Air Quality Monitoring Dashboard Report January 2020







Monitoring data are presented as 1-hour averages. Dashed red lines indicate the applicable Alberta Ambient Air Quality Objective or Guideline (AAAQO/G). AAAQOs presented in these charts: sulphur dioxide 1-hour = 172 ppb, ozone 1-hour = 76 ppb, nitrogen dioxide 1-hour = 159 ppb. AAAQGs presented in these charts: particulate matter_{2.5} 1-hour= 80 µg/m³. Air Quality Health Index (AQHI) Risk Range = 1-3 Low, 4-6 Moderate, 7-9 High, 10+ Very High (<u>www.alberta.ca/air-quality-health-index.aspx</u>).

Continuous Monitoring



Operations Notes: Parameters noted as "Coming Soon" will be added in 2020. For **Operational Time**, the minimum requirement is 90% (indicated by the dashed red line on the above charts). **Cold Lake South:** No operational issues this month. **Maskwa:** The hydrogen sulphide analyzer spanned outside the lower limit on January 13. Nineteen hours of relative humidity data were invalidated as the hourly readings were recorded overrange. Minor adjustment was made to channel's datalogger configuration on January 24 to correct the issue. **St. Lina:** The analyzer spanned outside the lower acceptance limit between January 14 and 16. This was likely related to low ambient temperatures. Due to winter weather conditions, site access was not possible until January 20 to check the analyzer's functionality until January 22. The THC/CH4/NMHC analyzer failed the daily span check on January 27 and 28. The issue was isolated to the span system. As subsequent span results were without issues, no further action was required. Data quality between January 27 and 28 were not affected. **PAMS - Bonnyville:** The THC/CH4/NMHC span gas cylinder was replaced following a zero-span check on January 6. Two hours of downtime were recorded due to the additional zero-span check. The particulate matter instrument failed on January 17 hour 10. The cause was likely due to extreme winter conditions. Thirty-two hours of downtime were recorded due to this event. **Acronyms:** PAMS = Portable Air Monitoring System, SO2 = sulphur dioxide, TRS = total reduced sulphur, NO2 = nitrogen dioxide, O3 = ozone, THC = total hydrocarbons, CH4 = methane, NMHC = non-methane hydrocarbons, PM2.5 = fine particulate matter, RH = relative humidity, H2S = hydrogen sulphide, BP = barometric pressure, TEMP = temperature, WS = wind speed, WD = wind direction, AQHI = air quality health

Passive Monitoring

Hydrogen Sulphide

18 22 24 25 26 27 29 32 34

Station ID Number

2

5

10 11 12 13

1011121314151617181922232425262728293234363840

Station ID Number

#13 - Primrose #23 - Medley 0.14 Martineau #26 - Mahihkan #13 - Primrose #13 - Primrose 0.5 #23 - Medley 0.15 28.4 Martineau 32.6 #11 - Wolf Lake #11 - Wolf Lake #11 - Wolf Lake #11 - Wolf Lake Hilda Lake #27 27.8 0.8 #14 - Maskwa #26 - Mahihkan #14 . Masku 0.21 #14 - Masky 13 #10 - La Corev 30.4 #27 - Hilda Lake Cold Lake Sou 0.14 #10 - La Corey 26.1 #10 - La Core old Lak #14 - Masky 0.16 Ardmore #3 - Therien #9 - Dupre 30.3 18 #9 - Dupre 32.3 #9 - Dupr #22 - Cold Lake 0.14 #3 - Therien 3 - Therie 28.7 #3 - Therien #22 - Cold Lake 0.5 #40 - Bonnyville-East #22 · Cold Lake South #40 - Bonnyville 0.5 South 30.4 #28 - Bonnyville ⁷³1 East 0.54 #32 - St. Lina 0.14 #32 - St. Lina #32 - St. Lina #32 - St. Lina 0.5 #28 Bonnyville 32.9 0.16 #40 - Bonnyville-East - Beaverdam #19 - Beaverdam - Bonnyville-East 25.2 20 0.9 #8 - Muriel-Kehewin #8 - Muriel Kehewin #8 - Muriel-Kehewin 4 - Flat Lake #4 - Flat Lake 32.9 #18 - Fishing Lake #19 - Beaverdam #18 - Fishing Lake #18 - Fishing Lake 0.5 #18 - Fishing Lake 0.15 St. Pau St. Pau St. Pau ort George#16 - Frog Lake #24 - Fort George^{#16} - Frog Lake #24 - Fort George^{#16} - Frog Lak #24 - Fort George #5 - Lake Eliz Lake Eliza #5 - Lake Eliza #5 - Lake Eliza 27.6 #16 - Frog Lake Telegraph Greek Telegraph Greek 0.17 legraph Greek #6 #17 - Clear Range #17 - Clear Range 7 - Clear Range **Clear Range** 0.25 Marwayne Minimum-Maximum-Average (ppb) Minimum-Maximum-Average (ppb) Minimum-Maximum-Average (ppb) Minimum-Maximum-Average (ppb) Monthy Nitrogen Dioxide: 2007 - 2019 Monthy Ozone: 2007 - 2019 Monthy Sulphur Dioxide: 2007 - 2019 Monthy Hydrogen Sulphide: 2007 - 2019 6 15 60 4 Average January 2020 Average January 2020 Average January 2020 Average January 2020 3 10 40 Δ 2

Uzone

Sulphur Dioxide

Nitrogen Dioxide

9 10 11 12 13 14 15 16 17 18 19 22 23 24 28 29 32 34 36 38 40

Station ID Number

5



2345

6 8 9 10 11 12 13 14 15 16 17 18 19 22 23 24 28 29 32 34 36 38 40

Station ID Number

This series of bubble maps present monthly average concentrations in parts per billion (ppb). The charts below each map show the range of concentrations measured at each location in the LICA network. Displaying data this way illustrates the spatial, and to a lesser extent, the temporal patterns of the pollutants measured in the LICA passive monitoring network. The 1-month Ambient Air Quality Objective for sulphur dioxide is 11 ppb.

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