

# Air Quality Monitoring DASHBOARD REPORT

January 2013



# Continuous Monitoring Stations

January  
2013

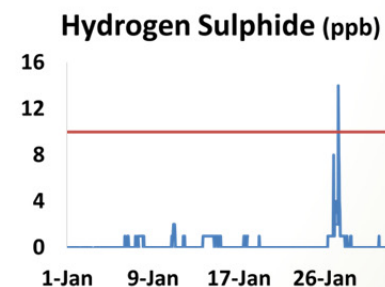
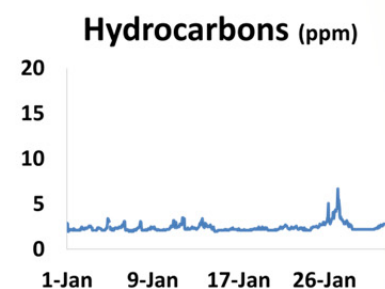
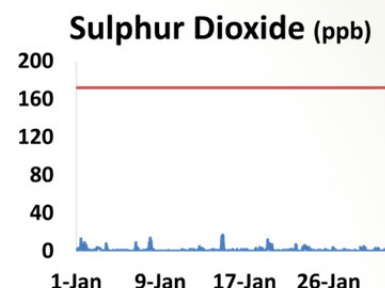
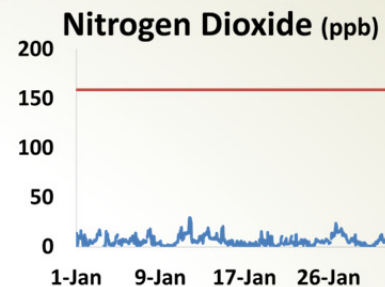
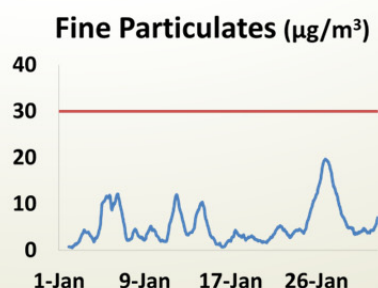
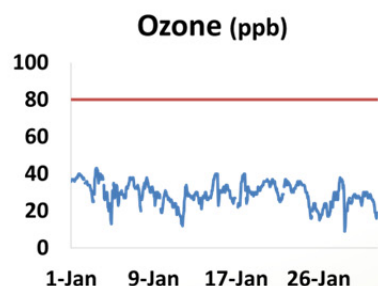
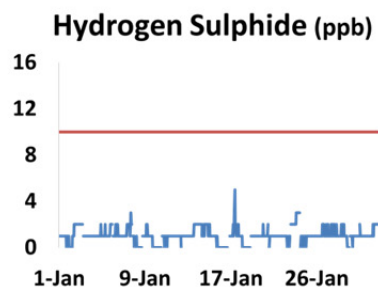
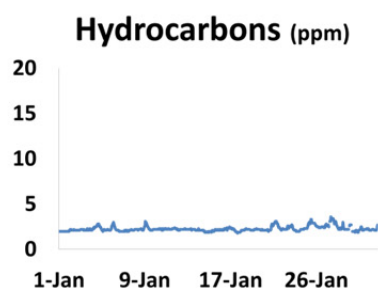
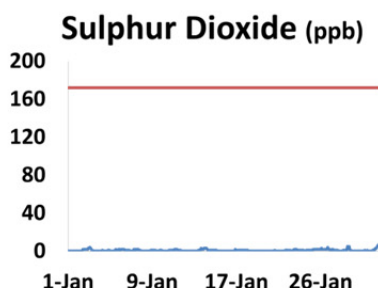
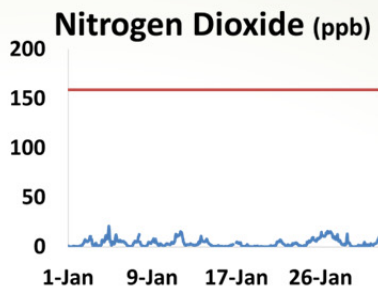
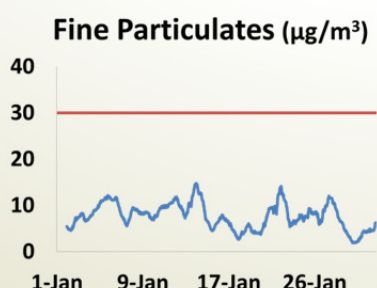
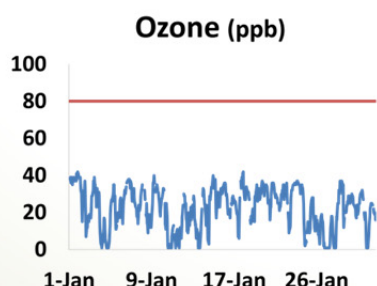
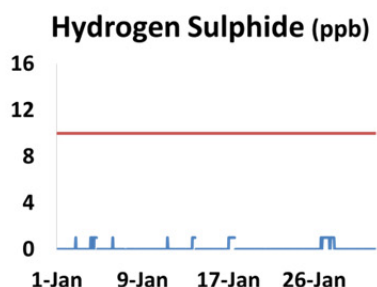
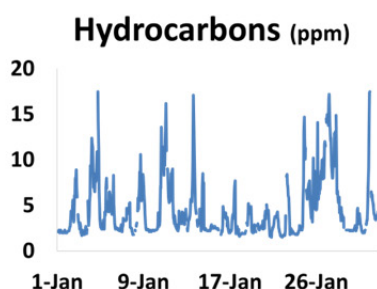
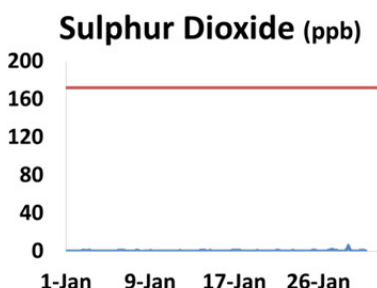
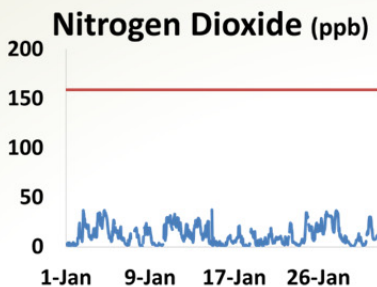
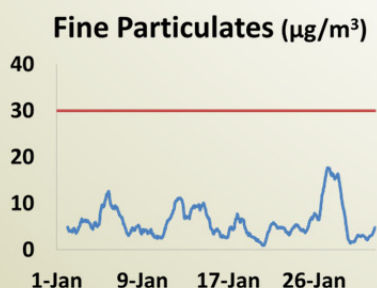
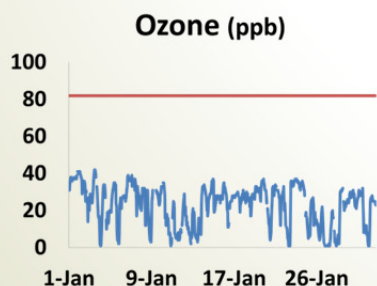
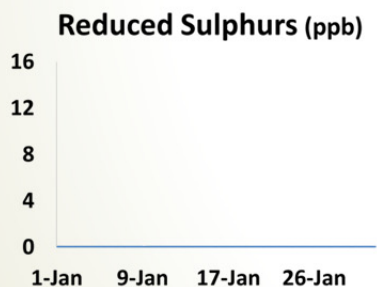
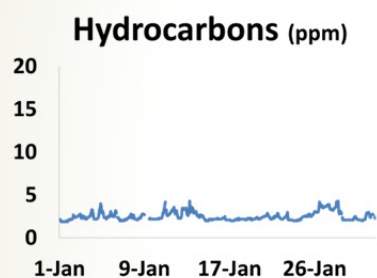
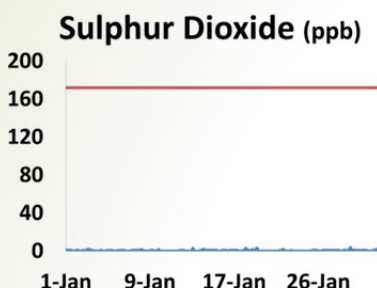
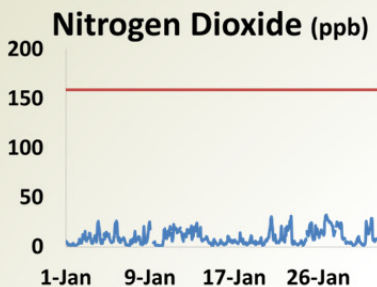


## Cold Lake

## PAMS (Elk Point)

## St. Lina

## Maskwa



### Notable observations for Jan 2013:

- Air quality was rated as "Low Risk" over 90% of the time at the Cold Lake, St. Lina, and portable monitoring stations.
- In this series of charts, the blue line indicates the pattern of measurements over a one-month period; the red line indicates the applicable Alberta Ambient Air Quality Objective (AAAQO) established for the respective
- There was one exceedence of the 1-hour AAAQO for hydrogen sulphide at the Maskwa station. An investigation by operators in the area found that a gas compressor on a production pad upwind of the station was shut-down due to low seal water level. As intended, the pressure safety valve on the vent separator vessel lifted to safely relieve the pressure. Field operations staff quickly responded by closing the vent valves on the wellheads to isolate the sources of gas (ESRD Reference #266784).



# Passive Monitoring Stations

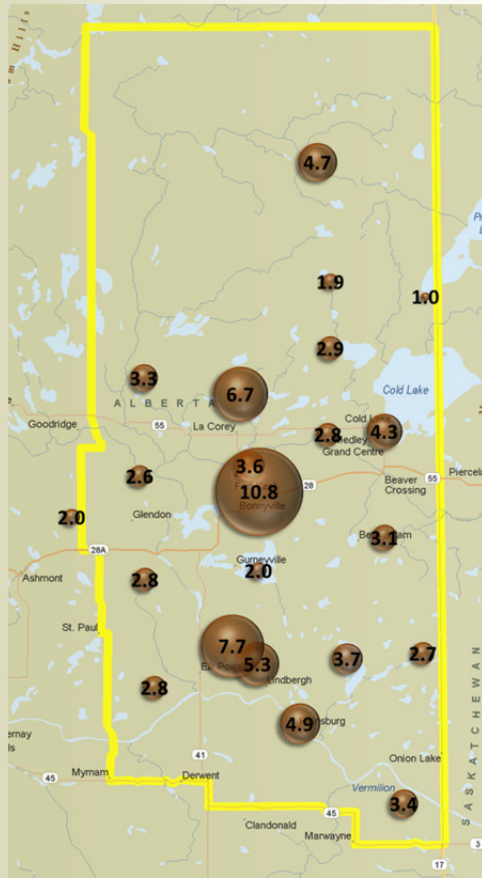
January  
2013



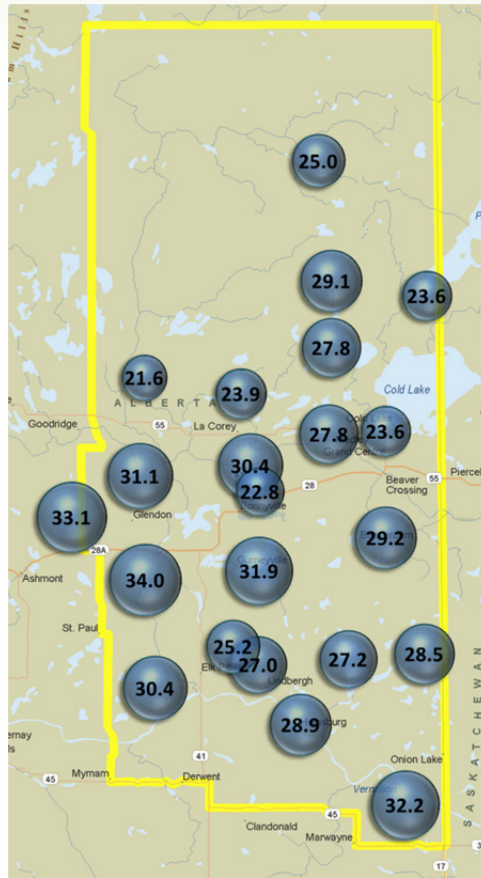
This series of bubble maps present monthly average concentrations in parts per billion (ppb).

Displaying data this way illustrates the spatial patterns of the parameters monitored in the LICA passive monitoring network.

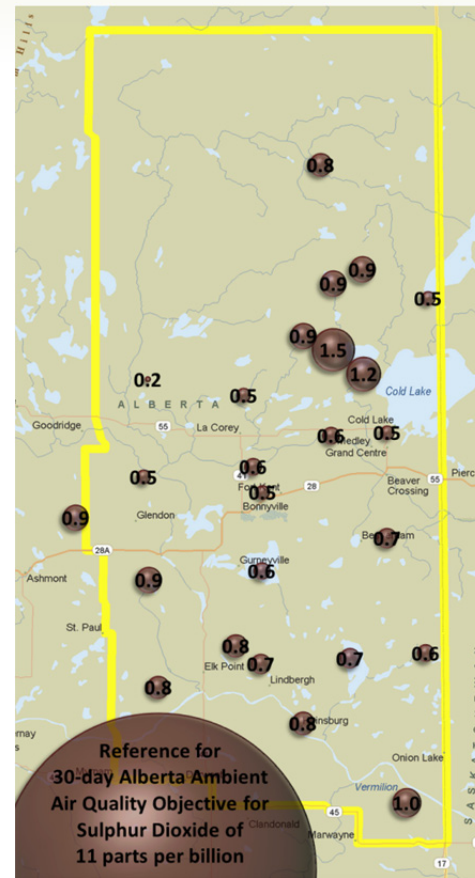
## Nitrogen Dioxide



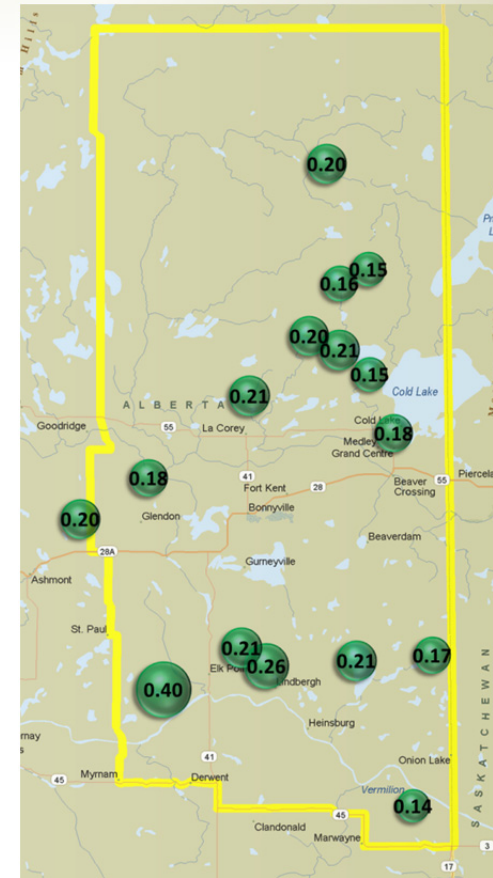
## Ozone



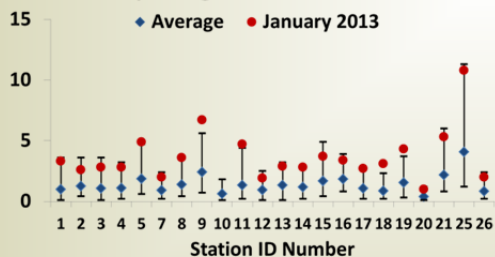
## Sulphur Dioxide



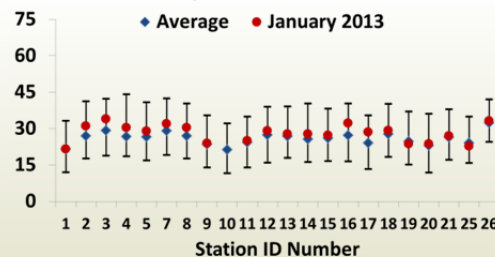
## Hydrogen Sulphide



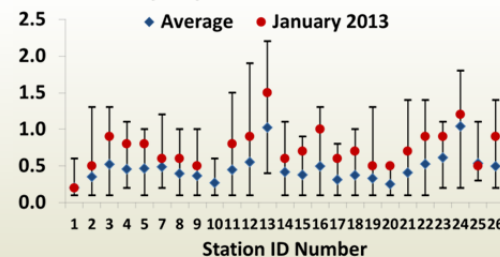
Minimum-Maximum-Average (ppb)  
Monthly Nitrogen Dioxide: 2011 - 2012



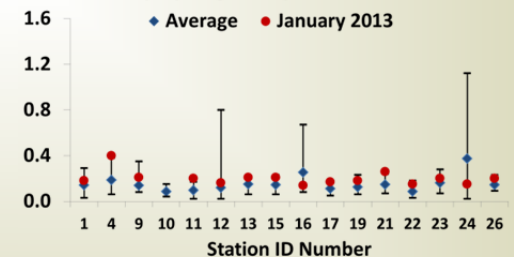
Minimum-Maximum-Average (ppb)  
Monthly Ozone: 2011 - 2012



Minimum-Maximum-Average (ppb)  
Monthly Sulphur Dioxide: 2011 - 2012

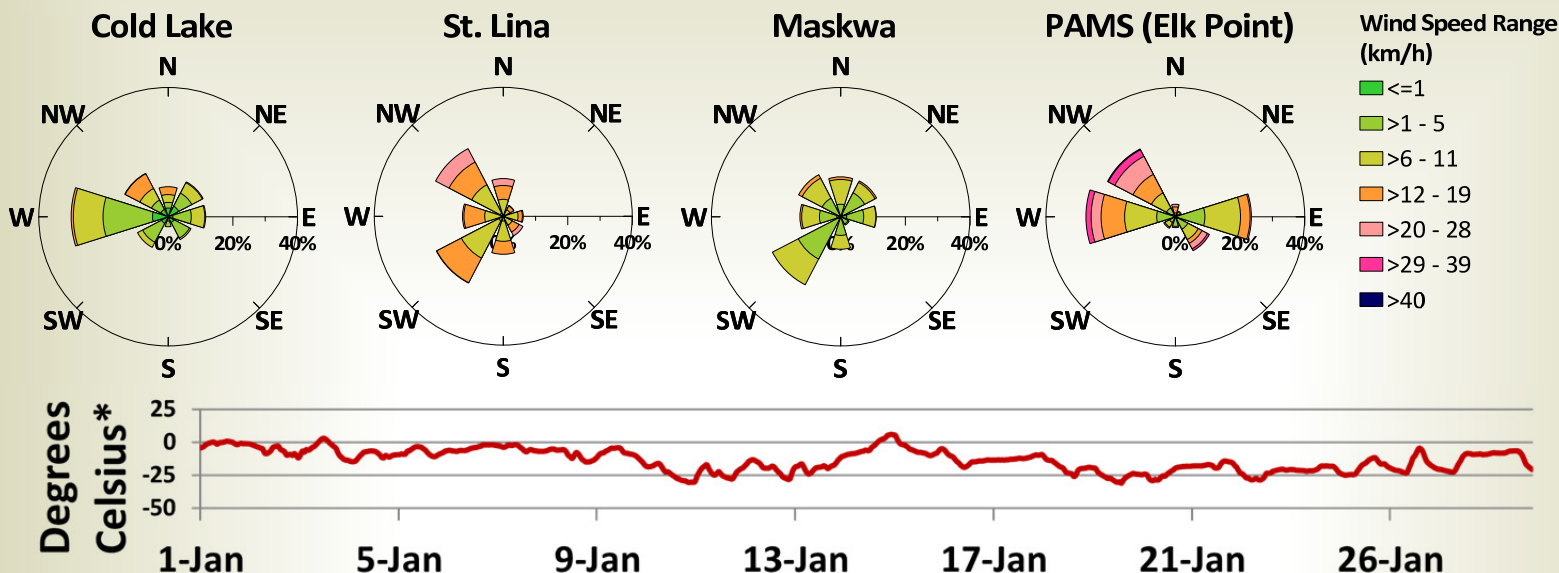


Minimum-Maximum-Average (ppb)  
Monthly Hydrogen Sulphide: 2011 - 2012



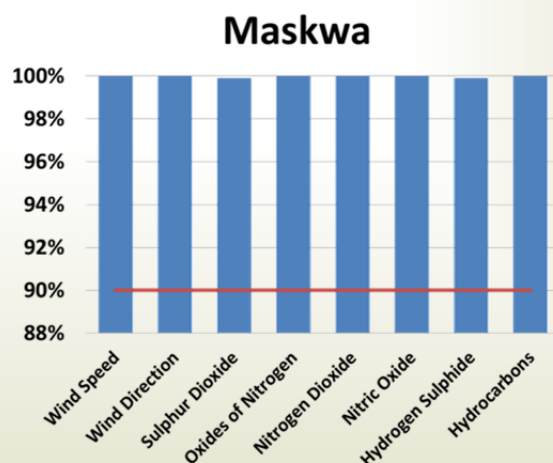
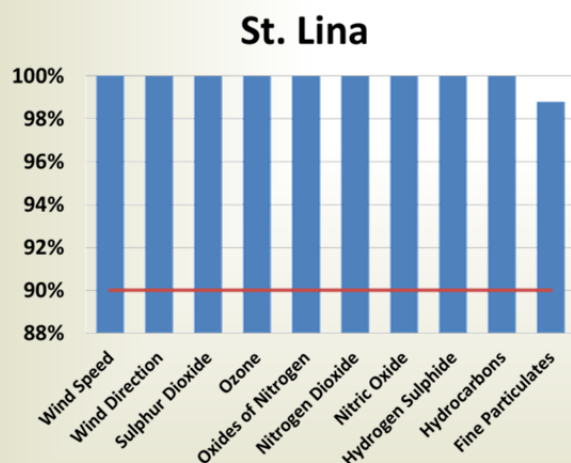
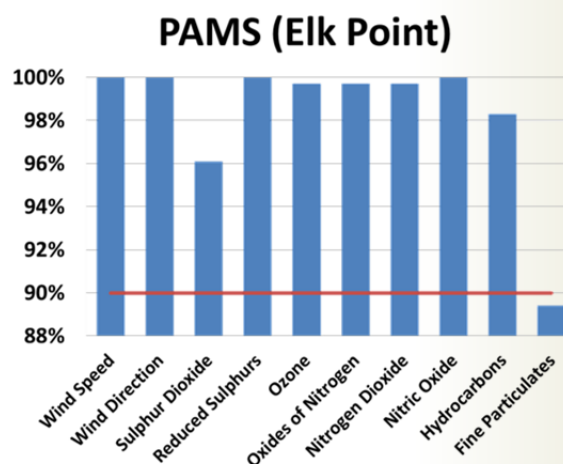
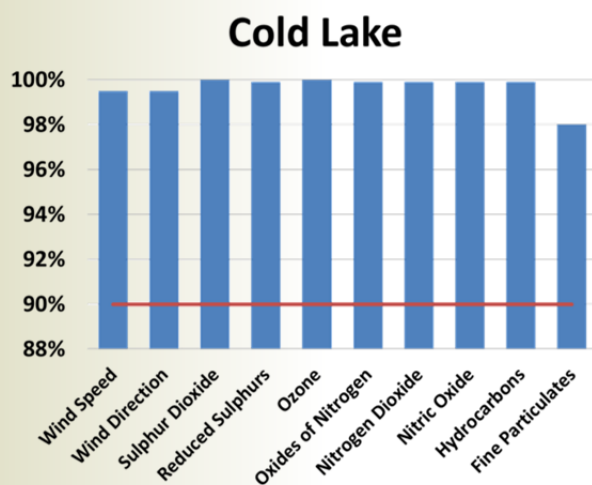
# Wind Speed, Wind Direction, Temperature

January  
2013



\* Temperature in Cold Lake

## Operational Uptime

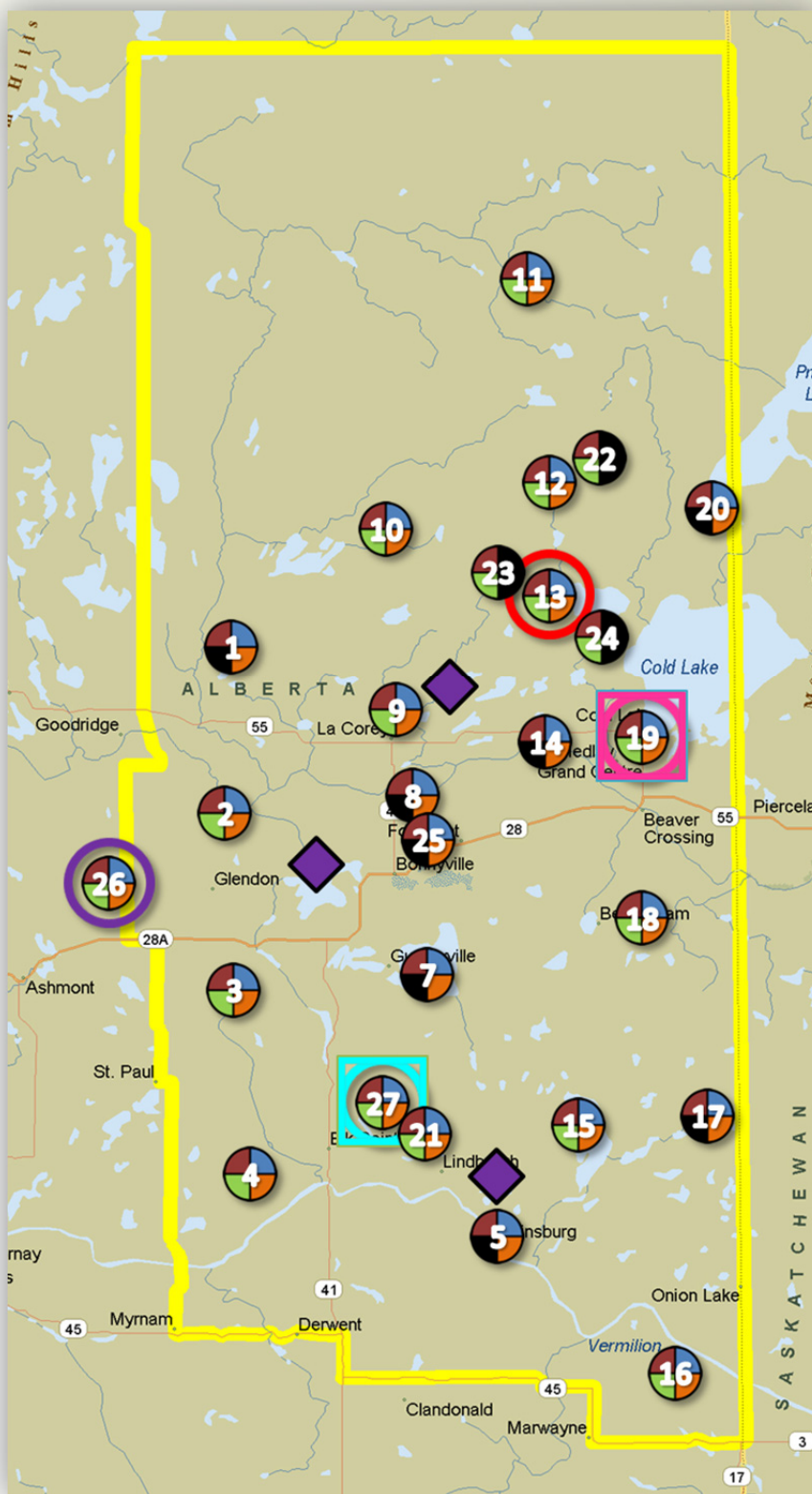
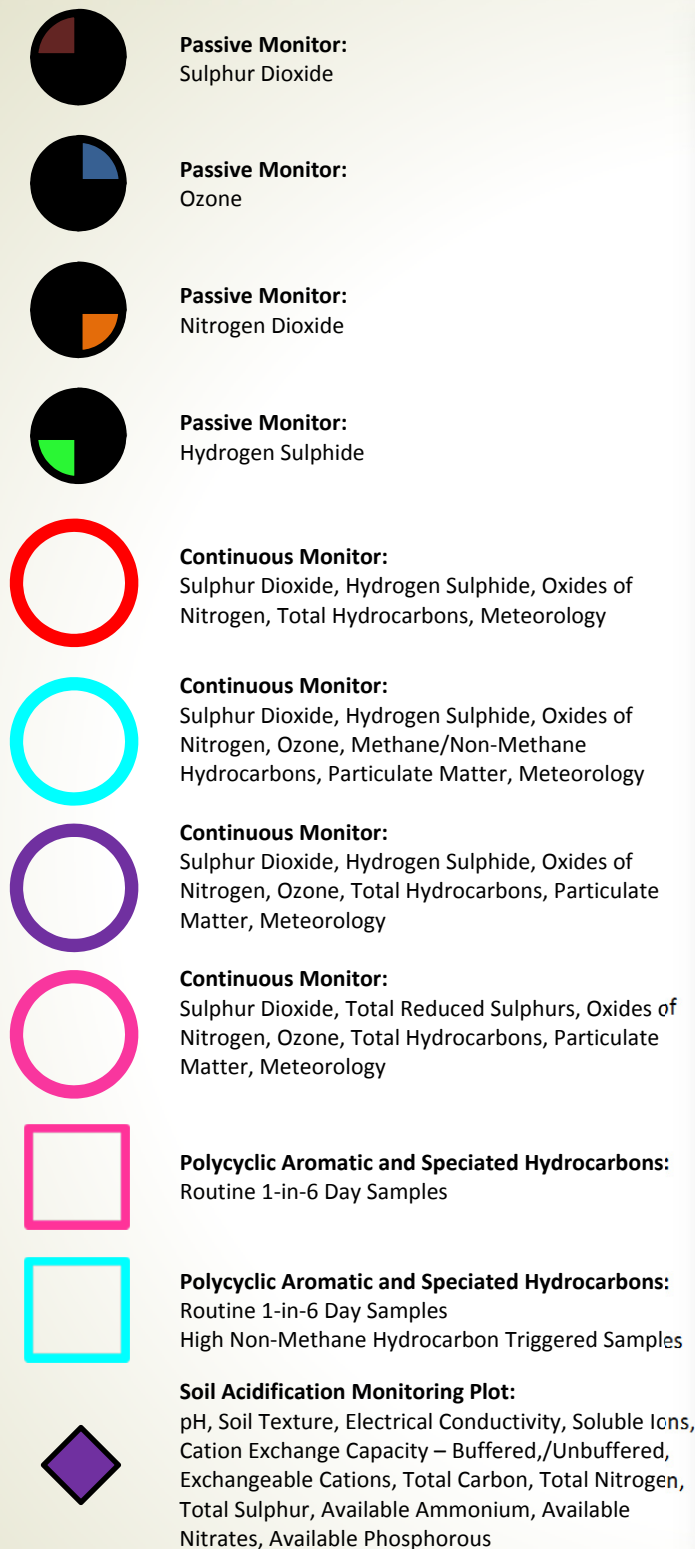


**Notes on instrument uptime:** The Alberta Air Monitoring Directive (1989) requires that real time instrumentation must be operational at least 90% of the time on a monthly basis (indicated by the red line on the above charts). In January 2013, the particulate matter analyzer at the portable air monitoring system (PAMS) located at Elk Point had several operational issues. With assistance from Alberta Environment and Sustainable Resource Development (ESRD) and particulate matter analyzer specialists, LICA was able to resolve the issues however, overall instrument operational uptime was less than the required 90% (ESRD Reference #268338).



# Regional Monitoring Network Map

January  
2013



## Station Identification

1 Sand River	9 La Corey	16 Clear Range	23 Mahihkan
2 Therien	10 Wolf Lake	17 Fishing Lake	24 Hilda Lake
3 Flat Lake	11 Foster Creek	18 Beaverdam	25 Town of Bonnyville
4 Lake Eliza	12 Primrose	19 Cold Lake South	26 St. Lina
5 Telegraph Creek	13 Maskwa	20 Medley-Martineau	27 Portable Station
7 Muriel-Kehewin	14 Ardmore	21 Fort George	
8 Dupre	15 Frog Lake	22 Burnt Lake	