# DURHAM YORK ENERGY CENTRE

COURTICE, ONTARIO

## 2023 Q2 AMBIENT AIR QUALITY MONITORING REPORT

RWDI #2205149

August 11, 2023

### SUBMITTED TO

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# 1 INTRODUCTION

RWDI AIR Inc. (RWDI) was retained by Durham Region and York Region (the Regions) to conduct discrete and continuous air quality ambient monitoring at the Durham York Energy Centre (DYEC) monitoring stations. The facility address is 1835 Energy Drive, Clarington, Ontario. The DYEC is a facility that manages post diversion municipal solid waste from Durham Region and York Region to create energy from waste combustion. Commercial operation of the DYEC commenced on February 1, 2016. The site location is shown below in Figure 1.

Condition 11 of the Environmental Assessment Notice of Approval and Condition 7(4) of the Environmental Compliance Approval (ECA) requires ambient air monitoring to be undertaken by the DYEC. An Ambient Air Monitoring and Reporting Plan was prepared and approved by the Ministry of Environment, Conservation and Parks (MECP) to satisfy these conditions. Two (2) monitoring stations were established to monitor ambient air quality around the DYEC and quantify the background ambient air quality levels and DYEC contributed emissions to ambient air quality levels.

This monitoring plan was developed based on the Regional Council mandate to provide ambient monitoring in the area of the DYEC. The purposes of the ambient monitoring program are to:

- Quantify any measurable ground level concentrations resulting from emissions from the DYEC cumulative to local air quality, including validating the predicted concentrations from the dispersion modelling conducted in the Environmental Assessment (2009a);
- Monitor concentration levels of EFW-related air contaminants in nearby residential areas; and,
- Quantify background ambient levels of air contaminants in the area.

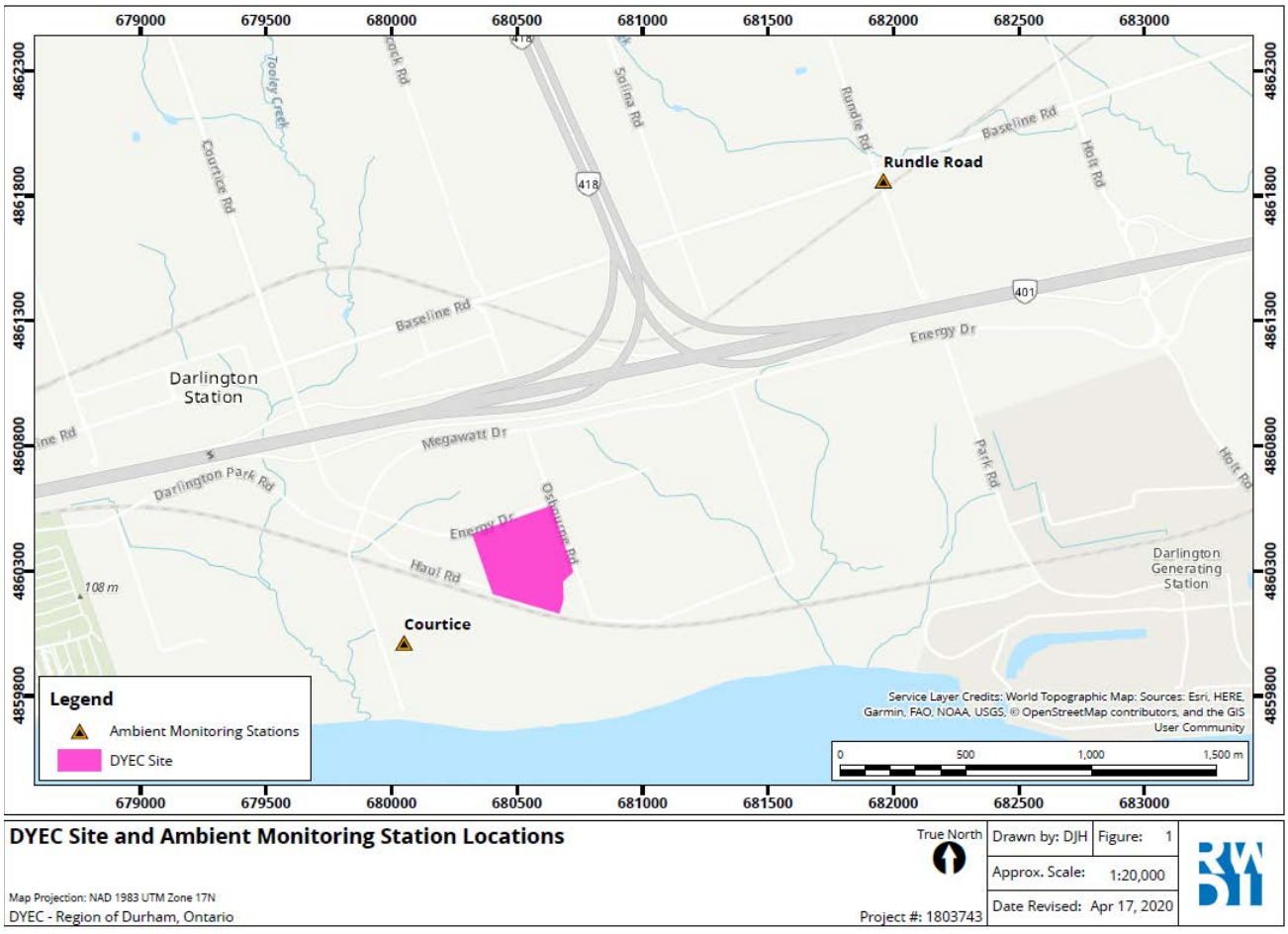
The facility has two (2) monitoring stations which collect continuous and discrete ambient measurements, known as the Courtice station and Rundle Road station. The station locations are shown in Figure 1. The Courtice and Rundle Road stations were operational in May of 2013 and have been operated on behalf of the Region of Durham by Stantec Consulting Ltd. since that time up until July 31, 2018. RWDI has overseen the operation of the stations on behalf of the Region of Durham since August 1, 2018.

The Courtice and Rundle Road stations continuously monitor the following air quality parameters: Particulate Matter less than 2.5 microns ($PM_{2.5}$), Nitrogen Oxides ($NO_X$) and Sulfur Dioxide ($SO_2$). In addition, both discretely monitor the following air quality parameters: Total Suspended Particulate (TSP), Metals, Dioxins and Furans (D&F) and Polycyclic Aromatic Hydrocarbons (PAHs).

Continuous meteorological data is collected at the Courtice and Rundle Road stations. The Rundle Road station collects the following meteorological parameters: wind speed, wind direction, ambient temperature, precipitation and relative humidity. The Courtice station collects the following meteorological parameters: wind speed, wind direction, ambient temperature, ambient pressure, precipitation and relative humidity. The meteorological towers at both stations are approximately 10 meters tall.

Throughout this monitoring period there were one-hundred and six (106) exceedance events of the rolling 10-minute $SO_2$ AAQC and forty (40) exceedance events of the rolling 1-hour $SO_2$ AAQC at the Courtice station. There were fourteen (14) exceedance events of the rolling 10-minute $SO_2$ AAQC and five (5) exceedance events of the rolling 1-hour $SO_2$ AAQC at the Rundle Road station. There were two (2) exceedances of the Benzo(a) Pyrene AAQC at the Courtice station and one (1) exceedances of the Benzo(a) Pyrene AAQC at the Rundle Road station. The exceedances occurred at both stations on May 12, 2023, and the second exceedance at Courtice occurred on May 24, 2023. There was one (1) exceedance of the Total Suspended Particulate (TSP) AAQC at the Courtice station and one (1) exceedance of the TSP AAQC at the Rundle Road station. The exceedances occurred on June 5, 2023, at the Courtice station and the Rundle Road station exceedance occurred on April 12, 2023. Data recovery rates were acceptable and valid for all measured Q2 continuous and discrete parameters.

**Figure 1:** DYEC Site and Ambient Monitoring Station Locations



## 1.1 Sampling Locations

The station sites were selected in consultation with a working group that included representatives from the MECP, the Region of Durham, York Region, and the Energy from Waste Advisory Committee (EFWAC), as required by Condition 11.3 of the Environmental Assessment Notice of Approval. The Courtice station is predominantly upwind of the DYEC and is located on the Courtice WPCP property just southwest of the DYEC. The Rundle Road station is predominantly downwind of the DYEC and is located just southeast of the intersection of Baseline Road and Rundle Road just northeast of the DYEC. Pictures of the two (2) stations are presented as **Figure 2** and **3**.

**Figure 2: Rundle Road Station**



**Figure 3: Courtice Station**



# 2 SAMPLING METHODOLOGY

The Rundle Road and Courtice stations are both equipped with the following continuous monitors: Thermo Scientific Model 5030 SHARP (Synchronized Hybrid Ambient Real-time Particulate) monitor ($PM_{2.5}$ analyzer), Teledyne Nitrogen Oxides Analyzer Model T200 ($NO_X$ analyzer), and a Teledyne Sulfur Dioxide Analyzer Model T100 ($SO_2$ analyzer). Both stations also have the following periodic monitors: High Volume (Hi-Vol) Air Sampler outfitted with a TSP inlet head as approved by the United States Environmental Protection Agency (U.S. EPA), and a Hi-Vol Air Sampler outfitted with a polyurethane foam plug and circular quartz filter for measuring PAH's and D&F's as approved by U.S. EPA.

## 2.1 Nitrogen Oxide Analyzers

The Teledyne T200 Nitrogen Oxide ($NO_X$) analyzers use chemiluminescence detection, coupled with microprocessor technology to provide sensitivity and stability for ambient air quality applications. The instrument determines real-time concentration of nitric oxide (NO), total nitrogen oxides ($NO_X$) (the sum of NO and $NO_2$), and nitrogen dioxide ($NO_2$). The amount of NO is measured by detecting the chemiluminescence reaction that occurs in the reaction cell when NO molecules are exposed to ozone ($O_3$). The NO and $O_3$ molecules collide in the reaction cell and enter a higher energy state.

When these excited molecules return to a stable energy state, they emit a photon of light which is proportional to the amount of NO in the sample stream of gas entering the analyzer.

To determine the total $NO_X$ ($NO+NO_2$) measurement, sample gas is periodically bypassed through a heated molybdenum converter cartridge that converts any $NO_2$ molecules in the sample stream into NO (any existing NO molecules in the stream remain as is). The instrument will switch the sample stream through the converter periodically and then through the reaction cell where the same chemiluminescence reaction occurs with ozone.

The resultant response produced is now the sum of NO and converted $NO_2$ producing a $NO_X$ measurement. The resultant $NO_2$ determination is the $NO_X$ measurement subtracted from the NO measurement.

The $NO_X$ analyzers were zero and span checked daily using the internal zero and span (IZS) system and calibrated once a month using either EPA protocol span gases and a dilution system or an ESA permeation tube calibrator. Automatic IZS checks were performed on a daily basis commencing at approximately 01:45 and ending at 02:15. The checks consisted of a 10-minute zero check, a 10-minute span check and a 10-minute purge. These checks provide a way to monitor daily performance of the analyzer using an external charcoal and purafil zeroing cartridge for the zero, and an internal permeation oven with a permeation tube for the span. These IZS checks are not for calibration purposes but are merely a diagnostic tool to identify instrument drift.

The instrument collects data using its own data acquisition system (DAS) on a 5-minute interval. Data is collected from the instrument directly to an EnviDAS logger at 1-min, 5-min and 60-min intervals. The logger can be accessed remotely, and all instrument parameters can be examined as well as the measurement data. This allows the tracking of instrument performance. Data was also collected at 1-minute intervals by an external datalogger using analog output connections as a back-up. The measurement data was averaged using Envista processing software over a 1-hour and 24-hour period to compare to the applicable ambient air quality criteria.

## 2.2 Sulphur Dioxide Analyzers

The Teledyne T100 Sulphur Dioxide ($SO_2$) Analyzer is a microprocessor-controlled analyzer that determines the concentration of $SO_2$ in a sample gas drawn through the instrument. In the sample chamber, sample gas is excited by ultraviolet light causing the $SO_2$ to absorb energy from the light and move to an active state ($SO_2$*). These active $SO_2$* molecules must decay into a stable state back to $SO_2$, and when this happens a photon of light is released which is recognized by the instrument as fluorescence. The instrument measures the amount of florescence to determine the amount of $SO_2$ present in the sample gas.

The $SO_2$ analyzers were zero and span checked daily using the IZS system and calibrated once a month using either EPA protocol span gases and a dilution system or an ESA permeation tube calibrator. Automatic IZS checks were performed on a daily basis commencing at approximately 01:45 and ending at 02:15. The checks consisted of a 10-minute zero check, a 10-minute span check and a 10-minute purge. These checks provide a way to monitor daily performance of the analyzer using an external charcoal and purafil zeroing cartridge for the zero, and an internal permeation oven with a permeation tube for the span. These IZS checks are not for calibration purposes but are merely a diagnostic tool to identify instrument drift.

The instrument collects data using its own data acquisition system (DAS) on a 5-minute interval. Data is collected from the instrument directly to an EnviDAS logger at 1-min, 5-min and 60-min intervals. The logger can be accessed remotely, and all instrument parameters can be examined as well as the measurement data. This allows the tracking of instrument performance. Data was also collected at 1-minute intervals by an external datalogger using analog output connections as a back-up. The measurement data was averaged using Envista processing software over a 1-hour and 24-hour period to compare to the applicable ambient air quality criteria.

## 2.3 SHARP 5030 $PM_{2.5}$ Analyzers

The SHARP 5030 is a hybrid nephelometric/radiometric particulate mass monitor capable of providing precise, real-time measurements with a superior detection limit. The SHARP incorporates a high sensitivity light scattering photometer whose output signal is continuously referenced to the time-averaged measurement of an integral beta attenuating mass sensor. The SHARP also incorporates a dynamic inlet heating system designed to maintain the relative humidity of the air passing through the filter tape constant.

The SHARP is calibrated once a month to ensure accuracy and validity of its data. The $PM_{2.5}$ inlet head and sharp cut cyclone is cleaned monthly as well to ensure proper performance. The monthly calibration process consists of the following: zeroing the nephelometer if necessary, calibration of ambient temperature, calibration of barometric pressure, and calibration of the flow.

The instrument collects data using its own data acquisition system (DAS) on a 5-minute interval. Data is collected from the instrument directly to an EnviDAS logger at 1-min, 5-min and 60-min intervals. The logger can be accessed remotely, and all instrument parameters can be examined as well as the measurement data. This allows the tracking of instrument performance. Data was also collected at 1-minute intervals by an external datalogger using analog output connections as a back-up. The measurement data was averaged using Envista processing software over a 1-hour and 24-hour period to compare to the applicable ambient air quality criteria.

## 2.4 TSP High Volume Air Samplers

The Tisch TE-5170 Total Suspended Particulate (TSP) high volume (Hi-Vol) air samplers were outfitted with a TSP gabled inlet capable of collecting particulate of all aerodynamic diameters. Each Hi-Vol is equipped with a mass flow controller, which ensures a flow rate of 40 cubic feet per minute (CFM), a chart recorder for measuring cfm flow throughout the run time, an elapsed timer and a wheel timer for starting and stopping each sample. In the latter part of 2019, the pin-based wheel timer was modified with an automated relay system controlled by a data logger to toggle the sampler on and off, and the chart recorder system was replaced by a digital pressure

transducer to record the blower output pressure. Teflon coated glass fibre filters are outfitted at the top of the hi-vol samplers where air is drawn through the filter, thereby collecting TSP. Each Hi-Vol is calibrated quarterly (every three months) to ensure accuracy and validity of the volume of air drawn through the sampler.

The Teflon coated glass fibre filter media was pre and post weighed by ALS Laboratories in Burlington, Ontario. The filters are then analyzed for total particulate weight, metals analysis and mercury.

## 2.5 Polyurethane Foam Samplers

The D&F, and PAH samples were collected using Tisch TE-1000 samplers, which are listed as reference devices for U.S. EPA Methods TO-9 and TO-13. The samplers use a collection filter that is 'backed-up' by a polyurethane foam (PUF) plug. The airborne compounds present in the particulate phase are collected on the Teflon coated glass fibre filter and any compounds present in the vapour phase are absorbed in the PUF plug. Each PUF sampler is equipped with a mass flow controller, which can sustain 8 CFM of flow over the sampling period, an elapsed timer and a wheel timer for starting and stopping each sample.

In the latter part of 2019, the pin-based wheel timer was modified with an automated relay system controlled by a data logger to toggle the sampler on and off, and the chart recorder system was replaced by a digital pressure transducer to record the blower output pressure. Each PUF sampler is calibrated quarterly (every three months) to ensure accuracy and validity of the volume of air drawn through the sampler.

The filter and PUF media/glassware is proofed and analyzed by ALS Laboratories in Burlington, Ontario. The filters and PUF/XAD plugs are then analyzed for PAH's and D&F's.

## 2.6 Meteorological Towers

Meteorological data was collected from the Rundle Road and Courtice stations. This is done so that a vector could be associated with the applicable contaminant concentrations. The Rundle Road and Courtice stations are outfitted with a Campbell Scientific HMP60 Temperature / Relative Humidity probe, and a Texas Instruments TE525M rain gauge. Meteorological data was collected at 1-minute intervals and was averaged using Envista processing software over a 1-hour period.

# 3 AIR QUALITY CRITERIA AND STANDARDS

The monitored contaminant concentrations were compared to air quality criteria and standards set by the MECP and by Environment Canada. The MECP developed Ambient Air Quality Criteria (AAQCs) which are the maximum desirable concentrations in the outdoor air, based on effects to the environment and health (MECP, 2012). Not all contaminants have an applicable regulatory limit; therefore, other criteria were used for comparison. These included human health risk assessment (HHRA) criteria.

Environment Canada has established a Canadian Ambient Air Quality Standard (CAAQS) which are health-based air quality objectives for the outdoor air (Environment Canada, 2013). The current CAAQS' for $PM_{2.5}$ are 27 µg/m$^3$ for the 3-year average of annual 98$^{th}$ percentile 24-hour concentration, and 8.8 µg/m$^3$ for the 3-year average of annual average concentrations (in effect as of 2020). The CAAQS' are listed in **Table 1**. No direct comparison to the 2020 CAAQS' is appropriate for this report, as the standards are only applicable to 3-year averaged data which is provided in the annual reports.

**Table 1:** $PM_{2.5}$, $SO_2$ and $NO_2$ CAAQS' by Implementation Year

| Parameter | Averaging Time | Year Applied | | Statistical Form |
|---|---|---|---|---|
| | | 2020 | 2025 | |
| **Fine Particulate Matter ($PM_{2.5}$)** | 24-hour | 27 µg/m$^3$ | | The 3-year average of the annual 98$^{th}$ percentile of the daily 24-hour average concentrations |
| | Annual | 8.8 µg/m$^3$ | | The 3-year average of the annual average of all 1-hour concentrations |
| **Sulphur Dioxide ($SO_2$)** | 1-hour | 70 ppb | 65 ppb | The 3-year average of the annual 99$^{th}$ percentile of the $SO_2$ daily maximum 1-hour average concentrations |
| | Annual | 5 ppb | 4 ppb | The average over a single calendar year of all 1-hour average $SO_2$ concentrations |
| **Nitrogen Dioxide ($NO_2$)** | 1-hour | 60 Ppb | 42 ppb | The 3-year average of the annual 98$^{th}$ percentile of the daily maximum 1-hour average concentrations |
| | Annual | 17 Ppb | 12 Ppb | The average over a single calendar year of all 1-hour average concentrations |

(CCME,2019)

All applicable criteria and standards are shown in the 'Summary of Ambient Measurements' section of this report.

# 4 MECP AUDITS

There was an MECP audit conducted on June 27, 2023. All instruments met their respective audit criteria. It was suggested by the MECP that a monitoring system for the sample air intake fans should be installed at both stations.

# 5 SUMMARY OF AMBIENT MEASUREMENTS

Ambient air quality monitoring results for all contaminants sampled at the Courtice and Rundle Road stations are discussed herein. Summary statistics from April to June 2023 are presented in a summary format below and in a more detailed matrix format in **Appendix A** for continuous measurements and **Appendix B** for discrete measurements.

# 5.1 Meteorological Station Results

## 5.1.1 Courtice Station Results

The Courtice station collected the following meteorological parameters: wind speed, wind direction, relative humidity, ambient temperature, ambient pressure and precipitation. The meteorological tower at the station is at a height of approximately 10 meters tall. The Courtice station maintained a minimum average of 95% of data collection for all of the parameters measured during Q2. Hourly statistics from the meteorological station are presented in **Table 2**. A wind rose showing trends in wind speed and wind direction during Q2 is provided in **Figure 4**.

**Figure 4:** Wind Roses of Hourly Wind Speed and Wind Direction – April to June 2023

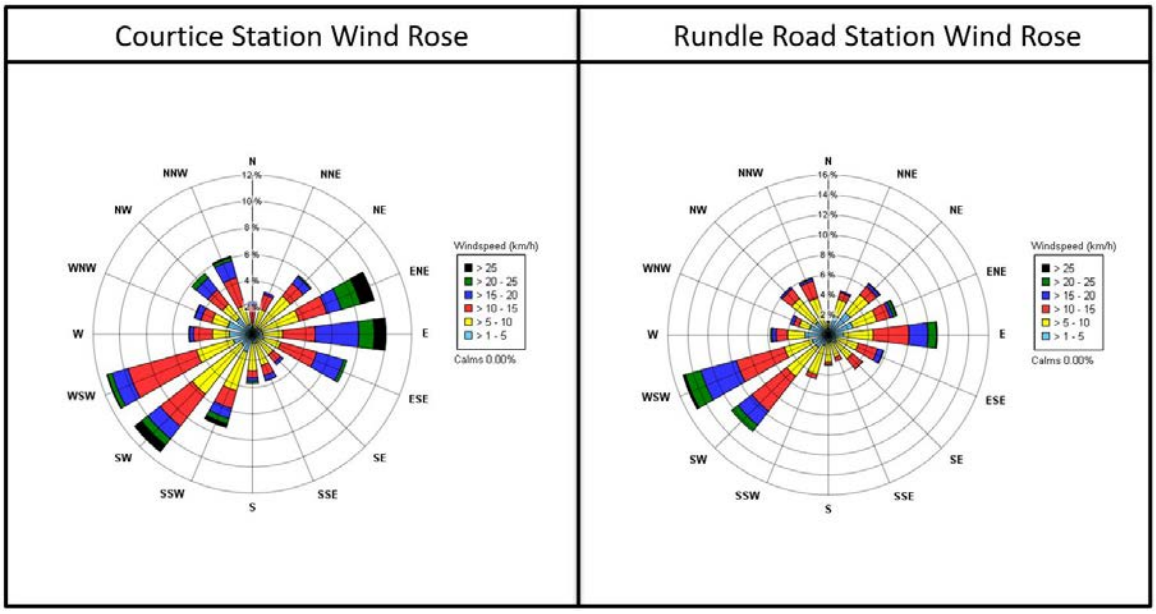


**Table 2:** Hourly Statistics from the Courtice Meteorological Station

| Courtice Station MET Statistics | Maximum 1 hr. Mean | | | | | Minimum 1 hr. Mean | | | | | Monthly Mean | | | | | Total | % Valid hours | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | WS | Temp | RH | Pres | Rain | WS | Temp | RH | Pres | Rain | WS | Temp | RH | Pres | Rain | Rain | WS | WD | Temp | RH | Pres | Rain |
| Units | (km/hr.) | ( C) | (%) | Hg | mm | (km/hr.) | ( C) | (%) | Hg | mm | (km/hr.) | ( C) | (%) | Hg | mm | mm | (%) | | | | | |
| April | 36.0 | 22.6 | 100.0 | 30.3 | 6.8 | 0.6 | -4.9 | 23.0 | 29.0 | 0.0 | 13.5 | 7.1 | 66.6 | 29.7 | 0.1 | 86.6 | 100.0 | 97.2 | 100.0 | 100.0 | 100.0 | 100.0 |
| May | 23.8 | 25.0 | 100.0 | 30.1 | 7.8 | 0.3 | 1.3 | 21.5 | 28.8 | 0.0 | 8.9 | 11.9 | 60.0 | 29.7 | 0.1 | 45.0 | 99.6 | 93.4 | 99.6 | 100.0 | 100.0 | 100.0 |
| June | 25.9 | 30.9 | 100.0 | 30.0 | 20.3 | 1.2 | 10.8 | 21.7 | 29.2 | 0.0 | 10.0 | 18.5 | 66.3 | 29.6 | 0.2 | 108.5 | 100.0 | 96.8 | 100.0 | 100.0 | 100.0 | 100.0 |
| Q2 Arithmetic Mean | | | | | | | | | | | 10.8 | 12.5 | 64.3 | 29.7 | 0.1 | 240.1 | 99.9 | 95.8 | 99.9 | 100.0 | 100.0 | 100.0 |

### 5.1.2 Rundle Road Station Results

The Rundle Road station collected the following meteorological parameters: wind speed, wind direction, relative humidity, ambient temperature and precipitation. The meteorological tower at the station is at a height of approximately 10 meters tall. The Rundle Road station maintained a minimum average of 87% data collection for all of the meteorological parameters measured during Q2. Hourly statistics from the meteorological station is presented in **Table 3**. A wind rose showing trends in wind speed and wind direction during Q2 is provided in **Figure 4**.

**Table 3:** Hourly Statistics from the Rundle Road Meteorological Station

| Rundle Road Station MET Statistics | Maximum 1 hr. Mean | | | | Minimum 1 hr. Mean | | | | Monthly Mean | | | | Total | % Valid Hours | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | WS | Temp | RH | Rain | WS | Temp | RH | Rain | WS | Temp | RH | Rain | Rain | WS | WD | Temp | RH | Rain |
| Units | (km/hr.) | ( C) | (%) | mm | (km/hr.) | ( C) | (%) | mm | (km/hr.) | ( C) | (%) | mm | mm | (%) | | | | |
| April | 28.3 | 23.2 | 100.0 | 7.2 | 0.1 | -5.2 | 26.6 | 0.0 | 11.5 | 7.3 | 68.3 | 0.1 | 105.1 | 98.8 | 95.3 | 97.6 | 97.6 | 98.9 |
| May | 27.6 | 27.4 | 100.0 | 6.8 | 0.2 | 0.2 | 22.2 | 0.0 | 8.2 | 12.3 | 62.1 | 0.1 | 44.4 | 100.0 | 92.7 | 100.0 | 100.0 | 100.0 |
| June | 17.3 | 31.6 | 100.0 | 3.5 | 0.7 | 8.2 | 25.4 | 0.0 | 7.3 | 18.3 | 70.8 | N/A[1] | 14.5 | 100.0 | 97.2 | 100.0 | 100.0 | 61.5 |
| Q2 Arithmetic Mean | | | | | | | | | 9.0 | 12.6 | 67.0 | 0.1 | 164.0 | 99.6 | 95.1 | 99.2 | 99.2 | 87.0 |

Notes:
[1] - No June average presented due to not meeting monthly data validity criteria of >75%

## 5.2 $NO_X$, $SO_2$ and $PM_{2.5}$ Summary Table Results

**Table 4** provides a summary of Maximum 1-hour Rolling Means, Maximum 24-hour Rolling Means, Monthly Means, Quarterly Means and Percent valid data for the Courtice station. **Table 5** provides a summary of Maximum 1-hour Means, Maximum 24-hour Means, Monthly Means, Quarterly Means and Percent valid data for the Rundle Road station. **Table 6** provides a summary of exceedance statistics for both Courtice and Rundle Road stations. At the Courtice station, there were one-hundred and six (106) exceedance events of the rolling 10-minute $SO_2$ AAQC and forty (40) exceedance events of the 1-hour $SO_2$ AAQC in Q2. At the Rundle Road station, there were fourteen (14) exceedance events of the rolling 10-minute $SO_2$ AAQC and five (5) exceedance events of the 1-hour $SO_2$ AAQC in Q2.

**Table 4:** Summary of Courtice Station Continuous Data Statistics

| Courtice Monitoring Station Data Statistics | Maximum Rolling 10 min Mean | Maximum Rolling 1 hr Mean | | | | | Maximum 24 hr Rolling Mean | | | | | Monthly Mean | | | | | % Valid Hours | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Compound** | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ |
| **Units** | ppb | ($\mu g/m^3$) | ppb | | | | ($\mu g/m^3$) | ppb | | | | ($\mu g/m^3$) | ppb | | | | (%) | | | | |
| **AAQC/CAAQS** | 67 | | | | 200 | 40 | 27[A] | | | 100 | | | | | | | | | | | |
| **April** | 163.6 | 36.9 | 63.0 | 34.7 | 36.6 | 77.1 | 23.8 | 20.4 | 5.2 | 15.2 | 11.9 | 6.7 | 5.2 | 0.7 | 4.6 | 2.4 | 99.9 | 99.7 | 99.7 | 99.7 | 99.7 |
| **May** | 340.7 | 36.0 | 91.9 | 57.9 | 37.5 | 130.6 | 14.6 | 20.7 | 7.2 | 14.9 | 29.2 | 6.3 | 6.7 | 1.2 | 5.5 | 6.4 | 99.9 | 99.6 | 99.6 | 99.6 | 99.7 |
| **June** | 145.4 | 120.8 | 176.2 | 175.8 | 45.3 | 63.8 | 63.8 | 13.6 | 1.6 | 12.6 | 10.7 | 18.6 | 5.3 | 0.6 | 4.8 | 3.0 | 99.3 | 99.2 | 99.2 | 99.2 | 99.4 |
| **Q2 Arithmetic Mean** | | | | | | | | | | | | 10.5 | 5.7 | 0.9 | 5.0 | 3.9 | 99.7 | 99.5 | 99.5 | 99.5 | 99.6 |

[A] The 24-hour $PM_{2.5}$ CAAQS applies to the 98$^{th}$ percentile over 3 consecutive years.

**Table 5:** Summary of Rundle Road Station Continuous Data Statistics

| Rundle Road Monitoring Station Data Statistics | Maximum Rolling 10 min Mean | Maximum Rolling 1 hr Mean | | | | | Maximum 24 hr Rolling Mean | | | | | Monthly Mean | | | | | % Valid Hours | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Compound** | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ |
| **Units** | ppb | ($\mu g/m^3$) | ppb | | | | ($\mu g/m^3$) | ppb | | | | ($\mu g/m^3$) | ppb | | | | (%) | | | | |
| **AAQC/CAAQS** | 67 | | | | 200 | 40 | 27[A] | | | 100 | | | | | | | | | | | |
| **April** | 60.0 | 34.5 | 56.5 | 41.1 | 21.9 | 47.9 | 21.8 | 14.2 | 8.2 | 10.8 | 3.2 | 6.6 | 5.7 | 1.6 | 4.3 | 0.6 | 98.5 | 97.8 | 97.8 | 97.8 | 98.3 |
| **May** | 9.1 | 49.1 | 73.3 | 43.9 | 40.0 | 4.1 | 13.4 | 16.6 | 6.6 | 10.5 | 1.4 | 5.8 | 5.9 | 1.6 | 4.5 | 0.5 | 99.7 | 99.6 | 99.6 | 99.6 | 99.7 |
| **June** | 362.5 | 118.2 | 94.8 | 60.4 | 34.4 | 142.8 | 63.3 | 16.1 | 7.5 | 8.9 | 18.3 | 17.2 | 4.5 | 1.0 | 3.6 | 1.2 | 98.6 | 98.5 | 98.5 | 98.5 | 99.6 |
| **Q2 Arithmetic Mean** | | | | | | | | | | | | 9.9 | 5.4 | 1.4 | 4.1 | 0.8 | 98.9 | 98.6 | 98.6 | 98.6 | 99.2 |

[A] The 24-hour $PM_{2.5}$ CAAQS applies to the 98$^{th}$ percentile over 3 consecutive years.

**Table 6:** Summary of Exceedance Statistics

| Event Statistics | Rolling Mean > 10 min AAQC for Courtice | Rolling Mean > 10 min AAQC for Rundle Road | Mean > 1 hr AAQC for Courtice Monitoring Station | | | Mean > 1 hr AAQC for Rundle Road Monitoring Station | | | Rolling Mean > 24 hr AAQC for Courtice Monitoring Station | | | Rolling Mean > 24 hr AAQC for Rundle Road Monitoring Station | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Compound** | $SO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_2$ | $SO_2$ |
| **Units** | No. | No. | No. | | | No. | | | No. | | | No. | | |
| **April** | 18 | 0 | | 0 | 6 | | 0 | 1 | N/A | 0 | | N/A | 0 | |
| **May** | 75 | 0 | | 0 | 30 | | 0 | 0 | N/A | 0 | | N/A | 0 | |
| **June** | 13 | 14 | | 0 | 4 | | 0 | 4 | N/A | 0 | | N/A | 0 | |
| **Q2 Total** | 106 | 14 | | 0 | 40 | | 0 | 5 | N/A | 0 | | N/A | 0 | |

## 5.3 Oxides of Nitrogen Results

### 5.3.1 Courtice Station Results

Data recovery levels were high for oxides of nitrogen (99.5% valid data). Monitoring results were compared to the AAQC for $NO_2$ only, as it is the only parameter that has AAQC values for 1-hour and 24-hour averaging periods (there are no AAQC's for NO or $NO_X$). There were no exceedances above the AAQC values for the entirety of the sampling period for rolling 1-hour and 24-hour averaged data. The highest $NO_2$ value seen among the 1-hour rolling averages was 45.3 ppb, which is 22.7% of the AAQC. The highest $NO_2$ value seen among the rolling 24-hour averages was 15.2 ppb, which is 15.2% of the AAQC. The measurements are summarized in **Table 4** above. A pollution rose is presented in **Figure 5** for the Courtice station during Q2 composed of hourly average $NO_2$ concentrations. A pollution rose indicates the percentage of time that the wind originates from a given direction coupled with the pollutant measurement for that time in either ppb or micrograms per meter cubed. In order to show where possible major sources of pollutants are coming from, levels below 5 ppb were omitted from the graphic wind rose representation.

The Courtice station pollution rose in **Figure 5** shows the majority of the $NO_2$ impacts were largely from the east-northeast. The station is downwind of the DYEC when winds are from the northeast and east-northeast directions, which happened frequently during the monitoring period, therefore it is likely that the DYEC contributed to the observed concentrations. There are additional impacts from the south-southwest to north-northwest which indicates reception from surrounding industry or the highway and railway corridors.

### 5.3.2 Rundle Road Station Results

Data recovery levels were high for oxides of nitrogen (98.6% valid data). There were no exceedances above the AAQC values for the entirety of the sampling period for rolling 1-hour and 24-hour averaged data. The highest $NO_2$ value seen among the 1-hour rolling averages was 40.0 ppb, which is 20.0% of the AAQC. The highest $NO_2$ value seen among the rolling 24-hour averages was 10.8 ppb, which is 10.8% of the AAQC. The measurements are summarized in **Table 5** above.

A pollution rose is presented in **Figure 5** for the Rundle Road station during Q2 composed of hourly average $NO_2$ concentrations. In order to show where possible major sources of pollutants are coming from, levels below 5 ppb were omitted from the graphic wind rose representation.

The Rundle Road station pollution rose in **Figure 5** shows that the majority of elevated $NO_2$ events at the Rundle Road station occurred when winds were from the southwest to west-southwest. The station is downwind of the DYEC when winds are from the south-southwest and southwest directions. Elevated concentrations occurred occasionally from the southwest during the monitoring period, therefore it is likely that the DYEC partially contributed to the observed concentrations. There are additional impacts from the west-southwest and the east-northeast to east-southeast which indicates reception from surrounding industry or the highway and railway corridors.

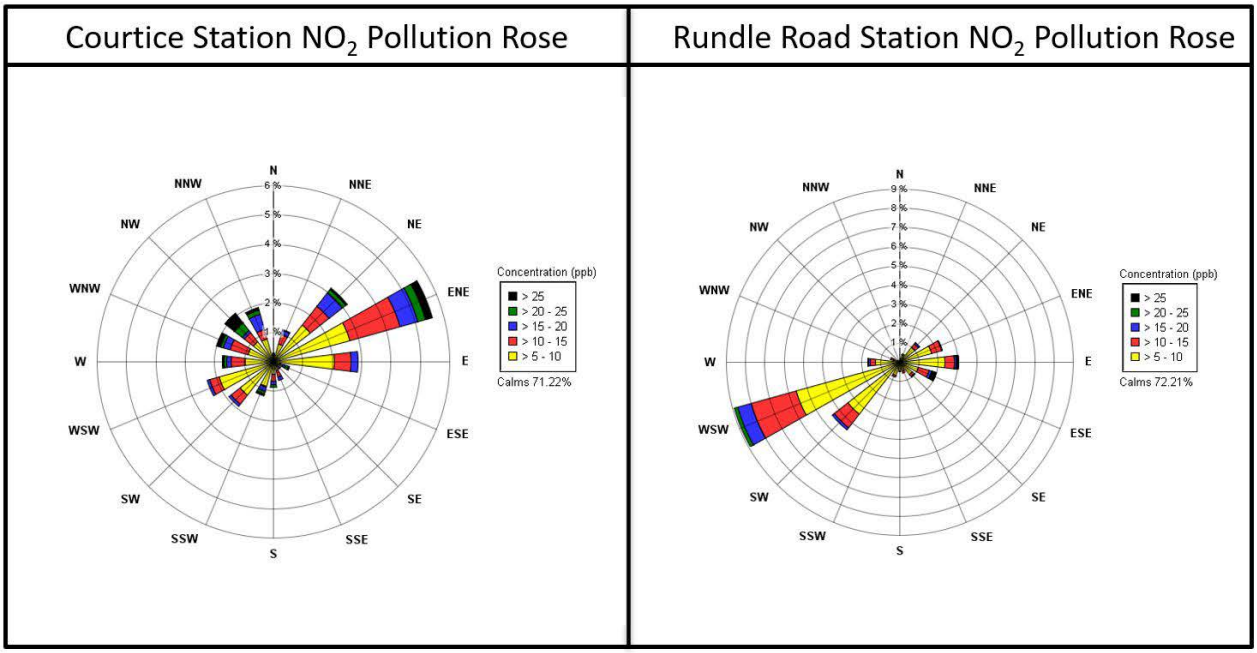



**Figure 5:** Pollution Roses of Hourly Average $NO_2$ Concentrations – April to June 2023

## 5.4 Sulphur Dioxide Results

### 5.4.1 Courtice Station Results

Data recovery levels were high for sulphur dioxide (99.6% valid data). Monitoring results were compared to the AAQC for 10-minute and 1-hour rolling average periods. In 2023, there have been more frequent $SO_2$ concentrations elevated above the AAQC's than in previous years due to the new limits imposed at the start of 2020. The highest $SO_2$ value seen among the 10-min rolling averages was 340.7 ppb, which is 508.5% of the AAQC. The highest $SO_2$ value seen among the 1-hour rolling averages was 130.6 ppb, which is 326.5% of the AAQC. There were one-hundred and six (106) exceedance events above the rolling 10-minute AAQC and forty (40) exceedance events above the rolling 1-hour AAQC. A table outlining the interpretation of the exceedance period can be found in **Appendix E**.

The $SO_2$ statistical results are summarized in **Table 4** above. A pollution rose is presented in **Figure 6** for the Courtice station during Q2 composed of hourly average $SO_2$ concentrations. In order to show where possible major sources of pollutants are coming from, levels below 5 ppb were omitted from the graphic wind rose representation. A pollution rose is presented in **Figure 7** for the Courtice station during Q2 composed of 5-minute average $SO_2$ concentrations with levels below 67 ppb omitted to illustrate directionality of exceedance concentrations.

The Courtice station pollution rose in **Figure 6** shows that the majority of elevated $SO_2$ events at Courtice occurred from the north-northeast to east-northeast and west-northwest directions. The events were likely a result of emissions from surrounding industrial sources with contributions from the DYEC in the east-northeast direction.

The Courtice station pollution rose in **Figure 7** shows that <0.68% of the 5-min $SO_2$ events are elevated >67 ppb and the majority occurred from the north-northwest to north-northeast directions. The pollution rose indicates that the DYEC was not a contributor to $SO_2$ levels at the station and that the levels may be related to other industrial activity nearby.

A Technical Memorandum summarizing the DYEC $SO_2$ continuous emissions monitoring system (CEMS) data during the exceedance events recorded at the Courtice and Rundle Road Ambient Monitoring stations for Q2, is included in **Appendix G**. The Memorandum indicates that based on the in-stack concentration levels measured by the CEMS, that there were no unusual levels of $SO_2$ emissions during the ambient station exceedance events and that the facility's impact on ambient air quality would be expected to be quite low.

### 5.4.2 Rundle Road Station Results

Data recovery levels were high for sulphur dioxide (99.2% valid data). Monitoring results were compared to the AAQC for 10-minute and 1-hour rolling average periods. The highest $SO_2$ value seen among the 10-min rolling averages was 362.5 ppb, which is 541.0% of the AAQC. The highest $SO_2$ value seen among the 1-hour rolling averages was 142.8 ppb, which is 357.0% of the AAQC.

The $SO_2$ statistical results are summarized in **Table 5** above. A pollution rose is presented in **Figure 6** for the Rundle Road station during Q2 composed of hourly average $SO_2$ concentrations. In order to show where possible major sources of pollutants are coming from, levels below 5 ppb were omitted from the graphic wind rose representation. A pollution rose is presented in **Figure 7** for the Rundle Road station during Q2 composed of 5-minute average $SO_2$ concentrations with levels below 67 ppb omitted to illustrate directionality of exceedance concentrations.

The Rundle Road station pollution rose in **Figure 6** shows that the majority of elevated $SO_2$ events at Rundle Road occurred from the east to east-southeast directions. The events were possibly a result of emissions from surrounding industrial sources with contributions from the DYEC in the east-northeast direction.

The Rundle Road station pollution rose in **Figure 7** shows that <0.11% of the 5-min $SO_2$ events are elevated >67 ppb and the majority occurred from the east to east-southeast directions. The pollution rose indicates that the DYEC was not a contributor to $SO_2$ levels at the station and that the levels may be related to other industrial activity nearby.

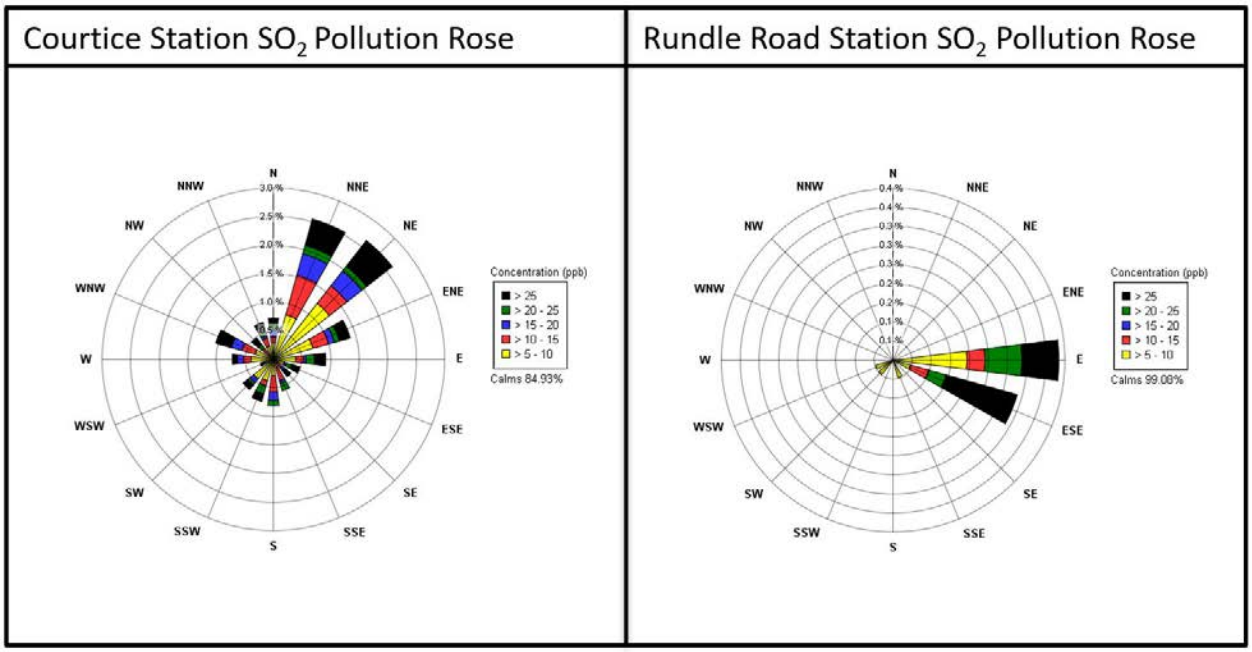



**Figure 6:** Pollution Roses of Hourly Average $SO_2$ Concentrations – April to June 2023

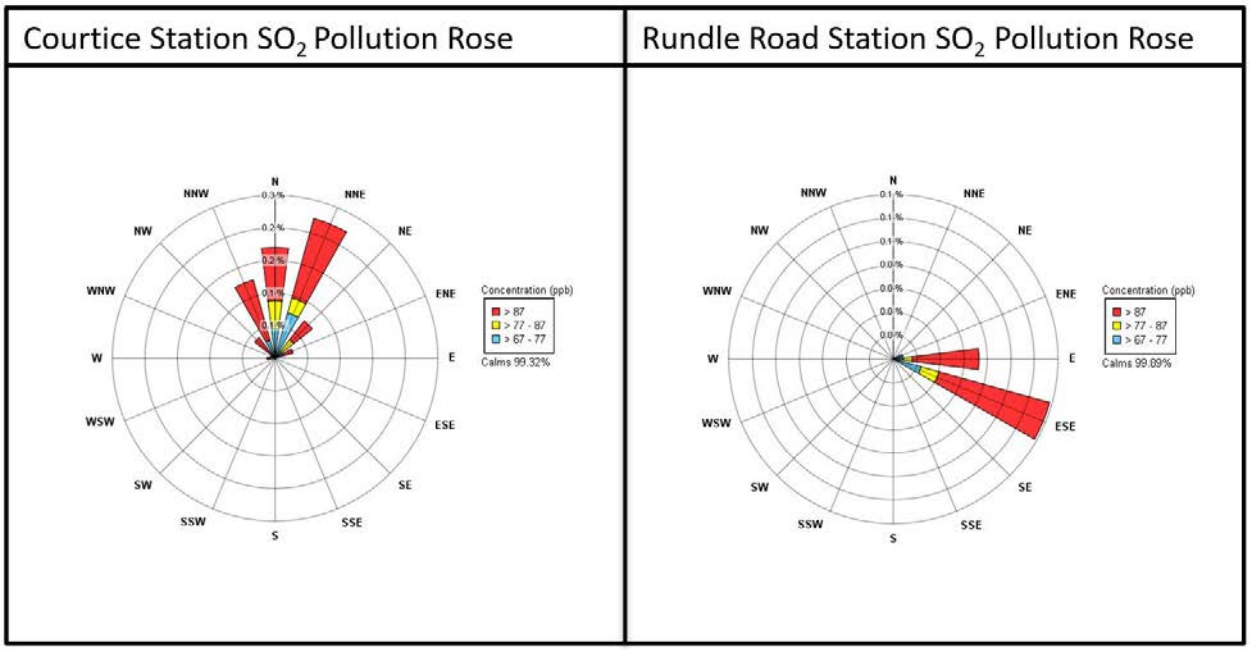



**Figure 7:** Pollution Roses of 5-minute Average $SO_2$ Concentrations >67 ppb – April to June 2023

## 5.5 Fine Particulate Matter ($PM_{2.5}$) Results

### 5.5.1 Courtice Station Results

Data recovery levels were high for particulate matter less than 2.5 microns (99.7% valid data). There is no 1-hour AAQC or standard for $PM_{2.5}$, but there is a 24-hour CAAQS of 27 µg/m$^3$ for the 3-year average of the annual 98$^{th}$ percentile 24-hour concentrations, and 8.8 µg/m$^3$ for the 3-year average of the annual average concentrations (in effect as of 2020). Note that since the reported data is only quarterly and the CAAQS is applicable to the 3-year average, the CAAQS' for $PM_{2.5}$ was not applicable to the data. The highest $PM_{2.5}$ value seen among the 1-hour rolling averages was 120.8 µg/m$^3$ and the highest value seen among the 24-hour rolling averages was 63.8 µg/m$^3$. The results are summarized in **Table 4** above. A pollution rose is presented in **Figure 8** for the Courtice station during Q2 composed of hourly average $PM_{2.5}$ concentrations. In order to show where possible major sources of pollutants are coming from, levels below 5 µg/m$^3$ were omitted from the graphic wind rose representation.

The Courtice station pollution rose in **Figure 8** shows that the majority of elevated $PM_{2.5}$ events at Courtice occurred when winds were from the east-northeast to east-southeast and southwest to west-southwest, which places the station downwind of the DYEC occasionally. Other contributions are in line with nearby industrial activity.

### 5.5.2 Rundle Road Station Results

Data recovery levels were high for particulate matter less than 2.5 microns (98.9% valid data). The highest $PM_{2.5}$ value seen among the 1-hour rolling averages was 118.2 µg/m$^3$ and the highest value seen among the 24-hour rolling averages was 63.3 µg/m$^3$. The results are summarized in **Table 5** above. A pollution rose is presented in **Figure 8** for the Rundle Road station during Q2 composed of hourly average $PM_{2.5}$ concentrations. In order to show where possible major sources of pollutants are coming from, levels below 5 µg/m$^3$ were omitted from the graphic wind rose representation.

The Rundle Road pollution rose in **Figure 8** shows that the majority of elevated $PM_{2.5}$ events at the Rundle Road station occurred when winds were from the southwest to west-southwest. Elevated concentrations were infrequent from the south-southwest and southwest during the monitoring period, therefore it is likely that the DYEC partially contributed to the observed concentrations. Other possible contributions include surrounding industry, nearby high traffic areas and urban background.

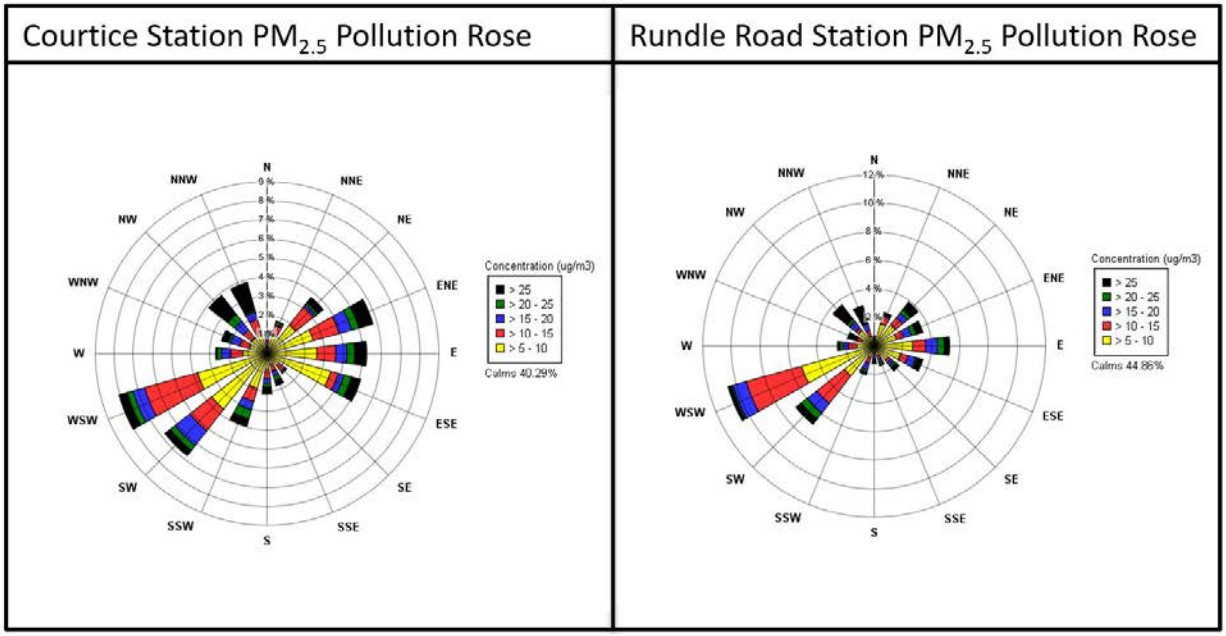



**Figure 8:** Pollution Roses of Hourly Average $PM_{2.5}$ Concentrations – April to June 2023

## 5.6 TSP and Metals Hi-Vol Results

All of the TSP Hi-Vols operated on a discrete schedule every 6 days according to the NAPS schedule during Q2 with the sample days being: April 6, 12, 18, 24, 30, May 6, 12, 18, 24, 30, June 5, 11, 17, 23 and 29, 2023.

### 5.6.1 Courtice Station Results

Data recovery levels were high for the TSP sampler at the Courtice station (87% valid data). There was one exceedance of the 24-hour TSP AAQC during Q2 of 2023. There were no exceedances of any of the AAQC's or HHRA Criteria for mercury or metals during Q2.

The exceedance occurred on June 5, 2023. Since the winds were predominantly coming from the SW to the W, the Courtice Station was upwind of the DYEC during the sampling period. Given the wind conditions during the sampling period, it is not likely that the measured TSP exceedance is attributable to the Energy Centre operations. The CEMS data indicates that particulate emissions were within the expected values as well as below the listed Limits. It is likely that other sources played a significant role in the measured exceedance including but not limited to increased airborne particulate from wildfire smoke.

Exceedance documentation can be found in **Appendix F**. **Table 7** is a summary of the statistics for this station.

**Table 7:** Summary of TSP Sampler Courtice Station

| Contaminant | Units | MECP Criteria | HHRA Health Based Criteria | No. > Criteria | Geometric Mean | Arithmetic Mean | Q2 Minimum Concentration | Q2 Maximum Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Particulate (TSP)** | µg/m³ | *120* | *120* | 1 | 29.7 | 43.4 | 4.42 | 141.76 | 35.88 | 69.70 | 141.76 | 13 | 87 |
| **Total Mercury (Hg)** | µg/m³ | *2* | *2* | 0 | 8.76E-06 | 1.15E-05 | 2.89E-06 | 2.55E-05 | 3.08E-06 | 2.55E-05 | 2.35E-05 | 13 | 87 |
| **Aluminum (Al)** | µg/m³ | *4.8* | - | 0 | 2.14E-01 | 2.86E-01 | 5.74E-02 | 7.65E-01 | 1.86E-01 | 5.95E-01 | 7.65E-01 | 13 | 87 |
| **Antimony (Sb)** | µg/m³ | *25* | *25* | 0 | 7.36E-04 | 8.48E-04 | 3.11E-04 | 1.65E-03 | 7.14E-04 | 1.57E-03 | 1.65E-03 | 13 | 87 |
| **Arsenic (As)** | µg/m³ | *0.3* | *0.3* | 0 | 1.02E-03 | 1.07E-03 | 8.67E-04 | 2.00E-03 | 9.23E-04 | 1.93E-03 | 2.00E-03 | 13 | 87 |
| **Barium (Ba)** | µg/m³ | *10* | *10* | 0 | 8.62E-03 | 1.06E-02 | 1.96E-03 | 2.96E-02 | 9.66E-03 | 2.08E-02 | 2.96E-02 | 13 | 87 |
| **Beryllium (Be)** | µg/m³ | *0.01* | *0.01* | 0 | 1.63E-05 | 1.71E-05 | 1.45E-05 | 4.12E-05 | 1.54E-05 | 1.59E-05 | 4.12E-05 | 13 | 87 |
| **Bismuth (Bi)** | µg/m³ | - | - | - | 5.43E-04 | 5.43E-04 | 5.20E-04 | 5.74E-04 | 5.54E-04 | 5.74E-04 | 5.40E-04 | 13 | 87 |
| **Boron (B)** | µg/m³ | *120* | - | 0 | 4.84E-03 | 5.00E-03 | 4.34E-03 | 1.06E-02 | 4.62E-03 | 4.78E-03 | 1.06E-02 | 13 | 87 |
| **Cadmium (Cd)** | µg/m³ | *0.025* | *0.025* | 0 | 1.14E-04 | 1.37E-04 | 3.65E-05 | 3.52E-04 | 3.52E-04 | 1.57E-04 | 3.02E-04 | 13 | 87 |
| **Chromium (Cr)** | µg/m³ | *0.5* | - | 0 | 1.64E-03 | 1.91E-03 | 9.83E-04 | 4.53E-03 | 2.15E-03 | 3.24E-03 | 4.53E-03 | 13 | 87 |
| **Cobalt (Co)** | µg/m³ | *0.1* | *0.1* | 0 | 1.56E-04 | 1.96E-04 | 5.20E-05 | 5.06E-04 | 1.54E-04 | 4.26E-04 | 5.06E-04 | 13 | 87 |
| **Copper (Cu)** | µg/m³ | *50* | - | 0 | 3.01E-02 | 3.67E-02 | 8.38E-03 | 7.90E-02 | 6.83E-02 | 7.90E-02 | 7.35E-02 | 13 | 87 |
| **Iron (Fe)** | µg/m³ | *4* | - | 0 | 4.85E-01 | 5.93E-01 | 1.69E-01 | 1.32E+00 | 4.54E-01 | 1.24E+00 | 1.32E+00 | 13 | 87 |
| **Lead (Pb)** | µg/m³ | *0.5* | *0.5* | 0 | 1.78E-03 | 2.03E-03 | 6.40E-04 | 3.78E-03 | 1.72E-03 | 3.78E-03 | 3.67E-03 | 13 | 87 |
| **Magnesium (Mg)** | µg/m³ | - | - | - | 2.76E-01 | 3.50E-01 | 1.01E-01 | 9.12E-01 | 3.54E-01 | 8.71E-01 | 9.12E-01 | 13 | 87 |
| **Manganese (Mn)** | µg/m³ | *0.4* | - | 0 | 1.36E-02 | 1.79E-02 | 3.75E-03 | 6.12E-02 | 1.51E-02 | 3.70E-02 | 6.12E-02 | 13 | 87 |
| **Molybdenum (Mo)** | µg/m³ | *120* | - | 0 | 1.24E-03 | 1.45E-03 | 4.37E-04 | 3.24E-03 | 3.24E-03 | 2.58E-03 | 2.20E-03 | 13 | 87 |
| **Nickel (Ni)** | µg/m³ | *0.2* | - | 0 | 1.20E-03 | 1.29E-03 | 5.72E-04 | 2.20E-03 | 1.38E-03 | 2.02E-03 | 2.20E-03 | 13 | 87 |
| **Phosphorus (P)** | µg/m³ | - | - | - | 2.26E-01 | 2.26E-01 | 2.17E-01 | 2.39E-01 | 2.31E-01 | 2.39E-01 | 2.25E-01 | 13 | 87 |
| **Selenium (Se)** | µg/m³ | *10* | *10* | 0 | 4.16E-04 | 4.28E-04 | 3.76E-04 | 8.71E-04 | 4.00E-04 | 8.71E-04 | 3.90E-04 | 13 | 87 |
| **Silver (Ag)** | µg/m³ | *1* | *1* | 0 | 3.63E-05 | 4.54E-05 | 2.60E-05 | 1.79E-04 | 2.77E-05 | 1.79E-04 | 7.53E-05 | 13 | 87 |
| **Strontium (Sr)** | µg/m³ | *120* | - | 0 | 7.26E-03 | 9.61E-03 | 2.33E-03 | 2.86E-02 | 1.42E-02 | 1.70E-02 | 2.86E-02 | 13 | 87 |
| **Thallium (Tl)** | µg/m³ | - | - | - | 2.89E-05 | 2.96E-05 | 2.60E-05 | 5.82E-05 | 2.77E-05 | 2.87E-05 | 5.82E-05 | 13 | 87 |
| **Tin (Sn)** | µg/m³ | *10* | *10* | 0 | 9.32E-04 | 1.03E-03 | 4.58E-04 | 2.07E-03 | 9.37E-04 | 1.63E-03 | 2.07E-03 | 13 | 87 |
| **Titanium (Ti)** | µg/m³ | *120* | - | 0 | 1.05E-02 | 1.40E-02 | 3.18E-03 | 3.71E-02 | 1.05E-02 | 2.61E-02 | 3.71E-02 | 13 | 87 |
| **Uranium (Ur)** | µg/m³ | *1.5* | - | 0 | 1.90E-05 | 2.50E-05 | 5.92E-06 | 5.57E-05 | 1.50E-05 | 5.57E-05 | 4.55E-05 | 13 | 87 |
| **Vanadium (V)** | µg/m³ | *2* | *1* | 0 | 1.51E-03 | 1.51E-03 | 1.45E-03 | 1.59E-03 | 1.54E-03 | 1.59E-03 | 1.50E-03 | 13 | 87 |
| **Zinc (Zn)** | µg/m³ | *120* | - | 0 | 2.86E-02 | 3.19E-02 | 1.17E-02 | 6.47E-02 | 3.55E-02 | 4.91E-02 | 6.47E-02 | 13 | 87 |
| **Zirconium (Zr)** | µg/m³ | *20* | - | 0 | 6.03E-04 | 6.04E-04 | 5.78E-04 | 6.38E-04 | 6.15E-04 | 6.38E-04 | 6.00E-04 | 13 | 87 |

**Note:** All non-detectable results were reported as 1/2 of the detection limit

### 5.6.2 Rundle Road Station Results

Data recovery levels were very high for the TSP sampler at the Rundle Road station (93% valid data). There was one exceedance of the 24-hour TSP AAQC during Q2 of 2023. There were no exceedances of any of the AAQC's or HHRA Criteria for mercury or metals during Q2.

The exceedance occurred on April 12, 2023. Since the winds were predominantly coming from the SW to the W, the Rundle Road Station was partially downwind of the DYEC during the sampling period. Given the wind conditions during the sampling period, it is possible that the measured TSP exceedance is attributable to the Energy Centre operations although CEMS data indicates that particulate emissions were within the expected values as well as below the listed Limits. It is likely that other sources played a role in the measured exceedance including but not limited to local construction and agricultural activities.

Exceedance documentation can be found in **Appendix F**. **Table 8** is a summary of the station statistics.

**Table 8:** Summary of TSP Sampler Rundle Road Station

| Contaminant | Units | MECP Criteria | HHRA Health Based Criteria | No. > Criteria | Geometric Mean | Arithmetic Mean | Q2 Minimum Concentration | Q2 Maximum Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Particulate (TSP)** | µg/m³ | *120* | *120* | 1 | 55.9 | 64.4 | 20.21 | 148.29 | 148.29 | 99.55 | 96.32 | 14 | 93 |
| **Total Mercury (Hg)** | µg/m³ | *2* | *2* | 0 | 1.09E-05 | 1.30E-05 | 3.03E-06 | 2.48E-05 | 2.06E-05 | 2.48E-05 | 2.33E-05 | 14 | 93 |
| **Aluminum (Al)** | µg/m³ | *4.8* | - | 0 | 3.71E-01 | 4.81E-01 | 1.30E-01 | 1.28E+00 | 1.28E+00 | 1.07E+00 | 4.39E-01 | 14 | 93 |
| **Antimony (Sb)** | µg/m³ | *25* | *25* | 0 | 7.98E-04 | 9.34E-04 | 2.52E-04 | 2.11E-03 | 1.57E-03 | 2.11E-03 | 1.25E-03 | 14 | 93 |
| **Arsenic (As)** | µg/m³ | *0.3* | *0.3* | 0 | 1.11E-03 | 1.32E-03 | 8.94E-04 | 5.36E-03 | 9.35E-04 | 5.36E-03 | 2.09E-03 | 14 | 93 |
| **Barium (Ba)** | µg/m³ | *10* | *10* | 0 | 1.04E-02 | 1.21E-02 | 2.61E-03 | 2.53E-02 | 2.12E-02 | 2.53E-02 | 2.21E-02 | 14 | 93 |
| **Beryllium (Be)** | µg/m³ | *0.01* | *0.01* | 0 | 2.28E-05 | 2.72E-05 | 1.50E-05 | 7.79E-05 | 7.79E-05 | 5.17E-05 | 3.28E-05 | 14 | 93 |
| **Bismuth (Bi)** | µg/m³ | - | - | - | 5.55E-04 | 5.55E-04 | 5.37E-04 | 5.74E-04 | 5.61E-04 | 5.74E-04 | 5.73E-04 | 14 | 93 |
| **Boron (B)** | µg/m³ | *120* | - | 0 | 5.36E-03 | 5.88E-03 | 4.47E-03 | 1.60E-02 | 4.67E-03 | 1.60E-02 | 1.10E-02 | 14 | 93 |
| **Cadmium (Cd)** | µg/m³ | *0.025* | *0.025* | 0 | 1.11E-04 | 1.28E-04 | 3.36E-05 | 2.70E-04 | 2.70E-04 | 2.07E-04 | 2.43E-04 | 14 | 93 |
| **Chromium (Cr)** | µg/m³ | *0.5* | - | 0 | 2.38E-03 | 2.82E-03 | 1.02E-03 | 6.29E-03 | 6.29E-03 | 5.11E-03 | 4.54E-03 | 14 | 93 |
| **Cobalt (Co)** | µg/m³ | *0.1* | *0.1* | 0 | 2.48E-04 | 3.13E-04 | 8.96E-05 | 8.97E-04 | 8.97E-04 | 6.51E-04 | 3.29E-04 | 14 | 93 |
| **Copper (Cu)** | µg/m³ | *50* | - | 0 | 8.52E-02 | 9.03E-02 | 5.15E-02 | 1.46E-01 | 7.84E-02 | 1.38E-01 | 1.46E-01 | 14 | 93 |
| **Iron (Fe)** | µg/m³ | *4* | - | 0 | 6.62E-01 | 8.37E-01 | 1.67E-01 | 2.19E+00 | 2.19E+00 | 1.69E+00 | 8.28E-01 | 14 | 93 |
| **Lead (Pb)** | µg/m³ | *0.5* | *0.5* | 0 | 2.38E-03 | 2.77E-03 | 8.74E-04 | 7.66E-03 | 7.66E-03 | 4.40E-03 | 3.67E-03 | 14 | 93 |
| **Magnesium (Mg)** | µg/m³ | - | - | - | 4.31E-01 | 6.11E-01 | 1.17E-01 | 2.51E+00 | 2.51E+00 | 1.27E+00 | 5.77E-01 | 14 | 93 |
| **Manganese (Mn)** | µg/m³ | *0.4* | - | 0 | 1.86E-02 | 2.44E-02 | 5.39E-03 | 7.29E-02 | 7.29E-02 | 4.94E-02 | 4.39E-02 | 14 | 93 |
| **Molybdenum (Mo)** | µg/m³ | *120* | - | 0 | 3.19E-03 | 3.58E-03 | 1.68E-03 | 9.28E-03 | 2.37E-03 | 4.11E-03 | 9.28E-03 | 14 | 93 |
| **Nickel (Ni)** | µg/m³ | *0.2* | - | 0 | 1.63E-03 | 1.79E-03 | 7.89E-04 | 3.36E-03 | 3.36E-03 | 2.47E-03 | 3.04E-03 | 14 | 93 |
| **Phosphorus (P)** | µg/m³ | - | - | - | 2.31E-01 | 2.31E-01 | 2.24E-01 | 2.39E-01 | 2.34E-01 | 2.39E-01 | 2.39E-01 | 14 | 93 |
| **Selenium (Se)** | µg/m³ | *10* | *10* | 0 | 4.97E-04 | 5.56E-04 | 3.88E-04 | 1.43E-03 | 1.43E-03 | 9.57E-04 | 1.02E-03 | 14 | 93 |
| **Silver (Ag)** | µg/m³ | *1* | *1* | 0 | 5.89E-05 | 7.90E-05 | 2.73E-05 | 2.96E-04 | 6.04E-05 | 2.96E-04 | 1.35E-04 | 14 | 93 |
| **Strontium (Sr)** | µg/m³ | *120* | - | 0 | 1.17E-02 | 1.56E-02 | 2.78E-03 | 5.21E-02 | 5.21E-02 | 2.85E-02 | 1.35E-02 | 14 | 93 |
| **Thallium (Tl)** | µg/m³ | - | - | - | 3.57E-05 | 3.96E-05 | 2.69E-05 | 9.81E-05 | 2.80E-05 | 9.81E-05 | 6.32E-05 | 14 | 93 |
| **Tin (Sn)** | µg/m³ | *10* | *10* | 0 | 1.00E-03 | 1.13E-03 | 1.89E-04 | 1.98E-03 | 1.96E-03 | 1.98E-03 | 1.61E-03 | 14 | 93 |
| **Titanium (Ti)** | µg/m³ | *120* | - | 0 | 1.37E-02 | 1.81E-02 | 3.36E-03 | 4.20E-02 | 4.05E-02 | 4.20E-02 | 2.21E-02 | 14 | 93 |
| **Uranium (Ur)** | µg/m³ | *1.5* | - | 0 | 3.53E-05 | 4.60E-05 | 7.95E-06 | 1.02E-04 | 1.02E-04 | 9.24E-05 | 9.49E-05 | 14 | 93 |
| **Vanadium (V)** | µg/m³ | *2* | *1* | 0 | 1.63E-03 | 1.67E-03 | 1.49E-03 | 3.36E-03 | 3.36E-03 | 1.60E-03 | 1.59E-03 | 14 | 93 |
| **Zinc (Zn)** | µg/m³ | *120* | - | 0 | 3.28E-02 | 3.55E-02 | 1.86E-02 | 6.13E-02 | 6.09E-02 | 5.89E-02 | 6.13E-02 | 14 | 93 |
| **Zirconium (Zr)** | µg/m³ | *20* | - | 0 | 6.17E-04 | 6.17E-04 | 5.96E-04 | 6.38E-04 | 6.23E-04 | 6.38E-04 | 6.37E-04 | 14 | 93 |

**Note:** All non-detectable results were reported as 1/2 of the detection limit

## 5.7 PAH Results

All of the PUF Hi-Vols operated on a discrete schedule every 12 days for PAH's according to the NAPS schedule during Q2 with the sample days being: April 6, 18, 30, May 12, 24, June 5, 17 and 29, 2023.

### 5.7.1 Courtice Station Results

Data recovery levels were very high for the PAH results at the Courtice station (100% valid data). There were two (2) exceedances of the Benzo(a) Pyrene AAQC during Q2 of 2023. There were no other exceedances of any of the AAQC's or HHRA Criteria.

The first BaP exceedance occurred on May 12, 2023. Since the winds were predominantly coming from the SW to W and the NW to NNW, the Courtice station was upwind of the DYEC during the sampling period. It is unlikely that the measured BaP exceedance is attributable to the Energy Centre operations.

The second BaP exceedance occurred on May 24, 2023. During the sampling period winds were highly variable but the Courtice station was primarily upwind of the DYEC. It is unlikely that the measured BaP exceedance is attributable to the Energy Centre operations.

The exceedance documentation is attached in **Appendix F**. **Table 9** outlines the statistics summary for this station.

**Table 9:** Statistics Summary of PAH Results for Courtice Station

| Contaminant | Units | MECP Criteria (µg/m³) | No. > Criteria | Arithmetic Mean | Minimum Q2 Concentration | Maximum Q2 Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1-Methylnaphthalene** | ng/m³ | 12000 | 0 | 6.37E+00 | 4.94E-01 | 1.64E+01 | 1.76E+00 | 1.06E+01 | 1.64E+01 | 8 | 100 |
| **2-Methylnaphthalene** | ng/m³ | 10000 | 0 | 1.27E+01 | 1.23E+00 | 3.12E+01 | 3.69E+00 | 2.11E+01 | 3.12E+01 | 8 | 100 |
| **Acenaphthene** | ng/m³ | - | - | 7.25E+00 | 5.83E-01 | 1.47E+01 | 2.44E+00 | 1.30E+01 | 1.47E+01 | 8 | 100 |
| **Acenaphthylene** | ng/m³ | 3500 | 0 | 2.32E-01 | 3.98E-02 | 5.11E-01 | 7.07E-02 | 4.10E-01 | 5.11E-01 | 8 | 100 |
| **Anthracene** | ng/m³ | 200 | 0 | 1.70E-01 | 1.24E-02 | 4.21E-01 | 1.42E-01 | 2.38E-01 | 4.21E-01 | 8 | 100 |
| **Benzo(a)Anthracene** | ng/m³ | - | - | 1.59E-02 | 1.52E-03 | 4.92E-02 | 1.49E-02 | 4.92E-02 | 2.22E-02 | 8 | 100 |
| **Benzo(a)fluorene** | ng/m³ | - | - | 3.54E-02 | 1.08E-02 | 6.85E-02 | 2.37E-02 | 6.85E-02 | 6.42E-02 | 8 | 100 |
| **Benzo(a)Pyrene (Historically High)** | ng/m³ | 0.05 | 2 | 3.66E-02 | 7.22E-03 | 1.14E-01 | 2.67E-02 | 1.14E-01 | 3.80E-02 | 8 | 100 |
| **Benzo(b)Fluoranthene** | ng/m³ | - | - | 4.55E-02 | 8.79E-03 | 1.33E-01 | 2.92E-02 | 1.33E-01 | 9.47E-02 | 8 | 100 |
| **Benzo(b)fluorene** | ng/m³ | - | - | 5.32E-03 | 0.00E+00 | 1.14E-02 | 3.79E-03 | 1.14E-02 | 9.41E-03 | 8 | 100 |
| **Benzo(e)Pyrene** | ng/m³ | - | - | 2.91E-02 | 7.26E-03 | 7.78E-02 | 2.14E-02 | 7.78E-02 | 6.20E-02 | 8 | 100 |
| **Benzo(g,h,i)Perylene** | ng/m³ | - | - | 3.23E-02 | 6.82E-03 | 8.30E-02 | 2.15E-02 | 8.30E-02 | 5.92E-02 | 8 | 100 |
| **Benzo(k)Fluoranthene** | ng/m³ | - | - | 4.06E-02 | 6.36E-03 | 9.07E-02 | 1.77E-02 | 9.07E-02 | 6.42E-02 | 8 | 100 |
| **Biphenyl** | ng/m³ | - | - | 4.61E+00 | 5.71E-01 | 1.36E+01 | 2.38E+00 | 4.57E+00 | 1.36E+01 | 8 | 100 |
| **Chrysene** | ng/m³ | - | - | 7.40E-02 | 2.65E-02 | 1.76E-01 | 3.80E-02 | 1.76E-01 | 1.60E-01 | 8 | 100 |
| **Dibenzo(a,h)Anthracene** | ng/m³ | - | - | 5.91E-03 | 1.52E-03 | 1.69E-02 | 9.38E-03 | 1.69E-02 | 8.97E-03 | 8 | 100 |
| **Fluoranthene** | ng/m³ | - | - | 1.10E+00 | 2.33E-01 | 2.23E+00 | 1.03E+00 | 1.42E+00 | 2.23E+00 | 8 | 100 |
| **Fluorene** | ng/m³ | - | - | 4.61E+00 | 4.54E-01 | 8.07E+00 | 2.85E+00 | 7.63E+00 | 8.07E+00 | 8 | 100 |
| **Indeno(1,2,3-cd)Pyrene** | ng/m³ | - | - | 2.78E-02 | 1.58E-03 | 8.04E-02 | 1.84E-02 | 8.04E-02 | 5.20E-02 | 8 | 100 |
| **Naphthalene** | ng/m³ | 22500 | 0 | 1.88E+01 | 2.37E+00 | 5.89E+01 | 5.21E+00 | 2.91E+01 | 5.89E+01 | 8 | 100 |
| **o-Terphenyl** | ng/m³ | - | - | 1.52E-02 | 3.98E-03 | 3.61E-02 | 8.36E-03 | 1.14E-02 | 3.61E-02 | 8 | 100 |
| **Perylene** | ng/m³ | - | - | 5.51E-03 | 1.52E-03 | 1.54E-02 | 1.54E-02 | 1.37E-02 | 4.83E-03 | 8 | 100 |
| **Phenanthrene** | ng/m³ | - | - | 6.88E+00 | 9.41E-01 | 1.09E+01 | 5.58E+00 | 1.09E+01 | 1.08E+01 | 8 | 100 |
| **Pyrene** | ng/m³ | - | - | 4.59E-01 | 1.33E-01 | 9.16E-01 | 4.13E-01 | 5.92E-01 | 9.16E-01 | 8 | 100 |
| **Tetralin** | ng/m³ | - | - | 1.22E+00 | 2.54E-01 | 3.49E+00 | 5.90E-01 | 2.23E+00 | 3.49E+00 | 8 | 100 |
| **Total PAH** | ng/m³ | - | - | 64.81 | 7.53 | 159.21 | 26.26 | 94.64 | 159.21 | 8 | 100 |

**Notes:** All non-detectable results were reported as 1/2 of the detection limit

### 5.7.2 Rundle Road Station Results

Data recovery levels were high for the PAH results at the Rundle Road station (88% valid data). There was one (1) exceedance of the Benzo(a) Pyrene AAQC during Q2 of 2023. There were no other exceedances of any of the AAQC's or HHRA Criteria.

The BaP exceedance occurred on May 12, 2023. Since the winds were predominantly coming from the SW to W and the NW to NNW, the Rundle Road station was crosswind of the DYEC during the sampling period. It is unlikely that the measured BaP exceedance is attributable to the Energy Centre operations.

The exceedance documentation is attached in **Appendix F**. **Table 10** outlines the statistics summary for this station.

**Table 10:** Statistics Summary of PAH Results for Rundle Road Station

| Contaminant | Units | MECP Criteria (µg/m³) | No. > Criteria | Arithmetic Mean | Minimum Q2 Concentration | Maximum Q2 Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1-Methylnaphthalene** | ng/m³ | 12000 | 0 | 4.35E+00 | 1.16E+00 | 7.56E+00 | 1.76E+00 | 6.99E+00 | 7.56E+00 | 7 | 88 |
| **2-Methylnaphthalene** | ng/m³ | 10000 | 0 | 8.09E+00 | 1.87E+00 | 1.44E+01 | 3.42E+00 | 1.29E+01 | 1.44E+01 | 7 | 88 |
| **Acenaphthene** | ng/m³ | - | - | 4.04E+00 | 4.30E-01 | 9.40E+00 | 1.51E+00 | 5.25E+00 | 9.40E+00 | 7 | 88 |
| **Acenaphthylene** | ng/m³ | 3500 | 0 | 2.54E-01 | 1.30E-01 | 4.94E-01 | 2.24E-01 | 2.89E-01 | 4.94E-01 | 7 | 88 |
| **Anthracene** | ng/m³ | 200 | 0 | 2.13E-01 | 5.88E-02 | 5.95E-01 | 8.93E-02 | 2.63E-01 | 5.95E-01 | 7 | 88 |
| **Benzo(a)Anthracene** | ng/m³ | - | - | 2.34E-02 | 1.52E-03 | 6.89E-02 | 3.28E-02 | 6.89E-02 | 1.78E-02 | 7 | 88 |
| **Benzo(a)fluorene** | ng/m³ | - | - | 4.36E-02 | 2.20E-02 | 7.47E-02 | 3.53E-02 | 6.83E-02 | 7.47E-02 | 7 | 88 |
| **Benzo(a)Pyrene (Historically High)** | ng/m³ | 0.05 | 1 | 3.93E-02 | 1.43E-02 | 1.45E-01 | 3.04E-02 | 1.45E-01 | 2.91E-02 | 7 | 88 |
| **Benzo(b)Fluoranthene** | ng/m³ | - | - | 5.75E-02 | 1.47E-02 | 1.45E-01 | 4.39E-02 | 1.45E-01 | 7.87E-02 | 7 | 88 |
| **Benzo(b)fluorene** | ng/m³ | - | - | 6.73E-03 | 3.90E-03 | 1.31E-02 | 4.94E-03 | 1.19E-02 | 1.31E-02 | 7 | 88 |
| **Benzo(e)Pyrene** | ng/m³ | - | - | 4.34E-02 | 9.27E-03 | 9.47E-02 | 7.09E-02 | 9.47E-02 | 5.31E-02 | 7 | 88 |
| **Benzo(g,h,i)Perylene** | ng/m³ | - | - | 4.10E-02 | 1.12E-02 | 1.02E-01 | 3.28E-02 | 1.02E-01 | 4.88E-02 | 7 | 88 |
| **Benzo(k)Fluoranthene** | ng/m³ | - | - | 4.70E-02 | 2.27E-02 | 1.14E-01 | 4.69E-02 | 1.14E-01 | 5.49E-02 | 7 | 88 |
| **Biphenyl** | ng/m³ | - | - | 3.63E+00 | 1.39E+00 | 8.10E+00 | 1.63E+00 | 3.10E+00 | 8.10E+00 | 7 | 88 |
| **Chrysene** | ng/m³ | - | - | 9.01E-02 | 2.68E-02 | 1.94E-01 | 7.15E-02 | 1.94E-01 | 1.32E-01 | 7 | 88 |
| **Dibenzo(a,h)Anthracene** | ng/m³ | - | - | 7.75E-03 | 1.52E-03 | 3.48E-02 | 1.57E-03 | 3.48E-02 | 7.38E-03 | 7 | 88 |
| **Fluoranthene** | ng/m³ | - | - | 1.26E+00 | 3.11E-01 | 2.88E+00 | 5.58E-01 | 2.15E+00 | 2.88E+00 | 7 | 88 |
| **Fluorene** | ng/m³ | - | - | 3.54E+00 | 6.89E-01 | 7.97E+00 | 1.82E+00 | 4.50E+00 | 7.97E+00 | 7 | 88 |
| **Indeno(1,2,3-cd)Pyrene** | ng/m³ | - | - | 3.64E-02 | 1.21E-02 | 9.81E-02 | 2.71E-02 | 9.81E-02 | 4.04E-02 | 7 | 88 |
| **Naphthalene** | ng/m³ | 22500 | 0 | 1.08E+01 | 3.75E+00 | 2.16E+01 | 4.80E+00 | 1.54E+01 | 2.16E+01 | 7 | 88 |
| **o-Terphenyl** | ng/m³ | - | - | 1.80E-02 | 6.61E-03 | 4.94E-02 | 6.72E-03 | 1.06E-02 | 4.94E-02 | 7 | 88 |
| **Perylene** | ng/m³ | - | - | 5.82E-03 | 1.52E-03 | 2.74E-02 | 1.57E-03 | 2.74E-02 | 3.70E-03 | 7 | 88 |
| **Phenanthrene** | ng/m³ | - | - | 6.44E+00 | 1.38E+00 | 1.44E+01 | 2.99E+00 | 1.03E+01 | 1.44E+01 | 7 | 88 |
| **Pyrene** | ng/m³ | - | - | 5.70E-01 | 1.52E-01 | 1.33E+00 | 3.29E-01 | 7.80E-01 | 1.33E+00 | 7 | 88 |
| **Tetralin** | ng/m³ | - | - | 1.12E+00 | 2.16E-01 | 2.19E+00 | 7.33E-01 | 2.19E+00 | 1.84E+00 | 7 | 88 |
| **Total PAH** | ng/m³ | - | - | 51.52 | 12.14 | 81.39 | 63.87 | 63.87 | 81.39 | 7 | 88 |

**Note:** All non-detectable results were reported as 1/2 of the detection limit

## 5.8 Dioxin and Furan Results

All of the PUF Hi-Vols operated on a discrete schedule every 24 days for D&F's according to the NAPS schedule during Q2 with the sample days being: April 6, 30, May 24 and June 17, 2023.

### 5.8.1 Courtice Station Results

Data recovery levels were very high for the D&F results at the Courtice station (100% valid data). There were no exceedances of any of the AAQC's or HHRA Criteria for any of the D&F's during Q2. **Table 11** is a summary of the statistics for this station.

**Table 11:** Courtice Station Q2 Monitoring Results for Dioxins and Furans

| Contaminant | Units | MECP Criteria | HHRA Health Based Criteria | No. > Criteria | Arithmetic Mean | Q2 Minimum Concentration | Q2 Maximum Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2,3,7,8-TCDD** | pg/m$^3$ | - | - | - | 1.28E-03 | 4.05E-04 | 2.62E-03 | 1.19E-03 | 2.62E-03 | 4.05E-04 | 4 | 100 |
| **1,2,3,7,8-PeCDD** | pg/m$^3$ | - | - | - | 2.82E-03 | 1.01E-03 | 7.41E-03 | 1.52E-03 | 7.41E-03 | 1.01E-03 | 4 | 100 |
| **1,2,3,4,7,8-HxCDD** | pg/m$^3$ | - | - | - | 5.65E-04 | 1.07E-04 | 1.85E-03 | 1.66E-04 | 1.85E-03 | 1.37E-04 | 4 | 100 |
| **1,2,3,6,7,8-HxCDD** | pg/m$^3$ | - | - | - | 5.55E-04 | 6.62E-05 | 1.85E-03 | 1.48E-04 | 1.85E-03 | 1.56E-04 | 4 | 100 |
| **1,2,3,7,8,9-HxCDD** | pg/m$^3$ | - | - | - | 5.43E-04 | 6.78E-05 | 1.85E-03 | 1.05E-04 | 1.85E-03 | 1.46E-04 | 4 | 100 |
| **1,2,3,4,6,7,8-HpCDD** | pg/m$^3$ | - | - | - | 3.14E-04 | 8.99E-05 | 4.61E-04 | 2.90E-04 | 4.17E-04 | 4.61E-04 | 4 | 100 |
| **OCDD** | pg/m$^3$ | - | - | - | 3.45E-05 | 1.09E-05 | 7.87E-05 | 2.40E-05 | 7.87E-05 | 2.43E-05 | 4 | 100 |
| **2,3,7,8-TCDF** | pg/m$^3$ | - | - | - | 1.94E-04 | 6.70E-05 | 3.55E-04 | 2.05E-04 | 3.55E-04 | 6.70E-05 | 4 | 100 |
| **1,2,3,7,8-PeCDF** | pg/m$^3$ | - | - | - | 5.63E-05 | 2.20E-05 | 9.72E-05 | 6.86E-05 | 9.72E-05 | 2.20E-05 | 4 | 100 |
| **2,3,4,7,8-PeCDF** | pg/m$^3$ | - | - | - | 4.25E-04 | 1.92E-04 | 9.26E-04 | 3.45E-04 | 9.26E-04 | 1.92E-04 | 4 | 100 |
| **1,2,3,4,7,8-HxCDF** | pg/m$^3$ | - | - | - | 3.70E-04 | 6.07E-05 | 1.20E-03 | 1.23E-04 | 1.20E-03 | 6.07E-05 | 4 | 100 |
| **1,2,3,6,7,8-HxCDF** | pg/m$^3$ | - | - | - | 3.62E-04 | 6.07E-05 | 1.20E-03 | 9.46E-05 | 1.20E-03 | 6.07E-05 | 4 | 100 |
| **2,3,4,6,7,8-HxCDF** | pg/m$^3$ | - | - | - | 3.80E-04 | 6.39E-05 | 1.27E-03 | 9.62E-05 | 1.27E-03 | 6.39E-05 | 4 | 100 |
| **1,2,3,7,8,9-HxCDF** | pg/m$^3$ | - | - | - | 5.70E-04 | 7.79E-05 | 1.54E-03 | 3.79E-04 | 1.54E-03 | 7.79E-05 | 4 | 100 |
| **1,2,3,4,6,7,8-HpCDF** | pg/m$^3$ | - | - | - | 1.67E-04 | 2.05E-05 | 5.86E-04 | 2.13E-05 | 5.86E-04 | 3.89E-05 | 4 | 100 |
| **1,2,3,4,7,8,9-HpCDF** | pg/m$^3$ | - | - | - | 5.82E-05 | 1.09E-05 | 1.85E-04 | 1.51E-05 | 1.85E-04 | 2.18E-05 | 4 | 100 |
| **OCDF** | pg/m$^3$ | - | - | - | 8.87E-06 | 6.15E-07 | 3.06E-05 | 9.15E-07 | 3.06E-05 | 3.41E-06 | 4 | 100 |
| **Total Toxic Equivalency** | pg TEQ/m$^3$ | 0.1<br>1[1] | - | 0 | 8.70E-03 | 2.95E-03 | 2.35E-02 | 4.44E-03 | 2.35E-02 | 2.95E-03 | 4 | 100 |

**Notes:** All non-detectable results were reported as 1/2 of the detection limit
[1] O. Reg. 419/05 Schedule Upper Risk Thresholds

### 5.8.2 Rundle Road Station Results

Data recovery levels were acceptable for the D&F results at the Rundle Road station (75% valid data). There were no exceedances of any of the AAQC's or HHRA Criteria for any of the D&F's during Q2. **Table 12** is a summary of the statistics for this station.

**Table 12:** Rundle Road Station Q2 Monitoring Results for Dioxins and Furans

| Contaminant | Units | *MECP Criteria* | *HHRA Health Based Criteria* | No. > Criteria | Arithmetic Mean | Q2 Minimum Concentration | Q2 Maximum Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2,3,7,8-TCDD** | pg/m$^3$ | - | - | - | 1.11E-03 | 4.12E-04 | 1.57E-03 | 1.57E-03 | 1.34E-03 | 4.12E-04 | 3 | 75 |
| **1,2,3,7,8-PeCDD** | pg/m$^3$ | - | - | - | 2.13E-03 | 8.69E-04 | 3.95E-03 | 1.57E-03 | 3.95E-03 | 8.69E-04 | 3 | 75 |
| **1,2,3,4,7,8-HxCDD** | pg/m$^3$ | - | - | - | 2.66E-04 | 1.19E-04 | 5.32E-04 | 1.46E-04 | 5.32E-04 | 1.19E-04 | 3 | 75 |
| **1,2,3,6,7,8-HxCDD** | pg/m$^3$ | - | - | - | 3.44E-04 | 1.39E-04 | 5.32E-04 | 1.39E-04 | 5.32E-04 | 3.60E-04 | 3 | 75 |
| **1,2,3,7,8,9-HxCDD** | pg/m$^3$ | - | - | - | 3.26E-04 | 1.43E-04 | 6.23E-04 | 1.43E-04 | 6.23E-04 | 2.13E-04 | 3 | 75 |
| **1,2,3,4,6,7,8-HpCDD** | pg/m$^3$ | - | - | - | 2.75E-04 | 1.51E-04 | 3.50E-04 | 3.26E-04 | 3.50E-04 | 1.51E-04 | 3 | 75 |
| **OCDD** | pg/m$^3$ | - | - | - | 3.05E-05 | 1.13E-05 | 4.51E-05 | 1.13E-05 | 3.51E-05 | 4.51E-05 | 3 | 75 |
| **2,3,7,8-TCDF** | pg/m$^3$ | - | - | - | 1.29E-04 | 4.73E-05 | 1.82E-04 | 1.57E-04 | 1.82E-04 | 4.73E-05 | 3 | 75 |
| **1,2,3,7,8-PeCDF** | pg/m$^3$ | - | - | - | 9.89E-05 | 2.38E-05 | 1.64E-04 | 1.64E-04 | 1.09E-04 | 2.38E-05 | 3 | 75 |
| **2,3,4,7,8-PeCDF** | pg/m$^3$ | - | - | - | 5.11E-04 | 1.23E-04 | 1.05E-03 | 3.62E-04 | 1.05E-03 | 1.23E-04 | 3 | 75 |
| **1,2,3,4,7,8-HxCDF** | pg/m$^3$ | - | - | - | 1.62E-04 | 3.81E-05 | 3.50E-04 | 9.72E-05 | 3.50E-04 | 3.81E-05 | 3 | 75 |
| **1,2,3,6,7,8-HxCDF** | pg/m$^3$ | - | - | - | 1.65E-04 | 5.34E-05 | 3.50E-04 | 9.25E-05 | 3.50E-04 | 5.34E-05 | 3 | 75 |
| **2,3,4,6,7,8-HxCDF** | pg/m$^3$ | - | - | - | 1.74E-04 | 4.57E-05 | 3.80E-04 | 9.56E-05 | 3.80E-04 | 4.57E-05 | 3 | 75 |
| **1,2,3,7,8,9-HxCDF** | pg/m$^3$ | - | - | - | 2.03E-04 | 3.81E-05 | 4.56E-04 | 1.14E-04 | 4.56E-04 | 3.81E-05 | 3 | 75 |
| **1,2,3,4,6,7,8-HpCDF** | pg/m$^3$ | - | - | - | 3.94E-05 | 2.90E-05 | 5.78E-05 | 3.13E-05 | 5.78E-05 | 2.90E-05 | 3 | 75 |
| **1,2,3,4,7,8,9-HpCDF** | pg/m$^3$ | - | - | - | 3.35E-05 | 7.16E-06 | 7.60E-05 | 1.72E-05 | 7.60E-05 | 7.16E-06 | 3 | 75 |
| **OCDF** | pg/m$^3$ | - | - | - | 6.91E-06 | 3.21E-06 | 1.41E-05 | 3.21E-06 | 1.41E-05 | 3.38E-06 | 3 | 75 |
| **Total Toxic Equivalency** | pg TEQ/m$^3$ | *0.1*<br>*1*[1] | - | 0 | 6.00E-03 | 2.58E-03 | 1.04E-02 | 5.03E-03 | 1.04E-02 | 2.58E-03 | 3 | 75 |

**Notes:** All non-detectable results were reported as 1/2 of the detection limit
[1] O. Reg. 419/05 Schedule Upper Risk Thresholds

# 6 DATA REQUESTS

The following sections outline any instrumentation issues encountered that have caused data loss at any of the monitors at each of the stations.

**Appendix C** contains monthly IZS zero trends for the $NO_X$ and $SO_2$ analyzers at the Courtice and Rundle Road stations.

Edit logs identifying missing data, maintenance times, calibrations and any other missing data have been included in **Appendix D**.

## 6.1 Continuous Monitoring

On April 29, 2023, all of the Rundle Road station's instruments suffered from a power outage beginning at 22:00 that lasted until April 30 at 07:00.

On April 30, 2023, the Rundle Road temperature and relative humidity instrument malfunctioned beginning at 13:00 that lasted until 21:00.

On June 11 2023, the Rundle Road rainfall instrument became clogged at approximately 00:00 and did not accurately measure rainfall until it was cleaned at 13:00 on June 22, 2023.

On June 27, 2023, both ambient stations were audited by the MECP. Data for the continuous analyzers at both stations was invalidated periodically between 09:00 and 12:00. The $PM_{2.5}$ analyzer at the Courtice station was re-calibrated at the suggestion of the MECP from 12:00 until 13:00 on this date.

On June 30, 2023, an instrument malfunction caused the loss of $PM_{2.5}$ data at the Rundle Road station at 16:00 that lasted until July 1 at 00:00.

## 6.2 Discrete Monitoring

The April 12, 2023, Courtice TSP sample was invalidated due to an equipment malfunction.

The April 30, 2023, Rundle Road TSP, D&F and PAH samples were all invalid due to a station wide power outage.

The June 11, 2023, Courtice TSP sample was invalidated due to an equipment malfunction.

# 7 CONCLUSIONS

This Q2 report provides a summary of the ambient air quality data collected at the Courtice and Rundle Road stations. There were one-hundred and six (106) exceedance events above the rolling 10-minute $SO_2$ AAQC and forty (40) exceedance events above the 1-hour $SO_2$ AAQC at the Courtice station. There were fourteen (14) exceedance events above the rolling 10-minute $SO_2$ AAQC and five (5) exceedance events above the 1-hour $SO_2$ AAQC at the Rundle Road station. There were two (2) exceedances of the Benzo(a) Pyrene AAQC at the Courtice station on May 12 and May 24, 2023. There was one (1) exceedances of the Benzo(a) Pyrene AAQC at the Rundle Road stations on May 12, 2023. There was one (1) exceedance of the Total Suspended Particulate (TSP) AAQC at the Courtice station and one (1) exceedance of the TSP AAQC at the Rundle Road station. The exceedances occurred on June 5, 2023, at the Courtice station and the Rundle Road station exceedance occurred on April 12, 2023. Data recovery rates were acceptable and valid for all measured Q2 continuous and discrete parameters.

# 8 REFERENCES

1. Canadian Council of Ministers of the Environment (CCME), 2012. Guidance Document on Achievement Determination Canadian Ambient Air Quality Standards for Fine Particulate Matter and Ozone. PN 1483 978-1-896997-91-9 PDF
2. Canadian Council of Ministers of the Environment (CCME), 2019. Guidance Document on Air Zone Management. PN 1593978-1-77202-050-2 PDF
3. Ontario Ministry of the Environment and Climate Change, 2018. [Technical Assessment and Standards Development Branch] Ontario Air Standards for Sulphur Dioxide (SO2). [Online]
4. Human Toxicology and Air Standards Section, Technical Assessment and Standards Development Branch, Ontario Ministry of the Environment, Conservation and Parks (MECP). 2020. Ontario's Ambient Air Quality Criteria. MECP, Toronto, ON, Canada.

# 9 GENERAL STATEMENT OF LIMITATIONS

This report entitled "2023 Q2 Ambient Air Quality Monitoring Report", dated August 11, 2023, was prepared by RWDI AIR Inc. ("RWDI") for The Regional Municipality of Durham ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). This report was prepared using scientific principles, published methodologies and professional judgment in assessing available information and data. The findings presented within this document are based on available data within the limits of the existing information, budgeted scope of work, and schedule. The conclusions contained in this report are based on the information available to RWDI when this report was prepared; subsequent changes made by the Client after the date of this report have not been reflected in the conclusions.

This report was prepared for the exclusive use of The Regional Municipality of Durham and the MECP. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. RWDI accepts no responsibility for damages, if any, suffered by any third party as result of decisions made or actions based on this report.

# APPENDIX A

**Table A1: 2023 Summary Statistics for Q2**

| Courtice Monitoring Station Data Statistics | Maximum 10 min Rolling Mean | Maximum 1 hr Rolling Mean | | | | | Maximum 24 hr Rolling Mean | | | | | Monthly Mean | | | | | Valid Data | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Compound | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ |
| Units | ppb | ($\mu g/m^3$) | ppb | | | | ($\mu g/m^3$) | ppb | | | | ($\mu g/m^3$) | ppb | | | | (%) | | | | |
| AAQC/CAAQS | 67 | | | | 200 | 40 | 27[A] | | | 100 | | | | | | | | | | | |
| April | 163.6 | 36.9 | 63.0 | 34.7 | 36.6 | 77.1 | 23.8 | 20.4 | 5.2 | 15.2 | 11.9 | 6.7 | 5.2 | 0.7 | 4.6 | 2.4 | 99.9 | 99.7 | 99.7 | 99.7 | 99.7 |
| May | 340.7 | 36.0 | 91.9 | 57.9 | 37.5 | 130.6 | 14.6 | 20.7 | 7.2 | 14.9 | 29.2 | 6.3 | 6.7 | 1.2 | 5.5 | 6.4 | 99.9 | 99.6 | 99.6 | 99.6 | 99.7 |
| June | 145.4 | 120.8 | 176.2 | 175.8 | 45.3 | 63.8 | 63.8 | 13.6 | 1.6 | 12.6 | 10.7 | 18.6 | 5.3 | 0.6 | 4.8 | 3.0 | 99.3 | 99.2 | 99.2 | 99.2 | 99.4 |
| Q2 Arithmetic Mean | | | | | | | | | | | | 10.5 | 5.7 | 0.9 | 5.0 | 3.9 | 99.7 | 99.5 | 99.5 | 99.5 | 99.6 |

| Rundle Monitoring Station Data Statistics | Maximum 10 min Rolling Mean | Maximum 1 hr Rolling Mean | | | | | Maximum 24 hr Rolling Mean | | | | | Monthly Mean | | | | | Valid Data | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Compound | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_x$ | NO | $NO_2$ | $SO_2$ |
| Units | ppb | ($\mu g/m^3$) | ppb | | | | ($\mu g/m^3$) | ppb | | | | ($\mu g/m^3$) | ppb | | | | (%) | | | | |
| AAQC/CAAQS | 67 | | | | 200 | 40 | 27[A] | | | 100 | | | | | | | | | | | |
| April | 60.0 | 34.5 | 56.5 | 41.1 | 21.9 | 47.9 | 21.8 | 14.2 | 8.2 | 10.8 | 3.2 | 6.6 | 5.7 | 1.6 | 4.3 | 0.6 | 98.5 | 97.8 | 97.8 | 97.8 | 98.3 |
| May | 9.1 | 49.1 | 73.3 | 43.9 | 40.0 | 4.1 | 13.4 | 16.6 | 6.6 | 10.5 | 1.4 | 5.8 | 5.9 | 1.6 | 4.5 | 0.5 | 99.7 | 99.6 | 99.6 | 99.6 | 99.7 |
| June | 362.5 | 118.2 | 94.8 | 60.4 | 34.4 | 142.8 | 63.3 | 16.1 | 7.5 | 8.9 | 18.3 | 17.2 | 4.5 | 1.0 | 3.6 | 1.2 | 98.6 | 98.5 | 98.5 | 98.5 | 99.6 |
| Q2 Arithmetic Mean | | | | | | | | | | | | 9.9 | 5.4 | 1.4 | 4.1 | 0.8 | 98.9 | 98.6 | 98.6 | 98.6 | 99.2 |

| Event Statistics | Rolling Mean > 10 min AAQC for Courtice | Rolling Mean > 10 min AAQC for Rundle | Rolling Mean > 1 hr AAQC for Courtice | | | Rolling Mean > 1 hr AAQC for Rundle | | | Rolling Mean > 24 hr AAQC for Courtice Monitoring Station | | | Rolling Mean > 24 hr AAQC for Rundle Monitoring Station | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Compound | $SO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_2$ | $SO_2$ | $PM_{2.5}$ | $NO_2$ | $SO_2$ |
| Units | No. | No. | No. | | | No. | | | No. | | | No. | | |
| April | 18 | 0 | | 0 | 6 | | 0 | 1 | N/A | 0 | | N/A | 0 | |
| May | 75 | 0 | | 0 | 30 | | 0 | 0 | N/A | 0 | | N/A | 0 | |
| June | 13 | 14 | | 0 | 4 | | 0 | 4 | N/A | 0 | | N/A | 0 | |
| Q2 Total | 106 | 14 | | 0 | 40 | | 0 | 5 | N/A | 0 | | N/A | 0 | |

| Courtice Station MET Statistics | Maximum 1 hr Mean | | | | | Minimum 1 hr Mean | | | | | Monthly Mean | | | | | Total | Valid Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | WS | Temp | RH | Pres | Rain | WS | Temp | RH | Pres | Rain | WS | Temp | RH | Pres | Rain | Rain | WS | WD | Temp | RH | Pres | Rain |
| Units | (km/hr) | (°C) | (%) | "Hg | mm | (km/hr) | (°C) | (%) | "Hg | mm | (km/hr) | (°C) | (%) | "Hg | mm | mm | (%) | | | | | |
| April | 36.0 | 22.6 | 100.0 | 30.3 | 6.8 | 0.6 | -4.9 | 23.0 | 29.0 | 0.0 | 13.5 | 7.1 | 66.6 | 29.7 | 0.1 | 86.6 | 100.0 | 97.2 | 100.0 | 100.0 | 100.0 | 100.0 |
| May | 23.8 | 25.0 | 100.0 | 30.1 | 7.8 | 0.3 | 1.3 | 21.5 | 28.8 | 0.0 | 8.9 | 11.9 | 60.0 | 29.7 | 0.1 | 45.0 | 99.6 | 93.4 | 99.6 | 100.0 | 100.0 | 100.0 |
| June | 25.9 | 30.9 | 100.0 | 30.0 | 20.3 | 1.2 | 10.8 | 21.7 | 29.2 | 0.0 | 10.0 | 18.5 | 66.3 | 29.6 | 0.2 | 108.5 | 100.0 | 96.8 | 100.0 | 100.0 | 100.0 | 100.0 |
| Q2 Arithmetic Mean | | | | | | | | | | | 10.8 | 12.5 | 64.3 | 29.7 | 0.1 | 240.1 | 99.9 | 95.8 | 99.9 | 100.0 | 100.0 | 100.0 |

| Rundle Station MET Statistics | Maximum 1 hr Mean | | | | Minimum 1 hr Mean | | | | Monthly Mean | | | | Total | Valid Data | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | WS | Temp | RH | Rain | WS | Temp | RH | Rain | WS | Temp | RH | Rain | Rain | WS | WD | Temp | RH | Rain |
| Units | (km/hr) | (°C) | (%) | mm | (km/hr) | (°C) | (%) | mm | (km/hr) | (°C) | (%) | mm | mm | (%) | | | | |
| April | 28.3 | 23.2 | 100.0 | 7.2 | 0.1 | -5.2 | 26.6 | 0.0 | 11.5 | 7.3 | 68.3 | 0.1 | 105.1 | 98.8 | 95.3 | 97.6 | 97.6 | 98.9 |
| May | 27.6 | 27.4 | 100.0 | 6.8 | 0.2 | 0.2 | 22.2 | 0.0 | 8.2 | 12.3 | 62.1 | 0.1 | 44.4 | 100.0 | 92.7 | 100.0 | 100.0 | 100.0 |
| June | 17.3 | 31.6 | 100.0 | 3.5 | 0.7 | 8.2 | 25.4 | 0.0 | 7.3 | 18.3 | 70.8 | N/A [1] | 14.5 | 100.0 | 97.2 | 100.0 | 100.0 | 61.5 |
| Q2 Arithmetic Mean | | | | | | | | | 9.0 | 12.6 | 67.0 | 0.1 | 164.0 | 99.6 | 95.1 | 99.2 | 99.2 | 87.0 |

Notes:
1 - No June average presented due to not meeting monthly data validity criteria of >75%

## Table A2: 2023 Q2 Station Courtice Monitoring Results for PM2.5

| Data Statistics | Rolling Mean > 24 hr AAQC | Arithmetic Mean | Maximum 1 hr Rolling Mean | Maximum 24 hr Rolling Mean | Number of Valid Hours | Valid Data |
|---|---|---|---|---|---|---|
| Month | $PM_{2.5}$ | $PM_{2.5}$ | $PM_{2.5}$ | $PM_{2.5}$ | $PM_{2.5}$ | $PM_{2.5}$ |
| | No. | ($ug/m^3$) | ($ug/m^3$) | ($ug/m^3$) | No. | % |
| April | N/A | 6.7 | 36.9 | 23.8 | 719 | 99.9 |
| May | N/A | 6.3 | 36.0 | 14.6 | 743 | 99.9 |
| June | N/A | 18.6 | 120.8 | 63.8 | 715 | 99.3 |

## Table A3: 2023 Q2 Station Rundle Monitoring Results for PM2.5

| Data Statistics | Rolling Mean > 24 hr AAQC | Arithmetic Mean | Maximum 1 hr Rolling Mean | Maximum 24 hr Rolling Mean | Number of Valid Hours | Valid Data |
|---|---|---|---|---|---|---|
| Month | $PM_{2.5}$ | $PM_{2.5}$ | $PM_{2.5}$ | $PM_{2.5}$ | $PM_{2.5}$ | $PM_{2.5}$ |
| | No. | ($ug/m^3$) | ($ug/m^3$) | ($ug/m^3$) | No. | % |
| April | N/A | 6.6 | 34.5 | 21.8 | 709 | 98.5 |
| May | N/A | 5.8 | 49.1 | 13.4 | 742 | 99.7 |
| June | N/A | 17.2 | 118.2 | 63.3 | 710 | 98.6 |

## Table A4: 2023 Q2 Station Courtice Monitoring Results for NOx

| Data Statistics | Events > 1 hr AAQC | Events > 24 hr AAQC | Arithmetic Mean | Maximum 1 hr Rolling Mean | Maximum 24 hr Rolling Mean | Number of Valid Hours | Valid Data |
|---|---|---|---|---|---|---|---|
| Month | $NO_x$ | $NO_x$ | $NO_x$ | $NO_x$ | $NO_x$ | $NO_x$ | $NO_x$ |
| | No. | No. | (ppb) | (ppb) | (ppb) | No. | % |
| April | N/A | N/A | 5.2 | 63.0 | 20.4 | 718 | 99.7 |
| May | N/A | N/A | 6.7 | 91.9 | 20.7 | 741 | 99.6 |
| June | N/A | N/A | 5.3 | 176.2 | 13.6 | 714 | 99.2 |

## Table A5: 2023 Q2 Station Rundle Monitoring Results for NOx

| Data Statistics | Events > 1 hr AAQC | Events > 24 hr AAQC | Arithmetic Mean | Maximum 1 hr Rolling Mean | Maximum 24 hr Rolling Mean | Number of Valid Hours | Valid Data |
|---|---|---|---|---|---|---|---|
| Month | $NO_x$ | $NO_x$ | $NO_x$ | $NO_x$ | $NO_x$ | $NO_x$ | $NO_x$ |
| | No. | No. | (ppb) | (ppb) | (ppb) | No. | % |
| April | N/A | N/A | 5.7 | 56.5 | 14.2 | 704 | 97.8 |
| May | N/A | N/A | 5.9 | 73.3 | 16.6 | 741 | 99.6 |
| June | N/A | N/A | 4.5 | 94.8 | 16.1 | 709 | 98.5 |

## Table A6: 2023 Q2 Station Courtice Monitoring Results for NO

| Data Statistics | Events > 1 hr AAQC | Events > 24 hr AAQC | Arithmetic Mean | Maximum 1 hr Rolling Mean | Maximum 24 hr Rolling Mean | Number of Valid Hours | Valid Data |
|---|---|---|---|---|---|---|---|
| Month | NO | NO | NO | NO | NO | NO | NO |
| | No. | No. | (ppb) | (ppb) | (ppb) | No. | % |
| April | N/A | N/A | 0.7 | 34.7 | 5.2 | 718 | 99.7 |
| May | N/A | N/A | 1.2 | 57.9 | 7.2 | 741 | 99.6 |
| June | N/A | N/A | 0.6 | 175.8 | 1.6 | 714 | 99.2 |

## Table A7: 2023 Q2 Station Rundle Monitoring Results for NO

| Data Statistics | Events > 1 hr AAQC | Events > 24 hr AAQC | Arithmetic Mean | Maximum 1 hr Rolling Mean | Maximum 24 hr Rolling Mean | Number of Valid Hours | Valid Data |
|---|---|---|---|---|---|---|---|
| Month | NO | NO | NO | NO | NO | NO | NO |
| | No. | No. | (ppb) | (ppb) | (ppb) | No. | % |
| April | N/A | N/A | 1.6 | 41.1 | 8.2 | 704 | 97.8 |
| May | N/A | N/A | 1.6 | 43.9 | 6.6 | 741 | 99.6 |
| June | N/A | N/A | 1.0 | 60.4 | 7.5 | 709 | 98.5 |

## Table A8: 2023 Q2 Station Courtice Monitoring Results for NO2

| Data Statistics | Events > 1 hr AAQC | Events > 24 hr AAQC | Arithmetic Mean | Maximum 1 hr Rolling Mean | Maximum 24 hr Rolling Mean | Number of Valid Hours | Valid Data |
|---|---|---|---|---|---|---|---|
| Month | $NO_2$ | $NO_2$ | $NO_2$ | $NO_2$ | $NO_2$ | $NO_2$ | $NO_2$ |
| | No. | No. | (ppb) | (ppb) | (ppb) | No. | % |
| April | 0 | 0 | 4.6 | 36.6 | 15.2 | 718 | 99.7 |
| May | 0 | 0 | 5.5 | 37.5 | 14.9 | 741 | 99.6 |
| June | 0 | 0 | 4.8 | 45.3 | 12.6 | 714 | 99.2 |

## Table A9: 2023 Q2 Station Rundle Monitoring Results for NO2

| Data Statistics | Events > 1 hr AAQC | Events > 24 hr AAQC | Arithmetic Mean | Maximum 1 hr Rolling Mean | Maximum 24 hr Rolling Mean | Number of Valid Hours | Valid Data |
|---|---|---|---|---|---|---|---|
| Month | $NO_2$ | $NO_2$ | $NO_2$ | $NO_2$ | $NO_2$ | $NO_2$ | $NO_2$ |
| | No. | No. | (ppb) | (ppb) | (ppb) | No. | % |
| April | 0 | 0 | 4.3 | 21.9 | 10.8 | 704 | 97.8 |
| May | 0 | 0 | 4.5 | 40.0 | 10.5 | 741 | 99.6 |
| June | 0 | 0 | 3.6 | 34.4 | 8.9 | 709 | 98.5 |

## Table A10: 2023 Q2 Station Courtice Monitoring Results for SO2

| Data Statistics | Events > 10 min AAQC | Events > 1 hr AAQC | Arithmetic Mean | Maximum 10 min Rolling Mean | Maximum 1 hr Rolling Mean | Maximum 24 hr Rolling Mean | Number of Valid Hours | Valid Data |
|---|---|---|---|---|---|---|---|---|
| Month | $SO_2$ | $SO_2$ | $SO_2$ | $SO_2$ | $SO_2$ | $SO_2$ | $SO_2$ | $SO_2$ |
| | No. | No. | (ppb) | (ppb) | (ppb) | (ppb) | No. | % |
| April | 18 | 6 | 2.4 | 163.6 | 77.1 | 11.9 | 718 | 99.7 |
| May | 75 | 30 | 6.4 | 340.7 | 130.6 | 29.2 | 742 | 99.7 |
| June | 13 | 4 | 3.0 | 145.4 | 63.8 | 10.7 | 716 | 99.4 |

## Table A11: 2023 Q2 Station Rundle Monitoring Results for SO2

| Data Statistics | Events > 10 min AAQC | Events > 1 hr AAQC | Arithmetic Mean | Maximum 10 min Rolling Mean | Maximum 1 hr Rolling Mean | Maximum 24 hr Rolling Mean | Number of Valid Hours | Valid Data |
|---|---|---|---|---|---|---|---|---|
| Month | $SO_2$ | $SO_2$ | $SO_2$ | $SO_2$ | $SO_2$ | $SO_2$ | $SO_2$ | $SO_2$ |
| | No. | No. | (ppb) | (ppb) | (ppb) | (ppb) | No. | % |
| April | 0 | 1 | 0.6 | 60.0 | 47.9 | 3.2 | 708 | 98.3 |
| May | 0 | 0 | 0.5 | 9.1 | 4.1 | 1.4 | 742 | 99.7 |
| June | 14 | 4 | 1.2 | 362.5 | 142.8 | 18.3 | 717 | 99.6 |

## Table A12: 2023 Q2 Courtice Meterological Station Windspeed Data Summary

| MET Statistics | Maximum 1 hr Mean | Minimum 1 hr | Monthly Mean | Valid Data |
|---|---|---|---|---|
| Month | Wind Speed | Wind Speed | Wind Speed | Wind Speed |
| | (km/hr) | (km/hr) | (km/hr) | (%) |
| April | 36.0 | 0.6 | 13.5 | 100.0 |
| May | 23.8 | 0.3 | 8.9 | 99.6 |
| June | 25.9 | 1.2 | 10.0 | 100.0 |

## Table A13: 2023 Q2 Rundle Meterological Station Windspeed Data Summary

| MET Statistics | Maximum 1 hr Mean | Minimum 1 hr | Monthly Mean | Valid Hours |
|---|---|---|---|---|
| Month | Wind Speed | Wind Speed | Wind Speed | Wind Speed |
| | (km/hr) | (km/hr) | (km/hr) | (%) |
| April | 28.3 | 0.1 | 11.5 | 98.8 |
| May | 27.6 | 0.2 | 8.2 | 100.0 |
| June | 17.3 | 0.7 | 7.3 | 100.0 |

## Table A14: 2023 Q2 Courtice Meterological Station Wind Direction Data Summary

| MET Statistics | Valid Data |
|---|---|
| Month | Wind Direction |
| | (%) |
| April | 97.2 |
| May | 93.4 |
| June | 96.8 |

## Table A15: 2023 Q2 Rundle Meterological Station Wind Direction Data Summary

| MET Statistics | Valid Data |
|---|---|
| Month | Wind Direction |
| | (%) |
| April | 95.3 |
| May | 92.7 |
| June | 97.2 |

## Table A16: 2023 Q2 Courtice Meterological Station Temperature Data Summary

| MET Statistics | Maximum 1 hr Mean | Minimum 1 hr | Monthly Mean | Valid Data |
|---|---|---|---|---|
| Month | Temperature | Temperature | Temperature | Temperature |
| | (°C) | (°C) | (°C) | (%) |
| April | 22.6 | -4.9 | 7.1 | 100.0 |
| May | 25.0 | 1.3 | 11.9 | 99.6 |
| June | 30.9 | 10.8 | 18.5 | 100.0 |

## Table A17: 2023 Q2 Rundle Meterological Station Temperature Data Summary

| MET Statistics | Maximum 1 hr Mean | Minimum 1 hr | Monthly Mean | Valid Data |
|---|---|---|---|---|
| Month | Temperature | Temperature | Temperature | Temperature |
| | (°C) | (°C) | (°C) | (%) |
| April | 23.2 | -5.2 | 7.3 | 97.6 |
| May | 27.4 | 0.2 | 12.3 | 100.0 |
| June | 31.6 | 8.2 | 18.3 | 100.0 |

## Table A18: 2023 Q2 Courtice Meterological Station Relative Humidity Data Summary

| MET Statistics | Maximum 1 hr Mean | Minimum 1 hr | Monthly Mean | Valid Data |
|---|---|---|---|---|
| Month | Relative Humidity | Relative Humidity | Relative Humidity | Relative Humidity |
| | (%) | (%) | (%) | (%) |
| April | 100.0 | 23.0 | 66.6 | 100.0 |
| May | 100.0 | 21.5 | 60.0 | 100.0 |
| June | 100.0 | 21.7 | 66.3 | 100.0 |

## Table A19: 2023 Q2 Rundle Meterological Station Relative Humidity Data Summary

| MET Statistics | Maximum 1 hr Mean | Minimum 1 hr | Monthly Mean | Valid Data |
|---|---|---|---|---|
| Month | Relative Humidity | Relative Humidity | Relative Humidity | Relative Humidity |
| | (%) | (%) | (%) | (%) |
| April | 100.0 | 26.6 | 68.3 | 97.6 |
| May | 100.0 | 22.2 | 62.1 | 100.0 |
| June | 100.0 | 25.4 | 70.8 | 100.0 |

## Table A20: 2023 Q2 Courtice Meterological Station Precipitation Data Summary

| MET Statistics | Maximum 1 hr Mean | Minimum 1 hr | Monthly Mean | Total | Valid Data |
|---|---|---|---|---|---|
| Month | Precipitation | Precipitation | Precipitation | Precipitation | Precipitation |
| | (mm) | (mm) | (mm) | (mm) | % |
| April | 6.8 | 0.0 | 0.1 | 86.6 | 100.0 |
| May | 7.8 | 0.0 | 0.1 | 45.0 | 100.0 |
| June | 20.3 | 0.0 | 0.2 | 108.5 | 100.0 |

## Table A21: 2023 Q2 Rundle Meterological Station Precipitation Data Summary

| MET Statistics | Maximum 1 hr Mean | Minimum 1 hr | Monthly Mean | Total | Valid Data |
|---|---|---|---|---|---|
| Month | Precipitation | Precipitation | Precipitation | Precipitation | Precipitation |
| | (mm) | (mm) | (mm) | (mm) | % |
| April | 7.2 | 0.0 | 0.1 | 105.1 | 98.9 |
| May | 6.8 | 0.0 | 0.1 | 44.4 | 100.0 |
| June | 3.5 | 0.0 | 0.0 | 14.5 | 61.5 |

## Table A22: 2023 Q2 Courtice Meterological Station Pressure Data Summary

| MET Statistics | Maximum 1 hr Mean | Minimum 1 hr | Monthly Mean | Valid Data |
|---|---|---|---|---|
| Month | Pressure | Pressure | Pressure | Pressure |
| | ("Hg) | ("Hg) | ("Hg) | (%) |
| April | 30.3 | 29.0 | 29.7 | 100.0 |
| May | 30.1 | 28.8 | 29.7 | 100.0 |
| June | 30.0 | 29.2 | 29.6 | 100.0 |

# APPENDIX B

**Table B1: Summary of Sample Flow Rate and Sample Duration for Dioxins & Furans**

| Sample Date | Courtice | | | Rundle | | |
|---|---|---|---|---|---|---|
| | Filter ID | Sample Duration | Sample Volume | Filter ID | Sample Duration | Sample Volume |
| | No. | (min) | ($m^3$) | No. | (min) | ($m^3$) |
| April 6, 2023 | L2749970-1 | 1440 | 328 | L2749970-2 | 1440 | 319 |
| April 30, 2023 | L2750390-2 | 1440 | 317 | Invalid | | |
| May 24, 2023 | L2750922-2 | 1440 | 324 | L2750922-1 | 1440 | 329 |
| June 17, 2023 | L2751400-2 | 1440 | 321 | L2751400-1 | 1440 | 328 |

**Table B2: 2023 Courtice Station Q2 Monitoring Results for Dioxins & Furans**

| Contaminant | Units | *MECP Criteria* | *HHRA Health Based Criteria* | 6 Apr-23 | 30 Apr-23 | 24 May 23 | 17 Jun-23 | MECP Criteria (µg/m$^3$) | No. > Criteria | Arithmetic Mean | Q2 Minimum Concentration | Q2 Maximum Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | pg TEQ/m$^3$ | - | - | 1.19E-03 | 8.99E-04 | 2.62E-03 | 4.05E-04 | - | - | 1.28E-03 | 4.05E-04 | 2.62E-03 | 1.19E-03 | 2.62E-03 | 4.05E-04 | 4 | 100 |
| 1,2,3,7,8-PeCDD | pg TEQ/m$^3$ | - | - | 1.52E-03 | 1.32E-03 | 7.41E-03 | 1.01E-03 | - | - | 2.82E-03 | 1.01E-03 | 7.41E-03 | 1.52E-03 | 7.41E-03 | 1.01E-03 | 4 | 100 |
| 1,2,3,4,7,8-HxCDD | pg TEQ/m$^3$ | - | - | 1.07E-04 | 1.66E-04 | 1.85E-03 | 1.37E-04 | - | - | 5.65E-04 | 1.07E-04 | 1.85E-03 | 1.66E-04 | 1.85E-03 | 1.37E-04 | 4 | 100 |
| 1,2,3,6,7,8-HxCDD | pg TEQ/m$^3$ | - | - | 1.48E-04 | 6.62E-05 | 1.85E-03 | 1.56E-04 | - | - | 5.55E-04 | 6.62E-05 | 1.85E-03 | 1.48E-04 | 1.85E-03 | 1.56E-04 | 4 | 100 |
| 1,2,3,7,8,9-HxCDD | pg TEQ/m$^3$ | - | - | 1.05E-04 | 6.78E-05 | 1.85E-03 | 1.46E-04 | - | - | 5.43E-04 | 6.78E-05 | 1.85E-03 | 1.05E-04 | 1.85E-03 | 1.46E-04 | 4 | 100 |
| 1,2,3,4,6,7,8-HpCDD | pg TEQ/m$^3$ | - | - | 2.90E-04 | 8.99E-05 | 4.17E-04 | 4.61E-04 | - | - | 3.14E-04 | 8.99E-05 | 4.61E-04 | 2.90E-04 | 4.17E-04 | 4.61E-04 | 4 | 100 |
| OCDD | pg TEQ/m$^3$ | - | - | 2.40E-05 | 1.09E-05 | 7.87E-05 | 2.43E-05 | - | - | 3.45E-05 | 1.09E-05 | 7.87E-05 | 2.40E-05 | 7.87E-05 | 2.43E-05 | 4 | 100 |
| 2,3,7,8-TCDF | pg TEQ/m$^3$ | - | - | 1.51E-04 | 2.05E-04 | 3.55E-04 | 6.70E-05 | - | - | 1.94E-04 | 6.70E-05 | 3.55E-04 | 2.05E-04 | 3.55E-04 | 6.70E-05 | 4 | 100 |
| 1,2,3,7,8-PeCDF | pg TEQ/m$^3$ | - | - | 6.86E-05 | 3.74E-05 | 9.72E-05 | 2.20E-05 | - | - | 5.63E-05 | 2.20E-05 | 9.72E-05 | 6.86E-05 | 9.72E-05 | 2.20E-05 | 4 | 100 |
| 2,3,4,7,8-PeCDF | pg TEQ/m$^3$ | - | - | 2.38E-04 | 3.45E-04 | 9.26E-04 | 1.92E-04 | - | - | 4.25E-04 | 1.92E-04 | 9.26E-04 | 3.45E-04 | 9.26E-04 | 1.92E-04 | 4 | 100 |
| 1,2,3,4,7,8-HxCDF | pg TEQ/m$^3$ | - | - | 9.45E-05 | 1.23E-04 | 1.20E-03 | 6.07E-05 | - | - | 3.70E-04 | 6.07E-05 | 1.20E-03 | 1.23E-04 | 1.20E-03 | 6.07E-05 | 4 | 100 |
| 1,2,3,6,7,8-HxCDF | pg TEQ/m$^3$ | - | - | 8.99E-05 | 9.46E-05 | 1.20E-03 | 6.07E-05 | - | - | 3.62E-04 | 6.07E-05 | 1.20E-03 | 9.46E-05 | 1.20E-03 | 6.07E-05 | 4 | 100 |
| 2,3,4,6,7,8-HxCDF | pg TEQ/m$^3$ | - | - | 9.30E-05 | 9.62E-05 | 1.27E-03 | 6.39E-05 | - | - | 3.80E-04 | 6.39E-05 | 1.27E-03 | 9.62E-05 | 1.27E-03 | 6.39E-05 | 4 | 100 |
| 1,2,3,7,8,9-HxCDF | pg TEQ/m$^3$ | - | - | 2.80E-04 | 3.79E-04 | 1.54E-03 | 7.79E-05 | - | - | 5.70E-04 | 7.79E-05 | 1.54E-03 | 3.79E-04 | 1.54E-03 | 7.79E-05 | 4 | 100 |
| 1,2,3,4,6,7,8-HpCDF | pg TEQ/m$^3$ | - | - | 2.13E-05 | 2.05E-05 | 5.86E-04 | 3.89E-05 | - | - | 1.67E-04 | 2.05E-05 | 5.86E-04 | 2.13E-05 | 5.86E-04 | 3.89E-05 | 4 | 100 |
| 1,2,3,4,7,8,9-HpCDF | pg TEQ/m$^3$ | - | - | 1.51E-05 | 1.09E-05 | 1.85E-04 | 2.18E-05 | - | - | 5.82E-05 | 1.09E-05 | 1.85E-04 | 1.51E-05 | 1.85E-04 | 2.18E-05 | 4 | 100 |
| OCDF | pg TEQ/m$^3$ | - | - | 9.15E-07 | 6.15E-07 | 3.06E-05 | 3.41E-06 | - | - | 8.87E-06 | 6.15E-07 | 3.06E-05 | 9.15E-07 | 3.06E-05 | 3.41E-06 | 4 | 100 |
| Total Toxic Equivalency | pg TEQ/m$^3$ | *0.1*<br>*1* [1] | - | 4.44E-03 | 3.94E-03 | 2.35E-02 | 2.95E-03 | 0.1 | 0 | 8.70E-03 | 2.95E-03 | 2.35E-02 | 4.44E-03 | 2.35E-02 | 2.95E-03 | 4 | 100 |

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] O. Reg. 419/05 Schedule  Upper Risk Thresholds

**Table B3: 2023 Rundle Road Station Q2 Monitoring Results for Dioxins & Furans**

| Contaminant | Units | *MECP Criteria* | *HHRA Health Based Criteria* | 6 Apr-23 | 30 Apr-23 | 24 May 23 | 17 Jun-23 | MECP Criteria (µg/m$^3$) | No. > Criteria | Arithmetic Mean | Q2 Minimum Concentration | Q2 Maximum Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | pg TEQ/m$^3$ | - | - | 1.57E-03 | | 1.34E-03 | 4.12E-04 | - | - | 1.11E-03 | 4.12E-04 | 1.57E-03 | 1.57E-03 | 1.34E-03 | 4.12E-04 | 3 | 75 |
| 1,2,3,7,8-PeCDD | pg TEQ/m$^3$ | - | - | 1.57E-03 | | 3.95E-03 | 8.69E-04 | - | - | 2.13E-03 | 8.69E-04 | 3.95E-03 | 1.57E-03 | 3.95E-03 | 8.69E-04 | 3 | 75 |
| 1,2,3,4,7,8-HxCDD | pg TEQ/m$^3$ | - | - | 1.46E-04 | | 5.32E-04 | 1.19E-04 | - | - | 2.66E-04 | 1.19E-04 | 5.32E-04 | 1.46E-04 | 5.32E-04 | 1.19E-04 | 3 | 75 |
| 1,2,3,6,7,8-HxCDD | pg TEQ/m$^3$ | - | - | 1.39E-04 | | 5.32E-04 | 3.60E-04 | - | - | 3.44E-04 | 1.39E-04 | 5.32E-04 | 1.39E-04 | 5.32E-04 | 3.60E-04 | 3 | 75 |
| 1,2,3,7,8,9-HxCDD | pg TEQ/m$^3$ | - | - | 1.43E-04 | | 6.23E-04 | 2.13E-04 | - | - | 3.26E-04 | 1.43E-04 | 6.23E-04 | 1.43E-04 | 6.23E-04 | 2.13E-04 | 3 | 75 |
| 1,2,3,4,6,7,8-HpCDD | pg TEQ/m$^3$ | - | - | 3.26E-04 | | 3.50E-04 | 1.51E-04 | - | - | 2.75E-04 | 1.51E-04 | 3.50E-04 | 3.26E-04 | 3.50E-04 | 1.51E-04 | 3 | 75 |
| OCDD | pg TEQ/m$^3$ | - | - | 1.13E-05 | | 3.51E-05 | 4.51E-05 | - | - | 3.05E-05 | 1.13E-05 | 4.51E-05 | 1.13E-05 | 3.51E-05 | 4.51E-05 | 3 | 75 |
| 2,3,7,8-TCDF | pg TEQ/m$^3$ | - | - | 1.57E-04 | | 1.82E-04 | 4.73E-05 | - | - | 1.29E-04 | 4.73E-05 | 1.82E-04 | 1.57E-04 | 1.82E-04 | 4.73E-05 | 3 | 75 |
| 1,2,3,7,8-PeCDF | pg TEQ/m$^3$ | - | - | 1.64E-04 | | 1.09E-04 | 2.38E-05 | - | - | 9.89E-05 | 2.38E-05 | 1.64E-04 | 1.64E-04 | 1.09E-04 | 2.38E-05 | 3 | 75 |
| 2,3,4,7,8-PeCDF | pg TEQ/m$^3$ | - | - | 3.62E-04 | Invalid | 1.05E-03 | 1.23E-04 | - | - | 5.11E-04 | 1.23E-04 | 1.05E-03 | 3.62E-04 | 1.05E-03 | 1.23E-04 | 3 | 75 |
| 1,2,3,4,7,8-HxCDF | pg TEQ/m$^3$ | - | - | 9.72E-05 | | 3.50E-04 | 3.81E-05 | - | - | 1.62E-04 | 3.81E-05 | 3.50E-04 | 9.72E-05 | 3.50E-04 | 3.81E-05 | 3 | 75 |
| 1,2,3,6,7,8-HxCDF | pg TEQ/m$^3$ | - | - | 9.25E-05 | | 3.50E-04 | 5.34E-05 | - | - | 1.65E-04 | 5.34E-05 | 3.50E-04 | 9.25E-05 | 3.50E-04 | 5.34E-05 | 3 | 75 |
| 2,3,4,6,7,8-HxCDF | pg TEQ/m$^3$ | - | - | 9.56E-05 | | 3.80E-04 | 4.57E-05 | - | - | 1.74E-04 | 4.57E-05 | 3.80E-04 | 9.56E-05 | 3.80E-04 | 4.57E-05 | 3 | 75 |
| 1,2,3,7,8,9-HxCDF | pg TEQ/m$^3$ | - | - | 1.14E-04 | | 4.56E-04 | 3.81E-05 | - | - | 2.03E-04 | 3.81E-05 | 4.56E-04 | 1.14E-04 | 4.56E-04 | 3.81E-05 | 3 | 75 |
| 1,2,3,4,6,7,8-HpCDF | pg TEQ/m$^3$ | - | - | 3.13E-05 | | 5.78E-05 | 2.90E-05 | - | - | 3.94E-05 | 2.90E-05 | 5.78E-05 | 3.13E-05 | 5.78E-05 | 2.90E-05 | 3 | 75 |
| 1,2,3,4,7,8,9-HpCDF | pg TEQ/m$^3$ | - | - | 1.72E-05 | | 7.60E-05 | 7.16E-06 | - | - | 3.35E-05 | 7.16E-06 | 7.60E-05 | 1.72E-05 | 7.60E-05 | 7.16E-06 | 3 | 75 |
| OCDF | pg TEQ/m$^3$ | - | - | 3.21E-06 | | 1.41E-05 | 3.38E-06 | - | - | 6.91E-06 | 3.21E-06 | 1.41E-05 | 3.21E-06 | 1.41E-05 | 3.38E-06 | 3 | 75 |
| Total Toxic Equivalency | pg TEQ/m$^3$ | *0.1 1* [1] | - | 5.03E-03 | | 1.04E-02 | 2.58E-03 | 0.1 | 0 | 6.00E-03 | 2.58E-03 | 1.04E-02 | 5.03E-03 | 1.04E-02 | 2.58E-03 | 3 | 75 |

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] O. Reg. 419/05 Schedule Upper Risk Thresholds

**Table B4: Summary of Sample Flow Rate and Sample Duration for PAHs**

| Sample Date | Courtice | | | Rundle | | |
|---|---|---|---|---|---|---|
| | Filter ID | Sample Duration | Sample Volume | Filter ID | Sample Duration | Sample Volume |
| | No. | (min) | ($m^3$) | No. | (min) | ($m^3$) |
| April 6, 2023 | L2749970-1 | 1440 | 328 | L2749970-2 | 1440 | 319 |
| April 18, 2023 | L2750116-2 | 1440 | 324 | L2750116-1 | 1440 | 326 |
| April 30, 2023 | L2750390-2 | 1440 | 317 | Invalid | | |
| May 12, 2023 | L2750727-2 | 1440 | 311 | L2750727-1 | 1440 | 322 |
| May 24, 2023 | L2750922-2 | 1440 | 334 | L2750922-1 | 1440 | 329 |
| June 5, 2023 | L2751156-2 | 1440 | 321 | L2751156-1 | 1440 | 324 |
| June 17, 2023 | L2751400-2 | 1440 | 321 | L2751400-1 | 1440 | 328 |
| June 29, 2023 | L2751679-2 | 1440 | 330 | L2751679-1 | 1440 | 316 |

**Table B5: 2023 Courtice Station Q2 Monitoring Results for PAHs**

| Contaminant | Units | *MECP Criteria* | *HHRA Health Based Criteria* | 6 Apr 23 | 18 Apr 23 | 30 Apr 23 | 12 May 23 | 24 May 23 | 5 Jun 23 | 17 Jun 23 | 29 Jun 23 | No. > Criteria | Arithmetic Mean | Minimum Q2 Concentration | Maximum Q2 Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | ng/m$^3$ | *12000* | - | 7.53E-01 | 4.94E-01 | 1.76E+00 | 1.06E+01 | 8.32E+00 | 1.64E+01 | 7.41E+00 | 5.18E+00 | 0 | 6.37E+00 | 4.94E-01 | 1.64E+01 | 1.76E+00 | 1.06E+01 | 1.64E+01 | 8 | 100 |
| 2-Methylnaphthalene | ng/m$^3$ | *10000* | - | 1.53E+00 | 1.23E+00 | 3.69E+00 | 2.11E+01 | 1.72E+01 | 3.12E+01 | 1.50E+01 | 1.06E+01 | 0 | 1.27E+01 | 1.23E+00 | 3.12E+01 | 3.69E+00 | 2.11E+01 | 3.12E+01 | 8 | 100 |
| Acenaphthene | ng/m$^3$ | - | - | 1.12E+00 | 5.83E-01 | 2.44E+00 | 8.52E+00 | 1.30E+01 | 1.47E+01 | 9.47E+00 | 8.15E+00 | - | 7.25E+00 | 5.83E-01 | 1.47E+01 | 2.44E+00 | 1.30E+01 | 1.47E+01 | 8 | 100 |
| Acenaphthylene | ng/m$^3$ | *3500* | - | 4.51E-02 | 3.98E-02 | 7.07E-02 | 3.50E-01 | 4.10E-01 | 5.11E-01 | 2.64E-01 | 1.61E-01 | 0 | 2.32E-01 | 3.98E-02 | 5.11E-01 | 7.07E-02 | 4.10E-01 | 5.11E-01 | 8 | 100 |
| Anthracene | ng/m$^3$ | *200* | - | 1.91E-02 | 1.24E-02 | 1.42E-01 | 1.88E-01 | 2.38E-01 | 2.14E-01 | 4.21E-01 | 1.28E-01 | 0 | 1.70E-01 | 1.24E-02 | 4.21E-01 | 1.42E-01 | 2.38E-01 | 4.21E-01 | 8 | 100 |
| Benzo(a)Anthracene | ng/m$^3$ | - | - | 9.70E-03 | 1.49E-02 | 3.60E-03 | 4.92E-02 | 2.08E-02 | 2.22E-02 | 5.42E-03 | 1.52E-03 | - | 1.59E-02 | 1.52E-03 | 4.92E-02 | 1.49E-02 | 4.92E-02 | 2.22E-02 | 8 | 100 |
| Benzo(a)fluorene | ng/m$^3$ | - | - | 1.52E-02 | 1.08E-02 | 2.37E-02 | 6.85E-02 | 4.37E-02 | 3.40E-02 | 6.42E-02 | 2.31E-02 | - | 3.54E-02 | 1.08E-02 | 6.85E-02 | 2.37E-02 | 6.85E-02 | 6.42E-02 | 8 | 100 |
| Benzo(a)Pyrene (Historically High) | ng/m$^3$ | *0.05* [1] *5* [2] *1.1* [3] | *1* | 2.67E-02 | 1.68E-02 | 7.22E-03 | 1.14E-01 | 5.30E-02 | 3.80E-02 | 2.90E-02 | 8.58E-03 | 2 | 3.66E-02 | 7.22E-03 | 1.14E-01 | 2.67E-02 | 1.14E-01 | 3.80E-02 | 8 | 100 |
| Benzo(b)Fluoranthene | ng/m$^3$ | - | - | 2.92E-02 | 2.49E-02 | 1.18E-02 | 1.33E-01 | 4.85E-02 | 9.47E-02 | 1.33E-02 | 8.79E-03 | - | 4.55E-02 | 8.79E-03 | 1.33E-01 | 2.92E-02 | 1.33E-01 | 9.47E-02 | 8 | 100 |
| Benzo(b)fluorene | ng/m$^3$ | - | - | 1.52E-03 | 1.54E-03 | 3.79E-03 | 1.14E-02 | 8.95E-03 | 5.95E-03 | 9.41E-03 | 0.00E+00 | - | 5.32E-03 | 0.00E+00 | 1.14E-02 | 3.79E-03 | 1.14E-02 | 9.41E-03 | 8 | 100 |
| Benzo(e)Pyrene | ng/m$^3$ | - | - | 1.42E-02 | 2.14E-02 | 7.26E-03 | 7.78E-02 | 2.76E-02 | 6.20E-02 | 1.20E-02 | 1.06E-02 | - | 2.91E-02 | 7.26E-03 | 7.78E-02 | 2.14E-02 | 7.78E-02 | 6.20E-02 | 8 | 100 |
| Benzo(g,h,i)Perylene | ng/m$^3$ | - | - | 1.97E-02 | 2.15E-02 | 9.91E-03 | 8.30E-02 | 4.40E-02 | 5.92E-02 | 1.43E-02 | 6.82E-03 | - | 3.23E-02 | 6.82E-03 | 8.30E-02 | 2.15E-02 | 8.30E-02 | 5.92E-02 | 8 | 100 |
| Benzo(k)Fluoranthene | ng/m$^3$ | - | - | 1.77E-02 | 1.61E-02 | 1.18E-02 | 9.07E-02 | 7.43E-02 | 6.42E-02 | 4.36E-02 | 6.36E-03 | - | 4.06E-02 | 6.36E-03 | 9.07E-02 | 1.77E-02 | 9.07E-02 | 6.42E-02 | 8 | 100 |
| Biphenyl | ng/m$^3$ | - | - | 1.00E+00 | 5.71E-01 | 2.38E+00 | 4.57E+00 | 3.20E+00 | 1.36E+01 | 5.79E+00 | 5.73E+00 | - | 4.61E+00 | 5.71E-01 | 1.36E+01 | 2.38E+00 | 4.57E+00 | 1.36E+01 | 8 | 100 |
| Chrysene | ng/m$^3$ | - | - | 3.45E-02 | 3.80E-02 | 2.82E-02 | 1.76E-01 | 7.72E-02 | 1.60E-01 | 5.23E-02 | 2.65E-02 | - | 7.40E-02 | 2.65E-02 | 1.76E-01 | 3.80E-02 | 1.76E-01 | 1.60E-01 | 8 | 100 |
| Dibenzo(a,h)Anthracene | ng/m$^3$ | - | - | 1.52E-03 | 9.38E-03 | 1.58E-03 | 1.69E-02 | 5.81E-03 | 8.97E-03 | 1.56E-03 | 1.52E-03 | - | 5.91E-03 | 1.52E-03 | 1.69E-02 | 9.38E-03 | 1.69E-02 | 8.97E-03 | 8 | 100 |
| Fluoranthene | ng/m$^3$ | - | - | 3.51E-01 | 2.33E-01 | 1.03E+00 | 1.42E+00 | 1.40E+00 | 1.24E+00 | 2.23E+00 | 9.27E-01 | - | 1.10E+00 | 2.33E-01 | 2.23E+00 | 1.03E+00 | 1.42E+00 | 2.23E+00 | 8 | 100 |
| Fluorene | ng/m$^3$ | - | - | 1.14E+00 | 4.54E-01 | 2.85E+00 | 5.79E+00 | 7.63E+00 | 8.07E+00 | 5.86E+00 | 5.09E+00 | - | 4.61E+00 | 4.54E-01 | 8.07E+00 | 2.85E+00 | 7.63E+00 | 8.07E+00 | 8 | 100 |
| Indeno(1,2,3-cd)Pyrene | ng/m$^3$ | - | - | 1.84E-02 | 1.55E-02 | 1.58E-03 | 8.04E-02 | 3.50E-02 | 5.20E-02 | 1.36E-02 | 5.55E-03 | - | 2.78E-02 | 1.58E-03 | 8.04E-02 | 1.84E-02 | 8.04E-02 | 5.20E-02 | 8 | 100 |
| Naphthalene | ng/m$^3$ | *22500* | *22500* | 3.05E+00 | 2.37E+00 | 5.21E+00 | 2.58E+01 | 2.91E+01 | 5.89E+01 | 1.46E+01 | 1.16E+01 | 0 | 1.88E+01 | 2.37E+00 | 5.89E+01 | 5.21E+00 | 2.91E+01 | 5.89E+01 | 8 | 100 |
| o-Terphenyl | ng/m$^3$ | - | - | 5.37E-03 | 3.98E-03 | 8.36E-03 | 1.14E-02 | 9.64E-03 | 3.61E-02 | 1.33E-02 | 3.33E-02 | - | 1.52E-02 | 3.98E-03 | 3.61E-02 | 8.36E-03 | 1.14E-02 | 3.61E-02 | 8 | 100 |
| Perylene | ng/m$^3$ | - | - | 1.52E-03 | 1.54E-02 | 1.58E-03 | 1.37E-02 | 3.95E-03 | 4.83E-03 | 1.56E-03 | 1.52E-03 | - | 5.51E-03 | 1.52E-03 | 1.54E-02 | 1.54E-02 | 1.37E-02 | 4.83E-03 | 8 | 100 |
| Phenanthrene | ng/m$^3$ | - | - | 1.73E+00 | 9.41E-01 | 5.58E+00 | 8.59E+00 | 1.09E+01 | 9.69E+00 | 1.08E+01 | 6.79E+00 | - | 6.88E+00 | 9.41E-01 | 1.09E+01 | 5.58E+00 | 1.09E+01 | 1.08E+01 | 8 | 100 |
| Pyrene | ng/m$^3$ | - | - | 1.58E-01 | 1.33E-01 | 4.13E-01 | 5.92E-01 | 5.63E-01 | 5.02E-01 | 9.16E-01 | 3.94E-01 | - | 4.59E-01 | 1.33E-01 | 9.16E-01 | 4.13E-01 | 5.92E-01 | 9.16E-01 | 8 | 100 |
| Tetralin | ng/m$^3$ | - | - | 3.60E-01 | 2.54E-01 | 5.90E-01 | 1.67E+00 | 2.23E+00 | 3.49E+00 | 6.04E-01 | 5.91E-01 | - | 1.22E+00 | 2.54E-01 | 3.49E+00 | 5.90E-01 | 2.23E+00 | 3.49E+00 | 8 | 100 |
| Total PAH[4] | ng/m$^3$ | - | - | 11.46 | 7.53 | 26.26 | 90.13 | 94.64 | 159.21 | 73.71 | 55.55 | - | 64.81 | 7.53 | 159.21 | 26.26 | 94.64 | 159.21 | 8 | 100 |

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC
[2] O. Reg. 419/05 Schedule  Upper Risk Thresholds
[3] O. Reg. 419/05 24 Hour Guideline
[4] Total PAH sums all PAH contaminants

**Table B6: 2023 Rundle Road Station Q2 Monitoring Results for PAHs**

| Contaminant | Units | *MECP Criteria* | *HHRA Health Based Criteria* | 6 Apr 23 | 18 Apr 23 | 30 Apr 23 | 12 May 23 | 24 May 23 | 5 Jun 23 | 17 Jun 23 | 29 Jun 23 | No. > Criteria | Arithmetic Mean | Minimum Q2 Concentration | Maximum Q2 Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | ng/m$^3$ | *12000* | - | 1.76E+00 | 1.33E+00 | | 6.99E+00 | 5.96E+00 | 5.71E+00 | 1.16E+00 | 7.56E+00 | 0 | 4.35E+00 | 1.16E+00 | 7.56E+00 | 1.76E+00 | 6.99E+00 | 7.56E+00 | 7 | 88 |
| 2-Methylnaphthalene | ng/m$^3$ | *10000* | - | 3.42E+00 | 3.10E+00 | | 1.29E+01 | 1.08E+01 | 1.02E+01 | 1.87E+00 | 1.44E+01 | 0 | 8.09E+00 | 1.87E+00 | 1.44E+01 | 3.42E+00 | 1.29E+01 | 1.44E+01 | 7 | 88 |
| Acenaphthene | ng/m$^3$ | - | - | 1.51E+00 | 9.11E-01 | | 5.25E+00 | 2.79E+00 | 7.99E+00 | 4.30E-01 | 9.40E+00 | - | 4.04E+00 | 4.30E-01 | 9.40E+00 | 1.51E+00 | 5.25E+00 | 9.40E+00 | 7 | 88 |
| Acenaphthylene | ng/m$^3$ | *3500* | - | 1.30E-01 | 2.24E-01 | | 2.89E-01 | 2.76E-01 | 2.01E-01 | 1.61E-01 | 4.94E-01 | 0 | 2.54E-01 | 1.30E-01 | 4.94E-01 | 2.24E-01 | 2.89E-01 | 4.94E-01 | 7 | 88 |
| Anthracene | ng/m$^3$ | *200* | - | 8.40E-02 | 8.93E-02 | | 2.63E-01 | 8.63E-02 | 3.12E-01 | 5.88E-02 | 5.95E-01 | 0 | 2.13E-01 | 5.88E-02 | 5.95E-01 | 8.93E-02 | 2.63E-01 | 5.95E-01 | 7 | 88 |
| Benzo(a)Anthracene | ng/m$^3$ | - | - | 1.33E-02 | 3.28E-02 | | 6.89E-02 | 1.26E-02 | 1.70E-02 | 1.52E-03 | 1.78E-02 | - | 2.34E-02 | 1.52E-03 | 6.89E-02 | 3.28E-02 | 6.89E-02 | 1.78E-02 | 7 | 88 |
| Benzo(a)fluorene | ng/m$^3$ | - | - | 2.76E-02 | 3.53E-02 | | 6.83E-02 | 2.60E-02 | 5.09E-02 | 2.20E-02 | 7.47E-02 | - | 4.36E-02 | 2.20E-02 | 7.47E-02 | 3.53E-02 | 6.83E-02 | 7.47E-02 | 7 | 88 |
| Benzo(a)Pyrene (Historically High) | ng/m$^3$ | *0.05* [1] *5* [2] *1.1* [3] | *1* | 3.04E-02 | 1.43E-02 | | 1.45E-01 | 2.02E-02 | 2.91E-02 | 1.99E-02 | 1.65E-02 | 1 | 3.93E-02 | 1.43E-02 | 1.45E-01 | 3.04E-02 | 1.45E-01 | 2.91E-02 | 7 | 88 |
| Benzo(b)Fluoranthene | ng/m$^3$ | - | - | 3.79E-02 | 4.39E-02 | | 1.45E-01 | 4.26E-02 | 7.87E-02 | 1.47E-02 | 3.99E-02 | - | 5.75E-02 | 1.47E-02 | 1.45E-01 | 4.39E-02 | 1.45E-01 | 7.87E-02 | 7 | 88 |
| Benzo(b)fluorene | ng/m$^3$ | - | - | 4.33E-03 | 4.94E-03 | | 1.19E-02 | 4.65E-03 | 4.32E-03 | 3.90E-03 | 1.31E-02 | - | 6.73E-03 | 3.90E-03 | 1.31E-02 | 4.94E-03 | 1.19E-02 | 1.31E-02 | 7 | 88 |
| Benzo(e)Pyrene | ng/m$^3$ | - | - | 2.32E-02 | 7.09E-02 | | 9.47E-02 | 2.80E-02 | 5.31E-02 | 9.27E-03 | 2.44E-02 | - | 4.34E-02 | 9.27E-03 | 9.47E-02 | 7.09E-02 | 9.47E-02 | 5.31E-02 | 7 | 88 |
| Benzo(g,h,i)Perylene | ng/m$^3$ | - | - | 3.01E-02 | 3.28E-02 | | 1.02E-01 | 4.29E-02 | 4.88E-02 | 1.12E-02 | 1.95E-02 | - | 4.10E-02 | 1.12E-02 | 1.02E-01 | 3.28E-02 | 1.02E-01 | 4.88E-02 | 7 | 88 |
| Benzo(k)Fluoranthene | ng/m$^3$ | - | - | 2.27E-02 | 4.69E-02 | | 1.14E-01 | 4.29E-02 | 5.49E-02 | 2.52E-02 | 2.29E-02 | - | 4.70E-02 | 2.27E-02 | 1.14E-01 | 4.69E-02 | 1.14E-01 | 5.49E-02 | 7 | 88 |
| Biphenyl | ng/m$^3$ | - | - | 1.63E+00 | 1.39E+00 | | 3.10E+00 | 2.24E+00 | 7.16E+00 | 1.80E+00 | 8.10E+00 | - | 3.63E+00 | 1.39E+00 | 8.10E+00 | 1.63E+00 | 3.10E+00 | 8.10E+00 | 7 | 88 |
| Chrysene | ng/m$^3$ | - | - | 4.92E-02 | 7.15E-02 | | 1.94E-01 | 5.20E-02 | 1.32E-01 | 2.68E-02 | 1.05E-01 | - | 9.01E-02 | 2.68E-02 | 1.94E-01 | 7.15E-02 | 1.94E-01 | 1.32E-01 | 7 | 88 |
| Dibenzo(a,h)Anthracene | ng/m$^3$ | - | - | 1.57E-03 | 1.53E-03 | | 3.48E-02 | 5.87E-03 | 7.38E-03 | 1.52E-03 | 1.58E-03 | - | 7.75E-03 | 1.52E-03 | 3.48E-02 | 1.57E-03 | 3.48E-02 | 7.38E-03 | 7 | 88 |
| Fluoranthene | ng/m$^3$ | - | - | 5.58E-01 | 4.36E-01 | | 2.15E+00 | 6.05E-01 | 1.89E+00 | 3.11E-01 | 2.88E+00 | - | 1.26E+00 | 3.11E-01 | 2.88E+00 | 5.58E-01 | 2.15E+00 | 2.88E+00 | 7 | 88 |
| Fluorene | ng/m$^3$ | - | - | 1.82E+00 | 1.20E+00 | | 4.50E+00 | 2.24E+00 | 6.33E+00 | 6.89E-01 | 7.97E+00 | - | 3.54E+00 | 6.89E-01 | 7.97E+00 | 1.82E+00 | 4.50E+00 | 7.97E+00 | 7 | 88 |
| Indeno(1,2,3-cd)Pyrene | ng/m$^3$ | - | - | 2.50E-02 | 2.71E-02 | | 9.81E-02 | 3.59E-02 | 4.04E-02 | 1.21E-02 | 1.61E-02 | - | 3.64E-02 | 1.21E-02 | 9.81E-02 | 2.71E-02 | 9.81E-02 | 4.04E-02 | 7 | 88 |
| Naphthalene | ng/m$^3$ | *22500* | *22500* | 4.80E+00 | 4.08E+00 | | 1.54E+01 | 1.33E+01 | 2.16E+01 | 3.75E+00 | 1.25E+01 | 0 | 1.08E+01 | 3.75E+00 | 2.16E+01 | 4.80E+00 | 1.54E+01 | 2.16E+01 | 7 | 88 |
| o-Terphenyl | ng/m$^3$ | - | - | 6.61E-03 | 6.72E-03 | | 1.06E-02 | 7.29E-03 | 3.33E-02 | 1.19E-02 | 4.94E-02 | - | 1.80E-02 | 6.61E-03 | 4.94E-02 | 6.72E-03 | 1.06E-02 | 4.94E-02 | 7 | 88 |
| Perylene | ng/m$^3$ | - | - | 1.57E-03 | 1.53E-03 | | 2.74E-02 | 3.40E-03 | 3.70E-03 | 1.52E-03 | 1.58E-03 | - | 5.82E-03 | 1.52E-03 | 2.74E-02 | 1.57E-03 | 2.74E-02 | 3.70E-03 | 7 | 88 |
| Phenanthrene | ng/m$^3$ | - | - | 2.99E+00 | 2.17E+00 | | 1.03E+01 | 3.53E+00 | 1.03E+01 | 1.38E+00 | 1.44E+01 | - | 6.44E+00 | 1.38E+00 | 1.44E+01 | 2.99E+00 | 1.03E+01 | 1.44E+01 | 7 | 88 |
| Pyrene | ng/m$^3$ | - | - | 3.29E-01 | 3.10E-01 | | 7.80E-01 | 2.82E-01 | 8.09E-01 | 1.52E-01 | 1.33E+00 | - | 5.70E-01 | 1.52E-01 | 1.33E+00 | 3.29E-01 | 7.80E-01 | 1.33E+00 | 7 | 88 |
| Tetralin | ng/m$^3$ | - | - | 6.27E-01 | 7.33E-01 | | 8.63E-01 | 2.19E+00 | 1.84E+00 | 2.16E-01 | 1.38E+00 | - | 1.12E+00 | 2.16E-01 | 2.19E+00 | 7.33E-01 | 2.19E+00 | 1.84E+00 | 7 | 88 |
| Total PAH[4] | ng/m$^3$ | - | - | 19.93 | 63.87 | | 63.87 | 44.56 | 74.90 | 12.14 | 81.39 | - | 51.52 | 12.14 | 81.39 | 63.87 | 63.87 | 81.39 | 7 | 88 |

Invalid

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC
[2] O. Reg. 419/05 Schedule  Upper Risk Thresholds
[3] O. Reg. 419/05 24 Hour Guideline
[4] Total PAH sums all PAH contaminants

**Table B7: Summary of Sample Flow Rate and Sample Duration for TSP**

| Sample Date | Courtice | | | Rundle | | |
|---|---|---|---|---|---|---|
| | Filter ID | Sample Duration | Sample Volume | Filter ID | Sample Duration | Sample Volume |
| | No. | (min) | ($m^3$) | No. | (min) | ($m^3$) |
| April 6, 2023 | L2749971-1 | 1440 | 1697 | L2749971-3 | 1440 | 1646 |
| April 12, 2023 | Invalid | | | L2750117-2 | 1440 | 1605 |
| April 18, 2023 | L2750117-3 | 1440 | 1671 | L2750117-1 | 1440 | 1651 |
| April 24, 2023 | L2750402-4 | 1440 | 1625 | L2750402-2 | 1440 | 1636 |
| April 30, 2023 | L2750402-3 | 1440 | 1730 | Invalid | | |
| May 6, 2023 | L2750728-4 | 1440 | 1627 | L2750728-2 | 1440 | 1648 |
| May 12, 2023 | L2750728-3 | 1440 | 1607 | L2750728-1 | 1440 | 1567 |
| May 18, 2023 | L2750924-4 | 1440 | 1568 | L2750924-2 | 1440 | 1628 |
| May 24, 2023 | L2750924-3 | 1440 | 1659 | L2750924-1 | 1440 | 1631 |
| May 30, 2023 | L2751157-4 | 1440 | 1650 | L2751157-2 | 1440 | 1570 |
| June 5, 2023 | L2751157-3 | 1440 | 1700 | L2751157-1 | 1440 | 1630 |
| June 11, 2023 | Invalid | | | L2751401-2 | 1440 | 1583 |
| June 17, 2023 | L2751401-3 | 1440 | 1682 | L2751401-1 | 1440 | 1585 |
| June 23, 2023 | L2751681-4 | 1439 | 1594 | L2751681-2 | 1438 | 1670 |
| June 29, 2023 | L2751681-3 | 1440 | 1666 | L2751681-1 | 1440 | 1677 |

**Table B8: 2023 Courtice Station Q2 Monitoring Results for TSP and Metals**

| Contaminant | Units | *MECP Criteria* | *HHRA Health Based Criteria* | 6 Apr 23 | 12 Apr 23 | 18 Apr 23 | 24 Apr 23 | 30 Apr 23 | 6 May 23 | 12 May 23 | 18 May 23 | 24 May 23 | 30 May 23 | 5 Jun 23 | 11 Jun 23 | 17 Jun 23 | 23 Jun 23 | 29 Jun 23 | MECP Criteria ($\mu g/m^3$) | No. > Criteria | Geometric Mean | Arithmetic Mean | Q2 Minimum Concentration | Q2 Maximum Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Particulate (TSP) | $\mu g/m^3$ | *120* | *120* | 4.42 | | 9.69 | 35.88 | 5.09 | 22.31 | 69.70 | 39.60 | 29.90 | 61.82 | 141.76 | | 49.29 | 46.28 | 48.02 | *120* | 1 | 29.7 | 43.4 | 4.42 | 141.76 | 35.88 | 69.70 | 141.76 | 13 | 87 |
| Mercury (Hg) | $\mu g/m^3$ | *2* | *2* | 2.95E-06 | | 2.99E-06 | 3.08E-06 | 2.89E-06 | 9.22E-06 | 1.80E-05 | 2.55E-05 | 9.04E-06 | 1.52E-05 | 2.35E-05 | | 8.32E-06 | 1.20E-05 | 1.68E-05 | *2* | 0 | 8.76E-06 | 1.15E-05 | 2.89E-06 | 2.55E-05 | 3.08E-06 | 2.55E-05 | 2.35E-05 | 13 | 87 |
| Aluminum (Al) | $\mu g/m^3$ | *4.8* | - | 1.03E-01 | | 5.74E-02 | 1.86E-01 | 1.23E-01 | 1.39E-01 | 5.43E-01 | 4.16E-01 | 1.92E-01 | 5.95E-01 | 7.65E-01 | | 1.17E-01 | 3.49E-01 | 1.33E-01 | *4.8* | 0 | 2.14E-01 | 2.86E-01 | 5.74E-02 | 7.65E-01 | 1.86E-01 | 5.95E-01 | 7.65E-01 | 13 | 87 |
| Antimony (Sb) | $\mu g/m^3$ | *25* | *25* | 5.95E-04 | | 3.11E-04 | 7.14E-04 | 3.18E-04 | 1.15E-03 | 1.57E-03 | 9.18E-04 | 1.01E-03 | 1.22E-03 | 1.65E-03 | | 3.80E-04 | 7.14E-04 | 4.86E-04 | *25* | 0 | 7.36E-04 | 8.48E-04 | 3.11E-04 | 1.65E-03 | 7.14E-04 | 1.57E-03 | 1.65E-03 | 13 | 87 |
| Arsenic (As) | $\mu g/m^3$ | *0.3* | *0.3* | 8.84E-04 | | 8.98E-04 | 9.23E-04 | 8.67E-04 | 9.22E-04 | 1.93E-03 | 9.57E-04 | 9.04E-04 | 9.09E-04 | 2.00E-03 | | 8.92E-04 | 9.00E-04 | 9.00E-04 | *0.3* | 0 | 1.02E-03 | 1.07E-03 | 8.67E-04 | 2.00E-03 | 9.23E-04 | 1.93E-03 | 2.00E-03 | 13 | 87 |
| Barium (Ba) | $\mu g/m^3$ | *10* | *10* | 6.42E-03 | | 5.15E-03 | 9.66E-03 | 1.96E-03 | 1.14E-02 | 2.08E-02 | 1.01E-02 | 1.25E-02 | 1.05E-02 | 2.96E-02 | | 4.79E-03 | 8.22E-03 | 6.30E-03 | *10* | 0 | 8.62E-03 | 1.06E-02 | 1.96E-03 | 2.96E-02 | 9.66E-03 | 2.08E-02 | 2.96E-02 | 13 | 87 |
| Beryllium (Be) | $\mu g/m^3$ | *0.01* | *0.01* | 1.47E-05 | | 1.50E-05 | 1.54E-05 | 1.45E-05 | 1.54E-05 | 1.56E-05 | 1.59E-05 | 1.51E-05 | 1.52E-05 | 4.12E-05 | | 1.49E-05 | 1.50E-05 | 1.50E-05 | *0.01* | 0 | 1.63E-05 | 1.71E-05 | 1.45E-05 | 4.12E-05 | 1.54E-05 | 1.59E-05 | 4.12E-05 | 13 | 87 |
| Bismuth (Bi) | $\mu g/m^3$ | - | - | 5.30E-04 | | 5.39E-04 | 5.54E-04 | 5.20E-04 | 5.53E-04 | 5.60E-04 | 5.74E-04 | 5.42E-04 | 5.45E-04 | 5.29E-04 | | 5.35E-04 | 5.40E-04 | 5.40E-04 | - | - | 5.43E-04 | 5.43E-04 | 5.20E-04 | 5.74E-04 | 5.54E-04 | 5.74E-04 | 5.40E-04 | 13 | 87 |
| Boron (B) | $\mu g/m^3$ | *120* | - | 4.42E-03 | | 4.49E-03 | 4.62E-03 | 4.34E-03 | 4.61E-03 | 4.67E-03 | 4.78E-03 | 4.52E-03 | 4.55E-03 | 1.06E-02 | | 4.46E-03 | 4.50E-03 | 4.50E-03 | *120* | 0 | 4.84E-03 | 5.00E-03 | 4.34E-03 | 1.06E-02 | 4.62E-03 | 4.78E-03 | 1.06E-02 | 13 | 87 |
| Cadmium (Cd) | $\mu g/m^3$ | *0.025* | *0.025* | 6.66E-05 | | 3.65E-05 | 3.52E-04 | 5.38E-05 | 1.43E-04 | 1.42E-04 | 1.01E-04 | 1.57E-04 | 1.15E-04 | 3.02E-04 | | 1.24E-04 | 1.00E-04 | 8.40E-05 | *0.025* | 0 | 1.14E-04 | 1.37E-04 | 3.65E-05 | 3.52E-04 | 3.52E-04 | 1.57E-04 | 3.02E-04 | 13 | 87 |
| Chromium (Cr) | $\mu g/m^3$ | *0.5* | - | 1.00E-03 | | 1.02E-03 | 2.15E-03 | 9.83E-04 | 1.04E-03 | 3.24E-03 | 2.55E-03 | 2.59E-03 | 2.67E-03 | 4.53E-03 | | 1.01E-03 | 1.02E-03 | 1.02E-03 | *0.5* | 0 | 1.64E-03 | 1.91E-03 | 9.83E-04 | 4.53E-03 | 2.15E-03 | 3.24E-03 | 4.53E-03 | 13 | 87 |
| Cobalt (Co) | $\mu g/m^3$ | *0.1* | *0.1* | 7.96E-05 | | 6.28E-05 | 1.54E-04 | 5.20E-05 | 1.27E-04 | 4.26E-04 | 3.02E-04 | 1.63E-04 | 2.92E-04 | 5.06E-04 | | 1.22E-04 | 1.60E-04 | 1.01E-04 | *0.1* | 0 | 1.56E-04 | 1.96E-04 | 5.20E-05 | 5.06E-04 | 1.54E-04 | 4.26E-04 | 5.06E-04 | 13 | 87 |
| Copper (Cu) | $\mu g/m^3$ | *50* | - | 1.94E-02 | | 8.38E-03 | 6.83E-02 | 1.46E-02 | 2.75E-02 | 4.29E-02 | 2.47E-02 | 7.90E-02 | 2.95E-02 | 7.35E-02 | | 1.50E-02 | 4.16E-02 | 3.30E-02 | *50* | 0 | 3.01E-02 | 3.67E-02 | 8.38E-03 | 7.90E-02 | 6.83E-02 | 7.90E-02 | 7.35E-02 | 13 | 87 |
| Iron (Fe) | $\mu g/m^3$ | *4* | - | 2.68E-01 | | 1.69E-01 | 4.54E-01 | 1.89E-01 | 4.92E-01 | 1.24E+00 | 8.61E-01 | 6.57E-01 | 8.85E-01 | 1.32E+00 | | 2.81E-01 | 5.56E-01 | 3.35E-01 | *4* | 0 | 4.85E-01 | 5.93E-01 | 1.69E-01 | 1.32E+00 | 4.54E-01 | 1.24E+00 | 1.32E+00 | 13 | 87 |
| Lead (Pb) | $\mu g/m^3$ | *0.5* | *0.5* | 1.72E-03 | Invalid | 6.40E-04 | 1.38E-03 | 9.54E-04 | 2.24E-03 | 3.78E-03 | 1.72E-03 | 1.55E-03 | 2.52E-03 | 3.65E-03 | Invalid | 1.18E-03 | 3.67E-03 | 1.37E-03 | *2* | 0 | 1.78E-03 | 2.03E-03 | 6.40E-04 | 3.78E-03 | 1.72E-03 | 3.78E-03 | 3.67E-03 | 13 | 87 |
| Magnesium (Mg) | $\mu g/m^3$ | - | - | 1.70E-01 | | 1.28E-01 | 3.54E-01 | 1.01E-01 | 1.71E-01 | 8.71E-01 | 4.53E-01 | 2.34E-01 | 4.99E-01 | 9.12E-01 | | 1.84E-01 | 2.95E-01 | 1.78E-01 | - | - | 2.76E-01 | 3.50E-01 | 1.01E-01 | 9.12E-01 | 3.54E-01 | 8.71E-01 | 9.12E-01 | 13 | 87 |
| Manganese (Mn) | $\mu g/m^3$ | *0.4* | - | 1.01E-02 | | 5.25E-03 | 1.51E-02 | 3.75E-03 | 1.09E-02 | 3.70E-02 | 1.98E-02 | 1.62E-02 | 2.23E-02 | 6.12E-02 | | 7.31E-03 | 1.20E-02 | 1.16E-02 | *0.4* | 0 | 1.36E-02 | 1.79E-02 | 3.75E-03 | 6.12E-02 | 1.51E-02 | 3.70E-02 | 6.12E-02 | 13 | 87 |
| Molybdenum (Mo) | $\mu g/m^3$ | *120* | - | 9.13E-04 | | 4.37E-04 | 3.24E-03 | 6.88E-04 | 1.10E-03 | 1.85E-03 | 1.15E-03 | 2.58E-03 | 1.12E-03 | 2.20E-03 | | 6.00E-04 | 9.96E-04 | 1.99E-03 | *120* | 0 | 1.24E-03 | 1.45E-03 | 4.37E-04 | 3.24E-03 | 3.24E-03 | 2.58E-03 | 2.20E-03 | 13 | 87 |
| Nickel (Ni) | $\mu g/m^3$ | *0.2* | - | 1.03E-03 | | 6.22E-04 | 1.38E-03 | 5.72E-04 | 1.01E-03 | 2.02E-03 | 1.53E-03 | 1.31E-03 | 1.72E-03 | 2.20E-03 | | 9.22E-04 | 1.01E-03 | 1.40E-03 | *0.2* | 0 | 1.20E-03 | 1.29E-03 | 5.72E-04 | 2.20E-03 | 1.38E-03 | 2.02E-03 | 2.20E-03 | 13 | 87 |
| Phosphorus (P) | $\mu g/m^3$ | - | - | 2.21E-01 | | 2.24E-01 | 2.31E-01 | 2.17E-01 | 2.30E-01 | 2.33E-01 | 2.39E-01 | 2.26E-01 | 2.27E-01 | 2.21E-01 | | 2.23E-01 | 2.25E-01 | 2.25E-01 | - | - | 2.26E-01 | 2.26E-01 | 2.17E-01 | 2.39E-01 | 2.31E-01 | 2.39E-01 | 2.25E-01 | 13 | 87 |
| Selenium (Se) | $\mu g/m^3$ | *10* | *10* | 3.83E-04 | | 3.89E-04 | 4.00E-04 | 3.76E-04 | 4.00E-04 | 8.71E-04 | 4.15E-04 | 3.92E-04 | 3.94E-04 | 3.82E-04 | | 3.86E-04 | 3.90E-04 | 3.90E-04 | *10* | 0 | 4.16E-04 | 4.28E-04 | 3.76E-04 | 8.71E-04 | 4.00E-04 | 8.71E-04 | 3.90E-04 | 13 | 87 |
| Silver (Ag) | $\mu g/m^3$ | *1* | *1* | 2.65E-05 | | 2.69E-05 | 2.77E-05 | 2.60E-05 | 2.77E-05 | 2.80E-05 | 2.87E-05 | 2.71E-05 | 1.79E-04 | 7.53E-05 | | 2.68E-05 | 6.30E-05 | 2.70E-05 | *1* | 0 | 3.63E-05 | 4.54E-05 | 2.60E-05 | 1.79E-04 | 2.77E-05 | 1.79E-04 | 7.53E-05 | 13 | 87 |
| Strontium (Sr) | $\mu g/m^3$ | *120* | - | 2.59E-03 | | 2.33E-03 | 1.42E-02 | 3.76E-03 | 5.22E-03 | 1.70E-02 | 9.76E-03 | 5.24E-03 | 1.30E-02 | 2.86E-02 | | 3.21E-03 | 1.33E-02 | 6.78E-03 | *120* | 0 | 7.26E-03 | 9.61E-03 | 2.33E-03 | 2.86E-02 | 1.42E-02 | 1.70E-02 | 2.86E-02 | 13 | 87 |
| Thallium (Tl) | $\mu g/m^3$ | - | - | 2.65E-05 | | 2.69E-05 | 2.77E-05 | 2.60E-05 | 2.77E-05 | 2.80E-05 | 2.87E-05 | 2.71E-05 | 2.73E-05 | 5.82E-05 | | 2.68E-05 | 2.70E-05 | 2.70E-05 | - | - | 2.89E-05 | 2.96E-05 | 2.60E-05 | 5.82E-05 | 2.77E-05 | 2.87E-05 | 5.82E-05 | 13 | 87 |
| Tin (Sn) | $\mu g/m^3$ | *10* | *10* | 9.37E-04 | | 5.80E-04 | 8.55E-04 | 5.14E-04 | 1.59E-03 | 1.63E-03 | 8.35E-04 | 1.01E-03 | 7.15E-04 | 2.07E-03 | | 4.58E-04 | 7.62E-04 | 1.49E-03 | *10* | 0 | 9.32E-04 | 1.03E-03 | 4.58E-04 | 2.07E-03 | 9.37E-04 | 1.63E-03 | 2.07E-03 | 13 | 87 |
| Titanium (Ti) | $\mu g/m^3$ | *120* | - | 3.24E-03 | | 3.29E-03 | 1.05E-02 | 3.18E-03 | 8.60E-03 | 2.24E-02 | 2.36E-02 | 1.08E-02 | 2.61E-02 | 3.71E-02 | | 1.07E-02 | 1.62E-02 | 6.60E-03 | *120* | 0 | 1.05E-02 | 1.40E-02 | 3.18E-03 | 3.71E-02 | 1.05E-02 | 2.61E-02 | 3.71E-02 | 13 | 87 |
| Uranium (Ur) | $\mu g/m^3$ | *1.5* | - | 7.96E-06 | | 5.92E-06 | 1.50E-05 | 1.43E-05 | 1.27E-05 | 4.82E-05 | 5.57E-05 | 1.41E-05 | 4.56E-05 | 4.55E-05 | | 8.32E-06 | 3.89E-05 | 1.27E-05 | *1.5* | 0 | 1.90E-05 | 2.50E-05 | 5.92E-06 | 5.57E-05 | 1.50E-05 | 5.57E-05 | 4.55E-05 | 13 | 87 |
| Vanadium (V) | $\mu g/m^3$ | *2* | *1* | 1.47E-03 | | 1.50E-03 | 1.54E-03 | 1.45E-03 | 1.54E-03 | 1.56E-03 | 1.59E-03 | 1.51E-03 | 1.52E-03 | 1.47E-03 | | 1.49E-03 | 1.50E-03 | 1.50E-03 | *2* | 0 | 1.51E-03 | 1.51E-03 | 1.45E-03 | 1.59E-03 | 1.54E-03 | 1.59E-03 | 1.50E-03 | 13 | 87 |
| Zinc (Zn) | $\mu g/m^3$ | *120* | - | 3.55E-02 | | 1.41E-02 | 2.97E-02 | 1.17E-02 | 3.76E-02 | 4.85E-02 | 2.10E-02 | 4.91E-02 | 2.50E-02 | 6.47E-02 | | 2.05E-02 | 2.84E-02 | 2.84E-02 | *120* | 0 | 2.86E-02 | 3.19E-02 | 1.17E-02 | 6.47E-02 | 3.55E-02 | 4.91E-02 | 6.47E-02 | 13 | 87 |
| Zirconium (Zr) | $\mu g/m^3$ | *20* | - | 5.89E-04 | | 5.98E-04 | 6.15E-04 | 5.78E-04 | 6.15E-04 | 6.22E-04 | 6.38E-04 | 6.03E-04 | 6.06E-04 | 5.88E-04 | | 5.95E-04 | 6.00E-04 | 6.00E-04 | *20* | 0 | 6.03E-04 | 6.04E-04 | 5.78E-04 | 6.38E-04 | 6.15E-04 | 6.38E-04 | 6.00E-04 | 13 | 87 |

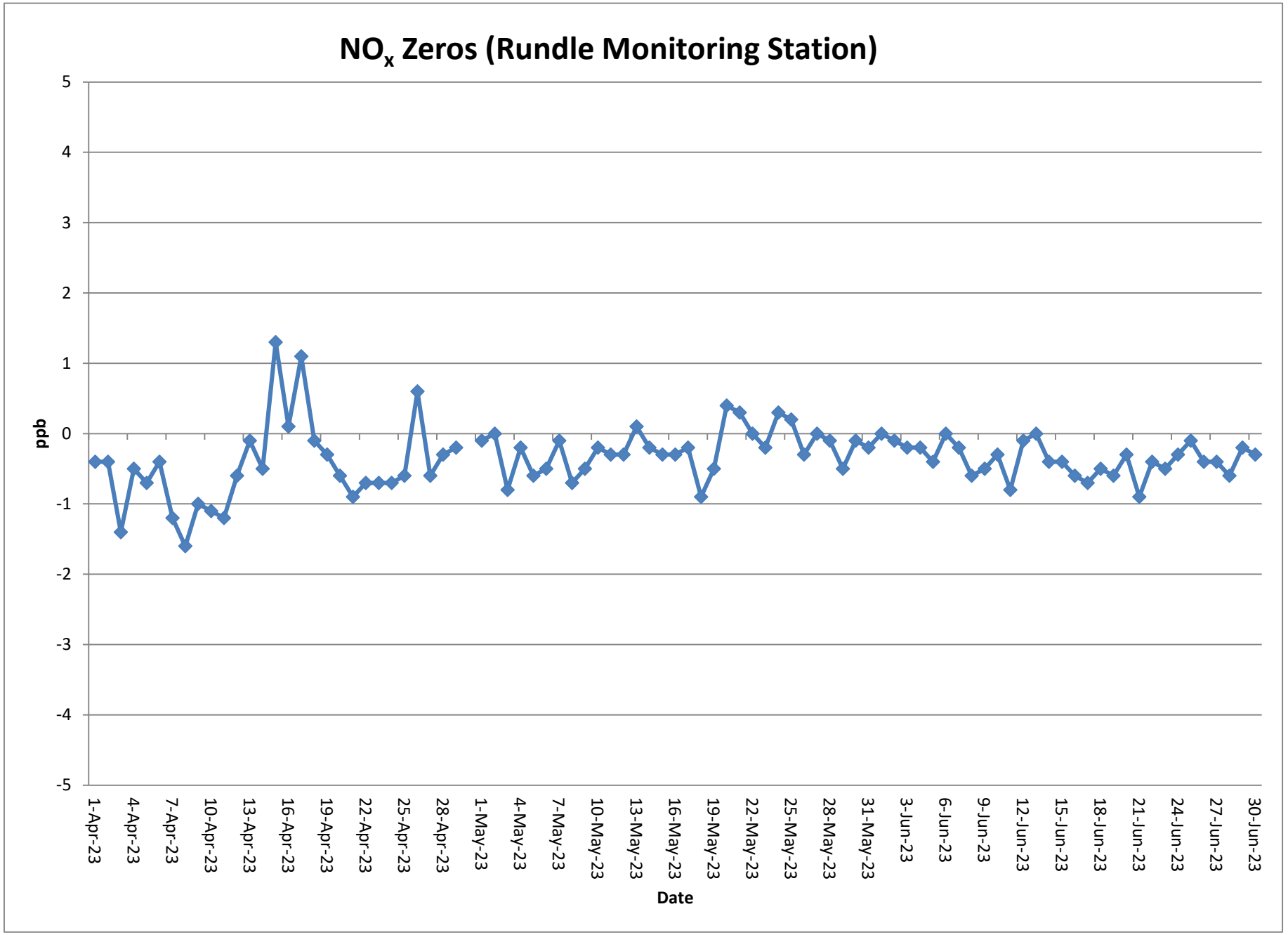
NOTE: All non-detectable results were reported as 1/2 of the detection limit

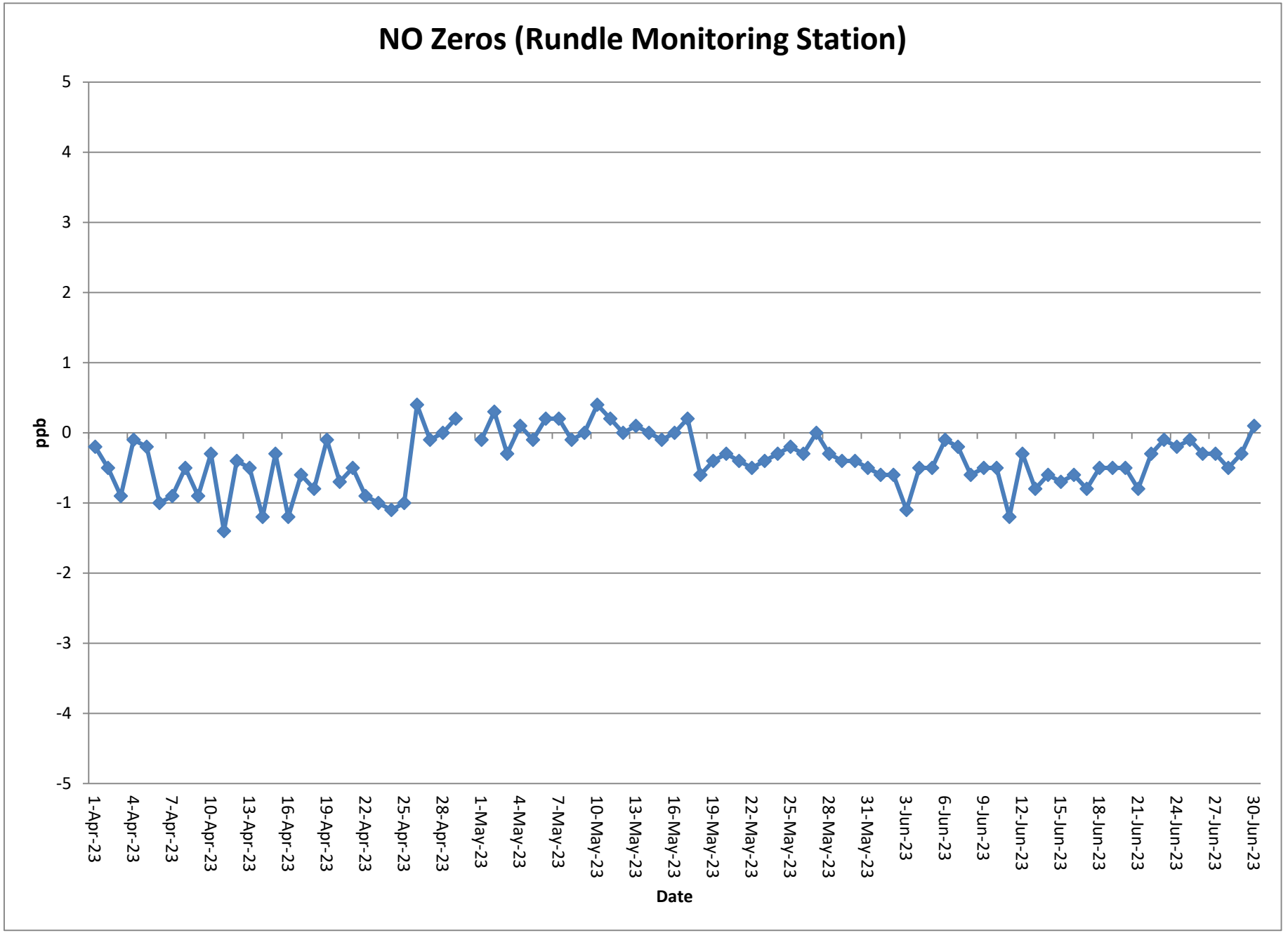
**Table B9: 2023 Rundle Road Station Q2 Monitoring Results for TSP and Metals**

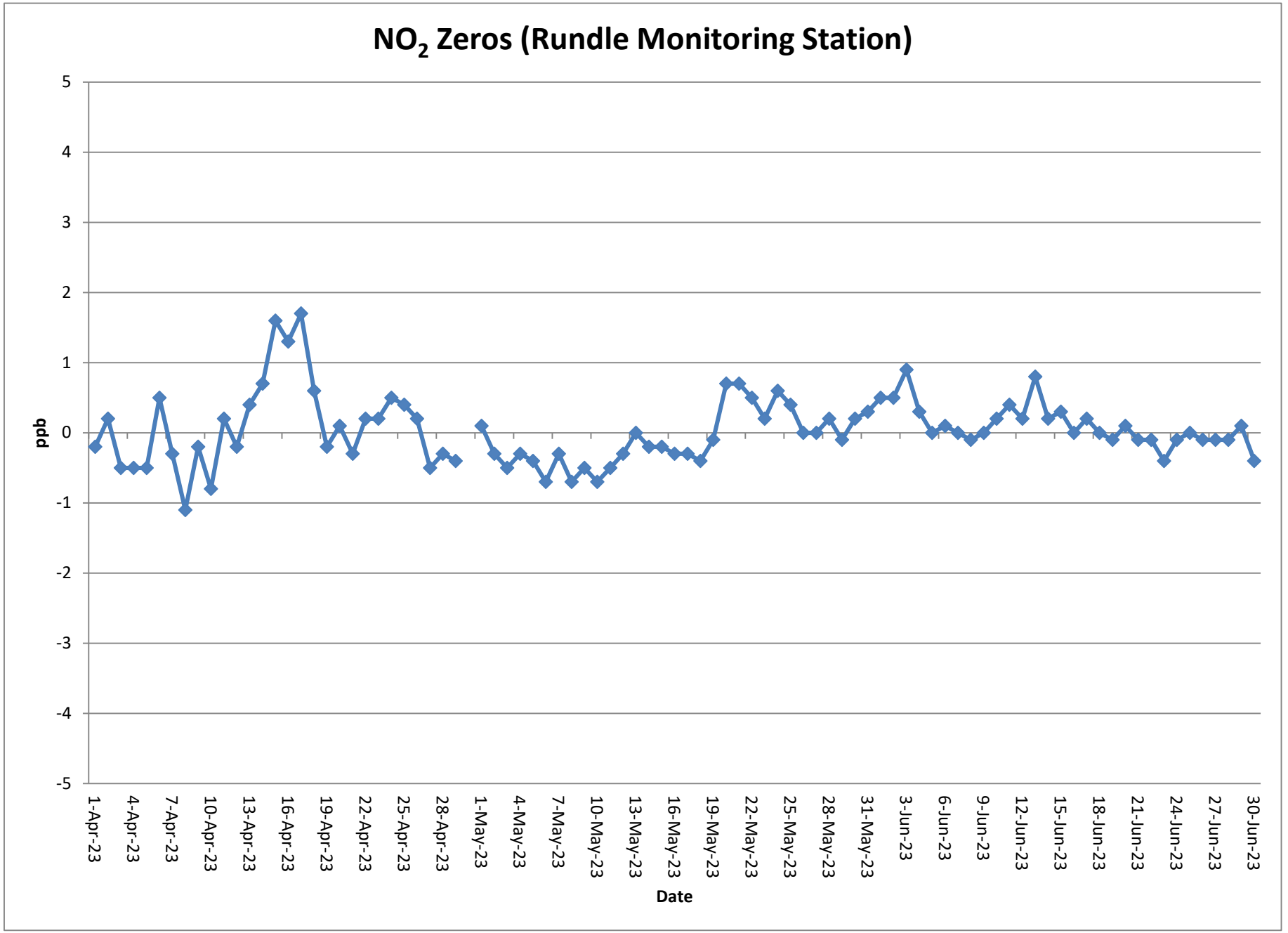
| Contaminant | Units | *MECP Criteria* | *HHRA Health Based Criteria* | 6 Apr 23 | 12 Apr 23 | 18 Apr 23 | 24 Apr 23 | 30 Apr 23 | 6 May 23 | 12 May 23 | 18 May 23 | 24 May 23 | 30 May 23 | 5 Jun 23 | 11 Jun 23 | 17 Jun 23 | 23 Jun 23 | 29 Jun 23 | MECP Criteria ($\mu g/m^3$) | No. > Criteria | Geometric Mean | Arithmetic Mean | Q2 Minimum Concentration | Q2 Maximum Concentration | April Maximum Concentration | May Maximum Concentration | June Maximum Concentration | Number of Valid Samples | % Valid data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Particulate (TSP) | $\mu g/m^3$ | *120* | *120* | 22.96 | 148.29 | 38.89 | 43.83 | | 20.21 | 99.55 | 63.88 | 35.68 | 87.90 | 96.32 | 77.07 | 50.03 | 51.92 | 65.00 | *120* | 1 | 55.9 | 64.4 | 20.21 | 148.29 | 148.29 | 99.55 | 96.32 | 14 | 93 |
| Mercury (Hg) | $\mu g/m^3$ | *2* | *2* | 8.51E-06 | 2.06E-05 | 3.03E-06 | 3.06E-06 | | 8.50E-06 | 2.17E-05 | 1.23E-05 | 9.81E-06 | 2.48E-05 | 2.33E-05 | 1.08E-05 | 8.83E-06 | 9.58E-06 | 1.67E-05 | *2* | 0 | 1.09E-05 | 1.30E-05 | 3.03E-06 | 2.48E-05 | 2.06E-05 | 2.48E-05 | 2.33E-05 | 14 | 93 |
| Aluminum (Al) | $\mu g/m^3$ | *4.8* | - | 2.02E-01 | 1.28E+00 | 3.08E-01 | 1.83E-01 | | 1.67E-01 | 1.07E+00 | 7.86E-01 | 2.43E-01 | 9.24E-01 | 4.39E-01 | 3.70E-01 | 1.30E-01 | 3.53E-01 | 2.71E-01 | *4.8* | 0 | 3.71E-01 | 4.81E-01 | 1.30E-01 | 1.28E+00 | 1.28E+00 | 1.07E+00 | 4.39E-01 | 14 | 93 |
| Antimony (Sb) | $\mu g/m^3$ | *25* | *25* | 7.65E-04 | 1.57E-03 | 4.12E-04 | 3.42E-04 | | 7.52E-04 | 2.11E-03 | 6.27E-04 | 1.56E-03 | 1.05E-03 | 1.25E-03 | 8.54E-04 | 2.52E-04 | 6.29E-04 | 9.06E-04 | *25* | 0 | 7.98E-04 | 9.34E-04 | 2.52E-04 | 2.11E-03 | 1.57E-03 | 2.11E-03 | 1.25E-03 | 14 | 93 |
| Arsenic (As) | $\mu g/m^3$ | *0.3* | *0.3* | 9.11E-04 | 9.35E-04 | 9.09E-04 | 9.17E-04 | | 9.10E-04 | 5.36E-03 | 9.21E-04 | 9.20E-04 | 9.55E-04 | 2.09E-03 | 9.55E-04 | 9.46E-04 | 8.98E-04 | 8.94E-04 | *0.3* | 0 | 1.11E-03 | 1.32E-03 | 8.94E-04 | 5.36E-03 | 9.35E-04 | 5.36E-03 | 2.09E-03 | 14 | 93 |
| Barium (Ba) | $\mu g/m^3$ | *10* | *10* | 1.09E-02 | 2.12E-02 | 8.12E-03 | 4.82E-03 | | 8.01E-03 | 2.53E-02 | 1.10E-02 | 9.63E-03 | 1.56E-02 | 2.21E-02 | 8.85E-03 | 2.61E-03 | 8.92E-03 | 1.25E-02 | *10* | 0 | 1.04E-02 | 1.21E-02 | 2.61E-03 | 2.53E-02 | 2.12E-02 | 2.53E-02 | 2.21E-02 | 14 | 93 |
| Beryllium (Be) | $\mu g/m^3$ | *0.01* | *0.01* | 1.52E-05 | 7.79E-05 | 1.51E-05 | 1.53E-05 | | 1.52E-05 | 5.17E-05 | 3.87E-05 | 1.53E-05 | 4.20E-05 | 1.53E-05 | 1.59E-05 | 1.58E-05 | 1.50E-05 | 3.28E-05 | *0.01* | 0 | 2.28E-05 | 2.72E-05 | 1.50E-05 | 7.79E-05 | 7.79E-05 | 5.17E-05 | 3.28E-05 | 14 | 93 |
| Bismuth (Bi) | $\mu g/m^3$ | - | - | 5.47E-04 | 5.61E-04 | 5.45E-04 | 5.50E-04 | | 5.46E-04 | 5.74E-04 | 5.53E-04 | 5.52E-04 | 5.73E-04 | 5.52E-04 | 5.73E-04 | 5.68E-04 | 5.39E-04 | 5.37E-04 | - | - | 5.55E-04 | 5.55E-04 | 5.37E-04 | 5.74E-04 | 5.61E-04 | 5.74E-04 | 5.73E-04 | 14 | 93 |
| Boron (B) | $\mu g/m^3$ | *120* | - | 4.56E-03 | 4.67E-03 | 4.54E-03 | 4.58E-03 | | 4.55E-03 | 1.60E-02 | 4.61E-03 | 4.60E-03 | 4.78E-03 | 1.10E-02 | 4.78E-03 | 4.73E-03 | 4.49E-03 | 4.47E-03 | *120* | 0 | 5.36E-03 | 5.88E-03 | 4.47E-03 | 1.60E-02 | 4.67E-03 | 1.60E-02 | 1.10E-02 | 14 | 93 |
| Cadmium (Cd) | $\mu g/m^3$ | *0.025* | *0.025* | 8.75E-05 | 2.70E-04 | 5.88E-05 | 3.36E-05 | | 7.10E-05 | 1.23E-04 | 6.88E-05 | 2.07E-04 | 1.18E-04 | 2.43E-04 | 1.59E-04 | 1.31E-04 | 8.86E-05 | 1.33E-04 | *0.025* | 0 | 1.11E-04 | 1.28E-04 | 3.36E-05 | 2.70E-04 | 2.70E-04 | 2.07E-04 | 2.43E-04 | 14 | 93 |
| Chromium (Cr) | $\mu g/m^3$ | *0.5* | - | 2.49E-03 | 6.29E-03 | 2.18E-03 | 1.04E-03 | | 1.03E-03 | 5.11E-03 | 3.26E-03 | 2.51E-03 | 3.95E-03 | 4.54E-03 | 2.61E-03 | 1.07E-03 | 1.02E-03 | 2.33E-03 | *0.5* | 0 | 2.38E-03 | 2.82E-03 | 1.02E-03 | 6.29E-03 | 6.29E-03 | 5.11E-03 | 4.54E-03 | 14 | 93 |
| Cobalt (Co) | $\mu g/m^3$ | *0.1* | *0.1* | 1.71E-04 | 8.97E-04 | 1.89E-04 | 9.78E-05 | | 1.24E-04 | 6.51E-04 | 5.06E-04 | 1.78E-04 | 4.82E-04 | 3.29E-04 | 2.39E-04 | 8.96E-05 | 2.17E-04 | 2.19E-04 | *0.1* | 0 | 2.48E-04 | 3.13E-04 | 8.96E-05 | 8.97E-04 | 8.97E-04 | 6.51E-04 | 3.29E-04 | 14 | 93 |
| Copper (Cu) | $\mu g/m^3$ | *50* | - | 7.84E-02 | 5.53E-02 | 5.72E-02 | 5.15E-02 | | 9.34E-02 | 1.38E-01 | 7.19E-02 | 1.02E-01 | 7.07E-02 | 1.34E-01 | 9.30E-02 | 6.13E-02 | 1.46E-01 | 1.11E-01 | *50* | 0 | 8.52E-02 | 9.03E-02 | 5.15E-02 | 1.46E-01 | 7.84E-02 | 1.38E-01 | 1.46E-01 | 14 | 93 |
| Iron (Fe) | $\mu g/m^3$ | *4* | - | 5.03E-01 | 2.19E+00 | 5.45E-01 | 2.65E-01 | | 3.25E-01 | 1.69E+00 | 1.19E+00 | 5.22E-01 | 1.52E+00 | 8.28E-01 | 7.77E-01 | 1.67E-01 | 6.71E-01 | 5.26E-01 | *4* | 0 | 6.62E-01 | 8.37E-01 | 1.67E-01 | 2.19E+00 | 2.19E+00 | 1.69E+00 | 8.28E-01 | 14 | 93 |
| Lead (Pb) | $\mu g/m^3$ | *0.5* | *0.5* | 2.04E-03 | 7.66E-03 | 1.21E-03 | 8.74E-04 | | 1.97E-03 | 4.40E-03 | 2.24E-03 | 1.69E-03 | 3.90E-03 | 3.15E-03 | 3.67E-03 | 1.68E-03 | 2.22E-03 | 2.05E-03 | *2* | 0 | 2.38E-03 | 2.77E-03 | 8.74E-04 | 7.66E-03 | 7.66E-03 | 4.40E-03 | 3.67E-03 | 14 | 93 |
| Magnesium (Mg) | $\mu g/m^3$ | - | - | 5.01E-01 | 2.51E+00 | 3.57E-01 | 1.74E-01 | Invalid | 1.71E-01 | 1.27E+00 | 7.49E-01 | 2.90E-01 | 8.34E-01 | 5.77E-01 | 4.13E-01 | 1.17E-01 | 2.89E-01 | 3.04E-01 | - | - | 4.31E-01 | 6.11E-01 | 1.17E-01 | 2.51E+00 | 2.51E+00 | 1.27E+00 | 5.77E-01 | 14 | 93 |
| Manganese (Mn) | $\mu g/m^3$ | *0.4* | - | 1.60E-02 | 7.29E-02 | 1.53E-02 | 5.39E-03 | | 8.25E-03 | 4.94E-02 | 2.72E-02 | 1.61E-02 | 3.15E-02 | 4.39E-02 | 2.05E-02 | 6.16E-03 | 1.18E-02 | 1.69E-02 | *0.4* | 0 | 1.86E-02 | 2.44E-02 | 5.39E-03 | 7.29E-02 | 7.29E-02 | 4.94E-02 | 4.39E-02 | 14 | 93 |
| Molybdenum (Mo) | $\mu g/m^3$ | *120* | - | 2.24E-03 | 2.36E-03 | 1.68E-03 | 2.37E-03 | | 3.36E-03 | 4.11E-03 | 2.62E-03 | 3.15E-03 | 2.69E-03 | 3.70E-03 | 3.27E-03 | 2.21E-03 | 9.28E-03 | 7.16E-03 | *120* | 0 | 3.19E-03 | 3.58E-03 | 1.68E-03 | 9.28E-03 | 2.37E-03 | 4.11E-03 | 9.28E-03 | 14 | 93 |
| Nickel (Ni) | $\mu g/m^3$ | *0.2* | - | 1.41E-03 | 3.36E-03 | 1.24E-03 | 8.92E-04 | | 7.89E-04 | 2.42E-03 | 2.06E-03 | 1.42E-03 | 2.47E-03 | 1.93E-03 | 1.29E-03 | 1.02E-03 | 1.66E-03 | 3.04E-03 | *0.2* | 0 | 1.63E-03 | 1.79E-03 | 7.89E-04 | 3.36E-03 | 3.36E-03 | 2.47E-03 | 3.04E-03 | 14 | 93 |
| Phosphorus (P) | $\mu g/m^3$ | - | - | 2.28E-01 | 2.34E-01 | 2.27E-01 | 2.29E-01 | | 2.28E-01 | 2.39E-01 | 2.30E-01 | 2.30E-01 | 2.39E-01 | 2.30E-01 | 2.39E-01 | 2.37E-01 | 2.25E-01 | 2.24E-01 | - | - | 2.31E-01 | 2.31E-01 | 2.24E-01 | 2.39E-01 | 2.34E-01 | 2.39E-01 | 2.39E-01 | 14 | 93 |
| Selenium (Se) | $\mu g/m^3$ | *10* | *10* | 3.95E-04 | 1.43E-03 | 3.94E-04 | 3.97E-04 | | 3.94E-04 | 9.57E-04 | 3.99E-04 | 3.99E-04 | 4.14E-04 | 3.99E-04 | 1.02E-03 | 4.10E-04 | 3.89E-04 | 3.88E-04 | *10* | 0 | 4.97E-04 | 5.56E-04 | 3.88E-04 | 1.43E-03 | 1.43E-03 | 9.57E-04 | 1.02E-03 | 14 | 93 |
| Silver (Ag) | $\mu g/m^3$ | *1* | *1* | 2.73E-05 | 6.04E-05 | 2.73E-05 | 2.75E-05 | | 2.73E-05 | 7.79E-05 | 2.76E-05 | 9.26E-05 | 2.96E-04 | 9.02E-05 | 8.92E-05 | 2.84E-05 | 1.35E-04 | 9.90E-05 | *1* | 0 | 5.89E-05 | 7.90E-05 | 2.73E-05 | 2.96E-04 | 6.04E-05 | 2.96E-04 | 1.35E-04 | 14 | 93 |
| Strontium (Sr) | $\mu g/m^3$ | *120* | - | 8.99E-03 | 5.21E-02 | 1.25E-02 | 3.73E-03 | | 5.10E-03 | 2.79E-02 | 2.11E-02 | 8.28E-03 | 2.85E-02 | 1.35E-02 | 1.20E-02 | 2.78E-03 | 1.28E-02 | 9.60E-03 | *120* | 0 | 1.17E-02 | 1.56E-02 | 2.78E-03 | 5.21E-02 | 5.21E-02 | 2.85E-02 | 1.35E-02 | 14 | 93 |
| Thallium (Tl) | $\mu g/m^3$ | - | - | 2.73E-05 | 2.80E-05 | 2.73E-05 | 2.75E-05 | | 2.73E-05 | 2.87E-05 | 5.77E-05 | 2.76E-05 | 9.81E-05 | 5.71E-05 | 2.87E-05 | 2.84E-05 | 2.69E-05 | 6.32E-05 | - | - | 3.57E-05 | 3.96E-05 | 2.69E-05 | 9.81E-05 | 2.80E-05 | 9.81E-05 | 6.32E-05 | 14 | 93 |
| Tin (Sn) | $\mu g/m^3$ | *10* | *10* | 1.16E-03 | 1.96E-03 | 8.12E-04 | 1.19E-03 | | 8.86E-04 | 1.98E-03 | 6.70E-04 | 8.83E-04 | 1.18E-03 | 1.61E-03 | 9.75E-04 | 1.89E-04 | 1.21E-03 | 1.05E-03 | *10* | 0 | 1.00E-03 | 1.13E-03 | 1.89E-04 | 1.98E-03 | 1.96E-03 | 1.98E-03 | 1.61E-03 | 14 | 93 |
| Titanium (Ti) | $\mu g/m^3$ | *120* | - | 1.09E-02 | 4.05E-02 | 8.48E-03 | 3.36E-03 | | 7.89E-03 | 3.45E-02 | 3.01E-02 | 9.81E-03 | 4.20E-02 | 2.21E-02 | 1.46E-02 | 3.47E-03 | 1.44E-02 | 1.19E-02 | *120* | 0 | 1.37E-02 | 1.81E-02 | 3.36E-03 | 4.20E-02 | 4.05E-02 | 4.20E-02 | 2.21E-02 | 14 | 93 |
| Uranium (Ur) | $\mu g/m^3$ | *1.5* | - | 1.70E-05 | 1.02E-04 | 2.13E-05 | 3.17E-05 | | 1.45E-05 | 6.18E-05 | 6.70E-05 | 1.82E-05 | 9.24E-05 | 2.76E-05 | 9.49E-05 | 7.95E-06 | 4.96E-05 | 3.84E-05 | *1.5* | 0 | 3.53E-05 | 4.60E-05 | 7.95E-06 | 1.02E-04 | 1.02E-04 | 9.24E-05 | 9.49E-05 | 14 | 93 |
| Vanadium (V) | $\mu g/m^3$ | *2* | *1* | 1.52E-03 | 3.36E-03 | 1.51E-03 | 1.53E-03 | | 1.52E-03 | 1.60E-03 | 1.54E-03 | 1.53E-03 | 1.59E-03 | 1.53E-03 | 1.59E-03 | 1.58E-03 | 1.50E-03 | 1.49E-03 | *2* | 0 | 1.63E-03 | 1.67E-03 | 1.49E-03 | 3.36E-03 | 3.36E-03 | 1.60E-03 | 1.59E-03 | 14 | 93 |
| Zinc (Zn) | $\mu g/m^3$ | *120* | - | 3.42E-02 | 6.09E-02 | 2.48E-02 | 1.86E-02 | | 2.41E-02 | 5.89E-02 | 2.09E-02 | 3.29E-02 | 3.30E-02 | 6.13E-02 | 3.78E-02 | 2.07E-02 | 2.78E-02 | 4.11E-02 | *120* | 0 | 3.28E-02 | 3.55E-02 | 1.86E-02 | 6.13E-02 | 6.09E-02 | 5.89E-02 | 6.13E-02 | 14 | 93 |
| Zirconium (Zr) | $\mu g/m^3$ | *20* | - | 6.08E-04 | 6.23E-04 | 6.06E-04 | 6.11E-04 | | 6.07E-04 | 6.38E-04 | 6.14E-04 | 6.13E-04 | 6.37E-04 | 6.13E-04 | 6.37E-04 | 6.31E-04 | 5.99E-04 | 5.96E-04 | *20* | 0 | 6.17E-04 | 6.17E-04 | 5.96E-04 | 6.38E-04 | 6.23E-04 | 6.38E-04 | 6.37E-04 | 14 | 93 |

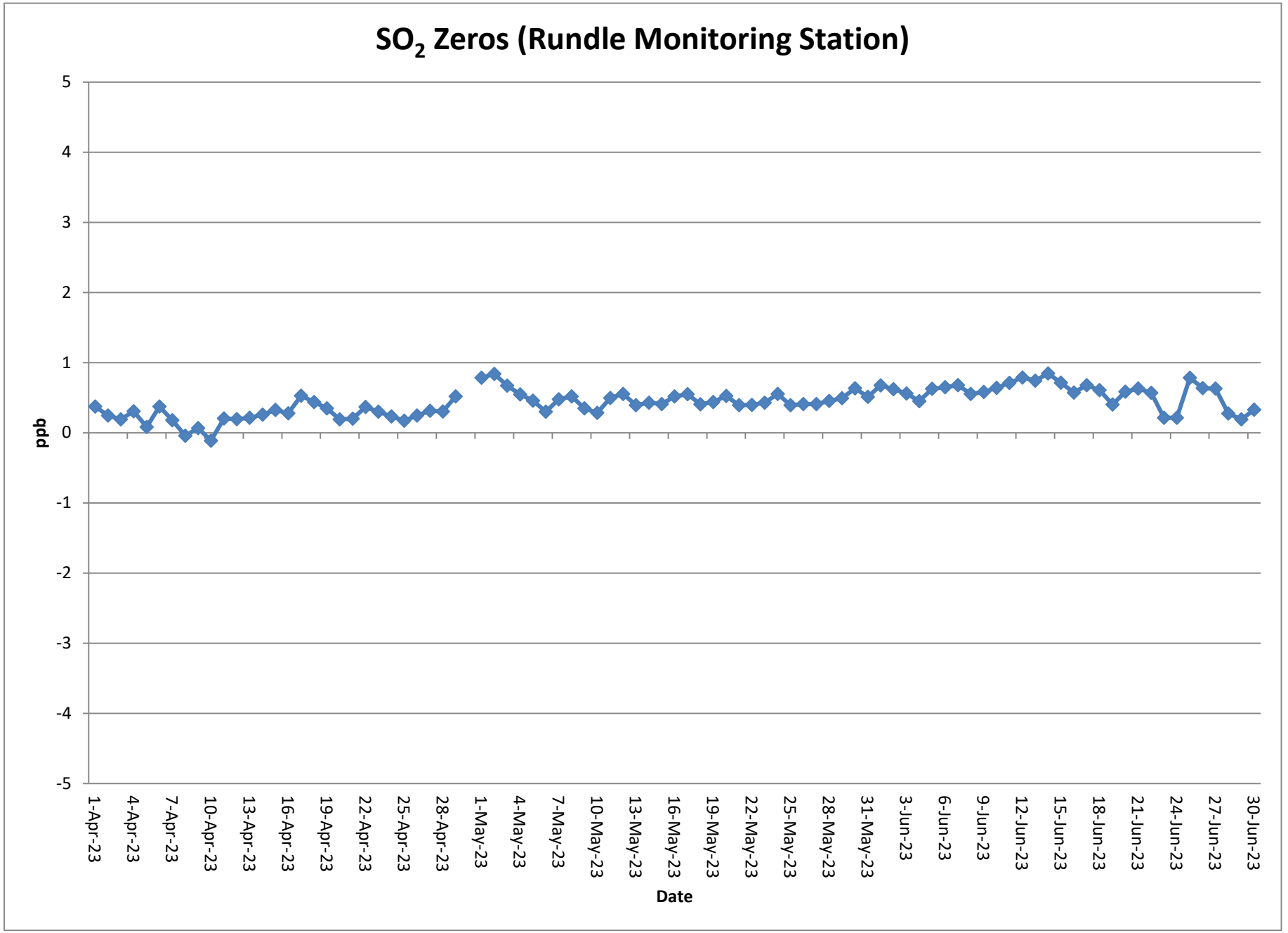
NOTE: All non-detectable results were reported as 1/2 of the detection limit

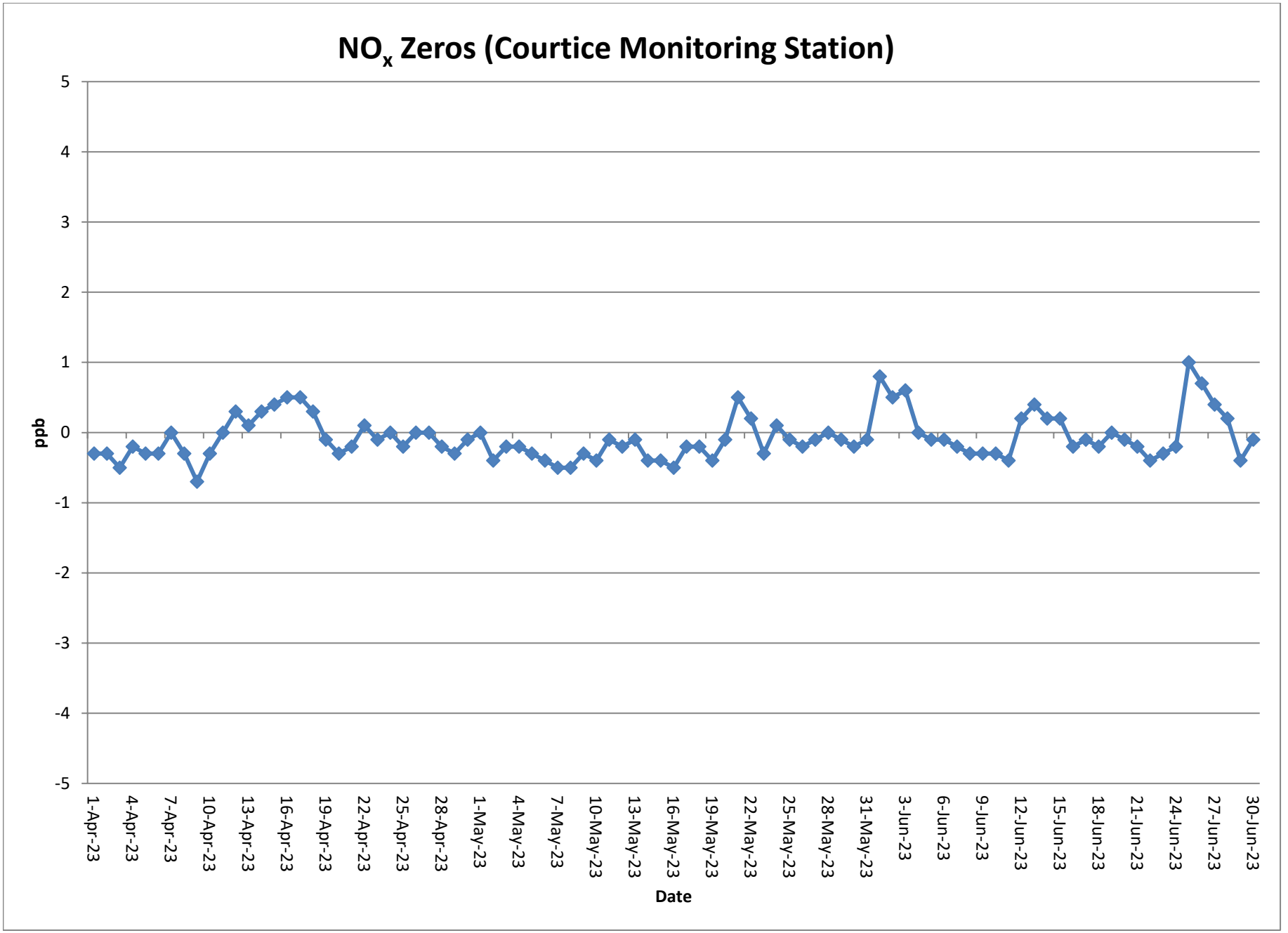
# APPENDIX C

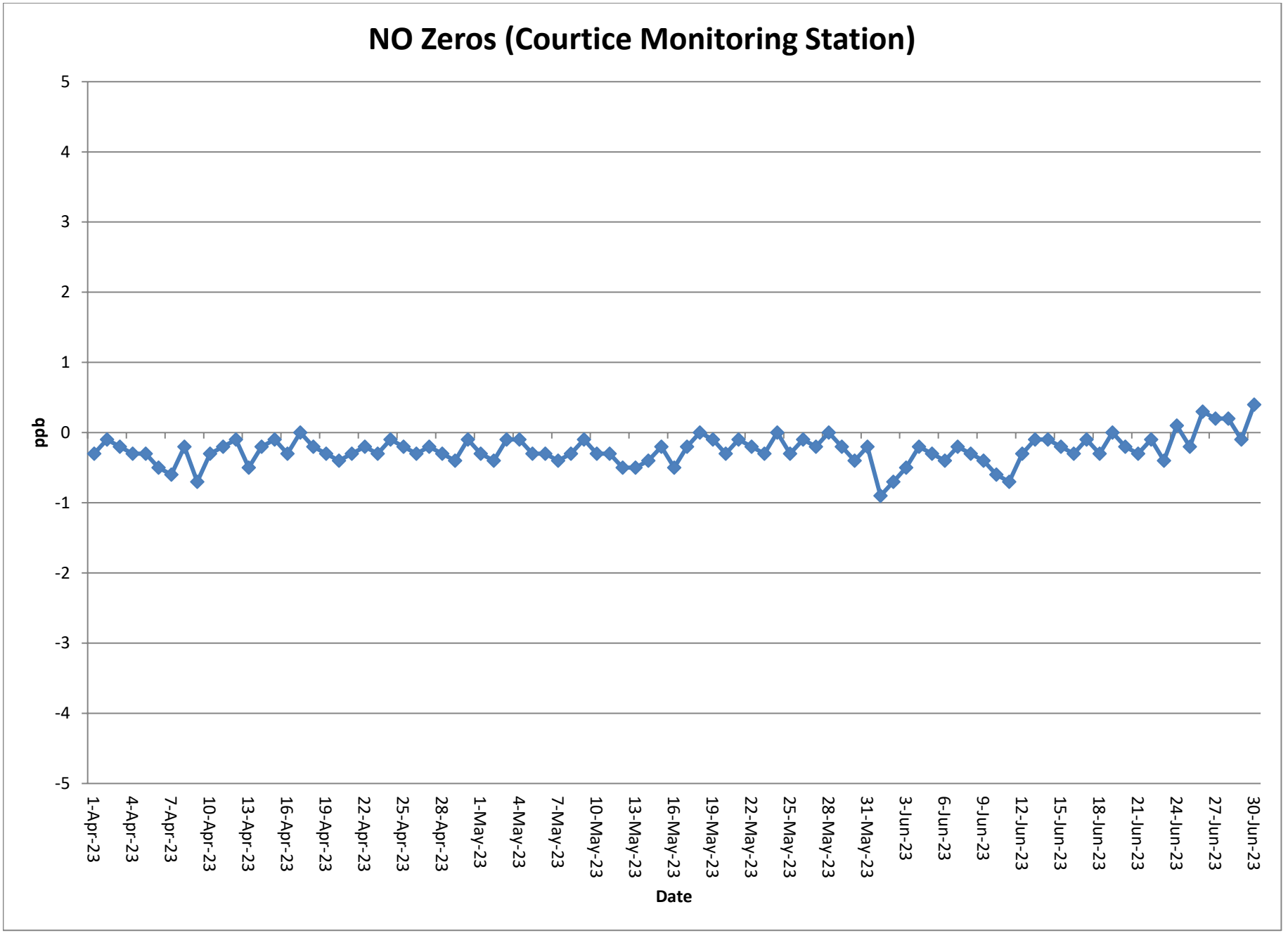

NOx Zeros (Rundle Monitoring Station)
ppb
5
4
3
2
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0
-1
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-5
1-Apr-23
4-Apr-23
7-Apr-23
10-Apr-23
13-Apr-23
16-Apr-23
19-Apr-23
22-Apr-23
25-Apr-23
28-Apr-23
1-May-23
4-May-23
7-May-23
10-May-23
13-May-23
16-May-23
19-May-23
22-May-23
25-May-23
28-May-23
31-May-23
3-Jun-23
6-Jun-23
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21-Jun-23
24-Jun-23
27-Jun-23
30-Jun-23
Date

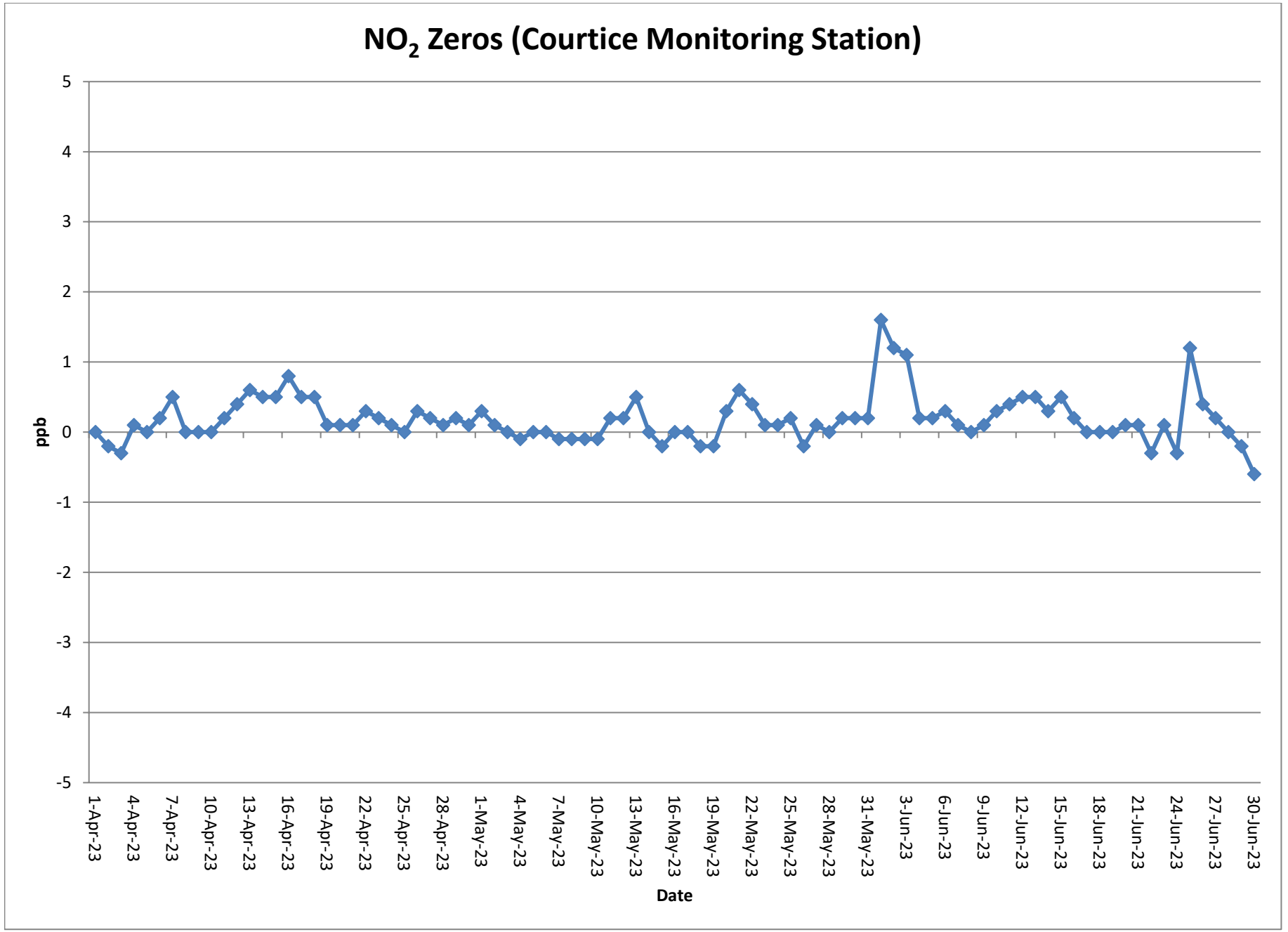

NO Zeros (Rundle Monitoring Station)
ppb
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28-Apr-23
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4-May-23
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16-May-23
19-May-23
22-May-23
25-May-23
28-May-23
31-May-23
3-Jun-23
6-Jun-23
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18-Jun-23
21-Jun-23
24-Jun-23
27-Jun-23
30-Jun-23
Date

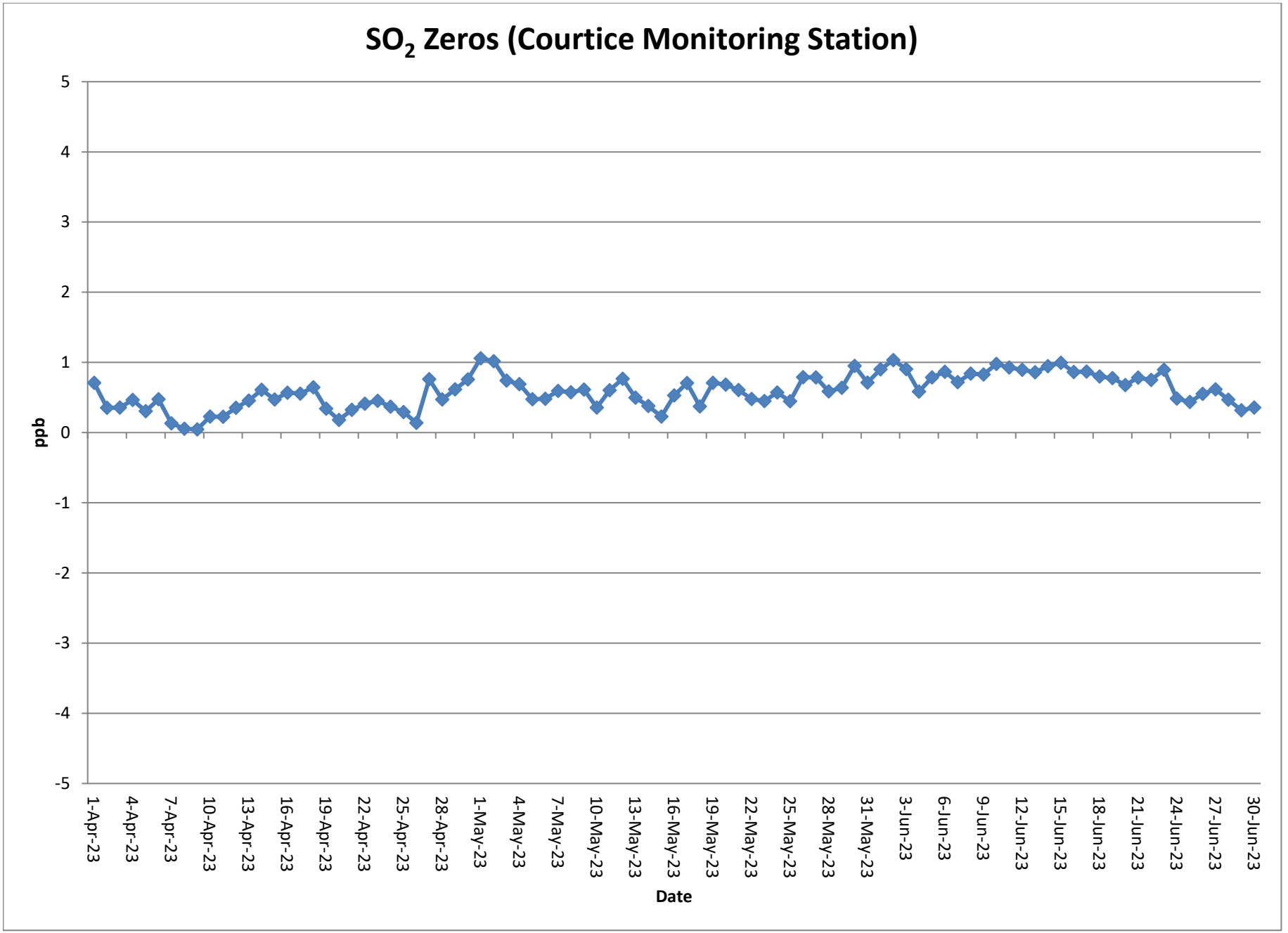

NO2 Zeros (Rundle Monitoring Station)
ppb
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2
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-1
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-3
-4
-5
1-Apr-23
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10-May-23
13-May-23
16-May-23
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22-May-23
25-May-23
28-May-23
31-May-23
3-Jun-23
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12-Jun-23
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18-Jun-23
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24-Jun-23
27-Jun-23
30-Jun-23
Date


SO2 Zeros (Rundle Monitoring Station)
ppb
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7-Apr-23
10-Apr-23
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16-Apr-23
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25-Apr-23
28-Apr-23
1-May-23
4-May-23
7-May-23
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13-May-23
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22-May-23
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31-May-23
3-Jun-23
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12-Jun-23
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18-Jun-23
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27-Jun-23
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Date


NOx Zeros (Courtice Monitoring Station)
ppb
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1-Apr-23
4-Apr-23
7-Apr-23
10-Apr-23
13-Apr-23
16-Apr-23
19-Apr-23
22-Apr-23
25-Apr-23
28-Apr-23
1-May-23
4-May-23
7-May-23
10-May-23
13-May-23
16-May-23
19-May-23
22-May-23
25-May-23
28-May-23
31-May-23
3-Jun-23
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9-Jun-23
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Date


NO Zeros (Courtice Monitoring Station)
ppb
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4-Apr-23
7-Apr-23
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7-May-23
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13-May-23
16-May-23
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25-May-23
28-May-23
31-May-23
3-Jun-23
6-Jun-23
9-Jun-23
12-Jun-23
15-Jun-23
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21-Jun-23
24-Jun-23
27-Jun-23
30-Jun-23
Date


NO2 Zeros (Courtice Monitoring Station)
ppb
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1-Apr-23
4-Apr-23
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7-May-23
10-May-23
13-May-23
16-May-23
19-May-23
22-May-23
25-May-23
28-May-23
31-May-23
3-Jun-23
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18-Jun-23
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27-Jun-23
30-Jun-23
Date


SO2 Zeros (Courtice Monitoring Station)
ppb
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4-Apr-23
7-Apr-23
10-Apr-23
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16-Apr-23
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25-Apr-23
28-Apr-23
1-May-23
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7-May-23
10-May-23
13-May-23
16-May-23
19-May-23
22-May-23
25-May-23
28-May-23
31-May-23
3-Jun-23
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24-Jun-23
27-Jun-23
30-Jun-23
Date

# APPENDIX D

**Table D1: Q2 Edit Log for $PM_{2.5}$ at Courtice Station**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emitter's Name:** Durham York Energy Centre | | | | | | | | | |
| **Contact** | **Name:** Ms. Lyndsay Waller | | **Phone:** (905) 404-0888 ext 4107 | | **Email:** Lyndsay.Waller@Durham.ca | | | | |
| **Station Number:** 45201 | | | | **Station Name:** Courtice Station | | | | | |
| **Station Address:** 100 Osbourne Road | | | | **Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON | | | | | |
| **Pollutants or Parameter:** $PM_{2.5}$ | | | **Instrument Make & Model:** Thermo Scientific Model 5030 SHARP Monitor | | | | | **s/n:** E 1563 | |
| **Data Edit Period** | | **Start Date:** April 1, 2023 | | **End Date:** June 30, 2023 | | | All testing done in EST | | |
| **Edit #** | **Edit date (dd/mm/yyyy)** | **Editor's Name** | **Edit Action** | **Starting** | | **Ending** | | **Duration** | **Reason** |
| | | | | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Deleted Hours** | |
| 1 | 26/04/2023 | SRS | Deleted Hours | 26/04/2023 | 13:00 | 26/04/2023 | 14:00 | 1 | Monthly Calibration |
| 2 | 09/05/2023 | DAJH | Zero Corrections | 01/04/2023 | 00:00 | 01/05/2023 | 00:00 | - | Correcting Values <0 to 0 |
| 3 | 16/05/2023 | SRS | Deleted Hours | 16/05/2023 | 14:00 | 16/05/2023 | 15:00 | 1 | Monthly Calibration |
| 4 | 23/06/2023 | SRS | Deleted Hours | 23/06/2023 | 13:00 | 23/06/2023 | 15:00 | 2 | Monthly Calibration |
| 5 | 27/06/2023 | SRS | Deleted Hours | 27/06/2023 | 09:00 | 27/06/2023 | 11:00 | 2 | MECP Audit |
| 6 | 27/06/2023 | SRS | Deleted Hours | 27/06/2023 | 12:00 | 27/06/2023 | 13:00 | 1 | Re-Calibration |

**Table D2: Q2 Edit Log for $PM_{2.5}$ at Rundle Road Station**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emitter's Name:** Durham York Energy Centre | | | | | | | | | |
| **Contact** | **Name:** Ms. Lyndsay Waller | | **Phone:** (905) 404-0888 ext 4107 | | **Email:** Lyndsay.Waller@Durham.ca | | | | |
| **Station Number:** 45200 | | | | **Station Name:** Rundle Road Station | | | | | |
| **Station Address:** Rundle Road | | | | **Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON | | | | | |
| **Pollutants or Parameter:** $PM_{2.5}$ | | | **Instrument Make & Model:** Thermo Scientific Model 5030 SHARP Monitor | | | | | | **s/n:** E 1569 |
| **Data Edit Period** | | **Start Date:** April 1, 2023 | | **End Date:** June 30, 2023 | | | All testing done in EST | | |
| **Edit #** | **Edit date (dd/mm/yyyy)** | **Editor's Name** | **Edit Action** | **Starting** | | **Ending** | | **Duration** | **Reason** |
| | | | | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Deleted Hours** | |
| 1 | 25/04/2023 | SRS | Deleted Hours | 25/04/2023 | 12:00 | 25/04/2023 | 14:00 | 2 | Monthly Calibration |
| 2 | 09/05/2023 | DAJH | Deleted Hours | 29/04/2023 | 22:00 | 30/04/2023 | 07:00 | 9 | Power Failure |
| 3 | 17/05/2023 | SRS | Deleted Hours | 17/05/2023 | 14:00 | 17/05/2023 | 16:00 | 2 | Monthly Calibration |
| 4 | 06/06/2023 | DAJH | Zero Corrections | 01/05/2023 | 00:00 | 01/06/2023 | 00:00 | - | Correcting Values <0 to 0 |
| 5 | 22/06/2023 | SRS | Deleted Hours | 22/06/2023 | 15:00 | 22/06/2023 | 17:00 | 2 | Monthly Calibration |
| 6 | 07/07/2023 | DAJH | Deleted Hours | 30/06/2023 | 16:00 | 01/07/2023 | 00:00 | 8 | Instrument Malfunction |
| 7 | 07/07/2023 | DAJH | Zero Corrections | 01/06/2023 | 00:00 | 01/07/2023 | 00:00 | - | Correcting Values <0 to 0 |

**Table D3: Q2 Edit Log for $NO_X$ at Courtice Station**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emitter's Name:** Durham York Energy Centre | | | | | | | | | |
| **Contact** | **Name:** Ms. Lyndsay Waller | | **Phone:** (905) 404-0888 ext 4107 | | **Email:** Lyndsay.Waller@Durham.ca | | | | |
| **Station Number:** 45201 | | | | **Station Name:** Courtice Station | | | | | |
| **Station Address:** 100 Osbourne Road | | | | **Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON | | | | | |
| **Pollutants or Parameter:** NOx | | | **Instrument Make & Model:** Teledyne Nitrogen Oxide Analyzer Model T200 | | | | | | **s/n:** 675 |
| **Data Edit Period** | | **Start Date:** April 1, 2023 | | **End Date:** June 30, 2023 | | | All testing done in EST | | |
| **Edit #** | **Edit date (dd/mm/yyyy)** | **Editor's Name** | **Edit Action** | **Starting** | | **Ending** | | **Duration** | **Reason** |
| | | | | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Deleted Hours** | |
| 1 | 26/04/2023 | SRS | Deleted Hours | 26/04/2023 | 11:00 | 26/04/2023 | 13:00 | 2 | Monthly Calibration |
| 2 | 09/05/2023 | DAJH | Zero Corrections | 01/04/2023 | 00:00 | 01/05/2023 | 00:00 | - | Correcting Values <0 to 0 |
| 3 | 17/05/2023 | SRS | Deleted Hours | 17/05/2023 | 09:00 | 17/05/2023 | 12:00 | 3 | Monthly Calibration |
| 4 | 06/06/2023 | DAJH | Zero Corrections | 01/05/2023 | 00:00 | 01/06/2023 | 00:00 | - | Correcting Values <0 to 0 |
| 5 | 23/06/2023 | SRS | Deleted Hours | 23/06/2023 | 11:00 | 23/06/2023 | 15:00 | 4 | Monthly Calibration |
| 6 | 27/06/2023 | SRS | Deleted Hours | 27/06/2023 | 09:00 | 27/06/2023 | 11:00 | 2 | MECP Audit |
| 7 | 07/07/2023 | DAJH | Zero Corrections | 01/06/2023 | 00:00 | 01/07/2023 | 00:00 | - | Correcting Values <0 to 0 |

**Table D4: Q2 Edit Log for $NO_X$ at Rundle Road Station**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emitter's Name:** Durham York Energy Centre | | | | | | | | | |
| **Contact** | **Name:** Ms. Lyndsay Waller | | **Phone:** (905) 404-0888 ext 4107 | | **Email:** Lyndsay.Waller@Durham.ca | | | | |
| **Station Number:** 45200 | | | | **Station Name:** Rundle Road Station | | | | | |
| **Station Address:** Rundle Road | | | | **Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON | | | | | |
| **Pollutants or Parameter:** NOx | | | **Instrument Make & Model:** Teledyne Nitrogen Oxide Analyzer Model T200 | | | | | | **s/n:** 676 |
| **Data Edit Period** | | **Start Date:** April 1, 2023 | | **End Date:** June 30, 2023 | | | All testing done in EST | | |
| **Edit #** | **Edit date (dd/mm/yyyy)** | **Editor's Name** | **Edit Action** | **Starting** | | **Ending** | | **Duration** | **Reason** |
| | | | | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Deleted Hours** | |
| 1 | 09/05/2023 | DAJH | Zero Offset Adjustment | 01/04/2023 | 00:00 | 26/04/2023 | 08:55 | - | Zero Drift Adjustment Based on Overnight Zeros |
| 2 | 25/04/2023 | SRS | Deleted Hours | 25/04/2023 | 09:00 | 25/04/2023 | 14:00 | 5 | Monthly Calibration and Annual Maintenance |
| 3 | 26/04/2023 | SRS | Deleted Hours | 26/04/2023 | 09:00 | 26/04/2023 | 11:00 | 2 | Re-Calibration After Annual Maintenance |
| 4 | 09/05/2023 | DAJH | Deleted Hours | 29/04/2023 | 22:00 | 30/04/2023 | 07:00 | 9 | Power Failure |
| 5 | 09/05/2023 | DAJH | Zero Corrections | 01/04/2023 | 00:00 | 01/05/2023 | 00:00 | - | Correcting Values <0 to 0 |
| 6 | 17/05/2023 | SRS | Deleted Hours | 17/05/2023 | 12:00 | 17/05/2023 | 15:00 | 3 | Monthly Calibration |
| 7 | 06/06/2023 | DAJH | Zero Corrections | 01/05/2023 | 00:00 | 01/06/2023 | 00:00 | - | Correcting Values <0 to 0 |
| 8 | 22/06/2023 | SRS | Deleted Hours | 22/06/2023 | 11:00 | 22/06/2023 | 18:00 | 7 | Monthly Calibration and GPT Check |
| 9 | 23/06/2023 | SRS | Deleted Hours | 23/06/2023 | 08:00 | 23/06/2023 | 11:00 | 3 | Follow-Up Calibration |
| 10 | 27/06/2023 | SRS | Deleted Hours | 27/06/2023 | 11:00 | 27/06/2023 | 12:00 | 1 | MECP Audit |
| 11 | 07/07/2023 | DAJH | Zero Corrections | 01/06/2023 | 00:00 | 01/07/2023 | 00:00 | - | Correcting Values <0 to 0 |

**Table D5: Q2 Edit Log for $SO_2$ at Courtice Station**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emitter's Name:** Durham York Energy Centre | | | | | | | | | |
| **Contact** | **Name:** Ms. Lyndsay Waller | | **Phone:** (905) 404-0888 ext 4107 | | **Email:** Lyndsay.Waller@Durham.ca | | | | |
| **Station Number:** 45201 | | | | **Station Name:** Courtice Station | | | | | |
| **Station Address:** 100 Osbourne Road | | | | **Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON | | | | | |
| **Pollutants or Parameter:** $SO_2$ | | | **Instrument Make & Model:** Teledyne Sulfur Dioxide Analyzer Model T100 | | | | | **s/n:** 565 | |
| **Data Edit Period** | | **Start Date:** April 1, 2023 | | **End Date:** June 30, 2023 | | All testing done in EST | | | |
| **Edit #** | **Edit Date (dd/mm/yyyy)** | **Editor's Name** | **Edit Action** | **Starting** | | **Ending** | | **Duration** | **Reason** |
| | | | | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Deleted Hours** | |
| 1 | 26/04/2023 | SRS | Deleted Hours | 26/04/2023 | 12:00 | 26/04/2023 | 14:00 | 2 | Monthly Calibration |
| 2 | 09/05/2023 | DAJH | Zero Corrections | 01/04/2023 | 00:00 | 01/05/2023 | 00:00 | - | Correcting Values <0 to 0 |
| 3 | 16/05/2023 | SRS | Deleted Hours | 16/05/2023 | 13:00 | 16/05/2023 | 15:00 | 2 | Monthly Calibration |
| 4 | 23/06/2023 | SRS | Deleted Hours | 23/06/2023 | 14:00 | 23/06/2023 | 16:00 | 2 | Monthly Calibration |
| 5 | 27/06/2023 | SRS | Deleted Hours | 27/06/2023 | 09:00 | 27/06/2023 | 11:00 | 2 | MECP Audit |

**Table D6: Q2 Edit Log for $SO_2$ at Rundle Road Station**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emitter's Name:** Durham York Energy Centre | | | | | | | | | |
| **Contact** | **Name:** Ms. Lyndsay Waller | | **Phone:** (905) 404-0888 ext 4107 | | | **Email:** Lyndsay.Waller@Durham.ca | | | |
| **Station Number:** 45200 | | | | **Station Name:** Rundle Road Station | | | | | |
| **Station Address:** Rundle Road | | | | **Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON | | | | | |
| **Pollutants or Parameter:** $SO_2$ | | | **Instrument Make & Model:** Teledyne Sulfur Dioxide Analyzer Model T100 | | | | | | **s/n:** 566 |
| **Data Edit Period** | | **Start Date:** April 1, 2023 | | **End Date:** June 30, 2023 | | | All testing done in EST | | |
| **Edit #** | **Edit date (dd/mm/yyyy)** | **Editor's Name** | **Edit Action** | **Starting** | | **Ending** | | **Duration** | **Reason** |
| | | | | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Deleted Hours** | |
| 1 | 25/04/2023 | SRS | Deleted Hours | 25/04/2023 | 11:00 | 25/04/2023 | 14:00 | 3 | Monthly Calibration |
| 2 | 09/05/2023 | DAJH | Deleted Hours | 29/04/2023 | 22:00 | 30/04/2023 | 07:00 | 9 | Power Failure |
| 3 | 09/05/2023 | DAJH | Zero Corrections | 01/04/2023 | 00:00 | 01/05/2023 | 00:00 | - | Correcting Values <0 to 0 |
| 4 | 17/05/2023 | SRS | Deleted Hours | 17/05/2023 | 14:00 | 17/05/2023 | 16:00 | 2 | Monthly Calibration |
| 5 | 06/06/2023 | DAJH | Zero Corrections | 01/05/2023 | 00:00 | 01/06/2023 | 00:00 | - | Correcting Values <0 to 0 |
| 6 | 22/06/2023 | SRS | Deleted Hours | 22/06/2023 | 12:00 | 22/06/2023 | 14:00 | 2 | Monthly Calibration |
| 7 | 27/06/2023 | SRS | Deleted Hours | 27/06/2023 | 11:00 | 27/06/2023 | 12:00 | 1 | MECP Audit |
| 8 | 07/07/2023 | DAJH | Zero Corrections | 01/06/2023 | 00:00 | 01/07/2023 | 00:00 | - | Correcting Values <0 to 0 |

**Table D7: Q2 Edit Log for Meteorological Parameters at Courtice Road Station**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emitter's Name:** Durham York Energy Centre | | | | | | | | | |
| **Contact** | **Name:** Ms. Lyndsay Waller | | **Phone:** (905) 404-0888 ext 4107 | | **Email:** Lyndsay.Waller@Durham.ca | | | | |
| **Station Number:** 45201 | | | | **Station Name:** Courtice Station | | | | | |
| **Station Address:** 100 Osbourne Road | | | | **Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON | | | | | |
| **Pollutants or Parameter:** WS, WD, Ambient T, BP, RH and Rain | | | **Instrument Make & Model:** Miscellaneous Meterological Instrumentation | | | | | **s/n:** N/A | |
| **Data Edit Period** | | **Start Date:** April 1, 2023 | | **End Date:** June 30, 2023 | | | All testing done in EST | | |
| **Edit #** | **Edit date (dd/mm/yyyy)** | **Editor's Name** | **Edit Action** | **Starting** | | **Ending** | | **Duration** | **Reason** |
| | | | | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Deleted Hours** | |
| 1 | 16/05/2023 | SRS | Deleted Hours | 16/05/2023 | 10:00 | 16/05/2023 | 13:00 | 3 | Annual Calibration - Wind Speed and Direction |

**Table D8: Q2 Edit Log for Meteorological Parameters at Rundle Road Station**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emitter's Name:** Durham York Energy Centre | | | | | | | | | |
| **Contact** | **Name:** Ms. Lyndsay Waller | | **Phone:** (905) 404-0888 ext 4107 | | **Email:** Lyndsay.Waller@Durham.ca | | | | |
| **Station Number:** 45200 | | | | **Station Name:** Rundle Station | | | | | |
| **Station Address:** Rundle Road | | | | **Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON | | | | | |
| **Pollutants or Parameter:** WS, WD, Ambient T, RH and Rain | | | **Instrument Make & Model:** Miscellaneous Meterological Instrumentation | | | | | **s/n:** N/A | |
| **Data Edit Period** | | **Start Date:** April 1, 2023 | | **End Date:** June 30, 2023 | | | All testing done in EST | | |
| **Edit #** | **Edit date (dd/mm/yyyy)** | **Editor's Name** | **Edit Action** | **Starting** | | **Ending** | | **Duration** | **Reason** |
| | | | | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Deleted Hours** | |
| 1 | 09/05/2023 | DAJH | Deleted Hours | 29/04/2023 | 22:00 | 30/04/2023 | 07:00 | 9 | Power Failure |
| 2 | 09/05/2023 | DAJH | Deleted Hours | 30/04/2023 | 13:00 | 30/04/2023 | 21:00 | 8 | Malfunction - Temperature and Relative Humidity |
| 3 | 22/06/2023 | DAJH | Deleted Hours | 11/06/2023 | 00:00 | 22/06/2023 | 13:00 | 277 | Malfunction - Rain |

**Table D9: Q2 Edit Log for Discrete Sampling at Courtice Station**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emitter's Name:** Durham York Energy Center | | | | | | | | | |
| **Contact** | **Name:** Ms. Lyndsay Waller | **Phone:** (905) 404-0888 ext 4107 | **Email:** Lyndsay.Waller@Durham.ca | | | | | | |
| **Station Number:** 45201 | | | **Station Name:** Courtice Station | | | | | | |
| **Station Address:** 100 Osbourne Road | | | **Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON | | | | | | |
| **Pollutants or Parameter:** N/A | | **Instrument Make & Model:** N/A | | | | | | | **s/n:** |
| **Data Edit Period** | **Start Date:** April 1, 2023 | | **End Date:** June 30, 2023 | | | | All testing done in EST | | |
| **Edit #** | **Edit date (dd/mm/yyyy)** | **Editor's Name** | **Edit Action** | **Starting** | | **Ending** | | **Duration** | **Reason** |
| | | | | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Deleted Hours** | |
| 1 | 12/04/2023 | DAJH | Deleted Hours | 12/04/2023 | 00:00 | 13/04/2023 | 00:00 | 24 | TSP - Equipment Malfunction |
| 2 | 11/06/2023 | DAJH | Deleted Hours | 11/06/2023 | 00:00 | 12/06/2023 | 00:00 | 24 | TSP - Equipment Malfunction |

**Table D10: Q2 Edit Log for Discrete Sampling at Rundle Station**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emitter's Name:** Durham York Energy Center | | | | | | | | | |
| **Contact** | **Name:** Ms. Lyndsay Waller | | **Phone:** (905) 404-0888 ext 4107 | | **Email:** Lyndsay.Waller@Durham.ca | | | | |
| **Station Number:** 45200 | | | | **Station Name:** Rundle Station | | | | | |
| **Station Address:** Rundle Rd | | | | **Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON | | | | | |
| **Pollutants or Parameter:** N/A | | | **Instrument Make & Model:** N/A | | | | | | **s/n:** |
| **Data Edit Period** | | **Start Date:** April 1, 2023 | | **End Date:** June 30, 2023 | | All testing done in EST | | | |
| **Edit #** | **Edit date (dd/mm/yyyy)** | **Editor's Name** | **Edit Action** | **Starting** | | **Ending** | | **Duration** | **Reason** |
| | | | | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Date (dd/mm/yyyy)** | **Hour (xx:xx)** | **Deleted Hours** | |
| 1 | 30/04/2023 | DAJH | Deleted Hours | 30/04/2023 | 00:00 | 01/05/2023 | 00:00 | 24 | TSP/ D&F/ PAH - Station Power Failure |

# APPENDIX E

**SO2 Exceedance Report** **Table E1**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

| Date | Time | $SO_2$ | $SO_2$ |
|---|---|---|---|
| | | 5-min Avg. | 10-minute Running Avg. |
| (mm/dd/yyyy) | (EST) | (ppb) | (ppb) |
| 03/04/2023 | 18:35 | 1 | 0 |
| 03/04/2023 | 18:40 | 25 | 13 |
| 03/04/2023 | 18:45 | 58 | 42 |
| 03/04/2023 | 18:50 | 160 | 109 |
| 03/04/2023 | 18:55 | 168 | 164 |
| 03/04/2023 | 19:00 | 106 | 137 |
| 03/04/2023 | 19:05 | 34 | 70 |
| 03/04/2023 | 19:10 | 9 | 22 |
| 03/04/2023 | 19:15 | 6 | 8 |
| Hidden cells with no values exceeding limit. | | | |
| 08/04/2023 | 21:00 | 1 | 1 |
| 08/04/2023 | 21:05 | 4 | 3 |
| 08/04/2023 | 21:10 | 79 | 41 |
| 08/04/2023 | 21:15 | 66 | 72 |
| 08/04/2023 | 21:20 | 65 | 65 |
| 08/04/2023 | 21:25 | 38 | 51 |
| 08/04/2023 | 21:30 | 6 | 22 |
| Hidden cells with no values exceeding limit. | | | |
| 09/04/2023 | 19:55 | 18 | 16 |
| 09/04/2023 | 20:00 | 42 | 30 |
| 09/04/2023 | 20:05 | 85 | 63 |
| 09/04/2023 | 20:10 | 57 | 71 |
| 09/04/2023 | 20:15 | 12 | 34 |
| 09/04/2023 | 20:20 | 4 | 8 |
| 09/04/2023 | 20:25 | 3 | 4 |
| 09/04/2023 | 20:30 | 2 | 3 |
| 09/04/2023 | 20:35 | 44 | 23 |
| 09/04/2023 | 20:40 | 171 | 107 |
| 09/04/2023 | 20:45 | 75 | 123 |
| 09/04/2023 | 20:50 | 115 | 95 |
| 09/04/2023 | 20:55 | 78 | 97 |
| 09/04/2023 | 21:00 | 162 | 120 |
| 09/04/2023 | 21:05 | 66 | 114 |
| 09/04/2023 | 21:10 | 11 | 38 |
| 09/04/2023 | 21:15 | 7 | 9 |
| 09/04/2023 | 21:20 | 5 | 6 |
| 09/04/2023 | 21:25 | 17 | 11 |
| 09/04/2023 | 21:30 | 175 | 96 |
| 09/04/2023 | 21:35 | 39 | 107 |
| 09/04/2023 | 21:40 | 11 | 25 |
| 09/04/2023 | 21:45 | 6 | 8 |
| Hidden cells with no values exceeding limit. | | | |
| 09/04/2023 | 22:20 | 3 | 3 |
| 09/04/2023 | 22:25 | 8 | 5 |
| 09/04/2023 | 22:30 | 103 | 56 |
| 09/04/2023 | 22:35 | 87 | 95 |
| 09/04/2023 | 22:40 | 87 | 87 |
| 09/04/2023 | 22:45 | 47 | 67 |
| 09/04/2023 | 22:50 | 32 | 39 |
| Hidden cells with no values exceeding limit. | | | |
| 25/04/2023 | 2:05 | - | - |
| 25/04/2023 | 2:10 | - | - |
| 25/04/2023 | 2:15 | 159 | 159 |
| 25/04/2023 | 2:20 | 30 | 95 |
| 25/04/2023 | 2:25 | 32 | 31 |
| 25/04/2023 | 2:30 | 9 | 21 |
| Hidden cells with no values exceeding limit. | | | |
| 25/04/2023 | 3:05 | 45 | 37 |

| | | | |
|---|---|---|---|
| 25/04/2023 | 3:10 | 15 | 30 |
| 25/04/2023 | 3:15 | 8 | 11 |
| 25/04/2023 | 3:20 | 170 | 89 |
| 25/04/2023 | 3:25 | 120 | 145 |
| 25/04/2023 | 3:30 | 33 | 76 |
| 25/04/2023 | 3:35 | 13 | 23 |
| 25/04/2023 | 3:40 | 8 | 10 |
| 25/04/2023 | 3:45 | 13 | 10 |
| Hidden cells with no values exceeding limit. | | | |
| 26/04/2023 | 4:30 | 5 | 19 |
| 26/04/2023 | 4:35 | 18 | 12 |
| 26/04/2023 | 4:40 | 69 | 44 |
| 26/04/2023 | 4:45 | 87 | 78 |
| 26/04/2023 | 4:50 | 22 | 55 |
| 26/04/2023 | 4:55 | 5 | 14 |
| 26/04/2023 | 5:00 | 3 | 4 |
| Hidden cells with no values exceeding limit. | | | |
| 26/04/2023 | 21:20 | 0 | 0 |
| 26/04/2023 | 21:25 | 0 | 0 |
| 26/04/2023 | 21:30 | 75 | 38 |
| 26/04/2023 | 21:35 | 171 | 123 |
| 26/04/2023 | 21:40 | 64 | 118 |
| 26/04/2023 | 21:45 | 8 | 36 |
| 26/04/2023 | 21:50 | 5 | 7 |
| Hidden cells with no values exceeding limit. | | | |
| 27/04/2023 | 3:10 | 2 | 2 |
| 27/04/2023 | 3:15 | 8 | 5 |
| 27/04/2023 | 3:20 | 76 | 42 |
| 27/04/2023 | 3:25 | 59 | 67 |
| 27/04/2023 | 3:30 | 91 | 75 |
| 27/04/2023 | 3:35 | 16 | 54 |
| 27/04/2023 | 3:40 | 51 | 34 |
| 27/04/2023 | 3:45 | 112 | 82 |
| 27/04/2023 | 3:50 | 44 | 78 |
| 27/04/2023 | 3:55 | 11 | 28 |
| 27/04/2023 | 4:00 | 33 | 22 |
| 27/04/2023 | 4:05 | 199 | 116 |
| 27/04/2023 | 4:10 | 42 | 121 |
| 27/04/2023 | 4:15 | 11 | 27 |
| 27/04/2023 | 4:20 | 51 | 31 |
| Hidden cells with no values exceeding limit. | | | |
| 27/04/2023 | 5:25 | 2 | 3 |
| 27/04/2023 | 5:30 | 3 | 3 |
| 27/04/2023 | 5:35 | 87 | 45 |
| 27/04/2023 | 5:40 | 122 | 105 |
| 27/04/2023 | 5:45 | 47 | 85 |
| 27/04/2023 | 5:50 | 11 | 29 |
| 27/04/2023 | 5:55 | 7 | 9 |

**Notes:**

| | |
|---|---|
| D, T & V | - Date, Time & Exceedence Value Reportec |
| Faded Values | - Not used to calculate the number of reportable exceedences |
| | - Range of 5-minute measurements that contribute to the Exceedance Value Reported |
| Max | - Maximum of the Range |
| Min | - Minimum of the Range |

Ambient Air Quality Criteria (AAQC) for SO2 = 67 ppb for 10-minute running average

Total Number of Reportable Exceedances: **18**

**SO2 Exceedance Report** **Table E2**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

| Date | Time | $SO_2$ 5-min Avg. | $SO_2$ 10-minute Running Avg. |
|---|---|---|---|
| (mm/dd/yyyy) | (EST) | (ppb) | (ppb) |
| 04/05/2023 | 21:45 | 0 | 0 |
| 04/05/2023 | 21:50 | 0 | 0 |
| 04/05/2023 | 21:55 | 36 | 18 |
| 04/05/2023 | 22:00 | 112 | 74 |
| 04/05/2023 | 22:05 | 79 | 95 |
| 04/05/2023 | 22:10 | 62 | 70 |
| 04/05/2023 | 22:15 | 12 | 37 |
| 04/05/2023 | 22:20 | 6 | 9 |
| 04/05/2023 | 22:25 | 4 | 5 |
| Hidden cells with no values exceeding limit. | | | |
| 05/05/2023 | 1:10 | 1 | 1 |
| 05/05/2023 | 1:15 | 5 | 3 |
| 05/05/2023 | 1:20 | 66 | 35 |
| 05/05/2023 | 1:25 | 78 | 72 |
| 05/05/2023 | 1:30 | 36 | 57 |
| 05/05/2023 | 1:35 | 8 | 22 |
| 05/05/2023 | 1:40 | 4 | 6 |
| Hidden cells with no values exceeding limit. | | | |
| 05/05/2023 | 20:05 | 2 | 21 |
| 05/05/2023 | 20:10 | 2 | 2 |
| 05/05/2023 | 20:15 | 99 | 50 |
| 05/05/2023 | 20:20 | 106 | 102 |
| 05/05/2023 | 20:25 | 6 | 56 |
| 05/05/2023 | 20:30 | 97 | 52 |
| 05/05/2023 | 20:35 | 15 | 56 |
| Hidden cells with no values exceeding limit. | | | |
| 05/05/2023 | 20:50 | 7 | 17 |
| 05/05/2023 | 20:55 | 4 | 6 |
| 05/05/2023 | 21:00 | 19 | 12 |
| 05/05/2023 | 21:05 | 167 | 93 |
| 05/05/2023 | 21:10 | 19 | 93 |
| 05/05/2023 | 21:15 | 30 | 25 |
| 05/05/2023 | 21:20 | 9 | 20 |
| Hidden cells with no values exceeding limit. | | | |
| 05/05/2023 | 22:40 | 8 | 30 |
| 05/05/2023 | 22:45 | 41 | 24 |
| 05/05/2023 | 22:50 | 9 | 25 |
| 05/05/2023 | 22:55 | 138 | 73 |
| 05/05/2023 | 23:00 | 75 | 107 |
| 05/05/2023 | 23:05 | 12 | 43 |
| 05/05/2023 | 23:10 | 7 | 9 |
| Hidden cells with no values exceeding limit. | | | |
| 06/05/2023 | 0:00 | 3 | 4 |
| 06/05/2023 | 0:05 | 31 | 17 |
| 06/05/2023 | 0:10 | 58 | 44 |
| 06/05/2023 | 0:15 | 107 | 82 |
| 06/05/2023 | 0:20 | 23 | 65 |
| 06/05/2023 | 0:25 | 9 | 16 |
| 06/05/2023 | 0:30 | 12 | 10 |
| Hidden cells with no values exceeding limit. | | | |
| 06/05/2023 | 4:10 | 4 | 7 |
| 06/05/2023 | 4:15 | 5 | 4 |
| 06/05/2023 | 4:20 | 91 | 48 |
| 06/05/2023 | 4:25 | 43 | 67 |
| 06/05/2023 | 4:30 | 8 | 26 |
| 06/05/2023 | 4:35 | 5 | 6 |
| 06/05/2023 | 4:40 | 4 | 4 |
| 06/05/2023 | 4:45 | 3 | 3 |

| | | | |
|---|---|---|---|
| 06/05/2023 | 4:50 | 5 | 4 |
| 06/05/2023 | 4:55 | 34 | 19 |
| 06/05/2023 | 5:00 | 115 | 75 |
| 06/05/2023 | 5:05 | 125 | 120 |
| 06/05/2023 | 5:10 | 100 | 113 |
| 06/05/2023 | 5:15 | 28 | 64 |
| 06/05/2023 | 5:20 | 14 | 21 |
| 06/05/2023 | 5:25 | 11 | 12 |
| Hidden cells with no values exceeding limit. | | | |
| 06/05/2023 | 21:00 | 3 | 21 |
| 06/05/2023 | 21:05 | 37 | 20 |
| 06/05/2023 | 21:10 | 89 | 63 |
| 06/05/2023 | 21:15 | 70 | 80 |
| 06/05/2023 | 21:20 | 20 | 45 |
| 06/05/2023 | 21:25 | 10 | 15 |
| 06/05/2023 | 21:30 | 6 | 8 |
| Hidden cells with no values exceeding limit. | | | |
| 07/05/2023 | 5:25 | 4 | 4 |
| 07/05/2023 | 5:30 | 7 | 5 |
| 07/05/2023 | 5:35 | 70 | 38 |
| 07/05/2023 | 5:40 | 76 | 73 |
| 07/05/2023 | 5:45 | 18 | 47 |
| 07/05/2023 | 5:50 | 23 | 20 |
| 07/05/2023 | 5:55 | 9 | 16 |
| Hidden cells with no values exceeding limit. | | | |
| 09/05/2023 | 20:30 | 1 | 0 |
| 09/05/2023 | 20:35 | 1 | 1 |
| 09/05/2023 | 20:40 | 120 | 61 |
| 09/05/2023 | 20:45 | 60 | 90 |
| 09/05/2023 | 20:50 | 3 | 31 |
| 09/05/2023 | 20:55 | 72 | 37 |
| 09/05/2023 | 21:00 | 19 | 45 |
| Hidden cells with no values exceeding limit. | | | |
| 10/05/2023 | 23:05 | 0 | 0 |
| 10/05/2023 | 23:10 | 0 | 0 |
| 10/05/2023 | 23:15 | 73 | 37 |
| 10/05/2023 | 23:20 | 71 | 72 |
| 10/05/2023 | 23:25 | 65 | 68 |
| 10/05/2023 | 23:30 | 11 | 38 |
| 10/05/2023 | 23:35 | 5 | 8 |
| Hidden cells with no values exceeding limit. | | | |
| 12/05/2023 | 1:15 | 2 | 2 |
| 12/05/2023 | 1:20 | 2 | 2 |
| 12/05/2023 | 1:25 | 53 | 27 |
| 12/05/2023 | 1:30 | 104 | 78 |
| 12/05/2023 | 1:35 | 46 | 75 |
| 12/05/2023 | 1:40 | 11 | 29 |
| 12/05/2023 | 1:45 | | 11 |
| Hidden cells with no values exceeding limit. | | | |
| 24/05/2023 | 8:10 | 12 | 8 |
| 24/05/2023 | 8:15 | 40 | 26 |
| 24/05/2023 | 8:20 | 80 | 60 |
| 24/05/2023 | 8:25 | 75 | 77 |
| 24/05/2023 | 8:30 | 58 | 66 |
| 24/05/2023 | 8:35 | 78 | 68 |
| 24/05/2023 | 8:40 | 76 | 77 |
| 24/05/2023 | 8:45 | 25 | 51 |
| 24/05/2023 | 8:50 | 14 | 19 |
| Hidden cells with no values exceeding limit. | | | |
| 25/05/2023 | 19:35 | 0 | 0 |
| 25/05/2023 | 19:40 | 0 | 0 |
| 25/05/2023 | 19:45 | 0 | 0 |
| 25/05/2023 | 19:50 | 164 | 82 |
| 25/05/2023 | 19:55 | 17 | 90 |
| 25/05/2023 | 20:00 | 3 | 10 |
| 25/05/2023 | 20:05 | 2 | 3 |
| Hidden cells with no values exceeding limit. | | | |
| 25/05/2023 | 20:20 | 1 | 1 |

| | | | |
|---|---|---|---|
| 25/05/2023 | 20:25 | 1 | 1 |
| 25/05/2023 | 20:30 | 43 | 22 |
| 25/05/2023 | 20:35 | 158 | 100 |
| 25/05/2023 | 20:40 | 6 | 82 |
| 25/05/2023 | 20:45 | 4 | 5 |
| 25/05/2023 | 20:50 | 3 | 3 |
| Hidden cells with no values exceeding limit. | | | |
| 25/05/2023 | 22:20 | 35 | 39 |
| 25/05/2023 | 22:25 | 66 | 50 |
| 25/05/2023 | 22:30 | 24 | 45 |
| 25/05/2023 | 22:35 | 295 | 159 |
| 25/05/2023 | 22:40 | 152 | 223 |
| 25/05/2023 | 22:45 | 130 | 141 |
| 25/05/2023 | 22:50 | 25 | 78 |
| 25/05/2023 | 22:55 | 33 | 29 |
| 25/05/2023 | 23:00 | 57 | 45 |
| Hidden cells with no values exceeding limit. | | | |
| 26/05/2023 | 1:15 | 3 | 6 |
| 26/05/2023 | 1:20 | 3 | 3 |
| 26/05/2023 | 1:25 | 10 | 6 |
| 26/05/2023 | 1:30 | 197 | 104 |
| 26/05/2023 | 1:35 | 97 | 147 |
| 26/05/2023 | 1:40 | 16 | 57 |
| 26/05/2023 | 1:45 | | 16 |
| Hidden cells with no values exceeding limit. | | | |
| 26/05/2023 | 2:05 | - | - |
| 26/05/2023 | 2:10 | - | - |
| 26/05/2023 | 2:15 | 143 | 143 |
| 26/05/2023 | 2:20 | 183 | 163 |
| 26/05/2023 | 2:25 | 78 | 131 |
| 26/05/2023 | 2:30 | 64 | 71 |
| 26/05/2023 | 2:35 | 22 | 43 |
| 26/05/2023 | 2:40 | 11 | 16 |
| 26/05/2023 | 2:45 | 8 | 10 |
| Hidden cells with no values exceeding limit. | | | |
| 26/05/2023 | 2:55 | 43 | 62 |
| 26/05/2023 | 3:00 | 39 | 41 |
| 26/05/2023 | 3:05 | 37 | 38 |
| 26/05/2023 | 3:10 | 128 | 83 |
| 26/05/2023 | 3:15 | 66 | 97 |
| 26/05/2023 | 3:20 | 194 | 130 |
| 26/05/2023 | 3:25 | 24 | 109 |
| 26/05/2023 | 3:30 | 38 | 31 |
| 26/05/2023 | 3:35 | 36 | 37 |
| Hidden cells with no values exceeding limit. | | | |
| 26/05/2023 | 3:45 | 25 | 37 |
| 26/05/2023 | 3:50 | 21 | 23 |
| 26/05/2023 | 3:55 | 112 | 67 |
| 26/05/2023 | 4:00 | 40 | 76 |
| 26/05/2023 | 4:05 | 14 | 27 |
| 26/05/2023 | 4:10 | 9 | 12 |
| 26/05/2023 | 4:15 | 7 | 8 |
| Hidden cells with no values exceeding limit. | | | |
| 26/05/2023 | 20:20 | 0 | 0 |
| 26/05/2023 | 20:25 | 0 | 0 |
| 26/05/2023 | 20:30 | 83 | 42 |
| 26/05/2023 | 20:35 | 364 | 224 |
| 26/05/2023 | 20:40 | 91 | 228 |
| 26/05/2023 | 20:45 | 10 | 51 |
| 26/05/2023 | 20:50 | 60 | 35 |
| 26/05/2023 | 20:55 | 20 | 40 |
| 26/05/2023 | 21:00 | 77 | 49 |
| 26/05/2023 | 21:05 | 251 | 164 |
| 26/05/2023 | 21:10 | 72 | 161 |
| 26/05/2023 | 21:15 | 10 | 41 |
| 26/05/2023 | 21:20 | 10 | 10 |
| 26/05/2023 | 21:25 | 5 | 7 |
| 26/05/2023 | 21:30 | 4 | 5 |

| | | | |
|---|---|---|---|
| 26/05/2023 | 21:35 | 236 | 120 |
| 26/05/2023 | 21:40 | 84 | 160 |
| 26/05/2023 | 21:45 | 15 | 49 |
| 26/05/2023 | 21:50 | 11 | 13 |
| Hidden cells with no values exceeding limit. | | | |
| 26/05/2023 | 22:50 | 2 | 3 |
| 26/05/2023 | 22:55 | 2 | 2 |
| 26/05/2023 | 23:00 | 3 | 3 |
| 26/05/2023 | 23:05 | 212 | 108 |
| 26/05/2023 | 23:10 | 184 | 198 |
| 26/05/2023 | 23:15 | 116 | 150 |
| 26/05/2023 | 23:20 | 30 | 73 |
| 26/05/2023 | 23:25 | 153 | 91 |
| 26/05/2023 | 23:30 | 21 | 87 |
| 26/05/2023 | 23:35 | 9 | 15 |
| 26/05/2023 | 23:40 | 109 | 59 |
| 26/05/2023 | 23:45 | 23 | 66 |
| 26/05/2023 | 23:50 | 120 | 71 |
| 26/05/2023 | 23:55 | 32 | 76 |
| 27/05/2023 | 0:00 | 15 | 24 |
| 27/05/2023 | 0:05 | 54 | 35 |
| Hidden cells with no values exceeding limit. | | | |
| 27/05/2023 | 0:25 | 6 | 7 |
| 27/05/2023 | 0:30 | 5 | 6 |
| 27/05/2023 | 0:35 | 103 | 54 |
| 27/05/2023 | 0:40 | 176 | 139 |
| 27/05/2023 | 0:45 | 66 | 121 |
| 27/05/2023 | 0:50 | 103 | 85 |
| 27/05/2023 | 0:55 | 66 | 84 |
| 27/05/2023 | 1:00 | 16 | 41 |
| 27/05/2023 | 1:05 | 23 | 20 |
| Hidden cells with no values exceeding limit. | | | |
| 27/05/2023 | 2:25 | 28 | 52 |
| 27/05/2023 | 2:30 | 11 | 19 |
| 27/05/2023 | 2:35 | 74 | 42 |
| 27/05/2023 | 2:40 | 77 | 76 |
| 27/05/2023 | 2:45 | 26 | 51 |
| 27/05/2023 | 2:50 | 12 | 19 |
| 27/05/2023 | 2:55 | 21 | 16 |
| Hidden cells with no values exceeding limit. | | | |
| 27/05/2023 | 3:10 | 10 | 17 |
| 27/05/2023 | 3:15 | 57 | 33 |
| 27/05/2023 | 3:20 | 61 | 59 |
| 27/05/2023 | 3:25 | 331 | 196 |
| 27/05/2023 | 3:30 | 48 | 189 |
| 27/05/2023 | 3:35 | 18 | 33 |
| 27/05/2023 | 3:40 | 10 | 14 |
| Hidden cells with no values exceeding limit. | | | |
| 27/05/2023 | 4:05 | 4 | 4 |
| 27/05/2023 | 4:10 | 3 | 3 |
| 27/05/2023 | 4:15 | 48 | 25 |
| 27/05/2023 | 4:20 | 103 | 75 |
| 27/05/2023 | 4:25 | 51 | 77 |
| 27/05/2023 | 4:30 | 46 | 49 |
| 27/05/2023 | 4:35 | 17 | 32 |
| Hidden cells with no values exceeding limit. | | | |
| 27/05/2023 | 19:25 | 1 | 1 |
| 27/05/2023 | 19:30 | 1 | 1 |
| 27/05/2023 | 19:35 | 28 | 14 |
| 27/05/2023 | 19:40 | 179 | 103 |
| 27/05/2023 | 19:45 | 164 | 171 |
| 27/05/2023 | 19:50 | 240 | 202 |
| 27/05/2023 | 19:55 | 3 | 122 |
| 27/05/2023 | 20:00 | 2 | 3 |
| 27/05/2023 | 20:05 | 11 | 7 |
| 27/05/2023 | 20:10 | 106 | 59 |
| 27/05/2023 | 20:15 | 166 | 136 |
| 27/05/2023 | 20:20 | 268 | 217 |

| | | | |
|---|---|---|---|
| 27/05/2023 | 20:25 | 145 | 207 |
| 27/05/2023 | 20:30 | 8 | 76 |
| 27/05/2023 | 20:35 | 3 | 6 |
| 27/05/2023 | 20:40 | 3 | 3 |
| 27/05/2023 | 20:45 | 445 | 224 |
| 27/05/2023 | 20:50 | 237 | 341 |
| 27/05/2023 | 20:55 | 96 | 166 |
| 27/05/2023 | 21:00 | 7 | 51 |
| 27/05/2023 | 21:05 | 14 | 10 |
| 27/05/2023 | 21:10 | 150 | 82 |
| 27/05/2023 | 21:15 | 192 | 171 |
| 27/05/2023 | 21:20 | 19 | 105 |
| 27/05/2023 | 21:25 | 29 | 24 |
| 27/05/2023 | 21:30 | 20 | 24 |
| 27/05/2023 | 21:35 | 41 | 30 |
| 27/05/2023 | 21:40 | 208 | 124 |
| 27/05/2023 | 21:45 | 59 | 133 |
| 27/05/2023 | 21:50 | 12 | 35 |
| 27/05/2023 | 21:55 | 7 | 10 |
| 27/05/2023 | 22:00 | 5 | 6 |
| 27/05/2023 | 22:05 | 4 | 5 |
| 27/05/2023 | 22:10 | 174 | 89 |
| 27/05/2023 | 22:15 | 292 | 233 |
| 27/05/2023 | 22:20 | 58 | 175 |
| 27/05/2023 | 22:25 | 15 | 37 |
| 27/05/2023 | 22:30 | 96 | 55 |
| 27/05/2023 | 22:35 | 19 | 58 |
| Hidden cells with no values exceeding limit. | | | |
| 27/05/2023 | 22:45 | 6 | 8 |
| 27/05/2023 | 22:50 | 5 | 6 |
| 27/05/2023 | 22:55 | 38 | 21 |
| 27/05/2023 | 23:00 | 144 | 91 |
| 27/05/2023 | 23:05 | 36 | 90 |
| 27/05/2023 | 23:10 | 35 | 36 |
| 27/05/2023 | 23:15 | 10 | 23 |
| Hidden cells with no values exceeding limit. | | | |
| 28/05/2023 | 2:35 | 11 | 14 |
| 28/05/2023 | 2:40 | 8 | 9 |
| 28/05/2023 | 2:45 | 106 | 57 |
| 28/05/2023 | 2:50 | 89 | 97 |
| 28/05/2023 | 2:55 | 104 | 96 |
| 28/05/2023 | 3:00 | 156 | 130 |
| 28/05/2023 | 3:05 | 394 | 275 |
| 28/05/2023 | 3:10 | 185 | 289 |
| 28/05/2023 | 3:15 | 25 | 105 |
| 28/05/2023 | 3:20 | 17 | 21 |
| 28/05/2023 | 3:25 | 23 | 20 |
| 28/05/2023 | 3:30 | 84 | 53 |
| 28/05/2023 | 3:35 | 32 | 58 |
| 28/05/2023 | 3:40 | 27 | 29 |
| 28/05/2023 | 3:45 | 165 | 96 |
| 28/05/2023 | 3:50 | 29 | 97 |
| 28/05/2023 | 3:55 | 106 | 67 |
| 28/05/2023 | 4:00 | 32 | 69 |
| 28/05/2023 | 4:05 | 23 | 28 |
| 28/05/2023 | 4:10 | 246 | 134 |
| 28/05/2023 | 4:15 | 222 | 234 |
| 28/05/2023 | 4:20 | 94 | 158 |
| 28/05/2023 | 4:25 | 66 | 80 |
| 28/05/2023 | 4:30 | 133 | 99 |
| 28/05/2023 | 4:35 | 224 | 179 |
| 28/05/2023 | 4:40 | 164 | 194 |
| 28/05/2023 | 4:45 | 31 | 98 |
| 28/05/2023 | 4:50 | 30 | 31 |
| 28/05/2023 | 4:55 | 161 | 96 |
| 28/05/2023 | 5:00 | 104 | 132 |
| 28/05/2023 | 5:05 | 17 | 60 |
| 28/05/2023 | 5:10 | 29 | 23 |

| | | | |
|---|---|---|---|
| 28/05/2023 | 5:15 | 24 | 27 |
| 28/05/2023 | 5:20 | 119 | 72 |
| 28/05/2023 | 5:25 | 68 | 94 |
| 28/05/2023 | 5:30 | 14 | 41 |
| 28/05/2023 | 5:35 | 11 | 13 |
| Hidden cells with no values exceeding limit. | | | |
| 28/05/2023 | 19:35 | 1 | 1 |
| 28/05/2023 | 19:40 | 4 | 2 |
| 28/05/2023 | 19:45 | 96 | 50 |
| 28/05/2023 | 19:50 | 167 | 131 |
| 28/05/2023 | 19:55 | 103 | 135 |
| 28/05/2023 | 20:00 | 32 | 67 |
| 28/05/2023 | 20:05 | 5 | 18 |
| 28/05/2023 | 20:10 | 4 | 4 |
| 28/05/2023 | 20:15 | 89 | 47 |
| 28/05/2023 | 20:20 | 206 | 147 |
| 28/05/2023 | 20:25 | 134 | 170 |
| 28/05/2023 | 20:30 | 42 | 88 |
| 28/05/2023 | 20:35 | 8 | 25 |
| 28/05/2023 | 20:40 | 31 | 19 |
| 28/05/2023 | 20:45 | 5 | 18 |
| Hidden cells with no values exceeding limit. | | | |
| 29/05/2023 | 21:00 | 3 | 4 |
| 29/05/2023 | 21:05 | 37 | 20 |
| 29/05/2023 | 21:10 | 77 | 57 |
| 29/05/2023 | 21:15 | 113 | 95 |
| 29/05/2023 | 21:20 | 105 | 109 |
| 29/05/2023 | 21:25 | 9 | 57 |
| 29/05/2023 | 21:30 | 8 | 8 |
| Hidden cells with no values exceeding limit. | | | |
| 29/05/2023 | 22:30 | 7 | 23 |
| 29/05/2023 | 22:35 | 5 | 6 |
| 29/05/2023 | 22:40 | 44 | 24 |
| 29/05/2023 | 22:45 | 96 | 70 |
| 29/05/2023 | 22:50 | 73 | 85 |
| 29/05/2023 | 22:55 | 28 | 51 |
| 29/05/2023 | 23:00 | 9 | 19 |
| Hidden cells with no values exceeding limit. | | | |
| 30/05/2023 | 2:25 | 53 | 52 |
| 30/05/2023 | 2:30 | 63 | 58 |
| 30/05/2023 | 2:35 | 57 | 60 |
| 30/05/2023 | 2:40 | 80 | 68 |
| 30/05/2023 | 2:45 | 73 | 77 |
| 30/05/2023 | 2:50 | 18 | 46 |
| 30/05/2023 | 2:55 | 8 | 13 |
| Hidden cells with no values exceeding limit. | | | |
| 30/05/2023 | 3:45 | 8 | 7 |
| 30/05/2023 | 3:50 | 85 | 46 |
| 30/05/2023 | 3:55 | 42 | 63 |
| 30/05/2023 | 4:00 | 103 | 72 |
| 30/05/2023 | 4:05 | 73 | 88 |
| 30/05/2023 | 4:10 | 79 | 76 |
| 30/05/2023 | 4:15 | 62 | 71 |
| 30/05/2023 | 4:20 | 35 | 49 |
| 30/05/2023 | 4:25 | 10 | 23 |
| 30/05/2023 | 4:30 | 7 | 8 |
| 30/05/2023 | 4:35 | 99 | 53 |
| 30/05/2023 | 4:40 | 99 | 99 |
| 30/05/2023 | 4:45 | 40 | 69 |
| 30/05/2023 | 4:50 | 44 | 42 |
| 30/05/2023 | 4:55 | 29 | 36 |
| Hidden cells with no values exceeding limit. | | | |
| 30/05/2023 | 20:25 | 3 | 3 |
| 30/05/2023 | 20:30 | 33 | 18 |
| 30/05/2023 | 20:35 | 91 | 62 |
| 30/05/2023 | 20:40 | 94 | 93 |
| 30/05/2023 | 20:45 | 78 | 86 |
| 30/05/2023 | 20:50 | 106 | 92 |

| | | | |
|---|---|---|---|
| 30/05/2023 | 20:55 | 48 | 77 |
| 30/05/2023 | 21:00 | 28 | 38 |
| 30/05/2023 | 21:05 | 14 | 21 |

**Notes:**

| | |
|---|---|
| D, T & V | - Date, Time & Exceedence Value Reportec |
| Faded Values | - Not used to calculate the number of reportable exceedences |
| | - Range of 5-minute measurements that contribute to the Exceedance Value Reported |
| Max | - Maximum of the Range |
| Min | - Minimum of the Range |

Ambient Air Quality Criteria (AAQC) for SO2 = 67 ppb for 10-minute running average

Total Number of Reportable Exceedances: **75**

**SO2 Exceedance Report** **Table E3**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

| Date | Time | $SO_2$ 5-min Avg. | $SO_2$ 10-minute Running Avg. |
|---|---|---|---|
| (mm/dd/yyyy) | (EST) | (ppb) | (ppb) |
| 01/06/2023 | 4:15 | 4 | 5 |
| 01/06/2023 | 4:20 | 30 | 17 |
| 01/06/2023 | 4:25 | 50 | 40 |
| 01/06/2023 | 4:30 | 84 | 67 |
| 01/06/2023 | 4:35 | 22 | 53 |
| 01/06/2023 | 4:40 | 23 | 23 |
| 01/06/2023 | 4:45 | 19 | 21 |
| Hidden cells with no values exceeding limit. | | | |
| 01/06/2023 | 20:05 | 2 | 2 |
| 01/06/2023 | 20:10 | 3 | 2 |
| 01/06/2023 | 20:15 | 93 | 48 |
| 01/06/2023 | 20:20 | 43 | 68 |
| 01/06/2023 | 20:25 | 15 | 29 |
| 01/06/2023 | 20:30 | 126 | 70 |
| 01/06/2023 | 20:35 | 14 | 70 |
| 01/06/2023 | 20:40 | 10 | 12 |
| 01/06/2023 | 20:45 | 124 | 67 |
| 01/06/2023 | 20:50 | 15 | 69 |
| 01/06/2023 | 20:55 | 9 | 12 |
| 01/06/2023 | 21:00 | 6 | 8 |
| 01/06/2023 | 21:05 | 5 | 6 |
| Hidden cells with no values exceeding limit. | | | |
| 01/06/2023 | 21:20 | 10 | 35 |
| 01/06/2023 | 21:25 | 7 | 9 |
| 01/06/2023 | 21:30 | 98 | 52 |
| 01/06/2023 | 21:35 | 127 | 113 |
| 01/06/2023 | 21:40 | 21 | 74 |
| 01/06/2023 | 21:45 | 15 | 18 |
| 01/06/2023 | 21:50 | 10 | 12 |
| Hidden cells with no values exceeding limit. | | | |
| 01/06/2023 | 22:00 | 6 | 6 |
| 01/06/2023 | 22:05 | 5 | 6 |
| 01/06/2023 | 22:10 | 34 | 19 |
| 01/06/2023 | 22:15 | 104 | 69 |
| 01/06/2023 | 22:20 | 26 | 65 |
| 01/06/2023 | 22:25 | 57 | 41 |
| 01/06/2023 | 22:30 | 36 | 47 |
| Hidden cells with no values exceeding limit. | | | |
| 01/06/2023 | 22:55 | 22 | 15 |
| 01/06/2023 | 23:00 | 38 | 30 |
| 01/06/2023 | 23:05 | 41 | 39 |
| 01/06/2023 | 23:10 | 127 | 84 |
| 01/06/2023 | 23:15 | 53 | 90 |
| 01/06/2023 | 23:20 | 18 | 35 |
| 01/06/2023 | 23:25 | 10 | 14 |
| Hidden cells with no values exceeding limit. | | | |
| 03/06/2023 | 23:20 | 2 | 5 |
| 03/06/2023 | 23:25 | 23 | 13 |
| 03/06/2023 | 23:30 | 89 | 56 |
| 03/06/2023 | 23:35 | 58 | 74 |
| 03/06/2023 | 23:40 | 62 | 60 |
| 03/06/2023 | 23:45 | 36 | 49 |
| 03/06/2023 | 23:50 | 29 | 33 |
| Hidden cells with no values exceeding limit. | | | |
| 05/06/2023 | 1:05 | 54 | 58 |
| 05/06/2023 | 1:10 | 7 | 31 |
| 05/06/2023 | 1:15 | 6 | 6 |
| 05/06/2023 | 1:20 | 161 | 83 |

| | | | |
|---|---|---|---|
| 05/06/2023 | 1:25 | 15 | 88 |
| 05/06/2023 | 1:30 | 130 | 73 |
| 05/06/2023 | 1:35 | 36 | 83 |
| 05/06/2023 | 1:40 | 102 | 69 |
| 05/06/2023 | 1:45 | - | 102 |
| 05/06/2023 | 1:50 | - | - |
| 05/06/2023 | 1:55 | - | - |
| Hidden cells with no values exceeding limit. | | | |
| 05/06/2023 | 2:50 | 17 | 10 |
| 05/06/2023 | 2:55 | 19 | 18 |
| 05/06/2023 | 3:00 | 14 | 17 |
| 05/06/2023 | 3:05 | 180 | 97 |
| 05/06/2023 | 3:10 | 111 | 145 |
| 05/06/2023 | 3:15 | 15 | 63 |
| 05/06/2023 | 3:20 | 11 | 13 |
| Hidden cells with no values exceeding limit. | | | |
| 28/06/2023 | 22:50 | 3 | 3 |
| 28/06/2023 | 22:55 | 1 | 2 |
| 28/06/2023 | 23:00 | 86 | 44 |
| 28/06/2023 | 23:05 | 79 | 83 |
| 28/06/2023 | 23:10 | 12 | 46 |
| 28/06/2023 | 23:15 | 7 | 9 |
| 28/06/2023 | 23:20 | 5 | 6 |

**Notes:**

| | |
|---|---|
| D, T & V | - Date, Time & Exceedence Value Reportec |
| Faded Values | - Not used to calculate the number of reportable exceedences |
| | - Range of 5-minute measurements that contribute to the Exceedance Value Reported |
| Max | - Maximum of the Range |
| Min | - Minimum of the Range |

Ambient Air Quality Criteria (AAQC) for SO2 = 67 ppb for 10-minute running average

Total Number of Reportable Exceedances: **13**

**SO2 Exceedance Report** **Table E4**

Durham York Energy Centre
Courtice, Ontario
Rundle Road Station
Baseline Corrected Data

| Date | Time | $SO_2$ | $SO_2$ |
|---|---|---|---|
| | | 5-min Avg. | 10-minute Running Avg. |
| (mm/dd/yyyy) | (EST) | (ppb) | (ppb) |
| 21/06/2023 | 11:40 | 12 | 12 |
| 21/06/2023 | 11:45 | 63 | 38 |
| 21/06/2023 | 11:50 | 70 | 66 |
| 21/06/2023 | 11:55 | 80 | 75 |
| 21/06/2023 | 12:00 | 102 | 91 |
| 21/06/2023 | 12:05 | 52 | 77 |
| 21/06/2023 | 12:10 | 29 | 40 |
| 21/06/2023 | 12:15 | 78 | 53 |
| 21/06/2023 | 12:20 | 203 | 140 |
| 21/06/2023 | 12:25 | 332 | 267 |
| 21/06/2023 | 12:30 | 393 | 363 |
| 21/06/2023 | 12:35 | 166 | 280 |
| 21/06/2023 | 12:40 | 90 | 128 |
| 21/06/2023 | 12:45 | 88 | 89 |
| 21/06/2023 | 12:50 | 87 | 87 |
| 21/06/2023 | 12:55 | 44 | 65 |
| 21/06/2023 | 13:00 | 41 | 42 |
| 21/06/2023 | 13:05 | 87 | 64 |
| 21/06/2023 | 13:10 | 93 | 90 |
| 21/06/2023 | 13:15 | 89 | 91 |
| 21/06/2023 | 13:20 | 192 | 141 |
| 21/06/2023 | 13:25 | 149 | 171 |
| 21/06/2023 | 13:30 | 213 | 181 |
| 21/06/2023 | 13:35 | 168 | 191 |
| 21/06/2023 | 13:40 | 72 | 120 |
| 21/06/2023 | 13:45 | 49 | 61 |
| 21/06/2023 | 13:50 | 72 | 61 |
| 21/06/2023 | 13:55 | 87 | 80 |
| 21/06/2023 | 14:00 | 70 | 79 |
| 21/06/2023 | 14:05 | 102 | 86 |
| 21/06/2023 | 14:10 | 103 | 103 |
| 21/06/2023 | 14:15 | 90 | 96 |
| 21/06/2023 | 14:20 | 108 | 99 |
| 21/06/2023 | 14:25 | 68 | 88 |
| 21/06/2023 | 14:30 | 38 | 53 |
| 21/06/2023 | 14:35 | 39 | 38 |
| 21/06/2023 | 14:40 | 53 | 46 |

**Notes:**

| | |
|---|---|
| D, T & V | - Date, Time & Exceedence Value Reportec |
| Faded Values | - Not used to calculate the number of reportable exceedences |
| | - Range of 5-minute measurements that contribute to the Exceedance Value Reported |
| Max | - Maximum of the Range |
| Min | - Minimum of the Range |

Ambient Air Quality Criteria (AAQC) for SO2 = 67 ppb for 10-minute running average

Total Number of Reportable Exceedances: **14**

**SO2 Exceedance Report** **Table E5**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

| Date | Time | $SO_2$ | $SO_2$ |
|---|---|---|---|
| | | 5-min Avg. | 1-hr Running Avg. |
| (mm/dd/yyyy) | (EST) | (ppb) | (ppb) |
| 03/04/2023 | 17:55 | 0 | 0 |
| 03/04/2023 | 18:00 | 0 | 0 |
| 03/04/2023 | 18:05 | 0 | 0 |
| 03/04/2023 | 18:10 | 0 | 0 |
| 03/04/2023 | 18:15 | 0 | 0 |
| 03/04/2023 | 18:20 | 0 | 0 |
| 03/04/2023 | 18:25 | 0 | 0 |
| 03/04/2023 | 18:30 | 0 | 0 |
| 03/04/2023 | 18:35 | 1 | 0 |
| 03/04/2023 | 18:40 | 25 | 2 |
| 03/04/2023 | 18:45 | 58 | 7 |
| 03/04/2023 | 18:50 | 160 | 20 |
| 03/04/2023 | 18:55 | 168 | 34 |
| 03/04/2023 | 19:00 | 106 | 43 |
| 03/04/2023 | 19:05 | 34 | 46 |
| 03/04/2023 | 19:10 | 9 | 47 |
| 03/04/2023 | 19:15 | 6 | 47 |
| 03/04/2023 | 19:20 | 4 | 48 |
| 03/04/2023 | 19:25 | 4 | 48 |
| 03/04/2023 | 19:30 | 3 | 48 |
| 03/04/2023 | 19:35 | 5 | 49 |
| 03/04/2023 | 19:40 | 4 | 47 |
| 03/04/2023 | 19:45 | 5 | 42 |
| 03/04/2023 | 19:50 | 29 | 31 |
| 03/04/2023 | 19:55 | 43 | 21 |
| 03/04/2023 | 20:00 | 45 | 16 |
| 03/04/2023 | 20:05 | 13 | 14 |
| Hidden cells with no values exceeding limit. | | | |
| 09/04/2023 | 19:35 | 0 | 0 |
| 09/04/2023 | 19:40 | 1 | 0 |
| 09/04/2023 | 19:45 | 83 | 7 |
| 09/04/2023 | 19:50 | 14 | 8 |
| 09/04/2023 | 19:55 | 18 | 10 |
| 09/04/2023 | 20:00 | 42 | 13 |
| 09/04/2023 | 20:05 | 85 | 20 |
| 09/04/2023 | 20:10 | 57 | 25 |
| 09/04/2023 | 20:15 | 12 | 26 |
| 09/04/2023 | 20:20 | 4 | 26 |
| 09/04/2023 | 20:25 | 3 | 27 |
| 09/04/2023 | 20:30 | 2 | 27 |
| 09/04/2023 | 20:35 | 44 | 30 |
| 09/04/2023 | 20:40 | 171 | 44 |
| 09/04/2023 | 20:45 | 75 | 44 |
| 09/04/2023 | 20:50 | 115 | 52 |
| 09/04/2023 | 20:55 | 78 | 57 |
| 09/04/2023 | 21:00 | 162 | 67 |
| 09/04/2023 | 21:05 | 66 | 66 |
| 09/04/2023 | 21:10 | 11 | 62 |
| 09/04/2023 | 21:15 | 7 | 62 |
| 09/04/2023 | 21:20 | 5 | 62 |
| 09/04/2023 | 21:25 | 17 | 63 |
| 09/04/2023 | 21:30 | 175 | 77 |
| 09/04/2023 | 21:35 | 39 | 77 |
| 09/04/2023 | 21:40 | 11 | 63 |
| 09/04/2023 | 21:45 | 6 | 58 |
| 09/04/2023 | 21:50 | 14 | 49 |
| 09/04/2023 | 21:55 | 71 | 49 |
| 09/04/2023 | 22:00 | 32 | 38 |

| | | | |
|---|---|---|---|
| 09/04/2023 | 22:05 | 9 | 33 |
| 09/04/2023 | 22:10 | 5 | 32 |
| 09/04/2023 | 22:15 | 4 | 32 |
| 09/04/2023 | 22:20 | 3 | 32 |
| 09/04/2023 | 22:25 | 8 | 31 |
| 09/04/2023 | 22:30 | 103 | 25 |
| 09/04/2023 | 22:35 | 87 | 29 |
| 09/04/2023 | 22:40 | 87 | 36 |
| 09/04/2023 | 22:45 | 47 | 39 |
| 09/04/2023 | 22:50 | 32 | 41 |
| 09/04/2023 | 22:55 | 12 | 36 |
| 09/04/2023 | 23:00 | 6 | 34 |
| 09/04/2023 | 23:05 | 5 | 33 |
| 09/04/2023 | 23:10 | 4 | 33 |
| 09/04/2023 | 23:15 | 3 | 33 |
| 09/04/2023 | 23:20 | 4 | 33 |
| 09/04/2023 | 23:25 | 2 | 33 |
| 09/04/2023 | 23:30 | 2 | 24 |
| 09/04/2023 | 23:35 | 2 | 17 |
| 09/04/2023 | 23:40 | 1 | 10 |
| 09/04/2023 | 23:45 | 1 | 6 |
| 09/04/2023 | 23:50 | 1 | 4 |
| 09/04/2023 | 23:55 | 1 | 3 |
| Hidden cells with no values exceeding limit. | | | |
| 25/04/2023 | 2:20 | 30 | 33 |
| 25/04/2023 | 2:25 | 32 | 38 |
| 25/04/2023 | 2:30 | 9 | 39 |
| 25/04/2023 | 2:35 | 22 | 42 |
| 25/04/2023 | 2:40 | 22 | 46 |
| 25/04/2023 | 2:45 | 7 | 40 |
| 25/04/2023 | 2:50 | 19 | 38 |
| 25/04/2023 | 2:55 | 24 | 36 |
| 25/04/2023 | 3:00 | 29 | 35 |
| 25/04/2023 | 3:05 | 45 | 36 |
| 25/04/2023 | 3:10 | 15 | 34 |
| 25/04/2023 | 3:15 | 8 | 22 |
| 25/04/2023 | 3:20 | 170 | 33 |
| 25/04/2023 | 3:25 | 120 | 41 |
| 25/04/2023 | 3:30 | 33 | 43 |
| 25/04/2023 | 3:35 | 13 | 42 |
| 25/04/2023 | 3:40 | 8 | 41 |
| 25/04/2023 | 3:45 | 13 | 41 |
| 25/04/2023 | 3:50 | 19 | 41 |
| 25/04/2023 | 3:55 | 9 | 40 |
| 25/04/2023 | 4:00 | 11 | 39 |
| 25/04/2023 | 4:05 | 10 | 36 |
| 25/04/2023 | 4:10 | 5 | 35 |
| 25/04/2023 | 4:15 | 4 | 35 |
| 25/04/2023 | 4:20 | 3 | 21 |
| 25/04/2023 | 4:25 | 3 | 11 |
| 25/04/2023 | 4:30 | 3 | 8 |
| Hidden cells with no values exceeding limit. | | | |
| 27/04/2023 | 2:55 | 2 | 3 |
| 27/04/2023 | 3:00 | 5 | 3 |
| 27/04/2023 | 3:05 | 2 | 3 |
| 27/04/2023 | 3:10 | 2 | 3 |
| 27/04/2023 | 3:15 | 8 | 4 |
| 27/04/2023 | 3:20 | 76 | 10 |
| 27/04/2023 | 3:25 | 59 | 14 |
| 27/04/2023 | 3:30 | 91 | 21 |
| 27/04/2023 | 3:35 | 16 | 22 |
| 27/04/2023 | 3:40 | 51 | 26 |
| 27/04/2023 | 3:45 | 112 | 36 |
| 27/04/2023 | 3:50 | 44 | 39 |
| 27/04/2023 | 3:55 | 11 | 40 |
| 27/04/2023 | 4:00 | 33 | 42 |
| 27/04/2023 | 4:05 | 199 | 59 |
| 27/04/2023 | 4:10 | 42 | 62 |

| | | | |
|---|---|---|---|
| 27/04/2023 | 4:15 | 11 | |
| 27/04/2023 | 4:20 | 51 | |
| 27/04/2023 | 4:25 | 17 | |
| 27/04/2023 | 4:30 | 12 | |
| 27/04/2023 | 4:35 | 7 | |
| 27/04/2023 | 4:40 | 5 | |
| 27/04/2023 | 4:45 | 4 | |
| 27/04/2023 | 4:50 | 4 | |
| 27/04/2023 | 4:55 | 3 | |
| | | | |
| | | | |

**Notes:**

| | |
|---|---|
| D, T & V | - Date, Time & Exceedence Value Reported |
| Faded Values | - Not used to calculate the number of reportable exceedences |
| | - Range of 5-minute measurements that contribute to the Exceedance Value Reported |
| Max | - Maximum of the Range |
| Min | - Minimum of the Range |

Ambient Air Quality Criteria (AAQC) for SO2 = 40 ppb for 1-hour running average

Total Number of Reportable Exceedances: **6**

**SO2 Exceedance Report** **Table E6**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

| Date | Time | $SO_2$ | $SO_2$ |
|---|---|---|---|
| | | 5-min Avg. | 1-hr Running Avg. |
| (mm/dd/yyyy) | (EST) | (ppb) | (ppb) |
| 05/05/2023 | 19:40 | 0 | 0 |
| 05/05/2023 | 19:45 | 0 | 0 |
| 05/05/2023 | 19:50 | 0 | 0 |
| 05/05/2023 | 19:55 | 44 | 4 |
| 05/05/2023 | 20:00 | 40 | 7 |
| 05/05/2023 | 20:05 | 2 | 7 |
| 05/05/2023 | 20:10 | 2 | 8 |
| 05/05/2023 | 20:15 | 99 | 16 |
| 05/05/2023 | 20:20 | 106 | 25 |
| 05/05/2023 | 20:25 | 6 | 25 |
| 05/05/2023 | 20:30 | 97 | 33 |
| 05/05/2023 | 20:35 | 15 | 34 |
| 05/05/2023 | 20:40 | 44 | 38 |
| 05/05/2023 | 20:45 | 27 | 40 |
| 05/05/2023 | 20:50 | 7 | 41 |
| 05/05/2023 | 20:55 | 4 | 37 |
| 05/05/2023 | 21:00 | 19 | 36 |
| 05/05/2023 | 21:05 | 167 | 49 |
| 05/05/2023 | 21:10 | 19 | 51 |
| 05/05/2023 | 21:15 | 30 | 45 |
| 05/05/2023 | 21:20 | 9 | 37 |
| 05/05/2023 | 21:25 | 5 | 37 |
| 05/05/2023 | 21:30 | 4 | 29 |
| 05/05/2023 | 21:35 | 3 | 28 |
| 05/05/2023 | 21:40 | 3 | 25 |
| 05/05/2023 | 21:45 | 2 | 23 |
| 05/05/2023 | 21:50 | 2 | 22 |
| Hidden cells with no values exceeding limit. | | | |
| 06/05/2023 | 4:05 | 10 | 4 |
| 06/05/2023 | 4:10 | 4 | 4 |
| 06/05/2023 | 4:15 | 5 | 3 |
| 06/05/2023 | 4:20 | 91 | 11 |
| 06/05/2023 | 4:25 | 43 | 14 |
| 06/05/2023 | 4:30 | 8 | 14 |
| 06/05/2023 | 4:35 | 5 | 15 |
| 06/05/2023 | 4:40 | 4 | 15 |
| 06/05/2023 | 4:45 | 3 | 15 |
| 06/05/2023 | 4:50 | 5 | 15 |
| 06/05/2023 | 4:55 | 34 | 18 |
| 06/05/2023 | 5:00 | 115 | 27 |
| 06/05/2023 | 5:05 | 125 | 37 |
| 06/05/2023 | 5:10 | 100 | 45 |
| 06/05/2023 | 5:15 | 28 | 47 |
| 06/05/2023 | 5:20 | 14 | 40 |
| 06/05/2023 | 5:25 | 11 | 38 |
| 06/05/2023 | 5:30 | 78 | 43 |
| 06/05/2023 | 5:35 | 12 | 44 |
| 06/05/2023 | 5:40 | 8 | 44 |
| 06/05/2023 | 5:45 | 6 | 45 |
| 06/05/2023 | 5:50 | 37 | 47 |
| 06/05/2023 | 5:55 | 61 | 50 |
| 06/05/2023 | 6:00 | 20 | 42 |
| 06/05/2023 | 6:05 | 11 | 32 |
| 06/05/2023 | 6:10 | 8 | 25 |
| 06/05/2023 | 6:15 | 8 | 23 |
| Hidden cells with no values exceeding limit. | | | |
| 24/05/2023 | 7:55 | 7 | 3 |
| 24/05/2023 | 8:00 | 4 | 3 |

| | | | |
|---|---|---|---|
| 24/05/2023 | 8:05 | 5 | 3 |
| 24/05/2023 | 8:10 | 12 | 4 |
| 24/05/2023 | 8:15 | 40 | 7 |
| 24/05/2023 | 8:20 | 80 | 14 |
| 24/05/2023 | 8:25 | 75 | 20 |
| 24/05/2023 | 8:30 | 58 | 24 |
| 24/05/2023 | 8:35 | 78 | 31 |
| 24/05/2023 | 8:40 | 76 | 37 |
| 24/05/2023 | 8:45 | 25 | 39 |
| 24/05/2023 | 8:50 | 14 | 39 |
| 24/05/2023 | 8:55 | 13 | 40 |
| 24/05/2023 | 9:00 | 9 | 40 |
| 24/05/2023 | 9:05 | 6 | 40 |
| 24/05/2023 | 9:10 | 4 | 40 |
| 24/05/2023 | 9:15 | 4 | 37 |
| 24/05/2023 | 9:20 | 4 | 30 |
| 24/05/2023 | 9:25 | 3 | 25 |
| 24/05/2023 | 9:30 | 3 | 20 |
| 24/05/2023 | 9:35 | 2 | 14 |
| 24/05/2023 | 9:40 | 2 | 7 |
| 24/05/2023 | 9:45 | 2 | 6 |
| 24/05/2023 | 9:50 | 2 | 5 |
| 24/05/2023 | 9:55 | 2 | 4 |
| 24/05/2023 | 10:00 | 2 | 3 |
| 24/05/2023 | 10:05 | 2 | 3 |
| Hidden cells with no values exceeding limit. | | | |
| 24/05/2023 | 20:30 | 21 | 24 |
| 24/05/2023 | 20:35 | 5 | 23 |
| 24/05/2023 | 20:40 | 2 | 23 |
| 24/05/2023 | 20:45 | 70 | 28 |
| 24/05/2023 | 20:50 | 63 | 33 |
| 24/05/2023 | 20:55 | 39 | 36 |
| 24/05/2023 | 21:00 | 31 | 35 |
| 24/05/2023 | 21:05 | 49 | 36 |
| 24/05/2023 | 21:10 | 58 | 37 |
| 24/05/2023 | 21:15 | 41 | 37 |
| 24/05/2023 | 21:20 | 4 | 35 |
| 24/05/2023 | 21:25 | 35 | 35 |
| 24/05/2023 | 21:30 | 71 | 39 |
| 24/05/2023 | 21:35 | 49 | 43 |
| 24/05/2023 | 21:40 | 49 | 47 |
| 24/05/2023 | 21:45 | 41 | 44 |
| 24/05/2023 | 21:50 | 46 | 43 |
| 24/05/2023 | 21:55 | 33 | 42 |
| 24/05/2023 | 22:00 | 16 | 41 |
| 24/05/2023 | 22:05 | 5 | 37 |
| 24/05/2023 | 22:10 | 24 | 35 |
| 24/05/2023 | 22:15 | 14 | 32 |
| 24/05/2023 | 22:20 | 12 | 33 |
| 24/05/2023 | 22:25 | 11 | 31 |
| 24/05/2023 | 22:30 | 10 | 26 |
| 24/05/2023 | 22:35 | 9 | 22 |
| 24/05/2023 | 22:40 | 6 | 19 |
| Hidden cells with no values exceeding limit. | | | |
| 25/05/2023 | 21:35 | 8 | 12 |
| 25/05/2023 | 21:40 | 3 | 12 |
| 25/05/2023 | 21:45 | 2 | 12 |
| 25/05/2023 | 21:50 | 1 | 12 |
| 25/05/2023 | 21:55 | 1 | 4 |
| 25/05/2023 | 22:00 | 1 | 3 |
| 25/05/2023 | 22:05 | 1 | 3 |
| 25/05/2023 | 22:10 | 7 | 3 |
| 25/05/2023 | 22:15 | 44 | 7 |
| 25/05/2023 | 22:20 | 35 | 9 |
| 25/05/2023 | 22:25 | 66 | 14 |
| 25/05/2023 | 22:30 | 24 | 16 |
| 25/05/2023 | 22:35 | 295 | 40 |
| 25/05/2023 | 22:40 | 152 | 52 |

| | | | |
|---|---|---|---|
| 25/05/2023 | 22:45 | 130 | 63 |
| 25/05/2023 | 22:50 | 25 | 65 |
| 25/05/2023 | 22:55 | 33 | 68 |
| 25/05/2023 | 23:00 | 57 | 72 |
| 25/05/2023 | 23:05 | 9 | 73 |
| 25/05/2023 | 23:10 | 6 | 73 |
| 25/05/2023 | 23:15 | 22 | 71 |
| 25/05/2023 | 23:20 | 14 | 69 |
| 25/05/2023 | 23:25 | 29 | 66 |
| 25/05/2023 | 23:30 | 48 | 68 |
| 25/05/2023 | 23:35 | 39 | 47 |
| 25/05/2023 | 23:40 | 32 | 37 |
| 25/05/2023 | 23:45 | 7 | 27 |
| Hidden cells with no values exceeding limit. | | | |
| 26/05/2023 | 1:50 | - | 36 |
| 26/05/2023 | 1:55 | - | 39 |
| 26/05/2023 | 2:00 | - | - |
| 26/05/2023 | 2:05 | - | - |
| 26/05/2023 | 2:10 | - | - |
| 26/05/2023 | 2:15 | 143 | - |
| 26/05/2023 | 2:20 | 183 | - |
| 26/05/2023 | 2:25 | 78 | - |
| 26/05/2023 | 2:30 | 64 | - |
| 26/05/2023 | 2:35 | 22 | - |
| 26/05/2023 | 2:40 | 11 | - |
| 26/05/2023 | 2:45 | 8 | - |
| 26/05/2023 | 2:50 | 82 | - |
| 26/05/2023 | 2:55 | 43 | 70 |
| 26/05/2023 | 3:00 | 39 | 67 |
| 26/05/2023 | 3:05 | 37 | 65 |
| 26/05/2023 | 3:10 | 128 | 70 |
| 26/05/2023 | 3:15 | 66 | 63 |
| 26/05/2023 | 3:20 | 194 | 64 |
| 26/05/2023 | 3:25 | 24 | 60 |
| 26/05/2023 | 3:30 | 38 | 58 |
| 26/05/2023 | 3:35 | 36 | 59 |
| 26/05/2023 | 3:40 | 49 | 62 |
| 26/05/2023 | 3:45 | 25 | 63 |
| 26/05/2023 | 3:50 | 21 | 58 |
| 26/05/2023 | 3:55 | 112 | 64 |
| 26/05/2023 | 4:00 | 40 | 64 |
| 26/05/2023 | 4:05 | 14 | 62 |
| 26/05/2023 | 4:10 | 9 | 52 |
| 26/05/2023 | 4:15 | 7 | 47 |
| 26/05/2023 | 4:20 | 10 | 32 |
| 26/05/2023 | 4:25 | 8 | 31 |
| 26/05/2023 | 4:30 | 5 | 28 |
| 26/05/2023 | 4:35 | 9 | 26 |
| 26/05/2023 | 4:40 | 6 | 22 |
| 26/05/2023 | 4:45 | 3 | 20 |
| 26/05/2023 | 4:50 | 3 | 19 |
| 26/05/2023 | 4:55 | 4 | 10 |
| 26/05/2023 | 5:00 | 7 | 7 |
| Hidden cells with no values exceeding limit. | | | |
| 26/05/2023 | 19:35 | 0 | 1 |
| 26/05/2023 | 19:40 | 0 | 1 |
| 26/05/2023 | 19:45 | 0 | 0 |
| 26/05/2023 | 19:50 | 0 | 0 |
| 26/05/2023 | 19:55 | 0 | 0 |
| 26/05/2023 | 20:00 | 0 | 0 |
| 26/05/2023 | 20:05 | 0 | 0 |
| 26/05/2023 | 20:10 | 0 | 0 |
| 26/05/2023 | 20:15 | 0 | 0 |
| 26/05/2023 | 20:20 | 0 | 0 |
| 26/05/2023 | 20:25 | 0 | 0 |
| 26/05/2023 | 20:30 | 83 | 7 |
| 26/05/2023 | 20:35 | 364 | 38 |
| 26/05/2023 | 20:40 | 91 | 45 |

| | | | |
|---|---|---|---|
| 26/05/2023 | 20:45 | 10 | 46 |
| 26/05/2023 | 20:50 | 60 | 51 |
| 26/05/2023 | 20:55 | 20 | 53 |
| 26/05/2023 | 21:00 | 77 | 59 |
| 26/05/2023 | 21:05 | 251 | 80 |
| 26/05/2023 | 21:10 | 72 | 86 |
| 26/05/2023 | 21:15 | 10 | 87 |
| 26/05/2023 | 21:20 | 10 | 87 |
| 26/05/2023 | 21:25 | 5 | 88 |
| 26/05/2023 | 21:30 | 4 | 81 |
| 26/05/2023 | 21:35 | 236 | 71 |
| 26/05/2023 | 21:40 | 84 | 70 |
| 26/05/2023 | 21:45 | 15 | 70 |
| 26/05/2023 | 21:50 | 11 | 66 |
| 26/05/2023 | 21:55 | 6 | 65 |
| 26/05/2023 | 22:00 | 5 | 59 |
| 26/05/2023 | 22:05 | 4 | 38 |
| 26/05/2023 | 22:10 | 3 | 33 |
| 26/05/2023 | 22:15 | 2 | 32 |
| 26/05/2023 | 22:20 | 2 | 31 |
| 26/05/2023 | 22:25 | 2 | 31 |
| 26/05/2023 | 22:30 | 2 | 31 |
| 26/05/2023 | 22:35 | 3 | 12 |
| 26/05/2023 | 22:40 | 12 | 6 |
| 26/05/2023 | 22:45 | 5 | 5 |
| 26/05/2023 | 22:50 | 2 | 4 |
| 26/05/2023 | 22:55 | 2 | 4 |
| 26/05/2023 | 23:00 | 3 | 4 |
| 26/05/2023 | 23:05 | 212 | 21 |
| 26/05/2023 | 23:10 | 184 | 36 |
| 26/05/2023 | 23:15 | 116 | 45 |
| 26/05/2023 | 23:20 | 30 | 48 |
| 26/05/2023 | 23:25 | 153 | 60 |
| 26/05/2023 | 23:30 | 21 | 62 |
| 26/05/2023 | 23:35 | 9 | 62 |
| 26/05/2023 | 23:40 | 109 | 70 |
| 26/05/2023 | 23:45 | 23 | 72 |
| 26/05/2023 | 23:50 | 120 | 82 |
| 26/05/2023 | 23:55 | 32 | 84 |
| 27/05/2023 | 0:00 | 15 | 85 |
| 27/05/2023 | 0:05 | 54 | 72 |
| 27/05/2023 | 0:10 | 70 | 63 |
| 27/05/2023 | 0:15 | 11 | 54 |
| 27/05/2023 | 0:20 | 8 | 52 |
| 27/05/2023 | 0:25 | 6 | 40 |
| 27/05/2023 | 0:30 | 5 | 39 |
| 27/05/2023 | 0:35 | 103 | 46 |
| 27/05/2023 | 0:40 | 176 | 52 |
| 27/05/2023 | 0:45 | 66 | 56 |
| 27/05/2023 | 0:50 | 103 | 54 |
| 27/05/2023 | 0:55 | 66 | 57 |
| 27/05/2023 | 1:00 | 16 | 57 |
| 27/05/2023 | 1:05 | 23 | 54 |
| 27/05/2023 | 1:10 | 15 | 50 |
| 27/05/2023 | 1:15 | 43 | 53 |
| 27/05/2023 | 1:20 | 24 | 54 |
| 27/05/2023 | 1:25 | 39 | 57 |
| 27/05/2023 | 1:30 | 42 | 60 |
| 27/05/2023 | 1:35 | 75 | 57 |
| 27/05/2023 | 1:40 | 14 | 44 |
| 27/05/2023 | 1:45 | - | 42 |
| 27/05/2023 | 1:50 | - | 36 |
| 27/05/2023 | 1:55 | - | 32 |
| 27/05/2023 | 2:00 | - | - |
| 27/05/2023 | 2:05 | - | - |
| 27/05/2023 | 2:10 | - | - |
| 27/05/2023 | 2:15 | 54 | - |
| 27/05/2023 | 2:20 | 77 | - |

| | | | |
|---|---|---|---|
| 27/05/2023 | 2:25 | 28 | - |
| 27/05/2023 | 2:30 | 11 | - |
| 27/05/2023 | 2:35 | 74 | - |
| 27/05/2023 | 2:40 | 77 | - |
| 27/05/2023 | 2:45 | 26 | - |
| 27/05/2023 | 2:50 | 12 | - |
| 27/05/2023 | 2:55 | 21 | 42 |
| 27/05/2023 | 3:00 | 31 | 41 |
| 27/05/2023 | 3:05 | 24 | 40 |
| 27/05/2023 | 3:10 | 10 | 37 |
| 27/05/2023 | 3:15 | 57 | 37 |
| 27/05/2023 | 3:20 | 61 | 36 |
| 27/05/2023 | 3:25 | 331 | 61 |
| 27/05/2023 | 3:30 | 48 | 64 |
| 27/05/2023 | 3:35 | 18 | 60 |
| 27/05/2023 | 3:40 | 10 | 54 |
| 27/05/2023 | 3:45 | 7 | 52 |
| 27/05/2023 | 3:50 | 6 | 52 |
| 27/05/2023 | 3:55 | 5 | 51 |
| 27/05/2023 | 4:00 | 4 | 48 |
| 27/05/2023 | 4:05 | 4 | 47 |
| 27/05/2023 | 4:10 | 3 | 46 |
| 27/05/2023 | 4:15 | 48 | 45 |
| 27/05/2023 | 4:20 | 103 | 49 |
| 27/05/2023 | 4:25 | 51 | 26 |
| 27/05/2023 | 4:30 | 46 | 25 |
| 27/05/2023 | 4:35 | 17 | 25 |
| 27/05/2023 | 4:40 | 74 | 31 |
| 27/05/2023 | 4:45 | 58 | 35 |
| 27/05/2023 | 4:50 | 56 | 39 |
| 27/05/2023 | 4:55 | 12 | 40 |
| 27/05/2023 | 5:00 | 8 | 40 |
| 27/05/2023 | 5:05 | 8 | 40 |
| 27/05/2023 | 5:10 | 7 | 41 |
| 27/05/2023 | 5:15 | 5 | 37 |
| 27/05/2023 | 5:20 | 6 | 29 |
| 27/05/2023 | 5:25 | 6 | 25 |
| 27/05/2023 | 5:30 | 6 | 22 |
| 27/05/2023 | 5:35 | 8 | 21 |
| 27/05/2023 | 5:40 | 51 | 19 |
| 27/05/2023 | 5:45 | 45 | 18 |
| 27/05/2023 | 5:50 | 7 | 14 |
| 27/05/2023 | 5:55 | 6 | 14 |
| 27/05/2023 | 6:00 | 5 | 13 |
| 27/05/2023 | 6:05 | 4 | 13 |
| 27/05/2023 | 6:10 | 4 | 13 |
| Hidden cells with no values exceeding limit. | | | |
| 27/05/2023 | 18:45 | 0 | 1 |
| 27/05/2023 | 18:50 | 0 | 1 |
| 27/05/2023 | 18:55 | 0 | 0 |
| 27/05/2023 | 19:00 | 0 | 0 |
| 27/05/2023 | 19:05 | 1 | 0 |
| 27/05/2023 | 19:10 | 1 | 0 |
| 27/05/2023 | 19:15 | 1 | 0 |
| 27/05/2023 | 19:20 | 1 | 0 |
| 27/05/2023 | 19:25 | 1 | 0 |
| 27/05/2023 | 19:30 | 1 | 1 |
| 27/05/2023 | 19:35 | 28 | 3 |
| 27/05/2023 | 19:40 | 179 | 18 |
| 27/05/2023 | 19:45 | 164 | 31 |
| 27/05/2023 | 19:50 | 240 | 51 |
| 27/05/2023 | 19:55 | 3 | 51 |
| 27/05/2023 | 20:00 | 2 | 52 |
| 27/05/2023 | 20:05 | 11 | 52 |
| 27/05/2023 | 20:10 | 106 | 61 |
| 27/05/2023 | 20:15 | 166 | 75 |
| 27/05/2023 | 20:20 | 268 | 97 |
| 27/05/2023 | 20:25 | 145 | 109 |

| | | | |
|---|---|---|---|
| 27/05/2023 | 20:30 | 8 | 110 |
| 27/05/2023 | 20:35 | 3 | 108 |
| 27/05/2023 | 20:40 | 3 | 93 |
| 27/05/2023 | 20:45 | 445 | 117 |
| 27/05/2023 | 20:50 | 237 | 116 |
| 27/05/2023 | 20:55 | 96 | 124 |
| 27/05/2023 | 21:00 | 7 | 125 |
| 27/05/2023 | 21:05 | 14 | 125 |
| 27/05/2023 | 21:10 | 150 | 128 |
| 27/05/2023 | 21:15 | 192 | 131 |
| 27/05/2023 | 21:20 | 19 | 110 |
| 27/05/2023 | 21:25 | 29 | 100 |
| 27/05/2023 | 21:30 | 20 | 101 |
| 27/05/2023 | 21:35 | 41 | 104 |
| 27/05/2023 | 21:40 | 208 | 121 |
| 27/05/2023 | 21:45 | 59 | 89 |
| 27/05/2023 | 21:50 | 12 | 70 |
| 27/05/2023 | 21:55 | 7 | 63 |
| 27/05/2023 | 22:00 | 5 | 63 |
| 27/05/2023 | 22:05 | 4 | 62 |
| 27/05/2023 | 22:10 | 174 | 64 |
| 27/05/2023 | 22:15 | 292 | 72 |
| 27/05/2023 | 22:20 | 58 | 76 |
| 27/05/2023 | 22:25 | 15 | 75 |
| 27/05/2023 | 22:30 | 96 | 81 |
| 27/05/2023 | 22:35 | 19 | 79 |
| 27/05/2023 | 22:40 | 9 | 63 |
| 27/05/2023 | 22:45 | 6 | 58 |
| 27/05/2023 | 22:50 | 5 | 58 |
| 27/05/2023 | 22:55 | 38 | 60 |
| 27/05/2023 | 23:00 | 144 | 72 |
| 27/05/2023 | 23:05 | 36 | 74 |
| 27/05/2023 | 23:10 | 35 | 63 |
| 27/05/2023 | 23:15 | 10 | 39 |
| 27/05/2023 | 23:20 | 7 | 35 |
| 27/05/2023 | 23:25 | 6 | 34 |
| 27/05/2023 | 23:30 | 5 | 27 |
| 27/05/2023 | 23:35 | 4 | 25 |
| 27/05/2023 | 23:40 | 4 | 25 |
| 27/05/2023 | 23:45 | 3 | 25 |
| 27/05/2023 | 23:50 | 3 | 25 |
| 27/05/2023 | 23:55 | 38 | 25 |
| Hidden cells with no values exceeding limit. | | | |
| 28/05/2023 | 1:50 | - | 3 |
| 28/05/2023 | 1:55 | - | 3 |
| 28/05/2023 | 2:00 | - | - |
| 28/05/2023 | 2:05 | - | - |
| 28/05/2023 | 2:10 | - | - |
| 28/05/2023 | 2:15 | 39 | - |
| 28/05/2023 | 2:20 | 18 | - |
| 28/05/2023 | 2:25 | 49 | - |
| 28/05/2023 | 2:30 | 18 | - |
| 28/05/2023 | 2:35 | 11 | - |
| 28/05/2023 | 2:40 | 8 | - |
| 28/05/2023 | 2:45 | 106 | - |
| 28/05/2023 | 2:50 | 89 | - |
| 28/05/2023 | 2:55 | 104 | 49 |
| 28/05/2023 | 3:00 | 156 | 60 |
| 28/05/2023 | 3:05 | 394 | 90 |
| 28/05/2023 | 3:10 | 185 | 98 |
| 28/05/2023 | 3:15 | 25 | 97 |
| 28/05/2023 | 3:20 | 17 | 97 |
| 28/05/2023 | 3:25 | 23 | 94 |
| 28/05/2023 | 3:30 | 84 | 100 |
| 28/05/2023 | 3:35 | 32 | 102 |
| 28/05/2023 | 3:40 | 27 | 103 |
| 28/05/2023 | 3:45 | 165 | 108 |
| 28/05/2023 | 3:50 | 29 | 103 |

| | | | |
|---|---|---|---|
| 28/05/2023 | 3:55 | 106 | 103 |
| 28/05/2023 | 4:00 | 32 | 93 |
| 28/05/2023 | 4:05 | 23 | 62 |
| 28/05/2023 | 4:10 | 246 | 67 |
| 28/05/2023 | 4:15 | 222 | 84 |
| 28/05/2023 | 4:20 | 94 | 90 |
| 28/05/2023 | 4:25 | 66 | 94 |
| 28/05/2023 | 4:30 | 133 | 98 |
| 28/05/2023 | 4:35 | 224 | 114 |
| 28/05/2023 | 4:40 | 164 | 125 |
| 28/05/2023 | 4:45 | 31 | 114 |
| 28/05/2023 | 4:50 | 30 | 114 |
| 28/05/2023 | 4:55 | 161 | 119 |
| 28/05/2023 | 5:00 | 104 | 125 |
| 28/05/2023 | 5:05 | 17 | 124 |
| 28/05/2023 | 5:10 | 29 | 106 |
| 28/05/2023 | 5:15 | 24 | 90 |
| 28/05/2023 | 5:20 | 119 | 92 |
| 28/05/2023 | 5:25 | 68 | 92 |
| 28/05/2023 | 5:30 | 14 | 82 |
| 28/05/2023 | 5:35 | 11 | 64 |
| 28/05/2023 | 5:40 | 9 | 51 |
| 28/05/2023 | 5:45 | 7 | 49 |
| 28/05/2023 | 5:50 | 6 | 47 |
| 28/05/2023 | 5:55 | 7 | 35 |
| 28/05/2023 | 6:00 | 16 | 27 |
| Hidden cells with no values exceeding limit. | | | |
| 28/05/2023 | 19:10 | 1 | 1 |
| 28/05/2023 | 19:15 | 1 | 1 |
| 28/05/2023 | 19:20 | 1 | 1 |
| 28/05/2023 | 19:25 | 1 | 1 |
| 28/05/2023 | 19:30 | 1 | 1 |
| 28/05/2023 | 19:35 | 1 | 1 |
| 28/05/2023 | 19:40 | 4 | 1 |
| 28/05/2023 | 19:45 | 96 | 9 |
| 28/05/2023 | 19:50 | 167 | 23 |
| 28/05/2023 | 19:55 | 103 | 31 |
| 28/05/2023 | 20:00 | 32 | 34 |
| 28/05/2023 | 20:05 | 5 | 34 |
| 28/05/2023 | 20:10 | 4 | 34 |
| 28/05/2023 | 20:15 | 89 | 42 |
| 28/05/2023 | 20:20 | 206 | 59 |
| 28/05/2023 | 20:25 | 134 | 70 |
| 28/05/2023 | 20:30 | 42 | 73 |
| 28/05/2023 | 20:35 | 8 | 74 |
| 28/05/2023 | 20:40 | 31 | 76 |
| 28/05/2023 | 20:45 | 5 | 69 |
| 28/05/2023 | 20:50 | 3 | 55 |
| 28/05/2023 | 20:55 | 3 | 47 |
| 28/05/2023 | 21:00 | 2 | 44 |
| 28/05/2023 | 21:05 | 2 | 44 |
| 28/05/2023 | 21:10 | 2 | 44 |
| 28/05/2023 | 21:15 | 2 | 37 |
| 28/05/2023 | 21:20 | 1 | 20 |
| Hidden cells with no values exceeding limit. | | | |
| 29/05/2023 | 20:15 | 1 | 1 |
| 29/05/2023 | 20:20 | 29 | 4 |
| 29/05/2023 | 20:25 | 29 | 6 |
| 29/05/2023 | 20:30 | 4 | 6 |
| 29/05/2023 | 20:35 | 2 | 6 |
| 29/05/2023 | 20:40 | 16 | 7 |
| 29/05/2023 | 20:45 | 80 | 14 |
| 29/05/2023 | 20:50 | 48 | 18 |
| 29/05/2023 | 20:55 | 4 | 18 |
| 29/05/2023 | 21:00 | 3 | 18 |
| 29/05/2023 | 21:05 | 37 | 21 |
| 29/05/2023 | 21:10 | 77 | 28 |
| 29/05/2023 | 21:15 | 113 | 37 |

| | | | |
|---|---|---|---|
| 29/05/2023 | 21:20 | 105 | 43 |
| 29/05/2023 | 21:25 | 9 | 42 |
| 29/05/2023 | 21:30 | 8 | 42 |
| 29/05/2023 | 21:35 | 8 | 42 |
| 29/05/2023 | 21:40 | 5 | 41 |
| 29/05/2023 | 21:45 | 3 | 35 |
| 29/05/2023 | 21:50 | 3 | 31 |
| 29/05/2023 | 21:55 | 19 | 33 |
| 29/05/2023 | 22:00 | 56 | 37 |
| 29/05/2023 | 22:05 | 7 | 35 |
| 29/05/2023 | 22:10 | 5 | 28 |
| 29/05/2023 | 22:15 | 17 | 20 |
| 29/05/2023 | 22:20 | 54 | 16 |
| 29/05/2023 | 22:25 | 39 | 19 |
| Hidden cells with no values exceeding limit. | | | |
| 29/05/2023 | 23:55 | 6 | 22 |
| 30/05/2023 | 0:00 | 5 | 21 |
| 30/05/2023 | 0:05 | 56 | 25 |
| 30/05/2023 | 0:10 | 57 | 26 |
| 30/05/2023 | 0:15 | 45 | 29 |
| 30/05/2023 | 0:20 | 39 | 31 |
| 30/05/2023 | 0:25 | 65 | 34 |
| 30/05/2023 | 0:30 | 66 | 37 |
| 30/05/2023 | 0:35 | 43 | 39 |
| 30/05/2023 | 0:40 | 16 | 36 |
| 30/05/2023 | 0:45 | 9 | 35 |
| 30/05/2023 | 0:50 | 28 | 36 |
| 30/05/2023 | 0:55 | 36 | 39 |
| 30/05/2023 | 1:00 | 33 | 41 |
| 30/05/2023 | 1:05 | 20 | 38 |
| 30/05/2023 | 1:10 | 14 | 35 |
| 30/05/2023 | 1:15 | 27 | 33 |
| 30/05/2023 | 1:20 | 29 | 32 |
| 30/05/2023 | 1:25 | 14 | 28 |
| 30/05/2023 | 1:30 | 5 | 23 |
| 30/05/2023 | 1:35 | 44 | 23 |
| 30/05/2023 | 1:40 | 70 | 28 |
| 30/05/2023 | 1:45 | - | 29 |
| 30/05/2023 | 1:50 | - | 29 |
| 30/05/2023 | 1:55 | - | 29 |
| 30/05/2023 | 2:00 | - | - |
| 30/05/2023 | 2:05 | - | - |
| 30/05/2023 | 2:10 | - | - |
| 30/05/2023 | 2:15 | 30 | - |
| 30/05/2023 | 2:20 | 52 | - |
| 30/05/2023 | 2:25 | 53 | - |
| 30/05/2023 | 2:30 | 63 | - |
| 30/05/2023 | 2:35 | 57 | - |
| 30/05/2023 | 2:40 | 80 | - |
| 30/05/2023 | 2:45 | 73 | - |
| 30/05/2023 | 2:50 | 18 | - |
| 30/05/2023 | 2:55 | 8 | 48 |
| 30/05/2023 | 3:00 | 28 | 46 |
| 30/05/2023 | 3:05 | 98 | 51 |
| 30/05/2023 | 3:10 | 20 | 48 |
| 30/05/2023 | 3:15 | 27 | 48 |
| 30/05/2023 | 3:20 | 18 | 45 |
| 30/05/2023 | 3:25 | 9 | 42 |
| 30/05/2023 | 3:30 | 38 | 39 |
| 30/05/2023 | 3:35 | 21 | 36 |
| 30/05/2023 | 3:40 | 7 | 30 |
| 30/05/2023 | 3:45 | 8 | 25 |
| 30/05/2023 | 3:50 | 85 | 30 |
| 30/05/2023 | 3:55 | 42 | 33 |
| 30/05/2023 | 4:00 | 103 | 40 |
| 30/05/2023 | 4:05 | 73 | 37 |
| 30/05/2023 | 4:10 | 79 | 42 |
| 30/05/2023 | 4:15 | 62 | 45 |

| | | | |
|---|---|---|---|
| 30/05/2023 | 4:20 | 35 | 47 |
| 30/05/2023 | 4:25 | 10 | 47 |
| 30/05/2023 | 4:30 | 7 | 44 |
| 30/05/2023 | 4:35 | 99 | 51 |
| 30/05/2023 | 4:40 | 99 | 58 |
| 30/05/2023 | 4:45 | 40 | 61 |
| 30/05/2023 | 4:50 | 44 | 58 |
| 30/05/2023 | 4:55 | 29 | 57 |
| 30/05/2023 | 5:00 | 44 | 52 |
| 30/05/2023 | 5:05 | 35 | 48 |
| 30/05/2023 | 5:10 | 9 | 43 |
| 30/05/2023 | 5:15 | 16 | 39 |
| 30/05/2023 | 5:20 | 18 | 37 |
| 30/05/2023 | 5:25 | 35 | 39 |
| 30/05/2023 | 5:30 | 23 | 41 |
| 30/05/2023 | 5:35 | 35 | 35 |
| 30/05/2023 | 5:40 | 39 | 30 |
| 30/05/2023 | 5:45 | 43 | 31 |
| 30/05/2023 | 5:50 | 8 | 28 |
| 30/05/2023 | 5:55 | 6 | 26 |
| 30/05/2023 | 6:00 | 10 | 23 |
| 30/05/2023 | 6:05 | 7 | 21 |
| 30/05/2023 | 6:10 | 3 | 20 |
| 30/05/2023 | 6:15 | 3 | 19 |
| Hidden cells with no values exceeding limit. | | | |
| 30/05/2023 | 19:50 | 9 | 2 |
| 30/05/2023 | 19:55 | 8 | 3 |
| 30/05/2023 | 20:00 | 10 | 4 |
| 30/05/2023 | 20:05 | 3 | 4 |
| 30/05/2023 | 20:10 | 5 | 4 |
| 30/05/2023 | 20:15 | 8 | 5 |
| 30/05/2023 | 20:20 | 3 | 5 |
| 30/05/2023 | 20:25 | 3 | 5 |
| 30/05/2023 | 20:30 | 33 | 8 |
| 30/05/2023 | 20:35 | 91 | 15 |
| 30/05/2023 | 20:40 | 94 | 23 |
| 30/05/2023 | 20:45 | 78 | 29 |
| 30/05/2023 | 20:50 | 106 | 37 |
| 30/05/2023 | 20:55 | 48 | 40 |
| 30/05/2023 | 21:00 | 28 | 42 |
| 30/05/2023 | 21:05 | 14 | 43 |
| 30/05/2023 | 21:10 | 9 | 43 |
| 30/05/2023 | 21:15 | 6 | 43 |
| 30/05/2023 | 21:20 | 14 | 44 |
| 30/05/2023 | 21:25 | 8 | 44 |
| 30/05/2023 | 21:30 | 44 | 45 |
| 30/05/2023 | 21:35 | 25 | 40 |
| 30/05/2023 | 21:40 | 66 | 37 |
| 30/05/2023 | 21:45 | 45 | 34 |
| 30/05/2023 | 21:50 | 23 | 27 |
| 30/05/2023 | 21:55 | 9 | 24 |
| 30/05/2023 | 22:00 | 7 | 22 |
| Hidden cells with no values exceeding limit. | | | |
| 31/05/2023 | 21:50 | 5 | 8 |
| 31/05/2023 | 21:55 | 4 | 8 |
| 31/05/2023 | 22:00 | 27 | 10 |
| 31/05/2023 | 22:05 | 97 | 18 |
| 31/05/2023 | 22:10 | 145 | 30 |
| 31/05/2023 | 22:15 | 50 | 34 |
| 31/05/2023 | 22:20 | 34 | 36 |
| 31/05/2023 | 22:25 | 17 | 36 |
| 31/05/2023 | 22:30 | 10 | 35 |
| 31/05/2023 | 22:35 | 8 | 34 |
| 31/05/2023 | 22:40 | 6 | 34 |
| 31/05/2023 | 22:45 | 5 | 34 |
| 31/05/2023 | 22:50 | 6 | 34 |
| 31/05/2023 | 22:55 | 97 | 42 |
| 31/05/2023 | 23:00 | 30 | 42 |

| | | | |
|---|---|---|---|
| 31/05/2023 | 23:05 | 26 | 36 |
| 31/05/2023 | 23:10 | 13 | 25 |
| 31/05/2023 | 23:15 | 8 | 22 |
| 31/05/2023 | 23:20 | 8 | 19 |
| 31/05/2023 | 23:25 | 9 | 19 |
| 31/05/2023 | 23:30 | 6 | 18 |
| 31/05/2023 | 23:35 | 7 | 18 |
| 31/05/2023 | 23:40 | 7 | 19 |
| 31/05/2023 | 23:45 | 5 | 19 |
| 31/05/2023 | 23:50 | 7 | 19 |
| 31/05/2023 | 23:55 | 5 | 11 |

**Notes:**

| | |
|---|---|
| D, T & V | - Date, Time & Exceedence Value Reportec |
| Faded Values | - Not used to calculate the number of reportable exceedences |
| | - Range of 5-minute measurements that contribute to the Exceedance Value Reported |
| Max | - Maximum of the Range |
| Min | - Minimum of the Range |

Ambient Air Quality Criteria (AAQC) for SO2 = 40 ppb for 1-hour running average

Total Number of Reportable Exceedances: **30**

**SO2 Exceedance Report** **Table E7**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

| Date | Time | $SO_2$ | $SO_2$ |
|---|---|---|---|
| | | 5-min Avg. | 1-hr Running Avg. |
| (mm/dd/yyyy) | (EST) | (ppb) | (ppb) |
| 01/06/2023 | 20:30 | 126 | 30 |
| 01/06/2023 | 20:35 | 14 | 31 |
| 01/06/2023 | 20:40 | 10 | 32 |
| 01/06/2023 | 20:45 | 124 | 37 |
| 01/06/2023 | 20:50 | 15 | 37 |
| 01/06/2023 | 20:55 | 9 | 38 |
| 01/06/2023 | 21:00 | 6 | 38 |
| 01/06/2023 | 21:05 | 5 | 39 |
| 01/06/2023 | 21:10 | 11 | 39 |
| 01/06/2023 | 21:15 | 59 | 36 |
| 01/06/2023 | 21:20 | 10 | 34 |
| 01/06/2023 | 21:25 | 7 | 33 |
| 01/06/2023 | 21:30 | 98 | 31 |
| 01/06/2023 | 21:35 | 127 | 40 |
| 01/06/2023 | 21:40 | 21 | 41 |
| 01/06/2023 | 21:45 | 15 | 32 |
| 01/06/2023 | 21:50 | 10 | 32 |
| 01/06/2023 | 21:55 | 7 | 31 |
| 01/06/2023 | 22:00 | 6 | 31 |
| 01/06/2023 | 22:05 | 5 | 31 |
| 01/06/2023 | 22:10 | 34 | 33 |
| 01/06/2023 | 22:15 | 104 | 37 |
| 01/06/2023 | 22:20 | 26 | 38 |
| 01/06/2023 | 22:25 | 57 | 42 |
| 01/06/2023 | 22:30 | 36 | 37 |
| 01/06/2023 | 22:35 | 19 | 28 |
| 01/06/2023 | 22:40 | 13 | 28 |
| 01/06/2023 | 22:45 | 8 | 27 |
| 01/06/2023 | 22:50 | 7 | 27 |
| 01/06/2023 | 22:55 | 22 | 28 |
| 01/06/2023 | 23:00 | 38 | 31 |
| 01/06/2023 | 23:05 | 41 | 34 |
| 01/06/2023 | 23:10 | 127 | 41 |
| 01/06/2023 | 23:15 | 53 | 37 |
| 01/06/2023 | 23:20 | 18 | 37 |
| 01/06/2023 | 23:25 | 10 | 33 |
| 01/06/2023 | 23:30 | 8 | 30 |
| 01/06/2023 | 23:35 | 8 | 29 |
| 01/06/2023 | 23:40 | 8 | 29 |
| 01/06/2023 | 23:45 | 7 | 29 |
| 01/06/2023 | 23:50 | 8 | 29 |
| 01/06/2023 | 23:55 | 7 | 28 |
| 02/06/2023 | 0:00 | 5 | 25 |
| 02/06/2023 | 0:05 | 5 | 22 |
| 02/06/2023 | 0:10 | 7 | 12 |
| 02/06/2023 | 0:15 | 5 | 8 |
| Hidden cells with no values exceeding limit. | | | |
| 05/06/2023 | 0:35 | 1 | 6 |
| 05/06/2023 | 0:40 | 2 | 6 |
| 05/06/2023 | 0:45 | 1 | 6 |
| 05/06/2023 | 0:50 | 1 | 3 |
| 05/06/2023 | 0:55 | 2 | 2 |
| 05/06/2023 | 1:00 | 62 | 7 |
| 05/06/2023 | 1:05 | 54 | 11 |
| 05/06/2023 | 1:10 | 7 | 11 |
| 05/06/2023 | 1:15 | 6 | 12 |
| 05/06/2023 | 1:20 | 161 | 25 |
| 05/06/2023 | 1:25 | 15 | 26 |

| | | | |
|---|---|---|---|
| 05/06/2023 | 1:30 | 130 | 37 |
| 05/06/2023 | 1:35 | 36 | 40 |
| 05/06/2023 | 1:40 | 102 | 48 |
| 05/06/2023 | 1:45 | | 52 |
| 05/06/2023 | 1:50 | | 58 |
| 05/06/2023 | 1:55 | | 64 |
| 05/06/2023 | 2:00 | | 64 |
| 05/06/2023 | 2:05 | | 65 |
| 05/06/2023 | 2:10 | | 75 |
| 05/06/2023 | 2:15 | 8 | 75 |
| 05/06/2023 | 2:20 | 8 | 50 |
| 05/06/2023 | 2:25 | 56 | 57 |
| 05/06/2023 | 2:30 | 36 | 41 |
| 05/06/2023 | 2:35 | 9 | 37 |
| 05/06/2023 | 2:40 | 6 | 21 |
| 05/06/2023 | 2:45 | 4 | 18 |
| 05/06/2023 | 2:50 | 17 | 18 |
| 05/06/2023 | 2:55 | 19 | 18 |
| 05/06/2023 | 3:00 | 14 | 18 |
| 05/06/2023 | 3:05 | 180 | 33 |
| 05/06/2023 | 3:10 | 111 | 39 |
| 05/06/2023 | 3:15 | 15 | 40 |
| 05/06/2023 | 3:20 | 11 | 40 |
| 05/06/2023 | 3:25 | 8 | 36 |
| 05/06/2023 | 3:30 | 13 | 34 |
| 05/06/2023 | 3:35 | 80 | 40 |
| 05/06/2023 | 3:40 | 49 | 43 |
| 05/06/2023 | 3:45 | 37 | 46 |
| 05/06/2023 | 3:50 | 9 | 45 |
| 05/06/2023 | 3:55 | 87 | 51 |
| 05/06/2023 | 4:00 | 25 | 52 |
| 05/06/2023 | 4:05 | 11 | 38 |
| 05/06/2023 | 4:10 | 8 | 29 |
| 05/06/2023 | 4:15 | 21 | 30 |
| 05/06/2023 | 4:20 | 14 | 30 |
| 05/06/2023 | 4:25 | 10 | 30 |
| 05/06/2023 | 4:30 | 6 | 30 |
| 05/06/2023 | 4:35 | 17 | 24 |
| 05/06/2023 | 4:40 | 8 | 21 |
| 05/06/2023 | 4:45 | 5 | 18 |

**Notes:**

| | |
|---|---|
| D, T & V | - Date, Time & Exceedence Value Reportec |
| Faded Values | - Not used to calculate the number of reportable exceedences |
| | - Range of 5-minute measurements that contribute to the Exceedance Value Reported |
| Max | - Maximum of the Range |
| Min | - Minimum of the Range |

Ambient Air Quality Criteria (AAQC) for SO2 = 40 ppb for 1-hour running average

Total Number of Reportable Exceedances: **4**

**SO2 Exceedance Report** **Table E8**

Durham York Energy Centre
Courtice, Ontario
Rundle Road Station
Baseline Corrected Data

| Date | Time | $SO_2$ 5-min Avg. | $SO_2$ 1-hr Running Avg. |
|---|---|---|---|
| (mm/dd/yyyy) | (EST) | (ppb) | (ppb) |
| 21/04/2023 | 11:05 | 1 | 1 |
| 21/04/2023 | 11:10 | 2 | 1 |
| 21/04/2023 | 11:15 | 4 | 1 |
| 21/04/2023 | 11:20 | 8 | 2 |
| 21/04/2023 | 11:25 | 18 | 3 |
| 21/04/2023 | 11:30 | 47 | 7 |
| 21/04/2023 | 11:35 | 53 | 11 |
| 21/04/2023 | 11:40 | 41 | 15 |
| 21/04/2023 | 11:45 | 61 | 20 |
| 21/04/2023 | 11:50 | 59 | 25 |
| 21/04/2023 | 11:55 | 49 | 29 |
| 21/04/2023 | 12:00 | 52 | 33 |
| 21/04/2023 | 12:05 | 53 | 37 |
| 21/04/2023 | 12:10 | 47 | 41 |
| 21/04/2023 | 12:15 | 35 | 44 |
| 21/04/2023 | 12:20 | 42 | 46 |
| 21/04/2023 | 12:25 | 36 | 48 |
| 21/04/2023 | 12:30 | 34 | 47 |
| 21/04/2023 | 12:35 | 21 | 44 |
| 21/04/2023 | 12:40 | 9 | 41 |
| 21/04/2023 | 12:45 | 4 | 37 |
| 21/04/2023 | 12:50 | 2 | 32 |
| 21/04/2023 | 12:55 | 2 | 28 |
| 21/04/2023 | 13:00 | 2 | 24 |
| 21/04/2023 | 13:05 | 1 | 20 |
| 21/04/2023 | 13:10 | 1 | 16 |
| 21/04/2023 | 13:15 | 1 | 13 |

**Notes:**

| | |
|---|---|
| D, T & V | - Date, Time & Exceedence Value Reportec |
| Faded Values | - Not used to calculate the number of reportable exceedences |
| | - Range of 5-minute measurements that contribute to the Exceedance Value Reported |
| Max | - Maximum of the Range |
| Min | - Minimum of the Range |

Ambient Air Quality Criteria (AAQC) for SO2 = 40 ppb for 1-hour running average

Total Number of Reportable Exceedances: **1**

**SO2 Exceedance Report** **Table E9**

Durham York Energy Centre
Courtice, Ontario
Rundle Road Station
Baseline Corrected Data

| Date | Time | $SO_2$ | $SO_2$ |
|---|---|---|---|
| | | 5-min Avg. | 1-hr Running Avg. |
| (mm/dd/yyyy) | (EST) | (ppb) | (ppb) |
| 21/06/2023 | 11:10 | 1 | 1 |
| 21/06/2023 | 11:15 | 2 | 1 |
| 21/06/2023 | 11:20 | 4 | 1 |
| 21/06/2023 | 11:25 | 2 | 1 |
| 21/06/2023 | 11:30 | 5 | 2 |
| 21/06/2023 | 11:35 | 12 | 2 |
| 21/06/2023 | 11:40 | 12 | 3 |
| 21/06/2023 | 11:45 | 63 | 9 |
| 21/06/2023 | 11:50 | 70 | 14 |
| 21/06/2023 | 11:55 | 80 | 21 |
| 21/06/2023 | 12:00 | 102 | 29 |
| 21/06/2023 | 12:05 | 52 | 34 |
| 21/06/2023 | 12:10 | 29 | 36 |
| 21/06/2023 | 12:15 | 78 | 42 |
| 21/06/2023 | 12:20 | 203 | 59 |
| 21/06/2023 | 12:25 | 332 | 86 |
| 21/06/2023 | 12:30 | 393 | 119 |
| 21/06/2023 | 12:35 | 166 | 132 |
| 21/06/2023 | 12:40 | 90 | 138 |
| 21/06/2023 | 12:45 | 88 | 140 |
| 21/06/2023 | 12:50 | 87 | 142 |
| 21/06/2023 | 12:55 | 44 | 139 |
| 21/06/2023 | 13:00 | 41 | 133 |
| 21/06/2023 | 13:05 | 87 | 136 |
| 21/06/2023 | 13:10 | 93 | 142 |
| 21/06/2023 | 13:15 | 89 | 143 |
| 21/06/2023 | 13:20 | 192 | 142 |
| 21/06/2023 | 13:25 | 149 | 127 |
| 21/06/2023 | 13:30 | 213 | 112 |
| 21/06/2023 | 13:35 | 168 | 112 |
| 21/06/2023 | 13:40 | 72 | 110 |
| 21/06/2023 | 13:45 | 49 | 107 |
| 21/06/2023 | 13:50 | 72 | 106 |
| 21/06/2023 | 13:55 | 87 | 109 |
| 21/06/2023 | 14:00 | 70 | 112 |
| 21/06/2023 | 14:05 | 102 | 113 |
| 21/06/2023 | 14:10 | 103 | 114 |
| 21/06/2023 | 14:15 | 90 | 114 |
| 21/06/2023 | 14:20 | 108 | 107 |
| 21/06/2023 | 14:25 | 68 | 100 |
| 21/06/2023 | 14:30 | 38 | 86 |
| 21/06/2023 | 14:35 | 39 | 75 |
| 21/06/2023 | 14:40 | 53 | 73 |
| 21/06/2023 | 14:45 | 37 | 72 |
| 21/06/2023 | 14:50 | 47 | 70 |
| 21/06/2023 | 14:55 | 56 | 68 |
| 21/06/2023 | 15:00 | 38 | 65 |
| 21/06/2023 | 15:05 | 40 | 60 |
| 21/06/2023 | 15:10 | 33 | 54 |
| 21/06/2023 | 15:15 | 20 | 48 |
| 21/06/2023 | 15:20 | 27 | 41 |
| 21/06/2023 | 15:25 | 33 | 38 |
| 21/06/2023 | 15:30 | 25 | 37 |
| 21/06/2023 | 15:35 | 45 | 38 |
| 21/06/2023 | 15:40 | 54 | 38 |
| 21/06/2023 | 15:45 | 41 | 38 |
| 21/06/2023 | 15:50 | 54 | 39 |
| 21/06/2023 | 15:55 | 48 | 38 |

| | | | |
|---|---|---|---|
| 21/06/2023 | 16:00 | 34 | 38 |
| 21/06/2023 | 16:05 | 44 | 38 |
| 21/06/2023 | 16:10 | 38 | 39 |
| 21/06/2023 | 16:15 | 23 | 39 |
| 21/06/2023 | 16:20 | 21 | 38 |

**Notes:**

| | |
|---|---|
| D, T & V | - Date, Time & Exceedence Value Reportec |
| Faded Values | - Not used to calculate the number of reportable exceedences |
| | - Range of 5-minute measurements that contribute to the Exceedance Value Reported |
| Max | - Maximum of the Range |
| Min | - Minimum of the Range |

Ambient Air Quality Criteria (AAQC) for SO2 = 40 ppb for 1-hour running average

Total Number of Reportable Exceedances: **4**

# APPENDIX F

600 Southgate Drive
Guelph ON Canada
N1G 4P6

Tel: +1.519.823.1311
Fax: +1.519.823.1316
E-mail: solutions@rwdi.com

# MEMORANDUM

| | | |
|---|---|---|
| **DATE:** | 2023-07-13 | **RWDI Reference No.:** 2205149 |
| **TO:** | Lipika Saha | **EMAIL:** Lipika.Saha@Durham.ca |
| **CC:** | Andrew Evans | **EMAIL:** Andrew.Evans@Durham.ca |
| **CC:** | Lyndsay Waller | **EMAIL:** Lyndsay.Waller@Durham.ca |
| **FROM:** | Maja Bokara | **EMAIL:** Maja.Bokara@rwdi.com |
| **RE:** | **Exceedance Report – Total Suspended Particulate June 5, 2023 Region of Durham, DYEC** | |

On June 22, 2023, the results from ALS Environmental were received regarding the TSP results from the June 5, 2023, sampling event. On July 10, 2023, the results were entered and assessed. It was noted that on June 5, 2023, the Courtice Station Total Suspended Particulates (TSP) concentration was in excess of the 24-hour AAQC as measured by the onsite TSP sampler. Attached is a figure depicting the wind rose (indicating the wind speed and direction during the sampling day), and the location of the sampling stations relative to the DYEC.

The following summarizes the TSP concentrations and onsite conditions during the June 5 sampling date:

1. The guideline concentration for TSP is 120 µg/m$^3$. The measured concentration at the Courtice sampler for a 24-hour sample was 141.8 µg/m$^3$.
2. During the sampling day the wind was predominantly from the SW to the W, as recorded at the Courtice Meteorological Tower. One-hour average wind speeds at the Courtice Meteorological Tower ranged from 1.8 km/h to 13.7 km/h.
3. RWDI reviewed the available CEMS data over a 72-hour period which includes the day before and after the TSP exceedance date. The data showed no unusual readings, and all parameters were within the expected values as well as below the listed Limits. Based on the data, both boilers 1 and 2 were operating normally during the time reviewed.
4. A review of the current ESDM data shows that Total Particulate Matter emissions from the DYEC for a 24-hour period are estimated to be less than 1% of the MECP limit.
5. At the time of the data review, MECP monitoring station data for TSP was not available.

CANADA'S BEST MANAGED COMPANIES Platinum member

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6. The Courtice meteorological data suggests that the primary wind direction during the sampling period was from the southwest to west direction. The station is downwind of the DYEC when winds are from the north-northeast to the northeast directions. This indicates that the station was upwind of the DYEC during the sampling period. Given the wind conditions, it is not likely that the measured TSP exceedance is attributable to the Energy Centre operations.
7. On the date of June 5, 2023, there were severe wildfires in Canada which significantly impacted the Southern Ontario region's air quality with smoke. Exceptionally high levels of particulate matter were observed in the air across the region. It is likely that this high background level of particulate matter affected the Courtice sample on this date.

At the Courtice station, the $NO_2$ hourly values were less than 20% of the criteria for the same period. The $PM_{2.5}$ 24-hour average value was 36.1 micrograms per cubic metre at the Courtice station.

We have attached the data files for the samples in question to aid with the review.

Respectfully submitted by:

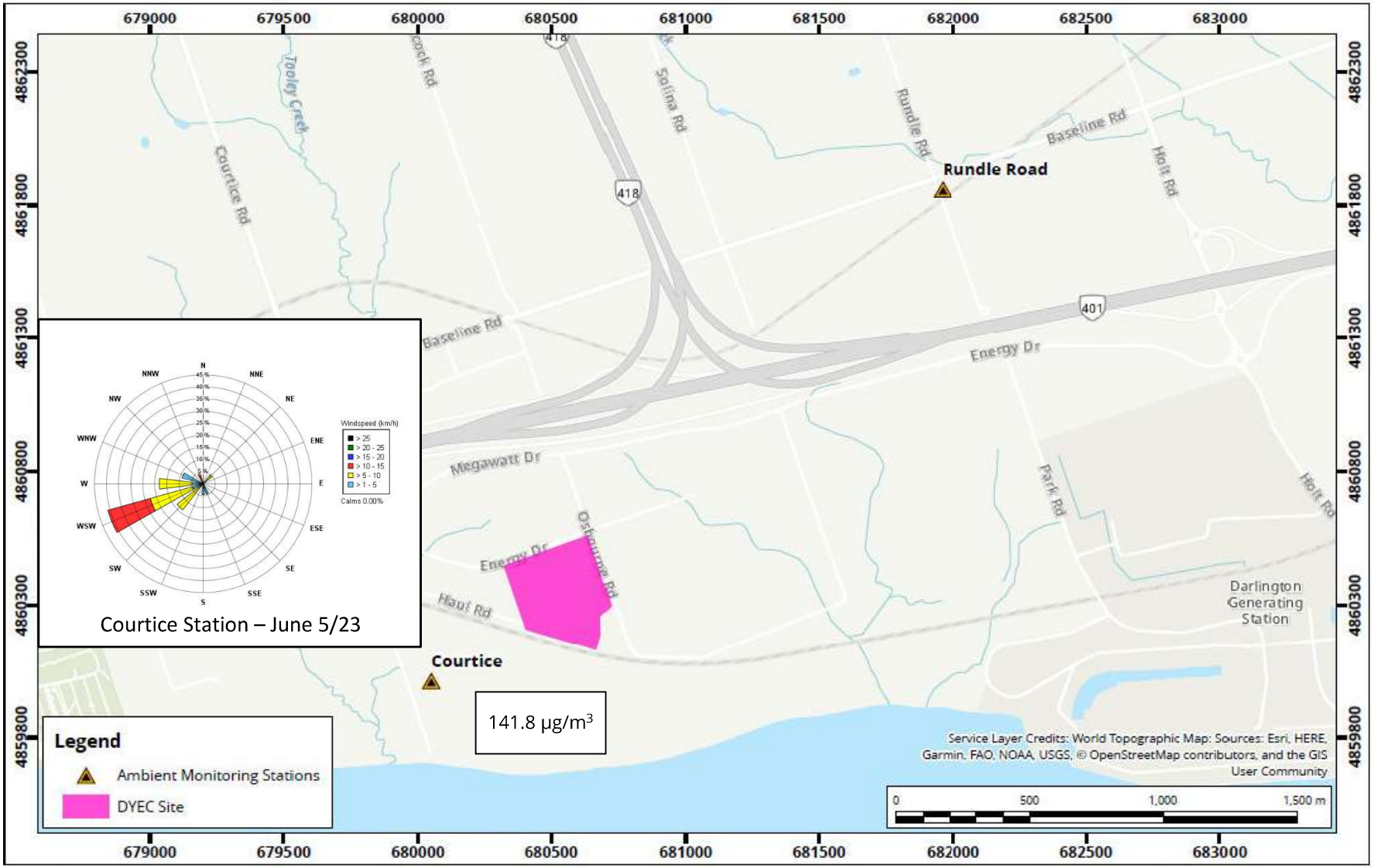
**RWDI AIR Inc.**

Maja Bokara, PGCert, EP
Project Manager

MB/kta

Attach.

# ATTACHMENTS




# DYEC Site and Ambient Monitoring Station Locations

Map Projection: NAD 1983 UTM Zone 17N

DYEC - Region of Durham, Ontario

True North

Project #: 2205149

| | |
|---|---|
| Drawn by: DAJH | Figure: 1 |
| Approx. Scale: | 1:20,000 |
| Date Revised: July 11, 2023 | |

ALS Environmental

**Chain of Custody / Analytical Request Form**
**1435 Norjohn Court, Unit 1, Burlington, Ontario, Canada, L7L 0E6**
Tel +1-905-331-3111 Fax +1-905-331-4567 www.alsglobal.com

L2751157-COFC

| Report To | | Report Format / Distribution | | Service Request |
|---|---|---|---|---|
| Company: | RWDI AIR INC. (Guelph) | ☑ Standard ☐ Other: | | ☑ Regular Service - 10day TAT |
| Contact: | Khalid Hussein | ☑ PDF ☑ Excel ☐ Digital ☐ Fax | | ☐ Rush Service (with prior consultation) - surcharge applies |
| Address: | 600 Southgate Drive, Guelph, ON N1G 4P6 | Email 1: | Khalid.Hussein@rwdi.com, Steve.Sanderson@rwdi.com | ☐ Other - Please contact ALS |
| Phone: | 519-823-1311 Fax: | Email 2: | John.DeYoe@rwdi.com, John.Green@RWDI.com | |
| Invoice To | Same as Report ? ☐ Yes ☑ No | Email 3: | Dan.Harrigan@rwdi.com, Maja.Bokara@rwdi.com | |
| | | Email 4: | Victoria.Latam@rwdi.com, claire.kocharakkal@alsglobal.com | |
| Email 1: | accountspayable@rwdi.com | Location: | DYEC | |
| Email 2: | Khalid.Hussein@rwdi.com | PO: | 1803743 Phase 1000 | |
| | | Sampled by: | Martin Town | |
| Quote | Q69531 | ALS Contact: | Claire Kocharakkal | |

| Sample # | Sample Identification (This description will appear on the report) | Date (dd-mmm-yy) | Air Volume (m³) | Sample Type | TSP, Hg, ICP | PAH | DX | Hazardous? Provide Details | Highly Contaminated? | Number of Containers |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | L2750781-3 - Purple | 05-Jun-23 | | Air | | X | | | | 1 |
| 2 | 744027 | 05-Jun-23 | | Air | X | | | | | 1 |
| 3 | 743997 | 30-May-23 | | Air | X | | | | | 1 |
| 4 | L2750781-2 - Coffee | 05-Jun-23 | | Air | | X | | | | 1 |
| 5 | 744028 | 05-Jun-23 | | Air | X | | | | | 1 |
| 6 | 743998 | 30-May-23 | | Air | X | | | | | 1 |
| 7 | | | | Air | | | | | | 1 |
| 8 | | | | Air | | | | | | 1 |

**Special Instructions / Regulations / Hazardous Details**

**By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided by ALS**

| Released by: | Date (dd-mmm-yy) | Time (hh-mm) | Received by: | Date: | Time: | Temperature: | Verified by: | Date: | Time: | Observations: |
|---|---|---|---|---|---|---|---|---|---|---|
| M Town | 07-Jun-23 | 17:45 | Aaron Benton | 8-June 2023 | 9:45 | 2.3 13.1 °C | | | | Yes / No If Yes add SIF |

RWDI AIR INC. (Guelph)
ATTN: Khalid Hussein
600 Southgate Drive
Guelph ON N1G 4P6

Date Received: 08-JUN-23
Report Date: 22-JUN-23 13:05 (MT)
Version: FINAL

Client Phone: 519-823-1311

# Certificate of Analysis

**Lab Work Order #: L2751157**

Project P.O. #: 1803743 Phase 1000
Job Reference: DYEC
C of C Numbers:
Legal Site Desc:

Robert Chin, B.Sc.
Project Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L2751157-1 #744027-RUNDLE-TSP/ICP-JUN05 | | | | | | | |
| Sampled By: Martin Town on 05-JUN-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Air volume | 1632 | | | m3 | | 08-JUN-23 | R5956636 |
| **Particulate on High Volume Filter** | | | | | | | |
| Total particulate | 96.2 | | 0.061 | ug/m3 | | 08-JUN-23 | R5956656 |
| Total particulate | 157000 | | 100 | ug | | 08-JUN-23 | R5956656 |
| **Mercury on High Volume Filter by CVAA** | | | | | | | |
| Mercury (Hg) | 0.0000232 | | 0.0000061 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958157 |
| Mercury (Hg) | 0.038 | | 0.010 | ug | 20-JUN-23 | 21-JUN-23 | R5958157 |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Silver (Ag) | 0.000090 | | 0.000055 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Silver (Ag) | 0.147 | | 0.090 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Aluminum (Al) | 0.438 | | 0.0055 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Aluminum (Al) | 716 | | 9.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Arsenic (As) | 0.0021 | | 0.0018 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Arsenic (As) | 3.4 | | 3.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Barium (Ba) | 0.0221 | | 0.00031 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Barium (Ba) | 36.1 | | 0.50 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Beryllium (Be) | <0.000031 | | 0.000031 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Beryllium (Be) | <0.050 | | 0.050 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cadmium (Cd) | 0.000242 | | 0.000017 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cadmium (Cd) | 0.396 | | 0.027 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cobalt (Co) | 0.000328 | | 0.000018 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cobalt (Co) | 0.536 | | 0.030 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Chromium (Cr) | 0.0045 | | 0.0021 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Chromium (Cr) | 7.4 | | 3.4 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Copper (Cu) | 0.133 | | 0.00061 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Copper (Cu) | 218 | | 1.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Iron (Fe) | 0.827 | | 0.0074 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Iron (Fe) | 1350 | | 12 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Magnesium (Mg) | 0.576 | | 0.037 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Magnesium (Mg) | 941 | | 60 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Manganese (Mn) | 0.0438 | | 0.00028 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Manganese (Mn) | 71.6 | | 0.45 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Molybdenum (Mo) | 0.00369 | | 0.00022 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Molybdenum (Mo) | 6.03 | | 0.36 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Nickel (Ni) | 0.00193 | | 0.00015 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Nickel (Ni) | 3.15 | | 0.25 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Lead (Pb) | 0.00314 | | 0.000074 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Lead (Pb) | 5.13 | | 0.12 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Antimony (Sb) | 0.00125 | | 0.00015 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Antimony (Sb) | 2.03 | | 0.25 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Selenium (Se) | <0.00080 | | 0.00080 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Selenium (Se) | <1.3 | | 1.3 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Thallium (Tl) | 0.000057 | | 0.000055 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Thallium (Tl) | 0.093 | | 0.090 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Uranium (U) | 0.0000276 | | 0.0000037 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Uranium (U) | 0.0450 | | 0.0060 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Vanadium (V) | <0.0031 | | 0.0031 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Vanadium (V) | <5.0 | | 5.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zinc (Zn) | 0.0615 | | 0.0028 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zinc (Zn) | 100 | | 4.5 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Bismuth (Bi) | <0.0011 | | 0.0011 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L2751157-1 #744027-RUNDLE-TSP/ICP-JUN05 | | | | | | | |
| Sampled By: Martin Town on 05-JUN-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Bismuth (Bi) | <1.8 | | 1.8 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Boron (B) | 0.0111 | | 0.0092 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Boron (B) | 18 | | 15 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Phosphorus (P) | <0.46 | | 0.46 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Phosphorus (P) | <750 | | 750 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Strontium (Sr) | 0.0135 | | 0.0018 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Strontium (Sr) | 22.0 | | 3.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Tin (Sn) | 0.00161 | | 0.00037 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Tin (Sn) | 2.63 | | 0.60 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Titanium (Ti) | 0.0223 | | 0.0067 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Titanium (Ti) | 36 | | 11 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zirconium (Zr) | <0.0012 | | 0.0012 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zirconium (Zr) | <2.0 | | 2.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| L2751157-2 #743997-RUNDLE-TSP/ICP-MAY30 | | | | | | | |
| Sampled By: Martin Town on 30-MAY-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Air volume | 1571 | | | m3 | | 08-JUN-23 | R5956636 |
| **Particulate on High Volume Filter** | | | | | | | |
| Total particulate | 87.8 | | 0.064 | ug/m3 | | 08-JUN-23 | R5956656 |
| Total particulate | 138000 | | 100 | ug | | 08-JUN-23 | R5956656 |
| **Mercury on High Volume Filter by CVAA** | | | | | | | |
| Mercury (Hg) | 0.0000246 | | 0.0000064 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958157 |
| Mercury (Hg) | 0.039 | | 0.010 | ug | 20-JUN-23 | 21-JUN-23 | R5958157 |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Silver (Ag) | 0.000295 | | 0.000057 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Silver (Ag) | 0.464 | | 0.090 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Aluminum (Al) | 0.925 | | 0.0057 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Aluminum (Al) | 1450 | | 9.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Arsenic (As) | <0.0019 | | 0.0019 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Arsenic (As) | <3.0 | | 3.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Barium (Ba) | 0.0156 | | 0.00032 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Barium (Ba) | 24.5 | | 0.50 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Beryllium (Be) | 0.000042 | | 0.000032 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Beryllium (Be) | 0.066 | | 0.050 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cadmium (Cd) | 0.000119 | | 0.000017 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cadmium (Cd) | 0.186 | | 0.027 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cobalt (Co) | 0.000481 | | 0.000019 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cobalt (Co) | 0.756 | | 0.030 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Chromium (Cr) | 0.0040 | | 0.0022 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Chromium (Cr) | 6.2 | | 3.4 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Copper (Cu) | 0.0705 | | 0.00064 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Copper (Cu) | 111 | | 1.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Iron (Fe) | 1.52 | | 0.0076 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Iron (Fe) | 2380 | | 12 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Magnesium (Mg) | 0.831 | | 0.038 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Magnesium (Mg) | 1310 | | 60 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Manganese (Mn) | 0.0315 | | 0.00029 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Manganese (Mn) | 49.5 | | 0.45 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Molybdenum (Mo) | 0.00269 | | 0.00023 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Molybdenum (Mo) | 4.23 | | 0.36 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L2751157-2 #743997-RUNDLE-TSP/ICP-MAY30 | | | | | | | |
| Sampled By: Martin Town on 30-MAY-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Nickel (Ni) | 0.00247 | | 0.00016 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Nickel (Ni) | 3.88 | | 0.25 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Lead (Pb) | 0.00390 | | 0.000076 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Lead (Pb) | 6.12 | | 0.12 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Antimony (Sb) | 0.00105 | | 0.00016 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Antimony (Sb) | 1.65 | | 0.25 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Selenium (Se) | <0.00083 | | 0.00083 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Selenium (Se) | <1.3 | | 1.3 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Thallium (Tl) | 0.000098 | | 0.000057 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Thallium (Tl) | 0.154 | | 0.090 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Uranium (U) | 0.0000922 | | 0.0000038 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Uranium (U) | 0.145 | | 0.0060 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Vanadium (V) | <0.0032 | | 0.0032 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Vanadium (V) | <5.0 | | 5.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zinc (Zn) | 0.0329 | | 0.0029 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zinc (Zn) | 51.8 | | 4.5 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Bismuth (Bi) | <0.0011 | | 0.0011 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Bismuth (Bi) | <1.8 | | 1.8 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Boron (B) | <0.0095 | | 0.0095 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Boron (B) | <15 | | 15 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Phosphorus (P) | <0.48 | | 0.48 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Phosphorus (P) | <750 | | 750 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Strontium (Sr) | 0.0285 | | 0.0019 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Strontium (Sr) | 44.7 | | 3.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Tin (Sn) | 0.00119 | | 0.00038 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Tin (Sn) | 1.86 | | 0.60 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Titanium (Ti) | 0.0418 | | 0.0070 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Titanium (Ti) | 66 | | 11 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zirconium (Zr) | <0.0013 | | 0.0013 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zirconium (Zr) | <2.0 | | 2.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| L2751157-3 #744028-COURTICE-TSP/ICP-JUN05 | | | | | | | |
| Sampled By: Martin Town on 05-JUN-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Air volume | 1695 | | | m3 | | 08-JUN-23 | R5956636 |
| **Particulate on High Volume Filter** | | | | | | | |
| Total particulate | 142 | | 0.059 | ug/m3 | | 08-JUN-23 | R5956656 |
| Total particulate | 241000 | | 100 | ug | | 08-JUN-23 | R5956656 |
| **Mercury on High Volume Filter by CVAA** | | | | | | | |
| Mercury (Hg) | 0.0000234 | | 0.0000059 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958157 |
| Mercury (Hg) | 0.040 | | 0.010 | ug | 20-JUN-23 | 21-JUN-23 | R5958157 |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Silver (Ag) | 0.000076 | | 0.000053 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Silver (Ag) | 0.128 | | 0.090 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Aluminum (Al) | 0.767 | | 0.0053 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Aluminum (Al) | 1300 | | 9.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Arsenic (As) | 0.0020 | | 0.0018 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Arsenic (As) | 3.4 | | 3.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Barium (Ba) | 0.0297 | | 0.00029 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Barium (Ba) | 50.4 | | 0.50 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Beryllium (Be) | 0.000041 | | 0.000029 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L2751157-3 #744028-COURTICE-TSP/ICP-JUN05 | | | | | | | |
| Sampled By: Martin Town on 05-JUN-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Beryllium (Be) | 0.070 | | 0.050 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cadmium (Cd) | 0.000303 | | 0.000016 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cadmium (Cd) | 0.513 | | 0.027 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cobalt (Co) | 0.000507 | | 0.000018 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cobalt (Co) | 0.860 | | 0.030 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Chromium (Cr) | 0.0045 | | 0.0020 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Chromium (Cr) | 7.7 | | 3.4 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Copper (Cu) | 0.0738 | | 0.00059 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Copper (Cu) | 125 | | 1.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Iron (Fe) | 1.32 | | 0.0071 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Iron (Fe) | 2250 | | 12 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Magnesium (Mg) | 0.913 | | 0.035 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Magnesium (Mg) | 1550 | | 60 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Manganese (Mn) | 0.0613 | | 0.00027 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Manganese (Mn) | 104 | | 0.45 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Molybdenum (Mo) | 0.00221 | | 0.00021 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Molybdenum (Mo) | 3.74 | | 0.36 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Nickel (Ni) | 0.00221 | | 0.00015 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Nickel (Ni) | 3.74 | | 0.25 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Lead (Pb) | 0.00366 | | 0.000071 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Lead (Pb) | 6.21 | | 0.12 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Antimony (Sb) | 0.00165 | | 0.00015 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Antimony (Sb) | 2.80 | | 0.25 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Selenium (Se) | <0.00077 | | 0.00077 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Selenium (Se) | <1.3 | | 1.3 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Thallium (Tl) | 0.000058 | | 0.000053 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Thallium (Tl) | 0.099 | | 0.090 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Uranium (U) | 0.0000457 | | 0.0000035 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Uranium (U) | 0.0774 | | 0.0060 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Vanadium (V) | <0.0029 | | 0.0029 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Vanadium (V) | <5.0 | | 5.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zinc (Zn) | 0.0648 | | 0.0027 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zinc (Zn) | 110 | | 4.5 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Bismuth (Bi) | <0.0011 | | 0.0011 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Bismuth (Bi) | <1.8 | | 1.8 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Boron (B) | 0.0109 | | 0.0088 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Boron (B) | 18 | | 15 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Phosphorus (P) | <0.44 | | 0.44 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Phosphorus (P) | <750 | | 750 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Strontium (Sr) | 0.0287 | | 0.0018 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Strontium (Sr) | 48.6 | | 3.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Tin (Sn) | 0.00208 | | 0.00035 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Tin (Sn) | 3.52 | | 0.60 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Titanium (Ti) | 0.0374 | | 0.0065 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Titanium (Ti) | 63 | | 11 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zirconium (Zr) | <0.0012 | | 0.0012 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zirconium (Zr) | <2.0 | | 2.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| L2751157-4 #743998-COURTICE-TSP/ICP-MAY30 | | | | | | | |
| Sampled By: Martin Town on 30-MAY-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L2751157-4 #743998-COURTICE-TSP/ICP-MAY30 | | | | | | | |
| Sampled By: Martin Town on 30-MAY-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| Air volume | 1649 | | | m3 | | 08-JUN-23 | R5956636 |
| **Particulate on High Volume Filter** | | | | | | | |
| Total particulate | 61.9 | | 0.061 | ug/m3 | | 08-JUN-23 | R5956656 |
| Total particulate | 102000 | | 100 | ug | | 08-JUN-23 | R5956656 |
| **Mercury on High Volume Filter by CVAA** | | | | | | | |
| Mercury (Hg) | 0.0000153 | | 0.0000061 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958157 |
| Mercury (Hg) | 0.025 | | 0.010 | ug | 20-JUN-23 | 21-JUN-23 | R5958157 |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Silver (Ag) | 0.000179 | | 0.000055 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Silver (Ag) | 0.296 | | 0.090 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Aluminum (Al) | 0.595 | | 0.0055 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Aluminum (Al) | 981 | | 9.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Arsenic (As) | <0.0018 | | 0.0018 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Arsenic (As) | <3.0 | | 3.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Barium (Ba) | 0.0105 | | 0.00030 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Barium (Ba) | 17.4 | | 0.50 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Beryllium (Be) | <0.000030 | | 0.000030 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Beryllium (Be) | <0.050 | | 0.050 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cadmium (Cd) | 0.000114 | | 0.000016 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cadmium (Cd) | 0.189 | | 0.027 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cobalt (Co) | 0.000292 | | 0.000018 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Cobalt (Co) | 0.482 | | 0.030 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Chromium (Cr) | 0.0027 | | 0.0021 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Chromium (Cr) | 4.4 | | 3.4 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Copper (Cu) | 0.0295 | | 0.00061 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Copper (Cu) | 48.6 | | 1.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Iron (Fe) | 0.884 | | 0.0073 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Iron (Fe) | 1460 | | 12 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Magnesium (Mg) | 0.499 | | 0.036 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Magnesium (Mg) | 824 | | 60 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Manganese (Mn) | 0.0223 | | 0.00027 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Manganese (Mn) | 36.8 | | 0.45 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Molybdenum (Mo) | 0.00112 | | 0.00022 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Molybdenum (Mo) | 1.84 | | 0.36 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Nickel (Ni) | 0.00172 | | 0.00015 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Nickel (Ni) | 2.84 | | 0.25 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Lead (Pb) | 0.00252 | | 0.000073 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Lead (Pb) | 4.16 | | 0.12 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Antimony (Sb) | 0.00122 | | 0.00015 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Antimony (Sb) | 2.01 | | 0.25 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Selenium (Se) | <0.00079 | | 0.00079 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Selenium (Se) | <1.3 | | 1.3 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Thallium (Tl) | <0.000055 | | 0.000055 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Thallium (Tl) | <0.090 | | 0.090 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Uranium (U) | 0.0000456 | | 0.0000036 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Uranium (U) | 0.0752 | | 0.0060 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Vanadium (V) | <0.0030 | | 0.0030 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Vanadium (V) | <5.0 | | 5.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zinc (Zn) | 0.0250 | | 0.0027 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zinc (Zn) | 41.3 | | 4.5 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Bismuth (Bi) | <0.0011 | | 0.0011 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Bismuth (Bi) | <1.8 | | 1.8 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L2751157-4 #743998-COURTICE-TSP/ICP-MAY30 | | | | | | | |
| Sampled By: Martin Town on 30-MAY-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Boron (B) | <0.0091 | | 0.0091 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Boron (B) | <15 | | 15 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Phosphorus (P) | <0.45 | | 0.45 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Phosphorus (P) | <750 | | 750 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Strontium (Sr) | 0.0130 | | 0.0018 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Strontium (Sr) | 21.4 | | 3.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Tin (Sn) | 0.00071 | | 0.00036 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Tin (Sn) | 1.18 | | 0.60 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Titanium (Ti) | 0.0262 | | 0.0067 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Titanium (Ti) | 43 | | 11 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zirconium (Zr) | <0.0012 | | 0.0012 | ug/m3 | 20-JUN-23 | 21-JUN-23 | R5958257 |
| Zirconium (Zr) | <2.0 | | 2.0 | ug | 20-JUN-23 | 21-JUN-23 | R5958257 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# Reference Information

**Test Method References:**

| ALS Test Code | Matrix | Test Description | Method Reference** |
|---|---|---|---|
| AIR VOLUME-HIVOL-BU | Filter | Air volume (m3) | USEPA IO3.1 |
| HG-IO3.5-CVAA-BU | Filter | Mercury on High Volume Filter by CVAA | USEPA Method IO3.5 |
| After weighing (if required), hivol filters are sub-sampled and leached with nitric acid to extract available metal analytes. After dilution, the extracts are submitted to the CVAA instrument for analysis. | | | |
| MET-IO3.5-MS-BU | Filter | Metals on High Volume Filter by ICPMS | IO3.5 |
| After weighing (if required), hivol filters are sub-sampled and leached with nitric acid to extract available metal analytes. After dilution, the extracts are submitted to the ICPMS instrument for analysis. | | | |
| PART-HIVOL-GRAV-BU | Filter | Particulate on High Volume Filter | USEPA IO3.1 |

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

| Laboratory Definition Code | Laboratory Location |
|---|---|
| BU | ALS ENVIRONMENTAL - BURLINGTON, ONTARIO, CANADA |

**Chain of Custody Numbers:**

**GLOSSARY OF REPORT TERMS**

*Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.*
*mg/kg - milligrams per kilogram based on dry weight of sample*
*mg/kg wwt - milligrams per kilogram based on wet weight of sample*
*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight*
*mg/L - unit of concentration based on volume, parts per million.*
*< - Less than.*
*D.L. - The reporting limit.*
*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*
*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*
*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*

# Quality Control Report



Client: RWDI AIR INC. (Guelph)
600 Southgate Drive
Guelph ON N1G 4P6
Contact: Khalid Hussein

| Test | Matrix | Reference | Result | Qualifier | Units | RPD | Limit | Analyzed |
|---|---|---|---|---|---|---|---|---|
| **HG-IO3.5-CVAA-BU** | **Filter** | | | | | | | |
| **Batch R5958157** | | | | | | | | |
| **WG3785481-3 DUP** | | **L2751157-1** | | | | | | |
| Mercury (Hg) | | 0.038 | 0.0342 | | ug | 10 | 20 | 21-JUN-23 |
| **WG3785481-2 LCS** | | | | | | | | |
| Mercury (Hg) | | | 88.8 | | ug | | 70-130 | 21-JUN-23 |
| **WG3785481-1 MB** | | | | | | | | |
| Mercury (Hg) | | | <0.0050 | | ug | | 0.005 | 21-JUN-23 |
| **WG3785481-4 MS** | | **L2751157-1** | | | | | | |
| Mercury (Hg) | | | 78.8 | | ug | | 70-130 | 21-JUN-23 |
| **MET-IO3.5-MS-BU** | **Filter** | | | | | | | |
| **Batch R5958257** | | | | | | | | |
| **WG3785481-3 DUP** | | **L2751157-1** | | | | | | |
| Silver (Ag) | | 0.147 | 0.147 | | ug | 0.3 | 20 | 21-JUN-23 |
| Aluminum (Al) | | 716 | 702 | | ug | 1.9 | 20 | 21-JUN-23 |
| Arsenic (As) | | 3.4 | 3.5 | | ug | 2.4 | 20 | 21-JUN-23 |
| Barium (Ba) | | 36.1 | 37.2 | | ug | 2.9 | 20 | 21-JUN-23 |
| Beryllium (Be) | | <0.050 | <0.050 | RPD-NA | ug | N/A | 20 | 21-JUN-23 |
| Cadmium (Cd) | | 0.396 | 0.349 | | ug | 13 | 20 | 21-JUN-23 |
| Cobalt (Co) | | 0.536 | 0.513 | | ug | 4.3 | 20 | 21-JUN-23 |
| Chromium (Cr) | | 7.4 | 7.8 | | ug | 5.9 | 20 | 21-JUN-23 |
| Copper (Cu) | | 218 | 230 | | ug | 5.2 | 20 | 21-JUN-23 |
| Iron (Fe) | | 1350 | 1320 | | ug | 2.0 | 25 | 21-JUN-23 |
| Magnesium (Mg) | | 941 | 900 | | ug | 4.4 | 20 | 21-JUN-23 |
| Manganese (Mn) | | 71.6 | 70.2 | | ug | 1.9 | 20 | 21-JUN-23 |
| Molybdenum (Mo) | | 6.03 | 5.99 | | ug | 0.7 | 20 | 21-JUN-23 |
| Nickel (Ni) | | 3.15 | 3.16 | | ug | 0.4 | 20 | 21-JUN-23 |
| Lead (Pb) | | 5.13 | 4.86 | | ug | 5.4 | 20 | 21-JUN-23 |
| Antimony (Sb) | | 2.03 | 1.99 | | ug | 2.2 | 20 | 21-JUN-23 |
| Selenium (Se) | | <1.3 | <1.3 | RPD-NA | ug | N/A | 20 | 21-JUN-23 |
| Thallium (Tl) | | 0.093 | <0.090 | RPD-NA | ug | N/A | 20 | 21-JUN-23 |
| Uranium (U) | | 0.0450 | 0.0455 | | ug | 1.0 | 20 | 21-JUN-23 |
| Vanadium (V) | | <5.0 | <5.0 | RPD-NA | ug | N/A | 20 | 21-JUN-23 |
| Zinc (Zn) | | 100 | 99.5 | | ug | 0.9 | 20 | 21-JUN-23 |
| Bismuth (Bi) | | <1.8 | <1.8 | RPD-NA | ug | N/A | 25 | 21-JUN-23 |
| Boron (B) | | 18 | 17 | | ug | 7.5 | 25 | 21-JUN-23 |
| Phosphorus (P) | | <750 | <750 | RPD-NA | ug | N/A | 25 | 21-JUN-23 |
| Strontium (Sr) | | 22.0 | 20.1 | | ug | 8.8 | 25 | 21-JUN-23 |

# Quality Control Report



| Test | Matrix | Reference | Result | Qualifier | Units | RPD | Limit | Analyzed |
|---|---|---|---|---|---|---|---|---|
| **MET-IO3.5-MS-BU** | **Filter** | | | | | | | |
| **Batch R5958257** | | | | | | | | |
| **WG3785481-3 DUP** | | **L2751157-1** | | | | | | |
| Tin (Sn) | | 2.63 | 2.58 | | ug | 1.9 | 25 | 21-JUN-23 |
| Titanium (Ti) | | 36 | 36 | | ug | 2.0 | 25 | 21-JUN-23 |
| Zirconium (Zr) | | <2.0 | <2.0 | RPD-NA | ug | N/A | 25 | 21-JUN-23 |
| **WG3785481-2 LCS** | | | | | | | | |
| Silver (Ag) | | | 89.8 | | % | | 70-130 | 21-JUN-23 |
| Aluminum (Al) | | | 94.0 | | % | | 70-130 | 21-JUN-23 |
| Arsenic (As) | | | 96.3 | | % | | 80-120 | 21-JUN-23 |
| Barium (Ba) | | | 102.0 | | % | | 70-130 | 21-JUN-23 |
| Beryllium (Be) | | | 89.4 | | % | | 70-130 | 21-JUN-23 |
| Cadmium (Cd) | | | 95.6 | | % | | 80-120 | 21-JUN-23 |
| Cobalt (Co) | | | 97.1 | | % | | 80-120 | 21-JUN-23 |
| Chromium (Cr) | | | 94.9 | | % | | 80-120 | 21-JUN-23 |
| Copper (Cu) | | | 101.0 | | % | | 80-120 | 21-JUN-23 |
| Iron (Fe) | | | 92.8 | | % | | 80-120 | 21-JUN-23 |
| Magnesium (Mg) | | | 91.0 | | % | | 70-130 | 21-JUN-23 |
| Manganese (Mn) | | | 90.9 | | % | | 80-120 | 21-JUN-23 |
| Molybdenum (Mo) | | | 90.0 | | % | | 70-130 | 21-JUN-23 |
| Nickel (Ni) | | | 93.2 | | % | | 80-120 | 21-JUN-23 |
| Lead (Pb) | | | 93.6 | | % | | 80-120 | 21-JUN-23 |
| Antimony (Sb) | | | 93.5 | | % | | 80-120 | 21-JUN-23 |
| Selenium (Se) | | | 92.0 | | % | | 80-120 | 21-JUN-23 |
| Thallium (Tl) | | | 92.2 | | % | | 70-130 | 21-JUN-23 |
| Uranium (U) | | | 94.8 | | % | | 70-130 | 21-JUN-23 |
| Vanadium (V) | | | 92.0 | | % | | 80-120 | 21-JUN-23 |
| Zinc (Zn) | | | 98.0 | | % | | 80-120 | 21-JUN-23 |
| Bismuth (Bi) | | | 94.2 | | % | | 70-130 | 21-JUN-23 |
| Boron (B) | | | 88.9 | | % | | 70-130 | 21-JUN-23 |
| Phosphorus (P) | | | 94.8 | | % | | 70-130 | 21-JUN-23 |
| Strontium (Sr) | | | 86.1 | | % | | 70-130 | 21-JUN-23 |
| Tin (Sn) | | | 94.6 | | % | | 70-130 | 21-JUN-23 |
| Titanium (Ti) | | | 90.6 | | % | | 70-130 | 21-JUN-23 |
| Zirconium (Zr) | | | 84.8 | | % | | 70-130 | 21-JUN-23 |
| **WG3785481-1 MB** | | | | | | | | |
| Silver (Ag) | | | <0.090 | | ug | | 0.09 | 21-JUN-23 |
| Aluminum (Al) | | | <9.0 | | ug | | 9 | 21-JUN-23 |

# Quality Control Report



| Test | Matrix | Reference | Result | Qualifier | Units | RPD | Limit | Analyzed |
|---|---|---|---|---|---|---|---|---|
| **MET-IO3.5-MS-BU** | **Filter** | | | | | | | |
| **Batch R5958257** | | | | | | | | |
| **WG3785481-1 MB** | | | | | | | | |
| Arsenic (As) | | | <3.0 | | ug | | 3 | 21-JUN-23 |
| Barium (Ba) | | | <0.50 | | ug | | 0.5 | 21-JUN-23 |
| Beryllium (Be) | | | <0.050 | | ug | | 0.05 | 21-JUN-23 |
| Cadmium (Cd) | | | <0.027 | | ug | | 0.027 | 21-JUN-23 |
| Cobalt (Co) | | | <0.030 | | ug | | 0.03 | 21-JUN-23 |
| Chromium (Cr) | | | <3.4 | | ug | | 3.4 | 21-JUN-23 |
| Copper (Cu) | | | 1.5 | A | ug | | 1 | 21-JUN-23 |
| Iron (Fe) | | | 66 | A | ug | | 12 | 21-JUN-23 |
| Magnesium (Mg) | | | <60 | | ug | | 60 | 21-JUN-23 |
| Manganese (Mn) | | | 0.61 | A | ug | | 0.45 | 21-JUN-23 |
| Molybdenum (Mo) | | | <0.36 | | ug | | 0.36 | 21-JUN-23 |
| Nickel (Ni) | | | <0.25 | | ug | | 0.25 | 21-JUN-23 |
| Lead (Pb) | | | <0.12 | | ug | | 0.12 | 21-JUN-23 |
| Antimony (Sb) | | | <0.25 | | ug | | 0.25 | 21-JUN-23 |
| Selenium (Se) | | | <1.3 | | ug | | 1.25 | 21-JUN-23 |
| Thallium (Tl) | | | <0.090 | | ug | | 0.09 | 21-JUN-23 |
| Uranium (U) | | | <0.0060 | | ug | | 0.006 | 21-JUN-23 |
| Vanadium (V) | | | <5.0 | | ug | | 10 | 21-JUN-23 |
| Zinc (Zn) | | | <4.5 | | ug | | 4.5 | 21-JUN-23 |
| Bismuth (Bi) | | | <1.8 | | ug | | 1.8 | 21-JUN-23 |
| Boron (B) | | | <15 | | ug | | 15 | 21-JUN-23 |
| Phosphorus (P) | | | <750 | | ug | | 750 | 21-JUN-23 |
| Strontium (Sr) | | | <3.0 | | ug | | 3 | 21-JUN-23 |
| Tin (Sn) | | | <0.60 | | ug | | 0.6 | 21-JUN-23 |
| Titanium (Ti) | | | <11 | | ug | | 10.5 | 21-JUN-23 |
| Zirconium (Zr) | | | <2.0 | | ug | | 2 | 21-JUN-23 |
| COMMENTS: Cu, Fe and Mn observed in the blank above the LOR. Sample data is more than 10x this potential background. Impact to data quality is expected to be negligible. SA 22-Jun-23 | | | | | | | | |
| **WG3785481-4 MS** | | **L2751157-1** | | | | | | |
| Silver (Ag) | | | 86.9 | | % | | 75-125 | 21-JUN-23 |
| Aluminum (Al) | | | N/A | MS-B | % | | - | 21-JUN-23 |
| Arsenic (As) | | | 94.5 | | % | | 75-125 | 21-JUN-23 |
| Barium (Ba) | | | 100.7 | | % | | 75-125 | 21-JUN-23 |
| Beryllium (Be) | | | 95.2 | | % | | 75-125 | 21-JUN-23 |
| Cadmium (Cd) | | | 94.6 | | % | | 75-125 | 21-JUN-23 |

# Quality Control Report



| Test | Matrix | Reference | Result | Qualifier | Units | RPD | Limit | Analyzed |
|---|---|---|---|---|---|---|---|---|
| **MET-IO3.5-MS-BU** | **Filter** | | | | | | | |
| **Batch R5958257** | | | | | | | | |
| **WG3785481-4 MS** | | **L2751157-1** | | | | | | |
| Cobalt (Co) | | | 95.1 | | % | | 75-125 | 21-JUN-23 |
| Chromium (Cr) | | | 97.6 | | % | | 75-125 | 21-JUN-23 |
| Copper (Cu) | | | N/A | MS-B | % | | - | 21-JUN-23 |
| Iron (Fe) | | | N/A | MS-B | % | | - | 21-JUN-23 |
| Magnesium (Mg) | | | N/A | MS-B | % | | - | 21-JUN-23 |
| Manganese (Mn) | | | N/A | MS-B | % | | - | 21-JUN-23 |
| Molybdenum (Mo) | | | 86.6 | | % | | 75-125 | 21-JUN-23 |
| Nickel (Ni) | | | 91.8 | | % | | 75-125 | 21-JUN-23 |
| Lead (Pb) | | | 94.6 | | % | | 75-125 | 21-JUN-23 |
| Antimony (Sb) | | | 83.4 | | % | | 75-125 | 21-JUN-23 |
| Selenium (Se) | | | 94.9 | | % | | 75-125 | 21-JUN-23 |
| Thallium (Tl) | | | 92.1 | | % | | 75-125 | 21-JUN-23 |
| Uranium (U) | | | 89.5 | | % | | 75-125 | 21-JUN-23 |
| Vanadium (V) | | | 92.3 | | % | | 75-125 | 21-JUN-23 |
| Zinc (Zn) | | | N/A | MS-B | % | | - | 21-JUN-23 |
| Bismuth (Bi) | | | 91.6 | | % | | 75-125 | 21-JUN-23 |
| Boron (B) | | | 99.8 | | % | | 75-125 | 21-JUN-23 |
| Phosphorus (P) | | | 94.9 | | % | | 75-125 | 21-JUN-23 |
| Strontium (Sr) | | | 85.2 | | % | | 75-125 | 21-JUN-23 |
| Tin (Sn) | | | 94.1 | | % | | 75-125 | 21-JUN-23 |
| Titanium (Ti) | | | 97.1 | | % | | 75-125 | 21-JUN-23 |
| Zirconium (Zr) | | | 67.5 | G | % | | 75-125 | 21-JUN-23 |
| COMMENTS: Zr recovery in the MS is outside ALS DQOs. This may be due to a matrix interference, which is providing a bias. Sample data may be biased low for this analyte. SA 22-Jun-23 | | | | | | | | |
| **PART-HIVOL-GRAV-BU** | **Filter** | | | | | | | |
| **Batch R5956656** | | | | | | | | |
| **WG3785231-6 DUP** | | **L2751157-1** | | | | | | |
| Total particulate | | 157000 | 157000 | | ug | 0.0 | 5 | 08-JUN-23 |
| **WG3785231-1 MB** | | | | | | | | |
| Total particulate | | | <100 | | ug | | 100 | 08-JUN-23 |

# Quality Control Report



**Legend:**

| | |
|---|---|
| Limit | ALS Control Limit (Data Quality Objectives) |
| DUP | Duplicate |
| RPD | Relative Percent Difference |
| N/A | Not Available |
| LCS | Laboratory Control Sample |
| SRM | Standard Reference Material |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| ADE | Average Desorption Efficiency |
| MB | Method Blank |
| IRM | Internal Reference Material |
| CRM | Certified Reference Material |
| CCV | Continuing Calibration Verification |
| CVS | Calibration Verification Standard |
| LCSD | Laboratory Control Sample Duplicate |

**Sample Parameter Qualifier Definitions:**

| Qualifier | Description |
|---|---|
| A | Method Blank exceeds ALS DQO. Refer to narrative comments for further information. |
| G | QC result did not meet ALS DQO. Refer to narrative comments for further information. |
| MS-B | Matrix Spike recovery could not be accurately calculated due to high analyte background in sample. |
| RPD-NA | Relative Percent Difference Not Available due to result(s) being less than detection limit. |

**Hold Time Exceedances:**

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental

**Chain of Custody / Analytical Request Form**
1435 Norjohn Court, Unit 1, Burlington, Ontario, Canada, L7L 0E6
Tel +1-905-331-3111 Fax +1-905-331-4567 www.alsglobal.com

L2751156-COFC

| Report To | | Report Format / Distribution | | Service Request |
|---|---|---|---|---|
| Company: | RWDI AIR INC. (Guelph) | ☑ Standard ☐ Other: | | ☑ Regular Service - 10day TAT |
| Contact: | Khalid Hussein | ☑ PDF ☑ Excel ☐ Digital ☐ Fax | | ☐ Rush Service (with prior consultation) - surcharge applies |
| Address: | 600 Southgate Drive, Guelph, ON N1G 4P6 | Email 1: | Khalid.Hussein@rwdi.com, Steve.Sanderson@rwdi.com | ☐ Other - Please contact ALS |
| Phone: | 519-823-1311 Fax: | Email 2: | John.DeYoe@rwdi.com, John.Green@RWDI.com | |
| Invoice To | Same as Report ? ☐ Yes ☑ No | Email 3: | Dan.Harrigan@rwdi.com, Maja.Bokara@rwdi.com | |
| | | Email 4: | Victoria.Latam@rwdi.com, claire.kocharakkal@alsglobal.com | |
| Email 1: | accountspayable@rwdi.com | Location: | DYEC | |
| Email 2: | Khalid.Hussein@rwdi.com | PO: | 1803743 Phase 1000 | |
| | | Sampled by: | Martin Town | |
| Quote | Q69531 | ALS Contact: | Claire Kocharakkal | |

| Sample # | Sample Identification (This description will appear on the report) | Date (dd-mmm-yy) | Air Volume (m³) | Sample Type | TSP, Hg, ICP | PAH | DX | Hazardous? Provide Details | Highly Contaminated? | Number of Containers |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | L2750781-3 - Rundle | 05-Jun-23 | 324 | Air | | X | | | | 1 |
| 2 | 744027 | 05-Jun-23 | 1632 | Air | X | | | | | 1 |
| 3 | 743997 | 30-May-23 | 1571 | Air | X | | | | | 1 |
| 4 | L2750781-2 - Courtice | 05-Jun-23 | 321 | Air | | X | | | | 1 |
| 5 | 744028 | 05-Jun-23 | 1695 | Air | X | | | | | 1 |
| 6 | 743998 | 30-May-23 | 1649 | Air | X | | | | | 1 |
| 7 | | | | Air | | | | | | 1 |
| 8 | | | | Air | | | | | | 1 |

**Special Instructions / Regulations / Hazardous Details**

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided by ALS

| Released by: | Date (dd-mmm-yy) | Time (hh-mm) | Received by: | Date: | Time: | Temperature: | Verified by: | Date: | Time: | Observations: |
|---|---|---|---|---|---|---|---|---|---|---|
| | 07-Jun-23 | 17:45 | Aaron Burton | 8-June 2023 | 9:45 | 2.3 13.1 °C | | | | Yes / No If Yes add SIF |

**Table B8: 2023 Courtice Station Q2 Monitoring Results for TSP and Metals**

| Contaminant | Units | *MECP Criteria* | 5-Jun-23 | No. > Criteria |
|---|---|---|---|---|
| Particulate (TSP) | µg/m$^3$ | *120* | 141.76 | 1 |
| Mercury (Hg) | µg/m$^3$ | *2* | 2.35E-05 | 0 |
| Aluminum (Al) | µg/m$^3$ | *4.8* | 7.65E-01 | 0 |
| Antimony (Sb) | µg/m$^3$ | *25* | 1.65E-03 | 0 |
| Arsenic (As) | µg/m$^3$ | *0.3* | 2.00E-03 | 0 |
| Barium (Ba) | µg/m$^3$ | *10* | 2.96E-02 | 0 |
| Beryllium (Be) | µg/m$^3$ | *0.01* | 4.12E-05 | 0 |
| Bismuth (Bi) | µg/m$^3$ | - | 5.29E-04 | - |
| Boron (B) | µg/m$^3$ | *120* | 1.06E-02 | 0 |
| Cadmium (Cd) | µg/m$^3$ | *0.025* | 3.02E-04 | 0 |
| Chromium (Cr) | µg/m$^3$ | *0.5* | 4.53E-03 | 0 |
| Cobalt (Co) | µg/m$^3$ | *0.1* | 5.06E-04 | 0 |
| Copper (Cu) | µg/m$^3$ | *50* | 7.35E-02 | 0 |
| Iron (Fe) | µg/m$^3$ | *4* | 1.32E+00 | 0 |
| Lead (Pb) | µg/m$^3$ | *0.5* | 3.65E-03 | 0 |
| Magnesium (Mg) | µg/m$^3$ | - | 9.12E-01 | - |
| Manganese (Mn) | µg/m$^3$ | *0.4* | 6.12E-02 | 0 |
| Molybdenum (Mo) | µg/m$^3$ | *120* | 2.20E-03 | 0 |
| Nickel (Ni) | µg/m$^3$ | *0.2* | 2.20E-03 | 0 |
| Phosphorus (P) | µg/m$^3$ | - | 2.21E-01 | - |
| Selenium (Se) | µg/m$^3$ | *10* | 3.82E-04 | 0 |
| Silver (Ag) | µg/m$^3$ | *1* | 7.53E-05 | 0 |
| Strontium (Sr) | µg/m$^3$ | *120* | 2.86E-02 | 0 |
| Thallium (Tl) | µg/m$^3$ | - | 5.82E-05 | - |
| Tin (Sn) | µg/m$^3$ | *10* | 2.07E-03 | 0 |
| Titanium (Ti) | µg/m$^3$ | *120* | 3.71E-02 | 0 |
| Uranium (Ur) | µg/m$^3$ | *1.5* | 4.55E-05 | 0 |
| Vanadium (V) | µg/m$^3$ | *2* | 1.47E-03 | 0 |
| Zinc (Zn) | µg/m$^3$ | *120* | 6.47E-02 | 0 |
| Zirconium (Zr) | µg/m$^3$ | *20* | 5.88E-04 | 0 |

NOTE: All non-detectable results were reported as 1/2 of the detection limit

Station: RofD Courtice Daily: 05/06/2023 Type: AVG 1 Hr. [5 Mins.]

| Date & Time | PM2.5 | NO | NO2 | NOX | SO2 | WS km/hr | ET | WD | Tr_Temp | RH AVG | BP | Rain total | Hi-Vol Pressure | PUF Pressure | BP | ET | Hivol Flow | PUF Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/m3 | ppb | ppb | ppb | ppb | km/hr | C° | Deg | C° | % | in HG | mm | in H20 | in H20 | kPa | K | cfm | cfm |
| 05/06/2023 00:00 | 56.6 | 0.5 | 12.3 | 12.7 | 1.916 | 6.51 | 10.772 | 264 | 21.7 | 62.6 | 29.75 | 0 | 4.89 | 50.86 | 100.73 | 283.922 | 47.29 | 8.36 |
| 05/06/2023 01:00 | 72.5 | 0 | 10.8 | 10.7 | 63.808 | 5.35 | 10.757 | 45 | 21.5 | 60.1 | 29.74 | 0 | 4.9 | 50.81 | 100.71 | 283.907 | 47.38 | 8.36 |
| 05/06/2023 02:00 | 76.4 | 0.1 | 13.4 | 13.3 | 18.287 | 2.88 | 10.866 | 180 | 21.5 | 60.3 | 29.73 | 0 | 4.89 | 50.36 | 100.68 | 284.016 | 47.3 | 8.32 |
| 05/06/2023 03:00 | 76 | 0 | 7 | 6.6 | 51.102 | 1.75 | 11.117 | <Samp | 21.5 | 60.3 | 29.73 | 0 | 4.88 | 49.32 | 100.67 | 284.267 | 47.21 | 8.24 |
| 05/06/2023 04:00 | 76.8 | 1.4 | 14.8 | 16.2 | 11.157 | 4.13 | 11.391 | 153 | 21.7 | 62.7 | 29.73 | 0 | 4.88 | 49.41 | 100.68 | 284.541 | 47.21 | 8.25 |
| 05/06/2023 05:00 | 74.2 | 3 | 16.5 | 19.5 | 6.912 | 5.23 | 12.044 | 228 | 21.3 | 62.5 | 29.74 | 0 | 4.87 | 49.2 | 100.7 | 285.194 | 47.12 | 8.22 |
| 05/06/2023 06:00 | 72.4 | 1.9 | 13.3 | 15.3 | 5.673 | 4 | 12.938 | 274 | 21.5 | 62.4 | 29.74 | 0 | 4.86 | 48.7 | 100.7 | 286.088 | 46.96 | 8.17 |
| 05/06/2023 07:00 | 66.9 | 7.2 | 18.1 | 25.4 | 2.603 | 2.13 | 14.926 | <Samp | 21.5 | 60.6 | 29.73 | 0 | 4.78 | 47.86 | 100.67 | 288.076 | 46.37 | 8.08 |
| 05/06/2023 08:00 | 50.6 | 2.7 | 13.2 | 15.9 | 2.083 | 4.97 | 16.445 | 253 | 21.7 | 62 | 29.73 | 0 | 4.76 | 47.72 | 100.66 | 289.595 | 46.15 | 8.05 |
| 05/06/2023 09:00 | 34.6 | 2.5 | 13.7 | 16.2 | 1.694 | 6.87 | 17.159 | 232 | 21.5 | 66.8 | 29.72 | 0 | 4.77 | 47.56 | 100.64 | 290.309 | 46.12 | 8.03 |
| 05/06/2023 10:00 | 19 | 0.5 | 6.9 | 7.4 | 1.808 | 5.87 | 19.367 | 248 | 21.7 | 55.9 | 29.71 | 0 | 4.74 | 46.85 | 100.61 | 292.517 | 45.79 | 7.95 |
| 05/06/2023 11:00 | 23.1 | 1.7 | 10 | 11.7 | 1.376 | 7.66 | 17.4 | 227 | 21.6 | 64.5 | 29.69 | 0 | 4.77 | 47.3 | 100.56 | 290.55 | 46.12 | 8.01 |
| 05/06/2023 12:00 | 23.2 | 0.1 | 4.8 | 4.8 | 1.325 | 10.23 | 17.397 | 237 | 21.5 | 63.5 | 29.68 | 0 | 4.84 | 47.22 | 100.51 | 290.547 | 46.45 | 8 |
| 05/06/2023 13:00 | 22.5 | 0.1 | 3.5 | 3.7 | 1.328 | 12.06 | 17.484 | 241 | 21.6 | 63.4 | 29.66 | 0 | 4.85 | 46.91 | 100.44 | 290.634 | 46.48 | 7.97 |
| 05/06/2023 14:00 | 8.2 | 1 | 6.7 | 7.7 | 1.163 | 9.86 | 17.651 | 238 | 21.5 | 63.1 | 29.64 | 0 | 4.84 | 46.78 | 100.39 | 290.801 | 46.41 | 7.96 |
| 05/06/2023 15:00 | 7.8 | 0.5 | 5.7 | 6.2 | 1.195 | 11.03 | 17.931 | 247 | 21.4 | 57.9 | 29.62 | 0 | 4.86 | 46.73 | 100.32 | 291.081 | 46.47 | 7.95 |
| 05/06/2023 16:00 | 14.7 | 0.3 | 6.1 | 6.3 | 1.147 | 10.81 | 18.324 | 251 | 21.5 | 52.2 | 29.62 | 0 | 4.87 | 46.46 | 100.29 | 291.474 | 46.48 | 7.92 |
| 05/06/2023 17:00 | 7.7 | 0.2 | 6.4 | 6.5 | 1.201 | 7.25 | 18.621 | 252 | 21.5 | 50.7 | 29.61 | 0 | 4.86 | 46.36 | 100.26 | 291.771 | 46.35 | 7.91 |
| 05/06/2023 18:00 | 8.7 | 0.1 | 6 | 6 | 1.197 | 7.09 | 18.258 | 253 | 21.5 | 52.6 | 29.59 | 0 | 4.85 | 47.01 | 100.22 | 291.408 | 46.37 | 7.96 |
| 05/06/2023 19:00 | 11.2 | 0 | 5.3 | 4.9 | 1.135 | 5.24 | 18.421 | 265 | 21.4 | 46.7 | 29.59 | 0 | 4.84 | 46.99 | 100.21 | 291.571 | 46.26 | 7.96 |
| 05/06/2023 20:00 | 13 | 0 | 3.8 | 3.6 | 0.977 | 6.8 | 18.195 | 266 | 21.6 | 47.9 | 29.59 | 0 | 4.88 | 47.08 | 100.21 | 291.345 | 46.48 | 7.97 |
| 05/06/2023 21:00 | 14.3 | 8.8 | 28.8 | 37.6 | 1.375 | 4.12 | 17.422 | 294 | 21.5 | 53.2 | 29.58 | 0 | 4.87 | 47.64 | 100.18 | 290.572 | 46.49 | 8.02 |
| 05/06/2023 22:00 | 17.5 | 4.5 | 38.9 | 43.4 | 1.328 | 4.28 | 16.596 | 294 | 21.6 | 55.5 | 29.58 | 0 | 4.85 | 47.48 | 100.15 | 289.746 | 46.49 | 8.02 |
| 05/06/2023 23:00 | 18.6 | 0.1 | 5.9 | 5.7 | 1.155 | 13.67 | 17.622 | 336 | 21.5 | 53.4 | 29.57 | 0 | 4.94 | 47.38 | 100.12 | 290.772 | 46.84 | 7.99 |
| Minimum | 7.7 | 0 | 3.5 | 3.6 | 0.977 | 1.75 | 10.757 | 45 | 21.3 | 46.7 | 29.57 | 0 | 4.74 | 46.36 | 100.12 | 283.907 | 45.79 | 7.91 |
| MinDate | 17:00 | 01:00 | 13:00 | 20:00 | 20:00 | 03:00 | 01:00 | 01:00 | 05:00 | 19:00 | 23:00 | 00:00 | 10:00 | 17:00 | 23:00 | 01:00 | 10:00 | 17:00 |
| Maximum | 76.8 | 8.8 | 38.9 | 43.4 | 63.808 | 13.67 | 19.367 | 336 | 21.7 | 66.8 | 29.75 | 0 | 4.94 | 50.86 | 100.73 | 292.517 | 47.38 | 8.36 |
| MaxDate | 04:00 | 21:00 | 22:00 | 22:00 | 01:00 | 23:00 | 10:00 | 23:00 | 00:00 | 09:00 | 00:00 | 00:00 | 23:00 | 00:00 | 00:00 | 10:00 | 01:00 | 00:00 |
| Avg | 36.1 | 1.6 | 11.3 | 12.8 | 7.623 | 6.66 | 15.796 | 240 | 21.5 | 58.4 | 29.67 | 0 | 4.85 | 47.92 | 100.47 | 288.946 | 46.61 | 8.07 |
| Num | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 22 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| Data[%] | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 91.67 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| STD | 26.8 | 2.3 | 8.1 | 10 | 15.6 | 3.1 | 3 | 55.8 | 0.1 | 5.5 | 0.1 | 0 | 0 | 1.3 | 0.2 | 3 | 0.4 | 0.1 |

600 Southgate Drive
Guelph ON Canada
N1G 4P6

Tel: +1.519.823.1311
Fax: +1.519.823.1316
E-mail: solutions@rwdi.com

# MEMORANDUM

| | | |
|---|---|---|
| **DATE:** | 2023-05-16 | **RWDI Reference No.:** 2205149 |
| **TO:** | Lipika Saha | **EMAIL:** Lipika.Saha@Durham.ca |
| **CC:** | Andrew Evans | **EMAIL:** Andrew.Evans@Durham.ca |
| **CC:** | Lyndsay Waller | **EMAIL:** Lyndsay.Waller@Durham.ca |
| **FROM:** | Maja Bokara | **EMAIL:** Maja.Bokara@rwdi.com |
| **RE:** | **Exceedance Report – Total Suspended Particulates April 12, 2023 Region of Durham, DYEC** | |

On May 4, 2023, the results from ALS Environmental were received regarding the TSP results from the April 12, 2023, sampling event. On May 5, 2023, the results were entered and assessed. It was noted that on April 12, 2023, the Rundle Road Station Total Suspended Particulates (TSP) concentration was in excess of the 24-hour AAQC as measured by the onsite TSP sampler. Attached is a figure depicting the wind rose (indicating the wind speed and direction during the sampling day), and the location of the sampling stations relative to the DYEC.

The following summarizes the TSP concentrations and onsite conditions during the April 12 sampling date:

1. The guideline concentration for TSP is 120 µg/m$^3$. The measured concentration at the Rundle Road sampler for a 24-hour sample was 148.3 µg/m$^3$.
2. During the sampling day the wind was predominantly from the SW to the W, as recorded at the Rundle Road Meteorological Tower. One-hour average wind speeds at Rundle Road Meteorological Tower ranged from 1.4 km/h to 21.8 km/h.
3. RWDI reviewed the available CEMS data over a 72-hour period which includes the day before and after the TSP exceedance date. The data showed no unusual readings, and all parameters were within the expected values as well as below the listed Limits. Based on the data, both boilers 1 and 2 were operating normally during the time reviewed.
4. A review of the current ESDM data shows that Total Particulate Matter emissions from the DYEC for a 24-hour period are estimated to be less than 1% of the MECP limit.
5. At the time of the data review, MECP monitoring station data for TSP was not available.

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6. The Rundle Road meteorological data suggests that the primary wind direction during the sampling period was from the southwest to west-southwest direction. The Station is downwind of the DYEC when winds are from the south-southwest and southwest directions. This indicates that the Station was partially downwind of the DYEC during the sampling period. Given the wind conditions, it is possible that the measured TSP exceedance is partially attributable to the Energy Centre operations.
7. Construction activities were taking place adjacent to the Rundle Road station, placing the station directly downwind during the sampling period. It is likely that this construction work significantly contributed to the measured TSP exceedance. Photos of the construction site are attached in this report.

At the Rundle Road Station, the $NO_2$ hourly values were less than 9% of the criteria for the same period. The $PM_{2.5}$ 24-hour average value was 11.4 micrograms per cubic metre at the Rundle Road Station.

We have attached the data files for the samples in question to aid with the review.

Respectfully submitted by:

**RWDI AIR Inc.**

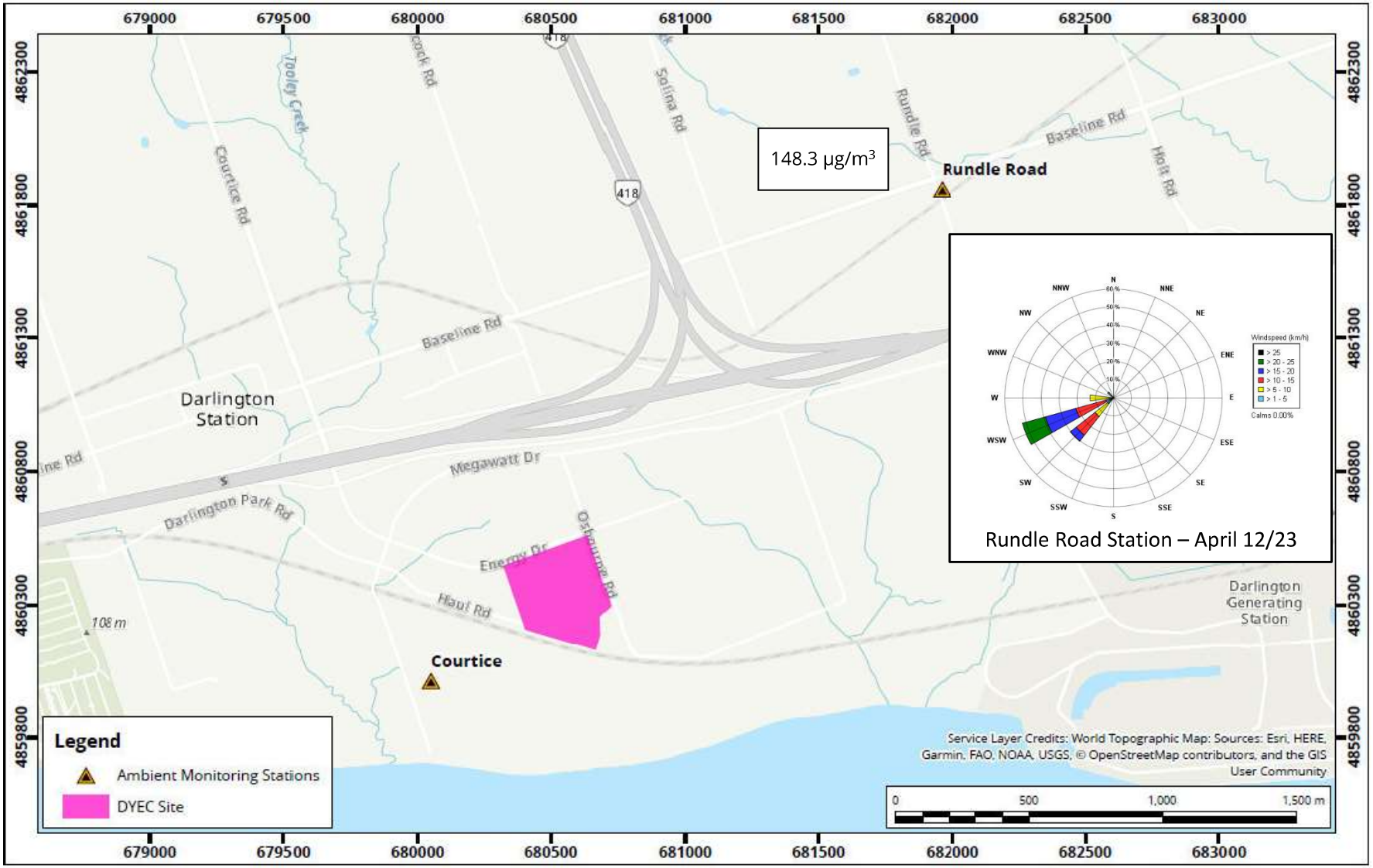
Maja Bokara, PGCert, EP
Project Manager

MB/vit

Attach.

# ATTACHMENTS






## DYEC Site and Ambient Monitoring Station Locations

Map Projection: NAD 1983 UTM Zone 17N

DYEC - Region of Durham, Ontario

True North

Project #: 2205149

| | |
|---|---|
| Drawn by: DAJH | Figure: 1 |
| Approx. Scale: | 1:20,000 |
| Date Revised: May 15, 2023 | |

# Chain of Custody (COC) / Analytical Request Form

L2750116-COFC

COC Number: 17 -

Page 1 of 1

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

| Report To | Contact and company name below will appear on the final report | Report Format / Distribution | | Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply) |
|---|---|---|---|---|
| Company: | RWDI | Select Report Format: | ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL) | Standard TAT is 15 business days. DTOX analysis standard TAT is 5 business days |
| Contact: | Matt Lantz | Quality Control (QC) Report with Report | ☐ YES ☐ NO | PRIORITY (Business Days): 15 day [R- Regular] ☐ |
| Phone: | 519 823 1311 | ☐ Compare Results to Criteria on Report - provide details below if box checked | | 10 day [P-50%] ☐ |
| | Company address below will appear on the final report | Select Distribution: | ☑ EMAIL ☐ MAIL ☐ FAX | 5 day [E-100%] ☐ |
| Street: | 600 Southgate Drive | Email 1 or Fax | Matt.Lantz@rwdi.com | EMERGENCY: 5 Business day - DTOX [R - Regular] ☐ |
| City/Province: | Guelph, Ontario | Email 2 | | 3 Business day - DTOX [E - 100%] ☐ |
| Postal Code: | N1G 4P6 | Email 3 | | Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm |
| Invoice To | Same as Report To ☐ YES ☐ NO | Invoice Distribution | | For tests that can not be performed according to the service level selected, you will be contacted. |
| | Copy of Invoice with Report ☐ YES ☐ NO | Select Invoice Distribution: | ☑ EMAIL ☐ MAIL ☐ FAX | |
| Company: | | Email 1 or Fax | | |
| Contact: | | Email 2 | | |

| Project Information | | Oil and Gas Required Fields (client use) | |
|---|---|---|---|
| ALS Account # / Quote #: | | AFE/Cost Center: | PO# |
| Job #: | DYEC | Major/Minor Code: | Routing Code |
| PO / AFE: | 1803743 Phase 1000 | Requisitioner: | |
| LSD: | | Location: | |
| ALS Lab Work Order # (lab use only): | | ALS Contact: | Sampler: Martin Town |

| ALS Sample # (lab use only) | Sample Identification and/or Coordinates (This description will appear on the report) | Sample Air Volume (m3) | Date (dd-mmm-yy) | Sample Period | Sample Type | NUMBER OF CONTAINERS: Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below | | | | SAMPLES ON HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | TSP, ICP on Hi-Vol Filter | PAH | DX | | |
| 1 | L2749947-3 - Rundle | 326 | 18-Apr-23 | 24hr | Air | | X | | | |
| 1 | 747850 | 1651 | 18-Apr-23 | 24hr | Air | X | | | | |
| 2 | 743849 | 1605 | 17-Apr-23 | 24hr | Air | X | | | | |
| 2 | L2749947-2 - Courtice | 324 | 18-Apr-23 | 24hr | Air | | X | | | |
| | 743851 | 1671 | 18-Apr-23 | 24hr | Air | X | | | | |
| | 743848 | INVALID | 17-Apr-23 | 24hr | Air | X | | | | |
| | | | | 24hr | Air | | | | | |
| | | | | 24hr | Air | | | | | |
| | | | | 24hr | Air | | | | | |
| | | | | 24hr | Air | | | | | |
| | | | | 24hr | Air | | | | | |
| | | | | 24hr | Air | | | | | |

| Drinking Water (DW) Samples[1] (client use) | Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only) |
|---|---|
| Are samples taken from a Regulated DW System? ☐ YES ☑ NO | |
| Are samples for human consumption/ use? ☐ YES ☑ NO | Samples are 10 day TAT |

SAMPLE CONDITION AS RECEIVED (lab use only)

| | | | | | |
|---|---|---|---|---|---|
| Frozen | ☐ | SIF Observations | Yes | ☐ | ☐ |
| Ice Packs | ☑ | Ice Cubes ☐ | Custody seal intact | Yes | ☑ ☐ |
| Cooling Initiated | ☑ | | | | |

| INITIAL COOLER TEMPERATURES °C | | FINAL COOLER TEMPERATURES °C | |
|---|---|---|---|
| 4.7°C | 14.3°C | | |

| SHIPMENT RELEASE (client use) | | | INITIAL SHIPMENT RECEPTION (lab use only) | | | FINAL SHIPMENT RECEPTION (lab use only) | | |
|---|---|---|---|---|---|---|---|---|
| Released by: | Date: | Time: | Received by: | Date: | Time: | Received by: | Date: | Time: |
| | 19-Apr-23 | 17:30 | AARON BURTON | 20-Apr-2023 | 9:45 | | | |

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

RWDI AIR INC. (Guelph)
ATTN: Khalid Hussein
600 Southgate Drive
Guelph ON N1G 4P6

Date Received: 20-APR-23
Report Date: 04-MAY-23 14:18 (MT)
Version: FINAL

Client Phone: 519-823-1311

# Certificate of Analysis

**Lab Work Order #: L2750117**

Project P.O. #: 1803743 Phase 1000
Job Reference: DYEC
C of C Numbers:
Legal Site Desc:

Breanne Dusureault
Project Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L2750117-1 #743850-RUNDLE-TSP/ICP-APR18 | | | | | | | |
| Sampled By: Martin Town on 18-APR-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Air volume | 1651 | | | m3 | | 21-APR-23 | R5947096 |
| **Particulate on High Volume Filter** | | | | | | | |
| Total particulate | 38.9 | | 0.061 | ug/m3 | | 21-APR-23 | R5948081 |
| Total particulate | 64200 | | 100 | ug | | 21-APR-23 | R5948081 |
| **Mercury on High Volume Filter by CVAA** | | | | | | | |
| Mercury (Hg) | <0.0000061 | | 0.0000061 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948457 |
| Mercury (Hg) | <0.010 | | 0.010 | ug | 02-MAY-23 | 03-MAY-23 | R5948457 |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Silver (Ag) | <0.000055 | | 0.000055 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Silver (Ag) | <0.090 | | 0.090 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Aluminum (Al) | 0.308 | | 0.0055 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Aluminum (Al) | 509 | | 9.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Arsenic (As) | <0.0018 | | 0.0018 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Arsenic (As) | <3.0 | | 3.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Barium (Ba) | 0.00810 | | 0.00030 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Barium (Ba) | 13.4 | | 0.50 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Beryllium (Be) | <0.000030 | | 0.000030 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Beryllium (Be) | <0.050 | | 0.050 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cadmium (Cd) | 0.000059 | | 0.000016 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cadmium (Cd) | 0.097 | | 0.027 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cobalt (Co) | 0.000189 | | 0.000018 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cobalt (Co) | 0.312 | | 0.030 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Chromium (Cr) | 0.0022 | | 0.0021 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Chromium (Cr) | 3.6 | | 3.4 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Copper (Cu) | 0.0572 | | 0.00061 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Copper (Cu) | 94.5 | | 1.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Iron (Fe) | 0.545 | | 0.0073 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Iron (Fe) | 900 | | 12 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Magnesium (Mg) | 0.357 | | 0.036 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Magnesium (Mg) | 590 | | 60 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Manganese (Mn) | 0.0152 | | 0.00027 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Manganese (Mn) | 25.2 | | 0.45 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Molybdenum (Mo) | 0.00168 | | 0.00022 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Molybdenum (Mo) | 2.77 | | 0.36 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Nickel (Ni) | 0.00124 | | 0.00015 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Nickel (Ni) | 2.05 | | 0.25 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Lead (Pb) | 0.00121 | | 0.000073 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Lead (Pb) | 2.00 | | 0.12 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Antimony (Sb) | 0.00041 | | 0.00015 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Antimony (Sb) | 0.68 | | 0.25 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Selenium (Se) | <0.00079 | | 0.00079 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Selenium (Se) | <1.3 | | 1.3 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Thallium (Tl) | <0.000055 | | 0.000055 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Thallium (Tl) | <0.090 | | 0.090 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Uranium (U) | 0.0000213 | | 0.0000036 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Uranium (U) | 0.0351 | | 0.0060 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Vanadium (V) | <0.0030 | | 0.0030 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Vanadium (V) | <5.0 | | 5.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zinc (Zn) | 0.0248 | | 0.0027 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zinc (Zn) | 41.0 | | 4.5 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Bismuth (Bi) | <0.0011 | | 0.0011 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L2750117-1 #743850-RUNDLE-TSP/ICP-APR18 | | | | | | | |
| Sampled By: Martin Town on 18-APR-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Bismuth (Bi) | <1.8 | | 1.8 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Boron (B) | <0.0091 | | 0.0091 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Boron (B) | <15 | | 15 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Phosphorus (P) | <0.45 | | 0.45 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Phosphorus (P) | <750 | | 750 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Strontium (Sr) | 0.0126 | | 0.0018 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Strontium (Sr) | 20.7 | | 3.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Tin (Sn) | 0.00081 | | 0.00036 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Tin (Sn) | 1.34 | | 0.60 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Titanium (Ti) | 0.0087 | | 0.0067 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Titanium (Ti) | 14 | | 11 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zirconium (Zr) | <0.0012 | | 0.0012 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zirconium (Zr) | <2.0 | | 2.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| L2750117-2 #743849-RUNDLE-TSP/ICP-APR12 | | | | | | | |
| Sampled By: Martin Town on 12-APR-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Air volume | 1605 | | | m3 | | 21-APR-23 | R5947096 |
| **Particulate on High Volume Filter** | | | | | | | |
| Total particulate | 148 | | 0.062 | ug/m3 | | 21-APR-23 | R5948081 |
| Total particulate | 238000 | | 100 | ug | | 21-APR-23 | R5948081 |
| **Mercury on High Volume Filter by CVAA** | | | | | | | |
| Mercury (Hg) | 0.0000207 | | 0.0000062 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948457 |
| Mercury (Hg) | 0.033 | | 0.010 | ug | 02-MAY-23 | 03-MAY-23 | R5948457 |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Silver (Ag) | 0.000060 | | 0.000056 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Silver (Ag) | 0.097 | | 0.090 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Aluminum (Al) | 1.28 | | 0.0056 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Aluminum (Al) | 2060 | | 9.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Arsenic (As) | <0.0019 | | 0.0019 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Arsenic (As) | <3.0 | | 3.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Barium (Ba) | 0.0212 | | 0.00031 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Barium (Ba) | 34.0 | | 0.50 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Beryllium (Be) | 0.000078 | | 0.000031 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Beryllium (Be) | 0.125 | | 0.050 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cadmium (Cd) | 0.000270 | | 0.000017 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cadmium (Cd) | 0.433 | | 0.027 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cobalt (Co) | 0.000900 | | 0.000019 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cobalt (Co) | 1.44 | | 0.030 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Chromium (Cr) | 0.0063 | | 0.0021 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Chromium (Cr) | 10.1 | | 3.4 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Copper (Cu) | 0.0552 | | 0.00062 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Copper (Cu) | 88.7 | | 1.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Iron (Fe) | 2.20 | | 0.0075 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Iron (Fe) | 3520 | | 12 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Magnesium (Mg) | 2.51 | | 0.037 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Magnesium (Mg) | 4030 | | 60 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Manganese (Mn) | 0.0726 | | 0.00028 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Manganese (Mn) | 117 | | 0.45 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Molybdenum (Mo) | 0.00236 | | 0.00022 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Molybdenum (Mo) | 3.78 | | 0.36 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L2750117-2 #743849-RUNDLE-TSP/ICP-APR12 | | | | | | | |
| Sampled By: Martin Town on 12-APR-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Nickel (Ni) | 0.00336 | | 0.00016 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Nickel (Ni) | 5.40 | | 0.25 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Lead (Pb) | 0.00765 | | 0.000075 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Lead (Pb) | 12.3 | | 0.12 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Antimony (Sb) | 0.00157 | | 0.00016 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Antimony (Sb) | 2.52 | | 0.25 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Selenium (Se) | 0.00143 | | 0.00081 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Selenium (Se) | 2.3 | | 1.3 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Thallium (Tl) | <0.000056 | | 0.000056 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Thallium (Tl) | <0.090 | | 0.090 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Uranium (U) | 0.000101 | | 0.0000037 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Uranium (U) | 0.163 | | 0.0060 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Vanadium (V) | 0.0034 | | 0.0031 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Vanadium (V) | 5.4 | | 5.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zinc (Zn) | 0.0608 | | 0.0028 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zinc (Zn) | 97.7 | | 4.5 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Bismuth (Bi) | <0.0011 | | 0.0011 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Bismuth (Bi) | <1.8 | | 1.8 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Boron (B) | <0.0093 | | 0.0093 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Boron (B) | <15 | | 15 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Phosphorus (P) | <0.47 | | 0.47 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Phosphorus (P) | <750 | | 750 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Strontium (Sr) | 0.0521 | | 0.0019 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Strontium (Sr) | 83.7 | | 3.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Tin (Sn) | 0.00196 | | 0.00037 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Tin (Sn) | 3.14 | | 0.60 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Titanium (Ti) | 0.0404 | | 0.0069 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Titanium (Ti) | 65 | | 11 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zirconium (Zr) | <0.0012 | | 0.0012 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zirconium (Zr) | <2.0 | | 2.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| L2750117-3 #743851-COURTICE-TSP/ICP-APR18 | | | | | | | |
| Sampled By: Martin Town on 18-APR-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Miscellaneous Parameters** | | | | | | | |
| Air volume | 1671 | | | m3 | | 21-APR-23 | R5947096 |
| **Particulate on High Volume Filter** | | | | | | | |
| Total particulate | 9.69 | | 0.060 | ug/m3 | | 21-APR-23 | R5948081 |
| Total particulate | 16200 | | 100 | ug | | 21-APR-23 | R5948081 |
| **Mercury on High Volume Filter by CVAA** | | | | | | | |
| Mercury (Hg) | <0.0000060 | | 0.0000060 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948457 |
| Mercury (Hg) | <0.010 | | 0.010 | ug | 02-MAY-23 | 03-MAY-23 | R5948457 |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Silver (Ag) | <0.000054 | | 0.000054 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Silver (Ag) | <0.090 | | 0.090 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Aluminum (Al) | 0.0574 | | 0.0054 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Aluminum (Al) | 95.9 | | 9.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Arsenic (As) | <0.0018 | | 0.0018 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Arsenic (As) | <3.0 | | 3.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Barium (Ba) | 0.00514 | | 0.00030 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Barium (Ba) | 8.60 | | 0.50 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Beryllium (Be) | <0.000030 | | 0.000030 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| L2750117-3 #743851-COURTICE-TSP/ICP-APR18 | | | | | | | |
| Sampled By: Martin Town on 18-APR-23 | | | | | | | |
| Matrix: Hi Vol Filter | | | | | | | |
| **Metals on High Volume Filter by ICPMS** | | | | | | | |
| Beryllium (Be) | <0.050 | | 0.050 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cadmium (Cd) | 0.000037 | | 0.000016 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cadmium (Cd) | 0.061 | | 0.027 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cobalt (Co) | 0.000063 | | 0.000018 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Cobalt (Co) | 0.105 | | 0.030 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Chromium (Cr) | <0.0020 | | 0.0020 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Chromium (Cr) | <3.4 | | 3.4 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Copper (Cu) | 0.00838 | | 0.00060 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Copper (Cu) | 14.0 | | 1.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Iron (Fe) | 0.169 | | 0.0072 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Iron (Fe) | 283 | | 12 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Magnesium (Mg) | 0.128 | | 0.036 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Magnesium (Mg) | 214 | | 60 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Manganese (Mn) | 0.00525 | | 0.00027 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Manganese (Mn) | 8.78 | | 0.45 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Molybdenum (Mo) | 0.00044 | | 0.00022 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Molybdenum (Mo) | 0.73 | | 0.36 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Nickel (Ni) | 0.00062 | | 0.00015 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Nickel (Ni) | 1.04 | | 0.25 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Lead (Pb) | 0.000638 | | 0.000072 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Lead (Pb) | 1.07 | | 0.12 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Antimony (Sb) | 0.00031 | | 0.00015 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Antimony (Sb) | 0.52 | | 0.25 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Selenium (Se) | <0.00078 | | 0.00078 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Selenium (Se) | <1.3 | | 1.3 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Thallium (Tl) | <0.000054 | | 0.000054 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Thallium (Tl) | <0.090 | | 0.090 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Uranium (U) | 0.0000059 | | 0.0000036 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Uranium (U) | 0.0099 | | 0.0060 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Vanadium (V) | <0.0030 | | 0.0030 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Vanadium (V) | <5.0 | | 5.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zinc (Zn) | 0.0141 | | 0.0027 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zinc (Zn) | 23.5 | | 4.5 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Bismuth (Bi) | <0.0011 | | 0.0011 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Bismuth (Bi) | <1.8 | | 1.8 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Boron (B) | <0.0090 | | 0.0090 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Boron (B) | <15 | | 15 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Phosphorus (P) | <0.45 | | 0.45 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Phosphorus (P) | <750 | | 750 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Strontium (Sr) | 0.0023 | | 0.0018 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Strontium (Sr) | 3.9 | | 3.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Tin (Sn) | 0.00058 | | 0.00036 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Tin (Sn) | 0.97 | | 0.60 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Titanium (Ti) | <0.0066 | | 0.0066 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Titanium (Ti) | <11 | | 11 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zirconium (Zr) | <0.0012 | | 0.0012 | ug/m3 | 02-MAY-23 | 03-MAY-23 | R5948521 |
| Zirconium (Zr) | <2.0 | | 2.0 | ug | 02-MAY-23 | 03-MAY-23 | R5948521 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# Reference Information

**Test Method References:**

| ALS Test Code | Matrix | Test Description | Method Reference** |
|---|---|---|---|
| AIR VOLUME-HIVOL-BU | Filter | Air volume (m3) | USEPA IO3.1 |
| HG-IO3.5-CVAA-BU | Filter | Mercury on High Volume Filter by CVAA | USEPA Method IO3.5 |
| After weighing (if required), hivol filters are sub-sampled and leached with nitric acid to extract available metal analytes. After dilution, the extracts are submitted to the CVAA instrument for analysis. | | | |
| MET-IO3.5-MS-BU | Filter | Metals on High Volume Filter by ICPMS | IO3.5 |
| After weighing (if required), hivol filters are sub-sampled and leached with nitric acid to extract available metal analytes. After dilution, the extracts are submitted to the ICPMS instrument for analysis. | | | |
| PART-HIVOL-GRAV-BU | Filter | Particulate on High Volume Filter | USEPA IO3.1 |

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

| Laboratory Definition Code | Laboratory Location |
|---|---|
| BU | ALS ENVIRONMENTAL - BURLINGTON, ONTARIO, CANADA |

**Chain of Custody Numbers:**

**GLOSSARY OF REPORT TERMS**

*Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.*
*mg/kg - milligrams per kilogram based on dry weight of sample*
*mg/kg wwt - milligrams per kilogram based on wet weight of sample*
*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight*
*mg/L - unit of concentration based on volume, parts per million.*
*< - Less than.*
*D.L. - The reporting limit.*
*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*
*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*
*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*

# Quality Control Report



Client: RWDI AIR INC. (Guelph)
600 Southgate Drive
Guelph ON N1G 4P6
Contact: Khalid Hussein

| Test | Matrix | Reference | Result | Qualifier | Units | RPD | Limit | Analyzed |
|---|---|---|---|---|---|---|---|---|
| **HG-IO3.5-CVAA-BU** | **Filter** | | | | | | | |
| **Batch R5948457** | | | | | | | | |
| **WG3783641-3 DUP** | | **L2750117-1** | | | | | | |
| Mercury (Hg) | | <0.010 | <0.0050 | RPD-NA | ug | N/A | 20 | 03-MAY-23 |
| **WG3783641-2 LCS** | | | | | | | | |
| Mercury (Hg) | | | 93.2 | | ug | | 70-130 | 03-MAY-23 |
| **WG3783641-1 MB** | | | | | | | | |
| Mercury (Hg) | | | <0.0050 | | ug | | 0.005 | 03-MAY-23 |
| **WG3783641-4 MS** | | **L2750117-1** | | | | | | |
| Mercury (Hg) | | | 88.2 | | ug | | 70-130 | 03-MAY-23 |
| **MET-IO3.5-MS-BU** | **Filter** | | | | | | | |
| **Batch R5948521** | | | | | | | | |
| **WG3783641-3 DUP** | | **L2750117-1** | | | | | | |
| Silver (Ag) | | <0.090 | <0.090 | RPD-NA | ug | N/A | 20 | 03-MAY-23 |
| Aluminum (Al) | | 509 | 617 | | ug | 19 | 20 | 03-MAY-23 |
| Arsenic (As) | | <3.0 | <3.0 | RPD-NA | ug | N/A | 20 | 03-MAY-23 |
| Barium (Ba) | | 13.4 | 12.9 | | ug | 3.8 | 20 | 03-MAY-23 |
| Beryllium (Be) | | <0.050 | <0.050 | RPD-NA | ug | N/A | 20 | 03-MAY-23 |
| Cadmium (Cd) | | 0.097 | 0.181 | DUP-H | ug | 0.084 | 0.054 | 03-MAY-23 |
| Cobalt (Co) | | 0.312 | 0.356 | | ug | 13 | 20 | 03-MAY-23 |
| Chromium (Cr) | | 3.6 | 3.9 | | ug | 9.4 | 20 | 03-MAY-23 |
| Copper (Cu) | | 94.5 | 204 | DUP-H | ug | 73 | 20 | 03-MAY-23 |
| Iron (Fe) | | 900 | 936 | | ug | 3.9 | 25 | 03-MAY-23 |
| Magnesium (Mg) | | 590 | 662 | | ug | 12 | 20 | 03-MAY-23 |
| Manganese (Mn) | | 25.2 | 26.6 | | ug | 5.7 | 20 | 03-MAY-23 |
| Molybdenum (Mo) | | 2.77 | 2.85 | | ug | 3.0 | 20 | 03-MAY-23 |
| Nickel (Ni) | | 2.05 | 2.38 | | ug | 15 | 20 | 03-MAY-23 |
| Lead (Pb) | | 2.00 | 2.85 | DUP-H | ug | 35 | 20 | 03-MAY-23 |
| Antimony (Sb) | | 0.68 | 0.88 | J | ug | 0.20 | 0.5 | 03-MAY-23 |
| Selenium (Se) | | <1.3 | <1.3 | RPD-NA | ug | N/A | 20 | 03-MAY-23 |
| Thallium (Tl) | | <0.090 | <0.090 | RPD-NA | ug | N/A | 20 | 03-MAY-23 |
| Uranium (U) | | 0.0351 | 0.0410 | | ug | 15 | 20 | 03-MAY-23 |
| Vanadium (V) | | <5.0 | <5.0 | RPD-NA | ug | N/A | 20 | 03-MAY-23 |
| Zinc (Zn) | | 41.0 | 60.3 | DUP-H | ug | 38 | 20 | 03-MAY-23 |
| Bismuth (Bi) | | <1.8 | <1.8 | RPD-NA | ug | N/A | 25 | 03-MAY-23 |
| Boron (B) | | <15 | <15 | RPD-NA | ug | N/A | 25 | 03-MAY-23 |
| Phosphorus (P) | | <750 | <750 | RPD-NA | ug | N/A | 25 | 03-MAY-23 |
| Strontium (Sr) | | 20.7 | 23.0 | | ug | 10 | 25 | 03-MAY-23 |

# Quality Control Report



| Test | Matrix | Reference | Result | Qualifier | Units | RPD | Limit | Analyzed |
|---|---|---|---|---|---|---|---|---|
| **MET-IO3.5-MS-BU** | **Filter** | | | | | | | |
| **Batch R5948521** | | | | | | | | |
| **WG3783641-3 DUP** | | **L2750117-1** | | | | | | |
| Tin (Sn) | | 1.34 | 1.35 | | ug | 0.3 | 25 | 03-MAY-23 |
| Titanium (Ti) | | 14 | 16 | | ug | 10 | 25 | 03-MAY-23 |
| Zirconium (Zr) | | <2.0 | <2.0 | RPD-NA | ug | N/A | 25 | 03-MAY-23 |
| COMMENTS: Cd, Cu, Pb and Zn RPDs are outside the ALS DQOs. This is likely due to inhomogeneity in the dispersion of these analytes across the sampled filter surface. Data may show higher-than-normal variability. GN 4-May-23 | | | | | | | | |
| **WG3783641-2 LCS** | | | | | | | | |
| Silver (Ag) | | | 93.6 | | % | | 70-130 | 03-MAY-23 |
| Aluminum (Al) | | | 92.5 | | % | | 70-130 | 03-MAY-23 |
| Arsenic (As) | | | 93.5 | | % | | 80-120 | 03-MAY-23 |
| Barium (Ba) | | | 100.0 | | % | | 70-130 | 03-MAY-23 |
| Beryllium (Be) | | | 91.9 | | % | | 70-130 | 03-MAY-23 |
| Cadmium (Cd) | | | 97.0 | | % | | 80-120 | 03-MAY-23 |
| Cobalt (Co) | | | 96.3 | | % | | 80-120 | 03-MAY-23 |
| Chromium (Cr) | | | 96.2 | | % | | 80-120 | 03-MAY-23 |
| Copper (Cu) | | | 98.9 | | % | | 80-120 | 03-MAY-23 |
| Iron (Fe) | | | 99.6 | | % | | 80-120 | 03-MAY-23 |
| Magnesium (Mg) | | | 96.2 | | % | | 70-130 | 03-MAY-23 |
| Manganese (Mn) | | | 94.7 | | % | | 80-120 | 03-MAY-23 |
| Molybdenum (Mo) | | | 92.4 | | % | | 70-130 | 03-MAY-23 |
| Nickel (Ni) | | | 97.1 | | % | | 80-120 | 03-MAY-23 |
| Lead (Pb) | | | 96.5 | | % | | 80-120 | 03-MAY-23 |
| Antimony (Sb) | | | 94.0 | | % | | 80-120 | 03-MAY-23 |
| Selenium (Se) | | | 99.5 | | % | | 80-120 | 03-MAY-23 |
| Thallium (Tl) | | | 92.6 | | % | | 70-130 | 03-MAY-23 |
| Uranium (U) | | | 93.4 | | % | | 70-130 | 03-MAY-23 |
| Vanadium (V) | | | 95.5 | | % | | 80-120 | 03-MAY-23 |
| Zinc (Zn) | | | 95.5 | | % | | 80-120 | 03-MAY-23 |
| Bismuth (Bi) | | | 96.5 | | % | | 70-130 | 03-MAY-23 |
| Boron (B) | | | 93.1 | | % | | 70-130 | 03-MAY-23 |
| Phosphorus (P) | | | 92.4 | | % | | 70-130 | 03-MAY-23 |
| Strontium (Sr) | | | 92.6 | | % | | 70-130 | 03-MAY-23 |
| Tin (Sn) | | | 96.4 | | % | | 70-130 | 03-MAY-23 |
| Titanium (Ti) | | | 95.9 | | % | | 70-130 | 03-MAY-23 |
| Zirconium (Zr) | | | 96.5 | | % | | 70-130 | 03-MAY-23 |
| **WG3783641-1 MB** | | | | | | | | |

# Quality Control Report



| Test | Matrix | Reference | Result | Qualifier | Units | RPD | Limit | Analyzed |
|---|---|---|---|---|---|---|---|---|
| **MET-IO3.5-MS-BU** | **Filter** | | | | | | | |
| **Batch R5948521** | | | | | | | | |
| **WG3783641-1 MB** | | | | | | | | |
| Silver (Ag) | | | <0.090 | | ug | | 0.09 | 03-MAY-23 |
| Aluminum (Al) | | | <9.0 | | ug | | 9 | 03-MAY-23 |
| Arsenic (As) | | | <3.0 | | ug | | 3 | 03-MAY-23 |
| Barium (Ba) | | | <0.50 | | ug | | 0.5 | 03-MAY-23 |
| Beryllium (Be) | | | <0.050 | | ug | | 0.05 | 03-MAY-23 |
| Cadmium (Cd) | | | <0.027 | | ug | | 0.027 | 03-MAY-23 |
| Cobalt (Co) | | | <0.030 | | ug | | 0.03 | 03-MAY-23 |
| Chromium (Cr) | | | <3.4 | | ug | | 3.4 | 03-MAY-23 |
| Copper (Cu) | | | <1.0 | | ug | | 1 | 03-MAY-23 |
| Iron (Fe) | | | <12 | | ug | | 12 | 03-MAY-23 |
| Magnesium (Mg) | | | <60 | | ug | | 60 | 03-MAY-23 |
| Manganese (Mn) | | | <0.45 | | ug | | 0.45 | 03-MAY-23 |
| Molybdenum (Mo) | | | <0.36 | | ug | | 0.36 | 03-MAY-23 |
| Nickel (Ni) | | | <0.25 | | ug | | 0.25 | 03-MAY-23 |
| Lead (Pb) | | | <0.12 | | ug | | 0.12 | 03-MAY-23 |
| Antimony (Sb) | | | <0.25 | | ug | | 0.25 | 03-MAY-23 |
| Selenium (Se) | | | <1.3 | | ug | | 1.25 | 03-MAY-23 |
| Thallium (Tl) | | | <0.090 | | ug | | 0.09 | 03-MAY-23 |
| Uranium (U) | | | <0.0060 | | ug | | 0.006 | 03-MAY-23 |
| Vanadium (V) | | | <5.0 | | ug | | 10 | 03-MAY-23 |
| Zinc (Zn) | | | <4.5 | | ug | | 4.5 | 03-MAY-23 |
| Bismuth (Bi) | | | <1.8 | | ug | | 1.8 | 03-MAY-23 |
| Boron (B) | | | <15 | | ug | | 15 | 03-MAY-23 |
| Phosphorus (P) | | | <750 | | ug | | 750 | 03-MAY-23 |
| Strontium (Sr) | | | <3.0 | | ug | | 3 | 03-MAY-23 |
| Tin (Sn) | | | <0.60 | | ug | | 0.6 | 03-MAY-23 |
| Titanium (Ti) | | | <11 | | ug | | 10.5 | 03-MAY-23 |
| Zirconium (Zr) | | | <2.0 | | ug | | 2 | 03-MAY-23 |
| **WG3783641-4 MS** | | **L2750117-1** | | | | | | |
| Silver (Ag) | | | 90.1 | | % | | 75-125 | 03-MAY-23 |
| Aluminum (Al) | | | N/A | MS-B | % | | - | 03-MAY-23 |
| Arsenic (As) | | | 93.6 | | % | | 75-125 | 03-MAY-23 |
| Barium (Ba) | | | 96.3 | | % | | 75-125 | 03-MAY-23 |
| Beryllium (Be) | | | 94.0 | | % | | 75-125 | 03-MAY-23 |

# Quality Control Report



| Test | Matrix | Reference | Result | Qualifier | Units | RPD | Limit | Analyzed |
|---|---|---|---|---|---|---|---|---|
| **MET-IO3.5-MS-BU** | **Filter** | | | | | | | |
| **Batch R5948521** | | | | | | | | |
| **WG3783641-4 MS** | | **L2750117-1** | | | | | | |
| Cadmium (Cd) | | | 97.4 | | % | | 75-125 | 03-MAY-23 |
| Cobalt (Co) | | | 94.6 | | % | | 75-125 | 03-MAY-23 |
| Chromium (Cr) | | | 95.1 | | % | | 75-125 | 03-MAY-23 |
| Copper (Cu) | | | N/A | MS-B | % | | - | 03-MAY-23 |
| Iron (Fe) | | | N/A | MS-B | % | | - | 03-MAY-23 |
| Magnesium (Mg) | | | N/A | MS-B | % | | - | 03-MAY-23 |
| Manganese (Mn) | | | 86.1 | | % | | 75-125 | 03-MAY-23 |
| Molybdenum (Mo) | | | 88.1 | | % | | 75-125 | 03-MAY-23 |
| Nickel (Ni) | | | 94.4 | | % | | 75-125 | 03-MAY-23 |
| Lead (Pb) | | | 95.6 | | % | | 75-125 | 03-MAY-23 |
| Antimony (Sb) | | | 83.0 | | % | | 75-125 | 03-MAY-23 |
| Selenium (Se) | | | 97.0 | | % | | 75-125 | 03-MAY-23 |
| Thallium (Tl) | | | 93.3 | | % | | 75-125 | 03-MAY-23 |
| Uranium (U) | | | 95.8 | | % | | 75-125 | 03-MAY-23 |
| Vanadium (V) | | | 94.2 | | % | | 75-125 | 03-MAY-23 |
| Zinc (Zn) | | | 87.5 | | % | | 75-125 | 03-MAY-23 |
| Bismuth (Bi) | | | 96.6 | | % | | 75-125 | 03-MAY-23 |
| Boron (B) | | | 91.5 | | % | | 75-125 | 03-MAY-23 |
| Phosphorus (P) | | | 93.0 | | % | | 75-125 | 03-MAY-23 |
| Strontium (Sr) | | | 79.9 | | % | | 75-125 | 03-MAY-23 |
| Tin (Sn) | | | 96.0 | | % | | 75-125 | 03-MAY-23 |
| Titanium (Ti) | | | 87.2 | | % | | 75-125 | 03-MAY-23 |
| Zirconium (Zr) | | | 79.9 | | % | | 75-125 | 03-MAY-23 |
| **PART-HIVOL-GRAV-BU** | **Filter** | | | | | | | |
| **Batch R5948081** | | | | | | | | |
| **WG3783564-2 DUP** | | **L2750117-1** | | | | | | |
| Total particulate | | 64200 | 64200 | | ug | 0.0 | 5 | 21-APR-23 |
| **WG3783564-1 MB** | | | | | | | | |
| Total particulate | | | <100 | | ug | | 100 | 21-APR-23 |

# Quality Control Report



**Legend:**

| | |
|---|---|
| Limit | ALS Control Limit (Data Quality Objectives) |
| DUP | Duplicate |
| RPD | Relative Percent Difference |
| N/A | Not Available |
| LCS | Laboratory Control Sample |
| SRM | Standard Reference Material |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| ADE | Average Desorption Efficiency |
| MB | Method Blank |
| IRM | Internal Reference Material |
| CRM | Certified Reference Material |
| CCV | Continuing Calibration Verification |
| CVS | Calibration Verification Standard |
| LCSD | Laboratory Control Sample Duplicate |

**Sample Parameter Qualifier Definitions:**

| Qualifier | Description |
|---|---|
| DUP-H | Duplicate results outside ALS DQO, due to sample heterogeneity. |
| J | Duplicate results and limits are expressed in terms of absolute difference. |
| MS-B | Matrix Spike recovery could not be accurately calculated due to high analyte background in sample. |
| RPD-NA | Relative Percent Difference Not Available due to result(s) being less than detection limit. |

**Hold Time Exceedances:**

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

# Chain of Custody (COC) / Analytical Request Form

L2750116-COFC

COC Number: 17 -

Page 1 of 1

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Canada Toll Free: 1 800 668 9878

| Report To | Contact and company name below will appear on the final report | Report Format / Distribution | | Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply) |
|---|---|---|---|---|
| Company: | RWDI | Select Report Format: | ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL) | Standard TAT is 15 business days. DTOX analysis standard TAT is 5 business days |
| Contact: | Matt Lantz | Quality Control (QC) Report with Report | ☐ YES ☐ NO | PRIORITY (Business Days): 15 day [R- Regular] ☐ / 10 day [P-50%] ☐ / 5 day [E-100%] ☐ — EMERGENCY: 5 Business day - DTOX [R - Regular] / 3 Business day - DTOX [E - 100%] |
| Phone: | 519 823 1311 | ☐ Compare Results to Criteria on Report - provide details below if box checked | | |
| | Company address below will appear on the final report | Select Distribution: | ☑ EMAIL ☐ MAIL ☐ FAX | Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm |
| Street: | 600 Southgate Drive | Email 1 or Fax | Matt.Lantz@rwdi.com | For tests that can not be performed according to the service level selected, you will be contacted. |
| City/Province: | Guelph, Ontario | Email 2 | | |
| Postal Code: | N1G 4P6 | Email 3 | | |
| Invoice To | Same as Report To ☐ YES ☐ NO | Invoice Distribution | | |
| | Copy of Invoice with Report ☐ YES ☐ NO | Select Invoice Distribution: | ☑ EMAIL ☐ MAIL ☐ FAX | |
| Company: | | Email 1 or Fax | | |
| Contact: | | Email 2 | | |

| Project Information | | Oil and Gas Required Fields (client use) | |
|---|---|---|---|
| ALS Account # / Quote #: | | AFE/Cost Center: | PO# |
| Job #: | DYEC | Major/Minor Code: | Routing Code |
| PO / AFE: | 1803743 Phase 1000 | Requisitioner: | |
| LSD: | | Location: | |
| ALS Lab Work Order # (lab use only): | | ALS Contact: | Sampler: Martin Town |

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

| ALS Sample # (lab use only) | Sample Identification and/or Coordinates (This description will appear on the report) | Sample Air Volume (m3) | Date (dd-mmm-yy) | Sample Period | Sample Type | NUMBER OF CONTAINERS | TSP, ICP on Hi-Vol Filter | PAH | DX | SAMPLES ON HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | L2749947-3 - Rundle | 326 | 18-Apr-23 | 24hr | Air | | | X | | |
| 1 | 747850 | 1651 | 18-Apr-23 | 24hr | Air | | X | | | |
| 2 | 743849 | 1605 | 17-Apr-23 | 24hr | Air | | X | | | |
| 2 | L2749947-2 - Cowtice | 324 | 18-Apr-23 | 24hr | Air | | | X | | |
| | 743851 | 1671 | 18-Apr-23 | 24hr | Air | | X | | | |
| | 743848 | INVALID | 17-Apr-23 | 24hr | Air | | X | | | |
| | | | | 24hr | Air | | | | | |
| | | | | 24hr | Air | | | | | |
| | | | | 24hr | Air | | | | | |
| | | | | 24hr | Air | | | | | |
| | | | | 24hr | Air | | | | | |
| | | | | 24hr | Air | | | | | |

| Drinking Water (DW) Samples[1] (client use) | Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only) |
|---|---|
| Are samples taken from a Regulated DW System? ☐ YES ☑ NO | |
| Are samples for human consumption/ use? ☐ YES ☑ NO | Samples are 10 day TAT |

SAMPLE CONDITION AS RECEIVED (lab use only)

| | | | | | |
|---|---|---|---|---|---|
| Frozen | ☐ | SIF Observations | Yes | ☐ | ☐ |
| Ice Packs | ☑ | Ice Cubes ☐ | Custody seal intact | Yes | ☑ ☐ |
| Cooling Initiated | ☑ | | | | |

| INITIAL COOLER TEMPERATURES °C | | | | FINAL COOLER TEMPERATURES °C | | | |
|---|---|---|---|---|---|---|---|
| 4.7°C | 14.3°C | | | | | | |

| SHIPMENT RELEASE (client use) | | | INITIAL SHIPMENT RECEPTION (lab use only) | | | FINAL SHIPMENT RECEPTION (lab use only) | | |
|---|---|---|---|---|---|---|---|---|
| Released by: | Date: 19-Apr-23 | Time: 17:30 | Received by: AARON BURTON | Date: 20-Apr-2023 | Time: 9:45 | Received by: | Date: | Time: |

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Station: RofD Rundle  Daily: 12/04/2023  Type: AVG 1 Hr. [5 Mins.]

| Date & Time | PM2.5 | NO | NO2 | NOX | SO2 | Precip | ET | Tr_Temp | RH AVG | Rain total | WS km/hr | WD | Hi-Vol Pressure | Hivol Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/m3 | ppb | ppb | ppb | ppb | Volts | C° | C° | % | mm | km/hr | Deg | in H20 | cfm |
| 12/04/2023 00:00 | 8.4 | 0 | 1.6 | 1.2 | 0.2 | 12.8 | 15.4 | 23 | 48.9 | 0 | 9.6 | 274 | 3.67 | 39.03 |
| 12/04/2023 01:00 | 9.3 | 0 | 2.4 | 2.1 | 0.1 | 12.8 | 14.6 | 23.2 | 51.3 | 0 | 6.4 | 272 | 3.67 | 39.1 |
| 12/04/2023 02:00 | 9.6 | 0 | 2.2 | 1.9 | 0.2 | 12.8 | 13.6 | 23.7 | 53.6 | 0 | 5.3 | 274 | 3.66 | 39.1 |
| 12/04/2023 03:00 | 9.7 | 0 | 1.5 | 1.2 | 0.1 | 12.8 | 12.6 | 22.8 | 55.5 | 0 | 3.7 | 316 | 3.67 | 39.21 |
| 12/04/2023 04:00 | 8.5 | 0.1 | 3 | 2.9 | 0.2 | 12.8 | 11.6 | 23.4 | 57.9 | 0 | 2.9 | 254 | 3.66 | 39.25 |
| 12/04/2023 05:00 | 12.5 | 7.2 | 13.6 | 20.8 | 0.3 | 12.8 | 9.7 | 23.1 | 68 | 0 | 2.3 | 214 | 3.68 | 39.48 |
| 12/04/2023 06:00 | 13 | 7.1 | 17.3 | 24.4 | 0.3 | 12.8 | 9.2 | 22.9 | 73 | 0 | 1.4 | <Samp | 3.69 | 39.56 |
| 12/04/2023 07:00 | 11.1 | 4.5 | 11.8 | 16.3 | 0.5 | 12.8 | 10.5 | 23.2 | 66.1 | 0 | 7.1 | 231 | 3.7 | 39.53 |
| 12/04/2023 08:00 | 11.1 | 2.1 | 6.3 | 8.4 | 0.6 | 12.8 | 11.6 | 23.1 | 63 | 0 | 11.5 | 237 | 3.71 | 39.49 |
| 12/04/2023 09:00 | 12.8 | 2.7 | 6.7 | 9.4 | 0.8 | 12.8 | 12.5 | 23.1 | 59.5 | 0 | 11.6 | 239 | 3.7 | 39.4 |
| 12/04/2023 10:00 | 13.2 | 3.7 | 7.6 | 11.3 | 1.0 | 12.8 | 13.2 | 23 | 57.6 | 0 | 13.1 | 228 | 3.7 | 39.33 |
| 12/04/2023 11:00 | 15.9 | 2.3 | 6.7 | 9 | 1.8 | 12.8 | 14.9 | 22.9 | 53.6 | 0 | 13.0 | 239 | 3.71 | 39.27 |
| 12/04/2023 12:00 | 17.6 | 1.9 | 7.8 | 9.7 | 1.8 | 12.8 | 18.1 | 23 | 46.5 | 0 | 11.3 | 233 | 3.66 | 38.79 |
| 12/04/2023 13:00 | 12.6 | 1.2 | 6.2 | 7.3 | 1.8 | 12.8 | 17.9 | 23 | 48.6 | 0 | 8.9 | 219 | 3.66 | 38.79 |
| 12/04/2023 14:00 | 13.9 | 1.7 | 7.5 | 9.2 | 1.4 | 12.8 | 18.7 | 23 | 47.8 | 0 | 14.4 | 234 | 3.68 | 38.85 |
| 12/04/2023 15:00 | 12.8 | 0.9 | 5.2 | 6.1 | 0.6 | 12.8 | 17.8 | 22.9 | 48.5 | 0 | 17.9 | 239 | 3.72 | 39.13 |
| 12/04/2023 16:00 | 10 | 1 | 4.2 | 5.2 | 0.5 | 12.8 | 16.3 | 22.9 | 54.6 | 0 | 18.2 | 234 | 3.74 | 39.38 |
| 12/04/2023 17:00 | 14.8 | 1.1 | 5.5 | 6.6 | 0.5 | 12.8 | 14.6 | 23 | 55.5 | 0 | 16.4 | 241 | 3.79 | 39.74 |
| 12/04/2023 18:00 | 15.3 | 0.7 | 5.3 | 6 | 0.3 | 12.8 | 14.5 | 22.9 | 56.4 | 0 | 21.0 | 243 | 3.8 | 39.79 |
| 12/04/2023 19:00 | 9.8 | 0.5 | 5.2 | 5.8 | 0.2 | 12.8 | 13.2 | 23.1 | 59.6 | 0 | 20.9 | 244 | 3.83 | 40.03 |
| 12/04/2023 20:00 | 8.3 | 0.9 | 6 | 6.8 | 0.3 | 12.8 | 14.5 | 23.2 | 56 | 0 | 21.8 | 246 | 3.8 | 39.8 |
| 12/04/2023 21:00 | 7.3 | 0 | 3.9 | 3.7 | 0.3 | 12.8 | 13.5 | 23.1 | 58.9 | 0 | 18.8 | 244 | 3.81 | 39.92 |
| 12/04/2023 22:00 | 7.9 | 0.3 | 5.1 | 5.2 | 1.0 | 12.8 | 12.9 | 23.6 | 61.2 | 0 | 17.5 | 240 | 3.82 | 39.99 |
| 12/04/2023 23:00 | 8.4 | 0.9 | 7.8 | 8.7 | 0.7 | 12.8 | 12.2 | 22.9 | 63.6 | 0 | 13.7 | 242 | 3.83 | 40.13 |
| Minimum | 7.3 | 0 | 1.5 | 1.2 | 0.1 | 12.8 | 9.2 | 22.8 | 46.5 | 0 | 1.4 | 214 | 3.66 | 38.79 |
| MinDate | 21:00 | 00:00 | 03:00 | 00:00 | 01:00 | 00:00 | 06:00 | 03:00 | 12:00 | 00:00 | 06:00 | 05:00 | 02:00 | 12:00 |
| Maximum | 17.6 | 7.2 | 17.3 | 24.4 | 1.8 | 12.8 | 18.7 | 23.7 | 73 | 0 | 21.8 | 316 | 3.83 | 40.13 |
| MaxDate | 12:00 | 05:00 | 06:00 | 06:00 | 12:00 | 00:00 | 14:00 | 02:00 | 06:00 | 00:00 | 20:00 | 03:00 | 19:00 | 23:00 |
| Avg | 11.4 | 1.7 | 6.3 | 7.9 | 0.7 | 12.8 | 13.9 | 23.1 | 56.9 | 0 | 12.0 | 245 | 3.72 | 39.42 |
| Num | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 23 | 24 | 24 |
| Data[%] | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 95.83 | 100 | 100 |
| STD | 2.8 | 2 | 3.6 | 5.6 | 0.5 | 0 | 2.5 | 0.2 | 6.6 | 0 | 6.2 | 21.1 | 0.1 | 0.4 |

**Table B9: 2023 Rundle Road Station Q2 Monitoring Results for TSP and Metals**

| Contaminant | Units | *MECP Criteria* | 12-Apr-23 | No. > Criteria |
|---|---|---|---|---|
| Particulate (TSP) | µg/m$^3$ | *120* | 148.29 | 1 |
| Mercury (Hg) | µg/m$^3$ | *2* | 2.06E-05 | 0 |
| Aluminum (Al) | µg/m$^3$ | *4.8* | 1.28E+00 | 0 |
| Antimony (Sb) | µg/m$^3$ | *25* | 1.57E-03 | 0 |
| Arsenic (As) | µg/m$^3$ | *0.3* | 9.35E-04 | 0 |
| Barium (Ba) | µg/m$^3$ | *10* | 2.12E-02 | 0 |
| Beryllium (Be) | µg/m$^3$ | *0.01* | 7.79E-05 | 0 |
| Bismuth (Bi) | µg/m$^3$ | - | 5.61E-04 | - |
| Boron (B) | µg/m$^3$ | *120* | 4.67E-03 | 0 |
| Cadmium (Cd) | µg/m$^3$ | *0.025* | 2.70E-04 | 0 |
| Chromium (Cr) | µg/m$^3$ | *0.5* | 6.29E-03 | 0 |
| Cobalt (Co) | µg/m$^3$ | *0.1* | 8.97E-04 | 0 |
| Copper (Cu) | µg/m$^3$ | *50* | 5.53E-02 | 0 |
| Iron (Fe) | µg/m$^3$ | *4* | 2.19E+00 | 0 |
| Lead (Pb) | µg/m$^3$ | *0.5* | 7.66E-03 | 0 |
| Magnesium (Mg) | µg/m$^3$ | - | 2.51E+00 | - |
| Manganese (Mn) | µg/m$^3$ | *0.4* | 7.29E-02 | 0 |
| Molybdenum (Mo) | µg/m$^3$ | *120* | 2.36E-03 | 0 |
| Nickel (Ni) | µg/m$^3$ | *0.2* | 3.36E-03 | 0 |
| Phosphorus (P) | µg/m$^3$ | - | 2.34E-01 | - |
| Selenium (Se) | µg/m$^3$ | *10* | 1.43E-03 | 0 |
| Silver (Ag) | µg/m$^3$ | *1* | 6.04E-05 | 0 |
| Strontium (Sr) | µg/m$^3$ | *120* | 5.21E-02 | 0 |
| Thallium (Tl) | µg/m$^3$ | - | 2.80E-05 | - |
| Tin (Sn) | µg/m$^3$ | *10* | 1.96E-03 | 0 |
| Titanium (Ti) | µg/m$^3$ | *120* | 4.05E-02 | 0 |
| Uranium (Ur) | µg/m$^3$ | *1.5* | 1.02E-04 | 0 |
| Vanadium (V) | µg/m$^3$ | *2* | 3.36E-03 | 0 |
| Zinc (Zn) | µg/m$^3$ | *120* | 6.09E-02 | 0 |
| Zirconium (Zr) | µg/m$^3$ | *20* | 6.23E-04 | 0 |

NOTE: All non-detectable results were reported as 1/2 of the detection limit







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Guelph ON Canada
N1G 4P6

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Fax: +1.519.823.1316
E-mail: solutions@rwdi.com

# MEMORANDUM

| | | |
|---|---|---|
| **DATE:** | 2023-06-15 | **RWDI Reference No.:** 2205149 |
| **TO:** | Lipika Saha | **EMAIL:** Lipika.Saha@Durham.ca |
| **CC:** | Andrew Evans | **EMAIL:** Andrew.Evans@Durham.ca |
| **CC:** | Lyndsay Waller | **EMAIL:** Lyndsay.Waller@Durham.ca |
| **FROM:** | Maja Bokara | **EMAIL:** Maja.Bokara@rwdi.com |
| **RE:** | **Exceedance Report – Benzo(a)Pyrene May 12, 2023<br>Region of Durham, DYEC** | |

On June 6, 2023, the results from ALS Environmental were received regarding the PAH results from the May 12, 2023, sampling event. On June 6, 2023, the results were entered and assessed. It was noted that on May 12, 2023, both the Courtice and Rundle Road Station Benzo(a)Pyrene (BaP) concentrations were in excess of the 24-hour AAQC as measured by the onsite PUF PS-1 samplers. Attached is a figure depicting the wind rose (indicating the wind speed and direction during the sampling day), and the location of the sampling stations relative to the DYEC.

The following summarizes the BaP concentrations and onsite conditions during the May 12 sampling date:

1. The guideline concentration for BaP is 0.05 ng/m$^3$. The measured concentration at the Courtice sampler was 0.114 ng/m$^3$ and the Rundle Road sampler was 0.145 ng/m$^3$.
2. During the sampling day the wind was predominantly from the SW to W and the NW to NNW, as recorded at the Courtice Meteorological Tower. One-hour average wind speeds at Courtice Meteorological Tower ranged from 1.46 km/h to 16.31 km/h.
3. During the sampling day the wind was predominantly from the SW to W and the NNW, as recorded at the Rundle Road Meteorological Tower. One-hour average wind speeds at Rundle Road Meteorological Tower ranged from 0.95 km/h to 17.96 km/h.
4. RWDI reviewed the available CEMS data over a 72-hour period which includes the day before and after the BaP exceedance date. The data showed no unusual readings, and all parameters were within the expected values as well as below the listed Limits. Based on the data, both boilers 1 and 2 were operating normally during the time reviewed.
5. A review of the current ESDM data shows that Benzo(a)Pyrene emissions from the DYEC for a 24-hour period are estimated to be less than 1% of the MECP limit.
6. At the time of the data review, MECP monitoring station data for BaP was not available.

BEST MANAGED COMPANIES Platinum member

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7. The Courtice meteorological data suggests that the Courtice Station was primarily upwind of the DYEC during the sampling period. Given the wind conditions, it is likely that the measured BaP exceedance is attributable to sources other than the Energy Centre operations.
8. The Rundle Road meteorological data suggests that the Rundle Road Station was primarily crosswind of the DYEC during the sampling period. Given the wind conditions, it is likely that the measured BaP exceedance is attributable to sources other than the Energy Centre operations.

At the Courtice Station, the $NO_2$ hourly values were less than 17% of the criteria for the same period. The $PM_{2.5}$ 24-hour average value was 11.4 micrograms per cubic metre at the Courtice Station.

At the Rundle Road Station, the $NO_2$ hourly values were less than 13% of the criteria for the same period. The $PM_{2.5}$ 24-hour average value was 9.2 micrograms per cubic metre at the Rundle Road Station.

We have attached the data files for the samples in question to aid with the review.

Respectfully submitted by:

**RWDI AIR Inc.**

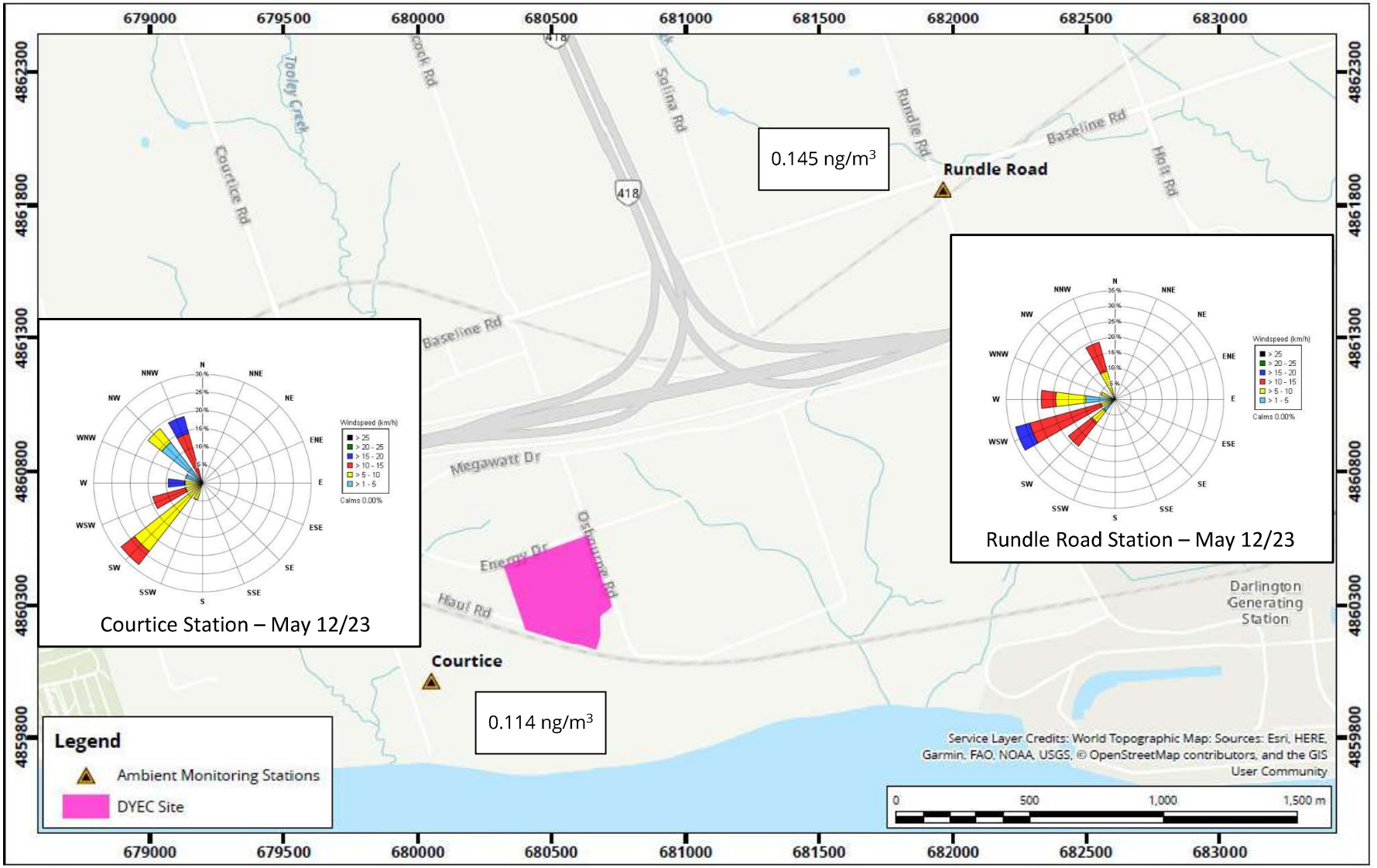


Maja Bokara, PGCert, EP
Project Manager

MB/vit

Attach.

# ATTACHMENTS




# DYEC Site and Ambient Monitoring Station Locations

True North

Map Projection: NAD 1983 UTM Zone 17N

DYEC - Region of Durham, Ontario

Project #: 2205149

| | |
|---|---|
| Drawn by: DAJH | Figure: 1 |
| Approx. Scale: | 1:20,000 |
| Date Revised: June 15, 2023 | |

1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

# Certificate of Analysis

| | | | |
|---|---|---|---|
| **ALS Project Contact:** | Claire Kocharakkal | **Client Name:** | RWDI Air Inc |
| **ALS Project ID:** | 23601 | **Client Address:** | 600 Southgate Drive |
| **ALS WO#:** | L2750727 | | Guelph, ON N1G 4P6 |
| **Date of Report** | 6-Jun-23 | | Canada |
| **Date of Sample Receipt** | 18-May-23 | **Client Contact:** | Khalid Hussein |
| | | **Client Project ID:** | DYEC |

**COMMENTS:** **PAH by CARB method 429 (LR option)- Isotope dilution**

Some results have been reported from the analysis of diluted extracts due to elevated target concentration

The reagent method blank appears to have come in contact with sample extract. However, the media method blank was not similarly affected. Sample data, calculated via isotope dilution, are not expected to be biased as a result.

Tetralin was detected in the media method blank. However, peaks do not coincide for the confirming masses. This result should be considered an estimated maximum possible concentration (EMPC).

Certified by: 

Steve Kennedy
Technical Supervisor

Results in this certificate relate only to the samples as submitted to the laboratory.
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# ALS Life Sciences

## Sample Analysis Summary Report

| Sample Name | Method Blank | | Method Blank | | RUNDLE-PAH-MAY12 | | COURTICE-PAH-MAY12 | | Laboratory Control Sample |
|---|---|---|---|---|---|---|---|---|---|
| ALS Sample ID | WG3784519-1 | | WG3784519-4 | | L2750727-1 | | L2750727-2 | | WG3784519-2 |
| Sample Size | 1 | | 1 | | 1 | | 1 | | 1 |
| Sample units | Sample | | Sample | | Sample | | Sample | | n/a |
| Moisture Content | n/a | | n/a | | n/a | | n/a | | n/a |
| Matrix | MEDIA | | REAGENT | | PUF | | PUF | | MEDIA |
| Sampling Date | n/a | | n/a | | 12-May-23 | | 12-May-23 | | n/a |
| Extraction Date | 19-May-23 | | 19-May-23 | | 19-May-23 | | 19-May-23 | | 19-May-23 |
| **Target Analytes** | **ng/sample** | | **ng/sample** | | **ng/sample** | | **ng/sample** | | **%** |
| Naphthalene | 60.3 | | 633 | | 4950 | | 8030 | | 88.1 |
| 2-Methylnaphthalene | 2.06 | | 390 | | 4160 | | 6560 | | 85.5 |
| 1-Methylnaphthalene | 2.40 | | 195 | | 2250 | | 3300 | | 90.9 |
| Acenaphthylene | <1.0 | U | 7.19 | | 93.1 | | 109 | | 92.0 |
| Acenaphthene | <1.0 | U | 149 | | 1690 | | 2650 | | 90.4 |
| Fluorene | <1.0 | U | 101 | | 1450 | | 1800 | | 85.9 |
| Phenanthrene | 1.95 | | 152 | | 3310 | | 2670 | | 95.0 |
| Anthracene | 1.04 | | 3.46 | | 84.8 | | 58.5 | | 88.0 |
| Fluoranthene | <1.0 | U | 25.2 | | 693 | | 443 | | 93.5 |
| Pyrene | <1.0 | U | 10.7 | | 251 | | 184 | | 91.4 |
| Benzo(a)Anthracene | <1.0 | U | <1.0 | U | 22.2 | | 15.3 | | 103.5 |
| Chrysene | <1.0 | U | 3.35 | | 62.4 | | 54.6 | | 87.0 |
| Benzo(b)Fluoranthene | <1.0 | U | 3.15 | M | 46.7 | | 41.3 | M | 92.8 |
| Benzo(k)Fluoranthene | <1.0 | U | 1.76 | M | 36.6 | M | 28.2 | M | 101.0 |
| Benzo(e)Pyrene | <1.0 | U | <1.0 | U | 30.5 | | 24.2 | | 85.5 |
| Benzo(a)Pyrene | <0.50 | U | <0.50 | U | 46.7 | | 35.4 | | 125.6 |
| Perylene | <1.0 | U | <1.0 | U | 8.82 | | 4.26 | | 84.7 |
| Indeno(1,2,3-cd)Pyrene | <1.0 | U | <1.0 | U | 31.6 | | 25.0 | | 89.7 |
| Dibenzo(a,h)Anthracene | <1.0 | U | <1.0 | U | 11.2 | M | 5.26 | M | 82.2 |
| Benzo(g,h,i)Perylene | <1.0 | U | <1.0 | U | 32.8 | | 25.8 | | 83.3 |
| **Additional Analytes** | | | | | | | | | |
| Tetralin | 34.2 | | 48.6 | | 278 | B | 519 | | NS |
| Biphenyl | 3.40 | | 96.0 | | 998 | | 1420 | | NS |
| o-Terphenyl | <1.0 | U | <1.0 | U | 3.41 | | 3.53 | | NS |
| Benzo(a)fluorene | <1.0 | U | 1.00 | M | 22.0 | M | 21.3 | M | NS |
| Benzo(b)fluorene | <1.0 | U | <1.0 | U | 3.82 | | 3.55 | | NS |
| **Field Sampling Standards** | **% Rec** | | **% Rec** | | **% Rec** | | **% Rec** | | **% Rec** |
| 1-Methylnaphthalene-D10 | NS | | NS | | 98 | | 95 | | NS |
| Fluorene D10 | NS | | NS | | 101 | | 86 | | NS |
| Terphenyl D14(Surr.) | NS | | NS | | 89 | | 93 | | NS |

# ALS Life Sciences

## Sample Analysis Summary Report

| Sample Name | Method Blank | Method Blank | RUNDLE-PAH-MAY12 | COURTICE-PAH-MAY12 | | Laboratory Control Sample |
|---|---|---|---|---|---|---|
| ALS Sample ID | WG3784519-1 | WG3784519-4 | L2750727-1 | L2750727-2 | | WG3784519-2 |
| **Extraction Standards** | **% Rec** | **% Rec** | **% Rec** | **% Rec** | | **% Rec** |
| Naphthalene D8 | 85.4 | 61.1 | 59.4 | 56.6 | M | 87.6 |
| 2-Methylnaphthalene-D10 | 91.2 | 69.5 | 49.6 | 48.0 | | 78.8 |
| Acenaphthylene D8 | 75.3 | 62.5 | 53.5 | 54.0 | | 73.5 |
| Phenanthrene D10 | 99.2 | 96.4 | 91.5 | 87.2 | M | 100.8 |
| Anthracene-D10 | 90.0 | 87.4 | 80.1 | 82.2 | | 90.8 |
| Fluoranthene D10 | 96.3 | 96.4 | 85.6 | 82.2 | M | 96.2 |
| Benz(a)Anthracene-D12 | 75.0 | 63.5 | 75.4 | 88.8 | | 73.1 |
| Chrysene D12 | 85.4 | 76.4 | 72.8 | 81.1 | | 90.7 |
| Benzo(b)Fluoranthene-D12 | 100.5 | 89.3 | 91.1 | 98.6 | | 100.3 |
| Benzo(k)Fluoranthene-D12 | 93.1 | 87.0 | 81.5 | 87.5 | | 94.2 |
| Benzo(a)Pyrene D12 | 81.9 | 75.4 | 100.8 | 103.5 | | 77.0 |
| Perylene D12 | 73.2 | 36.0 | 98.0 | 106.6 | | 75.5 |
| Indeno(1,2,3,cd)Pyrene-D12 | 74.3 | 78.9 | 68.4 | 81.8 | | 74.1 |
| Dibenz(a,h)Anthracene-D14 | 71.7 | 75.1 | 68.9 | 78.4 | | 74.0 |
| Benzo(g,h,i)Perylene D12 | 78.3 | 85.7 | 66.6 | 77.4 | | 80.7 |

| | |
|---|---|
| U | Indicates that this compound was not detected above the LOD. |
| M | Indicates that a peak has been manually integrated. |
| B | Indicates that this compound was detected in the method blank at greater than 10% of the sample value. |
| NS | Indicates that this compound was not spiked. |

# ALS Life Sciences

## Laboratory Method Blank Analysis Report

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | **Method Blank** | | Sampling Date | n/a | |
| ALS Sample ID | WG3784519-1 | | Extraction Date | 19-May-23 | |
| Analysis Method | PAH by CARB 429 | | | | |
| Analysis Type | Blank | | | | |
| Sample Matrix | QC | | | | Approved: |
| Sample Size | 1 | Sample | | | *Nick Schrobilgen* |
| Percent Moisture | n/a | | | | --e-signature-- |
| Split Ratio | 5 | | Workgroup | WG3784519 | 05-Jun-2023 |

| **Run Information** | **Run 1** |
|---|---|
| Filename | 23060112.D |
| Run Date | 6/2/2023 0:31 |
| Final Volume | 0.1 mL |
| Dilution Factor | 1 |
| Analysis Units | ng/sample |
| Instrument | MSD-5 |
| Column | HP-5MS US2879735H |

| **Target Analytes** | **Ret. Time** | **Concentration ng/sample** | **Flags** |
|---|---|---|---|
| Naphthalene | 2.69 | 60.3 | |
| 2-Methylnaphthalene | 3.26 | 2.06 | |
| 1-Methylnaphthalene | 3.38 | 2.40 | |
| Acenaphthylene | NotFnd | <1.0 | U |
| Acenaphthene | NotFnd | <1.0 | U |
| Fluorene | NotFnd | <1.0 | U |
| Phenanthrene | 7.77 | 1.95 | |
| Anthracene | 7.89 | 1.04 | |
| Fluoranthene | 11.15 | <1.0 | U |
| Pyrene | 11.78 | <1.0 | U |
| Benzo(a)Anthracene | 15.71 | <1.0 | U |
| Chrysene | 15.79 | <1.0 | U |
| Benzo(b)Fluoranthene | NotFnd | <1.0 | U |
| Benzo(k)Fluoranthene | NotFnd | <1.0 | U |
| Benzo(e)Pyrene | NotFnd | <1.0 | U |
| Benzo(a)Pyrene | NotFnd | <0.50 | U |
| Perylene | NotFnd | <1.0 | U |
| Indeno(1,2,3-cd)Pyrene | NotFnd | <1.0 | U |
| Dibenzo(a,h)Anthracene | NotFnd | <1.0 | U |
| Benzo(g,h,i)Perylene | NotFnd | <1.0 | U |
| **Additional Analytes** | | | |
| Tetralin | 2.56 | 34.2 | |
| Biphenyl | 3.79 | 3.40 | |
| o-Terphenyl | NotFnd | <1.0 | U |
| Benzo(a)fluorene | NotFnd | <1.0 | U |
| Benzo(b)fluorene | NotFnd | <1.0 | U |

| **Field Sampling Standards** | **ng spiked** | **% Rec** |
|---|---|---|
| 1-Methylnaphthalene-D10 | 0 | NS |
| Fluorene D10 | 0 | NS |
| Terphenyl D14(Surr.) | 0 | NS |

| **Extraction Standards** | | | **% Rec** | **Limits** |
|---|---|---|---|---|
| Naphthalene D8 | 100 | 2.68 | 85.4 | 50-150 |
| 2-Methylnaphthalene-D10 | 100 | 3.24 | 91.2 | 50-150 |
| Acenaphthylene D8 | 100 | 4.37 | 75.3 | 50-150 |
| Phenanthrene D10 | 100 | 7.71 | 99.2 | 50-150 |
| Anthracene-D10 | 100 | 7.84 | 90.0 | 50-150 |
| Fluoranthene D10 | 100 | 11.10 | 96.3 | 50-150 |
| Benz(a)Anthracene-D12 | 100 | 15.62 | 75.0 | 50-150 |
| Chrysene D12 | 100 | 15.73 | 85.4 | 50-150 |
| Benzo(b)Fluoranthene-D12 | 100 | 18.94 | 100.5 | 50-150 |
| Benzo(k)Fluoranthene-D12 | 100 | 19.03 | 93.1 | 50-150 |
| Benzo(a)Pyrene D12 | 100 | 19.83 | 81.9 | 50-150 |
| Perylene D12 | 100 | 20.06 | 73.2 | 50-150 |
| Indeno(1,2,3,cd)Pyrene-D12 | 100 | 23.38 | 74.3 | 50-150 |
| Dibenz(a,h)Anthracene-D14 | 100 | 23.55 | 71.7 | 50-150 |
| Benzo(g,h,i)Perylene D12 | 100 | 24.32 | 78.3 | 50-150 |

| | |
|---|---|
| U | Indicates that this compound was not detected above the MDL. |
| NS | Indicates that this compound was not spiked. |

# ALS Life Sciences

## Laboratory Method Blank Analysis Report

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | **Method Blank** | | Sampling Date | n/a | |
| ALS Sample ID | WG3784519-4 | | Extraction Date | 19-May-23 | |
| Analysis Method | PAH by CARB 429 | | | | |
| Analysis Type | Blank | | | | |
| Sample Matrix | QC | | | | Approved: |
| Sample Size | 1 | Sample | | | *Nick Schrobilgen* |
| Percent Moisture | n/a | | | | --e-signature-- |
| Split Ratio | 5 | | Workgroup | WG3784519 | 05-Jun-2023 |

| **Run Information** | **Run 1** |
|---|---|
| Filename | 23060113.D |
| Run Date | 6/2/2023 1:09 |
| Final Volume | 0.1 mL |
| Dilution Factor | 1 |
| Analysis Units | ng/sample |
| Instrument | MSD-5 |
| Column | HP-5MS US2879735H |

| **Target Analytes** | **Ret. Time** | **Concentration ng/sample** | **Flags** |
|---|---|---|---|
| Naphthalene | 2.69 | 633 | |
| 2-Methylnaphthalene | 3.27 | 390 | |
| 1-Methylnaphthalene | 3.38 | 195 | |
| Acenaphthylene | 4.40 | 7.19 | |
| Acenaphthene | 4.69 | 149 | |
| Fluorene | 5.60 | 101 | |
| Phenanthrene | 7.77 | 152 | |
| Anthracene | 7.88 | 3.46 | |
| Fluoranthene | 11.15 | 25.2 | |
| Pyrene | 11.79 | 10.7 | |
| Benzo(a)Anthracene | 15.69 | <1.0 | U |
| Chrysene | 15.79 | 3.35 | |
| Benzo(b)Fluoranthene | 19.01 | 3.15 | M |
| Benzo(k)Fluoranthene | 19.07 | 1.76 | M |
| Benzo(e)Pyrene | NotFnd | <1.0 | U |
| Benzo(a)Pyrene | NotFnd | <0.50 | U |
| Perylene | NotFnd | <1.0 | U |
| Indeno(1,2,3-cd)Pyrene | NotFnd | <1.0 | U |
| Dibenzo(a,h)Anthracene | NotFnd | <1.0 | U |
| Benzo(g,h,i)Perylene | NotFnd | <1.0 | U |
| **Additional Analytes** | | | |
| Tetralin | 2.56 | 48.6 | |
| Biphenyl | 3.79 | 96.0 | |
| o-Terphenyl | 9.04 | <1.0 | U |
| Benzo(a)fluorene | 12.95 | 1.00 | M |
| Benzo(b)fluorene | 13.17 | <1.0 | U |

| **Field Sampling Standards** | **ng spiked** | **% Rec** |
|---|---|---|
| 1-Methylnaphthalene-D10 | 0 | NS |
| Fluorene D10 | 0 | NS |
| Terphenyl D14(Surr.) | 0 | NS |

| **Extraction Standards** | | | **% Rec** | **Limits** |
|---|---|---|---|---|
| Naphthalene D8 | 100 | 2.68 | 61.1 | 50-150 |
| 2-Methylnaphthalene-D10 | 100 | 3.24 | 69.5 | 50-150 |
| Acenaphthylene D8 | 100 | 4.37 | 62.5 | 50-150 |
| Phenanthrene D10 | 100 | 7.71 | 96.4 | 50-150 |
| Anthracene-D10 | 100 | 7.84 | 87.4 | 50-150 |
| Fluoranthene D10 | 100 | 11.10 | 96.4 | 50-150 |
| Benz(a)Anthracene-D12 | 100 | 15.62 | 63.5 | 50-150 |
| Chrysene D12 | 100 | 15.73 | 76.4 | 50-150 |
| Benzo(b)Fluoranthene-D12 | 100 | 18.95 | 89.3 | 50-150 |
| Benzo(k)Fluoranthene-D12 | 100 | 19.03 | 87.0 | 50-150 |
| Benzo(a)Pyrene D12 | 100 | 19.83 | 75.4 | 50-150 |
| Perylene D12 | 100 | 20.06 | 36.0 | 50-150 |
| Indeno(1,2,3,cd)Pyrene-D12 | 100 | 23.38 | 78.9 | 50-150 |
| Dibenz(a,h)Anthracene-D14 | 100 | 23.55 | 75.1 | 50-150 |
| Benzo(g,h,i)Perylene D12 | 100 | 24.32 | 85.7 | 50-150 |

| | |
|---|---|
| M | Indicates that a peak has been manually integrated. |
| U | Indicates that this compound was not detected above the MDL. |
| NS | Indicates that this compound was not spiked. |

# ALS Life Sciences

## Sample Analysis Report

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | **RUNDLE-PAH-MAY12** | | Sampling Date | 12-May-23 | |
| ALS Sample ID | L2750727-1 | | Extraction Date | 19-May-23 | |
| Analysis Method | PAH by CARB 429 | | | | |
| Analysis Type | Sample | | | | |
| Sample Matrix | Puf | | | | Approved: |
| Sample Size | 1 | Sample | | | *Nick Schrobilgen* |
| Percent Moisture | n/a | | | | --e-signature-- |
| Split Ratio | 5 | | Workgroup | WG3784519 | 05-Jun-2023 |

| **Run Information** | **Run 1** | **Run 2** |
|---|---|---|
| Filename | 23060115.D | 23060140.D |
| Run Date | 6/2/2023 2:26 | 6/2/2023 18:22 |
| Final Volume | 0.1 mL | 0.1 mL |
| Dilution Factor | 1 | 20 |
| Analysis Units | ng/sample | ng/sample |
| Instrument | MSD-5 | MSD-5 |
| Column | HP-5MS US2879735H | HP-5MS US2879735H |

| **Target Analytes** | **Ret. Time** | **Concentration ng/sample** | **Flags** | **Ret. Time.** | **Concentration ng/sample** | **Flags** |
|---|---|---|---|---|---|---|
| Naphthalene | | | | 2.70 | 4950 | |
| 2-Methylnaphthalene | | | | 3.28 | 4160 | |
| 1-Methylnaphthalene | | | | 3.39 | 2250 | |
| Acenaphthylene | 4.40 | 93.1 | | | | |
| Acenaphthene | | | | 4.69 | 1690 | |
| Fluorene | | | | 5.60 | 1450 | |
| Phenanthrene | | | | 7.77 | 3310 | |
| Anthracene | 7.88 | 84.8 | | | | |
| Fluoranthene | | | | 11.15 | 693 | |
| Pyrene | | | | 11.80 | 251 | |
| Benzo(a)Anthracene | 15.68 | 22.2 | | | | |
| Chrysene | 15.79 | 62.4 | | | | |
| Benzo(b)Fluoranthene | 19.01 | 46.7 | | | | |
| Benzo(k)Fluoranthene | 19.08 | 36.6 | M | | | |
| Benzo(e)Pyrene | 19.75 | 30.5 | | | | |
| Benzo(a)Pyrene | 19.89 | 46.7 | | | | |
| Perylene | 20.12 | 8.82 | | | | |
| Indeno(1,2,3-cd)Pyrene | 23.47 | 31.6 | | | | |
| Dibenzo(a,h)Anthracene | 23.65 | 11.2 | M | | | |
| Benzo(g,h,i)Perylene | 24.42 | 32.8 | | | | |
| **Additional Analytes** | | | | | | |
| Tetralin | 2.57 | 278 | B | | | |
| Biphenyl | 3.79 | 998 | | | | |
| o-Terphenyl | 9.03 | 3.41 | | | | |
| Benzo(a)fluorene | 12.95 | 22.0 | M | | | |
| Benzo(b)fluorene | 13.17 | 3.82 | | | | |

| **Field Sampling Standards** | **ng spiked** | | **% Rec** |
|---|---|---|---|
| 1-Methylnaphthalene-D10 | 200 | 3.34 | 98 |
| Fluorene D10 | 200 | 5.54 | 101.1 |
| Terphenyl D14(Surr.) | 200 | 12.59 | 89.4 |

| **Extraction Standards** | | | **% Rec** | **Limits** | | **% Rec** |
|---|---|---|---|---|---|---|
| Naphthalene D8 | 100 | | | 50-150 | 2.69 | 59.4 |
| 2-Methylnaphthalene-D10 | 100 | | | 50-150 | 3.24 | 49.6 |
| Acenaphthylene D8 | 100 | 4.37 | 53.5 | 50-150 | | |
| Phenanthrene D10 | 100 | | | 50-150 | 7.72 | 91.5 |
| Anthracene-D10 | 100 | 7.84 | 80.1 | 50-150 | | |
| Fluoranthene D10 | 100 | | | 50-150 | 11.10 | 85.6 |
| Benz(a)Anthracene-D12 | 100 | 15.62 | 75.4 | 50-150 | | |
| Chrysene D12 | 100 | 15.72 | 72.8 | 50-150 | | |
| Benzo(b)Fluoranthene-D12 | 100 | 18.94 | 91.1 | 50-150 | | |
| Benzo(k)Fluoranthene-D12 | 100 | 19.03 | 81.5 | 50-150 | | |
| Benzo(a)Pyrene D12 | 100 | 19.83 | 100.8 | 50-150 | | |
| Perylene D12 | 100 | 20.06 | 98.0 | 50-150 | | |
| Indeno(1,2,3,cd)Pyrene-D12 | 100 | 23.38 | 68.4 | 50-150 | | |
| Dibenz(a,h)Anthracene-D14 | 100 | 23.55 | 68.9 | 50-150 | | |
| Benzo(g,h,i)Perylene D12 | 100 | 24.32 | 66.6 | 50-150 | | |

| | |
|---|---|
| M | Indicates that a peak has been manually integrated. |
| B | Indicates that this compound was detected in the method blank at greater than 10% of the sample value. |

# ALS Life Sciences

## Sample Analysis Report

| | | | |
|---|---|---|---|
| **Sample Name** | **COURTICE-PAH-MAY12** | Sampling Date | 12-May-23 |
| ALS Sample ID | L2750727-2 | Extraction Date | 19-May-23 |
| Analysis Method | PAH by CARB 429 | | |
| Analysis Type | Sample | | |
| Sample Matrix | Puf | | |
| Sample Size | 1 Sample | | |
| Percent Moisture | n/a | | |
| Split Ratio | 5 | Workgroup | WG3784519 |

Approved:
*Nick Schrobilgen*
--e-signature--
05-Jun-2023

| **Run Information** | **Run 1** | **Run 2** |
|---|---|---|
| Filename | 23060116.D | 23060141.D |
| Run Date | 6/2/2023 3:04 | 6/2/2023 19:00 |
| Final Volume | 0.1 mL | 0.1 mL |
| Dilution Factor | 1 | 20 |
| Analysis Units | ng/sample | ng/sample |
| Instrument | MSD-5 | MSD-5 |
| Column | HP-5MS US2879735H | HP-5MS US2879735H |

| **Target Analytes** | **Ret. Time** | **Concentration ng/sample** | **Flags** | **Ret. Time.** | **Concentration ng/sample** | **Flags** |
|---|---|---|---|---|---|---|
| Naphthalene | | | | 2.70 | 8030 | |
| 2-Methylnaphthalene | | | | 3.28 | 6560 | |
| 1-Methylnaphthalene | | | | 3.39 | 3300 | |
| Acenaphthylene | 4.40 | 109 | | | | |
| Acenaphthene | | | | 4.69 | 2650 | |
| Fluorene | | | | 5.60 | 1800 | |
| Phenanthrene | | | | 7.77 | 2670 | |
| Anthracene | 7.88 | 58.5 | | | | |
| Fluoranthene | | | | 11.15 | 443 | |
| Pyrene | 11.79 | 184 | | | | |
| Benzo(a)Anthracene | 15.68 | 15.3 | | | | |
| Chrysene | 15.79 | 54.6 | | | | |
| Benzo(b)Fluoranthene | 19.01 | 41.3 | M | | | |
| Benzo(k)Fluoranthene | 19.07 | 28.2 | M | | | |
| Benzo(e)Pyrene | 19.75 | 24.2 | | | | |
| Benzo(a)Pyrene | 19.89 | 35.4 | | | | |
| Perylene | 20.12 | 4.26 | | | | |
| Indeno(1,2,3-cd)Pyrene | 23.47 | 25.0 | | | | |
| Dibenzo(a,h)Anthracene | 23.65 | 5.26 | M | | | |
| Benzo(g,h,i)Perylene | 24.42 | 25.8 | | | | |
| **Additional Analytes** | | | | | | |
| Tetralin | 2.57 | 519 | | | | |
| Biphenyl | 3.79 | 1420 | | | | |
| o-Terphenyl | 9.04 | 3.53 | | | | |
| Benzo(a)fluorene | 12.95 | 21.3 | M | | | |
| Benzo(b)fluorene | 13.16 | 3.55 | | | | |

| **Field Sampling Standards** | **ng spiked** | | **% Rec** |
|---|---|---|---|
| 1-Methylnaphthalene-D10 | 200 | 3.34 | 95.3 |
| Fluorene D10 | 200 | 5.54 | 85.8 |
| Terphenyl D14(Surr.) | 200 | 12.59 | 92.7 |

| **Extraction Standards** | | **% Rec** | **Limits** | | **% Rec** | |
|---|---|---|---|---|---|---|
| Naphthalene D8 | 100 | | 50-150 | 2.69 | 56.6 M | R |
| 2-Methylnaphthalene-D10 | 100 | | 50-150 | 3.25 | 48 | |
| Acenaphthylene D8 | 100 | 4.37 | 54.0 | 50-150 | | |
| Phenanthrene D10 | 100 | | 50-150 | 7.72 | 87.2 M | |
| Anthracene-D10 | 100 | 7.84 | 82.2 | 50-150 | | |
| Fluoranthene D10 | 100 | | 50-150 | 11.11 | 82.2 M | |
| Benz(a)Anthracene-D12 | 100 | 15.61 | 88.8 | 50-150 | | |
| Chrysene D12 | 100 | 15.72 | 81.1 | 50-150 | | |
| Benzo(b)Fluoranthene-D12 | 100 | 18.94 | 98.6 | 50-150 | | |
| Benzo(k)Fluoranthene-D12 | 100 | 19.03 | 87.5 | 50-150 | | |
| Benzo(a)Pyrene D12 | 100 | 19.82 | 103.5 | 50-150 | | |
| Perylene D12 | 100 | 20.06 | 106.6 | 50-150 | | |
| Indeno(1,2,3,cd)Pyrene-D12 | 100 | 23.39 | 81.8 | 50-150 | | |
| Dibenz(a,h)Anthracene-D14 | 100 | 23.55 | 78.4 | 50-150 | | |
| Benzo(g,h,i)Perylene D12 | 100 | 24.32 | 77.4 | 50-150 | | |

M Indicates that a peak has been manually integrated.

# ALS Life Sciences

## Laboratory Control Sample Analysis Report

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | **Laboratory Control Sample** | | Sampling Date | n/a | |
| ALS Sample ID | WG3784519-2 | | Extraction Date | 19-May-23 | |
| Analysis Method | PAH by CARB 429 | | | | |
| Analysis Type | LCS | | | | |
| Sample Matrix | QC | | | | Approved: |
| Sample Size | 1 | n/a | | | *Nick Schrobilgen* |
| Percent Moisture | n/a | | | | --e-signature-- |
| Split Ratio | 5 | | Workgroup | WG3784519 | 05-Jun-2023 |

| **Run Information** | **Run 1** |
|---|---|
| Filename | 23060106.D |
| Run Date | 6/1/2023 20:42 |
| Final Volume | 0.1 mL |
| Dilution Factor | 1 |
| Analysis Units | % |
| Instrument | MSD-5 |
| Column | HP-5MS US2879735H |

| **Target Analytes** | **ug spiked** | **Ret. Time** | **%** | **Flags** | **Limits** |
|---|---|---|---|---|---|
| Naphthalene | 100 | 2.69 | 88.1 | | 50-150 |
| 2-Methylnaphthalene | 100 | 3.27 | 85.5 | | 50-150 |
| 1-Methylnaphthalene | 100 | 3.38 | 90.9 | | 50-150 |
| Acenaphthylene | 100 | 4.39 | 92.0 | | 50-150 |
| Acenaphthene | 100 | 4.69 | 90.4 | | 50-150 |
| Fluorene | 100 | 5.59 | 85.9 | | 50-150 |
| Phenanthrene | 100 | 7.77 | 95.0 | | 50-150 |
| Anthracene | 100 | 7.88 | 88.0 | | 50-150 |
| Fluoranthene | 100 | 11.15 | 93.5 | | 50-150 |
| Pyrene | 100 | 11.79 | 91.4 | | 50-150 |
| Benzo(a)Anthracene | 100 | 15.68 | 103.5 | | 50-150 |
| Chrysene | 100 | 15.80 | 87.0 | | 50-150 |
| Benzo(b)Fluoranthene | 100 | 19.01 | 92.8 | | 50-150 |
| Benzo(k)Fluoranthene | 100 | 19.09 | 101.0 | | 50-150 |
| Benzo(e)Pyrene | 100 | 19.75 | 85.5 | | 50-150 |
| Benzo(a)Pyrene | 100 | 19.89 | 125.6 | | 50-150 |
| Perylene | 100 | 20.13 | 84.7 | | 50-150 |
| Indeno(1,2,3-cd)Pyrene | 100 | 23.47 | 89.7 | | 50-150 |
| Dibenzo(a,h)Anthracene | 100 | 23.67 | 82.2 | | 50-150 |
| Benzo(g,h,i)Perylene | 100 | 24.42 | 83.3 | | 50-150 |
| **Additional Analytes** | | | | | |
| Tetralin | 0 | | NS | | |
| Biphenyl | 0 | | NS | | |
| o-Terphenyl | 0 | | NS | | |
| Benzo(a)fluorene | 0 | | NS | | |
| Benzo(b)fluorene | 0 | | NS | | |
| **Field Sampling Standards** | **ng spiked** | | **% Rec** | | |
| 1-Methylnaphthalene-D10 | 0 | | NS | | |
| Fluorene D10 | 0 | | NS | | |
| Terphenyl D14(Surr.) | 0 | | NS | | |
| **Extraction Standards** | | | **% Rec** | | **Limits** |
| Naphthalene D8 | 100 | 2.68 | 87.6 | | 30-150 |
| 2-Methylnaphthalene-D10 | 100 | 3.24 | 78.8 | | 30-150 |
| Acenaphthylene D8 | 100 | 4.38 | 73.5 | | 30-150 |
| Phenanthrene D10 | 100 | 7.71 | 100.8 | | 50-150 |
| Anthracene-D10 | 100 | 7.84 | 90.8 | | 50-150 |
| Fluoranthene D10 | 100 | 11.10 | 96.2 | | 50-150 |
| Benz(a)Anthracene-D12 | 100 | 15.62 | 73.1 | | 50-150 |
| Chrysene D12 | 100 | 15.72 | 90.7 | | 50-150 |
| Benzo(b)Fluoranthene-D12 | 100 | 18.94 | 100.3 | | 50-150 |
| Benzo(k)Fluoranthene-D12 | 100 | 19.03 | 94.2 | | 50-150 |
| Benzo(a)Pyrene D12 | 100 | 19.82 | 77.0 | | 30-150 |
| Perylene D12 | 100 | 20.06 | 75.5 | | 50-150 |
| Indeno(1,2,3,cd)Pyrene-D12 | 100 | 23.38 | 74.1 | | 50-150 |
| Dibenz(a,h)Anthracene-D14 | 100 | 23.55 | 74.0 | | 50-150 |
| Benzo(g,h,i)Perylene D12 | 100 | 24.32 | 80.7 | | 50-150 |

| | |
|---|---|
| B | Indicates that this compound was detected in the method blank at greater than 10% of the sample value. |
| NS | Indicates that this compound was not spiked. |

# Chain of Custody (COC) / Analytical Request Form

L2750727-COFC

COC Number: 17 -

Page 1 of 1

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

| Report To | Contact and company name below will appear on the final report |
|---|---|
| Company: | RWDI |
| Contact: | Matt Lentz |
| Phone: | 519 823 1311 |
| | Company address below will appear on the final report |
| Street: | 600 Southgate Drive |
| City/Province: | Guelph, Ontario |
| Postal Code: | N1G 4P6 |
| Invoice To | Same as Report To ☐ YES ☐ NO |
| | Copy of Invoice with Report ☐ YES ☐ NO |
| Company: | |
| Contact: | |

**Report Format / Distribution**

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☐ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Matt.Lentz@rwdi.com

Email 2:

Email 3:

**Invoice Distribution**

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

**Project Information**

| | |
|---|---|
| ALS Account # / Quote #: | |
| Job #: | DYEC |
| PO / AFE: | 1803743 Phase 1000 |
| LSD: | |

**Oil and Gas Required Fields (client use)**

| | |
|---|---|
| AFE/Cost Center: | PO# |
| Major/Minor Code: | Routing Code |
| Requisitioner: | |
| Location: | |

ALS Lab Work Order # (lab use only):

ALS Contact:

Sampler: Martin Town

**Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)**

Standard TAT is 15 business days. DTOX analysis standard TAT is 5 business days

PRIORITY (Business Days)
- ☐ 15 day [R- Regular]
- ☐ 10 day [P-50%]
- ☐ 5 day [E-100%]

EMERGENCY
- 5 Business day - DTOX [R - Regular]
- 3 Business day - DTOX [E - 100%]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

**Analysis Request**

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

NUMBER OF CONTAINERS

| ALS Sample # (lab use only) | Sample Identification and/or Coordinates (This description will appear on the report) | Sample Air Volume (m3) | Date (dd-mmm-yy) | Sample Period | Sample Type | TSP, ICP on Hi-Vol Filter | PAH | DX | SAMPLES ON HOLD |
|---|---|---|---|---|---|---|---|---|---|
| 1 | L2750318-3 - Rundle | 322 | 12-May-23 | 24hr | Air | | X | | |
| 1 | 743991 | 1567 | 12-May-23 | 24hr | Air | X | | | |
| 2 | 743989 | 1636 | 06-May-23 | 24hr | Air | X | | | |
| 2 | L2750318-2 - Coutlee | 311 | 12-May-23 | 24hr | Air | | X | | |
| 3 | 743992 | 1607 | 12-May-23 | 24hr | Air | X | | | |
| 4 | 743990 | 1627 | 06-May-23 | 24hr | Air | X | | | |
| | | | | 24hr | Air | | | | |
| | | | | 24hr | Air | | | | |
| | | | | 24hr | Air | | | | |
| | | | | 24hr | Air | | | | |
| | | | | 24hr | Air | | | | |
| | | | | 24hr | Air | | | | |
| | | | | 24hr | Air | | | | |

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Samples are 10 day TAT

**SAMPLE CONDITION AS RECEIVED (lab use only)**

| | | | |
|---|---|---|---|
| Frozen | ☐ | SIF Observations | Yes ☐ |
| Ice Packs | ☑ Ice Cubes ☐ | Custody seal intact | Yes ☑ |
| Cooling Initiated | ☑ | | |

| INITIAL COOLER TEMPERATURES °C | | | | FINAL COOLER TEMPERATURES °C | | | |
|---|---|---|---|---|---|---|---|
| 3.5°C | 12.8°C | | | | | | |

| SHIPMENT RELEASE (client use) | | | INITIAL SHIPMENT RECEPTION (lab use only) | | | FINAL SHIPMENT RECEPTION (lab use only) | | |
|---|---|---|---|---|---|---|---|---|
| Released by: M. Town | Date: 18-May-23 | Time: 12:45 | Received by: AARON BURTON | Date: 18-MAY-2023 | Time: 10:10 | Received by: | Date: | Time: |

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

**Table B5: 2023 Courtice Station Q2 Monitoring Results for PAHs**

| Contaminant | Units | *MECP Criteria* | 12-May-23 | No. > Criteria |
|---|---|---|---|---|
| 1-Methylnaphthalene | ng/m$^3$ | *12000* | 1.06E+01 | 0 |
| 2-Methylnaphthalene | ng/m$^3$ | *10000* | 2.11E+01 | 0 |
| Acenaphthene | ng/m$^3$ | - | 8.52E+00 | - |
| Acenaphthylene | ng/m$^3$ | *3500* | 3.50E-01 | 0 |
| Anthracene | ng/m$^3$ | *200* | 1.88E-01 | 0 |
| Benzo(a)Anthracene | ng/m$^3$ | - | 4.92E-02 | - |
| Benzo(a)fluorene | ng/m$^3$ | - | 6.85E-02 | - |
| Benzo(a)Pyrene (Historically High) | ng/m$^3$ | *0.05* [1] *5* [2] *1.1* [3] | 1.14E-01 | 1 |
| Benzo(b)Fluoranthene | ng/m$^3$ | - | 1.33E-01 | - |
| Benzo(b)fluorene | ng/m$^3$ | - | 1.14E-02 | - |
| Benzo(e)Pyrene | ng/m$^3$ | - | 7.78E-02 | - |
| Benzo(g,h,i)Perylene | ng/m$^3$ | - | 8.30E-02 | - |
| Benzo(k)Fluoranthene | ng/m$^3$ | - | 9.07E-02 | - |
| Biphenyl | ng/m$^3$ | - | 4.57E+00 | - |
| Chrysene | ng/m$^3$ | - | 1.76E-01 | - |
| Dibenzo(a,h)Anthracene | ng/m$^3$ | - | 1.69E-02 | - |
| Fluoranthene | ng/m$^3$ | - | 1.42E+00 | - |
| Fluorene | ng/m$^3$ | - | 5.79E+00 | - |
| Indeno(1,2,3-cd)Pyrene | ng/m$^3$ | - | 8.04E-02 | - |
| Naphthalene | ng/m$^3$ | *22500* | 2.58E+01 | 0 |
| o-Terphenyl | ng/m$^3$ | - | 1.14E-02 | - |
| Perylene | ng/m$^3$ | - | 1.37E-02 | - |
| Phenanthrene | ng/m$^3$ | - | 8.59E+00 | - |
| Pyrene | ng/m$^3$ | - | 5.92E-01 | - |
| Tetralin | ng/m$^3$ | - | 1.67E+00 | - |
| Total PAH[4] | ng/m$^3$ | - | 90.13 | - |

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC

[2] O. Reg. 419/05 Schedule  Upper Risk Thresholds

[3] O. Reg. 419/05 24 Hour Guideline

[4] Total PAH sums all PAH contaminants

**Table B6: 2023 Rundle Road Station Q2 Monitoring Results for PAHs**

| Contaminant | Units | *MECP Criteria* | 12-May-23 | No. > Criteria |
|---|---|---|---|---|
| 1-Methylnaphthalene | ng/m$^3$ | *12000* | 6.99E+00 | 0 |
| 2-Methylnaphthalene | ng/m$^3$ | *10000* | 1.29E+01 | 0 |
| Acenaphthene | ng/m$^3$ | - | 5.25E+00 | - |
| Acenaphthylene | ng/m$^3$ | *3500* | 2.89E-01 | 0 |
| Anthracene | ng/m$^3$ | *200* | 2.63E-01 | 0 |
| Benzo(a)Anthracene | ng/m$^3$ | - | 6.89E-02 | - |
| Benzo(a)fluorene | ng/m$^3$ | - | 6.83E-02 | - |
| Benzo(a)Pyrene (Historically High) | ng/m$^3$ | *0.05* [1] *5* [2] *1.1* [3] | 1.45E-01 | 1 |
| Benzo(b)Fluoranthene | ng/m$^3$ | - | 1.45E-01 | - |
| Benzo(b)fluorene | ng/m$^3$ | - | 1.19E-02 | - |
| Benzo(e)Pyrene | ng/m$^3$ | - | 9.47E-02 | - |
| Benzo(g,h,i)Perylene | ng/m$^3$ | - | 1.02E-01 | - |
| Benzo(k)Fluoranthene | ng/m$^3$ | - | 1.14E-01 | - |
| Biphenyl | ng/m$^3$ | - | 3.10E+00 | - |
| Chrysene | ng/m$^3$ | - | 1.94E-01 | - |
| Dibenzo(a,h)Anthracene | ng/m$^3$ | - | 3.48E-02 | - |
| Fluoranthene | ng/m$^3$ | - | 2.15E+00 | - |
| Fluorene | ng/m$^3$ | - | 4.50E+00 | - |
| Indeno(1,2,3-cd)Pyrene | ng/m$^3$ | - | 9.81E-02 | - |
| Naphthalene | ng/m$^3$ | *22500* | 1.54E+01 | 0 |
| o-Terphenyl | ng/m$^3$ | - | 1.06E-02 | - |
| Perylene | ng/m$^3$ | - | 2.74E-02 | - |
| Phenanthrene | ng/m$^3$ | - | 1.03E+01 | - |
| Pyrene | ng/m$^3$ | - | 7.80E-01 | - |
| Tetralin | ng/m$^3$ | - | 8.63E-01 | - |
| Total PAH[4] | ng/m$^3$ | - | 63.87 | - |

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC

[2] O. Reg. 419/05 Schedule  Upper Risk Thresholds

[3] O. Reg. 419/05 24 Hour Guideline

[4] Total PAH sums all PAH contaminants

Station: RofD Courtice Daily: 12/05/2023 Type: AVG 1 Hr. [5 Mins.]

| Date & Time | PM2.5 | NO | NO2 | NOX | SO2 | WS km/hr | ET | WD | Tr_Temp | RH AVG | BP | Rain total | Hi-Vol Pressure | PUF Pressure | BP | ET | Hivol Flow | PUF Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/m3 | ppb | ppb | ppb | ppb | km/hr | C° | Deg | C° | % | in HG | mm | in H20 | in H20 | kPa | K | cfm | cfm |
| 12/05/2023 00:00 | 17.4 | 10 | 32.9 | 42.8 | 3.105 | 4.96 | 13.656 | 316 | 21.6 | 73.4 | 29.74 | 0 | 4.44 | 46.42 | 100.71 | 286.806 | 44.74 | 7.99 |
| 12/05/2023 01:00 | 13.4 | 14 | 33.2 | 47.2 | 24.922 | 4.64 | 14.171 | 304 | 21.3 | 68.7 | 29.74 | 0 | 4.42 | 46.33 | 100.69 | 287.321 | 44.57 | 7.98 |
| 12/05/2023 02:00 | 10.7 | 8.2 | 28.1 | 36.2 | 3.154 | 4.11 | 15.163 | 300 | 21.5 | 61.1 | 29.74 | 0 | 4.39 | 46.69 | 100.71 | 288.313 | 44.34 | 7.99 |
| 12/05/2023 03:00 | 13.1 | 14.1 | 30.4 | 44.6 | 8.15 | 1.46 | 13.033 | <Samp | 21.2 | 71.8 | 29.74 | 0 | 4.39 | 47.05 | 100.71 | 286.183 | 44.48 | 8.05 |
| 12/05/2023 04:00 | 17.4 | 5.1 | 24.9 | 29.9 | 1.708 | 2.16 | 11.812 | <Samp | 21.7 | 74.9 | 29.74 | 0 | 4.39 | 47.29 | 100.72 | 284.962 | 44.6 | 8.08 |
| 12/05/2023 05:00 | 14.6 | 0.1 | 12.4 | 12.4 | 1.778 | 1.86 | 11.272 | <Samp | 21.8 | 79 | 29.77 | 0 | 4.39 | 47.05 | 100.81 | 284.422 | 44.7 | 8.07 |
| 12/05/2023 06:00 | 16.5 | 9.7 | 21.1 | 30.8 | 4.305 | 2 | 14.463 | 314 | 21.4 | 66.9 | 29.78 | 0 | 4.36 | 45.75 | 100.86 | 287.613 | 44.25 | 7.94 |
| 12/05/2023 07:00 | 12.3 | 2.5 | 8.6 | 11 | 1.822 | 6.16 | 13.539 | 206 | 21.5 | 66.6 | 29.79 | 0 | 4.36 | 45.76 | 100.89 | 286.689 | 44.36 | 7.95 |
| 12/05/2023 08:00 | 10 | 1 | 4.7 | 5.7 | 1.958 | 7.18 | 14.091 | 230 | 21.4 | 64.2 | 29.79 | 0 | 4.37 | 45.31 | 100.89 | 287.241 | 44.34 | 7.91 |
| 12/05/2023 09:00 | 9.6 | 0.9 | 3.9 | 4.8 | 1.711 | 9.66 | 13.974 | 231 | 21.6 | 65.2 | 29.79 | 0 | 4.39 | 44.94 | 100.89 | 287.124 | 44.45 | 7.88 |
| 12/05/2023 10:00 | 13.2 | 1.2 | 4.8 | 6 | 1.698 | 11.36 | 14.748 | 228 | 21.6 | 62.2 | 29.79 | 0 | 4.39 | 45.29 | 100.88 | 287.898 | 44.39 | 7.9 |
| 12/05/2023 11:00 | 21.7 | 2.1 | 8.2 | 10.3 | 2.509 | 13.32 | 18.977 | 242 | 21.9 | 45.3 | 29.78 | 0 | 4.35 | 44.21 | 100.86 | 292.127 | 43.84 | 7.76 |
| 12/05/2023 12:00 | 24.7 | 1.5 | 8 | 9.5 | 2.029 | 12.17 | 19.746 | 237 | 21.6 | 43.8 | 29.77 | 0 | 4.31 | 43.92 | 100.82 | 292.896 | 43.58 | 7.73 |
| 12/05/2023 13:00 | 15.6 | 0.3 | 4.1 | 4.3 | 1.524 | 6.97 | 20.682 | 227 | 21.8 | 41.8 | 29.75 | 0 | 4.26 | 43.04 | 100.76 | 293.832 | 43.22 | 7.65 |
| 12/05/2023 14:00 | 15 | 0 | 3.2 | 3.2 | 1.237 | 6.6 | 20.786 | 224 | 21.7 | 41.3 | 29.74 | 0 | 4.24 | 43.2 | 100.71 | 293.936 | 43.1 | 7.66 |
| 12/05/2023 15:00 | 9.3 | 0 | 1.9 | 1.6 | 1.063 | 5.62 | 21.339 | 226 | 21.7 | 39 | 29.73 | 0 | 4.26 | 43.1 | 100.67 | 294.489 | 43.13 | 7.64 |
| 12/05/2023 16:00 | 4.4 | 0 | 1.2 | 1 | 1.054 | 7.76 | 22.58 | 248 | 21.7 | 31.4 | 29.73 | 0 | 4.27 | 43.32 | 100.67 | 295.73 | 43.1 | 7.64 |
| 12/05/2023 17:00 | 6.6 | 0 | 2.6 | 2.2 | 1.507 | 5.75 | 22.097 | 263 | 21.5 | 37.3 | 29.73 | 0 | 4.26 | 43.27 | 100.66 | 295.247 | 43.1 | 7.64 |
| 12/05/2023 18:00 | 3.6 | 0.1 | 4.2 | 4.1 | 0.478 | 9.68 | 24.972 | 316 | 21.8 | 28.8 | 29.72 | 0 | 4.28 | 42.71 | 100.65 | 298.122 | 42.96 | 7.57 |
| 12/05/2023 19:00 | 3.9 | 0.1 | 3.7 | 3.5 | 0.566 | 12.83 | 22.749 | 331 | 21.8 | 34.3 | 29.73 | 0 | 4.31 | 42.71 | 100.68 | 295.899 | 43.32 | 7.59 |
| 12/05/2023 20:00 | 5 | 0 | 2.7 | 2.4 | 0.853 | 13.95 | 20.93 | 335 | 21.6 | 44.6 | 29.74 | 0 | 4.36 | 43.54 | 100.71 | 294.08 | 43.7 | 7.68 |
| 12/05/2023 21:00 | 4.8 | 0 | 2.5 | 2.1 | 0.86 | 13.49 | 20.283 | 343 | 21.7 | 46.3 | 29.75 | 0 | 4.38 | 44.6 | 100.73 | 293.433 | 43.84 | 7.77 |
| 12/05/2023 22:00 | 4.9 | 0.1 | 2.3 | 2.1 | 0.807 | 15.43 | 19.846 | 344 | 21.8 | 47.3 | 29.75 | 0 | 4.38 | 44.28 | 100.73 | 292.996 | 43.93 | 7.75 |
| 12/05/2023 23:00 | 5.1 | 0 | 1.4 | 1 | 2.265 | 16.31 | 18.766 | 263 | 21.5 | 50.9 | 29.75 | 0 | 4.39 | 44.68 | 100.75 | 291.916 | 44.04 | 7.79 |
| Minimum | 3.6 | 0 | 1.2 | 1 | 0.478 | 1.46 | 11.272 | 206 | 21.2 | 28.8 | 29.72 | 0 | 4.24 | 42.71 | 100.65 | 284.422 | 42.96 | 7.57 |
| MinDate | 18:00 | 14:00 | 16:00 | 16:00 | 18:00 | 03:00 | 05:00 | 07:00 | 03:00 | 18:00 | 18:00 | 00:00 | 14:00 | 18:00 | 18:00 | 05:00 | 18:00 | 18:00 |
| Maximum | 24.7 | 14.1 | 33.2 | 47.2 | 24.922 | 16.31 | 24.972 | 344 | 21.9 | 79 | 29.79 | 0 | 4.44 | 47.29 | 100.89 | 298.122 | 44.74 | 8.08 |
| MaxDate | 12:00 | 03:00 | 01:00 | 01:00 | 01:00 | 23:00 | 18:00 | 22:00 | 11:00 | 05:00 | 07:00 | 00:00 | 00:00 | 04:00 | 07:00 | 18:00 | 00:00 | 04:00 |
| Avg | 11.4 | 3 | 10.5 | 13.3 | 2.961 | 8.14 | 17.653 | 273 | 21.6 | 53.6 | 29.75 | 0 | 4.35 | 44.77 | 100.76 | 290.803 | 43.92 | 7.82 |
| Num | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 21 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| Data[%] | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 87.5 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| STD | 5.8 | 4.5 | 10.9 | 15.3 | 4.8 | 4.5 | 4 | 45.9 | 0.2 | 15 | 0 | 0 | 0.1 | 1.5 | 0.1 | 4 | 0.6 | 0.2 |

Station: RofD Rundle Daily: 12/05/2023 Type: AVG 1 Hr. [5 Mins.]

| Date & Time | PM2.5 | NO | NO2 | NOX | SO2 | ET | Rain | Tr_Temp | RH AVG | Rain total | WS km/hr | WD | Hi-Vol Pressure | PUF Pressure | ET | Hivol Flow | PUF Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/m3 | ppb | ppb | ppb | ppb | C° | mm | C° | % | mm | km/hr | Deg | in H20 | in H20 | K | cfm | cfm |
| 12/05/2023 00:00 | 13.1 | 9.1 | 25.1 | 34.1 | 0.513 | 12.8 | 0 | 23.5 | 83.3 | 0 | 3.48 | 260 | 3.64 | 58.16 | 285.98 | 39.04 | 8.28 |
| 12/05/2023 01:00 | 8.6 | 3.6 | 17 | 20.6 | 0.509 | 12.9 | 0 | 23.3 | 79.2 | 0 | 5.16 | 281 | 3.63 | 58.13 | 286.096 | 38.98 | 8.27 |
| 12/05/2023 02:00 | 6.6 | 0.3 | 6 | 6.2 | 0.525 | 14.3 | 0 | 23.5 | 68.2 | 0 | 3.86 | 262 | 3.62 | 56.9 | 287.415 | 38.85 | 8.18 |
| 12/05/2023 03:00 | 7.8 | 0.4 | 4.1 | 4.5 | 0.42 | 11.5 | 0 | 23.2 | 82.2 | 0 | 0.95 | <Samp | 3.62 | 56.89 | 284.664 | 39.01 | 8.21 |
| 12/05/2023 04:00 | 7.8 | 0.6 | 3.4 | 4 | 0.448 | 10.3 | 0 | 22.6 | 90.4 | 0 | 1.04 | <Samp | 3.64 | 56.45 | 283.431 | 39.22 | 8.2 |
| 12/05/2023 05:00 | 11.3 | 5 | 14.3 | 19.3 | 0.465 | 11.2 | 0 | 22.5 | 86.4 | 0 | 2.58 | 221 | 3.64 | 55.38 | 284.368 | 39.15 | 8.12 |
| 12/05/2023 06:00 | 10.8 | 5.9 | 14.1 | 20 | 0.554 | 14.8 | 0 | 23.1 | 70.3 | 0 | 2.07 | <Samp | 3.57 | 54 | 287.931 | 38.52 | 7.98 |
| 12/05/2023 07:00 | 10.1 | 9.8 | 16.4 | 26.2 | 0.881 | 15.7 | 0 | 23.2 | 59.9 | 0 | 8.46 | 228 | 3.6 | 54.5 | 288.866 | 38.64 | 8 |
| 12/05/2023 08:00 | 10.4 | 4.2 | 11 | 15.2 | 1.197 | 17.1 | 0 | 23 | 55.4 | 0 | 9.41 | 239 | 3.6 | 53.62 | 290.244 | 38.54 | 7.92 |
| 12/05/2023 09:00 | 10.8 | 3.9 | 9.3 | 13.1 | 1.363 | 17.6 | 0 | 23 | 54.2 | 0 | 11.24 | 233 | 3.6 | 52.31 | 290.774 | 38.5 | 7.83 |
| 12/05/2023 10:00 | 13.4 | 3 | 8.4 | 11.4 | 1.406 | 18.7 | 0 | 23 | 48.3 | 0 | 14.17 | 232 | 3.61 | 52.63 | 291.876 | 38.49 | 7.83 |
| 12/05/2023 11:00 | 19.2 | 2.6 | 8.3 | 10.9 | 1.326 | 21.3 | 0 | 23.1 | 38.6 | 0 | 17.96 | 243 | 3.58 | 51.99 | 294.43 | 38.14 | 7.76 |
| 12/05/2023 12:00 | 18.8 | 3 | 9.1 | 12.1 | 1.142 | 22.2 | 0 | 23 | 37.5 | 0 | 14.98 | 238 | 3.55 | 51.32 | 295.349 | 37.95 | 7.7 |
| 12/05/2023 13:00 | 15.7 | 0.7 | 5 | 5.6 | 0.897 | 23.2 | 0 | 23 | 36.3 | 0 | 13.55 | 238 | 3.54 | 50.91 | 296.369 | 37.81 | 7.66 |
| 12/05/2023 14:00 | 14.4 | 0.5 | 6 | 6.6 | 0.808 | 23.4 | 0 | 23.1 | 35.6 | 0 | 12.89 | 239 | 3.53 | 50.82 | 296.526 | 37.76 | 7.65 |
| 12/05/2023 15:00 | 4.7 | 0.3 | 3.4 | 3.7 | 0.587 | 23.3 | 0 | 22.9 | 31.6 | 0 | 11.64 | 242 | 3.56 | 51.02 | 296.468 | 37.95 | 7.67 |
| 12/05/2023 16:00 | 4.3 | 0.5 | 2.7 | 3.1 | 0.878 | 24.3 | 0 | 23.1 | 29.1 | 0 | 11.21 | 249 | 3.55 | 51.15 | 297.483 | 37.82 | 7.67 |
| 12/05/2023 17:00 | 6.9 | 0.5 | 7.4 | 7.9 | 1.346 | 25 | 0 | 23.1 | 33.3 | 0 | 8.79 | 262 | 3.55 | 51.34 | 298.173 | 37.74 | 7.67 |
| 12/05/2023 18:00 | 3 | 0.2 | 1 | 1.2 | 0.412 | 24.7 | 0 | 23 | 30.5 | 0 | 7.96 | 299 | 3.57 | 51.53 | 297.886 | 37.86 | 7.69 |
| 12/05/2023 19:00 | 3.3 | 0.2 | 0.6 | 0.8 | 0.432 | 22.3 | 0 | 23.2 | 38.6 | 0 | 8.36 | 333 | 3.59 | 51.45 | 295.497 | 38.15 | 7.71 |
| 12/05/2023 20:00 | 5.1 | 0.2 | 0.6 | 0.8 | 0.596 | 20.6 | 0 | 23.1 | 48.8 | 0 | 7.36 | 330 | 3.61 | 52.25 | 293.736 | 38.37 | 7.79 |
| 12/05/2023 21:00 | 5.7 | 0.2 | 0.8 | 0.9 | 0.605 | 19.9 | 0 | 23.1 | 49.9 | 0 | 11.58 | 336 | 3.63 | 53 | 293.067 | 38.5 | 7.85 |
| 12/05/2023 22:00 | 4.9 | 0 | 0.7 | 0.5 | 0.515 | 19.4 | 0 | 23.3 | 51.7 | 0 | 12.88 | 341 | 3.63 | 52.5 | 292.533 | 38.56 | 7.82 |
| 12/05/2023 23:00 | 5 | 0 | 0.6 | 0.5 | 0.449 | 18 | 0 | 23.2 | 57.3 | 0 | 11.15 | 264 | 3.61 | 52.79 | 291.125 | 38.52 | 7.85 |
| Minimum | 3 | 0 | 0.6 | 0.5 | 0.412 | 10.3 | 0 | 22.5 | 29.1 | 0 | 0.95 | 221 | 3.53 | 50.82 | 283.431 | 37.74 | 7.65 |
| MinDate | 18:00 | 22:00 | 19:00 | 22:00 | 18:00 | 04:00 | 00:00 | 05:00 | 16:00 | 00:00 | 03:00 | 05:00 | 14:00 | 14:00 | 04:00 | 17:00 | 14:00 |
| Maximum | 19.2 | 9.8 | 25.1 | 34.1 | 1.406 | 25 | 0 | 23.5 | 90.4 | 0 | 17.96 | 341 | 3.64 | 58.16 | 298.173 | 39.22 | 8.28 |
| MaxDate | 11:00 | 07:00 | 00:00 | 00:00 | 10:00 | 17:00 | 00:00 | 00:00 | 04:00 | 00:00 | 11:00 | 22:00 | 00:00 | 00:00 | 17:00 | 04:00 | 00:00 |
| Avg | 9.2 | 2.3 | 7.3 | 9.6 | 0.761 | 18.5 | 0 | 23.1 | 54 | 0 | 8.86 | 265 | 3.59 | 53.38 | 291.679 | 38.42 | 7.89 |
| Num | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 21 | 24 | 24 | 24 | 24 | 24 |
| Data[%] | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 87.5 | 100 | 100 | 100 | 100 | 100 |
| STD | 4.6 | 2.8 | 6.3 | 8.9 | 0.3 | 4.6 | 0 | 0.2 | 19.1 | 0 | 4.6 | 38.2 | 0 | 2.3 | 4.6 | 0.5 | 0.2 |

600 Southgate Drive
Guelph ON Canada
N1G 4P6

Tel: +1.519.823.1311
Fax: +1.519.823.1316
E-mail: solutions@rwdi.com

# MEMORANDUM

| | | |
|---|---|---|
| **DATE:** | 2023-07-13 | **RWDI Reference No.:** 2205149 |
| **TO:** | Lipika Saha | **EMAIL:** Lipika.Saha@Durham.ca |
| **CC:** | Andrew Evans | **EMAIL:** Andrew.Evans@Durham.ca |
| **CC:** | Lyndsay Waller | **EMAIL:** Lyndsay.Waller@Durham.ca |
| **FROM:** | Maja Bokara | **EMAIL:** Maja.Bokara@rwdi.com |
| **RE:** | **Exceedance Report – Benzo(a)Pyrene May 24, 2023**<br>**Region of Durham, DYEC** | |

On July 7, 2023, the results from ALS Environmental were received regarding the PAH results from the May 24, 2023, sampling event. On July 10, 2023, the results were entered and assessed. It was noted that on May 24, 2023, the Courtice Station Benzo(a)Pyrene (BaP) concentration was in excess of the 24-hour AAQC as measured by the onsite PUF PS-1 samplers. Attached is a figure depicting the wind rose (indicating the wind speed and direction during the sampling day), and the location of the sampling stations relative to the DYEC.

The following summarizes the BaP concentrations and onsite conditions during the May 24 sampling date:

1. The guideline concentration for BaP is 0.05 ng/m$^3$. The measured concentration at the Courtice sampler was 0.053 ng/m$^3$.
2. During the sampling day the wind was highly variable, as recorded at the Courtice Meteorological Tower. One-hour average wind speeds at Courtice Meteorological Tower ranged from 1.2 km/h to 19.9 km/h.
3. RWDI reviewed the available CEMS data over a 72-hour period which includes the day before and after the BaP exceedance date. The data showed no unusual readings, and all parameters were within the expected values as well as below the listed Limits. Based on the data, both boilers 1 and 2 were operating normally during the time reviewed.
4. A review of the current ESDM data shows that Benzo(a)Pyrene emissions from the DYEC for a 24-hour period are estimated to be less than 1% of the MECP limit.
5. At the time of the data review, MECP monitoring station data for BaP was not available.
6. The Courtice meteorological data suggests that the Courtice Station was primarily upwind of the DYEC during the sampling period. Given the wind conditions, it is likely that the measured BaP exceedance is attributable to sources other than the Energy Centre operations.

CANADA'S BEST MANAGED COMPANIES Platinum member

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At the Courtice Station, the $NO_2$ hourly values were less than 13% of the criteria for the same period. The $PM_{2.5}$ 24-hour average value was 5.5 micrograms per cubic metre at the Courtice Station.

We have attached the data files for the samples in question to aid with the review.

Respectfully submitted by:

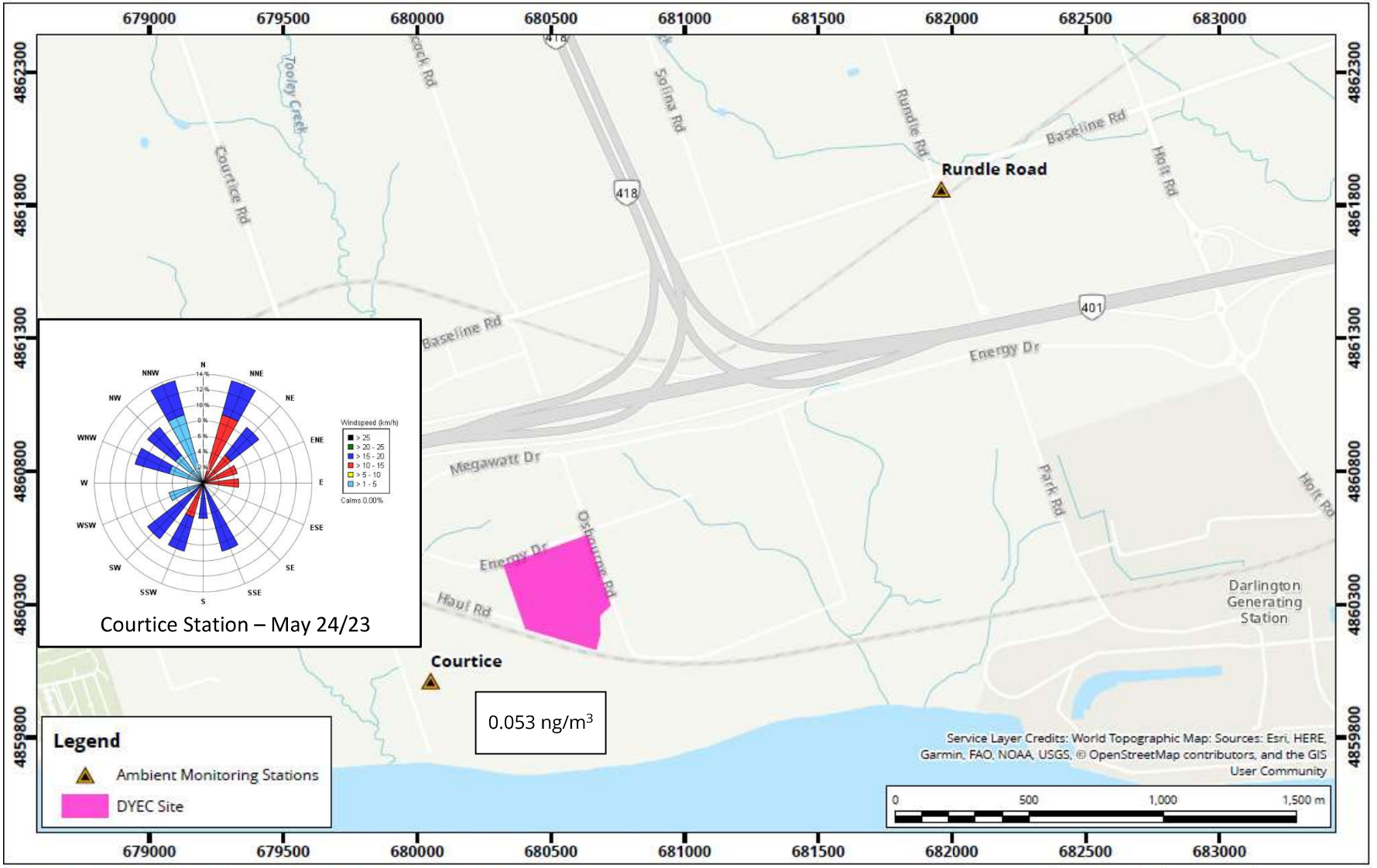
**RWDI AIR Inc.**

Maja Bokara, PGCert, EP
Project Manager

MB/kta

Attach.

# ATTACHMENTS




## DYEC Site and Ambient Monitoring Station Locations

Map Projection: NAD 1983 UTM Zone 17N

DYEC - Region of Durham, Ontario

True North

Project #: 2205149

| | |
|---|---|
| Drawn by: DAJH | Figure: 1 |
| Approx. Scale: | 1:20,000 |
| Date Revised: | July 11, 2023 |

1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

# Certificate of Analysis

| | | | |
|---|---|---|---|
| **ALS Project Contact:** | Claire Kocharakkal | **Client Name:** | RWDI Air Inc |
| **ALS Project ID:** | 23601 | **Client Address:** | 600 Southgate Drive |
| **ALS WO#:** | L2750922 | | Guelph, ON N1G 4P6 |
| **Date of Report** | 19-Jun-23 | | Canada |
| **Date of Sample Receipt** | 20-Apr-23 | **Client Contact:** | Khalid Hussein |
| | | **Client Project ID:** | DYEC |

**COMMENTS:** **PAH by CARB method 429 (LR option)- Isotope dilution**

The recoveries of some of the labelled extraction standards were outside the method control limits. However, the recoveries of the target analytes are all within limits for the laboratory control sample (LCS). No bias to sample data is expected as a result.

Certified by:

Sabrina Jin
Technical Specialist

Results in this certificate relate only to the samples as submitted to the laboratory.
This report shall not be reproduced, except in full, without the written permission of ALS Canada Ltd.

# ALS Life Sciences

## Laboratory Method Blank Analysis Report

| | | | | |
|---|---|---|---|---|
| **Sample Name** | **Method Blank** | Sampling Date | n/a | |
| ALS Sample ID | WG3784793-1 | Extraction Date | 31-May-23 | |
| Analysis Method | PAH by CARB 429 | | | |
| Analysis Type | Blank | | | |
| Sample Matrix | MEDIA | | | Approved: |
| Sample Size | 1 Sample | | | *Nick Schrobilgen* |
| Percent Moisture | n/a | | | --e-signature-- |
| Split Ratio | 5 | Workgroup | WG3784793 | 16-Jun-2023 |

| **Run Information** | **Run 1** |
|---|---|
| Filename | 23061225.D |
| Run Date | 6/13/2023 5:21 |
| Final Volume | 0.1 mL |
| Dilution Factor | 1 |
| Analysis Units | ng/sample |
| Instrument | MSD-5 |
| Column | HP-5MS US2879735H |

| **Target Analytes** | **Ret. Time** | **Concentration ng/sample** | **Flags** |
|---|---|---|---|
| Naphthalene | 2.69 | 70.5 | |
| 2-Methylnaphthalene | 3.27 | 7.19 | |
| 1-Methylnaphthalene | 3.38 | 4.77 | |
| Acenaphthylene | NotFnd | <1.0 | U |
| Acenaphthene | 4.68 | 1.54 | |
| Fluorene | 5.60 | 1.78 | |
| Phenanthrene | 7.77 | 3.42 | |
| Anthracene | 7.89 | <1.0 | U |
| Fluoranthene | 11.15 | 1.23 | |
| Pyrene | 11.79 | 1.11 | |
| Benzo(a)Anthracene | NotFnd | <1.0 | U |
| Chrysene | 15.81 | <1.0 | U |
| Benzo(b)Fluoranthene | 19.05 | <1.0 | U |
| Benzo(k)Fluoranthene | 19.05 | <1.0 | U |
| Benzo(e)Pyrene | NotFnd | <1.0 | U |
| Benzo(a)Pyrene | NotFnd | <0.50 | U |
| Perylene | 20.16 | <1.0 | U |
| Indeno(1,2,3-cd)Pyrene | NotFnd | <1.0 | U |
| Dibenzo(a,h)Anthracene | NotFnd | <1.0 | U |
| Benzo(g,h,i)Perylene | NotFnd | <1.0 | U |
| **Additional Analytes** | | | |
| Tetralin | 2.56 | 41.5 | |
| Biphenyl | 3.79 | 3.69 | |
| o-Terphenyl | 9.04 | <1.0 | U |
| Benzo(a)fluorene | NotFnd | <1.0 | U |
| Benzo(b)fluorene | NotFnd | <1.0 | U |

| **Field Sampling Standards** | **ng spiked** | **% Rec** |
|---|---|---|
| 1-Methylnaphthalene-D10 | 0 | NS |
| Fluorene D10 | 0 | NS |
| Terphenyl D14(Surr.) | 0 | NS |

| **Extraction Standards** | | | **% Rec** | **Limits** |
|---|---|---|---|---|
| Naphthalene D8 | 100 | 2.68 | 54.0 | 50-150 |
| 2-Methylnaphthalene-D10 | 100 | 3.24 | 56.8 | 50-150 |
| Acenaphthylene D8 | 100 | 4.38 | 59.0 | 50-150 |
| Phenanthrene D10 | 100 | 7.72 | 72.0 | 50-150 |
| Anthracene-D10 | 100 | 7.84 | 69.8 | 50-150 |
| Fluoranthene D10 | 100 | 11.10 | 74.8 | 50-150 |
| Benz(a)Anthracene-D12 | 100 | 15.63 | 49.4 | 50-150 |
| Chrysene D12 | 100 | 15.74 | 54.1 | 50-150 |
| Benzo(b)Fluoranthene-D12 | 100 | 18.96 | 63.4 | 50-150 |
| Benzo(k)Fluoranthene-D12 | 100 | 19.05 | 48.2 | 50-150 |
| Benzo(a)Pyrene D12 | 100 | 19.84 | 42.8 | 50-150 |
| Perylene D12 | 100 | 20.08 | 38.2 | 50-150 |
| Indeno(1,2,3,cd)Pyrene-D12 | 100 | 23.41 | 47.0 | 50-150 |
| Dibenz(a,h)Anthracene-D14 | 100 | 23.57 | 29.7 | 50-150 |
| Benzo(g,h,i)Perylene D12 | 100 | 24.35 | 48.1 | 50-150 |

| | |
|---|---|
| U | Indicates that this compound was not detected above the MDL. |
| NS | Indicates that this compound was not spiked. |

# ALS Life Sciences

## Laboratory Method Blank Analysis Report

| | | | | |
|---|---|---|---|---|
| **Sample Name** | **Method Blank** | Sampling Date | n/a | |
| ALS Sample ID | WG3784793-4 | Extraction Date | 31-May-23 | |
| Analysis Method | PAH by CARB 429 | | | |
| Analysis Type | Blank | | | |
| Sample Matrix | REAGENT | | | Approved: |
| Sample Size | 1 Sample | | | *Nick Schrobilgen* |
| Percent Moisture | n/a | | | --e-signature-- |
| Split Ratio | 5 | Workgroup | WG3784793 | 16-Jun-2023 |

| **Run Information** | **Run 1** |
|---|---|
| Filename | 23061226.D |
| Run Date | 6/13/2023 5:59 |
| Final Volume | 0.1 mL |
| Dilution Factor | 1 |
| Analysis Units | ng/sample |
| Instrument | MSD-5 |
| Column | HP-5MS US2879735H |

| **Target Analytes** | **Ret. Time** | **Concentration ng/sample** | **Flags** |
|---|---|---|---|
| Naphthalene | 2.69 | 9.33 | |
| 2-Methylnaphthalene | 3.27 | 2.95 | |
| 1-Methylnaphthalene | 3.38 | 1.84 | |
| Acenaphthylene | 4.39 | <1.0 | U |
| Acenaphthene | 4.69 | 1.05 | |
| Fluorene | 5.60 | 1.27 | |
| Phenanthrene | 7.77 | 1.72 | |
| Anthracene | 7.89 | <1.0 | U |
| Fluoranthene | 11.15 | <1.0 | U |
| Pyrene | 11.79 | <1.0 | U |
| Benzo(a)Anthracene | 15.73 | <1.0 | U |
| Chrysene | 15.81 | <1.0 | U |
| Benzo(b)Fluoranthene | 19.05 | <1.0 | U |
| Benzo(k)Fluoranthene | 19.05 | <1.0 | U |
| Benzo(e)Pyrene | 19.84 | <1.0 | U |
| Benzo(a)Pyrene | 19.91 | <0.50 | U |
| Perylene | NotFnd | <1.0 | U |
| Indeno(1,2,3-cd)Pyrene | NotFnd | <1.0 | U |
| Dibenzo(a,h)Anthracene | NotFnd | <1.0 | U |
| Benzo(g,h,i)Perylene | NotFnd | <1.0 | U |
| **Additional Analytes** | | | |
| Tetralin | NotFnd | <1.0 | U |
| Biphenyl | 3.79 | 1.74 | |
| o-Terphenyl | 9.04 | <1.0 | U |
| Benzo(a)fluorene | NotFnd | <1.0 | U |
| Benzo(b)fluorene | NotFnd | <1.0 | U |

| **Field Sampling Standards** | **ng spiked** | **% Rec** |
|---|---|---|
| 1-Methylnaphthalene-D10 | 0 | NS |
| Fluorene D10 | 0 | NS |
| Terphenyl D14(Surr.) | 0 | NS |

| **Extraction Standards** | | | **% Rec** | **Limits** |
|---|---|---|---|---|
| Naphthalene D8 | 100 | 2.68 | 83.5 | 50-150 |
| 2-Methylnaphthalene-D10 | 100 | 3.24 | 82.2 | 50-150 |
| Acenaphthylene D8 | 100 | 4.38 | 95.1 | 50-150 |
| Phenanthrene D10 | 100 | 7.72 | 108.0 | 50-150 |
| Anthracene-D10 | 100 | 7.84 | 110.9 | 50-150 |
| Fluoranthene D10 | 100 | 11.10 | 122.0 | 50-150 |
| Benz(a)Anthracene-D12 | 100 | 15.63 | 101.8 | 50-150 |
| Chrysene D12 | 100 | 15.74 | 105.9 | 50-150 |
| Benzo(b)Fluoranthene-D12 | 100 | 18.96 | 148.7 | 50-150 |
| Benzo(k)Fluoranthene-D12 | 100 | 19.05 | 113.9 | 50-150 |
| Benzo(a)Pyrene D12 | 100 | 19.84 | 104.9 | 50-150 |
| Perylene D12 | 100 | 20.08 | 111.3 | 50-150 |
| Indeno(1,2,3,cd)Pyrene-D12 | 100 | 23.41 | 121.1 | 50-150 |
| Dibenz(a,h)Anthracene-D14 | 100 | 23.57 | 95.0 | 50-150 |
| Benzo(g,h,i)Perylene D12 | 100 | 24.35 | 114.4 | 50-150 |

U Indicates that this compound was not detected above the MDL.

NS Indicates that this compound was not spiked.

# ALS Life Sciences

## Sample Analysis Report

| | | | |
|---|---|---|---|
| **Sample Name** | **RUNDLE-DX/PAH-MAY24** | Sampling Date | 24-May-23 00:00 |
| ALS Sample ID | L2750922-1 | Extraction Date | 31-May-23 |
| Analysis Method | PAH by CARB 429 | | |
| Analysis Type | Sample | | |
| Sample Matrix | PUF | | |
| Sample Size | 1 Sample | | |
| Percent Moisture | n/a | | |
| Split Ratio | 5 | Workgroup | WG3784793 |

Approved:
*Nick Schrobilgen*
--e-signature--
16-Jun-2023

| **Run Information** | **Run 1** | **Run 2** |
|---|---|---|
| Filename | 23061229.D | 23061227.D |
| Run Date | 6/13/2023 7:54 | 6/13/2023 6:37 |
| Final Volume | 0.1 mL | 0.1 mL |
| Dilution Factor | 1 | 20 |
| Analysis Units | ng/sample | ng/sample |
| Instrument | MSD-5 | MSD-5 |
| Column | HP-5MS US2879735H | HP-5MS US2879735H |

| **Target Analytes** | **Ret. Time** | **Concentration ng/sample** | **Flags** | **Ret. Time.** | **Concentration ng/sample** | **Flags** |
|---|---|---|---|---|---|---|
| Naphthalene | | | | 2.70 | 4360 | |
| 2-Methylnaphthalene | | | | 3.27 | 3550 | |
| 1-Methylnaphthalene | | | | 3.39 | 1960 | |
| Acenaphthylene | 4.40 | 90.7 | | | | |
| Acenaphthene | 4.69 | 919 | | | | |
| Fluorene | 5.60 | 736 | | | | |
| Phenanthrene | | | | 7.77 | 1160 | |
| Anthracene | 7.89 | 28.4 | | | | |
| Fluoranthene | 11.15 | 199 | | | | |
| Pyrene | 11.80 | 92.9 | | | | |
| Benzo(a)Anthracene | 15.69 | 4.15 | | | | |
| Chrysene | 15.81 | 17.1 | | | | |
| Benzo(b)Fluoranthene | 19.02 | 14.0 | M | | | |
| Benzo(k)Fluoranthene | 19.08 | 14.1 | M | | | |
| Benzo(e)Pyrene | 19.77 | 9.20 | | | | |
| Benzo(a)Pyrene | 19.90 | 6.63 | | | | |
| Perylene | 20.13 | 1.12 | M | | | |
| Indeno(1,2,3-cd)Pyrene | 23.50 | 11.8 | | | | |
| Dibenzo(a,h)Anthracene | 23.69 | 1.93 | | | | |
| Benzo(g,h,i)Perylene | 24.45 | 14.1 | | | | |
| **Additional Analytes** | | | | | | |
| Tetralin | 2.57 | 719 | | | | |
| Biphenyl | 3.79 | 738 | | | | |
| o-Terphenyl | 9.04 | 2.40 | M | | | |
| Benzo(a)fluorene | 12.96 | 8.57 | M | | | |
| Benzo(b)fluorene | 13.18 | 1.53 | | | | |

| **Field Sampling Standards** | **ng spiked** | | **% Rec** |
|---|---|---|---|
| 1-Methylnaphthalene-D10 | 300 | 3.35 | 55.6 |
| Fluorene D10 | 300 | 5.55 | 46.7 |
| Terphenyl D14(Surr.) | 300 | 12.60 | 100 |

| **Extraction Standards** | | | **% Rec** | **Limits** | | **% Rec** |
|---|---|---|---|---|---|---|
| Naphthalene D8 | 100 | | | 50-150 | 2.69 | 54.5 |
| 2-Methylnaphthalene-D10 | 100 | | | 50-150 | 3.24 | 60.3 |
| Acenaphthylene D8 | 100 | 4.37 | 82.6 | 50-150 | | |
| Phenanthrene D10 | 100 | | | 50-150 | 7.72 | 97.1 |
| Anthracene-D10 | 100 | 7.84 | 78.1 | 50-150 | | |
| Fluoranthene D10 | 100 | 11.10 | 91.4 | 50-150 | | |
| Benz(a)Anthracene-D12 | 100 | 15.63 | 88.5 | 50-150 | | |
| Chrysene D12 | 100 | 15.74 | 71.6 | 50-150 | | |
| Benzo(b)Fluoranthene-D12 | 100 | 18.96 | 101.9 | 50-150 | | |
| Benzo(k)Fluoranthene-D12 | 100 | 19.05 | 73.6 | 50-150 | | |
| Benzo(a)Pyrene D12 | 100 | 19.84 | 70.8 | 50-150 | | |
| Perylene D12 | 100 | 20.08 | 75.1 | 50-150 | | |
| Indeno(1,2,3,cd)Pyrene-D12 | 100 | 23.41 | 93.6 | 50-150 | | |
| Dibenz(a,h)Anthracene-D14 | 100 | 23.58 | 65.6 | 50-150 | | |
| Benzo(g,h,i)Perylene D12 | 100 | 24.35 | 78.8 | 50-150 | | |

M Indicates that a peak has been manually integrated.
U Indicates that this compound was not detected above the MDL.

# ALS Life Sciences

## Sample Analysis Report

| | | | |
|---|---|---|---|
| **Sample Name** | **COURTICE-DX/PAH-MAY24** | Sampling Date | 24-May-23 00:00 |
| ALS Sample ID | L2750922-2 | Extraction Date | 31-May-23 |
| Analysis Method | PAH by CARB 429 | | |
| Analysis Type | Sample | | |
| Sample Matrix | PUF | | |
| Sample Size | 1 Sample | | |
| Percent Moisture | n/a | | |
| Split Ratio | 5 | Workgroup | WG3784793 |

Approved:
*Nick Schrobilgen*
--e-signature--
16-Jun-2023

| **Run Information** | **Run 1** | **Run 2** |
|---|---|---|
| Filename | 23061248.D | 23061247.D |
| Run Date | 6/13/2023 20:05 | 6/13/2023 19:27 |
| Final Volume | 0.1 mL | 0.1 mL |
| Dilution Factor | 1 | 20 |
| Analysis Units | ng/sample | ng/sample |
| Instrument | MSD-5 | MSD-5 |
| Column | HP-5MS US2879735H | HP-5MS US2879735H |

| **Target Analytes** | **Ret. Time** | **Concentration ng/sample** | **Flags** | **Ret. Time.** | **Concentration ng/sample** | **Flags** |
|---|---|---|---|---|---|---|
| Naphthalene | | | | 2.70 | 9710 | |
| 2-Methylnaphthalene | | | | 3.27 | 5740 | |
| 1-Methylnaphthalene | | | | 3.39 | 2780 | |
| Acenaphthylene | 4.40 | 137 | | | | |
| Acenaphthene | | | | 4.69 | 4350 | |
| Fluorene | | | | 5.60 | 2550 | |
| Phenanthrene | | | | 7.77 | 3640 | |
| Anthracene | 7.89 | 79.6 | | | | |
| Fluoranthene | 11.16 | 468 | | | | |
| Pyrene | 11.80 | 188 | | | | |
| Benzo(a)Anthracene | 15.70 | 6.94 | | | | |
| Chrysene | 15.81 | 25.8 | | | | |
| Benzo(b)Fluoranthene | 19.03 | 16.2 | | | | |
| Benzo(k)Fluoranthene | 19.09 | 24.8 | | | | |
| Benzo(e)Pyrene | 19.78 | 9.23 | | | | |
| Benzo(a)Pyrene | 19.90 | 17.7 | | | | |
| Perylene | 20.15 | 1.32 | | | | |
| Indeno(1,2,3-cd)Pyrene | 23.50 | 11.7 | | | | |
| Dibenzo(a,h)Anthracene | 23.69 | 1.94 | | | | |
| Benzo(g,h,i)Perylene | 24.45 | 14.7 | | | | |
| **Additional Analytes** | | | | | | |
| Tetralin | 2.57 | 746 | | | | |
| Biphenyl | | | | 3.79 | 1070 | |
| o-Terphenyl | 9.05 | 3.22 | | | | |
| Benzo(a)fluorene | 12.97 | 14.6 M | | | | |
| Benzo(b)fluorene | 13.18 | 2.99 | | | | |

| **Field Sampling Standards** | **ng spiked** | | **% Rec** |
|---|---|---|---|
| 1-Methylnaphthalene-D10 | 300 | 3.35 | 54.3 |
| Fluorene D10 | 300 | 5.55 | 91 |
| Terphenyl D14(Surr.) | 300 | 12.61 | 102.9 |

| **Extraction Standards** | | | **% Rec** | **Limits** | | **% Rec** |
|---|---|---|---|---|---|---|
| Naphthalene D8 | 100 | | | 50-150 | 2.68 | 29.8 |
| 2-Methylnaphthalene-D10 | 100 | | | 50-150 | 3.24 | 21.6 |
| Acenaphthylene D8 | 100 | 4.38 | 65.4 | 50-150 | | |
| Phenanthrene D10 | 100 | | | 50-150 | 7.72 | 27.9 |
| Anthracene-D10 | 100 | 7.85 | 82.7 | 50-150 | | |
| Fluoranthene D10 | 100 | 11.11 | 81.4 | 50-150 | | |
| Benz(a)Anthracene-D12 | 100 | 15.63 | 120.9 | 50-150 | | |
| Chrysene D12 | 100 | 15.74 | 73.9 | 50-150 | | |
| Benzo(b)Fluoranthene-D12 | 100 | 18.97 | 96.5 | 50-150 | | |
| Benzo(k)Fluoranthene-D12 | 100 | 19.06 | 74.6 | 50-150 | | |
| Benzo(a)Pyrene D12 | 100 | 19.85 | 101.8 | 50-150 | | |
| Perylene D12 | 100 | 20.08 | 96.8 | 50-150 | | |
| Indeno(1,2,3,cd)Pyrene-D12 | 100 | 23.42 | 161.6 | 50-150 | | |
| Dibenz(a,h)Anthracene-D14 | 100 | 23.58 | 113.7 | 50-150 | | |
| Benzo(g,h,i)Perylene D12 | 100 | 24.35 | 101.8 | 50-150 | | |

M Indicates that a peak has been manually integrated.
U Indicates that this compound was not detected above the MDL.

# ALS Life Sciences

## Laboratory Control Sample Analysis Report

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | **Laboratory Control Sample** | | Sampling Date | n/a | |
| ALS Sample ID | WG3784793-2 | | Extraction Date | 31-May-23 | |
| Analysis Method | PAH by CARB 429 | | | | |
| Analysis Type | LCS | | | | |
| Sample Matrix | MEDIA | | | | Approved: |
| Sample Size | 1 | n/a | | | *Nick Schrobilgen* |
| Percent Moisture | n/a | | | | --e-signature-- |
| Split Ratio | 5 | | Workgroup | WG3784793 | 16-Jun-2023 |

| **Run Information** | **Run 1** |
|---|---|
| Filename | 23061221.D |
| Run Date | 6/13/2023 2:48 |
| Final Volume | 0.1 mL |
| Dilution Factor | 1 |
| Analysis Units | % |
| Instrument | MSD-5 |
| Column | HP-5MS US2879735H |

| **Target Analytes** | **ug spiked** | **Ret. Time** | **%** | **Flags** | **Limits** |
|---|---|---|---|---|---|
| Naphthalene | 100 | 2.69 | 125.5 | | 50-150 |
| 2-Methylnaphthalene | 100 | 3.27 | 92.1 | | 50-150 |
| 1-Methylnaphthalene | 100 | 3.38 | 96.3 | | 50-150 |
| Acenaphthylene | 100 | 4.39 | 95.6 | | 50-150 |
| Acenaphthene | 100 | 4.69 | 90.8 | | 50-150 |
| Fluorene | 100 | 5.60 | 83.8 | | 50-150 |
| Phenanthrene | 100 | 7.77 | 105.7 | | 50-150 |
| Anthracene | 100 | 7.89 | 91.4 | | 50-150 |
| Fluoranthene | 100 | 11.15 | 99.9 | | 50-150 |
| Pyrene | 100 | 11.80 | 112.4 | | 50-150 |
| Benzo(a)Anthracene | 100 | 15.69 | 110.5 | | 50-150 |
| Chrysene | 100 | 15.81 | 101.3 | | 50-150 |
| Benzo(b)Fluoranthene | 100 | 19.02 | 90.2 | | 50-150 |
| Benzo(k)Fluoranthene | 100 | 19.10 | 105.8 | | 50-150 |
| Benzo(e)Pyrene | 100 | 19.77 | 91.1 | | 50-150 |
| Benzo(a)Pyrene | 100 | 19.90 | 99.2 | | 50-150 |
| Perylene | 100 | 20.14 | 107 | | 50-150 |
| Indeno(1,2,3-cd)Pyrene | 100 | 23.49 | 82.1 | | 50-150 |
| Dibenzo(a,h)Anthracene | 100 | 23.69 | 95.1 | | 50-150 |
| Benzo(g,h,i)Perylene | 100 | 24.45 | 92.2 | | 50-150 |
| **Additional Analytes** | | | | | |
| Tetralin | 0 | | NS | | |
| Biphenyl | 0 | | NS | | |
| o-Terphenyl | 0 | | NS | | |
| Benzo(a)fluorene | 0 | | NS | | |
| Benzo(b)fluorene | 0 | | NS | | |
| **Field Sampling Standards** | **ng spiked** | | **% Rec** | | |
| 1-Methylnaphthalene-D10 | 0 | | NS | | |
| Fluorene D10 | 0 | | NS | | |
| Terphenyl D14(Surr.) | 0 | | NS | | |
| **Extraction Standards** | | | **% Rec** | | **Limits** |
| Naphthalene D8 | 100 | 2.68 | 39.2 | | 30-150 |
| 2-Methylnaphthalene-D10 | 100 | 3.24 | 46.2 | | 30-150 |
| Acenaphthylene D8 | 100 | 4.38 | 39.1 | | 30-150 |
| Phenanthrene D10 | 100 | 7.72 | 48.4 | | 50-150 |
| Anthracene-D10 | 100 | 7.84 | 46.6 | | 50-150 |
| Fluoranthene D10 | 100 | 11.10 | 48.2 | | 50-150 |
| Benz(a)Anthracene-D12 | 100 | 15.63 | 31.4 | | 50-150 |
| Chrysene D12 | 100 | 15.74 | 37.2 | | 50-150 |
| Benzo(b)Fluoranthene-D12 | 100 | 18.96 | 41.9 | | 50-150 |
| Benzo(k)Fluoranthene-D12 | 100 | 19.05 | 32.9 | | 50-150 |
| Benzo(a)Pyrene D12 | 100 | 19.84 | 26.3 | | 30-150 |
| Perylene D12 | 100 | 20.08 | 21.0 | M | 50-150 |
| Indeno(1,2,3,cd)Pyrene-D12 | 100 | 23.41 | 33.0 | | 50-150 |
| Dibenz(a,h)Anthracene-D14 | 100 | 23.57 | 22.8 | | 50-150 |
| Benzo(g,h,i)Perylene D12 | 100 | 24.35 | 32.7 | | 50-150 |

| | |
|---|---|
| M | Indicates that a peak has been manually integrated. |
| NS | Indicates that this compound was not spiked. |

ALS Environmental

# Chain of Custody / Analytical Request Form

1435 Norjohn Court, Unit 1, Burlington, Ontario, Canada, L7L 0E6

Tel +1-905-331-3111 Fax +1-905-331-4567 www.alsglobal.com

L2750922-COFC

| Report To | | Report Format / Distribution | | Service Request |
|---|---|---|---|---|
| Company: | RWDI AIR INC. (Guelph) | ☑ Standard ☐ Other: | | ☑ Regular Service - 10day TAT |
| Contact: | Khalid Hussein | ☑ PDF ☑ Excel ☐ Digital ☐ Fax | | ☐ Rush Service (with prior consultation) - surcharge applies |
| Address: | 600 Southgate Drive, Guelph, ON N1G 4P6 | Email 1: | Khalid.Hussein@rwdi.com, Steve.Sanderson@rwdi.com | ☐ Other - Please contact ALS |
| Phone: | 519-823-1311 Fax: | Email 2: | John.DeYoe@rwdi.com, John.Green@RWDI.com | |
| Invoice To | Same as Report ? ☐ Yes ☑ No | Email 3: | Dan.Harrigan@rwdi.com, Maja.Bokara@rwdi.com | |
| | | Email 4: | Victoria.Latam@rwdi.com, claire.kocharakkal@alsglobal.com | |
| Email 1: | accountspayable@rwdi.com | Location: | DYEC | |
| Email 2: | Khalid.Hussein@rwdi.com | PO: | 1803743 Phase 1000 | |
| | | Sampled by: | Martin Town | |
| Quote | Q69531 | ALS Contact: | Claire Kocharakkal | |

| Sample # | Sample Identification (This description will appear on the report) | Date (dd-mmm-yy) | Air Volume (m³) | Sample Type | TSP, Hg, ICP | PAH | DX | Hazardous? Provide Details | Highly Contaminated? | Number of Containers |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | L2750610-2 - Rundle | 24-May-23 | 329 | Air | | X | X | | | 1 |
| 1 | 743995 | 24-May-23 | 1631 | Air | X | | | | | 1 |
| 2 | 743993 | 18-May-23 | 1628 | Air | X | | | | | 1 |
| 2 | L2750610-3 - Cobrtice | 24-May-23 | 334 | Air | | X | X | | | 1 |
| 3 | 743996 | 24-May-23 | 1659 | Air | X | | | | | 1 |
| 4 | 743994 | 18-May-23 | 1568 | Air | X | | | | | 1 |
| 7 | | | | Air | | | | | | 1 |
| 8 | | | | Air | | | | | | 1 |

Analysis Request

Special Instructions / Regulations / Hazardous Details

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided by ALS

| Released by: | Date (dd-mmm-yy) | Time (hh-mm) | Received by: | Date: | Time: | Temperature: | Verified by: | Date: | Time: | Observations: |
|---|---|---|---|---|---|---|---|---|---|---|
| | 29-May-23 | 12:00 | AARON BULTON | 30-MAY 2023 | 10:45 | 6.6 18.8 °C | | | | Yes / No ? If Yes add SIF |

**Table B5: 2023 Courtice Station Q2 Monitoring Results for PAHs**

| Contaminant | Units | *MECP Criteria* | 24-May-23 | No. > Criteria |
|---|---|---|---|---|
| 1-Methylnaphthalene | ng/m$^3$ | *12000* | 8.32E+00 | 0 |
| 2-Methylnaphthalene | ng/m$^3$ | *10000* | 1.72E+01 | 0 |
| Acenaphthene | ng/m$^3$ | - | 1.30E+01 | - |
| Acenaphthylene | ng/m$^3$ | *3500* | 4.10E-01 | 0 |
| Anthracene | ng/m$^3$ | *200* | 2.38E-01 | 0 |
| Benzo(a)Anthracene | ng/m$^3$ | - | 2.08E-02 | - |
| Benzo(a)fluorene | ng/m$^3$ | - | 4.37E-02 | - |
| Benzo(a)Pyrene (Historically High) | ng/m$^3$ | *0.05* [1] *5* [2] *1.1* [3] | 5.30E-02 | 1 |
| Benzo(b)Fluoranthene | ng/m$^3$ | - | 4.85E-02 | - |
| Benzo(b)fluorene | ng/m$^3$ | - | 8.95E-03 | - |
| Benzo(e)Pyrene | ng/m$^3$ | - | 2.76E-02 | - |
| Benzo(g,h,i)Perylene | ng/m$^3$ | - | 4.40E-02 | - |
| Benzo(k)Fluoranthene | ng/m$^3$ | - | 7.43E-02 | - |
| Biphenyl | ng/m$^3$ | - | 3.20E+00 | - |
| Chrysene | ng/m$^3$ | - | 7.72E-02 | - |
| Dibenzo(a,h)Anthracene | ng/m$^3$ | - | 5.81E-03 | - |
| Fluoranthene | ng/m$^3$ | - | 1.40E+00 | - |
| Fluorene | ng/m$^3$ | - | 7.63E+00 | - |
| Indeno(1,2,3-cd)Pyrene | ng/m$^3$ | - | 3.50E-02 | - |
| Naphthalene | ng/m$^3$ | *22500* | 2.91E+01 | 0 |
| o-Terphenyl | ng/m$^3$ | - | 9.64E-03 | - |
| Perylene | ng/m$^3$ | - | 3.95E-03 | - |
| Phenanthrene | ng/m$^3$ | - | 1.09E+01 | - |
| Pyrene | ng/m$^3$ | - | 5.63E-01 | - |
| Tetralin | ng/m$^3$ | - | 2.23E+00 | - |
| Total PAH[4] | ng/m$^3$ | - | 94.64 | - |

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC

[2] O. Reg. 419/05 Schedule Upper Risk Thresholds

[3] O. Reg. 419/05 24 Hour Guideline

[4] Total PAH sums all PAH contaminants

Station: RofD Courtice Daily: 24/05/2023 Type: AVG 1 Hr. [5 Mins.]

| Date & Time | PM2.5 | NO | NO2 | NOX | SO2 | WS km/hr | ET | WD | Tr_Temp | RH AVG | BP | Rain total | Hi-Vol Pressure | PUF Pressure | BP | ET | Hivol Flow | PUF Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/m3 | ppb | ppb | ppb | ppb | km/hr | C° | Deg | C° | % | in HG | mm | in H20 | in H20 | kPa | K | cfm | cfm |
| 24/05/2023 00:00 | 11.6 | 1.8 | 20.9 | 22.7 | 0.525 | 2.99 | 10.808 | 320 | 21.4 | 70.8 | 29.78 | 0 | 4.52 | 48.15 | 100.83 | 283.958 | 45.41 | 8.16 |
| 24/05/2023 01:00 | 11 | 1.5 | 19.9 | 21.5 | 6.725 | 1.22 | 10.136 | <Samp | 21.3 | 75.9 | 29.76 | 0 | 4.51 | 50.53 | 100.78 | 283.286 | 45.4 | 8.35 |
| 24/05/2023 02:00 | 9.4 | 1.6 | 15.5 | 17 | 0.798 | 3.49 | 9.71 | 256 | 21 | 77.4 | 29.76 | 0 | 4.54 | 51.3 | 100.77 | 282.86 | 45.58 | 8.41 |
| 24/05/2023 03:00 | 8.6 | 0.1 | 18.2 | 18.2 | 0.811 | 2.14 | 10.384 | 285 | 20.9 | 71 | 29.76 | 0 | 4.54 | 51.51 | 100.77 | 283.534 | 45.52 | 8.42 |
| 24/05/2023 04:00 | 9.6 | 15.4 | 25.6 | 41 | 14.975 | 4.26 | 10.05 | 346 | 20.8 | 73.4 | 29.74 | 0 | 4.56 | 51.5 | 100.72 | 283.2 | 45.67 | 8.42 |
| 24/05/2023 05:00 | 9.9 | 30.8 | 19.8 | 50.6 | 5.743 | 1.47 | 9.636 | <Samp | 20.7 | 77.9 | 29.74 | 0 | 4.52 | 51.07 | 100.72 | 282.786 | 45.5 | 8.39 |
| 24/05/2023 06:00 | 10.8 | 30.4 | 18.6 | 48.9 | 7.301 | 3.22 | 12.002 | 331 | 21.5 | 75.2 | 29.77 | 0 | 4.51 | 50.92 | 100.8 | 285.152 | 45.23 | 8.36 |
| 24/05/2023 07:00 | 8.2 | 2.2 | 8 | 10.2 | 3.003 | 13.13 | 14.044 | 41 | 21.2 | 70.4 | 29.79 | 0.11 | 4.54 | 49.5 | 100.88 | 287.194 | 45.27 | 8.23 |
| 24/05/2023 08:00 | 8.2 | 0.8 | 3.6 | 4.3 | 39.954 | 14.3 | 12.897 | 93 | 21.4 | 79.8 | 29.81 | 0.18 | 4.57 | 50.48 | 100.95 | 286.047 | 45.55 | 8.32 |
| 24/05/2023 09:00 | 9.7 | 0.3 | 2.5 | 2.9 | 3.59 | 18 | 12.191 | 346 | 21.7 | 82.3 | 29.82 | 0.61 | 4.6 | 50.92 | 100.99 | 285.341 | 45.78 | 8.36 |
| 24/05/2023 10:00 | 5.7 | 0.4 | 1.9 | 2.2 | 2.007 | 17.47 | 13.213 | 320 | 21.3 | 73.8 | 29.84 | 0 | 4.59 | 51.91 | 101.07 | 286.363 | 45.64 | 8.42 |
| 24/05/2023 11:00 | 1.8 | 0.2 | 1.1 | 1.2 | 2.839 | 18.76 | 14.185 | 178 | 21.8 | 61.5 | 29.86 | 0 | 4.56 | 51.58 | 101.12 | 287.335 | 45.39 | 8.39 |
| 24/05/2023 12:00 | 1.2 | 2.2 | 1.2 | 3.3 | 3.586 | 17.5 | 14.592 | 154 | 21.8 | 58.1 | 29.87 | 0 | 4.54 | 51.27 | 101.16 | 287.742 | 45.28 | 8.36 |
| 24/05/2023 13:00 | 1.7 | 0.3 | 0.9 | 1.2 | 2.766 | 17.19 | 15.237 | 232 | 22 | 47.2 | 29.88 | 0 | 4.54 | 51.24 | 101.17 | 288.387 | 45.22 | 8.35 |
| 24/05/2023 14:00 | 1.1 | 0.3 | 1.3 | 1.6 | 6.021 | 17.3 | 16.076 | 206 | 21.8 | 36.4 | 29.88 | 0 | 4.53 | 51.04 | 101.18 | 289.226 | 45.09 | 8.32 |
| 24/05/2023 15:00 | 1.3 | 0.7 | 1.6 | 2.3 | 4.693 | 18.74 | 16.065 | 290 | 21.9 | 31.6 | 29.88 | 0 | 4.53 | 51.13 | 101.19 | 289.215 | 45.09 | 8.33 |
| 24/05/2023 16:00 | 1.9 | 0.4 | 1.3 | 1.8 | 8.033 | 16.51 | 16.059 | 234 | 21.6 | 31.1 | 29.88 | 0 | 4.52 | 50.21 | 101.2 | 289.209 | 45.1 | 8.26 |
| 24/05/2023 17:00 | 1.8 | 0.7 | 2.1 | 2.8 | 10.919 | 15.44 | 15.799 | 152 | 21.6 | 29.5 | 29.89 | 0 | 4.52 | 51.71 | 101.21 | 288.949 | 45.11 | 8.38 |
| 24/05/2023 18:00 | 1.8 | 0.2 | 1.7 | 1.9 | 14.471 | 14.01 | 14.915 | 65 | 21.4 | 30.1 | 29.89 | 0 | 4.53 | 51.19 | 101.22 | 288.065 | 45.22 | 8.35 |
| 24/05/2023 19:00 | 2.2 | 0.4 | 2.8 | 3.1 | 8.909 | 12.38 | 13.003 | 208 | 21.5 | 32.4 | 29.91 | 0 | 4.56 | 52.17 | 101.3 | 286.153 | 45.55 | 8.45 |
| 24/05/2023 20:00 | 2.5 | 0.2 | 2.6 | 2.8 | 36.488 | 11.83 | 11.015 | 13 | 21.7 | 33 | 29.94 | 0 | 4.57 | 53.08 | 101.4 | 284.165 | 45.78 | 8.55 |
| 24/05/2023 21:00 | 3.7 | 0.5 | 3.9 | 4.4 | 42.335 | 10.62 | 9.185 | 20 | 21.1 | 40.6 | 29.97 | 0 | 4.59 | 53.25 | 101.5 | 282.335 | 46.06 | 8.59 |
| 24/05/2023 22:00 | 3.7 | 0 | 1.1 | 1 | 10.083 | 19.6 | 7.757 | 32 | 20.4 | 44.3 | 30 | 0 | 4.61 | 53.13 | 101.59 | 280.907 | 46.35 | 8.6 |
| 24/05/2023 23:00 | 3.5 | 1.2 | 1.7 | 2.8 | 7.383 | 19.89 | 6.504 | 34 | 20.2 | 46.7 | 30.01 | 0 | 4.62 | 53.54 | 101.64 | 279.654 | 46.51 | 8.65 |
| Minimum | 1.1 | 0 | 0.9 | 1 | 0.525 | 1.22 | 6.504 | 13 | 20.2 | 29.5 | 29.74 | 0 | 4.51 | 48.15 | 100.72 | 279.654 | 45.09 | 8.16 |
| MinDate | 14:00 | 22:00 | 13:00 | 22:00 | 00:00 | 01:00 | 23:00 | 20:00 | 23:00 | 17:00 | 04:00 | 00:00 | 01:00 | 00:00 | 04:00 | 23:00 | 14:00 | 00:00 |
| Maximum | 11.6 | 30.8 | 25.6 | 50.6 | 42.335 | 19.89 | 16.076 | 346 | 22 | 82.3 | 30.01 | 0.61 | 4.62 | 53.54 | 101.64 | 289.226 | 46.51 | 8.65 |
| MaxDate | 00:00 | 05:00 | 04:00 | 05:00 | 21:00 | 23:00 | 14:00 | 04:00 | 13:00 | 09:00 | 23:00 | 09:00 | 23:00 | 23:00 | 23:00 | 14:00 | 23:00 | 23:00 |
| Avg | 5.5 | 3.9 | 7.4 | 11.2 | 10.165 | 12.14 | 12.311 | 189 | 21.3 | 56.3 | 29.85 | 0.04 | 4.55 | 51.35 | 101.09 | 285.461 | 45.51 | 8.39 |
| Num | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 22 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| Data[%] | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 91.67 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| STD | 3.8 | 8.6 | 8.2 | 15 | 11.8 | 6.5 | 2.7 | 114.7 | 0.5 | 19.2 | 0.1 | 0.1 | 0 | 1.2 | 0.3 | 2.7 | 0.4 | 0.1 |

# APPENDIX G

600 Southgate Drive
Guelph, ON N1G 4P6
Canada

Tel:+1.519.823.1311
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August 2, 2023

Lyndsay Waller
Operations Technician
The Regional Municipality of Durham
Durham York Energy Centre
605 Rossland Road East, 1st Floor
Corporate Services-Legislative Services Division
Whitby, ON L1N 6A3
Lyndsay.Waller@durham.ca
Lipika.Saha@durham.ca

**Re: Durham York Energy Centre (DYEC)**
**2023 Ambient Air Q2 Sulphur Dioxide Emissions**
**RWDI Reference No. 2205149**

In support of the 2023, Q2 Ambient Air Quality Monitoring Report prepared by RWDI Inc., the following information is provided in relation to the performance of the DYEC during the periods of elevated sulphur dioxide ($SO_2$) concentrations observed at the facility's Courtice and Rundle ambient air monitoring stations.

The Emission Summary and Dispersion Modelling (ESDM) report submitted as part of the DYEC ECA Application modelled $SO_2$ concentrations at the maximum point of impingement (POI) for a facility operating at 110% maximum continuous rating (MCR) with in-stack $SO_2$ concentrations at the permit limit of 35 mg/m$^3$. Under this conservative assumed facility operating condition, the predicted maximum 1-hour average concentration at the POI was 8.62 µg/m$^3$, which represents 8.62% of the new ambient air standard of 100 µg/m$^3$, which was implemented in 2020.

During Q2, there were one-hundred and six (106) exceedance events above the rolling 10-minute $SO_2$ Ambient Air Quality Criteria (AAQC) and forty (40) exceedance events above the rolling 1-hour $SO_2$ AAQC recorded at the Courtice station. There were fourteen (14) exceedance events above the rolling 10-minute $SO_2$ Ambient Air Quality Criteria (AAQC) and five (5) exceedance events above the rolling 1-hour $SO_2$ AAQC recorded at the Rundle Road station.

Each of the date and times of the $SO_2$ AAQC exceedances were compared against the wind direction recorded at the ambient air stations as well as the $SO_2$ concentrations measured at the DYEC by the continuous emissions monitoring system (CEMS).

As indicated by RWDI in the 2023 DYEC Ambient Air Q2 Report, the Courtice Station pollution rose in Figure 6 shows that the majority of elevated SO2 events at Courtice occurred from the north-northeast to east-northeast and west-northwest directions. The events were likely a result of emissions from surrounding industrial sources with contributions from the DYEC in the east-northeast direction. The Courtice station pollution rose in Figure 7 shows that <0.68% of the 5-min SO2 events are elevated >67 ppb and the majority occurred from the north-northwest to north-northeast directions. The pollution rose indicates that the DYEC was not a contributor to SO2 levels at the station and that the levels may be related to other industrial activity nearby.

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The Rundle Road Station pollution rose in Figure 6 shows that the majority of elevated SO2 events at Rundle Road occurred from the east to east-southeast directions. The events were possibly a result of emissions from surrounding industrial sources with contributions from the DYEC in the east-northeast direction. The Rundle Road station pollution rose in Figure 7 shows that <0.11% of the 5-min SO2 events are elevated >67 ppb and the majority occurred from the east to east-southeast directions. The pollution rose indicates that the DYEC was not a contributor to SO2 levels at the station and that the levels may be related to other industrial activity nearby.

During the times the SO2 AAQC events occurred, both boilers CEMS concentrations, comprised of 24-hour rolling arithmetic average, were recorded between 0-18 mg/Rm3. The DYEC's CEMS concentrations for both boilers were below the DYEC regulatory compliance limit of 35 mg/Rm3 and the facility was operating under normal conditions.