Quarterly Ambient Air Quality Monitoring Report for the Durham York Energy Centre – April to June 2017

Durham York Energy Centre

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Sign-off Sheet

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Executive Summary

The Regional Municipalities of Durham and York constructed the Durham York Energy Centre (DYEC) which is an Energy-from-Waste (EFW) Facility intended to provide a long-term, sustainable solution to manage the remaining municipal solid waste after waste diversion from the Regions. The facility commenced commercial operation on February 1, 2016.

The Ambient Air Quality Monitoring Plan - Durham York Residual Waste Study (Stantec, 2012), was developed based on the Regional Council's mandate to provide ambient air quality monitoring in the area of the DYEC for a three-year period. An ambient air quality monitoring and reporting program was also a requirement laid out in the Provincial Minister's Notice of Approval to Proceed with the Undertaking, detailed in Condition 11 of the Notice of Approval (MOECC, 2010). The air monitoring plan was also developed to satisfy the conditions of the Environmental Compliance Approval and the environmental mitigation and commitments set out in the Environmental Assessment (Jacques Whitford, 2009). The predominantly downwind station is located along Rundle Road, south of Baseline Road. The predominantly upwind station is sited at the Courtice Water Pollution Control Plant (WPCP). Since May 2013, measurements of the following air contaminants have been made at the two stations:

- Continuously monitored
  - Sulphur Dioxide (SO_2)
  - Nitrogen Oxides (NO_X), and
  - Particulate Matter smaller than 2.5 microns ($PM_{2.5}$).
- Non-continuously monitored
  - Metals in Total Suspended Particulate (TSP) matter
  - Polycyclic Aromatic Hydrocarbons (PAHs), and
  - Dioxins and Furans.

Operation of the non-continuous monitors was temporarily discontinued from June 28, 2014 (after completion of the background air quality data collection period) onwards through the rest of construction and commissioning, as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012). The EFW facility became fully operational on February 1, 2016, and monitoring of non-continuous air quality parameters resumed.

A third Fence Line Station, which measures non-continuous parameters (metals and total particulate matter), was installed prior to full operation of the DYEC. As per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012), the Fence Line Station, which collects non-continuous parameters began operation on February 1, 2016 upon start of commercial operations. The Fence Line Station was scheduled to run for a one-year period but this period has been extended by one year for a total of two years at the request of the Regional Municipality of Durham.

Meteorological data is also measured at the Courtice WPCP and Rundle Road Stations. The predominantly downwind Rundle Road Station measures horizontal wind speed, wind direction, atmospheric temperature, relative humidity, and rainfall. The predominantly upwind Courtice WPCP Station measures atmospheric temperature, relative humidity, rainfall, and barometric pressure. Wind speed and wind direction data at the predominantly upwind location are measured and provided by the Courtice Water Pollution Control Plant.

This quarterly report provides a summary of the ambient air quality data collected at the three stations for the period April to June (Calendar Quarter 2). Some operational issues at the sites were encountered this quarter including the Courtice WPCP Station $PM_{2.5}$ monitor pump tripping off and NO_x monitor calibration issues. Data recovery rates for all measured air quality parameters for this quarter were acceptable. Additional details on instrumentation issues are presented in Section 3.2 of this report.

Site personnel noted ongoing Highway 418 construction on the north and south sides of Highway 401 between Courtice and Crago Roads during Quarter 2, 2017.

The following observations and conclusions were made from a review of the measured ambient air quality monitoring data:

1. Measured concentrations of NO_2, SO_2, and $PM_{2.5}$ were below the applicable O. Reg. 419/05 Standards or human health risk assessment (HHRA) health-based criteria presented in **Table 2-2** of this report.

2. Since the Canadian Ambient Air Quality Standard (CAAQS) for $PM_{2.5}$ is based on a 98^{th} percentile level over 3 years, whereas the $PM_{2.5}$ measurement period at both stations for this quarterly report was 3 months, there is insufficient data collected to determine with any certainty if exceedances of the CAAQS would occur. Therefore, no comparison of the measured $PM_{2.5}$ data during this quarter to the CAAQS was conducted for this report, as it would not be scientifically accurate or representative.

3. The maximum measured concentrations of TSP and all metals with MOECC air quality Standards, were below their applicable Standards (as presented in **Table 2-3** in this report) with the exception of one TSP measurement at the Rundle Road Station on June 12, 2017 which exceeded the applicable criteria by 4.8%. As required by the Ambient Air Quality Monitoring Plan, a written notice of exceedance was submitted to the Region of Durham, Region of York, MOECC, and the local Medical Officer of Health on July 21, 2017. Stantec's root cause analysis determined that the likely cause of the TSP exceedance was high background TSP levels combined with Highway 418 construction activities. Stantec's Toxicologist concluded that the measured TSP concentration was not expected to have resulted in an adverse effect on human health or the environment.

4. The maximum measured concentrations of PAHs with MOECC air quality Standards were well below their applicable criteria shown in **Table 2-4**.

5. The maximum measured toxic equivalent dioxin and furan concentration was below the applicable Standard presented in **Table 2-4.**

In summary, the measured concentrations of the air contaminants monitored were below their applicable MOECC Standards and HHRA health-based criteria during the monitoring period between April to June 2017, with the exception of one TSP sample at the Rundle Road Station.

Abbreviations

AAQC	Ambient Air Quality Criteria
ACB List	Air Contaminants Benchmarks List: Standards, Guidelines, and Screening Levels for Assessing Point of Impingement Concentrations of Air Contaminants
CAAQS	Canadian Ambient Air Quality Standards
CAC	Criteria Air Contaminants
CDD	Chlorinated Dibenzo-p-dioxins
CDF	Chlorinated Dibenzo-p-furans
D/Fs	Dioxins and Furans
DYEC	Durham York Energy Centre
EFW	Energy from Waste
MOECC	Ontario Ministry of the Environment and Climate Change
SO_2	Sulphur Dioxide
NO_X	Nitrogen Oxides
PAH	Polycyclic Aromatic Hydrocarbons
Particulate	A particle of a solid or liquid that is suspended in air.
PCB	Polychlorinated biphenyl
PCDD/PCDF	Polychlorinated dibenzo-p-dioxins and dibenzofurans
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter smaller than 2.5 microns
TEQ	Toxic Equivalent Quotient
TEQs	Toxic Equivalents
TSP	Total Suspended Particulate
WPCP	Water Pollution Control Plant
Elements	
Cd	Cadmium
Hg	Mercury
Pb	Lead
Al	Aluminum
As	Arsenic
Be	Beryllium

Cr	Chromium
Cu	Copper
Mn	Manganese
Ni	Nickel
Ag	Silver
Tl	Thallium
Sn	Tin
V	Vanadium
Zn	Zinc
Miscellaneous	
°C	Temperature in degrees Celsius
N/A	Not Available
%	Percent
ppm	Parts per million
ppb	Parts per billion
ppbv	Parts per billion by volume
ppt	Parts per trillion
min	Minimum
max	Maximum
mm	Millimetre
m	Metre
km/hr	Kilometres per hour
mg/m^3	Milligrams per cubic metre
$\mu g/m^3$	Microgram per cubic metre
ng/m^3	Nanograms per cubic metre
pg/m^3	Picograms per cubic metre
pg TEQ/m^3	Picograms of toxic exposure equivalents per cubic metre

1.0 INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

The Regional Municipalities of Durham and York constructed the Durham York Energy Centre (DYEC) which is an Energy-from-Waste (EFW) Facility intended to provide a long-term, sustainable solution to manage municipal solid waste remaining after diversion from the Regions. The site location of the DYEC is shown in **Figure 1-1.** The facility commenced commercial operation on February 1, 2016.

An Ambient Air Quality Monitoring Plan – Durham York Residual Waste Study (Ambient Monitoring Plan) was developed and included two monitoring stations referred to as the Courtice Water Pollution Control Plant (WPCP) Station and the Rundle Road Station (as well as a temporary Fence Line Station). The plan developed for these stations was based on the Regional Council's mandate to provide ambient air quality monitoring in the area of the DYEC for a three-year period.

The purposes of the ambient air quality monitoring program are to:

1. 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 (Jacques Whitford, 2009);
2. Monitor concentration levels of EFW-related air contaminants in nearby residential areas; and
3. Quantify background ambient levels of air contaminants in the area.

Two monitoring stations (Courtice WPCP and Rundle Road Stations) in the vicinity of the DYEC were set up in April 2013. Since May 2013, the two stations have measured the following air contaminants:

- Continuously monitored criteria air contaminants (CACs)
  - Sulphur Dioxide (SO_2)
  - Nitrogen Oxides (NO_X), and
  - Particulate Matter smaller than 2.5 microns ($PM_{2.5}$).
- Non-continuously monitored
  - Metals in Total Suspended Particulate (TSP) matter
  - Polycyclic Aromatic Hydrocarbons (PAHs), and
  - Dioxins and Furans.

Operation of the non-continuous monitors was temporarily discontinued from June 28, 2014 (after completion of the background air quality data collection period) onwards through the rest of construction and commissioning, as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012). The EFW facility became fully operational starting February 1, 2016, and non-continuous monitoring resumed (as specified in the Ambient Monitoring Plan).

A third Fence Line Station, which measures non-continuous parameters (metals and total particulate matter), was installed prior to full operation of the DYEC. As per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012), the Fence Line Station, which collects non-continuous parameters began operation on February 1, 2016 upon start of commercial operations. The Fence Line Station was scheduled to run for a one-year period but this period has been extended by one year for a total of two years at the request of the Regional Municipality of Durham.

This quarterly report provides a summary of the ambient air quality data collected at the three stations for the period April to June 2017 (Q2).

1.2 LOCATIONS OF AMBIENT AIR QUALITY MONITORING STATIONS

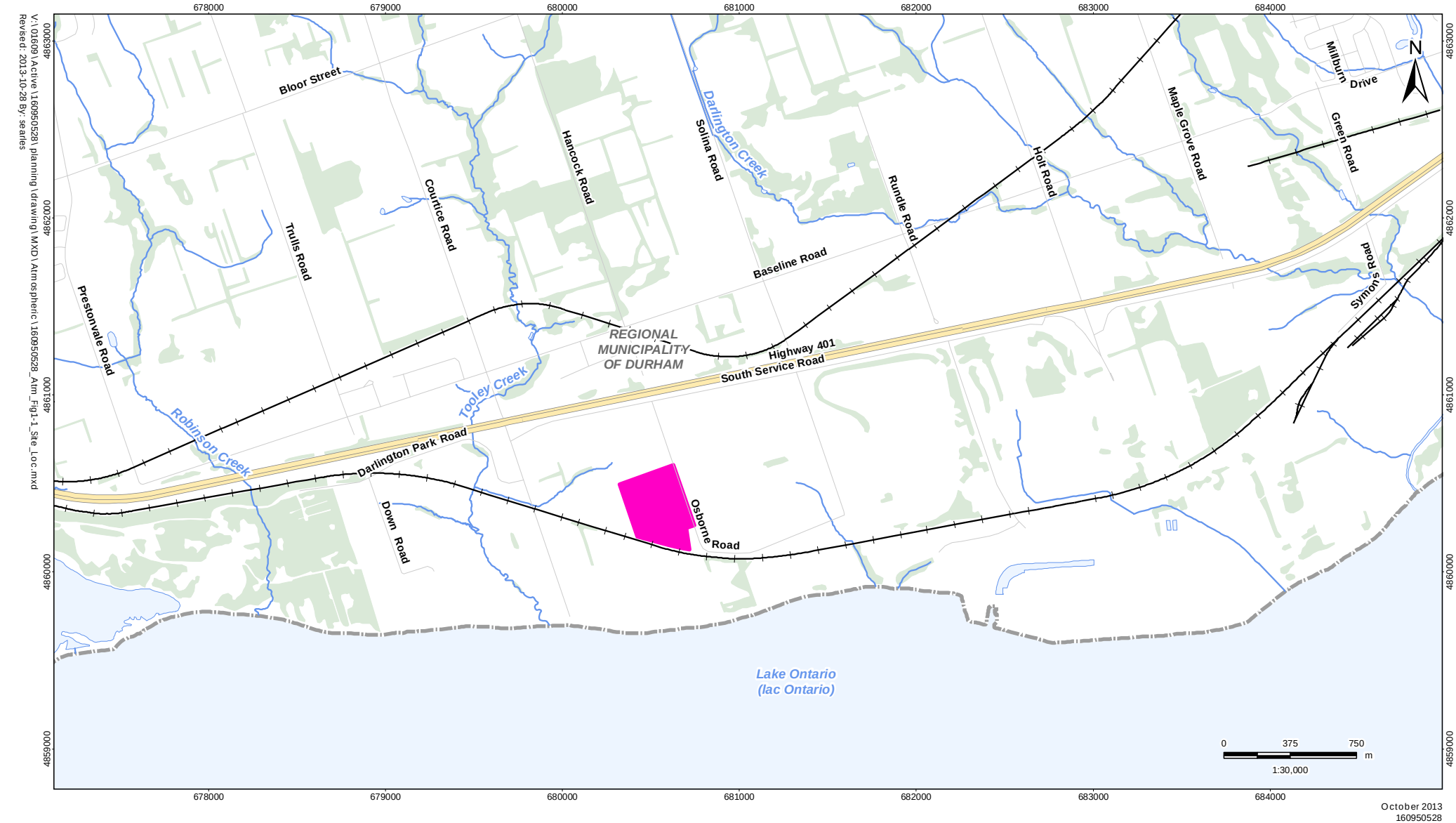
The selection of sites for the monitoring stations was accomplished in consultation with the Ontario Ministry of Environment and Climate Change (MOECC) and Regional Municipality of Durham and York representatives based on the results of air quality modelling done in support of the environmental assessment for the project, the locations of nearby sensitive receptors, and general MOECC siting criteria. Two monitoring stations (one predominantly downwind and one predominantly upwind) were chosen for the ambient air quality program. The final locations of the monitoring stations were influenced by the availability of electrical power, accessibility of each location and security. Details of the siting requirements are provided in the Ambient Monitoring Plan.

The Rundle Road Station is sited northeast of the DYEC in the vicinity of residential receptors predominantly downwind of the DYEC, and within the area where maximum annual concentrations are predicted to occur. This predominantly downwind station is located along Rundle Road, south of Baseline Road. Its location is shown in **Figure 1-2** and **Figure 1-3**. The monitoring station measures all the air contaminants listed in Section1.1 and meteorological data.

The predominately upwind Courtice WPCP Station is located at the Courtice Water Pollution Control Plant (WPCP) to the southwest of the DYEC with the objective of measuring background air quality in a predominantly upwind location. The location is presented in **Figure 1-2** and **Figure1-4.** This monitoring station measures the air contaminants presented in Section 1.1, as well as meteorological data, with the exception of wind speed and wind direction, which are measured and provided by the Courtice Water Pollution Control Plant.

Introduction
August 9, 2017

A third Fence Line Station, which measures non-continuous parameters (metals and total particulate matter), was installed prior to full operation of the DYEC. As per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012), the Fence Line Station, which collects non-continuous parameters began operation after the Facility's commissioning period was completed. The Fence Line Station was scheduled to run for a one-year period but this period has been extended by one year for a total of two years. The location is presented in **Figure 1-2** and **Figure1-5**.



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Revised: 2013-10-28 By: searles

October 2013
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Stantec

Legend

- Durham York Energy Centre Site
- Railway
- Road
- Highway
- Watercourse
- Waterbody
- Wooded Area

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.

Client/Project

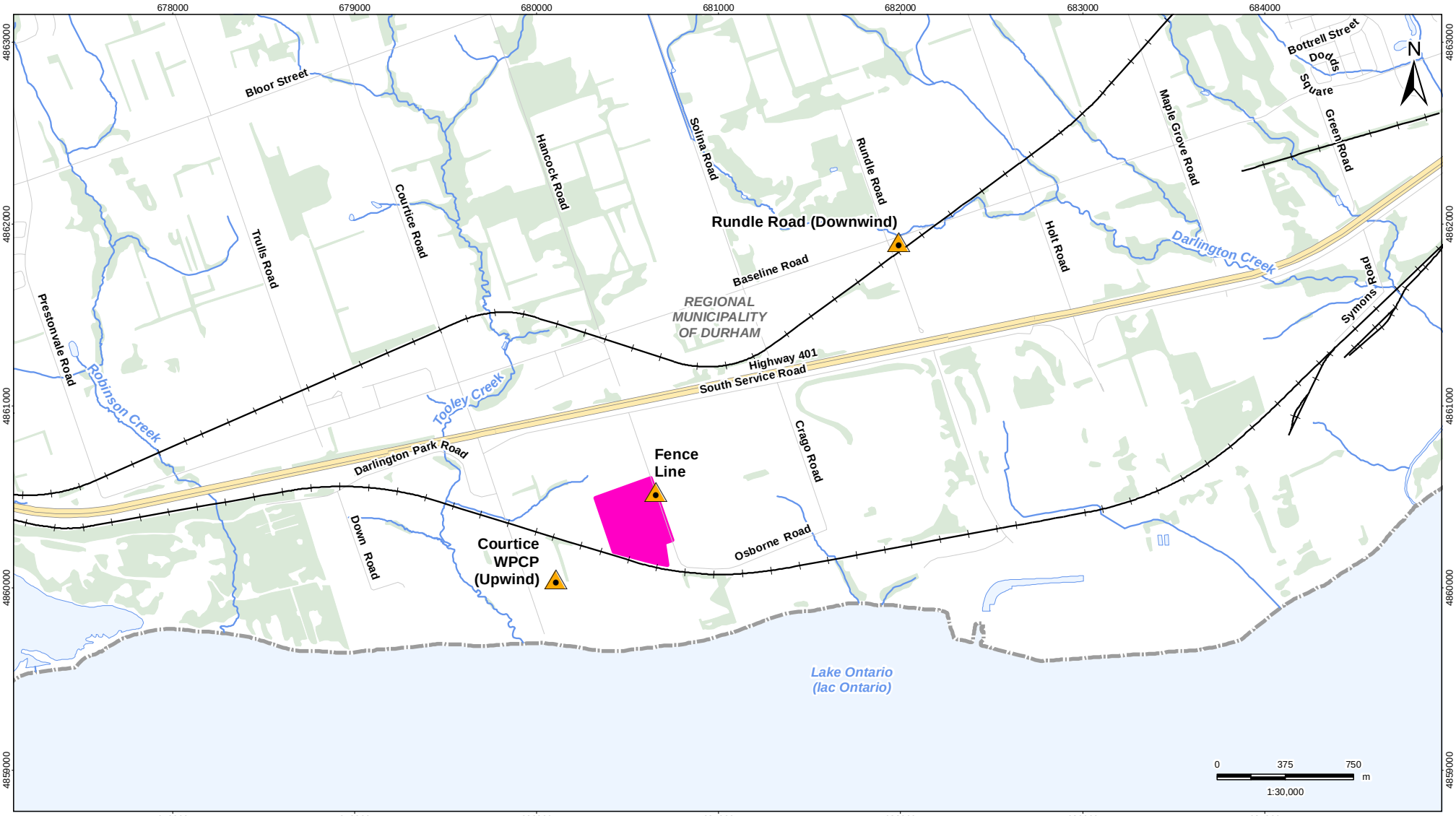
The Region of Durham
Durham York Energy Centre

Figure No.

1-1

Title

Site Location Plan



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Revised: 2016-05-11 By: searles

Stantec

Legend

- Station Location
- Durham York Energy Centre Site
- Railway
- Road
- Highway
- Watercourse
- Waterbody
- Wooded Area

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.

Client/Project

The Region of Durham
Durham York Energy Centre

Figure No.

1-2

Title

Locations of Ambient Monitoring Stations

Figure 1-3 View of the Rundle Road Ambient Air Quality Monitoring Station

Figure 1-4 View of the Courtice WPCP Ambient Air Quality Monitoring Station

Figure 1-5 View of the Fence Line Ambient Air Quality Monitoring Station

2.0 KEY COMPONENTS ASSESSED

2.1 METEOROLOGY

The following meteorological parameters are measured at the Rundle Road and Courtice WPCP Stations.

Table 2-1 Summary of Meteorological Parameters Measured at Each Station

Courtice WPCP (Predominately Upwind) Ambient Air Quality Monitoring Station	Rundle Road (Predominately Downwind) Ambient Air Quality Monitoring Station
Wind Speed and Direction @ 20 m	Wind Speed and Direction @10 m
Ambient Temperature @ 2 m	Ambient Temperature @ 2 m
Relative Humidity	Relative Humidity
Rainfall	Rainfall
Barometric Pressure	

2.2 AIR QUALITY CONTAMINANTS OF CONCERN

The ambient air quality monitoring program for the DYEC includes the following contaminants specified in the Ambient Monitoring Plan (Stantec, 2012):

- Continuously monitored criteria air contaminants (CACs)
  - Sulphur Dioxide (SO_2)
  - Nitrogen Oxides (NO_X), and
  - Particulate Matter smaller than 2.5 microns ($PM_{2.5}$).
- Non-continuously monitored
  - Metals in Total Suspended Particulate (TSP) matter
  - Polycyclic Aromatic Hydrocarbons (PAHs), and
  - Dioxins and Furans.

Operation of the non-continuous monitors was temporarily discontinued between June 28, 2014 and January 31, 2016 as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012). The EFW facility started full commercial operation on February 1, 2016, and monitoring of non-continuous monitors resumed, as specified in the Ambient Monitoring Plan (Stantec, 2012).

The following are lists of the specific metals, PAHs, and dioxins and furans being measured. Rationales for the choice of contaminants being monitored are provided in the Ambient Monitoring Plan (Stantec, 2012).

Metals:

- Aluminum (Al)
- Antimony (Sb)
- Arsenic (As)
- Barium (Ba)
- Beryllium (Be)
- Bismuth (Bi)
- Boron (B)
- Cadmium (Cd)
- Cobalt (Co)
- Copper (Cu)
- Chromium (Cr) (Total)
- Iron (Fe)
- Lead (Pb)
- Magnesium (Mg)
- Manganese (Mn)
- Mercury (Hg)
- Molybdenum (Mo)
- Nickel (Ni)
- Phosphorus (Ph)
- Selenium (Se)
- Silver (Ag)
- Strontium (Sr)
- Thallium (Tl)
- Tin (Sn)
- Titanium (Ti)
- Uranium (U)
- Vanadium (V)
- Zinc (Zn)
- Zirconium (Zr)

Polycyclic Aromatic Hydrocarbons:

- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)fluorene
- Benzo(a)pyrene
- Benzo(b)fluorene
- Benzo(b)fluoranthene
- Benzo(e)pyrene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Biphenol
- Chrysene
- Dibenz(a,h)anthracene
- Dibenz(a,c)anthracene
- Fluoranthene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Perylene
- Phenanthrene
- Pyrene
- Tetralin
- o-Terphenyl
- Total PAHs

Dioxins and Furans:

- 2,3,7,8-Tetra CDD
- 1,2,3,7,8-Penta CDD
- 1,2,3,4,7,8-Hexa CDD
- 1,2,3,6,7,8-Hexa CDD
- 1,2,3,7,8,9-Hexa CDD
- 1,2,3,4,6,7,8-Hepta CDD
- Octa CDD
- Total Tetra CDD
- Total Penta CDD
- Total Hexa CDD
- Total Hepta CDD
- 2,3,7,8-Tetra CDF
- 1,2,3,7,8-Penta CDF
- 2,3,4,7,8-Penta CDF
- 1,2,3,4,7,8-Hexa CDF
- 1,2,3,6,7,8-Hexa CDF
- 2,3,4,6,7,8-Hexa CDF
- 1,2,3,7,8,9-Hexa CDF
- 1,2,3,4,6,7,8-Hepta CDF
- 1,2,3,4,7,8,9-Hepta CDF
- Octa CDF
- Total Tetra CDF
- Total Penta CDF
- Total Hexa CDF
- Total Hepta CDF
- Total toxic equivalency (I-TEQ)

2.3 AIR QUALITY CRITERIA

Two sets of criteria were used for comparison to the air quality data as specified in the Ambient Air Monitoring Plan (Stantec, 2012). The first set of criteria was the Standards reported in O. Reg. 419/05 (Schedules 3 and 6). These are compliance based Standards used throughout the province of Ontario. These criteria, along with O. Reg. 419/05 Guidelines and Jurisdictional Screening Levels are unchanged but were consolidated in December 2016 into a new format known as the "Air Contaminants Benchmarks List: Standards, Guidelines and Screening Levels for Assessing Point of Impingement Concentrations of Air Contaminants" (MOECC, 2016) (ACB List).

Not all chemicals have O. Reg. 419/05 Standards, or in some instances updated health-based criteria were used in the human health risk assessment (HHRA) conducted in support of the Environmental Assessment (July 31, 2009 - December 10, 2009). These health-based values, which were reported in Table 7-2 (Summary of Inhalation TRVs and Inhalation Benchmarks Selected for CACs) and Table 7-3 (Inhalation TRVs and Inhalation Benchmarks for Selected COPCs) of the HHRA (Stantec, 2009) were used as the second set of criteria.

The previously applicable 24-hour Canada-Wide Standard (CWS) for $PM_{2.5}$ of 30 µg/m^3 (98th percentile averaged over 3 consecutive years) has been superseded by the new Canadian Ambient Air Quality Standard (CAAQS) of 28 µg/m^3 (98th percentile averaged over 3 consecutive years) and the annual objective of 10 µg/m^3 as noted in **Table 2-2**. The proposed CAAQS 24-hour objective for 2020 is 27 µg/m^3.

Summaries of the relevant air quality criteria for the contaminants monitored in Q2 2017 are presented in **Table 2-2** to **Table 2-4**.

Table 2-2 Summary of Air Quality Criteria for CACs

Contaminant	CAS	O. Reg. 419/05 – Schedule 3 Standards /AAQC			HHRA Health-Based Criteria		
		1-Hour (ppb / µg/m³)	24-Hour (ppb / µg/m³)	Annual (ppb / µg/m³)	1-Hour (ppb / µg/m³)	24-Hour (ppb / µg/m³)	Annual (ppb / µg/m³)
Sulphur dioxide	7446095	250 /690	100 / 275	20 / 55	250 / 690	100 / 275	11 / 29
Nitrogen oxides [A]	10102-44-0	200 /400	100 / 200	-	200 / 400	100 / 200	30 / 60
Contaminant	**CAS**	**Canadian Ambient Air Quality Standards (CAAQS)**			**HHRA Health-Based Criteria**		
		1-Hour (µg/m³)	**24-Hour (µg/m³)**	**Annual (µg/m³)**	**1-Hour (µg/m³)**	**24-Hour (µg/m³)**	**Other time Period (µg/m³)**
$PM_{2.5}$	N/A	-	28 [B]	10 [C]	-	30 [D]	-

Notes:

A. The Schedule 3 Standard for NO_X is based on health effects of NO_2, as NO_2 has adverse health effects at much lower concentrations than NO. Therefore, the Standard was compared to NO_2 in this report. However, as per the current (December 2016) version of the ACB List, the Standard was also compared to the monitored NO_X.

B. Canadian Ambient Air Quality Standards (CAAQS) for Respirable Particulate Matter and Ozone, effective by 2015 (CCME, 2012). The Respirable Particulate Matter Objective is referenced to the 98th percentile daily average concentration averaged over 3 consecutive years.

C. Annual Canadian Ambient Air Quality Standard for Respirable Particulate Matter, effective by 2015. The Respirable Particulate Matter Objective is referenced to the 3-year average of the annual average concentrations.

D. HHRA Health-Based criterion for $PM_{2.5}$ was selected referencing CCME (2006).

Table 2-3 Summary of Air Quality Criteria for Metals

Contaminant	CAS	O. Reg. 419/05 – Schedule 3 Standards, Guidelines and Screening Levels			HHRA Health-Based Criteria		
		1-Hour (µg/m³)	24-Hour (µg/m³)	Other time Period (µg/m³)	1-Hour (µg/m³)	24-Hour (µg/m³)	Annual (µg/m³)
Total Particulate	NA	-	120	-	-	120	60
Aluminum	7429-90-5	-	4.8	-	-	-	-
Antimony	7440-36-0	-	25	-	5	25	0.2
Arsenic	7440-38-2	-	0.3	-	0.2	0.3	0.015 [A] 0.0043 [B]
Barium	7440-39-3	-	10	-	5	10	1
Beryllium	7440-41-7	-	0.01	-	0.02	0.01	0.007 [A] 0.0024 [B]
Bismuth	7440-69-9	-					
Boron	7440-42-8	-	120	-	50	-	5

Table 2-3 Summary of Air Quality Criteria for Metals

Contaminant	CAS	O. Reg. 419/05 – Schedule 3 Standards, Guidelines and Screening Levels			HHRA Health-Based Criteria		
		1-Hour (µg/m³)	24-Hour (µg/m³)	Other time Period (µg/m³)	1-Hour (µg/m³)	24-Hour (µg/m³)	Annual (µg/m³)
Cadmium	7440-43-9	-	0.025	0.005; annual	0.1	0.025	0.005 [A] 0.0098 [B]
Chromium (Total)	7440-47-3	-	0.5	-	1	-	60
Cobalt	7440-48-4	-	0.1	-	0.2	0.1	0.1
Copper	8440-50-8	-	50	-	-	-	-
Iron	15438-31-0	-	4	-	-	-	-
Lead	7439-92-1	-	0.5	0.2; 30-day	1.5	0.5	0.5
Magnesium	7439-95-4	-					
Manganese	7439-96-5	-	0.4	-	-	-	-
Mercury	7439-97-6	-	2	-	0.6	2	0.3
Molybdenum	7439-87-7	-	120	-	-	-	-
Nickel	7440-02-0	-	0.2	0.04; annual	6	-	0.05
Phosphorus	7723-14-0	-	-	-	-	-	6.4×10^7
Selenium	7782-49-2	-	10	-	2	10	0.2
Silver	7440-22-4	-	1	-	0.1	1	0.01
Strontium	7440-24-6	-	120	-	-	-	-
Thallium	7440-28-0	-	-	-	1	-	0.1
Tin	7440-31-5	-	10	-	20	10	2
Titanium	7440-32-6	-	120	-	-	-	-
Vanadium	7440-62-2	-	2	-	0.5	1	1
Uranium	7440-61-1	-	1.5	0.03; annual	-	-	-
Zinc	7440-66-6	-	120	-	50	-	5
Zirconium	7440-67-7	-	20	-	-	-	-

Notes:

A. Annual Average
B. Carcinogenic Annual Average

Table 2-4 Summary of Air Quality Criteria for PAHs and D/Fs

Contaminant	CAS	O. Reg. 419/05 – Schedule 3 Standards, Guidelines and Screening Levels			HHRA Health-Based Criteria			
		1-Hour (ng/m^3)	24-Hour (ng/m^3)	Other time Period (ng/m^3)	1-Hour (ng/m^3)	24-Hour (ng/m^3)	Annual (ng/m^3)	Toxic Equivalency Factor Annual [A, G] $(ng/m^3)^{-1}$
1-Methylnaphthalene	90-12-0	-	12,000	-	-	-	3,000	-
2-Methylnaphthalene	91-57-6	-	10,000	-	-	-	3,000	-
Acenaphthene	83-32-9	-	-	-	1,000	-	-	1
Acenaphthylene	208-96-8	-	3,500	-	1,000	-	-	10
Anthracene	120-12-7	-	200	-	500	-	50	-
Benzo(a)anthracene	56-55-3	-	-	-	500	-	-	100
Benzo(b)fluoranthene	205-99-2	-	-	-	500	-	-	100
Benzo(k)fluoranthene	207 -08-9	-	-	-	500	-	-	100
Benzo(a)fluorene	238-84-6	-	-	-	500	-	50	-
Benzo(b)fluorene	243-17-4	-	-	-	500	-	50	-
Benzo (g,h,i) perylene	191-24-2	-	-	-	500	-	-	100
Benzo(a)pyrene	50-32-8	-	0.05 [B] 5 [C] 1.1 [D]	0.01; annual	-	1	87 [A]	-
Benzo(e)pyrene	192-97-2	-	-	-	500	-	-	10
Biphenyl	92-52-4	-	-	-	-	-	224,000	-
Chrysene	218-01-9	-						-
Dibenzo(a,c)anthracene	215-58-7	-	-	-	-	-	-	100
Dibenzo(a,h)anthracene	53-70-3	-	-	-	500	-	-	1,000
Fluoranthene	206-44-0	-	-	-	500	-	-	1
Indeno(1,2,3-cd)pyrene	193-39-5	-	-	-	500	-	-	100
Naphthalene	91-20-3	-	22,500	-	-	22,500	3,000	-
o-Terphenyl	84-15-1	-	-	-	50,000	-	5,000	-

Table 2-4 Summary of Air Quality Criteria for PAHs and D/Fs

Contaminant	CAS	O. Reg. 419/05 – Schedule 3 Standards, Guidelines and Screening Levels			HHRA Health-Based Criteria			
		1-Hour (ng/m^3)	24-Hour (ng/m^3)	Other time Period (ng/m^3)	1-Hour (ng/m^3)	24-Hour (ng/m^3)	Annual (ng/m^3)	Toxic Equivalency Factor Annual [A, G] $(ng/m^3)^{-1}$
Perylene	198-55-0	-	-	-	500	-	-	1
Phenanthrene	85-01-8	-	-	-	500	-	-	1
Pyrene	129-00-0	-	-	-	500	-	-	1
Tetralin	119-64-2	-						-
Dioxins and Furans Total Toxic Equivalency [E]	NA	-	0.1 (pg TEQ/m^3) [F] 1 (pg TEQ/m^3) [C]	-	-	-	-	-

Notes:

A. Carcinogenic Annual Average. Units in $(ng/m^3)^{-1}$.

B. Ontario Ambient Air Quality Criteria - The standard for benzo(a)pyrene (B(a)P) is for B(a)P as a surrogate for PAHs.

C. O. Reg. 419/05 Schedule 6 Upper Risk Thresholds.

D. O. Reg. 419/05 24 Hour Guideline.

E. Application of the air standard for dioxins, furans, and dioxin-like PCBs requires the calculation of the total toxicity equivalent (TEQ) concentration contributed by all dioxin-like compounds in the mixture. TEQ is calculated using the methodology as per the O. Reg. 419/05 Summary of Standards and Guidelines, and the corresponding WHO_{2005} toxic equivalency factors (i-TEFs).

F. O. Reg. 419/05 Schedule 3 Standard phased in after July 1, 2016.

G. Toxic Equivalency Factors (TEFs) are shown as benzo(a)pyrene equivalents.

3.0 INSTRUMENTATION SUMMARY AND FIELD CONDITIONS

3.1 INSTRUMENTATION

The measurement program at the monitoring stations includes both continuous and non-continuous monitors to sample air contaminant concentrations.

Monitoring for respirable particulate matter ($PM_{2.5}$), nitrogen oxides (NO_X) and sulphur dioxide (SO_2) are conducted on a continuous basis. A summary of the continuous monitors and a brief description of their principle of operation are provided in **Table 3-1** below.

Table 3-1 Summary of Continuous Ambient Air Quality Monitors

Contaminant	Monitor	Principle of Operation	Range	Time Interval
$PM_{2.5}$	Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time Particulate Monitor	Light Scattering Photometry / Beta Attenuation - Consists of a carbon14 source, detector and light scattering Nephelometer in a rack-mountable enclosure. The Thermo Sharp utilizes a continuous (non-step wise) hybrid mass measurement and a combination of beta attenuation and light scattering technology. The unit's filter tape is automatically advanced based upon a user defined frequency or particulate loading.	0 -10 mg/m^3	1 minute
NO, NO_2, NO_X	Teledyne API Model 200E Chemiluminescence Analyzer	Chemiluminescence - Uses a chemiluminescence detection principle and microprocessor technology for ambient continuous emissions monitoring (CEM). Measurements are automatically compensated for temperature and pressure changes.	0 – 1000 ppb	1 second
SO_2	Teledyne API Model T100	Pulsed Florescence - SO_2 levels are measured based on the principle that SO_2 has a strong ultraviolet (UV) absorption at a wavelength between 200 and 240 nanometres (nm). The absorption of photons at these wavelengths results in the emission of fluorescence photons at a higher wavelength. The amount of fluorescence measured is directly proportional to the concentration of SO_2.	0 – 1000 ppb	1 second

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Two manually operated, hi-volume air samplers are installed at both the Courtice WPCP (predominantly upwind) and Rundle Road (predominantly downwind) Stations to collect metals in total suspended particulate (TSP), polycyclic aromatic hydrocarbons (PAHs), and dioxins and furans. Sampling for these contaminants is conducted following the methodology and analyses described in the Ambient Monitoring Plan (Stantec, 2012), as presented in **Table 3-2**. Monitoring for metals in TSP is also conducted at the Fence Line Station. The samples were submitted to Maxxam Analytics Inc., a Canadian Association for Laboratory Accreditation Inc. (CALA) / Standards Council of Canada (SCC) accredited laboratory, for analysis.

Table 3-2 Summary of Non-Continuous Ambient Air Quality Monitors

Contaminant	Sampler	Filter Media	Lab Analysis	Sampling Schedule
TSP and metals	Tisch Environmental TE-5170 mass-flow high volume sampler	Pre-weighed, conditioned Teflon coated glass fibre filters	Weighed for particulate loading and analysed using the Atomic Emission Spectroscopy / Inductively Coupled Plasma (AES/ICP) technique to determine metals content	24 hour sample taken every 6 days
PAHs	Tisch Environmental TE-1000 mass-flow high volume air sampler	Dual chambered sampling module with a Teflon-coated glass fibre filter and a Poly-Urethane Foam (PUF) cartridge	Gas Chromatography / Mass Spectrometry (GC/MS)	24 hour sample taken every 12 days
Dioxins and Furans				24 hour sample taken every 24 days.

Horizontal wind speed, wind direction, atmospheric temperature, relative humidity, and rainfall are measured at the predominantly downwind Rundle Road Station. The meteorological sensors at the Rundle Road Station are mounted on an external 10 m aluminum tower. Atmospheric temperature, relative humidity, rainfall, and barometric pressure are measured at the predominantly upwind Courtice WPCP Station. Wind speed and wind direction data at the predominantly upwind location are measured on a 20 m tower and are provided by the Courtice Water Pollution Control Plant.

The meteorological equipment is summarized in **Table 3-3**.

Table 3-3 Summary of Meteorological Equipment

Parameter	Equipment
Wind Speed/Wind Direction	Met One Instruments Inc. Model 034B
Temperature/Relative Humidity	Campbell Scientific Model HMP60
Atmospheric Pressure	Campbell Scientific Model CS106
Rainfall	Texas Electronic TE525M

A Campbell Scientific CRX1000 data acquisition system (DAS) is used to collect continuous instrument monitoring data and status codes from the continuous ambient air quality monitors. Continuous station data is maintained in the data loggers, and data is viewed locally using a laptop and the relevant DAS software applications. Remote data transmission is accomplished by the periodic transmission of collected station air quality data via cellular phone.

3.2 INSTRUMENTATION ISSUES

The following operational issues were encountered at the stations this quarter:

- An issue was encountered with the Courtice WPCP Station $PM_{2.5}$ monitor pump tripping off repeatedly.
- During the MOECC audit of the Courtice and Rundle Road Stations on June 20, 2017, it was determined that the certified concentration of the gas used to calibrate all NO_X analyzers was low, resulting in the span setting of the Rundle and Courtice monitors being low by 8.9 and 13.3% respectively. Span adjustments were therefore applied to the NO_X data to account for this discrepancy.

A summary of operational issues for each measurement parameter during the monitoring period is presented in **Table 3-4** to **Table 3-6**.

Table 3-4 Summary of Instrument Issues at the Courtice WPCP Station (Predominately Upwind)

Parameter	Issues	Time Frame	Remedial Action
SO_2	None		
NO_X	Evidence of power outage during site visit.	21-Jun-17	Data reviewed. Power was not lost for significant amount of time. Data valid.
	Measured concentration during an MOECC audit was 13.3% low due to off-specification calibration gas.	Audit: 20-Jun-17	The issue was due to an inaccurate certified concentration of the calibration gas. A span correction was applied to all data from the time of previous MOECC audit (5-Apr-17) to account for the discrepancy. Monitor was recalibrated with spare calibration gas cylinder on 22-Jun-17. All data intact.
$PM_{2.5}$	Pump not running.	13-Apr-17 to 18-Apr-17 18-May-17 to 23-May-17 24-May-17 to 29-May-17	Restarted pump. Invalidated measurements during these timeframes. Valley Environmental downloaded monitor error logs to further diagnose issue.
		30-May-17	Monitor removed and sent to manufacturer for repair and replacement installed. Issue found with filter tape tension causing an error and subsequent pump shutdown.
		15-Jun-17 to 16-Jun-17 21-Jun-17 25-Jun-17 to 26-Jun-17 29-Jun-17 to 30-Jun-17	Restarted pump on replacement unit. Invalidated measurements during these timeframes. Valley Environmental contacted equipment manufacturer to identify and repair this re-occurring issue.
	Obstruction noted in inlet.	Discovered: 20-Jun-17 Addressed: 22-Jun-17	Fly removed from inlet. Filter tape suggested obstruction may have been present for approximately 5 days prior to removal. Data reviewed and compared to other stations. Data appeared to be reasonably consistent with the other stations and was therefore considered valid.

Table 3-4 Summary of Instrument Issues at the Courtice WPCP Station (Predominately Upwind)

Parameter	Issues	Time Frame	Remedial Action
TSP/Metals Hi-Vol	None.		
PAH/ D/F Hi-Vol	None.		
Other	Power outages intermittently throughout the day.	15-Jun-17	Invalidated suspicious minute data.

Table 3-5 Summary of Instrument Issues at the Rundle Road Station (Predominately Downwind)

Parameter	Issues	Time Frame	Remedial Action
SO_2	None		
NO_X	Measured concentration during MOECC audit was 8.9% due to off-specification calibration gas.	Audit: 20-Jun-17 Re-calibrated: 22-Jun-17	The issue was due to an inaccurate certified concentration of the calibration gas. A span correction was applied to all data from the time of previous MOECC audit (5-Apr-17) to account for the discrepancy. Monitor recalibrated with spare bottle on 22-Jun-17. All data intact.
$PM_{2.5}$	Readings out of range.	15-May-17	Removed insect from instrument and invalidated 13 hours of data.
		30-May-17 to 31-May-17	Removed insect from instrument and invalidated 11 hours of data.
TSP/Metals Hi-Vol	GFI tripped during sample run. Sample did not run for sufficient duration.	7-Apr-17 sample	Invalidated sample run. Resealed connector, add additional sealing and secured plugs underneath motor housing at all stations.
	Timer dial was 11 hours slow when filter was retrieved.	13-Apr-17 sample	Reviewed sampling procedure with technician. Sample ran for 24 hours (based on elapsed time meter) and sample results are comparable to other stations. Data deemed valid.
	Small gouges in sample filters, potentially caused by small birds.	12-June-17 and 18-Jun-17 samples	Installed bird barrier. Sample results reviewed and are consistent with other stations. Data deemed valid.
PAH/ D/F Hi-Vol	None.		

Table 3-5 Summary of Instrument Issues at the Rundle Road Station (Predominately Downwind)

Parameter	Issues	Time Frame	Remedial Action
Other	Anemometer's potentiometer failed causing wind direction data to consistently read as 0°.	8-May-17 to 10-May-17	Spare installed. Replacement on order. Invalidated 52 hours of data.
	Evidence of power outage.	18-Apr-17, 14-Jun-17, 27-Jun-17	Data reviewed and appears acceptable. Power outage was likely brief. Data deemed valid except for 27-Jun-17 for which 5 minutes of NOx measurements were invalidated.

Table 3-6 Summary of Instrument Issues at the Fence Line Station

Parameter	Issues	Time Frame	Remedial Action
TSP/Metals Hi-Vol	None		

3.3 INSTRUMENTATION RECOVERY RATES

Data recovery rates for each continuous monitor at the three monitoring stations during Quarter 2 (April to June 2017) are presented in **Table 3-7** to **Table 3-9**.

Table 3-7 Summary of Data Recovery Rates for the Courtice WPCP Station (Predominately Upwind) – April to June 2017

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO_2	2173	99.5% [A]
NO_X	2171	99.4% [A]
$PM_{2.5}$	1718	78.7% [A]
Temperature	2184	100.0% [A]
Rainfall	2184	100.0% [A]
Relative Humidity	2184	100.0% [A]

Table 3-7 Summary of Data Recovery Rates for the Courtice WPCP Station (Predominately Upwind) – April to June 2017

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
Pressure	2184	100.0% [A]
Wind Speed/Direction	2182	99.9% [A]
TSP/Metals	16 [B]	100%
PAHs	8 [B]	100%
Dioxins and Furans	4 [B]	100%

Notes:

A. Includes instrumentation issues summarized in Table 3-4, quarterly MOECC audit and monthly calibrations.
B. Number of filters/24-hour average samples.

Table 3-8 Summary of Data Recovery Rates for the Rundle Road Station (Predominately Downwind) – April to June 2017

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO_2	2177	99.7% [A]
NO_X	2173	99.5% [A]
$PM_{2.5}$	2143	98.1% [A]
Temperature	2184	100.0% [A]
Rainfall	2184	100.0% [A]
Relative Humidity	2184	100.0% [A]
Wind Speed/Direction	2184 / 2132	100.0% / 98% [A]
TSP/Metals	15 [B]	94 %
PAHs	8 [B]	100%
Dioxins and Furans	4 [B]	100%

Notes:

A. Includes instrumentation issues summarized in Table 3-5, quarterly MOECC audit, and monthly calibrations.
B. Number of filters/24-hour average samples.

Table 3-9 Summary of Data Recovery Rates for the Fence Line Station – April to June 2017

Parameter	Valid Measurements [B]	Data Recovery Rate (%)
TSP/Metals [A]	16	100%

Notes:

A. Includes instrumentation issues summarized in Table 3-6.

B. Number of filters/24-hour average samples.

3.4 CONTINUOUS MONITOR INTERNAL CALIBRATIONS

Summaries of the Courtice WPCP and Rundle Road Station SO_2 and NO_X monitor daily internal zero checks for Q2 2017 are presented in **Appendix A**. Daily internal zero checks are informal checks of an analyzer's response intended as a quick, convenient way to check for possible analyzer malfunction or calibration drift. They are not recommended as a basis for analyzer zero or span adjustments, calibration updates, or adjustment of ambient data (Environment Canada, 1995).

All internal zero calibrations of the SO_2 and NO_X analyzers at the Courtice WPCP and Rundle Road Stations were less than 5 ppb throughout Q2.

3.5 FIELD CONDITION OBSERVATIONS

During Q2 2017 activities in the vicinity of the ambient air monitoring stations were observed that had the potential to be affecting air quality levels during the period. These observations were noted by Stantec and Valley Environmental Services personnel during field visits.

Construction of Highway 418, which will connect with Highway 401 between Courtice Road and Crago Road was ongoing during this quarter. Highway 418 will provide a north-south link between Highway 401 and the Phase 2 expansion of Highway 407. The Highway 401/418 interchange will be located almost directly north of the DYEC. Throughout the quarter, excavator/ dump truck crews were observed working in a large area immediately north of the DYEC between Energy Drive and Highway 401 for the relocation/re-alignment of South Service Road. The new South Service Road will be located immediately south of the existing South Service Road and run between Courtice Road and Crago Road. A photograph of South Service Road realignment construction during Q2 is shown in **Figure 3-1**.

On the north side of Highway 401, the highway construction contractor has located a construction camp along Baseline Road about 1.5 km west of the Rundle Road Station. A photograph of construction activities during Q2 2017 just north of Highway 401 and about 1.5 km west of the Rundle Road Station is presented in **Figure 3-2**. A photograph of the construction area continuing north of Baseline Road is presented in **Figure 3-3**.

Other activities in the vicinity of the monitoring stations that had the potential to affect local air quality included trucks idling while loading and unloading supplies at the WPCP Chemical Building about 50 m north of the Courtice WPCP Station.

During Q2, there were some periods where waste feed to a boiler was halted, but there were no complete shutdowns of either boiler. The feed stops are summarized in **Table 3-10**.

Table 3-10 Feed Stops in Q2 2017

Date	Time	Boiler #1 Status	Boiler #2 Status
April 3-4	21:13 - 00:41	Feed stop	Online
April 4	01:01 - 05:32	Online	Feed stop
May 11	10:22 - 10:39	Online	Feed stop
May 18	16:21 - 17:43	Online	Feed stop
June 17	5:24 - 10:33	Online	Feed stop
June 27	9:25 - 11:33	Online	Feed stop

Notes:
Feed stops indicate that waste feed into the boiler was halted for a period, not that the boiler was offline.

Figure 3-1 Looking South from Existing South Service Road at South Service Road Realignment Construction (June 1, 2017)

Figure 3-2 View Looking Southwest from Baseline Road at the Highway 418 Construction Activities North of Highway 401 (May 30, 2017)

Figure 3-3 View Looking North from Baseline Road at the Highway 418 Construction Area (May 23, 2017)

4.0 SUMMARY OF AMBIENT MEASUREMENTS

The following sections provide summaries of the validated data and the validation completed on each parameter.

4.1 METEOROLOGICAL DATA

A summary of the maximum, minimum, arithmetic mean, and standard deviation of the hourly average meteorological parameters measured at the two monitoring stations for the April to June 2017 period are presented in **Table 4-1**.

Table 4-1 Summary of Hourly Meteorological Measurements – April to June 2017

Parameter		Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)	Units
Temperature	Maximum	25.5	26.5	^{0}C
	Minimum	-0.8	-2.0	^{0}C
	Mean (April)	7.7	7.7	^{0}C
	Mean (May)	11.1	11.3	^{0}C
	Mean (June)	16.5	16.8	^{0}C
	Mean (Period)	11.8	11.9	^{0}C
	Standard Deviation	5.1	5.6	^{0}C
Rainfall	Maximum	11.9	15.6	mm
	Minimum	0.0	0.0	mm
	Mean (April)	0.13	0.14	mm
	Mean (May)	0.18	0.21	mm
	Mean (June)	0.17	0.19	mm
	Mean (Period)	0.16	0.18	mm
	Standard Deviation	0.68	0.78	mm
Relative Humidity	Maximum	95.3	99.3	%
	Minimum	21.0	24.9	%
	Mean (April)	68.6	72.0	%
	Mean (May)	71.5	75.3	%
	Mean (June)	74.2	77.1	%
	Mean (Period)	71.4	74.8	%
	Standard Deviation	14.9	16.3	%

Table 4-1 Summary of Hourly Meteorological Measurements – April to June 2017

Parameter		Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)	Units
Pressure [A]	Maximum	30.2	-	in Hg
	Minimum	29.0	-	in Hg
	Mean (April)	29.7	-	in Hg
	Mean (May)	29.6	-	in Hg
	Mean (June)	29.6	-	in Hg
	Mean (Period)	29.6	-	in Hg
	Standard Deviation	0.2	-	in Hg
Wind Speed [B]	Maximum	37.9	33.0	km/hr
	Minimum	0.2	0.0	km/hr
	Mean (April)	14.2	13.0	km/hr
	Mean (May)	12.4	10.6	km/hr
	Mean (June)	8.7	8.9	km/hr
	Mean (Period)	11.7	10.8	km/hr
	Standard Deviation	7.4	6.1	km/hr

Notes:

A. Pressure is not measured at the Rundle Road Station.

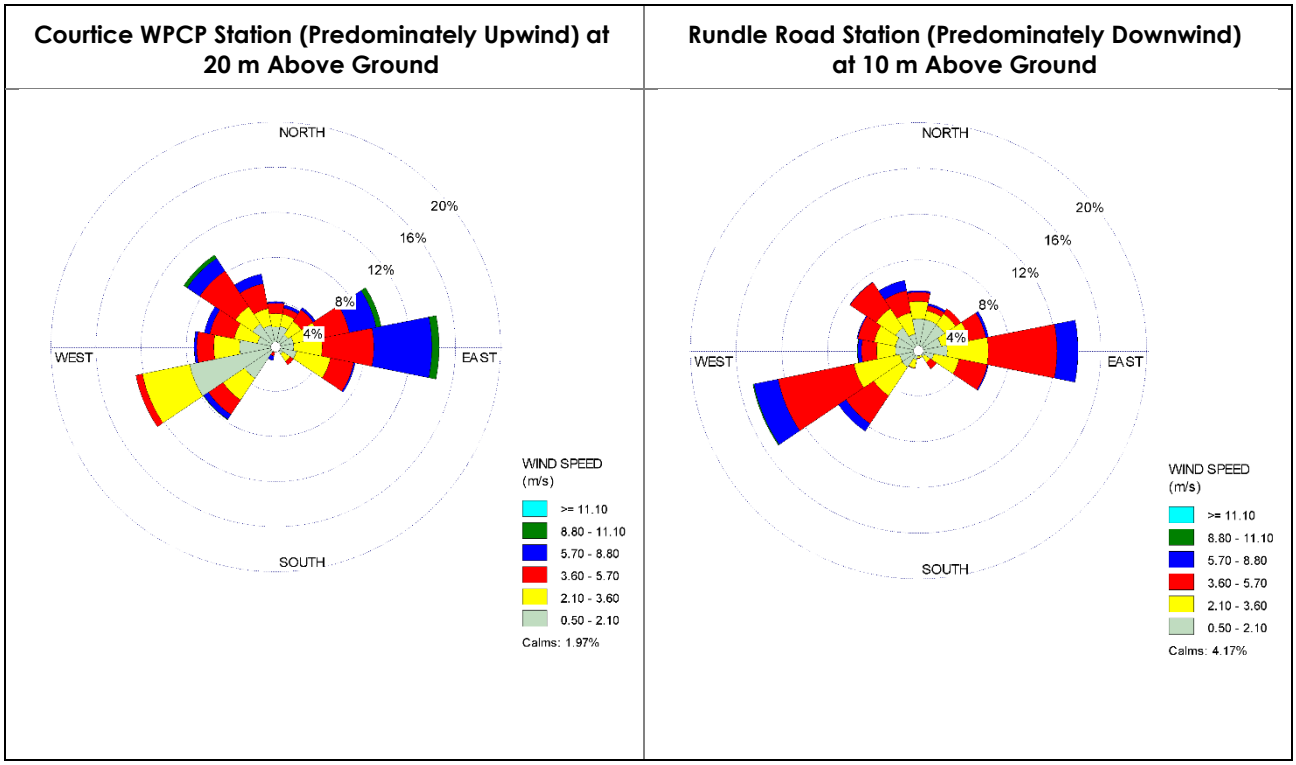
B. Wind speed at Courtice WPCP Station measured at 20 m and at Rundle Road Station at 10 m.

Wind roses showing the directionality and speed at each location are presented in **Figure 4-1**. The length of the radial barbs gives the total percent frequency of winds from the indicated direction, while portions of the barbs of different widths indicate the frequency associated with each wind speed category.

Winds over the three-month period at the Courtice WPCP Station occurred predominantly from easterly and west-southwesterly directions. Wind contribution from the south was low. Higher wind speeds occurred from northwesterly and easterly directions.

At the Rundle Road Station, the wind rose over the three-month period shows winds predominantly occurring from west-southwesterly and easterly directions. Higher wind speeds occurred from westerly and easterly directions relative to other directions.

Figure 4-1 Wind Roses for April to June 2017



4.2 CAC AMBIENT AIR QUALITY MEASUREMENTS

A summary of the maximum, minimum, arithmetic mean, and standard deviation of the CAC pollutant concentrations measured at each station are presented in **Table 4-2**. Also presented in this table are the number of exceedances (if any occurred), of the relevant O. Reg. 419/05 Schedule 3 Standards, Ontario Ambient Air Quality Criteria (AAQC) or health-based criteria for each contaminant. All monitored contaminants were below their applicable criteria during the period April to June 2017.

Nitric oxide (NO) has no regulatory criteria as discussed in Section 4.2.2 below. There are both hourly and daily AAQCs as well as O. Reg. 419/05 Schedule 3 Standards for NO_X which are based on health effects of NO_2,; therefore, the AAQC were compared to measured NO_2 concentrations in this report. As per the current (December 2016) version of ACB List, the Schedule 3 Standard for NO_X was also compared to the monitored NO_X levels.

A comparison of the maximum measured data to their respective air quality criteria is presented graphically in **Figure 4-2**.

Table 4-2 Summary of Ambient CAC Monitoring Data – April to June 2017

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Criteria			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		(ppb)	(µg/m³)		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
SO_2	1	250	690	Maximum	56.4	151.5	8.9	24.5
				Minimum	0.0	0.0	0.0	0.0
				Mean (April)	1.6	4.3	0.9	2.4
				Mean (May)	0.9	2.5	1.1	2.9
				Mean (June)	1.1	3.1	0.4	1.2
				Mean (Period)	1.2	3.3	0.8	2.2
				Standard Deviation	3.6	9.8	0.7	1.8
				# of Exceedances	0	0	0	0
	24	100	275	Maximum	18.7	50.8	2.0	5.6
				Minimum	0.0	0.0	0.0	0.0
				Mean (April)	1.6	4.4	0.9	2.4
				Mean (May)	1.0	2.6	1.1	2.9
				Mean (June)	1.1	3.1	0.5	1.2
				Mean (Period)	1.2	3.4	0.8	2.2
				Standard Deviation	2.1	5.6	0.4	1.1
				# of Exceedances	0	0	0	0

Table 4-2 Summary of Ambient CAC Monitoring Data – April to June 2017

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Criteria			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		(ppb)	(µg/m³)		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
$PM_{2.5}$	24	N/A	28 [A]	Maximum	-	16.6	-	15.9
				Minimum	-	0.2	-	0.3
				Mean (April)	-	4.6	-	5.2
				Mean (May)	-	4.6	-	4.9
				Mean (June)	-	7.0	-	5.7
				Mean (Period)	-	5.5	-	5.3
				Standard Deviation	-	3.8	-	3.2
				# of Exceedances	-	N/A	-	N/A
NO_2	1	200 [B]	400 [B]	Maximum	40.9	82.7	33.6	65.3
				Minimum	0.0	0.0	0.0	0.0
				Mean (April)	7.2	14.3	4.3	8.6
				Mean (May)	6.4	12.5	4.6	8.9
				Mean (June)	5.1	9.8	4.7	9.0
				Mean (Period)	6.2	12.2	4.5	8.8
				Standard Deviation	6.4	12.6	4.4	8.6
				# of Exceedances	0	0	0	0
	24	100 [B]	200 [B]	Maximum	17.7	34.7	12.3	23.3
				Minimum	0.8	1.6	0.0	0.0
				Mean (April)	7.2	14.3	4.3	8.6
				Mean (May)	6.4	12.6	4.5	8.8

Table 4-2 Summary of Ambient CAC Monitoring Data – April to June 2017

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Criteria			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		(ppb)	(µg/m³)		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
				Mean (June)	5.2	10.0	4.7	9.0
				Mean (Period)	6.3	12.3	4.5	8.8
				Standard Deviation	3.3	6.4	2.6	5.0
				# of Exceedances	0	0	0	0
NO [C]	1	N/A	N/A	Maximum	41.6	52.7	36.2	45.8
				Minimum	0.0	0.0	0.0	0.0
				Mean (April)	1.4	1.9	1.7	2.2
				Mean (May)	1.5	2.0	1.7	2.2
				Mean (June)	2.3	3.0	1.9	2.4
				Mean (Period)	1.8	2.3	1.8	2.2
				Standard Deviation	4.2	5.3	2.6	3.3
				# of Exceedances	N/A	N/A	N/A	N/A
	24	N/A	N/A	Maximum	15.3	19.3	7.2	9.0
				Minimum	0.0	0.0	0.1	0.1
				Mean (April)	1.4	1.9	1.7	2.2
				Mean (May)	1.6	2.0	1.7	2.2
				Mean (June)	2.4	3.0	1.9	2.4
				Mean (Period)	1.8	2.3	1.8	2.2
				Standard Deviation	2.2	2.8	1.1	1.4
				# of Exceedances	N/A	N/A	N/A	N/A

Table 4-2 Summary of Ambient CAC Monitoring Data – April to June 2017

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Criteria			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		(ppb)	(µg/m³)		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
NOx	1	200 [B]	400 [B]	Maximum	64.5	124.1	52.4	101.7
				Minimum	0.0	0.0	0.0	0.0
				Mean (April)	8.7	17.4	6.1	12.0
				Mean (May)	8.0	15.6	6.3	12.3
				Mean (June)	7.5	14.5	6.7	12.8
				Mean (Period)	8.1	15.8	6.3	12.3
				Standard Deviation	9.5	18.6	6.2	12.1
				# of Exceedances	0	0	0	0
	24	100 [B]	200 [B]	Maximum	28.4	55.0	17.8	34.2
				Minimum	0.8	1.6	0.2	0.4
				Mean (April)	8.8	17.4	6.1	12.0
				Mean (May)	8.1	15.8	6.3	12.2
				Mean (June)	7.6	14.7	6.7	12.9
				Mean (Period)	8.2	16.0	6.3	12.4
				Standard Deviation	4.9	9.5	3.4	6.5
				# of Exceedances	0	0	0	0

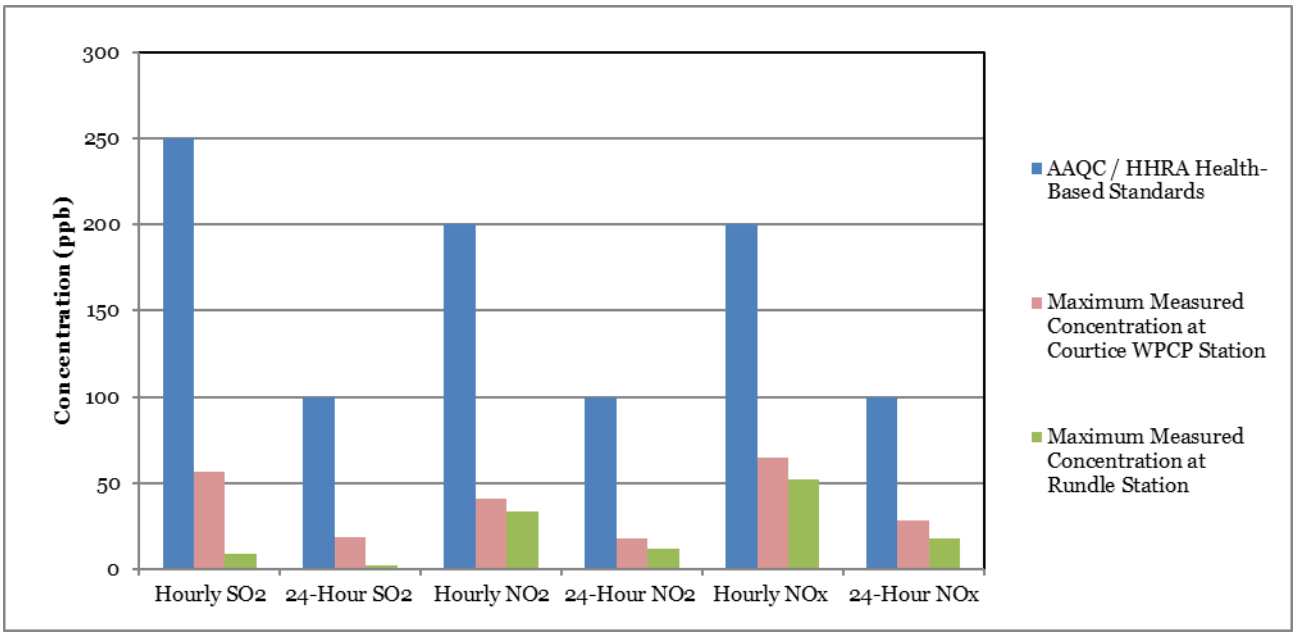
Notes:

A. Canadian Ambient Air Quality Standard for Respirable Particulate Matter. The Respirable Particulate Matter Objective is referenced to the 98th percentile over 3 consecutive years.

B. As per current version (December 2016) of the ACB List, the air standard for NO_X is compared to a monitored NO_X concentration, although the O. Reg. 419/05 Schedule 3 Standard for NO_X is based on health effects of NO_2.

C. NO has no regulatory criteria.

Figure 4-2 Comparison of NO_2 / NO_X and SO_2 Ambient Air Quality Monitoring Data to Applicable Criteria



Detailed discussion for each measured contaminant is presented in the following sections.

4.2.1 Sulphur Dioxide (SO_2)

Data summaries are presented in **Appendix B** for sulphur dioxide for each station and month as well as time history plots of the hourly and 24-hour average SO_2 concentrations. For the hourly and 24-hour averages, the Ontario AAQCs of 250 ppb and 100 ppb (690 µg/m³ and 275 µg/m³) are shown with blue lines in the respective plot. As shown in these figures, measured ambient SO_2 concentrations at both stations were well below the Ontario AAQCs.

The maximum hourly and 24-hour average SO_2 concentrations measured at the Courtice WPCP Station during April to June 2017 were 56.4 and 18.7 ppb (151.5 and 50.8 µg/m³) respectively, which are 22.6% and 18.7% of the applicable 1-hour and 24-hour Ontario AAQCs. The maximum hourly and 24-hour average SO_2 concentrations measured at the Rundle Road Station during this quarter were 8.9 and 2 ppb (24.5 and 5.6 µg/m³) respectively, which are 3.5% and 2% of the applicable 1-hour and 24-hour Ontario AAQCs.

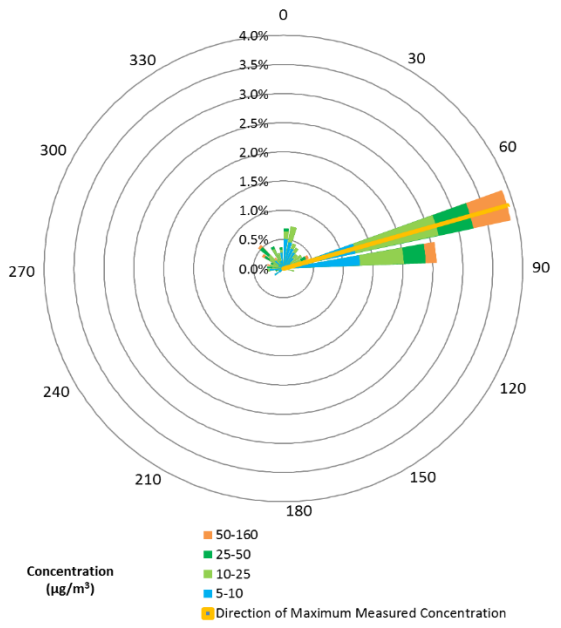
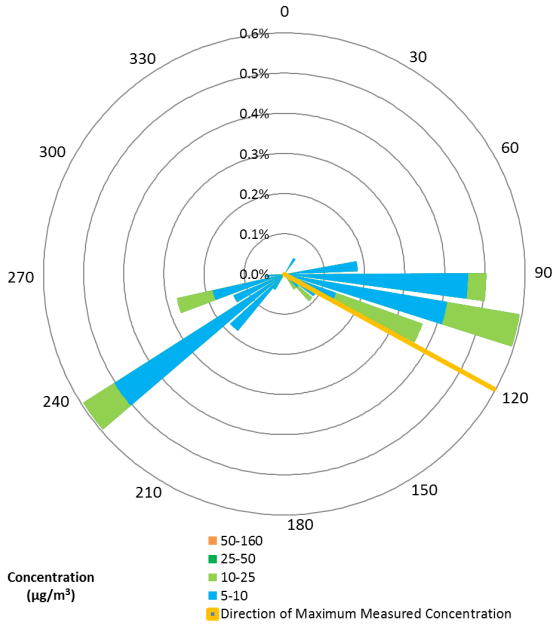
Pollution roses of hourly average SO_2 concentrations measured at the Courtice WPCP Station and Rundle Road Station are presented in **Figure 4-3**. The pollution rose plots present measured hourly average contaminant concentrations versus measured wind direction (over 10° wind sectors). Concentrations less than 5 µg/m³, which account for 85% of the measurements at the Courtice WPCP and 94% at the Rundle Road Station, have been removed from the plot to allow the distribution of maximum levels to be more clearly shown in the figure. For the Courtice WPCP

Station, higher hourly concentrations were measured when winds were blowing from the east-northeastern directions. For the Rundle Road Station, higher hourly concentrations occurred for east-southeasterly and southwesterly winds.

The maximum hourly SO_2 concentrations measured at the Courtice WPCP and Rundle Road Stations occurred on April 3, 2017 at 20:00 and May 20, 2017 at 12:00, measuring 56.4 and 8.9 ppb (151.5 and 24.5 µg/m^3), respectively. The highest measured concentration at the Courtice WPCP Station occurred for winds blowing from an east-northeasterly direction, for which the Courtice WPCP, a CN railroad and the St. Mary's Cement plant were upwind. The maximum measured concentration at the Rundle Road Station occurred for an east-southeasterly wind for which a CP railroad, Highway 401 and the St. Mary's Cement plant were upwind.

The maximum 24-hour average SO_2 concentrations at the Courtice WPCP and Rundle Road Stations were 18.7 and 2 ppb (50.8 and 5.6 µg/m^3) and occurred on April 4, 2017 and April 25, 2017 respectively. The wind directions during the measurements at the Courtice WPCP and Rundle Road Stations were both from the east. The Courtice WPCP, a CN railroad and the St. Mary's Cement plant were upwind of the Courtice WPCP Station, while for the Rundle Road Station measurement, a CP railroad and local roads were generally upwind of the station for this wind direction.

Figure 4-3 Pollution Roses of Measured Hourly Average SO_2 Concentrations – April to June 2017

Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)
	

4.2.2 Nitrogen Dioxide (NO_2)

Nitrogen oxides (NO_X) are almost entirely made up of nitric oxide (NO) and nitrogen dioxide (NO_2). Together, they are often referred to as NO_X. Most NO_2 in the atmosphere is formed by the oxidation of NO, which is emitted directly by combustion processes, particularly those at high temperature and pressure. Exposure to both NO and NO_2 can result in adverse health effects to an exposed population. NO_2 is the regulated form of NO_X. Similar to other jurisdictions (e.g., Alberta Environment, World Health Organization), the O. Reg. 419/05 Schedule 3 Standards for NO_X are based on health effects of NO_2, as health effects are seen at much lower concentrations of NO_2 than NO. In this report, because NO_2 is the regulated form of NO_X, the AAQC were compared to measured NO_2 concentrations. However, as per the current (December 2016) version of the ACB List, the Schedule 3 NO_X criteria were also compared to the monitored NO_X concentrations (see Section 4.2.3 below).

Data summaries are presented in **Appendix C** for nitrogen dioxide for each station and month as well as time history plots of the hourly and 24-hour average NO_2 concentrations. For the hourly and 24-hour averages, the Ontario AAQCs of 200 ppb and 100 ppb (400 µg/m^3 and 200 µg/m^3) are shown with blue lines on the respective plot. As shown in these figures, measured ambient NO_2 concentrations at both stations were well below the Ontario AAQCs.

The maximum hourly and 24-hour average NO_2 concentrations measured at the Courtice WPCP Station during this quarter were 40.9 and 17.7 ppb (82.7 and 34.7 µg/m^3) respectively, which are 20.4% and 17.7% of the applicable 1-hour and 24-hour Ontario AAQCs. At the Rundle Road Station, the maximum measured hourly and 24-hour average concentrations were 33.6 and 12.3 ppb (65.3 and 23.3 µg/m^3), which are 16.8% and 12.3% of the applicable 1-hour and 24-hour Ontario AAQCs.

Pollution roses of measured hourly average NO_2 concentrations are presented in **Figure 4-4**. To more clearly show the distribution of maximum levels in the figures, concentrations less than 10 µg/m^3, which account for 61% of the measurements at the Courtice WPCP Station and 64% at the Rundle Road Station, have been removed from the plots. The measured hourly average concentrations at the Courtice WPCP Station were higher for winds from easterly directions. For the Rundle Road Station, higher measured hourly average concentrations occurred for winds blowing from the southwest.

The maximum measured hourly average NO_2 concentration at the Courtice WPCP was 40.9 ppb (82.7 µg/m^3) on April 13, 2017 at 20:00. During this hour, the wind at the Courtice WPCP Station was blowing from the northwest, for which Highway 401 and the CN Railroad were upwind. The measured hourly average NO_2 concentration at the MOECC Oshawa Station in the same hour was 8 ppb which is lower than that at the Courtice WPCP Station, suggesting the elevated hourly average concentration was due to local emissions sources.

The maximum measured hourly average NO_2 concentration at the Rundle Road Station was 33.6 ppb (65.3 µg/m^3) on April 10, 2017 at 20:00, at which time winds were blowing from the west-southwest. A CP railroad, Highway 401 and Highway 418 construction areas were upwind of the Rundle Road Station for this direction. At the same time, the measured NO_2 concentration at the MOECC Oshawa Station was 12 ppb, which is lower than the Rundle Station, suggesting that the elevated Rundle Road Station measurement was due to local emission sources.

The maximum measured 24-hour average NO_2 concentration at the Courtice WPCP Station of 17.7 ppb (34.7 µg/m^3) occurred on April 4, 2017. The wind direction during this measurement was from the east for which the Courtice WPCP, a CN railroad and the St. Mary's Cement plant were upwind. The measured 24-hour NO_2 concentration at the MOECC Oshawa Station for the same day was 5.4 ppb which is lower than that at the Courtice WPCP Station, suggesting the elevated hourly concentration was due to local emissions sources.

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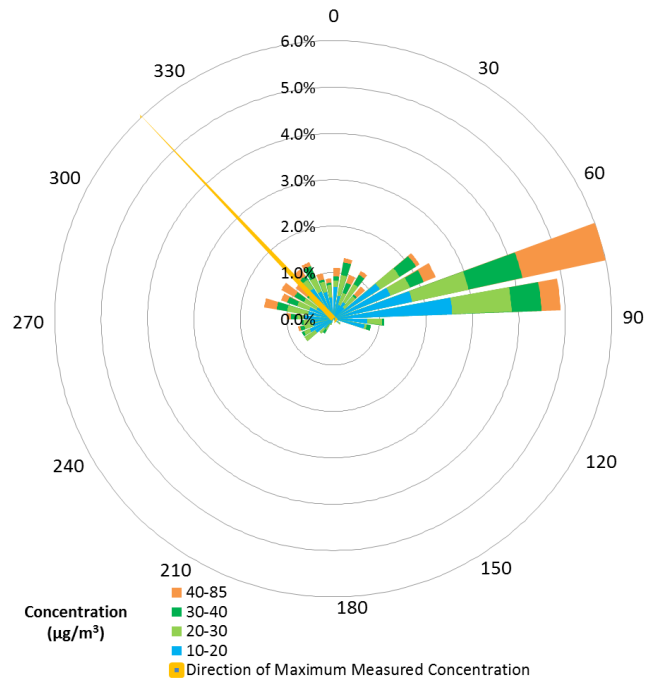
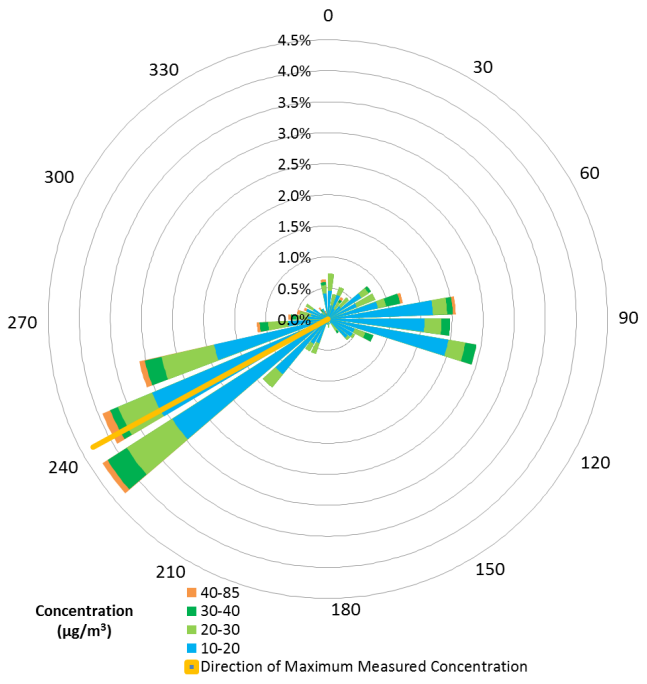
The maximum measured 24-hour average NO_2 concentration of 12.3 ppb (23.3 µg/m^3)at the Rundle Road Station occurred on June 13, 2017. Winds were from the west-southwest for which a CP railroad, Highway 401 and Highway 418 construction activities are upwind. The measured 24-hour average NO_2 concentration at the MOECC Oshawa Station for the same day was 13.5 ppb which is comparable to that measured at the Rundle Road Station, suggesting the elevated 24-hour concentration was due to regional sources.

The maximum measured hourly and 24-hour average NO_2 concentrations of 37 ppb and 13 ppb respectively at the MOECC Oshawa Station during this quarter were comparable to the maximum levels measured at the Courtice WPCP and Rundle Road Stations.

Figure 4-4 Pollution Roses of Measured Hourly Average NO_2 Concentrations – April to June 2017

Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)
	

4.2.3 Nitrogen Oxides (NO_X)

Data summaries are presented in **Appendix D** for nitrogen oxides for each station and month as well as time history plots of the hourly and 24-hour average NO_X concentrations. For the hourly and 24-hour averages, the O. Reg. 419/05 Schedule 3 Standards of 200 ppb and 100 ppb (400 µg/m^3 and 200 µg/m^3) are shown with blue lines on the respective plot. As shown in these figures, the maximum measured ambient hourly and 24-hour average NO_X concentrations at the Courtice WPCP Station were below the Ontario AAQCs during this quarter. The measured concentrations at the Rundle Road Station were also well below the Ontario AAQCs.

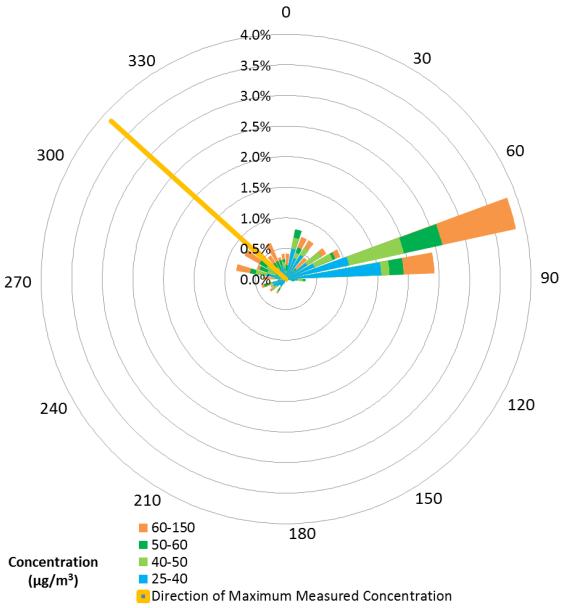
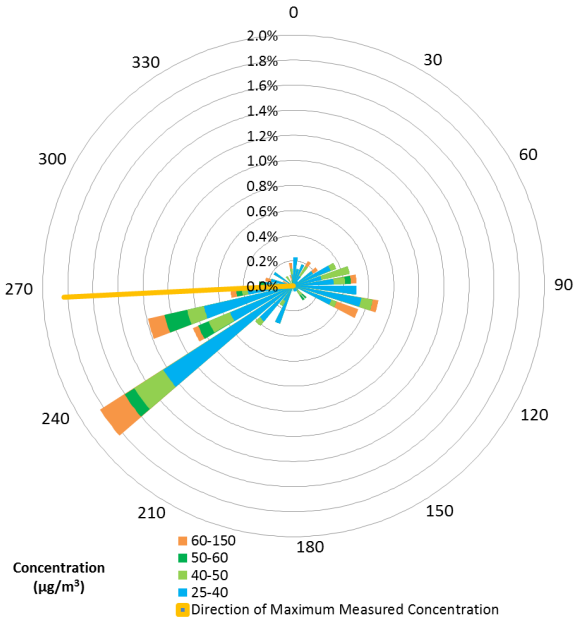
As shown in **Table 4-2**, the maximum hourly average NO_X concentration measured at the Courtice WPCP Station was 64.5 ppb (124.1 µg/m^3), which is 32.2% of the 1-hour Ontario AAQCs. The maximum 24-hour average NO_X concentration measured at this station was 28.4 ppb (55 µg/m^3), which is 28.4% of the applicable 24-hour Ontario AAQCs. At the Rundle Road Station, the maximum hourly and 24-hour average concentrations measured during this quarter were 52.4 and 17.8 ppb (101.7 and 34.2 µg/m^3), which are 26.2% and 17.8% of the Ontario AAQCs.

Pollution roses of measured hourly average NO_X concentrations for the Courtice WPCP Station and the Rundle Road Station are presented in **Figure 4-5**. Concentrations less than 25 µg/m^3, which account for 81% and 86% of the measurements at the Courtice WPCP and Rundle Road Stations, respectively, have been removed from the plots to allow the distribution of maximum levels to be more clearly shown in the figures. Higher measured hourly average NO_X concentrations at the Courtice WPCP Station occurred for winds blowing from east-northeasterly directions. At the Rundle Road Station, higher measured hourly average concentrations occurred for southwesterly wind directions.

The maximum measured hourly average NOx concentrations at the Courtice WPCP and Rundle Road Stations were 64.5 and 52.4 ppb (124.1 and 101.7 µg/m^3) and occurred on June 8, 2017 at 21:00 and 6:00 respectively. Winds at the Courtice WPCP Station during the measurement were blowing from the northwest for which agricultural lands, a CN railroad and Highway 401 were upwind. Winds at the Rundle Road Station were from the west for which local roads, commercial facilities along Baseline Road and Highway 418 construction activities were upwind.

The maximum measured 24-hour average NOx concentrations at the Courtice WPCP and Rundle Road Stations of 28.4 and 17.8 ppb (55 and 34.2 µg/m^3) were both observed on June 9, 2017. Wind directions at both stations were from the west during the period. Agricultural lands were upwind of the Courtice WPCP Station, while local roads, commercial facilities along Baseline Road and Highway 418 construction areas were upwind of the Rundle Road Station during this period.

Figure 4-5 Pollution Roses of Measured Hourly Average NO_x Concentrations – April to June 2017

Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)
	

4.2.4 Particulate Matter Smaller than 2.5 Microns ($PM_{2.5}$)

Data summaries and time history plots of measured 24-hour average concentrations are presented in **Appendix E** for $PM_{2.5}$ for the Courtice WPCP and Rundle Road Stations. The maximum measured 24-hour average $PM_{2.5}$ concentrations at the Courtice WPCP and the Rundle Road Stations were 16.6 µg/m³ and 15.9 µg/m³ during this quarter. It should be noted that since an exceedance of the criteria for $PM_{2.5}$ requires the average of the 98th percentile levels in each of three consecutive calendar years to be greater than 28 µg/m³ (CAAQS) or 30 µg/m³ (HHRA criteria) whereas the $PM_{2.5}$ measurement period at both stations in the report was three months, there is insufficient data in a quarter to determine with any certainty if exceedances of the CAAQS/HHRA criteria would occur. Discussion of $PM_{2.5}$ measurements with respect to the CAAQS/HHRA criteria will be provided in the 2017 annual report, at which time sufficient data will have been collected to make comparisons.

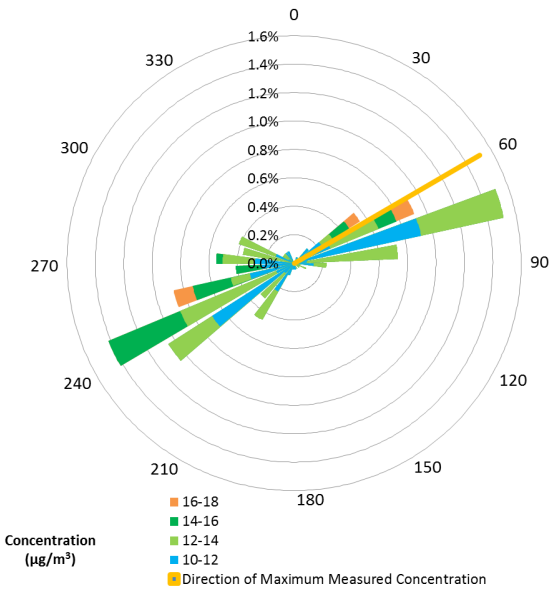
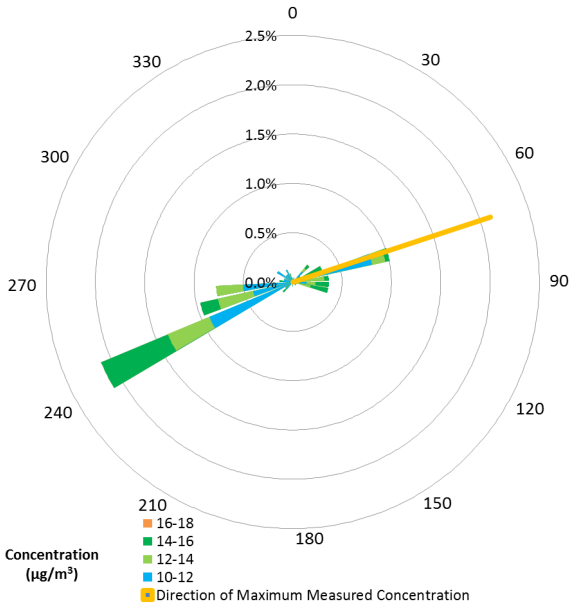
Pollution roses showing the measured 24-hour average ambient $PM_{2.5}$ concentrations versus direction are shown in **Figure 4-6** for both monitoring stations. Concentrations less than 10 µg/m³,

which account for 65% of the measurements at the Courtice WPCP Station and 87% at the Rundle Road Station, have been removed from the plot to allow the distribution of maximum levels to be more clearly shown in the figure. Higher measured 24-hour average concentrations occurred for west-southwesterly and east-northeasterly winds for the Courtice WPCP Station and the Rundle Road Station.

The maximum measured 24-hour average $PM_{2.5}$ concentrations at the Courtice WPCP and Rundle Road Stations occurred on June 4, 2017 and April 19, 2017 measuring 16.6 and 15.9 µg/m^3 respectively. The maximum measured concentration at the Courtice WPCP Station occurred when winds were blowing from the east-northeast for which a CN railroad, the Courtice WPCP, DYEC and St. Mary's Cement Facility are upwind. Based on the DYEC's operational records, the opacity measured by the continuous emission monitors on each boiler during this period was 0%. On the same day, the MOECC Oshawa Station measured 7.8 µg/m^3, which is lower than the Courtice WPCP measurement and suggests the Courtice WPCP Station was influenced by local emission sources. The maximum measured concentration at the Rundle Road Station also occurred when winds were from the east-northeast for which a CP railroad and local roads are upwind. The MOECC Oshawa Station measured a 24-hour average concentration of 4.5 µg/m^3 on the same day suggesting the Rundle Road Station was influenced by local emission sources.

The maximum measured 24-hour average $PM_{2.5}$ concentration at the MOECC Oshawa Station during Q2 was 14.4 µg/m^3, which is comparable to the maximum measurements at both stations during this quarter.

Figure 4-6 Pollution Roses of Measured 24-Hour Average $PM_{2.5}$ Concentrations – April to June 2017

Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)
	

4.3 AMBIENT TSP / METALS CONCENTRATIONS

A summary of the maximum and minimum ambient TSP and metals concentrations (for a daily averaging period) are presented in **Table 4-3**. A detailed summary of the concentrations measured for each sample is presented in **Appendix G**.

The maximum measured concentrations of TSP and all metals with MOECC air quality criteria were well below their applicable 24-hour criteria (shown in **Table 4-3** below) at all three stations with the exception of one TSP measurement at the Rundle Road Station on June 12, 2017. The TSP concentration for this 24-hour sample was 4.8% over the applicable MOECC and HHRA criteria. The maximum measured TSP concentrations in Q2 for the Fence Line and Courtice Stations were also measured on the same day, suggesting that TSP levels were elevated throughout the area on this day. Wind directions during this day were blowing from west-southwesterly to west-northwesterly directions, for which local roads, commercial businesses and Highway 418 construction activities would be upwind of the Rundle Road Station. Under these conditions, the DYEC was not upwind of the Rundle Road Station. The continuous emissions monitoring system at the DYEC indicated opacity at 0% throughout this day from both boilers. A

summary of the wind direction and potential source contributions for this measurement is presented in **Table 4-4.**

A notification of a potential exceedance was prepared by Stantec and submitted to the Region of Durham, York, MOECC, and the Medical Officer of Health on July 21, 2017 in accordance with Section 9 of the Ambient Air Quality Monitoring Plan (Stantec, 2012) and the final version of the notification was submitted to the Region of Durham on July 26, 2017. A copy of the letter is provided in Appendix J. A root cause analysis was completed and the potential impact on human health was evaluated by a toxicologist. Based on Stantec's review, the likely cause of the TSP exceedance was high background TSP levels combined with Highway 418 construction activities. The measured TSP concentration was not expected to have resulted in an adverse effect on human health or the environment.

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Table 4-3 Summary of Measured Ambient TSP/Metals Concentrations

Contaminant	Units	MOECC Standard	HHRA Health Based Criteria	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)			Fence Line		
				Maximum	Minimum	No. of Exceedances	Maximum	Minimum	No. of Exceedances	Maximum	Minimum	No. of Exceedances
Particulate	µg/m³	120	120	60	12	0	126	12	1	76	12	0
Total Mercury (Hg)	µg/m³	2	2	1.31E-05	6.18E-06 A	0	1.98E-05	6.13E-06 A	0	1.89E-05	6.11E-06 A	0
Aluminum (Al)	µg/m³	4.8	-	4.49E-01	1.66E-02 A	0	1.07E+00	1.65E-02 A	0	5.31E-01	1.56E-02 A	0
Antimony (Sb)	µg/m³	25	25	3.41E-03 A	3.09E-03 A	0	3.48E-03 A	3.07E-03 A	0	3.34E-03 A	3.05E-03 A	0
Arsenic (As)	µg/m³	0.3	0.3	2.05E-03 A	1.85E-03 A	0	2.09E-03 A	1.84E-03 A	0	2.00E-03 A	1.83E-03 A	0
Barium (Ba)	µg/m³	10	10	1.65E-02	4.17E-03	0	2.10E-02	2.84E-03	0	1.80E-02	3.24E-03	0
Beryllium (Be)	µg/m³	0.01	0.01	3.41E-04 A	3.09E-04 A	0	3.48E-04 A	3.07E-04 A	0	3.34E-04 A	3.05E-04 A	0
Bismuth (Bi)	µg/m³	-	-	2.05E-03 A	1.85E-03 A	-	2.09E-03 A	1.84E-03 A	-	2.00E-03 A	1.83E-03 A	-
Boron (B)	µg/m³	120	-	5.39E-03	1.85E-03 A	0	6.12E-03	1.84E-03 A	0	6.67E-03	1.83E-03 A	0
Cadmium (Cd)	µg/m³	0.025	0.025	6.82E-04 A	6.18E-04 A	0	6.96E-04 A	6.13E-04 A	0	2.64E-03	6.11E-04 A	0
Chromium (Cr)	µg/m³	0.5	-	6.44E-03	1.54E-03 A	0	1.75E-02	1.53E-03 A	0	5.49E-03	1.56E-03 A	0
Cobalt (Co)	µg/m³	0.1	0.1	6.82E-04 A	6.18E-04 A	0	6.96E-04 A	6.13E-04 A	0	6.68E-04 A	6.11E-04 A	0
Copper (Cu)	µg/m³	50	-	7.54E-02	1.52E-02	0	1.41E-01	2.08E-02	0	7.21E-02	1.51E-02	0
Iron (Fe)	µg/m³	4	-	9.13E-01	1.68E-01	0	2.26E+00	1.27E-01	0	1.10E+00	1.16E-01	0
Lead (Pb)	µg/m³	0.5	0.5	3.68E-03	9.33E-04 A	0	5.07E-03	9.35E-04 A	0	4.85E-03	9.34E-04 A	0
Magnesium (Mg)	µg/m³	-	-	5.61E-01	4.31E-02	-	1.20E+00	1.65E-02 A	-	6.67E-01	6.60E-02	-
Manganese (Mn)	µg/m³	0.4	-	3.18E-02	3.64E-03	0	6.54E-02	2.91E-03	0	3.96E-02	4.05E-03	0
Molybdenum (Mo)	µg/m³	120	-	4.44E-03	9.33E-04 A	0	4.48E-03	9.35E-04 A	0	1.00E-03 A	9.16E-04 A	0
Nickel (Ni)	µg/m³	0.2	-	2.63E-03	9.33E-04 A	0	3.29E-03	9.20E-04 A	0	2.52E-03	9.16E-04 A	0
Phosphorus (P)	µg/m³	-	-	9.76E-02	8.44E-03 A	-	1.45E-01	8.48E-03 A	-	1.07E-01	8.35E-03 A	-
Selenium (Se)	µg/m³	10	10	3.41E-03 A	3.09E-03 A	0	3.48E-03 A	3.07E-03 A	0	3.34E-03 A	3.05E-03 A	0
Silver (Ag)	µg/m³	1	1	1.71E-03 A	1.54E-03 A	0	1.74E-03 A	1.53E-03 A	0	1.67E-03 A	1.53E-03 A	0
Strontium (Sr)	µg/m³	120	-	8.21E-03	1.13E-03	0	2.59E-02	9.92E-04	0	9.86E-03	1.06E-03	0
Thallium (Tl)	µg/m³	-	-	3.41E-03 A	3.09E-03 A	-	3.48E-03 A	3.07E-03 A	-	3.34E-03 A	3.05E-03 A	-
Tin (Sn)	µg/m³	10	10	3.41E-03 A	3.09E-03 A	0	3.48E-03 A	3.07E-03 A	0	3.34E-03 A	3.05E-03 A	0
Titanium (Ti)	µg/m³	120	-	1.91E-02	3.09E-03 A	0	4.35E-02	3.07E-03 A	0	2.45E-02	3.11E-03 A	0
Vanadium (V)	µg/m³	2	1	1.71E-03 A	1.54E-03 A	0	1.74E-03 A	1.53E-03 A	0	1.67E-03 A	1.53E-03 A	0
Zinc (Zn)	µg/m³	120	-	5.43E-02	1.08E-02	0	4.76E-02	9.57E-03	0	5.13E-02	6.66E-03	0
Zirconium (Zr)	µg/m³	20	-	1.71E-03 A	1.54E-03 A	0	1.74E-03 A	1.53E-03 A	0	1.67E-03 A	1.53E-03 A	0
Total Uranium (U)	µg/m³	1.5	-	1.53E-04 A	1.39E-04 A	0	1.57E-04 A	1.38E-04 A	0	1.50E-04 A	1.37E-04 A	0

Note: A. Measured concentration was less than the laboratory method detection limit.

Table 4-4 Source Contribution Analysis – Quarter 2 2017 TSP Exceedances

Date	Station	% above the MOECC TSP Criterion	Wind Direction (blowing from)	Potential Source Contributions
12-Jun-17	Rundle Road	4.8%	West-Southwest to West - Northwesterly	Land use in this direction is a mix of agricultural and commercial. Highway 418 construction activities were observed upwind of the Rundle Road Station during this quarter. The likely cause of the TSP exceedance was high background TSP levels combined with Highway 418 construction activities.

4.4 AMBIENT PAH CONCENTRATIONS

A summary of the maximum and minimum ambient PAH concentrations (for a daily averaging period) are presented in **Table 4-5**. In this summary, both individual PAHs as well as a total PAH concentration are reported. A detailed summary of the concentrations measured for each sample is presented in **Appendix H**.

The maximum measured concentrations of the PAHs with MOECC AAQCs were below their applicable 24-hour criteria.

Table 4-5 Summary of Measured Ambient PAH Concentrations

Contaminant	Units	MOECC Standards	HHRA Health Based Criteria	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Maximum	Minimum	No. of Exceedances	Maximum	Minimum	No. of Exceedances
Benzo(a)pyrene	ng/m³	0.05 [A] 5 [B] 1.1 [C]	1	2.88E-02	6.09E-03 [F]	0 0 0	3.93E-02	9.20E-03 [F]	0 0 0
1-Methylnaphthalene	ng/m³	12,000	-	4.38E+00	1.06E+00	0	1.17E+01	2.40E+00	0
2-Methylnaphthalene	ng/m³	10,000	-	7.70E+00	1.87E+00	0	2.25E+01	4.35E+00	0
Acenaphthene	ng/m³	-	-	4.07E+00	2.46E-01	-	1.42E+01	1.90E+00	-
Acenaphthylene	ng/m³	3,500	-	3.08E-01	7.16E-02 [F]	0	3.55E-01	7.28E-02 [F]	0
Anthracene	ng/m³	200	-	1.60E-01	6.87E-02 [F]	0	8.52E-01	7.28E-02 [F]	0
Benzo(a)anthracene	ng/m³	-	-	1.09E-01 [F]	6.87E-02 [F]	-	1.11E-01 [F]	7.28E-02 [F]	-
Benzo(a)fluorene	ng/m³	-	-	2.19E-01 [F]	1.37E-01 [F]	-	2.22E-01 [F]	1.46E-01 [F]	-
Benzo(b)fluoranthene	ng/m³	-	-	1.09E-01 [F]	6.87E-02 [F]	-	1.11E-01 [F]	7.28E-02 [F]	-
Benzo(b)fluorene	ng/m³	-	-	2.19E-01 [F]	1.37E-01 [F]	-	2.22E-01 [F]	1.46E-01 [F]	-
Benzo(e)pyrene	ng/m³	-	-	2.19E-01 [F]	1.37E-01 [F]	-	2.22E-01 [F]	1.46E-01 [F]	-
Benzo(g,h,i)perylene	ng/m³	-	-	1.09E-01 [F]	6.87E-02 [F]	-	1.11E-01 [F]	7.28E-02 [F]	-
Benzo(k)fluoranthene	ng/m³	-	-	1.09E-01 [F]	6.87E-02 [F]	-	1.11E-01 [F]	7.28E-02 [F]	-
Biphenyl	ng/m³	-	-	1.92E+00	4.75E-01	-	6.15E+00	1.04E+00	-
Chrysene	ng/m³	-	-	1.09E-01 [F]	6.87E-02 [F]	-	1.11E-01 [F]	7.28E-02 [F]	-
Dibenz(a,h)anthracene [D]	ng/m³	-	-	1.09E-01 [F]	6.87E-02 [F]	-	1.11E-01 [F]	7.28E-02 [F]	-
Dibenzo(a,c) anthracene + Picene [D]	ng/m³	-	-	2.19E-01 [F]	1.37E-01 [F]	-	2.22E-01 [F]	7.48E-02 [F]	-
Fluoranthene	ng/m³	-	-	9.72E-01	2.94E-01	-	4.59E+00	3.82E-01	-

Table 4-5 Summary of Measured Ambient PAH Concentrations

Contaminant	Units	MOECC Standards	HHRA Health Based Criteria	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Maximum	Minimum	No. of Exceedances	Maximum	Minimum	No. of Exceedances
Indeno (1,2,3-cd)pyrene	ng/m^3	-	-	1.09E-01 [F]	6.87E-02 [F]	-	1.11E-01 [F]	7.28E-02 [F]	-
Naphthalene	ng/m^3	22,500	22,500	2.54E+01	5.28E+00	0	4.17E+01	9.48E+00	0
o-Terphenyl	ng/m^3	-	-	2.19E-01 [F]	1.37E-01 [F]	-	2.22E-01 [F]	1.46E-01 [F]	-
Perylene	ng/m^3	-	-	2.19E-01 [F]	1.37E-01 [F]	-	2.22E-01 [F]	1.46E-01 [F]	-
Phenanthrene	ng/m^3	-	-	5.08E+00	1.28E+00	-	2.46E+01	1.88E+00	-
Pyrene	ng/m^3	-	-	4.23E-01	7.25E-02 [F]	-	1.82E+00	2.31E-01	-
Tetralin	ng/m^3	-	-	3.00E+00	5.87E-01	-	3.51E+00	5.33E-01	-
Total PAH [E]	ng/m^3	-	-	48.6	14.2	-	131.7	24.8	-

Notes:

A. Ontario Ambient Air Quality Criteria. The standard for benzo(a)pyrene (B(a)P) is for B(a)P as a surrogate for PAHs.

B. O. Reg. 419/05 Schedule 6 Upper Risk Thresholds.

C. O. Reg. 419/05 24 Hour Guideline.

D. Based on laboratory analyses, dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene. Picene elutes after dibenz(a,h)anthracene.

E. The reported total PAH is the sum of all analyzed PAH species.

F. Measured concentration was less than the laboratory method detection limit.

4.5 AMBIENT DIOXINS AND FURANS CONCENTRATIONS

A summary of the maximum and minimum ambient dioxins and furans concentrations (for a daily averaging period) are presented in **Table 4-6**. In this summary, both individual dioxins and furans concentrations (pg/m^3) as well as the total toxic equivalency concentration (TEQ) are reported. A detailed summary of the concentrations measured for each sample is presented in **Appendix I**.

The maximum measured toxic equivalent dioxins and furans concentrations at both stations were below the applicable 24-hour AAQC of 0.1 pg TEQ/m^3 (as shown in **Table 4-6**).

Table 4-6 Summary of Measured Ambient Dioxins and Furans Concentrations

Contaminant	Units	MOECC Standards	HHRA Health Based Criteria	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Maximum	Minimum	No. of Exceedances	Maximum	Minimum	No. of Exceedances
2,3,7,8-Tetra CDD *	pg/m³			7.83E-03 [A]	4.36E-03 [A]		1.11E-02 [A]	4.29E-03 [A]	
1,2,3,7,8-Penta CDD	pg/m³			7.73E-03 [A]	4.63E-03 [A]		8.45E-03 [A]	4.60E-03 [A]	
1,2,3,4,7,8-Hexa CDD	pg/m³			5.69E-03 [A]	4.36E-03 [A]		1.25E-02 [A]	3.94E-03 [A]	
1,2,3,6,7,8-Hexa CDD	pg/m³			6.12E-03 [A]	4.63E-03 [A]		1.30E-02 [A]	4.24E-03 [A]	
1,2,3,7,8,9-Hexa CDD	pg/m³			5.41E-03 [A]	4.08E-03 [A]		1.18E-02 [A]	3.80E-03 [A]	
1,2,3,4,6,7,8-Hepta CDD	pg/m³			3.61E-02	5.17E-03 [A]		5.84E-02	5.03E-03 [A]	
Octa CDD	pg/m³			1.35E-01	4.16E-02		2.38E-01	3.42E-02	
Total Tetra CDD	pg/m³			1.75E-02 [A]	4.36E-03 [A]		1.61E-02 [A]	4.29E-03 [A]	
Total Penta CDD	pg/m³			1.43E-02 [A]	4.63E-03 [A]		1.37E-02 [A]	4.60E-03 [A]	
Total Hexa CDD	pg/m³			6.52E-02	5.84E-03 [A]		2.48E-02 [A]	5.18E-03 [A]	
Total Hepta CDD	pg/m³			6.40E-02	5.17E-03 [A]		1.33E-01	6.66E-03 [A]	
2,3,7,8-Tetra CDF **	pg/m³			5.83E-03 [A]	4.49E-03 [A]		9.47E-03 [A]	4.00E-03 [A]	
1,2,3,7,8-Penta CDF	pg/m³	-	-	5.98E-03 [A]	4.05E-03 [A]	N/A	1.12E-02 [A]	4.44E-03 [A]	N/A
2,3,4,7,8-Penta CDF	pg/m³			6.12E-03 [A]	3.91E-03 [A]		1.05E-02 [A]	4.15E-03 [A]	
1,2,3,4,7,8-Hexa CDF	pg/m³			4.84E-03 [A]	4.08E-03 [A]		9.32E-03 [A]	3.65E-03 [A]	
1,2,3,6,7,8-Hexa CDF	pg/m³			4.84E-03 [A]	4.08E-03 [A]		8.89E-03 [A]	3.65E-03 [A]	
2,3,4,6,7,8-Hexa CDF	pg/m³			5.17E-03 [A]	4.23E-03 [A]		1.03E-02 [A]	3.80E-03 [A]	
1,2,3,7,8,9-Hexa CDF	pg/m³			5.27E-03 [A]	4.38E-03 [A]		1.03E-02 [A]	3.94E-03 [A]	
1,2,3,4,6,7,8-Hepta CDF	pg/m³			1.29E-02	3.35E-03 [A]		8.18E-03	4.17E-03 [A]	
1,2,3,4,7,8,9-Hepta CDF	pg/m³			5.69E-03 [A]	3.94E-03 [A]		9.47E-03 [A]	3.65E-03 [A]	
Octa CDF	pg/m³			1.01E-02 [A]	4.22E-03 [A]		3.26E-02	4.60E-03 [A]	
Total Tetra CDF	pg/m³			5.83E-03 [A]	4.49E-03 [A]		9.47E-03 [A]	4.00E-03 [A]	
Total Penta CDF	pg/m³			6.12E-03 [A]	4.05E-03 [A]		1.09E-02 [A]	4.29E-03 [A]	
Total Hexa CDF	pg/m³			4.98E-03 [A]	4.23E-03 [A]		9.61E-03 [A]	3.80E-03 [A]	
Total Hepta CDF	pg/m³			1.29E-02	3.65E-03 [A]		8.59E-03 [A]	4.45E-03 [A]	
TOTAL TOXIC EQUIVALENCY [B]	pg TEQ/m³	0.1 1 [C]	-	2.11E-02	1.41E-02	0	3.21E-02	1.51E-02	0

Notes:

A. Measured concentration was less than the laboratory method detection limit.
B. Total Toxicity Equivalent (TEQ) concentration contributed by all dioxins, furans and dioxin-like PCBs calculated as per O. Reg. 419/05 methodology using corresponding WHO_{2005} toxic equivalency factors (TEFs) and a value of half the minimum detection limit (MDL) substituted for concentrations less than the MDL.
C. O. Reg. 419/05 Schedule 6 Upper Risk Thresholds.
* CDD - Chloro Dibenzo-p-Dioxin, ** CDF - Chloro Dibenzo-p-Furan.

5.0 CONCLUSIONS

This quarterly report provides a summary of the ambient air quality data collected at the three monitoring stations located predominantly upwind and downwind in the vicinity of the DYEC for the period April to June 2017.

The following observations and conclusions were made from a review of the measured ambient air quality monitoring data:

1. Measured concentrations of NO_2, SO_2 and $PM_{2.5}$ were below the applicable O. Reg. 419/05 Standards or human health risk assessment (HHRA) health-based criteria presented in **Table 2-2** of this report.

2. Since the Canadian Ambient Air Quality Standard (CAAQS) for $PM_{2.5}$ is based on a 98th percentile level over 3 years, whereas the $PM_{2.5}$ measurement period at both stations for this quarterly report was three months, there is insufficient data collected to determine with any certainty if exceedances of the CAAQS would occur. Therefore, no comparison of the measured $PM_{2.5}$ data during this quarter to the CAAQS was conducted for this report, as it would not be scientifically accurate or representative.

3. The maximum measured concentrations of TSP and all metals with MOECC air quality Standards, were below their applicable Standards (as presented in **Table 2-3** in this report) with the exception of one TSP measurement at the Rundle Road Station on June 12, 2017 which exceeded the applicable criteria by 4.8%. As required by the Ambient Air Quality Monitoring Plan, a written notice of exceedance was submitted to the Region of Durham, Region of York, MOECC, and the local Medical Officer of Health on July 21, 2017. Stantec's root cause analysis determined that the likely cause of the TSP exceedance was high background TSP levels combined with Highway 418 construction activities. Stantec's Toxicologist concluded that the measured TSP concentration was not expected to have resulted in an adverse effect on human health or the environment.

4. The maximum measured concentrations of PAHs with MOECC air quality Standards were well below their applicable criteria shown in **Table 2-4**.

5. The maximum measured toxic equivalent dioxin and furan concentration was below the applicable Standard presented in **Table 2-4.**

In summary, the measured concentrations of the air contaminants monitored were below their applicable MOECC Standards and HHRA health-based criteria during the monitoring period between April to June 2017, with the exception of TSP sample at the Rundle Road Station..

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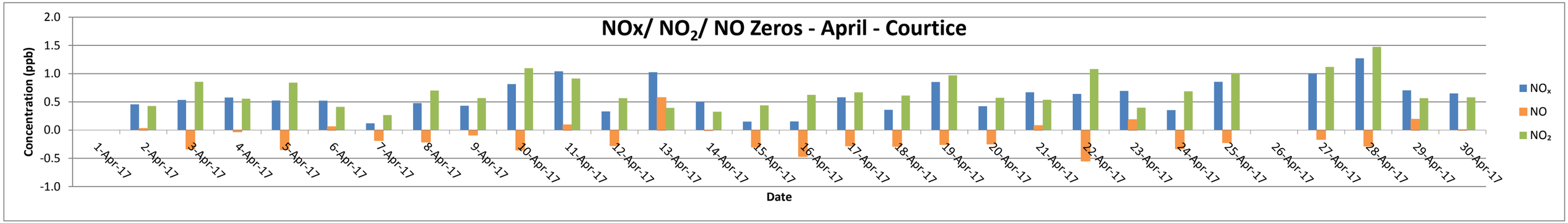
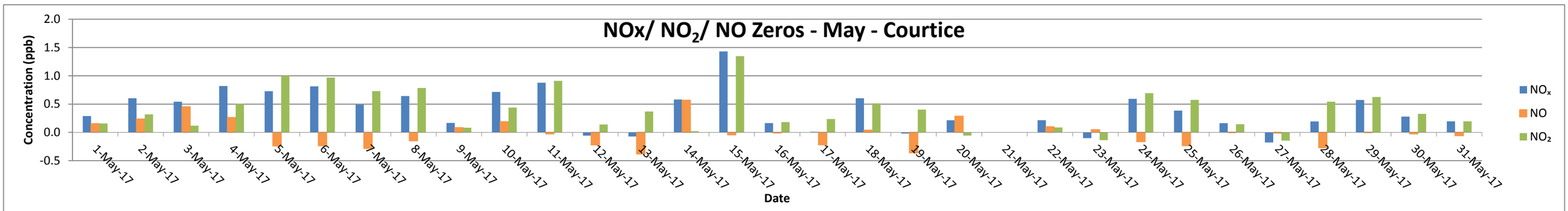
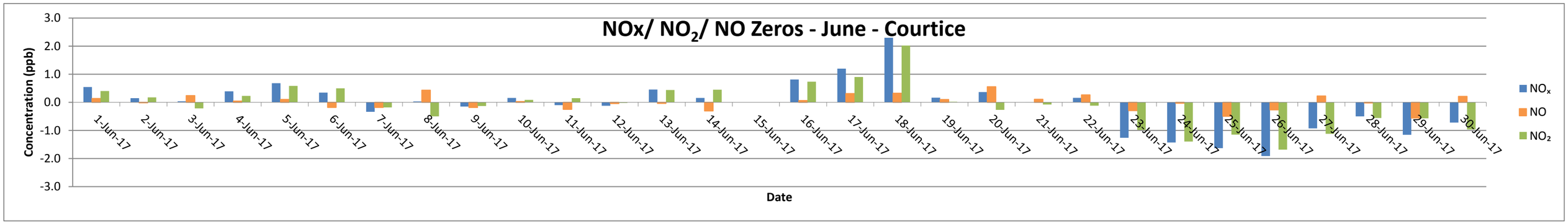
Appendix A SO_2 AND NO_X INSTRUMENT DAILY INTERNAL ZERO CALIBRATION SUMMARIES

Figure A-1 **Daily NOx/ NO_2/ NO Internal Zero Calibrations – Courtice WPCP Station**



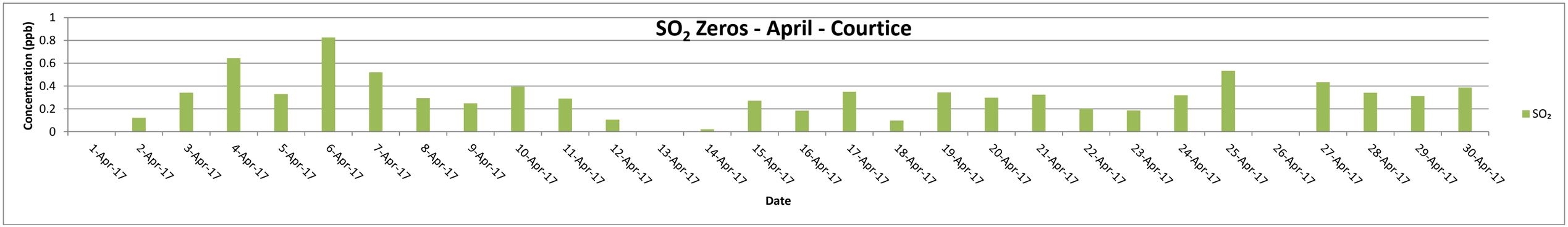


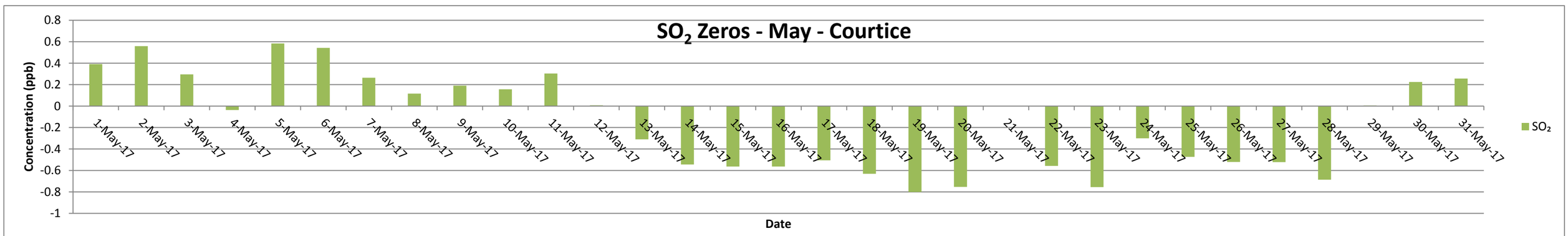


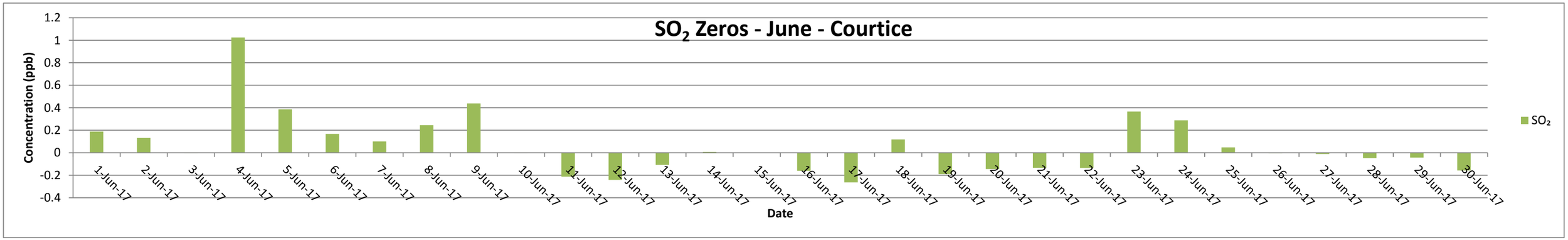
Notes:

- Auto-calibrations occur every 25 hours

Figure A-2 Daily SO_2 Internal Zero Calibrations – Courtice WPCP Station

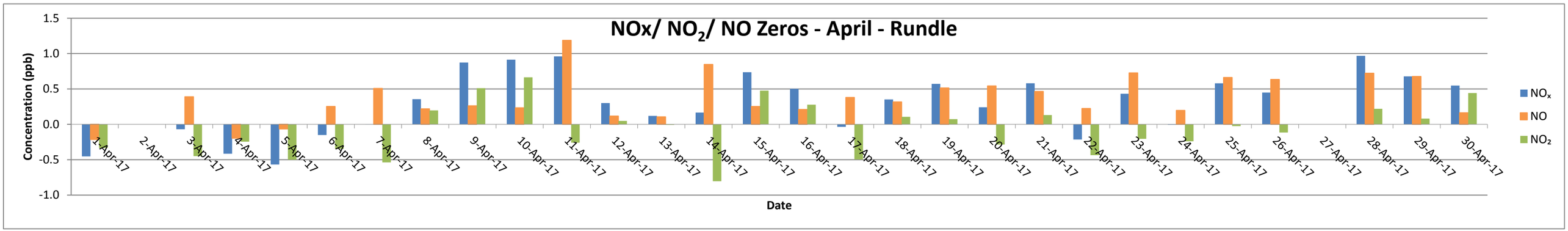


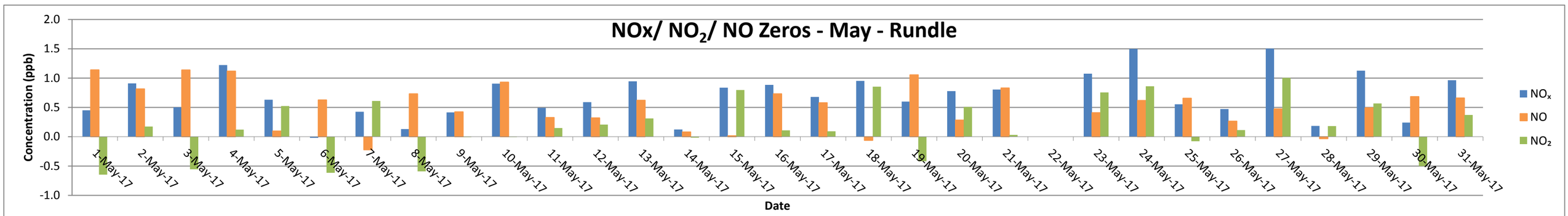


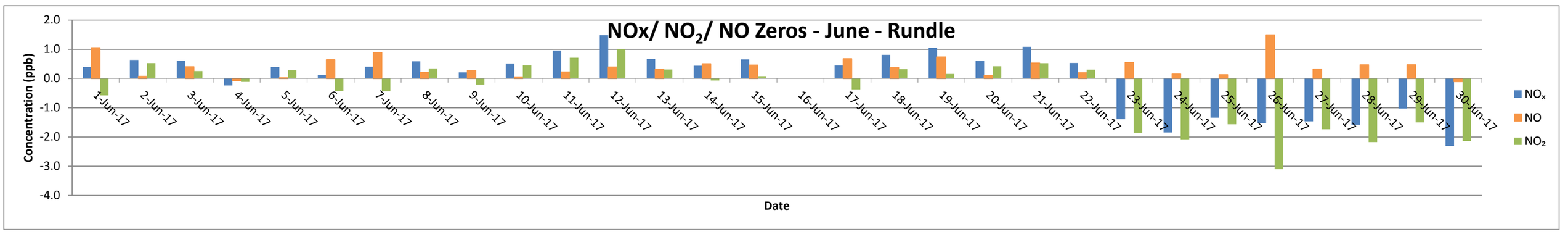


Notes:
Auto-calibrations occur every 25 hours.

Figure A-3 Daily NOx/ NO_2/ NO Internal Zero Calibrations –Rundle Road Station

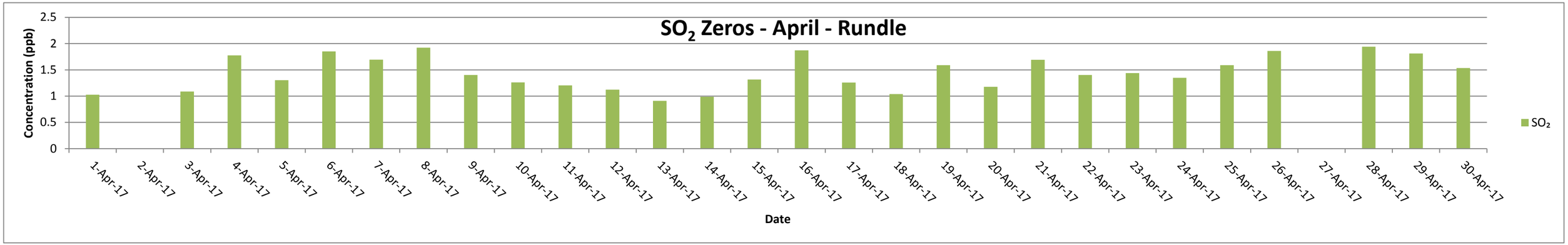


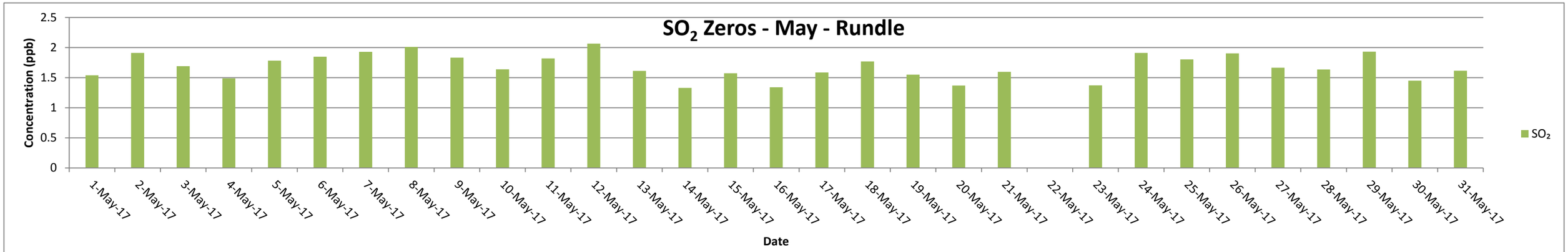


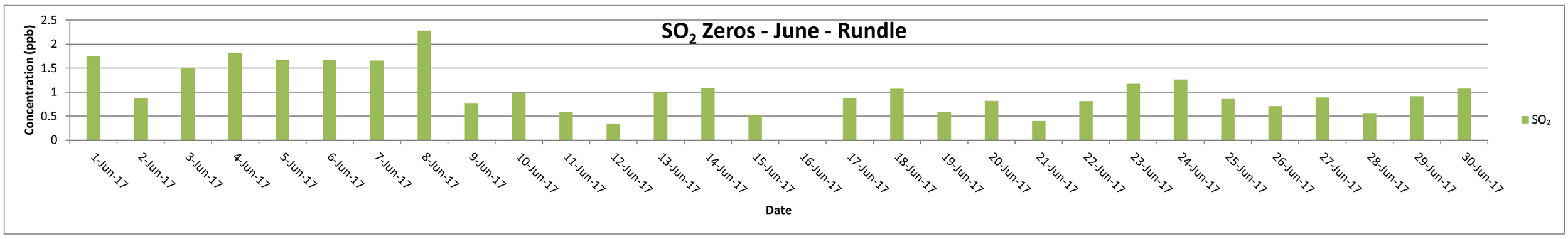


Notes:
- Auto-calibrations occur every 25 hours

Figure A-4 Daily SO_2 Internal Zero Calibrations – Rundle Road Station







Notes:

Auto-calibrations occur every 25 hours

Appendix B SO_2 DATA SUMMARIES AND TIME HISTORY PLOTS

SO_2 - April (ppb)	COURTICE 2017																												
Hour																													
Day	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>250	Days>100
1	1.4	1.6	1.3	1.4	0.9	0.8	0.6	0.7	0.3	0.4	0.6	0.5	0.7	0.7	0.3	0.0	0.0	0.0	0.0	1.1	4.4	4.0	1.2	0.3	24	4.4	0.0	1.0	0.0	0.0
2	2.3	3.3	3.8	3.9	3.9	0.4	0.3	0.3	0.3	0.5	0.5	0.4	0.3	0.9	0.6	0.4	1.2	1.4	1.2	2.1	3.0	3.6	2.1	1.9	24	3.9	0.3	1.6	0.0	0.0
3	1.3	1.9	1.3	0.6	0.6	0.9	0.7	8.0	6.5	16.7	7.2	1.2	0.6	17.8	29.3	50.4	44.9	20.7	13.6	9.9	56.4	18.0	11.4	30.6	24	56.4	0.6	14.6	0.0	0.0
4	26.0	20.3	22.0	7.4	9.1	14.0	6.3	3.4	3.4	3.6	1.9	1.2	0.8	0.8	0.6	0.4	0.3	0.3	0.3	0.5	0.3	0.3	0.3	0.3	24	26.0	0.3	5.2	0.0	0.0
5	0.2	0.3	0.2	0.1	0.1	0.0	0.0	0.1	C	1.0	0.6	0.7	0.5	0.5	0.5	0.6	1.4	2.9	0.6	3.7	9.7	3.1	5.3	0.8	23	9.7	0.0	1.4	0.0	0.0
6	0.6	0.5	0.5	3.9	2.3	3.6	1.7	3.2	5.1	5.2	12.0	25.5	2.9	1.2	1.1	1.2	1.3	1.4	1.5	1.4	0.8	0.7	0.6	0.5	24	25.5	0.5	3.3	0.0	0.0
7	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.4	0.3	0.3	24	0.5	0.2	0.3	0.0	0.0
8	0.3	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.6	0.9	0.8	0.9	0.5	0.2	0.3	0.3	0.2	2.4	3.5	24	3.5	0.0	0.5	0.0	0.0
9	2.3	2.8	2.1	2.5	3.2	5.1	3.2	0.9	0.5	0.3	0.6	0.5	0.5	0.4	0.3	0.3	0.3	0.6	0.5	0.4	0.6	2.1	3.1	1.9	24	5.1	0.3	1.5	0.0	0.0
10	1.4	3.0	2.8	3.7	1.7	0.9	1.4	2.1	1.1	0.7	0.5	0.5	0.4	0.6	0.5	0.5	0.4	0.5	0.5	0.7	0.8	0.8	0.3	0.3	24	3.7	0.3	1.1	0.0	0.0
11	0.5	0.7	0.3	0.3	0.3	0.2	1.1	0.3	0.3	0.3	0.2	0.1	0.1	0.5	1.0	0.5	0.3	0.3	0.2	0.3	0.2	0.1	0.1	0.0	24	1.1	0.0	0.3	0.0	0.0
12	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.2	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.5	0.2	0.1	0.7	0.1	0.1	0.1	0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.4	0.6	1.3	1.2	0.7	0.6	0.8	24	1.3	0.0	0.3	0.0	0.0
14	1.1	0.8	1.0	0.6	0.8	0.5	0.3	0.4	0.1	0.0	0.3	0.5	0.2	0.3	0.2	0.2	0.1	0.2	0.8	1.6	1.4	0.9	0.2	0.2	24	1.6	0.0	0.5	0.0	0.0
15	0.2	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.1	0.1	0.3	0.4	0.2	0.2	0.3	0.5	0.8	0.8	0.6	0.3	24	0.8	0.0	0.3	0.0	0.0
16	0.5	0.7	0.5	0.2	0.3	0.3	0.3	0.5	0.6	0.7	0.7	0.6	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.1	0.1	0.1	24	0.7	0.1	0.4	0.0	0.0
17	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.2	0.0	0.0	0.0	0.6	24	0.6	0.0	0.1	0.0	0.0
18	0.7	0.8	1.5	0.5	0.6	1.3	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.3	0.1	0.0	1.0	24	1.5	0.0	0.4	0.0	0.0
19	3.1	3.1	0.9	0.2	0.0	0.2	0.6	0.5	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.6	0.2	0.1	0.1	0.3	24	3.1	0.0	0.5	0.0	0.0
20	0.4	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.5	0.1	0.7	0.1	0.0	0.0	3.7	0.5	0.2	0.5	0.1	2.0	2.3	0.5	1.0	0.6	24	3.7	0.0	0.6	0.0	0.0
21	0.5	0.3	0.5	0.2	0.3	0.2	0.2	0.3	0.3	0.5	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	24	0.5	0.0	0.2	0.0	0.0
22	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.6	0.2	0.2	0.4	0.4	0.3	0.2	0.0	0.0	0.1	0.1	0.0	0.2	0.1	0.5	24	0.6	0.0	0.2	0.0	0.0
23	0.5	0.3	0.4	6.2	15.5	3.6	0.8	0.6	0.4	0.3	0.9	0.8	0.4	0.3	0.3	0.5	0.7	0.4	0.5	0.4	1.6	0.5	1.8	2.5	24	15.5	0.3	1.7	0.0	0.0
24	1.7	3.3	1.9	0.4	0.2	0.0	0.1	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	2.0	1.0	0.0	0.1	2.4	0.6	0.4	24	3.3	0.0	0.6	0.0	0.0
25	1.8	0.1	0.1	0.1	0.0	0.2	3.4	0.3	0.1	0.1	0.0	0.1	0.2	0.2	0.7	2.6	26.3	12.1	3.2	3.6	10.5	4.7	17.5	26.0	24	26.3	0.0	4.8	0.0	0.0
26	3.6	1.3	0.8	0.8	3.1	12.1	1.6	2.2	1.7	1.0	0.7	0.5	0.5	0.5	3.1	3.9	0.7	0.5	0.6	1.3	0.7	0.9	3.6	1.0	24	12.1	0.5	2.0	0.0	0.0
27	0.6	0.6	2.4	3.3	1.1	0.7	1.8	10.8	2.8	1.5	1.0	1.0	1.0	0.7	3.3	4.7	1.7	3.8	0.9	0.8	0.5	0.6	0.4	0.3	24	10.8	0.3	1.9	0.0	0.0
28	0.4	0.3	0.4	0.3	0.3	0.3	2.4	C	0.1	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	23	2.4	0.1	0.3	0.0	0.0
29	0.4	0.4	0.4	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9	24	0.9	0.0	0.1	0.0	0.0
30	1.3	0.0	0.5	0.2	1.6	0.6	1.0	0.6	0.1	2.3	2.3	2.9	1.4	0.4	4.6	7.9	3.4	0.8	0.4	0.1	0.1	0.7	0.4	0.5	24	7.9	0.0	1.4	0.0	0.0
31																														
Count	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	718					
Maximum	26.0	20.3	22.0	7.4	15.5	14.0	6.3	10.8	6.5	16.7	12.0	25.5	2.9	17.8	29.3	50.4	44.9	20.7	13.6	9.9	56.4	18.0	17.5	30.6	24					
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23					
Average	1.8	1.6	1.6	1.3	1.6	1.6	1.0	1.3	0.9	1.2	1.1	1.3	0.4	0.9	1.8	2.6	2.9	1.7	0.9	1.1	3.3	1.6	1.8	2.6						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.1	0.2	0.3	0.4	0.5	0.7	1.3	3.2	5.3	25.9	56.4

Maximum Hourly	56.4
Maximum Daily	14.6
Monthly Average	1.6

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

SO_2 - May (ppb) COURTICE 2017

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>250	Days>100
1	0.9	0.7	0.3	1.0	0.3	0.3	0.3	0.9	0.8	2.2	0.6	0.5	2.4	2.6	1.6	0.5	0.5	0.3	0.3	0.3	0.4	0.4	0.6	0.3	24	2.6	0.3	0.8	0.0	0.0
2	0.3	0.3	0.4	0.5	0.4	0.2	0.3	0.3	0.3	0.5	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	24	0.5	0.2	0.3	0.0	0.0
3	0.2	0.3	0.6	0.1	0.0	0.0	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	2.5	5.8	2.5	0.7	24	5.8	0.0	0.6	0.0	0.0
4	4.3	3.4	4.2	1.4	0.4	0.3	0.2	0.3	0.0	0.1	0.5	1.2	0.5	0.3	0.1	0.0	2.3	4.2	0.6	1.5	0.3	0.2	0.2	2.6	24	4.3	0.0	1.2	0.0	0.0
5	5.1	5.0	8.8	11.9	7.9	5.3	3.3	1.8	3.8	7.3	7.9	1.5	0.8	0.7	0.5	0.5	0.6	1.1	1.7	1.5	1.4	1.4	1.3	1.3	24	11.9	0.5	3.4	0.0	0.0
6	1.3	1.0	1.2	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	24	1.3	0.3	0.5	0.0	0.0
7	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.6	0.4	3.6	4.2	4.7	24	4.7	0.1	0.7	0.0	0.0
8	5.1	0.5	0.4	2.9	1.3	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	24	5.1	0.0	0.5	0.0	0.0
9	0.1	2.2	2.2	1.7	0.4	2.1	1.5	0.8	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.0	0.0	0.1	0.2	24	2.2	0.0	0.5	0.0	0.0
10	0.1	0.2	0.4	1.9	2.6	2.6	0.5	0.2	0.6	0.5	0.1	0.0	0.7	0.5	0.3	0.1	0.0	0.0	0.0	0.4	0.1	0.4	0.2	0.9	24	2.6	0.0	0.6	0.0	0.0
11	2.1	1.7	0.3	0.0	0.2	0.7	0.2	1.0	1.7	0.3	0.3	0.3	0.3	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.1	1.4	10.7	1.5	24	10.7	0.0	1.0	0.0	0.0
12	4.2	3.2	1.1	2.9	1.7	2.3	2.1	C	C	C	C	C	0.1	0.2	0.6	0.3	0.1	0.0	0.1	0.7	0.3	1.4	1.1	0.3	19	4.2	0.0	1.2	0.0	0.0
13	0.2	0.0	0.0	0.0	1.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	1.2	0.0	0.1	0.0	0.0
14	0.0	0.3	0.3	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.5	0.0	0.1	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.1	0.8	1.6	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	4.2	1.3	5.3	24	5.3	0.0	0.6	0.0	0.0
17	2.5	2.4	0.6	0.8	0.0	0.0	0.0	0.2	0.0	1.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.8	24	2.5	0.0	0.4	0.0	0.0
18	0.9	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.9	0.0	0.1	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	24	0.1	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.2	5.1	5.4	16.7	0.0	24	16.7	0.0	1.3	0.0	0.0
21	1.1	0.0	0.0	14.8	18.3	1.9	3.2	7.5	2.0	0.0	0.0	0.0	0.0	4.7	11.1	8.2	1.4	3.2	7.6	0.2	0.0	0.0	0.0	2.6	24	18.3	0.0	3.7	0.0	0.0
22	6.1	2.6	0.2	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	24	6.1	0.0	0.4	0.0	0.0
23	0.0	0.0	0.2	0.2	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	24	0.4	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.4	4.0	4.1	0.0	1.8	4.5	0.3	0.0	0.0	0.0	0.0	12.5	23.5	18.7	0.9	0.0	0.0	0.0	24	23.5	0.0	2.9	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	2.5	8.4	7.8	8.1	3.4	0.6	0.1	0.1	2.6	5.1	8.1	5.9	7.3	10.1	1.0	0.2	24	10.1	0.0	3.0	0.0	0.0
26	0.0	4.0	3.0	2.6	0.0	1.3	1.5	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.4	9.2	1.9	24	9.2	0.0	1.2	0.0	0.0
27	5.2	2.1	0.6	15.3	4.9	5.4	0.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	15.3	0.0	1.4	0.0	0.0
28	1.0	0.6	6.6	2.9	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.6	0.4	0.0	0.0	24	6.6	0.0	0.6	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.5	0.2	0.2	0.2	0.2	0.3	0.3	0.5	1.2	3.8	5.1	2.5	24	5.1	0.0	0.7	0.0	0.0
30	0.6	1.1	0.8	4.1	0.6	0.9	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.5	0.2	0.2	0.2	0.2	0.1	0.1	0.5	0.1	0.1	24	4.1	0.1	0.5	0.0	0.0
31	0.1	0.5	3.1	0.7	2.7	2.2	0.5	0.3	0.4	0.4	0.5	0.5	0.4	0.3	0.2	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	24	3.1	0.0	0.6	0.0	0.0
Count	31	31	31	31	31	31	31	30	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	739					
Maximum	6.1	5.0	8.8	15.3	18.3	5.4	3.3	7.5	4.1	8.4	7.9	8.1	3.4	4.7	11.1	8.2	2.6	12.5	23.5	18.7	7.3	10.1	16.7	5.3	24					
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19					
Average	1.3	1.1	1.2	2.2	1.5	0.9	0.5	0.7	0.6	0.7	0.8	0.6	0.4	0.4	0.5	0.4	0.3	0.9	1.4	1.1	0.9	1.3	1.8	0.9						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.9	2.6	5.1	11.6	23.5

Maximum Hourly	23.5
Maximum Daily	3.7
Monthly Average	0.9

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

SO_2 - COURTICE
June 2017
(ppb)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>250	Days>100
1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.1	0.0	0.0	24	0.4	0.0	0.0	0.0	0.0
2	0.0	0.0	0.3	0.9	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.9	0.0	0.1	0.0	0.0
3	0.3	0.5	0.4	2.4	1.6	0.6	0.0	0.3	0.5	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	8.2	10.8	5.4	3.7	1.5	24	10.8	0.0	1.5	0.0	0.0
4	2.4	5.6	1.9	2.8	1.2	2.5	1.1	0.5	0.3	0.2	0.4	4.7	1.5	3.5	19.2	21.6	31.3	18.3	3.8	1.5	2.4	0.9	2.4	3.8	24	31.3	0.2	5.6	0.0	0.0
5	1.3	1.8	1.1	3.0	1.2	1.7	2.9	2.2	1.5	1.1	1.7	1.4	1.8	1.4	1.2	2.3	1.9	0.9	2.2	1.2	0.9	0.5	0.5	0.3	24	3.0	0.3	1.5	0.0	0.0
6	0.3	0.2	0.3	0.4	0.5	0.9	0.7	1.4	1.8	2.0	1.4	0.5	0.8	0.6	0.4	0.5	0.5	0.5	0.5	1.3	1.4	1.1	0.4	4.4	24	4.4	0.2	1.0	0.0	0.0
7	6.4	5.5	4.6	3.1	4.6	5.1	1.8	1.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	7.3	11.3	8.4	6.8	24	11.3	0.0	2.8	0.0	0.0
8	3.3	2.0	0.8	0.7	0.7	0.9	0.9	0.7	0.7	0.5	0.4	0.5	0.6	1.1	2.5	2.2	0.7	0.3	0.2	0.4	14.7	16.7	4.1	4.9	24	16.7	0.2	2.5	0.0	0.0
9	17.8	8.7	3.8	2.6	15.6	3.6	1.2	0.8	C	C	0.4	0.5	1.0	1.9	2.1	0.8	0.5	0.5	0.5	0.9	2.3	2.3	2.7	0.9	22	17.8	0.4	3.2	0.0	0.0
10	1.5	7.9	3.7	6.1	3.4	2.5	1.5	1.0	0.7	0.6	0.4	0.2	0.2	0.4	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	24	7.9	0.0	1.3	0.0	0.0
11	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.1	0.0	0.0	0.0	0.0
12	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	24	0.4	0.0	0.1	0.0	0.0
13	0.8	0.2	0.7	0.9	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.9	0.7	0.4	24	0.9	0.0	0.2	0.0	0.0
14	0.8	0.9	0.4	0.9	0.9	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.5	0.8	0.4	0.2	24	1.5	0.0	0.3	0.0	0.0
15	0.3	0.4	0.8	6.1	13.6	22.2	19.9	2.8	1.2	2.8	0.4	0.5	0.2	2.6	6.2	8.7	1.5	0.6	3.1	1.1	0.2	0.0	0.1	0.6	24	22.2	0.0	4.0	0.0	0.0
16	0.7	0.2	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.7	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.1	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.4	0.2	0.5	24	1.0	0.0	0.1	0.0	0.0
22	1.4	4.8	3.8	1.3	2.5	1.4	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.5	0.5	0.3	0.2	0.3	0.4	0.9	0.6	24	4.8	0.0	0.8	0.0	0.0
23	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.3	0.0	0.1	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.4	0.6	24	1.4	0.0	0.1	0.0	0.0
25	3.1	1.3	1.8	2.2	1.0	1.0	0.3	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	24	3.1	0.0	0.5	0.0	0.0
26	0.8	0.1	6.6	2.4	0.9	1.5	1.0	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.7	0.6	0.0	24	6.6	0.0	0.7	0.0	0.0
27	1.3	1.5	3.9	1.7	2.8	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2.6	13.2	20.8	16.0	24	20.8	0.0	2.7	0.0	0.0
28	5.3	25.8	13.2	20.9	30.7	12.1	2.3	0.8	0.5	0.9	0.3	0.3	0.6	1.2	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	30.7	0.0	4.8	0.0	0.0
29	0.0	0.0	0.0	2.3	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	24	2.3	0.0	0.1	0.0	0.0
30	0.0	0.0	0.0	2.4	1.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	2.4	0.0	0.2	0.0	0.0
31																														
Count	30	30	30	30	30	30	30	30	29	28	29	30	30	30	30	30	30	30	30	30	30	30	30	30	716					
Maximum	17.8	25.8	13.2	20.9	30.7	22.2	19.9	2.8	1.8	2.8	1.7	4.7	1.8	3.5	19.2	21.6	31.3	18.3	3.8	8.2	14.7	16.7	20.8	16.0	24					
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22					
Average	1.6	2.3	1.6	2.1	2.8	1.9	1.2	0.4	0.3	0.3	0.2	0.3	0.2	0.4	1.1	1.2	1.2	0.7	0.4	0.5	1.5	1.8	1.6	1.4						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.0	0.0	0.0	0.0	0.2	0.5	1.0	2.5	5.3	19.8	31.3

Maximum Hourly	31.3
Maximum Daily	5.6
Monthly Average	1.1

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

SO_2 - Rundle Road
April 2017
(ppb)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>250	Days>100
1	0.4	0.4	0.4	0.4	0.4	0.3	0.1	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.2	0.0	0.3	0.4	0.3	0.3	0.4	0.4	24	0.4	0.0	0.3	0	0
2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.7	0.7	0.9	0.9	0.7	1.3	1.4	0.7	0.7	0.4	0.4	0.4	0.2	24	1.4	0.2	0.6	0	0
3	0.3	0.3	0.5	0.5	0.3	0.3	0.4	0.6	0.5	0.8	0.7	0.7	0.6	0.8	0.6	0.8	0.7	0.9	0.9	0.8	0.8	0.8	0.7	0.6	24	0.9	0.3	0.6	0	0
4	0.7	0.7	0.8	0.7	0.8	0.8	0.7	0.8	0.8	0.9	1.7	1.1	0.9	1.0	0.8	0.8	0.6	0.6	0.7	0.7	0.7	0.5	0.6	0.6	24	1.7	0.5	0.8	0	0
5	0.6	0.4	0.5	0.3	0.0	0.4	C	0.8	0.8	0.7	0.8	1.1	1.1	0.8	0.8	2.3	1.8	0.9	1.0	0.9	0.9	0.8	0.8	0.9	23	2.3	0.0	0.8	0	0
6	0.9	0.9	0.9	1.0	1.0	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	0.9	0.8	0.9	0.9	0.9	24	1.0	0.8	0.9	0	0
7	0.9	0.9	0.9	0.7	0.7	0.8	0.9	0.8	0.8	0.6	0.8	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.9	0.8	0.7	0.8	24	0.9	0.6	0.7	0	0
8	0.8	0.7	0.7	0.6	0.7	0.6	0.6	0.6	0.5	0.4	0.5	0.5	0.7	1.2	1.8	1.5	1.5	1.2	0.7	0.7	0.6	0.6	0.6	0.5	24	1.8	0.4	0.8	0	0
9	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.6	0.6	0.6	0.8	0.9	0.8	0.8	0.8	0.7	1.0	1.1	1.1	0.9	0.8	0.7	0.7	0.7	24	1.1	0.4	0.7	0	0
10	0.7	0.7	0.8	0.8	0.8	0.8	0.9	1.0	1.4	2.1	1.0	1.1	1.0	1.3	1.0	0.9	0.8	0.9	1.1	1.2	1.0	1.0	0.7	0.7	24	2.1	0.7	1.0	0	0
11	0.7	0.6	0.5	0.8	0.7	0.8	0.7	0.8	0.7	0.7	0.7	0.7	1.4	1.6	1.4	1.1	0.9	0.8	0.8	0.8	0.8	0.6	0.6	0.6	24	1.6	0.5	0.8	0	0
12	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.6	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.4	0.4	24	0.7	0.3	0.5	0	0
13	0.4	0.4	0.4	0.3	0.3	0.4	0.5	0.6	0.7	0.8	1.3	0.7	0.6	0.5	0.5	0.6	0.9	1.7	1.9	1.3	0.7	0.6	0.6	0.7	24	1.9	0.3	0.7	0	0
14	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.8	2.6	6.6	0.9	0.7	0.8	1.0	1.4	1.3	1.9	2.9	2.1	1.3	1.0	0.7	24	6.6	0.4	1.3	0	0
15	0.6	0.7	0.7	0.6	0.8	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.4	0.7	2.7	4.7	1.4	1.1	0.9	0.7	0.7	0.9	1.0	24	4.7	0.4	1.0	0	0
16	1.1	1.4	1.1	1.0	0.9	0.9	0.9	1.1	1.1	1.5	1.6	1.4	1.2	1.0	1.2	1.1	0.9	0.9	0.8	0.6	0.7	0.7	0.8	0.7	24	1.6	0.6	1.0	0	0
17	0.7	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.7	0.6	0.5	0.5	0.7	0.8	1.0	0.9	1.0	0.7	0.6	0.4	0.4	24	1.0	0.4	0.7	0	0
18	0.4	0.4	1.1	0.4	0.3	0.3	0.3	0.4	0.4	2.3	0.8	0.4	0.6	2.4	2.8	0.7	0.7	0.5	0.5	0.5	0.4	0.6	0.5	0.5	24	2.8	0.3	0.8	0	0
19	0.6	0.6	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.6	0.7	0.8	0.8	0.7	0.8	0.8	0.9	0.9	0.7	0.7	0.6	0.6	0.6	0.6	24	0.9	0.6	0.7	0	0
20	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.5	0.8	0.7	0.6	0.6	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.9	0.8	24	0.9	0.4	0.6	0	0
21	0.8	0.8	0.9	1.1	0.8	0.8	0.8	0.8	1.0	1.1	0.9	1.0	0.9	0.9	0.9	0.9	0.8	0.7	0.8	0.7	0.6	0.7	0.6	0.6	24	1.1	0.6	0.8	0	0
22	0.6	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.6	0.7	0.6	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7	1.0	24	1.0	0.6	0.7	0	0
23	0.9	0.8	0.7	0.7	0.7	0.5	1.1	1.5	1.2	2.1	4.6	2.5	1.3	1.2	1.2	1.2	1.4	1.2	1.2	1.2	0.9	0.7	0.7	0.7	24	4.6	0.5	1.3	0	0
24	0.7	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.6	0.7	6.6	4.2	8.1	4.4	6.9	2.9	1.1	1.0	1.0	0.9	0.8	0.8	0.8	0.8	24	8.1	0.5	2.0	0	0
25	0.8	0.8	0.7	0.7	0.8	0.9	0.9	0.7	0.8	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.6	0.9	0.7	0.8	0.8	24	0.9	0.6	0.8	0	0
26	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.9	0.7	0.8	0.8	0.8	0.8	0.9	0.9	2.1	1.1	1.1	1.1	1.1	0.9	1.1	1.0	1.1	24	2.1	0.7	0.9	0	0
27	1.1	1.1	1.0	1.1	1.0	1.2	1.0	1.1	1.2	1.2	1.4	1.4	1.4	1.3	1.2	1.1	1.2	3.7	2.0	1.4	1.2	1.3	1.2	1.1	24	3.7	1.0	1.3	0	0
28	1.2	1.0	1.0	1.0	0.9	C	1.0	1.0	1.2	1.3	1.2	1.4	1.1	1.0	1.0	1.1	1.4	1.2	1.6	1.7	1.2	1.1	1.0	1.1	23	1.7	0.9	1.2	0	0
29	1.8	1.5	1.2	1.2	1.2	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.9	0.7	0.5	0.7	0.5	0.8	0.7	0.8	0.7	0.7	0.7	24	1.8	0.5	0.9	0	0
30	0.7	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.8	0.5	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	24	0.9	0.5	0.7	0	0
31																														
Count	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	718					
Maximum	1.8	1.5	1.2	1.2	1.2	1.2	1.1	1.5	1.4	2.3	6.6	6.6	8.1	4.4	6.9	2.9	4.7	3.7	2.0	2.9	2.1	1.3	1.2	1.1	24					
Minimum	0.2	0.3	0.3	0.3	0.0	0.3	0.1	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.2	0.0	0.3	0.4	0.3	0.3	0.4	0.2	23					
Average	0.7	0.7	0.7	0.7	0.6	0.6	0.7	0.7	0.8	0.9	1.2	1.2	1.1	1.0	1.1	1.0	1.1	1.0	0.9	0.9	0.8	0.8	0.7	0.7						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.4	0.6	0.6	0.7	0.7	0.8	0.9	1.0	1.2	1.5	4.1	8.1

Maximum Hourly	8.1
Maximum Daily	2.0
Monthly Average	0.9

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

SO_2 - Rundle Road
May 2017
(ppb)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>250	Days>100
1	0.9	1.0	1.0	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.1	1.1	1.1	1.1	1.2	1.1	1.2	1.6	1.1	24	1.6	0.9	1.1	0	0
2	1.2	1.3	1.2	1.4	1.4	1.1	1.1	1.1	1.1	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1.0	1.0	24	1.4	1.0	1.2	0	0
3	1.0	1.0	1.3	0.9	0.9	0.9	1.0	1.1	1.0	1.0	1.0	1.1	1.0	0.9	1.0	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7	24	1.3	0.7	0.9	0	0
4	0.7	0.9	0.7	0.7	0.8	0.8	0.8	1.9	3.4	1.9	3.2	2.9	1.5	1.5	1.4	1.2	0.8	0.9	0.8	0.8	0.9	0.9	0.9	0.9	24	3.4	0.7	1.3	0	0
5	1.0	0.9	1.0	1.1	1.0	1.0	1.0	1.2	0.8	1.0	1.1	1.0	1.1	1.1	1.0	1.1	1.2	1.1	1.1	1.2	1.1	1.1	1.1	1.1	24	1.2	0.8	1.1	0	0
6	1.2	1.3	1.2	1.1	1.2	1.2	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.2	1.2	1.2	1.1	1.1	1.2	1.1	1.1	24	1.3	1.1	1.2	0	0
7	1.0	0.9	1.1	1.1	1.1	1.0	1.1	1.1	1.0	1.0	1.1	1.1	0.9	0.8	1.0	1.0	1.1	1.1	1.0	1.0	1.0	0.9	1.0	0.9	24	1.1	0.8	1.0	0	0
8	1.0	1.0	0.9	0.8	0.9	1.0	0.9	1.0	0.8	1.0	1.0	0.8	0.9	0.9	1.0	0.9	1.0	1.0	0.9	0.8	0.8	0.9	0.9	0.9	24	1.0	0.8	0.9	0	0
9	0.9	0.9	0.9	0.8	0.8	0.8	0.9	0.9	0.9	0.8	1.0	0.9	1.0	1.0	1.0	1.0	4.1	1.1	0.9	0.8	0.9	0.9	0.8	0.9	24	4.1	0.8	1.0	0	0
10	0.8	1.0	0.9	0.9	0.9	1.0	1.0	5.4	3.3	1.4	1.4	1.1	1.3	1.3	1.1	0.9	0.9	1.0	1.0	0.9	0.9	1.0	1.0	1.1	24	5.4	0.8	1.3	0	0
11	0.3	0.6	0.6	0.8	1.0	0.9	1.0	1.0	1.4	1.2	1.1	1.2	1.4	1.5	1.3	1.2	1.0	1.2	1.1	1.1	1.1	1.0	1.0	1.0	24	1.5	0.3	1.0	0	0
12	1.0	0.9	0.9	1.0	1.0	C	C	0.9	1.1	1.3	1.2	1.4	1.8	1.9	8.5	1.4	1.3	1.2	1.2	1.2	1.0	1.1	1.0	1.0	22	8.5	0.9	1.5	0	0
13	1.0	0.9	0.9	0.9	0.8	0.7	0.9	0.9	0.8	0.9	0.4	0.6	0.7	0.7	0.9	1.0	1.0	1.1	1.1	1.0	0.8	0.8	0.8	0.8	24	1.1	0.4	0.8	0	0
14	0.8	0.8	0.7	0.8	0.8	0.8	0.9	0.8	1.0	1.1	1.0	0.9	0.9	1.0	0.9	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.6	0.7	24	1.1	0.6	0.8	0	0
15	0.5	0.6	0.6	0.6	0.7	0.4	0.5	0.5	0.5	0.3	0.5	0.4	0.4	0.5	0.5	0.6	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.9	24	0.9	0.3	0.6	0	0
16	0.8	0.8	0.9	0.7	0.6	0.6	0.8	1.0	1.2	1.6	1.9	1.5	1.0	2.4	1.0	0.6	1.1	1.6	1.2	1.0	0.9	0.9	1.0	1.0	24	2.4	0.6	1.1	0	0
17	1.1	1.3	0.9	0.9	0.8	0.9	1.3	4.6	5.2	2.9	2.2	1.5	1.4	1.4	1.3	1.5	1.3	1.2	1.1	1.0	1.3	1.2	1.2	1.0	24	5.2	0.8	1.6	0	0
18	1.0	0.9	1.1	1.4	1.4	1.1	0.9	1.0	1.4	2.1	1.8	1.7	1.4	1.3	1.2	1.3	1.2	1.2	1.0	1.0	0.9	0.9	0.8	0.9	24	2.1	0.8	1.2	0	0
19	1.0	0.9	0.9	0.8	0.7	0.7	0.7	0.7	0.6	0.5	0.6	0.6	0.6	0.5	0.6	0.6	0.5	0.8	0.7	0.6	0.7	0.7	0.6	0.6	24	1.0	0.5	0.7	0	0
20	0.5	0.6	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	1.9	6.3	8.9	6.9	2.6	2.5	2.3	0.7	0.7	0.7	0.7	0.7	0.7	0.4	24	8.9	0.4	1.7	0	0
21	0.9	0.8	1.0	0.9	0.7	0.7	0.8	0.6	0.7	0.6	0.7	0.7	0.7	0.3	0.7	0.7	0.5	0.6	0.7	1.0	1.0	0.7	0.8	0.7	24	1.0	0.3	0.7	0	0
22	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.7	0.7	0.9	1.1	1.0	0.8	0.8	0.7	0.8	0.9	0.8	0.7	0.9	0.9	1.1	0.7	24	1.1	0.6	0.8	0	0
23	0.7	0.6	0.7	0.8	0.8	0.8	0.9	0.9	1.1	1.0	1.1	1.5	2.3	1.5	1.3	1.4	1.2	1.2	1.1	1.0	0.9	0.9	1.0	1.0	24	2.3	0.6	1.1	0	0
24	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.0	2.5	1.2	1.1	1.0	1.0	1.0	1.1	1.1	1.0	0.8	1.0	1.0	1.0	24	2.5	0.8	1.1	0	0
25	2.7	2.1	2.7	2.3	1.0	0.9	0.9	0.9	1.0	1.0	1.0	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	1.0	0.8	0.9	0.9	24	2.7	0.8	1.2	0	0
26	0.9	0.9	0.9	1.0	0.8	0.7	0.8	0.9	0.9	0.8	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.7	0.9	0.9	0.8	24	1.0	0.7	0.9	0	0
27	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.7	0.7	1.8	1.6	1.0	1.2	0.9	0.8	0.8	0.9	0.8	0.9	0.9	0.9	0.8	24	1.8	0.7	0.9	0	0
28	0.8	0.9	0.9	0.9	0.9	1.0	1.0	0.8	0.8	0.9	0.9	1.7	1.1	1.1	1.3	1.2	1.1	1.0	1.1	1.1	1.0	1.0	1.1	1.0	24	1.7	0.8	1.0	0	0
29	1.1	0.9	0.9	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.2	1.2	1.3	1.2	1.1	1.2	1.2	1.2	1.1	1.0	0.9	0.9	1.0	0.9	24	1.3	0.9	1.1	0	0
30	1.0	0.9	0.8	0.8	1.1	1.0	1.2	1.1	1.0	1.1	1.1	1.0	1.0	1.2	1.0	0.9	1.0	1.1	1.0	1.0	0.9	0.9	0.9	1.0	24	1.2	0.8	1.0	0	0
31	0.9	0.9	0.9	0.9	0.8	0.9	1.0	1.2	1.3	1.4	1.9	1.7	1.5	1.2	1.1	1.0	1.1	1.2	1.0	0.9	1.0	0.9	0.9	0.9	24	1.9	0.8	1.1	0	0
Count	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	742					
Maximum	2.7	2.1	2.7	2.3	1.4	1.2	1.3	5.4	5.2	2.9	3.2	6.3	8.9	6.9	8.5	2.5	4.1	1.6	1.2	1.2	1.3	1.2	1.6	1.1	24					
Minimum	0.3	0.6	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.3	0.4	0.4	0.4	0.3	0.5	0.6	0.5	0.6	0.7	0.6	0.6	0.6	0.6	0.4	22					
Average	0.9	0.9	1.0	0.9	0.9	0.9	0.9	1.2	1.3	1.1	1.2	1.4	1.4	1.3	1.3	1.1	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.9						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.3	1.6	3.8	8.9

Maximum Hourly	8.9
Maximum Daily	1.7
Monthly Average	1.1

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

SO_2 - Rundle Road
June 2017
(ppb)

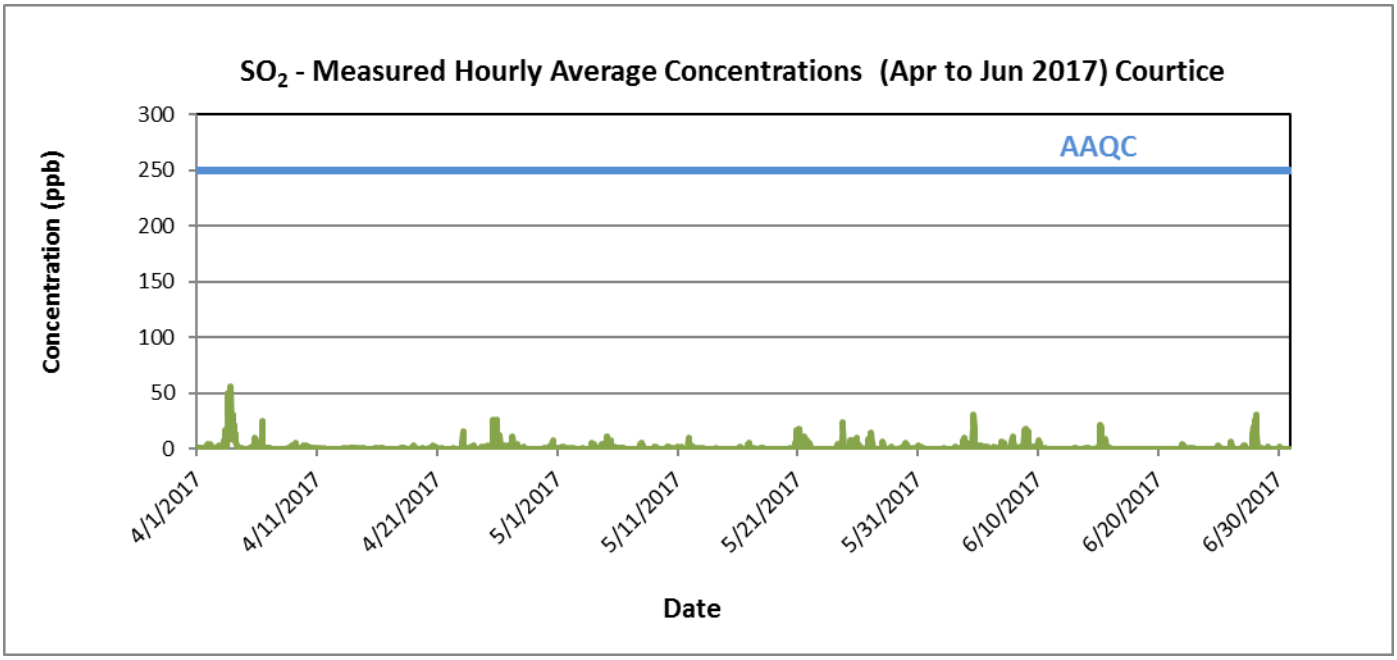
Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>250	Days>100
1	0.8	0.7	0.9	0.9	0.7	0.9	0.8	0.8	0.7	0.9	0.7	0.7	0.8	0.9	0.8	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	24	0.9	0.6	0.8	0	0
2	0.8	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.8	0.3	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.8	0.7	0.8	0.0	0.5	0.7	24	0.8	0.0	0.7	0	0
3	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.6	0.7	0.7	0.8	1.0	1.1	1.0	1.1	1.0	1.1	1.0	1.2	1.0	0.8	0.8	0.8	0.8	24	1.2	0.6	0.8	0	0
4	0.9	0.8	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0	0.9	1.0	1.0	0.9	1.0	1.0	0.9	0.9	0.9	0.9	1.0	0.9	24	1.1	0.8	1.0	0	0
5	0.9	0.9	1.0	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	24	1.0	0.8	0.9	0	0
6	0.9	0.8	0.9	0.9	0.7	0.9	0.8	0.8	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.7	0.7	0.7	24	0.9	0.7	0.8	0	0
7	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.7	0.7	0.8	0.7	0.7	0.9	0.8	0.9	0.9	0.9	0.8	0.8	0.8	0.9	0.8	0.8	24	0.9	0.6	0.8	0	0
8	0.9	0.9	0.8	0.9	0.9	0.9	1.5	2.9	2.7	2.0	1.9	1.8	1.6	3.9	2.4	2.0	1.1	1.1	1.0	1.1	1.1	1.2	1.1	1.1	24	3.9	0.8	1.5	0	0
9	1.0	1.1	1.1	1.2	1.1	1.3	1.4	1.4	1.4	1.7	2.5	C	1.4	1.8	2.3	0.5	0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.1	23	2.5	0.0	1.0	0	0
10	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.8	0.7	1.0	2.2	0.4	1.2	1.1	0.5	0.9	0.2	2.1	0.8	0.1	0.3	0.1	0.1	0.4	24	2.2	0.1	0.6	0	0
11	0.2	0.0	0.2	0.3	0.4	0.2	0.1	0.3	0.4	0.4	0.5	0.5	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.4	0.2	0.3	24	0.5	0.0	0.2	0	0
12	0.9	0.8	0.3	0.2	0.1	0.1	0.3	0.5	1.0	1.1	1.2	0.8	0.2	0.1	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.4	0.6	0.7	24	1.2	0.0	0.4	0	0
13	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.3	0.0	0.0	0	0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.4	1.8	1.7	0.1	0.3	0.0	0.0	5.8	2.7	0.8	0.1	0.0	0.0	0.0	24	5.8	0.0	0.6	0	0
15	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.1	0.0	0.0	0	0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	1.2	3.0	1.3	0.4	0.1	0.1	0.5	0.2	0.1	0.1	0.1	0.1	0.0	0.1	24	3.0	0.0	0.3	0	0
17	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.7	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	24	0.7	0.0	0.1	0	0
18	0.1	0.3	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	24	0.3	0.0	0.1	0	0
19	0.0	0.1	0.2	0.4	0.3	0.4	0.3	0.2	0.5	0.8	0.9	0.8	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.1	0.2	0.1	0.0	0.0	24	0.9	0.0	0.3	0	0
20	0.0	0.0	0.1	0.4	0.3	0.2	0.1	0.0	0.1	0.1	0.2	A	A	0.3	0.3	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	22	0.4	0.0	0.1	0	0
21	0.1	0.0	0.0	0.1	0.3	0.5	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.5	0.0	0.1	0	0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.2	0.7	0.6	0.4	0.5	0.7	0.7	0.9	1.0	0.8	1.2	1.0	1.0	0.6	0.5	24	1.2	0.0	0.5	0	0
23	0.9	0.3	0.3	0.3	0.3	0.4	0.4	0.1	0.3	0.5	0.3	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.0	24	0.9	0.0	0.3	0	0
24	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.4	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	24	0.4	0.0	0.2	0	0
25	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.5	0.7	0.7	0.1	0.1	0.0	0.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	24	0.7	0.0	0.1	0	0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.4	2.4	0.5	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	24	2.4	0.0	0.2	0	0
27	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.3	0.3	0.5	0.5	0.2	0.5	0.4	0.2	0.1	0.4	0.1	0.1	0.2	0.0	0.0	0.0	0.0	24	0.5	0.0	0.2	0	0
28	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.7	0.6	0.5	0.9	1.6	1.2	0.7	0.4	0.1	0.1	0.1	0.2	0.4	0.3	0.1	24	1.6	0.0	0.4	0	0
29	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.3	0.2	24	0.4	0.0	0.2	0	0
30	0.3	0.4	0.4	0.3	0.5	0.4	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	24	0.5	0.0	0.2	0	0
31																														
Count	30	30	30	30	30	30	30	30	30	30	30	28	29	30	30	30	30	30	30	30	30	30	30	30	717					
Maximum	1.0	1.1	1.1	1.2	1.1	1.3	1.5	2.9	2.7	2.0	2.5	3.0	1.7	3.9	2.4	2.0	1.1	5.8	2.7	1.2	1.1	1.2	1.1	1.1	24					
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22					
Average	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.6	0.6	0.6	0.4	0.4	0.6	0.4	0.4	0.3	0.3	0.3	0.3						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.0	0.1	0.1	0.2	0.4	0.7	0.8	1.0	1.2	2.4	5.8

Maximum Hourly	5.8
Maximum Daily	1.5
Monthly Average	0.4

Notes C - Calibration / Span Cycle; NA - No Data Available; T - Test; A- MOE Audit; M - Equipment Malfunction / Down; R - Rate of Change

Figure B-1 Time History Plots of Measured Hourly Average and 24 Hour Average SO_2 Concentrations – Courtice (WPCP) Station



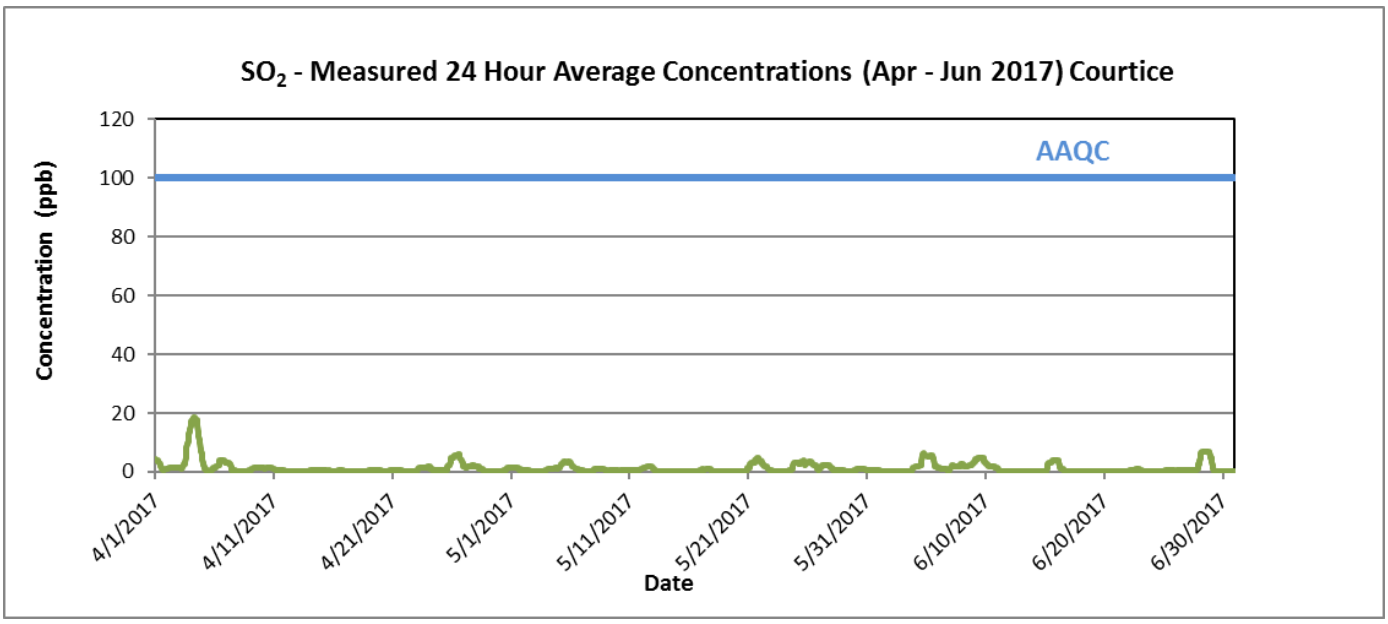
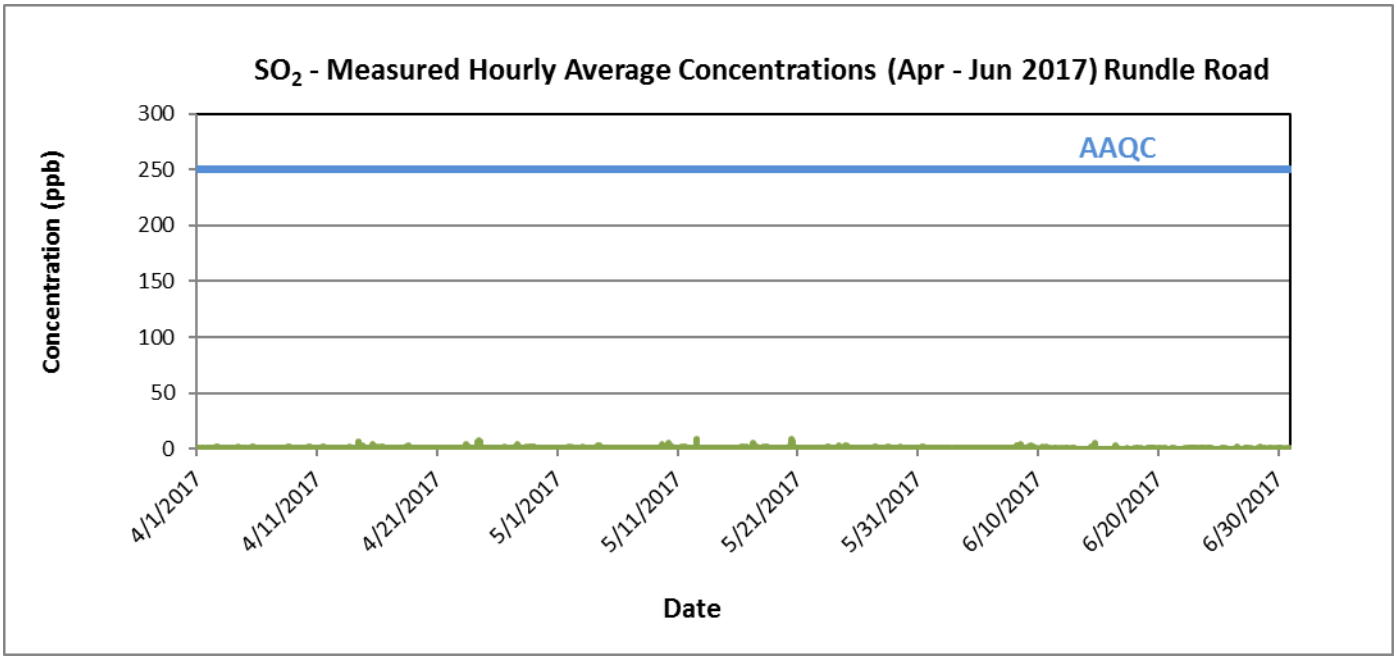
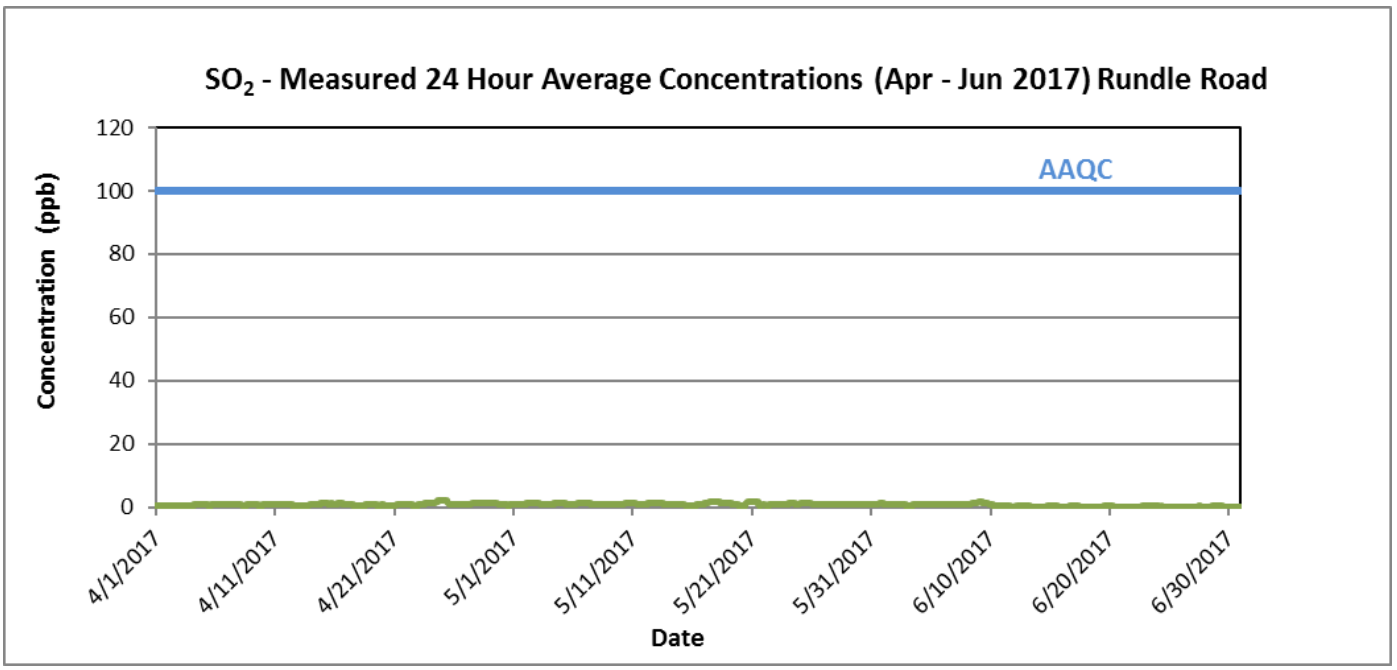


Figure B-2 Time History Plots of Measured Hourly Average and 24 Hour Average SO_2 Concentrations – Rundle Road Station





Appendix C NO_2 DATA SUMMARIES AND TIME HISTORY PLOTS

NO_2 - April (ppb) COURTICE 2017

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	4.0	3.8	3.0	3.7	3.0	3.2	3.4	2.6	2.7	4.8	2.0	2.3	1.8	2.0	1.7	1.8	2.1	1.8	1.5	8.6	30.1	31.0	16.3	2.9	24	31.0	1.5	5.8	0.0	0.0
2	17.9	11.9	21.2	25.0	25.8	13.2	4.9	3.7	4.6	5.4	5.8	5.9	3.4	4.8	3.5	2.0	2.3	2.3	2.6	6.5	21.8	28.1	20.9	11.6	24	28.1	2.0	10.6	0.0	0.0
3	10.7	9.4	6.3	8.3	6.4	8.9	16.6	19.4	11.4	18.4	8.5	4.3	3.5	16.0	20.2	26.7	22.5	13.6	9.6	9.7	27.5	17.5	17.4	29.9	24	29.9	3.5	14.3	0.0	0.0
4	33.2	26.4	21.0	12.1	18.4	21.3	14.4	11.2	11.4	12.0	10.3	9.0	5.3	2.7	2.6	3.2	3.0	2.8	4.7	4.5	4.9	3.9	3.4	2.5	24	33.2	2.5	10.2	0.0	0.0
5	2.4	2.9	3.3	2.2	3.1	5.5	4.1	3.0	C	C	2.0	1.4	1.0	1.0	1.1	1.5	5.3	13.3	4.8	8.4	15.1	7.2	13.1	4.8	22	15.1	1.0	4.8	0.0	0.0
6	3.8	2.8	3.3	14.6	9.3	16.3	11.4	15.5	18.1	21.7	22.9	24.1	9.1	6.2	5.4	5.9	5.3	4.6	5.8	3.9	2.8	2.6	2.9	2.3	24	24.1	2.3	9.2	0.0	0.0
7	3.0	2.1	1.9	2.5	2.3	2.7	3.5	2.5	2.5	2.9	2.4	2.0	1.9	1.9	2.0	2.0	1.9	3.0	4.0	6.3	8.4	11.6	15.8	9.1	24	15.8	1.9	4.1	0.0	0.0
8	13.5	18.0	20.3	22.2	24.0	24.6	16.7	4.8	2.3	2.2	2.2	1.8	1.9	1.8	2.1	3.0	1.8	1.2	1.5	1.8	1.8	1.9	5.7	9.2	24	24.6	1.2	7.8	0.0	0.0
9	15.8	14.7	10.9	13.8	16.7	13.4	11.8	8.1	3.8	4.8	6.3	4.6	5.4	7.7	3.5	3.9	8.2	6.1	10.8	6.9	8.6	26.6	26.0	27.9	24	27.9	3.5	11.1	0.0	0.0
10	20.9	20.4	19.1	31.3	32.6	31.8	33.6	26.4	14.2	4.5	4.0	2.1	1.6	1.7	1.8	6.4	2.4	4.2	3.2	5.0	3.6	3.0	2.3	4.2	24	33.6	1.6	11.7	0.0	0.0
11	1.9	2.1	3.3	2.9	3.3	1.9	23.1	7.1	4.2	5.0	3.3	5.6	4.0	5.8	6.4	4.6	5.9	8.8	6.7	8.7	10.1	5.6	5.9	5.9	24	23.1	1.9	5.9	0.0	0.0
12	4.4	4.2	2.8	3.1	4.1	5.5	5.8	3.7	3.4	3.4	3.6	2.9	2.5	2.4	2.5	3.8	3.6	4.1	4.9	4.0	5.1	3.7	3.2	5.9	24	5.9	2.4	3.9	0.0	0.0
13	13.9	8.5	8.4	17.1	21.0	24.3	29.5	20.3	11.5	13.4	8.7	3.5	4.5	2.3	1.7	1.3	1.3	1.5	1.5	8.1	40.9	35.2	33.9	29.4	24	40.9	1.3	14.2	0.0	0.0
14	12.3	4.1	2.6	4.2	5.2	6.0	7.1	7.3	4.2	3.4	3.1	4.1	3.6	2.8	2.2	2.4	2.8	3.1	4.8	7.2	6.7	10.0	7.9	14.0	24	14.0	2.2	5.5	0.0	0.0
15	8.9	6.9	9.0	7.5	8.0	8.9	9.7	7.9	4.1	3.8	4.8	3.0	5.8	8.2	5.0	5.3	3.9	4.3	4.4	15.1	16.9	12.5	12.3	3.5	24	16.9	3.0	7.5	0.0	0.0
16	2.4	2.2	2.6	2.1	1.7	1.8	2.0	2.4	2.5	2.1	1.7	1.9	2.0	1.6	1.6	1.8	2.1	2.6	3.0	3.3	2.9	3.3	3.6	2.8	24	3.6	1.6	2.3	0.0	0.0
17	2.6	2.9	3.4	4.1	3.3	3.2	3.9	2.7	3.0	2.4	2.1	1.9	1.7	1.8	1.8	2.2	2.3	3.5	4.6	4.0	4.8	7.3	9.5	7.3	24	9.5	1.7	3.6	0.0	0.0
18	8.8	14.4	13.0	11.3	14.6	20.7	11.8	8.1	1.6	1.0	0.7	0.8	0.8	1.0	1.2	1.5	2.6	2.6	4.1	8.5	21.2	3.7	2.4	10.6	24	21.2	0.7	7.0	0.0	0.0
19	22.5	25.9	11.9	3.6	2.1	3.0	14.2	14.5	8.9	10.2	7.2	5.4	4.7	4.2	3.2	3.0	3.4	3.3	6.0	8.1	18.8	10.2	5.8	4.2	24	25.9	2.1	8.5	0.0	0.0
20	5.1	5.5	6.4	6.0	4.3	5.3	4.8	5.6	6.4	3.7	5.8	2.6	3.6	3.8	18.9	5.1	4.9	12.6	6.0	12.6	18.5	6.1	9.7	8.2	24	18.9	2.6	7.1	0.0	0.0
21	5.0	3.3	10.5	2.7	2.0	8.2	8.4	9.9	8.1	6.4	4.2	3.5	4.2	4.0	2.5	2.3	3.4	3.5	3.9	3.9	3.4	3.4	3.0	3.8	24	10.5	2.0	4.7	0.0	0.0
22	2.9	3.0	2.2	2.8	2.7	2.6	2.4	1.8	3.2	1.8	1.8	1.8	1.8	1.8	2.1	2.1	1.3	1.6	2.5	4.5	4.8	4.0	3.7	2.3	24	4.8	1.3	2.6	0.0	0.0
23	2.1	1.7	2.6	10.7	17.6	15.6	11.4	11.1	10.0	6.1	4.0	2.7	2.2	1.9	1.9	1.7	1.6	1.5	2.0	5.4	7.6	5.7	3.2	4.2	24	17.6	1.5	5.6	0.0	0.0
24	3.2	6.9	6.0	5.9	6.1	6.6	5.4	3.6	2.2	1.2	1.1	1.2	1.0	0.9	1.5	2.2	1.6	10.0	8.1	1.5	5.4	16.9	5.8	6.9	24	16.9	0.9	4.6	0.0	0.0
25	11.3	4.5	7.6	7.3	8.2	10.4	7.3	5.2	5.3	4.0	4.0	5.1	4.4	3.6	5.5	9.7	22.0	16.5	15.5	18.7	34.2	16.8	28.9	26.9	24	34.2	3.6	11.8	0.0	0.0
26	5.8	2.2	3.1	2.9	18.8	24.8	5.6	8.9	7.2	3.4	2.9	2.4	2.7	2.8	8.2	8.3	4.7	2.7	5.7	9.5	18.6	2.7	26.8	13.1	24	26.8	2.2	8.1	0.0	0.0
27	3.2	4.5	13.3	17.9	10.8	18.2	15.5	19.1	9.6	5.1	3.8	4.3	4.1	3.4	9.6	14.9	7.6	11.8	5.2	6.7	4.8	3.9	2.9	2.8	24	19.1	2.8	8.5	0.0	0.0
28	5.4	7.8	5.9	5.5	6.8	9.8	8.6	C	2.5	2.6	2.2	1.8	1.6	1.4	1.4	1.5	1.7	3.7	2.6	3.3	3.1	3.1	3.4	3.2	23	9.8	1.4	3.9	0.0	0.0
29	3.1	3.8	4.3	16.5	5.7	3.8	4.5	3.6	3.4	2.9	2.7	2.2	2.2	2.2	2.4	2.2	2.9	2.8	3.6	2.8	2.9	3.5	2.8	2.8	24	16.5	2.2	3.7	0.0	0.0
30	2.8	2.1	3.4	4.2	10.6	7.9	8.7	5.0	2.3	12.1	8.0	8.6	4.7	2.9	13.7	17.4	12.1	4.9	4.2	4.2	3.6	5.2	6.6	5.9	24	17.4	2.1	6.7	0.0	0.0
31																														
Count	30	30	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	717					
Maximum	33.2	26.4	21.2	31.3	32.6	31.8	33.6	26.4	18.1	21.7	22.9	24.1	9.1	16.0	20.2	26.7	22.5	16.5	15.5	18.7	40.9	35.2	33.9	29.9	24					
Minimum	1.9	1.7	1.9	2.1	1.7	1.8	2.0	1.8	1.6	1.0	0.7	0.8	0.8	0.9	1.1	1.3	1.3	1.2	1.5	1.5	1.8	1.9	2.3	2.3	22					
Average	8.4	7.6	7.8	9.1	9.9	11.0	10.3	8.4	6.0	5.9	4.7	4.1	3.2	3.5	4.6	5.0	4.9	5.3	4.9	6.7	12.0	9.9	10.2	8.9						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.9	2.4	3.0	3.6	4.3	5.6	7.8	10.8	17.4	22.5	31.7	40.9

Maximum Hourly	40.9
Maximum Daily	14.3
Monthly Average	7.2

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NO_2 - May (ppb) COURTICE 2017																														
Day / Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	7.3	4.3	4.9	8.8	6.1	7.5	9.7	13.2	9.6	12.7	4.4	5.1	10.6	18.5	14.8	4.7	4.2	1.6	1.7	1.6	3.7	3.9	4.1	1.9	24	18.5	1.6	6.9	0.0	0.0
2	2.1	1.8	2.1	2.4	2.2	1.5	1.4	1.5	2.0	1.8	1.7	1.5	1.2	1.0	1.8	2.8	2.8	3.0	3.0	3.4	3.4	5.5	2.8	3.6	24	5.5	1.0	2.3	0.0	0.0
3	3.6	2.2	2.8	3.3	2.6	5.3	6.4	2.8	2.9	2.5	2.0	1.9	1.7	4.4	2.6	3.2	3.3	3.6	4.6	13.7	25.0	28.8	25.3	11.5	24	28.8	1.7	6.9	0.0	0.0
4	10.6	15.0	13.7	14.1	17.2	17.3	16.7	8.8	6.2	4.9	4.4	7.1	8.5	5.8	3.8	8.1	21.9	30.6	8.2	10.4	8.5	6.1	5.9	21.0	24	30.6	3.8	11.4	0.0	0.0
5	33.5	28.5	34.6	31.8	22.7	23.9	16.8	9.7	17.0	23.7	24.9	7.9	7.3	4.9	3.9	4.6	4.4	5.7	5.7	4.8	4.4	3.6	3.2	3.7	24	34.6	3.2	13.8	0.0	0.0
6	4.0	3.0	2.4	1.9	2.9	2.9	2.2	2.3	2.6	2.5	2.4	1.8	1.7	2.0	2.4	2.5	2.7	2.6	2.4	2.1	1.9	2.2	2.4	1.4	24	4.0	1.4	2.4	0.0	0.0
7	1.5	1.5	1.6	1.5	1.5	2.3	2.5	1.7	1.6	2.5	1.8	1.5	1.6	1.7	2.1	2.4	1.8	2.3	3.6	2.9	3.9	6.9	18.0	13.4	24	18.0	1.5	3.4	0.0	0.0
8	7.2	2.7	6.5	15.8	18.9	18.9	15.5	3.8	2.3	2.8	2.1	1.6	1.6	1.9	2.1	2.9	3.3	2.7	4.0	4.7	7.0	6.6	3.4	4.1	24	18.9	1.6	5.9	0.0	0.0
9	3.3	12.3	13.2	5.1	4.2	7.1	4.4	2.8	2.3	2.5	2.1	0.9	0.8	0.8	1.0	1.2	1.5	2.7	4.6	2.6	1.9	5.3	3.2	7.5	24	13.2	0.8	3.9	0.0	0.0
10	6.1	9.2	13.5	16.1	18.9	19.8	9.8	3.8	2.3	2.1	1.9	1.1	1.3	1.1	0.8	0.9	0.8	1.0	1.1	1.7	13.4	16.6	20.5	18.2	24	20.5	0.8	7.6	0.0	0.0
11	14.3	14.5	10.9	12.0	18.3	14.2	8.1	9.1	7.6	2.9	3.8	4.8	3.2	2.6	3.1	3.4	2.0	1.4	1.8	1.3	1.8	23.5	32.4	29.3	24	32.4	1.3	9.4	0.0	0.0
12	27.5	25.3	20.0	21.2	21.8	17.6	14.8	C	C	C	3.3	1.6	1.3	1.4	1.7	2.3	5.0	2.3	2.5	8.5	18.7	19.3	23.6	14.4	21	27.5	1.3	12.1	0.0	0.0
13	6.5	8.7	2.6	2.6	4.8	9.9	12.9	7.1	4.7	5.2	3.7	1.4	1.1	2.2	1.3	1.4	1.1	4.0	7.6	4.8	3.6	2.4	3.6	6.7	24	12.9	1.1	4.6	0.0	0.0
14	8.5	9.4	4.6	5.2	5.7	7.0	6.2	5.4	7.3	11.5	8.6	7.1	8.5	4.4	1.8	1.6	1.3	1.0	2.2	1.6	1.7	3.3	3.7	3.2	24	11.5	1.0	5.0	0.0	0.0
15	1.4	1.5	5.5	7.7	4.5	3.1	3.2	3.6	1.6	1.8	1.8	1.5	1.7	1.6	2.0	1.9	2.6	2.6	3.3	5.1	6.5	7.2	9.2	9.7	24	9.7	1.4	3.8	0.0	0.0
16	5.3	3.1	2.7	14.8	16.6	18.9	15.0	9.1	15.8	14.4	13.6	6.1	7.0	8.2	1.7	0.9	3.8	2.8	6.9	10.4	11.8	24.7	12.0	25.2	24	25.2	0.9	10.4	0.0	0.0
17	10.3	11.9	14.5	23.0	11.3	3.5	1.2	3.6	2.0	4.3	2.8	1.6	1.2	1.1	0.9	1.2	1.1	1.1	1.2	1.9	2.8	14.3	2.7	12.1	24	23.0	0.9	5.5	0.0	0.0
18	14.4	19.8	16.8	8.1	2.9	1.3	1.1	1.1	1.4	1.7	1.4	1.0	0.6	0.5	1.0	0.4	0.3	0.7	3.5	5.7	11.6	10.0	11.2	17.5	24	19.8	0.3	5.6	0.0	0.0
19	12.2	7.4	9.8	10.4	3.0	2.6	2.2	1.6	1.6	1.7	2.3	1.5	1.6	1.7	1.8	2.3	1.4	1.8	1.7	2.3	3.0	7.1	5.1	9.5	24	12.2	1.4	4.0	0.0	0.0
20	2.5	2.0	3.3	2.8	1.8	1.6	1.7	1.1	2.8	0.4	0.1	0.0	0.1	0.5	0.4	0.0	0.6	1.4	6.1	7.1	10.7	11.7	28.4	3.8	24	28.4	0.0	3.8	0.0	0.0
21	4.7	2.6	3.4	21.1	20.5	6.2	7.9	10.3	4.3	2.8	1.2	3.3	3.2	16.2	21.7	16.6	8.7	14.0	22.9	2.6	6.9	6.5	4.3	10.8	24	22.9	1.2	9.3	0.0	0.0
22	18.8	9.9	3.7	3.6	3.4	9.3	9.5	4.2	2.5	1.7	1.0	0.7	1.4	1.3	0.7	0.7	0.7	0.7	0.8	0.7	0.9	1.1	1.6	20.9	24	20.9	0.7	4.1	0.0	0.0
23	9.8	3.6	13.7	22.3	20.6	16.9	16.3	3.5	2.4	2.2	2.1	2.3	2.2	2.0	2.2	3.0	1.6	3.2	18.4	17.9	12.0	7.3	15.4	11.3	24	22.3	1.6	8.8	0.0	0.0
24	7.1	12.5	5.9	6.6	17.9	20.5	18.5	20.0	14.3	4.0	6.7	9.7	2.7	3.3	3.1	2.9	4.0	16.8	29.3	23.9	4.6	2.6	1.7	4.7	24	29.3	1.7	10.1	0.0	0.0
25	3.3	3.4	1.9	3.1	3.1	8.1	3.2	2.8	16.1	24.5	22.8	24.7	10.6	4.6	2.8	3.9	10.4	15.6	21.1	17.8	20.4	20.3	8.1	5.2	24	24.7	1.9	10.7	0.0	0.0
26	4.2	5.7	6.4	6.7	4.1	4.8	4.6	2.4	1.9	2.0	2.3	2.7	3.4	3.3	3.2	3.4	2.0	4.6	3.7	4.0	11.8	6.0	13.0	12.4	24	13.0	1.9	4.9	0.0	0.0
27	14.7	10.6	13.2	11.0	9.5	9.2	4.8	2.0	2.1	1.0	1.1	0.6	0.9	3.2	1.2	1.1	0.6	0.5	0.9	1.8	1.5	2.1	2.5	8.5	24	14.7	0.5	4.4	0.0	0.0
28	1.7	8.0	6.2	6.7	7.9	6.2	1.6	5.0	1.6	1.0	2.7	1.0	1.6	1.1	1.6	1.6	2.4	3.1	4.0	17.2	12.1	10.1	2.1	1.6	24	17.2	1.0	4.5	0.0	0.0
29	1.9	2.1	2.8	4.8	9.3	2.9	1.7	1.7	1.0	1.5	1.1	0.8	1.1	0.9	0.7	0.8	0.7	1.6	3.5	5.9	3.8	8.6	7.0	15.7	24	15.7	0.7	3.4	0.0	0.0
30	10.9	3.0	3.3	9.6	2.5	12.3	3.3	5.3	3.1	1.6	1.9	1.6	1.2	1.3	2.7	6.2	3.6	2.5	2.9	2.3	1.7	2.8	2.4	3.8	24	12.3	1.2	3.8	0.0	0.0
31	11.5	11.3	6.1	2.0	11.5	26.1	9.3	2.9	3.3	2.5	1.8	1.7	1.3	0.8	0.7	0.8	1.0	0.9	3.2	4.8	4.9	3.3	3.4	6.1	24	26.1	0.7	5.0	0.0	0.0
Count	31	31	31	31	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	741					
Maximum	33.5	28.5	34.6	31.8	22.7	26.1	18.5	20.0	17.0	24.5	24.9	24.7	10.6	18.5	21.7	16.6	21.9	30.6	29.3	23.9	25.0	28.8	32.4	29.3	24					
Minimum	1.4	1.5	1.6	1.5	1.5	1.3	1.1	1.1	1.0	0.4	0.1	0.0	0.1	0.5	0.4	0.0	0.3	0.5	0.8	0.7	0.9	1.1	1.6	1.4	21					
Average	8.7	8.3	8.2	9.9	9.6	10.0	7.5	5.1	4.9	4.9	4.3	3.4	3.0	3.4	2.9	2.9	3.3	4.5	6.0	6.3	7.3	9.0	9.1	10.3						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.2	1.7	2.2	2.8	3.4	4.7	7.1	10.6	16.7	20.9	28.7	34.6

Maximum Hourly	34.6
Maximum Daily	13.8
Monthly Average	6.4

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NO_2 - COURTICE
June 2017
(ppb)

Day	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	5.7	3.6	2.6	2.7	4.5	4.9	3.4	1.8	1.7	1.6	1.0	0.9	1.0	1.0	1.1	1.6	1.8	2.6	2.9	3.2	7.9	11.1	9.0	2.1	24	11.1	0.9	3.3	0.0	0.0
2	1.4	18.7	20.4	18.3	15.5	14.7	7.3	4.7	1.8	1.6	1.5	1.3	1.2	1.7	1.3	1.6	1.8	2.0	2.7	3.2	5.4	5.5	4.7	3.9	24	20.4	1.2	5.9	0.0	0.0
3	1.7	3.3	3.3	4.5	1.6	3.8	3.4	2.5	1.4	0.7	0.4	0.6	1.1	0.0	0.3	0.5	1.4	1.0	2.0	2.9	10.1	12.4	10.8	14.0	24	14.0	0.0	3.5	0.0	0.0
4	11.4	13.6	5.3	10.3	5.9	4.9	5.8	3.3	4.3	3.3	3.5	13.2	4.6	4.9	18.9	16.5	23.6	21.3	5.6	6.1	6.5	6.8	4.2	5.5	24	23.6	3.3	8.7	0.0	0.0
5	4.7	5.1	5.7	7.0	5.6	7.3	5.0	6.2	3.9	3.3	3.6	3.8	3.7	2.3	2.6	3.3	2.8	3.1	4.1	4.7	3.4	7.0	11.0	13.8	24	13.8	2.3	5.1	0.0	0.0
6	10.1	5.9	4.6	5.8	5.9	5.5	3.6	2.5	2.0	2.7	2.3	2.1	3.5	2.4	2.6	2.5	2.7	2.2	2.0	3.4	3.6	3.3	2.8	5.3	24	10.1	2.0	3.7	0.0	0.0
7	5.2	4.0	4.1	5.1	11.5	16.2	7.1	3.2	0.9	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9	22.3	25.2	22.8	24	25.2	0.0	5.4	0.0	0.0
8	19.6	16.8	14.7	15.8	15.4	14.1	15.8	14.2	15.8	13.4	10.3	6.4	8.4	13.2	11.5	5.3	1.7	0.6	0.6	2.4	13.9	26.3	24.9	22.4	24	26.3	0.6	12.6	0.0	0.0
9	20.5	18.9	13.9	15.3	18.6	17.5	11.5	6.0	C	C	C	1.9	2.4	4.3	3.1	3.3	3.5	2.3	8.9	3.1	23.5	27.8	25.9	21.1	21	27.8	1.9	12.1	0.0	0.0
10	19.7	18.9	17.2	10.9	10.6	9.2	6.5	3.6	2.9	2.7	1.4	1.4	1.3	1.3	1.4	1.1	1.4	3.3	3.0	1.6	1.0	1.0	1.3	1.4	24	19.7	1.0	5.2	0.0	0.0
11	1.4	1.9	1.4	1.3	2.0	1.7	1.6	1.4	1.4	1.0	1.3	1.0	0.9	1.2	0.7	0.6	1.0	0.9	1.0	0.8	1.0	1.3	1.1	1.8	24	2.0	0.6	1.2	0.0	0.0
12	1.8	1.5	1.7	1.8	2.0	2.0	2.3	2.7	2.9	2.6	3.2	2.3	2.6	1.5	0.8	0.4	0.4	0.6	2.1	1.5	1.5	1.3	1.5	1.9	24	3.2	0.4	1.8	0.0	0.0
13	4.0	3.5	3.2	18.7	7.4	4.6	10.4	8.9	9.9	5.9	3.1	4.3	5.8	4.1	4.4	3.0	3.7	2.3	2.1	2.5	6.5	22.7	19.8	13.7	24	22.7	2.1	7.3	0.0	0.0
14	10.8	8.1	8.7	9.0	7.0	7.0	3.7	2.6	3.5	1.2	0.7	0.4	0.3	0.7	0.5	0.2	0.1	0.3	0.9	3.3	6.1	12.8	14.0	12.2	24	14.0	0.1	4.8	0.0	0.0
15	11.9	8.7	9.9	16.3	21.7	24.8	22.2	12.3	11.0	10.8	11.0	11.9	12.9	9.4	12.2	16.0	8.3	8.5	16.1	11.8	9.3	9.9	7.1	10.3	24	24.8	7.1	12.7	0.0	0.0
16	9.5	5.3	6.0	4.5	4.3	3.7	3.9	2.4	2.0	1.7	1.5	1.4	1.2	1.3	1.3	0.9	0.6	0.9	4.5	2.9	4.2	3.2	7.8	4.8	24	9.5	0.6	3.3	0.0	0.0
17	16.9	8.5	13.2	10.6	13.1	11.4	5.9	5.1	2.7	2.4	2.6	3.3	2.6	1.7	4.2	6.5	3.7	8.8	8.7	2.7	3.3	4.6	4.1	8.2	24	16.9	1.7	6.4	0.0	0.0
18	10.0	16.5	13.0	10.5	6.4	4.4	2.2	2.5	1.5	1.2	1.7	1.0	1.2	1.2	0.5	0.4	0.6	0.6	0.4	0.7	0.9	0.8	1.2	1.8	24	16.5	0.4	3.4	0.0	0.0
19	2.2	2.2	3.2	3.0	2.6	2.8	2.6	2.7	3.2	3.5	3.2	3.0	1.5	1.2	0.8	0.6	0.9	0.6	1.3	2.7	8.1	11.9	6.3	3.3	24	11.9	0.6	3.1	0.0	0.0
20	6.5	4.8	2.4	2.9	10.6	12.3	7.4	10.2	3.4	A	A	3.6	4.6	2.7	1.8	4.4	3.1	2.5	1.3	4.3	4.4	2.8	2.1	3.0	22	12.3	1.3	4.6	0.0	0.0
21	3.4	4.4	7.7	10.4	10.9	12.3	7.3	5.5	5.3	4.7	4.9	3.2	2.0	1.5	1.0	0.6	0.5	0.6	0.5	1.5	6.7	15.0	7.9	12.7	24	15.0	0.5	5.4	0.0	0.0
22	12.1	11.8	10.4	10.8	10.7	10.0	9.2	3.2	2.4	3.8	3.6	4.1	C	C	3.2	0.7	4.2	1.9	2.7	1.4	0.8	3.9	15.5	8.4	22	15.5	0.7	6.1	0.0	0.0
23	7.4	4.4	2.3	0.0	0.0	0.0	4.2	11.6	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.9	2.8	1.3	1.0	2.4	24	11.6	0.0	1.7	0.0	0.0
24	3.1	1.5	0.0	2.3	2.7	1.3	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	6.9	6.3	3.4	24	6.9	0.0	1.3	0.0	0.0
25	3.9	9.4	5.7	4.6	5.6	5.6	6.0	1.4	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	8.0	4.7	3.5	24	9.4	0.0	2.6	0.0	0.0
26	2.0	5.9	9.5	7.9	6.1	5.2	7.4	6.1	4.0	0.0	0.0	0.0	0.3	1.3	1.7	4.2	8.3	3.2	2.0	1.6	1.8	11.9	20.2	5.0	24	20.2	0.0	4.8	0.0	0.0
27	7.5	14.3	11.4	14.6	13.2	6.7	5.1	8.6	3.7	1.3	2.8	4.2	2.5	1.7	1.6	1.5	1.0	0.9	2.4	4.9	13.5	13.0	14.7	12.6	24	14.7	0.9	6.8	0.0	0.0
28	12.0	13.6	12.2	12.5	11.2	8.7	9.7	6.5	5.2	3.5	2.5	3.3	5.1	3.8	1.2	0.5	0.0	0.0	0.0	0.0	0.1	0.4	0.5	1.3	24	13.6	0.0	4.7	0.0	0.0
29	1.2	0.5	2.2	12.5	9.5	7.5	8.6	3.1	3.3	4.3	5.3	2.7	2.4	1.4	1.4	2.8	0.9	1.0	1.2	3.7	18.1	5.0	11.4	10.5	24	18.1	0.5	5.0	0.0	0.0
30	1.0	0.5	0.9	6.1	2.0	0.6	1.2	1.8	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	1.5	24	6.1	0.0	0.8	0.0	0.0
31																														
Count	30	30	30	30	30	30	30	30	29	28	28	30	29	29	30	30	30	30	30	30	30	30	30	30	713					
Maximum	20.5	18.9	20.4	18.7	21.7	24.8	22.2	14.2	15.8	13.4	11.0	13.2	12.9	13.2	18.9	16.5	23.6	21.3	16.1	11.8	23.5	27.8	25.9	22.8	24					
Minimum	1.0	0.5	0.0	0.0	0.0	0.0	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	1.3	21					
Average	7.6	7.9	7.2	8.5	8.1	7.7	6.4	4.9	3.5	2.8	2.6	2.7	2.5	2.3	2.7	2.6	2.6	2.4	2.7	2.6	5.7	8.7	9.0	7.8						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.3	1.0	1.5	2.4	3.2	4.1	5.8	8.9	13.0	16.3	23.4	27.8

	Maximum
Maximum Hourly	27.8
Maximum Daily	12.7
Monthly Average	5.1

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NO_2 - April (ppb) Rundle Road 2017

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	1.1	1.0	0.6	0.5	0.4	0.5	0.4	0.4	0.1	0.1	0.0	0.1	0.0	0.0	0.0	3.3	2.1	2.4	2.8	2.8	9.6	18.1	14.5	10.2	24	18.1	0.0	3.0	0	0
2	6.2	6.9	10.2	14.8	22.7	17.8	9.0	6.1	7.2	8.0	6.1	6.5	3.4	5.8	3.7	2.5	3.7	9.6	4.5	26.0	12.0	4.4	1.8	2.7	24	26.0	1.8	8.4	0	0
3	2.0	0.2	0.4	8.2	6.8	13.1	12.2	11.3	8.0	7.3	5.7	4.5	4.0	2.4	3.4	1.9	3.8	6.5	4.4	5.5	4.9	3.2	2.8	4.1	24	13.1	0.2	5.3	0	0
4	3.9	2.9	1.9	1.4	2.2	5.0	6.3	8.1	11.1	16.5	19.8	12.2	15.2	8.2	5.6	6.0	5.1	5.6	7.9	6.3	6.6	2.0	0.5	0.5	24	19.8	0.5	6.7	0	0
5	0.3	0.3	0.3	0.0	0.2	0.2	C	C	0.5	0.4	1.6	4.1	2.2	2.7	2.1	5.4	4.4	5.7	1.7	1.7	4.6	3.6	3.5	2.0	22	5.7	0.0	2.2	0	0
6	1.8	0.6	2.3	2.1	2.5	4.1	3.6	4.5	6.5	5.3	7.7	6.0	3.1	2.4	2.1	1.9	2.0	1.8	0.9	0.5	0.1	0.1	0.0	0.0	24	7.7	0.0	2.6	0	0
7	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.1	1.2	2.3	2.2	2.2	3.8	24	3.8	0.0	0.5	0	0
8	2.1	2.2	3.9	3.3	2.8	1.7	2.0	0.8	0.3	0.1	0.0	0.2	0.1	0.0	1.5	4.0	3.2	2.2	2.9	3.2	4.0	5.1	6.2	2.8	24	6.2	0.0	2.3	0	0
9	3.6	3.4	3.0	3.7	2.4	1.8	1.9	3.7	4.8	5.1	5.9	6.6	4.3	3.7	6.1	3.4	3.8	4.8	10.1	11.5	10.1	11.3	3.3	2.4	24	11.5	1.8	5.0	0	0
10	2.8	2.3	4.5	3.5	5.2	7.9	13.2	14.0	12.0	7.1	5.7	6.7	4.0	5.6	5.7	10.3	7.0	9.9	15.9	14.6	33.6	20.7	7.3	4.2	24	33.6	2.3	9.3	0	0
11	9.2	8.0	7.4	4.4	5.3	10.6	13.4	5.9	1.3	1.4	8.3	9.6	9.3	11.8	9.8	10.1	8.1	7.4	12.5	11.2	6.6	1.2	1.3	1.4	24	13.4	1.2	7.3	0	0
12	1.6	1.4	1.1	1.1	0.5	0.8	1.5	2.1	1.8	2.1	3.7	2.0	6.4	6.7	6.3	1.1	0.9	0.9	0.6	0.3	0.8	0.5	0.3	0.4	24	6.7	0.3	1.9	0	0
13	1.6	0.8	1.4	1.8	2.3	3.6	9.5	17.8	16.7	18.1	14.7	3.8	4.7	3.7	3.1	2.9	3.4	3.4	8.9	13.6	6.7	9.6	6.8	6.7	24	18.1	0.8	6.9	0	0
14	1.5	0.1	0.2	0.2	0.2	0.6	0.7	4.1	6.0	7.4	6.5	13.6	2.4	1.8	2.8	1.8	4.3	2.9	5.3	7.0	8.7	9.5	4.9	4.8	24	13.6	0.1	4.1	0	0
15	4.3	5.3	2.4	1.6	9.2	5.6	3.4	4.4	6.3	4.5	7.9	4.9	5.8	6.0	4.3	8.1	11.1	4.7	9.2	8.1	3.6	3.7	4.5	4.7	24	11.1	1.6	5.6	0	0
16	2.2	2.3	2.1	2.0	2.4	2.4	2.0	2.9	2.8	3.5	3.6	2.5	2.6	2.2	1.3	1.0	0.5	0.8	0.7	0.9	0.6	0.5	0.5	0.5	24	3.6	0.5	1.8	0	0
17	0.4	1.3	4.9	0.7	0.4	0.4	0.5	0.6	0.5	0.4	0.4	0.2	0.2	0.5	0.5	0.4	0.3	0.3	0.1	0.1	0.0	0.5	0.2	0.1	24	4.9	0.0	0.6	0	0
18	0.1	0.4	1.0	1.4	2.9	3.6	3.5	2.1	0.6	9.7	4.0	0.8	6.2	14.5	15.0	1.8	1.9	2.3	7.0	3.6	7.7	4.8	2.8	1.8	24	15.0	0.1	4.1	0	0
19	7.1	7.1	7.2	1.7	3.1	3.6	7.3	13.1	15.4	17.0	15.2	16.2	13.0	10.0	10.5	7.9	4.5	5.7	1.0	1.0	1.0	1.0	1.0	0.7	24	17.0	0.7	7.1	0	0
20	0.7	1.1	5.3	4.0	0.5	1.5	1.7	1.7	4.8	2.5	6.6	6.2	4.2	3.0	2.3	4.1	4.5	4.0	1.4	3.9	9.6	4.6	6.6	3.9	24	9.6	0.5	3.7	0	0
21	2.5	7.8	2.8	8.6	7.8	7.9	12.4	8.9	12.9	9.2	6.7	5.2	6.8	6.9	5.6	1.0	1.0	0.8	1.0	0.9	0.6	1.7	0.7	0.7	24	12.9	0.6	5.0	0	0
22	1.7	0.5	0.3	0.5	0.5	0.4	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.4	0.3	1.1	1.6	3.1	5.4	0.6	0.4	0.5	0.3	24	5.4	0.0	0.8	0	0
23	0.1	1.7	8.7	5.7	3.7	2.7	4.4	7.0	12.7	9.6	5.3	4.7	3.6	2.7	2.3	2.4	5.3	4.0	2.2	2.4	1.6	0.4	0.6	0.6	24	12.7	0.1	3.9	0	0
24	0.8	1.5	1.2	0.9	4.5	1.3	1.1	0.8	3.6	2.5	9.4	9.4	19.0	13.0	18.9	6.6	3.6	2.8	6.5	12.1	7.9	8.4	8.5	1.4	24	19.0	0.8	6.1	0	0
25	0.8	4.4	1.9	3.3	1.9	4.9	5.3	4.9	5.1	9.5	3.1	6.3	2.0	1.8	1.6	2.0	2.0	3.3	6.8	4.8	5.7	2.7	3.1	3.2	24	9.5	0.8	3.8	0	0
26	1.6	2.5	1.5	1.2	2.1	5.4	3.0	4.5	2.4	3.9	1.8	1.9	2.2	4.6	2.0	4.1	2.1	2.7	4.6	13.1	8.2	16.6	9.3	8.6	24	16.6	1.2	4.6	0	0
27	5.9	3.4	8.4	16.8	18.0	22.4	7.4	10.7	6.8	5.6	6.8	4.9	4.5	3.3	2.7	2.5	3.1	9.5	7.6	12.0	12.3	7.5	5.8	5.8	24	22.4	2.5	8.1	0	0
28	3.7	1.4	1.8	2.2	2.4	C	12.5	11.9	5.6	7.2	3.8	3.0	2.7	3.0	2.8	2.7	3.2	6.7	7.1	13.3	9.0	5.1	6.1	3.6	23	13.3	1.4	5.2	0	0
29	7.7	15.7	11.3	9.8	2.7	1.1	0.7	0.5	0.6	0.6	0.7	0.6	0.5	0.6	0.5	0.7	0.5	0.4	0.3	0.4	0.4	0.5	0.4	0.5	24	15.7	0.3	2.4	0	0
30	0.8	3.0	3.6	0.3	0.6	1.6	1.6	0.7	0.4	0.9	2.6	1.2	1.0	0.8	1.3	1.5	1.7	1.0	0.9	0.6	3.6	1.7	2.4	3.9	24	3.9	0.3	1.6	0	0
31																														
Count	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	717					
Maximum	9.2	15.7	11.3	16.8	22.7	22.4	13.4	17.8	16.7	18.1	19.8	16.2	19.0	14.5	18.9	10.3	11.1	9.9	15.9	26.0	33.6	20.7	14.5	10.2	24					
Minimum	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	22					
Average	2.6	3.0	3.4	3.5	3.9	4.6	4.9	5.3	5.2	5.5	5.5	4.8	4.4	4.3	4.1	3.4	3.3	3.8	4.6	6.3	6.1	5.1	3.6	2.9						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.3	0.7	1.5	2.2	3.0	4.0	5.3	7.0	9.9	13.2	18.8	33.6

Maximum Hourly	33.6
Maximum Daily	9.3
Monthly Average	4.3

Notes C - Calibration / Span Cycle; NA - No Data Available; T - Test; A- MOE Audit; M - Equipment Malfunction / Down; R - Rate of Change

NO_2 - May (ppb) Rundle Road 2017

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	3.5	2.3	1.7	1.4	1.9	2.1	3.6	3.1	5.0	8.0	6.6	6.1	6.9	6.2	9.5	10.1	7.9	5.4	6.3	13.1	12.5	9.7	9.5	5.3	24	13.1	1.4	6.1	0	0
2	5.4	5.8	5.4	5.7	3.9	6.1	5.5	3.1	4.1	4.4	4.0	3.1	3.6	3.7	4.7	5.8	6.3	6.7	7.0	8.4	5.8	2.7	0.9	1.8	24	8.4	0.9	4.7	0	0
3	1.7	0.5	0.2	0.1	0.0	0.1	0.7	0.4	0.5	0.3	0.5	0.6	0.3	0.2	0.1	0.3	0.4	0.3	0.5	1.1	4.4	4.4	3.3	1.0	24	4.4	0.0	0.9	0	0
4	0.8	14.0	2.6	5.9	20.5	12.3	7.2	7.2	9.2	11.8	9.3	8.0	8.9	6.4	8.0	7.9	7.4	5.0	2.7	2.0	6.3	1.2	1.3	5.5	24	20.5	0.8	7.1	0	0
5	4.8	3.1	3.5	4.9	2.3	2.8	2.5	3.6	2.6	2.5	5.8	4.0	2.4	1.9	1.3	1.1	1.2	1.3	0.9	0.7	0.7	0.6	0.6	0.5	24	5.8	0.5	2.3	0	0
6	0.5	0.3	0.1	0.1	0.0	0.1	0.1	0.1	0.4	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.5	0.0	0.1	0	0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	1.6	9.1	0.5	24	9.1	0.0	0.5	0	0
8	0.7	1.8	2.7	1.1	0.4	2.1	1.6	0.7	0.2	0.5	1.0	0.3	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.1	0.7	0.8	0.0	0.0	24	2.7	0.0	0.6	0	0
9	3.4	2.9	1.2	0.0	0.2	0.2	0.8	0.4	0.4	0.5	2.9	2.5	3.3	1.1	1.5	1.4	16.9	5.0	3.1	3.2	6.3	3.5	3.2	5.1	24	16.9	0.0	2.9	0	0
10	6.7	10.8	4.2	3.1	2.7	3.3	4.5	11.5	5.3	4.1	1.5	1.4	1.4	1.0	1.0	0.9	1.6	4.4	6.0	5.8	5.5	5.9	5.9	3.5	24	11.5	0.9	4.3	0	0
11	2.1	2.0	2.6	2.0	2.7	2.6	2.4	1.5	8.7	3.0	4.3	4.3	4.0	3.7	3.3	4.1	3.4	2.6	3.6	20.4	21.0	16.1	10.5	7.1	24	21.0	1.5	5.7	0	0
12	11.5	10.1	6.9	1.9	0.8	C	C	4.9	4.3	4.7	4.0	8.8	6.0	4.4	15.3	4.4	4.2	9.5	13.3	21.7	16.3	17.0	14.0	10.5	22	21.7	0.8	8.8	0	0
13	5.1	5.2	7.7	1.7	2.4	3.6	11.9	9.5	6.4	13.4	6.5	1.7	3.4	3.7	1.9	5.5	2.8	2.8	3.0	5.8	3.9	6.2	4.5	5.3	24	13.4	1.7	5.2	0	0
14	3.7	2.6	2.2	1.3	1.0	1.1	5.8	3.5	5.6	13.2	12.7	10.4	8.6	3.0	0.9	0.9	0.6	0.5	0.6	0.6	0.5	0.5	1.5	0.5	24	13.2	0.5	3.4	0	0
15	0.1	0.1	0.3	0.7	0.3	0.2	0.7	0.4	0.4	0.3	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.8	1.0	1.6	1.6	1.8	0.9	24	1.8	0.1	0.6	0	0
16	0.9	7.3	9.4	3.6	1.8	1.9	2.2	9.7	19.2	14.7	11.5	12.2	11.4	14.2	6.6	2.0	3.0	6.0	10.9	14.6	19.6	15.0	18.5	8.4	24	19.6	0.9	9.4	0	0
17	4.6	13.5	5.6	3.8	8.7	23.4	17.4	13.5	12.4	9.2	7.1	8.6	5.2	4.6	4.4	5.3	5.6	5.7	7.9	10.7	25.4	23.9	13.6	11.0	24	25.4	3.8	10.5	0	0
18	6.0	4.9	8.8	7.0	7.7	9.1	8.8	7.4	5.7	8.1	6.1	4.0	3.9	3.6	4.8	4.8	4.2	5.6	4.8	13.2	3.1	1.3	1.2	1.5	24	13.2	1.2	5.6	0	0
19	2.9	6.4	7.7	2.1	0.7	0.7	0.9	0.7	0.4	0.3	0.2	0.4	0.2	0.4	0.6	0.2	0.7	5.7	9.2	10.1	18.6	10.4	1.6	4.2	24	18.6	0.2	3.6	0	0
20	0.3	0.3	1.9	0.0	0.2	0.3	0.2	1.3	0.8	2.3	2.0	5.2	4.9	8.1	2.3	3.1	4.4	0.9	1.1	2.0	2.7	2.8	3.7	1.8	24	8.1	0.0	2.2	0	0
21	5.1	1.7	6.9	1.4	1.1	1.4	1.6	1.2	3.7	1.2	3.3	2.6	3.5	1.9	2.7	5.0	2.2	2.2	3.0	4.2	4.8	2.5	4.9	1.7	24	6.9	1.1	2.9	0	0
22	5.3	3.4	3.4	2.6	1.4	4.1	4.8	7.8	4.1	4.0	5.0	7.3	4.0	3.6	2.3	2.3	2.5	3.3	5.1	4.2	5.4	5.4	2.9	5.4	24	7.8	1.4	4.1	0	0
23	5.0	6.5	5.7	4.5	3.4	3.2	15.0	9.5	7.0	6.5	4.5	4.9	5.9	6.5	6.6	9.0	9.0	15.9	9.3	9.9	6.9	9.0	12.2	13.1	24	15.9	3.2	7.9	0	0
24	10.3	4.5	7.4	13.0	8.4	8.9	7.6	6.3	9.7	6.6	4.4	4.0	4.2	4.4	3.6	3.1	3.1	5.2	4.0	5.6	5.9	4.5	5.8	3.3	24	13.0	3.1	6.0	0	0
25	8.3	4.9	9.6	6.1	2.5	2.3	2.2	4.3	2.7	3.2	2.4	2.2	2.1	1.8	2.5	1.7	2.2	3.5	4.6	4.8	6.0	4.8	8.2	2.6	24	9.6	1.7	4.0	0	0
26	1.3	1.3	1.1	1.2	1.0	1.2	1.0	1.1	0.7	1.2	7.2	7.3	2.6	5.2	6.1	6.1	6.9	12.9	14.9	13.2	7.5	2.2	1.6	1.8	24	14.9	0.7	4.4	0	0
27	1.4	3.4	2.4	1.4	1.5	1.0	0.9	1.4	2.5	2.9	2.3	5.9	3.4	2.1	3.0	1.5	2.0	3.9	3.9	8.6	16.6	11.2	11.8	4.9	24	16.6	0.9	4.2	0	0
28	3.2	4.6	3.6	5.9	6.8	5.3	5.5	2.7	2.3	2.6	1.3	2.8	1.6	1.3	2.9	1.0	1.3	1.2	3.6	5.2	5.1	4.4	5.0	4.2	24	6.8	1.0	3.5	0	0
29	8.6	4.5	8.5	7.4	10.6	14.3	8.0	6.9	8.2	5.5	4.3	4.1	4.0	3.6	3.2	3.6	6.1	5.0	4.9	2.2	11.2	14.1	9.5	13.0	24	14.3	2.2	7.1	0	0
30	19.8	10.8	7.4	7.7	16.1	5.6	10.6	11.7	5.9	5.4	5.3	3.2	3.3	3.5	3.1	2.3	2.0	7.1	8.6	9.1	6.9	4.8	7.2	11.5	24	19.8	2.0	7.5	0	0
31	10.2	12.8	11.2	11.3	6.1	4.6	7.3	7.5	7.8	4.3	4.7	5.3	3.9	6.6	5.2	4.3	5.9	6.9	2.9	1.1	1.0	1.1	0.6	0.9	24	12.8	0.6	5.6	0	0
Count	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	742					
Maximum	19.8	14.0	11.2	13.0	20.5	23.4	17.4	13.5	19.2	14.7	12.7	12.2	11.4	14.2	15.3	10.1	16.9	15.9	14.9	21.7	25.4	23.9	18.5	13.1	24					
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22					
Average	4.6	4.9	4.6	3.5	3.8	4.1	4.7	4.6	4.7	4.7	4.2	4.2	3.7	3.5	3.5	3.2	3.7	4.4	4.7	6.5	7.5	6.1	5.6	4.4						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum Hourly	25.4
													Maximum Daily	10.5
Data	0.3	0.9	1.6	2.6	3.6	4.5	5.7	7.3	10.4	13.2	19.7	25.4	Monthly Average	4.6

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

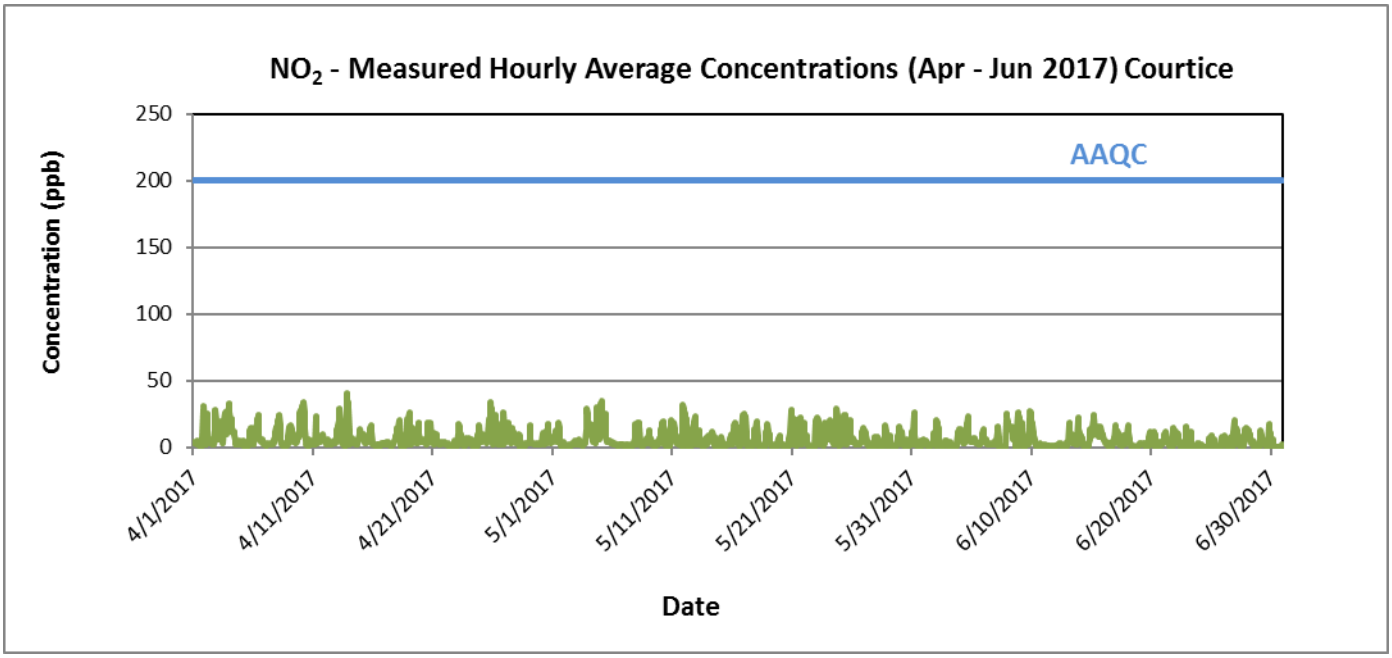
NO_2 - June (ppb) Rundle Road 2017																														
Day / Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	1.3	1.0	0.7	0.5	1.9	4.7	1.5	1.0	1.0	0.7	0.3	0.4	0.3	0.5	0.3	0.5	0.8	0.8	0.4	0.7	0.5	2.0	1.4	14.8	24	14.8	0.3	1.6	0	0
2	16.1	3.4	4.3	4.4	4.4	3.5	1.9	2.0	0.6	0.3	0.3	0.3	0.0	0.5	0.4	1.1	0.3	0.3	0.3	0.3	0.6	0.7	0.6	1.1	24	16.1	0.0	2.0	0	0
3	0.5	0.5	0.5	0.5	0.2	0.6	1.2	0.2	0.2	0.3	1.8	3.3	2.4	2.0	2.0	2.2	2.2	2.3	3.5	9.1	4.4	2.8	2.2	1.9	24	9.1	0.2	1.9	0	0
4	2.2	2.6	11.7	5.6	3.4	2.6	2.6	4.4	5.3	2.2	1.9	2.1	2.1	1.4	1.6	2.1	1.4	2.9	1.6	2.8	4.4	3.7	2.2	1.1	24	11.7	1.1	3.1	0	0
5	1.2	1.3	5.9	1.6	1.1	1.4	1.3	1.9	2.0	1.9	2.1	2.3	1.4	1.5	0.8	0.8	0.7	0.7	0.6	0.6	0.5	1.1	1.4	1.0	24	5.9	0.5	1.5	0	0
6	0.4	0.2	0.6	0.2	0.3	0.5	0.9	1.4	1.0	1.1	1.0	1.2	1.5	0.9	0.9	0.9	1.0	0.7	0.6	0.5	0.4	0.2	0.3	0.6	24	1.5	0.2	0.7	0	0
7	0.6	0.2	0.4	1.2	0.6	1.3	1.6	1.5	1.6	2.4	4.5	1.2	0.9	2.7	1.9	1.9	3.5	3.5	10.4	18.6	24.6	15.4	7.6	9.4	24	24.6	0.2	4.9	0	0
8	5.4	2.6	2.4	3.4	3.6	3.9	16.1	14.9	19.2	17.9	13.2	10.6	7.0	10.4	6.9	5.0	2.5	3.3	7.5	14.6	13.7	21.3	11.1	11.5	24	21.3	2.4	9.5	0	0
9	9.3	7.0	4.7	4.9	6.3	13.0	19.3	13.7	10.5	7.9	7.2	C	7.7	6.0	5.9	5.8	9.6	7.8	5.8	16.8	12.1	5.4	9.5	8.9	23	19.3	4.7	8.9	0	0
10	14.4	10.0	5.5	3.8	1.7	8.8	7.9	5.6	4.3	4.2	4.9	2.3	2.3	2.0	2.5	2.5	3.9	7.0	4.1	4.6	2.8	2.3	2.8	2.8	24	14.4	1.7	4.7	0	0
11	3.3	3.2	2.0	1.9	2.4	2.9	2.1	2.3	1.9	2.9	4.0	3.4	4.8	2.5	2.6	2.4	3.6	2.8	3.5	3.8	4.2	4.7	4.2	3.3	24	4.8	1.9	3.1	0	0
12	3.2	6.9	7.2	6.1	9.4	14.9	15.5	8.2	8.4	8.1	9.0	7.4	8.8	9.5	9.4	7.4	5.9	7.5	8.7	9.0	12.7	10.3	8.5	18.3	24	18.3	3.2	9.2	0	0
13	27.6	33.5	24.7	12.9	1.8	1.4	5.7	10.6	12.3	3.7	1.9	2.4	1.9	1.9	1.7	1.3	1.1	1.2	6.2	16.7	22.2	9.9	5.1	3.8	24	33.5	1.1	8.8	0	0
14	2.9	1.6	1.4	1.5	1.5	1.6	2.5	1.1	2.2	3.8	5.4	3.6	2.9	1.4	1.5	1.1	2.9	8.0	6.7	5.5	10.8	8.6	5.2	3.5	24	10.8	1.1	3.6	0	0
15	3.4	5.8	4.7	2.1	3.5	3.8	5.8	5.9	4.8	2.7	2.5	3.7	2.6	3.7	2.9	7.3	6.7	3.2	3.0	2.9	2.2	2.0	1.9	1.6	24	7.3	1.6	3.7	0	0
16	2.2	11.2	10.2	11.9	12.7	12.2	7.4	6.0	7.8	6.0	4.4	6.6	7.5	6.0	3.4	3.7	4.7	3.3	3.8	6.6	11.2	10.0	5.1	6.4	24	12.7	2.2	7.1	0	0
17	6.0	12.0	10.7	7.3	7.0	8.2	9.0	7.7	4.8	4.7	6.3	5.7	2.1	1.8	2.3	2.9	2.7	2.0	3.8	2.7	4.1	4.2	4.9	3.3	24	12.0	1.8	5.3	0	0
18	6.7	12.3	7.0	4.5	7.1	8.2	2.1	2.8	2.4	4.0	2.1	2.7	2.3	2.1	2.8	2.2	2.5	2.4	2.5	4.7	3.9	2.7	4.9	3.5	24	12.3	2.1	4.1	0	0
19	6.0	6.7	6.5	6.4	12.9	15.4	11.0	7.4	7.6	6.3	5.4	4.7	3.2	3.1	2.8	2.9	5.2	4.3	6.1	4.8	8.6	3.3	10.0	7.6	24	15.4	2.8	6.6	0	0
20	4.8	6.7	8.9	6.5	6.7	13.9	12.0	5.3	6.0	4.5	5.4	A	A	1.8	4.9	2.1	1.1	1.6	6.6	1.0	1.2	7.0	7.8	13.4	22	13.9	1.0	5.9	0	0
21	10.5	13.3	13.0	19.9	20.4	19.9	11.4	9.1	8.6	8.2	7.4	5.7	5.0	3.9	4.2	3.2	3.2	4.3	5.5	14.1	8.9	2.5	6.1	1.6	24	20.4	1.6	8.8	0	0
22	2.2	4.6	4.9	2.5	1.6	1.6	4.0	3.9	3.3	5.9	9.1	10.3	7.0	5.6	C	C	4.1	4.7	6.6	5.3	7.3	5.1	4.8	5.2	22	10.3	1.6	5.0	0	0
23	7.5	9.0	6.4	6.7	6.6	11.3	12.0	8.7	7.5	4.2	2.2	3.1	2.8	0.6	2.9	0.9	3.5	5.0	5.1	0.0	0.0	0.0	0.0	0.0	24	12.0	0.0	4.4	0	0
24	0.0	0.0	0.0	0.0	0.0	2.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	1.8	24	2.2	0.0	0.2	0	0
25	1.6	2.2	0.6	0.5	2.2	1.9	4.9	2.8	2.4	1.0	0.9	0.9	0.8	0.0	0.4	1.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	24	4.9	0.0	1.0	0	0
26	4.6	6.4	3.7	0.0	0.0	0.0	2.8	0.0	1.3	0.3	0.0	0.0	0.1	1.3	3.1	8.0	2.0	1.5	4.8	9.5	13.3	7.7	10.6	9.4	24	13.3	0.0	3.8	0	0
27	5.7	2.7	5.5	8.7	9.2	11.4	11.3	10.8	8.5	3.3	4.7	6.2	4.0	4.1	3.8	0.1	0.0	0.0	0.0	0.0	0.7	7.0	4.6	3.3	24	11.4	0.0	4.8	0	0
28	2.8	3.2	0.7	0.7	0.1	8.0	11.3	15.4	6.3	6.7	7.9	5.9	6.0	4.1	1.4	1.0	0.9	0.8	3.3	3.9	9.4	11.4	8.4	8.3	24	15.4	0.1	5.3	0	0
29	8.3	10.2	5.9	1.3	4.1	11.1	7.5	3.9	6.0	5.9	5.0	6.1	5.0	4.6	4.9	5.3	4.3	5.0	6.7	13.4	7.9	16.5	23.3	13.2	24	23.3	1.3	7.7	0	0
30	5.6	7.5	6.5	4.7	10.4	4.8	4.1	5.7	7.4	3.0	1.5	1.4	2.8	1.0	0.8	1.9	1.6	0.5	1.2	1.8	1.7	2.2	2.1	2.3	24	10.4	0.5	3.4	0	0
31																														
Count	30	30	30	30	30	30	30	30	30	30	30	28	29	30	29	29	30	30	30	30	30	30	30	30	715					
Maximum	27.6	33.5	24.7	19.9	20.4	19.9	19.3	15.4	19.2	17.9	13.2	10.6	8.8	10.4	9.4	8.0	9.6	8.0	10.4	18.6	24.6	21.3	23.3	18.3	24					
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22					
Average	5.5	6.3	5.6	4.4	4.8	6.5	6.6	5.5	5.2	4.1	4.1	3.7	3.3	2.9	2.7	2.7	2.7	2.9	4.0	5.8	6.5	5.7	5.2	5.4						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.4	1.1	1.9	2.5	3.4	4.6	5.9	7.5	10.5	13.3	20.3	33.5

Maximum Hourly	33.5
Maximum Daily	9.5
Monthly Average	4.7

Notes C - Calibration / Span Cycle; NA - No Data Available; T - Test; A- MOE Audit; M - Equipment Malfunction / Down; R - Rate of Change

Figure C-1 Time History Plots of Measured Hourly Average and 24 Hour Average NO_2 Concentrations – Courtice (WPCP) Station



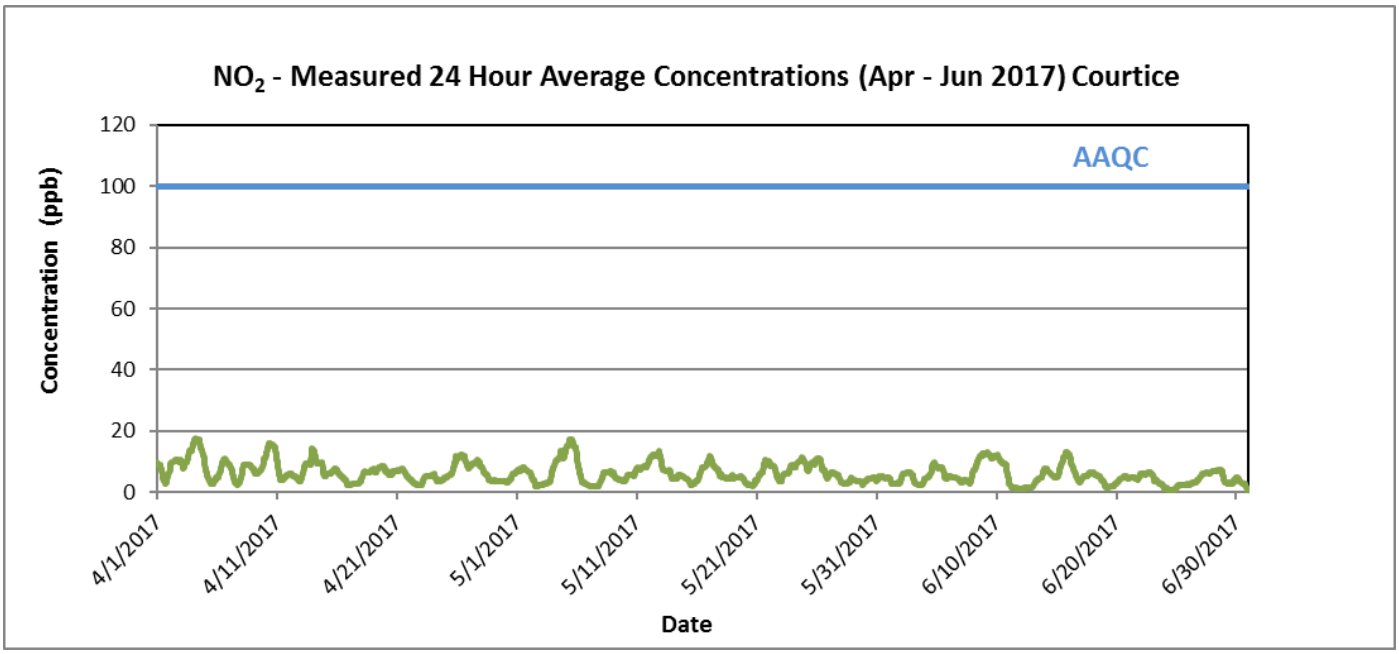
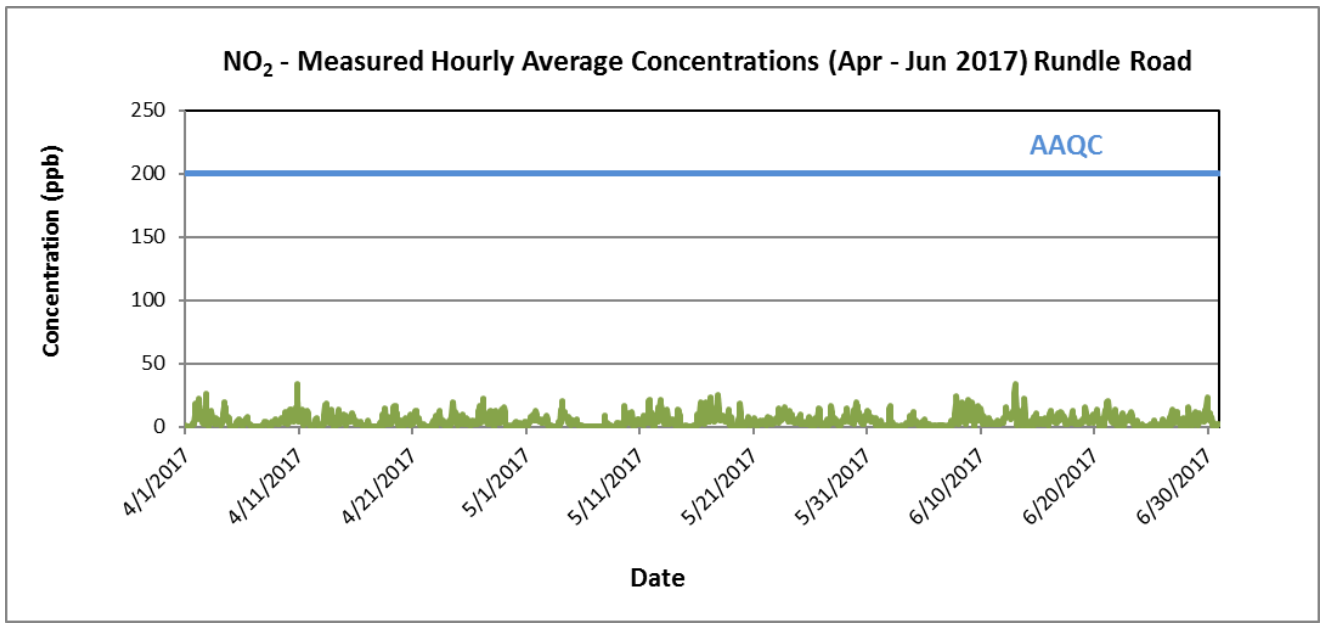
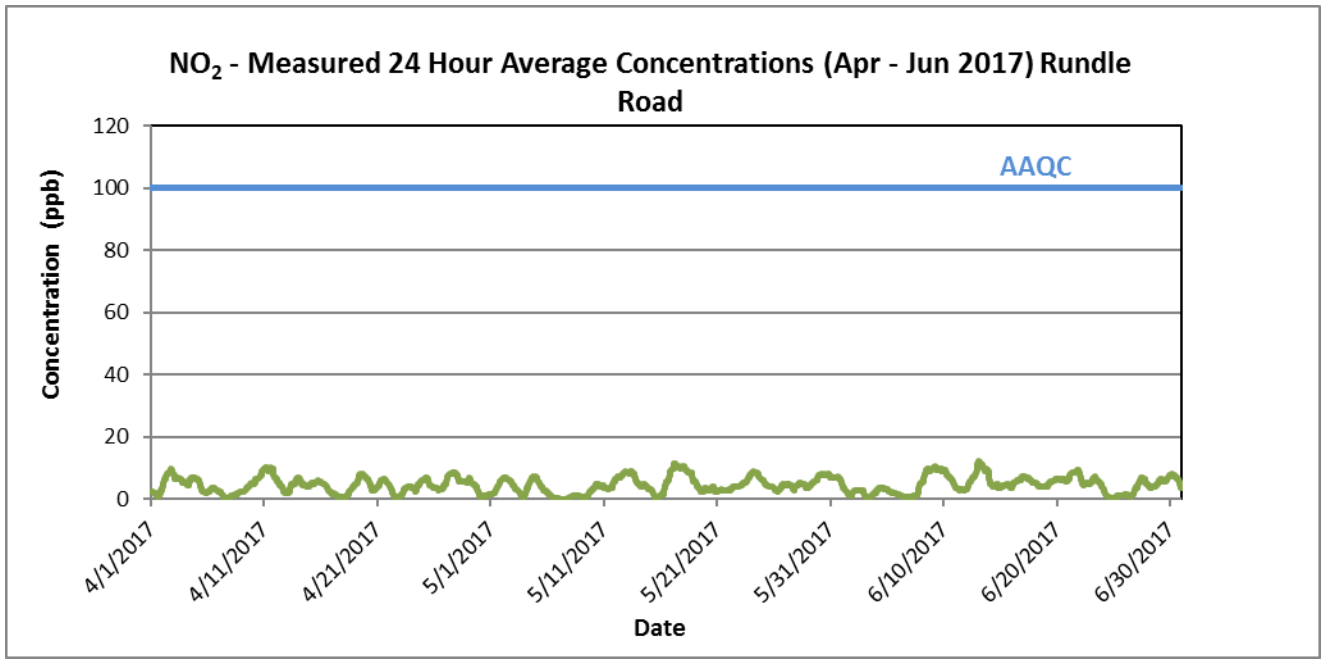


Figure C-2 Time History Plots of Measured Hourly Average and 24 Hour Average NO_2 Concentrations – Rundle Road Station





Appendix D NO_X DATA SUMMARIES AND TIME HISTORY PLOTS

NOx - April (ppb) COURTICE 2017

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	4.6	4.2	3.3	4.5	3.0	3.4	4.1	3.0	3.3	7.5	2.4	2.9	2.0	2.4	2.0	2.2	2.5	1.8	1.6	8.9	37.2	41.8	17.6	2.9	24	41.8	1.6	7.1	0.0	0.0
2	19.3	13.0	26.7	32.1	32.8	14.4	5.2	4.5	6.0	8.1	8.4	8.7	4.7	6.6	4.2	2.4	2.4	2.6	2.8	6.8	28.5	41.5	29.2	13.2	24	41.5	2.4	13.5	0.0	0.0
3	11.1	9.8	6.6	8.7	6.7	9.6	19.0	25.0	18.0	30.9	12.1	6.2	4.5	25.0	29.6	40.7	30.8	16.0	10.5	10.9	36.1	24.9	23.3	40.3	24	40.7	4.5	19.0	0.0	0.0
4	49.1	34.7	25.4	14.9	21.6	25.0	16.6	12.0	12.6	14.8	12.1	11.3	5.8	2.8	2.8	3.3	3.2	2.9	4.7	4.6	5.1	3.9	3.6	2.7	24	49.1	2.7	12.3	0.0	0.0
5	2.4	3.0	3.4	2.4	3.3	6.3	4.7	3.1	C	C	2.3	1.7	0.9	0.9	1.0	1.6	6.0	15.2	5.2	10.5	17.1	7.6	15.1	5.1	22	17.1	0.9	5.4	0.0	0.0
6	3.9	3.1	3.6	17.9	10.5	19.6	14.1	19.5	24.8	31.4	35.1	39.7	11.6	7.4	6.2	8.4	6.3	5.4	9.0	4.6	3.2	3.0	3.9	2.6	24	39.7	2.6	12.3	0.0	0.0
7	3.8	2.4	2.0	3.1	2.3	3.1	4.8	2.9	3.2	4.2	3.2	2.8	2.6	2.6	2.6	2.9	2.2	4.3	4.7	6.4	8.6	11.9	16.2	9.5	24	16.2	2.0	4.7	0.0	0.0
8	13.9	18.7	21.3	22.9	27.6	26.8	22.0	6.3	2.8	3.0	2.8	2.1	2.2	2.1	2.8	4.0	2.0	1.4	1.6	1.8	1.8	1.9	5.9	9.5	24	27.6	1.4	8.6	0.0	0.0
9	16.8	18.0	11.9	15.9	25.2	20.3	18.9	11.7	5.1	6.3	8.7	6.5	7.3	10.8	4.1	4.5	9.5	6.8	12.0	7.5	8.8	28.2	26.7	32.6	24	32.6	4.1	13.5	0.0	0.0
10	21.6	21.2	20.6	33.5	36.0	33.5	41.9	32.3	18.0	6.0	4.8	2.4	1.7	1.6	1.8	6.7	2.6	4.4	3.3	5.0	3.6	3.0	2.3	4.4	24	41.9	1.6	13.0	0.0	0.0
11	1.8	2.0	3.3	3.0	3.2	1.9	34.1	8.3	5.2	6.7	4.2	7.0	4.8	7.2	7.6	5.2	6.9	11.1	8.0	9.7	10.8	6.1	6.1	6.1	24	34.1	1.8	7.1	0.0	0.0
12	4.8	4.3	2.9	3.2	4.4	5.9	6.2	4.0	3.7	4.0	4.4	4.0	3.0	2.8	2.9	3.9	3.9	4.2	5.2	4.3	5.5	4.0	3.3	6.1	24	6.2	2.8	4.2	0.0	0.0
13	14.2	8.9	8.7	17.7	22.6	25.9	50.5	31.0	17.7	21.7	13.2	5.1	7.0	3.2	2.2	1.5	1.6	1.7	1.6	8.3	46.5	44.1	42.2	36.2	24	50.5	1.5	18.1	0.0	0.0
14	13.5	4.8	2.8	4.3	5.7	6.4	8.5	9.5	5.5	4.6	4.3	5.9	5.1	4.0	2.5	2.9	3.5	3.6	5.5	7.7	6.8	10.7	8.2	16.2	24	16.2	2.5	6.4	0.0	0.0
15	9.3	7.1	10.6	8.0	8.9	9.1	11.1	9.0	4.7	4.1	5.2	3.3	6.3	9.6	7.0	6.6	4.4	4.8	4.7	15.5	17.8	12.8	12.6	3.5	24	17.8	3.3	8.2	0.0	0.0
16	2.5	2.1	2.5	2.0	1.7	1.8	2.1	2.6	2.8	2.3	1.8	2.0	2.1	1.7	1.6	2.1	2.2	2.5	3.3	3.5	3.1	3.7	3.6	3.1	24	3.7	1.6	2.4	0.0	0.0
17	2.7	3.1	3.7	4.2	3.7	3.7	5.6	3.4	4.3	3.5	2.9	2.6	2.1	2.2	2.1	2.7	3.0	4.7	6.2	4.4	5.3	7.7	10.3	7.7	24	10.3	2.1	4.2	0.0	0.0
18	9.2	15.2	13.9	12.3	15.3	24.4	15.0	10.7	1.9	1.2	1.0	0.8	0.9	1.2	1.1	1.8	3.5	3.3	4.8	9.2	22.7	3.9	2.6	11.1	24	24.4	0.8	7.8	0.0	0.0
19	24.6	28.5	13.1	4.1	2.3	3.2	17.2	18.2	10.1	12.5	8.3	6.0	5.2	4.5	3.4	3.3	3.7	3.7	7.1	8.7	21.0	10.6	6.7	4.5	24	28.5	2.3	9.6	0.0	0.0
20	5.6	5.8	6.5	6.2	5.2	5.6	6.4	6.4	7.8	4.5	7.1	2.9	4.2	4.7	30.0	6.9	5.7	16.5	6.9	15.4	27.7	6.7	11.6	10.4	24	30.0	2.9	9.0	0.0	0.0
21	5.5	3.6	12.8	2.8	2.0	8.5	10.0	12.6	10.2	8.3	6.4	5.2	5.6	5.0	3.1	2.7	3.9	4.0	4.4	4.0	3.8	3.5	3.3	3.9	24	12.8	2.0	5.6	0.0	0.0
22	3.0	3.2	2.3	3.0	2.9	2.8	2.9	2.2	4.8	2.2	2.4	2.2	2.4	2.1	2.6	2.5	1.4	1.7	2.7	4.6	5.6	5.1	4.8	2.5	24	5.6	1.4	3.0	0.0	0.0
23	2.4	1.9	2.6	19.4	19.1	19.4	16.1	17.3	17.2	10.4	6.2	3.7	2.6	2.0	2.1	1.8	1.6	1.5	2.0	5.5	8.3	6.4	3.8	4.6	24	19.4	1.5	7.4	0.0	0.0
24	3.4	7.3	6.2	6.6	6.5	7.2	7.9	6.1	3.4	1.3	1.3	1.4	1.1	0.9	1.9	3.1	1.9	14.6	10.1	1.6	5.7	18.2	6.1	8.1	24	18.2	0.9	5.5	0.0	0.0
25	12.1	4.8	8.6	7.5	8.8	10.9	8.4	6.4	6.6	5.2	5.6	6.8	5.6	4.5	7.2	13.9	31.7	23.0	19.0	21.5	43.7	20.0	39.1	35.9	24	43.7	4.5	14.9	0.0	0.0
26	6.3	2.7	3.7	3.0	21.3	33.3	6.9	11.7	10.9	4.5	3.6	3.1	3.2	3.4	12.4	12.9	7.0	3.3	6.3	9.9	19.9	3.1	52.2	14.6	24	52.2	2.7	10.8	0.0	0.0
27	3.4	5.1	15.6	21.9	11.7	24.8	23.8	36.4	15.5	6.8	4.8	5.4	4.8	4.0	12.9	20.7	9.5	14.6	5.4	6.8	4.9	3.8	3.0	2.6	24	36.4	2.6	11.2	0.0	0.0
28	5.5	8.3	6.3	5.6	6.8	10.3	9.7	C	2.8	3.3	3.0	2.1	1.7	1.5	1.4	1.6	1.5	3.8	2.7	3.1	3.0	3.1	3.4	3.2	23	10.3	1.4	4.1	0.0	0.0
29	3.2	3.8	4.2	17.4	5.9	3.9	5.1	4.0	4.0	3.2	3.1	2.5	2.5	2.4	2.9	2.5	3.5	3.0	3.9	2.9	3.0	3.9	3.1	3.1	24	17.4	2.4	4.0	0.0	0.0
30	2.9	2.1	3.6	5.4	12.7	9.5	11.0	6.0	2.7	18.5	10.7	13.5	6.2	4.2	23.1	29.0	15.9	6.6	5.3	4.4	3.8	6.3	7.2	6.7	24	29.0	2.1	9.1	0.0	0.0
31																														
Count	30	30	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	717					
Maximum	49.1	34.7	26.7	33.5	36.0	33.5	50.5	36.4	24.8	31.4	35.1	39.7	11.6	25.0	30.0	40.7	31.7	23.0	19.0	21.5	46.5	44.1	52.2	40.3	24					
Minimum	1.8	1.9	2.0	2.0	1.7	1.8	2.1	2.2	1.9	1.2	1.0	0.8	0.9	0.9	1.0	1.5	1.4	1.4	1.6	1.6	1.8	1.9	2.3	2.5	22					
Average	9.4	8.4	8.6	10.4	11.3	12.7	13.7	11.2	8.1	8.3	6.4	5.7	4.0	4.4	6.2	6.8	6.1	6.4	5.7	7.3	14.0	11.7	12.6	10.4						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	2.1	2.8	3.3	4.1	5.2	6.5	8.7	12.8	21.3	29.7	41.9	52.2

Maximum Hourly	52.2
Maximum Daily	19.0
Monthly Average	8.7

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NOx - May (ppb) COURTICE 2017

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	7.9	4.6	5.2	10.6	6.8	8.3	11.5	17.9	12.8	19.5	5.4	6.2	20.2	47.5	24.6	4.9	4.5	1.6	1.6	1.6	3.6	3.8	4.1	1.8	24	47.5	1.6	9.9	0.0	0.0
2	2.1	1.8	2.1	2.4	2.2	1.4	1.7	1.6	2.0	1.8	1.8	1.5	1.4	1.1	2.0	3.1	2.9	3.0	3.0	3.5	3.4	5.6	2.9	3.4	24	5.6	1.1	2.4	0.0	0.0
3	3.6	2.3	3.0	3.6	2.6	5.6	7.5	3.5	3.8	3.2	2.4	2.2	2.0	10.8	3.1	4.1	3.9	3.9	5.0	14.4	26.1	40.8	29.6	12.7	24	40.8	2.0	8.3	0.0	0.0
4	10.9	15.4	14.4	14.6	17.9	19.3	19.9	11.1	7.5	5.8	5.2	8.6	10.0	6.6	4.0	9.2	25.7	35.1	8.8	10.9	9.5	6.3	6.0	22.7	24	35.1	4.0	12.7	0.0	0.0
5	37.9	32.6	44.1	42.1	27.3	29.0	19.6	11.0	21.4	35.9	41.2	9.2	9.2	5.8	4.6	5.7	4.7	6.7	6.8	5.1	4.9	3.7	3.3	4.2	24	44.1	3.3	17.3	0.0	0.0
6	4.6	3.5	2.4	2.0	3.0	3.1	2.7	2.9	3.8	3.2	3.2	2.2	1.9	2.4	2.8	3.0	3.0	2.6	2.6	2.2	2.1	2.9	3.1	1.5	24	4.6	1.5	2.8	0.0	0.0
7	1.5	1.5	1.4	1.7	1.6	2.3	2.9	1.7	1.6	3.7	1.9	1.9	1.9	2.0	2.8	3.1	2.0	2.6	3.9	3.1	4.5	7.1	19.7	14.2	24	19.7	1.4	3.8	0.0	0.0
8	7.6	2.8	6.7	17.4	27.5	35.8	27.7	4.9	2.9	3.4	2.4	1.8	2.0	2.3	2.4	3.4	4.4	3.3	4.9	5.0	7.2	7.1	3.6	4.5	24	35.8	1.8	7.9	0.0	0.0
9	3.5	12.7	13.7	5.9	4.2	9.1	5.2	3.3	3.2	3.3	2.5	0.9	0.9	1.0	1.2	1.3	1.9	2.9	5.5	2.6	2.0	6.3	3.5	8.2	24	13.7	0.9	4.4	0.0	0.0
10	6.2	10.0	13.8	17.6	21.4	29.9	13.6	5.1	3.3	2.9	2.6	1.4	1.6	1.3	1.0	1.0	0.8	1.0	1.2	1.8	13.9	20.7	23.6	24.0	24	29.9	0.8	9.2	0.0	0.0
11	16.0	16.6	11.8	12.7	24.6	16.5	9.9	14.4	11.9	4.1	5.2	6.3	4.2	2.9	3.4	4.1	2.4	1.5	2.0	1.5	2.0	28.1	51.3	45.1	24	51.3	1.5	12.4	0.0	0.0
12	57.7	52.3	24.9	28.7	28.9	21.8	21.0	C	C	C	10.8	2.2	1.6	1.8	2.1	2.6	6.0	2.3	2.5	8.8	19.3	20.9	24.9	14.7	21	57.7	1.6	16.9	0.0	0.0
13	6.7	8.9	2.6	2.6	4.9	10.6	14.6	7.6	5.2	5.7	4.6	1.6	1.3	3.0	1.3	1.4	1.0	4.8	8.3	5.0	3.6	2.5	3.9	6.9	24	14.6	1.0	4.9	0.0	0.0
14	9.0	9.9	4.9	5.9	6.6	8.8	8.8	8.6	9.5	16.5	13.8	9.4	10.3	5.1	2.0	2.2	1.5	1.3	3.7	1.9	2.0	3.7	4.0	3.7	24	16.5	1.3	6.4	0.0	0.0
15	1.5	1.7	5.8	8.8	5.1	3.9	5.4	11.2	2.2	2.7	2.8	2.0	2.3	2.2	2.5	2.5	3.5	3.5	3.8	5.7	7.2	7.6	9.4	11.1	24	11.2	1.5	4.8	0.0	0.0
16	5.8	3.0	2.7	24.2	20.4	37.0	27.3	15.0	22.8	25.2	23.2	9.5	11.6	12.2	1.9	0.9	4.7	3.3	7.6	10.9	12.3	26.6	12.5	27.0	24	37.0	0.9	14.5	0.0	0.0
17	10.7	12.0	14.8	31.6	13.3	3.8	1.2	4.4	2.4	5.4	3.2	1.7	1.4	1.0	0.8	1.2	1.2	1.2	1.2	1.9	2.9	14.8	2.6	12.3	24	31.6	0.8	6.1	0.0	0.0
18	14.7	21.9	18.3	8.2	3.1	1.2	1.0	1.1	1.4	1.8	1.6	1.0	0.7	0.4	0.9	0.6	0.4	0.6	3.7	6.0	12.1	10.3	12.1	19.2	24	21.9	0.4	5.9	0.0	0.0
19	12.5	7.7	10.6	11.5	3.4	3.6	4.0	3.1	2.8	4.7	4.1	2.7	2.6	2.5	2.2	3.0	1.7	2.3	1.9	2.3	3.1	8.7	5.5	10.8	24	12.5	1.7	4.9	0.0	0.0
20	2.6	2.0	3.2	4.5	1.9	1.6	2.8	1.6	4.9	0.6	0.2	0.0	0.1	0.8	0.6	0.0	0.6	1.7	6.9	7.4	14.4	13.6	34.8	4.3	24	34.8	0.0	4.6	0.0	0.0
21	5.3	3.0	3.9	29.8	32.2	7.7	9.2	13.5	5.7	3.9	1.7	3.9	3.6	20.9	27.8	22.1	9.9	15.7	28.8	2.8	8.7	7.3	5.0	12.2	24	32.2	1.7	11.9	0.0	0.0
22	21.6	10.7	3.9	3.8	3.8	9.9	11.4	5.0	3.0	1.9	1.2	0.8	1.8	1.7	0.8	0.8	0.6	0.5	0.8	0.7	0.8	1.2	1.6	23.7	24	23.7	0.5	4.7	0.0	0.0
23	10.2	3.6	17.5	29.8	38.5	32.6	28.6	4.3	3.0	2.7	2.5	3.0	2.4	2.2	2.4	3.3	1.6	3.4	20.3	18.4	12.9	7.3	15.8	11.6	24	38.5	1.6	11.6	0.0	0.0
24	7.3	12.6	5.9	7.4	19.4	21.7	22.4	26.0	18.4	5.0	8.9	12.5	3.2	4.0	3.6	3.3	4.9	20.3	33.7	25.9	5.1	2.8	1.7	5.1	24	33.7	1.7	11.7	0.0	0.0
25	3.4	3.5	2.0	3.3	3.3	8.6	3.4	3.2	20.5	36.7	32.1	35.4	13.9	6.1	3.6	5.3	15.5	21.9	31.1	24.4	30.1	33.0	9.2	5.7	24	36.7	2.0	14.8	0.0	0.0
26	4.6	6.0	7.0	7.8	4.5	6.2	7.5	3.5	2.4	2.8	3.1	3.7	5.6	4.5	4.1	3.8	2.3	5.0	3.9	4.2	13.7	6.5	25.7	17.3	24	25.7	2.3	6.5	0.0	0.0
27	20.8	12.1	31.0	13.1	16.3	20.3	9.9	3.4	2.5	1.2	1.4	0.9	1.2	5.5	1.6	1.3	0.7	0.7	0.8	1.8	1.4	2.3	3.1	9.2	24	31.0	0.7	6.8	0.0	0.0
28	1.9	10.8	7.8	11.0	10.6	8.1	2.0	8.8	2.5	1.5	5.0	1.5	2.5	1.2	1.9	2.0	3.6	4.5	4.7	18.6	12.9	10.5	2.3	1.8	24	18.6	1.2	5.7	0.0	0.0
29	2.0	2.2	2.9	5.1	9.5	3.3	1.8	1.7	1.3	1.9	1.5	0.9	1.2	0.9	0.9	1.0	0.7	1.7	3.5	6.1	3.9	9.4	7.2	21.7	24	21.7	0.7	3.8	0.0	0.0
30	13.4	3.3	3.3	10.0	2.5	14.2	3.7	10.3	4.7	2.2	2.4	2.0	1.2	1.5	3.2	7.7	4.1	2.7	3.2	2.3	1.8	2.9	2.4	4.0	24	14.2	1.2	4.5	0.0	0.0
31	12.5	11.4	6.3	1.9	13.4	36.9	11.6	3.4	4.0	3.3	2.4	2.2	1.4	1.0	0.8	0.7	1.2	1.0	3.4	5.1	5.3	3.6	3.7	6.5	24	36.9	0.7	6.0	0.0	0.0
Count	31	31	31	31	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	741					
Maximum	57.7	52.3	44.1	42.1	38.5	37.0	28.6	26.0	22.8	36.7	41.2	35.4	20.2	47.5	27.8	22.1	25.7	35.1	33.7	25.9	30.1	40.8	51.3	45.1	24					
Minimum	1.5	1.5	1.4	1.7	1.6	1.2	1.0	1.1	1.3	0.6	0.2	0.0	0.1	0.4	0.6	0.0	0.4	0.5	0.8	0.7	0.8	1.2	1.6	1.5	21					
Average	10.5	9.8	9.6	12.2	12.3	13.6	10.3	7.1	6.4	7.1	6.5	4.5	4.0	5.2	3.8	3.5	3.9	5.2	7.1	6.8	8.1	10.6	10.9	12.0						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum Hourly	57.7
													Maximum Daily	17.3
Data	1.4	1.9	2.6	3.3	3.9	5.4	8.6	12.5	21.0	28.6	41.1	57.7	Monthly Average	8.0

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NOx - June (ppb) COURTICE 2017

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	6.0	3.8	2.6	2.9	4.7	5.5	4.3	2.4	2.4	2.0	1.6	1.6	1.4	1.4	1.6	2.4	2.2	3.1	3.7	4.1	8.9	12.4	9.6	2.3	24	12.4	1.4	3.9	0.0	0.0
2	2.0	23.5	37.3	44.7	34.0	44.2	11.9	6.7	2.6	2.3	2.1	1.7	2.1	2.2	1.7	2.1	2.5	3.1	3.5	3.9	6.0	5.9	5.1	4.8	24	44.7	1.7	10.7	0.0	0.0
3	1.8	4.2	3.7	5.0	1.9	4.7	5.1	4.0	1.8	1.0	0.8	0.8	1.9	0.0	0.4	0.4	1.6	1.0	2.2	3.0	10.7	13.4	12.0	16.0	24	16.0	0.0	4.1	0.0	0.0
4	13.0	17.0	5.7	11.4	6.2	5.3	6.2	3.5	4.7	3.5	3.8	16.8	5.6	6.7	26.9	27.6	35.1	33.2	6.9	7.1	7.0	6.9	4.7	6.0	24	35.1	3.5	11.3	0.0	0.0
5	4.9	5.4	6.1	8.6	6.3	8.3	6.6	13.5	5.1	4.4	5.3	5.1	5.3	3.0	3.1	4.8	3.6	3.7	5.1	5.5	3.8	8.2	11.7	15.0	24	15.0	3.0	6.3	0.0	0.0
6	11.7	6.8	5.4	6.9	7.2	7.8	5.4	3.5	2.9	4.4	3.2	2.9	5.4	3.8	3.7	3.5	4.5	2.9	2.4	3.7	3.7	4.0	2.9	5.9	24	11.7	2.4	4.8	0.0	0.0
7	5.4	4.6	4.6	6.0	13.9	22.4	10.5	4.5	1.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.9	43.7	37.9	37.8	24	43.7	0.0	8.1	0.0	0.0
8	52.4	27.7	19.1	30.1	32.5	42.0	45.2	38.5	36.0	26.9	17.2	9.6	12.1	18.7	16.1	7.0	1.9	0.7	1.1	2.8	16.2	64.5	54.0	49.0	24	64.5	0.7	25.9	0.0	0.0
9	58.5	60.8	30.3	32.6	39.3	39.2	16.5	8.0	C	C	C	2.3	3.0	5.3	3.6	3.4	3.6	2.2	9.7	3.4	24.2	29.7	27.5	21.9	21	60.8	2.2	20.2	0.0	0.0
10	22.5	27.5	23.6	12.5	13.1	10.8	7.6	3.8	3.4	3.0	1.5	1.4	1.1	1.3	1.4	1.2	1.5	3.5	3.2	1.5	1.3	1.0	1.3	1.1	24	27.5	1.0	6.3	0.0	0.0
11	1.4	2.0	1.2	1.4	2.0	1.7	1.5	1.5	1.5	1.2	1.4	1.1	0.9	1.0	0.7	0.5	1.0	0.9	1.0	0.7	0.8	1.4	1.1	1.8	24	2.0	0.5	1.2	0.0	0.0
12	1.9	1.4	1.8	1.7	1.9	1.9	2.5	3.2	3.4	3.0	3.7	2.5	2.9	1.6	0.6	0.5	0.3	0.5	2.2	1.6	1.5	1.2	1.8	1.8	24	3.7	0.3	1.9	0.0	0.0
13	4.0	3.6	3.3	22.3	7.6	4.8	11.1	10.1	11.5	7.3	3.7	5.2	7.2	5.0	5.3	4.1	5.0	2.7	2.4	2.6	8.6	38.6	49.3	25.0	24	49.3	2.4	10.4	0.0	0.0
14	22.4	19.8	14.0	12.1	8.2	9.1	5.7	4.2	5.5	1.7	1.3	0.6	0.4	0.9	0.6	0.2	0.2	0.5	1.1	3.7	6.3	13.5	17.5	12.7	24	22.4	0.2	6.8	0.0	0.0
15	12.4	9.7	10.2	17.0	23.5	30.5	29.1	18.1	17.7	18.7	19.7	19.6	22.2	11.9	17.7	21.0	9.3	9.9	18.6	12.5	10.1	11.1	8.2	12.3	24	30.5	8.2	16.3	0.0	0.0
16	10.8	6.1	6.8	4.9	4.8	4.3	5.0	2.8	2.5	2.0	1.6	1.5	1.1	1.5	1.5	0.9	0.6	0.8	4.9	3.0	4.3	3.3	8.0	5.1	24	10.8	0.6	3.7	0.0	0.0
17	18.0	8.9	14.2	11.1	14.4	12.4	6.3	6.0	3.0	2.5	2.8	4.0	3.0	2.0	4.5	6.8	4.3	10.6	9.5	2.7	3.6	4.9	4.4	8.7	24	18.0	2.0	7.0	0.0	0.0
18	10.7	17.7	14.4	12.2	6.9	5.0	2.3	2.6	1.5	1.2	2.0	1.1	1.1	1.2	0.5	0.3	0.7	0.6	0.4	0.9	0.8	0.6	1.0	1.8	24	17.7	0.3	3.7	0.0	0.0
19	2.2	2.3	3.2	3.2	2.9	3.0	3.0	3.5	4.4	5.1	4.5	4.2	1.8	1.2	0.8	0.6	0.9	0.5	1.5	2.7	8.8	12.5	6.5	3.4	24	12.5	0.5	3.4	0.0	0.0
20	6.7	4.8	2.4	2.8	11.1	13.9	8.3	14.6	4.7	A	A	5.7	6.6	3.4	2.0	5.4	4.3	3.1	1.4	4.5	4.7	2.9	2.0	3.1	22	14.6	1.4	5.4	0.0	0.0
21	3.4	4.4	7.9	10.9	11.9	15.7	11.5	9.1	9.0	8.1	8.1	5.1	2.5	1.8	1.1	0.5	0.4	0.7	0.5	1.5	9.0	37.1	8.8	42.3	24	42.3	0.4	8.8	0.0	0.0
22	21.6	43.5	45.3	44.6	40.5	36.1	22.3	6.1	3.5	8.1	4.6	5.2	C	C	4.4	1.2	5.0	2.2	3.0	1.5	0.8	3.9	16.1	9.0	22	45.3	0.8	14.9	0.0	0.0
23	7.8	4.6	2.4	0.0	0.0	0.0	4.7	12.6	2.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.1	3.1	1.5	1.2	2.6	24	12.6	0.0	1.9	0.0	0.0
24	3.6	1.9	0.3	2.5	2.8	1.7	2.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	7.5	6.7	3.8	24	7.5	0.0	1.5	0.0	0.0
25	4.4	13.7	8.3	5.3	9.8	9.0	14.4	3.1	1.4	1.1	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	3.9	8.6	5.0	3.9	24	14.4	0.0	3.9	0.0	0.0
26	2.2	7.9	14.1	12.0	7.6	8.2	14.6	9.4	7.3	0.0	0.0	0.0	0.7	1.6	1.9	4.4	9.8	4.4	2.6	1.8	1.8	17.7	27.2	5.5	24	27.2	0.0	6.8	0.0	0.0
27	8.1	17.9	13.4	31.5	30.7	9.2	5.8	13.2	4.2	2.1	5.6	8.1	5.4	2.3	2.5	2.1	1.8	1.8	3.5	6.1	18.6	16.0	45.0	42.6	24	45.0	1.8	12.4	0.0	0.0
28	22.4	25.7	24.4	24.5	17.4	16.3	23.7	12.9	9.8	6.6	4.6	5.6	7.8	6.0	1.7	0.6	0.0	0.0	0.0	0.0	0.2	0.4	0.5	1.2	24	25.7	0.0	8.8	0.0	0.0
29	1.1	0.3	2.3	13.6	10.0	7.8	9.9	3.8	3.7	5.3	6.2	3.4	3.1	1.4	1.5	2.9	0.8	1.0	1.2	3.8	18.4	5.2	12.0	10.7	24	18.4	0.3	5.4	0.0	0.0
30	1.0	0.6	0.9	6.3	2.0	0.4	1.1	1.8	0.2	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	1.8	24	6.3	0.0	0.8	0.0	0.0
31																														
Count	30	30	30	30	30	30	30	30	29	28	28	30	29	29	30	30	30	30	30	30	30	30	30	30	713					
Maximum	58.5	60.8	45.3	44.7	40.5	44.2	45.2	38.5	36.0	26.9	19.7	19.6	22.2	18.7	26.9	27.6	35.1	33.2	18.6	12.5	24.2	64.5	54.0	49.0	24					
Minimum	1.0	0.3	0.3	0.0	0.0	0.0	1.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	1.1	21					
Average	11.5	12.6	11.0	13.4	12.5	12.7	10.1	7.6	5.4	4.4	3.8	3.8	3.6	2.9	3.5	3.5	3.4	3.1	3.1	2.9	6.4	12.6	13.0	12.0						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.4	1.1	1.8	2.8	3.7	5.0	7.0	11.1	18.7	30.6	45.3	64.5

Maximum Hourly	64.5
Maximum Daily	25.9
Monthly Average	7.6

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NOx April (ppb) Rundle Road 2017

Day \ Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	1.1	1.2	0.4	0.6	0.6	0.4	0.6	0.4	0.3	0.5	0.1	0.3	0.3	0.3	0.0	5.1	2.7	2.8	3.0	3.0	10.3	18.8	14.9	10.8	24	18.8	0.0	3.3	0	0
2	6.3	8.2	10.5	16.0	24.3	18.3	9.7	7.8	10.8	12.6	9.4	15.1	5.2	9.1	4.6	3.3	4.3	11.4	4.6	32.2	12.5	4.3	2.0	2.8	24	32.2	2.0	10.2	0	0
3	2.2	0.5	0.6	8.6	7.1	14.1	13.2	14.1	11.1	11.4	8.0	6.6	5.6	2.8	3.7	2.1	5.5	9.4	4.4	7.2	5.0	3.4	3.2	4.1	24	14.1	0.5	6.4	0	0
4	5.0	3.0	3.5	1.4	2.3	5.2	6.4	10.4	12.3	19.6	24.8	14.4	18.7	11.9	6.5	8.5	6.5	6.5	8.3	6.6	7.0	2.1	0.5	0.5	24	24.8	0.5	8.0	0	0
5	0.6	0.3	0.5	0.1	0.2	0.4	C	C	1.1	1.2	3.4	6.6	3.7	4.4	3.3	7.7	9.3	7.7	2.2	2.2	5.1	8.0	3.9	3.3	22	9.3	0.1	3.4	0	0
6	3.4	1.1	4.6	2.7	3.0	5.7	4.3	5.2	8.7	6.0	11.5	7.2	4.1	4.0	3.1	2.7	2.9	2.6	1.2	1.0	0.5	0.5	0.3	0.4	24	11.5	0.3	3.6	0	0
7	0.4	0.5	0.2	0.2	0.5	0.6	0.9	0.7	0.6	0.8	1.0	0.6	0.7	0.9	0.6	0.8	0.7	0.7	0.7	1.9	2.9	3.0	3.0	4.6	24	4.6	0.2	1.1	0	0
8	2.6	2.8	4.6	3.6	3.4	2.3	3.0	1.5	1.0	0.9	0.7	0.9	0.9	0.7	2.5	6.4	4.9	3.2	3.5	3.8	4.5	5.7	7.0	3.5	24	7.0	0.7	3.1	0	0
9	4.4	3.9	5.0	6.1	3.1	2.5	3.3	5.8	8.5	7.9	9.3	10.3	6.2	5.3	8.1	4.6	4.7	5.8	12.6	13.7	10.9	11.7	3.9	2.9	24	13.7	2.5	6.7	0	0
10	3.3	2.9	4.9	4.0	5.6	9.0	15.4	16.9	16.2	9.6	7.8	8.8	5.6	7.6	7.0	12.0	8.7	12.0	17.8	15.5	39.2	21.6	7.8	4.9	24	39.2	2.9	11.0	0	0
11	9.9	8.5	9.2	5.0	5.7	11.3	16.3	7.9	2.1	2.4	14.0	13.6	12.1	15.9	12.9	15.2	10.2	9.0	17.3	14.2	7.2	1.8	1.6	1.8	24	17.3	1.6	9.4	0	0
12	2.3	1.6	1.6	1.6	1.1	1.2	2.2	3.0	2.8	3.6	6.0	3.3	9.7	10.0	8.8	2.0	1.5	1.6	1.2	0.8	1.4	1.0	0.9	0.8	24	10.0	0.8	2.9	0	0
13	2.1	1.3	2.1	2.4	2.8	4.5	12.9	28.0	27.8	31.5	24.4	6.6	7.8	7.0	5.1	4.6	4.9	4.6	10.2	14.6	7.3	10.6	7.4	8.3	24	31.5	1.3	10.0	0	0
14	1.7	0.8	0.8	0.8	1.0	1.2	1.1	6.4	8.7	13.0	12.3	27.7	4.1	3.0	5.4	2.9	6.2	3.8	6.4	7.6	9.4	10.2	5.6	5.5	24	27.7	0.8	6.1	0	0
15	5.0	6.1	3.0	2.1	14.0	6.3	4.3	5.5	15.1	5.5	12.5	5.7	6.7	7.6	6.4	11.5	15.4	5.5	10.0	8.7	4.2	4.5	5.2	5.4	24	15.4	2.1	7.3	0	0
16	2.9	2.9	2.8	2.5	3.1	2.8	2.5	3.7	3.7	5.3	5.2	3.7	3.4	3.0	2.0	1.4	1.2	1.6	1.1	1.4	1.0	1.1	1.1	1.0	24	5.3	1.0	2.5	0	0
17	1.0	1.8	5.5	1.1	1.0	0.7	1.2	1.4	1.3	1.1	1.2	1.1	1.1	1.4	1.1	1.2	1.0	0.9	0.8	0.8	0.7	0.9	0.7	0.7	24	5.5	0.7	1.2	0	0
18	0.6	0.9	2.2	2.0	3.6	4.4	4.9	3.4	1.5	19.3	9.5	1.8	9.9	27.4	29.7	3.0	3.1	3.3	8.1	6.5	8.2	5.6	3.1	2.3	24	29.7	0.6	6.8	0	0
19	12.8	11.0	17.9	2.3	3.6	4.2	8.1	15.3	17.9	21.8	19.3	22.1	17.1	11.9	12.4	10.0	5.8	7.1	1.7	1.7	1.6	1.8	1.5	1.4	24	22.1	1.4	9.6	0	0
20	1.1	1.6	9.7	5.8	1.0	2.0	3.6	2.4	6.1	3.6	9.4	7.7	5.3	8.0	3.5	5.2	5.6	4.8	2.1	4.6	11.6	5.4	7.8	4.6	24	11.6	1.0	5.1	0	0
21	3.0	11.5	3.4	10.4	8.2	10.2	16.0	13.1	21.5	15.8	11.5	9.2	10.7	11.0	8.0	1.9	1.7	1.6	1.8	1.3	1.3	2.4	1.1	1.2	24	21.5	1.1	7.4	0	0
22	2.2	1.0	0.9	1.0	1.1	1.0	0.6	0.8	0.5	0.9	0.7	0.7	0.6	0.9	1.4	0.9	2.1	2.4	3.7	6.2	1.1	1.1	1.0	0.7	24	6.2	0.5	1.4	0	0
23	0.6	2.5	14.1	6.5	5.1	4.1	5.9	10.3	22.9	17.2	9.5	7.4	5.3	3.8	3.4	3.2	8.5	5.2	3.0	3.1	2.2	1.2	1.1	1.2	24	22.9	0.6	6.1	0	0
24	1.2	1.8	1.8	1.7	8.6	1.8	1.8	1.7	8.0	4.9	21.3	21.7	48.0	31.1	46.0	13.7	6.0	3.9	7.6	12.8	10.4	9.1	9.9	2.1	24	48.0	1.2	11.5	0	0
25	1.3	5.7	2.4	5.1	2.5	9.7	6.3	5.9	6.2	14.8	3.9	12.1	2.7	2.4	2.3	2.9	2.8	4.2	9.7	5.3	12.6	3.9	3.8	4.8	24	14.8	1.3	5.6	0	0
26	1.9	5.9	2.1	1.6	2.6	7.9	3.4	13.4	3.4	8.2	2.7	2.9	3.3	7.5	8.5	6.7	3.3	4.0	5.5	21.2	9.5	30.0	12.9	11.4	24	30.0	1.6	7.5	0	0
27	8.3	5.6	9.4	18.1	22.5	35.3	10.5	18.3	10.8	8.6	12.1	7.1	6.3	4.7	4.1	3.4	4.1	11.5	11.2	12.7	13.3	8.3	6.4	6.6	24	35.3	3.4	10.8	0	0
28	4.1	2.0	2.4	2.8	3.1	C	17.3	17.2	12.8	13.0	6.3	4.9	4.7	5.4	4.4	4.1	4.2	8.8	7.9	13.5	16.8	6.0	6.8	4.5	23	17.3	2.0	7.5	0	0
29	8.3	17.0	12.3	10.5	3.2	1.8	1.2	1.3	1.3	1.3	1.7	1.2	1.2	1.5	1.1	1.2	1.1	1.0	1.0	1.1	1.1	1.3	0.8	1.1	24	17.0	0.8	3.1	0	0
30	1.0	6.0	7.7	0.7	1.1	4.5	2.1	1.3	1.2	1.7	7.7	1.9	1.9	1.6	2.2	2.2	2.4	1.5	1.7	1.2	8.2	2.5	3.1	5.7	24	8.2	0.7	3.0	0	0
31																														
Count	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	717					
Maximum	12.8	17.0	17.9	18.1	24.3	35.3	17.3	28.0	27.8	31.5	24.8	27.7	48.0	31.1	46.0	15.2	15.4	12.0	17.8	32.2	39.2	30.0	14.9	11.4	24					
Minimum	0.4	0.3	0.2	0.1	0.2	0.4	0.6	0.4	0.3	0.5	0.1	0.3	0.3	0.3	0.0	0.8	0.7	0.7	0.7	0.8	0.5	0.5	0.3	0.4	22					
Average	3.3	4.0	4.9	4.2	4.8	6.0	6.2	7.7	8.2	8.8	8.9	7.8	7.1	7.1	6.9	5.0	4.7	4.9	5.7	7.5	7.6	6.3	4.3	3.6						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.9	1.3	2.1	3.0	4.1	5.5	7.4	9.7	13.4	17.4	30.0	48.0

Maximum Hourly	48.0
Maximum Daily	11.5
Monthly Average	6.1

Notes C - Calibration / Span Cycle; NA - No Data Available; T - Test; A- MOE Audit; M - Equipment Malfunction / Down; R - Rate of Change

NOx May (ppb) Rundle Road 2017

Day \ Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	5.4	4.9	2.3	2.0	2.4	2.9	5.8	4.4	7.2	10.6	9.1	8.0	9.5	8.0	11.5	12.5	9.2	6.2	7.2	19.5	13.2	10.9	10.3	6.1	24	19.5	2.0	7.9	0	0
2	6.2	8.2	6.2	6.5	4.5	8.0	9.1	4.4	7.9	6.4	5.5	4.8	5.5	6.4	6.6	7.4	8.1	8.1	8.7	10.7	6.6	3.4	1.4	2.3	24	10.7	1.4	6.4	0	0
3	2.3	0.6	0.8	0.6	0.5	0.9	1.6	1.4	1.6	1.1	1.3	1.5	1.1	1.0	1.1	1.0	1.1	1.1	1.1	1.8	5.0	5.0	3.8	1.4	24	5.0	0.5	1.6	0	0
4	1.3	24.2	2.9	7.3	23.4	13.1	8.8	10.2	12.2	18.0	14.4	10.4	10.8	7.6	9.5	12.0	8.5	5.7	3.3	2.5	11.1	1.6	1.8	7.3	24	24.2	1.3	9.5	0	0
5	5.5	3.8	4.1	13.4	2.8	8.2	3.0	8.9	3.6	3.3	8.2	5.4	3.4	2.7	2.2	1.9	1.8	2.0	1.4	1.4	1.2	0.9	1.3	0.8	24	13.4	0.8	3.8	0	0
6	1.1	1.1	0.5	0.7	0.6	0.5	0.8	1.0	1.1	1.1	0.9	0.7	0.9	0.7	0.7	0.6	0.7	0.7	0.4	0.8	0.5	0.6	0.4	0.2	24	1.1	0.2	0.7	0	0
7	0.3	0.1	0.5	0.5	0.2	0.4	0.7	0.4	0.5	0.3	0.8	1.0	0.8	0.7	0.4	0.5	0.7	0.8	0.9	0.6	0.5	2.5	17.2	1.2	24	17.2	0.1	1.4	0	0
8	1.2	2.5	3.4	1.6	1.2	4.7	3.0	1.8	1.0	1.3	1.8	1.5	0.8	1.0	1.1	0.9	0.6	0.5	0.5	0.9	1.4	1.2	0.4	0.4	24	4.7	0.4	1.4	0	0
9	3.9	3.6	2.0	0.8	0.6	0.9	1.5	1.4	1.4	1.4	5.0	4.5	6.5	2.5	2.6	2.6	30.8	6.9	4.1	3.8	9.7	4.4	4.7	6.1	24	30.8	0.6	4.6	0	0
10	8.0	13.4	5.1	4.4	3.8	4.8	7.0	25.0	12.3	7.0	3.3	3.0	3.3	2.4	2.2	2.1	2.9	6.2	7.3	6.9	8.9	7.2	6.7	4.4	24	25.0	2.1	6.6	0	0
11	2.7	2.9	3.1	2.5	3.2	3.6	3.5	2.6	15.8	5.0	7.0	6.2	8.3	5.5	4.7	6.8	4.6	3.9	4.7	27.1	22.2	17.4	13.9	8.4	24	27.1	2.5	7.7	0	0
12	15.1	10.7	9.3	2.7	1.5	C	C	14.4	7.1	7.0	6.1	19.0	9.9	7.1	36.1	5.8	5.3	10.6	14.3	23.1	18.3	21.3	17.3	11.2	22	36.1	1.5	12.4	0	0
13	5.8	5.9	8.5	2.3	3.1	4.2	13.4	11.0	7.8	19.4	9.1	2.8	5.3	5.3	2.7	8.5	4.2	3.5	3.7	7.9	4.6	8.7	5.0	6.2	24	19.4	2.3	6.6	0	0
14	4.5	3.2	2.9	1.9	1.7	1.9	8.4	5.4	7.3	21.9	21.9	14.6	12.5	4.0	1.4	1.7	1.1	1.1	1.0	1.5	1.1	1.4	2.7	0.9	24	21.9	0.9	5.3	0	0
15	0.5	0.5	0.9	1.3	1.0	0.8	1.7	1.4	1.3	1.1	1.5	1.4	1.2	1.1	1.3	1.2	1.2	1.0	1.6	1.5	2.4	2.3	2.4	1.2	24	2.4	0.5	1.3	0	0
16	1.3	8.2	20.0	4.2	2.5	2.9	4.5	17.3	36.5	25.7	18.2	20.2	19.7	21.7	14.4	3.0	4.1	7.5	12.8	15.6	23.0	15.8	21.6	9.9	24	36.5	1.3	13.8	0	0
17	5.1	25.1	6.5	4.5	10.7	36.8	23.7	19.1	18.2	12.6	9.6	11.6	6.8	6.0	5.7	6.9	7.2	7.1	8.9	11.3	27.1	24.6	14.4	14.3	24	36.8	4.5	13.5	0	0
18	6.5	5.5	11.3	7.5	8.2	10.2	10.9	9.6	7.7	11.4	8.3	5.3	5.4	4.9	7.1	6.5	5.8	6.6	5.4	14.2	3.6	2.2	1.8	1.9	24	14.2	1.8	7.0	0	0
19	3.4	7.2	8.8	2.9	1.1	1.2	1.9	1.7	1.6	1.2	1.3	0.9	1.0	1.5	1.5	1.1	1.6	7.9	10.9	11.2	19.9	12.6	2.3	5.6	24	19.9	0.9	4.6	0	0
20	1.1	0.8	2.8	0.8	0.7	0.8	0.8	2.9	4.0	5.0	4.0	11.7	11.5	16.7	4.6	5.2	7.1	1.5	1.5	2.5	5.4	3.3	4.4	2.3	24	16.7	0.7	4.2	0	0
21	8.8	2.2	11.5	1.9	1.7	1.8	2.2	1.7	5.4	2.0	9.2	4.3	5.3	2.4	3.4	12.3	2.7	2.7	3.6	4.7	5.2	3.2	10.5	2.2	24	12.3	1.7	4.6	0	0
22	6.2	4.0	4.1	3.3	1.8	5.8	5.8	10.8	5.4	5.6	8.6	13.1	5.5	5.7	3.0	3.3	3.4	4.1	6.4	4.9	5.9	6.2	3.6	5.7	24	13.1	1.8	5.5	0	0
23	5.5	8.1	6.4	5.8	5.2	5.3	20.7	13.2	10.9	9.8	6.7	7.1	7.8	9.5	8.1	11.0	11.0	18.2	10.2	10.1	7.6	10.4	12.8	13.7	24	20.7	5.2	9.8	0	0
24	11.0	5.1	8.3	14.1	9.6	9.9	9.0	8.1	14.4	8.8	6.1	5.1	5.4	5.6	4.6	3.9	4.1	7.4	4.7	6.9	6.5	4.9	8.9	3.9	24	14.4	3.9	7.3	0	0
25	11.7	5.6	9.9	7.1	3.0	2.9	2.8	14.3	3.4	6.2	3.1	2.8	2.8	2.4	4.7	2.2	3.0	4.2	5.2	5.2	8.6	5.3	14.6	3.3	24	14.6	2.2	5.6	0	0
26	1.9	1.8	1.7	1.8	1.8	2.2	2.1	2.1	1.5	2.3	11.1	13.9	4.8	8.1	8.6	7.5	9.3	17.3	18.2	14.5	8.2	6.1	2.1	2.3	24	18.2	1.5	6.3	0	0
27	1.9	6.4	3.1	1.8	2.1	1.9	1.9	2.9	3.7	5.7	5.0	11.1	6.0	3.6	5.1	2.2	3.3	4.7	4.9	9.4	20.6	12.3	15.2	5.6	24	20.6	1.8	5.8	0	0
28	3.9	13.0	4.5	8.3	8.0	8.5	8.3	4.5	4.0	5.2	2.6	5.4	2.6	3.0	5.5	1.9	1.7	1.8	6.3	5.7	6.6	5.6	5.5	5.0	24	13.0	1.7	5.3	0	0
29	9.3	5.1	9.1	7.8	12.2	18.5	9.1	8.7	11.4	8.2	6.5	6.1	5.4	4.8	4.5	5.3	7.9	8.0	5.8	2.9	13.5	17.5	10.7	13.6	24	18.5	2.9	8.8	0	0
30	22.3	12.0	8.5	9.9	19.5	7.4	13.3	13.9	7.8	8.0	8.6	4.8	4.6	5.0	3.9	3.5	2.9	8.5	9.5	9.9	7.5	5.3	7.9	12.4	24	22.3	2.9	9.0	0	0
31	10.8	13.5	12.4	12.1	7.2	6.0	8.8	10.1	11.2	6.8	7.1	10.7	5.1	8.4	8.0	5.3	7.2	8.6	3.8	1.4	1.5	1.5	1.3	1.4	24	13.5	1.3	7.1	0	0
Count	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	742					
Maximum	22.3	25.1	20.0	14.1	23.4	36.8	23.7	25.0	36.5	25.7	21.9	20.2	19.7	21.7	36.1	12.5	30.8	18.2	18.2	27.1	27.1	24.6	21.6	14.3	24					
Minimum	0.3	0.1	0.5	0.5	0.2	0.4	0.7	0.4	0.5	0.3	0.8	0.7	0.8	0.7	0.4	0.5	0.6	0.5	0.4	0.6	0.5	0.6	0.4	0.2	22					
Average	5.6	6.7	5.9	4.6	4.7	5.9	6.5	7.6	7.6	7.4	6.8	7.1	5.8	5.3	5.7	4.7	5.3	5.6	5.8	7.8	8.9	7.3	7.3	5.2						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.0	1.6	2.5	3.7	5.0	6.1	7.9	9.6	13.4	18.2	25.0	36.8

Maximum Hourly	36.8
Maximum Daily	13.8
Monthly Average	6.3

Notes C - Calibration / Span Cycle; NA - No Data Available; T - Test; A- MOE Audit; M - Equipment Malfunction / Down; R - Rate of Change

NOx June (ppb) Rundle Road 2017

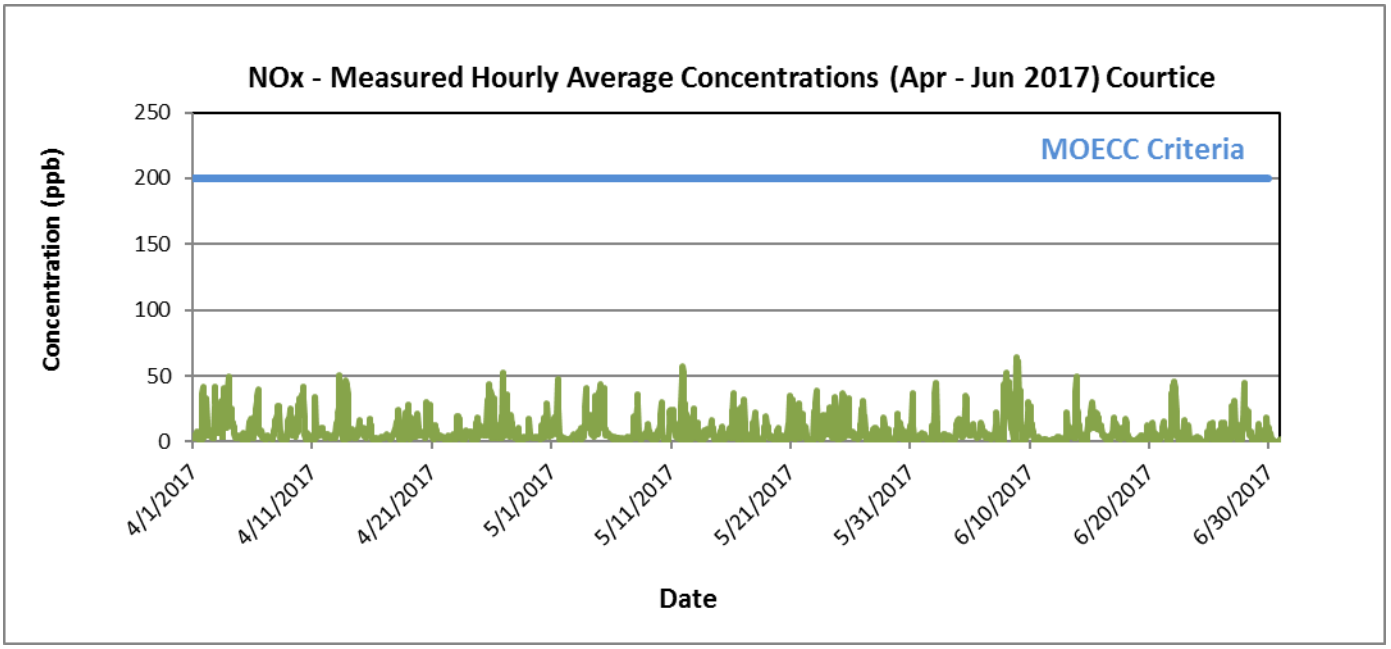
Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	1.7	1.5	1.4	1.1	2.6	6.0	2.5	2.2	2.0	1.6	1.2	1.3	1.2	1.4	0.9	1.4	1.7	1.4	1.2	1.3	1.8	3.3	2.1	17.8	24	17.8	0.9	2.5	0	0
2	18.4	3.9	5.3	5.3	7.9	7.6	3.2	3.5	1.6	1.3	0.8	1.1	0.8	1.2	1.5	2.3	1.2	1.0	1.2	0.8	1.2	1.0	1.3	1.6	24	18.4	0.8	3.1	0	0
3	1.2	1.0	0.7	1.1	0.5	1.4	2.4	1.0	0.9	1.1	3.1	6.0	4.3	3.2	3.1	3.3	3.2	2.9	4.5	11.4	5.4	3.2	2.9	2.6	24	11.4	0.5	2.9	0	0
4	2.8	3.3	33.1	6.2	4.0	3.4	3.3	5.6	10.5	3.0	2.4	2.7	3.0	2.3	2.4	3.1	2.3	6.0	2.4	3.7	5.1	4.5	3.7	1.8	24	33.1	1.8	5.0	0	0
5	1.9	1.8	14.3	2.1	1.8	2.2	2.3	3.0	3.1	2.9	3.8	3.3	2.2	2.7	1.8	1.8	1.8	1.4	1.2	1.4	0.8	1.5	2.2	2.0	24	14.3	0.8	2.6	0	0
6	1.2	1.0	1.3	0.8	1.1	1.4	2.0	2.4	2.2	2.2	2.0	2.5	2.9	1.8	1.8	1.8	1.7	1.3	1.3	1.1	1.0	0.9	0.5	1.2	24	2.9	0.5	1.6	0	0
7	1.4	0.9	0.9	1.7	1.1	2.1	2.7	2.9	3.2	4.4	9.8	2.4	1.8	4.7	3.5	3.2	5.4	5.1	13.2	21.0	27.3	27.1	9.6	12.5	24	27.3	0.9	7.0	0	0
8	6.6	3.4	3.4	4.7	5.7	9.8	52.4	26.0	36.7	35.0	22.6	16.3	10.3	15.2	9.4	7.3	3.9	4.9	9.8	19.4	16.0	36.7	13.8	15.3	24	52.4	3.4	16.0	0	0
9	11.4	8.6	7.7	6.6	8.6	32.7	39.5	21.0	17.5	13.0	11.6	C	14.5	7.9	7.6	7.0	11.5	8.8	6.9	17.7	12.9	6.1	17.0	10.1	23	39.5	6.1	13.3	0	0
10	15.8	10.7	6.6	4.4	2.3	11.4	11.8	7.5	5.8	5.5	8.6	2.9	3.2	2.6	3.3	2.9	6.4	7.8	4.7	5.5	3.4	2.7	3.5	3.3	24	15.8	2.3	5.9	0	0
11	4.1	3.8	2.6	2.2	3.0	3.3	2.7	3.2	2.7	4.0	6.7	4.6	6.5	3.4	3.4	3.3	4.6	3.3	4.2	4.4	4.6	5.5	4.8	3.8	24	6.7	2.2	3.9	0	0
12	3.8	7.5	7.8	6.8	10.0	16.4	20.5	10.8	11.2	10.9	11.8	9.0	10.9	11.5	11.7	9.4	7.0	9.0	9.7	9.6	13.3	10.9	9.2	19.2	24	20.5	3.8	10.7	0	0
13	29.0	50.1	28.6	17.6	2.3	2.1	7.2	13.5	19.5	5.5	2.7	3.6	2.8	3.1	2.6	2.4	2.1	1.8	7.8	19.4	26.4	11.1	6.2	4.7	24	50.1	1.8	11.3	0	0
14	4.3	4.3	2.7	2.3	1.9	2.6	5.3	2.4	5.0	6.4	9.2	6.6	5.4	2.6	2.5	2.0	5.3	11.5	8.7	6.4	14.9	9.7	6.4	4.1	24	14.9	1.9	5.5	0	0
15	4.1	8.9	11.5	2.6	4.0	4.6	6.9	9.2	5.9	6.3	3.6	7.0	3.6	4.9	4.0	11.6	7.5	4.0	3.7	3.4	2.5	2.7	2.6	2.0	24	11.6	2.0	5.3	0	0
16	3.1	15.1	17.3	17.9	17.4	18.1	9.8	7.8	11.6	9.1	5.8	9.8	9.8	7.5	4.4	4.8	8.8	4.3	4.9	8.0	12.2	10.6	5.8	6.9	24	18.1	3.1	9.6	0	0
17	6.5	13.0	11.6	8.3	7.6	9.3	13.5	9.6	6.6	5.9	9.2	10.3	3.1	2.7	2.9	3.4	3.7	2.7	6.3	4.6	4.6	4.7	5.4	3.9	24	13.5	2.7	6.6	0	0
18	7.1	17.2	8.6	5.6	8.0	9.9	2.8	3.8	3.3	7.1	2.6	3.6	2.8	3.1	4.3	3.1	3.1	3.2	3.4	5.5	4.5	3.2	5.4	3.8	24	17.2	2.6	5.2	0	0
19	6.5	7.8	7.1	7.1	14.6	19.0	14.3	11.5	12.8	9.7	8.4	6.9	4.8	4.5	4.4	4.1	8.0	5.4	6.8	5.5	11.2	3.7	10.6	8.2	24	19.0	3.7	8.5	0	0
20	5.4	7.7	9.5	7.2	7.9	19.3	16.1	8.7	10.1	8.5	10.0	A	A	2.7	6.7	3.3	2.2	2.5	7.9	1.6	1.7	8.1	8.7	15.3	22	19.3	1.6	7.8	0	0
21	11.5	15.4	15.0	23.6	29.6	47.0	21.8	17.6	18.6	16.4	13.7	9.4	7.5	6.3	7.0	4.8	4.9	6.3	7.1	17.4	12.0	3.7	9.2	2.4	24	47.0	2.4	13.7	0	0
22	3.0	8.6	9.6	3.9	4.0	4.9	9.4	7.1	5.5	8.8	13.8	15.7	11.1	8.8	C	C	4.9	5.4	7.3	8.5	9.2	5.4	5.5	5.5	22	15.7	3.0	7.5	0	0
23	7.9	12.4	6.7	7.1	7.3	13.0	13.2	9.7	9.1	5.3	3.4	6.6	4.6	1.8	4.6	2.0	5.2	6.4	6.2	0.0	0.0	0.0	0.0	0.0	24	13.2	0.0	5.5	0	0
24	0.0	0.0	0.0	0.0	0.0	3.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	2.4	24	3.2	0.0	0.4	0	0
25	1.8	2.5	1.6	0.8	2.6	3.4	9.3	5.5	7.6	2.9	2.7	2.7	1.8	0.6	0.9	3.8	0.7	1.1	0.0	0.0	0.0	0.0	0.0	0.0	24	9.3	0.0	2.2	0	0
26	9.3	9.2	5.1	0.0	0.4	0.0	4.6	0.5	2.6	1.5	0.3	1.5	1.3	2.7	3.8	9.2	2.9	3.0	7.0	11.3	14.5	8.5	13.6	10.4	24	14.5	0.0	5.1	0	0
27	6.7	3.2	7.6	12.7	14.6	14.3	15.0	14.5	12.1	6.7	10.2	12.1	8.8	Z	7.1	1.4	0.0	0.0	0.0	0.2	2.1	10.6	7.9	5.3	23	15.0	0.0	7.5	0	0
28	3.6	4.8	1.2	1.3	1.0	25.0	31.9	33.7	13.9	13.7	16.8	11.3	10.7	7.0	2.5	2.2	1.6	1.5	5.4	5.1	10.3	12.6	10.9	9.5	24	33.7	1.0	9.9	0	0
29	9.4	14.1	6.3	1.8	4.7	12.1	8.4	4.5	6.8	7.4	6.2	10.9	7.7	6.4	6.6	7.0	5.7	6.5	7.7	15.0	8.0	17.3	24.5	15.7	24	24.5	1.8	9.2	0	0
30	6.3	9.3	7.4	5.5	11.1	5.4	5.1	6.6	12.5	4.7	2.5	2.8	4.3	2.1	2.0	3.6	2.9	1.3	1.7	2.1	2.1	2.7	2.4	2.7	24	12.5	1.3	4.6	0	0
31																														
Count	30	30	30	30	30	30	30	30	30	30	30	28	29	29	29	29	30	30	30	30	30	30	30	30	714					
Maximum	29.0	50.1	33.1	23.6	29.6	47.0	52.4	33.7	36.7	35.0	22.6	16.3	14.5	15.2	11.7	11.6	11.5	11.5	13.2	21.0	27.3	36.7	24.5	19.2	24					
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22					
Average	6.5	8.4	8.1	5.6	6.3	10.4	11.4	8.5	8.7	7.0	6.9	6.2	5.2	4.3	4.0	4.0	4.0	4.0	5.1	7.0	7.7	7.3	6.5	6.5						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.1	2.0	2.7	3.4	4.7	6.3	7.8	10.0	14.3	17.8	33.7	52.4

Maximum Hourly	52.4
Maximum Daily	16.0
Monthly Average	6.7

Notes C - Calibration / Span Cycle; NA - No Data Available; T - Test; A- MOE Audit; M - Equipment Malfunction / Down; R - Rate of Change

Figure D-1 Time History Plots of Measured Hourly Average and 24 Hour Average NO_X Concentrations – Courtice (WPCP) Station



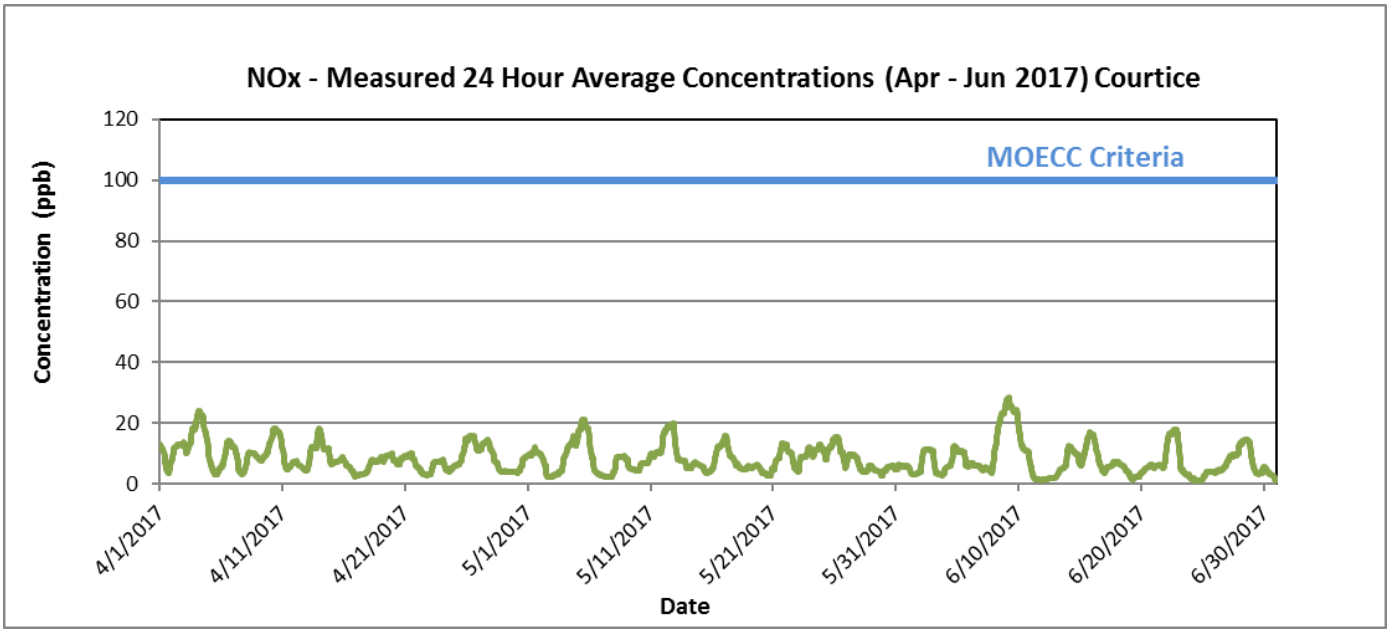
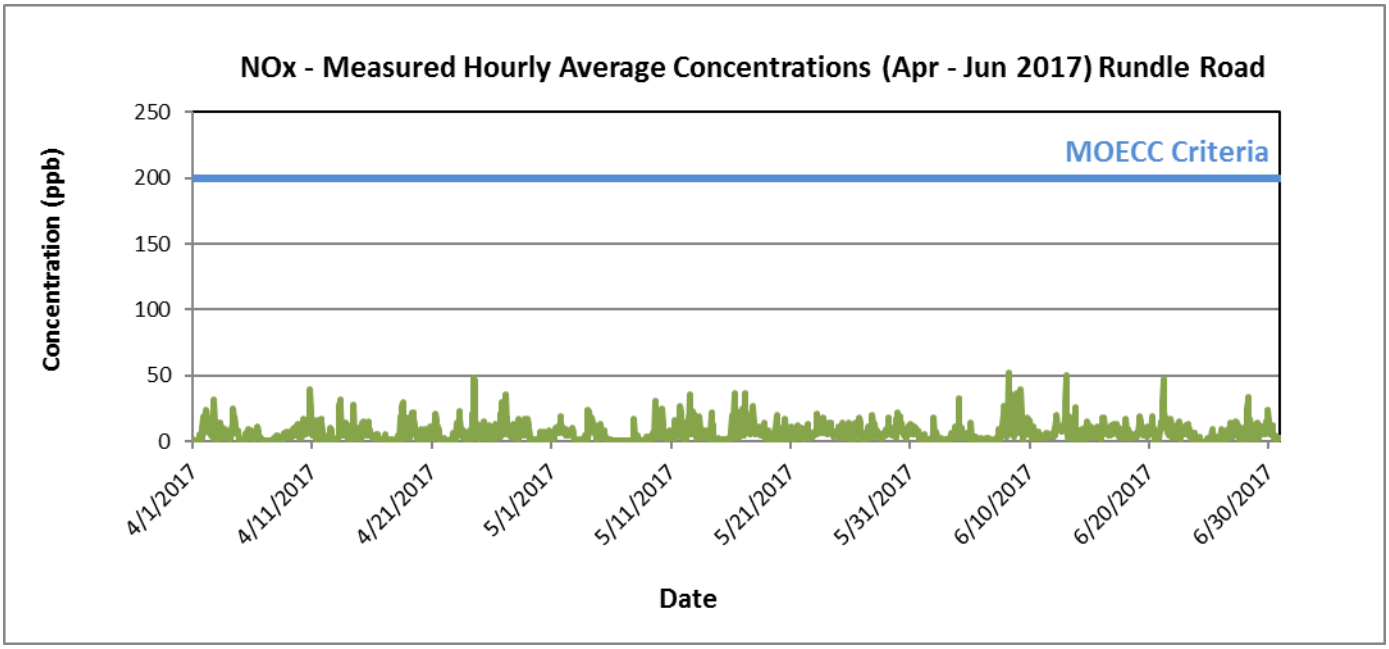
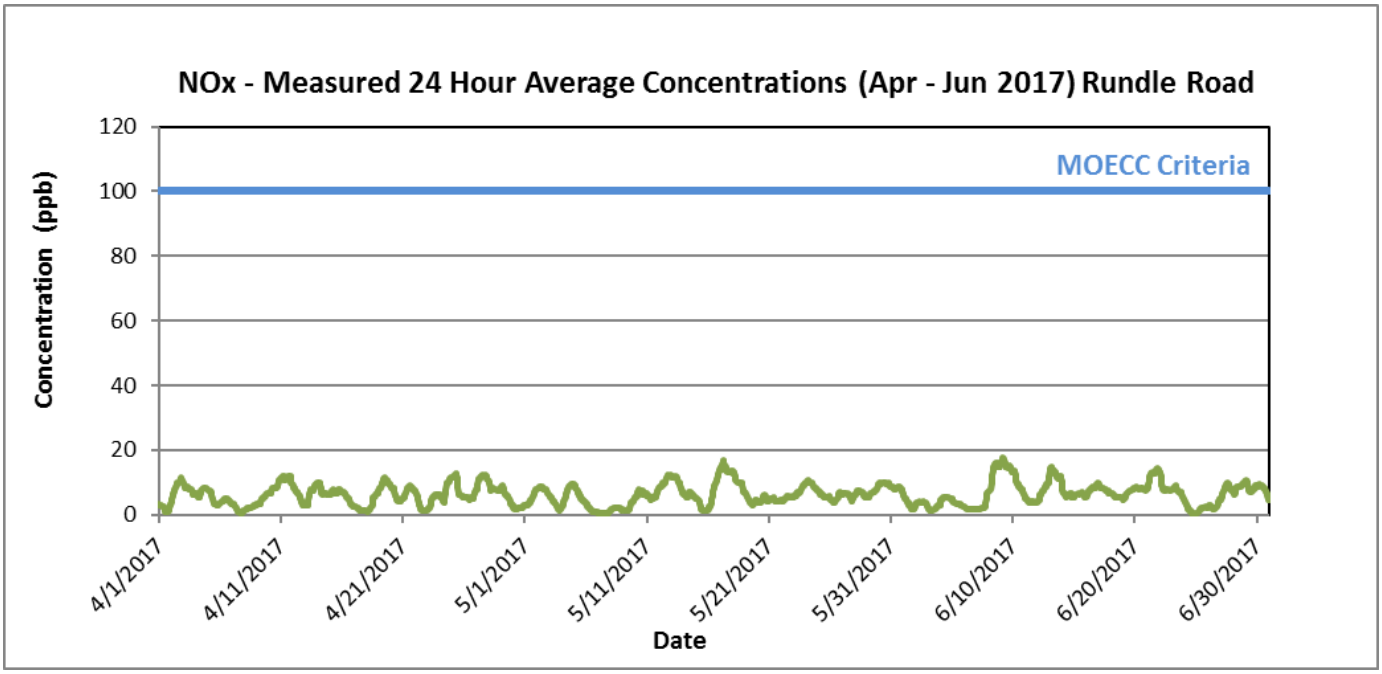


Figure D-2 Time History Plots of Measured Hourly Average and 24 Hour Average NO_X Concentrations – Rundle Road Station





Appendix E $PM_{2.5}$ DATA SUMMARIES AND TIME HISTORY PLOTS

$PM_{2.5}$ - April ($\mu g/m^3$) COURTICE 2017

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	0.2	0.2	0.3	0.7	1.0	1.4	1.2	1.1	0.8	0.9	0.6	0.5	0.5	0.5	0.4	1.5	2.0	1.8	1.8	3.8	8.1	9.7	5.0	2.9	24	9.7	0.2	2.0
2	6.0	9.5	11.9	8.2	7.3	5.7	5.3	4.3	5.0	5.8	5.0	5.9	5.7	7.8	6.3	4.1	3.9	4.9	5.5	8.7	22.3	30.6	14.0	5.9	24	30.6	3.9	8.3
3	6.0	4.9	2.9	3.5	8.6	6.2	5.6	6.5	5.9	9.1	9.3	T	9.4	13.2	18.2	14.6	8.7	4.7	3.4	3.6	9.3	4.7	7.4	14.5	23	18.2	2.9	7.8
4	19.0	26.2	31.1	13.1	17.3	18.3	8.2	3.8	4.4	3.4	2.2	3.0	3.0	1.6	1.7	1.4	0.4	0.2	0.2	0.2	0.4	0.2	0.2	0.2	24	31.1	0.2	6.7
5	0.2	0.4	0.2	0.2	0.3	0.2	0.2	0.2	C	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.9	1.6	0.9	1.9	2.8	0.9	2.1	0.6	23	2.8	0.2	0.7
6	0.7	0.8	0.7	2.2	2.7	5.9	6.1	6.9	6.9	7.5	10.4	15.4	1.7	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	15.4	0.2	2.9
7	0.2	0.2	0.2	0.3	0.2	0.2	0.4	0.7	0.6	0.7	1.1	0.5	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1.5	1.4	1.5	1.3	24	1.5	0.2	0.6
8	1.4	1.5	1.6	1.7	1.7	1.7	1.3	0.7	0.3	0.2	0.2	0.2	0.2	0.2	0.4	0.5	0.2	0.5	1.3	1.8	1.9	2.3	3.4	4.3	24	4.3	0.2	1.2
9	9.7	9.4	9.0	10.0	9.8	11.0	9.4	2.9	1.2	1.5	1.8	2.7	3.1	2.9	3.6	3.8	3.2	3.4	4.5	3.7	5.3	12.2	9.9	10.1	24	12.2	1.2	6.0
10	11.8	14.0	13.2	12.6	12.5	12.6	12.2	10.5	4.9	3.3	3.7	5.4	7.7	9.6	13.7	19.4	14.1	11.7	11.8	11.7	11.4	12.3	11.7	6.8	24	19.4	3.3	10.8
11	5.7	5.2	7.0	12.5	12.1	9.6	13.6	8.2	4.4	3.9	6.9	T	9.5	10.1	8.1	10.2	8.0	7.6	7.2	9.9	9.0	3.9	3.7	3.2	23	13.6	3.2	7.8
12	1.5	0.6	0.2	0.2	0.2	0.7	1.0	1.0	1.1	1.2	1.5	1.3	1.0	2.0	1.9	1.7	2.1	2.8	2.3	2.6	2.4	2.5	2.2	3.2	24	3.2	0.2	1.6
13	8.5	9.0	7.2	7.7	8.4	8.1	8.8	5.6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	8	9.0	5.6	
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
18	M	M	M	M	M	M	M	M	M	M	M	T	1.7	1.7	1.8	1.9	1.7	1.8	2.3	12.2	26.1	16.9	13.9	14.3	12	26.1	1.7	
19	13.5	11.0	6.9	7.4	8.2	8.4	11.4	9.5	8.9	12.4	9.7	8.3	7.5	6.8	7.8	9.4	8.6	8.3	1.7	2.5	2.9	2.6	3.5	5.3	24	13.5	1.7	7.6
20	6.5	5.3	3.8	3.7	4.3	5.3	5.2	5.3	3.9	2.3	2.6	2.0	1.8	1.7	2.4	1.9	3.9	5.0	4.2	6.3	8.0	6.6	6.8	4.7	24	8.0	1.7	4.3
21	5.9	7.9	9.3	6.1	5.6	5.7	6.7	10.7	12.3	12.4	11.8	9.5	9.3	5.4	0.7	0.2	0.2	0.2	0.4	0.8	2.2	2.3	1.7	1.5	24	12.4	0.2	5.4
22	1.4	1.7	1.8	1.6	1.1	1.1	0.7	0.7	0.7	0.4	0.2	0.3	0.5	0.7	0.6	0.6	0.6	0.6	1.0	2.6	3.3	2.9	3.0	3.4	24	3.4	0.2	1.3
23	3.6	3.1	3.7	5.0	7.1	7.7	5.1	3.5	4.7	17.8	18.2	15.0	9.6	8.5	6.5	3.7	2.8	3.3	3.7	4.0	4.1	2.2	2.6	3.4	24	18.2	2.2	6.2
24	4.9	6.4	6.2	5.4	3.9	2.7	2.2	1.5	0.9	1.0	2.0	2.2	2.0	1.8	1.7	1.7	1.9	2.8	3.0	3.9	5.1	6.2	3.6	3.2	24	6.4	0.9	3.2
25	2.9	3.0	3.5	2.6	3.1	3.5	2.9	3.4	5.6	7.4	7.5	6.9	3.5	2.7	2.5	4.6	7.1	4.0	2.3	2.3	4.6	2.3	5.0	4.6	24	7.5	2.3	4.1
26	1.5	1.1	0.8	0.8	1.5	2.3	0.3	1.4	0.7	0.3	0.4	0.8	0.6	0.4	1.9	1.1	0.4	0.2	0.2	0.5	0.4	0.3	1.0	0.4	24	2.3	0.2	0.8
27	0.2	0.4	0.8	1.0	0.7	1.2	1.6	2.1	2.0	3.5	5.7	6.2	4.7	5.3	5.7	4.9	3.5	5.1	8.9	7.9	7.4	5.0	3.7	4.2	24	8.9	0.2	3.8
28	3.6	1.5	3.7	4.6	6.9	6.2	6.9	10.1	10.6	9.6	10.2	9.4	10.2	10.8	10.5	7.1	6.0	3.8	2.8	3.6	5.2	11.2	16.9	19.0	24	19.0	1.5	7.9
29	16.6	17.9	19.3	15.5	9.8	6.0	2.0	0.9	0.7	0.8	1.0	0.9	0.8	0.7	1.1	1.6	0.7	0.6	0.7	1.2	1.6	1.8	1.6	1.7	24	19.3	0.6	4.4
30	1.6	1.5	1.4	1.2	1.5	1.5	2.1	1.8	1.6	1.8	1.7	1.7	1.4	1.4	1.9	1.5	1.6	1.8	2.0	1.6	1.7	2.5	3.8	5.5	24	5.5	1.2	1.9
31																												
Count	25	25	25	25	25	25	25	25	23	24	24	22	25	25	25	25	25	25	25	25	25	25	25	25	593			
Maximum	19.0	26.2	31.1	15.5	17.3	18.3	13.6	10.7	12.3	17.8	18.2	15.4	10.2	13.2	18.2	19.4	14.1	11.7	11.8	12.2	26.1	30.6	16.9	19.0	24			
Minimum	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0			
Average	5.3	5.7	5.9	5.1	5.4	5.3	4.8	4.1	3.8	4.5	4.7	4.5	3.8	3.9	4.0	3.9	3.3	3.1	2.9	3.9	5.9	5.7	5.1	5.0				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.3	0.7	1.5	1.9	3.0	4.0	5.8	8.0	10.7	13.6	19.3	31.1

Maximum Hourly	31.1
Maximum Daily	10.8
Monthly Average	4.5

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

$PM_{2.5}$ - COURTICE
May 2017
(µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	5.0	4.2	3.9	7.6	6.8	5.5	7.0	5.4	5.3	6.9	6.0	5.6	7.8	10.9	3.3	0.7	0.3	0.2	0.3	0.7	1.1	1.9	2.9	1.8	24	10.9	0.2	4.2
2	2.4	2.8	2.4	2.8	3.4	2.9	3.1	2.5	2.8	2.6	2.5	2.1	1.1	1.2	1.5	1.7	2.1	2.1	2.4	2.9	1.2	0.8	0.6	1.3	24	3.4	0.6	2.1
3	1.7	2.9	4.0	2.2	2.4	3.0	3.5	3.0	3.1	3.1	2.7	T	3.0	3.4	2.3	2.4	1.7	1.6	1.6	2.0	2.8	4.1	4.5	3.1	23	4.5	1.6	2.8
4	2.7	8.8	15.8	15.8	17.6	15.5	12.2	8.1	9.1	9.8	9.8	9.6	9.3	6.8	8.5	9.3	10.2	10.7	5.3	8.2	5.0	4.3	3.9	12.2	24	17.6	2.7	9.5
5	9.3	12.7	22.9	36.4	21.5	19.0	10.8	7.7	20.0	27.0	13.1	0.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	36.4	0.2	8.5
6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.5	0.5	24	0.5	0.2	0.2
7	0.5	0.6	0.7	0.7	1.0	1.1	1.3	1.4	1.5	1.8	1.9	1.5	1.5	1.2	1.2	1.2	1.6	1.9	2.4	2.4	2.4	2.9	4.2	5.2	24	5.2	0.5	1.7
8	5.1	4.2	5.7	6.5	6.6	7.4	5.0	2.0	1.4	1.7	T	1.7	1.6	1.5	1.4	1.7	2.0	2.3	3.0	4.0	4.0	3.7	3.4	3.6	23	7.4	1.4	3.5
9	4.4	5.0	5.5	4.2	3.3	2.4	2.1	1.3	0.9	0.7	0.5	0.5	0.5	0.5	0.6	0.6	0.5	1.6	1.7	1.4	1.4	1.7	2.0	2.4	24	5.5	0.5	1.9
10	2.9	4.2	7.2	7.3	6.6	5.7	3.0	0.9	0.7	0.9	0.6	0.5	0.6	0.5	0.5	0.4	0.2	0.3	0.5	0.8	2.3	3.0	4.3	3.2	24	7.3	0.2	2.4
11	1.8	1.9	1.7	1.4	1.5	1.3	1.2	1.3	1.4	1.1	1.7	1.9	2.1	1.9	2.0	2.1	1.7	1.6	1.7	2.1	2.7	5.3	6.2	9.7	24	9.7	1.1	2.4
12	17.3	20.0	16.4	10.9	11.4	9.6	9.1	C	C	6.5	6.9	9.9	10.5	10.5	9.9	9.5	5.2	5.4	7.7	10.9	9.9	14.1	12.1	6.8	22	20.0	5.2	10.5
13	4.3	6.0	5.0	5.5	6.3	7.4	8.1	6.7	6.1	7.8	9.3	7.3	7.0	9.0	9.0	8.1	5.8	7.2	7.1	5.8	5.8	4.3	5.7	7.0	24	9.3	4.3	6.7
14	7.6	9.0	8.6	8.1	7.3	7.5	7.6	10.3	10.8	20.7	21.0	17.7	12.3	6.7	0.8	1.4	1.3	0.8	0.6	0.7	0.9	0.9	1.0	0.9	24	21.0	0.6	6.8
15	0.5	0.4	0.6	0.9	1.0	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.9	0.9	1.1	1.3	24	1.3	0.3	0.6
16	1.2	0.8	1.5	4.8	3.2	4.5	3.6	3.0	3.3	2.1	3.0	4.0	6.0	6.7	1.1	0.7	3.6	3.2	3.0	3.7	5.1	6.7	4.5	4.4	24	6.7	0.7	3.5
17	4.9	5.3	5.5	6.1	5.7	6.1	7.0	9.2	6.0	14.2	14.5	13.1	12.9	13.4	12.9	12.6	12.3	12.5	12.3	13.4	12.8	12.9	12.0	12.8	24	14.5	4.9	10.4
18	11.9	11.8	12.4	12.6	9.6	7.8	6.9	6.7	6.6	7.0	8.0	8.9	9.0	9.4	10.3	M	M	M	M	M	M	M	M	M	15	12.6	6.6	
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
23	M	M	M	M	M	M	M	M	M	M	M	M	M	11.9	11.7	11.6	10.4	11.2	12.3	10.8	8.7	10.2	19.1	14.8	11	19.1	8.7	
24	11.1	13.2	12.0	13.6	14.2	13.3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	6	14.2	11.1	
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
29	M	M	M	M	M	M	M	M	M	M	M	M	M	21.2	18.6	14.1	5.7	2.6	2.0	1.9	3.1	3.9	4.9	6.8	11	21.2	1.9	
30	M	M	M	M	M	M	M	M	5.0	5.2	6.4	7.4	5.7	4.1	2.6	3.3	2.4	2.5	3.1	2.9	3.7	3.1	3.5	4.0	16	7.4	2.4	
31	4.6	4.3	6.1	4.5	6.2	8.4	6.4	4.0	2.4	1.2	1.4	2.5	2.8	2.3	1.8	1.9	1.4	1.4	1.1	1.4	1.6	1.6	2.0	2.0	24	8.4	1.1	3.0
Count	20	20	20	20	20	20	19	18	19	20	19	19	20	22	22	21	21	21	21	21	21	21	21	21	487			
Maximum	17.3	20.0	22.9	36.4	21.5	19.0	12.2	10.3	20.0	27.0	21.0	17.7	12.9	21.2	18.6	14.1	12.3	12.5	12.3	13.4	12.8	14.1	19.1	14.8	24			
Minimum	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0			
Average	5.0	5.9	6.9	7.6	6.8	6.5	5.2	4.1	4.6	6.0	5.8	5.0	4.7	5.6	4.6	4.0	3.3	3.3	3.3	3.6	3.6	4.1	4.7	4.9				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.5	0.9	1.6	2.3	3.1	4.6	6.5	8.7	12.0	13.9	21.0	36.4

Maximum Hourly	36.4
Maximum Daily	10.5
Monthly Average	4.5

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

$PM_{2.5}$ - COURTICE
June 2017
(µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	2.3	1.6	1.6	1.7	1.9	2.2	1.2	1.1	0.9	1.0	T	1.4	1.4	1.2	1.2	1.0	1.0	1.0	1.2	0.9	0.9	1.7	1.7	1.5	23	2.3	0.9	1.4
2	1.2	2.5	3.8	6.8	5.8	5.2	1.6	1.5	0.8	0.9	1.0	1.1	1.1	1.1	0.9	0.8	0.7	0.7	0.7	0.6	0.8	0.9	0.8	0.6	24	6.8	0.6	1.7
3	0.5	0.8	1.0	1.1	0.8	0.9	0.8	0.8	0.7	0.9	1.1	0.8	0.8	0.8	1.0	1.4	1.6	1.7	1.8	3.8	8.2	13.8	17.7	17.0	24	17.7	0.5	3.3
4	20.2	21.3	14.0	13.7	14.3	12.2	9.4	9.0	10.1	9.2	11.0	29.9	8.7	26.8	61.4	24.5	21.4	14.5	6.0	4.2	7.0	5.0	2.9	2.4	24	61.4	2.4	15.0
5	2.1	2.4	4.3	4.6	4.9	6.0	5.8	6.2	3.9	3.1	1.8	2.0	2.1	2.8	3.5	2.0	1.6	1.4	1.3	1.5	1.3	1.4	1.7	1.8	24	6.2	1.3	2.9
6	1.6	1.3	1.2	1.0	0.9	0.9	0.7	0.6	0.7	0.8	0.7	0.5	0.8	0.7	0.5	0.9	0.7	0.7	1.1	1.3	1.1	1.0	1.1	1.1	24	1.6	0.5	0.9
7	1.0	0.9	0.7	0.7	0.9	1.2	1.0	0.8	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.9	2.9	5.3	7.4	24	7.4	0.2	1.1
8	8.8	7.7	7.3	9.4	10.9	11.9	9.1	8.2	10.5	11.3	9.6	6.4	14.5	22.7	12.7	5.5	2.9	2.3	2.5	2.4	6.8	10.9	15.2	16.7	24	22.7	2.3	9.4
9	13.3	15.5	9.7	10.9	9.5	9.9	6.4	4.8	C	4.1	4.8	5.2	6.4	8.7	9.4	7.7	6.2	3.9	5.8	11.8	10.4	15.3	15.2	19.1	23	19.1	3.9	9.3
10	27.5	17.2	14.7	14.1	12.2	16.8	14.6	11.8	14.1	15.9	11.9	12.4	11.0	11.3	11.0	10.7	10.8	11.4	10.7	10.4	10.4	9.7	11.1	12.8	24	27.5	9.7	13.1
11	13.7	16.2	15.6	15.4	14.9	13.5	13.3	13.5	10.3	8.5	10.5	12.1	12.1	13.4	13.3	13.5	13.2	12.5	13.7	13.5	13.3	13.0	13.0	13.4	24	16.2	8.5	13.1
12	13.2	13.3	15.3	16.7	16.3	17.2	17.4	15.6	14.6	15.9	19.2	18.3	17.9	16.8	13.7	13.5	13.8	13.8	14.5	14.3	14.7	14.7	15.4	16.4	24	19.2	13.2	15.5
13	17.0	20.0	21.0	19.5	14.5	8.5	8.1	9.1	8.7	7.0	6.2	8.0	8.7	7.8	8.5	10.5	8.1	10.3	12.1	12.3	13.7	16.3	19.5	17.5	24	21.0	6.2	12.2
14	12.6	7.6	5.4	4.1	3.3	3.1	2.7	2.6	3.2	2.5	2.8	2.5	2.6	2.4	2.3	2.4	2.1	2.0	2.0	2.5	3.3	3.6	4.0	4.9	24	12.6	2.0	3.6
15	4.8	4.8	4.9	5.3	6.1	6.1	6.1	7.1	6.1	6.5	4.9	5.0	4.7	M	M	M	M	M	M	M	M	M	M	M	13	7.1	4.7	
16	M	M	M	M	M	M	M	M	M	M	M	M	10.5	14.1	13.8	15.0	12.5	9.5	11.7	8.8	7.6	8.7	6.9	9.6	12	15.0	6.9	
17	12.6	13.1	19.2	21.3	21.0	15.2	14.1	13.4	9.2	10.0	13.9	14.6	12.8	11.7	11.9	9.2	9.9	10.1	10.8	11.8	12.8	11.1	10.5	12.9	24	21.3	9.2	13.1
18	14.9	16.9	17.3	15.9	15.0	14.2	12.3	12.9	12.6	11.2	11.7	12.9	14.2	12.1	9.5	8.1	8.4	6.7	3.9	4.3	5.2	6.7	6.1	5.2	24	17.3	3.9	10.8
19	4.0	3.6	3.7	4.0	3.9	4.2	3.7	3.0	2.1	3.2	5.0	5.7	4.4	4.4	4.1	4.4	5.1	4.5	4.7	5.6	9.5	8.8	6.4	7.3	24	9.5	2.1	4.8
20	9.2	6.1	4.0	6.3	9.0	8.0	7.0	6.0	3.0	A	A	12.8	8.0	6.2	9.6	5.9	2.4	2.5	2.4	2.7	3.3	4.7	4.5	3.8	22	12.8	2.4	5.8
21	3.8	6.4	7.9	9.6	9.1	7.7	6.3	6.0	M	M	M	M	11.6	6.8	3.7	2.4	1.7	1.5	1.6	2.6	2.8	3.5	4.2	4.1	20	11.6	1.5	5.2
22	6.0	12.7	13.4	10.9	11.8	12.1	6.4	5.6	4.2	4.8	4.9	5.7	M	M	13.8	10.4	10.8	8.4	6.6	5.6	6.4	4.4	4.5	7.1	22	13.8	4.2	8.0
23	9.6	10.4	3.4	1.2	0.5	0.8	0.6	1.3	0.5	1.3	1.5	1.2	1.4	1.4	1.3	1.5	1.7	2.3	2.6	1.3	1.3	1.5	1.7	2.2	24	10.4	0.5	2.2
24	2.8	3.6	3.8	4.0	4.2	3.7	3.1	2.3	2.0	1.8	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	2.1	3.8	5.6	6.0	24	6.0	1.6	2.7
25	6.7	7.1	7.8	9.0	8.8	8.2	10.6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	7	10.6	6.7	
26	M	M	M	M	M	M	M	M	M	M	M	M	7.2	10.2	7.1	3.2	2.8	2.4	2.5	4.3	9.0	10.6	10.4	7.3	12	10.6	2.4	
27	7.8	10.3	12.6	13.1	14.7	6.0	5.3	5.9	3.0	2.7	3.2	6.4	8.0	3.5	3.5	2.4	2.1	2.8	4.1	5.4	7.5	16.9	10.8	11.4	24	16.9	2.1	7.1
28	7.7	7.4	7.4	6.8	6.0	6.4	6.3	7.4	6.8	6.5	8.1	9.6	10.4	8.6	6.5	6.2	5.5	5.1	4.9	4.9	5.1	5.5	4.9	5.1	24	10.4	4.9	6.6
29	4.5	4.8	5.8	7.5	7.8	8.2	6.7	5.6	4.3	5.3	4.6	5.8	5.9	5.6	6.4	8.1	M	M	M	M	M	M	M	M	16	8.2	4.3	
30	M	M	M	M	M	M	M	M	M	M	M	M	8.1	5.8	4.8	4.2	3.7	3.5	4.1	6.2	8.6	9.5	8.7	11.1	12	11.1	3.5	
31																												
Count	27	27	27	27	27	27	27	26	24	24	23	25	28	27	28	28	27	27	27	27	27	27	27	27	638			
Maximum	27.5	21.3	21.0	21.3	21.0	17.2	17.4	15.6	14.6	15.9	19.2	29.9	17.9	26.8	61.4	24.5	21.4	14.5	14.5	14.3	14.7	16.9	19.5	19.1	24			
Minimum	0.5	0.8	0.7	0.7	0.5	0.8	0.6	0.6	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.8	0.9	0.8	0.6	7			
Average	8.5	8.7	8.4	8.7	8.5	7.8	6.7	6.2	5.5	5.6	6.1	7.3	7.0	7.7	8.5	6.3	5.6	5.1	5.0	5.4	6.4	7.6	7.8	8.4				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.0	1.6	2.8	4.4	5.9	7.5	9.6	12.1	14.5	16.7	21.4	61.4

Maximum Hourly	61.4
Maximum Daily	15.5
Monthly Average	7.0

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

$PM_{2.5}$ - April ($\mu g/m^3$) Rundle Road 2017

Day \ Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	1.7	2.2	2.6	3.5	4.1	4.3	4.3	3.2	2.1	2.0	1.5	1.2	1.3	1.2	1.3	2.1	3.2	3.2	3.1	8.1	11.6	13.5	9.0	4.7	24	13.5	1.2	4.0
2	10.0	8.6	10.0	9.7	10.7	7.5	6.5	6.1	5.5	5.6	4.9	4.7	4.1	5.7	5.1	3.4	3.6	4.6	4.0	15.7	12.6	11.2	19.9	7.5	24	19.9	3.4	7.8
3	5.4	4.1	3.0	3.6	4.1	5.7	5.3	5.8	T	5.6	7.3	7.6	7.9	7.2	6.0	4.6	4.0	3.9	4.0	3.5	3.1	3.3	6.1	7.7	23	7.9	3.0	5.2
4	8.7	10.2	9.3	6.5	4.0	4.0	4.4	5.4	5.6	4.3	5.2	3.9	4.6	3.5	3.4	4.3	7.1	44.8	28.5	3.6	3.2	3.6	3.0	3.0	24	44.8	3.0	7.7
5	3.3	2.0	1.8	1.5	1.3	0.9	C	1.7	2.5	1.7	1.5	1.4	1.9	1.4	1.0	2.3	1.3	1.2	1.4	1.5	1.5	1.5	1.4	1.1	23	3.3	0.9	1.6
6	1.2	1.3	1.5	2.1	3.0	4.9	6.6	6.1	7.1	6.7	6.6	4.0	1.9	1.3	0.9	0.8	0.8	0.4	0.4	0.5	0.3	0.4	0.3	0.2	24	7.1	0.2	2.5
7	0.2	0.2	0.1	0.1	0.1	0.2	0.5	0.7	0.7	1.0	1.4	0.7	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.5	0.8	1.4	1.3	1.5	24	1.5	0.0	0.5
8	1.6	2.1	2.6	2.1	2.0	1.8	2.3	1.0	0.4	0.0	0.0	0.3	0.3	0.4	0.9	1.8	2.0	1.7	4.8	6.3	6.7	7.5	8.2	8.8	24	8.8	0.0	2.7
9	10.8	10.8	13.3	11.7	10.1	9.6	12.3	8.8	1.9	2.2	2.3	2.6	4.3	3.3	5.8	3.7	3.2	2.8	3.5	5.3	10.8	13.2	10.3	10.6	24	13.3	1.9	7.2
10	9.2	9.0	8.5	8.0	8.5	8.0	8.6	10.3	6.0	3.7	4.0	5.6	6.9	8.8	12.6	17.4	12.3	11.4	11.2	12.8	14.0	14.7	12.1	8.7	24	17.4	3.7	9.7
11	8.8	8.3	9.0	10.9	11.0	10.8	14.4	10.8	T	T	4.5	7.5	7.6	8.7	7.3	8.8	8.5	9.1	9.3	13.0	12.4	4.3	3.7	3.9	22	14.4	3.7	8.8
12	2.3	1.7	1.0	0.6	0.4	0.3	0.5	0.5	0.7	0.9	1.3	1.3	1.2	1.9	2.2	1.0	1.3	1.2	0.5	0.7	1.7	2.2	7.0	8.6	24	8.6	0.3	1.7
13	3.3	2.4	2.2	3.3	7.8	11.8	28.6	3.8	4.1	5.9	4.7	1.5	1.5	1.6	1.5	1.3	0.9	0.6	0.8	2.1	2.6	5.8	5.3	5.0	24	28.6	0.6	4.5
14	1.9	1.2	1.2	1.3	1.3	1.5	1.8	2.3	2.9	4.0	7.1	7.4	4.1	2.6	1.5	1.9	1.6	1.5	4.1	2.2	6.8	8.0	6.3	10.4	24	10.4	1.2	3.5
15	8.8	3.7	2.3	1.3	1.6	1.5	1.8	3.6	5.0	5.7	11.2	12.8	13.7	15.2	15.8	16.1	16.9	16.8	19.1	19.2	22.4	24.7	20.9	14.8	24	24.7	1.3	11.5
16	13.5	12.5	11.7	11.1	11.2	11.8	11.1	10.9	11.1	10.7	11.1	11.8	11.4	7.1	3.4	11.9	6.0	8.7	11.0	14.1	12.3	5.8	5.5	7.8	24	14.1	3.4	10.1
17	9.3	9.9	11.7	10.8	7.8	4.6	5.8	5.2	5.7	5.1	3.0	2.3	3.8	2.8	2.6	2.3	2.7	6.1	9.6	17.9	19.9	17.4	11.6	7.3	24	19.9	2.3	7.7
18	4.3	4.2	4.0	2.9	4.1	4.2	4.8	1.9	1.5	0.7	0.5	0.5	0.7	1.6	2.5	0.6	0.1	0.0	0.5	0.9	1.0	1.2	1.1	0.9	24	4.8	0.0	1.9
19	8.5	25.7	22.5	20.8	22.7	22.4	29.8	29.3	27.2	29.5	22.5	18.1	15.1	12.3	13.3	14.2	12.6	8.5	1.6	2.5	4.2	7.6	4.3	6.0	24	29.8	1.6	15.9
20	6.4	4.7	4.1	4.1	4.1	4.3	3.3	3.1	2.9	2.4	3.1	3.2	2.6	2.2	1.6	2.1	3.8	4.2	4.0	4.8	5.0	5.3	5.4	3.6	24	6.4	1.6	3.8
21	5.3	8.2	9.0	8.4	5.6	7.6	6.0	12.0	12.5	T	12.0	10.2	9.0	5.2	0.8	0.2	0.6	0.2	0.4	2.7	2.4	1.8	0.8	1.8	23	12.5	0.2	5.3
22	1.9	0.8	0.7	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.6	8.1	1.9	1.3	1.4	1.0	24	8.1	0.2	0.9
23	0.9	1.0	2.4	2.8	3.8	3.8	5.3	1.7	3.4	10.3	16.2	14.3	8.4	7.3	4.7	2.7	2.0	2.1	3.0	3.8	3.5	1.9	2.9	4.1	24	16.2	0.9	4.7
24	4.1	4.7	5.4	4.4	2.9	1.2	0.7	0.6	1.0	2.0	3.1	3.9	4.9	3.1	4.0	1.9	0.8	1.2	2.5	4.1	4.8	5.9	2.7	1.9	24	5.9	0.6	3.0
25	1.9	2.4	2.1	2.3	2.8	4.2	4.5	5.5	7.5	8.4	8.9	9.0	5.7	4.0	3.3	4.1	2.5	1.8	1.9	2.2	2.2	2.1	1.8	1.5	24	9.0	1.5	3.9
26	1.8	2.1	2.0	1.9	1.8	1.8	1.4	1.2	1.1	1.3	1.3	1.9	1.4	1.3	1.9	1.9	1.1	0.7	0.9	2.2	1.7	1.7	1.7	1.9	24	2.2	0.7	1.6
27	1.4	1.2	1.3	1.5	1.9	3.5	3.0	2.6	2.8	3.4	4.1	4.2	3.5	3.1	3.1	2.4	2.8	5.1	9.8	8.9	8.7	7.8	4.5	4.1	24	9.8	1.2	3.9
28	5.5	1.8	5.9	9.5	8.9	11.6	13.9	15.3	14.4	11.2	11.9	11.0	11.4	10.6	9.0	5.0	4.8	2.9	2.4	3.1	5.4	11.5	15.2	17.8	24	17.8	1.8	9.2
29	16.9	16.4	19.0	16.3	11.2	5.4	1.4	0.7	0.4	0.3	0.6	0.7	0.7	0.9	0.3	0.3	0.2	0.2	0.2	0.2	0.4	0.3	0.3	0.7	24	19.0	0.2	3.9
30	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.6	0.3	0.4	0.3	0.2	0.3	0.5	0.7	0.8	1.2	1.4	1.0	1.4	1.8	2.7	3.0	24	3.0	0.2	0.8
31																												
Count	30	30	30	30	30	30	29	30	28	28	30	30	30	30	30	30	30	30	30	30	30	30	30	30	715			
Maximum	16.9	25.7	22.5	20.8	22.7	22.4	29.8	29.3	27.2	29.5	22.5	18.1	15.1	15.2	15.8	17.4	16.9	44.8	28.5	19.2	22.4	24.7	20.9	17.8	24			
Minimum	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.1	0.0	0.1	0.2	0.3	0.3	0.3	0.2	22			
Average	5.3	5.5	5.7	5.5	5.3	5.3	6.5	5.4	4.9	4.8	5.4	5.1	4.7	4.2	3.9	4.0	3.6	4.9	4.8	5.7	6.2	6.3	5.9	5.3				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.5	1.2	1.7	2.3	3.4	4.3	6.0	8.8	11.8	15.3	25.6	44.8

Maximum Hourly	44.8
Maximum Daily	15.9
Monthly Average	5.2

Notes C - Calibration / Span Cycle; NA - No Data Available; T - Test; A- MOE Audit; M - Equipment Malfunction / Down; R - Rate of Change

$PM_{2.5}$ - May (µg/m³) Rundle Road 2017

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	3.5	4.2	3.9	4.8	6.1	4.7	6.6	6.4	5.3	5.1	4.9	5.1	5.0	3.3	2.0	0.8	0.5	0.7	0.6	0.6	1.2	2.3	2.5	2.0	24	6.6	0.5	3.4
2	3.3	3.9	3.1	3.8	5.5	6.0	5.6	4.8	5.2	6.4	6.1	5.1	2.4	2.4	3.2	4.1	6.0	5.6	6.1	6.6	2.6	1.3	0.4	0.4	24	6.6	0.4	4.2
3	1.0	2.4	1.6	0.2	0.3	0.8	1.7	1.7	1.5	T	2.4	3.3	1.8	0.8	0.2	0.2	0.2	0.3	0.7	1.4	3.9	6.9	6.3	2.8	23	6.9	0.2	1.8
4	1.9	3.3	2.5	2.9	5.1	5.4	4.7	3.3	4.1	6.3	6.4	6.1	6.5	4.5	8.6	10.6	7.4	5.8	6.0	5.8	5.9	5.0	4.6	5.2	24	10.6	1.9	5.3
5	6.0	6.3	7.2	5.9	3.9	3.8	3.1	3.1	2.8	2.7	2.6	1.9	1.2	1.0	1.0	0.9	0.9	1.1	0.7	0.7	0.6	0.5	0.5	0.6	24	7.2	0.5	2.5
6	0.5	0.6	0.6	0.5	0.6	0.6	0.4	0.7	0.7	1.4	1.3	1.3	1.2	1.2	1.3	1.6	1.9	1.8	1.8	1.8	1.5	1.0	1.1	1.1	24	1.9	0.4	1.1
7	1.2	1.1	1.0	1.0	1.3	1.5	1.8	1.9	2.0	2.6	2.6	2.2	2.4	2.0	1.4	1.2	1.6	1.5	1.0	1.0	1.2	2.4	3.9	60.1	24	60.1	1.0	4.2
8	2.4	2.0	2.2	1.9	1.8	1.8	1.5	0.4	T	0.2	0.5	0.9	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.3	23	2.4	0.0	0.7
9	0.7	0.8	1.0	1.2	0.8	0.4	0.2	0.1	0.0	0.0	0.2	0.7	0.7	0.7	0.8	0.7	1.8	1.8	1.4	1.7	2.0	2.0	2.3	3.6	24	3.6	0.0	1.1
10	3.9	5.6	7.9	7.8	6.7	5.9	3.5	1.2	0.4	0.3	0.4	0.3	0.4	0.4	0.2	0.0	0.0	0.1	0.1	0.2	1.8	6.4	2.9	2.2	24	7.9	0.0	2.4
11	1.5	1.7	1.6	0.9	1.0	1.0	1.3	1.3	0.9	0.9	1.7	1.7	1.2	1.7	0.9	0.8	0.6	0.8	0.8	3.4	15.5	34.0	3.1	4.3	24	34.0	0.6	3.4
12	7.5	8.8	8.7	9.2	8.4	C	8.2	7.9	6.9	7.3	6.6	10.4	11.9	11.8	10.9	8.3	4.8	7.2	4.8	12.1	15.9	13.6	15.8	13.3	23	15.9	4.8	9.6
13	7.1	11.7	10.0	8.3	9.5	10.8	12.1	9.6	6.4	6.6	6.9	5.0	5.5	7.3	7.4	6.5	5.8	8.3	8.2	6.9	5.9	5.9	6.2	8.9	24	12.1	5.0	7.8
14	9.6	12.7	13.6	12.9	12.5	10.4	12.0	9.5	13.6	31.0	28.8	20.1	15.2	4.6	0.5	0.9	0.9	0.2	0.2	0.3	0.5	0.2	2.5	0.8	24	31.0	0.2	8.9
15	0.2	0.8	2.0	M	M	M	M	M	M	M	M	M	M	M	M	M	12.4	11.6	11.6	11.8	12.0	12.0	11.9	8.9	11	12.4	0.2	
16	0.5	0.4	0.8	1.5	2.0	2.1	1.8	0.9	0.8	0.5	0.4	0.5	1.6	2.4	1.0	0.0	0.4	1.2	2.4	3.9	5.5	6.1	6.4	4.6	24	6.4	0.0	2.0
17	4.8	6.2	6.6	7.1	8.5	9.1	8.2	10.2	T	T	5.4	4.7	5.0	5.2	5.2	5.4	5.9	5.5	5.7	7.4	9.2	10.0	9.1	11.2	22	11.2	4.7	7.1
18	11.8	12.0	12.0	11.1	8.6	6.7	6.6	6.8	8.1	7.3	8.7	7.7	7.7	8.0	9.1	7.1	8.5	9.6	10.5	9.6	5.2	1.0	1.0	0.9	24	12.0	0.9	7.7
19	2.3	2.0	2.6	1.0	0.0	0.0	0.0	0.0	0.1	0.1	0.5	0.5	0.8	1.4	1.8	1.9	2.0	3.6	7.8	7.5	16.7	11.6	7.3	4.2	24	16.7	0.0	3.2
20	1.6	0.9	1.6	1.0	1.1	1.2	1.3	1.3	1.4	2.3	3.6	3.8	3.3	3.0	2.3	3.0	3.2	3.1	3.6	3.6	3.8	4.7	6.7	4.7	24	6.7	0.9	2.8
21	4.3	4.1	6.3	7.3	10.7	10.2	10.6	8.5	9.5	11.1	9.6	11.5	12.0	12.6	11.5	8.6	6.7	5.2	4.7	4.6	4.9	3.6	4.2	4.1	24	12.6	3.6	7.8
22	5.1	5.6	6.0	6.2	5.4	5.6	6.2	9.4	8.2	9.6	10.4	7.6	6.1	5.5	2.1	2.2	2.9	3.4	4.0	4.7	6.0	7.3	9.1	16.1	24	16.1	2.1	6.4
23	24.6	21.8	21.4	26.2	24.8	23.6	23.0	14.4	8.0	7.2	T	9.0	9.1	6.9	7.3	7.5	11.1	11.6	12.1	15.7	11.1	9.5	14.7	15.6	23	26.2	6.9	14.6
24	13.2	14.0	14.8	17.6	17.6	16.1	11.7	7.8	8.1	7.5	7.4	4.7	7.1	4.8	6.5	4.7	5.1	6.0	5.9	7.3	7.4	8.3	9.2	8.2	24	17.6	4.7	9.2
25	10.3	10.0	9.0	8.6	6.8	6.1	4.8	4.3	4.3	2.3	1.5	1.0	1.4	1.5	1.0	0.5	0.3	0.4	0.3	0.2	0.4	0.8	1.2	0.4	24	10.3	0.2	3.2
26	0.7	1.0	0.5	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.8	1.5	0.9	1.7	4.3	2.4	2.6	4.0	4.1	3.6	2.9	2.4	2.3	2.5	24	4.3	0.2	1.6
27	2.5	3.0	3.0	3.2	3.8	4.1	4.1	3.0	2.8	2.8	3.2	5.5	5.5	2.6	5.4	1.8	1.0	0.9	1.1	2.6	6.3	4.7	4.5	4.3	24	6.3	0.9	3.4
28	4.3	6.6	7.3	7.5	5.6	7.0	14.1	2.9	2.2	2.0	2.0	3.5	4.0	3.5	2.9	2.8	3.4	3.6	5.3	7.4	7.6	7.0	6.7	7.9	24	14.1	2.0	5.3
29	8.0	8.6	9.9	10.9	10.8	8.1	6.0	6.3	7.5	6.2	5.9	7.9	10.9	9.3	7.3	5.4	1.9	0.9	1.0	1.7	4.3	4.7	6.5	6.6	24	10.9	0.9	6.5
30	7.7	6.8	6.0	6.8	7.4	7.8	5.8	7.3	7.4	6.0	5.3	5.4	5.2	3.7	1.8	2.4	2.2	2.5	3.1	4.0	6.4	4.4	M	M	22	7.8	1.8	5.2
31	M	M	M	M	M	M	M	M	M	8.9	8.8	8.8	6.7	5.7	4.3	4.8	3.7	3.0	1.7	2.3	2.5	2.7	2.4	2.2	15	8.9	1.7	
Count	30	30	30	29	29	28	29	29	27	28	29	30	30	30	30	30	31	31	31	31	31	31	30	30	714			
Maximum	24.6	21.8	21.4	26.2	24.8	23.6	23.0	14.4	13.6	31.0	28.8	20.1	15.2	12.6	11.5	10.6	12.4	11.6	12.1	15.7	16.7	34.0	15.8	60.1	24			
Minimum	0.2	0.4	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.3	11			
Average	5.1	5.6	5.8	6.1	6.1	5.8	5.8	4.7	4.4	5.2	5.0	4.9	4.8	4.0	3.7	3.2	3.4	3.6	3.8	4.5	5.5	5.9	5.2	6.9				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.5	1.0	1.7	2.5	3.9	5.2	6.4	7.8	10.6	12.5	23.5	60.1

Maximum Hourly	60.1
Maximum Daily	14.6
Monthly Average	4.9

Notes C - Calibration / Span Cycle; NA - No Data Available; T - Test; A- MOE Audit; M - Equipment Malfunction / Down; R - Rate of Change

$PM_{2.5}$ - June ($\mu g/m^3$) Rundle Road 2017

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	2.0	1.6	1.4	1.9	2.3	2.5	1.3	1.1	T	0.5	0.4	0.5	0.6	0.3	0.3	0.2	0.3	0.2	0.9	2.2	2.7	3.1	2.5	3.7	23	3.7	0.2	1.4
2	4.3	3.9	4.5	5.5	6.3	5.9	2.4	1.8	0.9	0.8	0.5	0.8	0.9	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.4	0.8	1.0	1.3	24	6.3	0.2	1.8
3	1.4	1.9	2.3	3.0	3.6	3.6	2.2	1.4	1.2	1.0	2.7	3.2	2.6	2.1	2.1	2.1	2.6	2.1	1.9	3.6	12.3	16.9	18.4	24.8	24	24.8	1.0	5.0
4	32.0	21.8	17.1	12.7	13.4	11.4	9.1	7.8	6.1	4.3	4.2	3.7	2.9	2.2	2.4	2.2	2.0	2.2	2.4	3.1	4.0	3.7	2.1	2.0	24	32.0	2.0	7.3
5	2.0	2.5	4.2	4.4	4.1	4.2	4.2	3.7	3.2	1.8	1.4	1.4	1.5	1.7	1.6	1.3	1.6	1.6	1.6	2.0	1.9	2.1	2.3	2.6	24	4.4	1.3	2.4
6	2.1	1.6	1.4	1.3	1.1	1.1	1.1	1.0	1.4	1.0	0.8	0.6	0.7	0.7	0.4	0.6	0.8	0.7	0.8	0.9	0.9	0.9	0.8	1.0	24	2.1	0.4	1.0
7	1.1	1.2	1.9	3.0	2.2	2.1	2.4	2.0	1.9	1.9	1.4	1.2	1.3	1.8	1.8	1.7	1.8	1.5	1.8	2.7	17.3	12.6	19.8	14.3	24	19.8	1.1	4.2
8	12.0	8.3	8.0	11.5	10.7	13.2	11.0	5.4	6.0	5.2	T	3.8	3.2	4.5	3.4	2.2	2.2	3.0	3.6	5.1	14.4	20.3	29.4	24.9	23	29.4	2.2	9.2
9	15.9	9.8	12.6	9.4	10.2	13.6	10.0	6.9	6.4	5.1	5.2	C	4.7	5.3	4.9	6.1	8.4	3.9	4.4	6.4	6.4	7.8	11.3	9.1	23	15.9	3.9	8.0
10	10.4	7.7	8.5	8.0	7.3	12.6	11.7	8.7	10.6	11.3	10.8	7.5	8.0	6.5	7.4	8.0	9.3	11.5	11.3	9.9	7.6	6.2	6.2	7.6	24	12.6	6.2	8.9
11	11.3	10.7	10.1	9.7	9.3	8.8	8.7	9.2	11.0	10.3	11.1	10.7	10.9	11.0	11.4	11.3	11.5	10.6	11.1	10.4	10.4	10.3	10.1	11.1	24	11.5	8.7	10.5
12	13.0	12.8	13.5	16.4	18.3	17.6	18.3	16.6	18.7	18.3	19.7	17.0	15.4	14.2	12.9	13.0	12.9	11.6	12.1	12.7	12.8	12.4	12.1	13.1	24	19.7	11.6	14.8
13	14.2	16.1	14.9	16.5	11.8	5.0	7.1	7.5	9.1	7.6	6.0	9.3	9.9	10.0	10.4	11.7	7.8	6.2	10.8	13.5	16.0	14.1	15.8	14.8	24	16.5	5.0	11.1
14	10.6	6.0	3.6	3.3	1.2	1.3	1.2	1.3	1.4	2.5	3.4	2.9	2.8	2.0	3.8	4.6	3.6	7.6	5.1	5.2	7.4	8.6	9.9	10.1	24	10.6	1.2	4.6
15	8.7	7.8	7.5	6.7	6.5	6.8	6.1	7.0	8.1	7.2	5.2	5.5	4.3	3.3	3.2	2.4	2.6	2.7	2.6	3.3	3.4	2.7	2.8	2.7	24	8.7	2.4	5.0
16	2.9	3.4	4.0	4.7	7.1	8.1	6.2	7.8	12.2	9.4	6.5	9.1	10.3	7.6	5.4	7.4	7.6	5.9	5.6	7.0	8.9	7.8	4.3	5.6	24	12.2	2.9	6.9
17	6.6	7.6	11.3	12.4	12.2	9.5	8.1	8.6	6.8	5.8	8.6	9.4	8.2	7.4	7.2	7.3	7.9	6.0	5.7	6.3	7.7	6.9	7.3	7.2	24	12.4	5.7	8.0
18	7.7	9.8	9.6	9.2	10.6	11.7	9.7	9.4	11.1	11.0	10.0	10.4	10.5	9.1	6.9	5.4	7.6	6.4	2.8	3.3	4.9	6.0	5.6	4.2	24	11.7	2.8	8.0
19	3.9	2.2	2.6	2.7	3.7	5.3	4.9	4.0	4.6	5.1	6.6	5.6	3.6	3.2	3.5	4.3	6.0	5.8	6.1	8.7	10.4	8.6	5.0	5.7	24	10.4	2.2	5.1
20	8.7	6.8	4.3	5.7	8.5	9.6	6.5	4.8	5.8	7.4	10.0	A	A	2.7	8.5	2.6	1.4	0.7	1.6	0.0	1.8	4.8	5.2	6.1	22	10.0	0.0	5.2
21	6.2	10.2	11.9	11.5	11.6	10.5	6.8	6.2	T	9.1	11.1	9.1	8.1	4.3	1.3	1.3	1.4	1.3	1.1	3.6	2.3	1.9	3.8	2.2	23	11.9	1.1	5.9
22	2.3	2.1	2.0	3.7	3.7	3.9	4.1	1.6	2.2	5.1	7.0	8.1	9.0	7.1	8.0	6.4	5.6	4.3	4.8	4.1	4.8	4.8	3.6	7.2	24	9.0	1.6	4.8
23	12.4	18.4	18.0	10.5	7.3	5.8	5.0	3.3	2.1	3.1	2.8	1.2	1.7	2.2	1.3	1.2	0.8	0.5	0.6	0.2	0.2	0.2	0.2	0.2	24	18.4	0.2	4.1
24	0.3	0.2	0.2	0.2	0.2	0.5	0.7	0.2	0.4	0.2	0.3	0.3	0.3	0.4	0.5	0.6	1.2	1.2	1.4	1.7	3.3	4.8	5.8	7.0	24	7.0	0.2	1.3
25	5.4	3.0	4.1	4.5	5.2	5.0	3.3	3.4	3.0	2.5	2.4	1.8	1.6	0.6	1.4	1.7	1.2	1.4	1.1	1.5	2.6	3.6	3.6	3.5	24	5.4	0.6	2.8
26	3.8	5.0	4.3	3.8	3.4	3.6	3.2	2.5	1.8	1.3	1.7	2.5	3.3	4.3	4.9	5.2	7.1	8.0	5.0	5.9	5.8	5.1	5.6	4.9	24	8.0	1.3	4.2
27	4.2	3.6	5.1	6.6	8.3	5.9	4.0	3.2	2.9	2.2	2.7	3.7	3.5	2.3	3.2	1.4	2.9	5.4	5.6	7.3	9.4	11.0	9.5	10.3	24	11.0	1.4	5.2
28	4.3	4.4	4.1	5.5	4.5	8.2	6.0	4.8	5.7	6.7	7.7	8.5	8.1	5.4	4.0	3.9	4.6	5.1	4.4	4.5	5.8	6.5	5.6	5.2	24	8.5	3.9	5.6
29	5.0	5.5	6.5	6.7	6.9	7.3	5.6	4.4	3.7	2.7	2.6	3.2	3.8	3.7	3.7	5.3	4.6	4.5	5.4	6.8	8.4	9.8	11.0	10.7	24	11.0	2.6	5.7
30	10.0	10.9	14.5	15.8	15.7	11.8	8.6	6.1	5.7	5.8	5.5	4.6	3.2	2.6	2.1	1.9	1.8	1.2	1.8	3.0	3.1	3.7	3.9	4.3	24	15.8	1.2	6.2
31																												
Count	30	30	30	30	30	30	30	30	28	30	29	28	29	30	30	30	30	30	30	30	30	30	30	30	714			
Maximum	32.0	21.8	18.0	16.5	18.3	17.6	18.3	16.6	18.7	18.3	19.7	17.0	15.4	14.2	12.9	13.0	12.9	11.6	12.1	13.5	17.3	20.3	29.4	24.9	24			
Minimum	0.3	0.2	0.2	0.2	0.2	0.5	0.7	0.2	0.4	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.0	0.2	0.2	0.2	0.2	22			
Average	7.5	6.9	7.1	7.2	7.2	7.2	6.0	5.1	5.5	5.2	5.5	5.2	5.0	4.3	4.3	4.1	4.3	4.1	4.1	4.8	6.6	6.9	7.5	7.6				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.1	1.8	2.7	3.7	4.8	6.0	7.5	9.4	11.5	14.2	19.6	32.0

Maximum Hourly	32.0
Maximum Daily	14.8
Monthly Average	5.8

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

Figure E-1 Time History Plot of Measured 24 Hour Average $PM_{2.5}$ Concentrations – Courtice WPCP Station

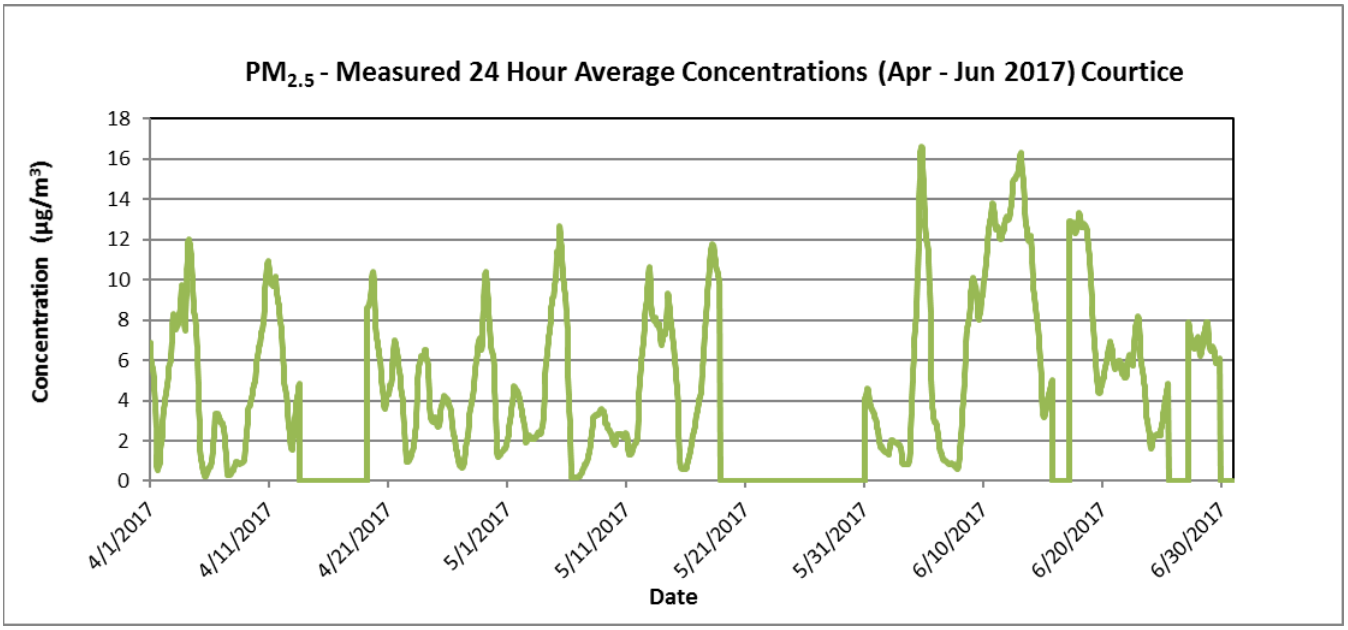
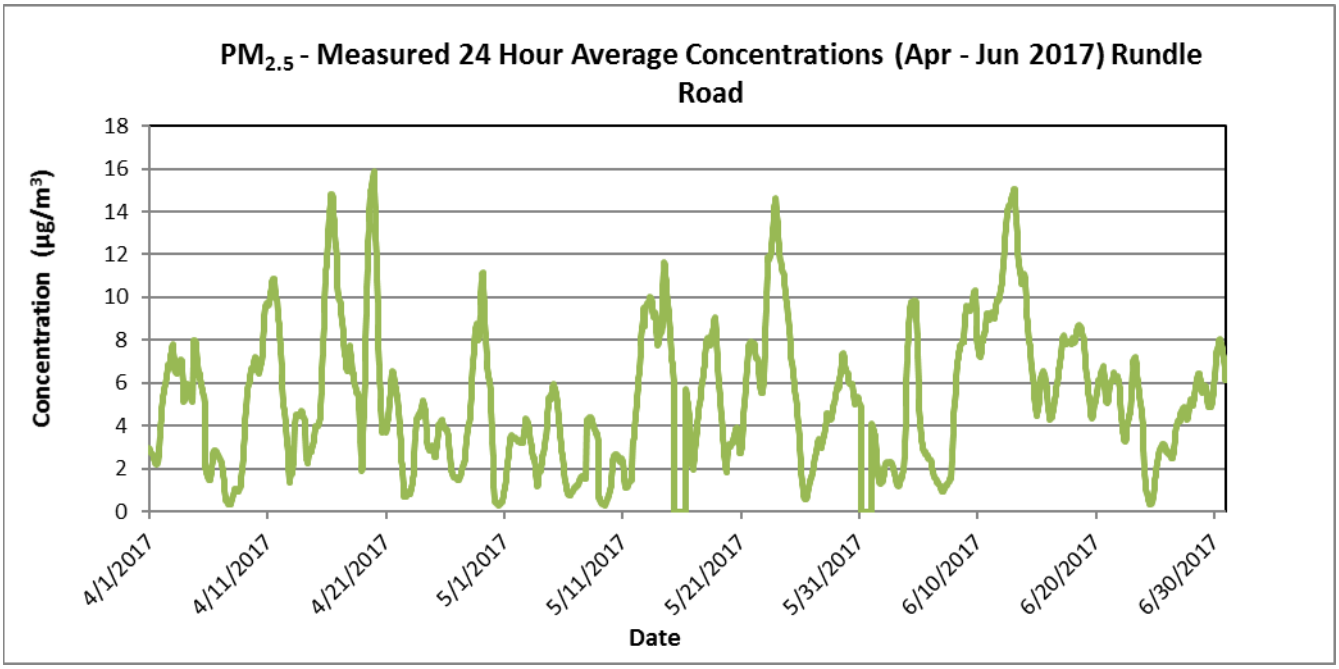


Figure E-2 Time History Plot of Measured 24 Hour Average $PM_{2.5}$ Concentrations – Rundle Road Station



Appendix F CONTINUOUS PARAMETER EDIT LOGS

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station (Upwind)**				
Station address:	**Courtice Water Pollution Control Plant**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**SO_2**	**Instrument make & model:**		**Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100**		**Serial Number:**	**565**	
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	
41	22-May-17	TH	Invalidate	28-Apr-17	07:00	28-Apr-17	07:00	Maintenance.
42	22-May-17	TH	Invalidate	2-Apr-17	09:00	2-Apr-17	09:03	Invalidate monthly calibration (minute data)
43	22-May-17	TH	Invalidate	2-Apr-17	08:00	2-Apr-17	08:00	Monthly calibration
44	24-May-17	TH	Data review	7-Apr-17	05:00	7-Apr-17	17:00	Instances of repeating 0.3ppb measurements. Data was reviewed - measurements were varying but were rounded to 0.3ppb. Winds were from the north, in which Highway 401 and CN railroad are upwind.
45	24-May-17	TH	Data review	12-Apr-17	02:00	13-Apr-17	02:00	Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb and rounded to 0 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied.
46	24-May-17	TH	Data review	17-Apr-17	03:00	17-Apr-17	15:00	
47	24-May-17	TH	Data review	18-Apr-17	08:00	18-Apr-17	18:00	
48	24-May-17	TH	Data review	29-Apr-17	06:00	29-Apr-17	21:00	
49	24-May-17	TH	Data review	3-Apr-17	07:00	4-Apr-17	05:00	An elevated SO_2 level of 56.4 ppb was measured at the Courtice WPCP station on April 3 at 20:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
50	24-May-17	TH	Data review	5-Apr-17	19:00	6-Apr-17	12:00	An elevated SO_2 level of 25.5 ppb was measured at the Courtice WPCP station on April 6 at 11:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured, suggesting a local combustion source. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
51	24-May-17	TH	Data review	23-Apr-17	04:00	23-Apr-17	04:00	An elevated SO_2 level of 15.5 ppb was measured at the Courtice WPCP station on April 23 at 4:00 without a corresponding trend at the Rundle Road Station. Winds were from the north - potential emission sources in this direction include Highway 401, local roads and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
52	24-May-17	TH	Data review	25-Apr-17	16:00	26-Apr-17	05:00	An elevated SO_2 level of 26.3 ppb was measured at the Courtice WPCP station on April 25 at 16:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
53	5-Jun-17	TH	Data review	12-May-17	07:00	12-May-17	11:00	Monthly calibration

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A		Station Name:	Courtice WPCP Station (Upwind)				
Station address:	Courtice Water Pollution Control Plant		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	SO_2	Instrument make & model:		Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100		Serial Number:	565	
Data edit period	Start date:	1-Apr-17	End date:	30-Jun-17		Time Zone : EST		
Edit #	Edit date	Editor's Name	Edit Action	Starting		Ending		Reason
				Date (dd/mm/yyyy)	Hour (xx:xx)	Date (dd/mm/yyyy)	Hour (xx:xx)	
54	6-Jun-17	TH	Data review	6-May-17	04:00	6-May-17	12:00	Instances of repeating 0.5ppb measurements. Data was reviewed - measurements were varying but were rounded to 0.5ppb. Wind direction in this time period was from the north-northwest in which Highway 401 and a CN railroad is upwind.
55	6-Jun-17	TH	Data review	6-May-17	16:00	7-May-17	04:00	Instances of repeating 0.3ppb measurements. Data was reviewed - measurements were varying but were rounded to 0.3ppb. Wind direction in this time period was from the northwest in which Highway 401 and a CN railroad is upwind.
56	6-Jun-17	TH	Data review	7-May-17	12:00	7-May-17	18:00	Instances of repeating 0.2ppb measurements. Data was reviewed - measurements were varying but were rounded to 0.2ppb. Wind direction in this time period was from the west-northwest in which there are no major SO2 sources in this direction
57	6-Jun-17	TH	Data review	13-May-17	06:00	20-May-17	17:00	Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb and rounded to 0 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied.
58	6-Jun-17	TH	Data review	22-May-17	05:00	24-May-17	05:00	
59	6-Jun-17	TH	Data review	24-May-17	21:00	25-May-17	07:00	
60	6-Jun-17	TH	Data review	26-May-17	09:00	26-May-17	19:00	
61	6-Jun-17	TH	Data review	27-May-17	08:00	29-May-17	08:00	
62	6-Jun-17	TH	Data review	5-May-17	00:00	5-May-17	10:00	An elevated SO_2 level of 12 ppb was measured at the Courtice WPCP station on May 5 at 3:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
63	6-Jun-17	TH	Data review	11-May-17	22:00	11-May-17	22:00	An elevated SO_2 level of 11 ppb was measured at the Courtice WPCP station on May 11 at 22:00 without a corresponding trend at the Rundle Road Station. Winds were from the north - potential emission sources in this direction include Highway 401, local roads and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
64	6-Jun-17	TH	Data review	20-May-17	22:00	21-May-17	04:00	An elevated SO_2 level of 18 ppb was measured at the Courtice WPCP station on May 21 at 4:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured, suggesting a local combustion source. Winds were from the east - potential emission sources in this direction include Courtice WPCP and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
65	6-Jun-17	TH	Data review	24-May-17	18:00	24-May-17	19:00	An elevated SO_2 level of 23 ppb was measured at the Courtice WPCP station on May 24 at 18:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
66	6-Jun-17	TH	Data review	25-May-17	09:00	25-May-17	21:00	An elevated SO_2 level of 10 ppb was measured at the Courtice WPCP station on May 25 at 21:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
67	6-Jun-17	TH	Data review	26-May-17	20:00	27-May-17	05:00	An elevated SO_2 level of 15.3 ppb was measured at the Courtice WPCP station on May 27 at 3:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured. Winds were from the west - potential emission sources in this direction include local roads. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
68	4-Jul-17	TH	Invalidate	9-Jun-17	08:00	9-Jun-17	09:00	Monthly calibration
69	4-Jul-17	TH	Invalidate	20-Jun-17	10:00	20-Jun-17	12:00	MOECC audit
70	8-Jul-17	TH	Span Correction	5-Apr-17	10:00	22-Jun-17	11:00	Nox bottle used for past few calibrations drifted 13% low. Applied offset from the first calibration after the passed audit in March (5-Apr-17). Spare Nox bottle used for re-calibration on 22-Jun-17
71	8-Jul-17	TH	Data review	1-Jun-17	06:00	2-Jun-17	23:00	Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb and rounded to 0 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied.
72	8-Jul-17	TH	Data review	7-Jun-17	11:00	7-Jun-17	16:00	
73	8-Jul-17	TH	Data review	10-Jun-17	17:00	14-Jun-17	18:00	
74	8-Jul-17	TH	Data review	16-Jun-17	05:00	21-Jun-17	19:00	
75	8-Jul-17	TH	Data review	23-Jun-17	10:00	26-Jun-17	20:00	
76	8-Jul-17	TH	Data review	27-Jun-17	14:00	27-Jun-17	19:00	
77	8-Jul-17	TH	Data review	28-Jun-17	16:00	30-Jun-17	23:00	

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station (Upwind)**				
Station address:	**Courtice Water Pollution Control Plant**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**SO_2**	**Instrument make & model:**		**Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100**			**Serial Number:**	**565**
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**				**Time Zone : EST**
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	
78	8-Jul-17	TH	Data review	4-Jun-17	13:00	4-Jun-17	18:00	An elevated SO_2 level of 31.3 ppb was measured at the Courtice WPCP station on June 4 at 16:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
79	8-Jul-17	TH	Data review	8-Jun-17	20:00	9-Jun-17	05:00	An elevated SO_2 level of 17.8 ppb was measured at the Courtice WPCP station on June 9 at 00:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured. Winds were from the north - potential emission sources in this direction include Highway 401, local roads and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
80	8-Jul-17	TH	Data review	15-Jun-17	05:00	15-Jun-17	05:00	An elevated SO_2 level of 22.2 ppb was measured at the Courtice WPCP station on June 15 at 5:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured. Winds were from the east-northeast - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
81	8-Jul-17	TH	Data review	27-Jun-17	22:00	28-Jun-17	04:00	An elevated SO_2 level of 30.7 ppb was measured at the Courtice WPCP station on June 28 at 4:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured. Winds were from the west - potential emission sources in this direction include local roads. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range
Test

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station (Upwind)**				
Station address:	**Courtice Water Pollution Control Plant**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**NOx**	**Instrument make & model:**		**Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100**			**Serial Number:**	**565**
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	
18	22-May-17	TH	Invalidate	28-Apr-17	07:00	28-Apr-17	07:00	Maintenance.
19	22-May-17	TH	Invalidate	2-Apr-17	08:00	2-Apr-17	09:00	Monthly calibration
20	24-May-17	TH	Data review	28-Apr-17	18:00	29-Apr-17	02:00	Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb and rounded to 0 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied.
21	24-May-17	TH	Data review	3-Apr-17	13:00	4-Apr-17	05:00	An elevated NOx level of 49.1 ppb was measured at the Courtice WPCP station on April 4 at 2:00 without a corresponding trend at the Rundle Road Station. Elevated SO_2 levels were also measured. For this hour, the measured NO concentration was smaller than NO_2 which suggests an emission source located relatively far away. Winds were from the east - potential emission sources in this direction include St Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
22	24-May-17	TH	Data review	6-Apr-17	03:00	6-Apr-17	11:00	An elevated NOx level of 34.4 ppb was measured at the Courtice WPCP station on April 6 at 11:00 without a corresponding trend at the Rundle Road Station. Elevated SO_2 levels were also measured. For this hour, the measured NO concentration was smaller than NO_2 which suggests an emission source located relatively far away. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
23	24-May-17	TH	Data review	7-Apr-17	20:00	8-Apr-17	07:00	An elevated NOx level of 23.9 ppb was measured at the Courtice WPCP station on April 8 at 4:00 without a corresponding trend at the Rundle Road Station. For this hour, the measured NO concentration was smaller than NO_2 which suggests an emission source located relatively far away. Winds were from the west-southwest - the elevated measurement may have been due to agricultural activities or local roads. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
24	24-May-17	TH	Data review	9-Apr-17	00:00	9-Apr-17	07:00	An elevated NOx level of 21.8 ppb was measured at the Courtice WPCP station on April 9 at 4:00 without a corresponding trend at the Rundle Road Station. Slightly elevated SO_2 concentrations at the Courtice WPCP station were also noted in this time period. For this hour, the measured NO concentration was smaller than NO_2 which suggests an emission source located relatively far away. Winds were blowing from the north -the elevated measurement may have been due to Highway 418 construction, a CN railroad or Highway 401. The data was deemed valid.
25	24-May-17	TH	Data review	9-Apr-17	21:00	10-Apr-17	06:00	An elevated NOx level of 36.3 ppb was measured at the Courtice WPCP station on April 9 at 21:00 without a corresponding trend at the Rundle Road Station. Slightly elevated SO_2 concentrations at the Courtice WPCP station were also noted in this time period. For this hour, the measured NO concentration was smaller than NO_2 which suggests an emission source located relatively far away. Winds were blowing from the north-northeast -the elevated measurement may have been due to the CN railroad or Highway 401. The data was deemed valid.
26	24-May-17	TH	Data review	14-Apr-17	20:00	14-Apr-17	00:00	An elevated NOx level of 40.4 ppb was measured at the Courtice WPCP station on April 13 at 20:00 without a corresponding trend at the Rundle Road Station. For this hour, the measured NO concentration was smaller than NO_2 which suggests an emission source located relatively far away. Winds were blowing from the northwest -the elevated measurement may have been due to Highway 401, local roads or a CN railroad. The data was deemed valid.
27	24-May-17	TH	Data review	25-Apr-17	15:00	26-Apr-17	06:00	An elevated NOx level of 37.9 ppb was measured at the Courtice WPCP station on April 25 at 20:00 without a corresponding trend at the Rundle Road Station. Elevated SO_2 levels were also measured. For this hour, the measured NO concentration was smaller than NO_2 which suggests an emission source located relatively far away. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A		Station Name:	Courtice WPCP Station (Upwind)				
Station address:	Courtice Water Pollution Control Plant		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	NOx	Instrument make & model:		Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100		Serial Number:	565	
Data edit period	Start date:	1-Apr-17	End date:	30-Jun-17		Time Zone : EST		
Edit #	Edit date	Editor's Name	Edit Action	Starting		Ending		Reason
				Date (dd/mm/yyyy)	Hour (xx:xx)	Date (dd/mm/yyyy)	Hour (xx:xx)	
28	6-Jun-17	TH	Invalidate	12-May-17	07:00	12-May-17	09:00	Monthly calibration
29	6-Jun-17	TH	Data review	1-May-17	17:00	2-May-17	05:00	Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb and rounded to 0 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied.
30	6-Jun-17	TH	Data review	17-May-17	13:00	17-May-17	20:00	
31	6-Jun-17	TH	Data review	22-May-17	14:00	22-May-17	22:00	
32	6-Jun-17	TH	Data review	11-May-17	22:00	12-May-17	06:00	An elevated NOx level of 50 ppb was measured at the Courtice WPCP station on May 12 at 00:00 without a corresponding trend at the Rundle Road Station. Elevated SO_2 concentrations at the Courtice WPCP station were also noted in this time period. For this hour, the measured NO concentration was approximately equal to NO_2 which suggests an emission source located an intermediate distance away. Winds were blowing from the north -the elevated measurement may have been due to highway 418 construction, a CN railroad or Highway 401. The data was deemed valid.
33	2-Jul-17	TH	Invalidate minute data	15-Jun-17	08:02	15-Jun-17	08:12	Power outage
34	2-Jul-17	TH	Invalidate minute data	15-Jun-17	11:11	15-Jun-17	11:24	Power outage
35	4-Jul-17	TH	Invalidate	9-Jun-17	08:00	9-Jun-17	10:00	Monthly calibration
36	4-Jul-17	TH	Invalidate	20-Jun-17	10:00	20-Jun-17	12:00	MOECC audit
37	4-Jul-17	TH	Invalidate	22-Jun-17	12:00	22-Jun-17	13:00	Recalibration after MOECC audit
38	5-Jul-17	TH	Span correction	5-Apr-17	09:00	22-Jun-17	11:00	Recalibration on June 22 confirmed that a faulty Nox bottle might have been used since April 5. Measurements would have been 13.3% low. Adjusted data since the 1st calibration after the previously passed MOECC audit.
39	8-Jul-17	TH	Data review	7-Jun-17	10:00	7-Jun-17	18:00	Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb and rounded to 0 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied.
40	8-Jul-17	TH	Data review	10-Jun-17	10:00	13-Jun-17	02:00	
41	8-Jul-17	TH	Data review	18-Jun-17	11:00	19-Jun-17	02:00	
42	8-Jul-17	TH	Data review	23-Jun-17	10:00	23-Jun-17	17:00	
43	8-Jul-17	TH	Data review	24-Jun-17	09:00	24-Jun-17	19:00	
44	8-Jul-17	TH	Data review	25-Jun-17	12:00	25-Jun-17	19:00	
45	8-Jul-17	TH	Data review	28-Jun-17	15:00	29-Jun-17	01:00	
46	8-Jul-17	TH	Data review	30-Jun-17	04:00	30-Jun-17	14:00	
47	8-Jul-17	TH	Data review	2-Jun-17	02:00	2-Jun-17	06:00	An elevated NOx level of 44.5 ppb was measured at the Courtice WPCP station on June 2 at 03:00 without a corresponding trend at the Rundle Road Station. For this hour, the measured NO concentration was approximately equa to NO_2 which suggests an emission source located an intermediate distance away. Winds were blowing from the north - the elevated measurement may have been due to highway 418 construction activities, a CN railroad or Highway 401. The data was deemed valid.
48	8-Jul-17	TH	Data review	4-Jun-17	14:00	4-Jun-17	18:00	An elevated NOx level of 34.9 ppb was measured at the Courtice WPCP station on June 4 at 16:00 without a corresponding trend at the Rundle Road Station. Elevated SO_2 levels were also measured. For this hour, the measured NO concentration was smaller than NO_2 which suggests an emission source located relatively far away. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
49	8-Jul-17	TH	Data review	21-Jun-17	21:00	22-Jun-17	05:00	An elevated NOx level of 45.1 ppb was measured at the Courtice WPCP station on June 22 at 02:00 without a corresponding trend at the Rundle Road Station. For this hour, the measured NO concentration was larger than NO_2 which suggests an emission source located nearby. Winds were blowing from the north -the elevated measurement may have been due to highway 418 construction activities, a CN railroad or Highway 401. The data was deemed valid.
50	8-Jul-17	TH	Data review	27-Jun-17	22:00	28-Jun-17	03:00	An elevated NOx level of 45 ppb was measured at the Courtice WPCP station on June 27 at 22:00 without a corresponding trend at the Rundle Road Station. Winds were blowing from the northwest -the elevated measurement may have been due to agricultural activities, a CN railroad or local roads. The data was deemed valid.

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range
Test

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A		Station Name:	Courtice WPCP Station				
Station address:	Courtice Water Pollution Control		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	$PM_{2.5}$	Instrument make & model:		Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time Particulate Monitor		Serial Number:	E-1569	
Data edit period	Start date:	1-Apr-17	End date:	30-Jun-17		Time Zone : EST		
Edit #	Edit date	Editor's Name	Edit Action	Starting		Ending		Reason
				Date (dd/mm/yyyy)	Hour (xx:xx)	Date (dd/mm/yyyy)	Hour (xx:xx)	
10	22-May-17	TH	Invalidate minute data	21-Apr-17	11:05	21-Apr-17	11:15	Weekly zero check. Invalidated minute data
11	22-May-17	TH	Invalidate minute data	27-Apr-17	11:16	27-Apr-17	11:27	Weekly zero check. Invalidated minute data
12	22-May-17	TH	Invalidate	3-Apr-17	11:00	3-Apr-17	11:00	Weekly zero check
13	22-May-17	TH	Invalidate	11-Apr-17	11:00	11-Apr-17	11:00	Weekly zero check
14	22-May-17	TH	Invalidate	18-Apr-17	11:00	18-Apr-17	11:00	Weekly zero check
15	22-May-17	TH	Invalidate	13-Apr-17	08:00	18-Apr-17	10:00	Pump was off when arrived onsite. Invalidated repeating low measurements.
16	22-May-17	TH	Invalidate	5-Apr-17	08:00	5-Apr-17	08:00	Monthly calibration
17	24-May-17	TH	Data review	6-Apr-17	17:00	7-Apr-17	02:00	Instances of repeating 0.2µg/m^3 measurements. Data was reviewed - measurements were varying but were rounded to 0.2µg/m3. Winds were from the north in which a CN railroad and Highway 401 are upwind.
18	24-May-17	TH	Data review	3-Apr-17	23:00	4-Apr-17	05:00	Elevated levels of up to 31.3 µg/m^3 were measured on April 4 at 2:00 without a corresponding trend at the Rundle or Oshawa Stations. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
19	5-Jun-17	TH	Invalidate minute data	17-May-17	10:21	17-May-17	11:33	Weekly zero check
20	5-Jun-17	TH	Invalidate minute data	23-May-17	13:57	23-May-17	14:07	Weekly zero check
21	5-Jun-17	TH	Invalidate minute data	18-May-17	14:52	18-May-17	14:59	Pump was off. Invalidate minute data
22	5-Jun-17	TH	Invalidate	3-May-17	11:00	3-May-17	11:00	Weekly zero check
23	5-Jun-17	TH	Invalidate	8-May-17	10:00	8-May-17	10:00	Weekly zero check
24	5-Jun-17	TH	Invalidate	12-May-17	07:00	12-May-17	08:00	Monthly calibration
25	5-Jun-17	TH	Invalidate	18-May-17	15:00	23-May-17	12:00	Pump was off. Invalidate data
26	5-Jun-17	TH	Invalidate	24-May-17	06:00	29-May-17	12:00	Pump was off. Invalidate data
27	5-Jun-17	TH	Invalidate	30-May-17	00:00	30-May-17	07:00	Pump was off. Invalidate data. Install spare
28	6-Jun-17	TH	Data review	5-May-17	12:00	6-May-17	20:00	Instances of repeating 0.2µg/m^3 measurements. Data was reviewed - measurements were varying but were rounded to 0.2µg/m3. Winds were from the north in which a CN railroad and Highway 401 are upwind.
29	6-Jun-17	TH	Data review	4-May-17	23:00	5-May-17	09:00	Elevated levels of up to 36 µg/m^3 were measured on May 5 at 3:00 without a corresponding trend at the Rundle or Oshawa Stations. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
30	6-Jun-17	TH	Data review	29-May-17	13:00	29-May-17	15:00	Elevated levels of up to 21 µg/m^3 were measured on May 29 at 13:00 without a corresponding trend at the Rundle or Oshawa Stations. Winds were from the west-southwest - potential emission sources in this direction include local roads. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
31	2-Jul-17	TH	Invalidate minute data	8-Jun-17	11:37	8-Jun-17	11:46	Weekly zero check
32	2-Jul-17	TH	Invalidate minute data	14-Jun-17	12:18	14-Jun-17	12:24	Weekly zero check
33	2-Jul-17	TH	Invalidate minute data	15-Jun-17	12:46	15-Jun-17	12:59	Pump was off. Invalidate data
34	2-Jul-17	TH	Invalidate minute data	21-Jun-17	12:00	21-Jun-17	12:03	Pump was off. Invalidate data
35	2-Jul-17	TH	Invalidate minute data	27-Jun-17	10:47	27-Jun-17	10:58	Weekly zero check
36	2-Jul-17	TH	Invalidate minute data	29-Jun-17	15:56	29-Jun-17	15:59	Pump was off. Invalidate data
37	2-Jul-17	TH	Invalidate minute data	30-Jun-17	12:00	30-Jun-17	12:10	Pump was off. Invalidate data

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A		Station Name:	Courtice WPCP Station				
Station address:	Courtice Water Pollution Control		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	$PM_{2.5}$	Instrument make & model:		Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time Particulate Monitor		Serial Number:	E-1569	
Data edit period	Start date:	1-Apr-17	End date:	30-Jun-17		Time Zone : EST		
Edit #	Edit date	Editor's Name	Edit Action	Starting		Ending		Reason
				Date (dd/mm/yyyy)	Hour (xx:xx)	Date (dd/mm/yyyy)	Hour (xx:xx)	
38	4-Jul-17	TH	Invalidate minute data	9-Jun-17	09:00	9-Jun-17	09:05	Monthly calibration
39	4-Jul-17	TH	Invalidate	1-Jun-17	10:00	1-Jun-17	10:00	Zero check
40	4-Jul-17	TH	Invalidate	9-Jun-17	08:00	9-Jun-17	08:00	Monthly calibration
41	4-Jul-17	TH	Invalidate	15-Jun-17	13:00	16-Jun-17	11:00	Pump was off. Invalidate data
42	4-Jul-17	TH	Invalidate	20-Jun-17	10:00	20-Jun-17	12:00	MOECC audit
43	4-Jul-17	TH	Invalidate	21-Jun-17	08:00	21-Jun-17	11:00	Pump was off. Invalidate data
44	4-Jul-17	TH	Invalidate	22-Jun-17	12:00	22-Jun-17	13:00	Remove fly from nozzle
45	4-Jul-17	TH	Invalidate	25-Jun-17	07:00	26-Jun-17	11:00	Pump was off. Invalidate data
46	4-Jul-17	TH	Invalidate	29-Jun-17	16:00	30-Jun-17	11:00	Pump was off. Invalidate data
47	5-Jul-17	TH	Zero correction	30-May-17	08:00	1-Jun-17	10:00	Zeroed at 1.2µg/m³
48	8-Jul-17	TH	Data review	24-Jun-17	12:00	24-Jun-17	18:00	Instances of repeating 1.6µg/m3 measurements. Data was reviewed - measurements were varying but were rounded to 1.6µg/m3. Winds were from the west. Given this was a Saturday, there were likely few PM2.5 generating activities.
49	8-Jul-17	TH	Data review	4-Jun-17	14:00	4-Jun-17	14:00	Elevated levels of up to 61.4 µg/m³ were measured on June 4 at 14:00 without a corresponding trend at the Rundle or Oshawa Stations. Winds were from the east - potential emission sources in this direction include St. Mary's Cement and a CN railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
50	10-Jul-17	TH	Data review	17-Jun-17	12:00	22-Jun-17	12:00	Fly removed from nozzle on June 22 may have caused inaccurate readings. Review of filter tape during removal suggests the fly was there for ~5 days. Review of data compared to Rundle Road Station was reasonably consistent. Data deemed valid.

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range
Test

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Temperature**	**Instrument make & model:**		**Campbell Scientific Model HMP60**		**Serial Number:**		
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Rainfall**	**Instrument make & model:**		**Texas Electronic TE525M**		**Serial Number:**		
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Relative Humidity**	**Instrument make & model:**		**Campbell Scientific Model HMP60**			**Serial Number:**	
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Atmospheric Pressure**	**Instrument make & model:**		**Campbell Scientific Model CS106**			**Serial Number:**	
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Lisa Heatherington**		**Phone:**	**N/A**	**E-mail:**	**Lisa.Hetherington@Durham.ca**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Wind Speed/Wind direction**	**Instrument make & model:**		**N/A**			**Serial Number:**	
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**	**Time Zone : EST**			
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**						
Contact	**Greg Crooks / Connie Lim / Tim Hung**	**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**45200**	**Station Name:**	**Rundle Road Station**				
Station address:	**Rundle Road / Baseline Road**	**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**SO_2**	**Instrument make & model:**	**Teledyne Monitor Labs Sulphur Dioxide**		**Serial Number:**	**565**	
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**	**Time Zone : EST**		

Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd-mm-yy)	**Hour (xx:xx)**	**Date (dd-mm-yy)**	**Hour (xx:xx)**	
23	22-May-17	TH	Invalidate minute data	5-Apr-17	05:45	5-Apr-17	05:59	Invalidate monthly calibration minute data
24	22-May-17	TH	Invalidate minute data	5-Apr-17	07:00	5-Apr-17	07:05	Invalidate monthly calibration minute data
25	22-May-17	TH	Invalidate	5-Apr-17	06:00	5-Apr-17	06:00	Monthly calibration
26	22-May-17	TH	Invalidate	28-Apr-17	05:00	28-Apr-17	05:00	Maintenance. Change perm tubes
27	24-May-17	TH	Data review	30-Apr-17	13:00	30-Apr-17	22:00	Instances of repeating 0.8ppb measurements. Data was reviewed - measurements were varying but were rounded to 0.8ppb. Winds were from the east where there are no major sources of SO2
28	24-May-17	TH	Data review	24-Apr-17	10:00	24-Apr-17	15:00	Elevated levels of 8.1ppb were measured on April 24 at 12:00 without a corresponding trend at the Oshawa or Courtice stations. Elevated NOx levels were also measured in the same time period suggesting a combustion source. Winds were generally blowing from the east-southeast - potential emission sources in this direction include St, Mary's Cement Facility or the CP railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
29	6-Jun-17	TH	Invalidate minute data	12-May-17	04:50	12-May-17	04:59	Monthly calibration
30	6-Jun-17	TH	Invalidate	12-May-17	05:00	12-May-17	06:00	Monthly calibration
31	6-Jun-17	TH	Data review	24-May-17	01:00	24-May-17	07:00	Instances of repeating 1ppb measurements. Data was reviewed - measurements were varying but were rounded to 1ppb. Winds were from the east where there are no major sources of SO2
32	6-Jun-17	TH	Data review	26-May-17	23:00	27-May-17	06:00	Instances of repeating 0.8ppb measurements. Data was reviewed - measurements were varying but were rounded to 0.8ppb. Winds were from the east where there are no major sources of SO2 and also from the west but given the timing of these repeats, there were likely no activities occuring.
33	6-Jun-17	TH	Data review	6-May-17	18:00	7-May-17	20:00	Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied. Winds were from the north where there are no major sources of SO2.
34	5-Jul-17	TH	Invalidate minute data	9-Jun-17	12:00	9-Jun-17	12:05	Monthly calibration
35	5-Jul-17	TH	Invalidate	9-Jun-17	11:00	9-Jun-17	11:00	Monthly calibration
36	5-Jul-17	TH	Invalidate	20-Jun-17	11:00	20-Jun-17	12:00	MOECC audit
37	8-Jul-17	TH	Data review	4-Jun-17	03:00	4-Jun-17	09:00	Instances of repeating 1.0ppb measurements. Data was reviewed - measurements were varying but were rounded to 1.0ppb. Winds were from the north where there are no major sources of SO2.
38	8-Jul-17	TH	Data review	5-Jun-17	06:00	6-Jun-17	05:00	Instances of repeating 0.9ppb measurements. Data was reviewed - measurements were varying but were rounded to 0.9ppb. Winds were from the north where there are no major sources of SO2.
39	8-Jul-17	TH	Data review	13-Jun-17	04:00	16-Jun-17	07:00	Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied
40	8-Jul-17	TH	Data review	21-Jun-17	17:00	22-Jun-17	05:00	
41	8-Jul-17	TH	Data review	25-Jun-17	19:00	26-Jun-17	09:00	
42	8-Jul-17	TH	Data review	27-Jun-17	20:00	28-Jun-17	04:00	
43	8-Jul-17	TH	Data review	24-Jun-17	12:00	25-Jun-17	05:00	Instances of repeating 0.1ppb measurements. Data was reviewed - measurements were varying but were rounded to 0.1ppb. Wind were generally from the west. Given the timing of these repeats, there were likely no major SO2 generating activities occuring.

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range
Test

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**						
Contact	**Greg Crooks / Connie Lim / Tim Hung**	**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**45200**	**Station Name:**	**Rundle Road Station**				
Station address:	**Rundle Road / Baseline Road**	**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**NOx**	**Instrument make & model:**	**API Model 200E Chemiluminescence Analyzer**		**Serial Number:**	**675**	
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**	**Time Zone : EST**		

Edit #	Edit date	Editor's Name	Edit Action	Starting		Ending		Reason
				Date (dd-mm-yy)	Hour (xx:xx)	Date (dd-mm-yy)	Hour (xx:xx)	
16	22-May-17	TH	Invalidate minute data	5-Apr-17	05:45	5-Apr-17	05:59	Invalidate monthly calibration minute data
17	22-May-17	TH	Invalidate	5-Apr-17	06:00	5-Apr-17	07:00	Monthly calibration
18	22-May-17	TH	Invalidate	28-Apr-17	05:00	28-Apr-17	05:00	Maintenance. Perm tubes changed
19	22-May-17	TH	Data review	10-Apr-17	20:00	10-Apr-17	20:00	An elevated NOx level 35.72ppb was measured on April 10 at 20:00 without a corresponding trend at the Oshawa or Courtice stations. For this hour, the measured NO concentration was smaller than NO_2 which suggests an emission source located relatively far away. Winds were generally blowing from the east-southeast - potential emission sources in this direction include St, Mary's Cement Facility or the CP railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
20	22-May-17	TH	Data review	14-Apr-17	11:00	14-Apr-17	11:00	An elevated NOx level 25.2ppb was measured on April 14 at 11:00 without a corresponding trend at the Oshawa or Courtice stations. For this hour, the measured NO concentration was similar to NO_2 which suggests an emission source located an intermediate distance away. Elevated SO_2 measurments were also noted in this hour. Winds were generally blowing from the southeast - potential emission sources in this direction include St, Mary's Cement Facility or the CP railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
21	22-May-17	TH	Data review	24-Apr-17	10:00	24-Apr-17	15:00	An elevated NOx level of 43.8ppb was measured on April 24 at 12:00 without a corresponding trend at the Oshawa or Courtice stations. For this hour, the measured NO concentration was larger than NO_2 which suggests an emission source located relatively near. Elevated SO_2 measurments were also noted in this hour. Winds were generally blowing from the east-southeast - potential emission sources in this direction include St, Mary's Cement Facility or the CP railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
22	6-Jun-17	TH	Invalidate minute data	12-May-17	04:50	12-May-17	04:59	Monthly calibration
23	6-Jun-17	TH	Invalidate minute data	12-May-17	07:00	12-May-17	07:02	Monthly calibration
24	6-Jun-17	TH	Invalidate	12-May-17	05:00	12-May-17	06:00	Monthly calibration
25	6-Jun-17	TH	Data review	6-May-17	17:00	7-May-17	20:00	Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied
26	5-Jul-17	TH	Invalidate	9-Jun-17	11:00	9-Jun-17	11:00	Monthly calibration
27	5-Jul-17	TH	Invalidate	20-Jun-17	11:00	20-Jun-17	12:00	MOECC audit
28	5-Jul-17	TH	Invalidate	22-Jun-17	14:00	22-Jun-17	15:00	Nox re-calibration
29	8-Jul-17	TH	Span correction	5-Apr-17	08:00	22-Jun-17	13:00	Nox bottle used for past few calibrations drifted 8.9% low. Applied span correction from the first calibration after the passed audit in March (5-Apr-17). Spare Nox bottle used for re-calibration on 22-Jun-17
30	8-Jul-17	TH	Invalidate minute data	26-Jun-17	14:00	26-Jun-17	14:00	Difference between NO+NO2 and Nox is greater than 1 for 4 minutes-invalidate. Likely power trip (evidence of power outage observed in following site visit)
31	8-Jul-17	TH	Invalidate minute data	27-Jun-17	16:00	27-Jun-17	16:00	Difference between NO+NO2 and Nox is greater than 1 for 1 minute-invalidate. Likely power trip (evidence of power outage observed in following site visit)
32	8-Jul-17	TH	Data review	23-Jun-17	19:00	24-Jun-17	19:00	Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied
33	8-Jul-17	TH	Data review	13-Jun-17	00:00	13-Jun-17	02:00	An elevated NOx level of 51.3ppb was measured on June 13 at 1:00 without a corresponding trend at the Oshawa or Courtice stations, Winds were blowing from the west-northwest - potential emission sources in this direction include Highway 418 construction activities, local roads and businesses. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
34	8-Jul-17	TH	Data review	21-Jun-17	03:00	21-Jun-17	06:00	An elevated NOx level of 47ppb was measured on June 21 at 5:00 without a corresponding trend at the Oshawa or Courtice stations, Winds were blowing from the west - potential emission sources in this direction include Highway 418 construction activities, local roads and businesses. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.

Examples of Acceptable Edit Actions:

Add offset of	Invalidating span & zero check data
Delete hours	Invalidating data due to equipment malfunctions and power failures.
Zero Correction	Invalidating data when instrumentation off-line
Slope Correction	Marking data as out-of-range
Manual data entry for missing, but collected data	Test

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**						
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**	
Station number:	**45200**		**Station Name:**	**Rundle Road Station**			
Station address:	**Rundle Road / Baseline Road**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**			
Pollutant or parameter:	**$PM_{2.5}$**	**Instrument make & model:**		**Thermo Sharp 5030 Synchronized Hybrid**	**Serial Number:**	**E-1569**	
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**	**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd-mm-yy)	**Hour (xx:xx)**	**Date (dd-mm-yy)**	**Hour (xx:xx)**	
33	22-May-17	TH	Invalidate minute data	18-Apr-17	09:27	18-Apr-17	09:40	Zero check
34	22-May-17	TH	Invalidate minute data	21-Apr-17	08:58	21-Apr-17	08:59	Zero check
35	22-May-17	TH	Invalidate minute data	27-Apr-17	12:51	27-Apr-17	13:07	Zero check
36	22-May-17	TH	Invalidate	3-Apr-17	08:00	3-Apr-17	08:00	Zero check
37	22-May-17	TH	Invalidate	11-Apr-17	08:00	11-Apr-17	09:00	Zero check
38	22-May-17	TH	Invalidate	21-Apr-17	09:00	21-Apr-17	09:00	Zero check
39	22-May-17	TH	Invalidate	5-Apr-17	06:00	5-Apr-17	06:00	Monthly calibration
40	22-May-17	TH	Zero correction	5-Apr-17	07:00	11-Apr-17	07:00	Zero check on April 11 at 8:00 was 1.2 µg/m³ . Applied correction from April 5 (monthly calibration).
41	22-May-17	TH	Zero correction	11-Apr-17	10:00	18-Apr-17	08:00	Zero check on April 18 at 8:00 was -1.2 µg/m³ . Applied linear correction from April 11 (previous zero).
42	22-May-17	TH	Zero correction	18-Apr-17	09:00	21-Apr-17	08:00	Zero check on April 21 at 8:00 was 1.4 µg/m³ . Applied correction from April 18 (previous zero).
43	24-May-17	TH	Data review	22-Apr-17	04:00	22-Apr-17	17:00	Instances of repeating 0.2 µg/m³ measurements in this timeframe was noted. Data was reviewed - measurements were varying but were rounded to 0.2 µg/m³. Winds were generally from the north where there are no major sources of $PM_{2.5}$
44	24-May-17	TH	Data review	4-Apr-17	17:00	4-Apr-17	18:00	Elevated levels of up to 44.8 µg/m³ were measured on April 4 at 17:00 without a corresponding trend at the Courtice or Oshawa Stations. Winds were blowing from the west-southwest - potential emission sources in this direction include Highway 418 construction activities, local roads and businesses. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
45	24-May-17	TH	Data review	13-Apr-17	06:00	13-Apr-17	06:00	Elevated levels of up to 28.3 µg/m³ were measured on April 13 at 6:00 without a corresponding trend at the Courtice or Oshawa Stations. Winds were blowing from the west - potential emission sources in this direction include Highway 418 construction, local roads and businesses. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
46	6-Jun-17	TH	Invalidate	3-May-17	09:00	3-May-17	09:00	Zero check
47	6-Jun-17	TH	Invalidate	8-May-17	08:00	8-May-17	08:00	Zero check
48	6-Jun-17	TH	Invalidate minute data	12-May-17	04:50	12-May-17	04:59	Monthly calibration
49	6-Jun-17	TH	Zero correction	8-May-17	09:00	12-May-17	04:00	Monthly calibration on May 12 at 5:00 read 1.4 µg/m³. Applied correction from May 8 (weekly zero check)
50	6-Jun-17	TH	Invalidate	12-May-17	05:00	12-May-17	05:00	Monthly calibration
51	6-Jun-17	TH	Invalidate minute data	15-May-17	02:54	15-May-17	02:59	Removed spider from monitor and invalidate high readings up to when spider was removed.
52	6-Jun-17	TH	Invalidate	15-May-17	03:00	15-May-17	15:00	Removed spider from monitor and invalidate high readings up to when spider was removed.
53	6-Jun-17	TH	Zero correction	15-May-17	16:00	17-May-17	07:00	Zero check on May 17 at 8:00 was 5.1 µg/m³ . Applied correction from May 15 (spider removed from monitor).
54	6-Jun-17	TH	Invalidate	17-May-17	08:00	17-May-17	09:00	Zero check
55	6-Jun-17	TH	Zero correction	17-May-17	10:00	23-May-17	09:00	Zero check on May 23 at 10:00 was 1.6 µg/m³ . Applied correction from May 15 (weekly zero check)
56	6-Jun-17	TH	Invalidate	23-May-17	10:00	23-May-17	10:00	Zero check
57	6-Jun-17	TH	Invalidate minute data	30-May-17	08:16	30-May-17	08:28	Zero check
58	6-Jun-17	TH	Invalidate	30-May-17	22:00	31-May-17	08:00	Removed spider from monitor and invalidate extremely high readings up to when spider was removed.
59	6-Jun-17	TH	Data review	10-May-17	08:00	10-May-17	19:00	Instances of repeating 0 µg/m³ measurements in this timeframe was noted. During these periods, low ambient PM2.5 levels were also measured at the Courtice and Oshawa Stations. This period is likely due to very low ambient PM2.5 concentrations being measured.

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	45200		Station Name:	Rundle Road Station				
Station address:	Rundle Road / Baseline Road		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	$PM_{2.5}$	Instrument make & model:		Thermo Sharp 5030 Synchronized Hybrid		Serial Number:	E-1569	
Data edit period	Start date:	1-Apr-17	End date:	30-Jun-17		Time Zone : EST		

Edit #	Edit date	Editor's Name	Edit Action	Starting		Ending		Reason
				Date (dd-mm-yy)	Hour (xx:xx)	Date (dd-mm-yy)	Hour (xx:xx)	
60	6-Jun-17	TH	Data review	7-May-17	23:00	7-May-17	23:00	Elevated levels of up to 60 µg/m³ were measured on May 7at 23:00 without a corresponding trend at the Courtice or Oshawa stations. Winds were blowing from the north - potential emission sources in this direction include local roads. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
61	6-Jun-17	TH	Data review	11-May-17	21:00	11-May-17	21:00	Elevated levels of up to 33 µg/m³ were measured on May 11at 21:00 without a corresponding trend at the Courtice or Oshawa stations. Winds were blowing from the north - potential emission sources in this direction include local roads. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
62	5-Jul-17	TH	Invalidate minute data	14-Jun-17	14:00	14-Jun-17	14:12	Zero check
63	5-Jul-17	TH	Invalidate minute data	27-Jun-17	12:24	27-Jun-17	12:38	Zero check
64	5-Jul-17	TH	Invalidate	1-Jun-17	08:00	1-Jun-17	08:00	Zero check
65	5-Jul-17	TH	Zero correction	30-May-17	07:00	1-Jun-17	07:00	Zero check on June 1 at 9:00 was 1.3 µg/m³ . Applied linear correction from May 30 (previous zero check)
66	5-Jul-17	TH	Invalidate	8-Jun-17	10:00	8-Jun-17	10:00	Zero check
67	5-Jul-17	TH	Invalidate	9-Jun-17	11:00	9-Jun-17	11:00	Monthly calibration
68	5-Jul-17	TH	Zero correction	9-Jun-17	12:00	14-Jun-17	15:00	Zero check on June 14 at 15:00 was -1.1 µg/m³ . Applied linear correction from June 9 (previous zero check)
69	5-Jul-17	TH	Invalidate	20-Jun-17	11:00	20-Jun-17	12:00	MOECC audit
70	5-Jul-17	TH	Invalidate	21-Jun-17	08:00	21-Jun-17	08:00	Zero check
71	5-Jul-17	TH	Zero correction	20-Jun-17	13:00	21-Jun-17	07:00	Zero check on June 21 at 8:00 was 1.6 µg/m³ . Applied correction from June 20 (previous zero check)
72	5-Jul-17	TH	Invalidate minute data	27-Jun-17	12:24	27-Jun-17	12:38	Zero check
73	11-Jul-17	TH	Invalidate minute data	25-May-17	00:09	30-Jun-17	16:09	Invalidate suspiciously high readings occuring consistently during filter tape changes at 00:09, 08:09 and 16:09

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range
Test

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	45200		Station Name:	Rundle Road Station				
Station address:	Rundle Road / Baseline Road		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Temperature	Instrument make & model:		Campbell Scientific Model HMP60		Serial Number:		
Data edit period	Start date:	1-Apr-17	End date:	30-Jun-17		Time Zone : EST		
Edit #	Edit date	Editor's Name	Edit Action	Starting		Ending		Reason
				Date (dd-mm-yy)	Hour (xx:xx)	Date (dd-mm-yy)	Hour (xx:xx)	

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	45200		Station Name:	Rundle Road Station				
Station address:	Rundle Road / Baseline Road		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Rainfall	Instrument make & model:		Texas Electronic TE525M		Serial Number:		
Data edit period	Start date:	1-Apr-17	End date:	30-Jun-17		Time Zone : EST		
Edit #	Edit date	Editor's Name	Edit Action	Starting		Ending		Reason
				Date (dd-mm-yy)	Hour (xx:xx)	Date (dd-mm-yy)	Hour (xx:xx)	

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**45200**		**Station Name:**	**Rundle Road Station**				
Station address:	**Rundle Road / Baseline Road**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Relative Humidity**	**Instrument make & model:**		**Campbell Scientific Model HMP60**			**Serial Number:**	
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd-mm-yy)	**Hour (xx:xx)**	**Date (dd-mm-yy)**	**Hour (xx:xx)**	

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**45200**		**Station Name:**	**Rundle Road Station**				
Station address:	**Rundle Road / Baseline Road**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Wind Speed/Wind Direction**	**Instrument make & model:**		**Met One Instruments Inc. Model 034B**			**Serial Number:**	
Data edit period	**Start date:**	**1-Apr-17**	**End date:**	**30-Jun-17**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd-mm-yy)	**Hour (xx:xx)**	**Date (dd-mm-yy)**	**Hour (xx:xx)**	
2	6-Jun-17	TH	Invalidate	8-May-17	06:00	10-May-17	09:00	Potentiometer failure. Invalidate starting from suspious strings of 360 degree wind direction measurements. Wind speed unaffected.

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

Appendix G METALS DATA SUMMARY

Metals and Total Particulates	Courtice WPCP Station	Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice	
Location		01/04/2017		07/04/2017		13/04/2017		19/04/2017		25/04/2017		01/05/2017		07/05/2017		13/05/2017		19/05/2017		25/05/2017		31/05/2017		06/06/2017		12/06/2017		18/06/2017		24/06/2017		30/06/2017	
Date	dd/mm/yyyy																														
Start Time	hh:mm	0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	Hours	23.71		23.43		23.55		24.25		23.07		23.46		23.44		24.13		23.7		24.08		23.26		23.06		23.41		23.2		24.38		24.05	
Technician		TH		TH		TH		TZ		TZ		TH		TH		TH		TH		TH		TH		TH		TZ		TZ		TH		TH	
Filter Number		17020742		17020746		17031576		17031581		17032808		17032811		17041900		17041904		17050429		17050434		17051563		17051569		17052341		17052345		17060536		17060540	
Analytical Report #		B768310		B773590		B778842		B782879		B785639		B790618		B793848		B7A1835		B7A5828		B7B1622		B7B4106		B7C0327		B7C4903		B7D0737		B7D5628		B7E0731	
Total Volumetric Flow	Am^3/sample	1480.81		1475.78		1512.45		1603.94		1466.16		1519.52		1509.66		1532.00		1577.66		1608.50		1581.56		1513.34		1521.75		1530.32		1584.94		1619.21	
Analytical Results	**Units**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Particulate	mg	19.9	5	21.5	5	38.1	5	32.1	5	35.9	5	30.8	5	18.8	5	62.9	5	67.2	5	37.6	5	32.4	5	24.5	5	90.7	5	48	5	40.5	5	32.5	5
Total Mercury (Hg)	µg	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	0.02	0.02	0.02	0.02	<0.02	0.02	<0.02	0.02
Aluminum (Al)	µg	83	50	83	50	193	50	132	50	141	50	104	50	<50	50	251	50	250	50	133	50	148	50	64	50	683	50	163	50	105	50	83	50
Antimony (Sb)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Arsenic (As)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Barium (Ba)	µg	14.5	1.0	8.1	1.0	24.9	1.0	8.6	1.0	8.4	1.0	7.9	1.0	6.4	1.0	10.9	1.0	11.6	1.0	6.7	1.0	8.6	1.0	6.7	1.0	12.7	1.0	7.4	1.0	12.3	1.0	8.7	1.0
Beryllium (Be)	µg	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0
Bismuth (Bi)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Boron (B)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	8.2	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Cadmium (Cd)	µg	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Chromium (Cr)	µg	<5.0	5.0	<5.0	5.0	5.5	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	9.8	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Cobalt (Co)	µg	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Copper (Cu)	µg	89.2	5.0	40.7	5.0	114	5.0	64.3	5.0	27.8	5.0	63.1	5.0	56.9	5.0	89.2	5.0	101	5.0	24.5	5.0	99.4	5.0	27.7	5.0	61.5	5.0	37.8	5.0	69.9	5.0	56.1	5.0
Iron (Fe)	µg	601	50	263	50	959	50	456	50	372	50	306	50	268	50	595	50	635	50	295	50	423	50	254	50	1390	50	537	50	413	50	287	50
Lead (Pb)	µg	<3.0	3.0	<3.0	3.0	4.9	3.0	3.5	3.0	3.4	3.0	<3.0	3.0	<3.0	3.0	3.2	3.0	3.4	3.0	<3.0	3.0	3.4	3.0	<3.0	3.0	5.6	3.0	3.5	3.0	<3.0	3.0	3.3	3.0
Magnesium (Mg)	µg	164	50	140	50	428	50	193	50	185	50	130	50	65	50	273	50	287	50	158	50	292	50	100	50	853	50	288	50	167	50	186	50
Manganese (Mn)	µg	10.5	1.0	9.1	1.0	27.9	1.0	13.4	1.0	10.0	1.0	11.8	1.0	5.5	1.0	21.0	1.0	22.6	1.0	13.9	1.0	15.5	1.0	9.3	1.0	48.4	1.0	19.2	1.0	11.9	1.0	10.4	1.0
Molybdenum (Mo)	µg	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	7.0	3.0	<3.0	3.0	4.6	3.0	<3.0	3.0	4.2	3.0	<3.0	3.0	4.3	3.0	3.8	3.0
Nickel (Ni)	µg	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	4.0	3.0	<3.0	3.0	<3.0	3.0	3.3	3.0
Phosphorus (P)	µg	<25	25	25	25	40	25	68	25	45	25	85	25	37	25	109	25	154	25	35	25	54	25	54	25	137	25	68	25	77	25	33	25
Selenium (Se)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Silver (Ag)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Strontium (Sr)	µg	5.4	1.0	4.2	1.0	7.7	1.0	5.3	1.0	5.9	1.0	3.9	1.0	1.7	1.0	9.3	1.0	7.1	1.0	5.2	1.0	3.1	1.0	2.5	1.0	12.5	1.0	6.8	1.0	4.1	1.0	3.1	1.0
Thallium (Tl)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Tin (Sn)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	µg	<10	10	<10	10	13	10	<10	10	<10	10	<10	10	<10	10	13	10	13	10	<10	10	<10	10	<10	10	29	10	<10	10	<10	10	<10	10
Vanadium (V)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Zinc (Zn)	µg	32.3	5.0	80.1	5.0	72.7	5.0	32.6	5.0	20.1	5.0	21.4	5.0	17.2	5.0	24.3	5.0	36.3	5.0	43.4	5.0	34.2	5.0	16.3	5.0	57.1	5.0	29.7	5.0	23.0	5.0	39.2	5.0
Zirconium (Zr)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Total Uranium (U)	µg	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45

Calculated Concentrations	Units	Quarter 2 Maximum	Quarter 2 Minimum	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
				01/04/2017	07/04/2017	13/04/2017	19/04/2017	25/04/2017	01/05/2017	07/05/2017	13/05/2017	19/05/2017	25/05/2017	31/05/2017	06/06/2017	12/06/2017	18/06/2017	24/06/2017	30/06/2017
Particulate	$µg/m^3$	59.60	12.45	13.44	14.57	25.19	20.01	24.49	20.27	12.45	41.06	42.59	23.38	20.49	16.19	59.60	31.37	25.55	20.07
Total Mercury (Hg)	$µg/m^3$	1.31E-05	6.18E-06	6.75E-06	6.78E-06	6.61E-06	6.23E-06	6.82E-06	6.58E-06	6.62E-06	6.53E-06	6.34E-06	6.22E-06	6.32E-06	6.61E-06	1.31E-05	1.31E-05	6.31E-06	6.18E-06
Aluminum (Al)	$µg/m^3$	4.49E-01	1.66E-02	5.61E-02	5.62E-02	1.28E-01	8.23E-02	9.62E-02	6.84E-02	1.66E-02	1.64E-01	1.58E-01	8.27E-02	9.36E-02	4.23E-02	4.49E-01	1.07E-01	6.62E-02	5.13E-02
Antimony (Sb)	$µg/m^3$	3.41E-03	3.09E-03	3.38E-03	3.39E-03	3.31E-03	3.12E-03	3.41E-03	3.29E-03	3.31E-03	3.26E-03	3.17E-03	3.11E-03	3.16E-03	3.30E-03	3.29E-03	3.27E-03	3.15E-03	3.09E-03
Arsenic (As)	$µg/m^3$	2.05E-03	1.85E-03	2.03E-03	2.03E-03	1.98E-03	1.87E-03	2.05E-03	1.97E-03	1.99E-03	1.96E-03	1.90E-03	1.87E-03	1.90E-03	1.98E-03	1.97E-03	1.96E-03	1.89E-03	1.85E-03
Barium (Ba)	$µg/m^3$	1.65E-02	4.17E-03	9.79E-03	5.49E-03	1.65E-02	5.36E-03	5.73E-03	5.20E-03	4.24E-03	7.11E-03	7.35E-03	4.17E-03	5.44E-03	4.43E-03	8.35E-03	4.84E-03	7.76E-03	5.37E-03
Beryllium (Be)	$µg/m^3$	3.41E-04	3.09E-04	3.38E-04	3.39E-04	3.31E-04	3.12E-04	3.41E-04	3.29E-04	3.31E-04	3.26E-04	3.17E-04	3.11E-04	3.16E-04	3.30E-04	3.29E-04	3.27E-04	3.15E-04	3.09E-04
Bismuth (Bi)	$µg/m^3$	2.05E-03	1.85E-03	2.03E-03	2.03E-03	1.98E-03	1.87E-03	2.05E-03	1.97E-03	1.99E-03	1.96E-03	1.90E-03	1.87E-03	1.90E-03	1.98E-03	1.97E-03	1.96E-03	1.89E-03	1.85E-03
Boron (B)	$µg/m^3$	5.39E-03	1.85E-03	2.03E-03	2.03E-03	1.98E-03	1.87E-03	2.05E-03	1.97E-03	1.99E-03	1.96E-03	1.90E-03	1.87E-03	1.90E-03	1.98E-03	5.39E-03	1.96E-03	1.89E-03	1.85E-03
Cadmium (Cd)	$µg/m^3$	6.82E-04	6.18E-04	6.75E-04	6.78E-04	6.61E-04	6.23E-04	6.82E-04	6.58E-04	6.62E-04	6.53E-04	6.34E-04	6.22E-04	6.32E-04	6.61E-04	6.57E-04	6.53E-04	6.31E-04	6.18E-04
Chromium (Cr)	$µg/m^3$	6.44E-03	1.54E-03	1.69E-03	1.69E-03	3.64E-03	1.56E-03	1.71E-03	1.65E-03	1.66E-03	1.63E-03	1.58E-03	1.55E-03	1.58E-03	1.65E-03	6.44E-03	1.63E-03	1.58E-03	1.54E-03
Cobalt (Co)	$µg/m^3$	6.82E-04	6.18E-04	6.75E-04	6.78E-04	6.61E-04	6.23E-04	6.82E-04	6.58E-04	6.62E-04	6.53E-04	6.34E-04	6.22E-04	6.32E-04	6.61E-04	6.57E-04	6.53E-04	6.31E-04	6.18E-04
Copper (Cu)	$µg/m^3$	7.54E-02	1.52E-02	6.02E-02	2.76E-02	7.54E-02	4.01E-02	1.90E-02	4.15E-02	3.77E-02	5.82E-02	6.40E-02	1.52E-02	6.28E-02	1.83E-02	4.04E-02	2.47E-02	4.41E-02	3.46E-02
Iron (Fe)	$µg/m^3$	9.13E-01	1.68E-01	4.06E-01	1.78E-01	6.34E-01	2.84E-01	2.54E-01	2.01E-01	1.78E-01	3.88E-01	4.02E-01	1.83E-01	2.67E-01	1.68E-01	9.13E-01	3.51E-01	2.61E-01	1.77E-01
Lead (Pb)	$µg/m^3$	3.68E-03	9.33E-04	1.01E-03	1.02E-03	3.24E-03	2.18E-03	2.32E-03	9.87E-04	9.94E-04	2.09E-03	2.16E-03	9.33E-04	2.15E-03	9.91E-04	3.68E-03	2.29E-03	9.46E-04	2.04E-03
Magnesium (Mg)	$µg/m^3$	5.61E-01	4.31E-02	1.11E-01	9.49E-02	2.83E-01	1.20E-01	1.26E-01	8.56E-02	4.31E-02	1.78E-01	1.82E-01	9.82E-02	1.85E-01	6.61E-02	5.61E-01	1.88E-01	1.05E-01	1.15E-01
Manganese (Mn)	$µg/m^3$	3.18E-02	3.64E-03	7.09E-03	6.17E-03	1.84E-02	8.35E-03	6.82E-03	7.77E-03	3.64E-03	1.37E-02	1.43E-02	8.64E-03	9.80E-03	6.15E-03	3.18E-02	1.25E-02	7.51E-03	6.42E-03
Molybdenum (Mo)	$µg/m^3$	4.44E-03	9.33E-04	1.01E-03	1.02E-03	9.92E-04	9.35E-04	1.02E-03	9.87E-04	9.94E-04	9.79E-04	4.44E-03	9.33E-04	2.91E-03	9.91E-04	2.76E-03	9.80E-04	2.71E-03	2.35E-03
Nickel (Ni)	$µg/m^3$	2.63E-03	9.33E-04	1.01E-03	1.02E-03	9.92E-04	9.35E-04	1.02E-03	9.87E-04	9.94E-04	9.79E-04	9.51E-04	9.33E-04	9.48E-04	9.91E-04	2.63E-03	9.80E-04	9.46E-04	2.04E-03
Phosphorus (P)	$µg/m^3$	9.76E-02	8.44E-03	8.44E-03	1.69E-02	2.64E-02	4.24E-02	3.07E-02	5.59E-02	2.45E-02	7.11E-02	9.76E-02	2.18E-02	3.41E-02	3.57E-02	9.00E-02	4.44E-02	4.86E-02	2.04E-02
Selenium (Se)	$µg/m^3$	3.41E-03	3.09E-03	3.38E-03	3.39E-03	3.31E-03	3.12E-03	3.41E-03	3.29E-03	3.31E-03	3.26E-03	3.17E-03	3.11E-03	3.16E-03	3.30E-03	3.29E-03	3.27E-03	3.15E-03	3.09E-03
Silver (Ag)	$µg/m^3$	1.71E-03	1.54E-03	1.69E-03	1.69E-03	1.65E-03	1.56E-03	1.71E-03	1.65E-03	1.66E-03	1.63E-03	1.58E-03	1.55E-03	1.58E-03	1.65E-03	1.64E-03	1.63E-03	1.58E-03	1.54E-03
Strontium (Sr)	$µg/m^3$	8.21E-03	1.13E-03	3.65E-03	2.85E-03	5.09E-03	3.30E-03	4.02E-03	2.57E-03	1.13E-03	6.07E-03	4.50E-03	3.23E-03	1.96E-03	1.65E-03	8.21E-03	4.44E-03	2.59E-03	1.91E-03
Thallium (Tl)	$µg/m^3$	3.41E-03	3.09E-03	3.38E-03	3.39E-03	3.31E-03	3.12E-03	3.41E-03	3.29E-03	3.31E-03	3.26E-03	3.17E-03	3.11E-03	3.16E-03	3.30E-03	3.29E-03	3.27E-03	3.15E-03	3.09E-03
Tin (Sn)	$µg/m^3$	3.41E-03	3.09E-03	3.38E-03	3.39E-03	3.31E-03	3.12E-03	3.41E-03	3.29E-03	3.31E-03	3.26E-03	3.17E-03	3.11E-03	3.16E-03	3.30E-03	3.29E-03	3.27E-03	3.15E-03	3.09E-03
Titanium (Ti)	$µg/m^3$	1.91E-02	3.09E-03	3.38E-03	3.39E-03	8.60E-03	3.12E-03	3.41E-03	3.29E-03	3.31E-03	8.49E-03	8.24E-03	3.11E-03	3.16E-03	3.30E-03	1.91E-02	3.27E-03	3.15E-03	3.09E-03
Vanadium (V)	$µg/m^3$	1.71E-03	1.54E-03	1.69E-03	1.69E-03	1.65E-03	1.56E-03	1.71E-03	1.65E-03	1.66E-03	1.63E-03	1.58E-03	1.55E-03	1.58E-03	1.65E-03	1.64E-03	1.63E-03	1.58E-03	1.54E-03
Zinc (Zn)	$µg/m^3$	5.43E-02	1.08E-02	2.18E-02	5.43E-02	4.81E-02	2.03E-02	1.37E-02	1.41E-02	1.14E-02	1.59E-02	2.30E-02	2.70E-02	2.16E-02	1.08E-02	3.75E-02	1.94E-02	1.45E-02	2.42E-02
Zirconium (Zr)	$µg/m^3$	1.71E-03	1.54E-03	1.69E-03	1.69E-03	1.65E-03	1.56E-03	1.71E-03	1.65E-03	1.66E-03	1.63E-03	1.58E-03	1.55E-03	1.58E-03	1.65E-03	1.64E-03	1.63E-03	1.58E-03	1.54E-03
Total Uranium (U)	$µg/m^3$	1.53E-04	1.39E-04	1.52E-04	1.52E-04	1.49E-04	1.40E-04	1.53E-04	1.48E-04	1.49E-04	1.47E-04	1.43E-04	1.40E-04	1.42E-04	1.49E-04	1.48E-04	1.47E-04	1.42E-04	1.39E-04

Metals and Total Particulates	Rundle Road Station																							
Location		Rundle		Rundle		Rundle[A]		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle[B]		Rundle[B]		Rundle		Rundle	
Date	dd/mm/yyyy	01/04/2017		07/04/2017		13/04/2017		19/04/2017		25/04/2017		01/05/2017		07/05/2017		13/05/2017		19/05/2017		25/05/2017		31/05/2017		06/06/2017		12/06/2017		18/06/2017		24/06/2017		30/06/2017	
Start Time	hh:mm	0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	Hours	23.22		0		24.21		23.72		23.32		23.4		23.36		23.67		23.14		23.91		24.34		23.77		23.52		23.62		23.64		23.62	
Technician		TH		TH		TH		TZ		TZ		TH		TH		TH		TH		TH		TH		TH		TZ		TZ		TH		TH	
Filter Number		17020743		17020747		17031577		17031580		17032806		17032810		17041901		17041905		17050430		17050435		17051564		17051570		17052339		17052346		17060537		17060541	
Analytical Report #		B768310		Power Trip. Did not run		B778842		B782879		B785639		B790618		B793848		EKD919		B7A5828		B7B1622		B7B4106		B7C0327		B7C4903		B7D0737		B7D5628		B7E0731	
Total Volumetric Flow	Am^3/sample	1473.38		0.00		1563.98		1449.73		1437.39		1580.82		1512.77		1503.01		1460.77		1577.04		1630.72		1562.14		1518.96		1549.95		1557.80		1604.39	
Analytical Results	**Units**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Particulate	mg	18.1	5			85	5	34.4	5	27.1	5	28.7	5	20.7	5	72	5	71.1	5	40.2	5	45	5	29.5	5	191	5	55.2	5	44.6	5	39.8	5
Total Mercury (Hg)	µg	<0.02	0.02			<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	0.03	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02
Aluminum (Al)	µg	62	50			435	50	172	50	111	50	67	50	<50	50	300	50	318	50	123	50	218	50	87	50	1620	50	197	50	105	50	106	50
Antimony (Sb)	µg	<10	10			<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Arsenic (As)	µg	<6.0	6.0			<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Barium (Ba)	µg	20.7	1.0			24.4	1.0	11.0	1.0	8.6	1.0	12.6	1.0	4.3	1.0	14.7	1.0	13.6	1.0	9.0	1.0	11.8	1.0	5.4	1.0	31.9	1.0	9.8	1.0	10.1	1.0	12.6	1.0
Beryllium (Be)	µg	<1.0	1.0			<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0
Bismuth (Bi)	µg	<6.0	6.0			<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Boron (B)	µg	<6.0	6.0			<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	9.3	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Cadmium (Cd)	µg	<2.0	2.0			<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Chromium (Cr)	µg	<5.0	5.0			5.2	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	7.6	5.0	<5.0	5.0	<5.0	5.0	28.1	5.0
Cobalt (Co)	µg	<2.0	2.0			<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Copper (Cu)	µg	117	5.0			207	5.0	82.9	5.0	41.9	5.0	68.2	5.0	114	5.0	153	5.0	198	5.0	35.8	5.0	230	5.0	118	5.0	131	5.0	68.5	5.0	97.4	5.0	33.4	5.0
Iron (Fe)	µg	288	50			1200	50	573	50	401	50	237	50	202	50	837	50	729	50	312	50	583	50	199	50	3440	50	655	50	328	50	609	50
Lead (Pb)	µg	<3.0	3.0			5.4	3.0	3.5	3.0	3.7	3.0	<3.0	3.0	<3.0	3.0	3.9	3.0	<3.0	3.0	<3.0	3.0	4.1	3.0	<3.0	3.0	7.7	3.0	3.8	3.0	<3.0	3.0	<3.0	3.0
Magnesium (Mg)	µg	117	50	N/A		798	50	246	50	168	50	109	50	<50	50	337	50	381	50	164	50	406	50	131	50	1820	50	313	50	173	50	201	50
Manganese (Mn)	µg	6.6	1.0			41.5	1.0	15.8	1.0	8.4	1.0	7.8	1.0	4.4	1.0	19.4	1.0	27.9	1.0	8.0	1.0	25.6	1.0	8.2	1.0	99.4	1.0	16.4	1.0	11.5	1.0	14.0	1.0
Molybdenum (Mo)	µg	3.3	3.0			7.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	3.6	3.0	5.4	3.0	<3.0	3.0	6.5	3.0	3.1	3.0	6.6	3.0	4.1	3.0	5.3	3.0	<3.0	3.0
Nickel (Ni)	µg	<3.0	3.0			<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	5.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0
Phosphorus (P)	µg	<25	25			60	25	49	25	51	25	52	25	35	25	120	25	138	25	38	25	85	25	61	25	221	25	100	25	98	25	41	25
Selenium (Se)	µg	<10	10			<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Silver (Ag)	µg	<5.0	5.0			<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Strontium (Sr)	µg	4.2	1.0			22.6	1.0	7.8	1.0	4.5	1.0	2.7	1.0	1.5	1.0	13.0	1.0	10.5	1.0	6.0	1.0	6.0	1.0	3.2	1.0	39.3	1.0	6.2	1.0	3.5	1.0	4.1	1.0
Thallium (Tl)	µg	<10	10			<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Tin (Sn)	µg	<10	10			<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	µg	<10	10			25	10	<10	10	<10	10	<10	10	<10	10	16	10	16	10	<10	10	<10	10	<10	10	66	10	11	10	<10	10	<10	10
Vanadium (V)	µg	<5.0	5.0			<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Zinc (Zn)	µg	23.1	5.0			61.4	5.0	33.4	5.0	18.1	5.0	19.8	5.0	18.9	5.0	27.4	5.0	29.7	5.0	15.1	5.0	33.6	5.0	15.2	5.0	72.3	5.0	28.8	5.0	37.6	5.0	43.0	5.0
Zirconium (Zr)	µg	<5.0	5.0			<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Total Uranium (U)	µg	<0.45	0.45			<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45

Notes:
A - Operator error. Sample run began 11 hours later than scheduled. Laboratory results reviewed and deemed reasonably consistent with other stations. Data deemed valid.

B - Small gouges observed in filter during retreival. Likely from small birds. Data reviewed and was comparable to other stations. Data deemed valid.

Calculated Concentrations	Units	Quarter 2 Maximum	Quarter 2 Minimum	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Rundle 31
				01/04/2017	07/04/2017	13/04/2017	19/04/2017	25/04/2017	01/05/2017	07/05/2017	13/05/2017	19/05/2017	25/05/2017	31/05/2017	06/06/2017	12/06/2017	18/06/2017	24/06/2017	30/06/2017
Particulate	µg/m^3	125.74	12.28	12.28	-	54.35	23.73	18.85	18.16	13.68	47.90	48.67	25.49	27.60	18.88	125.74	35.61	28.63	24.81
Total Mercury (Hg)	µg/m^3	1.98E-05	6.13E-06	6.79E-06	-	6.39E-06	6.90E-06	6.96E-06	6.33E-06	6.61E-06	6.65E-06	6.85E-06	6.34E-06	6.13E-06	6.40E-06	1.98E-05	6.45E-06	6.42E-06	6.23E-06
Aluminum (Al)	µg/m^3	1.07E+00	1.65E-02	4.21E-02	-	2.78E-01	1.19E-01	7.72E-02	4.24E-02	1.65E-02	2.00E-01	2.18E-01	7.80E-02	1.34E-01	5.57E-02	1.07E+00	1.27E-01	6.74E-02	6.61E-02
Antimony (Sb)	µg/m^3	3.48E-03	3.07E-03	3.39E-03	-	3.20E-03	3.45E-03	3.48E-03	3.16E-03	3.31E-03	3.33E-03	3.42E-03	3.17E-03	3.07E-03	3.20E-03	3.29E-03	3.23E-03	3.21E-03	3.12E-03
Arsenic (As)	µg/m^3	2.09E-03	1.84E-03	2.04E-03	-	1.92E-03	2.07E-03	2.09E-03	1.90E-03	1.98E-03	2.00E-03	2.05E-03	1.90E-03	1.84E-03	1.92E-03	1.98E-03	1.94E-03	1.93E-03	1.87E-03
Barium (Ba)	µg/m^3	2.10E-02	2.84E-03	1.40E-02	-	1.56E-02	7.59E-03	5.98E-03	7.97E-03	2.84E-03	9.78E-03	9.31E-03	5.71E-03	7.24E-03	3.46E-03	2.10E-02	6.32E-03	6.48E-03	7.85E-03
Beryllium (Be)	µg/m^3	3.48E-04	3.07E-04	3.39E-04	-	3.20E-04	3.45E-04	3.48E-04	3.16E-04	3.31E-04	3.33E-04	3.42E-04	3.17E-04	3.07E-04	3.20E-04	3.29E-04	3.23E-04	3.21E-04	3.12E-04
Bismuth (Bi)	µg/m^3	2.09E-03	1.84E-03	2.04E-03	-	1.92E-03	2.07E-03	2.09E-03	1.90E-03	1.98E-03	2.00E-03	2.05E-03	1.90E-03	1.84E-03	1.92E-03	1.98E-03	1.94E-03	1.93E-03	1.87E-03
Boron (B)	µg/m^3	6.12E-03	1.84E-03	2.04E-03	-	1.92E-03	2.07E-03	2.09E-03	1.90E-03	1.98E-03	2.00E-03	2.05E-03	1.90E-03	1.84E-03	1.92E-03	6.12E-03	1.94E-03	1.93E-03	1.87E-03
Cadmium (Cd)	µg/m^3	6.96E-04	6.13E-04	6.79E-04	-	6.39E-04	6.90E-04	6.96E-04	6.33E-04	6.61E-04	6.65E-04	6.85E-04	6.34E-04	6.13E-04	6.40E-04	6.58E-04	6.45E-04	6.42E-04	6.23E-04
Chromium (Cr)	µg/m^3	1.75E-02	1.53E-03	1.70E-03	-	3.32E-03	1.72E-03	1.74E-03	1.58E-03	1.65E-03	1.66E-03	1.71E-03	1.59E-03	1.53E-03	1.60E-03	5.00E-03	1.61E-03	1.60E-03	1.75E-02
Cobalt (Co)	µg/m^3	6.96E-04	6.13E-04	6.79E-04	-	6.39E-04	6.90E-04	6.96E-04	6.33E-04	6.61E-04	6.65E-04	6.85E-04	6.34E-04	6.13E-04	6.40E-04	6.58E-04	6.45E-04	6.42E-04	6.23E-04
Copper (Cu)	µg/m^3	1.41E-01	2.08E-02	7.94E-02	-	1.32E-01	5.72E-02	2.92E-02	4.31E-02	7.54E-02	1.02E-01	1.36E-01	2.27E-02	1.41E-01	7.55E-02	8.62E-02	4.42E-02	6.25E-02	2.08E-02
Iron (Fe)	µg/m^3	2.26E+00	1.27E-01	1.95E-01	-	7.67E-01	3.95E-01	2.79E-01	1.50E-01	1.34E-01	5.57E-01	4.99E-01	1.98E-01	3.58E-01	1.27E-01	2.26E+00	4.23E-01	2.11E-01	3.80E-01
Lead (Pb)	µg/m^3	5.07E-03	9.35E-04	1.02E-03	-	3.45E-03	2.41E-03	2.57E-03	9.49E-04	9.92E-04	2.59E-03	1.03E-03	9.51E-04	2.51E-03	9.60E-04	5.07E-03	2.45E-03	9.63E-04	9.35E-04
Magnesium (Mg)	µg/m^3	1.20E+00	1.65E-02	7.94E-02	-	5.10E-01	1.70E-01	1.17E-01	6.90E-02	1.65E-02	2.24E-01	2.61E-01	1.04E-01	2.49E-01	8.39E-02	1.20E+00	2.02E-01	1.11E-01	1.25E-01
Manganese (Mn)	µg/m^3	6.54E-02	2.91E-03	4.48E-03	-	2.65E-02	1.09E-02	5.84E-03	4.93E-03	2.91E-03	1.29E-02	1.91E-02	5.07E-03	1.57E-02	5.25E-03	6.54E-02	1.06E-02	7.38E-03	8.73E-03
Molybdenum (Mo)	µg/m^3	4.48E-03	9.35E-04	2.24E-03	-	4.48E-03	1.03E-03	1.04E-03	9.49E-04	9.92E-04	2.40E-03	3.70E-03	9.51E-04	3.99E-03	1.98E-03	4.35E-03	2.65E-03	3.40E-03	9.35E-04
Nickel (Ni)	µg/m^3	3.29E-03	9.20E-04	1.02E-03	-	9.59E-04	1.03E-03	1.04E-03	9.49E-04	9.92E-04	9.98E-04	1.03E-03	9.51E-04	9.20E-04	9.60E-04	3.29E-03	9.68E-04	9.63E-04	9.35E-04
Phosphorus (P)	µg/m^3	1.45E-01	8.48E-03	8.48E-03	-	3.84E-02	3.38E-02	3.55E-02	3.29E-02	2.31E-02	7.98E-02	9.45E-02	2.41E-02	5.21E-02	3.90E-02	1.45E-01	6.45E-02	6.29E-02	2.56E-02
Selenium (Se)	µg/m^3	3.48E-03	3.07E-03	3.39E-03	-	3.20E-03	3.45E-03	3.48E-03	3.16E-03	3.31E-03	3.33E-03	3.42E-03	3.17E-03	3.07E-03	3.20E-03	3.29E-03	3.23E-03	3.21E-03	3.12E-03
Silver (Ag)	µg/m^3	1.74E-03	1.53E-03	1.70E-03	-	1.60E-03	1.72E-03	1.74E-03	1.58E-03	1.65E-03	1.66E-03	1.71E-03	1.59E-03	1.53E-03	1.60E-03	1.65E-03	1.61E-03	1.60E-03	1.56E-03
Strontium (Sr)	µg/m^3	2.59E-02	9.92E-04	2.85E-03	-	1.45E-02	5.38E-03	3.13E-03	1.71E-03	9.92E-04	8.65E-03	7.19E-03	3.80E-03	3.68E-03	2.05E-03	2.59E-02	4.00E-03	2.25E-03	2.56E-03
Thallium (Tl)	µg/m^3	3.48E-03	3.07E-03	3.39E-03	-	3.20E-03	3.45E-03	3.48E-03	3.16E-03	3.31E-03	3.33E-03	3.42E-03	3.17E-03	3.07E-03	3.20E-03	3.29E-03	3.23E-03	3.21E-03	3.12E-03
Tin (Sn)	µg/m^3	3.48E-03	3.07E-03	3.39E-03	-	3.20E-03	3.45E-03	3.48E-03	3.16E-03	3.31E-03	3.33E-03	3.42E-03	3.17E-03	3.07E-03	3.20E-03	3.29E-03	3.23E-03	3.21E-03	3.12E-03
Titanium (Ti)	µg/m^3	4.35E-02	3.07E-03	3.39E-03	-	1.60E-02	3.45E-03	3.48E-03	3.16E-03	3.31E-03	1.06E-02	1.10E-02	3.17E-03	3.07E-03	3.20E-03	4.35E-02	7.10E-03	3.21E-03	3.12E-03
Vanadium (V)	µg/m^3	1.74E-03	1.53E-03	1.70E-03	-	1.60E-03	1.72E-03	1.74E-03	1.58E-03	1.65E-03	1.66E-03	1.71E-03	1.59E-03	1.53E-03	1.60E-03	1.65E-03	1.61E-03	1.60E-03	1.56E-03
Zinc (Zn)	µg/m^3	4.76E-02	9.57E-03	1.57E-02	-	3.93E-02	2.30E-02	1.26E-02	1.25E-02	1.25E-02	1.82E-02	2.03E-02	9.57E-03	2.06E-02	9.73E-03	4.76E-02	1.86E-02	2.41E-02	2.68E-02
Zirconium (Zr)	µg/m^3	1.74E-03	1.53E-03	1.70E-03	-	1.60E-03	1.72E-03	1.74E-03	1.58E-03	1.65E-03	1.66E-03	1.71E-03	1.59E-03	1.53E-03	1.60E-03	1.65E-03	1.61E-03	1.60E-03	1.56E-03
Total Uranium (U)	µg/m^3	1.57E-04	1.38E-04	1.53E-04	-	1.44E-04	1.55E-04	1.57E-04	1.42E-04	1.49E-04	1.50E-04	1.54E-04	1.43E-04	1.38E-04	1.44E-04	1.48E-04	1.45E-04	1.44E-04	1.40E-04

Metals and Total Particulates	Fenceline Station	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline[1]	Fenceline	Fenceline[1]	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline[1]	Fenceline
Location		01/04/2017	07/04/2017	13/04/2017	19/04/2017	25/04/2017	01/05/2017	07/05/2017	13/05/2017	19/05/2017	25/05/2017	31/05/2017	06/06/2017	12/06/2017	18/06/2017	24/06/2017	30/06/2017
Date	dd/mm/yyyy																
Start Time	hh:mm	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Sample Duration	Hours	23.76	24.04	23.83	23.64	23.81	23.63	24.88	23.51	24.12	23.52	23.59	23.88	24	24	23.41	24.14
Technician		TH	TH	TH	TZ	TZ	TH	TH	TH	TH	TH	TH	TH	TZ	TZ	TH	TH
Filter Number		17020744	17020748	17031578	17031582	17032807	17032812	17041902	17041906	17050432	17050436	17051565	17051571	17052340	16121517	17060538	17060542
Analytical Report #		B768310	B773590	B778842	B782879	B785639	B790618	B793848	EKD920	B7A5828	B7B1622	B7B4106	B7C0327	B7C4903	B7D0737	B7D5628	B7E0731
Total Volumetric Flow	Am^3/sample	1497.59	1508.14	1530.73	1528.22	1545.04	1522.82	1605.43	1510.93	1545.70	1554.05	1592.82	1585.34	1588.90	1636.87	1586.49	1609.20

Analytical Results	Units	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL
Particulate	mg	18.4	5	25.6	5	62.5	5	56.7	5	48.9	5	34.1	5	20.1	5	78.5	5	77.2	5	38.1	5	49.1	5	31.7	5	120	5	46	5	40.3	5	52.9	5
Total Mercury (Hg)	µg	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	0.02	0.02	<0.02	0.02	0.03	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02
Aluminum (Al)	µg	87	50	100	50	302	50	251	50	239	50	140	50	<50	50	367	50	417	50	184	50	250	50	116	50	844	50	220	50	103	50	172	50
Antimony (Sb)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Arsenic (As)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Barium (Ba)	µg	11.5	1.0	8.0	1.0	27.6	1.0	9.2	1.0	10.3	1.0	8.8	1.0	5.2	1.0	15.6	1.0	15.5	1.0	6.6	1.0	12.1	1.0	10.8	1.0	18.5	1.0	11.3	1.0	12.5	1.0	11.2	1.0
Beryllium (Be)	µg	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0
Bismuth (Bi)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Boron (B)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	10.6	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Cadmium (Cd)	µg	<2.0	2.0	<2.0	2.0	2.5	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	4.2	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Chromium (Cr)	µg	<5.0	5.0	<5.0	5.0	7.2	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	8.3	5.0	5.3	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	8.2	5.0	5.2	5.0	<5.0	5.0	6.2	5.0
Cobalt (Co)	µg	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Copper (Cu)	µg	38.2	5.0	22.7	5.0	80.6	5.0	56.3	5.0	71.2	5.0	80.6	5.0	26.1	5.0	109	5.0	70.5	5.0	82.8	5.0	86.4	5.0	62.2	5.0	99.5	5.0	97.4	5.0	73.8	5.0	89.8	5.0
Iron (Fe)	µg	417	50	308	50	1070	50	687	50	590	50	280	50	186	50	931	50	861	50	321	50	629	50	390	50	1740	50	605	50	360	50	619	50
Lead (Pb)	µg	<3.0	3.0	<3.0	3.0	5.9	3.0	3.7	3.0	4.4	3.0	3.2	3.0	<3.0	3.0	5.0	3.0	4.0	3.0	<3.0	3.0	4.8	3.0	<3.0	3.0	7.7	3.0	4.0	3.0	<3.0	3.0	4.1	3.0
Magnesium (Mg)	µg	156	50	191	50	660	50	363	50	301	50	134	50	106	50	496	50	481	50	168	50	477	50	214	50	1060	50	316	50	194	50	377	50
Manganese (Mn)	µg	9.4	1.0	12.6	1.0	42.9	1.0	24.2	1.0	17.9	1.0	10.3	1.0	6.5	1.0	46.5	1.0	31.2	1.0	10.3	1.0	26.8	1.0	13.8	1.0	62.9	1.0	22.4	1.0	13.8	1.0	30.6	1.0
Molybdenum (Mo)	µg	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0
Nickel (Ni)	µg	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	4.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0
Phosphorus (P)	µg	<25	25	32	25	51	25	88	25	138	25	70	25	32	25	120	25	136	25	48	25	69	25	61	25	170	25	79	25	80	25	43	25
Selenium (Se)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Silver (Ag)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Strontium (Sr)	µg	4.6	1.0	5.1	1.0	14.3	1.0	12.2	1.0	10.3	1.0	4.2	1.0	1.7	1.0	14.9	1.0	10.1	1.0	6.2	1.0	6.8	1.0	5.0	1.0	15.4	1.0	6.7	1.0	2.9	1.0	7.8	1.0
Thallium (Tl)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Tin (Sn)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	µg	<10	10	<10	10	20	10	12	10	12	10	<10	10	<10	10	22	10	22	10	<10	10	13	10	<10	10	39	10	11	10	<10	10	10	10
Vanadium (V)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Zinc (Zn)	µg	23.7	5.0	20.9	5.0	78.6	5.0	31.9	5.0	26.1	5.0	26.2	5.0	10.7	5.0	35.5	5.0	41.8	5.0	26.7	5.0	44.1	5.0	22.0	5.0	79.4	5.0	37.0	5.0	21.0	5.0	54.3	5.0
Zirconium (Zr)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Total Uranium (U)	µg	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45

Notes:

1. Tear in filter during retreival. Concentrations comparable to other stations on the same day. Data considered valid.

Calculated Concentrations	Quarter 2			16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Units	Maximum	Minimum	01/04/2017	07/04/2017	13/04/2017	19/04/2017	25/04/2017	01/05/2017	07/05/2017	13/05/2017	19/05/2017	25/05/2017	31/05/2017	06/06/2017	12/06/2017	18/06/2017	24/06/2017	30/06/2017
Particulate	$\mu g/m^3$	75.52	12.29	12.29	16.97	40.83	37.10	31.65	22.39	12.52	51.95	49.94	24.52	30.83	20.00	75.52	28.10	25.40	32.87
Total Mercury (Hg)	$\mu g/m^3$	1.89E-05	6.11E-06	6.68E-06	6.63E-06	6.53E-06	6.54E-06	6.47E-06	6.57E-06	6.23E-06	6.62E-06	6.47E-06	6.43E-06	1.26E-05	6.31E-06	1.89E-05	6.11E-06	6.30E-06	6.21E-06
Aluminum (Al)	$\mu g/m^3$	5.31E-01	1.56E-02	5.81E-02	6.63E-02	1.97E-01	1.64E-01	1.55E-01	9.19E-02	1.56E-02	2.43E-01	2.70E-01	1.18E-01	1.57E-01	7.32E-02	5.31E-01	1.34E-01	6.49E-02	1.07E-01
Antimony (Sb)	$\mu g/m^3$	3.34E-03	3.05E-03	3.34E-03	3.32E-03	3.27E-03	3.27E-03	3.24E-03	3.28E-03	3.11E-03	3.31E-03	3.23E-03	3.22E-03	3.14E-03	3.15E-03	3.15E-03	3.05E-03	3.15E-03	3.11E-03
Arsenic (As)	$\mu g/m^3$	2.00E-03	1.83E-03	2.00E-03	1.99E-03	1.96E-03	1.96E-03	1.94E-03	1.97E-03	1.87E-03	1.99E-03	1.94E-03	1.93E-03	1.88E-03	1.89E-03	1.89E-03	1.83E-03	1.89E-03	1.86E-03
Barium (Ba)	$\mu g/m^3$	1.80E-02	3.24E-03	7.68E-03	5.30E-03	1.80E-02	6.02E-03	6.67E-03	5.78E-03	3.24E-03	1.03E-02	1.00E-02	4.25E-03	7.60E-03	6.81E-03	1.16E-02	6.90E-03	7.88E-03	6.96E-03
Beryllium (Be)	$\mu g/m^3$	3.34E-04	3.05E-04	3.34E-04	3.32E-04	3.27E-04	3.27E-04	3.24E-04	3.28E-04	3.11E-04	3.31E-04	3.23E-04	3.22E-04	3.14E-04	3.15E-04	3.15E-04	3.05E-04	3.15E-04	3.11E-04
Bismuth (Bi)	$\mu g/m^3$	2.00E-03	1.83E-03	2.00E-03	1.99E-03	1.96E-03	1.96E-03	1.94E-03	1.97E-03	1.87E-03	1.99E-03	1.94E-03	1.93E-03	1.88E-03	1.89E-03	1.89E-03	1.83E-03	1.89E-03	1.86E-03
Boron (B)	$\mu g/m^3$	6.67E-03	1.83E-03	2.00E-03	1.99E-03	1.96E-03	1.96E-03	1.94E-03	1.97E-03	1.87E-03	1.99E-03	1.94E-03	1.93E-03	1.88E-03	1.89E-03	6.67E-03	1.83E-03	1.89E-03	1.86E-03
Cadmium (Cd)	$\mu g/m^3$	2.64E-03	6.11E-04	6.68E-04	6.63E-04	1.63E-03	6.54E-04	6.47E-04	6.57E-04	6.23E-04	6.62E-04	6.47E-04	6.43E-04	6.28E-04	6.31E-04	2.64E-03	6.11E-04	6.30E-04	6.21E-04
Chromium (Cr)	$\mu g/m^3$	5.49E-03	1.56E-03	1.67E-03	1.66E-03	4.70E-03	1.64E-03	1.62E-03	1.64E-03	1.56E-03	5.49E-03	3.43E-03	1.61E-03	1.57E-03	1.58E-03	5.16E-03	3.18E-03	1.58E-03	3.85E-03
Cobalt (Co)	$\mu g/m^3$	6.68E-04	6.11E-04	6.68E-04	6.63E-04	6.53E-04	6.54E-04	6.47E-04	6.57E-04	6.23E-04	6.62E-04	6.47E-04	6.43E-04	6.28E-04	6.31E-04	6.29E-04	6.11E-04	6.30E-04	6.21E-04
Copper (Cu)	$\mu g/m^3$	7.21E-02	1.51E-02	2.55E-02	1.51E-02	5.27E-02	3.68E-02	4.61E-02	5.29E-02	1.63E-02	7.21E-02	4.56E-02	5.33E-02	5.42E-02	3.92E-02	6.26E-02	5.95E-02	4.65E-02	5.58E-02
Iron (Fe)	$\mu g/m^3$	1.10E+00	1.16E-01	2.78E-01	2.04E-01	6.99E-01	4.50E-01	3.82E-01	1.84E-01	1.16E-01	6.16E-01	5.57E-01	2.07E-01	3.95E-01	2.46E-01	1.10E+00	3.70E-01	2.27E-01	3.85E-01
Lead (Pb)	$\mu g/m^3$	4.85E-03	9.34E-04	1.00E-03	9.95E-04	3.85E-03	2.42E-03	2.85E-03	2.10E-03	9.34E-04	3.31E-03	2.59E-03	9.65E-04	3.01E-03	9.46E-04	4.85E-03	2.44E-03	9.45E-04	2.55E-03
Magnesium (Mg)	$\mu g/m^3$	6.67E-01	6.60E-02	1.04E-01	1.27E-01	4.31E-01	2.38E-01	1.95E-01	8.80E-02	6.60E-02	3.28E-01	3.11E-01	1.08E-01	2.99E-01	1.35E-01	6.67E-01	1.93E-01	1.22E-01	2.34E-01
Manganese (Mn)	$\mu g/m^3$	3.96E-02	4.05E-03	6.28E-03	8.35E-03	2.80E-02	1.58E-02	1.16E-02	6.76E-03	4.05E-03	3.08E-02	2.02E-02	6.63E-03	1.68E-02	8.70E-03	3.96E-02	1.37E-02	8.70E-03	1.90E-02
Molybdenum (Mo)	$\mu g/m^3$	1.00E-03	9.16E-04	1.00E-03	9.95E-04	9.80E-04	9.82E-04	9.71E-04	9.85E-04	9.34E-04	9.93E-04	9.70E-04	9.65E-04	9.42E-04	9.46E-04	9.44E-04	9.16E-04	9.45E-04	9.32E-04
Nickel (Ni)	$\mu g/m^3$	2.52E-03	9.16E-04	1.00E-03	9.95E-04	9.80E-04	9.82E-04	9.71E-04	9.85E-04	9.34E-04	9.93E-04	9.70E-04	9.65E-04	9.42E-04	9.46E-04	2.52E-03	9.16E-04	9.45E-04	9.32E-04
Phosphorus (P)	$\mu g/m^3$	1.07E-01	8.35E-03	8.35E-03	2.12E-02	3.33E-02	5.76E-02	8.93E-02	4.60E-02	1.99E-02	7.94E-02	8.80E-02	3.09E-02	4.33E-02	3.85E-02	1.07E-01	4.83E-02	5.04E-02	2.67E-02
Selenium (Se)	$\mu g/m^3$	3.34E-03	3.05E-03	3.34E-03	3.32E-03	3.27E-03	3.27E-03	3.24E-03	3.28E-03	3.11E-03	3.31E-03	3.23E-03	3.22E-03	3.14E-03	3.15E-03	3.15E-03	3.05E-03	3.15E-03	3.11E-03
Silver (Ag)	$\mu g/m^3$	1.67E-03	1.53E-03	1.67E-03	1.66E-03	1.63E-03	1.64E-03	1.62E-03	1.64E-03	1.56E-03	1.65E-03	1.62E-03	1.61E-03	1.57E-03	1.58E-03	1.57E-03	1.53E-03	1.58E-03	1.55E-03
Strontium (Sr)	$\mu g/m^3$	9.86E-03	1.06E-03	3.07E-03	3.38E-03	9.34E-03	7.98E-03	6.67E-03	2.76E-03	1.06E-03	9.86E-03	6.53E-03	3.99E-03	4.27E-03	3.15E-03	9.69E-03	4.09E-03	1.83E-03	4.85E-03
Thallium (Tl)	$\mu g/m^3$	3.34E-03	3.05E-03	3.34E-03	3.32E-03	3.27E-03	3.27E-03	3.24E-03	3.28E-03	3.11E-03	3.31E-03	3.23E-03	3.22E-03	3.14E-03	3.15E-03	3.15E-03	3.05E-03	3.15E-03	3.11E-03
Tin (Sn)	$\mu g/m^3$	3.34E-03	3.05E-03	3.34E-03	3.32E-03	3.27E-03	3.27E-03	3.24E-03	3.28E-03	3.11E-03	3.31E-03	3.23E-03	3.22E-03	3.14E-03	3.15E-03	3.15E-03	3.05E-03	3.15E-03	3.11E-03
Titanium (Ti)	$\mu g/m^3$	2.45E-02	3.11E-03	3.34E-03	3.32E-03	1.31E-02	7.85E-03	7.77E-03	3.28E-03	3.11E-03	1.46E-02	1.42E-02	3.22E-03	8.16E-03	3.15E-03	2.45E-02	6.72E-03	3.15E-03	6.21E-03
Vanadium (V)	$\mu g/m^3$	1.67E-03	1.53E-03	1.67E-03	1.66E-03	1.63E-03	1.64E-03	1.62E-03	1.64E-03	1.56E-03	1.65E-03	1.62E-03	1.61E-03	1.57E-03	1.58E-03	1.57E-03	1.53E-03	1.58E-03	1.55E-03
Zinc (Zn)	$\mu g/m^3$	5.13E-02	6.66E-03	1.58E-02	1.39E-02	5.13E-02	2.09E-02	1.69E-02	1.72E-02	6.66E-03	2.35E-02	2.70E-02	1.72E-02	2.77E-02	1.39E-02	5.00E-02	2.26E-02	1.32E-02	3.37E-02
Zirconium (Zr)	$\mu g/m^3$	1.67E-03	1.53E-03	1.67E-03	1.66E-03	1.63E-03	1.64E-03	1.62E-03	1.64E-03	1.56E-03	1.65E-03	1.62E-03	1.61E-03	1.57E-03	1.58E-03	1.57E-03	1.53E-03	1.58E-03	1.55E-03
Total Uranium (U)	$\mu g/m^3$	1.50E-04	1.37E-04	1.50E-04	1.49E-04	1.47E-04	1.47E-04	1.46E-04	1.48E-04	1.40E-04	1.49E-04	1.46E-04	1.45E-04	1.41E-04	1.42E-04	1.42E-04	1.37E-04	1.42E-04	1.40E-04

Appendix H PAHS DATA SUMMARY

Polycyclic Aromatic Hydrocarbons	Courtice WPCP Station																	
Location			Courtice[2]		Courtice[3]		Courtice		Courtice		Courtice[2]		Courtice[2]		Courtice		Courtice[2]	
Date	dd/mm/yyyy		1/04/2017		13/04/2017		25/04/2017		7/05/2017		19/05/2017		31/05/2017		12/06/2017		24/06/2017	
Start Time	hh:mm		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	hours		23.85		23.47		24.01		23.99		24		23.33		23.47		23.49	
Technician			TH		TH		TZ		TH		TH		TH		TZ		TH	
Filter Number			DWR870-01		EAZ418-01		EAZ425-01		EGN443-01		EGN450-01		EGN480-01		EJC332-01		EJC614-01	
Maxaam ID			EEC212		EGA120		EHH661		EIS342		EKV209		EML895		EOM670		EQO111	
Maxxam Job #			B768122		B778859		B785644		B793824		B7A5381		B7B4079		B7C5006		B7D5643	
Total Volumetric Flow	Am^3/sample		357.84		342.81		344.75		357.63		364.03		351.22		349.21		367.38	
Analytical Results	**Units**		**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Benzo(a)pyrene	µg		<0.0055	0.0055	<0.0070	0.0070	<0.0042	0.0042	0.0036	0.0026	0.0041	0.0018	0.0101	0.0033	0.0046	0.0036	0.0044	0.0010
1-Methylnaphthalene	µg		0.76	0.10	1.50	0.15	1.06	0.10	0.38	0.15	1.50	0.10	0.85	0.15	0.55	0.10	1.13	0.15
2-Methylnaphthalene	µg		1.25	0.10	2.64	0.15	1.67	0.10	0.67	0.15	2.61	0.10	1.46	0.15	0.87	0.10	2.05	0.15
Acenaphthene	µg		0.370	0.050	0.615	0.075	0.740	0.050	0.363	0.075	1.48	0.050	0.681	0.075	0.086	0.050	1.35	0.075
Acenaphthylene	µg		0.064	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	0.112	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Anthracene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	0.056	0.050	<0.075	0.075
Benzo(a)anthracene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(a)fluorene	µg		<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(b)fluoranthene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(b)fluorene	µg		<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(e)pyrene	µg		<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(g,h,i)perylene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(k)fluoranthene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Biphenyl	µg		0.44	0.10	0.52	0.15	0.52	0.10	0.17	0.15	0.70	0.10	0.41	0.15	0.42	0.10	0.52	0.15
Chrysene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Dibenz(a,h)anthracene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Dibenzo(a,c) anthracene + Picene [1]	µg		<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Fluoranthene	µg		0.126	0.050	0.138	0.075	0.216	0.050	0.105	0.075	0.354	0.050	0.201	0.075	0.192	0.050	0.326	0.075
Indeno(1,2,3-cd)pyrene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Naphthalene	µg		4.55	0.072	8.71	0.11	3.84	0.072	1.89	0.11	6.44	0.072	4.31	0.11	5.46	0.072	4.43	0.11
o-Terphenyl	µg		<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Perylene	µg		<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Phenanthrene	µg		0.560	0.050	0.621	0.075	1.01	0.050	0.456	0.075	1.85	0.050	0.807	0.075	0.838	0.050	1.61	0.075
Pyrene	µg		0.064	0.050	0.081	0.075	<0.050	0.050	<0.075	0.075	0.154	0.050	<0.075	0.075	0.088	0.050	0.142	0.075
Tetralin	µg		0.40	0.10	1.03	0.15	0.47	0.10	0.21	0.15	0.68	0.10	0.38	0.15	0.25	0.10	0.38	0.15

Calculated Concentrations	Quarter 2			8	9	10	11	12	13	14	15
	Units	Maximum	Minimum	1/04/2017	13/04/2017	25/04/2017	7/05/2017	19/05/2017	31/05/2017	12/06/2017	24/06/2017
Benzo(a)pyrene	ng/m^3	2.88E-02	6.09E-03	0.008	0.010	0.006	0.010	0.011	0.029	0.013	0.012
1-Methylnaphthalene	ng/m^3	4.38E+00	1.06E+00	2.12E+00	4.38E+00	3.07E+00	1.06E+00	4.12E+00	2.42E+00	1.57E+00	3.08E+00
2-Methylnaphthalene	ng/m^3	7.70E+00	1.87E+00	3.49E+00	7.70E+00	4.84E+00	1.87E+00	7.17E+00	4.16E+00	2.49E+00	5.58E+00
Acenaphthene	ng/m^3	4.07E+00	2.46E-01	1.03E+00	1.79E+00	2.15E+00	1.02E+00	4.07E+00	1.94E+00	2.46E-01	3.67E+00
Acenaphthylene	ng/m^3	3.08E-01	7.16E-02	1.79E-01	1.09E-01	7.25E-02	1.05E-01	3.08E-01	1.07E-01	7.16E-02	1.02E-01
Anthracene	ng/m^3	1.60E-01	6.87E-02	6.99E-02	1.09E-01	7.25E-02	1.05E-01	6.87E-02	1.07E-01	1.60E-01	1.02E-01
Benzo(a)anthracene	ng/m^3	1.09E-01	6.87E-02	6.99E-02	1.09E-01	7.25E-02	1.05E-01	6.87E-02	1.07E-01	7.16E-02	1.02E-01
Benzo(a)fluorene	ng/m^3	2.19E-01	1.37E-01	1.40E-01	2.19E-01	1.45E-01	2.10E-01	1.37E-01	2.14E-01	1.43E-01	2.04E-01
Benzo(b)fluoranthene	ng/m^3	1.09E-01	6.87E-02	6.99E-02	1.09E-01	7.25E-02	1.05E-01	6.87E-02	1.07E-01	7.16E-02	1.02E-01
Benzo(b)fluorene	ng/m^3	2.19E-01	1.37E-01	1.40E-01	2.19E-01	1.45E-01	2.10E-01	1.37E-01	2.14E-01	1.43E-01	2.04E-01
Benzo(e)pyrene	ng/m^3	2.19E-01	1.37E-01	1.40E-01	2.19E-01	1.45E-01	2.10E-01	1.37E-01	2.14E-01	1.43E-01	2.04E-01
Benzo(g,h,i)perylene	ng/m^3	1.09E-01	6.87E-02	6.99E-02	1.09E-01	7.25E-02	1.05E-01	6.87E-02	1.07E-01	7.16E-02	1.02E-01
Benzo(k)fluoranthene	ng/m^3	1.09E-01	6.87E-02	6.99E-02	1.09E-01	7.25E-02	1.05E-01	6.87E-02	1.07E-01	7.16E-02	1.02E-01
Biphenyl	ng/m^3	1.92E+00	4.75E-01	1.23E+00	1.52E+00	1.51E+00	4.75E-01	1.92E+00	1.17E+00	1.20E+00	1.42E+00
Chrysene	ng/m^3	1.09E-01	6.87E-02	6.99E-02	1.09E-01	7.25E-02	1.05E-01	6.87E-02	1.07E-01	7.16E-02	1.02E-01
Dibenz(a,h)anthracene	ng/m^3	1.09E-01	6.87E-02	6.99E-02	1.09E-01	7.25E-02	1.05E-01	6.87E-02	1.07E-01	7.16E-02	1.02E-01
Dibenzo(a,c) anthracene + Picene	ng/m^3	2.19E-01	1.37E-01	1.40E-01	2.19E-01	1.45E-01	2.10E-01	1.37E-01	2.14E-01	1.43E-01	2.04E-01
Fluoranthene	ng/m^3	9.72E-01	2.94E-01	3.52E-01	4.03E-01	6.27E-01	2.94E-01	9.72E-01	5.72E-01	5.50E-01	8.87E-01
Indeno(1,2,3-cd)pyrene	ng/m^3	1.09E-01	6.87E-02	6.99E-02	1.09E-01	7.25E-02	1.05E-01	6.87E-02	1.07E-01	7.16E-02	1.02E-01
Naphthalene	ng/m^3	2.54E+01	5.28E+00	1.27E+01	2.54E+01	1.11E+01	5.28E+00	1.77E+01	1.23E+01	1.56E+01	1.21E+01
o-Terphenyl	ng/m^3	2.19E-01	1.37E-01	1.40E-01	2.19E-01	1.45E-01	2.10E-01	1.37E-01	2.14E-01	1.43E-01	2.04E-01
Perylene	ng/m^3	2.19E-01	1.37E-01	1.40E-01	2.19E-01	1.45E-01	2.10E-01	1.37E-01	2.14E-01	1.43E-01	2.04E-01
Phenanthrene	ng/m^3	5.08E+00	1.28E+00	1.56E+00	1.81E+00	2.93E+00	1.28E+00	5.08E+00	2.30E+00	2.40E+00	4.38E+00
Pyrene	ng/m^3	4.23E-01	7.25E-02	1.79E-01	2.36E-01	7.25E-02	1.05E-01	4.23E-01	1.07E-01	2.52E-01	3.87E-01
Tetralin	ng/m^3	3.00E+00	5.87E-01	1.12E+00	3.00E+00	1.36E+00	5.87E-01	1.87E+00	1.08E+00	7.16E-01	1.03E+00
Total PAH	ng/m^3	4.86E+01	1.42E+01	2.54E+01	4.86E+01	2.92E+01	1.42E+01	4.50E+01	2.83E+01	2.67E+01	3.47E+01

Note:
RDL = Reportable Detection Limit
1. For results up to and including the 13-Apr-17 Sample: These parameters have not been subjected to Maxxam's standard validation process nor has it been accredited for the submitted matrix.

For sample results after 13-Apr-17: These parameters are not accredited for the submitted matrix.
2. Average sample flows were greater than 8.8cfm. As discussed with the MOECC, these samplers are to run at their maximum allowable flow rate

3. Laboratory internal delays caused samples to be extracted after their hold time. Laboratory comment: "Field surrogate spike recoveries are a good indicator as to whether there were possible losses to PAHs once collected. For the report in question, the field surrogate recoveries for D10-Fluorene and D14-Terphenyl were 101% and 93%, respectively. The recoveries are well within the target range of 50-150%.". Based on the laboratory's comment and that the surrogate recoveries for this sample ranged between 99 and 118%, this data is deemed valid.

Polycyclic Aromatic Hydrocarbons	Rundle Road Station																	
Location			Rundle		Rundle[2]		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle	
Date	dd/mm/yyyy		1/04/2017		13/04/2017		25/04/2017		7/05/2017		19/05/2017		31/05/2017		12/06/2017		24/06/2017	
Start Time	hh:mm		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	hours		23.54		23.84		23.85		23.77		23.88		23.3		23.26		24.22	
Technician			TH		TH		TZ		TH		TH		TH		TZ		TH	
Filter Number			DWR871-01		EAZ417-01		EAZ424-01		EGN442-01		EGN449-01		EGN479-01		EJC331-01		EJC613-01	
Maxaam ID			EEC213		EGA119		EHH662		EIS343		EKV210		EML896		EOM671		EQO112	
Maxxam Job #			B768122		B778859		B785644		B793824		B7A5381		B7B4079		B7C5006		B7D5643	
Total Volumetric Flow	Am^3/sample		334.42		342.34		322.45		337.69		343.32		343.27		333.19		348.03	
Analytical Results	Units		Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL
Benzo(a)pyrene	µg		0.0075	0.0032	<0.0063	0.0063	0.0037	0.0025	0.0053	0.0026	0.0038	0.0011	0.0073	0.0016	0.0131	0.0021	0.0033	0.0014
1-Methylnaphthalene	µg		1.53	0.10	3.34	0.15	1.60	0.10	0.81	0.15	1.99	0.10	2.66	0.15	3.90	0.10	1.58	0.15
2-Methylnaphthalene	µg		2.61	0.10	6.14	0.15	3.12	0.10	1.47	0.15	3.71	0.10	5.34	0.15	7.49	0.10	2.89	0.15
Acenaphthene	µg		0.722	0.050	2.63	0.075	2.28	0.050	0.642	0.075	1.98	0.050	3.81	0.075	4.74	0.050	1.73	0.075
Acenaphthylene	µg		0.102	0.050	<0.075	0.075	<0.050	0.050	0.120	0.075	<0.050	0.050	<0.075	0.075	0.114	0.050	<0.075	0.075
Anthracene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	0.204	0.075	0.284	0.050	<0.075	0.075
Benzo(a)anthracene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(a)fluorene	µg		<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(b)fluoranthene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(b)fluorene	µg		<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(e)pyrene	µg		<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(g,h,i)perylene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(k)fluoranthene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Biphenyl	µg		0.74	0.10	1.29	0.15	0.79	0.10	0.35	0.15	0.81	0.10	1.31	0.15	2.05	0.10	0.59	0.15
Chrysene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Dibenz(a,h)anthracene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Dibenzo(a,c) anthracene + Picene [1]	µg		<0.050	0.050	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Fluoranthene	µg		0.230	0.050	0.519	0.075	0.498	0.050	0.129	0.075	0.420	0.050	1.06	0.075	1.53	0.050	0.347	0.075
Indeno(1,2,3-cd)pyrene	µg		<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Naphthalene	µg		7.63	0.072	13.2	0.11	4.27	0.072	3.20	0.11	5.73	0.072	6.68	0.11	13.9	0.072	4.84	0.11
o-Terphenyl	µg		<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Perylene	µg		<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Phenanthrene	µg		1.11	0.050	3.21	0.075	2.90	0.050	0.636	0.075	2.37	0.050	5.39	0.075	8.19	0.050	1.80	0.075
Pyrene	µg		0.120	0.050	0.240	0.075	0.178	0.050	0.078	0.075	0.198	0.050	0.396	0.075	0.606	0.050	0.155	0.075
Tetralin	µg		0.53	0.10	1.20	0.15	0.26	0.10	0.18	0.15	0.49	0.10	0.38	0.15	0.59	0.10	0.38	0.15

Calculated Concentrations	Quarter 2			8	9	10	11	12	13	14	15
	Units	Maximum	Minimum	1/04/2017	13/04/2017	25/04/2017	7/05/2017	19/05/2017	31/05/2017	12/06/2017	24/06/2017
Benzo(a)pyrene	ng/m^3	0.0393	0.0092	0.022	0.009	0.011	0.016	0.011	0.021	0.039	0.009
1-Methylnaphthalene	ng/m^3	1.17E+01	2.40E+00	4.58E+00	9.76E+00	4.96E+00	2.40E+00	5.80E+00	7.75E+00	1.17E+01	4.54E+00
2-Methylnaphthalene	ng/m^3	2.25E+01	4.35E+00	7.80E+00	1.79E+01	9.68E+00	4.35E+00	1.08E+01	1.56E+01	2.25E+01	8.30E+00
Acenaphthene	ng/m^3	1.42E+01	1.90E+00	2.16E+00	7.68E+00	7.07E+00	1.90E+00	5.77E+00	1.11E+01	1.42E+01	4.97E+00
Acenaphthylene	ng/m^3	3.55E-01	7.28E-02	3.05E-01	1.10E-01	7.75E-02	3.55E-01	7.28E-02	1.09E-01	3.42E-01	1.08E-01
Anthracene	ng/m^3	8.52E-01	7.28E-02	7.48E-02	1.10E-01	7.75E-02	1.11E-01	7.28E-02	5.94E-01	8.52E-01	1.08E-01
Benzo(a)anthracene	ng/m^3	1.11E-01	7.28E-02	7.48E-02	1.10E-01	7.75E-02	1.11E-01	7.28E-02	1.09E-01	7.50E-02	1.08E-01
Benzo(a)fluorene	ng/m^3	2.22E-01	1.46E-01	1.50E-01	2.19E-01	1.55E-01	2.22E-01	1.46E-01	2.18E-01	1.50E-01	2.16E-01
Benzo(b)fluoranthene	ng/m^3	1.11E-01	7.28E-02	7.48E-02	1.10E-01	7.75E-02	1.11E-01	7.28E-02	1.09E-01	7.50E-02	1.08E-01
Benzo(b)fluorene	ng/m^3	2.22E-01	1.46E-01	1.50E-01	2.19E-01	1.55E-01	2.22E-01	1.46E-01	2.18E-01	1.50E-01	2.16E-01
Benzo(e)pyrene	ng/m^3	2.22E-01	1.46E-01	1.50E-01	2.19E-01	1.55E-01	2.22E-01	1.46E-01	2.18E-01	1.50E-01	2.16E-01
Benzo(g,h,i)perylene	ng/m^3	1.11E-01	7.28E-02	7.48E-02	1.10E-01	7.75E-02	1.11E-01	7.28E-02	1.09E-01	7.50E-02	1.08E-01
Benzo(k)fluoranthene	ng/m^3	1.11E-01	7.28E-02	7.48E-02	1.10E-01	7.75E-02	1.11E-01	7.28E-02	1.09E-01	7.50E-02	1.08E-01
Biphenyl	ng/m^3	6.15E+00	1.04E+00	2.21E+00	3.77E+00	2.45E+00	1.04E+00	2.36E+00	3.82E+00	6.15E+00	1.70E+00
Chrysene	ng/m^3	1.11E-01	7.28E-02	7.48E-02	1.10E-01	7.75E-02	1.11E-01	7.28E-02	1.09E-01	7.50E-02	1.08E-01
Dibenz(a,h)anthracene	ng/m^3	1.11E-01	7.28E-02	7.48E-02	1.10E-01	7.75E-02	1.11E-01	7.28E-02	1.09E-01	7.50E-02	1.08E-01
Dibenzo(a,c) anthracene + Picene	ng/m^3	2.22E-01	7.48E-02	7.48E-02	2.19E-01	1.55E-01	2.22E-01	1.46E-01	2.18E-01	1.50E-01	2.16E-01
Fluoranthene	ng/m^3	4.59E+00	3.82E-01	6.88E-01	1.52E+00	1.54E+00	3.82E-01	1.22E+00	3.09E+00	4.59E+00	9.97E-01
Indeno(1,2,3-cd)pyrene	ng/m^3	1.11E-01	7.28E-02	7.48E-02	1.10E-01	7.75E-02	1.11E-01	7.28E-02	1.09E-01	7.50E-02	1.08E-01
Naphthalene	ng/m^3	4.17E+01	9.48E+00	2.28E+01	3.86E+01	1.32E+01	9.48E+00	1.67E+01	1.95E+01	4.17E+01	1.39E+01
o-Terphenyl	ng/m^3	2.22E-01	1.46E-01	1.50E-01	2.19E-01	1.55E-01	2.22E-01	1.46E-01	2.18E-01	1.50E-01	2.16E-01
Perylene	ng/m^3	2.22E-01	1.46E-01	1.50E-01	2.19E-01	1.55E-01	2.22E-01	1.46E-01	2.18E-01	1.50E-01	2.16E-01
Phenanthrene	ng/m^3	2.46E+01	1.88E+00	3.32E+00	9.38E+00	8.99E+00	1.88E+00	6.90E+00	1.57E+01	2.46E+01	5.17E+00
Pyrene	ng/m^3	1.82E+00	2.31E-01	3.59E-01	7.01E-01	5.52E-01	2.31E-01	5.77E-01	1.15E+00	1.82E+00	4.45E-01
Tetralin	ng/m^3	3.51E+00	5.33E-01	1.58E+00	3.51E+00	8.06E-01	5.33E-01	1.43E+00	1.11E+00	1.77E+00	1.09E+00
Total PAH	ng/m^3	1.32E+02	2.48E+01	4.73E+01	9.51E+01	5.09E+01	2.48E+01	5.31E+01	8.15E+01	1.32E+02	4.34E+01

Note:
RDL = Reportable Detection Limit
1. For results up to and including the 13-Apr-17 Sample: These parameters have not been subjected to Maxxam's standard validation process nor has it been accredited for the submitted matrix.

For sample results after 13-Apr-17: These parameters are not accredited for the submitted matrix.

(2) Laboratory internal delays caused samples to be extracted after their hold time. Laboratory comment: "Field surrogate spike recoveries are a good indicator as to whether there were possible losses to PAHs once collected. For the report in question, the field surrogate recoveries for D10-Fluorene and D14-Terphenyl were 101% and 93%, respectively. The recoveries are well within the target range of 50-150%.". Based on the laboratory's comment and that the surrogate recoveries for this sample ranged between 88% and 116%, this data is deemed valid.

Appendix I DIOXINS AND FURANS DATA SUMMARY

Dioxins and Furans	Courtice WPCP Station											
Location		Courtice[2]			Courtice			Courtice[3]			Courtice[3]		
Date	dd/mm/yyyy	13/04/2017			7/05/2017			31/05/2017			24/06/2017		
Start Time	hh:mm	0:00			0:00			0:00			0:00		
Sample Duration	hours	23.47			23.99			23.33			23.49		
Technician		TH			TH			TH			TH		
Filter Number		EAZ418-01			EGN443-01			EGN480-01			EJC613-01		
Maxxam ID		EGA120			EIS342			EML895			EQO111		
Maxxam Job #		B778859			B793824			B784079			B7D5643		
Total Volumetric Flow	Am^3/sample	342.81			357.63			351.22			367.38		
Analytical Results	Units	Value	EDL	WHO_{2005} TEF	Value	EDL	WHO_{2005} TEF	Value	EDL	WHO_{2005} TEF	Value	EDL	WHO_{2005} TEF
2,3,7,8-Tetra CDD *	pg	<4.0	4.0	1	<4.0	4.0	1	<5.5	5.5	1	<3.2	3.2	1
1,2,3,7,8-Penta CDD *	pg	<5.3	5.3	1	<4.3	4.3	1	<4.7	4.7	1	<3.4	3.4	1
1,2,3,4,7,8-Hexa CDD *	pg	<3.5	3.5	0.1	<3.8	3.8	0.1	<4.0	4.0	0.1	<3.2	3.2	0.1
1,2,3,6,7,8-Hexa CDD *	pg	<3.8	3.8	0.1	<4.2 (1)	4.2	0.1	<4.3	4.3	0.1	<3.4	3.4	0.1
1,2,3,7,8,9-Hexa CDD *	pg	<3.3	3.3	0.1	<3.6	3.6	0.1	<3.8	3.8	0.1	<3.0	3.0	0.1
1,2,3,4,6,7,8-Hepta CDD *	pg	<5.6 (1)	5.6	0.01	12.9	3.6	0.01	8.6	3.8	0.01	<3.8 (1)	3.8	0.01
Octa CDD *	pg	29.9	3.4	0.0003	48.4	4.1	0.0003	19.4	3.1	0.0003	15.3	3.4	0.0003
Total Tetra CDD *	pg	<12 (1)	12		<4.0	4.0		<5.5	5.5		<3.2	3.2	
Total Penta CDD *	pg	<9.8 (1)	9.8		<4.3	4.3		<4.7	4.7		<3.4	3.4	
Total Hexa CDD *	pg	<20 (1)	20		23.3	3.8		<4.1	4.1		<5.2 (1)	5.2	
Total Hepta CDD *	pg	<13 (1)	13		22.9	3.6		17.5	3.8		<3.8 (1)	3.8	
2,3,7,8-Tetra CDF **	pg	<4.0	4.0	0.1	<3.8	3.8	0.1	<3.4	3.4	0.1	<3.3	3.3	0.1
1,2,3,7,8-Penta CDF **	pg	<3.5	3.5	0.03	<2.9	2.9	0.03	<4.2	4.2	0.03	<3.3	3.3	0.03
2,3,4,7,8-Penta CDF **	pg	<3.6	3.6	0.3	<2.8	2.8	0.3	<4.3	4.3	0.3	<3.3	3.3	0.3
1,2,3,4,7,8-Hexa CDF **	pg	<2.8	2.8	0.1	<3.4	3.4	0.1	<3.4	3.4	0.1	<3.1	3.1	0.1
1,2,3,6,7,8-Hexa CDF **	pg	<2.8	2.8	0.1	<3.2	3.2	0.1	<3.4	3.4	0.1	<3.1	3.1	0.1
2,3,4,6,7,8-Hexa CDF **	pg	<2.9	2.9	0.1	<3.7	3.7	0.1	<3.6	3.6	0.1	<3.2	3.2	0.1
1,2,3,7,8,9-Hexa CDF **	pg	<3.0	3.0	0.1	<3.7	3.7	0.1	<3.7	3.7	0.1	<3.4	3.4	0.1
1,2,3,4,6,7,8-Hepta CDF **	pg	<2.3	2.3	0.01	4.6	3.0	0.01	<3.5	3.5	0.01	<2.9	2.9	0.01
1,2,3,4,7,8,9-Hepta CDF **	pg	<2.7	2.7	0.01	<3.7	3.7	0.01	<4.0	4.0	0.01	<3.4	3.4	0.01
Octa CDF **	pg	<3.3	3.3	0.0003	<7.2 (1)	7.2	0.0003	<4.7	4.7	0.0003	<3.1	3.1	0.0003
Total Tetra CDF **	pg	<4.0	4.0		<3.8	3.8		<3.4	3.4		<3.3	3.3	
Total Penta CDF **	pg	<3.5	3.5		<2.9	2.9		<4.3	4.3		<3.3	3.3	
Total Hexa CDF **	pg	<2.9	2.9		<3.5	3.5		<3.5	3.5		<3.2	3.2	
Total Hepta CDF **	pg	<2.5	2.5		4.6	3.3		<3.7	3.7		<3.1	3.1	
Toxic Equivalency	pg												

Notes:
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(2) Laboratory internal delays caused samples to be extracted after their hold time. Laboratory comment: "Field surrogate spike recoveries are a good indicator as to whether there were possible losses to PAHs once collected. For the report in question, the field surrogate recoveries for D10-Fluorene and D14-Terphenyl were 101% and 93%, respectively. The recoveries are well within the target range of 50-150%.". Based on the laboratory's comment and that the surrogate recoveries for this sample ranged between 90 and 117%, this data is deemed valid.

(3) Average sample flows were greater than 8.8cfm. As discussed with the MOECC, these samplers are to run at their maximum allowable flow rate
* CDD = Chloro Dibenzo-p-Dioxin ** CDF = Chloro Dibenzo-p-Furan

Calculated Concentrations	Quarter 2			5	6	7	8
	Units	Maximum	Minimum	13/04/2017	7/05/2017	31/05/2017	24/06/2017
2,3,7,8-Tetra CDD *	pg/m^3	7.83E-03	4.36E-03	0.006	0.006	0.008	0.004
1,2,3,7,8-Penta CDD *	pg/m^3	7.73E-03	4.63E-03	0.008	0.006	0.007	0.005
1,2,3,4,7,8-Hexa CDD *	pg/m^3	5.69E-03	4.36E-03	0.005	0.005	0.006	0.004
1,2,3,6,7,8-Hexa CDD *	pg/m^3	6.12E-03	4.63E-03	0.006	0.006	0.006	0.005
1,2,3,7,8,9-Hexa CDD *	pg/m^3	5.41E-03	4.08E-03	0.005	0.005	0.005	0.004
1,2,3,4,6,7,8-Hepta CDD *	pg/m^3	3.61E-02	5.17E-03	0.008	0.036	0.024	0.005
Octa CDD *	pg/m^3	1.35E-01	4.16E-02	0.087	0.135	0.055	0.042
Total Tetra CDD *	pg/m^3	1.75E-02	4.36E-03	0.018	0.006	0.008	0.004
Total Penta CDD *	pg/m^3	1.43E-02	4.63E-03	0.014	0.006	0.007	0.005
Total Hexa CDD *	pg/m^3	6.52E-02	5.84E-03	0.029	0.065	0.006	0.007
Total Hepta CDD *	pg/m^3	6.40E-02	5.17E-03	0.019	0.064	0.050	0.005
2,3,7,8-Tetra CDF **	pg/m^3	5.83E-03	4.49E-03	0.006	0.005	0.005	0.004
1,2,3,7,8-Penta CDF **	pg/m^3	5.98E-03	4.05E-03	0.005	0.004	0.006	0.004
2,3,4,7,8-Penta CDF **	pg/m^3	6.12E-03	3.91E-03	0.005	0.004	0.006	0.004
1,2,3,4,7,8-Hexa CDF **	pg/m^3	4.84E-03	4.08E-03	0.004	0.005	0.005	0.004
1,2,3,6,7,8-Hexa CDF **	pg/m^3	4.84E-03	4.08E-03	0.004	0.004	0.005	0.004
2,3,4,6,7,8-Hexa CDF **	pg/m^3	5.17E-03	4.23E-03	0.004	0.005	0.005	0.004
1,2,3,7,8,9-Hexa CDF **	pg/m^3	5.27E-03	4.38E-03	0.004	0.005	0.005	0.005
1,2,3,4,6,7,8-Hepta CDF **	pg/m^3	1.29E-02	3.35E-03	0.003	0.013	0.005	0.004
1,2,3,4,7,8,9-Hepta CDF **	pg/m^3	5.69E-03	3.94E-03	0.004	0.005	0.006	0.005
Octa CDF **	pg/m^3	1.01E-02	4.22E-03	0.005	0.010	0.007	0.004
Total Tetra CDF **	pg/m^3	5.83E-03	4.49E-03	0.006	0.005	0.005	0.004
Total Penta CDF **	pg/m^3	6.12E-03	4.05E-03	0.005	0.004	0.006	0.004
Total Hexa CDF **	pg/m^3	4.98E-03	4.23E-03	0.004	0.005	0.005	0.004
Total Hepta CDF **	pg/m^3	1.29E-02	3.65E-03	0.004	0.013	0.005	0.004
Toxic Equivalency	pg/m^3						
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	2.11E-02	1.41E-02	0.019	0.018	0.021	0.014
Calculated TEQ Concentrations	**Units**			**13/04/2017**	**07/05/2017**	**31/05/2017**	**24/06/2017**
2,3,7,8-Tetra CDD *	pg TEQ/m^3			0.006	0.006	0.008	0.004
1,2,3,7,8-Penta CDD	pg TEQ/m^3			0.008	0.006	0.007	0.005
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3			0.0005	0.0005	0.0006	0.0004
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3			0.0006	0.0006	0.0006	0.0005
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3			0.0005	0.0005	0.0005	0.0004
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3			0.0001	0.0004	0.0002	0.0001
Octa CDD	pg TEQ/m^3			0.00003	0.00004	0.00002	0.00001
Total Tetra CDD	pg TEQ/m^3						
Total Penta CDD	pg TEQ/m^3						
Total Hexa CDD	pg TEQ/m^3						
Total Hepta CDD	pg TEQ/m^3						
2,3,7,8-Tetra CDF **	pg TEQ/m^3			0.0006	0.0005	0.0005	0.0004
1,2,3,7,8-Penta CDF	pg TEQ/m^3			0.0002	0.0001	0.0002	0.0001
2,3,4,7,8-Penta CDF	pg TEQ/m^3			0.002	0.001	0.002	0.001
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3			0.0004	0.0005	0.0005	0.0004
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3			0.0004	0.0004	0.0005	0.0004
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3			0.0004	0.0005	0.0005	0.0004
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3			0.0004	0.0005	0.0005	0.0005
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3			0.00003	0.00013	0.00005	0.00004
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3			0.00004	0.00005	0.00006	0.00005
Octa CDF	pg TEQ/m^3			0.000001	0.000003	0.000002	0.000001
Total Tetra CDF	pg TEQ/m^3						
Total Penta CDF	pg TEQ/m^3						
Total Hexa CDF	pg TEQ/m^3						
Total Hepta CDF	pg TEQ/m^3						
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3			0.019	0.018	0.021	0.014

Notes:
EDL = Estimated Detection Limit
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

Dioxins and Furans	Rundle Road Station												
Location		Rundle[2]			Rundle			Rundle			Rundle		
Date	dd/mm/yyyy	13/04/2017			7/05/2017			31/05/2017			24/06/2017		
Start Time	hh:mm	0:00			0:00			0:00			0:00		
Sample Duration	hours	23.84			23.77			23.3			24.22		
Technician		TH			TH			TH			TH		
Filter Number		EAZ417-01			EGN442-01			EGN479-01			EJC613-01		
Maxaam ID		EGA119			EIS343			EML896			EQO112		
Maxxam Job #		B778859			B793824			B7B4079			B7D5643		
Total Volumetric Flow	Am^3/sample	342.34			337.69			343.27			348.03		
Analytical Results	**Units**	**Value**	**EDL**	**WHO_{2005} TEF**	**Value**	**EDL**	**WHO_{2005} TEF**	**Value**	**EDL**	**WHO_{2005} TEF**	**Value**	**EDL**	**WHO_{2005} TEF**
2,3,7,8-Tetra CDD *	pg	<5.5	5.5	1	<2.9	2.9	1	<7.6	7.6	1	<3.5	3.5	1
1,2,3,7,8-Penta CDD *	pg	<4.2	4.2	1	<4.4	4.4	1	<5.8	5.8	1	<3.2	3.2	1
1,2,3,4,7,8-Hexa CDD *	pg	<2.7	2.7	0.1	<3.6	3.6	0.1	<8.6	8.6	0.1	<3.3	3.3	0.1
1,2,3,6,7,8-Hexa CDD *	pg	<2.9	2.9	0.1	<3.7	3.7	0.1	<8.9	8.9	0.1	<3.5	3.5	0.1
1,2,3,7,8,9-Hexa CDD *	pg	<2.6	2.6	0.1	<3.4	3.4	0.1	<8.1	8.1	0.1	<3.1	3.1	0.1
1,2,3,4,6,7,8-Hepta CDD *	pg	20.0	3.0	0.01	<4.5 (1)	4.5	0.01	11.1	5.6	0.01	<3.5	3.5	0.01
Octa CDD *	pg	81.5	2.9	0.0003	15.6	4.3	0.0003	32.4	7.0	0.0003	11.9	3.4	0.0003
Total Tetra CDD *	pg	<11 (1)	11		<2.9	2.9		<7.6	7.6		<3.5	3.5	
Total Penta CDD *	pg	<9.4 (1)	9.4		<4.4	4.4		<5.8	5.8		<3.2	3.2	
Total Hexa CDD *	pg	<17 (1)	17		<3.5	3.5		<8.5	8.5		<4.6 (1)	4.6	
Total Hepta CDD *	pg	45.5	3.0		<4.5 (1)	4.5		20.5	5.6		3.9	3.5	
2,3,7,8-Tetra CDF **	pg	<3.7	3.7	0.1	<2.7	2.7	0.1	<6.5	6.5	0.1	<3.2	3.2	0.1
1,2,3,7,8-Penta CDF **	pg	<4.3	4.3	0.03	<3.0	3.0	0.03	<7.7	7.7	0.03	<3.5	3.5	0.03
2,3,4,7,8-Penta CDF **	pg	<4.3	4.3	0.3	<2.8	2.8	0.3	<7.2	7.2	0.3	<3.5	3.5	0.3
1,2,3,4,7,8-Hexa CDF **	pg	<2.5	2.5	0.1	<3.2	3.2	0.1	<6.4	6.4	0.1	<3.1	3.1	0.1
1,2,3,6,7,8-Hexa CDF **	pg	<2.5	2.5	0.1	<3.1	3.1	0.1	<6.1	6.1	0.1	<3.0	3.0	0.1
2,3,4,6,7,8-Hexa CDF **	pg	<2.6	2.6	0.1	<3.6	3.6	0.1	<7.1	7.1	0.1	<3.2	3.2	0.1
1,2,3,7,8,9-Hexa CDF **	pg	<2.7	2.7	0.1	<3.6	3.6	0.1	<7.1	7.1	0.1	<3.3	3.3	0.1
1,2,3,4,6,7,8-Hepta CDF **	pg	2.8	2.2	0.01	<2.9	2.9	0.01	<5.4	5.4	0.01	<2.9	2.9	0.01
1,2,3,4,7,8,9-Hepta CDF **	pg	<2.5	2.5	0.01	<3.5	3.5	0.01	<6.5	6.5	0.01	<3.3	3.3	0.01
Octa CDF **	pg	5.5	3.2	0.0003	<4.0	4.0	0.0003	11.2	6.6	0.0003	<3.2	3.2	0.0003
Total Tetra CDF **	pg	<4.3 (1)	4.3		<2.7	2.7		<6.5	6.5		<3.2	3.2	
Total Penta CDF **	pg	<4.3	4.3		<2.9	2.9		<7.5	7.5		<3.5	3.5	
Total Hexa CDF **	pg	<2.6	2.6		<3.4	3.4		<6.6	6.6		<3.1	3.1	
Total Hepta CDF **	pg	2.8	2.3		<3.1	3.1		<5.9	5.9		<3.1	3.1	
Toxic Equivalency	pg												

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(2) Laboratory internal delays caused samples to be extracted after their hold time. Laboratory comment: "Field surrogate spike recoveries are a good indicator as to whether there were possible losses to PAHs once collected. For the report in question, the field surrogate recoveries for D10-Fluorene and D14-Terphenyl were 101% and 93%, respectively. The recoveries are well within the target range of 50-150%.". Based on the laboratory's comment and that the surrogate recoveries for this sample ranged between 95 and 126%, this data was deemed valid.

* CDD = Chloro Dibenzo-p-Dioxin ** CDF = Chloro Dibenzo-p-Furan

Calculated Concentrations	Units	Quarter 2 Maximum	Quarter 2 Minimum	5	6	7	8
				13/04/2017	7/05/2017	31/05/2017	24/06/2017
2,3,7,8-Tetra CDD *	pg/m^3	1.11E-02	4.29E-03	0.008	0.004	0.011	0.005
1,2,3,7,8-Penta CDD *	pg/m^3	8.45E-03	4.60E-03	0.006	0.007	0.008	0.005
1,2,3,4,7,8-Hexa CDD *	pg/m^3	1.25E-02	3.94E-03	0.004	0.005	0.013	0.005
1,2,3,6,7,8-Hexa CDD *	pg/m^3	1.30E-02	4.24E-03	0.004	0.005	0.013	0.005
1,2,3,7,8,9-Hexa CDD *	pg/m^3	1.18E-02	3.80E-03	0.004	0.005	0.012	0.004
1,2,3,4,6,7,8-Hepta CDD *	pg/m^3	5.84E-02	5.03E-03	0.058	0.007	0.032	0.005
Octa CDD *	pg/m^3	2.38E-01	3.42E-02	0.238	0.046	0.094	0.034
Total Tetra CDD *	pg/m^3	1.61E-02	4.29E-03	0.016	0.004	0.011	0.005
Total Penta CDD *	pg/m^3	1.37E-02	4.60E-03	0.014	0.007	0.008	0.005
Total Hexa CDD *	pg/m^3	2.48E-02	5.18E-03	0.025	0.005	0.012	0.007
Total Hepta CDD *	pg/m^3	1.33E-01	6.66E-03	0.133	0.007	0.060	0.011
2,3,7,8-Tetra CDF **	pg/m^3	9.47E-03	4.00E-03	0.005	0.004	0.009	0.005
1,2,3,7,8-Penta CDF **	pg/m^3	1.12E-02	4.44E-03	0.006	0.004	0.011	0.005
2,3,4,7,8-Penta CDF **	pg/m^3	1.05E-02	4.15E-03	0.006	0.004	0.010	0.005
1,2,3,4,7,8-Hexa CDF **	pg/m^3	9.32E-03	3.65E-03	0.004	0.005	0.009	0.004
1,2,3,6,7,8-Hexa CDF **	pg/m^3	8.89E-03	3.65E-03	0.004	0.005	0.009	0.004
2,3,4,6,7,8-Hexa CDF **	pg/m^3	1.03E-02	3.80E-03	0.004	0.005	0.010	0.005
1,2,3,7,8,9-Hexa CDF **	pg/m^3	1.03E-02	3.94E-03	0.004	0.005	0.010	0.005
1,2,3,4,6,7,8-Hepta CDF **	pg/m^3	8.18E-03	4.17E-03	0.008	0.004	0.008	0.004
1,2,3,4,7,8,9-Hepta CDF **	pg/m^3	9.47E-03	3.65E-03	0.004	0.005	0.009	0.005
Octa CDF **	pg/m^3	3.26E-02	4.60E-03	0.016	0.006	0.033	0.005
Total Tetra CDF **	pg/m^3	9.47E-03	4.00E-03	0.006	0.004	0.009	0.005
Total Penta CDF **	pg/m^3	1.09E-02	4.29E-03	0.006	0.004	0.011	0.005
Total Hexa CDF **	pg/m^3	9.61E-03	3.80E-03	0.004	0.005	0.010	0.004
Total Hepta CDF **	pg/m^3	8.59E-03	4.45E-03	0.008	0.005	0.009	0.004
Toxic Equivalency	pg/m^3						
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	3.21E-02	1.51E-02	0.020	0.016	0.032	0.015
Calculated TEQ Concentrations	**Units**			**13/04/2017**	**07/05/2017**	**31/05/2017**	**24/06/2017**
2,3,7,8-Tetra CDD *	pg TEQ/m^3			0.008	0.004	0.011	0.005
1,2,3,7,8-Penta CDD	pg TEQ/m^3			0.006	0.007	0.008	0.005
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3			0.0004	0.0005	0.0013	0.0005
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3			0.0004	0.0005	0.0013	0.0005
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3			0.0004	0.0005	0.0012	0.0004
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3			0.0006	0.0001	0.0003	0.0001
Octa CDD	pg TEQ/m^3			0.00007	0.00001	0.00003	0.00001
Total Tetra CDD	pg TEQ/m^3						
Total Penta CDD	pg TEQ/m^3						
Total Hexa CDD	pg TEQ/m^3						
Total Hepta CDD	pg TEQ/m^3						
2,3,7,8-Tetra CDF **	pg TEQ/m^3			0.0005	0.0004	0.0009	0.0005
1,2,3,7,8-Penta CDF	pg TEQ/m^3			0.0002	0.0001	0.0003	0.0002
2,3,4,7,8-Penta CDF	pg TEQ/m^3			0.002	0.001	0.003	0.002
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3			0.0004	0.0005	0.0009	0.0004
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3			0.0004	0.0005	0.0009	0.0004
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3			0.0004	0.0005	0.0010	0.0005
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3			0.0004	0.0005	0.0010	0.0005
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3			0.00008	0.00004	0.00008	0.00004
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3			0.00004	0.00005	0.00009	0.00005
Octa CDF	pg TEQ/m^3			0.000005	0.000002	0.000010	0.000001
Total Tetra CDF	pg TEQ/m^3						
Total Penta CDF	pg TEQ/m^3						
Total Hexa CDF	pg TEQ/m^3						
Total Hepta CDF	pg TEQ/m^3						
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3			0.020	0.016	0.032	0.015

Notes:
EDL = Estimated Detection Limit
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

Appendix J NOTIFICATION LETTER

Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON, L3R 0B8

July 26, 2017
File: 160950528

Attention: Mr. Gioseph Anello, Manager,
Waste Planning, and Technical Services

The Regional Municipality of Durham
605 Rossland Rd. E.
P.O. Box 623
Whitby, ON L1N 6A3

Dear Mr. Anello,

Reference: Durham York Energy Centre, Ambient Monitoring Program, Notification of Potential Exceedance in Total Suspended Particulate (TSP)

The purpose of this letter is to provide a Notification of Exceedance to the Regions of Durham and York, the District Manager of the Ministry of the Environment and Climate Change (MOECC) and the Region of Durham Medical Officer of Health (MOH) of a measured Total Suspended Particulate (TSP) exceedance for the Durham York Energy Center (DYEC) monitoring network. This notification is being provided as per Section 9 of the Ambient Monitoring Plan (AMP) (Stantec, 2012).

The June 12, 2017 TSP measurement at the Rundle Road Station was 126 µg/m^3, exceeding the 24- hour Ontario Ambient Air Monitoring Criteria (AAQC) of 120 µg/m^3 by 5%. The exceedance was identified on July 13, 2017 during Stantec's review of the previous month's non-continuous monitoring data as per MOECC protocols. The filter results were received from the analytical laboratory on June 29, 2017. Following the requirements of the AMP, Stantec reviewed and confirmed the TSP filter results with the analytical laboratory and conducted a root cause assessment of the exceedance. The potential impact on human health was evaluated by a Stantec Toxicologist.

Our review indicates the following:

1. Stantec did not identify any equipment malfunctions or issues with the non-continuous monitor. Minor damage to the TSP filter, likely caused by birds, was noted for the June 12 TSP sample at the Rundle Road Station. This damage is not expected to have affected the particulate loading on the filter.

Reference: Durham York Energy Centre, Ambient Monitoring Program, Notification of Potential Exceedance in Total Suspended Particulate (TSP)

2. Wind directionality over the day was blowing from west-southwesterly to west-northwesterly wind directions. Under these conditions, the DYEC is not upwind of the Rundle Road Station. Highway 418 construction activities were observed to be occurring that were upwind of the Rundle Road Station for these wind directions.

3. The highest TSP readings of 2017 were measured at the Rundle Road, Courtice WPCP and Fenceline Stations on June 12, 2017. On June 12, the Courtice WPCP station was upwind of the DYEC. At this location, TSP was measured at 60 µg/m^3 (50% of the criterion). At the Fenceline station, TSP was reported at 76 µg/m^3 (63% of the criterion).

4. A review of the DYEC Continuous Emissions Monitoring (CEMs) data for June 12 showed the measured opacity for both boilers to be 0% all day.

5. No Air Quality Alerts were issued by the MOECC on June 12.

6. June 12, 2017 was the only day in approximately 3 years of monitoring where the measured TSP marginally exceeded (5%) the criterion of 120 µg/m^3. The potential human health risks associated with TSP are related to the concentrations of the inhalable TSP fraction ($PM_{2.5}$). On June 12, 2017, measured daily average $PM_{2.5}$ concentrations at the Courtice WPCP and Rundle Road Stations ranged between 14.8 µg/m^3 and 15.5 µg/m^3. These are below the 24-hour human health-based ambient air quality criterion of 30 µg/m^3. Therefore, $PM_{2.5}$ concentrations measured on June 12, 2017, represented a negligible human health risk. Based on this, the minor exceedance of the TSP criterion represented a negligible human health risk.

Based on Stantec's review, the likely cause of the TSP exceedance was high background TSP levels combined with Highway 418 construction activities. The measured TSP concentration is not expected to have resulted in an adverse effect on human health or the environment.

If you have comments or questions, please contact the undersigned.

Regards,

STANTEC CONSULTING LTD.

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Reference: Durham York Energy Centre, Ambient Monitoring Program, Notification of Potential Exceedance in Total Suspended Particulate (TSP)

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c. Celeste Dugas, District Manager (A), York-Durham District Office, MOECC
Dr. Robert Kyle, Commissioner & Medical Officer of Health, Region of Durham
Tara Wilcox, The Regional Municipality of Durham
Seth Dittman, The Regional Municipality of York
Kimberly Ireland, Tim Hung, Stantec Consulting Ltd.

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