# Site Documentation: St. Lina Continuous Monitoring Station

## General Site Information

| Item | Description |
|---|---|
| Site ID (CASA ID) | 31 |
| Station Name | St. Lina Continuous Monitoring Station (STL) |
| General Description | The STL monitoring station is located just outside the LICA airshed boundary south west of the hamlet of St. Lina. |
| Community | St. Lina |
| Station Address | LSD 4-SW30-60-10-4 |
| Coordinates | 54.215961° -111.503304° |
| Station Type | Regional Upwind |
| Area Land Use | Rural, Agricultural |
| Angle of elevation to nearby building in area | <15 degrees, trees surrounding knoll. |
| Airflow Restrictions (yes/no) | North: No East: No South: No West: No |
| Nearest Tree | Tree stands 10 - meters away in all directions |
| Sample Manifold Type | Glass |
| Meteorological Tower Information | Height: 10 meters<br>Type: Crank<br>Position: Attached to north side of monitoring shelter |
| Station Install Date | Original installation: June 2009 |
| Station Origin | LICA owned and operated |
| Site Preparation | Grassy open area on top of treed knoll. |

## Site Influences

**Localized Sources (within 20 meters of station)**

| Type | Distance | Description |
|---|---|---|
| Automobile | To the west | Regional highway |
| Industrial | To the east | Compressor pad |

**Road Way Sources**

| Name | Type | Traffic Volume | Distance (m) | Description |
|---|---|---|---|---|
| Highway 867 | Regional highway | Unknown – Minimal | Within 20 meters | Side Street |

**Major Point/Area Sources**

| Name | Type | Major Emissions | Distance (m) | Direction |
|---|---|---|---|---|
| CNRL Compressor Pad | Oil and Gas | NOx, PM, HC | Approximately 20 meters | East |

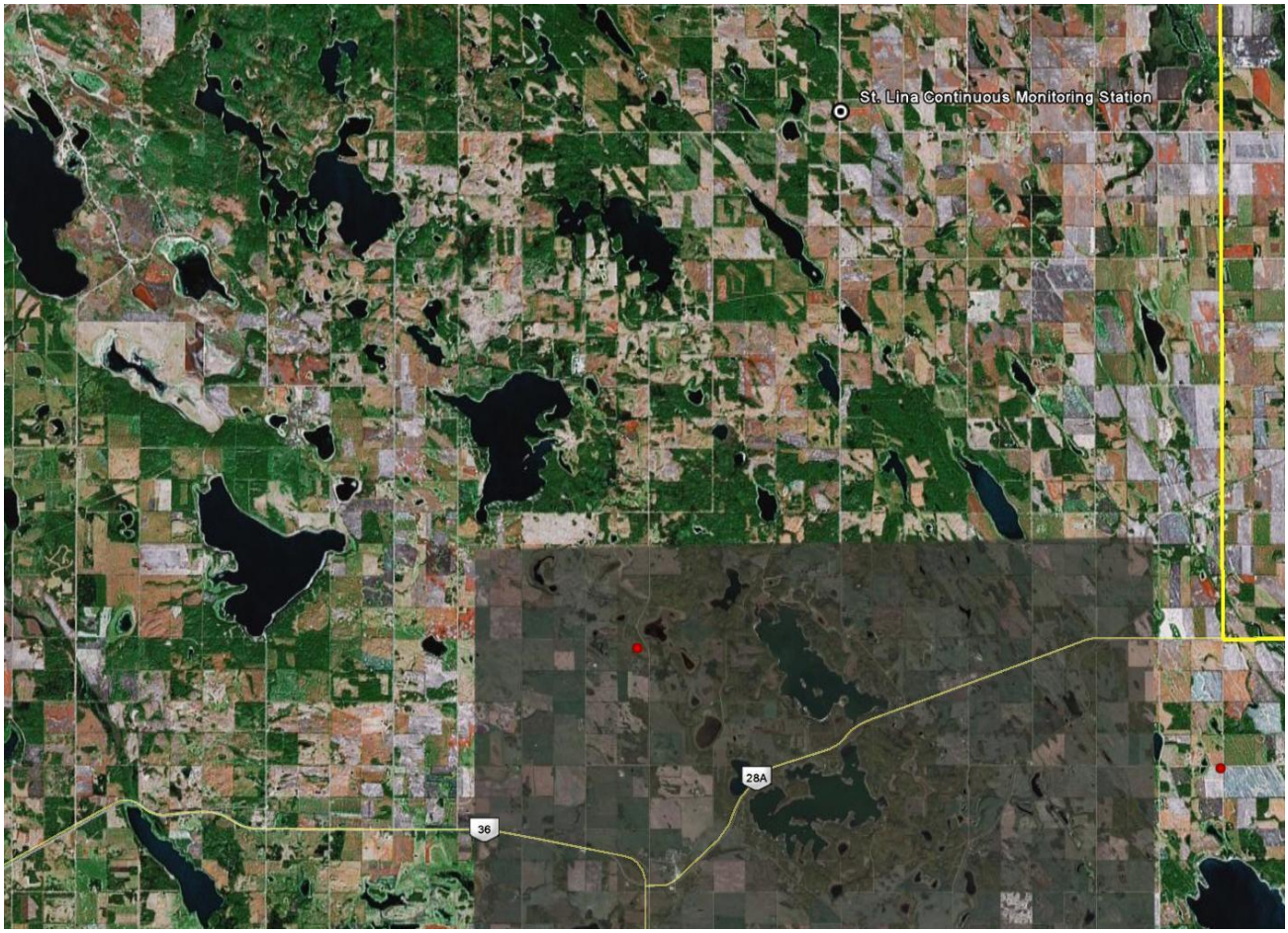



**Figure 1: Satellite image showing CLS Continuous Monitoring Station Location**

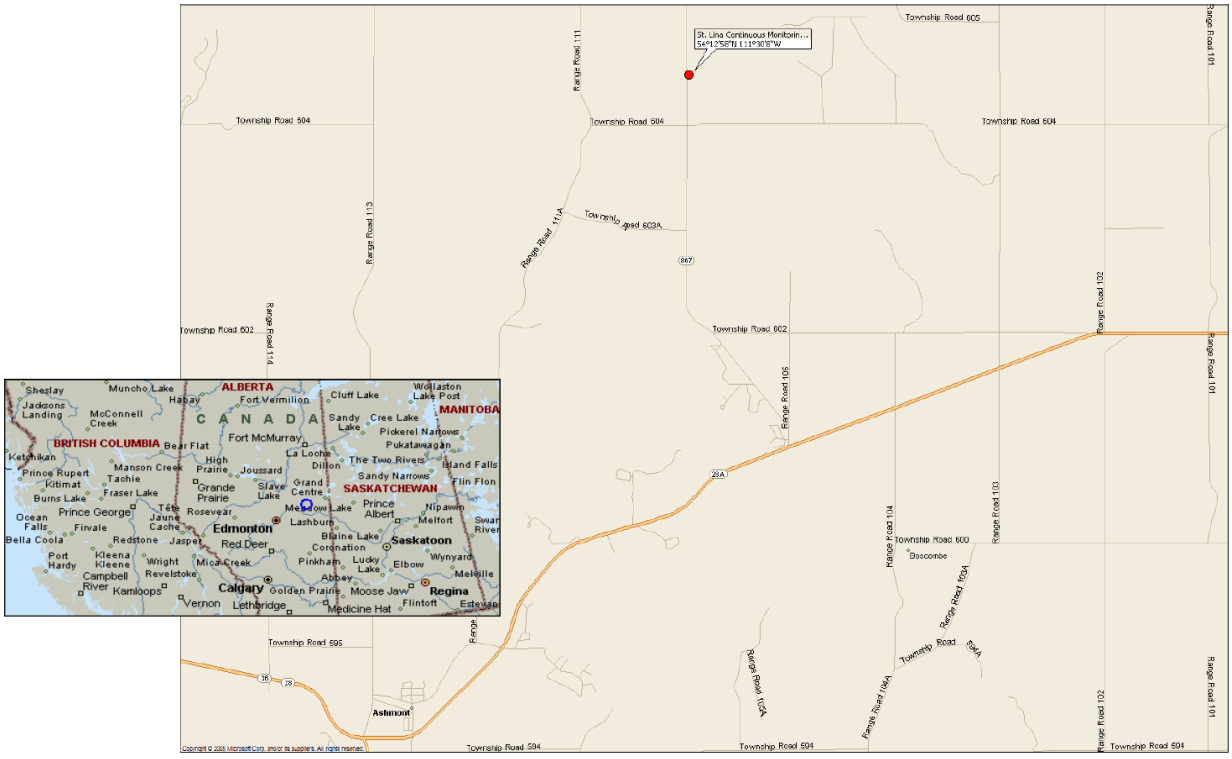



**Figure 2: Road Map showing STL Continuous Monitoring Station Location**

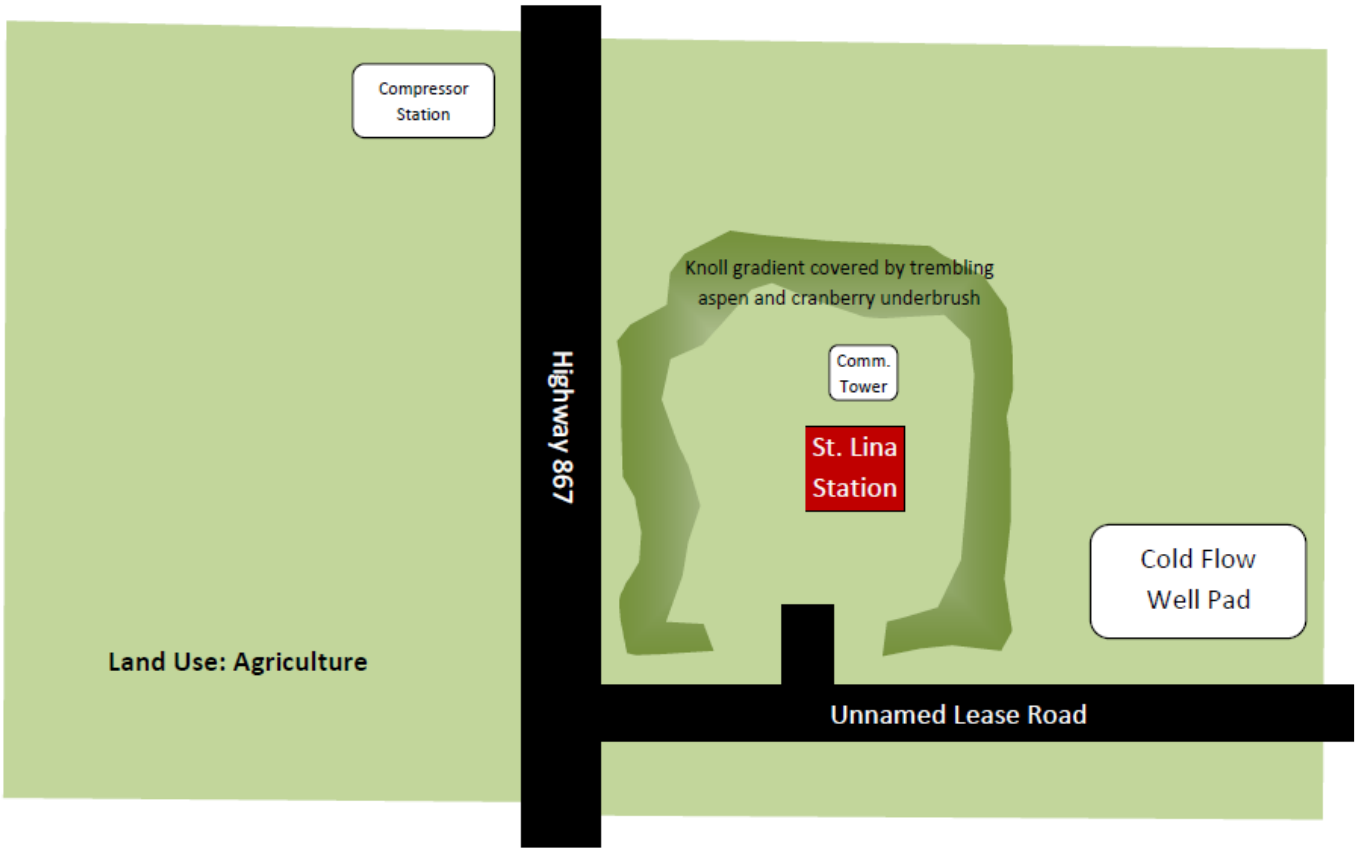



**Figure 3: Schematic showing STL Continuous Monitoring Station and surrounding features.**

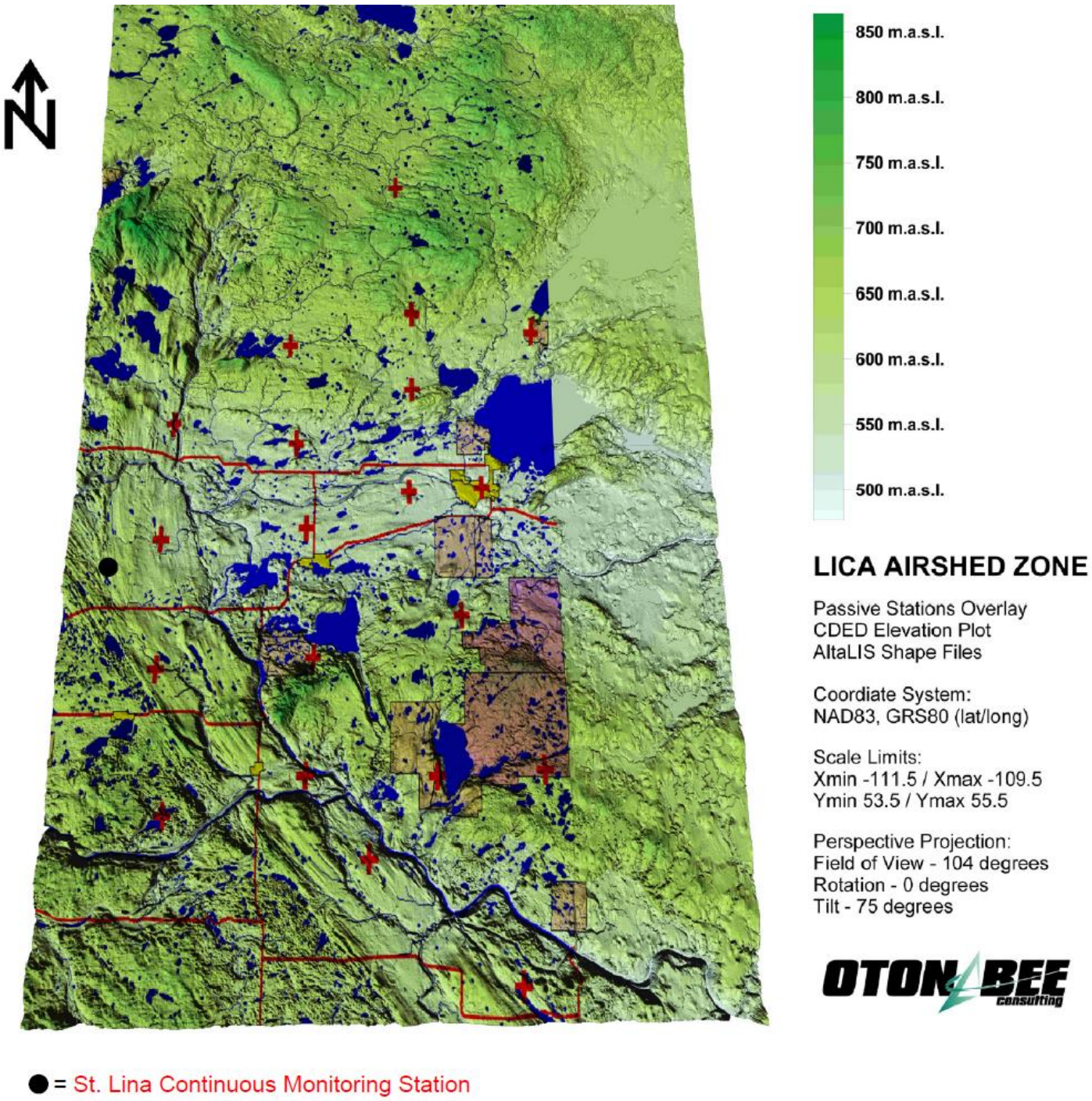
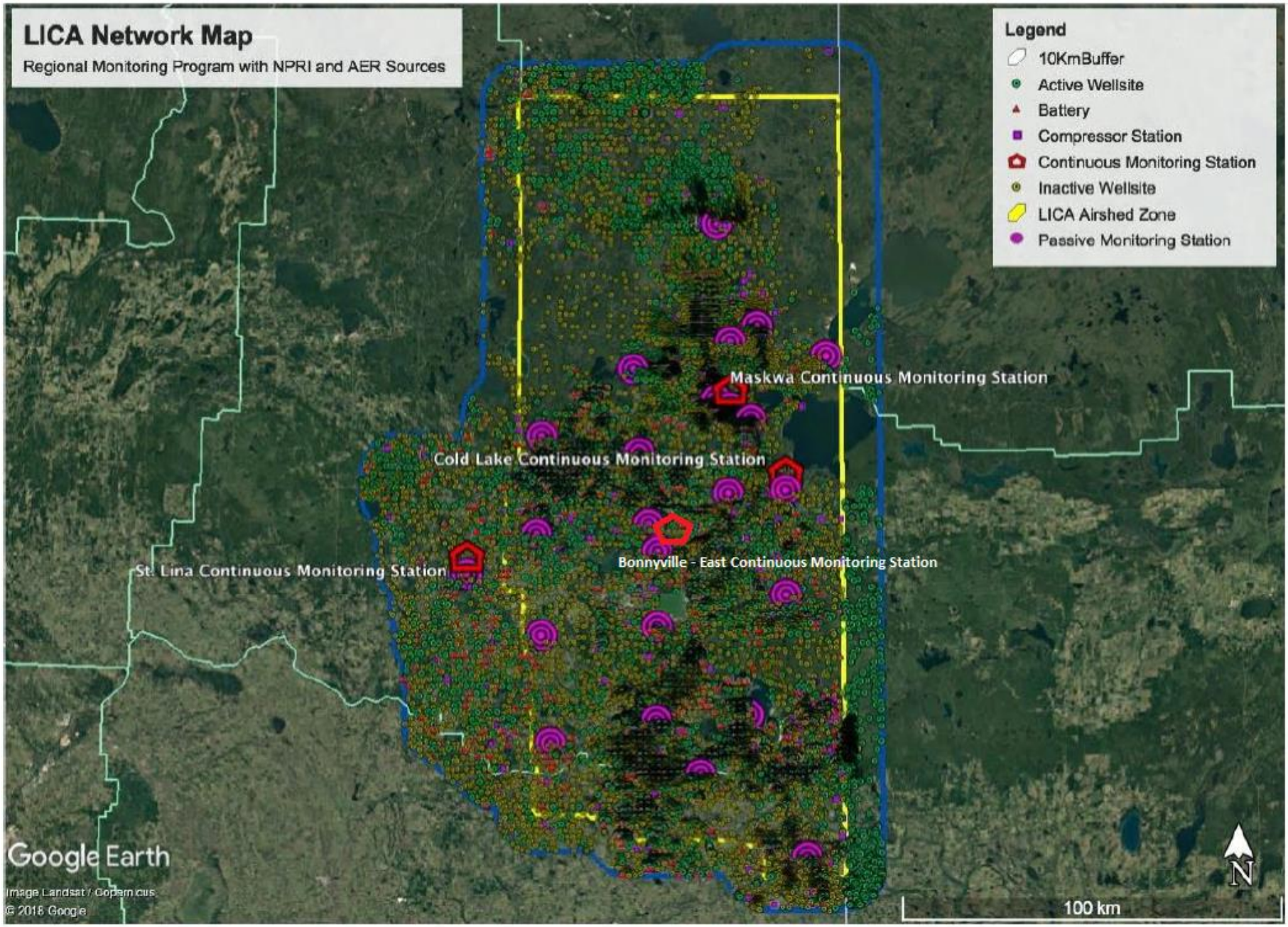



**Figure 4: Elevation Plot showing location of STL Continuous Monitoring Station**

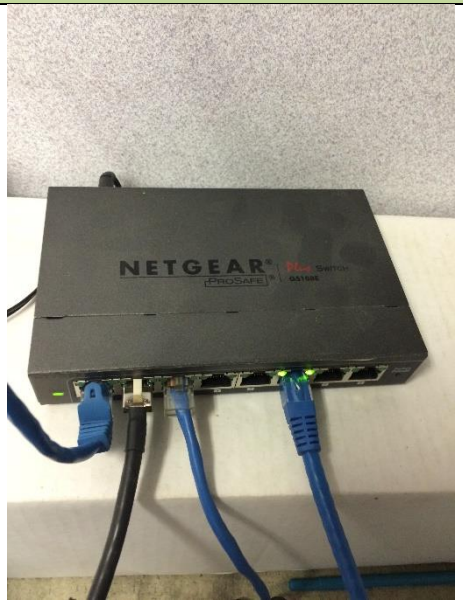
**LICA Network Map**



**Site Photographs – Cardinal Directions**

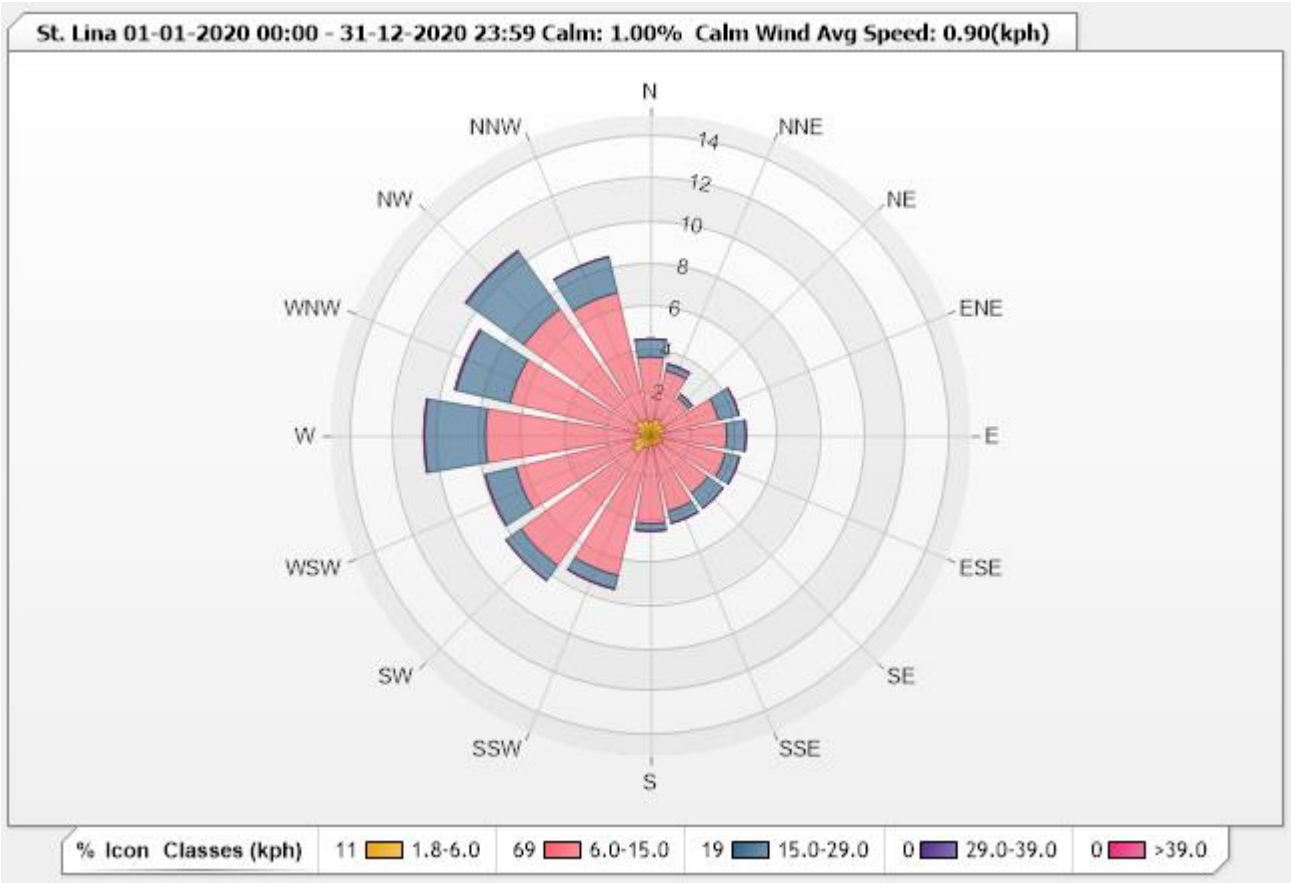
| North | East |
| --- | --- |
| | |
| **South** | **West** |
| | |

**Site Photographs – Monitoring Station**

| Exterior | Interior (Instrument Rack) | Interior (Intake Manifold) |
|---|---|---|
| | | |
| **Interior (gas cylinders)** | **Interior (modem and communications)** | |
| |  | |

## Wind Rose Diagram

**Wind Speed / Direction Frequency Distribution**




Data range: January 1, 2020 – December 31, 2020

# St. Lina Continuous Monitoring Station Equipment Inventory

**Air Quality**

| Parameter | Make/Model | Serial Number | Sampling Height (m) | Equipment Owner |
|---|---|---|---|---|
| ***Analytical Systems*** | | | | |
| Hydrogen Sulphide | Thermo / 43i -TLE | CM18010058 | 4 | LICA |
| Sulphur Dioxide | Thermo / 450i | 1180930030 | 4 | LICA |
| Oxides of Nitrogen | Thermo / 42i | 1180930029 | 4 | LICA |
| Particulate Matter 2.5 | Thermo / Sharp 5030i | CM17091001 | 4 | LICA |
| Hydrocarbons | Thermo / 55i | 1180930025 | 4 | LICA |
| Ozone | Thermo / 49i | 1002240371 | 4 | LICA |
| ***Meteorological Systems*** | | | | |
| Wind Speed | RM Young 05305VK | 161466 | 10 | LICA |
| Wind Direction | RM Young 05305VK | 161466 | 10 | LICA |
| Barometric Pressure | Met One 090D | F4998 | 4 | LICA |
| Relative Humanity | Vaisala Oyj. Finland / HMP155 | R2640785 | 4 | LICA |
| Ambient Temperature | Vaisala Oyj. Finland / HMP155 | R2640785 | 4 | LICA |
| ***Support Systems*** | | | | |
| Datalogger | Ultimate IPC-510 | KMA3518726 | N/A | LICA |
| Trailer Temperature | R&R 61 | N/A | N/A | LICA |
| Zero Air Supply | Teledyne API/701 | 1812 | N/A | LICA |
| HVAC | BARD WA-121-A05EPXXXJ | 158N082573045-01 | N/A | LICA |

## Owner/Approval Holder

| Item | Description |
|---|---|
| Name of owner/approval holder | LICA |
| Address | 5107W-50th Street<br>P.O. Box 8237<br>Bonnyville, AB Canada T9N 2J5 |
| Contact name | Mike Bisaga |
| Phone number | (780) 266-7068 |
| Email address | monitoring@lica.ca |
| Approval number | N/A |

## Operator

| Item | Description |
|---|---|
| Name of operating agency | Bureau Veritas Canada |
| Address | #1 2080 39th Ave NE<br>Calgary, AB T2E 6P7 |
| Contact name | Alexander Yakupov |
| Title | Field technician, Emission Services |
| Phone number | (780) 545-9363 |
| Email address | Alexander.yakupov@bvlabs.com |
| Contact name | Chris Wesson |
| Title | Senior Project Manager, Emission Services / Oil & Gas Division |
| Phone number | (780) 446-2724 |
| Email address | Christopher.wesson@bvlabs.com |

## Revisions

**Document Revision History**

| Revision No. | Date | Reason for Revision | Approved By |
|---|---|---|---|
| 0 | October 2009 | Original Issue | M. Bisaga, Airshed Program Manager |
| 1 | June 2013 | Updated equipment list, wind rose | M. Bisaga, Airshed Program Manager |
| 2 | June 2013 | Corrected location details | M. Bisaga, Airshed Program Manager |
| 3 | June 2014 | Updated equipment list | M. Bisaga, Manager – EMP |
| 4 | October 2015 | Serial numbers, wind rose. | M. Bisaga, Manager – EMP |
| 5 | July 2017 | Updated equipment list, wind rose diagram, trailer exterior photos<br>Added owner/operator info | M. Bisaga, Airshed Program Manager |
| 6 | May 2018 | Added LICA Network Map on page 5, updated wind rose diagram | L. Lin, Data & Reporting Specialist |
| 7 | November 2018 | Updated a photo to show new instruments and updated the equipment list | L. Lin, Data & Reporting Specialist |
| 8 | January 2019 | Updated trailer equipment list and serial numbers | L. Lin, Data & Reporting Specialist |
| 9 | March 2020 | Updated trailer equipment list, serial numbers, site photos, operator contact info and wind rose diagrams | L. Lin, Data & Reporting Specialist |
| 10 | January 2021 | Updated trailer equipment list, serial numbers and wind rose diagrams | L. Lin, Data & Reporting Specialist |