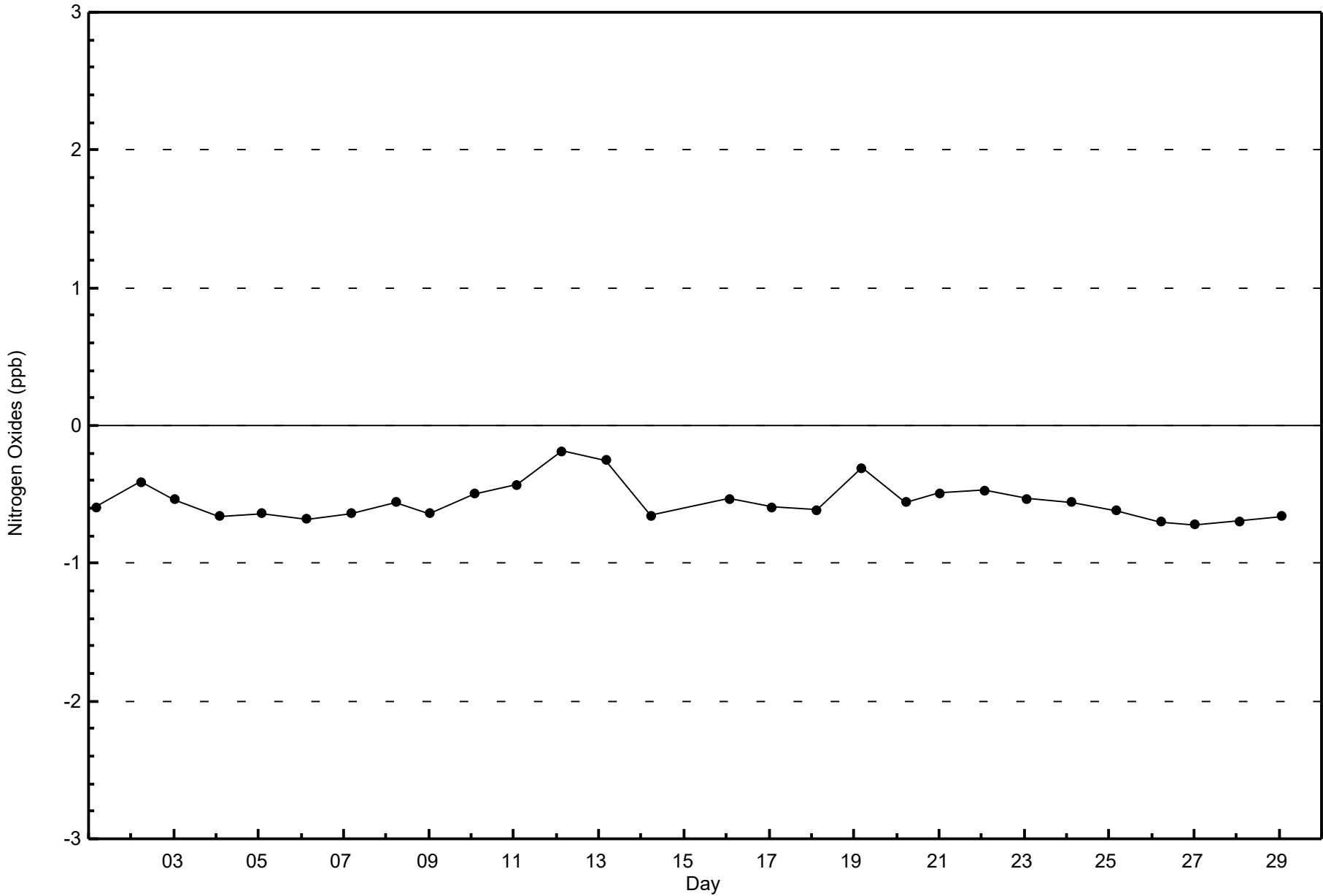


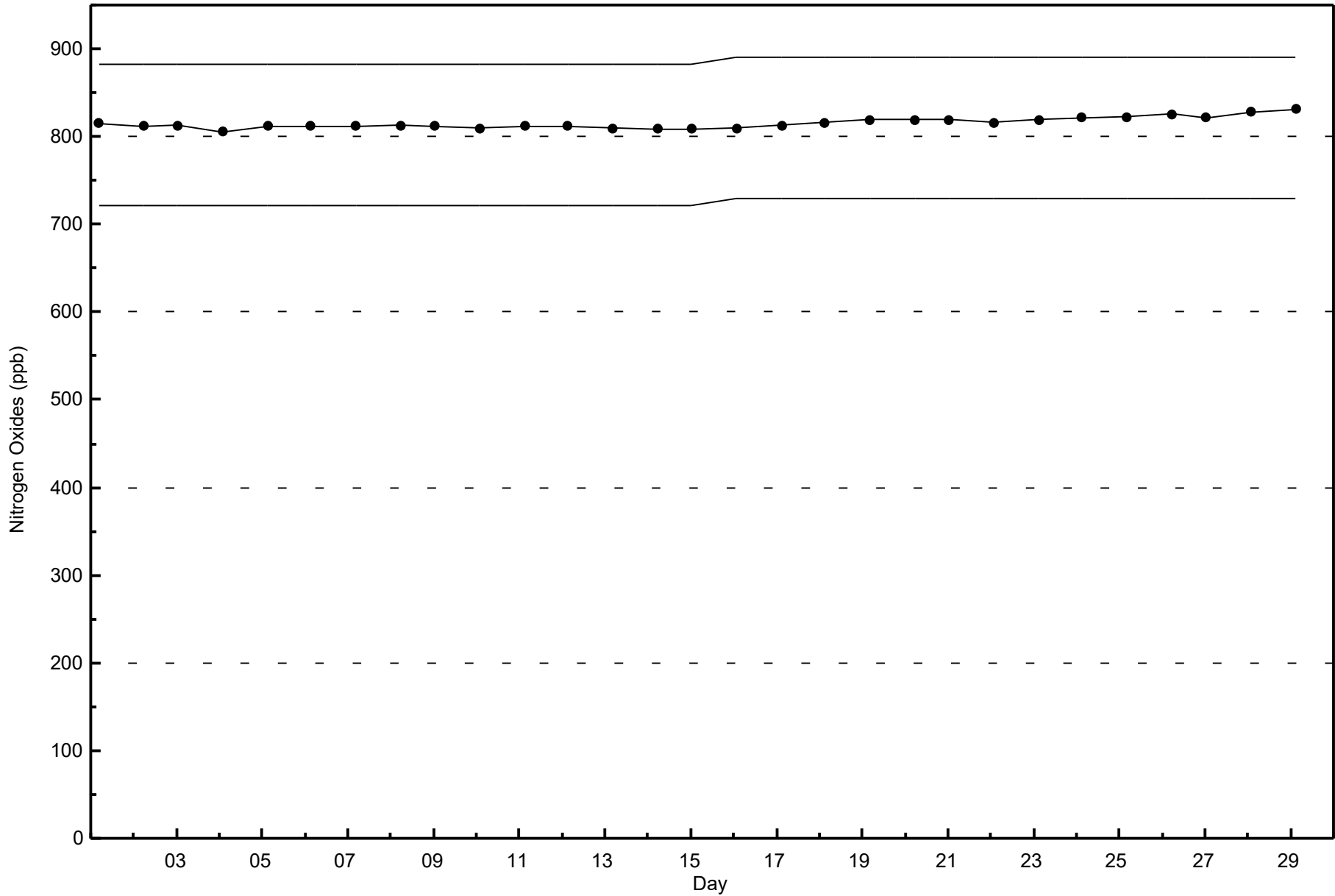
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Kirby South



Total Number of Valid Hours: 661







Wood Buffalo Environmental Association
Summary of Hour Averages

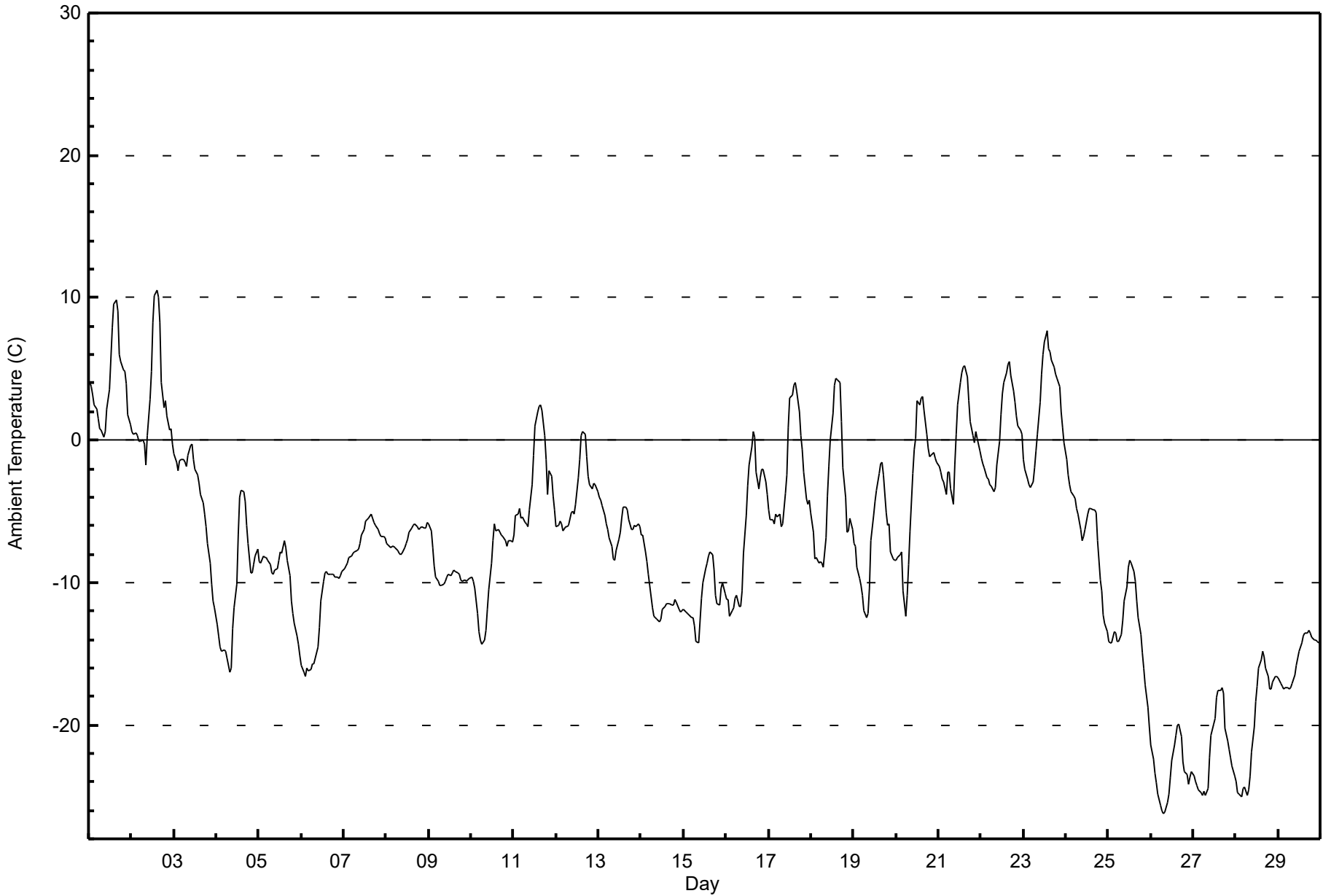
Ambient Temperature (AT) - C
Kirby South - February 2024

Maximum Value: 10.5 C on Feb 2 15:00 Maximum Daily Average: 4.0 C on Feb 1		Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: -26.2 C on Feb 26 08:00 Minimum Daily Average: -23.3 C on Feb 26 Maximum Diurnal Average: -3.6 C at hour 16 Minimum Diurnal Average: -10.2 C at hour 8 Monthly Average: -7.44 C Percentiles: P ₁ = -24.9 P ₁₀ = -17.3 Q ₁ = -11.8 Median = -7.0 Q ₃ = -2.3 P ₉₀ = 2.1 P ₉₉ = 8.2																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	4.0	3.8	3.2	2.5	2.2	1.5	0.9	0.7	0.2	0.6	2.2	3.5	5.7	7.9	9.5	9.8	9.1	6.0	5.5	5.0	4.9	3.9	1.8	1.1	4.0	9.8
2-Feb	0.6	0.4	0.5	0.3	-0.1	-0.1	0.0	-0.3	-1.8	0.3	2.8	4.8	8.3	10.1	10.5	10.1	8.2	4.1	2.2	2.8	1.7	0.7	0.8	-0.3	2.8	10.5
3-Feb	-1.0	-1.6	-2.1	-1.4	-1.4	-1.4	-1.6	-1.9	-1.1	-0.4	-0.3	-1.3	-2.1	-2.5	-3.1	-3.8	-4.4	-5.1	-6.1	-7.3	-8.6	-10.1	-11.3	-11.8	-3.8	-0.3
4-Feb	-13.0	-13.7	-14.6	-14.8	-14.7	-14.8	-15.3	-16.3	-16.0	-13.3	-11.7	-10.1	-6.7	-4.0	-3.6	-3.6	-4.3	-6.0	-7.3	-9.3	-9.3	-8.8	-8.1	-7.7	-10.3	-3.6
5-Feb	-8.5	-8.7	-8.1	-8.2	-8.2	-8.4	-8.7	-9.4	-9.5	-9.2	-9.0	-8.4	-7.8	-7.9	-7.1	-7.6	-8.4	-9.5	-11.3	-12.2	-12.9	-13.7	-14.3	-15.1	-9.7	-7.1
6-Feb	-15.8	-16.3	-16.6	-16.0	-16.2	-16.1	-15.8	-15.7	-15.3	-14.6	-13.2	-11.3	-9.9	-9.3	-9.2	-9.4	-9.4	-9.4	-9.5	-9.6	-9.7	-9.7	-9.5	-9.3	-12.4	-9.2
7-Feb	-9.0	-8.9	-8.6	-8.3	-8.1	-8.0	-7.8	-7.8	-7.6	-7.2	-6.7	-6.3	-5.7	-5.5	-5.5	-5.2	-5.5	-5.8	-6.0	-6.3	-6.6	-6.7	-6.8	-6.9	-7.0	-5.2
8-Feb	-7.2	-7.3	-7.5	-7.5	-7.5	-7.6	-7.7	-7.9	-8.1	-7.9	-7.5	-7.3	-7.0	-6.5	-6.2	-6.0	-5.9	-6.1	-6.2	-6.2	-6.1	-6.2	-6.1	-5.8	-6.9	-5.8
9-Feb	-5.8	-6.3	-7.5	-8.8	-9.6	-9.9	-10.2	-10.2	-10.1	-9.9	-9.6	-9.4	-9.5	-9.3	-9.2	-9.2	-9.3	-9.5	-9.8	-10.0	-9.9	-9.9	-9.8	-9.7	-9.3	-5.8
10-Feb	-9.6	-9.9	-10.4	-12.1	-13.4	-14.0	-14.3	-14.0	-13.3	-11.8	-10.5	-8.6	-7.0	-5.9	-6.4	-6.3	-6.4	-6.6	-6.8	-7.0	-7.4	-7.0	-7.1	-7.2	-9.3	-5.9
11-Feb	-6.6	-5.3	-5.2	-4.8	-5.4	-5.4	-5.8	-5.9	-6.1	-4.9	-3.1	-1.1	1.0	2.0	2.3	2.4	2.1	0.3	-1.4	-3.8	-2.2	-2.6	-3.9	-4.9	-2.8	2.4
12-Feb	-6.1	-6.0	-5.7	-5.9	-6.4	-6.0	-6.0	-5.9	-5.1	-5.0	-5.2	-4.5	-2.7	-1.3	0.3	0.7	0.4	-1.1	-2.5	-3.1	-3.4	-3.0	-3.1	-3.7	-3.8	0.7
13-Feb	-4.0	-4.2	-4.6	-5.3	-5.8	-6.2	-6.8	-7.5	-8.3	-8.4	-7.7	-7.0	-6.5	-5.5	-4.7	-4.7	-4.9	-5.6	-6.2	-6.3	-6.0	-6.1	-5.8	-6.0	-6.0	-4.0
14-Feb	-6.6	-6.7	-7.8	-8.6	-9.4	-10.2	-11.8	-12.4	-12.5	-12.8	-12.5	-11.8	-11.7	-11.5	-11.4	-11.5	-11.4	-11.5	-11.6	-11.2	-11.4	-11.9	-12.1	-12.0	-11.0	-6.6
15-Feb	-11.9	-12.0	-12.2	-12.3	-12.4	-12.5	-13.0	-14.1	-14.3	-12.7	-11.1	-10.0	-9.1	-8.6	-8.2	-7.8	-8.0	-9.2	-10.9	-11.5	-11.6	-10.4	-10.0	-10.8	-11.0	-7.8
16-Feb	-11.2	-11.2	-12.4	-11.9	-11.8	-11.1	-10.9	-11.7	-11.7	-10.6	-7.9	-5.2	-3.2	-1.7	-0.5	0.6	0.3	-2.2	-3.4	-2.7	-2.0	-2.0	-2.9	-3.8	-6.3	0.6
17-Feb	-4.9	-5.6	-5.6	-5.9	-5.2	-5.4	-5.1	-6.1	-5.9	-3.7	-2.5	0.9	3.0	3.2	3.8	4.1	3.5	2.0	0.3	-0.6	-2.3	-4.1	-4.5	-4.2	-2.1	4.1
18-Feb	-5.1	-6.5	-8.4	-8.2	-8.6	-8.5	-8.7	-8.9	-6.9	-3.9	-1.8	0.0	1.8	3.9	4.4	4.3	4.0	1.3	-2.0	-4.0	-6.4	-6.4	-5.5	-6.3	-3.6	4.4
19-Feb	-7.3	-7.5	-8.9	-9.7	-10.2	-10.9	-12.0	-12.4	-12.2	-10.4	-7.1	-5.3	-4.3	-3.5	-2.3	-1.7	-1.5	-2.5	-5.1	-6.0	-5.9	-7.9	-8.4	-8.5	-7.1	-1.5
20-Feb	-8.4	-8.3	-8.0	-7.8	-10.6	-12.3	-10.9	-8.8	-6.4	-2.4	-0.7	0.2	2.8	2.4	2.9	3.1	2.1	0.4	-0.5	-1.2	-1.0	-0.9	-1.2	-1.5	-3.2	3.1
21-Feb	-1.8	-2.3	-2.8	-3.0	-3.8	-2.2	-2.3	-3.5	-4.5	-1.7	0.4	2.5	4.0	4.7	5.2	5.2	4.4	2.7	1.3	0.3	-0.2	0.6	0.1	-0.8	0.1	5.2
22-Feb	-1.2	-1.6	-1.9	-2.6	-2.7	-3.1	-3.2	-3.6	-3.3	-1.7	-0.1	1.8	3.2	4.1	4.8	5.4	5.5	4.6	3.4	2.7	1.7	1.0	0.7	0.4	0.6	5.5
23-Feb	-1.3	-2.1	-2.8	-3.1	-3.3	-3.0	-2.0	-0.8	0.4	2.7	4.7	6.0	6.9	7.7	6.4	6.2	5.6	5.2	4.6	4.3	3.8	2.0	0.9	-0.2	2.0	7.7
24-Feb	-1.4	-2.4	-3.1	-3.6	-4.0	-4.2	-4.8	-5.2	-6.3	-7.1	-6.8	-6.3	-5.2	-4.8	-4.8	-4.9	-4.9	-5.1	-7.1	-9.8	-10.6	-12.2	-12.8	-13.4	-6.3	-1.4
25-Feb	-14.1	-14.2	-14.3	-13.5	-13.5	-14.1	-14.1	-13.7	-12.7	-11.3	-10.3	-9.0	-8.4	-8.6	-9.2	-9.9	-11.3	-12.5	-13.7	-14.9	-16.0	-17.2	-18.7	-20.2	-13.1	-8.4
26-Feb	-21.4	-22.4	-23.4	-24.1	-24.9	-25.7	-26.1	-26.2	-26.1	-25.5	-24.8	-23.6	-22.4	-21.4	-20.7	-20.0	-19.9	-20.9	-22.6	-23.3	-23.5	-24.2	-23.7	-23.3	-23.3	-19.9
27-Feb	-23.6	-24.0	-24.3	-24.6	-24.8	-24.9	-24.6	-24.9	-24.5	-22.3	-20.7	-19.9	-19.5	-18.1	-17.6	-17.6	-17.4	-17.8	-20.2	-21.2	-21.7	-22.3	-22.9	-23.5	-21.8	-17.4
28-Feb	-24.0	-24.7	-24.8	-25.1	-24.5	-24.4	-24.9	-24.6	-23.6	-21.9	-20.2	-18.3	-17.3	-16.0	-15.4	-14.9	-15.2	-16.0	-16.6	-17.4	-17.5	-17.0	-16.6	-16.6	-19.9	-14.9
29-Feb	-16.7	-17.1	-17.3	-17.5	-17.4	-17.4	-17.5	-17.3	-17.0	-16.5	-15.8	-15.3	-14.8	-14.2	-13.7	-13.5	-13.5	-13.3	-13.6	-13.8	-14.0	-14.1	-14.2	-14.3	-15.4	-13.3
	-8.4	-8.7	-9.1	-9.4	-9.7	-9.9	-10.0	-10.2	-10.0	-8.7	-7.5	-6.2	-5.0	-4.2	-3.7	-3.6	-4.0	-5.1	-6.3	-7.0	-7.4	-7.8	-8.1	-8.5		Diurnal Average
	4.0	3.8	3.2	2.5	2.2	1.5	0.9	0.7	0.4	2.7	4.7	6.0	8.3	10.1	10.5	10.1	9.1	6.0	5.5	5.0	4.9	3.9	1.8	1.1		Diurnal Maximum



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Kirby South - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Kirby South - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	51	7.33	7.33
-20 - 0	530	76.15	83.48
0 - 10	112	16.09	99.57
10 - 20	3	0.43	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

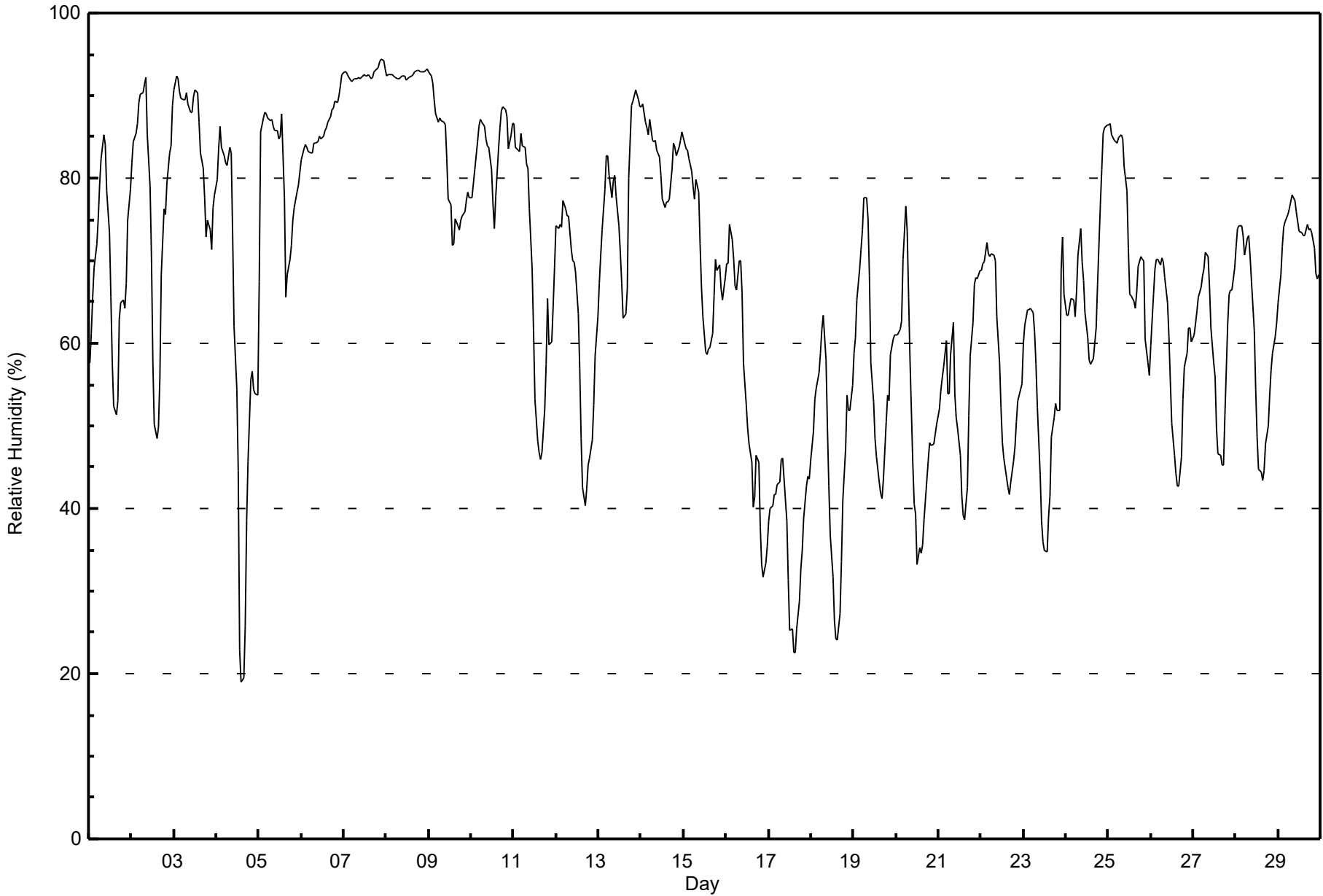
Relative Humidity (RH) - %
Kirby South - February 2024

Maximum Value: 94.5 % on Feb 7 22:00 Maximum Daily Average: 92.7 % on Feb 7																						Hours in Service: 696 Hours of Data: 696																										
Minimum Value: 19.0 % on Feb 4 15:00 Minimum Daily Average: 36.6 % on Feb 17 Maximum Diurnal Average: 77.0 % at hour 8 Minimum Diurnal Average: 55.3 % at hour 16 Monthly Average: 68.13 % Percentiles: P ₁ = 25.1 P ₁₀ = 43.4 Q ₁ = 55.6 Median = 70.1 Q ₃ = 83.7 P ₉₀ = 89.5 P ₉₉ = 93.0																						Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	57.6	61.1	65.6	69.2	72.1	75.3	79.3	82.4	85.3	84.0	78.5	73.5	65.6	57.7	52.4	51.3	53.1	62.9	65.0	65.3	64.2	67.2	74.9	78.6	68.4	85.3																						
2-Feb	81.9	84.4	85.4	86.6	89.2	90.2	90.3	91.3	92.2	85.3	79.0	70.5	57.6	50.1	48.5	49.9	55.8	68.3	76.3	75.6	79.3	83.1	83.9	88.8	76.8	92.2																						
3-Feb	90.7	92.5	92.0	90.6	89.7	89.5	89.5	90.3	88.9	88.0	87.9	89.8	90.7	90.3	86.8	83.1	81.1	77.6	72.9	74.9	73.8	71.4	76.4	78.0	84.8	92.5																						
4-Feb	79.9	83.5	86.2	83.7	82.8	81.9	81.6	83.7	83.1	73.2	62.1	54.4	44.5	22.9	19.0	19.4	25.7	38.6	45.8	55.7	56.7	54.4	53.9	53.8	59.4	86.2																						
5-Feb	67.4	85.5	87.3	88.0	87.8	87.3	86.9	87.0	86.2	85.7	85.7	85.1	87.9	77.6	65.5	68.2	70.2	71.9	74.9	76.4	78.4	79.2	80.6	80.7	88.0	88.0																						
6-Feb	82.2	83.5	84.1	83.7	83.3	83.1	83.0	84.2	84.3	84.4	85.0	84.8	85.1	85.7	86.1	86.8	87.5	88.3	88.4	89.3	89.2	90.1	91.3	92.5	86.1	92.5																						
7-Feb	92.9	92.8	92.5	92.2	91.7	91.8	92.0	92.1	92.3	92.0	92.3	92.6	92.3	92.4	92.6	92.0	92.2	92.9	93.0	93.4	94.1	94.5	94.3	93.2	92.7	94.5																						
8-Feb	92.3	92.6	92.5	92.5	92.3	92.2	92.1	92.0	92.2	92.4	92.3	91.9	92.1	92.2	92.5	92.6	92.9	93.0	93.0	92.9	93.0	92.9	93.0	93.2	92.5	93.2																						
9-Feb	92.8	92.4	91.5	89.6	87.7	86.7	87.2	87.0	86.8	86.5	82.3	77.5	76.8	71.8	72.1	75.0	74.2	73.8	75.0	75.5	75.9	77.2	78.2	77.6	81.3	92.8																						
10-Feb	77.6	79.2	81.1	84.4	86.3	87.1	86.9	86.3	84.8	83.9	83.7	81.0	77.0	73.8	77.8	83.6	86.2	88.2	88.6	88.3	87.5	83.5	85.2	86.7	83.7	88.6																						
11-Feb	86.6	83.7	83.4	83.1	85.4	83.9	83.8	81.8	81.2	76.2	69.0	61.5	53.2	48.2	46.8	45.9	46.8	52.0	57.5	65.5	59.8	60.2	64.4	69.2	67.9	86.6																						
12-Feb	74.2	73.9	74.3	74.0	77.2	76.3	75.5	75.5	71.3	70.1	69.9	68.6	63.5	57.0	48.5	42.5	40.3	42.4	45.2	46.1	48.3	52.5	58.5	63.2	62.0	77.2																						
13-Feb	67.2	70.6	73.7	78.6	82.7	82.7	80.4	77.7	79.7	80.4	77.7	74.3	71.0	67.2	63.0	63.5	66.7	79.9	88.8	89.3	90.0	90.7	89.4	88.6	78.1	90.7																						
14-Feb	88.7	88.9	86.8	86.1	85.3	87.2	84.6	84.4	84.6	83.3	82.6	80.3	77.4	76.5	77.1	77.1	77.4	81.2	84.2	83.8	82.7	83.8	84.6	85.5	83.1	88.9																						
15-Feb	85.0	83.6	83.4	82.4	80.9	79.0	77.5	79.9	78.3	72.1	66.8	63.2	59.0	58.7	59.4	59.5	61.2	65.7	70.2	68.8	69.5	66.7	65.2	67.9	71.0	85.0																						
16-Feb	69.7	69.7	74.5	72.6	70.1	67.0	66.4	70.0	69.9	66.0	57.6	52.6	49.7	47.9	45.6	40.2	41.4	46.4	45.5	37.9	33.2	31.7	33.4	35.4	53.9	74.5																						
17-Feb	38.4	40.0	40.4	41.8	41.7	43.0	43.2	46.0	46.1	40.9	38.5	31.4	25.2	25.5	22.6	22.5	25.4	28.8	32.7	35.0	38.8	42.6	43.9	43.5	36.6	46.1																						
18-Feb	45.8	49.3	53.3	54.5	56.4	58.8	61.7	63.4	57.9	49.7	42.8	36.8	31.7	26.5	24.2	24.1	27.3	33.5	41.0	47.3	53.7	51.9	51.8	55.0	45.8	63.4																						
19-Feb	58.8	60.6	65.2	69.0	71.3	73.8	77.6	77.7	75.0	68.1	57.7	52.8	48.5	46.2	43.2	41.9	41.3	43.5	50.5	53.8	53.0	58.6	60.5	61.0	58.7	77.7																						
20-Feb	61.0	61.0	61.6	62.7	70.1	76.7	73.5	65.6	57.9	45.4	40.5	39.3	33.2	35.3	34.6	35.6	38.6	43.4	45.8	48.0	47.6	47.8	49.0	50.2	51.0	76.7																						
21-Feb	52.0	54.2	55.8	57.1	60.4	53.9	53.9	58.6	62.5	53.8	51.1	49.7	46.4	41.5	39.2	38.7	42.5	51.1	58.4	62.5	67.2	67.9	67.8	68.7	54.8	68.7																						
22-Feb	68.8	69.6	69.8	72.2	70.8	70.5	70.8	70.8	70.0	63.3	57.7	52.2	48.0	46.1	43.7	42.6	41.7	43.2	45.8	47.5	50.5	53.1	54.4	55.1	57.4	72.2																						
23-Feb	60.0	62.2	64.1	64.1	64.2	63.8	61.3	57.5	52.2	44.1	38.5	35.9	35.0	34.7	39.0	41.6	48.6	51.0	52.8	51.8	51.9	68.9	72.9	66.0	53.4	72.9																						
24-Feb	63.4	63.4	64.4	65.4	65.2	63.3	66.3	70.7	73.9	69.9	67.6	63.8	60.7	58.0	57.4	58.1	59.9	61.8	67.1	76.9	81.0	85.4	86.1	86.5	68.2	86.5																						
25-Feb	86.4	86.7	85.2	84.5	84.4	84.2	84.9	85.2	84.8	81.3	78.5	71.6	66.0	65.7	65.1	64.2	66.3	69.3	70.5	70.2	70.1	60.6	57.6	56.2	74.1	86.7																						
26-Feb	59.7	65.9	69.0	70.1	70.2	69.5	70.4	69.8	68.0	64.9	60.9	55.5	50.3	46.5	44.2	42.7	42.8	46.3	53.2	57.1	58.8	61.8	61.9	60.2	59.1	70.4																						
27-Feb	61.0	62.3	63.9	65.6	66.8	68.2	69.0	71.0	70.5	66.8	61.9	57.6	55.8	49.7	46.5	46.5	45.2	45.2	51.3	62.3	66.0	66.5	66.4	69.2	60.6	71.0																						
28-Feb	71.8	73.9	74.3	74.2	73.1	70.6	72.7	73.0	70.5	67.5	61.4	54.4	48.7	44.7	44.4	43.4	44.7	47.8	50.0	53.7	56.7	58.9	60.9	62.5	60.6	74.3																						
29-Feb	65.0	68.3	71.8	74.1	74.7	75.5	76.2	77.2	78.0	77.2	75.9	74.7	73.5	73.3	73.1	73.1	74.4	73.8	73.9	73.4	71.6	68.5	67.7	68.3	73.1	78.0																						
																								71.7	73.6	74.9	75.6	76.3	76.3	76.5	77.0	76.2	72.3	68.5	64.7	60.8	57.7	56.0	55.3	56.9	60.7	63.9	66.1	66.9	68.0	69.2	70.2	Diurnal Average
																								92.9	92.8	92.5	92.5	92.3	92.2	92.1	92.1	92.3	92.4	92.3	92.6	92.3	92.4	92.6	92.6	92.9	93.0	93.0	93.4	94.1	94.5	94.3	93.2	Diurnal Maximum



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Kirby South - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Kirby South - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	2	0.29	0.29
20 - 40	41	5.89	6.18
40 - 60	173	24.86	31.03
60 - 80	266	38.22	69.25
80 - 100	214	30.75	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696

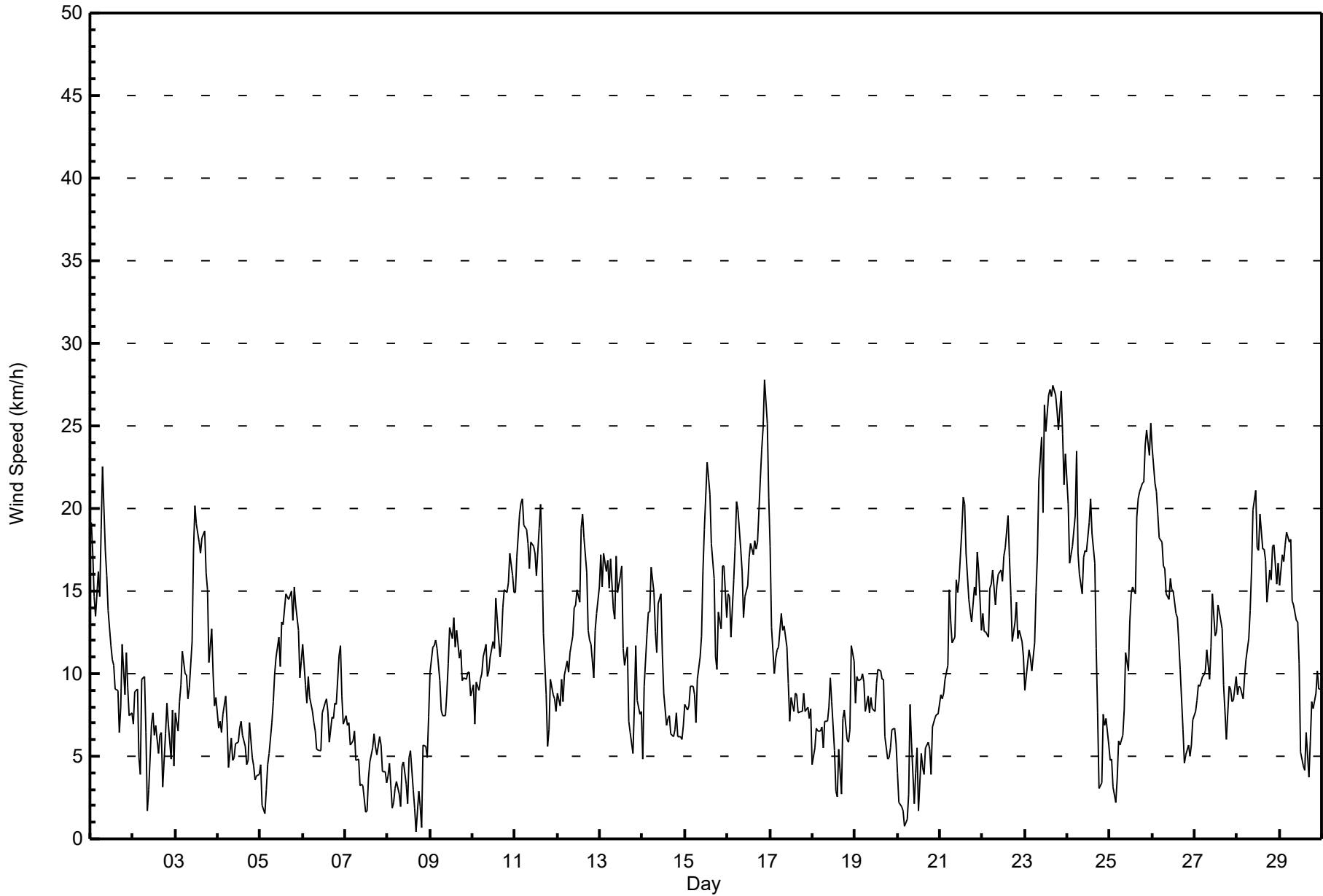


Maximum Speed: 28 km/h on Feb 16 22:00		Maximum Daily Speed Average: 19.6 km/h on Feb 23		Hours in Service: 696																						
Minimum Speed Value: 0 km/h on Feb 8 17:00		Minimum Daily Speed Average: 1.2 km/h on Feb 8		Hours of Data: 696																						
Maximum Diurnal Speed Average: 6.8 km/h at hour 14		Minimum Diurnal Speed Average: 3.0 km/h at hour 19		Hours of Missing Data: 0																						
Monthly Average Velocity: 4.3 km/h 286.1 deg		Percentiles: P ₁ = 2 P ₁₀ = 5 Q ₁ = 7 Median = 10 Q ₃ = 15 P ₉₀ = 18 P ₉₉ = 26		Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	S19	S17	S15	S13	S16	S15	SSW19	SSW23	SW17	SW16	SW14	SW12	SSW11	SSW11	SSW9	SSW9	SSW6	S8	SSW12	SSW9	S11	SSW9	SW7	SSW8	SSW12.1	SSW23
2-Feb	SSW7	SSW9	SSW9	SSW5	SSW4	S10	SSW10	SSW6	NE2	SE3	SSW7	S8	SSW6	SW7	S5	ESE6	SSE6	SSE3	SSW6	SW8	SW7	W5	WSW8	WSW4	SSW5.3	SSW10
3-Feb	WSW8	WNW7	NW8	NNW9	NNW11	N10	N10	N8	N9	NNW12	NNW17	NNW20	NNW19	NNW18	NNW17	NNW18	N19	N16	N15	NNE11	NE13	NE10	NE8	NE9	N11.2	NNW20
4-Feb	NE7	NE7	ENE6	ENE8	ENE9	ENE7	ENE4	ESE6	ESE5	E5	E6	ESE6	ESE7	SE7	SE6	ESE6	E4	NE5	NE7	E5	E4	E4	SE4	E4	E5.0	ENE9
5-Feb	ESE5	SSE2	NW1	NE3	NNE4	NNE5	NNE7	NE8	NE10	NE11	NE12	NE10	NE13	NE13	NE15	NE15	NE15	NE15	NE13	NE15	ENE14	ENE13	NE10	NE11	NE9.6	NE15
6-Feb	NE12	ENE9	ENE8	E10	E9	E8	E7	E7	ESE5	ESE5	ESE5	SSE8	S8	SSE9	SSE8	SSE6	SSE7	SSE7	SSE8	SSE8	S11	S12	S9	S7	SE5.7	NE12
7-Feb	S7	S7	S7	S6	S6	SSW7	S5	SSW5	SSW3	S3	S3	WSW2	E2	ENE4	ENE5	NE6	NE6	NE6	NNE5	NE6	NE6	ENE4	NE4	NE3	SE1.5	S7
8-Feb	NE4	NNE5	ENE2	S2	ESE3	ESE3	ESE3	SSE2	SSW4	WSW5	NW3	W2	SW5	WSW5	WNW3	NW2	ESE0	E3	E2	S1	SW6	SW6	SW5	W7	SW1.2	W7
9-Feb	WNW10	NW12	NW12	NW12	NW12	NW10	WNW8	WNW7	WNW7	NW9	NW11	NW13	NW12	NW13	NW12	NW13	NW11	NW11	WNW10	WNW10	W10	W10	WNW10	WNW9	NW10.1	NW13
10-Feb	WNW9	WSW7	SW9	SW9	SW10	SW10	SW11	SW12	SW10	SSW10	SW11	SSW12	SSW12	SW15	SW13	SSW11	SSW12	SW14	SW15	SW15	WSW16	W17	W16	WNW15	SW11.0	W17
11-Feb	WNW15	W17	W20	W20	W21	W19	W19	W18	W16	WNW18	WNW18	WNW17	NW16	WNW19	WNW20	NW17	NW12	WNW9	WNW6	WNW7	W10	WNW9	W8	SW8	WNW14.4	W21
12-Feb	SW9	WSW8	SW10	WSW8	SW10	SW11	SW10	SW11	SSW12	SW14	WSW14	WSW15	WSW14	W19	WNW20	WNW18	NW16	NW13	WNW12	WNW12	WNW10	NW13	NW14	NW15	W10.3	WNW20
13-Feb	NNW17	NNW15	NNW17	NNW16	NNW17	NNW15	NNW17	N14	NNW13	N17	NNW15	N16	NNW16	N12	NW10	NW12	WNW7	NW6	WNW5	W8	W12	WNW8	N8	N8	NNW11.6	NNW17
14-Feb	NNW5	N9	NNE12	NNE14	NNE14	NE16	NE15	NE13	NE11	NE14	NE15	NE11	NNE9	N7	N7	NW7	WNW6	WNW6	NW7	NNW8	NNW6	NW6	WNW6	WNW7	NNE7.7	NE16
15-Feb	WNW8	WNW8	WNW8	WNW9	WNW9	WNW9	NW7	WNW10	W11	W12	W16	WNW19	W23	W22	W21	W18	W16	W11	WSW10	WSW14	W13	W17	W17	W13	W13.0	W23
16-Feb	W15	W15	WSW12	W16	W18	W20	W20	W18	W16	W13	WNW15	W15	W17	W18	W17	W18	WSW18	WSW18	WSW22	W24	W25	W28	W25	W21	W18.2	W28
17-Feb	W18	WNW13	WNW10	WNW11	WNW11	WNW12	NW14	WNW13	NW13	NW12	NW9	NNW7	NNW9	WNW8	WNW9	WNW9	W8	W8	WSW8	WSW9	WSW8	SW8	WSW7	WSW8	WNW8.8	W18
18-Feb	WSW4	SW5	SW7	SW6	SW6	SW7	SW6	SW7	SW7	SW8	WSW10	WSW8	W5	W3	WNW3	W5	NE3	ENE7	ENE8	E6	ESE6	S7	SSW12	SW11	SW3.9	SSW12
19-Feb	SW8	SW10	SW10	SW10	WSW10	WSW10	WSW8	WNW9	NW8	NW9	NNW8	WNW8	WNW9	NW10	WNW10	NW10	NW10	NW6	NW5	N5	NNE5	ENE7	ENE7	E6	WNW4.8	NW10
20-Feb	E4	ESE2	SW2	WSW2	NW1	S1	S3	SSW8	WSW6	SSE2	WSW4	W6	NNW2	WSW5	W4	SW4	ENE6	E6	ESE5	ESE4	SSW7	SW7	WSW8	WSW8	SW2.1	SSW8
21-Feb	W9	W8	W9	W10	WSW11	W15	W13	WSW12	WSW12	W16	W15	WNW16	W19	W21	WNW20	W17	WSW14	WSW14	WSW13	WSW15	WSW15	W17	W16	W13	W13.7	WNW21
22-Feb	W14	W13	W13	W12	W15	W15	W16	W14	W15	WNW16	NW16	NW16	NW17	WNW18	WNW20	WNW17	WNW15	WNW12	WNW13	WNW14	WNW12	W13	W12	W11	WNW14.0	WNW20
23-Feb	WSW9	WSW10	SW11	SW11	SW10	WSW12	WSW15	WSW17	WSW22	W24	WSW20	W26	WNW25	WNW27	WNW27	W27	W27	W27	W26	WNW25	W27	WNW24	WNW21	NW23	W19.6	W27
24-Feb	NW20	WNW17	WNW17	WNW18	WNW20	NW23	NW17	NNW16	N15	NNW17	NNW17	NW17	NW19	NW21	NW18	NNW17	NNW12	NNW8	N3	NNE3	ENE8	E7	ESE7	ESE6	NW11.5	NW23
25-Feb	E5	E5	ESE3	SE2	E4	ENE6	E6	ENE6	ENE8	E11	ENE10	ENE13	ENE15	NE15	ENE15	NE19	ENE21	ENE21	ENE22	ENE22	ENE24	ENE25	ENE23	NE25	ENE13.2	NE25
26-Feb	NE24	NE22	NE21	NE20	NNE18	NNE18	NNE17	NNE16	NNE15	NNE14	NNE16	NNE15	NNE15	NNE14	NNE13	NNE12	N10	NNE7	NNE5	N5	N6	NNW5	NNW6	WNW7	NNE12.5	NE24
27-Feb	WNW8	WNW8	WNW9	WNW9	WNW10	WNW10	WNW10	W11	WSW10	W12	WNW15	WNW12	NW13	W14	WNW14	WNW13	WNW9	W8	SW6	SW9	SW9	SSW8	SSW8	SSW10	W8.8	WNW15
28-Feb	SSW9	SSW9	SSW9	S8	S10	S11	S12	S14	S16	S20	S21	S18	S17	SSE20	SSE18	S18	S17	SSE14	SSE16	SSE16	SSE18	SE18	SE15	SE17	SSE14.3	S21
29-Feb	SE15	SE17	SE17	SE18	SE19	SE18	SE18	SE14	ESE14	SE13	SE13	SE11	SE5	ESE4	NE4	ENE6	NE4	NNW6	NNW8	NNW8	NNW9	NNW10	N9	NNW9	ESE6.8	SE19
W3.5 W3.5 W3.7 W3.9 W4.0 WNW3.9 W3.9 W4.2 W3.8 WNW4.2 WNW4.9 WNW5.6 WNW6.0 WNW6.8 WNW6.7 NW6.2 WNW4.4 WNW3.3 W3.0 W3.4 W3.5 W4.1 W4.3 WNW3.9																								Diurnal Average		
NE24 NE22 NE21 W20 W21 NW23 W20 SSW23 WSW22 WSW24 S21 W26 WNW25 WNW27 WNW27 WNW27 W27 W27 W26 WNW25 W27 W28 W25 NE25																								Diurnal Maximum		
All monthly, daily, and diurnal averages have been calculated using vector methods																										



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Kirby South - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Kirby South - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	102	14.66	14.66
6 - 11	291	41.81	56.47
12 - 19	247	35.49	91.95
20 - 28	56	8.05	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Kirby South - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	3	7	9	6	12	14	4	4	8	5	5	8	5	5	4	3	102
6 - 11	11	4	19	17	12	8	3	9	17	27	41	23	18	47	19	16	291
12 - 19	7	15	18	5	0	1	13	6	13	7	11	18	52	30	28	23	247
20 - 28	0	0	5	7	0	0	0	1	2	1	0	4	18	13	4	1	56
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	21	26	51	35	24	23	20	20	40	40	57	53	93	95	55	43	696

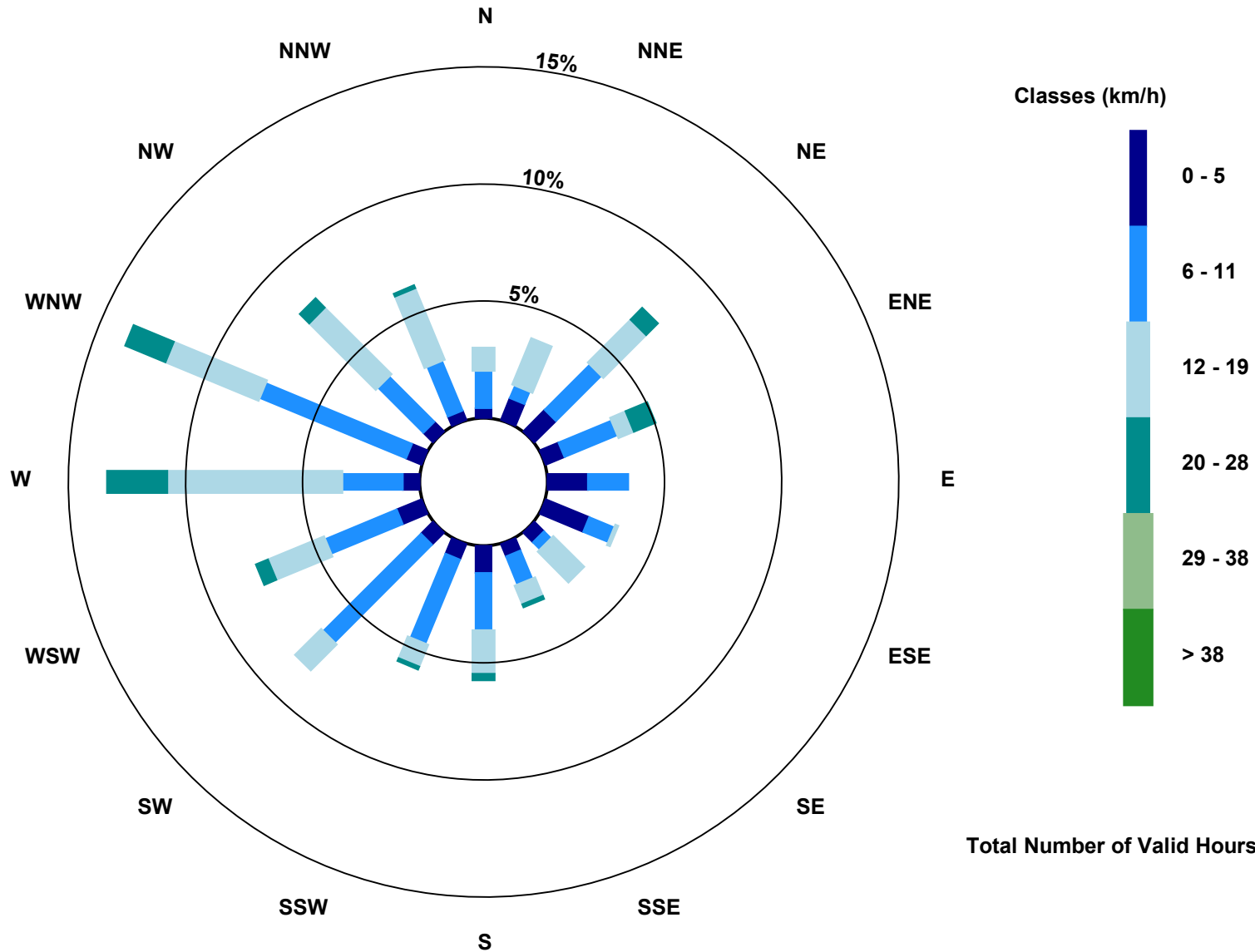
Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Kirby South



Total Number of Valid Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Kirby South - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 23 22:00 Minimum Value: 1 km/h on Feb 13 19:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																	Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	4	4	3	3	4	4	5	6	4	4	3	3	3	3	2	2	1	2	3	3	4	3	1	1	6
2-Feb	1	2	2	2	2	2	2	4	1	1	2	2	1	2	2	2	1	1	2	2	1	1	2	1	4
3-Feb	1	2	2	2	3	3	3	2	3	4	5	5	5	5	5	5	5	5	4	3	3	2	2	2	5
4-Feb	2	1	1	1	1	2	1	1	1	1	1	2	2	2	2	1	1	1	2	1	1	1	1	1	2
5-Feb	1	1	1	1	1	1	2	2	2	2	2	2	3	3	2	4	3	3	3	3	3	3	2	2	4
6-Feb	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	2	2	3
7-Feb	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
8-Feb	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	2
9-Feb	2	3	2	2	2	2	1	1	2	2	2	4	3	3	3	3	4	3	2	2	2	2	2	2	4
10-Feb	2	3	2	2	2	2	2	2	2	2	2	3	3	4	3	3	3	3	3	3	3	3	3	2	4
11-Feb	2	3	3	3	3	3	3	3	2	4	3	4	4	4	4	4	3	2	2	2	1	1	1	1	4
12-Feb	1	2	2	2	2	2	2	2	3	3	3	3	4	4	5	4	4	4	2	2	2	3	3	4	5
13-Feb	5	4	5	4	4	4	5	5	4	5	5	5	4	4	4	3	2	2	1	2	2	1	2	2	5
14-Feb	1	4	4	4	4	4	4	3	3	3	4	3	2	2	2	2	2	1	1	2	1	1	1	2	4
15-Feb	2	2	1	1	1	1	1	1	1	2	3	4	5	4	4	4	4	2	2	2	2	3	3	3	5
16-Feb	4	4	2	4	3	3	3	3	3	3	4	3	3	3	4	4	4	3	4	4	4	5	5	3	5
17-Feb	4	2	2	2	2	2	3	2	2	3	3	2	3	2	2	2	1	1	1	1	1	1	1	2	4
18-Feb	1	3	1	2	1	1	2	2	1	2	2	2	1	2	2	2	1	1	1	2	1	3	2	2	3
19-Feb	2	2	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2
20-Feb	1	1	1	1	1	1	1	3	3	2	2	2	2	2	2	2	3	1	1	1	3	2	1	2	3
21-Feb	2	2	1	2	3	2	3	2	2	3	3	3	4	5	5	4	3	3	2	3	3	4	3	2	5
22-Feb	2	2	2	2	3	3	3	3	3	3	4	4	4	4	4	4	3	3	2	2	2	1	1	1	4
23-Feb	2	2	2	2	2	3	3	4	4	5	5	6	6	6	7	6	6	6	6	5	5	7	5	6	7
24-Feb	5	3	3	3	4	6	4	4	4	5	5	4	4	5	4	4	3	3	2	2	1	1	1	1	6
25-Feb	1	1	1	1	1	1	1	2	2	2	2	3	3	3	3	4	4	5	5	5	5	6	5	6	6
26-Feb	6	5	5	5	5	5	4	4	4	4	4	4	4	4	4	3	3	3	1	1	1	1	1	2	6
27-Feb	1	1	1	1	1	2	1	3	2	3	3	3	3	4	4	3	3	2	2	1	1	1	1	1	4
28-Feb	1	2	1	1	2	3	3	3	4	5	5	5	4	5	4	5	5	4	4	4	4	4	4	4	5
29-Feb	4	4	4	4	5	4	5	4	4	4	3	3	4	3	2	2	2	2	2	2	2	3	3	2	5
																	6 5 5 5 5 6 5 6 4 5 5 6 6 6 7 6 6 6 6 6 5 5 7 5 6 Diurnal Maximum								



Wood Buffalo Environmental Association
Summary of Hour Averages

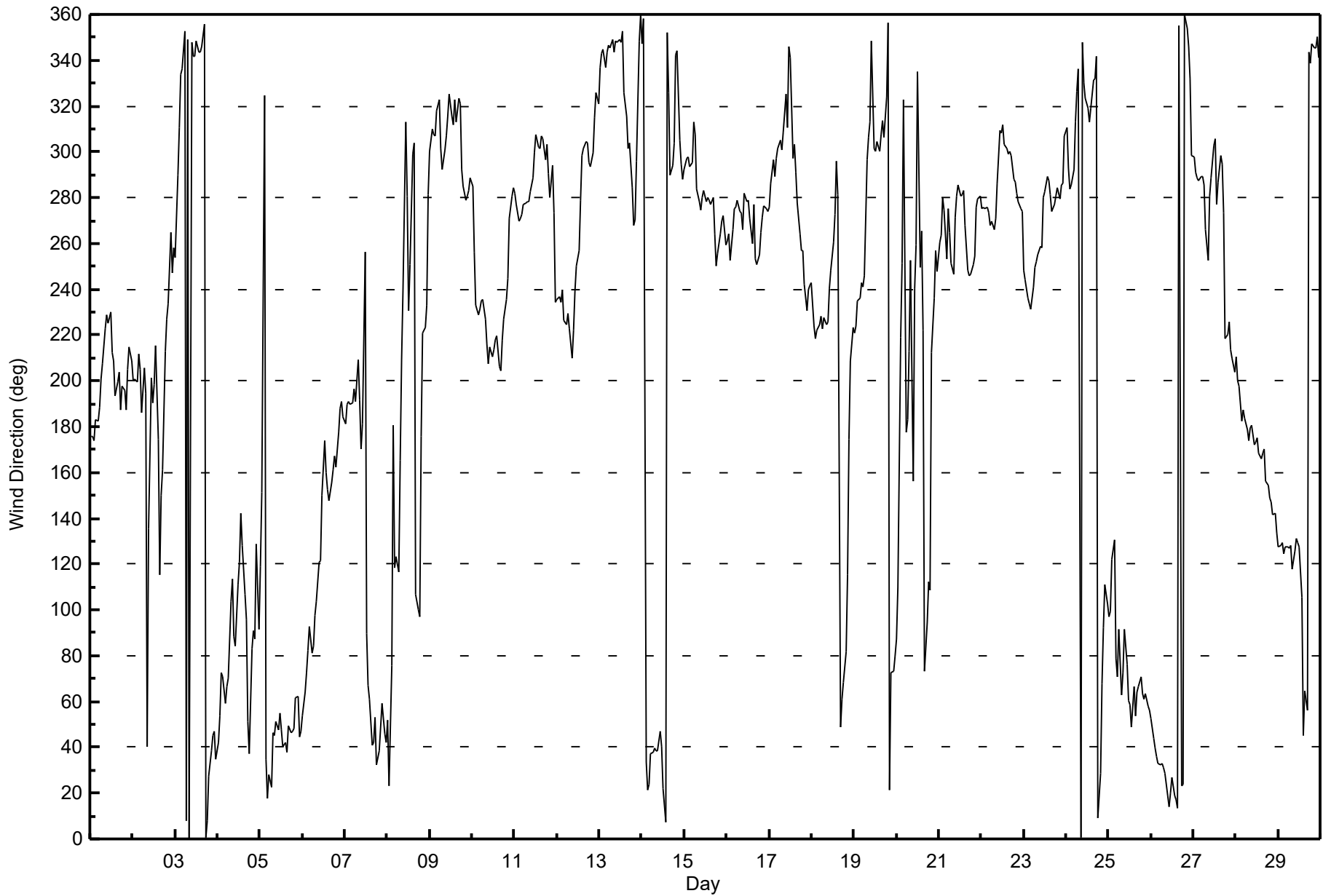
Wind Direction (WD) - deg
Kirby South - February 2024

Direction of Maximum Speed: 277 deg on Feb 16 22:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 272.7 deg on Feb 23	Hours of Data: 696
Direction of Minimum Speed: 107 deg on Feb 8 17:00	Hours of Missing Data: 0
Direction of Minimum Daily Speed Average: 1.2 deg on Feb 8	Percent Operational Time: 100.0
Monthly Average Direction: 286.1 deg	

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	176	176	174	183	182	188	201	207	223	229	225	230	212	209	193	199	204	187	197	196	187	205	215	209	199.6
2-Feb	200	201	200	212	205	186	206	195	40	136	201	190	198	215	174	116	150	161	213	227	234	265	247	258	201.9
3-Feb	254	290	310	334	336	353	8	349	0	348	341	342	348	344	344	346	356	0	8	28	39	45	47	35	353.4
4-Feb	42	54	73	71	59	67	70	104	113	89	84	111	121	142	128	107	95	51	37	83	91	88	129	92	85.6
5-Feb	119	151	324	35	17	28	23	46	45	51	48	55	47	40	42	38	49	46	47	48	61	63	45	47	47.4
6-Feb	54	64	73	82	93	81	84	97	104	121	122	150	174	160	153	147	156	161	167	162	178	188	191	184	133.0
7-Feb	182	190	191	190	191	196	191	209	192	170	182	256	89	67	61	41	42	53	33	38	49	59	46	42	125.9
8-Feb	52	23	76	181	118	123	117	165	209	240	313	281	230	251	299	304	107	100	97	176	221	223	233	281	229.2
9-Feb	300	310	308	307	318	323	301	292	301	307	315	325	315	312	323	313	323	321	292	285	279	280	283	289	306.4
10-Feb	285	256	233	229	231	235	235	227	216	207	215	210	213	218	220	206	204	218	227	236	245	271	280	284	234.0
11-Feb	282	277	270	271	273	277	277	278	278	282	289	300	307	302	302	307	306	297	303	290	280	294	273	234	285.5
12-Feb	236	237	234	240	226	224	230	223	210	222	239	250	257	279	299	301	305	304	296	293	300	315	326	321	269.9
13-Feb	337	343	345	337	344	347	345	349	344	349	348	349	348	353	326	315	302	304	285	268	270	296	349	360	335.7
14-Feb	347	358	33	21	24	37	38	40	39	39	47	40	22	7	352	326	290	294	304	343	344	305	294	288	11.8
15-Feb	292	297	298	294	296	313	308	284	278	274	280	283	278	280	279	277	280	265	250	256	264	270	272	259	278.2
16-Feb	261	264	253	266	275	276	279	274	273	266	282	278	279	271	260	277	253	251	255	265	272	277	275	274	269.4
17-Feb	276	286	296	289	297	302	305	301	309	325	311	346	341	297	303	291	278	264	257	257	242	231	240	242	289.3
18-Feb	243	224	219	222	224	228	222	227	225	226	240	248	260	272	296	281	49	61	68	82	115	174	208	223	222.3
19-Feb	221	224	235	236	243	241	246	297	306	313	348	302	301	304	300	308	314	306	324	357	21	72	73	80	290.4
20-Feb	88	110	219	251	323	178	183	213	253	156	241	259	335	250	266	222	73	95	112	108	213	236	257	248	219.0
21-Feb	261	264	280	275	253	275	265	251	246	272	281	286	280	281	283	268	248	246	247	251	254	276	280	281	268.1
22-Feb	275	276	275	276	273	268	270	266	271	286	310	308	312	303	302	299	300	299	288	287	282	278	275	274	286.5
23-Feb	248	244	236	234	231	241	250	252	255	259	258	280	282	289	288	281	274	277	281	284	279	286	286	307	272.7
24-Feb	310	293	284	286	292	313	326	336	0	348	330	323	319	313	319	331	332	342	9	29	68	92	111	103	323.1
25-Feb	97	100	122	130	79	71	91	63	73	92	76	60	58	49	67	54	64	66	71	63	61	64	58	56	65.7
26-Feb	52	44	40	36	33	33	33	31	29	19	14	20	27	19	17	14	355	23	24	360	354	346	332	298	25.1
27-Feb	298	291	288	288	289	289	286	266	253	281	288	302	306	277	287	298	295	273	218	221	226	213	210	204	273.7
28-Feb	210	200	198	183	187	183	179	174	179	181	172	173	175	168	166	169	170	156	155	149	147	142	142	133	167.7
29-Feb	128	128	129	124	128	127	127	128	118	126	131	129	128	105	45	65	56	344	339	347	346	346	350	341	108.6

274.2	271.5	267.4	274.5	278.2	282.4	277.6	266.2	273.3	283.4	293.8	298.7	301.1	293.7	300.5	305.1	301.4	299.4	280.2	280.5	269.9	278.2	280.3	287.7
Diurnal Average																							

All monthly, daily, and diurnal averages have been calculated using vector methods





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Kirby South - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 94 deg on Feb 8 17:00 Minimum Value: 6 deg on Feb 18 03:00 Percentiles: P ₁ = 7 P ₁₀ = 10 Q ₁ = 12 Median = 15 Q ₃ = 19 P ₉₀ = 27 P ₉₉ = 63																	Hours in Service: 696 Hours of Data: 696 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0								
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	14	14	14	16	16	17	15	15	17	15	15	17	19	17	17	15	12	11	16	20	19	19	8	11	20
2-Feb	14	15	17	28	40	15	14	52	54	42	19	17	25	32	35	23	17	22	15	11	11	28	14	21	54
3-Feb	11	24	9	20	16	22	20	20	21	19	18	17	20	19	21	19	21	20	20	18	14	12	12	12	24
4-Feb	13	19	9	9	7	12	25	10	15	21	18	28	24	28	25	21	25	19	14	34	26	23	19	21	34
5-Feb	19	31	77	39	23	14	17	12	13	12	12	16	14	14	15	13	13	12	10	11	11	11	12	12	77
6-Feb	11	12	15	15	16	15	17	19	18	18	19	22	19	17	22	20	16	19	16	16	17	15	18	17	22
7-Feb	15	18	16	17	14	16	15	16	27	18	28	52	60	34	22	14	14	13	18	16	20	21	17	29	60
8-Feb	20	22	58	27	30	28	38	47	29	27	38	55	25	21	26	47	94	21	26	64	12	14	24	19	94
9-Feb	14	17	14	14	13	13	13	11	13	14	15	16	17	16	18	16	17	16	15	10	10	10	11	10	18
10-Feb	13	32	13	11	11	11	11	13	14	14	15	15	16	16	15	18	15	15	13	14	13	13	10	10	32
11-Feb	9	10	9	9	9	9	9	9	9	10	11	15	15	16	15	15	13	15	30	10	7	7	19	9	30
12-Feb	6	9	7	14	10	10	10	12	13	17	13	14	18	10	16	15	15	13	11	14	13	15	15	16	18
13-Feb	17	19	20	16	18	18	18	19	19	19	22	20	19	26	22	17	14	15	10	14	13	20	23	19	26
14-Feb	20	26	15	17	17	13	13	12	15	14	13	17	21	26	24	17	17	12	14	18	19	15	9	12	26
15-Feb	16	13	11	10	11	13	15	8	7	10	10	11	12	12	13	13	12	12	11	9	12	11	10	12	16
16-Feb	12	14	10	14	9	9	9	9	10	18	12	11	10	16	14	12	13	11	10	11	10	10	9	9	18
17-Feb	10	10	15	12	13	12	12	10	14	15	16	37	34	22	16	13	14	11	9	9	11	9	12	10	37
18-Feb	21	23	6	18	12	6	10	12	10	13	13	16	19	55	75	29	72	11	8	10	14	27	14	11	75
19-Feb	11	12	8	9	11	10	17	9	14	20	25	22	19	21	20	22	14	11	27	20	29	8	10	12	29
20-Feb	25	43	57	50	35	46	39	11	29	81	51	26	85	37	38	43	52	15	12	17	27	19	11	16	85
21-Feb	15	15	8	12	21	8	15	12	10	13	11	12	12	12	11	17	12	12	12	10	12	11	9	9	21
22-Feb	9	9	9	9	9	13	9	12	12	13	15	16	17	16	15	13	13	11	9	9	9	7	8	8	17
23-Feb	16	12	10	11	11	12	11	12	11	13	16	13	14	14	14	11	12	12	11	11	10	11	12	13	16
24-Feb	13	12	10	9	14	13	16	22	21	21	21	17	16	19	18	19	22	34	35	46	10	15	12	16	46
25-Feb	16	17	39	41	28	18	14	17	16	15	19	21	22	16	18	15	13	13	13	13	13	13	13	13	41
26-Feb	13	14	14	15	16	16	16	15	16	19	20	21	20	27	23	26	25	23	18	18	19	20	18	14	27
27-Feb	9	8	8	7	8	8	10	16	18	18	17	23	19	20	22	21	25	24	23	7	9	8	7	8	25
28-Feb	11	11	11	12	13	16	15	14	16	17	16	20	20	18	18	17	18	17	14	13	15	14	16	15	20
29-Feb	16	15	15	16	15	16	16	16	16	17	21	24	62	52	47	25	63	27	21	20	20	20	23	20	63
Diurnal Maximum																									
25 43 77 50 40 46 39 52 54 81 51 55 85 55 75 47 94 34 35 64 29 28 24 29																									



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT

AMS511 BLACKGOLD FEBRUARY 2024

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

March 28, 2024

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BLACKGOLD (AMS511)
 FEBRUARY 2024

MONTHLY SUMMARY

Parameter	Hours of Data	Hours of Calibration	Hours without Data	Operational Time	Maximum 1-Hour Value	1-Hour Exceedances	Maximum 24-Hour Value	24-Hour Exceedances
SO2 (ppb) Average	613	33	83	92.82	18.1	0	4.5	0
H2S (ppb) Average	662	34	34	100	1.4	0	0.3	0
THC (ppm) Average	663	33	33	100	3.4	-	2.4	-
NO2 (ppb) Average	662	34	34	100	20	0	8.7	-
NO (ppb) Average	662	34	34	100	36.8	-	3	-
NOX (ppb) Average	662	34	34	100	55.1	-	9.9	-
Temperature 2 m (C) Average	696	0	0	100	10.3	-	3.4	-
Relative Humidity (%) Average	696	0	0	100	96	-	93.2	-
Wind Speed 10 m (km/h) Average	695	0	1	99.86	24	-	13	-
Wind Direction 10 m (deg) Average	695	0	1	99.86	-	-	-	-

Note : Operational time includes periods of data collection and instrument calibration

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BLACKGOLD (AMS511)
 FEBRUARY 2024

MONTHLY SUMMARY FOR AIR QUALITY/ METEOROLOGICAL MONITORING MEASUREMENTS

Parameter	Number	Mean	StnDev	Total	Percentile						
					Min	P10	Q1	Median	Q3	P90	Max
SO2 (ppb) Average	613	1.33	2.2	-	0	0	0.2	0.6	1.5	2.9	18.1
H2S (ppb) Average	662	0.13	0.1	-	0	0	0.1	0.1	0.2	0.3	1.4
THC (ppm) Average	663	2.32	0.1	-	2.1	2.2	2.3	2.3	2.3	2.4	3.4
NO2 (ppb) Average	662	2.81	2.8	-	0	0.4	1.1	2	3.8	5.9	20
NO (ppb) Average	662	0.59	1.9	-	0	0	0	0.2	0.5	1.4	36.8
NOX (ppb) Average	662	3.39	3.9	-	0	0.5	1.2	2.3	4.4	7.3	55.1
Temperature 2 m (C) Average	696	-7.93	7.7	-	-27.5	-17.8	-12.4	-7.5	-2.8	1.8	10.3
Relative Humidity (%) Average	696	68.88	16.8	-	20.8	43.6	57.3	71	82.3	90.8	96
Wind Speed 10 m (km/h) Average	695	7.1	4	-	0	2	4	6	10	13	24
Wind Direction 10 m (deg) Average	695	-	-	-	-	-	-	-	-	-	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BLACKGOLD (AMS511)
FEBRUARY 2024

OPERATIONAL NOTES

Parameter	Period Start	Period End	Duration (Hours)	Notes
SO2	04 Feb 2024 18:00	25 Feb 2024 14:00	50	Unstable Operation - excessive baseline noise
Wind Speed, Wind Direction	20 Feb 2024 03:00	20 Feb 2024 03:00	1	Flat line in sensor output signal - Sensor frozen



Wood Buffalo Environmental Association

Summary of Hour Averages

Sulphur Dioxide (SO₂) - ppb

Blackgold - February 2024

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	696
Maximum Value: 18.1 ppb on Feb 16 20:00	Maximum Daily Average: 4.5 ppb on Feb 16		Hours of Data:	613
Minimum Value: 0.0 ppb on Feb 3 00:00	Minimum Daily Average: 0.1 ppb on Feb 4		Hours of Missing Data:	83
Maximum Diurnal Average: 1.8 ppb at hour 20	Minimum Diurnal Average: 0.9 ppb at hour 6		Hours of Calibration:	33
Monthly Average: 1.33 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 0.6 Q ₃ = 1.5 P ₉₀ = 2.9 P ₉₉ = 10.8		Percent Operational Time:	92.8

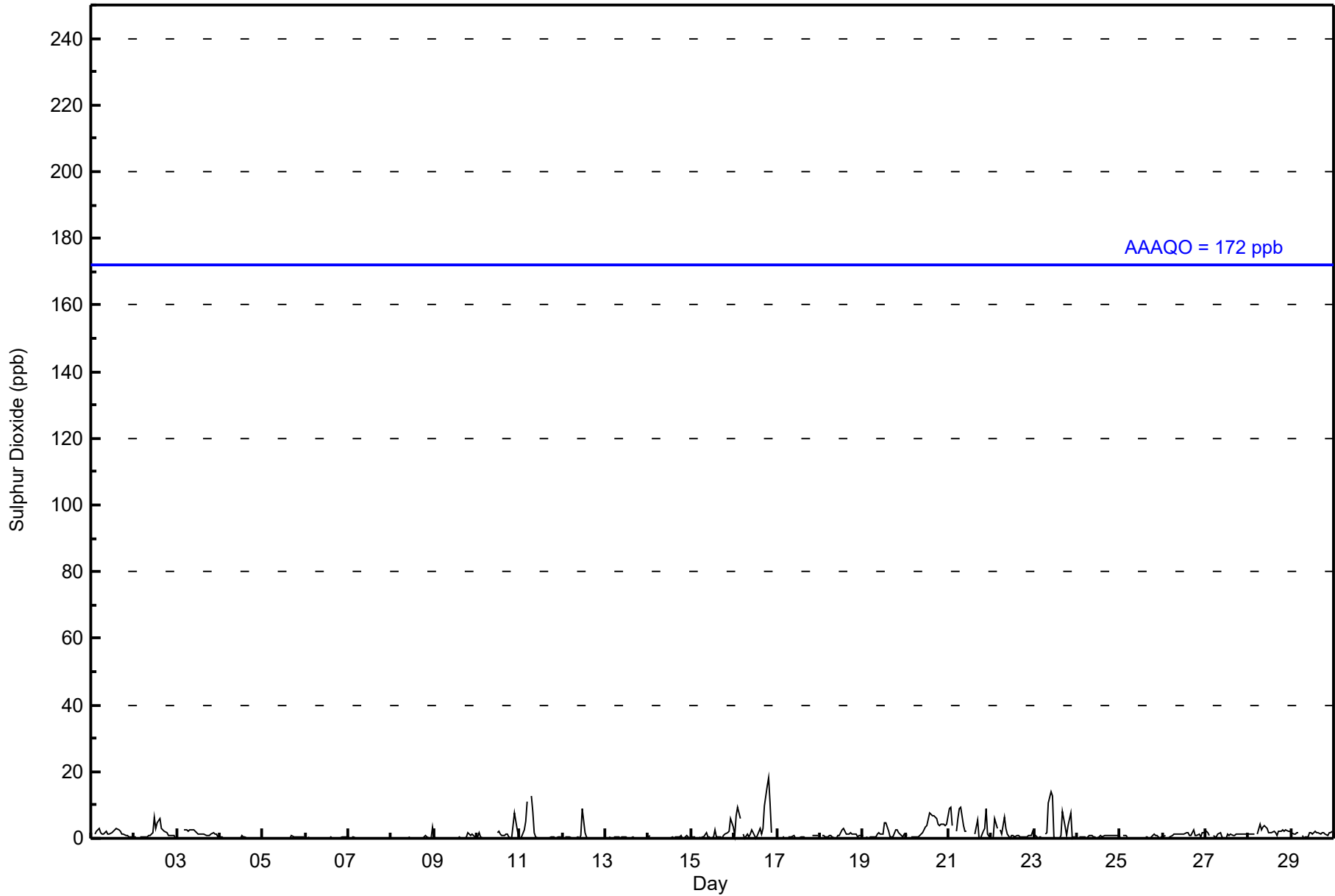
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	1.0	Z	1.3	2.0	3.0	1.5	1.2	1.2	2.0	1.2	1.2	1.7	2.0	2.7	3.1	2.7	2.2	1.3	1.1	0.8	0.6	0.5	0.4	0.4	1.5	3.1
2-Feb	0.5	0.4	Z	0.3	0.4	0.4	0.6	0.6	0.7	0.9	1.6	6.2	2.8	4.8	6.1	3.0	2.5	2.1	1.8	0.7	1.0	0.8	0.7	0.0	1.7	6.2
3-Feb	0.0	0.2	0.0	Z	2.6	2.7	2.3	2.5	2.4	2.4	2.1	1.6	1.5	1.3	1.3	1.2	1.0	1.1	0.9	1.3	1.6	1.4	1.1	0.5	1.4	2.7
4-Feb	0.4	0.2	0.1	0.1	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.6	0.5	0.6	0.0	0.0	UO	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6
5-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.0	0.6	0.5	0.6	0.6	0.5	0.4	0.3	0.2	1.0	1.0
6-Feb	Z	0.3	0.0	UO	UO	0.1	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.1	0.2	0.6	0.6	0.6	0.1	0.6
7-Feb	0.5	Z	0.5	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	UO	UO	UO	UO	UO	0.0	0.0	0.0	0.0	0.0	UO	UO	--	0.5
8-Feb	UO	0.0	Z	0.0	0.0	0.0	UO	UO	UO	0.0	0.4	UO	UO	0.2	0.1	0.1	0.0	0.1	0.3	0.7	0.4	0.1	0.1	3.2	--	3.2
9-Feb	0.3	0.1	0.1	Z	0.0	0.1	0.2	0.1	UO	UO	0.0	0.1	0.0	0.0	0.2	0.2	0.2	0.0	0.3	1.9	0.8	1.1	0.7	0.5	0.3	1.9
10-Feb	0.6	1.8	0.4	0.0	Z	UO	UO	UO	UO	UO	UO	1.5	2.1	1.2	1.0	1.0	1.2	1.2	0.4	0.2	3.7	7.7	2.7	0.2	--	7.7
11-Feb	0.0	0.4	2.5	5.1	10.9	Z	12.7	8.1	1.7	0.2	0.0	0.1	0.1	0.0	0.1	0.2	0.0	0.2	0.3	0.3	0.1	0.3	0.4	0.4	1.9	12.7
12-Feb	Z	0.2	0.4	0.3	0.3	0.0	0.1	0.2	0.3	0.2	0.9	8.9	1.9	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.6	8.9
13-Feb	0.0	Z	0.4	0.2	0.1	0.2	0.3	0.2	0.4	0.4	0.2	0.2	0.0	0.1	0.3	0.2	UO	UO	UO	UO	UO	UO	0.1	0.1	0.2	0.4
14-Feb	0.3	0.7	Z	UO	UO	UO	UO	UO	UO	0.1	0.0	0.2	0.1	0.3	0.0	0.6	0.4	0.5	0.7	0.0	0.0	0.6	0.3	0.1	--	0.7
15-Feb	0.3	0.4	0.2	Z	0.3	0.1	0.3	0.3	1.5	0.3	0.4	0.1	0.4	2.6	0.5	0.4	0.6	0.0	0.7	1.3	1.6	2.1	5.9	3.3	1.0	5.9
16-Feb	1.0	6.9	9.5	5.9	Z	1.1	0.0	1.1	0.3	1.3	2.6	0.9	0.0	0.7	3.1	1.3	2.9	9.6	15.6	18.1	10.8	1.6	UO	UO	4.5	18.1
17-Feb	0.0	0.0	UO	0.4	0.3	Z	0.5	0.4	0.4	0.7	0.1	0.0	0.0	0.5	0.5	0.6	0.0	UO	UO	UO	1.0	0.9	0.9	1.0	0.4	1.0
18-Feb	Z	1.0	0.7	0.4	0.6	0.9	0.9	0.6	0.1	0.0	1.0	0.9	2.5	2.8	2.3	1.4	1.2	1.6	1.4	1.3	1.2	0.6	0.8	0.8	1.1	2.8
19-Feb	0.8	Z	0.3	0.0	0.3	0.4	0.6	0.3	1.2	1.7	1.4	1.2	4.8	4.5	2.2	0.5	0.5	0.5	2.5	2.5	1.8	1.5	0.5	1.2	1.3	4.8
20-Feb	1.3	0.6	Z	0.4	0.3	0.3	0.3	0.4	0.9	1.6	2.5	3.4	3.7	7.6	7.2	6.7	6.7	6.0	4.2	4.0	4.3	4.3	3.7	4.0	3.2	7.6
21-Feb	9.0	9.2	3.9	Z	1.9	5.8	8.7	9.2	3.6	2.3	2.2	C	C	C	C	1.2	5.6	0.0	0.0	1.9	2.9	9.0	1.2	0.0	4.1	9.2
22-Feb	0.0	0.0	6.1	2.9	Z	2.6	1.2	6.3	3.1	1.2	0.0	0.8	0.8	0.6	0.7	0.7	0.6	0.6	0.4	0.4	0.4	0.7	0.9	1.9	1.4	6.3
23-Feb	1.2	0.8	0.1	0.4	0.5	Z	1.1	1.5	10.5	14.0	12.7	0.5	0.1	0.0	0.0	0.9	8.1	3.5	0.9	3.9	7.5	0.0	0.6	0.5	3.0	14.0
24-Feb	Z	0.6	0.5	0.3	0.4	0.2	0.5	0.7	0.9	0.3	0.5	0.2	0.6	0.7	0.6	0.7	0.7	0.8	0.9	0.9	1.0	0.9	0.7	0.7	0.6	1.0
25-Feb	0.6	Z	0.7	0.7	0.6	UO	UO	UO	UO	UO	UO	UO	UO	UO	0.5	0.3	0.2	0.0	0.8	1.2	0.8	0.7	0.1	0.4	--	1.2
26-Feb	0.4	0.8	Z	0.2	0.4	1.1	1.2	1.4	1.3	1.1	1.3	1.3	1.2	1.6	1.6	0.9	0.9	2.5	0.8	0.9	1.1	0.6	1.6	1.6	1.1	2.5
27-Feb	2.3	1.8	1.0	Z	1.0	0.6	0.4	1.3	1.6	0.3	0.0	0.0	1.2	0.9	1.1	0.7	0.6	1.3	1.2	1.3	1.4	1.3	1.3	1.4	1.0	2.3
28-Feb	1.3	1.2	1.2	1.3	Z	1.2	4.3	2.7	3.3	3.7	2.9	1.9	1.6	1.7	2.0	1.8	0.8	2.0	2.0	2.4	2.0	2.6	2.2	2.2	2.1	4.3
29-Feb	1.7	1.3	1.3	1.5	1.9	Z	1.0	0.1	0.2	0.6	1.6	1.8	1.3	2.0	1.9	1.8	1.3	1.9	1.7	1.2	1.0	1.8	1.8	2.1	1.4	2.1
1.0 1.2 1.4 1.0 1.2 0.9 1.5 1.6 1.5 1.3 1.3 1.3 1.2 1.4 1.4 1.0 1.4 1.4 1.5 1.8 1.7 1.5 1.1 1.0																								Diurnal Average		
9.0 9.2 9.5 5.9 10.9 5.8 12.7 9.2 10.5 14.0 12.7 8.9 4.8 7.6 7.2 6.7 8.1 9.6 15.6 18.1 10.8 9.0 5.9 4.0																								Diurnal Maximum		

Z - zerospan C - Calibration UO - Unstable Operation
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb



Wood Buffalo Environmental Association
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Blackgold - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Sulphur Dioxide (SO₂) - ppb
Blackgold - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 10	605	98.69	98.69
11 - 20	8	1.31	100.00
21 - 60	0	0.00	100.00
61 - 110	0	0.00	100.00
111 - 172	0	0.00	100.00
> 172	0	0.00	100.00

Total Number of Valid Hours: 613

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Sulphur Dioxide (SO₂) - ppb
Blackgold - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 10	36	32	36	16	11	22	12	21	13	21	36	54	110	95	45	45	605
11 - 20	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8
21 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111 - 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	36	32	36	16	11	22	12	21	13	21	36	62	110	95	45	45	613

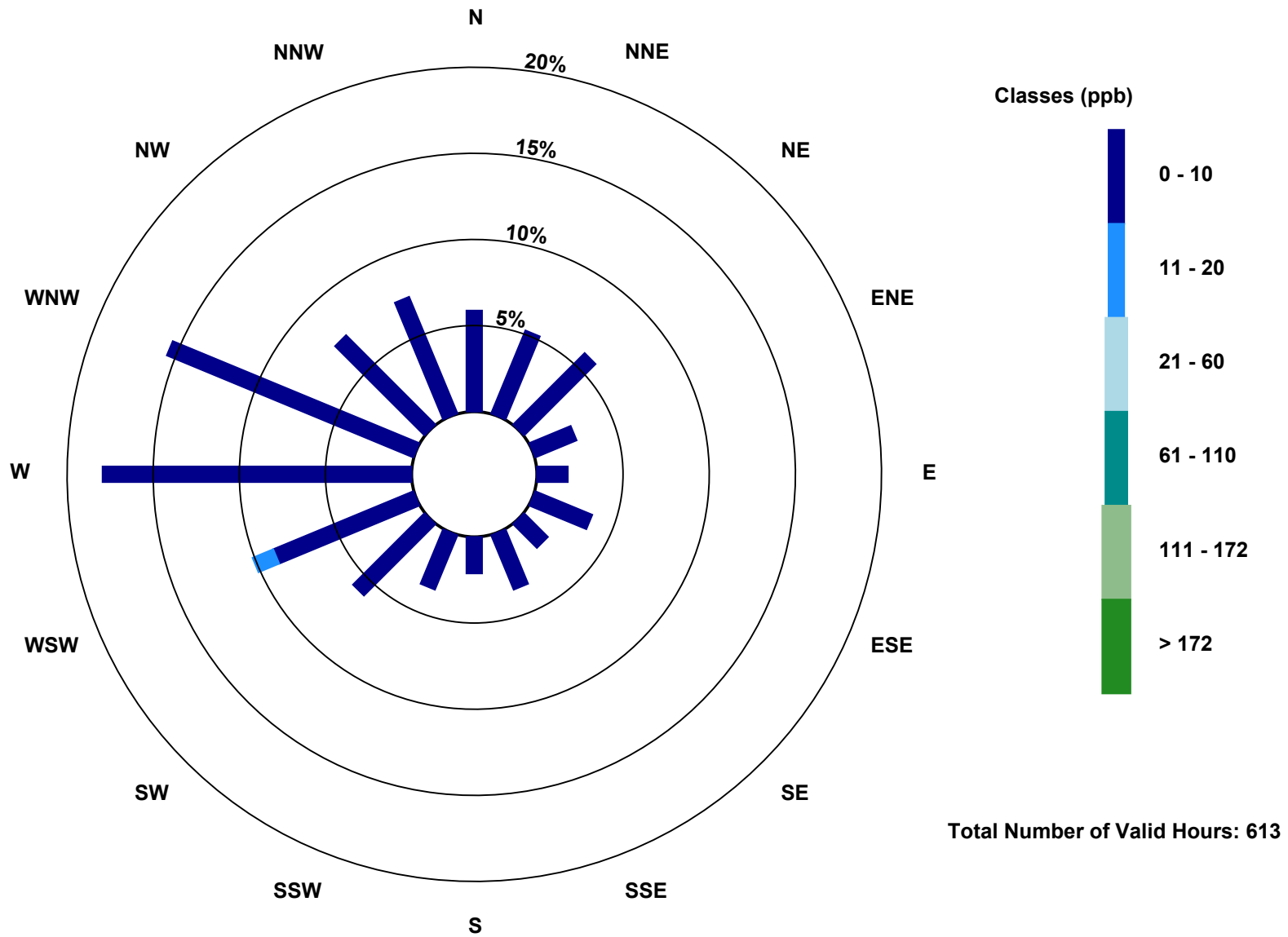
Total Number of Valid Hours: 613

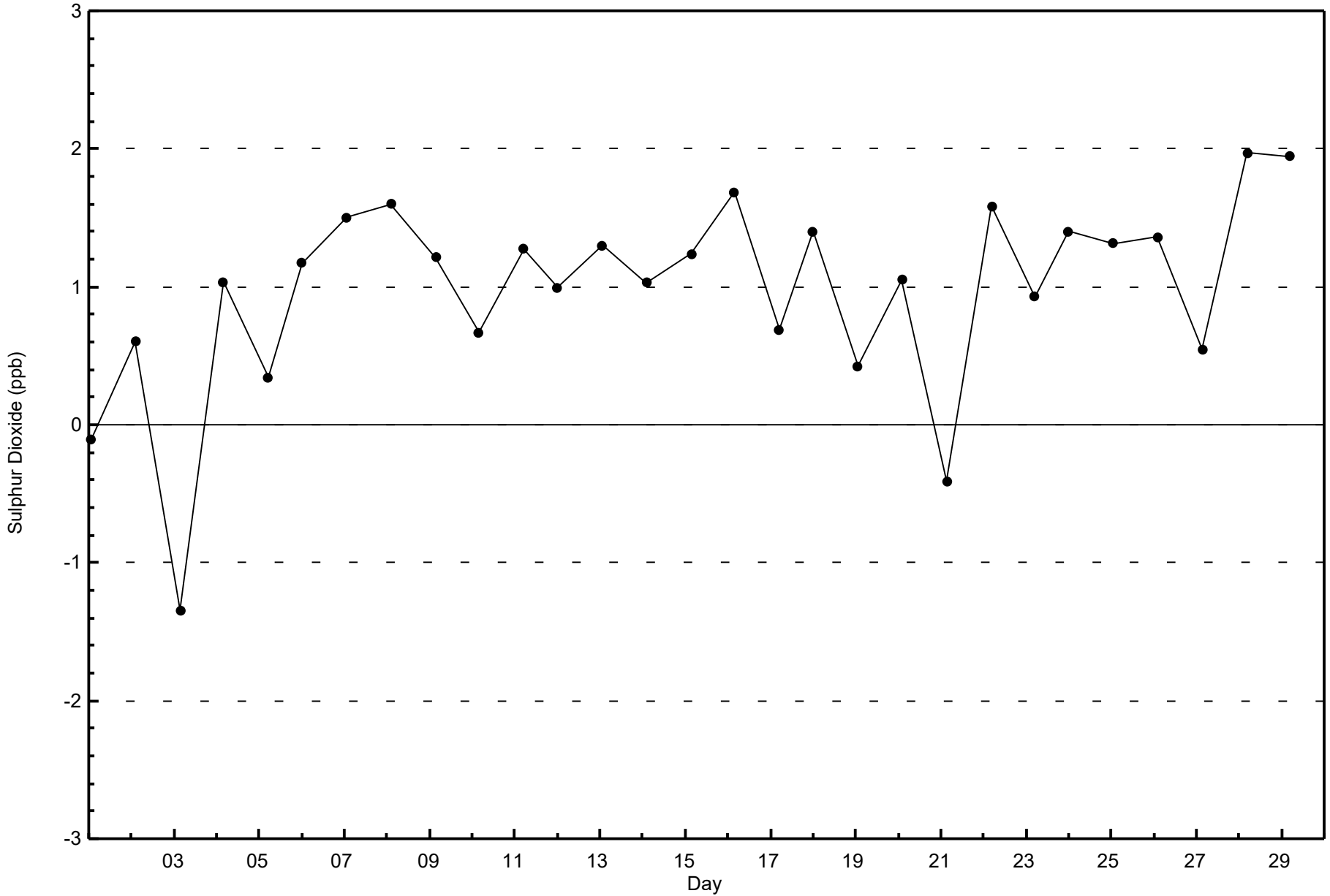
Total Number of Hours: 696

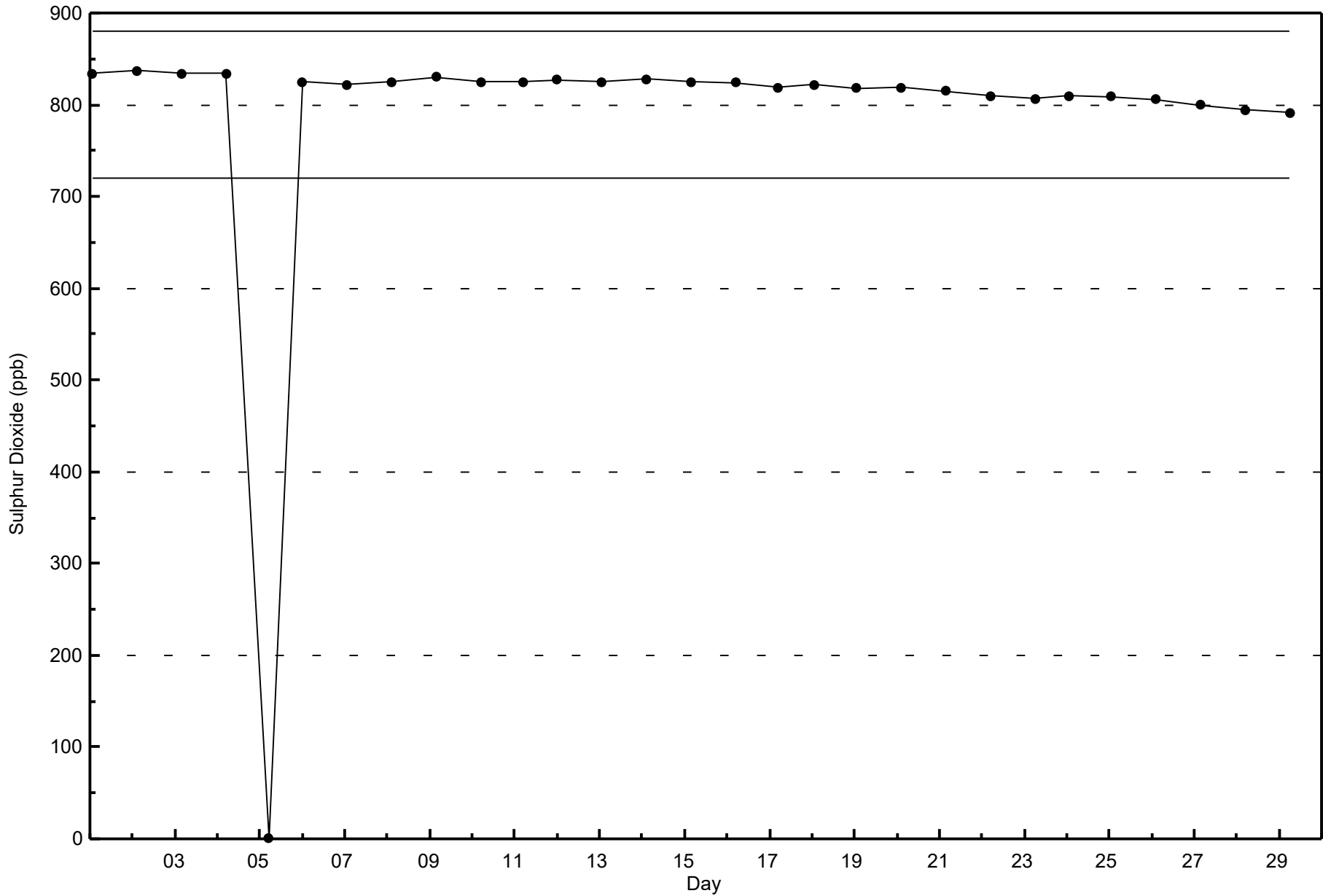


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Sulphur Dioxide (SO₂) - ppb
Blackgold









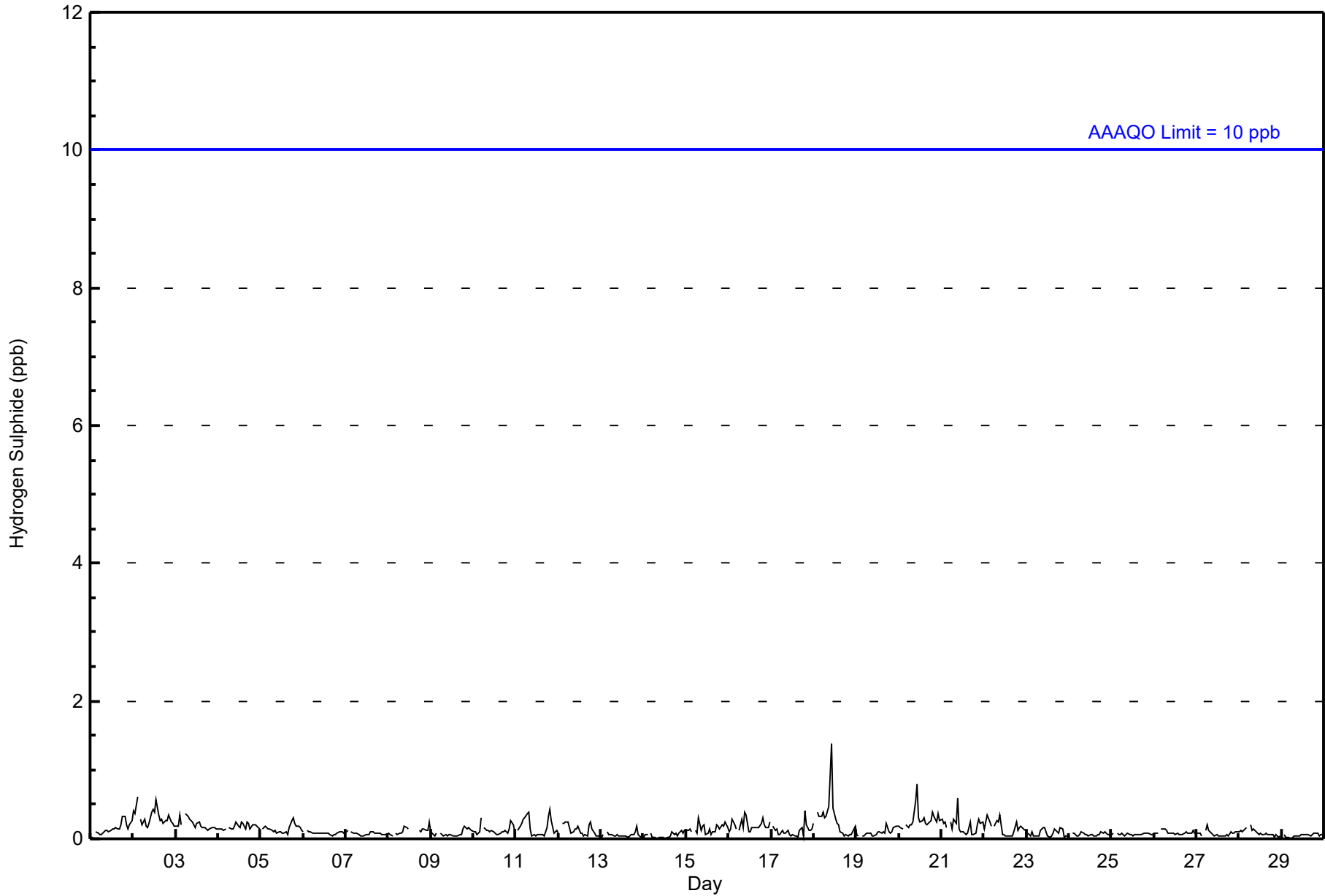
Wood Buffalo Environmental Association

Summary of Hour Averages

Hydrogen Sulphide (H₂S) - ppb

Blackgold - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	Hours of Data: 662																											
Maximum Value: 1.4 ppb on Feb 18 11:00		Maximum Daily Average: 0.3 ppb on Feb 2																	Hours of Missing Data: 34																													
Minimum Value: 0.0 ppb on Feb 14 08:00		Minimum Daily Average: 0.0 ppb on Feb 29																	Hours of Calibration: 34																													
Maximum Diurnal Average: 0.2 ppb at hour 10		Minimum Diurnal Average: 0.1 ppb at hour 16																	Percent Operational Time: 100.0																													
Monthly Average: 0.13 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.3 P ₉₉ = 0.5																																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Feb	0.0	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.1	0.3																						
2-Feb	0.4	0.4	0.6	Z	0.3	0.2	0.3	0.2	0.2	0.2	0.4	0.4	0.4	0.6	0.3	0.3	0.3	0.2	0.3	0.3	0.4	0.2	0.2	0.2	0.3	0.6																						
3-Feb	0.2	0.2	0.3	0.2	Z	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.4																							
4-Feb	0.1	0.1	0.1	0.1	0.1	Z	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.3																							
5-Feb	Z	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.3																								
6-Feb	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																							
7-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																							
8-Feb	0.1	0.1	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	C	C	C	C	C	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2																							
9-Feb	0.1	0.1	0.0	0.1	Z	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.2																							
10-Feb	0.1	0.1	0.1	0.1	0.3	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.3																							
11-Feb	Z	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.2	0.3	0.4	0.3	0.1	0.1	0.1	0.4																							
12-Feb	0.1	Z	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.0	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.3																							
13-Feb	0.0	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.2																							
14-Feb	0.0	0.1	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																							
15-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.3	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3																							
16-Feb	0.1	0.1	0.3	0.2	0.1	Z	0.1	0.3	0.2	0.4	0.3	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.4																							
17-Feb	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.4	0.2	0.1	0.1	0.2	0.4																							
18-Feb	0.2	Z	0.4	0.3	0.3	0.4	0.3	0.3	0.5	0.9	1.4	0.5	0.3	0.2	0.2	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.2	1.4																							
19-Feb	0.1	0.0	Z	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2																							
20-Feb	0.2	0.2	0.1	Z	0.2	0.2	0.2	0.2	0.2	0.5	0.8	0.3	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.4	0.3	0.2	0.4	0.3	0.8																							
21-Feb	0.3	0.2	0.2	0.2	Z	0.2	0.2	0.3	0.2	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.6																							
22-Feb	0.1	0.2	0.3	0.2	0.2	Z	0.2	0.3	0.2	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.1	0.2	0.2	0.1	0.1	0.4																							
23-Feb	Z	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.2																							
24-Feb	0.0	Z	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																							
25-Feb	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																							
26-Feb	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																							
27-Feb	0.1	0.1	0.1	0.1	Z	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2																							
28-Feb	0.1	0.1	0.1	0.1	0.2	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.2																							
29-Feb	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1																							
																								0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	Diurnal Average
																								0.4	0.4	0.6	0.3	0.3	0.4	0.4	0.4	0.5	0.9	1.4	0.5	0.4	0.6	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.4	0.3	Diurnal Maximum
Z - zerospan C - Calibration																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																																																





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Blackgold - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 2	662	100.00	100.00
3 - 4	0	0.00	100.00
5 - 7	0	0.00	100.00
8 - 11	0	0.00	100.00
> 11	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Hydrogen Sulphide (H₂S) - ppb
Blackgold - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2	38	44	41	17	11	23	14	20	20	22	40	64	116	98	46	47	661
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	38	44	41	17	11	23	14	20	20	22	40	64	116	98	46	47	661

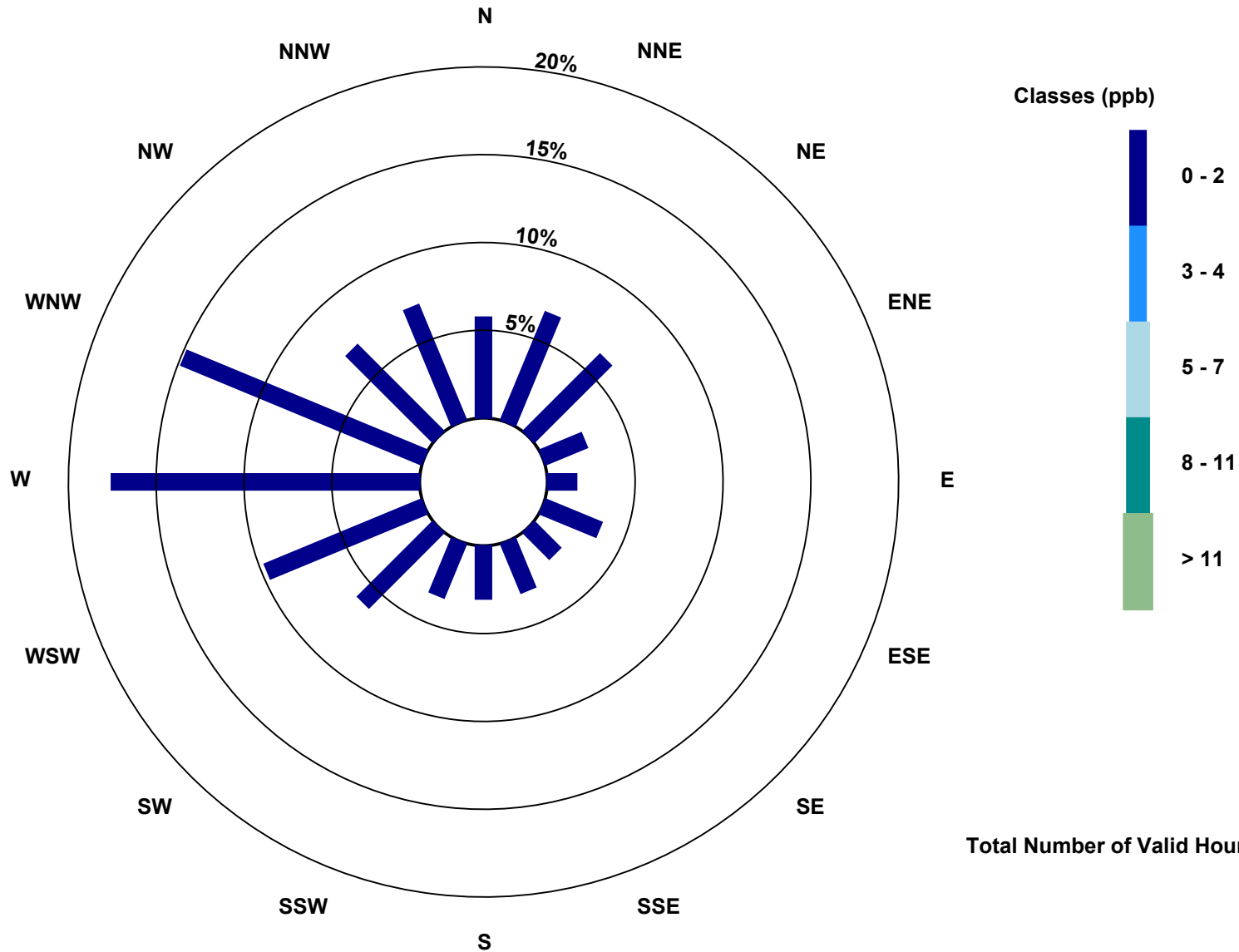
Total Number of Valid Hours: 661

Total Number of Hours: 696

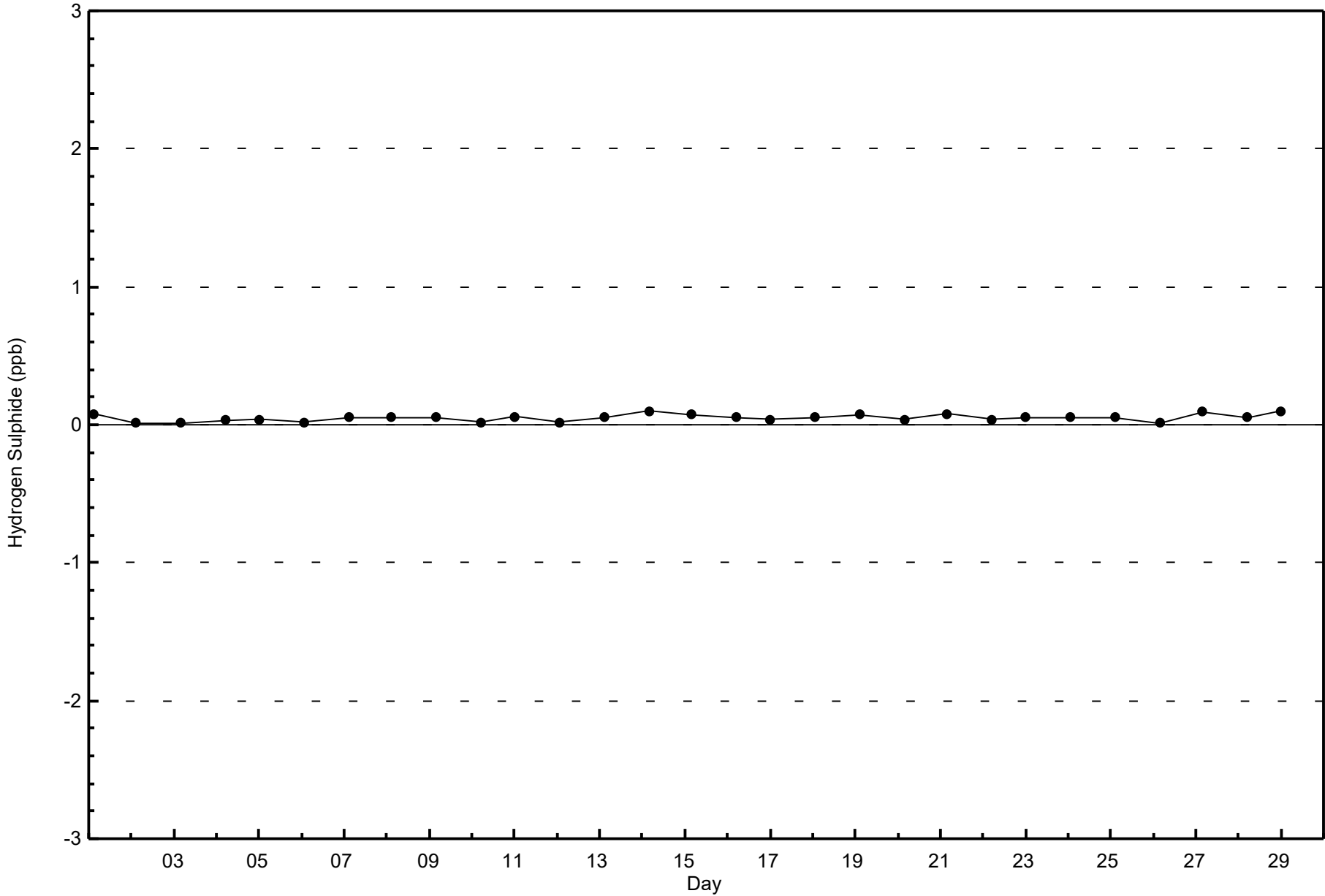


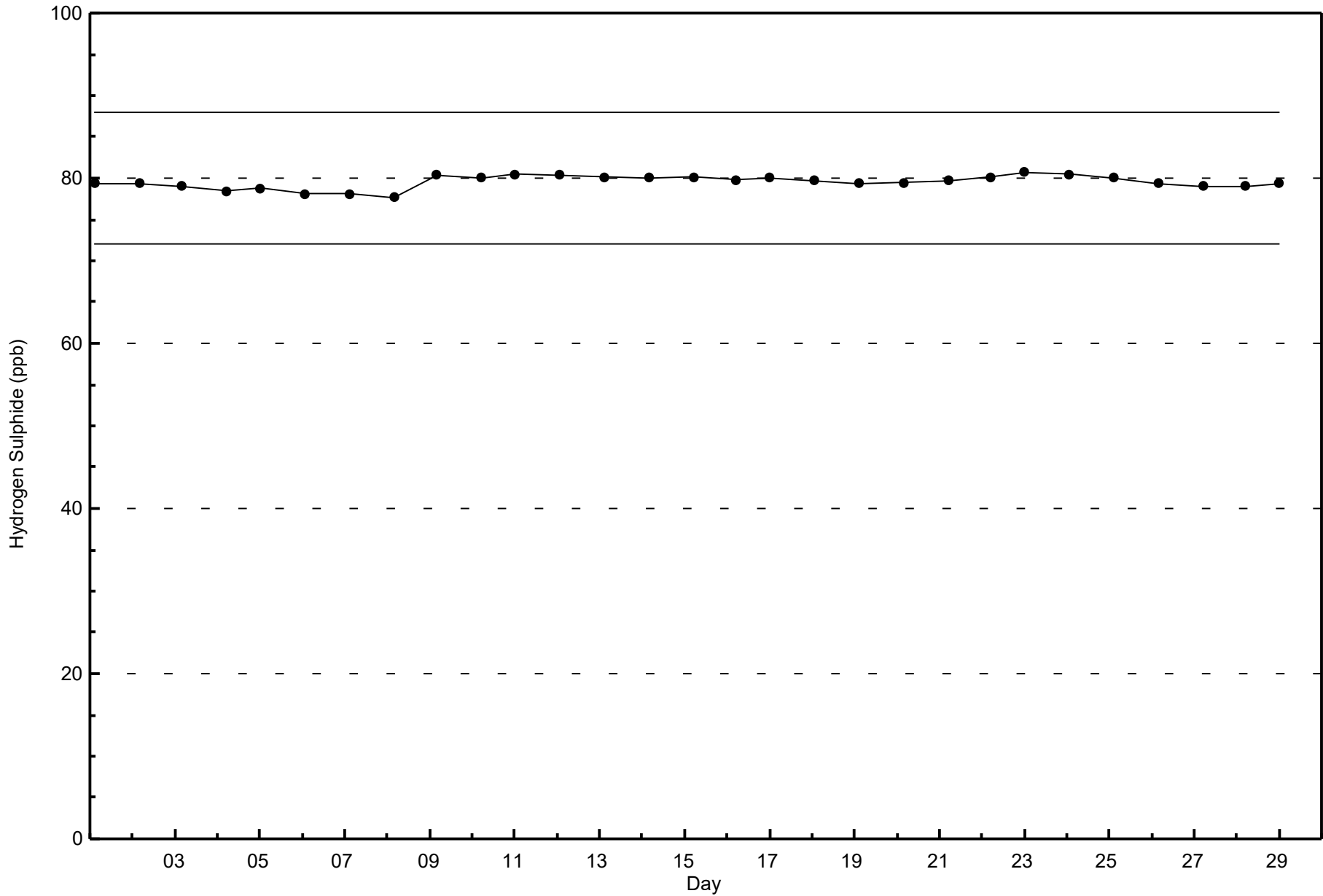
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Hydrogen Sulphide (H₂S) - ppb
Blackgold



Total Number of Valid Hours: 661



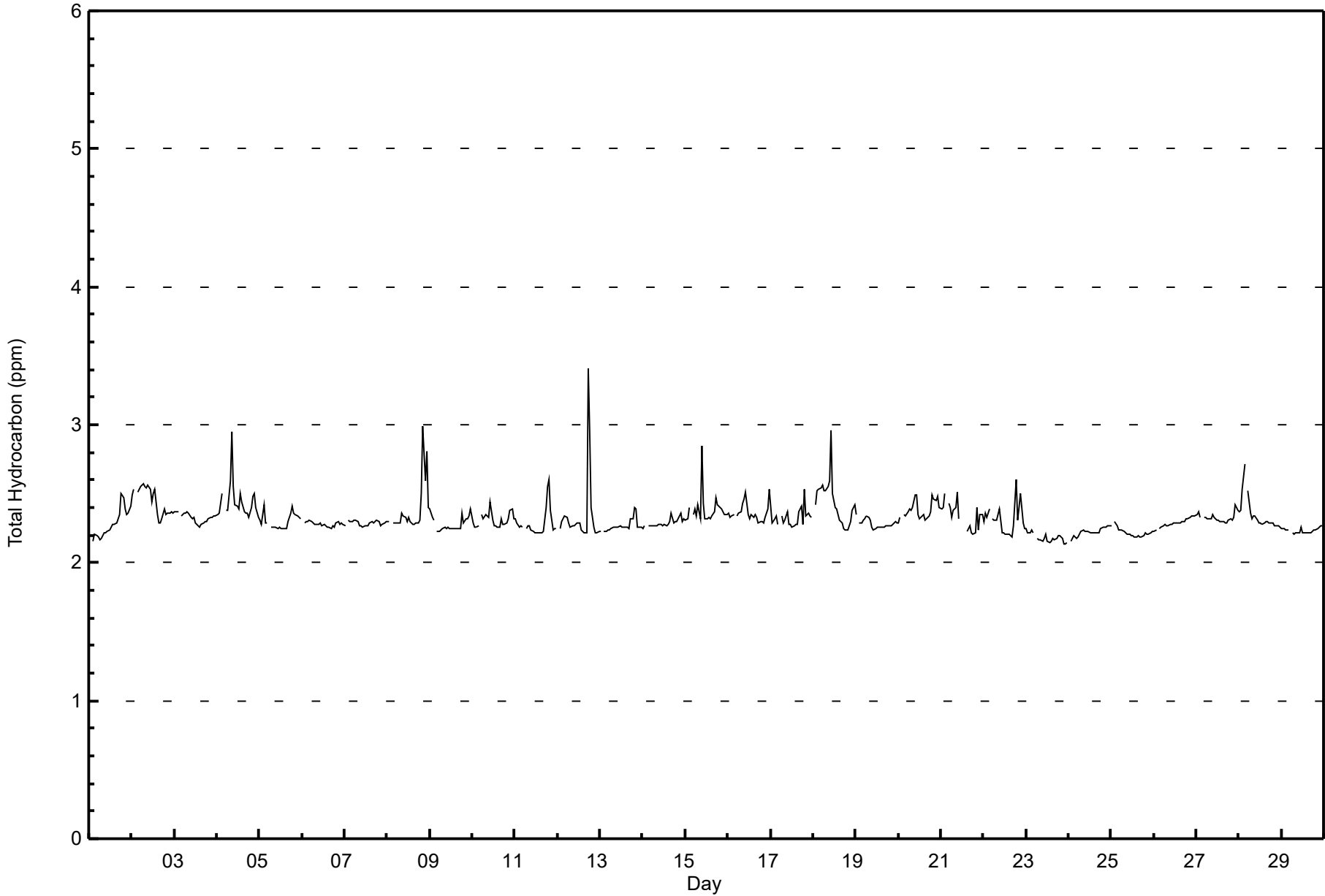




Wood Buffalo Environmental Association
Summary of Hour Averages

Total Hydrocarbon (THC) - ppm
Blackgold - February 2024

Maximum Value: 3.4 ppm on Feb 12 18:00																				Maximum Daily Average: 2.4 ppm on Feb 2					Hours in Service:	696																							
Minimum Value: 2.1 ppm on Feb 23 22:00																				Minimum Daily Average: 2.2 ppm on Feb 23					Hours of Data:	663																							
Maximum Diurnal Average: 2.3 ppm at hour 10																				Minimum Diurnal Average: 2.3 ppm at hour 16					Hours of Missing Data:	33																							
Monthly Average: 2.32 ppm																				Percentiles: P ₁ = 2.2 P ₁₀ = 2.2 Q ₁ = 2.3 Median = 2.3 Q ₃ = 2.3 P ₉₀ = 2.4 P ₉₉ = 2.7					Hours of Calibration:	33																							
																									Percent Operational Time:	100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Feb	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.5																							
2-Feb	2.5	2.5	Z	2.5	2.5	2.6	2.6	2.5	2.5	2.6	2.5	2.4	2.5	2.5	2.3	2.3	2.3	2.3	2.4	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.6																						
3-Feb	2.4	2.4	2.4	Z	2.3	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4																							
4-Feb	2.4	2.4	2.4	2.5	Z	2.4	2.4	2.6	2.9	2.6	2.4	2.4	2.4	2.5	2.4	2.4	2.4	2.4	2.3	2.4	2.5	2.5	2.4	2.3	2.3	2.9																							
5-Feb	2.3	2.3	2.4	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.4																							
6-Feb	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3																						
7-Feb	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3																						
8-Feb	2.3	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.5	3.0	2.6	2.8	2.4	2.4	3.0																							
9-Feb	2.4	2.3	2.3	Z	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.4	2.4																							
10-Feb	2.3	2.3	2.3	2.3	Z	2.4	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.4																							
11-Feb	2.3	2.3	2.3	2.3	2.3	Z	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.6	2.6	2.4	2.2	2.2	2.3	2.3	2.6																							
12-Feb	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	3.4	3.0	2.4	2.3	2.2	2.2	2.2	2.4	3.4																							
13-Feb	2.2	Z	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.4																							
14-Feb	2.3	2.3	Z	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.4																							
15-Feb	2.3	2.3	2.4	Z	2.4	2.4	2.3	2.4	2.3	2.9	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.9																							
16-Feb	2.4	2.3	2.3	2.4	Z	2.3	2.4	2.4	2.4	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.4	2.5																							
17-Feb	2.4	2.3	2.3	2.3	2.3	Z	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.5	2.3	2.4	2.3	2.3	2.3	2.5																							
18-Feb	Z	2.4	2.5	2.5	2.5	2.6	2.5	2.5	2.5	2.6	3.0	2.5	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.4	3.0																							
19-Feb	2.4	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4																							
20-Feb	2.3	2.3	Z	2.3	2.3	2.4	2.4	2.4	2.4	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.5	2.4	2.5	2.4	2.4	2.5																							
21-Feb	2.4	2.4	2.5	Z	2.4	2.4	2.3	2.4	2.4	2.5	2.3	C	C	C	C	2.2	2.3	2.2	2.2	2.2	2.4	2.2	2.4	2.4	2.4	2.5																							
22-Feb	2.3	2.4	2.3	2.4	Z	2.3	2.3	2.3	2.3	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.6	2.3	2.4	2.5	2.3	2.2	2.6																							
23-Feb	2.2	2.2	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2																							
24-Feb	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3																							
25-Feb	2.3	Z	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3																							
26-Feb	2.2	2.2	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3																							
27-Feb	2.3	2.4	2.3	Z	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.4																							
28-Feb	2.4	2.4	2.5	2.7	Z	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.7																							
29-Feb	2.2	2.2	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.3																							
2.3																								2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	Diurnal Average
2.5																								2.5	2.5	2.7	2.5	2.6	2.6	2.6	2.9	2.9	3.0	2.5	2.5	2.5	2.4	2.4	2.4	3.4	3.0	2.6	3.0	2.6	2.8	2.5	2.5	2.5	Diurnal Maximum
Z - zerspan																								C - Calibration																									





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Total Hydrocarbon (THC) - ppm
Blackgold - February 2024

Concentration Ranges (ppm)	Number of Hours	%	Cumulative %
0 - 2.0	0	0.00	0.00
2.1 - 3.0	662	99.85	99.85
3.1 - 10.0	1	0.15	100.00
> 10.0	0	0.00	100.00

Total Number of Valid Hours: 663

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Total Hydrocarbon (THC) - ppm
Blackgold - February 2024**

Concentration Ranges (ppm)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.1 - 3.0	42	42	44	17	11	23	13	21	19	24	39	64	114	97	46	46	662
3.1 - 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
> 10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	42	42	44	17	11	23	13	21	19	24	39	64	114	98	46	46	663

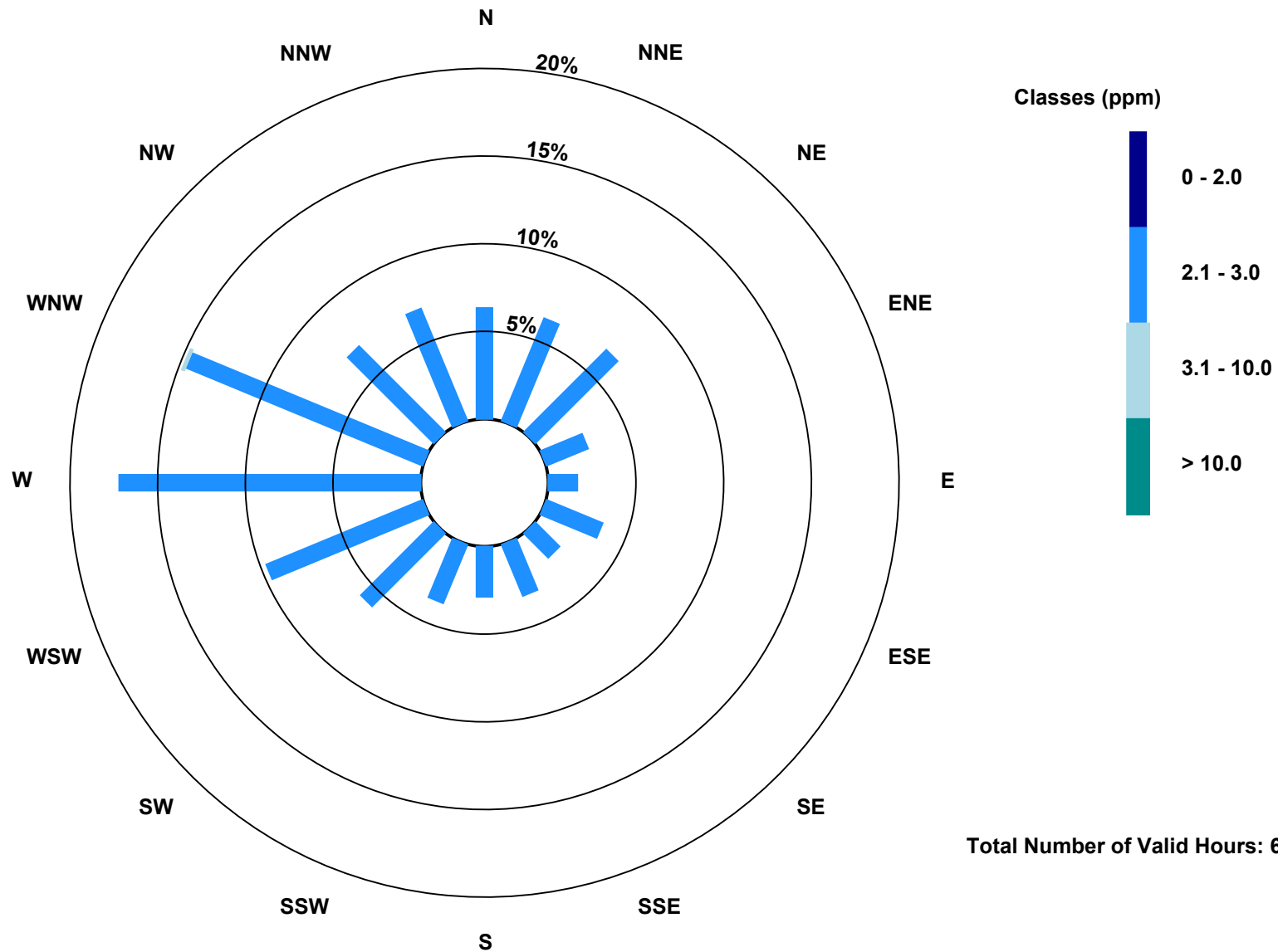
Total Number of Valid Hours: 663

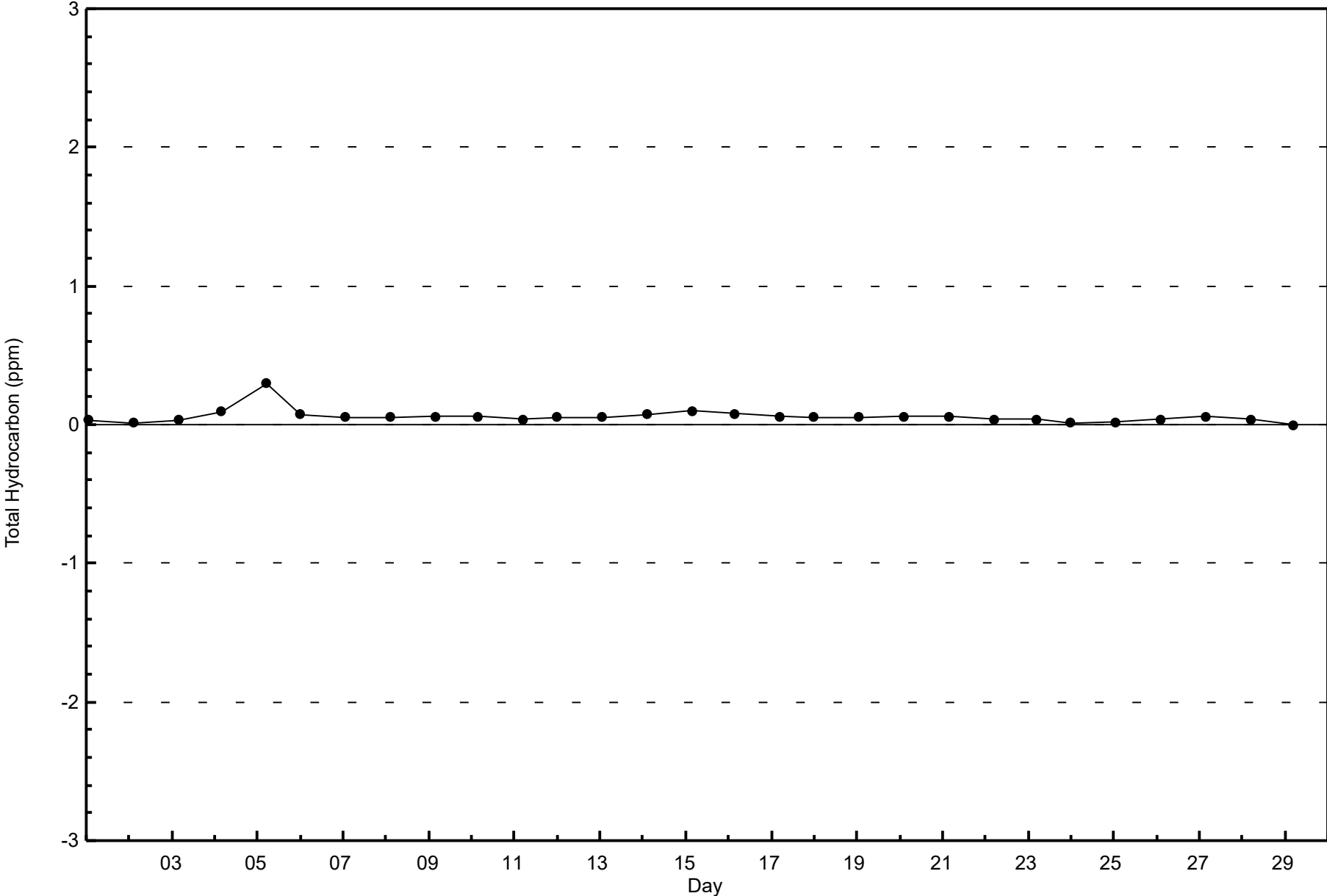
Total Number of Hours: 696

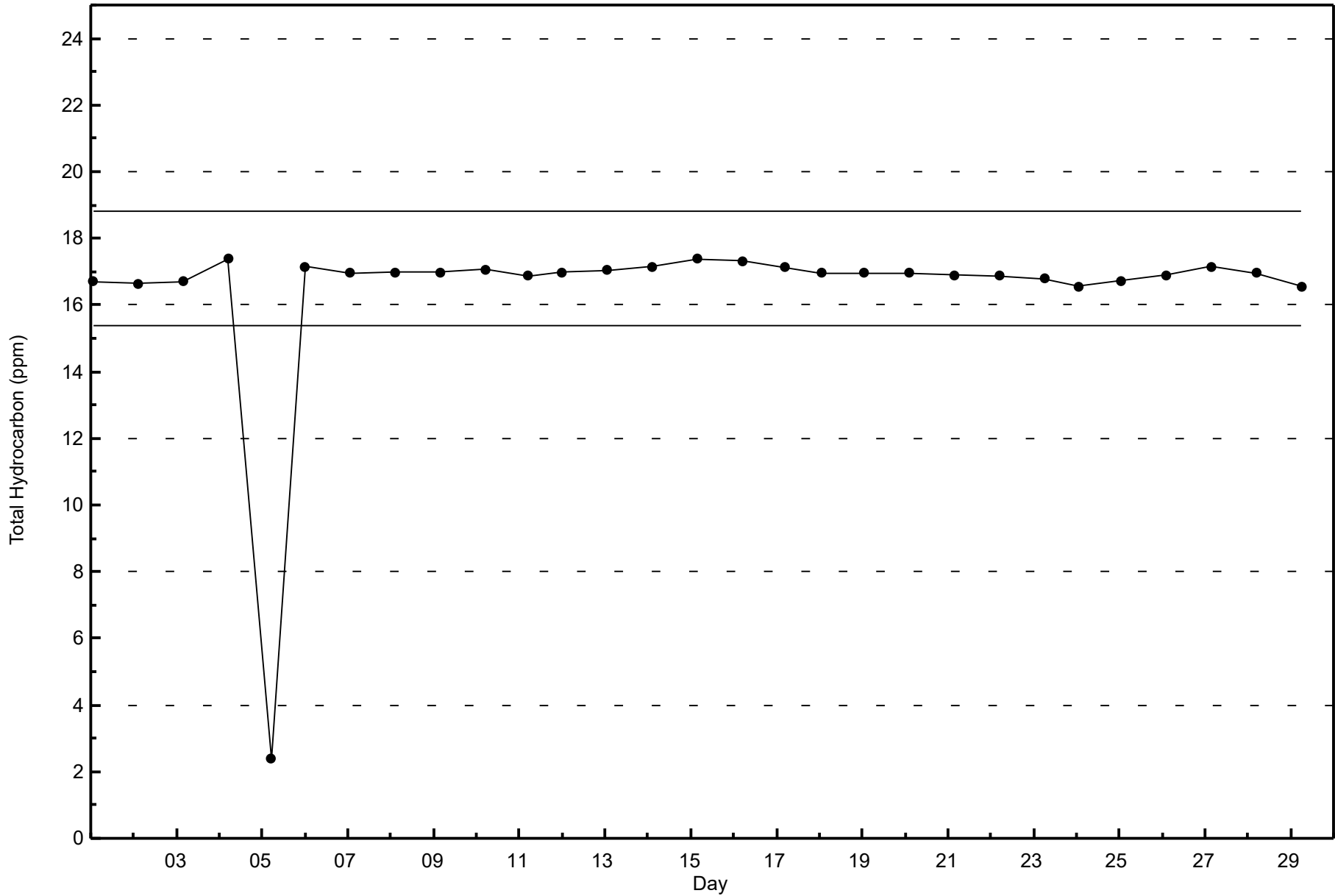


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Total Hydrocarbon (THC) - ppm
Blackgold









Wood Buffalo Environmental Association
Summary of Hour Averages

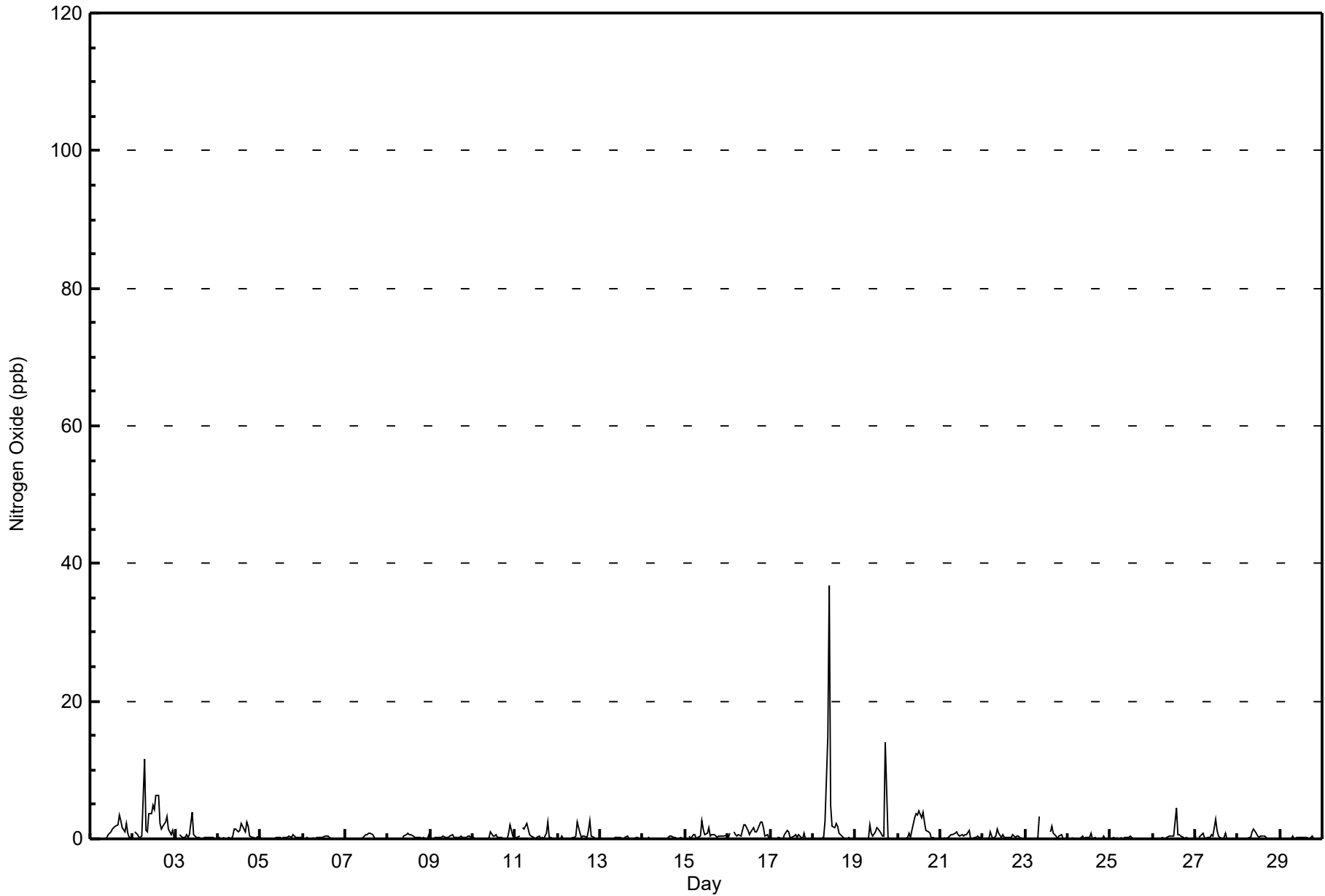
Nitrogen Oxide (NO) - ppb
Blackgold - February 2024

Maximum Value: 36.8 ppb on Feb 18 10:00		Maximum Daily Average: 3.0 ppb on Feb 18		Hours in Service: 696																							
Minimum Value: 0.0 ppb on Feb 1 03:00		Minimum Daily Average: 0.1 ppb on Feb 25		Hours of Data: 662																							
Maximum Diurnal Average: 2.2 ppb at hour 10		Minimum Diurnal Average: 0.1 ppb at hour 1		Hours of Missing Data: 34																							
Monthly Average: 0.59 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.2 Q ₃ = 0.5 P ₉₀ = 1.4 P ₉₉ = 4.8		Hours of Calibration: 34																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.3	0.6	1.1	1.4	1.7	1.8	2.0	3.5	2.6	1.6	1.0	2.2	0.8	0.2	0.3	0.9	3.5	
2-Feb	Z	1.0	0.7	0.1	0.1	0.4	11.6	1.3	1.1	3.6	3.7	4.8	4.3	6.3	6.3	2.3	1.5	1.8	2.4	3.3	1.4	0.6	1.3	0.1	2.6	11.6	
3-Feb	0.2	Z	0.6	0.5	0.1	0.2	0.6	0.3	0.7	3.9	0.6	0.4	0.3	0.3	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.4	3.9	
4-Feb	0.2	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.5	1.5	1.5	1.1	1.2	2.3	1.9	1.0	2.5	1.8	0.4	0.2	0.2	0.0	0.1	0.3	0.8	2.5	
5-Feb	0.0	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.3	0.2	0.3	0.4	0.3	0.6	0.4	0.2	0.1	0.1	0.2	0.2	0.6	
6-Feb	0.1	0.0	0.1	0.1	Z	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.4	0.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	
7-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.5	0.5	0.9	0.8	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.9	
8-Feb	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.3	0.6	0.7	0.6	0.6	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.2	0.7	
9-Feb	0.3	Z	0.1	0.2	0.2	0.2	0.1	0.4	0.1	0.3	0.2	0.3	0.7	0.3	0.1	0.2	0.2	0.4	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.7	
10-Feb	0.1	0.1	Z	0.0	0.1	0.1	0.1	0.0	0.1	0.3	0.9	0.4	0.4	0.5	0.3	0.3	0.1	0.0	0.0	0.0	0.8	2.1	0.5	0.1	0.3	2.1	
11-Feb	0.1	0.2	0.5	Z	1.5	1.5	2.2	1.5	0.5	0.4	0.1	0.0	0.2	0.4	0.0	0.2	0.0	0.7	2.4	0.2	0.2	0.0	0.0	0.0	0.6	2.4	
12-Feb	0.0	0.0	0.4	0.0	Z	0.0	0.0	0.0	0.2	0.2	0.4	2.4	0.8	0.3	0.3	0.4	0.2	1.1	2.7	0.3	0.2	0.0	0.0	0.0	0.4	2.7	
13-Feb	0.0	0.0	0.0	0.0	0.1	Z	0.0	0.0	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.5	0.1	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.1	0.5	
14-Feb	Z	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.5	0.5	0.2	0.1	0.0	0.1	0.3	0.0	0.0	0.0	0.1	0.5	
15-Feb	0.0	Z	0.5	0.1	0.7	0.7	0.0	0.2	0.4	2.6	1.4	0.7	0.8	1.5	0.4	0.5	0.6	0.3	0.2	0.5	0.4	0.3	0.5	0.7	0.6	2.6	
16-Feb	0.2	0.8	Z	1.0	0.5	0.3	0.6	0.3	1.3	1.9	2.0	1.3	0.7	1.0	1.6	0.9	1.1	1.4	2.4	2.5	1.6	0.4	0.7	0.1	1.1	2.5	
17-Feb	0.0	0.0	0.0	Z	0.2	0.2	0.0	0.0	0.6	1.2	0.9	0.3	0.3	0.4	0.5	0.2	0.6	0.2	0.0	0.7	0.0	0.0	0.0	0.0	0.3	1.2	
18-Feb	0.0	0.0	0.0	0.0	Z	0.3	0.1	2.6	14.9	36.8	4.9	1.7	1.7	2.2	1.9	0.9	0.5	0.1	0.0	0.0	0.2	0.0	0.0	0.0	3.0	36.8	
19-Feb	0.0	0.0	0.0	0.0	0.0	Z	0.0	0.0	2.1	0.9	0.5	1.0	1.6	1.4	0.9	0.4	0.4	14.1	0.2	0.0	0.1	0.0	0.0	0.0	1.0	14.1	
20-Feb	Z	0.1	0.0	0.0	0.0	0.1	0.7	0.2	1.2	3.0	3.7	3.4	4.1	3.0	3.8	2.5	1.2	0.9	0.7	0.0	0.2	0.0	0.0	0.0	1.3	4.1	
21-Feb	0.2	Z	0.2	0.1	0.2	0.3	0.7	0.7	0.8	1.0	0.6	0.5	0.5	0.4	0.5	0.5	1.3	0.0	0.0	0.2	0.3	0.5	0.1	0.1	0.4	1.3	
22-Feb	0.1	0.0	Z	0.1	1.0	0.3	0.1	0.4	1.4	0.8	0.3	0.6	0.2	0.3	0.1	0.1	0.2	0.6	0.3	0.4	0.3	0.2	0.0	0.0	0.3	1.4	
23-Feb	0.0	0.1	0.0	Z	0.0	0.0	0.1	0.2	3.2	C	C	C	C	C	1.0	1.8	0.8	0.4	0.0	0.3	0.7	0.0	0.0	0.0	0.5	3.2	
24-Feb	0.0	0.0	0.0	0.3	Z	0.0	0.0	0.0	0.3	0.0	0.2	0.2	0.2	0.7	0.0	0.2	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.1	0.7	
25-Feb	0.0	0.0	0.1	0.1	0.2	Z	0.2	0.0	0.1	0.2	0.2	0.3	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.3	
26-Feb	Z	0.0	0.1	0.0	0.0	0.3	0.0	0.1	0.2	0.3	0.5	0.4	0.4	4.5	0.7	0.5	0.4	0.3	0.1	0.1	0.0	0.0	0.1	0.0	0.4	4.5	
27-Feb	0.5	Z	0.1	0.4	0.8	0.3	0.1	0.1	0.3	0.5	0.3	2.9	1.2	0.3	0.2	0.1	0.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.9	
28-Feb	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	1.0	1.5	0.8	0.4	0.2	0.3	0.4	0.4	0.3	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.3	1.5	
29-Feb	0.0	0.1	0.0	Z	0.0	0.1	0.1	0.3	0.0	0.1	0.1	0.2	0.1	0.2	0.3	0.2	0.1	0.2	0.5	0.1	0.1	0.0	0.0	0.0	0.1	0.5	
		0.1	0.1	0.1	0.1	0.2	0.2	0.6	0.3	1.1	2.2	0.9	0.9	0.8	1.1	0.9	0.6	0.6	1.0	0.5	0.4	0.4	0.2	0.1	0.1	Diurnal Average	
		0.5	1.0	0.7	1.0	1.5	1.5	11.6	2.6	14.9	36.8	4.9	4.8	4.3	6.3	6.3	2.5	3.5	14.1	2.7	3.3	2.2	2.1	1.3	0.7	Diurnal Maximum	
Z - zerspan		C - Calibration																									



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxide (NO) - ppb
Blackgold - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Oxide (NO) - ppb
Blackgold - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	661	99.85	99.85
21 - 40	1	0.15	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxide (NO) - ppb
Blackgold - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	42	43	42	18	11	23	13	23	18	22	38	62	117	96	47	45	660
21 - 40	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
11 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	42	43	42	18	11	23	13	23	19	22	38	62	117	96	47	45	661

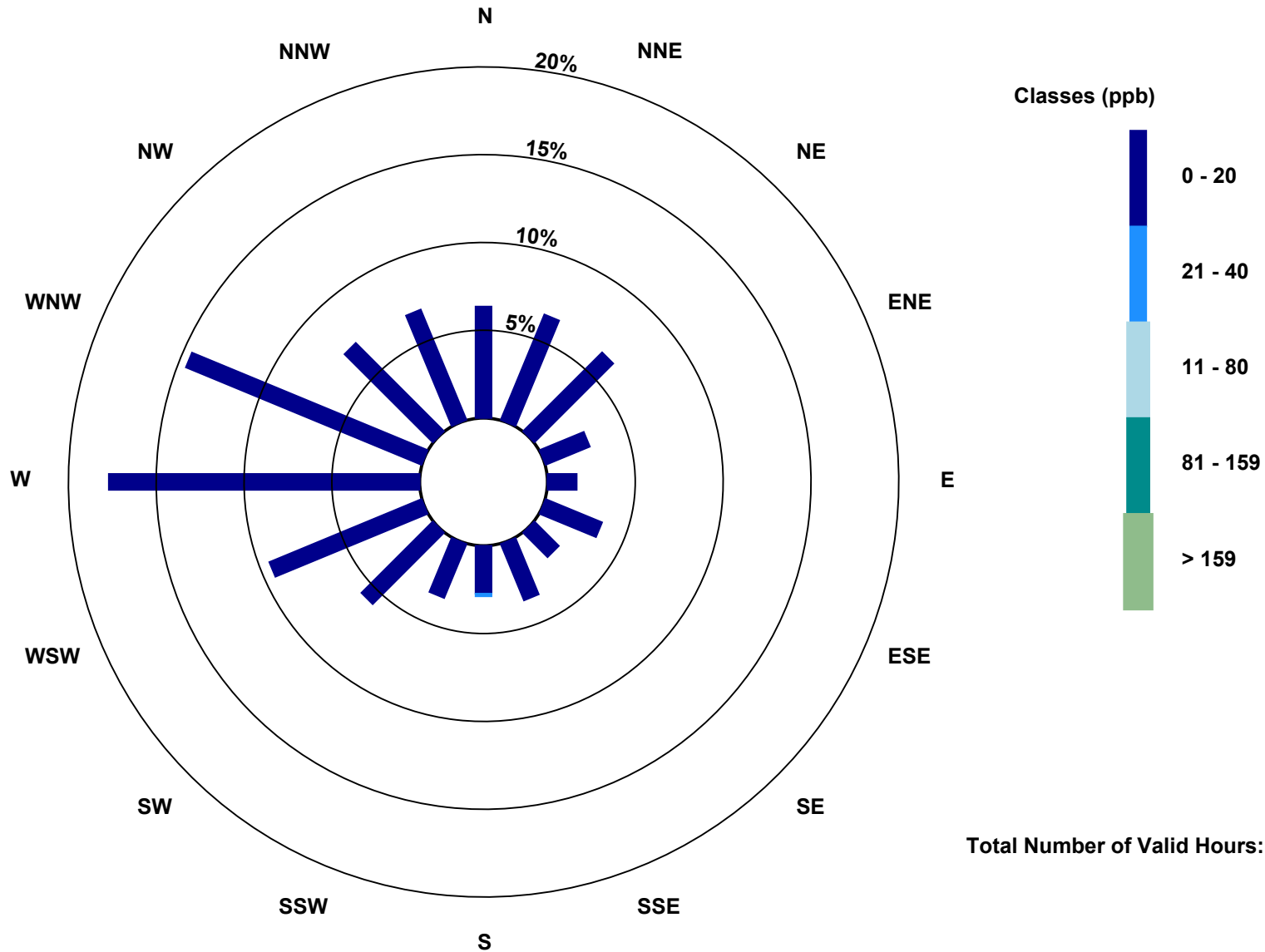
Total Number of Valid Hours: 661

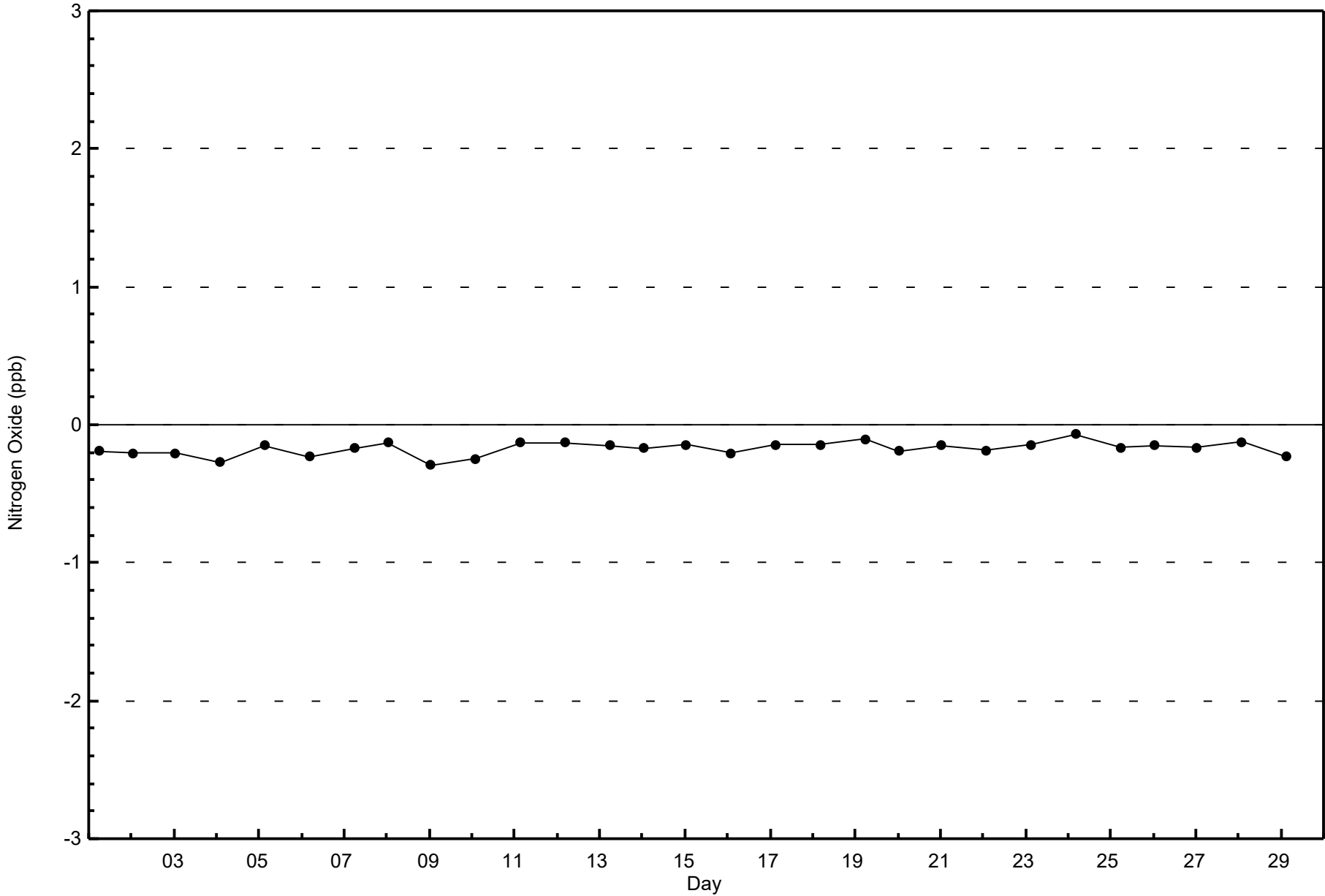
Total Number of Hours: 696

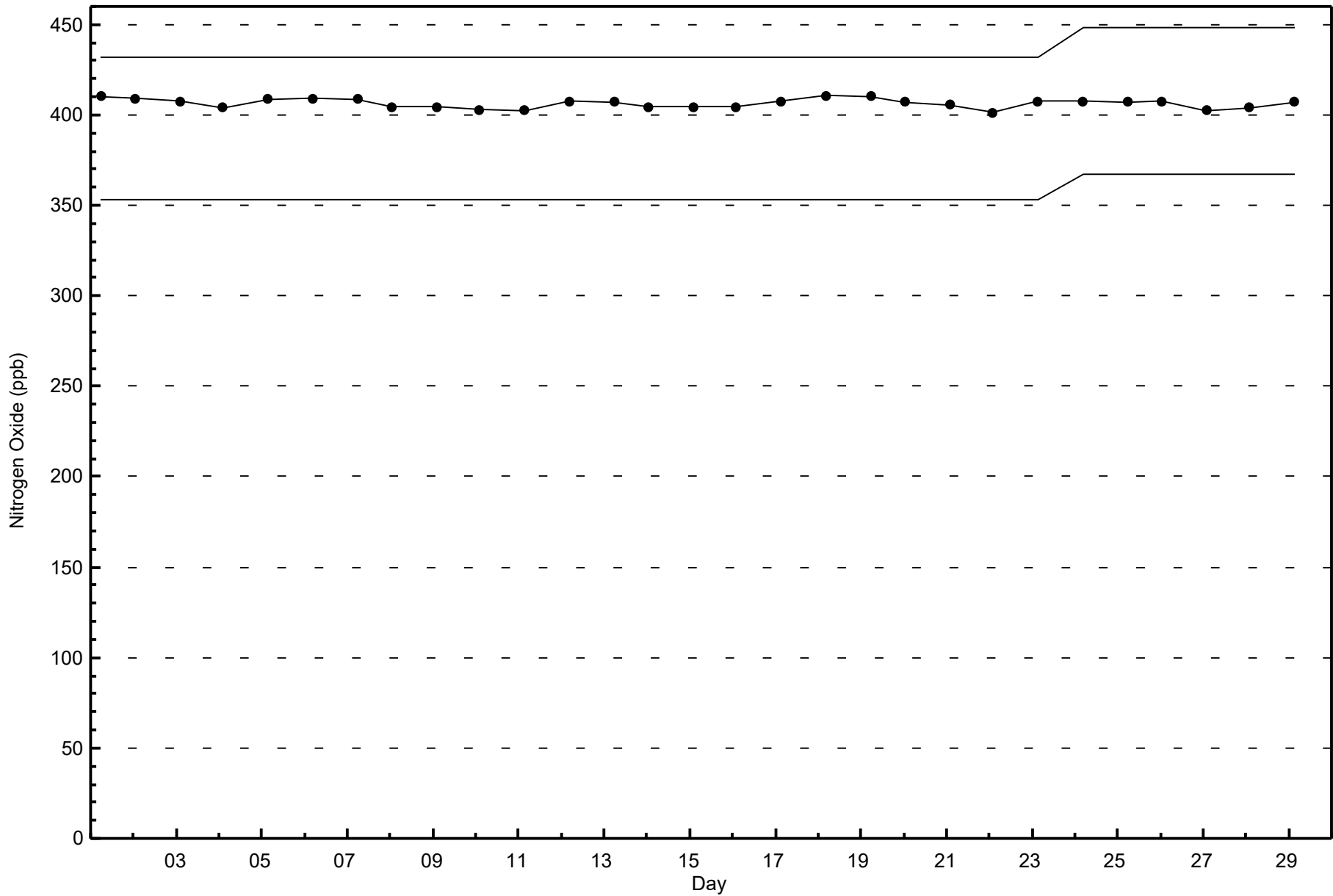


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxide (NO) - ppb
Blackgold









Wood Buffalo Environmental Association

Summary of Hour Averages

Nitrogen Dioxide (NO₂) - ppb

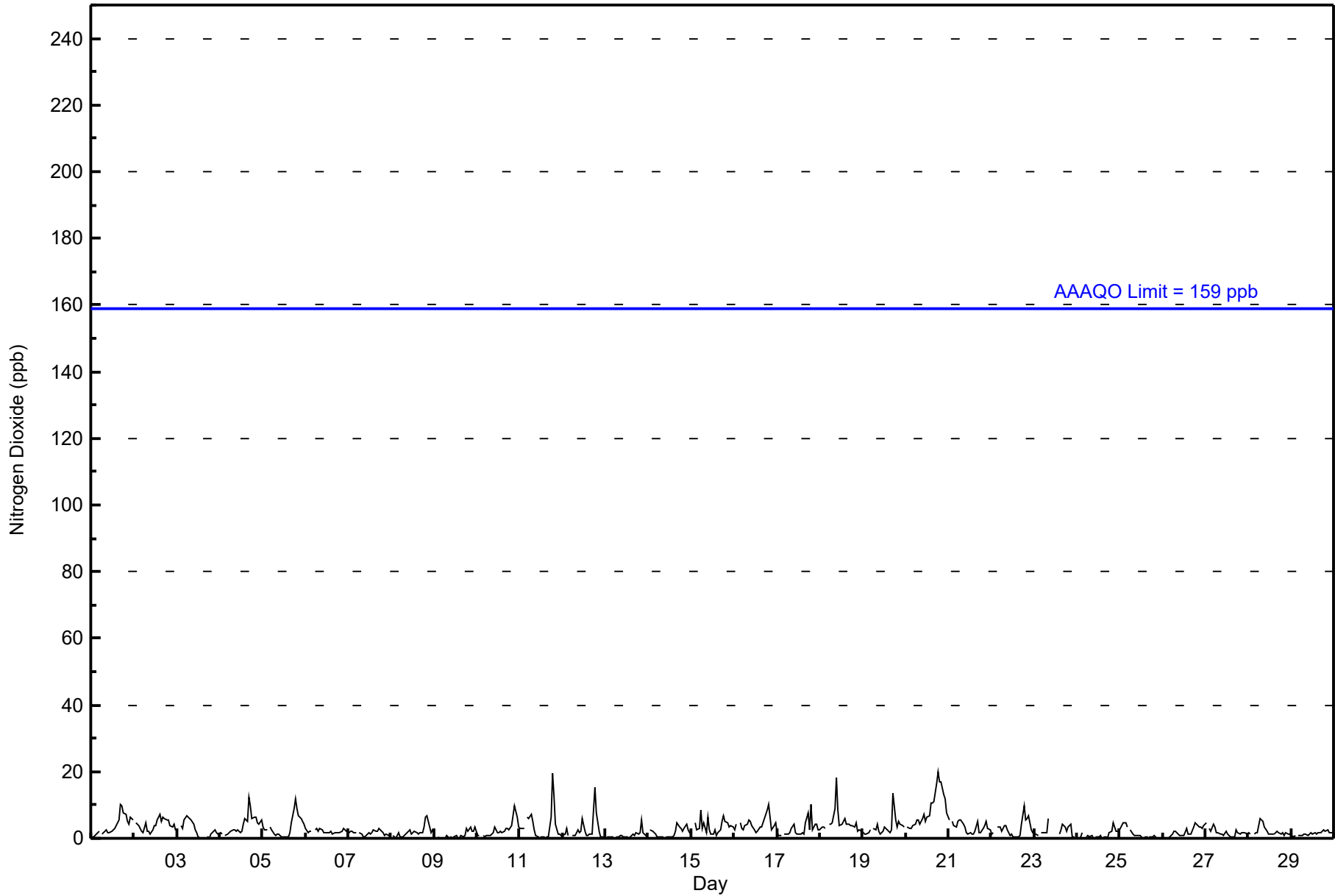
Blackgold - February 2024

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 696																	696						
Maximum Value: 20.0 ppb on Feb 20 19:00		Maximum Daily Average: 8.7 ppb on Feb 20																	Hours of Data: 662								
Minimum Value: 0.0 ppb on Feb 3 19:00		Minimum Daily Average: 0.9 ppb on Feb 13																	Hours of Missing Data: 34								
Maximum Diurnal Average: 5.4 ppb at hour 19		Minimum Diurnal Average: 1.6 ppb at hour 13																	Hours of Calibration: 34								
Monthly Average: 2.81 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.4 Q ₁ = 1.1 Median = 2.0 Q ₃ = 3.8 P ₉₀ = 5.9 P ₉₉ = 14.2																	Percent Operational Time: 100.0								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	0.4	0.4	1.0	1.4	2.3	Z	1.3	1.9	2.7	1.9	1.6	2.1	2.6	3.1	3.7	5.5	10.1	9.9	7.8	7.1	5.2	4.4	6.4	5.4	3.8	10.1	
2-Feb	Z	4.8	3.8	2.8	2.0	1.5	4.8	2.3	2.0	1.3	2.5	3.9	3.7	5.6	7.2	5.1	6.2	6.0	5.4	5.3	3.9	3.6	4.2	2.7	3.9	7.2	
3-Feb	2.7	Z	3.8	3.1	5.6	6.6	6.4	6.0	5.7	4.3	2.4	1.8	0.6	0.2	0.1	0.1	0.1	0.3	0.0	1.1	2.2	2.5	1.5	1.2	2.5	6.6	
4-Feb	1.5	1.3	Z	1.0	1.3	1.6	2.1	2.4	2.6	2.0	2.4	1.7	2.2	4.2	5.8	5.0	12.2	9.9	6.1	6.3	6.3	4.7	4.4	5.5	4.0	12.2	
5-Feb	3.6	2.6	2.5	Z	3.5	2.5	1.3	0.8	1.1	1.2	0.6	0.5	0.3	0.5	0.6	1.5	4.8	9.0	12.0	8.7	6.7	6.0	5.0	4.4	3.5	12.0	
6-Feb	2.8	1.7	2.1	2.1	Z	2.4	3.1	2.3	2.8	2.4	1.8	1.5	1.6	1.6	2.0	1.2	1.9	1.6	1.5	1.5	2.3	2.9	2.6	2.0	2.1	3.1	
7-Feb	1.8	2.0	2.1	1.9	1.5	Z	1.7	1.3	0.4	0.3	0.8	1.5	1.3	1.8	2.6	2.2	2.2	2.8	2.4	1.8	0.9	1.1	0.9	1.1	1.6	2.8	
8-Feb	Z	0.9	0.2	0.9	1.7	0.4	0.3	1.0	1.1	1.8	2.5	1.3	1.5	2.3	1.7	1.4	1.6	1.6	3.2	6.5	6.8	3.4	1.5	2.5	2.0	6.8	
9-Feb	1.6	Z	0.4	0.0	0.1	0.0	0.0	0.9	0.1	0.3	0.2	0.3	1.0	0.2	0.0	0.7	0.4	0.9	2.9	2.0	3.5	2.3	2.1	3.2	1.0	3.5	
10-Feb	0.8	0.9	Z	0.7	0.6	1.0	1.0	0.9	1.1	1.8	3.6	1.9	1.7	2.2	1.9	2.2	2.9	3.1	2.7	4.0	6.8	9.8	6.4	3.5	2.7	9.8	
11-Feb	2.9	2.8	3.0	Z	6.2	5.9	7.3	5.1	2.7	0.9	0.4	0.2	0.4	0.6	0.2	0.3	0.4	6.2	19.3	12.8	4.4	1.2	1.2	0.8	3.7	19.3	
12-Feb	0.8	1.2	3.0	1.0	Z	0.7	0.7	0.7	2.4	1.5	2.3	6.1	2.3	1.0	1.0	1.1	1.1	8.4	15.1	7.8	2.0	0.4	0.5	0.4	2.7	15.1	
13-Feb	0.2	0.3	0.6	0.4	0.4	Z	0.5	0.6	0.8	0.7	0.3	0.4	0.3	0.2	0.6	1.1	0.7	1.8	1.4	1.7	5.5	1.7	0.7	0.9	0.9	5.5	
14-Feb	Z	2.4	2.3	1.8	1.4	0.4	0.4	0.6	0.5	0.2	0.4	0.3	0.5	0.5	0.7	2.0	4.6	3.2	2.8	2.0	3.1	4.1	2.4	1.6	1.7	4.6	
15-Feb	1.4	Z	4.5	2.4	3.1	8.3	2.8	4.6	1.8	6.2	2.7	1.2	1.4	2.6	1.0	1.7	2.5	4.9	6.6	5.0	4.5	3.2	3.8	3.5	3.5	8.3	
16-Feb	2.5	4.4	Z	4.5	2.9	2.5	3.8	4.4	5.5	5.1	4.0	2.5	1.7	2.2	3.6	3.2	4.5	6.1	8.5	10.0	6.4	2.7	4.0	4.7	4.3	10.0	
17-Feb	1.7	1.0	0.9	Z	1.3	1.4	1.3	1.6	2.8	4.3	1.9	1.1	1.1	1.3	1.9	1.3	4.8	7.8	2.7	10.3	2.6	4.1	4.2	2.5	2.8	10.3	
18-Feb	2.5	3.3	3.3	2.8	Z	4.1	4.1	4.7	8.8	18.3	8.6	3.9	4.2	5.2	5.8	4.2	4.4	4.0	3.9	3.3	4.5	2.3	2.7	2.3	4.8	18.3	
19-Feb	1.5	1.4	1.2	1.9	2.6	Z	3.0	2.6	4.4	2.2	1.2	2.1	3.2	3.0	2.2	1.6	2.6	13.7	5.6	3.4	4.9	4.2	3.9	3.5	3.3	13.7	
20-Feb	Z	3.3	3.0	3.0	4.0	4.1	5.6	5.6	4.2	6.1	7.0	5.1	6.2	6.9	10.5	10.6	11.1	16.7	20.0	16.9	17.1	13.2	12.0	7.7	8.7	20.0	
21-Feb	5.5	Z	5.2	3.7	3.4	5.2	5.3	5.5	4.1	3.3	1.8	1.3	1.5	1.2	1.4	2.0	4.9	1.5	1.9	3.0	3.7	5.1	2.9	2.4	3.3	5.5	
22-Feb	1.3	1.6	Z	3.6	3.2	3.6	2.2	4.0	3.8	2.6	0.8	1.1	0.5	0.5	0.6	0.4	0.7	4.1	9.7	5.6	5.9	6.8	2.5	1.6	2.9	9.7	
23-Feb	1.7	1.3	0.9	Z	1.6	1.6	1.5	1.6	5.8	C	C	C	C	C	1.3	2.4	4.4	3.3	2.3	3.3	4.1	0.5	0.3	0.0	2.1	5.8	
24-Feb	0.0	0.0	0.4	1.5	Z	0.3	0.7	0.5	0.8	0.2	0.2	0.3	0.3	0.7	0.0	0.5	0.5	0.2	1.8	2.3	4.7	3.3	2.3	2.3	1.0	4.7	
25-Feb	2.8	4.0	4.6	4.5	3.3	Z	2.6	1.2	0.9	0.9	0.7	0.7	0.4	0.2	0.3	0.3	0.2	0.3	0.4	1.0	0.4	0.1	0.1	0.1	1.3	4.6	
26-Feb	Z	0.2	0.2	0.2	0.3	1.3	2.0	2.2	1.5	1.0	0.9	0.7	0.7	2.9	1.4	1.3	1.4	3.2	4.5	4.2	3.2	3.2	2.9	3.8	1.9	4.5	
27-Feb	4.8	Z	3.1	2.3	4.4	3.2	1.9	1.5	1.3	1.2	0.8	2.1	1.3	0.7	0.5	0.3	0.5	2.6	1.7	1.1	1.8	1.6	1.5	1.2	1.8	4.8	
28-Feb	1.8	1.4	Z	1.4	1.5	1.8	5.9	5.5	4.9	3.6	2.1	1.3	1.1	1.1	1.4	1.6	2.1	1.8	1.4	1.6	0.9	1.8	1.1	1.2	2.1	5.9	
29-Feb	0.7	0.6	0.8	Z	0.9	0.7	0.8	1.1	1.3	1.0	1.1	1.5	1.4	1.5	1.4	1.5	1.6	2.1	2.5	2.2	2.4	1.8	1.7	1.9	1.4	2.5	
		2.0	1.8	2.2	2.0	2.4	2.5	2.6	2.5	2.7	2.7	2.0	1.7	1.6	1.9	2.1	2.1	3.3	4.7	5.4	4.9	4.4	3.5	3.0	2.5	Diurnal Average	
		5.5	4.8	5.2	4.5	6.2	8.3	7.3	6.0	8.8	18.3	8.6	6.1	6.2	6.9	10.5	10.6	12.2	16.7	20.0	16.9	17.1	13.2	12.0	7.7	Diurnal Maximum	
Z - zerspan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 159 ppb																									



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Blackgold - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Blackgold - February 2024**

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	662	100.00	100.00
21 - 40	0	0.00	100.00
41 - 80	0	0.00	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Dioxide (NO₂) - ppb
Blackgold - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	42	43	42	18	11	23	13	23	19	22	38	62	117	96	47	45	661
21 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	42	43	42	18	11	23	13	23	19	22	38	62	117	96	47	45	661

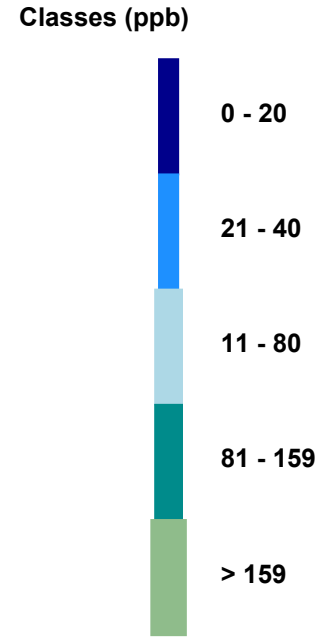
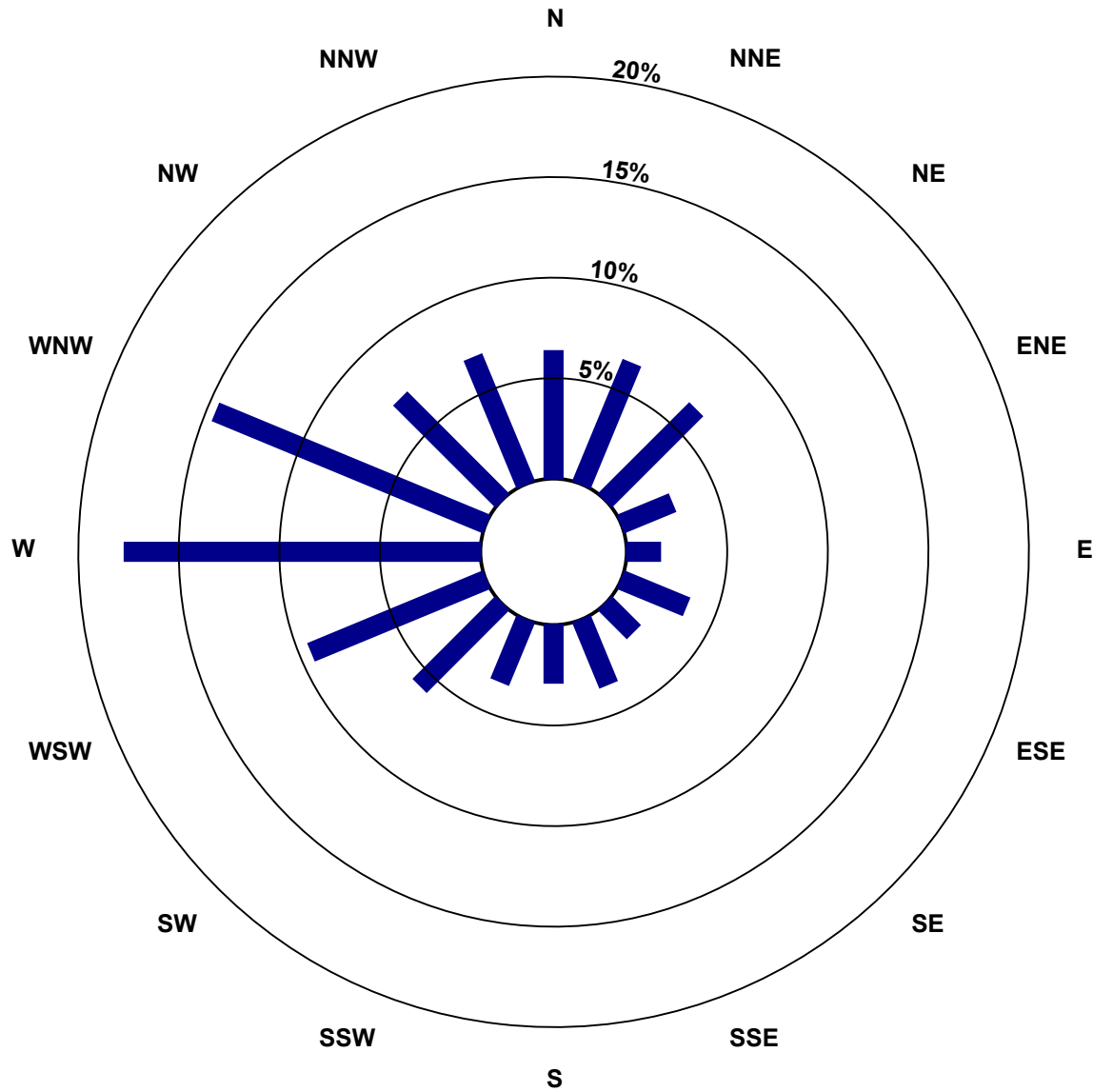
Total Number of Valid Hours: 661

Total Number of Hours: 696

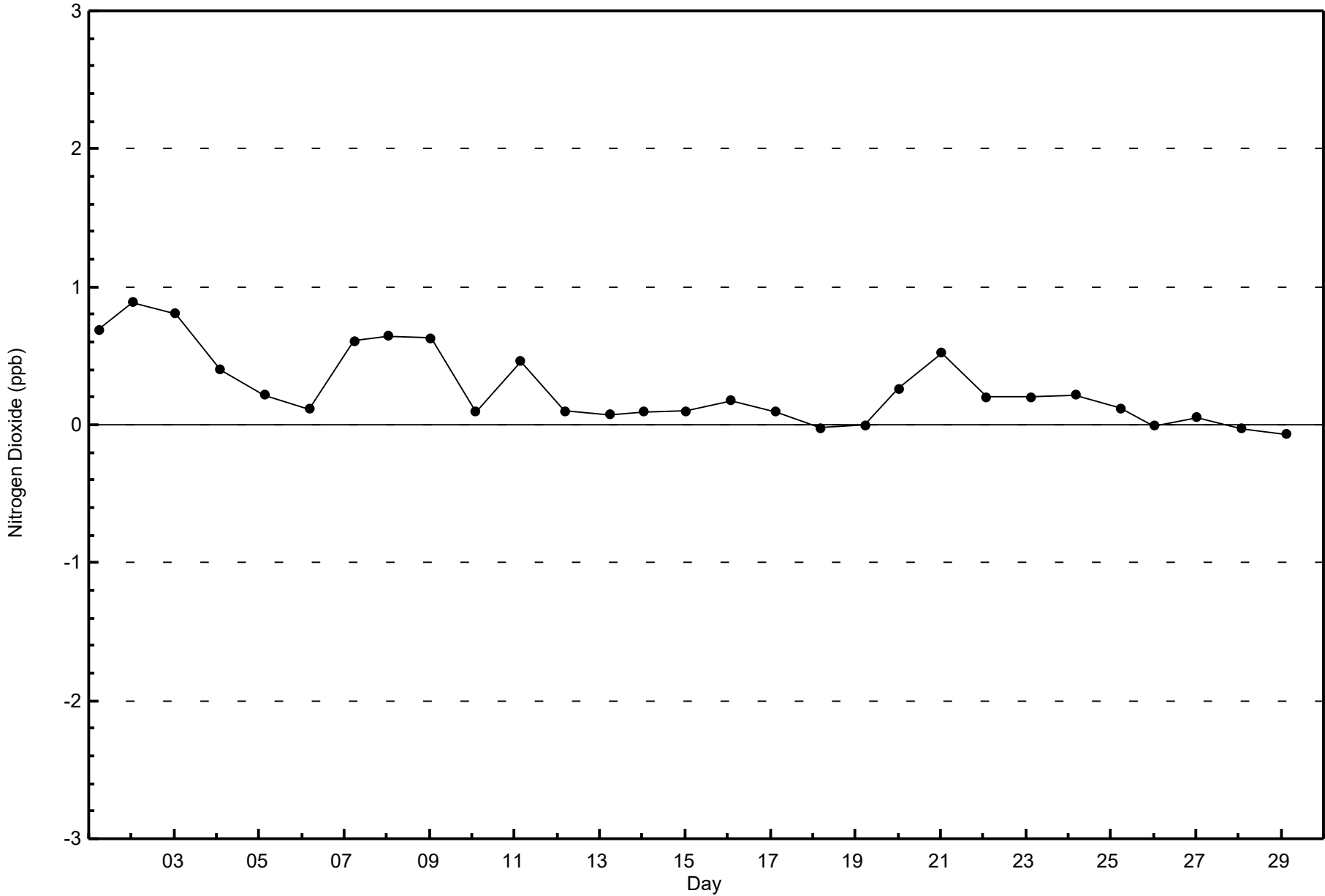


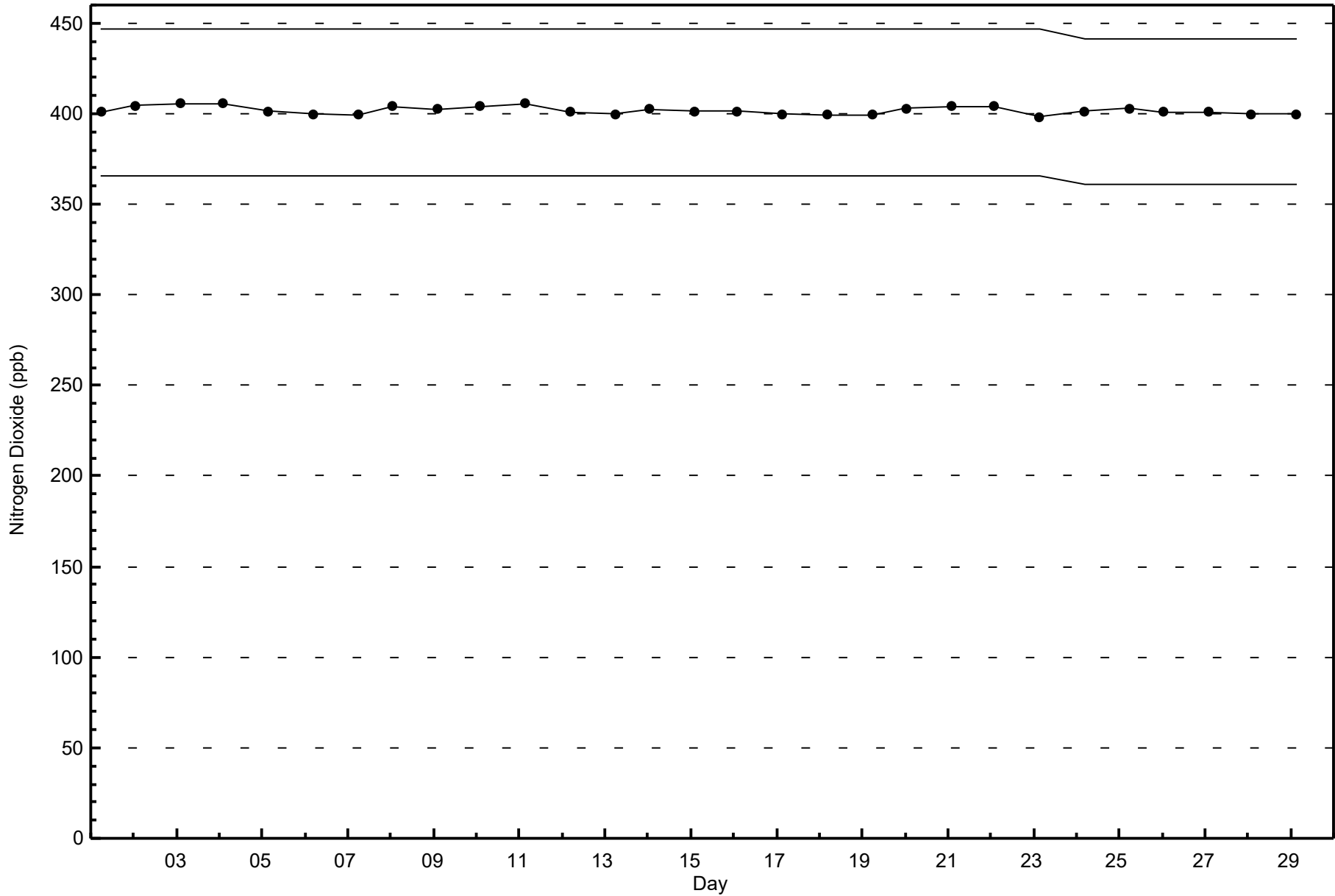
Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Dioxide (NO₂) - ppb
Blackgold



Total Number of Valid Hours: 661







Wood Buffalo Environmental Association
Summary of Hour Averages

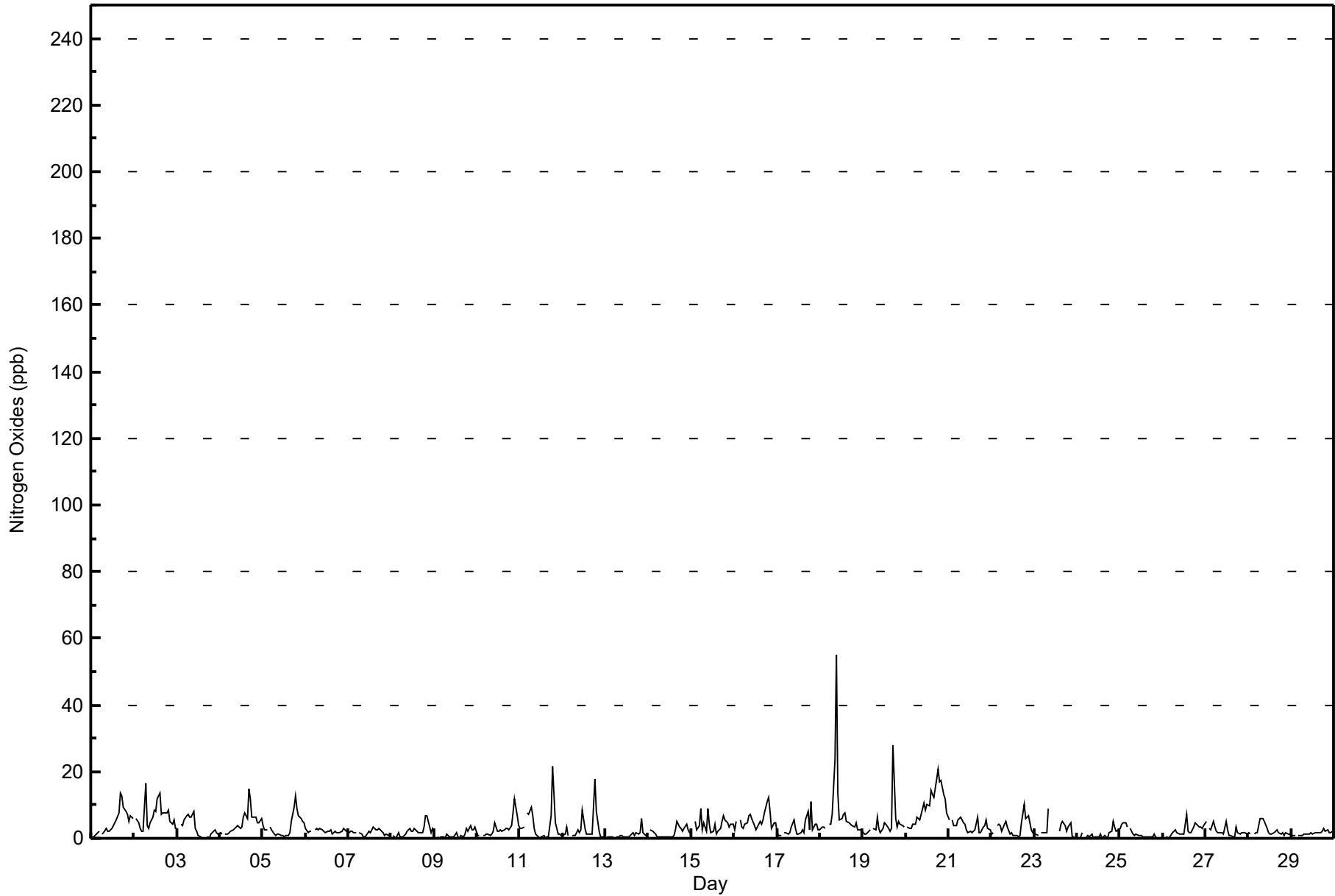
Nitrogen Oxides (NO_x) - ppb
Blackgold - February 2024

Maximum Value: 55.1 ppb on Feb 18 10:00																				Maximum Daily Average: 9.9 ppb on Feb 20					Hours in Service: 696	
Minimum Value: 0.0 ppb on Feb 24 00:00																				Minimum Daily Average: 1.0 ppb on Feb 13					Hours of Data: 662	
Maximum Diurnal Average: 5.9 ppb at hour 19																				Minimum Diurnal Average: 1.9 ppb at hour 2					Hours of Missing Data: 34	
Monthly Average: 3.39 ppb																				Percentiles: P ₁ = 0.1 P ₁₀ = 0.5 Q ₁ = 1.2 Median = 2.3 Q ₃ = 4.4 P ₉₀ = 7.3 P ₉₉ = 17.4					Hours of Calibration: 34	
																									Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	0.4	0.4	1.0	1.4	2.3	Z	1.3	1.9	2.8	2.2	2.2	3.2	4.0	4.8	5.5	7.5	13.6	12.5	9.4	8.1	7.4	5.2	6.6	5.7	4.8	13.6
2-Feb	Z	5.8	4.5	2.9	2.1	1.9	16.4	3.6	3.1	4.9	6.2	8.7	8.0	11.9	13.5	7.4	7.7	7.8	7.8	8.6	5.3	4.2	5.5	2.8	6.5	16.4
3-Feb	2.9	Z	4.4	3.6	5.7	6.8	7.0	6.3	6.4	8.2	3.0	2.2	0.9	0.5	0.1	0.2	0.2	0.5	0.1	1.2	2.3	2.6	1.6	1.3	3.0	8.2
4-Feb	1.7	1.4	Z	1.1	1.4	1.7	2.2	2.5	3.1	3.5	3.9	2.8	3.4	6.5	7.7	6.0	14.7	11.7	6.5	6.5	4.7	4.5	5.8	4.8	14.7	
5-Feb	3.6	2.6	2.5	Z	3.6	2.6	1.3	0.8	1.1	1.3	0.7	0.7	0.3	0.8	0.8	1.8	5.2	9.3	12.6	9.1	6.9	6.1	5.1	4.6	3.6	12.6
6-Feb	2.9	1.7	2.2	2.2	Z	2.5	3.1	2.4	3.0	2.6	2.0	1.7	2.0	2.1	2.4	1.3	1.9	1.6	1.5	1.5	2.3	2.9	2.6	2.0	2.2	3.1
7-Feb	1.8	2.0	2.1	1.9	1.5	Z	1.7	1.3	0.4	0.3	1.0	2.0	1.8	2.7	3.4	2.7	2.5	2.9	2.5	1.8	0.9	1.1	0.9	1.1	1.8	3.4
8-Feb	Z	0.9	0.2	0.9	1.8	0.4	0.3	1.0	1.2	2.1	3.1	2.0	2.1	2.9	2.1	1.6	1.8	1.7	3.3	6.6	6.9	3.5	1.6	3.1	2.2	6.9
9-Feb	1.9	Z	0.5	0.2	0.3	0.2	0.1	1.3	0.2	0.6	0.4	0.6	1.7	0.5	0.1	0.9	0.6	1.3	3.1	2.2	3.7	2.6	2.4	3.4	1.2	3.7
10-Feb	0.9	1.0	Z	0.7	0.7	1.1	1.1	0.9	1.2	2.1	4.5	2.3	2.1	2.7	2.2	2.5	3.0	3.1	2.7	4.0	7.6	11.9	6.9	3.6	3.0	11.9
11-Feb	3.0	3.0	3.5	Z	7.7	7.4	9.5	6.6	3.2	1.3	0.5	0.2	0.6	1.0	0.2	0.5	0.4	6.9	21.7	13.0	4.6	1.2	1.2	0.8	4.3	21.7
12-Feb	0.8	1.2	3.4	1.0	Z	0.7	0.7	0.7	2.6	1.7	2.7	8.5	3.1	1.3	1.3	1.5	1.3	9.5	17.8	8.1	2.2	0.4	0.5	0.4	3.1	17.8
13-Feb	0.2	0.3	0.6	0.4	0.5	Z	0.5	0.6	1.0	0.9	0.5	0.5	0.4	0.3	0.9	1.6	0.8	1.8	1.4	1.7	5.8	1.9	0.7	0.9	1.0	5.8
14-Feb	Z	2.4	2.3	1.9	1.5	0.4	0.4	0.6	0.5	0.2	0.4	0.4	0.5	0.6	0.9	2.5	5.1	3.4	2.9	2.0	3.2	4.4	2.4	1.6	1.8	5.1
15-Feb	1.4	Z	5.0	2.5	3.8	9.0	2.8	4.8	2.2	8.8	4.1	1.9	2.2	4.1	1.4	2.2	3.1	5.2	6.8	5.5	4.9	3.5	4.3	4.2	4.1	9.0
16-Feb	2.7	5.2	Z	5.5	3.4	2.8	4.4	4.7	6.8	7.0	6.0	3.8	2.4	3.2	5.2	4.1	5.6	7.5	10.9	12.5	8.0	3.1	4.7	4.8	5.4	12.5
17-Feb	1.7	1.0	0.9	Z	1.5	1.6	1.3	1.6	3.4	5.5	2.8	1.4	1.4	1.7	2.4	1.5	5.4	8.0	2.7	11.0	2.6	4.1	4.2	2.5	3.1	11.0
18-Feb	2.5	3.3	3.3	2.8	Z	4.4	4.2	7.3	23.7	55.1	13.5	5.6	5.9	7.4	7.7	5.1	4.9	4.1	3.9	3.3	4.7	2.3	2.7	2.3	7.8	55.1
19-Feb	1.5	1.4	1.2	1.9	2.6	Z	3.0	2.6	6.5	3.1	1.7	3.1	4.8	4.4	3.1	2.0	3.0	27.8	5.8	3.4	5.0	4.2	3.9	3.5	4.3	27.8
20-Feb	Z	3.4	3.0	3.0	4.0	4.2	6.3	5.8	5.4	9.1	10.7	8.5	10.3	9.9	14.3	13.1	12.3	17.6	20.7	16.9	17.3	13.2	12.0	7.7	9.9	20.7
21-Feb	5.7	Z	5.4	3.8	3.6	5.5	6.0	6.2	4.9	4.3	2.4	1.8	2.0	1.6	1.9	2.5	6.2	1.5	1.9	3.2	4.0	5.6	3.0	2.5	3.7	6.2
22-Feb	1.4	1.6	Z	3.7	4.2	3.9	2.3	4.4	5.2	3.4	1.1	1.7	0.7	0.8	0.7	0.5	0.9	4.7	10.0	6.0	6.2	7.0	2.5	1.6	3.2	10.0
23-Feb	1.7	1.4	0.9	Z	1.6	1.6	1.6	1.8	9.0	C	C	C	C	C	2.3	4.2	5.2	3.7	2.3	3.6	4.8	0.5	0.3	0.0	2.6	9.0
24-Feb	0.0	0.0	0.4	1.8	Z	0.3	0.7	0.5	1.1	0.2	0.4	0.5	0.5	1.4	0.0	0.7	0.5	0.2	1.9	2.3	5.0	3.3	2.3	2.3	1.1	5.0
25-Feb	2.8	4.0	4.7	4.6	3.5	Z	2.8	1.2	1.0	1.1	0.9	1.0	0.6	0.2	0.3	0.4	0.2	0.3	0.4	1.1	0.4	0.1	0.1	0.1	1.4	4.7
26-Feb	Z	0.2	0.3	0.2	0.3	1.6	2.0	2.3	1.7	1.3	1.4	1.1	1.1	7.4	2.1	1.8	1.8	3.5	4.6	4.3	3.2	3.2	3.0	3.8	2.3	7.4
27-Feb	5.3	Z	3.2	2.7	5.2	3.5	2.0	1.6	1.6	1.7	1.1	5.0	2.5	1.0	0.7	0.4	0.6	3.4	1.7	1.1	1.8	1.6	1.5	1.2	2.2	5.3
28-Feb	1.8	1.4	Z	1.4	1.5	1.8	6.0	5.7	5.9	5.1	2.9	1.7	1.3	1.4	1.8	2.0	2.4	1.9	1.4	1.6	1.0	1.8	1.2	1.2	2.4	6.0
29-Feb	0.7	0.7	0.8	Z	0.9	0.8	0.9	1.4	1.3	1.1	1.2	1.7	1.5	1.7	1.7	1.7	1.7	2.3	3.0	2.3	2.5	1.8	1.7	1.9	1.5	3.0
																								Diurnal Average		
																								Diurnal Maximum		
2.0 1.9 2.3 2.2 2.6 2.8 3.2 2.8 3.8 4.9 2.9 2.7 2.4 3.0 3.0 2.8 3.9 5.7 5.9 5.3 4.7 3.7 3.1 2.7																										
5.7 5.8 5.4 5.5 7.7 9.0 16.4 7.3 23.7 55.1 13.5 8.7 10.3 11.9 14.3 13.1 14.7 27.8 21.7 16.9 17.3 13.2 12.0 7.7																										
Z - zerospan C - Calibration																										



Wood Buffalo Environmental Association
Hourly Averages

Nitrogen Oxides (NO_x) - ppb
Blackgold - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Nitrogen Oxides (NO_x) - ppb
Blackgold - February 2024

Concentration Ranges (ppb)	Number of Hours	%	Cumulative %
0 - 20	657	99.24	99.24
21 - 40	4	0.60	99.85
41 - 80	1	0.15	100.00
81 - 159	0	0.00	100.00
> 159	0	0.00	100.00

Total Number of Valid Hours: 662

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Nitrogen Oxides (NO_x) - ppb
Blackgold - February 2024**

Concentration Ranges (ppb)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 20	42	43	42	18	11	23	13	23	18	22	37	62	117	95	45	45	656
21 - 40	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	4
41 - 80	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
81 - 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	42	43	42	18	11	23	13	23	19	22	38	62	117	96	47	45	661

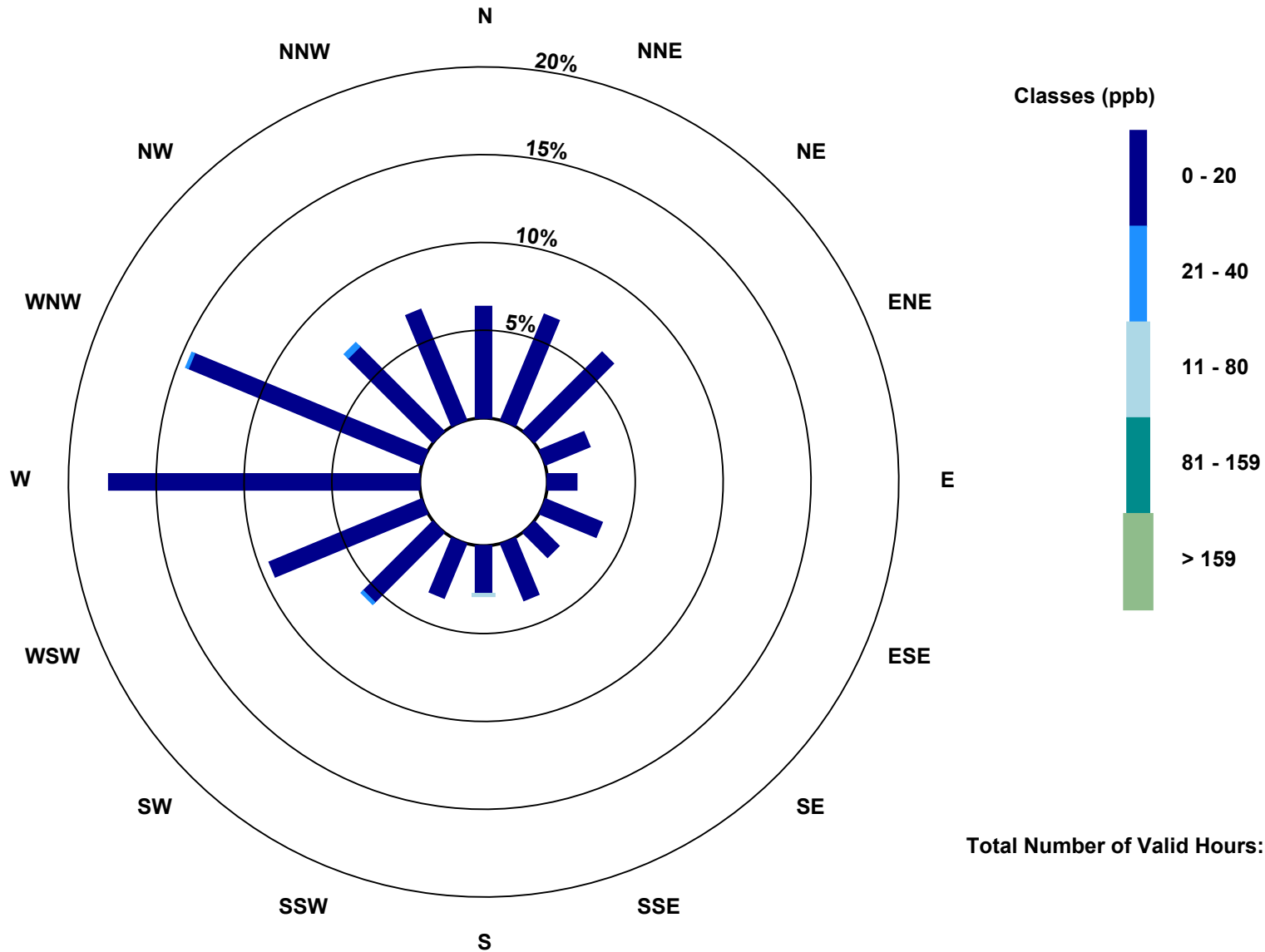
Total Number of Valid Hours: 661

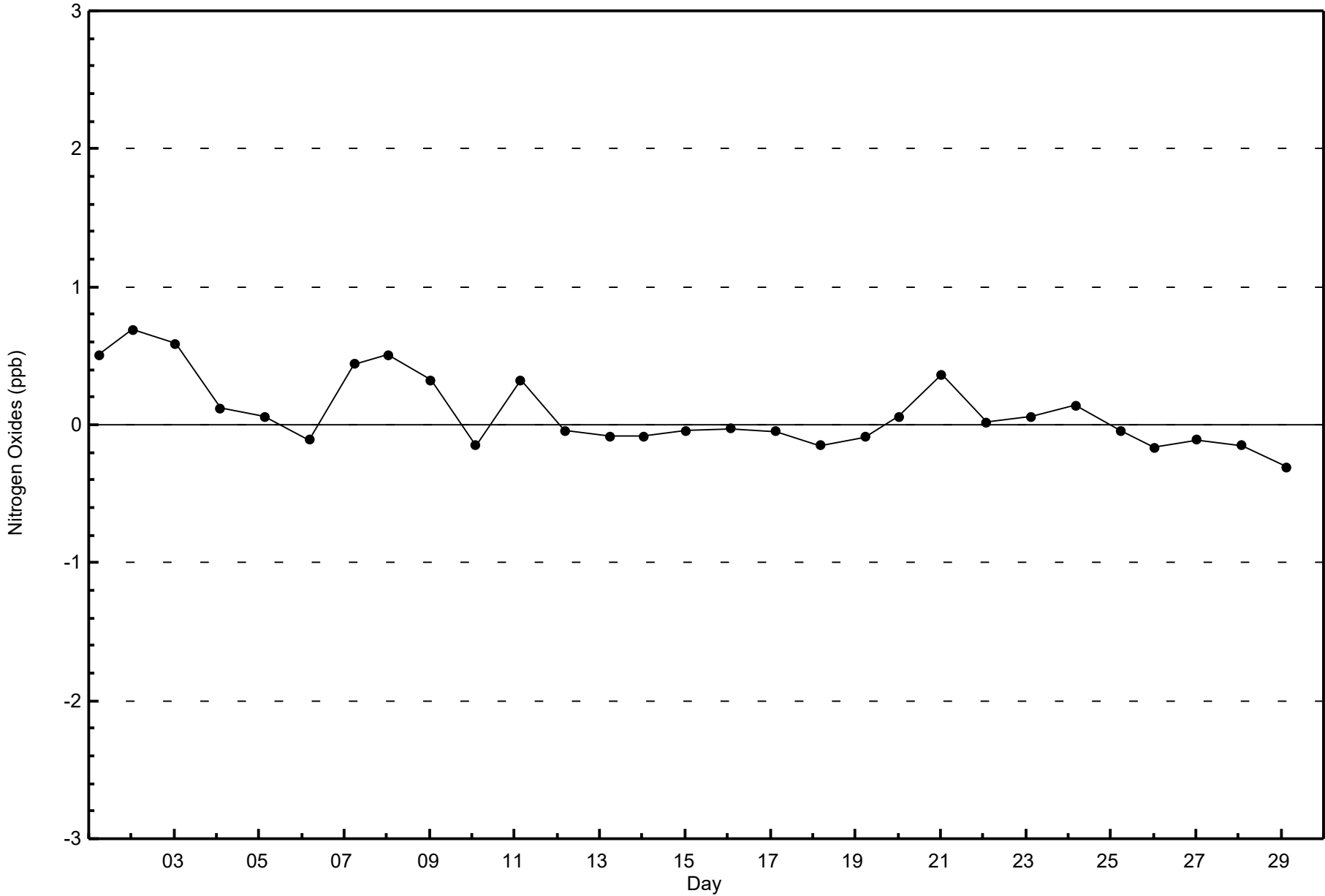
Total Number of Hours: 696

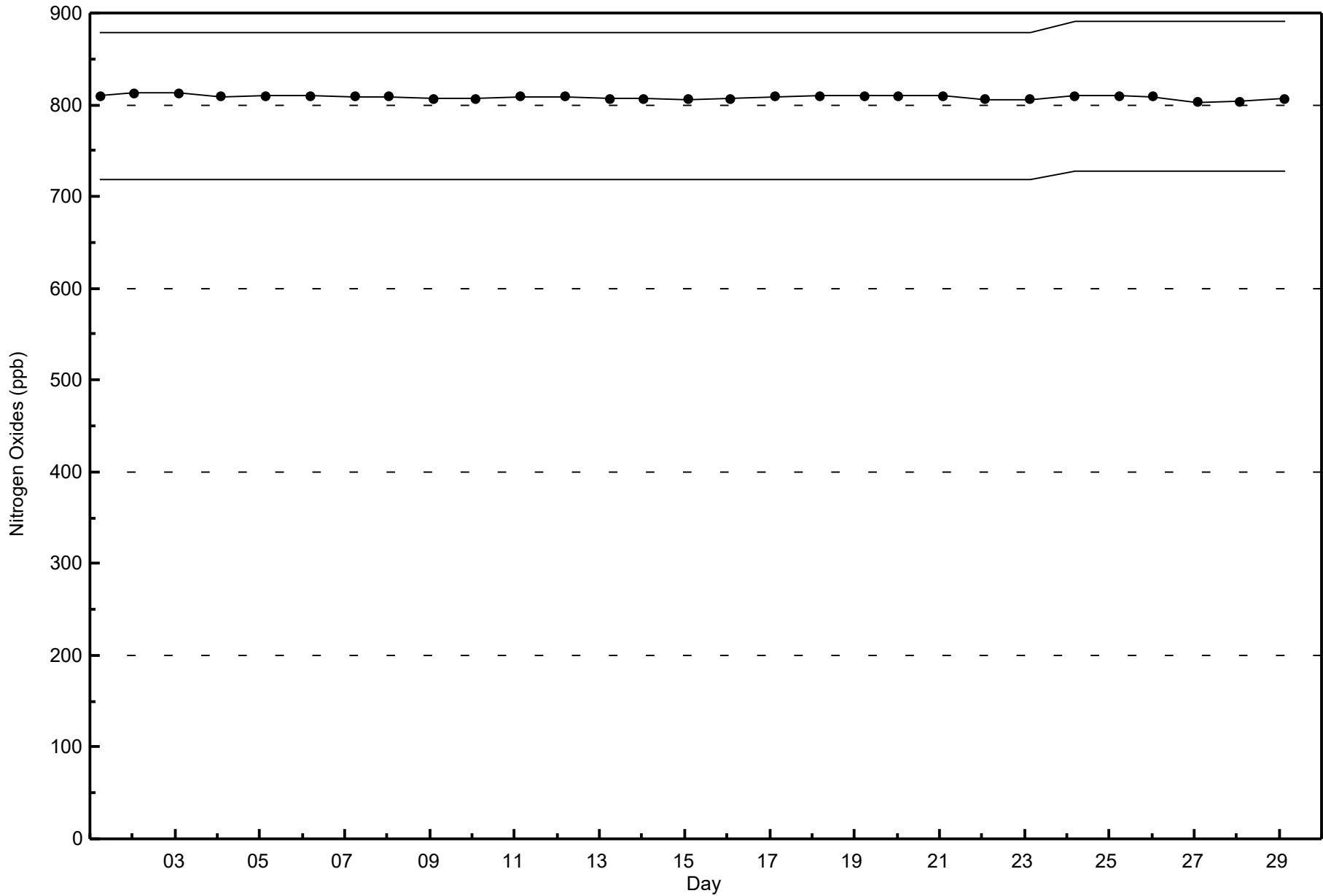


Wood Buffalo Environmental Association
Wind Rose Feb 2024

Nitrogen Oxides (NO_x) - ppb
Blackgold









Wood Buffalo Environmental Association
Summary of Hour Averages

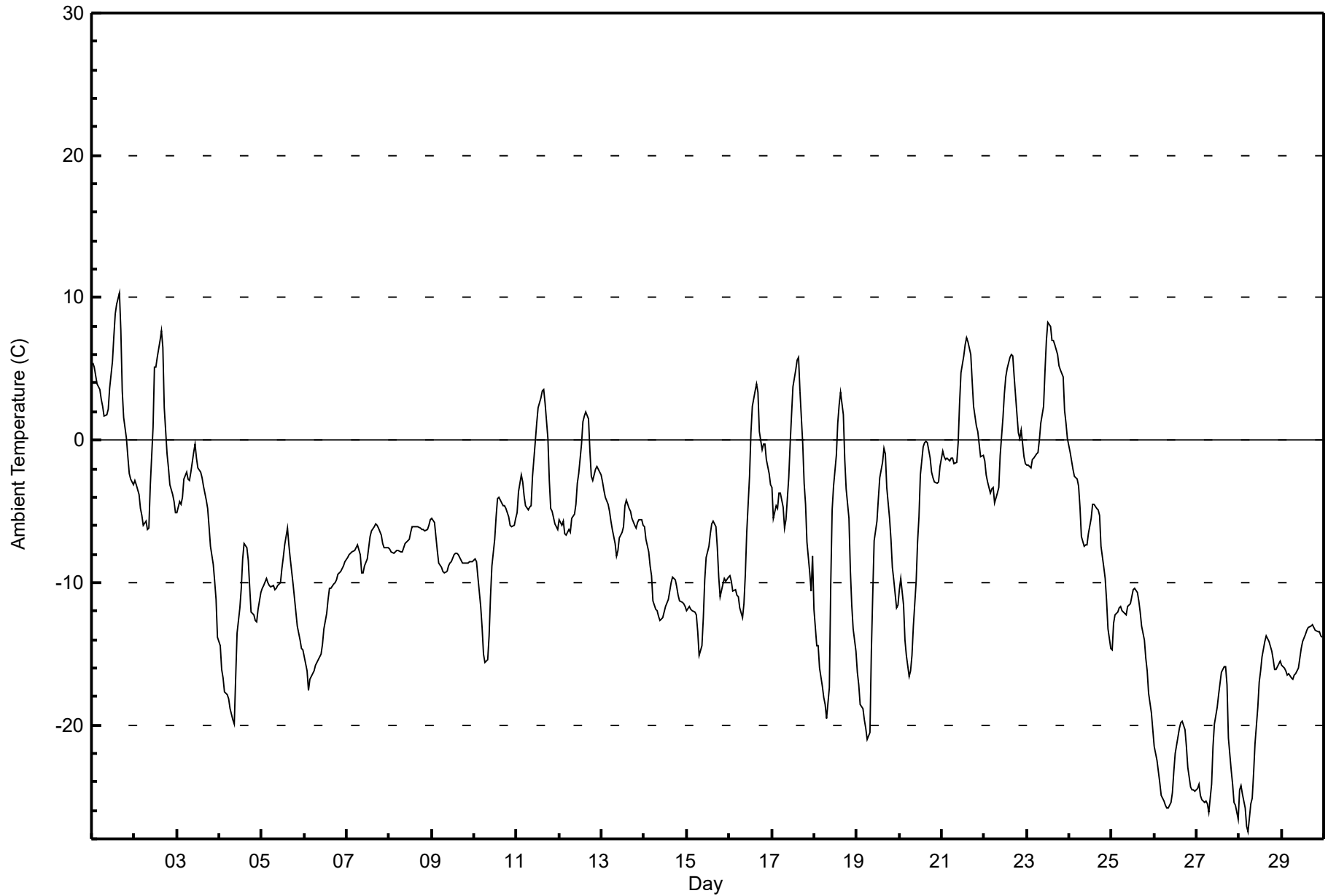
Ambient Temperature (AT) - C
Blackgold - February 2024

Maximum Value: 10.3 C on Feb 1 16:00 Maximum Daily Average: 3.4 C on Feb 1																					Hours in Service: 696 Hours of Data: 696						
Minimum Value: -27.5 C on Feb 28 06:00 Minimum Daily Average: -23.3 C on Feb 26 Maximum Diurnal Average: -3.3 C at hour 16 Minimum Diurnal Average: -11.4 C at hour 8 Monthly Average: -7.93 C Percentiles: P ₁ = -25.7 P ₁₀ = -17.8 Q ₁ = -12.4 Median = -7.5 Q ₃ = -2.8 P ₉₀ = 1.8 P ₉₉ = 7.3																					Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Feb	5.4	5.1	4.5	3.9	3.6	2.8	2.3	1.7	1.8	2.1	3.7	5.5	7.3	8.9	9.6	10.3	7.7	3.5	1.6	0.1	-1.1	-2.3	-2.8	-3.1	3.4	10.3	
2-Feb	-2.8	-3.1	-3.8	-4.8	-5.3	-6.0	-5.7	-6.3	-6.2	-3.2	0.9	5.2	5.1	5.8	7.0	7.7	6.5	2.3	-1.0	-2.0	-3.2	-3.8	-4.3	-5.1	-1.1	7.7	
3-Feb	-5.1	-4.3	-4.5	-4.0	-2.7	-2.2	-2.8	-2.8	-2.2	-0.8	-0.3	-1.3	-2.0	-2.3	-2.6	-3.2	-4.2	-4.8	-6.1	-7.5	-8.8	-10.0	-11.2	-13.8	-4.6	-0.3	
4-Feb	-14.5	-16.1	-16.7	-17.7	-17.9	-18.2	-18.9	-19.7	-19.9	-16.7	-13.6	-11.8	-10.4	-8.4	-7.3	-7.6	-8.4	-10.3	-12.0	-12.3	-12.6	-12.8	-11.9	-10.7	-13.6	-7.3	
5-Feb	-10.4	-10.2	-9.7	-10.0	-10.3	-10.2	-10.5	-10.4	-10.2	-10.6	-13.0	-10.0	-9.1	-8.2	-7.4	-6.2	-7.4	-8.3	-10.1	-11.1	-12.1	-13.0	-14.1	-14.6	-14.7	-10.4	-6.2
6-Feb	-15.2	-16.2	-17.5	-16.8	-16.6	-16.2	-15.8	-15.6	-15.4	-15.0	-14.3	-13.3	-12.2	-11.2	-10.4	-10.4	-10.1	-10.0	-9.8	-9.4	-9.2	-9.1	-8.8	-8.5	-12.8	-8.5	
7-Feb	-8.3	-8.1	-7.9	-7.9	-7.7	-7.6	-7.4	-8.0	-9.4	-9.3	-8.8	-8.4	-7.6	-6.8	-6.3	-6.1	-5.9	-6.0	-6.2	-6.7	-7.2	-7.6	-7.6	-7.6	-7.5	-5.9	
8-Feb	-7.7	-7.8	-7.9	-7.9	-7.8	-7.8	-7.8	-7.9	-7.6	-7.3	-7.0	-6.9	-6.5	-6.1	-6.1	-6.1	-6.1	-6.2	-6.3	-6.3	-6.4	-6.2	-5.9	-5.6	-6.9	-5.6	
9-Feb	-5.5	-5.8	-6.8	-7.8	-8.7	-9.0	-9.2	-9.3	-9.2	-8.9	-8.6	-8.5	-8.1	-7.9	-7.9	-8.1	-8.5	-8.6	-8.6	-8.6	-8.7	-8.5	-8.5	-8.5	-8.2	-5.5	
10-Feb	-8.4	-8.5	-9.6	-11.6	-13.2	-15.0	-15.6	-15.5	-13.7	-11.0	-8.9	-7.0	-5.4	-4.1	-4.0	-4.4	-4.6	-4.6	-4.8	-5.4	-6.0	-6.1	-6.0	-5.5	-8.3	-4.0	
11-Feb	-5.1	-3.6	-2.5	-3.0	-3.9	-4.6	-4.9	-4.7	-4.6	-2.5	0.0	1.2	2.2	3.0	3.5	3.5	2.6	0.1	-2.9	-4.8	-5.0	-5.9	-6.1	-6.3	-2.3	3.5	
12-Feb	-5.5	-6.0	-5.7	-6.6	-6.6	-6.3	-6.5	-5.5	-5.2	-4.5	-3.0	-2.3	-0.3	1.3	1.6	2.0	1.5	-0.8	-2.5	-2.8	-2.1	-1.8	-2.0	-2.4	-3.0	2.0	
13-Feb	-3.0	-3.6	-4.1	-4.5	-5.0	-5.6	-6.3	-7.2	-8.1	-7.8	-6.9	-6.5	-6.0	-4.6	-4.2	-4.8	-5.0	-5.5	-6.0	-6.2	-5.8	-5.6	-5.6	-6.0	-5.6	-3.0	
14-Feb	-6.1	-7.0	-7.9	-8.9	-9.6	-11.3	-11.8	-12.0	-12.4	-12.7	-12.5	-12.1	-11.6	-11.2	-10.6	-10.0	-9.6	-9.9	-10.4	-10.9	-11.3	-11.4	-11.5	-11.7	-10.6	-6.1	
15-Feb	-12.0	-11.6	-11.9	-11.9	-12.0	-12.2	-13.5	-15.1	-14.4	-12.5	-9.8	-8.3	-7.4	-6.6	-5.9	-5.6	-6.1	-7.5	-9.6	-11.0	-10.1	-9.8	-9.9	-9.6	-10.2	-5.6	
16-Feb	-9.6	-9.9	-10.6	-10.5	-10.9	-11.0	-11.7	-12.4	-11.5	-9.4	-6.4	-2.6	0.5	2.4	3.4	3.9	3.4	0.6	-0.7	-0.3	-0.3	-1.3	-2.4	-3.1	-4.6	3.9	
17-Feb	-3.4	-5.5	-4.6	-4.8	-3.7	-3.7	-4.7	-6.1	-5.6	-2.6	-0.3	1.8	3.7	4.9	5.7	5.8	3.5	-0.3	-3.0	-4.5	-7.2	-9.4	-10.6	-8.2	-2.6	5.8	
18-Feb	-11.9	-14.4	-14.4	-16.0	-17.2	-18.1	-18.5	-19.5	-17.4	-10.1	-4.9	-3.2	-1.1	1.2	2.5	3.4	1.8	-1.3	-3.4	-5.5	-9.1	-11.6	-13.2	-14.8	-9.0	3.4	
19-Feb	-16.3	-17.2	-18.5	-18.9	-19.7	-20.3	-21.0	-20.5	-14.8	-10.8	-7.1	-5.7	-4.1	-2.6	-1.5	-0.6	-0.9	-3.3	-5.5	-7.0	-8.9	-9.8	-11.7	-11.6	-10.8	-0.6	
20-Feb	-10.5	-9.8	-11.6	-14.0	-15.2	-16.6	-16.2	-15.2	-13.0	-9.9	-7.2	-5.4	-2.4	-0.5	-0.1	-0.1	-0.1	-1.2	-2.3	-2.7	-2.9	-3.0	-2.9	-1.9	-6.9	-0.1	
21-Feb	-0.8	-1.2	-1.4	-1.3	-1.4	-1.3	-1.3	-1.7	-1.6	-0.2	2.6	4.8	6.0	6.7	7.2	6.9	6.0	4.1	2.4	1.0	0.6	-0.3	-1.1	-1.1	1.4	7.2	
22-Feb	-1.5	-2.5	-3.0	-3.7	-3.4	-3.3	-4.4	-3.8	-3.3	-1.0	1.6	3.3	4.4	5.1	5.8	6.0	5.9	4.5	1.8	0.5	0.2	0.7	-1.1	-1.7	0.3	6.0	
23-Feb	-1.7	-1.8	-1.9	-1.4	-1.2	-0.9	-0.9	0.0	1.2	2.4	4.8	7.0	8.3	8.0	7.0	7.0	6.7	6.0	5.2	5.0	4.5	2.1	1.2	0.2	2.8	8.3	
24-Feb	-0.8	-1.5	-2.0	-2.5	-2.8	-3.3	-4.8	-6.7	-7.4	-7.3	-7.4	-6.5	-5.5	-4.5	-4.5	-4.8	-4.9	-5.3	-7.5	-8.9	-9.7	-11.3	-13.3	-14.6	-6.2	-0.8	
25-Feb	-14.7	-12.9	-12.3	-12.0	-11.8	-11.7	-11.9	-12.1	-12.2	-11.7	-11.4	-11.0	-10.5	-10.4	-10.7	-11.3	-12.1	-13.1	-14.1	-15.3	-16.3	-17.8	-19.1	-20.4	-13.2	-10.4	
26-Feb	-21.5	-22.5	-23.3	-24.0	-24.9	-25.4	-25.6	-25.8	-25.8	-25.4	-24.7	-23.3	-22.0	-20.8	-20.3	-19.8	-19.7	-20.3	-21.5	-23.0	-24.4	-24.6	-24.6	-24.7	-23.3	-19.7	
27-Feb	-24.4	-24.2	-25.0	-25.2	-25.5	-25.4	-25.5	-26.2	-24.2	-21.5	-20.0	-18.8	-17.9	-17.1	-16.3	-15.9	-15.9	-17.2	-20.9	-23.2	-24.1	-25.5	-25.7	-26.6	-22.2	-15.9	
28-Feb	-24.6	-24.2	-24.9	-25.8	-27.1	-27.5	-25.5	-25.2	-23.4	-21.3	-18.7	-17.0	-16.2	-15.2	-14.1	-13.8	-14.0	-14.1	-14.8	-15.5	-16.1	-16.1	-15.7	-15.5	-19.4	-13.8	
29-Feb	-15.8	-16.0	-16.2	-16.5	-16.4	-16.7	-16.8	-16.5	-16.4	-16.0	-15.3	-14.7	-14.2	-13.7	-13.4	-13.2	-13.0	-13.0	-13.2	-13.3	-13.4	-13.5	-13.7	-13.9	-14.8	-13.0	
																								Diurnal Average			
																								Diurnal Maximum			



Wood Buffalo Environmental Association
Hourly Averages

Ambient Temperature (AT) - C
Blackgold - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Ambient Temperature (AT) - C
Blackgold - February 2024**

Concentration Ranges (C)	Number of Hours	%	Cumulative %
-50 - -20	52	7.47	7.47
-20 - 0	549	78.88	86.35
0 - 10	94	13.51	99.86
10 - 20	1	0.14	100.00
> 20	0	0.00	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association
Summary of Hour Averages

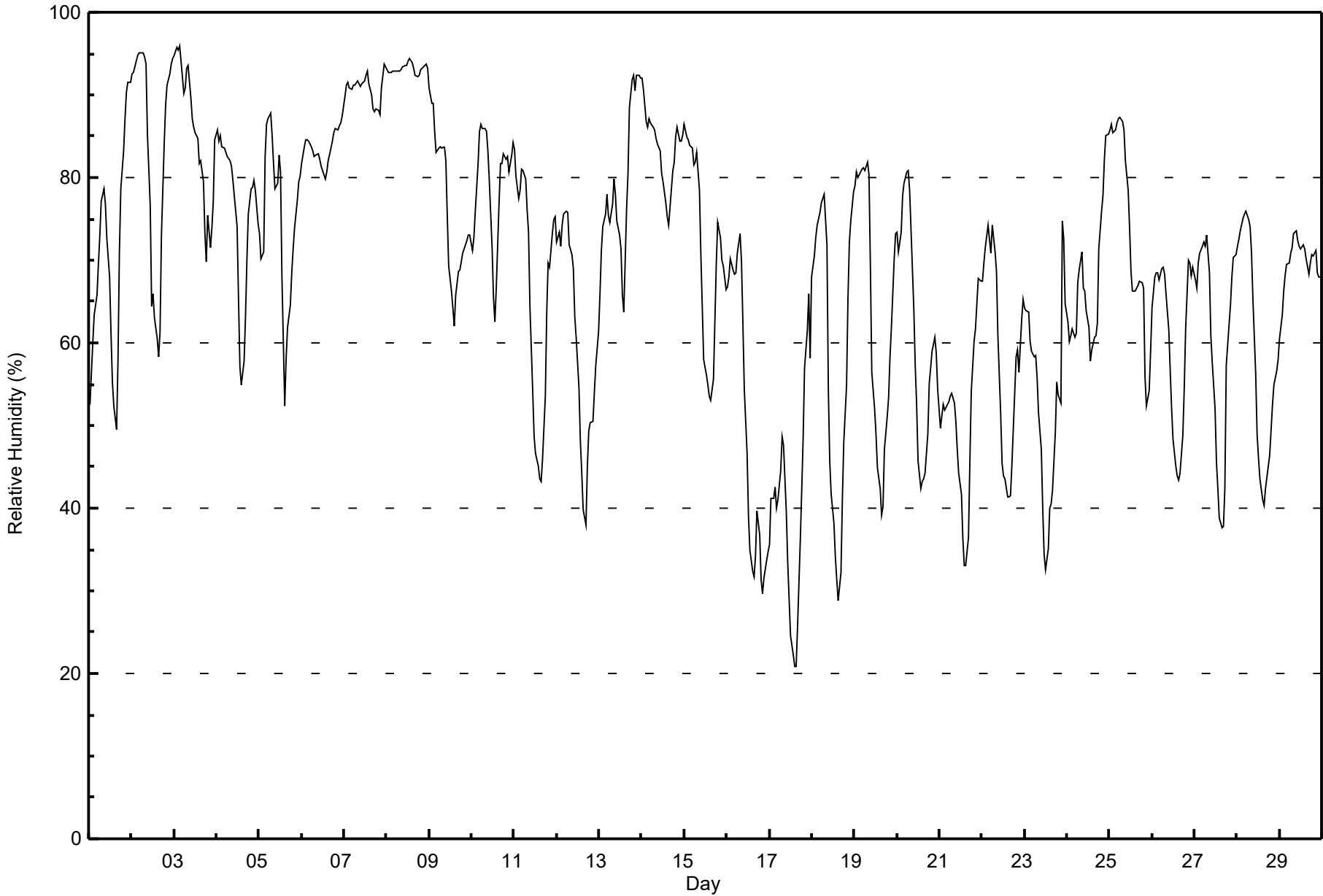
Relative Humidity (RH) - %
Blackgold - February 2024

Maximum Value: 96.0 % on Feb 3 04:00 Maximum Daily Average: 93.2 % on Feb 8																						Hours in Service:	696			
Minimum Value: 20.8 % on Feb 17 16:00 Minimum Daily Average: 40.3 % on Feb 17																						Hours of Data:	696			
Maximum Diurnal Average: 77.5 % at hour 7 Minimum Diurnal Average: 54.6 % at hour 15																						Hours of Missing Data:	0			
Monthly Average: 68.88 % Percentiles: P ₁ = 29.6 P ₁₀ = 43.6 Q ₁ = 57.3 Median = 71.0 Q ₃ = 82.3 P ₉₀ = 90.8 P ₉₉ = 94.8																						Hours of Calibration:	0			
																						Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	52.5	56.2	60.0	63.3	65.8	69.5	72.9	77.2	78.7	76.7	72.7	68.0	61.1	55.2	52.3	49.6	58.0	71.0	78.7	83.1	87.1	90.4	91.4	91.5	70.1	91.5
2-Feb	92.6	92.7	94.1	94.8	95.1	95.1	95.1	94.6	93.7	85.3	76.6	64.4	66.0	63.1	60.5	58.4	61.4	73.0	84.2	88.8	91.1	92.5	93.7	94.3	83.4	95.1
3-Feb	94.8	95.7	95.4	96.0	94.0	90.2	90.9	93.3	93.6	89.6	87.1	86.1	85.4	84.8	81.8	82.0	79.4	73.3	69.8	75.4	71.6	73.8	77.2	84.5	85.2	96.0
4-Feb	85.7	84.5	85.1	83.8	83.6	83.1	82.5	82.1	81.3	79.6	77.7	74.0	65.4	57.1	54.9	57.9	63.2	70.0	75.5	78.7	78.8	79.7	78.5	74.3	75.7	85.7
5-Feb	73.3	70.2	71.1	82.6	86.4	87.1	82.8	85.1	81.7	78.6	79.3	82.8	80.7	68.0	52.4	58.2	61.9	64.5	68.5	71.4	74.0	77.3	79.5	80.1	75.1	87.8
6-Feb	81.7	83.8	84.6	84.6	84.4	83.8	83.2	82.5	82.8	82.9	82.2	81.4	80.4	79.8	80.7	82.1	83.5	84.3	85.4	86.0	85.8	86.2	86.6	87.5	83.6	87.5
7-Feb	89.8	91.1	91.6	90.9	90.7	91.1	91.1	91.7	91.4	91.1	91.4	91.7	92.4	92.9	91.3	90.0	88.3	87.9	88.4	88.1	87.6	90.8	93.8	93.3	90.8	93.8
8-Feb	93.1	92.8	92.7	92.8	92.9	92.9	92.8	92.8	93.1	93.4	93.6	93.6	94.2	94.4	93.8	93.3	92.4	92.2	92.3	93.1	93.2	93.5	93.7	93.3	93.2	94.4
9-Feb	90.9	89.0	89.0	85.6	83.1	83.6	83.8	83.5	83.8	82.0	75.4	69.3	66.3	64.2	62.1	65.7	68.6	68.8	69.8	70.9	71.9	72.3	73.0	73.0	76.1	90.9
10-Feb	71.2	72.7	76.0	81.8	85.7	86.4	86.0	86.0	85.7	83.2	79.6	71.6	65.5	62.5	66.8	77.2	81.7	81.8	82.8	82.2	82.5	80.7	82.8	84.3	79.0	86.4
11-Feb	83.5	80.2	77.5	78.4	81.0	80.8	79.9	76.0	73.4	64.3	54.1	48.7	46.7	45.1	43.5	43.2	46.0	53.6	63.7	69.6	69.2	73.3	75.0	75.3	65.9	83.5
12-Feb	72.3	73.4	71.7	74.3	75.6	75.9	75.8	71.9	70.7	69.0	63.2	60.7	54.6	48.1	44.3	39.9	37.9	45.1	49.3	50.4	50.4	54.0	57.3	61.4	60.3	75.9
13-Feb	66.0	71.2	74.0	75.7	77.9	75.4	74.6	76.7	79.9	78.0	74.8	73.1	71.3	65.8	63.7	76.2	80.6	88.5	91.8	92.4	90.5	92.3	92.4	92.1	79.0	92.4
14-Feb	92.0	90.7	86.7	86.2	87.0	86.6	86.1	85.8	84.7	84.1	83.2	80.5	79.4	76.9	75.3	74.3	76.4	80.9	81.9	84.9	86.2	84.4	84.4	85.1	83.5	92.0
15-Feb	86.4	84.9	84.6	83.9	83.5	81.5	81.9	83.0	78.6	70.6	64.3	57.9	56.1	54.9	53.6	53.0	55.6	62.5	69.5	74.6	72.7	69.9	69.2	66.5	70.8	86.4
16-Feb	66.8	67.9	70.1	68.8	68.3	68.5	70.9	73.3	69.8	62.3	54.4	46.6	39.0	34.9	32.4	31.6	34.2	39.6	36.8	31.3	29.6	31.5	33.8	34.8	49.9	73.3
17-Feb	35.6	41.2	41.3	42.5	40.0	41.0	44.6	48.6	47.6	39.5	33.4	29.0	24.5	22.2	20.9	20.8	25.5	36.3	42.2	48.5	57.0	61.5	65.9	58.1	40.3	65.9
18-Feb	68.0	70.5	72.6	74.2	75.7	77.0	77.5	77.9	71.8	54.2	45.5	41.7	38.2	34.1	31.4	28.8	32.2	41.0	48.0	54.9	65.5	72.3	74.8	78.2	58.6	78.2
19-Feb	79.0	80.6	80.1	80.7	81.0	81.2	80.9	81.9	80.3	69.4	56.5	52.1	49.0	45.0	42.4	39.2	40.2	47.1	51.0	53.4	58.2	61.8	70.2	73.2	63.9	81.9
20-Feb	73.3	71.0	73.4	77.7	79.2	80.7	80.8	78.4	73.7	64.2	57.2	52.5	45.8	42.3	43.2	43.6	44.2	49.0	55.1	57.0	59.0	60.7	58.8	54.4	61.5	80.8
21-Feb	49.7	51.2	52.6	51.8	52.6	52.9	53.5	53.9	52.7	50.5	47.1	44.3	41.7	36.3	33.0	33.1	36.5	45.6	54.0	60.1	61.7	64.8	67.8	67.4	50.6	67.8
22-Feb	67.4	69.7	71.6	74.2	72.6	70.8	74.3	71.0	68.6	60.9	51.3	45.5	43.9	43.5	41.3	41.4	41.5	45.2	53.9	58.2	59.1	56.5	62.8	65.2	58.8	74.3
23-Feb	64.3	63.9	63.7	60.1	59.0	58.3	58.5	55.8	51.5	47.1	40.0	34.4	32.6	35.0	39.9	40.5	42.2	49.1	55.2	53.7	52.7	74.7	72.5	64.8	52.9	74.7
24-Feb	62.5	60.1	60.8	61.7	60.7	61.2	67.3	68.8	71.0	66.6	66.2	64.0	61.8	57.9	59.2	60.7	60.9	62.4	71.4	75.9	77.8	82.3	85.0	85.3	67.1	85.3
25-Feb	85.7	86.4	85.4	85.8	86.7	87.2	87.3	86.7	85.8	82.0	78.6	73.9	68.7	66.2	66.2	66.6	66.9	67.5	67.3	66.5	55.9	52.4	54.2	58.9	73.7	87.3
26-Feb	64.3	68.0	68.5	68.5	67.7	69.0	69.2	68.2	65.9	61.5	56.7	52.0	48.2	45.1	43.8	43.4	44.2	48.9	54.4	61.6	70.0	69.7	68.1	69.2	60.3	70.0
27-Feb	67.6	66.5	69.7	70.8	71.6	72.2	71.6	73.0	68.5	60.9	57.6	52.0	45.6	42.4	38.8	37.6	37.8	42.3	57.3	62.2	64.6	67.9	70.3	70.7	60.0	73.0
28-Feb	71.7	72.5	73.6	75.1	75.6	75.9	74.9	74.0	71.0	65.4	56.3	49.0	46.1	43.5	41.0	40.3	42.4	43.8	46.4	49.5	52.6	54.8	56.6	58.0	58.7	75.9
29-Feb	60.5	63.4	66.2	68.1	69.4	69.7	70.9	71.6	73.2	73.6	72.4	71.7	71.4	71.8	71.4	70.2	68.2	69.6	70.7	70.5	71.2	68.5	67.9	67.9	69.6	73.6
																								Diurnal Average		
																								Diurnal Maximum		



Wood Buffalo Environmental Association
Hourly Averages

Relative Humidity (RH) - %
Blackgold - February 2024





Wood Buffalo Environmental Association
Cumulative Frequency Distribution

Relative Humidity (RH) - %
Blackgold - February 2024

Concentration Ranges (%)	Number of Hours	%	Cumulative %
0 - 20	0	0.00	0.00
20 - 40	42	6.03	6.03
40 - 60	152	21.84	27.87
60 - 80	288	41.38	69.25
80 - 100	214	30.75	100.00

Total Number of Valid Hours: 696

Total Number of Hours: 696



Wood Buffalo Environmental Association

Summary of Hour Averages

Wind Speed (WS) - km/h

Blackgold - February 2024

Maximum Speed: 24 km/h on Feb 23 14:00	Maximum Daily Speed Average: 11.5 km/h on Feb 28	Hours in Service: 696
Minimum Speed Value: 0 km/h on Feb 8 08:00	Minimum Daily Speed Average: 0.2 km/h on Feb 8	Hours of Data: 695
Maximum Diurnal Speed Average: 4.8 km/h at hour 14	Minimum Diurnal Speed Average: 1.3 km/h at hour 20	Hours of Missing Data: 1
Monthly Average Velocity: 2.8 km/h 292.0 deg	Percentiles: P ₁ = 1 P ₁₀ = 2 Q ₁ = 4 Median = 6 Q ₃ = 10 P ₉₀ = 13 P ₉₉ = 18	Percent Operational Time: 99.9

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	SSE16	SSE14	SSE11	S13	S17	S16	S14	S8	SSW10	SSW10	SSW9	SSW10	SSW10	SSW8	S9	S7	SW2	SSW2	W2	WNW0	W2	WSW2	WSW2	SSW4	S7.6	S17
2-Feb	SSW4	WSW2	NW2	WSW1	WSW2	SW2	WNW2	W1	W2	WSW0	ESE2	ESE1	NE5	NE5	NE5	ENE6	NNE5	NNW4	WNW2	W4	W2	W3	WNW3	W2	NNW0.9	ENE6
3-Feb	W3	WNW4	W2	WNW4	WNW6	NW8	WNW4	W3	NW4	NW8	NW12	NNW16	NNW13	NW13	NW15	NNW14	NNW13	NNW11	N9	NNE6	N5	NNW4	N4	NW3	NNW7.1	NNW16
4-Feb	WNW3	WNW3	WSW2	W3	WSW2	SW2	WSW2	WSW1	WNW2	NW1	N1	WSW1	ESE4	ESE5	ENE4	NNE4	NNW2	NNW3	SW1	WNW2	WNW2	WSW1	W1	N2	WNW0.8	ESE5
5-Feb	N2	SSE1	W2	NNW4	NNW4	NNW4	NNW5	N5	N3	N5	N6	N7	NNE8	NNE7	NNE10	NE7	NNE9	NNE6	N5	NNE7	NNE7	NNE4	NNE4	NNE5	N4.8	NNE10
6-Feb	NNE5	NE4	ENE3	ENE4	NE5	ENE5	ENE5	E5	ENE5	E6	ESE5	E6	E5	E7	ENE7	E7	ESE6	ESE6	E4	ESE6	SE6	SSE6	SSE6	SE6	E4.6	E7
7-Feb	SSE7	S6	SSE6	SE3	SE3	SE2	NE1	NNW5	NNW4	NNW2	NNW3	N4	NNE3	N3	NNE4	NNE3	N3	N3	NE3	NE5	NE5	NE4	N3	NNE3	NE1.7	SSE7
8-Feb	N4	N4	SE0	NE2	NNE2	NE2	ESE2	SE0	SW2	WNW3	WNW3	S4	SSW5	WNW4	N4	N3	ENE3	E3	E3	SSE3	S3	S5	SSW4	WSW4	SW0.2	SSW5
9-Feb	WNW7	WNW12	WNW13	WNW13	NW14	WNW10	WNW7	WNW6	WNW7	WNW8	NW11	WNW11	WNW11	WNW11	NW12	NW10	WNW10	WNW7	WNW6	WSW4	W5	W6	W6	W7	WNW8.7	NW14
10-Feb	W7	WSW5	SW8	SW7	SW6	SSW5	SSW6	S6	S7	S8	S7	SSW11	SSW11	SSW12	SSW11	SSW10	S11	SSW13	SSW10	SW11	SW11	WSW10	W8	W9	SSW7.8	SSW13
11-Feb	W10	W10	W10	WSW9	WSW8	WSW8	WSW9	W10	W9	WNW11	WNW13	WNW15	WNW13	WNW14	WNW14	WNW13	WNW10	WNW6	WNW3	WSW3	WSW4	SW4	SW5	WSW5	W8.4	WNW15
12-Feb	SW6	SW5	SW5	SW6	SW7	SSW7	SW7	SW7	SW5	SW6	SW10	SW10	W11	W16	WNW15	WNW14	WNW12	WNW7	WNW6	WNW6	WNW9	WNW12	NW11	NW12	W7.1	W16
13-Feb	NW13	NW13	NW13	NW16	NW13	NW14	NNW13	NNW11	NNW10	NW10	NNW12	NNW14	NW13	NW11	NNW10	NNW6	SE3	SW2	S3	SW3	W7	NW7	NW6	NW4	NW8.6	NW16
14-Feb	NNW6	N8	N11	N11	N11	NNE9	NNE6	NNE6	NNE8	NE7	NNE6	N7	N7	N5	WNW4	W5	WNW3	NNW4	NW4	NNW2	W3	WNW4	WNW3	WNW2	N5.0	N11
15-Feb	W3	W5	WNW5	WNW4	WNW4	W5	WNW4	W4	WSW5	W6	W7	W13	W13	W11	W12	W10	W9	W7	W4	W5	W6	W8	WSW6	W8	W6.6	W13
16-Feb	W6	WSW7	WSW8	W10	W9	W9	W10	W5	W7	W7	W6	W7	W11	W11	W13	W11	WSW9	SW13	WSW14	WSW12	WSW15	W14	W11	W6	W9.4	WSW15
17-Feb	W6	WSW5	WNW8	WNW8	WNW12	WNW11	WNW8	WNW7	WNW7	W5	WNW8	WNW7	NNW5	WNW6	NW6	NNW5	WSW2	W2	WSW4	WSW3	WSW4	W2	W4	SW7	WNW5.5	WNW12
18-Feb	WSW2	WSW1	WSW3	W2	W3	W3	W3	WSW2	SW2	S1	ESE2	NE5	NE5	NE4	N5	NNW4	NNE6	NE6	NE6	NE4	N2	WNW3	WNW3	WNW3	N1.5	NNE6
19-Feb	W3	W3	WSW2	W3	WSW4	W3	W4	W4	W7	WNW6	NW6	NNW7	NNW7	N4	N5	NW7	NW5	NW4	NNE6	NE5	NE4	NNE2	N2	NNE1	NW3.1	NNW7
20-Feb	SW2	NNW1	UO	WNW1	WNW2	W2	W2	WNW3	SSE2	SSE1	ENE3	SE1	E1	ENE2	ENE4	NE5	ENE4	S1	NW1	WNW1	W1	WSW4	WSW3	SW5	NW0.4	NE5
21-Feb	WSW5	W6	W5	WSW6	W6	WSW5	WSW8	WSW7	W8	W8	W9	W11	W12	W12	W13	W12	WSW9	SW9	SW9	SW8	W7	WSW6	W5	W8	W7.7	W13
22-Feb	W10	W7	WSW5	WSW5	W7	W8	WNW7	WSW4	W6	W8	NW16	NW12	WNW13	WNW12	WNW14	WNW12	WNW10	WNW6	WNW5	WNW5	WNW6	WNW6	WSW3	WSW4	WNW7.5	NW16
23-Feb	WSW4	SW6	SW6	SW8	SW8	SW9	SW11	SW13	WSW14	WSW15	WSW15	W15	WNW22	WNW24	W18	W14	WSW10	W13	W11	W11	W13	WNW15	WNW15	WNW18	W11.5	WNW24
24-Feb	WNW14	WNW13	W11	W12	WNW16	NW17	NNW14	NNW12	NNW12	NNW14	NW12	NNW11	NW12	NW14	NW11	NNW11	NNW7	N5	NE8	NE7	ENE4	ENE4	NE1	NNW1	NW8.5	NW17
25-Feb	NNW2	ENE3	NE2	NE3	NE4	NE4	NE5	NE6	NE8	NNE9	NE10	NE12	NE13	NNE12	NNE12	NE13	NE13	NE12	NE13	NE14	NE16	NE15	NNE15	NE9.1	NE16	
26-Feb	NNE15	NNE14	NNE13	N13	NNE12	N11	N10	N9	N9	NNW10	N11	N10	N10	NNE10	NNE10	NNE8	NNE7	N6	N4	NNW2	WNW2	W2	WSW2	W3	N7.7	NNE15
27-Feb	W5	WNW7	W4	W4	W4	W4	WSW6	WSW4	WSW5	W7	NNW9	WNW11	W10	WNW9	WNW9	WNW9	NW8	NW4	W2	W2	SW3	SW4	WSW3	WSW3	W5.1	WNW11
28-Feb	SSW7	SSW7	SSW5	S5	SSE4	SSE4	SSE9	SSE8	SSE12	SSE15	SSE20	SSE20	SSE19	SSE15	SSE16	SSE18	SE14	SE15	SE12	SE14	SE14	ESE14	ESE13	ESE14	SSE11.5	SSE20
29-Feb	ESE15	ESE14	ESE14	ESE15	ESE18	ESE15	ESE14	ESE13	E11	ESE12	ESE11	ESE8	ENE5	ENE4	NNE5	NE5	N4	NW5	NW7	NW5	NW5	NW7	NW6	NW5	E5.6	ESE18

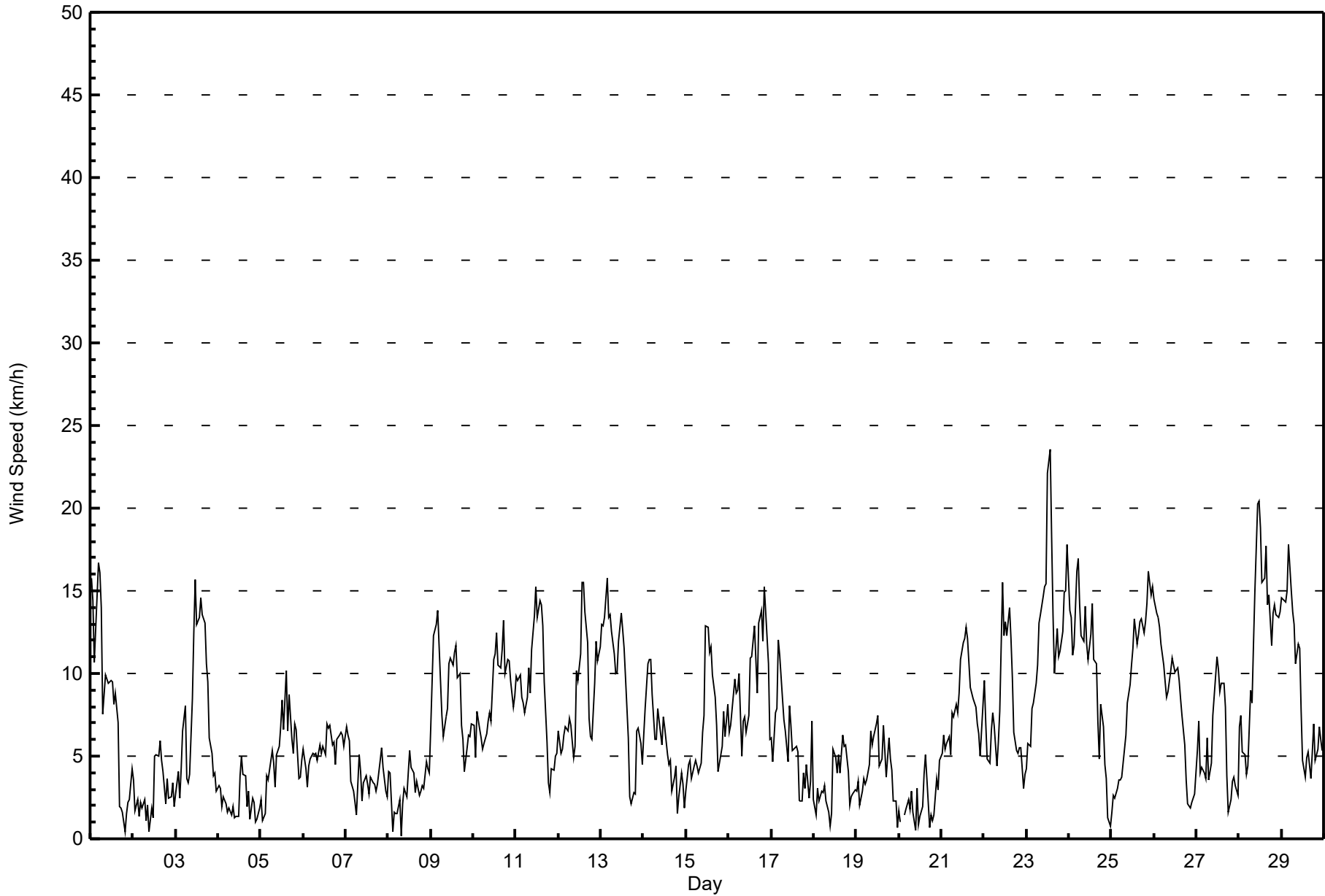
W2.6 W2.5 W2.6 W2.8 W3.0 W2.7 W2.4 W2.0 W2.5	NNW2.8	WNW3.5	NNW4.1	NNW4.4	NW4.8	NW4.8	NW3.9	NW2.8	NNW2.1	NNW1.5	NNW1.3	W2.2	NNW2.7	NNW2.6	NNW2.8											Diurnal Average						
SSE16 SSE14 ESE14	NW16	ESE18	NW17	NNW14	SW13	WSW14	SSE15	SSE20	SSE20	WNW22	WNW24	W18	SSE18	SE14	SE15	WSW14	SE14	WSW15	NE16	WNW15	WNW18											Diurnal Maximum

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Speed (WS) - km/h
Blackgold - February 2024





**Wood Buffalo Environmental Association
Cumulative Frequency Distribution**

**Wind Speed (WS) - km/h
Blackgold - February 2024**

Wind Speed Ranges (km/h)	Number of Hours	%	Cumulative %
0 - 5	308	44.32	44.32
6 - 11	257	36.98	81.29
12 - 19	126	18.13	99.42
20 - 28	4	0.58	100.00
29 - 38	0	0.00	100.00
> 38	0	0.00	100.00

Total Number of Valid Hours: 695

Total Number of Hours: 696



**Wood Buffalo Environmental Association
Frequency Distribution**

**Wind Speed (WS) - km/h
Blackgold - February 2024**

Wind Speed Ranges (km/h)	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	27	14	27	16	6	7	7	6	7	7	17	46	51	35	13	22	308
6 - 11	15	22	9	2	5	5	2	7	9	15	23	16	55	42	18	12	257
12 - 19	1	8	8	0	0	12	5	8	4	2	2	6	16	24	17	13	126
20 - 28	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	4
29 - 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	43	44	44	18	11	24	14	23	20	24	42	68	122	103	48	47	695

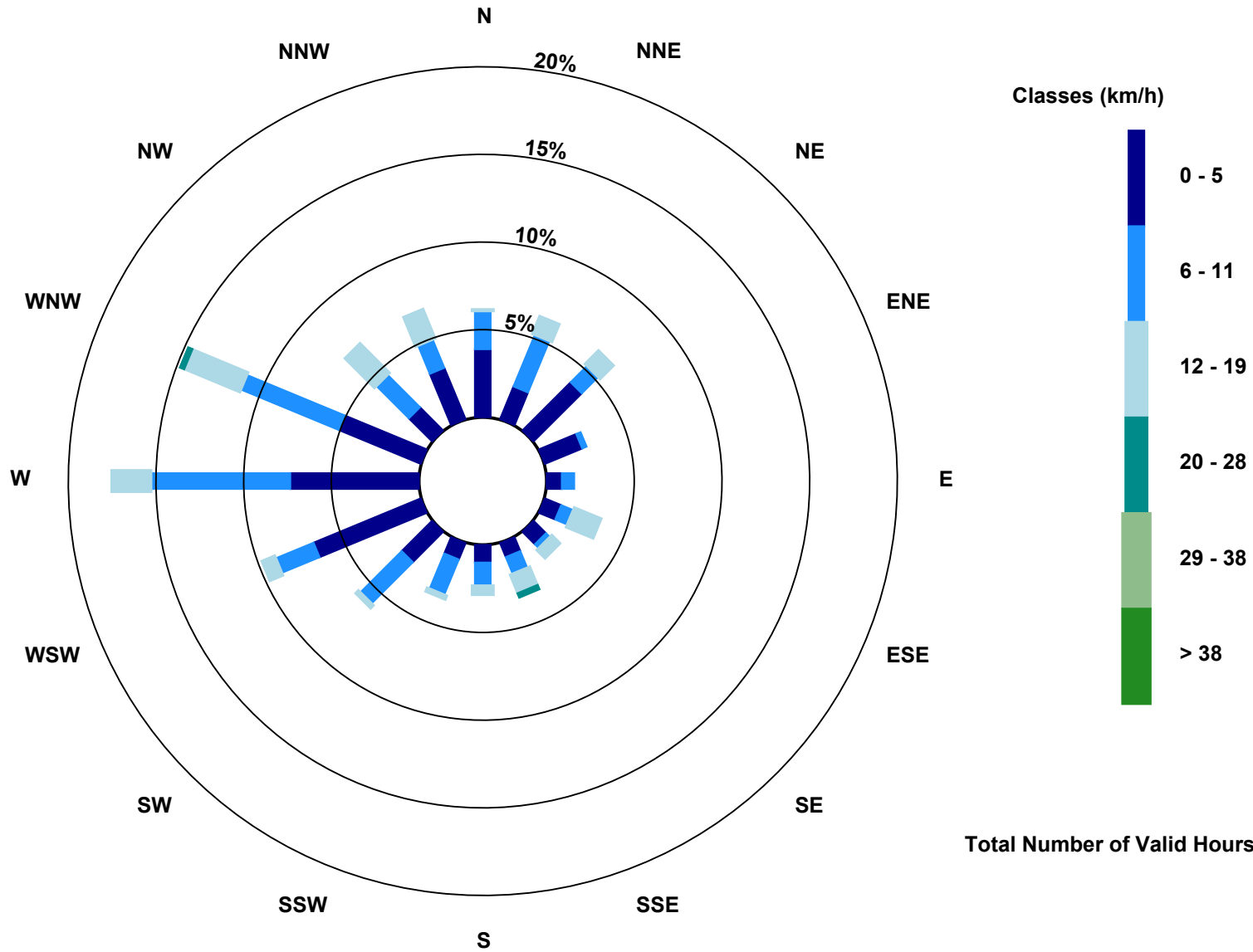
Total Number of Valid Hours: 695

Total Number of Hours: 696



Wood Buffalo Environmental Association
Wind Rose Feb 2024

Wind Speed (WS) - km/h
Blackgold



Total Number of Valid Hours: 695



Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Speed (WS) - km/h
Blackgold - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7 km/h on Feb 23 14:00 Minimum Value: 0 km/h on Feb 4 06:00 Percentiles: P ₁ = 1 P ₁₀ = 1 Q ₁ = 1 Median = 2 Q ₃ = 3 P ₉₀ = 4 P ₉₉ = 6																	Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9									
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Feb	4	4	4	4	4	3	4	2	4	3	3	3	3	3	2	2	1	1	1	1	1	1	1	1	2	4
2-Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	2
3-Feb	1	1	1	2	2	3	2	1	2	2	4	5	5	5	5	4	4	4	3	2	2	1	1	1	1	5
4-Feb	1	1	1	1	1	0	0	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2
5-Feb	1	1	1	1	1	1	2	1	1	2	2	2	3	2	4	3	3	2	2	2	2	1	1	2	4	
6-Feb	2	1	1	1	1	2	1	1	1	1	2	2	1	2	2	1	1	1	1	1	1	1	2	1	2	
7-Feb	2	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	
8-Feb	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	2	1	1	1	1	1	1	1	2	2	
9-Feb	2	3	4	3	4	3	2	1	2	2	4	4	3	3	3	3	3	2	2	2	2	2	2	2	4	
10-Feb	2	2	2	1	1	1	1	2	1	2	1	3	3	3	3	2	3	3	2	3	4	4	3	3	4	
11-Feb	3	3	4	3	3	3	3	4	3	3	4	4	4	4	4	4	4	1	1	1	1	1	1	1	4	
12-Feb	2	1	1	1	2	1	2	1	1	2	4	3	5	5	5	4	4	3	2	2	5	3	4	4	5	
13-Feb	4	4	4	4	4	4	4	4	3	3	4	4	4	4	3	2	1	1	1	1	2	2	2	1	4	
14-Feb	3	3	3	4	4	3	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	4	
15-Feb	1	1	1	1	1	1	1	2	2	2	3	4	4	4	3	3	3	2	2	2	2	3	3	3	4	
16-Feb	2	3	3	4	3	3	3	2	3	3	2	3	3	4	5	4	3	4	5	5	6	5	3	2	6	
17-Feb	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	1	1	1	1	2	1	2	3	3	
18-Feb	2	1	0	1	1	1	1	1	1	1	1	2	2	2	2	1	2	1	2	1	1	1	1	1	2	
19-Feb	1	1	0	0	1	1	1	2	2	2	2	2	3	2	2	2	1	1	2	1	1	1	1	1	3	
20-Feb	1	1	UO	1	1	0	1	4	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	4	
21-Feb	2	2	2	2	2	2	3	3	3	3	3	3	4	4	4	4	4	3	2	3	3	2	2	3	4	
22-Feb	3	2	2	2	2	3	3	2	3	4	4	3	4	3	4	4	3	3	1	1	1	1	1	2	4	
23-Feb	1	2	2	3	3	3	4	4	5	5	6	5	6	7	6	6	4	5	5	4	7	6	5	6	7	
24-Feb	4	4	4	4	5	6	5	4	4	4	4	3	4	4	3	3	3	2	2	2	1	1	1	1	6	
25-Feb	1	1	1	1	1	1	1	2	2	2	3	3	3	4	4	4	4	4	4	4	5	5	5	5	5	
26-Feb	5	5	5	4	5	4	3	3	3	3	3	4	3	4	3	3	2	2	1	1	1	1	1	1	5	
27-Feb	1	2	1	1	1	1	1	1	2	2	3	4	3	3	3	3	3	2	1	1	1	1	1	1	4	
28-Feb	1	1	1	1	1	2	2	2	3	4	6	5	5	4	4	4	3	4	3	3	3	3	3	4	6	
29-Feb	4	3	4	4	5	4	4	3	3	3	3	2	3	2	2	2	2	1	2	1	2	2	2	2	5	
Diurnal Maximum																										
UO - Unstable Operation																										



Wood Buffalo Environmental Association
Summary of Hour Averages

Wind Direction (WD) - deg
Blackgold - February 2024

Direction of Maximum Speed: 289 deg on Feb 23 14:00	Hours in Service: 696
Direction of Maximum Daily Speed Average: 152.3 deg on Feb 28	Hours of Data: 695
Direction of Minimum Speed: 141 deg on Feb 8 08:00	Hours of Missing Data: 1
Direction of Minimum Daily Speed Average: 0.2 deg on Feb 8	Percent Operational Time: 99.9
Monthly Average Direction: 292.0 deg	

Day	Hourly Period Ending At (MST)																								Daily Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	159	154	162	176	180	182	182	170	201	200	213	209	198	201	181	181	232	192	259	300	261	253	243	195	185.4
2-Feb	204	244	315	237	257	223	289	270	264	253	116	120	51	45	55	58	15	346	282	279	274	272	303	262	329.5
3-Feb	266	285	259	284	292	309	295	272	304	322	325	331	329	323	324	328	329	346	352	17	4	343	358	326	325.3
4-Feb	303	292	256	272	257	234	238	248	288	307	9	257	112	113	69	28	342	336	224	291	287	258	281	6	303.5
5-Feb	358	158	271	334	340	336	338	6	359	354	6	5	19	22	29	39	21	18	10	21	22	24	15	16	11.1
6-Feb	20	47	66	63	56	58	76	87	72	83	103	92	82	82	77	100	102	110	94	110	139	147	157	144	92.6
7-Feb	156	169	156	138	130	125	56	347	337	331	343	353	21	5	16	31	353	357	39	37	42	47	351	25	37.9
8-Feb	2	5	142	55	27	54	102	141	229	297	291	187	206	296	350	9	58	84	82	166	178	181	193	248	221.7
9-Feb	286	294	298	303	307	301	294	290	292	298	309	301	291	299	306	309	299	295	283	256	268	269	277	277	295.0
10-Feb	277	239	218	215	217	207	201	188	188	188	185	196	194	199	209	194	187	200	212	222	227	255	264	275	212.3
11-Feb	279	278	264	258	244	242	246	261	270	282	295	296	292	300	294	297	293	289	284	252	249	229	232	237	276.1
12-Feb	228	224	232	229	228	212	218	218	215	215	223	232	268	279	295	293	299	289	285	283	294	302	317	321	267.8
13-Feb	325	323	320	323	326	326	329	334	328	326	334	334	326	321	327	342	136	232	180	233	281	306	322	311	323.1
14-Feb	340	356	353	351	4	27	32	14	15	34	24	11	11	352	295	280	296	331	325	338	280	293	295	283	353.6
15-Feb	280	281	288	292	285	281	283	265	240	279	271	280	276	269	276	274	273	280	261	269	264	268	250	267	273.2
16-Feb	271	245	246	263	274	273	280	262	269	266	266	272	274	268	265	266	238	235	240	252	258	268	280	271	261.9
17-Feb	278	256	287	287	290	288	282	286	287	271	303	299	327	300	307	328	254	265	242	253	255	273	260	235	283.5
18-Feb	258	256	256	272	260	267	274	257	232	187	109	51	52	35	6	339	21	41	45	43	7	300	288	293	352.2
19-Feb	276	273	248	264	258	261	262	265	281	285	307	341	327	356	2	323	325	311	23	36	48	29	357	29	318.1
20-Feb	230	327	UO	300	296	274	277	301	154	168	59	127	81	58	63	44	58	189	313	285	267	239	245	221	305.0
21-Feb	253	261	263	255	270	252	238	252	265	267	271	274	272	278	280	271	250	220	219	224	268	249	268	274	259.9
22-Feb	280	273	251	248	266	272	282	252	274	279	307	305	300	292	295	295	296	290	287	296	283	282	239	246	285.5
23-Feb	242	226	218	219	223	223	227	229	238	239	250	275	287	289	280	271	258	271	276	267	271	294	291	297	264.2
24-Feb	295	292	281	281	296	313	340	338	328	335	326	331	321	310	324	321	331	0	52	46	68	61	42	328	322.6
25-Feb	348	73	54	49	54	53	39	37	52	44	24	45	37	29	32	31	38	46	46	35	41	38	35	31	38.1
26-Feb	29	21	15	9	12	7	4	7	2	345	350	351	5	15	29	27	31	0	11	348	285	274	240	263	7.5
27-Feb	281	283	280	273	264	263	238	237	248	281	330	295	281	283	283	295	317	314	273	260	233	219	238	242	279.3
28-Feb	210	199	199	186	168	161	168	147	159	157	163	165	156	150	156	159	140	143	142	140	133	122	123	119	152.3
29-Feb	110	107	108	107	112	107	104	111	97	107	118	113	66	69	15	39	10	310	306	326	312	317	321	305	92.9

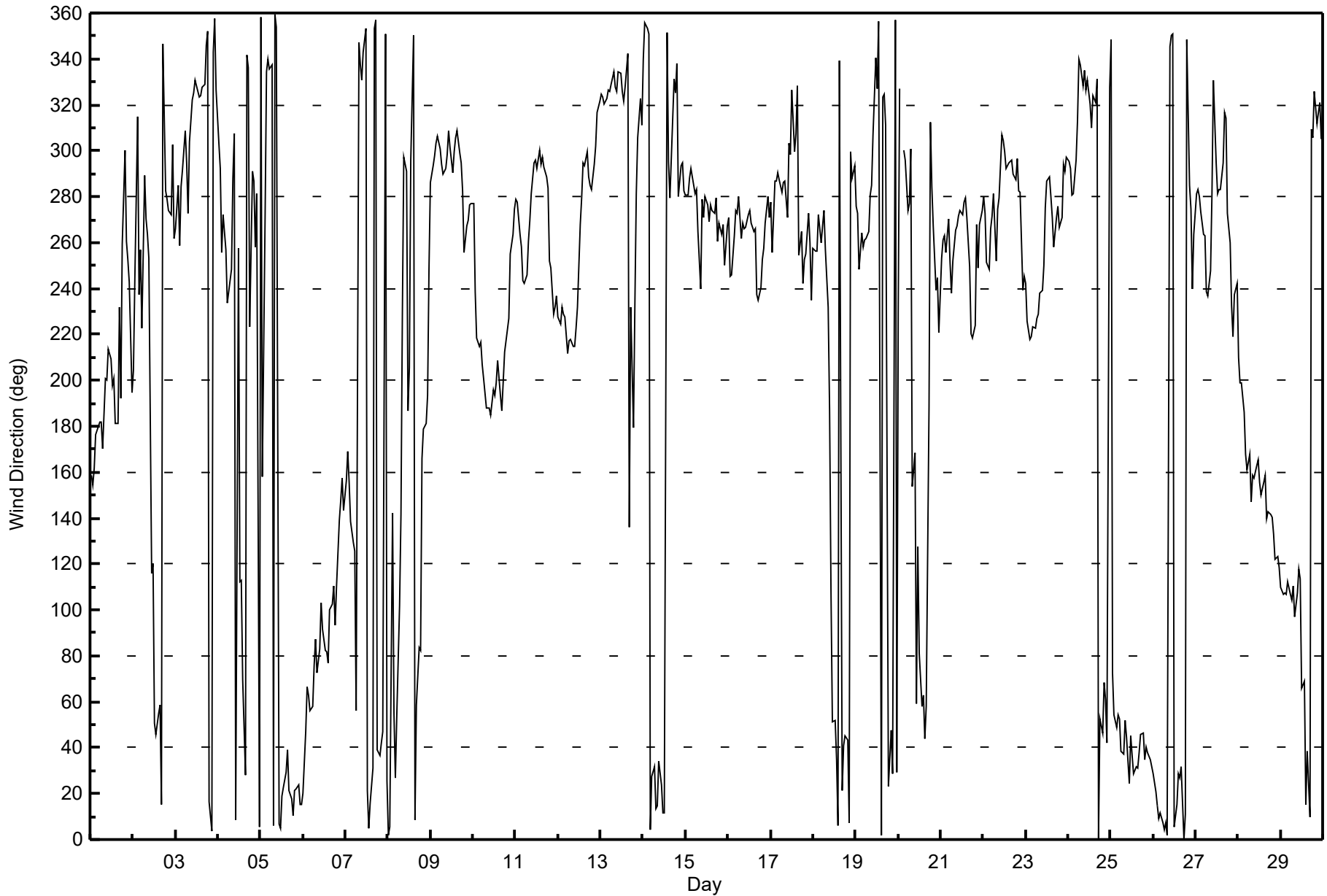
280.6 276.5 272.0 278.6 280.8 280.5 272.6 276.3 276.1 285.9 299.4 300.2 303.8 304.7 311.0 311.4 316.1 297.3 300.0 289.7 279.2 285.7 288.6 285.6
 Diurnal Average

UO - Unstable Operation
 All monthly, daily, and diurnal averages have been calculated using vector methods



Wood Buffalo Environmental Association
Hourly Averages

Wind Direction (WD) - deg
Blackgold - February 2024





Wood Buffalo Environmental Association
Summary of Hour Standard Deviations

Wind Direction (WD) - deg
Blackgold - February 2024

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 102 deg on Feb 8 03:00 Minimum Value: 8 deg on Feb 11 22:00 Percentiles: P ₁ = 12 P ₁₀ = 15 Q ₁ = 20 Median = 24 Q ₃ = 32 P ₉₀ = 43 P ₉₉ = 81																			Hours in Service: 696 Hours of Data: 695 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9						
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	15	16	16	14	14	14	14	22	24	22	20	20	23	26	23	16	56	68	55	98	56	24	32	37	98
2-Feb	36	52	28	48	31	45	19	73	24	75	22	78	31	27	32	19	32	22	45	15	33	32	32	49	78
3-Feb	35	26	26	22	22	21	33	28	24	19	21	23	22	23	22	23	22	24	23	23	22	22	22	23	35
4-Feb	13	28	37	22	29	42	27	52	39	48	73	68	43	35	33	20	18	20	65	23	41	50	60	45	73
5-Feb	42	71	60	22	21	22	20	26	28	22	24	24	27	24	22	22	24	22	24	21	22	25	20	25	71
6-Feb	22	18	20	19	21	20	23	22	24	20	28	22	26	21	19	15	15	13	12	15	15	11	13	14	28
7-Feb	14	18	15	15	20	32	59	16	19	37	31	20	39	49	33	37	29	26	23	21	22	25	29	35	59
8-Feb	23	29	102	57	51	47	35	96	64	69	42	51	38	38	36	43	22	21	31	23	12	12	13	42	102
9-Feb	22	17	17	17	17	16	17	17	15	16	21	20	20	21	22	20	18	16	24	56	32	32	28	24	56
10-Feb	23	34	19	14	14	16	11	12	12	13	16	19	19	18	20	18	15	15	19	22	25	33	30	26	34
11-Feb	24	25	34	35	34	34	34	33	32	21	18	20	20	21	20	21	21	18	13	13	20	8	12	13	35
12-Feb	13	18	21	13	17	15	16	14	19	19	23	26	34	24	22	21	19	17	18	20	20	17	23	22	34
13-Feb	22	22	22	21	22	22	23	21	20	22	24	22	25	26	24	31	57	45	20	40	20	27	20	16	57
14-Feb	30	23	25	22	25	23	24	24	25	21	28	27	27	36	35	35	45	27	18	49	18	17	19	27	49
15-Feb	16	26	20	17	15	18	19	27	38	21	27	24	26	30	27	25	26	24	41	40	47	32	39	31	47
16-Feb	34	33	31	31	28	26	20	35	30	31	31	30	26	27	31	29	34	27	28	35	33	30	24	36	36
17-Feb	27	28	16	15	13	14	16	12	16	34	24	28	38	39	35	32	43	27	20	17	11	53	15	9	53
18-Feb	33	67	15	22	13	10	14	35	57	55	49	41	41	51	39	40	19	15	19	22	43	29	28	20	67
19-Feb	16	16	24	20	17	13	18	20	14	23	31	31	34	67	55	28	23	20	27	26	27	49	25	81	81
20-Feb	30	71	UO	27	51	27	48	76	80	90	69	94	86	65	31	24	26	84	30	35	61	20	28	23	94
21-Feb	37	36	35	42	35	40	34	35	33	32	28	28	27	27	28	27	36	20	21	28	34	37	40	29	42
22-Feb	20	25	34	37	34	35	28	39	34	32	18	20	22	23	23	20	18	18	17	17	16	17	43	39	43
23-Feb	28	18	25	25	24	27	29	27	31	29	31	27	21	20	25	28	33	32	29	29	33	24	20	18	33
24-Feb	19	17	24	23	18	20	23	23	22	23	23	24	25	23	24	24	31	36	23	22	22	21	67	51	67
25-Feb	60	36	37	30	24	25	24	24	18	27	25	25	28	24	24	24	23	22	23	21	22	22	24	22	60
26-Feb	24	25	24	27	26	26	24	25	26	25	25	29	32	36	32	35	32	24	24	51	29	17	26	32	51
27-Feb	18	17	16	19	18	18	12	23	34	26	35	31	35	39	34	29	26	23	33	22	25	23	20	30	39
28-Feb	12	10	13	12	14	25	14	14	17	17	20	20	19	21	20	17	16	16	15	13	13	14	14	16	25
29-Feb	14	15	15	15	15	15	15	16	17	16	19	26	62	69	54	38	51	29	21	24	26	22	22	25	69
	60	71	102	57	51	47	59	96	80	90	73	94	86	69	55	43	57	84	65	98	61	53	67	81	
Diurnal Maximum																									
UO - Unstable Operation																									



End of Report

**ELECTRONIC TRANSFER SYSTEM
AIRDATA
SUBMISSION REPORT**

March 28, 2024
10:27:48 AM
Request # 4659559

Submitted by: EN6138
Submission Date: Mar 28, 2024 10:27:29 AM

File Type
Calibration Report

File Name
CAL-WBEA-202402.pdf

Total Number of Files: 1

*** End of Report ***

**ELECTRONIC TRANSFER SYSTEM
AIRDATA
SUBMISSION REPORT**

March 28, 2024
10:46:08 AM
Request # 4659572

Submitted by: EN6138
Submission Date: Mar 28, 2024 10:45:48 AM

File Type
Ambient Data

File Name
AMB-WBEA-202402-V00.xml

Total Number of Files: 1

*** End of Report ***

**ELECTRONIC TRANSFER SYSTEM
AIRDATA
SUBMISSION REPORT**

March 28, 2024
2:56:52 PM
Request # 4659767

Submitted by: EN6138
Submission Date: Mar 28, 2024 2:56:46 PM

File Type
Airshed Monitoring Report

File Name
WBEA-202402.pdf

Total Number of Files: 1

*** End of Report ***