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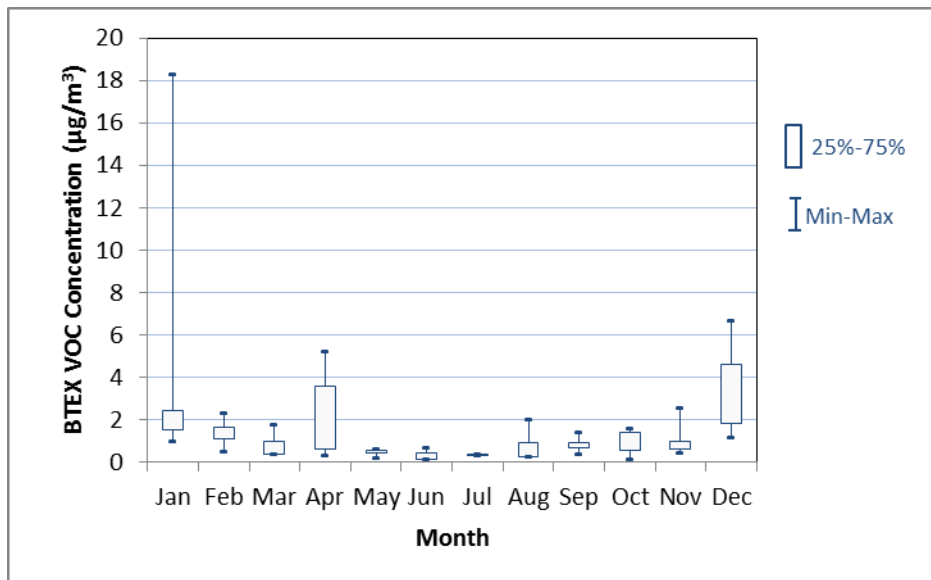


Figure E 199: Seasonal Variation of BTEX Concentrations ($\mu\text{g}/\text{m}^3$) at Elk Island National Park

Hinton Area

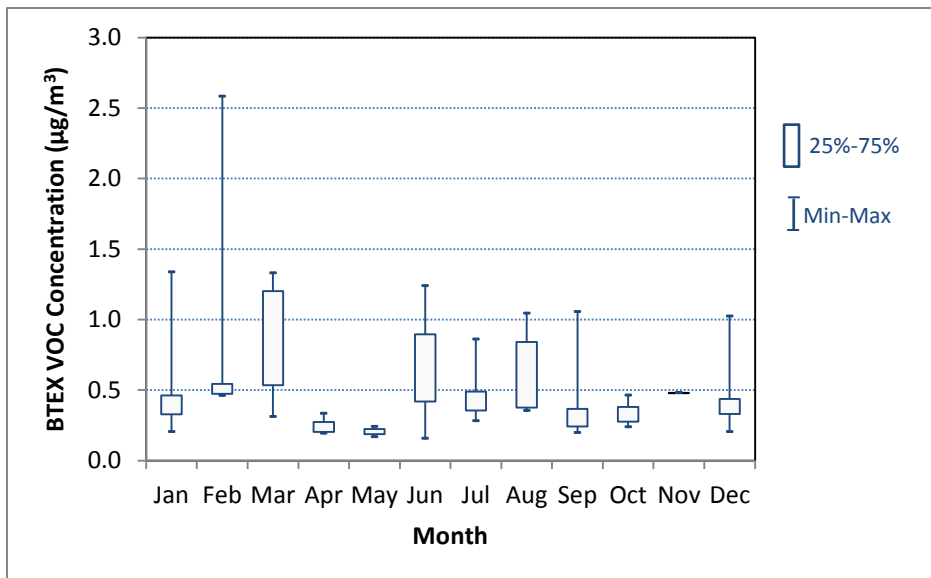
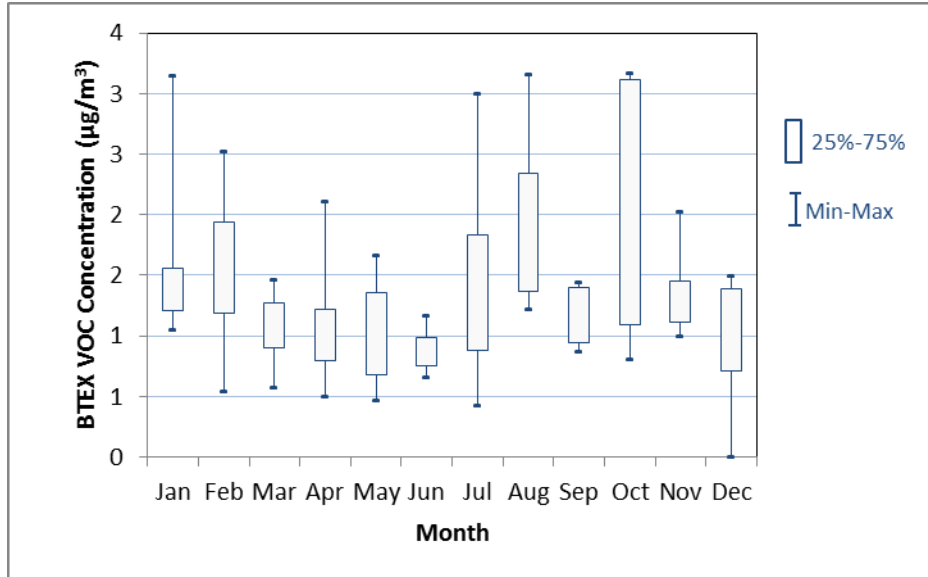


Figure E 200: Seasonal Variation of BTEX Concentrations ($\mu\text{g}/\text{m}^3$) at Hightower Ridge



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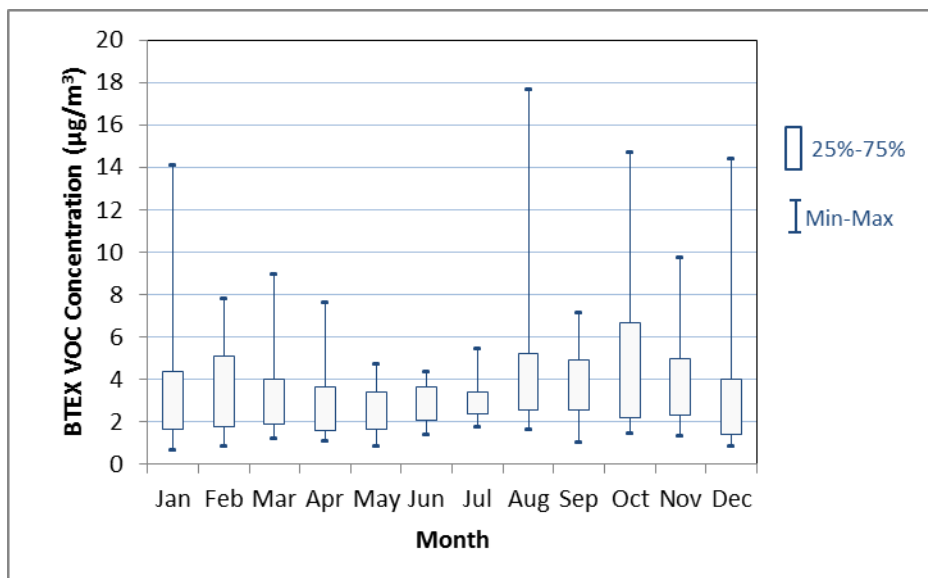
Hope Area



Note: Outlier concentration in December 2006 has been removed for visual clarity.

Figure E 201: Seasonal Variation of BTEX Concentrations ($\mu\text{g}/\text{m}^3$) at Hope Airport

Chilliwack Area





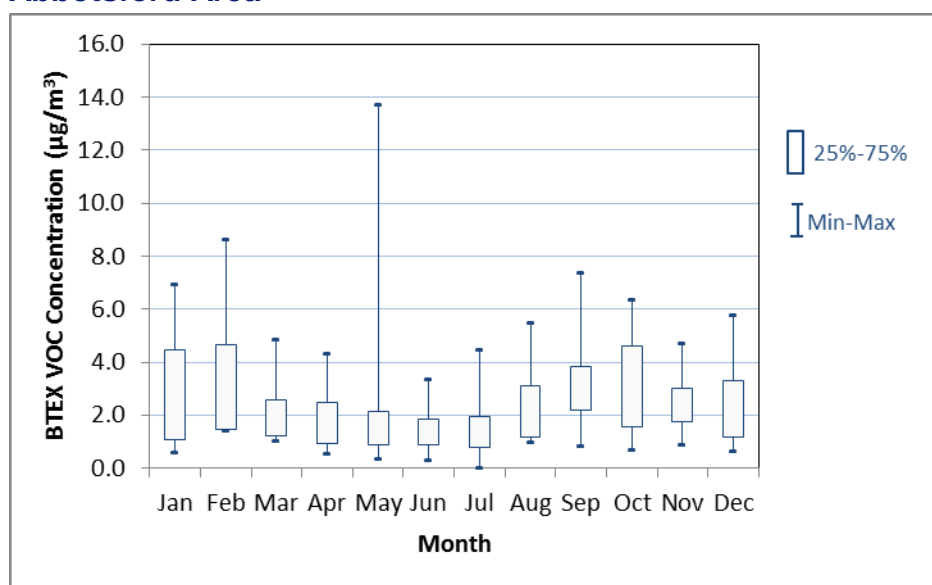
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Figure E 202: Seasonal Variation of BTEX Concentrations ($\mu\text{g}/\text{m}^3$) at Chilliwack Airport

Abbotsford Area



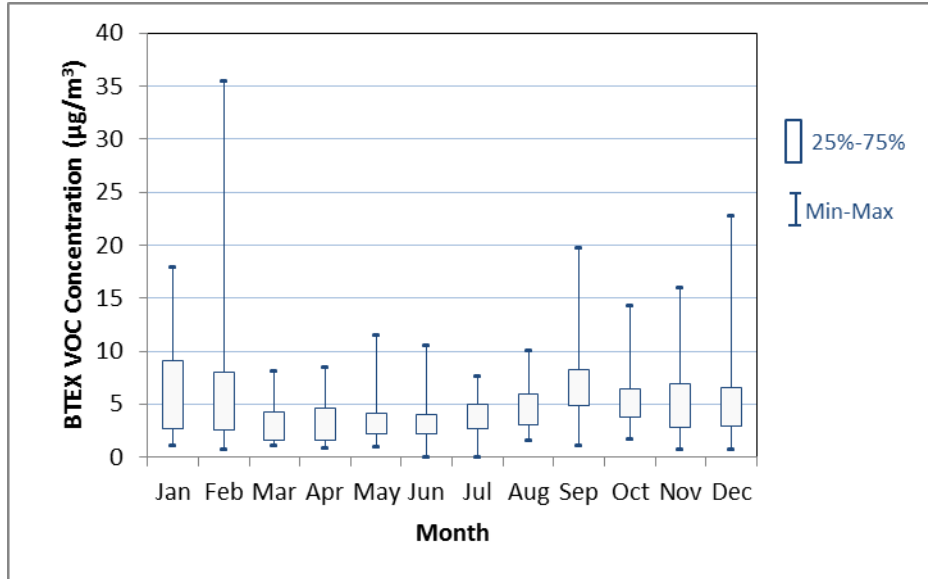
Note: Outlier concentration in July 2007 has been removed for visual clarity.

Figure E 203: Seasonal Variation of BTEX Concentrations ($\mu\text{g}/\text{m}^3$) at Abbotsford Airport



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Burnaby Area



Note: Outlier concentrations in June to July 2007 have been removed for visual clarity.

Figure E 204: Seasonal Variation of BTEX Concentrations (µg/m³) at Burmount



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REDUCED SULPHUR

Edmonton Area

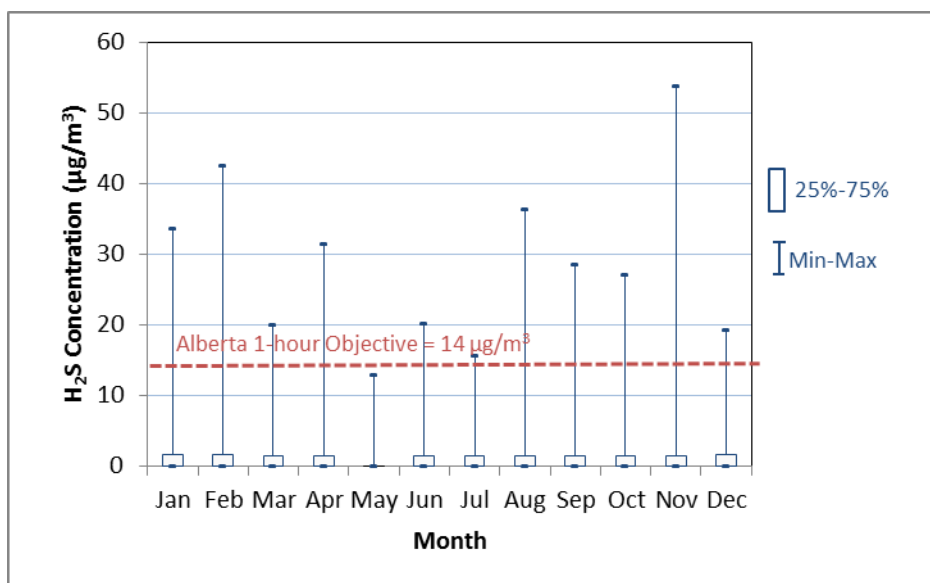


Figure E 205: Seasonal Variation of 1-Hour H₂S Concentrations (µg/m³) at Edmonton East

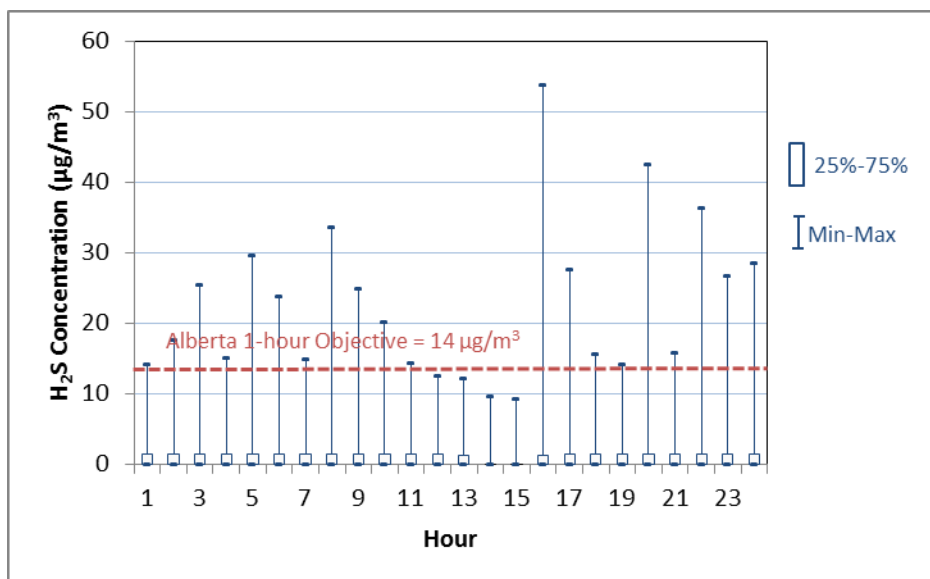


Figure E 206: Diurnal Variation of 1-Hour H₂S Concentrations (µg/m³) at Edmonton East



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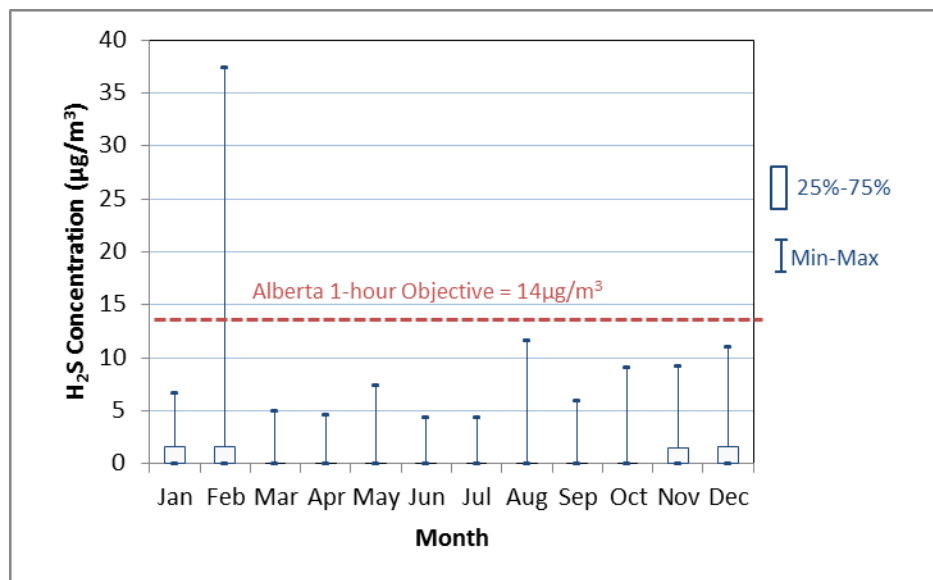


Figure E 207: Seasonal Variation of 1-hour H₂S Concentrations (µg/m³) at Fort Saskatchewan

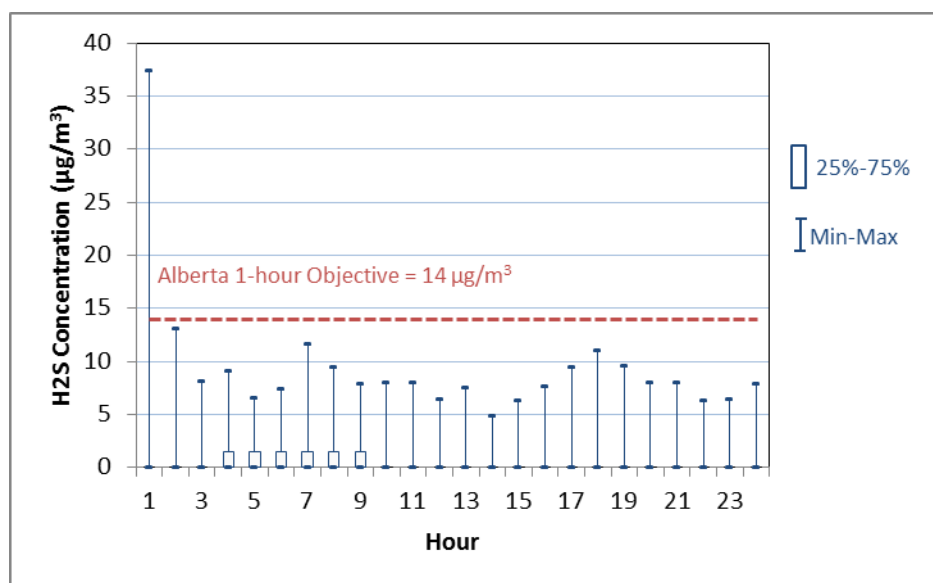


Figure E 208: Diurnal Variation of 1-Hour H₂S Concentrations (µg/m³) at Fort Saskatchewan



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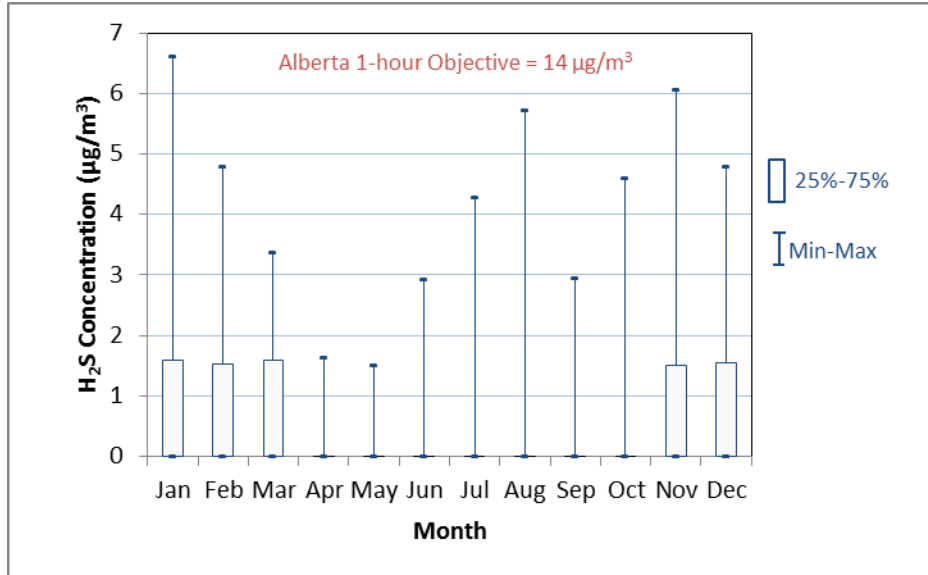


Figure E 209: Seasonal Variation of 1-hour H₂S Concentrations (µg/m³) at Sherwood Park

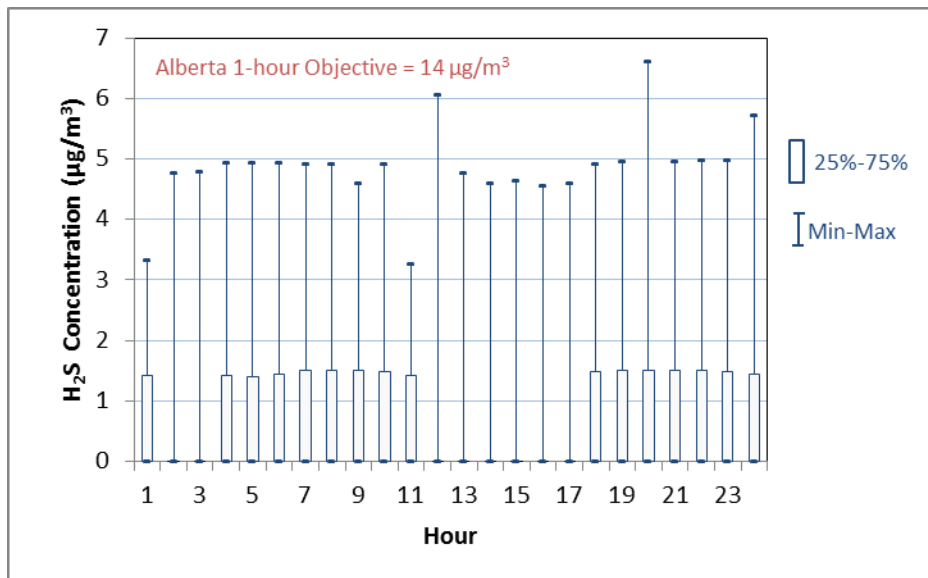


Figure E 210: Diurnal Variation of 1-Hour H₂S Concentrations (µg/m³) at Sherwood Park



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Hinton Area

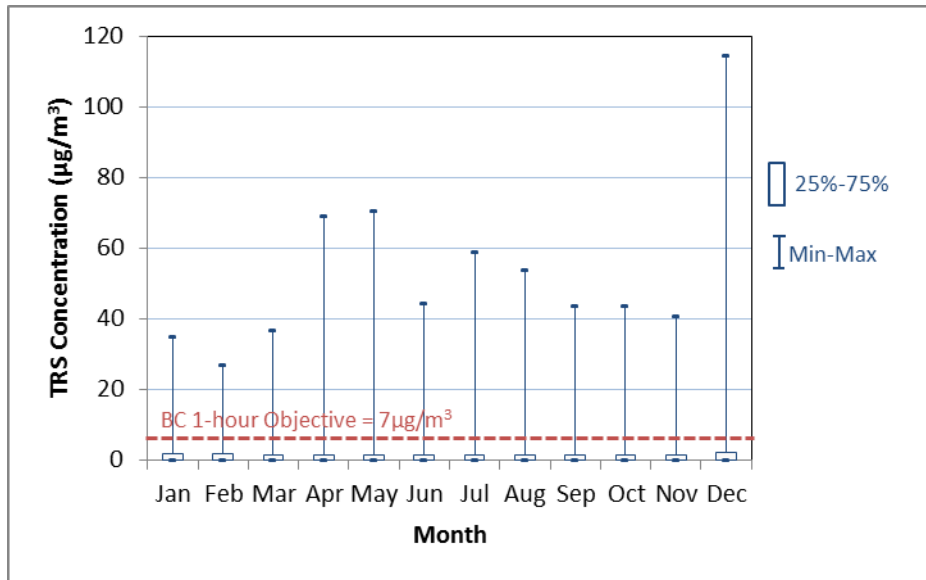


Figure E 211: Seasonal Variation of 1-hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at Hinton

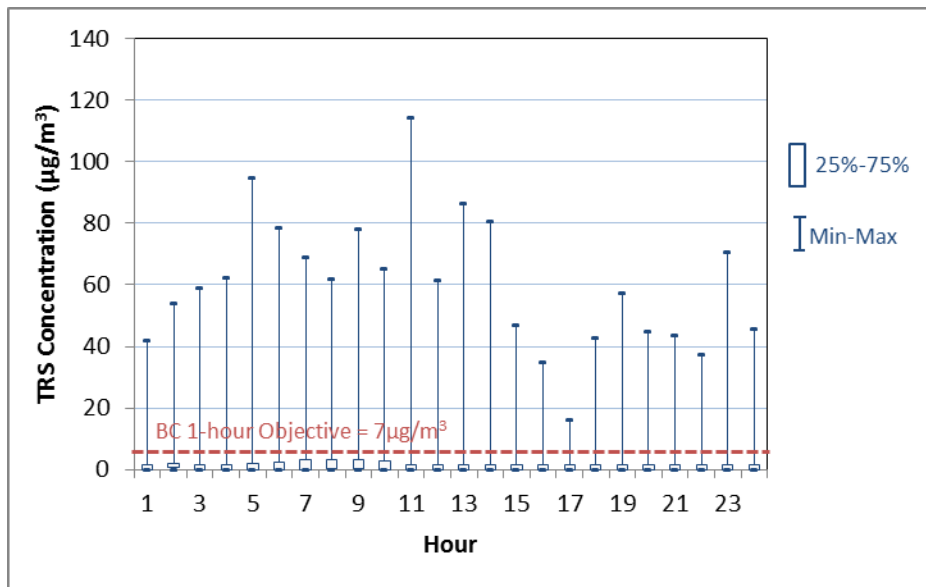


Figure E 212: Diurnal Variation of 1-Hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at Hinton



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Burnaby Area

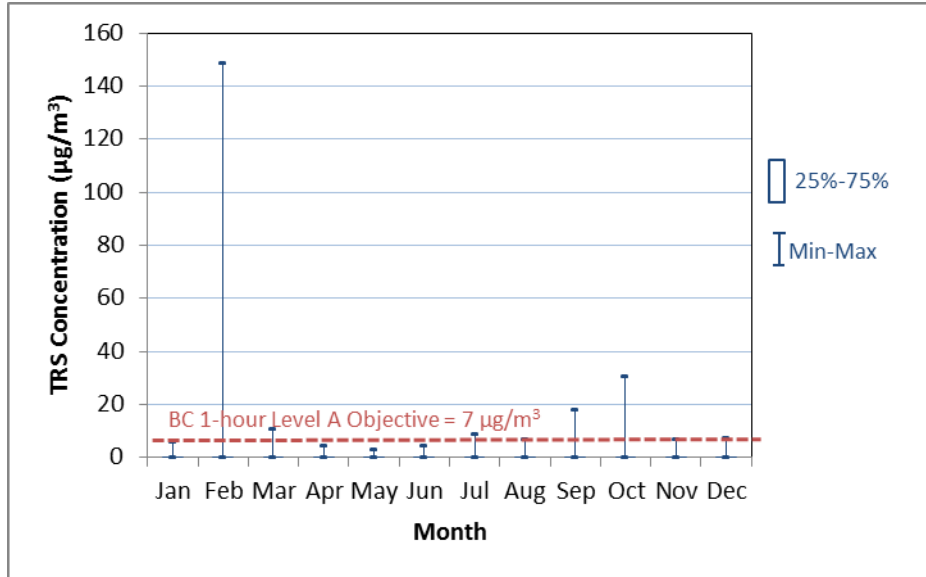


Figure E 213: Seasonal Variation of 1-hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at Burmount

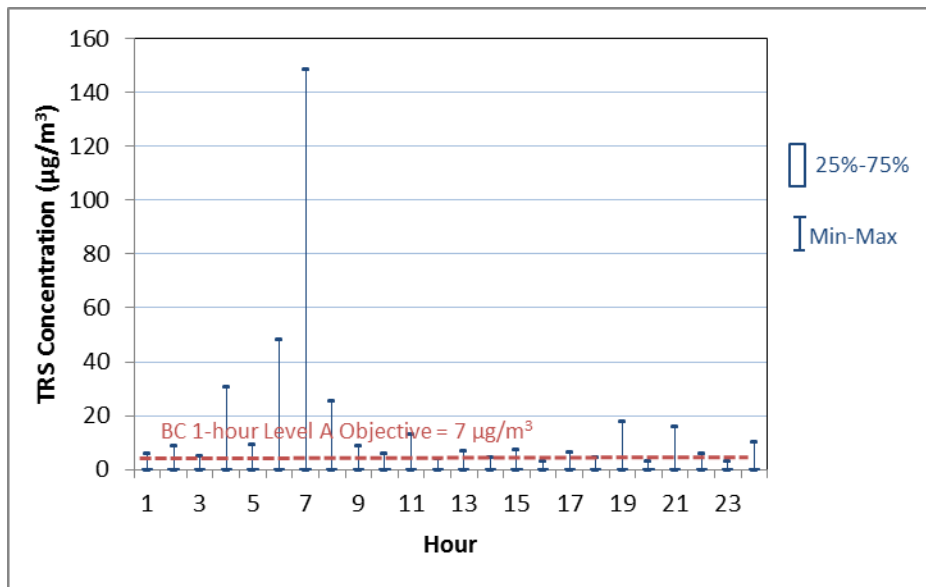


Figure E 214: Diurnal Variation of 1-Hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at Burmount



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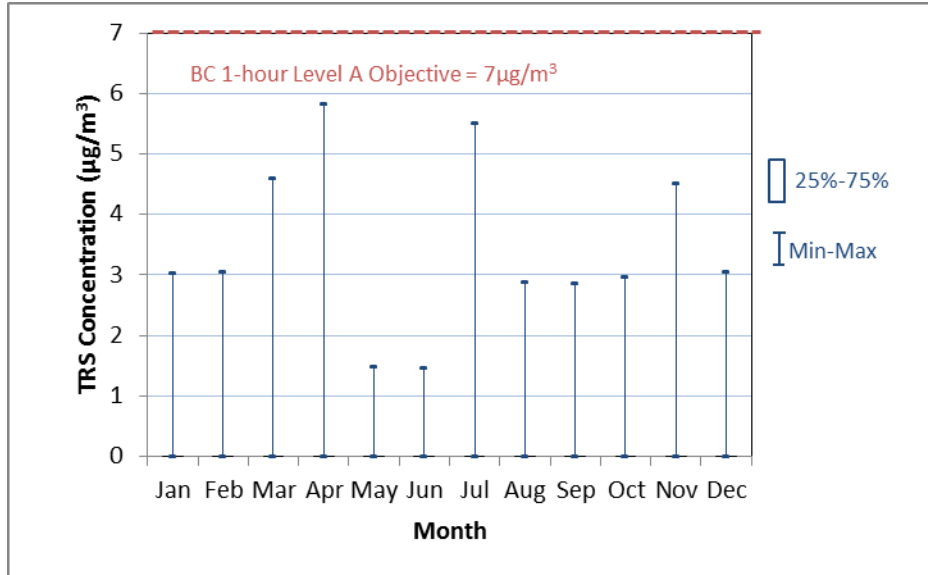


Figure E 215: Seasonal Variation of 1-hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at North Burnaby Capitol Hill

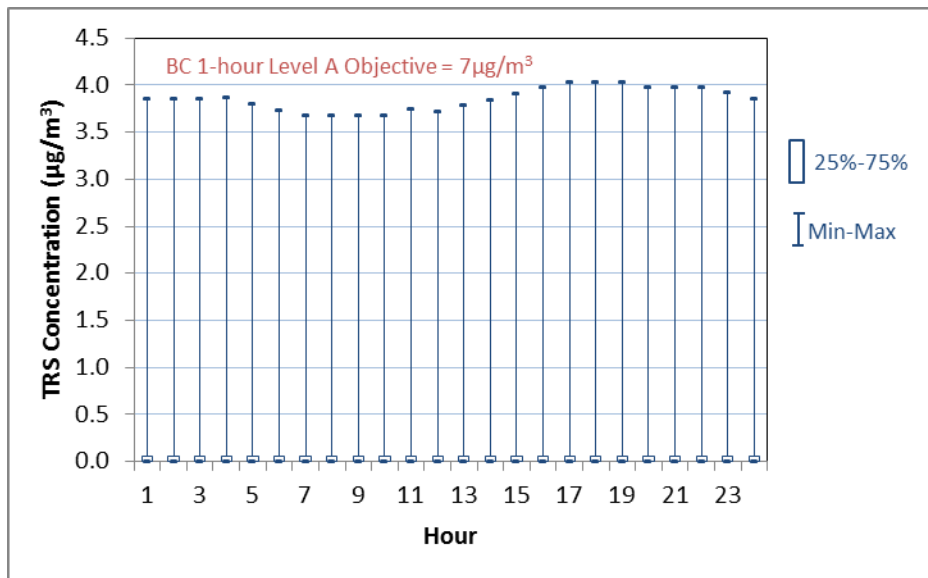


Figure E 216: Diurnal Variation of 1-Hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at North Burnaby Capitol Hill



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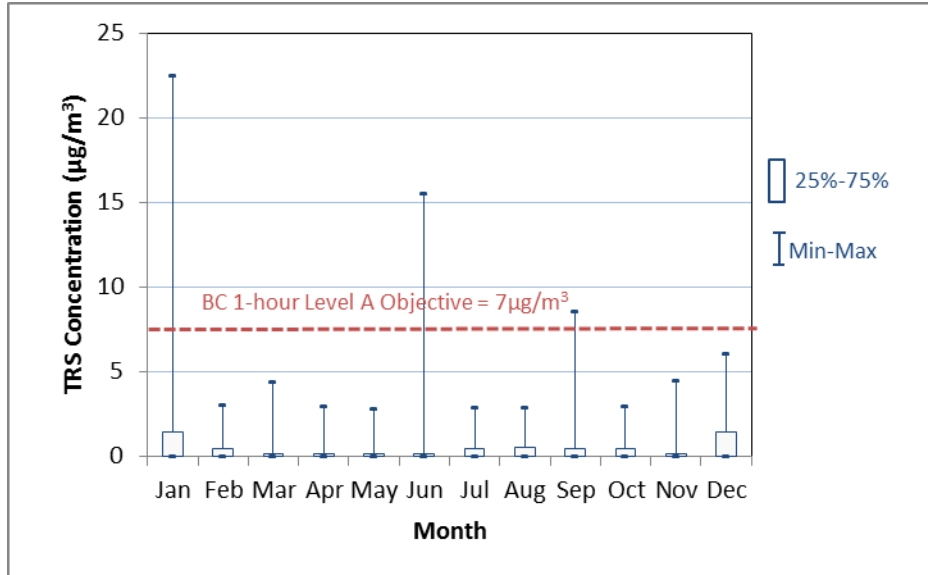


Figure E 217: Seasonal Variation of 1-hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at Burnaby North Eton

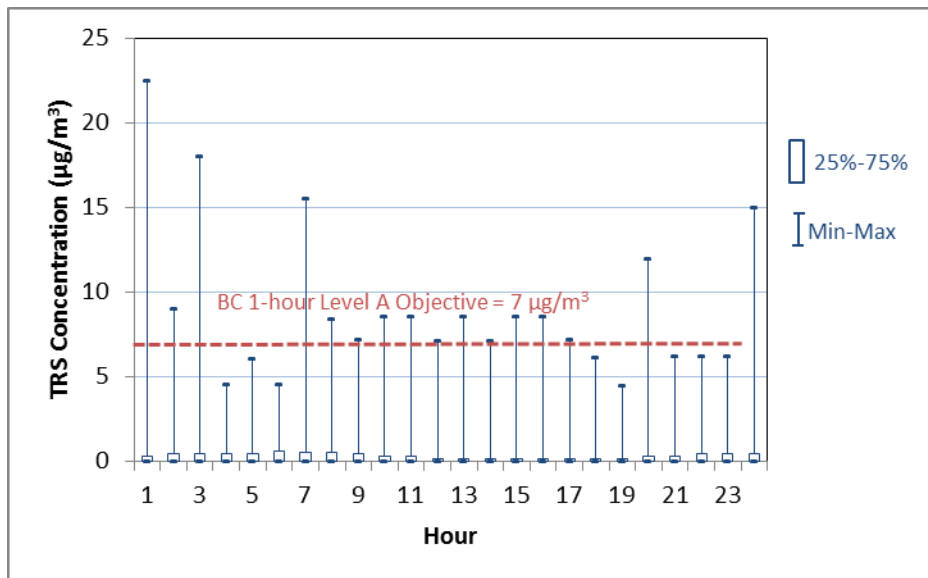


Figure E 218: Diurnal Variation of 1-Hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at Burnaby North Eton



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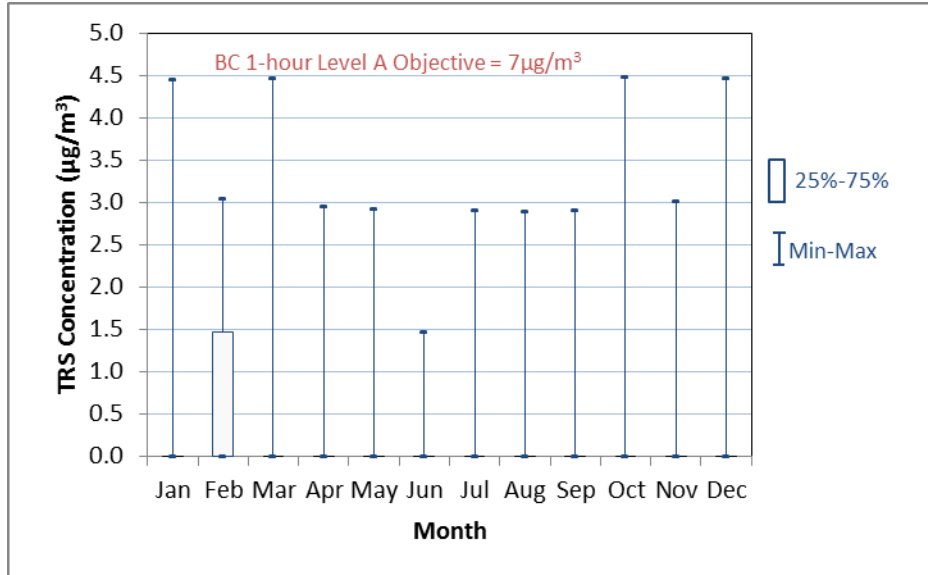


Figure E 219: Seasonal Variation of 1-hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at Burnaby Kensington Park

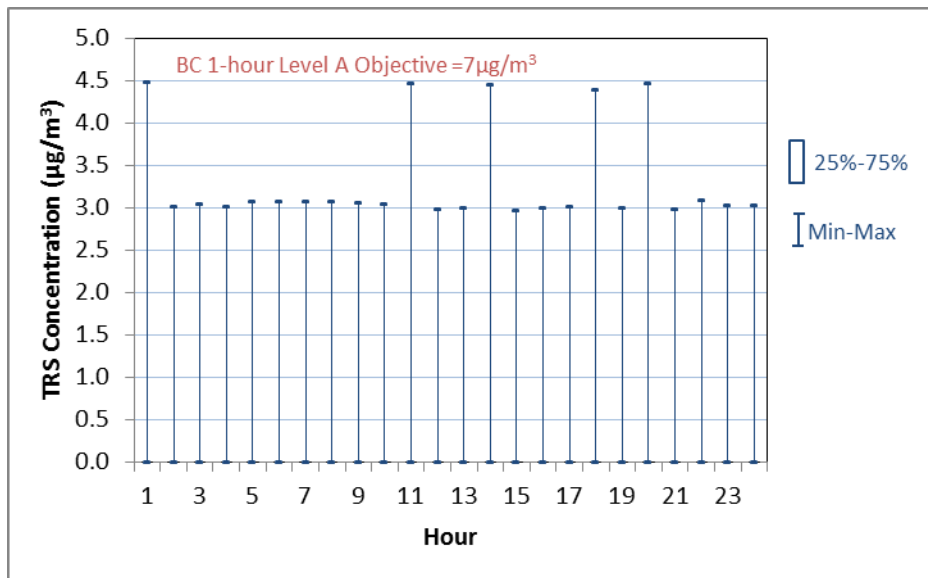


Figure E 220: Diurnal Variation of 1-Hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at Burnaby Kensington Park



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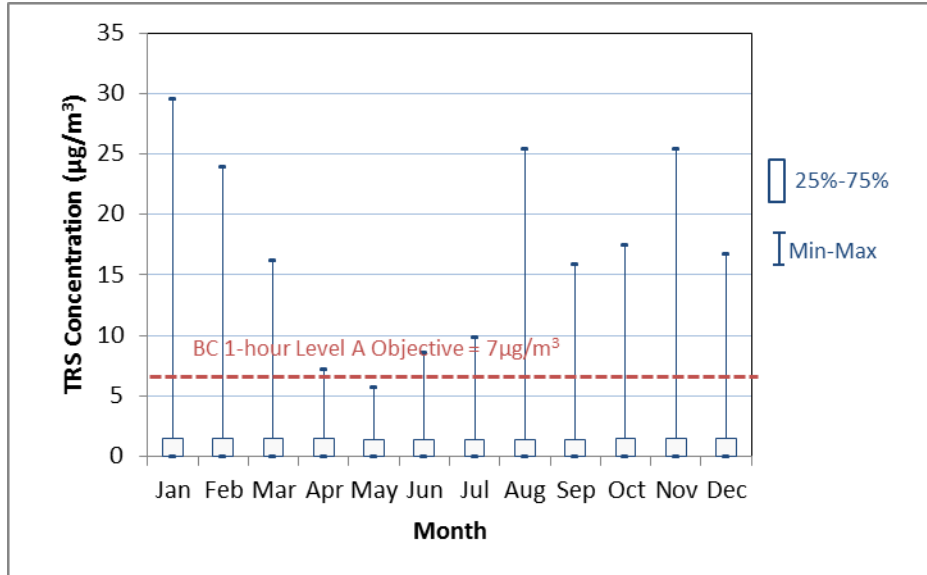


Figure E 221: Seasonal Variation of 1-hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at Port Moody

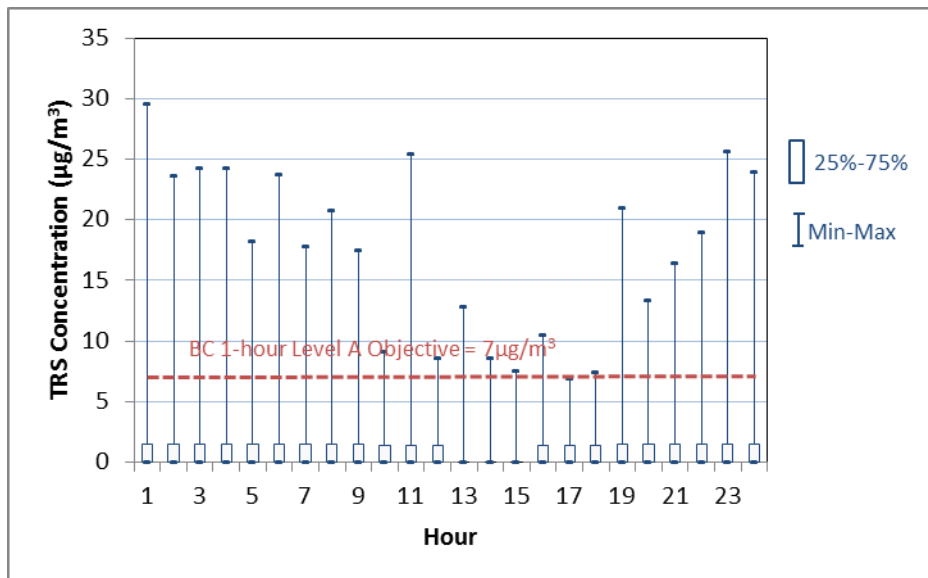


Figure E 222: Diurnal Variation of 1-Hour TRS Concentrations ($\mu\text{g}/\text{m}^3$) at Port Moody



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OZONE

Edmonton Area

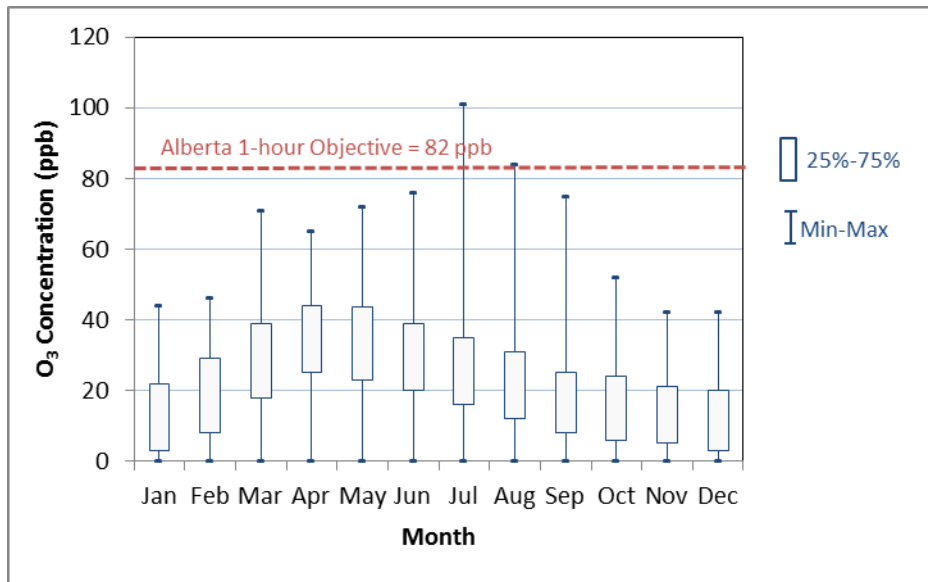


Figure E 223: Seasonal Variation of 1-Hour Ozone Concentrations (ppb) at Edmonton East

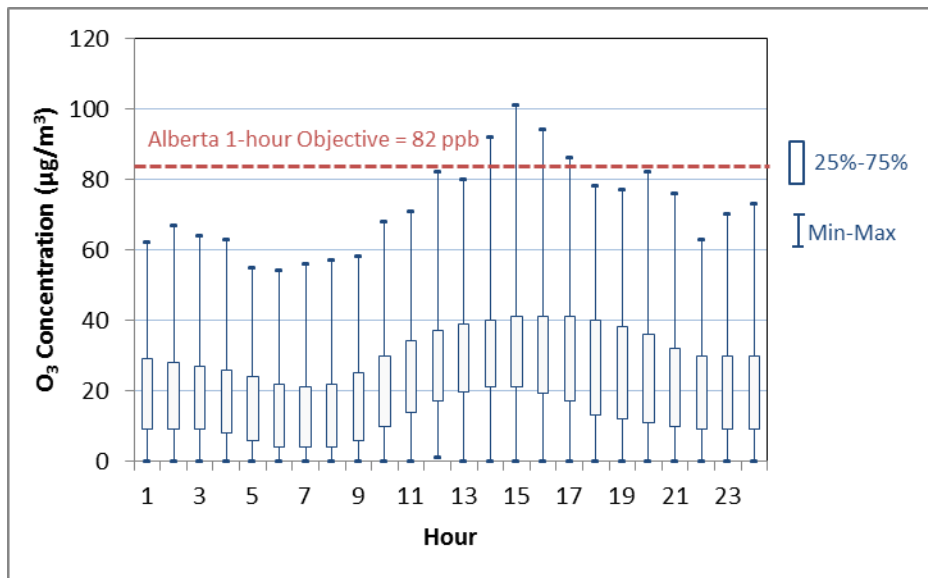


Figure E 224: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Edmonton East



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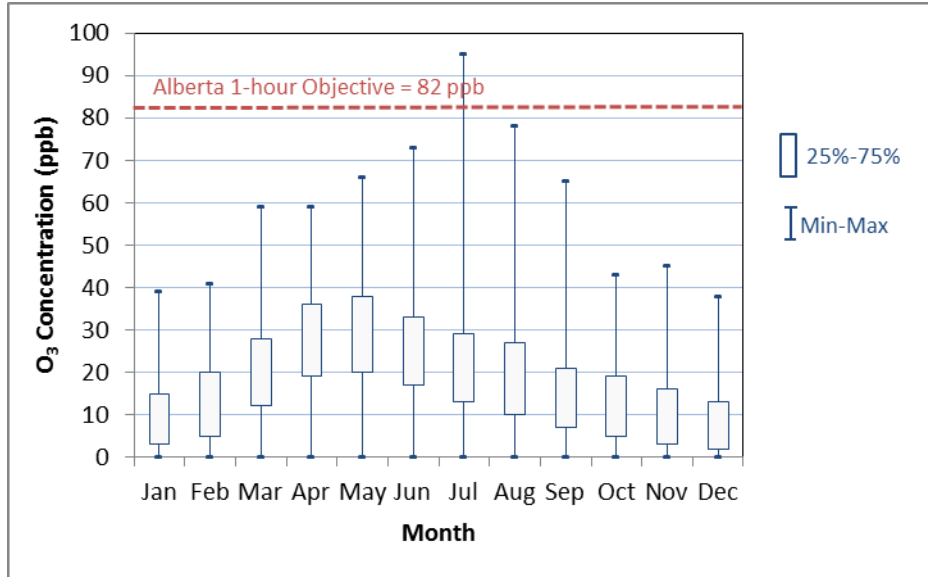


Figure E 225: Seasonal Variation of 1-Hour Ozone Concentrations (ppb) at Edmonton Central

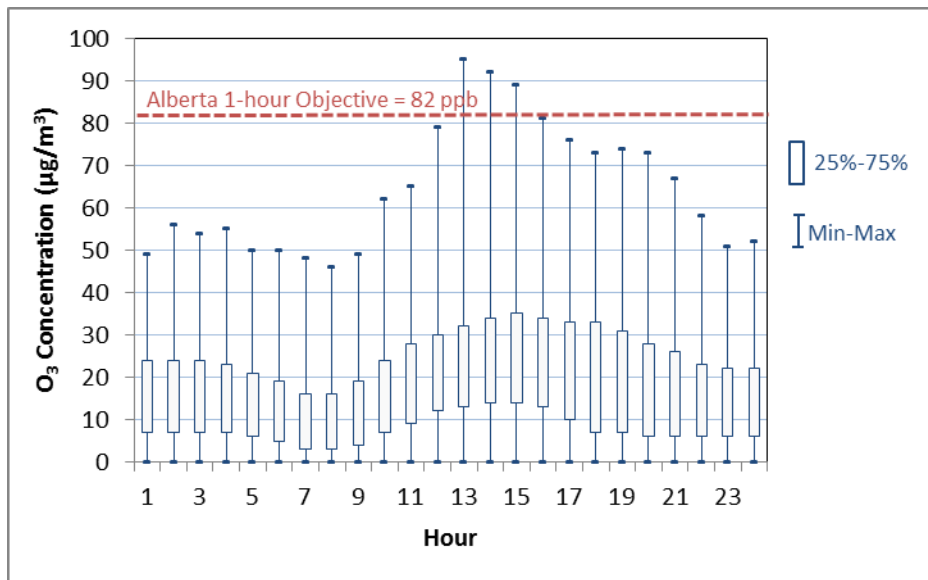


Figure E 226: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Edmonton Central



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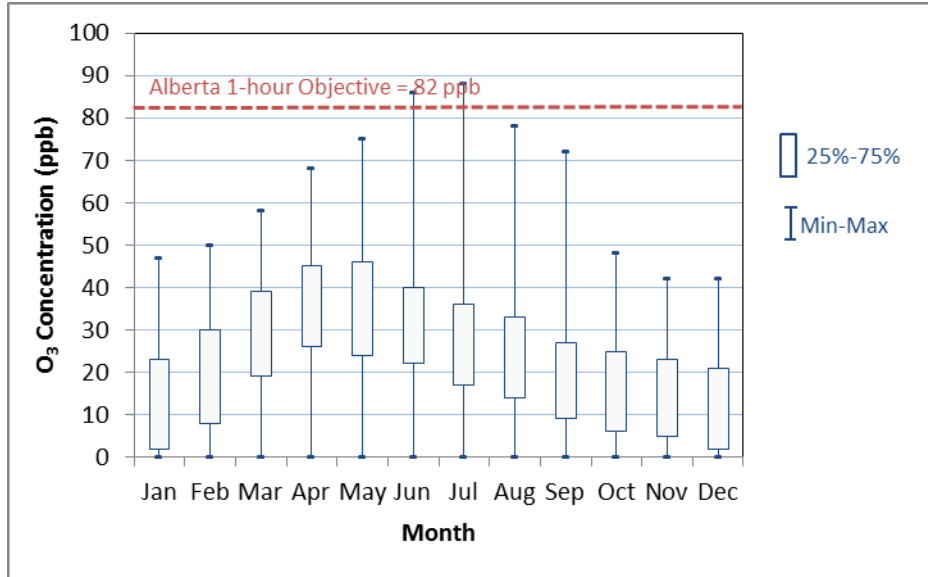


Figure E 227: Seasonal Variation of 1-Hour Ozone Concentrations (ppb) at Edmonton South

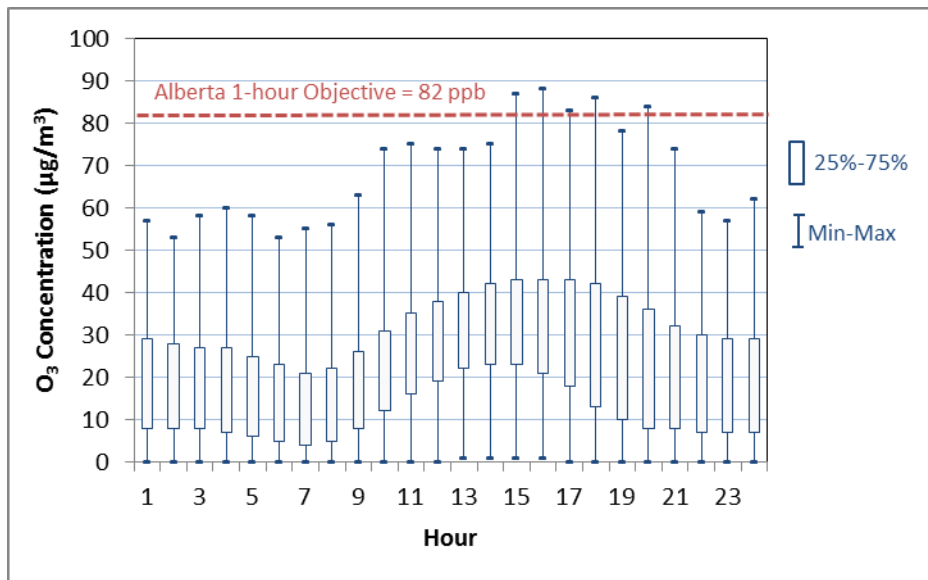


Figure E 228: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Edmonton South



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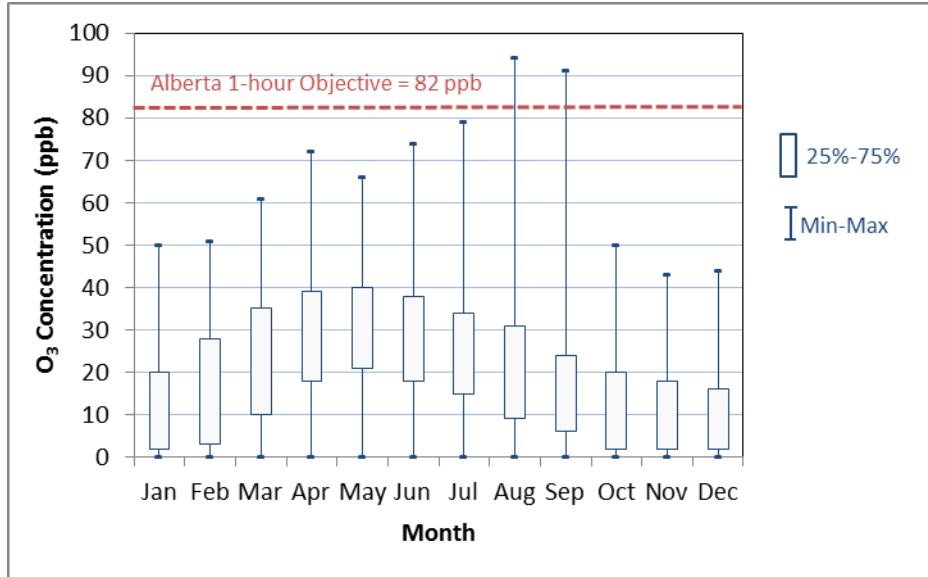


Figure E 229: Seasonal Variation of 1-Hour Ozone Concentrations (ppb) at Edmonton Northwest

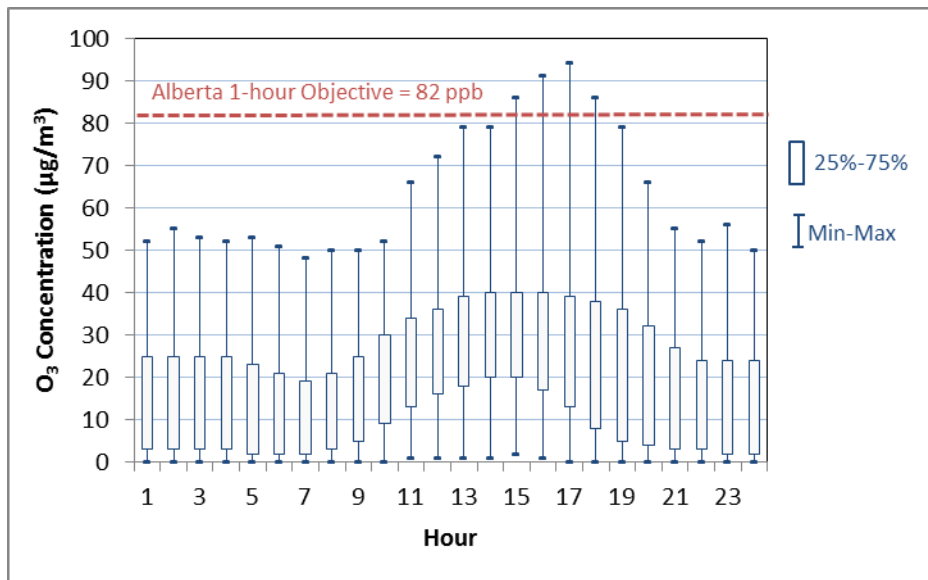


Figure E 230: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Edmonton Northwest



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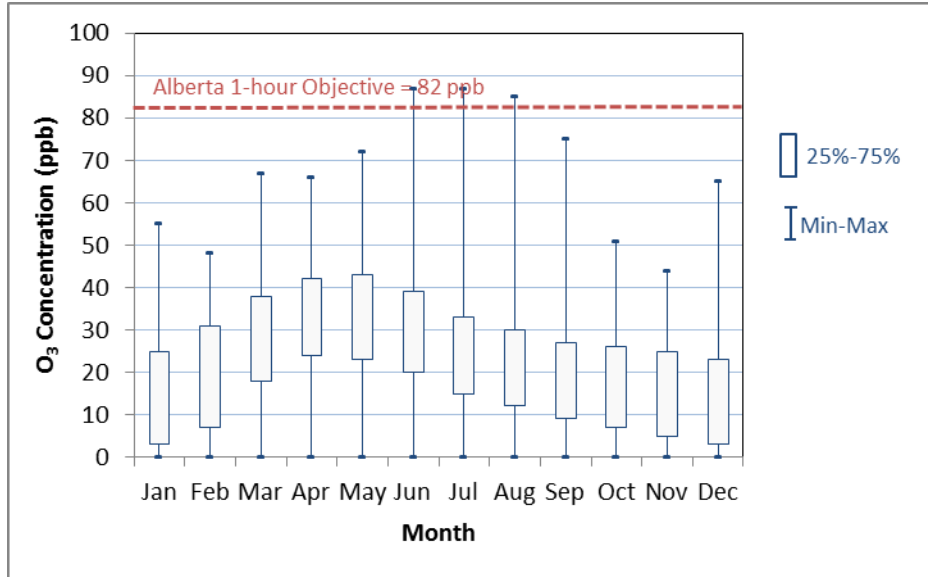


Figure E 231: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Fort Saskatchewan

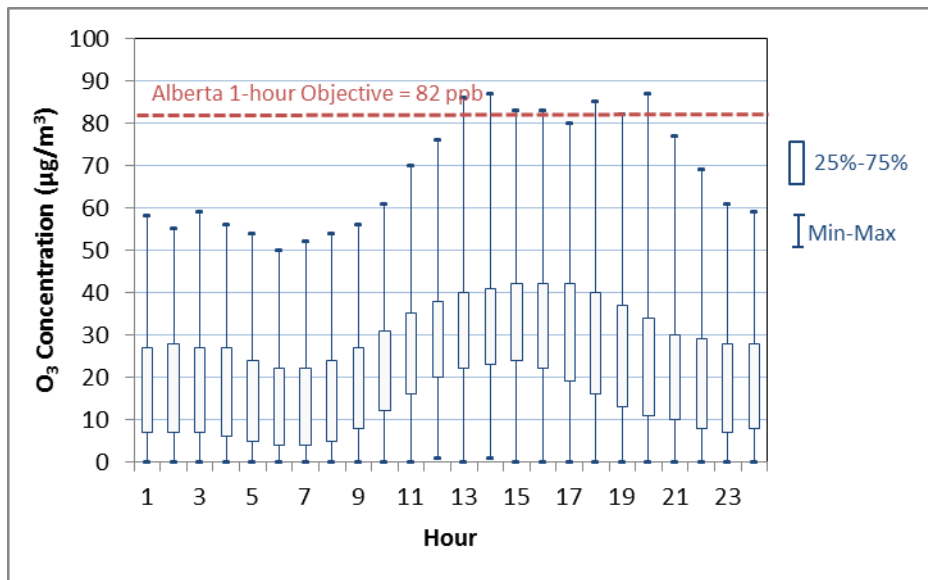


Figure E 232: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Fort Saskatchewan



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Gainford Area

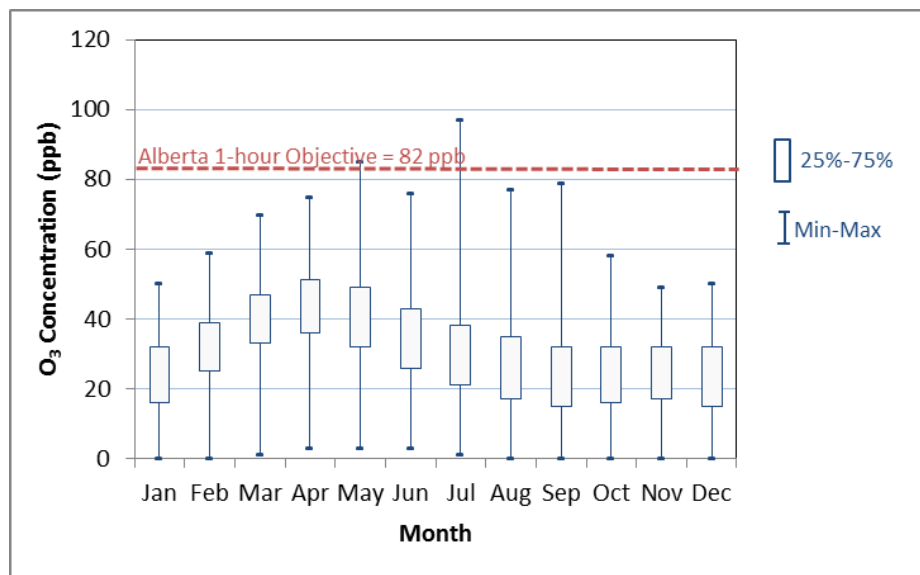
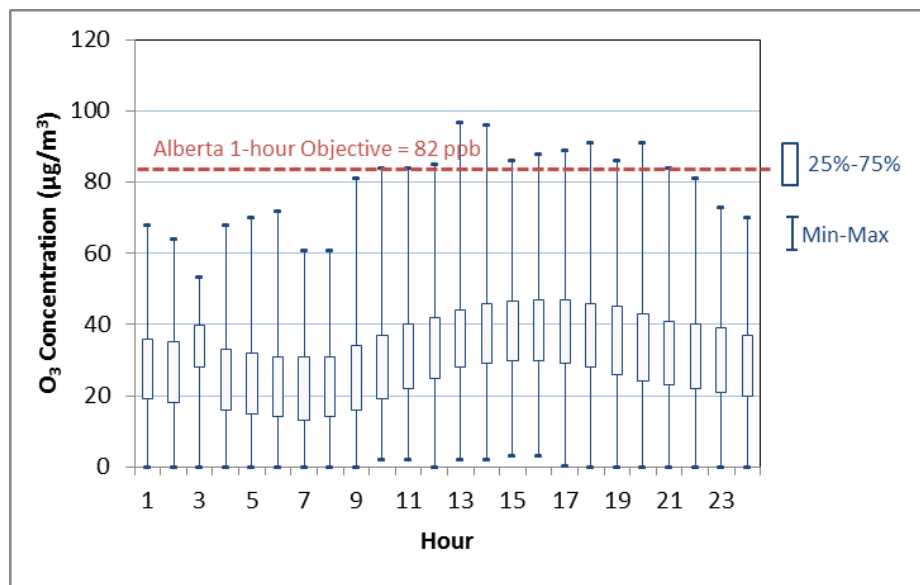


Figure E 233: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Tomahawk



Note: Daily instrumental zero/span occurred at 04:00 for the majority of the sampling period and therefore there are limited measurement data at 04:00.

Figure E 234: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Tomahawk



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Edson Area

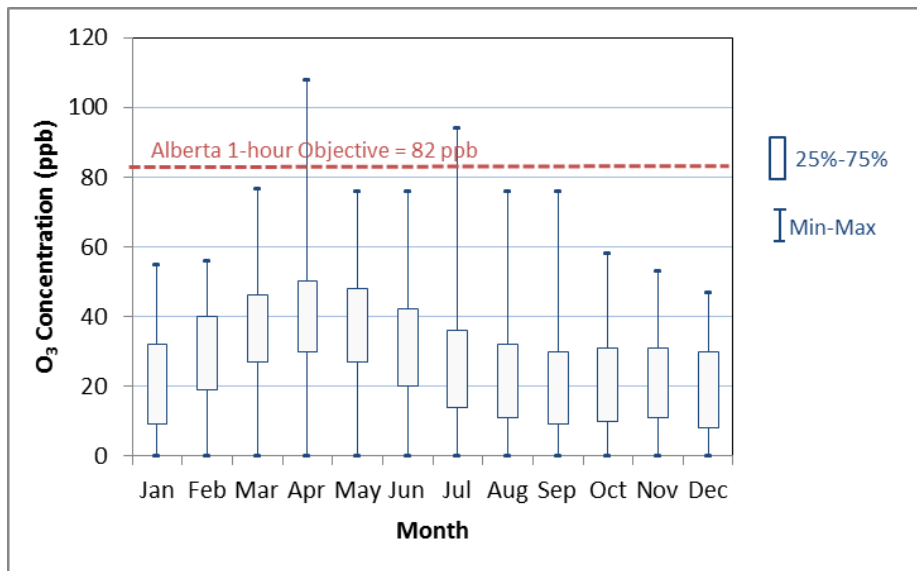
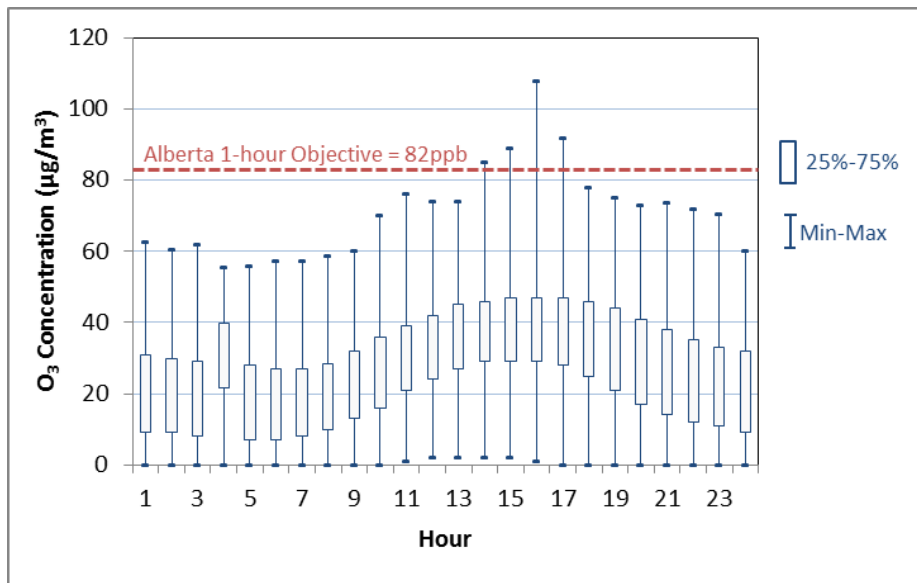


Figure E 235: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Carrot Creek



Note: Daily instrumental zero/span occurred at 04:00 for the majority of the sampling period and therefore there are limited measurement data at 04:00.

Figure E 236: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Carrot Creek



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Hinton Area

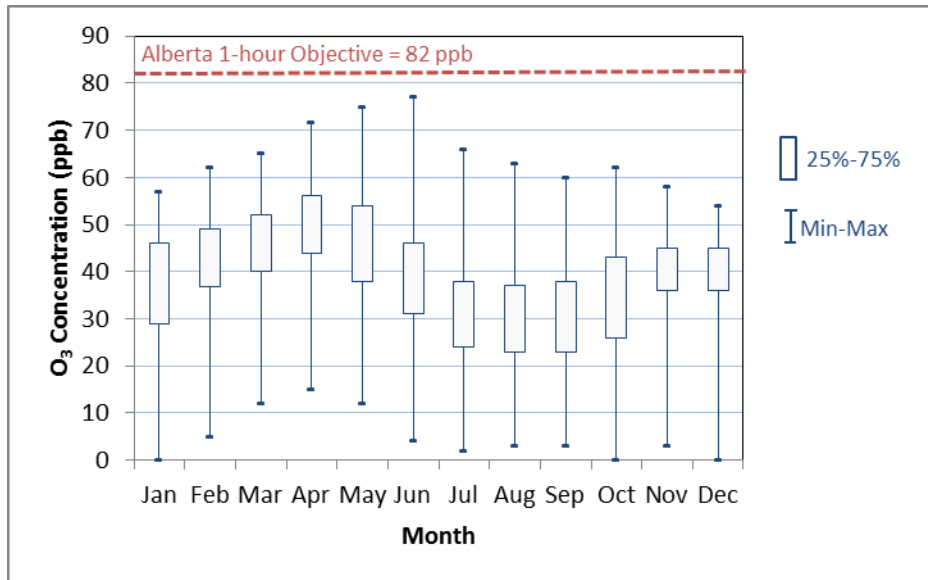


Figure E 237: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Steeper

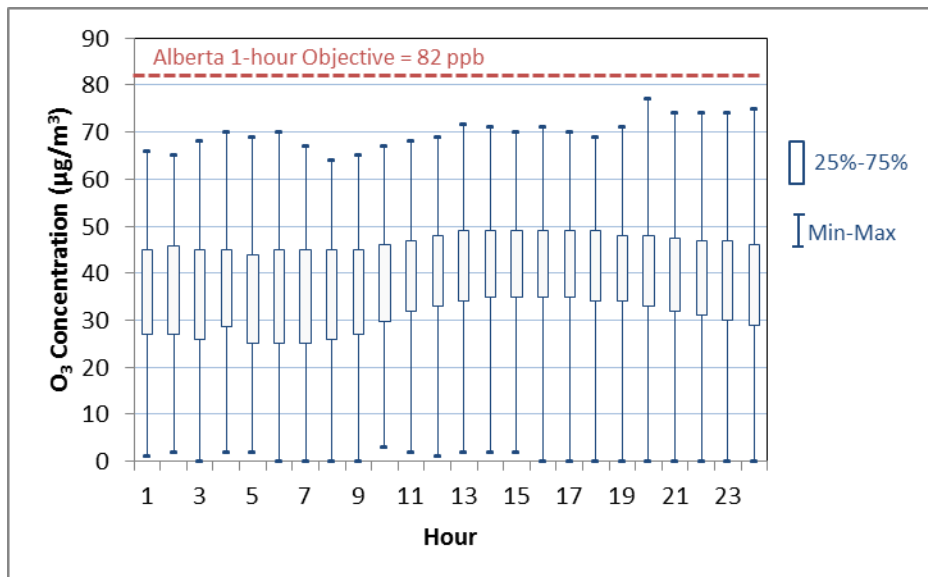


Figure E 238: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Steeper



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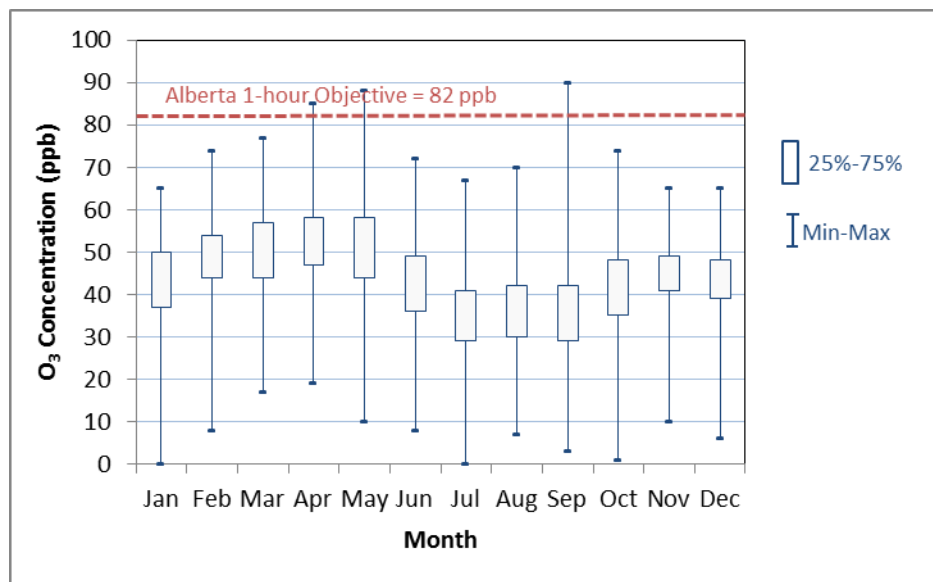
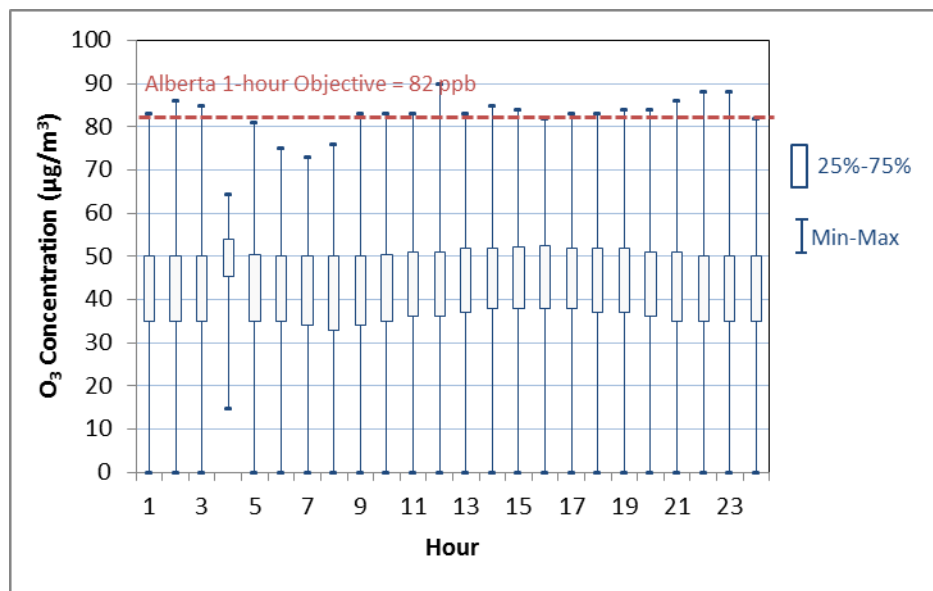


Figure E 239: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Hightower Ridge



Note: Daily instrumental zero/span occurred at 04:00 for the majority of the sampling period and therefore there are limited measurement data at 04:00.

Figure E 240: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Hightower Ridge



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Kamloops Area

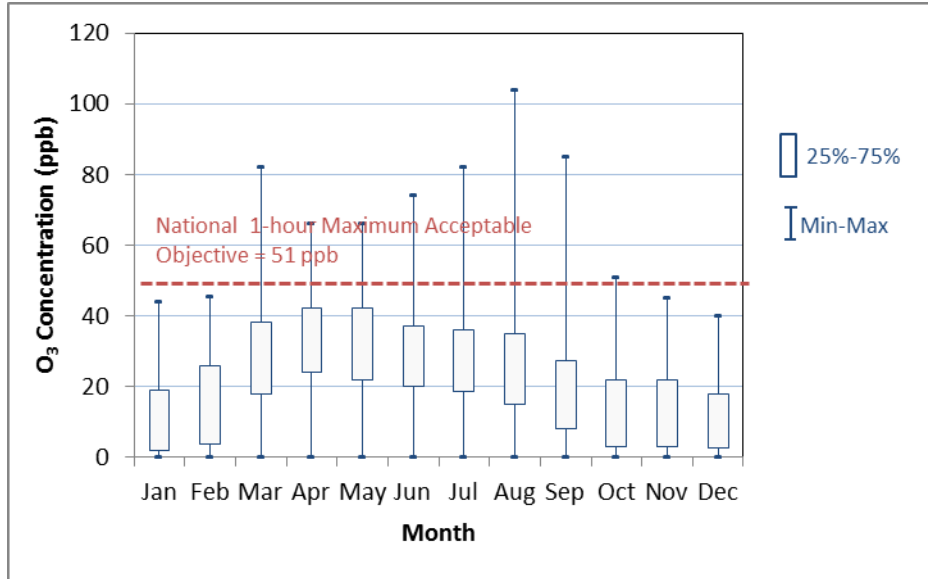


Figure E 241: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Kamloops

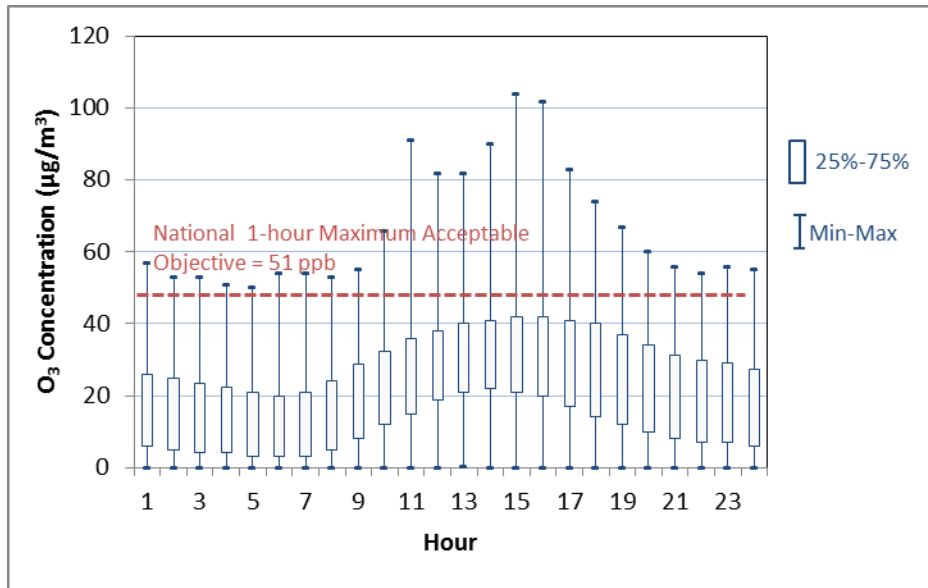


Figure E 242: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Kamloops



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Hope Area

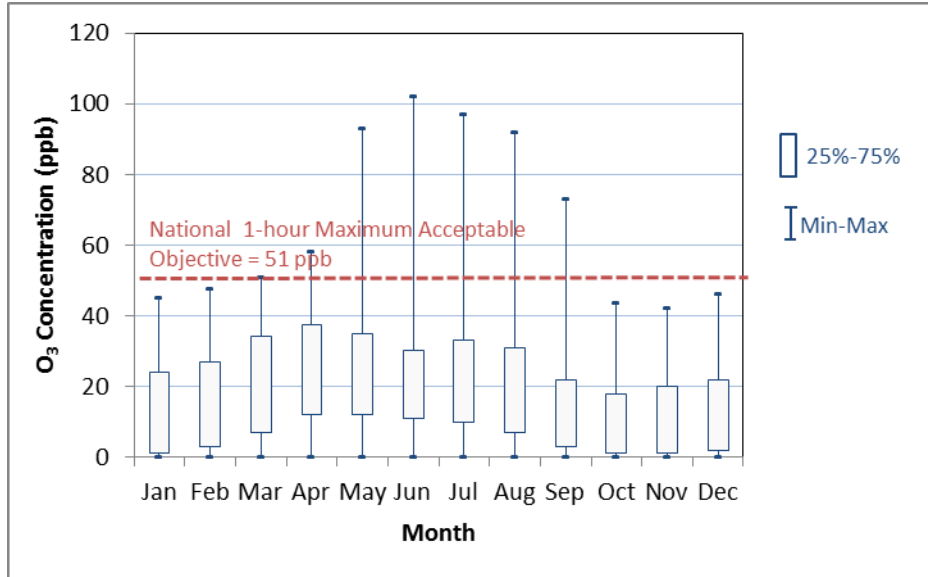


Figure E 243: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Hope Airport

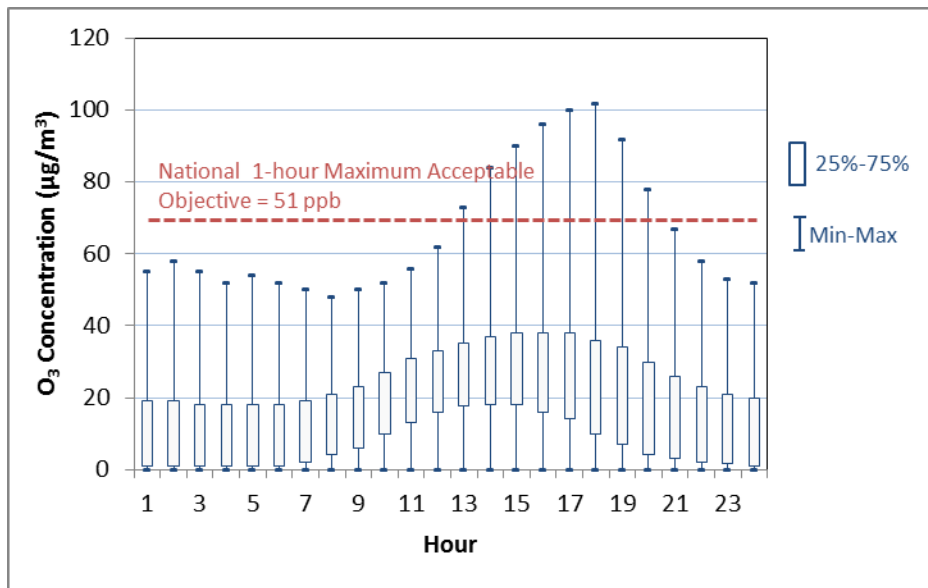


Figure E 244: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Hope Airport



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Chilliwack Area

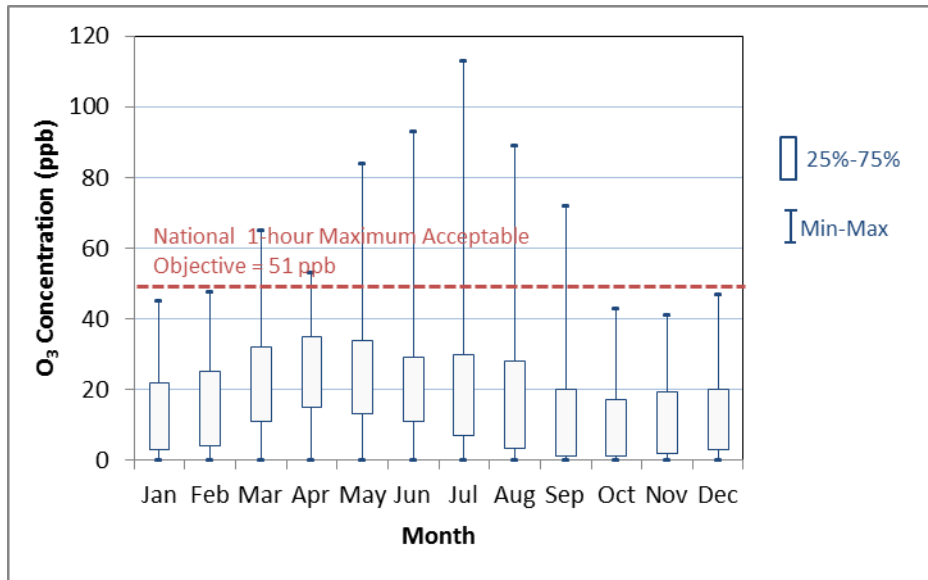


Figure E 245: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Chilliwack Airport

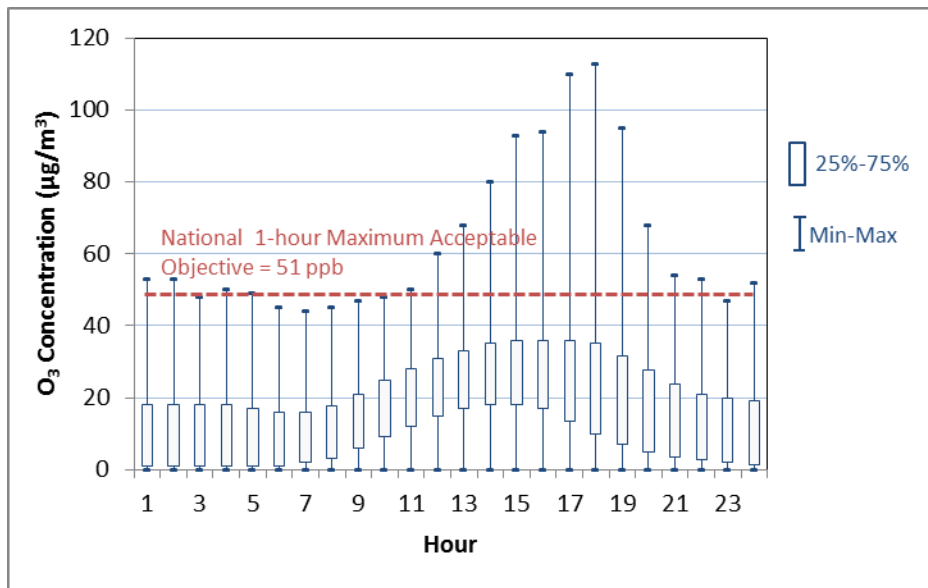


Figure E 246: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Chilliwack Airport



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Abbotsford Area

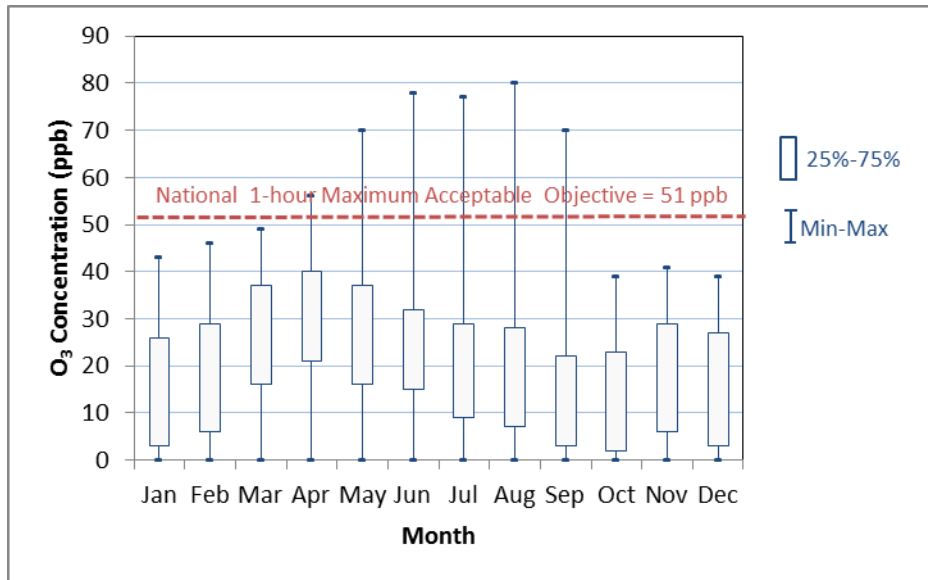


Figure E 247: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Abbotsford Airport

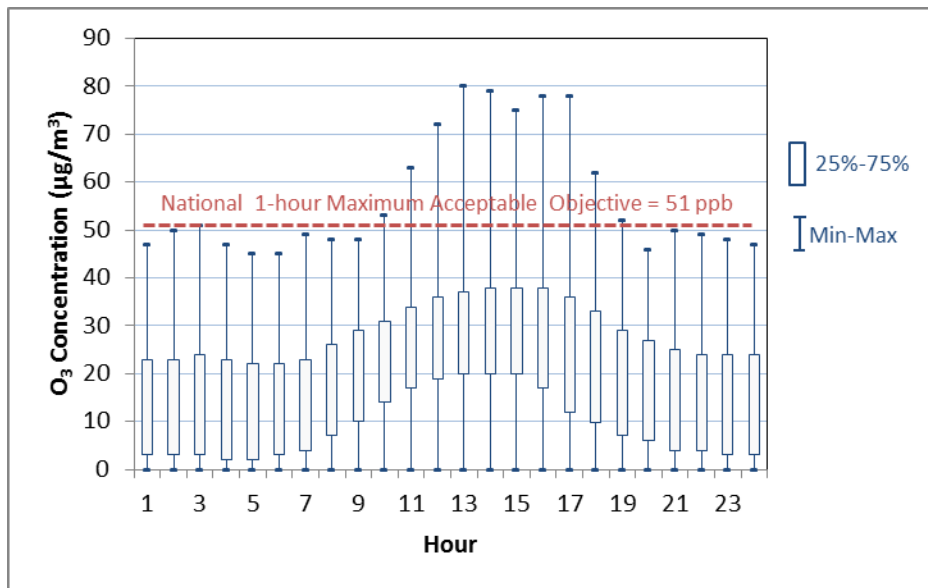


Figure E 248: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Abbotsford Airport



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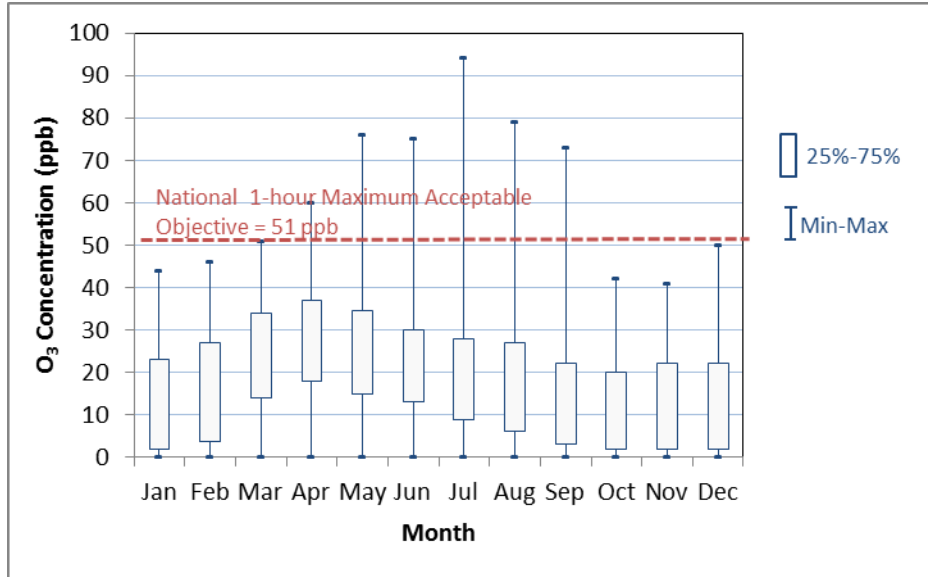


Figure E 249: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Abbotsford Central

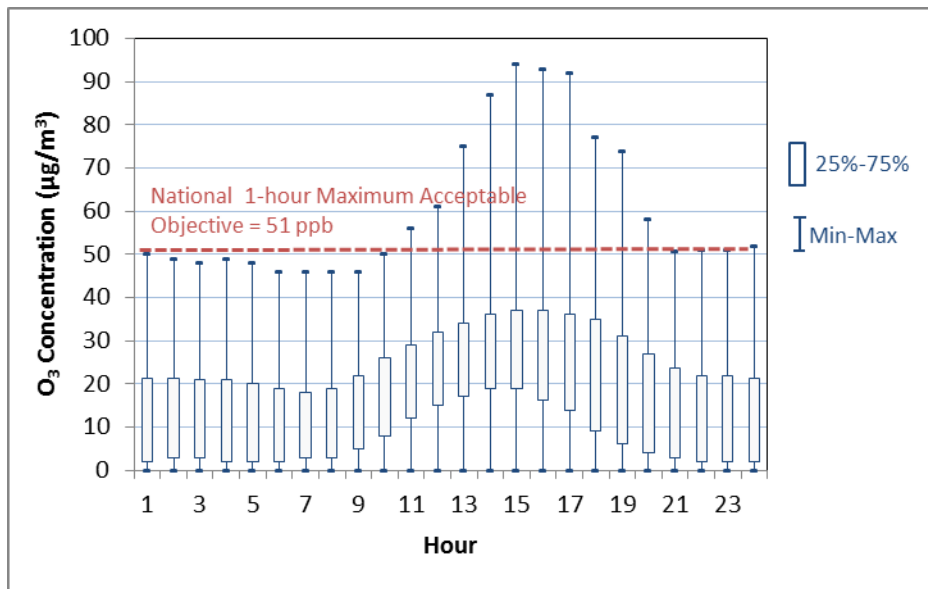


Figure E 250: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Abbotsford Central



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Burnaby Area

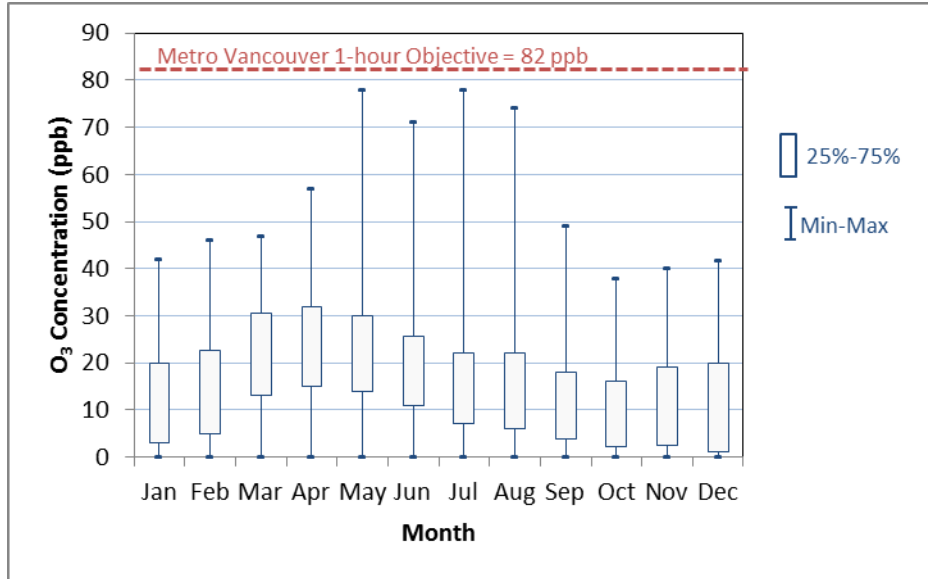


Figure E 251: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Burnaby Kensington Park

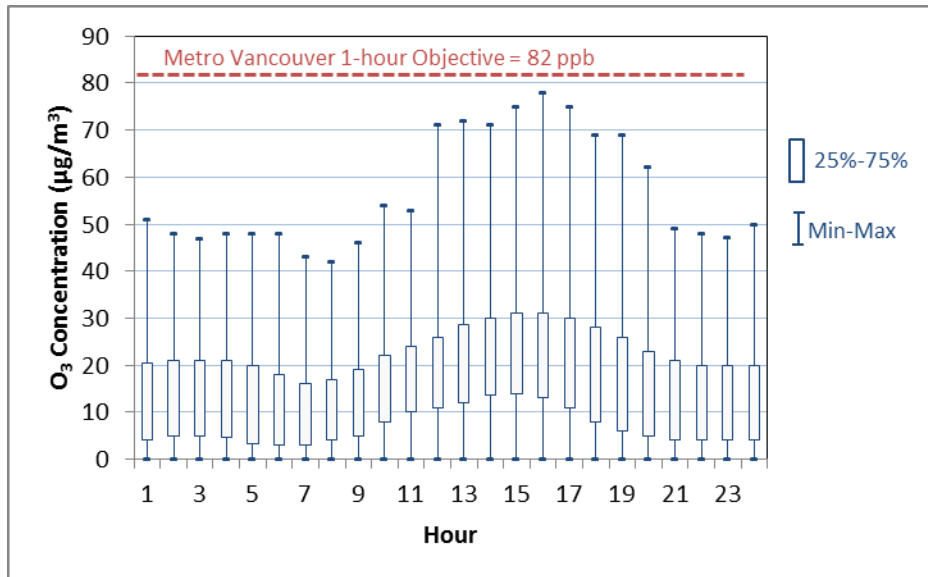


Figure E 252: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Burnaby Kensington Park



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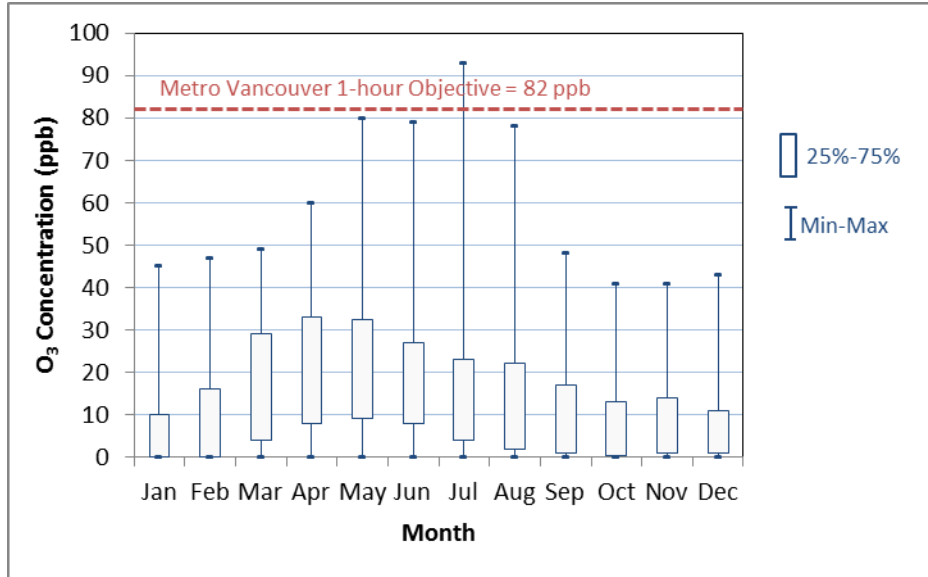


Figure E 253: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Port Moody

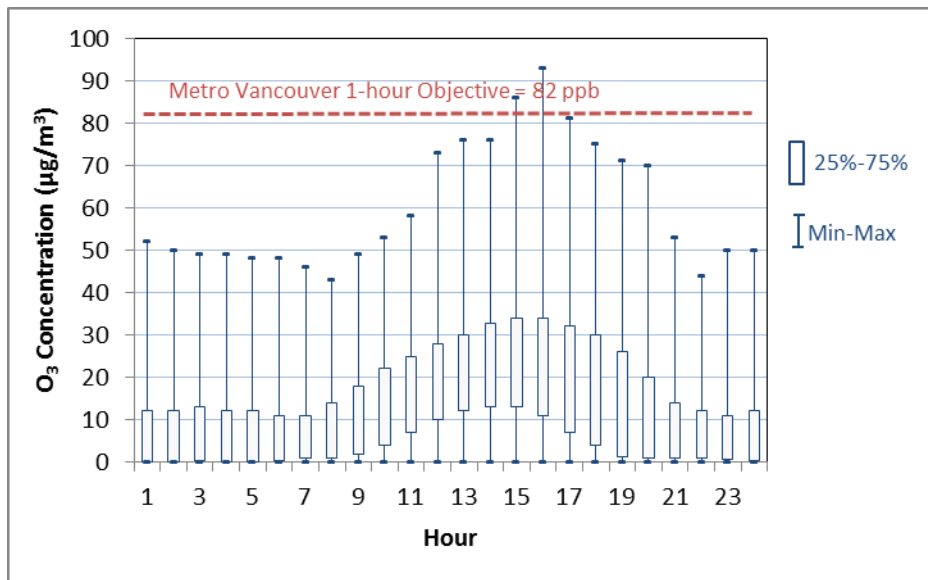


Figure E 254: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Port Moody



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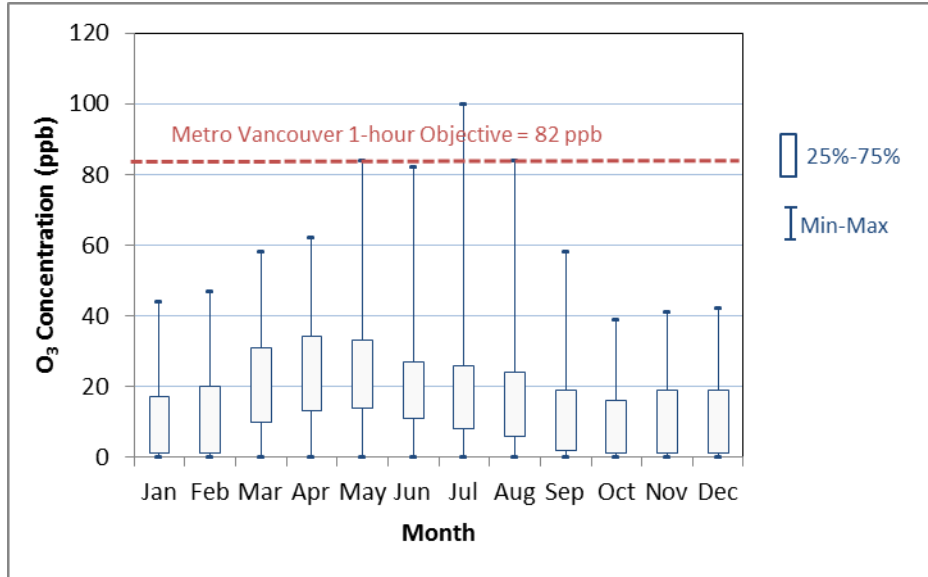


Figure E 255: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Coquitlam

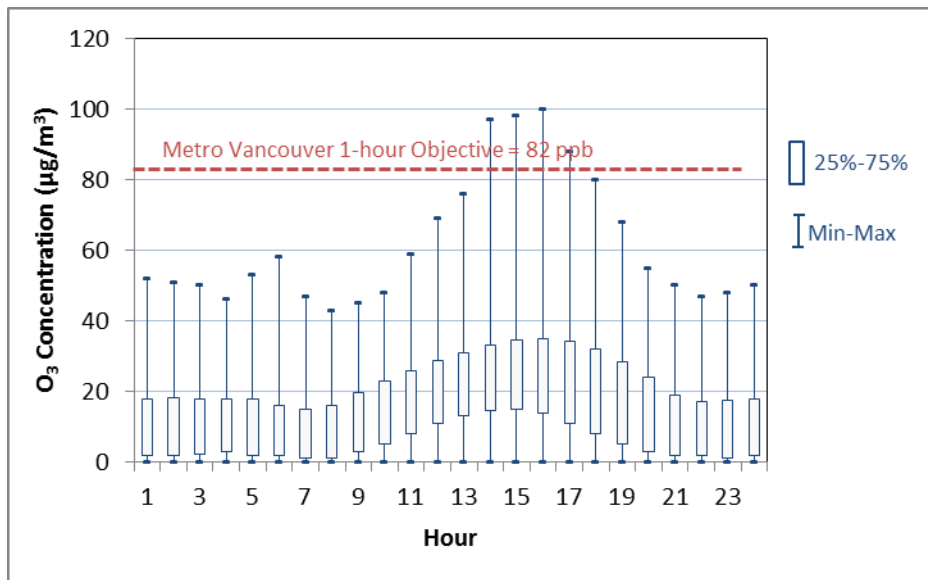


Figure E 256: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Coquitlam



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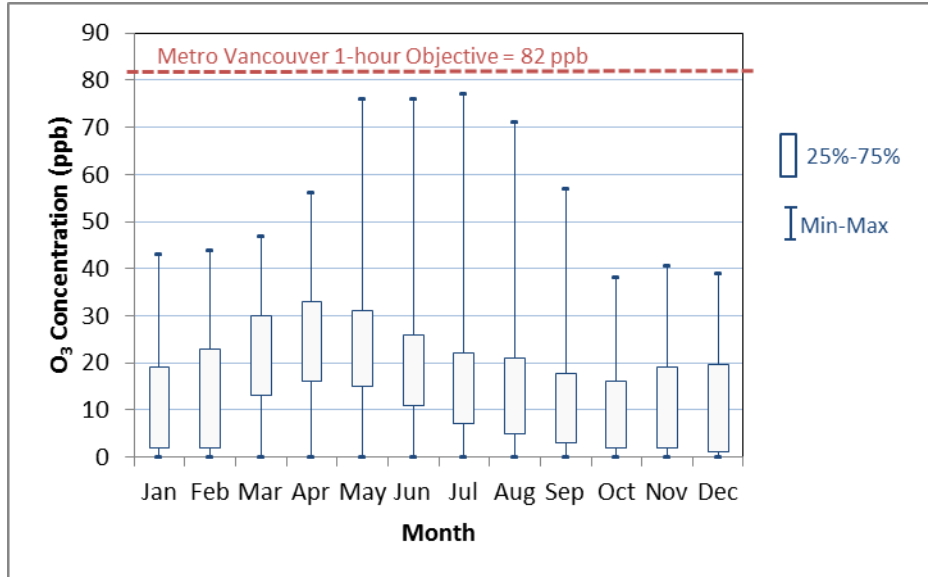


Figure E 257: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at North Vancouver Mahon Park

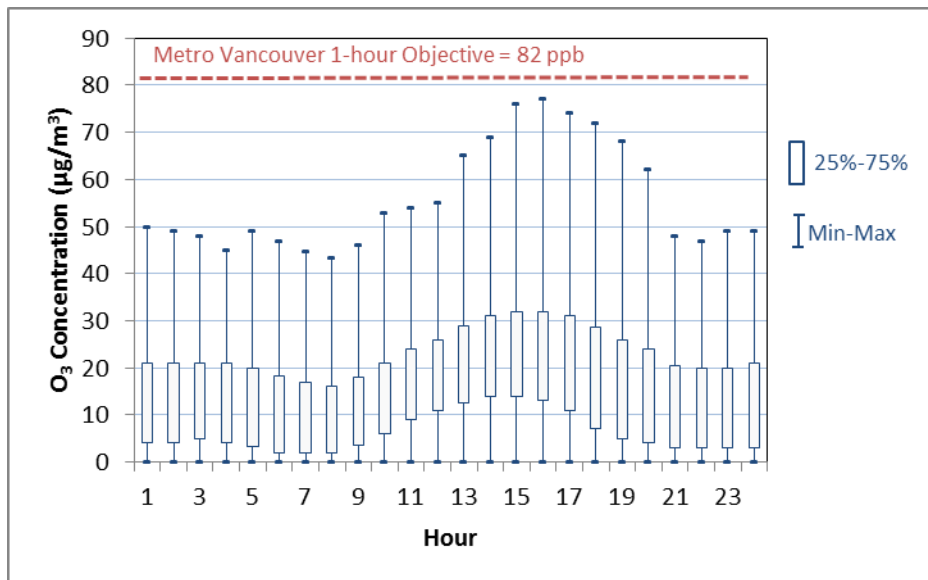


Figure E 258: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at North Vancouver Mahon Park



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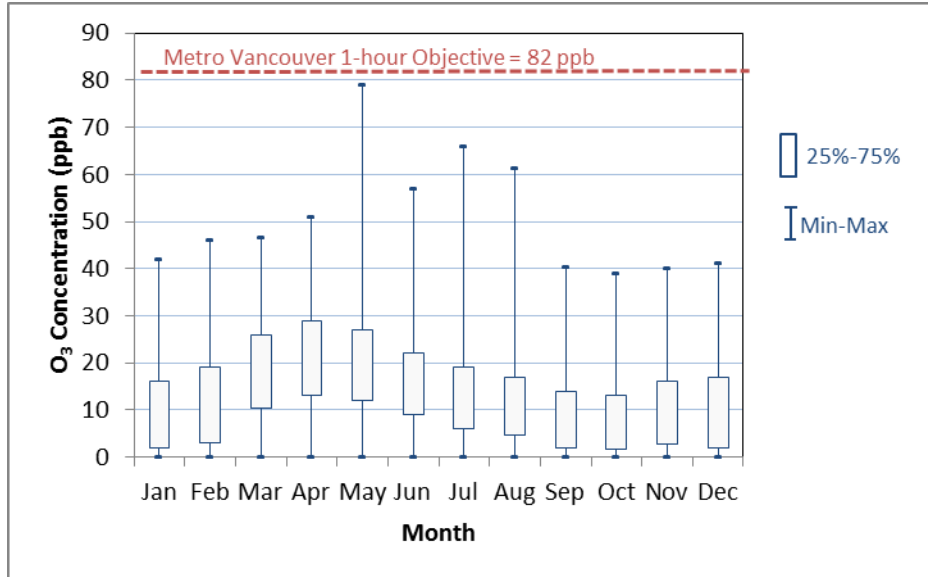


Figure E 259: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Second Narrows

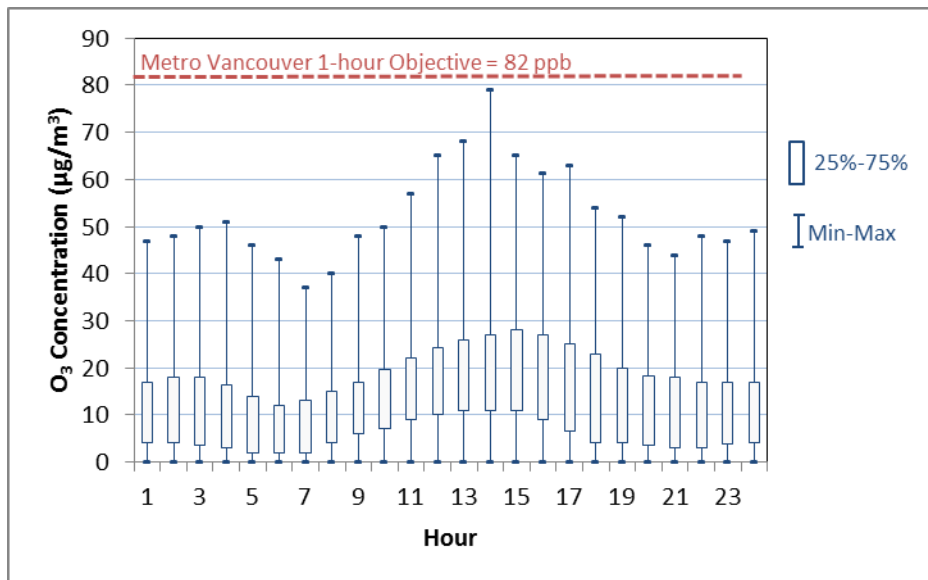


Figure E 260: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Second Narrows



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TransMountain Pipeline ULC
TransMountain Expansion Project
RWDI#1202006
December 6, 2013

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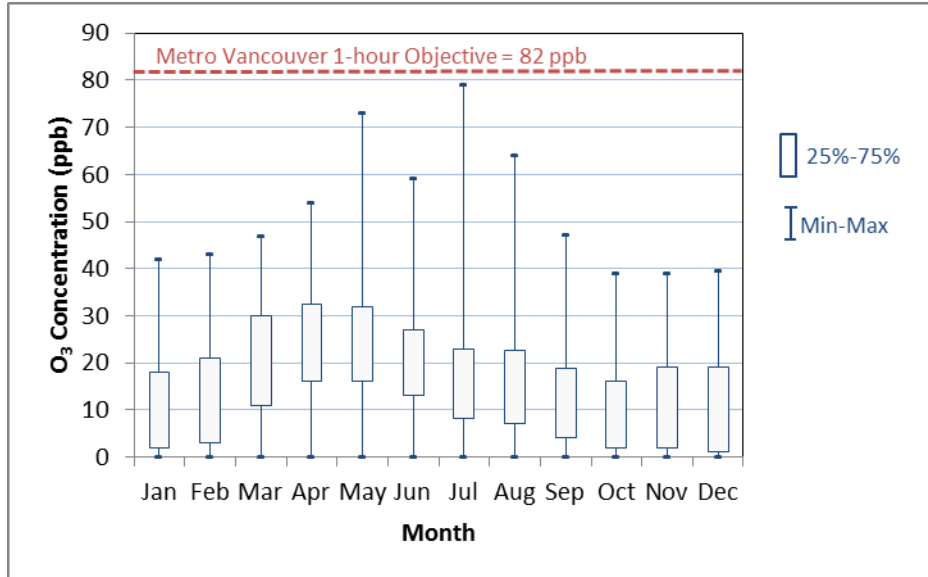


Figure E 261: Seasonal Variation of 1-hour Ozone Concentrations (ppb) at Burnaby South

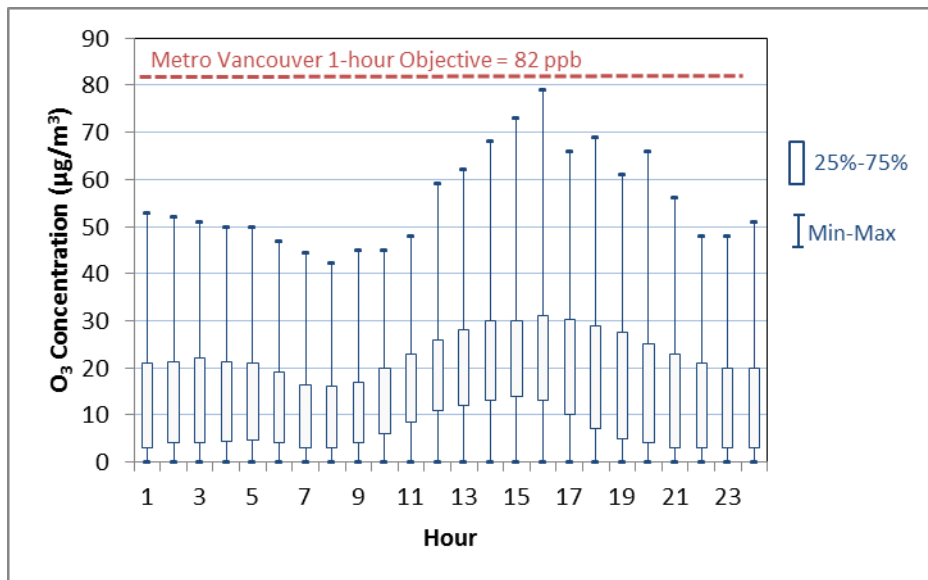


Figure E 262: Diurnal Variation of 1-Hour Ozone Concentrations (ppb) at Burnaby South

APPENDIX F

Date: December 6, 2013

RWDI Reference #: 1202006

To: Jason Smith
TERA Environmental Consultants

E-Mail: jsmith@teraenv.com

From: David Chadder

E-Mail: David.Chadder@rwdi.com

Re: **Screening Model Results for Fugitive Emissions from the Pump Stations**
Trans Mountain Pipeline ULC
Trans Mountain Expansion Project

This memo summarizes the screening dispersion modelling results for three representative pump stations along the proposed pipeline corridor. The operation of the pump stations could result in a small amount of fugitive emissions due to leaks. Screening modelling was conducted to provide a first-order estimate of potential air quality effects from the pump stations. The methodology and findings of the screening model assessment are discussed in the following sections.

Emission Rates

Uncontrolled fugitive hydrocarbon emission rates were estimated for pump stations along the proposed pipeline. The following pump stations are part of the proposed pipeline corridor: Gainford, Wolf, Edson, Hinton, Rearguard, Blue River, Blackpool, Black Pines, Kingsvale and Sumas. Pump station fugitive hydrocarbon emission rates were estimated for the existing equipment (existing case), and existing equipment along with the proposed expansion equipment (application case).

Weight fractions of mercaptans, benzene, toluene, ethylbenzene and xylene were obtained from lab analyses available for Cold Lake Winter Blend (representative heavy crude product) as it represents more than 60% of total pipeline throughput for the Project case. To be conservative, the highest weight fractions of the VOCs of interest were selected from the two available gas analyses. Table 1 presents the weight fractions of VOCs used in the screening assessment.

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Table 1: VOC Vapour Fractions by Weight

| VOC | Vapour Fraction by Weight |
|--------------|---------------------------|
| Mercaptans | 5.81E-05 |
| Benzene | 2.64E-03 |
| Toluene | 1.41E-03 |
| Ethylbenzene | 3.90E-05 |
| Xylene | 5.34E-04 |

The fugitive hydrocarbon emission rates were estimated using Table 20 of the CAPP guide “A Recommended Approach to Completing the NPRI for the Upstream Oil and Gas Industry” (CAPP, 2007)¹. Emission rates for the light liquid oil category were chosen. Cold Lake Winter Blend, with a Reid vapour pressure of 51.7 kPa, falls under this category, as do most other products delivered in the Trans Mountain Pipeline.

The pump station equipment counts and associated fugitive emission rates corresponding to existing case, and application case, are shown in Table 2 and Table 3, respectively. The equipment count, including connectors, pump seals and a variety of valves, were obtained from available valve numbering diagrams.

For the screening modelling, only three “representative” pump stations were selected: Edson, Gainford and Wolf. These pump stations were selected to represent large, medium and small pump stations in terms of emission rates.

The Edson Pump Station has three existing 2000 horsepower (hp) main line pumps and three existing 75 hp booster pumps, and the expansion will include the addition of three 5000 hp pumps to the second line. The Gainford Pump Station has three existing 2000 hp main line pumps, and the expansion will introduce three 5000 hp pumps to Line 2. At the Wolf Pump Station, two 5000 hp main line pumps will be relocated to Line 2.

¹ Canadian Association of Petroleum Producers (CAPP), 2007: A Recommended Approach to Completing the NPRI for the Upstream Oil and Gas Industry, March 2007.

Table 2: Fugitive Hydrocarbon Emission Rates for Pump Stations along the Existing Pipeline Corridor

| Pump Station | Number of Equipment Components | | | | | | Existing Case Emission Rate (g/s) |
|--------------|--------------------------------|-------------------------|----------------|------------------------|------------------|--------|-----------------------------------|
| | Connectors | Compressor / Pump Seals | Control Valves | Pressure Relief Valves | Open-Ended Lines | Valves | |
| Gainford | 55 | 3 | 10 | 0 | 0 | 24 | 0.079 |
| Wolf | 43 | 2 | 7 | 0 | 0 | 14 | 0.054 |
| Edson | 130 | 6* | 22 | 0 | 1 | 74 | 0.178 |
| Hinton | 59 | 2 | 8 | 0 | 0 | 20 | 0.062 |
| Rearguard | 43 | 2 | 7 | 0 | 0 | 14 | 0.054 |
| Blue River | 43 | 2 | 7 | 0 | 0 | 14 | 0.054 |
| Blackpool | 44 | 2 | 7 | 0 | 0 | 14 | 0.054 |
| Kingsvale | 37 | 3 | 9 | 0 | 0 | 18 | 0.071 |
| Sumas | 120 | 4 | 36 | 1 | 0 | 55 | 0.246 |

Table 3: Fugitive Hydrocarbon Emission Rates for Pump Stations along the Application Case Pipeline Corridor

| Pump Station | Number of Equipment Components | | | | | | Application Case Emission Rate (g/s) |
|--------------|--------------------------------|-------------------------|----------------|------------------------|------------------|--------|--------------------------------------|
| | Connectors | Compressor / Pump Seals | Control Valves | Pressure Relief Valves | Open-Ended Lines | Valves | |
| Gainford | 97 | 6 | 19 | 0 | 0 | 41 | 0.150 |
| Wolf | 34 | 2 | 7 | 0 | 0 | 14 | 0.053 |
| Edson | 182 | 9* | 37 | 0 | 1 | 96 | 0.281 |
| Hinton | 99 | 5 | 19 | 0 | 0 | 37 | 0.142 |
| Rearguard | 97 | 4 | 26 | 0 | 0 | 39 | 0.170 |
| Blue River | 42 | 3 | 9 | 0 | 0 | 17 | 0.071 |
| Blackpool | 86 | 5 | 16 | 0 | 0 | 31 | 0.125 |
| Black Pines | 88 | 4 | 26 | 0 | 0 | 38 | 0.170 |
| Kingsvale | 71 | 5 | 16 | 0 | 0 | 32 | 0.125 |
| Sumas | 128 | 5 | 38 | 1 | 0 | 58 | 0.264 |

Screening Dispersion Modelling Assessment

A screening model assessment was conducted using the US EPA AERSCREEN model to predict maximum short-term (one-hour) concentrations based on the estimated fugitive hydrocarbon emission rates for the three representative pump stations. AERSCREEN is a screening model based on the AERMOD model and is recommended for screening assessments by Alberta Environment and Sustainable Resource Development (AESRD, 2013)². AERSCREEN was run using pre-set meteorological data developed using default MAKEMET options for the coniferous forest land use category.

Fugitive emissions from the pump stations were modelled as surface-based volume sources, with initial lateral and vertical dimensions estimated following the US EPA's User's Guide for the AMS/EPA Regulatory Model - AERMOD (US EPA, 2004)³. Volume sources were defined to cover the primary locations of the pumps and pipes, where the bulk of fugitive emissions from leaks are expected to occur. The side length of the volume sources were in the range of 27 m to 129 m. The vertical dimensions of the volume sources were set to be 5 m for all pump stations. Table 4 summarizes the physical and modelled dimensions of the volume sources at the pump stations.

Table 4: Physical and Modelled Dimensions of the Volume Sources at the Pump Stations (in meters)

| VOC | Physical Dimensions (Length×Width×Height) | Initial Lateral Dimension σ_{y0} | Initial Vertical Dimension σ_{z0} |
|----------|--|--|---|
| Edson | 129×55×5 | 30 | 2.3 |
| Gainford | 75×20×5 | 18 | 2.3 |
| Wolf | 27×20×5 | 6 | 2.3 |

Since all the speciated compounds are emitted from the same, single volume source, each of the pump stations was modelled using a unit emission rate of 1 g/s. Predicted concentrations based on the unit emission rate were then multiplied by the fugitive emission rates in Table 2 (existing case) or Table 3 (application case) and the speciated weight fractions in Table 1 to determine the maximum concentrations of mercaptans, benzene, toluene, ethylbenzene and xylene.⁴

Maximum predicted 1-hour concentrations for the Edson, Gainford and Wolf Pump Stations are shown in Table 5 and Table 6 for the existing and application cases, respectively. The applicable ambient air quality objectives are included for comparison. The ambient air quality objectives represent the most

² Alberta Environment and Sustainable Resource Development (AESRD), 2013: Air Quality Model Guideline, Effective October 1st, 2013.

³ US Environmental Protection Agency (EPA), 2004: User's Guide for the AMS/EPA Regulatory Model – AERMOD, September 2004.

⁴ For example, the total THC emission rate from the Gainford station (application case) is 0.150 g/s, which when multiplied by the dispersion factor of 2253 (concentration for 1 g/s emission rate) results in 338 µg/m³. The weight fraction of benzene in total THC is 0.0026, which when multiplied by the THC concentration of 349 µg/m³ results in 0.9 µg/m³ of benzene.

stringent objectives, taken from the National Ambient Air Quality Objectives and provincial objectives in Alberta and British Columbia. Maximum predicted concentrations are well below the corresponding objectives (less than 1% in all cases except for benzene, which is approximately 3.4% of the 30 $\mu\text{g}/\text{m}^3$ objective). Maximum concentrations occur near the fenceline of the pump stations, and decrease rapidly with distance from the station, as shown in Figures 1 to 3 (only application case is presented). The maximum concentrations drop by 50% within approximately 120 m, 100 m and 50 m from the center of the volume sources for the Edson, Gainford and Wolf Pump Stations, respectively.

AERSCEEN model output files are presented in Attachment 1.

Table 5: Maximum Predicted 1-Hour Average Concentrations and Applicable Ambient Air Quality Objectives (in $\mu\text{g}/\text{m}^3$), Existing Case

| Pollutant | Edson | Gainford | Wolf | Most Stringent Objective |
|---------------|-------|----------|-------|--------------------------|
| Mercaptans | 0.014 | 0.007 | 0.018 | n/a |
| Benzene | 0.64 | 0.32 | 0.80 | 30 |
| Toluene | 0.34 | 0.17 | 0.43 | 1,880 |
| Ethyl Benzene | 0.009 | 0.005 | 0.012 | 2,000 |
| Xylene | 0.13 | 0.07 | 0.16 | 2,300 |

Note: n/a – not applicable

Table 6: Maximum Predicted 1-Hour Average Concentrations and Applicable Ambient Air Quality Objectives (in $\mu\text{g}/\text{m}^3$), Application Case.

| Pollutant | Edson | Gainford | Wolf | Most Stringent Objective |
|---------------|-------|----------|-------|--------------------------|
| Mercaptans | 0.022 | 0.014 | 0.017 | n/a |
| Benzene | 1.0 | 0.61 | 0.78 | 30 |
| Toluene | 0.54 | 0.33 | 0.42 | 1,880 |
| Ethyl Benzene | 0.015 | 0.009 | 0.012 | 2,000 |
| Xylene | 0.20 | 0.12 | 0.16 | 2,300 |

Note: n/a – not applicable

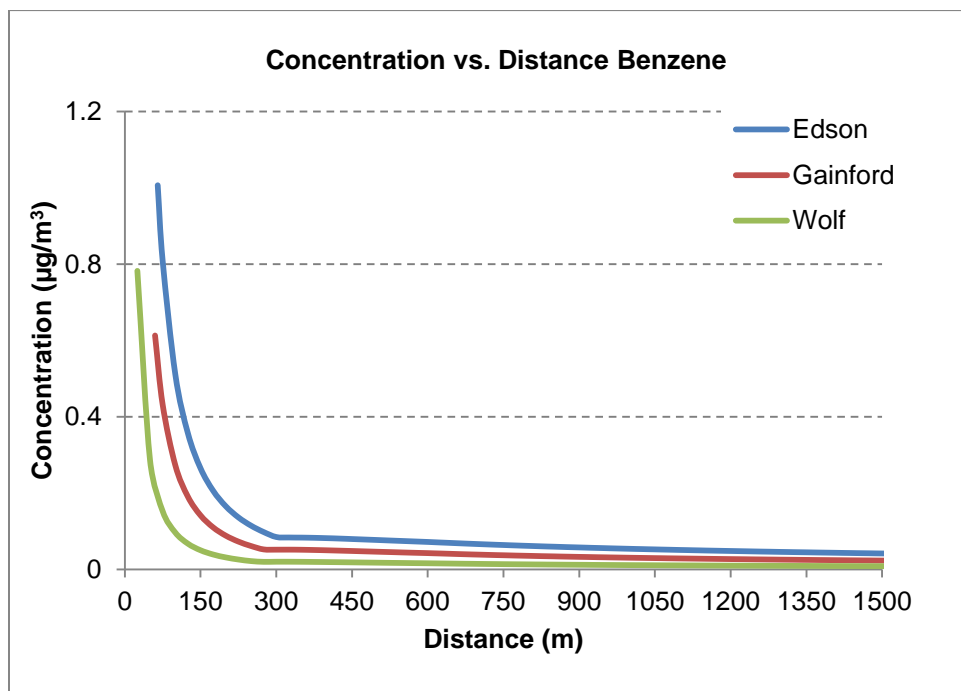


Figure 1: Predicted 1-Hour Benzene Concentration Profile (in $\mu\text{g}/\text{m}^3$). The most stringent objective is $30 \mu\text{g}/\text{m}^3$.

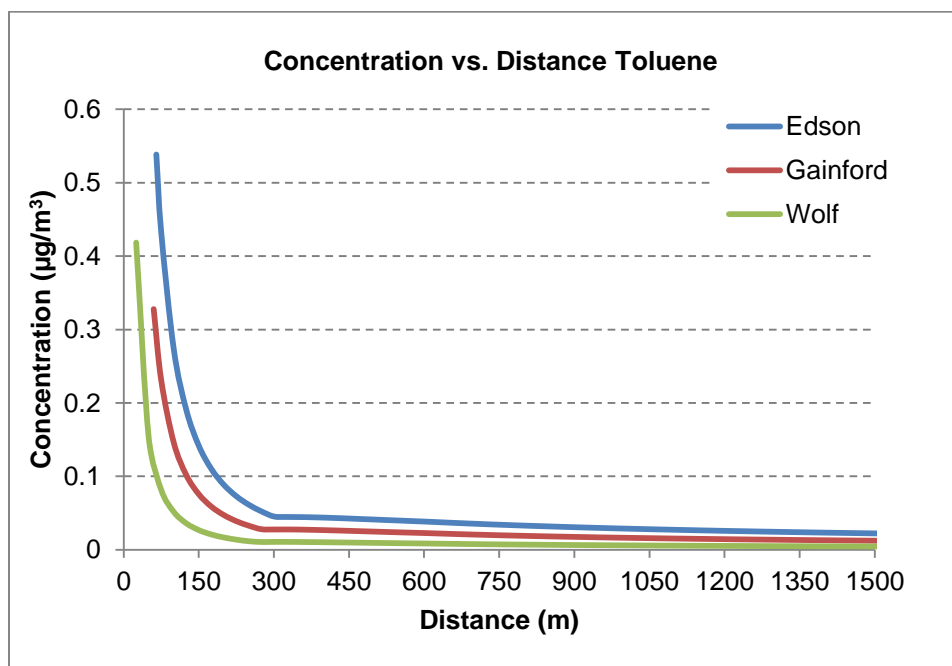


Figure 2: Predicted 1-Hour Toluene Concentration Profile (in $\mu\text{g}/\text{m}^3$). The most stringent objective is $1,880 \mu\text{g}/\text{m}^3$.

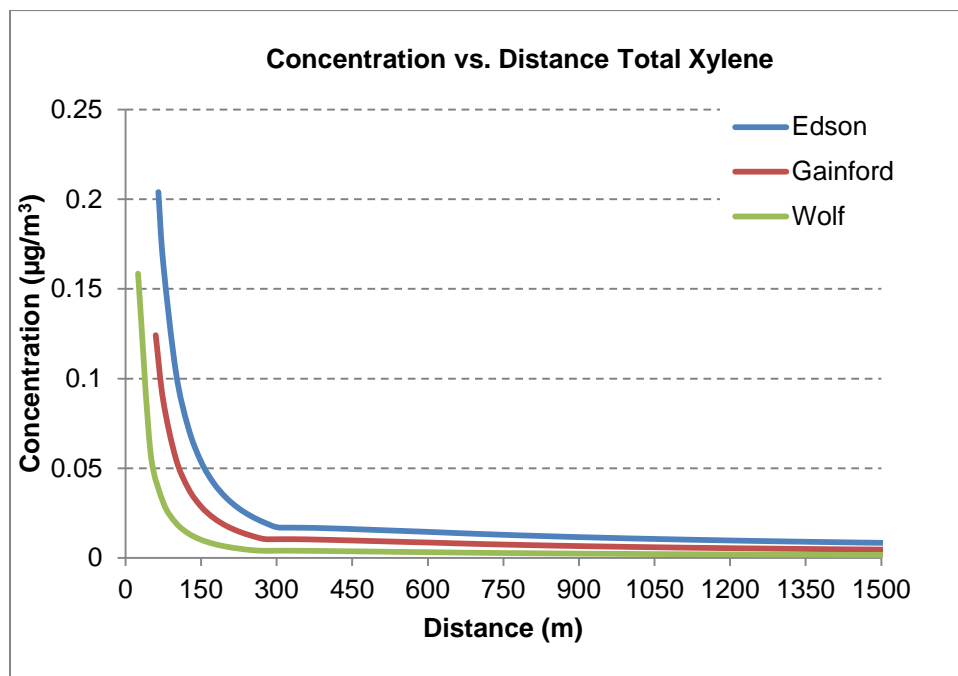


Figure 3: Predicted 1-Hour Total Xylene Concentration Profile (in $\mu\text{g}/\text{m}^3$). The most stringent objective is $2,300 \mu\text{g}/\text{m}^3$.

Conclusions

Screening model results indicate that the maximum predicted concentrations of mercaptans, benzene, toluene, ethylbenzene and xylene due to fugitive emissions from the pump stations are much lower than the corresponding ambient air quality objectives. Maximum predicted concentrations occur near the fenceline and decrease rapidly with distance.

ATTACHMENT 1

AERSCREEN 11126 / AERMOD 1234

10/01/13

11:06:57

TITLE: EDSON PUMP STATION AERSCREEN RUN

***** VOLUME PARAMETERS *****

SOURCE EMISSION RATE: 1.0000 g/s 7.937 lb/hr
VOLUME HEIGHT: 0.00 meters 0.00 feet
INITIAL LATERAL DIMENSION: 29.90 meters 98.10 feet
INITIAL VERTICAL DIMENSION: 2.30 meters 7.55 feet
RURAL OR URBAN: RURAL

INITIAL PROBE DISTANCE = 5000. meters 16404. feet

***** BUILDING DOWNWASH PARAMETERS *****

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

***** PROBE ANALYSIS *****

25 meter receptor spacing: 65. meters - 5000. meters

| Zo | ROUGHNESS | 1-HR CONC | DIST | TEMPORAL |
|--------|-----------|-----------|------|----------|
| SECTOR | LENGTH | (ug/m3) | (m) | PERIOD |
| 1* | 1.300 | 1359. | 65.3 | WIN |

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 250.0 / 310.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Coniferous Forest

DOMINANT CLIMATE TYPE: Average Moisture
DOMINANT SEASON: Winter

ALBEDO: 0.35
BOWEN RATIO: 1.50
ROUGHNESS LENGTH: 1.300 (meters)

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

10 01 01 1 01

H0 U* W* DT/DZ ZICNV ZIMCH M-O LEN Z0 BOWEN ALBEDO REF WS

-1.40 0.049 -9.000 0.020 -999. 25. 6.5 1.300 1.50 0.35 0.50

HT REF TA HT

10.0 250.0 2.0

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

10 01 01 1 01

H0 U* W* DT/DZ ZICNV ZIMCH M-O LEN Z0 BOWEN ALBEDO REF WS

-1.40 0.049 -9.000 0.020 -999. 25. 6.5 1.300 1.50 0.35 0.50

HT REF TA HT

10.0 250.0 2.0

AERSCREEN AUTOMATED DISTANCES
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

| MAXIMUM | | MAXIMUM | |
|---------|-----------|---------|-----------|
| DIST | 1-HR CONC | DIST | 1-HR CONC |
| (m) | (ug/m3) | (m) | (ug/m3) |
| 65.29 | 1359. | 2550.00 | 38.91 |
| 75.00 | 1093. | 2575.00 | 38.63 |
| 100.00 | 691.0 | 2600.00 | 38.37 |

| | | | |
|---------|-------|---------|-------|
| 125.00 | 481.8 | 2625.00 | 38.10 |
| 150.00 | 357.9 | 2650.00 | 37.85 |
| 175.00 | 278.1 | 2675.00 | 37.59 |
| 200.00 | 223.3 | 2700.00 | 37.34 |
| 225.00 | 183.9 | 2725.00 | 37.09 |
| 250.00 | 154.6 | 2750.00 | 36.85 |
| 275.00 | 132.0 | 2775.00 | 36.61 |
| 300.00 | 114.3 | 2800.00 | 36.37 |
| 325.00 | 112.6 | 2825.00 | 36.13 |
| 350.00 | 112.3 | 2850.00 | 35.90 |
| 375.00 | 111.5 | 2875.00 | 35.68 |
| 400.00 | 110.3 | 2900.00 | 35.45 |
| 425.00 | 108.9 | 2925.00 | 35.23 |
| 450.00 | 107.2 | 2950.00 | 35.01 |
| 475.00 | 105.5 | 2975.00 | 34.80 |
| 500.00 | 103.8 | 3000.00 | 34.58 |
| 525.00 | 102.0 | 3025.00 | 34.37 |
| 550.00 | 100.3 | 3050.00 | 34.17 |
| 575.00 | 98.55 | 3075.00 | 33.96 |
| 600.00 | 96.85 | 3100.00 | 33.76 |
| 625.00 | 94.95 | 3125.00 | 33.56 |
| 650.00 | 93.00 | 3150.00 | 33.37 |
| 675.00 | 91.14 | 3175.00 | 33.17 |
| 700.00 | 89.35 | 3200.00 | 32.98 |
| 725.00 | 87.64 | 3225.00 | 32.79 |
| 750.00 | 85.99 | 3250.00 | 32.61 |
| 775.00 | 84.42 | 3275.00 | 32.42 |
| 800.00 | 82.90 | 3300.00 | 32.24 |
| 825.00 | 81.45 | 3325.00 | 32.06 |
| 850.00 | 80.05 | 3350.00 | 31.88 |
| 875.00 | 78.70 | 3375.00 | 31.71 |
| 900.00 | 77.41 | 3400.00 | 31.53 |
| 925.00 | 76.16 | 3425.00 | 31.36 |
| 950.00 | 74.95 | 3450.00 | 31.19 |
| 975.00 | 73.78 | 3475.00 | 31.02 |
| 1000.00 | 72.66 | 3500.00 | 30.86 |
| 1025.00 | 71.57 | 3525.00 | 30.69 |
| 1050.00 | 70.52 | 3550.00 | 30.53 |
| 1075.00 | 69.50 | 3575.00 | 30.37 |
| 1100.00 | 68.52 | 3600.00 | 30.21 |
| 1125.00 | 67.56 | 3625.00 | 30.06 |
| 1150.00 | 66.64 | 3650.00 | 29.90 |
| 1175.00 | 65.74 | 3675.00 | 29.75 |
| 1200.00 | 64.87 | 3700.00 | 29.60 |
| 1225.00 | 64.02 | 3725.00 | 29.45 |
| 1250.00 | 63.20 | 3750.00 | 29.30 |
| 1275.00 | 62.40 | 3775.00 | 29.15 |
| 1300.00 | 61.63 | 3800.00 | 29.01 |
| 1325.00 | 60.87 | 3825.00 | 28.87 |
| 1350.00 | 60.14 | 3850.00 | 28.72 |
| 1375.00 | 59.43 | 3875.00 | 28.58 |
| 1400.00 | 58.73 | 3900.00 | 28.44 |
| 1425.00 | 58.05 | 3925.00 | 28.31 |
| 1450.00 | 57.39 | 3950.00 | 28.17 |

| | | | |
|---------|-------|---------|-------|
| 1475.00 | 56.75 | 3975.00 | 28.04 |
| 1500.00 | 56.12 | 4000.00 | 27.90 |
| 1525.00 | 55.51 | 4025.00 | 27.77 |
| 1550.00 | 54.91 | 4050.00 | 27.64 |
| 1575.00 | 54.33 | 4075.00 | 27.51 |
| 1600.00 | 53.76 | 4100.00 | 27.38 |
| 1625.00 | 53.21 | 4125.00 | 27.26 |
| 1650.00 | 52.66 | 4150.00 | 27.13 |
| 1675.00 | 52.13 | 4175.00 | 27.01 |
| 1700.00 | 51.61 | 4200.00 | 26.88 |
| 1725.00 | 51.10 | 4225.00 | 26.76 |
| 1750.00 | 50.61 | 4250.00 | 26.64 |
| 1775.00 | 50.12 | 4275.00 | 26.52 |
| 1800.00 | 49.65 | 4300.00 | 26.40 |
| 1825.00 | 49.18 | 4325.00 | 26.29 |
| 1850.00 | 48.73 | 4350.00 | 26.17 |
| 1875.00 | 48.28 | 4375.00 | 26.05 |
| 1900.00 | 47.84 | 4400.00 | 25.94 |
| 1925.00 | 47.41 | 4425.00 | 25.83 |
| 1950.00 | 46.99 | 4450.00 | 25.71 |
| 1975.00 | 46.58 | 4475.00 | 25.60 |
| 2000.00 | 46.18 | 4500.00 | 25.49 |
| 2025.00 | 45.78 | 4525.00 | 25.38 |
| 2050.00 | 45.39 | 4550.00 | 25.28 |
| 2075.00 | 45.01 | 4575.00 | 25.17 |
| 2100.00 | 44.63 | 4600.00 | 25.06 |
| 2125.00 | 44.27 | 4625.00 | 24.96 |
| 2150.00 | 43.91 | 4650.00 | 24.85 |
| 2175.00 | 43.55 | 4675.00 | 24.75 |
| 2200.00 | 43.20 | 4700.00 | 24.65 |
| 2225.00 | 42.86 | 4725.00 | 24.55 |
| 2250.00 | 42.53 | 4750.00 | 24.45 |
| 2275.00 | 42.20 | 4775.00 | 24.35 |
| 2300.00 | 41.87 | 4800.00 | 24.25 |
| 2325.00 | 41.55 | 4825.00 | 24.15 |
| 2350.00 | 41.24 | 4850.00 | 24.05 |
| 2375.00 | 40.93 | 4875.00 | 23.96 |
| 2400.00 | 40.63 | 4900.00 | 23.86 |
| 2425.00 | 40.33 | 4925.00 | 23.77 |
| 2450.00 | 40.03 | 4950.00 | 23.67 |
| 2475.00 | 39.75 | 4975.00 | 23.58 |
| 2500.00 | 39.46 | 5000.00 | 23.49 |
| 2525.00 | 39.18 | | |

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

| CALCULATION PROCEDURE | MAXIMUM 1-HOUR CONC (ug/m3) | SCALED 3-HOUR CONC (ug/m3) | SCALED 8-HOUR CONC (ug/m3) | SCALED 24-HOUR CONC (ug/m3) | SCALED ANNUAL CONC (ug/m3) |
|--------------------------|--------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|
|--------------------------|--------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|

FLAT TERRAIN 1359. 1359. 1223. 815.5 135.9

DISTANCE FROM SOURCE 65.29 meters

IMPACT AT THE
AMBIENT BOUNDARY 1359. 1359. 1223. 815.5 135.9

DISTANCE FROM SOURCE 65.29 meters

AERSCREEN 11126 / AERMOD 1234

10/01/13

15:14:14

TITLE: GAINFORD PUMP STATION AERSCREEN RUN

***** VOLUME PARAMETERS *****

SOURCE EMISSION RATE: 1.0000 g/s 7.937 lb/hr
VOLUME HEIGHT: 0.00 meters 0.00 feet
INITIAL LATERAL DIMENSION: 17.50 meters 57.41 feet
INITIAL VERTICAL DIMENSION: 2.30 meters 7.55 feet
RURAL OR URBAN: RURAL

INITIAL PROBE DISTANCE = 5000. meters 16404. feet

***** BUILDING DOWNWASH PARAMETERS *****

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

***** PROBE ANALYSIS *****

25 meter receptor spacing: 60. meters - 5000. meters

| Zo | ROUGHNESS | 1-HR CONC | DIST | TEMPORAL |
|--------|-----------|-----------|------|----------|
| SECTOR | LENGTH | (ug/m3) | (m) | PERIOD |
| 1* | 1.300 | 1550. | 60.0 | WIN |

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 250.0 / 310.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Coniferous Forest

DOMINANT CLIMATE TYPE: Average Moisture
DOMINANT SEASON: Winter

ALBEDO: 0.35
BOWEN RATIO: 1.50
ROUGHNESS LENGTH: 1.300 (meters)

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

10 01 01 1 01

H0 U* W* DT/DZ ZICNV ZIMCH M-O LEN Z0 BOWEN ALBEDO REF WS

-1.40 0.049 -9.000 0.020 -999. 25. 6.5 1.300 1.50 0.35 0.50

HT REF TA HT

10.0 250.0 2.0

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

10 01 01 1 01

H0 U* W* DT/DZ ZICNV ZIMCH M-O LEN Z0 BOWEN ALBEDO REF WS

-1.40 0.049 -9.000 0.020 -999. 25. 6.5 1.300 1.50 0.35 0.50

HT REF TA HT

10.0 250.0 2.0

AERSCREEN AUTOMATED DISTANCES
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

| MAXIMUM | | MAXIMUM | |
|---------|-----------|---------|-----------|
| DIST | 1-HR CONC | DIST | 1-HR CONC |
| (m) | (ug/m3) | (m) | (ug/m3) |
| 60.00 | 1550. | 2550.00 | 39.57 |
| 75.00 | 1093. | 2575.00 | 39.28 |
| 100.00 | 691.0 | 2600.00 | 39.00 |

| | | | |
|---------|-------|---------|-------|
| 125.00 | 481.8 | 2625.00 | 38.73 |
| 150.00 | 357.9 | 2650.00 | 38.45 |
| 175.00 | 278.1 | 2675.00 | 38.19 |
| 200.00 | 223.3 | 2700.00 | 37.92 |
| 225.00 | 183.9 | 2725.00 | 37.67 |
| 250.00 | 154.6 | 2750.00 | 37.41 |
| 275.00 | 132.0 | 2775.00 | 37.16 |
| 300.00 | 130.3 | 2800.00 | 36.91 |
| 325.00 | 130.5 | 2825.00 | 36.67 |
| 350.00 | 129.7 | 2850.00 | 36.43 |
| 375.00 | 128.1 | 2875.00 | 36.19 |
| 400.00 | 126.1 | 2900.00 | 35.96 |
| 425.00 | 123.9 | 2925.00 | 35.73 |
| 450.00 | 121.5 | 2950.00 | 35.50 |
| 475.00 | 119.1 | 2975.00 | 35.28 |
| 500.00 | 116.7 | 3000.00 | 35.05 |
| 525.00 | 114.3 | 3025.00 | 34.84 |
| 550.00 | 111.9 | 3050.00 | 34.62 |
| 575.00 | 109.6 | 3075.00 | 34.41 |
| 600.00 | 107.4 | 3100.00 | 34.20 |
| 625.00 | 104.9 | 3125.00 | 33.99 |
| 650.00 | 102.3 | 3150.00 | 33.79 |
| 675.00 | 99.82 | 3175.00 | 33.59 |
| 700.00 | 97.50 | 3200.00 | 33.39 |
| 725.00 | 95.30 | 3225.00 | 33.20 |
| 750.00 | 93.21 | 3250.00 | 33.00 |
| 775.00 | 91.23 | 3275.00 | 32.81 |
| 800.00 | 89.33 | 3300.00 | 32.62 |
| 825.00 | 87.53 | 3325.00 | 32.44 |
| 850.00 | 85.81 | 3350.00 | 32.25 |
| 875.00 | 84.17 | 3375.00 | 32.07 |
| 900.00 | 82.59 | 3400.00 | 31.89 |
| 925.00 | 81.08 | 3425.00 | 31.72 |
| 950.00 | 79.64 | 3450.00 | 31.54 |
| 975.00 | 78.25 | 3475.00 | 31.37 |
| 1000.00 | 76.92 | 3500.00 | 31.20 |
| 1025.00 | 75.64 | 3525.00 | 31.03 |
| 1050.00 | 74.41 | 3550.00 | 30.86 |
| 1075.00 | 73.22 | 3575.00 | 30.70 |
| 1100.00 | 72.07 | 3600.00 | 30.53 |
| 1125.00 | 70.97 | 3625.00 | 30.37 |
| 1150.00 | 69.90 | 3650.00 | 30.21 |
| 1175.00 | 68.87 | 3675.00 | 30.06 |
| 1200.00 | 67.88 | 3700.00 | 29.90 |
| 1225.00 | 66.91 | 3725.00 | 29.75 |
| 1250.00 | 65.98 | 3750.00 | 29.59 |
| 1275.00 | 65.08 | 3775.00 | 29.44 |
| 1300.00 | 64.21 | 3800.00 | 29.29 |
| 1325.00 | 63.36 | 3825.00 | 29.15 |
| 1350.00 | 62.53 | 3850.00 | 29.00 |
| 1375.00 | 61.74 | 3875.00 | 28.86 |
| 1400.00 | 60.96 | 3900.00 | 28.71 |
| 1425.00 | 60.21 | 3925.00 | 28.57 |
| 1450.00 | 59.47 | 3950.00 | 28.43 |

| | | | |
|---------|-------|---------|-------|
| 1475.00 | 58.76 | 3975.00 | 28.30 |
| 1500.00 | 58.07 | 4000.00 | 28.16 |
| 1525.00 | 57.39 | 4025.00 | 28.02 |
| 1550.00 | 56.74 | 4050.00 | 27.89 |
| 1575.00 | 56.10 | 4075.00 | 27.76 |
| 1600.00 | 55.47 | 4100.00 | 27.63 |
| 1625.00 | 54.86 | 4125.00 | 27.50 |
| 1650.00 | 54.27 | 4150.00 | 27.37 |
| 1675.00 | 53.69 | 4175.00 | 27.24 |
| 1700.00 | 53.13 | 4200.00 | 27.11 |
| 1725.00 | 52.57 | 4225.00 | 26.99 |
| 1750.00 | 52.04 | 4250.00 | 26.86 |
| 1775.00 | 51.51 | 4275.00 | 26.74 |
| 1800.00 | 51.00 | 4300.00 | 26.62 |
| 1825.00 | 50.49 | 4325.00 | 26.50 |
| 1850.00 | 50.00 | 4350.00 | 26.38 |
| 1875.00 | 49.52 | 4375.00 | 26.26 |
| 1900.00 | 49.05 | 4400.00 | 26.15 |
| 1925.00 | 48.59 | 4425.00 | 26.03 |
| 1950.00 | 48.14 | 4450.00 | 25.92 |
| 1975.00 | 47.70 | 4475.00 | 25.80 |
| 2000.00 | 47.26 | 4500.00 | 25.69 |
| 2025.00 | 46.84 | 4525.00 | 25.58 |
| 2050.00 | 46.43 | 4550.00 | 25.47 |
| 2075.00 | 46.02 | 4575.00 | 25.36 |
| 2100.00 | 45.62 | 4600.00 | 25.25 |
| 2125.00 | 45.23 | 4625.00 | 25.15 |
| 2150.00 | 44.85 | 4650.00 | 25.04 |
| 2175.00 | 44.47 | 4675.00 | 24.93 |
| 2200.00 | 44.10 | 4700.00 | 24.83 |
| 2225.00 | 43.74 | 4725.00 | 24.73 |
| 2250.00 | 43.38 | 4750.00 | 24.62 |
| 2275.00 | 43.03 | 4775.00 | 24.52 |
| 2300.00 | 42.69 | 4800.00 | 24.42 |
| 2325.00 | 42.35 | 4825.00 | 24.32 |
| 2350.00 | 42.02 | 4850.00 | 24.22 |
| 2375.00 | 41.70 | 4875.00 | 24.12 |
| 2400.00 | 41.38 | 4900.00 | 24.03 |
| 2425.00 | 41.06 | 4925.00 | 23.93 |
| 2450.00 | 40.75 | 4950.00 | 23.83 |
| 2475.00 | 40.45 | 4975.00 | 23.74 |
| 2500.00 | 40.15 | 5000.00 | 23.64 |
| 2525.00 | 39.86 | | |

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

| | MAXIMUM 1-HOUR CALCULATION PROCEDURE | SCALED 3-HOUR CONC (ug/m3) | SCALED 8-HOUR CONC (ug/m3) | SCALED 24-HOUR CONC (ug/m3) | SCALED ANNUAL CONC (ug/m3) |
|--|---|-------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|
|--|---|-------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|

FLAT TERRAIN 1550. 1550. 1395. 930.1 155.0

DISTANCE FROM SOURCE 60.00 meters

IMPACT AT THE
AMBIENT BOUNDARY 1550. 1550. 1395. 930.1 155.0

DISTANCE FROM SOURCE 60.00 meters

AERSCREEN 11126 / AERMOD 1234

10/01/13

11:43:22

TITLE: WOLF PUMP STATION AERSCREEN RUN

***** VOLUME PARAMETERS *****

SOURCE EMISSION RATE: 1.0000 g/s 7.937 lb/hr
VOLUME HEIGHT: 0.00 meters 0.00 feet
INITIAL LATERAL DIMENSION: 6.20 meters 20.34 feet
INITIAL VERTICAL DIMENSION: 2.30 meters 7.55 feet
RURAL OR URBAN: RURAL

INITIAL PROBE DISTANCE = 5000. meters 16404. feet

***** BUILDING DOWNWASH PARAMETERS *****

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

***** PROBE ANALYSIS *****

25 meter receptor spacing: 25. meters - 5000. meters

| Zo | ROUGHNESS | 1-HR CONC | DIST | TEMPORAL |
|--------|-----------|-----------|------|----------|
| SECTOR | LENGTH | (ug/m3) | (m) | PERIOD |

| | | | | |
|----|-------|-------|------|-----|
| 1* | 1.300 | 5599. | 25.0 | WIN |
|----|-------|-------|------|-----|

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 250.0 / 310.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Coniferous Forest

DOMINANT CLIMATE TYPE: Average Moisture
DOMINANT SEASON: Winter

ALBEDO: 0.35
BOWEN RATIO: 1.50
ROUGHNESS LENGTH: 1.300 (meters)

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

10 01 01 1 01

H0 U* W* DT/DZ ZICNV ZIMCH M-O LEN Z0 BOWEN ALBEDO REF WS

-1.40 0.049 -9.000 0.020 -999. 25. 6.5 1.300 1.50 0.35 0.50

HT REF TA HT

10.0 250.0 2.0

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

10 01 01 1 01

H0 U* W* DT/DZ ZICNV ZIMCH M-O LEN Z0 BOWEN ALBEDO REF WS

-1.40 0.049 -9.000 0.020 -999. 25. 6.5 1.300 1.50 0.35 0.50

HT REF TA HT

10.0 250.0 2.0

AERSCREEN AUTOMATED DISTANCES
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

| MAXIMUM | | MAXIMUM | |
|---------|-----------|---------|-----------|
| DIST | 1-HR CONC | DIST | 1-HR CONC |
| (m) | (ug/m3) | (m) | (ug/m3) |
| 25.00 | 5599. | 2525.00 | 40.17 |
| 50.00 | 2051. | 2550.00 | 39.88 |
| 75.00 | 1093. | 2575.00 | 39.59 |

| | | | |
|---------|-------|---------|-------|
| 100.00 | 691.0 | 2600.00 | 39.30 |
| 125.00 | 481.8 | 2625.00 | 39.02 |
| 150.00 | 357.9 | 2650.00 | 38.74 |
| 175.00 | 278.1 | 2675.00 | 38.47 |
| 200.00 | 223.3 | 2700.00 | 38.20 |
| 225.00 | 183.9 | 2725.00 | 37.94 |
| 250.00 | 154.6 | 2750.00 | 37.68 |
| 275.00 | 140.6 | 2775.00 | 37.42 |
| 300.00 | 142.7 | 2800.00 | 37.17 |
| 325.00 | 142.4 | 2825.00 | 36.92 |
| 350.00 | 140.9 | 2850.00 | 36.67 |
| 375.00 | 138.7 | 2875.00 | 36.43 |
| 400.00 | 136.1 | 2900.00 | 36.19 |
| 425.00 | 133.3 | 2925.00 | 35.96 |
| 450.00 | 130.3 | 2950.00 | 35.73 |
| 475.00 | 127.4 | 2975.00 | 35.50 |
| 500.00 | 124.5 | 3000.00 | 35.27 |
| 525.00 | 121.6 | 3025.00 | 35.05 |
| 550.00 | 118.8 | 3050.00 | 34.83 |
| 575.00 | 116.1 | 3075.00 | 34.62 |
| 600.00 | 113.5 | 3100.00 | 34.41 |
| 625.00 | 110.6 | 3125.00 | 34.20 |
| 650.00 | 107.5 | 3150.00 | 33.99 |
| 675.00 | 104.7 | 3175.00 | 33.79 |
| 700.00 | 102.0 | 3200.00 | 33.58 |
| 725.00 | 99.54 | 3225.00 | 33.38 |
| 750.00 | 97.17 | 3250.00 | 33.19 |
| 775.00 | 94.93 | 3275.00 | 32.99 |
| 800.00 | 92.81 | 3300.00 | 32.80 |
| 825.00 | 90.80 | 3325.00 | 32.61 |
| 850.00 | 88.89 | 3350.00 | 32.43 |
| 875.00 | 87.07 | 3375.00 | 32.24 |
| 900.00 | 85.33 | 3400.00 | 32.06 |
| 925.00 | 83.68 | 3425.00 | 31.88 |
| 950.00 | 82.10 | 3450.00 | 31.70 |
| 975.00 | 80.58 | 3475.00 | 31.53 |
| 1000.00 | 79.13 | 3500.00 | 31.36 |
| 1025.00 | 77.74 | 3525.00 | 31.18 |
| 1050.00 | 76.41 | 3550.00 | 31.01 |
| 1075.00 | 75.12 | 3575.00 | 30.85 |
| 1100.00 | 73.89 | 3600.00 | 30.68 |
| 1125.00 | 72.71 | 3625.00 | 30.52 |
| 1150.00 | 71.56 | 3650.00 | 30.36 |
| 1175.00 | 70.46 | 3675.00 | 30.20 |
| 1200.00 | 69.40 | 3700.00 | 30.04 |
| 1225.00 | 68.37 | 3725.00 | 29.88 |
| 1250.00 | 67.38 | 3750.00 | 29.73 |
| 1275.00 | 66.42 | 3775.00 | 29.58 |
| 1300.00 | 65.49 | 3800.00 | 29.43 |
| 1325.00 | 64.59 | 3825.00 | 29.28 |
| 1350.00 | 63.72 | 3850.00 | 29.13 |
| 1375.00 | 62.88 | 3875.00 | 28.98 |
| 1400.00 | 62.06 | 3900.00 | 28.84 |
| 1425.00 | 61.27 | 3925.00 | 28.70 |

| | | | |
|---------|-------|---------|-------|
| 1450.00 | 60.50 | 3950.00 | 28.56 |
| 1475.00 | 59.75 | 3975.00 | 28.42 |
| 1500.00 | 59.02 | 4000.00 | 28.28 |
| 1525.00 | 58.32 | 4025.00 | 28.14 |
| 1550.00 | 57.63 | 4050.00 | 28.00 |
| 1575.00 | 56.96 | 4075.00 | 27.87 |
| 1600.00 | 56.31 | 4100.00 | 27.74 |
| 1625.00 | 55.67 | 4125.00 | 27.61 |
| 1650.00 | 55.05 | 4150.00 | 27.48 |
| 1675.00 | 54.45 | 4175.00 | 27.35 |
| 1700.00 | 53.86 | 4200.00 | 27.22 |
| 1725.00 | 53.29 | 4225.00 | 27.09 |
| 1750.00 | 52.73 | 4250.00 | 26.97 |
| 1775.00 | 52.18 | 4275.00 | 26.85 |
| 1800.00 | 51.65 | 4300.00 | 26.72 |
| 1825.00 | 51.13 | 4325.00 | 26.60 |
| 1850.00 | 50.62 | 4350.00 | 26.48 |
| 1875.00 | 50.12 | 4375.00 | 26.36 |
| 1900.00 | 49.63 | 4400.00 | 26.24 |
| 1925.00 | 49.16 | 4425.00 | 26.13 |
| 1950.00 | 48.69 | 4450.00 | 26.01 |
| 1975.00 | 48.23 | 4475.00 | 25.90 |
| 2000.00 | 47.79 | 4500.00 | 25.78 |
| 2025.00 | 47.35 | 4525.00 | 25.67 |
| 2050.00 | 46.92 | 4550.00 | 25.56 |
| 2075.00 | 46.50 | 4575.00 | 25.45 |
| 2100.00 | 46.09 | 4600.00 | 25.34 |
| 2125.00 | 45.69 | 4625.00 | 25.23 |
| 2150.00 | 45.29 | 4650.00 | 25.12 |
| 2175.00 | 44.91 | 4675.00 | 25.02 |
| 2200.00 | 44.53 | 4700.00 | 24.91 |
| 2225.00 | 44.15 | 4725.00 | 24.81 |
| 2250.00 | 43.79 | 4750.00 | 24.70 |
| 2275.00 | 43.43 | 4775.00 | 24.60 |
| 2300.00 | 43.08 | 4800.00 | 24.50 |
| 2325.00 | 42.73 | 4825.00 | 24.40 |
| 2350.00 | 42.39 | 4850.00 | 24.30 |
| 2375.00 | 42.06 | 4875.00 | 24.20 |
| 2400.00 | 41.73 | 4900.00 | 24.10 |
| 2425.00 | 41.41 | 4925.00 | 24.00 |
| 2450.00 | 41.09 | 4950.00 | 23.91 |
| 2475.00 | 40.78 | 4975.00 | 23.81 |
| 2500.00 | 40.48 | 5000.00 | 23.72 |

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

| CALCULATION PROCEDURE | MAXIMUM 1-HOUR CONC (ug/m3) | SCALED 3-HOUR CONC (ug/m3) | SCALED 8-HOUR CONC (ug/m3) | SCALED 24-HOUR CONC (ug/m3) | SCALED ANNUAL CONC (ug/m3) |
|--------------------------|--------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|
|--------------------------|--------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|

FLAT TERRAIN 5599. 5599. 5039. 3360. 559.9

DISTANCE FROM SOURCE 25.00 meters

IMPACT AT THE
AMBIENT BOUNDARY 5599. 5599. 5039. 3360. 559.9

DISTANCE FROM SOURCE 25.00 meters