Quarterly Ambient Air Quality Monitoring Report for the Durham York Energy Centre – July to September 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.

Operation of the non-continuous monitors was temporarily discontinued on June 28, 2014 as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012), which calls for collection of continuous parameters only during commissioning of the Facility. When the EFW facility is fully operational, monitoring of non-continuous monitors will resume (as specified in the Ambient Monitoring Plan).

The 2014 Quarter 2 report did not present measurement results for metals, PAHs, dioxins and furans for samples taken on June 28, 2014 because laboratory results were not available at the time of the Q2 2014 report submission. Following standard protocol, these measurement results are included in this report.

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 WPCP Station measures atmospheric temperature, relative humidity, rainfall and barometric pressure. Wind speed and wind direction

data at the predominantly upwind location are measured and provided by the Courtice Water Pollution Control Plant.

This quarterly report provides a summary of the ambient air quality data collected at these two stations for the period July to September 2014 (Calendar Quarter 3), along with data unavailable for the Q2 2014 report. During this quarter, a few instrumentation issues were encountered with 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 during this quarter to the CWS was conducted for this report, as it would not be scientifically accurate or representative;
3. The 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 measured concentrations of all PAHs with MOE air quality criteria were well below their applicable criteria shown in Table 2.4 with the exception of one 24-hour benzo(a)pyrene concentration at the Courtice WPCP Station, which exceeded the applicable Ontario Ambient Air Quality Criteria by 47%. The measurement was however, well below the MOE Schedule 6 Upper Risk Threshold, the MOE O. Reg. 419 24-hour average guideline, and the HHRA health based standard (all shown in Table 2.4). Details of this measurement are provided in Section 4.2.6;
5. The measured toxic equivalent dioxin and furan concentrations were below the applicable criterion presented in Table 2.4.
6. In summary, all monitored contaminants were below their applicable MOE criteria for the monitoring data presented in this report, with the exception of benzo(a)pyrene. 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
µg/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 July to September 2014.

Operation of the non-continuous monitors was temporarily discontinued on June 28, 2014 as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012), which calls for collection of continuous parameters only during commissioning of the Facility. When the EFW facility is fully

operational, monitoring of non-continuous monitors will resume (as specified in the Ambient Monitoring Plan).

The 2014 Quarter 2 report did not include measurement results for metals, PAHs, dioxins and furans for samples taken on June 28, 2014 because laboratory results were not available at the time of the Q2 2014 report submission. Following standard protocol, these measurement results are included in this report.

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 Rundle Road 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 Courtice WPCP 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 and provided by the Courtice Water Pollution Control Plant.

A third Fence Line Station, which will measure non-continuous parameters (metals and total particulate matter) will be installed prior to full operation of the DYEC. As per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012), which requires collection of continuous parameters only during commissioning of the Facility, the non-continuous monitoring at the Fence Line Station will begin after the Facility's commissioning period is complete, and will 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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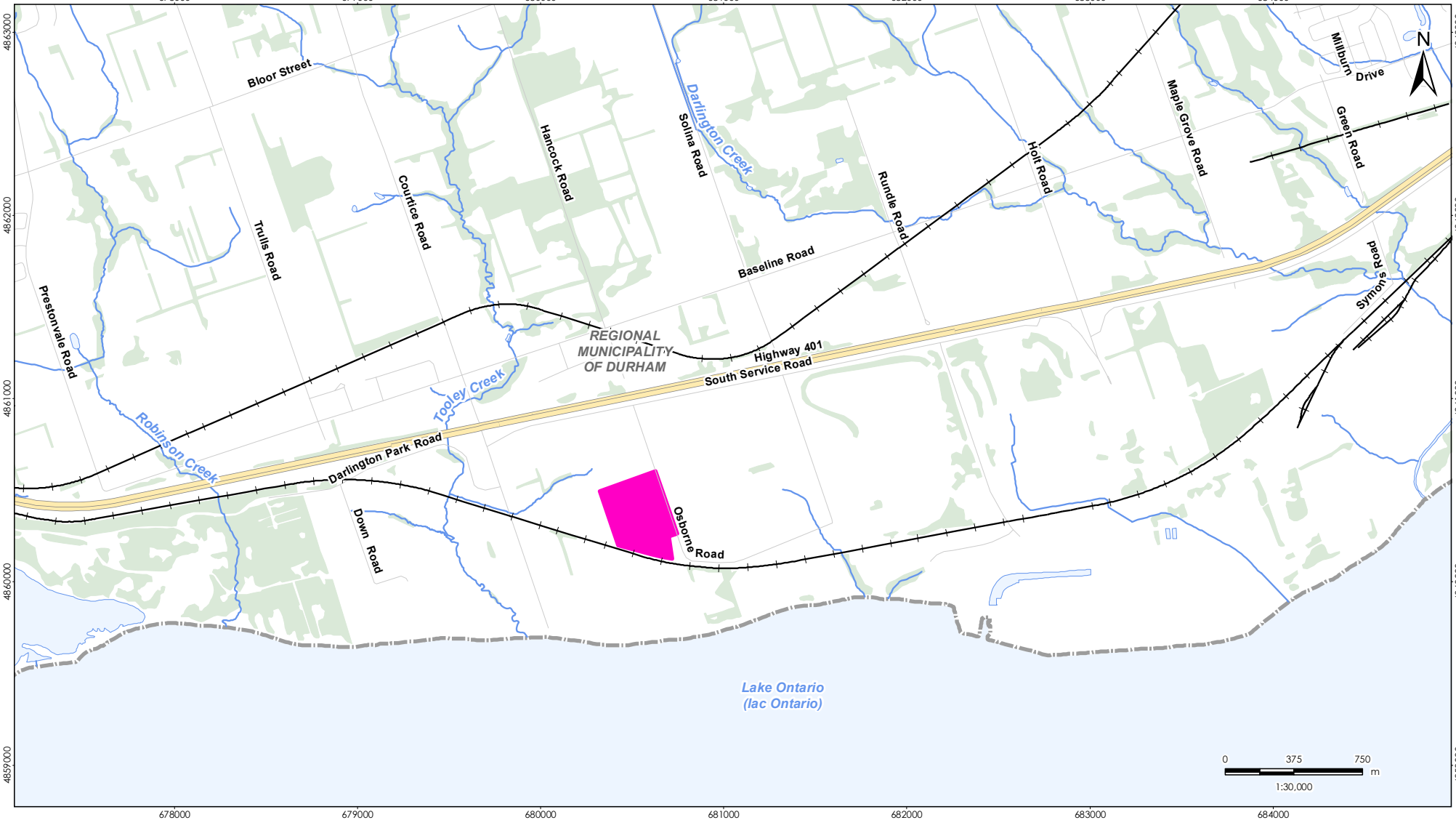

October 2013
160950528

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Notes

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

Legend

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

Client/Project

The Region of Durham
Durham York Energy Centre

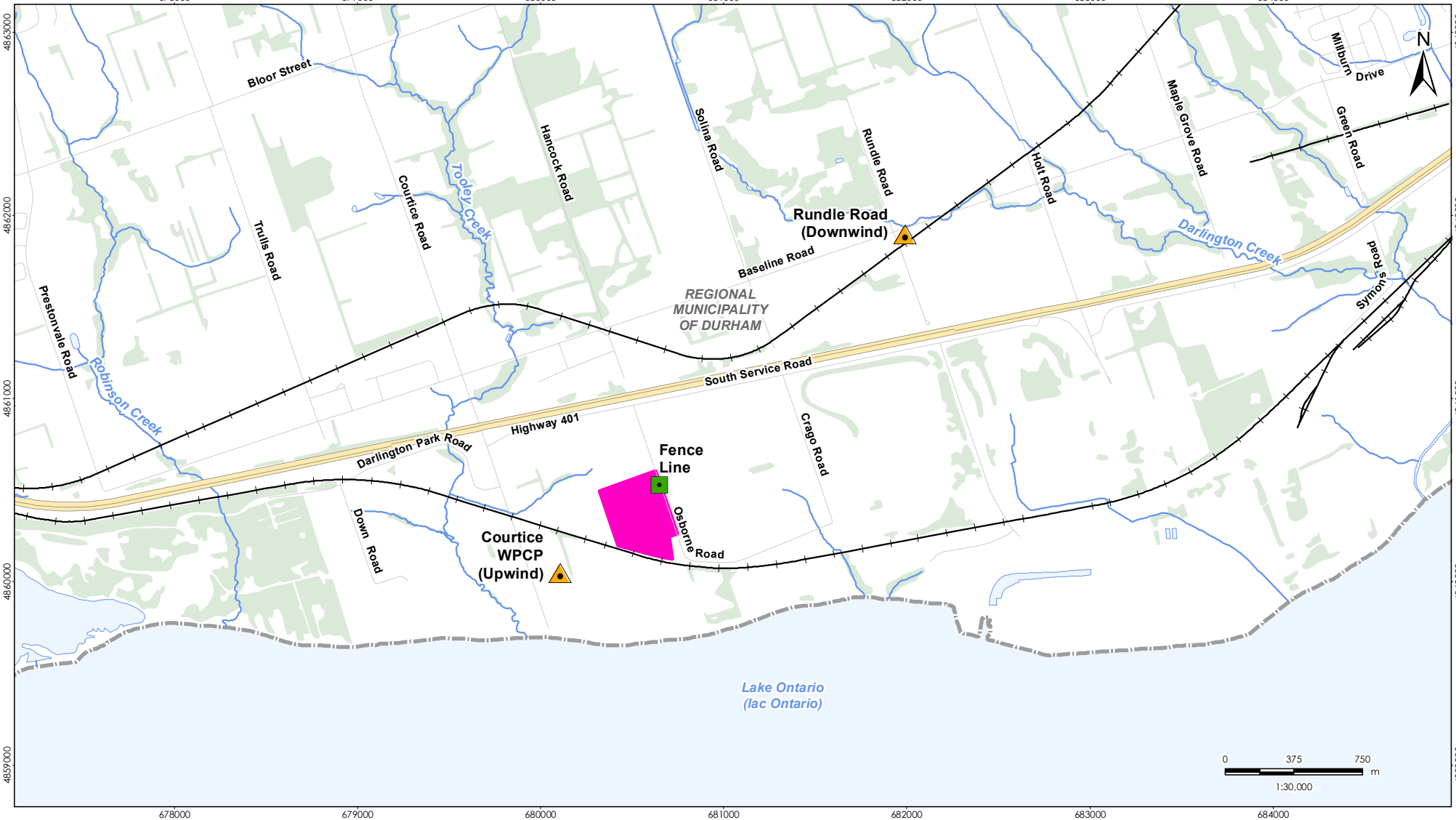
Figure No.

1-1

Title

Site Location Plan

[back of Figure 1-1]



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Stantec

Legend

- Station Location
- Fence Line Station Location (Monitoring to begin after DYEC commissioning period)
- Durham York Energy Centre Site
- Railway
- Road
- Highway
- Watercourse
- Waterbody
- Wooded Area

Notes

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

Client/Project

The Region of Durham
Durham York Energy Centre

Figure No.

1-2

Title

Locations of Ambient Monitoring Stations

[back of Figure 1-2]

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)

Key Components Assessed
November 14, 2014

- 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 PM2.5 was selected referencing CCME (2006).

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				
Vanadium	7440-62-2		2		0.5	1	1

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)
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
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	-						-

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)$^{-1}$
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/m³)$^{-1}$.

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. Future O. Reg. 419 standard that will be in effect in 2016

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
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

From May 2013 to June 2014, monitoring for metals in total suspended particulates (TSP), polycyclic aromatic hydrocarbons (PAHs) and dioxins and furans was 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.

Operation of the non-continuous monitors was temporarily discontinued on June 28, 2014 as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012), which calls for collection of continuous parameters only during commissioning of the Facility. When the EFW facility is fully operational, monitoring of non-continuous monitors will resume (as specified in the Ambient Monitoring Plan).

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 WPCP Station measures atmospheric temperature, relative humidity, rainfall and barometric pressure. Wind speed and wind direction data at the predominantly upwind location are measured and provided by the Courtice Water Pollution Control Plant. 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	Pump rebuild required due to reaction cell pressure rise.	September 23, 2014	Pump was rebuilt during routine calibrations.
$PM_{2.5}$	None		
TSP/Metals Hi-Vol	None		
PAH/ D/F Hi-Vol	None		

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

Parameter	Issues	Time Frame	Remedial Action
General	Data logger did not allow remote connecting and downloading.	Sept 7, 2014- Sept 9, 2014	Logger rebooted. All data stored in logger was intact – issue only affected remote communication via cell modem.
SO_2	The permeation tube oven's evacuation orifice was plugged, resulting in a negative bias to SO_2 measurements.	July 3, 2014 to July 12, 2014	Orifice replaced and chamber purged with zero air for 7 days before recalibrating. Charcoal filter replaced. Zero offset applied to measurement data.
	Auto calibrations were not turned on after manual calibration.	July 3, 2014 to July 12, 2014	Auto calibration turned on.
	SO_2 pump failed	August 31, 2014 to September 3, 2014	Pump was replaced with a spare pump on the morning of September 3, 2014. A replacement pump was ordered (under warranty) and was installed on Sept 23, 2014.
NO_X	Auto calibrations were not turned on after manual calibration.	July 3, 2014 to July 12, 2014	Auto calibration turned on.
	Zero offset noted when substitute unit installed during routine maintenance of permanent unit.	July 3, 2014 to July 30, 2014	Substitute monitor removed and the permanent unit re-installed after completion of routine maintenance. Zero offset applied to measurement data during this period.
	Pump rebuild required due to reaction cell pressure rise.	Sep 23, 2014	Pump was rebuilt during routine calibrations. Reaction cell pressure within acceptable range.
$PM_{2.5}$	None		
TSP/Metals Hi-Vol.	None		
PAH/ D/F Hi-Vol	None		

At the Rundle Road Station, occasional periods of zero SO_2 concentrations occurred during the period from July 30 to August 15 which 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 3 (July to September 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) – July to September 2014

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO_2	2192	99.3%
NO_X	2194	99.4%
$PM_{2.5}$	2198	99.5%
Temperature	2208	100%
Rainfall	2208	100%
Relative Humidity	2208	100%
Pressure	2208	100%
Wind Speed/Direction	2165	98.1%
TSP/Metals	N/A [A, B]	N/A [A, B]
PAHs	N/A [A, B]	N/A [A, B]
Dioxins and Furans	N/A [A, B]	N/A [A, B]

Note:

A. Monitoring of these parameters was temporarily discontinued after June 28, 2014. Monitoring will resume when the Facility is fully operational.

B. Laboratory analysis of the June 28, 2014 sample was unavailable for the Q2 2014 report. Results are included in this quarterly report.

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

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO_2	2105	95.3%
NO_X	2190	99.2%
$PM_{2.5}$	2196	99.5%
Temperature	2208	100.0%
Rainfall	2208	100.0%

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

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
Relative Humidity	2208	100.0%
Wind Speed/Direction	2208	100.0%
TSP/Metals	N/A [A, B]	N/A [A, B]
PAHs	N/A [A, B]	N/A [A, B]
Dioxins and Furans	N/A [A, B]	N/A [A, B]

Note:

A. Monitoring of these parameters was temporarily discontinued after June 28, 2014. Monitoring will resume when the EFW Facility is fully operational.

B. Laboratory analysis of the June 28, 2014 sample was unavailable for the Q2 2014 report. Results are included in this 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 July to September 2014 period are presented in Table 4-1.

Table 4-1 Summary of Hourly Meteorological Measurements – July to September 2014

Parameter		Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)	Units
Temperature	Max	25.3	26.3	C
	Min	5.1	3.6	C
	Mean (July)	18.0	18.3	C
	Mean (August)	18.8	18.5	C
	Mean (September)	15.8	15.3	C
	Mean (Period)	17.6	17.4	C
	Standard Deviation	3.7	4.3	C
Rainfall	Max	14.9	12.9	mm
	Min	0.0	0.0	mm
	Mean (July)	0.13	0.15	mm
	Mean (August)	0.09	0.10	mm
	Mean (September)	0.10	0.09	mm
	Mean (Period)	0.11	0.11	mm
	Standard Deviation	0.70	0.70	mm
Relative Humidity	Max	96.5	99.5	%
	Min	36.3	38.8	%
	Mean (July)	76.2	77.4	%
	Mean (August)	76.6	80.4	%
	Mean (September)	77.7	82.3	%
	Mean (Period)	76.8	80.0	%
	Standard Deviation	11.8	13.6	%
Pressure [A]	Max	30.2	-	in Hg

Table 4-1 Summary of Hourly Meteorological Measurements – July to September 2014

Parameter		Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)	Units
	Min	29.2	-	in Hg
	Mean (July)	29.6	-	in Hg
	Mean (August)	29.7	-	in Hg
	Mean (September)	29.8	-	in Hg
	Mean (Period)	29.7	-	in Hg
	Standard Deviation	0.2	-	in Hg
Wind Speed [B]	Max	44.6	24.3	km/hr
	Min	0.2	0.0	km/hr
	Mean (July)	8.6	8.2	km/hr
	Mean (August)	9.5	7.5	km/hr
	Mean (September)	10.3	8.0	km/hr
	Mean (Period)	9.4	7.9	km/hr
	Standard Deviation	5.5	4.8	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.

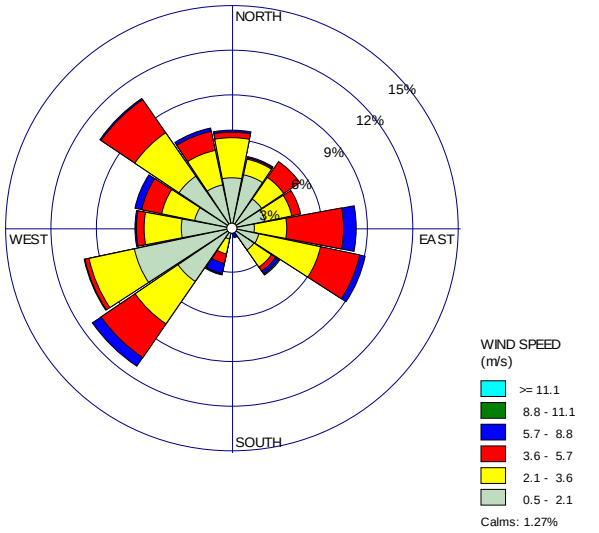
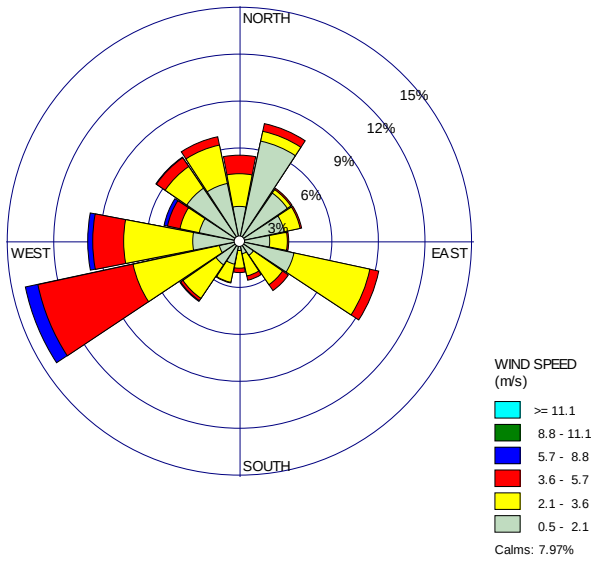
At the Courtice WPCP Station (located near Lake Ontario), wind data were measured and provided by the Courtice Water Pollution Control Plant on a 20-m tower, while at the Rundle Road Station they are measured on a 10-m tower.

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

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

Figure 4-1 Wind Roses for July to September 2014

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

4.2 CAC AMBIENT AIR QUALITY MEASUREMENTS

A summary of the maximum, minimum, arithmetic mean and standard deviation of the CAC pollutant concentrations measured at each station are presented in Table 4-2. Also presented in this table are the number of exceedances 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 July to September, 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 – July to September 2014

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
SO_2	1	250	690	Maximum	18.6	51.0	12.6	33.8
				Minimum	0.0	0.0	0.0	0.0
				Mean (July)	0.9	2.3	0.8	2.1
				Mean (August)	2.1	5.5	0.4	1.1
				Mean (September)	2.3	6.2	1.2	3.1
				Mean (Period)	1.7	4.7	0.8	2.1
				Standard Deviation	1.4	3.7	0.9	2.4
				# of Exceedances	0	0	0	0
	24	100	275	Maximum	4.2	11.4	4.1	10.9
				Minimum	0.2	0.6	0.0	0.0
				Mean (July)	0.9	2.3	0.8	2.1
				Mean (August)	2.1	5.5	0.4	1.1
				Mean (September)	2.3	6.2	1.1	3.0
				Mean (Period)	1.7	4.6	0.8	2.0
				Standard Deviation	0.8	2.2	0.6	1.7
				# of Exceedances	0	0	0	0
$PM_{2.5}$	24	N/A	30 [A]	Maximum	-	21.7	-	21.1
				Minimum	-	0.3	-	0.2
				Mean (July)	-	7.4	-	8.1
				Mean (August)	-	7.5	-	8.4

Table 4-2 Summary of Ambient CAC Monitoring Data – July to September 2014

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
				Mean (September)	-	8.3	-	8.1
				Mean (Period)	-	7.7	-	8.2
				Standard Deviation	-	4.9	-	4.1
				# of Exceedances	-	N/A	-	N/A
NO_2	1	200 [B]	400 [B]	Maximum	37.8	74.0	28.8	55.0
				Minimum	0.0	0.0	0.0	0.0
				Mean (July)	5.2	9.9	4.5	8.7
				Mean (August)	5.2	9.9	3.8	7.2
				Mean (September)	8.1	15.7	4.6	8.9
				Mean (Period)	6.1	11.8	4.3	8.2
				Standard Deviation	6.6	12.9	3.7	7.0
				# of Exceedances	0	0	0	0
	24	100 [B]	200 [B]	Maximum	16.9	33.2	10.3	19.8
				Minimum	0.1	0.1	0.3	0.7
				Mean (July)	5.2	10.0	4.5	8.7
				Mean (August)	5.1	9.9	3.8	7.2
				Mean (September)	8.0	15.6	4.6	8.9
				Mean (Period)	6.1	11.8	4.3	8.2
				Standard Deviation	3.6	7.0	2.1	4.0
				# of Exceedances	0	0	0	0

Table 4-2 Summary of Ambient CAC Monitoring Data – July to September 2014

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
NO[C]	1	NA	NA	Maximum	61.3	79.3	25.9	33.1
				Minimum	0.7	0.9	0.0	0.0
				Mean (July)	3.9	5.0	4.0	5.0
				Mean (August)	4.1	5.2	2.7	3.4
				Mean (September)	5.5	7.1	2.4	3.1
				Mean (Period)	4.5	5.7	3.1	3.8
				Standard Deviation	5.9	7.5	2.5	3.2
				# of Exceedances	N/A	N/A	N/A	N/A
	24	NA	NA	Maximum	15.1	19.0	8.2	10.3
				Minimum	1.5	1.8	0.1	0.2
				Mean (July)	4.0	5.0	4.0	4.9
				Mean (August)	4.1	5.2	2.7	3.4
				Mean (September)	5.5	7.0	2.4	3.0
				Mean (Period)	4.5	5.7	3.0	3.8
				Standard Deviation	2.8	3.6	1.2	1.5
				# of Exceedances	N/A	N/A	N/A	N/A
NO_X	1	200 [B]	400 [B]	Maximum	83.7	166.1	44.7	85.8
				Minimum	0.0	0.0	0.0	0.0
				Mean (July)	7.9	15.2	8.2	15.6
				Mean (August)	8.5	16.3	5.8	11.0

Table 4-2 Summary of Ambient CAC Monitoring Data – July to September 2014

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
				Mean (September)	12.1	23.5	6.3	12.2
				Mean (Period)	9.5	18.3	6.8	12.9
				Standard Deviation	11.3	22.1	5.4	10.3
				# of Exceedances	0	0	0	0
	24	100 [B]	200 [B]	Maximum	26.6	52.0	14.0	26.8
				Minimum	1.4	2.6	1.6	3.2
				Mean (July)	7.9	15.3	8.1	15.5
				Mean (August)	8.5	16.4	5.8	11.0
				Mean (September)	12.0	23.3	6.3	12.1
				Mean (Period)	9.5	18.3	6.7	12.9
				Standard Deviation	5.9	11.5	2.7	5.2
				# of Exceedances	0	0	0	0

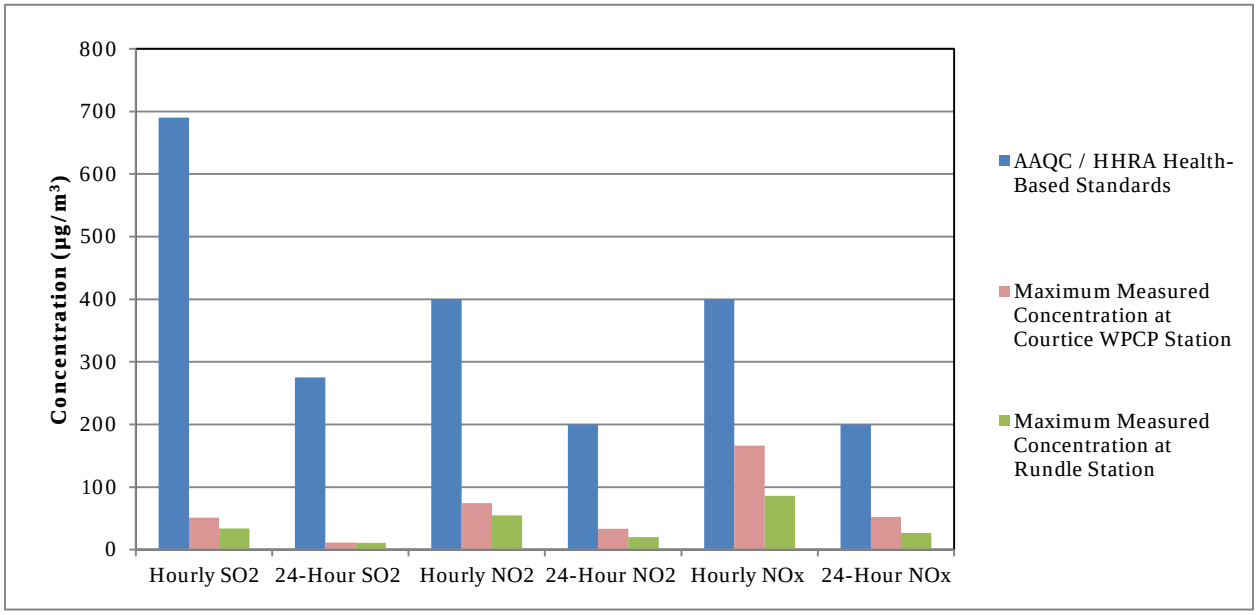
Note:

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.

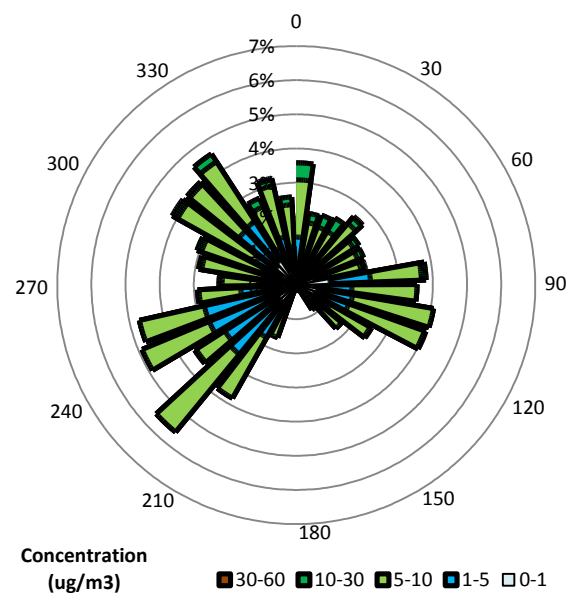
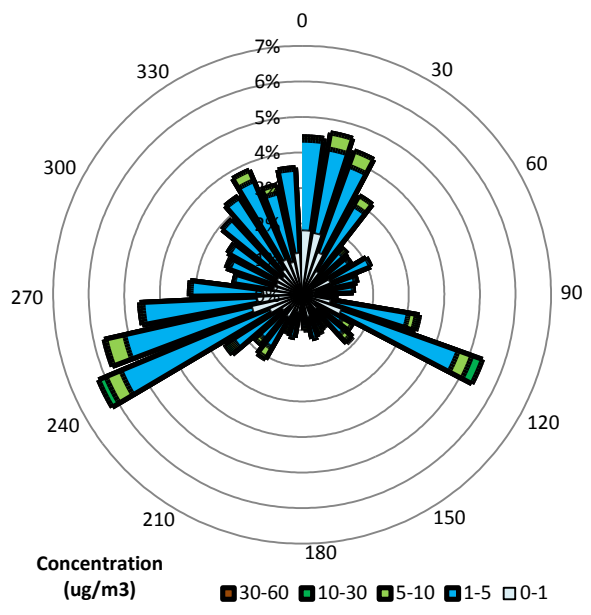
The maximum hourly and 24-hour average concentrations measured at the Courtice WPCP Station during July to September 2014 were 51 and 11 µg/m³ respectively, which are 7% and 4% of the applicable 1-hour and 24-hour ambient air quality criteria.

The maximum hourly and 24-hour average concentrations measured at the Rundle Road Station during this quarter were 34 and 11 µg/m³ respectively, which are 5% 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 northeast. For the Rundle Road Station, the maximum measured hourly concentration occurred for southeasterly winds.

Figure 4-3 Pollution Roses of Measured Hourly Average SO_2 Concentrations – July to September 2014

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

4.2.2 Nitrogen Dioxide (NO_2)

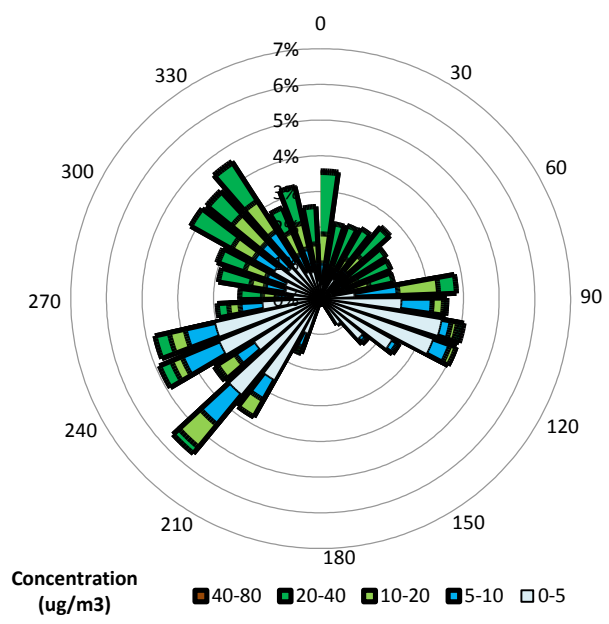
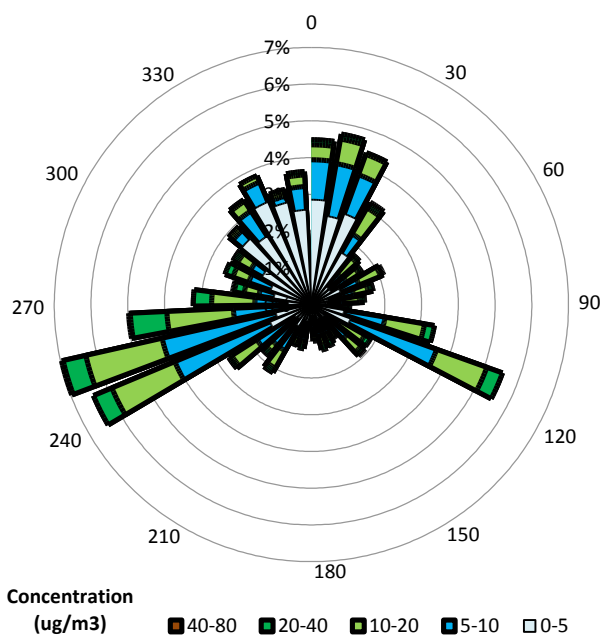
Nitrogen oxides (NO_X) are almost entirely made up of nitric oxide (NO) and nitrogen dioxide (NO_2). Together, they are often referred to as NO_X. Most NO_2 in the atmosphere is formed by the oxidation of NO, which is emitted directly by combustion processes, particularly those at high temperature and pressure. Exposure to both NO and NO_2 can result in adverse health effects to an exposed population. NO_2 is the regulated form of NO_X. Similar to other jurisdictions (e.g., Alberta Environment, World Health Organization),the O. Reg. 419/05 Schedule 3 standards for NO_X are based on health effects of NO_2, as health effects are seen at much lower concentrations of NO_2 than NO. In this report, because NO_2 is the regulated form of NO_X, the AAQC were compared to measured NO_2 concentrations (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/m³ and 200 µg/m³ 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 74 and 33 µg/m³ respectively, which are 19% and 17% 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 55 and 20 µg/m³, which are 14% and 10% 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 at the Courtice WPCP Station were higher for winds that occurred for north and northwesterly directions. For the Rundle Road Station, higher measured hourly average concentrations occurred for winds blowing from the west-southwest and southeast.

Figure 4-4 Pollution Roses of Measured Hourly Average NO_2 Concentrations – July to September 2014

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

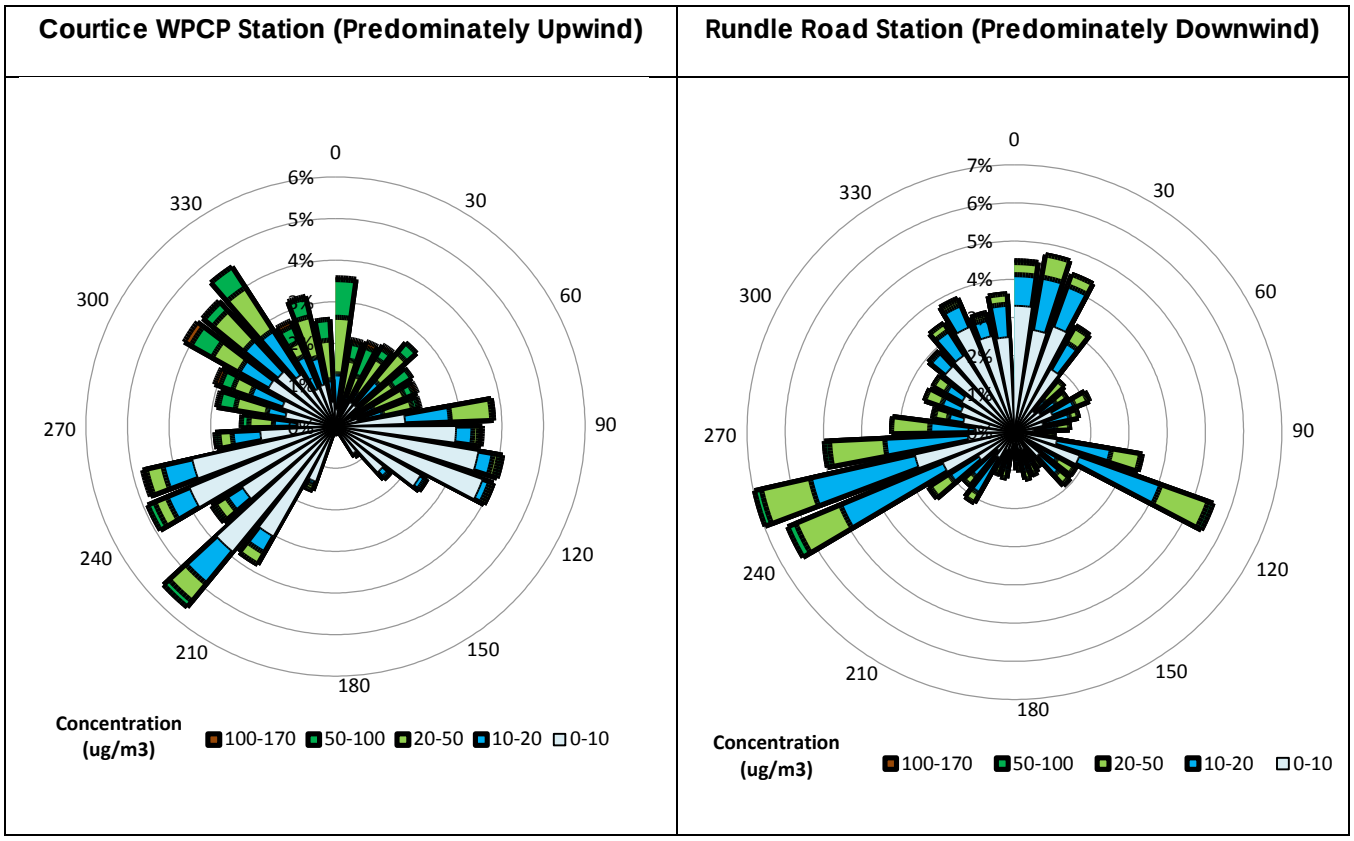
4.2.3 Nitrogen Oxides (NO_X)

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 aveage 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 166 µg/m³, which is 42% of the 1-hour ambient criteria. The 24-hour average NO_X concentration measured at this station was 52 µg/m³, which is 27% 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 86 and 27 µg/m³, which are 22% and 14% 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 Station occurred for winds blowing from northeasterly and northwesterly directions. At the Rundle Road Station, higher measured hourly average concentration occurred for southwesterly winds.

Figure 4-5 Pollution Roses of Measured Hourly Average NO_X Concentrations – July to September 2014



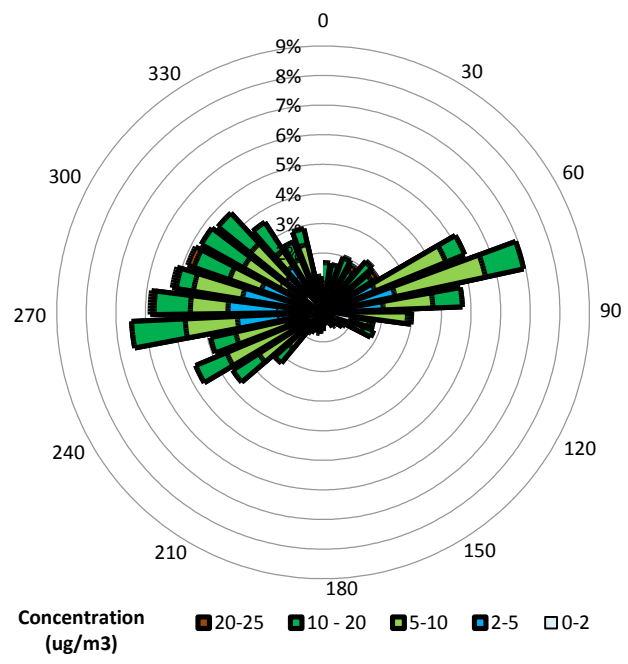
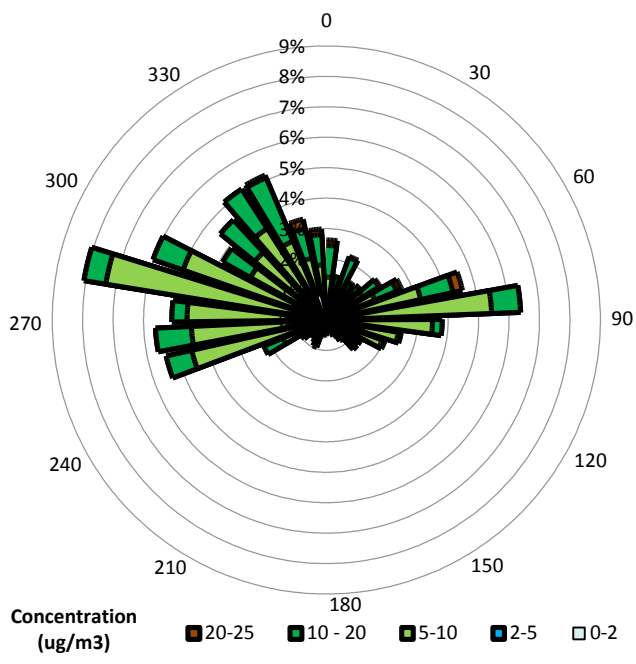
4.2.4 Particulate Matter Smaller than 2.5 Microns ($PM_{2.5}$)

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 21.7 µg/m³ and 21.1 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 westerly winds for the Courtice WPCP Station. For the Rundle Road Station, higher measured 24-hour average concentration occurred for north to northeasterly winds.

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

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

4.2.5 Ambient TSP / Metals Concentrations

Laboratory analysis for one measurement at each station on June 28, 2014 was not available to be included in the Q2, 2014 report. Following MOE protocol, this data is included in this quarterly report. A summary of ambient TSP and metals concentrations (for a daily averaging period) are presented in Table 4-3. A detailed summary of the concentrations measured is presented in Appendix F.

The 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 Measured Ambient TSP/Metals Concentrations (June 28, 2014)

Contaminant	Units	MOE Criteria	HHRA Health Based Standard	Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
				Measurement	No. of Exceedances	Measurement	No. of Exceedances
Particulate	µg/m³	120	120	28.699	0	42.7	0
Total Mercury (Hg)	µg/m³	2	2	1.21E-05	0	1.21E-05	0
Aluminum (Al)	µg/m³	4.8	-	1.25E-01	0	2.08E-01	0
Antimony (Sb)	µg/m³	25	25	3.03E-03	0	3.01E-03	0
Arsenic (As)	µg/m³	0.3	0.3	1.82E-03	0	1.81E-03	0
Barium (Ba)	µg/m³	10	10	4.96E-03	0	7.48E-03	0
Beryllium (Be)	µg/m³	0.01	0.01	3.03E-04	0	3.01E-04	0
Bismuth (Bi)	µg/m³	-	-	1.82E-03	-	1.81E-03	-
Boron (B)	µg/m³	120	-	1.82E-03	0	1.81E-03	0
Cadmium (Cd)	µg/m³	0.025	0.025	6.05E-04	0	6.03E-04	0
Chromium (Cr)	µg/m³	0.5	-	1.51E-03	0	3.68E-03	0
Cobalt (Co)	µg/m³	0.1	0.1	6.05E-04	0	6.03E-04	0
Copper (Cu)	µg/m³	50	-	2.02E-02	0	3.29E-02	0
Iron (Fe)	µg/m³	4	-	3.41E-01	0	6.57E-01	0
Lead (Pb)	µg/m³	0.5	0.5	2.54E-03	0	3.14E-03	0
Magnesium (Mg)	µg/m³	-	-	1.47E-01	-	2.29E-01	-
Manganese (Mn)	µg/m³	0.4	-	9.38E-03	0	1.54E-02	0
Molybdenum (Mo)	µg/m³	120	-	9.08E-04	0	9.04E-04	0
Nickel (Ni)	µg/m³	0.2	-	9.08E-04	0	2.05E-03	0
Phosphorus (P)	µg/m³	-	-	4.06E-02	-	1.01E-01	-
Selenium (Se)	µg/m³	10	10	3.03E-03	0	3.01E-03	0

Table 4-3 Measured Ambient TSP/Metals Concentrations (June 28, 2014)

Contaminant	Units	MOE Criteria	HHRA Health Based Standard	Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
				Measurement	No. of Exceedances	Measurement	No. of Exceedances
Silver (Ag)	µg/m³	1	1	1.51E-03	0	1.51E-03	0
Strontium (Sr)	µg/m³	120	-	5.03E-03	0	9.53E-03	0
Thallium (Tl)	µg/m³	-	-	3.03E-03	-	3.01E-03	-
Tin (Sn)	µg/m³	10	10	3.03E-03	0	3.01E-03	0
Titanium (Ti)	µg/m³	120	-	8.48E-03	0	1.27E-02	0
Vanadium (V)	µg/m³	2	1	1.51E-03	0	1.51E-03	0
Zinc (Zn)	µg/m³	120	-	1.28E-02	0	1.66E-02	0
Zirconium (Zr)	µg/m³	20	-	1.51E-03	0	1.51E-03	0
Total Uranium (U)	µg/m³	1.5	-	1.36E-04	0	1.36E-04	0

4.2.6 Ambient PAH Concentrations

Laboratory analysis for one measurement at each station on June 28, 2014 was not available to be included in the Q2, 2014 report. Following MOE protocol, this data is included in this quarterly report. A summary of the ambient PAH concentrations (for a daily averaging period) are presented in Table 4-4. In this summary, both individual PAHs as well as a total PAH concentration are reported. A detailed summary of the concentrations measured is presented in Appendix F.

The measured concentrations of all PAHs with MOE air quality criteria were well below their applicable 24-hour criteria with the exception of one (1) measurement of benzo(a)pyrene (B(a)P collected at the Courtice WPCP monitoring station.

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

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

The benzo(a)pyrene level in the sample collected at the Courtice WPCP Station on June 28, 2014 exceeded the Ontario AAQc by 47%. However, the measurement is well below the MOE Schedule 6 Upper Risk Threshold, the MOE O. Reg419 24-hour average guideline, and the HHRA health based standard. Wind direction data and potential source contributions for this measurement are presented in Table 4-5.

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

Table 4-4 Summary of Measured Ambient PAH Concentrations (June 28, 2014)

Contaminant	Units	MOE Criteria	HHRA Health Based Standard	Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
				Measurement	No. of Exceedances	Measurement	No. of Exceedances
Benzo(a)pyrene	ng/m³	0.05 [A] 5 [B] 1.1 [C]	1	7.37E-02	1 0 0	2.00E-02	0 0 0
1-Methylnaphthalene	ng/m³	12,000	-	7.25E+00	0	6.87E+00	0
2-Methylnaphthalene	ng/m³	10,000	-	1.39E+01	0	1.29E+01	0
Acenaphthene	ng/m³	-	-	1.18E+01	-	8.10E+00	-
Acenaphthylene	ng/m³	3500	-	1.47E-01	0	1.43E-01	0
Anthracene	ng/m³	200	-	2.95E-01	0	4.58E-01	0
Benzo(a)anthracene	ng/m³	-	-	1.47E-01	-	1.43E-01	-
Benzo(a)fluorene	ng/m³	-	-	2.95E-01	-	2.86E-01	-
Benzo(b)fluoranthene	ng/m³	-	-	1.47E-01	-	1.43E-01	-
Benzo(b)fluorene	ng/m³	-	-	2.95E-01	-	2.86E-01	-
Benzo(e)pyrene	ng/m³	-	-	2.95E-01	-	2.86E-01	-
Benzo(g,h,i)perylene	ng/m³	-	-	1.47E-01	-	1.43E-01	-
Benzo(k)fluoranthene	ng/m³	-	-	1.47E-01	-	1.43E-01	-
Biphenyl	ng/m³	-	-	4.33E+00	-	3.20E+00	-
Chrysene	ng/m³	-	-	1.47E-01	-	1.43E-01	-
Dibenz(a,h)anthracene [D]	ng/m³	-	-	1.47E-01	-	1.43E-01	-
Dibenzo(a,c) anthracene + Picene [D]	ng/m³	-	-	2.95E-01	-	2.86E-01	-
Fluoranthene	ng/m³	-	-	2.27E+00	-	3.52E+00	-

Table 4-4 Summary of Measured Ambient PAH Concentrations (June 28, 2014)

Contaminant	Units	MOE Criteria	HHRA Health Based Standard	Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
				Measurement	No. of Exceedances	Measurement	No. of Exceedances
Indeno (1,2,3-cd)pyrene	ng/m³	-	-	1.47E-01	-	1.43E-01	-
Naphthalene	ng/m³	22,500	22,500	2.98E+01	0	2.60E+01	0
o-Terphenyl	ng/m³	-	-	2.95E-01	-	2.86E-01	-
Perylene	ng/m³	-	-	2.95E-01	-	2.86E-01	-
Phenanthrene	ng/m³	-	-	1.42E+01	-	1.30E+01	-
Pyrene	ng/m³	-	-	8.55E-01	-	1.46E+00	-
Tetralin	ng/m³	-	-	1.65E+00	-	1.83E+00	-
Total PAH [E]	ng/m³	-	-	8.93E+01	-	8.02E+01	-

Notes:

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

B. O. Reg. 419 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.

Table 4-5 Source Contribution Analysis – June 28, 2014 B(a)P Exceedances

Date	Station	% above the MOE B(a)P Criterion	Wind Direction	Potential Source Contributions
June 28, 2014	Courtice	47%	East	Land use in this direction includes the Courtice WPCP and agricultural land.

4.2.7 Ambient Dioxin and Furan Concentrations

Laboratory analysis for one measurement at each station on June 28, 2014 was not available to be included in the Q2, 2014 report. Following MOE protocol, this data is included in this quarterly report. A summary of the ambient D/F concentrations (for a daily averaging period) are presented in Table 4-6. 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 is presented in Appendix G.

The 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 4-6 Summary of Measured Ambient Dioxin and Furan Concentrations

Contaminant	Units	MOE Criteria	HHRA Health Based Standard	Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
				Max	No. of Exceedances	Max	No. of Exceedances
2,3,7,8-Tetra CDD *	pg/m³	-	-	0.011	N/A	0.008	N/A
1,2,3,7,8-Penta CDD	pg/m³			0.012		0.008	
1,2,3,4,7,8-Hexa CDD	pg/m³			0.007		0.009	
1,2,3,6,7,8-Hexa CDD	pg/m³			0.008		0.009	
1,2,3,7,8,9-Hexa CDD	pg/m³			0.015		0.008	
1,2,3,4,6,7,8-Hepta CDD	pg/m³			0.022		0.091	
Octa CDD	pg/m³			0.204		0.278	
Total Tetra CDD	pg/m³			0.011		0.011	
Total Penta CDD	pg/m³			0.012		0.011	
Total Hexa CDD	pg/m³			0.015		0.029	
Total Hepta CDD	pg/m³			0.045		0.163	
2,3,7,8-Tetra CDF **	pg/m³			0.007		0.008	
1,2,3,7,8-Penta CDF	pg/m³			0.011		0.012	
2,3,4,7,8-Penta CDF	pg/m³			0.011		0.012	
1,2,3,4,7,8-Hexa CDF	pg/m³			0.006		0.007	
1,2,3,6,7,8-Hexa CDF	pg/m³			0.006		0.006	
2,3,4,6,7,8-Hexa CDF	pg/m³			0.006		0.006	
1,2,3,7,8,9-Hexa CDF	pg/m³			0.017		0.007	
1,2,3,4,6,7,8-Hepta CDF	pg/m³			0.023		0.021	
1,2,3,4,7,8,9-Hepta CDF	pg/m³			0.005		0.007	
Octa CDF	pg/m³			0.026		0.027	
Total Tetra CDF	pg/m³			0.007		0.008	
Total Penta CDF	pg/m³			0.011		0.012	
Total Hexa CDF	pg/m³			0.030		0.007	
Total Hepta CDF	pg/m³			0.040		0.021	
TOTAL TOXIC EQUIVALENCY [A]	pg TEQ/m³	0.1 [B] 1 [C]	-	0.034	0 0	0.027	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

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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 July to September 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 during this quarter to the CWS was conducted for this report, as it would not be scientifically accurate or representative;

3. The 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 measured concentrations of all PAHs with MOE air quality criteria were well below their applicable criteria shown in Table 2.4 with the exception of one 24-hour benzo(a)pyrene concentration at the Courtice WPCP Station, which exceeded the applicable Ontario Ambient Air Quality Criteria by 47%. The measurement was however, well below the MOE Schedule 6 Upper Risk Threshold, the MOE O. Reg. 419 24-hour average guideline, and the HHRA health based standard (all shown in Table 2.4). Details of this measurement are provided in Section 4.2.6;

5. The measured toxic equivalent dioxin and furan concentrations were below the applicable criterion presented in Table 2.4.

6. In summary, all monitored contaminants were below their applicable MOE criteria for the monitoring data presented in this report, with the exception of benzo(a)pyrene. All measured levels of all monitored contaminants were below their applicable HHRA health-based standards.

6.0 References

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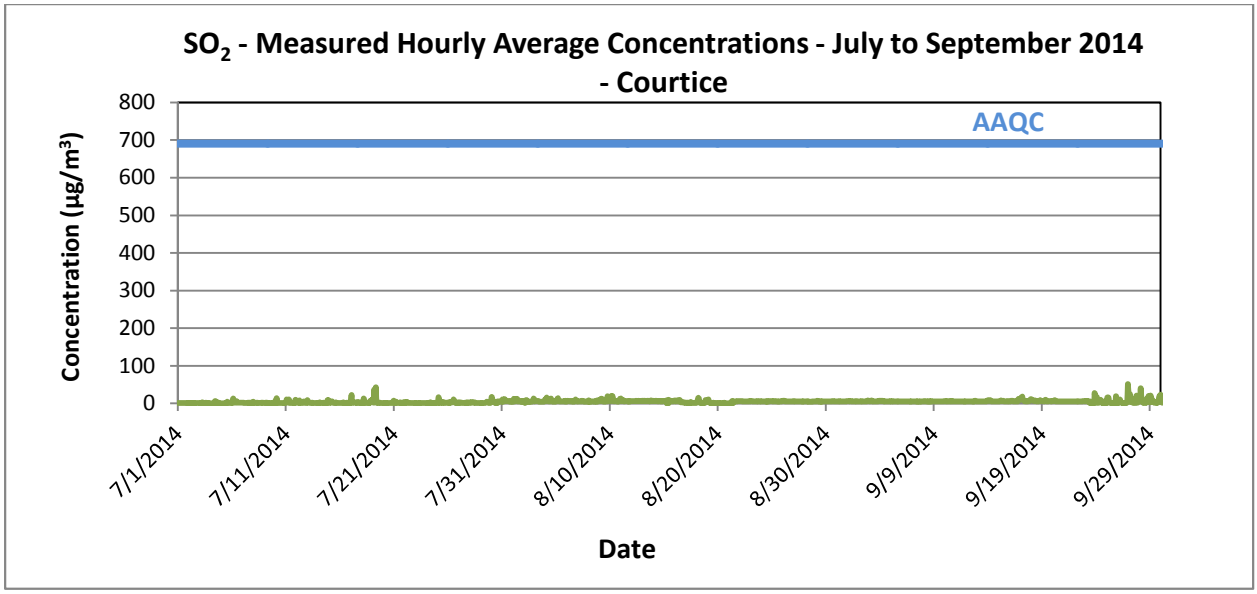
Appendix A

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



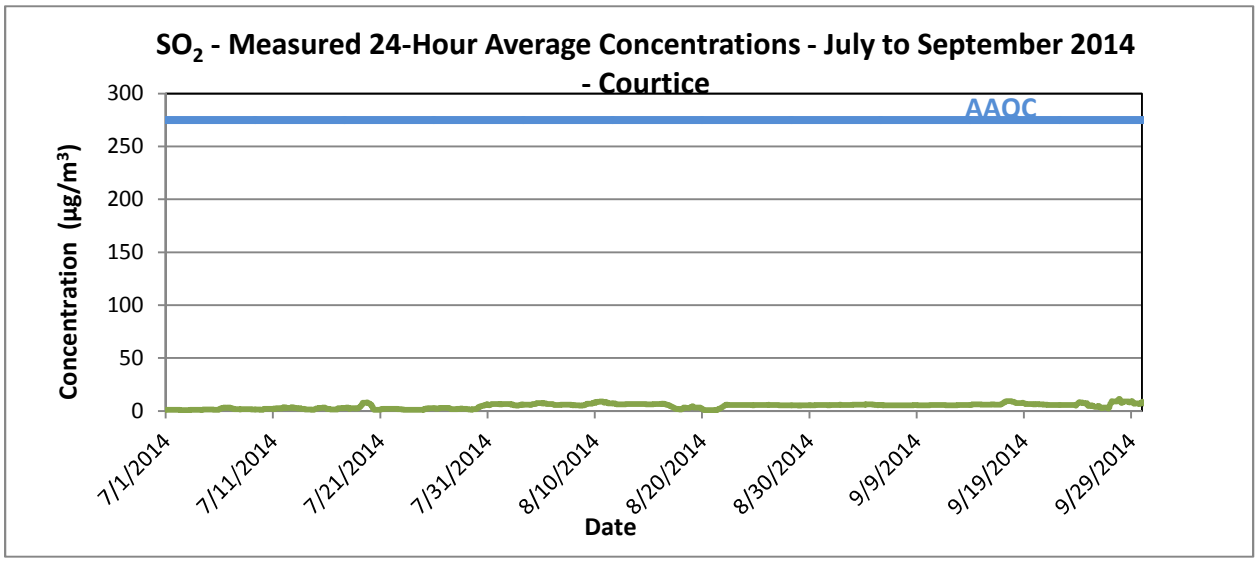
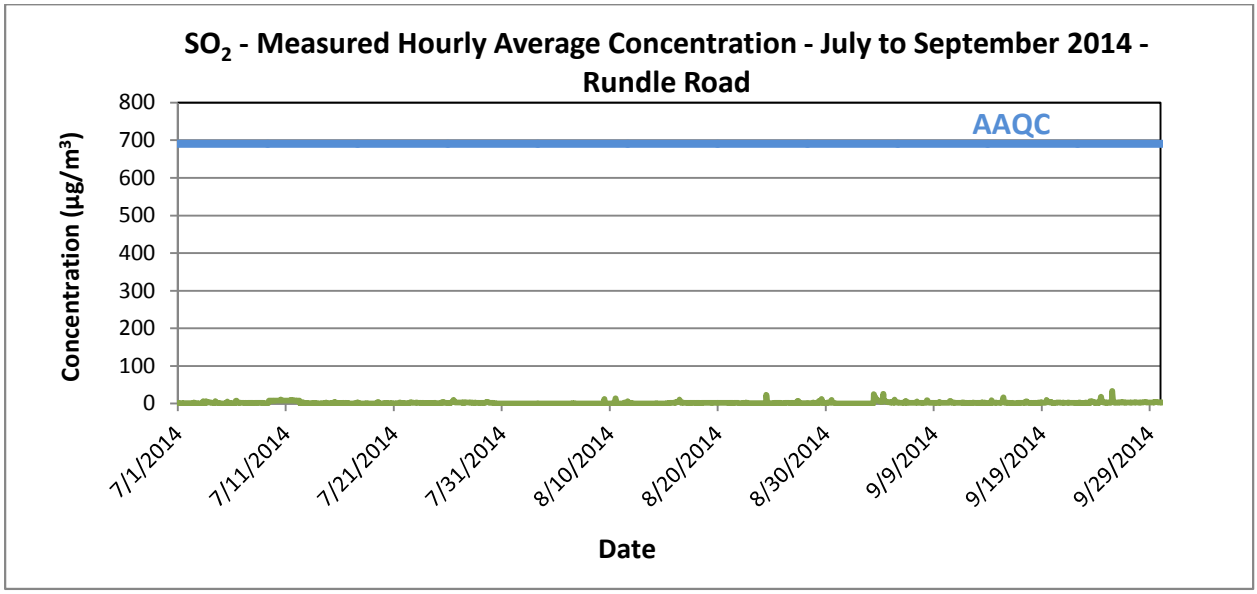
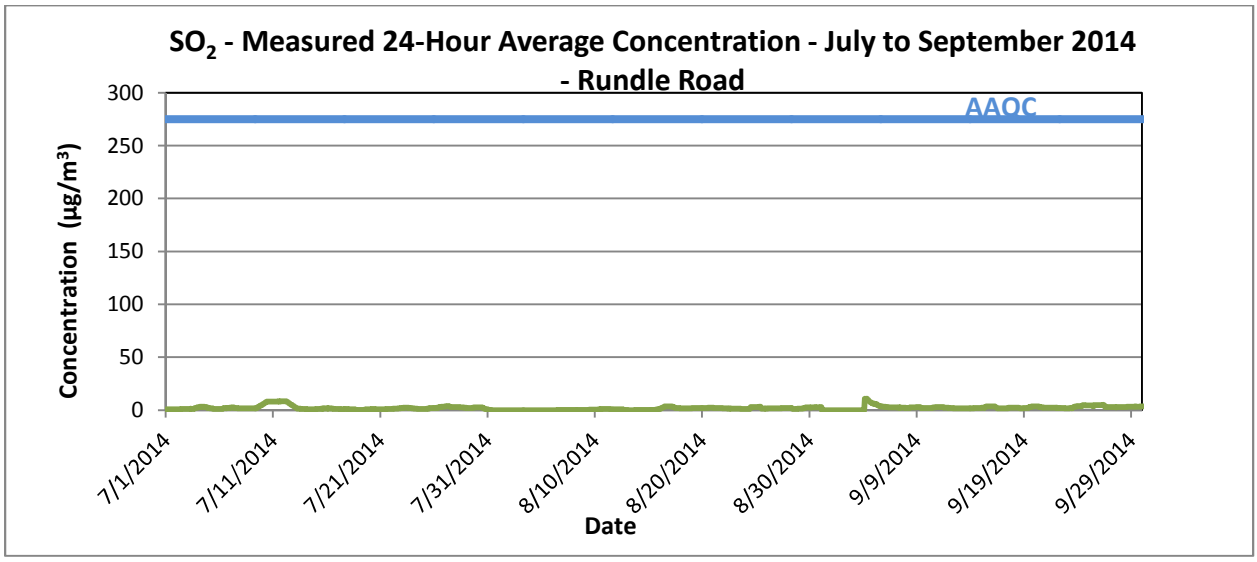


Figure A-2 Time History Plots of Measured Hourly Average and 24-Hour Average SO_2 Concentrations– Rundle Road Station





SO2 - COURTICE
July 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>690	Days>275
1	1.1	1.1	1.1	1.0	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.0	0.8	1.0	1.0	1.0	1.1	1.1	1.1	1.3	0.9	0.7	1.0	24	1.3	0.7	1.0	0	0
2	1.1	0.8	0.8	0.9	0.7	1.0	1.0	0.9	0.6	0.7	0.7	0.7	0.8	0.6	0.9	0.9	1.0	0.8	1.1	1.0	1.2	1.4	1.2	1.1	24	1.4	0.6	0.9	0	0
3	0.9	0.9	0.7	0.8	0.8	1.1	1.3	3.0	C	C	1.2	1.5	1.1	1.3	1.7	1.1	1.1	1.1	0.9	0.7	0.7	0.7	1.0	0.6	22	3.0	0.6	1.1	0	0
4	0.6	0.6	0.4	0.6	0.6	0.7	0.5	0.5	0.5	0.6	3.9	6.5	4.3	2.7	2.6	1.5	1.9	2.7	1.7	0.6	0.6	0.5	0.6	0.6	24	6.5	0.4	1.5	0	0
5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.2	0.9	1.2	2.4	4.3	3.9	2.3	1.6	1.6	1.1	1.2	1.5	1.4	1.8	24	4.3	0.5	1.3	0	0
6	4.9	2.3	7.3	13.2	2.3	1.8	2.0	1.8	3.2	5.6	6.5	2.5	2.0	1.8	1.8	1.9	1.8	2.1	1.9	1.9	1.9	1.9	1.9	2.2	24	13.2	1.8	3.2	0	0
7	2.2	1.9	1.8	1.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.6	1.8	1.5	1.3	1.7	1.8	1.8	1.9	1.6	1.8	1.4	2.2	24	2.2	1.2	1.6	0	0
8	4.3	2.2	1.4	1.2	1.2	1.1	1.2	1.2	1.8	2.0	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.6	1.8	2.3	2.0	1.2	1.2	24	4.3	1.1	1.6	0	0
9	1.1	1.4	1.2	1.8	2.1	1.5	2.2	1.2	1.0	1.0	0.7	1.0	0.9	1.1	1.0	1.1	1.0	1.0	0.7	0.8	0.8	0.7	0.6	0.7	24	2.2	0.6	1.1	0	0
10	1.5	6.9	2.3	1.3	14.0	2.4	1.8	1.3	1.1	1.2	1.1	1.1	1.3	1.3	1.1	1.1	1.2	1.1	1.0	0.8	0.6	0.6	0.8	0.8	24	14.0	0.6	2.0	0	0
11	0.8	4.1	10.3	3.9	2.6	7.0	3.4	10.5	1.8	1.1	1.1	1.1	1.5	1.2	0.9	1.0	1.1	1.1	0.8	0.6	1.1	7.1	9.4	3.2	24	10.5	0.6	3.2	0	0
12	5.1	4.5	7.1	2.8	1.3	4.1	7.7	3.1	1.4	1.1	0.9	1.1	1.1	1.1	1.9	4.7	5.3	3.0	2.5	1.9	1.7	1.3	1.5	3.4	24	7.7	0.9	2.9	0	0
13	9.2	4.1	1.8	1.7	1.9	1.9	1.7	1.3	1.2	1.3	1.9	1.7	1.3	1.1	1.1	1.1	1.1	1.0	1.2	1.1	1.1	1.0	0.7	1.0	24	9.2	0.7	1.8	0	0
14	1.0	0.7	1.9	1.8	2.7	1.5	1.4	1.4	1.2	1.2	1.2	1.7	1.0	1.2	0.9	0.9	0.9	0.7	1.1	1.0	1.0	9.1	4.6	8.5	24	9.1	0.7	2.0	0	0
15	7.4	2.4	1.8	3.5	1.9	3.4	5.8	5.7	2.7	2.8	1.8	1.4	1.6	1.5	1.6	2.6	2.4	1.2	1.2	1.5	1.2	1.2	1.0	1.2	24	7.4	1.0	2.5	0	0
16	1.1	1.2	1.3	1.3	1.4	1.2	1.3	2.3	2.5	1.7	0.6	1.1	1.2	1.1	1.2	1.7	1.1	1.5	1.5	1.9	1.1	1.8	1.0	0.7	24	2.5	0.6	1.4	0	0
17	1.1	7.4	22.2	2.7	1.8	2.7	2.5	1.9	1.7	1.9	1.8	2.1	2.7	2.0	1.5	1.5	2.9	2.3	3.0	2.9	2.4	2.0	1.5	1.1	24	22.2	1.1	3.1	0	0
18	0.7	0.8	1.3	1.0	1.0	13.2	8.8	3.3	1.8	2.1	1.6	1.3	1.5	1.3	1.1	1.0	1.0	0.6	0.8	1.8	6.9	2.8	4.3	8.8	24	13.2	0.6	2.9	0	0
19	4.7	11.0	7.8	2.4	8.6	37.0	5.4	13.3	42.6	16.0	2.3	2.8	1.7	1.7	1.6	1.8	1.9	1.7	1.3	1.6	1.4	1.0	0.8	1.1	24	42.6	0.8	7.1	0	0
20	1.0	0.9	0.8	0.7	1.0	1.2	0.6	1.0	0.7	0.6	0.7	1.1	1.2	1.2	1.2	1.2	1.1	1.2	1.1	1.2	1.4	1.4	1.5	4.7	24	4.7	0.6	1.2	0	0
21	6.9	2.9	1.4	2.5	2.3	4.6	2.2	2.1	1.5	1.1	0.9	1.1	1.4	1.9	2.0	2.6	1.8	1.0	1.0	0.7	0.8	1.5	2.3	3.4	24	6.9	0.7	2.1	0	0
22	3.2	1.7	2.0	3.1	1.9	3.5	3.1	2.7	1.8	1.2	1.1	1.1	1.1	1.2	1.1	1.0	1.1	1.0	0.9	1.1	1.0	0.9	1.0	0.8	24	3.5	0.8	1.6	0	0
23	0.7	0.8	1.0	1.1	1.0	1.0	1.1	0.9	0.9	0.7	0.9	1.1	1.2	1.2	1.1	1.4	1.4	1.4	1.2	1.1	1.1	1.0	1.1	0.9	24	1.4	0.7	1.1	0	0
24	0.9	1.2	0.7	0.7	0.8	0.7	0.8	1.0	2.0	3.2	1.6	1.7	0.9	1.0	0.9	0.8	1.0	1.0	1.3	1.3	2.2	1.5	1.6	1.3	24	3.2	0.7	1.2	0	0
25	1.2	1.0	1.1	3.2	16.9	3.0	2.2	1.4	1.9	2.1	3.5	2.6	2.2	4.0	4.0	1.7	1.5	1.2	1.2	1.8	1.7	1.9	1.7	1.6	24	16.9	1.0	2.7	0	0
26	1.7	1.5	1.2	2.6	2.0	3.0	2.4	2.4	2.8	2.7	3.0	5.3	6.8	10.4	5.8	2.9	2.4	1.9	1.7	1.2	1.8	1.5	1.5	2.5	24	10.4	1.2	3.0	0	0
27	1.7	2.2	2.0	3.2	2.0	1.7	2.0	1.8	1.4	1.2	1.2	1.2	1.3	1.2	1.5	1.7	1.8	1.3	1.1	3.0	2.9	1.7	1.7	1.3	24	3.2	1.1	1.8	0	0
28	1.8	2.3	2.1	2.5	3.3	4.1	2.9	1.7	1.8	2.2	2.7	2.7	2.7	1.9	1.4	1.4	1.1	1.2	1.0	1.1	1.2	1.3	1.4	1.1	24	4.1	1.0	2.0	0	0
29	1.2	1.1	1.2	0.7	1.1	1.2	1.3	1.2	1.1	1.1	1.2	1.2	1.7	2.9	4.5	3.5	4.1	4.2	2.2	1.1	1.3	1.1	1.1	1.2	24	4.5	0.7	1.8	0	0
30	4.5	11.9	17.2	8.1	9.4	5.7	5.9	3.7	3.9	3.3	C	C	C	C	C	5.7	5.6	5.9	5.1	5.1	5.3	5.7	4.8	4.9	19	17.2	3.3	6.4	0	0
31	4.3	5.5	10.8	4.9	5.6	9.8	8.3	11.0	7.2	7.4	6.6	6.7	6.4	6.3	6.7	6.4	5.7	5.8	6.1	5.2	4.7	4.8	5.1	5.1	24	11.0	4.3	6.5	0	0
Count	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	31	31	31	31	31	31	31	31	31	737	31	30	31		
Maximum	9.2	11.9	22.2	13.2	16.9	37.0	8.8	13.3	42.6	16.0	6.6	6.7	6.8	10.4	6.7	6.4	5.7	5.9	6.1	5.2	6.9	9.1	9.4	8.8	24	42.6	5.2	12.2		
Minimum	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.8	0.6	0.9	0.8	0.9	0.6	0.7	0.6	0.6	0.5	0.6	0.6	19	1.3	0.4	0.6		
Average	2.5	2.8	3.7	2.5	3.1	4.0	2.7	2.8	3.2	2.4	1.8	1.9	1.9	2.0	2.0	2.0	1.9	1.8	1.6	1.6	1.8	2.0	2.0	2.3	24	9	1	2.4		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													42.6
													7.1
Data	0.8	1.0	1.1	1.2	1.4	1.7	2.0	2.7	5.1	7.0	13.3	42.6	2.4

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

SO2 - COURTICE
August 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	5.5	4.7	5.2	12.1	5.4	5.4	7.8	6.2	7.8	12.6	12.0	7.2	5.6	5.4	5.3	5.7	5.5	6.1	5.8	5.5	5.0	5.3	4.7	4.4	24	12.6	4.4	6.5	0	0
2	6.4	6.3	4.8	4.0	1.6	3.5	9.1	8.7	6.9	6.8	4.7	4.2	3.3	4.8	4.7	4.5	4.6	4.4	4.5	5.2	5.2	6.3	6.9	13.1	24	13.1	1.6	5.6	0	0
3	8.3	5.6	6.3	6.4	7.0	6.2	6.7	6.5	6.5	6.5	5.6	4.8	4.9	4.7	4.5	4.9	4.4	4.8	4.7	4.2	4.3	5.0	4.9	6.2	24	8.3	4.2	5.6	0	0
4	6.3	11.6	8.7	7.9	15.3	9.8	10.2	6.1	6.1	5.6	5.0	5.6	11.8	12.7	8.4	6.2	5.4	5.6	5.1	4.7	4.8	5.0	4.6	5.1	24	15.3	4.6	7.4	0	0
5	6.2	5.6	9.4	10.8	11.4	13.8	6.5	5.9	5.5	6.1	6.1	5.6	5.1	5.4	5.3	5.2	5.1	5.3	5.3	6.0	5.5	7.4	5.5	5.5	24	13.8	5.1	6.7	0	0
6	4.8	5.3	6.9	6.1	6.3	6.2	6.0	5.9	5.3	5.7	5.2	5.4	5.9	5.1	5.7	5.3	4.8	5.0	6.3	5.9	10.8	7.2	6.2	5.8	24	10.8	4.8	6.0	0	0
7	5.6	5.9	5.2	5.2	5.4	5.2	5.8	5.6	5.7	5.4	6.8	5.9	5.8	6.6	6.0	5.4	5.1	4.9	4.9	4.8	5.0	4.9	4.9	4.9	24	6.8	4.8	5.5	0	0
8	5.2	7.7	4.8	5.0	4.4	4.6	4.9	5.1	5.6	5.8	5.5	5.1	5.3	5.2	4.9	4.8	5.1	5.3	4.9	5.1	8.4	5.7	6.0	5.4	24	8.4	4.4	5.4	0	0
9	5.9	8.6	8.8	10.2	12.1	7.6	8.6	12.2	6.1	5.1	5.2	5.5	4.9	5.2	5.2	5.4	5.4	5.1	5.1	18.6	13.3	12.8	6.7	6.6	24	18.6	4.9	7.9	0	0
10	6.5	6.7	9.3	19.0	8.1	11.2	20.1	10.4	6.5	6.6	5.9	6.8	6.9	6.4	6.0	5.7	5.7	5.4	5.6	4.8	5.3	6.9	11.8	8.7	24	20.1	4.8	8.2	0	0
11	13.0	8.7	6.7	7.1	7.3	7.1	9.2	6.6	5.8	5.8	6.3	6.0	6.4	6.3	6.3	5.9	5.9	5.4	6.2	5.9	4.7	6.4	5.9	6.5	24	13.0	4.7	6.7	0	0
12	6.1	6.3	6.4	6.5	6.5	6.2	6.7	6.6	6.2	6.2	6.0	7.1	6.5	6.5	6.1	6.4	6.8	6.0	6.1	6.6	6.6	6.6	6.6	6.4	24	7.1	6.0	6.4	0	0
13	6.8	6.9	6.8	6.7	6.6	7.2	6.6	7.0	6.4	6.4	6.2	6.1	7.4	7.0	6.5	6.2	6.4	5.8	6.2	7.7	7.3	6.8	6.5	6.8	24	7.7	5.8	6.7	0	0
14	6.9	6.6	6.4	6.4	6.4	6.2	7.1	7.5	6.5	6.1	6.0	5.8	6.2	6.3	6.5	5.9	5.8	5.9	6.0	5.6	5.9	5.7	6.2	6.2	24	7.5	5.6	6.3	0	0
15	6.6	6.4	6.6	6.1	5.1	6.1	7.7	C	C	C	C	10.1	9.3	8.3	7.3	6.2	6.2	6.0	5.4	5.4	5.4	5.4	6.0	6.9	20	10.1	5.1	6.6	0	0
16	7.6	6.8	5.5	5.3	6.7	7.9	7.2	6.0	5.7	7.7	8.6	9.4	6.8	3.8	3.2	3.1	3.0	3.1	3.5	3.6	2.5	2.2	2.3	2.0	24	9.4	2.0	5.1	0	0
17	1.9	1.6	2.4	1.8	1.3	1.3	1.6	1.7	1.2	1.3	1.2	2.0	4.1	1.1	1.2	0.8	1.0	1.3	0.9	1.2	0.9	1.5	1.0	1.4	24	4.1	0.8	1.5	0	0
18	1.5	2.2	3.2	5.7	9.3	14.7	13.7	2.9	2.6	1.6	0.9	0.5	0.5	0.5	0.4	0.2	0.1	0.3	0.3	0.9	2.2	8.9	9.0	6.7	24	14.7	0.1	3.7	0	0
19	3.5	7.3	7.8	10.2	8.7	2.5	2.0	1.5	1.1	0.6	0.5	0.5	0.4	1.5	1.9	0.8	1.1	0.4	0.0	0.2	0.0	0.1	0.0	1.0	24	10.2	0.0	2.2	0	0
20	1.4	1.2	1.1	0.9	0.5	0.5	0.5	0.9	1.1	1.0	1.5	1.6	0.9	1.3	0.8	1.8	0.5	0.0	0.2	0.7	0.4	0.0	0.0	0.0	24	1.8	0.0	0.8	0	0
21	0.0	0.1	0.2	0.5	0.3	0.9	2.4	5.7	6.7	A	A	5.9	5.6	5.6	5.4	5.4	5.4	5.3	5.4	5.6	6.0	6.2	6.4	6.2	22	6.7	0.0	4.1	0	0
22	6.2	6.2	6.2	6.1	6.0	6.1	5.9	5.5	5.5	5.4	5.4	5.5	5.4	5.4	5.4	5.4	5.3	5.3	5.4	5.5	5.7	5.6	6.1	5.9	24	6.2	5.3	5.7	0	0
23	5.9	5.9	6.0	6.1	5.9	5.9	5.6	5.6	5.5	5.5	5.5	5.5	5.5	5.5	5.3	5.6	6.1	5.9	5.5	5.5	5.5	5.6	5.6	6.1	24	6.1	5.3	5.7	0	0
24	5.6	5.6	5.6	5.7	5.6	5.6	5.6	5.8	5.5	5.5	5.4	5.4	5.0	5.2	5.1	4.9	5.3	5.4	5.3	5.4	5.9	6.2	6.2	6.3	24	6.3	4.9	5.5	0	0
25	6.6	6.1	5.7	5.7	5.8	5.9	6.3	6.2	5.5	5.4	5.3	5.5	5.3	5.3	5.0	5.0	5.1	5.2	5.3	5.5	5.4	5.5	5.6	6.2	24	6.6	5.0	5.6	0	0
26	6.4	7.1	6.6	7.3	7.2	6.0	5.6	5.5	5.5	5.5	5.3	5.4	5.3	5.3	5.2	5.3	5.2	5.3	5.4	5.4	5.4	5.4	5.4	5.5	24	7.3	5.2	5.7	0	0
27	5.5	5.6	6.2	5.5	5.5	5.6	5.6	5.5	5.5	5.5	5.4	5.4	5.4	5.4	5.4	5.2	5.1	5.1	5.2	5.2	5.4	4.9	5.6	5.8	24	6.2	4.9	5.4	0	0
28	5.6	5.4	5.5	5.8	5.6	5.6	5.7	5.6	5.1	5.2	5.0	4.9	4.8	4.8	4.8	4.9	4.8	4.9	4.9	5.1	5.2	5.0	5.1	5.1	24	5.8	4.8	5.2	0	0
29	5.1	5.4	5.3	5.7	6.0	6.9	6.5	5.7	5.9	5.3	5.0	5.0	5.0	5.1	5.1	5.0	5.2	5.4	5.1	5.2	5.3	5.5	5.6	5.6	24	6.9	5.0	5.5	0	0
30	5.5	5.5	5.6	5.6	5.6	5.8	5.5	5.5	5.6	5.4	5.4	5.4	5.6	5.9	5.9	5.9	6.4	6.3	5.4	5.4	5.4	5.4	5.4	5.5	24	6.4	5.4	5.6	0	0
31	5.5	5.4	5.6	5.5	5.5	5.5	6.2	5.8	5.6	5.5	5.4	5.4	5.4	5.4	5.4	5.3	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.9	24	6.2	5.3	5.5	0	0
Count	31	31	31	31	31	31	31	30	30	29	29	31	31	31	31	31	31	31	31	31	31	31	31	31	738	31	29	31		
Maximum	13.0	11.6	9.4	19.0	15.3	14.7	20.1	12.2	7.8	12.6	12.0	10.1	11.8	12.7	8.4	6.4	6.8	6.3	6.3	18.6	13.3	12.8	11.8	13.1	24	20.1	6.3	11.9		
Minimum	0.0	0.1	0.2	0.5	0.3	0.5	0.5	0.9	1.1	0.6	0.5	0.5	0.4	0.5	0.4	0.2	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	20	1.8	0.0	0.3		
Average	5.6	5.8	5.8	6.5	6.3	6.2	6.7	5.9	5.4	5.4	5.3	5.3	5.4	5.2	5.0	4.8	4.7	4.7	4.7	5.2	5.3	5.5	5.4	5.6	24	9	4	5.5		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													20.1
													8.2
Data	1.6	4.9	5.2	5.4	5.5	5.7	6.1	6.4	7.2	9.0	13.2	20.1	5.5

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

SO2 - COURTICE
September 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>690	Days>275
1	6.2	6.2	6.1	6.2	6.1	5.8	5.9	6.2	5.9	6.2	5.8	5.6	5.2	5.5	5.4	5.5	5.4	5.7	5.5	6.0	5.8	5.6	5.4	5.5	24	6.2	5.2	5.8	0	0
2	5.4	5.5	5.4	5.5	5.4	5.4	5.5	5.5	6.0	5.5	5.4	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.5	5.8	6.0	7.2	7.6	6.9	24	7.6	5.4	5.7	0	0
3	6.2	6.1	5.9	5.9	6.3	6.7	7.8	6.0	5.4	5.9	5.5	5.4	5.4	5.4	5.3	5.3	5.2	5.3	5.2	5.4	5.5	5.9	6.7	7.4	24	7.8	5.2	5.9	0	0
4	7.4	6.9	6.9	6.9	7.4	7.2	6.8	6.6	6.1	5.5	5.9	5.3	5.4	5.3	5.3	5.3	5.3	5.3	5.3	5.4	5.4	5.5	5.4	5.6	24	7.4	5.3	6.0	0	0
5	5.9	5.5	5.6	5.5	5.6	6.1	5.8	5.5	5.4	5.5	5.4	5.8	5.4	5.3	5.3	5.2	5.2	5.2	5.3	5.2	5.3	5.4	5.5	5.5	24	6.1	5.2	5.5	0	0
6	5.4	5.4	5.4	5.3	5.4	5.5	5.6	5.5	5.5	5.4	5.4	5.4	5.8	5.5	5.5	5.5	5.4	5.3	5.1	5.2	5.1	5.0	5.5	5.7	24	5.8	5.0	5.4	0	0
7	5.7	5.4	5.7	5.7	5.5	5.7	5.8	5.6	5.3	5.2	5.0	4.9	5.1	5.5	5.0	5.1	5.0	4.9	4.8	5.5	5.6	5.7	5.7	5.8	24	5.8	4.8	5.4	0	0
8	5.8	5.6	5.8	5.9	6.0	6.0	5.6	5.6	5.6	5.2	5.2	4.9	5.2	5.4	5.3	5.1	4.9	5.4	6.1	5.7	5.8	5.5	5.4	5.3	24	6.1	4.9	5.5	0	0
9	5.3	5.4	5.2	5.2	5.2	5.0	5.2	5.2	5.4	5.1	5.1	5.1	5.3	5.5	5.3	5.8	5.2	5.3	5.6	5.5	5.5	5.5	5.5	5.7	24	5.8	5.0	5.3	0	0
10	6.0	5.9	5.9	5.5	5.5	6.1	6.1	5.5	5.5	5.4	5.5	5.4	5.3	6.1	6.4	5.8	6.1	6.5	5.4	5.4	5.4	5.4	5.5	5.4	24	6.5	5.3	5.7	0	0
11	5.4	5.4	5.4	5.5	5.4	5.4	5.4	5.5	5.6	5.5	5.6	5.6	5.6	5.5	5.6	5.5	5.4	5.8	5.4	5.4	5.2	4.9	5.1	5.1	24	5.8	4.9	5.4	0	0
12	5.2	5.7	5.5	5.6	5.8	5.6	5.5	5.7	5.7	5.5	5.6	5.4	5.2	5.1	5.4	5.2	4.9	5.0	5.6	6.5	7.0	7.0	6.5	5.8	24	7.0	4.9	5.7	0	0
13	5.7	5.6	5.4	5.4	5.2	5.2	5.5	5.4	5.7	5.8	5.8	5.8	5.6	5.4	5.3	5.1	5.1	5.2	5.2	5.5	5.3	5.6	6.2	7.5	24	7.5	5.1	5.6	0	0
14	8.0	7.5	6.7	7.3	7.4	8.5	8.9	7.3	6.3	5.7	5.5	5.3	5.3	5.4	5.4	5.3	5.2	5.2	5.0	5.5	5.6	5.8	5.5	5.5	24	8.9	5.0	6.2	0	0
15	5.5	5.6	5.6	6.1	7.0	7.0	8.3	7.5	6.7	6.0	6.4	6.9	5.9	5.5	5.5	5.4	5.5	5.5	5.5	5.5	5.6	6.1	5.9	5.8	24	8.3	5.4	6.1	0	0
16	5.8	5.7	5.9	6.1	7.5	7.2	6.9	6.7	6.0	5.7	5.5	5.4	5.3	5.5	5.5	5.6	5.3	5.4	5.5	5.7	10.0	12.5	11.5	10.1	24	12.5	5.3	6.8	0	0
17	10.3	12.0	12.1	14.5	15.8	18.4	11.3	9.4	8.2	7.2	6.8	6.1	5.8	6.0	5.9	5.7	5.7	5.7	5.9	6.3	6.8	7.0	7.5	8.5	24	18.4	5.7	8.7	0	0
18	11.7	11.8	10.0	9.1	8.3	8.0	7.4	7.2	7.4	7.7	7.4	7.1	6.3	5.8	5.6	5.5	5.5	5.8	6.0	7.2	8.4	8.7	6.9	6.7	24	11.8	5.5	7.6	0	0
19	6.5	6.1	6.0	5.9	6.0	5.5	5.8	6.0	9.5	9.3	6.7	5.9	5.7	5.7	5.8	6.2	6.1	6.3	6.5	6.4	6.1	5.7	5.7	6.2	24	9.5	5.5	6.3	0	0
20	6.6	6.2	6.1	6.8	8.1	8.5	8.3	6.2	5.8	5.5	5.5	5.4	5.4	5.4	5.4	5.4	5.4	5.5	5.6	5.6	5.6	5.5	5.5	5.6	24	8.5	5.4	6.0	0	0
21	5.6	5.5	5.8	5.6	5.5	5.5	5.6	5.6	5.8	5.8	5.7	5.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.5	5.6	5.7	5.7	5.7	24	5.8	5.4	5.6	0	0
22	5.7	5.7	5.7	5.8	5.7	5.7	5.6	5.5	5.6	5.4	5.6	5.7	5.6	5.6	5.3	5.3	5.1	5.3	5.5	5.6	6.2	6.1	6.5	6.5	24	6.5	5.1	5.7	0	0
23	5.9	5.8	5.9	5.9	5.9	5.8	6.0	5.7	5.6	5.6	5.5	5.5	C	C	C	4.0	5.0	4.4	4.1	2.0	0.7	0.5	27.7	20.3	21	27.7	0.5	6.6	0	0
24	16.2	8.6	13.8	17.3	12.7	0.8	1.6	2.7	2.5	8.1	5.2	9.8	2.5	2.3	6.1	4.5	0.7	1.4	2.4	3.9	2.9	2.0	1.8	0.6	24	17.3	0.6	5.4	0	0
25	0.5	7.2	15.6	13.3	15.5	12.3	5.4	2.7	2.4	1.0	0.7	0.7	0.7	0.7	0.6	0.5	0.5	0.5	2.6	1.0	2.2	18.7	2.8	4.1	24	18.7	0.5	4.7	0	0
26	3.4	1.5	1.7	1.3	2.1	7.0	10.5	3.5	3.6	3.1	1.9	1.0	0.7	0.9	0.7	0.8	0.6	0.4	0.5	1.5	1.0	1.2	2.9	24.1	24	24.1	0.4	3.2	0	0
27	51.0	28.2	21.3	13.6	24.9	21.3	3.7	3.7	3.7	3.0	2.6	2.1	1.6	1.4	1.3	1.3	1.4	2.1	16.0	20.4	10.5	10.8	2.1	4.8	24	51.0	1.3	10.5	0	0
28	9.3	16.4	10.7	6.3	40.7	27.4	7.5	8.9	4.7	2.3	2.2	2.0	1.6	1.4	1.6	2.3	2.0	2.2	14.1	11.9	3.8	5.2	20.0	7.3	24	40.7	1.4	8.8	0	0
29	11.8	3.1	20.8	18.9	7.7	10.2	8.1	3.9	3.6	3.0	2.7	2.2	2.4	2.0	1.4	1.6	3.4	3.6	1.6	7.7	9.2	12.3	19.5	16.6	24	20.8	1.4	7.4	0	0
30	23.2	20.4	13.6	4.0	2.3	1.8	1.7	2.4	2.0	1.7	2.1	8.1	4.6	1.4	0.9	0.9	0.7	15.9	27.3	7.0	10.1	2.5	1.3	5.4	24	27.3	0.7	6.7	0	0
31																													0	0
Count	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	30	30	717	30	29	30		
Maximum	51.0	28.2	21.3	18.9	40.7	27.4	11.3	9.4	9.5	9.3	7.4	9.8	6.3	6.1	6.4	6.2	6.1	15.9	27.3	20.4	10.5	18.7	27.7	24.1	24	51.0	6.1	17.5		
Minimum	0.5	1.5	1.7	1.3	2.1	0.8	1.6	2.4	2.0	1.0	0.7	0.7	0.7	0.7	0.6	0.5	0.5	0.4	0.5	1.0	0.7	0.5	1.3	0.6	21	5.76	0.4	1.0		
Average	8.8	7.7	8.0	7.4	8.6	7.9	6.3	5.6	5.4	5.3	5.0	5.2	4.6	4.5	4.6	4.5	4.4	5.0	6.3	6.0	5.8	6.4	7.2	7.4	24	13	4	6.2		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													51.0
													10.5
Data	2.3	5.2	5.4	5.4	5.5	5.7	5.9	6.5	8.3	12.5	24.0	51.0	6.2

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

SO2 - Rundle Road
July 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>690	Days>275
1	0.8	0.8	0.8	0.7	0.8	0.9	0.8	0.9	0.9	0.8	0.8	0.8	0.6	0.8	0.9	0.8	0.8	0.9	0.8	0.9	0.9	0.9	0.9	0.9	24	0.9	0.6	0.8	0	0
2	0.8	0.9	0.8	0.9	0.9	1.4	1.2	0.8	0.8	1.4	1.2	2.4	3.0	2.2	1.5	1.2	0.8	0.9	0.9	0.9	1.0	0.7	0.6	0.4	24	3.0	0.4	1.2	0	0
3	0.5	0.4	0.4	0.4	0.4	0.5	0.5	1.7	6.5	1.2	1.0	C	C	C	C	6.7	5.0	4.7	4.1	3.7	3.8	3.3	2.5	3.1	20	6.7	0.4	2.5	0	0
4	2.5	2.7	2.5	2.3	1.7	1.9	1.7	2.0	1.4	1.5	4.3	6.0	3.9	3.3	2.6	1.9	2.2	2.2	2.0	1.1	0.6	0.7	1.0	0.7	24	6.0	0.6	2.2	0	0
5	0.5	0.4	0.7	0.3	0.5	0.4	0.2	0.3	0.2	0.2	1.2	0.6	0.9	2.0	5.0	4.0	3.0	1.6	1.6	1.3	0.7	0.9	0.6	0.8	24	5.0	0.2	1.2	0	0
6	0.6	0.0	0.3	0.2	0.7	0.4	0.4	1.3	2.4	7.1	7.7	3.2	2.7	2.7	2.0	2.2	2.4	2.5	2.0	2.0	2.3	2.3	2.4	2.3	24	7.7	0.0	2.2	0	0
7	2.1	1.9	2.0	1.5	1.5	1.3	1.7	1.8	1.5	1.1	1.3	1.5	1.9	2.0	1.9	1.9	2.1	2.0	2.1	1.4	1.9	1.8	2.0	1.9	24	2.1	1.1	1.8	0	0
8	1.4	1.5	1.4	1.6	1.7	1.8	1.7	1.9	1.9	1.8	1.6	1.8	2.0	2.0	2.0	1.9	2.2	1.8	1.6	2.1	2.1	2.0	1.5	1.5	24	2.2	1.4	1.8	0	0
9	1.6	1.4	1.3	1.6	1.3	1.2	1.3	1.1	1.0	1.1	2.8	8.1	8.2	8.0	8.1	8.0	7.9	8.1	7.9	7.8	7.6	7.6	7.5	7.7	24	8.2	1.0	4.9	0	0
10	7.9	7.8	8.1	8.2	8.3	8.2	8.1	7.7	7.6	8.1	8.2	8.1	8.2	10.3	9.8	8.5	8.0	7.8	8.0	8.2	7.8	7.6	7.8	8.0	24	10.3	7.6	8.2	0	0
11	7.9	7.6	8.0	8.1	7.8	7.8	7.7	7.9	8.1	8.2	8.1	9.7	9.4	10.1	8.4	8.3	8.3	8.6	8.4	7.8	8.0	7.9	7.9	7.9	24	10.1	7.6	8.2	0	0
12	7.5	8.0	7.9	8.2	8.2	8.0	8.1	1.3	3.6	0.6	0.6	0.2	0.9	2.3	4.2	2.7	1.9	1.7	1.6	1.5	0.9	0.9	0.8	0.8	24	8.2	0.2	3.4	0	0
13	0.6	0.8	0.9	1.0	1.4	1.5	1.4	1.0	0.8	1.0	0.9	1.0	0.4	1.0	1.1	1.0	1.2	1.2	0.7	1.0	1.2	1.2	0.9	0.8	24	1.5	0.4	1.0	0	0
14	0.7	0.2	0.6	0.6	0.7	0.4	0.3	0.6	0.8	1.0	1.3	1.5	0.8	0.9	0.8	0.9	1.1	3.1	0.9	0.8	0.9	0.8	1.2	1.0	24	3.1	0.2	0.9	0	0
15	0.8	1.1	1.1	0.9	1.1	0.5	0.9	1.1	1.1	1.4	1.4	3.8	4.6	2.1	1.8	2.7	2.5	1.7	1.5	1.4	1.3	1.0	0.7	1.1	24	4.6	0.5	1.6	0	0
16	1.0	0.7	1.0	1.2	1.0	1.0	1.2	2.0	1.7	1.4	1.2	0.9	1.2	1.2	1.7	1.3	1.3	1.6	1.4	1.1	0.6	0.3	0.7	0.7	24	2.0	0.3	1.1	0	0
17	0.5	0.4	0.3	0.3	0.6	0.5	0.4	0.5	0.7	1.1	1.3	0.9	1.7	1.3	1.1	3.0	3.0	1.3	2.0	1.3	0.4	0.4	0.0	0.1	24	3.0	0.0	1.0	0	0
18	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.9	1.1	0.5	0.4	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	24	1.1	0.0	0.2	0	0
19	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.2	1.1	0.9	3.9	4.7	1.6	1.1	1.3	0.7	0.7	0.2	0.2	0.7	0.5	0.8	24	4.7	0.0	0.8	0	0
20	0.6	0.8	0.9	0.7	0.5	0.9	0.8	0.6	0.6	0.8	0.5	1.1	0.9	1.1	0.9	1.3	0.9	1.0	0.8	0.9	0.9	0.8	0.6	0.5	24	1.3	0.5	0.8	0	0
21	0.6	0.7	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.8	0.8	1.3	1.7	2.8	2.8	2.5	1.6	1.6	1.6	1.1	0.9	0.6	0.9	0.6	24	2.8	0.6	1.2	0	0
22	1.1	1.0	1.0	1.1	0.9	1.1	1.0	1.4	1.3	1.2	1.3	2.0	2.9	3.7	3.2	2.7	3.1	3.0	3.0	2.0	2.1	2.1	1.9	2.3	24	3.7	0.9	1.9	0	0
23	2.1	2.1	3.0	2.5	2.2	2.2	2.1	2.1	1.8	2.0	2.0	2.3	1.6	1.8	1.6	1.6	2.1	1.9	1.2	1.3	1.5	1.3	1.4	0.6	24	3.0	0.6	1.8	0	0
24	1.3	0.9	1.0	0.7	1.1	1.1	1.1	0.9	0.7	1.2	0.4	1.0	0.8	1.3	1.4	1.2	0.5	1.1	1.8	2.0	1.9	1.6	1.4	1.2	24	2.0	0.4	1.2	0	0
25	1.0	1.3	1.4	1.3	1.0	1.2	1.0	0.8	1.5	3.2	2.6	2.1	2.5	4.1	4.3	2.8	2.1	1.9	2.2	2.4	2.2	2.3	1.2	1.6	24	4.3	0.8	2.0	0	0
26	1.4	1.8	1.6	1.4	1.6	1.5	1.9	2.0	3.2	3.6	4.0	5.5	7.3	9.9	5.6	3.6	3.6	3.2	2.8	2.9	2.9	2.8	2.6	2.5	24	9.9	1.4	3.3	0	0
27	2.8	2.8	3.0	3.1	2.8	2.9	3.0	3.0	2.4	2.5	2.3	2.6	2.3	2.5	2.9	3.6	3.3	3.1	3.1	3.1	3.1	2.9	2.9	2.5	24	3.6	2.3	2.9	0	0
28	2.9	2.3	2.6	2.8	2.8	2.8	2.7	2.7	2.4	1.3	2.3	1.8	2.1	2.5	2.3	2.5	1.9	1.8	2.2	1.7	1.9	2.4	2.1	1.1	24	2.9	1.1	2.2	0	0
29	1.6	1.5	1.9	1.9	1.8	1.9	1.8	1.9	2.0	1.6	2.0	2.3	2.5	3.2	4.6	4.4	4.4	5.0	3.4	2.7	2.2	2.1	2.3	2.5	24	5.0	1.5	2.6	0	0
30	2.2	1.9	1.9	1.7	1.8	1.4	C	C	C	C	1.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20	2.2	0.0	0.7	0	0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
Count	31	31	31	31	31	31	30	30	30	30	31	30	30	30	30	31	31	31	31	31	31	31	31	31	736	31	30	31		
Maximum	7.9	8.0	8.1	8.2	8.3	8.2	8.1	7.9	8.1	8.2	8.2	9.7	9.4	10.3	9.8	8.5	8.3	8.6	8.4	8.2	8.0	7.9	7.9	8.0	24	10.3	7.9	8.4		
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	20	0.0	0.0	0.0		
Average	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.9	1.9	2.1	2.5	2.7	3.0	2.8	2.7	2.5	2.5	2.3	2.1	2.0	1.9	1.8	1.8	24	4	1	2.1		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													10.3
													8.2
Data	0.2	0.7	0.9	1.1	1.4	1.8	2.1	2.8	6.2	8.0	8.5	10.3	2.1

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

SO2 - Rundle Road
August 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	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	0.0	0.0	0.0	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
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.8	0.2	0.1	0.3	1.1	0.4	0.1	0.1	0.1	0.1	24	1.4	0.0	0.2	0	0
7	0.1	0.1	0.1	0.1	0.1	0.5	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.5	0.0	0.1	0	0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.6	0.1	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	24	0.6	0.0	0.1	0	0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.1	12.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	12.4	0.0	0.6	0	0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.7	0.5	0.0	3.7	13.5	1.8	3.0	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.0	24	13.5	0.0	1.1	0	0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	2.8	0.6	0.0	0.0	0.8	1.6	2.3	5.6	2.8	0.8	0.2	0.1	0.1	0.2	0.5	24	5.6	0.0	0.8	0	0
12	1.7	0.3	0.1	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	24	1.7	0.0	0.2	0	0
13	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.5	0.5	0.2	0.0	0.1	24	0.5	0.0	0.1	0	0
14	0.2	0.0	0.0	0.0	0.0	0.0	0.4	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	24	1.0	0.0	0.1	0	0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0	0.3	0.0	0.0	1.3	C	C	1.1	2.0	2.1	1.8	2.0	1.8	2.0	1.9	2.0	2.2	22	2.2	0.0	1.0	0	0
16	2.5	2.6	2.4	2.3	2.9	4.4	4.5	4.5	4.1	6.4	7.3	10.5	4.7	3.0	2.7	2.3	2.3	2.5	2.8	2.7	2.3	2.3	2.2	2.1	24	10.5	2.1	3.6	0	0
17	2.2	2.0	1.9	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.6	1.8	1.9	2.3	2.2	2.0	1.9	1.8	1.9	1.6	1.6	1.6	24	2.3	1.6	1.8	0	0
18	1.6	1.6	1.7	1.6	1.6	1.7	1.6	1.7	1.6	1.6	1.5	1.6	2.0	1.6	2.0	1.7	2.2	2.1	2.3	2.3	2.3	2.2	2.0	1.8	24	2.3	1.5	1.8	0	0
19	1.8	1.8	2.0	1.9	1.8	1.7	2.2	2.0	1.9	1.9	1.5	1.7	1.6	2.1	1.8	1.9	1.9	2.2	2.1	2.0	2.2	1.9	2.1	2.1	24	2.2	1.5	1.9	0	0
20	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.1	2.1	2.2	2.2	2.1	2.3	2.1	2.4	2.4	2.2	2.2	2.0	1.7	24	2.4	1.7	2.2	0	0
21	1.6	1.7	1.8	1.7	1.9	2.1	1.9	2.0	2.1	2.2	A	A	1.7	1.6	1.7	1.7	2.2	2.2	2.1	1.9	1.7	1.6	1.5	1.4	22	2.2	1.4	1.8	0	0
22	1.2	1.1	1.3	1.5	1.1	1.1	1.4	1.2	1.3	1.7	1.3	1.4	1.1	1.1	1.7	3.1	1.7	1.6	2.1	1.7	1.5	1.6	1.3	1.1	24	3.1	1.1	1.5	0	0
23	1.1	1.2	1.1	1.1	1.1	1.1	1.2	1.0	1.0	1.1	1.1	0.9	1.1	1.1	1.0	1.1	1.0	1.4	1.0	1.1	1.0	1.3	1.5	1.3	24	1.5	0.9	1.1	0	0
24	1.2	1.1	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.2	1.0	2.7	23.2	18.2	3.9	2.0	1.5	1.2	1.3	1.2	1.1	1.1	1.4	1.4	24	23.2	1.0	3.0	0	0
25	1.1	1.1	1.2	1.2	1.1	1.1	1.7	1.5	1.9	2.1	1.7	1.7	1.7	1.6	2.0	1.7	1.8	2.0	1.8	1.8	1.6	1.1	1.1	1.4	24	2.1	1.1	1.5	0	0
26	1.2	1.1	1.4	1.2	1.3	1.4	1.9	1.7	2.4	2.4	2.2	2.1	2.0	1.9	1.9	1.5	1.6	1.5	1.5	1.6	1.7	1.8	1.6	1.3	24	2.4	1.1	1.7	0	0
27	1.5	1.5	1.1	1.2	1.1	1.1	1.3	1.2	1.3	6.4	4.1	7.4	3.1	1.7	1.6	1.3	1.2	1.1	1.1	1.1	1.0	1.1	1.0	1.1	24	7.4	1.0	1.9	0	0
28	1.1	1.4	1.3	1.1	1.1	1.1	1.2	1.1	1.0	1.0	1.0	1.0	0.9	1.0	1.0	0.9	1.1	1.3	1.5	2.1	2.5	2.1	1.8	1.8	24	2.5	0.9	1.3	0	0
29	2.0	1.9	1.9	1.6	1.2	1.1	1.2	1.1	1.3	7.5	2.5	1.9	2.0	1.8	2.6	12.1	5.8	3.0	1.7	1.4	1.2	1.1	1.3	1.2	24	12.1	1.1	2.5	0	0
30	1.1	1.3	1.2	1.5	3.0	2.6	2.6	2.9	2.8	2.6	2.2	2.4	4.3	9.8	4.1	2.5	2.8	2.5	1.7	1.7	1.5	1.5	M	M	22	9.8	1.1	2.7	0	0
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		0	0
Count	30	30	30	30	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30	30	30	30	29	29	714	30	29	30		
Maximum	2.5	2.6	2.4	2.3	3.0	4.4	4.5	4.5	4.1	7.5	7.3	10.5	23.2	18.2	4.1	12.1	5.8	3.0	2.8	2.7	2.5	2.3	2.2	2.2	24	23.2	2.2	5.7		
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	0.0			
Average	0.9	0.8	0.8	0.8	0.8	0.9	1.0	1.0	1.0	1.6	1.2	1.4	2.4	2.3	1.2	1.5	1.3	1.1	1.0	1.0	1.0	0.9	0.9	0.8	23	4	1	1.2		

																														Maximum
Percentiles		10		20		30		40		50		60		70		80		90		95		99		100						23.2
																														3.6
Data		0.0		0.0		0.0		0.1		1.1		1.3		1.6		1.9		2.3		2.8		7.5		23.2						1.2

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

SO2 - Rundle Road
September 2014
(ug/m3)

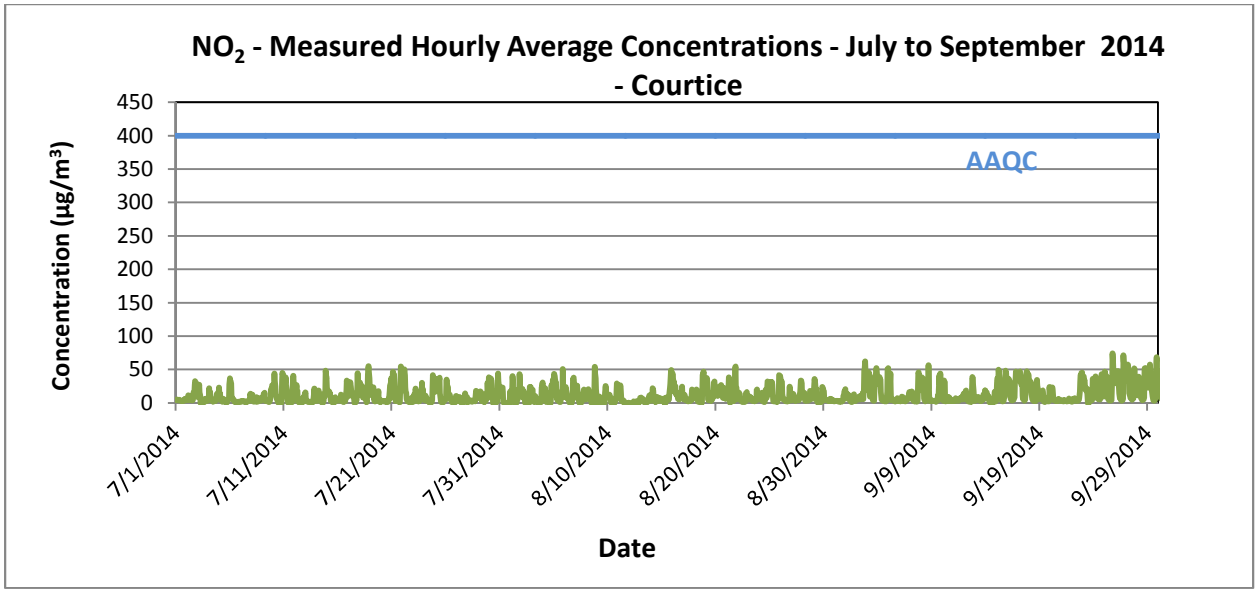
Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		0	0
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		0	0
3	M	M	M	M	M	M	M	M	M	M	M	24.7	19.5	19.0	15.3	13.7	13.5	11.1	10.0	10.1	9.0	8.2	7.5	6.9	13	24.7	6.9		0	0
4	6.3	5.9	5.3	5.2	4.9	4.8	4.9	5.3	25.8	9.2	8.5	7.4	6.8	6.6	5.7	5.0	4.6	4.5	4.2	4.0	4.0	3.7	3.5	3.3	24	25.8	3.3	6.2	0	0
5	3.3	3.3	3.1	3.4	3.0	3.0	3.1	3.3	3.3	10.4	3.2	2.9	2.8	2.9	2.8	2.8	2.8	2.7	2.5	2.5	2.4	2.3	2.3	2.3	24	10.4	2.3	3.2	0	0
6	2.4	2.3	2.3	2.3	2.6	2.3	2.3	2.3	2.3	2.2	7.1	2.5	2.3	2.8	3.0	3.0	2.8	2.4	2.3	2.2	2.1	2.1	2.0	2.2	24	7.1	2.0	2.6	0	0
7	2.1	1.9	1.7	2.0	1.7	1.7	1.7	1.7	2.2	3.7	4.3	5.3	2.3	2.2	2.0	1.8	1.8	1.9	1.7	1.6	1.6	1.6	1.6	1.7	24	5.3	1.6	2.2	0	0
8	1.6	1.7	1.6	1.7	1.6	1.7	2.0	2.1	3.2	8.6	8.7	3.3	4.5	2.6	2.3	2.3	2.3	2.2	2.1	2.2	1.9	2.3	1.9	1.7	24	8.7	1.6	2.8	0	0
9	2.1	1.6	1.6	1.7	1.6	1.7	1.9	2.0	2.1	2.3	1.9	2.1	2.2	4.5	2.3	2.3	2.2	2.0	1.9	1.8	2.0	1.8	1.7	1.6	24	4.5	1.6	2.0	0	0
10	2.1	2.1	1.9	1.9	1.8	1.9	2.3	2.2	2.1	2.1	2.3	3.5	6.8	6.6	6.5	3.1	2.7	2.9	2.4	2.4	2.4	2.3	2.5	2.3	24	6.8	1.8	2.9	0	0
11	2.3	2.4	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.2	2.1	2.0	1.8	1.9	1.8	3.1	1.8	1.7	3.2	2.7	1.7	1.6	1.7	1.7	24	3.2	1.6	2.2	0	0
12	1.6	1.7	1.6	1.5	1.2	1.6	1.6	1.7	1.7	1.6	1.6	1.4	1.3	1.5	1.5	1.9	3.1	2.2	1.7	1.7	1.6	1.7	1.7	1.6	24	3.1	1.2	1.7	0	0
13	1.6	1.6	1.8	1.7	1.7	1.6	1.6	1.7	1.5	1.5	1.6	3.4	1.9	1.6	1.6	1.6	1.7	2.8	1.7	1.6	1.6	1.5	1.3	1.5	24	3.4	1.3	1.7	0	0
14	1.4	1.2	1.4	1.1	1.1	1.4	1.2	1.4	2.1	9.2	2.4	2.3	2.3	2.0	2.1	2.3	2.2	2.3	2.7	1.8	1.7	1.6	1.7	1.7	24	9.2	1.1	2.1	0	0
15	1.7	2.2	1.9	1.7	1.7	1.5	2.1	3.6	5.8	6.3	11.5	16.2	4.6	2.8	2.3	2.3	2.1	2.1	2.2	3.0	1.9	2.1	2.3	2.0	24	16.2	1.5	3.6	0	0
16	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	2.3	1.6	1.6	1.6	24	2.3	1.5	1.6	0	0
17	1.6	1.6	1.7	1.6	1.6	1.7	1.7	1.8	2.1	2.6	2.3	2.4	2.1	5.6	6.4	3.3	3.5	3.4	2.7	1.8	1.7	2.4	1.7	1.6	24	6.4	1.6	2.5	0	0
18	1.6	1.7	1.6	1.6	1.6	1.6	1.7	1.6	1.7	1.6	1.6	1.6	1.4	1.9	1.5	1.8	1.8	2.7	1.7	1.6	1.6	2.3	3.8	3.2	24	3.8	1.4	1.9	0	0
19	3.0	2.6	2.1	1.7	1.7	1.9	2.1	2.4	2.6	3.1	3.0	9.5	6.3	4.6	5.5	4.4	4.1	3.6	3.1	3.5	4.4	4.4	3.1	2.5	24	9.5	1.7	3.6	0	0
20	2.0	1.7	1.6	1.7	1.6	1.6	1.9	2.1	2.3	2.4	2.6	2.8	2.9	2.9	2.9	2.9	2.9	2.6	2.3	2.2	2.3	2.2	2.2	2.3	24	2.9	1.6	2.3	0	0
21	2.7	1.7	1.8	2.3	2.3	2.3	2.3	2.3	2.2	2.4	2.3	2.8	2.5	2.4	2.4	2.2	2.1	2.2	2.1	2.1	2.1	2.0	1.8	1.6	24	2.8	1.6	2.2	0	0
22	1.7	2.3	1.6	1.6	1.7	1.6	1.6	1.5	1.5	1.6	1.7	3.3	3.0	2.8	1.7	1.5	1.6	1.6	1.6	1.6	1.5	1.6	1.4	1.6	24	3.3	1.4	1.8	0	0
23	1.7	1.7	2.8	2.3	1.6	1.4	C	C	C	C	C	C	6.4	5.4	5.0	5.7	6.4	5.5	4.7	3.6	3.1	2.7	2.4	2.5	18	6.4	1.4	3.6	0	0
24	2.5	2.5	2.5	2.8	2.4	2.4	2.4	2.5	2.5	3.2	6.3	14.3	17.8	9.5	5.9	4.9	3.3	3.1	3.0	2.5	2.5	2.4	2.5	2.5	24	17.8	2.4	4.4	0	0
25	2.4	2.5	2.7	2.5	2.7	2.5	2.4	2.6	2.8	2.5	4.5	3.1	7.0	33.8	13.8	5.2	3.6	3.1	2.9	2.5	2.4	2.6	2.6	2.5	24	33.8	2.4	4.8	0	0
26	2.5	2.5	2.4	2.5	2.5	2.8	2.7	3.1	3.5	3.8	3.4	3.3	3.8	3.4	3.4	3.0	3.0	2.6	2.5	2.5	2.7	2.9	2.6	2.5	24	3.8	2.4	2.9	0	0
27	2.5	2.5	2.5	3.0	2.7	2.5	2.4	2.8	2.7	2.9	2.9	3.0	3.0	3.0	3.0	3.1	3.4	3.2	2.9	3.1	2.6	2.8	2.6	2.9	24	3.4	2.4	2.8	0	0
28	2.7	2.6	2.6	2.4	2.5	2.5	2.5	2.9	2.8	3.0	3.4	3.8	3.8	4.0	4.5	4.9	3.8	3.2	3.1	3.1	3.1	3.0	3.1	3.1	24	4.9	2.4	3.2	0	0
29	3.0	3.0	3.1	3.1	3.0	3.0	3.1	3.1	3.3	3.4	3.2	3.3	3.4	3.4	4.1	4.2	4.4	4.2	3.9	3.2	3.2	3.1	3.1	3.2	24	4.4	3.0	3.4	0	0
30	3.1	3.4	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.1	3.3	9.3	12.0	11.4	7.9	3.7	3.4	3.4	3.1	3.2	3.1	3.1	24	12.0	3.1	4.4	0	0
31																													0	0
Count	27	27	27	27	27	27	26	26	26	26	26	27	28	28	28	28	28	28	28	28	28	28	28	28	655	28	26	27		
Maximum	6.3	5.9	5.3	5.2	4.9	4.8	4.9	5.3	25.8	10.4	11.5	24.7	19.5	33.8	15.3	13.7	13.5	11.1	10.0	10.1	9.0	8.2	7.5	6.9	24	33.8	4.8	11.4		
Minimum	1.4	1.2	1.4	1.1	1.1	1.4	1.2	1.4	1.5	1.5	1.5	1.4	1.3	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.3	1.5	0	0	1.1			
Average	2.3	2.3	2.2	2.2	2.1	2.1	2.3	2.4	3.4	3.7	3.7	5.0	4.6	5.4	4.4	3.8	3.5	3.1	2.9	2.7	2.6	2.6	2.5	2.4	22	8	2	2.9		

																														Maximum
Percentiles		10		20		30		40		50		60		70		80		90		95		99		100						33.8
																														6.2
Data		1.6		1.7		1.9		2.2		2.4		2.6		3.0		3.3		4.9		7.1		15.7		33.8						2.9

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



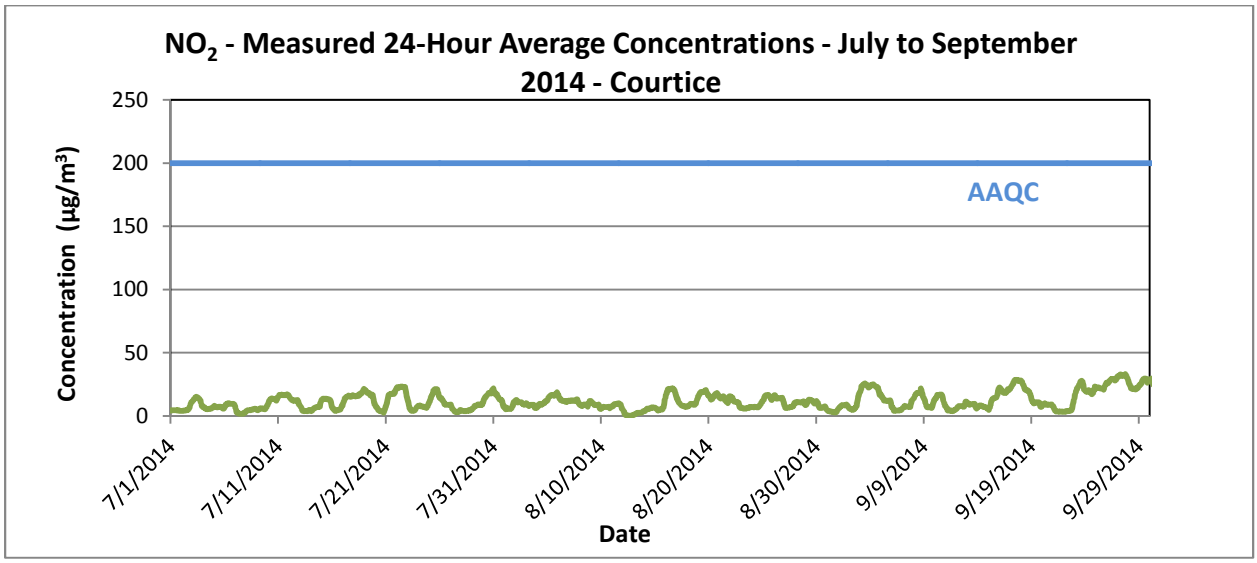
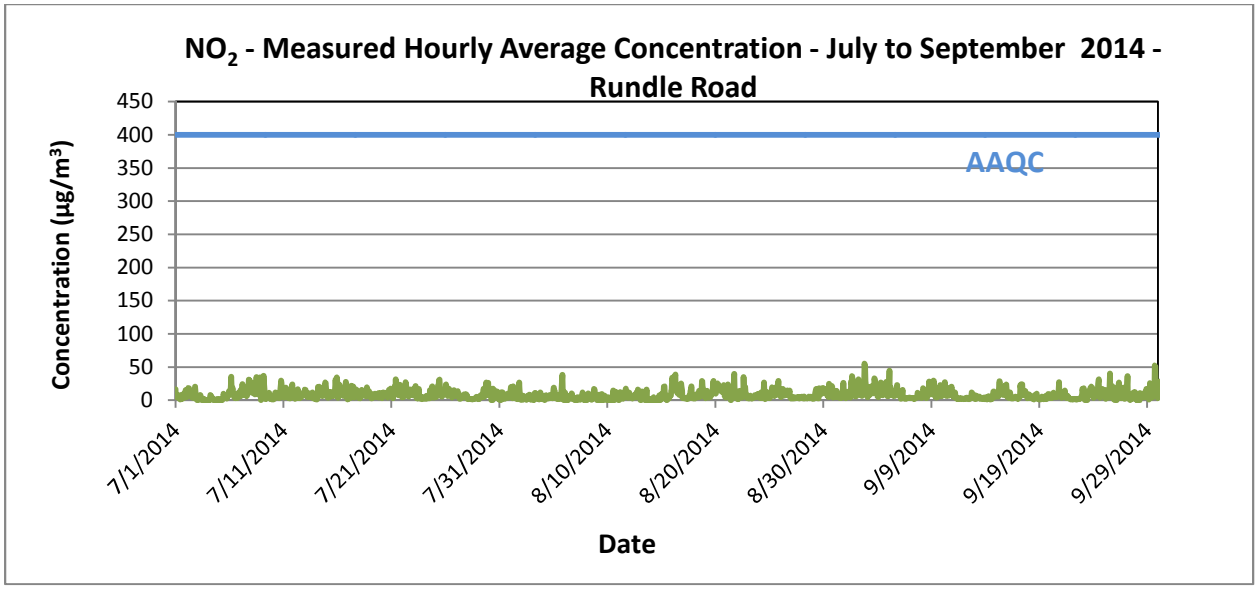
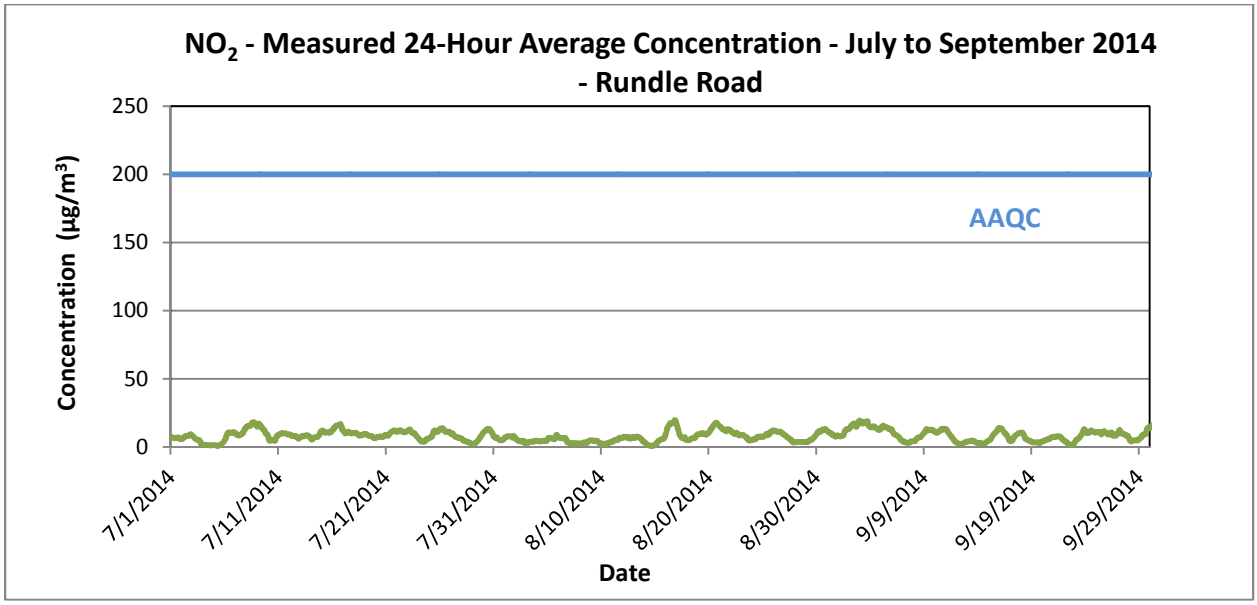


Figure B-2 Time History Plots of Measured Hourly Average and 24-Hour Average NO_2 Concentrations – Rundle Road Station





NO_2 - COURTICE
July 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	4.4	4.3	4.1	4.9	4.6	3.9	4.8	4.7	4.7	4.5	4.2	3.0	3.3	2.8	2.6	2.6	3.1	2.8	2.9	3.4	5.1	5.0	6.1	4.5	24	6.1	2.6	4.0	0	0
2	3.8	3.9	3.9	4.5	4.5	11.5	5.1	4.9	4.9	6.1	5.8	6.5	4.7	3.9	3.8	4.9	15.3	12.0	18.0	27.0	32.6	30.5	30.2	16.6	24	32.6	3.8	11.0	0	0
3	13.7	9.0	9.2	13.2	21.6	27.1	16.2	11.0	C	C	3.7	0.7	1.1	0.5	0.6	0.3	4.4	5.8	4.9	6.3	4.6	3.0	2.7	3.9	22	27.1	0.3	7.4	0	0
4	4.8	4.0	8.2	21.8	14.9	16.0	6.8	4.6	4.0	3.4	2.1	2.7	1.7	2.1	2.5	4.7	5.8	2.8	4.2	5.9	13.2	11.3	6.2	10.1	24	21.8	1.7	6.8	0	0
5	12.2	22.7	13.5	14.4	7.2	6.1	6.0	2.5	1.8	3.5	5.3	6.0	3.3	4.0	3.2	1.5	1.0	0.1	0.6	1.7	3.4	3.5	6.0	8.4	24	22.7	0.1	5.7	0	0
6	28.3	36.7	33.3	32.1	28.0	9.9	6.8	5.6	5.7	5.3	4.7	2.9	1.3	1.3	0.8	1.3	0.7	1.0	1.0	0.9	1.6	1.8	1.9	1.7	24	36.7	0.7	8.9	0	0
7	1.3	1.9	2.5	2.6	2.1	2.5	2.1	2.2	2.3	2.8	1.9	1.5	1.4	1.8	1.2	1.5	1.8	2.1	3.3	3.0	3.5	3.2	12.6	14.0	24	14.0	1.2	3.1	0	0
8	9.5	8.0	8.5	12.4	3.9	2.1	1.8	2.6	3.1	3.3	2.8	1.9	8.4	7.3	2.2	1.6	2.0	5.7	6.5	5.7	6.7	6.5	3.4	6.9	24	12.4	1.6	5.1	0	0
9	5.5	5.0	4.0	9.0	12.2	13.0	15.3	3.7	3.3	3.6	2.6	4.3	4.7	3.4	2.0	1.1	1.1	1.1	4.3	6.8	18.3	21.0	12.4	26.0	24	26.0	1.1	7.7	0	0
10	24.0	22.3	23.8	16.0	44.1	33.7	24.7	12.5	11.5	6.9	5.0	3.1	1.1	0.5	0.3	0.2	0.1	0.0	0.7	0.0	0.0	35.7	44.9	40.7	24	44.9	0.0	14.7	0	0
11	36.3	32.4	33.4	32.8	30.0	38.3	28.7	19.9	12.6	4.1	2.4	0.1	1.9	1.1	0.0	0.0	0.0	0.0	0.0	0.8	16.5	27.1	40.4	32.5	24	40.4	0.0	16.3	0	0
12	25.1	21.7	15.9	18.8	18.4	26.7	20.3	18.3	3.0	1.6	2.8	1.5	0.4	0.0	0.2	0.9	4.8	0.7	0.7	2.9	8.1	8.8	2.3	8.7	24	26.7	0.0	8.9	0	0
13	12.6	15.7	7.5	2.6	3.5	3.2	2.0	1.4	1.1	1.3	1.6	1.6	1.8	1.0	0.4	0.4	0.1	0.4	1.7	6.0	16.1	21.6	5.4	4.3	24	21.6	0.1	4.7	0	0
14	9.6	3.5	2.7	5.7	11.6	11.8	18.5	6.2	13.4	5.3	6.7	4.9	1.4	7.7	4.2	2.1	0.3	2.3	5.6	13.0	9.8	18.4	48.4	39.5	24	48.4	0.3	10.5	0	0
15	35.4	23.4	17.5	13.6	15.4	12.2	17.0	11.9	13.9	3.7	3.7	2.7	3.5	1.0	1.3	1.5	1.2	0.5	6.3	8.2	5.6	3.2	3.1	3.9	24	35.4	0.5	8.7	0	0
16	5.3	4.3	3.7	4.5	4.3	4.1	3.1	5.0	12.5	10.4	6.1	4.4	2.9	1.2	3.5	7.4	6.4	2.4	5.0	7.5	18.3	33.2	22.9	9.3	24	33.2	1.2	7.8	0	0
17	28.0	30.3	25.1	26.2	25.1	30.8	23.6	18.1	11.8	10.8	9.7	9.9	14.5	5.4	0.3	0.0	0.8	1.1	4.3	4.7	24.4	44.4	25.2	18.8	24	44.4	0.0	16.4	0	0
18	12.3	26.2	30.4	23.0	26.6	25.3	24.8	24.8	17.9	8.0	9.9	8.3	17.3	22.4	14.4	7.3	2.7	1.0	1.8	19.5	42.7	55.0	47.1	36.7	24	55.0	1.0	21.1	0	0
19	24.1	14.2	16.5	15.4	11.1	12.3	13.7	17.8	23.1	9.7	3.7	7.3	2.1	2.6	2.8	3.5	3.2	12.4	7.5	17.7	4.3	2.2	1.4	3.0	24	24.1	1.4	9.7	0	0
20	1.9	2.5	3.8	2.4	2.7	2.8	2.3	2.7	2.5	2.6	1.7	2.0	1.4	2.0	1.7	1.1	1.1	1.8	6.0	5.0	16.6	24.5	28.4	27.4	24	28.4	1.1	6.1	0	0
21	36.8	18.4	16.8	46.2	46.1	43.2	42.1	27.5	6.0	7.6	2.8	2.9	3.5	4.7	6.0	4.0	2.1	1.5	1.3	0.9	37.1	54.5	46.8	50.9	24	54.5	0.9	21.2	0	0
22	40.2	29.1	38.3	36.8	45.2	50.4	41.2	23.8	16.9	13.6	6.8	3.3	2.2	3.3	1.7	1.7	2.7	1.3	0.9	0.3	1.7	2.1	7.9	1.7	24	50.4	0.3	15.5	0	0
23	1.5	1.8	2.9	12.8	4.9	3.6	21.2	7.1	3.7	4.0	4.8	3.5	2.2	4.4	2.8	3.0	3.2	4.4	6.1	11.2	30.0	16.9	20.5	7.2	24	30.0	1.5	7.7	0	0
24	5.2	6.8	4.6	6.9	10.7	8.8	7.2	3.2	4.7	2.6	2.8	1.9	2.0	0.6	0.5	0.3	0.6	0.8	2.2	5.2	41.4	30.5	37.7	29.3	24	41.4	0.3	9.0	0	0
25	30.1	16.7	21.6	35.7	34.8	30.7	31.3	18.2	26.2	19.6	32.9	37.7	14.6	6.9	3.0	1.2	0.7	0.3	0.7	0.7	0.9	2.1	4.0	6.5	24	37.7	0.3	15.7	0	0
26	6.0	5.3	25.2	34.9	16.2	24.6	13.8	13.9	14.1	12.9	11.8	6.5	5.3	4.6	1.9	0.9	0.6	0.3	0.9	0.4	0.1	0.4	2.2	7.3	24	34.9	0.1	8.8	0	0
27	10.2	6.1	2.8	6.6	4.1	2.6	8.3	8.8	2.5	1.6	1.1	0.9	1.5	0.5	0.7	0.1	0.1	0.6	3.7	12.1	14.0	9.6	7.7	2.1	24	14.0	0.1	4.5	0	0
28	8.7	4.5	1.0	2.1	2.4	3.7	3.9	2.9	3.5	3.8	1.7	1.9	2.4	2.3	3.5	3.3	2.9	2.7	2.4	7.1	18.1	11.1	13.1	15.0	24	18.1	1.0	5.2	0	0
29	10.1	7.0	8.0	9.9	16.6	14.8	17.3	12.4	7.3	2.8	2.9	4.6	9.4	13.0	4.1	1.0	1.6	3.5	4.3	9.0	6.6	12.4	29.8	11.0	24	29.8	1.0	9.1	0	0
30	7.9	38.1	35.6	36.5	32.6	36.6	32.9	15.9	12.1	18.0	C	C	C	C	C	3.4	0.5	2.1	1.1	1.8	26.5	43.7	32.6	27.5	19	43.7	0.5	21.3	0	0
31	15.7	10.4	19.5	21.1	20.7	20.1	23.4	22.9	15.9	1.5	2.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.3	3.0	24	23.4	0.0	7.4	0	0
Count	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	31	31	31	31	31	31	31	31	31	737	31	30	31		
Maximum	40.2	38.1	38.3	46.2	46.1	50.4	42.1	27.5	26.2	19.6	32.9	37.7	17.3	22.4	14.4	7.4	15.3	12.4	18.0	27.0	42.7	55.0	48.4	50.9	24	55.0	7.4	32.4		
Minimum	1.3	1.8	1.0	2.1	2.1	2.1	1.8	1.4	1.1	1.3	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.7	19	6.1	0.0	0.8		
Average	15.2	14.1	14.3	17.0	17.0	17.2	15.7	10.9	8.9	6.2	5.2	4.6	4.0	3.7	2.4	2.0	2.3	2.4	3.5	6.3	13.8	17.5	17.9	15.4	24	32	1	10.0		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													55.0
													21.3
Data	0.9	1.8	2.7	3.6	4.8	6.9	11.8	17.3	27.7	35.7	46.2	55.0	10.0

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

NO_2 - COURTICE
August 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	17.1	7.2	0.8	9.3	4.0	39.9	33.9	7.9	3.1	4.9	1.0	0.0	0.0	0.0	0.0	3.1	4.3	10.4	19.9	11.9	19.3	42.9	21.8	11.9	24	42.9	0.0	11.4	0	0
2	14.6	15.6	9.3	20.8	7.8	8.1	17.2	12.7	8.3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.1	23.6	22.0	23.7	21.2	24	23.7	0.0	9.2	0	0
3	20.2	19.5	19.7	4.8	1.9	3.9	1.8	2.9	9.8	8.6	6.4	3.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	5.1	22.5	24.2	24	24.2	0.0	6.5	0	0
4	30.3	19.0	12.5	15.9	19.7	21.8	21.7	6.0	3.3	1.4	3.5	4.9	4.4	1.9	14.4	3.7	5.2	0.1	0.0	12.1	26.5	11.7	16.5	34.1	24	34.1	0.0	12.1	0	0
5	34.8	13.3	43.3	39.4	35.5	29.3	29.3	18.4	7.0	4.1	10.9	5.6	4.7	2.4	1.5	1.1	1.3	6.3	13.6	17.0	18.1	50.5	26.1	12.6	24	50.5	1.1	17.7	0	0
6	9.2	15.4	9.6	23.9	18.2	18.7	12.4	7.2	6.5	6.9	4.7	2.5	0.3	0.3	0.2	0.0	0.0	0.0	5.2	16.5	35.8	37.5	31.5	20.0	24	37.5	0.0	11.8	0	0
7	17.6	14.9	9.1	12.8	24.9	25.5	18.0	8.5	4.5	2.9	0.0	1.3	0.9	2.6	1.3	0.9	7.7	8.6	10.5	16.7	19.7	12.0	7.4	7.1	24	25.5	0.0	9.8	0	0
8	5.3	4.9	7.2	9.7	14.6	16.0	20.6	11.9	9.7	12.2	8.7	3.8	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.5	54.1	44.7	36.7	20.5	24	54.1	0.0	11.8	0	0
9	7.5	2.2	6.5	1.0	1.6	6.8	4.9	9.4	4.3	1.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.1	25.3	18.4	14.7	12.2	24	25.3	0.0	5.5	0	0
10	11.4	9.6	10.7	10.5	10.3	12.5	7.8	6.5	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	6.9	4.8	6.0	29.2	25.7	26.8	24	29.2	0.0	7.5	0	0
11	10.5	9.8	9.6	12.6	23.2	26.0	22.8	5.7	2.7	2.0	1.8	1.4	3.7	2.3	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	24	26.0	0.0	5.7	0	0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.6	0.5	1.3	2.4	0.9	24	2.6	0.0	0.4	0	0
13	1.9	7.3	3.0	8.2	5.2	4.5	2.2	4.0	5.5	3.9	2.9	0.7	0.8	1.3	0.7	1.8	0.2	0.8	1.6	3.3	6.5	8.9	11.5	4.5	24	11.5	0.2	3.8	0	0
14	3.2	3.3	7.4	9.7	13.2	21.9	17.5	8.5	3.3	2.2	1.9	2.5	1.1	3.7	6.2	9.0	5.8	3.2	4.6	4.8	6.7	3.1	7.0	4.4	24	21.9	1.1	6.4	0	0
15	4.1	3.7	4.6	5.0	2.3	3.9	6.4	C	C	C	7.0	7.9	5.1	4.0	4.2	5.3	6.2	5.3	13.4	22.3	28.1	46.5	49.3	42.7	21	49.3	2.3	13.2	0	0
16	31.5	43.9	27.6	17.7	32.4	22.9	22.5	24.7	13.7	15.8	12.2	13.3	9.4	6.8	5.5	5.6	4.9	7.5	9.0	10.8	16.5	14.6	24.4	12.3	24	43.9	4.9	16.9	0	0
17	11.9	5.5	6.1	10.5	12.0	4.5	4.2	5.6	3.8	6.0	4.5	3.2	2.4	4.1	3.6	3.1	3.5	3.3	3.0	5.8	19.9	18.1	15.7	16.5	24	19.9	2.4	7.4	0	0
18	12.3	6.4	9.9	13.7	12.1	17.6	19.9	12.7	10.9	7.5	1.9	1.8	2.0	1.2	0.9	0.9	0.6	0.7	0.5	18.3	40.6	44.0	46.6	33.4	24	46.6	0.5	13.2	0	0
19	36.7	26.6	29.6	28.4	29.4	37.3	36.3	19.0	5.7	4.0	6.8	4.5	6.0	4.4	3.4	5.0	3.8	5.4	15.6	7.9	11.0	30.1	31.8	25.5	24	37.3	3.4	17.3	0	0
20	12.5	20.2	23.8	16.4	17.9	10.4	20.0	23.0	13.7	15.0	14.3	17.0	25.0	26.7	15.2	10.8	10.2	7.6	22.9	13.2	8.1	8.0	6.7	6.2	24	26.7	6.2	15.2	0	0
21	7.8	7.8	9.2	21.8	11.8	11.7	38.4	32.2	24.8	A	2.1	2.7	4.5	3.9	3.1	2.7	3.8	3.3	9.6	4.2	51.4	54.7	24.8	21.5	23	54.7	2.1	15.6	0	0
22	5.6	6.9	5.9	5.6	11.0	15.1	13.1	6.5	6.1	5.9	2.9	1.7	1.3	1.5	1.3	1.4	1.2	1.4	1.6	3.1	12.2	15.7	16.1	6.5	24	16.1	1.2	6.2	0	0
23	9.0	9.5	5.0	7.5	7.1	9.5	6.5	7.6	4.7	5.3	3.4	2.5	4.5	4.4	2.5	2.4	3.4	6.1	4.4	3.6	18.9	20.1	10.3	10.2	24	20.1	2.4	7.0	0	0
24	9.1	9.6	8.7	5.6	5.0	4.8	8.6	15.1	3.6	3.0	2.3	2.0	1.4	1.2	1.2	7.4	19.5	13.3	7.4	16.8	32.1	30.9	31.3	25.0	24	32.1	1.2	11.0	0	0
25	21.1	17.6	14.0	21.0	31.0	30.1	31.1	26.6	7.3	2.0	2.7	2.7	2.3	2.3	2.2	1.8	1.5	2.0	2.0	6.6	6.8	13.2	41.4	41.2	24	41.4	1.5	13.8	0	0
26	40.8	34.9	30.1	30.9	31.6	13.6	6.5	5.1	5.3	5.5	4.1	3.3	3.1	2.6	2.5	2.3	2.7	2.4	2.8	2.9	3.3	24.1	15.7	10.4	24	40.8	2.3	11.9	0	0
27	5.6	3.5	3.7	8.2	11.8	13.8	13.0	7.1	5.1	3.4	3.6	3.1	4.7	7.4	6.8	4.1	3.7	5.7	4.4	8.7	13.6	16.4	33.2	33.4	24	33.4	3.1	9.3	0	0
28	28.7	9.4	9.5	8.8	9.7	12.5	15.3	8.9	3.8	4.9	3.2	3.5	4.1	6.0	3.7	5.6	3.9	5.4	12.5	18.0	17.5	13.4	11.8	7.5	24	28.7	3.2	9.5	0	0
29	6.0	9.8	15.8	19.3	28.8	35.8	28.6	21.5	20.8	5.0	3.4	0.9	0.9	1.2	1.0	1.0	1.0	1.0	1.0	1.2	1.9	12.1	23.6	21.0	24	35.8	0.9	11.0	0	0
30	19.0	17.8	8.7	5.3	5.5	4.3	4.7	4.3	4.2	3.5	3.5	3.3	3.2	2.9	5.4	5.9	6.0	3.8	5.6	2.9	4.0	3.7	2.9	3.9	24	19.0	2.9	5.6	0	0
31	2.2	3.0	2.9	2.6	2.9	2.5	2.7	3.1	2.8	2.3	1.7	1.9	1.9	2.9	3.0	1.7	1.8	1.9	3.3	4.1	4.3	10.6	11.4	17.0	24	17.0	1.7	3.9	0	0
Count	31	31	31	31	31	31	31	30	30	29	31	31	31	31	31	31	31	31	31	31	31	31	31	31	740	31	29	31		
Maximum	40.8	43.9	43.3	39.4	35.5	39.9	38.4	32.2	24.8	15.8	14.3	17.0	25.0	26.7	15.2	10.8	19.5	13.3	22.9	22.3	54.1	54.7	49.3	42.7	24	54.7	10.8	30.9		
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	0.3	21	2.6	0.0	0.0		
Average	14.4	12.2	11.7	13.1	14.3	15.7	15.7	11.1	6.9	4.8	3.9	3.3	3.2	3.2	2.9	2.8	3.3	3.5	5.9	8.7	17.2	21.4	20.8	17.3	24	31	1	9.9		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													54.7
													17.7
Data	0.2	1.9	3.1	4.3	5.9	8.4	12.1	17.1	25.0	32.1	44.5	54.7	9.9

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

NO_2 - COURTICE
September 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	19.4	20.6	12.3	13.9	12.2	6.4	13.2	10.2	12.1	9.4	6.9	4.6	2.2	1.9	1.9	1.2	1.1	2.2	5.9	8.9	12.6	3.0	3.3	3.8	24	20.6	1.1	7.9	0	0
2	2.7	3.8	4.0	4.5	4.9	7.3	8.1	7.3	10.0	6.5	5.1	5.6	8.9	6.0	11.7	10.7	15.2	5.7	18.9	47.1	48.7	62.1	49.8	37.7	24	62.1	2.7	16.3	0	0
3	28.4	21.8	18.8	24.8	31.5	45.6	40.3	20.5	9.6	14.2	16.6	12.7	12.3	14.2	4.1	3.5	3.1	3.1	18.1	33.9	41.7	34.1	52.2	46.5	24	52.2	3.1	23.0	0	0
4	37.6	33.3	27.9	33.5	34.5	38.8	34.8	34.2	15.9	6.1	4.4	3.8	4.6	4.1	3.3	4.7	2.5	2.3	2.4	2.2	2.1	3.1	16.4	51.2	24	51.2	2.1	16.8	0	0
5	51.9	18.0	11.0	5.0	20.5	43.8	18.9	4.6	4.0	6.1	5.6	3.5	3.8	3.2	2.5	2.1	2.1	2.9	4.1	4.4	4.3	7.1	3.6	2.7	24	51.9	2.1	9.8	0	0
6	3.4	2.7	3.1	2.1	6.0	3.4	6.8	9.6	9.1	5.4	4.3	2.7	2.7	3.9	2.2	2.3	3.1	4.2	7.7	5.8	5.1	7.3	10.1	16.1	24	16.1	2.1	5.4	0	0
7	13.5	10.7	13.3	11.9	9.6	17.0	13.7	5.6	4.3	2.8	2.1	2.5	2.3	2.1	2.1	2.2	1.9	2.0	2.8	43.8	45.7	39.2	28.8	27.4	24	45.7	1.9	12.8	0	0
8	19.3	21.6	19.5	29.1	38.3	37.3	23.9	26.0	7.6	5.0	3.5	2.1	4.3	3.2	4.2	4.3	7.1	22.5	56.4	12.5	3.9	2.7	2.8	3.5	24	56.4	2.1	15.0	0	0
9	4.1	3.7	3.2	3.1	3.0	3.1	2.7	2.9	3.0	2.2	2.0	1.8	3.6	4.2	5.8	11.2	4.1	20.0	41.2	28.2	44.0	31.3	26.3	29.2	24	44.0	1.8	11.8	0	0
10	23.4	20.3	13.3	3.2	14.2	33.6	31.1	3.5	2.5	2.8	2.7	2.8	4.5	6.1	9.2	7.7	7.9	3.2	3.2	3.6	4.0	2.7	3.7	3.7	24	33.6	2.5	8.9	0	0
11	3.4	3.3	2.9	2.7	2.6	4.0	6.9	5.9	5.1	3.9	3.3	3.1	3.4	3.2	4.6	5.4	4.9	7.7	6.1	8.1	8.1	5.2	6.5	11.2	24	11.2	2.6	5.1	0	0
12	11.3	14.1	5.6	13.9	14.1	18.5	12.1	6.0	5.8	3.3	2.4	5.6	3.4	3.4	5.1	1.5	1.8	1.8	8.7	38.6	37.9	29.2	17.7	9.1	24	38.6	1.5	11.3	0	0
13	4.7	3.4	5.0	3.9	3.9	4.3	7.7	5.7	8.9	7.3	5.5	5.6	4.6	2.7	3.6	3.8	3.1	5.3	7.4	4.7	12.6	5.7	10.5	14.7	24	14.7	2.7	6.0	0	0
14	18.5	14.9	12.1	15.3	10.4	7.3	7.1	10.3	5.6	1.2	1.3	1.1	0.9	0.8	0.9	1.0	0.6	1.4	1.2	1.6	3.7	16.7	1.9	2.4	24	18.5	0.6	5.8	0	0
15	3.7	5.6	30.7	36.4	34.3	36.3	49.9	40.3	30.3	11.2	10.9	12.2	4.0	3.1	2.3	2.4	3.1	3.4	6.9	9.9	35.3	48.2	44.5	37.7	24	49.9	2.3	20.9	0	0
16	24.1	20.7	20.6	23.5	36.5	31.4	32.9	18.6	11.0	6.2	4.4	3.7	4.0	3.9	4.5	6.6	5.8	8.1	29.0	35.7	46.8	43.5	36.4	33.9	24	46.8	3.7	20.5	0	0
17	36.5	38.5	34.9	40.1	45.6	46.8	43.4	34.1	27.8	31.6	29.7	10.5	6.2	8.6	6.2	3.3	4.0	5.8	18.3	41.1	47.3	38.8	33.4	37.1	24	47.3	3.3	27.9	0	0
18	43.1	34.4	28.8	28.6	20.1	32.0	25.7	12.9	6.2	5.2	5.1	3.0	2.9	2.7	2.6	2.9	2.8	8.6	8.4	34.5	25.9	20.1	12.5	7.6	24	43.1	2.6	15.7	0	0
19	5.6	5.5	6.0	12.3	12.7	16.3	14.7	18.0	18.5	9.6	2.8	1.9	1.1	1.3	3.2	6.9	5.1	4.7	4.8	2.4	2.3	2.3	4.5	24.0	24	24.0	1.1	7.8	0	0
20	15.1	7.4	17.0	22.9	22.0	22.8	20.2	6.4	4.3	4.2	3.7	3.9	4.4	3.4	3.0	3.1	2.7	3.3	5.2	5.9	3.5	4.4	4.6	3.9	24	22.9	2.7	8.2	0	0
21	3.1	3.3	2.6	3.1	3.1	2.4	2.4	3.9	3.3	3.8	3.3	3.1	2.6	2.4	2.7	2.1	3.6	4.8	6.4	5.4	4.5	3.4	3.1	2.4	24	6.4	2.1	3.4	0	0
22	1.9	1.8	2.1	6.1	3.9	5.6	6.2	7.1	5.0	3.4	3.7	3.5	5.4	4.3	4.2	3.2	4.7	7.5	16.4	31.4	41.1	41.7	45.1	45.5	24	45.5	1.8	12.5	0	0
23	36.4	38.7	39.6	39.7	33.1	33.1	24.0	20.0	18.7	17.6	21.4	15.6	C	C	C	8.6	7.5	6.6	6.8	5.8	3.8	4.0	8.6	35.7	21	39.7	3.8	20.2	0	0
24	35.2	27.2	36.4	30.9	29.8	39.6	35.0	31.7	20.7	16.0	6.0	6.1	5.5	5.7	5.0	5.1	13.1	13.2	24.3	42.9	30.1	35.1	28.3	9.2	24	42.9	5.0	22.2	0	0
25	19.5	29.7	46.6	41.4	29.9	32.6	39.3	33.2	16.4	6.2	5.4	6.0	3.8	3.9	3.9	3.7	3.8	4.4	35.9	74.0	58.4	45.7	38.7	36.3	24	74.0	3.7	25.8	0	0
26	34.0	29.7	32.6	40.4	44.9	47.2	47.6	35.9	30.5	22.9	13.7	6.9	7.0	4.7	3.6	3.3	4.8	3.9	7.1	71.1	61.5	55.6	53.0	52.6	24	71.1	3.3	29.8	0	0
27	51.6	51.4	39.1	34.0	57.3	57.5	54.1	44.1	15.0	11.7	10.3	7.4	8.9	9.1	4.6	6.4	7.7	6.6	25.5	51.7	50.7	39.1	33.9	24.9	24	57.5	4.6	29.3	0	0
28	29.8	23.2	11.2	15.5	37.9	39.0	35.2	15.9	14.4	9.8	7.8	6.6	4.8	5.1	4.7	5.8	4.9	8.6	50.0	52.3	44.5	35.1	40.9	51.5	24	52.3	4.7	23.1	0	0
29	46.8	35.1	22.8	22.9	28.9	43.8	57.2	49.9	25.7	32.4	17.7	14.1	10.4	5.4	3.6	3.4	3.5	3.5	7.1	25.6	60.6	68.2	49.8	48.4	24	68.2	3.4	28.6	0	0
30	36.4	47.5	32.2	28.3	36.6	32.5	19.7	6.1	15.3	14.4	14.0	14.6	7.6	5.3	5.6	4.7	4.4	27.5	41.1	26.1	41.0	15.4	9.2	12.5	24	47.5	4.4	20.8	0	0
31																													0	0
Count	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	30	30	717	30	29	30		
Maximum	51.9	51.4	46.6	41.4	57.3	57.5	57.2	49.9	30.5	32.4	29.7	15.6	12.3	14.2	11.7	11.2	15.2	27.5	56.4	74.0	61.5	68.2	53.0	52.6	24	74.0	11.2	40.8		
Minimum	1.9	1.8	2.1	2.1	2.6	2.4	2.4	2.9	2.5	1.2	1.3	1.1	0.9	0.8	0.9	1.0	0.6	1.4	1.2	1.6	2.1	2.3	1.9	2.4	21	6.37	0.6	1.7		
Average	22.1	19.7	18.5	19.8	22.7	26.3	24.5	17.7	12.2	9.4	7.5	5.9	4.8	4.4	4.2	4.4	4.7	6.8	15.9	25.3	27.7	25.0	22.7	24.1	24	42	3	15.8		

																														Maximum
Percentiles		10		20		30		40		50		60		70		80		90		95		99		100						74.0
																														29.8
Data		2.7		3.4		4.3		5.6		7.5		12.6		20.1		32.0		40.2		47.1		57.5		74.0						15.8

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

NO_2 - Rundle Road
July 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	16.8	5.2	5.3	6.2	5.3	7.3	5.2	3.6	5.4	3.9	7.7	1.4	3.6	4.9	4.1	2.2	3.1	9.1	3.0	6.5	6.9	11.3	10.9	15.7	24	16.8	1.4	6.4	0	0
2	4.5	5.0	4.9	7.5	8.6	18.3	18.3	11.7	11.7	10.0	5.3	6.7	7.3	7.6	4.0	3.6	3.4	5.2	14.4	12.8	20.3	9.0	6.7	0.9	24	20.3	0.9	8.7	0	0
3	0.1	0.0	0.0	0.4	3.2	2.8	3.9	8.0	6.5	2.5	2.2	C	C	C	C	2.4	0.7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	20	8.0	0.0	1.7	0	0
4	0.0	0.0	0.0	0.1	0.6	0.7	7.9	3.5	5.7	2.6	3.6	3.2	0.2	0.0	0.3	0.4	0.0	0.0	0.1	0.2	0.5	2.0	1.6	0.4	24	7.9	0.0	1.4	0	0
5	0.2	0.7	0.7	1.6	0.3	0.7	0.1	0.1	0.0	0.8	1.5	9.9	5.5	5.2	4.3	4.3	5.2	4.7	2.6	7.8	8.9	7.0	5.8	13.8	24	13.8	0.0	3.8	0	0
6	14.0	13.9	11.2	14.3	35.5	23.1	16.5	18.4	15.1	8.5	7.0	3.9	3.4	4.3	3.1	3.6	5.0	7.4	3.8	10.7	9.3	5.7	10.1	7.0	24	35.5	3.1	10.6	0	0
7	7.0	15.0	6.4	9.4	9.9	24.5	13.1	10.5	16.9	7.8	8.3	11.6	9.1	7.1	6.1	6.3	10.3	11.0	16.4	31.2	23.2	29.4	13.1	24.4	24	31.2	6.1	13.7	0	0
8	24.1	26.4	11.2	13.5	13.8	16.8	19.3	16.4	10.5	9.1	12.0	17.2	34.8	20.6	17.3	8.9	13.3	11.4	12.7	25.0	34.4	15.7	0.1	0.8	24	34.8	0.1	16.0	0	0
9	9.4	14.9	22.9	26.2	37.0	22.5	16.0	2.8	2.3	3.1	2.3	7.6	6.4	7.9	6.5	6.7	11.5	8.8	3.1	2.3	3.8	3.1	1.5	0.9	24	37.0	0.9	9.6	0	0
10	1.3	1.1	1.2	1.9	2.0	6.1	12.0	5.0	10.9	8.6	5.2	4.9	4.4	6.0	4.8	3.2	4.3	13.7	23.7	29.9	26.3	14.9	8.8	9.7	24	29.9	1.1	8.7	0	0
11	4.5	3.9	5.4	8.0	5.0	5.7	19.3	12.5	12.5	4.6	6.3	4.2	9.2	3.3	2.4	5.9	3.9	11.1	15.0	22.0	23.7	12.5	14.8	9.0	24	23.7	2.4	9.4	0	0
12	5.7	3.6	2.4	2.7	3.6	3.1	4.4	5.2	16.7	4.4	3.8	4.9	3.0	4.6	4.8	4.5	6.3	7.9	7.2	9.8	9.1	7.9	12.7	8.3	24	16.7	2.4	6.1	0	0
13	16.4	15.7	10.2	8.9	5.5	8.8	11.2	5.2	6.0	7.3	5.0	10.1	7.8	7.7	5.2	6.2	6.3	11.6	3.3	3.9	6.8	4.0	2.3	1.7	24	16.4	1.7	7.4	0	0
14	4.5	1.0	1.0	1.2	5.1	20.2	17.7	6.8	20.3	12.6	11.4	7.9	7.6	7.1	7.4	7.1	6.7	14.0	10.3	15.0	22.5	26.9	26.2	14.1	24	26.9	1.0	11.4	0	0
15	10.6	6.5	4.3	3.8	4.0	5.8	12.7	7.9	5.0	7.3	12.3	11.3	10.8	6.0	7.2	7.3	8.5	8.0	6.7	22.3	31.0	24.0	23.7	34.6	24	34.6	3.8	11.7	0	0
16	25.4	12.1	3.7	7.6	23.5	22.8	18.4	19.0	13.5	16.8	14.7	10.8	9.7	6.6	13.2	8.6	11.1	11.5	14.7	27.6	15.3	4.9	2.3	1.3	24	27.6	1.3	13.1	0	0
17	1.8	9.0	2.6	4.8	2.9	9.6	6.2	22.1	20.9	14.8	16.4	20.9	19.8	7.1	3.9	6.7	7.7	9.9	15.9	14.0	13.6	7.6	5.0	4.2	24	22.1	1.8	10.3	0	0
18	3.2	6.5	6.9	3.0	4.3	7.4	15.9	10.9	11.8	10.6	7.5	7.2	10.4	11.0	7.9	8.0	5.7	7.6	19.5	12.3	13.9	12.3	14.3	12.3	24	19.5	3.0	9.6	0	0
19	7.4	5.2	4.1	2.9	2.8	4.1	8.9	4.7	7.5	4.8	5.1	6.3	9.8	9.0	6.5	5.9	5.0	9.4	9.9	10.9	4.2	7.2	7.4	6.4	24	10.9	2.8	6.5	0	0
20	11.0	9.5	6.7	3.3	4.5	9.2	12.0	8.7	6.7	6.8	6.4	11.4	7.6	6.5	5.9	4.8	4.2	6.4	8.0	15.8	13.2	13.7	17.4	15.6	24	17.4	3.3	9.0	0	0
21	8.1	5.6	5.3	3.1	3.3	6.6	8.7	18.6	21.4	14.5	31.7	9.5	12.6	13.9	10.7	12.4	7.5	8.3	9.4	23.1	13.0	9.3	8.9	6.9	24	31.7	3.1	11.4	0	0
22	4.3	5.5	10.1	4.7	5.3	8.8	20.1	14.0	27.4	20.9	13.9	10.8	8.5	7.6	5.4	7.7	9.0	9.5	16.0	14.0	13.7	10.9	15.9	16.3	24	27.4	4.3	11.7	0	0
23	7.5	7.5	11.7	13.8	17.5	13.3	21.3	6.8	3.7	3.6	2.8	3.2	2.8	17.3	3.5	5.8	4.4	4.6	2.9	1.8	2.5	4.9	4.4	3.0	24	21.3	1.8	7.1	0	0
24	2.8	2.4	2.7	2.8	2.4	3.4	6.3	5.8	3.9	2.8	3.7	3.9	2.9	6.2	15.1	9.1	4.2	7.4	19.0	21.1	8.4	3.9	4.1	4.1	24	21.1	2.4	6.2	0	0
25	4.7	4.7	9.2	10.2	5.0	6.2	11.6	10.2	22.2	20.6	29.5	31.1	21.1	11.6	11.6	6.2	6.9	5.5	7.7	9.8	8.9	9.7	10.4	15.1	24	31.1	4.7	12.1	0	0
26	18.0	23.6	12.7	9.4	7.0	6.7	12.7	17.4	17.7	13.5	14.5	8.5	8.4	9.5	6.2	4.2	9.1	8.7	6.6	15.3	8.3	9.6	6.7	8.9	24	23.6	4.2	11.0	0	0
27	5.9	7.3	6.1	12.7	13.7	11.5	7.0	5.5	2.2	2.0	2.6	6.1	4.7	5.0	3.9	4.2	4.6	5.0	9.1	9.1	8.3	4.9	4.1	8.8	24	13.7	2.0	6.4	0	0
28	7.5	3.2	1.7	1.6	2.2	2.3	2.3	1.8	2.3	1.8	1.6	1.5	1.4	1.6	1.8	1.7	2.2	2.7	2.9	2.5	3.1	4.9	3.9	3.1	24	7.5	1.4	2.6	0	0
29	2.3	1.9	2.0	1.8	2.2	3.6	7.5	7.5	5.8	4.9	5.1	9.9	11.6	17.6	10.4	5.2	8.3	13.2	17.4	26.8	12.1	8.5	8.0	26.2	24	26.8	1.8	9.2	0	0
30	17.5	16.7	12.1	10.1	7.2	7.2	C	C	C	C	17.5	16.4	10.3	8.3	9.6	9.4	3.9	6.0	7.4	13.0	5.2	3.2	2.2	4.1	20	17.5	2.2	9.4	0	0
31	0.8	2.9	7.9	1.5	0.1	2.7	12.1	11.8	8.2	5.7	2.9	2.3	2.0	2.5	5.5	7.2	5.6	8.4	9.9	3.7	6.4	7.6	8.4	6.8	24	12.1	0.1	5.5	0	0
Count	31	31	31	31	31	31	30	30	30	30	31	30	30	30	30	31	31	31	31	31	31	31	31	31	736	31	30	31		
Maximum	25.4	26.4	22.9	26.2	37.0	24.5	21.3	22.1	27.4	20.9	31.7	31.1	34.8	20.6	17.3	12.4	13.3	14.0	23.7	31.2	34.4	29.4	26.2	34.6	24	37.0	12.4	25.4		
Minimum	0.0	0.0	0.0	0.1	0.1	0.7	0.1	0.1	0.0	0.8	1.5	1.4	0.2	0.0	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20	7.5	0.0	0.2		
Average	8.0	7.6	6.2	6.4	7.9	9.4	11.6	9.4	10.7	7.9	8.7	8.8	8.6	7.8	6.6	5.8	6.1	8.0	9.6	13.6	12.2	9.6	8.4	9.2	24	22	2	8.6		

																														Maximum
Percentiles		10		20		30		40		50		60		70		80		90		95		99		100						37.0
																														16.0
Data		2.0		3.3		4.6		5.8		7.2		8.5		10.3		13.2		17.5		22.6		31.1		37.0						8.6

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

NO_2 - Rundle Road
August 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	10.5	16.1	19.8	8.2	5.7	3.1	11.2	20.9	8.8	4.3	6.5	3.1	2.9	2.4	3.5	3.8	1.6	1.7	2.4	1.8	26.8	16.7	3.8	1.2	24	26.8	1.2	7.8	0	0
2	1.8	1.3	0.9	0.5	0.5	7.1	6.5	5.0	4.1	4.7	2.1	1.9	0.8	1.6	1.4	6.2	1.5	4.2	8.2	3.4	3.4	1.8	0.9	5.7	24	8.2	0.5	3.1	0	0
3	1.8	7.4	2.8	1.0	0.3	2.7	2.2	10.9	10.6	3.7	2.4	8.3	4.6	2.9	3.4	3.4	1.1	4.0	3.9	11.7	8.8	5.2	4.0	2.1	24	11.7	0.3	4.5	0	0
4	4.5	4.3	1.5	0.6	3.0	2.2	0.6	7.6	4.7	4.4	7.1	6.3	4.4	2.6	5.1	6.5	7.8	6.3	4.0	5.1	3.8	4.6	3.1	5.9	24	7.8	0.6	4.4	0	0
5	16.2	19.3	13.6	13.7	6.8	3.3	3.0	2.9	2.3	1.8	2.6	8.0	2.9	2.6	1.4	2.4	2.9	5.5	15.1	24.7	38.1	17.4	5.2	0.0	24	38.1	0.0	8.8	0	0
6	0.0	0.0	11.7	3.6	1.4	1.4	6.1	0.7	1.0	0.2	1.0	6.5	4.6	4.8	3.0	3.9	4.0	10.6	6.0	2.1	2.9	1.4	3.0	0.0	24	11.7	0.0	3.3	0	0
7	0.0	0.1	0.2	0.2	1.6	0.3	4.7	4.4	1.5	2.9	2.5	2.4	0.9	1.8	3.5	5.5	7.5	11.8	7.9	1.4	1.4	0.1	0.0	0.0	24	11.8	0.0	2.6	0	0
8	0.0	0.0	0.0	0.0	2.7	1.5	10.5	5.9	4.9	3.2	8.2	4.6	2.5	0.9	2.3	2.3	3.0	4.0	14.0	17.3	14.1	7.9	6.3	4.5	24	17.3	0.0	5.0	0	0
9	1.0	0.0	0.0	0.0	0.0	0.0	8.2	3.5	2.1	0.7	5.8	4.9	9.6	0.0	2.6	0.4	1.0	2.1	6.9	2.8	1.3	3.3	1.6	1.3	24	9.6	0.0	2.5	0	0
10	0.0	0.0	0.0	4.5	0.9	1.2	0.0	2.8	3.5	3.9	1.6	0.0	4.8	14.5	4.4	8.6	0.0	0.8	5.9	12.7	10.2	7.0	3.4	2.0	24	14.5	0.0	3.9	0	0
11	0.5	0.1	0.0	7.7	12.4	3.5	9.7	6.4	8.0	4.7	2.4	2.3	4.1	5.5	12.8	13.2	14.3	17.8	5.6	7.0	5.5	3.9	4.0	3.6	24	17.8	0.0	6.5	0	0
12	11.8	10.3	4.8	7.7	6.3	6.7	3.9	3.4	2.8	6.7	6.2	5.3	7.2	8.4	4.5	4.2	5.7	12.1	6.4	7.1	15.9	14.5	11.0	10.5	24	15.9	2.8	7.6	0	0
13	5.6	5.3	0.0	0.0	8.6	13.2	10.2	8.9	8.0	5.2	4.2	1.1	0.2	0.4	0.4	16.1	0.0	0.0	0.0	0.0	0.0	1.9	1.9	0.0	24	16.1	0.0	3.8	0	0
14	0.0	0.0	0.0	0.0	0.0	0.4	3.5	4.3	0.2	0.0	0.0	0.0	0.0	0.6	1.4	2.7	0.8	0.4	1.2	2.8	7.6	0.9	0.0	3.8	24	7.6	0.0	1.3	0	0
15	2.8	9.6	6.0	2.6	3.0	12.7	20.3	20.9	10.5	2.7	1.5	7.3	C	C	2.8	3.3	3.0	2.7	4.2	5.3	7.6	7.4	13.6	15.3	22	20.9	1.5	7.5	0	0
16	33.8	30.3	33.0	25.8	35.0	30.4	31.8	38.7	15.7	16.5	13.4	17.5	10.3	9.8	9.4	8.5	7.9	8.3	9.6	12.6	25.4	20.8	14.9	3.5	24	38.7	3.5	19.3	0	0
17	3.1	3.4	3.1	3.1	3.5	2.5	2.5	2.7	2.2	2.4	2.6	2.3	1.9	6.0	5.7	5.7	7.1	13.8	15.0	20.9	5.3	3.2	3.0	2.9	24	20.9	1.9	5.2	0	0
18	2.8	2.7	2.5	2.8	2.9	4.8	6.8	9.2	7.5	7.1	5.5	4.3	14.3	5.3	5.4	5.7	6.3	8.9	29.0	28.5	20.3	16.2	11.5	9.0	24	29.0	2.5	9.1	0	0
19	6.9	4.6	4.5	3.3	4.2	6.5	14.1	11.9	9.7	5.6	4.3	6.1	4.3	5.8	7.3	6.8	7.4	8.7	14.4	24.9	29.2	14.1	24.1	14.3	24	29.2	3.3	10.1	0	0
20	11.0	9.7	15.0	18.4	22.2	25.4	24.6	19.5	18.2	21.1	16.5	18.7	14.3	16.8	14.7	12.2	14.4	17.5	12.1	22.7	13.6	6.6	4.6	4.3	24	25.4	4.3	15.6	0	0
21	5.4	6.0	7.1	9.7	23.8	7.7	14.1	16.8	19.4	10.0	A	A	11.1	8.8	9.7	9.8	14.9	22.7	39.7	17.9	13.5	7.2	3.4	3.2	22	39.7	3.2	12.8	0	0
22	2.4	1.7	1.8	2.2	2.3	5.2	14.3	6.3	10.4	13.7	6.2	9.6	4.2	7.2	10.6	34.9	8.2	9.1	20.0	13.2	5.7	6.3	7.8	3.1	24	34.9	1.7	8.6	0	0
23	5.2	4.0	2.7	2.6	3.0	6.3	6.9	4.8	2.6	3.3	2.5	3.0	4.6	4.2	4.1	4.9	7.3	6.6	4.7	7.3	7.7	7.0	9.3	8.7	24	9.3	2.5	5.1	0	0
24	7.1	5.5	9.6	4.0	3.3	3.8	11.6	4.7	4.4	7.7	3.1	7.2	26.9	16.4	4.2	1.9	2.3	7.4	9.1	12.4	9.0	8.0	7.0	4.2	24	26.9	1.9	7.5	0	0
25	4.3	3.3	10.4	10.1	7.4	11.5	19.3	18.0	17.8	11.1	7.6	6.2	8.4	7.5	13.7	10.1	10.0	13.5	22.6	16.2	29.3	13.5	10.8	7.6	24	29.3	3.3	12.1	0	0
26	5.8	4.9	10.4	5.4	6.3	8.9	17.2	14.7	8.9	9.1	7.2	8.9	8.7	7.7	8.7	11.6	14.7	14.0	7.8	11.5	11.4	14.5	4.9	3.1	24	17.2	3.1	9.4	0	0
27	2.8	2.7	2.4	2.4	2.6	3.8	4.9	3.8	2.5	3.1	3.5	3.5	3.5	4.4	3.5	3.9	4.2	3.7	5.1	2.4	3.1	3.1	4.0	4.3	24	5.1	2.4	3.5	0	0
28	5.5	4.3	3.4	3.0	2.9	2.8	5.5	4.6	3.2	3.4	3.7	3.6	2.7	3.1	3.5	3.8	5.6	3.4	3.2	5.1	5.4	3.4	2.9	2.7	24	5.6	2.7	3.8	0	0
29	2.4	2.6	2.3	2.7	2.5	4.5	11.3	13.0	17.3	14.5	5.2	3.0	3.0	2.5	5.8	17.8	8.0	8.2	9.9	17.8	9.9	13.7	13.7	18.3	24	18.3	2.3	8.8	0	0
30	11.3	11.3	15.5	14.5	16.2	15.0	16.4	11.7	10.9	6.8	7.6	5.2	14.8	24.9	10.2	5.7	8.6	10.8	15.6	21.3	20.6	8.2	3.9	6.0	24	24.9	3.9	12.2	0	0
31	10.4	10.0	7.9	6.1	5.8	5.0	14.2	7.6	6.0	4.6	6.4	5.7	3.5	5.1	8.4	3.9	3.8	8.3	8.4	13.1	19.7	26.4	8.8	8.5	24	26.4	3.5	8.6	0	0
Count	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31	31	31	31	31	740	31	30	31		
Maximum	33.8	30.3	33.0	25.8	35.0	30.4	31.8	38.7	19.4	21.1	16.5	18.7	26.9	24.9	14.7	34.9	14.9	22.7	39.7	28.5	38.1	26.4	24.1	18.3	24	39.7	14.7	27.0		
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	22	5.1	0.0	0.1		
Average	5.7	5.8	6.2	5.4	6.4	6.6	10.2	9.6	7.4	6.1	5.0	5.6	6.2	6.2	5.7	7.4	6.0	8.0	10.3	11.4	12.2	8.6	6.3	5.1	24	20	2	7.2		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													39.7
													19.3
Data	0.9	2.4	3.1	4.0	5.2	6.7	8.4	11.3	16.1	20.4	31.3	39.7	7.2

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

NO_2 - Rundle Road
September 2014
(ug/m3)

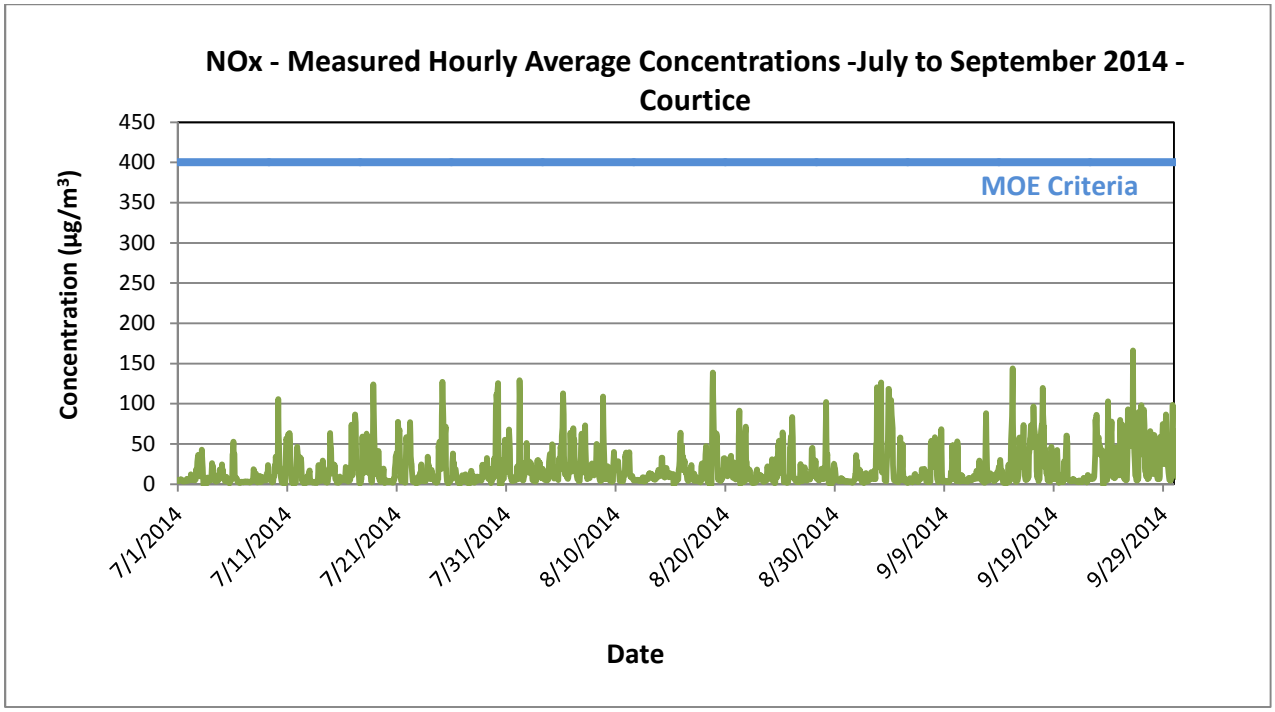
Day \ Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	6.4	3.6	3.1	4.5	4.8	4.4	12.0	5.7	7.6	13.1	9.2	8.0	4.2	8.2	28.3	24.1	36.3	30.5	13.1	15.6	27.3	27.3	8.3	8.9	24	36.3	3.1	13.1	0	0
2	5.5	5.8	9.1	9.8	16.2	23.1	31.4	16.3	14.3	10.4	8.5	10.5	21.5	18.0	6.6	14.2	17.8	15.9	14.9	31.2	55.0	48.2	29.3	19.7	24	55.0	5.5	18.9	0	0
3	16.6	9.3	5.9	4.6	7.0	8.2	7.2	19.3	15.5	16.1	17.0	21.2	19.9	14.9	10.5	14.8	12.6	20.3	33.2	27.0	17.7	15.1	13.6	14.5	24	33.2	4.6	15.1	0	0
4	7.8	5.7	4.3	8.6	8.2	7.6	13.7	19.1	27.0	11.2	11.1	10.9	7.6	9.9	10.9	11.5	13.9	20.7	16.1	14.7	27.9	20.8	10.9	6.2	24	27.9	4.3	12.8	0	0
5	6.0	18.5	15.2	44.6	13.3	11.5	18.9	15.5	8.6	11.0	9.5	7.1	8.0	9.9	6.4	6.6	9.2	9.2	12.9	12.8	23.0	15.9	8.4	8.0	24	44.6	6.0	12.9	0	0
6	14.1	6.0	6.4	5.8	6.1	2.1	2.8	8.8	15.4	5.2	2.9	3.6	3.8	2.0	2.0	2.2	2.2	2.9	3.3	3.2	3.5	3.5	3.6	3.9	24	15.4	2.0	4.8	0	0
7	4.0	3.5	3.1	3.7	3.4	3.7	3.6	3.2	2.5	2.1	2.4	2.2	3.1	3.2	3.1	3.8	5.3	6.1	11.1	7.9	6.8	5.0	4.6	5.1	24	11.1	2.1	4.3	0	0
8	4.0	4.0	3.4	4.2	3.9	5.1	18.2	15.8	15.9	12.4	8.6	6.1	3.7	4.0	3.8	5.5	7.8	7.1	12.1	28.3	16.4	15.8	11.8	12.9	24	28.3	3.4	9.6	0	0
9	16.3	10.4	9.0	16.1	18.5	29.8	27.4	14.8	8.0	6.1	5.3	4.3	5.6	10.1	4.5	7.5	6.0	7.1	16.2	12.1	22.9	8.8	6.8	5.9	24	29.8	4.3	11.6	0	0
10	8.3	8.0	9.9	16.1	9.5	17.0	27.3	22.2	16.7	10.8	6.5	14.8	13.5	17.3	15.7	6.9	9.3	18.3	10.3	17.3	10.8	20.7	10.0	6.4	24	27.3	6.4	13.5	0	0
11	6.0	6.7	4.9	6.0	6.8	11.9	4.7	3.6	2.9	2.3	2.6	2.3	2.5	2.3	2.5	2.6	2.6	2.4	3.0	2.4	2.5	2.4	2.2	2.4	24	11.9	2.2	3.8	0	0
12	1.6	2.0	2.0	1.9	2.1	3.4	3.8	3.8	2.6	1.9	1.8	1.6	1.8	1.7	2.0	4.3	4.6	7.2	11.8	8.7	7.1	6.4	5.5	3.6	24	11.8	1.6	3.9	0	0
13	2.3	2.1	7.5	5.0	2.3	2.6	2.4	6.0	3.5	3.9	3.7	5.5	2.7	2.5	2.3	2.1	2.1	2.2	1.8	2.6	2.6	4.1	2.1	1.8	24	7.5	1.8	3.2	0	0
14	1.4	1.8	4.4	1.4	1.4	1.9	2.7	5.8	3.5	5.7	1.5	1.3	1.2	1.5	2.1	1.7	2.9	7.7	13.2	13.3	9.0	6.0	7.4	5.6	24	13.3	1.2	4.3	0	0
15	5.6	7.1	8.7	6.7	5.7	5.4	10.9	23.2	28.7	12.9	10.9	16.0	9.0	14.8	11.6	10.6	8.0	9.4	19.4	21.3	19.4	21.3	23.6	24.0	24	28.7	5.4	13.9	0	0
16	9.8	5.5	3.9	3.8	4.6	6.1	8.1	11.8	7.9	3.3	4.1	2.5	2.8	2.7	2.7	3.5	3.5	3.6	5.0	5.7	5.1	3.8	2.7	3.8	24	11.8	2.5	4.8	0	0
17	2.8	3.1	2.0	2.9	5.2	8.7	22.8	19.2	20.6	24.4	23.9	12.2	7.4	10.3	9.8	8.0	10.2	14.4	10.3	9.9	6.3	4.2	3.3	4.3	24	24.4	2.0	10.3	0	0
18	6.2	8.8	3.8	3.4	4.4	6.9	5.1	4.0	3.3	2.5	2.3	2.2	1.3	3.8	3.5	7.8	5.1	7.8	9.6	2.9	2.1	2.5	1.9	1.2	24	9.6	1.2	4.3	0	0
19	1.2	3.0	2.4	1.4	1.5	3.9	5.4	3.2	2.9	2.3	1.9	3.7	3.7	4.2	6.3	1.8	1.8	2.5	4.0	5.9	9.3	9.5	6.8	3.6	24	9.5	1.2	3.8	0	0
20	5.1	7.0	3.4	4.9	4.3	3.8	10.2	11.1	8.3	5.7	4.7	4.9	5.6	5.7	4.9	7.2	5.4	5.1	6.6	10.8	27.2	8.5	7.6	6.8	24	27.2	3.4	7.3	0	0
21	6.3	11.9	3.6	4.3	5.6	6.4	7.0	7.6	11.9	14.7	5.1	5.2	3.8	4.6	5.4	6.3	3.2	3.3	3.0	2.5	2.6	1.5	1.3	1.3	24	14.7	1.3	5.3	0	0
22	1.0	1.3	1.4	1.5	1.2	1.9	2.0	1.9	1.9	1.2	1.2	1.7	1.4	1.5	1.6	1.8	1.6	1.7	2.6	2.7	2.8	4.5	5.0	8.8	24	8.8	1.0	2.3	0	0
23	17.2	14.5	16.0	18.2	10.8	7.1	C	C	C	C	C	C	13.4	10.0	8.5	8.8	8.2	12.0	18.7	18.2	20.4	19.7	6.9	7.0	18	20.4	6.9	13.1	0	0
24	5.5	3.7	5.6	4.7	4.9	9.3	15.3	13.3	8.3	8.0	14.4	25.2	31.4	14.5	10.2	3.5	4.6	9.4	12.2	7.3	16.9	10.7	8.7	7.7	24	31.4	3.5	10.6	0	0
25	6.6	5.3	15.4	3.7	2.1	6.3	13.6	13.0	14.0	5.1	15.2	3.8	10.2	40.2	18.4	6.0	7.4	18.4	21.5	12.1	9.4	4.2	1.1	1.2	24	40.2	1.1	10.6	0	0
26	0.5	0.0	0.0	0.0	0.0	4.1	15.5	19.8	19.9	26.8	11.4	8.7	6.0	4.2	3.0	5.8	6.7	17.8	18.9	13.6	15.8	6.3	1.9	10.2	24	26.8	0.0	9.0	0	0
27	7.3	20.6	3.9	17.8	36.5	6.2	5.3	9.0	3.5	1.7	0.0	9.1	4.9	5.6	2.3	3.7	4.0	8.5	11.8	11.5	6.6	12.1	2.2	1.2	24	36.5	0.0	8.1	0	0
28	2.7	0.0	0.0	4.0	0.0	0.7	0.5	0.0	10.9	9.1	5.1	5.1	5.4	6.2	7.2	6.1	4.6	8.6	11.0	11.6	6.5	5.0	16.9	11.8	24	16.9	0.0	5.8	0	0
29	7.2	6.7	5.7	2.9	1.0	1.6	25.9	23.6	9.7	21.9	9.4	7.2	4.2	6.7	7.5	7.4	11.4	52.3	51.0	22.3	20.5	13.2	11.1	15.7	24	52.3	1.0	14.4	0	0
30	3.0	10.2	6.4	5.7	9.5	28.2	25.9	15.4	13.0	7.8	6.1	5.2	4.3	13.2	18.8	21.8	12.9	14.4	17.2	19.7	22.9	6.8	0.5	0.0	24	28.2	0.0	12.0	0	0
31																													0	0
Count	30	30	30	30	30	30	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	714	30	29	30		
Maximum	17.2	20.6	16.0	44.6	36.5	29.8	31.4	23.6	28.7	26.8	23.9	25.2	31.4	40.2	28.3	24.1	36.3	52.3	51.0	31.2	55.0	48.2	29.3	24.0	24	55.0	16.0	32.3		
Minimum	0.5	0.0	0.0	0.0	0.0	0.7	0.5	0.0	1.9	1.2	0.0	1.3	1.2	1.5	1.6	1.7	1.6	1.7	1.8	2.4	2.1	1.5	0.5	0.0	18	7.480176	0.0	1.0		
Average	6.3	6.5	5.7	7.3	6.7	8.0	12.0	11.6	10.6	9.0	7.1	7.3	7.1	8.5	7.4	7.3	7.7	11.6	13.2	12.5	14.2	11.1	7.5	7.1	24	25	3	8.9		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													55.0
													18.9
Data	2.0	2.9	3.9	5.2	6.4	8.2	10.4	14.2	18.9	23.6	35.9	55.0	8.9

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



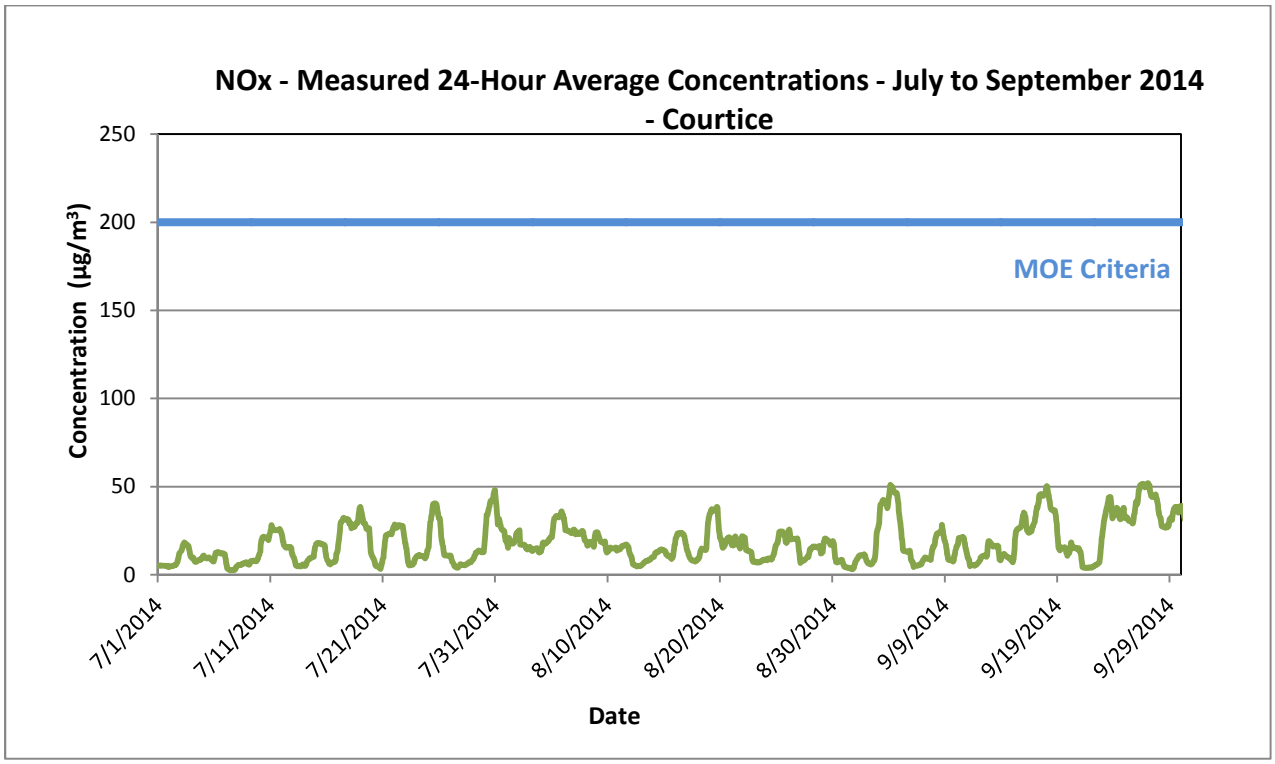
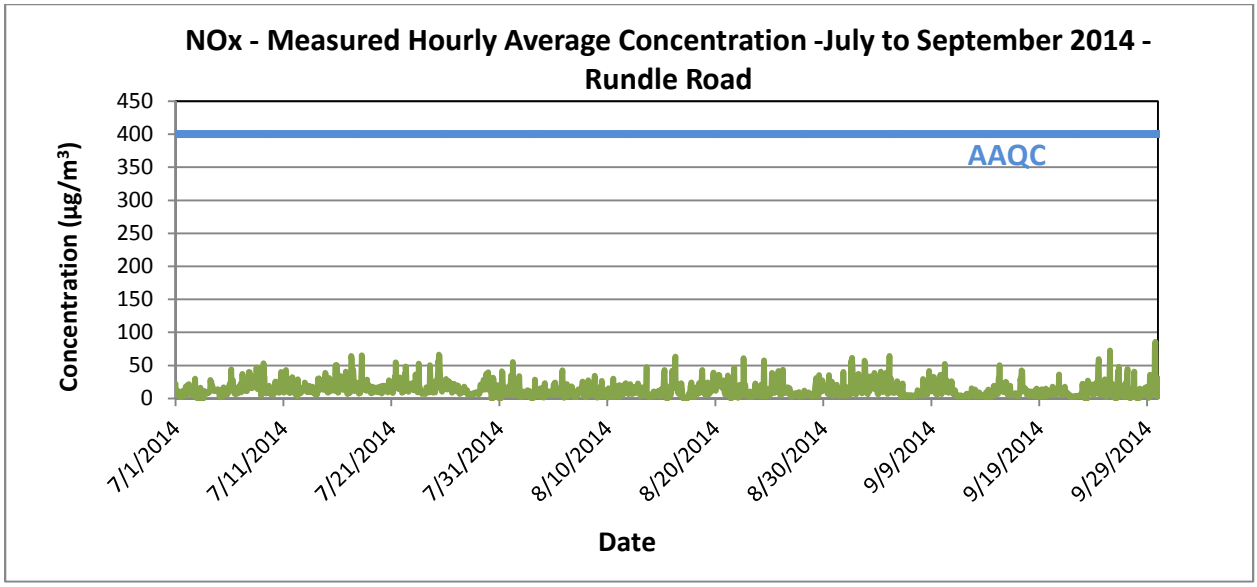
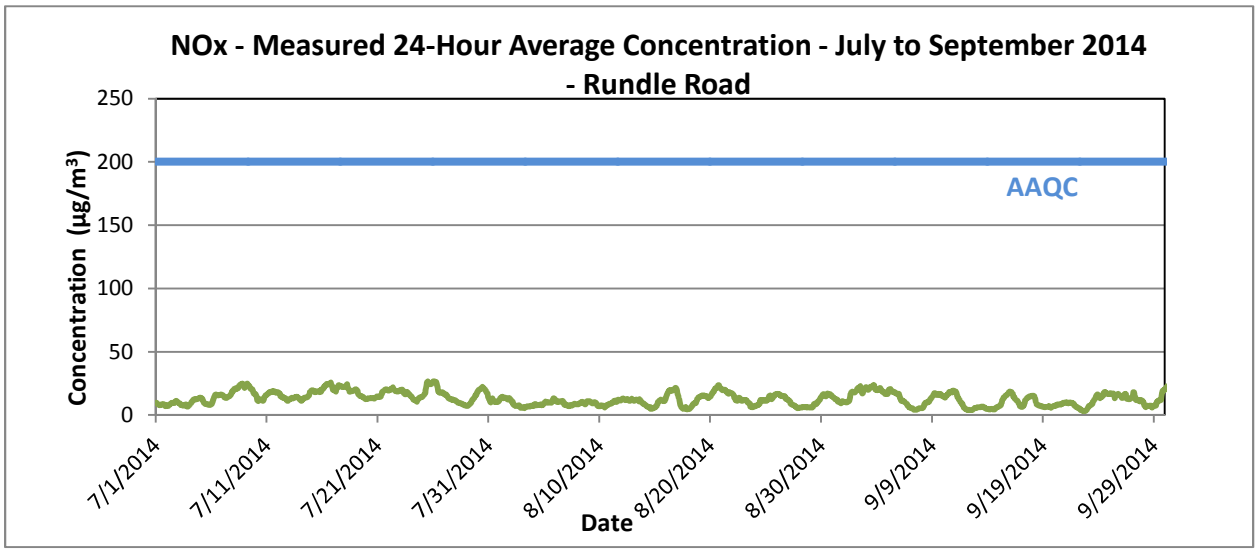


Figure C-2 Time History Plots of Measured Hourly Average and 24-Hour Average NO_X Concentrations – Rundle Road Station





NOx COURTICE
July 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	4.5	4.8	4.0	5.1	5.3	4.5	5.7	6.0	5.9	5.4	5.0	3.8	3.7	3.2	3.4	3.8	4.1	3.7	3.5	4.3	6.0	5.6	6.6	4.7	24	6.6	3.2	4.7	0	0
2	4.3	4.8	4.8	4.9	4.9	12.3	5.7	5.5	6.2	7.9	7.6	8.2	5.8	4.6	4.7	5.8	18.2	13.3	19.1	28.1	34.9	36.2	35.3	18.1	24	36.2	4.3	12.6	0	0
3	15.0	9.8	11.1	14.2	23.3	42.9	27.0	20.1	C	C	4.6	0.0	0.3	0.1	0.9	0.5	6.4	8.3	7.0	7.6	5.8	4.0	4.2	7.2	22	42.9	0.0	10.0	0	0
4	7.0	4.9	9.7	26.3	17.0	22.4	11.6	7.3	7.2	6.5	4.4	5.3	3.0	4.0	5.0	8.4	11.2	4.4	6.7	7.4	18.0	12.9	7.8	14.5	24	26.3	3.0	9.7	0	0
5	13.4	24.6	13.9	17.1	8.1	8.7	9.6	4.7	3.4	7.0	8.4	9.0	5.2	5.8	4.8	2.6	2.3	0.8	1.2	2.9	4.1	4.5	6.4	9.2	24	24.6	0.8	7.4	0	0
6	36.5	38.2	52.6	36.0	37.0	10.4	8.3	7.1	8.2	7.1	5.8	3.5	2.2	2.3	2.0	2.4	1.6	1.9	2.5	2.1	2.8	2.5	2.5	2.9	24	52.6	1.6	11.6	0	0
7	2.0	3.0	3.0	3.1	2.7	3.3	2.9	2.7	3.0	3.3	2.7	2.5	2.3	2.8	2.3	2.1	2.5	3.1	4.3	4.0	4.0	4.1	18.7	16.3	24	18.7	2.0	4.2	0	0
8	10.5	8.8	10.4	13.2	4.6	2.8	2.2	3.7	3.7	5.1	3.8	2.9	10.0	8.5	2.7	2.6	3.5	7.9	8.3	6.8	8.3	7.2	4.4	8.3	24	13.2	2.2	6.3	0	0
9	6.6	6.4	4.8	10.8	14.3	16.3	23.7	7.0	7.0	7.3	4.8	7.2	8.2	6.1	3.6	2.0	2.1	3.0	6.5	8.4	20.0	23.7	15.4	34.0	24	34.0	2.0	10.4	0	0
10	25.8	24.2	25.1	18.5	105.8	63.7	53.1	22.9	21.1	11.1	8.5	4.6	2.7	1.8	1.6	1.4	1.6	0.8	1.8	1.0	1.1	44.4	56.6	53.8	24	105.8	0.8	23.0	0	0
11	49.6	45.4	62.0	59.3	44.5	63.6	47.8	31.2	21.5	7.3	5.5	1.4	3.4	1.9	1.4	0.3	0.6	0.7	1.3	2.4	18.3	33.6	46.4	36.7	24	63.6	0.3	24.4	0	0
12	29.5	29.5	17.4	20.0	21.8	33.1	32.1	26.4	5.3	3.0	5.4	3.6	1.6	0.6	1.1	2.2	6.8	1.6	2.0	4.2	10.3	10.1	3.0	9.9	24	33.1	0.6	11.7	0	0
13	13.8	17.1	8.0	3.3	3.8	3.7	3.0	2.5	1.7	1.8	2.0	2.1	2.5	2.3	1.8	1.5	2.0	1.6	3.0	7.3	17.5	23.7	6.8	5.2	24	23.7	1.5	5.7	0	0
14	12.0	4.7	4.0	7.1	13.7	15.5	29.4	9.3	19.6	7.8	10.1	8.2	2.5	12.6	6.5	4.0	1.7	4.2	7.8	16.1	11.6	23.5	63.4	51.8	24	63.4	1.7	14.5	0	0
15	44.6	26.4	22.2	15.0	17.0	13.4	24.5	15.4	23.8	7.7	6.0	5.1	5.9	1.9	2.1	2.5	2.5	1.8	8.4	9.5	7.3	4.3	4.2	5.0	24	44.6	1.8	11.5	0	0
16	6.5	5.2	5.7	5.6	5.2	5.4	4.7	8.5	21.4	19.5	11.0	8.0	4.8	2.8	5.5	11.8	9.3	4.0	6.7	8.8	28.5	73.7	30.8	11.1	24	73.7	2.8	12.7	0	0
17	42.7	64.9	39.6	62.1	45.3	86.7	76.8	45.6	24.6	22.5	19.4	21.4	26.8	8.8	1.4	0.6	1.8	2.2	6.0	6.4	38.2	59.3	27.5	21.9	24	86.7	0.6	31.4	0	0
18	14.1	33.2	57.4	40.9	48.9	42.9	62.7	60.8	41.8	15.4	19.2	13.8	27.3	32.8	19.3	9.6	3.9	2.1	2.9	23.4	71.7	124.0	80.5	59.7	24	124.0	2.1	37.9	0	0
19	32.7	15.1	19.6	20.0	12.1	17.1	17.4	23.6	41.2	16.9	5.7	12.8	3.2	4.7	3.2	4.6	3.8	14.3	9.1	19.5	5.1	3.1	1.4	3.4	24	41.2	1.4	12.9	0	0
20	2.8	3.1	4.5	3.4	3.0	3.7	3.4	3.9	3.1	3.2	2.4	3.0	2.7	3.5	2.9	1.8	1.9	3.1	7.5	6.1	18.8	26.0	34.3	28.8	24	34.3	1.8	7.4	0	0
21	38.7	19.2	17.3	77.4	62.5	64.4	67.4	38.3	7.7	10.6	3.9	4.3	4.0	5.7	7.2	6.0	2.8	2.0	2.2	1.8	38.7	58.5	49.7	54.1	24	77.4	1.8	26.8	0	0
22	42.0	29.7	43.3	42.5	53.7	77.2	61.2	34.7	25.6	20.3	9.1	4.4	3.3	4.0	2.8	2.8	4.0	2.1	1.4	0.5	2.9	3.2	8.8	2.2	24	77.2	0.5	20.1	0	0
23	2.3	2.5	3.5	13.6	4.6	4.2	24.7	10.2	6.3	6.5	7.8	6.5	3.3	7.6	4.1	4.6	4.3	8.0	11.6	15.1	33.9	18.8	24.0	8.5	24	33.9	2.3	9.9	0	0
24	8.8	11.6	6.2	8.9	17.8	13.0	13.9	6.5	10.5	6.2	6.1	4.3	4.5	2.2	1.9	1.9	1.9	2.2	4.2	6.4	47.8	37.0	52.8	36.5	24	52.8	1.9	13.0	0	0
25	38.5	18.6	27.5	85.0	127.1	111.1	78.9	30.5	58.2	37.6	61.2	71.4	22.6	9.1	4.3	2.6	1.8	0.6	1.8	1.9	2.7	3.0	5.1	7.7	24	127.1	0.6	33.7	0	0
26	6.6	6.5	27.9	38.1	18.1	27.4	16.6	17.3	18.0	18.8	16.1	8.3	7.0	6.5	3.0	2.3	1.2	1.2	1.6	1.1	1.6	1.5	3.3	8.2	24	38.1	1.1	10.8	0	0
27	10.9	7.0	3.6	7.8	4.1	3.4	10.0	12.0	3.9	3.0	2.5	2.0	3.0	1.4	1.0	0.9	0.8	1.5	4.9	16.4	14.8	11.6	10.1	3.3	24	16.4	0.8	5.8	0	0
28	10.3	5.4	1.9	3.9	3.9	7.7	9.0	5.3	7.2	9.3	4.1	5.3	7.3	6.0	8.1	6.8	5.6	4.9	4.1	10.0	24.3	13.4	18.8	21.3	24	24.3	1.9	8.5	0	0
29	13.5	9.3	12.8	12.6	21.8	20.8	32.5	21.4	14.5	6.1	5.7	7.1	17.1	18.6	6.7	1.3	3.1	4.7	5.9	10.1	7.7	14.0	31.9	13.0	24	32.5	1.3	13.0	0	0
30	10.2	98.9	64.7	111.5	97.7	116.6	125.7	23.3	18.7	30.5	C	C	C	C	C	9.2	6.6	7.1	7.1	7.2	36.9	55.3	41.9	36.2	19	125.7	6.6	47.6	0	0
31	21.3	15.4	33.0	46.7	41.5	37.7	68.0	60.5	43.2	10.2	10.5	7.5	5.2	4.0	4.8	4.5	4.4	4.6	5.0	4.7	5.9	5.8	5.3	8.5	24	68.0	4.0	19.1	0	0
Count	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	31	31	31	31	31	31	31	31	31	737	31	30	31		
Maximum	49.6	98.9	64.7	111.5	127.1	116.6	125.7	60.8	58.2	37.6	61.2	71.4	27.3	32.8	19.3	11.8	18.2	14.3	19.1	28.1	71.7	124.0	80.5	59.7	24	127.1	11.8	62.1		
Minimum	2.0	2.5	1.9	3.1	2.7	2.8	2.2	2.5	1.7	1.8	2.0	0.0	0.3	0.1	0.9	0.3	0.6	0.6	1.2	0.5	1.1	1.5	1.4	2.2	19	6.6	0.0	1.5		
Average	18.6	19.3	20.0	26.9	28.7	30.8	31.0	18.5	16.1	10.8	9.0	8.2	6.7	5.9	4.0	3.7	4.0	3.9	5.3	8.1	17.7	24.1	22.8	19.4	24	52	2	15.4		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													127.1
													47.6
Data	2.1	3.0	4.2	5.4	7.1	9.2	15.0	23.4	41.0	59.3	98.5	127.1	15.4

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

NOx COURTICE
August 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	22.2	12.9	6.1	16.8	10.0	129.2	110.0	17.8	10.8	11.9	6.9	5.3	4.6	4.5	4.6	9.6	10.0	16.3	26.8	17.9	24.6	51.1	29.2	17.9	24	129.2	4.5	24.0	0	0
2	20.4	21.7	15.0	27.9	13.8	13.9	26.5	20.9	16.5	8.5	4.5	5.0	4.8	4.6	3.9	3.4	3.2	3.7	4.0	20.4	28.8	28.1	30.0	28.1	24	30.0	3.2	14.9	0	0
3	27.7	25.8	26.3	11.0	8.1	10.4	7.4	9.7	18.9	17.9	15.9	10.5	6.1	4.8	5.4	5.2	5.2	4.6	4.7	5.8	5.8	9.8	28.1	35.0	24	35.0	4.6	12.9	0	0
4	37.7	25.8	21.9	31.8	30.1	49.7	48.6	13.0	10.3	7.0	10.7	12.5	11.1	8.7	21.5	9.6	10.2	5.8	5.0	17.6	32.1	17.7	25.2	46.3	24	49.7	5.0	21.2	0	0
5	44.5	18.9	60.0	69.8	95.2	112.7	86.9	35.1	16.9	12.0	23.8	13.2	12.6	8.2	8.0	6.5	7.3	13.7	20.4	23.6	23.6	64.1	40.1	21.8	24	112.7	6.5	34.9	0	0
6	15.6	21.6	16.4	69.6	51.9	55.5	34.2	24.2	19.9	20.8	13.4	9.9	6.3	6.1	5.4	3.8	4.5	3.8	11.4	22.3	45.3	62.5	45.0	33.0	24	69.6	3.8	25.1	0	0
7	28.8	20.0	14.5	19.6	38.4	73.0	46.7	23.6	15.4	11.0	6.2	8.8	7.8	10.8	7.8	7.4	17.2	16.9	16.8	23.5	25.7	20.3	13.1	13.1	24	73.0	6.2	20.3	0	0
8	11.3	10.9	14.2	16.4	25.2	27.1	49.9	27.1	24.0	28.9	20.7	11.6	8.3	5.0	3.8	4.8	4.4	4.4	5.0	7.0	108.9	73.7	54.3	29.1	24	108.9	3.8	24.0	0	0
9	13.1	8.5	17.5	6.4	8.3	13.5	12.5	22.1	13.7	8.2	5.4	6.6	4.2	4.7	3.6	3.1	3.8	3.5	3.7	25.3	39.8	30.6	22.2	22.8	24	39.8	3.1	12.6	0	0
10	20.2	24.1	20.2	18.3	17.2	28.6	21.5	17.9	9.5	3.7	4.4	5.7	4.7	4.2	4.3	4.2	3.5	6.5	14.0	11.1	11.2	35.7	32.4	39.2	24	39.2	3.5	15.1	0	0
11	16.1	16.9	14.9	18.8	35.0	34.5	39.5	14.2	9.6	9.9	8.2	8.0	10.0	8.2	6.8	5.5	4.7	5.0	4.9	4.6	5.3	4.5	4.9	5.4	24	39.5	4.5	12.3	0	0
12	5.5	4.9	4.7	5.2	4.0	4.7	3.9	4.0	4.9	5.3	5.0	8.6	3.9	4.3	4.1	2.9	4.8	8.0	3.9	5.4	5.3	6.2	8.4	6.3	24	8.6	2.9	5.2	0	0
13	7.4	12.5	8.9	13.7	10.9	10.4	8.5	10.6	12.7	10.7	9.5	6.2	6.5	7.6	5.5	8.3	7.2	6.7	7.4	10.0	12.8	14.5	17.6	10.8	24	17.6	5.5	9.9	0	0
14	9.8	10.2	14.5	15.7	19.0	32.9	32.8	19.1	12.2	10.1	8.5	10.5	8.3	10.0	12.4	20.1	12.3	10.6	11.1	10.1	13.0	8.4	13.6	9.4	24	32.9	8.3	13.9	0	0
15	9.9	8.6	10.3	10.3	8.5	9.8	12.5	C	C	C	8.9	10.2	5.6	3.5	4.7	6.6	7.5	5.9	17.1	22.3	28.4	48.4	63.8	47.1	21	63.8	3.5	16.7	0	0
16	32.3	48.2	33.1	17.6	33.9	23.0	23.7	29.0	16.6	17.5	13.7	14.7	9.3	5.8	4.2	4.6	4.1	5.8	8.1	10.3	15.8	14.1	23.8	12.5	24	48.2	4.1	17.6	0	0
17	11.2	5.4	5.1	9.3	12.8	4.0	4.0	9.5	4.9	7.8	5.9	4.2	3.8	4.0	3.1	3.0	4.0	2.9	2.3	5.9	21.3	25.7	22.5	21.1	24	25.7	2.3	8.5	0	0
18	16.4	7.1	11.4	23.1	22.0	36.8	47.3	21.7	26.3	17.3	2.6	1.7	2.1	1.2	1.3	0.4	0.2	0.1	0.0	35.9	118.4	138.9	111.8	68.3	24	138.9	0.0	29.7	0	0
19	62.0	36.7	46.0	35.7	35.2	63.0	58.5	30.8	8.5	5.5	10.9	5.8	10.2	5.7	3.9	7.4	4.9	6.1	17.2	8.3	11.1	31.9	32.5	27.2	24	63.0	3.9	23.5	0	0
20	12.7	23.4	26.7	19.1	21.8	9.9	23.9	31.0	17.2	19.5	19.5	22.5	33.8	35.1	18.3	12.9	11.8	8.0	27.3	14.2	8.7	8.7	6.6	5.9	24	35.1	5.9	18.3	0	0
21	7.9	8.6	9.4	24.8	11.5	13.0	59.9	91.2	42.8	A	3.2	3.3	5.6	5.3	3.6	2.8	3.6	3.1	10.3	4.0	62.8	71.4	28.9	26.7	23	91.2	2.8	21.9	0	0
22	6.5	8.9	5.9	6.0	11.5	18.3	15.9	8.2	8.3	8.4	3.6	2.0	2.2	1.7	1.5	1.5	1.7	1.9	1.8	3.6	13.5	15.9	18.2	7.6	24	18.3	1.5	7.3	0	0
23	9.7	10.1	5.5	11.1	8.4	11.4	8.6	10.4	6.2	7.0	5.1	3.1	6.5	6.4	3.1	3.2	3.7	7.8	5.2	4.4	20.1	22.3	13.4	13.1	24	22.3	3.1	8.6	0	0
24	9.7	10.2	9.3	7.2	6.7	6.0	14.0	30.8	5.5	4.3	3.2	2.6	2.0	1.2	1.5	12.3	31.7	19.0	8.7	20.7	48.0	46.5	54.1	40.1	24	54.1	1.2	16.5	0	0
25	23.0	18.9	14.3	23.9	45.7	37.3	64.3	54.2	11.4	2.6	2.8	3.3	2.9	2.5	2.7	2.1	1.5	2.3	2.1	7.4	7.7	13.5	45.3	46.1	24	64.3	1.5	18.2	0	0
26	59.3	52.2	49.5	83.4	57.8	14.5	7.5	6.7	6.4	7.0	4.7	3.6	2.8	2.8	2.6	2.7	2.9	2.5	3.3	3.1	3.6	24.7	16.5	11.1	24	83.4	2.5	18.0	0	0
27	5.6	3.8	3.9	9.5	13.0	15.2	20.8	13.1	12.8	6.5	6.1	4.3	8.5	11.3	11.4	6.5	6.2	10.0	5.7	9.7	17.0	17.4	42.8	45.0	24	45.0	3.8	12.8	0	0
28	40.2	10.2	13.9	12.7	17.1	18.7	29.5	21.1	7.7	10.5	6.0	5.6	6.5	10.2	4.7	7.7	5.2	6.2	14.6	19.0	19.4	14.8	13.2	10.1	24	40.2	4.7	13.5	0	0
29	6.3	10.9	19.8	22.9	48.9	101.9	58.6	33.9	37.3	8.1	6.7	1.2	1.1	1.6	1.2	1.5	1.6	1.3	0.8	1.6	2.2	16.0	24.6	25.3	24	101.9	0.8	18.1	0	0
30	20.2	18.8	10.1	6.1	5.7	5.3	5.3	5.3	4.3	3.9	4.1	4.0	3.9	3.6	7.2	6.9	7.0	3.7	6.1	3.3	4.5	4.0	3.6	3.9	24	20.2	3.3	6.3	0	0
31	2.9	3.3	3.5	2.9	3.2	3.3	3.6	3.5	3.3	3.0	2.5	2.9	2.6	3.4	3.5	2.0	2.8	2.5	3.7	4.3	4.8	11.8	12.1	36.0	24	36.0	2.0	5.3	0	0
Count	31	31	31	31	31	31	31	30	30	29	31	31	31	31	31	31	31	31	31	31	31	31	31	31	740	31	29	31		
Maximum	62.0	52.2	60.0	83.4	95.2	129.2	110.0	91.2	42.8	28.9	23.8	22.5	33.8	35.1	21.5	20.1	31.7	19.0	27.3	35.9	118.4	138.9	111.8	68.3	24	138.9	19.0	61.0		
Minimum	2.9	3.3	3.5	2.9	3.2	3.3	3.6	3.5	3.3	2.6	2.5	1.2	1.1	1.2	1.2	0.4	0.2	0.1	0.0	1.6	2.2	4.0	3.6	3.9	21	8.6	0.0	2.3		
Average	19.9	16.8	17.2	21.5	23.6	31.9	31.8	22.0	13.8	10.2	8.1	7.0	6.7	6.4	5.7	5.8	6.4	6.4	8.8	12.3	25.5	30.8	29.0	24.7	24	56	4	16.4		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													138.9
													34.9
Data	3.3	4.5	5.8	7.9	10.1	13.0	17.6	23.7	35.9	51.1	99.3	138.9	16.4

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

NOx COURTICE
September 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	22.2	28.3	14.2	15.1	14.9	6.9	18.0	12.5	17.1	13.5	8.2	6.8	2.6	2.7	2.7	2.3	1.3	2.9	6.2	9.1	13.7	3.7	3.7	4.2	24	28.3	1.3	9.7	0	0
2	3.1	4.3	4.8	4.7	5.3	8.1	8.7	9.4	15.1	9.9	6.7	6.7	10.3	7.1	13.6	11.9	17.1	6.3	20.2	48.6	52.0	120.4	110.1	61.6	24	120.4	3.1	23.6	0	0
3	39.4	26.0	20.9	31.4	44.7	112.2	126.2	37.0	14.6	23.7	27.1	19.9	18.0	19.7	4.7	3.7	3.8	3.4	19.5	36.4	51.4	53.3	118.3	118.5	24	126.2	3.4	40.6	0	0
4	100.4	72.6	58.7	80.0	104.7	85.8	80.5	69.0	23.8	7.8	5.7	4.7	5.4	5.0	3.9	5.1	2.9	2.8	2.4	2.5	2.6	3.3	17.2	56.6	24	104.7	2.4	33.5	0	0
5	58.0	18.6	12.2	5.4	22.0	49.5	19.7	5.2	4.7	7.3	6.1	3.7	4.2	3.5	2.8	2.6	1.9	3.1	4.7	5.1	5.0	7.6	4.2	3.3	24	58.0	1.9	10.9	0	0
6	3.8	3.2	3.2	2.4	6.9	4.4	7.6	11.3	12.4	8.4	6.9	4.7	4.6	7.0	2.8	2.7	4.5	5.2	9.1	6.6	5.7	8.9	11.5	18.6	24	18.6	2.4	6.8	0	0
7	16.5	12.5	16.5	14.0	12.0	19.1	16.9	8.3	6.9	3.5	2.8	2.7	3.0	2.7	2.8	2.7	2.8	2.8	3.1	49.6	53.9	47.4	38.0	40.1	24	53.9	2.7	15.9	0	0
8	21.3	26.9	24.8	38.4	58.4	49.5	31.6	43.9	11.3	7.0	4.6	2.7	6.9	5.1	6.5	6.6	9.5	28.3	68.3	15.0	4.5	2.9	3.4	3.9	24	68.3	2.7	20.0	0	0
9	4.4	4.6	3.8	3.6	3.1	3.4	3.2	2.9	2.9	3.2	2.5	2.5	5.0	5.2	7.3	15.0	5.7	24.2	48.1	31.8	48.3	33.5	27.5	40.1	24	48.3	2.5	13.8	0	0
10	27.3	32.3	19.5	3.7	15.0	53.3	45.8	4.0	3.4	3.4	4.0	3.4	6.0	8.0	11.2	9.0	9.6	3.9	3.7	4.2	4.3	3.3	4.4	4.5	24	53.3	3.3	12.0	0	0
11	3.8	3.8	3.9	3.1	2.8	5.0	7.9	7.9	7.3	7.1	4.8	5.1	4.7	4.9	7.3	8.1	6.7	10.1	7.0	9.2	9.6	6.6	7.5	16.5	24	16.5	2.8	6.7	0	0
12	11.7	15.1	7.1	16.7	16.8	29.2	18.5	10.6	11.1	6.2	4.6	14.8	7.0	5.8	9.6	2.7	1.6	1.7	17.8	70.8	88.2	54.7	21.1	13.6	24	88.2	1.6	19.0	0	0
13	5.8	4.2	5.8	6.5	5.3	6.5	13.3	6.5	11.1	10.3	8.0	9.9	11.2	3.9	5.3	5.5	4.5	7.7	10.7	6.5	14.6	7.5	11.2	17.5	24	17.5	3.9	8.3	0	0
14	21.3	17.1	13.9	30.0	18.8	9.1	11.7	16.5	8.8	2.1	1.9	1.4	1.6	1.3	1.1	1.4	1.2	1.9	1.5	2.7	5.4	24.3	2.9	3.3	24	30.0	1.1	8.4	0	0
15	4.3	6.1	32.7	55.4	74.2	84.6	144.0	76.4	51.5	15.6	16.4	16.8	5.0	3.4	2.4	3.2	4.0	4.0	8.2	10.9	40.1	58.0	50.5	42.1	24	144.0	2.4	33.7	0	0
16	26.6	21.4	21.8	25.5	57.8	41.5	73.5	33.1	19.2	10.1	5.8	5.6	5.1	5.5	5.9	9.1	6.9	9.1	36.4	39.8	56.1	57.8	72.9	55.5	24	73.5	5.1	29.3	0	0
17	45.4	70.7	56.3	76.0	96.4	71.6	67.6	64.6	51.7	59.6	53.4	16.3	8.3	11.8	7.9	3.9	4.9	6.2	19.2	43.1	61.6	67.1	74.0	64.8	24	96.4	3.9	45.9	0	0
18	119.5	88.5	70.5	71.3	21.8	44.0	37.9	24.4	13.8	12.3	11.8	5.1	5.2	3.7	3.6	3.7	3.3	10.2	10.2	46.3	33.1	25.9	16.2	8.8	24	119.5	3.3	28.8	0	0
19	6.1	6.4	6.8	15.4	17.0	19.8	22.4	31.5	42.2	20.1	4.4	4.0	1.9	2.2	5.2	11.5	7.0	6.1	7.2	3.5	2.7	2.6	5.0	28.7	24	42.2	1.9	11.7	0	0
20	16.2	8.2	20.5	39.3	60.4	60.3	51.0	7.1	5.8	4.9	4.6	4.9	5.1	3.7	4.0	3.4	3.5	3.8	5.5	6.8	3.9	4.9	4.7	4.7	24	60.4	3.4	14.1	0	0
21	3.5	3.7	3.0	3.6	3.7	3.2	2.5	4.3	3.5	4.6	4.3	3.8	3.5	2.9	3.8	2.7	3.9	5.3	8.0	6.0	5.0	6.0	4.7	4.4	24	8.0	2.5	4.2	0	0
22	3.8	2.1	2.5	11.3	5.5	6.9	8.0	8.8	7.6	6.5	7.6	6.5	9.3	7.5	7.0	6.6	7.0	9.6	17.6	37.9	80.3	68.6	86.1	79.4	24	86.1	2.1	20.6	0	0
23	41.2	54.5	58.4	57.1	43.8	48.4	36.8	36.9	40.0	36.2	42.6	29.6	C	C	C	12.7	10.2	8.1	8.0	7.3	4.9	5.1	10.1	103.0	21	103.0	4.9	33.1	0	0
24	64.1	38.4	72.7	53.2	47.7	60.0	66.5	77.8	40.6	27.2	9.0	9.6	8.3	8.8	7.5	7.6	18.5	15.9	26.6	46.0	32.9	40.7	30.2	11.2	24	77.8	7.5	34.2	0	0
25	21.4	32.0	79.7	69.8	34.3	42.7	74.4	70.8	28.0	9.8	8.4	8.8	5.7	5.0	5.7	5.2	4.8	6.0	39.5	92.8	90.5	57.9	74.5	72.7	24	92.8	4.8	39.2	0	0
26	65.0	50.9	47.3	64.9	73.7	88.9	166.1	83.5	56.0	39.6	22.7	10.9	10.7	6.5	4.7	4.7	6.8	5.7	8.1	89.7	78.8	74.3	62.0	73.1	24	166.1	4.7	49.8	0	0
27	98.2	71.5	46.7	37.0	68.8	86.7	92.7	73.0	20.5	15.7	13.9	9.7	11.6	11.2	6.1	7.8	9.1	7.7	28.3	54.8	65.8	43.4	38.5	33.8	24	98.2	6.1	39.7	0	0
28	35.3	26.8	12.7	17.6	61.3	59.9	48.0	20.3	20.7	13.8	11.2	8.7	6.3	6.4	6.1	7.3	6.4	9.8	58.8	56.9	53.7	37.0	53.3	74.6	24	74.6	6.1	29.7	0	0
29	70.9	38.3	25.0	28.1	30.9	55.4	86.7	76.4	35.7	49.9	25.0	19.4	14.1	7.2	4.8	4.5	5.0	4.6	8.5	36.1	77.2	98.7	56.6	66.0	24	98.7	4.5	38.5	0	0
30	38.6	60.0	35.1	30.1	43.1	37.7	24.4	8.1	18.9	21.1	25.0	26.9	12.4	7.5	7.4	6.2	5.8	31.7	48.8	28.4	58.2	18.0	10.2	17.6	24	60.0	5.8	25.9	0	0
31																													0	0
Count	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	30	30	30	30	30	30	30	30	30	717	30	29	30		
Maximum	119.5	88.5	79.7	80.0	104.7	112.2	166.1	83.5	56.0	59.6	53.4	29.6	18.0	19.7	13.6	15.0	18.5	31.7	68.3	92.8	90.5	120.4	118.3	118.5	24	166.1	13.6	73.3		
Minimum	3.1	2.1	2.5	2.4	2.8	3.2	2.5	2.9	2.9	2.1	1.9	1.4	1.6	1.3	1.1	1.4	1.2	1.7	1.5	2.5	2.6	2.6	2.9	3.3	21	7.98	1.1	2.2		
Average	33.3	28.3	26.7	30.3	35.7	41.8	47.1	31.4	20.2	15.3	12.0	9.2	7.0	6.0	5.6	6.0	6.0	8.3	18.7	30.2	36.8	34.8	34.3	38.1	24	74	3	23.6		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	3.3	4.5	5.7	7.4	10.2	16.6	27.2	43.9	64.9	76.6	111.9	166.1

Maximum
166.1
49.8
23.6

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

NOx Rundle Road
July 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	22.3	5.0	5.4	7.2	5.9	11.7	6.0	4.5	7.1	4.6	10.2	1.8	4.6	6.6	8.6	2.7	3.8	11.5	3.1	7.5	6.6	11.5	11.2	18.2	24	22.3	1.8	7.8	0	0
2	4.8	5.3	4.7	7.5	9.1	21.1	21.7	13.0	13.7	13.4	7.6	8.2	9.6	10.1	5.2	4.8	4.1	5.6	15.1	13.4	29.9	9.4	7.0	1.5	24	29.9	1.5	10.2	0	0
3	0.5	0.1	0.0	1.2	4.4	4.5	6.8	16.0	16.4	5.7	4.5	C	C	C	C	10.7	9.3	10.9	8.6	8.8	8.3	7.7	7.1	8.3	20	16.4	0.0	7.0	0	0
4	8.3	9.2	10.7	9.1	10.6	11.9	27.8	18.8	23.9	15.7	18.4	16.7	12.1	11.6	11.3	12.2	10.8	11.3	11.9	12.0	11.5	13.1	13.8	12.0	24	27.8	8.3	13.5	0	0
5	12.2	13.1	3.9	5.1	1.8	2.0	2.2	2.7	3.1	3.4	4.5	17.0	9.0	8.6	8.5	9.2	10.6	10.6	5.4	13.1	11.7	10.5	8.5	17.6	24	17.6	1.8	8.1	0	0
6	19.2	22.1	14.8	17.6	43.8	27.3	22.2	27.7	28.1	14.0	11.9	7.0	7.3	8.4	7.5	6.8	9.9	16.5	7.7	16.2	14.8	9.3	14.3	10.9	24	43.8	6.8	16.1	0	0
7	11.4	22.1	9.2	12.9	13.5	37.0	16.9	14.8	23.7	11.9	12.9	17.8	14.5	12.4	11.2	11.2	16.6	15.4	21.0	40.2	26.4	39.0	16.9	29.6	24	40.2	9.2	19.1	0	0
8	30.4	33.2	15.4	17.8	17.5	21.2	24.6	23.6	17.2	16.9	20.0	22.3	46.8	27.0	23.4	13.8	21.6	21.8	18.1	32.1	46.0	20.5	4.1	4.7	24	46.8	4.1	22.5	0	0
9	13.8	19.0	29.1	36.9	53.2	33.2	32.2	8.7	8.2	9.6	7.5	16.5	15.7	16.6	12.8	13.4	19.2	16.1	9.2	7.1	8.8	7.9	6.3	4.6	24	53.2	4.6	16.9	0	0
10	5.9	5.9	6.3	6.2	7.8	16.0	25.3	14.2	24.5	18.6	12.0	11.0	9.6	13.1	12.1	8.6	9.4	20.6	32.8	40.0	31.5	19.9	14.3	14.5	24	40.0	5.9	15.8	0	0
11	9.2	8.5	10.6	26.1	14.0	13.1	42.8	24.1	21.8	11.8	15.0	10.1	29.5	9.3	8.2	14.6	9.0	18.3	21.4	31.6	32.5	17.3	19.3	13.3	24	42.8	8.2	18.0	0	0
12	10.5	8.3	6.3	7.8	9.9	7.5	10.5	3.1	29.2	9.9	8.7	10.6	7.6	10.2	10.1	7.9	11.4	13.6	11.2	15.4	15.0	12.5	19.0	13.1	24	29.2	3.1	11.2	0	0
13	24.0	19.6	15.0	12.4	9.9	15.8	18.6	9.7	10.5	13.5	9.5	18.9	14.4	15.1	10.1	12.8	12.1	17.7	7.9	8.7	12.6	9.8	6.7	6.3	24	24.0	6.3	13.0	0	0
14	8.9	5.7	5.7	5.8	9.5	30.1	30.4	13.1	30.0	19.8	20.0	15.8	15.0	16.4	14.5	13.8	13.2	22.5	15.5	20.0	28.7	38.7	37.9	19.9	24	38.7	5.7	18.8	0	0
15	15.6	10.9	9.7	8.6	9.2	11.4	31.0	15.0	11.2	16.8	21.9	27.2	21.5	11.9	12.5	13.2	14.4	13.5	11.6	34.3	50.5	28.2	27.9	50.1	24	50.5	8.6	19.9	0	0
16	31.6	17.2	8.5	11.7	29.4	29.3	27.4	33.8	25.6	29.9	28.7	19.5	17.6	12.9	20.5	17.8	16.8	17.8	21.1	40.8	20.9	10.2	6.8	6.4	24	40.8	6.4	20.9	0	0
17	7.3	15.7	8.1	13.6	8.8	30.7	14.5	64.5	59.1	33.8	36.1	43.7	37.6	14.3	11.0	13.3	13.3	16.3	24.1	19.5	20.2	13.7	10.3	9.0	24	64.5	7.3	22.4	0	0
18	7.2	11.7	12.6	8.3	12.4	26.7	65.5	30.2	28.4	22.9	15.9	13.8	18.7	19.4	15.5	15.9	11.6	18.4	28.7	17.9	22.1	20.7	18.5	17.2	24	65.5	7.2	20.0	0	0
19	13.3	10.6	8.3	8.3	7.7	8.7	18.0	10.7	16.5	9.6	11.7	13.2	16.6	15.0	12.0	11.6	10.1	15.8	16.9	16.6	8.9	12.7	13.7	11.8	24	18.0	7.7	12.4	0	0
20	18.4	14.4	12.0	7.8	7.9	14.4	19.1	14.2	11.9	12.2	11.0	19.4	15.1	11.2	12.5	9.9	9.0	13.6	13.5	27.5	18.5	18.5	22.7	20.8	24	27.5	7.8	14.8	0	0
21	12.9	10.1	9.9	8.0	9.2	16.8	16.3	27.7	33.3	23.9	54.8	18.6	23.6	25.8	18.4	21.5	14.1	14.3	14.5	32.1	18.0	14.1	14.4	13.5	24	54.8	8.0	19.4	0	0
22	8.8	12.1	20.2	9.9	10.7	18.7	37.8	24.2	48.1	35.2	22.3	17.4	15.1	13.3	10.1	13.0	13.9	14.6	22.2	18.7	18.0	15.9	20.3	22.9	24	48.1	8.8	19.3	0	0
23	12.8	12.4	16.7	18.6	22.0	19.0	36.4	18.5	11.4	13.0	9.2	9.6	10.7	52.8	12.6	16.3	10.9	11.2	9.0	7.7	6.8	9.5	8.9	8.4	24	52.8	6.8	15.2	0	0
24	7.9	7.4	7.6	6.8	6.9	8.8	16.9	14.5	11.5	9.3	10.6	13.5	8.9	17.8	50.3	25.6	9.8	12.7	25.8	25.2	13.5	8.6	9.5	9.5	24	50.3	6.8	14.1	0	0
25	9.5	9.1	20.0	18.6	16.0	17.6	29.7	25.2	56.6	49.8	66.4	64.2	43.3	23.6	26.6	12.7	14.1	10.0	12.5	17.1	15.7	15.0	15.7	18.2	24	66.4	9.1	25.3	0	0
26	24.1	29.6	17.8	15.6	13.6	14.2	22.5	25.5	25.9	23.6	24.2	13.9	13.6	18.1	11.0	8.6	15.7	15.1	11.4	22.3	14.2	15.2	11.0	13.2	24	29.6	8.6	17.5	0	0
27	11.1	11.8	10.7	17.1	19.7	16.8	12.0	11.0	6.6	7.0	7.5	12.8	10.1	10.8	9.3	9.1	9.8	10.6	17.8	13.8	13.9	10.0	8.4	13.0	24	19.7	6.6	11.7	0	0
28	12.4	7.8	5.6	6.9	6.5	6.8	7.4	7.1	6.4	7.1	6.7	7.0	6.1	6.9	7.5	6.3	8.3	7.9	8.4	7.9	7.5	9.6	9.3	7.6	24	12.4	5.6	7.5	0	0
29	7.0	6.4	6.3	6.7	8.3	10.4	20.5	18.7	17.3	14.7	12.7	17.5	23.1	28.3	22.1	15.4	13.4	19.0	23.8	36.9	16.3	14.9	13.4	39.7	24	39.7	6.3	17.2	0	0
30	24.0	22.1	22.4	21.7	13.8	18.0	C	C	C	C	31.5	28.4	17.7	13.9	14.4	14.4	7.3	9.7	10.3	20.4	4.9	2.5	1.0	4.5	20	31.5	1.0	15.1	0	0
31	0.2	4.3	9.2	0.7	0.0	6.0	41.2	39.9	15.9	18.9	6.3	6.5	5.6	6.6	10.3	13.3	9.5	11.8	16.8	6.8	9.0	9.8	10.5	8.7	24	41.2	0.0	11.2	0	0
Count	31	31	31	31	31	31	30	30	30	30	31	30	30	30	30	31	31	31	31	31	31	31	31	31	736	31	30	31		
Maximum	31.6	33.2	29.1	36.9	53.2	37.0	65.5	64.5	59.1	49.8	66.4	64.2	46.8	52.8	50.3	25.6	21.6	22.5	32.8	40.8	50.5	39.0	37.9	50.1	24	66.4	21.6	44.2		
Minimum	0.2	0.1	0.0	0.7	0.0	2.0	2.2	2.7	3.1	3.4	4.5	1.8	4.6	6.6	5.2	2.7	3.8	5.6	3.1	6.8	4.9	2.5	1.0	1.5	20	12.4	0.0	2.9		
Average	13.1	12.6	11.1	11.7	13.3	17.0	23.5	19.1	21.4	16.5	17.4	17.3	16.7	15.6	14.0	12.3	11.7	14.3	15.4	20.4	18.2	14.7	13.2	14.5	24	38	6	15.6		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													66.4
													25.3
Data	6.6	8.4	9.8	11.5	13.3	15.0	17.6	21.1	28.3	34.5	53.1	66.4	15.6

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

NOx Rundle Road
August 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	20.7	15.6	34.3	4.8	7.1	5.1	55.0	24.5	13.4	8.3	13.3	6.7	6.7	5.1	6.4	7.4	4.9	5.4	5.2	4.2	33.8	18.2	5.0	2.3	24	55.0	2.3	13.1	0	0
2	4.0	1.9	3.2	2.9	3.2	9.9	10.4	9.0	8.6	9.2	5.8	4.7	4.0	4.8	4.4	12.3	4.7	6.9	11.6	6.3	4.9	1.9	0.7	7.9	24	12.3	0.7	6.0	0	0
3	0.8	9.5	3.0	0.4	0.9	4.3	2.8	28.6	15.7	7.1	4.9	12.9	7.3	6.4	6.5	6.3	4.1	7.9	7.1	15.4	10.9	6.5	3.8	1.7	24	28.6	0.4	7.3	0	0
4	4.7	3.8	1.3	1.5	17.7	23.0	3.2	11.2	7.7	8.0	11.7	9.8	8.0	5.5	8.1	9.1	10.4	9.2	7.2	7.6	6.1	7.0	5.3	7.7	24	23.0	1.3	8.1	0	0
5	17.2	21.7	14.6	15.3	24.2	6.8	4.7	6.0	7.5	8.6	6.7	15.1	7.6	7.4	5.9	7.9	6.8	9.5	20.0	27.4	42.6	20.7	7.6	1.2	24	42.6	1.2	13.0	0	0
6	0.9	3.0	16.8	5.1	3.3	3.7	21.7	3.9	4.9	4.5	5.8	14.3	10.4	10.9	7.2	10.3	7.9	18.1	12.9	5.0	8.7	3.8	7.3	2.5	24	21.7	0.9	8.0	0	0
7	2.7	2.7	1.9	2.3	3.6	2.9	11.5	13.6	6.5	11.7	9.8	9.7	7.4	8.7	11.8	17.8	19.5	25.7	16.4	4.6	4.2	3.3	3.0	3.1	24	25.7	1.9	8.5	0	0
8	1.9	2.8	2.5	3.1	8.5	5.6	27.6	17.9	11.6	10.3	20.1	10.8	7.2	5.1	6.6	6.2	11.1	7.9	18.9	20.6	34.5	8.7	8.9	6.1	24	34.5	1.9	11.0	0	0
9	3.3	1.5	1.3	2.2	1.7	1.8	16.9	8.4	7.0	4.9	16.7	13.2	26.4	3.5	11.1	3.8	5.4	5.6	12.3	6.2	2.9	6.1	2.9	3.0	24	26.4	1.3	7.0	0	0
10	1.9	1.9	1.5	15.4	2.8	4.4	3.2	8.2	9.0	9.5	7.4	2.3	13.2	29.9	13.5	16.8	2.3	4.5	13.5	18.7	12.8	10.0	6.3	4.6	24	29.9	1.5	8.9	0	0
11	3.0	3.1	2.4	20.2	16.3	6.9	18.5	16.0	17.6	12.0	6.4	5.1	7.5	9.0	20.2	21.8	19.1	23.2	8.5	11.6	8.2	7.0	6.7	6.5	24	23.2	2.4	11.5	0	0
12	19.2	13.9	7.9	21.6	10.8	11.9	8.8	6.9	6.8	16.0	10.3	9.9	17.3	13.9	10.2	8.0	9.1	15.1	13.5	9.5	22.7	18.0	13.7	14.5	24	22.7	6.8	12.9	0	0
13	8.4	7.7	2.6	3.8	11.8	16.8	14.3	14.6	14.2	10.8	9.5	5.3	4.9	4.7	4.5	47.4	4.7	3.9	3.6	3.0	2.6	5.9	5.8	2.4	24	47.4	2.4	8.9	0	0
14	2.2	2.5	2.3	2.7	3.1	4.7	9.4	10.5	5.6	4.7	4.6	4.0	4.4	6.1	6.4	10.8	5.5	4.8	5.6	6.9	11.9	4.9	3.3	7.7	24	11.9	2.2	5.6	0	0
15	6.6	14.0	10.4	6.7	7.8	21.1	31.2	43.1	23.7	8.9	7.2	19.1	C	C	2.8	2.7	1.9	1.5	4.3	4.4	9.9	5.5	16.6	13.5	22	43.1	1.5	11.9	0	0
16	41.9	37.0	33.0	24.7	36.7	29.8	35.3	63.5	17.7	17.9	14.3	21.6	9.6	8.8	8.6	8.5	6.2	6.4	8.3	10.1	22.9	22.7	12.0	0.8	24	63.5	0.8	20.8	0	0
17	0.6	0.8	0.3	0.6	1.2	0.3	1.4	1.3	0.2	0.5	1.2	0.5	1.2	7.2	5.7	6.1	9.0	18.0	15.6	24.2	5.1	2.7	2.5	2.7	24	24.2	0.2	4.5	0	0
18	2.9	2.4	2.2	2.5	3.3	7.2	11.6	17.1	14.0	12.8	9.0	7.5	23.1	10.3	11.0	9.1	14.1	12.7	41.0	42.8	28.0	22.3	14.9	13.2	24	42.8	2.2	14.0	0	0
19	8.1	6.2	6.4	5.2	5.8	8.6	22.0	24.3	16.2	12.0	6.2	9.8	12.4	9.2	11.1	10.0	10.5	11.8	17.8	28.8	39.0	16.2	30.1	16.1	24	39.0	5.2	14.3	0	0
20	12.8	11.4	18.9	21.2	24.1	27.6	35.1	24.5	25.2	35.4	23.7	27.0	19.1	21.4	21.7	15.8	24.2	19.3	27.2	27.4	14.8	8.8	5.7	6.1	24	35.4	5.7	20.8	0	0
21	8.1	7.3	9.3	13.0	34.7	29.3	24.6	26.3	30.3	15.0	A	A	13.8	10.3	10.2	10.4	15.8	28.6	46.4	17.5	14.3	7.8	2.6	3.3	22	46.4	2.6	17.2	0	0
22	2.0	1.3	0.7	1.6	2.0	5.5	20.9	7.8	14.8	20.8	8.2	17.3	5.5	9.9	14.6	60.8	9.8	9.6	21.1	16.9	5.8	6.3	10.2	3.0	24	60.8	0.7	11.5	0	0
23	5.0	4.4	3.1	2.6	2.7	6.2	10.7	5.9	2.7	4.1	2.4	3.6	5.5	6.0	5.0	6.8	9.0	22.9	4.6	9.9	7.9	8.0	9.9	13.3	24	22.9	2.4	6.8	0	0
24	7.5	8.6	10.8	4.3	3.4	4.2	20.7	6.5	6.0	14.0	3.4	11.8	57.5	31.5	6.0	2.8	2.7	11.4	11.2	13.5	11.1	10.1	13.7	4.5	24	57.5	2.7	11.5	0	0
25	4.3	3.5	14.1	11.1	8.2	16.1	38.4	30.4	31.3	15.7	10.1	8.2	11.5	10.0	18.6	12.6	13.4	15.3	28.0	17.0	41.3	13.8	11.2	8.9	24	41.3	3.5	16.4	0	0
26	6.1	4.8	18.6	5.7	8.4	11.7	43.3	22.8	11.2	11.7	8.0	10.8	10.4	9.1	9.5	13.2	16.9	16.9	8.1	13.0	11.5	15.5	5.1	3.5	24	43.3	3.5	12.3	0	0
27	2.9	3.2	2.9	3.1	3.0	4.3	7.7	7.5	5.2	5.9	6.5	6.5	6.4	7.9	6.4	7.8	8.0	7.6	9.4	2.7	4.0	4.0	4.7	5.6	24	9.4	2.7	5.6	0	0
28	6.4	5.2	4.1	3.1	4.0	3.7	11.8	11.2	6.0	7.6	7.7	7.8	5.1	5.6	6.0	7.5	9.1	5.2	4.4	6.6	6.5	4.1	3.6	3.3	24	11.8	3.1	6.1	0	0
29	3.3	3.1	3.2	3.4	3.6	6.4	19.3	22.1	31.0	28.5	13.0	4.4	4.2	3.5	9.0	35.3	12.3	11.7	11.0	21.5	10.4	14.2	27.4	21.6	24	35.3	3.1	13.5	0	0
30	11.8	17.8	18.6	15.2	17.4	16.1	18.6	18.1	17.0	8.1	9.1	6.3	19.5	35.3	12.5	6.7	9.7	12.1	16.4	25.6	22.3	9.5	4.1	6.4	24	35.3	4.1	14.8	0	0
31	16.4	11.9	8.8	6.7	6.1	5.5	20.7	8.3	6.5	5.8	9.0	9.7	4.2	6.1	11.6	4.9	4.4	11.3	9.1	13.5	23.2	40.2	10.6	8.8	24	40.2	4.2	11.0	0	0
Count	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31	31	31	31	31	740	31	30	31		
Maximum	41.9	37.0	34.3	24.7	36.7	29.8	55.0	63.5	31.3	35.4	23.7	27.0	57.5	35.3	21.7	60.8	24.2	28.6	46.4	42.8	42.6	40.2	30.1	21.6	24	63.5	21.6	37.2		
Minimum	0.6	0.8	0.3	0.4	0.9	0.3	1.4	1.3	0.2	0.5	1.2	0.5	1.2	3.5	2.8	2.7	1.9	1.5	3.6	2.7	2.6	1.9	0.7	0.8	22	9.4	0.2	1.4		
Average	7.7	7.6	8.4	7.5	9.3	10.0	18.8	16.8	12.8	11.3	9.1	9.9	11.4	10.4	9.5	13.1	9.4	11.9	14.2	14.3	15.6	10.8	8.6	6.6	24	34	2	11.1		

Percentiles		10		20		30		40		50		60		70		80		90		95		99		100						Maximum
																														63.5
																														20.8
Data		2.8		4.2		5.6		6.7		8.3		10.2		12.7		16.6		22.7		29.4		43.0		63.5						11.1

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

NOx Rundle Road
September 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	12.0	4.4	3.7	5.0	5.0	5.5	16.9	7.2	9.1	16.2	11.6	11.6	5.9	12.0	56.6	37.1	61.4	42.8	14.1	17.3	28.3	29.7	9.0	10.9	24	61.4	3.7	18.1	0	0
2	6.4	6.3	9.6	9.7	16.8	24.0	37.2	22.7	21.0	14.8	12.4	12.4	24.8	21.2	7.6	16.0	20.3	17.0	15.7	32.8	56.8	54.8	31.9	20.8	24	56.8	6.3	21.4	0	0
3	17.2	10.0	6.6	6.2	8.4	10.5	10.6	33.5	25.0	25.9	27.1	32.7	28.6	21.5	15.2	18.0	14.4	23.8	38.5	29.7	20.0	16.5	19.7	24.3	24	38.5	6.2	20.2	0	0
4	9.8	6.6	6.0	13.6	11.9	11.1	24.8	28.9	40.8	15.5	15.9	13.5	9.4	11.8	13.3	13.2	16.7	23.9	16.8	14.8	38.9	24.1	13.5	6.9	24	40.8	6.0	16.7	0	0
5	6.9	26.8	17.8	64.1	14.4	13.1	30.4	18.0	10.0	13.2	11.7	8.5	10.2	17.1	8.5	8.4	11.5	10.1	13.9	16.5	25.8	16.7	9.0	8.8	24	64.1	6.9	16.3	0	0
6	17.9	7.2	7.2	6.4	6.7	3.0	3.5	10.9	22.6	8.3	4.2	5.5	6.4	2.8	3.2	2.7	3.3	4.1	4.2	4.1	4.6	4.5	4.6	4.6	24	22.6	2.7	6.3	0	0
7	4.9	4.7	4.3	4.4	4.3	4.5	4.2	4.5	3.3	3.0	3.3	3.7	4.6	4.0	4.3	5.0	7.3	7.6	12.4	9.7	8.2	6.0	5.9	6.5	24	12.4	3.0	5.4	0	0
8	4.8	5.5	4.2	5.7	5.1	6.6	29.2	23.7	25.1	20.7	14.6	8.8	5.3	6.1	5.4	7.4	12.5	8.5	13.2	41.4	23.9	17.1	13.1	13.8	24	41.4	4.2	13.4	0	0
9	25.7	13.0	10.4	21.9	20.5	32.9	32.3	21.1	10.9	9.3	7.8	6.3	7.6	13.8	6.2	18.2	7.8	8.7	17.5	14.7	35.8	9.5	7.5	6.8	24	35.8	6.2	15.3	0	0
10	12.1	11.2	11.9	17.2	12.0	23.2	52.1	31.8	27.9	14.9	9.5	24.2	19.0	25.7	18.3	8.7	10.5	21.0	11.7	22.6	20.3	26.0	24.2	7.9	24	52.1	7.9	19.3	0	0
11	7.1	10.1	6.0	7.0	7.6	12.6	6.3	5.7	4.1	3.7	4.6	3.5	4.4	4.3	4.4	4.0	4.2	4.0	4.6	3.4	3.7	3.4	3.1	3.7	24	12.6	3.1	5.2	0	0
12	3.0	2.8	3.0	2.9	3.9	5.5	5.8	7.1	3.8	3.7	3.1	3.1	2.9	3.2	3.5	6.9	7.2	9.5	15.2	11.2	9.7	7.6	6.6	4.3	24	15.2	2.8	5.6	0	0
13	3.2	3.4	13.5	6.6	3.7	3.8	3.4	9.0	4.2	5.8	6.0	9.1	4.8	3.3	3.7	3.3	3.2	3.0	3.4	4.1	4.8	5.6	3.6	3.2	24	13.5	3.0	4.9	0	0
14	2.6	3.1	9.2	2.9	2.3	3.0	3.9	13.5	5.8	10.6	2.9	2.7	2.5	2.7	3.2	2.9	4.5	10.8	15.1	19.3	11.1	7.4	8.9	6.8	24	19.3	2.3	6.6	0	0
15	6.8	7.8	9.5	10.9	6.7	9.2	30.0	36.4	50.3	19.0	16.2	23.4	13.1	17.4	14.5	12.6	9.4	10.2	20.7	23.2	20.6	23.0	25.0	24.8	24	50.3	6.7	18.4	0	0
16	10.9	6.7	5.4	4.7	5.9	8.1	11.9	19.4	11.8	5.5	7.2	4.9	4.3	4.6	4.9	5.6	4.8	4.8	6.6	8.0	6.7	5.2	4.1	5.3	24	19.4	4.1	7.0	0	0
17	4.0	4.3	3.2	4.6	7.6	11.9	29.6	27.7	35.0	42.3	41.5	19.3	10.7	15.2	13.4	10.4	11.4	15.2	11.2	13.0	8.4	4.6	4.6	5.0	24	42.3	3.2	14.8	0	0
18	8.0	10.4	5.0	4.2	5.9	10.4	8.1	6.6	6.0	5.3	5.5	4.8	3.3	7.5	6.3	12.3	7.7	12.4	14.9	4.8	3.4	4.0	3.2	2.9	24	14.9	2.9	6.8	0	0
19	2.6	7.5	5.1	2.6	2.9	8.8	13.7	7.3	5.5	4.9	3.7	7.8	7.7	9.0	15.1	3.5	3.4	3.7	5.3	9.0	12.5	12.0	8.3	5.1	24	15.1	2.6	7.0	0	0
20	9.2	9.0	4.8	9.2	6.0	5.4	17.6	13.6	13.7	7.5	6.7	6.5	7.6	7.5	6.9	9.6	6.9	6.7	8.0	11.1	36.3	9.5	8.6	7.4	24	36.3	4.8	9.8	0	0
21	7.2	15.1	4.8	5.0	6.4	7.8	7.9	8.3	14.5	17.6	8.0	7.1	5.3	7.0	7.1	8.0	4.6	4.2	4.0	3.6	4.9	2.4	3.0	2.8	24	17.6	2.4	6.9	0	0
22	2.1	2.0	2.7	2.9	2.6	3.2	3.4	3.4	4.0	3.1	2.6	3.7	3.3	4.0	3.2	4.0	3.1	3.1	3.9	4.1	4.2	6.9	6.4	10.1	24	10.1	2.0	3.8	0	0
23	22.2	16.2	17.6	21.4	12.4	8.8	C	C	C	C	C	C	26.8	18.0	13.8	12.9	10.3	13.1	19.6	18.3	21.2	21.0	7.3	11.1	18	26.8	7.3	16.2	0	0
24	5.8	4.1	13.0	6.4	8.2	14.3	23.1	21.8	14.9	15.1	24.1	47.9	59.6	25.5	17.4	5.3	6.3	10.4	12.7	7.7	19.3	12.6	10.4	8.1	24	59.6	4.1	16.4	0	0
25	8.0	7.2	29.2	4.2	2.4	8.3	19.9	22.7	24.1	12.7	23.1	5.9	14.9	72.4	25.7	7.5	8.7	21.9	22.2	13.8	9.9	4.6	1.7	2.3	24	72.4	1.7	15.5	0	0
26	1.5	0.0	0.0	0.0	0.2	7.3	28.9	41.2	35.6	47.9	18.1	13.8	9.1	5.6	4.2	8.5	8.0	19.1	19.9	14.1	17.3	6.3	2.1	10.3	24	47.9	0.0	13.3	0	0
27	7.6	24.3	4.4	32.8	44.5	7.2	6.8	11.2	4.6	2.3	0.0	13.5	6.1	7.5	2.9	4.4	4.7	9.1	13.2	40.6	7.2	14.2	2.7	1.8	24	44.5	0.0	11.4	0	0
28	3.8	0.2	0.0	7.2	0.2	1.4	1.4	0.9	14.8	12.3	6.7	6.4	6.7	7.1	8.0	6.7	5.1	9.1	11.5	15.7	7.2	5.5	17.5	12.3	24	17.5	0.0	7.0	0	0
29	7.4	6.6	5.8	2.9	1.0	1.6	35.7	35.0	13.7	30.9	12.9	10.2	5.3	8.7	9.6	9.0	12.9	74.4	85.8	28.6	31.3	13.5	11.7	25.6	24	85.8	1.0	20.0	0	0
30	2.8	29.6	6.4	6.1	11.6	29.2	27.5	16.2	16.9	10.0	9.2	8.6	7.3	25.9	34.6	40.2	17.4	18.5	23.7	39.0	25.7	18.7	0.6	0.2	24	40.2	0.2	17.7	0	0
31																													0	0
Count	30	30	30	30	30	30	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	714	30	29	30		
Maximum	25.7	29.6	29.2	64.1	44.5	32.9	52.1	41.2	50.3	47.9	41.5	47.9	59.6	72.4	56.6	40.2	61.4	74.4	85.8	41.4	56.8	54.8	31.9	25.6	24	85.8	25.6	48.7		
Minimum	1.5	0.0	0.0	0.0	0.2	1.4	1.4	0.9	3.3	2.3	0.0	2.7	2.5	2.7	2.9	2.7	3.1	3.0	3.4	3.4	3.4	2.4	0.6	0.2	18	10.12015	0.0	1.8		
Average	8.1	8.9	7.7	10.0	8.2	10.1	18.2	17.6	16.5	13.9	11.0	11.3	10.9	13.1	11.4	10.4	10.3	14.4	16.0	16.5	17.6	13.1	9.3	8.8	24	36	4	12.2		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													85.8
													21.4
Data	3.2	4.3	5.5	6.9	8.4	10.8	13.6	18.0	25.7	33.1	56.3	85.8	12.2

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

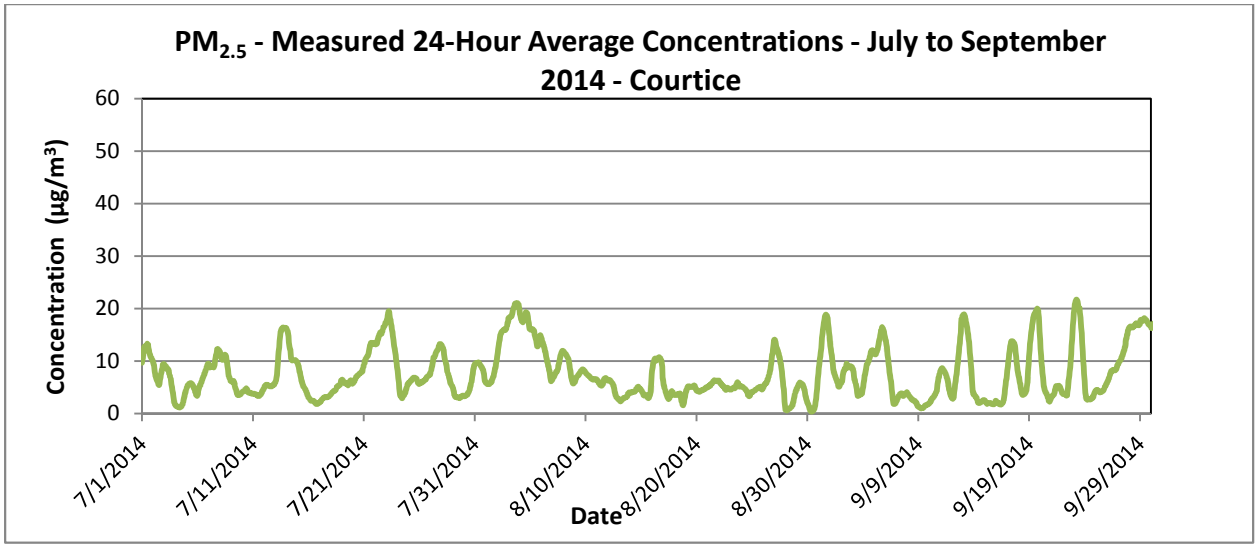
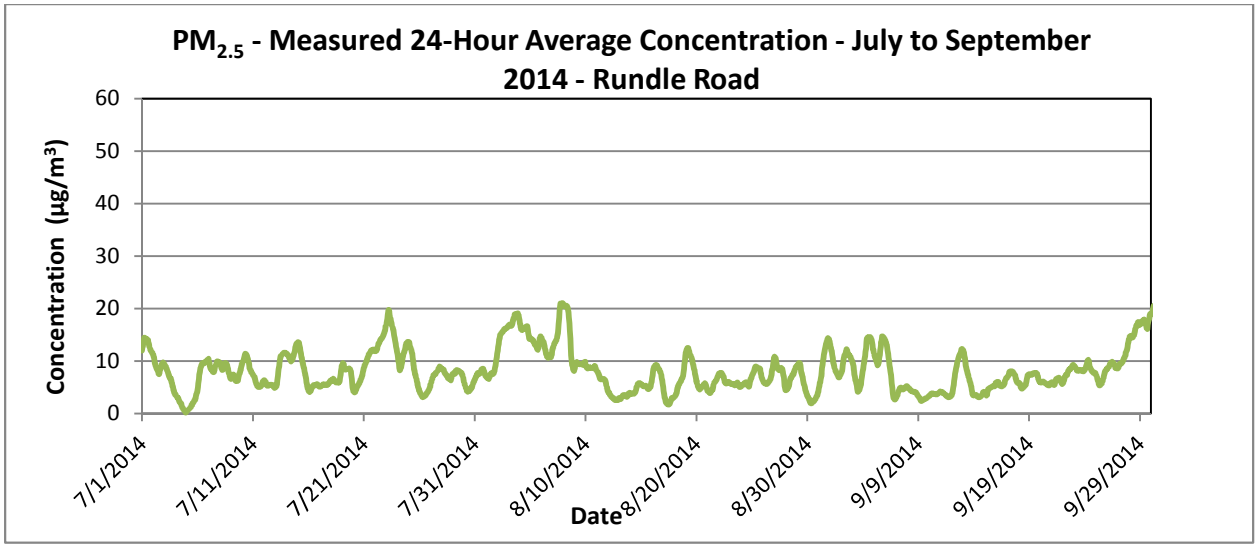


Figure D-2 Time History Plot of Measured 24-Hour Average $PM_{2.5}$ Concentrations – Rundle Road Station



$PM_{2.5}$ - COURTICE
July 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	12.6	12.7	15.4	19.6	19.7	18.0	14.6	14.5	15.0	14.7	14.9	15.8	17.6	9.8	0.3	0.5	1.1	1.0	1.9	2.7	4.3	4.8	5.5	4.6	24	19.7	0.3	10.1
2	6.2	6.1	5.1	5.1	5.5	6.2	5.9	6.5	9.0	9.7	9.6	10.7	9.5	8.7	9.6	12.7	14.4	13.3	12.4	12.2	12.7	19.8	10.0	5.2	24	19.8	5.1	9.4
3	4.5	3.7	3.4	2.2	2.0	2.8	2.1	2.8	C	C	1.6	1.1	2.3	2.3	2.3	1.5	1.5	1.2	0.7	0.6	0.3	0.4	0.6	0.6	22	4.5	0.3	1.8
4	0.8	0.8	0.9	1.3	1.6	1.7	1.3	1.2	0.8	0.7	1.2	2.3	3.7	4.1	5.1	6.4	7.8	8.2	8.6	8.0	10.3	10.8	9.4	8.7	24	10.8	0.7	4.4
5	7.9	6.9	5.8	5.6	5.3	4.6	2.8	2.4	1.3	1.4	1.5	1.6	1.5	1.9	1.6	1.3	2.2	1.0	1.1	2.6	3.5	4.7	5.7	6.0	24	7.9	1.0	3.3
6	10.7	16.5	18.6	16.3	12.1	8.3	6.9	6.4	6.4	6.9	8.8	8.7	7.6	6.2	6.3	6.5	7.1	7.7	8.6	9.4	9.9	10.5	10.7	11.1	24	18.6	6.2	9.5
7	10.9	10.1	10.8	12.7	16.7	6.8	10.1	4.5	6.2	8.9	5.9	5.5	10.6	16.6	20.7	21.2	17.1	16.6	19.4	20.4	12.1	8.3	8.2	10.0	24	21.2	4.5	12.1
8	5.8	3.9	5.4	7.0	5.1	3.5	2.7	4.6	10.5	13.1	12.2	9.0	15.1	16.0	13.8	8.5	1.5	1.9	2.4	1.6	2.4	2.5	2.5	2.1	24	16.0	1.5	6.4
9	2.1	3.0	3.4	5.0	6.3	5.8	3.8	1.2	1.5	1.7	2.8	6.0	8.5	8.4	6.0	3.0	2.2	2.0	1.7	2.2	3.3	4.0	4.9	5.3	24	8.5	1.2	3.9
10	4.9	4.4	5.1	6.5	7.8	7.6	5.6	3.6	4.7	4.1	3.5	3.5	2.9	2.2	1.8	1.5	1.9	2.0	1.8	1.7	1.5	2.7	4.0	5.0	24	7.8	1.5	3.8
11	4.8	4.6	5.7	6.2	6.4	5.5	5.8	3.5	3.1	2.1	2.5	1.9	2.0	2.5	2.2	3.0	3.9	4.6	4.8	5.3	7.3	7.3	8.3	7.5	24	8.3	1.9	4.6
12	9.6	10.8	9.3	8.3	7.4	7.9	5.5	3.9	1.3	1.3	1.9	1.3	0.7	1.0	1.3	2.9	4.0	5.4	7.7	7.5	8.1	8.2	9.5	12.0	24	12.0	0.7	5.7
13	13.1	15.9	14.7	17.8	23.5	32.0	40.3	31.5	21.4	21.8	28.6	26.5	15.6	10.2	6.8	7.2	6.6	6.6	7.0	6.7	7.8	9.4	9.7	10.8	24	40.3	6.6	16.3
14	11.8	10.8	11.7	13.8	15.3	14.7	13.1	12.4	13.5	11.2	10.2	9.3	8.2	7.5	7.7	7.7	6.7	6.8	6.6	7.5	7.0	8.6	8.8	7.7	24	15.3	6.6	9.9
15	7.6	5.1	4.5	4.9	6.3	5.4	3.9	2.3	1.8	1.4	1.5	2.1	2.2	1.8	2.9	5.2	5.4	2.3	1.7	2.1	2.4	3.0	3.3	2.6	24	7.6	1.4	3.4
16	1.9	0.9	2.0	3.3	2.8	1.8	1.8	1.9	1.9	1.4	1.0	1.0	1.3	0.9	1.5	1.2	1.1	1.5	1.3	2.1	2.9	6.1	3.9	2.2	24	6.1	0.9	2.0
17	3.4	3.4	4.1	5.3	5.4	5.9	4.7	4.9	3.2	2.6	2.3	2.6	2.9	1.6	0.8	0.7	1.3	1.3	1.7	2.2	5.6	6.6	6.1	5.4	24	6.6	0.7	3.5
18	5.4	6.6	7.1	7.1	8.4	7.6	8.5	5.0	3.7	3.2	3.8	4.0	6.7	8.8	5.7	3.4	1.9	1.7	2.2	3.7	7.1	9.7	12.5	14.7	24	14.7	1.7	6.2
19	10.6	7.5	6.1	5.0	4.0	4.4	4.3	3.1	4.0	3.7	3.4	3.5	4.0	4.3	4.1	4.1	6.0	7.1	8.5	9.1	8.1	7.8	7.0	8.9	24	10.6	3.1	5.8
20	8.6	9.5	8.4	8.2	9.3	9.4	9.0	9.6	7.9	5.5	4.8	5.0	5.2	5.5	6.7	7.2	8.1	8.6	9.7	10.4	10.6	10.6	17.6	16.2	24	17.6	4.8	8.8
21	18.3	16.4	15.9	15.5	14.1	13.4	13.7	12.0	10.3	10.9	11.1	12.9	15.9	17.9	16.3	12.6	12.2	8.1	6.6	7.5	11.6	16.1	15.7	15.4	24	18.3	6.6	13.4
22	15.3	15.9	15.6	16.0	16.1	19.0	22.5	20.7	18.0	15.4	19.1	20.1	16.2	14.6	14.0	16.6	18.5	15.8	13.9	13.9	14.5	18.7	21.2	21.2	24	22.5	13.9	17.2
23	19.8	18.9	20.4	26.1	30.1	32.1	27.8	12.1	4.6	6.3	7.8	7.5	2.5	0.4	0.4	0.5	0.5	0.4	0.5	1.2	2.4	2.0	2.5	2.4	24	32.1	0.4	9.6
24	3.0	3.6	3.7	8.7	8.3	4.7	4.3	3.5	3.4	3.5	3.9	4.3	5.4	4.2	3.5	3.5	4.5	4.7	5.1	9.4	10.3	8.3	9.4	9.4	24	10.3	3.0	5.5
25	7.8	6.1	6.4	7.0	8.6	9.2	9.2	5.1	6.8	5.5	7.6	7.3	4.4	4.2	4.1	3.3	3.5	2.7	3.6	3.6	3.1	3.9	5.8	7.7	24	9.2	2.7	5.7
26	7.9	7.6	8.0	9.2	9.1	9.6	8.6	9.1	8.1	7.5	7.0	6.9	7.9	7.3	6.3	6.7	6.9	6.1	6.1	4.5	5.3	6.6	6.8	8.3	24	9.6	4.5	7.4
27	13.1	14.7	16.0	18.0	20.6	18.3	24.8	21.9	9.9	9.2	10.0	12.6	16.5	13.1	9.8	8.9	9.6	11.0	12.4	12.2	13.2	6.8	7.0	8.4	24	24.8	6.8	13.2
28	9.4	9.1	11.9	14.9	15.4	10.9	6.3	2.9	2.3	2.1	1.9	2.0	1.9	1.8	2.1	2.5	2.8	2.8	2.7	3.2	4.7	4.6	4.9	4.5	24	15.4	1.8	5.3
29	4.4	3.9	3.4	3.6	3.4	3.2	4.0	4.0	2.3	0.8	1.0	1.1	1.9	2.1	1.2	0.9	2.5	5.2	5.5	4.3	4.8	6.9	7.1	4.1	24	7.1	0.8	3.4
30	2.7	2.7	3.5	4.6	4.7	5.9	5.2	3.5	3.9	4.4	6.6	C	C	8.9	9.4	10.3	12.2	11.8	14.6	16.4	18.7	21.4	15.4	14.1	22	21.4	2.7	9.1
31	7.9	5.3	5.4	5.7	5.0	4.5	6.0	5.5	5.0	3.3	4.0	5.0	6.8	5.8	6.7	6.7	7.6	8.4	9.7	7.4	7.1	6.0	5.3	5.2	24	9.7	3.3	6.1
Count	31	31	31	31	31	31	31	31	30	30	31	30	30	31	31	31	31	31	31	31	31	31	31	31	740	31	30	31
Maximum	19.8	18.9	20.4	26.1	30.1	32.1	40.3	31.5	21.4	21.8	28.6	26.5	17.6	17.9	20.7	21.2	18.5	16.6	19.4	20.4	18.7	21.4	21.2	21.2	24	40.3	16.6	23.0
Minimum	0.8	0.8	0.9	1.3	1.6	1.7	1.3	1.2	0.8	0.7	1.0	1.0	0.7	0.4	0.3	0.5	0.5	0.4	0.5	0.6	0.3	0.4	0.6	0.6	22	4.5	0.3	0.8
Average	8.2	8.0	8.3	9.4	9.9	9.4	9.2	7.3	6.4	6.2	6.5	6.7	6.9	6.5	5.8	5.7	5.9	5.7	6.1	6.5	7.2	8.0	8.0	8.0	24	15	3	7.3

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													40.3
													17.2
Data	1.6	2.5	3.7	4.9	6.0	7.3	8.7	10.8	15.5	18.3	26.3	40.3	7.3

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

$PM_{2.5}$ - COURTICE
August 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	4.2	3.6	2.9	3.3	4.0	6.0	6.4	5.3	4.1	4.4	6.6	8.2	8.9	11.2	12.3	13.5	10.9	14.0	20.8	18.8	17.2	15.7	15.2	15.4	24	20.8	2.9	9.7
2	17.0	18.8	19.2	20.6	20.6	19.6	19.5	17.8	13.6	10.5	10.9	12.1	12.3	13.1	13.5	14.3	14.5	15.1	16.2	19.3	21.0	22.8	23.4	25.5	24	25.5	10.5	17.1
3	25.7	28.0	26.8	22.9	21.7	21.2	19.8	19.2	17.7	17.6	18.2	20.6	19.9	20.1	21.1	20.2	18.6	15.1	14.3	21.0	22.6	22.9	23.1	19.9	24	28.0	14.3	20.8
4	16.9	11.9	10.5	12.5	12.8	13.0	14.3	14.5	15.0	20.5	26.2	26.5	25.1	24.6	28.3	34.3	15.4	13.8	9.0	8.1	8.2	8.0	9.2	10.7	24	34.3	8.0	16.2
5	12.2	11.3	12.5	12.4	12.9	12.7	12.9	14.2	13.2	11.8	14.1	17.0	18.1	17.1	16.0	16.7	14.8	14.1	15.7	18.9	21.3	23.1	14.2	7.8	24	23.1	7.8	14.8
6	5.7	4.7	5.4	6.0	5.7	5.7	5.5	4.5	3.9	3.8	5.1	6.5	7.1	8.1	7.4	6.5	4.9	2.7	5.1	7.5	8.4	9.6	10.2	10.8	24	10.8	2.7	6.3
7	11.0	9.2	8.8	8.4	9.0	10.8	10.5	8.5	8.0	7.6	6.4	10.3	13.5	18.0	17.0	16.2	16.1	16.2	14.1	13.9	13.9	14.8	13.5	11.3	24	18.0	6.4	11.9
8	8.8	6.9	6.5	5.8	6.0	6.7	8.5	5.6	4.2	3.7	3.7	3.8	3.3	2.5	2.3	2.3	2.6	3.0	3.7	6.3	7.4	9.8	13.0	12.3	24	13.0	2.3	5.8
9	12.2	11.5	11.3	12.0	11.9	11.4	10.0	8.4	6.9	5.8	6.1	6.7	6.4	6.2	6.5	6.3	5.5	4.3	4.2	4.6	6.8	7.3	8.6	8.7	24	12.2	4.2	7.9
10	9.2	8.8	9.0	9.9	9.8	9.5	8.5	7.7	4.4	3.0	3.5	4.4	4.7	4.7	4.6	4.7	4.8	4.2	4.4	5.2	6.9	8.3	8.3	8.2	24	9.9	3.0	6.5
11	8.7	7.4	6.2	5.6	5.6	5.9	5.3	3.7	2.4	1.6	2.5	3.7	6.5	8.8	11.1	11.9	11.8	9.4	6.4	6.3	6.5	5.4	5.2	5.0	24	11.9	1.6	6.4
12	5.8	7.9	8.0	7.2	5.7	3.6	2.0	0.7	0.2	0.2	0.2	0.5	0.8	1.8	0.6	0.4	1.3	1.9	2.4	3.0	2.2	1.9	3.4	4.4	24	8.0	0.2	2.8
13	7.5	5.1	3.5	3.9	4.9	5.0	4.8	3.3	3.2	2.4	2.8	1.3	1.4	1.6	1.8	1.8	2.0	2.9	3.6	8.2	8.0	7.3	6.0	4.6	24	8.2	1.3	4.0
14	5.5	5.0	4.5	4.4	5.3	6.5	5.4	4.7	3.0	2.1	2.2	3.0	3.7	5.5	6.7	5.3	5.7	5.0	4.9	5.0	5.3	4.6	4.9	3.9	24	6.7	2.1	4.7
15	2.4	1.0	0.8	0.8	0.9	1.0	1.3	C	C	C	2.1	2.8	3.2	2.2	2.2	2.7	4.2	6.3	8.0	10.5	11.9	15.3	28.1	49.5	21	49.5	0.8	7.5
16	16.2	15.3	11.4	7.8	7.3	6.6	6.4	6.7	7.0	7.1	6.0	4.2	4.6	5.8	6.3	4.5	4.0	3.8	4.7	5.3	7.8	7.3	7.2	0.3	24	16.2	0.3	6.8
17	0.5	1.1	0.5	0.2	0.2	0.3	0.8	0.6	0.7	0.8	0.8	1.1	0.8	9.8	10.8	10.0	12.1	9.9	8.6	10.4	4.5	0.8	0.3	0.2	24	12.1	0.2	3.6
18	0.4	0.2	0.2	0.4	0.6	1.1	1.7	1.9	1.9	0.9	1.1	1.5	1.9	1.8	1.8	1.7	1.8	3.1	2.8	4.8	8.4	11.1	12.9	11.8	24	12.9	0.2	3.2
19	10.8	9.4	8.1	6.7	6.1	6.2	5.4	2.8	1.0	0.5	0.4	0.7	0.9	1.7	2.9	2.5	3.4	4.0	4.9	6.0	6.7	7.2	7.4	6.6	24	10.8	0.4	4.7
20	6.1	5.7	6.5	6.6	6.2	4.7	3.7	3.1	2.6	1.9	2.4	2.8	2.3	2.6	2.4	3.7	4.1	4.6	6.4	6.9	9.6	10.4	8.1	6.8	24	10.4	1.9	5.0
21	5.9	5.9	8.5	11.3	4.8	5.0	9.7	2.1	5.6	A	4.4	3.3	5.6	8.6	5.3	2.9	3.1	3.1	5.3	7.2	11.9	9.6	7.9	7.1	23	11.9	2.1	6.3
22	6.7	5.3	5.0	4.8	4.3	3.5	3.2	2.1	2.6	2.4	4.1	3.4	2.2	3.4	0.2	0.2	2.7	5.2	7.8	12.6	10.7	7.9	5.5	5.3	24	12.6	0.2	4.6
23	5.6	5.4	4.8	4.4	5.0	5.2	5.0	5.7	3.2	2.6	2.0	2.6	5.4	4.9	5.4	9.2	9.8	7.0	4.5	3.9	4.7	6.1	7.1	6.4	24	9.8	2.0	5.2
24	5.4	4.4	4.1	3.9	3.4	3.6	3.9	3.2	1.2	1.0	0.9	1.0	1.2	1.5	1.8	1.0	3.1	2.9	4.1	5.0	9.5	14.6	9.3	6.8	24	14.6	0.9	4.0
25	5.6	5.3	5.2	4.9	5.2	5.2	6.8	5.0	2.2	2.1	2.6	2.8	3.0	3.0	2.7	2.8	3.6	4.2	4.5	5.9	5.9	6.9	8.0	7.9	24	8.0	2.1	4.6
26	11.3	8.5	8.5	9.5	10.8	9.2	7.0	5.6	6.4	7.8	8.3	8.6	9.5	10.0	11.0	11.7	14.2	18.8	22.7	23.6	20.1	16.7	25.8	32.1	24	32.1	5.6	13.2
27	27.1	12.7	4.0	1.9	0.7	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.4	0.6	0.4	0.9	0.2	0.2	0.3	0.5	0.4	1.2	1.3	24	27.1	0.2	2.3
28	1.8	1.6	1.3	1.3	1.1	2.1	2.3	1.3	1.3	1.5	1.7	1.6	1.7	2.7	2.9	4.2	5.8	7.2	8.9	10.4	11.6	10.7	9.5	7.7	24	11.6	1.1	4.2
29	6.9	5.8	5.6	6.1	6.1	8.7	5.9	5.0	3.3	0.4	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.8	0.7	24	8.7	0.2	2.4
30	0.6	0.4	0.6	0.6	0.4	0.3	0.3	0.3	0.4	0.3	0.5	1.6	1.7	2.3	3.0	3.7	8.3	10.8	14.3	16.0	20.8	25.4	23.6	23.4	24	25.4	0.3	6.7
31	23.2	23.7	22.0	20.1	15.6	16.6	20.1	23.9	26.3	20.2	16.5	18.9	17.3	15.6	13.5	12.5	11.5	10.7	11.3	10.8	10.0	5.4	1.9	3.8	24	26.3	1.9	15.5
Count	31	31	31	31	31	31	31	30	30	29	31	31	31	31	31	31	31	31	31	31	31	31	31	31	740	31	29	31
Maximum	27.1	28.0	26.8	22.9	21.7	21.2	20.1	23.9	26.3	20.5	26.2	26.5	25.1	24.6	28.3	34.3	18.6	18.8	22.7	23.6	22.6	25.4	28.1	49.5	24	49.5	18.6	25.5
Minimum	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	21	6.7	0.2	0.2
Average	9.2	8.1	7.5	7.3	6.9	7.0	7.0	6.3	5.5	5.0	5.3	5.9	6.2	7.1	7.2	7.4	7.1	7.2	7.9	9.2	10.0	10.2	10.4	10.5	24	17	3	7.6

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													49.5
													20.8
Data	0.8	2.2	3.6	4.8	5.8	7.1	9.0	12.0	17.0	21.0	26.7	49.5	7.6

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

$PM_{2.5}$ - COURTICE
September 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	2.7	2.8	2.5	2.3	2.4	2.3	2.5	3.1	3.5	8.3	11.8	11.7	10.7	8.5	8.3	6.9	5.3	3.5	3.2	4.5	5.4	4.9	7.4	7.9	24	11.8	2.3	5.5
2	6.8	5.4	4.6	7.6	13.2	19.8	16.1	9.7	10.6	10.4	11.2	16.2	19.4	19.6	3.2	1.5	1.7	1.0	2.1	5.0	8.1	7.5	7.9	6.8	24	19.8	1.0	9.0
3	4.6	1.7	1.2	1.3	1.8	2.7	3.9	1.4	1.4	3.0	3.0	2.6	2.6	4.4	3.0	3.2	3.1	2.7	4.6	6.3	7.3	7.7	11.1	15.3	24	15.3	1.2	4.2
4	14.6	15.1	16.1	17.1	18.1	12.9	12.6	16.7	13.1	10.6	6.3	6.3	8.7	9.8	10.0	10.1	11.4	12.6	12.9	11.7	7.6	8.3	8.9	12.4	24	18.1	6.3	11.8
5	15.6	10.6	9.3	13.3	18.5	19.4	17.9	19.6	20.0	21.4	20.9	17.6	14.8	19.2	22.5	23.8	22.3	19.1	21.0	6.5	2.6	2.5	1.1	2.2	24	23.8	1.1	15.1
6	1.7	1.6	1.2	1.6	1.9	0.8	0.9	1.2	1.4	0.9	0.7	0.9	2.3	5.5	6.6	3.7	0.6	0.3	0.8	1.2	1.8	2.5	3.3	4.4	24	6.6	0.3	2.0
7	5.7	5.8	6.6	6.7	6.4	6.5	6.4	3.9	3.2	2.7	2.8	2.1	2.3	1.3	1.1	1.0	1.2	1.6	3.0	4.9	4.9	5.1	5.8	6.1	24	6.7	1.0	4.1
8	3.7	2.6	2.9	3.0	3.2	3.7	3.2	1.4	0.6	0.3	0.3	0.2	0.3	0.2	0.3	0.4	0.5	0.7	1.4	1.2	0.9	0.7	0.9	1.2	24	3.7	0.2	1.4
9	1.3	1.2	1.3	1.7	1.8	2.1	2.3	1.9	1.3	0.9	0.9	1.1	2.3	2.9	2.9	3.0	1.6	1.1	1.9	1.9	2.5	2.1	1.9	2.2	24	3.0	0.9	1.8
10	3.3	4.6	3.9	4.1	8.1	6.6	5.6	3.2	3.5	3.7	3.4	4.4	6.1	7.9	7.9	5.8	7.9	16.1	17.3	16.7	13.8	11.5	11.6	10.8	24	17.3	3.2	7.8
11	10.6	6.4	7.7	9.9	8.8	5.7	0.2	0.2	0.7	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.6	0.8	4.5	6.6	5.4	2.8	2.4	3.1	24	10.6	0.2	3.3
12	4.2	5.3	5.7	7.9	11.2	14.2	18.6	19.0	19.3	16.3	16.6	16.1	16.7	17.8	18.5	22.4	25.1	23.9	23.2	32.2	26.9	49.5	18.8	11.2	24	49.5	4.2	18.4
13	9.5	8.9	8.8	9.1	8.6	8.4	8.5	8.2	7.8	6.5	4.2	1.5	0.6	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.4	0.2	0.5	2.3	24	9.5	0.2	4.0
14	3.5	4.5	6.1	7.1	6.5	6.5	4.6	1.5	0.6	0.4	0.5	0.6	0.7	0.9	1.1	1.2	1.5	1.7	1.9	1.9	1.9	2.6	1.8	1.8	24	7.1	0.4	2.6
15	1.9	1.8	2.4	3.0	3.7	4.1	5.1	3.6	1.6	0.4	0.6	0.5	0.2	0.2	0.2	0.2	0.5	1.3	1.4	1.1	2.6	4.8	6.6	8.4	24	8.4	0.2	2.3
16	4.2	0.6	0.3	0.4	1.3	2.1	2.5	1.2	0.8	0.2	0.2	0.2	0.5	1.8	2.9	3.9	5.6	7.6	12.4	19.9	23.2	24.3	24.4	20.9	24	24.4	0.2	6.7
17	19.9	19.6	19.5	19.0	20.5	20.4	20.7	16.9	13.4	9.7	3.4	0.4	0.5	0.5	0.4	0.3	0.5	0.7	0.7	1.1	1.3	2.0	3.1	3.7	24	20.7	0.3	8.3
18	6.4	9.0	8.7	9.5	9.6	9.9	8.5	4.0	2.5	0.7	1.0	1.4	1.0	1.4	2.6	3.1	3.0	4.3	7.3	16.6	21.3	28.0	31.3	35.0	24	35.0	0.7	9.4
19	40.2	40.4	35.7	31.3	26.5	25.1	24.1	21.7	18.7	13.9	11.2	7.7	6.1	5.5	5.7	6.5	7.0	8.7	11.3	11.7	8.7	4.1	1.0	1.2	24	40.4	1.0	15.6
20	2.3	1.9	1.8	1.9	1.7	1.9	2.0	2.1	1.9	1.9	1.9	2.0	2.0	2.0	1.8	1.6	1.6	1.5	3.6	4.7	6.1	7.0	7.0	7.1	24	7.1	1.5	2.9
21	7.6	6.2	3.0	2.7	3.4	4.3	6.4	8.3	11.4	11.5	10.3	4.3	2.2	2.0	1.7	1.7	2.0	2.0	1.3	1.4	1.2	1.2	0.8	0.9	24	11.5	0.8	4.1
22	1.9	3.3	3.0	3.2	3.4	4.8	5.4	6.4	7.9	9.2	11.6	20.2	20.3	20.5	19.3	20.9	22.2	21.3	25.6	38.0	38.3	32.3	32.1	31.7	24	38.3	1.9	16.8
23	31.0	30.0	23.7	19.7	14.5	12.9	10.7	7.4	4.0	1.4	2.1	1.8	C	C	1.0	0.9	0.9	0.7	0.8	0.6	0.3	0.3	0.4	0.8	22	31.0	0.3	7.5
24	1.1	1.4	3.0	4.8	6.0	8.3	8.8	9.9	5.8	1.9	0.8	1.5	2.0	2.4	3.0	2.4	2.1	2.4	3.6	5.8	5.8	6.0	5.7	4.9	24	9.9	0.8	4.1
25	4.8	3.9	5.1	5.1	5.1	6.5	8.3	6.7	2.5	0.6	1.0	2.1	2.7	2.9	4.2	4.9	4.5	4.1	7.0	12.4	11.4	9.1	9.1	8.8	24	12.4	0.6	5.5
26	8.9	9.3	9.5	10.1	11.0	12.9	15.9	11.4	9.2	6.8	5.5	4.4	3.6	3.8	4.9	4.4	4.2	5.0	8.2	10.4	13.8	15.5	14.6	17.0	24	17.0	3.6	9.2
27	12.9	12.8	12.6	14.4	15.5	16.2	16.8	16.5	13.3	12.1	10.7	10.3	12.9	10.9	9.4	13.4	13.5	19.0	23.4	19.6	23.2	25.4	26.5	22.8	24	26.5	9.4	16.0
28	18.2	16.5	16.0	15.5	16.0	15.7	15.9	13.7	13.3	12.4	12.9	13.0	12.6	14.3	15.0	15.2	16.1	15.3	20.4	21.1	23.0	21.8	26.6	24.7	24	26.6	12.4	16.9
29	26.8	27.6	19.0	16.6	12.6	13.4	15.5	16.5	14.2	21.7	12.5	10.8	10.2	12.2	11.5	12.0	12.2	12.9	14.5	17.8	20.0	23.0	28.5	24.4	24	28.5	10.2	16.9
30	20.3	18.5	19.8	19.3	20.2	21.4	18.2	13.5	13.9	14.2	16.9	17.8	9.9	10.0	12.0	12.7	11.6	14.0	15.7	15.8	17.3	10.2	10.7	12.6	24	21.4	9.9	15.3
31																												
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	40.2	40.4	35.7	31.3	26.5	25.1	24.1	21.7	20.0	21.7	20.9	20.2	20.3	20.5	22.5	23.8	25.1	23.9	25.6	38.0	38.3	49.5	32.1	35.0	24	49.5	20.0	28.4
Minimum	1.1	0.6	0.3	0.4	1.3	0.8	0.2	0.2	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.4	0.8	22	3.03	0.2	0.4
Average	9.9	9.3	8.7	9.0	9.4	9.7	9.6	8.4	7.4	6.8	6.2	6.0	6.0	6.5	6.1	6.3	6.4	6.9	8.5	10.0	10.2	10.8	10.4	10.4	24	19	3	8.3

																												Maximum
Percentiles		10		20		30		40		50		60		70		80		90		95		99		100				49.5
																												18.4
Data		0.8		1.6		2.4		3.6		5.6		8.0		11.2		15.1		19.8		23.3		32.3		49.5				8.3

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

$PM_{2.5}$ - Rundle Road
July 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	13.3	13.4	15.5	17.7	17.9	16.7	14.9	15.5	16.3	15.8	17.5	18.8	20.1	10.6	2.1	2.4	3.1	3.6	4.2	5.5	6.9	8.1	8.1	7.7	24	20.1	2.1	11.5
2	7.7	7.5	6.2	6.4	6.7	7.5	8.3	9.2	11.4	11.5	11.8	12.6	11.6	10.2	10.3	11.6	11.1	11.6	10.6	10.7	11.0	10.5	9.5	5.2	24	12.6	5.2	9.6
3	4.2	3.9	3.0	2.2	2.1	2.5	2.4	4.1	5.6	5.3	3.5	C	C	C	9.5	5.9	4.5	3.9	3.0	3.6	2.5	3.1	3.2	3.1	21	9.5	2.1	3.9
4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	0.3	0.2	0.2
5	5.4	2.0	2.1	2.0	2.0	2.0	2.1	2.4	2.5	2.8	3.4	4.1	4.3	4.4	4.1	3.7	3.3	3.0	3.4	5.4	8.4	8.4	7.8	6.0	24	8.4	2.0	4.0
6	11.5	20.3	20.0	21.4	21.9	15.2	13.1	10.4	8.9	10.1	9.1	7.1	4.6	3.2	3.0	4.0	5.1	6.2	6.8	7.4	8.7	9.8	10.5	11.0	24	21.9	3.0	10.4
7	11.6	10.3	9.9	11.8	13.1	9.5	10.6	6.3	7.5	7.3	4.6	5.7	9.6	11.3	12.1	11.2	9.4	11.7	12.8	11.8	8.4	7.0	10.9	11.4	24	13.1	4.6	9.8
8	9.5	5.3	4.5	5.2	4.8	5.1	5.6	8.2	12.3	14.6	13.7	13.8	10.4	10.1	12.7	9.2	4.1	2.6	1.8	1.9	3.0	2.7	2.4	2.1	24	14.6	1.8	6.9
9	3.2	4.4	5.5	8.8	12.2	11.1	8.3	5.5	5.8	7.1	6.4	8.2	10.8	10.8	10.6	9.4	8.7	19.5	9.0	5.9	8.4	13.9	8.7	9.8	24	19.5	3.2	8.8
10	14.0	11.2	12.0	12.4	15.0	20.6	18.8	13.0	9.0	6.5	4.1	3.1	2.3	2.1	2.0	1.9	1.8	2.0	2.5	3.2	4.8	6.0	6.7	7.5	24	20.6	1.8	7.6
11	8.2	9.2	9.9	10.1	9.7	9.5	9.8	7.1	2.6	1.2	1.3	1.4	1.3	1.3	1.8	2.5	3.1	5.0	3.8	6.9	10.3	11.0	12.9	10.5	24	12.9	1.2	6.3
12	10.6	8.4	7.9	6.6	5.8	4.8	3.4	2.6	2.7	1.8	1.9	1.8	2.1	2.8	2.8	2.8	3.1	3.1	4.0	6.1	7.0	7.7	8.6	9.1	24	10.6	1.8	4.9
13	11.4	11.0	10.0	10.6	15.3	20.7	23.7	19.9	15.6	15.7	19.4	18.8	10.7	7.2	5.3	5.3	4.8	5.6	7.5	6.5	7.0	7.3	9.2	9.2	24	23.7	4.8	11.6
14	9.4	7.4	8.9	10.9	12.8	15.5	16.8	13.4	16.5	14.2	13.6	12.8	13.7	11.2	10.3	12.4	14.3	13.2	12.3	15.2	19.1	16.4	16.2	13.7	24	19.1	7.4	13.3
15	12.0	10.3	10.0	8.7	8.9	6.1	4.8	2.0	1.7	2.1	2.0	2.2	2.7	3.3	3.9	4.0	2.8	1.5	2.2	2.2	3.7	4.7	5.5	6.7	24	12.0	1.5	4.7
16	6.6	5.0	5.8	8.2	10.9	8.3	7.7	8.4	7.8	7.3	5.9	4.3	3.4	3.1	3.6	2.9	2.8	3.6	3.7	4.0	3.3	2.9	2.7	3.1	24	10.9	2.7	5.2
17	3.8	5.0	8.0	9.7	9.5	11.2	10.2	11.8	7.7	5.9	5.6	5.3	4.1	2.5	2.2	2.3	3.3	4.3	4.2	4.2	5.1	6.7	8.3	7.0	24	11.8	2.2	6.2
18	6.5	6.9	7.1	7.2	9.9	13.0	19.0	8.8	4.8	2.1	2.0	2.1	2.7	3.1	2.6	2.7	2.4	2.7	5.9	6.8	9.7	19.3	24.3	22.7	24	24.3	2.0	8.1
19	22.5	18.2	13.5	10.2	7.5	6.1	5.2	4.1	2.4	2.5	2.8	2.9	3.2	3.2	3.1	3.1	3.0	3.3	3.5	3.5	3.3	3.4	3.4	2.7	24	22.5	2.4	5.7
20	5.3	7.2	6.5	6.1	6.6	8.3	8.7	8.5	8.2	7.2	7.2	8.2	7.4	7.1	6.5	6.8	7.7	8.5	8.1	9.2	9.7	11.4	13.9	15.5	24	15.5	5.3	8.3
21	12.9	12.9	12.2	11.4	11.7	12.7	13.8	17.7	13.2	13.3	12.9	12.1	12.4	10.3	9.8	12.0	10.9	10.2	9.2	9.5	10.4	11.6	11.4	10.5	24	17.7	9.2	11.9
22	12.8	13.1	13.2	14.4	14.2	15.8	23.6	24.5	21.2	16.5	16.0	18.4	17.6	14.4	11.2	12.3	14.9	13.5	14.3	15.4	16.0	18.0	20.5	20.5	24	24.5	11.2	16.4
23	20.5	20.8	22.6	29.8	31.7	33.2	30.1	13.8	6.3	9.5	9.5	8.0	5.4	4.8	4.1	5.7	4.1	4.0	2.8	2.6	4.5	4.6	6.7	8.1	24	33.2	2.6	12.2
24	9.4	9.2	9.7	14.5	20.3	13.2	15.9	16.8	14.0	13.7	19.2	22.3	19.6	18.2	12.7	12.1	10.7	10.4	10.5	12.7	12.5	11.7	9.4	9.2	24	22.3	9.2	13.6
25	10.0	8.3	8.0	7.7	8.0	9.3	10.7	8.6	5.5	3.3	3.7	3.6	2.5	2.4	2.3	2.1	2.1	2.0	2.2	2.2	2.1	2.2	2.4	2.4	24	10.7	2.0	4.7
26	2.9	2.8	2.5	3.3	4.1	6.0	6.2	5.1	4.8	4.5	4.5	4.8	4.6	4.6	4.4	4.9	5.4	5.3	5.4	5.1	5.2	6.9	7.7	9.0	24	9.0	2.5	5.0
27	10.2	9.4	10.1	10.4	12.6	12.0	13.9	10.4	6.1	5.5	5.2	6.2	8.8	8.0	7.0	6.7	7.8	8.9	9.7	9.6	12.2	6.3	6.8	6.8	24	13.9	5.2	8.8
28	6.8	7.0	8.5	10.6	11.7	9.4	6.4	4.0	3.1	3.4	3.9	4.0	4.0	3.7	3.7	3.4	5.3	9.1	7.6	7.4	9.8	12.7	13.7	13.6	24	13.7	3.1	7.2
29	13.1	11.4	10.1	9.4	9.5	9.3	11.1	10.3	8.1	5.3	2.5	2.4	2.9	3.6	2.6	2.4	3.3	6.0	6.7	7.6	6.2	7.3	6.6	5.6	24	13.1	2.4	6.8
30	4.0	2.0	2.4	2.3	2.7	4.1	C	C	C	C	3.0	3.7	4.4	3.3	4.4	6.1	7.6	7.9	10.6	10.6	11.8	12.6	10.8	9.9	20	12.6	2.0	6.2
31	7.6	6.6	7.1	6.1	6.0	4.7	13.9	11.8	4.7	4.0	6.1	5.1	6.9	7.6	10.5	10.5	9.4	10.3	9.5	7.1	6.0	4.6	4.3	3.5	24	13.9	3.5	7.3
Count	31	31	31	31	31	31	30	30	30	30	31	30	30	30	31	31	31	31	31	31	31	31	31	31	737	31	30	31
Maximum	22.5	20.8	22.6	29.8	31.7	33.2	30.1	24.5	21.2	16.5	19.4	22.3	20.1	18.2	12.7	12.4	14.9	19.5	14.3	15.4	19.1	19.3	24.3	22.7	24	33.2	12.4	21.1
Minimum	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	20	0.3	0.2	0.2
Average	9.3	8.7	8.8	9.6	10.5	10.4	11.3	9.5	7.9	7.3	7.2	7.5	7.1	6.3	5.9	5.9	5.8	6.5	6.4	6.8	7.6	8.4	8.8	8.5	24	16	4	8.0

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	2.3	3.2	4.3	5.9	7.2	8.8	10.3	11.8	14.4	18.2	23.3	33.2

Maximum
33.2
16.4
8.0

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

$PM_{2.5}$ - Rundle Road
August 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	4.1	4.0	4.3	3.7	4.3	5.4	11.2	11.4	10.8	11.5	10.7	9.6	9.0	9.4	9.5	9.1	6.7	12.4	15.9	15.6	16.6	16.0	15.8	16.5	24	16.6	3.7	10.1
2	18.1	19.4	19.4	19.4	20.0	21.6	21.5	20.7	17.1	14.9	13.1	12.0	11.7	12.0	12.1	12.2	13.1	13.8	14.6	16.5	17.3	17.6	17.5	18.8	24	21.6	11.7	16.4
3	21.1	22.8	22.9	21.7	20.7	20.2	18.3	18.6	19.4	19.8	19.8	19.8	21.4	19.2	19.4	19.3	14.3	11.5	10.6	21.3	20.8	19.0	17.6	10.8	24	22.9	10.6	18.8
4	11.9	7.9	9.0	11.1	11.7	12.5	15.5	22.5	18.9	18.7	22.4	22.3	20.0	18.1	19.9	26.3	15.0	16.3	9.4	5.8	5.6	6.0	6.6	6.7	24	26.3	5.6	14.2
5	12.2	9.0	9.7	11.5	7.8	8.4	15.5	18.0	16.1	15.5	15.5	17.5	18.9	18.0	15.9	14.2	12.6	14.4	17.3	19.2	23.6	21.9	13.0	7.5	24	23.6	7.5	14.7
6	7.4	5.0	6.3	4.1	4.5	5.9	8.1	6.3	5.8	6.1	6.4	8.8	11.4	13.4	12.7	13.3	14.2	16.2	23.6	20.6	19.4	18.0	17.5	17.3	24	23.6	4.1	11.4
7	23.5	14.5	12.5	11.3	9.5	10.2	12.1	10.7	9.1	12.0	12.7	18.9	25.8	30.7	34.3	43.8	45.9	40.7	32.0	19.8	17.2	20.1	20.3	17.0	24	45.9	9.1	21.0
8	18.4	11.7	9.8	8.1	8.2	9.1	16.9	10.6	8.1	5.8	4.0	3.8	3.5	3.1	3.9	4.2	4.6	4.6	5.0	6.8	8.4	9.7	12.1	14.4	24	18.4	3.1	8.1
9	28.1	19.0	17.0	15.3	13.7	12.3	11.2	9.8	7.5	4.4	3.5	3.3	3.5	4.1	4.4	3.6	3.4	3.4	4.0	5.5	8.3	16.3	19.7	15.3	24	28.1	3.3	9.9
10	16.4	11.6	11.2	12.3	11.1	12.2	12.2	13.4	8.7	3.9	2.3	2.3	3.2	4.2	3.4	4.3	4.2	4.0	4.4	5.9	15.2	12.4	11.0	10.6	24	16.4	2.3	8.3
11	12.8	9.3	8.3	7.9	7.3	6.7	6.7	4.7	2.6	2.4	2.5	2.9	3.5	4.2	4.5	4.1	3.2	3.2	2.3	2.9	2.9	2.8	2.9	3.3	24	12.8	2.3	4.7
12	4.0	4.6	5.2	5.2	3.5	2.6	1.9	1.1	0.2	0.4	1.3	2.0	2.0	3.5	1.2	1.1	1.4	2.6	3.5	3.1	3.6	1.3	3.3	4.4	24	5.2	0.2	2.6
13	11.1	5.9	2.5	2.5	3.7	5.3	5.5	4.9	3.7	3.2	2.9	1.1	0.9	1.0	0.4	4.8	0.3	0.3	0.6	4.9	8.4	7.9	7.7	5.2	24	11.1	0.3	3.9
14	6.2	5.0	4.2	3.4	3.5	4.2	5.6	5.3	3.4	2.9	4.2	5.0	6.4	7.4	10.5	9.4	7.0	4.3	5.7	6.7	7.9	7.1	6.3	5.2	24	10.5	2.9	5.7
15	4.3	3.1	2.0	1.8	2.2	3.0	3.8	4.8	4.6	4.4	5.0	4.6	3.5	C	5.4	5.7	5.9	6.6	7.0	8.1	9.4	15.6	15.0	14.5	23	15.6	1.8	6.1
16	18.6	16.7	17.0	11.0	9.8	8.6	7.3	6.9	6.2	4.6	3.2	2.3	2.0	2.3	2.3	1.8	1.7	1.7	1.7	1.9	3.0	3.0	2.6	0.8	24	18.6	0.8	5.7
17	1.0	0.8	0.6	0.3	0.3	0.6	1.4	2.1	2.4	2.8	2.4	1.9	1.4	3.3	4.6	4.8	7.8	7.5	7.3	8.0	3.8	2.5	2.3	2.1	24	8.0	0.3	3.0
18	3.4	3.2	3.5	4.1	5.0	6.2	9.7	12.8	10.7	8.9	6.0	6.4	6.8	6.2	6.6	12.2	11.3	10.9	12.3	14.0	15.2	24.3	23.2	18.0	24	24.3	3.2	10.0
19	25.9	14.9	12.7	10.6	9.9	9.9	10.0	6.3	2.1	1.2	1.4	1.4	1.4	1.6	1.5	1.3	1.1	1.2	2.7	5.9	9.6	9.4	10.5	9.1	24	25.9	1.1	6.7
20	12.2	5.6	5.8	6.1	6.1	5.2	4.0	3.1	3.5	3.8	4.3	4.8	3.8	3.5	3.6	4.1	5.3	4.7	5.3	4.6	3.6	3.9	3.2	2.6	24	12.2	2.6	4.7
21	4.3	2.4	2.9	3.2	6.2	2.6	4.1	6.3	7.4	11.9	A	A	15.4	13.0	9.8	8.1	7.2	6.4	7.5	7.9	9.1	8.2	7.4	6.8	22	15.4	2.4	7.2
22	11.1	4.5	4.3	4.1	4.0	4.1	5.4	4.7	4.8	5.3	4.9	5.0	3.8	3.8	4.3	5.4	4.7	6.1	8.7	11.9	11.9	8.3	6.5	6.3	24	11.9	3.8	6.0
23	6.1	4.0	3.5	3.1	3.4	3.9	4.1	4.9	3.4	3.9	2.8	3.5	6.2	6.7	6.9	7.7	7.5	6.2	4.3	4.3	5.3	6.2	7.3	6.5	24	7.7	2.8	5.1
24	6.5	5.6	5.7	5.4	5.3	5.8	7.1	6.6	5.9	5.4	4.5	3.8	4.9	4.8	4.0	2.3	2.3	2.9	4.4	17.6	14.7	16.1	12.3	10.6	24	17.6	2.3	6.9
25	14.5	8.7	9.6	10.3	9.8	11.0	17.3	13.0	9.7	5.8	3.8	2.4	2.6	2.3	2.4	2.3	2.2	2.5	2.6	3.0	4.2	4.5	5.4	4.8	24	17.3	2.2	6.4
26	8.3	5.5	6.6	6.8	8.9	11.9	19.0	9.4	8.2	6.5	6.3	5.4	5.1	4.8	5.2	5.5	6.8	9.3	12.6	15.5	14.6	13.5	19.2	25.4	24	25.4	4.8	10.0
27	22.2	11.8	4.7	2.7	2.0	1.4	1.1	1.7	2.0	3.0	3.5	4.9	4.2	7.8	7.5	8.7	9.5	6.5	8.5	2.3	3.1	3.0	3.3	3.7	24	22.2	1.1	5.4
28	8.2	3.9	3.7	3.9	3.7	3.9	6.4	6.2	8.3	11.2	13.3	16.2	9.4	9.0	10.8	13.7	15.6	8.3	7.6	9.5	11.0	10.0	9.3	8.5	24	16.2	3.7	8.8
29	10.1	6.5	6.3	5.9	6.1	7.0	11.5	6.3	3.8	1.7	1.3	1.1	1.0	1.0	1.1	1.6	1.4	1.3	1.2	1.6	1.3	3.7	2.9	2.3	24	11.5	1.0	3.7
30	2.8	2.7	2.2	2.3	2.4	2.2	2.2	2.3	2.5	2.6	2.6	2.8	3.2	3.3	3.3	3.2	4.1	5.2	5.5	6.1	4.8	7.1	8.1	9.7	24	9.7	2.2	3.9
31	12.0	13.6	14.2	14.0	11.7	12.2	16.4	20.0	22.5	18.0	16.8	19.6	17.9	16.1	14.2	13.4	13.2	13.1	11.0	13.1	14.1	10.4	5.7	4.5	24	22.5	4.5	14.1
Count	31	31	31	31	31	31	31	31	31	31	30	30	31	30	31	31	31	31	31	31	31	31	31	31	741	31	30	31
Maximum	28.1	22.8	22.9	21.7	20.7	21.6	21.5	22.5	22.5	19.8	22.4	22.3	25.8	30.7	34.3	43.8	45.9	40.7	32.0	21.3	23.6	24.3	23.2	25.4	24	45.9	19.8	26.7
Minimum	1.0	0.8	0.6	0.3	0.3	0.6	1.1	1.1	0.2	0.4	1.3	1.1	0.9	1.0	0.4	1.1	0.3	0.3	0.6	1.6	1.3	1.3	2.3	0.8	22	5.2	0.2	0.9
Average	11.8	8.5	8.0	7.5	7.3	7.6	9.5	8.9	7.7	7.2	6.8	7.2	7.5	7.9	7.9	8.8	8.2	8.0	8.4	9.4	10.1	10.5	10.2	9.3	24	18	3	8.5

																												Maximum
Percentiles		10		20		30		40		50		60		70		80		90		95		99		100				45.9
																												21.0
Data		2.3		3.3		4.1		5.2		6.4		8.3		11.0		13.5		18.0		20.0		26.1		45.9				8.5

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

$PM_{2.5}$ - Rundle Road
September 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	5.0	3.5	3.8	3.5	3.4	3.3	3.3	3.1	4.2	8.3	10.8	10.5	10.0	10.2	10.4	9.6	8.9	8.0	8.2	8.5	8.9	9.0	10.2	10.1	24	10.8	3.1	7.3
2	10.3	8.3	7.8	9.8	14.5	20.0	20.1	15.3	15.3	13.3	13.2	15.8	18.8	19.9	4.0	3.1	3.4	3.1	4.0	6.3	8.8	4.3	4.1	6.8	24	20.1	3.1	10.4
3	5.6	2.6	2.1	2.0	2.6	2.3	2.9	3.8	3.9	4.7	4.3	4.8	5.0	5.1	4.1	5.6	6.4	7.6	13.5	11.9	15.2	24.0	22.3	17.0	24	24.0	2.0	7.5
4	17.2	16.4	16.6	18.0	16.4	16.6	22.5	19.8	31.3	19.3	9.3	6.7	5.8	5.5	5.1	5.7	6.3	5.9	7.1	7.7	6.9	7.0	7.0	7.6	24	31.3	5.1	12.0
5	8.2	8.6	9.1	10.2	11.0	11.7	13.5	17.9	18.2	19.7	20.0	17.7	16.6	21.1	22.9	24.1	22.8	21.1	21.3	7.9	5.4	5.1	3.5	3.9	24	24.1	3.5	14.2
6	4.8	3.1	2.5	2.7	2.7	1.6	1.5	1.9	2.1	2.1	2.0	2.3	3.2	4.5	5.5	4.1	1.5	1.2	1.2	1.4	2.1	2.7	4.1	4.8	24	5.5	1.2	2.7
7	12.4	5.3	6.1	7.4	9.4	9.2	9.4	8.6	5.7	3.3	2.7	2.1	2.4	2.6	2.4	2.3	2.4	2.6	2.7	2.9	5.4	6.7	5.9	6.4	24	12.4	2.1	5.3
8	6.6	5.4	5.5	6.1	6.0	6.0	8.6	4.8	2.3	2.1	1.8	1.7	1.6	1.6	1.7	1.9	2.1	2.0	2.1	2.2	2.4	2.4	2.4	3.1	24	8.6	1.6	3.4
9	3.5	3.1	2.5	2.5	2.3	3.0	3.4	3.6	3.4	3.0	3.3	3.1	3.4	3.3	3.1	3.1	2.5	2.5	3.2	3.7	4.5	4.4	4.2	3.7	24	4.5	2.3	3.3
10	5.1	5.5	5.5	4.9	4.7	4.0	4.4	3.5	2.7	2.2	2.3	2.6	3.1	3.0	2.8	2.3	2.5	3.4	5.2	6.0	6.1	6.2	6.4	6.2	24	6.4	2.2	4.2
11	5.4	2.9	4.0	5.1	5.4	4.6	1.2	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.8	0.9	1.4	4.9	8.0	9.2	5.4	5.6	6.7	24	9.2	0.8	3.3
12	9.2	8.4	12.4	14.4	16.8	18.9	18.9	19.2	16.2	13.7	11.9	11.5	10.6	10.0	8.1	8.4	8.5	8.5	8.8	12.4	14.1	15.5	11.4	7.9	24	19.2	7.9	12.3
13	6.9	6.3	5.9	5.8	5.5	5.0	4.4	4.1	4.3	5.5	2.8	2.9	1.9	1.5	1.5	1.4	1.4	1.1	1.2	1.9	2.4	2.5	3.4	4.0	24	6.9	1.1	3.5
14	6.5	7.0	7.0	5.4	5.4	4.5	3.9	3.2	1.9	1.8	1.7	2.0	2.1	2.2	2.5	2.7	2.8	3.2	3.8	5.2	8.1	8.1	4.2	2.3	24	8.1	1.7	4.1
15	2.5	2.8	2.8	3.2	4.2	8.0	16.8	13.9	5.5	3.0	3.2	3.4	2.8	3.5	3.9	3.8	4.4	4.8	5.4	6.5	6.4	7.0	8.9	9.8	24	16.8	2.5	5.7
16	5.7	4.6	4.0	4.5	5.5	6.9	9.6	7.4	3.4	2.1	1.8	2.1	2.3	3.3	4.9	6.0	5.9	6.4	7.9	14.6	16.0	14.1	12.0	10.0	24	16.0	1.8	6.7
17	8.5	7.6	7.0	7.4	8.7	17.6	14.2	7.4	4.6	2.4	2.3	1.5	1.4	1.7	1.8	1.9	2.2	3.6	4.1	5.6	6.7	7.0	6.9	7.8	24	17.6	1.4	5.8
18	7.4	7.3	7.7	8.3	7.7	7.3	6.0	3.1	2.4	2.4	3.2	3.9	3.1	3.4	4.2	4.4	4.9	8.8	16.3	14.4	20.6	13.4	9.2	8.6	24	20.6	2.4	7.4
19	8.7	8.1	7.3	7.1	6.5	6.4	6.9	6.3	4.9	3.8	3.8	3.9	3.4	3.5	3.9	4.5	5.3	5.9	7.9	9.8	9.4	7.1	5.2	5.4	24	9.8	3.4	6.0
20	8.3	5.7	6.9	7.1	8.0	8.1	7.8	6.2	2.5	2.2	2.3	2.5	2.4	2.4	2.2	2.5	3.3	5.0	7.3	9.1	9.9	9.6	9.7	9.8	24	9.9	2.2	5.9
21	9.6	7.2	4.7	4.1	4.5	4.9	6.7	7.6	9.7	10.6	9.3	5.5	3.8	3.6	3.4	3.9	4.5	5.0	4.8	5.0	5.0	4.1	4.4	5.1	24	10.6	3.4	5.7
22	7.7	9.5	10.4	10.7	10.4	11.5	15.3	10.0	13.8	9.4	9.4	13.1	10.4	9.1	5.8	7.3	5.6	4.6	9.8	7.8	7.6	8.0	7.9	7.2	24	15.3	4.6	9.3
23	7.5	7.9	7.7	7.7	6.8	9.5	C	C	9.2	9.1	13.2	11.4	9.9	8.3	7.8	6.4	5.9	6.3	7.6	7.8	6.2	5.7	7.3	9.8	22	13.2	5.7	8.1
24	11.1	10.3	11.5	13.6	13.3	14.9	17.3	19.9	11.7	3.3	1.5	2.1	2.8	3.0	3.1	1.9	2.1	2.4	4.8	5.7	7.2	6.9	6.8	7.8	24	19.9	1.5	7.7
25	7.0	5.3	7.5	6.5	6.6	7.7	10.8	10.0	5.9	3.4	3.3	3.6	4.5	7.8	7.7	6.6	8.6	10.1	13.3	17.6	14.3	12.3	10.2	9.7	24	17.6	3.3	8.3
26	9.2	8.9	8.7	8.5	9.1	11.1	15.7	16.7	8.7	5.7	5.0	6.0	5.7	5.1	4.8	5.1	5.2	5.6	7.1	9.8	14.3	11.3	8.9	9.4	24	16.7	4.8	8.6
27	9.6	11.4	13.8	14.4	15.8	11.5	15.3	18.5	12.6	8.1	6.4	9.3	11.0	10.3	9.1	10.2	9.8	14.7	15.2	16.3	16.4	24.3	23.8	21.6	24	24.3	6.4	13.7
28	19.6	18.0	18.3	18.5	14.1	13.1	13.4	13.3	13.3	11.3	10.8	12.8	15.4	22.2	21.6	17.6	15.0	14.1	18.5	25.3	22.8	18.0	18.8	18.8	24	25.3	10.8	16.9
29	21.8	25.5	22.9	14.2	13.0	12.8	19.4	20.7	14.3	13.8	10.1	8.6	7.2	10.1	11.3	11.7	13.1	33.3	35.3	28.8	29.9	31.2	27.1	18.2	24	35.3	7.2	18.9
30	24.0	22.8	24.2	24.9	24.0	24.9	23.0	16.1	12.4	13.2	13.1	10.8	9.5	14.1	19.2	14.2	11.6	16.5	26.4	19.4	17.0	9.5	9.9	11.6	24	26.4	9.5	17.2
31																												
Count	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	718	30	29	30
Maximum	24.0	25.5	24.2	24.9	24.0	24.9	23.0	20.7	31.3	19.7	20.0	17.7	18.8	22.2	22.9	24.1	22.8	33.3	35.3	28.8	29.9	31.2	27.1	21.6	24	35.3	17.7	24.9
Minimum	2.5	2.6	2.1	2.0	2.3	1.6	1.2	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.8	0.9	1.1	1.2	1.4	2.1	2.4	2.4	2.3	22	4.546049	0.8	1.5
Average	9.2	8.3	8.5	8.6	8.8	9.6	10.9	9.9	8.2	6.8	6.2	6.2	6.0	6.8	6.3	6.1	6.0	7.3	9.3	9.7	10.3	9.8	9.1	8.7	24	16	4	8.2

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													35.3
													18.9
Data	2.3	3.1	4.2	5.4	6.7	7.9	9.6	12.4	16.9	20.2	26.2	35.3	8.2

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:	30-Sep-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
8	11-Jul-14	TH	Invalidate data	3-Jul-14	08:00	3-Jul-14	09:00	Monthly calibration
9	1-Aug-14	TH/CL	Invalidate data	30-Jul-14	10:00	30-Jul-14	14:00	Remove unit for annual maintenance. Spare unit installed. Calibration on spare unit.
10	5-Oct-14	CL	Invalidate data	15-Aug-14	07:00	15-Aug-14	12:00	Original unit re-installed and calibrated.
11	6-Oct-14	CL	Invalidate data	21-Aug-14	09:00	21-Aug-14	10:00	MOE audit and calibration
12	6-Oct-14	CL	Invalidate data	23-Sep-14	12:00	23-Sep-14	14:00	Monthly calibration
13	6-Oct-14	CL	Apply offset to data	15-Aug-14	12:00	23-Sep-14	12:00	SO2 drifting negative

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:	30-Sep-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
8	11-Jul-14	TH	Invalidate data	3-Jul-14	08:00	3-Jul-14	09:00	Monthly calibration
9	1-Aug-14	TH	Invalidate data	30-Jul-14	10:00	30-Jul-14	14:00	Remove unit for annual maintenance. Spare unit installed. Calibration on spare unit.
10	5-Oct-14	CL	Invalidate data	15-Aug-14	07:00	15-Aug-14	11:00	Original unit re-installed and calibrated.
11	6-Oct-14	CL	Invalidate data	21-Aug-14	09:00	21-Aug-14	09:00	MOE audit and calibration
12	6-Oct-14	CL	Invalidate data	23-Sep-14	12:00	23-Sep-14	14:00	Monthly calibration
13	11-Nov-14	CL	No action taken	14-Jul-14	22:00	14-Jul-14	22:00	Elevated NO2 measurement noted. Log book and download log reviewed. Hourly data reviewed. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.
14	11-Nov-14	CL	No action taken	18-Jul-14	21:00	18-Jul-14	21:00	Elevated NO2 measurement noted. Log book and download log reviewed. Hourly data reviewed. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.
15	11-Nov-14	CL	No action taken	21-Jul-14	21:00	21-Jul-14	21:00	Elevated NO2 measurement noted. Log book and download log reviewed. Hourly data reviewed. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.
16	11-Nov-14	CL	Apply offset to NOx	30-Jul-14	15:00	15-Aug-14	06:00	NO measurements noted to be slightly higher than NOx. All channels were within 5 ppb span during calibration. A 2.5 ppb offset was applied to NOx to balance the NOx/NO/NO2 readings.
17	11-Nov-14	CL	No action taken	8-Aug-14	20:00	8-Aug-14	20:00	Elevated NO2 measurement noted. Log book and download log reviewed. Hourly and minute data reviewed. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.
18	11-Nov-14	CL	No action taken	21-Aug-14	21:00	21-Aug-14	21:00	Elevated NO2 measurement noted. Log book and download log reviewed. Hourly data reviewed. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.
19	11-Nov-14	CL	No action taken	27-Aug-14	22:00	27-Aug-14	23:00	Elevated NO2 measurement noted. Log book and download log reviewed. Hourly data reviewed. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.
20	11-Nov-14	CL	No action taken	8-Sep-14	18:00	8-Sep-14	18:00	Elevated NO2 measurement noted. Log book and download log reviewed. Hourly and minute data reviewed. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.
21	11-Nov-14	CL	No action taken	25-Sep-14	19:00	25-Sep-14	19:00	Elevated NO2 measurement noted. Log book and download log reviewed. Hourly data reviewed. Rundle Road station and Oshawa AQI monitoring station measurements reviewed. Oshawa station measured relatively high NO2 during this period. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.
22	11-Nov-14	CL	No action taken	26-Sep-14	19:00	26-Sep-14	19:00	Elevated NO2 measurement noted. Log book and download log reviewed. Hourly data reviewed. Rundle Road station and Oshawa AQI monitoring station measurements reviewed. Oshawa station measured relatively high NO2 during this period. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.

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

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:**	**30-Sep-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
10	11-Jul-14	TH	Invalidate data	3-Jul-14	08:00	3-Jul-14	09:00	Monthly calibration
11	1-Aug-14	TH	Invalidate data	30-Jul-14	11:00	30-Jul-14	12:00	Monthly calibration
12	6-Oct-14	CL	Invalidate data	23-Sep-14	12:00	23-Sep-14	13:00	Monthly calibration
13	10-Nov-14	CL	No action taken	2-Jul-14	00:00	2-Jul-14	01:00	Unusual rate of change in hourly data noted. Log book and download log reviewed. Hourly and minute data reviewed. No equipment issues identified for this period. No rate of change issues identified in minute data. Data deemed valid.
14	10-Nov-14	CL	No action taken	13-Jul-14	06:00	13-Jul-14	06:00	Elevated measurement noted. Log book and download log reviewed. Hourly data reviewed. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.
15	10-Nov-14	CL	No action taken	4-Aug-14	15:00	4-Aug-14	15:00	Elevated measurement noted. Log book and download log reviewed. Hourly data reviewed. Rundle Road station and Oshawa AQI station measurements reviewed. Rundle Road and Oshawa AQI stations had relatively high measurements during this period. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.
16	10-Nov-14	CL	No action taken	15-Aug-14	23:00	15-Aug-14	23:00	Elevated measurement noted. Log book and download log reviewed. Hourly data reviewed. No equipment issues identified for this period. No rate of change issues identified. Data deemed valid.
17	10-Nov-14	CL	No action taken	27-Aug-14	05:00	27-Aug-14	21:00	Relatively consistent low measurements noted. Log book and download log reviewed. Hourly and minute data reviewed. Rundle Road station and Oshawa AQI station measurements reviewed. Oshawa station recorded relatively low measurements during this period. Data deemed valid as measurements were not repeating exactly.
18	10-Nov-14	CL	No action taken	29-Aug-14	09:00	Aug 30,1 4	10:00	Relatively consistent low measurements noted. Log book and download log reviewed. Hourly and minute data reviewed. Rundle Road station and Oshawa AQI station measurements reviewed. Rundle Road and Oshawa stations recorded relatively low measurements during portions of this period. Data deemed valid as measurements were not repeating exactly.

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

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A		Station Name:	Courtice WPCP Station				
Station address:	Courtice Water Pollution Control Plant		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Temperature	Instrument make & model:		Campbell Scientific Model HMP60			Serial Number:	
Data edit period	Start date:	1-Jan-14	End date:	30-Sep-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 Plant		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Rainfall	Instrument make & model:		Texas Electronic TE525M			Serial Number:	
Data edit period	Start date:	1-Jan-14	End date:	30-Sep-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 Plant		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Relative Humidity	Instrument make & model:		Campbell Scientific Model HMP60			Serial Number:	
Data edit period	Start date:	1-Jan-14	End date:	30-Sep-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 Plant		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Atmospheric Pressure	Instrument make & model:		Campbell Scientific Model CS106			Serial Number:	
Data edit period	Start date:	1-Jan-14	End date:	30-Sep-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	Lisa Heatherington		Phone:	N/A	E-mail:	Lisa.Hetherington@Durham.ca		
Station number:	N/A		Station Name:	Courtice WPCP Station				
Station address:	Courtice Water Pollution Control Plant		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Wind Speed/Wind direction	Instrument make & model:		N/A			Serial Number:	
Data edit period	Start date:	1-Jan-14	End date:	30-Sep-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	6-Oct-14	CL	Invalidate data	21-Aug-14	14:00	22-Aug-14	09:00	No wind data recorded
2	6-Oct-14	CL	Invalidate data	23-Sep-14	14:00	24-Sep-14	12:00	No wind speed data recorded.

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 Numb	565	
Data edit period	Start date:	1-Jan-14	End date:	30-Sep-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
9	11-Jul-14	TH	Invalidate data	3-Jul-14	11:00	3-Jul-14	14:00	Monthly calibration
10	1-Aug-14	TH	Invalidate data	30-Jul-14	06:00	30-Jul-14	09:00	Monthly calibration
11	6-Oct-14	CL	Invalidate data	15-Aug-14	12:00	15-Aug-14	13:00	Monthly calibration
12	6-Oct-14	CL	Invalidate data	21-Aug-14	10:00	21-Aug-14	11:00	MOE audit
13	6-Oct-14	CL	Invalidate data	30-Aug-14	22:00	3-Sep-14	10:00	SO2 pump failed and removed. Replaced by spare SO2 pump on Sept 3.
14	6-Oct-14	CL	Invalidate data	23-Sep-14	06:00	23-Sep-14	11:00	New SO2 pump installed. Monthly calibration.
15	6-Oct-14	CL	Apply negative offset	3-Jul-14	15:00	12-Jul-14	07:00	Permeation tube oven evacuation orifice plugged and charcoal filters contaminated with SO2. Therefore the monitor was reading a slight negative. Orifice and charcoal filters were replaced.

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 para	NOx	Instrument make & model:		API Model 200E Chemiluminescence Analyzer		Serial Numb	675	
Data edit period	Start date:	1-Jan-14	End date:	30-Sep-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
9	11-Jul-14	TH	Invalidate data	3-Jul-14	11:00	3-Jul-14	13:00	Monthly calibration
10	1-Aug-14	TH	Invalidate data	30-Jul-14	06:00	30-Jul-14	09:00	Monthly calibration
11	5-Aug-14	TH	Apply offset	3-Jul-14	14:00	30-Jul-14	05:00	Logger was reading data 7 ppb higher than the analyzer.
12	6-Oct-14	CL	Invalidate data	15-Aug-14	12:00	15-Aug-14	13:00	Monthly calibration
13	6-Oct-14	CL	Invalidate data	21-Aug-14	10:00	21-Aug-14	11:00	MOE audit
14	6-Oct-14	CL	Invalidate data	23-Sep-14	06:00	23-Sep-14	11:00	Monthly calibration
15	7-Oct-14	CL	Apply offset to NO and NO	5-Jul-14	02:00	30-Jul-14	05:00	Analyzer zero drift
16	11-Nov-14	TH	Data Check	3-Jul-14	00:00	3-Jul-14	03:00	Continuous 0 readings for NO2 observed. Station log book reviewed. No equipment issues identified for that period. Hourly and minutely data reviewed. Courtice and MOECC Oshawa measurements reviewed. Data deemed valid
17	11-Nov-14	TH	Data Check	3-Jul-14	18:00	5-Jul-14	09:00	Relatively constant low measurements noted. Station log book reviewed. No equipment issues identified for that period. Hourly and minutely data reviewed. Courtice and Oshawa measurements reviewed. No rate of change identified. Data deemed valid.
18	11-Nov-14	TH	Data Check	8-Jul-14	22:00	9-Jul-14	06:00	Volatile readings for NO2 observed. Station log book reviewed. No equipment issues identified for that period. Hourly and minutely data reviewed. Courtice and MOECC Oshawa measurements reviewed. Data deemed valid
19	11-Nov-14	TH	Data Check	15-Jul-14	19:00	16-Jul-14	05:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station.Station log book reviewed. No equipment issues identified for that period. No rate of change identified. Data deemed valid.
20	11-Nov-14	TH	Data Check	6-Aug-14	23:00	7-Aug-14	05:00	Relatively constant low measurements noted. Station log book reviewed. No equipment issues identified for that period. Hourly and minutely data reviewed. Courtice and Oshawa measurements reviewed. No rate of change identified. Data deemed valid.
21	11-Nov-14	TH	Data Check	7-Aug-14	21:00	8-Aug-14	02:00	Relatively constant low measurements noted. Station log book reviewed. No equipment issues identified for that period. Hourly and minutely data reviewed. Courtice and Oshawa measurements reviewed. No rate of change identified. Data deemed valid.
22	11-Nov-14	TH	Data Check	9-Aug-14	01:00	9-Aug-14	04:00	Relatively constant low measurements noted. Station log book reviewed. No equipment issues identified for that period. Hourly and minutely data reviewed. Courtice and Oshawa measurements reviewed. No rate of change identified. Data deemed valid.
23	11-Nov-14	TH	Data Check	13-Aug-14	16:00	14-Aug-14	11:00	Relatively constant low measurements noted. Station log book reviewed. No equipment issues identified for that period. Hourly and minutely data reviewed. Courtice and Oshawa measurements reviewed. No rate of change identified. Data deemed valid.
24	11-Nov-14	TH	Data Check	25-Aug-14	14:00	25-Aug-14	22:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Data deemed valid.
25	11-Nov-14	TH	Data Check	1-Sep-14	14:00	2-Sep-14	06:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. No rate of change identified. Data deemed valid.
26	11-Nov-14	TH	Data Check	7-Sep-14	21:00	8-Sep-14	05:00	Investigated a period of time where readings at Rundle are significantly lower than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. No rate of change identifed. Data deemed valid.
27	11-Nov-14	TH	Data Check	16-Sep-14	21:00	17-Sep-14	04:00	Investigated a period of time where readings at Rundle are significantly lower than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. No rate of change identified. Data deemed valid.
28	11-Nov-14	TH	Data Check	17-Sep-14	20:00	18-Sep-14	09:00	Investigated a period of time where readings at Rundle are significantly lower than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. No rate of change identified. Data deemed valid.
29	11-Nov-14	TH	Data Check	20-Sep-14	19:00	20-Sep-14	20:00	Elevated readings in concentration for 2 hours where readings are signficantly higher than Courtice and the MOECC Oshawa station readings. Station log book reviewed. No equipment issues identified for that period. No rate of change identified. Data deemed valid
30	11-Nov-14	TH	Data Check	25-Sep-14	21:00	26-Sep-14	05:00	Investigated a period of time where readings at Rundle are significantly lower than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. No rate of change identified. Data deemed valid.

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A		Station Name:	Rundle Road Station				
Station address:	Rundle Road / Baseline Road		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or para	NOx	Instrument make & model:		API Model 200E Chemiluminescence Analyzer		Serial Numb		675
Data edit period	Start date:	1-Jan-14	End date:	30-Sep-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)	
31	11-Nov-14	TH	Data Check	27-Sep-14	22:00	28-Sep-14	07:00	Investigated a period of time where readings at Rundle are significantly lower than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. No rate of change identified. Data deemed valid.
32	12-Nov-14	TH	Applied updated offset	3-Jul-14	15:00	30-Jul-14	05:00	Offset for NO2 adjusted to value of 5ppb

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**		**Serial Number:**	**E-1569**	
Data edit period	**Start date:**	**1-Jan-14**	**End date:**	**30-Sep-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
9	11-Jul-14	TH	Invalidate data	3-Jul-14	11:00	3-Jul-14	13:00	Monthly calibration
10	1-Aug-14	TH	Invalidate data	30-Jul-14	06:00	30-Jul-14	09:00	Monthly calibration
11	6-Oct-14	CL	Invalidate data	15-Aug-14	12:00	15-Aug-14	12:00	Monthly calibration
12	6-Oct-14	CL	Invalidate data	21-Aug-14	10:00	21-Aug-14	11:00	MOE audit
13	6-Oct-14	CL	Invalidate data	23-Sep-14	06:00	23-Sep-14	07:00	Monthly calibration
14	10-Nov-14	TH	Data check	4-Jul-14	00:00	4-Jul-14	23:00	Relatively constant low measurements noted.Station log book reviewed. No equipment issues identified for that period. Hourly and minutely data reviewed. Courtice and MOECC Oshawa measurements reviewed. Oshawa recorded relatively low measurements during this period. Minute data after last low reading elevates but trends downwards slowly afterwards. Data deemed valid.
15	10-Nov-14	TH	Data check	9-Jul-14	03:00	10-Jul-14	09:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change indicating valid measurements. Data deemed valid.
16	10-Nov-14	TH	Data check	14-Jul-14	05:00	15-Jul-14	05:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change indicating valid measurements. Data deemed valid.
17	10-Nov-14	TH	Data check	15-Jul-14	22:00	16-Jul-14	11:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change indicating valid measurements. Data deemed valid.
18	10-Nov-14	TH	Data check	17-Jul-14	02:00	17-Jul-14	08:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change indicating valid measurements. Data deemed valid.
19	10-Nov-14	TH	Data check	18-Jul-14	04:00	18-Jul-14	06:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change indicating valid measurements. Data deemed valid.
20	10-Nov-14	TH	Data check	24-Jul-14	00:00	25-Jul-14	02:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change indicating valid measurements. Data deemed valid.
21	10-Nov-14	TH	Data check	28-Jul-14	19:00	29-Jul-14	09:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change with 1 elevated reading. Since minute readings after the elevated reading trends downwards slowly afterwards, indicating valid measurements. Data deemed valid.
22	10-Nov-14	TH	Data check	6-Aug-14	12:00	8-Aug-14	01:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change with 2 elevated readings which trends downwards slowly, indicating valid measurements. Data deemed valid.
23	10-Nov-14	TH	Data check	9-Aug-14	00:00	9-Aug-14	05:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change with 1 elevated reading which trends downwards slowly indicating valid measurements. Data deemed valid.

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A		Station Name:	Rundle Road Station				
Station address:	Rundle Road / Baseline Road		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	PM2.5	Instrument make & model:		Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time		Serial Number:	E-1569	
Data edit period	Start date:	1-Jan-14	End date:	30-Sep-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)	
24	10-Nov-14	TH	Data check	9-Aug-14	22:00	10-Aug-14	08:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change with 2 elevated readings which trends downwards slowly indicating valid measurements. Data deemed valid.
25	10-Nov-14	TH	Data check	10-Aug-14	20:00	11-Aug-14	01:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change with 1 elevated reading which trends downwards slowly indicating valid measurements. Data deemed valid.
26	10-Nov-14	TH	Data check	15-Aug-14	19:00	16-Aug-14	03:00	Investigated a period of time where readings at Rundle are significantly higher than at the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change with 1 elevated reading which trends downwards slowly indicating valid measurements. Data deemed valid.
27	10-Nov-14	TH	Data check	18-Aug-14	03:00	19-Aug-14	01:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change with 1 elevated reading which trends downwards slowly indicating valid measurements. Data deemed valid.
28	10-Nov-14	TH	Data check	27-Aug-14	10:00	28-Aug-14	16:00	Investigated a period of time where readings at Rundle are significantly higher than at Courtice and the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change with 1 elevated reading which trends downwards slowly indicating valid measurements. Data deemed valid.
29	10-Nov-14	TH	Data check	16-Sep-14	19:00	17-Sep-14	01:00	Investigated a period of time where readings at Rundle are significantly higher than at the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change with 1 elevated reading which trends downwards slowly indicating valid measurements. Courtice measurements are higher than Rundle's. Data deemed valid.
30	10-Nov-14	TH	Data check	18-Sep-14	20:00	19-Sep-14	03:00	Investigated a period of time where readings at Rundle are significantly higher than at the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change indicating valid measurements. Courtice measurements are higher than Rundle's. Data deemed valid.
31	10-Nov-14	TH	Data check	22-Sep-14	00:00	22-Sep-14	14:00	Investigated a period of time where readings at Rundle are significantly higher than at the MOECC's Oshawa station. Station log book reviewed. No equipment issues identified for that period. Minute data has a low rate of change with 1 elevated reading which trends downwards slowly indicating valid measurements. Courtice measurements are higher than Rundle's. Data deemed valid.
32	11-Nov-14	CL	Invalidate data	17-Jan-14	13:00	17-Jan-14	13:00	Invalidate data due to rate of change
33	11-Nov-14	CL	Invalidate data	26-Jan-14	09:00	26-Jan-14	09:00	Invalidate data due to rate of change

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:	Temperature	Instrument make & model:		Campbell Scientific Model HMP60			Serial Number:	
Data edit period	Start date:	1-Jan-14	End date:	30-Sep-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:	30-Sep-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
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:	Relative Humidity	Instrument make & model:		Campbell Scientific Model HMP60			Serial Number:	
Data edit period	Start date:	1-Jan-14	End date:	30-Sep-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:	30-Sep-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
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

Appendix F
Metals Data Summary

Metals and Total Particulates	Courtice WPCP Station		
Location		Courtice	
Date	dd/mm/yyyy	28/06/2014	
Start Time	hh:mm	0:00	
Sample Duration	minutes	23.62	
Technician		TH	
Filter Number		14041569	
Analytical Report #		B4B6102	
Total Volumetric Flow	Am^3/sample	1651.63	
Analytical Results	**Units**	**Value**	**RDL**
Particulate	mg	47.4	5
Total Mercury (Hg)	ug	0.02	0.02
Aluminum (Al)	ug	206	50
Antimony (Sb)	ug	<10	10
Arsenic (As)	ug	<6.0	6
Barium (Ba)	ug	8.2	1
Beryllium (Be)	ug	<1.0	1
Bismuth (Bi)	ug	<6.0	6
Boron (B)	ug	<6.0	6
Cadmium (Cd)	ug	<2.0	2
Chromium (Cr)	ug	<5.0	5
Cobalt (Co)	ug	<2.0	2
Copper (Cu)	ug	33.4	5
Iron (Fe)	ug	563	50
Lead (Pb)	ug	4.2	3
Magnesium (Mg)	ug	243	50
Manganese (Mn)	ug	15.5	1
Molybdenum (Mo)	ug	<3.0	3
Nickel (Ni)	ug	<3.0	3
Phosphorus (P)	ug	67	25
Selenium (Se)	ug	<10	10
Silver (Ag)	ug	<5.0	5
Strontium (Sr)	ug	8.3	1
Thallium (Tl)	ug	<10	10
Tin (Sn)	ug	<10	10
Titanium (Ti)	ug	14	10
Vanadium (V)	ug	<5.0	5
Zinc (Zn)	ug	21.2	5
Zirconium (Zr)	ug	<5.0	5
Total Uranium (U)	ug	<0.45	0.45

Calculated Concentrations	Units	Courtice 30 28/06/2014
Particulate	ug/m^3	28.699
Total Mercury (Hg)	ug/m^3	1.21E-05
Aluminum (Al)	ug/m^3	1.25E-01
Antimony (Sb)	ug/m^3	3.03E-03
Arsenic (As)	ug/m^3	1.82E-03
Barium (Ba)	ug/m^3	4.96E-03
Beryllium (Be)	ug/m^3	3.03E-04
Bismuth (Bi)	ug/m^3	1.82E-03
Boron (B)	ug/m^3	1.82E-03
Cadmium (Cd)	ug/m^3	6.05E-04
Chromium (Cr)	ug/m^3	1.51E-03
Cobalt (Co)	ug/m^3	6.05E-04
Copper (Cu)	ug/m^3	2.02E-02
Iron (Fe)	ug/m^3	3.41E-01
Lead (Pb)	ug/m^3	2.54E-03
Magnesium (Mg)	ug/m^3	1.47E-01
Manganese (Mn)	ug/m^3	9.38E-03
Molybdenum (Mo)	ug/m^3	9.08E-04
Nickel (Ni)	ug/m^3	9.08E-04
Phosphorus (P)	ug/m^3	4.06E-02
Selenium (Se)	ug/m^3	3.03E-03
Silver (Ag)	ug/m^3	1.51E-03
Strontium (Sr)	ug/m^3	5.03E-03
Thallium (Tl)	ug/m^3	3.03E-03
Tin (Sn)	ug/m^3	3.03E-03
Titanium (Ti)	ug/m^3	8.48E-03
Vanadium (V)	ug/m^3	1.51E-03
Zinc (Zn)	ug/m^3	1.28E-02
Zirconium (Zr)	ug/m^3	1.51E-03
Total Uranium (U)	ug/m^3	1.36E-04

Metals and Total Particulates	Rundle Road Station		
Location		Rundle	
Date	dd/mm/yyyy	28/06/2014	
Start Time	hh:mm	0:00	
Sample Duration	minutes	23.65	
Technician		TH	
Filter Number		14041568	
Analytical Report #		B4B6102	
Total Volumetric Flow	Am^3/sample	1658.69	
Analytical Results	**Units**	**Value**	**RDL**
Particulate	mg	70.9	5
Total Mercury (Hg)	ug	0.02	0.02
Aluminum (Al)	ug	345	50
Antimony (Sb)	ug	<10	10
Arsenic (As)	ug	<6.0	6
Barium (Ba)	ug	12.4	1
Beryllium (Be)	ug	<1.0	1
Bismuth (Bi)	ug	<6.0	6
Boron (B)	ug	<6.0	6
Cadmium (Cd)	ug	<2.0	2
Chromium (Cr)	ug	6.1	5
Cobalt (Co)	ug	<2.0	2
Copper (Cu)	ug	54.5	5
Iron (Fe)	ug	1090	50
Lead (Pb)	ug	5.2	3
Magnesium (Mg)	ug	380	50
Manganese (Mn)	ug	25.6	1
Molybdenum (Mo)	ug	<3.0	3
Nickel (Ni)	ug	3.4	3
Phosphorus (P)	ug	168	25
Selenium (Se)	ug	<10	10
Silver (Ag)	ug	<5.0	5
Strontium (Sr)	ug	15.8	1
Thallium (Tl)	ug	<10	10
Tin (Sn)	ug	<10	10
Titanium (Ti)	ug	21	10
Vanadium (V)	ug	<5.0	5
Zinc (Zn)	ug	27.5	5
Zirconium (Zr)	ug	<5.0	5
Total Uranium (U)	ug	<0.45	0.45

Calculated Concentrations	Units	Rundle 30 28/06/2014
Particulate	ug/m^3	42.7
Total Mercury (Hg)	ug/m^3	1.21E-05
Aluminum (Al)	ug/m^3	2.08E-01
Antimony (Sb)	ug/m^3	3.01E-03
Arsenic (As)	ug/m^3	1.81E-03
Barium (Ba)	ug/m^3	7.48E-03
Beryllium (Be)	ug/m^3	3.01E-04
Bismuth (Bi)	ug/m^3	1.81E-03
Boron (B)	ug/m^3	1.81E-03
Cadmium (Cd)	ug/m^3	6.03E-04
Chromium (Cr)	ug/m^3	3.68E-03
Cobalt (Co)	ug/m^3	6.03E-04
Copper (Cu)	ug/m^3	3.29E-02
Iron (Fe)	ug/m^3	6.57E-01
Lead (Pb)	ug/m^3	3.14E-03
Magnesium (Mg)	ug/m^3	2.29E-01
Manganese (Mn)	ug/m^3	1.54E-02
Molybdenum (Mo)	ug/m^3	9.04E-04
Nickel (Ni)	ug/m^3	2.05E-03
Phosphorus (P)	ug/m^3	1.01E-01
Selenium (Se)	ug/m^3	3.01E-03
Silver (Ag)	ug/m^3	1.51E-03
Strontium (Sr)	ug/m^3	9.53E-03
Thallium (Tl)	ug/m^3	3.01E-03
Tin (Sn)	ug/m^3	3.01E-03
Titanium (Ti)	ug/m^3	1.27E-02
Vanadium (V)	ug/m^3	1.51E-03
Zinc (Zn)	ug/m^3	1.66E-02
Zirconium (Zr)	ug/m^3	1.51E-03
Total Uranium (U)	ug/m^3	1.36E-04

Appendix G
PAHs Data Summary

Polycyclic Aromatic Hydrocarbons	Courtice WPCP Station		
Location		Courtice	
Date	dd/mm/yyyy	28/06/2014	
Start Time	**hh:mm**	0:00	
Sample Duration	**minutes**	23.63	
Technician		TH	
Filter Number		WA8710-01	
Maxaam ID		WO1600	
Analytical Report #		B4B6112	
Total Volumetric Flow	**Am^3/sample**	339.30	
Analytical Results	**Units**	**Value**	**RDL**
Benzo(a)pyrene	µg	<0.050	0.05
1-Methylnaphthalene	µg	2.46	0.2
2-Methylnaphthalene	µg	4.7	0.2
Acenaphthene	µg	4	0.1
Acenaphthylene	µg	<0.10	0.1
Anthracene	µg	0.1	0.1
Benzo(a)anthracene	µg	<0.10	0.1
Benzo(a)fluorene	µg	<0.20	0.2
Benzo(b)fluoranthene	µg	<0.10	0.1
Benzo(b)fluorene	µg	<0.20	0.2
Benzo(e)pyrene	µg	<0.20	0.2
Benzo(g,h,i)perylene	µg	<0.10	0.1
Benzo(k)fluoranthene	µg	<0.10	0.1
Biphenyl	µg	1.47	0.2
Chrysene	µg	<0.10	0.1
Dibenz(a,h)anthracene [1]	µg	<0.10	0.1
Dibenzo(a,c) anthracene + Picene [2]	µg	<0.20	0.2
Fluoranthene	µg	0.77	0.1
Indeno(1,2,3-cd)pyrene	µg	<0.10	0.1
Naphthalene	µg	10.1	0.14
o-Terphenyl	µg	<0.20	0.2
Perylene	µg	<0.20	0.2
Phenanthrene	µg	4.81	0.1
Pyrene	µg	0.29	0.1
Tetralin	µg	0.56	0.2

Calculated Concentrations	Units	Courtice 15 28/06/2014
Benzo(a)pyrene	ng/m^3	7.37E-02
1-Methylnaphthalene	ng/m^3	7.25E+00
2-Methylnaphthalene	ng/m^3	1.39E+01
Acenaphthene	ng/m^3	1.18E+01
Acenaphthylene	ng/m^3	1.47E-01
Anthracene	ng/m^3	2.95E-01
Benzo(a)anthracene	ng/m^3	1.47E-01
Benzo(a)fluorene	ng/m^3	2.95E-01
Benzo(b)fluoranthene	ng/m^3	1.47E-01
Benzo(b)fluorene	ng/m^3	2.95E-01
Benzo(e)pyrene	ng/m^3	2.95E-01
Benzo(g,h,i)perylene	ng/m^3	1.47E-01
Benzo(k)fluoranthene	ng/m^3	1.47E-01
Biphenyl	ng/m^3	4.33E+00
Chrysene	ng/m^3	1.47E-01
Dibenz(a,h)anthracene [1]	ng/m^3	1.47E-01
Dibenzo(a,c) anthracene + Picene [1]	ng/m^3	2.95E-01
Fluoranthene	ng/m^3	2.27E+00
Indeno(1,2,3-cd)pyrene	ng/m^3	1.47E-01
Naphthalene	ng/m^3	2.98E+01
o-Terphenyl	ng/m^3	2.95E-01
Perylene	ng/m^3	2.95E-01
Phenanthrene	ng/m^3	1.42E+01
Pyrene	ng/m^3	8.55E-01
Tetralin	ng/m^3	1.65E+00
Total PAH	ng/m^3	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		
Location		Rundle	
Date	dd/mm/yyyy	28/06/2014	
Start Time	hh:mm	0:00	
Sample Duration	minutes	24.02	
Technician		TH	
Filter Number		WA8709-01	
Maxaam ID		WO1601	
Analytical Report #		B4B6112	
Total Volumetric Flow	Am^3/sample	349.56	
Analytical Results	**Units**	**Value**	**RDL**
Benzo(a)pyrene	µg	<0.014	0.014
1-Methylnaphthalene	µg	2.4	0.2
2-Methylnaphthalene	µg	4.51	0.2
Acenaphthene	µg	2.83	0.1
Acenaphthylene	µg	<0.10	0.1
Anthracene	µg	0.16	0.1
Benzo(a)anthracene	µg	<0.10	0.1
Benzo(a)fluorene	µg	<0.20	0.2
Benzo(b)fluoranthene	µg	<0.10	0.1
Benzo(b)fluorene	µg	<0.20	0.2
Benzo(e)pyrene	µg	<0.20	0.2
Benzo(g,h,i)perylene	µg	<0.10	0.1
Benzo(k)fluoranthene	µg	<0.10	0.1
Biphenyl	µg	1.12	0.2
Chrysene	µg	<0.10	0.1
Dibenz(a,h)anthracene [1]	µg	<0.10	0.1
Dibenzo(a,c) anthracene + Picene [2]	µg	<0.20	0.2
Fluoranthene	µg	1.23	0.1
Indeno(1,2,3-cd)pyrene	µg	<0.10	0.1
Naphthalene	µg	9.1	0.14
o-Terphenyl	µg	<0.20	0.2
Perylene	µg	<0.20	0.2
Phenanthrene	µg	4.54	0.1
Pyrene	µg	0.51	0.1
Tetralin	µg	0.64	0.2

Calculated Concentrations	Units	Rundle 15 28/06/2014
Benzo(a)pyrene	ng/m^3	2.00E-02
1-Methylnaphthalene	ng/m^3	6.87E+00
2-Methylnaphthalene	ng/m^3	1.29E+01
Acenaphthene	ng/m^3	8.10E+00
Acenaphthylene	ng/m^3	1.43E-01
Anthracene	ng/m^3	4.58E-01
Benzo(a)anthracene	ng/m^3	1.43E-01
Benzo(a)fluorene	ng/m^3	2.86E-01
Benzo(b)fluoranthene	ng/m^3	1.43E-01
Benzo(b)fluorene	ng/m^3	2.86E-01
Benzo(e)pyrene	ng/m^3	2.86E-01
Benzo(g,h,i)perylene	ng/m^3	1.43E-01
Benzo(k)fluoranthene	ng/m^3	1.43E-01
Biphenyl	ng/m^3	3.20E+00
Chrysene	ng/m^3	1.43E-01
Dibenz(a,h)anthracene [1]	ng/m^3	1.43E-01
Dibenzo(a,c) anthracene + Picene [1]	ng/m^3	2.86E-01
Fluoranthene	ng/m^3	3.52E+00
Indeno(1,2,3-cd)pyrene	ng/m^3	1.43E-01
Naphthalene	ng/m^3	2.60E+01
o-Terphenyl	ng/m^3	2.86E-01
Perylene	ng/m^3	2.86E-01
Phenanthrene	ng/m^3	1.30E+01
Pyrene	ng/m^3	1.46E+00
Tetralin	ng/m^3	1.83E+00
Total PAH	ng/m^3	8.02E+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			
Location		Courtice		
Date	dd/mm/yyyy	28/06/2014		
Start Time	hh:mm	0:00		
Sample Duration	minutes	23.63		
Technician		TH		
Filter Number		WA8710-01		
Maxaam ID		WO1600		
Analytical Report #		B4B6112		
Total Volumetric Flow	Am^3/sample	339.30		
Analytical Results	**Units**	**Value**	**EDL**	**WHO_{2005} TEF**
2,3,7,8-Tetra CDD *	pg	<7.4	7.4	1
1,2,3,7,8-Penta CDD	pg	<8.0	8	1
1,2,3,4,7,8-Hexa CDD	pg	<4.9	4.9	0.1
1,2,3,6,7,8-Hexa CDD	pg	<5.3	5.3	0.1
1,2,3,7,8,9-Hexa CDD	pg	5	4.3	0.1
1,2,3,4,6,7,8-Hepta CDD	pg	<15 (1)	15	0.01
Octa CDD	pg	69.3	4.3	0.0003
Total Tetra CDD	pg	<7.4	7.4	
Total Penta CDD	pg	<8.0	8	
Total Hexa CDD	pg	5	4.8	
Total Hepta CDD	pg	15.4	3.3	
2,3,7,8-Tetra CDF **	pg	<4.6	4.6	0.1
1,2,3,7,8-Penta CDF	pg	<7.7	7.7	0.03
2,3,4,7,8-Penta CDF	pg	<7.5	7.5	0.3
1,2,3,4,7,8-Hexa CDF	pg	<4.2	4.2	0.1
1,2,3,6,7,8-Hexa CDF	pg	<4.0	4	0.1
2,3,4,6,7,8-Hexa CDF	pg	<4.0	4	0.1
1,2,3,7,8,9-Hexa CDF	pg	5.6	4.2	0.1
1,2,3,4,6,7,8-Hepta CDF	pg	7.8	3	0.01
1,2,3,4,7,8,9-Hepta CDF	pg	<3.5	3.5	0.01
Octa CDF	pg	8.9	4.4	0.0003
Total Tetra CDF	pg	<4.6	4.6	
Total Penta CDF	pg	<7.6	7.6	
Total Hexa CDF	pg	10.1	4.1	
Total Hepta CDF	pg	13.6	3.2	
Toxic Equivalency	pg			

Calculated Concentrations	Units	Courtice 8 28/06/2014
2,3,7,8-Tetra CDD *	pg/m^3	0.011
1,2,3,7,8-Penta CDD	pg/m^3	0.012
1,2,3,4,7,8-Hexa CDD	pg/m^3	0.007
1,2,3,6,7,8-Hexa CDD	pg/m^3	0.008
1,2,3,7,8,9-Hexa CDD	pg/m^3	0.015
1,2,3,4,6,7,8-Hepta CDD	pg/m^3	0.022
Octa CDD	pg/m^3	0.204
Total Tetra CDD	pg/m^3	0.011
Total Penta CDD	pg/m^3	0.012
Total Hexa CDD	pg/m^3	0.015
Total Hepta CDD	pg/m^3	0.045
2,3,7,8-Tetra CDF **	pg/m^3	0.007
1,2,3,7,8-Penta CDF	pg/m^3	0.011
2,3,4,7,8-Penta CDF	pg/m^3	0.011
1,2,3,4,7,8-Hexa CDF	pg/m^3	0.006
1,2,3,6,7,8-Hexa CDF	pg/m^3	0.006
2,3,4,6,7,8-Hexa CDF	pg/m^3	0.006
1,2,3,7,8,9-Hexa CDF	pg/m^3	0.017
1,2,3,4,6,7,8-Hepta CDF	pg/m^3	0.023
1,2,3,4,7,8,9-Hepta CDF	pg/m^3	0.005
Octa CDF	pg/m^3	0.026
Total Tetra CDF	pg/m^3	0.007
Total Penta CDF	pg/m^3	0.011
Total Hexa CDF	pg/m^3	0.030
Total Hepta CDF	pg/m^3	0.040
Toxic Equivalency	pg/m^3	
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	0.034

Calculated TEQ Concentrations	Units	Courtice 28/06/2014
2,3,7,8-Tetra CDD *	pg TEQ/m^3	0.011
1,2,3,7,8-Penta CDD	pg TEQ/m^3	0.012
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3	0.0007
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3	0.0008
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3	0.0015
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3	0.0002
Octa CDD	pg TEQ/m^3	0.00006
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	0.0007
1,2,3,7,8-Penta CDF	pg TEQ/m^3	0.0003
2,3,4,7,8-Penta CDF	pg TEQ/m^3	0.003
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3	0.0006
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3	0.0006
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3	0.0006
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3	0.0017
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3	0.00023
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3	0.00005
Octa CDF	pg TEQ/m^3	0.000008
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	0.034

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

Dioxins and Furans	Rundle Road Station			
Location		Rundle		
Date	dd/mm/yyyy	28/06/2014		
Start Time	**hh:mm**	0:00		
Sample Duration	**minutes**	24.02		
Technician		TH		
Filter Number		WA8709-01		
Maxaam ID		WO1601		
Analytical Report #		B4B6112		
Total Volumetric Flow	**Am^3/sample**	349.56		
Analytical Results	**Units**	**Value**	**EDL**	**WHO_{2005} TEF**
2,3,7,8-Tetra CDD *	pg	<5.3	5.3	1
1,2,3,7,8-Penta CDD	pg	<5.8	5.8	1
1,2,3,4,7,8-Hexa CDD	pg	<6.1	6.1	0.1
1,2,3,6,7,8-Hexa CDD	pg	<6.6	6.6	0.1
1,2,3,7,8,9-Hexa CDD	pg	<5.4	5.4	0.1
1,2,3,4,6,7,8-Hepta CDD	pg	31.9	5	0.01
Octa CDD	pg	97.1	4.9	0.0003
Total Tetra CDD	pg	<7.8 (1)	7.8	
Total Penta CDD	pg	<7.5 (1)	7.5	
Total Hexa CDD	pg	10	6	
Total Hepta CDD	pg	57	5	
2,3,7,8-Tetra CDF **	pg	<5.5	5.5	0.1
1,2,3,7,8-Penta CDF	pg	<8.6	8.6	0.03
2,3,4,7,8-Penta CDF	pg	<8.4	8.4	0.3
1,2,3,4,7,8-Hexa CDF	pg	<4.8	4.8	0.1
1,2,3,6,7,8-Hexa CDF	pg	<4.5	4.5	0.1
2,3,4,6,7,8-Hexa CDF	pg	<4.5	4.5	0.1
1,2,3,7,8,9-Hexa CDF	pg	<4.8	4.8	0.1
1,2,3,4,6,7,8-Hepta CDF	pg	7.4	4.4	0.01
1,2,3,4,7,8,9-Hepta CDF	pg	<5.1	5.1	0.01
Octa CDF	pg	9.4	4.1	0.0003
Total Tetra CDF	pg	<5.5	5.5	
Total Penta CDF	pg	<8.5	8.5	
Total Hexa CDF	pg	<4.6	4.6	
Total Hepta CDF	pg	7.4	4.8	
Toxic Equivalency	pg			

Calculated Concentrations		Rundle
		8
	Units	28/06/2014
2,3,7,8-Tetra CDD *	pg/m3	0.008
1,2,3,7,8-Penta CDD	pg/m3	0.008
1,2,3,4,7,8-Hexa CDD	pg/m3	0.009
1,2,3,6,7,8-Hexa CDD	pg/m3	0.009
1,2,3,7,8,9-Hexa CDD	pg/m3	0.008
1,2,3,4,6,7,8-Hepta CDD	pg/m3	0.091
Octa CDD	pg/m3	0.278
Total Tetra CDD	pg/m3	0.011
Total Penta CDD	pg/m3	0.011
Total Hexa CDD	pg/m3	0.029
Total Hepta CDD	pg/m3	0.163
2,3,7,8-Tetra CDF **	pg/m3	0.008
1,2,3,7,8-Penta CDF	pg/m3	0.012
2,3,4,7,8-Penta CDF	pg/m3	0.012
1,2,3,4,7,8-Hexa CDF	pg/m3	0.007
1,2,3,6,7,8-Hexa CDF	pg/m3	0.006
2,3,4,6,7,8-Hexa CDF	pg/m3	0.006
1,2,3,7,8,9-Hexa CDF	pg/m3	0.007
1,2,3,4,6,7,8-Hepta CDF	pg/m3	0.021
1,2,3,4,7,8,9-Hepta CDF	pg/m3	0.007
Octa CDF	pg/m3	0.027
Total Tetra CDF	pg/m3	0.008
Total Penta CDF	pg/m3	0.012
Total Hexa CDF	pg/m3	0.007
Total Hepta CDF	pg/m3	0.021
Toxic Equivalency	pg/m3	
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	0.027

Calculated TEQ Concentrations	Units	Rundle
		28/06/2014
2,3,7,8-Tetra CDD *	pg TEQ/m^3	0.008
1,2,3,7,8-Penta CDD	pg TEQ/m^3	0.008
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3	0.0009
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3	0.0009
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3	0.0008
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3	0.0009
Octa CDD	pg TEQ/m^3	0.00008
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	0.0008
1,2,3,7,8-Penta CDF	pg TEQ/m^3	0.0004
2,3,4,7,8-Penta CDF	pg TEQ/m^3	0.004
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3	0.0007
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3	0.0006
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3	0.0006
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3	0.0007
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3	0.00021
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3	0.00007
Octa CDF	pg TEQ/m^3	0.000008
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	0.027

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