



Wood Buffalo Environmental Association  
**Ambient Air Monitoring Station  
Site Documentation**

Mildred Lake

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LAST UPDATED: MARCH 27, 2024



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## General Site Information

Revision Date: March 27, 2024

### Station

Station ID	AMS 02
Station name	Mildred Lake
Date station established	June 1st, 1979

### Location

Station street address	Located at the south end of the Syncrude airstrip, 400m west of HWY 63
Legal land description	8-08-093-10 W4
Airshed Zone	Wood Buffalo Environmental Association
Latitude	57.050006
Longitude	-111.564147
UTM East	465775
UTM North	6323094
Nearest community	Fort Mackay
Community population	757
Census Year	2021

### Owner/Operator/Approval Holder

Operating Agency	Wood Buffalo Environmental Association
Address of Operating Agency	Unit 3-805 Memorial Drive, Fort McMurray, Alberta T9K 0K4
Name of Approval Holder	Syncrude Canada Limited
Approval number	026-03-00
Contact Name	Nikola Stears
Address	Bag 4009, MD 4160, Fort McMurray, Alberta, T9H 3L1
Phone number	780-742-7281
Email address	nstears@suncor.com

### Site Description

Land use by sector	0 – 90 degrees	Airstrip
	91 – 180 degrees	Airstrip
	181 – 270 degrees	Forest
	271 – 360 degrees	Road
Site elevation (m) (above sea level)	314	
Angle of elevation to nearby buildings	Greatest angle	28 degrees
	Building direction	North
Airflow restrictions	North	Building

	East	None
	South	Trees
	West	Trees
Distance to nearest trees (m)	North	160
	East	> 1 Km
	West	40
	South	40
Sample manifold	Type	All glass
	Inlet height above roof	1 metre
Wind Sensors	Type	Cup and vane
	Height above ground (m)	10
	Distance from station (m)	Attached

## Site Influences

### Localized Sources (within 20 metres of station)

Type	Distance (m)	Description
Airstrip	20	Syncrude Airstrip
Trailer	15	Toilet facilities

### Roadway Influences

Type	Traffic Volume	Distance (m)	Description
Access Road	Low	50	Paved secondary road for industrial access frequented by pick-up trucks, heavy equipment, and tractor trailers
Highway 63	Medium	300	Provincial highway frequented by tractor trailers, heavy equipment and light vehicles

### Major Point Sources

Facility Name	Source Type	Distance from site (km)	Compass direction from site
Syncrude	Oil Sands Plant	5	West
Suncor	Oil Sands Plant	20	South east

## Station Equipment

Equipment Owner: Syncrude Canada Ltd.

### Analytical Equipment

Parameter	Make	Model	Serial Number	Date Instrument Installed	WBEA Data Start Date
SO <sub>2</sub>	Thermo Environmental	43i	JC1404901075	2015	January, 1999
H <sub>2</sub> S	Thermo Environmental	43iQ	12113311966	2022	January, 1999
THC/CH <sub>4</sub> /NMHC	Thermo Environmental	55i	1180320038	2022	December, 2019

### Meteorological Equipment

Parameter	Make	Model	Serial Number	WMO Site Class	Date Sensor Installed	WBEA Data Start Date
AT/RH	Vaisala	HMP155	N2910507	Class 3	2019	February, 1999
WS	Met One	010C-1	E5130	Class 4	2018	January, 1999
WD	Met One	020C-1	B1462	Class 4	2018	January, 1999

### Support Equipment

Name	Description	Make	Model	Serial Number
Datalogger	Datalogger	Campbell Scientific	CR3000	8790
Gas Dilution Calibrator	Dynamic dilution calibrator	Teledyne/API	T700	1185
Zero air generator	Zero Air Generator	Teledyne/API	701	4891
Shelter / Building	Air monitoring portable	C&V	8 x 16 trailer	S3381408
Mitsubishi Electric Mr Slim	Heating and air conditioning system. Wall mount unit	R410A	MUY-GE15NA	30025603T
H <sub>2</sub> S converter	Converter	Global Analyzer Systems	G150	2022-198



Figure 1 – Area topographic map showing AMS 02



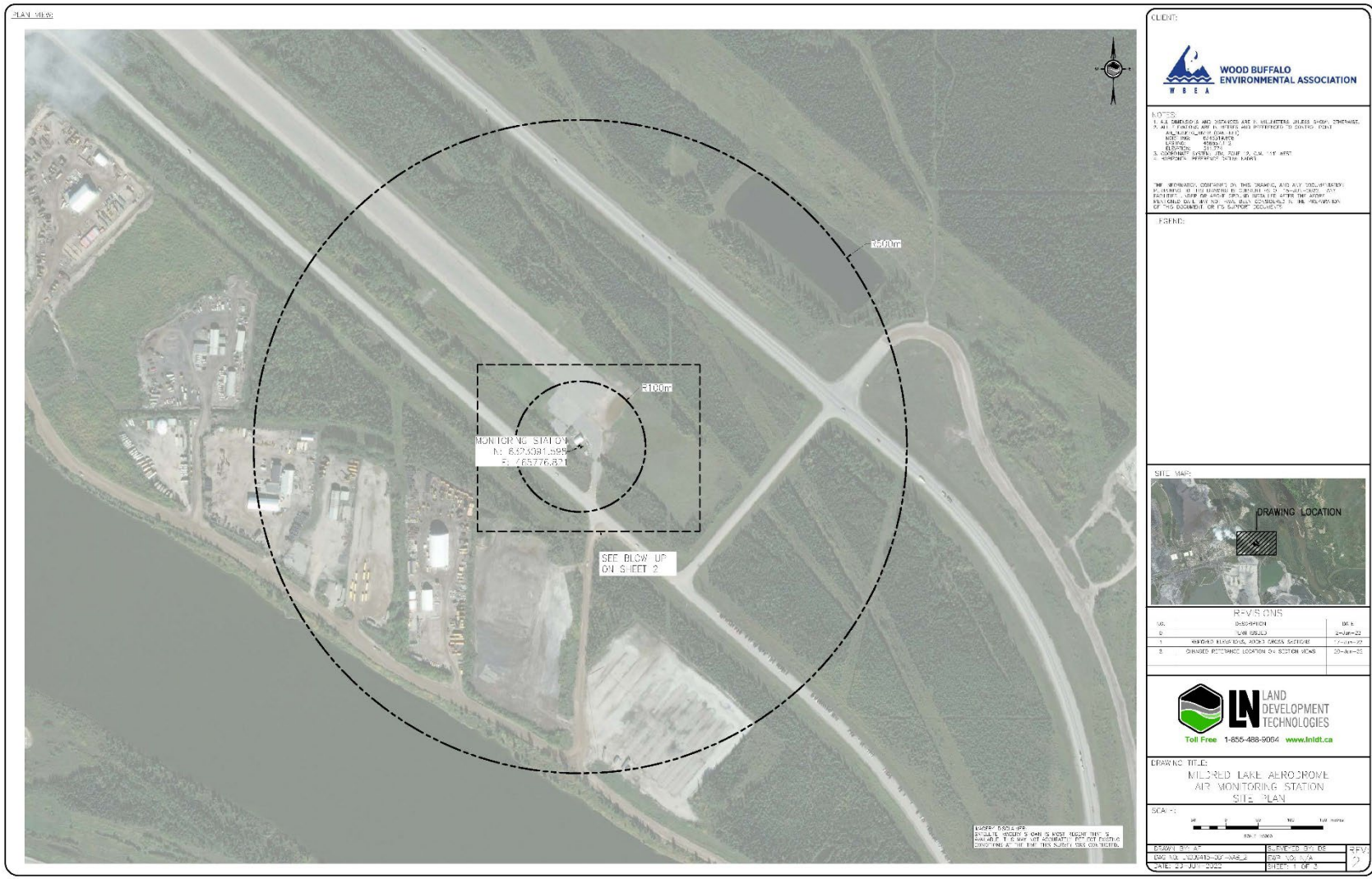


Figure 2 – Aerial image showing AMS 02



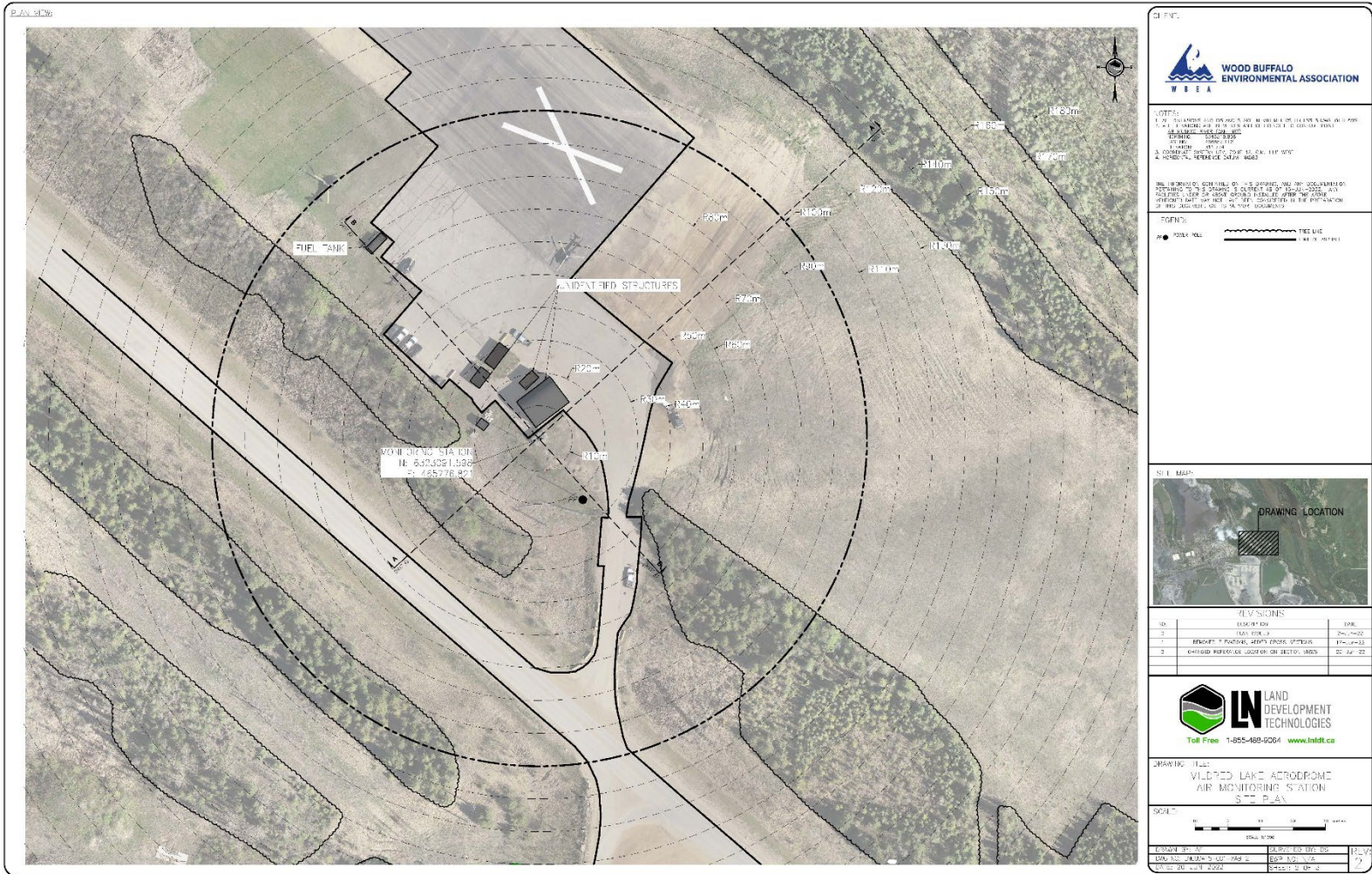


Figure 3 – Plan view image for AMS 02 site

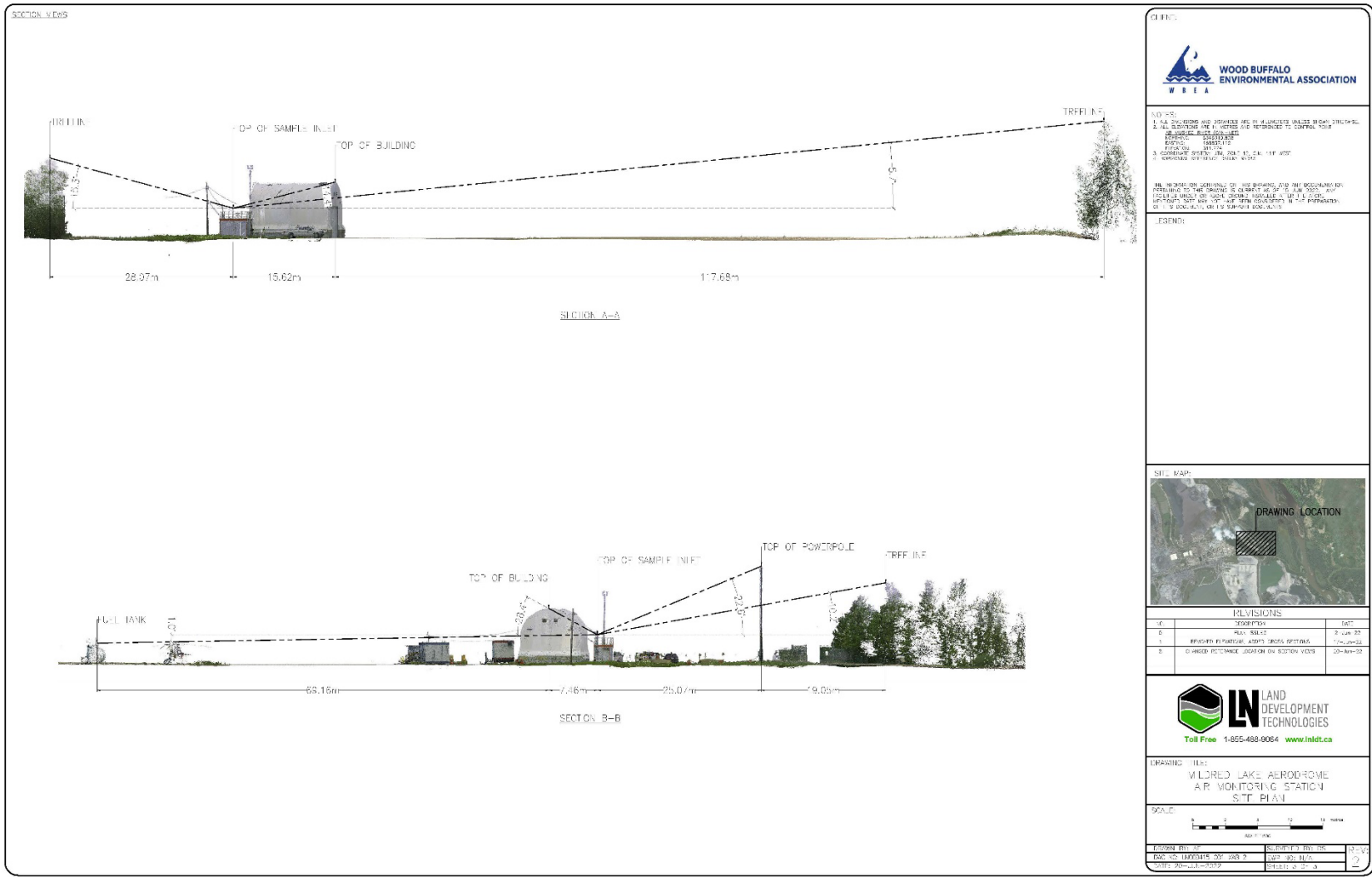


Figure 4 – Elevation view image for AMS 02 site



Site photos

The following photos show the environment surrounding the monitoring station.



Figure 5 – Environment looking North



Figure 6 – Environment looking East





Figure 7 – Environment looking South



Figure 8 – Environment looking West





Figure 9 – Meteorological Tower



## Station Photos

The following photos show the monitoring station and instrumentation.



Figure 10 – Photo showing the inlet and sample manifold



Figure 11 – Curb shot of the monitoring station





Figure 12 –Photo of the front and the back of instrument rack



Wood Buffalo Environmental Association  
Wind Rose 2019 - 2024

Wind Speed (WS) - km/h  
Mildred Lake

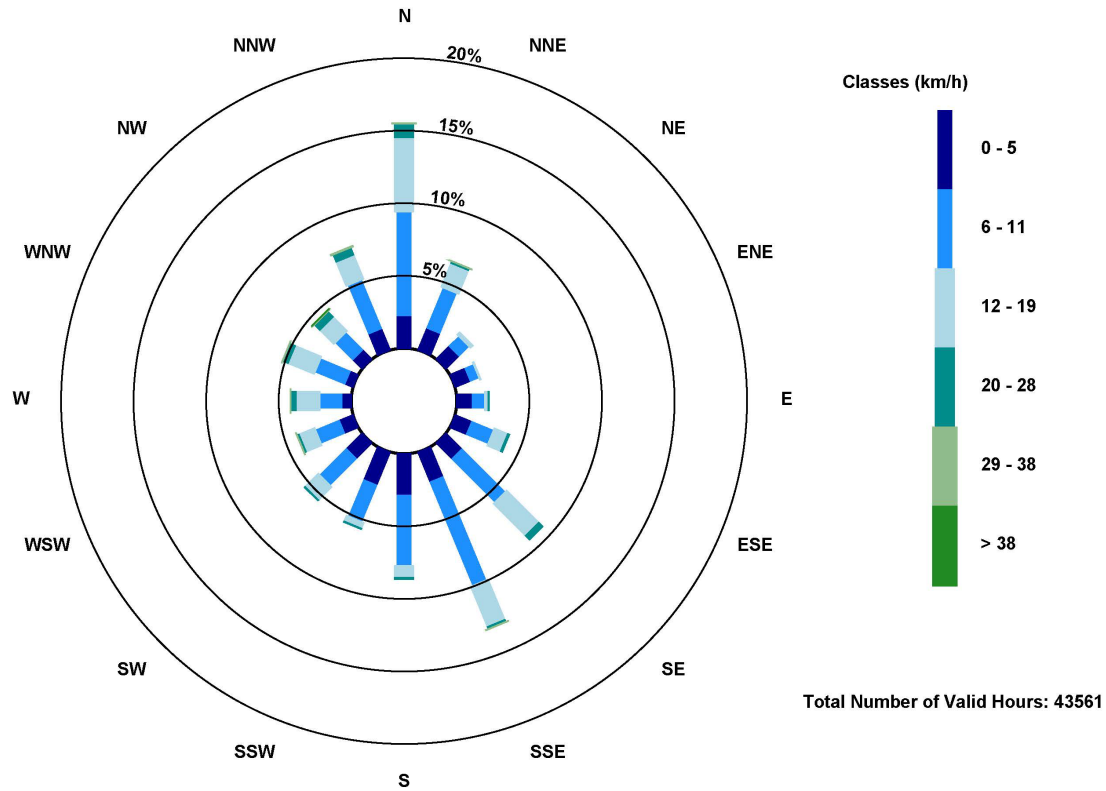


Figure 13 – Windrose (five year)