Quarterly Ambient Air Quality Monitoring Report for the Durham York Energy Centre – April to June 2016

Durham York Energy Centre

Prepared for:
The Regional Municipality of Durham
605 Rossland Rd
Whitby, ON L1N 6A3

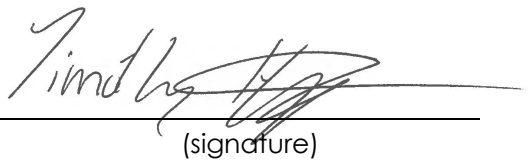
Prepared by:
Stantec Consulting Ltd.
300W-675 Cochrane Dr.,
Markham, ON L3R 0B8

Project No.: 160950528

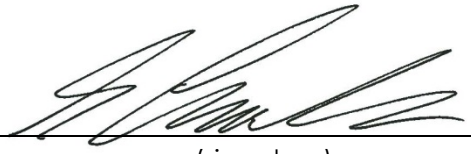
August 8, 2016

Sign-off Sheet

This document entitled Quarterly Ambient Air Quality Monitoring Report for the Durham York Energy Centre – April to June 2016 was prepared by Stantec Consulting Ltd. for the account of The Regional Municipality of Durham. The material in it reflects Stantec's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec Consulting Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Prepared by 
(signature)

Timothy Hung, B.A.Sc.

Reviewed by 
(signature)

Gregory Crooks M.Eng., P.Eng.

Reviewed by 
(signature)

Kimberly Ireland, P.Eng.

V:\01609\Active\160950528\planning\report\final\2016\2016Q2\160950528_rpt_2016_Q2_FINAL.docx

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

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 municipal solid waste remaining after 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).

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, and will run for a one year period.

The EFW facility became fully operational on February 1, 2016, and monitoring of non-continuous air quality parameters resumed.

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: a malfunction of the Courtice WPCP SO_2 monitor requiring manufacturer repair; bird damage to non-continuous samples at the Courtice WPCP Station; and, metals sampler mass flow controller adjustments to address MOECC audit results. 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.

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 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 well below their applicable Standards (as presented in **Table 2-3** in this report);

4. The maximum measured concentrations of all PAHs with MOECC air quality Standards were well below their applicable criteria shown in **Table 2-4**, with the exception of the 24-hour benzo(a)pyrene (B(a)P) concentration in three samples measured at the Courtice WPCP Station and three samples measured at the Rundle Road Station, which exceeded the applicable Ontario Ambient Air Quality Criteria (AAQC) ranging from 1% to 66%. The current Ontario 24-hour B(a)P AAQC was introduced in 2011 and levels above this AAQC are commonly measured throughout Ontario. The measurements were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOECC O. Reg. 419/05 24-hour average guideline, and the HHRA health based criterion; and,

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 during the monitoring period between April to June 2016, with the exception of benzo(a)pyrene. Furthermore, all measured levels of the monitored contaminants were below their applicable HHRA health-based criteria.

Abbreviations

AAQC	Ambient Air Quality Criteria
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 monitor). 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 measureable 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. The Fence Line Station began operation after the Facility's commissioning period was completed, and will run for a one year period.

This quarterly report provides a summary of the ambient air quality data collected at the three stations for the period April to June 2016 (Q2).

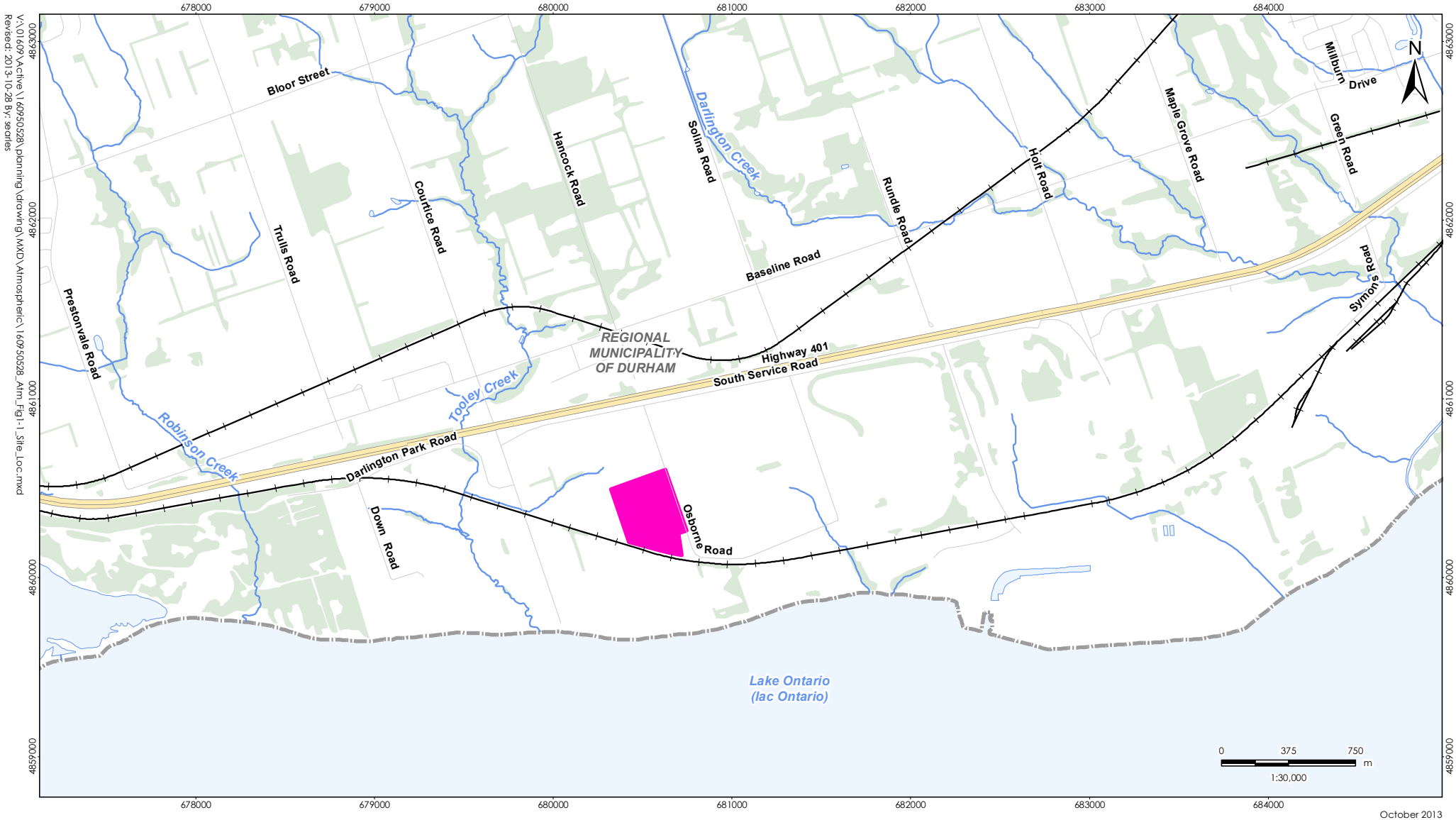
1.2 LOCATIONS OF AMBIENT AIR QUALITY MONITORING STATIONS

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 detailed 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 Section 1.1 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 **Figure 1-4.** 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.

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, and will run for a one year period. The location is presented in **Figure 1-2** and **Figure 1-5**.



V:\01609\Active\160950528\planning\drawing\MXD\Atmospheric\160950528_Atm_Fig1-1_Site_Loc.mxd
Revised: 2013-10-28 By: seorles

October 2013
160950528

Stantec

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.

Legend

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

Client/Project

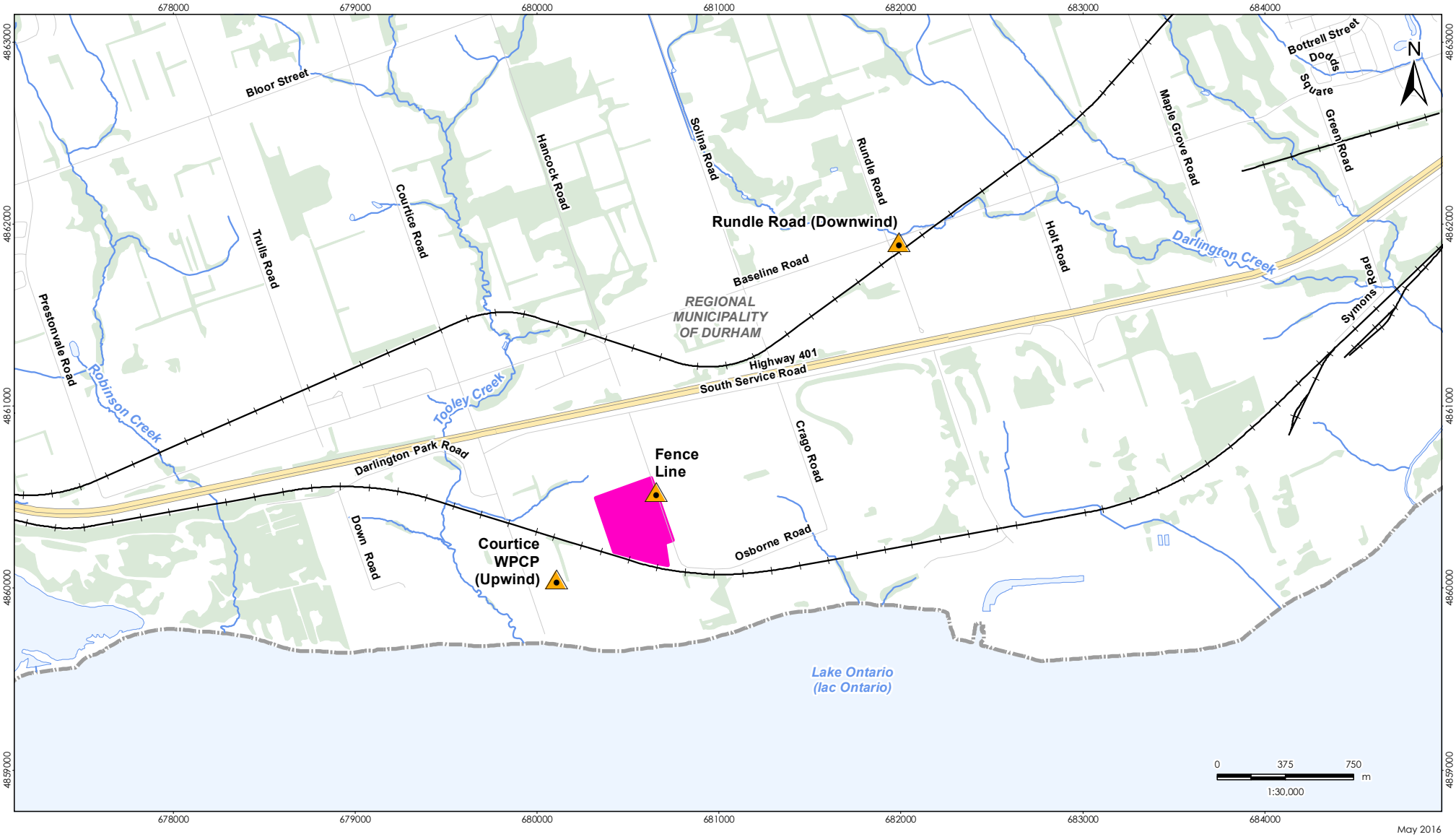
The Region of Durham
Durham York Energy Centre

Figure No.

1-1

Title

Site Location Plan



May 2016
160950528

\\cd1215-001\work_group\01609\Active\160950528\planning\drawing\MXD\Atmospheric\2016_Report\160950528_Atm_Fig1-2_Ambient_Monitor_Loc_2016.mxd
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 monitoring 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).

Key Components Assessed
August 8, 2016

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. The first set of criteria are the Standards reported in O. Reg. 419/05 (Schedules 3 and 6). These are compliance based Standards used throughout the province of Ontario. However, 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 2016 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 (µg/m^3)	24-Hour (µg/m^3)	Annual (µg/m^3)	1-Hour (µg/m^3)	24-Hour (µg/m^3)	Annual (µg/m^3)
Sulphur dioxide	7446095	690	275	-	690	275	29
Nitrogen oxides [A]	10102-44-0	400	200	-	400	200	60
Contaminant	**CAS**	**Canadian Ambient Air Quality Standards (CAAQS)**			**HHRA Health-Based Criteria**		
		1-Hour (µg/m^3)	24-Hour (µg/m^3)	Annual (µg/m^3)	1-Hour (µg/m^3)	24-Hour (µg/m^3)	Other time Period (µg/m^3)
$PM_{2.5}$	N/A	-	28 [B]	10 [C]	-	30 [D]	-

Notes:

A. The Schedule 3 Standards for NO_X are 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 April 2012 version of O. Reg. 419/05 Summary of Standards and Guidelines, 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			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
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

Table 2-3 Summary of Air Quality Criteria for Metals

Contaminant	CAS	O. Reg. 419/05 – Schedule 3 Standards			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)
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			HHRA Health-Based Criteria			
		1-Hour (ng/m³)	24-Hour (ng/m³)	Other time Period (ng/m³)	1-Hour (ng/m³)	24-Hour (ng/m³)	Annual (ng/m³)	Toxic Equivalency Factor Annual [A, G] (ng/m³)⁻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

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

Contaminant	CAS	O. Reg. 419/05 – Schedule 3 Standards			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] $(ng/m^3)^{-1}$
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	-
Perylene	198-55-0	-	-	-	500	-	-	1
Phenanthrene	85-01-8	-	-	-	500	-	-	1
Pyrene	129-00-0	-	-	-	500	-	-	1

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

Contaminant	CAS	O. Reg. 419/05 – Schedule 3 Standards			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] $(ng/m^3)^{-1}$
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 (TEFs).

F. Ontario Ambient Air Quality Criteria

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

3.0 INSTRUMENTATION SUMMARY

3.1 INSTRUMENTATION

The measurement program at the monitoring sites 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	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 Monitor Labs Sulphur Dioxide Analyzer 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

Instrumentation Summary
August 8, 2016

Two manually operated, hi-volume air samplers are installed at both the Courtice WPCP (predominantly upwind) and Rundle Road (predominantly downwind) monitoring 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

Some operational issues at the sites were encountered this quarter including: a malfunction of the Courtice WPCP SO_2 monitor requiring manufacturer repair; bird damage to non-continuous samples at the Courtice WPCP Station; and metals sampler mass flow controller adjustments to address MOECC audit results. 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	Internal pump and UV detector failed	15-Apr-16 to 21-Apr-16	Removed monitor for manufacturer repairs. Reinstalled and calibrated. Data during this time was not collected.
	Internal clock not synchronized with logger time.	27-Jun-16	Adjusted internal clock. All data intact.
NOx	Evidence of temporary pump failure	Discovered 29-Apr-16 Replaced 12-May-16	Suspected to be due to a power outage. Pump replaced as a precaution. All data intact.
	Internal clock not synchronized with logger time.	8-Jun-16 and 27-Jun-16	Adjusted internal clock. All data intact.
$PM_{2.5}$	None		
TSP/Metals Hi-Vol.	Sampler flow rate not consistent due to mass flow controller probe malfunction.	6-May-16 to 17-May-16	Initially diagnosed as a motor issue during the station visit on May 11. Replacement motor ordered and installed, with no effect. Issue subsequently determined to be the mass flow controller (MFC). MFC removed and sent to manufacturer for repair. Replaced mass flow controller with alternate on May 17. Samples on May 6 and 12 invalidated.
	Sample was destroyed by birds.	30-May-16 to 3-Jun-16	Cleaned hi-vol interior of nesting materials and installed barrier to prevent bird access. No sample collected.
PAH/ D/F Hi-Vol	Minor bird damage to sample pre-filter. Bird nesting materials found in sampler.	Noted 6-Jun-16. Affected 5-Jun-16 sample.	Removed materials, cleaned hi-vol interior, and upgraded bird barrier. Sample results reviewed and deemed valid.
	Sampler ran too long due to operator error in setting the mechanical timer off-time set screw.	17-Jun-16 sample	Reviewed with operator requirement to confirm mechanical timer setup each site visit. PAH sample invalidated.
Other	None		

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

Parameter	Issues	Time Frame	Remedial Action
SO_2	Evidence of power outage.	Noted 25-May-16	Cleared warning message. All data intact.
	Evidence of power outage.	Noted 8-Jun-16. Believed to have occurred 5-Jun-16.	Cleared warning message. All data intact.
	Internal clock not synchronized with actual time.	30-Jun-16	Adjusted internal clock. All data intact.
NO_X	Evidence of power outage.	Noted 25-May-16	Cleared warning message. All data intact.
	Evidence of power outage.	Noted 8-Jun-16. Believed to have occurred 5-Jun-16.	Cleared warning message. All data intact.
	Internal clock not synchronized with actual time.	30-Jun-16	Adjusted internal clock. All data intact.
$PM_{2.5}$	None		
TSP/Metals Hi-Vol.	Flow rate deviation during MOECC audit.	13-May-16	Conducted check of unit's operation and replaced a motor gasket. Recalibrated and adjusted flow rate.
PAH/ D/F Hi-Vol	Power outage during run.	Noted 8-Jun-16. Outage occurred on 5-Jun-16 during a thunderstorm.	Reset GFI receptacle. PAH/DF sample not collected.
Other			

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

Parameter	Issues	Time Frame	Remedial Action
TSP/Metals Hi-Vol.	Flow rate deviation during MOECC audit. Unit's chart recorder reading not consistent with a manometer.	13-May-16 to 17-May-16	Replaced chart recorder with a spare on May 17. Recalibrated and adjusted flow rate.

3.3 INSTRUMENTATION RECOVERY RATES

Data recovery rates for each continuous monitor at the three monitoring stations during Quarter 2 (April to June 2016) are presented in **Table 3-7** to **Table 3-8**.

Table 3-7 Summary of Data Recovery Rates for the Courtice WPCP Station (Predominately Upwind) – April to June 2016

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO_2	2021	92.5% [A]
NO_X	2173	99.5% [A]
$PM_{2.5}$	2177	99.7% [A]
Temperature	2184	100.0% [A]
Rainfall	2184	100.0% [A]
Relative Humidity	2184	100.0% [A]
Pressure	2184	100.0% [A]
Wind Speed/Direction	2184	100.0% [A]
TSP/Metals	12 [B]	80%
PAHs	7 [B]	88%
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 2016

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO_2	2173	99.5% [A]
NO_X	2174	99.5% [A]
$PM_{2.5}$	2176	99.6% [A]
Temperature	2183	100.0% [A]
Rainfall	2183	100.0% [A]
Relative Humidity	2183	100.0% [A]
Wind Speed/Direction	2183	100% [A]
TSP/Metals	15 [B]	100%
PAHs	7 [B]	88%
Dioxins and Furans	3 [B]	75%

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 2016

Parameter	Valid Measurements [B]	Data Recovery Rate (%)
TSP/Metals [A]	15	100%

Notes:

A. Includes instrumentation issues summarized in Table 3-6, quarterly MOECC audit, and monthly calibrations

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 2016 are presented in **Appendix A**.

4.0 SUMMARY OF AMBIENT MEASUREMENTS

The following sections provide summaries of the validated data and the validation done 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 2016 period are presented in **Table 4-1**.

Table 4-1 Summary of Hourly Meteorological Measurements – April to June 2016

Parameter		Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)	Units
Temperature	Maximum	27.8	29.6	C
	Minimum	-8.2	-9.0	C
	Mean (April)	4.2	4.1	C
	Mean (May)	12.5	13.0	C
	Mean (June)	17.2	17.8	C
	Mean (Period)	11.3	11.7	C
	Standard Deviation	7.2	7.8	C
Rainfall	Maximum	4.2	5.6	mm
	Minimum	0.0	0.0	mm
	Mean (April)	0.05	0.06	mm
	Mean (May)	0.03	0.03	mm
	Mean (June)	0.01	0.04	mm
	Mean (Period)	0.03	0.04	mm
	Standard Deviation	0.20	0.28	mm
Relative Humidity	Maximum	96.6	99.9	%
	Minimum	19.9	21.7	%
	Mean (April)	58.3	61.4	%
	Mean (May)	64.6	66.0	%
	Mean (June)	61.2	63.0	%
	Mean (Period)	61.4	63.5	%
	Standard Deviation	15.8	17.7	%

Table 4-1 Summary of Hourly Meteorological Measurements – April to June 2016

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)	29.8	-	in Hg
	Mean (May)	29.7	-	in Hg
	Mean (June)	29.6	-	in Hg
	Mean (Period)	29.7	-	in Hg
	Standard Deviation	0.2	-	in Hg
Wind Speed [B]	Maximum	38.0	30.8	km/hr
	Minimum	0.2	0.0	km/hr
	Mean (April)	13.1	11.7	km/hr
	Mean (May)	9.5	9.5	km/hr
	Mean (June)	10.0	9.6	km/hr
	Mean (Period)	10.8	10.2	km/hr
	Standard Deviation	6.3	5.5	km/hr

Notes:

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

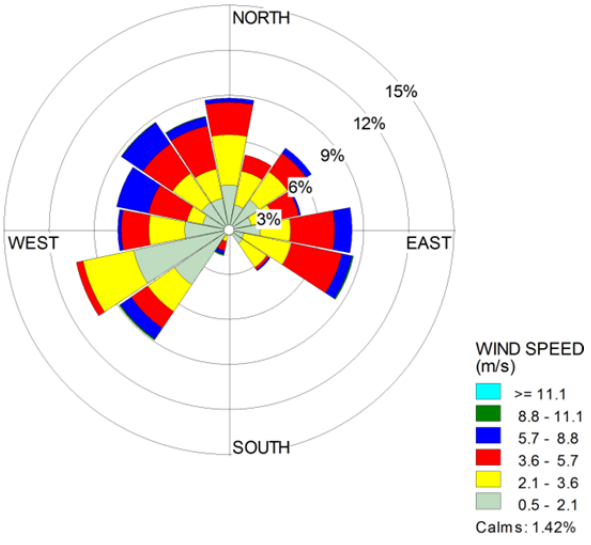
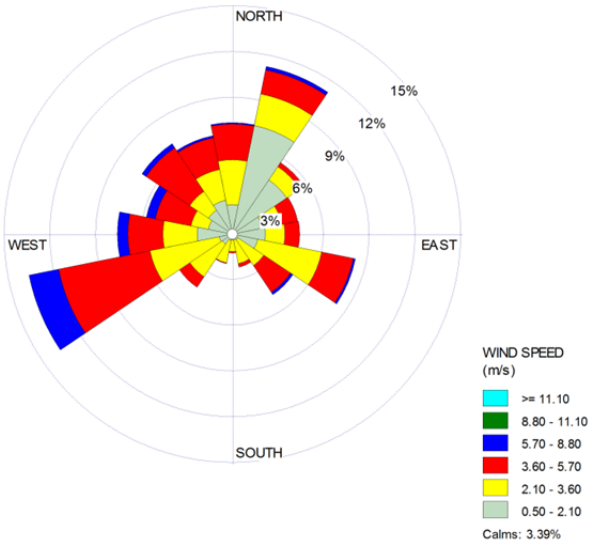
B. Wind speed at Courtice WPCP Station measured at 20-m and at Rundle Road Station at 10-m.

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 southwesterly to northerly and easterly directions. Wind contribution from the south was low. Higher wind speeds occurred from northwesterly and easterly directions, and lower wind speeds from southwesterly directions.

At the Rundle Road Station, the wind rose over the three-month period showed winds predominantly occurring from west-southwesterly and north-northeasterly directions. Higher wind speeds are noted occurring from the west-southwest.

Figure 4-1 Wind Roses for April to June 2016

Courtice WPCP Station (Predominately Upwind) at 20 m Above Ground	Rundle Road Station (Predominately Downwind) at 10 m Above Ground
	

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 2016.

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. As specified in the MOECC's listing of AAQCs (MOECC, 2012a) the AAQC were compared to measured NO_2 concentrations in this report. However, as per the current April 2012 version of O. Reg. 419/05 Summary of Standards and Guidelines, the Schedule 3 Standard for NO_X (MOECC, 2012b) was 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 2016

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	57.1	153.6	30.0	80.3
				Minimum	0.0	0.0	0.0	0.0
				Mean (April)	2.5	6.9	1.0	2.7
				Mean (May)	2.8	7.6	0.7	1.8
				Mean (June)	1.7	4.7	0.9	2.5
				Mean (Period)	2.3	6.4	0.8	2.3
				Standard Deviation	4.6	12.6	1.6	4.3
				# of Exceedances	0	0	0	0
	24	100	275	Maximum	12.0	33.2	4.1	11.1
				Minimum	0.0	0.1	0.0	0.0
				Mean (April)	2.4	6.9	1.0	2.7
				Mean (May)	2.8	7.6	0.7	1.8
				Mean (June)	1.7	4.5	0.9	2.4
				Mean (Period)	2.3	6.3	0.8	2.3
				Standard Deviation	2.0	5.5	0.6	1.7
				# of Exceedances	0	0	0	0

Table 4-2 Summary of Ambient CAC Monitoring Data – April to June 2016

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	-	34.7	-	26.9
				Minimum	-	1.9	-	0.0
				Mean (April)	-	6.9	-	6.2
				Mean (May)	-	10.4	-	7.8
				Mean (June)	-	6.6	-	6.8
				Mean (Period)	-	8.0	-	6.9
				Standard Deviation	-	5.0	-	5.3
				# of Exceedances	-	N/A	-	N/A
NO_2	1	200 [B]	400 [B]	Maximum	43.6	85.8	33.4	65.2
				Minimum	0.0	0.0	0.0	0.0
				Mean (April)	6.3	12.7	4.4	8.8
				Mean (May)	7.8	15.3	5.9	11.5
				Mean (June)	5.5	10.6	4.6	8.8
				Mean (Period)	6.5	12.9	5.0	9.7
				Standard Deviation	7.2	14.2	5.2	10.1
				# of Exceedances	0	0	0	0
	24	100 [B]	200 [B]	Maximum	16.6	32.9	16.4	31.6
				Minimum	1.0	2.0	0.0	0.0
				Mean (April)	6.3	12.7	4.5	9.1
				Mean (May)	7.8	15.3	5.9	11.4

Table 4-2 Summary of Ambient CAC Monitoring Data – April to June 2016

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)	5.5	10.5	4.6	8.8
				Mean (Period)	6.5	12.8	5.0	9.8
				Standard Deviation	3.4	6.7	3.1	6.1
				# of Exceedances	0	0	0	0
NO[C]	1	NA	NA	Maximum	69.5	94.4	42.8	53.9
				Minimum	0.0	0.0	0.0	0.0
				Mean (April)	2.9	3.9	2.4	3.1
				Mean (May)	3.4	4.4	2.2	2.8
				Mean (June)	1.9	2.4	1.2	1.5
				Mean (Period)	2.8	3.6	1.9	2.5
				Standard Deviation	4.9	6.4	3.3	4.2
				# of Exceedances	N/A	N/A	N/A	N/A
	24	NA	NA	Maximum	14.4	18.6	9.0	11.3
				Minimum	0.2	0.3	0.1	0.1
				Mean (April)	2.9	3.8	2.4	3.1
				Mean (May)	3.4	4.4	2.2	2.8
				Mean (June)	1.9	2.4	1.2	1.5
				Mean (Period)	2.8	3.5	1.9	2.5
				Standard Deviation	2.4	3.1	1.3	1.7
				# of Exceedances	N/A	N/A	N/A	N/A

Table 4-2 Summary of Ambient CAC Monitoring Data – April to June 2016

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)
NO_X	1	200 [B]	400 [B]	Maximum	97.1	202.3	61.9	122.7
				Minimum	0.0	0.0	0.0	0.0
				Mean (April)	9.3	18.7	6.8	13.6
				Mean (May)	11.3	22.1	8.2	15.9
				Mean (June)	7.4	14.2	5.9	11.3
				Mean (Period)	9.3	18.4	7.0	13.6
				Standard Deviation	10.8	21.6	7.5	14.7
				# of Exceedances	0	0	0	0
	24	100 [B]	200 [B]	Maximum	31.1	61.7	20.9	40.3
				Minimum	1.4	2.9	0.2	0.4
				Mean (April)	9.2	18.6	6.9	13.9
				Mean (May)	11.3	22.1	8.2	15.9
				Mean (June)	7.3	14.1	5.8	11.2
				Mean (Period)	9.3	18.3	7.0	13.7
				Standard Deviation	5.4	10.7	4.1	8.0
				# of Exceedances	0	0	0	0

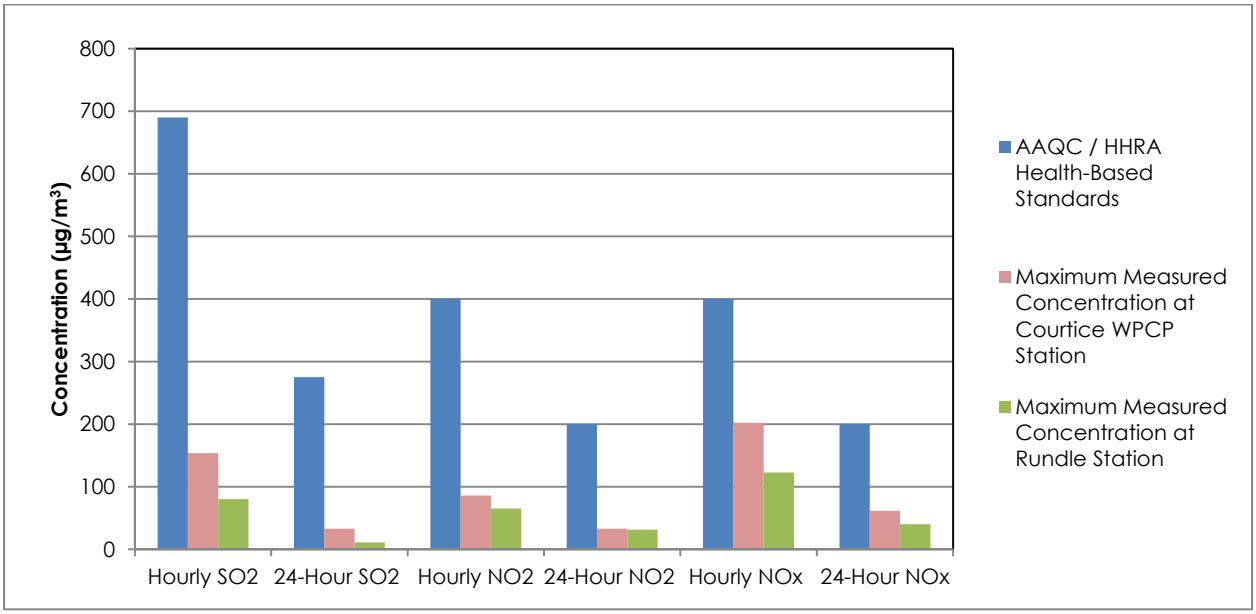
Notes:

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 (April 2012) of O. Reg. 419/05 Summary of Standards and Guidelines, 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.

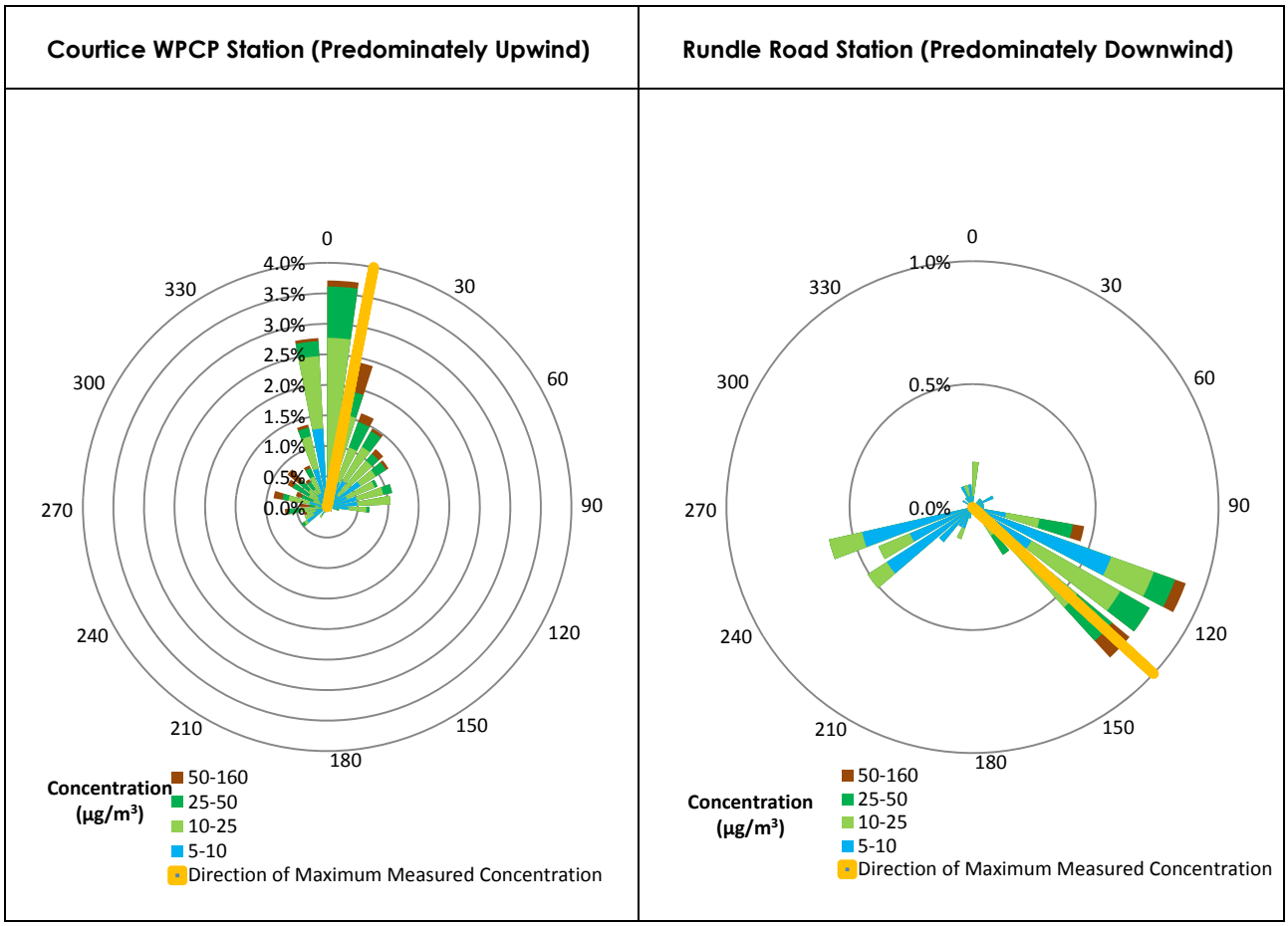
The maximum hourly and 24-hour average SO_2 concentrations measured at the Courtice WPCP Station during April to June 2016 were 57.1 and 12 ppb (153.6 and 33.2 µg/m³) respectively, which are 22.3% and 12.1% of the applicable 1-hour and 24-hour Ontario AAQCs.

The maximum hourly and 24-hour average SO_2 concentrations measured at the Rundle Road Station during this quarter were 30 and 4.1 ppb (80.3 and 11.1 µg/m³) respectively, which are 11.6% and 4% 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 75% 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 northerly directions. The highest measured concentration at this station was from the north-northeast. For the Rundle Road Station, higher hourly concentrations occurred for southeasterly winds. The maximum measured concentration at this station occurred for southeasterly winds.

Figure 4-3 Pollution Roses of Measured Hourly Average SO_2 Concentrations – April to June 2016



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 (as per MOECC 2012a). However, as per the current April 2012 version of O. Reg. 419/05 Summary of Standards and Guidelines, the Schedule 3 NO_X criteria were also compared to the monitored NO_X concentrations (see Section 4.2.3 below).

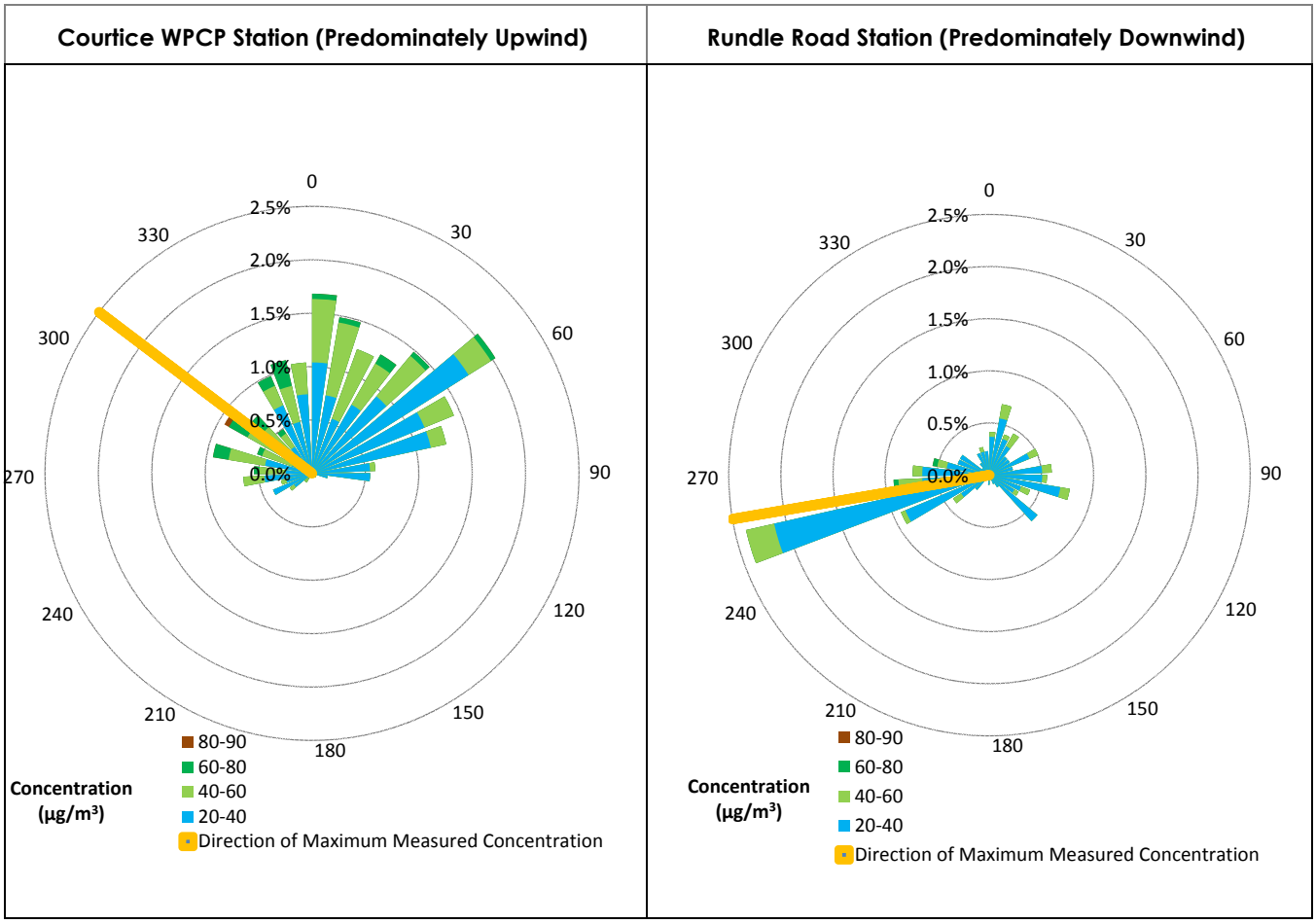
Data summaries are presented in **Appendix C** for nitrogen dioxide for each station and month as well as time history plots of the hourly and 24-hour average NO_2 concentrations. For the hourly and 24-hour averages, the Ontario AAQCs of 200 ppb and 100 ppb (400 µg/m^3 and 200 µg/m^3) are shown with 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 43.6 and 16.6 ppb (85.8 and 32.9 µg/m^3) respectively, which are 21.5% and 16.5% 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 33.4 and 16.4 ppb (65.2 and 31.6 µg/m^3), which are 16.3% and 15.8% 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**. Concentrations less than 20 µg/m^3, which account for 85% of the measurements at both the Courtice WPCP and Rundle Road Stations, have been removed from the plots to allow the distribution of maximum levels to be more clearly shown in the figures.

The measured hourly average concentrations at the Courtice WPCP Station were higher for winds from northwesterly to northeasterly directions. The maximum measured hourly average NO_2 concentration for the Courtice WPCP Station occurred for a northwesterly wind. For the Rundle Road Station, higher measured hourly average concentrations occurred for winds blowing from the west. The maximum measured hourly average concentration at the Rundle Road Station occurred for a wind blowing from the west-southwest.

Figure 4-4 Pollution Roses of Measured Hourly Average NO_2 Concentrations – April to June 2016



4.2.3 Nitrogen Oxides (NO_X)

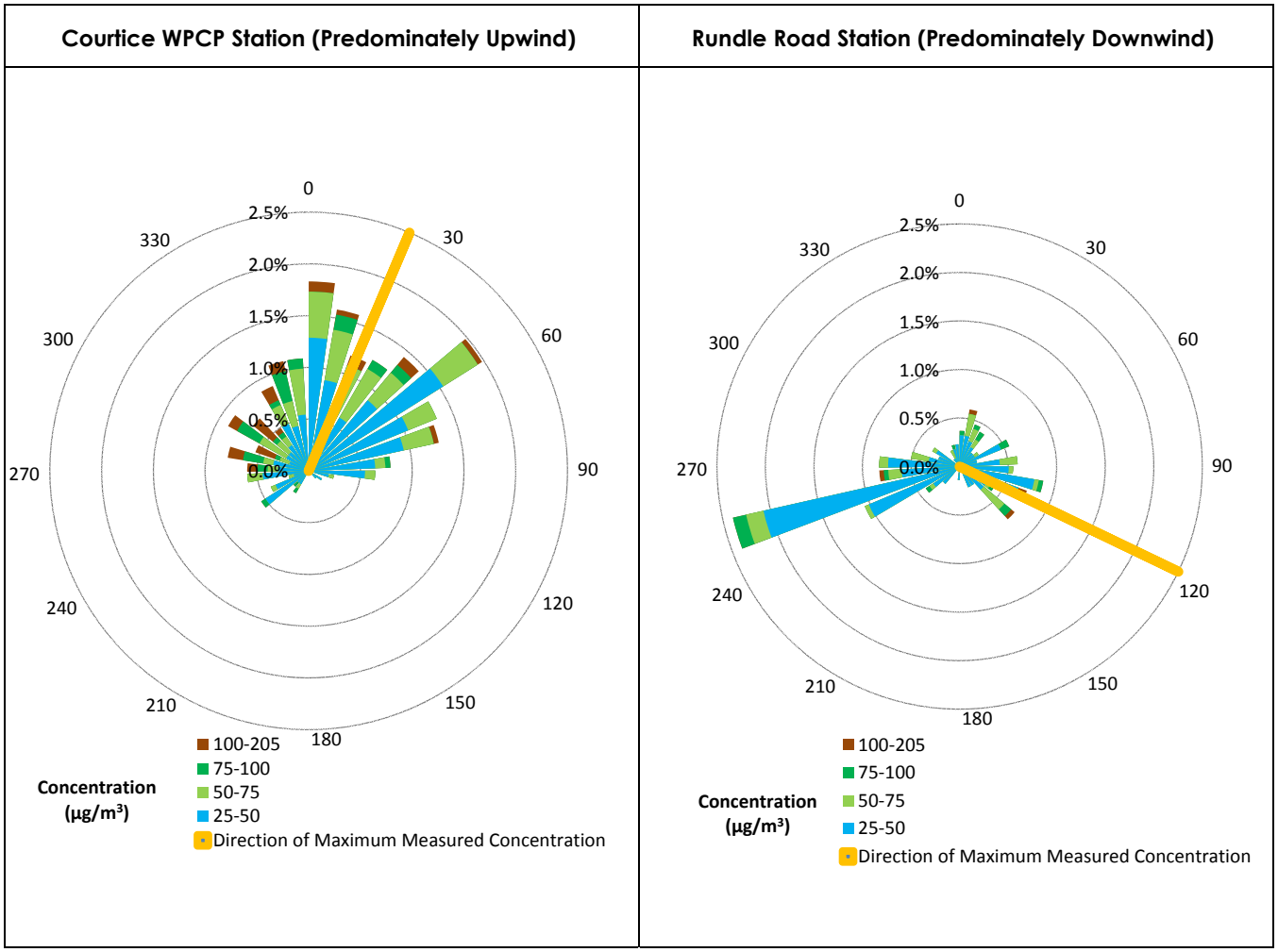
Data summaries are presented in **Appendix D** for nitrogen oxides for each station and month as well as time history plots of the hourly and 24-hour average NO_X concentrations. For the hourly and 24-hour averages, the O. Reg. 419/05 Schedule 3 Standards of 200 ppb and 100 ppb (400 µg/m³ and 200 µg/m³) 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 97.1 ppb (202.3 µg/m^3), which is 50.6% of the 1-hour Ontario AAQCs. The 24-hour average NO_X concentration measured at this station was 31.1ppb (61.7 µg/m^3), which is 30.8% 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 61.9 and 20.9 ppb (122.7 and 40.3 µg/m^3), which are 30.7% and 20.1% 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 85% of the measurements at the Courtice WPCP and 85% at the Rundle Road Station, have been removed from the plots to allow the distribution of maximum levels to be more clearly shown in the figures.

In **Figure 4-5**, higher measured hourly average NO_X concentrations at the Courtice WPCP Station occurred for winds blowing from westerly to northeasterly directions. The maximum measured concentration was for a wind blowing from the northeast. At the Rundle Road Station, higher measured hourly average concentrations occurred for westerly and northerly to southeasterly winds. The maximum measured hourly average NO_X concentration occurred for an east-southeasterly wind.

Figure 4-5 Pollution Roses of Measured Hourly Average NO_X Concentrations – April to June 2016



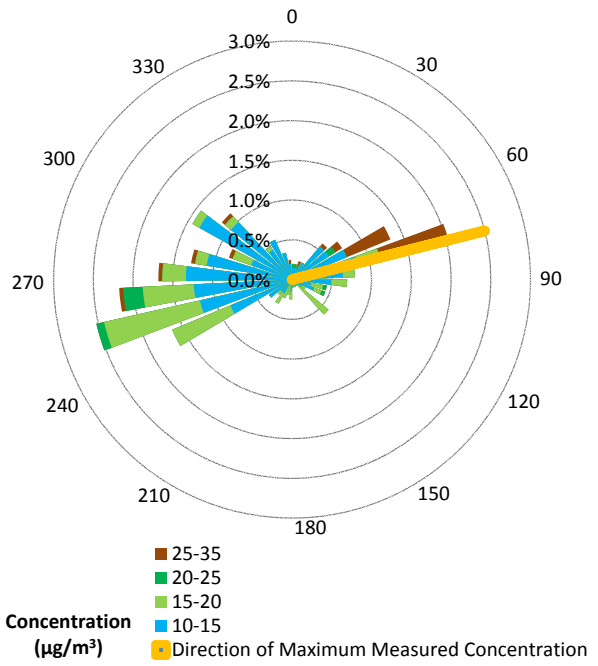
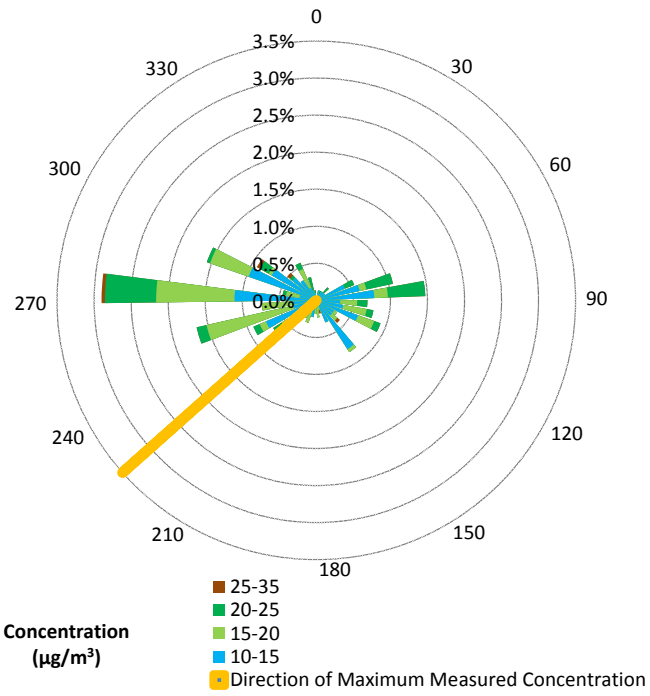
4.2.4 Particulate Matter Smaller than 2.5 Microns ($PM_{2.5}$)

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 34.7 µg/m^3 and 26.9 µg/m^3 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/m^3 (CAAQS) or 30 µg/m^3 (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 2016 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/m^3, which account for 83% of the measurements at the Courtice WPCP and 79% 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.

The maximum measured concentrations occurred for east-northeasterly winds for the Courtice WPCP Station. The maximum measured concentration occurred for an east-northeasterly wind. For the Rundle Road Station, higher measured 24-hour average concentrations occurred for westerly and easterly winds. The maximum measured concentration occurred for a southwesterly wind.

Figure 4-6 Pollution Roses of Measured 24-Hour Average $PM_{2.5}$ Concentrations – April to June 2016

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.

Summary of Ambient Measurements
August 8, 2016

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	95	13	0	90	17	0	80	17	0
Total Mercury (Hg)	µg/m³	2	2	3.62E-05	6.01E-06 [A]	0	2.50E-05	5.79E-06 [A]	0	4.79E-05	5.76E-06 [A]	0
Aluminum (Al)	µg/m³	4.8	-	6.78E-01	6.56E-02	0	7.43E-01	7.22E-02	0	6.52E-01	9.89E-02	0
Antimony (Sb)	µg/m³	25	25	3.67E-03 [A]	2.93E-03 [A]	0	3.34E-03 [A]	2.90E-03 [A]	0	3.40E-03 [A]	2.83E-03 [A]	0
Arsenic (As)	µg/m³	0.3	0.3	2.20E-03 [A]	1.76E-03 [A]	0	4.72E-03	1.74E-03 [A]	0	2.04E-03 [A]	1.70E-03 [A]	0
Barium (Ba)	µg/m³	10	10	2.18E-02	3.69E-03	0	2.37E-02	3.61E-03	0	2.06E-02	3.93E-03	0
Beryllium (Be)	µg/m³	0.01	0.01	3.67E-04 [A]	2.93E-04 [A]	0	3.34E-04 [A]	2.90E-04 [A]	0	3.40E-04 [A]	2.83E-04 [A]	0
Bismuth (Bi)	µg/m³	-	-	2.20E-03 [A]	1.76E-03 [A]	-	2.00E-03 [A]	1.74E-03 [A]	-	2.04E-03 [A]	1.70E-03 [A]	-
Boron (B)	µg/m³	120	-	8.50E-03	1.80E-03 [A]	0	7.45E-03	1.74E-03 [A]	0	8.49E-03	1.73E-03 [A]	0
Cadmium (Cd)	µg/m³	0.025	0.025	7.34E-04 [A]	5.86E-04 [A]	0	6.68E-04 [A]	5.79E-04 [A]	0	9.09E-03	6.26E-04 [A]	0
Chromium (Cr)	µg/m³	0.5	-	5.20E-03	1.50E-03 [A]	0	7.93E-03	1.52E-03 [A]	0	5.26E-03	1.44E-03 [A]	0
Cobalt (Co)	µg/m³	0.1	0.1	7.34E-04 [A]	5.86E-04 [A]	0	6.68E-04 [A]	5.79E-04 [A]	0	6.79E-04 [A]	5.66E-04 [A]	0
Copper (Cu)	µg/m³	50	-	1.14E-01	2.16E-02	0	9.87E-02	2.14E-02	0	7.70E-02	1.14E-02	0
Iron (Fe)	µg/m³	4	-	1.58E+00	1.21E-01	0	1.80E+00	2.07E-01	0	1.36E+00	2.07E-01	0
Lead (Pb)	µg/m³	0.5	0.5	7.52E-03	8.99E-04 [A]	0	5.93E-03	9.12E-04 [A]	0	1.02E-02	8.65E-04 [A]	0
Magnesium (Mg)	µg/m³	-	-	1.14E+00	6.90E-02	-	1.10E+00	9.72E-02	-	1.01E+00	1.20E-01	-
Manganese (Mn)	µg/m³	0.4	-	4.86E-02	4.60E-03	0	6.56E-02	7.41E-03	0	4.65E-02	7.73E-03	0
Molybdenum (Mo)	µg/m³	120	-	3.15E-03	8.99E-04 [A]	0	6.24E-03	9.34E-04 [A]	0	5.25E-03	9.24E-04 [A]	0
Nickel (Ni)	µg/m³	0.2	-	2.40E-03	9.02E-04 [A]	0	1.94E-02	8.90E-04 [A]	0	2.57E-03	8.65E-04 [A]	0
Phosphorus (P)	µg/m³	-	-	4.60E-01	7.73E-03 [A]	-	1.03E-01	7.90E-03 [A]	-	1.09E-01	1.77E-02	-
Selenium (Se)	µg/m³	10	10	3.67E-03 [A]	2.93E-03 [A]	0	3.34E-03 [A]	2.90E-03 [A]	0	3.40E-03 [A]	2.83E-03 [A]	0
Silver (Ag)	µg/m³	1	1	1.83E-03 [A]	1.47E-03 [A]	0	1.67E-03 [A]	1.45E-03 [A]	0	1.70E-03 [A]	1.42E-03 [A]	0
Strontium (Sr)	µg/m³	120	-	1.86E-02	1.33E-03	0	1.95E-02	1.81E-03	0	1.86E-02	2.29E-03	0
Thallium (Tl)	µg/m³	-	-	3.67E-03 [A]	2.93E-03 [A]	-	3.34E-03 [A]	2.90E-03 [A]	-	3.40E-03 [A]	2.83E-03 [A]	-
Tin (Sn)	µg/m³	10	10	3.67E-03 [A]	2.93E-03 [A]	0	8.21E-03	2.90E-03 [A]	0	3.40E-03 [A]	2.83E-03 [A]	0
Titanium (Ti)	µg/m³	120	-	2.82E-02	3.02E-03 [A]	0	3.50E-02	2.90E-03 [A]	0	2.93E-02	3.27E-03 [A]	0
Vanadium (V)	µg/m³	2	1	1.83E-03 [A]	1.47E-03 [A]	0	3.14E-03	1.45E-03 [A]	0	1.70E-03 [A]	1.42E-03 [A]	0
Zinc (Zn)	µg/m³	120	-	8.65E-02	1.18E-02	0	4.86E-02	7.01E-03	0	7.96E-02	1.37E-02	0
Zirconium (Zr)	µg/m³	20	-	1.83E-03 [A]	1.47E-03 [A]	0	1.67E-03 [A]	1.45E-03 [A]	0	1.70E-03 [A]	1.42E-03 [A]	0
Total Uranium (U)	µg/m³	1.5	-	1.65E-04 [A]	1.32E-04 [A]	0	1.50E-04 [A]	1.30E-04 [A]	0	1.53E-04 [A]	1.27E-04 [A]	0

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

4.4 AMBIENT PAH CONCENTRATIONS

A summary of the maximum and minimum ambient PAH concentrations (for a daily averaging period) are presented in **Table 4-4**. 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 well below their applicable 24-hour criteria, with the exception of six (6) measurements of benzo(a)pyrene (B(a)P) collected at the two monitoring stations.

The current Ontario 24-hour B(a)P AAQC was introduced in 2011 and levels above this recently enacted AAQC are commonly measured throughout Ontario. B(a)P measurement data available from the National Air Pollutant Surveillance (NAPS) network for Ontario in 2013 (for Simcoe, Toronto and Hamilton), all had maximum levels above the AAQC (varying between 136% - 6220% of the criteria). Available NAPS data for Ontario in 2012 (for Windsor, Toronto and Hamilton) showed maximum B(a)P levels at these stations that varied between 716% - 2920% of the Ontario AAQCs. In 2011, NAPS data available for seven Ontario stations (Windsor, Toronto, Etobicoke, Hamilton, Simcoe, Pt. Petrie and Burnt Island) showed exceedances at six of the seven stations, with only the remote Burnt Island Ontario station reporting a maximum level below the MOECC AAQC. In 2010, all of these stations, including the Burnt Island station, measured B(a)P levels above the AAQC.

Benzo(a)pyrene (B(a)P) is a byproduct of a wide variety of natural and man-made combustion processes (including motor vehicles, natural gas, wood, refuse, oil, forest fires, etc.) and is widely present in the environment (including being present in soil and water).

The B(a)P level in three (3) samples collected at the Courtice WPCP Station on April 6, April 18 and May 24, 2016 exceeded the Ontario AAQC by 1%, 66% and 44%, respectively. The three (3) B(a)P samples collected at the Rundle Road Station on the same days also exceeded the Ontario AAQC by 3%, 21% and 33%. All B(a)P samples were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOECC O. Reg. 419/05 24-hour average guideline, and the HHRA health based criterion. A summary of the wind directions and potential source contributions for these measurements is presented in **Table 4-5**.

Based on the air quality assessments completed during the Environmental Assessment Study and the Environmental Compliance Approval application for the DYEC, the facility will not be a significant contributor of B(a)P. Therefore, ambient B(a)P levels are not expected to be substantially impacted by the operation of the DYEC.

Table 4-4 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	0.083	0.008	3 0 0	0.066	0.024	3 0 0
1-Methylnaphthalene	ng/m³	12,000	-	8.96E+00	2.25E+00	0	8.79E+00	3.63E+00	0
2-Methylnaphthalene	ng/m³	10,000	-	1.81E+01	3.45E+00	0	1.57E+01	5.95E+00	0
Acenaphthene	ng/m³	-	-	9.44E+00	8.08E-01	-	1.03E+01	1.83E+00	-
Acenaphthylene	ng/m³	3,500	-	1.05E-01 [F]	6.34E-02 [F]	0	1.08E-01 [F]	6.57E-02 [F]	0
Anthracene	ng/m³	200	-	1.05E-01 [F]	6.34E-02 [F]	0	4.92E-01	7.43E-02 [F]	0
Benzo(a)anthracene	ng/m³	-	-	1.05E-01 [F]	6.34E-02 [F]	-	1.08E-01 [F]	6.57E-02 [F]	-
Benzo(a)fluorene	ng/m³	-	-	2.11E-01 [F]	1.27E-01 [F]	-	2.17E-01 [F]	1.31E-01 [F]	-
Benzo(b)fluoranthene	ng/m³	-	-	2.48E+00	6.34E-02 [F]	-	1.08E-01 [F]	6.57E-02 [F]	-
Benzo(b)fluorene	ng/m³	-	-	2.11E-01 [F]	1.27E-01 [F]	-	2.17E-01 [F]	1.31E-01 [F]	-
Benzo(e)pyrene	ng/m³	-	-	2.11E-01 [F]	1.27E-01 [F]	-	2.17E-01 [F]	1.31E-01 [F]	-
Benzo(g,h,i)perylene	ng/m³	-	-	2.45E+00	6.34E-02 [F]	-	1.08E-01 [F]	6.57E-02 [F]	-
Benzo(k)fluoranthene	ng/m³	-	-	2.51E+00	6.34E-02 [F]	-	1.08E-01 [F]	6.57E-02 [F]	-
Biphenyl	ng/m³	-	-	4.82E+00	1.34E+00	-	3.94E+00	1.85E+00	-
Chrysene	ng/m³	-	-	1.05E-01 [F]	6.34E-02 [F]	-	1.08E-01 [F]	6.57E-02 [F]	-
Dibenz(a,h)anthracene [D]	ng/m³	-	-	2.79E+00	6.34E-02 [F]	-	1.08E-01 [F]	6.57E-02 [F]	-
Dibenzo(a,c) anthracene + Picene [D]	ng/m³	-	-	3.00E+00	1.27E-01 [F]	-	2.17E-01 [F]	1.31E-01 [F]	-
Fluoranthene	ng/m³	-	-	1.46E+00	4.61E-01	-	3.76E+00	6.48E-01	-

Table 4-4 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	-	-	2.82E+00	6.34E-02 [F]	-	1.08E-01 [F]	6.57E-02 [F]	-
Naphthalene	ng/m^3	22,500	22,500	3.22E+01	1.18E+01	0	4.92E+01	1.55E+01	0
o-Terphenyl	ng/m^3	-	-	2.11E-01 [F]	1.27E-01 [F]	-	2.17E-01	1.31E-01 [F]	-
Perylene	ng/m^3	-	-	2.11E-01 [F]	1.27E-01 [F]	-	2.17E-01	1.31E-01 [F]	-
Phenanthrene	ng/m^3	-	-	7.91E+00	1.48E+00	-	1.52E+01	1.99E+00	-
Pyrene	ng/m^3	-	-	4.86E-01	2.58E-01	-	1.51E+00	3.75E-01	-
Tetralin	ng/m^3	-	-	2.08E+00	6.79E-01	-	3.31E+00	1.09E+00	-
Total PAH [E]	ng/m^3	-	-	81.8	26.8	-	1.04E+02	3.93E+01	-

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 analysed PAH species.

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

Table 4-5 Source Contribution Analysis – Quarter 2 2016 B(a)P Exceedances

Date	Station	% above the MOECC B(a)P Criterion	Wind Direction (blowing from)	Potential Source Contributions
April 6, 2016	Courtice WPCP	1%	East-Southeast	Land use in this direction is primarily agricultural with some commercial usage (including the Courtice WPCP). Potential sources could be agricultural activities or a nearby poorly controlled commercial / residential combustion source operating.
	Rundle Road	3%	Southeast	Land use in this direction is primarily agricultural with Highway 401and a Canadian Pacific rail line also located to the southeast.
April 18, 2016	Courtice WPCP	66%	West	Land use in this direction is primarily agricultural. Potential sources could be agricultural activities.
	Rundle Road	21%	Northwest	Land use in this wind direction is mainly agricultural. Potential sources could be agricultural activities or a residence with a poorly controlled combustion source operating.
May 24, 2016	Courtice WPCP	47%	West	Land use in this direction is primarily agricultural. Potential sources could be agricultural activities.
	Rundle Road	33%	West	Land use in this direction is a mix of agricultural and commercial. Potential sources could be a nearby business or residence with a poorly controlled combustion source operating.

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			5.22E-03 A	2.81E-03 A		4.71E-03 A	3.25E-03 A	
1,2,3,7,8-Penta CDD	pg/m³			5.35E-03 A	3.90E-03 A		5.05E-03 A	3.82E-03 A	
1,2,3,4,7,8-Hexa CDD	pg/m³			5.43E-03 A	3.64E-03 A		5.23E-03 A	4.57E-03 A	
1,2,3,6,7,8-Hexa CDD	pg/m³			5.57E-03 A	3.64E-03 A		5.23E-03 A	4.57E-03 A	
1,2,3,7,8,9-Hexa CDD	pg/m³			4.87E-03 A	3.79E-03 A		1.39E-02	4.04E-03 A	
1,2,3,4,6,7,8-Hepta CDD	pg/m³			6.88E-02	4.46E-03 A		9.08E-02	1.67E-02	
Octa CDD	pg/m³			2.50E-01	3.48E-02		3.47E-01	1.27E-01	
Total Tetra CDD	pg/m³			1.82E-02 A	2.81E-03 A		1.61E-02 A	3.25E-03 A	
Total Penta CDD	pg/m³			9.49E-03 A	3.93E-03 A		1.22E-02	8.08E-03 A	
Total Hexa CDD	pg/m³			4.36E-02	5.29E-03 A		8.32E-02	5.05E-03 A	
Total Hepta CDD	pg/m³			1.55E-01	1.03E-02		2.01E-01	7.74E-02	
2,3,7,8-Tetra CDF **	pg/m³			5.35E-03 A	4.03E-03 A		4.67E-03 A	4.17E-03 A	
1,2,3,7,8-Penta CDF	pg/m³	-	-	4.87E-03 A	3.51E-03 A	N/A	5.20E-03 A	3.96E-03 A	N/A
2,3,4,7,8-Penta CDF	pg/m³			4.87E-03 A	3.51E-03 A		5.20E-03 A	3.96E-03 A	
1,2,3,4,7,8-Hexa CDF	pg/m³			4.78E-03 A	3.64E-03 A		4.47E-03 A	3.25E-03 A	
1,2,3,6,7,8-Hexa CDF	pg/m³			4.50E-03 A	3.38E-03 A		4.19E-03 A	2.97E-03 A	
2,3,4,6,7,8-Hexa CDF	pg/m³			4.92E-03 A	3.64E-03 A		4.47E-03 A	3.25E-03 A	
1,2,3,7,8,9-Hexa CDF	pg/m³			5.34E-03 A	3.90E-03 A		4.91E-03 A	3.54E-03 A	
1,2,3,4,6,7,8-Hepta CDF	pg/m³			1.35E-02	4.04E-03 A		8.61E-03	4.04E-03 A	
1,2,3,4,7,8,9-Hepta CDF	pg/m³			5.61E-03 A	3.23E-03 A		4.91E-03 A	2.97E-03 A	
Octa CDF	pg/m³			1.64E-02	4.31E-03 A		1.36E-02	4.62E-03 A	
Total Tetra CDF	pg/m³			5.35E-03 A	4.03E-03 A		2.72E-02	4.17E-03 A	
Total Penta CDF	pg/m³			1.15E-02	3.79E-03 A		1.39E-02	4.71E-03 A	
Total Hexa CDF	pg/m³			4.78E-03 A	3.64E-03 A		1.02E-02	4.04E-03 A	
Total Hepta CDF	pg/m³			1.35E-02	4.46E-03 A		1.41E-02	4.33E-03 A	
TOTAL TOXIC EQUIVALENCY B	pg TEQ/m³	0.1 C 1 D	-	0.016	0.012	0	0.015	0.014	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. Ontario Ambient Air Quality Criteria
D. 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 2016.

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 well below their applicable Standard (as presented in **Table 2-3** in this report);
4. The maximum measured concentrations of all PAHs with MOECC air quality Standards were well below their applicable Standard shown in **Table 2-4,** with the exception of the 24-hour benzo(a)pyrene concentrations in three samples measured at the Courtice WPCP Station and three samples measured at the Rundle Road Station, which exceeded the applicable AAQC ranging from 1% to 66%. The current Ontario 24-hour B(a)P AAQC was introduced in 2011 and levels above this AAQC are commonly measured throughout Ontario. The measurements were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOECC O. Reg. 419/05 24-hour average guideline, and the HHRA health based criterion; and,
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 during the monitoring period between April to June 2016, with the exception of benzo(a)pyrene. Furthermore, all measured levels of the monitored contaminants were below their applicable HHRA health-based criteria.

6.0 REFERENCES

Canadian Council of Ministers of the Environment (CCME), (2007). Guidance Document on Achievement Determination. Canada-Wide Standards for Particulate Matter and Ozone. Revised (PN1391)(978-1-896997-74-2 PDF).

Canadian Council of Ministers of the Environment (CCME), (2012). Guidance Document on Achievement Determination. Canadian Ambient Air Quality Standards for Fine Particulate Matter and Ozone (PN 1483)(978-1-896997-91-9 PDF).

Jacques Whitford, (2009). Final Environmental Assessment, December 4, 2009.

Ontario Minister of the Environment and Climate Change(MOECC), (2010). Environmental Assessment Act, Section 9. Notice of Approval to Proceed with the Undertaking. Re: The Amended Environmental Assessment for Durham and York Residual Waste Study (EA File No: 04-EA-02-08).

Ontario Ministry of the Environment and Climate Change (MOECC), (2012a). Standards Development Branch, Ontario's Ambient Air Quality Criteria, April 2012. (PIBs 6570e01).

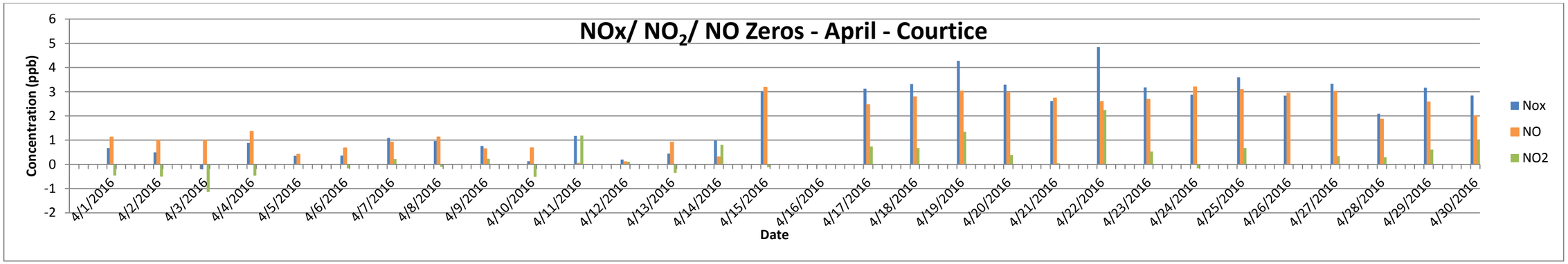
Ontario Ministry of the Environment and Climate Change (MOECC), (2012b). Standards Development Branch, Summary of Standards and Guidelines to support Ontario Regulation 419/05 – Air Pollution – Local Air Quality (including Schedule 6 of O. Reg 419/05 on Upper Risk Thresholds), April 2012 (PIBs 6569e01).

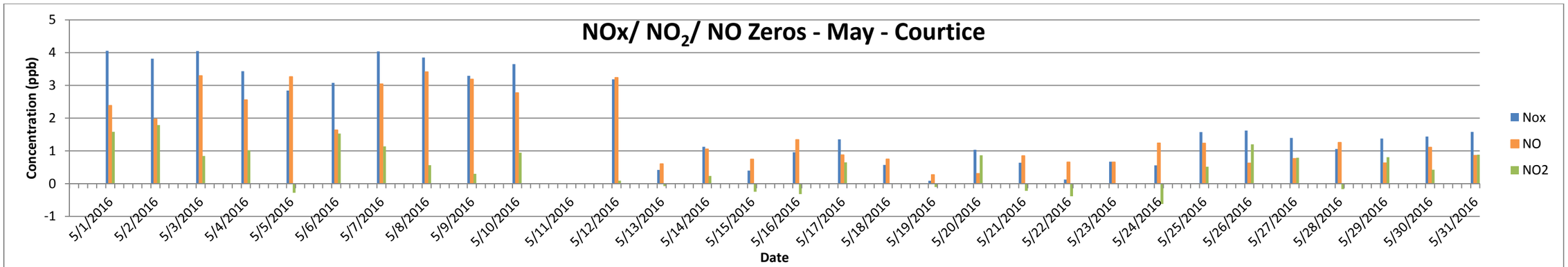
Stantec Consulting Limited, (2009). Final Environmental Assessment, Appendix C12: Site Specific Human Health and Ecological Risk Assessment Technical Study Report, December 4, 2009.

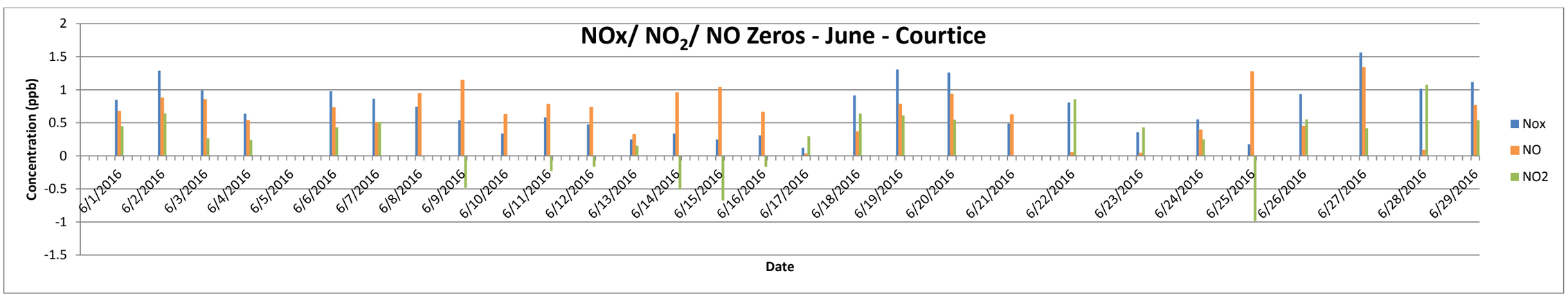
Stantec Consulting Limited, (2012). Ambient Air Quality Monitoring Plan – Durham York Residual Waste Study, May 8, 2012.

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

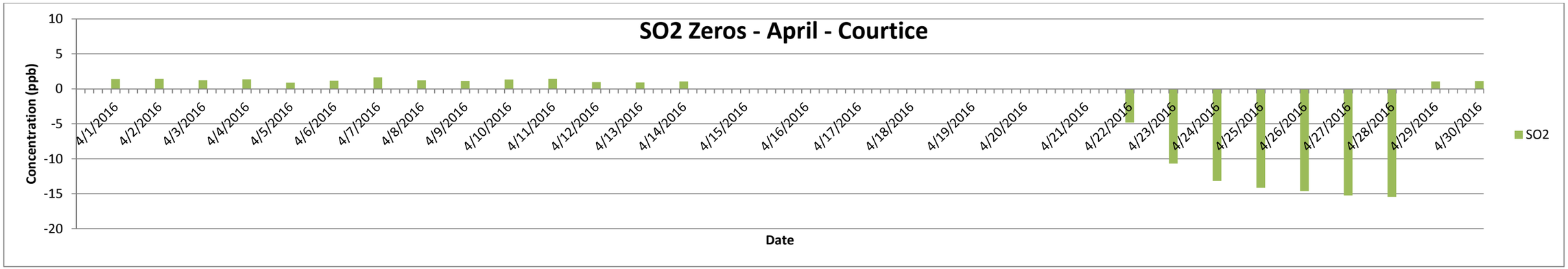


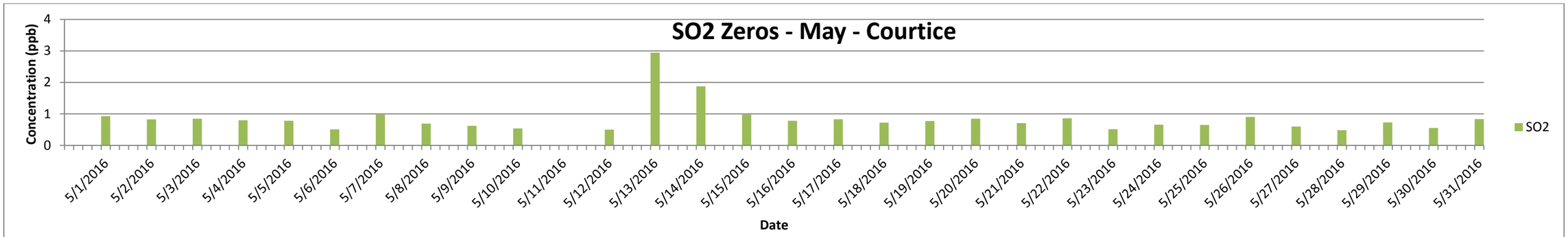


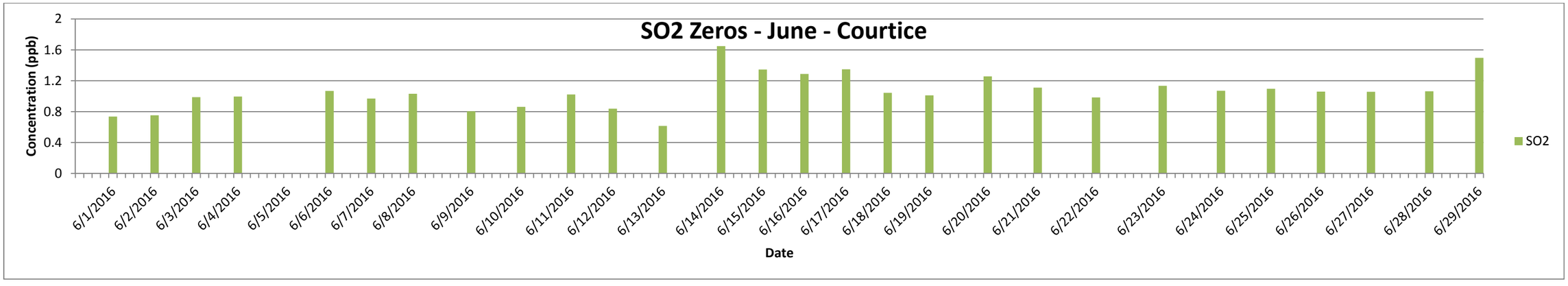


Note: Auto-calibrations occur every 25 hours

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

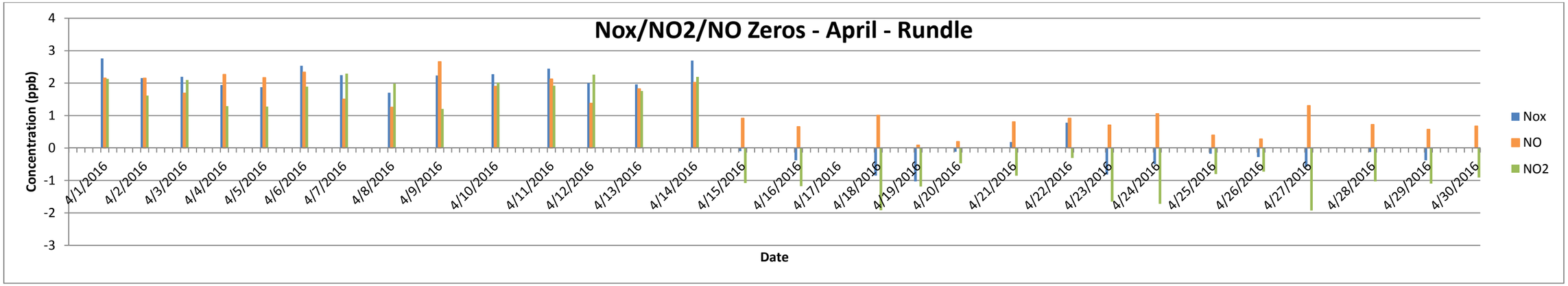


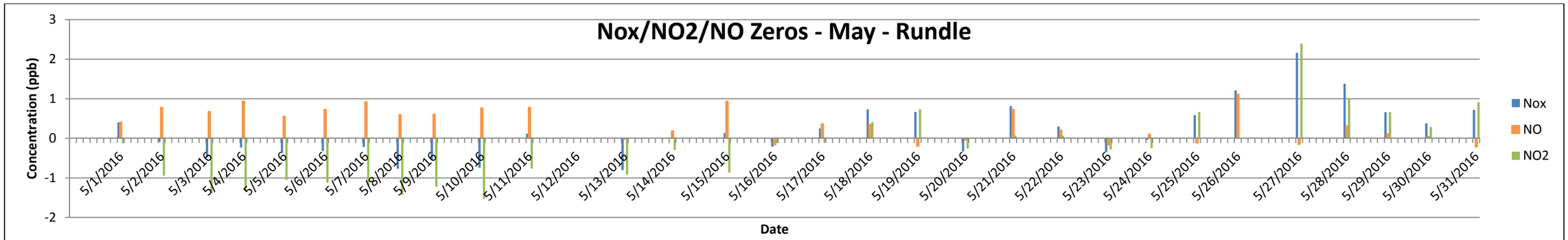


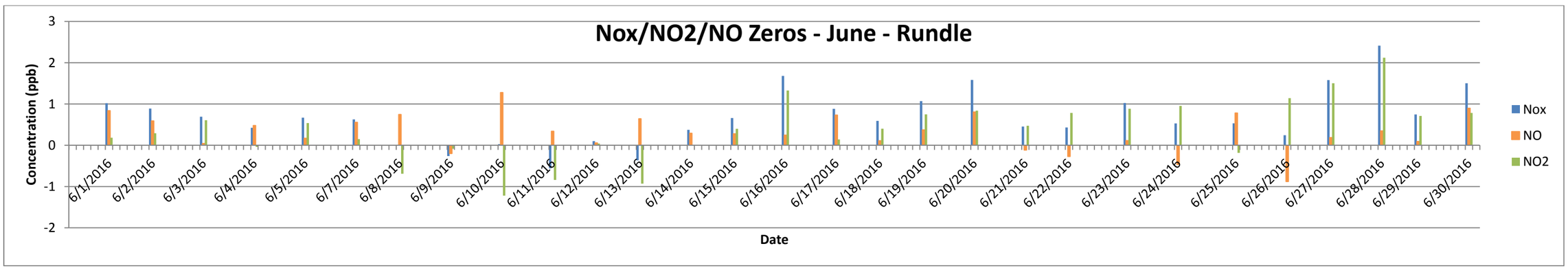


Note: Auto-calibrations occur every 25 hours.

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

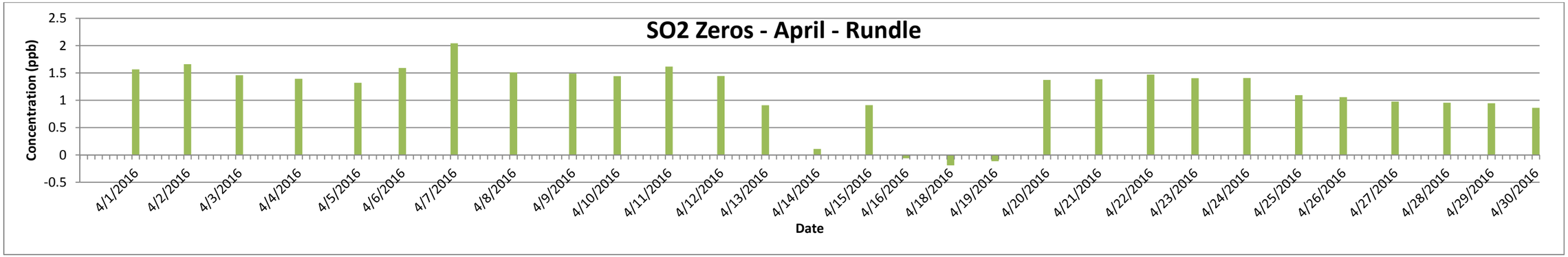


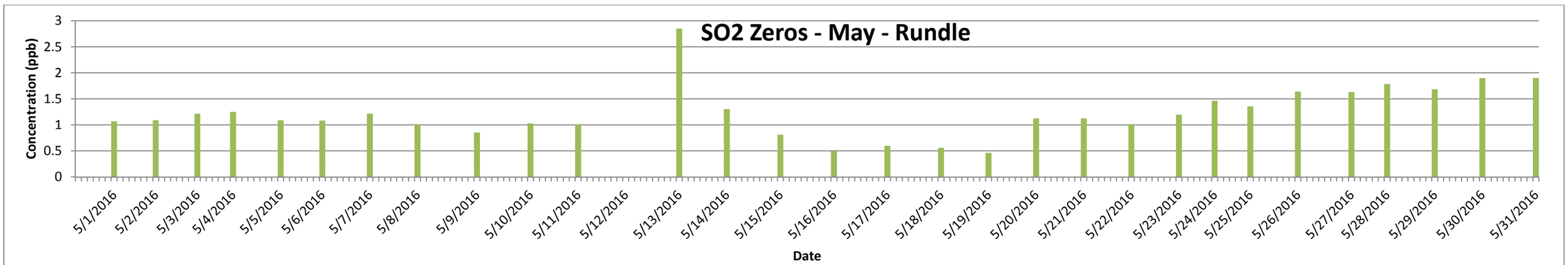


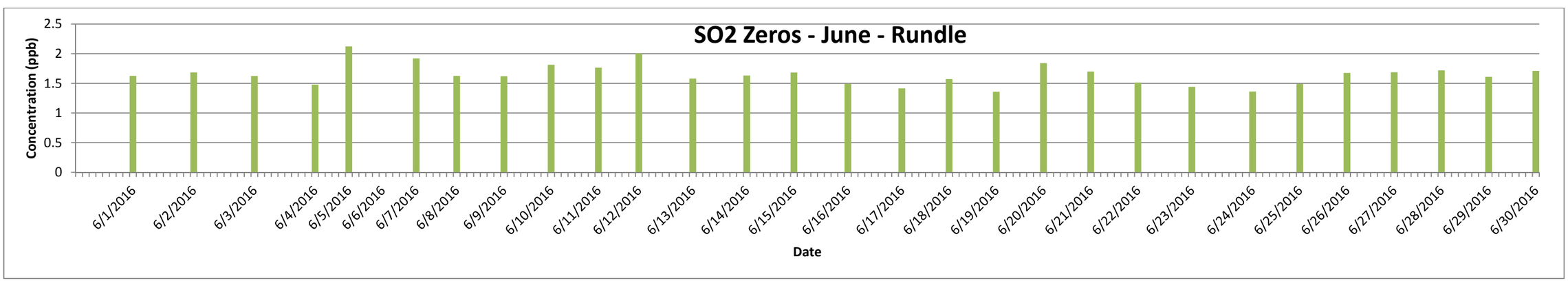


Note: Auto-calibrations occur every 25 hours

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







Note: Auto-calibrations occur every 25 hours

Appendix B SO_2 DATA SUMMARIES AND TIME HISTORY PLOTS

SO_2 - April (ppb) COURTICE 2016

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	0.7	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.5	0.5	0.4	2.6	12.2	21.1	24	21.1	0.4	2.1	0.0	0.0
2	17.3	13.0	10.9	2.2	4.6	3.8	1.5	1.1	1.0	0.7	0.7	0.4	0.8	0.9	0.9	1.8	5.0	5.1	2.3	1.0	0.8	0.7	0.7	0.8	24	17.3	0.4	3.2	0.0	0.0
3	0.7	0.6	1.0	0.7	0.6	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.5	0.4	0.4	0.4	0.4	1.9	8.3	7.5	4.5	0.9	0.7	0.6	24	8.3	0.4	1.4	0.0	0.0
4	0.5	0.6	0.5	0.6	0.7	0.8	0.8	1.3	1.3	1.1	3.9	5.2	4.3	1.3	0.5	1.0	0.5	0.5	0.3	0.3	0.3	0.3	0.4	0.5	24	5.2	0.3	1.1	0.0	0.0
5	0.8	2.4	7.6	7.5	7.8	2.4	0.9	2.9	3.5	2.6	1.5	1.1	0.3	0.3	0.2	0.3	0.4	0.4	1.1	0.9	0.7	0.4	2.5	4.6	24	7.8	0.2	2.2	0.0	0.0
6	1.1	1.0	0.8	0.7	0.8	0.8	0.5	0.4	0.5	0.6	0.6	0.7	0.8	1.0	1.0	1.0	1.0	1.0	3.3	6.3	16.5	3.6	3.1	2.2	24	16.5	0.4	2.1	0.0	0.0
7	1.6	2.3	2.0	1.3	1.2	1.2	1.0	0.7	0.8	0.7	0.8	0.9	0.8	0.9	0.7	0.8	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.7	24	2.3	0.7	1.0	0.0	0.0
8	0.7	0.6	0.7	0.6	0.7	0.7	0.7	1.0	1.4	1.4	1.7	1.8	1.3	1.1	0.9	0.7	0.6	0.7	0.8	1.2	1.7	1.4	1.7	1.6	24	1.8	0.6	1.1	0.0	0.0
9	3.5	7.1	7.1	7.0	6.7	5.4	3.7	2.9	1.6	1.8	1.4	1.8	1.1	0.5	0.5	0.4	0.4	0.4	0.2	0.3	0.4	1.4	3.0	2.0	24	7.1	0.2	2.5	0.0	0.0
10	1.2	0.7	0.5	0.4	8.8	10.7	4.9	3.1	1.2	1.6	0.8	0.8	0.8	0.9	0.8	0.7	0.7	0.7	0.6	0.7	0.5	0.4	0.4	0.4	24	10.7	0.4	1.8	0.0	0.0
11	0.4	0.5	0.6	0.7	0.5	0.6	0.6	0.4	0.5	0.6	0.6	0.7	0.6	0.7	0.7	0.6	0.7	0.6	0.5	0.6	0.5	0.5	0.5	0.5	24	0.7	0.4	0.6	0.0	0.0
12	0.4	0.4	0.5	0.5	0.5	0.8	0.8	0.7	0.5	0.5	0.4	0.4	0.5	0.7	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.7	0.8	24	0.8	0.2	0.5	0.0	0.0
13	1.5	0.4	9.8	5.4	10.6	13.9	12.7	5.5	1.4	0.9	0.8	0.7	0.7	0.7	0.4	0.4	0.4	0.5	0.8	1.1	11.5	11.1	7.2	10.5	24	13.9	0.4	4.5	0.0	0.0
14	16.0	18.8	17.8	7.2	7.3	14.1	10.7	1.7	3.3	1.0	1.0	1.1	0.9	0.9	0.7	0.6	0.4	0.4	0.7	9.4	8.1	1.9	1.8	1.7	24	18.8	0.4	5.3	0.0	0.0
15	1.2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	1	1.2	1.2		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		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		0.0	0.0
18	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		0.0	0.0
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		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		0.0	0.0
21	M	M	M	M	M	M	M	M	M	M	M	C	C	C	1.0	0.5	1.6	3.3	3.7	3.6	2.5	3.0	2.9	2.9	10	3.7	0.5		0.0	0.0
22	0.6	0.0	5.5	5.8	4.5	4.1	3.7	3.6	3.3	3.2	2.8	2.5	2.0	1.7	1.4	0.9	0.6	0.5	0.6	0.3	0.5	2.5	0.2	0.1	24	5.8	0.0	2.1	0.0	0.0
23	4.4	5.5	5.7	6.0	6.0	8.8	7.3	5.9	4.9	2.9	4.8	2.0	1.2	1.3	1.0	0.7	0.5	0.3	0.5	1.6	0.2	0.1	0.1	0.8	24	8.8	0.1	3.0	0.0	0.0
24	3.4	7.7	11.4	12.1	17.3	10.4	3.2	6.9	0.7	0.8	0.7	0.8	0.7	0.6	0.5	0.5	0.4	2.2	0.3	0.2	0.1	0.7	9.4	8.5	24	17.3	0.1	4.1	0.0	0.0
25	5.4	7.2	2.9	8.3	11.6	2.2	1.3	3.6	5.0	0.4	0.2	0.1	0.1	0.2	1.9	0.1	0.3	1.3	0.2	2.5	4.3	0.9	0.3	0.1	24	11.6	0.1	2.5	0.0	0.0
26	0.6	1.4	1.4	0.6	0.5	0.6	0.7	0.5	2.2	1.1	0.6	0.6	3.3	2.6	3.4	2.3	0.2	0.2	0.2	0.1	0.1	0.1	14.6	18.3	24	18.3	0.1	2.3	0.0	0.0
27	18.7	18.4	7.1	19.1	8.8	8.0	3.8	1.9	2.0	1.1	1.9	0.1	0.4	0.5	0.5	0.5	0.4	0.4	0.2	0.2	0.8	1.4	0.8	2.2	24	19.1	0.1	4.1	0.0	0.0
28	4.0	5.7	6.0	3.9	3.9	9.0	0.9	1.3	5.3	0.3	0.3	0.4	0.4	0.2	0.1	0.1	0.2	1.4	0.2	1.9	12.3	11.5	5.2	0.5	24	12.3	0.1	3.1	0.0	0.0
29	0.1	0.2	0.6	0.3	0.9	1.1	1.6	0.1	0.7	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	9.1	31.4	9.0	8.2	1.2	24	31.4	0.0	2.7	0.0	0.0
30	3.7	3.2	8.4	9.5	10.5	12.7	7.7	1.2	1.3	0.2	0.3	0.5	0.5	0.2	0.1	0.1	0.0	0.2	0.1	0.0	0.1	0.5	4.1	3.9	24	12.7	0.0	2.9	0.0	0.0
31																									0	0.0	0.0		0.0	0.0
Count	24	23	23	23	23	23	23	23	23	23	23	23	23	23	24	24	24	24	24	24	24	24	24	24	563					
Maximum	18.7	18.8	17.8	19.1	17.3	14.1	12.7	6.9	5.3	3.2	4.8	5.2	4.3	2.6	3.4	2.3	5.0	5.1	8.3	9.4	31.4	11.5	14.6	21.1	24					
Minimum	0.1	0.0	0.5	0.3	0.5	0.4	0.4	0.1	0.5	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0					
Average	3.7	4.3	4.8	4.4	5.0	4.9	3.0	2.1	1.9	1.1	1.2	1.1	1.0	0.8	0.8	0.6	0.7	1.0	1.1	2.1	4.1	2.3	3.4	3.6						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.3	0.4	0.6	0.7	0.8	1.1	1.8	3.6	7.3	10.7	18.3	31.4

Maximum Hourly	31.4
Maximum Daily	5.3
Monthly Average	2.5

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

SO_2 - May (ppb) COURTICE 2016

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	4.5	5.6	1.1	3.9	3.1	1.8	0.4	0.2	0.1	0.1	0.1	0.1	1.0	0.8	1.3	0.8	0.5	3.1	3.4	3.5	3.6	4.6	3.9	4.5	24	5.6	0.1	2.2	0.0	0.0
2	1.6	1.1	6.3	6.2	2.9	4.9	3.5	4.0	2.8	2.1	1.6	1.8	0.6	0.2	0.1	0.1	0.0	0.1	0.0	3.1	20.1	6.1	4.6	4.4	24	20.1	0.0	3.3	0.0	0.0
3	4.9	7.1	10.8	14.0	17.7	7.4	3.0	1.3	1.0	0.8	0.7	0.3	0.3	0.1	0.2	0.1	0.0	0.0	0.0	0.2	0.5	0.8	6.6	0.8	24	17.7	0.0	3.3	0.0	0.0
4	3.8	7.5	7.2	4.3	1.1	5.4	0.9	0.5	0.2	0.1	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.4	1.8	1.8	6.0	3.4	24	7.5	0.0	1.9	0.0	0.0
5	2.4	3.9	1.1	1.4	0.6	0.8	0.3	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	1.8	2.8	3.4	4.6	24	4.6	0.0	1.0	0.0	0.0
6	3.5	2.1	1.3	1.5	3.1	6.7	3.3	57.1	15.8	6.2	0.7	0.4	0.1	0.1	0.0	0.0	0.0	0.1	0.0	1.4	6.8	9.8	20.2	10.5	24	57.1	0.0	6.3	0.0	0.0
7	17.4	15.1	13.1	7.1	2.6	0.7	0.6	0.3	0.3	0.4	0.4	0.1	0.2	0.3	0.2	0.1	0.0	0.3	0.1	0.1	0.1	4.7	0.1	0.0	24	17.4	0.0	2.7	0.0	0.0
8	0.0	0.2	1.0	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	0.6	0.0	0.0	1.0	1.0	24	1.0	0.0	0.2	0.0	0.0
9	2.7	0.3	0.0	0.9	2.3	1.3	0.3	2.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	6.3	2.1	2.6	3.4	24	6.3	0.0	1.2	0.0	0.0
10	5.1	4.7	8.5	11.4	11.9	17.9	9.8	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	18.8	25.6	23.2	24	25.6	0.0	6.0	0.0	0.0
11	19.2	12.9	9.3	7.8	8.6	9.6	1.5	4.1	11.1	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	13.2	5.7	9.2	24	19.2	0.0	5.0	0.0	0.0
12	6.2	18.1	12.4	7.4	0.3	2.8	0.7	0.8	0.5	0.9	0.3	0.0	0.0	0.0	0.0	C	C	2.1	2.8	2.8	2.6	8.6	6.5	3.7	22	18.1	0.0	3.6	0.0	0.0
13	6.3	2.4	4.2	7.6	2.4	2.0	1.7	1.6	1.5	A	A	1.3	1.3	1.2	1.0	1.1	1.0	1.0	1.0	2.5	2.9	2.7	13.4	5.6	22	13.4	1.0	3.0	0.0	0.0
14	10.1	6.3	2.9	3.9	1.9	1.2	1.1	1.0	1.0	0.8	0.8	0.8	0.7	0.8	0.6	1.0	1.1	0.6	0.4	0.4	0.4	0.4	0.3	0.3	24	10.1	0.3	1.6	0.0	0.0
15	0.2	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.8	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.8	0.0	0.1	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.7	0.6	0.4	0.1	0.9	0.3	0.0	0.0	2.1	16.5	24	16.5	0.0	1.0	0.0	0.0
17	21.5	5.8	10.9	6.5	1.5	0.7	1.6	4.7	1.7	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	1.6	6.9	13.1	0.9	4.1	24	21.5	0.0	3.4	0.0	0.0
18	13.6	19.2	19.2	31.5	23.0	22.0	7.7	1.0	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	1.4	39.3	7.6	26.2	24	39.3	0.0	9.1	0.0	0.0
19	9.4	2.7	0.8	0.6	2.0	0.5	0.3	0.5	1.1	2.6	4.4	0.2	0.4	0.7	0.3	0.1	0.0	0.1	0.3	0.6	15.9	36.6	32.5	24.3	24	36.6	0.0	5.7	0.0	0.0
20	32.8	17.2	34.3	15.8	18.8	30.0	6.3	2.2	1.2	0.2	0.5	0.6	0.6	0.3	0.3	0.3	0.2	0.1	0.1	16.7	7.8	1.6	7.6	16.9	24	34.3	0.1	8.9	0.0	0.0
21	12.1	1.7	12.4	3.7	1.4	0.6	0.7	6.8	4.5	0.5	0.5	0.5	0.3	0.4	0.4	0.2	0.2	0.3	1.1	1.9	1.1	0.4	0.3	0.1	24	12.4	0.1	2.2	0.0	0.0
22	0.1	2.7	3.4	6.2	1.0	1.4	1.6	2.2	1.1	1.0	1.2	0.4	0.1	0.0	0.1	0.0	0.0	1.4	0.9	0.1	0.1	0.2	0.1	0.9	24	6.2	0.0	1.1	0.0	0.0
23	1.6	3.1	5.3	4.1	8.2	4.8	0.5	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	12.2	9.9	2.3	1.1	24	12.2	0.0	2.3	0.0	0.0
24	0.4	0.4	5.7	6.1	20.8	1.4	0.5	0.3	0.3	0.5	1.1	1.9	3.5	3.2	2.0	1.6	1.8	1.4	0.5	0.3	7.9	9.9	4.1	10.5	24	20.8	0.3	3.6	0.0	0.0
25	9.9	19.4	17.6	5.6	5.3	3.0	1.2	1.1	0.9	0.6	0.8	1.4	1.6	1.9	2.7	2.0	2.1	1.6	0.8	0.6	1.3	2.0	3.4	2.4	24	19.4	0.6	3.7	0.0	0.0
26	1.5	2.7	3.4	1.5	0.8	0.5	0.7	1.0	1.0	0.7	0.4	0.6	0.4	0.2	0.3	0.4	0.3	0.2	0.1	0.4	0.8	0.7	0.5	1.7	24	3.4	0.1	0.9	0.0	0.0
27	1.6	2.0	2.1	1.3	1.5	1.9	0.9	0.5	0.4	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	24	2.1	0.0	0.6	0.0	0.0
28	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.2	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.2	24	0.4	0.0	0.1	0.0	0.0
29	0.1	0.2	0.4	0.4	0.8	0.4	0.1	0.1	0.1	0.1	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	24	0.8	0.0	0.1	0.0	0.0
30	0.0	0.0	0.3	0.3	0.1	0.1	0.1	0.1	0.3	0.3	0.1	0.3	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.5	2.4	0.8	0.1	24	2.4	0.0	0.3	0.0	0.0
31	2.2	10.8	1.2	4.7	2.3	0.7	0.5	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.5	0.8	0.7	2.3	5.0	3.1	1.8	24	10.8	0.0	1.6	0.0	0.0
Count	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	30	30	31	31	31	31	31	31	31	740					
Maximum	32.8	19.4	34.3	31.5	23.0	30.0	9.8	57.1	15.8	6.2	4.4	1.9	3.5	3.2	2.7	2.0	2.1	3.1	3.4	16.7	20.1	39.3	32.5	26.2	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	6.3	5.6	6.3	5.4	4.7	4.2	1.6	3.1	1.6	0.7	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	1.6	3.8	6.4	5.4	5.9						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.0	0.1	0.3	0.5	1.0	1.8	3.5	7.7	14.0	28.5	57.1

Maximum Hourly	57.1
Maximum Daily	9.1
Monthly Average	2.8

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

SO_2 - June (ppb) COURTICE 2016

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	2.6	3.1	1.1	4.7	9.9	5.7	2.5	6.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	7.8	3.2	1.9	1.1	1.0	2.5	24	9.9	0.0	2.3	0.0	0.0
2	0.9	0.5	1.6	2.3	4.1	3.5	0.6	0.3	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.3	0.0	24	4.1	0.0	0.6	0.0	0.0
3	4.6	13.4	4.7	2.6	6.1	3.3	1.1	1.5	0.3	0.1	0.1	0.1	0.1	0.4	0.3	0.3	0.2	0.0	0.0	0.1	0.1	0.5	0.9	1.5	24	13.4	0.0	1.8	0.0	0.0
4	2.2	1.8	4.6	8.7	2.7	4.4	2.0	0.6	0.3	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	24	8.7	0.0	1.2	0.0	0.0
5	0.0	0.1	1.1	2.8	1.5	0.5	0.3	0.3	0.2	0.2	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.3	0.3	0.4	0.2	0.2	0.1	0.1	24	2.8	0.0	0.4	0.0	0.0
6	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	24	0.3	0.0	0.1	0.0	0.0
7	0.2	0.2	0.3	0.8	0.4	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	24	0.8	0.0	0.1	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.8	0.4	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	0.8	0.0	0.1	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.7	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.5	24	0.7	0.0	0.1	0.0	0.0
10	5.6	1.2	0.1	0.6	0.7	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.5	0.3	0.1	8.8	8.9	7.2	8.6	6.7	24	8.9	0.0	2.1	0.0	0.0
11	1.5	0.5	0.4	0.4	1.1	0.3	0.3	0.6	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.0	24	1.5	0.0	0.2	0.0	0.0
12	0.0	0.0	0.1	0.5	0.5	0.7	0.2	0.0	0.0	0.2	0.2	0.4	0.0	0.2	0.7	0.6	0.2	1.3	0.8	0.6	0.4	0.1	0.0	0.0	24	1.3	0.0	0.3	0.0	0.0
13	0.8	0.5	0.8	0.3	0.3	0.4	0.0	0.8	C	C	1.3	1.6	1.5	1.3	1.3	1.3	1.2	1.3	1.5	1.7	3.0	3.6	2.4	1.8	22	3.6	0.0	1.3	0.0	0.0
14	2.1	2.5	4.1	5.3	4.1	1.9	1.1	0.9	0.9	0.8	1.0	1.1	0.7	0.6	0.6	0.6	0.5	0.4	0.5	24.5	31.6	7.6	6.3	6.5	24	31.6	0.4	4.4	0.0	0.0
15	5.3	15.3	12.3	8.7	4.4	3.9	1.5	1.8	0.8	0.9	1.0	0.6	0.6	0.5	0.5	3.0	7.2	2.1	0.8	0.9	0.8	1.7	4.9	2.5	24	15.3	0.5	3.4	0.0	0.0
16	1.1	1.4	1.3	2.0	2.5	0.8	2.0	8.5	3.5	1.3	1.0	0.8	0.8	1.2	4.8	1.6	0.7	11.0	7.2	2.3	3.5	4.6	4.1	3.5	24	11.0	0.7	3.0	0.0	0.0
17	5.7	4.5	3.4	2.6	4.5	2.8	2.3	1.8	0.8	0.7	0.6	0.5	0.6	0.4	0.5	0.4	0.3	0.4	0.6	0.7	2.0	1.9	6.9	7.1	24	7.1	0.3	2.2	0.0	0.0
18	1.6	4.1	6.1	6.1	7.2	4.5	1.4	0.9	0.6	0.6	0.5	0.6	0.6	0.2	0.5	0.6	0.8	0.9	0.5	0.4	0.6	3.0	5.3	5.6	24	7.2	0.2	2.2	0.0	0.0
19	4.7	2.9	4.0	5.6	5.5	3.7	1.1	0.9	0.8	0.8	1.4	2.8	1.3	0.9	0.7	0.6	0.5	0.4	0.5	0.4	0.4	0.3	0.4	0.3	24	5.6	0.3	1.7	0.0	0.0
20	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.6	0.5	0.5	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	24	0.6	0.3	0.4	0.0	0.0
21	0.2	0.2	0.1	0.1	0.1	0.3	0.4	0.2	0.3	0.7	0.6	1.0	1.0	0.8	0.8	1.2	1.0	0.9	0.7	0.6	0.7	0.7	1.0	1.3	24	1.3	0.1	0.6	0.0	0.0
22	1.0	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.5	0.8	0.4	0.4	0.7	0.1	0.2	0.3	0.2	0.3	5.0	16.5	15.9	4.6	24	16.5	0.1	2.1	0.0	0.0
23	4.9	9.5	3.1	4.7	11.8	4.1	3.6	5.7	4.2	0.8	0.6	0.7	1.3	0.8	0.5	0.4	0.3	0.3	0.3	0.3	0.4	2.8	15.8	13.7	24	15.8	0.3	3.8	0.0	0.0
24	11.1	7.4	9.8	2.8	9.1	8.2	4.4	3.0	1.0	0.6	0.6	0.5	0.6	0.5	0.3	0.4	0.8	0.3	0.2	0.3	6.4	7.0	6.1	5.5	24	11.1	0.2	3.6	0.0	0.0
25	5.6	11.8	3.6	3.7	6.1	4.4	3.5	2.7	1.2	0.7	0.5	0.4	0.3	0.3	0.3	0.4	0.4	0.2	0.2	0.2	0.8	1.6	5.4	7.6	24	11.8	0.2	2.6	0.0	0.0
26	3.4	4.7	6.8	8.2	7.3	4.9	1.4	1.0	0.9	0.9	0.9	0.7	0.5	0.5	0.3	0.3	0.2	0.3	0.3	0.3	0.4	0.3	0.3	0.3	24	8.2	0.2	1.9	0.0	0.0
27	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.5	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	24	0.5	0.2	0.3	0.0	0.0
28	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.4	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.3	0.3	24	0.4	0.1	0.2	0.0	0.0
29	0.3	0.3	0.4	1.0	0.7	0.7	0.7	0.8	0.4	0.6	1.0	0.6	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.5	2.0	1.1	7.5	20.7	24	20.7	0.0	1.7	0.0	0.0
30	4.9	32.0	26.7	34.0	14.8	3.3	1.9	1.1	1.3	1.4	1.2	1.7	3.4	5.0	3.1	1.7	0.9	0.7	0.6	0.7	6.9	12.6	17.0	8.1	24	34.0	0.6	7.7	0.0	0.0
31																									0	0.0	0.0		0.0	0.0
Count	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	718					
Maximum	11.1	32.0	26.7	34.0	14.8	8.2	4.4	8.5	4.2	1.4	1.4	2.8	3.4	5.0	4.8	3.0	7.2	11.0	7.8	24.5	31.6	16.5	17.0	20.7	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	0					
Average	2.4	4.0	3.3	3.7	3.5	2.2	1.1	1.4	0.7	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.8	0.8	1.6	2.6	2.5	3.7	3.4						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.1	0.2	0.3	0.4	0.7	1.0	2.3	5.0	7.5	16.4	34.0

Maximum Hourly	34.0
Maximum Daily	7.7
Monthly Average	1.7

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

SO_2 - April (ppb) Rundle Road 2016

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	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	24	0.9	0.7	0.8	0	0
2	0.7	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.8	24	0.8	0.7	0.7	0	0
3	0.7	0.7	0.9	0.7	0.7	0.6	0.5	0.5	0.5	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.4	0.4	0.4	0.4	0.5	0.6	24	0.9	0.4	0.6	0	0
4	0.4	0.5	0.4	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	24	0.7	0.4	0.5	0	0
5	0.4	0.4	0.4	0.4	0.4	0.3	0.1	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.6	0.5	0.5	0.9	0.7	0.7	0.7	0.4	0.4	24	0.9	0.1	0.4	0	0
6	0.5	0.7	0.7	0.6	0.7	0.7	0.6	0.6	0.6	0.7	0.5	1.1	1.6	1.2	9.5	2.8	1.2	0.9	0.9	0.8	0.9	0.9	0.8	0.7	24	9.5	0.5	1.3	0	0
7	0.8	0.7	0.8	0.9	0.9	1.0	1.1	0.9	0.9	0.9	0.9	0.9	1.0	0.9	1.0	0.9	0.9	0.9	0.8	0.7	0.7	0.8	0.7	0.7	24	1.1	0.7	0.9	0	0
8	0.7	0.7	0.6	0.7	0.7	0.7	0.8	1.1	1.2	1.4	1.7	1.9	1.4	1.2	1.0	0.9	0.9	0.8	0.7	1.1	1.5	1.3	1.4	1.3	24	1.9	0.6	1.1	0	0
9	1.1	0.8	0.7	0.6	0.7	0.7	0.6	0.7	0.6	0.6	0.6	0.5	0.5	0.7	0.7	0.5	0.6	0.5	0.4	0.4	0.5	0.9	2.4	2.1	24	2.4	0.4	0.8	0	0
10	1.3	0.9	0.5	0.5	0.4	0.4	0.4	0.6	0.8	1.1	1.0	0.8	1.0	1.0	0.9	1.6	4.2	1.9	1.8	2.6	1.1	0.7	0.5	0.5	24	4.2	0.4	1.1	0	0
11	0.6	0.7	2.4	1.3	1.5	1.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.8	0.7	0.6	0.6	0.6	0.6	24	2.4	0.6	0.8	0	0
12	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.5	0.5	0.5	0.8	0.5	0.4	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	24	0.8	0.3	0.5	0	0
13	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	3.5	6.1	1.6	0.8	0.8	0.7	0.9	1.7	1.4	1.1	1.3	0.6	0.0	0.0	0.0	0.0	24	6.1	0.0	1.0	0	0
14	0.1	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	0.0	1.4	9.0	0.0	0.0	0.0	0.0	0.0	0.0	24	9.0	0.0	0.4	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	C	C	C	C	0.5	0.4	0.2	0.2	0.2	0.1	1.9	1.9	20	1.9	0.0	0.3	0	0
16	1.8	1.7	1.8	1.7	1.5	1.6	1.6	1.8	1.6	1.5	1.8	5.4	9.1	7.6	6.8	14.5	9.8	1.9	1.4	1.3	1.2	1.2	1.1	1.2	24	14.5	1.1	3.4	0	0
17	1.2	1.1	1.0	0.9	0.9	0.9	1.0	1.3	1.2	1.2	2.6	2.5	1.6	1.9	1.8	1.2	1.0	0.9	1.0	0.9	0.9	1.0	1.0	1.0	24	2.6	0.9	1.2	0	0
18	1.5	1.1	1.2	1.5	3.9	5.3	4.0	2.7	1.7	2.5	2.7	2.2	2.4	2.5	1.9	2.5	1.8	1.8	1.4	1.3	1.3	1.1	1.0	1.0	24	5.3	1.0	2.1	0	0
19	0.8	0.9	0.8	0.7	0.5	0.4	0.5	0.6	0.5	0.1	0.5	0.4	0.4	0.6	0.6	0.7	0.6	0.5	0.5	0.5	0.5	0.6	0.8	1.0	24	1.0	0.1	0.6	0	0
20	1.0	0.8	0.7	0.5	0.4	0.4	0.5	2.5	10.8	2.5	8.4	0.9	0.8	0.7	0.9	26.8	6.3	1.1	1.3	1.0	0.9	0.7	0.6	0.6	24	26.8	0.4	3.0	0	0
21	0.6	0.5	0.5	0.6	0.6	0.5	0.5	0.7	1.4	5.3	2.3	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.9	0.9	0.7	0.7	0.6	0.7	24	5.3	0.5	1.0	0	0
22	0.5	0.6	0.6	0.5	0.6	0.5	0.6	0.8	0.8	0.9	0.9	0.8	0.7	0.8	0.8	0.4	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.5	24	0.9	0.4	0.6	0	0
23	0.4	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.3	0.6	1.0	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	24	1.0	0.3	0.5	0	0
24	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.5	9.6	7.8	4.5	0.8	0.6	0.6	0.7	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.4	24	9.6	0.3	1.3	0	0
25	0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.4	0.3	0.3	0.1	0.1	0.2	0.3	0.4	0.4	0.4	0.3	0.2	0.4	0.4	0.4	0.3	0.3	24	0.4	0.1	0.3	0	0
26	0.3	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	24	0.4	0.1	0.3	0	0
27	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.4	1.2	0.4	0.2	0.2	0.1	0.3	0.3	0.3	0.1	0.2	0.6	0.6	0.4	0.2	24	1.2	0.1	0.3	0	0
28	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.9	0.2	0.2	2.8	7.2	6.9	4.0	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.2	24	7.2	0.1	1.1	0	0
29	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.4	5.9	2.3	11.0	6.9	0.8	0.4	0.5	0.3	0.1	0.1	0.2	0.2	24	11.0	0.1	1.3	0	0
30	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	1.6	2.2	1.5	0.4	0.3	0.3	2.6	0.3	0.4	0.3	0.2	0.2	0.3	0.2	0.2	24	2.6	0.1	0.5	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30	30	30	30	716					
Maximum	1.8	1.7	2.4	1.7	3.9	5.3	4.0	2.7	10.8	7.8	8.4	5.4	9.1	7.6	11.0	26.8	9.8	9.0	1.8	2.6	1.5	1.3	2.4	2.1	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	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0					
Average	0.6	0.6	0.6	0.6	0.7	0.7	0.6	0.7	1.4	1.4	1.3	0.9	1.3	1.3	1.8	2.6	1.3	1.0	0.7	0.6	0.6	0.6	0.6	0.6						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.6	2.5	9.1	26.8

Maximum Hourly	26.8
Maximum Daily	3.4
Monthly Average	1.0

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

SO_2 - May (ppb) Rundle Road 2016

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	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	24	0.3	0.1	0.1	0	0
2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2	24	0.2	0.0	0.1	0	0
3	0.1	0.4	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.2	0.2	0.1	0.3	0.4	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0.3	24	0.4	0.1	0.2	0	0
4	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.6	1.3	0.9	0.4	20.3	10.5	13.8	4.6	2.5	0.9	0.4	0.5	0.4	0.2	0.3	0.3	24	20.3	0.2	2.5	0	0
5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.7	0.5	0.7	0.5	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.3	0.4	24	0.7	0.2	0.3	0	0
6	0.4	0.3	0.2	0.3	0.2	0.3	0.4	0.2	0.2	0.3	0.6	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.4	0.4	24	0.6	0.2	0.4	0	0
7	0.2	0.3	0.3	0.3	0.4	0.6	0.7	0.6	4.2	1.4	2.1	1.7	2.6	1.5	0.7	0.5	0.4	0.4	0.4	0.5	0.4	0.3	0.4	0.4	24	4.2	0.2	0.9	0	0
8	0.3	0.3	0.2	0.3	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	0.1	0.2	24	0.3	0.1	0.2	0	0
9	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.2	24	0.3	0.1	0.2	0	0
10	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.6	0.4	0.3	0.2	0.2	0.1	2.2	2.4	0.6	0.3	0.4	0.2	0.2	0.2	0.2	24	2.4	0.1	0.5	0	0
11	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.6	3.3	2.6	2.1	15.0	5.2	7.2	3.5	0.7	0.5	0.4	0.3	0.1	0.3	0.2	24	15.0	0.1	1.8	0	0
12	0.2	0.2	0.2	0.1	0.1	0.2	0.5	1.0	0.9	0.4	0.6	0.5	0.4	0.4	0.6	0.8	0.9	0.6	0.5	C	C	1.8	2.0	2.1	22	2.1	0.1	0.7	0	0
13	2.0	1.8	1.5	1.5	1.5	1.5	1.4	1.4	1.2	1.3	1.2	1.2	A	A	0.5	0.5	0.4	1.3	0.3	0.3	0.3	0.3	0.3	0.3	22	2.0	0.3	1.0	0	0
14	0.3	0.3	0.0	0.2	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	24	0.3	0.0	0.2	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
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	1.0	0.0	0.1	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
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
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	4.2	1.2	0.7	0.7	0.5	0.4	0.3	0.3	0.4	0.9	1.2	0.3	0.2	0.0	24	4.2	0.0	0.5	0	0
20	0.0	0.0	0.1	0.1	0.1	0.5	0.3	0.4	0.8	0.8	0.7	0.3	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.2	0.5	0.4	24	0.8	0.0	0.3	0	0
21	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.9	0.5	2.7	5.4	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.4	0.2	0.2	24	5.4	0.2	0.7	0	0
22	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	24	0.3	0.1	0.2	0	0
23	0.3	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.4	4.7	2.1	0.4	0.4	0.4	0.3	0.4	0.5	0.4	0.4	0.4	0.3	0.5	0.5	0.4	24	4.7	0.1	0.6	0	0
24	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	1.5	2.5	3.0	4.0	2.9	2.1	1.3	2.3	1.9	1.0	0.8	0.6	0.5	0.5	0.6	24	4.0	0.4	1.3	0	0
25	0.6	0.6	0.9	0.8	0.7	0.7	1.0	1.0	1.3	1.2	1.4	2.3	3.8	4.2	2.8	2.3	2.5	2.1	1.7	1.1	0.8	0.9	0.7	0.9	24	4.2	0.6	1.5	0	0
26	0.8	0.8	0.8	0.7	0.7	0.7	0.9	1.2	1.5	1.2	0.9	1.0	1.0	0.9	1.2	1.1	1.1	1.1	0.9	0.9	0.9	0.8	0.9	0.8	24	1.5	0.7	1.0	0	0
27	1.0	0.9	1.2	1.3	1.2	1.4	1.1	1.1	1.3	1.5	1.3	1.2	1.1	1.0	1.0	1.1	1.0	1.0	0.9	0.9	0.8	0.7	0.8	0.8	24	1.5	0.7	1.1	0	0
28	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.9	0.9	2.1	2.5	2.6	1.2	1.3	1.1	1.2	1.5	1.4	1.0	1.0	1.0	0.9	0.9	0.9	24	2.6	0.8	1.2	0	0
29	0.9	0.9	0.9	0.8	0.8	0.9	0.9	1.0	1.3	1.4	1.4	1.6	1.7	2.2	1.9	1.3	1.1	1.1	1.1	1.0	1.0	0.9	1.0	1.0	24	2.2	0.8	1.2	0	0
30	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.2	1.3	1.3	1.4	1.6	1.3	1.2	1.0	1.0	1.0	0.9	0.9	1.0	0.9	0.9	0.9	24	1.6	0.9	1.1	0	0
31	0.9	0.7	0.8	0.9	0.8	0.9	1.0	1.0	1.1	1.1	2.2	1.9	1.4	0.7	0.9	0.9	1.0	1.6	1.9	1.0	0.7	0.8	0.7	0.7	24	2.2	0.7	1.1	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	30	30	31	31	31	740					
Maximum	2.0	1.8	1.5	1.5	1.5	1.5	1.4	1.4	4.2	4.7	4.2	3.0	20.3	15.0	13.8	7.2	3.5	2.1	1.9	1.1	1.2	1.8	2.0	2.1	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	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.7	0.8	1.0	0.9	1.7	1.6	1.2	1.0	0.8	0.6	0.5	0.4	0.4	0.4	0.4	0.4						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.1	0.2	0.2	0.3	0.4	0.7	1.0	1.3	2.1	4.7	20.3

Maximum Hourly	20.3
Maximum Daily	2.5
Monthly Average	0.7

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

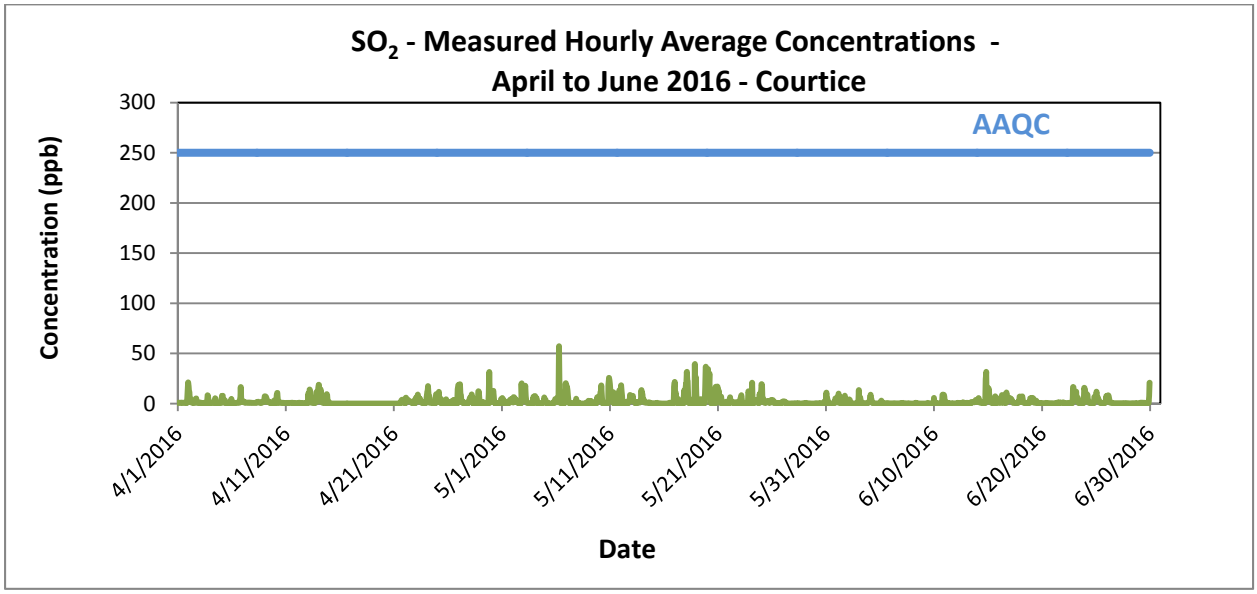
SO_2 - June (ppb)	Rundle Road 2016																												
Hour																													
Day	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>250	Days>100
1	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.7	1.2	1.1	14.8	9.6	30.0	19.3	5.5	1.7	1.4	1.0	1.1	0.9	0.9	0.9	24	30.0	0.7	4.1	0	0
2	0.9	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9	1.0	1.3	1.5	1.3	1.4	1.1	1.2	1.4	1.4	1.2	1.1	0.9	0.9	0.8	0.8	24	1.5	0.8	1.1	0	0
3	0.8	0.8	0.6	0.7	0.8	0.7	0.7	0.8	0.8	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	1.2	0.8	0.8	0.8	0.8	0.8	0.7	24	1.2	0.6	0.8	0	0
4	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	1.0	1.2	0.9	0.8	0.8	0.7	0.8	0.9	24	1.2	0.7	0.8	0	0
5	0.8	0.8	0.9	0.9	0.9	1.0	0.9	0.9	0.8	0.8	0.9	0.7	0.8	0.9	0.8	0.7	0.8	0.9	1.0	1.0	0.9	0.8	0.7	0.8	24	1.0	0.7	0.9	0	0
6	0.8	0.8	0.9	0.9	0.8	0.9	1.0	1.0	1.0	1.0	0.9	1.0	0.9	0.9	0.8	0.8	0.8	1.0	0.7	0.8	0.8	0.9	0.7	0.8	24	1.0	0.7	0.9	0	0
7	1.0	0.9	0.8	0.6	0.9	1.0	1.5	0.9	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	24	1.5	0.6	0.8	0	0
8	0.7	0.6	0.7	0.6	0.6	0.7	0.8	0.9	1.3	1.2	0.8	0.6	0.7	0.8	0.7	0.6	0.7	0.6	0.7	0.6	0.6	0.5	0.6	0.5	24	1.3	0.5	0.7	0	0
9	0.5	0.6	0.5	0.5	0.5	0.4	0.6	0.6	0.8	1.4	1.8	1.2	1.1	0.8	0.6	0.6	0.5	0.7	0.7	0.6	0.6	0.5	0.5	0.5	24	1.8	0.4	0.7	0	0
10	0.4	0.3	0.4	0.5	0.5	0.4	0.4	0.5	0.6	0.7	1.2	1.4	0.7	0.7	0.7	1.1	1.5	1.0	0.8	0.7	0.5	0.5	0.5	0.5	24	1.5	0.3	0.7	0	0
11	0.6	0.7	1.0	1.0	0.6	0.7	0.6	0.8	0.9	0.9	0.9	0.8	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7	24	1.0	0.6	0.8	0	0
12	0.6	0.7	0.7	0.9	1.1	1.8	0.9	0.6	0.7	1.0	1.2	1.2	0.9	0.9	1.6	1.3	1.1	2.4	1.8	1.2	0.9	0.6	0.5	0.5	24	2.4	0.5	1.0	0	0
13	0.4	0.4	0.5	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.6	0.8	1.0	1.1	1.8	2.5	2.1	1.3	24	2.5	0.4	0.8	0	0
14	0.8	0.7	0.6	0.5	0.5	0.6	0.7	1.7	1.6	0.7	0.6	0.6	0.6	1.1	C	C	C	0.7	0.6	0.5	0.6	0.6	0.6	0.5	21	1.7	0.5	0.7	0	0
15	0.5	0.5	0.6	0.5	0.5	0.6	1.0	1.3	1.1	9.4	15.2	3.5	2.3	4.1	1.3	0.8	1.0	0.9	0.7	0.8	0.7	0.5	0.7	0.6	24	15.2	0.5	2.0	0	0
16	0.6	0.5	0.6	0.5	0.5	0.5	0.7	1.1	1.4	1.1	1.2	1.1	1.0	0.9	0.7	0.7	0.6	0.6	0.6	0.8	0.6	0.6	0.6	0.4	24	1.4	0.4	0.7	0	0
17	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.6	0.5	7.7	3.9	0.7	0.8	0.8	1.1	0.5	0.3	0.5	0.5	0.6	0.6	0.5	0.5	0.4	24	7.7	0.3	1.0	0	0
18	0.4	0.4	0.4	0.4	0.5	0.3	0.3	0.5	0.4	0.5	0.5	0.6	0.6	0.9	1.1	1.2	0.9	1.1	1.0	0.6	0.5	0.4	0.5	0.4	24	1.2	0.3	0.6	0	0
19	0.3	0.4	0.4	0.5	0.4	0.3	0.3	0.5	0.8	1.1	2.7	4.2	1.5	1.1	1.0	1.1	0.8	0.7	0.9	0.8	0.6	0.5	0.7	0.6	24	4.2	0.3	0.9	0	0
20	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.7	1.0	1.2	1.2	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.5	0.5	0.5	0.5	0.5	0.4	24	1.2	0.4	0.6	0	0
21	0.5	0.4	0.5	0.3	0.3	0.4	0.8	0.8	0.7	1.0	0.8	1.3	1.3	0.9	1.3	1.7	1.4	1.0	0.7	0.6	0.5	0.5	0.4	0.3	24	1.7	0.3	0.8	0	0
22	0.1	0.4	0.5	0.5	0.4	0.5	0.5	0.2	0.3	0.3	0.5	1.0	0.5	0.4	0.5	0.4	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.3	24	1.0	0.1	0.5	0	0
23	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	2.9	2.0	0.9	0.9	0.6	0.6	0.6	0.3	0.5	0.5	0.5	0.4	0.3	0.4	0.4	24	2.9	0.3	0.6	0	0
24	0.4	0.3	0.4	0.3	0.3	0.4	0.4	0.4	0.6	1.6	0.5	0.5	0.5	0.6	0.4	0.5	0.6	0.9	0.8	0.5	0.4	0.3	0.4	0.3	24	1.6	0.3	0.5	0	0
25	0.4	0.3	0.3	0.3	0.3	0.3	0.5	1.9	4.8	1.7	0.6	1.2	0.8	1.0	1.3	1.1	1.0	1.9	1.0	0.5	0.4	0.5	0.5	0.4	24	4.8	0.3	1.0	0	0
26	0.4	0.4	0.3	0.4	0.5	0.4	0.6	0.6	0.9	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.7	1.0	0.8	0.7	0.6	0.5	0.5	0.6	24	1.0	0.3	0.7	0	0
27	0.6	0.5	0.5	0.6	0.6	0.5	0.4	0.4	0.5	0.5	0.6	0.5	0.6	1.2	0.9	0.8	0.7	0.7	0.7	0.5	0.6	0.6	0.5	0.5	24	1.2	0.4	0.6	0	0
28	0.3	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.4	0.5	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.3	24	0.5	0.3	0.4	0	0
29	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.6	0.4	0.4	0.5	0.5	24	0.6	0.3	0.4	0	0
30	0.5	0.6	0.5	0.4	0.5	0.5	0.5	0.6	1.0	2.1	3.2	3.7	7.7	4.4	2.4	1.3	1.0	1.0	0.9	0.8	0.7	0.5	0.5	0.5	24	7.7	0.4	1.5	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	717					
Maximum	1.0	1.0	1.0	1.0	1.1	1.8	1.5	1.9	4.8	9.4	15.2	4.2	14.8	9.6	30.0	19.3	5.5	2.4	1.8	1.2	1.8	2.5	2.1	1.3	24					
Minimum	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0					
Average	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.9	1.5	1.6	1.2	1.6	1.4	1.9	1.5	1.0	0.9	0.8	0.7	0.7	0.7	0.6	0.6						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.4	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.7	7.4	30.0

Maximum Hourly	30.0
Maximum Daily	4.1
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

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



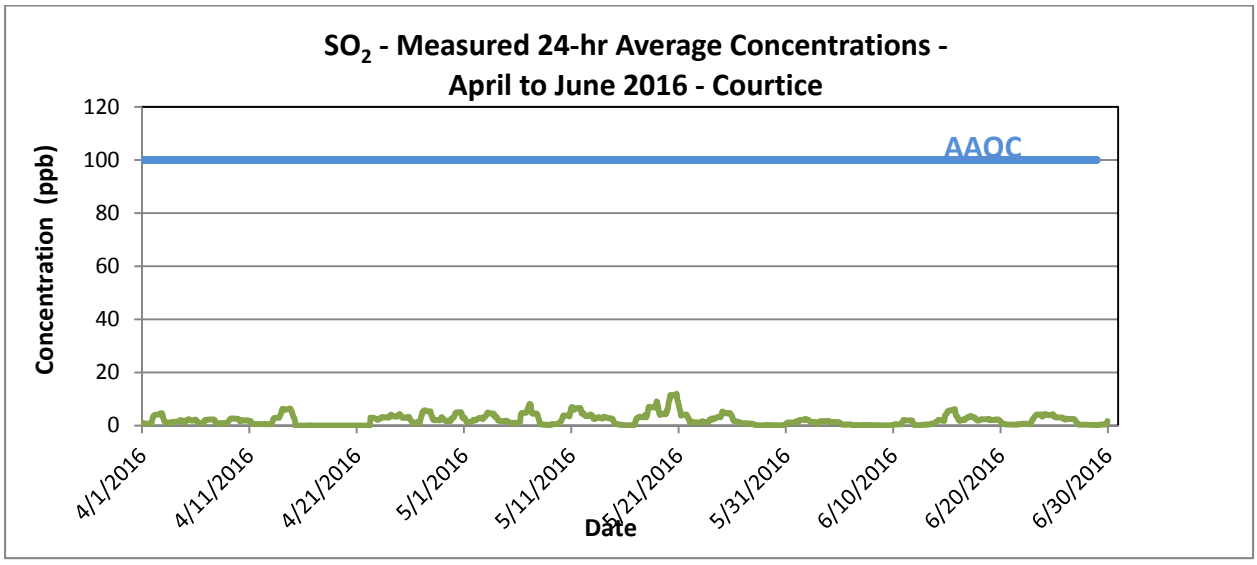
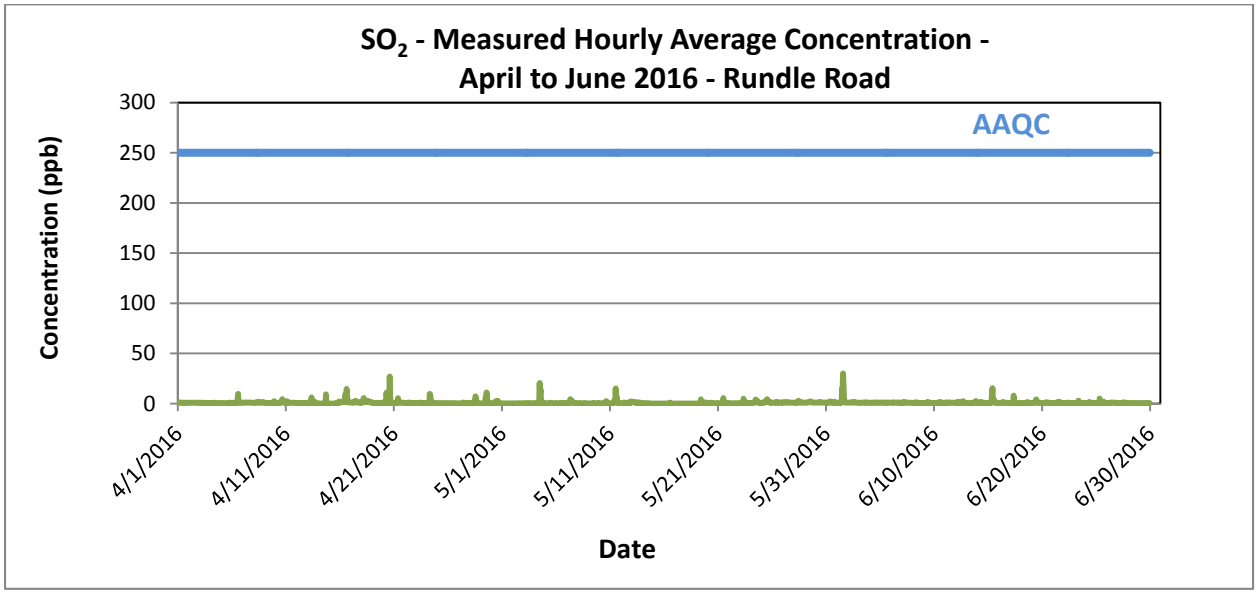
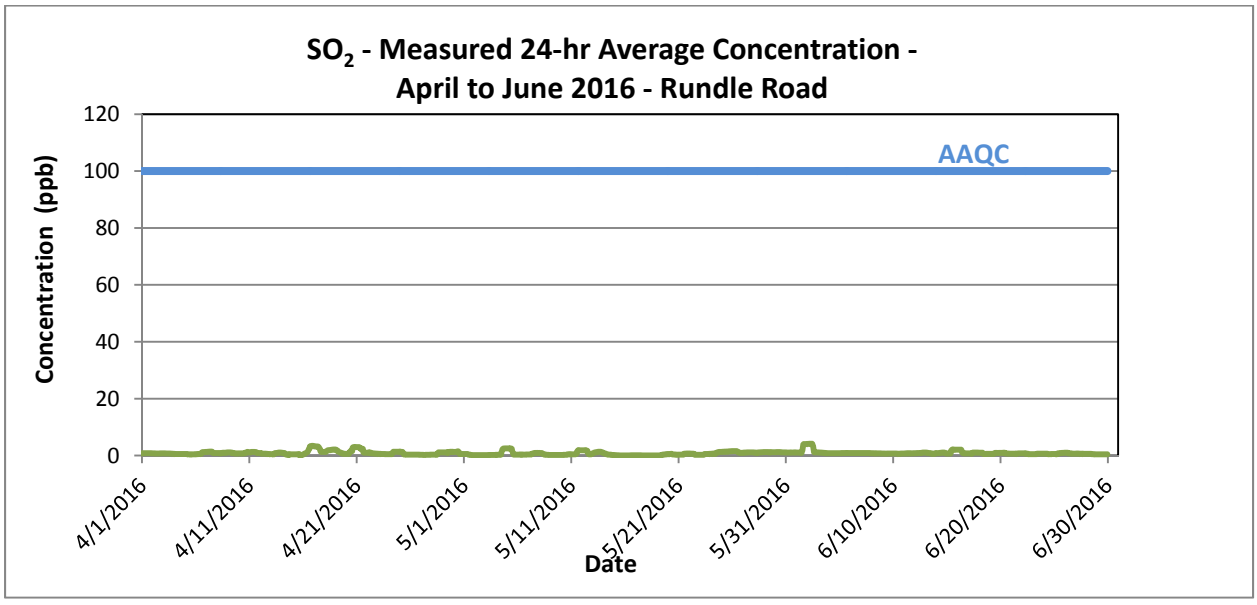


Figure B-2 Time History Plots of Measured Hourly Average and 24-Hour Average SO_2 Concentrations– Rundle Road Station





Appendix C NO_2 DATA SUMMARIES AND TIME HISTORY PLOTS

NO_2 - April (ppb) COURTICE 2016

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	1.2	1.0	1.4	1.9	2.2	1.7	2.7	8.3	5.3	5.2	4.0	3.9	2.4	2.6	2.7	2.3	2.0	2.8	2.6	3.2	7.7	17.6	23.6	24.4	24	24.4	1.0	5.5	0.0	0.0
2	8.0	19.5	16.5	9.4	8.4	9.7	3.7	2.9	1.8	1.4	0.8	1.9	1.4	0.8	1.2	2.7	1.6	1.4	1.7	3.2	1.2	0.8	1.1	1.3	24	19.5	0.8	4.3	0.0	0.0
3	0.7	0.8	0.7	0.8	0.6	0.7	0.8	1.0	0.4	0.5	0.8	0.4	0.5	0.7	0.7	1.2	1.8	1.5	5.3	5.1	5.3	4.3	4.2	4.1	24	5.3	0.4	1.8	0.0	0.0
4	3.0	3.7	2.1	3.0	2.1	2.7	3.4	3.2	3.4	4.2	2.4	2.0	1.8	1.1	1.5	1.3	1.5	3.8	4.2	8.8	10.7	4.7	4.0	2.8	24	10.7	1.1	3.4	0.0	0.0
5	2.9	2.4	4.0	7.0	10.4	7.3	12.7	5.1	2.8	1.1	1.1	0.7	0.8	0.5	0.9	2.2	3.3	4.2	5.7	4.2	6.3	19.7	35.0	22.2	24	35.0	0.5	6.8	0.0	0.0
6	2.0	1.5	1.6	1.7	2.1	1.9	1.4	1.3	1.6	1.8	2.1	2.5	2.5	3.5	3.0	5.1	11.5	5.4	11.9	17.2	27.0	8.7	13.2	14.7	24	27.0	1.3	6.0	0.0	0.0
7	13.4	14.0	11.1	4.1	3.1	2.9	2.8	1.4	3.2	3.4	2.7	2.3	2.4	2.5	2.9	2.9	3.4	4.1	4.9	3.4	2.5	2.8	3.2	2.5	24	14.0	1.4	4.2	0.0	0.0
8	1.7	1.9	2.0	1.8	2.3	2.5	3.2	2.6	1.9	1.8	1.3	1.3	1.3	1.3	1.3	1.4	1.5	1.6	3.3	3.1	2.9	2.1	1.7	3.4	24	3.4	1.3	2.0	0.0	0.0
9	1.9	1.5	1.3	1.8	1.1	1.1	1.0	1.2	1.0	1.3	0.6	0.7	0.5	0.6	1.0	0.9	1.3	1.0	1.2	2.1	2.3	2.0	1.8	2.9	24	2.9	0.5	1.3	0.0	0.0
10	2.0	3.1	3.6	4.2	3.3	3.7	4.2	1.6	1.0	1.5	1.1	0.7	0.6	1.5	1.4	1.6	1.7	1.3	1.3	1.2	0.9	0.9	0.7	0.8	24	4.2	0.6	1.8	0.0	0.0
11	0.9	1.3	1.6	1.7	1.7	2.6	6.2	3.5	1.4	1.6	1.9	2.1	2.3	2.2	2.1	2.3	2.5	3.3	2.7	3.3	3.0	2.7	3.1	4.0	24	6.2	0.9	2.5	0.0	0.0
12	3.6	4.1	6.0	6.1	10.6	22.3	28.6	18.3	6.6	3.5	1.6	1.9	2.5	1.9	1.7	1.9	1.8	2.3	3.0	5.7	6.5	11.3	19.1	17.7	24	28.6	1.6	7.9	0.0	0.0
13	16.1	12.2	16.7	17.8	24.0	27.5	27.3	12.7	4.7	1.5	0.9	0.6	0.6	0.4	0.2	0.0	0.1	0.0	1.0	3.1	27.2	23.2	20.2	17.7	24	27.5	0.0	10.7	0.0	0.0
14	20.9	24.0	22.2	21.2	23.5	24.5	19.5	10.7	8.0	1.9	1.5	2.3	0.5	0.4	0.5	0.4	0.3	0.5	6.3	23.9	31.7	23.9	22.0	21.1	24	31.7	0.3	13.0	0.0	0.0
15	11.0	10.2	13.8	7.8	7.8	10.6	9.9	C	C	C	C	5.4	2.2	2.1	2.5	1.9	2.9	3.1	4.8	7.4	24.4	20.3	14.8	16.9	20	24.4	1.9	9.0	0.0	0.0
16	11.9	12.5	9.0	8.2	15.6	11.5	8.9	7.9	18.0	5.3	2.3	2.0	1.4	1.2	1.2	1.7	1.8	2.5	2.8	8.0	19.1	16.5	12.1	12.9	24	19.1	1.2	8.1	0.0	0.0
17	8.1	5.9	8.5	4.2	7.9	7.4	9.1	5.3	8.2	5.8	2.5	3.3	2.5	2.1	2.1	1.7	1.6	1.4	1.5	4.8	33.7	36.9	25.3	20.5	24	36.9	1.4	8.8	0.0	0.0
18	19.8	15.0	14.2	21.5	15.9	6.4	6.8	7.3	9.2	14.2	19.9	26.5	28.8	11.5	6.1	4.7	3.9	3.1	2.6	10.7	5.5	5.2	4.3	4.2	24	28.8	2.6	11.1	0.0	0.0
19	3.2	3.7	2.9	3.3	6.6	5.3	7.1	2.6	2.3	2.3	2.0	2.4	1.9	1.1	1.1	1.0	1.1	2.4	5.6	5.2	6.0	4.7	3.8	3.9	24	7.1	1.0	3.4	0.0	0.0
20	3.7	6.7	4.7	6.6	30.8	30.9	26.0	15.4	3.1	1.2	2.1	1.1	1.1	1.3	2.1	1.0	1.5	3.1	3.8	8.2	5.7	20.9	11.9	19.0	24	30.9	1.0	8.8	0.0	0.0
21	13.4	12.8	11.8	12.1	15.3	21.4	17.0	13.7	7.6	3.6	3.6	2.7	3.1	8.4	3.0	2.9	5.8	14.7	9.0	17.2	19.3	20.0	23.1	16.8	24	23.1	2.7	11.6	0.0	0.0
22	12.2	11.4	3.6	2.7	2.4	5.6	7.4	5.5	10.0	8.6	6.6	7.2	6.0	4.5	4.2	4.9	3.7	4.2	4.7	5.0	5.6	5.9	3.5	3.0	24	12.2	2.4	5.8	0.0	0.0
23	4.4	3.3	3.3	3.1	3.2	3.2	4.0	2.5	2.0	2.0	3.3	1.4	1.1	1.3	1.6	1.2	1.3	1.2	1.7	3.8	5.0	2.9	2.2	1.8	24	5.0	1.1	2.5	0.0	0.0
24	3.0	2.3	2.1	3.0	2.3	3.1	6.9	8.0	1.4	1.2	1.3	1.0	1.1	1.1	1.2	1.2	1.6	2.6	1.5	1.4	1.5	3.6	5.1	12.8	24	12.8	1.0	2.9	0.0	0.0
25	14.0	15.8	11.8	12.5	25.6	10.2	5.4	7.3	6.6	8.6	4.9	4.0	3.3	3.1	4.5	2.2	3.6	6.7	7.4	16.5	13.2	10.1	8.7	4.7	24	25.6	2.2	8.8	0.0	0.0
26	3.7	4.0	4.2	4.0	5.2	4.9	5.0	3.9	5.2	6.5	3.6	3.2	3.8	3.5	3.5	2.4	1.3	1.6	1.8	1.9	2.6	4.0	31.2	30.3	24	31.2	1.3	5.9	0.0	0.0
27	28.0	24.8	21.2	20.7	26.1	27.5	13.2	5.3	3.2	2.1	2.3	0.6	0.7	0.4	0.5	0.7	0.7	1.8	3.9	5.9	4.8	2.8	3.0	2.5	24	28.0	0.4	8.5	0.0	0.0
28	2.7	2.4	2.6	11.0	23.1	22.3	16.9	9.1	7.8	1.5	1.3	1.1	1.0	0.9	1.0	2.6	2.5	6.3	3.9	2.7	30.0	24.1	15.0	11.0	24	30.0	0.9	8.4	0.0	0.0
29	7.5	6.1	11.4	8.5	9.6	10.5	9.3	5.8	3.9	2.8	1.5	2.3	1.3	0.9	1.3	1.3	1.1	2.0	1.7	3.5	22.4	33.7	19.5	19.7	24	33.7	0.9	7.8	0.0	0.0
30	23.4	14.3	11.3	8.7	10.5	11.4	8.6	5.9	4.8	2.1	2.1	2.7	3.4	2.7	1.7	1.7	3.5	2.0	3.8	4.6	4.4	3.5	10.8	14.7	24	23.4	1.7	6.8	0.0	0.0
31																									0	0.0	0.0		0.0	0.0
Count	30	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	716					
Maximum	28.0	24.8	22.2	21.5	30.8	30.9	28.6	18.3	18.0	14.2	19.9	26.5	28.8	11.5	6.1	5.1	11.5	14.7	11.9	23.9	33.7	36.9	35.0	30.3	24					
Minimum	0.7	0.8	0.7	0.8	0.6	0.7	0.8	1.0	0.4	0.5	0.6	0.4	0.5	0.4	0.2	0.0	0.1	0.0	1.0	1.2	0.9	0.8	0.7	0.8	0					
Average	8.3	8.1	7.6	7.3	10.1	10.1	9.3	6.2	4.7	3.4	2.8	3.0	2.8	2.2	2.0	2.0	2.4	3.1	3.9	6.5	11.3	11.3	11.6	11.1						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.1	1.5	2.0	2.6	3.3	4.2	6.1	10.4	17.6	23.1	30.7	36.9

Maximum Hourly	36.9
Maximum Daily	13.0
Monthly Average	6.3

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

NO_2 - COURTICE
May 2016
(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>200	Days>100
1	15.4	14.8	6.6	18.1	18.2	10.4	4.3	4.1	3.8	4.7	4.6	4.6	15.6	9.4	12.5	10.3	4.8	4.1	5.8	4.7	4.5	4.5	5.7	4.5	24	18.2	3.8	8.2	0.0	0.0
2	3.9	3.6	4.7	4.7	8.8	9.8	7.1	7.4	5.3	4.4	3.9	4.5	2.5	2.1	2.1	1.9	3.1	3.9	2.1	3.7	20.0	29.8	19.9	23.7	24	29.8	1.9	7.6	0.0	0.0
3	20.5	20.6	20.1	18.2	19.3	17.5	18.3	15.1	10.0	7.0	5.3	3.9	2.5	2.0	2.4	1.7	1.7	2.1	2.8	7.7	15.2	26.9	26.9	10.7	24	26.9	1.7	11.6	0.0	0.0
4	16.5	23.3	19.5	22.1	22.8	25.0	14.5	6.6	5.4	5.4	4.4	2.1	1.6	1.6	1.7	1.6	1.8	2.7	4.9	12.3	22.3	19.8	25.1	17.4	24	25.1	1.6	11.7	0.0	0.0
5	13.4	8.9	6.8	6.7	7.7	8.0	7.1	6.2	4.5	3.4	2.3	1.6	1.6	1.6	2.2	2.1	3.6	1.8	2.4	2.3	3.1	27.5	17.7	15.0	24	27.5	1.6	6.6	0.0	0.0
6	22.7	19.8	20.2	15.0	10.7	10.0	10.4	8.0	4.5	6.7	8.6	5.6	8.4	6.1	5.9	4.4	4.4	13.2	5.7	4.3	20.5	13.2	28.6	21.1	24	28.6	4.3	11.6	0.0	0.0
7	27.4	18.0	13.6	9.1	13.6	10.0	6.2	3.4	2.9	2.9	3.0	2.6	3.2	2.8	4.3	5.3	3.0	4.2	7.5	3.8	5.4	7.3	4.3	2.5	24	27.4	2.5	6.9	0.0	0.0
8	1.8	1.6	1.9	1.6	1.7	3.9	2.0	1.4	1.7	1.9	1.5	1.8	2.0	2.0	2.5	2.6	1.9	1.4	1.8	2.9	4.2	7.5	7.8	11.5	24	11.5	1.4	3.0	0.0	0.0
9	10.2	8.0	8.1	11.1	13.6	8.0	10.2	2.6	2.2	2.0	2.3	6.7	3.1	2.3	2.7	2.6	2.9	2.9	2.9	12.0	15.6	7.5	5.2	3.9	24	15.6	2.0	6.2	0.0	0.0
10	3.0	2.9	3.3	4.2	10.8	15.0	9.0	7.1	3.0	2.4	1.6	1.7	1.4	1.2	0.8	0.6	0.9	0.6	0.8	1.8	3.1	28.0	29.8	26.0	24	29.8	0.6	6.6	0.0	0.0
11	22.2	16.6	17.3	12.3	20.2	21.9	19.4	10.1	14.1	4.9	3.5	2.5	2.0	1.5	1.4	2.3	1.9	2.8	5.3	6.9	29.1	29.4	20.2	21.3	24	29.4	1.4	12.0	0.0	0.0
12	19.9	19.3	15.1	18.4	16.6	17.9	18.8	7.5	5.8	5.1	4.2	2.7	2.5	3.3	3.2	C	C	C	3.8	4.1	6.1	18.3	21.3	8.5	21	21.3	2.5	10.6	0.0	0.0
13	17.2	3.8	3.7	3.7	6.4	6.0	4.3	3.0	1.6	A	A	2.1	1.9	2.0	2.0	2.5	3.3	3.4	4.4	10.5	15.6	5.5	10.9	10.2	22	17.2	1.6	5.6	0.0	0.0
14	11.9	16.6	11.2	14.4	12.3	5.5	7.7	7.0	3.9	3.3	2.4	1.7	1.4	2.2	2.2	2.1	2.3	2.0	2.1	2.3	2.2	2.5	1.7	1.7	24	16.6	1.4	5.1	0.0	0.0
15	1.4	2.5	2.2	2.5	1.1	1.0	1.3	1.7	1.2	1.7	0.9	1.2	1.0	1.1	1.2	1.1	1.3	1.6	2.4	2.6	3.3	2.3	2.5	3.9	24	3.9	0.9	1.8	0.0	0.0
16	4.2	4.5	7.4	8.3	12.2	11.3	8.3	4.6	2.2	2.6	2.3	4.7	3.2	3.4	3.5	3.3	4.6	3.6	3.9	8.6	4.6	3.9	9.2	35.9	24	35.9	2.2	6.7	0.0	0.0
17	30.2	21.1	21.9	12.1	10.5	8.3	5.2	3.6	3.3	4.2	4.1	2.3	3.4	2.8	4.6	5.4	3.6	2.4	1.1	1.7	3.7	24.2	15.2	6.4	24	30.2	1.1	8.4	0.0	0.0
18	8.2	14.9	12.8	19.5	21.2	15.5	9.1	2.4	2.4	1.0	0.7	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.6	9.8	27.8	33.3	31.4	31.4	24	33.3	0.0	10.1	0.0	0.0
19	26.6	23.3	12.7	10.8	11.7	7.3	6.3	6.2	4.3	4.0	3.6	11.5	15.5	14.0	7.4	2.5	2.5	2.6	3.6	3.3	20.8	43.6	34.6	28.8	24	43.6	2.5	12.8	0.0	0.0
20	26.0	21.6	21.5	19.8	23.2	24.4	26.0	14.1	13.0	9.8	8.7	7.3	3.8	2.4	2.1	2.6	3.4	0.7	1.1	12.5	31.0	16.8	16.8	23.3	24	31.0	0.7	13.8	0.0	0.0
21	19.2	14.6	10.3	10.4	9.1	7.5	7.9	12.9	9.1	2.9	2.2	1.6	1.3	2.0	1.9	1.2	1.2	1.5	5.6	8.0	3.3	1.7	2.6	1.6	24	19.2	1.2	5.8	0.0	0.0
22	1.7	5.1	10.1	4.9	3.0	2.5	2.3	2.6	2.3	2.1	2.0	0.7	0.6	0.7	1.7	0.7	1.4	3.4	6.2	6.4	6.7	3.7	3.4	3.9	24	10.1	0.6	3.3	0.0	0.0
23	2.7	3.0	3.8	2.7	3.8	2.9	2.0	2.6	1.0	1.0	0.7	1.1	0.4	0.5	1.1	1.1	0.9	0.4	0.6	1.8	18.4	29.1	19.2	13.1	24	29.1	0.4	4.7	0.0	0.0
24	6.4	7.2	8.0	7.5	34.9	11.6	7.1	6.4	8.1	11.2	8.9	5.5	8.5	8.1	5.2	3.4	3.0	2.3	1.8	2.1	2.9	7.3	25.3	25.3	24	34.9	1.8	9.1	0.0	0.0
25	28.7	34.4	29.0	14.2	3.8	3.6	3.7	4.7	5.4	5.0	7.1	8.5	6.4	4.6	3.6	3.0	2.7	3.1	4.1	4.1	15.5	41.5	39.3	28.0	24	41.5	2.7	12.7	0.0	0.0
26	14.2	17.6	30.5	14.9	9.4	5.5	9.8	5.8	5.3	3.4	4.6	4.1	3.4	3.7	5.8	4.7	5.0	3.0	4.9	5.4	9.4	17.1	20.6	35.9	24	35.9	3.0	10.2	0.0	0.0
27	26.6	22.7	20.5	19.7	18.0	19.4	16.4	14.1	4.1	2.5	1.8	1.7	1.5	1.3	1.1	1.0	1.1	1.2	3.5	3.3	5.6	2.6	8.7	11.6	24	26.6	1.0	8.7	0.0	0.0
28	6.0	3.8	3.0	3.8	11.3	11.8	3.9	3.9	3.0	3.4	2.3	2.1	2.7	2.4	1.9	1.7	1.6	1.7	2.2	6.3	5.6	10.1	15.4	8.7	24	15.4	1.6	4.9	0.0	0.0
29	5.1	7.7	11.6	6.0	7.1	5.0	2.8	2.6	2.1	2.0	1.9	1.9	1.9	1.7	3.3	1.7	1.4	1.0	1.4	1.8	1.8	2.2	2.9	2.7	24	11.6	1.0	3.3	0.0	0.0
30	2.7	2.8	5.6	4.2	4.1	3.8	6.9	3.4	4.2	4.1	3.3	3.5	2.6	1.2	1.3	2.4	3.4	3.5	3.5	8.5	16.9	23.1	17.3	14.3	24	23.1	1.2	6.1	0.0	0.0
31	10.7	13.5	8.1	6.4	5.7	6.4	10.6	4.5	5.4	9.2	5.8	3.2	2.6	2.5	2.9	3.1	2.9	3.2	3.8	6.6	15.6	9.6	7.6	7.3	24	15.6	2.5	6.6	0.0	0.0
Count	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	30	30	30	31	31	31	31	31	31	739					
Maximum	30.2	34.4	30.5	22.1	34.9	25.0	26.0	15.1	14.1	11.2	8.9	11.5	15.6	14.0	12.5	10.3	5.0	13.2	7.5	12.5	31.0	43.6	39.3	35.9	24					
Minimum	1.4	1.6	1.9	1.6	1.1	1.0	1.3	1.4	1.0	1.0	0.7	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.6	1.7	1.8	1.7	1.7	1.6	21					
Average	13.8	12.8	12.0	10.6	12.0	10.2	8.7	6.0	4.7	4.1	3.6	3.4	3.5	3.0	3.1	2.6	2.5	2.7	3.3	5.5	11.6	16.1	16.0	14.9						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.6	2.1	2.7	3.5	4.4	6.1	8.6	13.3	19.9	25.1	34.0	43.6

Maximum Hourly	43.6
Maximum Daily	13.8
Monthly Average	7.8

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

NO_2 - COURTICE
June 2016
(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>200	Days>100
1	10.8	10.5	5.2	9.7	13.3	8.4	4.7	6.9	1.6	1.1	1.0	0.9	0.9	0.9	0.8	0.9	1.2	3.9	11.2	8.2	14.1	18.7	17.9	17.4	24	18.7	0.8	7.1	0.0	0.0
2	13.7	11.5	11.6	11.7	12.0	7.6	6.3	10.5	3.8	2.2	2.1	1.9	1.7	1.3	1.4	1.6	1.5	1.5	2.5	6.1	8.4	5.7	6.2	10.2	24	13.7	1.3	6.0	0.0	0.0
3	20.0	27.2	20.4	14.0	15.5	15.2	9.7	5.1	9.0	6.3	4.1	2.3	1.1	0.9	0.7	0.3	0.3	0.3	1.0	3.7	8.0	5.9	5.0	4.4	24	27.2	0.3	7.5	0.0	0.0
4	3.7	4.2	4.9	9.9	7.8	5.1	4.3	3.2	3.0	2.1	1.0	1.0	0.6	0.3	0.3	0.4	0.3	2.1	3.9	3.4	5.5	2.2	2.6	2.0	24	9.9	0.3	3.1	0.0	0.0
5	1.9	3.3	6.9	12.4	5.0	2.0	1.2	1.2	0.9	0.8	0.6	0.6	0.7	0.7	0.6	0.6	0.9	1.0	1.5	1.9	2.2	2.9	4.2	2.1	24	12.4	0.6	2.3	0.0	0.0
6	1.8	2.2	2.4	3.2	2.0	2.1	1.7	1.7	2.9	2.4	1.6	1.4	0.7	0.7	0.4	0.8	0.6	1.5	3.7	2.8	2.3	1.9	5.0	3.4	24	5.0	0.4	2.1	0.0	0.0
7	1.9	1.8	8.8	16.9	6.4	7.1	8.4	4.2	2.7	2.8	1.8	2.8	2.3	2.4	2.5	2.6	2.2	2.4	2.0	3.0	4.6	3.4	3.2	4.2	24	16.9	1.8	4.2	0.0	0.0
8	3.8	3.7	3.2	3.1	2.5	3.4	3.5	5.2	2.1	2.2	1.6	1.5	1.7	1.6	1.6	2.3	2.2	2.8	2.6	5.3	7.1	7.6	5.3	9.7	24	9.7	1.5	3.6	0.0	0.0
9	8.4	4.8	9.0	9.5	3.7	4.5	3.8	2.7	2.2	2.1	1.8	1.8	1.9	1.8	1.7	1.9	2.2	1.8	2.7	4.1	5.1	9.3	14.9	14.2	24	14.9	1.7	4.8	0.0	0.0
10	15.7	10.7	7.5	4.3	5.7	5.0	4.6	4.0	3.8	3.8	5.0	5.2	4.5	3.7	1.6	1.1	2.1	2.2	2.0	3.7	10.7	29.0	30.7	18.6	24	30.7	1.1	7.7	0.0	0.0
11	11.8	4.9	2.9	3.6	7.0	6.1	5.4	4.3	2.3	1.7	1.4	1.3	1.0	1.0	0.7	0.8	1.2	0.6	1.0	1.5	2.1	3.4	2.2	1.8	24	11.8	0.6	2.9	0.0	0.0
12	1.7	1.3	1.6	1.2	1.1	1.5	1.2	1.5	1.3	1.2	1.1	1.4	1.4	1.2	1.5	1.1	1.1	1.2	2.2	2.6	2.3	2.2	1.3	1.2	24	2.6	1.1	1.5	0.0	0.0
13	1.3	1.1	1.4	1.6	2.1	3.0	2.1	4.4	C	C	1.3	2.0	2.0	2.6	2.5	3.2	3.3	2.3	2.3	3.7	4.1	4.9	3.7	3.9	22	4.9	1.1	2.7	0.0	0.0
14	2.6	3.2	3.7	4.8	3.2	3.2	5.2	3.9	2.9	1.8	1.5	1.1	0.4	0.0	0.0	0.0	0.0	0.0	0.4	2.3	16.7	34.2	27.2	25.3	24	34.2	0.0	6.0	0.0	0.0
15	24.3	22.6	17.9	20.8	21.3	17.8	12.7	9.5	6.4	4.6	8.5	7.9	4.2	5.5	6.3	6.8	10.4	11.9	8.7	7.2	5.2	4.5	15.7	19.9	24	24.3	4.2	11.7	0.0	0.0
16	13.2	10.2	10.2	11.2	10.4	5.8	8.5	10.9	6.7	4.1	3.9	6.4	5.1	3.1	7.2	3.6	2.8	18.1	20.5	12.6	19.1	22.4	16.0	20.2	24	22.4	2.8	10.5	0.0	0.0
17	22.3	21.3	19.6	19.9	16.1	12.1	9.2	8.2	4.3	4.9	4.8	2.1	1.3	1.1	1.1	0.5	0.5	0.1	0.5	6.8	21.7	32.2	25.3	27.3	24	32.2	0.1	11.0	0.0	0.0
18	9.6	13.1	20.8	22.8	13.3	8.2	5.6	5.5	6.1	3.8	3.4	2.7	2.5	2.2	1.9	1.6	1.7	1.8	2.2	4.7	5.4	8.8	18.5	16.6	24	22.8	1.6	7.6	0.0	0.0
19	15.2	14.0	12.8	9.9	12.1	9.0	11.5	9.2	6.3	3.3	2.6	2.0	1.5	1.3	1.1	0.9	2.6	1.9	2.7	1.9	1.5	1.6	1.9	2.4	24	15.2	0.9	5.4	0.0	0.0
20	2.7	1.9	2.1	2.0	2.6	2.7	2.0	1.7	1.9	1.8	3.5	1.6	1.4	1.1	1.4	0.8	0.8	0.8	1.2	2.4	3.2	2.4	2.4	2.5	24	3.5	0.8	2.0	0.0	0.0
21	1.7	1.7	2.0	1.4	1.4	2.7	3.1	2.4	4.1	6.8	5.0	4.6	2.6	0.8	0.5	0.9	0.5	1.5	2.2	2.4	3.0	7.4	4.1	10.9	24	10.9	0.5	3.1	0.0	0.0
22	13.3	7.6	3.1	3.0	8.7	9.6	4.8	3.0	2.7	2.0	2.0	1.5	3.0	2.3	1.3	1.5	0.3	0.3	0.2	0.8	10.0	34.3	31.9	23.7	24	34.3	0.2	7.1	0.0	0.0
23	18.6	12.2	5.3	10.8	18.1	9.3	4.5	3.4	2.0	2.4	2.9	1.9	1.8	0.4	0.0	0.1	0.0	0.0	0.5	1.9	4.5	23.5	27.3	27.9	24	27.9	0.0	7.5	0.0	0.0
24	21.5	20.2	15.8	8.7	10.5	8.4	5.8	3.9	7.6	3.5	2.5	2.0	1.4	1.4	0.6	0.5	0.8	0.7	1.3	5.4	11.5	25.2	22.5	19.2	24	25.2	0.5	8.4	0.0	0.0
25	13.5	13.0	9.8	7.7	6.9	7.7	9.6	8.2	4.8	2.6	1.4	0.9	0.9	0.7	0.6	0.4	0.4	0.3	0.4	1.6	4.5	7.9	11.9	13.2	24	13.5	0.3	5.4	0.0	0.0
26	7.8	5.3	6.3	5.6	6.8	7.1	3.3	3.6	2.8	2.0	1.9	1.7	1.4	1.4	1.3	0.9	0.2	0.4	0.7	1.4	1.7	1.9	8.7	6.1	24	8.7	0.2	3.3	0.0	0.0
27	2.1	1.3	1.4	1.5	2.4	2.1	1.8	4.3	3.1	3.1	3.9	2.3	1.7	1.4	0.9	0.9	1.0	0.6	3.0	6.1	5.6	4.9	4.5	5.2	24	6.1	0.6	2.7	0.0	0.0
28	3.4	2.6	2.7	2.8	3.9	4.1	3.6	3.2	2.9	2.1	2.1	4.9	4.8	5.2	3.2	2.7	1.9	2.1	2.8	3.8	3.9	4.3	3.8	4.2	24	5.2	1.9	3.4	0.0	0.0
29	3.1	2.2	2.1	2.4	3.2	4.0	4.5	3.5	2.0	2.2	2.0	2.6	2.1	2.8	1.4	1.1	0.7	0.6	0.7	2.1	10.1	11.7	23.6	21.6	24	23.6	0.6	4.7	0.0	0.0
30	20.4	12.6	10.9	20.1	21.0	20.7	14.7	10.0	8.3	7.8	7.6	6.2	2.9	4.0	2.8	1.5	1.0	1.8	1.3	2.6	2.9	3.5	23.7	25.1	24	25.1	1.0	9.7	0.0	0.0
31																									0	0.0	0.0		0.0	0.0
Count	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	718					
Maximum	24.3	27.2	20.8	22.8	21.3	20.7	14.7	10.9	9.0	7.8	8.5	7.9	5.1	5.5	7.2	6.8	10.4	18.1	20.5	12.6	21.7	34.3	31.9	27.9	24					
Minimum	1.3	1.1	1.4	1.2	1.1	1.5	1.2	1.2	0.9	0.8	0.6	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.8	1.5	1.6	1.3	1.2	0					
Average	9.7	8.4	7.7	8.5	8.2	6.8	5.6	5.0	3.8	3.0	2.8	2.5	2.0	1.8	1.6	1.4	1.5	2.2	2.9	3.9	6.9	10.9	12.4	12.1						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.9	1.4	1.9	2.3	3.0	3.9	5.3	8.6	14.0	20.4	27.3	34.3

	Maximum
Maximum Hourly	34.3
Maximum Daily	11.7
Monthly Average	5.5

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

NO_2 - April (ppb)	Rundle Road 2016																												
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	4.4	4.2	5.7	20.9	14.3	18.0	16.1	8.7	3.1	3.3	3.5	2.7	3.2	4.5	5.9	2.1	1.8	1.6	2.3	4.5	6.7	5.1	5.0	6.4	24	20.9	1.6	6.4	0	0
2	7.0	9.6	8.5	13.1	9.5	5.7	2.0	1.6	1.4	1.0	0.9	3.6	4.1	3.4	2.7	2.2	0.9	0.7	0.6	0.6	0.8	0.5	0.4	0.6	24	13.1	0.4	3.4	0	0
3	0.7	0.8	0.8	0.7	0.5	0.4	0.6	0.4	0.5	0.4	0.4	0.4	0.6	0.6	0.5	0.8	0.9	0.8	1.3	1.0	1.4	4.8	2.1	6.2	24	6.2	0.4	1.2	0	0
4	1.4	1.0	1.1	2.7	1.1	1.2	2.3	1.3	1.1	2.4	1.0	0.8	0.5	0.4	0.4	0.6	0.4	0.4	0.7	1.4	2.1	1.1	0.8	0.5	24	2.7	0.4	1.1	0	0
5	0.4	0.5	0.6	1.0	1.3	1.0	1.4	1.3	1.1	0.9	0.4	0.6	1.2	3.0	3.7	5.6	6.8	9.7	14.7	13.4	10.9	13.8	13.1	9.2	24	14.7	0.4	4.8	0	0
6	10.2	7.7	5.5	6.1	10.1	11.1	7.5	10.1	6.5	9.4	7.8	12.2	9.5	8.0	18.0	8.2	5.8	6.2	8.3	9.8	12.1	12.0	9.1	12.2	24	18.0	5.5	9.3	0	0
7	9.0	6.4	9.8	12.0	7.5	8.5	9.8	4.5	7.6	7.7	6.0	7.1	5.8	5.7	7.1	6.3	5.0	2.3	2.0	1.8	1.6	1.3	1.1	1.4	24	12.0	1.1	5.7	0	0
8	0.7	0.8	0.9	0.9	0.9	1.1	1.7	1.3	1.0	0.9	1.0	1.2	1.3	0.9	0.8	1.0	0.8	0.5	0.8	0.8	0.7	0.7	0.5	0.6	24	1.7	0.5	0.9	0	0
9	0.5	0.5	1.0	0.9	0.4	0.3	0.5	0.3	0.3	0.5	0.5	0.4	0.3	0.4	0.5	0.5	0.4	0.6	0.4	0.8	0.9	0.9	0.7	0.6	24	1.0	0.3	0.5	0	0
10	0.7	0.8	1.6	1.2	1.3	1.0	2.4	1.2	2.0	2.0	2.2	2.1	1.6	2.7	3.0	2.9	6.5	5.1	6.0	8.8	5.8	4.8	2.4	2.5	24	8.8	0.7	2.9	0	0
11	2.4	4.5	11.0	5.7	7.9	10.3	6.5	17.5	9.3	13.0	12.9	14.3	13.3	11.5	8.4	10.8	11.3	10.1	8.7	8.7	2.1	1.4	1.3	1.3	24	17.5	1.3	8.5	0	0
12	1.5	2.4	8.4	16.5	18.9	29.3	21.6	14.8	8.6	4.5	3.3	2.3	1.4	1.2	1.0	0.9	0.8	0.7	0.6	1.0	1.7	2.2	3.5	4.4	24	29.3	0.6	6.3	0	0
13	1.4	0.9	0.9	0.9	10.9	18.4	12.7	5.3	11.6	11.9	2.9	1.5	2.0	2.1	1.9	2.8	2.6	4.3	13.5	10.8	7.1	5.0	3.5	4.1	24	18.4	0.9	5.8	0	0
14	7.5	10.6	9.8	5.2	2.7	3.2	3.6	7.6	4.8	4.0	3.7	2.2	1.7	2.6	2.7	2.4	8.1	21.9	5.7	4.0	9.3	10.2	6.9	5.4	24	21.9	1.7	6.1	0	0
15	2.3	5.7	4.5	4.0	6.9	6.9	8.1	4.6	9.5	5.3	5.1	4.0	C	C	2.4	2.2	0.7	1.5	2.0	10.8	8.3	6.3	3.7	5.9	22	10.8	0.7	5.0	0	0
16	3.7	6.2	1.4	1.0	3.1	1.3	1.9	4.0	0.9	1.0	0.7	6.0	18.4	17.5	18.0	29.0	22.6	3.3	0.4	1.6	4.1	3.1	3.4	2.2	24	29.0	0.4	6.5	0	0
17	1.0	0.5	0.1	0.0	0.0	0.0	0.1	0.1	1.1	1.0	2.2	0.9	0.2	1.4	3.6	0.8	1.1	2.7	15.4	22.3	11.3	8.3	4.5	0.8	24	22.3	0.0	3.3	0	0
18	0.0	0.0	4.0	23.4	0.0	0.0	0.0	0.0	0.0	11.2	13.1	15.8	30.5	11.2	5.5	5.8	6.6	4.3	4.4	3.2	0.0	0.0	0.0	0.0	24	30.5	0.0	5.8	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	0.2	1.8	1.4	3.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	24	3.4	0.0	0.3	0	0
20	0.0	1.2	0.0	1.3	2.1	3.5	9.4	11.7	21.8	3.5	12.1	0.0	1.0	6.3	0.4	28.2	10.7	4.8	10.3	10.7	13.9	10.3	7.3	5.4	24	28.2	0.0	7.3	0	0
21	3.5	2.0	12.4	1.1	1.2	2.5	6.4	8.3	7.2	6.6	7.4	3.0	6.2	12.1	7.8	10.8	10.0	8.7	16.0	30.1	18.4	15.6	13.6	8.5	24	30.1	1.1	9.1	0	0
22	9.3	10.2	9.8	14.1	24.9	9.9	13.3	19.4	24.2	23.0	14.9	7.0	0.7	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	24.9	0.0	7.6	0	0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.6	0.0	0.2	0.6	7.6	1.2	0.0	0.0	0.0	0.0	24	7.6	0.0	0.5	0	0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	9.6	3.3	0.0	0.0	0.0	4.5	2.5	2.8	5.4	6.2	6.2	10.7	8.9	6.2	6.2	24	10.7	0.0	3.3	0	0
25	4.1	3.6	4.5	7.3	6.1	2.2	3.6	3.1	2.9	6.0	2.4	0.1	0.1	0.0	0.1	1.4	3.0	0.6	1.9	13.2	5.4	4.1	1.3	0.0	24	13.2	0.0	3.2	0	0
26	0.0	0.8	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	2.8	2.3	4.1	10.3	9.1	12.1	7.2	12.8	24	12.8	0.0	2.7	0	0
27	2.3	1.1	0.3	0.6	0.3	1.6	1.0	0.8	0.0	1.8	2.0	0.0	0.0	1.7	2.6	3.5	1.7	2.0	0.0	0.0	0.0	0.0	0.0	0.0	24	3.5	0.0	1.0	0	0
28	0.0	0.0	0.0	2.7	0.0	1.0	4.2	4.0	0.4	3.7	0.4	0.0	5.9	12.8	14.0	6.2	0.4	1.7	8.3	19.7	11.0	6.9	3.7	1.6	24	19.7	0.0	4.5	0	0
29	0.5	6.5	0.7	0.9	0.8	1.3	1.4	1.1	0.0	2.9	4.0	3.6	18.0	4.9	19.9	11.7	0.9	2.7	7.2	11.0	12.7	11.2	9.8	6.4	24	19.9	0.0	5.8	0	0
30	5.0	3.1	1.4	0.3	0.0	0.0	1.0	1.8	5.3	2.5	4.9	2.0	0.4	0.5	0.0	3.9	0.3	0.8	0.7	4.7	8.8	1.5	2.3	2.3	24	8.8	0.0	2.2	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	718					
Maximum	10.2	10.6	12.4	23.4	24.9	29.3	21.6	19.4	24.2	23.0	14.9	15.8	30.5	17.5	19.9	29.0	22.6	21.9	16.0	30.1	18.4	15.6	13.6	12.8	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	0					
Average	2.7	3.1	3.5	4.8	4.4	4.7	4.6	4.5	4.7	4.7	4.0	3.1	4.4	4.0	4.6	5.2	4.0	3.6	5.0	7.1	5.9	5.1	3.8	3.6						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.4	0.8	1.3	2.2	3.5	5.7	8.1	11.4	14.7	23.4	30.5

Maximum Hourly	30.5
Maximum Daily	9.3
Monthly Average	4.4

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 2016

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	3.4	2.7	0.8	1.3	2.1	5.0	1.9	0.9	0.9	3.5	1.2	1.0	0.8	3.1	0.8	0.6	0.7	0.1	0.2	0.0	0.0	0.0	0.0	0.0	24	5.0	0.0	1.3	0	0
2	0.0	0.0	0.0	0.0	0.5	0.4	0.2	1.6	0.8	0.0	0.0	0.0	0.0	3.4	2.4	1.3	2.4	4.0	5.3	14.0	6.9	3.9	2.5	2.8	24	14.0	0.0	2.2	0	0
3	2.6	5.2	1.4	1.3	1.7	0.8	4.3	3.1	2.8	7.1	2.2	2.3	1.4	0.5	2.1	0.3	2.0	6.2	7.7	8.5	15.3	12.6	10.3	11.0	24	15.3	0.3	4.7	0	0
4	8.9	6.6	4.3	4.7	5.8	7.1	8.5	7.6	5.4	6.6	2.3	0.0	18.6	10.2	13.1	5.6	5.0	4.4	6.5	11.1	5.4	4.5	1.6	2.4	24	18.6	0.0	6.5	0	0
5	1.7	1.4	1.0	0.9	1.2	1.4	2.4	1.5	6.0	5.0	3.3	2.8	1.3	3.4	5.8	3.7	5.7	6.6	10.9	16.7	12.9	8.3	11.7	19.0	24	19.0	0.9	5.6	0	0
6	17.2	8.2	5.2	1.8	0.3	1.3	2.4	1.7	0.4	2.5	2.2	1.9	7.3	3.6	2.2	2.2	4.7	6.7	7.4	9.0	6.0	9.8	7.5	12.7	24	17.2	0.3	5.2	0	0
7	9.9	6.4	3.0	1.8	6.8	11.9	10.2	4.5	12.5	3.3	3.2	4.6	6.1	2.1	3.7	2.0	1.2	3.7	6.1	4.5	3.0	3.2	1.7	0.0	24	12.5	0.0	4.8	0	0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.1	1.0	1.7	4.1	3.7	1.6	0.1	0.0	0.0	0.0	0.0	0.0	24	4.1	0.0	0.6	0	0
9	0.0	0.0	0.3	0.0	0.0	0.0	1.3	0.0	0.0	2.2	0.9	2.4	3.6	2.8	3.3	3.1	3.6	3.7	4.6	6.0	0.4	0.0	0.0	0.0	24	6.0	0.0	1.6	0	0
10	0.0	0.0	0.0	0.0	0.0	0.4	2.7	4.7	4.1	1.1	0.9	0.4	0.8	1.0	0.0	3.0	3.6	3.4	11.0	29.5	21.6	17.3	13.2	5.1	24	29.5	0.0	5.2	0	0
11	1.3	1.0	3.2	0.3	0.8	3.0	7.3	12.0	8.5	6.9	6.8	4.8	5.1	16.3	7.1	11.4	6.2	9.0	8.4	17.9	9.0	8.2	9.0	6.2	24	17.9	0.3	7.1	0	0
12	3.9	2.1	2.1	1.5	1.4	2.5	6.0	7.9	9.3	5.6	3.6	3.8	4.2	3.0	4.7	3.4	7.2	8.9	10.7	C	C	C	10.4	10.4	21	10.7	1.4	5.4	0	0
13	9.1	13.2	8.0	10.7	13.2	12.6	13.5	14.2	8.9	10.0	3.0	2.7	A	A	0.9	0.7	0.7	0.7	0.8	1.5	2.0	5.8	6.0	4.9	22	14.2	0.7	6.5	0	0
14	9.9	10.7	8.8	12.4	13.9	9.3	6.8	10.3	5.1	5.4	3.4	2.9	2.0	1.0	0.4	0.2	0.2	0.0	0.1	0.2	0.3	0.2	0.0	0.0	24	13.9	0.0	4.3	0	0
15	0.0	0.9	0.8	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	0.4	0.9	1.1	24	1.1	0.0	0.2	0	0
16	1.8	2.7	2.4	2.3	3.2	5.0	4.8	2.8	0.8	0.8	1.2	8.9	7.3	6.4	6.0	5.2	7.6	11.7	7.7	2.5	15.1	16.2	8.4	5.7	24	16.2	0.8	5.7	0	0
17	5.7	23.0	10.8	1.8	1.4	1.1	1.3	1.6	2.8	5.6	5.5	4.5	3.9	2.2	2.9	4.0	3.2	4.0	7.4	18.7	10.4	1.9	1.6	0.9	24	23.0	0.9	5.3	0	0
18	2.7	1.7	2.2	1.6	1.7	2.3	3.6	3.5	2.4	8.5	8.9	1.0	0.9	1.6	1.7	4.8	1.8	3.6	6.5	6.9	9.7	8.7	6.8	5.5	24	9.7	0.9	4.1	0	0
19	5.9	4.9	7.5	12.8	1.1	0.9	2.9	3.5	1.6	0.7	0.6	13.2	22.0	16.6	15.4	11.3	6.6	6.8	4.7	16.8	16.8	18.3	13.3	3.5	24	22.0	0.6	8.6	0	0
20	14.3	3.5	8.0	5.2	21.8	24.5	16.6	10.6	14.7	13.7	6.4	3.6	1.6	1.6	2.0	3.5	4.3	3.4	4.6	9.2	20.9	22.6	25.0	22.9	24	25.0	1.6	11.0	0	0
21	18.5	12.0	9.4	13.9	10.2	4.1	5.0	4.0	4.4	5.4	2.6	4.4	8.4	1.4	1.8	2.5	2.4	2.4	3.7	5.0	6.6	6.8	6.6	1.8	24	18.5	1.4	6.0	0	0
22	3.3	10.3	12.8	8.7	2.9	1.9	1.1	1.0	1.4	0.9	0.9	0.7	0.9	0.9	2.5	1.9	1.3	1.2	2.6	1.8	1.6	1.7	1.4	1.5	24	12.8	0.7	2.7	0	0
23	3.2	4.0	4.6	4.7	5.8	6.7	1.5	6.7	3.1	7.8	4.6	0.4	0.6	1.3	3.2	1.5	1.6	2.8	2.3	11.7	10.1	7.4	3.3	4.6	24	11.7	0.4	4.3	0	0
24	1.8	3.5	4.0	2.9	10.8	18.0	21.1	12.8	12.0	13.7	14.2	10.4	16.7	14.5	7.3	9.3	6.4	5.2	5.5	7.6	17.2	20.1	19.4	22.1	24	22.1	1.8	11.5	0	0
25	23.3	11.0	15.6	33.4	16.9	18.1	16.0	20.8	21.5	17.1	17.1	15.8	12.5	7.8	4.2	4.1	4.6	10.4	12.2	14.1	18.9	28.3	21.0	19.1	24	33.4	4.1	16.0	0	0
26	17.6	23.5	18.7	14.3	17.2	16.2	17.5	6.7	6.6	4.6	4.6	6.1	7.6	6.9	8.7	6.0	5.3	6.7	5.7	5.6	16.8	21.9	15.8	16.9	24	23.5	4.6	11.6	0	0
27	19.6	14.0	11.1	10.0	15.0	14.8	16.2	17.0	15.5	8.1	5.5	4.7	4.1	4.0	2.7	6.5	4.5	6.0	5.6	6.1	13.8	18.3	15.3	11.7	24	19.6	2.7	10.4	0	0
28	15.2	10.2	6.5	7.2	20.2	16.0	7.0	7.6	7.2	6.3	5.1	4.0	2.3	2.5	3.3	4.9	3.8	3.1	4.3	6.2	6.7	5.5	19.3	9.6	24	20.2	2.3	7.7	0	0
29	7.6	6.6	10.0	7.2	12.5	8.2	3.7	3.7	6.8	5.6	3.8	2.2	5.8	2.7	2.6	5.9	2.9	2.3	4.3	7.1	6.9	4.3	3.9	4.7	24	12.5	2.2	5.5	0	0
30	4.2	5.7	5.8	12.1	10.2	13.3	13.7	7.1	7.0	8.3	6.2	4.6	4.5	3.8	3.0	1.1	1.0	1.2	1.3	5.4	4.8	5.2	1.8	1.8	24	13.7	1.0	5.6	0	0
31	2.2	6.0	1.4	6.1	14.6	19.5	16.7	13.5	9.2	14.4	10.2	8.5	6.0	1.5	1.0	1.0	1.0	1.0	0.9	3.9	7.1	4.3	2.2	1.5	24	19.5	0.9	6.4	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	30	30	30	31	31	739					
Maximum	23.3	23.5	18.7	33.4	21.8	24.5	21.1	20.8	21.5	17.1	17.1	15.8	22.0	16.6	15.4	11.4	7.6	11.7	12.2	29.5	21.6	28.3	25.0	22.9	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	21					
Average	6.9	6.5	5.5	5.9	6.9	7.3	7.0	6.2	5.9	5.8	4.2	4.0	5.3	4.2	3.8	3.7	3.4	4.2	5.1	8.3	8.9	8.9	7.7	6.8						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.2	1.1	1.9	3.0	4.2	5.6	7.1	10.2	14.7	17.9	22.9	33.4

Maximum Hourly	33.4
Maximum Daily	16.0
Monthly Average	5.9

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 2016

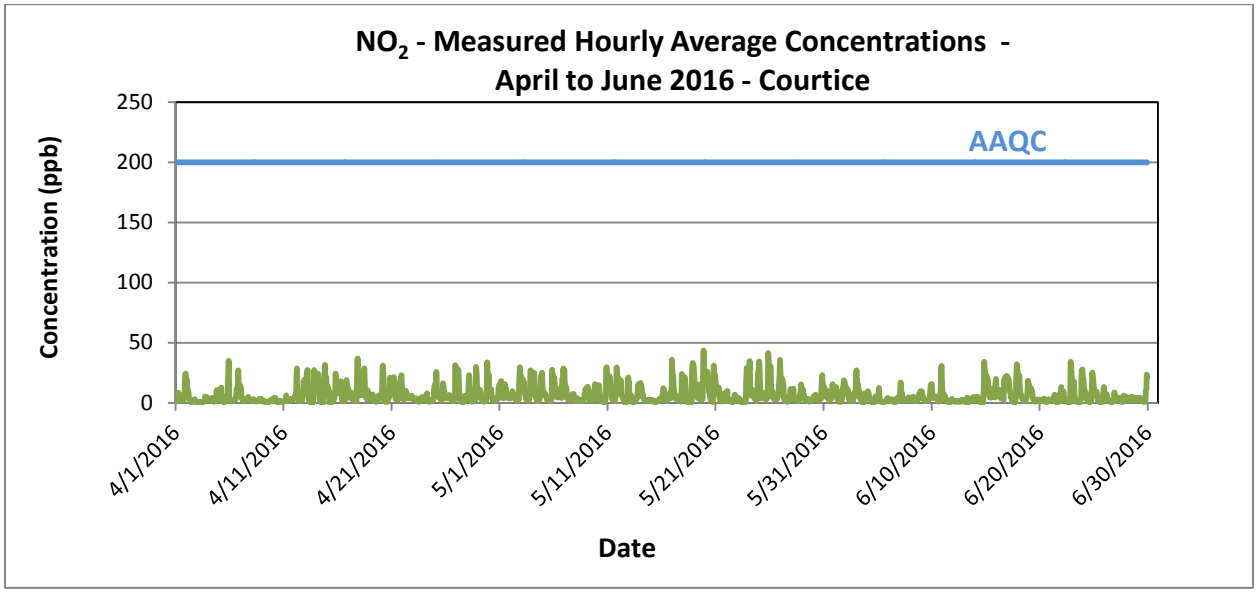
Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	4.1	3.3	1.5	2.8	3.7	3.2	1.7	1.8	2.8	3.8	1.1	0.6	8.7	5.4	15.9	10.7	4.1	2.1	4.6	8.3	6.8	12.5	8.5	6.9	24	15.9	0.6	5.2	0	0
2	5.8	4.1	4.0	4.0	3.9	2.9	8.4	15.4	7.7	5.1	5.6	3.8	4.7	5.7	6.5	9.0	4.5	4.8	4.6	2.0	2.1	1.5	2.3	2.7	24	15.4	1.5	5.0	0	0
3	1.0	3.4	8.3	6.0	6.0	3.8	3.2	2.2	2.5	6.2	3.0	2.1	1.9	1.9	3.8	1.0	2.9	3.5	2.7	1.7	2.4	1.6	2.0	1.8	24	8.3	1.0	3.1	0	0
4	1.4	0.9	2.7	2.7	3.1	3.0	1.7	1.3	2.7	3.7	2.1	1.4	0.9	0.9	0.7	0.1	0.6	1.0	0.7	4.6	1.8	1.2	3.0	0.8	24	4.6	0.1	1.8	0	0
5	1.4	6.1	2.0	1.3	0.9	1.8	1.8	2.9	2.1	2.3	1.3	1.9	1.5	2.0	2.2	1.7	2.9	3.8	3.6	6.5	6.7	4.9	5.1	4.0	24	6.7	0.9	2.9	0	0
6	0.9	1.1	2.3	3.6	4.8	8.5	8.0	6.7	6.9	6.7	5.4	3.1	4.2	4.5	4.7	5.1	3.7	4.0	1.1	12.0	13.8	10.9	6.8	15.6	24	15.6	0.9	6.0	0	0
7	4.8	6.6	4.1	13.0	18.9	24.5	15.6	1.6	0.9	0.8	2.0	1.3	0.7	0.5	0.6	1.3	1.3	1.1	0.9	1.3	1.5	0.6	0.5	1.0	24	24.5	0.5	4.4	0	0
8	0.9	0.8	0.7	0.3	0.2	0.7	1.3	1.6	0.8	0.4	0.4	0.2	0.2	0.4	0.2	0.5	0.5	0.7	0.6	1.0	1.6	1.7	1.3	1.3	24	1.7	0.2	0.8	0	0
9	3.6	11.6	4.8	1.0	0.2	0.5	1.4	1.4	0.6	0.4	0.3	0.3	0.4	0.3	0.1	0.1	0.4	0.3	0.0	0.1	0.2	0.8	1.8	2.0	24	11.6	0.0	1.4	0	0
10	1.3	1.0	0.8	1.1	1.1	1.6	1.3	0.6	6.6	7.8	7.3	6.5	4.6	4.8	7.0	7.2	5.1	5.0	5.5	11.3	10.0	12.3	11.2	8.7	24	12.3	0.6	5.4	0	0
11	8.8	12.8	9.1	5.0	5.0	4.3	3.1	4.2	4.2	4.0	5.8	5.9	4.9	4.0	4.7	2.4	1.1	1.6	1.5	8.9	14.9	7.2	0.7	0.2	24	14.9	0.2	5.2	0	0
12	0.1	0.0	0.1	0.1	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	0.7	0.0	0.0	0.0	24	0.7	0.0	0.0	0	0
13	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.8	0.5	1.6	3.3	4.4	4.1	0.5	0.7	0.4	0.3	0.2	0.0	0.3	0.3	0.5	0.2	0.5	24	4.4	0.0	0.8	0	0
14	0.4	0.3	0.4	0.5	0.6	4.6	1.8	2.3	4.8	1.6	0.8	0.6	1.6	0.1	C	C	M	4.6	4.5	9.5	9.4	10.6	7.9	5.5	21	10.6	0.1	3.4	0	0
15	6.3	7.1	6.3	5.7	5.0	11.6	23.1	19.9	14.8	11.1	12.2	5.6	4.9	5.5	4.8	4.2	11.1	16.9	15.3	21.5	15.2	12.3	19.0	13.1	24	23.1	4.2	11.4	0	0
16	7.7	5.0	5.0	4.6	5.9	10.9	16.5	6.1	7.6	5.0	4.1	7.4	3.4	3.9	3.6	5.1	3.5	4.4	6.6	17.3	12.2	7.1	4.4	3.4	24	17.3	3.4	6.7	0	0
17	5.1	8.2	5.3	3.9	4.2	4.6	5.6	3.4	2.3	7.5	8.5	3.9	3.8	4.4	3.0	3.0	3.7	5.2	7.3	6.3	9.1	10.1	6.4	2.2	24	10.1	2.2	5.3	0	0
18	5.9	13.7	9.1	7.6	5.7	3.4	2.8	6.1	7.1	3.9	3.8	4.1	4.2	3.8	3.2	3.2	2.7	3.4	5.3	10.3	13.5	10.4	11.3	9.1	24	13.7	2.7	6.4	0	0
19	7.7	7.5	5.3	5.5	3.9	4.9	14.3	13.8	11.7	5.9	6.2	3.9	2.8	2.7	3.6	3.5	3.3	4.4	5.0	3.5	4.8	6.5	6.5	7.2	24	14.3	2.7	6.0	0	0
20	4.0	4.2	4.4	5.5	9.1	12.4	10.7	7.5	9.4	7.7	7.5	7.8	4.7	4.5	5.0	4.9	3.2	4.5	5.5	8.6	1.5	1.3	1.1	1.0	24	12.4	1.0	5.7	0	0
21	1.0	1.0	1.0	4.6	15.8	11.8	20.8	16.2	10.7	11.9	11.4	8.7	7.4	4.0	4.1	11.8	4.7	8.2	4.1	2.3	7.2	9.3	1.8	2.5	24	20.8	1.0	7.6	0	0
22	2.6	6.4	11.1	2.4	8.6	2.6	2.6	2.0	1.3	1.4	1.3	0.9	1.2	1.2	1.7	4.0	3.3	3.1	7.1	11.4	11.8	18.2	9.9	8.4	24	18.2	0.9	5.2	0	0
23	7.4	3.8	4.9	12.1	8.2	4.4	6.5	2.9	1.6	5.0	4.5	2.6	2.3	2.4	1.9	3.2	2.2	2.8	2.9	9.5	7.0	6.0	14.5	14.6	24	14.6	1.6	5.6	0	0
24	10.5	5.0	1.7	2.8	5.2	6.0	3.7	3.1	9.4	5.6	3.3	3.1	2.7	2.4	2.2	1.9	2.3	3.5	5.6	5.7	10.2	7.3	8.1	6.4	24	10.5	1.7	4.9	0	0
25	4.8	4.4	4.8	3.9	3.4	3.0	8.3	5.0	7.6	4.9	1.3	1.7	1.6	1.4	1.6	2.1	2.5	2.5	2.3	4.0	9.3	7.7	9.9	6.9	24	9.9	1.3	4.4	0	0
26	3.6	3.6	3.1	3.0	3.3	3.3	5.8	6.3	4.1	7.4	2.8	2.5	3.2	2.8	3.0	3.1	2.8	3.3	5.2	5.9	7.3	11.3	3.1	11.6	24	11.6	2.5	4.6	0	0
27	5.3	6.7	3.7	5.9	7.8	12.0	11.6	12.2	9.9	7.6	9.6	7.1	6.4	6.9	4.8	5.1	4.7	4.7	6.4	2.5	2.0	2.0	1.8	1.8	24	12.2	1.8	6.2	0	0
28	1.6	1.7	1.8	1.8	1.6	2.0	2.2	2.0	1.8	1.7	3.3	9.2	9.5	2.0	1.5	1.6	1.4	1.2	1.4	1.8	1.8	1.8	1.6	1.7	24	9.5	1.2	2.4	0	0
29	1.6	1.5	1.2	1.0	1.3	1.7	2.7	1.9	1.4	1.4	1.3	1.4	3.0	5.8	3.7	3.8	3.1	3.7	5.1	14.0	5.4	4.7	2.7	3.3	24	14.0	1.0	3.2	0	0
30	2.7	12.1	7.3	7.4	10.7	11.8	5.0	7.5	10.7	7.6	5.5	5.2	5.5	4.2	3.5	2.7	4.1	5.7	8.9	14.9	12.9	11.9	6.9	7.6	24	14.9	2.7	7.6	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	717					
Maximum	10.5	13.7	11.1	13.0	18.9	24.5	23.1	19.9	14.8	11.9	12.2	9.2	9.5	6.9	15.9	11.8	11.1	16.9	15.3	21.5	15.2	18.2	19.0	15.6	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	0.2	0.0	0.0	0.0	0					
Average	3.7	4.8	3.9	4.0	4.9	5.5	6.4	5.3	5.2	4.7	4.2	3.6	3.5	3.0	3.4	3.5	3.0	3.7	4.1	6.9	6.8	6.5	5.3	5.1						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.5	1.3	1.8	2.8	3.7	4.6	5.6	7.4	10.6	12.3	18.0	24.5

Maximum Hourly	24.5
Maximum Daily	11.4
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

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



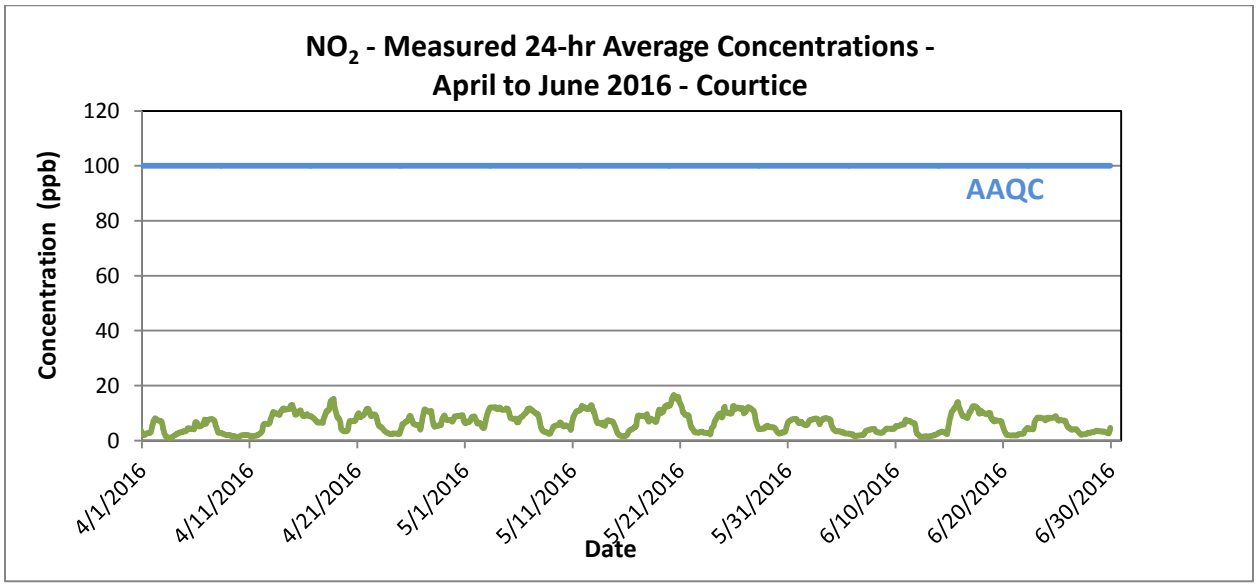
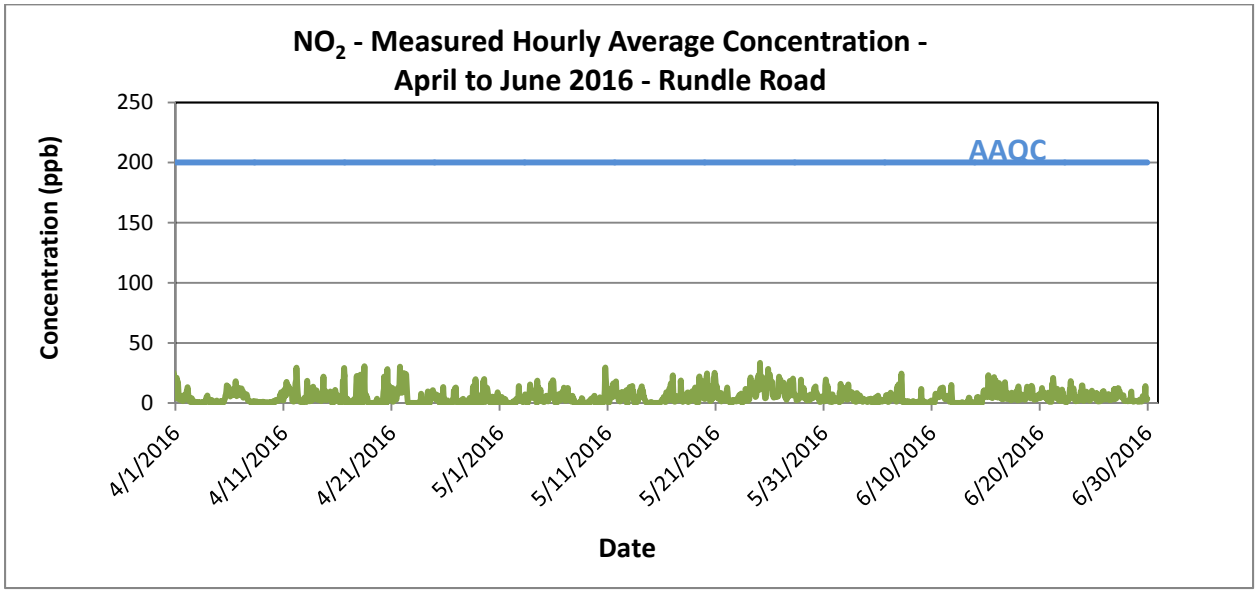
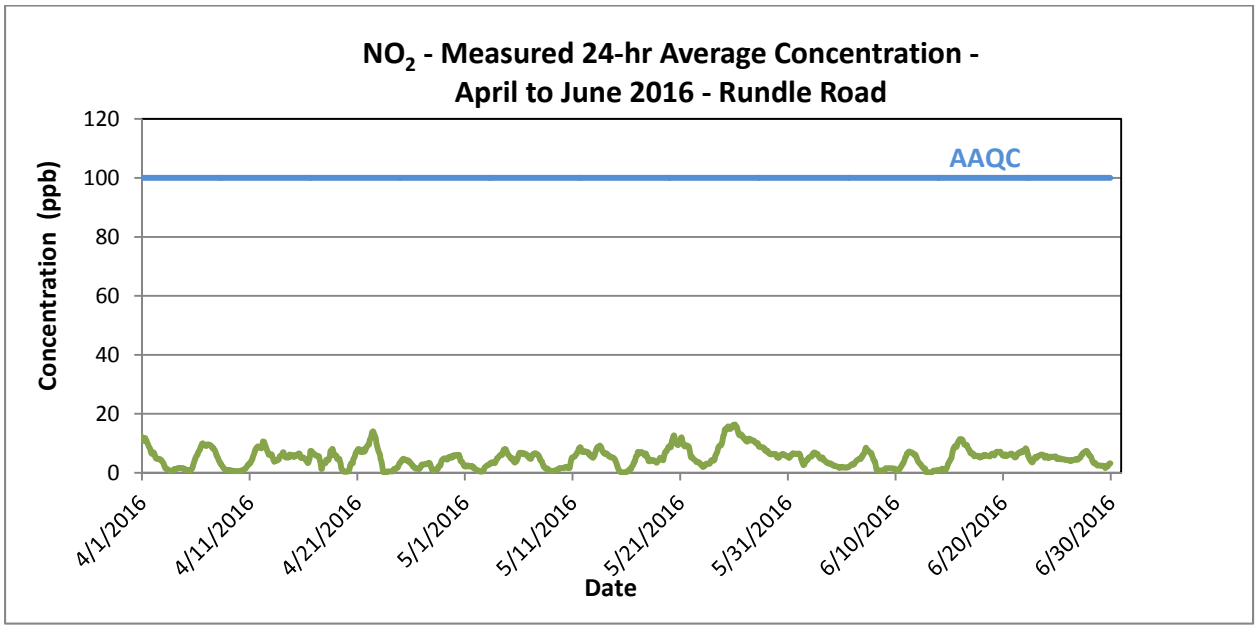


Figure C-2 Time History Plots of Measured Hourly Average and 24-Hour Average NO_2 Concentrations – Rundle Road Station





Appendix D NO_X DATA SUMMARIES AND TIME HISTORY PLOTS

NOx - April (ppb) COURTICE 2016

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	1.4	1.2	1.7	1.8	2.5	1.9	2.8	9.6	6.6	7.3	5.6	5.4	3.7	3.6	3.3	3.2	2.4	3.2	2.7	3.3	7.9	19.3	27.2	27.2	24	27.2	1.2	6.5	0.0	0.0
2	8.4	31.7	22.9	10.3	9.5	10.3	4.5	3.5	2.5	1.8	1.5	3.2	2.3	1.2	1.6	3.6	2.0	2.3	2.1	3.9	1.8	0.8	1.4	1.8	24	31.7	0.8	5.6	0.0	0.0
3	0.9	1.4	1.0	1.1	1.4	1.0	1.1	1.4	0.7	0.8	1.4	0.5	1.1	1.2	1.2	1.6	2.2	1.9	7.1	5.8	6.1	4.8	4.6	4.5	24	7.1	0.5	2.3	0.0	0.0
4	3.2	6.6	2.6	3.9	2.7	3.3	4.3	4.2	4.8	6.7	3.9	3.2	3.1	1.8	2.7	1.9	2.2	5.6	5.1	9.4	11.2	5.3	4.4	3.5	24	11.2	1.8	4.4	0.0	0.0
5	3.3	2.6	6.1	8.3	10.9	7.7	16.6	8.4	4.9	1.6	1.8	1.2	1.5	0.9	1.7	3.4	4.7	5.1	6.2	4.7	6.6	20.2	38.7	23.3	24	38.7	0.9	7.9	0.0	0.0
6	2.2	1.8	1.9	1.9	2.5	2.2	1.7	1.7	1.8	1.9	2.4	3.1	3.1	4.0	3.4	6.2	15.3	6.4	13.4	19.6	32.0	9.8	14.7	16.5	24	32.0	1.7	7.1	0.0	0.0
7	13.9	14.6	13.0	4.5	3.6	3.2	3.2	1.9	3.9	4.2	3.9	3.3	3.2	3.4	3.8	3.9	4.1	4.6	5.6	4.1	3.1	3.1	3.7	2.7	24	14.6	1.9	4.9	0.0	0.0
8	2.0	2.2	2.1	2.0	2.4	2.8	3.6	3.3	2.5	2.8	2.3	1.8	1.8	2.0	1.9	1.8	1.8	2.3	4.3	3.8	3.7	2.6	2.1	4.2	24	4.3	1.8	2.6	0.0	0.0
9	2.2	1.6	1.5	2.8	1.4	1.6	1.6	1.8	1.6	2.3	1.1	1.1	0.7	1.1	1.8	1.4	1.9	1.8	1.9	2.2	2.7	2.3	2.0	3.5	24	3.5	0.7	1.8	0.0	0.0
10	2.3	3.3	3.9	4.9	3.8	4.0	5.4	2.2	1.2	2.3	1.3	1.2	1.2	2.1	1.8	2.1	2.2	1.6	1.4	1.8	0.9	0.8	0.7	0.7	24	5.4	0.7	2.2	0.0	0.0
11	1.1	1.5	1.6	2.1	2.0	2.9	7.5	3.6	1.4	1.9	2.1	2.4	2.5	2.5	2.5	2.8	2.4	3.8	2.7	3.8	3.6	3.4	3.4	4.2	24	7.5	1.1	2.8	0.0	0.0
12	4.1	4.5	6.3	6.5	11.2	27.4	47.7	28.5	9.2	4.8	2.3	2.4	3.3	2.8	2.2	2.6	2.3	2.8	3.5	6.1	6.6	12.1	20.3	19.2	24	47.7	2.2	9.9	0.0	0.0
13	18.8	12.9	18.7	19.7	42.6	51.4	97.1	19.4	7.2	2.2	1.3	0.9	0.9	1.0	0.6	0.4	0.5	0.0	1.4	3.6	32.4	27.8	25.1	22.1	24	97.1	0.0	17.0	0.0	0.0
14	24.0	31.3	32.4	29.6	32.3	33.5	29.1	14.5	11.9	2.8	2.5	3.6	0.7	0.5	0.8	0.5	0.4	0.6	7.2	27.8	37.3	29.0	32.5	29.2	24	37.3	0.4	17.3	0.0	0.0
15	11.9	10.9	14.8	8.3	8.5	11.6	11.8	C	C	C	C	10.8	5.0	5.3	5.7	4.6	6.1	6.0	7.9	10.2	29.2	24.8	18.2	20.9	20	29.2	4.6	11.6	0.0	0.0
16	15.0	16.1	11.8	11.0	18.7	14.5	14.3	14.0	34.5	9.7	5.6	4.9	4.0	3.8	3.5	4.0	4.6	5.4	5.8	10.7	24.3	19.7	15.1	16.2	24	34.5	3.5	12.0	0.0	0.0
17	11.2	8.9	11.5	7.0	12.4	10.2	13.4	8.9	14.1	11.2	5.6	6.8	5.7	5.0	5.2	4.5	4.1	4.0	4.1	8.2	45.2	61.8	34.6	26.2	24	61.8	4.0	13.7	0.0	0.0
18	25.5	17.9	16.7	24.7	18.9	9.2	11.3	10.7	14.4	21.4	29.6	41.9	44.8	16.9	9.9	7.7	6.3	5.7	5.1	13.4	8.3	7.5	6.7	6.9	24	44.8	5.1	15.9	0.0	0.0
19	6.0	6.7	5.8	6.2	9.9	8.4	11.4	5.5	5.5	5.7	4.9	5.6	4.9	3.6	3.3	3.3	3.6	5.2	9.1	8.5	9.1	7.5	6.5	6.9	24	11.4	3.3	6.4	0.0	0.0
20	6.5	9.3	7.3	9.7	49.2	56.5	51.3	26.9	6.6	4.1	5.3	3.8	3.5	3.9	5.2	3.3	3.9	5.9	6.8	11.2	8.8	24.0	14.9	22.9	24	56.5	3.3	14.6	0.0	0.0
21	16.8	16.5	15.5	14.8	19.1	25.4	22.1	19.6	13.5	7.2	7.6	5.9	6.0	19.3	5.8	5.9	9.1	19.0	12.1	23.0	23.2	23.7	29.2	20.2	24	29.2	5.8	15.9	0.0	0.0
22	15.2	14.2	6.4	5.3	5.0	8.4	10.9	8.7	13.7	12.6	10.9	11.5	10.7	7.8	7.1	8.3	6.8	8.1	8.1	8.1	8.7	8.8	6.5	6.0	24	15.2	5.0	9.1	0.0	0.0
23	8.8	6.8	6.5	6.0	5.9	6.0	7.8	6.5	5.3	5.3	7.7	4.5	3.5	4.0	4.5	3.4	3.6	3.8	4.2	6.8	8.0	5.9	5.0	4.4	24	8.8	3.4	5.6	0.0	0.0
24	6.6	4.9	4.7	5.9	4.9	6.0	11.2	12.9	4.4	4.0	4.0	3.2	3.7	3.6	3.6	3.7	4.0	5.3	3.9	3.7	4.2	6.7	7.9	15.9	24	15.9	3.2	5.8	0.0	0.0
25	17.0	19.1	14.6	15.5	29.8	13.4	8.7	11.6	10.1	13.3	8.2	7.5	7.0	6.2	9.2	5.3	7.0	10.3	10.5	20.5	18.2	13.2	11.8	8.4	24	29.8	5.3	12.4	0.0	0.0
26	6.7	7.0	7.1	6.6	8.9	7.5	8.1	7.1	8.6	10.6	7.2	6.4	7.1	6.9	6.6	5.2	4.1	4.5	4.4	4.7	5.6	6.8	53.5	89.9	24	89.9	4.1	12.1	0.0	0.0
27	84.5	38.8	30.8	25.8	36.2	46.3	21.3	9.6	6.8	5.4	6.1	3.5	3.3	3.0	3.1	3.2	3.4	4.6	7.2	9.1	7.6	5.8	6.1	5.7	24	84.5	3.0	15.7	0.0	0.0
28	5.6	5.4	5.4	15.2	30.1	30.8	25.1	14.9	16.0	4.5	4.2	3.5	4.1	3.4	3.5	5.9	5.8	10.1	7.1	5.7	35.5	28.2	19.2	14.4	24	35.5	3.4	12.7	0.0	0.0
29	10.7	8.9	16.0	11.4	12.9	17.1	15.1	9.9	7.5	6.5	4.4	5.5	3.8	3.7	4.0	3.8	3.5	5.2	4.5	6.3	28.3	57.0	24.7	24.5	24	57.0	3.5	12.3	0.0	0.0
30	40.4	20.5	15.2	14.8	15.1	15.1	13.3	10.2	9.2	5.1	5.0	5.9	6.9	5.6	5.0	4.8	6.9	5.2	7.0	7.9	7.5	6.6	13.8	19.4	24	40.4	4.8	11.1	0.0	0.0
31																									0	0.0	0.0		0.0	0.0
Count	30	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	716					
Maximum	84.5	38.8	32.4	29.6	49.2	56.5	97.1	28.5	34.5	21.4	29.6	41.9	44.8	19.3	9.9	8.3	15.3	19.0	13.4	27.8	45.2	61.8	53.5	89.9	24					
Minimum	0.9	1.2	1.0	1.1	1.4	1.0	1.1	1.4	0.7	0.8	1.1	0.5	0.7	0.5	0.6	0.4	0.4	0.0	1.4	1.8	0.9	0.8	0.7	0.7	0					
Average	12.5	11.0	10.2	9.6	13.8	14.7	16.1	9.7	8.0	5.9	5.2	5.5	5.1	4.3	3.8	3.7	4.2	5.0	5.7	8.6	14.3	15.0	15.2	15.7						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.8	2.5	3.6	4.5	5.7	6.9	9.1	13.7	22.1	29.7	51.4	97.1

Maximum Hourly	97.1
Maximum Daily	17.3
Monthly Average	9.3

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

NOx - May (ppb) COURTICE 2016

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	18.9	18.9	9.6	22.2	22.1	14.9	7.4	8.1	7.0	8.0	8.2	8.0	23.5	15.1	18.5	14.7	8.1	7.3	9.1	7.8	7.6	7.5	9.4	8.3	24	23.5	7.0	12.1	0.0	0.0
2	6.6	6.3	7.3	7.5	12.0	13.2	10.9	12.8	9.0	7.9	7.3	9.5	5.3	5.0	4.6	4.5	6.5	7.3	4.9	6.4	25.8	42.8	25.5	33.1	24	42.8	4.5	11.7	0.0	0.0
3	32.1	34.9	43.3	29.9	56.5	56.6	66.3	30.9	18.6	13.3	10.0	7.9	5.4	4.4	5.3	3.9	4.5	4.5	5.4	10.9	18.5	31.7	35.3	18.4	24	66.3	3.9	22.9	0.0	0.0
4	20.0	29.1	25.5	29.5	30.3	40.6	21.6	10.9	10.3	10.7	8.5	5.0	4.1	4.0	4.1	4.3	4.4	5.5	8.5	18.8	26.8	23.7	29.7	22.2	24	40.6	4.0	16.6	0.0	0.0
5	17.2	12.2	10.3	10.1	11.1	12.3	11.6	10.9	8.2	6.9	5.3	4.4	4.0	4.5	5.1	4.8	6.7	4.2	5.0	5.1	6.1	47.2	37.7	33.1	24	47.2	4.0	11.8	0.0	0.0
6	58.6	29.4	27.3	25.8	14.8	14.5	17.3	13.1	7.7	12.7	16.1	10.5	16.6	11.5	10.8	8.4	7.6	21.0	9.1	7.0	24.1	16.3	34.1	27.8	24	58.6	7.0	18.4	0.0	0.0
7	35.3	25.2	18.5	12.1	17.0	13.3	9.6	6.4	6.0	5.9	6.3	5.7	6.4	6.0	7.2	8.5	5.6	6.9	10.9	6.5	8.4	10.6	7.1	5.9	24	35.3	5.6	10.5	0.0	0.0
8	4.4	4.1	4.7	4.5	4.5	6.9	4.8	4.2	4.8	5.0	4.0	5.1	4.8	5.1	5.5	5.8	4.7	3.9	4.3	5.7	7.1	11.7	10.7	15.0	24	15.0	3.9	5.9	0.0	0.0
9	13.2	11.3	11.4	15.2	17.6	12.2	18.8	5.9	5.5	5.2	5.8	11.5	7.0	6.1	6.5	6.4	6.0	5.7	5.6	15.1	18.5	10.7	9.2	7.3	24	18.8	5.2	9.9	0.0	0.0
10	5.8	5.8	6.7	7.2	14.6	20.5	13.9	12.8	6.8	5.8	4.5	4.8	4.2	3.9	3.6	3.3	3.4	3.2	3.2	4.6	5.9	44.6	54.0	43.5	24	54.0	3.2	11.9	0.0	0.0
11	28.6	21.2	20.8	15.5	25.5	31.8	32.1	19.5	31.1	9.6	7.2	5.3	5.0	4.3	3.9	5.2	4.8	6.1	8.7	10.0	36.4	34.3	30.1	45.1	24	45.1	3.9	18.4	0.0	0.0
12	30.6	24.3	18.4	22.6	20.6	22.0	26.6	11.6	9.9	8.8	8.0	6.1	5.5	6.4	6.0	C	C	C	4.4	4.6	6.8	19.1	22.3	9.3	21	30.6	4.4	14.0	0.0	0.0
13	17.9	4.5	4.5	4.3	7.1	6.8	5.1	3.4	2.3	A	A	3.1	2.7	2.7	2.9	3.3	4.0	4.1	5.3	11.7	20.2	6.3	14.2	11.6	22	20.2	2.3	6.7	0.0	0.0
14	14.0	22.2	13.1	18.1	13.5	6.1	9.9	9.1	4.8	4.1	3.2	2.3	2.2	2.8	3.5	2.9	3.2	2.8	2.9	3.1	3.0	3.1	2.3	2.3	24	22.2	2.2	6.4	0.0	0.0
15	1.8	3.0	2.7	3.0	2.0	1.7	1.9	2.4	2.0	2.5	1.8	2.1	1.7	2.0	2.0	2.0	2.0	2.2	3.1	3.2	3.9	2.8	3.4	4.7	24	4.7	1.7	2.5	0.0	0.0
16	5.0	5.3	8.3	9.1	13.1	13.8	11.6	7.0	3.6	4.7	3.7	9.0	5.7	5.6	5.1	4.2	5.4	4.6	4.8	9.5	5.1	4.4	10.3	45.2	24	45.2	3.6	8.5	0.0	0.0
17	40.1	23.5	23.8	13.4	12.1	10.9	7.1	4.8	5.0	7.1	7.3	4.2	5.6	4.7	7.3	7.9	5.1	3.4	1.5	2.2	4.2	29.7	17.1	7.5	24	40.1	1.5	10.6	0.0	0.0
18	9.2	16.3	14.8	23.5	27.8	20.6	13.0	4.3	4.2	1.9	1.3	0.9	0.9	0.8	0.7	0.8	0.3	0.4	1.1	10.8	29.8	40.6	39.8	54.9	24	54.9	0.3	13.3	0.0	0.0
19	34.0	27.4	13.5	11.5	12.5	8.7	7.9	8.1	6.4	5.7	5.2	16.8	23.6	23.1	10.5	3.5	3.4	3.1	4.2	3.9	22.2	62.5	58.4	74.2	24	74.2	3.1	18.8	0.0	0.0
20	64.1	56.2	35.1	23.0	31.3	77.3	71.7	24.5	22.5	16.3	13.8	11.5	5.7	3.6	3.1	4.0	4.8	1.0	1.5	16.4	36.9	18.6	18.5	27.8	24	77.3	1.0	24.5	0.0	0.0
21	21.7	15.8	11.1	12.1	10.0	8.9	9.7	17.1	12.4	4.1	3.5	2.1	1.8	2.7	2.6	1.7	1.7	2.0	6.5	8.6	4.0	2.1	3.3	2.1	24	21.7	1.7	7.0	0.0	0.0
22	1.9	5.7	10.9	5.7	3.5	3.0	2.9	3.6	3.1	2.9	2.6	1.3	1.0	1.1	2.8	1.1	2.1	4.5	8.6	7.4	7.8	4.4	4.3	4.8	24	10.9	1.0	4.0	0.0	0.0
23	3.2	3.8	4.8	3.3	5.0	3.6	3.0	3.9	1.8	1.6	1.2	1.6	1.1	1.1	1.7	1.7	1.4	0.8	1.2	2.3	20.4	31.8	21.3	14.3	24	31.8	0.8	5.7	0.0	0.0
24	7.4	7.8	8.7	8.3	65.2	12.9	9.1	8.9	11.5	16.4	12.6	7.4	13.2	10.3	6.1	4.1	3.6	2.9	2.5	2.7	3.4	8.2	26.5	27.1	24	65.2	2.5	12.0	0.0	0.0
25	29.6	58.7	41.8	15.1	4.3	4.2	4.4	5.3	6.6	6.1	8.9	10.5	7.8	5.9	4.5	3.7	3.4	3.8	4.7	4.7	16.2	44.7	46.0	30.4	24	58.7	3.4	15.5	0.0	0.0
26	15.2	18.5	37.1	15.9	10.0	6.3	12.2	7.6	7.2	4.4	6.0	5.1	4.1	4.5	6.6	5.6	5.9	3.8	6.0	6.0	10.2	18.0	21.8	39.8	24	39.8	3.8	11.6	0.0	0.0
27	29.4	25.4	23.8	21.5	28.5	54.1	41.7	22.9	5.1	3.2	2.3	2.2	1.9	1.7	1.6	1.4	1.6	1.7	4.0	3.7	6.3	3.2	9.5	12.4	24	54.1	1.4	12.9	0.0	0.0
28	6.6	4.2	3.6	4.5	12.1	13.2	4.5	4.5	3.8	4.1	2.7	2.6	3.4	3.0	2.2	2.1	1.9	2.1	2.7	7.0	6.3	10.6	16.4	9.2	24	16.4	1.9	5.6	0.0	0.0
29	5.6	8.3	12.5	6.8	7.9	5.7	3.3	3.2	2.6	2.3	2.5	2.3	2.2	2.0	3.7	1.8	1.9	1.2	2.1	2.1	2.5	2.6	3.3	3.1	24	12.5	1.2	3.8	0.0	0.0
30	3.2	3.2	6.2	4.7	4.7	4.7	8.5	4.6	6.1	6.0	4.6	5.0	3.6	1.5	1.9	3.1	4.5	4.3	4.2	9.6	17.8	26.8	18.8	15.4	24	26.8	1.5	7.2	0.0	0.0
31	11.3	15.4	8.8	7.1	6.4	8.0	18.4	6.2	7.7	13.8	8.2	4.3	3.4	3.4	3.9	4.1	4.0	4.5	5.0	7.5	19.2	11.0	8.4	8.7	24	19.2	3.4	8.3	0.0	0.0
Count	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	30	30	30	31	31	31	31	31	31	739					
Maximum	64.1	58.7	43.3	29.9	65.2	77.3	71.7	30.9	31.1	16.4	16.1	16.8	23.6	23.1	18.5	14.7	8.1	21.0	10.9	18.8	36.9	62.5	58.4	74.2	24					
Minimum	1.8	3.0	2.7	3.0	2.0	1.7	1.9	2.4	1.8	1.6	1.2	0.9	0.9	0.8	0.7	0.8	0.3	0.4	1.1	2.1	2.5	2.1	2.3	2.1	21					
Average	19.1	17.7	15.8	13.3	16.9	17.1	15.7	9.6	7.9	6.9	6.1	5.7	5.9	5.1	5.0	4.3	4.1	4.3	4.9	7.3	13.9	20.4	20.9	21.4						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	2.3	3.4	4.4	5.3	6.6	8.4	11.5	17.1	26.9	35.3	58.6	77.3

Maximum Hourly	77.3
Maximum Daily	24.5
Monthly Average	11.3

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

NOx - June (ppb) COURTICE 2016

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	11.7	11.7	6.1	11.8	15.8	10.6	7.1	13.1	2.8	1.9	1.4	1.3	1.5	1.4	1.5	1.3	1.7	6.1	17.2	10.1	16.0	23.8	20.0	22.4	24	23.8	1.3	9.1	0.0	0.0
2	15.8	12.9	12.8	13.0	13.5	8.9	7.3	13.3	5.0	3.4	3.4	2.6	2.4	1.8	2.0	2.1	1.8	1.8	3.0	6.8	9.1	6.3	7.0	11.5	24	15.8	1.8	7.0	0.0	0.0
3	26.1	35.5	23.0	15.7	17.8	21.3	13.7	7.3	14.7	10.3	6.4	3.6	1.7	1.8	1.2	0.9	0.8	0.7	1.3	4.3	8.6	6.5	5.9	5.4	24	35.5	0.7	9.8	0.0	0.0
4	4.3	4.8	5.5	10.9	8.4	5.9	5.8	4.3	4.3	3.0	1.5	1.6	1.0	0.9	0.9	0.9	0.8	2.7	5.0	4.1	6.6	2.8	3.2	2.4	24	10.9	0.8	3.8	0.0	0.0
5	2.5	4.1	7.6	13.9	6.0	2.7	1.6	1.7	1.5	1.2	0.9	1.1	1.2	1.2	1.1	1.1	1.5	1.5	2.1	2.3	2.7	3.3	4.7	2.5	24	13.9	0.9	2.9	0.0	0.0
6	2.1	3.0	3.1	3.7	2.6	2.8	2.3	2.7	4.2	3.4	2.3	2.0	1.2	1.2	0.8	1.2	1.1	1.9	4.5	3.4	3.1	2.4	5.7	4.0	24	5.7	0.8	2.7	0.0	0.0
7	2.6	2.2	9.8	18.0	7.0	8.1	10.8	6.2	4.4	3.8	2.6	3.8	3.4	3.5	3.5	3.7	3.3	3.6	2.7	3.6	5.3	4.1	3.9	4.7	24	18.0	2.2	5.2	0.0	0.0
8	4.2	4.4	3.9	4.1	3.2	4.1	4.7	10.4	3.3	3.5	2.7	2.8	2.6	2.9	2.7	3.4	3.3	4.0	3.7	6.4	7.9	8.6	6.0	10.8	24	10.8	2.6	4.7	0.0	0.0
9	9.1	5.4	9.8	10.6	4.5	5.9	5.5	4.1	3.2	3.2	2.7	2.6	2.7	2.6	2.3	2.5	3.2	2.7	3.9	5.1	5.8	10.2	16.1	20.6	24	20.6	2.3	6.0	0.0	0.0
10	22.4	11.9	8.4	5.4	6.7	6.7	7.0	7.0	7.3	7.4	8.7	8.6	7.2	5.6	2.4	1.6	3.0	3.0	2.8	4.5	11.6	31.9	37.1	20.0	24	37.1	1.6	9.9	0.0	0.0
11	13.0	5.6	3.3	4.5	7.9	7.0	7.3	6.1	3.3	2.7	2.0	1.6	1.4	1.4	1.4	1.5	1.7	1.0	1.5	2.0	2.6	4.0	2.7	2.4	24	13.0	1.0	3.7	0.0	0.0
12	2.0	1.8	2.3	1.7	1.6	2.2	1.6	2.3	1.8	1.8	1.6	2.0	2.1	1.7	2.3	1.7	1.7	1.9	3.8	3.5	3.0	3.0	1.7	1.7	24	3.8	1.6	2.1	0.0	0.0
13	2.1	1.6	2.2	2.8	2.6	4.1	3.4	7.4	C	C	2.4	3.6	3.5	3.6	3.4	4.2	4.6	3.2	3.1	4.6	4.6	6.3	4.4	5.2	22	7.4	1.6	3.8	0.0	0.0
14	3.5	4.1	4.9	5.8	4.0	4.3	8.2	7.0	5.1	4.1	2.9	2.2	1.2	0.5	0.2	0.1	0.1	0.2	1.0	2.8	21.5	51.4	36.5	33.2	24	51.4	0.1	8.5	0.0	0.0
15	37.1	37.9	20.7	23.3	23.0	23.0	18.7	13.3	8.7	6.2	12.0	11.8	6.2	8.5	8.9	9.2	13.5	15.1	10.7	8.4	6.0	5.1	16.8	23.6	24	37.9	5.1	15.3	0.0	0.0
16	14.3	11.2	12.1	12.9	11.5	6.9	12.7	19.1	11.1	6.5	5.3	9.0	7.0	4.0	12.2	5.4	4.1	30.9	28.1	13.5	21.4	26.2	18.1	23.8	24	30.9	4.0	13.6	0.0	0.0
17	26.8	23.6	23.0	22.5	17.9	14.0	12.2	10.7	6.3	7.4	6.8	2.8	1.8	1.6	1.7	1.0	0.9	0.6	1.0	7.8	25.2	54.8	32.0	39.6	24	54.8	0.6	14.3	0.0	0.0
18	10.6	14.2	26.9	30.7	17.9	10.2	8.2	8.2	9.2	5.1	4.4	3.4	3.1	2.9	2.5	1.8	2.1	2.2	2.7	5.5	6.0	9.6	20.2	18.1	24	30.7	1.8	9.4	0.0	0.0
19	16.7	22.0	15.6	11.7	14.2	10.5	15.2	11.7	7.9	4.4	3.2	2.5	2.0	1.8	1.7	1.4	3.3	2.4	3.2	2.2	1.7	2.1	2.2	2.7	24	22.0	1.4	6.8	0.0	0.0
20	3.1	2.2	2.5	2.2	2.9	3.2	2.5	2.0	2.7	2.4	5.0	2.0	1.6	1.3	1.7	1.3	1.4	1.2	1.5	3.0	3.9	2.6	3.2	3.1	24	5.0	1.2	2.4	0.0	0.0
21	2.1	2.1	2.3	1.8	1.7	3.3	4.1	4.1	6.6	11.3	8.2	7.3	3.9	1.3	1.1	1.4	1.0	1.9	2.6	2.9	3.5	8.3	4.6	12.8	24	12.8	1.0	4.2	0.0	0.0
22	15.1	8.2	3.5	3.6	9.6	11.0	6.3	4.5	3.8	3.2	2.8	2.2	4.8	3.1	1.8	2.3	0.6	0.9	0.7	1.4	10.9	46.5	49.5	33.2	24	49.5	0.6	9.6	0.0	0.0
23	34.2	18.9	6.2	12.8	40.0	13.1	6.6	5.6	3.6	4.8	5.7	3.7	3.2	1.0	0.5	0.6	0.2	0.1	1.2	2.4	5.0	26.3	39.7	44.2	24	44.2	0.1	11.6	0.0	0.0
24	30.9	22.1	17.1	9.4	12.8	10.7	8.5	6.1	14.5	5.8	4.0	2.6	2.0	1.8	1.1	0.8	1.1	1.0	1.6	6.5	12.5	28.7	27.1	26.5	24	30.9	0.8	10.6	0.0	0.0
25	15.4	14.6	11.1	9.6	7.7	9.6	16.2	12.5	8.8	4.5	2.0	1.5	1.4	1.3	1.0	0.9	0.7	1.0	0.8	2.0	5.2	8.7	12.5	14.8	24	16.2	0.7	6.8	0.0	0.0
26	9.2	5.9	7.4	6.4	7.6	8.0	3.9	4.5	3.4	2.7	2.4	2.1	1.7	1.8	1.7	1.1	0.7	0.8	1.1	2.0	2.1	2.4	9.4	6.5	24	9.4	0.7	4.0	0.0	0.0
27	2.7	1.6	1.7	2.0	2.8	2.7	2.4	6.9	4.5	4.6	5.5	3.1	2.3	1.7	1.4	1.2	1.6	1.2	3.7	6.8	6.4	5.9	5.6	6.1	24	6.9	1.2	3.5	0.0	0.0
28	3.8	3.1	3.6	3.3	4.5	5.1	5.2	4.8	4.0	3.1	3.0	6.9	7.1	7.3	4.3	4.3	3.0	3.2	4.0	4.9	4.8	5.3	4.3	5.7	24	7.3	3.0	4.5	0.0	0.0
29	3.8	3.2	2.9	3.1	4.3	5.0	6.5	6.0	3.1	3.5	2.9	3.9	3.3	4.3	1.9	1.7	1.0	1.0	1.2	2.7	10.9	13.0	48.7	55.2	24	55.2	1.0	8.1	0.0	0.0
30	26.9	14.0	12.3	48.8	72.0	55.8	30.9	19.6	14.4	13.1	12.7	10.0	4.1	5.8	3.8	2.3	1.3	2.5	1.8	3.2	3.6	4.1	26.6	28.4	24	72.0	1.3	17.4	0.0	0.0
31																									0	0.0	0.0		0.0	0.0
Count	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	718					
Maximum	37.1	37.9	26.9	48.8	72.0	55.8	30.9	19.6	14.7	13.1	12.7	11.8	7.2	8.5	12.2	9.2	13.5	30.9	28.1	13.5	25.2	54.8	49.5	55.2	24					
Minimum	2.0	1.6	1.7	1.7	1.6	2.2	1.6	1.7	1.5	1.2	0.9	1.1	1.0	0.5	0.2	0.1	0.1	0.1	0.7	1.4	1.7	2.1	1.7	1.7	0					
Average	12.5	10.5	9.1	10.9	11.7	9.6	8.2	7.8	6.0	4.8	4.3	3.8	3.0	2.7	2.4	2.1	2.2	3.3	4.1	4.6	7.9	13.8	15.8	16.4						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.4	1.9	2.6	3.2	4.0	5.3	7.0	10.8	17.4	26.3	48.3	72.0

Maximum Hourly	72.0
Maximum Daily	17.4
Monthly Average	7.4

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

NOx April (ppb) Rundle Road 2016

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	6.1	5.8	7.4	22.8	16.0	20.6	19.0	11.3	5.2	6.0	5.8	4.8	5.6	7.1	9.1	4.0	3.6	3.3	3.9	6.0	8.3	6.8	7.3	9.7	24	22.8	3.3	8.6	0	0
2	8.8	11.4	10.3	21.0	11.3	7.5	3.6	3.3	3.3	2.5	2.5	6.5	7.3	6.4	4.9	4.0	2.5	2.4	2.2	2.2	2.5	2.1	2.1	2.1	24	21.0	2.1	5.5	0	0
3	2.3	2.2	2.3	2.3	1.9	2.1	2.3	2.0	2.1	2.0	2.0	2.2	2.4	2.4	2.3	2.4	2.7	2.3	2.9	2.5	3.2	7.5	3.7	11.4	24	11.4	1.9	3.0	0	0
4	3.1	2.5	2.7	5.0	2.7	2.8	4.1	3.0	2.8	5.0	3.1	2.6	2.0	1.9	2.3	2.3	2.0	2.0	2.3	2.9	3.7	2.6	2.5	2.1	24	5.0	1.9	2.8	0	0
5	2.1	2.1	2.3	2.6	2.9	2.6	3.2	3.5	2.9	2.7	2.0	2.5	3.4	6.1	7.0	9.5	10.7	13.5	17.4	15.8	12.8	15.5	15.8	10.8	24	17.4	2.0	7.1	0	0
6	11.8	10.9	7.2	7.5	12.0	13.1	9.5	15.9	9.8	16.1	10.9	17.0	13.0	10.7	25.3	11.0	7.5	7.8	10.8	11.4	21.6	15.1	10.8	14.1	24	25.3	7.2	12.5	0	0
7	10.7	8.2	11.4	16.4	9.2	10.2	11.5	6.5	11.5	11.7	10.1	11.4	11.1	8.9	10.8	9.7	7.4	4.0	3.6	3.4	3.1	2.7	2.5	3.0	24	16.4	2.5	8.3	0	0
8	2.3	2.4	2.3	2.5	2.6	2.6	3.4	3.3	2.8	2.9	2.8	3.2	3.4	2.5	2.6	2.8	2.6	2.3	2.4	2.3	2.4	2.3	2.3	2.2	24	3.4	2.2	2.6	0	0
9	2.1	2.1	2.4	2.4	2.2	1.9	1.9	2.0	2.1	2.1	2.2	1.9	1.9	2.1	2.2	2.3	2.1	2.5	2.1	2.2	2.4	2.4	2.4	2.2	24	2.5	1.9	2.2	0	0
10	2.2	2.4	3.0	2.8	2.9	2.5	4.1	3.0	3.8	3.8	4.0	4.0	3.5	5.0	5.0	4.7	8.8	7.2	8.5	14.8	9.0	7.8	4.2	4.2	24	14.8	2.2	5.0	0	0
11	3.9	7.6	13.8	7.1	9.8	12.1	8.3	21.6	11.9	15.9	16.2	18.8	17.7	14.9	11.2	13.9	13.8	12.2	10.8	10.7	3.8	3.1	3.0	2.8	24	21.6	2.8	11.0	0	0
12	3.2	4.1	10.5	19.3	20.8	33.0	28.4	23.5	14.2	7.9	5.7	4.7	3.1	3.1	2.8	2.7	2.7	2.5	2.5	2.7	3.4	3.8	5.2	6.0	24	33.0	2.5	9.0	0	0
13	3.2	2.5	2.5	2.8	21.0	24.4	19.7	9.0	24.0	24.4	5.6	3.8	4.3	4.3	3.9	4.9	4.8	6.6	17.4	13.0	9.1	6.8	5.1	5.8	24	24.4	2.5	9.5	0	0
14	9.1	12.5	11.5	6.7	4.5	5.0	5.8	13.7	8.5	7.5	6.7	4.2	3.6	15.1	5.1	4.8	14.4	36.6	7.6	5.6	14.0	13.0	8.5	7.6	24	36.6	3.6	9.7	0	0
15	4.0	7.4	6.1	5.7	10.9	8.6	11.1	7.5	18.0	8.6	8.5	6.7	C	C	4.6	5.2	2.1	2.8	2.9	12.1	9.8	9.3	4.8	9.7	22	18.0	2.1	7.6	0	0
16	4.9	8.8	2.1	1.9	4.2	2.2	3.1	11.2	2.3	2.4	7.4	11.1	35.7	33.5	37.6	61.9	39.8	5.2	1.2	2.5	5.6	4.0	4.2	3.0	24	61.9	1.2	12.3	0	0
17	2.1	1.3	1.0	0.8	0.2	0.7	1.6	1.1	2.6	2.6	4.0	2.2	1.6	2.8	6.1	2.2	2.4	4.2	17.0	24.5	12.9	9.3	5.5	1.8	24	24.5	0.2	4.6	0	0
18	0.0	0.0	4.9	25.0	0.4	0.0	0.4	0.8	0.2	15.9	18.3	22.1	45.3	14.9	7.7	7.9	8.2	5.4	5.4	4.1	0.1	0.0	0.0	0.3	24	45.3	0.0	7.8	0	0
19	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	1.7	4.5	3.1	5.6	2.0	0.1	0.0	0.0	0.0	0.0	0.0	24	5.6	0.0	0.7	0	0
20	0.0	1.9	0.5	2.3	3.5	5.1	15.2	21.5	43.9	8.1	23.1	0.6	3.0	11.6	1.9	59.4	17.0	19.0	11.7	13.1	14.8	12.3	8.9	6.3	24	59.4	0.0	12.7	0	0
21	4.3	3.0	16.2	1.9	2.2	3.8	8.4	11.5	12.6	11.1	12.0	5.2	9.2	16.5	11.4	13.6	12.3	10.2	17.5	38.0	19.7	16.6	17.1	9.5	24	38.0	1.9	11.8	0	0
22	10.1	11.8	10.7	14.8	26.5	11.3	15.3	24.9	34.2	34.8	22.8	9.2	1.8	1.4	1.3	1.0	0.8	0.6	0.7	0.3	0.5	0.3	0.1	0.0	24	34.8	0.0	9.8	0	0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.2	1.2	2.5	2.5	0.9	1.4	2.0	11.0	2.1	0.4	0.0	0.0	0.0	24	11.0	0.0	1.1	0	0
24	0.1	0.0	0.0	0.0	0.0	0.3	1.0	0.9	14.4	16.9	6.5	0.3	0.6	0.9	7.9	4.3	4.3	7.8	7.5	7.2	13.3	9.7	7.5	7.1	24	16.9	0.0	4.9	0	0
25	5.2	4.7	5.3	8.2	6.9	3.1	5.7	4.3	4.5	13.5	5.1	1.2	1.0	0.7	1.6	3.3	4.4	1.6	3.7	20.4	10.6	10.7	2.1	0.7	24	20.4	0.7	5.4	0	0
26	0.0	3.5	0.7	0.3	0.4	3.6	0.6	0.9	0.8	2.2	0.8	1.1	1.1	0.8	0.6	0.2	6.3	4.2	5.5	11.7	10.1	13.3	8.2	14.2	24	14.2	0.0	3.8	0	0
27	3.1	2.0	1.1	1.5	1.5	3.3	2.4	2.4	1.5	8.4	5.3	1.3	1.0	4.8	5.9	6.9	3.8	3.9	0.1	0.0	0.0	0.0	0.0	0.0	24	8.4	0.0	2.5	0	0
28	0.0	0.0	0.0	3.7	0.8	2.8	6.4	7.9	2.1	8.3	2.1	1.3	10.6	24.9	23.9	10.9	1.6	3.0	10.1	22.1	12.3	11.5	4.5	2.4	24	24.9	0.0	7.2	0	0
29	1.1	9.7	1.3	1.5	1.7	2.6	2.7	2.4	1.3	6.5	8.8	8.5	38.3	12.2	51.7	22.6	2.2	4.2	8.9	12.4	14.2	12.9	10.8	7.7	24	51.7	1.1	10.3	0	0
30	6.2	4.2	1.9	1.2	0.9	0.9	2.4	3.2	8.9	5.5	9.5	4.4	1.5	2.8	0.9	7.0	1.4	1.9	1.6	6.2	10.9	2.5	3.1	5.8	24	10.9	0.9	4.0	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	718					
Maximum	11.8	12.5	16.2	25.0	26.5	33.0	28.4	24.9	43.9	34.8	23.1	22.1	45.3	33.5	51.7	61.9	39.8	36.6	17.5	38.0	21.6	16.6	17.1	14.2	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	0.7	0.6	0.2	0.8	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0					
Average	3.7	4.5	4.7	6.3	6.0	6.3	6.7	7.4	8.4	8.5	7.2	5.5	8.1	7.7	8.8	9.6	6.6	6.1	6.6	9.1	7.8	6.8	5.1	5.1						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.6	1.9	2.3	2.8	4.0	5.6	8.2	11.0	15.2	21.1	37.9	61.9

Maximum Hourly	61.9
Maximum Daily	12.7
Monthly Average	6.8

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 2016

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	4.0	1.5	2.1	2.9	8.5	2.5	1.8	1.6	7.6	2.0	1.9	1.6	4.8	2.0	1.7	1.7	1.0	1.0	0.8	0.5	0.5	0.5	0.4	24	8.5	0.4	2.4	0	0
2	0.4	0.0	0.4	0.3	1.4	1.6	1.3	3.2	2.0	1.1	1.0	0.8	0.9	5.5	4.4	3.4	4.2	6.1	7.5	15.1	7.9	4.8	3.3	3.6	24	15.1	0.0	3.3	0	0
3	3.8	20.2	2.4	2.3	3.1	2.4	10.2	5.4	5.4	13.1	4.4	4.8	3.2	1.7	3.7	1.5	3.7	8.4	10.2	9.7	19.6	13.8	14.0	12.3	24	20.2	1.5	7.5	0	0
4	9.6	7.9	5.5	5.6	6.8	9.1	14.2	11.7	9.6	13.0	6.4	1.4	36.7	18.4	24.4	9.5	8.2	6.3	8.3	15.0	6.5	5.6	2.4	3.2	24	36.7	1.4	10.2	0	0
5	2.5	2.4	1.6	1.5	2.0	2.3	4.0	2.9	10.7	8.7	6.8	5.9	4.1	7.5	10.9	5.4	8.1	9.7	14.4	19.4	14.0	9.6	24.6	28.1	24	28.1	1.5	8.6	0	0
6	26.9	9.3	6.2	2.5	0.8	2.6	4.8	3.7	1.9	5.4	4.2	3.9	14.2	6.4	4.2	3.8	7.0	9.1	9.0	13.4	7.9	12.2	8.4	16.1	24	26.9	0.8	7.7	0	0
7	11.0	7.1	4.1	2.5	11.7	15.3	15.4	6.9	18.5	5.8	6.1	7.7	10.3	12.5	5.1	3.0	1.7	5.9	8.3	5.8	4.2	4.1	2.4	0.3	24	18.5	0.3	7.3	0	0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	2.4	2.9	3.2	7.1	6.2	2.9	1.3	0.2	0.0	0.0	0.2	0.4	24	7.1	0.0	1.3	0	0
9	0.4	0.3	1.1	0.6	0.2	0.7	3.7	1.6	1.4	7.9	3.6	6.1	7.5	6.0	6.8	5.9	6.3	5.7	6.0	7.1	1.0	0.1	0.0	0.0	24	7.9	0.0	3.3	0	0
10	0.0	0.0	0.0	0.0	0.2	1.7	5.2	9.0	8.2	3.3	2.7	2.3	2.7	2.7	1.1	5.6	6.8	5.3	13.7	38.8	23.9	19.3	14.5	6.9	24	38.8	0.0	7.2	0	0
11	2.2	1.9	4.2	1.1	2.1	5.0	12.8	19.3	15.4	11.6	12.1	8.3	8.2	27.6	11.7	18.6	9.6	13.8	14.4	19.7	10.3	9.4	14.3	7.2	24	27.6	1.1	10.9	0	0
12	5.3	2.7	3.0	2.0	2.3	3.5	8.3	15.1	16.2	8.8	6.0	5.9	6.6	4.7	7.0	5.0	8.8	10.4	15.9	C	C	C	11.0	10.8	21	16.2	2.0	7.6	0	0
13	9.6	14.9	8.5	11.6	13.7	13.5	18.2	20.3	11.0	15.2	4.2	3.7	A	A	1.2	0.9	0.8	1.1	1.0	1.8	2.1	9.8	6.6	6.4	22	20.3	0.8	8.0	0	0
14	11.3	10.9	10.6	13.2	15.9	10.1	7.2	14.3	6.0	7.4	4.0	3.5	2.2	1.4	0.6	0.5	0.2	0.3	0.3	0.2	0.3	0.2	0.0	0.0	24	15.9	0.0	5.0	0	0
15	0.0	0.9	0.8	0.7	0.4	0.0	0.3	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.5	1.1	1.0	24	1.1	0.0	0.3	0	0
16	2.1	2.8	2.7	2.5	3.6	6.3	7.3	4.9	1.6	2.1	3.5	18.7	14.9	10.5	8.6	6.2	8.4	14.0	8.2	2.7	17.1	16.9	8.4	6.0	24	18.7	1.6	7.5	0	0
17	5.9	34.5	11.2	1.9	1.5	1.8	2.1	2.8	4.6	9.9	9.5	7.3	6.6	3.5	4.0	5.6	4.5	5.1	8.4	20.0	10.9	2.0	2.0	1.1	24	34.5	1.1	6.9	0	0
18	2.9	1.8	2.5	1.9	1.9	3.1	5.3	5.6	3.8	17.3	17.0	1.9	1.6	2.8	3.4	8.7	2.3	4.1	6.9	8.3	10.2	9.6	7.0	6.0	24	17.3	1.6	5.7	0	0
19	6.1	5.6	8.2	15.7	1.2	1.1	3.5	5.3	2.6	1.3	1.4	21.5	42.5	28.3	22.5	16.1	7.9	7.6	5.1	20.2	17.2	20.7	14.4	3.4	24	42.5	1.1	11.6	0	0
20	18.0	3.8	11.5	5.7	29.4	53.5	30.2	16.1	25.5	22.8	9.4	5.3	2.5	2.7	3.1	7.1	5.5	4.4	5.3	12.7	29.3	28.6	43.1	41.8	24	53.5	2.5	17.4	0	0
21	30.9	13.7	10.4	16.7	11.6	4.3	6.9	5.2	5.8	7.6	3.8	6.2	12.6	1.8	2.5	2.9	2.9	2.6	3.9	5.3	6.7	7.2	6.8	2.0	24	30.9	1.8	7.5	0	0
22	3.3	11.3	19.3	10.1	3.3	2.2	1.7	1.6	2.3	1.3	1.3	1.1	1.1	1.2	3.4	2.5	1.6	1.5	3.0	2.0	1.6	1.9	1.6	1.8	24	19.3	1.1	3.4	0	0
23	3.8	4.8	5.3	5.3	6.8	7.7	1.8	9.8	4.6	11.8	6.6	0.5	0.9	1.9	5.1	1.7	2.0	3.8	2.6	12.4	10.8	7.5	3.2	4.8	24	12.4	0.5	5.2	0	0
24	1.8	3.7	4.1	3.0	16.6	21.8	30.1	17.2	16.0	18.6	19.2	15.0	21.9	17.8	8.8	11.2	7.2	5.9	5.7	8.0	18.0	22.8	23.7	24.5	24	30.1	1.8	14.3	0	0
25	27.1	12.8	47.7	45.4	17.5	19.1	17.2	22.7	28.9	20.7	21.5	19.5	14.9	9.1	4.8	4.2	4.9	10.9	12.5	14.4	19.7	37.7	25.2	34.5	24	47.7	4.2	20.5	0	0
26	21.2	27.3	19.5	14.7	17.6	17.6	20.7	10.3	8.9	5.6	5.2	7.3	10.6	7.9	10.0	6.6	5.8	7.0	5.9	5.8	17.0	22.9	18.4	19.7	24	27.3	5.2	13.1	0	0
27	36.3	27.7	42.4	46.5	43.0	57.6	37.7	21.4	20.5	10.1	6.4	5.6	4.5	4.5	2.7	8.0	5.3	6.6	5.8	6.9	15.3	19.8	16.8	12.0	24	57.6	2.7	19.3	0	0
28	15.7	10.1	6.4	7.2	25.6	18.7	7.9	12.0	8.8	7.9	6.4	4.5	2.5	2.7	3.8	5.8	4.2	3.4	4.9	6.6	7.5	5.0	20.4	9.7	24	25.6	2.5	8.7	0	0
29	7.6	6.6	11.5	7.1	13.5	9.5	3.9	4.5	8.8	7.6	4.4	2.4	7.3	3.0	2.7	6.8	3.0	2.1	4.6	7.7	7.2	4.5	4.1	4.6	24	13.5	2.1	6.0	0	0
30	3.9	6.0	5.9	15.4	12.6	15.2	17.6	9.2	9.4	12.3	8.5	5.6	5.8	4.9	3.9	1.5	1.4	1.9	1.6	6.3	6.3	6.1	1.6	1.7	24	17.6	1.4	6.9	0	0
31	2.3	6.6	1.3	6.1	15.4	27.2	28.0	20.4	13.4	26.1	15.6	11.5	9.1	2.2	1.3	1.0	1.6	1.8	1.2	4.3	8.5	5.5	2.2	1.4	24	28.0	1.0	8.9	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	30	30	30	31	31	739					
Maximum	36.3	34.5	47.7	46.5	43.0	57.6	37.7	22.7	28.9	26.1	21.5	21.5	42.5	28.3	24.4	18.6	9.6	14.0	15.9	38.8	29.3	37.7	43.1	41.8	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	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	21					
Average	8.9	8.4	8.4	8.1	9.2	11.1	10.6	9.2	8.8	9.4	6.5	6.2	8.7	6.9	5.7	5.4	4.6	5.5	6.4	9.7	10.1	10.3	9.8	8.8						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.8	1.8	2.8	4.2	5.8	7.1	9.4	13.4	19.3	24.6	42.5	57.6

Maximum Hourly	57.6
Maximum Daily	20.5
Monthly Average	8.2

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 2016

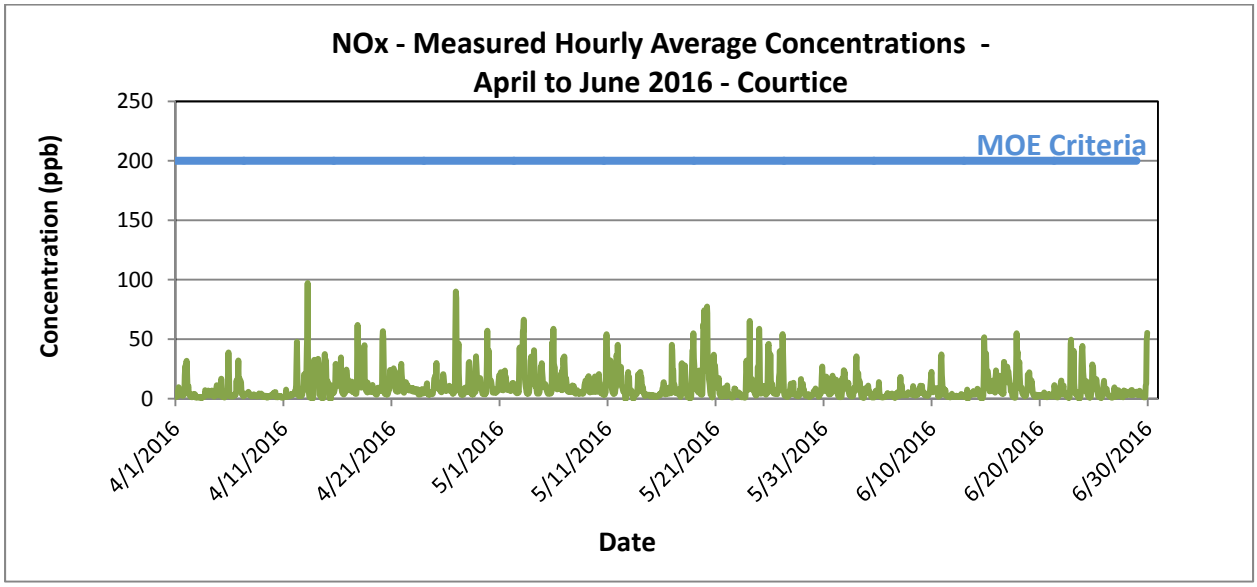
Day \ Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>200	Days>100
1	4.8	3.6	1.8	3.3	4.2	4.1	2.5	2.8	6.2	10.2	2.4	1.3	24.9	13.9	45.0	23.0	6.6	2.8	5.7	9.1	7.1	13.6	9.0	7.5	24	45.0	1.3	9.0	0	0
2	5.9	4.1	4.4	4.2	4.1	3.4	10.2	20.5	12.9	7.4	7.7	4.5	5.6	6.6	7.9	10.8	4.9	5.3	4.9	2.2	2.2	1.8	2.5	2.9	24	20.5	1.8	6.1	0	0
3	1.4	4.2	9.5	6.6	6.8	4.6	4.6	3.5	4.1	9.1	4.0	3.0	2.4	2.7	6.6	1.2	3.7	3.9	2.9	2.1	4.0	1.7	2.3	2.1	24	9.5	1.2	4.0	0	0
4	1.6	0.9	2.8	2.8	3.3	3.1	2.0	1.4	4.5	5.9	2.9	1.9	1.2	1.5	1.1	0.3	0.6	1.1	0.7	7.5	2.3	1.4	6.3	1.1	24	7.5	0.3	2.4	0	0
5	1.2	8.3	2.0	1.2	0.9	2.0	1.8	4.6	3.0	4.0	1.7	2.2	1.8	3.3	2.8	2.1	3.3	4.0	4.0	7.3	6.8	5.1	5.2	4.1	24	8.3	0.9	3.5	0	0
6	1.1	1.5	2.4	4.0	5.1	10.2	10.9	10.4	10.3	10.5	7.8	4.4	5.6	5.6	6.5	6.4	4.6	4.3	1.0	14.9	14.2	11.4	6.9	16.1	24	16.1	1.0	7.3	0	0
7	5.2	6.9	4.4	13.6	20.8	32.7	24.8	2.3	1.3	1.1	3.4	1.8	1.3	0.7	1.0	1.8	1.9	1.6	1.4	1.3	1.6	0.6	0.4	1.2	24	32.7	0.4	5.5	0	0
8	1.1	0.8	0.8	0.4	0.4	1.1	2.1	2.7	1.4	0.7	1.1	0.8	1.2	1.5	1.2	1.1	1.3	1.2	0.7	1.4	1.6	1.9	1.3	1.4	24	2.7	0.4	1.2	0	0
9	6.5	12.7	5.1	1.5	0.4	1.1	2.3	2.3	1.4	1.0	1.2	1.0	0.9	1.0	0.5	0.5	0.9	1.2	0.0	0.3	0.4	1.0	2.4	2.3	24	12.7	0.0	2.0	0	0
10	1.5	1.1	0.8	1.6	1.5	2.2	2.1	1.2	12.2	15.8	12.4	10.7	7.1	7.1	11.1	10.5	6.4	6.1	5.9	12.1	10.4	13.0	12.1	8.9	24	15.8	0.8	7.2	0	0
11	9.3	17.7	9.4	5.3	5.2	4.7	3.6	6.1	5.6	6.2	9.2	7.5	6.3	4.9	6.0	3.0	1.2	1.9	1.6	10.0	15.7	7.3	0.8	0.5	24	17.7	0.5	6.2	0	0
12	0.4	0.3	0.0	0.2	0.0	0.1	0.5	0.0	0.1	0.3	0.6	0.3	0.2	0.0	0.3	0.5	0.4	0.0	0.2	0.2	1.9	0.0	0.0	0.0	24	1.9	0.0	0.3	0	0
13	0.0	0.0	0.0	0.0	0.0	0.2	0.6	1.8	1.2	3.2	5.8	7.4	6.9	1.0	1.4	0.9	1.4	0.5	0.0	0.3	0.5	1.3	0.2	0.6	24	7.4	0.0	1.5	0	0
14	0.5	0.6	0.6	0.9	1.1	6.2	3.1	4.2	11.2	2.7	1.7	1.5	3.6	1.3	C	C	M	5.5	5.1	10.1	10.1	13.1	8.0	5.4	21	13.1	0.5	4.6	0	0
15	6.7	8.0	6.7	5.7	5.2	15.5	43.7	31.4	21.7	15.5	17.4	7.5	6.5	7.7	6.3	5.0	15.3	20.8	17.0	26.4	15.9	12.7	29.4	13.5	24	43.7	5.0	15.1	0	0
16	8.1	5.1	5.4	4.6	7.3	16.0	28.4	8.6	14.4	7.1	5.4	10.0	4.2	4.8	4.1	8.6	4.2	6.9	7.4	24.0	15.3	7.3	4.8	3.6	24	28.4	3.6	9.0	0	0
17	5.0	8.4	5.8	3.9	4.3	4.9	7.7	4.8	2.5	11.2	11.6	5.1	4.5	7.4	3.6	3.8	4.4	5.9	8.3	6.8	9.0	10.8	6.8	2.1	24	11.6	2.1	6.2	0	0
18	6.0	14.6	8.9	7.5	5.7	3.5	3.2	8.7	9.5	4.7	4.5	4.9	4.9	4.5	3.4	3.4	2.4	3.7	5.4	10.5	13.5	10.5	11.8	9.1	24	14.6	2.4	6.9	0	0
19	7.8	8.2	5.7	5.9	4.0	5.1	17.7	17.4	16.5	6.9	8.1	4.7	3.2	2.9	4.1	4.3	3.8	4.9	5.1	3.4	4.8	6.4	6.6	7.3	24	17.7	2.9	6.9	0	0
20	4.3	4.2	4.2	5.5	9.4	12.9	12.1	9.1	12.7	9.3	9.0	9.5	5.1	5.2	5.7	5.9	3.3	4.7	5.5	9.0	1.5	1.2	0.9	0.9	24	12.9	0.9	6.3	0	0
21	0.8	0.9	1.0	4.5	16.0	13.6	42.5	36.2	18.5	19.8	20.4	13.5	10.9	5.0	4.9	17.3	5.4	9.2	4.8	2.9	9.1	12.7	1.7	2.5	24	42.5	0.8	11.4	0	0
22	2.5	6.9	13.0	2.3	8.6	2.7	3.2	2.4	1.6	2.0	1.8	1.3	2.1	1.8	2.4	4.9	3.9	3.9	8.3	12.1	12.8	25.4	10.3	12.4	24	25.4	1.3	6.2	0	0
23	11.5	4.7	5.5	14.6	9.6	6.7	11.5	5.4	2.6	8.4	7.2	3.8	3.4	3.2	2.5	4.3	3.0	4.0	3.5	12.5	7.9	6.5	17.0	18.7	24	18.7	2.5	7.4	0	0
24	12.5	6.7	1.9	2.9	5.9	8.3	5.4	4.5	18.0	8.8	4.5	4.0	3.2	3.1	2.8	2.2	2.8	4.3	6.4	6.0	11.4	7.6	8.6	6.5	24	18.0	1.9	6.2	0	0
25	5.3	4.4	5.6	4.1	3.6	3.7	14.6	6.9	11.0	7.5	1.1	2.1	1.6	1.4	1.9	2.5	2.9	2.9	2.2	3.9	9.7	7.9	10.8	6.8	24	14.6	1.1	5.2	0	0
26	3.6	3.6	3.1	2.7	3.1	3.4	6.9	7.5	4.6	12.0	2.7	2.5	3.6	2.7	3.0	3.4	3.0	3.3	5.3	5.8	7.4	12.1	3.1	14.4	24	14.4	2.5	5.1	0	0
27	5.2	6.6	3.4	5.4	7.7	12.5	14.0	17.4	14.0	10.1	12.2	8.3	7.0	9.0	5.8	5.8	5.4	5.0	7.0	2.3	1.8	2.0	1.8	1.9	24	17.4	1.8	7.1	0	0
28	1.8	1.5	1.5	1.7	1.3	2.1	2.4	2.5	2.1	2.1	4.0	13.3	14.1	2.1	1.9	2.0	1.8	1.6	1.6	1.9	1.8	1.7	1.7	1.9	24	14.1	1.3	2.9	0	0
29	1.5	1.3	1.2	1.3	1.5	1.9	4.1	3.2	1.9	2.4	1.4	1.6	3.8	8.4	4.6	4.2	3.5	3.9	5.4	16.6	6.1	5.6	2.9	3.6	24	16.6	1.2	3.8	0	0
30	2.9	22.4	7.7	8.7	12.0	15.8	6.5	13.9	18.1	12.7	7.5	7.2	7.3	4.9	4.2	3.3	4.4	6.2	12.8	16.4	13.2	13.5	6.7	7.8	24	22.4	2.9	9.8	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	717					
Maximum	12.5	22.4	13.0	14.6	20.8	32.7	43.7	36.2	21.7	19.8	20.4	13.5	24.9	13.9	45.0	23.0	15.3	20.8	17.0	26.4	15.9	25.4	29.4	18.7	24					
Minimum	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.1	0.3	0.6	0.3	0.2	0.0	0.3	0.3	0.4	0.0	0.0	0.2	0.4	0.0	0.0	0.0	0					
Average	4.2	5.7	4.2	4.2	5.3	6.8	9.8	8.1	8.2	7.3	6.0	4.9	5.1	4.2	5.3	4.9	3.7	4.4	4.7	8.0	7.3	7.2	6.1	5.6						

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.0	1.6	2.3	3.3	4.3	5.4	6.9	9.0	12.9	16.2	28.1	45.0

Maximum Hourly	45.0
Maximum Daily	15.1
Monthly Average	5.9

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



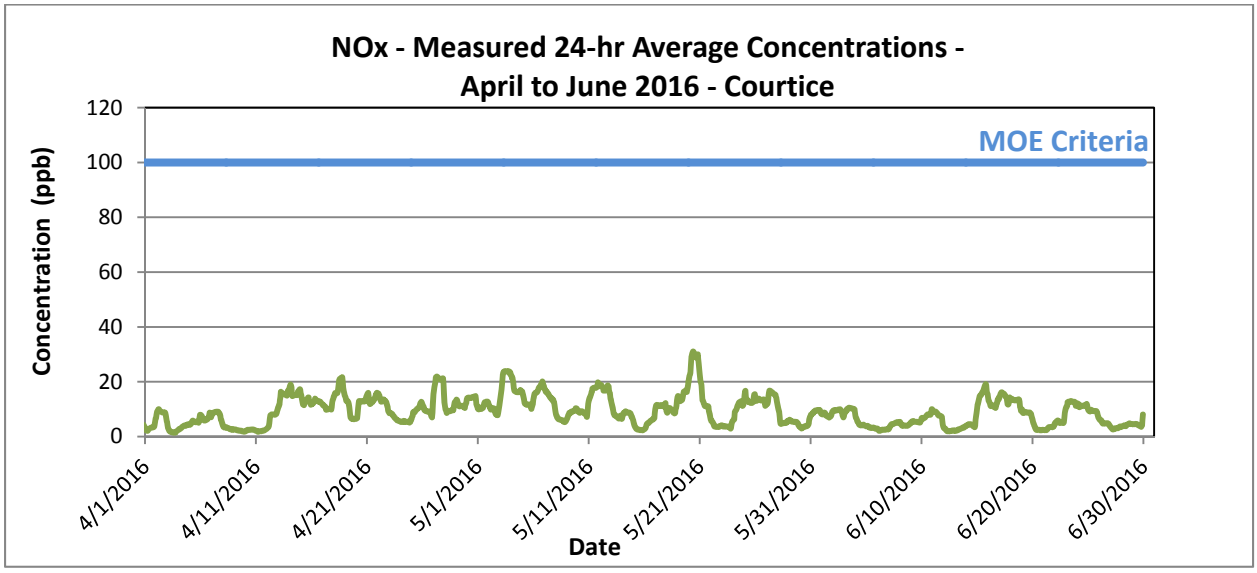
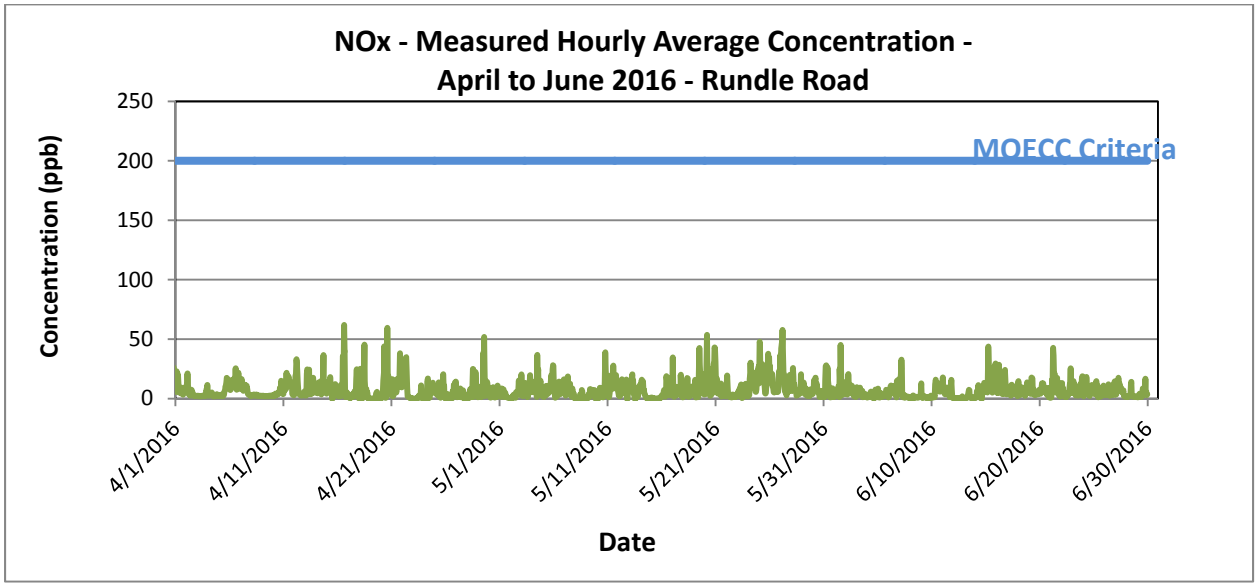
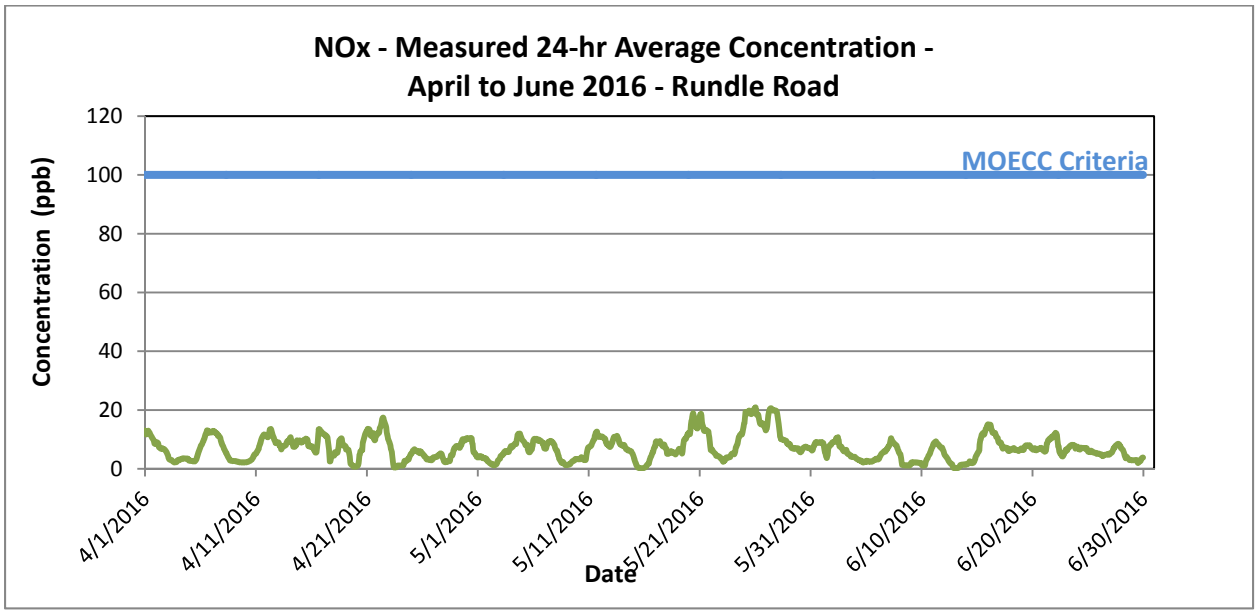


Figure D-2 Time History Plots of Measured Hourly Average and 24-Hour Average NO_X Concentrations – Rundle Road Station





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

$PM_{2.5}$ - April ($\mu g/m^3$) COURTICE 2016

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	1.5	2.3	3.0	4.4	5.4	5.6	6.0	4.7	3.2	4.1	3.0	2.2	1.6	1.6	1.7	1.6	1.5	1.8	1.6	1.8	2.6	4.3	5.9	6.2	24	6.2	1.5	3.2
2	3.2	2.4	4.3	7.7	7.9	10.4	1.0	1.2	0.5	0.6	0.8	1.1	1.3	1.7	2.2	3.2	2.7	3.0	2.3	2.3	2.1	2.1	2.5	2.5	24	10.4	0.5	2.9
3	3.0	3.7	3.7	4.1	4.3	4.3	3.7	3.0	2.3	2.2	2.4	2.5	2.4	3.0	2.6	2.6	3.8	5.3	6.0	6.6	6.0	5.2	4.5	4.3	24	6.6	2.2	3.8
4	4.4	4.1	4.0	3.8	4.3	4.7	4.3	3.7	3.0	2.7	2.2	1.9	1.8	1.8	2.0	2.2	2.7	3.1	4.4	6.3	7.0	5.6	5.2	4.1	24	7.0	1.8	3.7
5	3.9	4.6	4.7	5.8	6.2	5.7	6.2	3.6	2.5	2.5	2.6	2.4	3.3	4.0	4.3	4.6	3.9	3.7	4.7	5.5	6.4	7.0	8.1	9.4	24	9.4	2.4	4.8
6	8.6	8.5	7.8	6.8	6.9	7.1	4.7	3.7	3.8	4.2	5.7	6.5	4.7	5.1	5.5	7.4	5.3	5.1	11.2	12.2	12.1	10.3	12.2	11.4	24	12.2	3.7	7.4
7	11.2	11.3	8.1	7.1	6.5	6.6	6.2	1.8	2.0	1.7	3.2	7.0	9.7	9.5	7.1	5.1	4.4	3.1	3.4	3.5	4.6	3.5	3.2	2.0	24	11.3	1.7	5.5
8	1.5	1.7	1.8	1.9	2.4	2.3	2.4	2.7	2.8	3.3	3.4	4.0	3.7	3.7	4.1	4.5	4.4	4.5	5.9	6.9	5.7	5.1	5.2	5.4	24	6.9	1.5	3.7
9	5.6	5.7	4.3	4.4	4.4	3.8	3.6	2.7	1.9	1.8	1.7	1.6	1.5	1.8	1.8	1.7	1.8	2.2	2.8	3.9	4.8	4.9	4.7	5.1	24	5.7	1.5	3.3
10	4.6	4.4	4.5	5.2	5.7	5.2	3.9	2.0	2.1	3.6	2.5	4.2	4.4	4.4	5.1	5.6	6.8	8.0	7.5	6.7	7.6	5.8	3.9	3.7	24	8.0	2.0	4.9
11	7.6	10.2	10.6	11.1	10.8	9.0	9.1	8.9	9.5	13.9	16.2	11.9	9.5	8.3	7.4	7.8	15.4	16.7	16.0	25.5	19.7	7.0	8.5	7.3	24	25.5	7.0	11.6
12	3.8	2.7	3.9	4.3	6.2	8.3	8.5	5.0	1.9	1.4	0.8	0.7	0.8	1.1	1.1	1.4	1.5	1.7	2.3	2.9	3.7	4.9	6.0	6.7	24	8.5	0.7	3.4
13	7.3	6.9	7.1	7.0	7.8	7.8	7.5	4.0	2.4	3.1	3.3	3.2	3.1	3.7	2.9	3.3	3.3	4.0	5.4	5.8	10.7	13.9	14.6	12.9	24	14.6	2.4	6.3
14	14.7	15.6	13.8	12.7	9.8	9.9	8.4	5.2	5.2	5.5	6.8	6.5	4.6	4.2	4.1	4.0	3.5	3.3	4.6	6.4	9.1	10.6	9.0	6.9	24	15.6	3.3	7.7
15	6.2	8.4	9.9	9.0	8.3	7.8	7.4	6.2	C	C	9.7	10.9	6.1	5.8	4.9	4.2	4.7	5.3	5.9	9.6	11.1	15.3	10.5	9.4	22	15.3	4.2	8.0
16	9.4	9.2	8.4	7.8	8.6	8.5	6.9	5.4	5.5	4.9	4.6	4.9	5.6	5.6	5.4	5.8	6.7	7.7	7.7	9.1	14.5	41.2	52.1	38.3	24	52.1	4.6	11.8
17	22.6	17.0	14.0	12.4	10.6	9.1	7.2	4.7	4.7	5.7	5.4	7.0	7.3	6.8	7.1	6.9	6.7	7.9	7.6	8.7	13.5	18.3	16.7	15.7	24	22.6	4.7	10.1
18	14.0	14.5	16.1	16.1	16.9	12.3	10.2	9.2	10.2	16.1	21.6	29.5	33.3	24.0	14.5	11.2	10.6	8.9	8.8	9.6	9.8	9.8	10.6	12.4	24	33.3	8.8	14.6
19	10.6	9.8	8.8	7.2	6.4	2.4	2.0	1.9	1.9	1.9	1.9	2.1	2.1	3.2	3.8	3.2	3.6	6.0	6.8	7.8	8.1	6.3	6.3	7.1	24	10.6	1.9	5.0
20	7.3	7.1	5.7	5.7	7.8	11.1	10.5	4.3	2.6	3.8	4.8	4.4	4.7	3.8	3.7	3.2	3.3	3.7	4.3	6.1	9.5	8.6	7.4	7.2	24	11.1	2.6	5.9
21	6.9	6.3	5.8	5.4	5.8	6.6	7.3	7.0	9.1	11.7	13.7	15.1	16.0	15.7	15.7	16.0	16.8	23.0	18.2	20.7	19.8	18.2	22.5	21.1	24	23.0	5.4	13.5
22	21.8	18.1	13.4	12.6	13.2	14.5	15.8	20.1	21.5	26.3	21.5	21.6	16.2	5.7	4.4	6.6	5.5	4.1	3.5	2.8	2.8	2.9	3.9	3.8	24	26.3	2.8	11.8
23	4.7	3.9	3.2	4.5	5.5	5.7	5.3	4.1	2.7	2.2	3.5	4.6	5.2	5.6	7.3	5.6	6.4	7.7	8.2	5.7	4.7	4.6	5.2	5.3	24	8.2	2.2	5.1
24	6.6	7.2	7.2	7.4	6.1	5.1	4.6	3.5	3.7	4.2	4.5	4.2	4.6	5.0	5.8	6.1	6.3	6.5	5.9	6.1	5.3	5.1	4.8	6.3	24	7.4	3.5	5.5
25	12.5	18.0	12.4	11.1	13.6	8.6	5.7	6.5	7.7	8.9	8.4	9.0	9.4	9.1	19.2	7.9	8.2	8.9	9.0	11.3	15.3	7.4	6.8	5.4	24	19.2	5.4	10.0
26	4.0	3.8	4.8	4.7	4.5	3.8	3.3	3.1	2.5	3.1	3.7	4.6	6.3	4.7	4.2	3.6	5.0	8.2	10.0	11.5	13.2	14.9	45.4	21.7	24	45.4	2.5	8.1
27	18.7	6.5	6.4	5.5	4.5	4.9	3.6	2.4	2.2	2.4	3.0	3.0	2.5	2.7	2.8	3.0	3.1	4.5	3.6	4.4	4.7	4.5	4.6	4.7	24	18.7	2.2	4.5
28	5.9	6.3	6.1	7.8	8.6	7.6	6.5	4.9	3.9	3.3	4.7	4.1	3.6	2.9	3.2	3.6	4.3	5.8	5.6	6.7	10.8	13.5	9.8	6.2	24	13.5	2.9	6.1
29	3.1	2.6	3.2	2.8	2.8	2.6	3.1	2.4	3.0	3.5	5.0	6.1	3.5	3.7	5.0	4.6	5.7	5.8	6.2	7.8	11.8	16.7	28.2	20.9	24	28.2	2.4	6.7
30	18.1	12.4	10.9	8.4	7.0	5.9	4.5	3.3	2.4	3.3	4.9	7.1	8.2	6.5	4.4	3.1	2.8	2.4	2.5	2.9	3.1	3.2	4.2	3.6	24	18.1	2.4	5.6
31																									0	0.0	0.0	
Count	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	718			
Maximum	22.6	18.1	16.1	16.1	16.9	14.5	15.8	20.1	21.5	26.3	21.6	29.5	33.3	24.0	19.2	16.0	16.8	23.0	18.2	25.5	19.8	41.2	52.1	38.3	24			
Minimum	1.5	1.7	1.8	1.9	2.4	2.3	1.0	1.2	0.5	0.6	0.8	0.7	0.8	1.1	1.1	1.4	1.5	1.7	1.6	1.8	2.1	2.1	2.5	2.0	0			
Average	8.4	7.8	7.3	7.2	7.3	6.9	6.0	4.7	4.4	5.2	5.8	6.5	6.2	5.5	5.4	5.0	5.4	6.1	6.4	7.6	8.7	9.4	11.1	9.2				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	2.3	3.1	3.8	4.6	5.4	6.2	7.3	9.1	13.4	16.7	26.1	52.1

Maximum Hourly	52.1
Maximum Daily	14.6
Monthly Average	6.8

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

$PM_{2.5}$ - May ($\mu g/m^3$) COURTICE 2016

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	4.0	6.1	5.5	7.5	8.3	8.1	8.9	12.8	14.2	15.4	12.8	7.3	15.8	4.3	4.2	3.3	3.0	2.9	2.7	2.6	3.5	4.4	5.0	5.6	24	15.8	2.6	7.0
2	8.4	9.2	9.4	9.1	9.8	9.2	8.9	9.9	7.1	5.2	4.5	3.5	2.4	4.9	7.7	8.2	9.2	12.6	10.2	11.4	13.2	17.4	19.1	15.5	24	19.1	2.4	9.4
3	11.7	9.3	9.1	9.7	11.1	10.3	14.0	12.8	10.1	12.8	9.3	7.7	4.5	4.6	5.2	4.8	6.4	4.6	2.3	3.5	3.9	3.6	4.3	4.3	24	14.0	2.3	7.5
4	5.7	9.1	8.4	7.8	8.3	8.8	8.2	6.6	6.2	7.2	6.3	4.8	4.1	3.8	5.0	7.8	7.6	7.6	8.1	11.8	11.3	11.0	10.2	9.2	24	11.8	3.8	7.7
5	8.7	11.9	15.9	18.0	15.6	12.4	10.2	9.0	8.9	6.2	3.3	2.5	4.3	7.0	7.5	7.5	7.9	7.6	7.5	7.1	8.1	11.6	12.9	12.2	24	18.0	2.5	9.3
6	16.0	17.3	17.2	8.3	3.9	4.2	4.3	2.7	1.7	3.8	6.9	6.3	12.6	12.5	9.6	7.8	9.8	9.8	7.6	3.8	5.7	9.6	8.8	7.5	24	17.3	1.7	8.3
7	14.5	25.9	25.9	14.8	11.7	13.4	10.9	6.7	6.2	6.7	9.3	10.2	12.8	6.0	4.2	4.3	2.9	2.7	2.3	2.7	3.2	4.6	6.2	1.1	24	25.9	1.1	8.7
8	1.0	1.5	2.1	2.1	2.4	3.3	2.0	1.3	1.6	2.0	2.7	6.2	6.8	6.4	6.9	7.4	8.2	5.6	5.1	5.5	3.9	5.7	5.3	5.7	24	8.2	1.0	4.2
9	4.8	4.5	4.9	5.3	5.2	4.6	3.7	1.5	1.1	1.4	2.1	4.5	6.2	4.5	5.4	5.3	7.9	8.5	7.9	9.5	5.5	2.4	2.7	3.5	24	9.5	1.1	4.7
10	2.8	3.1	3.2	3.3	3.7	4.1	3.0	2.5	2.0	2.7	3.5	3.7	3.6	3.6	2.3	1.7	1.8	2.5	2.7	4.4	5.3	9.1	18.2	16.4	24	18.2	1.7	4.6
11	10.9	12.1	8.1	7.9	7.3	8.4	6.7	4.7	5.2	5.2	4.4	4.3	3.4	3.4	5.5	2.5	2.7	3.5	3.7	5.9	7.3	8.9	9.2	17.7	24	17.7	2.5	6.6
12	17.4	12.1	7.7	6.7	5.1	5.3	6.1	4.8	3.8	3.5	3.1	3.0	4.1	3.6	5.9	C	C	11.3	14.1	13.3	12.3	14.2	13.0	10.7	22	17.4	3.0	8.2
13	12.5	12.0	14.8	14.9	31.8	4.0	3.3	4.6	3.7	A	A	7.1	2.4	4.1	5.3	5.0	5.0	6.3	8.4	12.3	14.5	15.5	17.3	15.4	22	31.8	2.4	10.0
14	18.4	20.5	20.7	15.7	17.5	27.1	26.9	22.9	19.5	10.8	7.6	4.8	3.4	0.8	0.8	4.0	3.9	2.4	2.1	1.7	1.5	1.7	1.6	1.5	24	27.1	0.8	9.9
15	1.8	2.3	2.2	2.1	2.1	1.9	1.6	1.5	1.7	3.5	2.8	1.5	1.5	1.5	1.5	1.6	2.1	3.6	3.8	3.5	3.2	3.2	3.2	3.3	24	3.8	1.5	2.4
16	3.6	3.6	3.9	3.8	4.1	4.2	2.9	2.1	1.8	2.1	2.9	8.4	10.2	9.8	10.7	11.6	11.4	7.1	8.1	9.2	10.1	11.5	8.9	12.9	24	12.9	1.8	6.9
17	15.7	11.3	26.1	13.4	8.8	5.7	3.6	2.4	3.5	5.4	6.9	8.5	10.0	8.5	12.8	10.4	6.0	3.2	1.7	2.4	3.3	3.7	3.3	3.4	24	26.1	1.7	7.5
18	4.6	5.6	4.9	4.7	5.4	4.7	7.4	2.3	2.0	2.2	2.6	3.0	3.2	3.9	3.9	3.3	3.3	3.7	3.9	7.4	9.8	9.2	8.8	9.5	24	9.8	2.0	5.0
19	7.2	4.9	4.2	3.7	3.5	2.9	3.0	2.9	2.7	9.0	3.5	8.5	12.0	11.9	5.8	5.1	8.0	8.5	8.0	12.3	13.8	20.1	22.5	21.1	24	22.5	2.7	8.5
20	17.8	16.6	12.7	11.3	13.2	13.6	13.4	8.0	9.3	11.4	12.1	12.5	8.1	5.7	5.3	4.6	4.1	3.5	4.2	12.3	10.3	9.3	8.1	9.3	24	17.8	3.5	9.9
21	11.0	15.2	11.4	11.5	11.2	9.1	9.9	9.7	9.8	13.2	14.6	13.2	12.4	15.9	15.1	15.9	16.6	15.3	19.8	16.3	21.1	17.2	16.9	8.0	24	21.1	8.0	13.8
22	7.0	8.5	10.2	11.0	9.7	9.0	8.6	8.5	10.4	9.8	9.5	10.8	13.1	15.8	17.0	13.1	11.5	8.9	9.9	9.7	10.3	12.0	10.9	11.3	24	17.0	7.0	10.7
23	15.1	12.9	13.0	14.7	13.5	12.6	12.2	11.6	8.6	8.4	8.6	10.1	10.4	10.0	10.7	10.2	9.6	9.1	10.8	11.1	14.0	23.5	22.0	14.6	24	23.5	8.4	12.4
24	12.3	10.8	11.2	13.0	15.1	14.7	14.9	12.3	12.4	14.4	16.5	19.1	22.2	22.4	18.4	15.7	14.8	13.0	14.1	15.8	16.7	18.0	19.2	21.2	24	22.4	10.8	15.8
25	24.1	26.1	25.2	19.5	17.4	16.5	16.4	15.4	16.2	16.7	21.0	24.1	24.6	26.3	20.3	17.8	17.5	21.8	19.9	22.4	25.1	32.1	30.0	25.8	24	32.1	15.4	21.8
26	35.0	41.3	84.6	52.4	46.9	32.4	19.0	11.2	11.6	14.8	26.6	29.0	34.4	37.6	38.0	43.4	43.0	40.2	33.9	31.9	30.2	29.9	31.0	33.4	24	84.6	11.2	34.7
27	33.8	31.5	30.7	33.6	40.1	40.5	28.3	26.3	19.5	21.7	21.3	21.9	19.0	16.6	14.5	13.3	11.2	8.7	7.1	7.1	8.0	13.1	18.7	20.1	24	40.5	7.1	21.1
28	18.5	17.5	16.7	18.4	22.2	23.0	15.6	15.3	14.9	13.3	12.4	13.5	14.4	13.5	13.7	12.5	11.0	10.8	10.5	11.4	11.6	12.3	14.9	14.4	24	23.0	10.5	14.7
29	12.9	14.3	15.3	19.4	18.6	16.6	18.1	16.7	16.8	16.8	18.4	20.2	17.1	15.7	16.4	17.0	15.3	15.6	15.3	13.2	11.9	14.0	21.7	20.1	24	21.7	11.9	16.6
30	18.3	17.1	17.5	17.0	15.9	16.1	15.5	9.6	9.5	10.3	10.8	9.7	7.1	4.0	2.2	2.0	2.2	3.4	3.6	4.0	5.3	6.2	6.2	7.2	24	18.3	2.0	9.2
31	7.4	6.9	5.8	6.4	7.1	6.8	6.7	5.3	6.3	7.3	6.3	6.7	6.3	3.2	2.2	2.6	3.9	6.7	6.2	5.1	6.1	4.4	5.0	6.5	24	7.4	2.2	5.7
Count	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	30	30	31	31	31	31	31	31	31	740			
Maximum	35.0	41.3	84.6	52.4	46.9	40.5	28.3	26.3	19.5	21.7	26.6	29.0	34.4	37.6	38.0	43.4	43.0	40.2	33.9	31.9	30.2	32.1	31.0	33.4	24			
Minimum	1.0	1.5	2.1	2.1	2.1	1.9	1.6	1.3	1.1	1.4	2.1	1.5	1.5	0.8	0.8	1.6	1.8	2.4	1.7	1.7	1.5	1.7	1.6	1.1	22			
Average	12.4	12.9	14.5	12.5	12.8	11.4	10.1	8.5	8.0	8.8	9.1	9.6	10.1	9.4	9.2	9.0	8.9	8.7	8.6	9.4	10.0	11.6	12.4	11.9				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	2.7	3.8	5.2	7.1	8.7	10.4	12.6	15.4	19.4	25.9	40.2	84.6

Maximum Hourly	84.6
Maximum Daily	34.7
Monthly Average	10.4

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

$PM_{2.5}$ - COURTICE
June 2016
(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	9.4	9.5	8.4	7.7	8.6	6.1	4.4	4.9	3.5	3.2	2.8	2.3	2.0	1.9	1.8	1.8	2.1	2.8	3.4	2.4	2.8	2.6	3.0	3.0	24	9.5	1.8	4.2
2	2.4	2.1	2.7	2.3	2.5	2.2	2.1	3.3	2.7	2.3	2.2	2.4	3.0	3.1	6.6	8.4	8.1	6.6	6.3	3.9	4.0	3.7	4.4	5.8	24	8.4	2.1	3.9
3	9.5	8.3	9.0	9.6	13.6	10.1	6.7	4.3	6.9	5.2	4.9	3.7	3.5	3.3	3.4	2.7	2.4	1.9	2.8	2.2	2.8	3.4	3.5	4.0	24	13.6	1.9	5.3
4	4.3	5.7	6.6	7.8	7.1	6.8	4.5	3.7	3.5	2.7	3.2	3.4	3.2	2.8	2.7	2.6	2.9	4.9	5.7	6.7	7.1	6.1	5.6	4.5	24	7.8	2.6	4.8
5	3.8	4.0	4.5	6.8	5.5	5.5	5.1	4.9	2.1	2.7	3.3	3.1	3.5	6.1	5.4	4.2	2.7	3.3	4.5	5.8	3.7	4.1	2.9	2.1	24	6.8	2.1	4.1
6	1.8	1.7	2.4	3.0	2.5	2.8	3.8	4.2	5.0	4.2	3.9	4.1	4.5	4.2	3.8	4.8	5.6	7.0	7.5	8.4	6.6	5.8	6.7	10.7	24	10.7	1.7	4.8
7	8.9	15.3	18.1	19.3	27.6	26.3	11.1	1.8	1.2	1.0	1.3	1.3	2.5	2.4	2.1	2.9	4.3	5.2	5.6	5.9	5.2	5.4	5.2	5.3	24	27.6	1.0	7.7
8	5.8	6.2	6.4	6.3	5.6	4.9	4.8	7.8	13.0	10.1	3.3	3.0	3.2	3.9	2.8	2.2	3.1	4.0	4.1	4.5	3.8	3.6	3.2	3.5	24	13.0	2.2	5.0
9	4.0	4.9	4.8	4.8	4.3	3.7	3.2	2.3	2.8	3.5	3.3	3.4	3.1	3.7	3.9	3.4	3.6	3.8	3.9	4.6	5.0	5.5	7.0	7.5	24	7.5	2.3	4.2
10	7.2	7.2	7.1	6.2	6.3	5.8	4.7	4.8	3.0	2.7	3.2	3.6	3.8	3.8	2.7	2.2	2.5	2.8	3.9	4.8	7.2	10.9	14.2	14.2	24	14.2	2.2	5.6
11	8.9	7.4	7.1	7.4	10.7	8.0	6.6	6.5	4.1	3.6	3.9	5.2	5.0	5.0	4.1	3.5	2.3	3.2	3.7	4.6	6.7	8.4	5.5	4.6	24	10.7	2.3	5.7
12	4.0	4.2	4.6	5.1	4.8	4.7	4.3	5.0	4.5	4.2	4.0	4.3	4.3	4.3	4.4	3.7	4.7	5.9	6.0	5.4	4.6	4.0	3.9	3.6	24	6.0	3.6	4.5
13	4.8	6.1	6.3	5.6	5.6	4.7	3.4	3.1	C	1.7	2.9	4.0	3.9	1.9	1.4	1.5	1.4	1.0	1.2	1.5	2.7	3.6	3.1	3.2	23	6.3	1.0	3.2
14	2.0	1.8	2.0	2.3	2.8	3.0	2.4	2.9	1.8	1.8	2.2	2.2	2.2	2.0	1.8	2.6	2.0	2.6	3.1	3.2	6.5	9.3	11.2	11.3	24	11.3	1.8	3.5
15	12.4	10.6	9.2	11.7	14.1	13.1	10.1	6.2	4.0	3.5	3.9	2.3	2.0	2.7	1.8	4.7	3.9	4.2	3.6	5.3	7.2	4.5	6.0	5.8	24	14.1	1.8	6.4
16	4.6	4.5	4.7	7.2	4.9	5.8	6.3	7.3	4.3	3.8	5.2	7.5	6.3	4.7	4.5	4.6	6.1	7.9	8.8	7.8	9.9	14.7	10.4	10.5	24	14.7	3.8	6.8
17	9.6	9.7	9.4	8.8	10.1	8.0	8.5	8.2	5.6	6.6	7.5	8.3	7.1	5.7	5.2	4.8	3.8	3.0	5.7	12.9	27.1	19.9	29.7	26.7	24	29.7	3.0	10.5
18	13.1	10.9	14.5	13.4	13.0	8.4	8.4	9.0	12.0	8.6	10.5	11.5	14.0	10.5	9.2	11.0	10.1	8.2	9.2	9.4	9.8	10.6	13.3	24.8	24	24.8	8.2	11.4
19	27.2	26.5	22.4	19.1	19.3	18.4	24.4	23.0	23.4	18.7	15.7	11.3	12.5	12.5	10.5	12.6	13.2	12.8	13.0	14.9	15.0	14.8	13.2	13.3	24	27.2	10.5	17.0
20	14.5	14.7	14.8	13.9	14.4	13.8	13.1	12.8	13.2	13.1	16.8	15.2	18.6	23.6	25.3	22.8	19.5	20.0	19.7	17.4	8.7	4.8	3.4	2.5	24	25.3	2.5	14.9
21	2.6	2.0	1.9	1.8	2.0	2.8	3.3	3.0	3.4	4.4	4.5	6.0	6.4	5.0	4.5	5.0	5.8	5.9	5.8	6.3	6.8	6.5	4.7	5.1	24	6.8	1.8	4.4
22	7.5	9.3	6.9	3.9	4.7	4.2	4.3	4.7	4.4	4.4	7.0	5.9	5.2	5.1	5.7	8.6	6.5	5.6	5.5	7.5	9.9	12.7	14.5	10.9	24	14.5	3.9	6.9
23	8.7	4.4	3.5	4.1	5.8	4.2	3.5	2.7	2.1	2.9	3.9	4.5	9.6	2.5	2.6	2.8	4.1	6.9	6.9	8.9	8.7	12.4	12.5	13.1	24	13.1	2.1	5.9
24	11.3	11.6	8.6	5.4	4.1	2.1	2.1	1.8	2.6	2.2	3.8	6.1	6.5	5.3	2.7	2.2	2.2	2.1	2.5	3.5	5.4	6.2	10.6	13.9	24	13.9	1.8	5.2
25	8.9	9.0	8.0	6.6	7.0	7.0	9.1	7.1	6.9	7.3	7.1	5.8	6.3	6.5	6.4	6.5	6.1	4.5	4.6	5.0	7.4	7.7	9.9	11.7	24	11.7	4.5	7.2
26	10.8	8.7	8.1	7.9	8.7	8.5	7.4	10.4	11.4	11.6	12.3	11.6	11.7	12.2	11.1	8.7	7.8	7.7	9.1	10.1	11.8	12.1	16.1	18.1	24	18.1	7.4	10.6
27	16.8	14.8	16.9	17.3	17.8	16.7	8.1	5.1	7.5	12.0	15.3	10.6	6.3	4.7	3.2	2.8	2.6	3.2	3.6	2.7	3.3	2.7	2.0	1.9	24	17.8	1.9	8.3
28	1.8	1.6	1.9	1.9	1.9	1.9	2.0	2.9	3.1	3.9	3.0	3.9	6.6	6.4	5.5	4.6	3.4	7.1	6.7	2.9	2.0	2.1	1.7	2.2	24	7.1	1.6	3.4
29	2.0	1.9	2.4	2.4	2.9	3.2	3.6	3.3	2.2	1.9	2.4	3.7	6.4	6.6	6.0	5.6	4.8	5.2	5.3	5.9	5.1	6.1	10.6	9.9	24	10.6	1.9	4.6
30	8.1	7.3	8.5	10.2	10.9	10.0	7.0	6.6	7.0	9.4	10.8	10.2	9.1	8.1	10.6	7.6	5.9	6.2	6.3	7.0	7.4	6.8	8.4	12.6	24	12.6	5.9	8.4
31																									0	0.0	0.0	
Count	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	719			
Maximum	27.2	26.5	22.4	19.3	27.6	26.3	24.4	23.0	23.4	18.7	16.8	15.2	18.6	23.6	25.3	22.8	19.5	20.0	19.7	17.4	27.1	19.9	29.7	26.7	24			
Minimum	1.8	1.6	1.9	1.8	1.9	1.9	2.0	1.8	1.2	1.0	1.3	1.3	2.0	1.9	1.4	1.5	1.4	1.0	1.2	1.5	2.0	2.1	1.7	1.9	0			
Average	7.9	7.7	7.7	7.7	8.3	7.4	6.3	5.8	5.8	5.4	5.8	5.7	6.1	5.7	5.4	5.4	5.1	5.5	5.9	6.4	7.1	7.4	8.2	8.9				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	2.2	3.0	3.7	4.4	5.2	6.3	7.4	9.4	12.9	15.4	25.2	29.7

Maximum Hourly	29.7
Maximum Daily	17.0
Monthly Average	6.6

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 2016

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	6.5	7.5	6.2	6.7	6.1	5.1	4.3	3.6	4.9	7.6	8.0	5.5	3.6	2.8	3.1	2.1	1.9	1.1	0.6	0.2	0.3	0.4	0.4	0.8	24	8.0	0.2	3.7
2	1.0	1.7	1.9	2.3	3.1	4.8	0.8	0.6	0.2	1.1	1.8	4.0	6.2	6.4	6.7	6.2	4.5	3.7	3.9	2.7	0.7	0.3	0.2	0.3	24	6.7	0.2	2.7
3	1.6	1.9	0.6	0.6	0.7	0.6	0.4	0.4	0.3	0.4	0.7	2.9	15.9	6.0	5.2	5.4	9.7	7.7	5.2	2.5	1.6	1.6	1.7	1.3	24	15.9	0.3	3.1
4	1.3	0.9	1.1	0.9	1.1	2.1	1.5	1.1	3.3	7.7	10.2	11.7	12.5	12.3	11.1	11.4	10.2	8.5	9.7	8.6	6.4	2.1	1.2	1.0	24	12.5	0.9	5.7
5	0.9	1.1	1.5	1.2	1.2	1.3	1.7	1.7	5.0	9.8	12.9	12.7	11.2	10.8	8.3	9.6	24.3	30.9	10.5	9.9	8.1	7.6	6.7	4.7	24	30.9	0.9	8.1
6	6.6	6.2	7.0	7.5	8.1	8.0	5.7	4.2	5.5	8.0	13.1	23.4	15.2	10.9	30.8	9.1	8.9	10.5	12.7	15.6	13.7	13.8	15.3	17.9	24	30.8	4.2	11.6
7	17.1	15.8	12.9	8.7	7.6	9.6	8.8	4.9	5.5	4.2	5.0	7.9	9.8	10.7	8.2	6.0	5.9	5.5	4.3	3.7	3.4	2.0	1.8	0.8	24	17.1	0.8	7.1
8	1.2	2.6	2.6	2.2	2.0	1.3	1.3	0.7	1.1	2.2	4.8	7.9	8.5	7.5	7.9	8.5	9.6	12.6	14.7	13.3	10.0	5.3	4.1	2.7	24	14.7	0.7	5.6
9	2.4	1.9	0.8	0.7	0.7	0.6	0.4	0.3	0.5	1.8	3.1	4.1	4.5	5.9	6.0	5.7	6.3	9.0	8.9	8.4	4.4	2.4	1.8	1.8	24	9.0	0.3	3.4
10	1.7	2.0	2.4	2.4	2.6	2.5	2.9	3.0	7.0	16.4	14.1	13.4	14.2	15.5	17.9	18.4	24.1	19.3	17.7	16.2	12.6	9.2	7.2	6.5	24	24.1	1.7	10.4
11	8.4	10.0	31.2	20.0	22.9	18.0	5.2	7.9	10.1	12.7	17.2	13.2	12.9	10.8	9.7	12.1	16.4	14.0	16.7	17.7	15.8	5.8	4.5	3.5	24	31.2	3.5	13.2
12	0.9	0.0	0.0	0.0	0.5	1.8	1.1	0.9	0.8	1.0	1.5	1.1	1.5	1.3	1.8	2.9	3.2	3.9	3.5	2.8	1.6	1.0	1.1	1.3	24	3.9	0.0	1.5
13	1.4	1.2	1.2	1.2	1.6	2.2	2.3	2.6	6.4	9.7	9.2	8.9	8.1	7.5	7.5	7.0	8.2	9.9	8.4	8.4	6.5	3.5	2.6	3.2	24	9.9	1.2	5.4
14	5.1	8.6	9.4	6.2	5.4	6.6	5.9	7.2	9.4	11.7	13.7	9.2	7.6	7.3	7.1	6.8	8.7	13.4	10.4	12.0	14.0	9.2	4.5	2.7	24	14.0	2.7	8.4
15	3.6	7.8	9.4	10.6	10.5	8.2	8.2	9.2	12.0	14.6	17.2	14.3	C	C	7.5	6.6	4.5	2.6	1.8	5.4	9.0	6.1	1.8	0.7	22	17.2	0.7	7.8
16	0.6	0.2	0.0	0.0	0.8	1.0	0.2	1.3	5.5	9.9	10.5	11.0	9.5	10.1	11.0	11.8	8.9	6.0	6.3	7.8	7.8	36.7	28.2	34.9	24	36.7	0.0	9.2
17	25.5	10.9	6.8	5.2	4.7	3.0	2.6	5.5	4.3	6.8	9.2	8.8	9.2	9.4	8.4	5.5	3.5	3.8	4.8	16.2	22.9	12.2	6.1	2.8	24	25.5	2.6	8.2
18	2.6	4.9	5.1	7.5	4.6	4.5	5.6	6.3	6.1	12.6	15.8	21.6	34.7	20.1	9.3	7.5	8.8	9.5	9.4	10.2	10.2	8.2	10.9	13.8	24	34.7	2.6	10.4
19	13.8	14.0	10.6	7.8	3.5	1.4	0.6	0.0	0.0	0.2	0.2	0.3	0.4	3.8	8.6	3.5	2.1	1.2	3.6	5.3	4.1	1.7	0.4	0.3	24	14.0	0.0	3.6
20	0.3	0.0	0.0	0.2	0.2	0.4	0.9	0.4	1.7	2.6	3.9	1.9	2.2	1.3	0.5	3.4	2.4	3.5	3.6	8.0	1.2	0.4	1.0	1.0	24	8.0	0.0	1.7
21	0.6	0.0	0.2	0.0	0.6	1.0	2.6	5.8	12.7	18.6	27.4	25.3	24.6	24.6	24.8	25.2	23.8	33.3	37.7	25.7	18.4	18.6	22.8	26.3	24	37.7	0.0	16.7
22	23.7	23.4	21.2	17.1	19.7	18.4	26.8	38.8	36.8	42.9	45.6	22.5	7.2	7.5	6.7	9.4	6.9	4.4	3.6	2.4	1.1	0.7	0.3	0.0	24	45.6	0.0	16.1
23	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.1	2.8	6.1	7.5	8.8	10.2	6.5	6.9	11.6	12.1	3.5	0.8	0.0	0.2	0.0	24	12.1	0.0	3.3
24	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.0	0.2	1.4	2.3	2.4	5.3	5.4	5.7	2.3	5.5	1.9	1.3	0.8	24	5.7	0.0	1.5
25	1.4	3.0	4.8	2.6	6.5	1.0	0.5	0.5	0.3	0.3	0.2	0.4	1.0	0.8	3.1	5.5	5.9	3.4	2.3	1.3	0.2	0.2	0.0	0.0	24	6.5	0.0	1.9
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	4.1	8.5	5.1	4.4	4.1	9.1	21.0	25.1	24.0	19.8	20.1	25.5	14.2	24	25.5	0.0	7.8
27	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	24	1.9	0.0	0.2
28	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.7	0.3	1.9	2.0	0.2	24	2.0	0.0	0.2
29	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.3	0.8	0.0	0.0	1.0	1.6	0.5	0.0	0.0	0.3	1.0	4.6	6.4	4.4	24	6.4	0.0	0.9
30	2.1	1.3	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	0.0	0.0	0.0	0.2	1.4	0.2	0.0	0.0	0.0	24	2.1	0.0	0.2
31																									0	0.0	0.0	
Count	30	30	30	30	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	718			
Maximum	25.5	23.4	31.2	20.0	22.9	18.4	26.8	38.8	36.8	42.9	45.6	25.3	34.7	24.6	30.8	25.2	24.3	33.3	37.7	25.7	22.9	36.7	28.2	34.9	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	0			
Average	4.4	4.2	4.6	3.7	3.8	3.4	3.1	3.6	4.7	6.8	8.3	8.1	8.2	7.2	7.6	6.8	7.7	8.5	8.1	7.9	6.7	5.9	5.3	4.9				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.3	1.0	1.9	3.5	5.5	7.7	9.8	14.9	21.7	34.5	45.6

Maximum Hourly	45.6
Maximum Daily	16.7
Monthly Average	6.0

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 2016

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	0.0	0.2	0.0	0.3	0.5	0.9	1.3	2.6	2.9	3.0	5.8	3.8	1.1	0.3	0.3	0.2	0.0	0.0	0.0	0.2	0.2	0.2	0.6	0.7	24	5.8	0.0	1.1
2	0.9	1.8	2.3	1.2	1.8	2.0	1.3	2.5	5.4	7.4	6.8	6.0	6.1	9.0	9.3	10.2	11.5	18.2	13.5	14.8	11.6	8.0	2.9	1.6	24	18.2	0.9	6.5
3	2.7	5.9	4.8	5.3	3.6	2.1	3.7	6.3	9.2	21.1	11.5	14.4	9.6	8.5	7.8	3.9	12.4	22.6	16.3	21.3	10.3	5.9	6.5	5.9	24	22.6	2.1	9.2
4	6.9	7.4	6.8	5.2	4.0	3.4	2.7	6.2	8.1	9.3	5.0	4.3	9.1	9.8	11.1	12.8	13.3	7.9	7.9	9.1	7.9	3.9	3.5	1.5	24	13.3	1.5	7.0
5	4.8	10.9	13.7	15.7	16.3	12.6	13.3	13.8	17.9	19.5	11.5	11.0	12.8	11.9	16.7	16.7	16.7	15.7	14.1	13.9	14.5	11.1	13.6	9.9	24	19.5	4.8	13.7
6	5.7	2.3	3.6	1.3	0.0	0.3	0.6	0.9	1.5	2.9	3.2	3.7	18.7	12.2	4.0	3.9	4.9	4.6	3.0	4.5	6.2	5.5	6.0	13.4	24	18.7	0.0	4.7
7	10.2	5.3	2.3	1.7	1.7	3.3	3.6	5.0	5.7	6.0	7.4	10.0	11.7	7.7	5.8	3.9	1.1	0.5	0.3	0.3	2.2	0.9	2.4	0.2	24	11.7	0.2	4.1
8	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	3.0	2.0	1.7	2.1	5.1	4.4	1.1	1.3	1.6	1.5	0.3	0.0	24	5.1	0.0	1.0
9	0.0	0.0	0.2	0.2	0.0	0.0	0.2	0.0	0.2	0.2	16.6	5.2	7.3	3.2	4.1	3.8	3.7	2.3	4.0	5.1	0.6	0.0	0.0	0.0	24	16.6	0.0	2.4
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.7	0.3	0.4	0.0	0.0	0.0	0.0	0.5	0.6	2.6	1.5	5.4	3.4	4.2	6.3	10.0	24	10.0	0.0	1.6
11	3.9	5.9	2.8	2.9	2.2	2.0	2.1	5.6	5.1	4.6	4.3	4.4	3.4	4.2	3.6	3.0	1.0	0.7	0.2	1.1	2.4	4.0	1.2	0.8	24	5.9	0.2	3.0
12	5.7	0.4	0.2	0.2	0.0	0.0	0.0	0.5	3.6	5.0	4.7	3.5	3.5	2.6	8.8	8.8	18.6	18.2	15.6	C	C	10.2	14.3	7.2	22	18.6	0.0	6.0
13	9.2	10.8	19.7	20.2	34.3	7.6	7.7	7.3	5.4	10.5	0.8	1.6	A	A	2.4	1.2	0.6	0.3	1.8	4.3	5.2	3.8	4.5	5.0	22	34.3	0.3	7.5
14	3.5	3.1	3.3	2.1	1.6	5.7	11.5	12.2	11.1	5.6	3.3	2.6	1.0	0.2	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	12.2	0.0	2.8
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
16	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	3.0	2.7	5.3	7.1	16.5	13.9	10.7	9.8	10.0	8.8	7.1	8.7	24	16.5	0.0	4.4
17	5.7	8.0	15.7	7.2	4.1	0.7	0.2	0.2	1.6	5.4	8.7	9.4	7.7	2.9	4.1	3.8	1.7	0.3	0.2	1.0	3.6	0.2	0.0	0.0	24	15.7	0.0	3.9
18	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	3.3	5.7	7.6	5.5	3.7	3.7	5.8	6.7	2.6	0.4	1.6	3.1	2.9	4.1	5.0	3.3	24	7.6	0.0	2.7
19	1.6	1.7	2.6	1.8	0.4	0.3	0.6	1.1	4.1	10.0	11.3	16.2	30.8	24.7	13.7	11.2	12.6	15.8	15.9	17.4	24.0	21.2	17.7	6.6	24	30.8	0.3	11.0
20	6.6	7.7	5.8	2.9	5.1	6.0	6.0	5.1	5.8	7.4	4.1	2.8	0.8	1.3	1.6	2.1	0.3	0.0	0.2	3.4	8.4	9.6	3.8	2.6	24	9.6	0.0	4.1
21	6.7	10.5	7.8	8.2	7.8	4.2	5.5	5.2	7.3	7.7	6.3	7.5	6.7	3.4	4.0	7.6	8.6	7.7	8.4	8.0	6.5	10.8	3.8	1.6	24	10.8	1.6	6.7
22	3.0	6.9	11.2	10.0	9.7	8.7	8.0	8.8	9.0	9.6	10.0	7.3	9.3	14.3	15.9	10.5	5.3	3.9	13.4	16.3	7.7	6.5	3.6	2.7	24	16.3	2.7	8.8
23	6.8	5.0	4.7	4.1	2.8	2.2	2.4	6.3	7.2	5.6	5.6	5.0	5.8	8.2	9.2	7.0	4.9	3.8	5.1	7.5	15.1	15.9	8.8	5.6	24	15.9	2.2	6.5
24	6.5	6.9	6.3	6.7	8.3	10.7	11.6	10.2	14.4	27.6	30.8	29.1	35.0	35.6	25.0	14.6	15.3	16.9	19.2	26.4	22.9	22.6	21.8	21.3	24	35.6	6.3	18.6
25	20.1	17.4	19.3	19.6	16.3	16.1	15.4	19.2	16.9	15.1	19.6	23.9	23.0	13.9	8.1	11.0	15.5	19.0	20.2	22.2	24.7	24.0	20.4	19.5	24	24.7	8.1	18.4
26	32.0	49.5	49.0	38.3	35.2	35.5	22.2	7.3	6.6	7.6	12.7	11.3	14.6	19.7	15.9	20.2	21.5	25.4	23.3	19.6	21.0	21.5	22.8	22.9	24	49.5	6.6	23.1
27	21.0	19.6	21.1	20.4	26.2	26.4	30.3	26.7	26.0	26.1	30.7	28.8	19.9	17.0	15.6	12.2	8.5	7.3	6.2	7.6	9.4	12.0	20.9	28.1	24	30.7	6.2	19.5
28	29.6	26.7	24.7	23.9	26.2	28.3	18.9	15.0	13.5	4.8	6.0	8.1	11.0	11.7	10.6	12.1	13.3	12.9	14.5	16.3	16.9	17.0	17.2	18.1	24	29.6	4.8	16.5
29	15.4	13.2	14.9	16.4	17.4	19.3	16.2	13.6	17.3	17.0	17.4	15.1	13.1	12.7	12.5	16.4	15.2	13.2	13.3	13.5	12.5	14.0	19.3	16.1	24	19.3	12.5	15.2
30	10.7	10.4	10.6	12.3	12.5	11.9	10.1	8.8	14.8	21.9	20.5	16.6	11.7	8.0	6.9	5.7	6.3	7.4	5.4	4.8	6.7	1.6	0.2	0.0	24	21.9	0.0	9.4
31	0.2	0.4	0.0	0.0	0.2	0.4	0.4	0.2	0.4	1.1	2.9	2.7	2.3	1.5	1.8	1.3	2.9	7.1	7.0	4.3	5.2	3.9	1.8	0.3	24	7.1	0.0	2.0
Count	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	30	30	31	31	31	740			
Maximum	32.0	49.5	49.0	38.3	35.2	35.5	30.3	26.7	26.0	27.6	30.8	29.1	35.0	35.6	25.0	20.2	21.5	25.4	23.3	26.4	24.7	24.0	22.8	28.1	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	7.1	7.7	8.2	7.3	7.7	6.8	6.3	6.2	7.3	8.7	8.9	8.4	9.5	8.4	7.5	7.1	7.8	8.2	7.9	8.8	8.8	8.2	7.6	6.9				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.5	2.2	3.8	5.5	7.4	10.2	13.9	19.3	23.1	33.4	49.5

Maximum Hourly	49.5
Maximum Daily	23.1
Monthly Average	7.8

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 2016

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	0.2	0.2	0.2	0.2	0.2	0.3	0.6	0.2	0.2	0.2	0.2	0.2	1.1	2.0	0.3	0.2	0.2	0.4	0.2	0.3	0.2	0.2	24	2.0	0.2	0.3
2	0.2	0.2	0.2	0.3	0.7	0.9	1.1	1.7	1.1	2.3	3.0	4.4	9.0	10.1	11.6	10.7	7.4	7.8	9.6	5.8	5.8	5.8	3.3	2.7	24	11.6	0.2	4.4
3	3.0	2.2	0.4	0.3	0.2	0.3	0.2	0.9	2.6	4.6	5.5	3.7	2.6	2.0	2.2	1.9	0.4	11.5	12.5	11.7	10.9	11.2	12.6	13.6	24	13.6	0.2	4.9
4	13.6	13.2	14.2	14.8	15.4	16.2	16.6	17.1	16.8	16.3	0.7	0.3	0.2	0.2	0.2	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.4	0.8	24	17.1	0.2	6.6
5	1.7	2.3	5.4	8.0	8.1	10.2	11.1	11.1	10.1	9.8	10.2	10.7	12.5	13.0	12.9	8.8	6.0	3.2	7.6	8.0	6.0	6.9	3.5	2.3	24	13.0	1.7	7.9
6	1.1	1.1	1.1	0.2	0.2	0.3	0.3	0.5	0.7	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.6	0.5	0.4	0.5	0.9	24	1.1	0.2	0.4
7	1.0	3.0	6.9	8.9	10.9	10.2	6.9	14.7	14.9	13.8	14.0	12.7	16.2	14.4	13.2	14.7	15.9	16.5	13.1	11.3	7.9	3.9	3.2	3.9	24	16.5	1.0	10.5
8	7.1	8.3	7.1	5.3	4.4	4.1	4.6	7.4	12.0	12.6	6.4	5.9	5.6	6.3	4.2	3.6	3.3	3.2	4.0	3.9	2.9	1.9	0.6	0.8	24	12.6	0.6	5.2
9	0.5	0.3	0.2	0.2	0.2	0.2	0.9	4.0	5.6	6.8	6.7	6.7	5.1	5.2	5.2	5.0	2.8	0.8	1.7	1.8	2.0	0.2	0.2	0.3	24	6.8	0.2	2.6
10	0.4	0.3	0.5	0.7	0.7	0.9	0.8	0.9	3.8	5.0	5.3	4.8	3.0	2.8	3.6	4.0	3.1	3.0	2.7	3.9	6.2	4.4	3.7	2.9	24	6.2	0.3	2.8
11	1.9	0.8	2.3	4.1	8.1	7.0	6.2	8.8	9.0	9.1	12.1	14.5	15.8	12.3	10.7	7.3	8.9	6.6	6.6	9.0	12.4	13.2	9.7	5.8	24	15.8	0.8	8.4
12	7.2	5.8	3.7	1.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.4	3.0	3.5	2.1	1.2	0.2	0.2	0.2	24	7.2	0.2	1.3
13	2.5	4.3	3.4	1.8	3.0	1.9	0.4	0.7	2.4	4.8	5.9	4.3	3.4	2.1	2.4	2.5	1.1	0.2	0.2	0.4	1.4	1.2	1.0	0.7	24	5.9	0.2	2.2
14	2.6	3.4	1.2	1.4	0.2	0.2	0.2	1.6	1.9	1.5	1.0	0.8	0.4	0.3	C	0.7	M	2.0	0.9	6.6	14.9	6.1	3.7	2.8	22	14.9	0.2	2.5
15	1.9	2.0	2.0	2.3	2.3	2.9	5.8	9.3	11.8	10.8	12.8	3.3	2.9	3.9	1.9	1.5	9.9	11.9	7.9	10.7	15.0	7.2	8.7	7.9	24	15.0	1.5	6.5
16	8.5	7.0	7.4	7.6	9.4	10.5	11.7	8.2	8.8	11.1	12.7	12.4	12.1	11.7	7.4	6.9	6.7	5.2	5.0	9.3	14.8	15.3	9.7	7.6	24	15.3	5.0	9.5
17	5.4	5.5	5.5	4.1	3.6	3.7	4.4	6.3	4.3	6.1	10.6	8.7	8.1	6.0	5.0	4.6	4.2	3.5	4.4	7.7	14.2	16.0	15.3	8.2	24	16.0	3.5	6.9
18	11.0	17.5	16.9	13.1	9.9	6.8	6.7	9.6	7.6	4.1	3.6	4.3	7.3	8.3	7.1	7.8	8.1	8.6	16.0	21.6	19.6	18.9	20.8	23.8	24	23.8	3.6	11.6
19	24.5	25.2	20.7	18.9	17.7	16.2	22.2	22.3	18.9	15.7	15.8	11.9	11.3	12.3	11.7	12.0	12.1	15.0	16.1	17.6	19.1	16.8	14.1	13.9	24	25.2	11.3	16.7
20	15.8	16.4	17.7	16.3	17.0	18.2	17.3	17.3	15.1	13.9	14.8	17.9	24.2	20.5	22.0	23.9	17.8	19.4	24.6	22.1	11.4	7.5	4.5	4.2	24	24.6	4.2	16.7
21	4.1	3.8	2.0	1.0	1.2	1.3	1.5	1.5	2.4	3.6	4.7	5.6	5.0	3.5	3.8	7.7	7.5	11.8	9.6	9.7	14.1	11.8	7.1	9.8	24	14.1	1.0	5.6
22	14.2	18.7	17.7	13.4	12.7	9.7	7.7	8.3	7.3	4.4	3.4	2.2	3.0	1.9	1.9	5.1	3.4	2.0	2.1	3.3	4.8	6.1	3.1	3.3	24	18.7	1.9	6.7
23	3.3	2.4	2.2	2.8	2.2	2.3	2.9	5.5	7.0	8.8	12.2	11.2	8.0	5.6	4.5	4.7	6.7	9.3	9.3	11.1	13.8	12.6	11.5	8.1	24	13.8	2.2	7.0
24	4.1	3.7	2.6	2.9	2.7	2.8	3.2	4.8	9.5	12.7	14.2	14.8	11.6	11.1	7.8	6.9	5.7	5.7	7.6	7.9	10.8	10.1	7.6	3.7	24	14.8	2.6	7.3
25	3.1	2.3	2.1	1.9	1.8	2.0	2.9	2.8	4.2	5.4	4.9	6.7	6.5	4.7	4.8	4.9	3.9	4.2	6.1	8.4	12.5	8.9	7.4	5.7	24	12.5	1.8	4.9
26	5.4	7.7	8.5	7.8	8.3	9.4	8.2	9.2	13.4	16.1	16.4	19.9	19.6	20.4	19.5	16.1	18.7	19.0	18.7	23.3	21.9	23.9	29.0	30.5	24	30.5	5.4	16.3
27	22.9	19.6	18.6	20.4	23.5	26.6	15.3	12.8	24.0	20.9	19.3	14.3	9.2	6.8	5.7	6.0	6.6	5.9	6.1	7.1	6.8	5.9	5.4	4.5	24	26.6	4.5	13.1
28	2.1	1.7	1.8	1.8	1.8	1.8	1.8	1.9	3.8	8.1	7.5	8.9	8.1	6.3	6.9	5.7	8.0	14.0	13.8	10.0	6.4	4.7	3.4	2.7	24	14.0	1.7	5.5
29	3.9	6.3	4.9	4.7	3.8	2.6	2.3	2.4	3.8	7.2	7.5	7.8	9.0	8.8	6.2	5.4	6.6	8.7	8.8	8.2	7.3	2.5	2.0	1.9	24	9.0	1.9	5.5
30	2.0	2.3	2.0	1.9	1.9	2.0	1.9	8.1	11.5	10.2	12.1	11.9	9.6	10.1	8.2	5.7	6.9	7.0	8.1	9.0	10.6	11.2	7.4	4.3	24	12.1	1.9	6.9
31																									0	0.0	0.0	
Count	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	29	30	30	30	30	30	30	30	718			
Maximum	24.5	25.2	20.7	20.4	23.5	26.6	22.2	22.3	24.0	20.9	19.3	19.9	24.2	20.5	22.0	23.9	18.7	19.4	24.6	23.3	21.9	23.9	29.0	30.5	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	5.8	6.2	6.0	5.6	5.7	5.7	5.5	6.7	7.8	8.2	8.1	7.7	7.7	7.0	6.6	6.2	6.3	7.0	7.6	8.4	9.2	7.8	6.7	5.9				

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.3	1.5	2.6	3.9	5.6	7.3	8.9	11.9	15.8	18.9	24.0	30.5

Maximum Hourly	30.5
Maximum Daily	16.7
Monthly Average	6.9

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

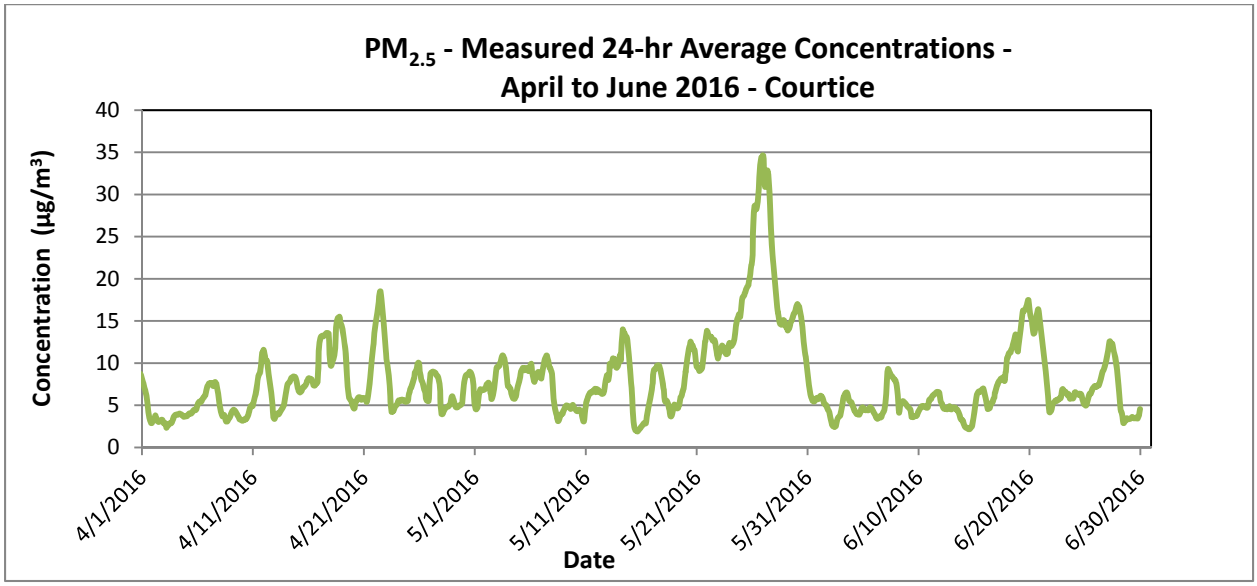
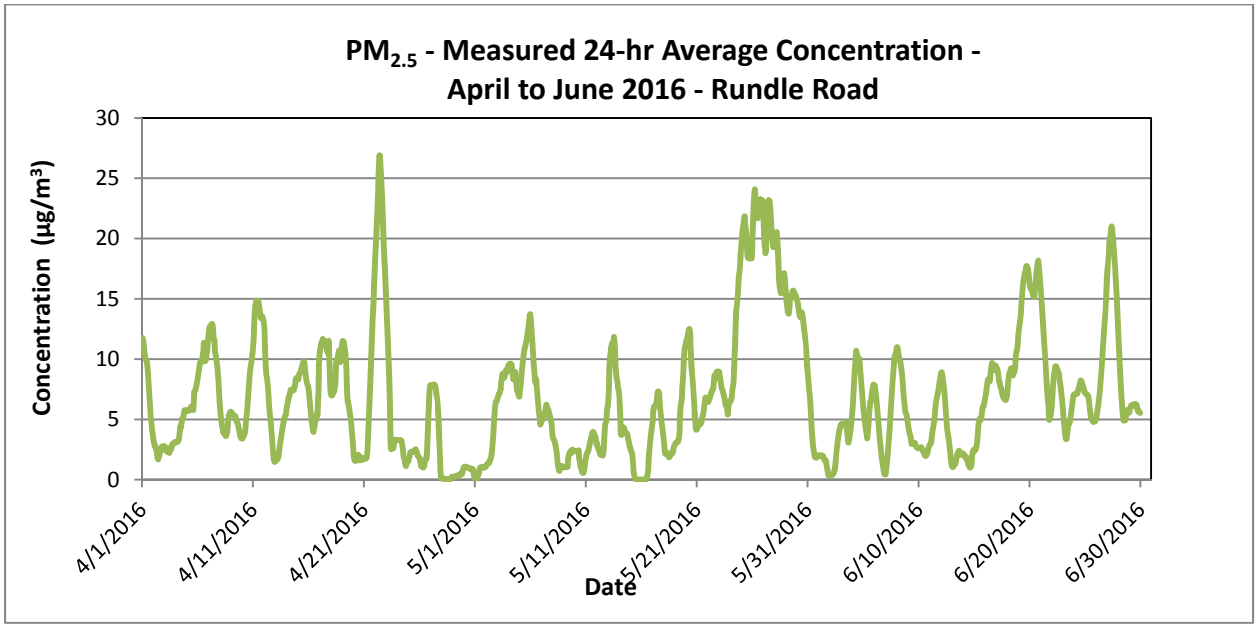


Figure E-2 Time History Plot of Measured 24-Hour Average $PM_{2.5}$ Concentrations – Rundle Road Station



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:	**SO2**	**Instrument make & model:**		**Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100**		**Serial Number:**	**565**	
Data edit period	**Start date:**	**1-Apr-16**	**End date:**	**30-Jun-16**		**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)**	
7	25-Apr-16	TH	Invalidate	15-Apr-16	01:00	15-Apr-16	11:00	Pump and detector failed during monthly calibration. Upon review of minute data, pump and detector likely began to fail on April 15, 2016 at 01:24
8	25-Apr-16	TH	Invalidate	15-Apr-16	12:00	21-Apr-16	10:00	Monitor removed for repairs and reinstalled on April 20, 2016. Data invalidated for 24 hours after installation to allow for unit to stabilize.
9	25-Apr-16	TH	Invalidate	21-Apr-16	11:00	21-Apr-16	13:00	Monthly calibration
10	9-May-16	TH	Zero Correction	21-Apr-16	18:00	29-Apr-16	08:00	Instrument zero drift greater than 5 ppb in this period. Corrected with the following offsets: Apr 21: 4.1 ppb; Apr 22:10.7 ppb; Apr 23: 14.15 ppb; Apr 24: 15.3 ppb; Apr 25: 15.65 ppb; Apr 26: 16.25 ppb; Apr 27 16.8 ppb; Apr 28: 16.9 ppb; Apr 29: 16.8 ppb.
11	20-May-16	CL	Invalidate	13-May-16	09:00	13-May-16	10:00	MOECC audit (10 - 11 am DST)
12	24-May-16	CL	Invalidate	12-May-16	15:00	12-May-16	16:00	Monthly calibration
13	20-Jun-16	CL	Invalidate	13-Jun-16	08:00	13-Jun-16	09:00	Monthly calibration
14	1-Jul-16	TH	Data Review	8-May-16	04:00	11-May-16	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
15	1-Jul-16	TH	Data Review	15-May-16	20:00	16-May-16	10:00	
16	1-Jul-16	TH	Data Review	7-Jun-16	20:00	10-Jun-16	11:00	
17	7-Jul-16	TH	Data Review	29-Apr-16	20:00	29-Apr-16	20:00	An elevated SO_2 measurement of 31 ppb was observed at the Courtice WPCP station on April 29 at 20:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured, suggesting a local combustion source. The data was deemed valid.
18	7-Jul-16	TH	Data Review	6-May-16	07:00	6-May-16	07:00	An elevated SO_2 measurement of 57 ppb was observed at the Courtice WPCP station on May 6 at 7:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured, suggesting a local combustion source. The data was deemed valid.
19	7-Jul-16	TH	Data Review	14-Jun-16	19:00	14-Jun-16	20:00	An elevated SO_2 measurement of 32 ppb was observed at the Courtice WPCP station on June 14 at 20:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured, suggesting a local combustion source. The data was deemed valid.
20	7-Jul-16	TH	Data Review	30-Jun-16	01:00	30-Jun-16	03:00	An elevated SO_2 measurement of 34 ppb was observed at the Courtice WPCP station on June 30 at 3:00 without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured, suggesting a local combustion source. 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

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 Plant**	**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-16**	**End date:**	**30-Jun-16**	**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)**	
23	20-May-16	CL	Invalidate	13-May-16	09:00	13-May-16	10:00	MOECC audit (10 - 11 am DST)
24	24-May-16	CL	Invalidate	12-May-16	15:00	12-May-16	17:00	Monthly calibration
25	20-Jun-16	CL	Invalidate	13-Jun-16	08:00	13-Jun-16	09:00	Monthly calibration
26	7-Jul-16	TH	Data Review	13-Apr-16	06:00	13-Apr-16	06:00	An elevated NOx measurement of 97 ppb was observed at the Courtice WPCP station on April 13 at 6:00 without a corresponding trend at the Rundle Road Station. For this hour, the measured NO concentration was larger than NO_2 which suggests a nearby emissions source. Winds were blowing from the north - from the WPCP Chemical Building to the station. Idling trucks have been observed next to the Chemical Building (off-loading supplies) – since this measurement occurred during WPCP operating hours, the elevated measurement may have been due to an idling truck. Therefore the data was deemed valid.
27	7-Jul-16	TH	Data Review	26-Apr-16	23:00	26-Apr-16	23:00	An elevated NOx measurement of 90 ppb was observed at the Courtice WPCP station on April 26 at 23:00 without a corresponding trend at the Rundle Road Station. For this hour, the measured NO concentration was larger than NO_2 which suggests a nearby emissions source. Winds were blowing from northwesterly to northerly directions. Since this measurement occurred outside WPCP operating hours, the elevated measurement was not likely from an idling delivery truck at the WPCP. $PM_{2.5}$ and SO_2 levels were also elevated, suggesting a nearby combustion source. The data was deemed valid.
28	7-Jul-16	TH	Data Review	2-May-16	21:00	3-May-16	07:00	An elevated NOx measurement of 66 ppb was observed at the Courtice WPCP station on May 3 at 6:00 without a corresponding trend at the Rundle Road Station. For this hour, the measured NO concentration was larger than NO_2 which suggests a nearby emissions source. Winds were blowing from the northwest and slightly elevated SO_2 levels were also measured. Emissions may have been from local roads. The data was deemed valid.
29	7-Jul-16	TH	Data Review	20-May-16	20:00	20-May-16	06:00	An elevated NOx measurement of 77 ppb was observed at the Courtice WPCP on May 20 at 6:00 with a corresponding trend also observed at the Rundle Road station. For this hour at the Courtice WPCP, the measured NO concentration was larger than NO_2 which suggests a nearby emissions source. SO_2 levels were also elevated at the Coutice WPCP. Winds were blowing from the northwest, suggesting roads or railway traffic as the source. The data was deemed valid.
30	7-Jul-16	TH	Data Review	29-Jun-16	22:00	30-Jun-16	04:00	An elevated NOx measurement of 72 ppb was observed at the Courtice WPCP station on June 30 at 4:00 without a corresponding trend at the Rundle Road Station. For this hour, the measured NO concentration was larger than NO_2 which suggests a nearby emissions source. Elevated SO_2 concentrations at the Courtice WPCP station were also noted in this time period. Winds were blowing from the northwesterly direction. Emissions may have been from local roads or railroads. 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

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 Plant		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	PM2.5	Instrument make & model:		Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time Particulate Monitor		Serial Number:	E-1569	
Data edit period	Start date:	1-Apr-16	End date:	30-Jun-16		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)	
6	25-Apr-16	TH	Invalidate	15-Apr-16	08:00	15-Apr-16	09:00	Monthly calibration
7	20-May-16	CL	Invalidate	13-May-16	09:00	13-May-16	10:00	MOECC audit (10 - 11 am DST)
8	24-May-16	CL	Invalidate	12-May-16	15:00	12-May-16	16:00	Monthly calibration
9	20-Jun-16	CL	Invalidate	13-Jun-16	08:00	13-Jun-16	08:00	Monthly calibration
10	7-Jul-16	TH	Data Review	16-Apr-16	22:00	16-Apr-16	22:00	An elevated $PM_{2.5}$ measurement of 52ug/m^3 was noted at the Courtice WPCP on April 16 at 22:00. Elevated readings were also measured at the Rundle Road Station. Winds were blowing from the east. The data was deemed to be valid.
11	7-Jul-16	TH	Data Review	26-May-16	02:00	26-May-16	02:00	An elevated $PM_{2.5}$ measurement of 85ug/m3 was noted at the Courtice WPCP on May 26 at 2:00. An elevated reading of 49.5ug/m3 was measured at the Rundle Road station. Winds were blowing from the east. The data was deemed to be 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

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 Plant**		**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-16**	**End date:**	**30-Jun-16**		**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 Plant**		**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-16**	**End date:**	**30-Jun-16**		**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 Plant		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-16	End date:	30-Jun-16	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 Plant		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-16	End date:	30-Jun-16	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 Plant**		**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-16**	**End date:**	**30-Jun-16**		**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:	**SO2**	**Instrument make & model:**		**Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100**		**Serial Number:**	**565**	
Data edit period	**Start date:**	**1-Apr-16**	**End date:**	**30-Jun-16**		**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)**	
6	25-Apr-16	TH	Invalidate	15-Apr-16	12:00	15-Apr-16	15:00	Monthly calibration
7	25-Apr-16	TH	Zero correction	15-Apr-16	22:00	19-Apr-16	08:00	Negative zero drift after calibration on April 19, 2016. Offset of 1.929 ppb applied.
8	24-May-16	CL	Invalidate	12-May-16	19:00	12-May-16	20:00	Monthly calibration
9	24-May-16	CL	Invalidate	13-May-16	12:00	13-May-16	13:00	MOECC audit (1 - 2 pm DST)
10	24-May-16	CL	Zero correction	13-May-16	14:00	13-May-16	17:00	Negative drift after calibration/audit on May 13, 2016. Offset of 1.374 ppb applied.
11	20-Jun-16	TH	Invalidate	14-Jun-16	14:00	14-Jun-16	16:00	Monthly calibration
12	21-Jun-16	TH	Invalidate	14-Jun-16	16:00	14-Jun-16	16:00	Hour during which data logger was removed for calibration (spare installed) was invalidated.
13	29-Jun-16	TH	Data review	14-Apr-16	03:00	15-Apr-16	11:00	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.
14	29-Jun-16	TH	Data review	14-May-16	19:00	19-May-16	07:00	
15	7-Jul-16	TH	Data review	20-Apr-16	15:00	20-Apr-16	15:00	An elevated SO_2 measurement of 27ppb was observed at the Rundle Road station on April 16 at 15:00 without a corresponding trend at the Courtice WPCP station. Elevated NOx levels were also measured at the Rundle Station. Winds were blowing from the east. A potential emissions source may be from local roads or railroad. The data was deemed valid.
16	7-Jul-16	TH	Data review	1-Jun-16	14:00	1-Jun-16	14:00	An elevated SO_2 measurement of 30ppb was observed at the Rundle Road station on June 1 at 14:00 without a corresponding trend at the Courtice WPCP station. Elevated NOx levels were also measured at the Rundle Station. Winds were blowing from the southeast. A potential emissions source may be the St. Mary's Cement plant. 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

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-16**	**End date:**	**30-Jun-16**	**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)**	
6	25-Apr-16	TH	Invalidate	15-Apr-16	12:00	15-Apr-16	13:00	Monthly calibration
7	24-May-16	CL	Invalidate	12-May-16	19:00	12-May-16	21:00	Monthly calibration
8	24-May-16	CL	Invalidate	13-May-16	12:00	13-May-16	13:00	MOECC audit (1 - 2 pm DST)
9	20-Jun-16	TH	Invalidate	14-Jun-16	14:00	14-Jun-16	15:00	Monthly calibration
10	21-Jun-16	TH	Invalidate	14-Jun-16	16:00	14-Jun-16	16:00	Hour during which data logger was removed for calibration (spare installed) was invalidated.
11	2-Jul-16	TH	Replaced	1-Apr-16	00:00	15-Apr-16	11:00	NO2, NOx and NO not adding up. NO2 data replaced by NOx - NO.
12	2-Jul-16	TH	Data review	18-Apr-16	20:00	19-Apr-16	12:00	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.
13	2-Jul-16	TH	Data review	22-Apr-16	15:00	24-Apr-16	13:00	
14	2-Jul-16	TH	Data review	7-May-16	23:00	10-May-16	04:00	
15	2-Jul-16	TH	Data review	14-May-16	22:00	15-May-16	20:00	
16	2-Jul-16	TH	Data review	12-Jun-16	04:00	13-Jun-16	03:00	
17	2-Jul-16	TH	Data review	16-Apr-16	12:00	16-Apr-16	16:00	An elevated NOx measurement of 62ppb was observed at the Rundle Road station on April 16 at 15:00 without a corresponding trend at the WPCP Station. For this hour, the measured NO concentration was larger than NO_2 which suggests a nearby emissions source. Winds were blowing from the east. A potential emissions source may be from the St. Mary's plant or a nearby railroad. The data was deemed valid.
18	2-Jul-16	TH	Data review	19-May-16	21:00	20-May-16	05:00	An elevated NOx measurement of 53ppb was observed at the Rundle Road station on May 20 at 5:00 with a corresponding trend a the Courtice WPCP Station. For this hour, the measured NO concentration was larger than NO_2 which suggests a nearby emissions source. Winds were blowing from the north. Emissions may have been from local roads or railroad. The data was deemed valid.
19	2-Jul-16	TH	Data review	27-May-16	05:00	27-May-16	05:00	An elevated NOx measurement of 58ppb was observed at the Rundle Road station on May 27 at 5:00 without a corresponding trend at the Courtice WPCP Station. For this hour, the measured NO concentration was approximately equal to NO_2 which suggests a nearby emissions source. Winds were blowing from the northwest. Emissions may have been from local roads, railways or construction. 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

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:	**PM2.5**	**Instrument make & model:**		**Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time**			**Serial Number:**	**E-1569**
Data edit period	**Start date:**	**1-Apr-16**	**End date:**	**30-Jun-16**		**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)**	
11	25-Apr-16	TH	Invalidate	15-Apr-16	12:00	15-Apr-16	13:00	Monthly calibration
12	24-May-16	CL	Invalidate	12-May-16	19:00	12-May-16	20:00	Monthly calibration
13	24-May-16	CL	Invalidate	13-May-16	12:00	13-May-16	13:00	MOECC audit (1 - 2 pm DST)
14	20-Jun-16	TH	Invalidate	14-Jun-16	14:00	14-Jun-16	14:00	Monthly calibration
15	21-Jun-16	TH	Invalidate	14-Jun-16	16:00	14-Jun-16	16:00	Hour during which data logger was removed for calibration (spare installed) was invalidated.
16	7-Jul-16	TH	Data review	26-May-16	01:00	26-May-16	02:00	Elevated measurement of up to 49.5 ug/m^3 observed on May 26 at 01:00. Wind was blowing from east. Elevated measurements were also observed at Courtice WPCP. Data deemed to be valid.
17	7-Jul-16	TH	Data review	23-Apr-16	01:00	23-Apr-16	07:00	Instances of repeating zero values in these timeframes were noted. During these periods, low ambient $PM_{2.5}$ levels were also measured at the Courtice and Oshawa Stations. Some non-zero measurements were also recorded and no instrument warnings or error messages occurred. These periods are likely due to very low ambient $PM_{2.5}$ concentrations being measured while the instrument nephalometer calibration had drifted slightly negative.
18	7-Jul-16	TH	Data review	23-Apr-16	21:00	24-Apr-16	12:00	
19	7-Jul-16	TH	Data review	25-Apr-16	22:00	30-Apr-16	23:00	
20	7-Jul-16	TH	Data review	8-May-16	00:00	10-May-16	07:00	
21	7-Jul-16	TH	Data review	14-May-16	17:00	16-May-16	10:00	
22	7-Jul-16	TH	Data review	1-Jun-16	00:00	2-Jun-16	02:00	

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:	**Temperature**	**Instrument make & model:**		**Campbell Scientific Model HMP60**			**Serial Number:**	
Data edit period	**Start date:**	**1-Apr-16**	**End date:**	**30-Jun-16**		**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	21-Jun-16	TH	Invalidate	14-Jun-16	16:00	14-Jun-16	16:00	Hour during which data logger was removed for calibration (spare installed) was invalidated.

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-16**	**End date:**	**30-Jun-16**		**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	21-Jun-16	TH	Invalidate	14-Jun-16	16:00	14-Jun-16	16:00	Hour during which data logger was removed for calibration (spare installed) was invalidated.

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-16**	**End date:**	**30-Jun-16**		**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	21-Jun-16	TH	Invalidate	14-Jun-16	16:00	14-Jun-16	16:00	Hour during which data logger was removed for calibration (spare installed) was invalidated.

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-16**	**End date:**	**30-Jun-16**		**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)**	
3	21-Jun-16	TH	Invalidate	14-Jun-16	16:00	14-Jun-16	16:00	Hour during which data logger was removed for calibration (spare installed) was invalidated.

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																					
Location			Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice[A]		Courtice[A]		Courtice		Courtice	
Date	dd/mm/yyyy		06/04/2016		12/04/2016		18/04/2016		24/04/2016		30/04/2016		06/05/2016		12/05/2016		18/05/2016		24/05/2016		30/05/2016		05/06/2016	
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	
Sample Duration	Hours		24.04		23.16		23.53		23.53		23.76		23.85		23.88		23.32		23.41		23.79		23.62	
Technician			TH		TH		TH		TH		TH/KM		TH/KM		TH/KM		TH/KM		KM/BB		KM/CL		KM/GC	
Filter Number			16030106		16030110		16030142		16030145		16031549		16031553		16040620		16040624		16042909		16042913		16052023	
Analytical Report #			B670162		B676446		B679608		B688412		B688381						B6A5301		B6A6169				B6B7897	
Total Volumetric Flow	Am^3/sample		1519.40		1616.76		1705.75		1662.85		1583.58		Sample invalid due to operational issue		Sample invalid due to operational issue		1363.15		1382.89		Birds destroyed sample		1653.06	
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**
Particulate	mg		29.9	5	26.8	5	112	5	36.3	5	41.0	5					32.8	5.0	131	5.0			21.4	5
Total Mercury (Hg)	µg		<0.02	0.02	<0.02	0.02	0.04	0.02	<0.02	0.02	0.02	0.02					<0.02	0.02	0.05	0.02			<0.02	0.02
Aluminum (Al)	µg		206	50	106	50	502	50	185	50	290	50					185	50	937	50			109	50
Antimony (Sb)	µg		<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
Barium (Ba)	µg		9.9	1.0	16.8	1.0	30.3	1.0	7.6	1.0	11.3	1.0					17.3	1.0	28.2	1.0			6.1	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
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
Boron (B)	µg		<6.0	6.0	<6.0	6.0	14.5	6.0	<6.0	6.0	<6.0	6.0					<6.0	6.0	7.4	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
Chromium (Cr)	µg		<5.0	5.0	<5.0	5.0	6.6	5.0	<5.0	5.0	<5.0	5.0					5.9	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
Copper (Cu)	µg		35.8	5.0	185	5.0	125	5.0	88.1	5.0	53.2	5.0					76.1	5.0	127	5.0			35.7	5.0
Iron (Fe)	µg		386	50	552	50	1560	50	490	50	735	50					908	50	2180	50			200	50
Lead (Pb)	µg		4.7	3.0	<3.0	3.0	8.6	3.0	<3.0	3.0	<3.0	3.0					4.6	3.0	10.4	3.0			3.2	3.0
Magnesium (Mg)	µg		237	50	204	50	1120	50	239	50	366	50					287	50	1570	50			114	50
Manganese (Mn)	µg		12.8	1.0	15.1	1.0	59.3	1.0	12.5	1.0	17.8	1.0					28.4	1.0	67.2	1.0			7.6	1.0
Molybdenum (Mo)	µg		<3.0	3.0	5.1	3.0	3.9	3.0	<3.0	3.0	<3.0	3.0					<3.0	3.0	3.6	3.0			<3.0	3.0
Nickel (Ni)	µg		<3.0	3.0	<3.0	3.0	3.3	3.0	<3.0	3.0	<3.0	3.0					<3.0	3.0	3.2	3.0			<3.0	3.0
Phosphorus (P)	µg		26	25	<25	25	94	25	765	25	41	25					26	25	150	25			42	25
Selenium (Se)	µg		<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
Strontium (Sr)	µg		6.4	1.0	5.9	1.0	29.3	1.0	7.9	1.0	8.8	1.0					7.9	1.0	23.1	1.0			2.2	1.0
Thallium (Tl)	µg		<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
Titanium (Ti)	µg		10	10	<10	10	31	10	11	10	23	10					15	10	39	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
Zinc (Zn)	µg		30.7	5.0	102	5.0	85.1	5.0	19.6	5.0	21.1	5.0					61.8	5.0	75.5	5.0			143	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
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

Calculated Concentrations	Quarter 2			Courtice 11	Courtice 12	Courtice 13	Courtice 14	Courtice 15	Courtice 16	Courtice 17	CourticeA 18	CourticeA 19	Courtice 20	Courtice 21
	Units	Maximum	Minimum	4/6/2016	4/12/2016	4/18/2016	4/24/2016	30/04/2016	06/05/2016	12/05/2016	18/05/2016	24/05/2016	30/05/2016	05/06/2016
Particulate	$\mu g/m^3$	94.73	12.95	19.679	16.576	65.660	21.830	25.891	-	-	24.062	94.729	-	12.946
Total Mercury (Hg)	$\mu g/m^3$	3.62E-05	6.01E-06	6.58E-06	6.19E-06	2.35E-05	6.01E-06	1.26E-05	-	-	7.34E-06	3.62E-05	-	6.05E-06
Aluminum (Al)	$\mu g/m^3$	6.78E-01	6.56E-02	1.36E-01	6.56E-02	2.94E-01	1.11E-01	1.83E-01	-	-	1.36E-01	6.78E-01	-	6.59E-02
Antimony (Sb)	$\mu g/m^3$	3.67E-03	2.93E-03	3.29E-03	3.09E-03	2.93E-03	3.01E-03	3.16E-03	-	-	3.67E-03	3.62E-03	-	3.02E-03
Arsenic (As)	$\mu g/m^3$	2.20E-03	1.76E-03	1.97E-03	1.86E-03	1.76E-03	1.80E-03	1.89E-03	-	-	2.20E-03	2.17E-03	-	1.81E-03
Barium (Ba)	$\mu g/m^3$	2.18E-02	3.69E-03	6.52E-03	1.04E-02	1.78E-02	4.57E-03	7.14E-03	-	-	1.27E-02	2.04E-02	-	3.69E-03
Beryllium (Be)	$\mu g/m^3$	3.67E-04	2.93E-04	3.29E-04	3.09E-04	2.93E-04	3.01E-04	3.16E-04	-	-	3.67E-04	3.62E-04	-	3.02E-04
Bismuth (Bi)	$\mu g/m^3$	2.20E-03	1.76E-03	1.97E-03	1.86E-03	1.76E-03	1.80E-03	1.89E-03	-	-	2.20E-03	2.17E-03	-	1.81E-03
Boron (B)	$\mu g/m^3$	8.50E-03	1.80E-03	1.97E-03	1.86E-03	8.50E-03	1.80E-03	1.89E-03	-	-	2.20E-03	5.35E-03	-	1.81E-03
Cadmium (Cd)	$\mu g/m^3$	7.34E-04	5.86E-04	6.58E-04	6.19E-04	5.86E-04	6.01E-04	6.31E-04	-	-	7.34E-04	7.23E-04	-	6.05E-04
Chromium (Cr)	$\mu g/m^3$	5.20E-03	1.50E-03	1.65E-03	1.55E-03	3.87E-03	1.50E-03	1.58E-03	-	-	4.33E-03	3.62E-03	-	1.51E-03
Cobalt (Co)	$\mu g/m^3$	7.34E-04	5.86E-04	6.58E-04	6.19E-04	5.86E-04	6.01E-04	6.31E-04	-	-	7.34E-04	7.23E-04	-	6.05E-04
Copper (Cu)	$\mu g/m^3$	1.14E-01	2.16E-02	2.36E-02	1.14E-01	7.33E-02	5.30E-02	3.36E-02	-	-	5.58E-02	9.18E-02	-	2.16E-02
Iron (Fe)	$\mu g/m^3$	1.58E+00	1.21E-01	2.54E-01	3.41E-01	9.15E-01	2.95E-01	4.64E-01	-	-	6.66E-01	1.58E+00	-	1.21E-01
Lead (Pb)	$\mu g/m^3$	7.52E-03	8.99E-04	3.09E-03	9.28E-04	5.04E-03	9.02E-04	9.47E-04	-	-	3.37E-03	7.52E-03	-	1.94E-03
Magnesium (Mg)	$\mu g/m^3$	1.14E+00	6.90E-02	1.56E-01	1.26E-01	6.57E-01	1.44E-01	2.31E-01	-	-	2.11E-01	1.14E+00	-	6.90E-02
Manganese (Mn)	$\mu g/m^3$	4.86E-02	4.60E-03	8.42E-03	9.34E-03	3.48E-02	7.52E-03	1.12E-02	-	-	2.08E-02	4.86E-02	-	4.60E-03
Molybdenum (Mo)	$\mu g/m^3$	3.15E-03	8.99E-04	9.87E-04	3.15E-03	2.29E-03	9.02E-04	9.47E-04	-	-	1.10E-03	2.60E-03	-	9.07E-04
Nickel (Ni)	$\mu g/m^3$	2.40E-03	9.02E-04	9.87E-04	9.28E-04	1.93E-03	9.02E-04	9.47E-04	-	-	1.10E-03	2.31E-03	-	9.07E-04
Phosphorus (P)	$\mu g/m^3$	4.60E-01	7.73E-03	1.71E-02	7.73E-03	5.51E-02	4.60E-01	2.59E-02	-	-	1.91E-02	1.08E-01	-	2.54E-02
Selenium (Se)	$\mu g/m^3$	3.67E-03	2.93E-03	3.29E-03	3.09E-03	2.93E-03	3.01E-03	3.16E-03	-	-	3.67E-03	3.62E-03	-	3.02E-03
Silver (Ag)	$\mu g/m^3$	1.83E-03	1.47E-03	1.65E-03	1.55E-03	1.47E-03	1.50E-03	1.58E-03	-	-	1.83E-03	1.81E-03	-	1.51E-03
Strontium (Sr)	$\mu g/m^3$	1.86E-02	1.33E-03	4.21E-03	3.65E-03	1.72E-02	4.75E-03	5.56E-03	-	-	5.80E-03	1.67E-02	-	1.33E-03
Thallium (Tl)	$\mu g/m^3$	3.67E-03	2.93E-03	3.29E-03	3.09E-03	2.93E-03	3.01E-03	3.16E-03	-	-	3.67E-03	3.62E-03	-	3.02E-03
Tin (Sn)	$\mu g/m^3$	3.67E-03	2.93E-03	3.29E-03	3.09E-03	2.93E-03	3.01E-03	3.16E-03	-	-	3.67E-03	3.62E-03	-	3.02E-03
Titanium (Ti)	$\mu g/m^3$	2.82E-02	3.02E-03	6.58E-03	3.09E-03	1.82E-02	6.62E-03	1.45E-02	-	-	1.10E-02	2.82E-02	-	3.02E-03
Vanadium (V)	$\mu g/m^3$	1.83E-03	1.47E-03	1.65E-03	1.55E-03	1.47E-03	1.50E-03	1.58E-03	-	-	1.83E-03	1.81E-03	-	1.51E-03
Zinc (Zn)	$\mu g/m^3$	8.65E-02	1.18E-02	2.02E-02	6.31E-02	4.99E-02	1.18E-02	1.33E-02	-	-	4.53E-02	5.46E-02	-	8.65E-02
Zirconium (Zr)	$\mu g/m^3$	1.83E-03	1.47E-03	1.65E-03	1.55E-03	1.47E-03	1.50E-03	1.58E-03	-	-	1.83E-03	1.81E-03	-	1.51E-03
Total Uranium (U)	$\mu g/m^3$	1.65E-04	1.32E-04	1.48E-04	1.39E-04	1.32E-04	1.35E-04	1.42E-04	-	-	1.65E-04	1.63E-04	-	1.36E-04

Notes:
A – Flow rates on May 18 and 24 samples outside of normal operating range. High filter loading observed. The sample results were comparable to the other stations, therefore the results were considered valid.
B – A small tear on the filter occurred during removal, with no loss of filter material or surface loading. Sample deemed valid.

Metals and Total Particulates	Courtice WPCP Station								
Location			Courtice		Courtice[B]		Courtice		Courtice
Date	dd/mm/yyyy		11/06/2016		17/06/2016		23/06/2016		29/06/2016
Start Time	hh:mm		0:00		0:00		0:00		0:00
Sample Duration	Hours		23.83		23.65		23.95		23.11
Technician			TH		TH		TH		TH
Filter Number			16052026		16060101		16060105		16061373
Analytical Report #			B6C4266		B6C7521		B6D3152		B6D5241
Total Volumetric Flow	Am^3/sample		1545.10		1597.39		1668.15		1499.67
Analytical Results	**Units**		**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Particulate	mg		42.6	5.0	121	5.0	62.9	5	60.9	5
Total Mercury (Hg)	µg		0.02	0.02	0.03	0.02	0.02	0.02	<0.02	0.02
Aluminum (Al)	µg		135	50	694	50	318	50	304	50
Antimony (Sb)	µg		<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
Barium (Ba)	µg		6.3	1.0	34.9	1.0	19.6	1.0	23.0	1.0
Beryllium (Be)	µg		<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
Boron (B)	µg		<6.0	6.0	9.1	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
Chromium (Cr)	µg		<5.0	5.0	8.3	5.0	5.7	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
Copper (Cu)	µg		50.5	5.0	131	5.0	98.6	5.0	82.1	5.0
Iron (Fe)	µg		317	50	2280	50	1110	50	795	50
Lead (Pb)	µg		4.3	3.0	5.9	3.0	<3.0	3.0	4.1	3.0
Magnesium (Mg)	µg		213	50	895	50	536	50	456	50
Manganese (Mn)	µg		11.9	1.0	73.4	1.0	41.7	1.0	27.0	1.0
Molybdenum (Mo)	µg		<3.0	3.0	3.2	3.0	<3.0	3.0	<3.0	3.0
Nickel (Ni)	µg		<3.0	3.0	<3.0	3.0	4.0	3.0	<3.0	3.0
Phosphorus (P)	µg		56	25	212	25	76	25	59	25
Selenium (Se)	µg		<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
Strontium (Sr)	µg		4.5	1.0	29.7	1.0	18.1	1.0	15.5	1.0
Thallium (Tl)	µg		<10	10	<10	10	<10	10	<10	10
Tin (Sn)	µg		<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	µg		<10	10	43	10	22	10	19	10
Vanadium (V)	µg		<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Zinc (Zn)	µg		26.9	5.0	70.5	5.0	51.4	5.0	39.8	5.0
Zirconium (Zr)	µg		<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

Calculated Concentrations	Quarter 2			Courtice	CourticeB	Courtice	Courtice
				22	23	24	25
	Units	Maximum	Minimum	11/06/2016	17/06/2016	23/06/2016	29/06/2016
Particulate	$µg/m^3$	94.73	12.95	27.571	75.748	37.706	40.609
Total Mercury (Hg)	$µg/m^3$	3.62E-05	6.01E-06	1.29E-05	1.88E-05	1.20E-05	6.67E-06
Aluminum (Al)	$µg/m^3$	6.78E-01	6.56E-02	8.74E-02	4.34E-01	1.91E-01	2.03E-01
Antimony (Sb)	$µg/m^3$	3.67E-03	2.93E-03	3.24E-03	3.13E-03	3.00E-03	3.33E-03
Arsenic (As)	$µg/m^3$	2.20E-03	1.76E-03	1.94E-03	1.88E-03	1.80E-03	2.00E-03
Barium (Ba)	$µg/m^3$	2.18E-02	3.69E-03	4.08E-03	2.18E-02	1.17E-02	1.53E-02
Beryllium (Be)	$µg/m^3$	3.67E-04	2.93E-04	3.24E-04	3.13E-04	3.00E-04	3.33E-04
Bismuth (Bi)	$µg/m^3$	2.20E-03	1.76E-03	1.94E-03	1.88E-03	1.80E-03	2.00E-03
Boron (B)	$µg/m^3$	8.50E-03	1.80E-03	1.94E-03	5.70E-03	1.80E-03	2.00E-03
Cadmium (Cd)	$µg/m^3$	7.34E-04	5.86E-04	6.47E-04	6.26E-04	5.99E-04	6.67E-04
Chromium (Cr)	$µg/m^3$	5.20E-03	1.50E-03	1.62E-03	5.20E-03	3.42E-03	1.67E-03
Cobalt (Co)	$µg/m^3$	7.34E-04	5.86E-04	6.47E-04	6.26E-04	5.99E-04	6.67E-04
Copper (Cu)	$µg/m^3$	1.14E-01	2.16E-02	3.27E-02	8.20E-02	5.91E-02	5.47E-02
Iron (Fe)	$µg/m^3$	1.58E+00	1.21E-01	2.05E-01	1.43E+00	6.65E-01	5.30E-01
Lead (Pb)	$µg/m^3$	7.52E-03	8.99E-04	2.78E-03	3.69E-03	8.99E-04	2.73E-03
Magnesium (Mg)	$µg/m^3$	1.14E+00	6.90E-02	1.38E-01	5.60E-01	3.21E-01	3.04E-01
Manganese (Mn)	$µg/m^3$	4.86E-02	4.60E-03	7.70E-03	4.59E-02	2.50E-02	1.80E-02
Molybdenum (Mo)	$µg/m^3$	3.15E-03	8.99E-04	9.71E-04	2.00E-03	8.99E-04	1.00E-03
Nickel (Ni)	$µg/m^3$	2.40E-03	9.02E-04	9.71E-04	9.39E-04	2.40E-03	1.00E-03
Phosphorus (P)	$µg/m^3$	4.60E-01	7.73E-03	3.62E-02	1.33E-01	4.56E-02	3.93E-02
Selenium (Se)	$µg/m^3$	3.67E-03	2.93E-03	3.24E-03	3.13E-03	3.00E-03	3.33E-03
Silver (Ag)	$µg/m^3$	1.83E-03	1.47E-03	1.62E-03	1.57E-03	1.50E-03	1.67E-03
Strontium (Sr)	$µg/m^3$	1.86E-02	1.33E-03	2.91E-03	1.86E-02	1.09E-02	1.03E-02
Thallium (Tl)	$µg/m^3$	3.67E-03	2.93E-03	3.24E-03	3.13E-03	3.00E-03	3.33E-03
Tin (Sn)	$µg/m^3$	3.67E-03	2.93E-03	3.24E-03	3.13E-03	3.00E-03	3.33E-03
Titanium (Ti)	$µg/m^3$	2.82E-02	3.02E-03	3.24E-03	2.69E-02	1.32E-02	1.27E-02
Vanadium (V)	$µg/m^3$	1.83E-03	1.47E-03	1.62E-03	1.57E-03	1.50E-03	1.67E-03
Zinc (Zn)	$µg/m^3$	8.65E-02	1.18E-02	1.74E-02	4.41E-02	3.08E-02	2.65E-02
Zirconium (Zr)	$µg/m^3$	1.83E-03	1.47E-03	1.62E-03	1.57E-03	1.50E-03	1.67E-03
Total Uranium (U)	$µg/m^3$	1.65E-04	1.32E-04	1.46E-04	1.41E-04	1.35E-04	1.50E-04

Notes:
A – Flow rates on May 18 and 24 samples outside of normal operating range. High filter loading observed. The sample results were comparable to the other stations, therefore the results were considered valid.
B – A small tear on the filter occurred during removal, with no loss of filter material or surface loading. Sample deemed valid.

Metals and Total Particulates	Fenceline Station																					
Location			Fenceline		Fenceline		Fenceline		Fenceline		Fenceline		Fenceline		Fenceline		Fenceline		Fenceline		Fenceline	
Date	dd/mm/yyyy		06/04/2016		12/04/2016		18/04/2016		24/04/2016		30/04/2016		06/05/2016		12/05/2016		18/05/2016		24/05/2016		30/05/2016		05/06/2016	
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	
Sample Duration	hours		23.41		23.74		23.82		25.06		23.27		23.96		23.71		23.24		23.95		24.1		23.63	
Technician			TH		TH		TH		TH		TH/KM		TH/KM		TH/KM		TH/KM		KM/BB		KM/CL		KM/GC	
Filter Number			16030108		16030112		16030143		16030147		16031551		16031555		16040619		16040623		16042908		16042912		16052022	
Analytical Report #			B670162		B676446		B679608		B688412		B688381		B695479		B698595		B6A5301		B6A6169		B6B5715		B6B7897	
Total Volumetric Flow	Am^3/sample		1622.59		1472.15		1766.77		1734.97		1733.17		1519.21		1596.78		1539.39		1671.50		1659.06		1527.01	
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**
Particulate	mg		42.5	5.0	32.5	5	121	5.0	45.4	5.0	58.3	5.0	80.9	5.0	120	5.0	41.5	5.0	134	5	90.5	5.0	26.7	5.0
Total Mercury (Hg)	µg		0.02	0.02	<0.02	0.02	0.06	0.02	<0.02	0.02	0.03	0.02	0.03	0.02	0.04	0.02	0.03	0.02	0.08	0.02	0.03	0.02	0.02	0.02
Aluminum (Al)	µg		235	50	153	50	610	50	292	50	520	50	517	50	869	50	263	50	1090	50	553	50	151	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
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
Barium (Ba)	µg		9.9	1.0	19.7	1.0	36.2	1.0	9.8	1.0	14.8	1.0	24.8	1.0	28.2	1.0	21.4	1.0	34.5	1.0	18.7	1.0	6.0	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
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
Boron (B)	µg		<6.0	6.0	<6.0	6.0	15.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	7.7	6.0	<6.0	6.0	10.4	6.0	6.3	6.0	<6.0	6.0
Cadmium (Cd)	µg		2.8	2.0	3.0	2.0	2.9	2.0	2.2	2.0	5.5	2.0	4.5	2.0	<2.0	2.0	2.2	2.0	15.2	2.0	3.0	2.0	<2.0	2.0
Chromium (Cr)	µg		<5.0	5.0	5.5	5.0	7.6	5.0	<5.0	5.0	6.1	5.0	7.8	5.0	7.9	5.0	7.4	5.0	8.8	5.0	6.2	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
Copper (Cu)	µg		65.3	5.0	35.8	5.0	89.2	5.0	106	5.0	129	5.0	117	5.0	89.3	5.0	103	5.0	88.1	5.0	68.6	5.0	45.9	5.0
Iron (Fe)	µg		456	50	628	50	1770	50	756	50	1030	50	1320	50	2130	50	896	50	2270	50	1310	50	316	50
Lead (Pb)	µg		5.9	3.0	<3.0	3.0	13.8	3.0	<3.0	3.0	5.7	3.0	10.0	3.0	7.4	3.0	6.9	3.0	17.1	3.0	8.6	3.0	4.9	3.0
Magnesium (Mg)	µg		293	50	324	50	1340	50	349	50	593	50	657	50	1050	50	448	50	1680	50	771	50	183	50
Manganese (Mn)	µg		18.9	1.0	26.6	1.0	63.4	1.0	26.3	1.0	29.4	1.0	67.7	1.0	74.2	1.0	39.6	1.0	72.8	1.0	57.6	1.0	11.8	1.0
Molybdenum (Mo)	µg		<3.0	3.0	<3.0	3.0	5.6	3.0	7.0	3.0	9.1	3.0	5.4	3.0	5.3	3.0	4.3	3.0	4.5	3.0	3.4	3.0	<3.0	3.0
Nickel (Ni)	µg		<3.0	3.0	<3.0	3.0	4.1	3.0	<3.0	3.0	<3.0	3.0	3.3	3.0	3.2	3.0	<3.0	3.0	4.3	3.0	3.1	3.0	<3.0	3.0
Phosphorus (P)	µg		31	25	26	25	127	25	54	25	77	25	123	25	156	25	45	25	170	25	140	25	55	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
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
Strontium (Sr)	µg		9.8	1.0	9.6	1.0	29.5	1.0	12.2	1.0	15.0	1.0	17.1	1.0	29.7	1.0	10.1	1.0	20.1	1.0	13.5	1.0	3.5	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
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
Titanium (Ti)	µg		11	10	11	10	39	10	18	10	37	10	37	10	44	10	20	10	49	10	29	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
Zinc (Zn)	µg		39.2	5.0	57.8	5.0	136	5.0	25.9	5.0	44.6	5.0	113	5.0	65.6	5.0	88.1	5.0	133	5.0	72.3	5.0	49.7	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
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

Calculated Concentrations	Quarter 2			Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline
				11	12	13	14	15	16	17	18	19	20	21	
	Units	Maximum	Minimum	4/6/2016	4/12/2016	4/18/2016	4/24/2016	4/30/2016	06/05/2016	12/05/2016	18/05/2016	24/05/2016	30/05/2016	05/06/2016	
Particulate	$µg/m^3$	80.2	17.5	26.193	22.077	68.487	26.168	33.638	53.251	75.151	26.959	80.168	54.549	17.485	
Total Mercury (Hg)	$µg/m^3$	4.79E-05	5.76E-06	1.23E-05	6.79E-06	3.40E-05	5.76E-06	1.73E-05	1.97E-05	2.51E-05	1.95E-05	4.79E-05	1.81E-05	1.31E-05	
Aluminum (Al)	$µg/m^3$	6.52E-01	9.89E-02	1.45E-01	1.04E-01	3.45E-01	1.68E-01	3.00E-01	3.40E-01	5.44E-01	1.71E-01	6.52E-01	3.33E-01	9.89E-02	
Antimony (Sb)	$µg/m^3$	3.40E-03	2.83E-03	3.08E-03	3.40E-03	2.83E-03	2.88E-03	2.88E-03	3.29E-03	3.13E-03	3.25E-03	2.99E-03	3.01E-03	3.27E-03	
Arsenic (As)	$µg/m^3$	2.04E-03	1.70E-03	1.85E-03	2.04E-03	1.70E-03	1.73E-03	1.73E-03	1.97E-03	1.88E-03	1.95E-03	1.79E-03	1.81E-03	1.96E-03	
Barium (Ba)	$µg/m^3$	2.06E-02	3.93E-03	6.10E-03	1.34E-02	2.05E-02	5.65E-03	8.54E-03	1.63E-02	1.77E-02	1.39E-02	2.06E-02	1.13E-02	3.93E-03	
Beryllium (Be)	$µg/m^3$	3.40E-04	2.83E-04	3.08E-04	3.40E-04	2.83E-04	2.88E-04	2.88E-04	3.29E-04	3.13E-04	3.25E-04	2.99E-04	3.01E-04	3.27E-04	
Bismuth (Bi)	$µg/m^3$	2.04E-03	1.70E-03	1.85E-03	2.04E-03	1.70E-03	1.73E-03	1.73E-03	1.97E-03	1.88E-03	1.95E-03	1.79E-03	1.81E-03	1.96E-03	
Boron (B)	$µg/m^3$	8.49E-03	1.73E-03	1.85E-03	2.04E-03	8.49E-03	1.73E-03	1.73E-03	1.97E-03	4.82E-03	1.95E-03	6.22E-03	3.80E-03	1.96E-03	
Cadmium (Cd)	$µg/m^3$	9.09E-03	6.26E-04	1.73E-03	2.04E-03	1.64E-03	1.27E-03	3.17E-03	2.96E-03	6.26E-04	1.43E-03	9.09E-03	1.81E-03	6.55E-04	
Chromium (Cr)	$µg/m^3$	5.26E-03	1.44E-03	1.54E-03	3.74E-03	4.30E-03	1.44E-03	3.52E-03	5.13E-03	4.95E-03	4.81E-03	5.26E-03	3.74E-03	1.64E-03	
Cobalt (Co)	$µg/m^3$	6.79E-04	5.66E-04	6.16E-04	6.79E-04	5.66E-04	5.76E-04	5.77E-04	6.58E-04	6.26E-04	6.50E-04	5.98E-04	6.03E-04	6.55E-04	
Copper (Cu)	$µg/m^3$	7.70E-02	1.14E-02	4.02E-02	2.43E-02	5.05E-02	6.11E-02	7.44E-02	7.70E-02	5.59E-02	6.69E-02	5.27E-02	4.13E-02	3.01E-02	
Iron (Fe)	$µg/m^3$	1.36E+00	2.07E-01	2.81E-01	4.27E-01	1.00E+00	4.36E-01	5.94E-01	8.69E-01	1.33E+00	5.82E-01	1.36E+00	7.90E-01	2.07E-01	
Lead (Pb)	$µg/m^3$	1.02E-02	8.65E-04	3.64E-03	1.02E-03	7.81E-03	8.65E-04	3.29E-03	6.58E-03	4.63E-03	4.48E-03	1.02E-02	5.18E-03	3.21E-03	
Magnesium (Mg)	$µg/m^3$	1.01E+00	1.20E-01	1.81E-01	2.20E-01	7.58E-01	2.01E-01	3.42E-01	4.32E-01	6.58E-01	2.91E-01	1.01E+00	4.65E-01	1.20E-01	
Manganese (Mn)	$µg/m^3$	4.65E-02	7.73E-03	1.16E-02	1.81E-02	3.59E-02	1.52E-02	1.70E-02	4.46E-02	4.65E-02	2.57E-02	4.36E-02	3.47E-02	7.73E-03	
Molybdenum (Mo)	$µg/m^3$	5.25E-03	9.24E-04	9.24E-04	1.02E-03	3.17E-03	4.03E-03	5.25E-03	3.55E-03	3.32E-03	2.79E-03	2.69E-03	2.05E-03	9.82E-04	
Nickel (Ni)	$µg/m^3$	2.57E-03	8.65E-04	9.24E-04	1.02E-03	2.32E-03	8.65E-04	8.65E-04	2.17E-03	2.00E-03	9.74E-04	2.57E-03	1.87E-03	9.82E-04	
Phosphorus (P)	$µg/m^3$	1.09E-01	1.77E-02	1.91E-02	1.77E-02	7.19E-02	3.11E-02	4.44E-02	8.10E-02	9.77E-02	2.92E-02	1.02E-01	8.44E-02	3.60E-02	
Selenium (Se)	$µg/m^3$	3.40E-03	2.83E-03	3.08E-03	3.40E-03	2.83E-03	2.88E-03	2.88E-03	3.29E-03	3.13E-03	3.25E-03	2.99E-03	3.01E-03	3.27E-03	
Silver (Ag)	$µg/m^3$	1.70E-03	1.42E-03	1.54E-03	1.70E-03	1.42E-03	1.44E-03	1.44E-03	1.65E-03	1.57E-03	1.62E-03	1.50E-03	1.51E-03	1.64E-03	
Strontium (Sr)	$µg/m^3$	1.86E-02	2.29E-03	6.04E-03	6.52E-03	1.67E-02	7.03E-03	8.65E-03	1.13E-02	1.86E-02	6.56E-03	1.20E-02	8.14E-03	2.29E-03	
Thallium (Tl)	$µg/m^3$	3.40E-03	2.83E-03	3.08E-03	3.40E-03	2.83E-03	2.88E-03	2.88E-03	3.29E-03	3.13E-03	3.25E-03	2.99E-03	3.01E-03	3.27E-03	
Tin (Sn)	$µg/m^3$	3.40E-03	2.83E-03	3.08E-03	3.40E-03	2.83E-03	2.88E-03	2.88E-03	3.29E-03	3.13E-03	3.25E-03	2.99E-03	3.01E-03	3.27E-03	
Titanium (Ti)	$µg/m^3$	2.93E-02	3.27E-03	6.78E-03	7.47E-03	2.21E-02	1.04E-02	2.13E-02	2.44E-02	2.76E-02	1.30E-02	2.93E-02	1.75E-02	3.27E-03	
Vanadium (V)	$µg/m^3$	1.70E-03	1.42E-03	1.54E-03	1.70E-03	1.42E-03	1.44E-03	1.44E-03	1.65E-03	1.57E-03	1.62E-03	1.50E-03	1.51E-03	1.64E-03	
Zinc (Zn)	$µg/m^3$	7.96E-02	1.37E-02	2.42E-02	3.93E-02	7.70E-02	1.49E-02	2.57E-02	7.44E-02	4.11E-02	5.72E-02	7.96E-02	4.36E-02	3.25E-02	
Zirconium (Zr)	$µg/m^3$	1.70E-03	1.42E-03	1.54E-03	1.70E-03	1.42E-03	1.44E-03	1.44E-03	1.65E-03	1.57E-03	1.62E-03	1.50E-03	1.51E-03	1.64E-03	
Total Uranium (U)	$µg/m^3$	1.53E-04	1.27E-04	1.39E-04	1.53E-04	1.27E-04	1.30E-04	1.30E-04	1.48E-04	1.41E-04	1.46E-04	1.35E-04	1.36E-04	1.47E-04	

Metals and Total Particulates	Fenceline Station							
Location		Fenceline		Fenceline		Fenceline		Fenceline	
Date	dd/mm/yyyy	11/06/2016		17/06/2016		23/06/2016		29/06/2016	
Start Time	hh:mm	0:00		0:00		0:00		0:00	
Sample Duration	hours	23.4		24.61		23.81		22.83	
Technician		TH		TH		TH		TH	
Filter Number		16052027		16060103		16060107		16061375	
Analytical Report #		B6C4266		B6C7521		B6D3152		B6D5241	
Total Volumetric Flow	Am^3/sample	1532.17		1593.92		1568.57		1538.64	
Analytical Results	**Units**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Particulate	mg	59.1	5	80.3	5.0	62.5	5.0	97.1	5.0
Total Mercury (Hg)	µg	0.03	0.02	0.03	0.02	<0.02	0.02	0.03	0.02
Aluminum (Al)	µg	272	50	525	50	589	50	473	50
Antimony (Sb)	µg	<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
Barium (Ba)	µg	11.9	1.0	26.6	1.0	19.5	1.0	10.8	1.0
Beryllium (Be)	µg	<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
Boron (B)	µg	<6.0	6.0	7.9	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
Chromium (Cr)	µg	<5.0	5.0	6.5	5.0	6.8	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
Copper (Cu)	µg	57.6	5.0	56.7	5.0	50.0	5.0	17.6	5.0
Iron (Fe)	µg	662	50	1670	50	1340	50	771	50
Lead (Pb)	µg	6.8	3.0	6.4	3.0	7.8	3.0	<3.0	3.0
Magnesium (Mg)	µg	398	50	643	50	528	50	312	50
Manganese (Mn)	µg	26.7	1.0	49.3	1.0	47.2	1.0	23.2	1.0
Molybdenum (Mo)	µg	3.4	3.0	3.2	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
Phosphorus (P)	µg	109	25	174	25	78	25	50	25
Selenium (Se)	µg	<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
Strontium (Sr)	µg	7.1	1.0	13.9	1.0	11.8	1.0	5.0	1.0
Thallium (Tl)	µg	<10	10	<10	10	<10	10	<10	10
Tin (Sn)	µg	<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	µg	15	10	35	10	36	10	27	10
Vanadium (V)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Zinc (Zn)	µg	40.2	5.0	72.7	5.0	57.0	5.0	21.1	5.0
Zirconium (Zr)	µg	<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

Calculated Concentrations	Quarter 2			Fenceline	Fenceline	Fenceline	Fenceline
				22	23	24	25
	Units	Maximum	Minimum	11/06/2016	17/06/2016	23/06/2016	29/06/2016
Particulate	$µg/m^3$	80.2	17.5	38.573	50.379	39.845	63.108
Total Mercury (Hg)	$µg/m^3$	4.79E-05	5.76E-06	1.96E-05	1.88E-05	6.38E-06	1.95E-05
Aluminum (Al)	$µg/m^3$	6.52E-01	9.89E-02	1.78E-01	3.29E-01	3.76E-01	3.07E-01
Antimony (Sb)	$µg/m^3$	3.40E-03	2.83E-03	3.26E-03	3.14E-03	3.19E-03	3.25E-03
Arsenic (As)	$µg/m^3$	2.04E-03	1.70E-03	1.96E-03	1.88E-03	1.91E-03	1.95E-03
Barium (Ba)	$µg/m^3$	2.06E-02	3.93E-03	7.77E-03	1.67E-02	1.24E-02	7.02E-03
Beryllium (Be)	$µg/m^3$	3.40E-04	2.83E-04	3.26E-04	3.14E-04	3.19E-04	3.25E-04
Bismuth (Bi)	$µg/m^3$	2.04E-03	1.70E-03	1.96E-03	1.88E-03	1.91E-03	1.95E-03
Boron (B)	$µg/m^3$	8.49E-03	1.73E-03	1.96E-03	4.96E-03	1.91E-03	1.95E-03
Cadmium (Cd)	$µg/m^3$	9.09E-03	6.26E-04	6.53E-04	6.27E-04	6.38E-04	6.50E-04
Chromium (Cr)	$µg/m^3$	5.26E-03	1.44E-03	1.63E-03	4.08E-03	4.34E-03	1.62E-03
Cobalt (Co)	$µg/m^3$	6.79E-04	5.66E-04	6.53E-04	6.27E-04	6.38E-04	6.50E-04
Copper (Cu)	$µg/m^3$	7.70E-02	1.14E-02	3.76E-02	3.56E-02	3.19E-02	1.14E-02
Iron (Fe)	$µg/m^3$	1.36E+00	2.07E-01	4.32E-01	1.05E+00	8.54E-01	5.01E-01
Lead (Pb)	$µg/m^3$	1.02E-02	8.65E-04	4.44E-03	4.02E-03	4.97E-03	9.75E-04
Magnesium (Mg)	$µg/m^3$	1.01E+00	1.20E-01	2.60E-01	4.03E-01	3.37E-01	2.03E-01
Manganese (Mn)	$µg/m^3$	4.65E-02	7.73E-03	1.74E-02	3.09E-02	3.01E-02	1.51E-02
Molybdenum (Mo)	$µg/m^3$	5.25E-03	9.24E-04	2.22E-03	2.01E-03	9.56E-04	9.75E-04
Nickel (Ni)	$µg/m^3$	2.57E-03	8.65E-04	9.79E-04	9.41E-04	9.56E-04	9.75E-04
Phosphorus (P)	$µg/m^3$	1.09E-01	1.77E-02	7.11E-02	1.09E-01	4.97E-02	3.25E-02
Selenium (Se)	$µg/m^3$	3.40E-03	2.83E-03	3.26E-03	3.14E-03	3.19E-03	3.25E-03
Silver (Ag)	$µg/m^3$	1.70E-03	1.42E-03	1.63E-03	1.57E-03	1.59E-03	1.62E-03
Strontium (Sr)	$µg/m^3$	1.86E-02	2.29E-03	4.63E-03	8.72E-03	7.52E-03	3.25E-03
Thallium (Tl)	$µg/m^3$	3.40E-03	2.83E-03	3.26E-03	3.14E-03	3.19E-03	3.25E-03
Tin (Sn)	$µg/m^3$	3.40E-03	2.83E-03	3.26E-03	3.14E-03	3.19E-03	3.25E-03
Titanium (Ti)	$µg/m^3$	2.93E-02	3.27E-03	9.79E-03	2.20E-02	2.30E-02	1.75E-02
Vanadium (V)	$µg/m^3$	1.70E-03	1.42E-03	1.63E-03	1.57E-03	1.59E-03	1.62E-03
Zinc (Zn)	$µg/m^3$	7.96E-02	1.37E-02	2.62E-02	4.56E-02	3.63E-02	1.37E-02
Zirconium (Zr)	$µg/m^3$	1.70E-03	1.42E-03	1.63E-03	1.57E-03	1.59E-03	1.62E-03
Total Uranium (U)	$µg/m^3$	1.53E-04	1.27E-04	1.47E-04	1.41E-04	1.43E-04	1.46E-04

Metals and Total Particulates	Rundle Station																					
Location		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle	
Date	dd/mm/yyyy	06/04/2016		12/04/2016		18/04/2016		24/04/2016		30/04/2016		06/05/2016		12/05/2016		18/05/2016		24/05/2016		30/05/2016		05/06/2016	
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	
Sample Duration	hours	23.8		23.69		23.08		23.76		23.55		23.59		24.14		23.8		23.55		24.14		24.06	
Technician		TH		TH		TH		TH		TH/KM		TH/KM		TH/KM		TH/KM		KM/BB		KM/CL		KM/GC	
Filter Number		16030107		16030111		16030141		16030146		16031550		16031554		16040618		16040622		16042907		16042911		16052021	
Analytical Report #		B670162		B676446		B679608		B688412		B688381		B695479		B698595		B6A5301		B6A6169		B6B5715		B6B7897	
Total Volumetric Flow	Am^3/sample	1726.51		1583.20		1543.38		1536.51		1645.07		1585.77		1649.26		1616.77		1601.50		1685.49		1605.73	
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**
Particulate	mg	35.5	5	26.9	5	75.3	5	59.8	5	42.1	5	67.2	5	112	5	47.1	5	144	5	133	5.0	26.5	5
Total Mercury (Hg)	µg	<0.02	0.02	<0.02	0.02	0.03	0.02	<0.02	0.02	<0.02	0.02	0.02	0.02	0.04	0.02	0.02	0.02	0.04	0.02	0.02	0.02	<0.02	0.02
Aluminum (Al)	µg	174	50	121	50	371	50	499	50	308	50	424	50	837	50	288	50	1190	50	796	50	116	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
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
Barium (Ba)	µg	11.5	1.0	11.6	1.0	20.7	1.0	11.3	1.0	11.5	1.0	16.1	1.0	20.9	1.0	16.4	1.0	37.9	1.0	25.2	1.0	6.9	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
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
Boron (B)	µg	<6.0	6.0	<6.0	6.0	11.5	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	6.2	6.0	<6.0	6.0	9.6	6.0	6.1	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
Chromium (Cr)	µg	8.0	5.0	<5.0	5.0	6.2	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	5.7	5.0	12.7	5.0	11.3	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
Copper (Cu)	µg	44.1	5.0	45.3	5.0	125	5.0	83.0	5.0	70.5	5.0	114	5.0	65.0	5.0	111	5.0	158	5.0	78.4	5.0	34.3	5.0
Iron (Fe)	µg	763	50	410	50	1010	50	1180	50	840	50	1110	50	2090	50	833	50	2880	50	1890	50	332	50
Lead (Pb)	µg	4.7	3.0	<3.0	3.0	6.4	3.0	<3.0	3.0	<3.0	3.0	3.9	3.0	5.0	3.0	5.3	3.0	9.5	3.0	6.8	3.0	<3.0	3.0
Magnesium (Mg)	µg	247	50	209	50	809	50	483	50	385	50	499	50	921	50	401	50	1760	50	1160	50	156	50
Manganese (Mn)	µg	14.1	1.0	16.7	1.0	42.5	1.0	25.3	1.0	19.8	1.0	35.0	1.0	51.8	1.0	36.2	1.0	105	1.0	94.8	1.0	12.5	1.0
Molybdenum (Mo)	µg	5.9	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	5.1	3.0	9.9	3.0	5.9	3.0	5.9	3.0	4.8	3.0	4.3	3.0	<3.0	3.0
Nickel (Ni)	µg	33.5	3.0	<3.0	3.0	<3.0	3.0	3.1	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	3.4	3.0	<3.0	3.0	<3.0	3.0
Phosphorus (P)	µg	28	25	<25	25	82	25	68	25	43	25	92	25	162	25	50	25	165	25	155	25	59	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
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
Strontium (Sr)	µg	7.0	1.0	6.4	1.0	17.4	1.0	20.2	1.0	9.6	1.0	13.8	1.0	32.1	1.0	9.4	1.0	27.0	1.0	28.7	1.0	2.9	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
Tin (Sn)	µg	<10	10	13	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	22	10	32	10	25	10	29	10	39	10	21	10	56	10	46	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	5.3	5.0	<5.0	5.0
Zinc (Zn)	µg	31.7	5.0	43.0	5.0	48.8	5.0	24.6	5.0	22.7	5.0	36.6	5.0	36.8	5.0	78.6	5.0	76.4	5.0	55.1	5.0	41.6	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
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

Calculated Concentrations	Quarter 2			Rundle 11	Rundle 12	Rundle 13	Rundle 14	Rundle 15	Rundle 16	Rundle 17	Rundle 18	Rundle 19	Rundle 20	Rundle 21
	Units	Maximum	Minimum	4/6/2016	4/12/2016	4/18/2016	4/24/2016	30/04/2016	06/05/2016	12/05/2016	18/05/2016	24/05/2016	30/05/2016	05/06/2016
Particulate	$\mu g/m^3$	89.9	16.5	20.562	16.991	48.789	38.919	25.592	42.377	67.909	29.132	89.916	78.909	16.503
Total Mercury (Hg)	$\mu g/m^3$	2.50E-05	5.79E-06	5.79E-06	6.32E-06	1.94E-05	6.51E-06	6.08E-06	1.26E-05	2.43E-05	1.24E-05	2.50E-05	1.19E-05	6.23E-06
Aluminum (Al)	$\mu g/m^3$	7.43E-01	7.22E-02	1.01E-01	7.64E-02	2.40E-01	3.25E-01	1.87E-01	2.67E-01	5.08E-01	1.78E-01	7.43E-01	4.72E-01	7.22E-02
Antimony (Sb)	$\mu g/m^3$	3.34E-03	2.90E-03	2.90E-03	3.16E-03	3.24E-03	3.25E-03	3.04E-03	3.15E-03	3.03E-03	3.09E-03	3.12E-03	2.97E-03	3.11E-03
Arsenic (As)	$\mu g/m^3$	4.72E-03	1.74E-03	1.74E-03	1.89E-03	1.94E-03	1.95E-03	1.82E-03	1.89E-03	1.82E-03	1.86E-03	1.87E-03	1.78E-03	1.87E-03
Barium (Ba)	$\mu g/m^3$	2.37E-02	3.61E-03	6.66E-03	7.33E-03	1.34E-02	7.35E-03	6.99E-03	1.02E-02	1.27E-02	1.01E-02	2.37E-02	1.50E-02	4.30E-03
Beryllium (Be)	$\mu g/m^3$	3.34E-04	2.90E-04	2.90E-04	3.16E-04	3.24E-04	3.25E-04	3.04E-04	3.15E-04	3.03E-04	3.09E-04	3.12E-04	2.97E-04	3.11E-04
Bismuth (Bi)	$\mu g/m^3$	2.00E-03	1.74E-03	1.74E-03	1.89E-03	1.94E-03	1.95E-03	1.82E-03	1.89E-03	1.82E-03	1.86E-03	1.87E-03	1.78E-03	1.87E-03
Boron (B)	$\mu g/m^3$	7.45E-03	1.74E-03	1.74E-03	1.89E-03	7.45E-03	1.95E-03	1.82E-03	1.89E-03	3.76E-03	1.86E-03	5.99E-03	3.62E-03	1.87E-03
Cadmium (Cd)	$\mu g/m^3$	6.68E-04	5.79E-04	5.79E-04	6.32E-04	6.48E-04	6.51E-04	6.08E-04	6.31E-04	6.06E-04	6.19E-04	6.24E-04	5.93E-04	6.23E-04
Chromium (Cr)	$\mu g/m^3$	7.93E-03	1.52E-03	4.63E-03	1.58E-03	4.02E-03	1.63E-03	1.52E-03	1.58E-03	1.52E-03	3.53E-03	7.93E-03	6.70E-03	1.56E-03
Cobalt (Co)	$\mu g/m^3$	6.68E-04	5.79E-04	5.79E-04	6.32E-04	6.48E-04	6.51E-04	6.08E-04	6.31E-04	6.06E-04	6.19E-04	6.24E-04	5.93E-04	6.23E-04
Copper (Cu)	$\mu g/m^3$	9.87E-02	2.14E-02	2.55E-02	2.86E-02	8.10E-02	5.40E-02	4.29E-02	7.19E-02	3.94E-02	6.87E-02	9.87E-02	4.65E-02	2.14E-02
Iron (Fe)	$\mu g/m^3$	1.80E+00	2.07E-01	4.42E-01	2.59E-01	6.54E-01	7.68E-01	5.11E-01	7.00E-01	1.27E+00	5.15E-01	1.80E+00	1.12E+00	2.07E-01
Lead (Pb)	$\mu g/m^3$	5.93E-03	9.12E-04	2.72E-03	9.47E-04	4.15E-03	9.76E-04	9.12E-04	2.46E-03	3.03E-03	3.28E-03	5.93E-03	4.03E-03	9.34E-04
Magnesium (Mg)	$\mu g/m^3$	1.10E+00	9.72E-02	1.43E-01	1.32E-01	5.24E-01	3.14E-01	2.34E-01	3.15E-01	5.58E-01	2.48E-01	1.10E+00	6.88E-01	9.72E-02
Manganese (Mn)	$\mu g/m^3$	6.56E-02	7.41E-03	8.17E-03	1.05E-02	2.75E-02	1.65E-02	1.20E-02	2.21E-02	3.14E-02	2.24E-02	6.56E-02	5.62E-02	7.78E-03
Molybdenum (Mo)	$\mu g/m^3$	6.24E-03	9.34E-04	3.42E-03	9.47E-04	9.72E-04	9.76E-04	3.10E-03	6.24E-03	3.58E-03	3.65E-03	3.00E-03	2.55E-03	9.34E-04
Nickel (Ni)	$\mu g/m^3$	1.94E-02	8.90E-04	1.94E-02	9.47E-04	9.72E-04	2.02E-03	9.12E-04	9.46E-04	9.10E-04	9.28E-04	2.12E-03	8.90E-04	9.34E-04
Phosphorus (P)	$\mu g/m^3$	1.03E-01	7.90E-03	1.62E-02	7.90E-03	5.31E-02	4.43E-02	2.61E-02	5.80E-02	9.82E-02	3.09E-02	1.03E-01	9.20E-02	3.67E-02
Selenium (Se)	$\mu g/m^3$	3.34E-03	2.90E-03	2.90E-03	3.16E-03	3.24E-03	3.25E-03	3.04E-03	3.15E-03	3.03E-03	3.09E-03	3.12E-03	2.97E-03	3.11E-03
Silver (Ag)	$\mu g/m^3$	1.67E-03	1.45E-03	1.45E-03	1.58E-03	1.62E-03	1.63E-03	1.52E-03	1.58E-03	1.52E-03	1.55E-03	1.56E-03	1.48E-03	1.56E-03
Strontium (Sr)	$\mu g/m^3$	1.95E-02	1.81E-03	4.05E-03	4.04E-03	1.13E-02	1.31E-02	5.84E-03	8.70E-03	1.95E-02	5.81E-03	1.69E-02	1.70E-02	1.81E-03
Thallium (Tl)	$\mu g/m^3$	3.34E-03	2.90E-03	2.90E-03	3.16E-03	3.24E-03	3.25E-03	3.04E-03	3.15E-03	3.03E-03	3.09E-03	3.12E-03	2.97E-03	3.11E-03
Tin (Sn)	$\mu g/m^3$	8.21E-03	2.90E-03	2.90E-03	8.21E-03	3.24E-03	3.25E-03	3.04E-03	3.15E-03	3.03E-03	3.09E-03	3.12E-03	2.97E-03	3.11E-03
Titanium (Ti)	$\mu g/m^3$	3.50E-02	2.90E-03	2.90E-03	3.16E-03	1.43E-02	2.08E-02	1.52E-02	1.83E-02	2.36E-02	1.30E-02	3.50E-02	2.73E-02	3.11E-03
Vanadium (V)	$\mu g/m^3$	3.14E-03	1.45E-03	1.45E-03	1.58E-03	1.62E-03	1.63E-03	1.52E-03	1.58E-03	1.52E-03	1.55E-03	1.56E-03	3.14E-03	1.56E-03
Zinc (Zn)	$\mu g/m^3$	4.86E-02	7.01E-03	1.84E-02	2.72E-02	3.16E-02	1.60E-02	1.38E-02	2.31E-02	2.23E-02	4.86E-02	4.77E-02	3.27E-02	2.59E-02
Zirconium (Zr)	$\mu g/m^3$	1.67E-03	1.45E-03	1.45E-03	1.58E-03	1.62E-03	1.63E-03	1.52E-03	1.58E-03	1.52E-03	1.55E-03	1.56E-03	1.48E-03	1.56E-03
Total Uranium (U)	$\mu g/m^3$	1.50E-04	1.30E-04	1.30E-04	1.42E-04	1.46E-04	1.46E-04	1.37E-04	1.42E-04	1.36E-04	1.39E-04	1.40E-04	1.33E-04	1.40E-04

Metals and Total Particulates	Rundle Station								
Location		Rundle		Rundle		Rundle		Rundle	
Date	dd/mm/yyyy	11/06/2016		17/06/2016		23/06/2016		29/06/2016	
Start Time	hh:mm	0:00		0:00		0:00		0:00	
Sample Duration	hours	23.92		23.5		23.82		23.89	
Technician		TH		TH		TH		TH	
Filter Number		16052028		16060102		16060106		16061374	
Analytical Report #		B6C4266		B6C7521		B6D3152		B6D5241	
Total Volumetric Flow	Am^3/sample	1557.36		1504.28		1508.60		1497.13	
Analytical Results	**Units**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Particulate	mg	64.5	5	78.5	5	69.6	5	53	5
Total Mercury (Hg)	µg	0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02
Aluminum (Al)	µg	315	50	436	50	475	50	142	50
Antimony (Sb)	µg	<10	10	<10	10	<10	10	<10	10
Arsenic (As)	µg	<6.0	6.0	7.1	6.0	<6.0	6.0	<6.0	6.0
Barium (Ba)	µg	12.6	1.0	18.3	1.0	18.2	1.0	5.4	1.0
Beryllium (Be)	µg	<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
Boron (B)	µg	<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
Chromium (Cr)	µg	<5.0	5.0	<5.0	5.0	7.9	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
Copper (Cu)	µg	38.4	5.0	120	5.0	69.5	5.0	42.0	5.0
Iron (Fe)	µg	863	50	1110	50	1110	50	356	50
Lead (Pb)	µg	5.6	3.0	4.0	3.0	3.3	3.0	<3.0	3.0
Magnesium (Mg)	µg	398	50	493	50	653	50	164	50
Manganese (Mn)	µg	25.3	1.0	37.3	1.0	56.5	1.0	11.1	1.0
Molybdenum (Mo)	µg	<3.0	3.0	4.2	3.0	3.8	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
Phosphorus (P)	µg	112	25	112	25	76	25	<25	25
Selenium (Se)	µg	<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
Strontium (Sr)	µg	9.1	1.0	11.5	1.0	15.9	1.0	3.4	1.0
Thallium (Tl)	µg	<10	10	<10	10	<10	10	<10	10
Tin (Sn)	µg	<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	µg	17	10	28	10	30	10	<10	10
Vanadium (V)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Zinc (Zn)	µg	31.3	5.0	39.3	5.0	41.5	5.0	10.5	5.0
Zirconium (Zr)	µg	<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

Calculated Concentrations	Quarter 2			Rundle 22	Rundle 23	Rundle 24	Rundle 25
	Units	Maximum	Minimum	11/06/2016	17/06/2016	23/06/2016	29/06/2016
Particulate	$\mu g/m^3$	89.9	16.5	41.416	52.184	46.135	35.401
Total Mercury (Hg)	$\mu g/m^3$	2.50E-05	5.79E-06	1.28E-05	6.65E-06	6.63E-06	6.68E-06
Aluminum (Al)	$\mu g/m^3$	7.43E-01	7.22E-02	2.02E-01	2.90E-01	3.15E-01	9.48E-02
Antimony (Sb)	$\mu g/m^3$	3.34E-03	2.90E-03	3.21E-03	3.32E-03	3.31E-03	3.34E-03
Arsenic (As)	$\mu g/m^3$	4.72E-03	1.74E-03	1.93E-03	4.72E-03	1.99E-03	2.00E-03
Barium (Ba)	$\mu g/m^3$	2.37E-02	3.61E-03	8.09E-03	1.22E-02	1.21E-02	3.61E-03
Beryllium (Be)	$\mu g/m^3$	3.34E-04	2.90E-04	3.21E-04	3.32E-04	3.31E-04	3.34E-04
Bismuth (Bi)	$\mu g/m^3$	2.00E-03	1.74E-03	1.93E-03	1.99E-03	1.99E-03	2.00E-03
Boron (B)	$\mu g/m^3$	7.45E-03	1.74E-03	1.93E-03	1.99E-03	1.99E-03	2.00E-03
Cadmium (Cd)	$\mu g/m^3$	6.68E-04	5.79E-04	6.42E-04	6.65E-04	6.63E-04	6.68E-04
Chromium (Cr)	$\mu g/m^3$	7.93E-03	1.52E-03	1.61E-03	1.66E-03	5.24E-03	1.67E-03
Cobalt (Co)	$\mu g/m^3$	6.68E-04	5.79E-04	6.42E-04	6.65E-04	6.63E-04	6.68E-04
Copper (Cu)	$\mu g/m^3$	9.87E-02	2.14E-02	2.47E-02	7.98E-02	4.61E-02	2.81E-02
Iron (Fe)	$\mu g/m^3$	1.80E+00	2.07E-01	5.54E-01	7.38E-01	7.36E-01	2.38E-01
Lead (Pb)	$\mu g/m^3$	5.93E-03	9.12E-04	3.60E-03	2.66E-03	2.19E-03	1.00E-03
Magnesium (Mg)	$\mu g/m^3$	1.10E+00	9.72E-02	2.56E-01	3.28E-01	4.33E-01	1.10E-01
Manganese (Mn)	$\mu g/m^3$	6.56E-02	7.41E-03	1.62E-02	2.48E-02	3.75E-02	7.41E-03
Molybdenum (Mo)	$\mu g/m^3$	6.24E-03	9.34E-04	9.63E-04	2.79E-03	2.52E-03	1.00E-03
Nickel (Ni)	$\mu g/m^3$	1.94E-02	8.90E-04	9.63E-04	9.97E-04	9.94E-04	1.00E-03
Phosphorus (P)	$\mu g/m^3$	1.03E-01	7.90E-03	7.19E-02	7.45E-02	5.04E-02	8.35E-03
Selenium (Se)	$\mu g/m^3$	3.34E-03	2.90E-03	3.21E-03	3.32E-03	3.31E-03	3.34E-03
Silver (Ag)	$\mu g/m^3$	1.67E-03	1.45E-03	1.61E-03	1.66E-03	1.66E-03	1.67E-03
Strontium (Sr)	$\mu g/m^3$	1.95E-02	1.81E-03	5.84E-03	7.64E-03	1.05E-02	2.27E-03
Thallium (Tl)	$\mu g/m^3$	3.34E-03	2.90E-03	3.21E-03	3.32E-03	3.31E-03	3.34E-03
Tin (Sn)	$\mu g/m^3$	8.21E-03	2.90E-03	3.21E-03	3.32E-03	3.31E-03	3.34E-03
Titanium (Ti)	$\mu g/m^3$	3.50E-02	2.90E-03	1.09E-02	1.86E-02	1.99E-02	3.34E-03
Vanadium (V)	$\mu g/m^3$	3.14E-03	1.45E-03	1.61E-03	1.66E-03	1.66E-03	1.67E-03
Zinc (Zn)	$\mu g/m^3$	4.86E-02	7.01E-03	2.01E-02	2.61E-02	2.75E-02	7.01E-03
Zirconium (Zr)	$\mu g/m^3$	1.67E-03	1.45E-03	1.61E-03	1.66E-03	1.66E-03	1.67E-03
Total Uranium (U)	$\mu g/m^3$	1.50E-04	1.30E-04	1.44E-04	1.50E-04	1.49E-04	1.50E-04

Appendix H PAHS DATA SUMMARY

Polycyclic Aromatic Hydrocarbons	Courtice WPCP Station															
Location			Courtice		Courtice		Courtice		Courtice		Courtice		Courtice[2]		Courtice		Courtice	
Date	dd/mm/yyyy		6/04/2016		18/04/2016		30/04/2016		12/05/2016		24/05/2016		5/06/2016		17/06/2016		29/06/2016	
Start Time	hh:mm		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	hours		23.49		24.29		23.73		23.78		24.5		23.61		72.25		23.53	
Technician			TH		TH		TH/KM		TH/KM		KM/BB		KM		TH		TH	
Filter Number			CBK976-01		CBL018-01		CBL034-01		CGE412-01		CGE527-01		CGE565-01		N/A		CKE123-01	
Maxaam ID			CDW124		CFM353		CHG244		CJC755		CKP269		CMS560		N/A		CQA993	
Maxxam Job #			B670152		B678941		B688395		B698618		B6A6164		B6B7903		N/A		B6D5267	
Total Volumetric Flow	Am^3/sample		341.68		355.86		351.68		384.71		394.09		383.08		Sample Invalid		359.04	
Analytical Results	**Units**		**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Benzo(a)pyrene	µg		0.0173	0.0043	0.0295	0.0079	0.0091	0.0032	0.0107	0.0019	0.0290	0.0022	<0.0093	0.0093			0.0028	0.0013
1-Methylnaphthalene	µg		0.77	0.10	3.19	0.15	1.49	0.10	2.81	0.15	3.38	0.10	1.37	0.15			1.01	0.15
2-Methylnaphthalene	µg		1.18	0.10	6.43	0.15	2.60	0.10	4.94	0.15	6.57	0.10	2.26	0.15			1.73	0.15
Acenaphthene	µg		0.276	0.050	2.26	0.075	1.28	0.050	2.48	0.075	3.72	0.050	2.11	0.075			1.27	0.075
Acenaphthylene	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			<0.075	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			<0.075	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			<0.075	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			<0.15	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	0.951	0.075			<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			<0.15	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			<0.15	0.15
Benzo(g,h,i)perylene	µg		<0.050	0.050	<0.075	0.075	0.068	0.050	<0.075	0.075	<0.050	0.050	0.939	0.075			<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	0.963	0.075			<0.075	0.075
Biphenyl	µg		0.48	0.10	1.65	0.15	0.83	0.10	1.51	0.15	1.90	0.10	0.83	0.15			0.48	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			<0.075	0.075
Dibenz(a,h)anthracene	µg		<0.050	0.050	<0.075	0.075	0.052	0.050	<0.075	0.075	<0.050	0.050	1.07	0.075			<0.075	0.075
Dibenzo(a,c) anthracene + Picene [1]	µg		<0.10	0.10	<0.10	0.10	<0.10	0.10	<0.15	0.15	<0.10	0.10	1.15	0.15			<0.15	0.15
Fluoranthene	µg		0.160	0.050	0.246	0.075	0.162	0.050	0.339	0.075	0.296	0.050	0.558	0.075			0.249	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	1.08	0.075			<0.075	0.075
Naphthalene	µg		4.79	0.072	11.0	0.11	6.98	0.072	10.9	0.11	12.7	0.072	5.33	0.11			4.24	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			<0.15	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			<0.15	0.15
Phenanthrene	µg		0.506	0.050	1.58	0.075	1.11	0.050	2.60	0.075	2.47	0.050	3.03	0.075			1.37	0.075
Pyrene	µg		0.088	0.050	0.129	0.075	0.104	0.050	0.147	0.075	0.134	0.050	0.186	0.075			0.108	0.075
Tetralin	µg		0.37	0.10	0.74	0.15	0.38	0.10	0.74	0.15	0.53	0.10	0.26	0.15			0.32	0.15

Calculated Concentrations	Quarter 2			Courtice	Courtice	Courtice	Courtice	Courtice	Courtice2	Courtice	Courtice
				6	7	8	9	10	11	12	13
	Units	Maximum	Minimum	6/04/2016	18/04/2016	30/04/2016	12/05/2016	24/05/2016	5/06/2016	17/06/2016	29/06/2016
Benzo(a)pyrene	ng/m^3	8.29E-02	7.80E-03	0.051	0.083	0.026	0.028	0.074	0.012	-	0.008
1-Methylnaphthalene	ng/m^3	8.96E+00	2.25E+00	2.25E+00	8.96E+00	4.24E+00	7.30E+00	8.58E+00	3.58E+00	-	2.81E+00
2-Methylnaphthalene	ng/m^3	1.81E+01	3.45E+00	3.45E+00	1.81E+01	7.39E+00	1.28E+01	1.67E+01	5.90E+00	-	4.82E+00
Acenaphthene	ng/m^3	9.44E+00	8.08E-01	8.08E-01	6.35E+00	3.64E+00	6.45E+00	9.44E+00	5.51E+00	-	3.54E+00
Acenaphthylene	ng/m^3	1.05E-01	6.34E-02	7.32E-02	1.05E-01	7.11E-02	9.75E-02	6.34E-02	9.79E-02	-	1.04E-01
Anthracene	ng/m^3	1.05E-01	6.34E-02	7.32E-02	1.05E-01	7.11E-02	9.75E-02	6.34E-02	9.79E-02	-	1.04E-01
Benzo(a)anthracene	ng/m^3	1.05E-01	6.34E-02	7.32E-02	1.05E-01	7.11E-02	9.75E-02	6.34E-02	9.79E-02	-	1.04E-01
Benzo(a)fluorene	ng/m^3	2.11E-01	1.27E-01	1.46E-01	2.11E-01	1.42E-01	1.95E-01	1.27E-01	1.96E-01	-	2.09E-01
Benzo(b)fluoranthene	ng/m^3	2.48E+00	6.34E-02	7.32E-02	1.05E-01	7.11E-02	9.75E-02	6.34E-02	2.48E+00	-	1.04E-01
Benzo(b)fluorene	ng/m^3	2.11E-01	1.27E-01	1.46E-01	2.11E-01	1.42E-01	1.95E-01	1.27E-01	1.96E-01	-	2.09E-01
Benzo(e)pyrene	ng/m^3	2.11E-01	1.27E-01	1.46E-01	2.11E-01	1.42E-01	1.95E-01	1.27E-01	1.96E-01	-	2.09E-01
Benzo(g,h,i)perylene	ng/m^3	2.45E+00	6.34E-02	7.32E-02	1.05E-01	1.93E-01	9.75E-02	6.34E-02	2.45E+00	-	1.04E-01
Benzo(k)fluoranthene	ng/m^3	2.51E+00	6.34E-02	7.32E-02	1.05E-01	7.11E-02	9.75E-02	6.34E-02	2.51E+00	-	1.04E-01
Biphenyl	ng/m^3	4.82E+00	1.34E+00	1.40E+00	4.64E+00	2.36E+00	3.93E+00	4.82E+00	2.17E+00	-	1.34E+00
Chrysene	ng/m^3	1.05E-01	6.34E-02	7.32E-02	1.05E-01	7.11E-02	9.75E-02	6.34E-02	9.79E-02	-	1.04E-01
Dibenz(a,h)anthracene	ng/m^3	2.79E+00	6.34E-02	7.32E-02	1.05E-01	1.48E-01	9.75E-02	6.34E-02	2.79E+00	-	1.04E-01
Dibenzo(a,c) anthracene + Picene	ng/m^3	3.00E+00	1.27E-01	1.46E-01	1.41E-01	1.42E-01	1.95E-01	1.27E-01	3.00E+00	-	2.09E-01
Fluoranthene	ng/m^3	1.46E+00	4.61E-01	4.68E-01	6.91E-01	4.61E-01	8.81E-01	7.51E-01	1.46E+00	-	6.94E-01
Indeno(1,2,3-cd)pyrene	ng/m^3	2.82E+00	6.34E-02	7.32E-02	1.05E-01	7.11E-02	9.75E-02	6.34E-02	2.82E+00	-	1.04E-01
Naphthalene	ng/m^3	3.22E+01	1.18E+01	1.40E+01	3.09E+01	1.98E+01	2.83E+01	3.22E+01	1.39E+01	-	1.18E+01
o-Terphenyl	ng/m^3	2.11E-01	1.27E-01	1.46E-01	2.11E-01	1.42E-01	1.95E-01	1.27E-01	1.96E-01	-	2.09E-01
Perylene	ng/m^3	2.11E-01	1.27E-01	1.46E-01	2.11E-01	1.42E-01	1.95E-01	1.27E-01	1.96E-01	-	2.09E-01
Phenanthrene	ng/m^3	7.91E+00	1.48E+00	1.48E+00	4.44E+00	3.16E+00	6.76E+00	6.27E+00	7.91E+00	-	3.82E+00
Pyrene	ng/m^3	4.86E-01	2.58E-01	2.58E-01	3.62E-01	2.96E-01	3.82E-01	3.40E-01	4.86E-01	-	3.01E-01
Tetralin	ng/m^3	2.08E+00	6.79E-01	1.08E+00	2.08E+00	1.08E+00	1.92E+00	1.34E+00	6.79E-01	-	8.91E-01
Total PAH	ng/m^3	8.18E+01	2.68E+01	2.68E+01	7.87E+01	4.42E+01	7.09E+01	8.18E+01	5.90E+01	-	3.22E+01

Note:

1. These parameters have not been subjected to Maxxam's standard validation process nor has it been accredited for the submitted matrix.

2. Minor bird damage to pre-filter. The sample results were comparable to other stations, therefore the results were considered valid.

Polycyclic Aromatic Hydrocarbons	Rundle Road Station																	
Location				Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle	
Date	dd/mm/yyyy			06/04/2016		18/04/2016		30/04/2016		12/05/2016		24/05/2016		05/06/2016		17/06/2016		29/06/2016	
Start Time	hh:mm			0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	hours			23.39		22.81		23.42		24.05		23.97		5.14		24.39		23.28	
Technician				TH		TH		TH/KM		TH/KM		KM/BB		KM		TH		TH	
Filter Number				CBK975-01		CBL017-01		CBL033-01		CGE410-01		CGE526-01		N/A		CKD229-01		CKE124-01	
Maxaam ID				CDW125		CFM354		CHG245		CJC756		CKP268		N/A		COP391		CQA994	
Maxxam Job #				B670152		B678941		B688395		B698618		B6A6164		N/A		B6C7532		B6D5267	
Total Volumetric Flow	Am^3/sample			336.26		353.45		331.14		371.69		380.49		N/A		369.79		346.40	
Analytical Results	Units			Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL
Benzo(a)pyrene	µg			0.0174	0.0044	0.0214	0.0067	0.0100	0.0042	0.0124	0.0016	0.0253	0.0041	Sample invalidated - did not run for sufficient time		0.011	0.011	0.0082	0.0029
1-Methylnaphthalene	µg			1.22	0.10	1.89	0.15	1.32	0.10	2.96	0.15	2.94	0.10			3.25	0.10	1.47	0.15
2-Methylnaphthalene	µg			2.00	0.10	3.57	0.15	2.19	0.10	5.39	0.15	5.25	0.10			5.81	0.10	2.54	0.15
Acenaphthene	µg			0.616	0.050	2.08	0.075	1.49	0.050	2.75	0.075	3.58	0.050			3.81	0.050	2.00	0.075
Acenaphthylene	µg			<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050			<0.050	0.050	<0.075	0.075
Anthracene	µg			<0.050	0.050	<0.075	0.075	0.062	0.050	0.156	0.075	0.126	0.050			0.182	0.050	0.138	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			<0.050	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			<0.10	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			<0.050	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			<0.10	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			<0.10	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			<0.050	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			<0.050	0.050	<0.075	0.075
Biphenyl	µg			0.64	0.10	1.00	0.15	0.69	0.10	1.39	0.15	1.50	0.10			1.37	0.10	0.64	0.15
Chrysene	µg			<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050			<0.050	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			<0.050	0.050	<0.075	0.075
Dibenzo(a,c) anthracene + Picene [1]	µg			<0.10	0.10	<0.10	0.10	<0.10	0.10	<0.15	0.15	<0.10	0.10			<0.10	0.10	<0.15	0.15
Fluoranthene	µg			0.218	0.050	0.546	0.075	0.428	0.050	0.984	0.075	1.05	0.050			1.39	0.050	0.735	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			<0.050	0.050	<0.075	0.075
Naphthalene	µg			6.67	0.072	7.17	0.11	5.81	0.072	18.3	0.11	10.8	0.072			9.90	0.072	5.38	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			<0.10	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			<0.10	0.10	<0.15	0.15
Phenanthrene	µg			0.668	0.050	2.57	0.075	1.74	0.050	4.26	0.075	4.85	0.050			5.62	0.050	3.24	0.075
Pyrene	µg			0.126	0.050	0.225	0.075	0.182	0.050	0.387	0.075	0.438	0.050			0.558	0.050	0.318	0.075
Tetralin	µg			0.53	0.10	0.61	0.15	0.36	0.10	1.23	0.15	0.69	0.10			0.94	0.10	0.47	0.15

Calculated Concentrations	Quarter 2			Rundle 6	Rundle 7	Rundle 8	Rundle 9	Rundle 10	Rundle 11	Rundle 12	Rundle 13
	Units	Maximum	Minimum	06/04/2016	18/04/2016	30/04/2016	12/05/2016	24/05/2016	05/06/2016	17/06/2016	29/06/2016
Benzo(a)pyrene	ng/m^3	6.65E-02	2.37E-02	5.17E-02	6.05E-02	3.02E-02	3.34E-02	6.65E-02	N/A	2.97E-02	2.37E-02
1-Methylnaphthalene	ng/m^3	8.79E+00	3.63E+00	3.63E+00	5.35E+00	3.99E+00	7.96E+00	7.73E+00	N/A	8.79E+00	4.24E+00
2-Methylnaphthalene	ng/m^3	1.57E+01	5.95E+00	5.95E+00	1.01E+01	6.61E+00	1.45E+01	1.38E+01	N/A	1.57E+01	7.33E+00
Acenaphthene	ng/m^3	1.03E+01	1.83E+00	1.83E+00	5.88E+00	4.50E+00	7.40E+00	9.41E+00	N/A	1.03E+01	5.77E+00
Acenaphthylene	ng/m^3	1.08E-01	6.57E-02	7.43E-02	1.06E-01	7.55E-02	1.01E-01	6.57E-02	N/A	6.76E-02	1.08E-01
Anthracene	ng/m^3	4.92E-01	7.43E-02	7.43E-02	1.06E-01	1.87E-01	4.20E-01	3.31E-01	N/A	4.92E-01	3.98E-01
Benzo(a)anthracene	ng/m^3	1.08E-01	6.57E-02	7.43E-02	1.06E-01	7.55E-02	1.01E-01	6.57E-02	N/A	6.76E-02	1.08E-01
Benzo(a)fluorene	ng/m^3	2.17E-01	1.31E-01	1.49E-01	2.12E-01	1.51E-01	2.02E-01	1.31E-01	N/A	1.35E-01	2.17E-01
Benzo(b)fluoranthene	ng/m^3	1.08E-01	6.57E-02	7.43E-02	1.06E-01	7.55E-02	1.01E-01	6.57E-02	N/A	6.76E-02	1.08E-01
Benzo(b)fluorene	ng/m^3	2.17E-01	1.31E-01	1.49E-01	2.12E-01	1.51E-01	2.02E-01	1.31E-01	N/A	1.35E-01	2.17E-01
Benzo(e)pyrene	ng/m^3	2.17E-01	1.31E-01	1.49E-01	2.12E-01	1.51E-01	2.02E-01	1.31E-01	N/A	1.35E-01	2.17E-01
Benzo(g,h,i)perylene	ng/m^3	1.08E-01	6.57E-02	7.43E-02	1.06E-01	7.55E-02	1.01E-01	6.57E-02	N/A	6.76E-02	1.08E-01
Benzo(k)fluoranthene	ng/m^3	1.08E-01	6.57E-02	7.43E-02	1.06E-01	7.55E-02	1.01E-01	6.57E-02	N/A	6.76E-02	1.08E-01
Biphenyl	ng/m^3	3.94E+00	1.85E+00	1.90E+00	2.83E+00	2.08E+00	3.74E+00	3.94E+00	N/A	3.70E+00	1.85E+00
Chrysene	ng/m^3	1.08E-01	6.57E-02	7.43E-02	1.06E-01	7.55E-02	1.01E-01	6.57E-02	N/A	6.76E-02	1.08E-01
Dibenz(a,h)anthracene	ng/m^3	1.08E-01	6.57E-02	7.43E-02	1.06E-01	7.55E-02	1.01E-01	6.57E-02	N/A	6.76E-02	1.08E-01
Dibenzo(a,c) anthracene + Picene	ng/m^3	2.17E-01	1.31E-01	1.49E-01	1.41E-01	1.51E-01	2.02E-01	1.31E-01	N/A	1.35E-01	2.17E-01
Fluoranthene	ng/m^3	3.76E+00	6.48E-01	6.48E-01	1.54E+00	1.29E+00	2.65E+00	2.76E+00	N/A	3.76E+00	2.12E+00
Indeno(1,2,3-cd)pyrene	ng/m^3	1.08E-01	6.57E-02	7.43E-02	1.06E-01	7.55E-02	1.01E-01	6.57E-02	N/A	6.76E-02	1.08E-01
Naphthalene	ng/m^3	4.92E+01	1.55E+01	1.98E+01	2.03E+01	1.75E+01	4.92E+01	2.84E+01	N/A	2.68E+01	1.55E+01
o-Terphenyl	ng/m^3	2.17E-01	1.31E-01	1.49E-01	2.12E-01	1.51E-01	2.02E-01	1.31E-01	N/A	1.35E-01	2.17E-01
Perylene	ng/m^3	2.17E-01	1.31E-01	1.49E-01	2.12E-01	1.51E-01	2.02E-01	1.31E-01	N/A	1.35E-01	2.17E-01
Phenanthrene	ng/m^3	1.52E+01	1.99E+00	1.99E+00	7.27E+00	5.25E+00	1.15E+01	1.27E+01	N/A	1.52E+01	9.35E+00
Pyrene	ng/m^3	1.51E+00	3.75E-01	3.75E-01	6.37E-01	5.50E-01	1.04E+00	1.15E+00	N/A	1.51E+00	9.18E-01
Tetralin	ng/m^3	3.31E+00	1.09E+00	1.58E+00	1.73E+00	1.09E+00	3.31E+00	1.81E+00	N/A	2.54E+00	1.36E+00
Total PAH	ng/m^3	1.04E+02	3.93E+01	3.93E+01	5.78E+01	4.46E+01	1.04E+02	8.34E+01	N/A	9.02E+01	5.11E+01

Note:

1. These parameters have not been subjected to Maxxam's standard validation process nor has it been accredited for the submitted matrix.

Appendix I DIOXINS AND FURANS DATA SUMMARY

Dioxins and Furans	Courtice WPCP Station												
Location		Courtice			Courtice			Courtice[2]			Courtice		
Date	dd/mm/yyyy	18/04/2016			12/05/2016			5/06/2016			29/06/2016		
Start Time	hh:mm	0:00			0:00			0:00			0:00		
Sample Duration	hours	24.29			23.78			23.61			23.53		
Technician		TH			TH/KM			KM			TH		
Filter Number		CBL018-01			CGE412-01			CGE565-01			CKE123-01		
Maxaam ID		CFM353			CJC755			CMS560			CQA993		
Maxxam Job #		B678941			B698618			B6B7903			B6D5267		
Total Volumetric Flow	Am^3/sample	355.86			384.71			383.08			359.04		
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	<2.0	2.0	1	<3.8	3.8	1	<4.0	4.0	1	<3.1	3.1	1
1,2,3,7,8-Penta CDD *	pg	<2.8	2.8	1	<3.0	3.0	1	<4.1	4.1	1	<3.5	3.5	1
1,2,3,4,7,8-Hexa CDD *	pg	<3.0	3.0	0.1	<2.8	2.8	0.1	<4.0	4.0	0.1	<3.9	3.9	0.1
1,2,3,6,7,8-Hexa CDD *	pg	<3.0	3.0	0.1	<2.8	2.8	0.1	<4.0	4.0	0.1	<4.0	4.0	0.1
1,2,3,7,8,9-Hexa CDD *	pg	<2.7	2.7	0.1	<3.2 (1)	3.2	0.1	<3.6	3.6	0.1	<3.5 (1)	3.5	0.1
1,2,3,4,6,7,8-Hepta CDD *	pg	24.5	2.7	0.01	18.5	3.5	0.01	5.9	3.2	0.01	<3.2	3.2	0.01
Octa CDD *	pg	70.8	3.0	0.0003	96.0	4.5	0.0003	36.1	3.2	0.0003	12.5	3.4	0.0003
Total Tetra CDD *	pg	<2.0	2.0		<14 (1)	14		<4.0	4.0		<3.1	3.1	
Total Penta CDD *	pg	<2.8	2.8		<7.3 (1)	7.3		<4.1	4.1		<5.8 (1)	5.8	
Total Hexa CDD *	pg	15.5	2.9		7.0	2.7		<7.9 (1)	7.9		<3.8	3.8	
Total Hepta CDD *	pg	55.2	2.7		44.0	3.5		13.8	3.2		3.7	3.2	
2,3,7,8-Tetra CDF **	pg	<3.3 (1)	3.3	0.1	<3.1	3.1	0.1	<4.1	4.1	0.1	<3.1	3.1	0.1
1,2,3,7,8-Penta CDF **	pg	<2.5	2.5	0.03	<3.3	3.3	0.03	<2.9	2.9	0.03	<3.5	3.5	0.03
2,3,4,7,8-Penta CDF **	pg	<2.5	2.5	0.3	<3.3	3.3	0.3	<2.9	2.9	0.3	<3.5	3.5	0.3
1,2,3,4,7,8-Hexa CDF **	pg	<3.4	3.4	0.1	<2.8	2.8	0.1	<3.5	3.5	0.1	<3.2	3.2	0.1
1,2,3,6,7,8-Hexa CDF **	pg	<3.2	3.2	0.1	<2.6	2.6	0.1	<3.2	3.2	0.1	<2.9	2.9	0.1
2,3,4,6,7,8-Hexa CDF **	pg	<3.5	3.5	0.1	<2.8	2.8	0.1	<3.5	3.5	0.1	<3.2	3.2	0.1
1,2,3,7,8,9-Hexa CDF **	pg	<3.8	3.8	0.1	<3.0	3.0	0.1	<3.8	3.8	0.1	<3.5	3.5	0.1
1,2,3,4,6,7,8-Hepta CDF **	pg	4.8	1.9	0.01	3.4	2.3	0.01	<3.6	3.6	0.01	<2.9	2.9	0.01
1,2,3,4,7,8,9-Hepta CDF **	pg	<2.3	2.3	0.01	<2.7	2.7	0.01	<4.3	4.3	0.01	<3.6	3.6	0.01
Octa CDF **	pg	4.1	3.2	0.0003	6.3	3.2	0.0003	<3.3	3.3	0.0003	<3.4	3.4	0.0003
Total Tetra CDF **	pg	<3.3 (1)	3.3		<3.1	3.1		<4.1	4.1		<3.1	3.1	
Total Penta CDF **	pg	4.1	2.5		<3.3	3.3		<2.9	2.9		<3.5	3.5	
Total Hexa CDF **	pg	<3.4	3.4		<2.8	2.8		<3.5	3.5		<3.2	3.2	
Total Hepta CDF **	pg	4.8	2.1		3.4	2.5		<3.9	3.9		<3.2	3.2	
Toxic Equivalency	pg												

Notes:
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) Minor bird damage to pre-filter. The sample results were comparable to other stations, therefore the results were considered valid.
* CDD = Chloro Dibenzo-p-Dioxin ** CDF = Chloro Dibenzo-p-Furan

Calculated Concentrations	Quarter 2			Courtice	Courtice	Courtice2	Courtice
				4	5	6	7
	Units	Maximum	Minimum	18/04/2016	12/05/2016	5/06/2016	29/06/2016
2,3,7,8-Tetra CDD *	pg/m^3	0.005220789	0.002810059	0.003	0.005	0.005	0.004
1,2,3,7,8-Penta CDD *	pg/m^3	0.005351309	0.003899065	0.004	0.004	0.005	0.005
1,2,3,4,7,8-Hexa CDD *	pg/m^3	0.005431188	0.003639127	0.004	0.004	0.005	0.005
1,2,3,6,7,8-Hexa CDD *	pg/m^3	0.005570449	0.003639127	0.004	0.004	0.005	0.006
1,2,3,7,8,9-Hexa CDD *	pg/m^3	0.004874143	0.003793579	0.004	0.004	0.005	0.005
1,2,3,4,6,7,8-Hepta CDD *	pg/m^3	0.068846436	0.004456359	0.069	0.048	0.015	0.004
Octa CDD *	pg/m^3	0.249540167	0.034815306	0.199	0.250	0.094	0.035
Total Tetra CDD *	pg/m^3	0.018195637	0.002810059	0.003	0.018	0.005	0.004
Total Penta CDD *	pg/m^3	0.009487725	0.003934082	0.004	0.009	0.005	0.008
Total Hexa CDD *	pg/m^3	0.043555909	0.005291927	0.044	0.018	0.010	0.005
Total Hepta CDD *	pg/m^3	0.155115236	0.010305331	0.155	0.114	0.036	0.010
2,3,7,8-Tetra CDF **	pg/m^3	0.005351309	0.004029034	0.005	0.004	0.005	0.004
1,2,3,7,8-Penta CDF **	pg/m^3	0.004874143	0.003512573	0.004	0.004	0.004	0.005
2,3,4,7,8-Penta CDF **	pg/m^3	0.004874143	0.003512573	0.004	0.004	0.004	0.005
1,2,3,4,7,8-Hexa CDF **	pg/m^3	0.0047771	0.003639127	0.005	0.004	0.005	0.004
1,2,3,6,7,8-Hexa CDF **	pg/m^3	0.004496094	0.00337919	0.004	0.003	0.004	0.004
2,3,4,6,7,8-Hexa CDF **	pg/m^3	0.004917603	0.003639127	0.005	0.004	0.005	0.004
1,2,3,7,8,9-Hexa CDF **	pg/m^3	0.005339111	0.003899065	0.005	0.004	0.005	0.005
1,2,3,4,6,7,8-Hepta CDF **	pg/m^3	0.013488281	0.004038576	0.013	0.009	0.005	0.004
1,2,3,4,7,8,9-Hepta CDF **	pg/m^3	0.005612348	0.003231567	0.003	0.004	0.006	0.005
Octa CDF **	pg/m^3	0.016376073	0.004307151	0.012	0.016	0.004	0.005
Total Tetra CDF **	pg/m^3	0.005351309	0.004029034	0.005	0.004	0.005	0.004
Total Penta CDF **	pg/m^3	0.01152124	0.003785072	0.012	0.004	0.004	0.005
Total Hexa CDF **	pg/m^3	0.0047771	0.003639127	0.005	0.004	0.005	0.004
Total Hepta CDF **	pg/m^3	0.013488281	0.004456359	0.013	0.009	0.005	0.004
Toxic Equivalency	pg/m^3						
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	0.015984294	0.012461121	0.012	0.014	0.016	0.015
Calculated TEQ Concentrations	**Units**			**Courtice**	**Courtice**	**Courtice2**	**Courtice**
				18/04/2016	**12/05/2016**	**05/06/2016**	**29/06/2016**
2,3,7,8-Tetra CDD *	pg TEQ/m^3			0.003	0.005	0.005	0.004
1,2,3,7,8-Penta CDD	pg TEQ/m^3			0.004	0.004	0.005	0.005
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3			0.0004	0.0004	0.0005	0.0005
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3			0.0004	0.0004	0.0005	0.0006
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3			0.0004	0.0004	0.0005	0.0005
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3			0.0007	0.0005	0.0002	0.0000
Octa CDD	pg TEQ/m^3			0.00006	0.00007	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	0.0005	0.0004
1,2,3,7,8-Penta CDF	pg TEQ/m^3			0.0001	0.0001	0.0001	0.0001
2,3,4,7,8-Penta CDF	pg TEQ/m^3			0.001	0.001	0.001	0.001
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3			0.0005	0.0004	0.0005	0.0004
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3			0.0004	0.0003	0.0004	0.0004
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3			0.0005	0.0004	0.0005	0.0004
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3			0.0005	0.0004	0.0005	0.0005
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3			0.00013	0.00009	0.00005	0.00004
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3			0.00003	0.00004	0.00006	0.00005
Octa CDF	pg TEQ/m^3			0.000003	0.000005	0.000001	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			0.012	0.014	0.016	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

Dioxins and Furans	Rundle Road Station											
Location		Rundle			Rundle			Rundle			Rundle		
Date	dd/mm/yyyy	18/04/2016			12/05/2016			5/06/2016			29/06/2016		
Start Time	hh:mm	0:00			0:00			0:00			0:00		
Sample Duration	hours	22.81			24.05			5.14			23.28		
Technician		TH			TH/KM			KM			TH		
Filter Number		CBL017-01			CGE410-01			CGE-564-01			CKE124-01		
Maxaam ID		CFM354			CJC756			N/A			CQA994		
Maxxam Job #		B678941			B698618			N/A			B6D5267		
Total Volumetric Flow	Am^3/sample	353.45			371.69			N/A			346.40		
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	<2.3	2.3	1	<3.5	3.5	1			1	<3.2	3.2	1
1,2,3,7,8-Penta CDD *	pg	<2.7	2.7	1	<3.3	3.3	1			1	<3.5	3.5	1
1,2,3,4,7,8-Hexa CDD *	pg	<3.7	3.7	0.1	<3.4	3.4	0.1			0.1	<3.6	3.6	0.1
1,2,3,6,7,8-Hexa CDD *	pg	<3.7	3.7	0.1	<3.4	3.4	0.1			0.1	<3.6	3.6	0.1
1,2,3,7,8,9-Hexa CDD *	pg	4.9	3.3	0.1	<3.0	3.0	0.1			0.1	<3.2 (1)	3.2	0.1
1,2,3,4,6,7,8-Hepta CDD *	pg	32.1	2.2	0.01	24.6	2.5	0.01			0.01	5.8	3.2	0.01
Octa CDD *	pg	79.1	5.1	0.0003	129	3.1	0.0003			0.0003	43.9	3.5	0.0003
Total Tetra CDD *	pg	<2.3	2.3		<12 (1)	12					<3.2	3.2	
Total Penta CDD *	pg	4.3	2.7		<7.1 (1)	7.1					<5.6 (1)	5.6	
Total Hexa CDD *	pg	29.4	3.6		7.3	3.3					<3.5	3.5	
Total Hepta CDD *	pg	71.2	2.2		56.2	2.5					26.8	3.2	
2,3,7,8-Tetra CDF **	pg	<3.3 (1)	3.3	0.1	<3.1	3.1	0.1			0.1	<3.0	3.0	0.1
1,2,3,7,8-Penta CDF **	pg	<2.8	2.8	0.03	<3.5	3.5	0.03	Sample invalifated - did not run for sufficent time		0.03	<3.6	3.6	0.03
2,3,4,7,8-Penta CDF **	pg	<2.8	2.8	0.3	<3.5	3.5	0.3			0.3	<3.6	3.6	0.3
1,2,3,4,7,8-Hexa CDF **	pg	<2.3	2.3	0.1	<3.0	3.0	0.1			0.1	<3.1	3.1	0.1
1,2,3,6,7,8-Hexa CDF **	pg	<2.1	2.1	0.1	<2.8	2.8	0.1			0.1	<2.9	2.9	0.1
2,3,4,6,7,8-Hexa CDF **	pg	<2.3	2.3	0.1	<3.0	3.0	0.1			0.1	<3.1	3.1	0.1
1,2,3,7,8,9-Hexa CDF **	pg	<2.5	2.5	0.1	<3.3	3.3	0.1			0.1	<3.4	3.4	0.1
1,2,3,4,6,7,8-Hepta CDF **	pg	3.0	1.7	0.01	3.2	1.9	0.01			0.01	<2.8	2.8	0.01
1,2,3,4,7,8,9-Hepta CDF **	pg	<2.1	2.1	0.01	<2.4	2.4	0.01			0.01	<3.4	3.4	0.01
Octa CDF **	pg	4.8	3.2	0.0003	4.7	3.1	0.0003			0.0003	<3.2	3.2	0.0003
Total Tetra CDF **	pg	9.6	2.3		<3.1	3.1					<3.0	3.0	
Total Penta CDF **	pg	4.9	2.8		<3.5	3.5					<3.6	3.6	
Total Hexa CDF **	pg	3.6	2.3		<3.0	3.0					<3.1	3.1	
Total Hepta CDF **	pg	5.0	1.9		3.2	2.1					<3.0	3.0	
Toxic Equivalency	pg												

Notes:
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
* CDD = Chloro Dibenzo-p-Dioxin ** CDF = Chloro Dibenzo-p-Furan

Calculated Concentrations	Quarter 2			Rundle	Rundle	Rundle	Rundle
				4	5	6	7
	Units	Maximum	Minimum	18/04/2016	12/05/2016	5/06/2016	29/06/2016
2,3,7,8-Tetra CDD *	pg/m^3	4.71E-03	3.25E-03	0.003	0.005	N/A	0.005
1,2,3,7,8-Penta CDD	pg/m^3	5.05E-03	3.82E-03	0.004	0.004	N/A	0.005
1,2,3,4,7,8-Hexa CDD	pg/m^3	5.23E-03	4.57E-03	0.005	0.005	N/A	0.005
1,2,3,6,7,8-Hexa CDD	pg/m^3	5.23E-03	4.57E-03	0.005	0.005	N/A	0.005
1,2,3,7,8,9-Hexa CDD	pg/m^3	1.39E-02	4.04E-03	0.014	0.004	N/A	0.005
1,2,3,4,6,7,8-Hepta CDD	pg/m^3	9.08E-02	1.67E-02	0.091	0.066	N/A	0.017
Octa CDD	pg/m^3	3.47E-01	1.27E-01	0.224	0.347	N/A	0.127
Total Tetra CDD	pg/m^3	1.61E-02	3.25E-03	0.003	0.016	N/A	0.005
Total Penta CDD	pg/m^3	1.22E-02	8.08E-03	0.012	0.010	N/A	0.008
Total Hexa CDD	pg/m^3	8.32E-02	5.05E-03	0.083	0.020	N/A	0.005
Total Hepta CDD	pg/m^3	2.01E-01	7.74E-02	0.201	0.151	N/A	0.077
2,3,7,8-Tetra CDF **	pg/m^3	4.67E-03	4.17E-03	0.005	0.004	N/A	0.004
1,2,3,7,8-Penta CDF	pg/m^3	5.20E-03	3.96E-03	0.004	0.005	N/A	0.005
2,3,4,7,8-Penta CDF	pg/m^3	5.20E-03	3.96E-03	0.004	0.005	N/A	0.005
1,2,3,4,7,8-Hexa CDF	pg/m^3	4.47E-03	3.25E-03	0.003	0.004	N/A	0.004
1,2,3,6,7,8-Hexa CDF	pg/m^3	4.19E-03	2.97E-03	0.003	0.004	N/A	0.004
2,3,4,6,7,8-Hexa CDF	pg/m^3	4.47E-03	3.25E-03	0.003	0.004	N/A	0.004
1,2,3,7,8,9-Hexa CDF	pg/m^3	4.91E-03	3.54E-03	0.004	0.004	N/A	0.005
1,2,3,4,6,7,8-Hepta CDF	pg/m^3	8.61E-03	4.04E-03	0.008	0.009	N/A	0.004
1,2,3,4,7,8,9-Hepta CDF	pg/m^3	4.91E-03	2.97E-03	0.003	0.003	N/A	0.005
Octa CDF	pg/m^3	1.36E-02	4.62E-03	0.014	0.013	N/A	0.005
Total Tetra CDF	pg/m^3	2.72E-02	4.17E-03	0.027	0.004	N/A	0.004
Total Penta CDF	pg/m^3	1.39E-02	4.71E-03	0.014	0.005	N/A	0.005
Total Hexa CDF	pg/m^3	1.02E-02	4.04E-03	0.010	0.004	N/A	0.004
Total Hepta CDF	pg/m^3	1.41E-02	4.33E-03	0.014	0.009	N/A	0.004
Toxic Equivalency	pg/m^3						
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	0.015	0.014	0.014	0.015	N/A	0.015
Calculated TEQ Concentrations	**Units**			**Rundle**	**Rundle**	**Rundle**	**Rundle**
				18/04/2016	**12/05/2016**	**05/06/2016**	**29/06/2016**
2,3,7,8-Tetra CDD *	pg TEQ/m^3			0.003	0.005	N/A	0.005
1,2,3,7,8-Penta CDD	pg TEQ/m^3			0.004	0.004	N/A	0.005
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3			0.0005	0.0005	N/A	0.0005
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3			0.0005	0.0005	N/A	0.0005
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3			0.0014	0.0004	N/A	0.0005
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3			0.0009	0.0007	N/A	0.0002
Octa CDD	pg TEQ/m^3			0.00007	0.00010	N/A	0.00004
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	N/A	0.0004
1,2,3,7,8-Penta CDF	pg TEQ/m^3			0.0001	0.0001	N/A	0.0002
2,3,4,7,8-Penta CDF	pg TEQ/m^3			0.001	0.001	N/A	0.002
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3			0.0003	0.0004	N/A	0.0004
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3			0.0003	0.0004	N/A	0.0004
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3			0.0003	0.0004	N/A	0.0004
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3			0.0004	0.0004	N/A	0.0005
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3			0.00008	0.00009	N/A	0.00004
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3			0.00003	0.00003	N/A	0.00005
Octa CDF	pg TEQ/m^3			0.000004	0.000004	N/A	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			0.014	0.015	0.000	0.015

Notes:
RDL = Reportable 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