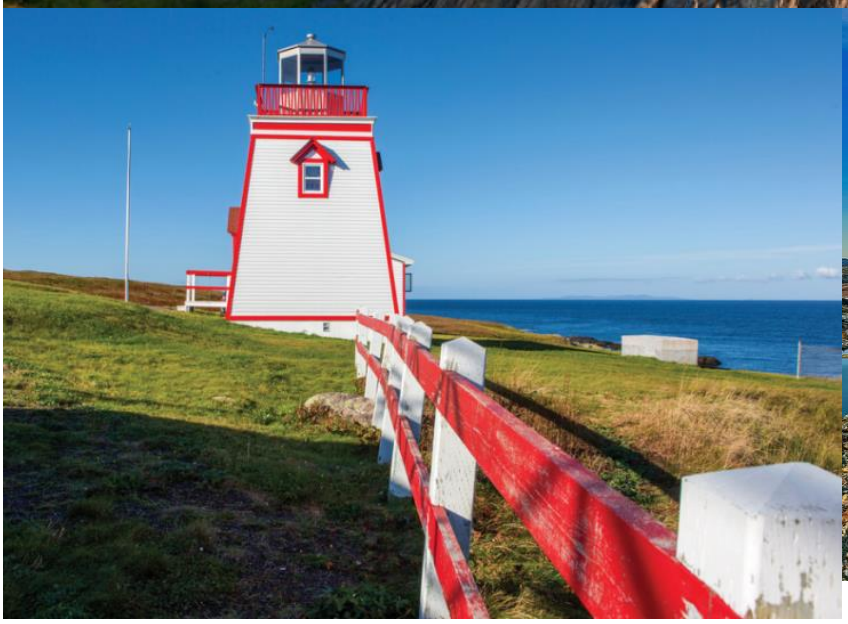
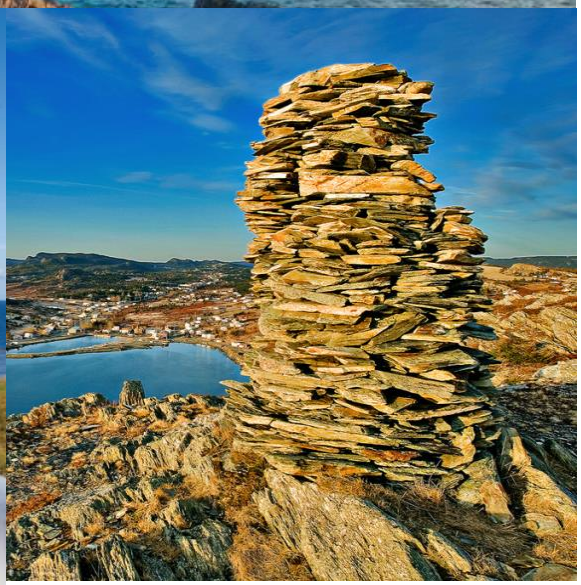
DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT

2016 AMBIENT AIR MONITORING REPORT

April 2017





Executive Summary

The air quality in communities across the province is generally considered to be good as the ambient air quality standards are rarely exceeded for the pollutants being measured. On occasion, communities in close proximity to an industrial operation may experience episodic decreases in the quality of the air; however, these episodes tend to be brief in nature and are rarely at levels that exceed the air quality standards. Elevated levels of air pollutants can also occur due to long-range transport from mainland Canada and the United States, but these events are episodic in nature and rarely produce levels that exceed the ambient air quality standards. On the local level, emissions from sources such as vehicular traffic, forest fires and woodstoves also impact the air quality in the province.

This 2016 report is the 8th annual and presents all the monitoring results from both the federal / provincial operated National Air Pollution Surveillance (NAPS) network as well as the stations operated by industrial facilities in the province. Both datasets undergo a rigorous quality assurance procedure to ensure that the highest level of data confidence is achieved.

In 2016 there were no major long range transport events to adversely affect the air quality in the province. The air quality at most monitoring stations indicated no exceedances of the ambient air quality standards. There were however instances where the levels measured at a station operated by an industrial facility approached or exceeded the associated ambient standard.

The report does not provide commentary on the data contained herein except in situations where there has been a technological change in the data collection system (eg. $PM_{2.5}$ monitoring was switched from TEOM to BAM), or there has been a change in industrial operating conditions which would lead to a change in emissions (eg. a switch from heavy fuel oil combustion to distillate combustion).

Though an industrial facility may monitor the ambient air for specific pollutants, this report in no way implies or attributes those measurements to emissions from that facility.

The 2016 monitoring results are summarized below.

Sulphur Dioxide - 2016

Operator	Monitoring Location	Maximum 1-hour Concentration	Maximum 3-hour Concentration	Maximum 24-hour Concentration	Annual Concentration
Regulatory Limit (µg/m^3)		**900**	**600**	**300**	**60**
NAPS	St. John's	31.5	21.8	10.1	1.3
	Mt. Pearl	96.8	70.1	13.3	0.6
	Grand Falls-Windsor	15.7	6.8	2.8	1.0
	Corner Brook	13.6	6.6	2.9	0.9
	Burin	15.1	5.1	1.1	0.2
NALCOR	Butterpot Road	195.6	164.7	34.1	2.0
	Green Acres Road	285.8	170.3	34.8	2.0
	Indian Pond Drive	199.7	173.2	79.9	2.8
	Indian Pond Road	142.6	113.9	25.5	2.1
	Lawrence Pond Road	147.4	91.3	19.6	2.4
NARL	Arnold's Cove	165.8	125.3	21.5	2.0
	Come by Chance	66.6	52.1	21.4	3.1
	Sunnyside	201.6	164.2	29.4	3.8
	Property Boundary	1166.9	1096.4	740.2	64.2
IOCC	Indian Point	136.1	89.1	37.6	1.9
	Hudson Drive	232.6	207.0	68.1	1.7
	Smokey Mountain II	84.6	62.6	15.5	0.8
Wabush Mines	Bond Street	36.8	22.4	11.2	4.1
CBPP	Main Street	14.5	11.8	4.4	1.9

Observations in µg/m^3
* based on limited data

$PM_{2.5}$ - 2016

Operator	Monitoring Location	Maximum 24-hour Concentration	Annual Concentration
Regulatory Limit (µg/m^3)		**25**	**8.8**
NAPS	St. John's	10.8	5.5
	Mt. Pearl	36.0	4.7
	Grand Falls-Windsor	15.4	4.3
	Corner Brook	14.2	5.8
	Burin	12.6	5.4
NALCOR	Butterpot Road	13.1	4.6
	Green Acres Road	10.9	2.9
	Indian Pond Drive	12.7	3.6
	Indian Pond Road	13.4	4.2
	Lawrence Pond Road	9.4	2.9
	Holyrood Property Boundary	11.9	4.3
NARL	Arnold's Cove	15.8	7.6
	Come by Chance	16.2	6.4
	Sunnyside	53.1	8.9
	Property Boundary	159.8	20.1
IOCC	Indian Point	13.3	2.6
	Hudson Drive	14.1	3.0
	Smokey Mountain II	11.6	2.7
Wabush Mines	Bond Street	8.8	2.1
	Cabot Drive	11.3	3.3
CBPP	Main Street	31.1	6.4
VALE	Community Centre	15.5	4.5
	Main Road	14.1	4.5
	Access Road	19.3	5.9
	Accommodation Building	17.7	2.6

Observations in ug/m^3
* based on limited data

Nitrogen Dioxide - 2016

Operator	Monitoring Location	Maximum 1-hour Concentration	Maximum 24-hour Concentration	Annual Concentration
Regulatory Limit (µg/m^3)		**400**	**200**	**100**
NAPS	St. John's	105.1	41.0	10.1
	Mt. Pearl	53.9	13.6	2.8
	Grand Falls-Windsor	74.1	12.6	2.7
	Corner Brook	64.6	19.0	4.3
	Burin	57.7	7.7	1.0
NALCOR	Butterpot Road	33.5	8.8	0.8
	Green Acres Road	47.9	12.1	1.1
	Indian Pond Drive	46.5	15.5	1.3
	Indian Pond Road	37.0	7.8	1.1
	Lawrence Pond Road	48.6	10.4	1.6
IOCC	Indian Point	70.8	35.8	5.8
	Hudson Drive	87.0	55.2	5.4
	Smokey Mountain II	71.1	29.7	2.7
VALE	Community Centre	88.3	6.6	1.1
	Main Road	55.7	26.0	3.6
	Access Road	28.1	5.7	0.9
	Crusher Building	92.1	34.2	5.4
	Accommodation Building	112.8	69.3	20.8

Observations in ug/m^3
* based on limited data

Ozone - 2016

Operator	Monitoring Location	Maximum 1-hour Concentration	Maximum 8-hour Concentration
Regulatory Limit (µg/m^3)		**160**	**87**
NAPS	St. John's	105.0	98.3
	Mt. Pearl	97.8	90.7
	Grand Falls-Windsor	100.6	92.9
	Corner Brook	102.0	96.7
	Burin	107.0	94.1
	Port aux Choix	95.0	91.4
IOCC	Hudson Drive	136.9	122.0

Observations in ug/m^3

Carbon Monoxide - 2016

Operator	Monitoring Location	Maximum 1-hour Concentration	Maximum 8-hour Concentration
Regulatory Limit (mg/m^3)		**35**	**15**
NAPS	St. John's	1.4	0.6
	Mt. Pearl	1.0	0.5
	Grand Falls-Windsor	0.8	0.5
	Corner Brook	0.7	0.4
	Burin	2.1	1.9

Observations in mg/m^3

PM_{10} - 2016

Operator	Monitoring Location	Maximum 24-hour Concentration
Regulatory Limit (µg/m^3)		**50**
NAPS	Burin	66.9

Observations in ug/m^3

Total Particulate Matter - 2016

Operator	Monitoring Location	Maximum 24-hour Concentration	Annual Concentration
Regulatory Limit (µg/m^3)		**120**	**60**
NALCOR	Green Acres Road	25.1	6.1
	Indian Pond Drive	19.0	8.0
	Indian Pond Road	23.9	7.2
	Lawrence Pond Road	49.2	7.0
	Holyrood Property Boundary	303.3	39.4
IOCC	Indian Point	172.9	7.7
	Hudson Drive	186.1	13.7
	Smokey Mountain II	110.1	7.2
Wabush Mines	Bond Street	52.9	5.5
	Cabot Drive	74.5	8.3
CBPP	Main Street	110.1	24.3
	West Street	109.3	20.3
VALE	Port Site	177.1	6.6

Observations in ug/m^3

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Disclaimer

Though all data presented in this report has been subjected to quality assurance and quality control procedures, the Department of Municipal Affairs and Environment does not warrant any data contained herein or the use of this data for other purposes. The Department accepts no liability for inaccurate data, or any misrepresentation or misuse of the data contained in this report.

All data presented herein may be subject to future revision.

1.0 Introduction

The ambient air quality in Newfoundland and Labrador is monitored through a joint effort between the Department of Municipal Affairs and Environment, and Environment and Climate Change Canada via the National Air Pollution Surveillance (NAPS) network. In 2016, the Department operated stations at six locations as part of the NAPS network. Additionally the major industrial operations in the province are required to monitor the air quality near their operations for select pollutants. The Department audits the operation of these industrial monitoring networks on a regular basis.

In general the air quality in the province is good as indicated by the levels recorded at the various monitors. Unlike the major forest fires in Labrador and northern Quebec in late June and early July 2013 which resulted in an extended period of poorer air quality in the province, in 2016 there were no major long range episodes to diminish the air quality. There were however, instances in 2016 where the levels measured at an industrial monitoring station approached or exceeded the associated ambient standard, and instances when elevated air pollutant levels, particularly ozone, were seen as a result of long range transport. Local emissions, such as those from vehicular traffic and woodstoves also impact air quality.

This report provides 2-year tabular summary information and 5-year graphical trends for each air quality monitor in Newfoundland and Labrador which were either operated or audited by the Department in 2016. All monitoring stations, including those operated by industrial operations, are required to meet minimum standards set out in the *National Air Pollution Surveillance (NAPS) Program Quality Assurance/Quality Control (QA/QC) Guidelines*, and those defined in the *Departmental Guidelines for Ambient Air Monitoring* (http://www.env.gov.nl.ca/env/env_protection/science/gd_ppd_065.pdf). Additionally all data has gone through a data validation and quality assurance process to account for any anomalous readings or system malfunctions.

In this report, Section 2 provides an overview of the monitoring network in the province, a description of the pollutants being measured and their associated standard. Section 3 provides results from the monitors in the NAPS network; while Section 4 provides results from the monitoring networks operated by industrial facilities.

1.1 Definitions

The following definitions are used throughout this report:

AQHI	Air Quality Health Index
CBPP	Corner Brook Pulp and Paper
CO	Carbon Monoxide
IOCC	Iron Ore Company of Canada
mg/m^3	Milligrams per cubic metre
NALCOR	NALCOR Energy
NARL	North Atlantic Refining Limited
NAPS	National Air Pollution Surveillance
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
O_3	Ozone
$PM_{2.5}$	Particulate Matter less than or equal to 2.5 microns
PM_{10}	Particulate Matter less than or equal to 10 microns
SO_2	Sulphur Dioxide
TPM	Total Particulate Matter
$\mu g/m^3$	Micrograms per cubic metre
VALE	VALE Newfoundland and Labrador

2.0 Monitoring Network

Five categories of pollutants are measured at the monitoring networks in the province, though not all networks monitor all pollutants. The monitored pollutants are sulphur dioxide (SO_2); oxides of nitrogen (NO_x) (which includes nitric oxide (NO) and nitrogen dioxide (NO_2)); carbon monoxide (CO); particulate matter (PM) (which includes particles less or equal to than 2.5 microns ($PM_{2.5}$), particles less than or equal to 10 microns (PM_{10}) and total particulate matter (TPM)); and ozone (O_3). Volatile organic compounds, (VOCs) are also measured on a one-in-six day cycle at the NAPS station in St. John's, but the data is not included in this report.

2.1 Pollutants

2.1.1 Oxides of Nitrogen (NO_x)

In a combustion process, NO_x is produced through 3 mechanisms, namely thermal NO_x, fuel NO_x and prompt NO_x. Thermal NO_x is the primary source of NO_x and is formed as a high temperature dissociation and subsequent reaction of nitrogen (N_2) and oxygen (O_2). It is produced in the hottest part of the flame and its formation increases exponentially with the flame temperature. The control of thermal NO_x is generally achieved through reducing the flame temperature, reducing the residence time, or by operating under fuel rich conditions. Fuel NO_x is formed by the reaction of nitrogen compounds chemically bound in liquid or solid fuels with oxygen in the combustion air. In the combustion of such fuels, fuel NO_x can account for up to 50% of the total NO_x emissions. Prompt NO_x is formed from the rapid reaction of atmospheric nitrogen with hydrocarbon radicals, and typically under partially fuel-rich conditions. It can be reduced through combustion staging or by operating under highly oxidizing combustion conditions.

NO_2 is the primary component of concern in NO_x emissions. Generally between 5% and 10% of the NO_x emitted from the combustion of fuel is emitted as NO_2. The remainder is emitted as NO, which is subsequently converted to NO_2 in reactions with various oxidants and oxygen as the plume is transported downwind from the source. The rate of NO_2 formation varies with time of day, season, temperature, wind speed, solar radiation and the availability of oxidants to help drive the chemical reactions.

NO_2 is a reddish brown gas with a pungent odour, which upon reaction with other atmospheric compounds, becomes a major contributor to smog, acid rain, inhalable particulates and reduced visibility. At significant levels and exposure, inhalation may result in irritation and burning to the skin and eyes, nose and throat. Prolonged exposure may result in permanent lung damage.

2.1.2 Particulate Matter (PM)

Particulate matter is the term for particles found in the air, including dust, dirt, soot, smoke, and liquid droplets, and can be large and dark enough to be seen with the naked eye or so small that they can only be detected with an electron microscope. Many manmade and natural sources emit particulate matter directly while others emit gaseous pollutants that react in the atmosphere to form particulate matter.

The size of the particulate has important health considerations. Particulate matter less than or equal to 10 microns in diameter (PM_{10}) poses a health concern because it can be inhaled into and accumulate in the respiratory system. Particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$) is believed to pose the greatest health risks as it can lodge deeply into the lungs; a $PM_{2.5}$ particle is approximately $1/30^{th}$ the average width of a human hair. Typically these smaller particles are suspended in the air for long periods of time. Total Particulate Matter (TPM) is the term applied to any particle suspended in the atmosphere, but depending on the monitoring method, is typically limited to particulate matter less than 44 microns. Particulate larger than 10 microns is typically associated with a nuisance issue rather than a health issue.

2.1.3 Carbon Monoxide (CO)

Carbon monoxide is a colourless and odourless gas which reduces the delivery of oxygen to the body's organs. For those with heart disease, exposure to low doses can result in chest pain. For healthier people, exposure to higher levels affects the central nervous system.

Incomplete oxidation of fuel results in the formation of CO. In simplified terms, the generic stoichiometric combustion equation for complete combustion is:

$$HC + O_2 \rightarrow CO_2 + H_2O$$

However if sufficient oxygen (O_2) is not present to complete the combustion of the hydrocarbon fuel (HC), then the oxidation to carbon dioxide (CO_2) and water (H_2O) is not completed and hence CO is emitted.

2.1.4 Sulphur Dioxide (SO_2)

Levels of sulphur dioxide (SO_2) in ambient air are directly related to the concentration of sulphur in fuel and the quantity of fuel being combusted. Upon combustion, approximately 98% of the sulphur in the fuel will oxidize to form SO_2, with the remaining 2% producing sulphur trioxide (SO_3). The emitted SO_2 can also further oxidize to SO_3 and react with water to produce acid rain in the form of sulphuric acid (H_2SO_4).

Short-term exposures to SO_2 have shown adverse respiratory effects including bronchoconstriction and increased asthma symptoms.

2.1.5 Ozone (O_3)

Ground-level ozone is not directly emitted into the air, but rather is formed by chemical reactions between NO_x and volatile organic compounds (VOCs) in the presence of ultraviolet (UV) radiation. Ozone is a primary component of smog.

Breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can also worsen bronchitis, emphysema, and asthma as well as reduce lung function and inflame the linings of the lungs, permanently scarring lung tissue under repeated exposure.

2.2 Ambient Air Standards

The maximum concentrations of air pollutants considered to be protective of the environment are defined in the *Air Pollution Control Regulations, 2004*. For the pollutants discussed in the report, the ambient air standards are detailed in Table 2.2.1.

TABLE 2.2.1 - AMBIENT AIR STANDARDS IN NEWFOUNDLAND AND LABRADOR

Pollutant	Averaging Period	Concentration ($\mu g/m^3$)
Carbon Monoxide (CO)	1-hour	35000
	8-hour	15000
Nitrogen Dioxide (NO_2)	1-hour	400
	24-hour	200
	1-year	100
Ozone	1-hour	160
	8-hour	87
Particulate Matter < 2.5 microns ($PM_{2.5}$)	24-hour	25
	1-year	8.8 *
Particulate Matter < 10 microns (PM_{10})	24-hour	50
Particulate Matter Total (TPM)	24-hour	120
	1-year	60
Sulphur Dioxide (SO_2)	1-hour	900
	3-hour	600
	24-hour	300
	1-year	60

* The 3 year average of the annual average concentrations

2.3 Monitoring in Newfoundland and Labrador

Table 2.3.1 provides the listing of monitoring stations in the province that measured pollutants during 2016. Figure 2.0.1 provides a picture of a typical ambient air monitoring station.

TABLE 2.3.1 - POLLUTANT MONITORING IN NEWFOUNDLAND AND LABRADOR

		POLLUTANT						
OPERATOR	**STATION LOCATION**	**SO_2**	**NO_X / NO_2**	**O_3**	**TPM**	**PM_{10}**	**$PM_{2.5}$**	**CO**
MUNICIPAL AFFAIRS AND ENVIRONMENT + ENVIRONMENT AND CLIMATE CHANGE CANADA (NAPS)	Water Street, St. John's	✓	✓	✓			✓	✓
	Old Placentia Road, Mount Pearl	✓	✓	✓			✓	✓
	Macpherson Avenue, Corner Brook	✓	✓	✓			✓	✓
	Scott Avenue, Grand Falls-Windsor	✓	✓	✓			✓	✓
	Port aux Choix			✓				
	Burin	✓	✓	✓		✓	✓	✓
NALCOR ENERGY	Butterpot Road	✓	✓				✓	
	Green Acres Road	✓	✓		✓		✓	
	Indian Pond Drive	✓	✓		✓		✓	
	Indian Pond Road	✓	✓		✓		✓	
	Lawrence Pond Road	✓	✓		✓		✓	
	Property Boundary				✓		✓	
NORTH ATLANTIC REFINING LIMITED	Come by Chance	✓					✓	
	First Street, Arnold's Cove	✓					✓	
	Sunnyside	✓					✓	
	Property Boundary	✓					✓	
CORNER BROOK PULP AND PAPER	Main Street	✓			✓		✓	
	West Street				✓			

		POLLUTANT						
OPERATOR	**STATION LOCATION**	**SO_2**	**NO_X / NO_2**	**O_3**	**TPM**	**PM_{10}**	**$PM_{2.5}$**	**CO**
IRON ORE COMPANY OF CANADA	Hudson Drive	✓	✓	✓	✓		✓	
	Indian Point	✓	✓		✓		✓	
	Smokey Mountain II	✓	✓		✓		✓	
VALE NEWFOUNDLAND AND LABRADOR LIMITED	Voisey's Bay Camp		✓				✓	
	Voisey's Bay Process Area		✓					
	Voisey's Bay Port				✓			
	Long Harbour Community Centre		✓				✓	
	Long Harbour Main Road		✓				✓	
	Long Harbour Property Boundary		✓				✓	
WABUSH MINES	Bond Street	✓			✓		✓	
	Cabot Drive				✓		✓	

FIGURE 2.0.1 - TYPICAL AMBIENT AIR MONITORING STATION

NAPS monitoring station in Mt. Pearl

2.4 Air Quality Health Index (AQHI)

The Air Quality Health Index (AQHI) is a numerical scale designed to help an individual understand what the air quality means to your health. Ranging from 1 to 10+, the higher the number on the scale the greater the health risk associated with air quality. Specifically the AQHI health messages are defined in Table 2.4.1.

The AQHI is calculated on an hourly basis and considers the combined relative health risks of O_3, $PM_{2.5}$ and NO_2. Data for the calculation of AQHI is currently being collected at the NAPS stations and at the Smokey Mountain station operated by the Iron Ore Company of Canada. The hourly AQHI is published to the Environment and Climate Change Canada weather office website.
http://weather.gc.ca/airquality/pages/provincial_summary/nl_e.html

TABLE 2.4.1 - AQHI HEALTH MESSAGES

AQHI READING	HEALTH RISK LEVEL	HEALTH MESSAGES	
		GENERAL POPULATION	AT RISK POPULATION
1-3	LOW	Ideal air quality for outdoor activities.	Enjoy your usual outdoor activities.
4-6	MODERATE	No need to modify your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.	Consider reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms.
7-10	HIGH	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.	Reduce or reschedule strenuous activities outdoors. Children and the elderly should also take it easy.
10+	VERY HIGH	Reduce or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.	Avoid strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.

2.5 Data Validity and Acceptability

All air monitoring data monitored in both the NAPS network and the industrial monitoring network undergoes a quality assurance and quality control procedure before being published. This procedure ensures that any anomalous readings or questionable data is not incorporated into the published dataset. Elements of this procedure account for:

- Routine calibration and auditing of the analyzers
- Zero correction of the baseline drift and noise
- Analyzer "Status Flag" activation
- Shelter temperature analysis
- Statistical rendering of outliers

Further details on the quality assurance and quality control procedures can be found in the Departmental *Guidelines for Ambient Air Monitoring (GD-PPD-065)* (http://www.env.gov.nl.ca/env/env_protection/science/gd_ppd_065.pdf) and in the *National Air Pollution Surveillance (NAPS) Program Quality Assurance/Quality Control (QA/QC) Guidelines*.

3.0 National Air Pollution Surveillance (NAPS) Network

The NAPS network in the province is primarily established to monitor the air quality in urbanized settings and in neighbourhoods away from the influences of industrial operations. In 2016 there were five sites operational with a complete suite monitoring (SO_2, $PM_{2.5}$ NO_x / NO_2, CO and O_3), with the Burin station additionally measuring PM_{10}. The five NAPS stations provide the data necessary to calculate the hourly AQHI. A sixth NAPS station monitors O_3 only.

The five sites with a complete suite monitoring were located in St. John's on Water Street, in Mt. Pearl on Old Placentia Road, in Grand Falls-Windsor on Scott Avenue, in Corner Brook on Macpherson Avenue and in Burin at the Highway Depot. The station which monitored O_3 only was located at the Town Depot in Port aux Choix.

The maps identifying the location of the NAPS stations in the St. John's and Mt. Pearl are presented in Figures 3.0.1 and 3.0.2, while the location of the Grand Falls Windsor station is presented in Figure 3.0.3. The location of the Corner Brook station is presented in Figure 3.0.4 while Figure 3.0.5 presents the location of the Port aux Choix Station. The location of the Burin station is presented in Figure 3.0.6.

FIGURE 3.0.1 - NAPS MONITORING STATION IN ST. JOHN'S

FIGURE 3.0.2 - NAPS MONITORING STATION IN MOUNT PEARL

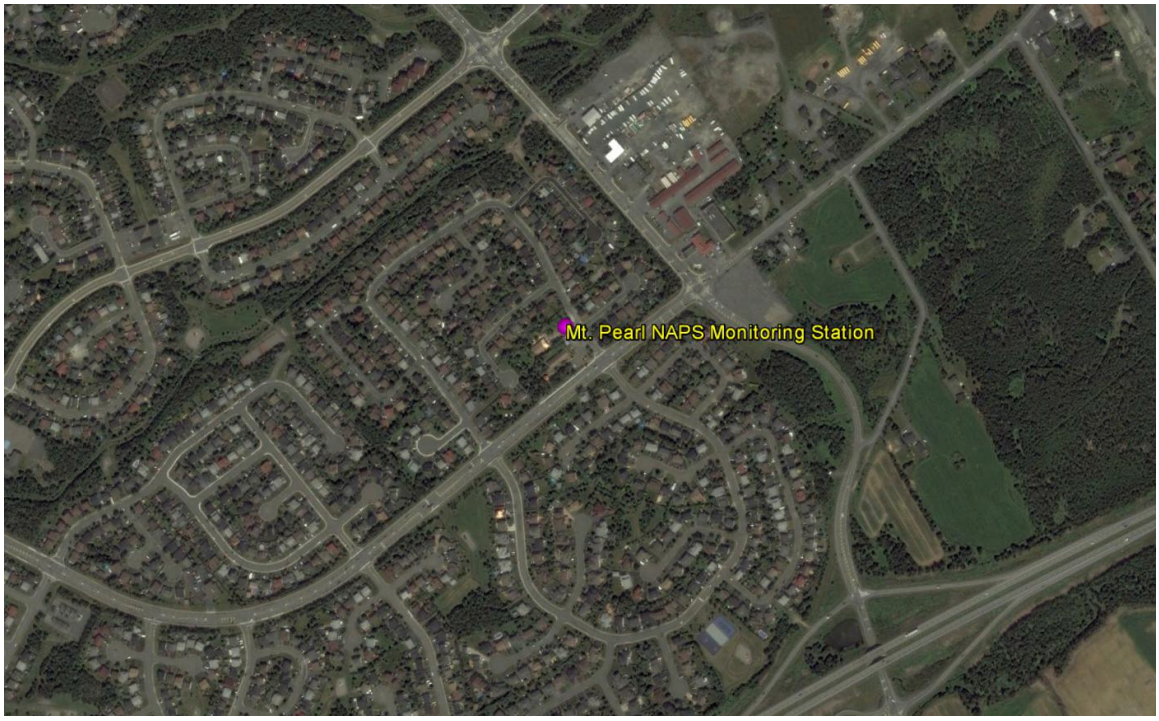


FIGURE 3.0.3 - NAPS MONITORING STATION IN GRAND FALLS-WINDSOR

FIGURE 3.0.4 - NAPS MONITORING STATION IN CORNER BROOK

FIGURE 3.0.5 - NAPS MONITORING STATION IN PORT AUX CHOIX

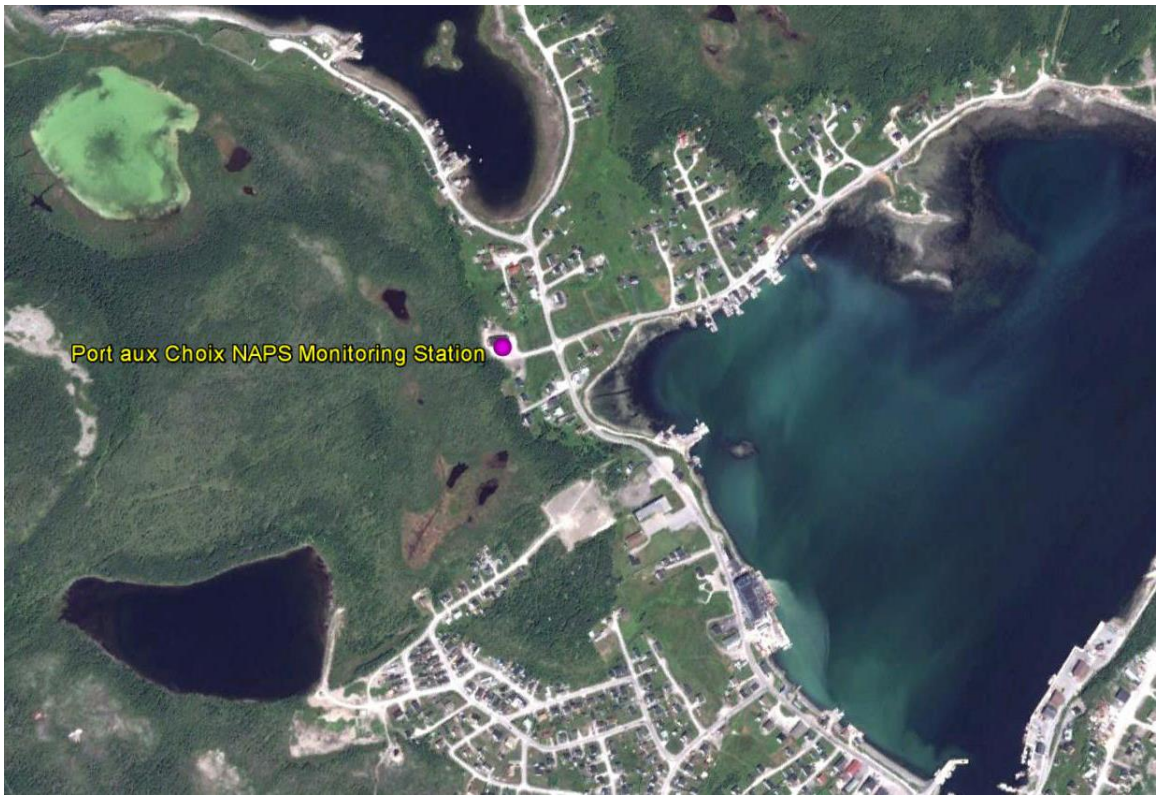
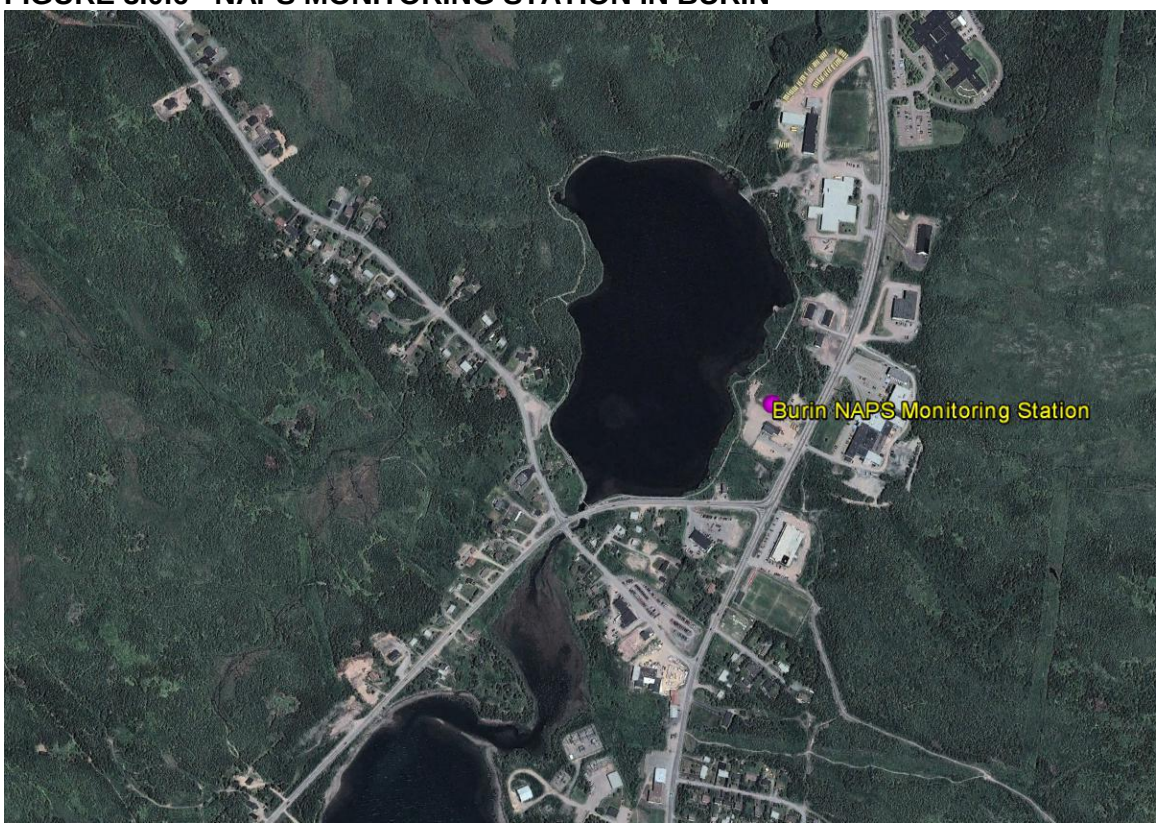


FIGURE 3.0.6 - NAPS MONITORING STATION IN BURIN



3.1 St. John's

The St. John's NAPS monitoring station is located on Water Street near the convention centre and monitors the ambient levels of SO_2, NO_x / NO_2, CO, O_3 and $PM_{2.5}$ on a continuous basis. For SO_2, NO_x / NO_2, $PM_{2.5}$ and CO, the ambient air criteria were not exceeded on any occasion in 2016. For O_3, the 8-hour standard was exceeded thirteen times in 2016, which included eight times in March, three times in April, and once in each of June and August.

Tables 3.1.1 through 3.1.5 present the summary information on the level of air contaminants measured at the St. John's NAPS station, while Figures 3.1.1 through 3.1.5 provide a graphical representation of the annual trend of each pollutant. Table 3.1.6 provides a summary of the AQHI while Figure 3.1.6 provides a graphical representation of the percentage of time the AQHI values were below a given level in 2016.

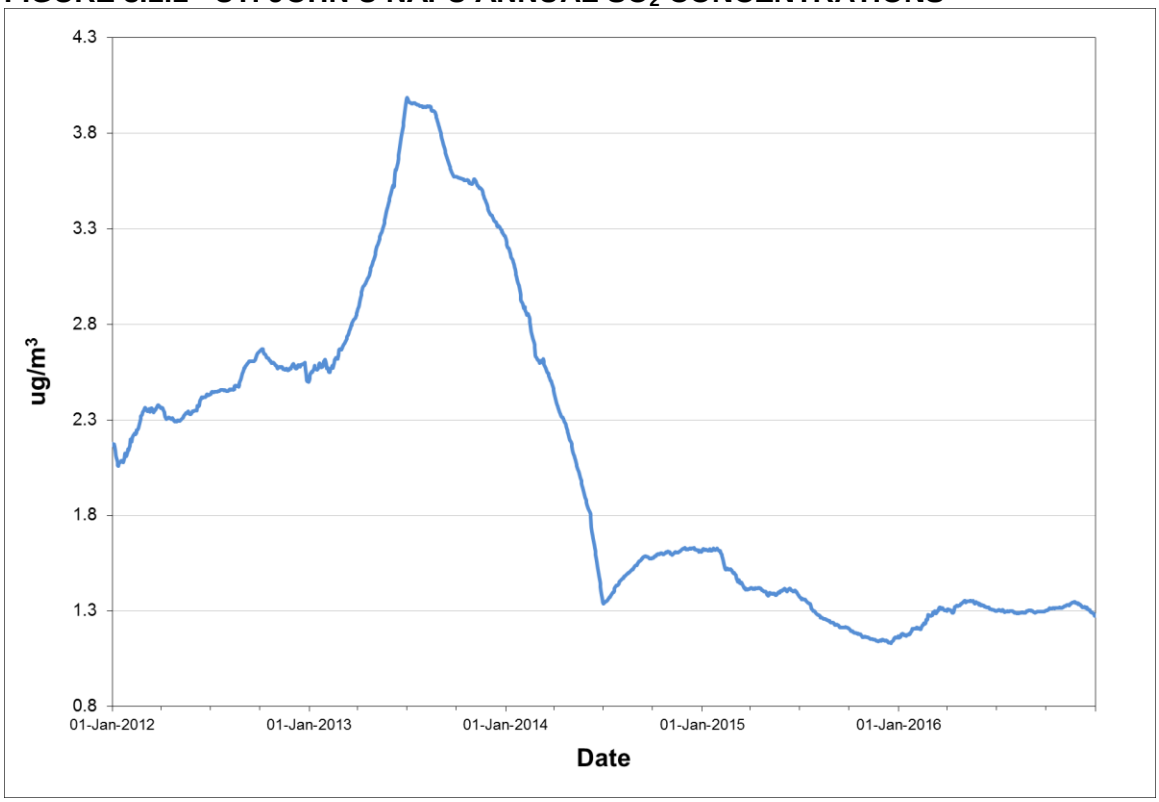
Volatile organic compounds, (VOCs) are also measured on a one-in-six day cycle at the monitoring station however the data is not included in this report.

TABLE 3.1.1 - ST. JOHN'S NAPS SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	671	90.2%	1.6	22.6	15.9	4.5	0	0	0
	February	537	79.9%	1.5	14.3	9.3	3.5	0	0	0
	March	658	88.4%	2.2	13.9	10.8	5.5	0	0	0
	April	718	99.7%	1.1	8.1	7.2	2.9	0	0	0
	May	727	97.7%	1.3	14.5	11.2	4.7	0	0	0
	June	718	99.7%	1.4	15.5	7.0	3.0	0	0	0
	July	742	99.7%	1.0	7.8	4.2	1.9	0	0	0
	August	743	99.9%	0.9	4.6	3.6	2.3	0	0	0
	September	581	80.7%	0.5	2.8	2.0	0.9	0	0	0
	October	743	99.9%	0.6	6.0	2.8	1.5	0	0	0
	November	714	99.2%	0.6	7.3	5.0	1.9	0	0	0
	December	744	100.0%	1.4	49.5	16.5	4.3	0	0	0
Annual		8296	94.7%	1.2	49.5	16.5	5.5	0	0	0
2016	January	742	99.7%	2.0	24.9	14.7	5.7	0	0	0
	February	696	100.0%	2.3	21.8	19.8	10.1	0	0	0
	March	744	100.0%	2.4	20.9	15.2	5.3	0	0	0
	April	613	85.1%	1.6	31.5	21.8	7.5	0	0	0
	May	743	99.9%	1.3	10.1	8.5	3.4	0	0	0
	June	720	100.0%	0.9	6.1	4.2	1.8	0	0	0
	July	743	99.9%	1.0	19.6	9.0	2.7	0	0	0
	August	664	89.2%	0.9	8.7	5.9	2.5	0	0	0
	September	720	100.0%	0.6	5.2	2.6	1.3	0	0	0
	October	744	100.0%	0.8	6.5	4.4	2.6	0	0	0
	November	720	100.0%	0.9	6.0	4.1	2.1	0	0	0
	December	744	100.0%	0.6	9.4	4.8	1.5	0	0	0
Annual		8593	97.8%	1.3	31.5	21.8	10.1	0	0	0

Observations in ug/m^3

FIGURE 3.1.1 - ST. JOHN'S NAPS ANNUAL SO_2 CONCENTRATIONS



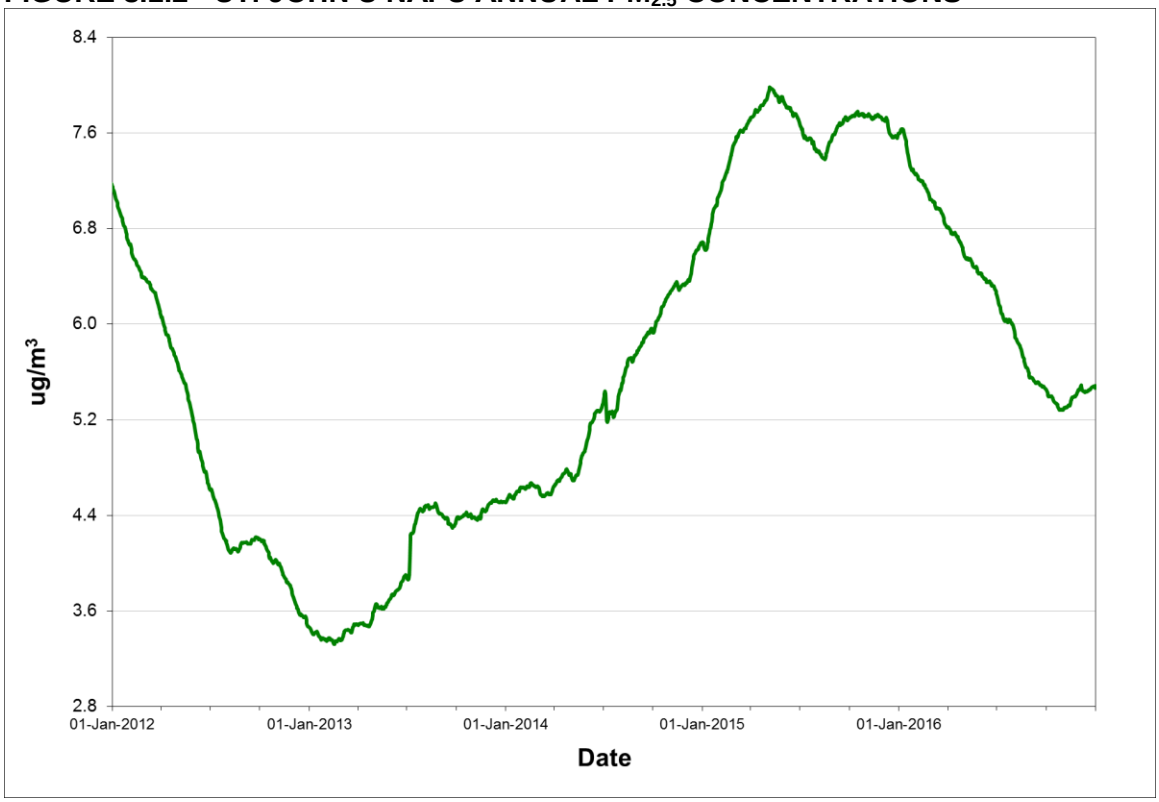
Rolling annual average of hourly concentrations

TABLE 3.1.2 - ST. JOHN'S NAPS $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	27	87.1%	8.6	15.2	0
	February	21	75.0%	8.6	12.8	0
	March	23	74.2%	6.5	11.0	0
	April	30	100.0%	8.3	12.2	0
	May	30	96.8%	8.3	15.6	0
	June	30	100.0%	7.4	10.8	0
	July	31	100.0%	8.7	16.5	0
	August	31	100.0%	10.6	15.9	0
	September	30	100.0%	7.8	10.6	0
	October	31	100.0%	7.6	12.5	0
	November	28	93.3%	4.3	7.5	0
	December	31	100.0%	4.4	10.0	0
Annual		343	94.0%	7.6	16.5	0
2016	January	31	100.0%	4.6	8.6	0
	February	29	100.0%	5.7	9.9	0
	March	31	100.0%	3.9	8.0	0
	April	26	86.7%	5.9	9.9	0
	May	31	100.0%	6.0	9.2	0
	June	22	73.3%	5.1	7.6	0
	July	31	100.0%	5.6	10.1	0
	August	21	67.7%	5.9	8.5	0
	September	30	100.0%	6.7	9.3	0
	October	31	100.0%	5.6	9.3	0
	November	30	100.0%	6.2	10.8	0
	December	31	100.0%	4.8	10.8	0
Annual		344	94.0%	5.5	10.8	0

Observations in ug/m^3

FIGURE 3.1.2 - ST. JOHN'S NAPS ANNUAL $PM_{2.5}$ CONCENTRATIONS



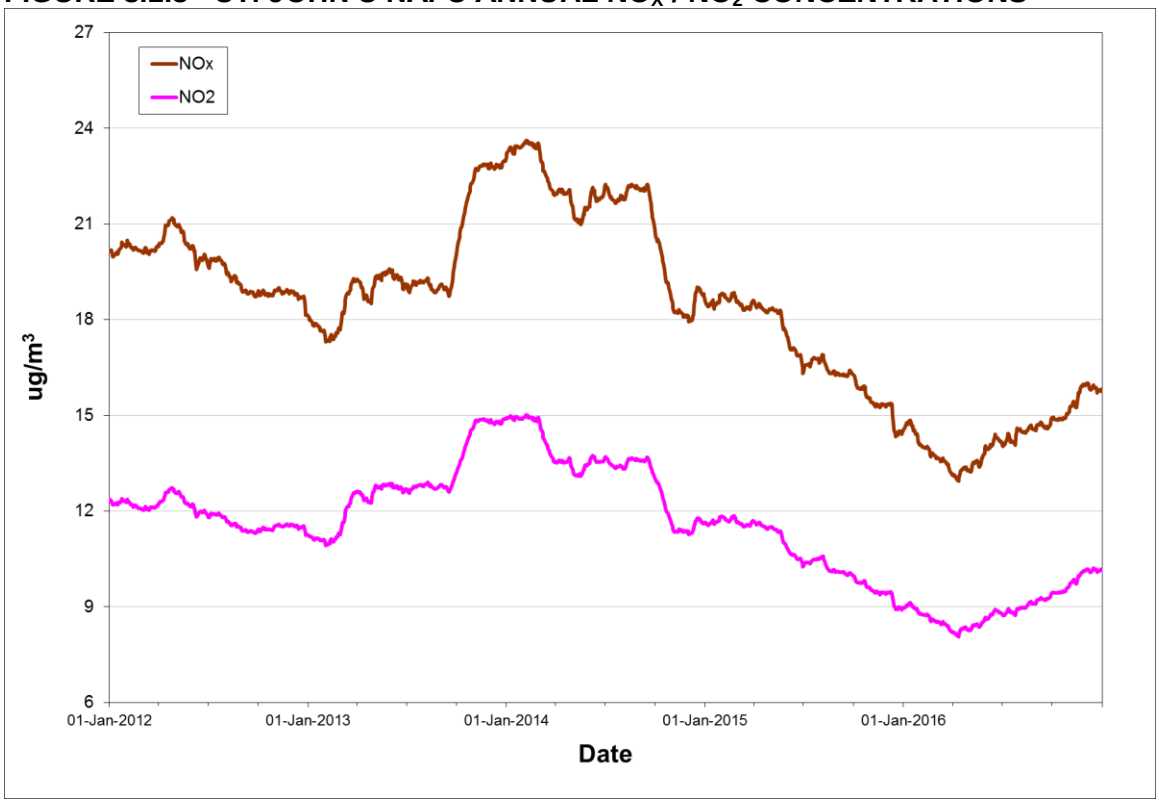
Rolling annual average of daily concentrations

TABLE 3.1.3 - ST. JOHN'S NAPS NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour	Exceedances 24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	671	90.2%	21.7	14.4	501.9	112.8	86.6	37.9	0	0
	February	538	80.1%	17.1	12.3	140.6	71.7	61.2	40.3	0	0
	March	658	88.4%	17.1	12.0	181.2	79.7	45.2	28.0	0	0
	April	718	99.7%	13.3	9.5	138.1	61.0	34.3	21.7	0	0
	May	729	98.0%	11.5	6.8	254.0	80.9	52.5	29.1	0	0
	June	718	99.7%	15.1	7.7	210.0	46.4	40.7	20.2	0	0
	July	744	100.0%	15.8	8.9	197.2	53.0	48.6	23.3	0	0
	August	743	99.9%	12.6	6.2	179.0	64.0	55.5	24.3	0	0
	September	720	100.0%	11.8	6.2	149.1	49.5	35.4	14.6	0	0
	October	744	100.0%	11.4	6.9	106.6	40.1	25.3	13.8	0	0
	November	714	99.2%	12.2	8.5	77.3	38.6	37.9	27.3	0	0
	December	719	96.6%	15.9	9.9	198.5	89.6	59.8	37.8	0	0
Annual		8416	96.1%	14.5	9.0	501.9	112.8	86.6	40.3	0	0
2016	January	744	100.0%	16.1	11.6	118.9	74.3	38.0	25.8	0	0
	February	696	100.0%	11.9	8.8	91.8	57.1	35.1	22.5	0	0
	March	744	100.0%	9.7	7.2	124.2	55.7	26.1	19.3	0	0
	April	634	88.1%	15.3	10.7	134.0	55.7	42.1	26.1	0	0
	May	743	99.9%	20.9	11.5	327.8	93.4	59.6	26.3	0	0
	June	720	100.0%	16.1	9.2	202.8	56.2	47.6	25.4	0	0
	July	743	99.9%	20.8	10.6	373.7	105.1	100.7	41.0	0	0
	August	744	100.0%	12.0	7.8	144.8	61.8	30.3	19.3	0	0
	September	720	100.0%	16.3	10.3	173.2	66.9	63.4	33.1	0	0
	October	743	99.9%	13.2	9.1	204.8	64.4	38.8	25.7	0	0
	November	720	100.0%	23.2	14.7	238.0	64.0	65.6	39.2	0	0
	December	744	100.0%	13.7	10.1	100.3	58.5	30.5	20.3	0	0
Annual		8695	99.0%	15.8	10.1	373.7	105.1	100.7	41.0	0	0

Observations in ug/m^3

FIGURE 3.1.3 - ST. JOHN'S NAPS ANNUAL NO_X / NO_2 CONCENTRATIONS



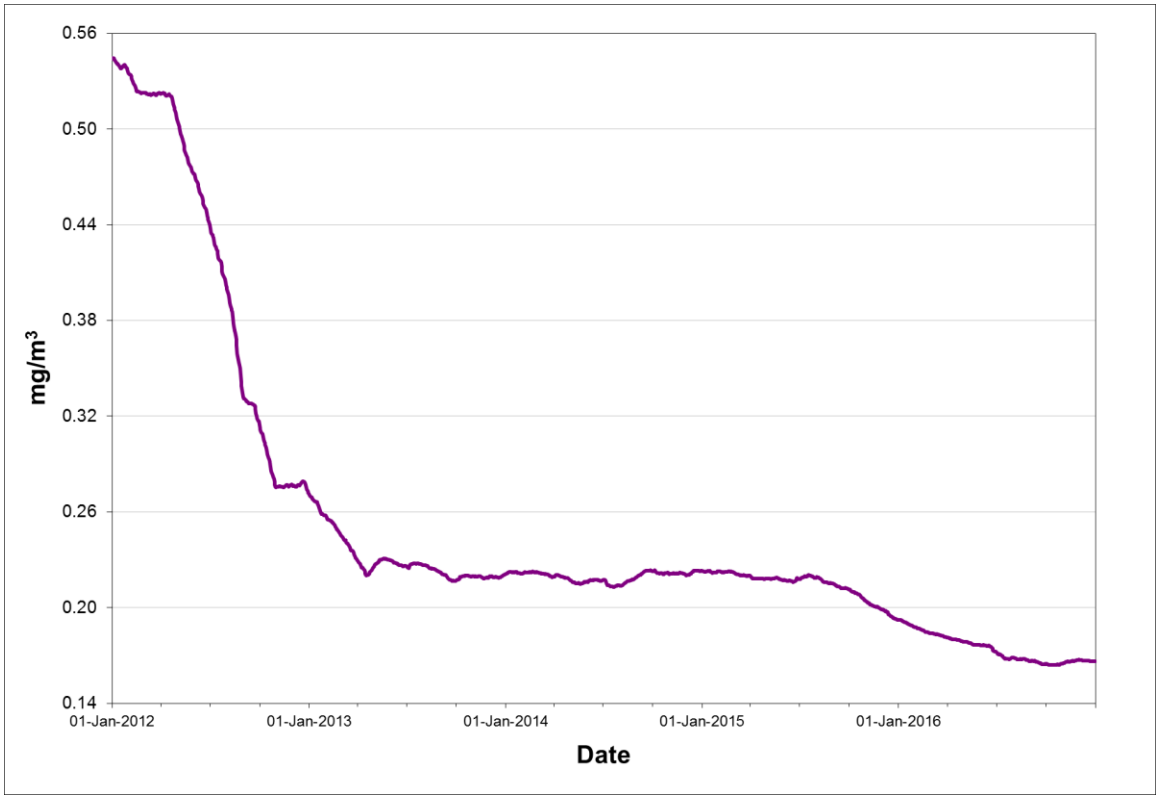
Rolling annual average of hourly concentrations

TABLE 3.1.4 - ST. JOHN'S NAPS CO SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>35)	Regulatory Exceedances 8-Hour (>15)
2015	January	672	90.3%	0.2	1.2	0.6	0	0
	February	537	79.9%	0.2	0.8	0.4	0	0
	March	658	88.4%	0.2	1.4	0.4	0	0
	April	717	99.6%	0.2	0.7	0.4	0	0
	May	726	97.6%	0.2	0.5	0.3	0	0
	June	718	99.7%	0.2	2.3	1.1	0	0
	July	744	100.0%	0.2	1.1	0.5	0	0
	August	744	100.0%	0.2	0.8	0.5	0	0
	September	720	100.0%	0.2	0.7	0.3	0	0
	October	744	100.0%	0.2	0.7	0.5	0	0
	November	714	99.2%	0.1	2.2	0.4	0	0
	December	744	100.0%	0.2	1.7	0.7	0	0
Annual		8438	96.3%	0.2	2.3	1.1	0	0
2016	January	743	99.9%	0.2	0.9	0.3	0	0
	February	696	100.0%	0.2	0.8	0.4	0	0
	March	744	100.0%	0.2	1.0	0.4	0	0
	April	625	86.8%	0.2	0.6	0.3	0	0
	May	743	99.9%	0.2	0.7	0.3	0	0
	June	720	100.0%	0.2	0.7	0.3	0	0
	July	742	99.7%	0.2	1.4	0.6	0	0
	August	744	100.0%	0.2	0.8	0.4	0	0
	September	720	100.0%	0.2	0.6	0.3	0	0
	October	743	99.9%	0.2	0.6	0.4	0	0
	November	720	100.0%	0.2	0.6	0.4	0	0
	December	744	100.0%	0.2	0.7	0.4	0	0
Annual		8684	98.9%	0.2	1.4	0.6	0	0

Observations in mg/m^3

FIGURE 3.1.4 - ST. JOHN'S NAPS ANNUAL CO CONCENTRATIONS



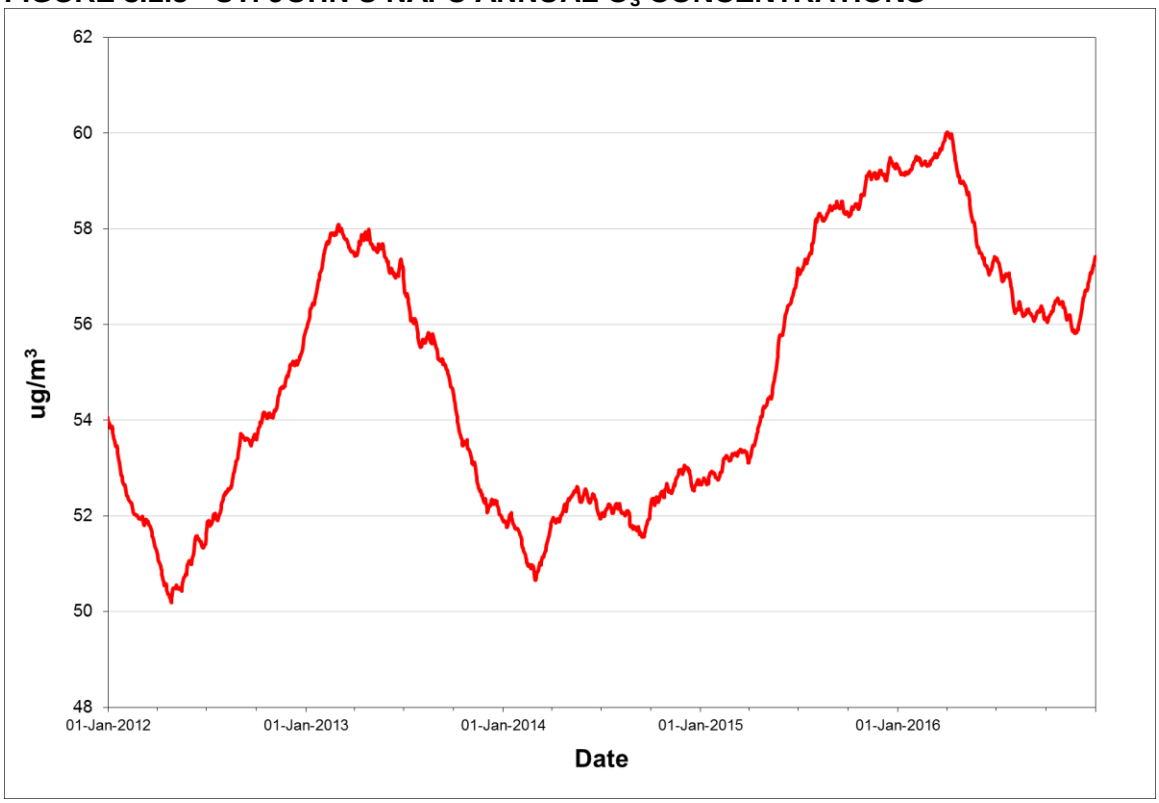
Rolling annual average of hourly concentrations

TABLE 3.1.5 - ST. JOHN'S NAPS O_3 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2015	January	671	90.2%	60.8	89.8	83.0	0	0
	February	537	79.9%	67.7	89.0	86.8	0	0
	March	658	88.4%	64.4	92.6	84.7	0	0
	April	716	99.4%	81.1	119.3	107.7	0	32
	May	727	97.7%	74.9	128.1	107.0	0	18
	June	718	99.7%	54.3	104.3	80.7	0	0
	July	744	100.0%	54.4	99.1	92.0	0	1
	August	743	99.9%	48.0	120.1	92.1	0	1
	September	720	100.0%	45.1	82.2	70.1	0	0
	October	742	99.7%	49.4	80.3	73.6	0	0
	November	715	99.3%	58.7	80.8	78.9	0	0
	December	744	100.0%	56.6	79.4	76.5	0	0
Annual		8435	96.3%	59.3	128.1	107.7	0	52
2016	January	743	99.9%	61.9	87.3	85.1	0	0
	February	696	100.0%	65.4	85.4	83.1	0	0
	March	744	100.0%	72.0	96.6	94.5	0	8
	April	634	88.1%	69.1	105.0	98.3	0	3
	May	743	99.9%	57.0	86.9	82.2	0	0
	June	720	100.0%	51.9	96.8	90.0	0	1
	July	743	99.9%	45.7	94.0	79.1	0	0
	August	744	100.0%	44.4	102.0	93.6	0	1
	September	720	100.0%	43.5	77.7	73.2	0	0
	October	742	99.7%	53.5	83.1	81.2	0	0
	November	720	100.0%	52.3	89.4	83.3	0	0
	December	744	100.0%	73.5	96.3	86.2	0	0
Annual		8693	99.0%	57.4	105.0	98.3	0	13

Observations in ug/m^3

FIGURE 3.1.5 - ST. JOHN'S NAPS ANNUAL O_3 CONCENTRATIONS

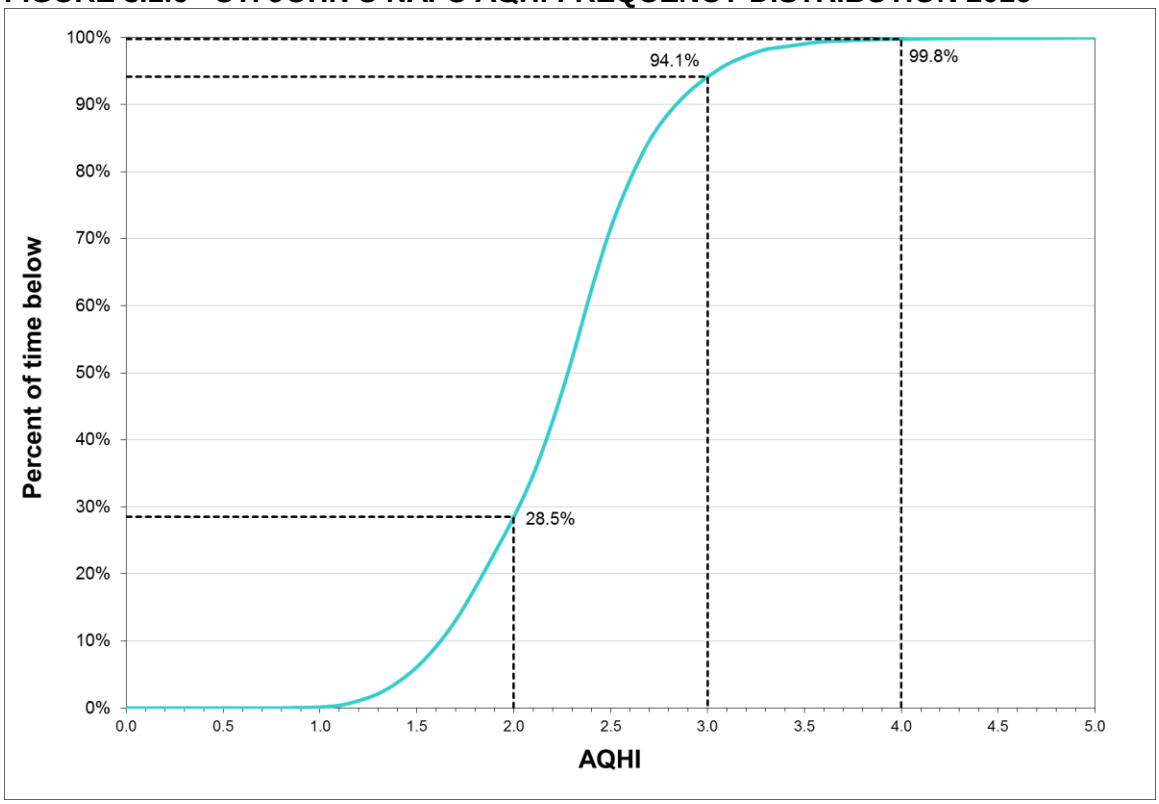


Rolling annual average of hourly concentrations

TABLE 3.1.6 - ST. JOHN'S NAPS AQHI SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2015	January	668	89.8%	2.7	5.1
	February	536	79.8%	2.7	4.0
	March	587	78.9%	2.5	4.3
	April	717	99.6%	3.0	4.4
	May	728	97.8%	2.7	5.5
	June	718	99.7%	2.1	3.4
	July	744	100.0%	2.2	3.8
	August	744	100.0%	2.0	4.1
	September	720	100.0%	1.8	3.2
	October	740	99.5%	2.0	2.9
	November	683	94.9%	2.1	3.0
	December	717	96.4%	2.1	4.5
Annual		8302	94.8%	2.3	5.5
2016	January	744	100.0%	2.4	3.8
	February	694	99.7%	2.4	3.5
	March	742	99.7%	2.4	3.3
	April	626	86.9%	2.6	3.8
	May	742	99.7%	2.3	6.2
	June	532	73.9%	2.1	3.2
	July	741	99.6%	2.0	4.9
	August	525	70.6%	1.9	3.2
	September	718	99.7%	1.9	4.1
	October	738	99.2%	2.1	3.3
	November	715	99.3%	2.3	4.2
	December	740	99.5%	2.6	5.1
Annual		8257	94.0%	2.3	6.2

FIGURE 3.1.6 - ST. JOHN'S NAPS AQHI FREQUENCY DISTRIBUTION 2016



e.g. 94.1% of the time the AQHI recorded was below 3.0

3.2 Mt. Pearl

The Mt. Pearl NAPS monitoring station is located on Old Placentia Road near Admiralty House and monitors the ambient levels of SO_2, NO_x / NO_2, CO, O_3 and $PM_{2.5}$ on a continuous basis. For SO_2, NO_x / NO_2, and CO, the ambient air criteria were not exceeded on any occasion in 2016. For O_3, the 8-hour ambient standard was exceeded on two occasions in 2016; once in April and once in August. The $PM_{2.5}$ standard was exceeded on one occasion in August.

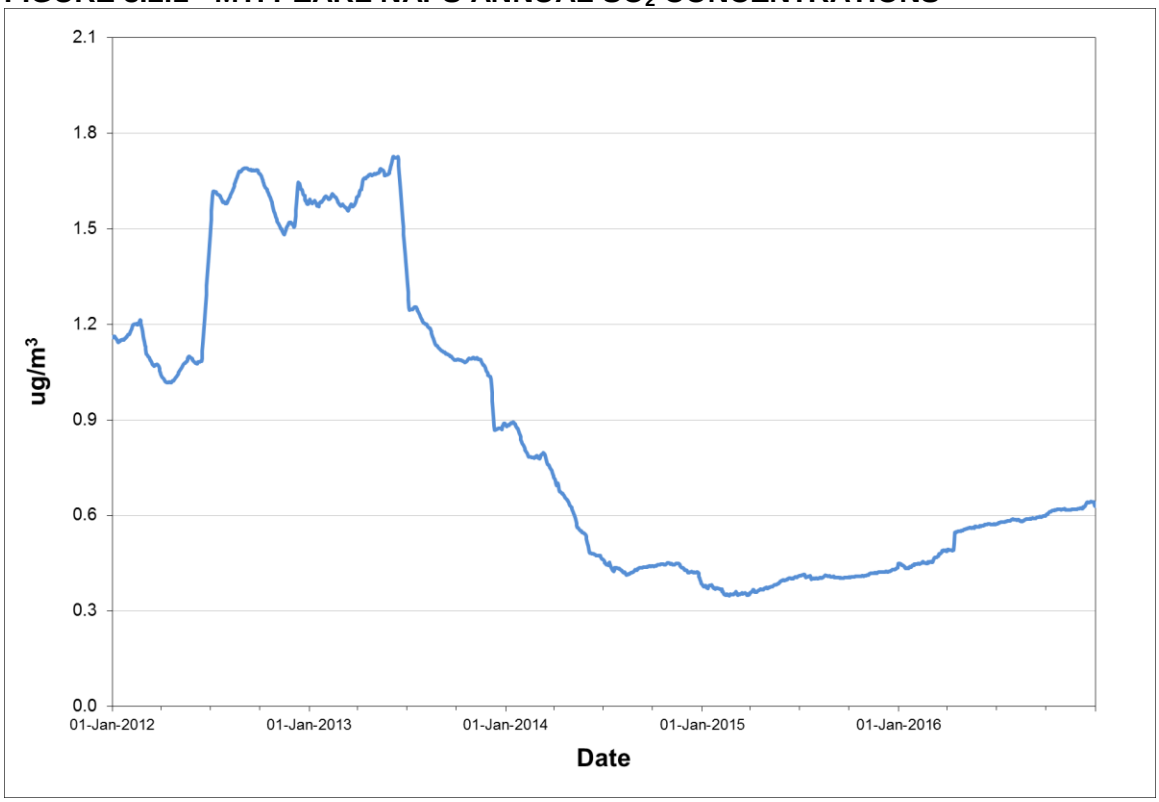
Tables 3.2.1 through 3.2.5 present the summary information on the level of air contaminants measured at the Mt. Pearl NAPS station, while Figures 3.2.1 through 3.2.5 provide a graphical representation of the annual trend of each pollutant. Table 3.2.6 provides a summary of the AQHI while Figure 3.2.6 provides a graphical representation of the percentage of time the AQHI values were below a given level in 2016.

TABLE 3.2.1 - MT. PEARL NAPS SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	743	99.9%	0.7	17.2	8.8	1.8	0	0	0
	February	672	100.0%	0.5	9.1	4.8	1.4	0	0	0
	March	737	99.1%	0.6	14.3	5.7	1.7	0	0	0
	April	716	99.4%	0.5	10.1	5.6	1.7	0	0	0
	May	741	99.6%	0.4	13.5	5.8	1.4	0	0	0
	June	720	100.0%	0.3	5.6	3.3	1.1	0	0	0
	July	744	100.0%	0.2	1.5	1.3	0.7	0	0	0
	August	744	100.0%	0.5	1.7	1.5	1.0	0	0	0
	September	720	100.0%	0.3	2.9	1.8	0.5	0	0	0
	October	744	100.0%	0.3	4.8	1.7	0.6	0	0	0
	November	720	100.0%	0.4	3.8	2.4	1.4	0	0	0
	December	744	100.0%	0.6	19.2	14.0	5.0	0	0	0
Annual		8745	99.8%	0.4	19.2	14.0	5.0	0	0	0
2016	January	743	99.9%	0.7	19.1	12.1	3.0	0	0	0
	February	696	100.0%	0.7	15.7	9.6	2.8	0	0	0
	March	732	98.4%	1.0	14.9	8.6	2.6	0	0	0
	April	719	99.9%	1.3	96.8	70.1	13.3	0	0	0
	May	744	100.0%	0.5	7.6	3.4	1.5	0	0	0
	June	720	100.0%	0.4	7.1	2.9	1.0	0	0	0
	July	743	99.9%	0.4	2.4	1.5	0.9	0	0	0
	August	744	100.0%	0.5	10.1	3.6	1.1	0	0	0
	September	720	100.0%	0.4	2.2	1.8	0.9	0	0	0
	October	744	100.0%	0.5	10.4	6.9	1.5	0	0	0
	November	720	100.0%	0.4	3.0	1.6	0.8	0	0	0
	December	431	57.9%	0.9	11.9	5.6	1.7	0	0	0
Annual		8456	96.3%	0.6	96.8	70.1	13.3	0	0	0

Observations in ug/m^3

FIGURE 3.2.1 - MT. PEARL NAPS ANNUAL SO_2 CONCENTRATIONS



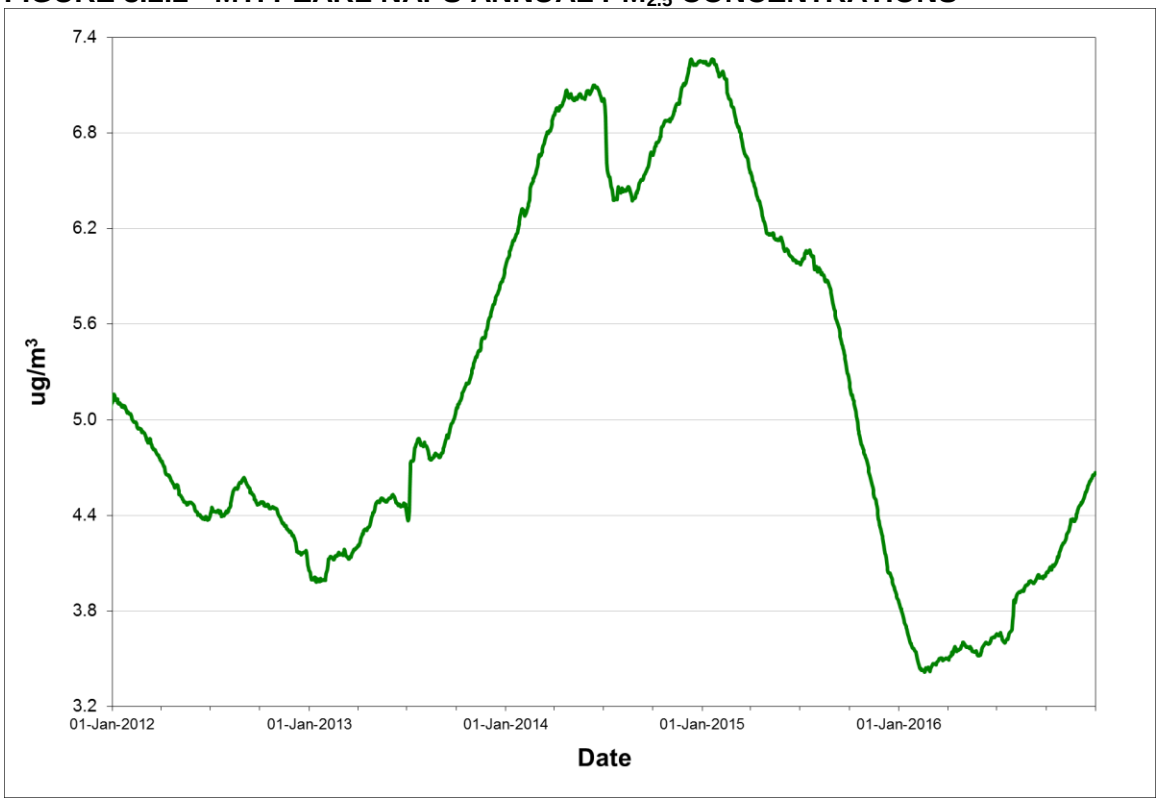
Rolling annual average of hourly concentrations

TABLE 3.2.2 - MT. PEARL NAPS $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	31	100.0%	7.5	9.8	0
	February	28	100.0%	6.3	11.8	0
	March	31	100.0%	3.7	8.3	0
	April	30	100.0%	3.5	7.5	0
	May	26	83.9%	3.7	9.5	0
	June	30	100.0%	2.0	4.5	0
	July	24	77.4%	2.6	11.6	0
	August	27	87.1%	2.1	15.7	0
	September	30	100.0%	2.7	5.5	0
	October	31	100.0%	3.9	6.4	0
	November	30	100.0%	3.6	6.7	0
	December	31	100.0%	4.3	7.7	0
Annual		349	95.6%	3.9	15.7	0
2016	January	31	100.0%	3.9	6.0	0
	February	29	100.0%	5.0	8.0	0
	March	31	100.0%	4.5	8.1	0
	April	27	90.0%	4.8	11.6	0
	May	22	71.0%	2.3	4.5	0
	June	24	80.0%	3.5	7.7	0
	July	30	96.8%	4.1	21.1	0
	August	25	80.6%	4.9	36.0	1
	September	26	86.7%	3.2	6.1	0
	October	31	100.0%	5.9	9.5	0
	November	30	100.0%	6.2	12.7	0
	December	31	100.0%	6.5	10.3	0
Annual		337	92.1%	4.7	36.0	1

Observations in ug/m^3

FIGURE 3.2.2 - MT. PEARL NAPS ANNUAL $PM_{2.5}$ CONCENTRATIONS



Rolling annual average of daily concentrations

TABLE 3.2.3 - MT. PEARL NAPS NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour	Exceedances 24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	743	99.9%	5.7	4.5	87.5	48.3	14.1	11.1	0	0
	February	672	100.0%	4.7	3.6	115.9	34.3	11.0	8.8	0	0
	March	737	99.1%	5.6	4.3	106.6	57.4	13.4	11.1	0	0
	April	715	99.3%	3.9	2.9	35.7	29.6	10.2	8.9	0	0
	May	741	99.6%	3.4	2.4	63.1	38.1	18.0	13.5	0	0
	June	720	100.0%	3.5	2.2	61.4	27.1	7.3	4.9	0	0
	July	743	99.9%	2.8	1.8	32.7	26.9	7.1	5.8	0	0
	August	744	100.0%	3.1	1.6	69.8	31.9	7.4	4.1	0	0
	September	720	100.0%	4.0	2.4	116.1	25.4	12.1	5.6	0	0
	October	742	99.7%	4.3	2.8	67.0	25.6	12.2	8.9	0	0
	November	720	100.0%	4.1	2.9	50.7	23.6	8.3	6.4	0	0
	December	744	100.0%	5.0	3.6	217.6	46.7	17.9	14.9	0	0
Annual		8741	99.8%	4.2	2.9	217.6	57.4	18.0	14.9	0	0
2016	January	743	99.9%	4.6	3.4	55.9	40.2	9.3	6.5	0	0
	February	696	100.0%	4.3	3.1	68.7	42.8	14.3	10.8	0	0
	March	744	100.0%	3.8	2.7	35.9	33.4	11.2	8.9	0	0
	April	718	99.7%	4.2	2.9	55.0	36.0	9.4	8.4	0	0
	May	744	100.0%	3.6	2.2	35.8	23.3	8.0	5.5	0	0
	June	720	100.0%	4.6	2.2	143.3	53.9	25.2	10.3	0	0
	July	742	99.7%	3.7	1.9	126.1	35.5	12.5	5.8	0	0
	August	744	100.0%	4.2	2.1	94.6	30.0	12.9	5.2	0	0
	September	720	100.0%	3.7	2.2	26.3	15.1	6.2	4.7	0	0
	October	742	99.7%	4.4	2.9	74.2	39.2	9.4	6.3	0	0
	November	720	100.0%	6.1	4.5	49.3	40.3	16.5	13.6	0	0
	December	744	100.0%	4.9	3.4	74.3	51.7	13.1	9.8	0	0
Annual		8777	99.9%	4.3	2.8	143.3	53.9	25.2	13.6	0	0

Observations in ug/m^3

FIGURE 3.2.3 - MT. PEARL NAPS ANNUAL NO_X / NO_2 CONCENTRATIONS

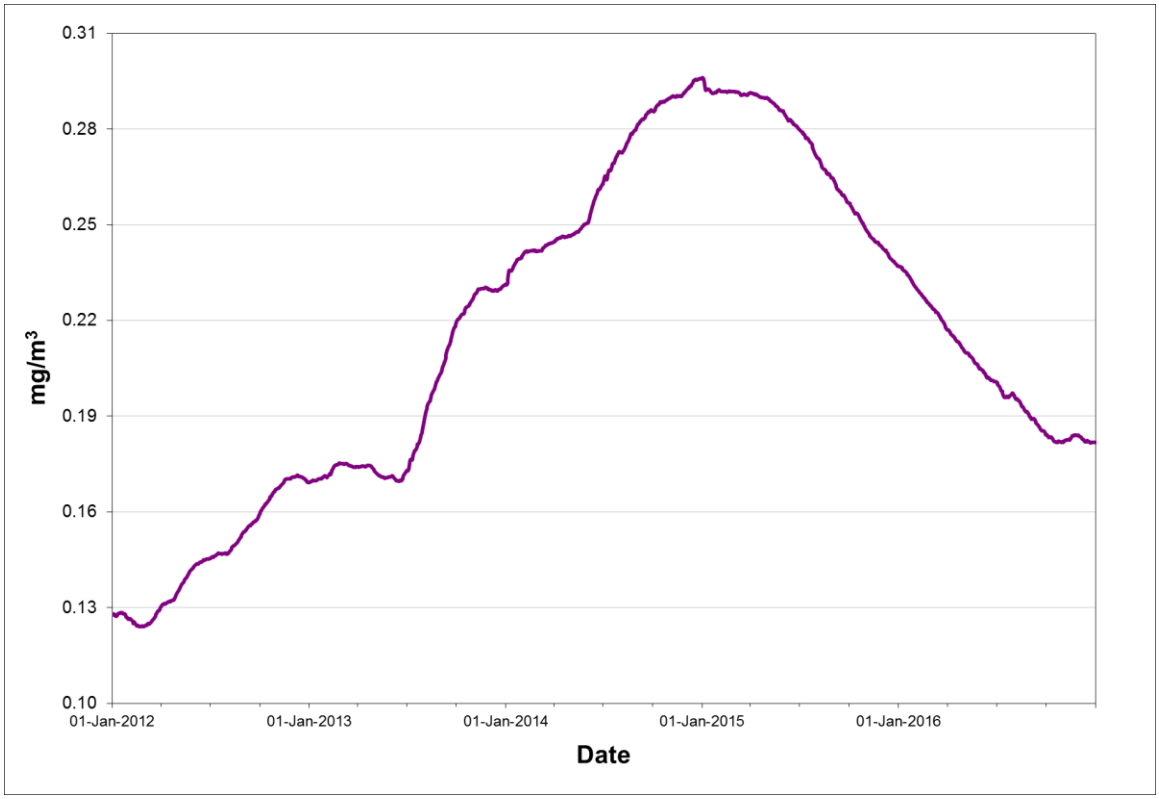
Rolling annual average of hourly concentrations

TABLE 3.2.4 - MT. PEARL NAPS CO SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>35)	Regulatory Exceedances 8-Hour (>15)
2015	January	743	99.9%	0.2	0.9	0.4	0	0
	February	672	100.0%	0.2	0.6	0.3	0	0
	March	737	99.1%	0.2	1.1	0.4	0	0
	April	715	99.3%	0.2	0.6	0.3	0	0
	May	741	99.6%	0.2	0.4	0.4	0	0
	June	720	100.0%	0.2	0.4	0.4	0	0
	July	744	100.0%	0.3	0.6	0.4	0	0
	August	744	100.0%	0.3	0.5	0.4	0	0
	September	720	100.0%	0.3	0.8	0.4	0	0
	October	744	100.0%	0.2	0.6	0.5	0	0
	November	720	100.0%	0.2	0.5	0.3	0	0
	December	744	100.0%	0.2	0.4	0.3	0	0
Annual		8744	99.8%	0.2	1.1	0.5	0	0
2016	January	744	100.0%	0.2	0.5	0.3	0	0
	February	695	99.9%	0.2	0.8	0.3	0	0
	March	744	100.0%	0.1	0.7	0.4	0	0
	April	718	99.7%	0.2	0.9	0.3	0	0
	May	744	100.0%	0.2	0.3	0.3	0	0
	June	720	100.0%	0.2	0.3	0.3	0	0
	July	743	99.9%	0.2	0.5	0.4	0	0
	August	744	100.0%	0.2	0.5	0.3	0	0
	September	720	100.0%	0.2	0.3	0.3	0	0
	October	743	99.9%	0.2	0.7	0.3	0	0
	November	720	100.0%	0.2	0.6	0.5	0	0
	December	740	99.5%	0.1	1.0	0.4	0	0
Annual		8775	99.9%	0.0	1.0	0.5	0	0

Observations in mg/m^3

FIGURE 3.2.4 - MT. PEARL NAPS ANNUAL CO CONCENTRATIONS



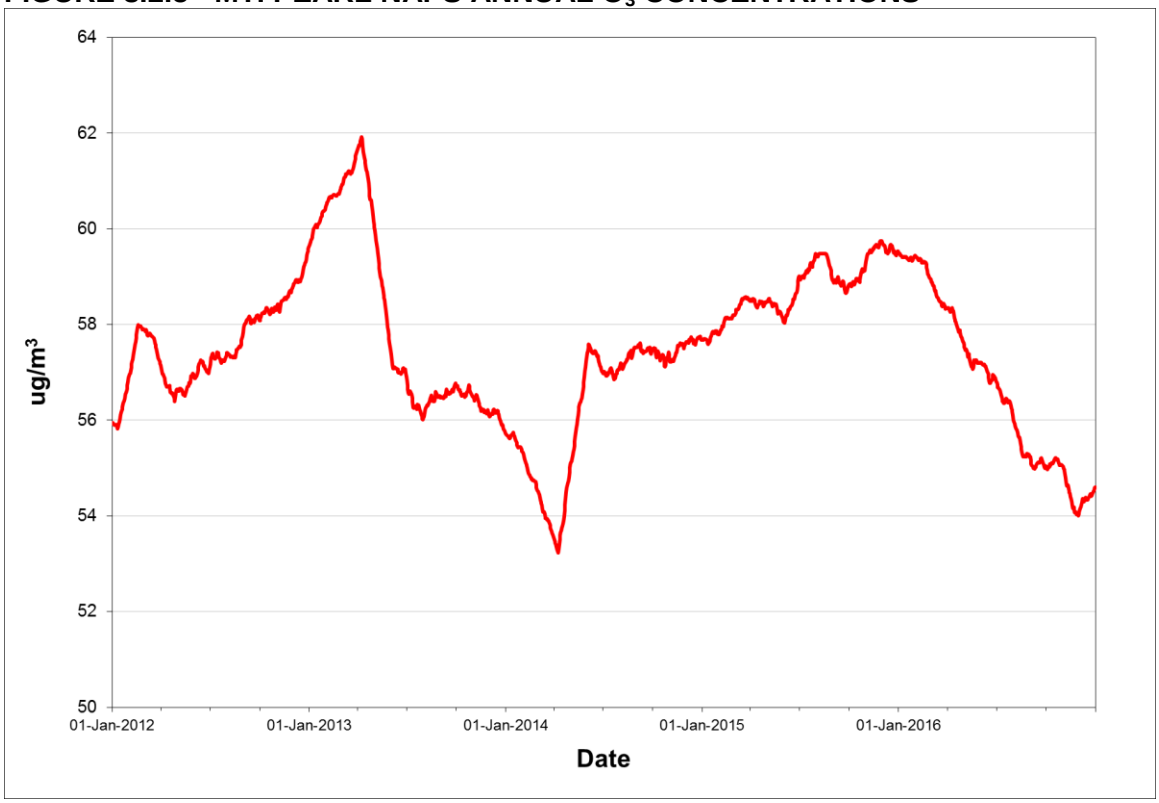
Rolling annual average of hourly concentrations

TABLE 3.2.5 - MT. PEARL NAPS O_3 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2015	January	740	99.5%	63.6	88.0	79.6	0	0
	February	672	100.0%	69.5	87.5	84.1	0	0
	March	737	99.1%	72.2	90.5	84.7	0	0
	April	716	99.4%	73.1	99.9	95.1	0	3
	May	564	75.8%	60.6	117.8	86.8	0	0
	June	384	53.3%	50.3	110.3	71.4	0	0
	July	568	76.3%	47.2	114.2	91.9	0	1
	August	327	44.0%	46.8	122.5	68.7	0	0
	September	718	99.7%	46.0	124.8	97.2	0	2
	October	743	99.9%	50.0	79.1	71.7	0	0
	November	720	100.0%	61.7	76.9	74.2	0	0
	December	744	100.0%	60.1	76.5	74.9	0	0
Annual		7633	87.1%	59.5	124.8	97.2	0	6
2016	January	742	99.7%	63.0	81.2	79.7	0	0
	February	696	100.0%	64.2	81.2	78.8	0	0
	March	732	98.4%	66.2	86.1	79.6	0	0
	April	718	99.7%	64.9	97.8	90.7	0	1
	May	744	100.0%	55.1	79.4	76.7	0	0
	June	720	100.0%	48.5	86.7	80.2	0	0
	July	742	99.7%	42.0	88.4	72.4	0	0
	August	744	100.0%	41.8	93.7	88.1	0	1
	September	720	100.0%	43.4	71.9	66.7	0	0
	October	743	99.9%	50.4	76.0	73.2	0	0
	November	720	100.0%	49.5	80.9	78.9	0	0
	December	741	99.6%	66.8	84.4	80.8	0	0
Annual		8762	99.7%	54.6	97.8	90.7	0	2

Observations in ug/m^3

FIGURE 3.2.5 - MT. PEARL NAPS ANNUAL O_3 CONCENTRATIONS

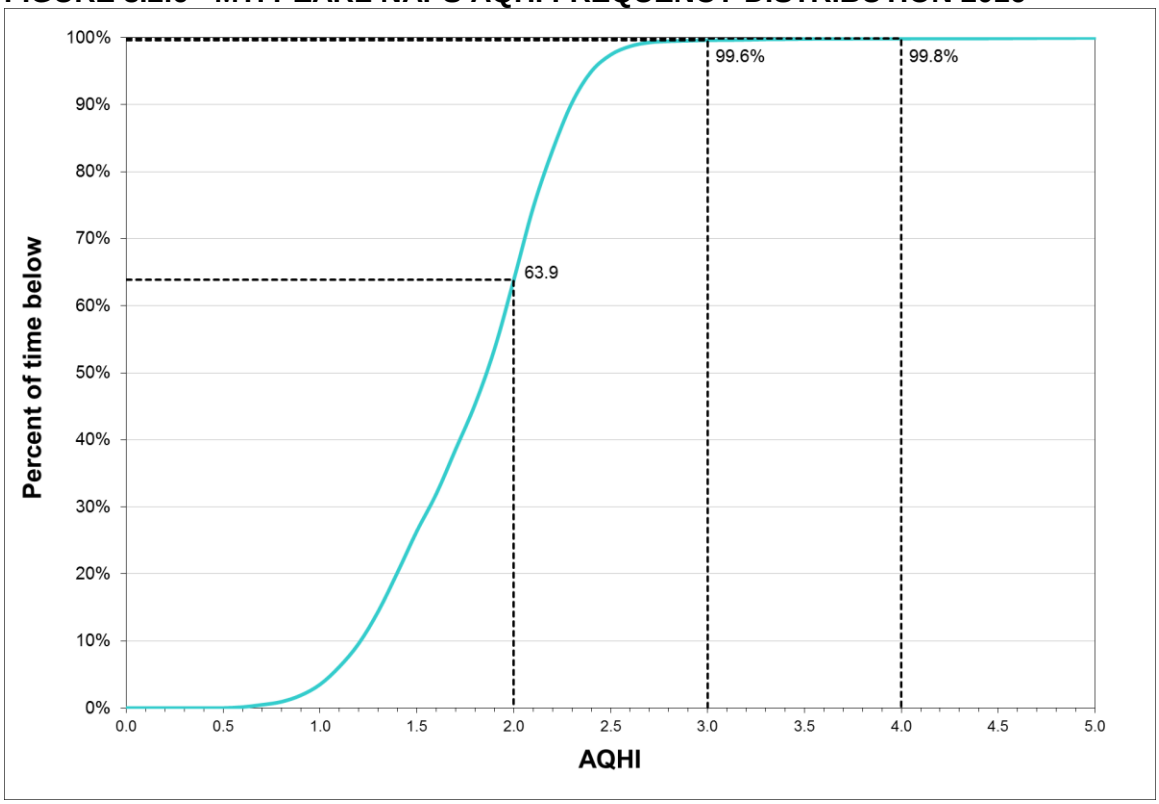


Rolling annual average of hourly concentrations

TABLE 3.2.6 - MT. PEARL NAPS AQHI SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2015	January	740	99.5%	2.2	3.0
	February	668	99.4%	2.3	3.0
	March	731	98.3%	2.3	3.2
	April	713	99.0%	2.2	4.0
	May	486	65.3%	1.9	2.9
	June	379	52.6%	1.5	2.6
	July	507	68.1%	1.5	3.9
	August	308	41.4%	1.4	2.7
	September	716	99.4%	1.5	3.2
	October	738	99.2%	1.6	2.7
	November	720	100.0%	1.9	2.5
	December	744	100.0%	2.0	2.8
Annual		7450	85.0%	1.9	4.0
2016	January	740	99.5%	2.0	2.6
	February	689	99.0%	2.1	2.8
	March	730	98.1%	2.1	3.6
	April	683	94.9%	2.1	4.5
	May	610	82.0%	1.7	2.3
	June	630	87.5%	1.6	2.7
	July	701	94.2%	1.4	6.1
	August	682	91.7%	1.4	6.1
	September	639	88.8%	1.4	2.6
	October	741	99.6%	1.7	2.5
	November	720	100.0%	1.8	3.3
	December	740	99.5%	2.2	2.9
Annual		8305	94.5%	1.8	6.1

FIGURE 3.2.6 - MT. PEARL NAPS AQHI FREQUENCY DISTRIBUTION 2016



e.g. 99.6% of the time the AQHI recorded was below 3.0

3.3 Grand Falls-Windsor

The Grand Falls-Windsor NAPS monitoring station is located on Scott Avenue and monitors the ambient levels of SO_2, NO_x / NO_2, CO, O_3 and $PM_{2.5}$ on a continuous basis. For O_3, the 8-hour ambient standard was exceeded on eleven occasions in 2016, specifically four times in March, three times in April and twice in both May and July. For all other pollutants, the ambient air criteria were not exceeded on any occasion in 2016.

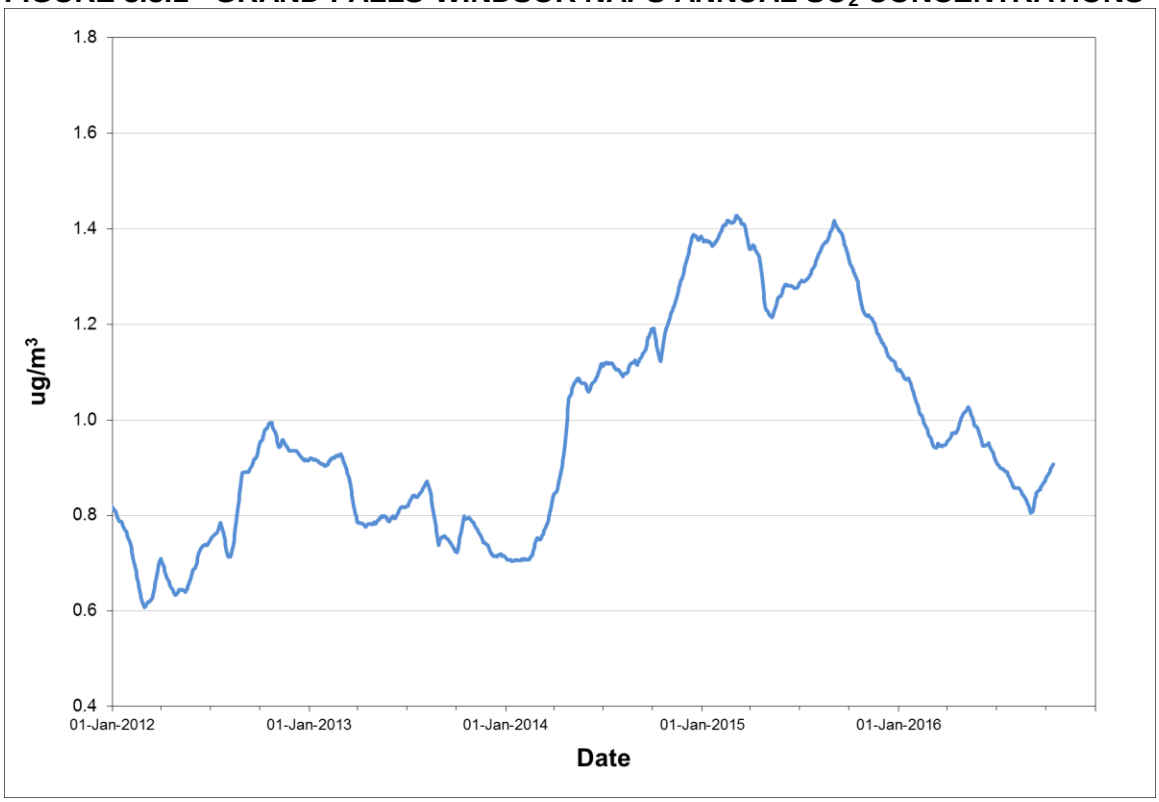
Tables 3.3.1 through 3.3.5 present the summary information on the level of air contaminants measured at the Grand Falls-Windsor NAPS station, while Figures 3.3.1 through 3.3.5 provides a graphical representation of the annual trend of each pollutant. Table 3.3.6 provides a summary of the AQHI while Figure 3.3.6 provides a graphical representation of the percentage of time the AQHI values were below a given level in 2016.

TABLE 3.3.1 - GRAND FALLS-WINDSOR NAPS SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	728	97.8%	1.4	3.1	2.9	2.6	0	0	0
	February	662	98.5%	1.9	6.6	3.7	2.7	0	0	0
	March	732	98.4%	1.3	4.2	3.2	2.8	0	0	0
	April	653	90.7%	0.9	5.5	2.2	1.5	0	0	0
	May	719	96.6%	1.4	3.0	2.8	2.5	0	0	0
	June	718	99.7%	1.9	17.0	7.1	2.6	0	0	0
	July	744	100.0%	1.2	2.6	2.2	1.9	0	0	0
	August	456	61.3%	1.5	2.7	2.3	1.7	0	0	0
	September	714	99.2%	0.5	3.0	2.8	2.6	0	0	0
	October	738	99.2%	0.3	1.4	0.9	0.8	0	0	0
	November	619	86.0%	0.6	3.4	1.6	0.9	0	0	0
	December	743	99.9%	0.7	2.9	1.5	1.2	0	0	0
Annual		8226	93.9%	1.1	17.0	7.1	2.8	0	0	0
2016	January	681	91.5%	0.7	3.4	1.9	1.2	0	0	0
	February	271	38.9%	0.6	1.2	1.1	1.0	0	0	0
	March	741	99.6%	1.2	3.5	2.7	2.1	0	0	0
	April	715	99.3%	1.5	3.1	2.7	2.0	0	0	0
	May	743	99.9%	0.9	2.4	1.9	1.7	0	0	0
	June	713	99.0%	1.3	6.0	4.0	2.3	0	0	0
	July	441	59.3%	0.6	1.6	1.5	1.3	0	0	0
	August	81	10.9%	0.4	1.3	1.0	0.4	0	0	0
	September	442	61.4%	1.1	15.7	6.8	2.8	0	0	0
	October	0	0.0%							
	November	0	0.0%							
	December	0	0.0%							
Annual		4828	55.0%	1.0	15.7	6.8	2.8	0	0	0

Observations in ug/m^3

FIGURE 3.3.1 - GRAND FALLS-WINDSOR NAPS ANNUAL SO_2 CONCENTRATIONS



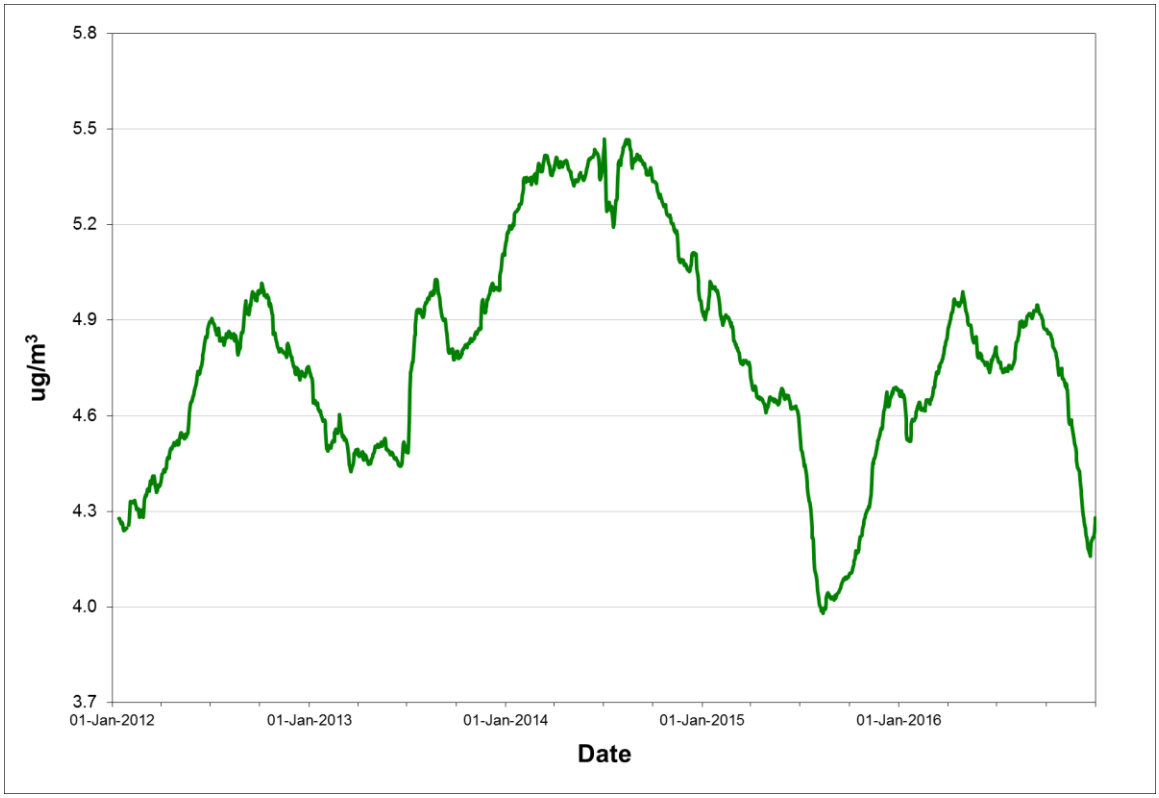
Rolling annual average of hourly concentrations

TABLE 3.3.2 - GRAND FALLS-WINDSOR NAPS $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	31	100.0%	5.7	17.5	0
	February	28	100.0%	4.3	8.0	0
	March	31	100.0%	3.5	7.5	0
	April	30	100.0%	3.4	6.9	0
	May	31	100.0%	5.2	10.4	0
	June	30	100.0%	3.3	5.5	0
	July	31	100.0%	3.4	9.8	0
	August	28	90.3%	4.1	11.3	0
	September	0	0.0%			
	October	17	54.8%	6.1	10.6	0
	November	25	83.3%	7.6	18.5	0
	December	31	100.0%	5.9	10.7	0
Annual		313	85.8%	4.7	18.5	0
2016	January	23	74.2%	4.9	15.4	0
	February	11	37.9%	5.4	8.1	0
	March	31	100.0%	5.4	9.0	0
	April	30	100.0%	4.7	7.8	0
	May	31	100.0%	3.4	6.8	0
	June	30	100.0%	3.4	7.0	0
	July	31	100.0%	2.9	6.1	0
	August	31	100.0%	5.7	9.3	0
	September	28	93.3%	4.4	10.5	0
	October	31	100.0%	4.0	8.0	0
	November	29	96.7%	3.8	9.0	0
	December	31	100.0%	4.1	14.5	0
Annual		337	92.1%	4.3	15.4	0

Observations in ug/m^3

FIGURE 3.3.2 - GRAND FALLS-WINDSOR NAPS ANNUAL $PM_{2.5}$ CONCENTRATIONS



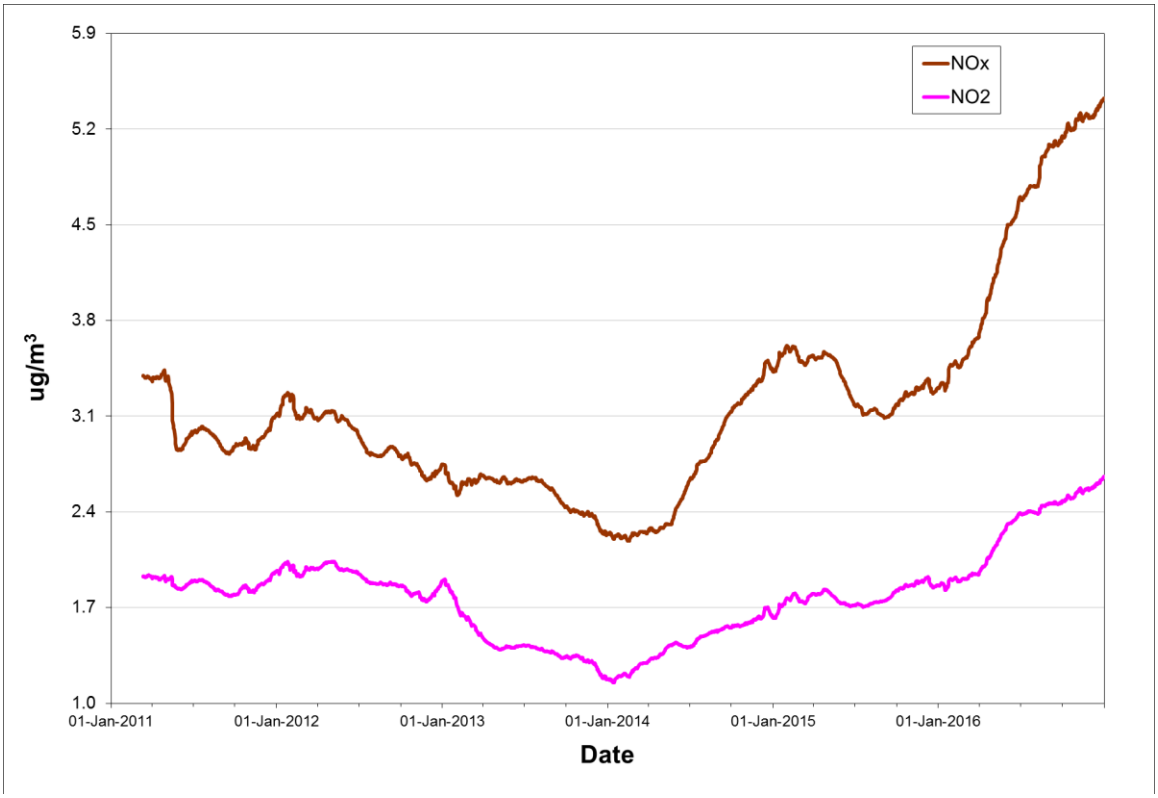
Rolling annual average of daily concentrations

TABLE 3.3.3 - GRAND FALLS-WINDSOR NAPS NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour	Exceedances 24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	741	99.6%	4.6	3.2	54.3	29.4	17.2	12.7	0	0
	February	672	100.0%	3.3	1.9	87.3	31.6	8.8	5.2	0	0
	March	742	99.7%	3.6	2.2	90.8	35.5	7.5	5.1	0	0
	April	716	99.4%	2.7	1.6	219.5	120.8	12.2	7.1	0	0
	May	740	99.5%	2.0	1.0	55.8	18.3	5.4	2.2	0	0
	June	719	99.9%	2.2	0.9	30.6	15.4	3.5	2.2	0	0
	July	744	100.0%	2.6	1.6	20.0	9.4	4.2	2.4	0	0
	August	744	100.0%	2.7	1.6	63.8	20.0	5.2	2.4	0	0
	September	711	98.8%	4.1	2.0	33.2	21.3	10.6	4.8	0	0
	October	739	99.3%	4.2	2.1	40.4	19.2	9.4	4.6	0	0
	November	619	86.0%	4.4	2.5	119.1	69.3	13.3	7.5	0	0
	December	742	99.7%	3.4	1.8	112.0	57.0	7.4	3.9	0	0
Annual		8629	98.5%	3.3	1.9	219.5	120.8	17.2	12.7	0	0
2016	January	680	91.4%	6.8	3.8	156.2	61.6	23.8	11.6	0	0
	February	272	39.1%	4.7	2.2	30.4	20.3	8.5	4.4	0	0
	March	741	99.6%	5.6	2.7	74.9	25.0	12.0	6.1	0	0
	April	698	96.9%	7.0	3.5	106.7	38.9	28.8	12.6	0	0
	May	743	99.9%	6.4	3.0	60.9	25.9	18.6	8.1	0	0
	June	697	96.8%	4.7	1.9	140.6	49.8	14.6	6.0	0	0
	July	719	96.6%	3.4	1.6	122.7	41.9	8.5	3.4	0	0
	August	741	99.6%	5.9	2.3	106.1	47.4	31.1	10.7	0	0
	September	687	95.4%	4.9	2.2	96.9	44.2	15.9	6.7	0	0
	October	744	100.0%	5.6	2.8	131.0	56.7	15.5	7.9	0	0
	November	720	100.0%	4.6	2.8	33.4	18.8	8.5	5.2	0	0
	December	744	100.0%	5.0	2.8	217.3	74.1	13.2	7.4	0	0
Annual		8186	93.2%	5.4	2.7	217.3	74.1	31.1	12.6	0	0

Observations in ug/m^3

FIGURE 3.3.3 - GRAND FALLS-WINDSOR NAPS ANNUAL NO_X / NO_2 CONCENTRATIONS



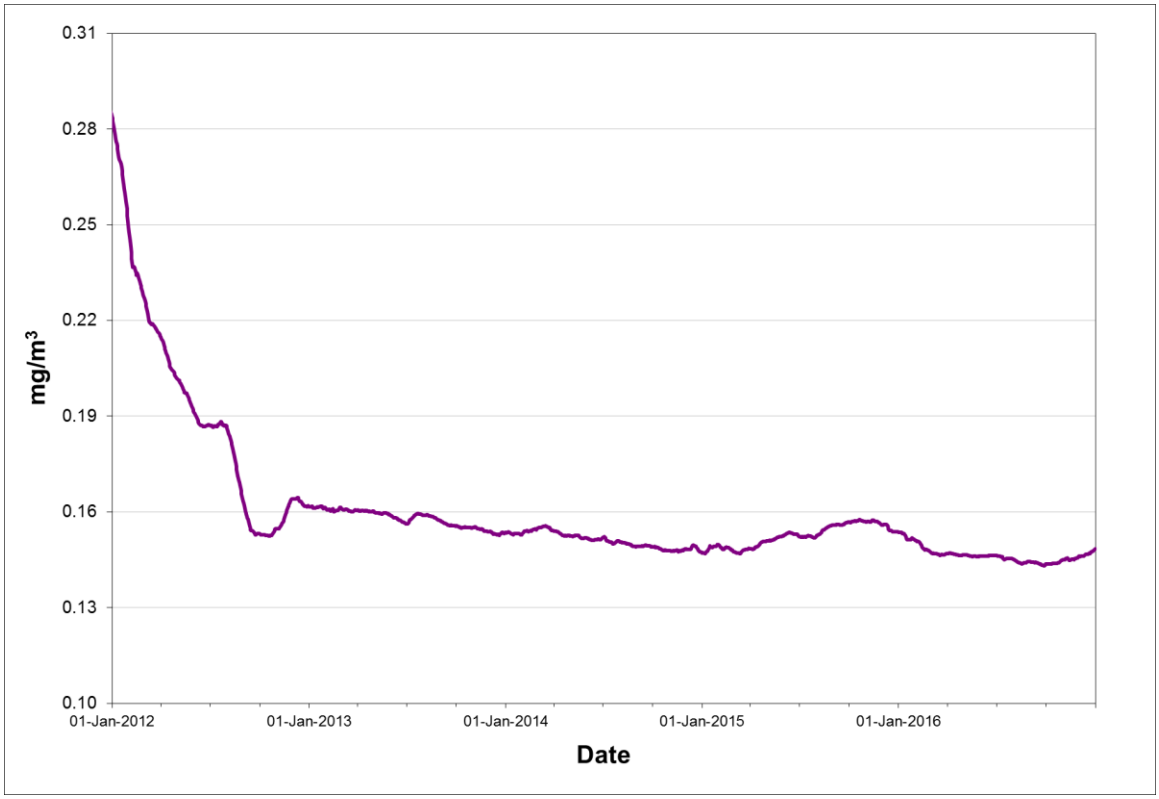
Rolling annual average of hourly concentrations

TABLE 3.3.4 - GRAND FALLS-WINDSOR NAPS CO SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>35)	Regulatory Exceedances 8-Hour (>15)
2015	January	742	99.7%	0.2	0.7	0.5	0	0
	February	672	100.0%	0.2	0.8	0.3	0	0
	March	743	99.9%	0.2	0.6	0.3	0	0
	April	718	99.7%	0.2	0.4	0.3	0	0
	May	744	100.0%	0.1	0.3	0.2	0	0
	June	720	100.0%	0.1	0.3	0.2	0	0
	July	684	91.9%	0.1	0.3	0.2	0	0
	August	422	56.7%	0.1	0.3	0.2	0	0
	September	715	99.3%	0.1	0.4	0.2	0	0
	October	738	99.2%	0.1	0.3	0.2	0	0
	November	620	86.1%	0.1	0.5	0.4	0	0
	December	744	100.0%	0.2	0.4	0.3	0	0
Annual		8262	94.3%	0.2	0.8	0.5	0	0
2016	January	684	91.9%	0.2	0.7	0.4	0	0
	February	272	39.1%	0.2	0.4	0.3	0	0
	March	741	99.6%	0.2	0.5	0.3	0	0
	April	718	99.7%	0.2	0.5	0.3	0	0
	May	744	100.0%	0.1	0.2	0.2	0	0
	June	713	99.0%	0.1	0.2	0.2	0	0
	July	742	99.7%	0.1	0.3	0.2	0	0
	August	396	53.2%	0.1	0.3	0.1	0	0
	September	677	94.0%	0.1	0.4	0.2	0	0
	October	744	100.0%	0.1	0.4	0.3	0	0
	November	717	99.6%	0.2	0.8	0.4	0	0
	December	744	100.0%	0.2	0.7	0.5	0	0
Annual		7892	89.8%	0.1	0.8	0.5	0	0

Observations in mg/m^3

FIGURE 3.3.4 - GRAND FALLS-WINDSOR NAPS ANNUAL CO CONCENTRATIONS



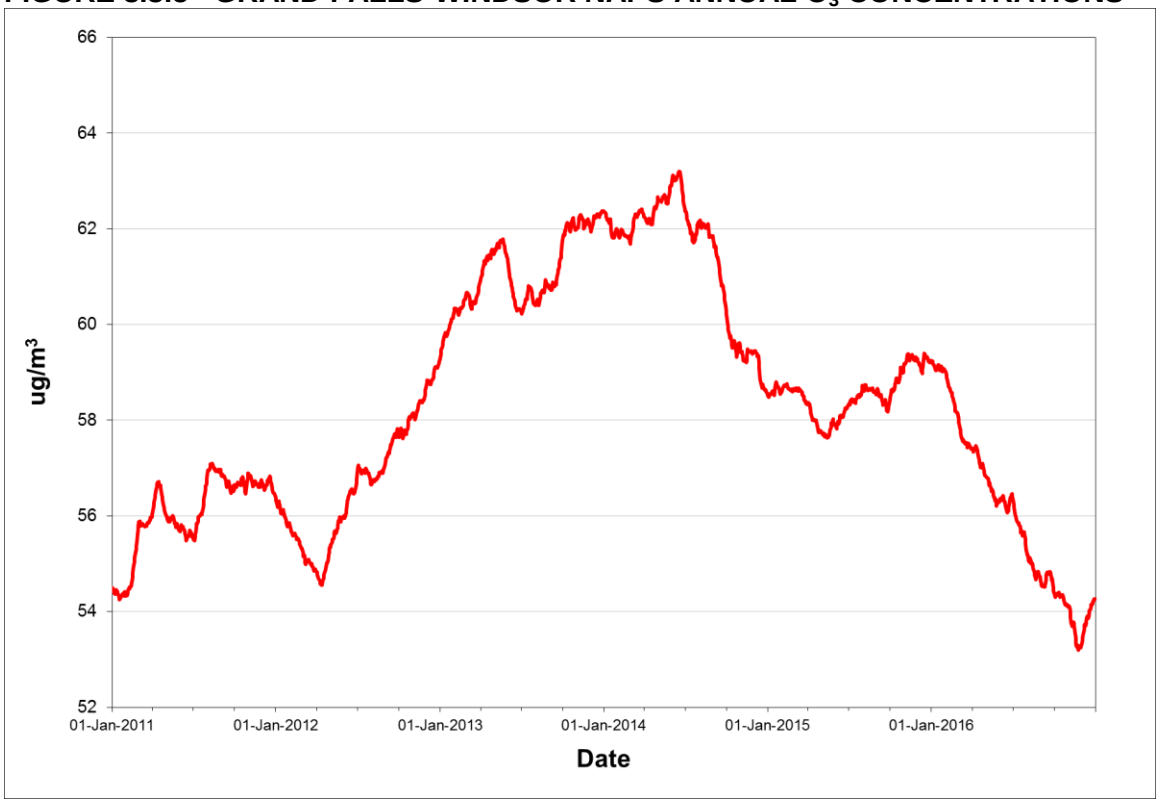
Rolling annual average of hourly concentrations

TABLE 3.3.5 - GRAND FALLS-WINDSOR NAPS O_3 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2015	January	731	98.3%	65.0	87.7	82.8	0	0
	February	669	99.6%	72.6	92.8	88.3	0	1
	March	743	99.9%	77.1	99.4	94.1	0	8
	April	659	91.5%	79.3	111.0	102.9	0	19
	May	744	100.0%	68.1	117.3	105.0	0	6
	June	720	100.0%	51.2	101.9	89.9	0	1
	July	609	81.9%	51.8	96.9	89.1	0	1
	August	741	99.6%	43.2	88.8	78.7	0	0
	September	717	99.6%	40.1	99.4	80.9	0	0
	October	738	99.2%	48.2	84.3	72.5	0	0
	November	620	86.1%	57.3	77.3	75.1	0	0
	December	744	100.0%	57.9	75.6	74.7	0	0
Annual		8435	96.3%	59.2	117.3	105.0	0	36
2016	January	682	91.7%	62.8	88.9	85.0	0	0
	February	177	25.4%	71.0	85.8	83.6	0	0
	March	560	75.3%	74.4	100.4	92.9	0	4
	April	717	99.6%	71.0	95.4	89.2	0	3
	May	743	99.9%	61.9	95.9	90.2	0	2
	June	715	99.3%	51.6	94.3	85.0	0	0
	July	743	99.9%	40.7	100.6	89.9	0	2
	August	740	99.5%	37.4	71.6	62.3	0	0
	September	671	93.2%	35.4	75.0	61.3	0	0
	October	744	100.0%	45.6	77.5	68.6	0	0
	November	715	99.3%	48.1	83.3	79.1	0	0
	December	744	100.0%	68.2	84.1	81.9	0	0
Annual		7951	90.5%	54.3	100.6	92.9	0	11

Observations in ug/m^3

FIGURE 3.3.5 - GRAND FALLS-WINDSOR NAPS ANNUAL O_3 CONCENTRATIONS

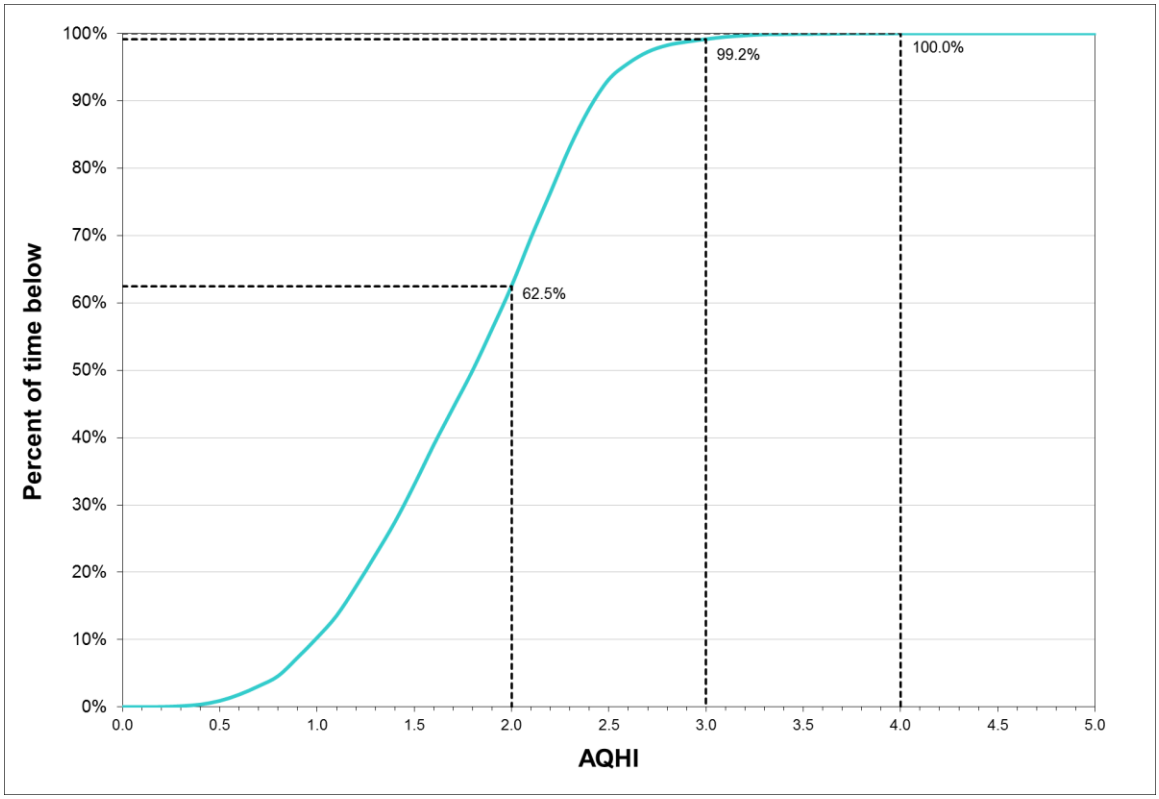


Rolling annual average of hourly concentrations

TABLE 3.3.6 - GRAND FALLS-WINDSOR NAPS AQHI SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2015	January	732	98.4%	2.1	4.2
	February	661	98.4%	2.2	3.3
	March	737	99.1%	2.3	3.4
	April	649	90.1%	2.3	3.3
	May	744	100.0%	2.1	3.7
	June	711	98.8%	1.6	2.8
	July	599	80.5%	1.6	3.1
	August	643	86.4%	1.4	2.9
	September	0	0.0%		
	October	430	57.8%	1.8	2.5
	November	617	85.7%	2.0	3.3
	December	740	99.5%	1.9	2.9
Annual		7263	82.9%	2.0	4.2
2016	January	586	78.8%	2.1	3.7
	February	176	25.3%	2.3	3.0
	March	550	73.9%	2.3	3.3
	April	693	96.3%	2.3	3.4
	May	730	98.1%	1.9	3.2
	June	693	96.3%	1.6	3.2
	July	718	96.5%	1.3	3.0
	August	738	99.2%	1.4	3.2
	September	665	92.4%	1.2	2.9
	October	738	99.2%	1.5	3.1
	November	698	96.9%	1.6	2.5
	December	733	98.5%	2.1	3.9
Annual		7718	87.9%	1.8	3.9

FIGURE 3.3.6 - GRAND FALLS-WINDSOR NAPS AQHI FREQUENCY DISTRIBUTION 2016



e.g. 99.2% of the time the AQHI recorded was below 3.0

3.4 Corner Brook

The Corner Brook NAPS monitoring station is located on MacPherson Avenue near Confederation Drive and monitors the ambient levels of SO_2, NO_x / NO_2, CO, O_3 and $PM_{2.5}$ on a continuous basis. For SO_2, NO_x / NO_2, CO and $PM_{2.5}$, the ambient air criteria were not exceeded on any occasion in 2016. The 8-hour O_3 standard was exceeded on thirteen occasions in 2016 between February and August, specifically once in February, six times in March, five times in April and once in August.

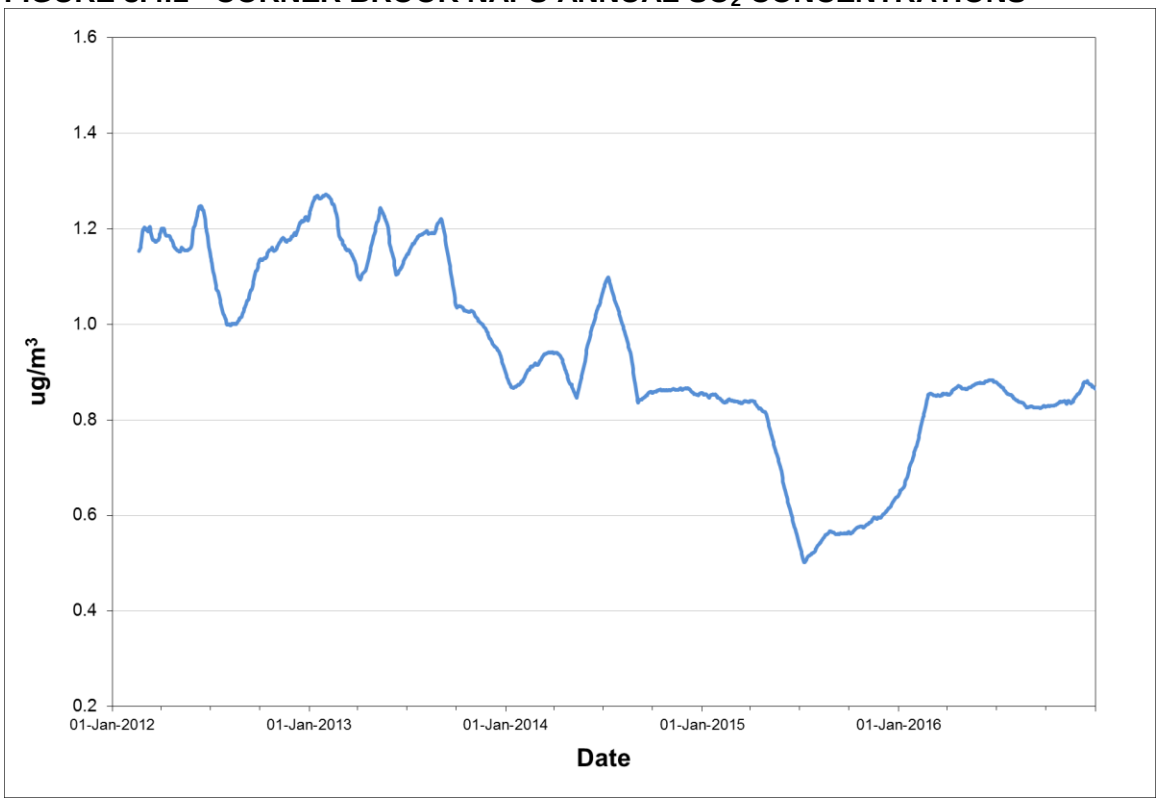
Tables 3.4.1 through 3.4.5 present the summary information on the level of air contaminants measured at the Corner Brook NAPS station, while Figures 3.4.1 through 3.4.5 provide a graphical representation of the annual trend of each pollutant. Table 3.4.6 provides a summary of the AQHI while Figure 3.4.6 provides a graphical representation of the percentage of time the AQHI values were below a given level in 2016.

TABLE 3.4.1 - CORNER BROOK NAPS SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	734	98.7%	0.5	6.0	3.5	1.3	0	0	0
	February	666	99.1%	0.6	2.6	2.4	1.4	0	0	0
	March	742	99.7%	0.6	1.8	1.4	0.9	0	0	0
	April	717	99.6%	0.6	1.8	1.4	1.0	0	0	0
	May	744	100.0%	0.5	1.9	1.4	0.7	0	0	0
	June	719	99.9%	0.6	14.2	8.9	1.8	0	0	0
	July	600	80.6%	0.8	2.5	1.7	1.1	0	0	0
	August	721	96.9%	0.8	2.2	1.4	1.0	0	0	0
	September	692	96.1%	0.5	4.4	2.7	0.7	0	0	0
	October	738	99.2%	0.7	4.3	2.5	1.3	0	0	0
	November	713	99.0%	0.7	1.8	1.3	1.1	0	0	0
	December	742	99.7%	0.9	2.2	1.9	1.6	0	0	0
Annual		8528	97.4%	0.6	14.2	8.9	1.8	0	0	0
2016	January	738	99.2%	1.6	2.9	2.5	2.4	0	0	0
	February	695	99.9%	2.1	3.8	3.2	2.9	0	0	0
	March	742	99.7%	0.6	1.9	1.5	1.3	0	0	0
	April	707	98.2%	0.7	2.6	1.6	1.1	0	0	0
	May	744	100.0%	0.6	4.3	3.3	1.4	0	0	0
	June	719	99.9%	0.7	1.5	1.3	1.0	0	0	0
	July	742	99.7%	0.5	3.2	2.2	0.7	0	0	0
	August	640	86.0%	0.4	6.2	2.8	1.0	0	0	0
	September	716	99.4%	0.5	2.5	1.5	1.0	0	0	0
	October	54	7.3%	0.5	1.4	0.9	0.5	0	0	0
	November	650	90.3%	0.8	13.6	6.6	2.1	0	0	0
	December	716	96.2%	1.1	3.2	2.2	2.0	0	0	0
Annual		7863	89.5%	0.9	13.6	6.6	2.9	0	0	0

Observations in ug/m^3

FIGURE 3.4.1 - CORNER BROOK NAPS ANNUAL SO_2 CONCENTRATIONS



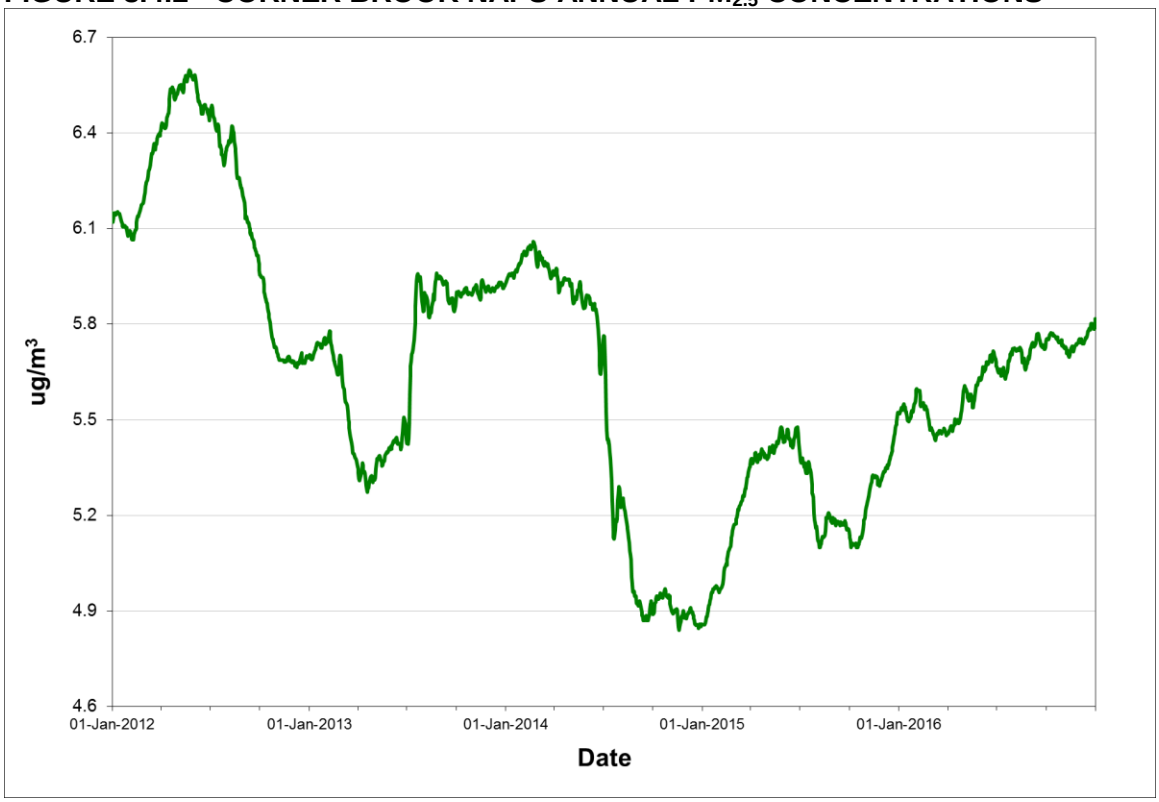
Rolling annual average of hourly concentrations

TABLE 3.4.2 - CORNER BROOK NAPS $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	26	83.9%	6.3	9.9	0
	February	28	100.0%	7.5	14.1	0
	March	31	100.0%	6.2	9.4	0
	April	30	100.0%	5.9	11.7	0
	May	31	100.0%	6.3	10.8	0
	June	28	93.3%	4.9	9.1	0
	July	29	93.5%	4.7	12.8	0
	August	30	96.8%	4.2	12.6	0
	September	23	76.7%	3.0	7.9	0
	October	27	87.1%	5.2	10.5	0
	November	30	100.0%	5.4	9.5	0
	December	31	100.0%	6.1	9.2	0
Annual		344	94.2%	5.5	14.1	0
2016	January	31	100.0%	6.6	10.9	0
	February	29	100.0%	6.4	14.2	0
	March	21	67.7%	6.4	9.8	0
	April	30	100.0%	7.3	13.2	0
	May	27	87.1%	6.8	14.1	0
	June	30	100.0%	5.5	9.9	0
	July	31	100.0%	5.4	10.4	0
	August	31	100.0%	3.9	6.5	0
	September	30	100.0%	4.2	8.8	0
	October	31	100.0%	5.2	9.4	0
	November	30	100.0%	5.6	11.1	0
	December	29	93.5%	7.0	10.3	0
Annual		350	95.6%	5.8	14.2	0

Observations in ug/m^3

FIGURE 3.4.2 - CORNER BROOK NAPS ANNUAL $PM_{2.5}$ CONCENTRATIONS



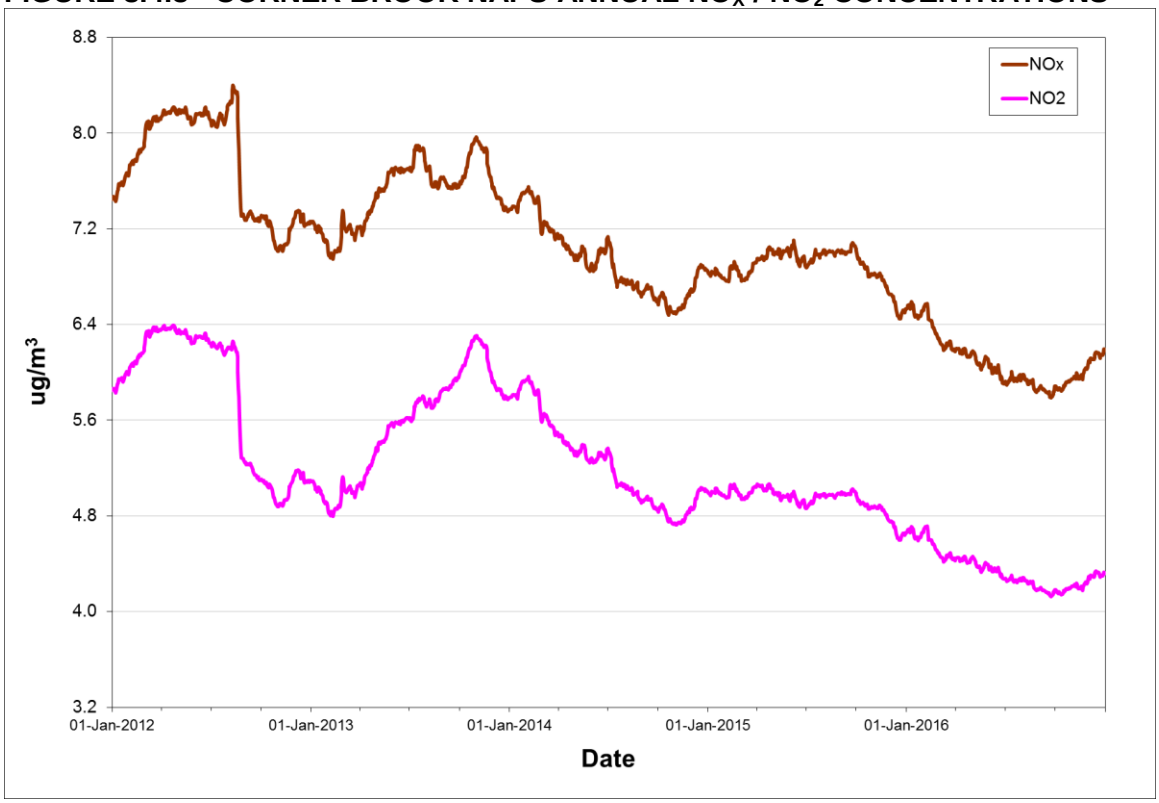
Rolling annual average of daily concentrations

TABLE 3.4.3 - CORNER BROOK NAPS NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour	Exceedances 24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	738	99.2%	6.8	5.3	73.5	54.3	22.6	16.9	0	0
	February	671	99.9%	9.1	6.8	113.9	60.7	37.2	29.4	0	0
	March	742	99.7%	7.8	5.5	57.2	33.6	20.5	14.0	0	0
	April	716	99.4%	6.7	4.5	52.3	43.1	16.6	11.6	0	0
	May	744	100.0%	6.7	5.0	84.9	62.0	13.5	10.0	0	0
	June	720	100.0%	8.1	5.1	85.8	43.5	23.8	15.2	0	0
	July	744	100.0%	6.1	4.0	84.6	36.8	22.2	11.1	0	0
	August	741	99.6%	5.5	3.5	50.9	35.3	19.6	13.2	0	0
	September	716	99.4%	5.1	3.3	51.2	28.1	19.2	10.2	0	0
	October	730	98.1%	5.1	3.7	39.2	24.2	10.2	6.8	0	0
	November	718	99.7%	5.5	4.4	36.9	25.3	14.1	11.5	0	0
	December	744	100.0%	6.0	4.7	77.5	45.2	15.8	12.1	0	0
Annual		8724	99.6%	6.5	4.7	113.9	62.0	37.2	29.4	0	0
2016	January	740	99.5%	6.7	5.3	88.2	56.2	19.6	15.3	0	0
	February	696	100.0%	6.1	4.6	59.5	41.6	11.4	9.8	0	0
	March	719	96.6%	6.5	4.8	87.8	49.6	17.9	13.3	0	0
	April	709	98.5%	6.6	4.8	52.2	36.6	20.5	14.6	0	0
	May	738	99.2%	6.0	4.3	47.9	30.3	18.1	13.1	0	0
	June	717	99.6%	5.6	3.7	53.2	32.8	14.4	9.7	0	0
	July	744	100.0%	6.8	4.0	47.5	28.4	18.0	10.5	0	0
	August	740	99.5%	4.2	2.5	56.7	30.5	12.9	8.4	0	0
	September	720	100.0%	5.5	3.3	67.9	30.9	20.0	10.1	0	0
	October	744	100.0%	5.8	4.1	42.8	25.7	11.5	8.4	0	0
	November	712	98.9%	6.9	5.0	74.8	39.4	21.3	15.0	0	0
	December	740	99.5%	7.5	5.4	166.5	64.6	30.4	19.0	0	0
Annual		8719	99.3%	6.2	4.3	166.5	64.6	30.4	19.0	0	0

Observations in ug/m^3

FIGURE 3.4.3 - CORNER BROOK NAPS ANNUAL NO_X / NO_2 CONCENTRATIONS



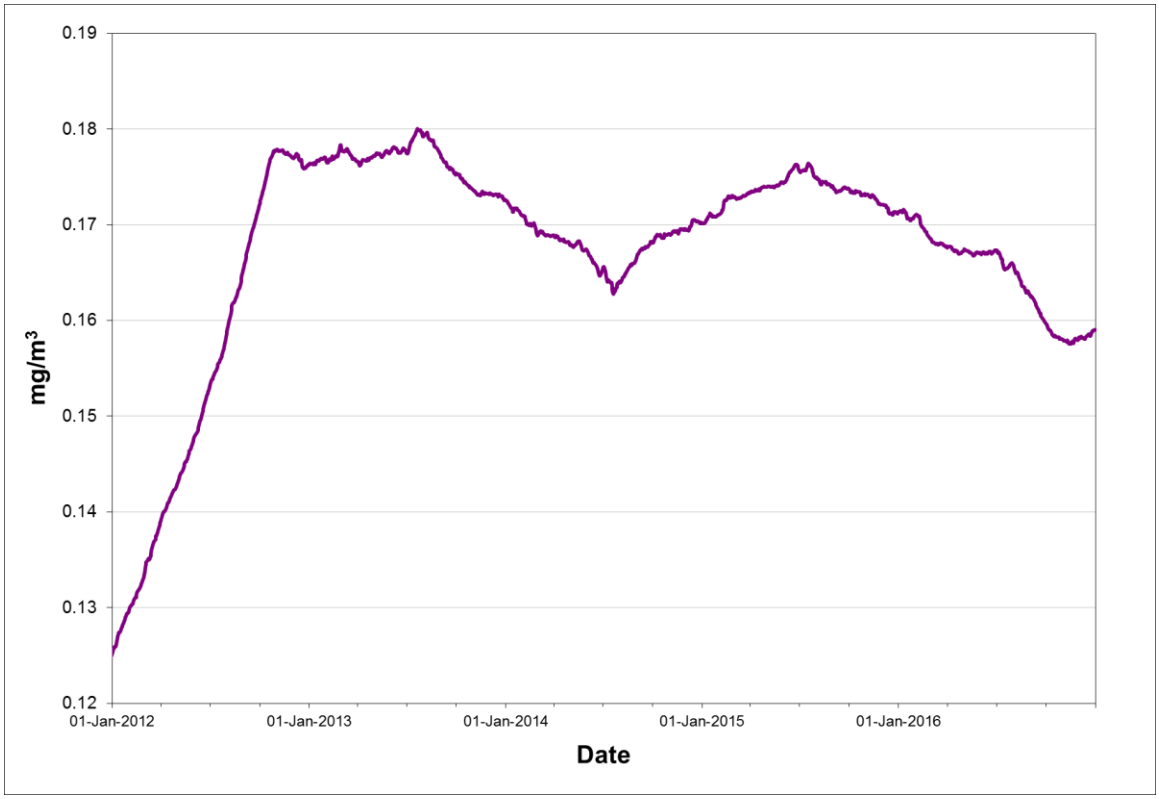
Rolling annual average of hourly concentrations

TABLE 3.4.4 - CORNER BROOK NAPS CO SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>35)	Regulatory Exceedances 8-Hour (>15)
2015	January	737	99.1%	0.2	0.9	0.4	0	0
	February	670	99.7%	0.2	0.9	0.5	0	0
	March	737	99.1%	0.2	0.6	0.3	0	0
	April	717	99.6%	0.2	0.6	0.3	0	0
	May	737	99.1%	0.2	0.3	0.2	0	0
	June	719	99.9%	0.1	0.4	0.2	0	0
	July	743	99.9%	0.2	0.5	0.3	0	0
	August	739	99.3%	0.2	0.8	0.3	0	0
	September	714	99.2%	0.2	0.4	0.2	0	0
	October	741	99.6%	0.1	0.5	0.2	0	0
	November	715	99.3%	0.2	0.4	0.3	0	0
	December	740	99.5%	0.2	0.5	0.3	0	0
Annual		8709	99.4%	0.2	0.9	0.5	0	0
2016	January	738	99.2%	0.2	0.5	0.3	0	0
	February	692	99.4%	0.2	0.6	0.3	0	0
	March	741	99.6%	0.2	0.5	0.3	0	0
	April	710	98.6%	0.2	0.4	0.3	0	0
	May	741	99.6%	0.2	0.6	0.3	0	0
	June	715	99.3%	0.1	0.4	0.2	0	0
	July	742	99.7%	0.1	0.4	0.2	0	0
	August	740	99.5%	0.1	0.3	0.2	0	0
	September	715	99.3%	0.1	0.3	0.2	0	0
	October	743	99.9%	0.1	0.4	0.2	0	0
	November	710	98.6%	0.2	0.5	0.3	0	0
	December	738	99.2%	0.2	0.7	0.4	0	0
Annual		8725	99.3%	0.2	0.7	0.4	0	0

Observations in mg/m^3

FIGURE 3.4.4 - CORNER BROOK NAPS ANNUAL CO CONCENTRATIONS



Rolling annual average of hourly concentrations

TABLE 3.4.5 - CORNER BROOK NAPS O_3 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2015	January	717	96.4%	62.9	90.9	79.9	0	0
	February	584	86.9%	68.7	92.4	86.0	0	0
	March	742	99.7%	78.5	102.0	95.3	0	14
	April	717	99.6%	79.1	115.9	107.2	0	16
	May	744	100.0%	66.8	109.8	106.1	0	10
	June	715	99.3%	38.2	77.3	72.4	0	0
	July	744	100.0%	41.8	79.9	71.7	0	0
	August	737	99.1%	41.2	92.9	74.8	0	0
	September	714	99.2%	41.6	105.6	88.1	0	1
	October	742	99.7%	48.0	78.4	65.0	0	0
	November	719	99.9%	53.5	78.7	76.2	0	0
	December	744	100.0%	55.1	78.7	72.6	0	0
Annual		8619	98.4%	56.1	115.9	107.2	0	41
2016	January	737	99.1%	63.5	85.6	81.2	0	0
	February	696	100.0%	72.6	95.6	87.4	0	1
	March	744	100.0%	72.9	100.1	96.7	0	6
	April	711	98.8%	69.3	99.6	90.3	0	5
	May	744	100.0%	54.7	88.9	78.4	0	0
	June	719	99.9%	50.1	91.5	83.8	0	0
	July	744	100.0%	39.7	83.3	75.4	0	0
	August	741	99.6%	40.1	102.0	90.3	0	1
	September	720	100.0%	37.8	71.8	54.8	0	0
	October	744	100.0%	47.5	88.8	69.8	0	0
	November	714	99.2%	48.0	74.9	68.9	0	0
	December	744	100.0%	67.1	86.5	82.5	0	0
Annual		8758	99.7%	55.2	102.0	96.7	0	13

Observations in ug/m^3

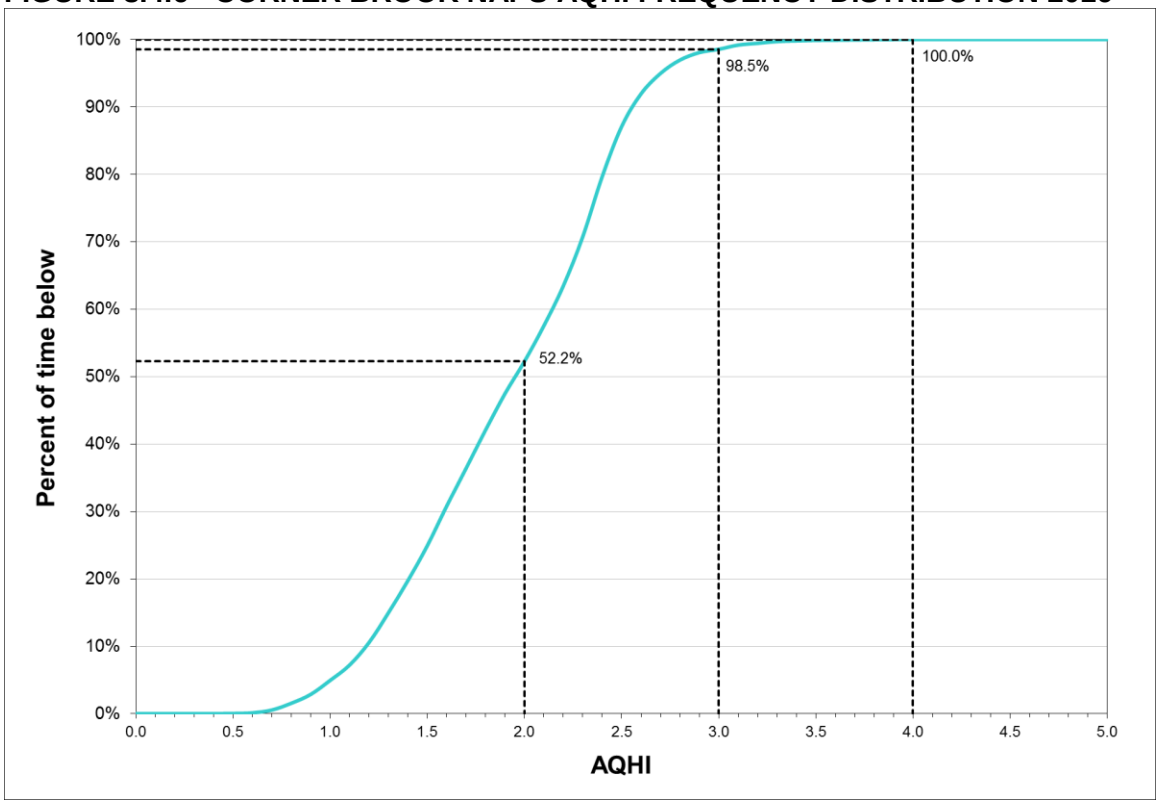
FIGURE 3.4.5 - CORNER BROOK NAPS ANNUAL O_3 CONCENTRATIONS

Rolling annual average of hourly concentrations

TABLE 3.4.6 - CORNER BROOK NAPS AQHI SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2015	January	607	81.6%	2.2	3.1
	February	585	87.1%	2.5	3.9
	March	742	99.7%	2.6	3.5
	April	711	98.8%	2.6	4.2
	May	744	100.0%	2.3	4.2
	June	679	94.3%	1.5	3.3
	July	704	94.6%	1.5	3.2
	August	706	94.9%	1.4	3.3
	September	582	80.8%	1.4	2.5
	October	633	85.1%	1.7	2.7
	November	712	98.9%	1.9	2.5
	December	744	100.0%	2.0	3.2
Annual		8149	93.0%	2.0	4.2
2016	January	733	98.5%	2.2	3.5
	February	696	100.0%	2.4	4.0
	March	489	65.7%	2.5	3.8
	April	707	98.2%	2.4	3.5
	May	653	87.8%	1.9	3.4
	June	713	99.0%	1.8	3.1
	July	740	99.5%	1.5	2.7
	August	733	98.5%	1.4	2.9
	September	713	99.0%	1.3	2.8
	October	744	100.0%	1.7	2.9
	November	703	97.6%	1.8	3.1
	December	722	97.0%	2.3	3.9
Annual		8346	95.0%	1.9	4.0

FIGURE 3.4.6 - CORNER BROOK NAPS AQHI FREQUENCY DISTRIBUTION 2016



e.g. 98.5% of the time the AQHI recorded was below 3.0

3.5 Burin

The Burin station monitors the ambient levels of SO_2, $PM_{2.5}$, NO_x / NO_2, CO, O_3 and PM_{10} on a continuous basis. The ambient air criteria for SO_2, NO_x / NO_2, CO and $PM_{2.5}$ were not exceeded on any occasion in 2016. For 8-hour ozone, the ambient air criteria were exceeded on ten occasions in 2016 which included twice in January, once in February, three times in March, twice in April, once in May and once in August. PM_{10} standard was also exceeded once in February and once in December. Tables 3.5.1 through 3.5.6 provide summary information on the level of each air contaminant measured at the Burin site while Figures 3.5.1 through 3.5.6 provide a graphical representation of the annual trend for each pollutant.

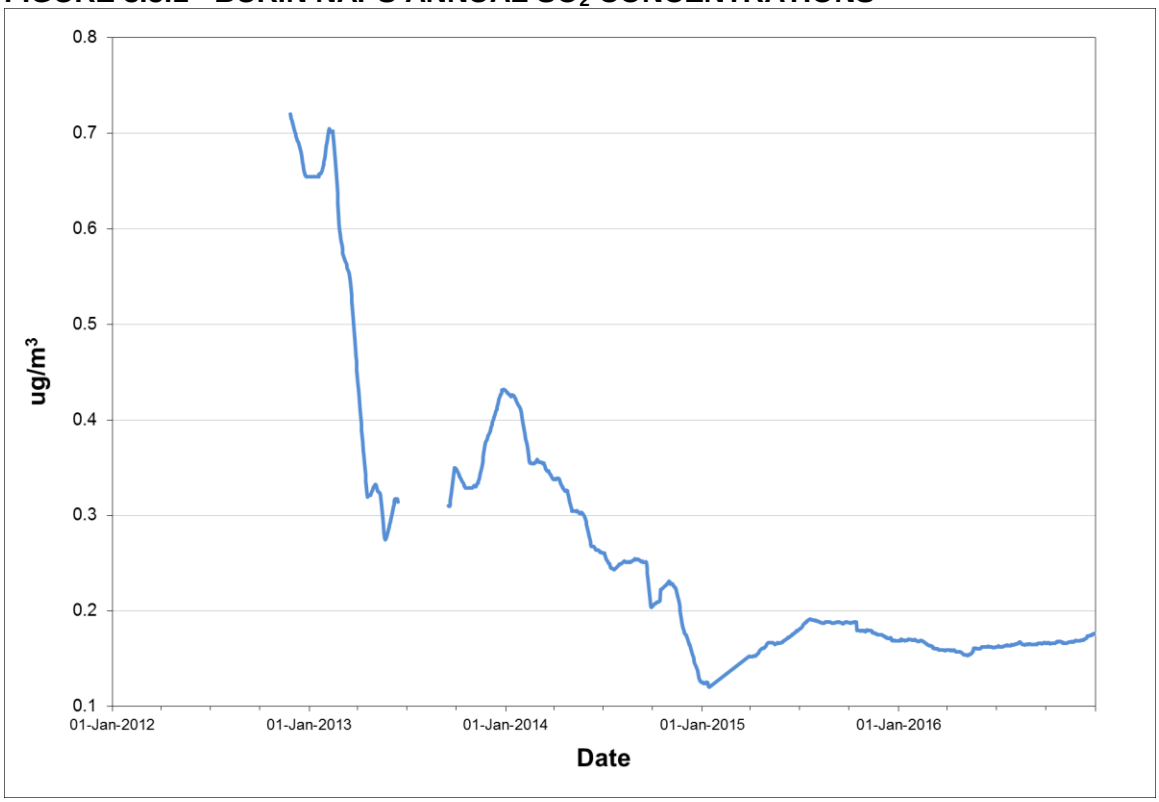
Table 3.5.7 provides a summary of the AQHI, while Figure 3.5.7 provides a graphical representation of the AQHI frequency based on all data collected in Burin in 2016.

TABLE 3.5.1 - BURIN NAPS SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	455	61.2%	0.2	1.5	0.8	0.5	0	0	0
	February	671	99.9%	0.2	1.8	1.0	0.5	0	0	0
	March	743	99.9%	0.2	1.2	1.0	0.5	0	0	0
	April	720	100.0%	0.2	1.3	1.0	0.4	0	0	0
	May	742	99.7%	0.2	1.1	0.6	0.3	0	0	0
	June	717	99.6%	0.1	2.3	0.9	0.3	0	0	0
	July	737	99.1%	0.2	1.0	0.7	0.4	0	0	0
	August	596	80.1%	0.2	2.1	1.6	0.4	0	0	0
	September	718	99.7%	0.2	1.7	0.7	0.3	0	0	0
	October	725	97.4%	0.1	1.2	0.8	0.4	0	0	0
	November	717	99.6%	0.2	0.9	0.7	0.5	0	0	0
	December	742	99.7%	0.1	0.8	0.5	0.2	0	0	0
Annual		8283	94.6%	0.2	2.3	1.6	0.5	0	0	0
2016	January	743	99.9%	0.2	15.1	5.1	0.8	0	0	0
	February	696	100.0%	0.2	2.4	0.8	0.4	0	0	0
	March	551	74.1%	0.1	0.6	0.5	0.3	0	0	0
	April	562	78.1%	0.1	0.8	0.5	0.2	0	0	0
	May	590	79.3%	0.2	3.3	2.7	1.1	0	0	0
	June	515	71.5%	0.2	5.0	0.8	0.3	0	0	0
	July	675	90.7%	0.2	1.9	1.2	0.4	0	0	0
	August	487	65.5%	0.2	3.5	0.7	0.3	0	0	0
	September	314	43.6%	0.2	1.2	0.9	0.3	0	0	0
	October	554	74.5%	0.2	0.9	0.7	0.5	0	0	0
	November	680	94.4%	0.2	1.8	0.9	0.3	0	0	0
	December	740	99.5%	0.2	1.3	0.8	0.5	0	0	0
Annual		7107	80.9%	0.2	15.1	5.1	1.1	0	0	0

Observations in ug/m^3

FIGURE 3.5.1 - BURIN NAPS ANNUAL SO_2 CONCENTRATIONS



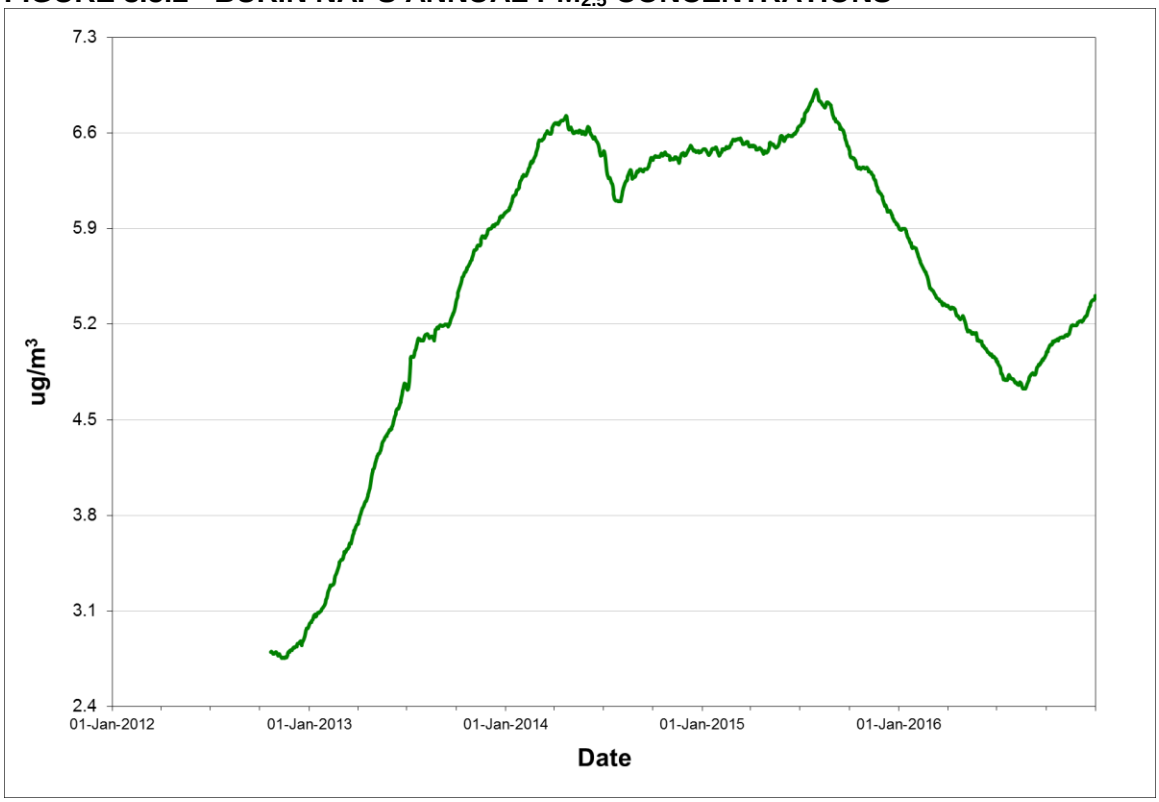
Rolling annual average of hourly concentrations

TABLE 3.5.2 - BURIN NAPS $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	21	67.7%	8.8	12.9	0
	February	28	100.0%	10.1	14.5	0
	March	31	100.0%	7.8	12.0	0
	April	30	100.0%	7.3	12.0	0
	May	31	100.0%	7.1	13.7	0
	June	30	100.0%	4.8	6.6	0
	July	31	100.0%	5.0	16.5	0
	August	31	100.0%	3.6	9.0	0
	September	29	96.7%	2.4	5.7	0
	October	31	100.0%	4.7	7.7	0
	November	24	80.0%	4.7	7.7	0
	December	31	100.0%	5.4	10.6	0
Annual		348	95.3%	5.9	16.5	0
2016	January	31	100.0%	6.0	9.8	0
	February	29	100.0%	6.4	9.1	0
	March	31	100.0%	6.3	10.8	0
	April	30	100.0%	6.4	11.7	0
	May	31	100.0%	4.9	9.2	0
	June	28	93.3%	3.0	8.6	0
	July	29	93.5%	3.3	8.3	0
	August	31	100.0%	3.8	7.5	0
	September	30	100.0%	4.5	8.9	0
	October	31	100.0%	6.2	8.9	0
	November	27	90.0%	6.3	9.8	0
	December	31	100.0%	7.6	12.6	0
Annual		359	98.1%	5.4	12.6	0

Observations in ug/m^3

FIGURE 3.5.2 - BURIN NAPS ANNUAL $PM_{2.5}$ CONCENTRATIONS



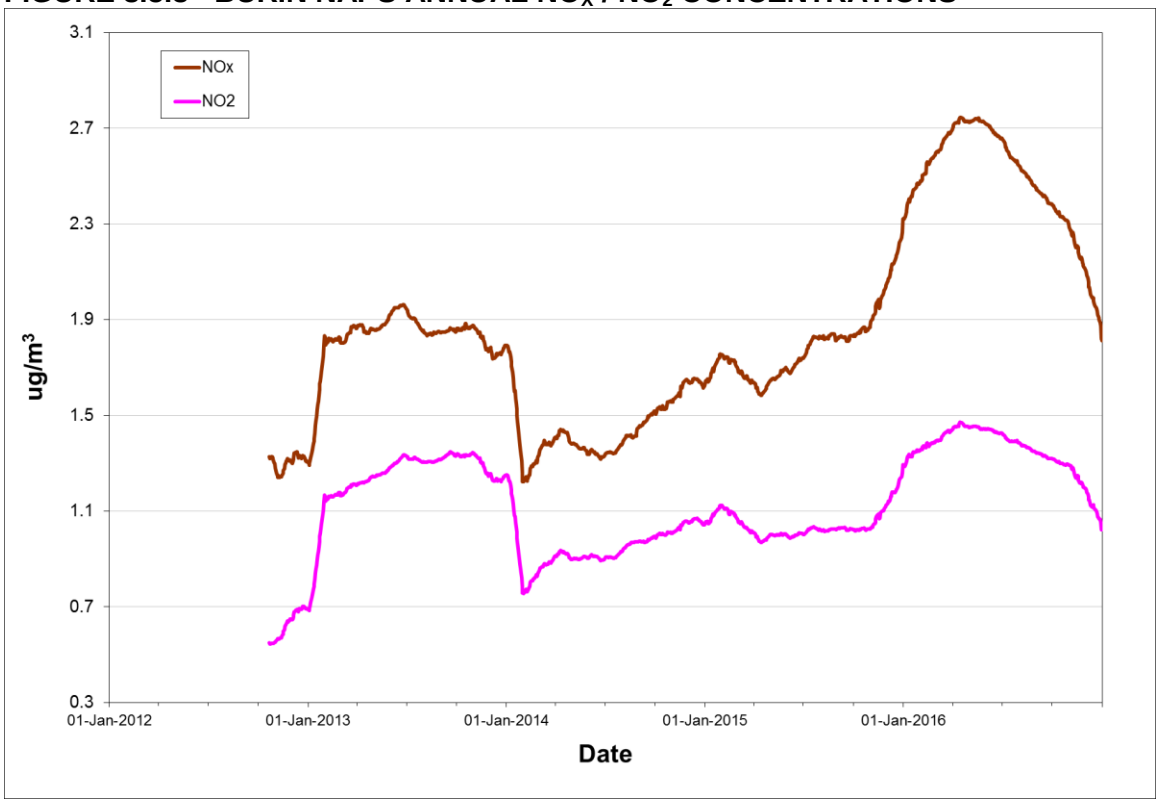
Rolling annual average of hourly concentrations

TABLE 3.5.3 - BURIN NAPS NO_X / NO_2 SUMMARY 2015 &2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour	Exceedances 24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	744	100.0%	2.4	1.5	88.5	73.2	6.9	5.0	0	0
	February	672	100.0%	1.9	1.3	22.6	14.9	3.8	3.3	0	0
	March	743	99.9%	1.5	0.9	30.2	19.3	4.7	4.0	0	0
	April	716	99.4%	1.4	0.9	31.7	24.5	2.9	1.9	0	0
	May	742	99.7%	1.7	0.9	47.5	14.6	6.6	2.3	0	0
	June	717	99.6%	1.8	0.8	79.4	44.2	4.6	2.7	0	0
	July	743	99.9%	2.1	0.9	48.0	28.5	5.7	3.0	0	0
	August	596	80.1%	1.8	0.9	30.9	12.2	4.8	2.6	0	0
	September	720	100.0%	1.7	0.8	51.9	9.1	5.4	1.5	0	0
	October	729	98.0%	2.2	1.1	103.4	42.3	7.5	3.2	0	0
	November	716	99.4%	4.3	2.4	69.0	46.7	10.8	8.2	0	0
	December	742	99.7%	4.9	3.1	105.6	50.7	21.2	12.4	0	0
Annual		8580	97.9%	2.3	1.3	105.6	73.2	21.2	12.4	0	0
2016	January	720	96.8%	4.2	2.2	93.4	57.7	10.9	7.7	0	0
	February	693	99.6%	3.4	1.8	74.6	32.4	16.6	7.0	0	0
	March	744	100.0%	2.6	1.5	40.3	27.7	5.7	4.4	0	0
	April	716	99.4%	1.7	1.0	22.0	12.5	4.1	3.0	0	0
	May	740	99.5%	1.7	0.8	29.9	13.1	3.4	1.9	0	0
	June	717	99.6%	1.0	0.6	42.2	15.1	2.6	1.4	0	0
	July	743	99.9%	0.8	0.5	27.5	13.4	2.8	1.7	0	0
	August	743	99.9%	0.9	0.5	9.7	7.1	1.6	0.9	0	0
	September	720	100.0%	0.8	0.4	26.0	7.9	2.4	0.9	0	0
	October	744	100.0%	1.3	0.8	37.7	15.7	3.9	2.2	0	0
	November	716	99.4%	2.0	1.2	51.5	21.0	5.3	3.0	0	0
	December	744	100.0%	1.4	1.1	26.7	17.9	5.1	3.6	0	0
Annual		8740	99.5%	1.8	1.0	93.4	57.7	16.6	7.7	0	0

Observations in ug/m^3

FIGURE 3.5.3 - BURIN NAPS ANNUAL NO_X / NO_2 CONCENTRATIONS



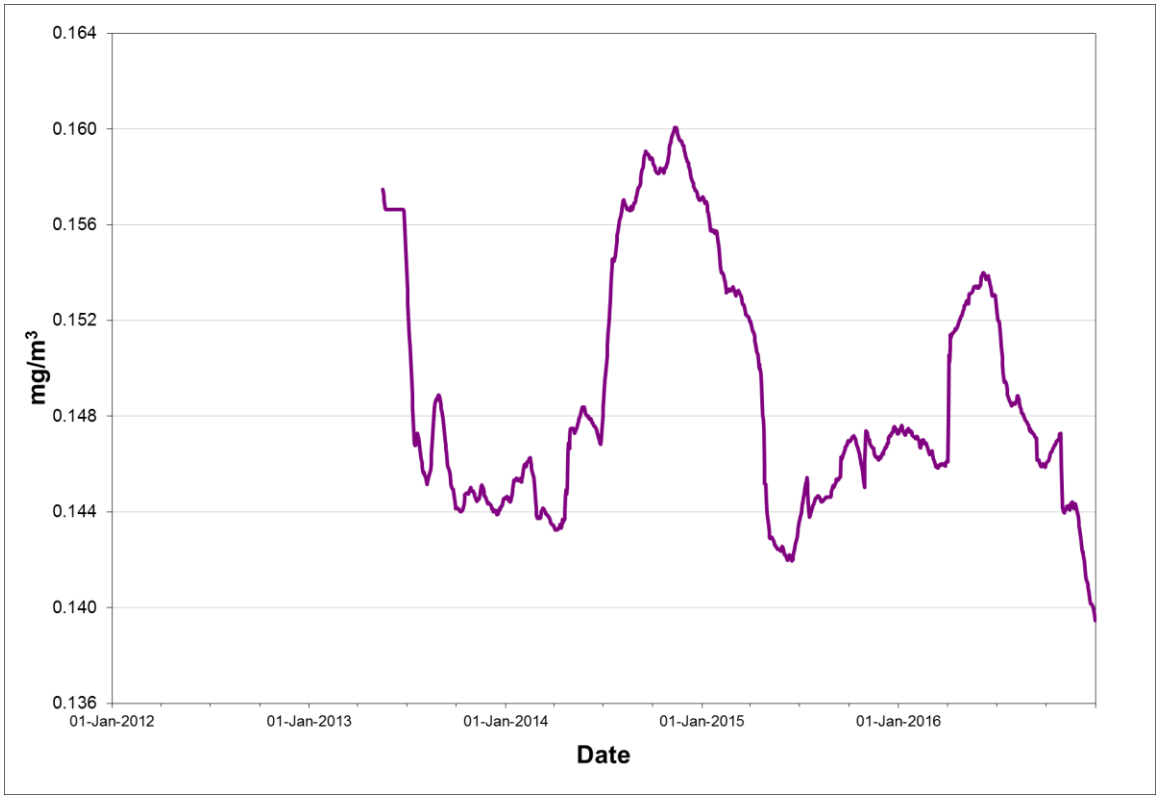
Rolling annual average of hourly concentrations

TABLE 3.5.4 - BURIN NAPS CO SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>35)	Regulatory Exceedances 8-Hour (>15)
2015	January	744	100.0%	0.2	0.3	0.2	0	0
	February	672	100.0%	0.2	0.3	0.2	0	0
	March	744	100.0%	0.2	0.3	0.2	0	0
	April	720	100.0%	0.1	0.2	0.2	0	0
	May	742	99.7%	0.1	0.2	0.2	0	0
	June	717	99.6%	0.1	0.2	0.2	0	0
	July	744	100.0%	0.2	0.3	0.3	0	0
	August	597	80.2%	0.1	0.2	0.2	0	0
	September	720	100.0%	0.1	3.6	1.0	0	0
	October	731	98.3%	0.1	0.9	0.8	0	0
	November	719	99.9%	0.1	0.7	0.4	0	0
	December	744	100.0%	0.1	0.2	0.2	0	0
Annual		8594	98.1%	0.1	3.6	1.0	0	0
2016	January	495	66.5%	0.2	0.3	0.2	0	0
	February	635	91.2%	0.2	0.3	0.2	0	0
	March	744	100.0%	0.2	0.2	0.2	0	0
	April	716	99.4%	0.2	2.1	1.9	0	0
	May	540	72.6%	0.1	0.7	0.6	0	0
	June	558	77.5%	0.1	0.7	0.2	0	0
	July	685	92.1%	0.1	0.3	0.2	0	0
	August	493	66.3%	0.1	0.3	0.2	0	0
	September	720	100.0%	0.1	0.2	0.2	0	0
	October	743	99.9%	0.1	0.2	0.2	0	0
	November	677	94.0%	0.1	0.3	0.2	0	0
	December	744	100.0%	0.1	0.3	0.1	0	0
Annual		7750	88.2%	0.1	2.1	1.9	0	0

Observations in ug/m^3

FIGURE 3.5.4 - BURIN NAPS ANNUAL CO CONCENTRATIONS



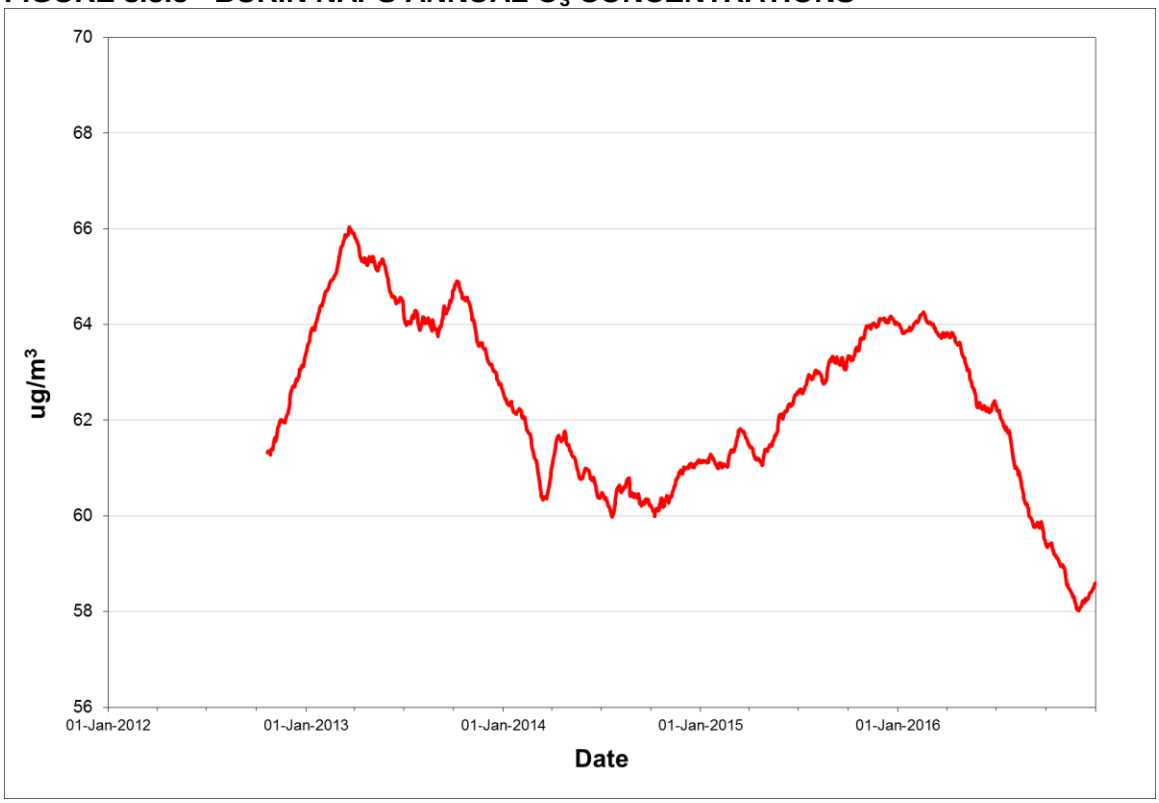
Rolling annual average of hourly concentrations

TABLE 3.5.5 - BURIN NAPS O_3 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2015	January	744	100.0%	68.3	87.8	84.2	0	0
	February	672	100.0%	73.7	93.5	87.4	0	2
	March	744	100.0%	77.1	101.5	93.5	0	8
	April	719	99.9%	77.3	111.0	102.6	0	14
	May	742	99.7%	72.1	109.8	100.4	0	10
	June	717	99.6%	54.6	89.7	81.2	0	0
	July	744	100.0%	58.1	92.8	85.5	0	0
	August	597	80.2%	54.2	100.3	86.1	0	0
	September	720	100.0%	48.8	92.4	88.8	0	1
	October	693	93.1%	54.8	90.1	85.3	0	0
	November	681	94.6%	63.4	86.3	81.6	0	0
	December	743	99.9%	63.7	83.7	79.8	0	0
Annual		8516	97.2%	64.0	111.0	102.6	0	35
2016	January	743	99.9%	68.4	92.9	91.9	0	2
	February	692	99.4%	74.2	91.0	89.1	0	1
	March	744	100.0%	74.4	91.9	88.6	0	3
	April	713	99.0%	71.6	103.9	94.1	0	2
	May	735	98.8%	60.4	104.8	89.9	0	1
	June	715	99.3%	53.7	107.0	84.7	0	0
	July	742	99.7%	46.6	85.4	80.7	0	0
	August	743	99.9%	41.0	101.3	88.5	0	1
	September	720	100.0%	41.8	76.4	71.0	0	0
	October	744	100.0%	49.4	80.3	78.6	0	0
	November	711	98.8%	52.1	94.4	75.9	0	0
	December	744	100.0%	70.0	86.6	80.1	0	0
Annual		8746	99.6%	58.6	107.0	94.1	0	10

Observations in ug/m^3

FIGURE 3.5.5 - BURIN NAPS ANNUAL O_3 CONCENTRATIONS



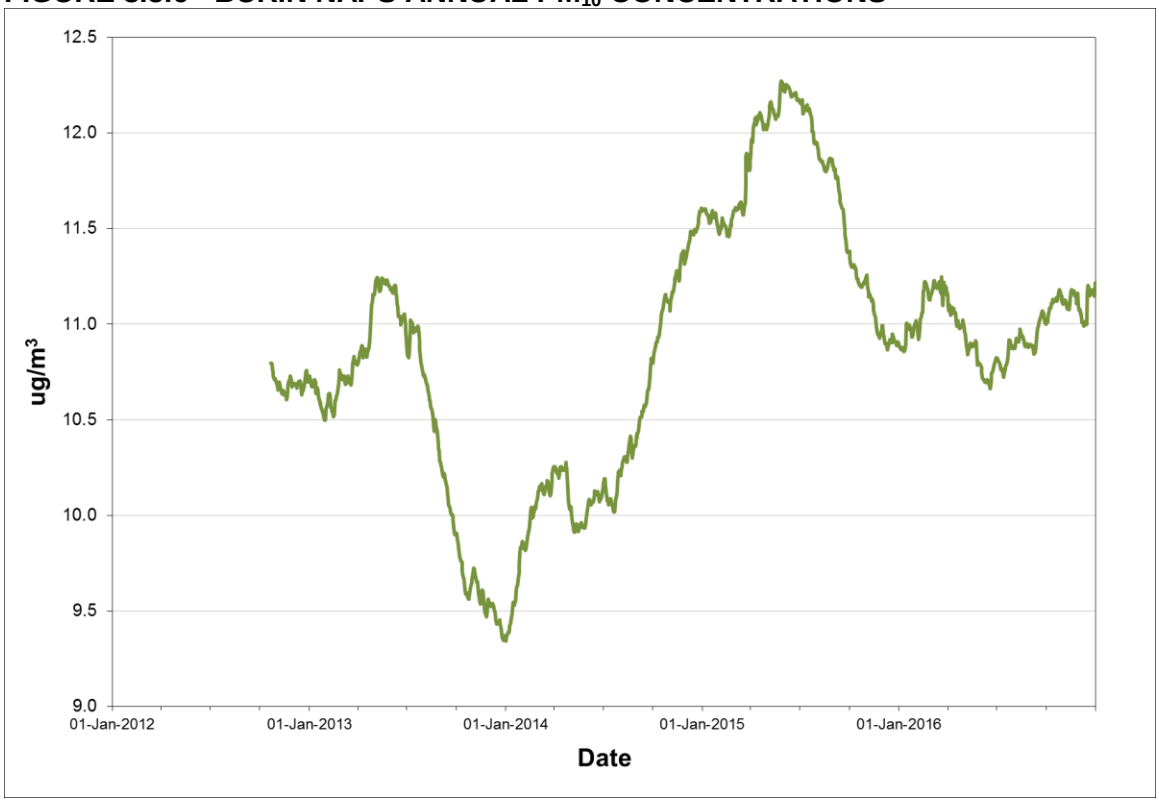
Rolling annual average of hourly concentrations

TABLE 3.5.6 - BURIN NAPS PM_{10} SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>50 µg/m^3)
2015	January	22	71.0%	11.7	19.6	0
	February	28	100.0%	13.8	24.3	0
	March	31	100.0%	16.0	64.8	1
	April	30	100.0%	14.4	37.5	0
	May	31	100.0%	12.4	30.5	0
	June	30	100.0%	8.0	14.5	0
	July	29	93.5%	8.0	14.8	0
	August	31	100.0%	8.9	13.2	0
	September	30	100.0%	7.4	16.8	0
	October	30	96.8%	9.8	15.2	0
	November	30	100.0%	9.7	26.8	0
	December	31	100.0%	11.0	29.3	0
Annual		353	96.7%	10.9	64.8	1
2016	January	31	100.0%	12.7	44.9	0
	February	29	100.0%	15.6	53.4	1
	March	31	100.0%	16.3	44.8	0
	April	30	100.0%	12.5	45.0	0
	May	21	67.7%	8.9	17.9	0
	June	23	76.7%	7.5	22.5	0
	July	31	100.0%	8.7	22.7	0
	August	31	100.0%	9.0	15.7	0
	September	29	96.7%	8.7	16.0	0
	October	31	100.0%	11.1	20.1	0
	November	25	83.3%	9.2	16.8	0
	December	31	100.0%	12.2	66.9	1
Annual		343	93.7%	11.2	66.9	2

Observations in ug/m^3

FIGURE 3.5.6 - BURIN NAPS ANNUAL PM_{10} CONCENTRATIONS

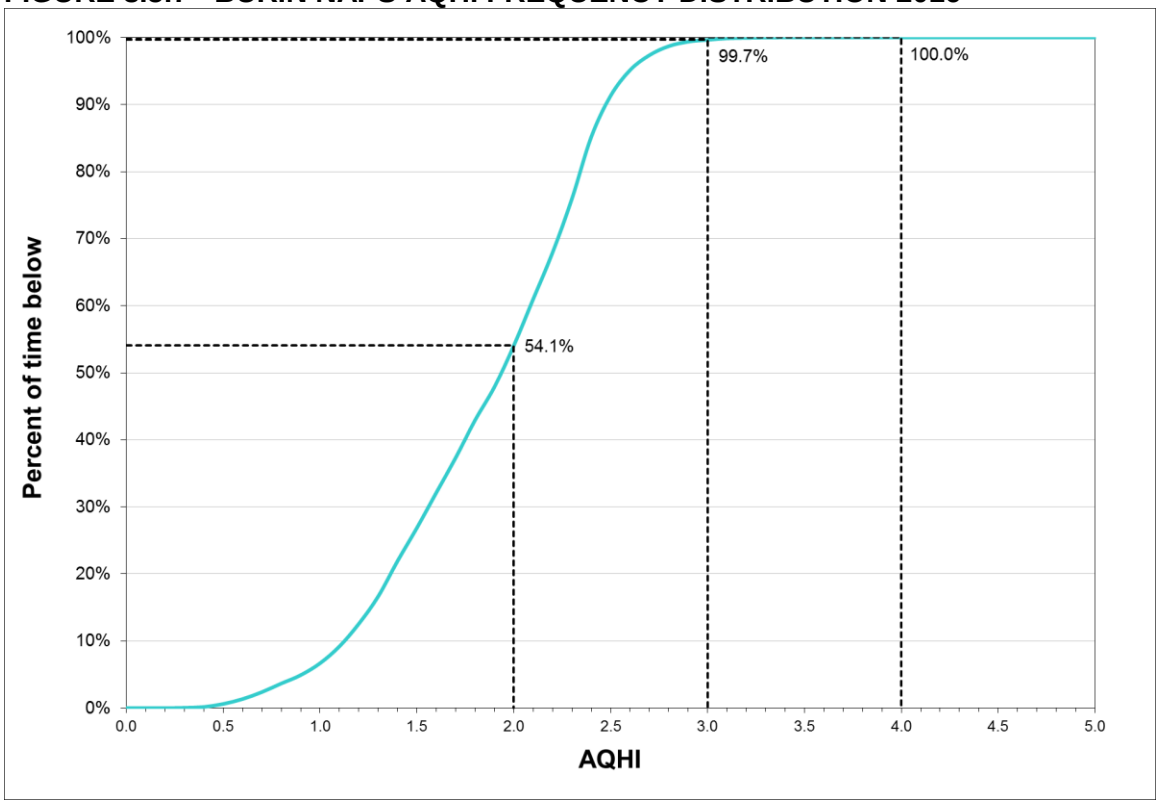


Rolling annual average of hourly concentrations

TABLE 3.5.7 - BURIN NAPS AQHI SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2015	January	532	71.5%	2.3	3.4
	February	672	100.0%	2.5	3.3
	March	744	100.0%	2.5	3.4
	April	716	99.4%	2.4	3.5
	May	740	99.5%	2.3	3.6
	June	719	99.9%	1.7	2.8
	July	740	99.5%	1.8	4.1
	August	594	79.8%	1.7	2.9
	September	678	94.2%	1.4	2.7
	October	692	93.0%	1.7	2.7
	November	545	75.7%	2.0	2.7
	December	742	99.7%	2.1	4.0
Annual		8114	92.6%	2.0	4.1
2016	January	720	96.8%	2.2	3.1
	February	690	99.1%	2.4	3.3
	March	744	100.0%	2.3	3.1
	April	712	98.9%	2.2	3.3
	May	734	98.7%	1.9	3.0
	June	689	95.7%	1.6	2.7
	July	700	94.1%	1.4	2.5
	August	733	98.5%	1.3	3.2
	September	711	98.8%	1.3	2.3
	October	741	99.6%	1.6	2.6
	November	655	91.0%	1.7	2.7
	December	744	100.0%	2.3	2.8
Annual		8573	97.6%	1.9	3.3

FIGURE 3.5.7 - BURIN NAPS AQHI FREQUENCY DISTRIBUTION 2016



e.g. 99.7% of the time the AQHI recorded was below 3.0

3.6 Port aux Choix

The Port aux Choix NAPS monitoring station monitors the ambient levels of O_3 on a continuous basis.

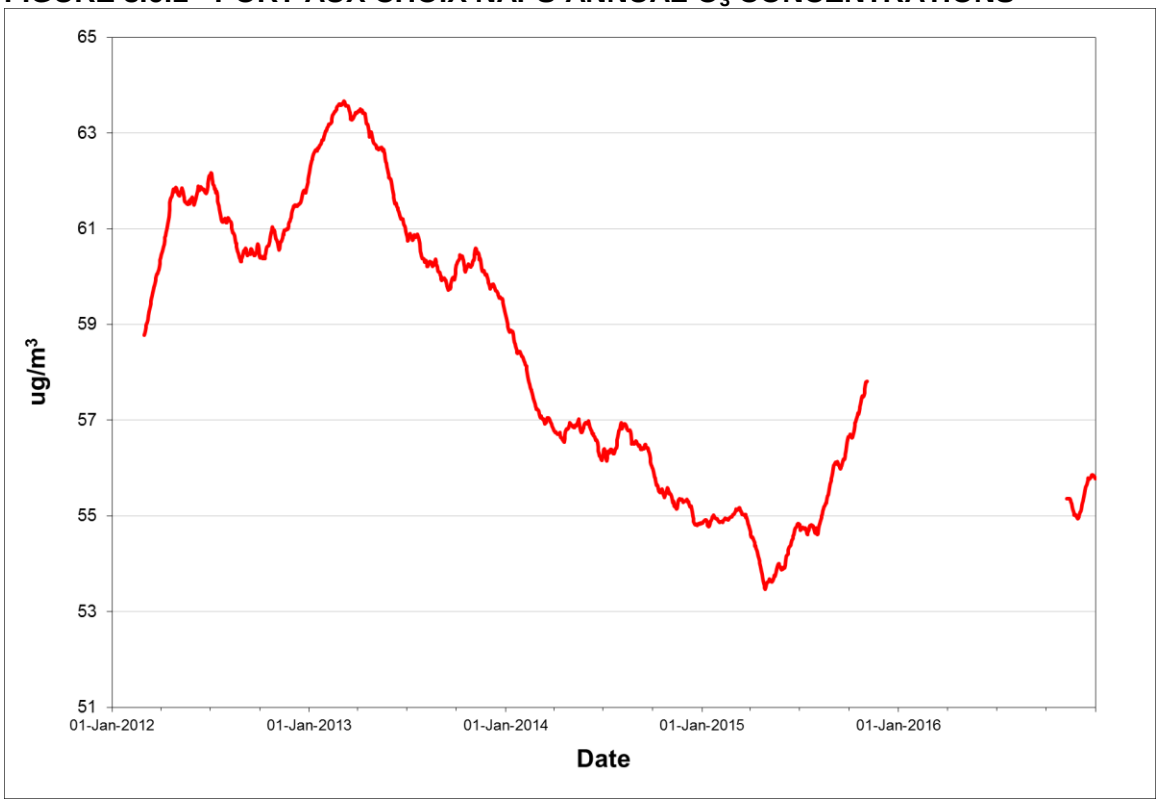
There were four recorded O_3 exceedances at this station in 2016; three times in March and once in April. Table 3.6.1 presents the summary information on the level of O_3 measured at the Port aux Choix NAPS station while Figure 3.6.1 presents a graphical representation of the annual trend of O_3.

TABLE 3.6.1 - PORT AUX CHOIX NAPS O_3 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2015	January	744	100.0%	65.7	77.3	73.4	0	0
	February	670	99.7%	68.4	86.2	81.0	0	0
	March	411	55.2%	71.1	86.0	84.8	0	0
	April	278	38.6%	68.8	84.1	81.9	0	0
	May	356	47.8%	68.1	91.5	85.4	0	0
	June	662	91.9%	49.5	78.1	71.2	0	0
	July	655	88.0%	45.3	82.2	76.5	0	0
	August	415	55.8%	45.3	75.2	72.4	0	0
	September	322	44.7%	40.3	68.6	58.6	0	0
	October	744	100.0%	54.9	85.4	81.9	0	0
	November	175	24.3%	68.7	78.8	76.3	0	0
	December	485	65.2%	66.7	81.5	80.0	0	0
Annual		5917	67.5%	58.6	91.5	85.4	0	0
2016	January	109	14.7%	64.8	77.5	74.7	0	0
	February	129	18.5%	76.2	87.5	84.9	0	0
	March	392	52.7%	71.6	92.8	91.4	0	3
	April	717	99.6%	71.1	95.0	87.5	0	1
	May	744	100.0%	61.9	84.4	80.3	0	0
	June	716	99.4%	54.0	87.0	83.2	0	0
	July	744	100.0%	41.2	85.3	80.8	0	0
	August	741	99.6%	42.0	91.5	79.3	0	0
	September	720	100.0%	41.2	68.1	65.5	0	0
	October	744	100.0%	54.5	88.5	79.2	0	0
	November	562	78.1%	52.1	80.0	78.6	0	0
	December	744	100.0%	70.4	83.6	81.8	0	0
Annual		7062	80.4%	55.8	95.0	91.4	0	4

Observations in ug/m^3

FIGURE 3.6.1 - PORT AUX CHOIX NAPS ANNUAL O_3 CONCENTRATIONS



Rolling annual average of hourly concentrations

4.0 Industrial Monitoring Network

Industrial operations in the province are responsible for the monitoring of air quality near their facility. The Department audits the operation of the industrial monitoring stations on a regular basis to ensure that the monitors are functioning according to instrument specifications and to the standard operating procedures. If the audits indicate a monitor is not operating within the specifications, corrective actions are required by the industry and data may be invalidated.

On the island of Newfoundland, there were four monitoring networks operated by industry in 2016 and another three in Labrador. Figures 4.0.1 and 4.0.2 present the locations of these monitoring networks.

The subsequent sections of this report detail the summary statistics and the longer term trend of pollutants measured at each station within a given network.

FIGURE 4.0.1 - INDUSTRIAL MONITORING NETWORK IN NEWFOUNDLAND

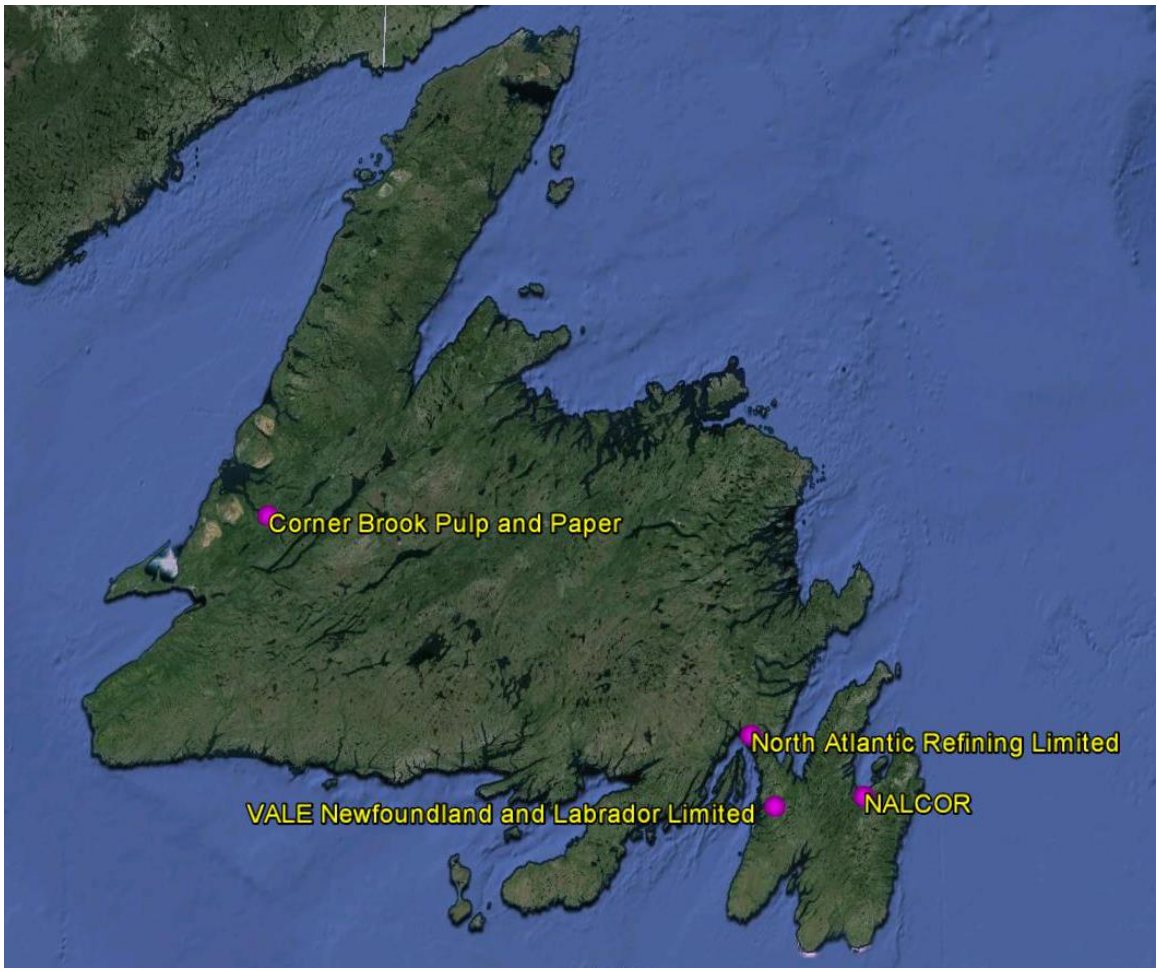
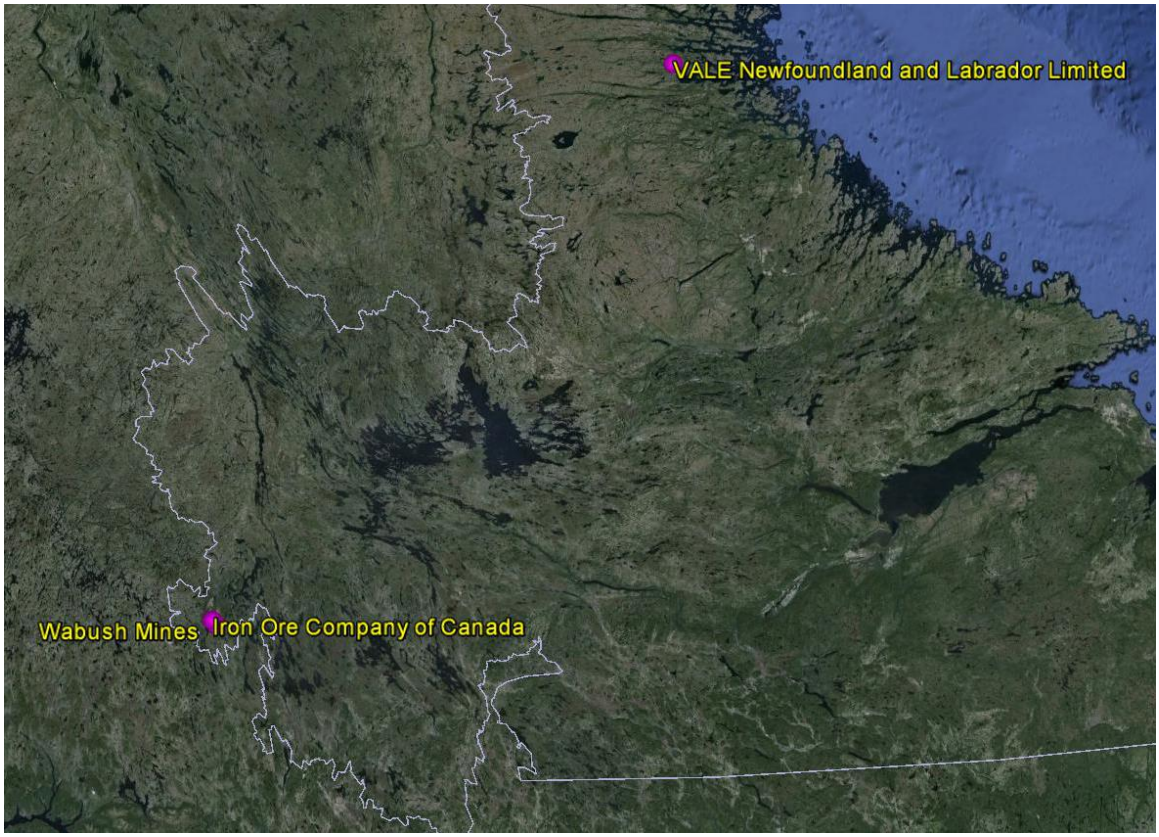


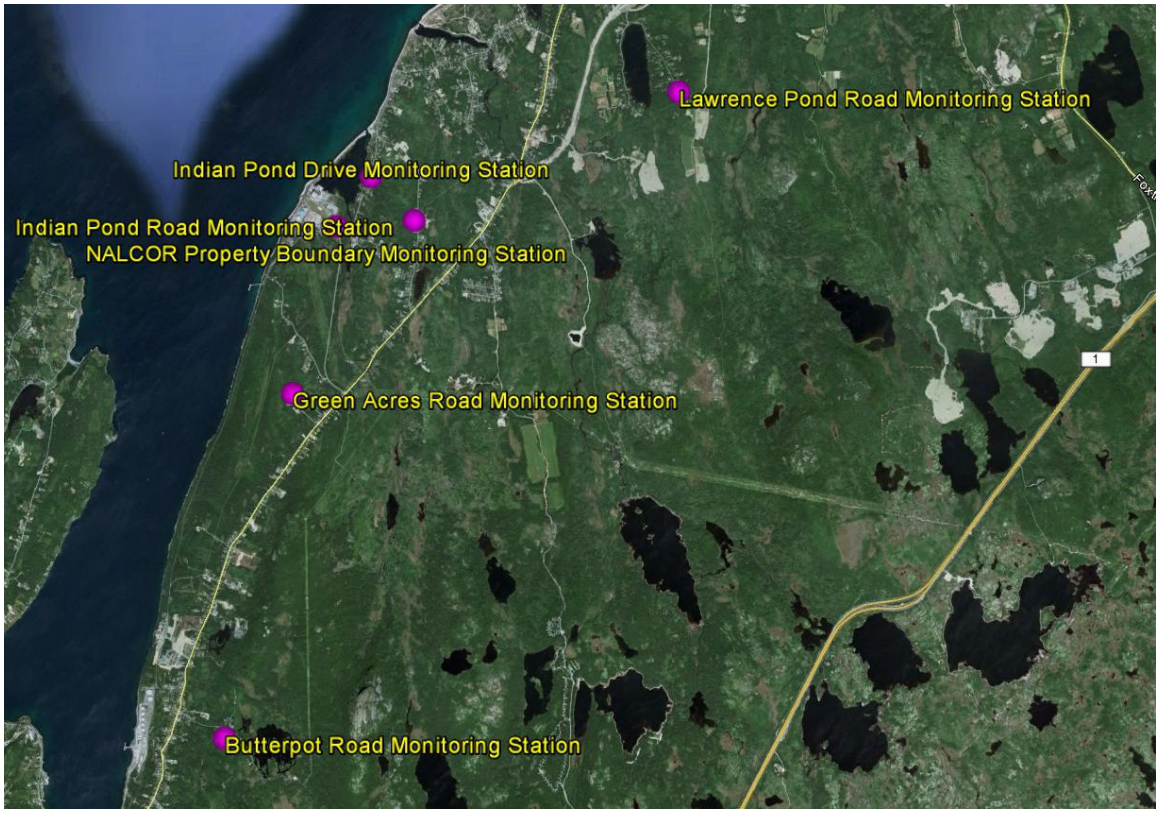
FIGURE 4.0.2 - INDUSTRIAL MONITORING NETWORK IN LABRADOR



4.1 NALCOR

In 2016, NALCOR operated monitoring stations at 6 locations in the Holyrood area. These stations are installed to monitor the air quality near the Holyrood Thermal Generating Station and are located at Butterpot Road, Green Acres Road, Indian Pond Drive, Indian Pond Road, Lawrence Pond, and the NALCOR property boundary. Figure 4.1.1 indicates the location of these stations.

FIGURE 4.1.1 - NALCOR AMBIENT MONITORING STATIONS



4.1.1 Butterpot Road

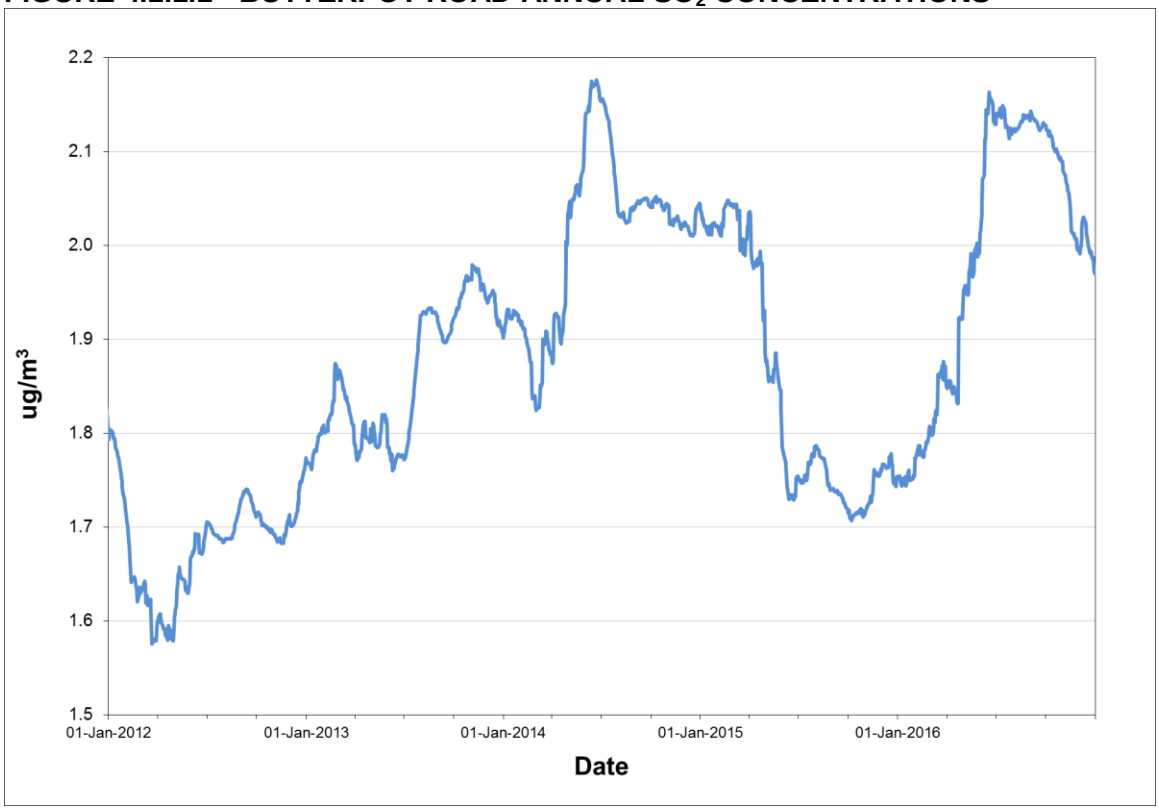
The Butterpot Road station monitors the ambient levels of SO_2, NO_x / NO_2 and $PM_{2.5}$ on a continuous basis. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2016. Tables 4.1.1.1 through 4.1.1.3 provide summary information on the level of air contaminants measured at Butterpot Road, while Figures 4.1.1.1 through 4.1.1.3 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.1.1 - BUTTERPOT ROAD SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	712	95.7%	1.8	71.4	25.3	6.1	0	0	0
	February	638	94.9%	1.8	60.2	24.6	6.1	0	0	0
	March	711	95.6%	2.3	75.8	44.2	8.1	0	0	0
	April	690	95.8%	2.3	42.1	26.8	7.3	0	0	0
	May	684	91.9%	2.2	63.9	39.8	7.8	0	0	0
	June	689	95.7%	1.5	42.2	21.4	6.8	0	0	0
	July	710	95.4%	1.6	29.5	17.4	4.2	0	0	0
	August	703	94.5%	0.9	15.4	10.5	2.0	0	0	0
	September	687	95.4%	1.1	4.3	2.7	1.6	0	0	0
	October	706	94.9%	1.6	10.7	9.1	2.8	0	0	0
	November	688	95.6%	2.0	29.1	19.0	5.5	0	0	0
	December	635	85.3%	1.9	21.3	19.1	5.6	0	0	0
Annual		8253	94.2%	1.8	75.8	44.2	8.1	0	0	0
2016	January	711	95.6%	1.9	16.2	7.6	4.0	0	0	0
	February	660	94.8%	2.4	10.4	6.1	5.9	0	0	0
	March	708	95.2%	2.8	82.9	56.9	13.8	0	0	0
	April	688	95.6%	3.2	195.6	164.7	34.1	0	0	0
	May	690	92.7%	3.0	94.0	57.8	11.4	0	0	0
	June	687	95.4%	3.2	90.3	47.6	14.5	0	0	0
	July	712	95.7%	1.6	26.5	24.0	5.1	0	0	0
	August	706	94.9%	1.0	23.2	12.6	2.9	0	0	0
	September	684	95.0%	0.9	29.6	22.5	4.8	0	0	0
	October	711	95.6%	1.1	12.8	8.7	3.1	0	0	0
	November	684	95.0%	0.9	13.4	6.6	2.3	0	0	0
	December	710	95.4%	1.7	16.4	11.1	5.0	0	0	0
Annual		8351	95.1%	2.0	195.6	164.7	34.1	0	0	0

Observations in ug/m^3

FIGURE 4.1.1.1 - BUTTERPOT ROAD ANNUAL SO_2 CONCENTRATIONS



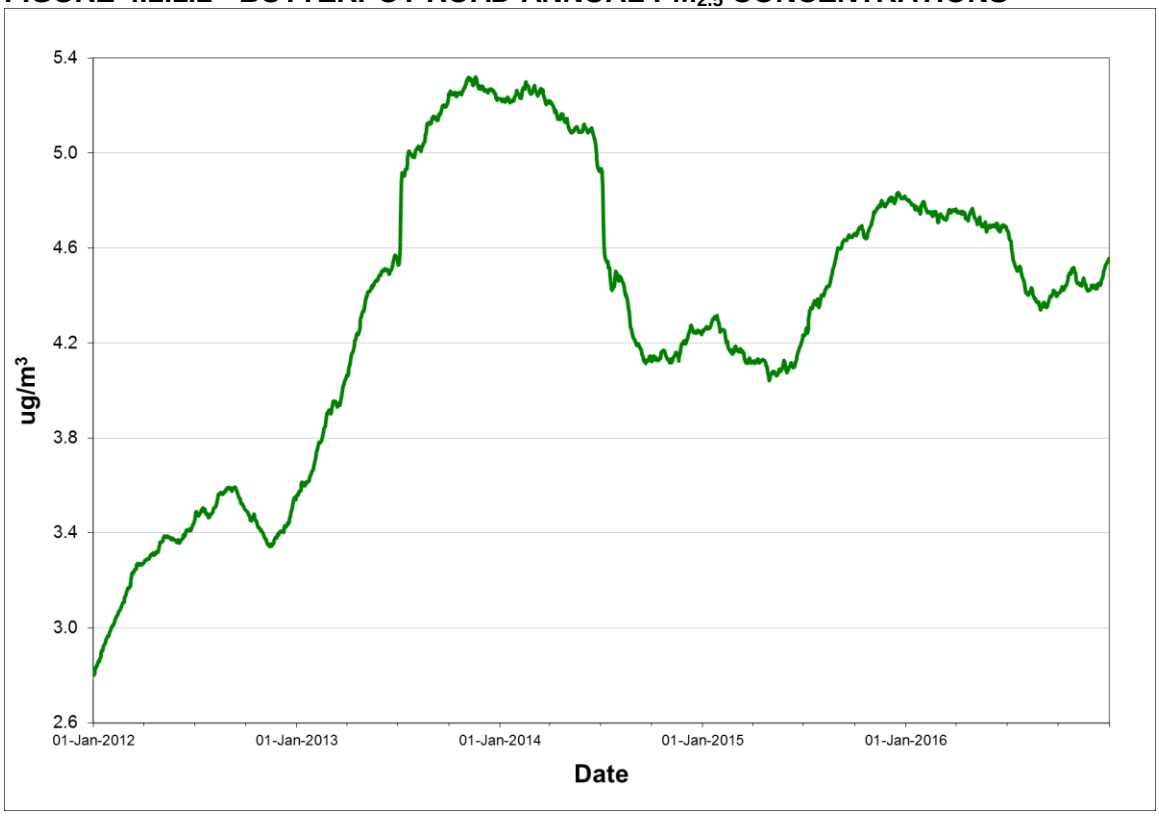
Rolling annual average of hourly concentrations

TABLE 4.1.1.2 - BUTTERPOT ROAD $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	31	100.0%	5.5	8.8	0
	February	28	100.0%	5.5	11.5	0
	March	31	100.0%	4.7	9.7	0
	April	30	100.0%	5.1	8.5	0
	May	29	93.5%	5.3	9.3	0
	June	29	96.7%	3.6	5.4	0
	July	31	100.0%	5.2	14.5	0
	August	31	100.0%	4.7	9.1	0
	September	30	100.0%	3.3	8.0	0
	October	26	83.9%	4.1	7.9	0
	November	30	100.0%	5.6	12.3	0
	December	27	87.1%	5.0	10.3	0
Annual		353	96.7%	4.8	14.5	0
2016	January	31	100.0%	5.3	13.1	0
	February	29	100.0%	4.6	9.6	0
	March	30	96.8%	5.3	9.0	0
	April	30	100.0%	5.1	10.1	0
	May	31	100.0%	4.3	8.1	0
	June	28	93.3%	3.4	9.0	0
	July	31	100.0%	2.7	5.8	0
	August	31	100.0%	3.4	6.5	0
	September	22	73.3%	3.9	8.5	0
	October	30	96.8%	5.4	7.9	0
	November	30	100.0%	4.9	8.3	0
	December	31	100.0%	6.1	9.4	0
Annual		354	96.7%	4.6	13.1	0

Observations in ug/m^3

FIGURE 4.1.1.2 - BUTTERPOT ROAD ANNUAL $PM_{2.5}$ CONCENTRATIONS



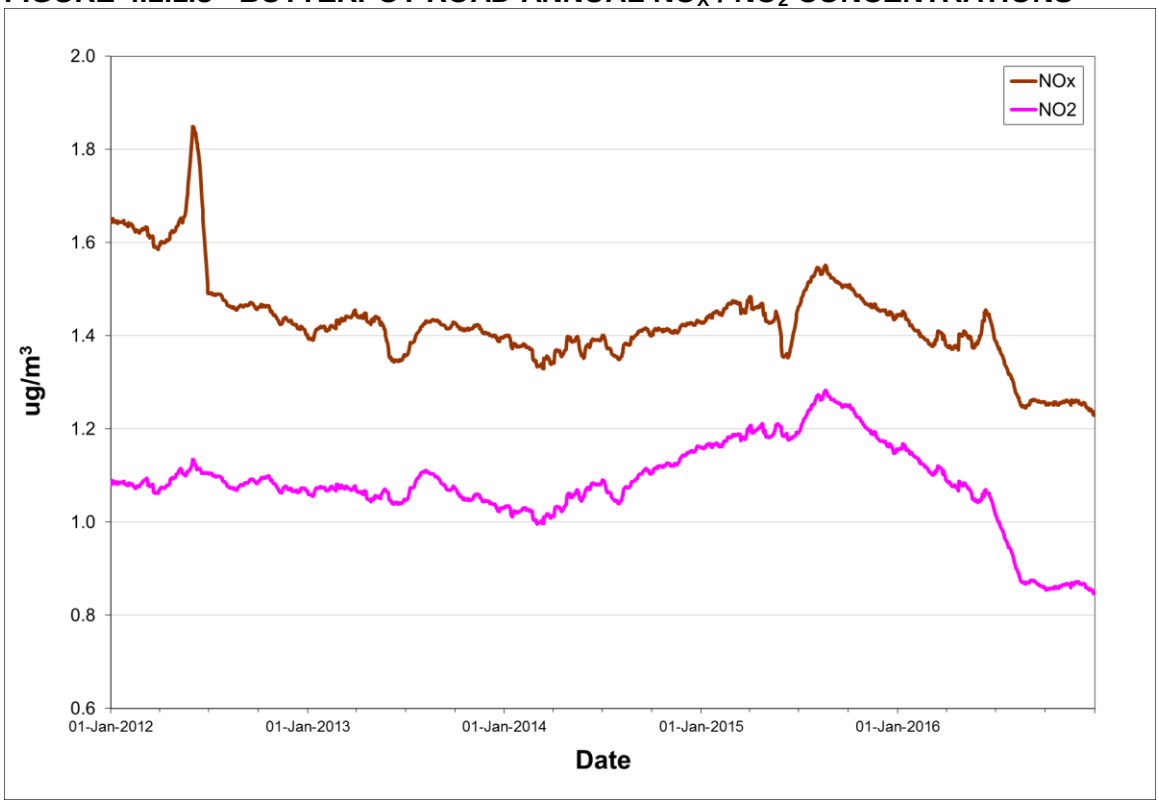
Rolling annual average of daily concentrations

TABLE 4.1.1.3 - BUTTERPOT ROAD NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2015	January	713	95.8%	1.5	1.2	34.6	29.8	4.0	3.3	0	0
	February	640	95.2%	1.3	1.2	39.5	33.0	3.6	3.0	0	0
	March	711	95.6%	1.5	1.3	29.1	20.8	4.7	4.2	0	0
	April	690	95.8%	1.3	1.3	15.6	11.2	3.6	3.0	0	0
	May	658	88.4%	1.7	1.5	35.9	21.0	6.2	4.5	0	0
	June	687	95.4%	2.8	1.3	16.1	8.6	5.4	2.7	0	0
	July	713	95.8%	1.9	1.6	10.9	8.6	2.9	2.5	0	0
	August	686	92.2%	1.4	1.3	14.1	10.1	3.5	3.0	0	0
	September	687	95.4%	0.8	0.7	5.5	4.3	1.3	1.1	0	0
	October	688	92.5%	0.9	0.6	11.4	10.2	2.1	1.7	0	0
	November	690	95.8%	1.1	0.9	15.0	13.4	2.5	2.2	0	0
	December	636	85.5%	1.2	1.0	10.9	10.1	3.2	2.8	0	0
Annual		8199	93.6%	1.4	1.2	39.5	33.0	6.2	4.5	0	0
2016	January	713	95.8%	1.1	1.0	19.6	19.2	4.9	4.6	0	0
	February	663	95.3%	0.9	0.8	10.4	7.5	1.8	1.5	0	0
	March	711	95.6%	1.4	1.1	37.7	26.4	5.8	4.3	0	0
	April	690	95.8%	1.6	1.1	65.4	33.5	13.5	8.8	0	0
	May	687	92.3%	1.6	1.0	41.7	19.5	3.9	2.7	0	0
	June	687	95.4%	2.8	1.1	43.4	25.2	8.8	5.2	0	0
	July	713	95.8%	0.9	0.7	11.8	8.0	2.6	2.0	0	0
	August	711	95.6%	0.8	0.5	10.4	7.7	1.6	1.2	0	0
	September	688	95.6%	0.8	0.6	19.7	12.3	3.4	2.3	0	0
	October	713	95.8%	0.9	0.7	25.4	13.5	3.0	1.8	0	0
	November	685	95.1%	1.2	1.0	33.8	29.9	5.0	4.5	0	0
	December	712	95.7%	0.8	0.7	19.1	9.6	2.1	1.8	0	0
Annual		8373	95.3%	1.2	0.8	65.4	33.5	13.5	8.8	0	0

Observations in ug/m^3

FIGURE 4.1.1.3 - BUTTERPOT ROAD ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations

4.1.2 Green Acres Road

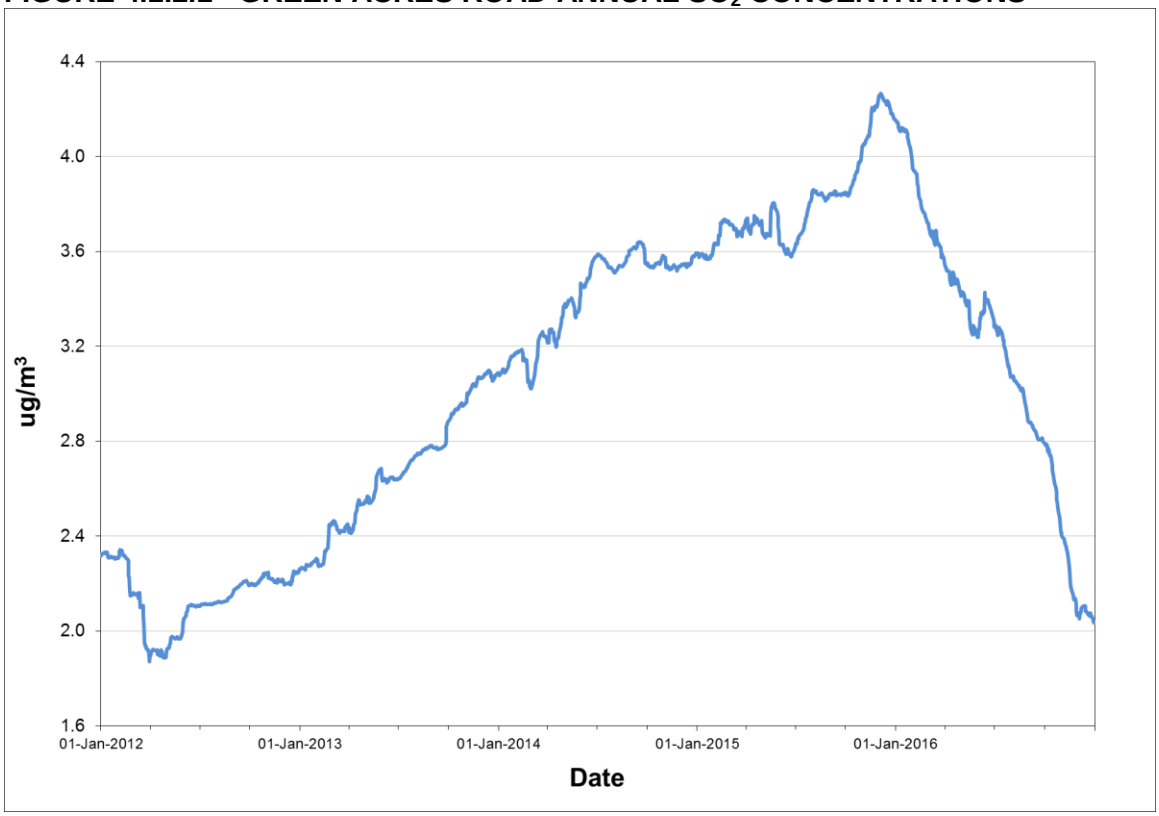
The Green Acres Road station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ on a continuous basis and TPM on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For all pollutants the ambient air criteria were not exceeded on any occasion in 2016. Tables 4.1.2.1 through 4.1.2.4 provide summary information on the level of air contaminants measured at Green Acres Road, while Figures 4.1.2.1 through 4.1.2.4 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.2.1 - GREEN ACRES ROAD SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	678	91.1%	4.2	64.0	26.7	10.8	0	0	0
	February	639	95.1%	4.4	182.4	89.0	16.4	0	0	0
	March	702	94.4%	5.1	99.2	57.4	15.0	0	0	0
	April	690	95.8%	4.8	175.4	97.2	14.6	0	0	0
	May	713	95.8%	4.6	192.8	124.7	36.5	0	0	0
	June	648	90.0%	3.3	58.8	22.4	7.4	0	0	0
	July	705	94.8%	4.3	129.9	48.0	8.2	0	0	0
	August	712	95.7%	3.1	50.3	25.9	7.0	0	0	0
	September	618	85.8%	2.3	6.2	4.8	4.5	0	0	0
	October	711	95.6%	5.7	49.3	27.4	13.2	0	0	0
	November	690	95.8%	5.6	52.2	42.5	17.7	0	0	0
	December	689	92.6%	2.3	48.8	40.8	8.8	0	0	0
Annual		8195	93.6%	4.2	192.8	124.7	36.5	0	0	0
2016	January	687	92.3%	1.9	47.7	24.5	7.9	0	0	0
	February	666	95.7%	1.3	19.3	9.2	3.0	0	0	0
	March	707	95.0%	3.0	102.6	74.6	33.0	0	0	0
	April	690	95.8%	3.1	263.5	126.5	32.4	0	0	0
	May	713	95.8%	2.6	133.1	66.4	18.1	0	0	0
	June	636	88.3%	4.0	285.8	170.3	34.8	0	0	0
	July	713	95.8%	1.7	118.4	71.0	14.1	0	0	0
	August	712	95.7%	1.0	64.8	26.4	5.6	0	0	0
	September	684	95.0%	1.1	53.5	30.5	5.4	0	0	0
	October	711	95.6%	1.3	72.3	35.9	8.5	0	0	0
	November	690	95.8%	1.5	40.1	20.1	5.2	0	0	0
	December	686	92.2%	1.8	54.2	52.3	8.0	0	0	0
Annual		8295	94.4%	2.0	285.8	170.3	34.8	0	0	0

Observations in ug/m^3

FIGURE 4.1.2.1 - GREEN ACRES ROAD ANNUAL SO_2 CONCENTRATIONS



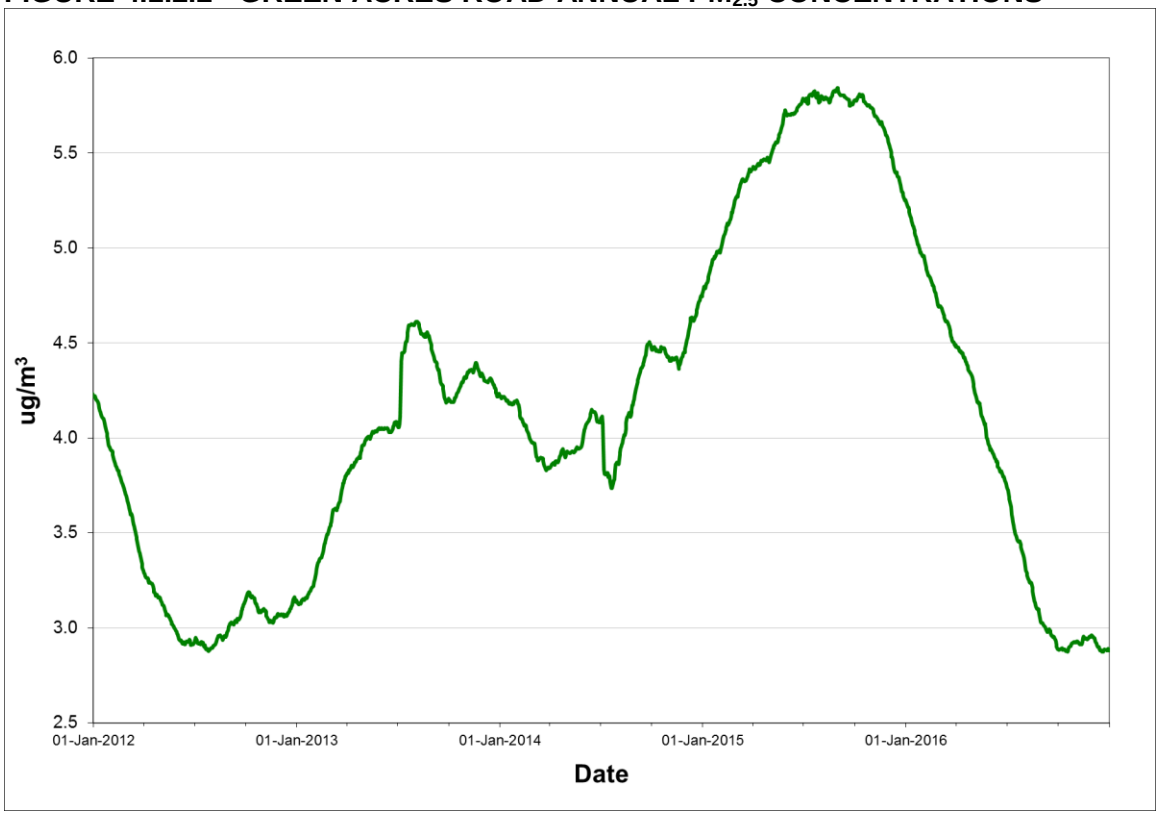
Rolling annual average of hourly concentrations

TABLE 4.1.2.2 - GREEN ACRES ROAD $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	27	87.1%	5.6	7.8	0
	February	28	100.0%	6.2	10.8	0
	March	31	100.0%	5.8	10.2	0
	April	30	100.0%	5.6	8.3	0
	May	29	93.5%	7.2	13.9	0
	June	27	90.0%	5.6	8.4	0
	July	31	100.0%	7.1	15.6	0
	August	31	100.0%	7.5	11.5	0
	September	27	90.0%	4.6	9.4	0
	October	26	83.9%	2.9	7.0	0
	November	30	100.0%	2.2	6.6	0
	December	31	100.0%	2.4	6.4	0
Annual		348	95.3%	5.3	15.6	0
2016	January	31	100.0%	2.2	5.0	0
	February	29	100.0%	3.0	6.5	0
	March	31	100.0%	3.5	10.9	0
	April	30	100.0%	3.5	8.7	0
	May	31	100.0%	2.8	6.3	0
	June	28	93.3%	3.1	7.8	0
	July	31	100.0%	2.8	7.0	0
	August	31	100.0%	3.5	6.6	0
	September	25	83.3%	2.8	5.4	0
	October	31	100.0%	3.3	7.2	0
	November	30	100.0%	2.6	8.6	0
	December	29	93.5%	1.4	4.0	0
Annual		357	97.5%	2.9	10.9	0

Observations in ug/m^3

FIGURE 4.1.2.2 - GREEN ACRES ROAD ANNUAL $PM_{2.5}$ CONCENTRATIONS



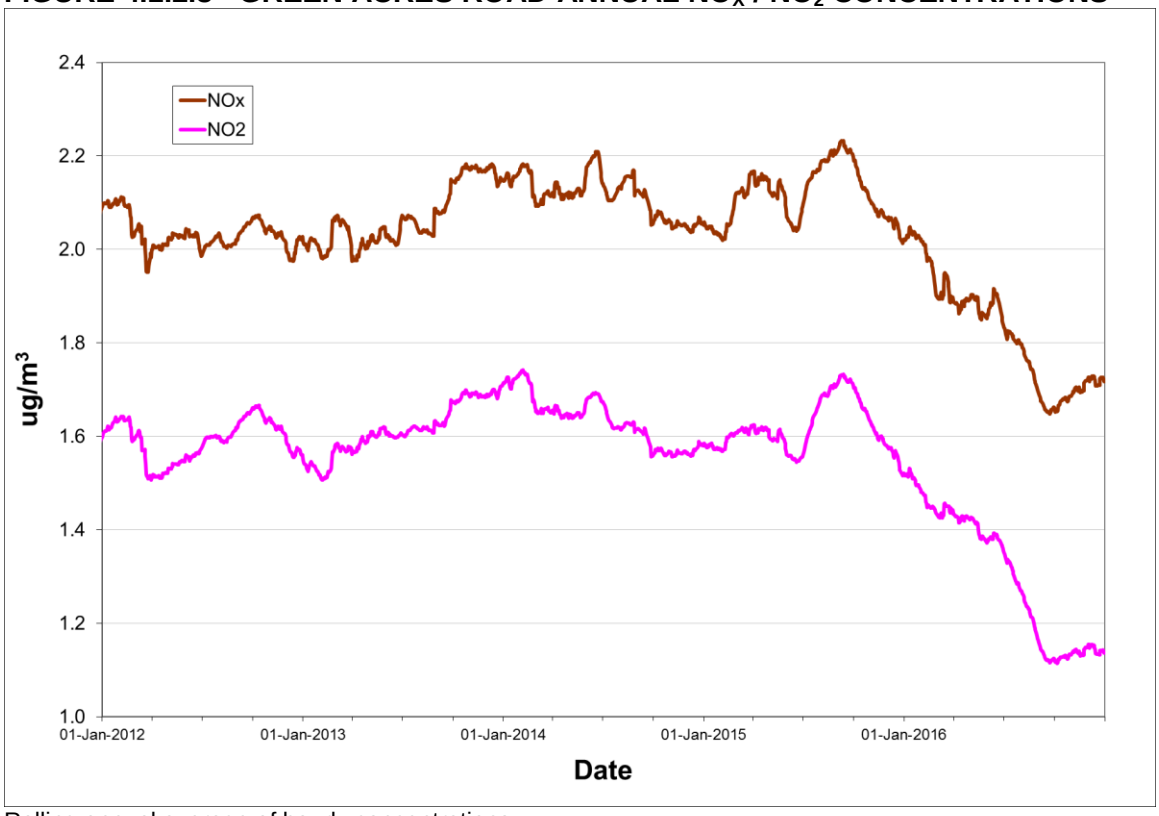
Rolling annual average of daily concentrations

TABLE 4.1.2.3 - GREEN ACRES ROAD NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums				Exceedances	
						1-Hour		24-Hour		1-Hour	24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	676	90.9%	1.8	1.7	24.5	20.7	3.5	3.2	0	0
	February	610	90.8%	3.1	1.8	103.7	55.8	7.6	5.7	0	0
	March	697	93.7%	2.5	1.5	40.0	20.5	8.4	4.8	0	0
	April	690	95.8%	1.9	1.5	70.3	31.1	7.1	3.9	0	0
	May	713	95.8%	2.1	1.6	54.7	31.6	11.9	7.6	0	0
	June	647	89.9%	2.4	1.4	19.4	10.9	4.2	2.1	0	0
	July	705	94.8%	2.4	2.0	40.3	17.3	3.9	3.0	0	0
	August	713	95.8%	2.3	1.9	26.9	15.8	4.6	3.5	0	0
	September	636	88.3%	1.6	1.4	11.2	10.7	2.9	2.7	0	0
	October	709	95.3%	1.2	0.9	17.2	11.9	3.0	2.2	0	0
	November	690	95.8%	1.5	1.2	22.1	15.4	5.5	4.3	0	0
	December	708	95.2%	1.7	1.3	26.4	17.7	6.6	5.0	0	0
Annual		8194	93.5%	2.0	1.5	103.7	55.8	11.9	7.6	0	0
2016	January	711	95.6%	1.8	1.3	48.4	46.3	8.6	7.9	0	0
	February	667	95.8%	1.5	1.1	20.8	17.7	4.0	3.1	0	0
	March	707	95.0%	2.3	1.5	60.3	34.4	20.3	12.1	0	0
	April	690	95.8%	2.0	1.3	77.8	47.9	11.6	6.7	0	0
	May	713	95.8%	1.6	1.1	45.4	26.0	6.5	3.5	0	0
	June	621	86.3%	2.2	1.3	90.4	34.7	13.3	6.7	0	0
	July	713	95.8%	2.0	1.0	36.3	15.9	5.6	3.2	0	0
	August	713	95.8%	1.1	0.7	18.6	11.4	2.6	1.8	0	0
	September	684	95.0%	1.1	0.8	23.8	10.4	2.5	1.6	0	0
	October	713	95.8%	1.5	1.0	35.0	21.7	5.4	3.8	0	0
	November	690	95.8%	1.9	1.4	30.8	23.5	6.8	4.9	0	0
	December	689	92.6%	1.6	1.2	45.6	24.2	7.5	4.6	0	0
Annual		8311	94.6%	1.7	1.1	90.4	47.9	20.3	12.1	0	0

Observations in ug/m^3

FIGURE 4.1.2.3 - GREEN ACRES ROAD ANNUAL NO_X / NO_2 CONCENTRATIONS



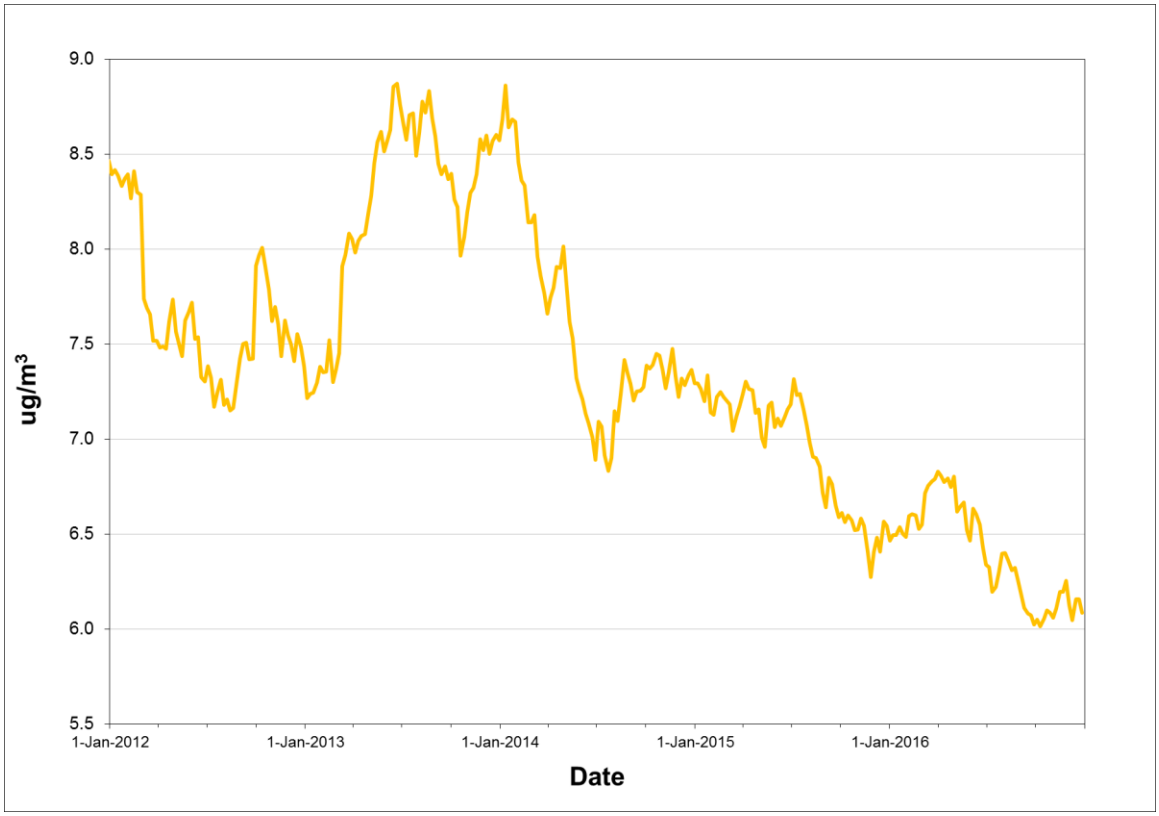
Rolling annual average of hourly concentrations

TABLE 4.1.2.4 - GREEN ACRES ROAD TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2015	January	3	60.0%	4.7	7.7	0
	February	1	25.0%	5.9	5.9	0
	March	4	66.7%	5.0	9.2	0
	April	5	100.0%	8.7	12.5	0
	May	5	100.0%	5.1	19.0	0
	June	5	100.0%	9.6	14.2	0
	July	5	100.0%	5.1	10.8	0
	August	5	100.0%	8.8	12.2	0
	September	5	100.0%	5.5	7.4	0
	October	5	100.0%	8.9	15.5	0
	November	5	100.0%	4.7	8.2	0
	December	5	100.0%	7.9	12.6	0
Annual		53	88.3%	6.6	19.0	0
2016	January	5	83.3%	5.8	8.4	0
	February	4	100.0%	5.5	7.3	0
	March	6	100.0%	8.4	12.7	0
	April	5	100.0%	7.7	8.9	0
	May	5	100.0%	4.5	7.7	0
	June	5	100.0%	4.9	7.6	0
	July	5	100.0%	6.4	14.9	0
	August	5	100.0%	6.0	8.0	0
	September	5	100.0%	3.7	5.6	0
	October	5	100.0%	9.6	14.7	0
	November	5	100.0%	6.9	19.1	0
	December	5	100.0%	5.6	25.1	0
Annual		60	98.4%	6.1	25.1	0

Observations in ug/m^3

FIGURE 4.1.2.4 - GREEN ACRES ROAD ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.1.3 Indian Pond Drive

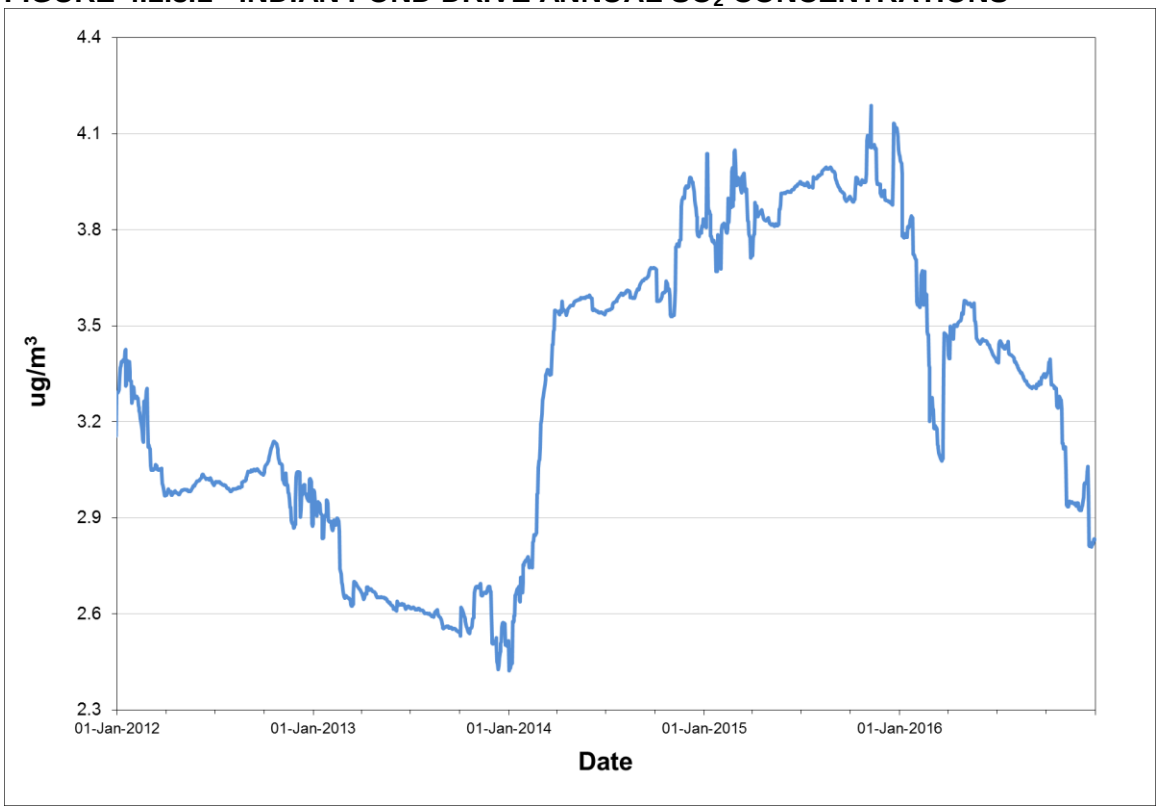
The Indian Pond Drive station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ on a continuous basis and TPM on a 1 day in 6 day cycle consistent with the NAPS defined schedule. The ambient air criteria for any pollutant were not exceeded on any occasion in 2016. Tables 4.1.3.1 through 4.1.3.4 provide summary information on the level of air contaminants measured at Indian Pond Drive, while Figures 4.1.3.1 through 4.1.3.4 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.3.1 - INDIAN POND DRIVE SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	680	91.4%	6.7	187.1	126.5	73.8	0	0	0
	February	629	93.6%	11.2	169.8	149.1	61.1	0	0	0
	March	709	95.3%	4.1	81.2	62.0	21.2	0	0	0
	April	689	95.7%	3.7	105.5	83.9	20.9	0	0	0
	May	708	95.2%	2.4	111.7	68.2	18.7	0	0	0
	June	685	95.1%	2.0	24.0	12.6	4.2	0	0	0
	July	711	95.6%	2.0	48.2	30.3	13.2	0	0	0
	August	656	88.2%	1.9	6.5	4.2	2.6	0	0	0
	September	678	94.2%	1.4	22.7	11.0	3.2	0	0	0
	October	713	95.8%	4.7	108.5	79.3	39.9	0	0	0
	November	551	76.5%	4.6	114.6	90.9	40.8	0	0	0
	December	711	95.6%	4.4	180.8	159.1	59.4	0	0	0
Annual		8120	92.7%	4.0	187.1	159.1	73.8	0	0	0
2016	January	707	95.0%	2.8	85.5	34.9	11.5	0	0	0
	February	657	94.4%	5.5	156.9	105.3	37.6	0	0	0
	March	633	85.1%	6.6	199.7	173.2	79.9	0	0	0
	April	658	91.4%	5.1	109.0	82.7	56.0	0	0	0
	May	696	93.5%	0.9	27.5	13.1	4.5	0	0	0
	June	619	86.0%	1.1	11.7	4.1	1.7	0	0	0
	July	644	86.6%	2.1	72.9	66.4	21.8	0	0	0
	August	674	90.6%	0.9	17.1	10.7	3.0	0	0	0
	September	613	85.1%	1.5	49.1	19.2	8.1	0	0	0
	October	707	95.0%	2.5	83.0	48.2	10.8	0	0	0
	November	614	85.3%	2.0	21.9	11.7	4.7	0	0	0
	December	668	89.8%	3.2	76.7	45.0	15.0	0	0	0
Annual		7890	89.8%	2.8	199.7	173.2	79.9	0	0	0

Observations in ug/m^3

FIGURE 4.1.3.1 - INDIAN POND DRIVE ANNUAL SO_2 CONCENTRATIONS



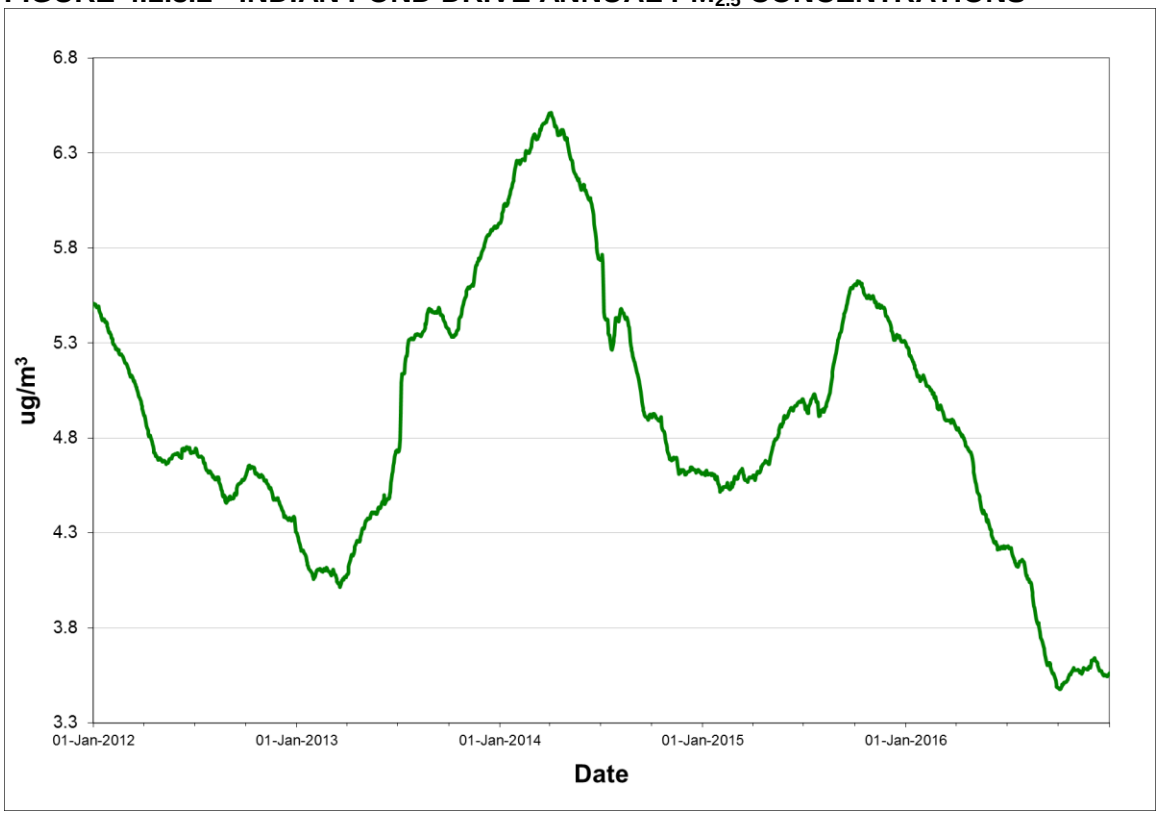
Rolling annual average of hourly concentrations

TABLE 4.1.3.2 - INDIAN POND DRIVE $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	29	93.5%	4.3	10.1	0
	February	27	96.4%	6.0	15.1	0
	March	31	100.0%	4.8	9.5	0
	April	30	100.0%	5.8	9.4	0
	May	27	87.1%	7.2	12.5	0
	June	30	100.0%	5.2	8.7	0
	July	31	100.0%	6.8	14.2	0
	August	29	93.5%	8.4	12.6	0
	September	29	96.7%	6.2	10.0	0
	October	26	83.9%	2.8	5.2	0
	November	23	76.7%	2.5	6.3	0
	December	27	87.1%	2.8	8.7	0
Annual		339	92.9%	5.3	15.1	0
2016	January	31	100.0%	2.3	4.3	0
	February	29	100.0%	4.1	8.5	0
	March	27	87.1%	3.5	12.5	0
	April	28	93.3%	3.9	12.7	0
	May	31	100.0%	2.8	10.9	0
	June	30	100.0%	4.1	8.9	0
	July	27	87.1%	6.2	10.3	0
	August	30	96.8%	3.7	11.0	0
	September	25	83.3%	3.1	8.0	0
	October	31	100.0%	3.9	6.2	0
	November	26	86.7%	3.3	9.8	0
	December	31	100.0%	2.1	6.6	0
Annual		346	94.5%	3.6	12.7	0

Observations in ug/m^3

FIGURE 4.1.3.2 - INDIAN POND DRIVE ANNUAL $PM_{2.5}$ CONCENTRATIONS



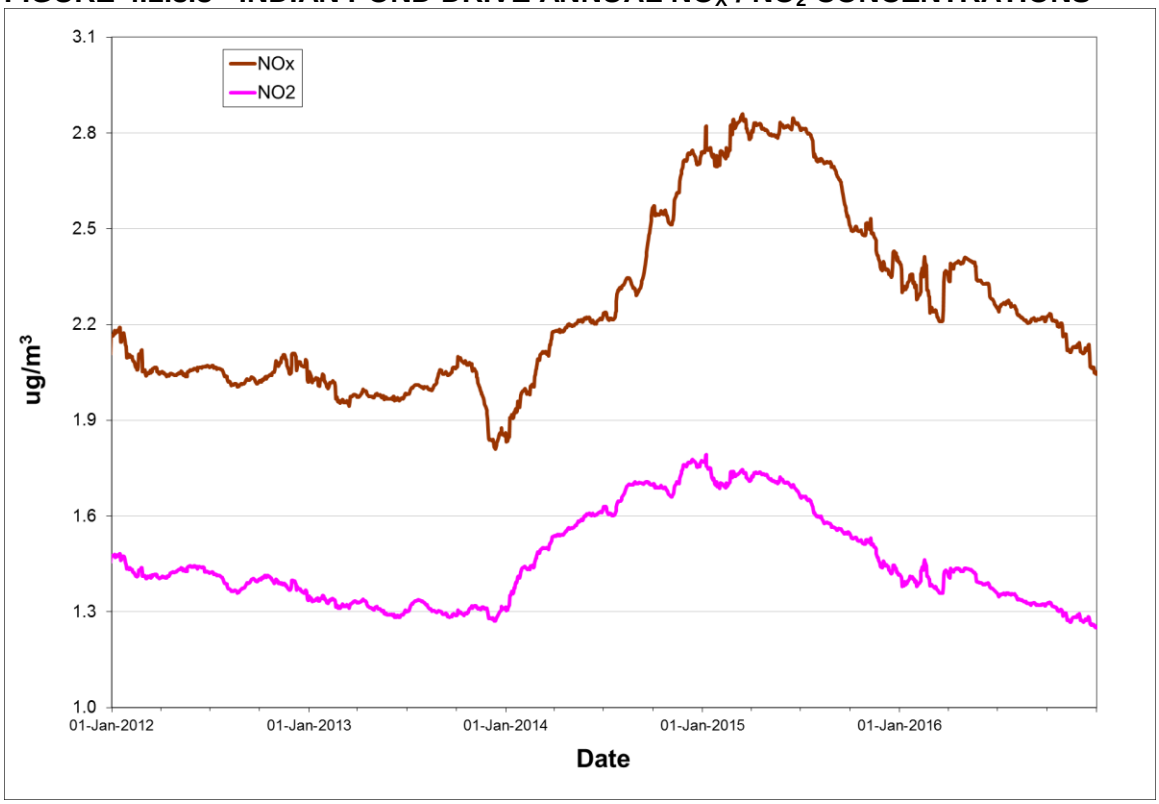
Rolling annual average of daily concentrations

TABLE 4.1.3.3 - INDIAN POND DRIVE NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums				Exceedances	
						1-Hour		24-Hour		1-Hour	24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	682	91.7%	3.7	2.2	66.3	32.2	28.5	10.9	0	0
	February	610	90.8%	4.6	2.4	132.6	41.4	27.8	12.2	0	0
	March	709	95.3%	2.4	1.7	42.4	27.9	8.7	5.2	0	0
	April	690	95.8%	2.0	1.5	30.0	14.6	6.8	3.7	0	0
	May	692	93.0%	1.8	1.3	52.8	27.4	10.9	5.5	0	0
	June	688	95.6%	1.9	1.1	89.4	33.0	10.4	3.5	0	0
	July	713	95.8%	1.5	0.9	95.2	28.3	6.0	2.4	0	0
	August	653	87.8%	1.6	1.1	21.5	10.0	5.0	3.1	0	0
	September	678	94.2%	2.8	0.9	35.4	17.9	7.5	2.9	0	0
	October	712	95.7%	2.0	1.2	37.5	16.5	11.8	5.3	0	0
	November	550	76.4%	1.9	1.2	40.1	19.5	13.3	6.1	0	0
	December	712	95.7%	2.7	1.6	54.2	23.8	18.1	6.6	0	0
Annual		8089	92.3%	2.4	1.4	132.6	41.4	28.5	12.2	0	0
2016	January	657	88.3%	2.8	2.0	48.4	46.5	8.4	7.2	0	0
	February	642	92.2%	3.7	2.3	62.3	34.4	21.4	12.4	0	0
	March	638	85.8%	3.8	2.2	105.1	45.6	33.7	15.5	0	0
	April	658	91.4%	2.5	1.6	60.8	33.7	26.2	13.3	0	0
	May	710	95.4%	1.0	0.8	11.7	6.3	2.4	1.4	0	0
	June	688	95.6%	0.9	0.7	6.7	4.3	1.7	1.3	0	0
	July	644	86.6%	1.4	0.9	21.8	8.5	6.2	2.6	0	0
	August	672	90.3%	1.1	0.7	13.8	9.1	2.5	1.6	0	0
	September	684	95.0%	2.9	1.0	43.3	16.6	6.0	1.9	0	0
	October	713	95.8%	1.3	0.8	21.0	8.8	3.7	2.0	0	0
	November	617	85.7%	1.6	1.3	28.6	20.9	3.7	3.4	0	0
	December	669	89.9%	1.7	1.1	37.5	17.3	5.5	2.7	0	0
Annual		7992	91.0%	2.0	1.3	105.1	46.5	33.7	15.5	0	0

Observations in ug/m^3

FIGURE 4.1.3.3 - INDIAN POND DRIVE ANNUAL NO_X / NO_2 CONCENTRATIONS



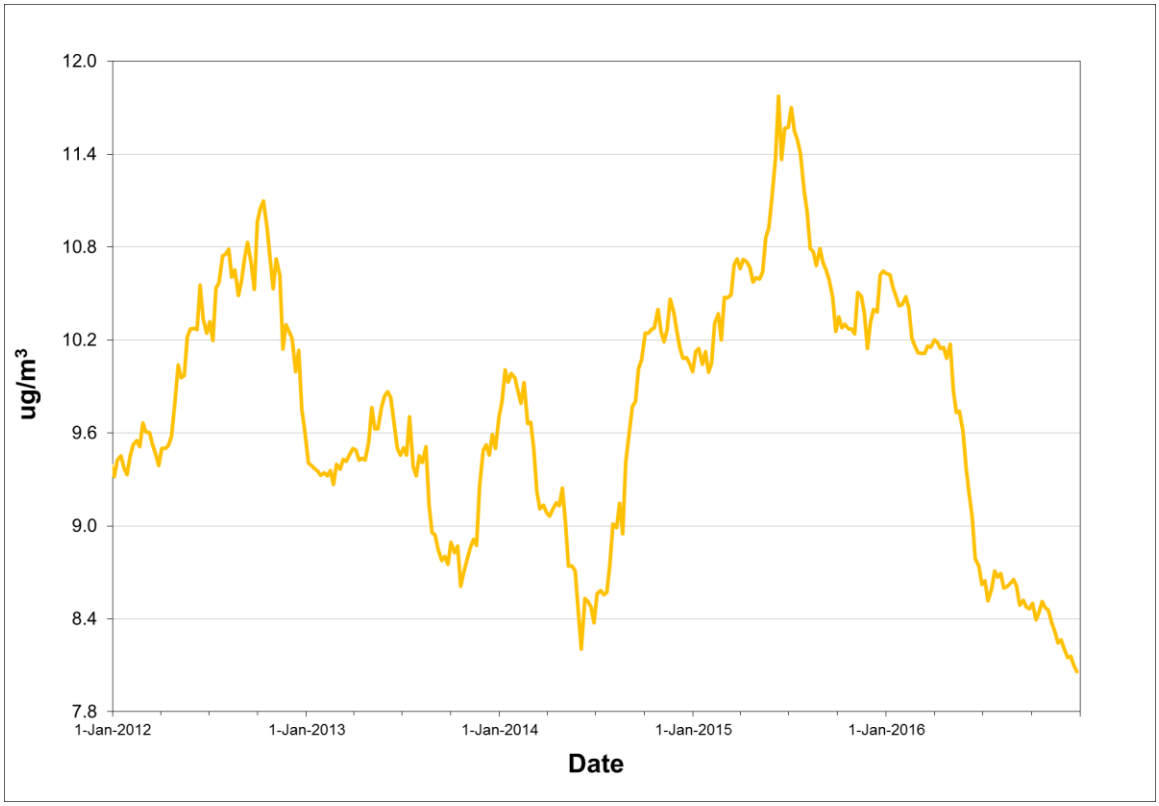
Rolling annual average of hourly concentrations

TABLE 4.1.3.4 - INDIAN POND DRIVE TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2015	January	5	100.0%	10.2	17.6	0
	February	3	75.0%	13.3	21.9	0
	March	6	100.0%	9.3	11.4	0
	April	5	100.0%	10.9	13.6	0
	May	5	100.0%	16.5	23.3	0
	June	5	100.0%	19.0	42.3	0
	July	5	100.0%	8.2	11.9	0
	August	5	100.0%	10.5	16.3	0
	September	5	100.0%	7.2	9.3	0
	October	5	100.0%	12.9	25.6	0
	November	5	100.0%	7.9	20.3	0
	December	5	100.0%	11.2	17.4	0
Annual		59	98.3%	6.6	42.3	0
2016	January	6	100.0%	7.4	10.9	0
	February	4	100.0%	7.8	9.1	0
	March	6	100.0%	9.7	13.5	0
	April	5	100.0%	9.7	12.8	0
	May	5	100.0%	5.6	9.4	0
	June	5	100.0%	7.9	12.8	0
	July	5	100.0%	9.3	19.0	0
	August	5	100.0%	9.5	13.0	0
	September	5	100.0%	5.6	11.6	0
	October	5	100.0%	12.0	16.2	0
	November	5	100.0%	6.5	13.5	0
	December	5	100.0%	7.6	12.7	0
Annual		61	100.0%	8.0	19.0	0

Observations in ug/m^3

FIGURE 4.1.3.4 - INDIAN POND DRIVE ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.1.4 Indian Pond Road

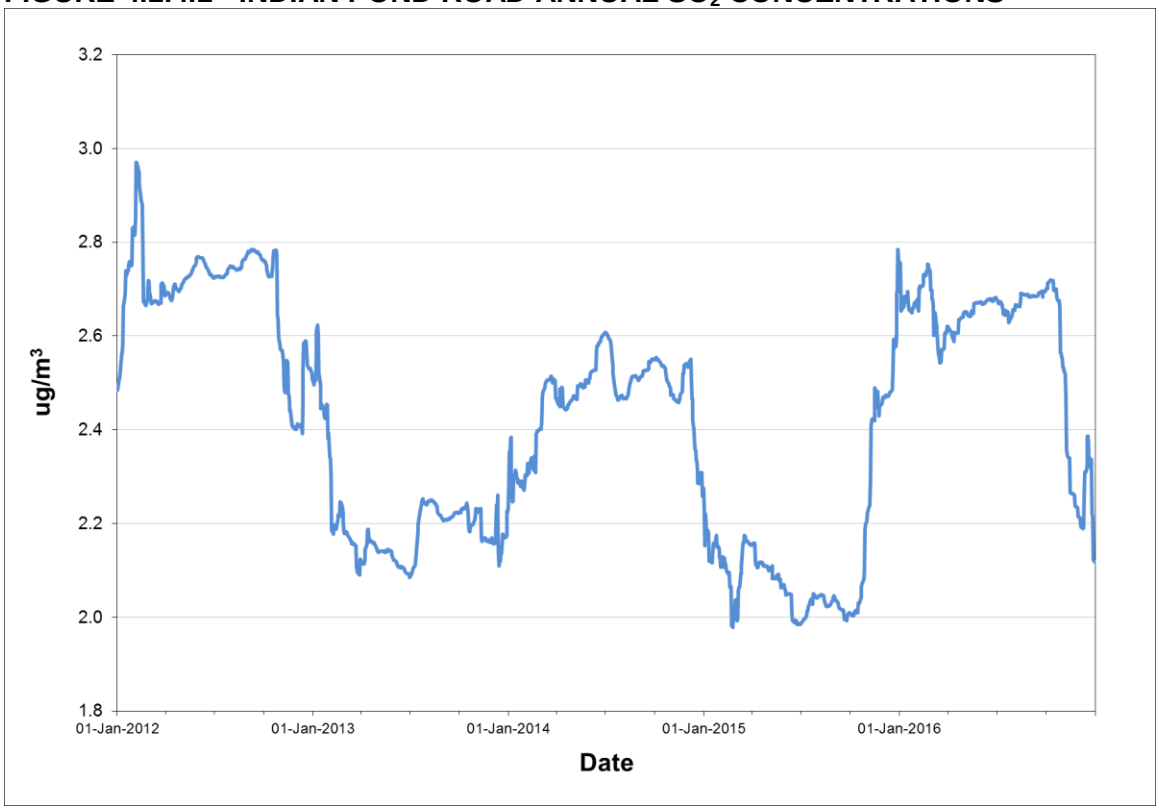
The Indian Pond Road station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ on a continuous basis and TPM on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2016. Tables 4.1.4.1 through 4.1.4.4 provide summary information on the level of air contaminants measured at Indian Pond Road, while Figures 4.1.4.1 through 4.1.4.4 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.4.1 - INDIAN POND ROAD SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	649	87.2%	3.5	119.9	85.3	28.2	0	0	0
	February	644	95.8%	2.6	57.0	31.4	15.7	0	0	0
	March	709	95.3%	3.9	120.8	59.5	24.9	0	0	0
	April	689	95.7%	1.6	27.3	14.2	3.2	0	0	0
	May	705	94.8%	1.3	43.9	15.9	3.5	0	0	0
	June	684	95.0%	1.2	20.3	12.5	2.8	0	0	0
	July	686	92.2%	2.1	65.4	27.5	9.3	0	0	0
	August	713	95.8%	1.4	27.6	12.1	3.3	0	0	0
	September	683	94.9%	1.5	14.8	12.6	6.1	0	0	0
	October	703	94.5%	3.3	106.6	74.4	32.9	0	0	0
	November	688	95.6%	5.0	107.9	83.0	42.1	0	0	0
	December	709	95.3%	5.4	113.8	99.3	35.9	0	0	0
Annual		8262	94.3%	2.8	120.8	99.3	42.1	0	0	0
2016	January	705	94.8%	2.4	52.9	32.4	9.3	0	0	0
	February	664	95.4%	2.9	104.3	80.9	19.7	0	0	0
	March	709	95.3%	3.0	97.5	65.4	15.0	0	0	0
	April	680	94.4%	2.0	117.6	72.8	10.9	0	0	0
	May	712	95.7%	1.6	73.5	40.4	8.6	0	0	0
	June	686	95.3%	1.3	17.1	11.7	2.8	0	0	0
	July	683	91.8%	1.8	56.6	26.2	7.4	0	0	0
	August	711	95.6%	1.8	42.4	27.9	5.9	0	0	0
	September	688	95.6%	1.7	44.8	18.9	4.3	0	0	0
	October	708	95.2%	1.7	70.9	29.8	5.9	0	0	0
	November	683	94.9%	1.0	4.2	2.3	1.3	0	0	0
	December	710	95.4%	4.3	142.6	113.9	25.5	0	0	0
Annual		8339	94.9%	2.1	142.6	113.9	25.5	0	0	0

Observations in ug/m^3

FIGURE 4.1.4.1 - INDIAN POND ROAD ANNUAL SO_2 CONCENTRATIONS



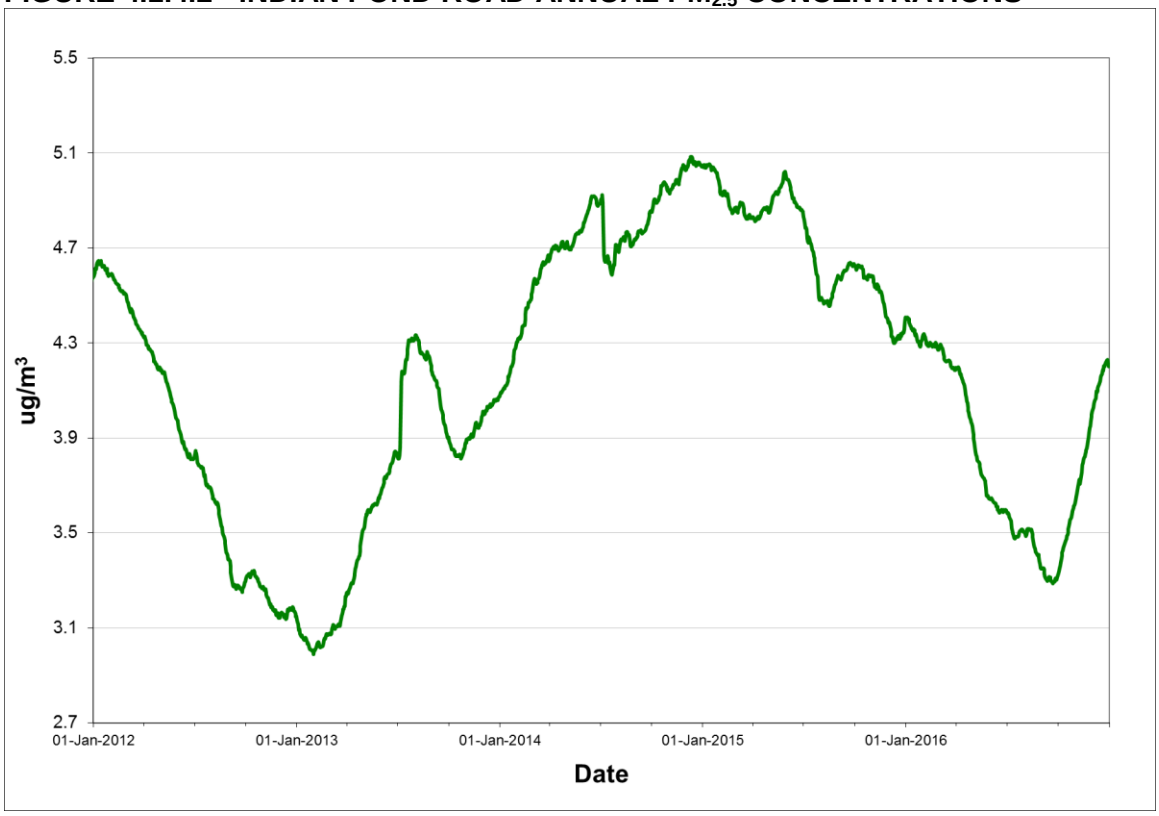
Rolling annual average of hourly concentrations

TABLE 4.1.4.2 - INDIAN POND ROAD $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	28	90.3%	4.1	8.5	0
	February	28	100.0%	5.1	10.0	0
	March	31	100.0%	5.1	9.8	0
	April	30	100.0%	6.0	9.7	0
	May	31	100.0%	6.1	11.4	0
	June	30	100.0%	3.6	6.9	0
	July	31	100.0%	3.9	13.5	0
	August	31	100.0%	4.7	8.2	0
	September	30	100.0%	3.7	7.5	0
	October	25	80.6%	3.3	5.0	0
	November	30	100.0%	2.7	11.7	0
	December	27	87.1%	4.6	14.0	0
Annual		352	96.4%	4.4	14.0	0
2016	January	31	100.0%	3.2	7.8	0
	February	29	100.0%	4.5	7.7	0
	March	31	100.0%	4.1	8.5	0
	April	29	96.7%	2.9	10.0	0
	May	31	100.0%	2.6	6.0	0
	June	30	100.0%	3.0	7.6	0
	July	31	100.0%	2.9	7.6	0
	August	31	100.0%	2.9	8.6	0
	September	24	80.0%	3.4	7.6	0
	October	31	100.0%	6.7	9.0	0
	November	30	100.0%	7.2	13.4	0
	December	31	100.0%	6.8	11.9	0
Annual		359	98.1%	4.2	13.4	0

Observations in ug/m^3

FIGURE 4.1.4.2 - INDIAN POND ROAD ANNUAL $PM_{2.5}$ CONCENTRATIONS



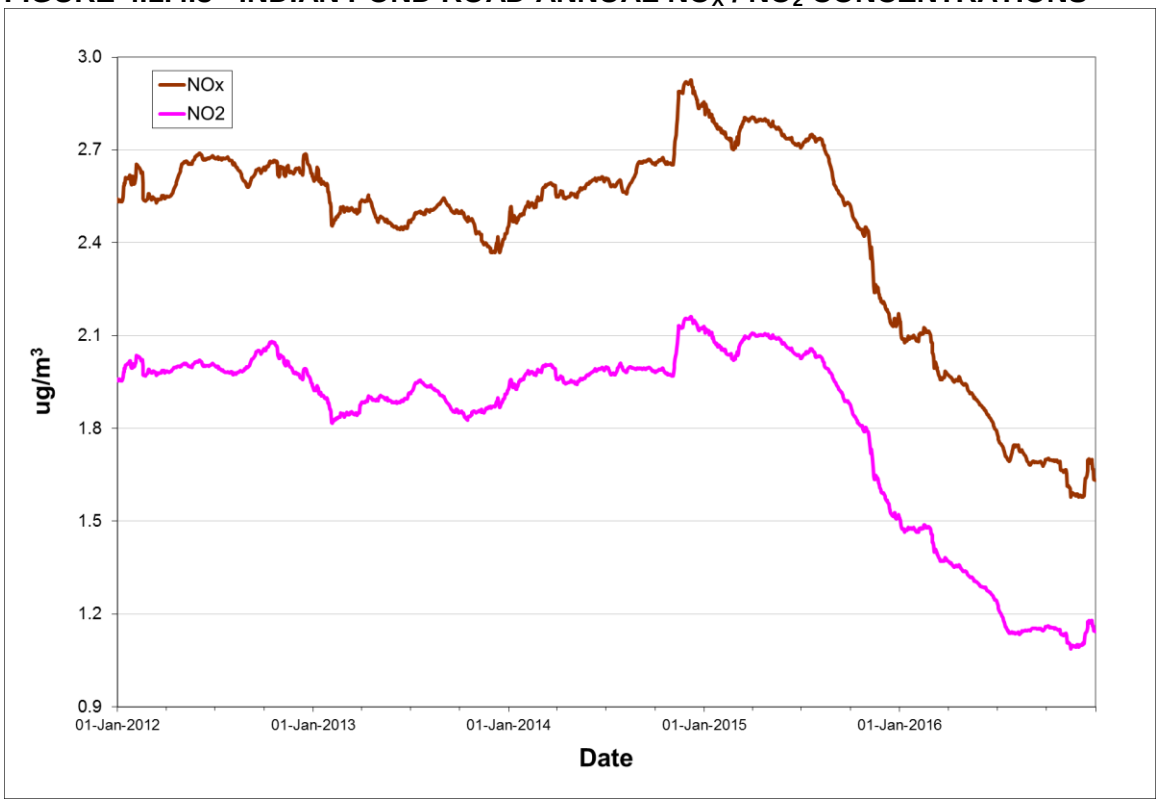
Rolling annual average of daily concentrations

TABLE 4.1.4.3 - INDIAN POND ROAD NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums				Exceedances	
						1-Hour		24-Hour		1-Hour	24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	651	87.5%	2.7	1.9	57.3	24.8	14.5	7.1	0	0
	February	644	95.8%	2.3	1.6	26.4	15.7	8.8	5.8	0	0
	March	711	95.6%	3.1	2.3	60.1	31.2	14.0	9.0	0	0
	April	690	95.8%	1.8	1.4	19.7	13.1	3.6	2.9	0	0
	May	684	91.9%	1.8	1.5	17.6	11.0	5.2	3.7	0	0
	June	656	91.1%	2.0	1.7	19.2	17.7	4.1	3.7	0	0
	July	661	88.8%	2.4	2.0	22.3	14.1	4.4	3.8	0	0
	August	713	95.8%	2.1	0.8	57.0	24.3	4.9	2.1	0	0
	September	684	95.0%	1.2	0.8	24.5	13.0	3.1	2.0	0	0
	October	708	95.2%	1.6	1.1	34.6	18.7	11.1	6.2	0	0
	November	687	95.4%	2.6	1.6	37.8	21.8	16.0	9.0	0	0
	December	711	95.6%	2.3	1.4	32.8	16.4	13.0	6.6	0	0
Annual		8200	93.6%	2.2	1.5	60.1	31.2	16.0	9.0	0	0
2016	January	679	91.3%	1.9	1.4	39.2	37.0	6.2	5.5	0	0
	February	667	95.8%	2.1	1.5	73.8	31.8	10.2	5.2	0	0
	March	711	95.6%	1.9	1.3	47.1	23.6	8.6	5.3	0	0
	April	676	93.9%	1.5	1.0	60.5	30.3	6.5	3.4	0	0
	May	713	95.8%	1.0	0.9	19.5	11.7	2.9	2.0	0	0
	June	688	95.6%	1.0	1.2	5.9	5.9	1.5	1.6	0	0
	July	685	92.1%	1.8	0.7	21.5	7.7	5.4	1.9	0	0
	August	636	85.5%	1.3	0.8	21.6	8.8	3.4	2.3	0	0
	September	688	95.6%	1.4	0.9	22.8	12.5	3.1	2.1	0	0
	October	709	95.3%	1.2	0.9	31.2	12.4	3.3	1.9	0	0
	November	686	95.3%	1.6	1.2	22.3	12.9	4.6	3.8	0	0
	December	710	95.4%	2.8	1.9	73.6	31.3	14.3	7.8	0	0
Annual		8248	93.9%	1.6	1.1	73.8	37.0	14.3	7.8	0	0

Observations in ug/m^3

FIGURE 4.1.4.3 - INDIAN POND ROAD ANNUAL NO_X / NO_2 CONCENTRATIONS



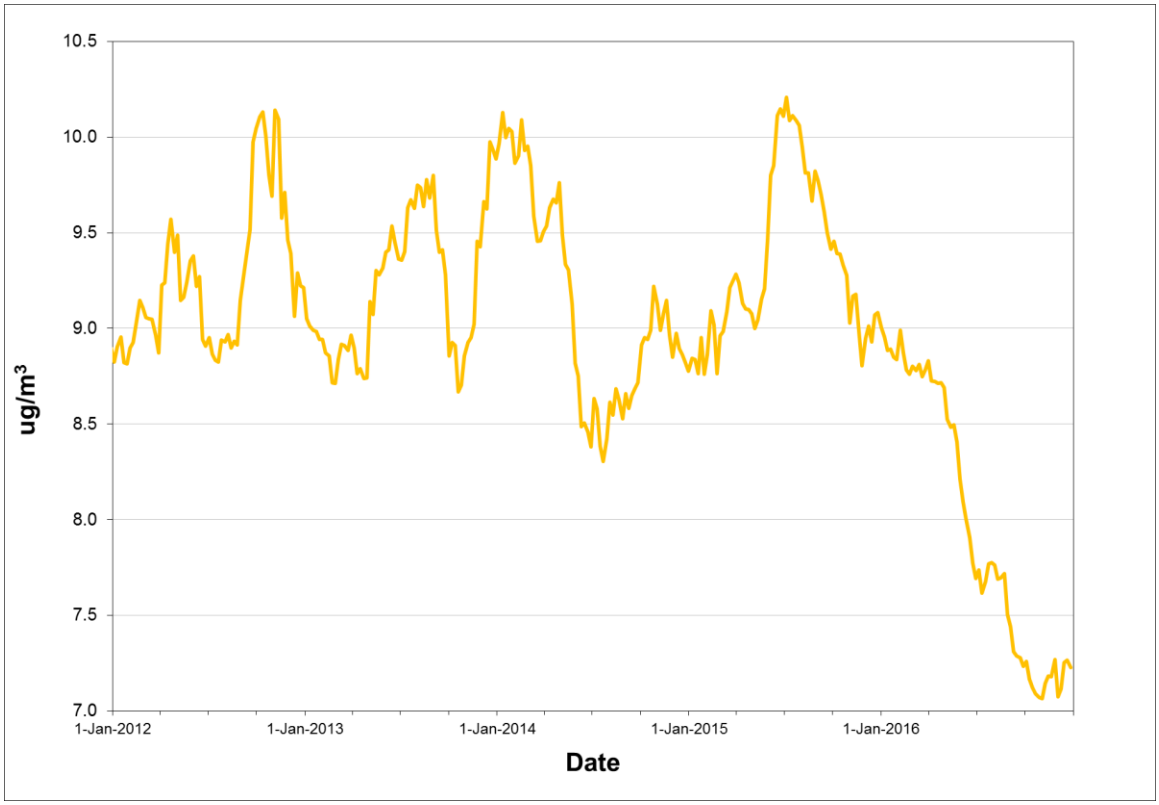
Rolling annual average of hourly concentrations

TABLE 4.1.4.4 - INDIAN POND ROAD TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2015	January	5	100.0%	8.4	14.6	0
	February	3	75.0%	10.7	18.5	0
	March	3	50.0%	11.8	14.3	0
	April	5	100.0%	11.6	13.8	0
	May	5	100.0%	13.2	23.7	0
	June	5	100.0%	12.0	16.1	0
	July	5	100.0%	7.6	9.7	0
	August	5	100.0%	9.2	13.3	0
	September	5	100.0%	6.5	9.7	0
	October	5	100.0%	9.8	15.5	0
	November	5	100.0%	5.4	10.4	0
	December	5	100.0%	8.5	12.5	0
Annual		56	93.3%	9.1	23.7	0
2016	January	6	100.0%	7.3	10.0	0
	February	4	100.0%	8.2	9.4	0
	March	6	100.0%	9.5	12.4	0
	April	5	100.0%	9.7	14.3	0
	May	5	100.0%	6.2	10.1	0
	June	5	100.0%	6.4	7.5	0
	July	5	100.0%	7.9	17.3	0
	August	5	100.0%	6.0	9.9	0
	September	5	100.0%	4.4	8.1	0
	October	0	0.0%			
	November	3	60.0%	8.5	14.0	0
	December	5	100.0%	7.5	23.9	0
Annual		54	88.5%	7.2	23.9	0

Observations in ug/m^3

FIGURE 4.1.4.4 - INDIAN POND ROAD ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.1.5 Lawrence Pond Road

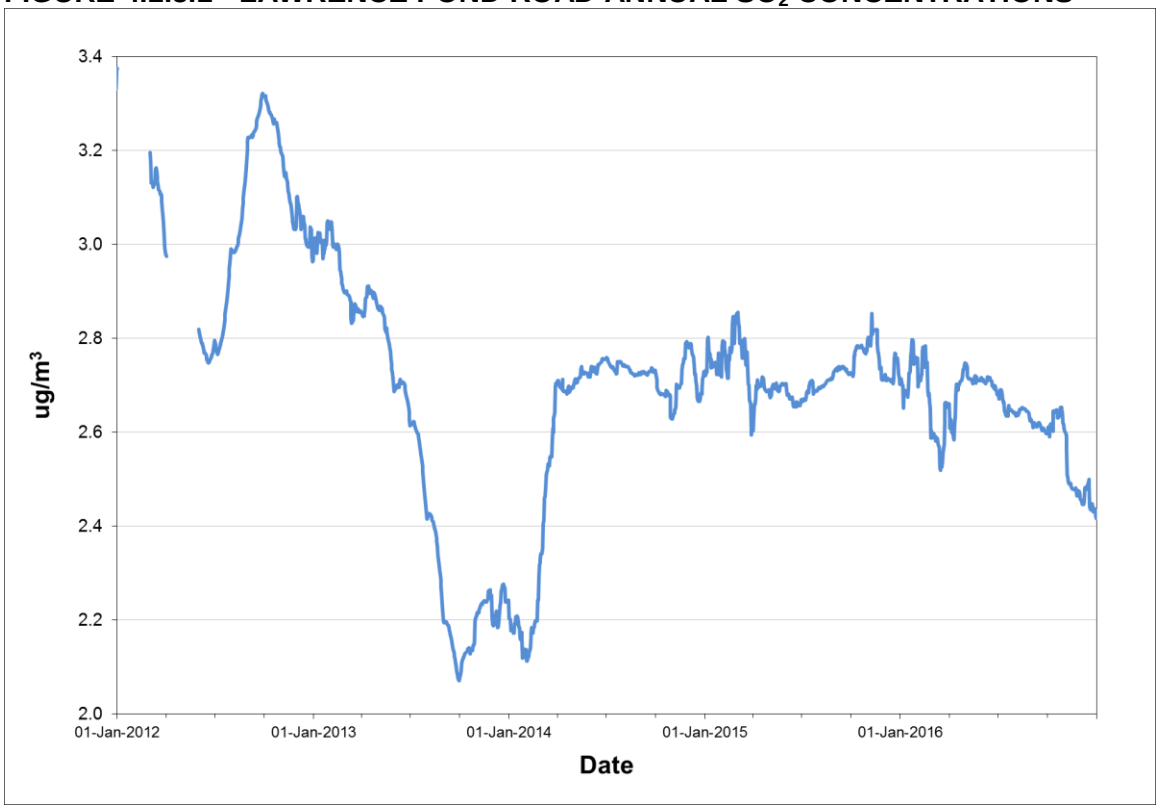
The Lawrence Pond Road station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ on a continuous basis and TPM on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2016. Tables 4.1.5.1 through 4.1.5.4 provide summary information on the level of air contaminants measured at Lawrence Pond Road, while Figures 4.1.5.1 through 4.1.5.4 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.5.1 - LAWRENCE POND ROAD SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	713	95.8%	3.7	69.4	52.3	25.5	0	0	0
	February	644	95.8%	6.2	87.2	59.2	26.0	0	0	0
	March	706	94.9%	3.6	179.8	89.9	16.2	0	0	0
	April	690	95.8%	3.2	86.6	35.9	12.5	0	0	0
	May	711	95.6%	1.7	47.1	33.7	7.5	0	0	0
	June	683	94.9%	1.6	28.3	18.0	5.5	0	0	0
	July	712	95.7%	1.7	30.1	25.4	6.7	0	0	0
	August	713	95.8%	1.6	14.4	13.1	4.5	0	0	0
	September	657	91.3%	1.7	17.1	13.2	4.1	0	0	0
	October	711	95.6%	2.3	71.5	43.9	13.9	0	0	0
	November	690	95.8%	2.8	72.7	54.8	20.2	0	0	0
	December	700	94.1%	2.6	73.9	40.9	16.3	0	0	0
Annual		8330	95.1%	2.7	179.8	89.9	26.0	0	0	0
2016	January	711	95.6%	4.3	71.2	43.2	18.6	0	0	0
	February	667	95.8%	4.2	52.3	40.4	13.8	0	0	0
	March	698	93.8%	4.3	95.0	53.3	19.6	0	0	0
	April	690	95.8%	4.3	147.4	91.3	18.3	0	0	0
	May	688	92.5%	1.3	50.7	23.6	5.7	0	0	0
	June	667	92.6%	1.1	24.8	19.2	4.3	0	0	0
	July	713	95.8%	1.3	27.6	16.2	6.2	0	0	0
	August	713	95.8%	1.4	22.2	12.1	3.8	0	0	0
	September	659	91.5%	1.3	18.3	12.5	4.0	0	0	0
	October	713	95.8%	2.7	94.3	61.0	16.2	0	0	0
	November	689	95.7%	1.0	45.0	18.8	4.9	0	0	0
	December	708	95.2%	2.0	55.0	32.7	10.3	0	0	0
Annual		8316	94.7%	2.4	147.4	91.3	19.6	0	0	0

Observations in ug/m^3

FIGURE 4.1.5.1 - LAWRENCE POND ROAD ANNUAL SO_2 CONCENTRATIONS



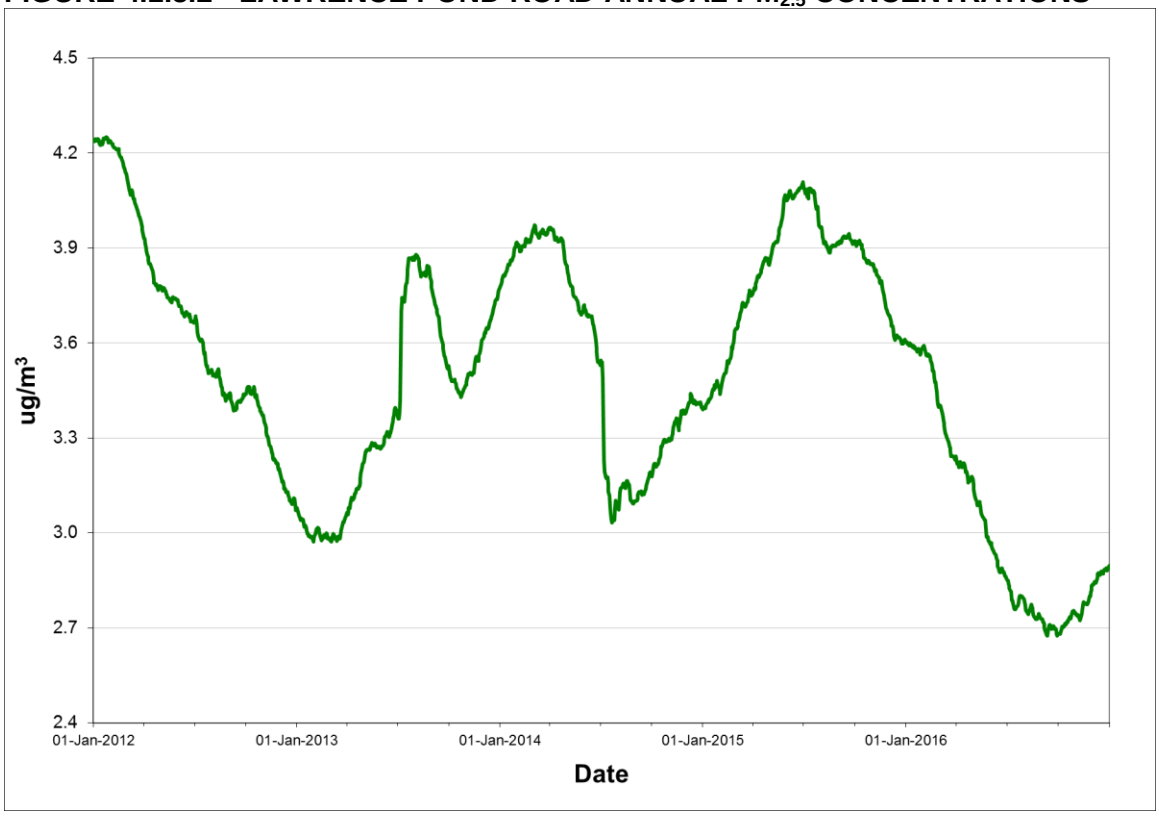
Rolling annual average of hourly concentrations

TABLE 4.1.5.2 - LAWRENCE POND ROAD $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	31	100.0%	4.3	8.1	0
	February	28	100.0%	5.7	11.3	0
	March	31	100.0%	4.8	9.3	0
	April	30	100.0%	4.4	8.1	0
	May	31	100.0%	4.7	11.5	0
	June	30	100.0%	3.0	5.9	0
	July	31	100.0%	3.0	12.0	0
	August	31	100.0%	2.8	7.2	0
	September	30	100.0%	2.7	5.6	0
	October	26	83.9%	2.4	4.2	0
	November	30	100.0%	2.3	5.2	0
	December	31	100.0%	3.0	6.8	0
Annual		360	98.6%	3.6	12.0	0
2016	January	31	100.0%	4.1	7.0	0
	February	29	100.0%	3.4	8.3	0
	March	31	100.0%	3.0	8.5	0
	April	30	100.0%	3.5	9.4	0
	May	30	96.8%	2.2	5.0	0
	June	30	100.0%	1.6	6.4	0
	July	31	100.0%	2.2	7.4	0
	August	31	100.0%	2.1	5.1	0
	September	25	83.3%	2.1	5.0	0
	October	31	100.0%	3.3	5.5	0
	November	30	100.0%	3.3	7.1	0
	December	31	100.0%	3.8	6.0	0
Annual		360	98.4%	2.9	9.4	0

Observations in ug/m^3

FIGURE 4.1.5.2 - LAWRENCE POND ROAD ANNUAL $PM_{2.5}$ CONCENTRATIONS



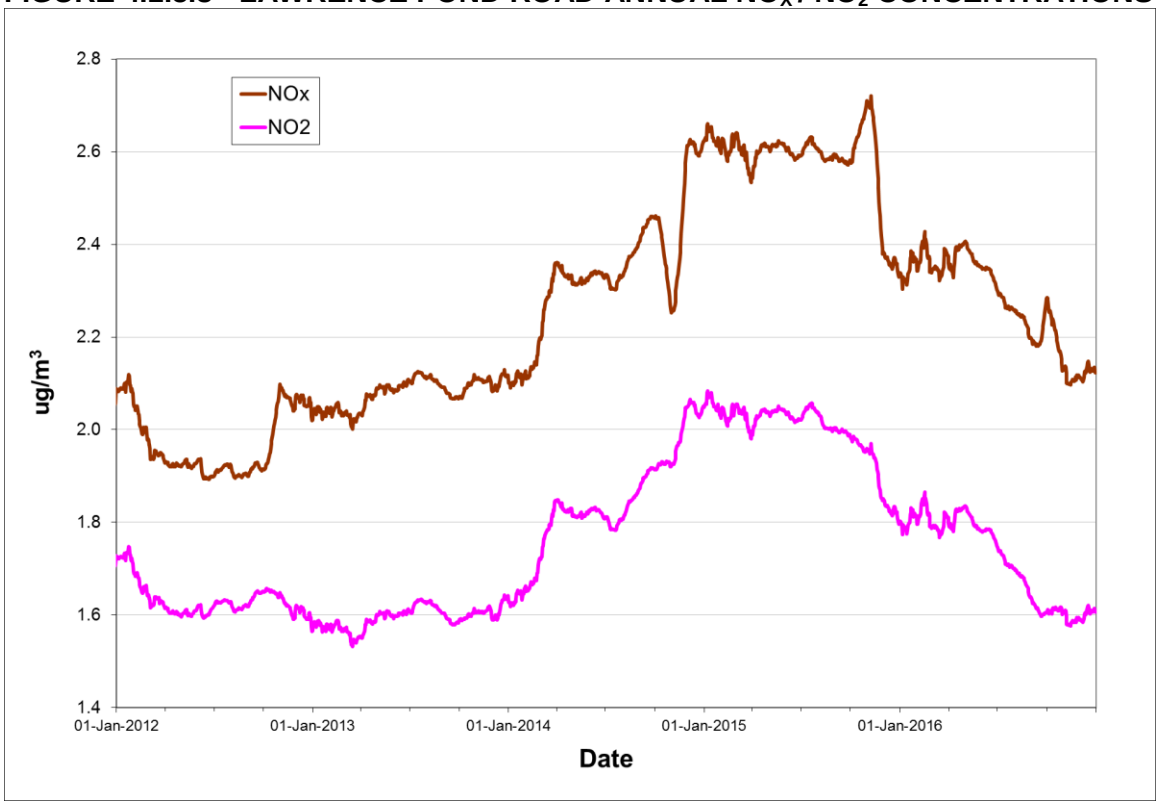
Rolling annual average of daily concentrations

TABLE 4.1.5.3 - LAWRENCE POND ROAD NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2015	January	713	95.8%	2.7	2.4	51.2	37.3	14.0	11.0	0	0
	February	644	95.8%	3.4	2.8	37.7	28.6	12.9	9.6	0	0
	March	706	94.9%	2.5	2.1	80.7	42.7	7.7	6.5	0	0
	April	690	95.8%	2.4	2.0	49.7	30.1	7.3	5.8	0	0
	May	713	95.8%	1.9	1.6	26.6	18.6	4.6	3.7	0	0
	June	684	95.0%	1.8	1.4	12.0	7.7	3.0	2.4	0	0
	July	713	95.8%	1.9	1.7	16.7	10.3	4.1	3.2	0	0
	August	713	95.8%	2.0	1.5	19.9	10.2	5.1	3.3	0	0
	September	660	91.7%	2.0	1.7	17.3	12.6	4.3	3.4	0	0
	October	713	95.8%	3.6	1.5	31.4	21.6	8.5	5.1	0	0
	November	679	94.3%	2.0	1.6	35.5	28.8	10.1	8.0	0	0
	December	705	94.8%	1.8	1.4	44.3	23.6	6.6	5.1	0	0
Annual		8333	95.1%	2.3	1.8	80.7	42.7	14.0	11.0	0	0
2016	January	711	95.6%	3.1	2.5	53.2	37.8	12.8	10.4	0	0
	February	667	95.8%	3.1	2.5	49.7	40.5	11.1	8.9	0	0
	March	708	95.2%	2.8	2.3	47.4	38.3	11.6	9.3	0	0
	April	689	95.7%	2.8	2.2	82.3	48.6	9.5	7.3	0	0
	May	713	95.8%	1.3	1.0	17.5	12.0	3.0	2.3	0	0
	June	685	95.1%	1.2	1.0	15.5	10.9	2.8	2.4	0	0
	July	713	95.8%	1.4	1.1	10.2	7.0	2.8	2.1	0	0
	August	713	95.8%	1.3	0.8	14.4	10.0	2.9	2.0	0	0
	September	647	89.9%	3.1	1.2	15.4	13.2	6.6	2.6	0	0
	October	713	95.8%	1.9	1.5	40.3	23.8	7.6	5.2	0	0
	November	690	95.8%	1.8	1.5	26.9	23.0	4.8	4.2	0	0
	December	708	95.2%	1.9	1.6	40.1	26.7	5.9	4.7	0	0
Annual		8357	95.1%	2.1	1.6	82.3	48.6	12.8	10.4	0	0

Observations in ug/m^3

FIGURE 4.1.5.3 - LAWRENCE POND ROAD ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations

TABLE 4.1.5.4 - LAWRENCE POND ROAD TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2015	January	5	100.0%	7.0	15.5	0
	February	4	100.0%	15.5	35.9	0
	March	6	100.0%	8.7	12.3	0
	April	5	100.0%	8.9	12.5	0
	May	5	100.0%	12.1	17.5	0
	June	5	100.0%	16.4	32.1	0
	July	5	100.0%	7.2	10.0	0
	August	5	100.0%	13.9	27.2	0
	September	5	100.0%	4.3	9.2	0
	October	5	100.0%	9.3	14.4	0
	November	5	100.0%	6.7	24.5	0
	December	5	100.0%	12.4	22.0	0
Annual		60	100.0%	9.4	35.9	0
2016	January	6	100.0%	6.3	9.5	0
	February	4	100.0%	7.0	8.1	0
	March	6	100.0%	8.7	13.0	0
	April	5	100.0%	8.8	14.9	0
	May	5	100.0%	6.3	25.1	0
	June	5	100.0%	9.3	16.0	0
	July	5	100.0%	10.0	49.2	0
	August	5	100.0%	11.6	19.2	0
	September	2	40.0%	4.0	4.4	0
	October	1	20.0%	6.6	6.6	0
	November	4	80.0%	2.8	13.4	0
	December	5	100.0%	4.9	10.4	0
Annual		53	86.9%	7.0	49.2	0

Observations in ug/m^3

FIGURE 4.1.5.4 - LAWRENCE POND ROAD ANNUAL TPM CONCENTRATIONS

Rolling annual average of daily concentrations

4.1.6 NALCOR Property Boundary

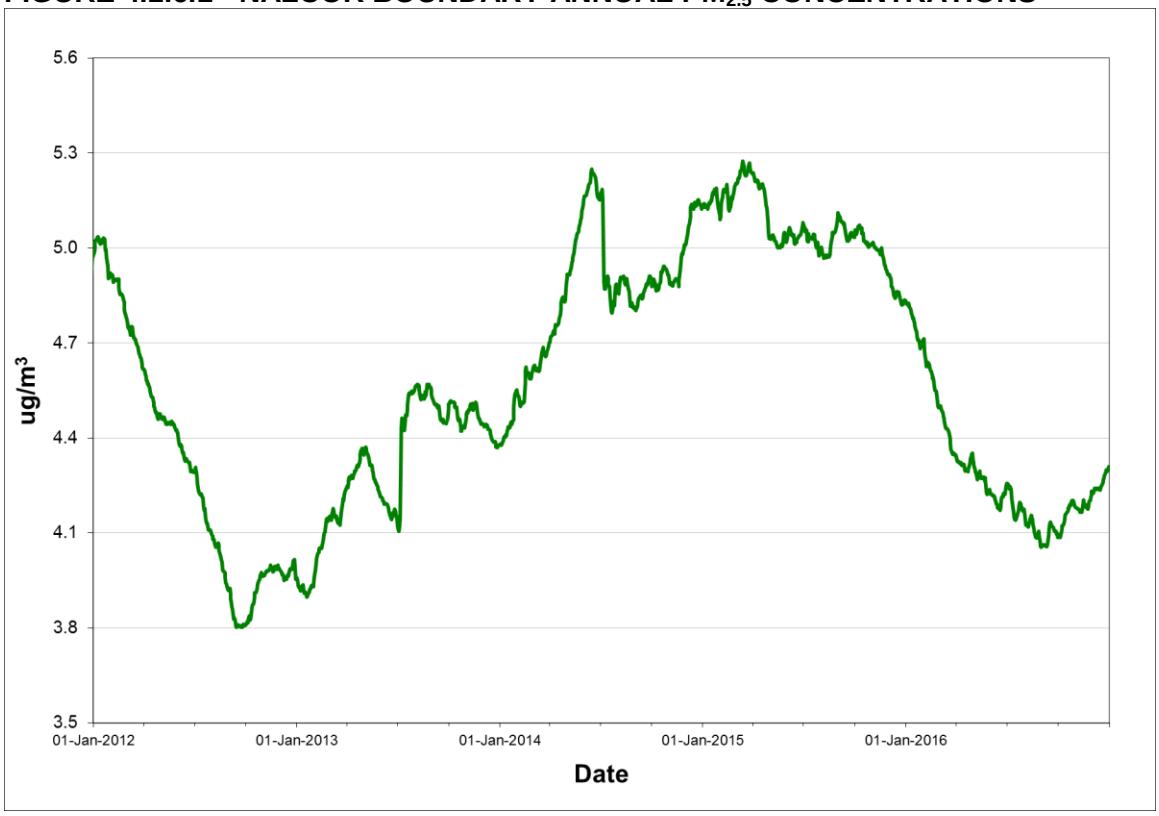
The NALCOR Property Boundary station monitors the ambient levels of $PM_{2.5}$ on a continuous basis and TPM on a 1 day in 6 day cycle consistent with the NAPS defined schedule. The 24-hour TPM ambient air quality standard was exceeded on eight occasions in 2016 and the exceedances may have been attributable to the operation of the new combustion turbine in close proximity to the property boundary monitoring station. The 24-hour $PM_{2.5}$ standard was not exceeded at any time. Tables 4.1.6.1 through 4.1.6.2 provide summary information on the level of air contaminants measured at NALCOR Property Boundary, while Figures 4.1.6.1 through 4.1.6.2 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.6.1 - NALCOR BOUNDARY $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	31	100.0%	5.6	9.0	0
	February	28	100.0%	7.5	20.3	0
	March	31	100.0%	6.0	11.8	0
	April	30	100.0%	4.8	8.8	0
	May	31	100.0%	5.6	12.1	0
	June	30	100.0%	3.5	7.5	0
	July	29	93.5%	5.2	13.6	0
	August	31	100.0%	4.8	10.0	0
	September	30	100.0%	3.3	6.5	0
	October	26	83.9%	4.1	11.0	0
	November	30	100.0%	3.8	8.6	0
	December	26	83.9%	3.7	5.8	0
Annual		353	96.7%	4.8	20.3	0
2016	January	29	93.5%	4.1	7.1	0
	February	29	100.0%	5.0	9.8	0
	March	26	83.9%	4.3	7.8	0
	April	30	100.0%	4.7	8.8	0
	May	29	93.5%	4.3	8.1	0
	June	30	100.0%	3.7	11.9	0
	July	29	93.5%	4.1	10.7	0
	August	31	100.0%	3.5	9.5	0
	September	25	83.3%	3.9	9.6	0
	October	28	90.3%	5.0	8.9	0
	November	30	100.0%	4.3	7.7	0
	December	31	100.0%	4.7	8.4	0
Annual		347	94.8%	4.3	11.9	0

Observations in ug/m^3

FIGURE 4.1.6.1 - NALCOR BOUNDARY ANNUAL $PM_{2.5}$ CONCENTRATIONS



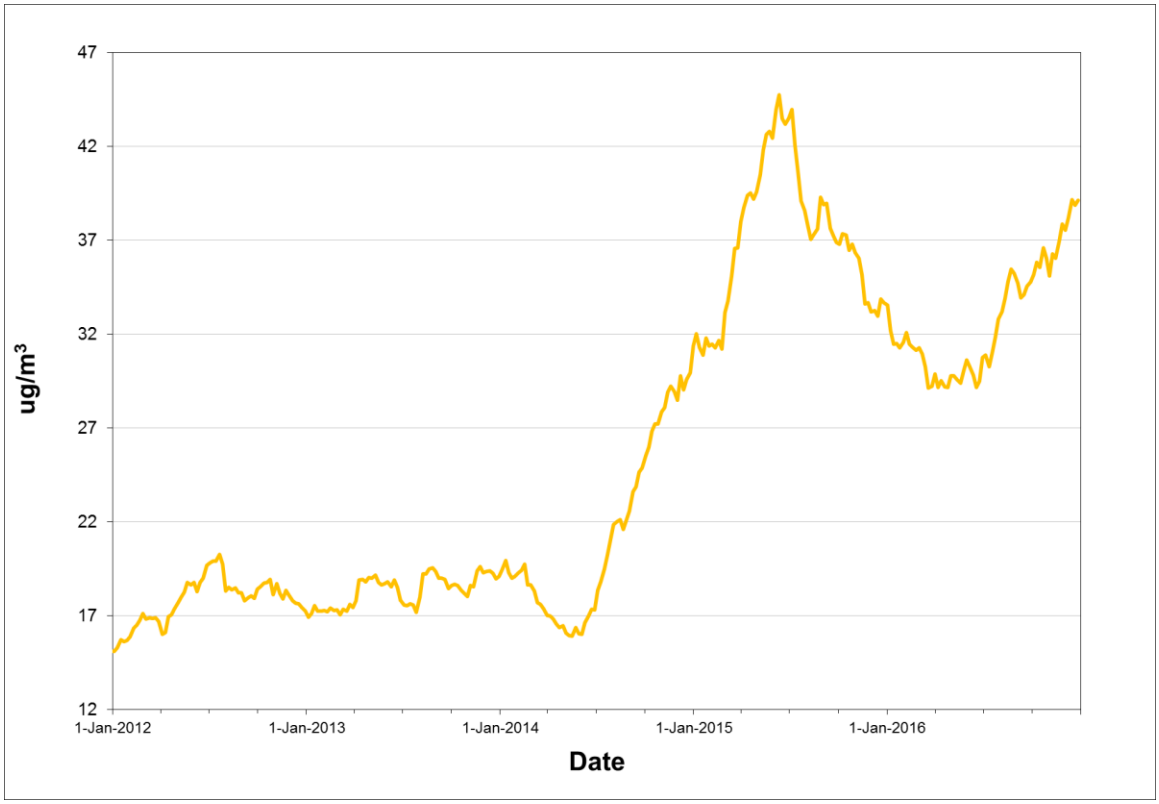
Rolling annual average of daily concentrations

TABLE 4.1.6.2 - NALCOR BOUNDARY TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2015	January	5	100.0%	16.9	44.4	0
	February	3	75.0%	24.3	65.0	0
	March	5	83.3%	64.3	143.0	1
	April	5	100.0%	25.4	35.5	0
	May	5	100.0%	49.6	109.0	0
	June	5	100.0%	49.5	89.0	0
	July	5	100.0%	29.3	111.8	0
	August	5	100.0%	42.8	55.7	0
	September	5	100.0%	37.5	91.1	0
	October	5	100.0%	52.2	88.2	0
	November	5	100.0%	20.1	62.5	0
	December	5	100.0%	22.3	61.2	0
Annual		58	96.7%	33.6	143.0	1
2016	January	6	100.0%	11.9	36.4	0
	February	4	100.0%	22.4	46.9	0
	March	6	100.0%	26.3	72.4	0
	April	4	80.0%	33.2	68.7	0
	May	5	100.0%	62.5	116.7	0
	June	5	100.0%	43.8	273.3	1
	July	5	100.0%	60.6	114.2	0
	August	5	100.0%	118.2	227.6	3
	September	5	100.0%	33.1	125.8	1
	October	5	100.0%	76.6	303.3	2
	November	3	60.0%	35.2	129.3	1
	December	0	0.0%			
Annual		53	86.9%	39.4	303.3	8

Observations in ug/m^3

FIGURE 4.1.6.2 - NALCOR BOUNDARY ANNUAL TPM CONCENTRATIONS

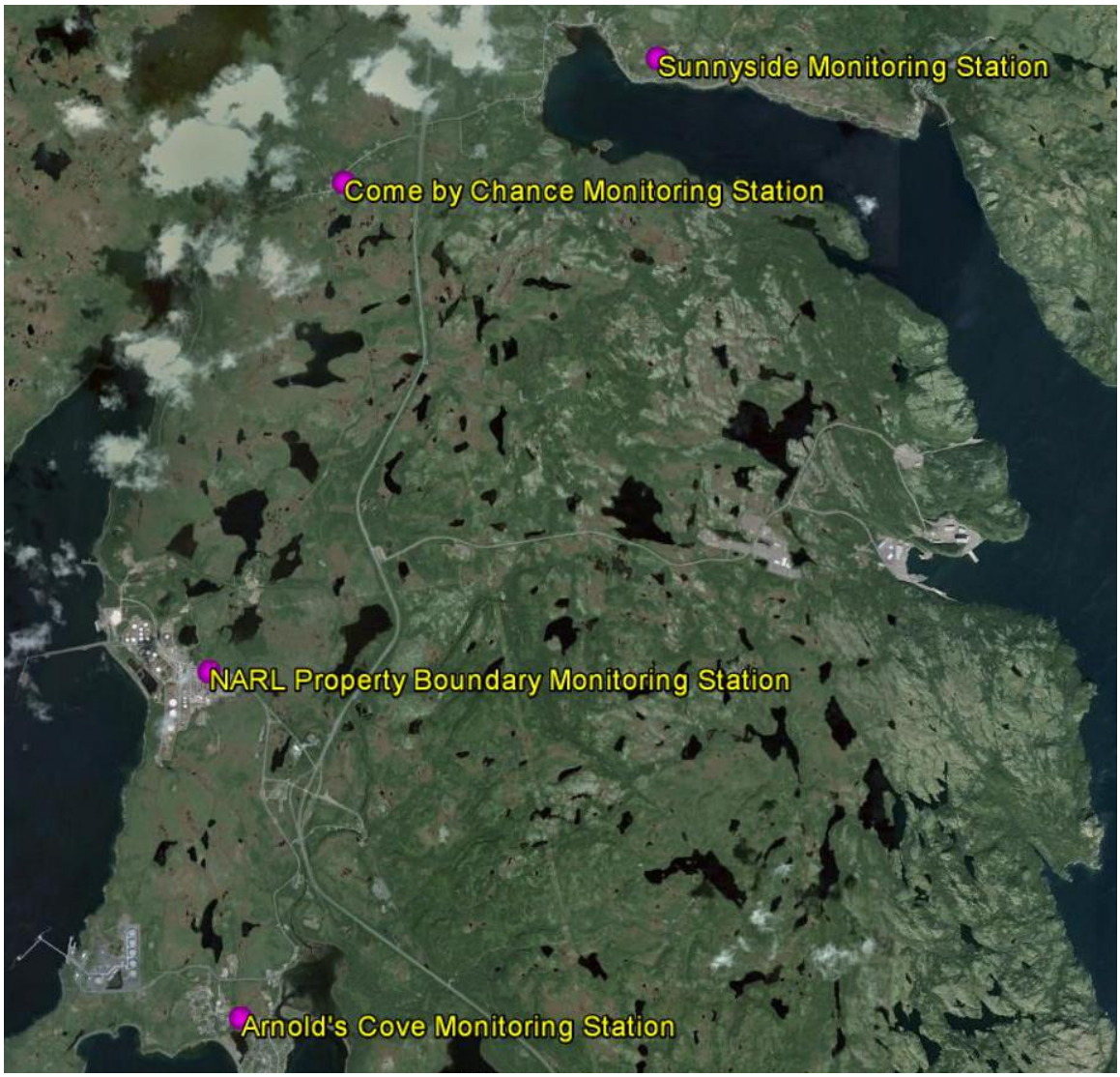


Rolling annual average of daily concentrations

4.2 North Atlantic Refining Limited

North Atlantic Refining Limited (NARL) operated monitoring stations at four locations in 2016. These stations are installed to monitor the air quality near North Atlantic's refinery in Come-by-Chance and are located at Arnold's Cove, Come-by-Chance, Sunnyside and the NARL property boundary. The locations of these monitoring stations are identified in Figure 4.2.1.

FIGURE 4.2.1 - NARL AMBIENT MONITORING STATIONS



4.2.1 Arnold's Cove

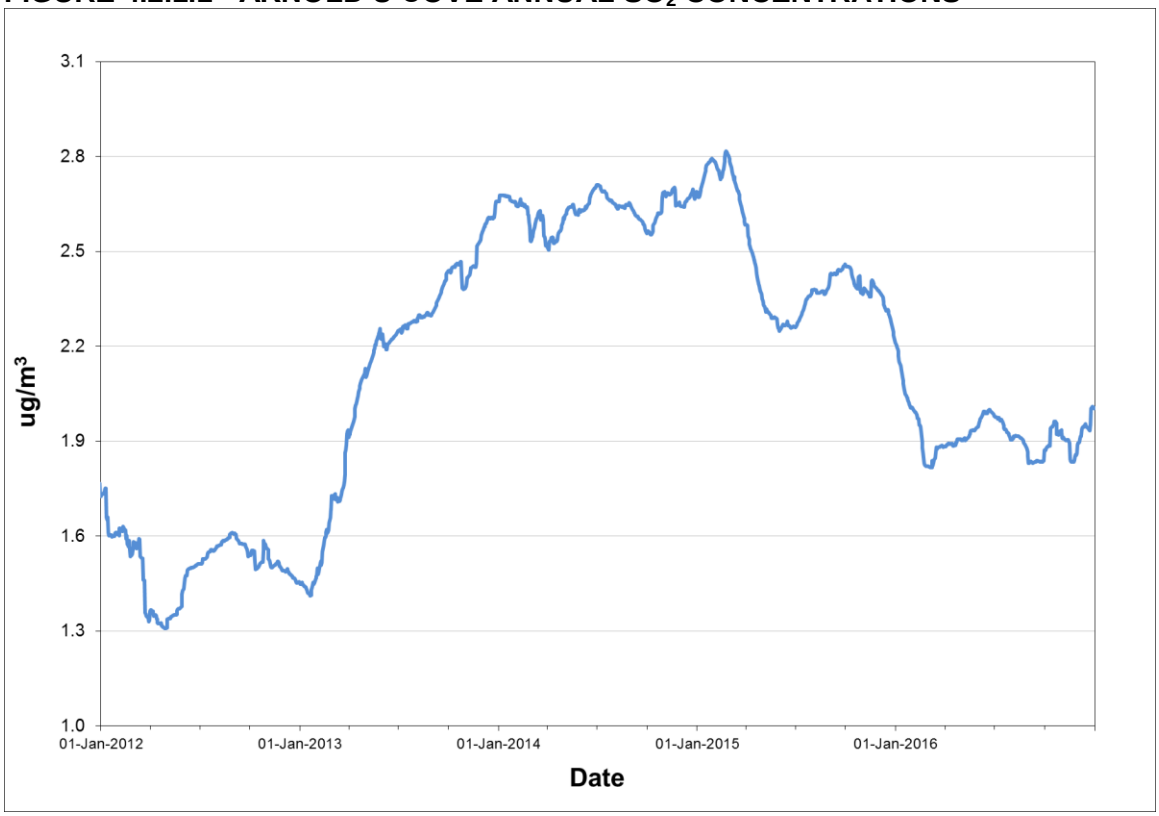
The Arnold's Cove station monitors the ambient levels of SO_2 and $PM_{2.5}$ on a continuous basis and is located near Tricentia Academy School. For both SO_2 and $PM_{2.5}$ the ambient air criteria were not exceeded on any occasion in 2016. Tables 4.2.1.1 through 4.2.1.2 provide summary information on the level of air contaminants measured at Arnold's Cove, while Figures 4.2.1.1 through 4.2.1.2 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.2.1.1 - ARNOLD'S COVE SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	637	85.6%	4.1	17.9	10.1	6.2	0	0	0
	February	620	92.3%	3.8	25.1	18.4	8.4	0	0	0
	March	706	94.9%	1.6	56.6	16.2	7.3	0	0	0
	April	681	94.6%	1.2	22.6	13.1	4.2	0	0	0
	May	710	95.4%	2.2	22.8	16.5	5.6	0	0	0
	June	685	95.1%	2.6	11.5	7.4	4.0	0	0	0
	July	698	93.8%	2.1	13.9	8.9	4.0	0	0	0
	August	711	95.6%	1.4	22.6	7.8	3.7	0	0	0
	September	688	95.6%	2.0	42.1	31.2	8.5	0	0	0
	October	711	95.6%	1.9	38.7	31.4	13.8	0	0	0
	November	687	95.4%	2.4	75.0	56.3	19.5	0	0	0
	December	702	94.4%	1.6	24.4	14.6	4.2	0	0	0
Annual		8236	94.0%	2.2	75.0	56.3	19.5	0	0	0
2016	January	709	95.3%	1.5	37.5	14.7	3.4	0	0	0
	February	664	95.4%	1.3	11.3	5.6	2.7	0	0	0
	March	708	95.2%	2.3	83.3	51.4	10.7	0	0	0
	April	686	95.3%	1.5	24.7	15.7	4.3	0	0	0
	May	685	92.1%	2.7	10.7	6.7	3.5	0	0	0
	June	664	92.2%	3.0	11.9	8.7	5.5	0	0	0
	July	706	94.9%	1.2	14.8	13.9	4.2	0	0	0
	August	710	95.4%	1.0	6.2	3.7	2.2	0	0	0
	September	685	95.1%	2.0	44.5	40.2	12.7	0	0	0
	October	718	96.5%	2.7	53.0	39.9	21.5	0	0	0
	November	708	98.3%	1.8	50.5	38.1	11.1	0	0	0
	December	737	99.1%	3.0	165.8	125.3	19.7	0	0	0
Annual		8380	95.4%	2.0	165.8	125.3	21.5	0	0	0

Observations in ug/m^3

FIGURE 4.2.1.1 - ARNOLD'S COVE ANNUAL SO_2 CONCENTRATIONS



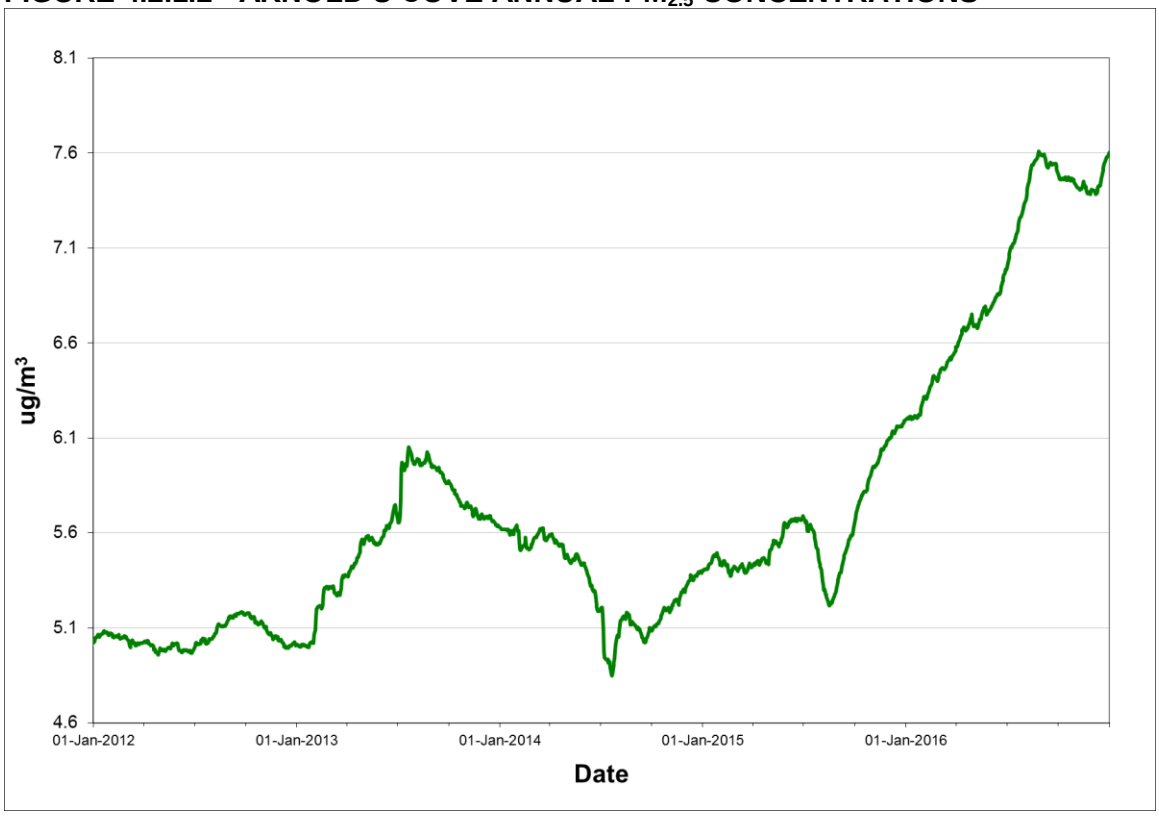
Rolling annual average of hourly concentrations

TABLE 4.2.1.2 - ARNOLD'S COVE $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	28	90.3%	6.2	9.9	0
	February	23	82.1%	6.7	12.3	0
	March	29	93.5%	6.4	12.3	0
	April	30	100.0%	6.5	22.7	0
	May	31	100.0%	6.2	15.2	0
	June	30	100.0%	3.5	6.5	0
	July	26	83.9%	4.3	10.7	0
	August	31	100.0%	5.7	10.8	0
	September	30	100.0%	7.5	12.4	0
	October	31	100.0%	7.5	10.8	0
	November	30	100.0%	7.0	13.1	0
	December	31	100.0%	6.7	12.0	0
Annual		350	95.9%	6.2	22.7	0
2016	January	31	100.0%	7.3	12.0	0
	February	29	100.0%	8.4	15.0	0
	March	31	100.0%	8.2	13.3	0
	April	30	100.0%	8.1	15.7	0
	May	31	100.0%	6.7	11.5	0
	June	30	100.0%	6.1	14.5	0
	July	31	100.0%	8.6	15.8	0
	August	31	100.0%	9.0	13.8	0
	September	15	50.0%	5.5	7.9	0
	October	29	93.5%	6.7	9.9	0
	November	30	100.0%	6.7	12.2	0
	December	31	100.0%	8.8	13.3	0
Annual		349	95.4%	7.6	15.8	0

Observations in ug/m^3

FIGURE 4.2.1.2 - ARNOLD'S COVE ANNUAL $PM_{2.5}$ CONCENTRATIONS



Rolling annual average of daily concentrations

4.2.2 Come by Chance

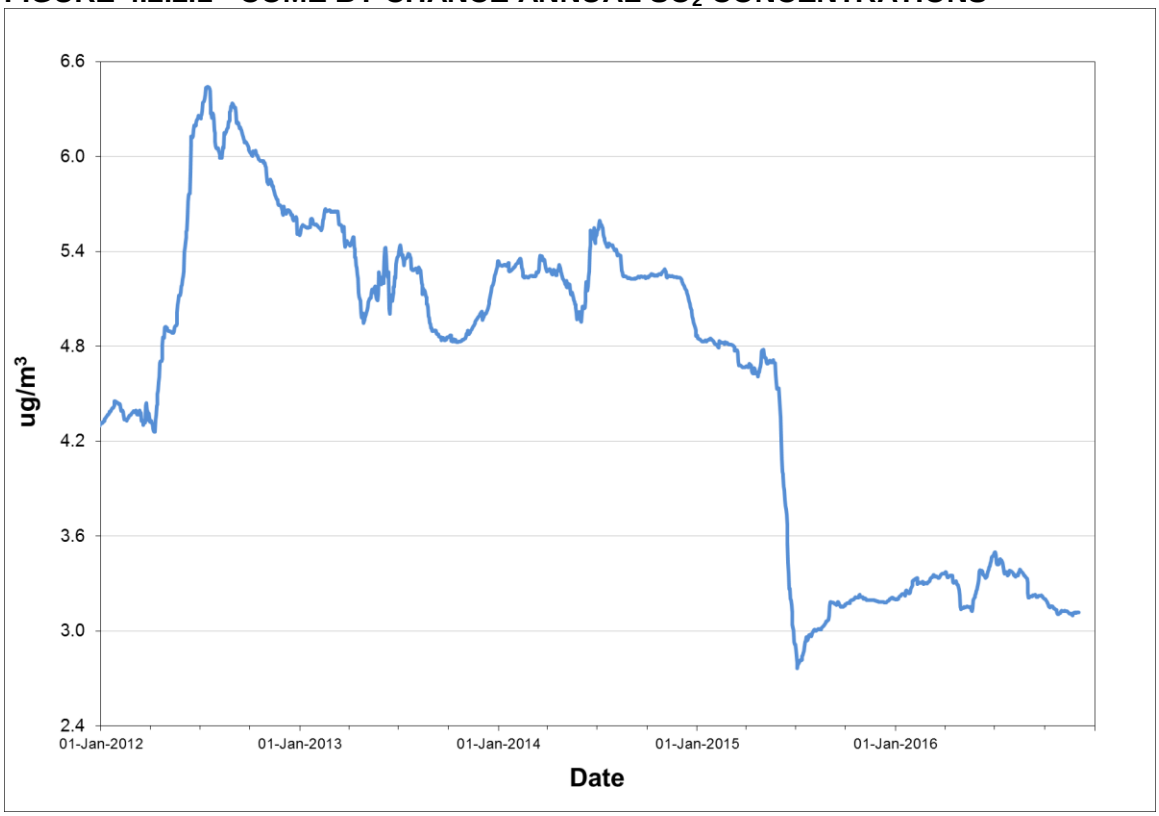
The Come by Chance station, located near the town office, monitors the ambient levels of SO_2 and $PM_{2.5}$ on a continuous basis. For both SO_2 and $PM_{2.5}$ the ambient air criteria were not exceeded on any occasion in 2016. Tables 4.2.2.1 through 4.2.2.2 provide summary information on the level of air contaminants measured at Come by Chance, while Figures 4.2.2.1 through 4.2.2.2 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.2.2.1 - COME BY CHANCE SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	737	99.1%	2.6	9.7	5.7	4.0	0	0	0
	February	665	99.0%	3.0	10.0	6.7	5.0	0	0	0
	March	736	98.9%	3.4	90.9	57.1	18.3	0	0	0
	April	712	98.9%	2.7	14.2	7.7	5.3	0	0	0
	May	738	99.2%	5.2	77.5	56.5	26.8	0	0	0
	June	712	98.9%	2.5	38.1	28.7	9.6	0	0	0
	July	718	96.5%	2.3	50.0	31.9	9.6	0	0	0
	August	726	97.6%	4.8	84.9	37.3	18.4	0	0	0
	September	712	98.9%	3.7	109.3	64.1	24.3	0	0	0
	October	605	81.3%	1.8	28.0	19.3	10.4	0	0	0
	November	677	94.0%	3.1	33.0	19.0	8.2	0	0	0
	December	737	99.1%	2.7	6.7	4.6	3.8	0	0	0
Annual		8475	96.7%	3.2	109.3	64.1	26.8	0	0	0
2016	January	724	97.3%	2.8	9.1	5.4	4.6	0	0	0
	February	665	95.5%	4.1	61.8	51.0	14.6	0	0	0
	March	737	99.1%	3.7	52.3	27.7	12.1	0	0	0
	April	690	95.8%	3.4	34.0	17.2	8.6	0	0	0
	May	710	95.4%	2.6	43.4	27.1	7.5	0	0	0
	June	685	95.1%	4.7	61.0	40.2	20.7	0	0	0
	July	723	97.2%	4.2	66.6	52.1	21.4	0	0	0
	August	738	99.2%	3.4	34.5	18.1	7.1	0	0	0
	September	716	99.4%	2.0	35.9	19.9	8.9	0	0	0
	October	735	98.8%	1.7	20.0	9.6	2.7	0	0	0
	November	710	98.6%	2.3	35.6	21.3	6.5	0	0	0
	December	735	98.8%	2.6	32.9	23.3	6.9	0	0	0
Annual		8568	97.5%	3.1	66.6	52.1	21.4	0	0	0

Observations in ug/m^3

FIGURE 4.2.2.1 - COME BY CHANCE ANNUAL SO_2 CONCENTRATIONS



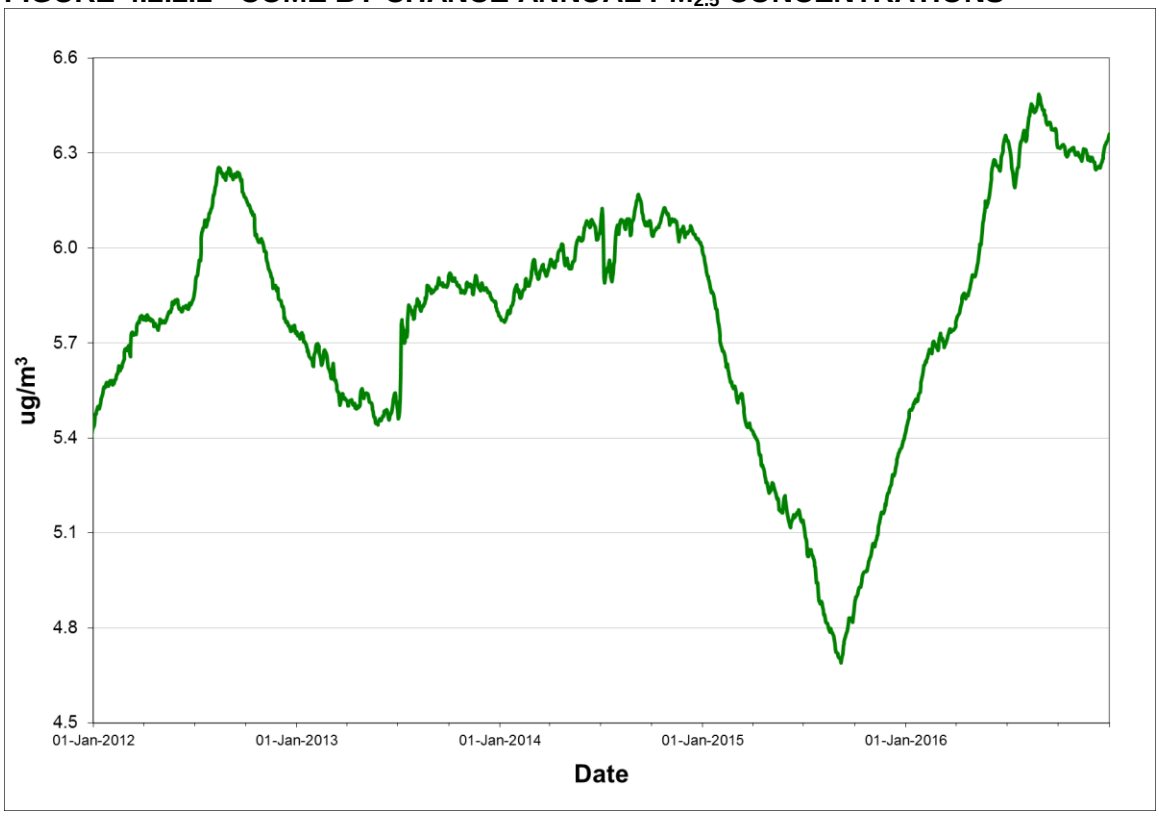
Rolling annual average of hourly concentrations

TABLE 4.2.2.2 - COME BY CHANCE $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	31	100.0%	3.0	6.2	0
	February	24	85.7%	3.9	9.0	0
	March	31	100.0%	4.1	11.8	0
	April	30	100.0%	3.8	8.0	0
	May	31	100.0%	5.0	11.5	0
	June	26	86.7%	4.9	9.8	0
	July	31	100.0%	8.4	15.8	0
	August	31	100.0%	6.2	13.6	0
	September	30	100.0%	7.1	13.8	0
	October	31	100.0%	6.5	11.1	0
	November	30	100.0%	6.3	11.4	0
	December	31	100.0%	5.4	11.1	0
Annual		357	97.8%	5.4	15.8	0
2016	January	31	100.0%	5.1	9.0	0
	February	29	100.0%	5.3	10.4	0
	March	31	100.0%	5.0	10.8	0
	April	30	100.0%	5.6	8.3	0
	May	31	100.0%	8.0	13.2	0
	June	30	100.0%	7.2	16.0	0
	July	31	100.0%	8.8	16.2	0
	August	26	83.9%	7.3	11.5	0
	September	24	80.0%	5.3	7.2	0
	October	31	100.0%	6.3	8.3	0
	November	30	100.0%	6.1	9.8	0
	December	31	100.0%	6.2	9.3	0
Annual		355	97.0%	6.4	16.2	0

Observations in ug/m^3

FIGURE 4.2.2.2 - COME BY CHANCE ANNUAL $PM_{2.5}$ CONCENTRATIONS



Rolling annual average of daily concentrations

4.2.3 Sunnyside

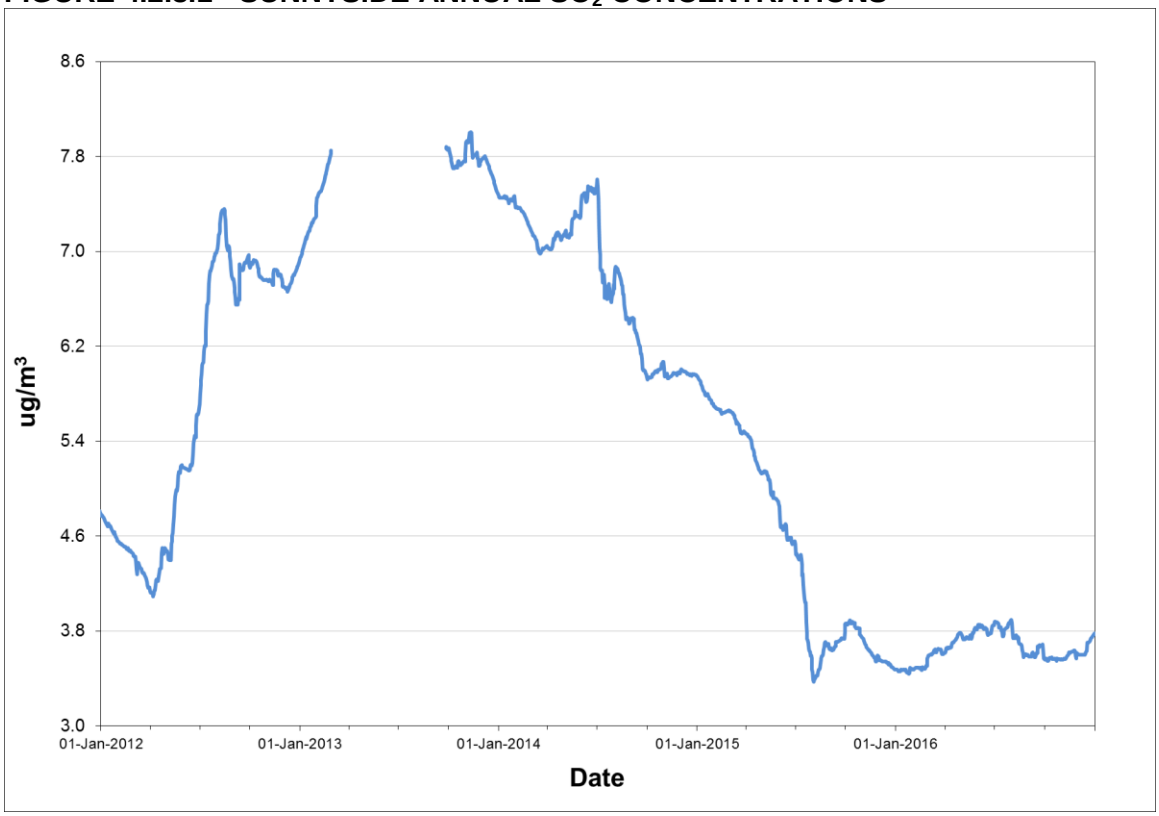
The Sunnyside station monitors the ambient levels of SO_2 and $PM_{2.5}$ on a continuous basis. For SO_2, the ambient air criteria were not exceeded on any occasion in 2016, however the 24-hour $PM_{2.5}$ standard was exceeded on four occasions, specifically twice in March and twice in April. Given there was no corresponding increase in ambient SO_2 levels during the time of the $PM_{2.5}$ exceedances, and given the time of year of the exceedances, it is assumed that local influences were the primary contributor to the elevated $PM_{2.5}$ levels. Tables 4.2.3.1 through 4.2.3.3 provide summary information on the level of air contaminants measured at Sunnyside, while Figures 4.2.3.1 through 4.2.3.3 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.2.3.1 - SUNNYSIDE SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	707	95.0%	2.7	36.5	21.4	10.9	0	0	0
	February	626	93.2%	3.4	38.8	20.1	8.1	0	0	0
	March	677	91.0%	2.7	82.6	51.9	10.9	0	0	0
	April	658	91.4%	1.9	36.8	18.0	5.4	0	0	0
	May	626	84.1%	3.7	87.2	54.4	12.2	0	0	0
	June	511	71.0%	5.0	77.7	35.5	14.9	0	0	0
	July	537	72.2%	4.8	79.8	47.1	17.9	0	0	0
	August	711	95.6%	7.0	97.1	79.3	27.4	0	0	0
	September	644	89.4%	4.2	136.5	71.9	25.0	0	0	0
	October	710	95.4%	2.8	62.4	25.9	6.9	0	0	0
	November	668	92.8%	2.1	104.3	59.9	10.0	0	0	0
	December	679	91.3%	1.9	38.1	28.6	5.0	0	0	0
Annual		7754	88.5%	3.5	136.5	79.3	27.4	0	0	0
2016	January	710	95.4%	2.8	65.1	45.7	18.3	0	0	0
	February	665	95.5%	4.4	110.0	69.7	24.2	0	0	0
	March	708	95.2%	3.3	63.2	36.6	7.6	0	0	0
	April	663	92.1%	3.8	48.8	40.3	14.1	0	0	0
	May	709	95.3%	4.5	55.9	33.8	14.8	0	0	0
	June	687	95.4%	4.7	59.9	41.5	15.9	0	0	0
	July	706	94.9%	5.1	40.4	29.5	14.7	0	0	0
	August	712	95.7%	3.6	38.5	27.4	8.8	0	0	0
	September	673	93.5%	3.8	62.4	48.3	24.5	0	0	0
	October	703	94.5%	2.7	48.9	27.3	10.4	0	0	0
	November	667	92.6%	2.7	80.3	47.5	19.1	0	0	0
	December	444	59.7%	4.0	201.6	164.2	29.4	0	0	0
Annual		8047	91.6%	3.8	201.6	164.2	29.4	0	0	0

Observations in ug/m^3

FIGURE 4.2.3.1 - SUNNYSIDE ANNUAL SO_2 CONCENTRATIONS



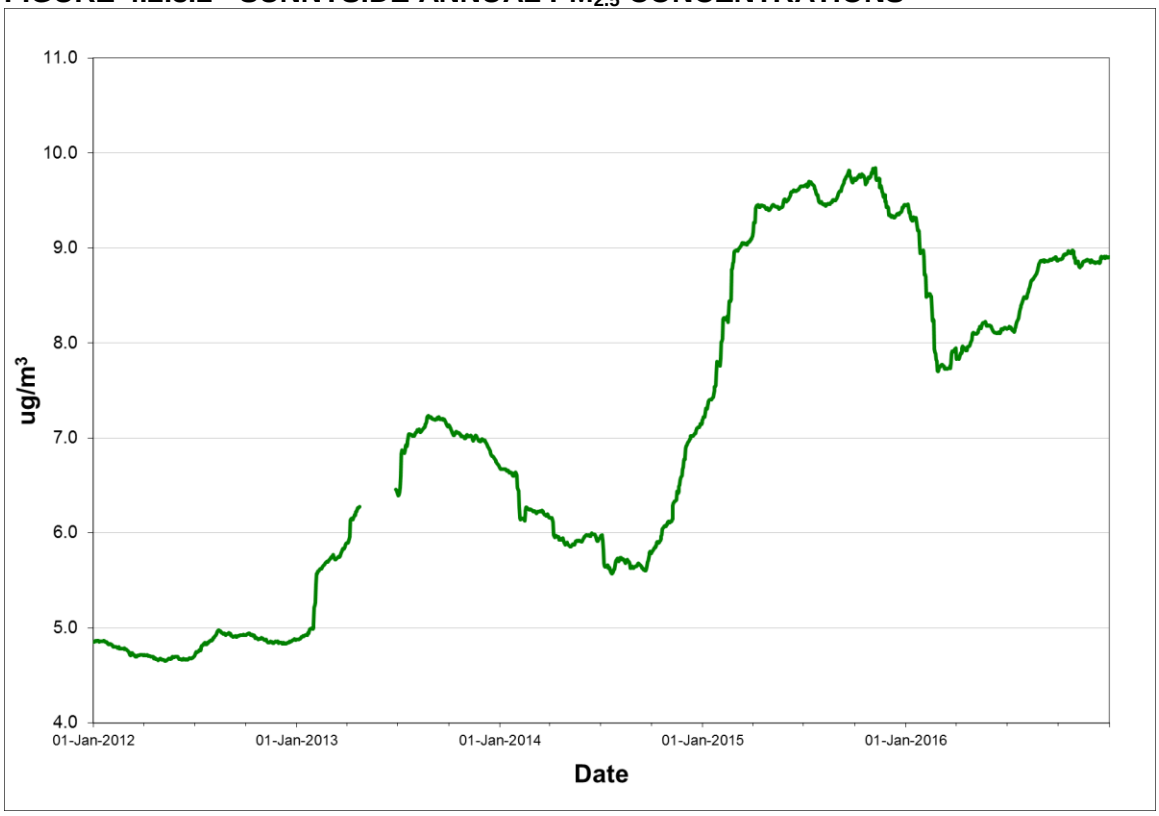
Rolling annual average of hourly concentrations

TABLE 4.2.3.2 - SUNNYSIDE $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	31	100.0%	12.7	53.0	2
	February	28	100.0%	22.0	102.0	8
	March	29	93.5%	7.3	19.0	0
	April	30	100.0%	9.3	53.7	2
	May	31	100.0%	6.4	14.7	0
	June	14	46.7%	6.1	8.3	0
	July	23	74.2%	7.3	15.1	0
	August	31	100.0%	7.8	12.6	0
	September	27	90.0%	8.7	16.8	0
	October	29	93.5%	8.3	19.5	0
	November	28	93.3%	8.0	25.8	1
	December	25	80.6%	7.6	16.0	0
Annual		326	89.3%	9.4	102.0	13
2016	January	24	77.4%	7.2	19.7	0
	February	29	100.0%	7.7	19.9	0
	March	31	100.0%	10.0	39.4	2
	April	30	100.0%	10.9	53.1	2
	May	31	100.0%	7.0	14.3	0
	June	30	100.0%	6.9	15.3	0
	July	31	100.0%	11.2	17.7	0
	August	31	100.0%	12.1	17.2	0
	September	24	80.0%	8.6	10.9	0
	October	30	96.8%	8.6	17.8	0
	November	30	100.0%	7.8	15.6	0
	December	30	96.8%	8.2	23.5	0
Annual		351	95.9%	8.9	53.1	4

Observations in ug/m^3

FIGURE 4.2.3.2 - SUNNYSIDE ANNUAL $PM_{2.5}$ CONCENTRATIONS



Rolling annual average of daily concentrations

4.2.4 NARL Property Boundary

The NARL Property Boundary station monitors the ambient levels of SO_2 and $PM_{2.5}$. Given its proximity to the process area of NARL, this station routinely records ambient levels of SO_2 and $PM_{2.5}$ in excess of the standards. In 2016, the 1-hour SO_2 standard was exceeded eight times, the 3-hour standard exceeded thirteen times and the 24-hour standard exceeded ten times.

For $PM_{2.5}$, the monitor recorded eighty-seven exceedances of the 24-hour ambient standard in 2016. The annual $PM_{2.5}$ standard was also exceeded in 2016.

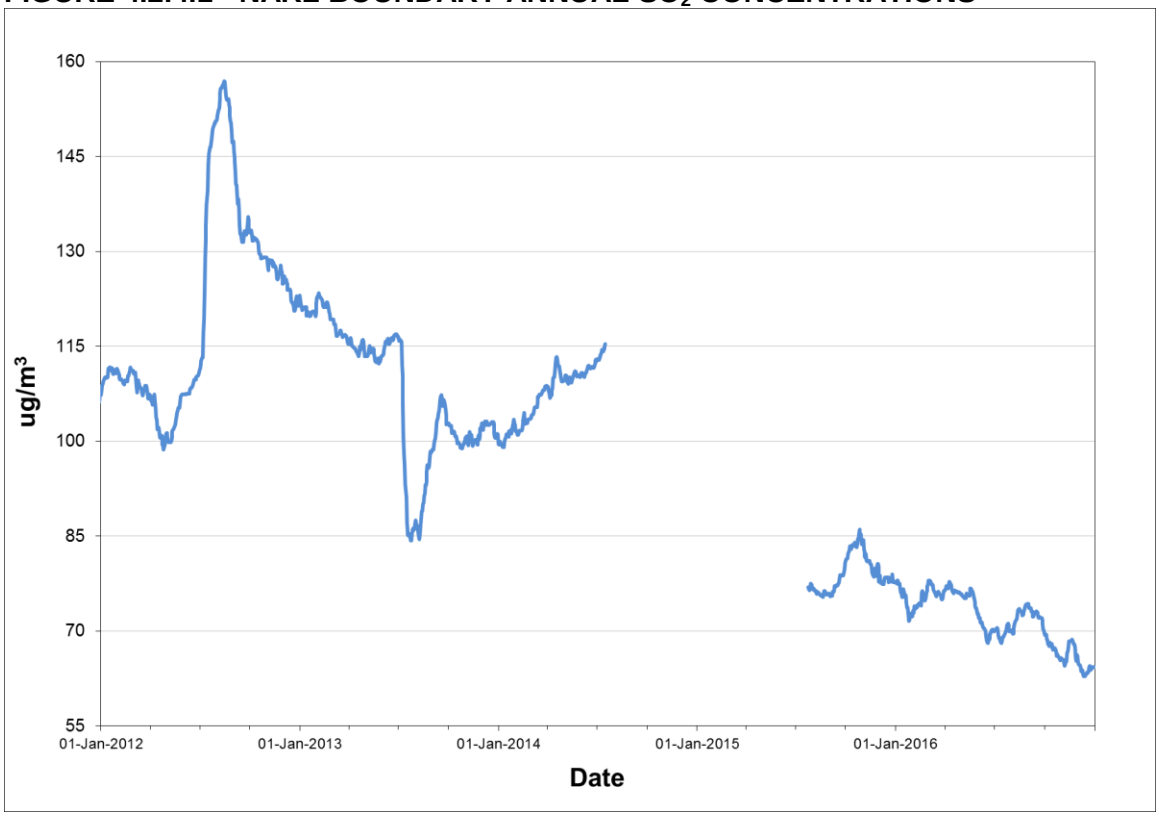
Tables 4.2.4.1 through 4.2.4.2 provide summary information on the level of air contaminants measured at NARL Property Boundary, while Figures 4.2.4.1 and 4.2.4.2 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.2.4.1 - NARL BOUNDARY SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	666	89.5%	114.4	1121.2	900.9	474.4	3	16	3
	February	429	63.8%	77.9	972.8	740.5	359.1	1	2	3
	March	314	42.2%	67.0	874.2	776.3	358.4	0	2	1
	April	533	74.0%	63.3	588.0	449.3	293.2	0	0	0
	May	708	95.2%	77.9	576.1	494.0	202.5	0	0	0
	June	690	95.8%	84.3	672.7	543.2	386.3	0	0	1
	July	691	92.9%	50.7	686.4	480.7	361.5	0	0	2
	August	710	95.4%	66.3	725.3	438.7	270.5	0	0	0
	September	687	95.4%	81.7	851.0	695.2	330.3	0	1	1
	October	585	78.6%	120.2	1034.0	709.5	313.5	2	6	1
	November	651	90.4%	67.6	734.5	704.1	582.8	0	5	1
	December	706	94.9%	61.3	775.2	672.0	398.4	0	2	2
Annual		7370	84.1%	77.8	1121.2	900.9	582.8	6	34	15
2016	January	711	95.6%	55.0	641.6	553.4	424.3	0	0	2
	February	666	95.7%	131.8	1166.9	1096.4	740.2	8	6	2
	March	710	95.4%	67.0	789.7	648.5	360.5	0	1	1
	April	684	95.0%	54.7	626.3	497.6	226.2	0	0	0
	May	703	94.5%	40.5	517.0	483.8	266.0	0	0	0
	June	674	93.6%	52.0	699.9	689.5	234.4	0	2	0
	July	600	80.6%	48.4	560.2	503.1	231.7	0	0	0
	August	711	95.6%	114.8	623.1	506.0	332.7	0	0	2
	September	661	91.8%	30.1	382.5	365.8	144.8	0	0	0
	October	706	94.9%	62.1	650.0	604.2	259.7	0	1	0
	November	595	82.6%	74.0	775.5	744.5	427.4	0	3	3
	December	686	92.2%	38.6	614.9	437.3	263.9	0	0	0
Annual		8107	92.3%	64.2	1166.9	1096.4	740.2	8	13	10

Observations in ug/m^3

FIGURE 4.2.4.1 - NARL BOUNDARY ANNUAL SO_2 CONCENTRATIONS



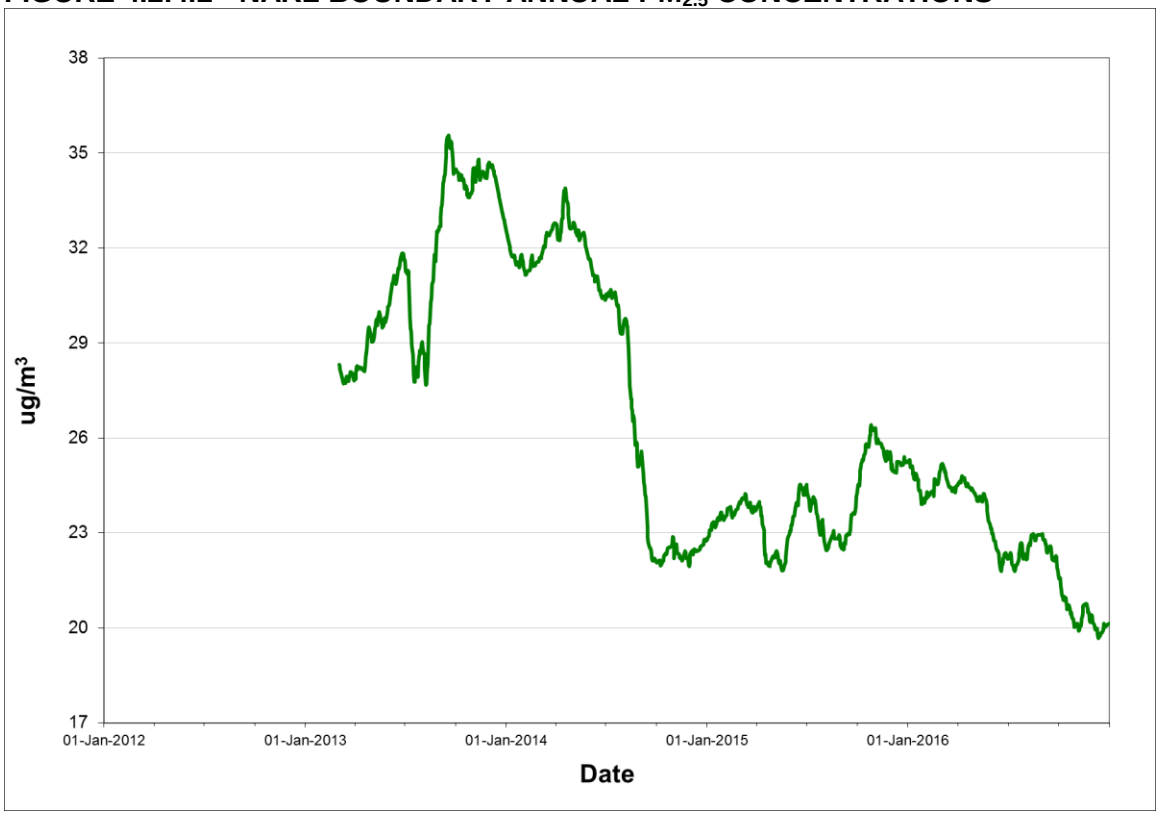
Rolling annual average of hourly concentrations

TABLE 4.2.4.2 - NARL BOUNDARY $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	29	93.5%	27.3	82.5	13
	February	15	53.6%	20.5	93.9	3
	March	10	32.3%	21.7	70.6	2
	April	22	73.3%	20.8	75.4	7
	May	25	80.6%	28.3	70.6	13
	June	25	83.3%	31.2	115.1	13
	July	31	100.0%	23.6	131.6	9
	August	15	48.4%	21.4	48.2	7
	September	29	96.7%	28.5	110.0	12
	October	31	100.0%	37.3	97.2	20
	November	30	100.0%	16.9	80.0	8
	December	31	100.0%	19.3	78.5	7
Annual		293	80.3%	25.3	131.6	114
2016	January	31	100.0%	14.6	66.2	5
	February	29	100.0%	33.1	159.8	17
	March	31	100.0%	19.4	81.5	9
	April	30	100.0%	18.4	48.7	10
	May	31	100.0%	14.7	55.8	4
	June	30	100.0%	19.1	67.2	7
	July	22	71.0%	26.0	68.3	8
	August	18	58.1%	34.0	90.1	8
	September	20	66.7%	11.6	32.5	1
	October	26	83.9%	19.3	65.3	6
	November	30	100.0%	19.7	79.8	5
	December	31	100.0%	16.5	59.1	7
Annual		329	89.9%	20.1	159.8	87

Observations in ug/m^3

FIGURE 4.2.4.2 - NARL BOUNDARY ANNUAL $PM_{2.5}$ CONCENTRATIONS



Rolling annual average of hourly concentrations

4.3 Iron Ore Company of Canada

The Iron Ore Company of Canada (IOCC) operated three monitoring stations in Labrador City in 2016, and they are located on Indian Point, Hudson Drive and on Smokey Mountain Road. The locations of these monitoring stations are identified in Figure 4.3.1.

In October 2015 IOCC undertook a revamp of their monitoring network. First, the Smokey Mountain Road station was moved closer to the ski resort and is designated as Smokey Mountain II. Second, the Town Depot / Tamarack Drive station was moved to the new Hudson Drive location. Finally the TPM monitors at both the Bartlett Drive and old Hudson Drive location were decommissioned. 2016 marks the first year for reporting data from the new Smokey Mountain II and Hudson Drive stations.

In late 2013, IOCC, in conjunction with the then Environment Canada and the Department of Environment and Conservation, became the first industrial operation in the province to operate an ozone monitor. The installation of the ozone monitor designated the station as a NAPS equivalent for the purpose of generating an hourly AQHI reading. The ozone monitor was originally located at the Smokey Mountain station prior to the revamp, but was moved to the new Hudson Drive station. The Hudson Drive station now reports the AQHI readings for Labrador City.

FIGURE 4.3.1 - IOCC AMBIENT MONITORING STATIONS

4.3.1 Indian Point

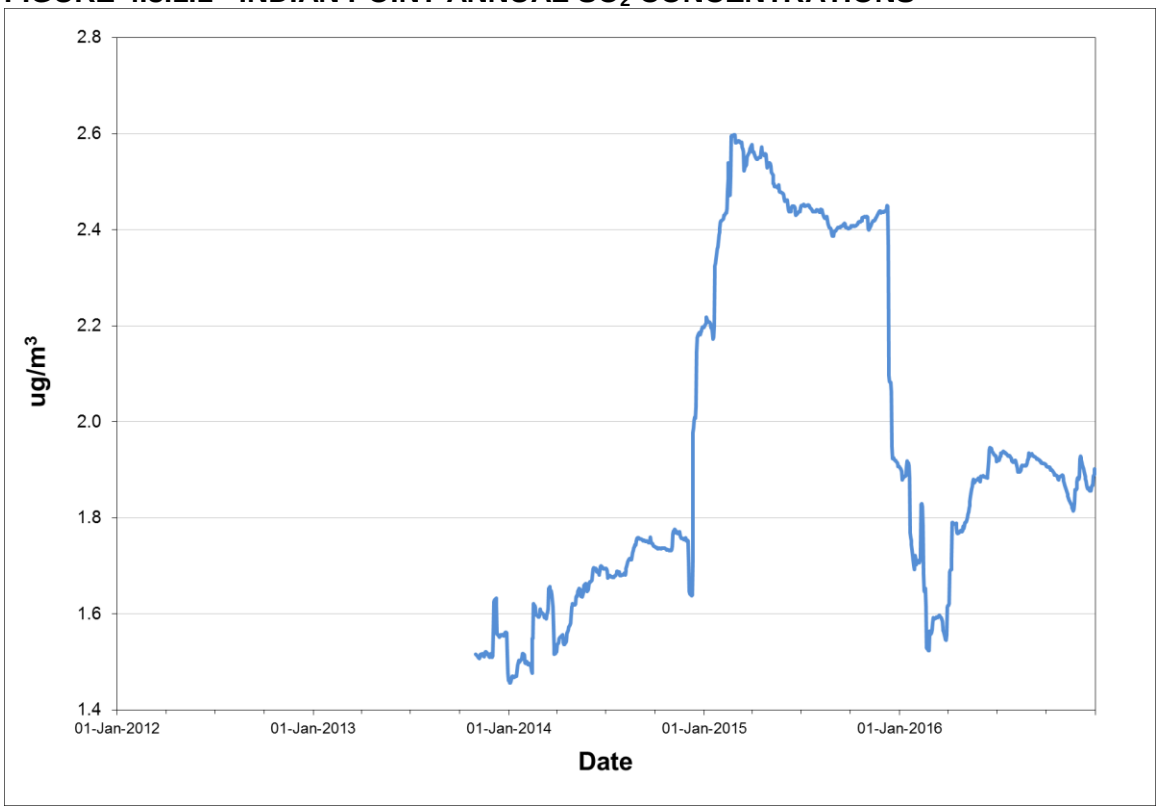
The Indian Point station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ and TPM on a continuous basis. For all parameters except TPM the ambient air criteria were not exceeded on any occasion in 2016; the TPM standard was exceeded on two occasions. Tables 4.3.1.1 through 4.3.1.4 provide summary information on the level of air contaminants measured at Indian Point while Figures 4.3.1.1 through 4.3.1.4 present the graphical representation of the annual trends.

TABLE 4.3.1.1 - INDIAN POINT SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	733	98.5%	4.3	178.6	127.9	41.9	0	0	0
	February	660	98.2%	5.7	132.4	98.9	36.0	0	0	0
	March	741	99.6%	2.0	51.5	34.2	7.5	0	0	0
	April	575	79.9%	1.8	25.3	17.8	5.5	0	0	0
	May	742	99.7%	1.0	16.2	9.8	3.8	0	0	0
	June	683	94.9%	1.2	27.8	18.0	4.0	0	0	0
	July	744	100.0%	0.9	15.5	8.1	2.6	0	0	0
	August	744	100.0%	1.1	25.7	16.9	4.0	0	0	0
	September	720	100.0%	0.8	9.4	3.6	1.3	0	0	0
	October	740	99.5%	0.9	18.9	8.3	2.6	0	0	0
	November	506	70.3%	1.5	15.7	11.2	3.0	0	0	0
	December	742	99.7%	1.8	14.2	9.7	3.7	0	0	0
Annual		8330	95.1%	1.9	178.6	127.9	41.9	0	0	0
2016	January	744	100.0%	2.0	50.7	40.6	13.9	0	0	0
	February	693	99.6%	3.7	109.3	89.1	37.6	0	0	0
	March	731	98.3%	2.7	90.8	67.7	23.1	0	0	0
	April	686	95.3%	3.8	136.1	67.8	25.6	0	0	0
	May	695	93.4%	2.2	15.1	10.9	4.4	0	0	0
	June	707	98.2%	1.6	27.2	18.4	8.7	0	0	0
	July	739	99.3%	0.9	20.1	10.0	2.8	0	0	0
	August	743	99.9%	1.3	21.6	16.2	5.6	0	0	0
	September	719	99.9%	0.5	7.2	4.6	1.4	0	0	0
	October	743	99.9%	0.6	9.5	6.3	2.5	0	0	0
	November	717	99.6%	1.6	39.1	30.6	11.3	0	0	0
	December	744	100.0%	2.1	57.4	31.3	16.1	0	0	0
Annual		8661	98.6%	1.9	136.1	89.1	37.6	0	0	0

Observations in ug/m^3

FIGURE 4.3.1.1 - INDIAN POINT ANNUAL SO_2 CONCENTRATIONS



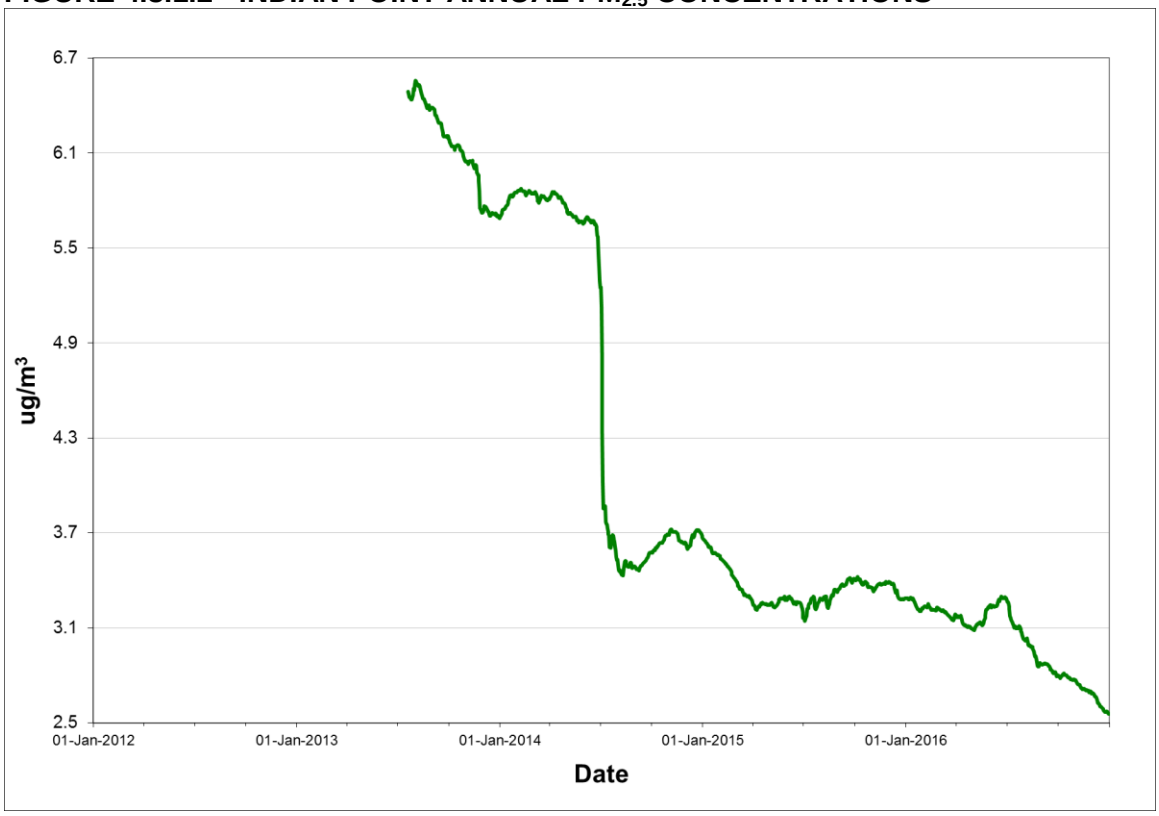
Rolling annual average of hourly concentrations

TABLE 4.3.1.2 - INDIAN POINT $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	31	100.0%	2.8	4.3	0
	February	27	96.4%	2.6	4.1	0
	March	31	100.0%	2.4	3.8	0
	April	23	76.7%	4.1	7.5	0
	May	31	100.0%	3.7	8.1	0
	June	28	93.3%	3.3	9.4	0
	July	31	100.0%	5.4	17.6	0
	August	27	87.1%	4.7	10.1	0
	September	30	100.0%	3.5	7.4	0
	October	27	87.1%	2.2	7.0	0
	November	21	70.0%	2.1	4.6	0
	December	31	100.0%	2.5	5.1	0
Annual		338	92.6%	3.3	17.6	0
2016	January	31	100.0%	2.1	6.6	0
	February	29	100.0%	2.6	7.8	0
	March	31	100.0%	1.9	7.8	0
	April	30	100.0%	2.8	8.6	0
	May	31	100.0%	5.4	13.3	0
	June	29	96.7%	3.8	7.5	0
	July	30	96.8%	2.5	9.8	0
	August	31	100.0%	2.7	6.2	0
	September	30	100.0%	2.7	4.9	0
	October	25	80.6%	1.7	5.8	0
	November	29	96.7%	1.2	5.3	0
	December	30	96.8%	1.0	3.3	0
Annual		356	97.3%	2.6	13.3	0

Observations in ug/m^3

FIGURE 4.3.1.2 - INDIAN POINT ANNUAL $PM_{2.5}$ CONCENTRATIONS



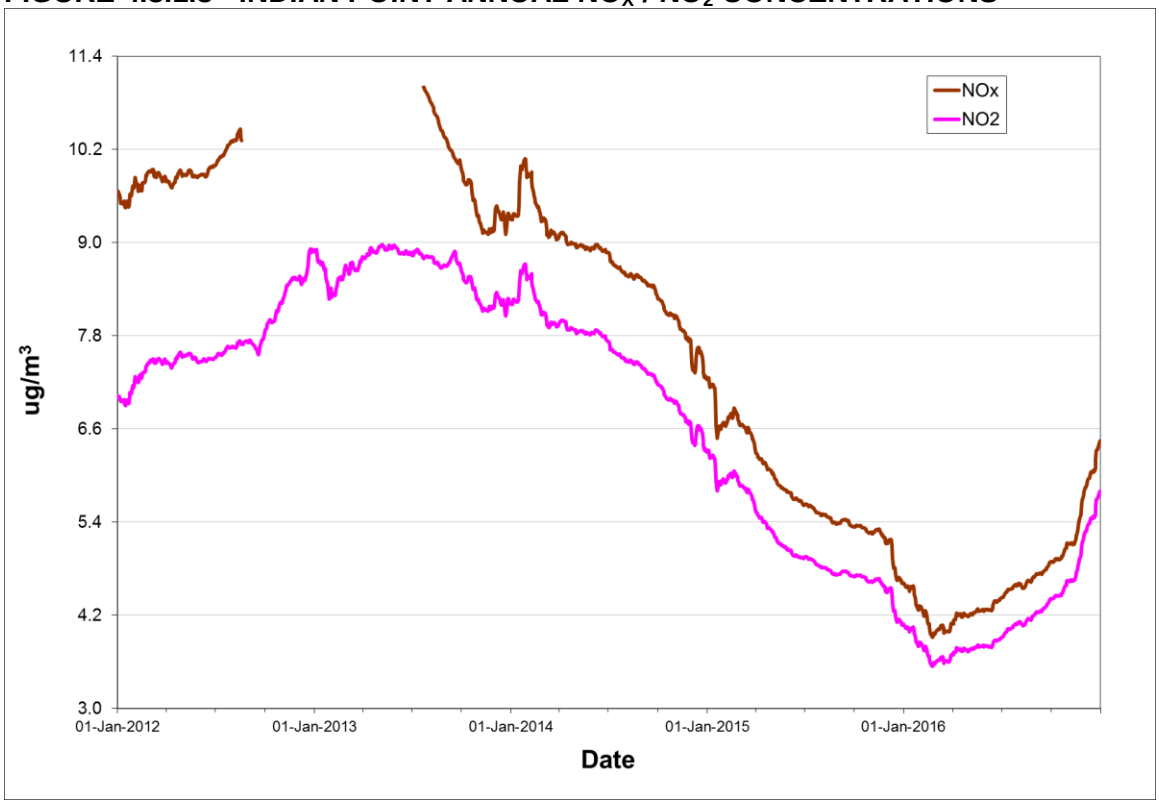
Rolling annual average of hourly concentrations

TABLE 4.3.1.3 - INDIAN POINT NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour	Exceedances 24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	734	98.7%	8.7	7.5	151.4	68.4	28.2	22.2	0	0
	February	659	98.1%	10.8	9.0	89.2	49.6	26.6	20.8	0	0
	March	739	99.3%	5.0	4.4	131.4	68.7	22.3	15.2	0	0
	April	575	79.9%	3.7	3.3	28.3	26.9	10.0	8.6	0	0
	May	742	99.7%	3.7	3.3	38.3	27.9	15.4	12.1	0	0
	June	684	95.0%	3.2	2.9	34.7	25.1	6.6	5.7	0	0
	July	744	100.0%	2.4	2.1	27.7	15.8	7.0	5.5	0	0
	August	743	99.9%	3.4	3.1	56.1	24.8	8.6	6.1	0	0
	September	720	100.0%	3.3	3.0	26.3	19.8	7.0	6.0	0	0
	October	740	99.5%	3.2	2.9	36.4	26.8	9.2	6.5	0	0
	November	510	70.8%	3.3	3.1	26.0	24.8	8.7	7.9	0	0
	December	744	100.0%	4.7	4.4	68.4	48.2	20.5	17.6	0	0
Annual		8334	95.1%	4.6	4.1	151.4	68.7	28.2	22.2	0	0
2016	January	743	99.9%	5.0	4.6	57.0	39.8	18.2	16.4	0	0
	February	693	99.6%	6.6	5.8	66.7	51.8	28.1	23.2	0	0
	March	742	99.7%	6.4	5.6	76.7	54.3	17.9	14.9	0	0
	April	686	95.3%	4.8	3.9	96.9	57.1	23.0	16.8	0	0
	May	744	100.0%	4.6	4.1	33.1	32.8	10.6	9.8	0	0
	June	706	98.1%	5.1	4.2	34.9	25.4	12.7	9.7	0	0
	July	742	99.7%	4.4	4.3	27.2	22.8	9.0	7.3	0	0
	August	743	99.9%	4.6	4.3	31.6	25.3	10.7	10.0	0	0
	September	718	99.7%	5.5	5.4	22.4	21.8	11.5	11.3	0	0
	October	743	99.9%	6.0	5.7	41.3	39.7	19.5	18.5	0	0
	November	716	99.4%	11.1	10.0	102.2	70.8	42.4	34.7	0	0
	December	743	99.9%	13.1	11.7	92.0	66.9	40.9	35.8	0	0
Annual		8719	99.3%	6.4	5.8	102.2	70.8	42.4	35.8	0	0

Observations in ug/m^3

FIGURE 4.3.1.3 - INDIAN POINT ANNUAL NO_X / NO_2 CONCENTRATIONS



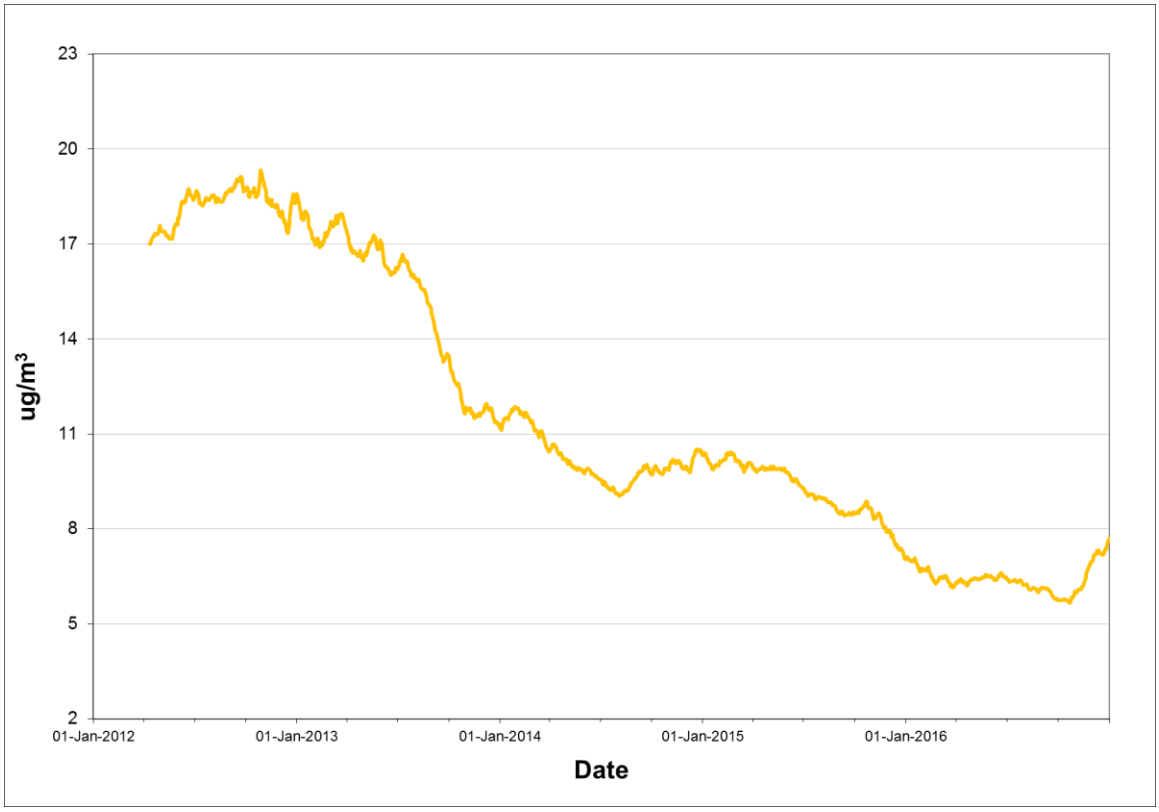
Rolling annual average of hourly concentrations

TABLE 4.3.1.4 - INDIAN POINT TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m^3)
2015	January	30	96.8%	6.7	88.5	0
	February	26	92.9%	10.7	88.9	0
	March	30	96.8%	5.9	66.3	0
	April	21	70.0%	10.8	27.3	0
	May	31	100.0%	14.5	50.7	0
	June	27	90.0%	12.2	62.5	0
	July	28	90.3%	12.3	41.2	0
	August	25	80.6%	10.7	29.6	0
	September	29	96.7%	6.0	37.8	0
	October	26	83.9%	4.4	33.0	0
	November	14	46.7%	0.6	42.1	0
	December	21	67.7%	2.3	66.7	0
Annual		308	84.4%	7.1	88.9	0
2016	January	24	77.4%	3.4	172.9	1
	February	27	93.1%	6.1	46.3	0
	March	23	74.2%	4.8	112.8	0
	April	29	96.7%	11.0	124.2	1
	May	31	100.0%	16.8	101.9	0
	June	28	93.3%	11.4	95.8	0
	July	31	100.0%	7.8	30.1	0
	August	31	100.0%	7.9	27.4	0
	September	30	100.0%	3.5	25.9	0
	October	24	77.4%	5.9	34.6	0
	November	29	96.7%	11.4	60.3	0
	December	24	77.4%	10.3	113.6	0
Annual		331	90.4%	7.7	172.9	2

Observations in ug/m^3

FIGURE 4.3.1.4 - INDIAN POINT ANNUAL TPM CONCENTRATIONS



Rolling annual average of hourly concentrations

4.3.2 Hudson Drive

The Hudson Drive station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$, TPM and O_3 on a continuous basis. For SO_2, NO_x / NO_2 and $PM_{2.5}$ the ambient air criteria were not exceeded on any occasion in 2016. The TPM standard was exceeded on nine occasions in 2016 while the 8-hour O_3 standard was exceed on two hundred and thirty seven occasions. Tables 4.3.2.1 through 4.3.2.5 provide summary information on the level of air contaminants measured at Hudson Drive while Table 4.3.2.6 provides the AQHI levels for 2016. Figure 4.3.2.1 provides the AQHI frequency distribution for 2016. Owing to the limited amount of data, a graphical representation of the annual trends is not provided.

TABLE 4.3.2.1 - HUDSON DRIVE SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January									
	February									
	March									
	April									
	May									
	June									
	July									
	August									
	September									
	October									
	November									
	December	391	52.6%	1.0	10.0	5.0	1.5	0	0	0
Annual		391	4.5%	1.0	10.0	5.0	1.5	0	0	0
2016	January	744	100.0%	0.7	38.7	18.6	5.2	0	0	0
	February	688	98.9%	1.5	68.5	42.5	14.7	0	0	0
	March	744	100.0%	1.0	52.7	38.9	5.3	0	0	0
	April	720	100.0%	1.2	57.9	26.3	8.9	0	0	0
	May	733	98.5%	2.1	82.4	60.9	19.0	0	0	0
	June	684	95.0%	3.5	141.0	117.7	46.2	0	0	0
	July	738	99.2%	1.2	39.2	17.4	6.7	0	0	0
	August	550	73.9%	0.7	28.5	16.5	3.1	0	0	0
	September	668	92.8%	0.7	14.2	11.7	3.2	0	0	0
	October	744	100.0%	5.1	232.6	207.0	68.1	0	0	0
	November	720	100.0%	1.0	71.8	39.5	6.5	0	0	0
	December	744	100.0%	1.1	64.2	35.4	10.1	0	0	0
Annual		8477	96.5%	1.7	232.6	207.0	68.1	0	0	0

Observations in ug/m^3

TABLE 4.3.2.2 - HUDSON DRIVE $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January					
	February					
	March					
	April					
	May					
	June					
	July					
	August					
	September					
	October					
	November					
	December	16	51.6%	3.2	11.0	0
Annual		16	4.4%	3.2	11.0	0
2016	January	31	100.0%	3.2	7.0	0
	February	27	93.1%	3.6	6.3	0
	March	31	100.0%	2.8	4.3	0
	April	29	96.7%	4.2	14.1	0
	May	31	100.0%	3.8	10.7	0
	June	26	86.7%	2.6	10.4	0
	July	30	96.8%	1.6	8.2	0
	August	21	67.7%	1.2	3.8	0
	September	21	70.0%	2.2	4.3	0
	October	31	100.0%	3.2	10.2	0
	November	30	100.0%	3.0	7.2	0
	December	31	100.0%	3.9	8.2	0
Annual		339	92.6%	3.0	14.1	0

Observations in ug/m^3

TABLE 4.3.2.3 - HUDSON DRIVE NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2015	January										
	February										
	March										
	April										
	May										
	June										
	July										
	August										
	September										
	October										
	November										
	December	391	52.6%	7.3	5.8	57.8	42.3	22.3	17.3	0	0
Annual		391	4.5%	7.3	5.8	57.8	42.3	22.3	17.3	0	0
2016	January	744	100.0%	5.5	4.0	143.7	56.5	25.3	16.3	0	0
	February	677	97.3%	7.8	5.6	83.9	57.6	21.5	16.6	0	0
	March	735	98.8%	8.2	6.1	137.2	85.8	22.2	15.4	0	0
	April	719	99.9%	5.3	4.0	76.4	44.8	23.7	16.9	0	0
	May	733	98.5%	6.5	4.5	65.7	45.5	17.1	12.1	0	0
	June	683	94.9%	6.4	3.9	106.3	37.3	37.3	15.6	0	0
	July	742	99.7%	5.0	3.3	44.1	23.9	9.0	7.1	0	0
	August	548	73.7%	4.0	3.2	35.9	24.7	9.0	6.6	0	0
	September	669	92.9%	4.5	3.3	40.1	19.7	9.7	8.0	0	0
	October	742	99.7%	7.4	4.4	159.7	38.3	65.0	18.5	0	0
	November	719	99.9%	11.6	9.3	111.0	81.6	36.1	29.0	0	0
	December	744	100.0%	16.8	12.6	182.7	87.0	81.2	55.2	0	0
Annual		8455	96.3%	7.5	5.4	182.7	87.0	81.2	55.2	0	0

Observations in ug/m^3

TABLE 4.3.2.4 - HUDSON DRIVE TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m^3)
2015	January					
	February					
	March					
	April					
	May					
	June					
	July					
	August					
	September					
	October					
	November					
	December	15	48.4%	8.3	69.4	0
Annual		15	4.1%	0.0	69.4	0
2016	January	29	93.5%	6.5	94.6	0
	February	25	86.2%	9.6	67.6	0
	March	28	90.3%	12.8	84.4	0
	April	30	100.0%	25.0	180.5	3
	May	31	100.0%	38.4	186.1	3
	June	26	86.7%	28.1	176.0	2
	July	31	100.0%	16.5	79.4	0
	August	21	67.7%	11.5	33.1	0
	September	21	70.0%	7.4	36.5	0
	October	31	100.0%	8.3	56.8	0
	November	30	100.0%	12.6	154.8	1
	December	30	96.8%	10.4	119.7	0
Annual		333	91.0%	13.7	186.1	9

Observations in ug/m^3

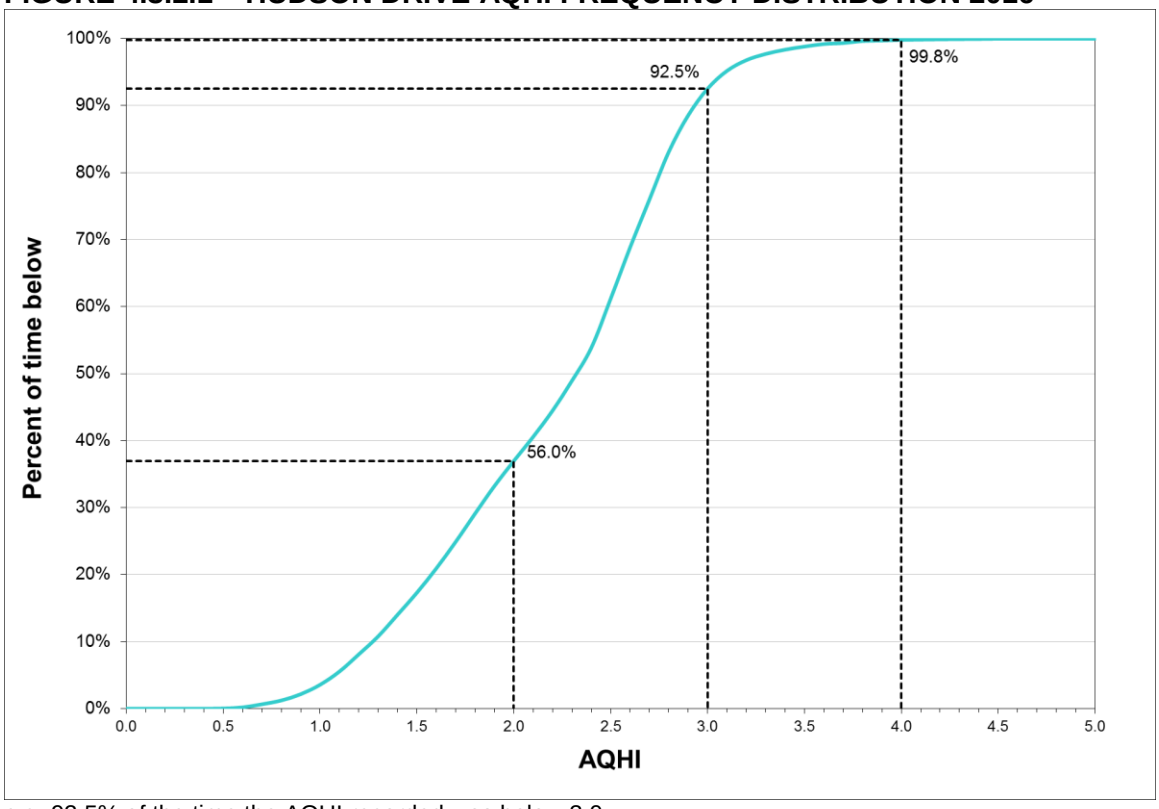
TABLE 4.3.2.5 - HUDSON DRIVE O_3 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2015	January							
	February							
	March							
	April							
	May							
	June							
	July							
	August							
	September							
	October							
	November							
	December	394	53.0%	79.5	101.2	98.1	0	17
Annual		394	4.5%	79.5	101.2	98.1	0	17
2016	January	743	99.9%	87.8	113.2	110.1	0	52
	February	644	92.5%	79.8	101.2	96.5	0	34
	March	740	99.5%	80.0	108.5	105.9	0	36
	April	720	100.0%	81.8	122.8	114.9	0	36
	May	733	98.5%	78.5	136.9	122.0	0	31
	June	497	69.0%	60.6	117.1	111.0	0	6
	July	739	99.3%	50.1	99.9	88.7	0	1
	August	549	73.8%	47.0	113.2	98.5	0	2
	September	669	92.9%	46.2	77.5	67.4	0	0
	October	744	100.0%	59.1	101.6	89.9	0	2
	November	719	99.9%	61.7	95.7	93.7	0	8
	December	744	100.0%	72.1	104.0	102.1	0	29
Annual		8241	94.1%	67.7	136.9	122.0	0	237

TABLE 4.3.2.6 - HUDSON DRIVE AQHI SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2015	January				
	February				
	March				
	April				
	May				
	June				
	July				
	August				
	September				
	October				
	November				
	December	387	52.0%	2.5	5.1
Annual		387	4.4%	2.5	5.1
2016	January	744	100.0%	2.7	4.1
	February	607	87.2%	2.5	3.5
	March	731	98.3%	2.5	4.2
	April	707	98.2%	2.5	6.6
	May	727	97.7%	2.5	4.5
	June	427	59.3%	1.8	3.4
	July	710	95.4%	1.6	3.6
	August	524	70.4%	1.4	3.2
	September	517	71.8%	1.5	2.3
	October	744	100.0%	1.9	3.2
	November	720	100.0%	2.2	4.0
	December	744	100.0%	2.7	4.3
Annual		7902	90.0%	2.2	6.6

FIGURE 4.3.2.1 – HUDSON DRIVE AQHI FREQUENCY DISTRIBUTION 2016



e.g. 92.5% of the time the AQHI recorded was below 3.0

4.3.3 Smokey Mountain II

The Smokey Mountain II station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ and TPM on a continuous basis. For all pollutants, the ambient air standards were not exceeded on any occasion in 2016.

Tables 4.3.3.1 through 4.3.3.4 provide summary information on the level of air contaminants measured at Smokey Mountain II. Owing to the limited amount of data, a graphical representation of the annual trends is not provided.

TABLE 4.3.3.1 - SMOKEY MOUNTAIN SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January									
	February									
	March									
	April									
	May									
	June									
	July									
	August									
	September									
	October									
	November									
	December	226	30.4%	0.4	6.1	2.9	0.4	0	0	0
Annual		226	2.6%	0.4	6.1	2.9	0.4	0	0	0
2016	January	740	99.5%	1.1	75.0	62.1	15.5	0	0	0
	February	692	99.4%	0.5	5.9	3.7	0.9	0	0	0
	March	729	98.0%	0.7	19.4	10.3	2.6	0	0	0
	April	720	100.0%	1.2	84.6	62.6	13.2	0	0	0
	May	744	100.0%	0.9	26.7	19.7	5.0	0	0	0
	June	619	86.0%	1.1	20.5	17.2	7.0	0	0	0
	July	739	99.3%	1.1	73.5	45.4	11.3	0	0	0
	August	744	100.0%	0.8	24.0	17.0	4.6	0	0	0
	September	720	100.0%	0.5	25.4	9.6	2.2	0	0	0
	October	740	99.5%	0.7	34.0	22.5	7.3	0	0	0
	November	720	100.0%	0.8	34.8	21.3	5.3	0	0	0
	December	743	99.9%	0.7	16.7	10.0	3.3	0	0	0
Annual		8650	98.5%	0.8	84.6	62.6	15.5	0	0	0

Observations in ug/m^3

TABLE 4.3.3.2 - SMOKEY MOUNTAIN $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January					
	February					
	March					
	April					
	May					
	June					
	July					
	August					
	September					
	October					
	November					
	December	9	29.0%	2.0	3.1	0
Annual		9	2.5%	2.0	3.1	0
2016	January	31	100.0%	2.7	5.2	0
	February	28	96.6%	2.6	4.1	0
	March	29	93.5%	2.8	7.3	0
	April	27	90.0%	3.0	5.3	0
	May	31	100.0%	3.3	11.6	0
	June	25	83.3%	3.0	7.4	0
	July	31	100.0%	2.6	11.0	0
	August	28	90.3%	2.7	6.6	0
	September	22	73.3%	2.2	6.0	0
	October	24	77.4%	1.5	3.0	0
	November	27	90.0%	2.3	4.3	0
	December	30	96.8%	2.6	5.7	0
Annual		333	91.0%	2.7	11.6	0

Observations in ug/m^3

TABLE 4.3.3.3 - SMOKEY MOUNTAIN NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2015	January										
	February										
	March										
	April										
	May										
	June										
	July										
	August										
	September										
	October										
	November										
	December	225	30.2%	1.7	1.5	26.0	21.5	5.0	4.6	0	0
Annual		225	2.6%	1.7	1.5	26.0	21.5	5.0	4.6	0	0
2016	January	740	99.5%	4.1	3.4	84.1	71.1	25.3	22.9	0	0
	February	693	99.6%	3.1	2.5	52.3	51.9	10.0	8.6	0	0
	March	735	98.8%	3.7	3.0	65.6	51.2	12.6	10.9	0	0
	April	720	100.0%	3.6	2.8	85.6	35.5	15.3	8.6	0	0
	May	744	100.0%	2.2	1.9	39.9	39.8	9.3	8.3	0	0
	June	619	86.0%	2.3	2.0	38.4	29.9	11.4	9.5	0	0
	July	738	99.2%	2.8	2.4	74.2	38.7	14.9	11.1	0	0
	August	744	100.0%	2.3	1.8	59.1	31.1	7.8	6.0	0	0
	September	720	100.0%	2.0	1.6	42.7	19.3	6.4	5.6	0	0
	October	738	99.2%	2.2	1.8	47.8	28.4	9.9	7.5	0	0
	November	720	100.0%	5.5	4.2	131.7	66.1	48.0	29.7	0	0
	December	743	99.9%	5.1	4.4	71.0	57.8	20.2	16.5	0	0
Annual		8654	98.5%	3.3	2.7	131.7	71.1	48.0	29.7	0	0

Observations in ug/m^3

TABLE 4.3.3.4 - SMOKEY MOUNTAIN TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m^3)
2015	January					
	February					
	March					
	April					
	May					
	June					
	July					
	August					
	September					
	October					
	November					
	December	9	29.0%	4.9	20.5	0
Annual		9	2.5%		20.5	0
2016	January	31	100.0%	9.1	38.8	0
	February	29	100.0%	6.8	51.0	0
	March	31	100.0%	7.5	33.1	0
	April	27	90.0%	10.6	52.2	0
	May	31	100.0%	8.6	43.8	0
	June	24	80.0%	10.9	110.1	0
	July	31	100.0%	11.4	39.1	0
	August	31	100.0%	9.7	25.9	0
	September	30	100.0%	3.8	11.5	0
	October	30	96.8%	3.2	8.3	0
	November	30	100.0%	3.8	23.7	0
	December	31	100.0%	8.7	52.3	0
Annual		356	97.3%	7.2	110.1	0

Observations in ug/m^3

4.4 Wabush Mines

By the end of 2016 there were two monitoring stations in operation in Wabush, namely on Bond Street near the Provincial Building and on Cabot Drive near the J. R. Smallwood School. These stations were installed to monitor the air quality near Wabush Mines' iron ore mine, concentrator / processing facility and the tailings. The locations of these monitoring stations are identified in Figure 4.4.1.

In February 2014, Wabush Mines indefinitely idled the processing facility, and it remained idled at the end of 2016. Though not processing, Wabush Mines are committed to their environmental responsibilities and will continue to operate the ambient air monitoring network until further notice.

FIGURE 4.4.1 - WABUSH MINES AMBIENT MONITORING STATIONS

4.4.1 Bond Street

The Bond Street monitoring station is located near the Provincial Building and measures SO_2, $PM_{2.5}$ and TPM on a continuous basis. Each monitor did not record exceedances of the associated ambient air criteria on any occasion in 2016. The TPM monitor was newly installed in September 2013.

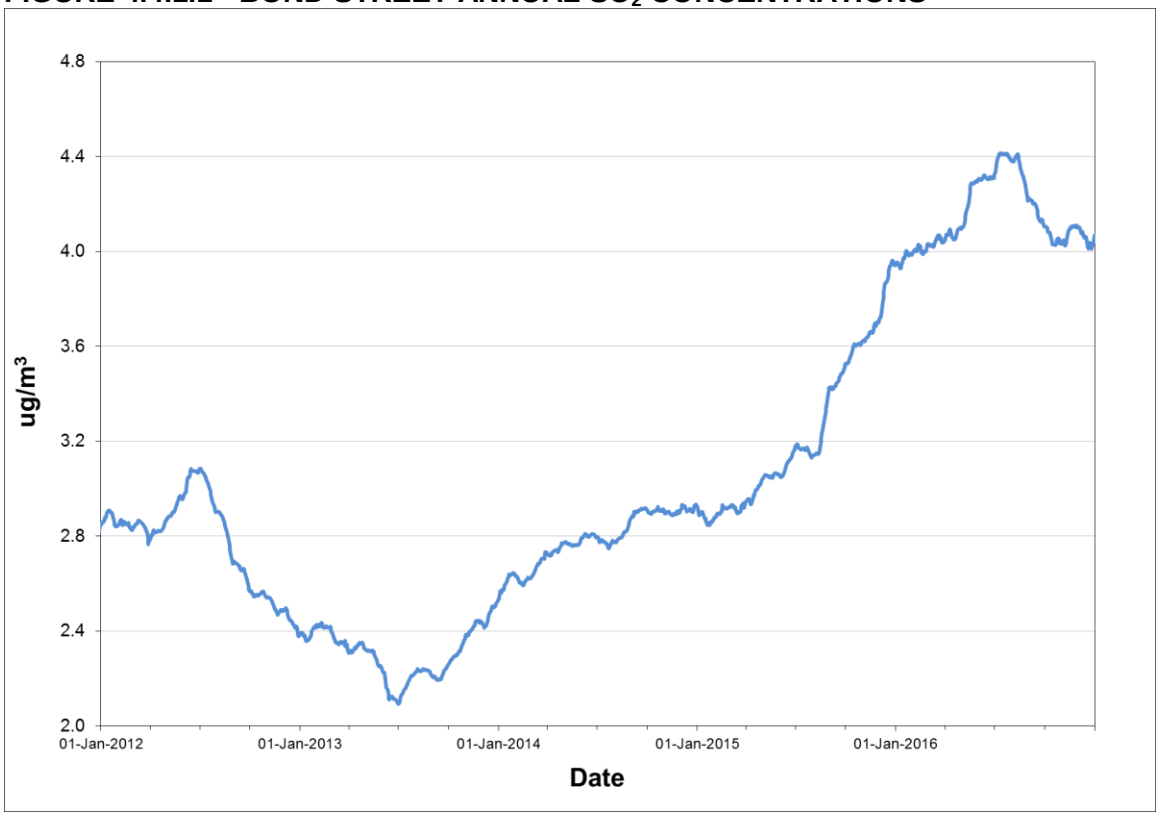
Tables 4.4.1.1 to 4.4.1.3 provide summary information of air contaminants measured at Bond Street, while Figures 4.4.1.1 to 4.4.1.3 provide a graphical representation of the annual trend of SO_2, $PM_{2.5}$ and TPM respectively.

TABLE 4.4.1.1 - BOND STREET SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	710	95.4%	3.4	35.0	16.8	7.8	0	0	0
	February	640	95.2%	2.9	54.5	39.1	11.1	0	0	0
	March	713	95.8%	3.2	42.8	23.3	10.9	0	0	0
	April	691	96.0%	4.2	15.0	12.3	7.5	0	0	0
	May	713	95.8%	2.9	13.2	10.9	5.5	0	0	0
	June	663	92.1%	3.7	36.8	29.7	7.6	0	0	0
	July	712	95.7%	2.4	47.3	16.3	4.0	0	0	0
	August	714	96.0%	6.3	28.5	21.2	12.0	0	0	0
	September	690	95.8%	4.1	14.7	12.2	6.6	0	0	0
	October	710	95.4%	3.9	19.0	9.6	8.0	0	0	0
	November	686	95.3%	4.0	9.0	8.6	7.3	0	0	0
	December	712	95.7%	6.1	11.1	10.8	10.0	0	0	0
Annual		8354	95.4%	3.9	54.5	39.1	12.0	0	0	0
2016	January	713	95.8%	3.9	9.2	8.9	7.8	0	0	0
	February	687	98.7%	3.4	23.4	18.6	7.7	0	0	0
	March	637	85.6%	3.5	18.0	15.7	6.2	0	0	0
	April	715	99.3%	4.8	27.2	16.0	9.8	0	0	0
	May	611	82.1%	5.4	27.6	12.6	9.0	0	0	0
	June	712	98.9%	4.1	32.3	18.8	7.8	0	0	0
	July	711	95.6%	3.1	36.8	22.4	10.1	0	0	0
	August	744	100.0%	4.4	19.8	16.7	6.6	0	0	0
	September	718	99.7%	2.8	23.0	11.5	5.5	0	0	0
	October	744	100.0%	3.2	9.0	8.8	7.3	0	0	0
	November	720	100.0%	4.9	19.6	16.0	8.9	0	0	0
	December	740	99.5%	5.6	23.4	17.2	11.2	0	0	0
Annual		8452	96.2%	4.1	36.8	22.4	11.2	0	0	0

Observations in ug/m^3

FIGURE 4.4.1.1 - BOND STREET ANNUAL SO_2 CONCENTRATIONS



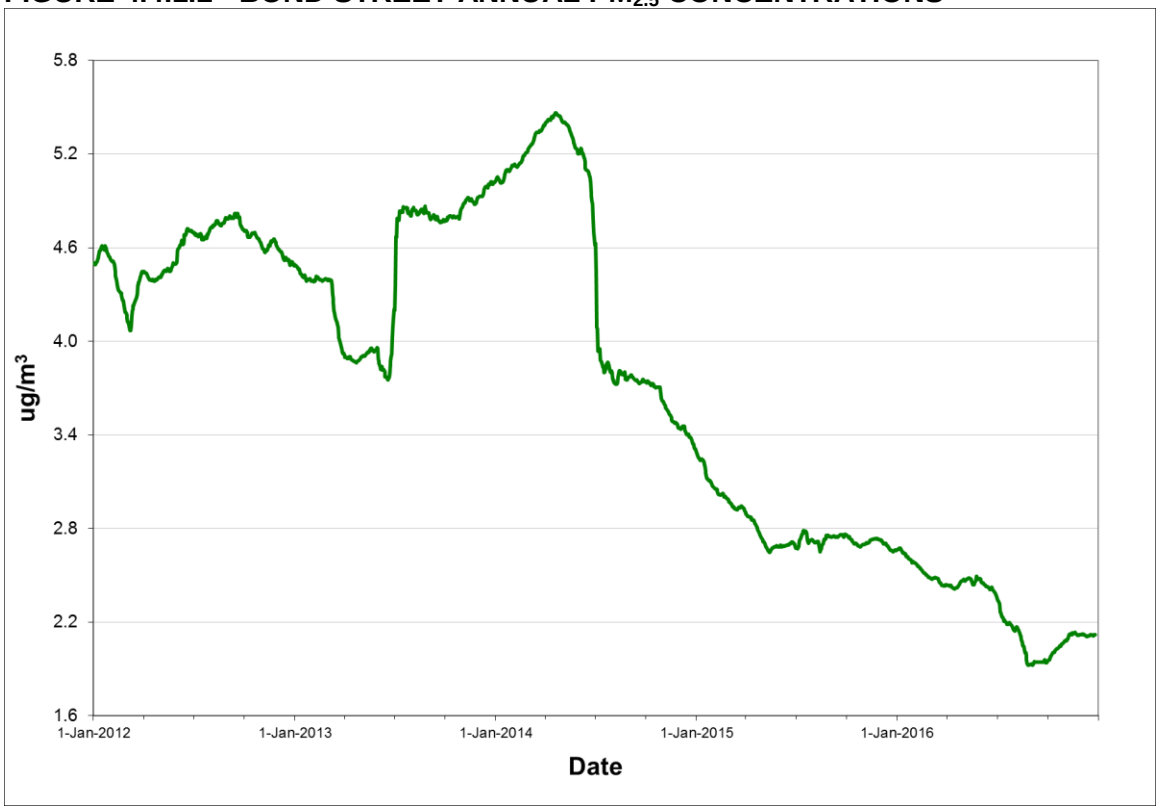
Rolling annual average of daily concentrations

TABLE 4.4.1.2 - BOND STREET $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	31	100.0%	2.8	5.8	0
	February	28	100.0%	3.4	4.6	0
	March	31	100.0%	2.7	6.0	0
	April	30	100.0%	2.1	4.1	0
	May	31	100.0%	1.6	4.3	0
	June	28	93.3%	2.2	6.6	0
	July	31	100.0%	4.2	15.0	0
	August	28	90.3%	4.7	10.5	0
	September	7	23.3%	2.6	5.5	0
	October	30	96.8%	1.7	4.6	0
	November	30	100.0%	2.1	4.2	0
	December	31	100.0%	2.1	3.7	0
Annual		336	92.1%	2.7	15.0	0
2016	January	28	90.3%	1.8	4.1	0
	February	29	100.0%	2.4	4.5	0
	March	29	93.5%	2.2	3.4	0
	April	30	100.0%	2.2	3.7	0
	May	31	100.0%	1.7	8.8	0
	June	29	96.7%	1.0	5.3	0
	July	27	87.1%	2.1	5.2	0
	August	31	100.0%	2.3	5.6	0
	September	29	96.7%	1.9	5.1	0
	October	31	100.0%	3.0	5.2	0
	November	21	70.0%	2.7	6.8	0
	December	0	0.0%			
Annual		315	86.1%	2.1	8.8	0

Observations in ug/m^3

FIGURE 4.4.1.2 - BOND STREET ANNUAL $PM_{2.5}$ CONCENTRATIONS



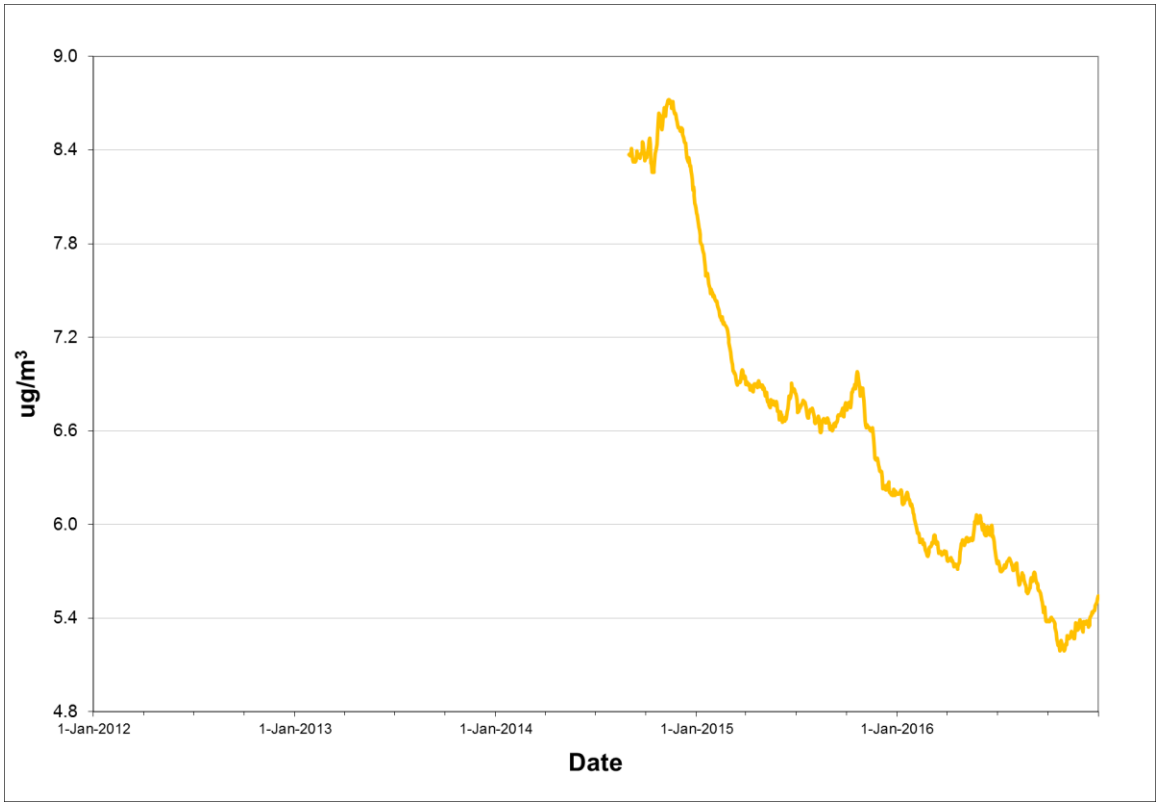
Rolling annual average of daily concentrations

TABLE 4.4.1.3 - BOND STREET TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	30	96.8%	4.4	14.9	0
	February	25	89.3%	5.2	20.7	0
	March	31	100.0%	5.4	33.0	0
	April	28	93.3%	7.4	22.4	0
	May	30	96.8%	9.5	31.4	0
	June	28	93.3%	11.4	51.8	0
	July	25	80.6%	9.4	28.8	0
	August	24	77.4%	8.9	37.3	0
	September	20	66.7%	9.3	39.9	0
	October	27	87.1%	6.1	42.1	0
	November	26	86.7%	2.7	35.1	0
	December	24	77.4%	2.6	7.9	0
Annual		318	87.1%	6.2	51.8	0
2016	January	27	87.1%	3.3	21.0	0
	February	26	89.7%	3.3	10.5	0
	March	28	90.3%	5.1	15.2	0
	April	29	96.7%	8.5	52.5	0
	May	28	90.3%	13.1	52.9	0
	June	24	80.0%	6.9	43.1	0
	July	21	67.7%	8.9	20.1	0
	August	30	96.8%	7.6	31.5	0
	September	27	90.0%	4.5	32.1	0
	October	30	96.8%	4.0	18.7	0
	November	30	100.0%	4.2	35.0	0
	December	25	80.6%	4.0	10.6	0
Annual		325	88.8%	5.5	52.9	0

Observations in ug/m^3

FIGURE 4.4.1.3 - BOND STREET ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.4.2 Cabot Drive

The Cabot Drive monitoring station was installed in early 2014 and is located near the J.R. Smallwood School. The station measures $PM_{2.5}$ and TPM on a continuous basis. Neither monitor recorded an exceedance in 2016.

Tables 4.4.2.1 and 4.4.2.2 provide summary information of air contaminants measured at Cabot Drive while figures 4.4.2.1 and 4.4.2.2 present the annual trend of $PM_{2.5}$ and TPM respectively.

TABLE 4.4.2.1 - CABOT DRIVE $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	31	100.0%	5.0	31.8	2
	February	28	100.0%	3.7	5.6	0
	March	30	96.8%	3.1	6.8	0
	April	30	100.0%	2.8	4.7	0
	May	31	100.0%	3.1	6.7	0
	June	28	93.3%	3.5	7.3	0
	July	31	100.0%	5.6	16.1	0
	August	31	100.0%	4.1	9.9	0
	September	26	86.7%	3.2	7.0	0
	October	30	96.8%	3.6	7.8	0
	November	30	100.0%	3.5	6.0	0
	December	31	100.0%	2.5	6.0	0
Annual		357	97.8%	3.7	31.8	2
2016	January	31	100.0%	2.4	6.1	0
	February	29	100.0%	3.0	5.9	0
	March	31	100.0%	3.1	6.3	0
	April	29	96.7%	3.8	6.4	0
	May	31	100.0%	4.5	11.3	0
	June	29	96.7%	3.5	8.2	0
	July	31	100.0%	4.1	9.7	0
	August	31	100.0%	3.6	7.2	0
	September	30	100.0%	2.2	6.4	0
	October	25	80.6%	2.7	4.9	0
	November	30	100.0%	3.1	7.3	0
	December	26	83.9%	3.2	9.0	0
Annual		353	96.4%	3.3	11.3	0

Observations in ug/m^3

FIGURE 4.4.2.1 – CABOT DRIVE ANNUAL $PM_{2.5}$ CONCENTRATIONS

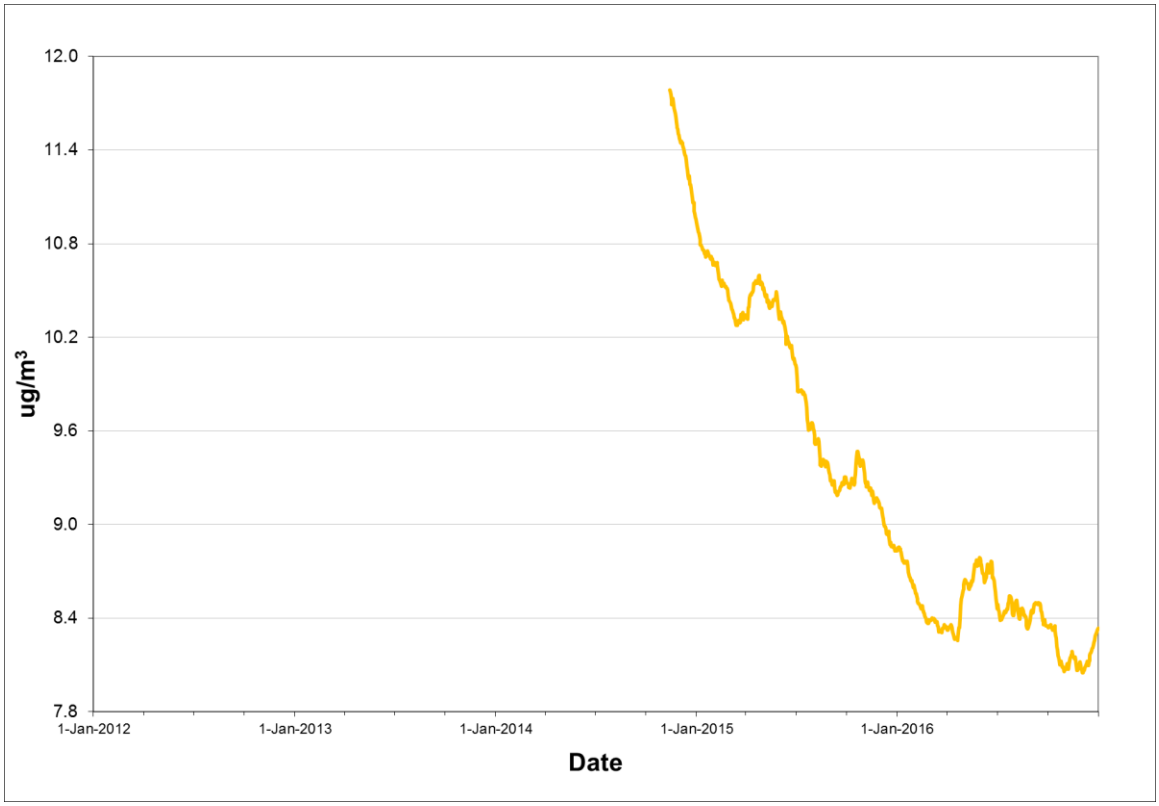
Rolling annual average of daily concentrations

TABLE 4.4.2.2 - CABOT DRIVE TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m^3)
2015	January	31	100.0%	8.1	19.2	0
	February	28	100.0%	8.2	20.9	0
	March	31	100.0%	8.7	24.6	0
	April	30	100.0%	10.2	19.6	0
	May	31	100.0%	13.8	61.6	0
	June	27	90.0%	15.3	43.3	0
	July	30	96.8%	9.1	38.1	0
	August	31	100.0%	8.9	33.0	0
	September	26	86.7%	8.6	41.2	0
	October	31	100.0%	9.4	44.4	0
	November	27	90.0%	5.7	29.9	0
	December	31	100.0%	4.9	8.5	0
Annual		354	97.0%	8.8	61.6	0
2016	January	29	93.5%	5.9	19.5	0
	February	29	100.0%	5.9	11.5	0
	March	31	100.0%	8.3	20.3	0
	April	27	90.0%	15.2	74.5	0
	May	31	100.0%	17.4	62.3	0
	June	27	90.0%	9.8	50.1	0
	July	31	100.0%	8.5	16.8	0
	August	30	96.8%	8.9	21.1	0
	September	30	100.0%	7.6	27.6	0
	October	31	100.0%	6.3	20.5	0
	November	30	100.0%	6.0	24.9	0
	December	25	80.6%	6.8	19.7	0
Annual		351	95.9%	8.3	74.5	0

Observations in ug/m^3

FIGURE 4.4.2.2 – CABOT DRIVE ANNUAL TPM CONCENTRATIONS

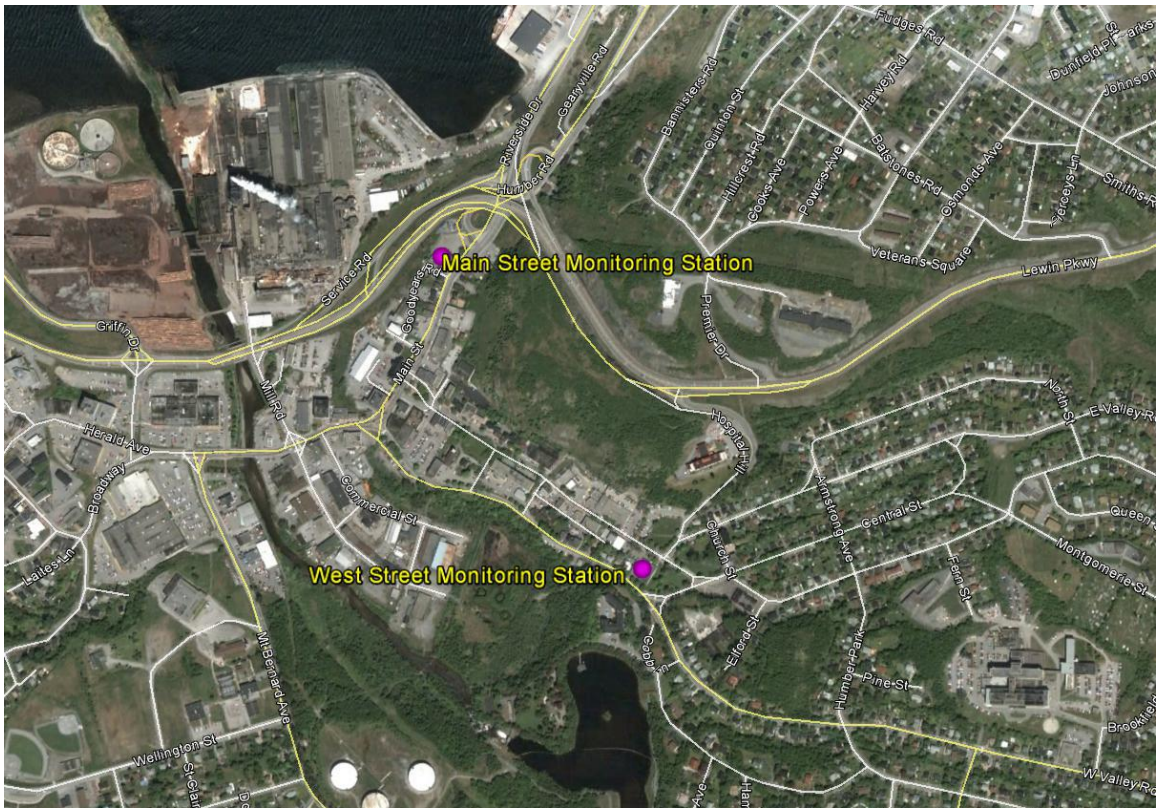


Rolling annual average of daily concentrations

4.5 Corner Brook Pulp and Paper

In 2016, Corner Brook Pulp and Paper (CBPP) operated monitoring stations at two locations in Corner Brook. These stations are installed to monitor the air quality near CBPP's paper mill operation and are located on Main Street and West Street. The locations of these monitoring stations are identified in Figure 4.5.1.

FIGURE 4.5.1 - CBPP AMBIENT MONITORING STATIONS



4.5.1 Main Street

The Main Street monitoring station is located at Hotel Corner Brook. The station monitors ambient levels of SO_2 and $PM_{2.5}$ on a continuous basis and TPM on a 1 day in 6 day cycle. For $PM_{2.5}$, the 24-hour ambient air criteria were exceeded on three occasions in 2016; the SO_2 and TPM criteria were not exceeded during the year.

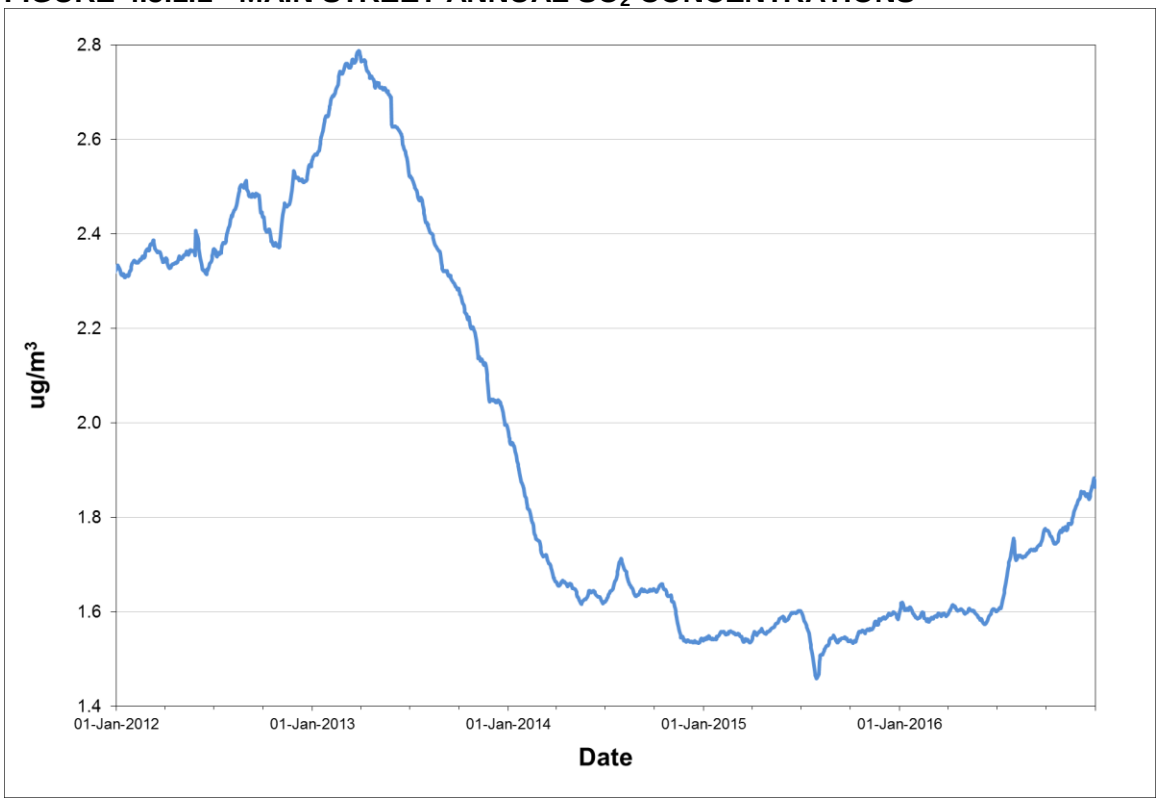
Tables 4.5.1.1 through 4.5.1.3 provide summary information on the level of air contaminants measured at the Main Street Station, while Figures 4.5.1.1 through 4.5.1.3 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.5.1.1 - MAIN STREET SO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2015	January	740	99.5%	2.0	5.5	4.5	3.0	0	0	0
	February	644	95.8%	1.6	4.6	4.3	3.9	0	0	0
	March	742	99.7%	1.5	4.6	3.3	2.4	0	0	0
	April	719	99.9%	1.7	4.3	4.0	2.9	0	0	0
	May	743	99.9%	1.6	4.4	3.8	3.0	0	0	0
	June	716	99.4%	1.3	4.3	3.2	1.9	0	0	0
	July	743	99.9%	0.9	6.3	2.8	1.4	0	0	0
	August	744	100.0%	2.0	60.2	50.6	11.1	0	0	0
	September	715	99.3%	1.5	5.2	5.2	3.4	0	0	0
	October	744	100.0%	1.7	4.6	3.9	3.2	0	0	0
	November	720	100.0%	1.6	4.7	3.8	3.0	0	0	0
	December	736	98.9%	1.8	4.7	4.6	4.2	0	0	0
Annual		8706	99.4%	1.6	60.2	50.6	11.1	0	0	0
2016	January	741	99.6%	1.9	4.7	4.4	4.0	0	0	0
	February	696	100.0%	1.6	4.3	3.8	2.9	0	0	0
	March	739	99.3%	1.6	4.3	3.9	3.4	0	0	0
	April	716	99.4%	1.7	4.8	4.2	3.7	0	0	0
	May	744	100.0%	1.4	14.5	11.8	3.6	0	0	0
	June	711	98.8%	1.5	3.4	3.1	2.5	0	0	0
	July	670	90.1%	2.8	10.1	7.4	4.3	0	0	0
	August	742	99.7%	1.7	4.2	3.8	2.4	0	0	0
	September	696	96.7%	2.0	3.7	3.5	3.3	0	0	0
	October	744	100.0%	1.7	4.5	4.3	4.0	0	0	0
	November	720	100.0%	2.3	5.2	5.0	4.4	0	0	0
	December	739	99.3%	2.2	5.2	5.0	4.1	0	0	0
Annual		8658	98.6%	1.9	14.5	11.8	4.4	0	0	0

Observations in ug/m^3

FIGURE 4.5.1.1 - MAIN STREET ANNUAL SO_2 CONCENTRATIONS



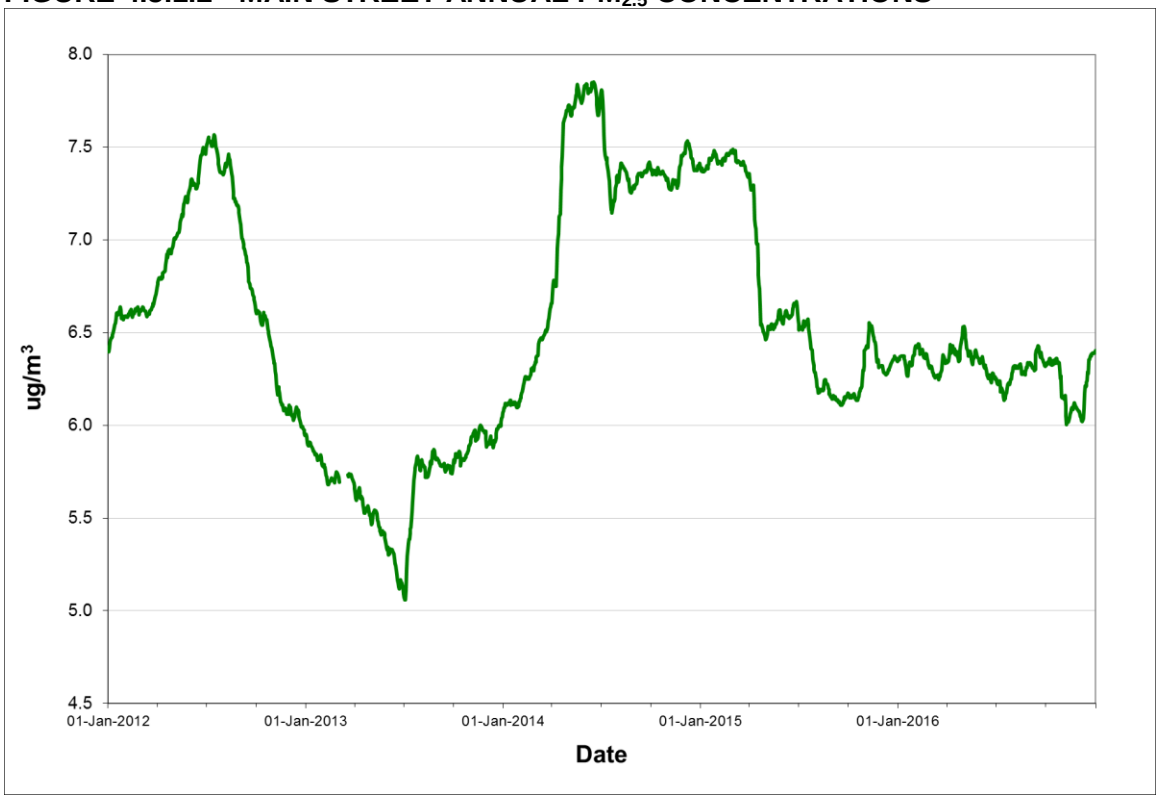
Rolling annual average of hourly concentrations

TABLE 4.5.1.2 - MAIN STREET $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	26	83.9%	5.6	12.8	0
	February	28	100.0%	8.2	16.2	0
	March	31	100.0%	7.3	11.3	0
	April	30	100.0%	6.9	14.7	0
	May	31	100.0%	8.0	15.1	0
	June	30	100.0%	6.1	13.1	0
	July	31	100.0%	5.1	19.1	0
	August	31	100.0%	4.6	16.0	0
	September	30	100.0%	5.4	11.2	0
	October	31	100.0%	7.6	34.1	1
	November	30	100.0%	5.4	24.4	0
	December	13	41.9%	5.5	12.7	0
Annual		342	93.7%	6.3	34.1	1
2016	January	19	61.3%	6.0	16.3	0
	February	29	100.0%	7.4	21.0	0
	March	31	100.0%	7.6	24.2	0
	April	30	100.0%	9.0	22.1	0
	May	31	100.0%	5.9	13.2	0
	June	30	100.0%	5.0	11.3	0
	July	27	87.1%	5.6	12.0	0
	August	31	100.0%	5.0	12.8	0
	September	30	100.0%	5.4	29.5	1
	October	31	100.0%	5.7	17.5	0
	November	30	100.0%	4.6	11.4	0
	December	31	100.0%	9.5	31.1	2
Annual		350	95.6%	6.4	31.1	3

Observations in ug/m^3

FIGURE 4.5.1.2 - MAIN STREET ANNUAL $PM_{2.5}$ CONCENTRATIONS



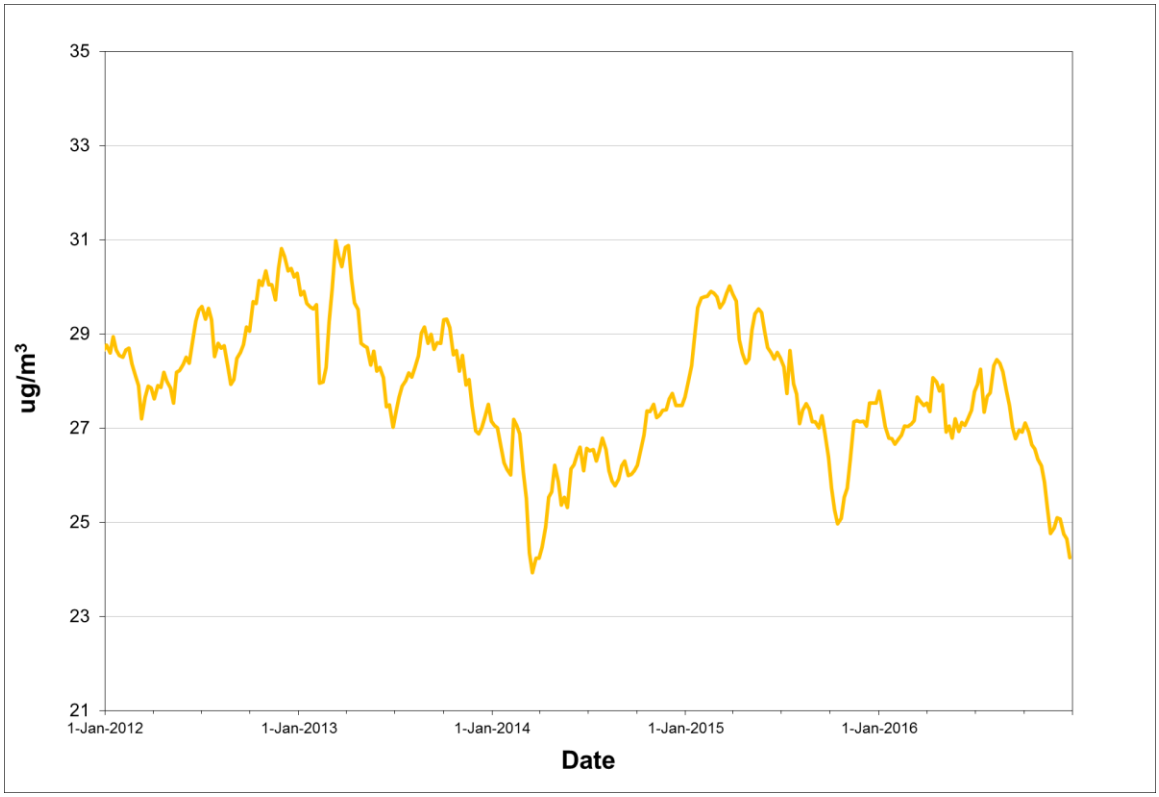
Rolling annual average of daily concentrations

TABLE 4.5.1.3 - MAIN STREET TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2015	January	2	40.0%	18.7	23.8	0
	February	4	100.0%	14.4	22.9	0
	March	6	100.0%	20.5	63.2	0
	April	5	100.0%	55.7	86.9	0
	May	5	100.0%	48.1	94.4	0
	June	4	80.0%	32.3	39.5	0
	July	5	100.0%	33.4	225.8	1
	August	4	80.0%	20.7	32.7	0
	September	5	100.0%	20.0	26.9	0
	October	5	100.0%	26.3	43.8	0
	November	5	100.0%	38.2	61.6	0
	December	3	60.0%	23.3	29.4	0
Annual		53	88.3%	28.0	225.8	1
2016	January	6	100.0%	15.2	23.1	0
	February	4	100.0%	17.6	34.5	0
	March	6	100.0%	24.4	52.9	0
	April	5	100.0%	65.2	110.1	0
	May	5	100.0%	32.0	64.6	0
	June	5	100.0%	44.6	92.0	0
	July	4	80.0%	34.4	45.3	0
	August	5	100.0%	22.3	32.8	0
	September	5	100.0%	13.8	27.3	0
	October	5	100.0%	20.5	27.0	0
	November	5	100.0%	19.7	25.1	0
	December	5	100.0%	17.7	36.9	0
Annual		60	98.4%	24.3	110.1	0

Observations in ug/m^3

FIGURE 4.5.1.3 - MAIN STREET ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.5.2 West Street

The West Street monitoring station is located at the Western Star building. The station monitors ambient levels TPM on a 1 day in 6 day cycle. The ambient air criterion was not exceeded in 2016.

Tables 4.5.2.1 provides summary information on the level of air contaminants measured at the West Street Station, while Figure 4.5.2.1 provides a graphical representation of the annual trend.

TABLE 4.5.2.1 - WEST STREET TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2015	January	5	100.0%	11.7	16.8	0
	February	4	100.0%	12.6	17.6	0
	March	6	100.0%	12.3	24.7	0
	April	5	100.0%	55.3	89.6	0
	May	5	100.0%	47.8	106.8	0
	June	4	80.0%	19.7	28.8	0
	July	5	100.0%	23.0	47.4	0
	August	4	80.0%	21.9	33.3	0
	September	5	100.0%	24.8	39.3	0
	October	5	100.0%	20.5	26.2	0
	November	5	100.0%	32.6	77.8	0
	December	3	60.0%	23.9	43.1	0
Annual		56	93.3%	22.7	106.8	0
2016	January	6	100.0%	10.9	14.6	0
	February	4	100.0%	12.7	17.4	0
	March	6	100.0%	17.2	35.3	0
	April	5	100.0%	67.0	109.3	0
	May	5	100.0%	29.9	79.5	0
	June	5	100.0%	33.3	48.1	0
	July	4	80.0%	23.9	32.9	0
	August	5	100.0%	17.8	23.0	0
	September	5	100.0%	12.4	25.0	0
	October	5	100.0%	17.4	27.2	0
	November	5	100.0%	19.1	26.8	0
	December	5	100.0%	18.8	42.2	0
Annual		60	98.4%	20.3	109.3	0

Observations in ug/m^3

FIGURE 4.5.2.1 - WEST STREET ANNUAL TPM CONCENTRATIONS

Rolling annual average of daily concentrations

4.6 VALE Newfoundland and Labrador Limited - Voisey's Bay

In 2016, VALE Newfoundland and Labrador Limited (VALE) operated monitoring stations at three locations at its Voisey's Bay mine site. These stations are installed to monitor the air quality near VALE's mining / processing operation and port activities, and are located at the Accommodation Unit, the Crusher and the Port Site near the concentrate storage facility. The locations of these monitoring stations are identified in Figure 4.6.1.

FIGURE 4.6.1 - VALE / VOISEY'S BAY AMBIENT MONITORING STATIONS

4.6.1 Accommodation Unit

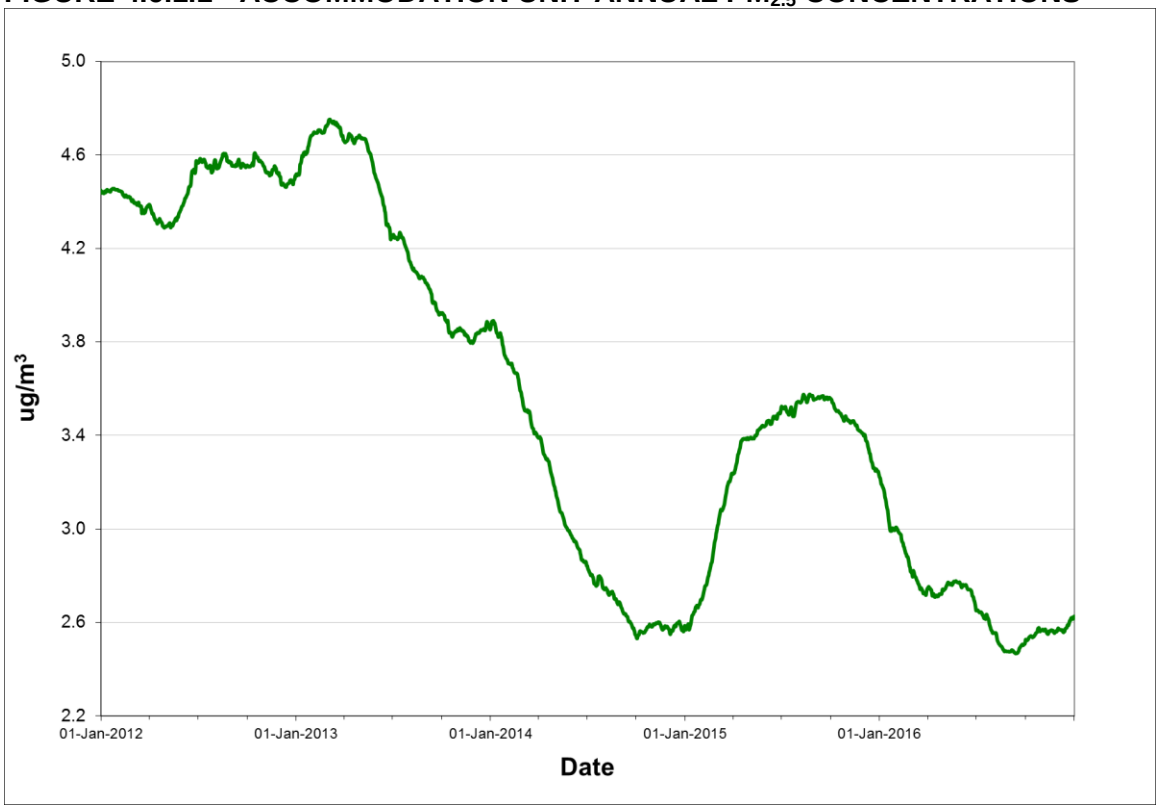
The Accommodation Unit station monitors the ambient levels of $PM_{2.5}$ and NO_x / NO_2 on a continuous basis. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2016. Tables 4.6.1.1 through 4.6.1.2 provide summary information on the level of air contaminants measured at the Accommodation Unit, while Figures 4.6.1.1 through 4.6.1.2 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.6.1.1 - ACCOMMODATION UNIT $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 ug/m^3)
2015	January	31	100.0%	6.1	9.0	0
	February	28	100.0%	6.4	8.8	0
	March	31	100.0%	5.5	8.8	0
	April	30	100.0%	4.0	7.6	0
	May	31	100.0%	1.5	5.4	0
	June	27	90.0%	2.0	5.3	0
	July	27	87.1%	2.4	6.5	0
	August	26	83.9%	1.7	5.0	0
	September	30	100.0%	1.3	2.8	0
	October	28	90.3%	1.9	7.3	0
	November	30	100.0%	2.5	4.5	0
	December	31	100.0%	3.3	5.8	0
Annual		350	95.9%	3.2	9.0	0
2016	January	31	100.0%	3.6	8.5	0
	February	29	100.0%	4.1	7.4	0
	March	31	100.0%	4.6	17.7	0
	April	30	100.0%	3.8	8.2	0
	May	22	71.0%	1.4	3.5	0
	June	30	100.0%	0.8	3.3	0
	July	29	93.5%	1.1	7.7	0
	August	31	100.0%	0.9	2.1	0
	September	30	100.0%	1.7	4.5	0
	October	31	100.0%	2.6	6.5	0
	November	28	93.3%	2.5	4.4	0
	December	31	100.0%	3.9	6.5	0
Annual		353	96.4%	2.6	17.7	0

Observations in ug/m^3

FIGURE 4.6.1.1 - ACCOMMODATION UNIT ANNUAL $PM_{2.5}$ CONCENTRATIONS



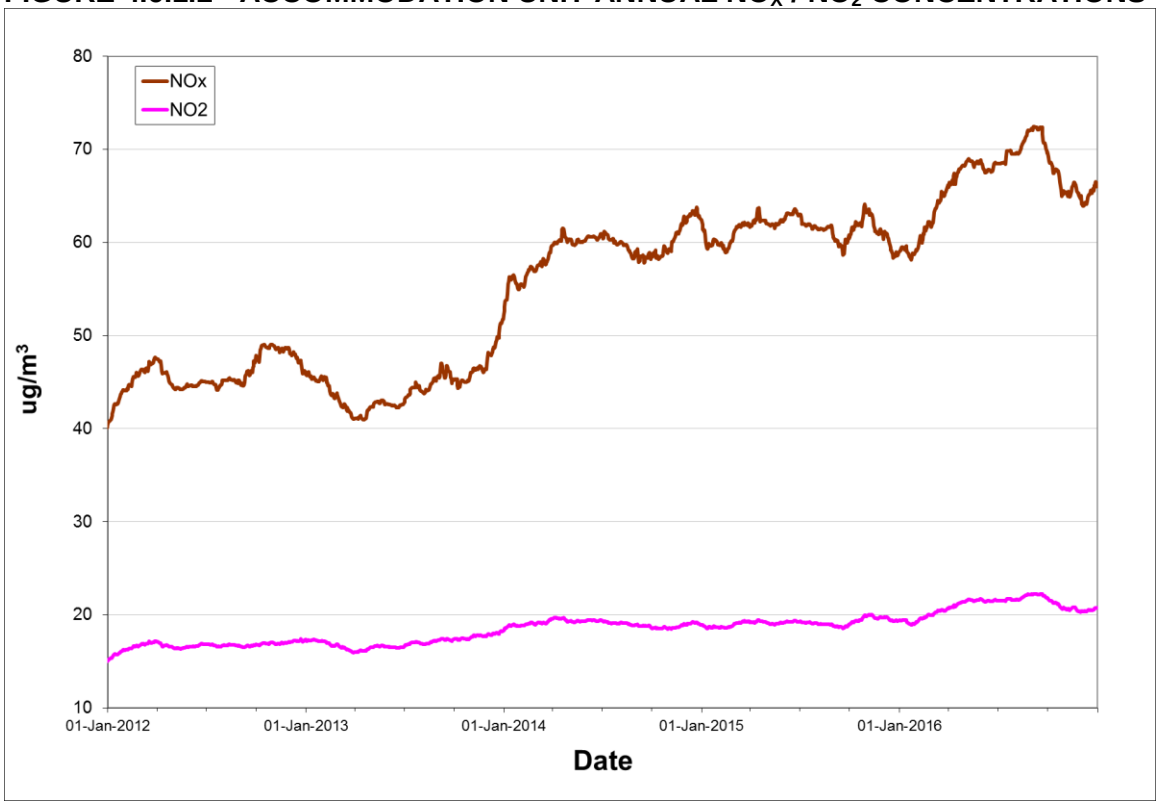
Rolling annual average of daily concentrations

TABLE 4.6.1.2 - ACCOMMODATION UNIT NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour	Exceedances 24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	735	98.8%	81.8	31.0	472.7	107.0	166.0	44.9	0	0
	February	671	99.9%	100.1	31.8	728.9	109.9	232.8	44.0	0	0
	March	738	99.2%	76.3	24.8	546.1	118.4	162.3	46.4	0	0
	April	706	98.1%	54.6	15.2	801.1	129.8	320.2	61.6	0	0
	May	728	97.8%	27.5	11.1	457.5	83.8	109.4	36.6	0	0
	June	698	96.9%	34.3	11.7	484.6	73.3	166.6	38.9	0	0
	July	699	94.0%	11.9	5.5	351.1	54.6	71.3	17.9	0	0
	August	699	94.0%	15.5	6.8	321.8	61.1	58.4	22.7	0	0
	September	692	96.1%	62.6	15.4	793.8	75.8	305.0	40.3	0	0
	October	736	98.9%	87.4	24.8	686.3	98.9	296.2	56.2	0	0
	November	719	99.9%	66.2	25.1	891.5	96.7	171.3	49.9	0	0
	December	739	99.3%	86.8	28.6	1014.3	99.0	339.7	60.5	0	0
Annual		8560	97.7%	59.0	19.4	1014.3	129.8	339.7	61.6	0	0
2016	January	734	98.7%	84.9	28.9	878.7	112.8	214.6	69.3	0	0
	February	696	100.0%	133.0	41.3	1110.2	109.9	322.3	66.7	0	0
	March	744	100.0%	123.7	33.1	1056.4	91.5	365.6	67.5	0	0
	April	718	99.7%	78.1	22.4	721.8	105.9	342.1	57.3	0	0
	May	661	88.8%	31.8	14.3	730.8	99.8	159.8	36.7	0	0
	June	638	88.6%	25.6	8.2	544.7	63.8	178.4	28.5	0	0
	July	684	91.9%	23.3	5.8	628.0	56.7	306.4	41.4	0	0
	August	384	51.6%	26.8	7.6	503.7	43.0	145.2	21.5	0	0
	September	662	91.9%	35.1	10.9	462.0	43.7	142.3	24.5	0	0
	October	683	91.8%	37.8	12.5	722.6	69.4	152.1	33.9	0	0
	November	662	91.9%	60.1	20.9	648.5	74.7	176.3	35.5	0	0
	December	711	95.6%	105.2	33.5	931.3	108.9	225.6	68.7	0	0
Annual		7977	90.8%	66.5	20.8	1110.2	112.8	365.6	69.3	0	0

Observations in ug/m^3

FIGURE 4.6.1.2 - ACCOMMODATION UNIT ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations

4.6.2 Crusher Site

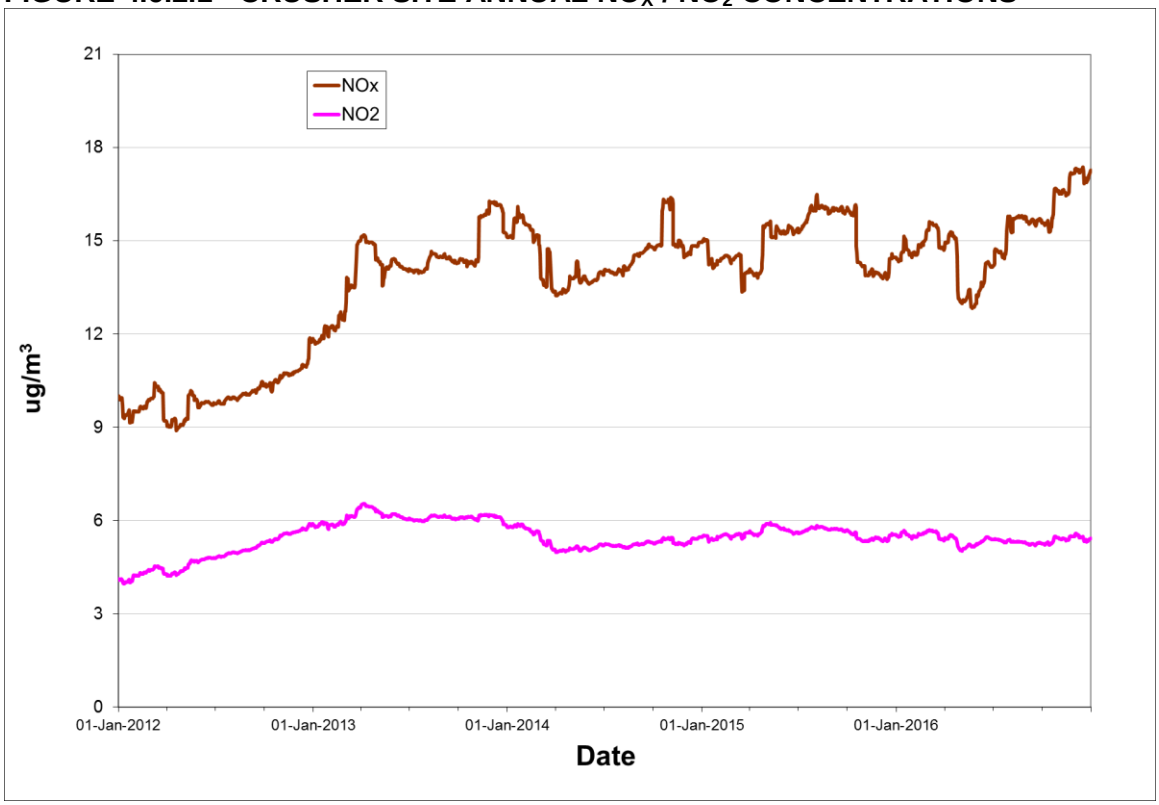
The Crusher Site station monitors the ambient levels of NO_x / NO_2 on a continuous basis. The ambient air criteria were not exceeded on any occasion in 2016. Table 4.6.2.1 provides summary information on the level of air contaminants measured at the Crusher Site, while Figure 4.6.2.1 provides a graphical representation of the annual trend.

TABLE 4.6.2.1 - CRUSHER SITE NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2015	January	709	95.3%	13.7	6.2	561.4	78.8	131.8	33.4	0	0
	February	645	96.0%	7.1	3.8	195.5	58.5	38.7	19.6	0	0
	March	702	94.4%	14.3	6.1	673.0	102.9	183.8	40.6	0	0
	April	672	93.3%	32.1	9.0	689.2	69.4	365.7	40.8	0	0
	May	714	96.0%	13.6	5.0	793.2	67.6	103.2	12.9	0	0
	June	520	72.2%	10.5	4.1	236.8	42.2	59.3	12.8	0	0
	July	384	51.6%	20.1	6.9	355.2	43.6	71.2	16.6	0	0
	August	684	91.9%	18.7	6.1	319.7	50.8	135.4	24.8	0	0
	September	662	91.9%	11.4	4.5	233.6	35.8	42.5	14.7	0	0
	October	680	91.4%	9.4	3.6	607.8	44.8	58.9	14.6	0	0
	November	657	91.3%	8.8	5.1	215.3	62.0	40.0	24.4	0	0
	December	666	89.5%	15.2	6.3	706.2	83.1	154.5	33.6	0	0
Annual		7695	87.8%	14.5	5.5	793.2	102.9	365.7	40.8	0	0
2016	January	677	91.0%	15.1	5.6	513.6	75.1	194.2	33.5	0	0
	February	641	92.1%	15.7	5.9	640.0	81.2	89.8	21.3	0	0
	March	684	91.9%	7.8	3.0	498.5	74.6	100.4	20.4	0	0
	April	664	92.2%	13.1	5.4	435.1	92.1	81.8	22.5	0	0
	May	703	94.5%	15.3	6.9	310.5	60.4	87.7	20.0	0	0
	June	663	92.1%	22.3	6.1	448.6	43.9	122.8	14.7	0	0
	July	684	91.9%	36.1	5.9	576.4	30.1	226.4	18.4	0	0
	August	328	44.1%	22.5	5.1	663.6	43.4	151.1	10.2	0	0
	September	665	92.4%	9.8	4.2	189.7	37.4	43.3	15.4	0	0
	October	682	91.7%	19.8	5.6	430.0	58.2	182.6	31.2	0	0
	November	656	91.1%	15.5	5.6	540.6	83.4	172.2	34.2	0	0
	December	125	16.8%	11.6	6.5	152.3	61.9	35.8	19.2	0	0
Annual		7172	81.6%	17.2	5.4	663.6	92.1	226.4	34.2	0	0

Observations in ug/m^3

FIGURE 4.6.2.1 - CRUSHER SITE ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations

4.6.3 Port Site

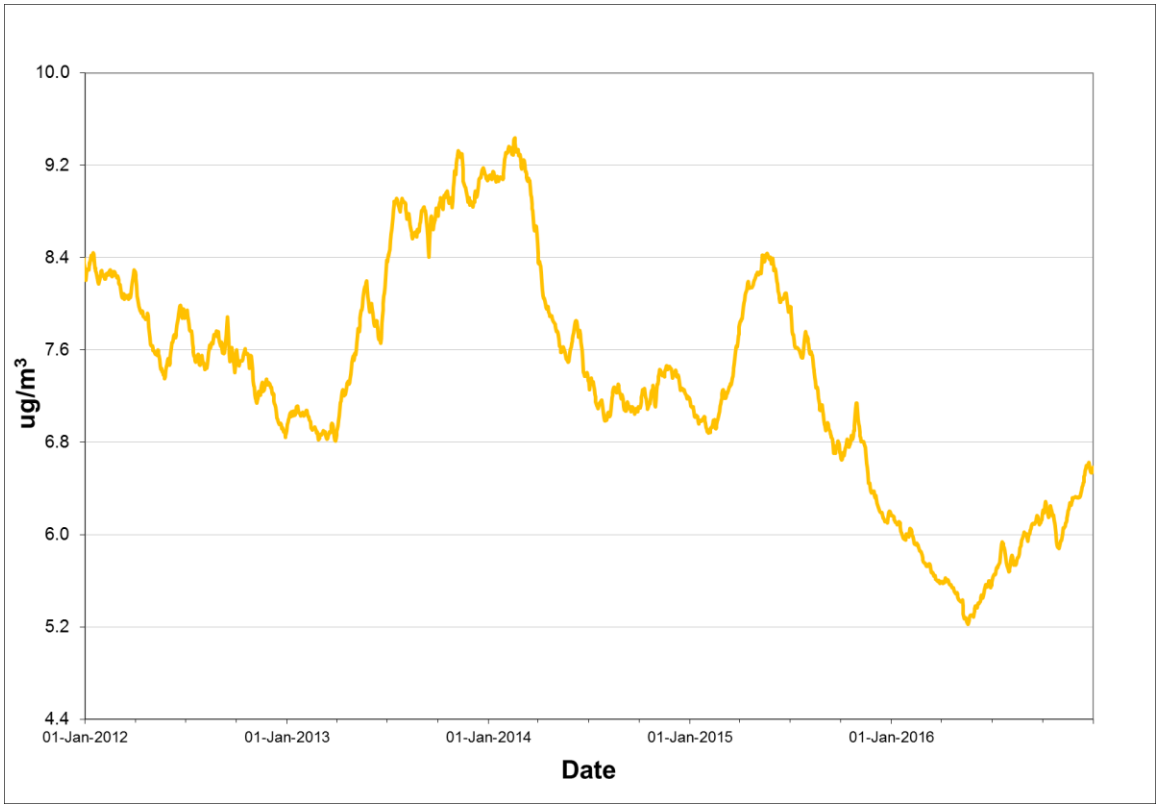
The Port Site station monitors the ambient levels of TPM on a continuous basis. The 24-hour ambient air criterion was exceeded on three occasions in late summer and the fall 2016 likely owing to dry conditions and high winds. Table 4.6.3.1 provides summary information on the level of air contaminants measured at the Port Site, while Figure 4.6.3.1 provides a graphical representation of the annual trend.

TABLE 4.6.3.1 - PORT SITE TPM SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120ug/m^3)
2015	January	25	80.6%	5.0	11.2	0
	February	28	100.0%	6.6	13.2	0
	March	28	90.3%	8.5	46.0	0
	April	18	60.0%	9.8	30.7	0
	May	30	96.8%	6.5	105.5	0
	June	29	96.7%	6.0	25.5	0
	July	30	96.8%	4.9	67.5	0
	August	30	96.8%	4.7	21.1	0
	September	30	100.0%	7.0	73.0	0
	October	31	100.0%	15.3	445.2	3
	November	30	100.0%	3.2	11.3	0
	December	31	100.0%	4.2	28.8	0
Annual		340	93.2%	6.7	445.2	3
2016	January	30	96.8%	3.7	27.2	0
	February	29	100.0%	4.2	40.8	0
	March	31	100.0%	5.8	14.6	0
	April	30	100.0%	5.9	43.7	0
	May	27	87.1%	5.2	39.3	0
	June	30	100.0%	9.4	51.8	0
	July	31	100.0%	6.3	112.3	0
	August	31	100.0%	9.0	37.9	0
	September	30	100.0%	9.8	177.1	1
	October	30	96.8%	9.3	137.3	1
	November	28	93.3%	7.6	162.7	1
	December	31	100.0%	6.4	33.3	0
Annual		358	97.8%	6.6	177.1	3

Observations in ug/m^3

FIGURE 4.6.3.1 - PORT SITE ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.7 VALE Newfoundland and Labrador - Long Harbour

VALE operates a monitoring network in the Long Harbour / Mt. Arlington Heights area to monitor the air quality near the Hydromet Nickel Processing facility. The network monitors levels of NO_x / NO_2 as well as $PM_{2.5}$. In 2016, VALE operated three stations; near the Community Centre in Long Harbour, along the Main Road in Long harbour, and near the Access Road to the Hydromet facility. The location of the stations is shown in Figure 4.7.1.

FIGURE 4.7.1 - VALE / LONG HARBOUR AMBIENT MONITORING STATIONS

4.7.1 Community Centre (AM1)

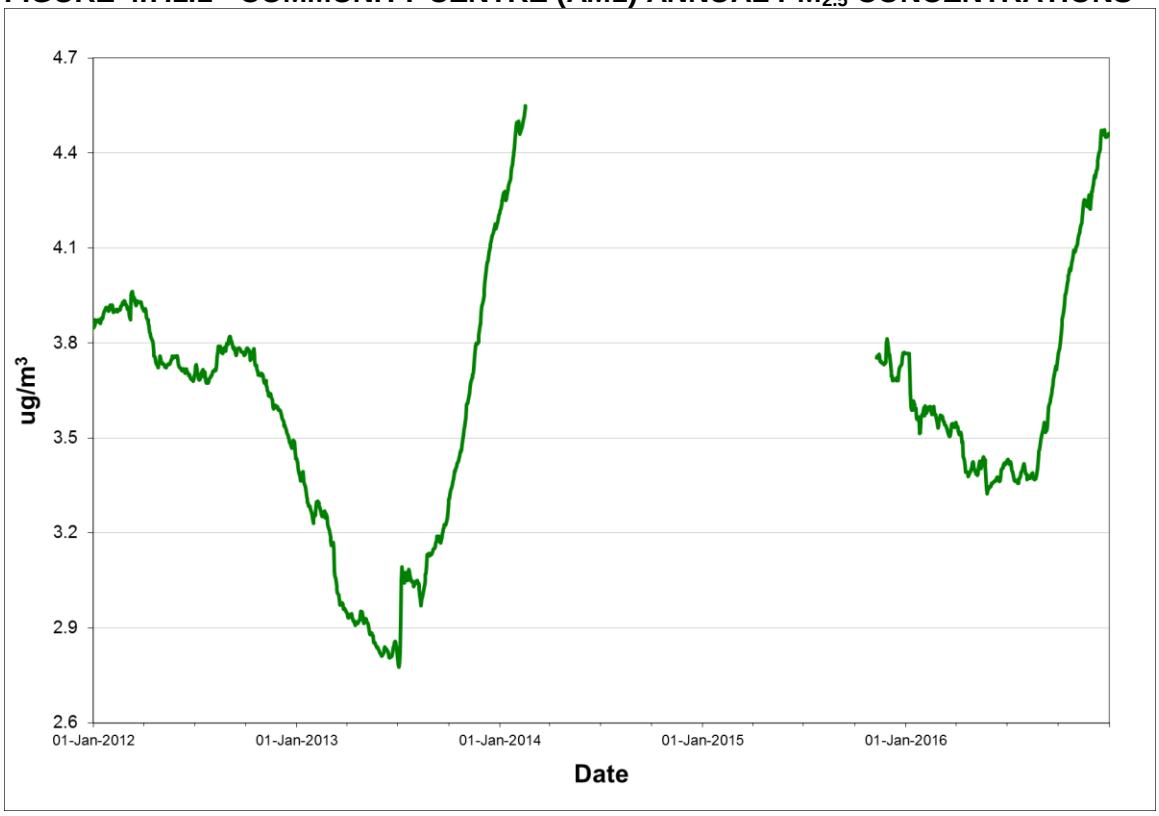
The Community Centre (AM1) station was the first station installed in the area by VALE and monitors the ambient levels of $PM_{2.5}$ and NO_x / NO_2 on a continuous basis. Neither the 24-hour ambient air criterion for $PM_{2.5}$ nor the ambient air criteria for NO_x / NO_2 was exceeded in 2016. Tables 4.7.1.1 and 4.7.1.2 provide summary information on the level of air contaminants measured at the Community Centre (AM1) site, while Figures 4.7.1.1 and 4.7.1.2 provide a graphical representation of the annual trend of $PM_{2.5}$ and NO_x / NO_2.

TABLE 4.7.1.1 - COMMUNITY CENTRE (AM1) $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	23	74.2%	6.6	25.0	0
	February	28	100.0%	4.8	11.0	0
	March	14	45.2%	3.2	5.5	0
	April	29	96.7%	5.0	19.7	0
	May	30	96.8%	4.9	13.9	0
	June	30	100.0%	1.9	4.2	0
	July	31	100.0%	2.6	9.3	0
	August	29	93.5%	2.3	6.3	0
	September	29	96.7%	2.3	8.8	0
	October	27	87.1%	3.1	9.6	0
	November	28	93.3%	4.1	22.3	0
	December	31	100.0%	4.8	13.3	0
Annual		329	90.1%	3.8	25.0	0
2016	January	24	77.4%	3.8	13.9	0
	February	26	89.7%	4.6	13.5	0
	March	31	100.0%	3.4	10.8	0
	April	24	80.0%	3.7	12.1	0
	May	31	100.0%	3.8	9.3	0
	June	26	86.7%	2.6	8.7	0
	July	22	71.0%	2.2	5.4	0
	August	21	67.7%	3.0	9.7	0
	September	29	96.7%	5.1	11.0	0
	October	31	100.0%	6.8	9.6	0
	November	30	100.0%	6.2	10.4	0
	December	20	64.5%	8.1	15.5	0
Annual		315	86.1%	4.5	15.5	0

Observations in ug/m^3

FIGURE 4.7.1.1 - COMMUNITY CENTRE (AM1) ANNUAL $PM_{2.5}$ CONCENTRATIONS



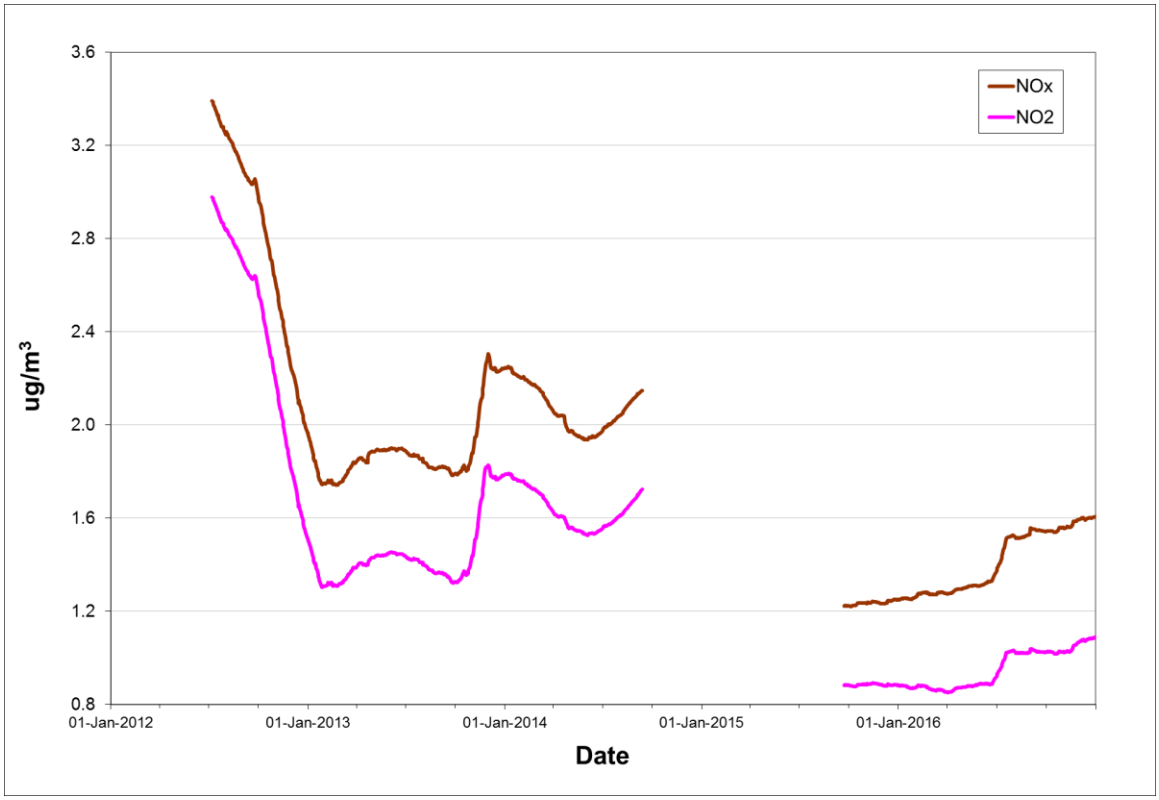
Rolling annual average of daily concentrations

TABLE 4.7.1.2 - COMMUNITY CENTRE (AM1) NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour	Exceedances 24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	702	94.4%	1.3	1.0	11.5	9.9	2.5	2.0	0	0
	February	670	99.7%	1.4	1.0	8.6	7.2	2.6	2.2	0	0
	March	712	95.7%	1.2	0.9	10.0	7.1	2.5	2.2	0	0
	April	718	99.7%	1.0	0.8	9.8	7.3	1.5	1.2	0	0
	May	743	99.9%	1.1	0.7	13.8	9.2	2.4	1.9	0	0
	June	712	98.9%	1.2	0.9	9.7	7.0	2.2	1.8	0	0
	July	742	99.7%	1.1	0.7	8.9	5.1	1.7	1.2	0	0
	August	744	100.0%	1.4	1.1	11.5	9.3	2.9	2.3	0	0
	September	699	97.1%	1.4	0.9	7.0	5.5	1.9	1.4	0	0
	October	736	98.9%	1.3	0.9	11.2	9.4	2.5	1.8	0	0
	November	716	99.4%	1.2	0.9	11.9	7.0	2.7	2.3	0	0
	December	741	99.6%	1.4	0.8	8.5	6.7	3.0	2.2	0	0
Annual		8635	98.6%	1.3	0.9	13.8	9.9	3.0	2.3	0	0
2016	January	742	99.7%	1.4	0.8	8.7	6.8	2.1	1.5	0	0
	February	694	99.7%	1.6	1.0	11.9	10.4	4.0	3.0	0	0
	March	741	99.6%	1.2	0.7	12.1	10.8	2.0	1.5	0	0
	April	718	99.7%	1.3	1.0	8.1	6.1	2.3	1.9	0	0
	May	742	99.7%	1.3	0.9	6.9	5.4	2.1	1.5	0	0
	June	716	99.4%	1.9	1.3	15.2	7.8	3.4	2.9	0	0
	July	740	99.5%	2.9	2.1	21.7	15.7	6.5	4.6	0	0
	August	739	99.3%	1.5	0.9	30.4	6.3	2.9	1.6	0	0
	September	716	99.4%	1.5	1.0	154.9	88.3	11.7	6.6	0	0
	October	736	98.9%	1.5	0.9	17.8	14.8	5.1	3.9	0	0
	November	713	99.0%	1.6	1.4	22.2	16.5	6.3	5.8	0	0
	December	741	99.6%	1.5	1.1	14.8	10.3	3.2	2.4	0	0
Annual		8738	99.5%	1.6	1.1	154.9	88.3	11.7	6.6	0	0

Observations in ug/m^3

FIGURE 4.7.1.2 - COMMUNITY CENTRE (AM1) ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations

4.7.2 Main Road (AM2)

The Main Road (AM2) station monitors the ambient levels of $PM_{2.5}$ and NO_x / NO_2 on a continuous basis. Neither the $PM_{2.5}$ nor the NO_x / NO_2 ambient air criteria were exceeded in 2016. Tables 4.7.2.1 and 4.7.2.2 provide summary information on the level of air contaminants measured at the Main Road (AM2) site, while Figures 4.7.2.1 and 4.7.2.2 provide a graphical representation of the annual trend for pollutants.

Owing to prolonged maintenance related issues, significant volumes of $PM_{2.5}$ data collected at the station was invalidated in 2015. In late December of that year, the maintenance issues were largely resolved and valid data was again being recorded.

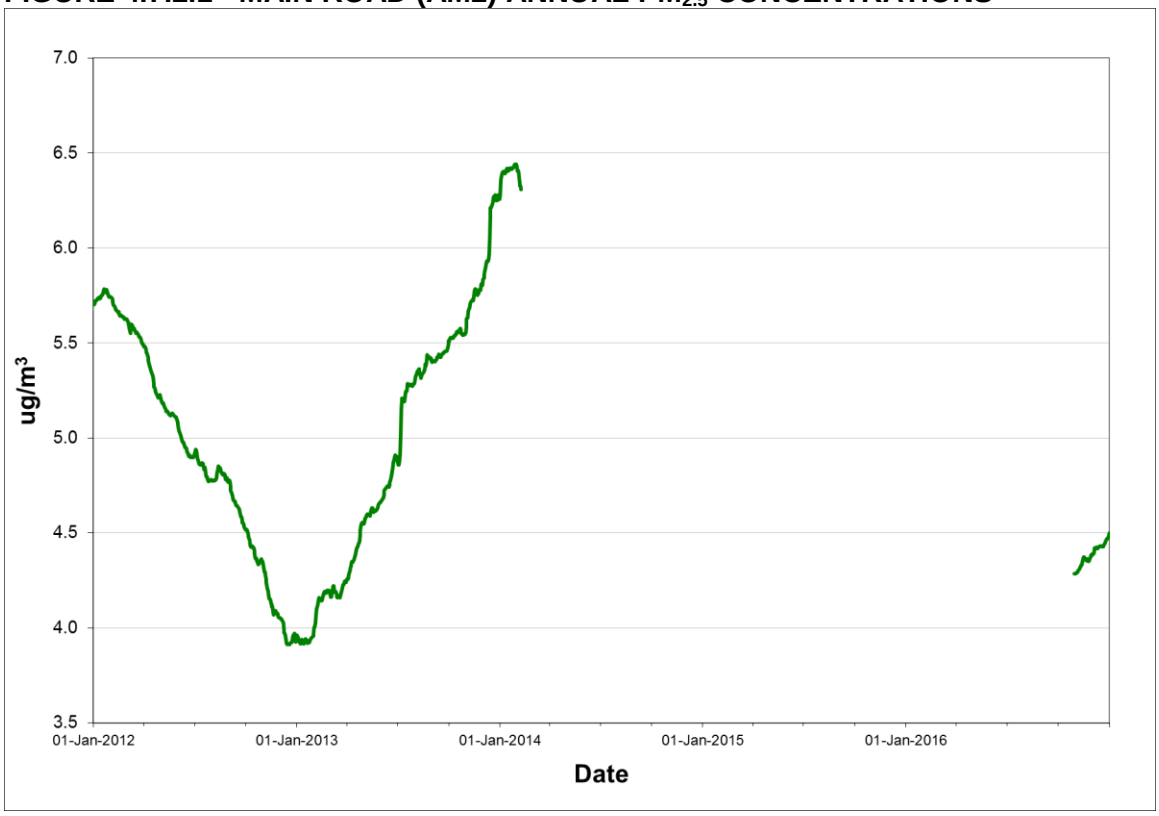
Though presented for illustrative purposes, the averaging contained within Table 4.7.2.1 does not meet established criteria.

TABLE 4.7.2.1 - MAIN ROAD (AM2) $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	31	100.0%	3.9	7.5	0
	February	26	92.9%	4.8	10.9	0
	March	29	93.5%	3.4	8.2	0
	April	6	20.0%	5.5	9.8	0
	May	3	9.7%	7.8	11.9	0
	June	4	13.3%	3.5	3.9	0
	July	4	12.9%	3.9	4.9	0
	August	13	41.9%	6.6	9.1	0
	September	0	0.0%			
	October	1	3.2%	2.3	2.3	0
	November	11	36.7%	3.8	5.3	0
	December	20	64.5%	4.3	5.9	0
Annual		148	40.5%	4.4	11.9	0
2016	January	30	96.8%	4.1	10.9	0
	February	26	89.7%	5.3	13.5	0
	March	31	100.0%	4.3	12.7	0
	April	24	80.0%	4.6	14.1	0
	May	31	100.0%	5.0	10.5	0
	June	28	93.3%	2.8	10.0	0
	July	31	100.0%	3.6	8.7	0
	August	17	54.8%	3.3	7.2	0
	September	24	80.0%	3.7	8.3	0
	October	26	83.9%	6.0	11.4	0
	November	30	100.0%	5.1	9.0	0
	December	20	64.5%	6.0	12.5	0
Annual		318	86.9%	4.5	14.1	0

Observations in ug/m^3

FIGURE 4.7.2.1 - MAIN ROAD (AM2) ANNUAL $PM_{2.5}$ CONCENTRATIONS



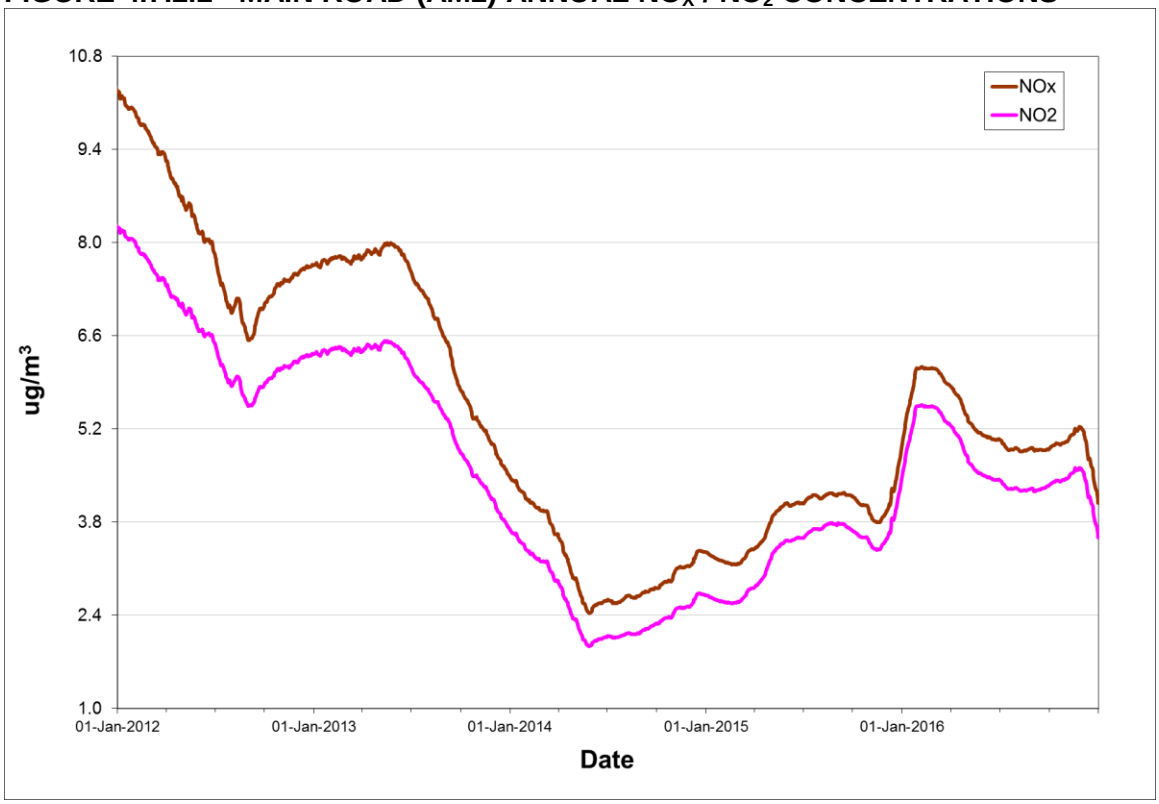
Rolling annual average of daily concentrations

TABLE 4.7.2.2 - MAIN ROAD (AM2) NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour	Exceedances 24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	744	100.0%	1.8	1.6	10.4	9.7	4.8	4.1	0	0
	February	670	99.7%	2.2	2.1	14.4	12.2	5.9	5.4	0	0
	March	736	98.9%	4.9	4.7	15.6	11.7	8.8	8.5	0	0
	April	715	99.3%	7.2	7.2	24.0	23.5	13.0	12.7	0	0
	May	737	99.1%	6.1	5.9	27.0	26.6	20.2	19.8	0	0
	June	714	99.2%	3.8	3.4	17.7	13.0	6.2	5.8	0	0
	July	744	100.0%	4.5	4.1	14.7	10.9	8.3	7.1	0	0
	August	737	99.1%	3.3	2.9	16.9	14.5	8.1	6.8	0	0
	September	679	94.3%	3.7	2.2	18.1	16.8	9.9	8.8	0	0
	October	608	81.7%	1.5	1.3	11.1	10.1	2.7	2.3	0	0
	November	658	91.4%	3.5	3.1	31.6	27.3	13.2	11.7	0	0
	December	741	99.6%	15.5	13.9	60.1	52.9	32.5	28.9	0	0
Annual		8483	96.8%	4.9	4.4	60.1	52.9	32.5	28.9	0	0
2016	January	742	99.7%	15.4	14.2	63.5	55.7	28.4	26.0	0	0
	February	685	98.4%	2.1	1.9	21.9	20.3	5.6	4.8	0	0
	March	740	99.5%	1.9	1.6	8.1	7.5	4.0	3.4	0	0
	April	719	99.9%	2.1	1.8	11.0	7.2	4.6	4.1	0	0
	May	741	99.6%	2.7	2.5	10.0	8.6	4.8	4.1	0	0
	June	717	99.6%	3.0	2.6	14.4	12.2	4.5	4.0	0	0
	July	744	100.0%	3.1	2.7	20.1	9.2	4.9	4.4	0	0
	August	738	99.2%	3.3	2.7	11.3	7.2	5.0	4.1	0	0
	September	596	82.8%	3.2	2.5	11.6	7.3	6.0	4.4	0	0
	October	732	98.4%	3.3	2.9	20.8	17.4	6.9	5.7	0	0
	November	685	95.1%	6.4	5.2	44.0	32.8	13.4	10.5	0	0
	December	495	66.5%	2.3	2.0	12.0	10.9	6.1	5.5	0	0
Annual		8334	94.9%	4.1	3.6	63.5	55.7	28.4	26.0	0	0

Observations in ug/m^3

FIGURE 4.7.2.2 - MAIN ROAD (AM2) ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations

4.7.3 Access Road (AM3)

The Access Road (AM3) station is installed near the VALE Inco security gate and monitors the ambient levels of $PM_{2.5}$ and NO_x / NO_2 on a continuous basis. The $PM_{2.5}$ ambient air standards were not exceeded in 2016 nor were the NO_x / NO_2 standards. Tables 4.7.3.1 and 4.7.3.2 provide summary information on the level of air contaminants measured at the Access Road (AM3) site while Figures 4.7.3.1 and 4.7.3.2 provide a graphical representation of the annual trend in the data.

Owing to prolonged maintenance related issues, significant volumes of $PM_{2.5}$ data collected at the station was invalidated in 2015. In late December of that year, the maintenance issues were resolved and valid data was again being recorded. In the case of NO_x / NO_2 the monitor, maintenance issues also resulted in a period of invalid data being collected in mid-2016.

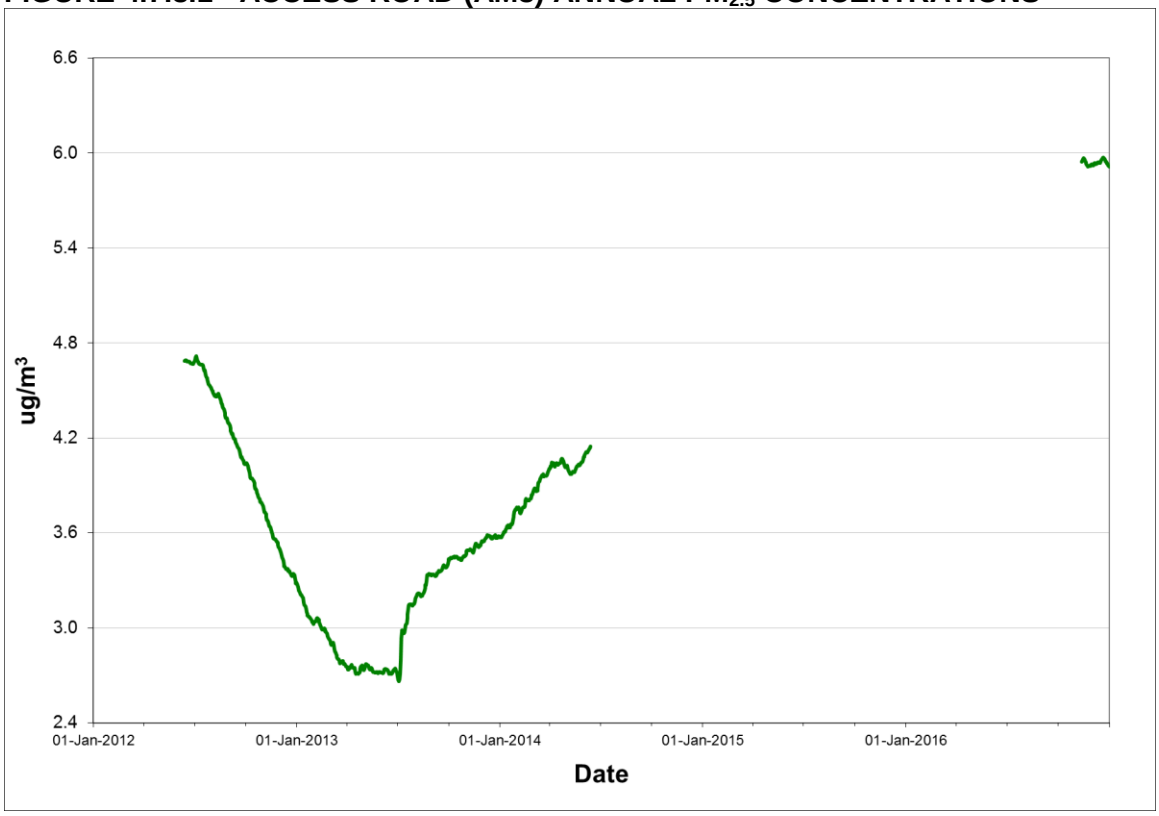
Though presented for illustrative purposes, the averaging contained within Tables 4.7.3.1 for 2015 does not meet established criteria.

TABLE 4.7.3.1 - ACCESS ROAD (AM3) $PM_{2.5}$ SUMMARY 2015 & 2016

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2015	January	28	90.3%	6.4	9.7	0
	February	28	100.0%	7.3	13.9	0
	March	31	100.0%	7.4	12.3	0
	April	15	50.0%	7.4	11.1	0
	May	5	16.1%	7.4	11.0	0
	June	3	10.0%	4.8	6.8	0
	July	7	22.6%	5.5	9.8	0
	August	18	58.1%	9.1	12.0	0
	September	3	10.0%	9.8	11.4	0
	October	0	0.0%			
	November	1	3.3%	4.6	4.6	0
	December	17	54.8%	6.2	8.4	0
Annual		156	42.7%	7.2	13.9	0
2016	January	29	93.5%	7.4	13.7	0
	February	26	89.7%	5.5	9.5	0
	March	31	100.0%	6.1	19.3	0
	April	20	66.7%	4.8	10.1	0
	May	28	90.3%	5.2	8.9	0
	June	24	80.0%	4.6	8.3	0
	July	31	100.0%	8.7	12.3	0
	August	31	100.0%	6.3	10.4	0
	September	30	100.0%	4.6	10.4	0
	October	26	83.9%	5.5	10.2	0
	November	30	100.0%	5.5	8.8	0
	December	31	100.0%	5.9	10.7	0
Annual		337	92.1%	5.9	19.3	0

Observations in ug/m^3

FIGURE 4.7.3.1 - ACCESS ROAD (AM3) ANNUAL $PM_{2.5}$ CONCENTRATIONS



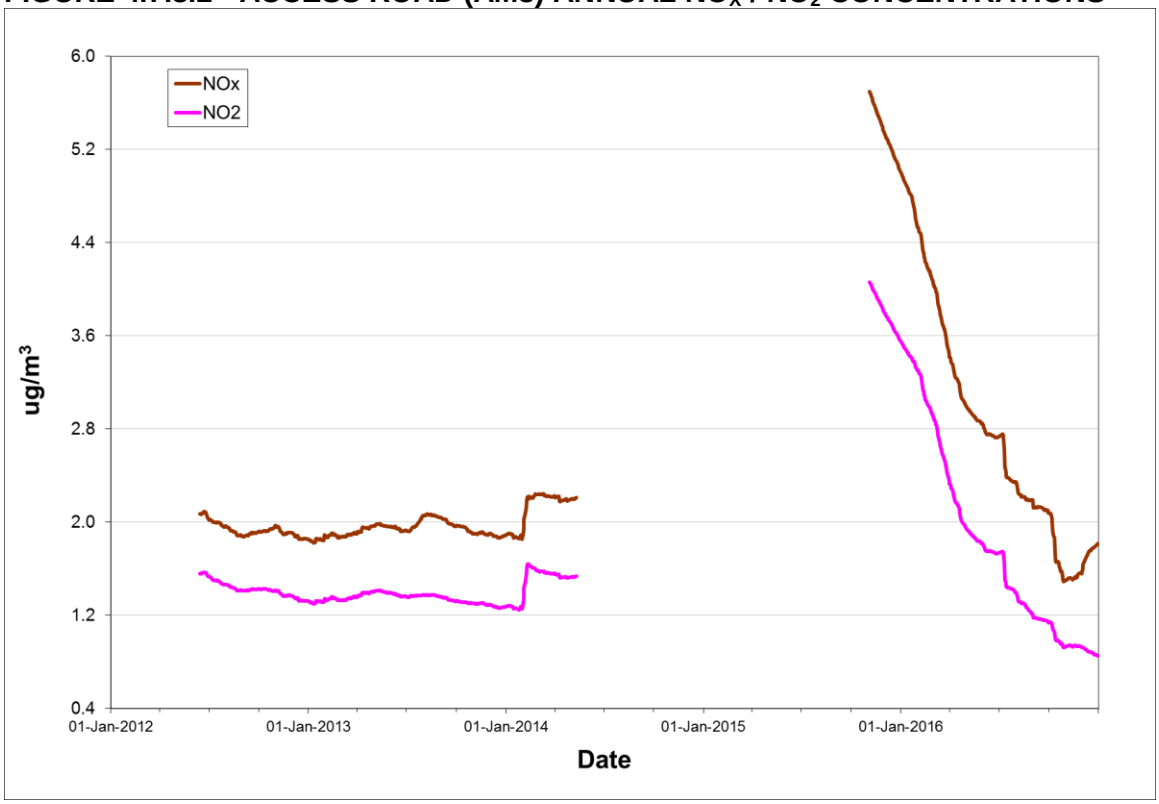
Rolling annual average of daily concentrations

TABLE 4.7.3.2 - ACCESS ROAD (AM3) NO_X / NO_2 SUMMARY 2015 & 2016

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums				Exceedances	
						1-Hour		24-Hour		1-Hour	24-Hour
				NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2015	January	253	34.0%	10.2	4.6	42.9	26.0	17.8	10.4	0	0
	February	635	94.5%	7.4	6.0	75.1	33.1	18.2	15.2	0	0
	March	710	95.4%	8.7	7.5	90.0	56.3	19.1	16.9	0	0
	April	681	94.6%	6.2	5.5	61.1	44.8	15.7	13.5	0	0
	May	716	96.2%	3.0	2.4	30.9	22.7	6.2	5.0	0	0
	June	671	93.2%	3.4	2.3	49.2	34.2	9.9	7.6	0	0
	July	710	95.4%	6.8	5.3	346.4	301.4	56.4	48.4	0	0
	August	715	96.1%	4.2	2.8	65.2	37.7	14.0	11.5	0	0
	September	681	94.6%	2.6	1.5	272.0	101.5	22.7	10.5	0	0
	October	713	95.8%	7.8	3.4	242.0	89.3	45.0	16.9	0	0
	November	687	95.4%	1.5	1.0	27.2	19.4	4.8	3.2	0	0
	December	710	95.4%	1.5	1.0	48.8	17.5	4.3	2.3	0	0
Annual		7882	90.0%	5.0	3.6	346.4	301.4	56.4	48.4	0	0
2016	January	719	96.6%	1.3	1.0	22.1	15.8	3.8	3.1	0	0
	February	694	99.7%	1.6	1.1	85.5	28.1	6.7	5.7	0	0
	March	734	98.7%	1.1	0.7	8.4	8.0	2.1	1.4	0	0
	April	716	99.4%	1.2	0.8	11.4	9.1	2.7	2.0	0	0
	May	671	90.2%	1.1	0.8	7.7	5.8	1.8	1.3	0	0
	June	407	56.5%	1.4	1.0	13.5	7.2	3.4	2.7	0	0
	July	0	0.0%								
	August	333	44.8%	3.1	0.6	15.6	2.1	4.5	0.8	0	0
	September	716	99.4%	1.7	0.9	9.7	5.1	2.9	1.5	0	0
	October	737	99.1%	1.8	1.2	20.8	15.4	4.6	3.2	0	0
	November	715	99.3%	2.2	1.0	18.9	9.4	4.7	2.3	0	0
	December	743	99.9%	4.0	0.2	8.3	0.5	8.1	0.4	0	0
Annual		7185	81.8%	1.8	0.9	85.5	28.1	8.1	5.7	0	0

Observations in ug/m^3

FIGURE 4.7.3.2 - ACCESS ROAD (AM3) ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations