Wood Buffalo Environmental Association

# Ambient Air Monitoring Station Site Documentation

## Barge Landing

**LAST UPDATED: MARCH 27, 2024**

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# Tables and Figures

## General Site Information

Revision Date: March 27, 2024

### Station

| | |
|---|---|
| Station ID | AMS 09 |
| Station name | Barge Landing |
| Date station established | 2000 |

### Location

| | |
|---|---|
| Station street address | Northeast of the Barge Landing Road, approximately 460 meters northwest of the Highway 63 intersection |
| Legal land description | 7-31-094-10 W4 |
| Airshed Zone | Wood Buffalo Environmental Association |
| Latitude | 57.198178 |
| Longitude | -111.59946327 |
| UTM East | 463778 |
| UTM North | 6339606 |
| 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 | Canadian Natural Upgrading Limited |
| Approval number | 20809-02-00 |
| Contact Name | Tina Ding |
| Address | Albian Sands, P.O. Box 5670 |
| Phone number | 780-713-4454 |
| Email address | Tina.Ding@cnrl.com |

### Site Description

| | | |
|---|---|---|
| Land use by sector | 0 – 90 degrees | Wooded area |
| | 91 – 180 degrees | Wooded area |
| | 181 – 270 degrees | Wooded area |
| | 271 – 360 degrees | Wooded area |
| Site elevation (m) (above sea level) | 282 m | |
| Angle of elevation to nearby buildings | Greatest angle | N/A |
| | Building direction | N/A |
| Airflow restrictions | North | Trees |

| | | |
|---|---|---|
| | East | Trees |
| | South | Trees |
| | West | Trees |
| Distance to nearest trees (m) | North | 10 m |
| | East | 10 m |
| | West | 10 m |
| | South | 20 m |
| Sample manifold | Type | All glass |
| | Inlet height above roof | 1 metre |
| Wind Sensors | Type | Cup and vane |
| | Height above ground (m) | 20 m |
| | Distance from station (m) | 2 m |

## Site Influences

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

| Type | Distance (m) | Description |
|---|---|---|
| None | N/A | N/A |

### Roadway Influences

| Type | Traffic Volume | Distance (m) | Description |
|---|---|---|---|
| Barge Landing Road | Very low | 70 | Well maintained dirt access road frequented by pickup trucks and heavy equipment |
| Highway 63 | Medium | 400 | Provincial highway frequented by tractor trailers and pickup trucks. |

### Major Point Sources

| Facility Name | Source Type | Distance from site (km) | Compass direction from site |
|---|---|---|---|
| CNRL Albian | Oil Sands Plant | 10 | NE |
| CNRL Horizon | Oil Sands Plant | 20 | NW |

## Station Equipment

Equipment Owner: Canadian Natural

### Analytical Equipment

| Parameter | Make | Model | Serial Number | Date Instrument Installed | WBEA Data Start Date |
|---|---|---|---|---|---|
| **Continuous** | | | | | |
| $SO_2$ | Thermo Environmental | 43i | 1118148498 | 2018 | December, 2018 |
| TRS | Thermo Environmental | 43i-TLE | 1331259320 | N/A | January, 1999 |
| $NO_x/NO/NO_2$ | Thermo Environmental | 42i | 1426262593 | 2018 | December, 2018 |
| $THC/CH_4/NMHC$ | Thermo Environmental | 55i | 1170050131 | 2021 | January, 1999 |
| PM 2.5 | Teledyne | T640 | 844 | 2023 | January, 2019 |
| **Time-Integrated** | | | | | |
| VOC | Global Analyzers Systems ltd. | G170 | 2023-236 | 2023 | - |

### Meteorological Equipment

| Parameter | Make | Model | Serial Number | WMO Site Class | Date Sensor Installed | WBEA Data Start Date |
|---|---|---|---|---|---|---|
| AT/RH | Vaisala | HMP155 | P3640808 | 3 | 2023 | January, 2000 |
| WS | Met One | 010C-1 | B4129 | 4 | 2023 | August, 2021 |
| WD | Met One | 020C-1 | D14061 | 4 | 2023 | August, 2021 |
| Barometric Pressure | WBEA | 61302V-10 | BPA4394 | N/A | 2018 | December, 2018 |

### Support Equipment

| Name | Description | Make | Model | Serial Number |
|---|---|---|---|---|
| Datalogger | Datalogger | Campbell Scientific | CR3000 | 1850 |
| Gas Dilution Calibrator | Dynamic dilution calibrator | Teledyne/API | T700 | 3812 |
| Zero air generator | Zero Air Generator | Teledyne/API | 701 | 4888 |
| Hydrogen Generator | Hydrogen Generator | AMA Instruments | HG 300 | 171067036 |
| TRS Converter | Thermal Oxidizer | CD Nova | CDN-101 | 519 |
| Shelter / Building | Air monitoring portable | ITB | 10 x 20 | ITB0814464 |

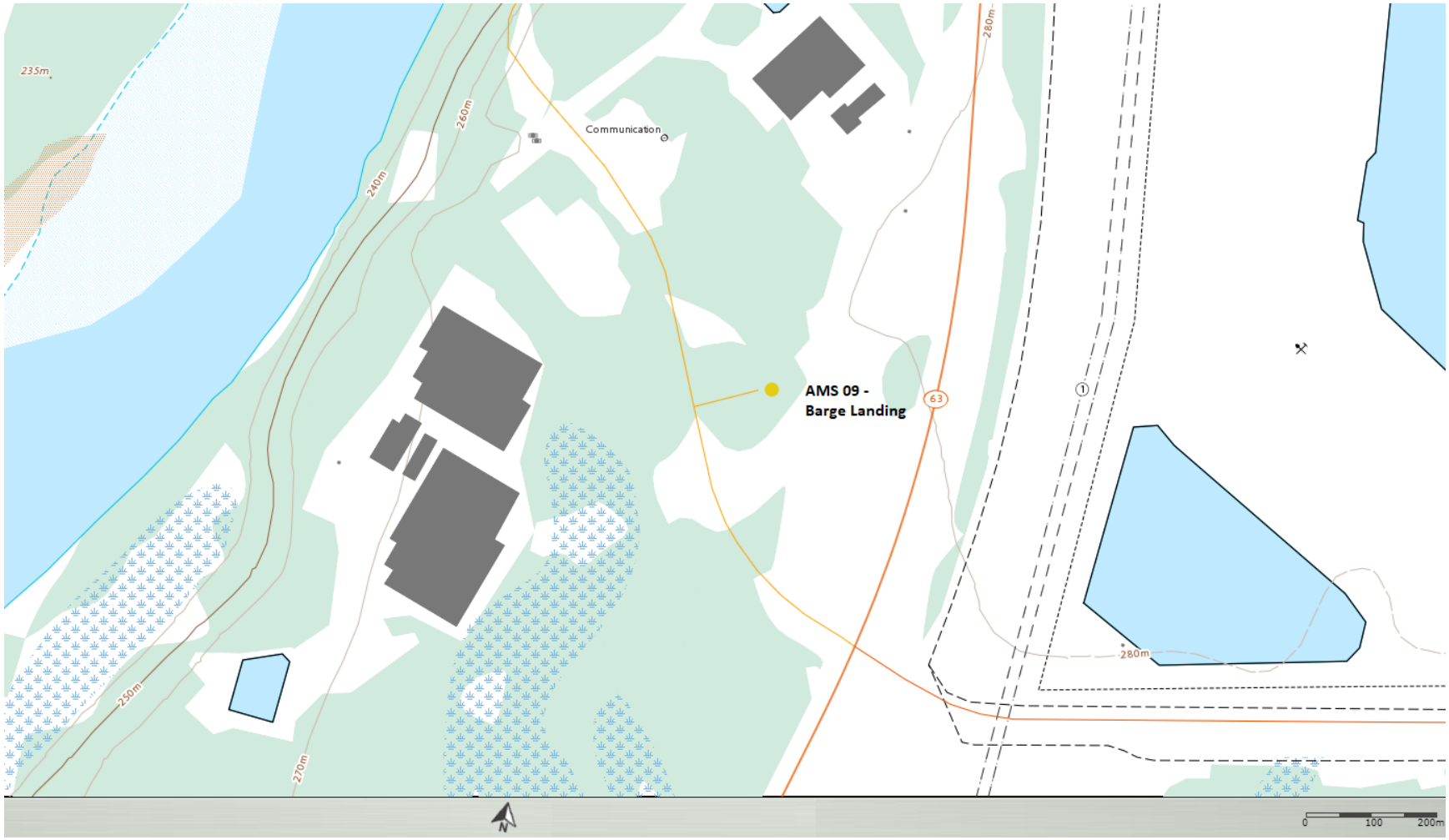

Figure 1 – Area topographic map showing AMS 09


Figure 2 – Aerial photo showing AMS 09

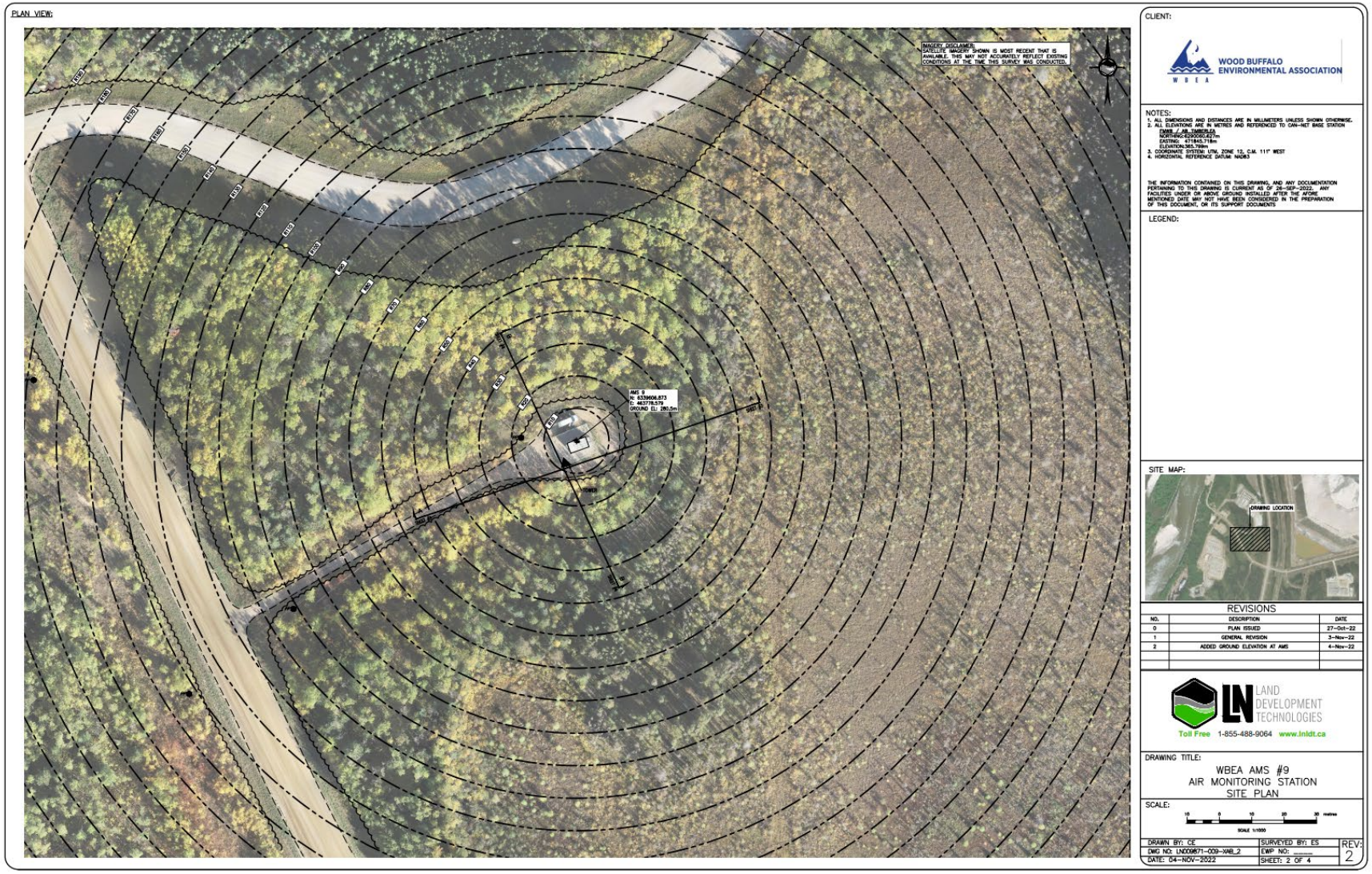


Figure 3 – Plan view sketch for AMS 09 site

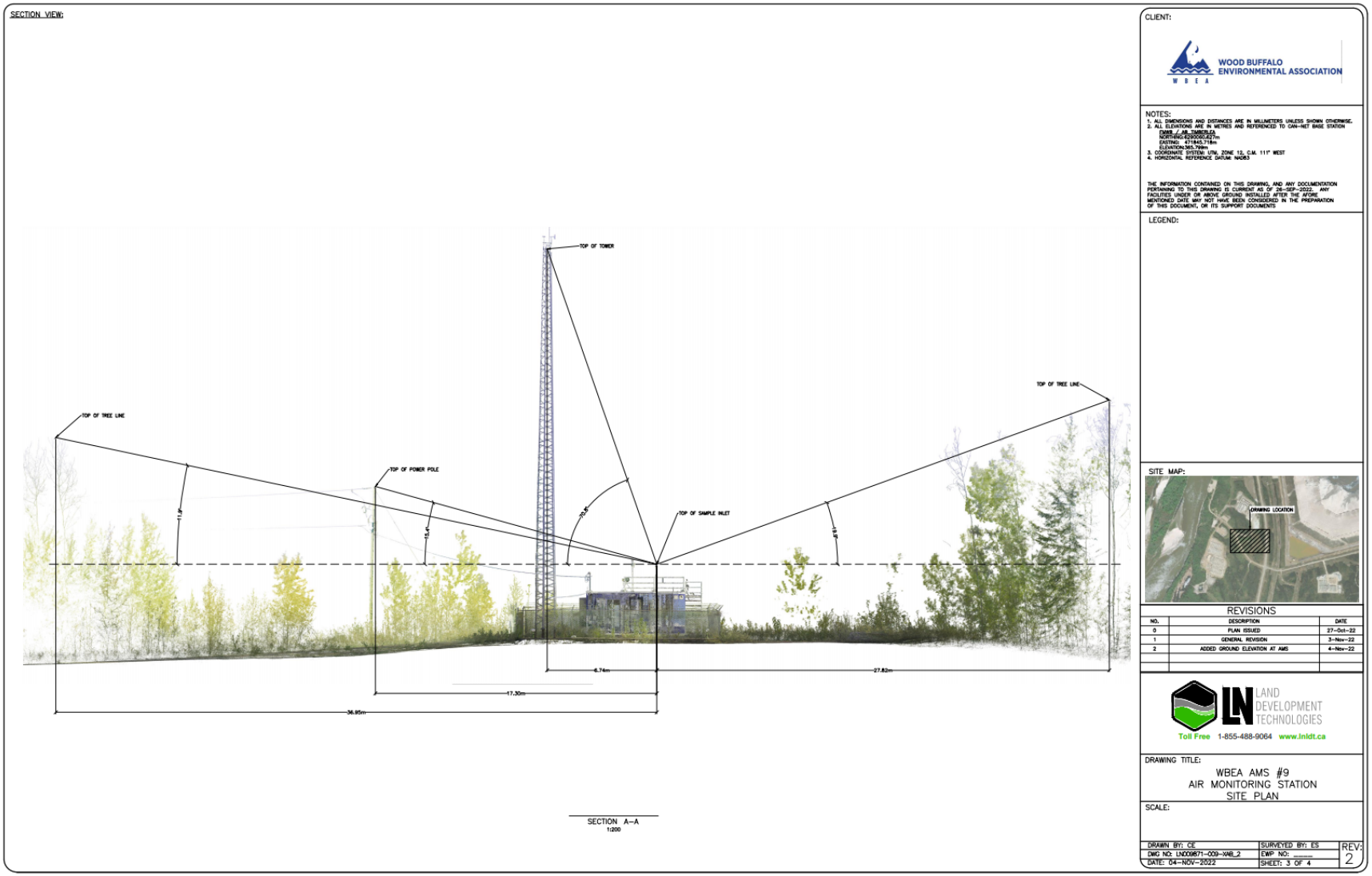


Figure 4 – Elevation view image for AMS 09 site, section A-A

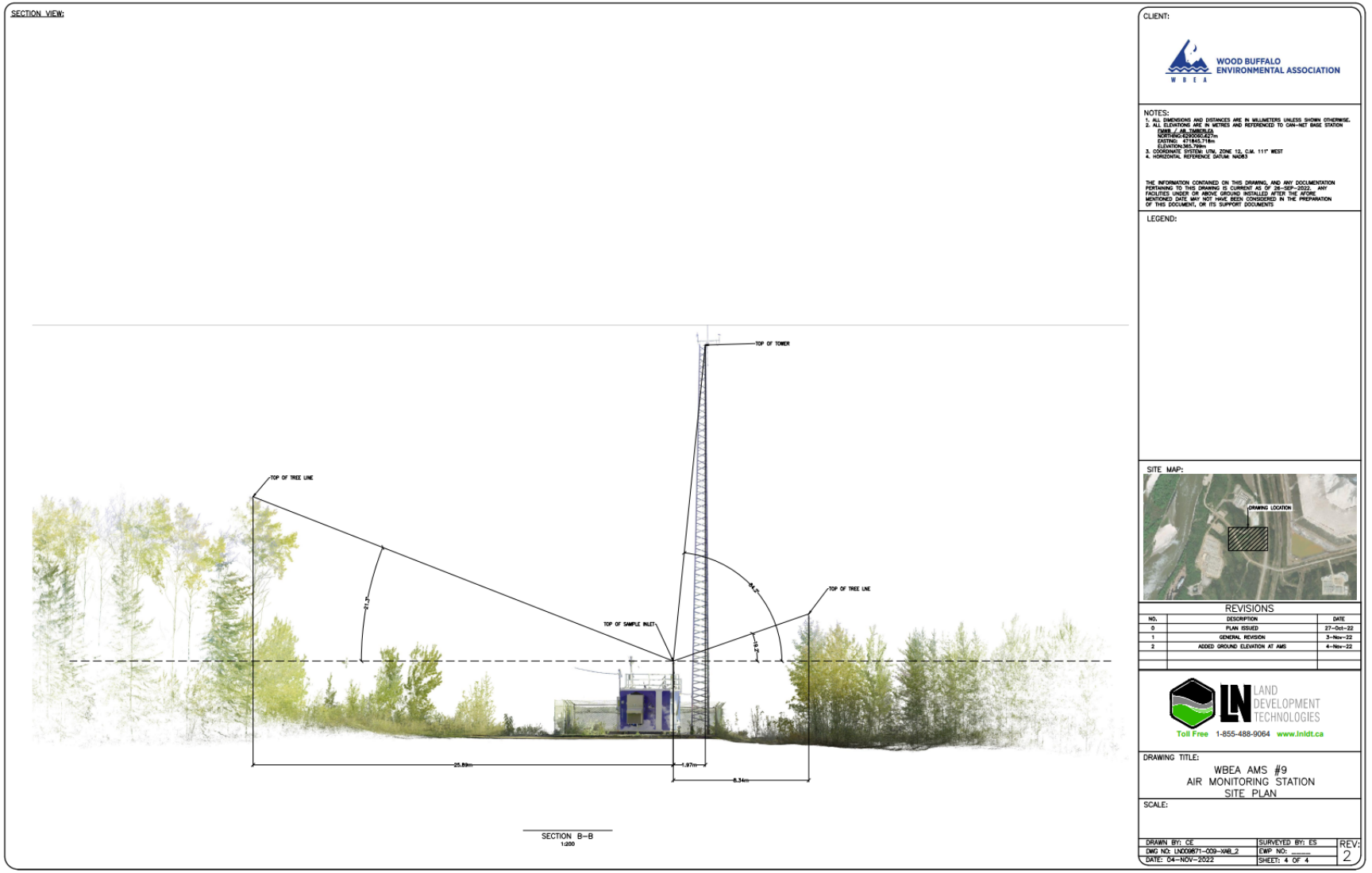


Figure 5 – Elevation view image for AMS 09 site, section B-B

## Site photos

The following photos show the environment surrounding the monitoring station.

Figure 6 – Environment looking North

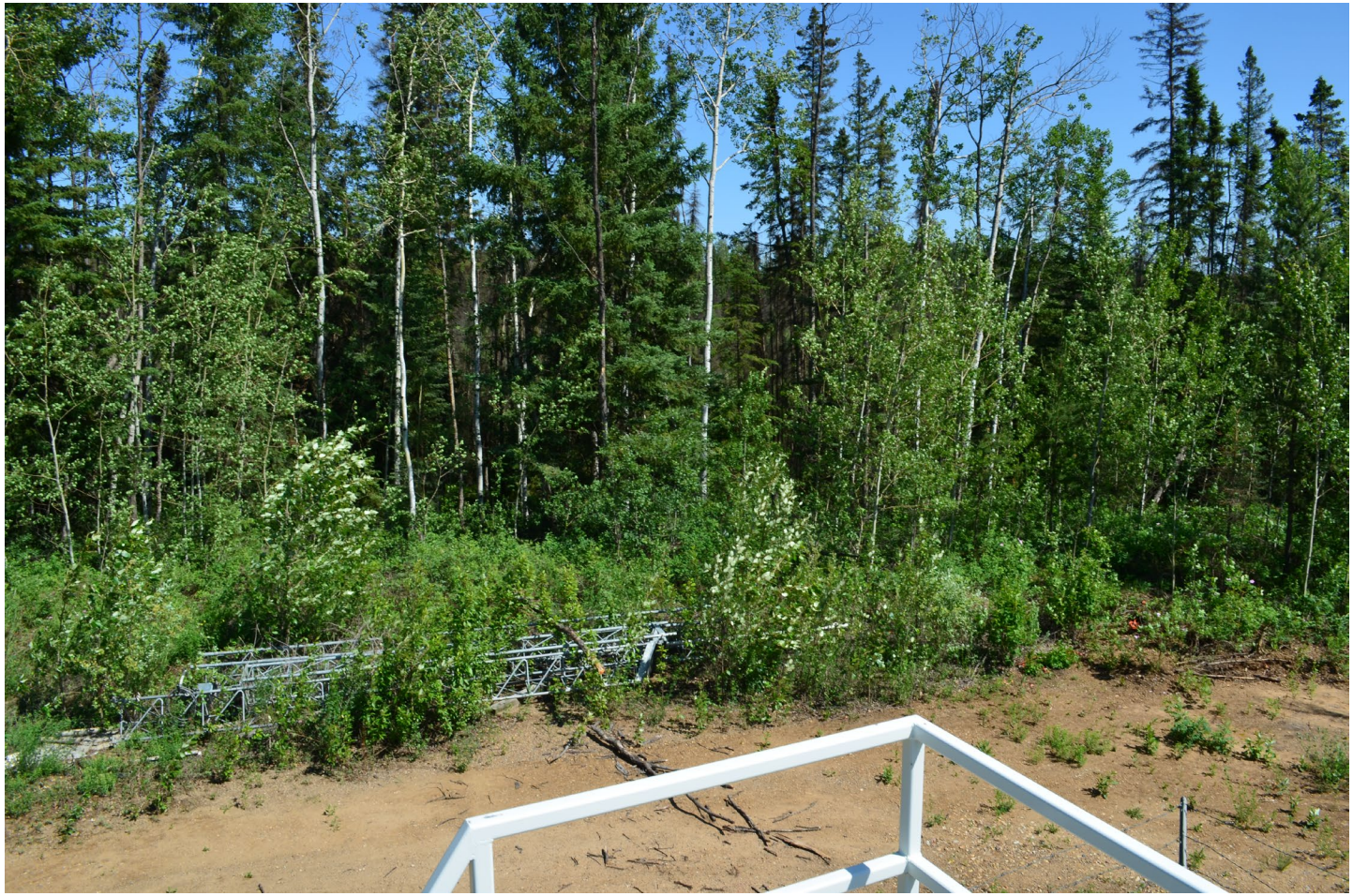

Figure 7 – Environment looking East

Figure 8 – Environment looking South

Figure 9 – Environment looking West

Figure 10 – Meteorological Tower

## Station Photos

The following photos show the monitoring station and instrumentation.

Figure 11 – Photo showing the inlet and sample manifold

Figure 12 – Curb shot of the monitoring station

Figure 13 –Photo of the front and the back of instrument rack

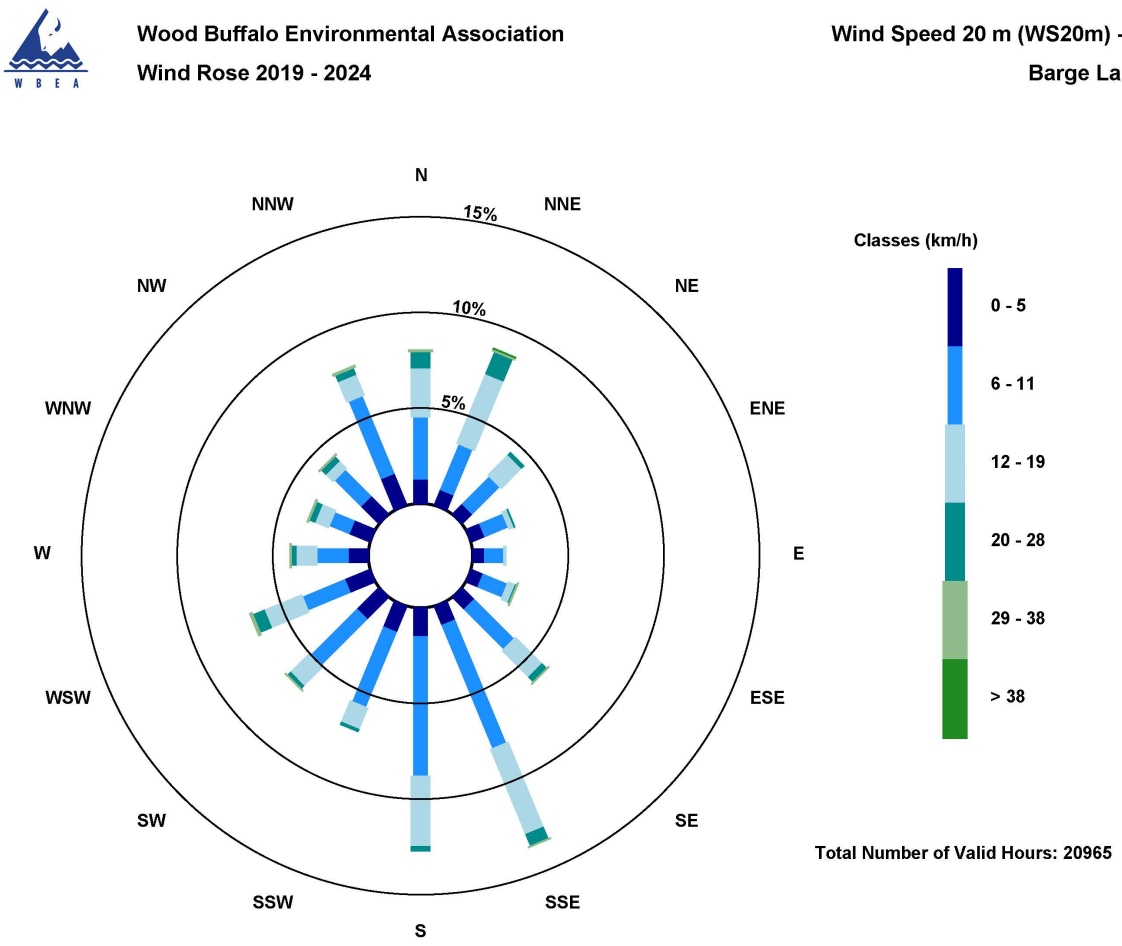


Figure 14 – Windrose (2019 – 2024)