# Air Quality Monitoring DASHBOARD REPORT





# **Continuous Monitoring Stations**

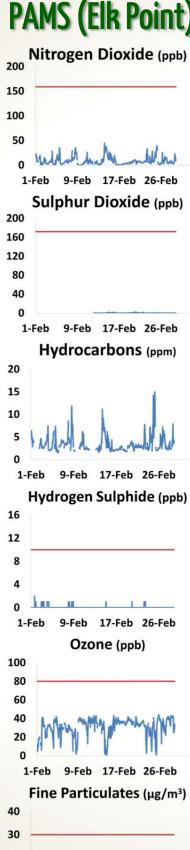
## **Cold Lake**

### Nitrogen Dioxide (ppb) 150 100 50 9-Feb 17-Feb 26-Feb Sulphur Dioxide (ppb) 200 160 120 80 40 9-Feb 17-Feb 26-Feb Hydrocarbons (ppm) 20 15 10 5 9-Feb 17-Feb 26-Feb Reduced Sulphurs (ppb) 16 8 9-Feb 17-Feb 26-Feb Ozone (ppb) 100 80 60 40 20 9-Feb 17-Feb 26-Feb Fine Particulates (µg/m³) 40 30 20 10

9-Feb

17-Feb 26-Feb

## PAMS (Elk Point)

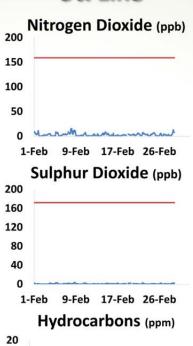


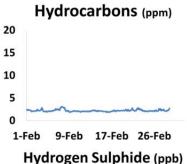
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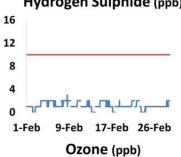
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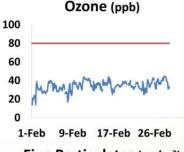
9-Feb 17-Feb 26-Feb

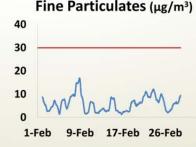
## St. Lina



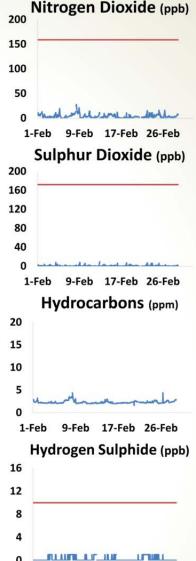








## Maskwa



#### Notable observations for Feb 2013:

9-Feb 17-Feb 26-Feb

- 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 onemonth period; the red line indicates the applicable Alberta Ambient Air Quality Objective (AAAQO) established for the respective parameter.
- The total reduced sulphur analyzer failed its 'as found' check point at the Cold Lake South station. The cause was determined to be a failure of the scrubber material. Data were invalidated back to the last good calibration on January 31 (ESRD Reference #268468).
- A circuit board failure and instrument instability resulted in operational uptime less than 90% for the particulate matter analyzer and the sulphur dioxide analyzer (reference #268469) at the PAMS site.

# **Passive Monitoring Stations**

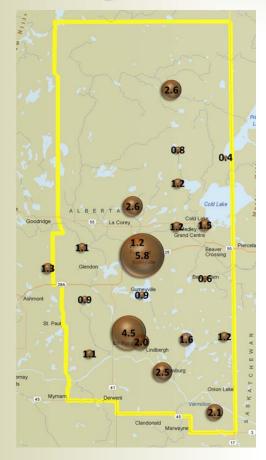
February

Lakeland Industry & Ommunity Association

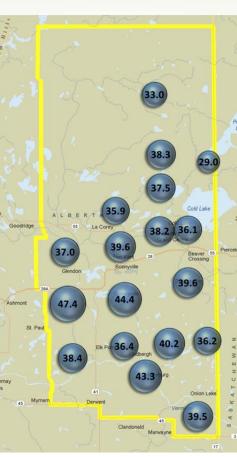
This series of bubble maps present monthly average concentrations in parts per billion (ppb).

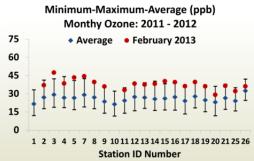
Displaying data this way illustrates the spatial patterns of the parameters monitored in the LICA passive monitoring network.

## Nitrogen Dioxide

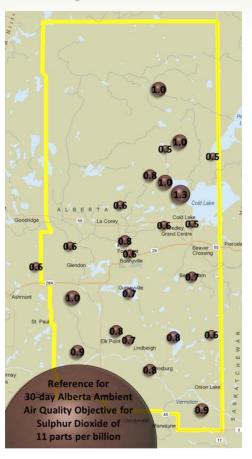


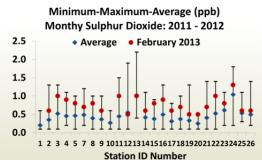
## **Ozone**



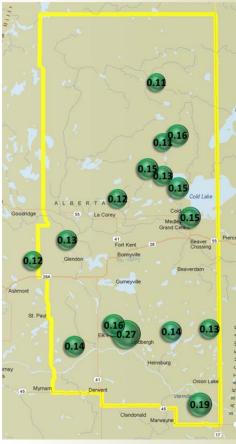


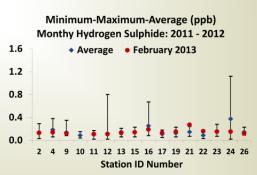
## **Sulphur Dioxide**





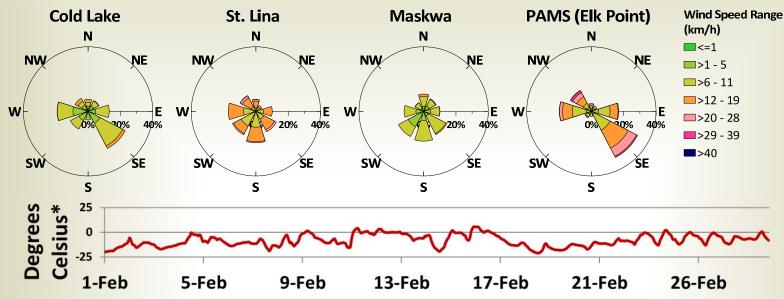
## Hydrogen Sulphide



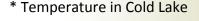


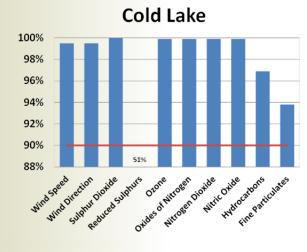
# Wind Speed, Wind Direction, Temperature

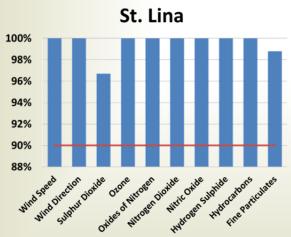


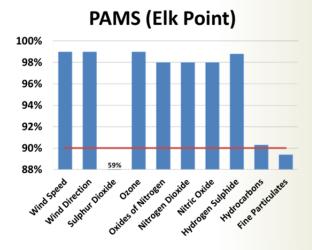


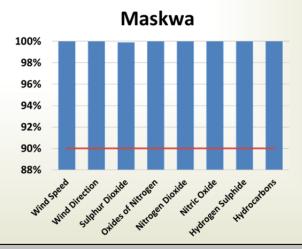
# **Operational Uptime**











**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). The total reduced sulphur analyzer failed its 'as found' check point at the Cold Lake South station on February 14<sup>th</sup>. The cause was determined to be a failure of the scrubber material. Data were invalidated back to the last good calibration on January 31 (reference #268468). The corrective action that LICA is taking to address this issue is to install a second (redundant) scrubber at the station. At the end of January 2013, a snow removal crew accidentally cut the power line to the PAIMS site. Power was restored to the station within a matter of hours however the event caused damage to the sulphur dioxide analyzer's circuitry and further instability with the particulate matter analyzer (reference #268469). The corrective action that LICA took to prevent this from happening again included raising and relocating the power supply.

# **Regional Monitoring Network Map**





Passive Monitor: Sulphur Dioxide



Passive Monitor:





**Passive Monitor:** 

Nitrogen Dioxide



**Passive Monitor:** 

Hydrogen Sulphide



#### **Continuous Monitor:**

Sulphur Dioxide, Hydrogen Sulphide, Oxides of Nitrogen, Total Hydrocarbons, Meteorology



#### **Continuous Monitor:**

Sulphur Dioxide, Hydrogen Sulphide, Oxides of Nitrogen, Ozone, Methane/Non-Methane Hydrocarbons, Particulate Matter, Meteorology



#### **Continuous Monitor:**

Sulphur Dioxide, Hydrogen Sulphide, Oxides of Nitrogen, Ozone, Total Hydrocarbons, Particulate Matter, Meteorology



#### **Continuous Monitor:**

Sulphur Dioxide, Total Reduced Sulphurs, Oxides of Nitrogen, Ozone, Total Hydrocarbons, Particulate Matter, Meteorology



Polycyclic Aromatic and Speciated Hydrocarbons:

Routine 1-in-6 Day Samples



#### **Polycyclic Aromatic and Speciated Hydrocarbons:**

Routine 1-in-6 Day Samples High Non-Methane Hydrocarbon Triggered Samples



#### **Soil Acidification Monitoring Plot:**

pH, Soil Texture, Electrical Conductivity, Soluble Ions, Cation Exchange Capacity – Buffered,/Unbuffered, Exchangeable Cations, Total Carbon, Total Nitrogen, Total Sulphur, Available Ammonium, Available Nitrates, Available Phosphorous

#### Station Identification

- 1 Sand River
- 2 Therien
- **3** Flat Lake
- 4 Lake Eliza
- 5 Telegraph Creek
- 7 Muriel-Kehewin
- 8 Dupre

- 9 La Corey
- 10 Wolf Lake
- 11 Foster Creek
- 12 Primrose
- 13 Maskwa
- 14 Ardmore
- L5 Frog Lake

- 16 Clear Range
- 17 Fishing Lake
- **18** Beaverdam
- 19 Cold Lake South
- 20 Medley-Martineau
- 21 Fort George22 Burnt Lake

- 23 Mahihkan
- 24 Hilda Lake
- 25 Town of Bonnyville
- **26** St. Lina
- 27 Portable Station

