Quarterly Ambient Air Quality Monitoring Report for the Durham York Energy Centre – April to June 2014

Durham York Energy Centre

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Sign-off Sheet

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Executive Summary

The Regional Municipalities of Durham and York are constructing 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 Ambient Air Quality Monitoring Plan - Durham York Residual Waste Study (Stantec, May 8, 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 (MOE, 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, the two stations have measured the following air contaminants:

- Sulphur Dioxide (SO_2);
- Nitrogen Oxides (NO_X);
- Particulate Matter smaller than 2.5 microns ($PM_{2.5}$);
- Metals in total suspended particulate matter (TSP);
- Polycyclic Aromatic Hydrocarbons (PAHs); and,
- Dioxins and Furans.

Meteorological data is also measured at the two stations. The predominantly downwind Rundle Road station measures horizontal wind speed, wind direction, atmospheric temperature, relative humidity and rainfall. The predominantly upwind Courtice station measures atmospheric temperature, relative humidity, rainfall and barometric pressure. Wind speed and wind direction data at the predominantly upwind location are available from the Courtice Water Pollution Control Plant.

This quarterly report provides a summary of the ambient air quality data collected at these two stations for the period April to June 2014 (Calendar Quarter 2). During this quarter, a few minor instrumentation issues were encountered with well above acceptable data recovery rates for all measured air quality parameters. 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 levels of NO_2, SO_2 and $PM_{2.5}$ were below the applicable O.Reg. 419/05 criteria or human health risk assessment (HHRA) health-based standards presented in Table 2.2 of this report;

2. Since the Canada Wide Standard (CWS) 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 CWS would occur. Therefore no comparison of the measured $PM_{2.5}$ data to the CWS 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 MOE air quality criteria were well below their applicable criteria (as presented in Table 2.3 in this report);

4. The maximum measured concentrations of all PAHs with MOE air quality criteria were well below their applicable criteria shown in Table 2.4.

5. The maximum measured toxic equivalent dioxin and furan concentration was below the applicable criterion presented in Table 2.4; and,

6. In summary, all monitored contaminants were below their applicable MOE criteria during the monitoring period between April to June 2014. All measured levels of all monitored contaminants were below their applicable HHRA health-based standards.

Abbreviations

AAQC	Ambient Air Quality Criteria
CAC	Criteria Air Contaminants
D/Fs	Dioxins and Furans
DYEC	Durham York Energy Centre
EFW	Energy from Waste
MOE	Ontario Ministry of the Environment
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
Si	Silver
Tl	Thallium
Sn	Tin
V	Vanadium
Zn	Zinc

Miscellaneous	
°C	temperature in degrees Celsius
N/A	not available
%	percent
ppm (part per million)	mg/L, µg/mL, ng/µL
ppb (part per billion)	µg/L, ng/mL, pg/µL
ppt (part per trillion)	ng/L, pg/mL, fg/µL
min	minimum
max	maximum
$\mu g/m^3$	microgram per cubic metre

1.0 Introduction

1.1 BACKGROUND AND OBJECTIVES

The Regional Municipalities of Durham and York are constructing 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.

A monitoring plan, Ambient Air Quality Monitoring Plan - Durham York Residual Waste Study (Stantec, May 8, 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.

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 in the vicinity of the DYEC were set up in April 2013. Since May 2013, the two stations have measured the following air contaminants:

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

This quarterly report provides a summary of the ambient air quality data collected at these two stations for the period April to June 2014.

1.2 LOCATIONS OF AMBIENT AIR QUALITY MONITORING STATIONS

The selection of sites for the monitoring stations was done in consultation with the Ontario Ministry of Environment (MOE) and Durham/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 MOE 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 Monitoring Plan.

The selected downwind location is sited northeast of the DYEC in the vicinity of residential receptors predominantly downwind of the DYEC in this direction, and falls in the area where maximum annual concentrations are predicted to occur. The predominantly downwind station is located along Rundle Road, south of Baseline Road. Its location is shown in Figure 1-2. The monitoring station measures all the air contaminants listed in Section 1.1 and meteorological data. This station is referred to as the Rundle Road Station.

The predominately upwind station is sited at the Courtice Water Pollution Control Plant (WPCP), located to the southwest of the DYEC in order to measure background air quality in the predominantly upwind direction. The location is presented in Figure 1-2. This monitoring station measures the air contaminants presented in Section1.1, as well as meteorological data, with the exception of wind speed and wind direction, which are measured by and available from the Courtice Water Pollution Control Plant.

A third fence line station, which will measure metals and total particulate matter will be installed prior to full operation of the DYEC in 2014 and run for a one-year period.

Photographs of the Rundle Road and Courtice WPCP ambient air quality monitoring stations are shown in Figures 1-3 and 1-4 respectively.

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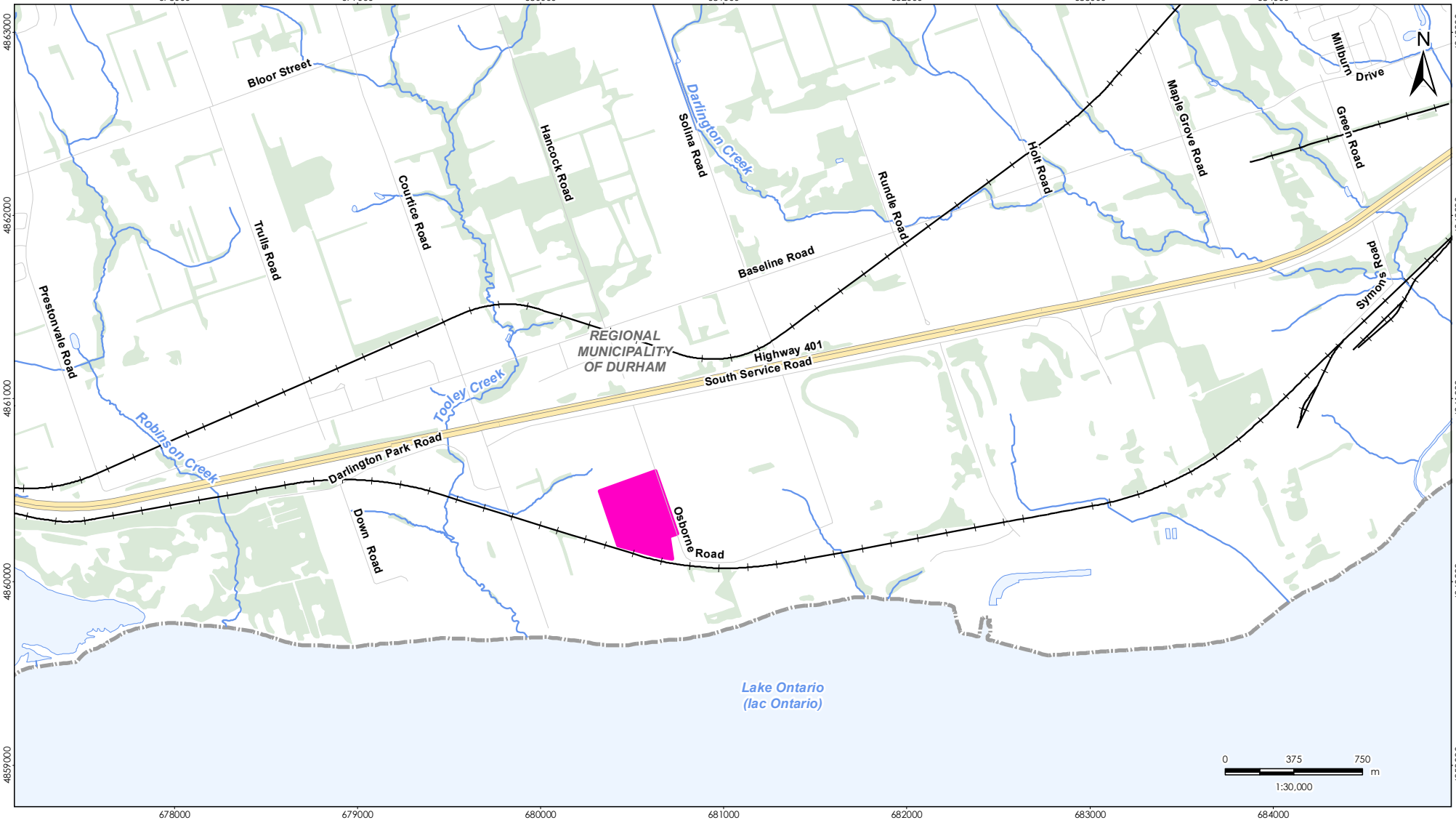

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Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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Legend

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

Client/Project

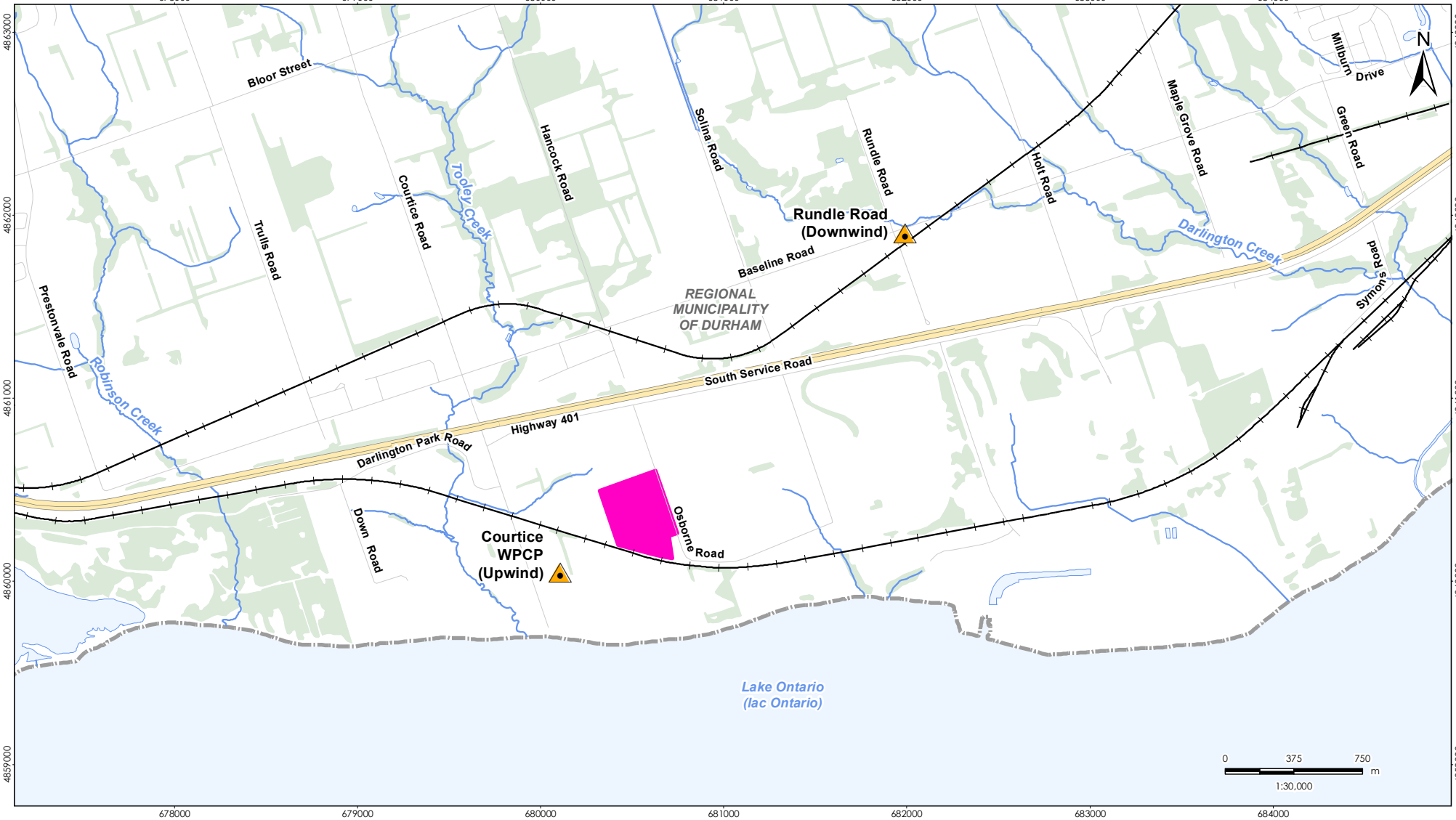
The Region of Durham
Durham York Energy Centre

Figure No.

1-1

Title

Site Location Plan



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Legend

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

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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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 Rundle Road Ambient Air Quality Monitoring Station

Figure 1-4 View of Courtice WPCP 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 Air Quality Monitoring Plan:

- Nitrogen Oxides (NO_X);
- Sulphur Dioxide (SO_2);
- Particulate Matter smaller than 2.5 microns ($PM_{2.5}$);
- Total Suspended Particulate (TSP) matter and metals;
- Polycyclic Aromatic Hydrocarbons (PAHs); and,
- Dioxins and Furans (D/Fs).

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 Air Quality Monitoring Plan.

<u>Metals:</u>

- 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 standards were used for comparison to the air quality data as specified in the Ambient Air Monitoring Plan. The first set of standards is the limits 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 criteria, or in some instances updated health-based standards 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 standards.

The currently applicable Canada-Wide Standard (CWS) for $PM_{2.5}$ of 30 µg/m^3 (98th percentile averaged over 3 consecutive years), is noted in Table 2-2. New Canadian Ambient Air Quality Standards (CAAQS) are being proposed as objectives to replace the existing CWS. The proposed CAAQS for $PM_{2.5}$ would be 28 µg/m^3 by 2015 and 27 µg/m^3 by 2020.

A summary of the relevant air quality criteria is presented in Tables 2-2 to 2-4 for CACs, metals and PAHs/dioxins and furans respectively.

Table 2-2 Summary of Air Quality Criteria for CACs

Contaminant	CAS	O. Reg 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards		
		1-Hour (µg/m^3)	24-Hour (µg/m^3)	Other time Period (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	Canada-Wide Standard			HHRA Health-Based Standards		
		1-Hour (µg/m^3)	24-Hour (µg/m^3)	Other time Period (µg/m^3)	1-Hour (µg/m^3)	24-Hour (µg/m^3)	Other time Period (µg/m^3)
$PM_{2.5}$	N/A		30 [B]			30 [C]	

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 Summary of Standards and Guidelines, the standard was also compared to the monitored NO_X.

B. CCME (2000), Canada-Wide Standards for Respirable Particulate Matter and Ozone, effective by 2010. The Respirable Particulate Matter Objective is referenced to the 98th percentile over 3 consecutive years.

C. HHRA Health-Based Standard for $PM_{2.5}$ was selected referencing CCME (2000).

Table 2-3 Summary of Air Quality Criteria for Metals

Contaminant	CAS	O. Reg 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards		
		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
Titanium	7440-32-6		120				

Table 2-3 Summary of Air Quality Criteria for Metals

Contaminant	CAS	O. Reg 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards		
		1-Hour (µg/m³)	24-Hour (µg/m³)	Other time Period (µg/m³)	1-Hour (µg/m³)	24-Hour (µg/m³)	Annual (µg/m³)
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 / AAQC			HHRA Health-Based Standards			
		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
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

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

Contaminant	CAS	O. Reg 419/05 – Schedule 3 / AAQC			HHRA Health-Based Standards			
		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] $(ng/m^3)^{-1}$
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
Tetralin	119-64-2	-						-
Dioxins and Furans Total Toxic Equivalency [e]	NA		0.1 (pg TEQ/m³) [F] 1 (pg TEQ/m³) [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 Schedule 6 Upper Risk Thresholds
D. O. Reg. 419 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 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. The monitors were set up in April 2013, and monitoring started in May 2013.

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

Table 3-1 Summary of Continuous Ambient Air Quality Monitors

Contaminant	Monitor	Principle of Operation	Range	Time Interval
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

Monitoring for metals in total suspended particulates (TSP), polycyclic aromatic hydrocarbons (PAHs) and dioxins and furans are conducted at both the Courtice WPCP (predominantly upwind) and Rundle Road (predominantly downwind) monitoring stations with non-continuous monitors, per the methodology and analyses described in the ambient air monitoring plan (Stantec, 2012) as presented in Table 3-2.

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 / Furans				24 hour sample taken every 24 days

The predominantly downwind Rundle Road station measures horizontal wind speed, wind direction, atmospheric temperature, relative humidity and rainfall. The predominantly upwind Courtice station measures atmospheric temperature, relative humidity, rainfall and barometric pressure. Wind speed and wind direction data at the predominantly upwind location are available from the Courtice Water Pollution Control Plant. The meteorological sensors at the Rundle Road station are mounted on an external 10-m aluminum tower and are logged using a digital data acquisition system (DAS). The meteorological equipment includes the following:

Table 3-3 Summary of Meteorological Equipment

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

A Campbell Scientific CRX1000 station data acquisition system is used to collect continuous instrument monitoring data and status codes from the 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

A few minor instrumentation issues were encountered during this quarter. A summary of operational issues for each measurement parameter during the monitoring period is presented in Tables 3-4 and 3-5.

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

Parameter	Issues	Time Frame	Remedial Action
SO_2	None		
NO_X	Sample flow warning message noted (likely due to a momentary power loss to the pump)	May 27, 2014	All data was intact. Cleared error message.
$PM_{2.5}$	None		
TSP/Metals Hi-Vol.	TSP hi-vol motor did not turn on for one sample run.	May 23, 2014	Inspect all electrical connections, check on/off switches. Always test on/off switches for future runs.
PAH/ D/F Hi-Vol	Motor failed at the end of a run due to misaligned motor brush.	April 8, 2014	Secured motor brush and recalibrated unit.
	Motor would not turn on due to motor brush issue.	May 22, 2014	Secured motor brush and recalibrated unit.
	7 day timer switch that feeds power to the rest of the system at startup failed	June 27, 2014	Replaced 7-day timer assembly with a new one. The sample ran on schedule and no data was lost.

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

Parameter	Issues	Time Frame	Remedial Action
SO_2	None		
NO_X	Sample pressure warning message noted. (likely due to a momentary power loss to the pump)	May 22, 2014	All data was intact. Cleared error message.
$PM_{2.5}$	None		
TSP/Metals Hi-Vol.	None		
PAH/ D/F Hi-Vol	None		

At the Rundle Road Station, occasional periods of zero NOx and SO_2 concentrations occurred during the month of June that were due to low ambient concentrations coupled with minor instrument drift. Since the monthly external calibrations on the instruments were well within the acceptable MOE guidelines for instrumentation drift, and ambient levels were very low during these periods, no drift correction to the measurements was required.

3.3 INSTRUMENTATION RECOVERY RATES

Data recovery rates for each continuous monitor at the two monitoring stations during Quarter 2 (April to June 2014) are presented in Tables 3-6 and 3-7.

Table 3-6 Summary of Data Recovery Rates for the Courtice WPCP Station (Predominately Upwind) – April to June 2014

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO_2	2177	99.7%
NO_X	2180	99.8%
$PM_{2.5}$	2180	99.8%
Temperature	2184	100%
Rainfall	2184	100%
Relative Humidity	2184	100%
Pressure	2184	100%
Wind Speed/Direction	2184	100%
TSP/Metals	13[A,B]	93%
PAHs	7[A, B]	100%
Dioxins and Furans	3[A, B]	100%

Note:
A. Number of filters/24-hour average samples.
B. One outstanding laboratory analysis in June is still being processed and was not included in this report. This sample will be included in the next quarterly report.

Table 3-7 Summary of Data Recovery Rates for the Rundle Road Station (Predominately Downwind) – April to June 2014

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO_2	2181	99.9%
NO_X	2181	99.9%
$PM_{2.5}$	2181	99.9%
Temperature	2184	100%
Rainfall	2184	100%
Relative Humidity	2184	100%
Wind Speed/Direction	2184	100%
TSP/Metals	14A, B	100%
PAHs	7A, B	100%
Dioxins and Furans	3[A, B]	100%

Note:
A. Number of filters/24-hour average samples.
B. One outstanding laboratory analysis in June is still being processed and was not included in this report. This sample will be included in the next quarterly report.

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 2014 period are presented in Table 4-1.

Table 4-1 Summary of Hourly Meteorological Measurements – April to June 2014

Parameter		Courtice WPCP (Predominately Upwind)	Rundle Road (Predominately Downwind)	Units
Temperature	Max	25.8	26.6	C
	Min	-6.1	-6.8	C
	Mean (April)	4.9	4.8	C
	Mean (May)	11.4	12.3	C
	Mean (June)	17.5	17.7	C
	Mean (Period)	11.3	11.6	C
	Standard Deviation	6.2	6.7	C
Rainfall	Max	12.4	13.7	mm
	Min	0.0	0.0	mm
	Mean (April)	0.15	0.17	mm
	Mean (May)	0.08	0.09	mm
	Mean (June)	0.10	0.13	mm
	Mean (Period)	0.11	0.13	mm
	Standard Deviation	0.62	0.74	mm
Relative Humidity	Max	99.1	100.0	%
	Min	25.1	26.7	%
	Mean (April)	69.7	70.8	%
	Mean (May)	71.8	70.9	%
	Mean (June)	73.1	75.3	%
	Mean (Period)	71.6	72.3	%
	Standard Deviation	15.4	17.0	%

Table 4-1 Summary of Hourly Meteorological Measurements – April to June 2014

Parameter		Courtice WPCP (Predominately Upwind)	Rundle Road (Predominately Downwind)	Units
Pressure [A]	Max	30.3	-	in Hg
	Min	29.0	-	in Hg
	Mean (April)	29.7	-	in Hg
	Mean (May)	29.7	-	in Hg
	Mean (June)	29.7	-	in Hg
	Mean (Period)	29.7	-	in Hg
	Standard Deviation	0.2	-	in Hg
Wind Speed [B]	Max	44.3	36.8	km/hr
	Min	0.4	0.2	km/hr
	Mean (April)	15.9	13.6	km/hr
	Mean (May)	9.9	10.5	km/hr
	Mean (June)	9.2	7.5	km/hr
	Mean (Period)	11.6	10.5	km/hr
	Standard Deviation	7.9	6.2	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.

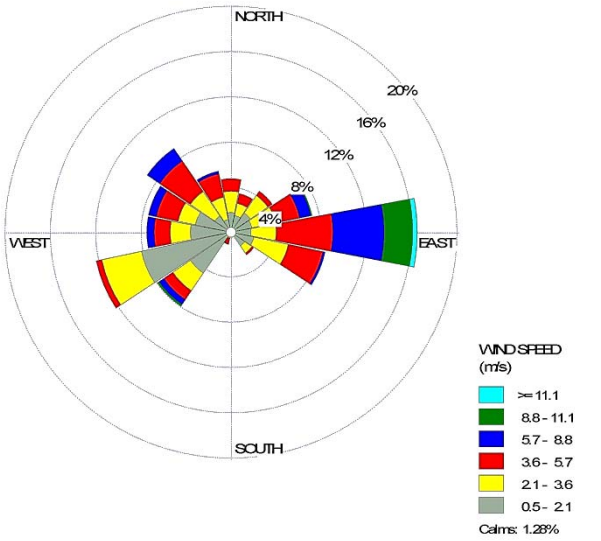
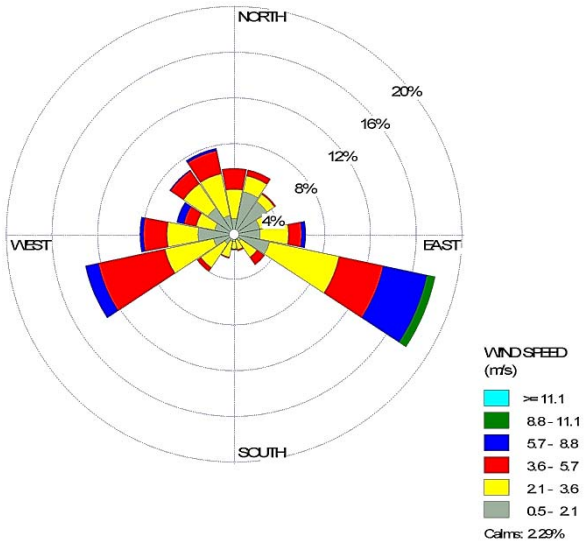
At the Courtice WPCP Station (located near Lake Ontario), wind data were measured and provided by the Courtice Water Pollution Control Plant on a 20-m tower, while at the Rundle Road Station they are measured on a 10-m tower.

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

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

At the Rundle Road Station, the wind rose showed predominant winds occurring from the east-southeasterly and west-southwesterly directions. Higher wind speeds are noted occurring from the east-southeasterly directions, with lower wind speeds from the northeast.

Figure 4-1 Wind Roses for April to June 2014

Courtice WPCP (Predominately Upwind) at 20-m Above Ground	Rundle Road (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 of the relevant Ontario ambient air quality criteria (AAQC) or health-based standard for each contaminant (if any occurred). All monitored contaminants were below their applicable criteria during the period between April and June, 2014.

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 Reg. 419 Schedule 3 criteria for NO_X which are based on health effects of NO_2. As specified in the MOE's listing of AAQCs (MOE, 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 Summary of Standards and Guidelines, the Schedule 3 criterion for NO_X (MOE, 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 2014

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP (Predominately Upwind)		Rundle Road (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
SO_2	1	250	690	Maximum	43.3	120.7	34.1	91.6
				Minimum	0.0	0.0	0.0	0.0
				Mean (April)	1.9	5.2	0.5	1.5
				Mean (May)	1.6	4.5	0.7	1.9
				Mean (June)	1.5	4.1	0.5	1.3
				Mean (Period)	1.7	4.6	0.6	1.6
				Standard Deviation	3.2	8.9	2.1	5.6
				# of Exceedances	0	0	0	0
	24	100	275	Maximum	15.6	43.7	4.2	11.2
				Minimum	0.0	0.0	0.0	0.0
				Mean (April)	1.9	5.2	0.5	1.5
				Mean (May)	1.6	4.4	0.7	1.9
				Mean (June)	1.5	4.2	0.5	1.3
				Mean (Period)	1.7	4.6	0.6	1.6
				Standard Deviation	1.7	4.7	0.7	1.8
				# of Exceedances	0	0	0	0
$PM_{2.5}$	24	N/A	30 [A]	Maximum	-	30.4	-	32.4
				Minimum	-	0.5	-	0.4
				Mean (April)	-	10.1	-	8.0
				Mean (May)	-	8.5	-	8.3
				Mean (June)	-	6.9	-	7.2
				Mean (Period)	-	8.5	-	7.8
				Standard Deviation	-	4.8	-	4.7
				# of Exceedances	-	N/A	-	N/A
NO_2	1	200 [B]	400 [B]	Maximum	46.0	92.6	62.2	117.4
				Minimum	0.4	0.8	0.0	0.0
				Mean (April)	8.9	18.0	6.6	13.3

Table 4-2 Summary of Ambient CAC Monitoring Data – April to June 2014

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP (Predominately Upwind)		Rundle Road (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
				Mean (May)	6.2	12.2	7.5	14.6
				Mean (June)	7.0	13.4	3.5	6.6
				Mean (Period)	7.4	14.5	5.9	11.5
				Standard Deviation	7.1	14.0	6.2	12.2
				# of Exceedances	0	0	0	0
	24	100 [B]	200 [B]	Maximum	21.7	43.4	16.9	32.2
				Minimum	1.8	3.5	0.0	0.0
				Mean (April)	9.1	18.4	6.7	13.4
				Mean (May)	6.2	12.2	7.5	14.5
				Mean (June)	7.0	13.6	3.5	6.7
				Mean (Period)	7.4	14.7	5.9	11.6
				Standard Deviation	3.5	7.0	3.6	7.1
				# of Exceedances	0	0	0	0
NO [C]	1	NA	NA	Maximum	64.1	84.6	32.9	41.8
				Minimum	0.3	0.4	0.0	0.0
				Mean (April)	3.1	4.1	1.9	2.4
				Mean (May)	2.6	3.4	2.0	2.5
				Mean (June)	3.5	4.4	1.2	1.6
				Mean (Period)	3.1	4.0	1.7	2.2
				Standard Deviation	4.2	5.4	2.6	3.3
				# of Exceedances	N/A	N/A	N/A	N/A
	24	NA	NA	Maximum	14.4	18.8	4.5	5.6
				Minimum	1.0	1.2	0.0	0.0
				Mean (April)	3.2	4.2	1.9	2.4
				Mean (May)	2.6	3.4	2.0	2.5
				Mean (June)	3.5	4.4	1.2	1.6
				Mean (Period)	3.1	4.0	1.7	2.2

Table 4-2 Summary of Ambient CAC Monitoring Data – April to June 2014

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP (Predominately Upwind)		Rundle Road (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
				Standard Deviation	1.7	2.2	0.9	1.2
				# of Exceedances	N/A	N/A	N/A	N/A
NO_X	1	200 [B]	400 [B]	Maximum	100.4	203.3	66.0	126.4
				Minimum	0.4	0.7	0.0	0.0
				Mean (April)	11.3	22.7	8.0	15.9
				Mean (May)	8.0	15.7	8.9	17.4
				Mean (June)	9.4	18.2	4.2	8.1
				Mean (Period)	9.6	18.8	7.1	13.9
				Standard Deviation	10.1	20.1	7.9	15.4
				# of Exceedances	0	0	0	0
	24	100 [B]	200 [B]	Maximum	35.3	70.8	20.8	39.8
				Minimum	2.3	4.3	0.0	0.0
				Mean (April)	11.6	23.2	8.0	16.0
				Mean (May)	8.0	15.7	8.9	17.4
				Mean (June)	9.5	18.3	4.3	8.2
				Mean (Period)	9.7	19.0	7.1	13.9
				Standard Deviation	4.8	9.7	4.3	8.5
				# of Exceedances	0	0	0	0

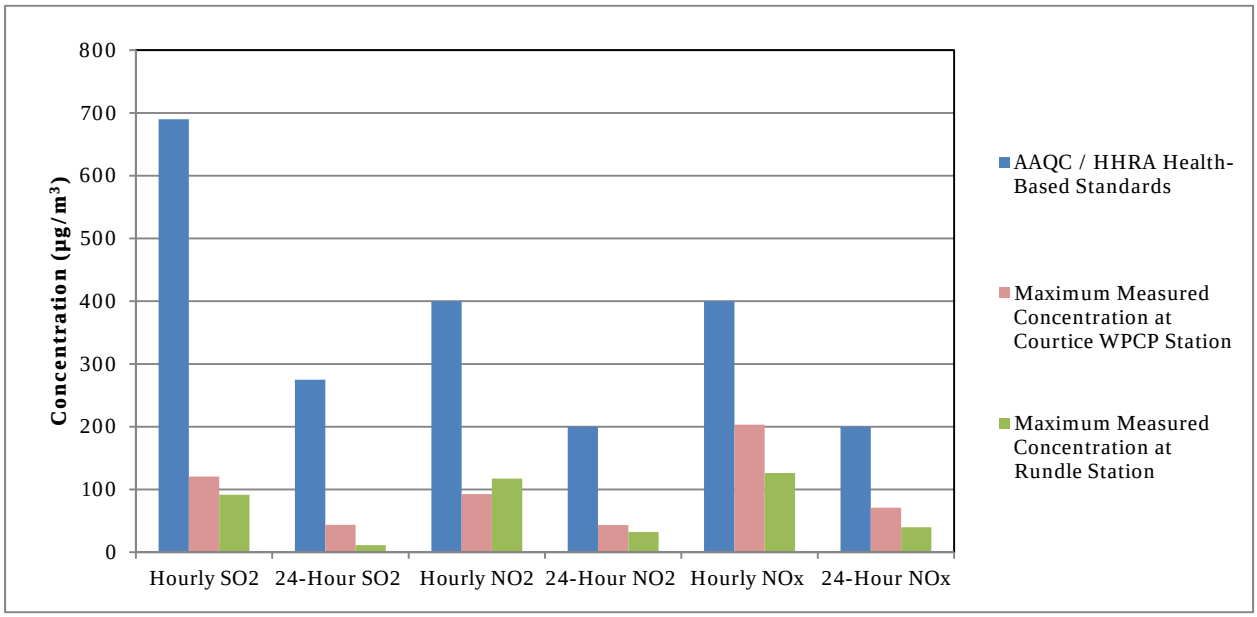
Note:

A. Canada-Wide Standards 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 Reg 419 Summary of Standards and Guidelines, the air standard for NO_X is compared to a monitored NO_X concentration, although the Reg419 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 A 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 690 µg/m³ and 275 µg/m³ are shown as blue lines on each plot. As shown in these figures, measured ambient SO_2 concentrations at both stations were well below the criteria.

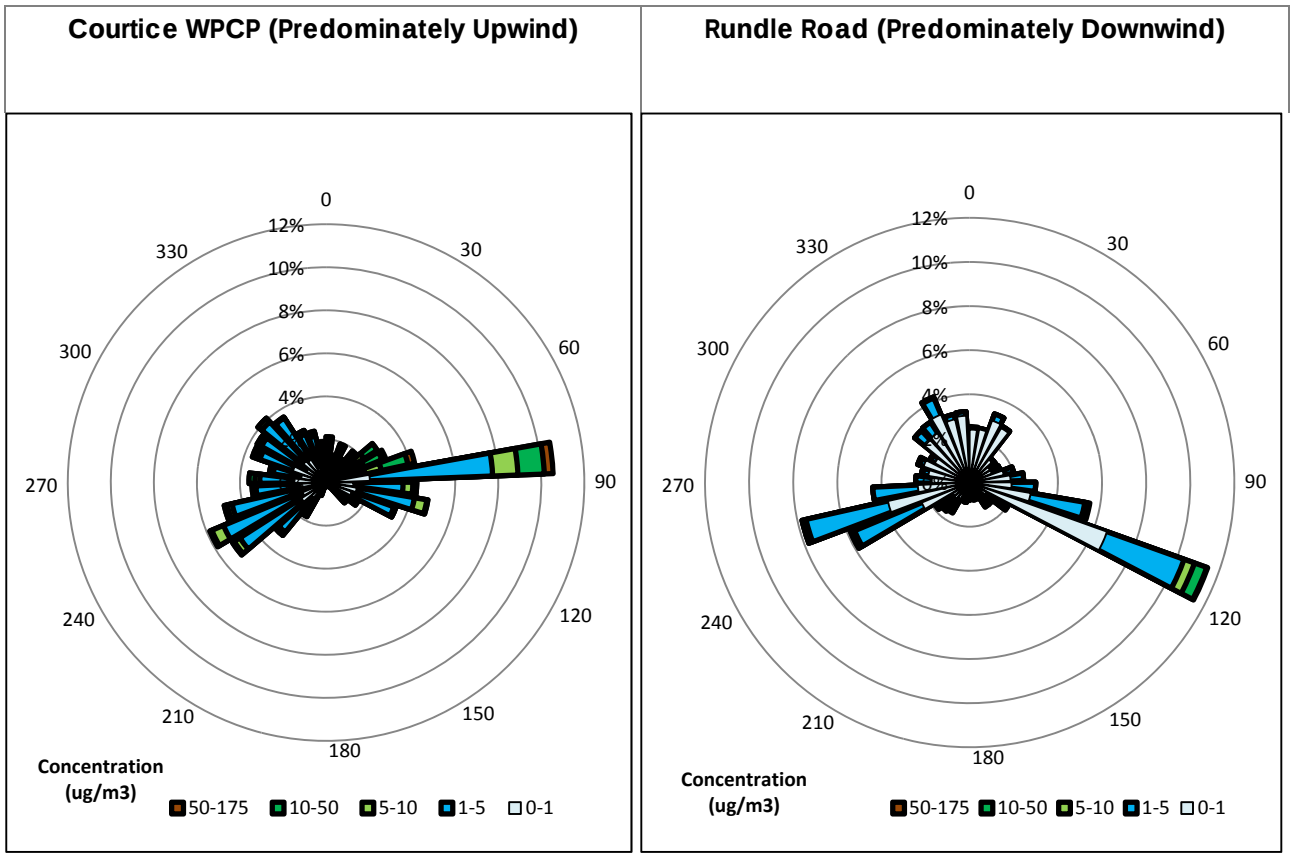
The maximum hourly and 24-hour average concentrations measured at the Courtice WPCP station during April to June 2014 were 121 and 44 µg/m³ respectively, which are 17% and 16% of the applicable 1-hour and 24-hour ambient air quality criteria.

The maximum hourly and 24-hour average concentrations measured at the Rundle Road station during this quarter were 92 and 11 µg/m³ respectively, which are 13% and 4% of the applicable 1-hour and 24-hour ambient air quality criteria.

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).

For the Courtice WPCP Station, higher hourly concentrations were measured when winds were blowing from the east. For the Rundle Road station, the maximum measured hourly concentration occurred for east-southeasterly winds.

Figure 4-3 Pollution Roses of Measured Hourly Average SO_2 Concentrations – April to June 2014



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 MOE 2012a). However, as per

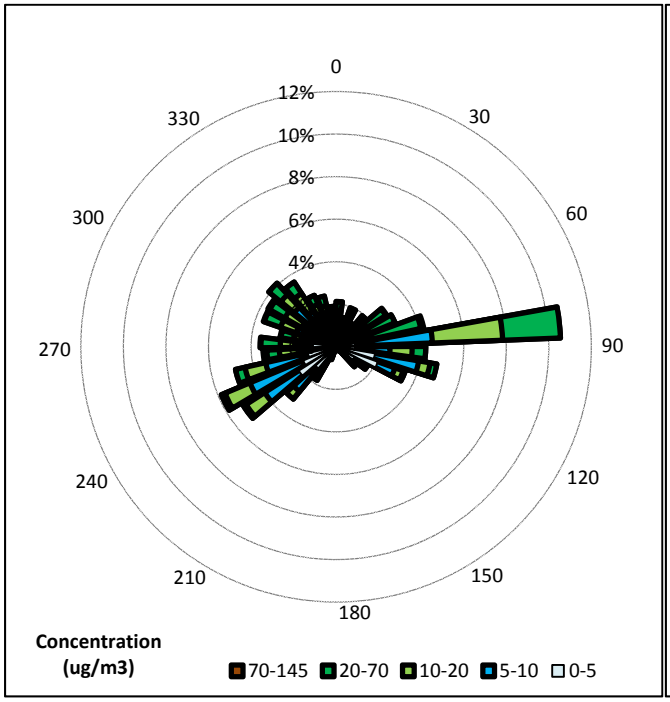
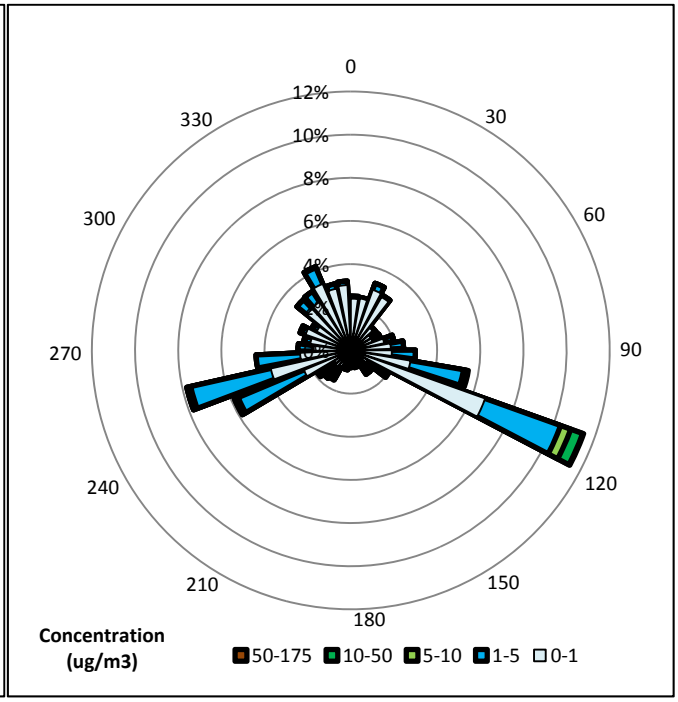
the current April 2012 version of O. Reg. 419 Summary of Standards and Guidelines, the Schedule 3 NO_X criteria were also compared to the monitored NO_X concentrations (see Section 4.2.3 below).

Data summaries are presented in Appendix B 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 400 µg/m^3 and 200 µg/m^3 are shown as blue lines on each plot. As shown in these figures, measured ambient NO_2 concentrations at both stations were well below the criteria.

The maximum hourly and 24-hour average NO_2 concentrations measured at the Courtice WPCP station during this quarter were 93 and 43 µg/m^3 respectively, which are 23% and 22% of the applicable 1-hour and 24-hour ambient air quality criteria. At the Rundle Road station, the maximum measured hourly and 24-hour average concentrations were 117 and 32 µg/m^3, which are 29% and 16% of the applicable 1-hour and 24-hour ambient air quality criteria.

Pollution roses of measured hourly average NO_2 concentrations are presented in Figure 4-4. The measured hourly average concentrations for the Courtice WPCP Station were higher for winds that occurred for easterly and westerly directions. For the Rundle Road Station, higher measured hourly average concentrations occurred for winds blowing from the east-southeast relative to other directions.

Figure 4-4 Pollution Roses of Measured Hourly Average NO_2 Concentrations – April to June 2014

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

4.2.3 Nitrogen Oxides (NO_X)

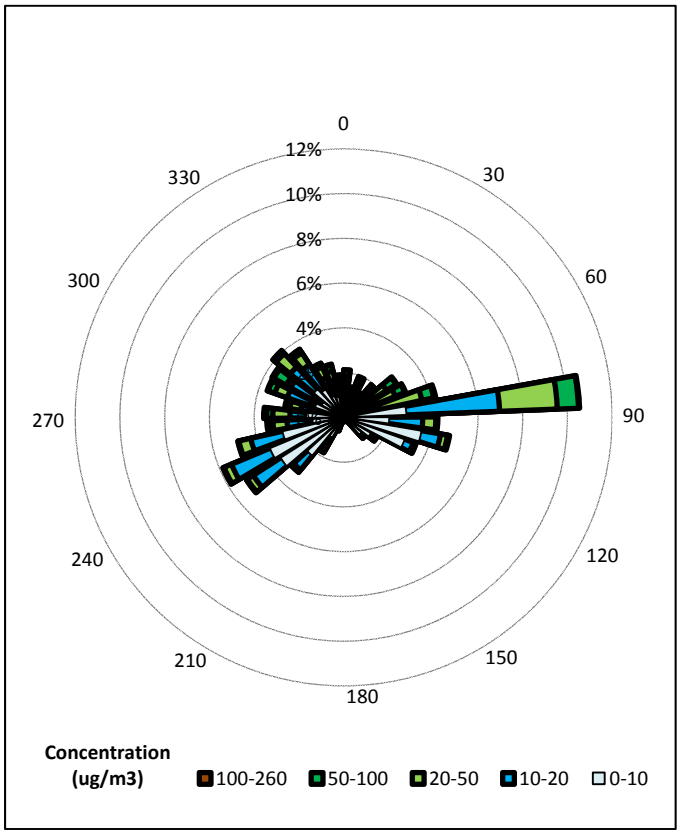
Data summaries are presented in Appendix C for nitrogen oxides for each station and month as well as time history plots of the hourly and 24-hour average NO_X concentrations. For the hourly and 24-hour averages, the Ontario Schedule 3 criteria of 400 µg/m³ and 200 µg/m³ are shown as blue lines on each 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 criteria during this quarter. The measured concentrations at the Rundle Road station were also well below the criteria.

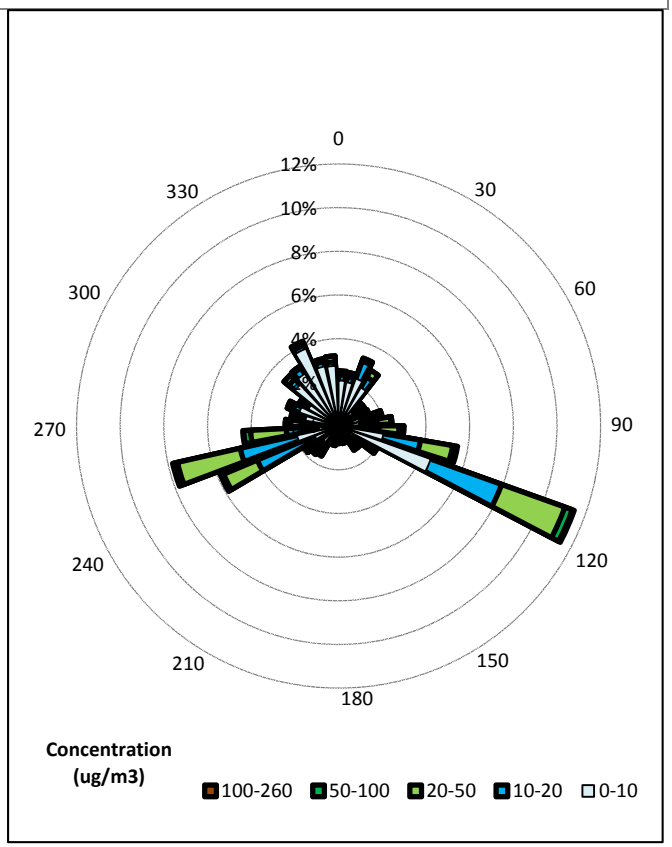
As indicated above and in Table 4-2, the maximum hourly NO_X concentration measured at the Courtice WPCP station was 203 µg/m³, which is 51% of the 1-hour ambient criteria. The 24-hour average NO_X concentration measured at this station was 71 µg/m³, which is 35% of the applicable 24-hour air quality criteria. At the Rundle Road Station, the maximum hourly and 24-hour average concentrations measured during this quarter were 126 and 40 µg/m³, which are 32% and 20% of the applicable air quality criteria.

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. In Figure 4-5, higher measured hourly average NO_X concentrations at the Courtice WPCP occurred for winds blowing from westerly directions. At the Rundle Road Station, the maximum measured hourly average concentration occurred for easterly winds.

Figure 4-5 Pollution Roses of Measured Hourly Average NO_X Concentrations – April to June 2014

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





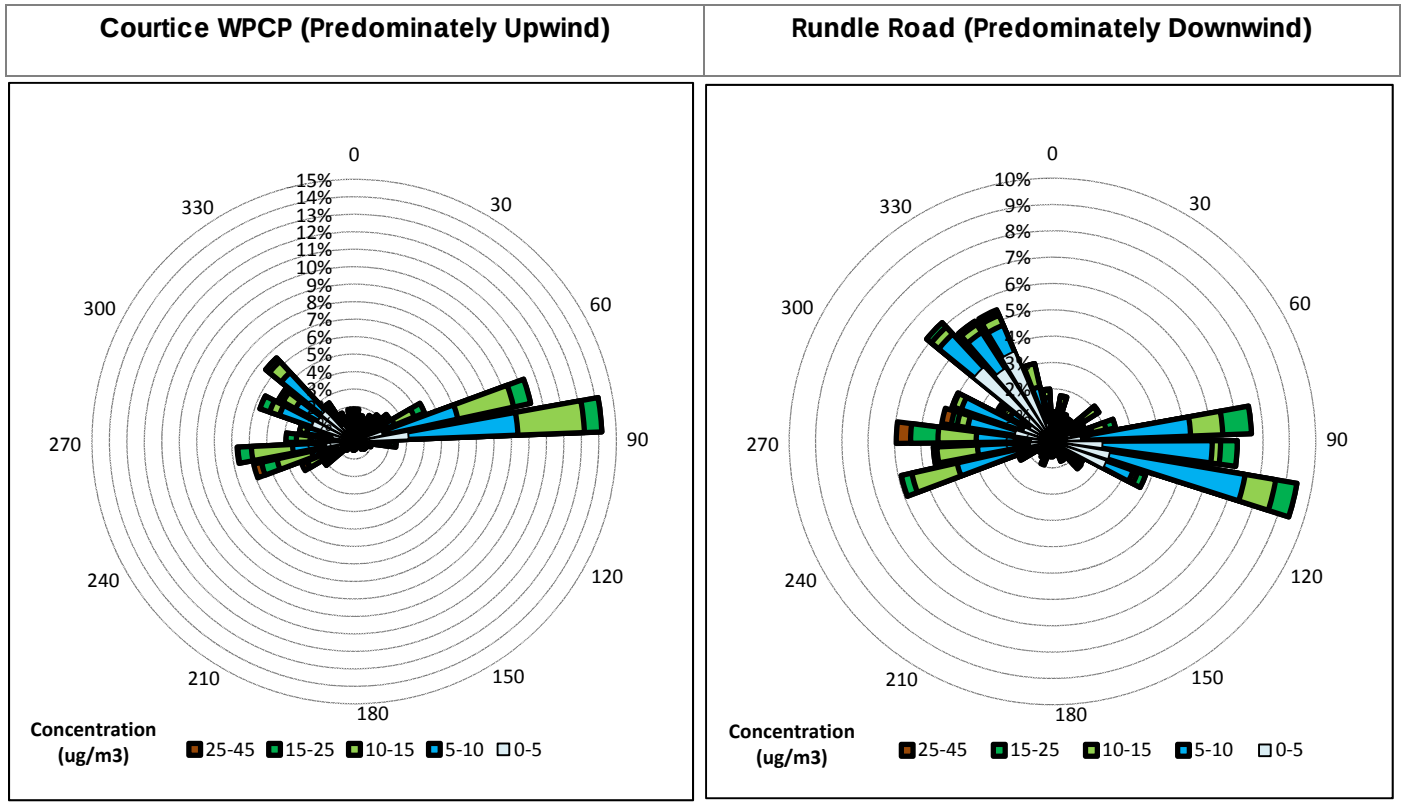
4.2.4 Particulate Matter Smaller than 2.5 Microns ($PM_{2.5}$)

Data summaries and time history plots of measured 24-hour average concentrations are presented in Appendix D 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 30.4 µg/m³ and 32.4 µg/m³ during this quarter. It should be noted that since an exceedance of the CWS for $PM_{2.5}$ requires the average of the 98th percentile levels in each of three consecutive years to be greater than 30 µg/m³, 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 CWS would occur. Discussion of $PM_{2.5}$ measurements with respect to the CWS will be provided in the 2014 annual report, at which time sufficient data will have been collected to make preliminary 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. The maximum measured concentration occurred for west-southwesterly winds for the Courtice WPCP Station. For the Rundle Road Station, the maximum measured 24-hour average concentration occurred for westerly winds.

Figure 4-6 Pollution Roses of Measured 24-Hour Average $PM_{2.5}$ Concentrations – April to June 2014



4.2.5 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. Laboratory analysis for one measurement at each station was not received in time to be included in this report – following MOE protocol, this data will be included in the next quarterly report. A detailed summary of the concentrations measured for each sample is presented in Appendix F.

The maximum measured concentrations of TSP and all metals with MOE air quality criteria were well below their applicable 24-hour criteria (shown in Table 4-3 below) at both stations.

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

Contaminant	Units	MOE Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Max	Min	No. of Exceedances	Max	Min	No. of Exceedances
Particulate	µg/m³	120	120	57	7	0	59	8	0
Total Mercury (Hg)	µg/m³	2	2	2.15E-05	5.58E-06	0	1.20E-05	5.89E-07	0
Aluminum (Al)	µg/m³	4.8	-	3.57E-01	6.06E-02	0	2.90E-01	4.48E-02	0
Antimony (Sb)	µg/m³	25	25	3.23E-03	2.64E-03	0	3.41E-03	2.93E-03	0
Arsenic (As)	µg/m³	0.3	0.3	1.94E-03	1.58E-03	0	2.05E-03	1.76E-03	0
Barium (Ba)	µg/m³	10	10	1.90E-02	3.29E-03	0	1.18E-02	1.94E-03	0
Beryllium (Be)	µg/m³	0.01	0.01	3.23E-04	2.64E-04	0	3.41E-04	2.93E-04	0
Bismuth (Bi)	µg/m³	-	-	1.94E-03	1.58E-03	-	2.05E-03	1.76E-03	-
Boron (B)	µg/m³	120	-	1.94E-03	1.58E-03	0	4.43E-03	1.76E-03	0
Cadmium (Cd)	µg/m³	0.025	0.025	6.46E-04	5.27E-04	0	6.83E-04	5.87E-04	0
Chromium (Cr)	µg/m³	0.5	-	6.29E-03	1.32E-03	0	4.75E-03	1.47E-03	0
Cobalt (Co)	µg/m³	0.1	0.1	6.46E-04	5.27E-04	0	6.83E-04	5.87E-04	0
Copper (Cu)	µg/m³	50	-	5.43E-02	1.86E-02	0	1.23E-01	7.90E-03	0
Iron (Fe)	µg/m³	4	-	9.26E-01	2.00E-01	0	9.30E-01	1.17E-01	0
Lead (Pb)	µg/m³	0.5	0.5	4.31E-03	8.37E-04	0	3.58E-03	8.80E-04	0
Magnesium (Mg)	µg/m³	-	-	4.13E-01	9.25E-02	-	2.97E-01	6.78E-02	-
Manganese (Mn)	µg/m³	0.4	-	3.08E-02	7.11E-03	0	2.55E-02	4.42E-03	0
Molybdenum (Mo)	µg/m³	120	-	9.69E-04	7.91E-04	0	2.21E-03	8.80E-04	0
Nickel (Ni)	µg/m³	0.2	-	2.78E-03	7.91E-04	0	4.58E-03	8.80E-04	0

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

Contaminant	Units	MOE Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Max	Min	No. of Exceedances	Max	Min	No. of Exceedances
Phosphorus (P)	µg/m³	-	-	9.69E-02	7.73E-03	-	1.85E-01	7.57E-03	-
Selenium (Se)	µg/m³	10	10	3.23E-03	2.64E-03	0	3.41E-03	2.93E-03	0
Silver (Ag)	µg/m³	1	1	1.62E-03	1.32E-03	0	1.71E-03	1.47E-03	0
Strontium (Sr)	µg/m³	120	-	1.34E-02	2.92E-03	0	1.09E-02	1.94E-03	0
Thallium (Tl)	µg/m³	-	-	3.23E-03	2.64E-03	-	3.41E-03	2.93E-03	-
Tin (Sn)	µg/m³	10	10	3.23E-03	2.64E-03	0	3.41E-03	2.93E-03	0
Titanium (Ti)	µg/m³	120	-	2.26E-02	2.68E-03	0	1.71E-02	3.03E-03	0
Vanadium (V)	µg/m³	2	1	1.62E-03	1.32E-03	0	1.71E-03	1.47E-03	0
Zinc (Zn)	µg/m³	120	-	5.54E-02	9.75E-03	0	3.90E-02	6.24E-03	0
Zirconium (Zr)	µg/m³	20	-	1.62E-03	1.32E-03	0	1.71E-03	1.47E-03	0
Total Uranium (U)	µg/m³	1.5	-	1.45E-04	1.19E-04	0	1.54E-04	1.32E-04	0

4.2.6 Ambient PAH Concentrations

A summary of the maximum and minimum ambient PAH concentrations (for a daily averaging period) are presented in Table 4-4. Laboratory analysis for one measurement at each station was not received in time to be included in this report – following MOE protocol, this data will be included in the next quarterly report. 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 F.

The maximum measured concentrations of all PAHs with MOE air quality criteria were well below their applicable 24-hour criteria.

Table 4-4 Summary of Measured Ambient PAH Concentrations

Contaminant	Units	MOE Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Max	Min	No. of Exceedances	Max	Min	No. of Exceedances
Benzo(a)pyrene	ng/m³	0.05 [A] 5 [B] 1.1 [C]	1	2.62E-02	8.11E-03	0	2.21E-02	6.60E-03	0 0 0
1-Methylnaphthalene	ng/m³	12,000	-	7.14E+00	1.65E+00	0	6.19E+00	1.91E+00	0
2-Methylnaphthalene	ng/m³	10,000	-	1.35E+01	3.00E+00	0	1.18E+01	3.33E+00	0
Acenaphthene	ng/m³	-	-	1.03E+01	6.60E-01	-	7.50E+00	6.24E-01	-
Acenaphthylene	ng/m³	3500	-	3.71E-01	1.15E-01	0	2.44E-01	1.04E-01	0
Anthracene	ng/m³	200	-	4.07E-01	1.15E-01	0	4.68E-01	1.13E-01	0
Benzo(a)anthracene	ng/m³	-	-	1.70E-01	1.11E-01	-	1.54E-01	1.04E-01	-
Benzo(a)fluorene	ng/m³	-	-	3.41E-01	2.21E-01	-	3.09E-01	2.09E-01	-
Benzo(b)fluoranthene	ng/m³	-	-	3.03E-01	1.11E-01	-	1.54E-01	1.04E-01	-
Benzo(b)fluorene	ng/m³	-	-	3.41E-01	2.21E-01	-	3.09E-01	2.09E-01	-
Benzo(e)pyrene	ng/m³	-	-	3.41E-01	2.21E-01	-	3.09E-01	2.09E-01	-
Benzo(g,h,i)perylene	ng/m³	-	-	3.42E-01	1.11E-01	-	1.54E-01	1.04E-01	-
Benzo(k)fluoranthene	ng/m³	-	-	2.48E-01	1.11E-01	-	1.54E-01	1.04E-01	-
Biphenyl	ng/m³	-	-	4.07E+00	8.56E-01	-	2.98E+00	1.02E+00	-
Chrysene	ng/m³	-	-	1.70E-01	1.11E-01	-	1.54E-01	1.04E-01	-
Dibenz(a,h)anthracene [D]	ng/m³	-	-	4.85E-01	1.11E-01	-	1.54E-01	1.04E-01	-
Dibenzo(a,c) anthracene + Picene [D]	ng/m³	-	-	3.41E-01	2.21E-01	-	3.09E-01	2.09E-01	-
Fluoranthene	ng/m³	-	-	2.04E+00	2.38E-01	-	2.42E+00	3.98E-01	-

Table 4-4 Summary of Measured Ambient PAH Concentrations

Contaminant	Units	MOE Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Max	Min	No. of Exceedances	Max	Min	No. of Exceedances
Indeno (1,2,3-cd)pyrene	ng/m³	-	-	4.85E-01	1.11E-01	-	1.54E-01	1.04E-01	-
Naphthalene	ng/m³	22,500	22,500	3.39E+01	9.26E+00	0	2.45E+01	1.02E+01	0
o-Terphenyl	ng/m³	-	-	3.41E-01	2.21E-01	-	3.09E-01	2.09E-01	-
Perylene	ng/m³	-	-	3.41E-01	2.21E-01	-	3.09E-01	2.09E-01	-
Phenanthrene	ng/m³	-	-	1.26E+01	1.25E+00	-	1.05E+01	1.65E+00	-
Pyrene	ng/m³	-	-	8.14E-01	1.15E-01	-	1.04E+00	1.47E-01	-
Tetralin	ng/m³	-	-	7.64E+00	1.01E+00	-	2.63E+00	1.00E+00	-
Total PAH [E]	ng/m³	-	-	89.3	21.3	-	71.4	24.8	-

Notes:

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

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

C. O. Reg. 419 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.

4.2.7 Ambient Dioxin and Furan Concentrations

A summary of the maximum and minimum ambient D/F concentrations (for a daily averaging period) are presented in Table 4-6. Laboratory analysis for one measurement at each station was not received in time to be included in this report – following MOE protocol, this data will be included in the next quarterly report. In this summary, both individual dioxin and furan 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 G.

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

Table 4-5 Summary of Measured Ambient Dioxin and Furan Concentrations

Contaminant	Units	MOE Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Max	Min	No. of Exceedances	Max	Min	No. of Exceedances
2,3,7,8-Tetra CDD *	pg/m³	-	-	8.18E-03	5.99E-03	N/A	7.77E-03	6.18E-03	N/A
1,2,3,7,8-Penta CDD	pg/m³			9.38E-03	5.85E-03		8.52E-03	5.92E-03	
1,2,3,4,7,8-Hexa CDD	pg/m³			7.67E-03	6.13E-03		6.58E-03	6.18E-03	
1,2,3,6,7,8-Hexa CDD	pg/m³			7.67E-03	6.37E-03		6.58E-03	6.18E-03	
1,2,3,7,8,9-Hexa CDD	pg/m³			6.82E-03	5.66E-03		5.83E-03	5.44E-03	
1,2,3,4,6,7,8-Hepta CDD	pg/m³			9.51E-02	1.71E-02		7.50E-02	6.06E-03	
Octa CDD	pg/m³			6.72E-01	7.73E-02		3.15E-01	5.25E-02	
Total Tetra CDD	pg/m³			3.07E-02	5.99E-03		1.10E-02	6.21E-03	
Total Penta CDD	pg/m³			1.06E-02	5.85E-03		1.64E-02	5.92E-03	
Total Hexa CDD	pg/m³			4.77E-02	7.85E-03		4.04E-02	7.51E-03	
Total Hepta CDD	pg/m³			1.78E-01	1.71E-02		1.45E-01	1.53E-02	
2,3,7,8-Tetra CDF **	pg/m³			7.33E-03	5.71E-03		2.02E-02	5.89E-03	
1,2,3,7,8-Penta CDF	pg/m³			7.16E-03	5.66E-03		6.13E-03	5.89E-03	
2,3,4,7,8-Penta CDF	pg/m³			7.16E-03	5.66E-03		6.13E-03	6.03E-03	
1,2,3,4,7,8-Hexa CDF	pg/m³			7.50E-03	5.99E-03		6.43E-03	6.03E-03	
1,2,3,6,7,8-Hexa CDF	pg/m³			6.65E-03	5.38E-03		5.68E-03	5.30E-03	
2,3,4,6,7,8-Hexa CDF	pg/m³			7.67E-03	6.13E-03		6.58E-03	6.06E-03	
1,2,3,7,8,9-Hexa CDF	pg/m³			7.67E-03	6.28E-03		6.73E-03	6.18E-03	
1,2,3,4,6,7,8-Hepta CDF	pg/m³			1.45E-02	5.28E-03		7.62E-03	5.49E-03	
1,2,3,4,7,8,9-Hepta CDF	pg/m³			7.67E-03	5.99E-03		6.92E-03	6.35E-03	
Octa CDF	pg/m³			6.04E-02	1.43E-02		3.11E-02	1.44E-02	
Total Tetra CDF	pg/m³			7.33E-03	5.71E-03		2.02E-02	5.89E-03	
Total Penta CDF	pg/m³			7.16E-03	5.66E-03		6.13E-03	5.89E-03	
Total Hexa CDF	pg/m³			1.53E-02	5.99E-03		6.43E-03	5.89E-03	
Total Hepta CDF	pg/m³			5.90E-02	5.56E-03		2.09E-02	5.92E-03	
TOTAL TOXIC EQUIVALENCY [A]	pg TEQ/m³	0.1 [B] 1 [C]	-	0.027	0.019	0 0	0.024	0.019	0 0

Note:

A. Total Toxicity Equivalent (TEQ) concentration contributed by all dioxins, furans and dioxin-like PCBs calculated as per O. Reg. 419 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.

B. Ontario Ambient Air Quality Criteria

C. O. Reg. 419 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 two monitoring stations located predominantly upwind and downwind in the vicinity of the DYEC for the period April to June 2014. The following observations and conclusions were made from a review of the measured ambient air quality monitoring data:

1. Measured levels of NO_2, SO_2 and $PM_{2.5}$ were below the applicable O.Reg. 419/05 criteria or human health risk assessment (HHRA) health-based standards presented in Table 2.2 of this report;

2. Since the Canada Wide Standard (CWS) 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 CWS would occur. Therefore no comparison of the measured $PM_{2.5}$ data to the CWS 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 MOE air quality criteria were well below their applicable criteria (as presented in Table 2.3 in this report);

4. The maximum measured concentrations of all PAHs with MOE air quality criteria were well below their applicable criteria shown in Table 2.4.

5. The maximum measured toxic equivalent dioxin and furan concentration was below the applicable criteria presented in Table 2.4.

6.0 References

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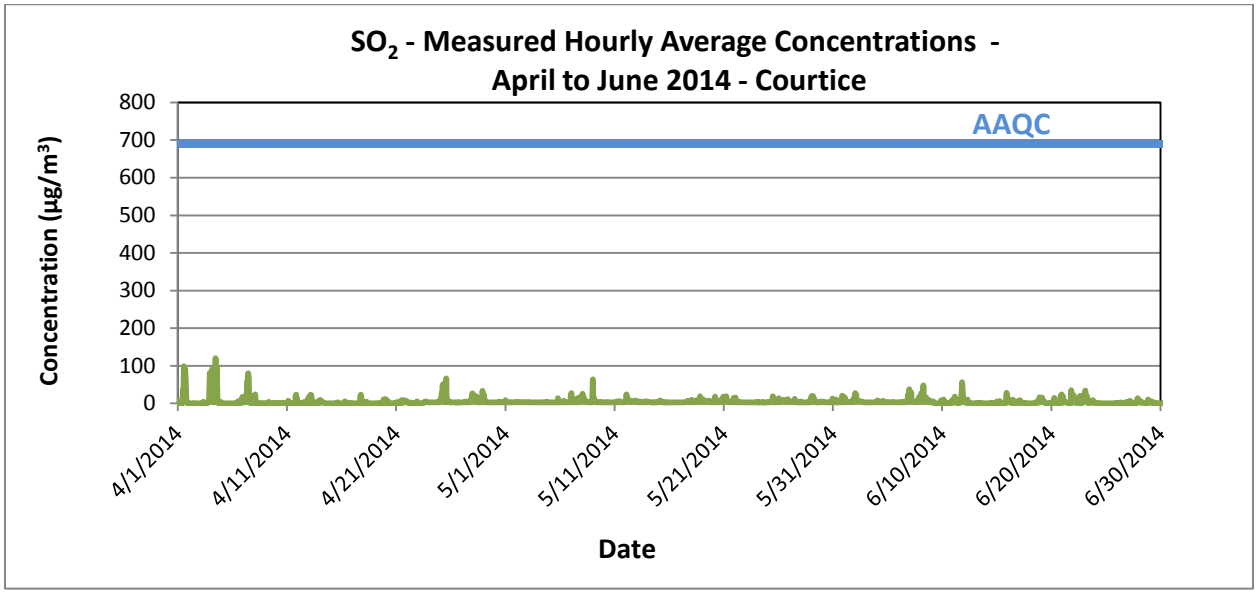
Appendix A

SO_2 Data Summaries and Time History Plots

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



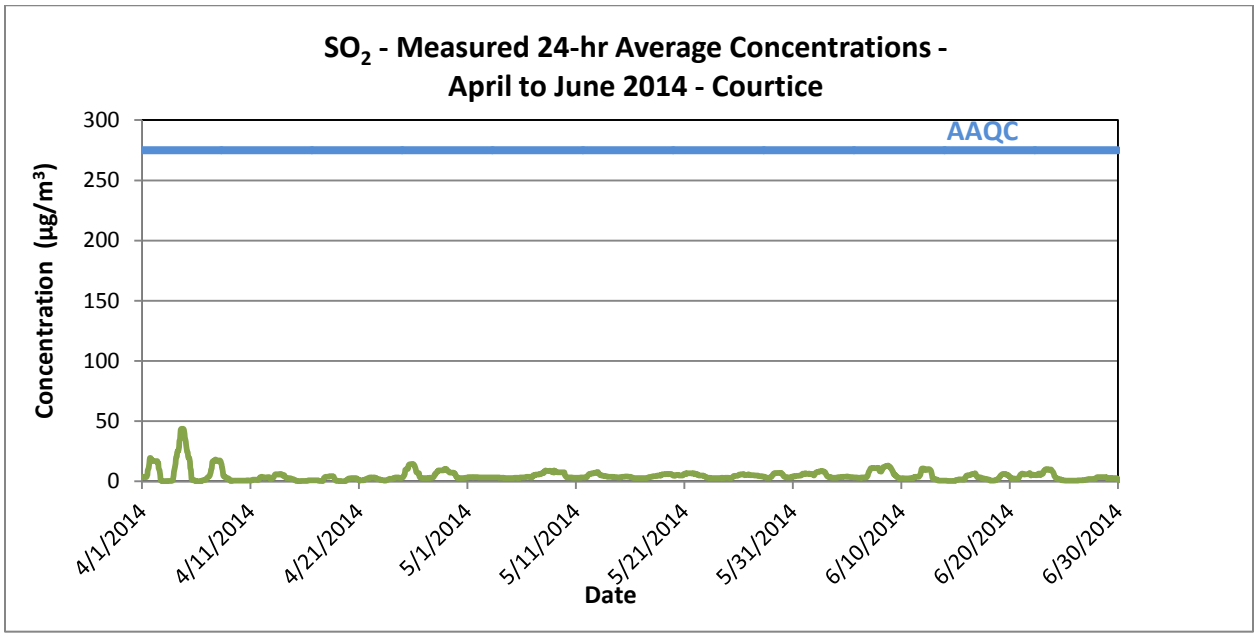
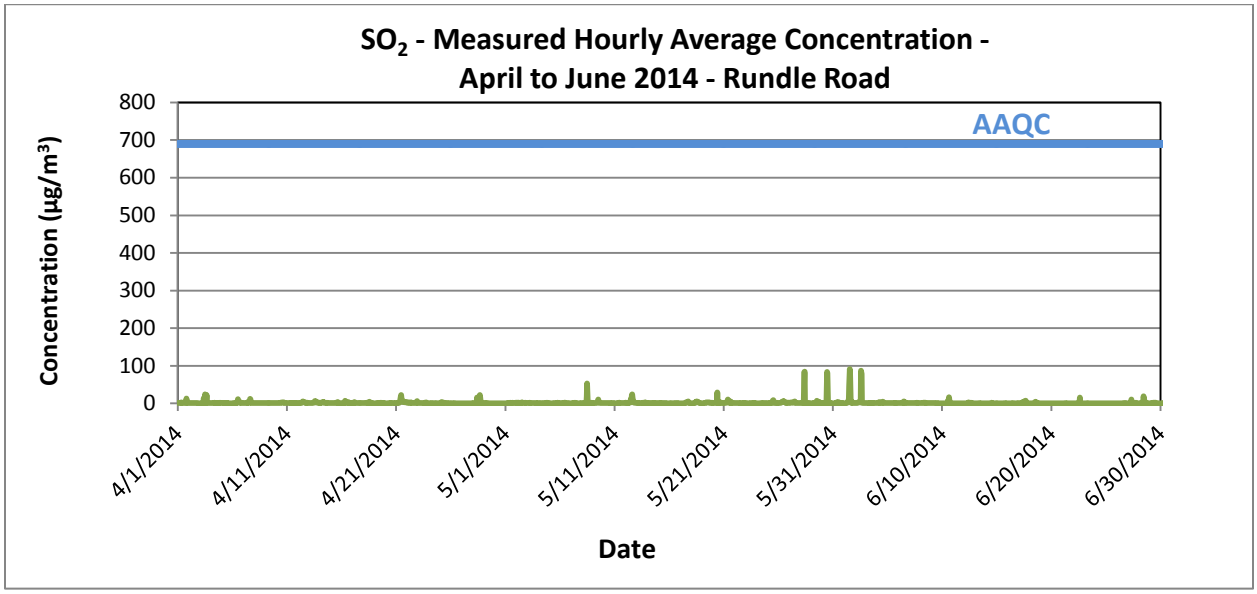
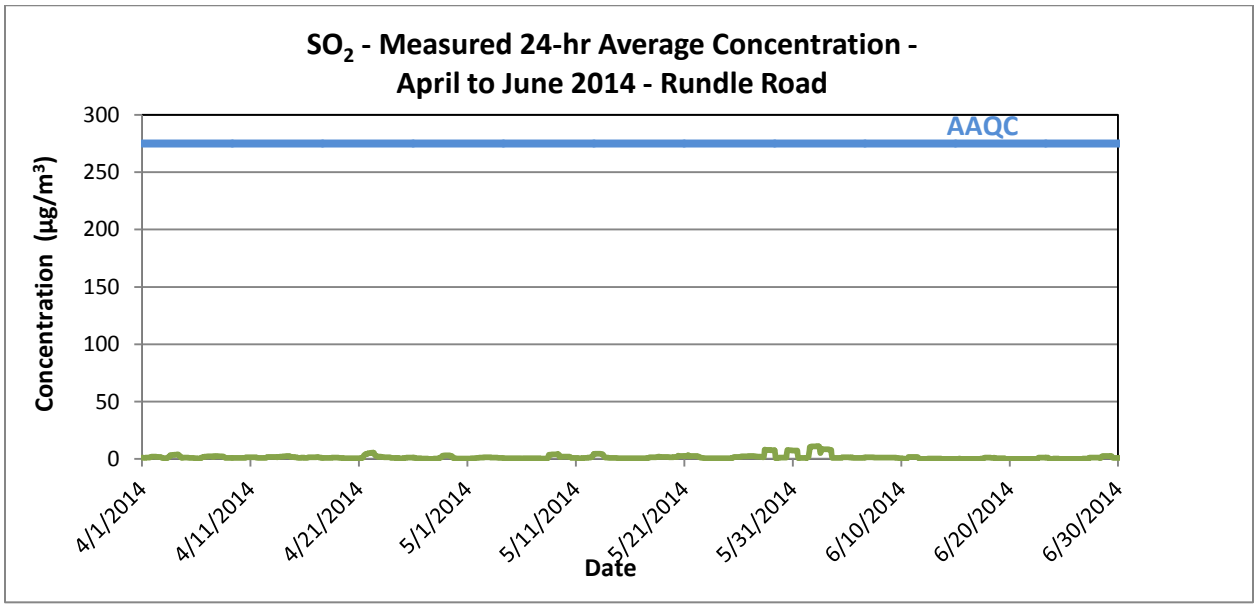


Figure A-2 Time History Plots of Measured Hourly Average and 24-Hour Average SO_2 Concentrations– Rundle Road Station





SO2 - COURTICE
April 2014
(ug/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	Hrs>690	Days>275
1	1.0	6.6	2.3	2.0	0.6	0.4	0.5	0.0	1.0	0.3	0.6	36.1	2.8	99.0	31.9	15.5	92.1	77.0	36.0	1.9	2.3	3.6	1.0	0.7	24	99.0	0.0	17.3	0	0
2	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.8	1.0	0.4	0.4	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
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	5.0	1.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.9	3.2	6.8	16.2	81.5	75.8	24	81.5	0.0	8.1	0	0
4	57.2	30.9	73.5	91.2	42.1	4.9	81.8	29.6	2.6	11.8	68.6	120.7	44.0	98.5	87.1	13.7	2.0	0.9	3.4	0.4	1.3	4.5	2.8	3.0	24	120.7	0.4	36.5	0	0
5	2.5	1.9	1.4	0.7	0.7	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	2.5	0.0	0.3	0	0
6	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	1.5	0.8	1.2	1.5	4.5	6.4	2.9	1.5	0.9	1.8	1.4	0.4	1.0	9.0	17.5	4.2	24	17.5	0.0	2.4	0	0
7	9.4	10.8	8.8	5.5	2.8	2.9	19.9	22.7	40.0	62.2	12.4	80.1	65.4	17.5	3.1	1.8	0.5	12.8	21.0	0.8	0.4	0.5	0.8	3.9	24	80.1	0.4	16.9	0	0
8	5.1	7.1	24.4	9.9	2.0	0.5	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.7	1.1	0.7	0.4	0.3	0.2	0.7	1.2	1.2	0.3	24	24.4	0.2	2.5	0	0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	2.6	1.5	0.5	0.4	0.5	0.5	0.3	0.1	0.1	0.0	0.5	1.3	2.1	0.0	0.0	24	3.7	0.0	0.6	0	0
10	0.0	0.1	0.1	0.0	0.1	0.8	1.0	0.6	0.4	0.6	1.1	1.1	0.7	1.4	1.5	1.7	1.5	1.2	1.1	0.3	0.0	0.1	0.0	0.0	24	1.7	0.0	0.6	0	0
11	0.0	0.0	0.6	7.0	4.2	4.5	1.5	0.4	0.4	0.8	0.8	0.9	0.9	0.6	0.3	0.2	0.0	0.1	0.1	19.3	22.9	3.0	14.0	4.2	24	22.9	0.0	3.6	0	0
12	1.1	1.0	0.2	0.3	0.7	0.6	0.8	0.8	1.1	0.8	1.4	1.5	2.0	3.3	3.4	2.1	1.1	0.9	0.5	1.2	0.9	9.9	5.2	9.5	24	9.9	0.2	2.1	0	0
13	16.8	5.5	0.7	0.3	23.0	22.4	13.3	11.4	1.7	1.6	1.6	1.8	1.7	1.5	1.7	2.2	2.0	1.4	1.3	3.7	5.7	2.7	2.6	1.3	24	23.0	0.3	5.3	0	0
14	1.1	9.6	2.5	4.6	6.7	2.6	2.5	2.5	1.9	2.0	1.2	0.9	0.6	0.3	0.3	0.5	0.4	0.2	0.3	0.0	0.0	0.0	0.0	0.0	24	9.6	0.0	1.7	0	0
15	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.0	2.8	2.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	24	2.8	0.0	0.3	0	0
16	0.0	0.0	0.0	0.0	0.0	0.0	1.2	5.3	5.3	2.3	0.3	0.0	0.0	0.0	0.8	2.4	0.4	0.1	0.0	0.0	0.0	1.3	0.0	0.4	24	5.3	0.0	0.8	0	0
17	0.6	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	1.8	1.8	19.4	23.5	19.7	11.9	7.5	3.2	0.4	24	23.5	0.0	3.7	0	0
18	1.7	0.3	0.2	0.2	0.5	1.9	0.9	4.3	0.4	0.3	0.0	0.1	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	4.3	0.0	0.5	0	0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.5	0.3	0.5	0.0	0.1	0.3	0.0	0.0	0.0	0.0	4.9	10.6	4.5	10.5	4.4	24	10.6	0.0	1.6	0	0
20	1.3	11.5	8.7	0.2	0.0	0.0	0.2	5.0	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.1	0.0	1.7	1.5	24	11.5	0.0	1.3	0	0
21	0.9	1.3	4.0	4.0	2.1	0.6	0.4	0.4	1.0	0.8	0.8	1.0	9.0	5.5	2.2	2.4	3.0	9.2	2.6	3.6	3.0	3.4	7.2	5.0	24	9.2	0.4	3.1	0	0
22	4.8	2.5	2.2	1.7	1.1	0.7	0.8	1.3	2.7	2.1	1.0	0.6	0.4	0.3	0.4	0.2	0.0	0.0	0.0	0.0	0.0	4.2	5.7	2.9	24	5.7	0.0	1.5	0	0
23	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	2.4	2.7	2.7	2.8	4.3	5.2	4.4	3.8	4.3	3.3	2.7	2.6	22	5.2	0.0	1.9	0	0
24	2.6	2.6	2.7	2.7	2.7	2.7	2.9	3.2	3.1	2.9	2.6	2.6	2.8	2.8	3.2	2.9	2.8	2.6	2.7	2.6	3.0	4.3	2.8	6.8	24	6.8	2.6	3.0	0	0
25	4.4	4.8	11.6	17.6	27.6	14.6	46.2	51.7	10.8	6.4	4.4	4.6	3.1	11.6	66.8	21.8	3.7	4.1	4.1	5.2	6.5	3.0	2.9	2.9	24	66.8	2.9	14.2	0	0
26	2.7	2.7	2.6	2.7	2.7	2.6	2.7	2.7	2.6	2.8	3.0	3.0	2.2	2.4	2.8	2.6	2.6	2.4	2.5	2.6	2.6	2.6	2.7	2.8	24	3.0	2.2	2.6	0	0
27	2.5	2.7	2.6	2.6	2.7	2.6	2.6	2.6	5.0	5.0	3.2	2.6	2.6	2.7	2.7	2.6	2.7	2.8	3.2	4.4	7.3	12.1	8.6	26.9	24	26.9	2.5	4.8	0	0
28	26.5	4.3	10.3	22.1	13.2	9.0	13.9	7.9	18.9	4.4	3.0	3.2	3.8	3.7	3.1	3.1	2.7	2.9	2.9	3.4	16.9	10.1	33.6	20.4	24	33.6	2.7	10.1	0	0
29	4.9	22.8	12.3	3.8	3.3	3.1	3.0	3.2	3.1	2.9	2.6	2.6	2.6	2.6	2.5	2.5	2.6	2.6	2.6	2.6	2.7	2.6	2.7	2.7	24	22.8	2.5	4.1	0	0
30	2.7	2.7	2.6	2.6	2.7	2.7	2.6	2.6	2.7	2.6	2.9	4.9	3.7	3.1	2.7	2.7	2.6	2.9	2.6	3.1	2.7	2.7	2.6	3.4	24	4.9	2.6	2.9	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	718	30	29	30		
Maximum	57.2	30.9	73.5	91.2	42.1	22.4	81.8	51.7	40.0	62.2	68.6	120.7	65.4	99.0	87.1	21.8	92.1	77.0	36.0	19.7	22.9	16.2	81.5	75.8	24	120.7	16.2	59.9		
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	0	0.0			
Average	5.0	4.4	5.8	6.1	4.7	2.7	6.6	5.3	3.9	4.0	4.0	9.4	5.2	8.9	7.5	3.0	4.4	5.1	4.0	2.9	3.8	3.8	7.1	6.2	23	24	1	5.2		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.0	0.3	0.7	1.5	2.6	2.8	4.2	10.7	22.7	81.3	120.7

	Maximum
	120.7
	36.5
	5.2

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

SO2 - COURTICE
May 2014
(ug/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	Hrs>690	Days>275
1	9.2	7.4	2.9	2.6	3.0	2.7	2.6	2.6	2.8	3.2	3.9	3.1	3.2	3.3	3.1	3.3	3.3	3.2	2.9	3.0	3.2	3.7	2.7	3.3	24	9.2	2.6	3.5	0	0
2	3.7	3.6	3.6	3.2	3.9	3.5	3.1	3.1	3.0	3.2	3.1	3.1	4.2	4.1	3.2	3.1	3.1	3.1	3.1	3.3	3.3	3.2	2.9	3.0	24	4.2	2.9	3.3	0	0
3	3.5	3.6	3.5	3.2	3.0	3.0	3.2	3.2	3.2	3.2	3.3	3.1	3.1	3.2	3.1	3.1	2.9	2.9	2.9	3.0	3.1	2.6	2.8	2.7	24	3.6	2.6	3.1	0	0
4	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.8	2.6	2.6	2.7	2.9	2.8	2.8	4.4	2.8	3.0	3.2	3.3	24	4.4	2.6	2.8	0	0
5	2.8	2.6	2.7	2.7	2.7	2.7	2.6	2.6	2.8	2.6	2.6	2.8	3.1	2.6	2.6	2.6	2.6	2.6	2.9	3.2	13.6	2.9	2.7	2.6	24	13.6	2.6	3.2	0	0
6	2.6	2.8	2.9	3.2	3.2	2.8	2.7	4.4	7.5	3.0	3.9	4.0	3.1	3.2	2.7	2.5	2.5	2.6	3.1	3.3	3.0	2.7	2.6	4.1	24	7.5	2.5	3.3	0	0
7	16.7	27.3	4.9	3.3	2.9	2.7	13.5	12.3	6.5	3.6	3.3	2.6	2.8	2.7	2.6	3.1	14.7	4.6	4.7	5.4	6.7	2.7	10.9	13.0	24	27.3	2.6	7.2	0	0
8	20.1	16.0	25.9	18.9	10.1	12.1	8.7	5.3	3.3	3.5	3.7	3.2	4.2	4.8	3.9	2.8	2.7	3.0	3.1	3.2	2.7	2.8	3.1	7.4	24	25.9	2.7	7.3	0	0
9	63.8	7.5	18.1	12.9	11.1	4.6	3.8	3.5	3.1	3.1	3.2	3.1	3.1	3.0	3.9	4.0	3.4	3.1	2.9	3.0	3.4	3.1	3.1	3.1	24	63.8	2.9	7.4	0	0
10	2.8	3.2	3.2	3.1	3.0	2.8	3.3	3.3	3.8	3.3	3.1	2.9	3.1	3.0	3.2	3.0	2.9	2.5	2.8	2.8	2.9	2.6	2.6	2.5	24	3.8	2.5	3.0	0	0
11	2.6	2.8	2.7	2.7	2.9	5.8	2.7	2.7	2.9	3.5	3.3	6.6	4.8	3.4	3.5	3.4	3.0	3.0	2.9	3.1	3.3	3.1	3.0	3.6	24	6.6	2.6	3.4	0	0
12	4.3	5.0	23.7	17.7	13.4	10.6	11.6	4.9	5.9	8.1	5.4	5.1	4.9	5.2	4.9	5.2	5.5	5.2	5.2	5.4	6.1	4.9	7.9	6.7	24	23.7	4.3	7.6	0	0
13	4.1	6.5	4.0	4.7	3.9	3.0	2.6	3.0	5.1	3.3	3.2	3.6	3.1	3.5	3.3	3.0	3.1	3.0	3.1	5.4	4.8	5.0	3.2	5.2	24	6.5	2.6	3.9	0	0
14	3.2	4.5	4.7	3.7	3.4	3.8	3.2	2.8	2.8	2.9	3.0	2.6	2.6	2.8	2.5	2.8	3.3	3.0	2.8	3.0	3.5	3.0	3.1	4.9	24	4.9	2.5	3.3	0	0
15	2.8	2.9	3.9	7.4	6.2	7.8	7.2	4.7	3.4	3.0	3.0	3.0	3.0	3.9	3.1	3.0	3.0	2.7	2.7	2.4	2.6	2.7	2.7	2.7	24	7.8	2.4	3.7	0	0
16	2.7	2.7	2.6	3.0	2.9	2.6	2.6	2.5	2.5	2.7	2.5	2.6	2.7	2.7	2.6	3.0	3.1	2.7	2.6	2.6	2.6	2.7	2.7	2.5	24	3.1	2.5	2.7	0	0
17	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	3.0	3.1	3.8	4.2	3.9	5.8	6.0	4.5	6.1	6.0	4.2	5.9	4.5	2.8	24	6.1	2.6	3.8	0	0
18	2.8	2.9	9.3	5.5	4.2	3.6	3.8	3.0	2.8	3.2	3.4	5.4	9.2	6.7	4.6	4.9	4.4	5.1	4.9	3.7	18.8	10.0	9.1	6.2	24	18.8	2.8	5.7	0	0
19	3.2	5.4	11.7	4.1	6.2	3.7	3.4	3.5	3.8	3.6	4.4	5.5	5.8	7.0	6.4	7.1	5.2	4.4	4.2	6.3	3.2	2.8	3.2	3.7	24	11.7	2.8	4.9	0	0
20	3.2	3.1	3.8	6.9	3.3	17.9	9.2	4.0	3.7	3.6	3.6	3.2	3.1	3.7	4.3	4.0	4.3	4.8	9.9	3.9	4.5	3.5	13.6	17.8	24	17.9	3.1	5.9	0	0
21	6.0	6.0	10.6	6.8	5.7	7.7	19.2	5.2	4.5	4.1	3.9	5.7	3.4	3.4	3.1	3.4	3.2	3.4	3.2	5.0	6.8	7.8	14.9	3.8	24	19.2	3.1	6.1	0	0
22	3.1	5.2	15.3	3.7	3.3	4.3	3.1	3.2	3.3	3.4	3.2	3.4	3.1	2.9	3.0	3.1	3.0	3.0	2.9	2.8	2.9	2.7	2.8	2.6	24	15.3	2.6	3.7	0	0
23	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.5	2.7	2.9	3.3	3.3	2.7	2.6	2.6	2.5	2.6	2.5	2.5	2.7	2.6	24	3.3	2.5	2.7	0	0
24	2.7	2.7	4.3	4.0	2.7	2.7	3.1	2.0	2.5	2.7	3.4	2.9	3.1	3.1	2.8	2.6	2.5	2.5	2.9	2.8	2.6	2.9	2.9	2.6	24	4.3	2.0	2.9	0	0
25	2.6	2.6	3.6	2.9	3.8	2.6	2.7	3.0	3.1	3.1	7.0	5.3	19.4	16.8	4.3	3.5	3.1	3.1	3.1	3.2	3.7	4.1	3.3	7.9	24	19.4	2.6	4.9	0	0
26	8.0	13.6	3.3	3.0	3.2	4.6	4.4	4.6	4.4	4.6	6.2	9.9	7.0	8.1	5.4	4.6	4.1	3.5	3.1	3.8	4.1	11.6	5.3	3.5	24	13.6	3.0	5.6	0	0
27	3.5	3.6	4.5	4.2	4.5	5.2	3.9	3.6	3.6	4.4	4.3	4.3	12.2	7.3	4.0	3.3	3.2	3.0	3.1	3.0	3.0	2.9	2.8	3.0	24	12.2	2.8	4.2	0	0
28	3.2	5.6	3.2	3.1	3.1	2.9	2.8	2.9	2.7	2.8	2.6	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.6	2.6	2.7	9.5	2.8	24	9.5	2.5	3.2	0	0
29	9.9	19.5	11.0	17.0	19.8	13.7	5.7	12.0	4.0	4.1	4.5	3.7	3.2	3.0	3.0	2.9	2.7	2.7	2.7	3.0	2.8	5.2	4.6	3.2	24	19.8	2.7	6.8	0	0
30	3.2	4.3	4.3	4.1	3.7	3.8	3.0	2.9	3.0	2.9	3.0	3.0	2.8	2.9	2.7	2.7	2.8	2.9	2.7	4.5	4.9	2.9	4.1	13.2	24	13.2	2.7	3.8	0	0
31	12.6	6.4	2.7	2.6	2.7	2.7	8.2	10.9	3.1	2.5	2.5	2.5	2.5	4.3	5.1	4.2	3.6	3.2	3.0	3.6	21.1	15.9	16.0	8.7	24	21.1	2.5	6.3	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	31	31	31		
Maximum	63.8	27.3	25.9	18.9	19.8	17.9	19.2	12.3	7.5	8.1	7.0	9.9	19.4	16.8	6.4	7.1	14.7	5.2	9.9	6.3	21.1	15.9	16.0	17.8	24	63.8	5.2	16.4		
Minimum	2.6	2.6	2.6	2.6	2.7	2.6	2.6	2.0	2.5	2.5	2.5	2.5	2.5	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.6	2.5	24	3.1	2.0	2.5		
Average	7.0	6.0	6.6	5.4	4.8	5.0	5.0	4.2	3.6	3.4	3.6	3.8	4.5	4.3	3.5	3.5	3.7	3.3	3.5	3.7	5.0	4.3	5.1	5.0	24	14	3	4.5		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													63.8
													7.6
Data	2.6	2.7	2.9	3.0	3.2	3.4	3.9	4.9	7.3	12.1	19.5	63.8	4.5

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

SO2 - COURTICE
June 2014
(ug/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	Hrs>690	Days>275
1	3.2	4.1	16.6	4.5	6.4	4.1	3.4	3.5	3.6	3.6	3.5	3.2	3.7	3.5	3.9	4.0	4.3	3.2	3.0	3.0	8.9	11.9	4.1	4.6	24	16.6	3.0	4.9	0	0
2	9.7	28.0	22.5	23.1	11.3	8.8	7.0	5.1	5.3	5.5	5.9	6.0	6.0	5.4	5.1	4.7	4.1	3.7	3.4	3.0	3.0	3.0	3.0	3.0	24	28.0	3.0	7.7	0	0
3	2.9	3.1	3.1	3.1	3.0	2.5	2.6	2.8	3.0	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.1	3.0	3.0	2.8	2.8	2.8	2.6	3.2	24	3.2	2.5	2.9	0	0
4	3.0	3.2	8.4	3.2	3.2	3.8	5.5	4.7	3.2	3.1	3.0	3.1	3.1	6.4	7.5	3.6	3.2	3.0	3.0	2.9	3.1	3.1	3.2	4.1	24	8.4	2.9	3.9	0	0
5	3.5	3.0	3.0	2.9	3.3	3.2	3.1	3.1	2.9	3.7	3.3	3.7	3.5	3.0	3.0	2.8	2.7	2.9	3.0	2.8	2.7	2.9	2.8	2.7	24	3.7	2.7	3.1	0	0
6	2.7	3.2	3.3	3.2	3.1	3.7	3.5	3.2	3.2	3.0	3.0	4.6	4.0	3.2	3.4	3.8	3.6	3.0	3.0	3.1	6.7	23.4	10.0	34.4	24	34.4	2.7	5.9	0	0
7	37.8	27.8	15.9	19.3	29.4	7.8	5.2	4.8	4.1	3.7	3.7	3.4	3.4	3.1	3.1	3.9	3.4	3.5	3.5	10.4	5.1	16.1	14.3	8.9	24	37.8	3.1	10.1	0	0
8	4.1	16.8	26.8	11.3	22.3	30.1	11.6	48.0	20.6	7.1	4.3	7.6	5.8	15.3	5.4	3.5	5.4	5.2	7.1	5.5	8.9	4.6	3.5	3.2	24	48.0	3.2	11.8	0	0
9	3.0	3.2	3.4	5.0	4.5	5.7	C	C	C	C	C	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.4	1.1	4.5	7.6	4.1	19	7.6	0.3	2.4	0	0
10	4.1	3.4	1.1	10.4	4.7	1.7	4.2	2.7	1.6	0.8	0.4	0.3	0.3	0.4	0.4	0.4	0.3	1.1	1.2	3.4	4.9	4.8	8.8	1.9	24	10.4	0.3	2.6	0	0
11	2.6	1.7	7.4	10.6	18.0	9.2	2.9	4.4	2.3	0.9	0.7	0.6	0.5	0.4	0.4	3.3	10.4	6.0	18.5	27.6	56.6	46.8	20.0	3.9	24	56.6	0.4	10.7	0	0
12	2.8	4.1	4.7	4.4	1.7	1.2	1.4	7.6	10.7	3.0	2.0	1.7	1.8	1.5	0.7	0.3	0.3	0.4	0.6	0.5	0.4	0.4	0.4	0.5	24	10.7	0.3	2.2	0	0
13	0.4	0.5	0.4	0.8	0.6	0.6	2.4	0.9	0.4	0.4	0.6	0.9	0.7	0.8	0.8	0.6	0.3	0.3	0.4	0.3	0.4	0.3	0.1	0.3	24	2.4	0.1	0.6	0	0
14	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.3	1.0	1.9	2.3	0.4	0.4	0.3	0.3	0.2	0.3	0.2	0.8	1.1	1.3	24	2.3	0.0	0.5	0	0
15	2.3	5.5	3.7	1.0	3.6	0.9	5.3	6.5	0.7	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.3	0.0	0.2	20.7	28.2	17.7	24	28.2	0.0	4.1	0	0
16	11.0	14.1	3.2	3.3	3.2	6.0	7.8	2.7	1.2	6.7	2.2	4.1	9.8	2.1	1.4	2.0	1.5	1.2	3.3	2.3	5.8	2.4	2.2	0.9	24	14.1	0.9	4.2	0	0
17	1.3	2.4	4.4	8.4	2.5	1.7	4.2	1.7	1.3	1.3	1.0	1.2	1.0	0.8	1.0	1.0	0.6	0.8	0.4	0.4	0.4	0.4	0.5	0.4	24	8.4	0.4	1.6	0	0
18	0.4	0.5	0.4	0.4	0.3	0.2	0.5	0.5	0.3	0.3	0.4	0.5	0.4	3.1	3.5	2.7	2.9	3.0	2.2	4.3	1.9	7.2	16.5	6.7	24	16.5	0.2	2.5	0	0
19	4.8	8.3	14.0	14.9	16.0	6.1	8.0	7.5	5.9	4.7	2.1	0.7	0.5	0.5	0.4	0.4	0.4	0.2	0.3	0.4	0.9	1.8	0.4	0.4	24	16.0	0.2	4.1	0	0
20	0.2	0.1	2.0	2.1	3.5	4.9	11.2	14.4	6.9	0.8	0.3	0.4	0.4	0.5	0.3	0.3	0.2	0.0	0.7	0.4	11.2	20.2	19.5	24.1	24	24.1	0.0	5.2	0	0
21	1.4	8.2	18.9	5.9	5.5	4.2	3.3	4.6	2.6	2.9	2.3	2.1	1.5	1.1	0.7	0.3	0.3	0.3	0.3	0.5	35.2	2.3	5.7	4.1	24	35.2	0.3	4.8	0	0
22	9.3	22.2	16.6	4.8	1.9	4.5	3.6	2.1	1.4	1.3	1.0	1.1	1.1	1.9	7.4	19.9	4.9	1.6	0.6	0.6	1.9	21.1	11.8	16.7	24	22.2	0.6	6.6	0	0
23	9.1	10.0	32.7	34.6	21.5	6.1	12.0	18.0	1.8	1.4	1.6	1.3	1.7	7.5	6.1	1.9	1.8	1.8	1.7	5.0	8.5	2.1	2.1	1.8	24	34.6	1.3	8.0	0	0
24	1.2	1.2	1.3	1.1	1.2	1.0	1.1	1.0	0.9	0.8	0.6	0.6	0.7	0.5	0.7	0.5	0.6	0.7	0.5	0.4	0.4	0.5	0.6	0.6	24	1.3	0.4	0.8	0	0
25	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.4	0.4	0.5	0.5	0.5	1.0	1.2	24	1.2	0.4	0.5	0	0
26	1.0	1.1	0.8	0.8	0.6	0.7	0.6	1.0	2.5	1.7	0.7	0.6	0.6	0.6	0.7	0.7	0.5	0.9	0.9	1.0	2.6	1.2	4.0	2.4	24	4.0	0.5	1.2	0	0
27	2.6	1.0	1.1	1.1	3.3	7.0	6.1	2.2	1.2	1.1	1.1	0.5	0.6	0.4	0.9	1.2	0.8	0.9	1.9	0.9	0.8	11.9	13.6	3.5	24	13.6	0.4	2.7	0	0
28	7.4	8.2	7.3	2.8	2.9	4.9	5.6	1.5	1.2	1.2	1.3	1.2	1.1	0.8	0.8	1.0	1.0	0.9	0.7	0.8	0.6	10.6	6.9	5.6	24	10.6	0.6	3.2	0	0
29	2.8	3.5	2.7	5.2	5.1	5.8	1.4	0.8	0.7	0.5	0.6	1.8	2.2	1.7	0.9	0.7	0.7	0.4	0.8	0.8	0.7	0.8	0.6	0.6	24	5.8	0.4	1.7	0	0
30	0.5	0.5	0.5	0.5	0.7	0.8	0.5	0.6	0.7	0.9	1.0	0.9	1.0	1.0	0.9	1.0	0.9	0.9	1.1	2.3	1.6	1.1	1.1	1.1	24	2.3	0.5	0.9	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	715	30	29	30		
Maximum	37.8	28.0	32.7	34.6	29.4	30.1	12.0	48.0	20.6	7.1	5.9	7.6	9.8	15.3	7.5	19.9	10.4	6.0	18.5	27.6	56.6	46.8	28.2	34.4	24	56.6	5.9	23.9		
Minimum	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.2	0.0	0.2	0.3	0.1	0.3	0	0	0.0			
Average	4.5	6.3	7.5	6.3	6.1	4.6	4.3	5.4	3.1	2.2	1.7	1.9	2.0	2.4	2.1	2.3	2.0	1.7	2.2	2.9	5.9	7.7	6.5	5.5	23	16	1	4.0		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													56.6
													11.8
Data	0.4	0.5	0.8	1.2	2.3	3.0	3.5	5.1	9.2	16.8	32.3	56.6	4.0

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

SO2 - April (ug/m3) Rundle Road 2014

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>690	Days>275
1	1.7	0.9	0.9	0.9	0.9	0.8	1.1	1.0	2.6	2.2	1.6	1.6	1.5	1.5	1.6	1.5	1.5	1.5	1.4	13.2	3.1	3.8	1.4	1.0	24	13.2	0.8	2.0	0	0
2	0.9	0.8	0.8	1.1	0.9	0.8	0.8	0.8	0.9	0.9	0.8	1.1	1.3	1.4	1.4	1.3	0.9	0.8	0.8	0.9	0.2	0.2	0.2	0.1	24	1.4	0.1	0.8	0	0
3	0.2	0.2	0.2	0.2	0.1	0.3	0.1	0.5	0.9	13.9	8.5	0.9	24.4	2.0	1.4	22.9	3.5	1.3	0.8	0.8	0.9	0.8	1.2	1.4	24	24.4	0.1	3.6	0	0
4	0.8	1.1	1.4	1.0	0.9	1.3	1.3	1.5	1.5	1.7	1.0	1.0	1.0	1.0	0.9	1.0	0.8	0.8	1.5	0.9	2.5	1.3	1.0	1.5	24	2.5	0.8	1.2	0	0
5	1.1	1.3	1.3	0.8	0.8	0.9	0.4	0.8	0.9	0.7	0.8	0.8	0.8	0.8	0.8	0.6	0.4	0.5	0.2	0.1	0.1	0.1	0.2	0.4	24	1.3	0.1	0.6	0	0
6	0.3	0.3	0.2	0.3	0.9	0.3	0.7	1.1	1.8	1.6	2.6	1.7	11.4	7.6	4.4	3.2	2.0	3.3	2.2	1.7	0.9	0.9	0.9	0.8	24	11.4	0.2	2.1	0	0
7	1.2	1.1	1.2	1.6	1.6	1.2	0.8	1.2	1.4	2.6	2.5	3.4	2.9	2.2	2.6	12.1	11.5	1.2	1.0	1.2	1.5	1.3	1.4	1.4	24	12.1	0.8	2.5	0	0
8	1.2	1.0	0.9	1.0	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.8	0.8	0.9	1.0	0.9	0.8	0.9	1.0	1.4	1.2	1.0	24	1.4	0.8	1.0	0	0
9	0.8	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	24	1.0	0.8	0.9	0	0
10	0.9	0.8	1.0	0.8	1.0	0.9	1.5	1.6	1.5	1.6	2.3	1.8	2.2	2.8	2.7	3.0	2.8	2.3	2.3	1.4	0.8	0.9	0.9	0.9	24	3.0	0.8	1.6	0	0
11	0.9	0.9	1.3	0.9	1.0	1.2	0.9	0.9	0.7	0.9	1.5	1.2	0.8	0.8	0.7	0.7	0.8	0.9	0.8	0.8	0.8	0.7	1.0	0.9	24	1.5	0.7	0.9	0	0
12	1.3	0.7	0.7	0.8	1.0	0.7	0.9	1.6	2.2	3.1	3.0	5.1	4.8	3.6	2.9	3.0	1.6	1.1	0.9	1.7	2.0	1.4	0.8	0.8	24	5.1	0.7	1.9	0	0
13	0.9	0.9	1.1	0.9	0.9	0.9	0.8	1.0	1.5	1.5	1.6	2.6	4.3	6.5	2.9	2.9	5.3	4.1	1.6	2.0	2.3	2.0	1.9	1.5	24	6.5	0.8	2.2	0	0
14	1.6	2.0	1.6	1.9	1.7	2.0	2.9	3.4	3.0	3.4	2.5	2.3	1.5	1.3	1.1	1.6	1.1	0.9	0.9	0.8	0.9	0.9	0.9	0.9	24	3.4	0.8	1.7	0	0
15	0.8	0.9	0.9	1.0	1.0	0.9	0.8	0.9	0.9	0.9	0.8	1.0	1.0	1.1	2.7	3.4	3.5	1.2	0.7	0.7	0.4	0.4	0.4	0.3	24	3.5	0.3	1.1	0	0
16	0.2	0.3	0.2	0.2	0.9	1.3	1.5	5.3	6.8	4.3	1.8	1.1	0.8	0.9	1.7	3.8	2.1	1.4	1.0	1.3	0.7	0.4	0.6	0.1	24	6.8	0.1	1.6	0	0
17	0.1	0.2	0.2	1.7	3.5	1.3	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.9	1.0	1.0	1.0	0.9	0.9	1.1	24	3.5	0.1	1.0	0	0
18	1.0	0.9	0.8	0.8	0.8	1.0	0.9	1.1	2.0	2.0	1.4	1.5	2.3	4.2	1.7	1.6	1.0	0.8	0.8	0.8	0.7	0.4	0.4	0.2	24	4.2	0.2	1.2	0	0
19	0.1	0.6	0.2	0.2	0.3	0.3	0.6	0.9	0.8	0.6	0.8	1.2	1.2	1.1	1.8	0.9	0.9	0.8	1.0	0.8	0.6	0.9	0.3	0.4	24	1.8	0.1	0.7	0	0
20	0.6	0.2	0.4	0.2	0.1	0.4	0.3	0.7	1.2	0.8	0.8	0.8	0.8	0.8	0.9	1.0	0.8	0.9	0.8	0.8	0.6	0.8	0.7	0.7	24	1.2	0.1	0.7	0	0
21	0.8	1.0	0.6	0.9	0.9	0.8	1.0	1.7	3.7	8.5	18.7	22.1	14.0	9.4	6.8	5.4	3.9	3.5	3.4	2.9	3.5	3.8	3.2	2.3	24	22.1	0.6	5.1	0	0
22	2.2	3.3	2.7	2.7	2.4	1.6	1.6	2.3	3.1	2.8	1.5	1.4	1.1	1.4	1.2	0.9	0.9	0.9	0.8	0.8	0.9	5.0	6.2	3.3	24	6.2	0.8	2.1	0	0
23	1.4	0.9	0.8	0.8	0.9	0.8	0.9	0.8	0.9	0.9	0.8	0.8	C	C	0.1	0.6	1.9	2.9	2.1	1.5	2.0	1.1	0.3	0.2	22	2.9	0.1	1.1	0	0
24	0.2	0.0	0.2	0.2	0.2	0.2	0.8	0.8	0.8	0.7	0.4	0.5	0.7	0.6	0.9	0.9	0.8	0.6	0.6	0.7	0.5	0.5	0.3	0.5	24	0.9	0.0	0.5	0	0
25	0.2	0.7	1.8	2.9	3.1	3.6	2.4	0.9	1.3	2.4	1.4	1.1	1.1	0.8	0.9	1.0	1.0	0.9	0.7	0.6	0.7	0.6	0.5	0.5	24	3.6	0.2	1.3	0	0
26	0.5	0.5	0.5	0.2	0.2	0.6	0.6	0.7	0.9	0.7	0.7	0.3	0.4	0.5	0.8	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.1	0.2	24	0.9	0.1	0.4	0	0
27	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.4	0.2	0.4	0.1	0.6	0.7	0.4	0.7	0.3	0.3	0.4	0.1	0.3	0.2	24	0.7	0.0	0.3	0	0
28	0.2	0.6	1.0	0.5	0.2	0.2	0.3	0.1	0.2	2.6	15.9	0.9	1.1	1.1	4.1	1.9	22.1	16.7	1.2	0.6	0.5	0.4	1.1	0.8	24	22.1	0.1	3.1	0	0
29	0.8	0.8	0.9	1.2	0.8	0.6	0.8	0.9	0.8	0.8	0.7	0.4	0.6	0.4	0.6	0.1	0.2	0.0	0.2	0.2	0.2	0.3	0.5	0.1	24	1.2	0.0	0.5	0	0
30	0.3	0.2	0.5	0.3	0.3	0.1	0.2	0.6	0.2	0.1	0.4	0.2	0.3	0.3	0.5	0.2	0.1	0.7	0.2	0.5	0.4	0.7	0.4	0.3	24	0.7	0.1	0.3	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	30	29	30		
Maximum	2.2	3.3	2.7	2.9	3.5	3.6	2.9	5.3	6.8	13.9	18.7	22.1	24.4	9.4	6.8	22.9	22.1	16.7	3.4	13.2	3.5	5.0	6.2	3.3	24	24.4	2.2	9.4		
Minimum	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.4	0.2	0.3	0.1	0.1	0.1	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0	0	0.0			
Average	0.8	0.8	0.8	0.9	1.0	0.9	0.9	1.2	1.5	2.2	2.6	2.0	2.9	2.0	1.7	2.6	2.5	1.8	1.0	1.4	1.0	1.1	1.0	0.8	23	5	0	1.5		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.2	0.5	0.8	0.8	0.9	1.0	1.2	1.6	2.8	3.8	14.0	24.4

	Maximum
	24.4
	5.1
	1.5

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

SO2 - Rundle Road
May 2014
(ug/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	Hrs>690	Days>275
1	0.5	0.6	0.6	0.4	0.4	0.6	1.0	0.9	0.7	1.6	1.8	0.9	0.9	0.9	0.9	1.8	1.3	0.8	0.8	0.9	1.4	1.6	1.2	1.6	24	1.8	0.4	1.0	0	0
2	1.7	1.3	1.7	1.1	2.0	1.7	1.6	1.0	0.8	0.9	1.3	1.2	3.2	2.5	1.3	1.1	1.6	1.4	1.0	1.4	1.8	0.9	0.9	1.0	24	3.2	0.8	1.4	0	0
3	1.2	1.2	1.4	1.2	1.0	0.9	1.6	1.1	0.9	1.0	1.2	0.9	1.3	1.5	1.4	0.9	0.8	0.8	0.8	0.9	0.8	0.7	0.7	0.4	24	1.6	0.4	1.0	0	0
4	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.5	0.4	0.7	0.7	0.7	0.8	0.8	0.6	0.6	0.8	0.6	0.8	2.1	0.9	0.8	1.0	0.9	24	2.1	0.4	0.8	0	0
5	0.5	0.2	0.4	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.4	0.8	0.8	0.8	0.9	0.9	1.1	1.0	1.8	0.6	0.3	0.3	0.3	24	1.8	0.1	0.5	0	0
6	0.4	0.5	0.4	1.0	0.9	0.7	0.3	0.7	0.7	0.7	2.0	1.7	0.9	0.7	0.7	0.5	0.7	0.9	0.9	0.9	0.5	0.2	0.2	0.2	24	2.0	0.2	0.7	0	0
7	0.2	0.2	0.4	0.2	0.3	0.9	0.2	1.2	1.8	1.0	0.9	0.3	1.0	0.1	0.2	0.4	0.1	0.2	0.2	0.2	0.3	0.2	0.4	1.2	24	1.8	0.1	0.5	0	0
8	0.5	0.4	0.6	0.3	0.2	0.3	0.4	0.9	1.1	0.9	2.7	18.9	53.5	5.5	1.6	0.8	0.8	0.7	1.1	0.8	0.9	1.9	0.8	0.8	24	53.5	0.2	4.0	0	0
9	0.8	1.0	1.0	0.9	0.8	0.9	1.1	1.2	0.9	1.2	2.1	5.0	10.8	4.0	4.5	2.7	1.3	0.8	0.9	0.8	1.2	1.2	0.9	0.9	24	10.8	0.8	2.0	0	0
10	0.9	0.8	0.9	1.2	1.0	1.1	1.3	1.4	1.6	1.5	0.9	0.9	1.1	0.8	0.8	0.8	0.5	0.6	0.7	0.8	0.9	1.0	0.3	0.3	24	1.6	0.3	0.9	0	0
11	0.7	0.5	0.5	0.3	0.4	0.1	0.4	0.5	0.8	1.7	1.4	2.0	1.2	0.9	1.3	1.4	1.0	0.8	0.8	1.0	1.3	0.9	1.2	1.6	24	2.0	0.1	0.9	0	0
12	2.2	2.2	1.2	0.8	0.6	0.7	1.0	2.1	2.8	4.1	2.4	2.7	11.3	6.0	22.4	24.2	8.7	3.2	3.1	2.5	2.3	2.0	1.8	1.2	24	24.2	0.6	4.6	0	0
13	1.4	1.0	0.9	0.9	0.8	0.9	0.9	1.2	0.8	0.9	0.8	1.3	1.0	1.2	1.6	1.2	0.8	0.8	0.9	2.7	2.7	1.3	1.0	0.5	24	2.7	0.5	1.1	0	0
14	0.8	0.4	0.8	1.1	0.8	0.7	0.9	0.9	0.9	0.8	0.7	0.7	0.7	0.8	0.7	0.8	1.2	1.3	0.5	0.4	0.3	0.8	0.7	0.4	24	1.3	0.3	0.8	0	0
15	0.3	0.6	0.4	0.8	0.9	0.8	0.7	0.9	1.0	0.9	0.8	1.0	0.8	0.8	1.1	0.9	1.0	0.7	0.7	0.5	0.4	0.4	0.8	0.5	24	1.1	0.3	0.7	0	0
16	0.4	0.7	0.3	0.6	0.8	0.8	0.7	0.6	0.6	0.6	0.5	0.7	0.6	0.4	0.9	0.9	0.9	0.9	1.1	0.4	0.2	0.3	0.3	0.8	24	1.1	0.2	0.6	0	0
17	0.4	0.6	0.6	0.2	0.4	0.5	0.4	0.5	0.7	0.3	0.9	1.2	1.6	2.6	2.0	3.0	3.8	2.5	5.5	3.4	1.6	1.1	0.4	0.7	24	5.5	0.2	1.5	0	0
18	0.4	0.2	0.6	0.2	0.2	0.2	0.6	0.9	1.2	1.9	1.9	4.5	4.1	5.1	4.5	3.5	2.7	2.8	2.4	1.0	0.7	0.4	0.7	0.3	24	5.1	0.2	1.7	0	0
19	0.7	0.3	0.2	0.2	0.4	0.8	1.2	1.5	1.7	2.1	2.7	2.9	3.1	3.0	2.8	3.0	2.1	2.0	1.7	1.9	1.0	0.9	1.0	1.8	24	3.1	0.2	1.6	0	0
20	1.2	0.9	0.9	0.9	0.9	0.9	0.9	1.4	1.4	1.3	28.9	4.4	1.1	1.4	1.5	2.1	2.6	2.7	1.8	1.3	1.5	1.0	0.9	0.9	24	28.9	0.9	2.6	0	0
21	1.2	1.0	1.1	0.9	1.7	2.3	2.2	2.0	5.9	10.8	7.1	2.1	1.6	3.2	1.6	5.5	1.4	2.8	1.8	1.3	0.9	0.9	1.0	0.8	24	10.8	0.8	2.6	0	0
22	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.9	0.7	0.7	24	0.9	0.7	0.8	0	0
23	0.6	0.5	0.8	0.9	0.4	0.7	0.3	0.5	0.5	0.4	0.5	0.7	0.8	1.1	1.4	0.9	0.8	0.6	0.8	0.7	0.8	0.6	0.4	0.4	24	1.4	0.3	0.7	0	0
24	0.7	0.6	0.3	0.7	0.6	0.4	0.7	0.6	0.6	0.6	1.3	0.9	0.4	0.6	0.3	0.8	0.8	0.8	0.9	0.9	0.8	0.9	0.9	0.9	24	1.3	0.3	0.7	0	0
25	0.8	0.8	0.8	0.7	0.7	0.6	0.8	1.0	0.8	1.0	2.9	4.5	7.3	9.0	1.9	1.4	0.9	0.9	1.1	1.6	1.6	1.9	1.6	1.0	24	9.0	0.6	1.9	0	0
26	0.9	0.9	0.9	1.2	1.2	2.0	2.2	2.7	3.1	3.4	4.3	6.6	4.2	5.9	2.9	2.7	2.4	1.9	1.6	1.9	1.8	1.4	1.6	1.8	24	6.6	0.9	2.5	0	0
27	1.6	1.8	2.2	2.0	1.9	2.6	3.2	2.9	2.4	2.4	2.4	2.3	5.3	3.3	1.9	1.5	1.3	1.3	1.5	1.0	0.8	0.9	0.8	0.9	24	5.3	0.8	2.0	0	0
28	0.8	0.9	0.9	0.9	0.8	0.8	1.2	0.8	0.8	84.0	84.6	0.9	0.9	1.3	1.2	1.1	0.5	0.6	0.9	0.9	0.8	0.5	0.6	0.4	24	84.6	0.4	7.8	0	0
29	0.4	0.2	0.3	0.6	0.4	0.5	0.8	0.7	0.8	0.9	0.8	0.9	0.8	7.2	1.7	1.1	0.9	1.8	4.2	0.9	0.8	0.8	0.7	0.9	24	7.2	0.2	1.2	0	0
30	0.8	0.8	0.7	0.7	0.7	0.4	0.7	0.7	0.8	0.8	0.8	84.0	80.3	0.7	0.8	0.8	0.7	0.8	0.8	0.7	0.9	0.6	0.4	0.7	24	84.0	0.4	7.5	0	0
31	0.8	0.7	0.4	0.3	0.2	0.3	0.2	0.2	3.1	1.1	0.5	0.6	3.4	3.2	1.2	1.0	0.8	1.2	1.0	0.9	0.7	0.8	0.7	0.5	24	3.4	0.2	1.0	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	31	31	31		
Maximum	2.2	2.2	2.2	2.0	2.0	2.6	3.2	2.9	5.9	84.0	84.6	84.0	80.3	9.0	22.4	24.2	8.7	3.2	5.5	3.4	2.7	2.0	1.8	1.8	24	84.6	1.8	18.4		
Minimum	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.3	0.4	0.1	0.2	0.4	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	0.9	0.1	0.2		
Average	0.8	0.8	0.8	0.7	0.7	0.8	0.9	1.0	1.3	4.2	5.2	5.0	6.6	2.4	2.2	2.2	1.5	1.3	1.4	1.2	1.0	0.9	0.8	0.8	24	12	0	1.9		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.4	0.6	0.7	0.8	0.9	0.9	1.2	1.6	2.6	3.9	20.9	84.6

	Maximum
	84.6
	7.8
	1.9

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

SO2 - Rundle Road
June 2014
(ug/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	Hrs>690	Days>275
1	0.6	0.3	0.7	0.7	0.6	0.5	1.1	1.5	2.5	4.9	6.1	11.0	45.9	91.6	77.8	2.3	2.4	5.1	4.2	1.1	1.1	0.9	1.0	0.8	24	91.6	0.3	11.0	0	0
2	0.9	0.9	0.9	0.9	0.9	1.2	1.6	2.3	2.9	3.6	3.4	3.6	2.8	2.8	86.8	78.8	1.8	1.5	1.3	0.8	0.9	1.1	0.8	0.9	24	86.8	0.8	8.5	0	0
3	0.8	1.4	1.3	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.3	0.2	0.8	0.8	0.8	0.9	0.8	0.9	1.0	24	1.4	0.2	0.9	0	0
4	0.9	0.9	1.2	0.9	1.1	1.9	3.8	1.5	0.8	0.9	1.0	1.4	1.5	4.6	4.8	1.9	1.3	0.9	0.9	0.8	0.9	0.9	1.0	1.0	24	4.8	0.8	1.5	0	0
5	1.0	0.9	0.9	1.0	1.5	1.1	0.9	0.9	0.8	1.4	1.4	1.6	1.3	0.9	0.9	0.9	0.8	0.7	0.9	0.8	0.8	0.9	0.9	0.9	24	1.6	0.7	1.0	0	0
6	0.9	1.0	1.4	1.0	0.9	1.0	1.1	1.2	1.1	0.8	0.9	3.6	5.4	1.5	1.5	1.7	1.8	1.5	1.3	0.9	0.9	1.0	0.9	0.9	24	5.4	0.8	1.4	0	0
7	0.9	0.9	0.9	0.9	1.0	0.9	1.4	1.6	1.4	1.6	1.3	1.1	0.9	1.0	1.1	1.3	1.6	1.7	1.5	1.6	1.0	0.9	1.1	1.0	24	1.7	0.9	1.2	0	0
8	0.9	0.9	1.0	0.9	1.0	1.1	1.4	1.6	1.6	1.7	1.8	1.6	1.6	1.6	1.6	1.1	1.2	1.0	0.9	0.9	0.9	1.2	0.9	0.8	24	1.8	0.8	1.2	0	0
9	0.8	0.9	1.3	1.6	1.4	0.8	0.9	0.9	1.4	1.4	1.3	C	0.7	0.8	0.1	0.2	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	23	1.6	0.0	0.7	0	0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.0	0.0	7.4	4.9	16.2	10.7	2.0	0.4	0.3	0.2	0.0	0.0	0.1	24	16.2	0.0	1.8	0	0
11	0.2	0.3	0.4	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.2	24	0.4	0.0	0.1	0	0
12	0.4	0.0	0.1	0.0	0.2	0.0	0.2	0.2	0.2	0.3	2.9	1.2	0.3	0.3	0.2	1.1	2.0	1.0	0.5	0.2	0.2	0.1	0.1	0.1	24	2.9	0.0	0.5	0	0
13	0.0	0.2	0.0	0.1	0.0	0.0	0.3	0.4	0.2	0.6	0.9	0.7	0.2	0.2	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.9	0.0	0.2	0	0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	2.4	1.4	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	24	2.4	0.0	0.2	0	0
15	0.3	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	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	24	0.8	0.0	0.1	0	0
16	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.9	0.2	0.3	0.2	0.2	0.2	0.5	0.2	0.2	0.0	0.0	0.3	24	0.9	0.0	0.2	0	0
17	0.8	0.0	0.0	0.1	0.0	0.2	0.5	1.0	1.2	3.6	0.6	0.3	0.3	0.3	0.7	7.0	7.4	3.3	0.3	0.2	0.2	0.2	0.0	0.0	24	7.4	0.0	1.2	0	0
18	0.0	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.6	4.4	2.9	2.5	1.2	1.6	1.4	0.6	0.2	0.5	0.2	0.0	24	4.4	0.0	0.7	0	0
19	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.1	0.0	0.0	0	0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	24	0.1	0.0	0.0	0	0
21	0.0	0.1	0.1	0.0	0.1	0.0	0.2	1.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.0	24	1.2	0.0	0.1	0	0
22	0.1	0.0	0.0	0.1	0.1	0.0	0.3	0.2	0.1	0.0	0.2	0.1	0.2	1.4	5.5	15.4	2.7	0.5	0.2	0.4	0.2	0.0	0.1	0.0	24	15.4	0.0	1.2	0	0
23	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.8	0.5	0.5	0.3	0.6	0.5	0.4	0.4	0.2	0.2	0.3	24	0.8	0.0	0.3	0	0
24	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	24	0.3	0.1	0.2	0	0
25	0.2	0.1	0.0	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	24	0.2	0.0	0.1	0	0
26	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.0	0.3	0.4	0.3	0.4	0.4	0.8	0.9	1.4	0.8	0.7	0.3	0.4	0.3	0.4	24	1.4	0.0	0.4	0	0
27	0.2	0.3	0.2	0.2	0.5	0.3	0.6	0.8	10.2	5.7	0.9	0.7	0.3	0.3	0.2	0.6	1.2	2.1	1.1	0.8	0.5	0.3	0.4	0.3	24	10.2	0.2	1.2	0	0
28	0.3	0.4	0.3	0.2	0.7	1.4	2.1	0.8	0.8	0.8	8.3	19.1	8.5	7.3	2.4	2.1	1.4	1.2	0.8	0.6	0.2	0.4	0.3	0.4	24	19.1	0.2	2.5	0	0
29	0.7	0.6	0.3	0.4	0.3	0.3	0.8	1.3	1.9	1.4	2.0	2.3	1.6	1.7	2.1	1.2	1.0	0.7	0.5	0.5	0.2	0.4	0.5	0.3	24	2.3	0.2	1.0	0	0
30	0.4	0.3	0.3	0.4	0.4	0.7	0.5	0.4	0.9	0.9	0.6	0.2	0.4	0.6	0.6	0.6	0.5	0.7	0.7	0.7	0.6	0.6	0.8	0.6	24	0.9	0.2	0.6	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	719	30	29	30		
Maximum	1.0	1.4	1.4	1.6	1.5	1.9	3.8	2.3	10.2	5.7	8.3	19.1	45.9	91.6	86.8	78.8	10.7	5.1	4.2	1.6	1.1	1.2	1.1	1.0	24	91.6	1.0	16.1		
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	0	0.0			
Average	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.6	1.0	1.0	1.2	1.8	2.5	4.5	6.6	4.6	1.4	1.0	0.7	0.5	0.4	0.4	0.4	0.4	23	9	0	1.3		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.0	0.1	0.2	0.3	0.6	0.9	1.1	1.6	2.9	14.6	91.6

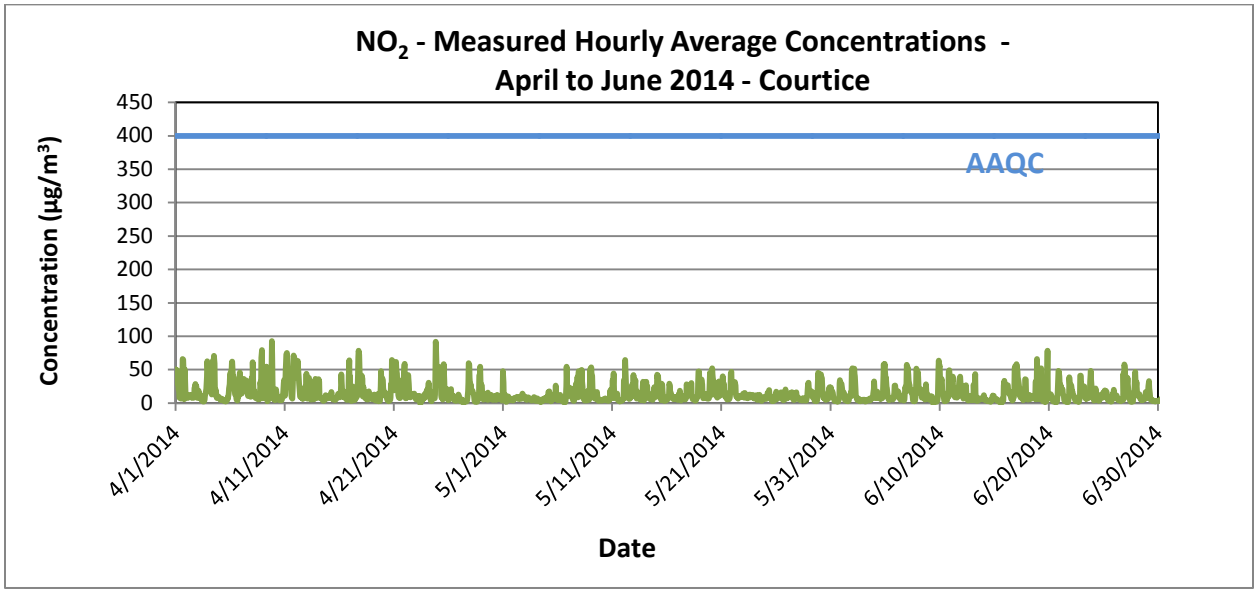
	Maximum
	91.6
	11.0
	1.3

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

Appendix B

NO_2 Data Summaries and Time History Plots

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



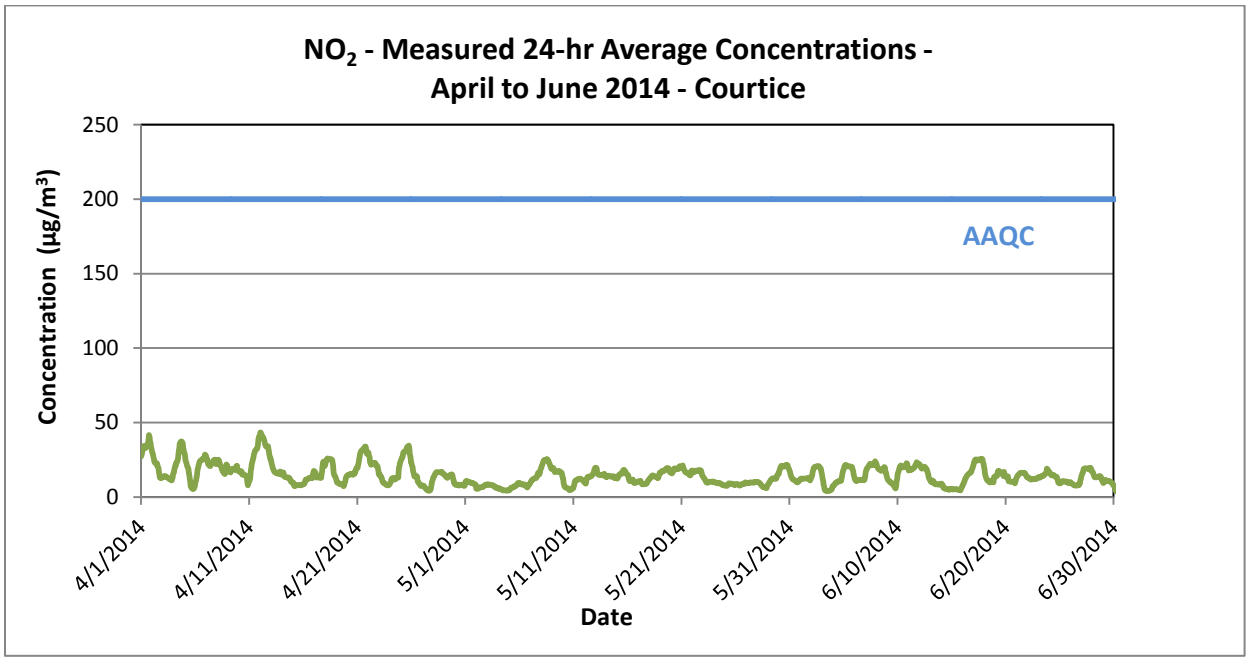
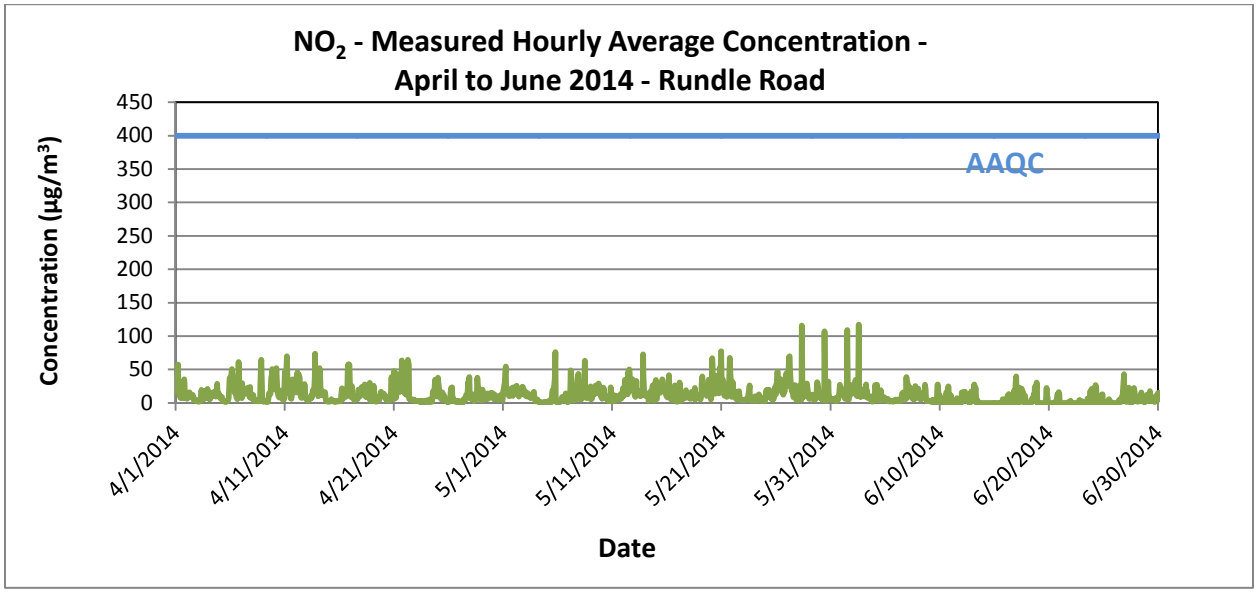
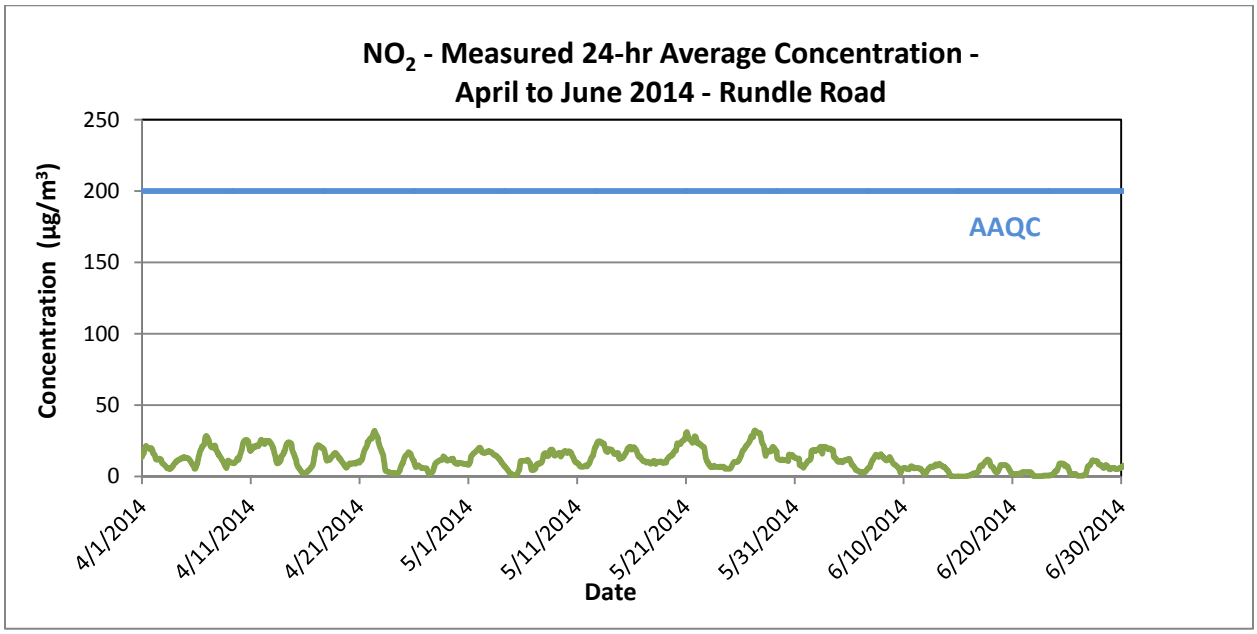


Figure B-2 Time History Plots of Measured Hourly Average and 24-Hour Average NO_2 Concentrations – Rundle Road Station





NO_2 - April (ug/m3) COURTICE 2014

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>400	Days>200
1	50.6	30.4	31.2	40.2	49.1	42.8	43.7	21.6	17.7	7.9	9.0	34.6	6.4	45.3	27.4	21.4	66.0	65.1	49.7	5.8	31.7	50.2	19.0	11.0	24	66.0	5.8	32.4	0	0
2	12.4	9.8	8.2	7.6	10.5	10.9	11.3	11.8	12.4	11.3	11.3	9.0	8.2	7.7	8.0	8.0	8.1	8.1	22.3	24.7	28.4	24.6	25.0	19.7	24	28.4	7.6	13.3	0	0
3	18.7	7.5	10.4	18.5	10.0	8.5	12.6	9.9	10.2	5.1	3.9	3.3	2.5	2.3	2.4	2.3	5.1	10.9	13.0	18.3	21.5	39.2	62.6	58.6	24	62.6	2.3	14.9	0	0
4	39.5	24.9	54.6	57.7	32.8	16.4	52.4	23.0	12.6	20.3	53.9	65.0	42.9	70.6	59.2	24.5	11.1	19.5	14.6	7.5	10.7	9.0	8.0	9.3	24	70.6	7.5	30.8	0	0
5	8.1	7.8	6.5	4.9	4.9	5.6	6.5	4.7	4.2	3.5	4.1	3.0	3.3	2.5	2.6	2.3	2.9	3.8	4.8	8.3	7.7	14.2	21.9	28.2	24	28.2	2.3	6.9	0	0
6	41.2	46.1	33.0	37.7	61.4	62.0	43.1	39.0	39.5	34.6	20.8	13.0	13.4	11.4	6.8	4.6	3.7	4.5	26.1	10.1	16.6	41.2	45.9	24.8	24	62.0	3.7	28.4	0	0
7	26.4	23.3	14.2	16.5	24.9	22.7	36.1	35.0	32.1	25.7	17.5	29.7	34.1	23.5	22.8	11.4	10.4	22.1	30.6	13.2	16.7	9.6	9.5	21.5	24	36.1	9.5	22.1	0	0
8	37.5	24.9	61.4	26.3	13.3	18.9	15.9	12.4	7.6	9.0	8.3	7.8	6.7	5.7	5.4	5.6	6.3	6.2	19.1	31.3	23.9	68.0	79.2	12.5	24	79.2	5.4	21.4	0	0
9	6.9	11.2	16.4	13.7	9.6	16.3	10.2	6.9	54.5	20.7	2.9	3.5	4.8	6.2	10.5	10.9	9.5	8.7	9.3	13.9	92.6	73.0	6.7	8.8	24	92.6	2.9	17.8	0	0
10	9.0	5.9	4.9	4.2	7.6	20.7	16.2	9.7	10.0	9.5	7.2	5.7	4.4	4.0	4.2	4.1	4.2	3.9	4.6	8.2	12.4	13.1	29.7	34.5	24	34.5	3.9	9.9	0	0
11	22.3	10.7	49.2	60.0	72.9	75.0	71.1	45.5	35.9	43.3	41.1	35.3	32.2	30.3	17.3	11.4	8.1	6.7	17.8	47.9	71.4	66.0	66.7	43.9	24	75.0	6.7	40.9	0	0
12	37.3	54.5	46.6	37.8	54.0	62.9	52.6	39.1	29.8	17.1	9.9	9.0	8.5	8.8	7.1	11.5	5.9	13.9	14.3	15.3	13.1	24.9	17.9	18.1	24	62.9	5.9	25.4	0	0
13	44.1	16.7	6.4	6.7	29.7	36.4	37.6	22.0	10.4	13.4	4.9	5.5	5.5	5.4	7.8	5.7	5.6	5.8	17.2	27.8	36.1	18.6	15.9	9.6	24	44.1	4.9	16.5	0	0
14	7.4	16.9	12.6	36.0	31.8	8.9	8.8	8.0	8.0	6.5	6.0	5.3	4.3	3.2	4.6	7.4	4.8	4.8	11.6	9.8	8.3	8.1	7.5	8.6	24	36.0	3.2	10.0	0	0
15	7.0	11.1	9.1	7.5	8.0	8.2	11.8	16.7	8.7	6.8	6.8	5.3	5.7	6.3	5.5	5.5	4.4	6.1	7.4	7.4	9.9	11.8	13.6	10.8	24	16.7	4.4	8.4	0	0
16	13.7	8.4	15.4	13.6	26.4	43.0	25.3	11.4	9.5	11.3	8.9	9.9	16.9	12.0	7.1	7.7	5.9	4.8	5.3	5.4	5.8	39.4	64.0	25.3	24	64.0	4.8	16.5	0	0
17	39.9	4.3	3.7	3.5	3.3	4.0	5.6	24.6	17.1	5.2	5.5	4.7	6.5	7.5	8.1	9.8	11.6	42.1	69.1	78.6	72.0	53.1	14.7	19.8	24	78.6	3.3	21.4	0	0
18	23.5	23.8	41.3	36.3	9.8	24.3	11.4	17.5	9.8	8.1	6.7	7.5	6.1	5.7	5.6	5.2	11.9	17.5	10.5	11.1	11.1	10.2	7.9	8.6	24	41.3	5.2	13.8	0	0
19	5.7	11.4	8.6	9.4	10.5	12.8	11.4	4.3	5.4	3.8	3.6	4.0	13.2	6.0	4.4	2.6	2.8	3.2	3.2	25.3	47.9	27.5	35.8	37.4	24	47.9	2.6	12.5	0	0
20	34.5	21.7	17.6	14.5	12.8	12.4	11.6	14.8	8.5	6.1	4.2	4.5	3.9	2.9	4.1	4.0	4.8	8.3	28.0	19.5	64.6	63.3	55.7	50.1	24	64.6	2.9	19.7	0	0
21	39.7	19.0	52.7	49.6	55.1	61.8	50.7	44.1	29.3	23.2	11.9	8.1	12.1	9.7	7.5	8.6	11.4	34.1	31.8	18.8	13.0	15.7	37.8	56.5	24	61.8	7.5	29.3	0	0
22	58.7	15.0	6.9	25.0	19.4	8.2	33.1	24.1	42.1	29.1	18.7	10.5	9.5	8.6	9.8	13.3	10.5	12.4	10.9	11.8	11.7	14.2	9.8	9.5	24	58.7	6.9	17.6	0	0
23	6.7	5.2	5.8	6.7	6.1	11.0	9.9	8.6	10.7	8.9	C	C	4.7	4.1	4.5	4.9	5.7	7.3	6.5	12.5	8.4	13.7	13.8	11.5	22	13.8	4.1	8.1	0	0
24	17.0	20.1	18.8	22.2	27.2	30.7	17.8	12.7	6.0	6.0	3.6	2.6	4.9	13.1	15.7	10.7	8.9	7.6	7.2	13.0	91.8	83.2	50.0	48.8	24	91.8	2.6	22.5	0	0
25	46.7	37.1	32.8	38.8	54.0	41.1	51.6	46.0	11.6	7.8	8.4	9.2	5.1	13.9	58.4	33.1	12.7	13.4	16.5	19.1	21.5	10.7	7.9	7.4	24	58.4	5.1	25.2	0	0
26	4.9	5.8	7.0	9.6	6.4	12.1	20.8	9.2	9.6	11.2	11.4	9.7	4.6	5.2	6.5	3.5	3.1	3.4	5.6	5.3	6.2	4.5	12.7	11.3	24	20.8	3.1	7.9	0	0
27	3.8	3.1	5.9	4.1	6.1	2.2	4.0	4.6	1.5	1.7	1.9	2.1	1.8	2.7	3.9	2.6	2.2	3.4	7.2	17.7	31.2	59.6	57.5	38.1	24	59.6	1.5	11.2	0	0
28	22.4	28.4	16.3	19.2	18.9	18.5	16.0	13.7	13.2	3.6	2.2	1.9	2.0	2.1	2.2	1.6	2.4	6.1	5.5	10.9	41.7	42.8	54.2	34.5	24	54.2	1.6	15.8	0	0
29	9.0	27.6	14.2	8.7	9.6	4.9	5.3	8.6	7.0	8.8	13.2	7.8	8.7	5.0	5.1	15.6	5.3	5.8	11.2	10.2	11.5	9.8	12.2	7.7	24	27.6	4.9	9.7	0	0
30	5.8	5.1	4.7	5.9	6.9	8.4	5.8	11.0	6.0	4.5	6.2	12.2	12.0	9.2	5.7	9.4	7.6	5.9	6.6	8.2	10.3	11.6	3.7	13.8	24	13.8	3.7	7.8	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	718	30	29	30		
Maximum	58.7	54.5	61.4	60.0	72.9	75.0	71.1	46.0	54.5	43.3	53.9	65.0	42.9	70.6	59.2	33.1	66.0	65.1	69.1	78.6	92.6	83.2	79.2	58.6	24	92.6	33.1	63.1		
Minimum	3.8	3.1	3.7	3.5	3.3	2.2	4.0	4.3	1.5	1.7	1.9	1.9	1.8	2.1	2.2	1.6	2.2	3.2	3.2	5.3	5.8	4.5	3.7	7.4	0	0	1.5			
Average	23.3	17.9	20.5	21.4	23.1	23.7	23.7	18.7	16.0	12.5	10.8	11.4	9.8	11.4	11.3	9.0	8.8	12.2	16.2	17.2	28.3	31.0	28.9	23.3	23	50	4	17.9		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													92.6
													40.9
Data	4.3	5.7	7.5	8.9	10.9	13.2	18.9	29.6	43.9	56.7	72.7	92.6	17.9

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

NO_2 - COURTICE
May 2014
(ug/m3)

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>400	Days>200
1	47.6	30.6	5.0	3.8	6.6	12.3	2.3	2.4	1.9	3.2	6.6	6.0	10.1	7.1	5.2	6.5	6.2	4.3	4.9	4.7	5.7	5.7	3.8	4.3	24	47.6	1.9	8.2	0	0
2	6.9	7.4	7.2	7.5	7.3	7.6	8.8	9.6	8.0	7.3	6.2	6.6	8.8	8.0	6.8	6.1	10.0	11.1	12.6	14.2	12.1	7.5	6.5	6.9	24	14.2	6.1	8.4	0	0
3	7.8	9.2	8.3	6.2	4.6	4.5	6.1	8.5	8.7	6.4	6.6	6.3	5.5	4.7	5.7	3.9	3.6	4.6	4.5	4.9	8.7	9.0	5.7	5.8	24	9.2	3.6	6.2	0	0
4	3.4	3.4	3.1	5.2	7.1	4.4	4.6	3.4	3.7	3.0	2.0	2.1	1.8	2.4	5.6	3.1	3.2	4.9	5.4	5.9	7.6	6.2	5.8	6.9	24	7.6	1.8	4.3	0	0
5	7.9	3.6	9.8	7.6	16.5	15.6	17.5	3.8	3.1	2.7	2.7	5.5	12.2	11.0	7.5	5.4	5.7	8.1	10.4	13.0	26.1	15.1	6.9	7.1	24	26.1	2.7	9.4	0	0
6	4.4	5.8	4.9	5.3	7.5	11.4	12.5	6.8	4.1	3.9	4.1	3.9	2.1	2.1	1.1	1.1	0.8	1.5	3.1	25.4	54.5	17.1	10.1	13.2	24	54.5	0.8	8.6	0	0
7	17.5	23.8	17.1	17.7	17.4	13.9	21.7	16.1	9.2	5.5	5.1	3.6	3.1	4.0	13.1	8.7	28.6	18.9	23.8	25.8	39.2	8.5	45.0	47.8	24	47.8	3.1	18.1	0	0
8	42.7	29.0	44.1	43.6	32.7	49.6	34.9	24.8	8.1	11.3	6.6	3.8	8.9	9.9	7.6	5.0	3.8	13.2	7.5	18.5	5.4	4.8	4.9	34.6	24	49.6	3.8	19.0	0	0
9	51.1	14.7	53.4	44.6	40.5	24.0	9.0	10.8	12.4	8.7	6.3	6.7	8.6	9.1	12.7	16.8	5.3	4.1	3.3	4.1	5.0	5.0	5.0	4.1	24	53.4	3.3	15.2	0	0
10	3.7	3.6	3.6	3.9	4.1	5.8	6.2	6.0	6.6	6.9	5.8	4.3	4.0	3.8	3.5	3.6	4.2	3.9	4.5	9.5	19.3	7.6	7.2	7.0	24	19.3	3.5	5.8	0	0
11	9.0	34.5	24.3	44.3	28.9	9.3	8.6	7.2	10.4	12.5	9.1	14.4	7.8	4.3	3.9	3.4	2.5	2.3	2.6	3.1	5.1	5.3	3.9	5.4	24	44.3	2.3	10.9	0	0
12	5.4	6.3	34.1	30.3	15.5	64.5	39.1	25.3	18.4	17.6	10.0	9.7	7.0	7.9	6.0	6.8	7.6	8.3	10.8	10.0	27.8	13.7	23.4	42.0	24	64.5	5.4	18.7	0	0
13	17.3	20.7	22.3	34.2	10.6	18.7	6.6	7.8	16.4	12.2	8.5	8.7	8.2	5.7	5.5	4.5	11.6	4.5	6.9	25.6	32.2	20.1	3.9	21.8	24	34.2	3.9	13.9	0	0
14	13.3	15.4	23.3	31.8	18.1	25.4	13.8	8.7	7.9	8.8	9.0	5.9	5.4	5.6	7.3	6.0	6.0	4.7	15.5	12.5	13.9	23.9	14.7	12.7	24	31.8	4.7	12.9	0	0
15	9.2	9.7	20.3	42.6	37.5	40.4	30.0	15.3	10.5	15.6	9.1	9.2	4.1	29.2	27.0	18.1	12.3	3.5	3.9	3.2	3.2	3.9	4.4	4.0	24	42.6	3.2	15.3	0	0
16	4.5	5.4	5.5	10.1	11.4	13.5	29.1	25.3	16.2	15.2	10.0	11.4	9.8	7.6	6.2	6.7	8.9	6.2	5.5	7.3	9.0	8.1	7.9	5.3	24	29.1	4.5	10.3	0	0
17	4.8	9.8	9.1	13.5	12.0	18.6	11.6	7.2	3.9	6.2	11.1	10.3	9.6	9.8	8.4	10.0	6.9	5.3	7.0	8.7	28.0	23.7	20.9	11.5	24	28.0	3.9	11.2	0	0
18	12.0	26.8	20.9	11.3	20.9	26.8	30.0	13.6	9.7	5.6	5.5	6.0	7.4	4.9	3.7	4.2	3.9	6.6	7.2	10.7	9.5	32.2	47.2	47.3	24	47.3	3.7	15.6	0	0
19	27.9	24.0	20.8	24.3	34.6	35.1	27.6	12.1	7.3	7.5	14.2	13.4	13.6	13.1	11.6	11.7	6.8	6.6	7.1	7.8	6.8	7.2	16.1	45.5	24	45.5	6.6	16.8	0	0
20	22.7	18.2	18.5	12.5	51.9	43.3	32.9	32.8	29.0	16.7	13.7	12.1	11.7	11.2	10.0	8.1	8.9	10.0	13.5	32.6	16.6	10.9	11.9	16.9	24	51.9	8.1	19.4	0	0
21	29.2	19.8	26.0	40.3	18.3	18.1	28.8	11.8	13.7	8.8	9.9	9.2	5.4	5.2	5.8	8.1	14.9	5.7	6.5	8.0	17.5	43.8	46.6	27.3	24	46.6	5.2	17.9	0	0
22	24.7	19.7	22.3	16.8	23.0	22.1	31.7	26.2	13.4	10.0	9.3	9.5	7.1	6.5	7.6	8.8	8.8	10.9	8.8	10.0	10.1	10.8	9.8	11.9	24	31.7	6.5	14.2	0	0
23	14.3	8.9	8.1	8.1	15.1	11.9	11.3	10.6	8.2	7.8	6.9	9.0	11.1	12.1	12.8	9.3	8.6	8.4	9.5	10.6	10.9	12.5	11.2	7.7	24	15.1	6.9	10.2	0	0
24	10.0	6.4	7.5	8.9	10.3	11.8	9.3	4.6	5.0	6.2	10.5	12.5	12.4	9.1	7.7	4.3	3.1	3.2	5.8	8.6	8.3	7.6	7.6	8.8	24	12.5	3.1	7.9	0	0
25	5.9	6.0	6.3	5.9	7.8	12.3	15.1	14.7	16.8	19.5	12.9	8.4	10.8	10.1	4.9	3.4	2.7	3.2	3.1	3.1	3.9	4.2	4.0	6.1	24	19.5	2.7	8.0	0	0
26	13.1	17.1	7.6	6.0	6.7	10.2	10.3	10.2	10.3	12.0	14.0	16.1	14.7	12.6	8.9	5.4	4.2	4.2	4.4	6.1	7.4	20.6	7.6	7.1	24	20.6	4.2	9.9	0	0
27	6.9	7.2	8.4	8.6	9.0	10.1	10.1	12.9	12.0	15.9	15.7	14.0	16.0	13.0	5.9	4.7	4.5	4.8	6.8	6.8	15.6	16.1	10.4	7.0	24	16.1	4.5	10.1	0	0
28	7.3	8.7	6.8	5.2	4.9	5.0	4.9	5.2	4.1	4.0	3.7	6.8	7.3	5.9	4.7	4.0	4.2	3.8	3.7	3.6	8.0	11.2	25.9	30.0	24	30.0	3.6	7.4	0	0
29	30.5	15.3	15.5	15.9	18.8	17.8	14.4	17.1	10.4	8.5	10.1	15.2	7.6	3.4	3.2	3.1	3.0	2.9	3.4	3.9	31.2	45.3	39.4	32.0	24	45.3	2.9	15.3	0	0
30	34.8	41.5	42.8	43.2	39.1	37.2	25.7	14.6	7.8	8.7	8.3	6.5	8.2	12.6	4.9	8.3	9.3	8.1	5.7	6.4	17.3	22.0	23.7	15.2	24	43.2	4.9	18.8	0	0
31	13.8	23.5	12.8	15.7	17.8	15.2	11.2	6.4	5.6	3.3	3.1	3.7	3.0	3.1	2.3	2.7	2.2	2.4	5.4	6.8	29.5	34.2	22.0	27.4	24	34.2	2.2	11.4	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	31	31	31		
Maximum	51.1	41.5	53.4	44.6	51.9	64.5	39.1	32.8	29.0	19.5	15.7	16.1	16.0	29.2	27.0	18.1	28.6	18.9	23.8	32.6	54.5	45.3	47.2	47.8	24	64.5	15.7	35.3		
Minimum	3.4	3.4	3.1	3.8	4.1	4.4	2.3	2.4	1.9	2.7	2.0	2.1	1.8	2.1	1.1	1.1	0.8	1.5	2.6	3.1	3.2	3.9	3.8	4.0	24	7.6	0.8	2.7		
Average	16.4	15.4	16.8	18.5	17.9	19.9	17.0	12.3	9.8	9.1	8.3	8.4	8.2	8.2	7.3	6.5	6.9	6.1	7.2	10.4	16.0	15.0	14.9	17.1	24	34	4	12.2		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													64.5
													19.4
Data	3.8	5.0	6.2	7.3	8.7	10.1	12.7	17.1	27.2	34.7	47.5	64.5	12.2

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

NO_2 - COURTICE
June 2014
(ug/m3)

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>400	Days>200
1	29.1	25.6	18.8	15.8	15.7	10.6	15.3	8.7	4.3	4.2	3.7	3.5	3.7	3.3	3.0	2.6	3.6	7.0	8.4	12.7	12.0	16.4	10.5	45.7	24	45.7	2.6	11.8	0	0
2	52.2	37.7	44.7	41.7	51.6	43.6	40.0	20.9	11.0	8.2	6.1	4.0	5.6	6.9	6.4	3.8	3.7	2.9	3.0	3.1	3.5	3.8	4.0	5.1	24	52.2	2.9	17.2	0	0
3	4.5	4.8	5.3	3.5	2.4	2.3	2.9	4.0	3.9	5.4	4.9	4.2	4.1	5.5	3.5	7.1	5.2	6.0	5.9	7.2	8.4	7.9	13.9	20.8	24	20.8	2.3	6.0	0	0
4	32.3	13.9	7.4	10.6	14.5	8.1	12.5	17.3	9.2	7.5	9.0	8.8	6.8	6.4	7.9	5.9	9.8	8.0	7.4	8.7	40.7	58.0	51.2	58.9	24	58.9	5.9	17.5	0	0
5	48.8	35.0	37.5	24.1	22.3	17.5	7.9	6.9	4.7	7.1	4.7	6.3	7.8	7.0	5.9	7.0	6.5	5.3	6.0	8.4	15.0	26.0	26.1	19.4	24	48.8	4.7	15.1	0	0
6	9.8	10.1	13.0	13.6	15.8	17.8	14.5	10.9	7.0	6.3	4.8	7.2	9.3	10.5	8.8	6.6	6.0	3.7	4.2	5.6	22.7	24.1	17.6	32.6	24	32.6	3.7	11.8	0	0
7	57.5	48.7	53.3	42.9	33.3	28.2	26.7	18.8	17.1	19.5	19.8	15.2	11.1	5.1	3.3	4.1	2.8	2.9	3.5	6.5	23.3	51.8	47.1	22.1	24	57.5	2.8	23.5	0	0
8	46.1	37.4	24.3	16.6	20.6	17.1	14.8	20.3	14.4	8.0	12.5	10.8	8.0	13.6	9.2	7.0	5.2	11.8	28.0	11.1	14.2	11.9	6.4	8.8	24	46.1	5.2	15.8	0	0
9	5.8	5.7	4.9	9.2	10.3	7.5	8.7	9.8	8.0	C	C	2.1	2.3	2.2	1.7	1.8	1.8	1.6	2.1	3.9	8.3	52.5	63.5	52.9	22	63.5	1.6	12.1	0	0
10	56.5	38.7	25.4	31.5	36.2	32.6	18.1	15.6	14.9	6.9	3.5	2.8	3.9	3.1	3.8	3.8	4.4	9.4	9.2	9.2	47.0	49.1	41.1	28.5	24	56.5	2.8	20.6	0	0
11	12.9	16.1	30.9	38.3	33.3	39.5	14.1	22.3	10.7	10.9	8.6	11.3	11.3	10.3	8.2	22.8	21.1	10.6	26.4	32.9	36.8	39.5	31.2	22.2	24	39.5	8.2	21.8	0	0
12	19.1	18.8	18.1	24.0	6.7	24.9	13.9	18.8	17.4	15.4	26.5	9.1	12.0	4.6	4.0	3.5	5.7	10.4	10.4	6.3	6.4	5.2	4.2	5.1	24	26.5	3.5	12.1	0	0
13	5.1	4.5	4.5	27.9	5.1	10.3	43.3	15.1	4.6	4.3	3.2	3.4	7.3	6.8	4.9	4.6	5.3	6.2	7.1	6.1	6.4	6.0	5.9	7.2	24	43.3	3.2	8.5	0	0
14	5.7	11.8	9.0	4.6	6.1	6.0	4.3	3.9	4.0	3.1	3.0	2.9	2.6	3.3	2.5	2.2	2.0	5.1	3.5	4.5	10.3	11.5	8.4	10.7	24	11.8	2.0	5.5	0	0
15	5.8	7.1	6.5	5.0	6.4	5.7	5.0	3.9	4.9	2.8	2.7	2.1	1.5	1.3	1.1	1.1	0.8	1.0	2.3	6.9	4.0	26.3	33.4	21.8	24	33.4	0.8	6.6	0	0
16	21.0	25.6	18.3	22.1	26.8	26.7	26.9	17.9	14.2	17.6	16.8	11.4	15.6	6.6	6.6	10.2	3.7	4.8	7.7	9.2	18.4	52.0	55.6	36.4	24	55.6	3.7	19.7	0	0
17	39.9	58.3	49.6	48.9	38.4	33.2	29.4	20.3	11.6	11.6	8.0	20.4	20.1	8.4	10.3	6.7	4.1	6.8	6.1	6.3	35.6	35.5	16.2	6.9	24	58.3	4.1	22.2	0	0
18	5.5	5.7	5.6	5.2	8.0	12.4	9.3	6.0	6.3	6.9	10.2	7.1	7.4	7.5	9.6	8.8	6.7	8.8	7.5	32.3	5.7	30.6	65.8	43.9	24	65.8	5.2	13.4	0	0
19	9.2	6.9	5.6	12.4	12.7	11.0	41.4	52.1	9.1	7.0	4.6	2.9	2.9	3.4	2.3	1.8	2.6	2.0	2.3	2.8	23.7	78.5	18.3	11.7	24	78.5	1.8	13.6	0	0
20	8.6	7.5	8.9	12.3	13.3	12.4	9.9	9.4	5.9	2.7	2.3	2.5	2.4	2.4	2.0	1.7	1.0	1.8	2.6	9.7	22.5	48.5	48.0	40.3	24	48.5	1.0	11.6	0	0
21	28.5	27.5	23.7	24.8	21.0	20.3	20.4	13.6	11.6	9.6	4.3	2.6	3.1	2.3	1.9	1.6	1.5	1.3	1.2	3.1	9.6	38.4	32.1	19.0	24	38.4	1.2	13.5	0	0
22	24.4	26.9	23.1	16.5	17.1	13.1	12.1	10.8	8.5	7.4	4.2	7.6	2.8	2.8	2.6	4.0	2.5	3.6	1.9	3.6	7.4	41.1	40.9	27.8	24	41.1	1.9	13.0	0	0
23	28.5	21.1	23.8	17.9	16.1	15.8	25.0	17.8	8.5	6.7	8.8	6.1	7.9	11.2	10.7	7.3	8.9	14.0	12.8	32.5	48.1	36.4	22.9	18.8	24	48.1	6.1	17.8	0	0
24	8.1	18.9	15.2	3.7	6.2	8.0	10.3	21.9	11.3	6.6	5.2	4.4	4.1	3.6	3.2	3.6	8.2	9.1	12.5	12.9	12.2	8.7	7.9	14.8	24	21.9	3.2	9.2	0	0
25	11.3	16.8	14.2	18.8	12.5	16.3	18.1	15.6	8.9	6.5	4.2	7.3	6.5	3.1	3.6	2.6	2.2	2.2	2.5	9.7	11.7	14.1	14.3	19.8	24	19.8	2.2	10.1	0	0
26	11.2	7.8	7.6	9.3	11.3	11.4	7.4	7.4	4.9	5.6	5.4	4.4	3.6	3.4	2.9	3.9	6.0	5.9	5.0	4.0	43.8	7.1	57.7	55.4	24	57.7	2.9	12.2	0	0
27	39.5	32.5	27.0	27.6	31.2	37.8	27.9	16.5	9.1	6.6	5.3	3.0	2.5	1.9	2.8	2.8	2.2	2.4	15.3	10.2	10.0	42.2	47.0	21.6	24	47.0	1.9	17.7	0	0
28	26.0	31.7	13.5	11.4	11.8	11.6	11.3	13.4	11.0	6.1	5.8	5.5	4.2	5.7	4.3	4.5	5.2	7.3	8.8	9.3	5.9	16.7	15.0	15.9	24	31.7	4.2	10.9	0	0
29	8.2	10.9	18.0	25.1	32.8	21.7	13.6	7.7	5.1	4.0	3.6	4.8	3.5	3.4	3.8	3.8	2.8	2.7	2.3	3.2	3.2	3.3	3.4	3.2	24	32.8	2.3	8.1	0	0
30	3.5	3.3	3.0	3.0	3.0	3.9	6.3	4.6	5.4	4.4	4.1	3.1	3.2	3.3	2.8	2.9	2.7	2.2	2.4	7.0	7.0	12.5	4.2	4.0	24	12.5	2.2	4.2	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	718	30	29	30		
Maximum	57.5	58.3	53.3	48.9	51.6	43.6	43.3	52.1	17.4	19.5	26.5	20.4	20.1	13.6	10.7	22.8	21.1	14.0	28.0	32.9	48.1	78.5	65.8	58.9	24	78.5	10.7	37.8		
Minimum	3.5	3.3	3.0	3.0	2.4	2.3	2.9	3.9	3.9	2.7	2.3	2.1	1.5	1.3	1.1	1.1	0.8	1.0	1.2	2.8	3.2	3.3	3.4	3.2	0	0	0.8			
Average	22.1	20.6	18.7	18.9	18.1	17.6	17.0	14.4	8.9	7.5	7.1	6.2	6.2	5.3	4.8	5.0	4.8	5.6	7.3	9.6	17.5	28.5	27.1	23.4	23	42	3	13.4		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	2.9	3.9	5.2	6.7	8.3	10.7	14.5	21.0	32.8	43.7	57.3	78.5

	Maximum
	78.5
	23.5
	13.4

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

NO_2 - April (ug/m3) Rundle Road 2014

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>400	Days>200
1	52.5	24.4	16.1	16.5	18.5	35.7	57.2	16.9	18.6	17.4	8.6	8.2	8.3	6.9	7.7	8.4	9.6	9.3	7.1	35.1	29.7	15.9	8.1	9.6	24	57.2	6.9	18.6	0	0
2	7.2	7.9	6.2	14.3	9.8	10.0	15.9	15.5	9.1	10.9	12.6	11.5	11.6	11.7	11.7	10.0	4.5	3.8	4.3	4.3	3.8	4.1	4.8	3.9	24	15.9	3.8	8.7	0	0
3	2.5	2.1	2.2	1.8	1.9	2.2	3.1	3.6	4.4	19.5	8.7	4.9	15.0	5.0	5.1	17.5	13.6	8.8	11.4	13.5	19.0	8.3	17.7	21.0	24	21.0	1.8	8.9	0	0
4	10.6	6.0	12.8	12.7	5.6	13.3	11.7	9.2	10.5	14.8	10.1	14.8	16.1	15.8	14.3	14.4	9.8	9.4	18.6	20.7	28.5	11.7	9.8	14.4	24	28.5	5.6	13.2	0	0
5	9.3	11.6	7.7	6.9	8.1	7.5	9.0	5.0	2.8	2.7	2.4	2.2	2.2	2.4	1.2	1.9	1.7	2.3	2.8	2.7	3.9	7.0	16.9	36.6	24	36.6	1.2	6.5	0	0
6	37.6	21.5	30.7	40.9	50.8	45.4	36.5	33.9	28.7	23.8	18.0	14.0	29.4	18.2	8.3	7.9	5.6	12.7	41.5	61.4	30.7	25.7	21.8	12.5	24	61.4	5.6	27.4	0	0
7	28.7	27.6	7.2	29.7	17.7	11.0	15.9	16.7	16.7	15.0	14.6	19.3	19.9	17.2	20.7	22.7	16.8	13.7	16.7	8.7	23.8	8.8	7.0	10.4	24	29.7	7.0	16.9	0	0
8	7.9	6.0	8.7	11.7	4.9	3.5	3.4	2.7	3.5	4.2	3.7	3.3	3.0	3.3	2.8	2.5	2.4	2.6	4.1	27.2	57.8	64.5	24.8	3.4	24	64.5	2.4	10.9	0	0
9	2.5	2.0	1.9	2.0	2.5	2.5	2.9	2.8	2.0	1.5	1.2	1.3	5.3	10.1	14.4	13.4	12.1	14.5	26.9	38.3	42.1	50.7	44.0	24.8	24	50.7	1.2	13.4	0	0
10	24.2	30.3	31.1	20.5	29.6	41.1	52.3	30.3	16.5	17.4	10.6	9.4	8.0	9.1	8.7	9.6	18.3	12.6	12.8	7.1	8.9	4.4	7.0	5.8	24	52.3	4.4	17.7	0	0
11	38.8	46.8	28.4	26.0	45.4	69.8	45.7	28.0	15.4	14.4	33.2	15.3	11.3	7.2	7.5	6.0	9.7	15.7	35.1	23.9	24.0	23.8	29.2	18.7	24	69.8	6.0	25.8	0	0
12	29.6	26.8	15.5	37.5	45.8	36.7	32.1	42.7	40.2	37.7	22.9	12.7	8.6	7.6	9.4	10.7	7.8	17.6	8.6	14.6	28.1	13.5	11.2	6.3	24	45.8	6.3	21.8	0	0
13	6.8	4.5	7.9	4.3	3.1	7.3	6.1	6.2	5.7	7.2	6.8	11.2	7.9	11.4	19.0	19.1	16.7	17.9	38.2	73.5	19.1	33.9	17.6	14.0	24	73.5	3.1	15.2	0	0
14	19.6	34.7	9.8	28.9	20.1	52.0	39.8	22.2	12.3	12.6	18.1	12.5	11.1	13.4	14.8	10.7	13.7	16.0	7.6	3.4	2.7	2.3	2.2	1.6	24	52.0	1.6	15.9	0	0
15	2.0	1.7	1.7	1.7	2.0	2.1	4.0	5.8	3.3	3.4	2.4	2.6	2.6	1.9	2.7	2.0	1.6	1.7	1.7	2.3	2.9	2.2	2.7	2.6	24	5.8	1.6	2.5	0	0
16	2.5	2.2	3.5	2.8	6.6	14.0	21.9	9.3	5.4	9.5	10.9	11.3	16.1	13.8	9.1	9.6	20.7	12.3	26.2	49.7	57.9	38.3	57.4	44.8	24	57.9	2.2	19.0	0	0
17	26.5	12.7	9.0	15.7	25.1	16.7	8.4	7.4	5.1	4.1	5.3	5.0	5.6	6.6	8.4	10.9	5.6	6.8	17.6	19.9	16.7	11.8	9.9	15.0	24	26.5	4.1	11.5	0	0
18	15.0	17.2	24.0	18.3	17.1	13.6	12.7	14.7	27.7	15.9	9.6	16.0	8.7	19.0	20.5	26.2	13.9	7.8	17.0	30.2	4.2	3.8	3.5	3.5	24	30.2	3.5	15.0	0	0
19	3.2	2.9	2.8	8.2	25.9	6.1	3.0	2.5	2.3	2.0	1.9	8.7	8.6	6.2	5.3	3.9	3.8	6.8	11.3	16.2	16.5	13.9	14.5	14.1	24	25.9	1.9	7.9	0	0
20	11.1	12.7	13.6	11.4	10.1	8.5	6.5	5.0	9.7	4.5	3.9	6.1	3.9	3.7	4.6	7.2	4.6	6.9	14.7	38.6	17.1	13.7	10.3	7.2	24	38.6	3.7	9.8	0	0
21	5.5	47.8	15.2	11.3	21.6	7.4	20.1	43.7	39.7	38.5	32.1	23.7	20.1	16.1	17.4	24.0	25.7	18.4	63.6	33.3	33.9	30.2	27.8	17.8	24	63.6	5.5	26.5	0	0
22	14.1	35.9	16.9	12.4	33.4	49.0	42.3	64.4	61.8	56.9	6.1	6.5	5.5	5.5	5.2	5.2	5.1	4.2	4.6	5.2	4.4	4.5	4.1	3.6	24	64.4	3.6	19.0	0	0
23	3.2	2.7	2.8	2.7	2.6	2.3	2.9	3.0	2.7	2.6	2.8	2.5	C	C	3.2	1.5	1.5	1.5	1.9	2.3	1.8	1.6	1.4	2.8	22	3.2	1.4	2.4	0	0
24	3.5	1.7	1.2	1.3	3.3	3.1	5.1	2.3	1.2	1.4	1.2	1.9	1.7	6.4	17.1	11.5	15.5	13.5	26.2	34.9	18.7	22.6	15.2	10.2	24	34.9	1.2	9.2	0	0
25	9.3	37.5	31.4	23.5	20.4	15.2	16.6	9.3	5.7	10.5	7.3	15.9	12.3	4.7	7.5	10.4	9.5	4.6	4.5	4.1	3.1	1.8	2.0	1.5	24	37.5	1.5	11.2	0	0
26	1.6	1.5	1.9	3.7	3.0	18.7	22.1	13.4	23.5	9.3	7.7	6.9	3.0	2.6	2.4	2.1	2.0	2.3	1.8	2.3	1.9	1.2	2.5	3.2	24	23.5	1.2	5.9	0	0
27	2.9	0.9	1.1	1.0	1.0	0.8	0.9	1.0	0.6	0.7	5.9	5.1	5.8	4.1	6.2	11.9	7.3	7.2	12.6	27.2	32.0	19.2	38.6	18.9	24	38.6	0.6	8.9	0	0
28	13.4	7.7	10.8	5.6	5.8	6.9	5.6	3.4	2.8	6.7	13.3	3.3	4.3	4.4	10.3	21.7	37.8	25.4	8.1	19.3	15.2	17.7	20.0	14.4	24	37.8	2.8	11.8	0	0
29	3.7	4.1	5.1	19.8	7.4	4.0	4.6	8.7	8.1	9.1	9.1	6.9	9.4	5.6	14.4	7.1	6.5	7.6	9.0	9.2	11.0	14.1	15.1	8.6	24	19.8	3.7	8.7	0	0
30	11.2	8.7	14.1	7.1	11.5	5.1	6.4	11.7	7.0	6.2	7.6	5.9	5.6	4.8	7.6	7.3	7.0	10.5	6.8	11.9	9.6	10.4	5.0	4.3	24	14.1	4.3	8.1	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	30	29	30		
Maximum	52.5	47.8	31.4	40.9	50.8	69.8	57.2	64.4	61.8	56.9	33.2	23.7	29.4	19.0	20.7	26.2	37.8	25.4	63.6	73.5	57.9	64.5	57.4	44.8	24	73.5	19.0	46.3		
Minimum	1.6	0.9	1.1	1.0	1.0	0.8	0.9	1.0	0.6	0.7	1.2	1.3	1.7	1.9	1.2	1.5	1.5	1.5	1.7	2.3	1.8	1.2	1.4	1.5	0	0	0.6			
Average	13.6	15.0	11.4	13.3	15.4	17.1	17.2	14.7	13.1	12.7	10.0	9.0	9.3	8.4	9.6	10.6	10.4	9.8	15.4	21.4	19.0	16.1	15.1	11.8	23	38	3	13.3		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100					Maximum
																	73.5
																	27.4
Data	2.3	3.4	5.2	7.2	9.3	12.1	15.5	19.6	30.3	39.7	57.9	73.5					13.3

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

NO_2 - Rundle Road
May 2014
(ug/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	Hrs>400	Days>200
1	12.8	20.1	17.4	25.6	31.2	43.9	54.4	26.4	15.1	16.2	18.3	12.2	16.2	10.9	9.8	13.2	14.2	12.7	17.1	22.0	18.8	17.1	10.6	23.5	24	54.4	9.8	20.0	0	0
2	17.1	21.7	16.6	13.8	17.4	20.7	25.9	22.1	17.5	14.4	12.6	9.4	13.7	16.7	12.6	16.9	18.5	17.2	21.1	24.5	23.6	12.9	15.0	18.3	24	25.9	9.4	17.5	0	0
3	15.3	16.8	10.9	13.9	13.8	9.6	14.6	11.3	10.3	12.3	9.2	10.2	10.5	7.0	11.1	8.4	11.1	13.2	10.4	10.9	16.4	9.2	4.9	3.9	24	16.8	3.9	11.1	0	0
4	2.4	2.3	2.8	3.7	5.1	1.6	2.8	1.6	1.5	1.3	1.2	1.0	0.9	0.7	0.8	0.7	0.7	0.6	0.9	0.7	0.8	1.2	1.6	1.2	24	5.1	0.6	1.6	0	0
5	0.9	0.5	0.6	1.0	1.5	2.0	3.5	1.7	1.4	1.1	0.7	2.9	15.4	19.2	19.5	10.9	20.7	30.3	37.0	76.2	12.9	1.7	0.9	0.8	24	76.2	0.5	11.0	0	0
6	0.8	0.8	0.7	0.8	1.2	1.5	3.4	3.9	2.4	4.9	8.8	6.6	4.8	5.3	5.9	4.4	4.5	8.2	14.3	13.8	7.7	2.0	1.0	1.3	24	14.3	0.7	4.5	0	0
7	1.7	2.5	9.0	3.8	11.5	48.5	17.2	12.4	11.1	5.6	5.6	3.6	25.1	5.3	4.2	8.1	5.4	9.6	22.8	33.1	37.8	42.2	43.3	11.8	24	48.5	1.7	15.9	0	0
8	6.3	12.3	7.2	5.2	5.2	10.5	9.1	11.0	14.8	13.0	13.6	43.2	63.3	14.2	10.3	7.3	7.1	10.0	16.0	10.7	14.8	19.6	11.2	11.4	24	63.3	5.2	14.5	0	0
9	6.2	24.6	22.6	5.5	7.7	18.7	13.0	16.5	12.8	13.0	18.6	18.3	26.1	24.8	24.2	19.0	14.9	18.3	29.1	24.5	23.1	15.4	16.5	9.7	24	29.1	5.5	17.6	0	0
10	9.4	8.4	6.3	16.2	16.7	22.9	19.8	12.7	10.5	11.0	7.9	6.3	7.1	5.6	5.7	6.2	3.6	2.6	3.1	3.9	13.7	23.2	2.9	3.2	24	23.2	2.6	9.5	0	0
11	3.7	6.0	7.5	12.1	3.8	2.5	7.9	5.6	10.9	9.4	6.7	7.1	6.9	5.6	9.4	4.7	9.4	6.3	8.9	13.3	6.8	7.6	13.6	9.7	24	13.6	2.5	7.7	0	0
12	21.7	15.1	11.1	11.8	34.5	23.8	19.7	35.2	25.6	18.4	12.7	15.8	46.6	28.8	50.3	34.1	19.3	26.1	22.2	18.4	35.9	28.4	19.4	18.7	24	50.3	11.1	24.7	0	0
13	20.1	14.6	10.7	9.0	15.5	32.9	17.8	19.8	16.5	18.0	14.6	15.3	11.9	10.3	12.4	10.4	12.6	13.7	15.4	18.0	72.5	42.3	21.0	11.4	24	72.5	9.0	19.0	0	0
14	15.6	15.1	10.2	10.6	13.7	10.1	11.8	13.4	3.3	3.5	4.2	13.8	17.3	11.0	8.7	12.6	16.5	26.4	16.0	4.4	3.8	26.9	9.3	28.5	24	28.5	3.3	12.8	0	0
15	34.2	6.6	5.6	11.0	14.1	20.2	18.0	23.6	15.9	22.6	15.0	25.0	26.9	24.8	35.4	35.0	28.0	17.8	18.2	17.7	18.1	15.3	15.7	11.4	24	35.4	5.6	19.8	0	0
16	9.4	9.2	15.1	8.0	29.3	41.4	10.5	11.2	10.0	7.3	4.9	8.4	5.9	4.5	13.2	14.1	14.5	17.2	26.0	11.9	3.2	2.3	1.7	1.8	24	41.4	1.7	11.7	0	0
17	1.7	2.1	6.5	15.6	30.6	28.2	7.6	3.8	3.0	3.7	10.6	11.5	9.9	8.7	8.7	8.1	7.0	8.0	19.2	13.8	14.8	10.0	9.2	11.3	24	30.6	1.7	10.6	0	0
18	8.8	7.8	6.6	6.4	6.4	6.0	13.6	16.8	13.8	11.6	7.0	12.9	7.4	5.4	22.2	5.0	6.6	7.8	12.5	9.5	9.3	8.4	12.2	9.6	24	22.2	5.0	9.7	0	0
19	8.6	5.5	5.1	5.7	10.3	28.8	39.7	32.0	16.2	19.5	19.2	22.3	15.9	14.1	13.3	15.4	10.4	13.0	17.1	14.2	34.8	28.7	17.0	21.2	24	39.7	5.1	17.8	0	0
20	13.3	5.2	7.6	43.2	67.2	60.1	17.3	25.8	28.1	18.7	27.5	13.7	14.8	32.1	40.4	19.1	15.1	23.1	21.6	14.3	34.5	53.0	28.7	35.3	24	67.2	5.2	27.5	0	0
21	77.0	20.5	17.8	19.7	34.5	19.5	17.1	10.9	15.7	20.7	15.3	12.4	9.1	18.8	11.0	23.5	25.8	33.0	49.1	67.6	43.0	35.6	27.0	9.1	24	77.0	9.1	26.4	0	0
22	9.5	31.4	18.6	17.0	13.1	11.4	17.2	16.1	7.9	5.8	5.8	5.7	5.7	12.7	16.5	17.4	12.3	4.6	4.4	4.5	4.7	4.6	4.6	4.1	24	31.4	4.1	10.6	0	0
23	4.3	4.5	4.1	4.2	4.2	5.2	5.5	5.7	5.7	5.3	4.8	8.5	15.6	17.1	26.2	6.2	4.8	5.2	3.9	4.8	4.9	3.9	3.2	3.3	24	26.2	3.2	6.7	0	0
24	3.0	3.2	10.0	5.9	3.0	3.4	3.4	3.4	3.9	4.2	10.0	12.9	9.4	9.0	7.0	5.1	7.4	5.6	2.6	3.8	4.4	3.4	2.9	2.4	24	12.9	2.4	5.4	0	0
25	2.8	6.2	13.8	18.8	14.4	18.2	19.7	19.2	17.6	19.7	15.8	16.5	7.4	8.2	8.9	6.2	4.6	8.8	7.8	5.5	13.0	18.0	23.5	13.0	24	23.5	2.8	12.8	0	0
26	12.8	27.0	30.1	46.0	46.9	27.4	35.1	26.4	26.2	30.7	35.7	17.8	19.3	24.6	15.7	18.0	12.5	14.1	21.5	16.8	27.0	30.4	41.8	44.6	24	46.9	12.5	27.0	0	0
27	41.5	26.3	31.7	26.2	52.3	68.9	69.9	51.6	34.2	23.8	23.8	17.0	17.6	18.6	10.2	8.2	8.7	10.5	26.6	21.6	5.3	4.8	4.0	3.5	24	69.9	3.5	25.3	0	0
28	4.1	9.3	17.2	15.8	24.3	25.7	27.2	12.8	4.7	115.8	26.7	9.9	8.7	12.7	9.4	9.7	11.4	13.9	20.0	25.2	29.3	25.1	17.2	14.1	24	115.8	4.1	20.4	0	0
29	12.3	6.0	9.0	6.6	7.3	6.8	6.9	8.6	12.2	9.4	8.2	5.0	5.5	10.6	4.6	6.3	6.7	11.9	24.3	30.8	27.6	24.9	13.3	10.2	24	30.8	4.6	11.5	0	0
30	10.8	9.4	7.2	7.7	7.9	8.5	4.2	4.7	4.4	4.8	5.5	107.4	15.9	3.4	2.8	3.1	3.3	17.7	22.5	31.9	14.6	10.8	6.5	5.6	24	107.4	2.8	13.4	0	0
31	5.7	6.7	4.8	4.1	4.2	4.8	4.6	4.8	5.7	3.6	3.0	3.4	7.4	3.0	5.3	3.4	6.0	5.5	9.6	14.3	21.8	27.4	20.9	16.2	24	27.4	3.0	8.2	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	31	31	31		
Maximum	77.0	31.4	31.7	46.0	67.2	68.9	69.9	51.6	34.2	115.8	35.7	107.4	63.3	32.1	50.3	35.0	28.0	33.0	49.1	76.2	72.5	53.0	43.3	44.6	24	115.8	28.0	54.9		
Minimum	0.8	0.5	0.6	0.8	1.2	1.5	2.8	1.6	1.4	1.1	0.7	1.0	0.9	0.7	0.8	0.7	0.7	0.6	0.9	0.7	0.8	1.2	0.9	0.8	24	5.1	0.5	1.0		
Average	12.7	11.2	11.1	12.7	17.7	20.4	17.4	15.2	12.2	15.1	12.0	15.4	15.1	12.7	14.0	11.6	11.1	13.3	17.4	18.8	19.3	17.9	13.6	11.9	24	43	5	14.6		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													115.8
													27.5
Data	3.3	5.0	7.0	9.4	11.7	14.2	17.1	21.1	28.3	35.7	67.4	115.8	14.6

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

NO_2 - June (ug/m3) **Rundle Road 2014**

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>400	Days>200
1	11.6	14.7	20.3	14.9	18.4	11.3	12.6	8.3	6.0	8.8	8.8	15.3	34.7	109.0	16.6	4.7	5.2	13.5	11.4	11.4	15.4	18.2	26.5	15.4	24	109.0	4.7	18.0	0	0
2	24.1	20.1	15.2	14.4	14.8	22.3	21.5	34.4	15.4	12.5	10.5	11.6	11.1	15.1	117.4	15.4	15.2	9.4	10.6	8.8	15.0	19.0	15.0	12.5	24	117.4	8.8	20.1	0	0
3	11.0	15.9	15.8	9.2	22.6	22.9	27.7	13.8	18.9	12.4	7.7	7.2	7.6	9.4	7.8	7.2	9.7	6.7	2.3	2.3	2.1	1.9	6.6	7.5	24	27.7	1.9	10.7	0	0
4	4.1	6.8	26.6	23.5	20.0	20.4	27.3	12.8	3.5	4.9	14.4	13.2	11.8	17.4	15.1	19.0	3.8	6.1	5.2	6.1	7.5	8.8	8.2	7.3	24	27.3	3.5	12.2	0	0
5	5.3	5.4	4.5	4.3	3.1	3.9	6.2	2.7	2.3	2.7	2.2	2.5	3.3	2.5	2.1	3.1	2.5	2.3	2.0	2.4	2.9	3.0	4.5	5.2	24	6.2	2.0	3.4	0	0
6	3.5	2.6	2.5	2.7	3.3	5.0	3.8	3.5	4.3	3.5	3.9	2.8	3.5	13.3	14.4	15.8	12.5	13.4	9.7	7.4	6.5	5.8	6.2	38.8	24	38.8	2.5	7.9	0	0
7	18.3	30.4	24.3	19.0	11.6	9.5	23.9	21.0	12.7	20.7	15.1	11.5	6.5	6.0	7.8	5.2	5.3	6.9	7.2	25.1	16.3	17.8	16.0	17.3	24	30.4	5.2	14.8	0	0
8	19.3	21.2	14.0	7.2	6.1	8.3	7.6	5.0	7.2	13.1	9.6	12.3	10.2	10.5	16.4	13.1	27.3	19.9	9.1	2.8	5.0	2.8	2.9	3.1	24	27.3	2.8	10.6	0	0
9	3.1	2.7	2.7	2.1	2.0	2.3	3.1	4.2	4.0	3.1	4.6	C	1.7	0.0	0.0	0.0	0.0	1.9	5.6	27.2	27.5	13.8	10.8	12.1	23	27.5	0.0	5.8	0	0
10	9.0	2.3	0.0	0.0	0.0	0.0	1.2	0.0	0.0	2.5	6.1	0.0	0.0	11.9	8.1	16.0	15.8	0.9	6.8	24.6	16.4	9.0	11.6	0.0	24	24.6	0.0	5.9	0	0
11	0.0	11.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	4.1	7.2	2.5	6.0	0.9	1.7	0.6	2.1	0.0	1.6	0.0	24	11.4	0.0	1.8	0	0
12	5.0	15.7	14.0	15.1	16.1	14.6	10.9	4.8	16.5	5.1	4.9	10.6	7.0	5.1	2.2	5.6	1.1	0.5	6.3	0.0	6.7	16.9	9.5	12.8	24	16.9	0.0	8.6	0	0
13	2.9	3.3	7.3	11.8	27.7	8.3	18.2	23.0	5.9	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	27.7	0.0	4.7	0	0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
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	5.7	0.0	4.0	1.2	0.0	24	5.7	0.0	0.5	0	0
16	3.0	0.0	0.0	0.0	0.0	11.0	6.0	0.2	13.2	4.0	3.6	0.0	3.9	0.0	1.4	0.0	0.0	0.0	4.1	13.2	19.2	9.8	1.4	28.3	24	28.3	0.0	5.1	0	0
17	39.6	15.9	5.9	7.0	0.2	0.0	3.0	22.7	22.0	21.2	5.9	4.6	21.5	3.9	1.4	12.3	15.8	7.7	4.3	3.9	10.5	0.0	0.0	0.0	24	39.6	0.0	9.6	0	0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	5.0	1.5	5.6	8.2	8.1	12.8	5.9	23.3	24.4	24.2	19.0	30.6	23.0	0.0	24	30.6	0.0	8.0	0	0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	22.2	9.3	8.8	0.0	0.0	24	22.2	0.0	1.8	0	0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	2.1	8.7	13.3	10.9	9.8	16.2	12.2	24	16.2	0.0	3.1	0	0
21	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.5	0.9	0.0	0.0	24	1.5	0.0	0.2	0	0
22	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	2.8	3.9	1.6	0.0	24	4.4	0.0	0.7	0	0
23	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	2.4	5.6	0.0	0.8	5.0	16.4	18.5	3.1	9.2	21.2	24	21.2	0.0	3.8	0	0
24	1.2	1.9	0.0	9.1	22.0	22.8	18.7	26.7	22.2	7.6	0.6	0.0	0.3	0.0	0.0	6.6	0.0	0.0	0.0	0.0	0.0	13.0	12.7	1.8	24	26.7	0.0	7.0	0	0
25	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	3.6	5.8	0.3	0.0	0.9	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	5.8	0.0	0.6	0	0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	3.1	3.2	3.6	1.4	2.8	8.1	7.7	8.4	21.6	28.2	42.7	18.6	17.1	24	42.7	0.0	7.1	0	0
27	7.0	3.6	2.6	1.3	15.7	10.5	12.2	16.5	22.7	9.1	2.3	1.5	0.0	0.0	0.0	5.6	4.3	7.3	7.6	22.3	19.8	12.2	9.8	5.1	24	22.7	0.0	8.3	0	0
28	4.9	4.7	2.2	1.8	1.9	3.8	6.5	6.4	9.9	2.4	7.8	15.9	9.4	11.0	9.5	5.9	1.8	1.2	3.3	1.2	2.2	2.3	2.3	2.9	24	15.9	1.2	5.0	0	0
29	12.3	7.2	4.5	4.2	3.9	2.7	17.4	5.2	8.6	3.3	3.7	5.9	6.8	5.8	7.3	7.7	2.4	1.5	5.7	10.5	5.4	2.6	4.4	12.3	24	17.4	1.5	6.3	0	0
30	14.9	7.9	5.6	9.3	14.8	12.9	8.8	7.9	5.3	6.2	2.0	0.9	0.7	1.9	4.1	3.5	2.4	3.5	5.7	14.6	23.4	20.4	5.9	2.5	24	23.4	0.7	7.7	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	719	30	29	30		
Maximum	39.6	30.4	26.6	23.5	27.7	22.9	27.7	34.4	22.7	21.2	15.1	15.9	34.7	109.0	117.4	19.0	27.3	23.3	24.4	27.2	28.2	42.7	26.5	38.8	24	117.4	15.1	34.4		
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	0	0.0			
Average	6.9	6.5	5.7	5.2	6.8	6.4	7.9	7.3	6.7	4.8	4.1	4.4	5.2	8.2	8.4	5.8	4.9	4.6	5.3	9.8	9.8	9.4	7.5	7.8	23	26	1	6.6		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.0	0.0	0.0	2.1	3.5	5.7	8.2	12.5	17.9	22.6	30.6	117.4

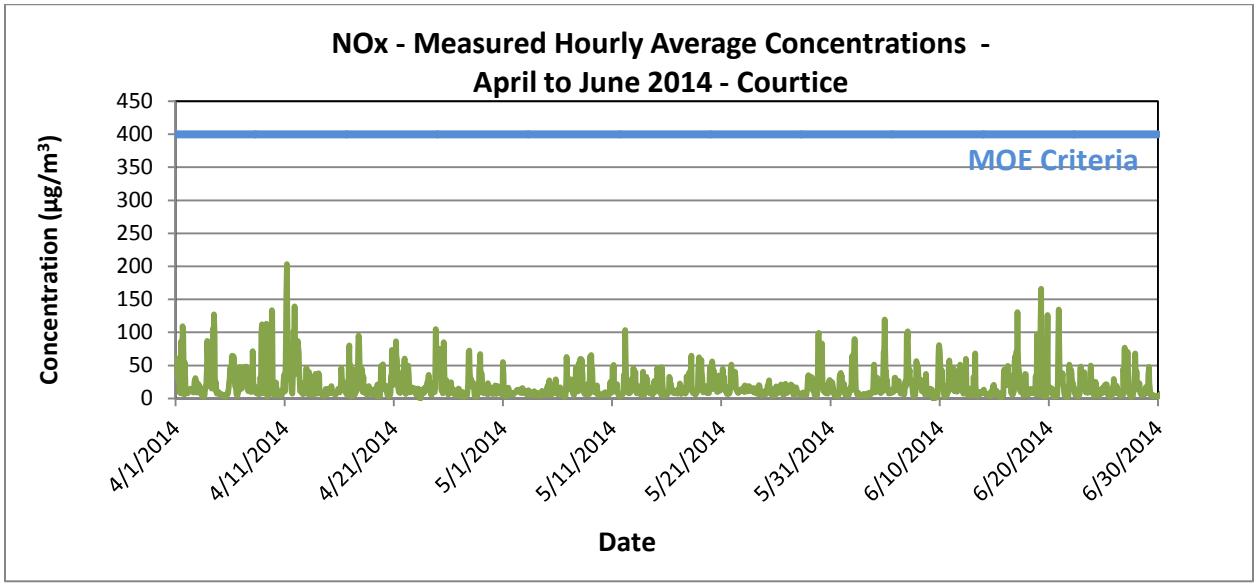
	Maximum
	117.4
	20.1
	6.6

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

Appendix C

NO_X Data Summaries and Time History Plots

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



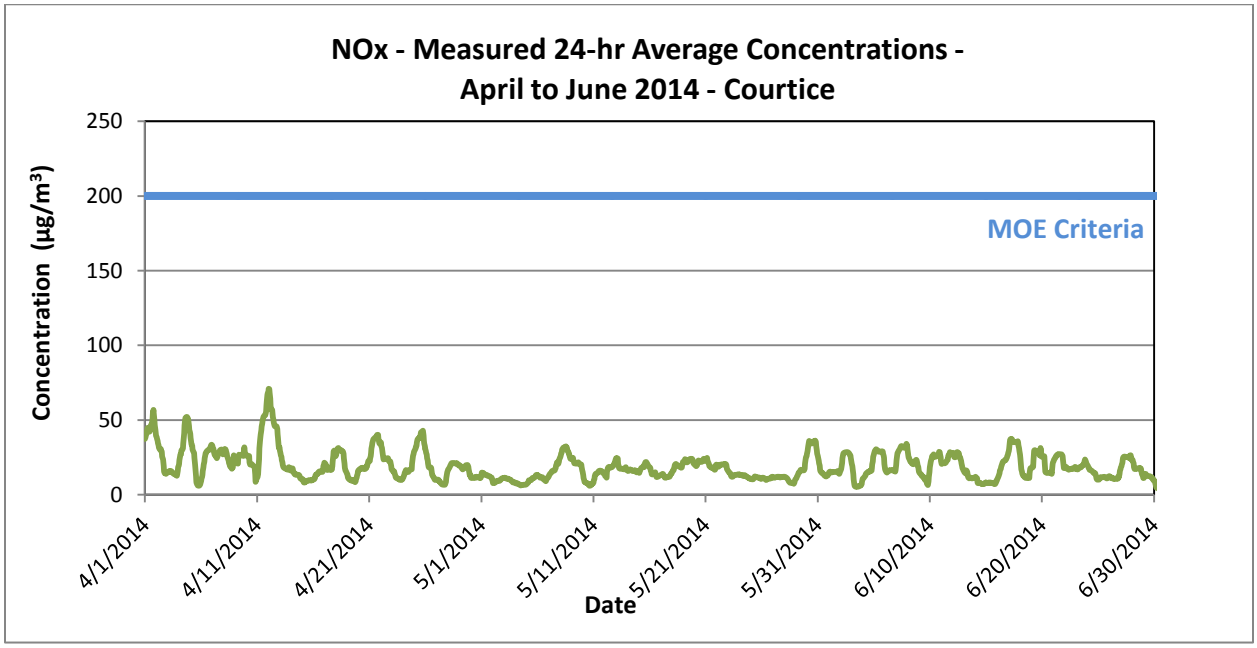
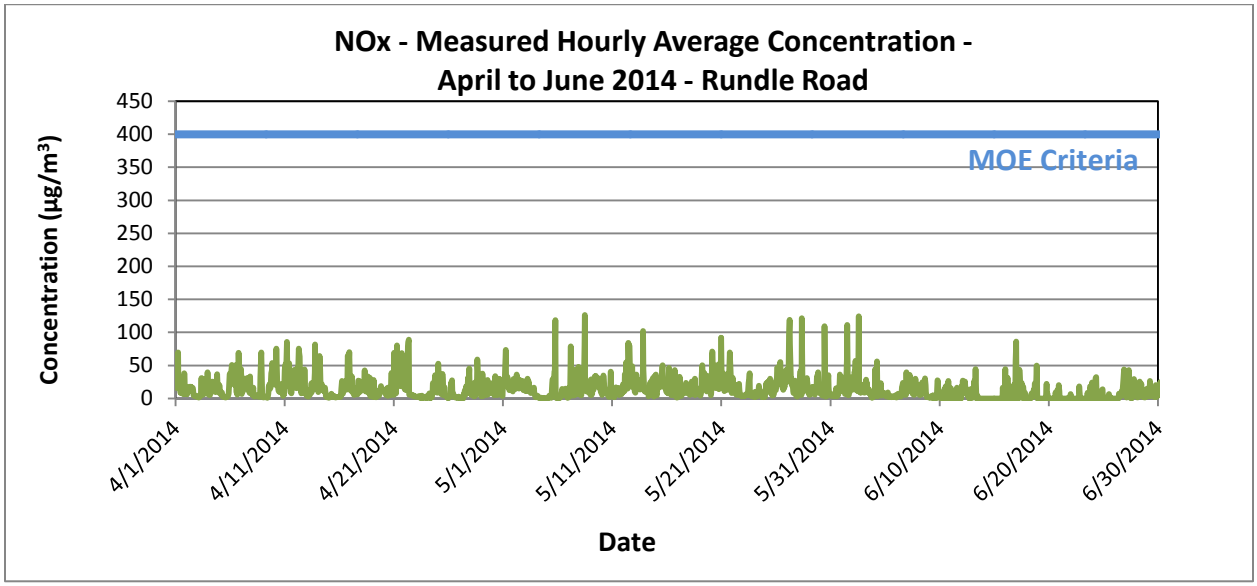
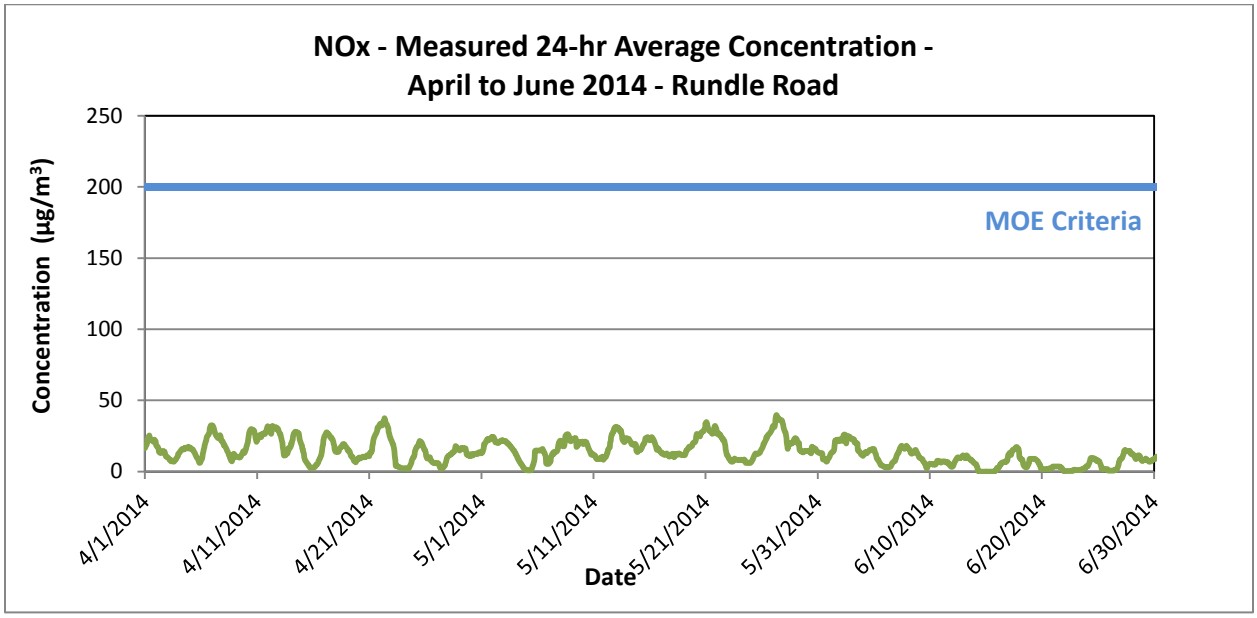


Figure C-2 Time History Plots of Measured Hourly Average and 24-Hour Average NO_X Concentrations – Rundle Road Station





NOx COURTICE
April 2014
(ug/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	Hrs>400	Days>200
1	61.7	30.9	34.2	41.5	50.0	44.0	50.6	29.3	26.1	8.9	10.9	59.0	7.8	87.1	40.3	27.1	109.5	95.5	59.2	5.9	31.9	54.2	19.2	11.0	24	109.5	5.9	41.5	0	0
2	12.2	9.9	8.2	7.6	11.3	10.6	11.4	12.7	13.9	13.7	15.1	11.8	10.6	10.0	9.4	9.2	9.5	9.0	25.5	26.5	30.7	26.7	25.6	20.2	24	30.7	7.6	14.6	0	0
3	20.8	8.4	10.4	21.8	9.6	9.7	17.4	12.7	14.9	6.4	5.3	3.8	2.8	3.0	3.1	2.6	5.8	16.8	14.9	19.2	22.7	47.6	87.1	74.4	24	87.1	2.6	18.4	0	0
4	47.9	33.4	73.8	76.4	40.0	17.7	74.2	29.1	15.1	26.0	87.5	107.1	63.2	127.4	97.7	28.9	12.2	24.9	15.0	7.1	10.8	8.5	8.0	9.1	24	127.4	7.1	43.4	0	0
5	7.5	7.8	6.9	4.9	5.8	5.7	6.2	6.2	5.2	4.5	5.1	4.1	4.4	3.4	3.5	3.0	3.9	4.5	5.8	8.8	8.5	15.2	23.2	29.4	24	29.4	3.0	7.6	0	0
6	42.5	47.9	34.6	39.2	63.4	64.7	51.7	52.6	63.9	56.6	31.7	18.7	18.7	14.6	8.1	4.8	4.4	5.3	29.0	10.6	17.5	46.2	47.6	25.6	24	64.7	4.4	33.3	0	0
7	27.8	24.6	15.1	18.3	26.8	23.6	41.0	47.8	46.8	41.2	24.4	40.0	48.5	32.2	31.7	12.2	10.9	24.3	33.5	15.4	20.1	10.2	9.6	22.7	24	48.5	9.6	27.0	0	0
8	44.8	27.8	71.7	27.9	13.3	19.5	17.5	14.0	8.5	10.8	10.3	9.7	8.1	6.5	7.2	7.0	8.0	6.9	20.1	32.1	24.9	98.7	112.2	14.2	24	112.2	6.5	25.9	0	0
9	7.8	11.3	22.6	15.3	10.0	24.8	12.6	8.6	112.7	49.7	3.0	5.2	5.9	7.6	14.1	13.6	11.7	9.8	9.4	14.6	133.5	129.7	6.5	8.5	24	133.5	3.0	27.0	0	0
10	9.1	6.0	4.7	4.3	8.1	24.1	17.5	11.4	12.1	11.7	8.9	7.0	6.2	4.8	4.6	4.1	4.6	4.5	4.5	8.9	12.8	13.1	30.5	35.9	24	35.9	4.1	10.8	0	0
11	22.7	10.5	56.1	96.5	153.9	203.3	139.2	66.3	54.6	78.0	70.8	62.2	51.9	47.1	24.1	14.1	9.8	7.4	20.1	57.1	102.0	79.9	139.2	61.6	24	203.3	7.4	67.8	0	0
12	37.7	67.3	51.6	37.7	60.3	87.0	78.7	69.5	46.3	24.5	11.4	10.5	9.7	9.6	8.4	12.4	6.1	14.3	14.3	16.4	14.9	25.5	17.9	19.4	24	87.0	6.1	31.3	0	0
13	46.5	17.0	6.5	7.1	31.2	38.9	40.1	27.0	14.7	16.7	5.2	5.8	5.6	5.6	8.4	6.6	5.9	6.1	17.0	29.3	37.0	18.6	16.2	9.9	24	46.5	5.2	17.6	0	0
14	7.2	16.7	12.7	38.3	32.8	8.7	9.0	7.9	8.4	6.8	6.2	5.1	4.2	3.3	4.9	7.3	5.7	4.6	14.3	10.5	9.1	8.9	8.0	9.2	24	38.3	3.3	10.4	0	0
15	6.8	14.9	12.1	8.7	9.0	9.0	12.8	19.0	10.6	8.8	8.5	7.2	7.5	8.8	8.2	7.8	5.6	9.2	8.9	8.2	10.9	12.7	14.5	11.6	24	19.0	5.6	10.0	0	0
16	14.9	9.1	16.1	14.5	27.6	46.2	30.1	15.4	14.2	17.6	12.9	13.5	24.3	17.7	9.4	10.3	7.0	5.6	6.0	5.9	6.0	45.5	80.4	28.5	24	80.4	5.6	19.9	0	0
17	51.1	5.0	3.6	3.8	3.4	4.2	6.4	43.8	29.4	7.0	7.9	6.4	8.5	11.0	11.0	12.7	15.6	55.2	84.0	95.3	79.8	56.9	15.7	25.5	24	95.3	3.4	26.8	0	0
18	24.3	26.9	44.7	37.1	9.6	32.8	11.4	19.3	10.9	9.3	7.2	9.1	7.3	6.5	6.0	5.5	12.7	18.7	10.8	11.5	11.7	10.8	8.4	9.3	24	44.7	5.5	15.1	0	0
19	6.0	13.3	9.4	10.0	10.9	13.5	13.8	4.9	8.3	4.3	3.5	4.7	21.1	8.3	5.3	2.9	3.3	3.8	3.6	26.7	49.2	28.8	36.9	41.0	24	49.2	2.9	13.9	0	0
20	51.8	24.8	17.4	17.7	14.7	14.0	13.7	19.1	11.1	7.9	5.0	5.7	4.4	3.3	5.1	4.4	5.7	9.9	33.4	21.7	73.6	67.0	63.5	56.9	24	73.6	3.3	23.0	0	0
21	42.6	20.7	61.7	56.9	62.0	86.6	65.5	57.8	45.0	32.1	14.8	9.4	14.4	10.5	8.0	9.5	12.1	38.1	32.7	19.1	13.0	16.4	38.5	57.8	24	86.6	8.0	34.4	0	0
22	60.6	15.3	6.6	25.2	19.4	8.0	33.5	25.2	49.8	33.8	21.2	10.6	11.8	9.2	11.4	16.7	12.0	16.4	12.6	12.0	12.7	15.1	10.3	10.2	24	60.6	6.6	19.2	0	0
23	7.3	5.7	6.9	7.6	6.8	15.1	11.6	9.5	14.1	12.2	C	C	6.9	6.1	7.8	8.5	9.2	11.3	8.3	15.5	10.7	16.3	16.7	13.4	22	16.7	5.7	10.3	0	0
24	18.9	22.4	25.0	26.1	33.4	35.5	23.5	19.4	9.8	10.3	6.2	4.7	8.4	19.9	23.2	15.5	12.4	10.4	9.7	15.1	104.9	96.8	55.0	52.8	24	104.9	4.7	27.5	0	0
25	50.2	39.5	39.3	45.7	62.1	49.4	75.1	70.1	17.5	11.8	13.6	14.7	7.8	20.1	85.3	43.8	15.7	16.2	18.8	23.3	27.4	14.4	9.7	10.9	24	85.3	7.8	32.6	0	0
26	6.1	7.2	8.4	10.9	8.7	14.0	24.6	11.3	11.7	14.0	14.5	13.4	6.5	7.5	11.3	5.7	4.4	4.7	7.2	6.7	9.2	6.3	14.8	14.8	24	24.6	4.4	10.2	0	0
27	5.3	4.2	9.8	6.4	10.7	3.9	7.3	9.4	3.0	3.8	3.3	3.7	3.0	4.9	6.9	4.4	3.4	4.9	9.0	20.6	41.0	70.2	72.4	46.1	24	72.4	3.0	14.9	0	0
28	24.4	31.3	18.1	21.7	21.9	21.2	24.8	22.4	22.0	6.0	3.4	3.2	3.4	3.4	3.8	2.7	4.3	8.8	8.1	15.9	44.8	52.4	67.4	43.9	24	67.4	2.7	20.0	0	0
29	10.8	38.1	18.8	13.5	14.1	7.9	7.7	14.4	9.8	11.6	17.6	9.8	13.4	6.6	7.6	23.3	6.7	7.4	14.4	13.1	15.4	12.1	16.7	10.2	24	38.1	6.6	13.4	0	0
30	7.2	6.6	6.6	8.0	11.6	16.1	8.1	19.5	9.1	6.6	9.0	17.5	18.9	14.1	7.8	13.8	11.1	8.4	8.4	10.5	14.0	17.4	5.4	21.2	24	21.2	5.4	11.5	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	718	30	29	30		
Maximum	61.7	67.3	73.8	96.5	153.9	203.3	139.2	70.1	112.7	78.0	87.5	107.1	63.2	127.4	97.7	43.8	109.5	95.5	84.0	95.3	133.5	129.7	139.2	74.4	24	203.3	43.8	101.8		
Minimum	5.3	4.2	3.6	3.8	3.4	3.9	6.2	4.9	3.0	3.8	3.0	3.2	2.8	3.0	3.1	2.6	3.3	3.8	3.6	5.9	6.0	6.3	5.4	8.5	0	0.0	2.6			
Average	26.1	20.1	23.8	25.0	28.1	32.0	31.2	25.8	24.0	18.4	15.3	16.7	13.8	17.3	16.1	11.3	11.6	15.4	18.6	19.4	33.4	37.4	35.9	26.8	23	68	5	22.6		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													203.3
													67.8
Data	5.2	7.1	8.8	10.6	13.2	16.2	22.7	33.4	55.0	73.7	112.6	203.3	22.6

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

NOx COURTICE
May 2014
(ug/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	Hrs>400	Days>200
1	55.3	34.8	5.9	5.0	8.3	14.5	3.5	3.6	3.2	5.4	11.6	9.6	16.5	11.2	7.6	8.5	8.5	5.8	6.4	6.7	7.8	7.0	5.3	5.7	24	55.3	3.2	10.7	0	0
2	8.7	8.9	9.0	9.3	9.1	9.6	11.9	13.2	11.8	11.5	12.8	10.7	13.3	12.8	9.9	8.3	12.8	14.3	14.9	16.0	13.9	8.9	8.0	8.2	24	16.0	8.0	11.2	0	0
3	9.2	10.8	9.7	7.7	6.3	5.8	8.0	11.0	12.4	9.3	9.7	9.9	8.1	6.6	8.1	5.4	5.6	6.3	5.9	6.2	10.3	10.9	7.4	7.6	24	12.4	5.4	8.3	0	0
4	4.3	4.6	4.7	6.8	8.5	6.3	6.4	5.2	5.9	5.3	3.7	4.2	4.7	4.7	11.6	6.1	6.0	8.3	8.3	8.8	9.9	7.9	7.1	10.1	24	11.6	3.7	6.6	0	0
5	11.7	5.1	18.2	10.0	21.4	18.9	27.4	7.5	5.6	4.6	5.0	9.4	19.6	17.9	11.6	8.2	8.4	10.0	12.2	15.0	28.8	21.2	9.0	9.7	24	28.8	4.6	13.2	0	0
6	6.0	9.0	7.3	7.4	9.6	13.6	16.9	10.5	7.1	6.8	7.1	6.6	3.5	3.8	3.0	2.6	2.4	2.9	4.7	29.0	63.0	19.6	13.3	19.8	24	63.0	2.4	11.5	0	0
7	19.0	29.5	20.2	19.8	20.3	16.6	29.1	24.8	14.2	9.0	8.4	6.3	5.2	6.7	25.8	14.4	46.0	28.7	29.9	31.4	44.9	10.3	50.9	53.2	24	53.2	5.2	23.5	0	0
8	46.5	31.8	59.8	50.2	36.2	58.9	47.5	36.5	11.9	18.9	10.5	6.5	12.3	13.7	10.5	7.2	6.3	19.2	9.4	22.2	6.8	6.2	6.5	42.1	24	59.8	6.2	24.1	0	0
9	64.0	16.2	65.7	47.9	44.9	29.9	10.7	14.9	16.6	12.6	8.9	9.3	11.6	11.3	15.5	19.6	5.8	5.8	4.3	4.5	6.1	5.9	6.4	5.0	24	65.7	4.3	18.5	0	0
10	4.3	4.8	4.9	5.2	5.2	7.4	7.7	8.1	9.1	9.4	8.5	6.2	5.5	5.1	5.1	5.6	5.6	5.8	6.5	11.2	24.9	8.8	8.4	8.5	24	24.9	4.3	7.6	0	0
11	10.5	47.2	27.9	50.7	35.1	11.0	11.9	10.5	15.8	19.5	13.9	21.9	11.1	6.6	5.3	4.4	3.6	3.3	3.5	5.9	6.3	6.9	5.2	6.6	24	50.7	3.3	14.4	0	0
12	7.1	8.3	35.8	32.4	17.7	103.8	52.6	36.0	24.8	22.8	12.7	12.4	8.8	9.8	7.4	8.8	9.7	9.8	12.7	11.4	30.4	15.3	25.2	45.9	24	103.8	7.1	23.4	0	0
13	19.1	23.1	24.3	40.1	11.8	20.9	7.8	9.8	19.4	18.8	11.5	12.6	12.6	7.2	6.9	5.3	15.6	5.0	7.5	26.0	40.8	22.6	4.8	23.5	24	40.8	4.8	16.5	0	0
14	13.8	16.4	27.3	33.0	19.1	28.8	15.6	10.6	11.3	13.1	12.5	7.6	7.9	7.6	11.1	8.1	7.7	5.8	18.2	15.0	16.5	26.7	16.4	14.7	24	33.0	5.8	15.2	0	0
15	10.1	10.9	23.4	45.9	43.1	45.1	36.0	18.9	13.6	20.2	11.5	11.7	5.0	47.2	33.9	21.8	14.4	4.9	5.1	4.2	4.5	4.9	5.5	5.6	24	47.2	4.2	18.6	0	0
16	5.9	6.6	6.8	11.4	12.8	15.0	32.8	29.7	20.8	22.4	14.5	14.9	13.1	11.0	8.5	9.2	11.8	8.4	7.6	8.6	11.5	11.2	10.6	7.9	24	32.8	5.9	13.0	0	0
17	7.1	12.1	11.0	15.6	13.6	22.4	15.9	10.7	6.6	8.8	16.6	15.4	14.1	14.6	12.6	14.3	9.6	7.3	8.7	10.3	33.3	25.6	22.8	12.8	24	33.3	6.6	14.2	0	0
18	13.9	38.9	25.6	15.8	23.6	46.2	64.6	21.6	14.9	8.6	8.1	8.8	10.1	7.2	5.9	6.7	6.1	8.9	9.3	12.3	11.6	34.5	49.8	62.2	24	64.6	5.9	21.5	0	0
19	30.7	25.7	22.5	35.7	58.4	40.1	31.5	13.6	9.3	10.3	19.7	18.9	18.6	15.7	14.3	14.4	8.5	7.9	8.9	9.2	8.3	8.1	17.8	48.1	24	58.4	7.9	20.7	0	0
20	24.0	19.9	20.7	14.0	56.0	49.7	40.3	43.0	40.4	22.0	17.0	14.9	13.8	13.1	11.4	9.6	10.9	11.6	14.9	35.0	18.0	11.6	13.1	18.3	24	56.0	9.6	22.6	0	0
21	30.9	21.4	27.7	44.9	19.9	19.5	32.8	15.7	16.8	11.1	12.7	11.8	6.9	6.6	7.2	9.9	17.5	7.0	8.1	9.8	19.0	46.1	51.4	29.8	24	51.4	6.6	20.2	0	0
22	26.5	20.5	23.5	17.3	26.0	24.6	40.8	32.1	16.2	13.0	12.0	11.8	8.5	8.1	9.1	10.4	10.9	13.3	10.7	11.2	11.1	11.8	10.8	13.7	24	40.8	8.1	16.4	0	0
23	16.4	10.9	10.1	9.7	19.7	14.9	14.9	15.4	11.6	12.5	10.4	14.4	18.6	17.0	17.6	11.9	11.6	11.5	12.5	12.0	12.0	15.3	14.9	9.4	24	19.7	9.4	13.6	0	0
24	15.2	8.4	8.7	10.6	11.7	15.6	15.3	7.4	6.8	10.2	18.2	20.2	19.1	12.4	10.3	6.0	4.3	4.4	7.7	10.2	10.4	8.8	9.4	10.3	24	20.2	4.3	10.9	0	0
25	7.1	7.6	7.6	6.9	9.5	14.9	18.7	19.3	23.8	27.6	17.8	11.6	15.3	13.4	6.4	5.1	4.0	4.8	4.5	4.2	5.0	5.3	5.5	8.0	24	27.6	4.0	10.6	0	0
26	14.6	18.1	8.5	7.3	8.1	11.5	12.6	13.1	13.7	16.6	18.1	21.1	18.6	15.7	10.5	7.0	5.1	5.2	6.0	7.3	8.5	22.1	8.7	8.2	24	22.1	5.1	11.9	0	0
27	7.9	8.4	9.7	9.9	10.3	11.2	12.6	18.0	15.0	21.4	20.8	17.3	19.3	15.0	6.7	5.3	4.8	5.4	8.0	7.5	16.7	16.4	12.6	8.0	24	21.4	4.8	12.0	0	0
28	8.7	9.3	8.0	6.3	5.7	5.7	6.3	6.8	5.5	6.0	5.2	8.6	9.3	8.0	6.4	4.9	5.5	5.0	5.4	4.9	11.0	13.6	28.8	34.5	24	34.5	4.9	9.1	0	0
29	35.1	17.1	17.5	18.1	21.0	21.9	21.7	32.2	14.7	12.5	16.6	28.9	13.3	4.5	4.2	4.3	4.4	3.9	5.6	5.6	38.2	96.0	99.4	63.0	24	99.4	3.9	25.0	0	0
30	53.6	50.4	66.5	57.2	59.4	83.3	43.5	22.8	11.4	13.0	12.2	9.5	11.4	19.8	7.7	12.7	11.7	10.4	7.0	7.9	19.2	26.0	28.0	15.6	24	83.3	7.0	27.5	0	0
31	14.7	24.8	14.0	17.8	24.8	19.3	16.5	8.7	8.8	4.8	4.8	5.7	4.3	4.9	4.1	4.2	3.4	3.7	7.3	8.3	31.7	36.4	24.2	38.5	24	38.5	3.4	14.0	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	31	31	31		
Maximum	64.0	50.4	66.5	57.2	59.4	103.8	64.6	43.0	40.4	27.6	20.8	28.9	19.6	47.2	33.9	21.8	46.0	28.7	29.9	35.0	63.0	96.0	99.4	63.0	24	103.8	19.6	50.4		
Minimum	4.3	4.6	4.7	5.0	5.2	5.7	3.5	3.6	3.2	4.6	3.7	4.2	3.5	3.8	3.0	2.6	2.4	2.9	3.5	4.2	4.5	4.9	4.8	5.0	24	11.6	2.4	4.1		
Average	19.4	18.1	20.4	21.6	21.8	26.0	23.0	17.1	13.5	13.2	12.0	12.2	11.6	11.6	10.2	8.7	9.3	8.2	9.1	12.2	18.7	18.5	18.9	21.1	24	44	5	15.7		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	5.3	6.7	8.1	9.6	11.4	13.3	16.4	20.9	32.3	45.9	63.6	103.8

	Maximum
	103.8
	27.5
	15.7

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

NOx COURTICE
June 2014
(ug/m3)

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>400	Days>200
1	33.0	34.3	19.8	17.3	17.3	13.2	22.1	12.6	6.2	6.0	5.4	5.0	5.0	4.7	4.5	4.6	5.1	9.4	11.1	15.2	13.7	18.2	12.2	49.0	24	49.0	4.5	14.4	0	0
2	64.9	41.0	47.1	50.1	82.3	90.2	81.2	30.2	13.7	10.6	7.6	5.1	6.7	8.5	7.7	5.3	5.1	3.9	4.0	4.2	4.8	5.1	5.6	6.1	24	90.2	3.9	24.6	0	0
3	5.6	6.0	6.7	4.3	2.9	3.5	4.1	5.5	4.8	7.8	7.3	5.8	5.5	8.1	5.2	8.6	6.2	8.7	7.5	9.9	11.0	9.7	15.7	46.4	24	46.4	2.9	8.6	0	0
4	51.2	16.9	9.1	12.3	17.0	10.7	19.7	31.4	14.3	11.2	13.4	12.7	9.5	9.0	10.7	8.0	13.1	10.5	10.8	10.4	52.0	70.6	61.6	119.8	24	119.8	8.0	25.2	0	0
5	87.8	40.0	40.6	25.4	27.5	21.8	11.1	11.8	7.6	12.8	7.4	10.0	12.3	11.7	8.7	11.0	10.4	8.9	9.4	12.3	18.5	31.6	31.2	23.3	24	87.8	7.4	20.5	0	0
6	12.5	16.9	18.9	17.9	18.9	25.0	26.7	20.1	11.8	10.3	7.1	11.6	14.4	16.4	12.9	9.3	8.3	5.6	5.9	7.6	25.1	25.9	18.6	44.8	24	44.8	5.6	16.4	0	0
7	96.4	90.2	101.7	52.8	35.0	39.3	43.4	29.1	26.5	28.3	26.3	20.1	14.2	6.9	4.4	5.3	3.6	3.6	4.4	7.6	24.7	56.5	50.4	24.7	24	101.7	3.6	33.2	0	0
8	48.7	40.5	26.7	18.8	26.4	19.7	16.8	28.1	21.7	11.0	16.5	13.2	9.5	16.2	11.2	8.1	5.6	13.7	37.3	12.1	15.4	12.5	7.8	10.5	24	48.7	5.6	18.7	0	0
9	6.0	5.9	5.6	14.9	13.7	9.6	12.4	13.3	9.2	C	C	1.1	0.8	1.4	0.8	0.7	1.2	1.4	1.8	4.0	8.7	64.8	76.4	80.8	22	80.8	0.7	15.2	0	0
10	73.2	63.7	29.2	33.9	43.0	41.7	24.1	19.8	19.5	8.3	3.8	3.1	5.2	3.3	4.6	4.4	5.4	10.8	10.9	9.8	50.4	57.6	43.0	32.4	24	73.2	3.1	25.1	0	0
11	13.9	16.7	35.7	41.9	37.8	46.9	16.3	28.6	11.7	13.0	10.9	18.5	18.3	16.3	10.0	41.2	35.5	13.1	32.3	43.6	44.6	51.1	39.1	23.3	24	51.1	10.0	27.5	0	0
12	20.0	22.1	19.1	25.6	7.2	40.1	17.3	27.7	22.7	37.5	59.8	10.8	17.1	5.7	4.5	4.2	7.7	14.7	12.5	7.2	7.0	6.2	4.6	5.9	24	59.8	4.2	17.0	0	0
13	5.5	5.0	5.7	32.6	5.2	12.0	68.3	21.1	5.5	5.5	4.1	3.8	9.2	9.6	6.7	5.9	7.0	8.0	9.4	7.5	8.8	8.1	7.6	11.6	24	68.3	3.8	11.4	0	0
14	7.9	13.6	11.0	7.1	8.0	7.4	5.6	6.0	7.0	5.4	5.4	5.0	4.1	6.3	3.8	3.6	3.4	10.0	5.7	6.0	12.2	18.1	12.5	20.7	24	20.7	3.4	8.2	0	0
15	7.8	8.8	7.7	6.1	12.3	8.6	8.0	6.0	9.1	4.7	4.3	2.9	2.7	2.6	2.1	2.5	2.2	2.3	3.3	9.5	5.1	32.2	44.1	25.3	24	44.1	2.1	9.2	0	0
16	24.3	33.6	20.1	29.3	30.3	36.7	49.5	29.2	19.1	36.0	30.8	20.4	32.5	8.6	8.2	13.2	4.7	6.4	9.9	10.5	19.4	55.9	64.3	49.5	24	64.3	4.7	26.8	0	0
17	48.8	71.5	55.9	130.7	70.4	47.5	45.2	33.8	15.8	13.6	9.7	27.1	21.9	9.9	12.8	7.8	5.2	8.5	6.6	7.8	36.9	36.5	16.1	7.9	24	130.7	5.2	31.2	0	0
18	6.0	6.8	6.0	5.9	8.7	14.0	11.8	8.1	8.1	8.9	14.3	8.7	8.5	9.0	11.3	10.6	7.4	9.8	8.1	33.9	6.4	32.6	96.6	82.2	24	96.6	5.9	17.6	0	0
19	9.9	7.6	5.9	14.6	18.1	14.9	112.9	165.9	14.6	10.6	7.8	3.9	3.7	5.4	3.4	2.8	3.6	3.3	3.4	3.6	30.9	126.4	22.8	14.3	24	165.9	2.8	25.4	0	0
20	10.4	10.1	9.8	16.3	14.2	15.4	15.5	14.9	9.7	4.6	3.3	3.7	3.3	3.4	3.2	2.6	2.6	3.1	3.7	14.3	25.5	107.5	134.6	65.3	24	134.6	2.6	20.7	0	0
21	32.6	31.5	28.8	34.2	22.6	23.9	38.4	22.9	19.9	14.1	7.1	3.7	4.8	3.4	2.9	2.2	2.2	2.3	2.3	4.9	10.8	51.3	39.1	20.1	24	51.3	2.2	17.8	0	0
22	39.4	43.1	38.4	20.8	25.3	18.4	19.1	18.0	13.5	11.1	6.3	11.8	4.2	4.2	4.6	6.1	3.7	5.4	3.1	4.7	8.3	46.0	48.4	43.5	24	48.4	3.1	18.6	0	0
23	34.4	24.0	28.6	19.0	17.2	19.1	39.6	29.7	13.2	9.5	12.5	8.4	11.6	16.2	13.6	8.7	10.7	15.6	13.4	33.5	50.0	36.8	22.9	18.9	24	50.0	8.4	21.1	0	0
24	8.1	19.5	15.2	3.8	6.7	8.8	11.4	25.1	13.0	7.9	5.9	5.2	4.7	4.5	3.5	4.1	9.2	9.9	13.8	13.5	12.9	8.5	8.2	15.6	24	25.1	3.5	10.0	0	0
25	11.5	17.9	14.7	20.3	13.0	18.1	21.5	21.1	11.9	8.2	4.5	10.1	8.0	3.7	5.3	3.0	3.2	3.1	3.0	14.5	13.8	17.4	15.9	29.4	24	29.4	3.0	12.2	0	0
26	15.0	8.0	10.9	11.0	14.0	19.5	16.3	13.4	7.5	8.4	7.8	6.2	4.9	4.4	3.6	5.2	7.5	7.0	6.8	5.2	45.3	7.8	67.3	76.7	24	76.7	3.6	15.8	0	0
27	44.9	34.1	30.9	39.2	43.4	70.6	47.4	24.0	13.1	8.9	6.9	3.7	3.4	2.4	4.8	3.6	4.1	3.7	19.0	11.0	11.6	55.3	68.2	22.4	24	70.6	2.4	24.0	0	0
28	30.9	41.0	16.0	14.9	14.5	13.5	14.7	23.0	17.1	8.1	7.1	6.5	5.2	6.9	4.8	5.6	5.6	9.0	10.0	10.4	6.5	17.3	15.6	16.1	24	41.0	4.8	13.3	0	0
29	8.2	11.0	17.9	36.0	47.7	24.0	14.4	7.9	5.1	4.9	4.8	5.0	4.3	3.8	4.6	4.8	3.3	3.3	3.2	3.9	3.7	3.9	4.0	3.8	24	47.7	3.2	9.7	0	0
30	4.4	4.1	3.8	3.3	3.7	4.6	7.3	6.1	7.2	5.9	6.0	3.9	4.0	4.3	3.0	3.7	3.1	3.1	3.2	8.3	7.6	14.2	4.4	4.1	24	14.2	3.0	5.1	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	718	30	29	30		
Maximum	96.4	90.2	101.7	130.7	82.3	90.2	112.9	165.9	26.5	37.5	59.8	27.1	32.5	16.4	13.6	41.2	35.5	15.6	37.3	43.6	52.0	126.4	134.6	119.8	24	165.9	13.6	70.4		
Minimum	4.4	4.1	3.8	3.3	2.9	3.5	4.1	5.5	4.8	4.6	3.3	1.1	0.8	1.4	0.8	0.7	1.2	1.4	1.8	3.6	3.7	3.9	4.0	3.8	0	0	0.7			
Average	28.8	26.2	22.9	25.3	23.5	24.6	28.1	24.5	12.7	11.5	10.8	8.6	8.6	7.2	6.2	6.9	6.5	7.3	9.2	11.6	19.7	36.2	35.3	33.1	23	66	4	18.1		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	3.8	5.1	6.8	8.5	10.9	13.7	18.3	26.9	43.1	56.0	100.8	165.9

	Maximum
	165.9
	33.2
	18.1

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

NOx Rundle Road
April 2014
(ug/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	Hrs>400	Days>200
1	61.9	24.5	15.8	18.6	18.4	36.1	69.7	18.3	22.5	24.1	13.0	8.8	8.9	8.3	8.9	8.7	10.3	12.2	6.2	38.3	36.5	15.8	7.7	9.3	24	69.7	6.2	21.0	0	0
2	6.8	7.3	6.1	15.2	9.8	9.9	17.5	18.0	11.0	13.7	17.8	16.9	16.7	16.5	15.7	13.2	4.8	4.0	4.2	4.4	3.5	4.0	4.4	3.8	24	18.0	3.5	10.2	0	0
3	2.0	1.7	1.8	1.6	1.2	2.3	3.9	4.4	5.7	30.8	13.7	5.9	30.1	5.9	6.1	24.6	17.4	12.2	13.4	13.5	25.2	8.0	22.4	39.4	24	39.4	1.2	12.2	0	0
4	10.6	5.5	16.1	13.9	5.2	24.1	11.7	9.5	15.2	25.5	10.3	22.7	17.5	25.0	14.6	18.4	9.7	9.4	21.7	21.3	36.9	12.6	10.3	19.0	24	36.9	5.2	16.1	0	0
5	9.9	20.3	7.5	6.6	7.5	7.1	9.0	5.8	2.6	2.8	2.8	2.4	2.3	2.7	1.1	1.8	1.6	2.7	3.1	2.6	3.8	7.3	16.8	36.5	24	36.5	1.1	6.9	0	0
6	37.9	21.4	31.1	40.8	50.9	45.7	45.2	44.0	40.7	35.5	26.0	19.9	50.1	29.7	9.6	8.9	5.7	13.7	42.9	68.9	30.2	25.4	22.1	12.3	24	68.9	5.7	31.6	0	0
7	45.0	30.4	6.8	31.6	22.5	11.0	16.7	23.1	23.1	19.6	17.5	29.9	23.6	19.9	31.1	25.2	17.7	13.8	16.8	8.6	33.2	8.6	7.2	16.1	24	45.0	6.8	20.8	0	0
8	12.0	5.8	9.8	16.3	4.4	3.2	3.3	2.6	3.7	4.5	4.5	3.8	3.1	3.3	2.8	2.6	2.7	2.4	4.0	32.4	61.0	69.7	24.6	2.9	24	69.7	2.4	11.9	0	0
9	2.4	1.9	1.5	1.6	2.1	2.0	2.7	3.3	2.3	1.2	0.9	1.2	7.1	17.4	19.4	21.8	14.3	16.4	27.9	38.3	42.5	53.5	48.6	25.4	24	53.5	0.9	14.8	0	0
10	24.1	30.2	37.6	20.7	35.8	49.8	75.3	39.5	20.4	23.3	14.0	11.0	9.8	11.2	10.0	10.0	21.7	12.6	12.7	7.1	8.4	3.9	6.9	5.5	24	75.3	3.9	20.9	0	0
11	42.6	48.0	52.4	29.1	49.5	85.5	56.5	35.8	19.4	19.6	53.0	22.9	15.6	9.7	10.2	7.7	12.6	21.2	38.3	25.1	24.7	24.2	43.3	18.6	24	85.5	7.7	31.9	0	0
12	29.8	26.9	15.3	38.3	46.0	37.3	40.3	75.3	70.5	63.5	34.0	21.7	9.7	7.9	10.7	11.1	8.2	19.6	8.0	23.7	43.8	15.7	10.6	5.8	24	75.3	5.8	28.1	0	0
13	7.8	3.7	12.7	3.9	2.9	8.4	5.7	6.2	5.9	7.7	8.2	23.0	9.3	12.9	23.0	21.5	18.8	17.9	38.6	81.5	19.3	34.2	17.1	13.9	24	81.5	2.9	16.8	0	0
14	19.6	59.6	9.4	47.9	24.8	64.5	44.1	23.8	13.3	14.6	21.9	13.9	11.8	14.2	15.5	11.1	14.1	16.2	7.5	3.0	2.3	2.1	1.9	1.5	24	64.5	1.5	19.1	0	0
15	1.5	1.4	1.7	1.2	1.8	1.9	4.5	7.3	4.5	4.7	2.9	3.7	3.7	2.7	3.4	2.5	1.3	1.8	1.7	2.3	2.4	1.8	2.4	2.2	24	7.3	1.2	2.7	0	0
16	2.5	2.4	3.8	2.9	7.2	15.0	26.5	12.1	7.4	13.7	15.9	19.5	25.6	21.5	19.9	13.0	27.7	17.8	29.4	64.8	59.9	44.6	70.3	45.4	24	70.3	2.4	23.7	0	0
17	27.0	13.9	11.5	20.0	33.2	20.5	9.0	8.7	6.2	5.1	6.5	6.3	6.7	7.9	16.1	16.1	6.1	7.1	26.9	26.5	26.4	11.6	10.2	15.1	24	33.2	5.1	14.3	0	0
18	14.9	17.2	25.0	18.4	17.0	16.7	12.9	16.8	42.6	20.8	10.5	18.8	10.3	23.0	23.2	33.1	14.4	8.3	17.8	31.1	4.2	3.2	3.3	3.2	24	42.6	3.2	17.0	0	0
19	3.0	2.7	2.1	8.2	27.8	5.7	2.7	2.7	2.2	2.0	1.8	11.2	11.6	7.5	5.3	4.3	4.1	8.1	11.6	16.8	19.0	13.9	14.8	14.1	24	27.8	1.8	8.5	0	0
20	11.2	13.1	13.2	11.8	9.6	8.4	7.3	5.3	13.9	5.1	4.2	16.2	4.2	4.0	5.1	13.9	4.9	7.3	15.6	38.8	17.3	13.7	10.9	6.7	24	38.8	4.0	10.9	0	0
21	5.1	69.2	14.9	11.9	27.2	7.6	33.8	80.1	59.9	53.2	44.9	31.6	26.1	18.6	20.5	27.3	28.4	18.6	68.5	33.3	39.5	30.2	27.7	17.9	24	80.1	5.1	33.2	0	0
22	13.8	38.6	16.7	12.6	34.4	51.8	43.8	79.1	85.1	88.8	5.8	7.0	5.6	5.9	6.1	5.5	5.3	4.2	4.6	4.8	3.8	3.9	3.5	3.4	24	88.8	3.4	22.3	0	0
23	3.0	2.5	2.5	2.4	2.2	2.3	3.1	2.8	2.6	3.1	3.4	3.3	C	C	4.0	1.3	1.4	1.2	1.3	1.6	1.3	1.0	0.8	2.2	22	4.0	0.8	2.2	0	0
24	3.4	1.3	0.5	1.1	3.0	3.2	7.8	2.9	1.0	1.4	1.0	2.0	1.9	8.3	23.1	14.5	22.7	15.2	27.6	35.2	18.5	22.4	14.7	9.4	24	35.2	0.5	10.1	0	0
25	8.6	42.0	52.5	29.5	19.9	19.9	23.9	10.1	6.7	13.9	8.5	37.3	29.6	4.6	7.6	17.2	12.1	4.3	4.4	3.6	2.6	1.6	1.3	1.1	24	52.5	1.1	15.1	0	0
26	0.5	0.7	1.3	3.6	2.8	18.8	24.2	14.0	27.4	10.2	8.2	7.0	2.9	2.6	2.0	1.7	1.5	2.4	1.6	2.1	1.8	0.8	2.0	2.9	24	27.4	0.5	6.0	0	0
27	2.5	0.3	0.8	0.6	0.5	0.5	0.5	0.4	0.5	0.1	6.6	6.5	12.3	5.0	7.3	18.4	9.1	7.5	12.5	31.3	31.8	20.0	45.5	18.5	24	45.5	0.1	10.0	0	0
28	13.4	7.0	9.9	5.1	5.1	6.8	6.9	4.1	3.1	9.7	24.0	4.0	21.1	5.6	15.0	29.3	58.8	38.6	8.1	19.3	15.0	17.4	31.6	14.3	24	58.8	3.1	15.6	0	0
29	3.3	3.7	4.7	37.7	10.5	3.9	4.7	11.0	8.0	9.3	8.9	6.9	12.1	5.2	28.1	7.7	6.6	7.2	8.9	9.2	10.5	17.8	21.9	8.7	24	37.7	3.3	10.7	0	0
30	14.2	11.1	23.8	9.3	14.4	4.6	6.4	33.6	7.4	6.1	18.0	6.0	6.8	5.0	30.0	7.8	6.6	29.6	6.4	17.1	9.7	25.2	4.1	3.9	24	33.6	3.9	12.8	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	30	29	30		
Maximum	61.9	69.2	52.5	47.9	50.9	85.5	75.3	80.1	85.1	88.8	53.0	37.3	50.1	29.7	31.1	33.1	58.8	38.6	68.5	81.5	61.0	69.7	70.3	45.4	24	88.8	29.7	59.4		
Minimum	0.5	0.3	0.5	0.6	0.5	0.5	0.5	0.4	0.5	0.1	0.9	1.2	1.9	2.6	1.1	1.3	1.3	1.2	1.3	1.6	1.3	0.8	0.8	1.1	0	0	0.1			
Average	14.7	17.1	13.6	15.4	16.6	19.1	20.7	20.0	17.8	17.8	13.6	13.0	13.7	10.8	13.2	13.3	12.4	11.8	16.4	23.5	21.2	17.1	17.0	12.6	23	49	3	15.9		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													88.8
													33.2
Data	2.2	3.5	5.7	7.8	10.8	14.6	18.7	25.0	37.6	48.1	74.5	88.8	15.9

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

NOx Rundle Road
May 2014
(ug/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	Hrs>400	Days>200
1	20.6	20.0	20.4	25.8	31.3	48.1	73.5	31.4	18.3	25.9	33.0	17.0	24.5	15.8	12.6	19.7	15.2	13.3	17.4	22.9	22.7	17.0	10.3	29.5	24	73.5	10.3	24.4	0	0
2	17.1	21.6	17.1	14.0	17.6	22.0	36.3	29.7	23.9	21.9	28.3	14.9	19.3	28.2	16.2	22.7	21.9	20.8	23.2	26.7	25.8	12.5	14.3	23.1	24	36.3	12.5	21.6	0	0
3	16.5	17.0	10.8	21.4	20.9	10.8	30.1	13.3	12.6	25.3	11.0	13.1	13.4	8.2	15.6	10.1	13.1	13.7	10.5	11.2	16.4	9.1	4.3	3.4	24	30.1	3.4	13.8	0	0
4	2.0	1.8	2.2	3.2	4.4	1.3	2.5	1.6	1.0	0.9	0.8	1.3	0.9	0.6	0.8	0.8	0.1	0.0	0.6	0.2	0.6	0.2	0.8	0.8	24	4.4	0.0	1.2	0	0
5	0.5	0.1	0.0	0.3	1.1	2.1	4.3	2.0	1.5	1.2	0.6	4.6	23.0	28.7	28.5	15.1	24.8	40.4	40.8	118.5	14.3	1.2	0.5	0.0	24	118.5	0.0	14.8	0	0
6	0.2	0.4	0.4	0.6	0.6	0.7	3.5	4.6	2.8	6.3	14.6	9.3	7.5	7.3	11.4	5.8	5.5	9.6	14.7	13.7	7.9	1.6	1.0	0.8	24	14.7	0.2	5.4	0	0
7	1.6	2.4	16.8	3.3	11.3	78.8	22.6	21.3	21.2	19.6	7.3	4.1	43.4	6.2	5.2	13.6	6.1	10.7	24.6	34.4	42.3	43.7	47.9	13.5	24	78.8	1.6	20.9	0	0
8	6.1	16.0	6.4	5.0	4.8	11.6	10.4	24.2	22.6	16.5	18.8	80.6	126.4	19.7	11.5	15.7	16.2	10.0	19.2	11.0	15.6	20.9	10.9	10.9	24	126.4	4.8	21.3	0	0
9	5.5	28.2	28.9	5.1	7.2	18.9	13.6	21.1	14.1	19.2	33.4	24.3	34.3	31.2	29.9	22.2	19.5	18.4	30.3	25.1	26.8	15.0	19.5	9.2	24	34.3	5.1	20.9	0	0
10	8.8	7.5	5.4	15.9	16.7	34.6	22.7	14.6	12.2	14.6	9.5	7.4	11.6	6.5	6.3	7.4	3.2	2.4	2.6	3.7	25.1	40.7	2.5	2.7	24	40.7	2.4	11.9	0	0
11	3.5	5.8	6.8	11.1	3.2	1.9	11.2	7.2	16.8	13.1	9.1	8.7	9.0	9.0	15.2	5.1	15.6	6.4	9.0	13.3	6.4	6.8	13.1	9.3	24	16.8	1.9	9.0	0	0
12	21.4	14.5	10.4	11.0	36.7	27.0	24.6	54.4	34.4	22.4	14.7	20.5	84.4	38.3	80.3	48.9	20.3	27.1	27.0	17.9	48.7	29.8	19.2	18.7	24	84.4	10.4	31.4	0	0
13	20.0	14.2	10.2	8.8	17.5	36.1	19.0	23.4	17.7	28.8	18.8	21.3	18.3	13.3	25.9	17.6	14.8	16.5	20.4	18.2	102.1	43.8	21.1	11.1	24	102.1	8.8	23.3	0	0
14	14.7	14.7	9.5	9.9	13.3	10.4	12.7	14.8	3.5	4.1	4.8	19.8	24.8	15.5	11.2	16.3	19.5	30.6	15.6	3.7	2.8	33.2	8.2	30.5	24	33.2	2.8	14.3	0	0
15	36.2	7.4	4.7	15.6	13.3	20.2	21.2	30.7	19.3	31.6	17.3	30.7	31.6	30.1	47.1	50.5	30.5	17.6	18.3	18.0	18.1	15.0	15.6	11.1	24	50.5	4.7	23.0	0	0
16	9.1	9.1	20.7	7.8	33.4	46.5	11.1	11.6	11.4	8.1	5.1	9.6	7.5	5.3	22.4	16.8	16.4	20.7	42.9	11.5	2.7	1.9	1.4	1.5	24	46.5	1.4	13.9	0	0
17	1.7	1.7	6.3	15.5	32.7	31.2	8.7	4.3	3.7	4.5	14.0	18.3	13.4	11.8	11.7	10.1	8.3	8.8	23.8	13.5	14.5	9.5	9.1	12.5	24	32.7	1.7	12.1	0	0
18	8.0	7.6	5.9	6.2	5.6	7.3	18.4	25.8	19.7	16.2	8.4	21.1	8.5	5.6	29.9	5.3	7.4	8.6	13.4	9.8	9.1	7.9	14.7	9.4	24	29.9	5.3	11.7	0	0
19	8.2	5.1	4.4	5.2	10.2	34.5	50.1	42.2	20.6	24.8	24.4	38.3	21.2	15.6	13.9	16.7	10.6	13.2	17.3	13.6	33.9	28.1	16.7	20.9	24	50.1	4.4	20.4	0	0
20	12.9	4.6	8.3	44.0	71.2	70.0	19.1	32.3	36.6	22.9	37.3	16.0	18.5	36.1	50.1	20.9	15.4	24.0	22.0	14.0	33.9	53.3	30.0	35.8	24	71.2	4.6	30.4	0	0
21	91.8	20.0	16.8	19.6	38.2	19.9	18.0	11.2	22.1	28.8	19.3	14.5	14.5	36.8	12.8	29.0	28.6	38.7	53.8	69.7	47.7	35.6	26.5	8.2	24	91.8	8.2	30.1	0	0
22	8.5	31.5	18.1	17.0	12.4	11.1	21.2	18.5	8.2	5.8	5.9	5.6	5.6	14.2	18.8	22.4	13.6	4.7	4.4	4.2	3.8	4.2	4.1	3.6	24	31.5	3.6	11.1	0	0
23	4.2	3.8	3.9	4.2	3.9	5.0	6.0	6.3	6.9	6.5	5.3	10.9	25.2	24.5	38.4	7.2	4.5	5.5	3.8	4.5	4.9	3.3	2.7	2.8	24	38.4	2.7	8.1	0	0
24	2.4	2.6	10.0	5.4	2.4	3.2	3.5	3.7	4.1	4.2	14.5	19.1	12.3	11.4	7.9	6.2	9.3	6.1	2.0	3.3	4.1	2.5	2.0	2.4	24	19.1	2.0	6.0	0	0
25	2.2	10.6	16.2	23.2	14.2	18.9	21.7	25.6	22.0	26.8	21.9	30.0	8.4	9.1	12.1	7.1	4.4	10.0	7.9	5.1	12.4	17.4	22.9	12.8	24	30.0	2.2	15.1	0	0
26	12.3	28.2	29.2	46.6	47.3	28.4	42.9	33.1	37.4	54.1	55.2	22.1	22.6	34.4	17.0	21.3	13.0	14.5	22.0	17.1	27.0	29.9	41.5	43.6	24	55.2	12.3	30.9	0	0
27	41.1	25.9	31.4	25.4	53.8	94.6	119.2	82.4	46.1	30.4	30.3	19.9	19.5	19.5	11.0	7.9	8.9	10.6	26.9	21.5	4.4	3.8	3.2	2.9	24	119.2	2.9	30.9	0	0
28	3.2	10.0	17.6	15.3	24.4	28.7	41.6	16.7	5.2	121.5	31.7	12.9	10.6	21.8	14.4	11.5	13.8	19.9	22.0	26.6	31.0	25.5	16.9	13.7	24	121.5	3.2	23.2	0	0
29	11.7	5.5	8.9	5.5	6.9	6.7	7.5	16.0	17.1	14.0	12.1	8.0	8.1	17.6	5.5	11.4	9.9	15.7	30.2	34.3	28.3	39.6	13.8	10.1	24	39.6	5.5	14.4	0	0
30	10.6	8.6	7.0	7.1	7.9	9.3	4.0	5.3	4.7	5.1	6.0	109.2	16.4	3.4	3.0	3.2	3.3	21.7	24.6	35.3	16.5	9.9	6.0	4.8	24	109.2	3.0	13.9	0	0
31	4.6	5.6	4.0	3.5	3.6	4.8	4.9	4.7	7.0	4.1	3.3	3.9	15.3	3.2	11.5	3.8	8.4	5.6	11.7	15.1	22.1	36.2	21.3	15.8	24	36.2	3.2	9.3	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	31	31	31		
Maximum	91.8	31.5	31.4	46.6	71.2	94.6	119.2	82.4	46.1	121.5	55.2	109.2	126.4	38.3	80.3	50.5	30.5	40.4	53.8	118.5	102.1	53.3	47.9	43.6	24	126.4	30.5	70.3		
Minimum	0.2	0.1	0.0	0.3	0.6	0.7	2.5	1.6	1.0	0.9	0.6	1.3	0.9	0.6	0.8	0.8	0.1	0.0	0.6	0.2	0.6	0.2	0.5	0.0	24	4.4	0.0	0.6		
Average	13.1	11.4	11.6	13.0	18.3	24.0	22.8	20.5	16.0	20.3	16.7	20.6	22.6	17.1	19.3	15.2	13.0	15.0	19.5	20.6	21.7	19.3	13.6	12.1	24	57	4	17.4		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													126.4
													31.4
Data	3.2	5.1	7.9	10.8	13.8	16.8	20.6	25.4	34.4	43.8	88.6	126.4	17.4

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

NOx Rundle Road
June 2014
(ug/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	Hrs>400	Days>200
1	10.9	14.1	32.0	18.8	25.6	12.1	16.7	9.6	6.8	10.8	11.4	26.4	61.4	111.2	17.6	4.6	5.0	17.3	16.5	10.7	16.1	17.4	31.8	14.8	24	111.2	4.6	21.6	0	0
2	31.2	20.0	14.4	13.6	17.0	40.4	30.8	57.1	19.7	18.1	12.1	18.1	11.1	15.9	124.6	16.0	18.2	9.3	11.3	8.5	14.5	19.2	14.5	11.5	24	124.6	8.5	23.6	0	0
3	10.2	17.3	21.0	8.6	21.8	22.6	28.4	14.3	24.1	15.1	9.3	8.7	9.3	13.6	11.0	6.9	9.0	6.0	1.5	1.7	1.5	1.1	6.8	6.8	24	28.4	1.1	11.5	0	0
4	3.3	7.3	44.0	24.2	20.6	26.3	56.2	20.5	3.5	5.9	20.8	17.5	14.5	22.0	18.6	23.2	4.2	6.4	4.8	5.8	7.1	8.6	7.8	6.4	24	56.2	3.3	15.8	0	0
5	4.4	4.5	3.9	3.4	2.7	3.7	9.0	2.6	2.6	2.9	2.2	2.6	3.1	2.7	2.0	3.3	2.6	2.7	2.3	2.1	2.4	2.3	4.1	4.5	24	9.0	2.0	3.3	0	0
6	2.7	1.3	1.7	2.1	2.8	7.3	5.0	4.1	5.7	4.2	4.9	2.9	3.9	17.3	18.5	23.6	14.3	15.2	11.5	8.9	6.0	5.2	5.6	39.8	24	39.8	1.3	8.9	0	0
7	18.1	31.5	23.8	18.5	12.7	11.0	35.6	30.7	16.9	29.6	19.2	14.2	7.3	8.8	11.4	5.5	5.0	7.1	7.1	29.9	15.8	17.9	19.9	16.7	24	35.6	5.0	17.3	0	0
8	18.4	20.5	13.0	5.8	5.1	8.0	7.2	5.7	10.1	22.1	24.5	13.6	10.7	11.4	17.8	13.3	30.3	20.5	8.5	2.1	4.8	2.4	1.9	1.9	24	30.3	1.9	11.6	0	0
9	2.3	1.2	1.3	1.3	0.9	1.6	3.0	4.4	4.2	2.9	4.8	C	3.9	0.0	0.0	0.0	0.0	0.9	4.0	27.6	26.8	11.1	8.2	9.5	23	27.6	0.0	5.2	0	0
10	7.5	0.7	0.0	0.0	0.0	0.0	1.9	0.0	0.0	3.5	12.8	0.0	0.0	18.0	9.3	18.3	20.1	0.0	5.2	26.4	15.8	6.5	9.2	0.0	24	26.4	0.0	6.5	0	0
11	0.0	15.5	7.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	12.9	16.3	4.6	9.8	0.0	0.9	0.0	5.4	0.0	0.0	0.0	24	16.3	0.0	3.2	0	0
12	3.6	18.6	19.2	27.0	15.5	14.4	15.3	8.9	25.7	8.5	9.0	14.6	11.4	7.7	3.3	12.0	2.5	0.1	12.5	0.0	11.0	14.7	6.8	10.4	24	27.0	0.0	11.4	0	0
13	0.6	4.8	4.5	9.5	26.3	7.1	27.8	44.2	10.5	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	44.2	0.0	5.8	0	0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
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	16.2	0.0	4.2	0.1	0.0	24	16.2	0.0	0.9	0	0
16	44.5	0.0	0.0	0.0	0.0	31.6	14.3	0.0	19.6	8.3	7.4	2.7	7.4	0.0	3.8	0.0	0.0	0.0	2.4	12.1	21.2	8.1	0.0	55.7	24	55.7	0.0	10.0	0	0
17	86.1	15.9	4.5	17.1	0.0	0.0	3.5	43.5	36.4	28.9	6.9	4.0	23.7	3.8	0.6	14.5	17.9	5.8	5.3	1.6	8.4	0.0	0.0	0.0	24	86.1	0.0	13.7	0	0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	7.5	1.9	5.6	8.6	8.1	13.2	4.3	22.7	22.2	23.1	17.6	49.6	30.1	0.0	24	49.6	0.0	9.0	0	0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	22.1	7.6	7.0	0.0	0.0	24	22.1	0.0	1.7	0	0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	9.1	0.0	2.6	8.3	13.1	10.6	9.2	20.0	11.1	24	20.0	0.0	3.5	0	0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.6	0.1	0.0	0.0	24	0.9	0.0	0.1	0	0
22	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.2	4.8	2.3	0.0	0.0	24	18.2	0.0	1.3	0	0
23	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	8.8	3.9	7.3	0.0	0.0	3.4	18.1	16.5	1.0	7.4	23.9	24	23.9	0.0	3.8	0	0
24	0.0	0.0	0.0	7.6	19.7	21.2	18.0	30.7	32.1	12.2	0.0	0.0	0.2	0.0	0.0	6.9	0.0	0.0	0.0	0.0	0.0	13.0	14.1	0.0	24	32.1	0.0	7.3	0	0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	6.7	1.7	0.0	0.2	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	6.7	0.0	0.6	0	0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	5.5	5.6	7.7	3.1	3.9	10.3	9.7	9.6	22.9	29.0	44.1	18.8	24.9	24	44.1	0.0	8.4	0	0
27	7.2	4.0	2.9	1.2	24.2	14.7	19.5	25.8	43.0	14.5	3.5	7.0	0.3	0.0	0.1	9.2	6.3	11.1	8.9	29.3	26.7	13.9	16.4	6.2	24	43.0	0.0	12.3	0	0
28	4.9	4.6	2.0	1.6	2.0	5.7	9.4	12.8	25.3	3.2	11.9	22.3	12.7	14.9	12.6	10.1	2.0	1.7	4.8	1.3	2.1	2.7	2.5	2.6	24	25.3	1.3	7.3	0	0
29	14.8	7.4	4.9	8.5	6.1	3.4	26.4	6.2	10.9	3.8	7.8	8.9	9.1	6.8	9.2	12.0	5.8	2.0	8.5	20.4	5.3	2.4	4.4	12.9	24	26.4	2.0	8.7	0	0
30	17.8	9.2	5.7	11.2	18.3	24.8	9.4	10.3	7.5	8.9	2.5	1.7	1.1	3.2	7.3	4.8	3.0	5.0	6.6	16.4	24.0	22.4	6.0	3.0	24	24.8	1.1	9.6	0	0
31																									0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	719	30	29	30		
Maximum	86.1	31.5	44.0	27.0	26.3	40.4	56.2	57.1	43.0	29.6	24.5	26.4	61.4	111.2	124.6	23.6	30.3	22.7	22.2	29.9	29.0	49.6	31.8	55.7	24	124.6	22.2	45.2		
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	0	0.0			
Average	9.9	6.6	6.9	6.0	7.4	8.5	11.2	11.0	10.2	6.8	6.2	6.3	7.1	9.9	10.0	7.4	5.8	4.9	5.6	11.3	10.1	9.6	7.9	8.8	23	35	1	8.1		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													124.6
													23.6
Data	0.0	0.0	0.0	1.9	4.1	6.9	9.6	14.8	21.3	27.6	48.7	124.6	8.1

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

Appendix D

$PM_{2.5}$ Data Summaries and Time History Plots

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

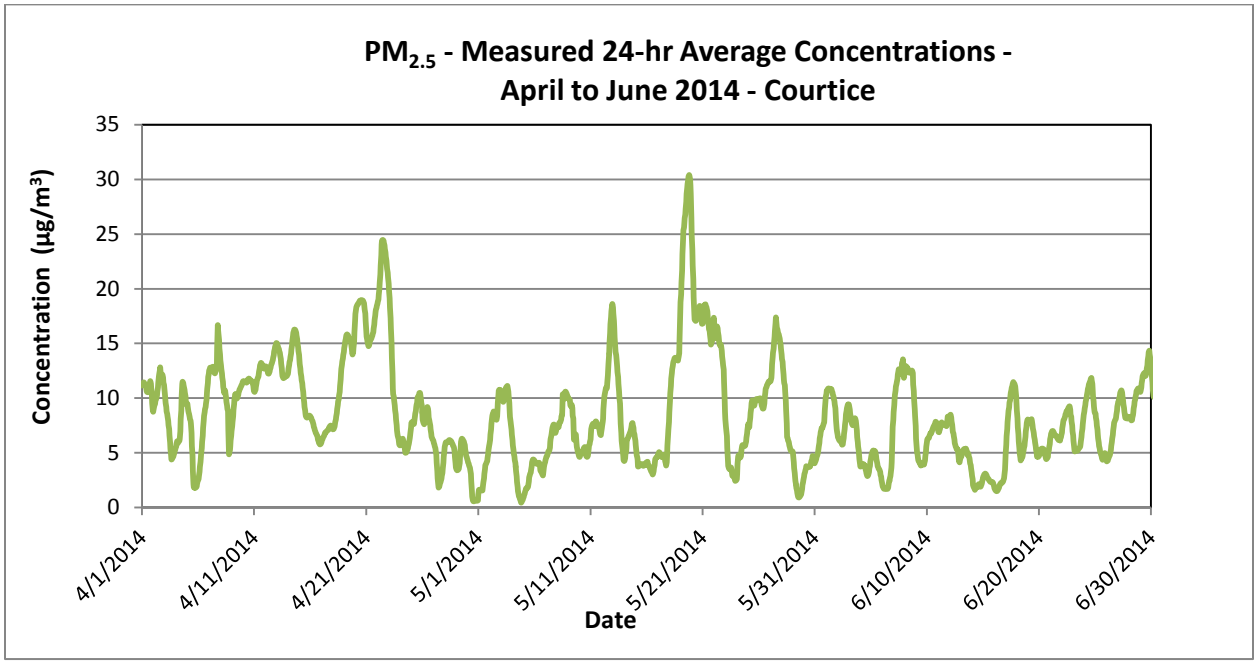
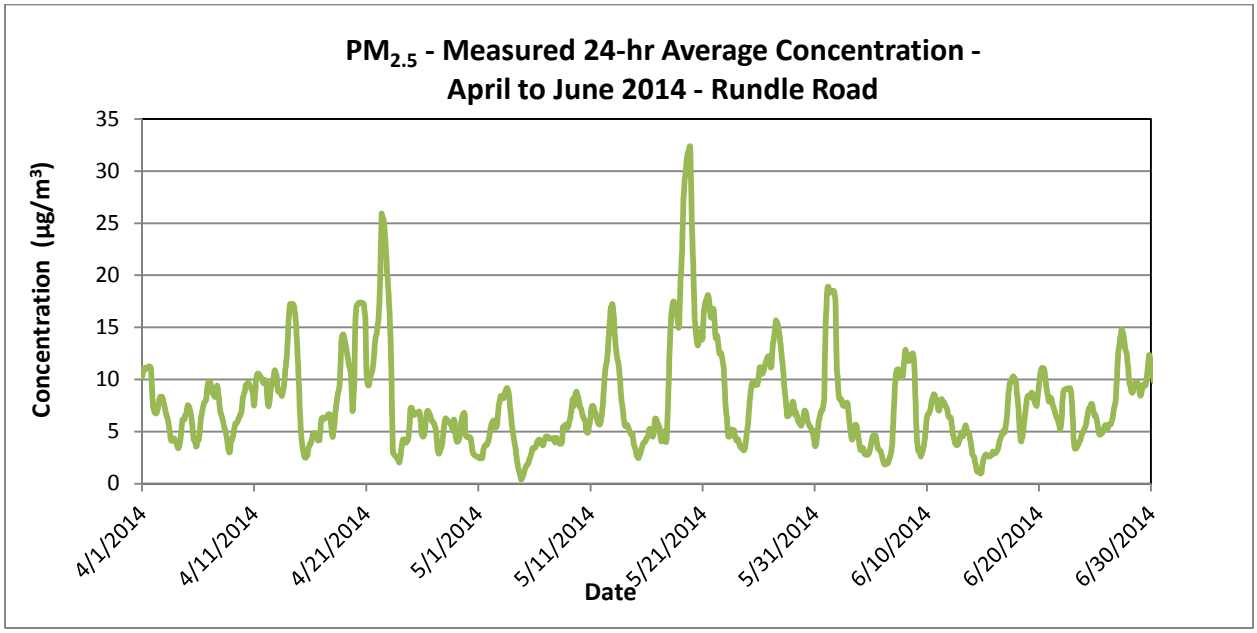


Figure D-2 Time History Plot of Measured 24-Hour Average $PM_{2.5}$ Concentrations – Rundle Road Station



$PM_{2.5}$ - COURTICE
April 2014
(ug/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	15.4	10.1	10.7	9.9	9.7	8.6	7.3	7.0	5.6	3.9	3.3	5.7	4.1	11.4	8.0	6.3	12.9	11.6	6.6	4.4	6.0	13.0	18.6	12.5	24	18.6	3.3	8.9
2	12.7	18.2	13.9	12.7	13.6	14.5	10.6	9.8	11.7	12.2	12.3	16.5	17.9	16.5	16.4	12.7	3.8	3.2	5.2	6.4	6.9	6.6	7.2	7.8	24	18.2	3.2	11.2
3	4.7	3.8	4.3	4.7	4.6	4.9	5.4	3.8	2.4	2.6	3.7	2.7	2.2	2.5	3.4	2.8	3.9	5.6	6.5	8.5	10.2	11.4	12.3	9.9	24	12.3	2.2	5.3
4	8.9	6.5	10.3	10.2	4.0	1.8	7.8	5.0	3.4	6.8	20.7	29.4	21.1	33.9	30.6	7.8	1.2	0.2	3.0	2.2	4.1	3.4	1.6	3.1	24	33.9	0.2	9.5
5	7.6	8.4	4.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.7	0.9	0.9	0.8	0.5	0.5	0.9	1.7	3.0	4.2	5.5	6.9	9.4	24	9.4	0.2	2.4
6	9.3	11.4	10.6	10.5	10.5	10.3	9.9	9.9	11.0	14.2	13.9	17.5	16.9	11.7	9.4	6.7	5.6	7.5	11.6	16.4	14.0	18.3	20.4	16.2	24	20.4	5.6	12.2
7	16.2	15.0	13.3	10.6	9.4	9.6	11.2	11.0	12.1	10.1	8.6	14.1	15.3	13.6	13.4	10.7	10.2	50.1	60.1	5.3	6.6	4.0	2.2	2.8	24	60.1	2.2	14.0
8	3.6	4.1	5.2	1.1	0.3	0.2	0.2	2.5	7.5	13.3	9.8	7.7	5.7	5.2	4.8	3.7	5.3	7.6	8.3	9.5	11.0	12.4	15.0	14.2	24	15.0	0.2	6.6
9	13.5	14.4	14.5	14.1	14.2	12.7	11.6	10.1	10.6	8.2	6.6	6.2	7.1	8.0	8.6	8.8	9.6	10.2	10.3	11.8	13.6	14.4	16.1	17.8	24	17.8	6.2	11.4
10	16.9	15.4	14.6	13.4	12.9	12.8	11.8	9.5	9.7	10.1	9.3	8.7	8.6	8.3	7.9	7.5	8.4	9.0	9.3	11.5	12.0	11.4	10.9	10.8	24	16.9	7.5	10.9
11	11.3	14.3	16.1	16.4	19.3	20.5	17.6	13.7	11.9	12.6	14.6	14.9	14.9	14.7	11.7	9.4	7.4	6.5	6.3	8.0	9.8	10.9	12.7	12.8	24	20.5	6.3	12.9
12	12.7	14.0	14.9	15.3	15.4	14.6	13.9	13.2	13.5	16.1	18.9	19.3	18.7	17.2	14.7	12.7	11.5	11.8	12.0	15.1	15.5	16.4	16.1	15.6	24	19.3	11.5	15.0
13	14.7	13.5	12.0	10.9	12.9	11.7	9.8	8.7	7.9	8.7	8.9	8.8	9.2	10.2	11.1	11.4	11.6	12.9	13.9	14.8	16.2	16.9	16.7	17.4	24	17.4	7.9	12.1
14	16.8	18.5	18.8	19.0	18.7	17.0	16.3	15.9	17.0	18.1	18.6	19.2	16.3	14.8	13.8	11.1	11.4	10.9	9.4	8.7	8.0	8.1	8.2	8.7	24	19.2	8.0	14.3
15	8.6	8.3	8.9	9.3	9.2	8.7	8.9	8.4	8.0	8.0	7.7	7.1	6.9	6.8	6.7	6.5	8.4	10.0	9.5	9.9	9.3	9.0	8.9	8.5	24	10.0	6.5	8.4
16	7.5	6.8	6.8	6.8	6.8	6.7	6.3	3.5	3.1	4.2	4.2	3.9	4.1	4.4	4.4	4.7	4.9	5.1	5.5	6.5	7.0	7.9	9.4	9.2	24	9.4	3.1	5.8
17	10.9	10.4	9.8	9.1	8.6	8.5	7.9	6.9	6.0	5.4	5.1	5.2	5.1	5.5	5.5	5.6	6.5	7.8	8.0	8.0	7.2	7.0	7.1	7.2	24	10.9	5.1	7.3
18	8.5	9.9	10.4	11.4	12.4	13.1	12.9	12.5	12.7	13.0	13.7	13.7	12.7	11.7	13.0	13.2	18.9	22.7	20.7	18.9	16.1	14.0	14.0	14.3	24	22.7	8.5	13.9
19	15.9	17.7	18.2	18.1	18.4	17.9	16.4	13.9	12.4	11.8	10.5	10.5	10.7	11.4	11.0	10.7	11.5	12.3	12.8	15.5	21.1	23.4	27.7	34.9	24	34.9	10.5	16.0
20	41.1	32.5	28.0	23.4	21.5	19.7	17.9	15.5	13.5	13.6	12.8	11.9	11.0	10.7	11.5	11.6	10.8	11.0	11.1	11.7	14.2	16.8	19.0	18.7	24	41.1	10.7	17.1
21	19.7	19.7	20.9	17.5	16.2	16.8	19.8	20.0	18.4	16.0	14.7	13.4	13.6	13.9	14.9	16.0	18.5	20.0	21.0	21.3	21.9	22.0	23.0	23.2	24	23.2	13.4	18.4
22	24.3	24.1	25.4	28.2	29.8	30.1	37.1	39.7	41.3	39.6	23.0	15.2	13.6	12.3	10.4	10.1	11.0	12.0	12.0	12.2	12.6	14.1	14.3	13.0	24	41.3	10.1	21.1
23	10.8	8.9	8.1	7.7	7.2	6.7	6.5	6.6	6.6	6.4	C	C	6.3	2.3	1.5	0.8	0.6	0.7	0.9	3.0	9.7	9.6	8.4	7.8	22	10.8	0.6	5.8
24	8.9	10.2	10.0	10.3	10.1	10.5	7.4	3.8	1.8	0.7	0.3	0.4	0.7	1.9	2.6	3.2	3.6	3.7	5.6	8.7	13.8	18.3	14.0	13.8	24	18.3	0.3	6.8
25	20.0	20.8	11.8	9.0	10.1	6.4	8.1	9.9	11.9	7.0	7.0	8.0	5.4	7.8	12.9	6.0	4.8	7.0	8.8	8.9	9.4	6.9	7.1	7.3	24	20.8	4.8	9.3
26	6.2	5.8	6.2	6.5	7.1	8.7	11.6	17.9	17.9	16.4	15.6	8.5	1.2	1.0	0.3	0.2	0.2	0.2	0.2	0.4	1.9	3.5	5.1	5.4	24	17.9	0.2	6.2
27	3.6	2.3	2.3	2.8	3.0	3.1	2.5	0.9	0.2	0.2	1.4	2.4	2.9	3.6	3.9	3.7	3.0	5.4	6.0	6.9	11.2	16.6	18.2	17.5	24	18.2	0.2	5.2
28	12.6	9.1	5.1	3.8	2.8	2.8	2.3	1.6	1.5	3.4	1.8	2.0	2.2	2.7	2.7	1.9	1.5	2.3	3.5	4.6	8.7	8.1	6.3	4.0	24	12.6	1.5	4.1
29	2.9	5.1	3.7	3.1	3.5	3.5	4.1	5.9	9.6	17.2	21.2	15.7	8.3	3.5	1.3	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	21.2	0.2	4.6
30	0.2	0.2	0.2	0.2	0.4	0.9	0.8	0.9	1.1	1.1	1.3	2.4	0.6	0.8	1.0	0.8	0.7	0.4	0.2	0.3	0.3	0.2	0.2	0.9	24	2.4	0.2	0.7
31																									0	0.0	0.0	
Count	30	30	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	718	30	29	30
Maximum	41.1	32.5	28.0	28.2	29.8	30.1	37.1	39.7	41.3	39.6	23.0	29.4	21.1	33.9	30.6	16.0	18.9	50.1	60.1	21.3	21.9	23.4	27.7	34.9	24	60.1	16.0	31.7
Minimum	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.6	0.8	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0.2	
Average	12.2	12.0	11.3	10.5	10.4	10.1	10.1	9.6	9.7	10.0	10.0	10.1	8.8	9.0	8.6	6.9	7.0	9.0	9.7	8.8	10.1	11.0	11.6	11.5	23	20	5	9.9

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.3	3.7	6.2	7.8	9.3	10.9	12.7	14.6	18.0	20.7	34.7	60.1

Maximum
60.1
21.1
9.9

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

$PM_{2.5}$ - COURTICE
May 2014
(ug/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	12.9	10.0	0.7	0.3	0.2	1.3	0.2	0.2	0.2	1.7	13.3	8.0	9.3	10.7	11.4	9.6	3.4	1.5	2.0	3.8	7.1	9.1	8.6	10.2	24	13.3	0.2	5.7
2	16.7	18.9	12.6	11.3	12.2	14.1	6.0	3.0	3.8	4.1	5.2	6.5	9.6	8.5	6.3	8.2	11.2	14.3	18.4	20.7	17.8	10.3	6.8	11.2	24	20.7	3.0	10.7
3	11.5	12.1	11.6	9.7	7.6	7.5	7.7	7.5	9.0	10.9	11.8	12.3	11.4	9.5	7.7	4.1	3.2	3.5	4.1	4.4	3.3	0.2	0.2	0.2	24	12.3	0.2	7.1
4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.7	1.1	1.3	0.2	0.2	0.4	0.4	0.2	0.2	0.5	0.6	0.5	1.7	1.4	2.0	2.4	2.3	24	2.4	0.2	0.7
5	3.1	3.4	3.6	3.5	4.2	4.6	3.4	2.0	1.5	1.2	1.4	4.0	9.5	9.3	5.2	2.6	3.6	6.5	8.6	10.1	6.4	3.5	1.8	1.7	24	10.1	1.2	4.4
6	1.6	1.4	1.7	2.3	3.1	3.4	3.6	2.3	1.4	2.6	2.4	2.4	1.7	2.0	2.0	1.9	2.2	3.0	5.8	15.3	18.7	7.8	5.6	5.5	24	18.7	1.4	4.2
7	6.3	6.0	4.4	4.2	4.7	8.4	6.4	3.2	2.9	8.9	15.1	8.5	7.8	6.6	12.0	6.5	5.9	5.1	5.9	7.8	9.2	6.7	9.7	10.2	24	15.1	2.9	7.2
8	7.5	6.4	5.9	5.1	4.5	17.7	6.2	5.0	4.6	13.2	22.7	9.9	29.9	31.3	9.6	3.7	2.8	3.2	21.0	8.3	6.2	5.7	5.3	7.4	24	31.3	2.8	10.1
9	6.7	3.6	4.2	3.9	4.3	4.7	5.3	5.4	7.2	6.1	5.8	3.6	4.8	10.2	11.4	10.4	5.4	3.4	1.3	0.2	0.2	0.9	3.0	2.3	24	11.4	0.2	4.8
10	3.1	4.3	5.9	8.6	8.8	3.7	4.9	5.6	9.1	11.2	8.1	5.5	5.4	5.0	3.0	4.5	4.0	2.4	2.5	4.0	12.8	8.1	6.4	7.0	24	12.8	2.4	6.0
11	8.8	17.0	16.0	14.7	11.2	6.3	5.3	4.1	6.6	10.1	11.8	12.0	5.6	1.7	1.4	1.5	0.5	0.9	1.6	2.5	3.5	3.5	5.1	12.6	24	17.0	0.5	6.8
12	17.9	22.8	25.2	21.0	32.1	25.0	15.1	11.1	10.2	18.3	11.9	11.2	16.7	18.4	15.5	14.1	20.5	24.4	23.7	22.6	19.1	16.1	17.1	16.7	24	32.1	10.2	18.6
13	10.1	9.6	8.9	5.9	11.4	3.8	3.7	4.1	2.9	0.5	0.4	0.6	1.2	1.7	1.8	1.3	1.1	0.8	2.7	4.9	6.1	11.0	3.3	6.3	24	11.4	0.4	4.3
14	8.2	10.3	14.1	16.9	14.0	13.2	21.3	6.1	3.7	3.6	2.9	3.4	3.9	5.2	3.8	7.2	5.5	6.6	3.9	0.3	0.2	0.2	0.2	0.2	24	21.3	0.2	6.5
15	0.4	0.2	0.6	8.8	8.3	8.3	6.9	5.9	5.1	5.1	3.7	3.7	3.8	6.2	4.2	3.9	5.4	5.7	5.1	0.4	0.2	0.2	1.2	4.8	24	8.8	0.2	4.1
16	1.7	0.2	1.7	3.1	6.4	7.3	4.1	3.9	2.6	2.7	0.9	1.9	2.8	1.9	5.9	9.2	12.4	12.0	12.0	7.0	2.1	1.9	2.2	4.5	24	12.4	0.2	4.6
17	3.6	4.2	4.6	5.5	4.7	4.7	2.9	1.6	0.4	0.9	3.3	3.8	3.5	2.5	3.8	5.2	5.0	6.1	8.2	13.7	16.3	24.5	23.6	17.0	24	24.5	0.4	7.1
18	21.1	25.8	28.2	23.7	21.2	20.5	15.0	10.3	8.1	6.6	6.3	7.5	6.7	3.9	2.6	3.5	4.6	6.2	7.1	12.4	20.3	28.0	31.7	48.6	24	48.6	2.6	15.4
19	74.6	53.6	45.0	49.1	47.4	56.9	46.9	30.4	14.7	16.4	16.7	16.0	18.3	19.8	20.3	16.3	13.5	15.1	13.8	16.4	17.7	20.8	18.6	29.6	24	74.6	13.5	28.7
20	22.3	14.8	13.1	16.0	16.4	17.3	13.7	15.0	13.2	14.8	17.2	20.4	20.6	22.6	19.7	16.4	19.0	23.1	23.5	10.2	11.3	15.3	16.2	11.3	24	23.5	10.2	16.8
21	22.8	30.0	30.5	22.5	15.9	20.2	14.0	11.4	10.9	11.2	11.0	10.2	11.5	11.3	11.7	12.3	11.4	11.6	12.4	13.8	15.0	18.5	30.5	40.8	24	40.8	10.2	17.1
22	27.4	16.4	16.8	7.0	13.7	27.7	27.1	16.9	6.6	2.8	2.8	2.6	3.5	6.7	11.8	13.6	7.4	1.0	1.1	2.0	7.7	8.4	3.6	1.1	24	27.7	1.0	9.8
23	1.0	0.8	0.2	0.2	0.3	1.4	2.3	2.5	1.9	1.0	1.5	3.2	7.1	6.9	7.9	4.5	2.1	1.6	1.8	3.0	2.6	1.8	1.5	1.9	24	7.9	0.2	2.5
24	1.9	2.5	12.3	20.2	17.7	4.9	1.2	0.4	0.2	0.9	5.1	13.3	16.5	10.5	8.7	3.0	1.2	1.6	3.0	3.1	5.4	8.0	9.6	10.8	24	20.2	0.2	6.8
25	10.3	12.5	15.6	16.3	14.7	14.2	12.7	10.9	10.9	11.5	11.1	11.7	9.9	8.9	6.6	4.6	5.1	5.1	5.3	6.4	5.8	7.0	8.3	10.4	24	16.3	4.6	9.8
26	11.7	13.8	17.0	15.8	14.5	9.0	6.5	6.4	7.2	8.9	11.4	14.3	18.4	20.7	18.6	12.3	7.4	7.8	8.4	8.7	7.9	9.6	9.7	10.0	24	20.7	6.4	11.5
27	11.7	14.6	19.2	21.2	26.0	27.2	22.7	16.5	15.0	20.7	26.2	27.5	35.3	32.8	4.3	4.5	2.8	3.8	4.9	5.9	4.4	3.9	3.2	2.9	24	35.3	2.8	14.9
28	2.5	2.6	9.3	15.0	13.7	11.9	10.7	9.2	10.2	7.2	5.7	6.6	7.0	2.3	1.4	0.2	0.4	0.2	0.3	0.5	0.7	0.9	2.5	2.8	24	15.0	0.2	5.2
29	2.8	0.9	0.8	0.6	0.6	1.1	1.5	1.8	1.2	0.3	0.5	0.6	0.3	0.2	0.3	0.8	2.1	2.1	1.7	1.9	5.3	9.0	10.4	9.0	24	10.4	0.2	2.3
30	8.0	7.8	6.3	5.3	4.0	5.6	6.4	0.5	0.4	0.3	0.4	0.7	0.9	1.1	0.6	3.9	6.8	6.1	4.2	6.6	8.8	4.2	3.7	5.0	24	8.8	0.3	4.1
31	7.7	11.2	7.6	9.3	8.8	9.0	8.4	7.0	6.1	5.9	8.2	10.6	8.2	7.7	6.3	7.0	6.8	8.1	8.5	9.3	12.9	17.2	18.4	23.5	24	23.5	5.9	9.7
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	31	31	31
Maximum	74.6	53.6	45.0	49.1	47.4	56.9	46.9	30.4	15.0	20.7	26.2	27.5	35.3	32.8	20.3	16.4	20.5	24.4	23.7	22.6	20.3	28.0	31.7	48.6	24	74.6	15.0	34.1
Minimum	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.2	24	2.4	0.2	0.2
Average	11.2	10.9	11.1	11.2	11.4	11.6	9.4	6.8	5.8	6.8	7.9	7.8	9.4	9.2	7.3	6.4	5.9	6.2	7.2	7.4	8.3	8.5	8.7	10.6	24	21	3	8.6

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.9	2.1	3.5	4.9	6.4	8.2	10.6	13.7	18.5	23.5	43.2	74.6

Maximum
74.6
28.7
8.6

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

$PM_{2.5}$ - COURTICE
June 2014
(ug/m3)

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
1	17.6	17.3	14.4	10.2	11.2	10.5	8.8	5.7	5.4	6.4	8.6	9.1	8.1	4.0	2.9	2.6	3.2	3.1	2.5	2.7	4.3	4.0	4.1	6.4	24	17.6	2.5	7.2
2	11.8	9.6	8.7	8.4	8.4	8.4	8.0	4.2	4.6	5.4	6.0	6.6	9.1	9.4	11.5	11.9	13.7	12.0	13.8	14.7	11.5	9.7	9.5	9.8	24	14.7	4.2	9.4
3	10.1	10.8	5.6	0.2	0.2	0.2	0.2	0.2	1.2	3.1	6.8	9.6	12.0	14.6	14.6	11.2	8.4	4.7	0.5	0.2	0.2	0.2	0.2	0.5	24	14.6	0.2	4.8
4	1.1	0.2	0.2	0.4	1.0	0.9	1.6	2.3	1.1	2.0	4.2	10.0	11.0	8.2	9.7	6.4	4.0	2.8	2.4	2.1	6.0	8.1	5.7	8.6	24	11.0	0.2	4.2
5	7.8	5.3	4.9	4.1	4.2	3.2	1.5	1.1	0.8	2.0	1.9	2.7	3.8	4.4	2.5	1.2	0.8	0.5	0.5	1.0	1.7	1.7	1.7	1.3	24	7.8	0.5	2.5
6	1.0	1.1	1.5	1.5	2.4	2.3	1.5	1.8	1.6	1.7	1.7	1.9	3.6	7.5	7.6	6.3	5.5	5.2	6.2	7.0	13.6	14.6	53.0	27.0	24	53.0	1.0	7.4
7	16.2	18.2	17.2	14.2	12.0	11.2	10.5	7.4	5.9	8.9	10.6	10.1	7.3	4.5	4.2	4.3	4.7	6.0	8.7	26.4	15.8	21.1	22.6	16.4	24	26.4	4.2	11.9
8	24.6	30.8	22.3	14.0	11.5	10.2	7.9	6.6	4.3	4.7	7.3	9.8	7.2	5.6	5.4	5.4	5.9	5.2	3.7	1.7	1.6	1.5	1.8	2.2	24	30.8	1.5	8.4
9	2.6	2.5	3.5	4.1	4.6	3.6	3.0	3.6	3.2	C	C	6.3	8.4	6.5	6.2	5.5	5.7	4.7	3.4	4.8	7.2	9.5	11.2	12.5	22	12.5	2.5	5.6
10	11.1	8.1	5.7	4.3	5.0	5.6	6.1	6.2	5.2	6.2	9.2	10.0	11.0	9.6	8.8	7.9	7.3	5.8	7.0	7.6	6.9	7.7	8.7	5.9	24	11.1	4.3	7.4
11	4.4	3.9	5.1	7.3	9.4	10.1	8.9	10.1	8.3	4.3	7.5	9.8	10.0	9.6	8.7	7.6	6.5	4.4	6.0	14.0	13.8	15.3	9.0	4.2	24	15.3	3.9	8.3
12	4.2	5.8	8.7	7.6	3.4	1.8	1.0	2.2	0.9	0.7	1.6	1.9	2.4	4.6	6.3	4.8	3.3	4.2	6.2	5.3	6.0	6.3	5.8	8.4	24	8.7	0.7	4.3
13	10.0	8.8	8.9	13.3	5.8	3.2	5.1	4.5	0.4	0.2	1.0	4.7	2.2	0.4	0.5	1.2	7.1	2.2	0.9	1.2	0.9	0.8	0.9	1.4	24	13.3	0.2	3.6
14	1.1	1.6	1.3	1.2	1.5	1.7	2.1	2.4	3.6	3.6	1.9	2.8	2.7	2.5	2.8	3.0	2.7	1.1	1.1	1.4	2.5	4.6	4.1	5.3	24	5.3	1.1	2.4
15	6.2	5.7	4.2	3.1	2.8	2.3	1.5	1.0	0.7	0.8	0.8	1.1	1.0	1.1	1.3	1.4	1.3	0.8	1.1	1.8	2.6	2.7	3.0	2.3	24	6.2	0.7	2.1
16	1.8	1.8	1.6	1.3	1.5	1.5	1.9	1.9	2.7	2.5	3.4	4.0	4.0	3.1	3.3	2.4	0.9	1.3	2.5	3.4	5.5	7.1	8.7	15.1	24	15.1	0.9	3.5
17	17.8	20.5	21.8	20.1	16.9	17.0	17.0	11.4	10.1	13.2	8.4	13.9	10.2	9.7	7.9	6.5	5.2	5.8	1.1	1.1	4.0	2.4	0.5	0.2	24	21.8	0.2	10.1
18	2.4	6.3	4.5	0.9	1.0	1.2	1.1	1.1	1.0	7.3	13.6	12.2	13.4	11.7	13.1	13.6	10.5	11.3	9.8	12.1	15.9	12.2	9.1	6.4	24	15.9	0.9	8.0
19	3.8	1.6	0.9	1.0	1.7	2.2	3.4	4.0	3.5	3.6	3.6	5.1	7.3	7.3	6.6	6.5	4.2	2.6	2.7	4.6	8.2	13.8	6.8	6.8	24	13.8	0.9	4.6
20	5.1	4.7	4.3	5.0	4.8	4.3	4.0	3.8	3.7	3.1	2.7	2.5	2.5	2.4	2.5	2.6	3.0	3.9	4.2	6.0	18.9	17.4	14.2	13.5	24	18.9	2.4	5.8
21	15.6	11.1	9.8	8.9	6.6	5.3	4.0	1.9	1.0	1.2	0.8	0.8	1.9	1.8	0.9	0.8	1.5	2.2	2.3	12.2	18.3	10.1	18.9	17.0	24	18.9	0.8	6.5
22	19.5	17.0	19.4	17.5	12.3	8.5	5.9	4.3	5.0	5.6	3.6	3.9	2.8	3.7	3.3	3.7	3.7	3.2	2.8	4.1	6.3	7.8	8.1	7.7	24	19.5	2.8	7.5
23	7.1	8.1	6.9	5.4	5.1	5.2	9.9	5.5	3.1	3.2	3.7	4.8	5.6	5.0	4.6	4.7	5.7	8.1	9.3	13.6	15.6	17.2	17.8	20.7	24	20.7	3.1	8.2
24	14.5	15.4	13.7	12.6	12.2	11.8	12.7	11.1	10.8	8.8	8.7	9.4	9.2	7.5	7.5	8.6	7.8	2.8	1.5	0.8	1.3	5.5	6.6	8.4	24	15.4	0.8	8.7
25	13.4	13.8	4.4	5.0	2.7	2.5	2.4	2.3	1.8	1.1	3.0	4.1	4.5	4.8	3.6	4.0	4.3	3.6	4.4	5.6	6.4	6.6	5.7	6.7	24	13.8	1.1	4.9
26	6.0	5.5	5.4	5.5	5.4	6.2	5.2	4.5	3.5	4.7	10.5	12.3	13.7	11.8	12.3	12.6	14.9	10.6	8.5	7.3	8.7	10.1	11.8	15.2	24	15.2	3.5	8.8
27	15.0	12.6	9.8	7.1	9.9	13.3	11.3	7.9	4.7	5.1	5.8	4.3	4.0	3.9	4.2	4.7	5.4	6.0	7.9	7.4	8.3	11.6	14.2	11.6	24	15.0	3.9	8.2
28	14.0	14.1	9.8	9.7	9.0	8.9	8.4	8.9	10.4	10.7	11.2	12.8	11.8	11.2	9.3	10.5	11.9	11.6	10.2	9.1	10.3	11.5	11.7	12.2	24	14.1	8.4	10.8
29	10.9	11.9	12.7	16.1	18.8	17.3	15.0	12.7	12.0	12.7	9.9	9.2	10.0	12.7	16.5	18.2	18.7	22.9	19.2	17.7	14.1	3.7	2.5	1.6	24	22.9	1.6	13.2
30	2.0	2.1	2.9	2.2	2.3	4.1	12.8	12.2	17.4	11.2	13.4	15.3	10.6	12.2	14.4	14.3	11.9	8.2	7.2	7.5	7.8	9.4	9.7	10.6	24	17.4	2.0	9.2
31																									0	0.0	0.0	
Count	30	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	718	30	29	30
Maximum	24.6	30.8	22.3	20.1	18.8	17.3	17.0	12.7	17.4	13.2	13.6	15.3	13.7	14.6	16.5	18.2	18.7	22.9	19.2	26.4	18.9	21.1	53.0	27.0	24	53.0	12.7	20.6
Minimum	1.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.2	0.8	0.8	1.0	0.4	0.5	0.8	0.8	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0	0	0.2	
Average	9.3	9.2	8.0	7.1	6.5	6.1	6.1	5.1	4.6	5.0	5.9	7.0	7.0	6.7	6.8	6.5	6.3	5.6	5.3	6.8	8.1	8.5	9.6	8.9	23	16	2	6.9

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.2	2.3	3.4	4.4	5.7	7.3	9.0	11.2	13.9	17.0	22.2	53.0

Maximum
53.0
13.2
6.9

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

$PM_{2.5}$ - April (ug/m3) Rundle Road 2014

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	20.5	14.5	14.3	11.9	12.1	11.3	8.7	7.7	6.2	4.4	3.2	3.0	3.6	3.8	3.9	3.4	2.9	2.5	2.6	4.7	7.6	9.9	14.4	9.7	24	20.5	2.5	7.8
2	9.3	11.5	9.8	9.0	10.0	10.4	8.8	7.5	9.0	8.5	8.3	9.4	10.6	9.9	8.2	5.5	2.7	2.4	3.2	4.5	5.2	6.0	7.1	7.1	24	11.5	2.4	7.7
3	5.3	5.2	5.4	5.3	5.6	5.6	5.6	4.4	2.5	2.1	2.0	1.9	2.2	1.7	2.1	3.5	3.1	3.2	4.6	5.6	6.8	6.5	4.5	3.4	24	6.8	1.7	4.1
4	3.9	2.7	2.3	2.3	2.5	2.9	4.6	6.4	5.8	7.1	10.2	10.3	13.4	14.4	12.9	8.4	3.5	3.2	4.7	5.4	14.5	8.8	5.2	6.6	24	14.5	2.3	6.7
5	10.7	11.0	6.9	1.3	1.2	1.2	1.2	1.0	1.1	1.7	2.0	2.1	2.2	2.1	1.7	1.6	1.5	1.9	2.6	3.9	6.4	8.9	13.7	11.5	24	13.7	1.0	4.1
6	12.2	10.4	11.3	11.4	10.0	17.8	9.7	8.0	6.1	7.8	6.8	7.5	8.0	5.2	4.2	2.9	2.5	3.2	14.1	14.8	13.9	16.3	17.2	14.4	24	17.8	2.5	9.8
7	12.1	10.0	9.4	8.2	6.2	6.2	6.5	6.7	5.5	4.2	4.2	5.2	6.3	7.1	8.6	8.8	10.0	10.1	7.3	6.8	7.9	6.6	4.4	3.5	24	12.1	3.5	7.2
8	4.6	7.1	5.6	4.4	2.9	1.7	1.1	0.8	0.8	1.6	1.3	0.8	1.0	2.1	1.7	1.0	1.2	1.6	4.4	4.1	9.5	13.7	14.0	11.0	24	14.0	0.8	4.1
9	8.4	7.9	8.7	8.5	10.2	8.6	7.1	6.0	4.0	2.6	1.5	1.2	2.5	4.1	6.0	5.1	3.7	3.2	4.5	8.5	12.7	15.2	21.2	25.6	24	25.6	1.2	7.8
10	18.6	12.7	12.6	12.9	11.5	15.3	15.7	6.3	4.8	3.8	3.2	2.7	2.8	2.3	2.0	1.8	2.2	2.3	2.6	6.1	9.7	11.1	10.5	11.1	24	18.6	1.8	7.7
11	14.0	22.6	25.2	27.4	30.7	26.0	16.8	11.9	5.2	2.2	3.9	1.6	0.6	0.3	0.2	0.2	0.2	0.2	0.4	2.0	7.0	13.4	16.6	10.8	24	30.7	0.2	10.0
12	8.4	19.7	29.6	12.0	14.0	10.9	9.6	9.6	10.3	9.5	14.1	14.3	7.8	5.2	3.7	5.4	3.3	3.4	5.1	12.0	12.5	12.4	12.2	8.3	24	29.6	3.3	10.6
13	7.9	8.6	9.2	8.5	8.3	9.8	13.2	10.6	8.7	8.8	8.5	8.6	8.8	8.9	9.8	11.0	10.9	12.5	21.0	24.5	20.2	24.9	23.2	27.4	24	27.4	7.9	13.1
14	30.0	29.2	27.2	25.3	21.9	19.2	13.0	9.5	8.6	8.5	9.0	9.7	6.8	6.1	6.1	3.3	4.1	3.9	2.1	1.8	1.3	1.2	0.8	0.8	24	30.0	0.8	10.4
15	5.3	2.5	2.2	1.8	1.4	0.8	1.0	1.3	1.3	1.8	2.5	3.6	4.2	5.0	5.4	5.7	5.0	4.5	3.5	6.9	11.8	4.4	4.5	4.8	24	11.8	0.8	3.8
16	4.7	4.8	5.1	4.9	5.6	6.4	6.4	3.5	1.7	1.8	2.0	2.0	2.7	2.3	2.4	2.2	2.4	2.7	3.6	7.3	11.8	15.9	19.4	16.0	24	19.4	1.7	5.7
17	14.9	7.0	6.1	6.1	5.7	5.4	4.8	3.1	2.3	2.7	3.0	3.2	4.0	4.7	3.9	3.3	2.7	2.5	3.8	4.1	3.7	4.1	5.3	6.6	24	14.9	2.3	4.7
18	9.5	12.3	13.6	14.8	16.2	17.0	14.9	13.1	12.0	11.8	9.6	11.9	9.1	7.7	9.7	12.4	22.8	33.3	27.8	30.2	12.0	8.3	7.0	6.8	24	33.3	6.8	14.3
19	6.8	6.9	7.9	9.0	11.1	11.2	9.5	6.8	5.4	4.7	3.3	3.4	4.6	4.9	4.3	4.3	4.8	5.8	6.2	12.4	23.3	29.1	28.6	45.6	24	45.6	3.3	10.8
20	93.2	38.0	26.6	20.5	14.6	12.1	10.9	8.4	5.8	4.8	4.8	4.2	3.4	3.2	4.3	5.1	5.1	5.0	6.0	10.0	13.6	21.1	17.4	16.6	24	93.2	3.2	14.8
21	10.7	16.8	15.0	11.4	10.4	11.7	13.1	15.1	10.0	10.3	9.9	8.2	7.0	6.8	9.4	14.8	16.6	17.5	23.0	21.3	23.1	23.5	20.8	21.4	24	23.5	6.8	14.5
22	24.1	23.1	22.8	26.6	34.9	36.6	54.7	65.0	64.0	47.6	2.9	6.5	4.8	3.9	2.3	2.1	2.3	2.4	2.6	2.9	3.3	7.7	8.1	5.0	24	65.0	2.1	19.0
23	3.3	2.1	1.1	1.1	1.1	1.0	0.6	1.2	2.1	2.3	2.7	2.7	C	C	1.8	0.9	0.8	0.8	1.3	1.9	3.3	3.9	3.9	4.5	22	4.5	0.6	2.0
24	7.0	8.4	8.0	11.1	8.7	8.0	6.1	3.3	2.1	1.1	1.5	1.5	2.0	2.0	3.2	2.6	2.4	2.4	3.8	15.3	14.2	16.5	28.6	12.4	24	28.6	1.1	7.2
25	9.8	8.2	7.2	5.4	5.1	3.7	3.6	3.7	3.4	2.6	2.7	2.3	2.0	2.5	2.5	2.8	3.2	3.9	4.7	5.9	6.6	7.0	7.4	8.0	24	9.8	2.0	4.8
26	6.7	6.1	6.2	7.1	7.3	8.6	10.9	17.9	17.6	10.2	8.2	4.6	1.8	1.6	0.9	0.5	0.6	0.9	1.1	1.7	3.2	4.9	6.2	7.0	24	17.9	0.5	5.9
27	6.3	3.8	3.3	3.6	4.3	4.4	3.6	2.4	1.6	1.2	1.5	2.5	2.8	3.5	4.7	3.5	3.2	3.8	6.1	7.6	12.3	16.5	16.1	17.6	24	17.6	1.2	5.7
28	12.9	10.0	5.0	3.4	2.4	2.3	2.1	1.2	0.8	1.1	0.9	0.8	0.9	1.0	1.4	1.0	1.3	1.2	2.1	6.6	39.3	13.4	3.0	2.4	24	39.3	0.8	4.8
29	3.6	2.3	2.6	3.0	2.8	3.0	3.6	5.0	7.0	10.5	12.8	10.7	7.9	6.0	4.8	3.6	3.7	3.1	2.5	2.1	2.0	2.1	2.3	1.9	24	12.8	1.9	4.5
30	2.0	2.2	2.3	2.6	3.3	3.7	3.6	3.8	3.8	3.4	2.8	2.7	2.2	2.6	3.0	2.8	2.8	2.1	1.7	1.6	1.6	1.4	1.7	1.5	24	3.8	1.4	2.6
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	30	29	30
Maximum	93.2	38.0	29.6	27.4	34.9	36.6	54.7	65.0	64.0	47.6	14.1	14.3	13.4	14.4	12.9	14.8	22.8	33.3	27.8	30.2	39.3	29.1	28.6	45.6	24	93.2	12.9	34.7
Minimum	2.0	2.1	1.1	1.1	1.1	0.8	0.6	0.8	0.8	1.1	0.9	0.8	0.6	0.3	0.2	0.2	0.2	0.2	0.4	1.6	1.3	1.2	0.8	0.8	0	0	0.2	
Average	12.9	10.9	10.4	9.4	9.4	9.4	9.0	8.4	7.3	6.4	5.0	5.0	4.7	4.5	4.5	4.3	4.4	4.8	6.0	8.1	10.7	11.1	11.5	11.0	23	23	2	7.9

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	1.6	2.4	3.2	4.2	5.4	7.0	9.0	11.5	16.2	23.1	37.7	93.2

Maximum
93.2
19.0
7.9

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

$PM_{2.5}$ - May (ug/m3) Rundle Road 2014

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	1.3	2.0	1.7	2.0	2.4	6.2	5.7	2.3	1.7	3.0	16.0	9.8	6.1	5.9	4.5	4.1	2.8	2.1	2.1	2.6	4.4	5.5	5.5	6.2	24	16.0	1.3	4.4
2	8.2	9.8	7.6	6.8	8.4	9.9	6.5	3.1	3.8	3.9	4.8	5.0	5.9	5.0	5.1	6.5	8.2	10.2	13.7	15.8	15.9	10.3	10.5	13.9	24	15.9	3.1	8.3
3	10.9	8.4	8.1	7.4	6.9	6.7	6.7	6.7	7.5	8.6	8.6	9.1	8.2	6.3	5.1	4.0	3.9	4.6	5.1	5.3	4.8	0.9	0.4	0.2	24	10.9	0.2	6.0
4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.2	0.2	0.2	0.4	0.2	0.2	0.3	0.3	0.3	0.6	1.8	2.5	3.0	3.2	24	3.2	0.2	0.7
5	3.6	4.0	3.9	3.9	3.7	3.6	3.2	2.1	1.4	1.3	1.4	2.1	4.0	4.7	3.3	2.8	3.3	3.8	4.8	8.2	3.7	3.3	2.8	2.4	24	8.2	1.3	3.4
6	3.7	5.0	5.4	5.8	6.1	7.6	7.0	5.4	2.3	2.0	2.3	1.9	1.5	1.6	1.6	1.3	1.4	2.0	3.8	9.2	9.1	7.0	5.2	5.7	24	9.2	1.3	4.3
7	7.4	6.1	5.3	5.1	5.3	8.2	4.8	3.4	2.2	2.2	2.1	2.0	2.3	2.0	1.5	1.5	1.9	1.5	2.3	3.6	6.0	8.5	12.5	8.3	24	12.5	1.5	4.4
8	5.6	5.0	3.4	3.6	3.5	4.0	3.2	3.3	2.4	2.3	2.6	6.4	16.1	19.6	5.0	2.2	1.8	2.0	3.4	5.2	6.4	6.8	6.5	7.9	24	19.6	1.8	5.3
9	8.3	9.0	8.0	7.2	7.5	9.1	11.2	11.1	11.7	12.0	10.7	7.5	7.0	11.0	14.0	15.1	9.1	5.0	4.6	2.3	1.9	2.4	3.4	3.1	24	15.1	1.9	8.0
10	2.8	2.6	3.4	5.5	6.9	4.3	5.2	6.3	8.9	10.0	7.5	5.6	5.7	5.0	4.3	5.2	6.4	4.5	3.9	4.6	8.4	10.3	6.6	10.0	24	10.3	2.6	6.0
11	10.4	13.1	14.0	12.2	6.7	5.3	4.2	3.7	4.0	5.4	3.9	3.4	1.1	1.0	1.7	1.5	1.4	1.6	2.4	3.8	8.3	16.1	7.7	15.7	24	16.1	1.0	6.2
12	19.2	23.0	24.7	22.6	24.0	22.0	19.9	17.4	14.9	15.0	8.5	7.9	10.5	14.8	17.6	14.9	16.1	17.7	19.0	20.1	17.3	14.8	15.7	16.2	24	24.7	7.9	17.2
13	11.6	11.8	11.3	7.2	6.8	6.3	5.9	6.6	6.1	4.7	3.9	4.4	4.5	5.1	4.6	3.2	3.0	3.2	4.3	8.8	11.7	7.7	4.4	3.9	24	11.8	3.0	6.3
14	4.9	4.2	6.6	7.7	6.7	5.5	9.3	6.6	2.9	2.1	1.2	1.4	1.7	1.5	1.9	2.4	3.0	3.8	4.5	1.3	1.1	1.7	0.9	1.3	24	9.3	0.9	3.5
15	1.2	0.2	0.2	2.5	4.6	5.9	5.9	5.9	5.6	5.2	4.2	4.2	5.9	6.3	5.6	5.7	6.7	7.0	5.2	2.1	1.5	1.8	3.8	5.8	24	7.0	0.2	4.3
16	2.1	1.2	2.7	4.8	8.8	16.0	7.9	6.5	4.9	3.7	0.8	1.5	0.5	1.8	7.1	12.7	16.3	17.8	16.1	4.2	1.6	0.2	0.2	0.2	24	17.8	0.2	5.8
17	0.5	0.2	0.4	2.0	3.2	2.6	2.0	1.2	0.8	4.3	5.4	8.1	6.7	5.9	7.9	7.8	8.9	9.9	11.4	14.6	19.1	22.9	34.6	33.0	24	34.6	0.2	8.9
18	37.0	41.0	34.5	26.4	23.8	20.0	13.7	9.6	8.5	7.8	6.9	7.1	4.9	3.0	2.5	2.1	2.0	2.5	4.3	7.8	10.0	15.9	39.3	67.1	24	67.1	2.0	16.6
19	80.3	69.2	52.5	48.1	49.7	57.4	59.0	47.0	24.6	23.5	20.5	16.0	15.5	15.4	15.1	11.4	7.8	6.9	6.6	12.3	15.1	17.1	19.7	29.0	24	80.3	6.6	30.0
20	23.0	13.4	12.3	15.5	17.7	18.5	12.8	11.7	11.5	9.5	7.7	8.0	8.0	10.7	12.2	16.5	19.0	17.5	11.9	10.7	10.9	13.8	16.5	21.9	24	23.0	7.7	13.8
21	28.4	32.8	38.5	32.5	23.2	26.1	19.3	13.5	13.2	13.8	12.8	10.4	8.2	6.2	4.6	5.3	5.2	6.8	8.0	10.4	14.2	16.2	25.6	27.6	24	38.5	4.6	16.8
22	23.6	23.1	19.6	11.8	11.5	22.8	23.0	17.7	7.2	3.7	2.5	2.6	2.5	2.8	5.4	8.1	3.7	2.1	2.0	2.7	7.4	10.1	6.1	3.0	24	23.6	2.0	9.4
23	7.0	3.0	2.3	2.3	2.7	5.5	7.3	7.2	6.1	3.9	4.1	4.2	7.9	7.4	8.9	6.5	3.6	2.5	1.8	2.6	2.3	2.1	2.1	1.9	24	8.9	1.8	4.4
24	1.9	2.1	3.3	3.5	3.2	3.4	2.9	2.3	2.1	2.1	2.6	6.1	8.6	7.4	4.5	2.2	3.0	3.2	3.7	6.5	10.9	12.1	10.5	10.6	24	12.1	1.9	4.9
25	10.8	11.4	14.0	17.7	17.7	16.3	15.6	12.7	10.2	8.3	7.8	8.1	5.1	4.4	3.9	3.3	3.8	4.4	5.2	6.5	8.1	10.9	14.5	16.9	24	17.7	3.3	9.9
26	19.6	23.0	23.4	18.9	15.3	11.7	11.2	9.4	9.4	9.8	10.9	11.0	10.6	9.8	7.6	6.7	6.6	6.4	8.6	10.3	10.4	11.6	13.3	12.8	24	23.4	6.4	12.0
27	13.4	14.5	17.6	21.1	25.4	28.2	27.8	20.3	15.1	17.0	20.4	19.6	21.7	20.4	5.3	5.1	2.8	3.7	3.8	4.0	3.8	3.9	3.1	2.7	24	28.2	2.7	13.4
28	2.5	2.3	6.1	12.4	12.9	13.5	16.6	7.5	1.9	7.7	8.4	8.6	9.0	7.5	5.6	4.5	4.9	5.3	5.0	7.6	5.0	6.3	9.1	8.8	24	16.6	1.9	7.5
29	9.0	5.7	5.4	5.6	6.1	6.7	7.0	7.9	6.8	5.4	4.0	3.4	4.4	3.6	2.8	3.6	3.4	3.4	4.0	5.8	7.6	11.5	11.3	13.7	24	13.7	2.8	6.2
30	16.2	13.6	9.9	6.7	4.6	3.3	2.0	1.3	1.1	1.2	1.4	1.5	1.5	1.6	1.5	1.4	1.8	2.2	2.0	2.8	3.9	4.6	5.3	7.3	24	16.2	1.1	4.1
31	8.2	9.0	10.9	11.4	12.4	13.6	12.5	10.7	9.1	8.3	5.5	7.4	6.2	6.0	4.2	3.3	3.0	4.0	8.6	8.4	15.4	34.7	64.7	69.8	24	69.8	3.0	14.5
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	31	31	31
Maximum	80.3	69.2	52.5	48.1	49.7	57.4	59.0	47.0	24.6	23.5	20.5	19.6	21.7	20.4	17.6	16.5	19.0	17.8	19.0	20.1	19.1	34.7	64.7	69.8	24	80.3	16.5	37.2
Minimum	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.2	0.2	0.2	0.4	0.2	0.2	0.3	0.3	0.3	0.6	1.1	0.2	0.2	0.2	24	3.2	0.2	0.3
Average	12.3	11.9	11.5	11.0	10.9	11.9	11.0	8.7	6.7	6.7	6.4	6.3	6.5	6.6	5.6	5.5	5.3	5.4	5.9	6.8	8.0	9.5	11.8	13.9	24	22	2	8.6

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													80.3
													30.0
Data	1.7	2.5	3.7	4.9	6.1	7.5	9.1	12.4	17.6	23.2	51.3	80.3	8.6

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

$PM_{2.5}$ - June (ug/m3)	Rundle Road 2014																													
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	43.9	28.4	37.2	31.0	18.0	13.2	9.9	6.4	4.8	5.7	6.5	7.9	8.0	5.2	5.3	3.0	3.6	4.5	3.8	3.9	5.2	6.3	8.4	10.9	24	43.9	3.0	11.7		
2	18.8	19.9	15.4	12.2	10.0	9.3	8.6	8.2	4.9	4.0	2.7	2.5	3.9	3.9	5.0	3.9	4.5	4.0	5.0	5.8	6.5	8.3	6.9	7.0	24	19.9	2.5	7.6		
3	6.9	7.8	5.2	1.0	0.8	0.3	1.2	1.4	3.1	5.7	9.3	9.5	10.3	8.9	8.0	8.0	4.9	2.8	0.5	0.2	0.2	0.2	0.2	0.2	24	10.3	0.2	4.0		
4	0.3	0.2	0.6	0.4	1.3	1.7	4.4	1.9	1.0	1.3	2.9	8.0	9.3	8.6	9.3	8.1	3.2	2.1	1.6	1.3	2.2	3.3	5.1	5.0	24	9.3	0.2	3.5		
5	5.3	5.5	5.4	5.7	5.8	5.2	3.0	1.4	1.6	2.9	2.9	3.4	3.7	3.7	2.1	1.1	0.6	0.6	0.8	1.0	1.4	1.6	1.4	1.3	24	5.8	0.6	2.8		
6	1.1	1.1	1.5	2.0	2.3	2.5	2.2	2.6	2.5	3.0	3.3	3.2	3.4	5.5	6.7	3.6	3.5	4.2	3.6	4.7	8.0	10.3	10.7	27.0	24	27.0	1.1	4.9		
7	23.0	25.0	24.5	23.8	19.3	16.0	13.7	9.6	5.6	5.3	3.4	3.0	2.1	2.0	1.8	1.5	1.6	1.5	1.1	5.4	8.7	13.8	26.0	37.7	24	37.7	1.1	11.5		
8	34.7	38.6	32.4	20.7	14.6	11.4	7.2	4.2	3.7	4.9	5.8	8.6	5.6	3.9	3.4	2.0	2.4	2.9	2.2	1.4	1.3	1.3	1.3	1.4	24	38.6	1.3	9.0		
9	1.7	2.0	2.4	3.1	3.4	3.2	3.0	2.9	2.9	2.9	3.4	C	8.3	6.5	5.9	6.5	6.2	6.7	6.5	9.2	10.1	11.0	12.9	14.9	23	14.9	1.7	5.9		
10	11.2	6.9	5.4	4.2	4.1	4.4	5.3	6.1	7.4	9.2	11.1	13.5	10.8	10.2	10.2	8.3	5.7	4.8	4.4	5.1	6.4	8.3	9.8	6.1	24	13.5	4.1	7.5		
11	4.3	3.7	4.6	6.6	10.0	11.0	10.7	10.3	10.2	6.4	8.9	10.5	10.7	9.8	7.7	5.1	4.0	2.9	2.7	2.6	2.1	2.4	3.6	3.2	24	11.0	2.1	6.4		
12	3.1	3.2	5.6	5.8	4.0	2.9	2.1	2.3	2.8	3.5	3.7	4.5	5.5	6.8	6.7	3.9	2.7	3.2	3.9	3.6	5.3	6.2	6.3	8.3	24	8.3	2.1	4.4		
13	9.7	8.6	4.9	1.7	1.9	0.7	4.5	9.7	6.6	7.1	7.5	9.4	2.4	1.0	1.0	1.8	4.1	1.4	1.4	1.2	0.7	0.3	0.2	0.3	24	9.7	0.2	3.7		
14	0.8	0.2	0.2	0.2	0.2	0.2	0.3	0.9	2.7	3.7	2.0	1.6	1.7	1.9	1.6	1.9	0.5	0.4	0.5	0.6	1.0	2.9	9.6	7.0	24	9.6	0.2	1.8		
15	6.7	5.5	4.2	3.7	2.7	2.2	1.4	1.4	1.2	1.5	1.6	1.7	1.4	1.5	1.4	1.8	1.5	1.5	1.9	1.9	4.0	7.2	6.0	5.0	24	7.2	1.2	2.9		
16	7.2	6.1	4.6	3.6	3.7	3.8	3.1	3.3	5.0	5.3	6.2	6.8	6.0	5.1	4.6	4.8	4.3	3.8	5.1	5.9	5.3	3.6	5.0	7.0	24	7.2	3.1	5.0		
17	12.5	13.9	12.9	12.4	15.2	19.1	23.7	16.6	12.1	14.8	11.8	7.3	10.0	8.1	5.7	6.7	6.9	5.7	2.7	3.4	4.9	2.6	1.2	0.5	24	23.7	0.5	9.6		
18	1.6	3.4	2.5	1.4	1.4	1.6	1.8	1.9	1.6	4.2	10.3	12.6	13.3	11.4	14.6	15.6	16.5	14.6	12.8	13.7	12.7	14.2	9.9	5.7	24	16.5	1.4	8.3		
19	4.6	2.9	1.3	1.2	1.7	3.2	3.5	4.9	4.5	4.3	4.3	5.3	11.2	12.5	12.0	11.5	12.4	12.2	11.0	12.0	19.6	27.2	17.8	15.5	24	27.2	1.2	9.0		
20	15.5	12.6	9.5	8.9	8.1	7.2	6.5	4.6	3.6	3.7	5.9	4.3	3.7	3.8	3.1	3.8	2.9	3.8	5.3	7.1	12.3	19.7	19.6	20.5	24	20.5	2.9	8.2		
21	18.6	11.6	8.3	5.3	3.8	2.3	2.0	1.4	0.6	0.6	0.5	0.5	0.6	0.6	0.6	1.2	1.1	1.1	1.7	1.6	10.6	10.0	21.3	27.2	24	27.2	0.5	5.5		
22	27.0	27.1	37.7	17.6	12.9	8.4	4.7	1.5	1.0	1.0	1.0	1.1	1.0	1.1	0.9	0.8	0.8	1.2	1.5	2.5	4.9	6.3	7.6	6.8	24	37.7	0.8	7.4		
23	8.7	7.0	5.8	4.6	4.4	4.6	3.7	2.8	2.2	2.5	2.6	3.1	3.4	3.4	3.6	3.4	3.2	3.2	4.7	7.5	8.8	8.5	8.6	10.8	24	10.8	2.2	5.0		
24	10.0	9.7	8.8	7.2	7.5	9.2	9.9	8.7	8.7	9.7	7.7	6.6	5.3	4.9	5.6	7.1	5.2	3.0	2.7	2.8	2.5	3.4	5.3	4.7	24	10.0	2.5	6.5		
25	12.0	10.0	4.7	3.4	2.6	2.8	3.0	3.5	3.2	3.1	5.8	6.4	7.2	6.5	6.5	6.0	6.6	6.3	5.2	5.8	6.6	6.6	5.9	5.7	24	12.0	2.6	5.6		
26	6.5	5.6	5.4	4.7	4.8	5.7	5.6	5.1	3.5	2.5	6.4	10.8	10.1	9.6	12.4	12.0	17.8	10.9	9.2	10.4	14.3	19.4	24.3	24.3	24	24.3	2.5	10.1		
27	29.7	32.5	17.2	11.8	12.8	15.8	13.3	10.9	10.6	7.6	6.5	6.8	5.8	5.1	4.3	5.3	5.6	5.7	5.5	7.1	8.8	11.2	12.9	15.2	24	32.5	4.3	11.2		
28	15.5	15.4	11.0	9.8	8.5	8.5	8.5	8.7	10.0	10.6	11.3	11.1	10.4	8.6	7.2	6.0	5.9	5.8	5.6	5.2	6.5	7.0	8.2	9.1	24	15.5	5.2	8.9		
29	9.0	10.3	11.0	13.1	15.0	15.0	15.5	10.6	9.7	10.5	10.2	10.3	10.8	12.3	14.2	14.8	16.6	18.0	15.4	15.5	14.5	4.1	3.4	3.7	24	18.0	3.4	11.8		
30	4.1	3.9	4.7	4.6	4.3	5.3	14.2	17.6	20.6	20.2	24.1	15.9	13.0	13.5	13.9	12.8	11.7	11.0	8.8	10.0	10.8	11.3	11.3	11.8	24	24.1	3.9	11.6		
31																									0	0.0	0.0			
Count	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	719	30	29	30		
Maximum	43.9	38.6	37.7	31.0	19.3	19.1	23.7	17.6	20.6	20.2	24.1	15.9	13.3	13.5	14.6	15.6	17.8	18.0	15.4	15.5	19.6	27.2	26.0	37.7	24	43.9	13.3	22.7		
Minimum	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.9	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.8	0.5	0.4	0.5	0.2	0.2	0.2	0.2	0.2	0	0	0.2			
Average	11.8	10.9	9.8	7.7	6.8	6.6	6.6	5.7	5.3	5.6	6.3	6.8	6.6	6.2	6.2	5.7	5.6	5.0	4.6	5.3	6.9	8.0	9.0	10.1	23	19	2	7.0		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													43.9
													11.8
Data	1.3	2.2	3.3	4.3	5.3	6.5	8.6	10.7	14.3	19.2	32.1	43.9	7.0

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

Appendix E
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-Jan-14	End date:	31-Mar-14	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)	
1	2-Apr-14	CL	Invalidate data	10-Jan-14	09:00	10-Jan-14	10:00	MOE audit and calibration
2	2-Apr-14	CL	Invalidate data	21-Jan-14	10:00	21-Jan-14	11:00	Monthly calibration
3	2-Apr-14	CL	Invalidate data	25-Feb-14	08:00	25-Feb-14	09:00	Monthly calibration
4	8-Apr-14	CL	Invalidate data	26-Mar-14	07:00	26-Mar-14	09:00	MOE audit and calibration
5	30-Apr-14	CL	Invalidate data	25-Feb-14	10:00	25-Feb-14	11:00	Datalogger program updated.
6	16-May-14	CL	Invalidate data	23-Apr-14	10:00	23-Apr-14	11:00	Monthly calibration
7	27-Jun-14	TH	Invalidate data	9-Jun-14	06:00	9-Jun-14	10:00	MOE audit and calibration

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-Jan-14	End date:	31-Mar-14	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)	
1	2-Apr-14	CL	Invalidate data	10-Jan-14	09:00	10-Jan-14	10:00	MOE audit and calibration
2	2-Apr-14	CL	Invalidate data	21-Jan-14	10:00	21-Jan-14	11:00	Monthly calibration
3	2-Apr-14	CL	Invalidate data	25-Feb-14	08:00	25-Feb-14	09:00	Monthly calibration
4	8-Apr-14	CL	Invalidate data	26-Mar-14	08:00	26-Mar-14	09:00	MOE audit and calibration
5	30-Apr-14	CL	Invalidate data	25-Feb-14	10:00	25-Feb-14	11:00	Datalogger program updated.
6	16-May-14	CL	Invalidate data	23-Apr-14	10:00	23-Apr-14	11:00	Monthly calibration
7	27-Jun-14	TH	Invalidate data	9-Jun-14	09:00	9-Jun-14	10:00	MOE audit and calibration

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-Jan-14**	**End date:**	**31-Mar-14**	**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)**	
1	2-Apr-14	CL	Invalidate data	10-Jan-14	10:00	10-Jan-14	10:00	MOE audit and calibration
2	8-Apr-14	CL	Invalidate data	25-Feb-14	09:00	25-Feb-14	09:00	Monthly calibration
3	8-Apr-14	CL	Invalidate data	26-Mar-14	08:00	26-Mar-14	08:00	MOE audit and calibration
4	11-Apr-14	CL	Replace missing data	11-Jan-14	10:00	12-Jan-14	18:00	Cable from PM2.5 monitor to datalogger was loose. Missing data was replaced with hourly data downloaded from PM monitor.
5	11-Apr-14	CL	Replace missing data	12-Jan-14	19:00	17-Jan-14	12:00	Monitor set at incorrect zero offset. Data replaced with data downloaded from the PM monitor.
6	14-Apr-14	CL	Invalidate data	20-Mar-14	06:00	24-Mar-14	06:00	Snow/ice melted causing water build-up in the unit.
7	30-Apr-14	CL	Invalidate data	25-Feb-14	10:00	25-Feb-14	11:00	Datalogger program updated.
8	16-May-14	CL	Invalidate data	23-Apr-14	11:00	23-Apr-14	11:00	Monthly calibration
9	27-Jun-14	TH	Invalidate data	9-Jun-14	09:00	9-Jun-14	10:00	MOE audit and calibration

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

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A		Station Name:	Courtice WPCP Station				
Station address:	Courtice Water Pollution Control		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Temperature	Instrument make & model:		Campbell Scientific Model HMP60			Serial Number:	
Data edit period	Start date:	1-Jan-14	End date:	31-Mar-14	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)	
1	30-Apr-14	CL	Invalidate data	25-Feb-14	16:00	25-Feb-14	17:00	Datalogger program updated.

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A		Station Name:	Courtice WPCP Station				
Station address:	Courtice Water Pollution Control		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Rainfall	Instrument make & model:		Texas Electronic TE525M			Serial Number:	
Data edit period	Start date:	1-Jan-14	End date:	31-Mar-14	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)	
1	30-Apr-14	CL	Invalidate data	25-Feb-14	16:00	25-Feb-14	17:00	Datalogger program updated.
2	15-May-14	TH	Invalidate data	10-Jan-14	00:00	Febuary 3, 2014	23:00	Top of rain guage blown off

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

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A		Station Name:	Courtice WPCP Station				
Station address:	Courtice Water Pollution Control		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Relative Humidity	Instrument make & model:		Campbell Scientific Model HMP60			Serial Number:	
Data edit period	Start date:	1-Jan-14	End date:	31-Mar-14	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)	
1	30-Apr-14	CL	Invalidate data	25-Feb-14	16:00	25-Feb-14	17:00	Datalogger program updated.

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:	Rundle Road Station				
Station address:	Courtice Water Pollution Control		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Atmospheric Pressure	Instrument make & model:		Campbell Scientific Model CS106			Serial Number:	
Data edit period	Start date:	1-Jan-14	End date:	31-Mar-14	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)	
1	30-Apr-14	CL	Invalidate data	25-Feb-14	16:00	25-Feb-14	17:00	Datalogger program updated.

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:	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-Jan-14	End date:	31-Mar-14		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)	
1	21-Apr-14	CL	Invalidate data	10-Jan-14	11:00	10-Jan-14	12:00	MOE audit
2	15-Apr-14	TZ	Invalidate data	21-Jan-14	08:00	21-Jan-14	09:00	Monthly calibration
3	21-Apr-14	CL	Invalidate data	25-Feb-14	15:00	25-Feb-14	16:00	Monthly calibration
4	21-Apr-14	CL	Invalidate data	26-Mar-14	09:00	26-Mar-14	10:00	Monthly calibration
5	14-Apr-14	CL	Invalidate data	17-Jan-14	04:00	17-Jan-14	10:00	Modem connection off-line.
6	30-Apr-14	CL	Invalidate data	25-Feb-14	16:00	25-Feb-14	17:00	Datalogger program updated.
7	30-Jun-14	TH	Invalidate data	23-Apr-14	12:00	23-Apr-14	13:00	Monthly calibration
8	30-Jun-14	TH	Invalidate data	9-Jun-14	11:00	9-Jun-14	11:00	Monthly calibration and MOE audit

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:	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-Jan-14	End date:	31-Mar-14	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)	
1	21-Apr-14	CL	Invalidate data	10-Jan-14	11:00	10-Jan-14	12:00	MOE audit
2	15-Apr-14	TZ	Invalidate data	21-Jan-14	08:00	21-Jan-14	09:00	Monthly calibration
3	21-Apr-14	CL	Invalidate data	25-Feb-14	15:00	25-Feb-14	16:00	Monthly calibration
4	21-Apr-14	CL	Invalidate data	26-Mar-14	09:00	26-Mar-14	10:00	Monthly calibration
5	14-Apr-14	CL	Invalidate data	17-Jan-14	04:00	17-Jan-14	10:00	Modem connection off-line.
6	30-Apr-14	CL	Invalidate data	25-Feb-14	16:00	25-Feb-14	17:00	Datalogger program updated.
7	30-Jun-14	TH	Invalidate data	23-Apr-14	12:00	23-Apr-14	13:00	Monthly calibration
8	30-Jun-14	TH	Invalidate data	9-Jun-14	11:00	9-Jun-14	11:00	Monthly calibration and MOE audit

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:**	**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 Particulate Monitor**			**Serial Number:**	**E-1569**
Data edit period	**Start date:**	**1-Jan-14**	**End date:**	**31-Mar-14**	**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)**	
1	21-Apr-14	CL	Invalidate data	10-Jan-14	11:00	10-Jan-14	12:00	MOE audit
2	21-Apr-14	CL	Invalidate data	21-Jan-14	09:00	21-Jan-14	09:00	Monthly calibration
3	21-Apr-14	CL	Invalidate data	25-Feb-14	15:00	25-Feb-14	15:00	Monthly calibration
4	21-Apr-14	CL	Invalidate data	26-Mar-14	10:00	26-Mar-14	10:00	Monthly calibration
5	14-Apr-14	CL	Invalidate data	17-Jan-14	04:00	17-Jan-14	10:00	Modem connection off-line.
6	30-Apr-14	CL	Invalidate data	25-Feb-14	16:00	25-Feb-14	17:00	Datalogger program updated.
7	30-Jun-14	TH	Invalidate data	23-Apr-14	12:00	23-Apr-14	13:00	Monthly calibration
8	30-Jun-14	TH	Invalidate data	9-Jun-14	11:00	9-Jun-14	11:00	Monthly calibration and MOE audit

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
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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:	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-Jan-14	End date:	31-Mar-14		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)	
1	21-Apr-14	CL	Invalidate data	17-Jan-14	04:00	17-Jan-14	10:00	Modem connection off-line.
2	30-Apr-14	CL	Invalidate data	25-Feb-14	16:00	25-Feb-14	17:00	Datalogger program updated.

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:	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-Jan-14	End date:	31-Mar-14		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)	
1	21-Apr-14	CL	Invalidate data	17-Jan-14	04:00	17-Jan-14	10:00	Modem connection off-line.
2	30-Apr-14	CL	Invalidate data	25-Feb-14	16:00	25-Feb-14	17:00	Datalogger program updated.

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
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Slope Correction
Manual data entry for missing, but collected data
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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:	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-Jan-14	End date:	31-Mar-14		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)	
1	21-Apr-14	CL	Invalidate data	17-Jan-14	04:00	17-Jan-14	10:00	Modem connection off-line.
2	30-Apr-14	CL	Invalidate data	25-Feb-14	16:00	25-Feb-14	17:00	Datalogger program updated.

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:	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-Jan-14	End date:	31-Mar-14		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)	
1	21-Apr-14	CL	Invalidate data	17-Jan-14	04:00	17-Jan-14	10:00	Modem connection off-line.
2	30-Apr-14	CL	Invalidate data	25-Feb-14	16:00	25-Feb-14	17:00	Datalogger program updated.

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
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Appendix F
Metals Data Summary

Metals and Total Particulates	Courtice WPCP Station	April to June 2014																											
Location		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice	
Date	dd/mm/yyyy	05/04/2014		11/04/2014		17/04/2014		23/04/2014		29/04/2014		05/05/2014		11/05/2014		17/05/2014		23/05/2014		29/05/2014		04/06/2014		10/06/2014		16/06/2014		22/06/2014	
Start Time	hh:mm	0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	minutes	23.69		23.01		23.81		23.86		23.3		24.09		23.69		23.93		0		23.97		24.46		23.11		23.6		23.18	
Technician		TH		TH		TH		TH		TH		TH		CL		TH		TH		TH		CL		CL		TH		TH	
Filter Number		14010790		14020327		14021108		14021111		14021114		14021116		14022622		14022623		14022626		14022626		14022630		14022631		14022634		14041566	
Analytical Report #		B456942		B462486		B464532		B468103		B478107		B478107		B480787		B485837		Did not run		B494076		B498203		B4A2707		B4A6768		B4B3354	
Total Volumetric Flow	Am^3/sample	1616.64		1577.28		1569.97		1610.21		1620.36		1792.32		1863.95		1706.85		0.00		1896.57		1856.50		1547.83		1593.30		1611.98	
Analytical Results	Units	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL
Particulate	mg	19.3	5	50.2	5	68.4	5	19.6	5	48.5	5	13	5	40.2	5	28.9	5			59.5	5	66.4	5	87.5	5	57	5	44.8	5
Total Mercury (Hg)	ug	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	0.03	0.02	<0.02	0.02			0.02	0.02	0.04	0.02	0.02	0.02	0.02	0.02	<0.02	0.02
Aluminum (Al)	ug	98	50	231	50	418	50	116	50	235	50	324	50	244	50	149	50			394	50	337	50	553	50	262	50	196	50
Antimony (Sb)	ug	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10			<10	10	<10	10	<10	10	<10	10	<10	10
Arsenic (As)	ug	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6			<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6
Barium (Ba)	ug	6	1	29.9	1	9.8	1	5.3	1	6.5	1	13.3	1	9.1	1	19.3	1			13.8	1	15.1	1	12.7	1	10.4	1	11.3	1
Beryllium (Be)	ug	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1			<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1
Bismuth (Bi)	ug	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6			<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6
Boron (B)	ug	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6			<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6
Cadmium (Cd)	ug	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2			<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2
Chromium (Cr)	ug	<5.0	5	7.6	5	7.3	5	<5.0	5	10.2	5	<5.0	5	<5.0	5	<5.0	5			<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5
Cobalt (Co)	ug	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2			<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2
Copper (Cu)	ug	73.4	5	85.6	5	29.2	5	36	5	41.9	5	71.9	5	91.8	5	76.6	5			54.7	5	98.9	5	66.2	5	68.6	5	64	5
Iron (Fe)	ug	323	50	1460	50	1050	50	362	50	753	50	755	50	746	50	535	50			977	50	1010	50	1260	50	824	50	917	50
Lead (Pb)	ug	<3.0	3	6.8	3	3.7	3	<3.0	3	<3.0	3	<3.0	3	3.7	3	3.6	3			3.6	3	3.8	3	3.3	3	5.6	3	4.1	3
Magnesium (Mg)	ug	184	50	442	50	648	50	149	50	334	50	504	50	351	50	334	50			482	50	478	50	504	50	339	50	227	50
Manganese (Mn)	ug	11.5	1	38.2	1	48.4	1	14.1	1	29.3	1	28.8	1	19.9	1	20.1	1			31.8	1	29.6	1	38.2	1	23.4	1	19.1	1
Molybdenum (Mo)	ug	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3			<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3
Nickel (Ni)	ug	<3.0	3	3.8	3	<3.0	3	3.7	3	4.5	3	<3.0	3	<3.0	3	<3.0	3			<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3
Phosphorus (P)	ug	<25	25	38	25	61	25	<25	25	88	25	93	25	90	25	55	25			108	25	106	25	150	25	118	25	69	25
Selenium (Se)	ug	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10			<10	10	<10	10	<10	10	<10	10	<10	10
Silver (Ag)	ug	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5			<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5
Strontium (Sr)	ug	5	1	12.2	1	21.1	1	4.7	1	12	1	10.4	1	6	1	11.6	1			14	1	8.6	1	16.5	1	10.1	1	8.1	1
Thallium (Tl)	ug	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10			<10	10	<10	10	<10	10	<10	10	<10	10
Tin (Sn)	ug	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10			<10	10	<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	ug	<10	10	20	10	20	10	<10	10	12	10	16	10	<10	10	10	10			23	10	20	10	35	10	15	10	15	10
Vanadium (V)	ug	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5			<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5
Zinc (Zn)	ug	18.6	5	87.4	5	25.4	5	15.7	5	27.6	5	37.4	5	28.9	5	48.6	5			36.3	5	39.6	5	34.6	5	27.8	5	22.5	5
Zirconium (Zr)	ug	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5			<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5
Total Uranium (U)	ug	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45			<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45

Calculated Concentrations	Quarter 2 2014			Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice
				16	17	18	19	20	21	22	23	24	25	26	27	28	29
	Units	Maximum	Minimum	05/04/2014	11/04/2014	17/04/2014	23/04/2014	29/04/2014	05/05/2014	11/05/2014	17/05/2014	23/05/2014	29/05/2014	04/06/2014	10/06/2014	16/06/2014	22/06/2014
Particulate	ug/m^3	56.5	7.3	11.938	31.827	43.568	12.172	29.932	7.253	21.567	16.932	N/A	31.372	35.766	56.531	35.775	27.792
Total Mercury (Hg)	ug/m^3	2.15E-05	5.58E-06	6.19E-06	6.34E-06	6.37E-06	6.21E-06	6.17E-06	5.58E-06	1.61E-05	5.86E-06	N/A	1.05E-05	2.15E-05	1.29E-05	1.26E-05	6.20E-06
Aluminum (Al)	ug/m^3	3.57E-01	6.06E-02	6.06E-02	1.46E-01	2.66E-01	7.20E-02	1.45E-01	1.81E-01	1.31E-01	8.73E-02	N/A	2.08E-01	1.82E-01	3.57E-01	1.64E-01	1.22E-01
Antimony (Sb)	ug/m^3	3.23E-03	2.64E-03	3.09E-03	3.17E-03	3.18E-03	3.11E-03	3.09E-03	2.79E-03	2.68E-03	2.93E-03	N/A	2.64E-03	2.69E-03	3.23E-03	3.14E-03	3.10E-03
Arsenic (As)	ug/m^3	1.94E-03	1.58E-03	1.86E-03	1.90E-03	1.91E-03	1.86E-03	1.85E-03	1.67E-03	1.61E-03	1.76E-03	N/A	1.58E-03	1.62E-03	1.94E-03	1.88E-03	1.86E-03
Barium (Ba)	ug/m^3	1.90E-02	3.29E-03	3.71E-03	1.90E-02	6.24E-03	3.29E-03	4.01E-03	7.42E-03	4.88E-03	1.13E-02	N/A	7.28E-03	8.13E-03	8.21E-03	6.53E-03	7.01E-03
Beryllium (Be)	ug/m^3	3.23E-04	2.64E-04	3.09E-04	3.17E-04	3.18E-04	3.11E-04	3.09E-04	2.79E-04	2.68E-04	2.93E-04	N/A	2.64E-04	2.69E-04	3.23E-04	3.14E-04	3.10E-04
Bismuth (Bi)	ug/m^3	1.94E-03	1.58E-03	1.86E-03	1.90E-03	1.91E-03	1.86E-03	1.85E-03	1.67E-03	1.61E-03	1.76E-03	N/A	1.58E-03	1.62E-03	1.94E-03	1.88E-03	1.86E-03
Boron (B)	ug/m^3	1.94E-03	1.58E-03	1.86E-03	1.90E-03	1.91E-03	1.86E-03	1.85E-03	1.67E-03	1.61E-03	1.76E-03	N/A	1.58E-03	1.62E-03	1.94E-03	1.88E-03	1.86E-03
Cadmium (Cd)	ug/m^3	6.46E-04	5.27E-04	6.19E-04	6.34E-04	6.37E-04	6.21E-04	6.17E-04	5.58E-04	5.36E-04	5.86E-04	N/A	5.27E-04	5.39E-04	6.46E-04	6.28E-04	6.20E-04
Chromium (Cr)	ug/m^3	6.29E-03	1.32E-03	1.55E-03	4.82E-03	4.65E-03	1.55E-03	6.29E-03	1.39E-03	1.34E-03	1.46E-03	N/A	1.32E-03	1.35E-03	1.62E-03	1.57E-03	1.55E-03
Cobalt (Co)	ug/m^3	6.46E-04	5.27E-04	6.19E-04	6.34E-04	6.37E-04	6.21E-04	6.17E-04	5.58E-04	5.36E-04	5.86E-04	N/A	5.27E-04	5.39E-04	6.46E-04	6.28E-04	6.20E-04
Copper (Cu)	ug/m^3	5.43E-02	1.86E-02	4.54E-02	5.43E-02	1.86E-02	2.24E-02	2.59E-02	4.01E-02	4.93E-02	4.49E-02	N/A	2.88E-02	5.33E-02	4.28E-02	4.31E-02	3.97E-02
Iron (Fe)	ug/m^3	9.26E-01	2.00E-01	2.00E-01	9.26E-01	6.69E-01	2.25E-01	4.65E-01	4.21E-01	4.00E-01	3.13E-01	N/A	5.15E-01	5.44E-01	8.14E-01	5.17E-01	5.69E-01
Lead (Pb)	ug/m^3	4.31E-03	8.37E-04	9.28E-04	4.31E-03	2.36E-03	9.32E-04	9.26E-04	8.37E-04	1.99E-03	2.11E-03	N/A	1.90E-03	2.05E-03	2.13E-03	3.51E-03	2.54E-03
Magnesium (Mg)	ug/m^3	4.13E-01	9.25E-02	1.14E-01	2.80E-01	4.13E-01	9.25E-02	2.06E-01	2.81E-01	1.88E-01	1.96E-01	N/A	2.54E-01	2.57E-01	3.26E-01	2.13E-01	1.41E-01
Manganese (Mn)	ug/m^3	3.08E-02	7.11E-03	7.11E-03	2.42E-02	3.08E-02	8.76E-03	1.81E-02	1.61E-02	1.07E-02	1.18E-02	N/A	1.68E-02	1.59E-02	2.47E-02	1.47E-02	1.18E-02
Molybdenum (Mo)	ug/m^3	9.69E-04	7.91E-04	9.28E-04	9.51E-04	9.55E-04	9.32E-04	9.26E-04	8.37E-04	8.05E-04	8.79E-04	N/A	7.91E-04	8.08E-04	9.69E-04	9.41E-04	9.31E-04
Nickel (Ni)	ug/m^3	2.78E-03	7.91E-04	9.28E-04	2.41E-03	9.55E-04	2.30E-03	2.78E-03	8.37E-04	8.05E-04	8.79E-04	N/A	7.91E-04	8.08E-04	9.69E-04	9.41E-04	9.31E-04
Phosphorus (P)	ug/m^3	9.69E-02	7.73E-03	7.73E-03	2.41E-02	3.89E-02	7.76E-03	5.43E-02	5.19E-02	4.83E-02	3.22E-02	N/A	5.69E-02	5.71E-02	9.69E-02	7.41E-02	4.28E-02
Selenium (Se)	ug/m^3	3.23E-03	2.64E-03	3.09E-03	3.17E-03	3.18E-03	3.11E-03	3.09E-03	2.79E-03	2.68E-03	2.93E-03	N/A	2.64E-03	2.69E-03	3.23E-03	3.14E-03	3.10E-03
Silver (Ag)	ug/m^3	1.62E-03	1.32E-03	1.55E-03	1.59E-03	1.59E-03	1.55E-03	1.54E-03	1.39E-03	1.34E-03	1.46E-03	N/A	1.32E-03	1.35E-03	1.62E-03	1.57E-03	1.55E-03
Strontium (Sr)	ug/m^3	1.34E-02	2.92E-03	3.09E-03	7.73E-03	1.34E-02	2.92E-03	7.41E-03	5.80E-03	3.22E-03	6.80E-03	N/A	7.38E-03	4.63E-03	1.07E-02	6.34E-03	5.02E-03
Thallium (Tl)	ug/m^3	3.23E-03	2.64E-03	3.09E-03	3.17E-03	3.18E-03	3.11E-03	3.09E-03	2.79E-03	2.68E-03	2.93E-03	N/A	2.64E-03	2.69E-03	3.23E-03	3.14E-03	3.10E-03
Tin (Sn)	ug/m^3	3.23E-03	2.64E-03	3.09E-03	3.17E-03	3.18E-03	3.11E-03	3.09E-03	2.79E-03	2.68E-03	2.93E-03	N/A	2.64E-03	2.69E-03	3.23E-03	3.14E-03	3.10E-03
Titanium (Ti)	ug/m^3	2.26E-02	2.68E-03	3.09E-03	1.27E-02	1.27E-02	3.11E-03	7.41E-03	8.93E-03	2.68E-03	5.86E-03	N/A	1.21E-02	1.08E-02	2.26E-02	9.41E-03	9.31E-03
Vanadium (V)	ug/m^3	1.62E-03	1.32E-03	1.55E-03	1.59E-03	1.59E-03	1.55E-03	1.54E-03	1.39E-03	1.34E-03	1.46E-03	N/A	1.32E-03	1.35E-03	1.62E-03	1.57E-03	1.55E-03
Zinc (Zn)	ug/m^3	5.54E-02	9.75E-03	1.15E-02	5.54E-02	1.62E-02	9.75E-03	1.70E-02	2.09E-02	1.55E-02	2.85E-02	N/A	1.91E-02	2.13E-02	2.24E-02	1.74E-02	1.40E-02
Zirconium (Zr)	ug/m^3	1.62E-03	1.32E-03	1.55E-03	1.59E-03	1.59E-03	1.55E-03	1.54E-03	1.39E-03	1.34E-03	1.46E-03	N/A	1.32E-03	1.35E-03	1.62E-03	1.57E-03	1.55E-03
Total Uranium (U)	ug/m^3	1.45E-04	1.19E-04	1.39E-04	1.43E-04	1.43E-04	1.40E-04	1.39E-04	1.26E-04	1.21E-04	1.32E-04	N/A	1.19E-04	1.21E-04	1.45E-04	1.41E-04	1.40E-04

Metals and Total Particulates	Rundle Road Station	April to June 2014																											
Location		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle	
Date	dd/mm/yyyy	05/04/2014		11/04/2014		17/04/2014		23/04/2014		29/04/2014		05/05/2014		11/05/2014		17/05/2014		23/05/2014		29/05/2014		04/06/2014		10/06/2014		16/06/2014		22/06/2014	
Start Time	hh:mm	0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	minutes	23.39		23.6		24.6		23.81		23.76		23.95		23.05		23.58		23.73		24.04		24.07		23.05		23.36		23.75	
Technician		TH		TH		TH		TH		TH		TH		CL		TH		TH		TH		CL		CL		TH		TH	
Filter Number		14020325		14020326		14021109		14021110		14021113		14021117		14021118		14022624		14022625		14022628		14022629		14022632		14022633		14041567	
Analytical Report #		B456942		B462486		B464532		B468103		B478107		B478107		B480787		B485837		B489148		B494076		B498203		B4A2707		B4A6768		B4B3354	
Total Volumetric Flow	Am^3/sample	1559.07		1584.89		1652.76		1651.61		1594.66		1674.95		1604.27		1641.61		1697.46		1704.11		1663.72		1464.56		1537.70		1636.54	
Analytical Results	Units	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL
Particulate	mg	20.6	5	49	5	35.6	5	13.5	5	21.7	5	37.3	5	34	5	35.3	5	50.9	5	71.8	5	78.7	5	86.3	5	56.4	5	50.5	5
Total Mercury (Hg)	ug	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.002	0.002	<0.02	0.02	0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02
Aluminum (Al)	ug	107	50	260	50	245	50	74	50	119	50	223	50	209	50	137	50	321	50	437	50	315	50	424	50	311	50	195	50
Antimony (Sb)	ug	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Arsenic (As)	ug	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6
Barium (Ba)	ug	5.6	1	18.7	1	9.1	1	3.2	1	5.1	1	12	1	8.5	1	19.4	1	9.5	1	13.2	1	15	1	12.9	1	12	1	11.6	1
Beryllium (Be)	ug	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1	<1.0	1
Bismuth (Bi)	ug	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6
Boron (B)	ug	6.9	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6	<6.0	6
Cadmium (Cd)	ug	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2
Chromium (Cr)	ug	<5.0	5	6.4	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	7.3	5	<5.0	5
Cobalt (Co)	ug	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2	<2.0	2
Copper (Cu)	ug	86.1	5	74.9	5	18.7	5	30.9	5	12.6	5	41.6	5	126	5	37.1	5	114	5	77.6	5	205	5	67.8	5	83.4	5	109	5
Iron (Fe)	ug	303	50	1460	50	1080	50	193	50	434	50	721	50	561	50	609	50	680	50	1370	50	1030	50	1250	50	1430	50	687	50
Lead (Pb)	ug	<3.0	3	5.6	3	4.1	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	4.6	3	<3.0	3	<3.0	3	4.4	3	3.5	3	5.5	3	4.5	3
Magnesium (Mg)	ug	181	50	446	50	371	50	112	50	185	50	425	50	306	50	298	50	402	50	472	50	457	50	435	50	326	50	218	50
Manganese (Mn)	ug	11.2	1	40.4	1	24.5	1	7.3	1	11.8	1	25.2	1	16.4	1	18.3	1	30.2	1	32.5	1	33.9	1	35.6	1	23.1	1	16	1
Molybdenum (Mo)	ug	<3.0	3	3.5	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3
Nickel (Ni)	ug	<3.0	3	<3.0	3	3.4	3	3.4	3	7.3	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	<3.0	3	4.1	3	<3.0	3
Phosphorus (P)	ug	<25	25	57	25	43	25	<25	25	30	25	41	25	69	25	54	25	63	25	196	25	125	25	126	25	285	25	83	25
Selenium (Se)	ug	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Silver (Ag)	ug	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5
Strontium (Sr)	ug	4.4	1	13.4	1	10.8	1	3.2	1	4.7	1	9.8	1	6.3	1	9.3	1	9.7	1	18.6	1	8.2	1	15.9	1	11.6	1	8.1	1
Thallium (Tl)	ug	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Tin (Sn)	ug	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	ug	<10	10	20	10	11	10	<10	10	<10	10	15	10	13	10	<10	10	20	10	27	10	19	10	25	10	19	10	14	10
Vanadium (V)	ug	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5
Zinc (Zn)	ug	17.9	5	51.1	5	21.8	5	10.3	5	34.6	5	24.4	5	19.8	5	45.2	5	31.7	5	25.5	5	64.9	5	32.6	5	29.6	5	29.8	5
Zirconium (Zr)	ug	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5	<5.0	5
Total Uranium (U)	ug	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45

Calculated Concentrations	Units	Quarter 2 2014 Maximum	Quarter 2 2014 Minimum	Rundle 16 05/04/2014	Rundle 17 11/04/2014	Rundle 18 17/04/2014	Rundle 19 23/04/2014	Rundle 20 29/04/2014	Rundle 21 05/05/2014	Rundle 22 11/05/2014	Rundle 23 17/05/2014	Rundle 24 23/05/2014	Rundle 25 29/05/2014	Rundle 26 04/06/2014	Rundle 27 10/06/2014	Rundle 28 16/06/2014	Rundle 29 22/06/2014
Particulate	ug/m^3	58.9	8.2	13.2	30.9	21.5	8.2	13.6	22.3	21.2	21.5	30.0	42.1	47.3	58.9	36.7	30.9
Total Mercury (Hg)	ug/m^3	1.20E-05	5.89E-07	6.41E-06	6.31E-06	6.05E-06	6.05E-06	6.27E-06	5.97E-06	6.23E-06	6.09E-06	5.89E-07	5.87E-06	1.20E-05	6.83E-06	6.50E-06	6.11E-06
Aluminum (Al)	ug/m^3	2.90E-01	4.48E-02	6.86E-02	1.64E-01	1.48E-01	4.48E-02	7.46E-02	1.33E-01	1.30E-01	8.35E-02	1.89E-01	2.56E-01	1.89E-01	2.90E-01	2.02E-01	1.19E-01
Antimony (Sb)	ug/m^3	3.41E-03	2.93E-03	3.21E-03	3.15E-03	3.03E-03	3.03E-03	3.14E-03	2.99E-03	3.12E-03	3.05E-03	2.95E-03	2.93E-03	3.01E-03	3.41E-03	3.25E-03	3.06E-03
Arsenic (As)	ug/m^3	2.05E-03	1.76E-03	1.92E-03	1.89E-03	1.82E-03	1.82E-03	1.88E-03	1.79E-03	1.87E-03	1.83E-03	1.77E-03	1.76E-03	1.80E-03	2.05E-03	1.95E-03	1.83E-03
Barium (Ba)	ug/m^3	1.18E-02	1.94E-03	3.59E-03	1.18E-02	5.51E-03	1.94E-03	3.20E-03	7.16E-03	5.30E-03	1.18E-02	5.60E-03	7.75E-03	9.02E-03	8.81E-03	7.80E-03	7.09E-03
Beryllium (Be)	ug/m^3	3.41E-04	2.93E-04	3.21E-04	3.15E-04	3.03E-04	3.03E-04	3.14E-04	2.99E-04	3.12E-04	3.05E-04	2.95E-04	2.93E-04	3.01E-04	3.41E-04	3.25E-04	3.06E-04
Bismuth (Bi)	ug/m^3	2.05E-03	1.76E-03	1.92E-03	1.89E-03	1.82E-03	1.82E-03	1.88E-03	1.79E-03	1.87E-03	1.83E-03	1.77E-03	1.76E-03	1.80E-03	2.05E-03	1.95E-03	1.83E-03
Boron (B)	ug/m^3	4.43E-03	1.76E-03	4.43E-03	1.89E-03	1.82E-03	1.82E-03	1.88E-03	1.79E-03	1.87E-03	1.83E-03	1.77E-03	1.76E-03	1.80E-03	2.05E-03	1.95E-03	1.83E-03
Cadmium (Cd)	ug/m^3	6.83E-04	5.87E-04	6.41E-04	6.31E-04	6.05E-04	6.05E-04	6.27E-04	5.97E-04	6.23E-04	6.09E-04	5.89E-04	5.87E-04	6.01E-04	6.83E-04	6.50E-04	6.11E-04
Chromium (Cr)	ug/m^3	4.75E-03	1.47E-03	1.60E-03	4.04E-03	1.51E-03	1.51E-03	1.57E-03	1.49E-03	1.56E-03	1.52E-03	1.47E-03	1.47E-03	1.50E-03	1.71E-03	4.75E-03	1.53E-03
Cobalt (Co)	ug/m^3	6.83E-04	5.87E-04	6.41E-04	6.31E-04	6.05E-04	6.05E-04	6.27E-04	5.97E-04	6.23E-04	6.09E-04	5.89E-04	5.87E-04	6.01E-04	6.83E-04	6.50E-04	6.11E-04
Copper (Cu)	ug/m^3	1.23E-01	7.90E-03	5.52E-02	4.73E-02	1.13E-02	1.87E-02	7.90E-03	2.48E-02	7.85E-02	2.26E-02	6.72E-02	4.55E-02	1.23E-01	4.63E-02	5.42E-02	6.66E-02
Iron (Fe)	ug/m^3	9.30E-01	1.17E-01	1.94E-01	9.21E-01	6.53E-01	1.17E-01	2.72E-01	4.30E-01	3.50E-01	3.71E-01	4.01E-01	8.04E-01	6.19E-01	8.54E-01	9.30E-01	4.20E-01
Lead (Pb)	ug/m^3	3.58E-03	8.80E-04	9.62E-04	3.53E-03	2.48E-03	9.08E-04	9.41E-04	8.96E-04	9.35E-04	2.80E-03	8.84E-04	8.80E-04	2.64E-03	2.39E-03	3.58E-03	2.75E-03
Magnesium (Mg)	ug/m^3	2.97E-01	6.78E-02	1.16E-01	2.81E-01	2.24E-01	6.78E-02	1.16E-01	2.54E-01	1.91E-01	1.82E-01	2.37E-01	2.77E-01	2.75E-01	2.97E-01	2.12E-01	1.33E-01
Manganese (Mn)	ug/m^3	2.55E-02	4.42E-03	7.18E-03	2.55E-02	1.48E-02	4.42E-03	7.40E-03	1.50E-02	1.02E-02	1.11E-02	1.78E-02	1.91E-02	2.04E-02	2.43E-02	1.50E-02	9.78E-03
Molybdenum (Mo)	ug/m^3	2.21E-03	8.80E-04	9.62E-04	2.21E-03	9.08E-04	9.08E-04	9.41E-04	8.96E-04	9.35E-04	9.14E-04	8.84E-04	8.80E-04	9.02E-04	1.02E-03	9.75E-04	9.17E-04
Nickel (Ni)	ug/m^3	4.58E-03	8.80E-04	9.62E-04	9.46E-04	2.06E-03	2.06E-03	4.58E-03	8.96E-04	9.35E-04	9.14E-04	8.84E-04	8.80E-04	9.02E-04	1.02E-03	2.67E-03	9.17E-04
Phosphorus (P)	ug/m^3	1.85E-01	7.57E-03	8.02E-03	3.60E-02	2.60E-02	7.57E-03	1.88E-02	2.45E-02	4.30E-02	3.29E-02	3.71E-02	1.15E-01	7.51E-02	8.60E-02	1.85E-01	5.07E-02
Selenium (Se)	ug/m^3	3.41E-03	2.93E-03	3.21E-03	3.15E-03	3.03E-03	3.03E-03	3.14E-03	2.99E-03	3.12E-03	3.05E-03	2.95E-03	2.93E-03	3.01E-03	3.41E-03	3.25E-03	3.06E-03
Silver (Ag)	ug/m^3	1.71E-03	1.47E-03	1.60E-03	1.58E-03	1.51E-03	1.51E-03	1.57E-03	1.49E-03	1.56E-03	1.52E-03	1.47E-03	1.47E-03	1.50E-03	1.71E-03	1.63E-03	1.53E-03
Strontium (Sr)	ug/m^3	1.09E-02	1.94E-03	2.82E-03	8.45E-03	6.53E-03	1.94E-03	2.95E-03	5.85E-03	3.93E-03	5.67E-03	5.71E-03	1.09E-02	4.93E-03	1.09E-02	7.54E-03	4.95E-03
Thallium (Tl)	ug/m^3	3.41E-03	2.93E-03	3.21E-03	3.15E-03	3.03E-03	3.03E-03	3.14E-03	2.99E-03	3.12E-03	3.05E-03	2.95E-03	2.93E-03	3.01E-03	3.41E-03	3.25E-03	3.06E-03
Tin (Sn)	ug/m^3	3.41E-03	2.93E-03	3.21E-03	3.15E-03	3.03E-03	3.03E-03	3.14E-03	2.99E-03	3.12E-03	3.05E-03	2.95E-03	2.93E-03	3.01E-03	3.41E-03	3.25E-03	3.06E-03
Titanium (Ti)	ug/m^3	1.71E-02	3.03E-03	3.21E-03	1.26E-02	6.66E-03	3.03E-03	3.14E-03	8.96E-03	8.10E-03	3.05E-03	1.18E-02	1.58E-02	1.14E-02	1.71E-02	1.24E-02	8.55E-03
Vanadium (V)	ug/m^3	1.71E-03	1.47E-03	1.60E-03	1.58E-03	1.51E-03	1.51E-03	1.57E-03	1.49E-03	1.56E-03	1.52E-03	1.47E-03	1.47E-03	1.50E-03	1.71E-03	1.63E-03	1.53E-03
Zinc (Zn)	ug/m^3	3.90E-02	6.24E-03	1.15E-02	3.22E-02	1.32E-02	6.24E-03	2.17E-02	1.46E-02	1.23E-02	2.75E-02	1.87E-02	1.50E-02	3.90E-02	2.23E-02	1.92E-02	1.82E-02
Zirconium (Zr)	ug/m^3	1.71E-03	1.47E-03	1.60E-03	1.58E-03	1.51E-03	1.51E-03	1.57E-03	1.49E-03	1.56E-03	1.52E-03	1.47E-03	1.47E-03	1.50E-03	1.71E-03	1.63E-03	1.53E-03
Total Uranium (U)	ug/m^3	1.54E-04	1.32E-04	1.44E-04	1.42E-04	1.36E-04	1.36E-04	1.41E-04	1.34E-04	1.40E-04	1.37E-04	1.33E-04	1.32E-04	1.35E-04	1.54E-04	1.46E-04	1.37E-04

Appendix G
PAHs Data Summary

Polycyclic Aromatic Hydrocarbons	Courtice WPCP Station	April to June 2014													
Location		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice	
Date	dd/mm/yyyy	05/04/2014		17/04/2014		29/04/2014		11/05/2014		23/05/2014		04/06/2014		16/06/2014	
Start Time	**hh:mm**	0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	**minutes**	22.69		23.66		23.48		19.78		23		23.55		23.48	
Technician		TH		TH		TH		CL		TH		CL		TH	
Filter Number		UZ5548-01		UZ6819-01		VH9592-01		VH9649-01		UZ5536-01		VR0825-01		VR0911-01	
Maxaam ID		VM3472		VP9220		VT5837		VX8042		WB6886		WG2755		WJ5863	
Analytical Report #		B456948		B464533		B472009		B480792		B489135		B498215		B4A6686	
Total Volumetric Flow	**Am^3/sample**	327.05		353.12		350.86		293.27		329.23		350.54		338.89	
Analytical Results	**Units**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Benzo(a)pyrene	µg	<0.0078	0.0078	0.0042	0.0029	<0.0063	0.0063	<0.0048	0.0048	0.0033	0.0012	0.0092	0.0014	<0.0055	0.0055
1-Methylnaphthalene	µg	0.54	0.15	0.73	0.2	1.09	0.2	1.44	0.2	0.9	0.2	2.12	0.2	2.42	0.15
2-Methylnaphthalene	µg	0.98	0.15	1.26	0.2	1.76	0.2	3	0.2	1.79	0.2	4.38	0.2	4.56	0.15
Acenaphthene	µg	0.216	0.075	0.77	0.1	1.55	0.1	1.29	0.1	0.89	0.1	2.4	0.1	3.5	0.075
Acenaphthylene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	0.13	0.1	0.075	0.075
Anthracene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	0.138	0.075
Benzo(a)anthracene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Benzo(a)fluorene	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Benzo(b)fluoranthene	µg	0.099	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Benzo(b)fluorene	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Benzo(e)pyrene	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Benzo(g,h,i)perylene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	0.12	0.1	<0.075	0.075
Benzo(k)fluoranthene	µg	0.081	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Biphenyl	µg	0.28	0.15	0.45	0.2	0.63	0.2	0.73	0.2	0.41	0.2	0.98	0.2	1.38	0.15
Chrysene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Dibenz(a,h)anthracene [1]	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	0.17	0.1	<0.075	0.075
Dibenzo(a,c) anthracene + Picene [2]	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Fluoranthene	µg	0.078	0.075	0.11	0.1	0.29	0.1	0.14	0.1	0.16	0.1	0.25	0.1	0.693	0.075
Indeno(1,2,3-cd)pyrene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	0.17	0.1	<0.075	0.075
Naphthalene	µg	3.19	0.11	3.27	0.14	4.49	0.14	5.94	0.14	4.29	0.14	11.1	0.14	11.5	0.11
o-Terphenyl	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Perylene	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Phenanthrene	µg	0.408	0.075	0.67	0.1	1.5	0.1	1.14	0.1	0.92	0.1	1.81	0.1	4.28	0.075
Pyrene	µg	<0.075	0.075	<0.10	0.1	0.11	0.1	<0.10	0.1	<0.10	0.1	0.12	0.1	0.276	0.075
Tetralin	µg	0.33	0.15	0.42	0.2	2.68	0.2	0.52	0.2	0.36	0.2	0.94	0.2	0.72	0.15

Calculated Concentrations	Quarter 2 2014			Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice
				8	9	10	11	12	13	14
	Units	Maximum	Minimum	05/04/2014	17/04/2014	29/04/2014	11/05/2014	23/05/2014	04/06/2014	16/06/2014
Benzo(a)pyrene	ng/m^3	2.62E-02	8.11E-03	1.19E-02	1.19E-02	8.98E-03	8.18E-03	1.00E-02	2.62E-02	8.11E-03
1-Methylnaphthalene	ng/m^3	7.14E+00	1.65E+00	1.65E+00	2.07E+00	3.11E+00	4.91E+00	2.73E+00	6.05E+00	7.14E+00
2-Methylnaphthalene	ng/m^3	1.35E+01	3.00E+00	3.00E+00	3.57E+00	5.02E+00	1.02E+01	5.44E+00	1.25E+01	1.35E+01
Acenaphthene	ng/m^3	1.03E+01	6.60E-01	6.60E-01	2.18E+00	4.42E+00	4.40E+00	2.70E+00	6.85E+00	1.03E+01
Acenaphthylene	ng/m^3	3.71E-01	1.15E-01	1.15E-01	1.42E-01	1.43E-01	1.70E-01	1.52E-01	3.71E-01	2.21E-01
Anthracene	ng/m^3	4.07E-01	1.15E-01	1.15E-01	1.42E-01	1.43E-01	1.70E-01	1.52E-01	1.43E-01	4.07E-01
Benzo(a)anthracene	ng/m^3	1.70E-01	1.11E-01	1.15E-01	1.42E-01	1.43E-01	1.70E-01	1.52E-01	1.43E-01	1.11E-01
Benzo(a)fluorene	ng/m^3	3.41E-01	2.21E-01	2.29E-01	2.83E-01	2.85E-01	3.41E-01	3.04E-01	2.85E-01	2.21E-01
Benzo(b)fluoranthene	ng/m^3	3.03E-01	1.11E-01	3.03E-01	1.42E-01	1.43E-01	1.70E-01	1.52E-01	1.43E-01	1.11E-01
Benzo(b)fluorene	ng/m^3	3.41E-01	2.21E-01	2.29E-01	2.83E-01	2.85E-01	3.41E-01	3.04E-01	2.85E-01	2.21E-01
Benzo(e)pyrene	ng/m^3	3.41E-01	2.21E-01	2.29E-01	2.83E-01	2.85E-01	3.41E-01	3.04E-01	2.85E-01	2.21E-01
Benzo(g,h,i)perylene	ng/m^3	3.42E-01	1.11E-01	1.15E-01	1.42E-01	1.43E-01	1.70E-01	1.52E-01	3.42E-01	1.11E-01
Benzo(k)fluoranthene	ng/m^3	2.48E-01	1.11E-01	2.48E-01	1.42E-01	1.43E-01	1.70E-01	1.52E-01	1.43E-01	1.11E-01
Biphenyl	ng/m^3	4.07E+00	8.56E-01	8.56E-01	1.27E+00	1.80E+00	2.49E+00	1.25E+00	2.80E+00	4.07E+00
Chrysene	ng/m^3	1.70E-01	1.11E-01	1.15E-01	1.42E-01	1.43E-01	1.70E-01	1.52E-01	1.43E-01	1.11E-01
Dibenz(a,h)anthracene [1]	ng/m^3	4.85E-01	1.11E-01	1.15E-01	1.42E-01	1.43E-01	1.70E-01	1.52E-01	4.85E-01	1.11E-01
Dibenzo(a,c) anthracene + Picene [1]	ng/m^3	3.41E-01	2.21E-01	2.29E-01	2.83E-01	2.85E-01	3.41E-01	3.04E-01	2.85E-01	2.21E-01
Fluoranthene	ng/m^3	2.04E+00	2.38E-01	2.38E-01	3.12E-01	8.27E-01	4.77E-01	4.86E-01	7.13E-01	2.04E+00
Indeno(1,2,3-cd)pyrene	ng/m^3	4.85E-01	1.11E-01	1.15E-01	1.42E-01	1.43E-01	1.70E-01	1.52E-01	4.85E-01	1.11E-01
Naphthalene	ng/m^3	3.39E+01	9.26E+00	9.75E+00	9.26E+00	1.28E+01	2.03E+01	1.30E+01	3.17E+01	3.39E+01
o-Terphenyl	ng/m^3	3.41E-01	2.21E-01	2.29E-01	2.83E-01	2.85E-01	3.41E-01	3.04E-01	2.85E-01	2.21E-01
Perylene	ng/m^3	3.41E-01	2.21E-01	2.29E-01	2.83E-01	2.85E-01	3.41E-01	3.04E-01	2.85E-01	2.21E-01
Phenanthrene	ng/m^3	1.26E+01	1.25E+00	1.25E+00	1.90E+00	4.28E+00	3.89E+00	2.79E+00	5.16E+00	1.26E+01
Pyrene	ng/m^3	8.14E-01	1.15E-01	1.15E-01	1.42E-01	3.14E-01	1.70E-01	1.52E-01	3.42E-01	8.14E-01
Tetralin	ng/m^3	7.64E+00	1.01E+00	1.01E+00	1.19E+00	7.64E+00	1.77E+00	1.09E+00	2.68E+00	2.12E+00
Total PAH	ng/m^3	8.93E+01	2.13E+01	2.13E+01	2.49E+01	4.32E+01	5.22E+01	3.29E+01	7.29E+01	8.93E+01

Note:
RDL = Reportable Detection Limit

1. Based on laboratory analyses, dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene. Picene elutes after dibenz(a,h)anthracene. Ions specific to this compound in the appropriate retention time range were searched with no possible positives detected.

Polycyclic Aromatic Hydrocarbons	Rundle Road Station	April to June 2014													
Location		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle	
Date	dd/mm/yyyy	05/04/2014		17/04/2014		29/04/2014		11/05/2014		23/05/2014		04/06/2014		16/06/2014	
Start Time	hh:mm	0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	minutes	24.17		23.06		23.89		23.39		23.68		23.43		23.6	
Technician		TH		TH		TH		CL		TH		CL		TH	
Filter Number		UZ5549-01		UZ6818-01		VH9593-01		VH9650-01		UZ5537-01		VR0823-01		VR0910-01	
Maxaam ID		VM3473		VP9219		VT5838		VX8043		WB6887		WG2754		WJ5862	
Analytical Report #		B456948		B464533		B472009		B480792		B489135		B498215		B4A6686	
Total Volumetric Flow	Am^3/sample	331.82		339.82		333.36		334.53		324.05		346.40		358.90	
Analytical Results	Units	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL
Benzo(a)pyrene	µg	<0.0073	0.0073	0.0075	0.0023	0.0022	0.002	0.0071	0.0046	0.0028	0.0017	0.0056	0.0016	<0.0061	0.0061
1-Methylnaphthalene	µg	0.86	0.15	0.65	0.2	0.67	0.2	1.28	0.2	1.44	0.2	1.5	0.2	2.22	0.15
2-Methylnaphthalene	µg	1.55	0.15	1.13	0.2	1.11	0.2	2.4	0.2	2.97	0.2	2.88	0.2	4.22	0.15
Acenaphthene	µg	0.207	0.075	0.49	0.1	0.46	0.1	1.05	0.1	0.33	0.1	0.87	0.1	2.69	0.075
Acenaphthylene	µg	0.081	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Anthracene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	0.168	0.075
Benzo(a)anthracene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Benzo(a)fluorene	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Benzo(b)fluoranthene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Benzo(b)fluorene	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Benzo(e)pyrene	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Benzo(g,h,i)perylene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Benzo(k)fluoranthene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Biphenyl	µg	0.38	0.15	0.41	0.2	0.4	0.2	0.66	0.2	0.33	0.2	0.58	0.2	1.07	0.15
Chrysene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Dibenz(a,h)anthracene [1]	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Dibenzo(a,c) anthracene + Picene [2]	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Fluoranthene	µg	0.132	0.075	0.16	0.1	0.2	0.1	0.41	0.1	0.14	0.1	0.3	0.1	0.867	0.075
Indeno(1,2,3-cd)pyrene	µg	<0.075	0.075	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.10	0.1	<0.075	0.075
Naphthalene	µg	5.62	0.11	3.53	0.14	3.39	0.14	5.82	0.14	4.63	0.14	7.99	0.14	8.78	0.11
o-Terphenyl	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Perylene	µg	<0.15	0.15	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.20	0.2	<0.15	0.15
Phenanthrene	µg	0.549	0.075	0.61	0.1	0.74	0.1	1.68	0.1	0.55	0.1	1.38	0.1	3.78	0.075
Pyrene	µg	0.075	0.075	<0.10	0.1	<0.10	0.1	0.18	0.1	<0.10	0.1	0.14	0.1	0.372	0.075
Tetralin	µg	0.55	0.15	0.34	0.2	0.38	0.2	0.55	0.2	0.7	0.2	0.91	0.2	0.7	0.15

Calculated Concentrations	Quarter 2 2014			Rundle	Rundle	Rundle	Rundle	Rundle	Rundle	Rundle
				8	9	10	11	12	13	14
	Units	Maximum	Minimum	05/04/2014	17/04/2014	29/04/2014	11/05/2014	23/05/2014	04/06/2014	16/06/2014
Benzo(a)pyrene	ng/m^3	2.21E-02	6.60E-03	1.10E-02	2.21E-02	6.60E-03	2.12E-02	8.64E-03	1.62E-02	8.50E-03
1-Methylnaphthalene	ng/m^3	6.19E+00	1.91E+00	2.59E+00	1.91E+00	2.01E+00	3.83E+00	4.44E+00	4.33E+00	6.19E+00
2-Methylnaphthalene	ng/m^3	1.18E+01	3.33E+00	4.67E+00	3.33E+00	3.33E+00	7.17E+00	9.17E+00	8.31E+00	1.18E+01
Acenaphthene	ng/m^3	7.50E+00	6.24E-01	6.24E-01	1.44E+00	1.38E+00	3.14E+00	1.02E+00	2.51E+00	7.50E+00
Acenaphthylene	ng/m^3	2.44E-01	1.04E-01	2.44E-01	1.47E-01	1.50E-01	1.49E-01	1.54E-01	1.44E-01	1.04E-01
Anthracene	ng/m^3	4.68E-01	1.13E-01	1.13E-01	1.47E-01	1.50E-01	1.49E-01	1.54E-01	1.44E-01	4.68E-01
Benzo(a)anthracene	ng/m^3	1.54E-01	1.04E-01	1.13E-01	1.47E-01	1.50E-01	1.49E-01	1.54E-01	1.44E-01	1.04E-01
Benzo(a)fluorene	ng/m^3	3.09E-01	2.09E-01	2.26E-01	2.94E-01	3.00E-01	2.99E-01	3.09E-01	2.89E-01	2.09E-01
Benzo(b)fluoranthene	ng/m^3	1.54E-01	1.04E-01	1.13E-01	1.47E-01	1.50E-01	1.49E-01	1.54E-01	1.44E-01	1.04E-01
Benzo(b)fluorene	ng/m^3	3.09E-01	2.09E-01	2.26E-01	2.94E-01	3.00E-01	2.99E-01	3.09E-01	2.89E-01	2.09E-01
Benzo(e)pyrene	ng/m^3	3.09E-01	2.09E-01	2.26E-01	2.94E-01	3.00E-01	2.99E-01	3.09E-01	2.89E-01	2.09E-01
Benzo(g,h,i)perylene	ng/m^3	1.54E-01	1.04E-01	1.13E-01	1.47E-01	1.50E-01	1.49E-01	1.54E-01	1.44E-01	1.04E-01
Benzo(k)fluoranthene	ng/m^3	1.54E-01	1.04E-01	1.13E-01	1.47E-01	1.50E-01	1.49E-01	1.54E-01	1.44E-01	1.04E-01
Biphenyl	ng/m^3	2.98E+00	1.02E+00	1.15E+00	1.21E+00	1.20E+00	1.97E+00	1.02E+00	1.67E+00	2.98E+00
Chrysene	ng/m^3	1.54E-01	1.04E-01	1.13E-01	1.47E-01	1.50E-01	1.49E-01	1.54E-01	1.44E-01	1.04E-01
Dibenz(a,h)anthracene [1]	ng/m^3	1.54E-01	1.04E-01	1.13E-01	1.47E-01	1.50E-01	1.49E-01	1.54E-01	1.44E-01	1.04E-01
Dibenzo(a,c) anthracene + Picene [1]	ng/m^3	3.09E-01	2.09E-01	2.26E-01	2.94E-01	3.00E-01	2.99E-01	3.09E-01	2.89E-01	2.09E-01
Fluoranthene	ng/m^3	2.42E+00	3.98E-01	3.98E-01	4.71E-01	6.00E-01	1.23E+00	4.32E-01	8.66E-01	2.42E+00
Indeno(1,2,3-cd)pyrene	ng/m^3	1.54E-01	1.04E-01	1.13E-01	1.47E-01	1.50E-01	1.49E-01	1.54E-01	1.44E-01	1.04E-01
Naphthalene	ng/m^3	2.45E+01	1.02E+01	1.69E+01	1.04E+01	1.02E+01	1.74E+01	1.43E+01	2.31E+01	2.45E+01
o-Terphenyl	ng/m^3	3.09E-01	2.09E-01	2.26E-01	2.94E-01	3.00E-01	2.99E-01	3.09E-01	2.89E-01	2.09E-01
Perylene	ng/m^3	3.09E-01	2.09E-01	2.26E-01	2.94E-01	3.00E-01	2.99E-01	3.09E-01	2.89E-01	2.09E-01
Phenanthrene	ng/m^3	1.05E+01	1.65E+00	1.65E+00	1.80E+00	2.22E+00	5.02E+00	1.70E+00	3.98E+00	1.05E+01
Pyrene	ng/m^3	1.04E+00	1.47E-01	2.26E-01	1.47E-01	1.50E-01	5.38E-01	1.54E-01	4.04E-01	1.04E+00
Tetralin	ng/m^3	2.63E+00	1.00E+00	1.66E+00	1.00E+00	1.14E+00	1.64E+00	2.16E+00	2.63E+00	1.95E+00
Total PAH	ng/m^3	7.14E+01	2.48E+01	3.24E+01	2.48E+01	2.54E+01	4.51E+01	3.76E+01	5.08E+01	7.14E+01

Note:
RDL = Reportable Detection Limit

1. Based on laboratory analyses, dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene. Picene elutes after dibenz(a,h)anthracene. Ions specific to this compound in the appropriate retention time range were searched with no possible positives detected.

Appendix H
Dioxins and Furans Data Summary

Dioxins and Furans	Courtice WPCP Station	April to June 2014								
Location		Courtice			Courtice			Courtice		
Date	dd/mm/yyyy	17/04/2014			11/05/2014			04/06/2014		
Start Time	hh:mm	0:00			0:00			0:00		
Sample Duration	minutes	23.66			19.78			23.55		
Technician		TH			CL			CL		
Filter Number		UZ6819-01			VH9649-01			VR0825-01		
Maxaam ID		VP9220			VX8042			WG2755		
Analytical Report #		B464533			B480792			B498215		
Total Volumetric Flow	Am^3/sample	353.12			293.27			350.54		
Analytical Results	**Units**	**Value**	**EDL**	**WHO_{2005} TEF**	**Value**	**EDL**	**WHO_{2005} TEF**	**Value**	**EDL**	**WHO_{2005} TEF**
2,3,7,8-Tetra CDD *	pg	<4.3	4.3	1	<4.8	4.8	1	<4.2	4.2	1
1,2,3,7,8-Penta CDD	pg	<4.2	4.2	1	<5.5	5.5	1	<4.1	4.1	1
1,2,3,4,7,8-Hexa CDD	pg	<4.5	4.5	0.1	<4.5	4.5	0.1	<4.3	4.3	0.1
1,2,3,6,7,8-Hexa CDD	pg	<4.5	4.5	0.1	<4.5	4.5	0.1	<4.5	4.5	0.1
1,2,3,7,8,9-Hexa CDD	pg	<4.0	4	0.1	<4.0	4	0.1	<4.0	4	0.1
1,2,3,4,6,7,8-Hepta CDD	pg	11.2	4.1	0.01	27.9	4.4	0.01	6	3.9	0.01
Octa CDD	pg	122	4	0.0003	197	6.6	0.0003	27.1	4.1	0.0003
Total Tetra CDD	pg	<6.9	6.9		<18	18		<4.2	4.2	
Total Penta CDD	pg	<7.5	7.5		<6.2	6.2		<4.1	4.1	
Total Hexa CDD	pg	<16	16		<28	28		<5.5 (1)	5.5	
Total Hepta CDD	pg	11.2	4.1		52.3	4.4		6	3.9	
2,3,7,8-Tetra CDF **	pg	<4.1	4.1	0.1	<4.3	4.3	0.1	<4.0	4	0.1
1,2,3,7,8-Penta CDF	pg	<4.0	4	0.03	<4.2	4.2	0.03	<4.2	4.2	0.03
2,3,4,7,8-Penta CDF	pg	<4.0	4	0.3	<4.2	4.2	0.3	<4.2	4.2	0.3
1,2,3,4,7,8-Hexa CDF	pg	<4.3	4.3	0.1	<4.4	4.4	0.1	<4.2	4.2	0.1
1,2,3,6,7,8-Hexa CDF	pg	<3.8	3.8	0.1	<3.9	3.9	0.1	<3.9	3.9	0.1
2,3,4,6,7,8-Hexa CDF	pg	<4.4	4.4	0.1	<4.5	4.5	0.1	<4.3	4.3	0.1
1,2,3,7,8,9-Hexa CDF	pg	<4.5	4.5	0.1	<4.5	4.5	0.1	<4.4	4.4	0.1
1,2,3,4,6,7,8-Hepta CDF	pg	<4.1	4.1	0.01	<8.5	8.5	0.01	<3.7	3.7	0.01
1,2,3,4,7,8,9-Hepta CDF	pg	<4.5	4.5	0.01	<4.5	4.5	0.01	<4.2	4.2	0.01
Octa CDF	pg	6.6	4.1	0.0003	17.7	6.5	0.0003	5	4.2	0.0003
Total Tetra CDF	pg	<4.1	4.1		<4.3	4.3		<4.0	4	
Total Penta CDF	pg	<4.0	4		<4.2	4.2		<4.2	4.2	
Total Hexa CDF	pg	<4.3	4.3		<9.0	9		<4.2	4.2	
Total Hepta CDF	pg	<4.5	4.5		17.3	4		<3.9	3.9	
Toxic Equivalency	pg									

Calculated Concentrations	Quarter 2 2014			Courtice	Courtice	Courtice
				5	6	7
	Units	Maximum	Minimum	17/04/2014	11/05/2014	04/06/2014
2,3,7,8-Tetra CDD *	pg/m^3	0.008	0.006	0.006	0.008	0.006
1,2,3,7,8-Penta CDD	pg/m^3	0.009	0.006	0.006	0.009	0.006
1,2,3,4,7,8-Hexa CDD	pg/m^3	0.008	0.006	0.006	0.008	0.006
1,2,3,6,7,8-Hexa CDD	pg/m^3	0.008	0.006	0.006	0.008	0.006
1,2,3,7,8,9-Hexa CDD	pg/m^3	0.007	0.006	0.006	0.007	0.006
1,2,3,4,6,7,8-Hepta CDD	pg/m^3	0.095	0.017	0.032	0.095	0.017
Octa CDD	pg/m^3	0.672	0.077	0.345	0.672	0.077
Total Tetra CDD	pg/m^3	0.031	0.006	0.010	0.031	0.006
Total Penta CDD	pg/m^3	0.011	0.006	0.011	0.011	0.006
Total Hexa CDD	pg/m^3	0.048	0.008	0.023	0.048	0.008
Total Hepta CDD	pg/m^3	0.178	0.017	0.032	0.178	0.017
2,3,7,8-Tetra CDF **	pg/m^3	0.007	0.006	0.006	0.007	0.006
1,2,3,7,8-Penta CDF	pg/m^3	0.007	0.006	0.006	0.007	0.006
2,3,4,7,8-Penta CDF	pg/m^3	0.007	0.006	0.006	0.007	0.006
1,2,3,4,7,8-Hexa CDF	pg/m^3	0.008	0.006	0.006	0.008	0.006
1,2,3,6,7,8-Hexa CDF	pg/m^3	0.007	0.005	0.005	0.007	0.006
2,3,4,6,7,8-Hexa CDF	pg/m^3	0.008	0.006	0.006	0.008	0.006
1,2,3,7,8,9-Hexa CDF	pg/m^3	0.008	0.006	0.006	0.008	0.006
1,2,3,4,6,7,8-Hepta CDF	pg/m^3	0.014	0.005	0.006	0.014	0.005
1,2,3,4,7,8,9-Hepta CDF	pg/m^3	0.008	0.006	0.006	0.008	0.006
Octa CDF	pg/m^3	0.060	0.014	0.019	0.060	0.014
Total Tetra CDF	pg/m^3	0.007	0.006	0.006	0.007	0.006
Total Penta CDF	pg/m^3	0.007	0.006	0.006	0.007	0.006
Total Hexa CDF	pg/m^3	0.015	0.006	0.006	0.015	0.006
Total Hepta CDF	pg/m^3	0.059	0.006	0.006	0.059	0.006
Toxic Equivalency	pg/m^3					
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	0.027	0.019	0.019	0.027	0.019

Calculated TEQ Concentrations	Units			Courtice	Courtice	Courtice
				17/04/2014	11/05/2014	04/06/2014
2,3,7,8-Tetra CDD *	pg TEQ/m^3			0.006	0.008	0.006
1,2,3,7,8-Penta CDD	pg TEQ/m^3			0.006	0.009	0.006
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3			0.0006	0.0008	0.0006
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3			0.0006	0.0008	0.0006
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3			0.0006	0.0007	0.0006
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3			0.0003	0.0010	0.0002
Octa CDD	pg TEQ/m^3			0.00010	0.00020	0.00002
Total Tetra CDD	pg TEQ/m^3					
Total Penta CDD	pg TEQ/m^3					
Total Hexa CDD	pg TEQ/m^3					
Total Hepta CDD	pg TEQ/m^3					
2,3,7,8-Tetra CDF **	pg TEQ/m^3			0.0006	0.0007	0.0006
1,2,3,7,8-Penta CDF	pg TEQ/m^3			0.0002	0.0002	0.0002
2,3,4,7,8-Penta CDF	pg TEQ/m^3			0.002	0.002	0.002
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3			0.0006	0.0008	0.0006
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3			0.0005	0.0007	0.0006
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3			0.0006	0.0008	0.0006
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3			0.0006	0.0008	0.0006
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3			0.00006	0.00014	0.00005
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3			0.00006	0.00008	0.00006
Octa CDF	pg TEQ/m^3			0.000006	0.000018	0.000004
Total Tetra CDF	pg TEQ/m^3					
Total Penta CDF	pg TEQ/m^3					
Total Hexa CDF	pg TEQ/m^3					
Total Hepta CDF	pg TEQ/m^3					
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3			0.019	0.027	0.019

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	April to June 2014								
Location		Rundle			Rundle			Rundle		
Date	dd/mm/yyyy	17/04/2014			11/05/2014			04/06/2014		
Start Time	hh:mm	0:00			0:00			0:00		
Sample Duration	minutes	23.06			23.39			23.43		
Technician		TH			CL			CL		
Filter Number		UZ6818-01			VH9650-01			VR0823-01		
Maxaam ID		VP9219			VX8043			WG2754		
Analytical Report #		B464533			B480792			B498215		
Total Volumetric Flow	Am^3/sample	339.82			334.53			346.40		
Analytical Results	**Units**	**Value**	**EDL**	**WHO_{2005} TEF**	**Value**	**EDL**	**WHO_{2005} TEF**	**Value**	**EDL**	**WHO_{2005} TEF**
2,3,7,8-Tetra CDD *	pg	<4.2	4.2	1	<5.2	5.2	1	<4.3	4.3	1
1,2,3,7,8-Penta CDD	pg	<4.1	4.1	1	<5.7	5.7	1	<4.1	4.1	1
1,2,3,4,7,8-Hexa CDD	pg	<4.2	4.2	0.1	<4.4	4.4	0.1	<4.3	4.3	0.1
1,2,3,6,7,8-Hexa CDD	pg	<4.2	4.2	0.1	<4.4	4.4	0.1	<4.5	4.5	0.1
1,2,3,7,8,9-Hexa CDD	pg	<3.7	3.7	0.1	<3.9	3.9	0.1	<4.0	4	0.1
1,2,3,4,6,7,8-Hepta CDD	pg	14.3	4.3	0.01	25.1	4.1	0.01	<4.2	4.2	0.01
Octa CDD	pg	107	4	0.0003	96.4	3.9	0.0003	18.2	4.2	0.0003
Total Tetra CDD	pg	<7.5	7.5		<5.2	5.2		<4.3	4.3	
Total Penta CDD	pg	<6.7	6.7		<11 (1)	11		<4.1	4.1	
Total Hexa CDD	pg	<13	13		<27 (1)	27		<5.2 (1)	5.2	
Total Hepta CDD	pg	26.6	4.3		48.6	4.1		5.3	4.2	
2,3,7,8-Tetra CDF **	pg	<4.0	4	0.1	<4.2	4.2	0.1	7	4.1	0.1
1,2,3,7,8-Penta CDF	pg	<4.0	4	0.03	<4.1	4.1	0.03	<4.2	4.2	0.03
2,3,4,7,8-Penta CDF	pg	<4.1	4.1	0.3	<4.1	4.1	0.3	<4.2	4.2	0.3
1,2,3,4,7,8-Hexa CDF	pg	<4.1	4.1	0.1	<4.3	4.3	0.1	<4.2	4.2	0.1
1,2,3,6,7,8-Hexa CDF	pg	<3.6	3.6	0.1	<3.8	3.8	0.1	<3.9	3.9	0.1
2,3,4,6,7,8-Hexa CDF	pg	<4.2	4.2	0.1	<4.4	4.4	0.1	<4.2	4.2	0.1
1,2,3,7,8,9-Hexa CDF	pg	<4.2	4.2	0.1	<4.5	4.5	0.1	<4.4	4.4	0.1
1,2,3,4,6,7,8-Hepta CDF	pg	<3.8	3.8	0.01	<5.1 (1)	5.1	0.01	<3.8	3.8	0.01
1,2,3,4,7,8,9-Hepta CDF	pg	<4.7	4.7	0.01	<4.4	4.4	0.01	<4.4	4.4	0.01
Octa CDF	pg	7.2	4.2	0.0003	10.4	4.5	0.0003	5	4.1	0.0003
Total Tetra CDF	pg	<4.0	4		<4.2	4.2		7	4.1	
Total Penta CDF	pg	<4.0	4		<4.1	4.1		<4.2	4.2	
Total Hexa CDF	pg	<4.0	4		<4.3	4.3		<4.2	4.2	
Total Hepta CDF	pg	<4.2	4.2		7	3.9		<4.1	4.1	
Toxic Equivalency	pg									

Calculated Concentrations	Quarter 2 2014			Rundle	Rundle	Rundle
				5	6	7
	Units	Maximum	Minimum	17/04/2014	11/05/2014	04/06/2014
2,3,7,8-Tetra CDD *	pg/m3	0.008	0.006	0.006	0.008	0.006
1,2,3,7,8-Penta CDD	pg/m3	0.009	0.006	0.006	0.009	0.006
1,2,3,4,7,8-Hexa CDD	pg/m3	0.007	0.006	0.006	0.007	0.006
1,2,3,6,7,8-Hexa CDD	pg/m3	0.007	0.006	0.006	0.007	0.006
1,2,3,7,8,9-Hexa CDD	pg/m3	0.006	0.005	0.005	0.006	0.006
1,2,3,4,6,7,8-Hepta CDD	pg/m3	0.075	0.006	0.042	0.075	0.006
Octa CDD	pg/m3	0.315	0.053	0.315	0.288	0.053
Total Tetra CDD	pg/m3	0.011	0.006	0.011	0.008	0.006
Total Penta CDD	pg/m3	0.016	0.006	0.010	0.016	0.006
Total Hexa CDD	pg/m3	0.040	0.008	0.019	0.040	0.008
Total Hepta CDD	pg/m3	0.145	0.015	0.078	0.145	0.015
2,3,7,8-Tetra CDF **	pg/m3	0.020	0.006	0.006	0.006	0.020
1,2,3,7,8-Penta CDF	pg/m3	0.006	0.006	0.006	0.006	0.006
2,3,4,7,8-Penta CDF	pg/m3	0.006	0.006	0.006	0.006	0.006
1,2,3,4,7,8-Hexa CDF	pg/m3	0.006	0.006	0.006	0.006	0.006
1,2,3,6,7,8-Hexa CDF	pg/m3	0.006	0.005	0.005	0.006	0.006
2,3,4,6,7,8-Hexa CDF	pg/m3	0.007	0.006	0.006	0.007	0.006
1,2,3,7,8,9-Hexa CDF	pg/m3	0.007	0.006	0.006	0.007	0.006
1,2,3,4,6,7,8-Hepta CDF	pg/m3	0.008	0.005	0.006	0.008	0.005
1,2,3,4,7,8,9-Hepta CDF	pg/m3	0.007	0.006	0.007	0.007	0.006
Octa CDF	pg/m3	0.031	0.014	0.021	0.031	0.014
Total Tetra CDF	pg/m3	0.020	0.006	0.006	0.006	0.020
Total Penta CDF	pg/m3	0.006	0.006	0.006	0.006	0.006
Total Hexa CDF	pg/m3	0.006	0.006	0.006	0.006	0.006
Total Hepta CDF	pg/m3	0.021	0.006	0.006	0.021	0.006
Toxic Equivalency	pg/m3					
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	0.024	0.020	0.020	0.024	0.021

Calculated TEQ Concentrations	Units	Rundle	Rundle	Rundle
		17/04/2014	11/05/2014	04/06/2014
2,3,7,8-Tetra CDD *	pg TEQ/m^3	0.006	0.008	0.006
1,2,3,7,8-Penta CDD	pg TEQ/m^3	0.006	0.009	0.006
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3	0.0006	0.0007	0.0006
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3	0.0006	0.0007	0.0006
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3	0.0005	0.0006	0.0006
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3	0.0004	0.0008	0.0001
Octa CDD	pg TEQ/m^3	0.00009	0.00009	0.00002
Total Tetra CDD	pg TEQ/m^3			
Total Penta CDD	pg TEQ/m^3			
Total Hexa CDD	pg TEQ/m^3			
Total Hepta CDD	pg TEQ/m^3			
2,3,7,8-Tetra CDF **	pg TEQ/m^3	0.0006	0.0006	0.0020
1,2,3,7,8-Penta CDF	pg TEQ/m^3	0.0002	0.0002	0.0002
2,3,4,7,8-Penta CDF	pg TEQ/m^3	0.002	0.002	0.002
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3	0.0006	0.0006	0.0006
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3	0.0005	0.0006	0.0006
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3	0.0006	0.0007	0.0006
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3	0.0006	0.0007	0.0006
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3	0.00006	0.00008	0.00005
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3	0.00007	0.00007	0.00006
Octa CDF	pg TEQ/m^3	0.000006	0.000009	0.000004
Total Tetra CDF	pg TEQ/m^3			
Total Penta CDF	pg TEQ/m^3			
Total Hexa CDF	pg TEQ/m^3			
Total Hepta CDF	pg TEQ/m^3			
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	0.020	0.024	0.021

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 Compounds