DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE

2022 AMBIENT AIR MONITORING REPORT

April 2023

Executive Summary

The air quality in communities across the province is generally considered to be good as the 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, the United States, and Europe but these events are also episodic in nature and infrequently produce levels that exceed the 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 2022 report is the 14th 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. All datasets are subject to historical revisions.

In 2022, amendments to the *Air Pollution Control Regulations, 2004* were promulgated; now cited as *Air Pollution Control Regulations, 2022*. Of particular note, the units of measurement for gases in the air quality standards were changed from micrograms per cubic metre ($\mu g/m^3$) to parts per billion (ppb) for consistency with field monitors. Care is therefore required when comparing the results from previous annual reports to this 2022 annual report.

There were instances where the levels measured at a station operated by an industrial facility approached or exceeded the associated air quality standard. 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.

This 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, there was a series of exceedances, or there has been a change in industrial operating conditions which would lead to a change in emissions (e.g. a switch from heavy fuel oil combustion to distillate fuel oil combustion).

The 2022 monitoring results are summarized below.

Sulphur Dioxide - 2022

Operator	Monitoring Location	Maximum 1-hour Concentration	Maximum 3-hour Concentration	Maximum 24-hour Concentration	Annual Concentration
Regulatory Limit (ppb)		**344**	**229**	**115**	**23**
NAPS	St. John's	4.5	2.2	0.6	0.2
	Mt. Pearl	5.0	1.9	0.5	0.1
	Grand Falls-Windsor	2.4	2.4	2.2	0.8
	Corner Brook	1.7	1.5	0.5	0.2
NL HYDRO	Butterpot Road	18.9	15.6	3.2	0.6
	Green Acres Road	80.2	34.1	9.4	0.9
	Indian Pond Drive	70.2	56.9	21.2	0.9
	Indian Pond Road	91.6	65.5	22.6	0.8
	Lawrence Pond Road	20.9	14.7	6.9	0.7
BRAYA	Arnold's Cove	7.3	3.3	1.2	0.5
	Come by Chance	7.2	3.6	2.5	1.0
	Sunnyside	7.2	3.4	2.4	0.9
	Property Boundary	21.1 *	7.4 *	2.3 *	**
IOC	Dog Park	44.2	25.0	8.4	0.5
	Hudson Drive	36.9	27.1	7.1	0.3
	Smokey Mountain II	18.9	12.3	4.6	0.4
CBPP	Main Street	2.3	1.6	0.8	0.4
TACORA RESOURCES	Bond Street	20.5	9.5	3.1	0.6

Observations in ppb

* based on limited data

** insufficient data to calculate

$PM_{2.5}$ - 2022

Operator	Monitoring Location	Maximum 24-hour Concentration	Annual Concentration
Regulatory Limit (µg/m³)		**25**	**8.8**
NAPS	St. John's	16.8	6.6
	Mt. Pearl	11.5	4.6
	Grand Falls-Windsor	34.3	4.6
	Corner Brook	24.2	**
	Burin	26.3	5.9
NL HYDRO	Butterpot Road	10.6	4.6
	Green Acres Road	10.2	4.1
	Indian Pond Drive	10.5	4.3
	Indian Pond Road	12.8	5.3
	Lawrence Pond Road	10.1	4.4
	Holyrood Property Boundary	11.3	4.9
BRAYA	Arnold's Cove	36.3	5.7
	Come by Chance	13.8	5.1
	Sunnyside	80.3	5.3
	Property Boundary	34.1	5.3
IOC	Dog Park	14.6	5.0
	Hudson Drive (Firehall)	13.6	3.6
	Smokey Mountain II	17.2	5.4
TACORA RESOURCES	Bond Street	16.4	4.7
	Cabot Drive	15.3	**
CBPP	Main Street	22.3	6.9
VALE	Community Centre	11.6	4.2
	Access Road	11.8	4.0
	Accommodation Building	37.2	4.3
CFI	Director Drive	15.6	5.1
AML	Property Boundary	12.1	4.5
TSMC	Camp Site	18.8	4.0

Observations in µg/m³
** insufficient data to calculate

Nitrogen Dioxide - 2022

Operator	Monitoring Location	Maximum 1-hour Concentration	Maximum 24-hour Concentration	Annual Concentration
Regulatory Limit (ppb)		**213**	**106**	**53**
NAPS	St. John's	41.1	17.3	4.1
	Mt. Pearl	13.5	3.6	0.9
	Grand Falls-Windsor	12.2	4.6	1.8
	Corner Brook	34.0	8.6	2.0
	Burin	27.2	1.8	0.3
NL HYDRO	Butterpot Road	8.4	1.9	0.3
	Green Acres Road	13.6	2.4	0.4
	Indian Pond Drive	12.6	4.5	0.5
	Indian Pond Road	19.0	5.7	0.5
	Lawrence Pond Road	14.8	4.4	0.5
IOC	Dog Park	38.1	13.6	2.0
	Hudson Drive (Firehall)	42.1	17.2	2.6
	Smokey Mountain II	37.9	15.8	1.6
VALE	Community Centre	7.1 *	3.5 *	**
	Access Road	6.8 *	1.9 *	**
	Crusher Building	41.3	24.7	3.7
	Accommodation Building	52.3	31.5	9.3
CFI	Director Drive	**	**	**
TSMC	Camp Site	108.6	35.0	1.7

Observations in ppb

* based on limited data

** insufficient data to calculate

Ozone - 2022

Operator	Monitoring Location	Maximum 1-hour Concentration	Maximum 8-hour Concentration
Regulatory Limit (ppb)		**82**	**44**
NAPS	St. John's	50.2	44.9
	Mt. Pearl	48.7	43.1
	Grand Falls-Windsor	52.8	48.4
	Corner Brook	54.6	48.0
	Burin	45.9	42.6
	Port aux Choix	47.4 *	43.5 *
IOC	Hudson Drive (Firehall)	67.9 *	65.5 *

Observations in ppb
* based on limited data

PM_{10} - 2022

Operator	Monitoring Location	Maximum 24-hour Concentration
Regulatory Limit (µg/m^3)		**50**
NAPS	St. John's	42.5
	Mt. Pearl	27.5
	Grand Falls-Windsor	55.8
	Corner Brook	43.3
	Burin	65.5
IOC	Hudson Drive (Firehall)	106.0
VALE	Community Centre	27.6
	Access Road	29.2

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

Total Particulate Matter - 2022

Operator	Monitoring Location	Maximum 24-hour Concentration	Annual Concentration
Regulatory Limit (µg/m³)		**120**	**60**
NL HYDRO	Green Acres Road	20.0	7.2
	Indian Pond Drive	28.2	7.8
	Indian Pond Road	31.9	8.5
	Lawrence Pond Road	25.6	6.7
	Holyrood Property Boundary	51.4	9.8
IOC	Dog Park	186.9	10.5
	Hudson Drive (Firehall)	240.8	15.5
	Smokey Mountain II	167.9	10.9
TACORA RESOURCES	Bond Street	129.3	13.9
	Cabot Drive	103.2	**
CBPP	Main Street	**	**
VALE	Port Site	515.4	7.8
CFI	Director Drive	28.1	9.3
AML	Property Boundary	183.4	9.1

Observations in µg/m³

* based on limited data

** insufficient data to calculate

Carbon Monoxide - 2022

Operator	Monitoring Location	Maximum 1-hour Concentration	Maximum 8-hour Concentration
Regulatory Limit (ppm)		**30.582**	**13.107**
NAPS	St. John's	1.3	0.4
	Mt. Pearl	0.7	0.3
	Grand Falls-Windsor	1.0	0.6
	Corner Brook	0.5	0.4
	Burin	0.6	0.4

Observations in ppm

* based on limited data

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Disclaimer

All data presented in this report has been subjected to quality assurance and quality control procedures. The Department of Environment and Climate Change 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 Environment and Climate Change, and Environment and Climate Change Canada via the National Air Pollution Surveillance (NAPS) network. In 2022, 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, and in 2022 there were no extended periods of diminished air quality resulting from the long-range transport of pollutants. There were however, sporadic short-lived episodes in 2022 where the measured levels approached or exceeded the associated air quality standard owing to short-lived long-range transport and / or industrial emissions. Of particular note, in July the smoke from a forest fire in central Newfoundland reached numerous communities in the central portion of the island, with the Grand Falls – Windsor NAPS monitoring station indicating a $PM_{2.5}$ exceedance on July 25th. Owing to the lack of monitoring in general in the area, the full extent of the smoke from the forest fire could not be readily ascertained. In response, the Department, in conjunction with the Department of Health and Community Services have installed numerous Purple Air $PM_{2.5}$ sensors in the general area, which will serve as early indicators of adverse air quality if such events were to occur in the future.

Local emissions, such as those from vehicular traffic and woodstoves also impact air quality.

This report provides a two-year tabular summary information and a five-year graphical trend for each air quality monitor in Newfoundland and Labrador which were either operated or audited by the Department in 2022. All monitoring stations, including those operated by industrial operations, are required to meet minimum performance criteria 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* (https://www.gov.nl.ca/ecc/files/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 networks in the province, a description of the pollutants being measured, and their associated air quality standard. Section 3 provides results from the monitors in the NAPS network; while Section 4 provides results from the monitoring networks operated at industrial facilities.

1.1 Definitions

The following definitions are used throughout this report:

AML	Atlantic Minerals Limited
AQHI	Air Quality Health Index
Braya	Braya Renewable Fuels
CBPP	Corner Brook Pulp and Paper
CFI	Canada Fluorspar Inc.
CO	carbon monoxide
IOC	Iron Ore Company of Canada
mg/m^3	milligrams per cubic metre
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
ppb	parts per billion
SO_2	sulphur dioxide
TPM	total particulate matter
TSMC	Tata Steel Minerals Canada
$\mu g/m^3$	micrograms per cubic metre
Vale	Vale Newfoundland and Labrador

2.0 Monitoring Network

Seven 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); total particulate matter (TPM); particles less or equal to than 10 microns (PM_{10}); particles less than or equal to 2.5 microns ($PM_{2.5}$); 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 three 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. Fuel NO_x is formed by the reaction of nitrogen compounds chemically bound in liquid or solid fuels with oxygen in the combustion air and can account for up to 50% of 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.

NO_2 is the primary component of concern in NO_x emissions. Though typically less than 10% of the NO_x emitted from the combustion of fuel is emitted as NO_2, the remaining 90+% is emitted as NO, which is subsequently converted to NO_2 in reactions with various oxidants and ozone 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 and aerosols 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:

$$4HC + 5O_2 \rightarrow 4CO_2 + 2H_2O$$

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 typically 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 Air Quality Standards

The maximum concentrations of air pollutants considered to be protective of the environment are defined in the new *Air Pollution Control Regulations, 2022*. Note that under the new regulations, the air quality standards for gases were changed from $\mu g/m^3$ to ppb for consistency with pollutant monitors. For the pollutants discussed in the report, the air quality standards are detailed in Table 2.2.1.

TABLE 2.2.1 - AIR QUALITY STANDARDS IN NEWFOUNDLAND AND LABRADOR

Pollutant	Averaging Period	Concentration (ppb)	Concentration ($\mu g/m^3$)
Carbon Monoxide (CO)	1-hour	30582	---
	8-hour	13107	---
Nitrogen Dioxide (NO_2)	1-hour	213	---
	24-hour	106	---
	1-year	53	---
Ozone (O_3)	1-hour	82	---
	8-hour	44	---
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	344	---
	3-hour	229	---
	24-hour	115	---
	1-year	23	---

* The 3 year average of the annual average concentrations

https://assembly.nl.ca/Legislation/sr/regulations/rc220011.htm

2.3 Monitoring in Newfoundland and Labrador

Table 2.3.1 provides the listing of monitoring stations in the province that measured pollutants during 2022. Figure 2.0.1 provides a picture of a typical ambient air monitoring station.

TABLE 2.3.1 - POLLUTANT MONITORING IN NEWFOUNDLAND AND LABRADOR

OPERATOR	STATION LOCATION	POLLUTANT						
		SO_2	NO_X / NO_2	O_3	TPM	PM_{10}	$PM_{2.5}$	CO
ENVIRONMENT AND CLIMATE CHANGE + 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	✓	✓	✓		✓	✓	✓
	Fisher Street, Port aux Choix			✓				
	Main Street, Burin		✓	✓		✓	✓	✓
NL HYDRO	Butterpot Road	✓	✓				✓	
	Green Acres Road	✓	✓		✓		✓	
	Indian Pond Drive	✓	✓		✓		✓	
	Indian Pond Road	✓	✓		✓		✓	
	Lawrence Pond Road	✓	✓		✓		✓	
	Property Boundary				✓		✓	
BRAYA RENEWABLE FUELS	Main Road, Come by Chance	✓					✓	
	Spencers Cove Road, Arnold's Cove	✓					✓	
	Goulding Avenue, Sunnyside	✓					✓	
	Property Boundary	✓					✓	
CORNER BROOK PULP AND PAPER	Main Street	✓			✓		✓	

OPERATOR	STATION LOCATION	POLLUTANT						
		SO_2	NO_X / NO_2	O_3	TPM	PM_{10}	$PM_{2.5}$	CO
IRON ORE COMPANY OF CANADA	Dog Park, Labrador City	✓	✓		✓		✓	
	Hudson Drive, Labrador City	✓	✓	✓	✓	✓	✓	
	Smokey Mountain II	✓	✓		✓		✓	
VALE NEWFOUNDLAND AND LABRADOR LIMITED	Voisey's Bay Accommodations		✓				✓	
	Voisey's Bay Crusher		✓					
	Voisey's Bay Port				✓			
	Long Harbour Community Centre		✓			✓	✓	
	Long Harbour Property Boundary		✓			✓	✓	
TACORA RESOURCES	Bond Street, Wabush	✓			✓		✓	
	Cabot Drive, Wabush				✓		✓	
CANADA FLUORSPAR INC.	Director Drive, St. Lawrence		✓		✓		✓	
ATLANTIC MINERALS LIMITED	Property Boundary				✓		✓	
TATA STEEL MINERALS CANADA	Camp Site		✓				✓	

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 their 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 Hudson Drive (Firehall) 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)* (https://www.gov.nl.ca/ecc/files/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 2021, there were six sites operational, and of the six, four had a complete suite monitoring (SO_2, $PM_{2.5}$, PM_{10}, NO_x / NO_2, CO and O_3). One site operated with a subset of monitors ($PM_{2.5}$, PM_{10}, NO_x / NO_2, CO and O_3). These five NAPS stations provide the data necessary to calculate the hourly AQHI. A sixth NAPS station monitors O_3 only.

The four 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, and in Corner Brook on Macpherson Avenue. The site with the subset of monitoring is located in Burin at the Highway Depot. The station that 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

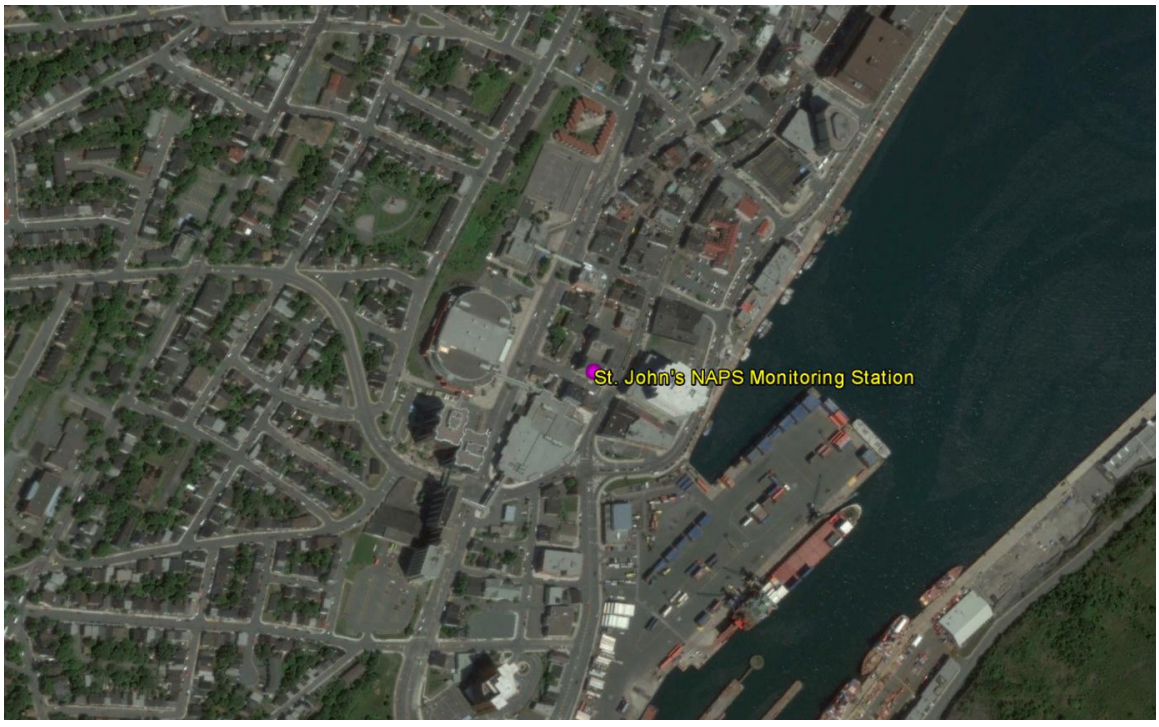


FIGURE 3.0.2 - NAPS MONITORING STATION IN MOUNT PEARL

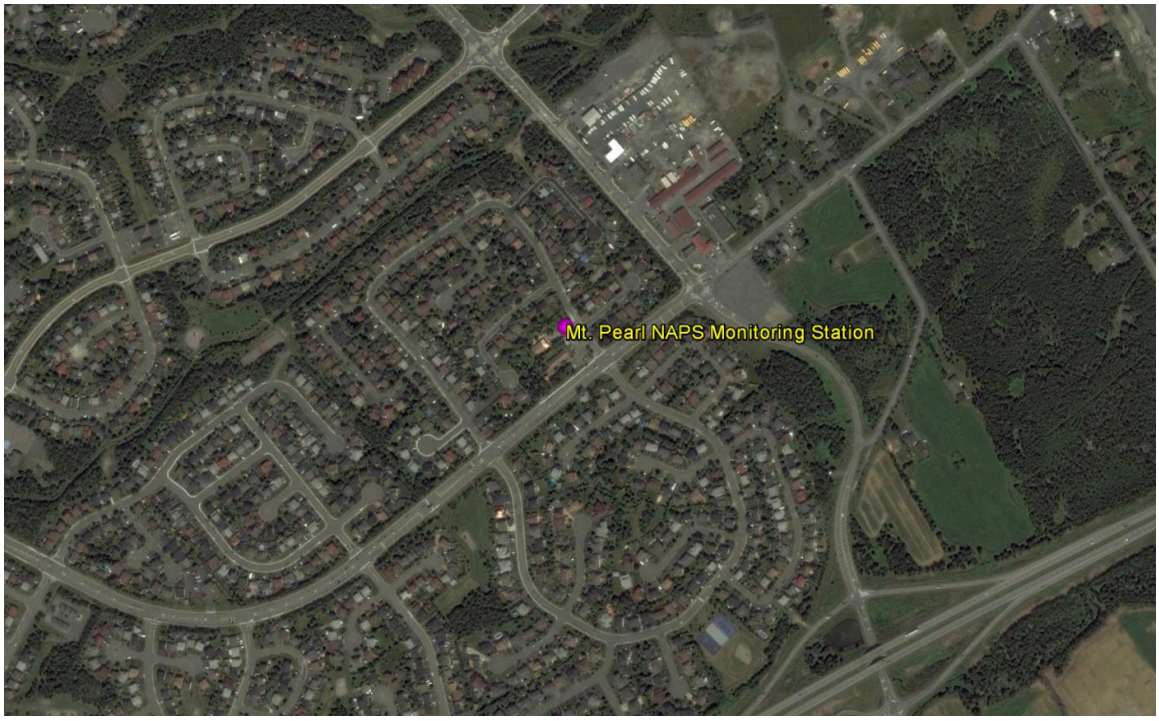


FIGURE 3.0.3 - NAPS MONITORING STATION IN GRAND FALLS-WINDSOR

FIGURE 3.0.4 - NAPS MONITORING STATION IN CORNER BROOK

FIGURE 3.0.5 - NAPS MONITORING STATION IN PORT AUX CHOIX

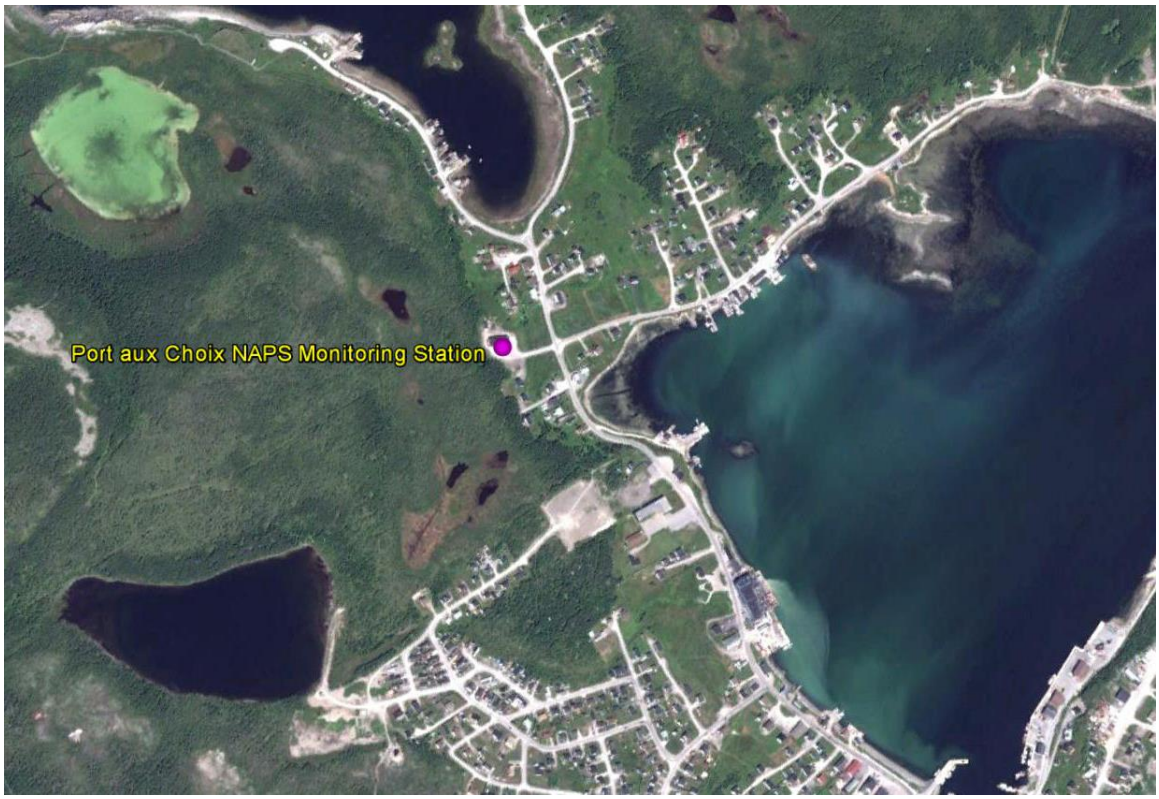
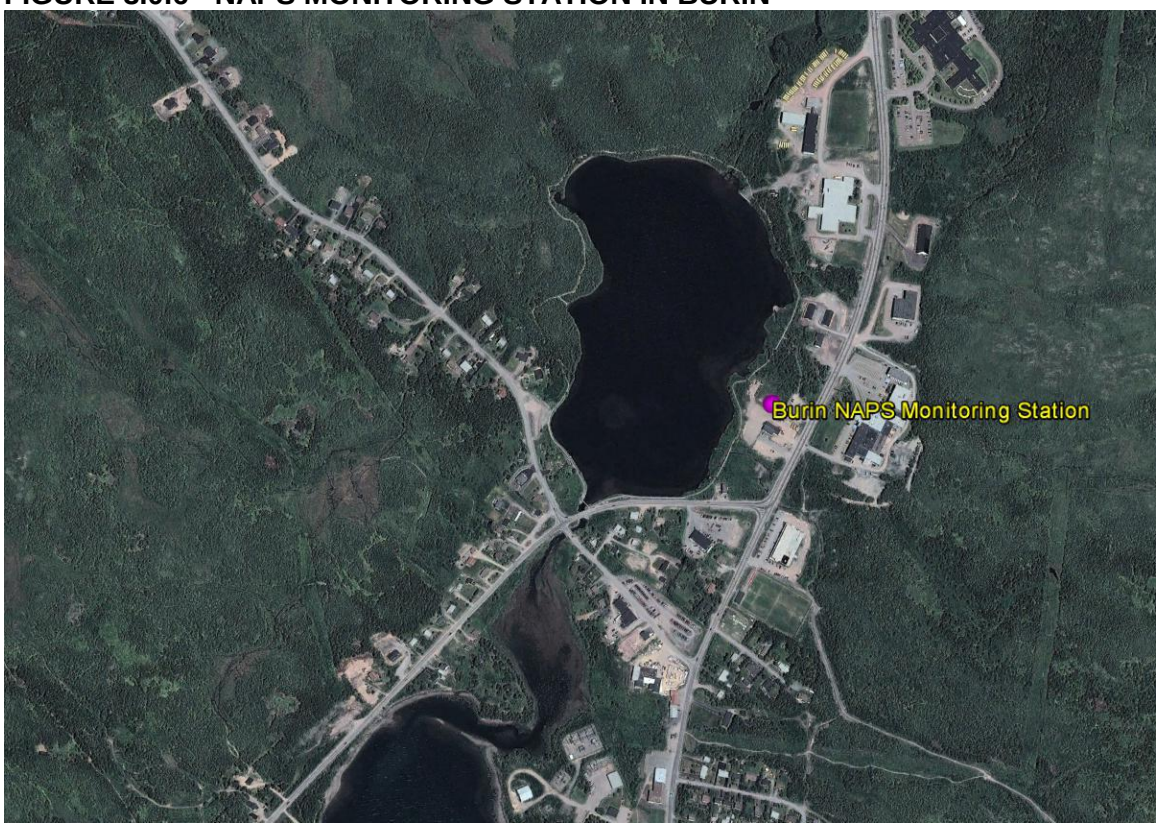


FIGURE 3.0.6 - NAPS MONITORING STATION IN BURIN



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, $PM_{2.5}$ and PM_{10} on a continuous basis. Monitoring for PM_{10} was introduced to the station in September 2019 when the Met One BAM measuring $PM_{2.5}$ was replaced with a Teledyne API T640 capable of measuring both PM_{10} and $PM_{2.5}$. For all measured pollutants, the air quality standards were not exceeded on any occasion in 2022 with the exception of 8-hour O_3 air quality standard which was exceeded once in July.

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 2022.

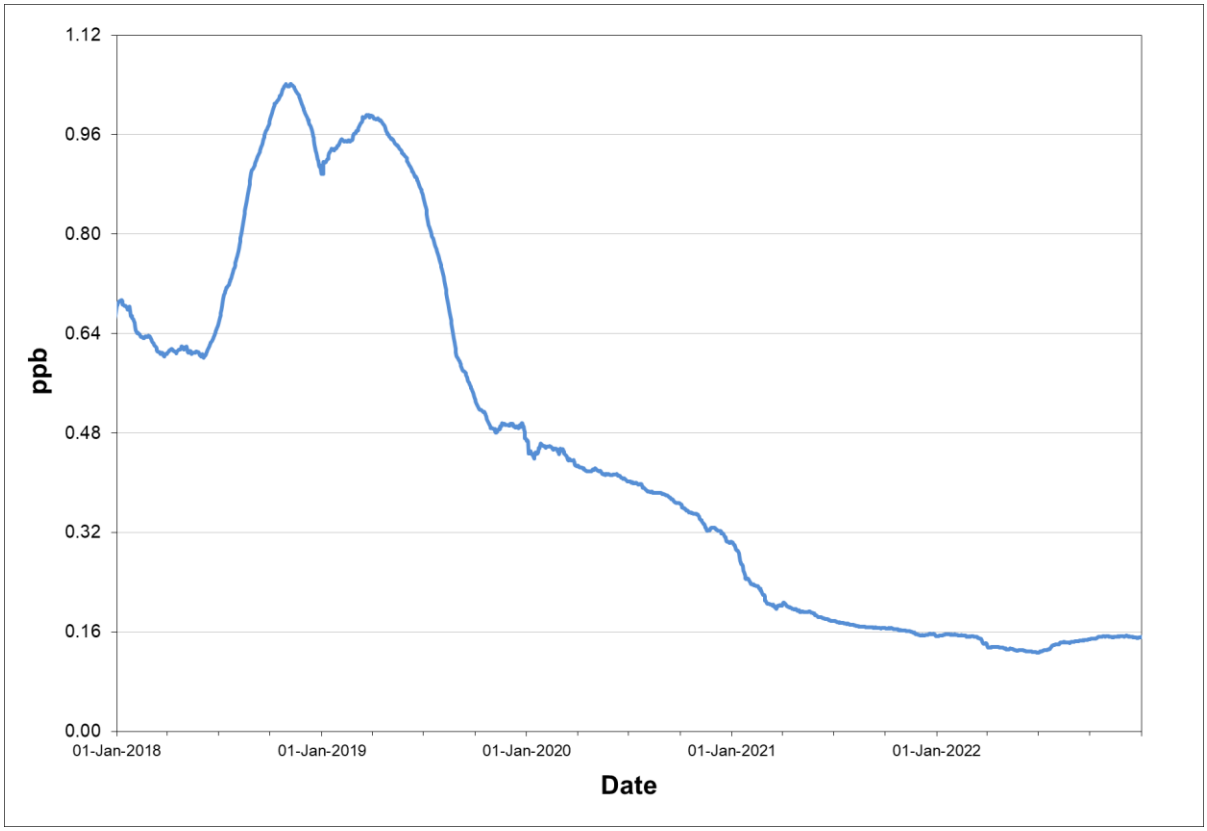
Volatile organic compounds, (VOCs) are also measured on a one-in-six day cycle at the monitoring station however the data is not included in this report.

TABLE 3.1.1 - ST. JOHN'S NAPS SO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	744	100.0%	0.1	1.3	0.9	0.4	0	0	0
	February	622	92.6%	0.2	2.4	1.9	0.5	0	0	0
	March	680	91.4%	0.3	5.4	3.3	1.3	0	0	0
	April	718	99.7%	0.2	8.0	5.0	1.6	0	0	0
	May	742	99.7%	0.2	1.7	1.3	0.4	0	0	0
	June	619	86.0%	0.1	1.0	0.8	0.2	0	0	0
	July	742	99.7%	0.1	1.4	0.8	0.2	0	0	0
	August	609	81.9%	0.1	1.2	1.0	0.3	0	0	0
	September	718	99.7%	0.1	0.9	0.5	0.3	0	0	0
	October	691	92.9%	0.1	0.9	0.8	0.4	0	0	0
	November	638	88.6%	0.1	2.5	1.4	0.4	0	0	0
	December	744	100.0%	0.1	1.9	1.4	0.5	0	0	0
Annual		8267	94.4%	0.2	8.0	5.0	1.6	0	0	0
2022	January	663	89.1%	0.1	2.1	1.4	0.5	0	0	0
	February	672	100.0%	0.1	2.7	1.4	0.4	0	0	0
	March	668	89.8%	0.2	4.5	2.2	0.4	0	0	0
	April	718	99.7%	0.1	1.4	0.7	0.2	0	0	0
	May	622	83.6%	0.2	1.8	1.5	0.5	0	0	0
	June	720	100.0%	0.1	1.3	1.0	0.3	0	0	0
	July	717	96.4%	0.3	1.2	1.1	0.6	0	0	0
	August	744	100.0%	0.2	0.8	0.6	0.4	0	0	0
	September	420	58.3%	0.2	0.5	0.4	0.4	0	0	0
	October	514	69.1%	0.2	0.9	0.8	0.4	0	0	0
	November	717	99.6%	0.1	0.7	0.6	0.2	0	0	0
	December	744	100.0%	0.1	1.5	1.0	0.3	0	0	0
Annual		7919	90.4%	0.2	4.5	2.2	0.6	0	0	0

Observations in ppb

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



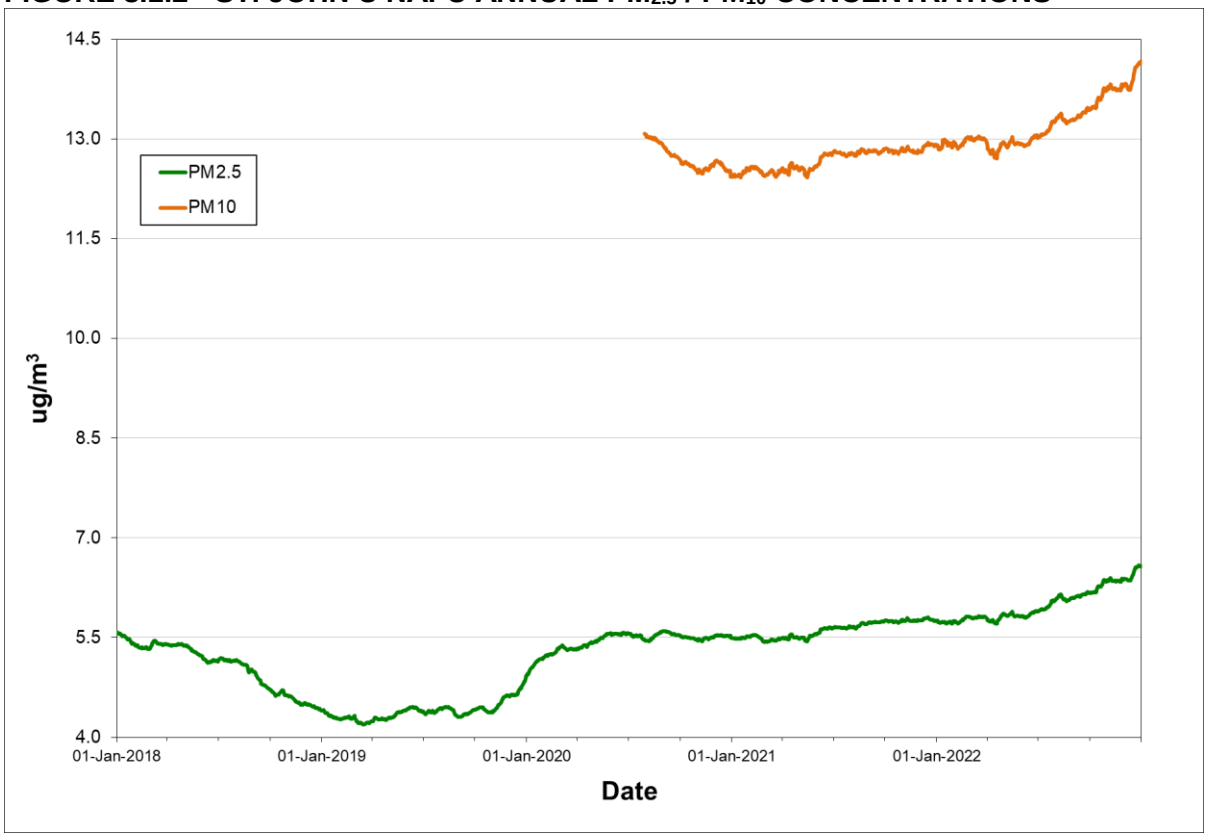
Rolling annual average of hourly concentrations

TABLE 3.1.2 - ST. JOHN'S NAPS $PM_{2.5}$ / PM_{10} SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average $PM_{2.5}$	Average PM_{10}	24-Hour Maximum $PM_{2.5}$	24-Hour Maximum PM_{10}	Regulatory Exceedances $PM_{2.5}$ (>25)	Regulatory Exceedances PM_{10} (>50)
2021	January	31	100.0%	6.0	14.5	13.9	32.8	0	0
	February	28	100.0%	5.0	12.9	10.0	24.6	0	0
	March	31	100.0%	6.7	16.0	12.1	31.3	0	0
	April	30	100.0%	6.7	16.1	17.4	40.2	0	0
	May	31	100.0%	6.3	13.2	17.4	29.3	0	0
	June	30	100.0%	5.2	11.1	16.7	26.6	0	0
	July	31	100.0%	4.9	9.5	8.8	14.5	0	0
	August	31	100.0%	6.2	12.0	11.4	21.1	0	0
	September	30	100.0%	5.1	10.9	7.7	18.5	0	0
	October	31	100.0%	5.0	10.9	12.8	23.7	0	0
	November	30	100.0%	6.1	13.4	13.6	25.5	0	0
	December	31	100.0%	5.7	14.2	8.3	26.4	0	0
Annual		365	100.0%	5.7	12.9	17.4	40.2	0	0
2022	January	27	87.1%	6.1	15.4	9.8	42.5	0	0
	February	28	100.0%	5.8	13.6	10.8	26.7	0	0
	March	27	87.1%	6.5	15.6	10.3	28.1	0	0
	April	30	100.0%	7.6	16.3	16.5	31.5	0	0
	May	28	90.3%	5.9	12.9	11.0	21.9	0	0
	June	30	100.0%	6.0	12.1	10.4	23.2	0	0
	July	29	93.5%	7.0	12.5	11.8	19.1	0	0
	August	31	100.0%	6.6	12.2	12.3	20.1	0	0
	September	22	73.3%	5.8	12.3	13.8	30.6	0	0
	October	29	93.5%	7.0	14.2	16.8	31.1	0	0
	November	30	100.0%	6.5	14.4	13.5	28.2	0	0
	December	31	100.0%	7.9	18.1	16.5	37.1	0	0
Annual		342	93.7%	6.6	14.2	16.8	42.5	0	0

Observations in $\mu g/m^3$

FIGURE 3.1.2 - ST. JOHN'S NAPS ANNUAL $PM_{2.5}$ / PM_{10} CONCENTRATIONS



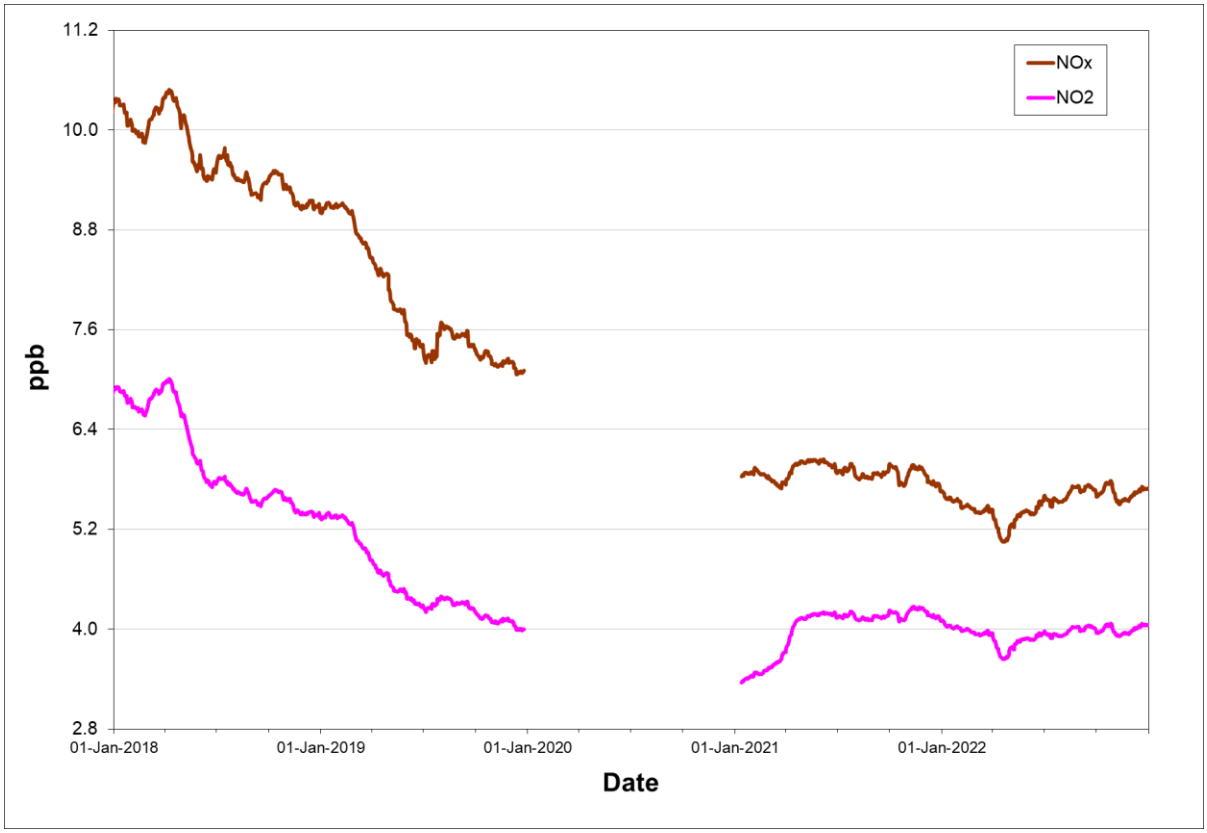
Rolling annual average of daily concentrations

TABLE 3.1.3 - ST. JOHN'S NAPS NO_X / NO_2 SUMMARY 2021 & 2022

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 (>213)	Exceedances 24-Hour (>106)
2021	January	744	100.0%	6.2	4.6	112.4	36.2	18.9	13.9	0	0
	February	669	99.6%	5.7	4.2	88.4	40.6	31.8	17.4	0	0
	March	744	100.0%	5.1	4.0	104.9	49.8	31.0	21.1	0	0
	April	718	99.7%	9.3	7.1	109.8	43.2	21.9	17.0	0	0
	May	743	99.9%	4.5	3.3	78.2	30.3	13.4	9.9	0	0
	June	709	98.5%	4.7	3.1	89.7	29.2	11.0	6.4	0	0
	July	742	99.7%	5.9	3.7	60.0	29.6	26.4	13.9	0	0
	August	744	100.0%	3.8	2.7	53.3	24.3	15.7	9.3	0	0
	September	719	99.9%	5.5	3.8	102.4	41.0	15.3	11.6	0	0
	October	743	99.9%	5.8	4.3	52.3	24.6	16.0	11.3	0	0
	November	720	100.0%	6.7	4.8	116.0	28.8	25.2	11.3	0	0
	December	744	100.0%	4.7	3.5	66.5	31.5	14.3	9.3	0	0
Annual		8739	99.8%	5.7	4.1	116.0	49.8	31.8	21.1	0	0
2022	January	663	89.1%	4.8	3.6	115.8	37.3	16.0	10.4	0	0
	February	672	100.0%	4.0	3.2	31.7	23.5	10.2	7.9	0	0
	March	668	89.8%	5.4	4.1	51.0	26.3	12.2	8.6	0	0
	April	718	99.7%	6.3	4.7	104.4	41.1	25.8	17.3	0	0
	May	684	91.9%	7.2	5.1	74.1	34.1	23.6	17.0	0	0
	June	720	100.0%	6.9	4.1	107.4	36.9	30.4	13.6	0	0
	July	717	96.4%	5.1	3.1	95.8	34.1	35.5	16.5	0	0
	August	744	100.0%	5.7	3.8	80.0	19.9	18.1	10.2	0	0
	September	543	75.4%	4.2	3.1	31.8	22.8	16.1	11.6	0	0
	October	706	94.9%	6.2	4.4	64.8	26.3	12.9	9.4	0	0
	November	717	99.6%	6.1	4.8	40.3	21.1	9.4	7.0	0	0
	December	744	100.0%	5.8	4.4	50.4	22.1	15.0	9.9	0	0
Annual		8296	94.7%	5.7	4.1	115.8	41.1	35.5	17.3	0	0

Observations in ppb

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



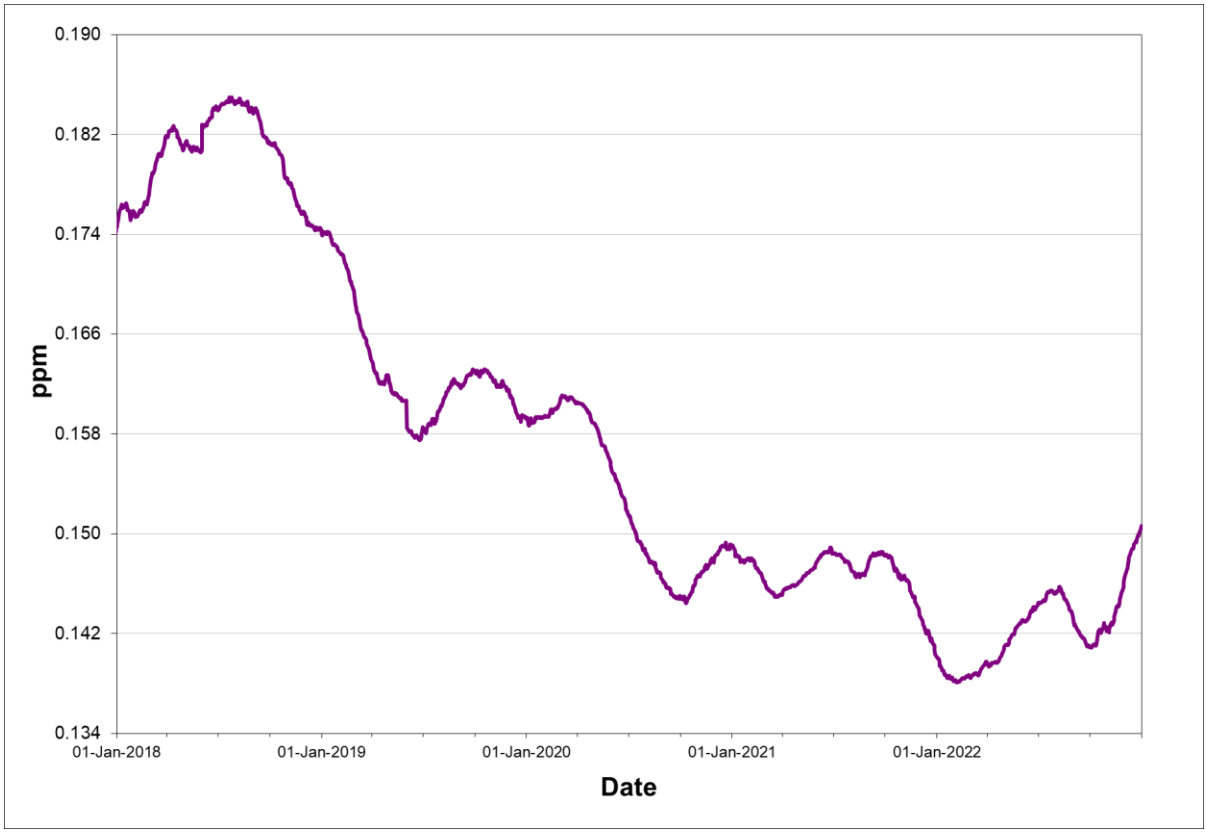
Rolling annual average of hourly concentrations

TABLE 3.1.4 - ST. JOHN'S NAPS CO SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>30.582)	Regulatory Exceedances 8-Hour (>13.107)
2021	January	744	100.0%	0.2	0.4	0.3	0	0
	February	670	99.7%	0.1	0.8	0.3	0	0
	March	744	100.0%	0.1	0.5	0.2	0	0
	April	718	99.7%	0.2	0.5	0.3	0	0
	May	742	99.7%	0.1	0.3	0.2	0	0
	June	646	89.7%	0.1	0.6	0.2	0	0
	July	742	99.7%	0.1	0.4	0.2	0	0
	August	744	100.0%	0.2	0.4	0.3	0	0
	September	719	99.9%	0.2	0.6	0.3	0	0
	October	742	99.7%	0.1	1.8	0.6	0	0
	November	719	99.9%	0.1	0.6	0.4	0	0
	December	744	100.0%	0.1	0.7	0.4	0	0
Annual		8674	99.0%	0.1	1.8	0.6	0	0
2022	January	663	89.1%	0.1	0.5	0.3	0	0
	February	672	100.0%	0.1	0.5	0.2	0	0
	March	668	89.8%	0.2	0.3	0.2	0	0
	April	718	99.7%	0.2	0.6	0.3	0	0
	May	684	91.9%	0.2	0.5	0.3	0	0
	June	720	100.0%	0.1	1.3	0.4	0	0
	July	718	96.5%	0.1	0.4	0.3	0	0
	August	744	100.0%	0.1	0.4	0.2	0	0
	September	543	75.4%	0.1	0.3	0.2	0	0
	October	705	94.8%	0.2	0.5	0.4	0	0
	November	716	99.4%	0.2	0.5	0.3	0	0
	December	744	100.0%	0.2	0.6	0.4	0	0
Annual		8295	94.7%	0.2	1.3	0.4	0	0

Observations in ppm

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



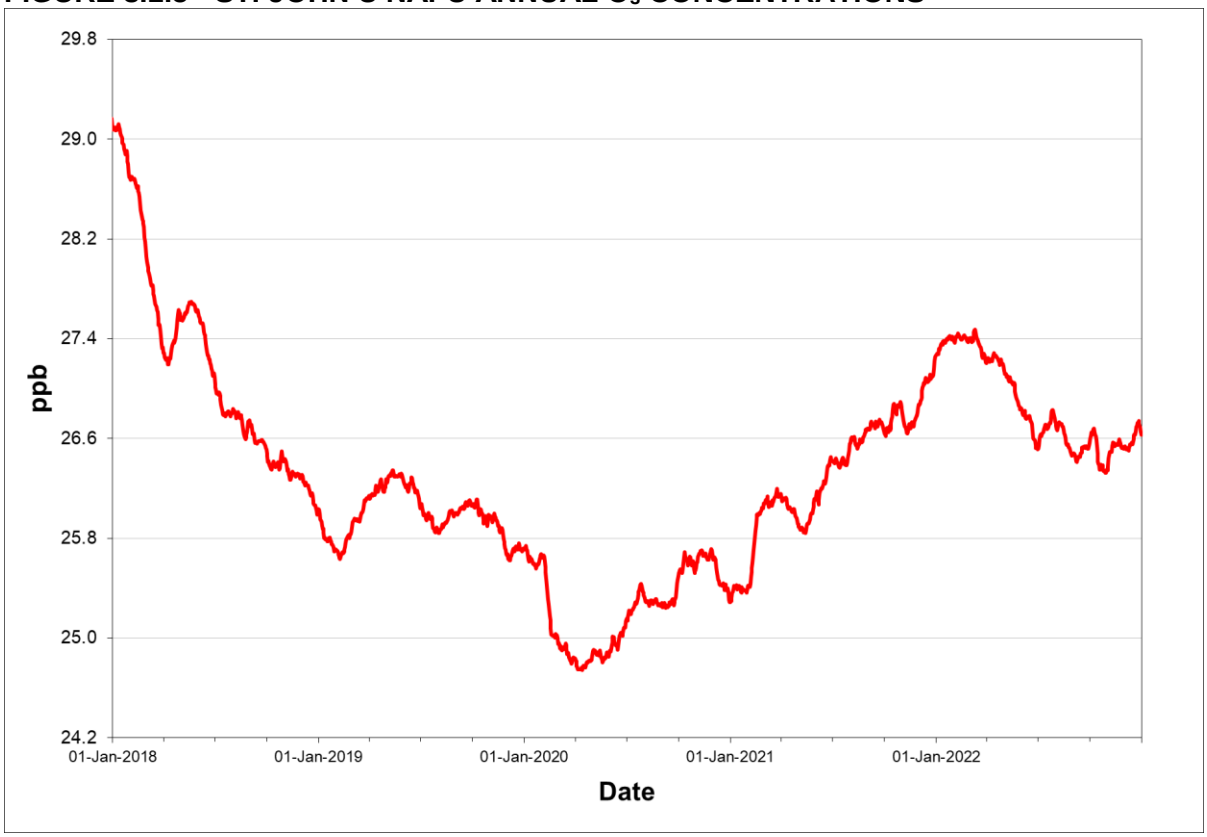
Rolling annual average of hourly concentrations

TABLE 3.1.5 - ST. JOHN'S NAPS O_3 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>82)	Regulatory Exceedances 8-Hour (>44)
2021	January	744	100.0%	30.1	42.4	40.6	0	0
	February	670	99.7%	34.1	46.0	43.3	0	0
	March	744	100.0%	35.4	49.9	48.8	0	7
	April	718	99.7%	31.7	51.0	44.8	0	1
	May	740	99.5%	30.8	47.4	45.7	0	1
	June	712	98.9%	24.7	52.6	48.5	0	1
	July	650	87.4%	18.2	39.5	33.2	0	0
	August	743	99.9%	21.7	45.8	38.8	0	0
	September	719	99.9%	22.0	43.2	33.7	0	0
	October	741	99.6%	23.5	38.9	35.8	0	0
	November	718	99.7%	24.8	37.3	35.2	0	0
	December	744	100.0%	29.6	40.0	39.1	0	0
Annual		8643	98.7%	27.3	52.6	48.8	0	10
2022	January	662	89.0%	32.2	40.7	39.4	0	0
	February	672	100.0%	34.0	43.0	41.2	0	0
	March	668	89.8%	33.8	43.2	42.3	0	0
	April	718	99.7%	31.4	46.5	43.4	0	0
	May	684	91.9%	26.8	48.1	42.1	0	0
	June	720	100.0%	21.0	39.6	35.2	0	0
	July	718	96.5%	21.6	50.2	44.9	0	1
	August	744	100.0%	18.8	44.5	37.4	0	0
	September	421	58.5%	20.5	29.7	28.3	0	0
	October	518	69.6%	19.0	38.9	33.4	0	0
	November	56	7.8%	27.1	40.0	35.4	0	0
	December	537	72.2%	32.2	40.9	39.6	0	0
Annual		7118	81.3%	26.6	50.2	44.9	0	1

Observations in ppb

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

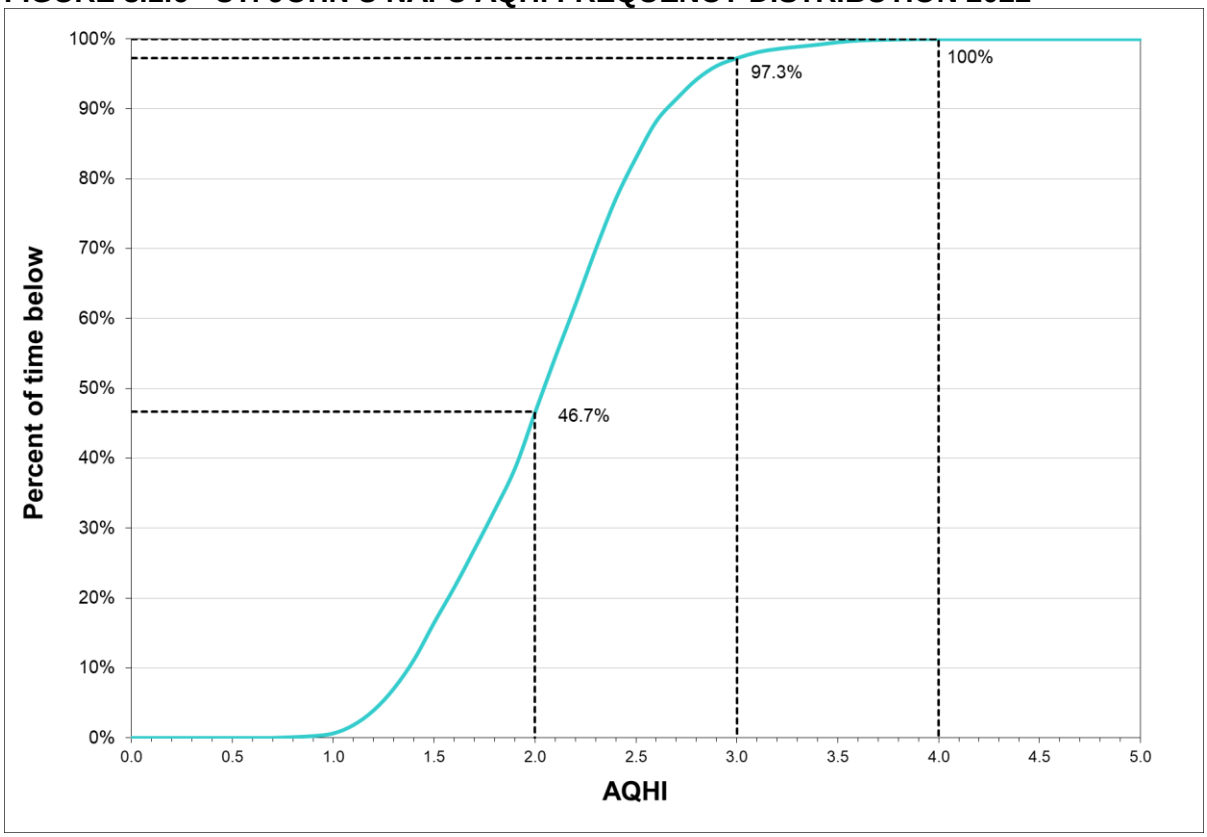


Rolling annual average of hourly concentrations

TABLE 3.1.6 - ST. JOHN'S NAPS AQHI SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2021	January	744	100.0%	2.2	4.0
	February	669	99.6%	2.4	4.0
	March	744	100.0%	2.5	4.7
	April	718	99.7%	2.6	4.2
	May	742	99.7%	2.2	2.9
	June	709	98.5%	1.8	3.9
	July	656	88.2%	1.5	3.1
	August	744	100.0%	1.6	2.8
	September	720	100.0%	1.7	3.3
	October	741	99.6%	1.8	3.4
	November	718	99.7%	2.0	3.3
	December	744	100.0%	2.1	3.4
Annual		8649	98.7%	2.0	4.7
2022	January	661	88.8%	2.3	3.5
	February	672	100.0%	2.3	3.0
	March	668	89.8%	2.4	3.8
	April	717	99.6%	2.4	3.9
	May	684	91.9%	2.1	3.7
	June	720	100.0%	1.7	3.6
	July	715	96.1%	1.7	3.5
	August	744	100.0%	1.6	2.7
	September	421	58.5%	1.6	2.8
	October	505	67.9%	1.7	3.8
	November	57	7.9%	2.1	2.5
	December	538	72.3%	2.4	3.6
Annual		7102	81.1%	2.0	3.9

FIGURE 3.1.6 - ST. JOHN'S NAPS AQHI FREQUENCY DISTRIBUTION 2022



e.g. 97.3% 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, $PM_{2.5}$ and PM_{10} on a continuous basis. Monitoring for PM_{10} was introduced to the station in September 2020 when the Met One BAM measuring $PM_{2.5}$ was replaced with a Teledyne API T640 capable of measuring both PM_{10} and $PM_{2.5}$. For all pollutants, the air quality standards were not exceeded on any occasion in 2022.

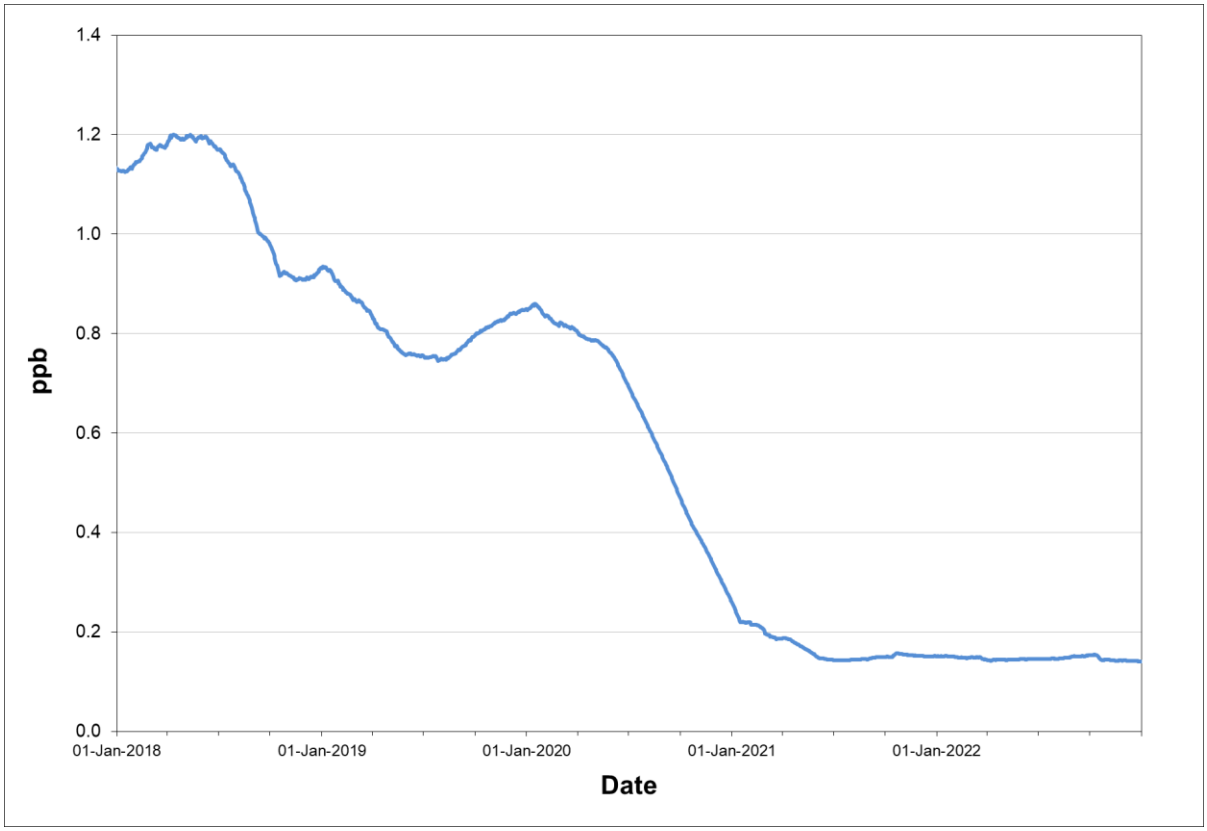
Tables 3.2.1 through 3.2.5 present the summary information on the level of air contaminants measured at the Mt. Pearl NAPS station, while Figures 3.2.1 through 3.2.5 provide a graphical representation of the annual trend of each pollutant. Table 3.2.6 provides a summary of the AQHI while Figure 3.2.6 provides a graphical representation of the percentage of time the AQHI values were below a given level in 2022.

TABLE 3.2.1 - MT. PEARL NAPS SO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	744	100.0%	0.2	2.2	1.0	0.4	0	0	0
	February	668	99.4%	0.2	2.6	1.2	0.4	0	0	0
	March	744	100.0%	0.2	3.8	2.6	0.6	0	0	0
	April	717	99.6%	0.1	3.0	2.2	0.6	0	0	0
	May	743	99.9%	0.1	1.2	0.6	0.2	0	0	0
	June	719	99.9%	0.1	0.5	0.3	0.2	0	0	0
	July	713	95.8%	0.1	0.5	0.3	0.2	0	0	0
	August	709	95.3%	0.1	0.7	0.6	0.2	0	0	0
	September	720	100.0%	0.2	0.7	0.6	0.4	0	0	0
	October	741	99.6%	0.2	0.8	0.7	0.6	0	0	0
	November	646	89.7%	0.1	0.6	0.3	0.2	0	0	0
	December	741	99.6%	0.1	0.6	0.4	0.2	0	0	0
Annual		8605	98.2%	0.2	3.8	2.6	0.6	0	0	0
2022	January	739	99.3%	0.1	0.6	0.4	0.3	0	0	0
	February	672	100.0%	0.1	2.9	1.3	0.4	0	0	0
	March	740	99.5%	0.1	5.0	1.9	0.5	0	0	0
	April	656	91.1%	0.1	0.8	0.5	0.3	0	0	0
	May	701	94.2%	0.1	0.5	0.4	0.2	0	0	0
	June	639	88.8%	0.1	0.6	0.4	0.2	0	0	0
	July	700	94.1%	0.1	0.8	0.5	0.3	0	0	0
	August	744	100.0%	0.2	1.0	0.6	0.3	0	0	0
	September	720	100.0%	0.2	0.9	0.5	0.4	0	0	0
	October	744	100.0%	0.1	0.9	0.4	0.2	0	0	0
	November	714	99.2%	0.1	1.0	0.5	0.3	0	0	0
	December	744	100.0%	0.1	1.0	0.6	0.2	0	0	0
Annual		8513	97.2%	0.1	5.0	1.9	0.5	0	0	0

Observations in ppb

FIGURE 3.2.1 - MT. PEARL NAPS ANNUAL SO_2 CONCENTRATIONS



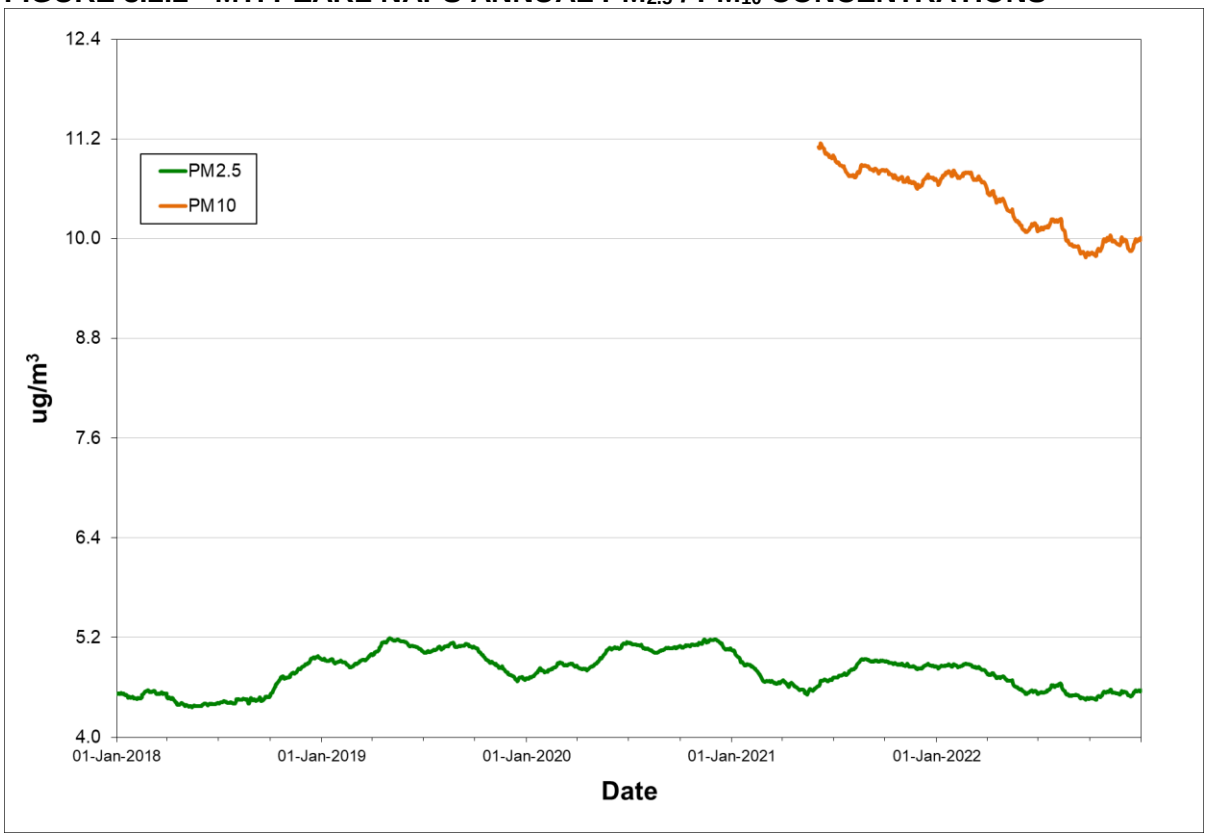
Rolling annual average of hourly concentrations

TABLE 3.2.2 - MT. PEARL NAPS $PM_{2.5}$ / PM_{10} SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average $PM_{2.5}$	Average PM_{10}	24-Hour Maximum $PM_{2.5}$	24-Hour Maximum PM_{10}	Regulatory Exceedances $PM_{2.5}$ (>25)	Regulatory Exceedances PM_{10} (>50)
2021	January	31	100.0%	4.7	10.1	10.6	24.1	0	0
	February	28	100.0%	4.6	10.4	8.9	24.3	0	0
	March	31	100.0%	6.0	13.5	8.7	20.9	0	0
	April	30	100.0%	5.0	11.3	12.8	28.2	0	0
	May	31	100.0%	5.7	12.4	15.9	26.2	0	0
	June	30	100.0%	4.6	9.8	16.0	27.1	0	0
	July	31	100.0%	4.0	8.3	8.7	15.0	0	0
	August	31	100.0%	5.6	12.2	10.2	24.1	0	0
	September	30	100.0%	4.3	9.7	7.6	14.9	0	0
	October	31	100.0%	3.9	8.7	10.0	19.1	0	0
	November	26	86.7%	4.9	10.8	11.2	20.5	0	0
	December	31	100.0%	4.8	11.1	7.6	16.5	0	0
Annual		361	98.9%	4.8	10.7	16.0	28.2	0	0
2022	January	31	100.0%	5.1	11.4	8.6	20.3	0	0
	February	28	100.0%	4.6	10.1	7.3	15.9	0	0
	March	31	100.0%	4.8	11.2	6.7	21.3	0	0
	April	27	90.0%	4.5	9.8	9.0	18.9	0	0
	May	28	90.3%	3.8	8.7	5.7	12.5	0	0
	June	26	86.7%	3.8	8.8	8.7	24.3	0	0
	July	29	93.5%	5.1	9.7	8.8	13.8	0	0
	August	31	100.0%	4.4	8.8	9.2	16.0	0	0
	September	30	100.0%	3.8	8.5	11.5	27.5	0	0
	October	31	100.0%	4.8	10.6	11.2	25.2	0	0
	November	30	100.0%	4.9	10.8	8.9	19.9	0	0
	December	31	100.0%	5.0	11.4	10.7	23.8	0	0
Annual		353	96.7%	4.6	10.0	11.5	27.5	0	0

Observations in $\mu g/m^3$

FIGURE 3.2.2 - MT. PEARL NAPS ANNUAL $PM_{2.5}$ / PM_{10} CONCENTRATIONS



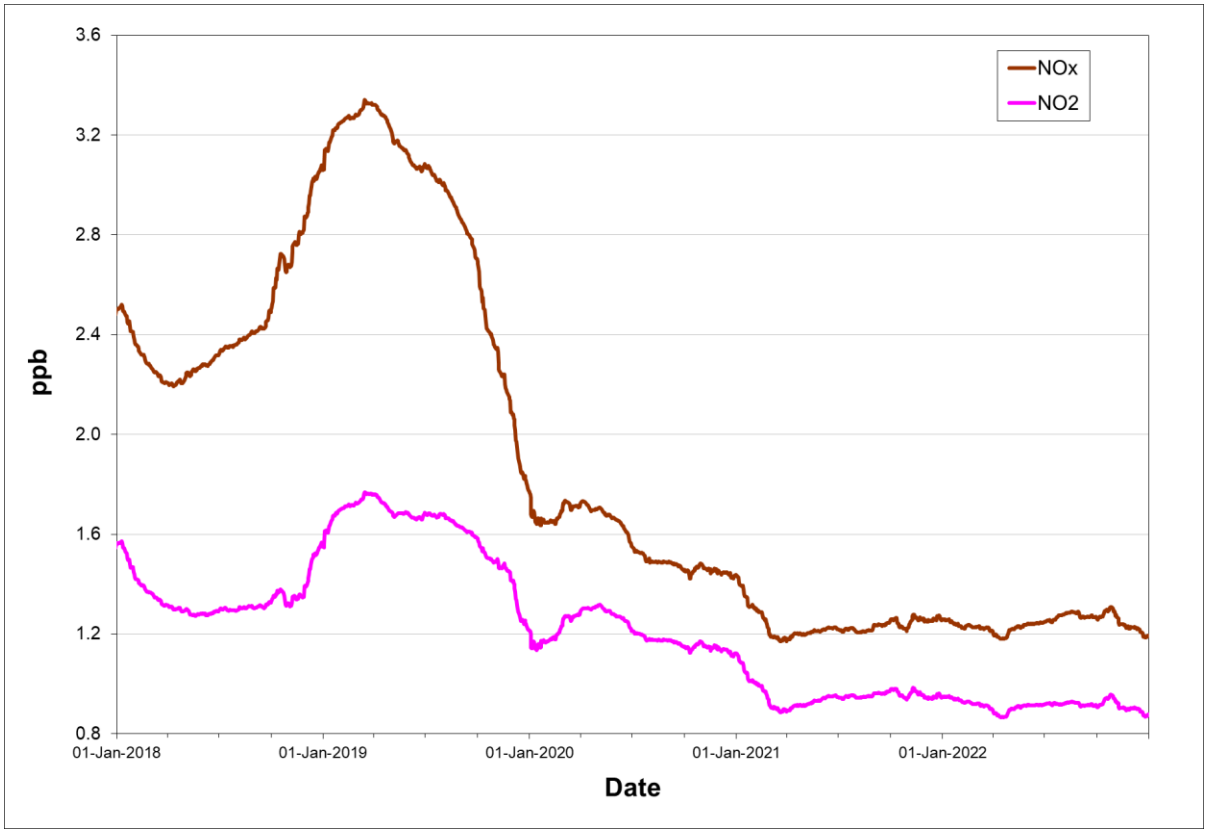
Rolling annual average of daily concentrations

TABLE 3.2.3 - MT. PEARL NAPS NO_X / NO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour (>213)	Exceedances 24-Hour (>106)
				NO_X	NO_2	NO_X	NO_2	NO_X	NO_2		
2021	January	744	100.0%	1.6	1.2	45.8	18.5	4.2	3.0	0	0
	February	669	99.6%	1.3	1.1	16.6	14.7	3.9	3.4	0	0
	March	744	100.0%	1.4	1.1	42.3	22.7	5.0	4.4	0	0
	April	718	99.7%	1.3	1.1	18.7	14.5	4.9	4.1	0	0
	May	743	99.9%	1.0	0.8	16.3	15.7	3.1	2.7	0	0
	June	720	100.0%	0.9	0.7	4.1	3.1	1.5	1.2	0	0
	July	713	95.8%	0.8	0.6	13.9	13.4	3.2	2.7	0	0
	August	710	95.4%	0.9	0.6	17.0	6.2	4.3	2.1	0	0
	September	719	99.9%	1.1	0.7	16.8	8.6	3.8	2.5	0	0
	October	742	99.7%	1.4	0.9	13.4	10.7	3.5	3.0	0	0
	November	720	100.0%	2.0	1.4	24.5	17.4	7.3	5.5	0	0
	December	741	99.6%	1.5	1.2	31.2	23.5	6.7	5.6	0	0
Annual		8683	99.1%	1.3	0.9	45.8	23.5	7.3	5.6	0	0
2022	January	739	99.3%	1.3	1.1	13.9	13.5	3.5	3.0	0	0
	February	672	100.0%	1.3	0.9	40.8	12.6	4.8	2.2	0	0
	March	739	99.3%	1.2	0.9	19.7	8.8	2.8	2.4	0	0
	April	656	91.1%	1.4	1.1	16.0	10.6	5.0	3.6	0	0
	May	702	94.4%	1.3	1.1	10.5	10.4	2.6	2.3	0	0
	June	639	88.8%	0.9	0.7	7.3	4.6	1.9	1.5	0	0
	July	701	94.2%	1.1	0.5	17.7	10.9	3.9	2.9	0	0
	August	744	100.0%	0.9	0.6	25.8	9.5	2.8	1.0	0	0
	September	720	100.0%	0.9	0.6	11.8	6.9	2.4	1.6	0	0
	October	744	100.0%	1.7	1.3	19.4	13.4	3.5	2.9	0	0
	November	716	99.4%	1.2	1.0	13.1	10.7	3.5	2.8	0	0
	December	744	100.0%	1.1	0.9	10.7	9.4	2.7	2.4	0	0
Annual		8516	97.2%	1.2	0.9	40.8	13.5	5.0	3.6	0	0

Observations in ppb

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



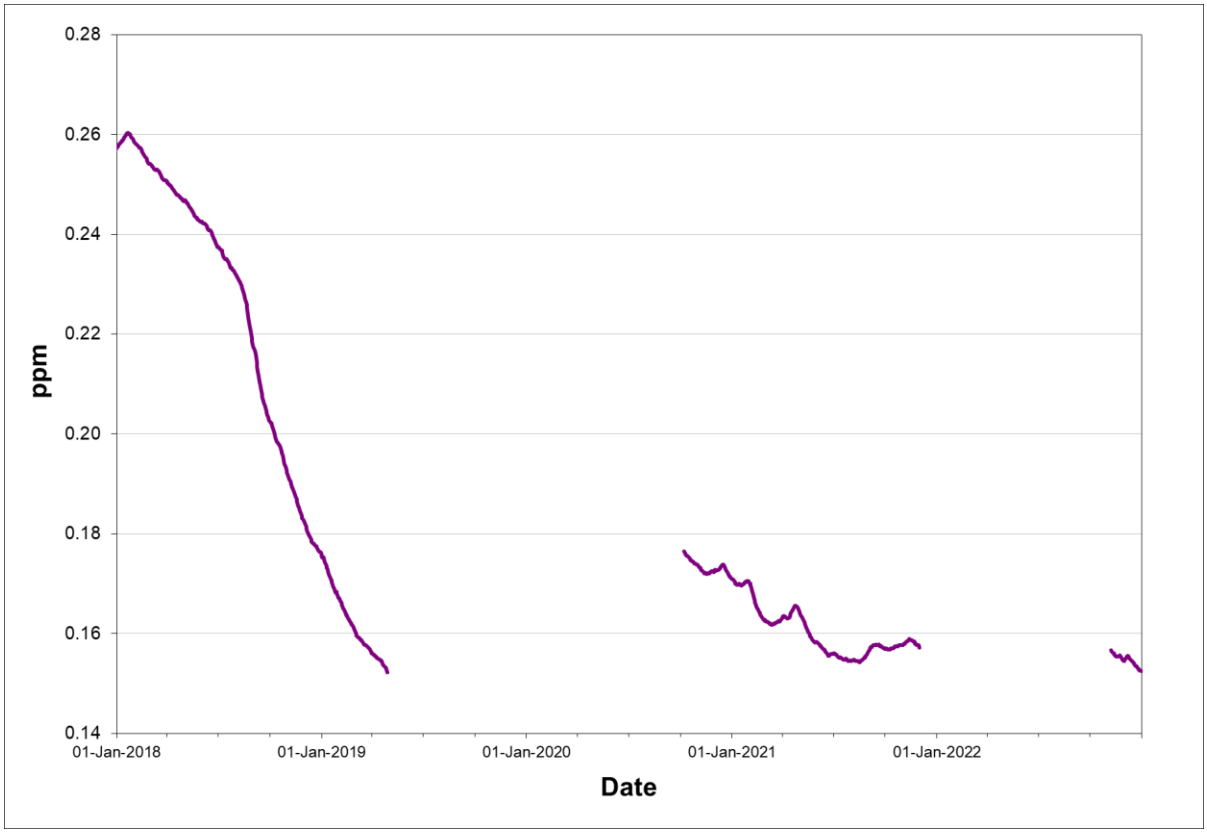
Rolling annual average of hourly concentrations

TABLE 3.2.4 - MT. PEARL NAPS CO SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>30.582)	Regulatory Exceedances 8-Hour (>13.107)
2021	January	744	100.0%	0.2	0.5	0.3	0	0
	February	667	99.3%	0.2	1.7	0.5	0	0
	March	744	100.0%	0.2	0.6	0.3	0	0
	April	717	99.6%	0.2	0.5	0.3	0	0
	May	743	99.9%	0.1	0.4	0.2	0	0
	June	555	77.1%	0.1	0.2	0.1	0	0
	July	712	95.7%	0.1	0.4	0.2	0	0
	August	710	95.4%	0.2	0.4	0.3	0	0
	September	186	25.8%	0.2	0.4	0.3	0	0
	October	64	8.6%	0.1	0.2	0.1	0	0
	November	0	0.0%					
	December	0	0.0%					
Annual		5842	66.7%	0.2	1.7	0.5	0	0
2022	January	105	14.1%	0.2	0.4	0.2	0	0
	February	672	100.0%	0.1	0.3	0.2	0	0
	March	742	99.7%	0.1	0.3	0.2	0	0
	April	657	91.3%	0.1	0.3	0.2	0	0
	May	702	94.4%	0.2	0.4	0.3	0	0
	June	639	88.8%	0.2	0.3	0.3	0	0
	July	702	94.4%	0.1	0.3	0.3	0	0
	August	743	99.9%	0.1	0.3	0.2	0	0
	September	720	100.0%	0.2	0.5	0.3	0	0
	October	744	100.0%	0.2	0.4	0.2	0	0
	November	717	99.6%	0.1	0.7	0.3	0	0
	December	743	99.9%	0.1	0.3	0.3	0	0
Annual		7886	90.0%	0.2	0.7	0.3	0	0

Observations in ppm

FIGURE 3.2.4 - MT. PEARL NAPS ANNUAL CO CONCENTRATIONS



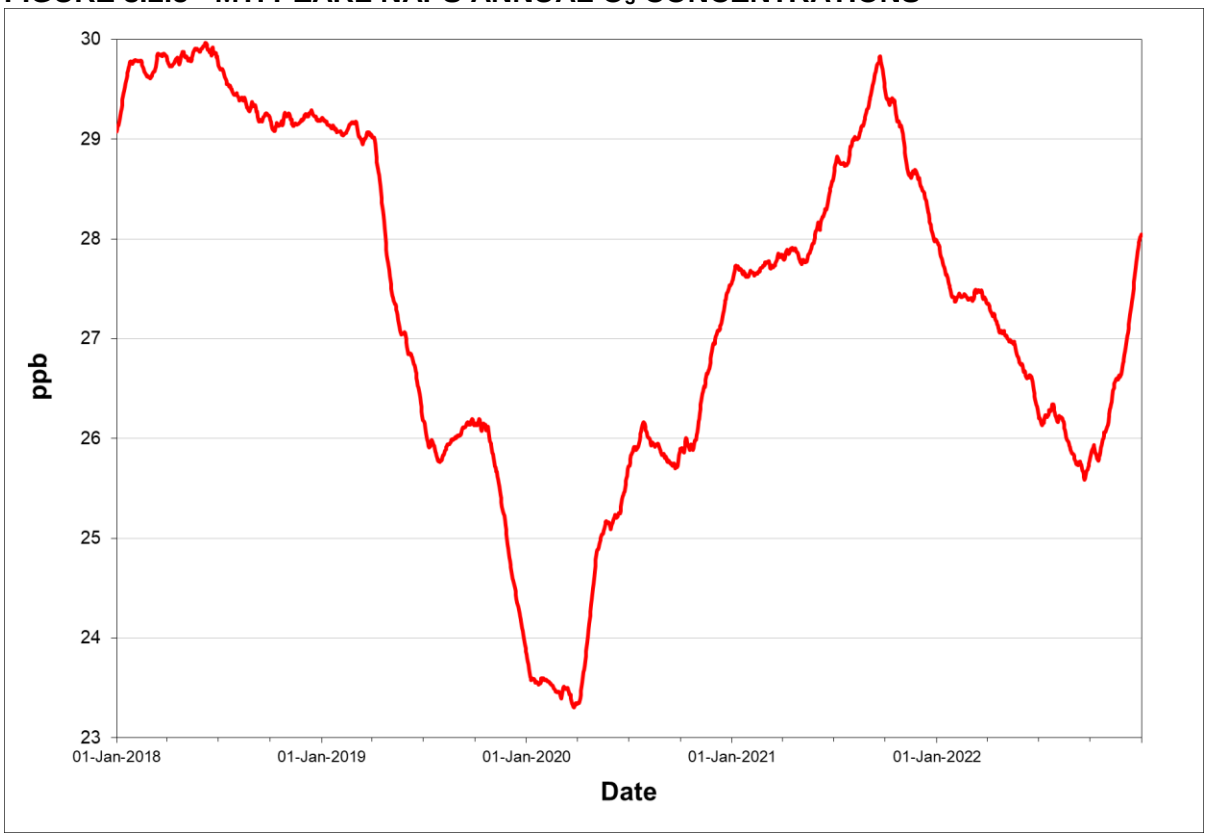
Rolling annual average of hourly concentrations

TABLE 3.2.5 - MT. PEARL NAPS O_3 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>82)	Regulatory Exceedances 8-Hour (>44)
2021	January	636	85.5%	32.3	43.9	41.4	0	0
	February	669	99.6%	36.1	46.4	43.8	0	0
	March	744	100.0%	36.9	50.2	49.0	0	7
	April	718	99.7%	35.8	51.5	46.5	0	4
	May	744	100.0%	32.5	49.5	43.6	0	0
	June	715	99.3%	28.7	54.3	47.8	0	2
	July	713	95.8%	22.6	42.7	32.1	0	0
	August	710	95.4%	25.6	50.7	35.6	0	0
	September	217	30.1%	16.3	34.4	30.8	0	0
	October	741	99.6%	18.9	37.1	36.2	0	0
	November	648	90.0%	21.3	39.5	38.3	0	0
	December	743	99.9%	21.0	31.8	29.2	0	0
Annual		7998	91.3%	28.0	54.3	49.0	0	13
2022	January	740	99.5%	25.4	41.8	39.9	0	0
	February	672	100.0%	35.9	43.2	41.4	0	0
	March	739	99.3%	36.4	44.0	43.1	0	0
	April	656	91.1%	33.2	45.3	42.9	0	0
	May	702	94.4%	28.9	48.5	41.4	0	0
	June	639	88.8%	23.0	36.5	33.1	0	0
	July	702	94.4%	22.2	48.1	41.3	0	0
	August	744	100.0%	21.6	48.7	39.6	0	0
	September	720	100.0%	22.2	35.4	34.2	0	0
	October	744	100.0%	22.8	39.8	37.8	0	0
	November	717	99.6%	29.8	41.0	37.3	0	0
	December	744	100.0%	35.3	43.2	42.2	0	0
Annual		8519	97.2%	28.0	48.7	43.1	0	0

Observations in ppb

FIGURE 3.2.5 - MT. PEARL NAPS ANNUAL O_3 CONCENTRATIONS

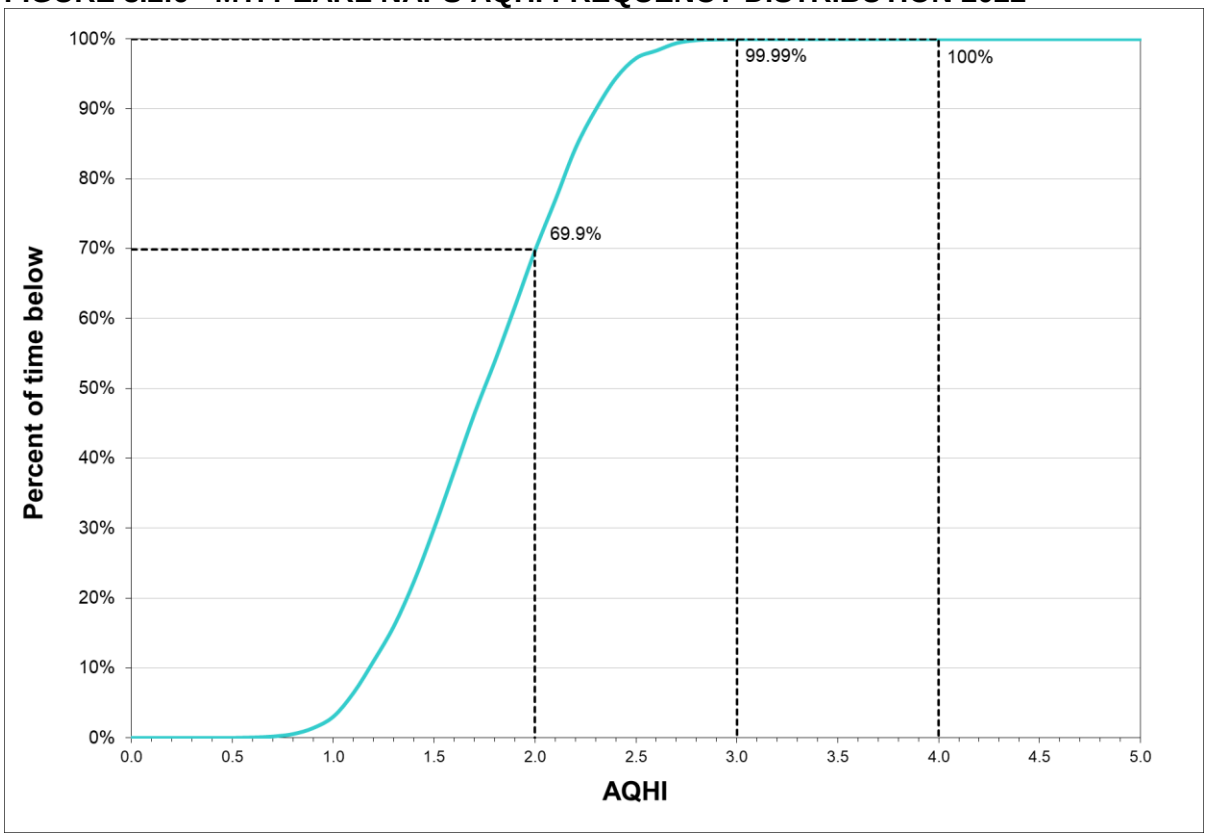


Rolling annual average of hourly concentrations

TABLE 3.2.6 - MT. PEARL NAPS AQHI SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2021	January	635	85.3%	2.0	2.7
	February	669	99.6%	2.2	2.9
	March	744	100.0%	2.3	3.4
	April	717	99.6%	2.2	3.1
	May	744	100.0%	2.0	2.7
	June	715	99.3%	1.8	3.7
	July	740	99.5%	1.4	2.6
	August	744	100.0%	1.6	3.0
	September	217	30.1%	1.2	2.1
	October	740	99.5%	1.2	2.7
	November	647	89.9%	1.5	2.8
	December	741	99.6%	1.4	3.0
Annual		8053	91.9%	1.8	3.7
2022	January	739	99.3%	1.7	3.2
	February	672	100.0%	2.2	2.7
	March	742	99.7%	2.2	2.7
	April	656	91.1%	2.0	2.9
	May	702	94.4%	1.8	2.7
	June	639	88.8%	1.4	2.1
	July	701	94.2%	1.4	2.9
	August	744	100.0%	1.4	2.6
	September	720	100.0%	1.4	2.5
	October	744	100.0%	1.5	2.8
	November	717	99.6%	1.9	3.0
	December	744	100.0%	2.2	2.8
Annual		8520	97.3%	1.7	3.2

FIGURE 3.2.6 - MT. PEARL NAPS AQHI FREQUENCY DISTRIBUTION 2022



e.g. 99.99% 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, $PM_{2.5}$ and PM_{10} on a continuous basis. The $PM_{2.5}$ Met One BAM was replaced in September 2020 with a Teledyne API T640 capable of measuring both PM_{10} and $PM_{2.5}$. For O_3, the 8-hour air quality standard was exceeded on six occasions in 2022, specifically three times in both April and May. The 24-hour PM_{10} air quality standard was exceeded once in June while the 24-hour $PM_{2.5}$ air quality standard was exceeded once in July. For all other pollutants, the air quality standards were not exceeded on any occasion in 2022.

Of particular note, in July a forest fire in central Newfoundland and generally south of Grand Falls-Windsor impaired the air quality in the region. The prevailing winds during this time, for the most part, did not bring the smoke from the fire in the direction of the NAPS station and though $PM_{2.5}$ levels were somewhat elevated, only one exceedance on the $PM_{2.5}$ 24-hour air quality standard was measured on July 25th. Although not necessarily measured at the NAPS monitoring station, it is recognized that particulate levels in the area were elevated during this time.

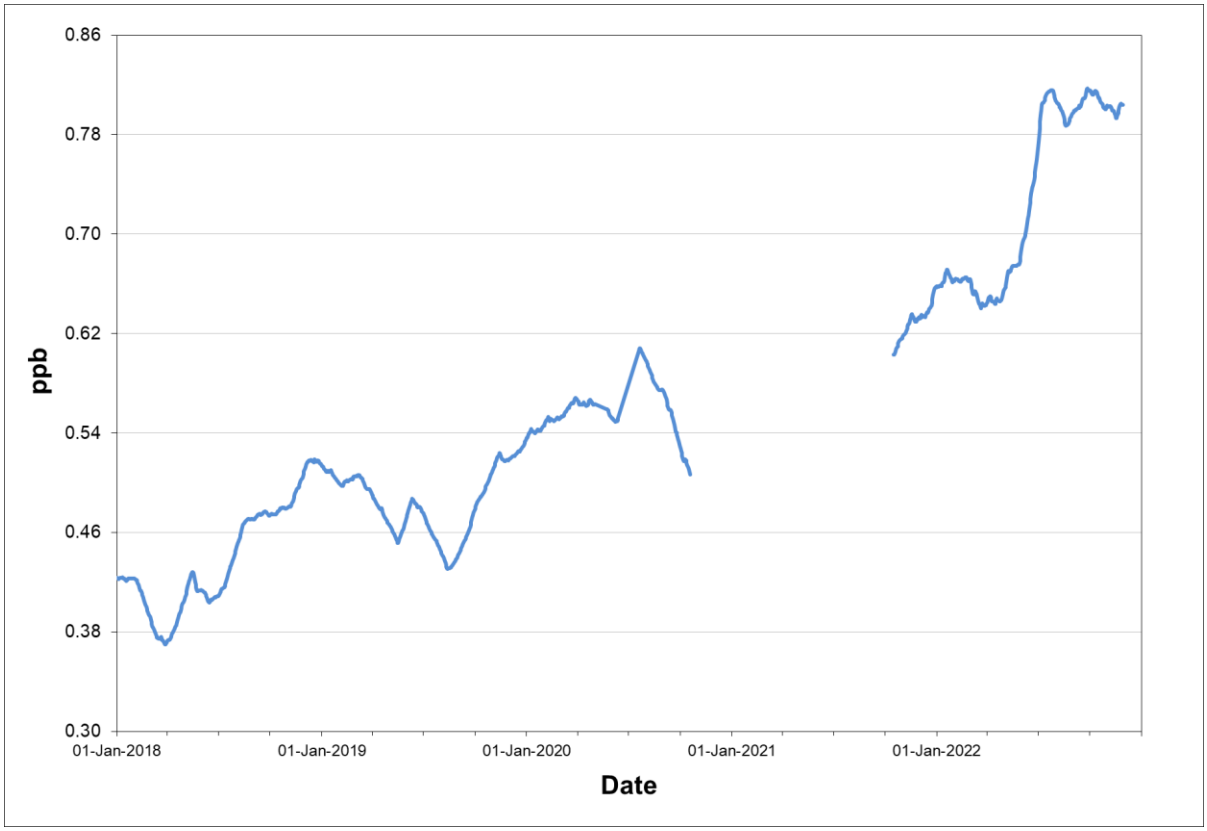
Tables 3.3.1 through 3.3.5 present the summary information on the level of air contaminants measured at the Grand Falls-Windsor NAPS station, while Figures 3.3.1 through 3.3.5 provides a graphical representation of the annual trend of each pollutant. Table 3.3.6 provides a summary of the AQHI while Figure 3.3.6 provides a graphical representation of the percentage of time the AQHI values were below a given level in 2022.

TABLE 3.3.1 - GRAND FALLS-WINDSOR NAPS SO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	651	87.5%	0.6	1.9	1.5	1.0	0	0	0
	February	671	99.9%	0.6	1.7	1.3	1.0	0	0	0
	March	740	99.5%	0.8	2.1	1.6	1.4	0	0	0
	April	716	99.4%	0.7	1.5	1.5	1.4	0	0	0
	May	506	68.0%	0.4	1.0	0.9	0.8	0	0	0
	June	715	99.3%	0.5	1.3	1.1	0.9	0	0	0
	July	744	100.0%	0.6	1.5	1.4	1.3	0	0	0
	August	739	99.3%	0.6	1.4	1.2	1.1	0	0	0
	September	718	99.7%	0.5	1.3	1.3	0.9	0	0	0
	October	737	99.1%	0.7	1.6	1.5	1.3	0	0	0
	November	716	99.4%	0.8	2.0	1.8	1.5	0	0	0
	December	744	100.0%	0.9	1.9	1.9	1.7	0	0	0
Annual		8397	95.9%	0.7	2.1	1.9	1.7	0	0	0
2022	January	740	99.5%	0.6	2.0	2.0	1.5	0	0	0
	February	15	2.2%	0.2	0.4	0.3	0.0	0	0	0
	March	700	94.1%	0.6	2.0	1.9	1.5	0	0	0
	April	714	99.2%	0.8	1.8	1.6	1.5	0	0	0
	May	372	50.0%	0.9	1.6	1.5	1.4	0	0	0
	June	719	99.9%	1.4	1.9	1.9	1.7	0	0	0
	July	378	50.8%	1.2	2.4	2.4	2.2	0	0	0
	August	652	87.6%	0.4	1.0	0.8	0.7	0	0	0
	September	705	97.9%	0.7	1.3	1.2	1.1	0	0	0
	October	722	97.0%	0.6	1.4	1.4	1.2	0	0	0
	November	69	9.6%	0.8	1.4	1.4	1.1	0	0	0
	December	0	0.0%							
Annual		5786	66.1%	0.8	2.4	2.4	2.2	0	0	0

Observations in ppb

FIGURE 3.3.1 - GRAND FALLS-WINDSOR NAPS ANNUAL SO_2 CONCENTRATIONS



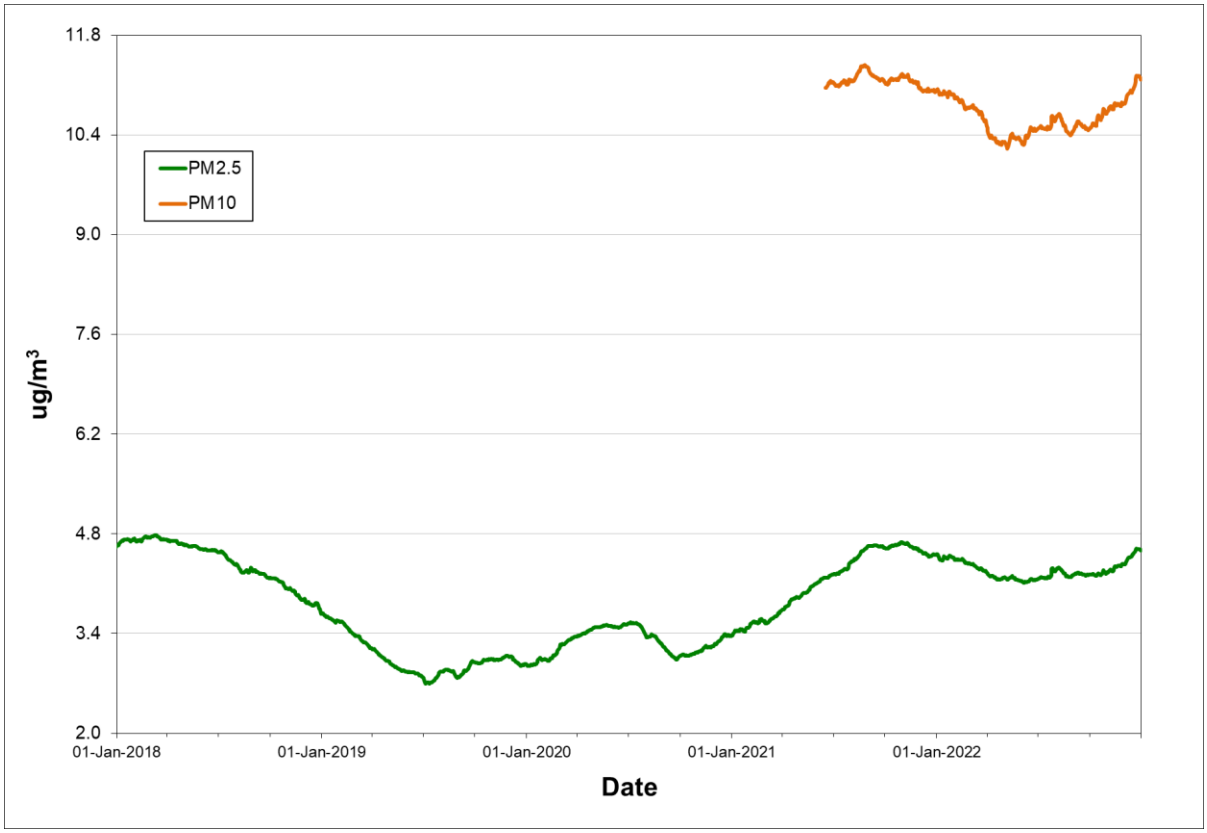
Rolling annual average of hourly concentrations

TABLE 3.3.2 - GRAND FALLS-WINDSOR NAPS $PM_{2.5}$ / PM_{10} SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average		24-Hour Maximum		Regulatory Exceedances	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$ (>25)	PM_{10} (>50)
2021	January	31	100.0%	5.5	11.6	15.1	23.3	0	0
	February	28	100.0%	5.1	11.5	12.9	29.2	0	0
	March	31	100.0%	5.6	13.1	9.4	30.7	0	0
	April	30	100.0%	5.0	12.6	11.4	25.1	0	0
	May	31	100.0%	4.0	10.5	11.7	23.4	0	0
	June	30	100.0%	3.9	12.0	10.4	30.3	0	0
	July	31	100.0%	4.5	11.4	20.5	32.2	0	0
	August	31	100.0%	5.7	13.2	10.6	23.8	0	0
	September	30	100.0%	3.2	8.9	5.5	16.0	0	0
	October	31	100.0%	4.4	10.2	10.1	18.3	0	0
	November	29	96.7%	3.5	8.0	7.5	16.3	0	0
	December	24	77.4%	3.5	8.4	6.6	22.9	0	0
Annual		357	97.8%	4.5	11.0	20.5	32.2	0	0
2022	January	27	87.1%	5.1	11.0	15.0	24.2	0	0
	February	28	100.0%	4.0	9.2	6.7	22.4	0	0
	March	31	100.0%	4.1	10.1	7.0	21.8	0	0
	April	30	100.0%	4.2	10.0	7.9	20.7	0	0
	May	31	100.0%	3.5	10.7	5.3	20.0	0	0
	June	30	100.0%	4.2	14.1	7.9	55.8	0	1
	July	31	100.0%	5.7	12.7	34.3	49.8	1	0
	August	30	96.8%	5.0	11.4	9.8	20.4	0	0
	September	30	100.0%	3.3	9.4	6.4	20.3	0	0
	October	31	100.0%	4.7	12.7	12.1	28.7	0	0
	November	30	100.0%	5.0	9.8	19.3	28.9	0	0
	December	28	90.3%	6.1	13.0	13.1	26.2	0	0
Annual		357	97.8%	4.6	11.2	34.3	55.8	1	1

Observations in $\mu g/m^3$

FIGURE 3.3.2 - GRAND FALLS-WINDSOR NAPS ANNUAL $PM_{2.5}$ / PM_{10} CONCENTRATIONS



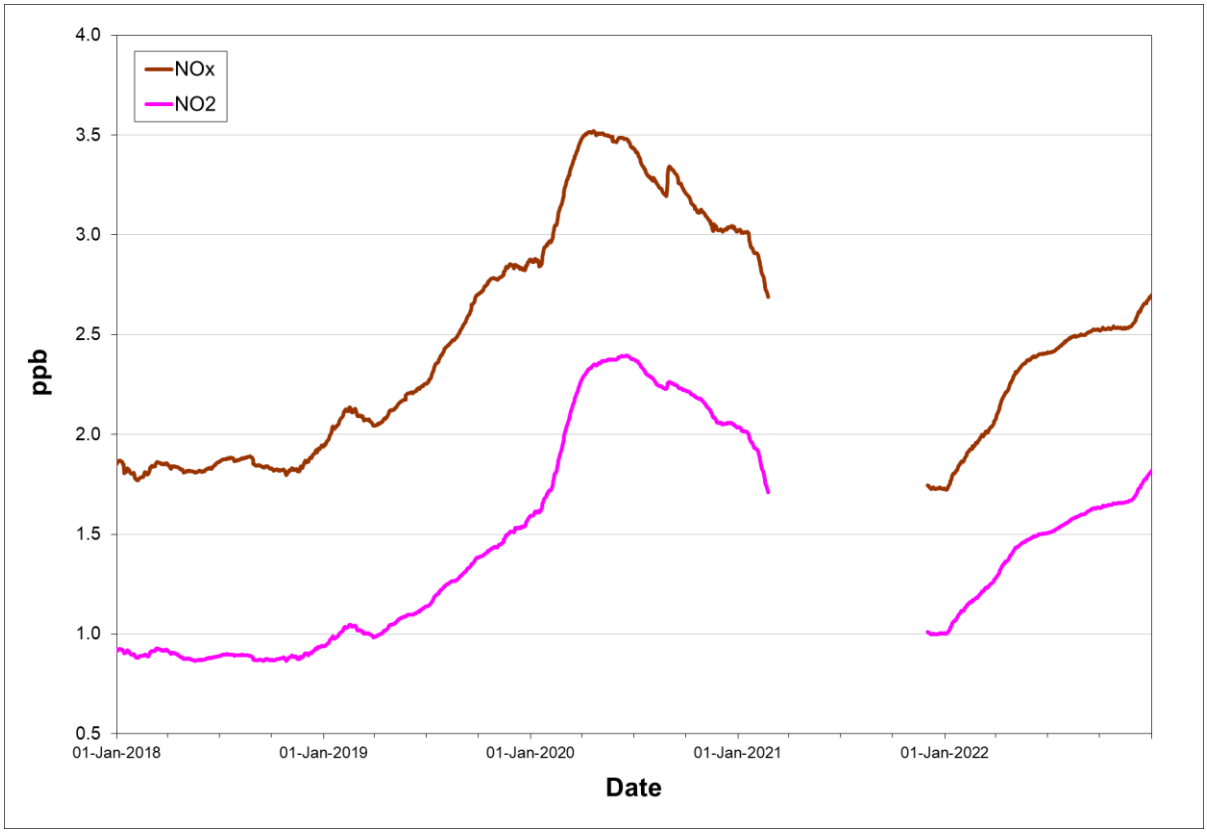
Rolling annual average of daily concentrations

TABLE 3.3.3 - GRAND FALLS-WINDSOR NAPS NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	0	0.0%								
	February	0	0.0%								
	March	724	97.3%	1.7	1.0	65.5	22.1	5.2	2.4	0	0
	April	718	99.7%	1.4	1.1	12.2	5.5	3.1	2.2	0	0
	May	743	99.9%	1.5	1.0	26.2	8.8	3.3	1.9	0	0
	June	718	99.7%	1.8	1.0	26.0	10.6	4.8	2.5	0	0
	July	744	100.0%	1.6	0.9	11.6	4.4	2.2	1.1	0	0
	August	739	99.3%	1.4	0.7	32.9	5.5	2.8	1.4	0	0
	September	717	99.6%	1.5	0.8	14.0	4.7	2.4	1.4	0	0
	October	742	99.7%	2.4	1.4	27.6	7.9	4.2	2.4	0	0
	November	720	100.0%	2.3	1.4	22.4	5.5	3.7	2.2	0	0
	December	743	99.9%	1.6	0.9	14.0	10.3	3.4	2.5	0	0
Annual		7308	83.4%	1.7	1.0	65.5	22.1	5.2	2.5	0	0
2022	January	741	99.6%	3.2	2.2	27.8	12.2	7.0	4.6	0	0
	February	672	100.0%	3.2	2.0	14.7	8.3	6.3	3.9	0	0
	March	740	99.5%	3.0	2.0	19.9	6.8	5.1	3.7	0	0
	April	710	98.6%	3.9	2.6	14.8	8.4	6.2	4.3	0	0
	May	743	99.9%	2.7	1.8	16.8	8.1	4.8	3.5	0	0
	June	719	99.9%	2.2	1.4	31.0	4.4	3.8	2.0	0	0
	July	379	50.9%	2.0	1.2	13.1	4.5	3.1	1.5	0	0
	August	731	98.3%	1.8	1.2	8.7	4.7	2.4	1.8	0	0
	September	720	100.0%	1.8	1.2	10.5	4.5	2.6	1.6	0	0
	October	659	88.6%	2.5	1.6	23.2	8.4	3.9	2.3	0	0
	November	0	0.0%								
	December	562	75.5%	3.1	2.5	32.0	7.0	4.1	3.2	0	0
Annual		7376	84.2%	2.7	1.8	32.0	12.2	7.0	4.6	0	0

Observations in ppb

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



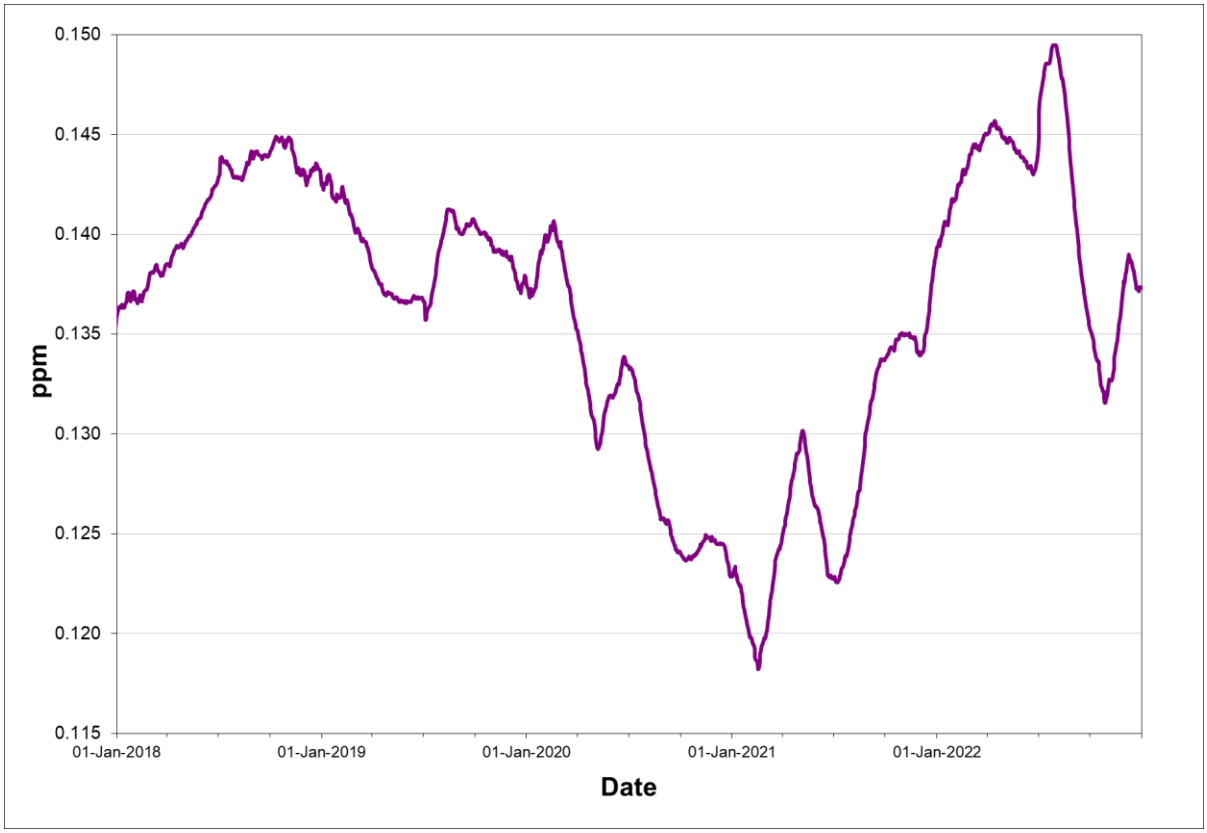
Rolling annual average of hourly concentrations

TABLE 3.3.4 - GRAND FALLS-WINDSOR NAPS CO SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>30.582)	Regulatory Exceedances 8-Hour (>13.107)
2021	January	738	99.2%	0.2	0.6	0.4	0	0
	February	671	99.9%	0.2	0.4	0.3	0	0
	March	480	64.5%	0.2	0.4	0.2	0	0
	April	714	99.2%	0.1	0.3	0.2	0	0
	May	741	99.6%	0.1	0.2	0.2	0	0
	June	717	99.6%	0.1	0.2	0.2	0	0
	July	437	58.7%	0.1	0.2	0.2	0	0
	August	629	84.5%	0.1	0.3	0.2	0	0
	September	711	98.8%	0.1	0.3	0.2	0	0
	October	741	99.6%	0.1	0.7	0.3	0	0
	November	720	100.0%	0.1	0.3	0.2	0	0
	December	744	100.0%	0.2	0.5	0.4	0	0
Annual		8043	91.8%	0.1	0.7	0.4	0	0
2022	January	596	80.1%	0.2	0.8	0.3	0	0
	February	671	99.9%	0.2	0.4	0.3	0	0
	March	736	98.9%	0.2	0.5	0.3	0	0
	April	711	98.8%	0.1	0.5	0.3	0	0
	May	742	99.7%	0.1	0.2	0.2	0	0
	June	719	99.9%	0.1	0.4	0.2	0	0
	July	53	7.1%	0.4	1.0	0.6	0	0
	August	696	93.5%	0.1	0.5	0.3	0	0
	September	718	99.7%	0.1	0.2	0.1	0	0
	October	742	99.7%	0.1	0.3	0.2	0	0
	November	618	85.8%	0.2	0.8	0.5	0	0
	December	701	94.2%	0.2	0.4	0.3	0	0
Annual		7703	87.9%	0.1	1.0	0.6	0	0

Observations in ppm

FIGURE 3.3.4 - GRAND FALLS-WINDSOR NAPS ANNUAL CO CONCENTRATIONS



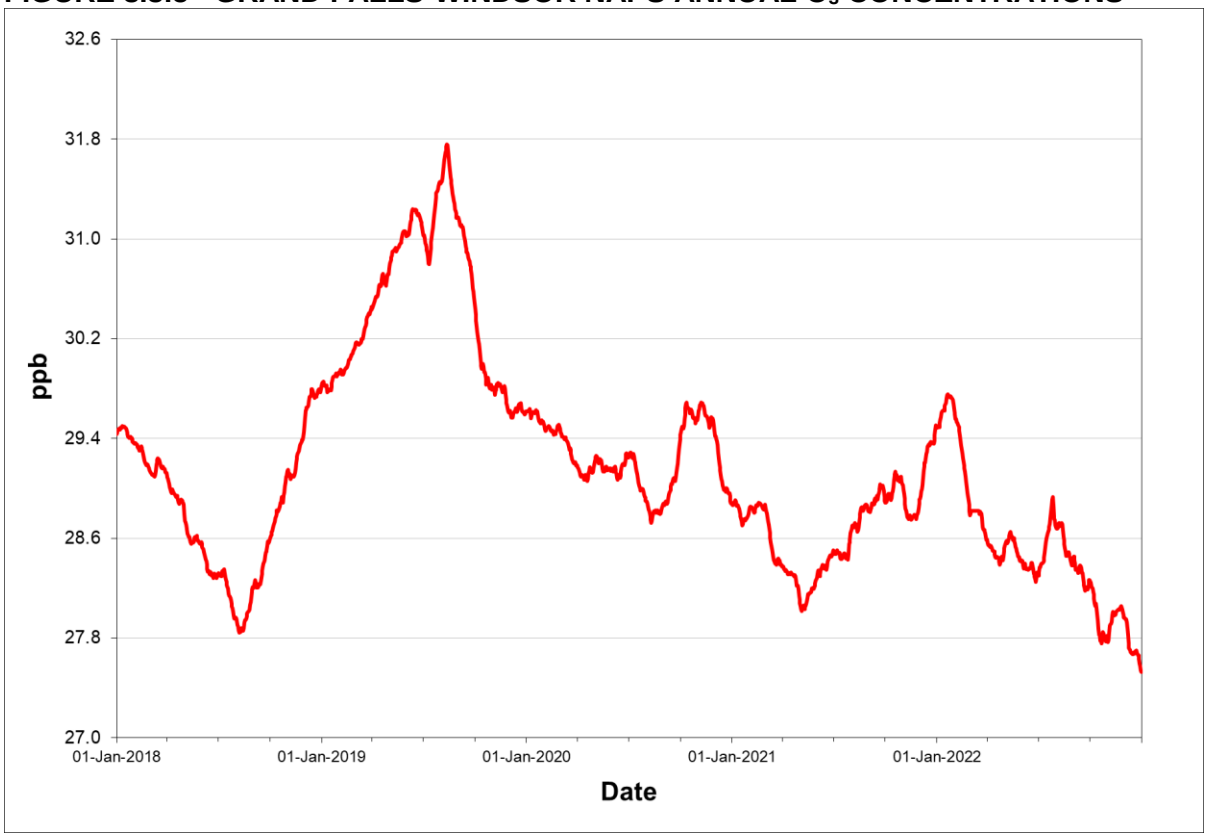
Rolling annual average of hourly concentrations

TABLE 3.3.5 - GRAND FALLS-WINDSOR NAPS O_3 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>82)	Regulatory Exceedances 8-Hour (>44)
2021	January	743	99.9%	34.6	45.3	44.7	0	1
	February	669	99.6%	38.6	52.5	44.9	0	8
	March	361	48.5%	38.6	52.4	48.5	0	7
	April	714	99.2%	35.6	52.4	48.1	0	2
	May	741	99.6%	31.9	51.5	43.0	0	0
	June	719	99.9%	25.6	51.1	48.2	0	1
	July	740	99.5%	20.0	46.5	43.7	0	0
	August	581	78.1%	21.5	42.9	33.7	0	0
	September	715	99.3%	23.9	40.5	37.8	0	0
	October	719	96.6%	24.9	47.3	39.0	0	0
	November	520	72.2%	25.7	41.6	38.2	0	0
	December	744	100.0%	35.5	46.2	45.5	0	2
Annual		7966	90.9%	29.5	52.5	48.5	0	21
2022	January	686	92.2%	36.7	46.7	43.4	0	0
	February	0	0.0%					
	March	375	50.4%	33.8	44.4	42.1	0	0
	April	709	98.5%	34.7	47.9	44.7	0	3
	May	743	99.9%	31.1	52.8	48.4	0	3
	June	719	99.9%	24.5	40.4	37.9	0	0
	July	379	50.9%	19.5	50.0	33.8	0	0
	August	727	97.7%	20.3	42.3	36.0	0	0
	September	720	100.0%	22.2	44.7	37.9	0	0
	October	744	100.0%	20.8	41.0	34.7	0	0
	November	717	99.6%	27.9	41.6	36.9	0	0
	December	701	94.2%	31.4	41.2	40.2	0	0
Annual		7220	82.4%	27.5	52.8	48.4	0	6

Observations in ppb

FIGURE 3.3.5 - GRAND FALLS-WINDSOR NAPS ANNUAL O_3 CONCENTRATIONS

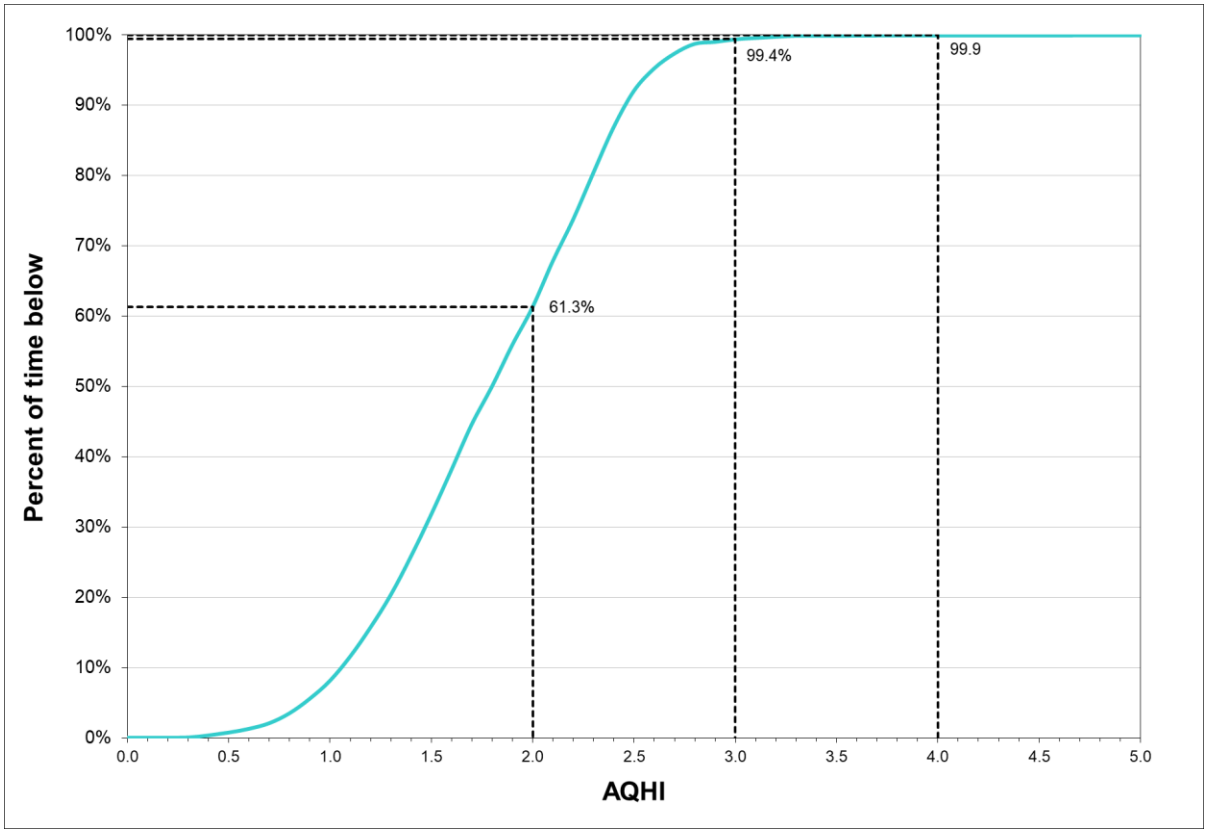


Rolling annual average of hourly concentrations

TABLE 3.3.6 - GRAND FALLS-WINDSOR NAPS AQHI SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2021	January	0			
	February	0			
	March	344	46.2%	2.3	3.0
	April	713	99.0%	2.2	3.1
	May	741	99.6%	1.9	4.5
	June	718	99.7%	1.6	3.5
	July	742	99.7%	1.3	3.8
	August	578	77.7%	1.4	2.7
	September	714	99.2%	1.5	2.3
	October	720	96.8%	1.6	3.3
	November	509	70.7%	1.6	2.5
	December	593	79.7%	2.0	2.7
Annual		6372	72.7%	1.7	4.5
2022	January	595	80.0%	2.4	5.5
	February	0	0.0%		
	March	374	50.3%	2.1	3.7
	April	707	98.2%	2.2	3.2
	May	742	99.7%	1.9	3.1
	June	720	100.0%	1.6	2.4
	July	379	50.9%	1.3	4.1
	August	726	97.6%	1.4	2.6
	September	717	99.6%	1.4	2.4
	October	658	88.4%	1.4	2.7
	November	0	0.0%		
	December	562	75.5%	2.2	2.9
Annual		6180	70.5%	1.8	5.5

FIGURE 3.3.6 - GRAND FALLS-WINDSOR NAPS AQHI FREQUENCY DISTRIBUTION 2022



e.g. 99.4% 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, $PM_{2.5}$ and PM_{10} on a continuous basis. The $PM_{2.5}$ Met One BAM was replaced in September 2020 with a Teledyne API T640 capable of measuring both PM_{10} and $PM_{2.5}$. For SO_2, NO_x / NO_2, CO, $PM_{2.5}$ and PM_{10} the air quality standards were not exceeded on any occasion in 2022. The 8-hour O_3 air quality standard was exceeded on five occasions in 2022, specifically once in February, twice in April, and twice in May.

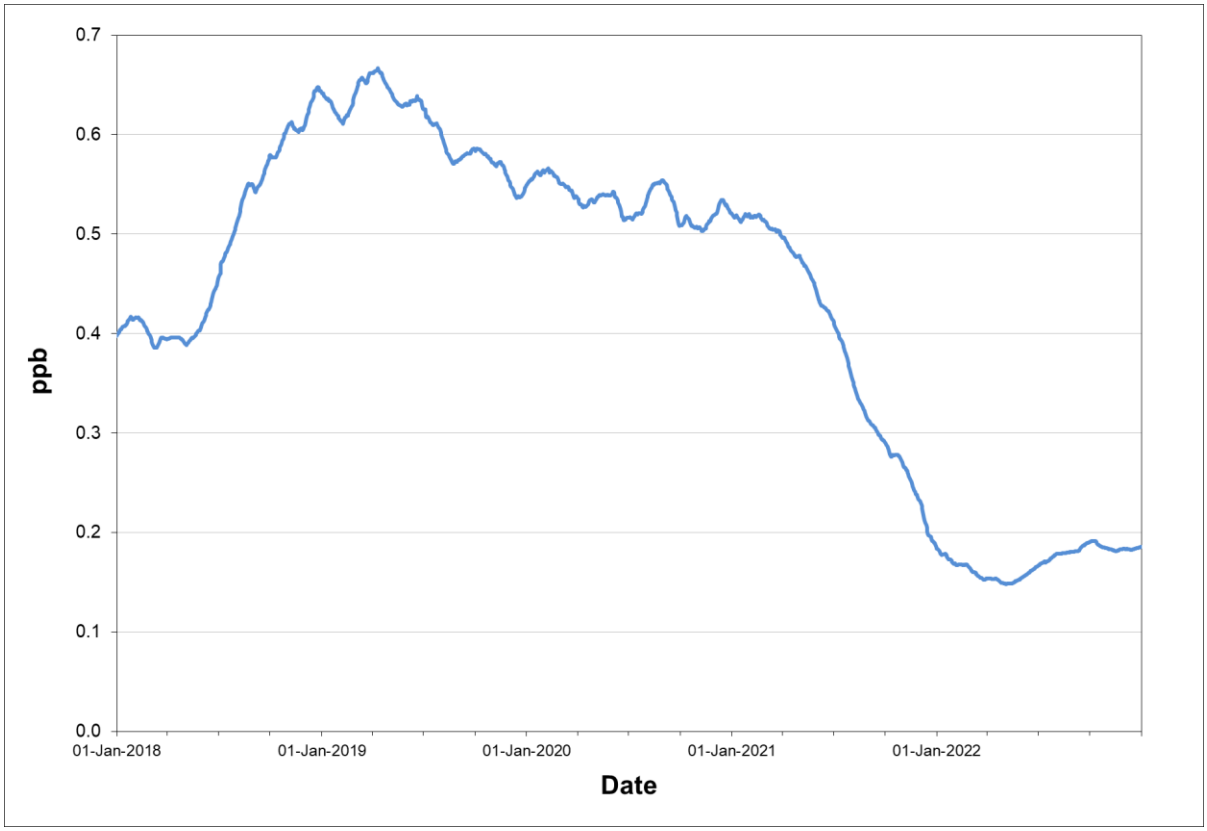
Tables 3.4.1 through 3.4.5 present the summary information on the level of air contaminants measured at the Corner Brook NAPS station, while Figures 3.4.1 through 3.4.5 provide a graphical representation of the annual trend of each pollutant. Table 3.4.6 provides a summary of the AQHI while Figure 3.4.6 provides a graphical representation of the percentage of time the AQHI values were below a given level in 2022.

TABLE 3.4.1 - CORNER BROOK NAPS SO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	676	90.9%	0.5	2.0	1.1	0.9	0	0	0
	February	300	44.6%	0.3	0.9	0.9	0.7	0	0	0
	March	744	100.0%	0.3	2.3	1.1	0.5	0	0	0
	April	715	99.3%	0.2	0.5	0.4	0.3	0	0	0
	May	743	99.9%	0.1	0.6	0.4	0.3	0	0	0
	June	716	99.4%	0.1	0.5	0.2	0.1	0	0	0
	July	711	95.6%	0.1	6.1	3.6	0.8	0	0	0
	August	742	99.7%	0.1	0.9	0.6	0.3	0	0	0
	September	720	100.0%	0.1	0.6	0.3	0.2	0	0	0
	October	734	98.7%	0.2	3.6	2.4	0.9	0	0	0
	November	717	99.6%	0.2	0.3	0.3	0.2	0	0	0
	December	737	99.1%	0.1	0.3	0.3	0.2	0	0	0
Annual		8255	94.2%	0.2	6.1	3.6	0.9	0	0	0
2022	January	744	100.0%	0.3	1.5	0.8	0.5	0	0	0
	February	670	99.7%	0.2	0.7	0.5	0.3	0	0	0
	March	743	99.9%	0.2	0.4	0.4	0.3	0	0	0
	April	708	98.3%	0.1	0.4	0.3	0.3	0	0	0
	May	744	100.0%	0.2	0.8	0.5	0.3	0	0	0
	June	720	100.0%	0.2	1.7	1.5	0.4	0	0	0
	July	744	100.0%	0.2	0.7	0.5	0.3	0	0	0
	August	740	99.5%	0.2	0.5	0.3	0.2	0	0	0
	September	689	95.7%	0.2	0.7	0.6	0.4	0	0	0
	October	686	92.2%	0.1	0.5	0.5	0.2	0	0	0
	November	717	99.6%	0.1	0.4	0.4	0.3	0	0	0
	December	320	43.0%	0.1	0.3	0.2	0.2	0	0	0
Annual		8225	93.9%	0.2	1.7	1.5	0.5	0	0	0

Observations in ppb

FIGURE 3.4.1 - CORNER BROOK NAPS ANNUAL SO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations

TABLE 3.4.2 - CORNER BROOK NAPS $PM_{2.5}$ / PM_{10} SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average $PM_{2.5}$	Average PM_{10}	24-Hour Maximum $PM_{2.5}$	24-Hour Maximum PM_{10}	Regulatory Exceedances $PM_{2.5}$ (>25)	Regulatory Exceedances PM_{10} (>50)
2021	January	31	100.0%	4.0	8.0	9.4	17.0	0	0
	February	28	100.0%	4.9	11.8	9.3	50.4	0	1
	March	31	100.0%	5.4	15.6	12.0	40.5	0	0
	April	30	100.0%	3.8	14.1	7.5	41.6	0	0
	May	31	100.0%	4.1	11.6	6.8	25.0	0	0
	June	30	100.0%	4.4	10.1	13.0	24.3	0	0
	July	29	93.5%	3.9	8.2	13.5	19.1	0	0
	August	31	100.0%	5.9	11.4	10.7	20.6	0	0
	September	30	100.0%	3.2	7.7	5.5	12.4	0	0
	October	31	100.0%	4.1	9.1	8.7	18.8	0	0
	November	30	100.0%	3.9	9.2	8.7	16.6	0	0
	December	31	100.0%	4.4	9.1	9.0	13.8	0	0
Annual		363	99.5%	4.3	10.5	13.5	50.4	0	1
2022	January	31	100.0%	4.4	8.5	6.1	13.8	0	0
	February	28	100.0%	4.2	9.0	5.6	19.1	0	0
	March	31	100.0%	4.0	10.8	6.4	43.3	0	0
	April	30	100.0%	3.8	14.0	6.9	33.8	0	0
	May	18	58.1%	4.1	13.9	7.1	25.4	0	0
	June	2	6.7%	6.3	16.0	6.4	18.2	0	0
	July	31	100.0%	5.4	10.7	10.6	16.7	0	0
	August	31	100.0%	5.2	10.0	24.2	34.7	0	0
	September	28	93.3%	3.2	9.0	4.7	14.9	0	0
	October	28	90.3%	5.6	12.7	17.7	34.4	0	0
	November	30	100.0%	4.5	9.9	9.6	18.4	0	0
	December	31	100.0%	3.8	11.1	7.8	36.2	0	0
Annual		319	87.4%			24.2	43.3	0	0

Observations in $\mu g/m^3$

FIGURE 3.4.2 - CORNER BROOK NAPS ANNUAL $PM_{2.5}$ / PM_{10} CONCENTRATIONS

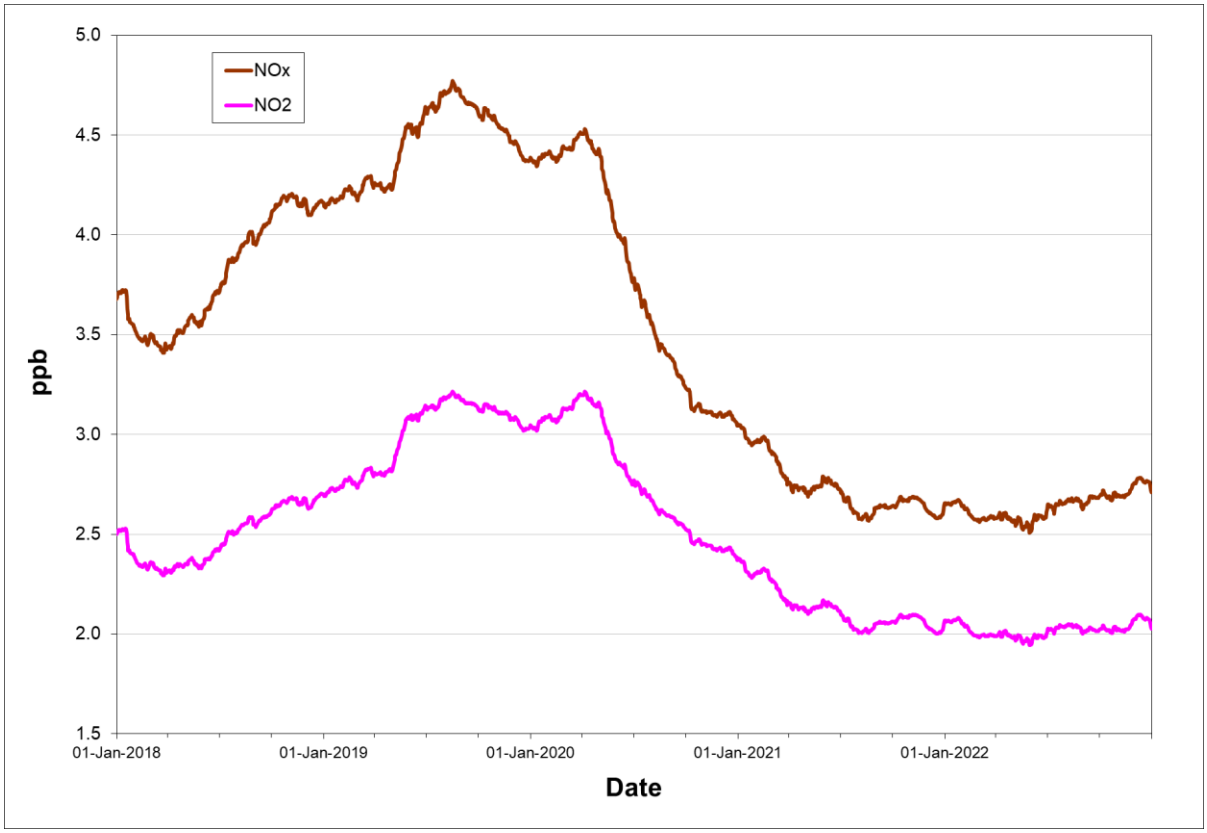
Rolling annual average of daily concentrations

TABLE 3.4.3 - CORNER BROOK NAPS NO_X / NO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour (>213)	Exceedances 24-Hour (>106)
				NO_X	NO_2	NO_X	NO_2	NO_X	NO_2		
2021	January	736	98.9%	2.9	2.5	23.2	19.3	5.5	4.7	0	0
	February	670	99.7%	3.7	3.1	28.7	20.9	8.3	6.9	0	0
	March	744	100.0%	2.9	2.3	38.3	24.6	8.7	6.1	0	0
	April	717	99.6%	2.7	2.1	30.8	21.5	10.3	7.3	0	0
	May	744	100.0%	3.8	2.8	41.3	27.5	14.0	9.1	0	0
	June	709	98.5%	2.4	1.7	30.5	22.0	10.0	7.2	0	0
	July	711	95.6%	2.2	1.4	39.7	18.3	5.4	3.1	0	0
	August	740	99.5%	2.7	2.0	32.7	20.0	6.9	5.3	0	0
	September	716	99.4%	1.8	1.4	20.2	15.3	4.7	3.7	0	0
	October	740	99.5%	2.8	2.1	30.6	17.2	9.1	7.2	0	0
	November	717	99.6%	1.5	1.2	12.4	10.5	3.1	2.7	0	0
	December	737	99.1%	2.5	2.2	30.5	23.0	10.5	8.6	0	0
Annual		8681	99.1%	2.7	2.1	41.3	27.5	14.0	9.1	0	0
2022	January	744	100.0%	2.7	2.3	22.8	21.1	5.3	4.5	0	0
	February	671	99.9%	2.8	2.3	29.3	23.2	6.5	5.4	0	0
	March	743	99.9%	3.0	2.4	19.3	10.7	4.9	3.6	0	0
	April	717	99.6%	2.5	2.0	28.3	26.3	11.2	8.6	0	0
	May	744	100.0%	3.2	2.3	36.4	29.3	11.1	7.4	0	0
	June	720	100.0%	3.8	2.5	46.3	25.9	12.8	8.4	0	0
	July	741	99.6%	2.6	1.7	31.2	19.9	10.7	6.6	0	0
	August	744	100.0%	2.4	1.6	29.7	17.8	6.2	4.7	0	0
	September	689	95.7%	2.5	1.6	43.1	15.0	7.7	4.5	0	0
	October	686	92.2%	2.8	2.1	42.0	34.0	8.6	6.8	0	0
	November	717	99.6%	2.3	1.8	20.4	15.8	6.9	5.7	0	0
	December	744	100.0%	2.0	1.6	17.5	16.0	5.1	4.3	0	0
Annual		8660	98.9%	2.7	2.0	46.3	34.0	12.8	8.6	0	0

Observations in ppb

FIGURE 3.4.3 - CORNER BROOK NAPS ANNUAL NO_X / NO_2 CONCENTRATIONS



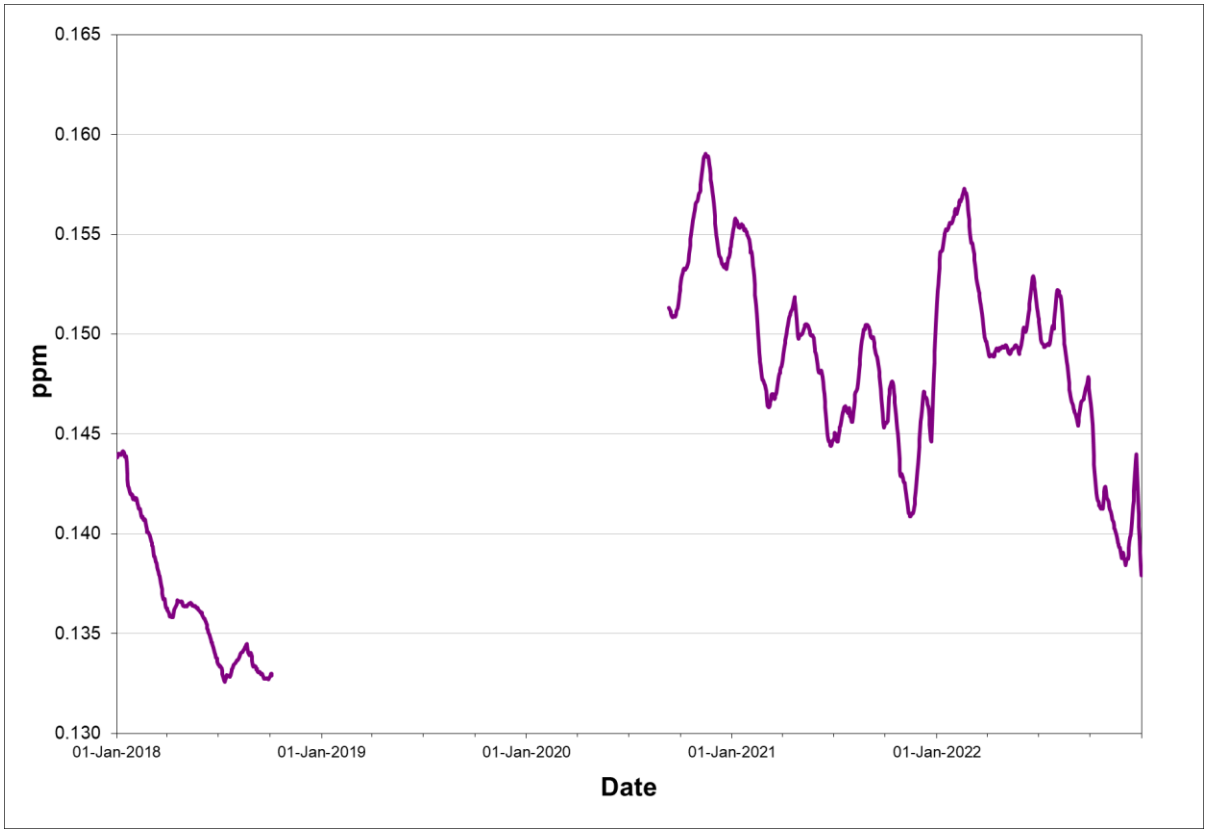
Rolling annual average of hourly concentrations

TABLE 3.4.4 - CORNER BROOK NAPS CO SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>30.582)	Regulatory Exceedances 8-Hour (>13.107)
2021	January	615	82.7%	0.2	0.4	0.3	0	0
	February	666	99.1%	0.1	0.6	0.3	0	0
	March	738	99.2%	0.2	0.6	0.3	0	0
	April	711	98.8%	0.2	0.4	0.3	0	0
	May	741	99.6%	0.2	0.3	0.3	0	0
	June	713	99.0%	0.1	0.3	0.2	0	0
	July	711	95.6%	0.1	0.2	0.2	0	0
	August	737	99.1%	0.2	0.9	0.3	0	0
	September	716	99.4%	0.1	0.4	0.3	0	0
	October	737	99.1%	0.2	0.7	0.6	0	0
	November	717	99.6%	0.2	0.4	0.3	0	0
	December	737	99.1%	0.2	0.8	0.6	0	0
Annual		8539	97.5%	0.2	0.9	0.6	0	0
2022	January	740	99.5%	0.2	0.5	0.4	0	0
	February	667	99.3%	0.1	0.4	0.2	0	0
	March	738	99.2%	0.1	0.2	0.2	0	0
	April	715	99.3%	0.2	0.3	0.3	0	0
	May	738	99.2%	0.2	0.5	0.2	0	0
	June	718	99.7%	0.1	0.2	0.2	0	0
	July	657	88.3%	0.1	0.3	0.2	0	0
	August	533	71.6%	0.1	0.3	0.2	0	0
	September	522	72.5%	0.1	0.3	0.1	0	0
	October	685	92.1%	0.1	0.3	0.2	0	0
	November	714	99.2%	0.1	0.5	0.3	0	0
	December	742	99.7%	0.2	0.4	0.3	0	0
Annual		8169	93.3%	0.1	0.5	0.4	0	0

Observations in ppm

FIGURE 3.4.4 - CORNER BROOK NAPS ANNUAL CO CONCENTRATIONS



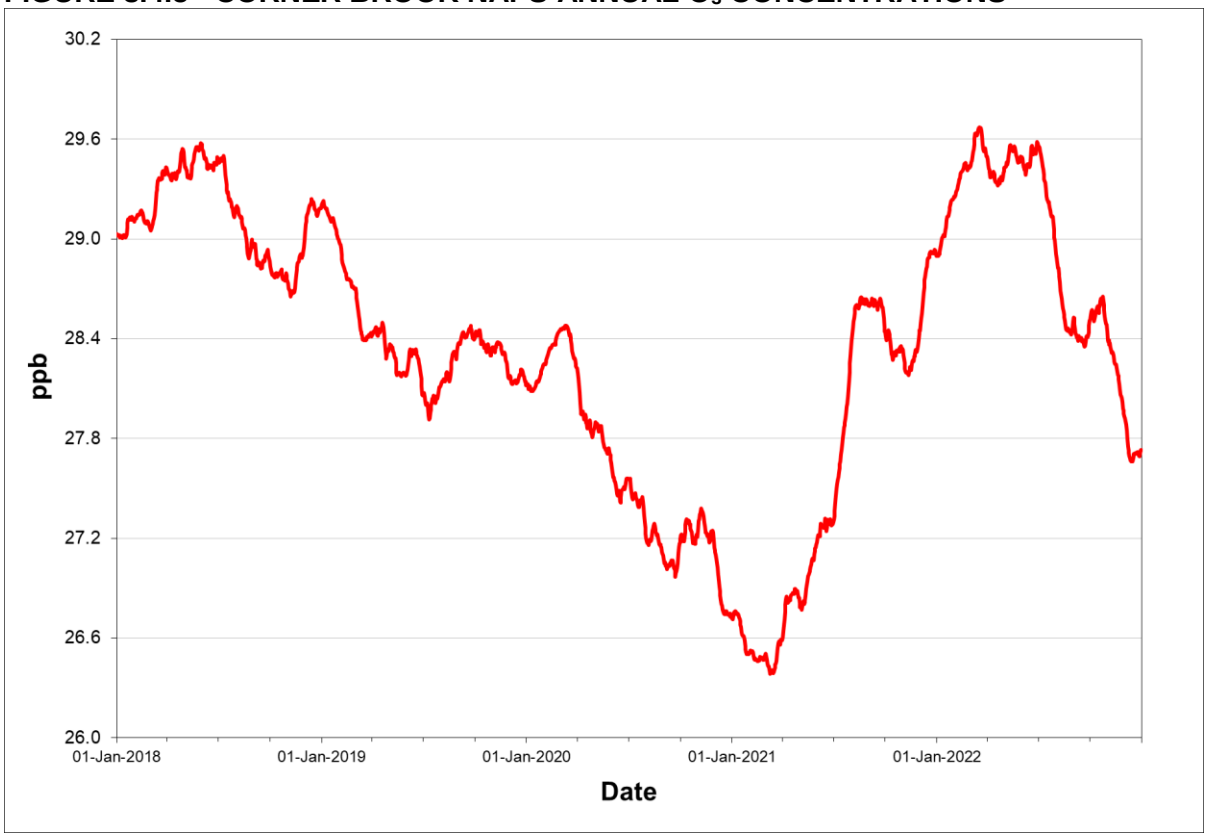
Rolling annual average of hourly concentrations

TABLE 3.4.5 - CORNER BROOK NAPS O_3 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>82)	Regulatory Exceedances 8-Hour (>44)
2021	January	680	91.4%	32.2	40.4	39.3	0	0
	February	670	99.7%	35.7	44.9	42.7	0	0
	March	744	100.0%	36.6	57.4	51.3	0	10
	April	717	99.6%	36.3	53.5	48.6	0	8
	May	740	99.5%	30.3	43.9	42.3	0	0
	June	714	99.2%	22.4	51.1	48.7	0	1
	July	43	5.8%	23.5	26.6	24.6	0	0
	August	466	62.6%	19.7	33.1	27.4	0	0
	September	718	99.7%	19.8	39.3	31.2	0	0
	October	740	99.5%	21.4	45.1	38.2	0	0
	November	720	100.0%	27.8	39.3	38.5	0	0
	December	740	99.5%	33.0	43.8	39.6	0	0
Annual		7692	87.8%	28.9	57.4	51.3	0	19
2022	January	744	100.0%	35.7	43.1	42.5	0	0
	February	672	100.0%	37.7	48.9	47.4	0	1
	March	743	99.9%	37.3	45.9	43.9	0	0
	April	717	99.6%	35.3	49.4	48.0	0	2
	May	744	100.0%	31.2	54.6	47.7	0	2
	June	720	100.0%	23.3	45.2	40.5	0	0
	July	741	99.6%	22.3	50.5	38.6	0	0
	August	743	99.9%	17.9	41.3	36.9	0	0
	September	689	95.7%	19.5	39.7	35.4	0	0
	October	654	87.9%	19.6	37.5	31.2	0	0
	November	719	99.9%	21.8	32.3	29.1	0	0
	December	608	81.7%	31.1	41.6	40.9	0	0
Annual		8494	97.0%	27.7	54.6	48.0	0	5

Observations in ppb

FIGURE 3.4.5 - CORNER BROOK NAPS ANNUAL O_3 CONCENTRATIONS

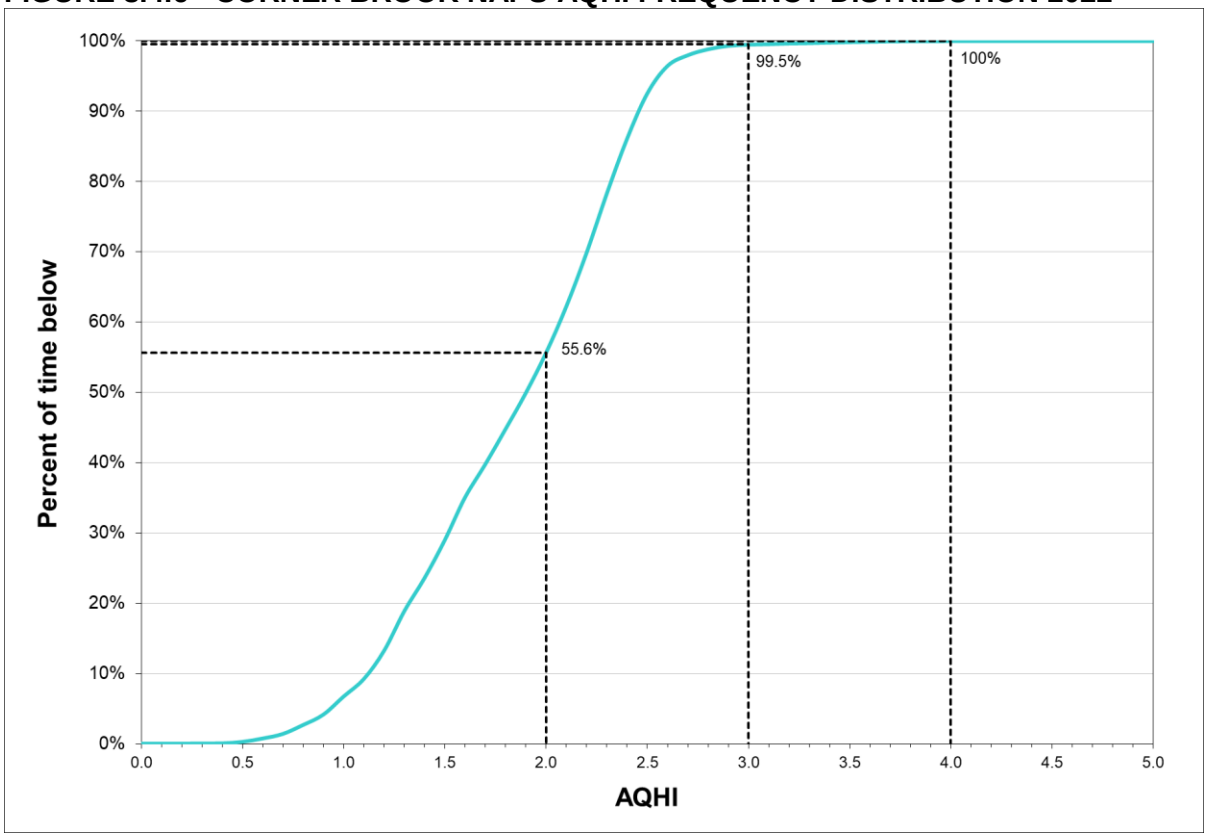


Rolling annual average of hourly concentrations

TABLE 3.4.6 - CORNER BROOK NAPS AQHI SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2021	January	678	91.1%	2.1	3.5
	February	668	99.4%	2.4	3.2
	March	744	100.0%	2.4	4.0
	April	717	99.6%	2.2	3.3
	May	740	99.5%	2.0	3.2
	June	706	98.1%	1.5	3.3
	July	44	5.9%	1.3	1.4
	August	465	62.5%	1.5	2.4
	September	715	99.3%	1.3	2.3
	October	740	99.5%	1.5	2.9
	November	717	99.6%	1.7	2.4
	December	735	98.8%	2.1	3.2
Annual		7669	87.5%	1.9	4.0
2022	January	744	100.0%	2.3	2.8
	February	672	100.0%	2.4	3.0
	March	744	100.0%	2.3	2.9
	April	714	99.2%	2.2	3.3
	May	445	59.8%	2.1	4.0
	June	62	8.6%	1.6	2.7
	July	739	99.3%	1.6	3.1
	August	744	100.0%	1.3	3.6
	September	690	95.8%	1.3	2.3
	October	653	87.8%	1.5	4.1
	November	718	99.7%	1.5	2.1
	December	608	81.7%	1.9	2.6
Annual		7533	86.0%	1.8	4.1

FIGURE 3.4.6 - CORNER BROOK NAPS AQHI FREQUENCY DISTRIBUTION 2022



e.g. 99.5% of the time the AQHI recorded was below 3.0

3.5 Burin

The Burin NAPS monitoring station is located near the Highway Depot in Burin and monitors the ambient levels of NO_x / NO_2, CO, O_3, $PM_{2.5}$ and PM_{10} on a continuous basis. The air quality standards for NO_x / NO_2, CO and O_3, were not exceeded on any occasion in 2022. For 24-hour PM_{10} and 24-hour $PM_{2.5}$, the air quality standard was exceeded once, with both pollutant exceedances occurring on June 19th.

In July 2018 a new Teledyne API T640 was installed at the site, capable of simultaneously measuring PM_{10} and $PM_{2.5}$. For determination of compliance with the Canadian Ambient Air Quality Standards (CAAQS), this monitor replaced the Met One BAMs, however the BAMs are still installed and monitoring. Only the data from the T640 is captured in this annual report though data from the BAMs is available.

Tables 3.5.1 through 3.5.4 provide summary information on the level of each air contaminant measured at the Burin site while Figures 3.5.1 through 3.5.4 provide a graphical representation of the annual trend for each pollutant.

Table 3.5.5 provides a summary of the AQHI, while Figure 3.5.5 provides a graphical representation of the AQHI frequency based on all data collected in Burin in 2022.

TABLE 3.5.1 - BURIN NAPS $PM_{2.5}$ / PM_{10} SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average $PM_{2.5}$	Average PM_{10}	24-Hour Maximum $PM_{2.5}$	24-Hour Maximum PM_{10}	Regulatory Exceedances $PM_{2.5}$ (>25)	Regulatory Exceedances PM_{10} (>50)
2021	January	31	100.0%	3.9	8.9	12.4	27.2	0	0
	February	28	100.0%	4.5	10.2	8.9	19.7	0	0
	March	31	100.0%	6.2	13.8	11.3	21.4	0	0
	April	30	100.0%	5.1	11.4	14.5	31.7	0	0
	May	31	100.0%	5.5	12.1	11.2	23.1	0	0
	June	30	100.0%	5.3	10.5	16.9	25.1	0	0
	July	31	100.0%	4.1	8.6	8.5	16.2	0	0
	August	31	100.0%	5.5	10.3	10.0	18.1	0	0
	September	30	100.0%	4.4	10.0	8.2	20.6	0	0
	October	26	83.9%	3.3	7.3	5.5	11.1	0	0
	November	29	96.7%	5.2	11.6	9.3	20.7	0	0
	December	31	100.0%	4.5	10.3	10.2	22.8	0	0
Annual		359	98.4%	4.8	10.4	16.9	31.7	0	0
2022	January	31	100.0%	5.7	13.1	10.7	32.1	0	0
	February	19	67.9%	5.6	11.9	10.6	22.4	0	0
	March	28	90.3%	8.9	20.6	13.1	29.6	0	0
	April	30	100.0%	8.0	19.1	19.7	46.5	0	0
	May	31	100.0%	6.9	15.5	13.2	30.0	0	0
	June	30	100.0%	7.4	16.1	26.3	65.5	1	1
	July	31	100.0%	7.5	14.9	17.1	30.5	0	0
	August	31	100.0%	3.7	7.2	7.6	12.9	0	0
	September	30	100.0%	4.1	9.8	15.3	36.8	0	0
	October	31	100.0%	4.4	9.4	9.8	17.9	0	0
	November	30	100.0%	4.7	10.4	9.5	20.3	0	0
	December	31	100.0%	3.5	7.6	9.1	20.5	0	0
Annual		353	96.7%	5.9	12.9	26.3	65.5	1	1

Observations in $\mu g/m^3$

FIGURE 3.5.1 - BURIN NAPS ANNUAL $PM_{2.5}$ / PM_{10} CONCENTRATIONS

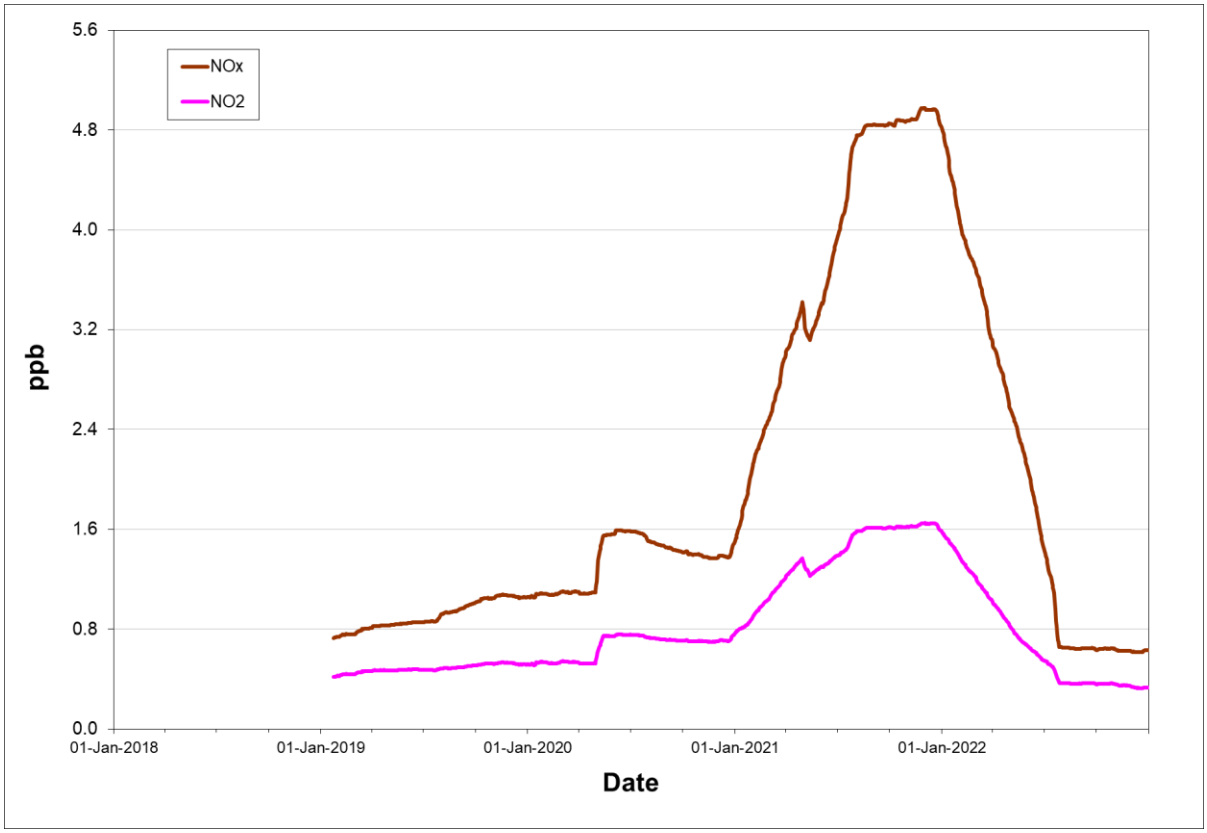
Rolling annual average of hourly concentrations

TABLE 3.5.2 - BURIN NAPS NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	740	99.5%	8.5	2.5	22.3	7.0	17.6	3.5	0	0
	February	668	99.4%	6.1	2.6	20.1	7.5	10.4	4.1	0	0
	March	741	99.6%	7.5	2.7	27.2	7.8	19.0	4.5	0	0
	April	714	99.2%	6.1	2.3	31.2	6.9	10.9	4.0	0	0
	May	742	99.7%	5.6	2.1	17.6	6.5	10.4	4.4	0	0
	June	718	99.7%	7.9	1.7	20.8	9.4	12.2	3.1	0	0
	July	599	80.5%	10.8	2.5	53.2	8.3	32.1	6.2	0	0
	August	490	65.9%	0.6	0.2	7.7	3.0	1.2	0.5	0	0
	September	718	99.7%	0.7	0.3	37.9	18.9	4.5	2.2	0	0
	October	647	87.0%	0.6	0.4	8.4	4.0	1.9	1.3	0	0
	November	533	74.0%	1.0	0.6	31.0	13.0	3.2	1.7	0	0
	December	741	99.6%	0.8	0.5	15.2	5.7	2.2	1.3	0	0
Annual		8051	91.9%	4.8	1.6	53.2	18.9	32.1	6.2	0	0
2022	January	731	98.3%	0.5	0.3	5.5	4.9	1.1	0.9	0	0
	February	507	75.4%	0.7	0.4	16.1	11.6	1.9	1.3	0	0
	March	661	88.8%	0.7	0.5	11.0	4.0	1.2	0.8	0	0
	April	717	99.6%	0.6	0.3	12.4	6.2	1.3	0.8	0	0
	May	742	99.7%	0.6	0.3	6.8	2.9	1.1	0.7	0	0
	June	718	99.7%	0.7	0.4	21.2	4.7	1.6	0.8	0	0
	July	741	99.6%	0.6	0.2	5.6	1.4	0.9	0.4	0	0
	August	741	99.6%	0.5	0.2	3.6	1.7	0.9	0.5	0	0
	September	718	99.7%	0.5	0.3	9.5	3.0	2.0	0.8	0	0
	October	742	99.7%	0.7	0.4	15.3	4.9	2.5	1.3	0	0
	November	716	99.4%	0.7	0.3	12.5	5.1	1.6	0.8	0	0
	December	742	99.7%	0.8	0.3	54.0	27.2	4.3	1.8	0	0
Annual		8476	96.8%	0.6	0.3	54.0	27.2	4.3	1.8	0	0

Observations in ppb

FIGURE 3.5.2 - BURIN NAPS ANNUAL NO_X / NO_2 CONCENTRATIONS



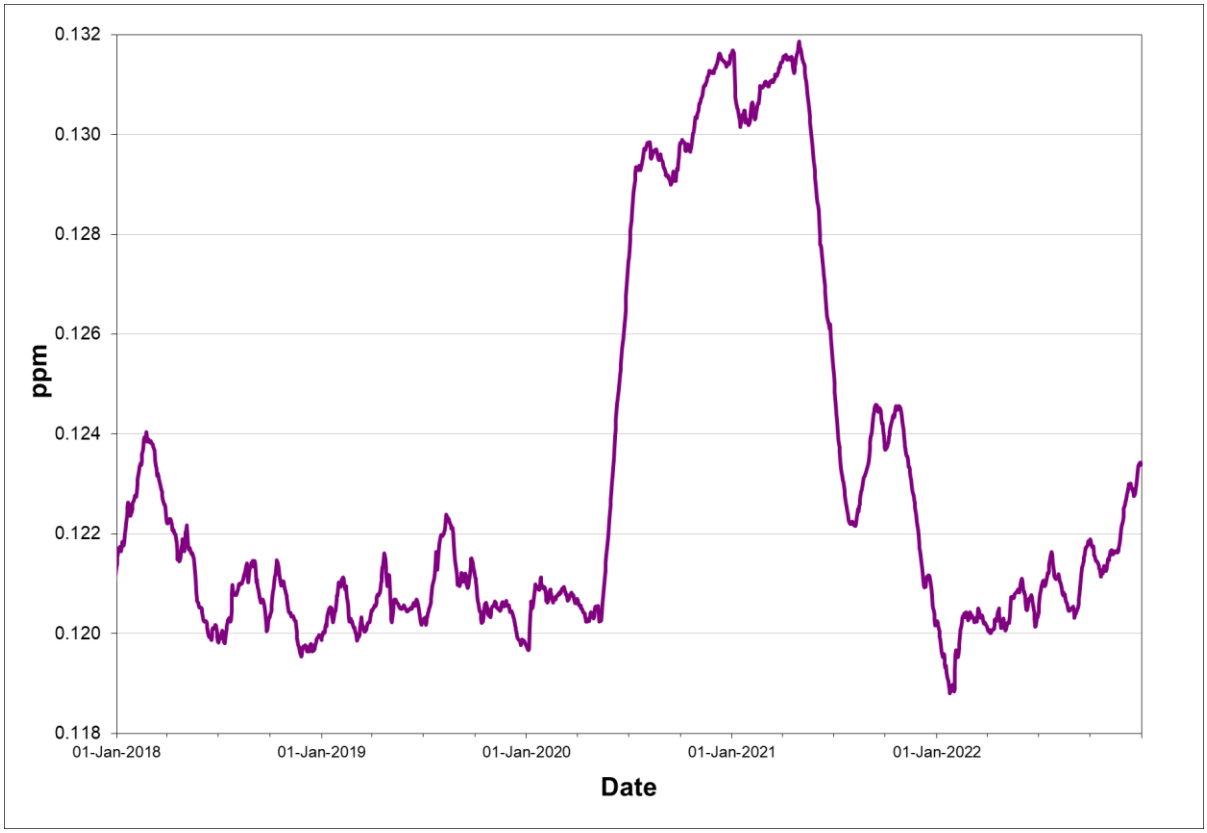
Rolling annual average of hourly concentrations

TABLE 3.5.3 - BURIN NAPS CO SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>30.582)	Regulatory Exceedances 8-Hour (>13.107)
2021	January	743	99.9%	0.1	0.2	0.2	0	0
	February	669	99.6%	0.1	0.2	0.2	0	0
	March	743	99.9%	0.1	0.2	0.2	0	0
	April	621	86.3%	0.1	0.3	0.2	0	0
	May	741	99.6%	0.1	0.2	0.2	0	0
	June	718	99.7%	0.1	0.2	0.2	0	0
	July	656	88.2%	0.1	0.3	0.1	0	0
	August	344	46.2%	0.1	0.2	0.2	0	0
	September	553	76.8%	0.1	0.3	0.2	0	0
	October	455	61.2%	0.1	0.5	0.1	0	0
	November	710	98.6%	0.1	0.2	0.1	0	0
	December	743	99.9%	0.1	0.2	0.2	0	0
Annual		7696	87.9%	0.1	0.5	0.2	0	0
2022	January	740	99.5%	0.1	0.4	0.2	0	0
	February	511	76.0%	0.2	0.4	0.4	0	0
	March	662	89.0%	0.1	0.2	0.2	0	0
	April	691	96.0%	0.1	0.6	0.2	0	0
	May	466	62.6%	0.1	0.3	0.2	0	0
	June	718	99.7%	0.1	0.2	0.1	0	0
	July	741	99.6%	0.1	0.2	0.1	0	0
	August	744	100.0%	0.1	0.2	0.2	0	0
	September	720	100.0%	0.1	0.2	0.2	0	0
	October	741	99.6%	0.1	0.2	0.2	0	0
	November	720	100.0%	0.1	0.2	0.2	0	0
	December	742	99.7%	0.1	0.3	0.2	0	0
Annual		8196	93.6%	0.1	0.6	0.4	0	0

Observations in ppm

FIGURE 3.5.3 - BURIN NAPS ANNUAL CO CONCENTRATIONS



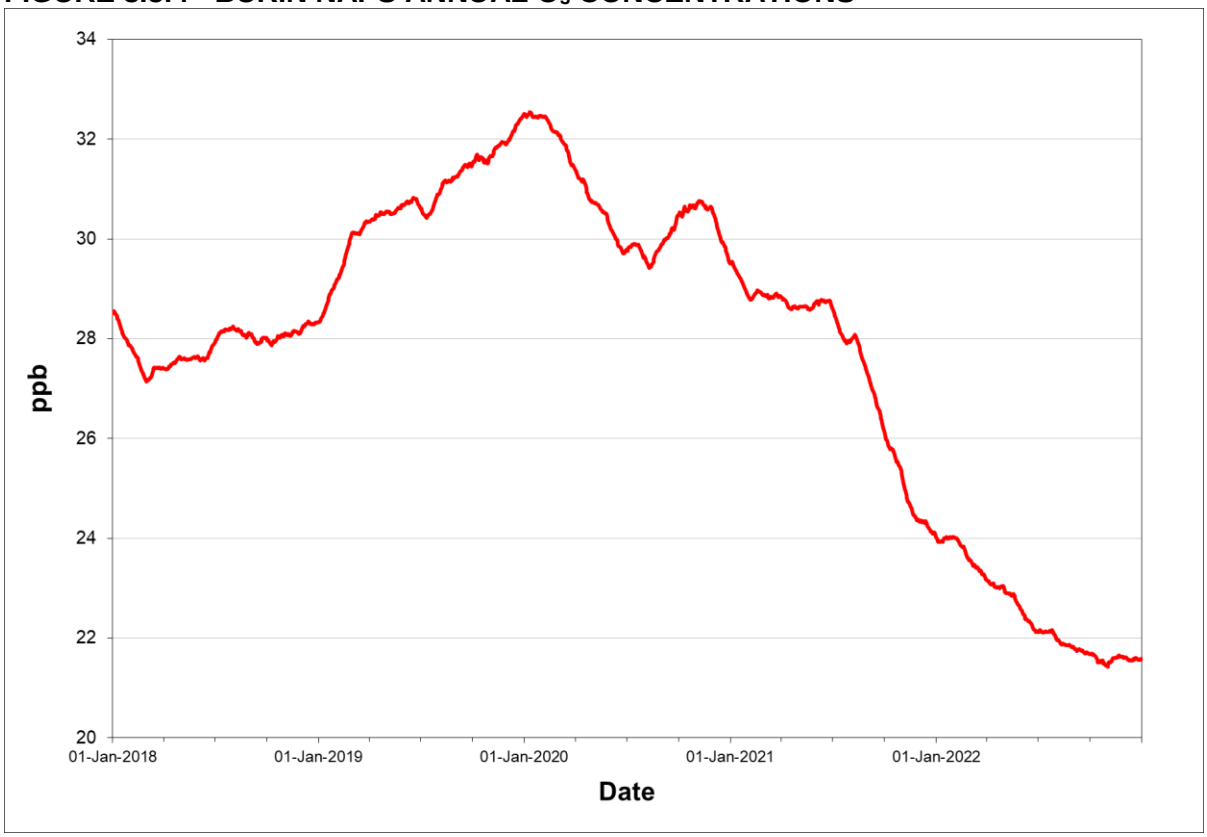
Rolling annual average of hourly concentrations

TABLE 3.5.4 - BURIN NAPS O_3 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>82)	Regulatory Exceedances 8-Hour (>44)
2021	January	742	99.7%	28.2	37.9	36.6	0	0
	February	670	99.7%	33.5	43.7	40.8	0	0
	March	742	99.7%	33.3	52.6	46.9	0	2
	April	611	84.9%	29.9	41.2	36.8	0	0
	May	513	69.0%	29.0	41.5	39.6	0	0
	June	718	99.7%	20.6	42.1	38.7	0	0
	July	740	99.5%	16.6	35.3	32.2	0	0
	August	567	76.2%	16.6	33.8	26.9	0	0
	September	716	99.4%	16.3	28.4	26.9	0	0
	October	645	86.7%	17.9	33.2	27.9	0	0
	November	711	98.8%	21.5	34.2	32.5	0	0
	December	735	98.8%	25.5	35.2	34.1	0	0
Annual		8110	92.6%	24.0	52.6	46.9	0	2
2022	January	726	97.6%	28.2	37.1	36.0	0	0
	February	513	76.3%	29.3	41.7	40.8	0	0
	March	662	89.0%	29.7	39.1	37.7	0	0
	April	717	99.6%	27.4	45.9	42.6	0	0
	May	741	99.6%	22.1	34.5	33.3	0	0
	June	718	99.7%	15.3	26.8	22.4	0	0
	July	742	99.7%	15.8	33.4	29.3	0	0
	August	744	100.0%	15.4	34.8	27.1	0	0
	September	718	99.7%	14.7	26.8	24.1	0	0
	October	742	99.7%	15.8	27.8	24.7	0	0
	November	719	99.9%	23.3	33.7	32.3	0	0
	December	744	100.0%	25.3	34.7	32.8	0	0
Annual		8486	96.9%	21.6	45.9	42.6	0	0

Observations in ppb

FIGURE 3.5.4 - BURIN NAPS ANNUAL O_3 CONCENTRATIONS

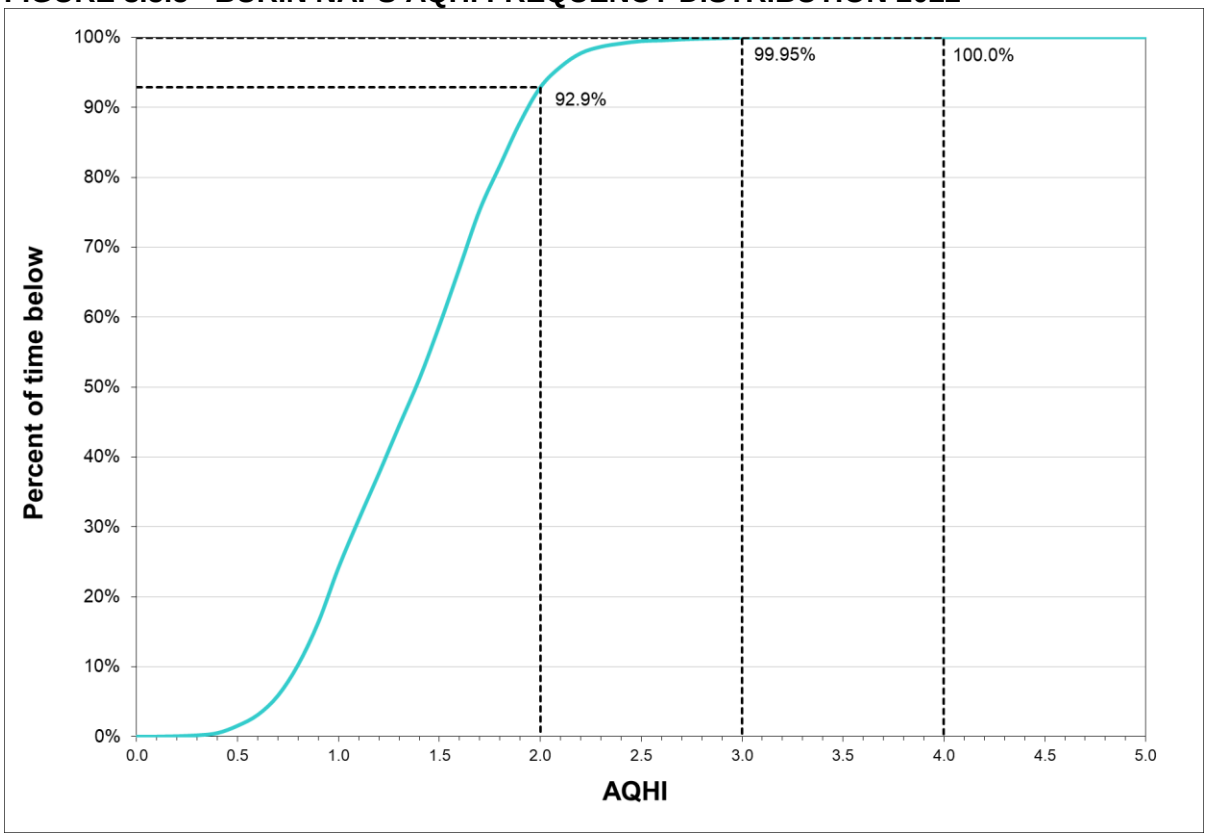


Rolling annual average of hourly concentrations

TABLE 3.5.5 - BURIN NAPS AQHI SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2021	January	738	99.2%	1.9	2.6
	February	593	88.2%	2.1	3.0
	March	344	46.2%	2.2	3.0
	April	604	83.9%	2.0	2.8
	May	512	68.8%	2.0	2.7
	June	716	99.4%	1.5	3.4
	July	594	79.8%	1.2	2.6
	August	311	41.8%	1.1	1.9
	September	673	93.5%	1.0	2.5
	October	519	69.8%	1.1	1.9
	November	529	73.5%	1.3	2.0
	December	734	98.7%	1.6	2.3
Annual		6867	78.4%	1.6	3.4
2022	January	719	96.6%	1.8	2.7
	February	507	75.4%	1.8	3.3
	March	661	88.8%	1.9	2.9
	April	717	99.6%	1.7	2.9
	May	742	99.7%	1.4	2.2
	June	720	100.0%	1.0	2.0
	July	741	99.6%	1.1	2.2
	August	739	99.3%	1.0	2.0
	September	717	99.6%	1.0	2.2
	October	741	99.6%	1.1	1.9
	November	714	99.2%	1.5	2.2
	December	740	99.5%	1.6	2.6
Annual		8458	96.6%	1.4	3.3

FIGURE 3.5.5 - BURIN NAPS AQHI FREQUENCY DISTRIBUTION 2022



e.g. 99.95% of the time the AQHI recorded was below 3.0

3.6 Port aux Choix

The Port aux Choix NAPS monitoring station is located at the Town Depot and monitors the ambient levels of O_3 on a continuous basis. There were no recorded O_3 exceedances at this station in 2022. Due to on-going operational issues with the monitor, data collection was limited during the year.

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 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>82)	Regulatory Exceedances 8-Hour (>44)
2021	January	740	99.5%	31.7	40.6	39.7	0	0
	February	672	100.0%	35.2	41.4	40.7	0	0
	March	228	30.6%	30.4	40.4	40.0	0	0
	April	0	0.0%					
	May	0	0.0%					
	June	489	67.9%	23.2	39.7	38.2	0	0
	July	742	99.7%	22.0	40.3	34.9	0	0
	August	287	38.6%	23.4	36.4	32.2	0	0
	September	720	100.0%	22.0	38.3	33.8	0	0
	October	744	100.0%	26.5	37.8	34.8	0	0
	November	720	100.0%	28.8	38.4	35.1	0	0
	December	744	100.0%	34.0	48.2	40.4	0	0
Annual		6086	69.5%		48.2	40.7	0	0
2022	January	711	95.6%	34.8	41.4	39.4	0	0
	February	672	100.0%	36.2	47.4	43.5	0	0
	March	228	30.6%	37.7	42.9	42.4	0	0
	April	0						
	May	0						
	June	370	51.4%	22.4	39.3	31.6	0	0
	July	163	21.9%	22.7	41.5	39.5	0	0
	August	180	24.2%	19.8	32.5	27.3	0	0
	September	0						
	October	11	1.5%	31.4	33.7	31.3	0	0
	November	719	99.9%	32.4	39.8	38.2	0	0
	December	744	100.0%	34.6	42.3	41.8	0	0
Annual		3798	43.4%		47.4	43.5	0	0

Observations in ppb

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 six monitoring networks operated by industry in 2022 and another four 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

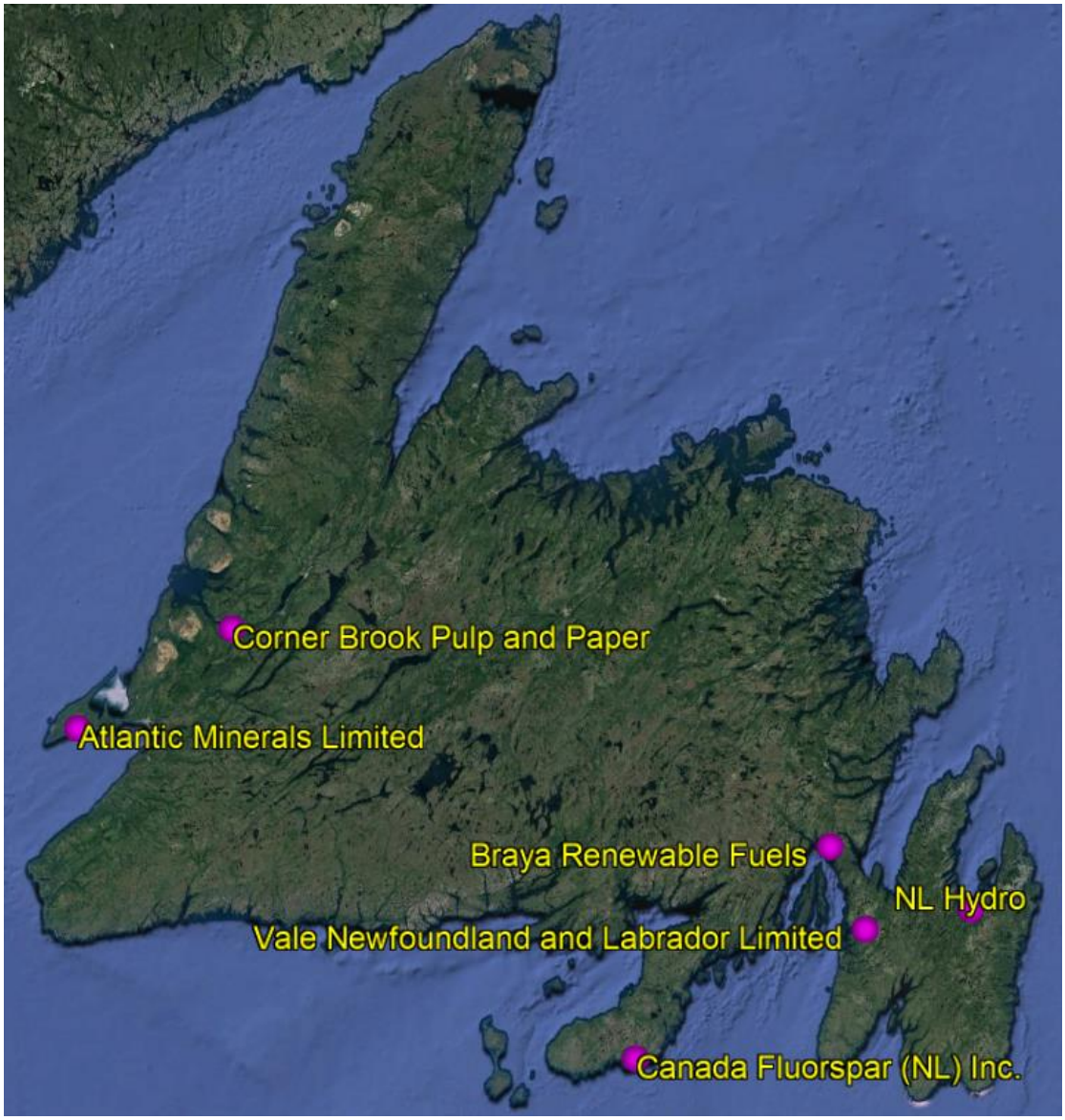
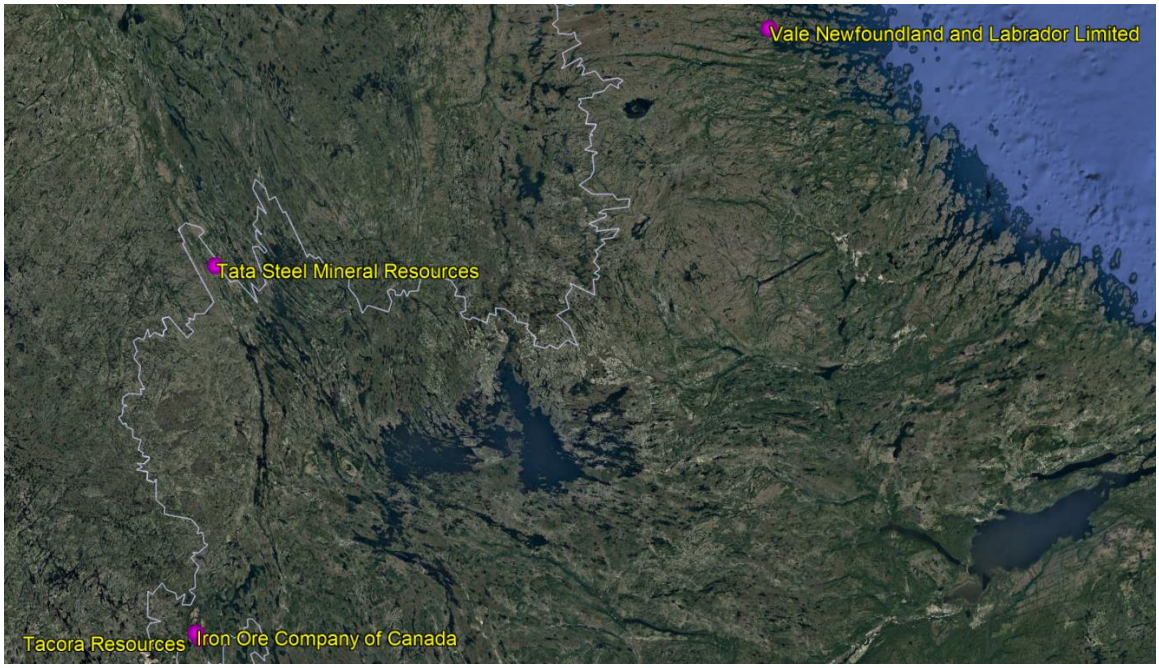


FIGURE 4.0.2 - INDUSTRIAL MONITORING NETWORK IN LABRADOR

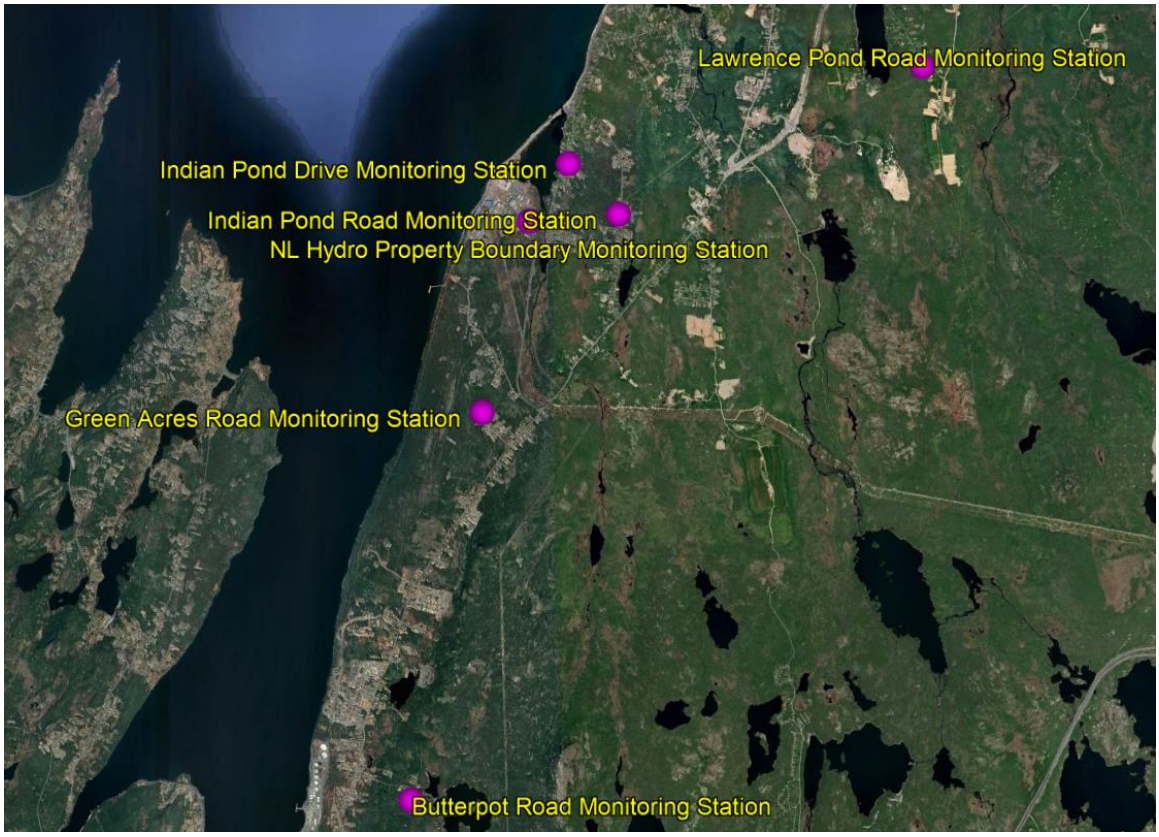


4.1 Newfoundland and Labrador Hydro

In 2022, Newfoundland and Labrador Hydro (NL Hydro) operated monitoring stations at six locations in the Holyrood area. These stations are installed to monitor the air quality near the Holyrood Thermal Generating Station (HTGS) and are located at Butterpot Road, Green Acres Road, Indian Pond Drive, Indian Pond Road, Lawrence Pond, and the NL Hydro HTGS property boundary. Figure 4.1.1 indicates the location of the six monitoring stations operated by NL Hydro.

In 2021 it was announced that NALCOR Energy operations will be moving under Newfoundland and Labrador Hydro. Ambient air monitoring results in previous annual reports for this facility were presented under NALCOR Energy however going forward they will be presented under Newfoundland and Labrador Hydro.

FIGURE 4.1.1 – NL HYDRO AMBIENT MONITORING STATIONS



4.1.1 Butterpot Road

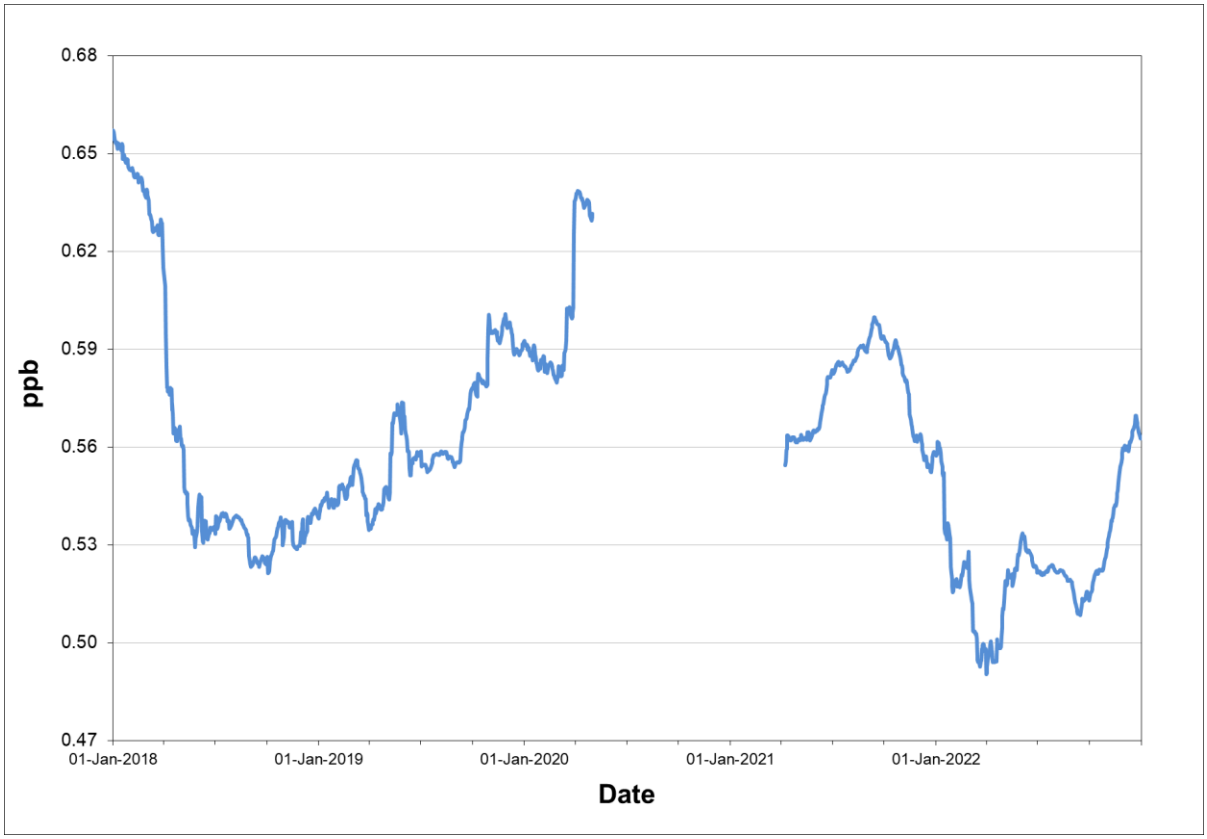
The Butterpot Road station monitors the ambient levels of SO_2, NO_x / NO_2 and $PM_{2.5}$ on a continuous basis. For all pollutants, the air quality standards were not exceeded on any occasion in 2022. Tables 4.1.1.1 through 4.1.1.3 provide summary information on the level of air contaminants measured 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 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	711	95.6%	1.0	13.2	10.7	6.8	0	0	0
	February	642	95.5%	0.5	9.1	3.4	0.9	0	0	0
	March	711	95.6%	1.1	26.3	18.0	4.0	0	0	0
	April	690	95.8%	0.6	11.0	6.7	1.9	0	0	0
	May	686	92.2%	0.5	6.4	5.8	1.8	0	0	0
	June	687	95.4%	0.6	4.5	3.1	1.1	0	0	0
	July	713	95.8%	0.4	0.9	0.7	0.6	0	0	0
	August	712	95.7%	0.4	0.7	0.6	0.5	0	0	0
	September	667	92.6%	0.5	1.4	1.2	0.8	0	0	0
	October	699	94.0%	0.3	2.5	0.6	0.5	0	0	0
	November	686	95.3%	0.4	4.9	2.7	0.8	0	0	0
	December	710	95.4%	0.6	3.0	1.4	1.0	0	0	0
Annual		8314	94.9%	0.6	26.3	18.0	6.8	0	0	0
2022	January	711	95.6%	0.5	18.4	13.7	2.6	0	0	0
	February	643	95.7%	0.7	7.4	5.1	1.4	0	0	0
	March	709	95.3%	0.6	14.9	7.4	1.9	0	0	0
	April	689	95.7%	0.8	18.9	15.6	3.2	0	0	0
	May	713	95.8%	0.7	11.2	7.1	1.9	0	0	0
	June	687	95.4%	0.4	1.2	1.0	0.9	0	0	0
	July	713	95.8%	0.4	1.0	0.8	0.8	0	0	0
	August	712	95.7%	0.3	0.7	0.6	0.5	0	0	0
	September	683	94.9%	0.4	0.9	0.8	0.7	0	0	0
	October	713	95.8%	0.5	3.3	1.6	0.7	0	0	0
	November	690	95.8%	0.7	1.6	1.2	1.0	0	0	0
	December	709	95.3%	0.6	6.3	3.3	1.4	0	0	0
Annual		8372	95.6%	0.6	18.9	15.6	3.2	0	0	0

Observations in ppb

FIGURE 4.1.1.1 - BUTTERPOT ROAD ANNUAL SO_2 CONCENTRATIONS



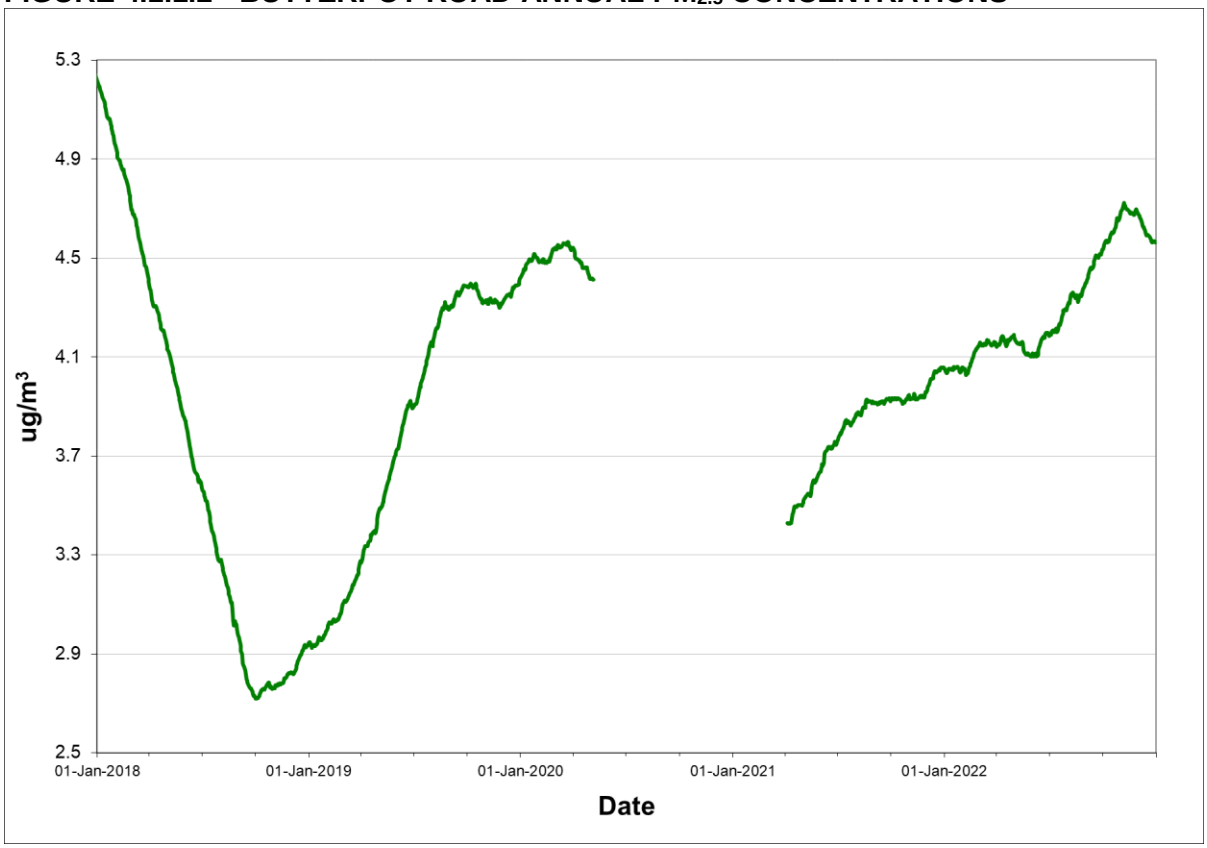
Rolling annual average of hourly concentrations

TABLE 4.1.1.2 - BUTTERPOT ROAD $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	31	100.0%	4.8	8.7	0
	February	23	82.1%	5.3	10.3	0
	March	31	100.0%	6.0	9.0	0
	April	23	76.7%	5.0	9.6	0
	May	31	100.0%	4.9	14.0	0
	June	30	100.0%	3.5	13.1	0
	July	31	100.0%	3.2	5.7	0
	August	31	100.0%	3.0	8.0	0
	September	24	80.0%	1.9	5.3	0
	October	26	83.9%	2.9	6.2	0
	November	29	96.7%	3.7	6.2	0
	December	31	100.0%	4.4	6.9	0
Annual		341	93.4%	4.1	14.0	0
2022	January	29	93.5%	4.9	8.4	0
	February	28	100.0%	6.1	9.6	0
	March	29	93.5%	6.2	8.5	0
	April	30	100.0%	5.3	7.8	0
	May	28	90.3%	4.0	5.9	0
	June	30	100.0%	4.4	8.5	0
	July	31	100.0%	4.5	7.5	0
	August	31	100.0%	4.0	8.3	0
	September	28	93.3%	4.1	8.2	0
	October	27	87.1%	4.7	10.6	0
	November	30	100.0%	3.8	7.7	0
	December	29	93.5%	2.8	5.1	0
Annual		350	95.9%	4.6	10.6	0

Observations in µg/m³

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



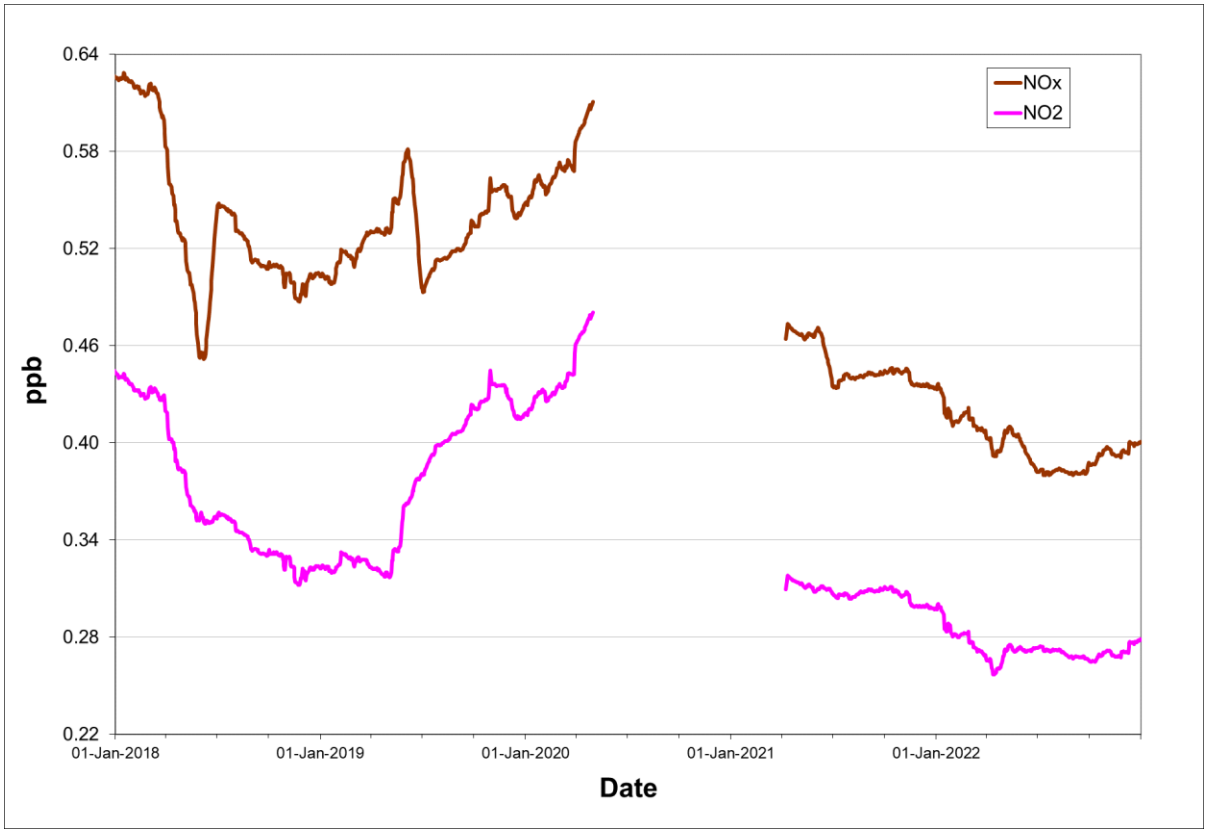
Rolling annual average of daily concentrations

TABLE 4.1.1.3 - BUTTERPOT ROAD NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>103)
2021	January	711	95.6%	0.7	0.5	6.8	6.6	3.7	3.3	0	0
	February	640	95.2%	0.3	0.2	6.0	5.7	0.7	0.6	0	0
	March	711	95.6%	0.6	0.4	14.0	13.5	2.8	2.6	0	0
	April	690	95.8%	0.5	0.4	9.5	9.3	1.5	1.2	0	0
	May	686	92.2%	0.5	0.3	3.3	2.8	1.3	0.9	0	0
	June	688	95.6%	0.5	0.2	2.6	1.6	0.8	0.5	0	0
	July	713	95.8%	0.4	0.2	12.4	4.8	1.5	1.1	0	0
	August	712	95.7%	0.4	0.3	5.4	2.7	0.7	0.5	0	0
	September	669	92.9%	0.3	0.2	4.5	3.4	0.8	0.6	0	0
	October	617	82.9%	0.3	0.2	7.1	1.3	0.7	0.5	0	0
	November	648	90.0%	0.4	0.3	3.9	2.5	1.0	0.8	0	0
	December	711	95.6%	0.4	0.3	4.2	4.1	0.6	0.5	0	0
Annual		8196	93.6%	0.4	0.3	14.0	13.5	3.7	3.3	0	0
2022	January	713	95.8%	0.4	0.3	10.7	7.8	1.7	1.2	0	0
	February	644	95.8%	0.5	0.3	5.2	4.3	1.1	0.9	0	0
	March	707	95.0%	0.4	0.2	7.4	4.9	0.9	0.6	0	0
	April	644	89.4%	0.5	0.4	8.9	6.4	1.6	1.3	0	0
	May	713	95.8%	0.5	0.3	5.2	3.7	1.3	0.9	0	0
	June	686	95.3%	0.3	0.2	10.6	3.0	0.8	0.6	0	0
	July	713	95.8%	0.4	0.2	3.3	1.5	0.7	0.5	0	0
	August	713	95.8%	0.4	0.2	1.8	1.7	0.5	0.3	0	0
	September	595	82.6%	0.4	0.2	1.6	1.2	1.1	0.4	0	0
	October	713	95.8%	0.5	0.3	5.6	4.3	1.0	0.7	0	0
	November	690	95.8%	0.3	0.3	9.0	8.4	1.4	1.3	0	0
	December	711	95.6%	0.4	0.4	8.5	8.2	2.0	1.9	0	0
Annual		8242	94.1%	0.4	0.3	10.7	8.4	2.0	1.9	0	0

Observations in ppb

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

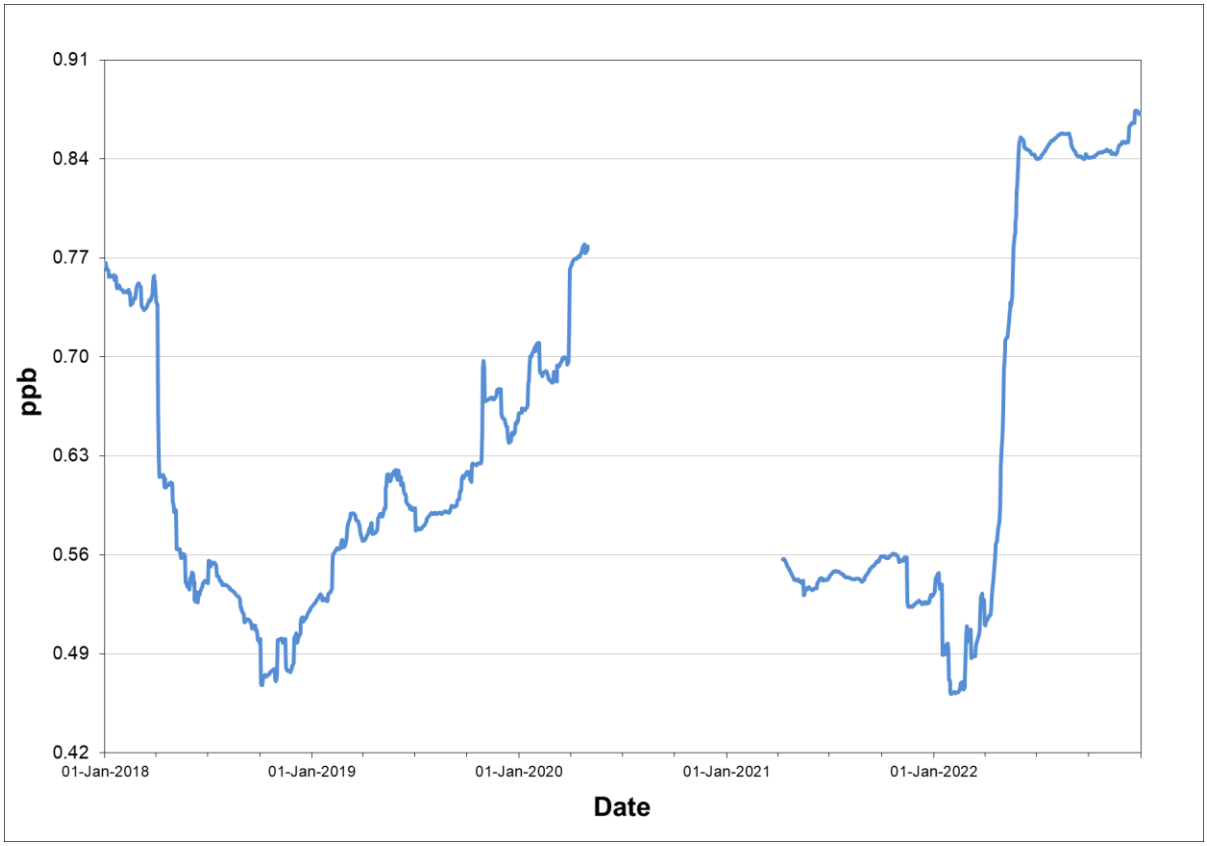
The Green Acres Road station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ on a continuous basis and TPM on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For all pollutants the air quality standards were not exceeded on any occasion in 2022. Tables 4.1.2.1 through 4.1.2.4 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 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	713	95.8%	1.5	45.0	39.3	17.9	0	0	0
	February	562	83.6%	0.5	30.5	10.8	1.9	0	0	0
	March	705	94.8%	1.2	86.6	44.2	7.9	0	0	0
	April	690	95.8%	0.3	3.5	1.9	0.7	0	0	0
	May	638	85.8%	0.6	31.5	17.3	3.1	0	0	0
	June	663	92.1%	0.4	24.1	9.8	1.7	0	0	0
	July	710	95.4%	0.2	0.7	0.6	0.6	0	0	0
	August	619	83.2%	0.2	0.7	0.4	0.4	0	0	0
	September	641	89.0%	0.4	0.8	0.7	0.5	0	0	0
	October	708	95.2%	0.2	2.1	0.8	0.3	0	0	0
	November	666	92.5%	0.3	12.1	5.0	0.9	0	0	0
	December	670	90.1%	0.4	3.9	2.0	0.7	0	0	0
Annual		7985	91.2%	0.5	86.6	44.2	17.9	0	0	0
2022	January	713	95.8%	0.7	18.8	13.8	2.4	0	0	0
	February	636	94.6%	1.1	12.2	7.3	5.5	0	0	0
	March	617	82.9%	1.3	51.6	32.1	5.0	0	0	0
	April	422	58.6%	2.4	51.3	24.5	7.7	0	0	0
	May	657	88.3%	3.2	80.2	34.1	9.4	0	0	0
	June	628	87.2%	0.2	0.8	0.7	0.4	0	0	0
	July	704	94.6%	0.4	0.8	0.7	0.5	0	0	0
	August	703	94.5%	0.3	0.6	0.5	0.4	0	0	0
	September	620	86.1%	0.2	0.8	0.5	0.4	0	0	0
	October	707	95.0%	0.3	4.0	1.7	0.5	0	0	0
	November	625	86.8%	0.4	1.1	0.9	0.6	0	0	0
	December	710	95.4%	0.7	15.5	9.9	3.3	0	0	0
Annual		7742	88.4%	0.9	80.2	34.1	9.4	0	0	0

Observations in ppb

FIGURE 4.1.2.1 - GREEN ACRES ROAD ANNUAL SO_2 CONCENTRATIONS



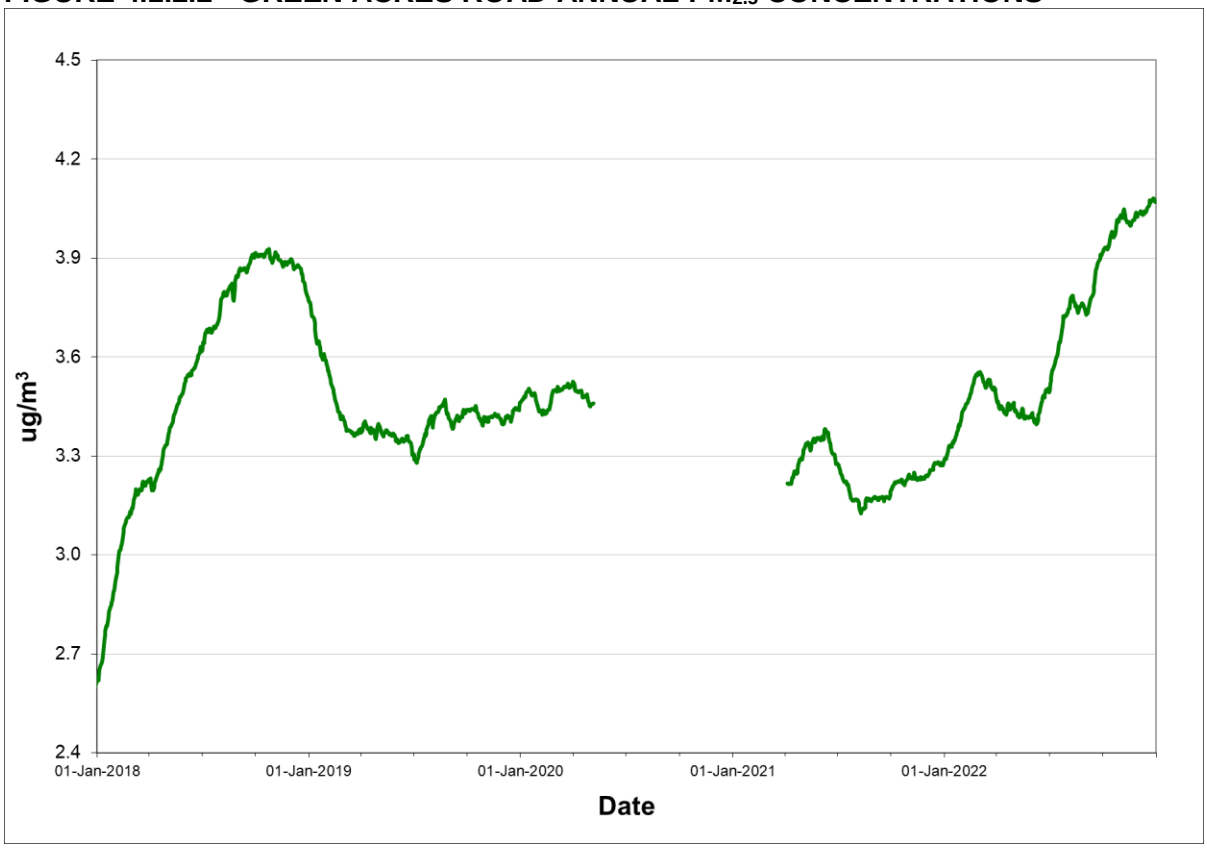
Rolling annual average of hourly concentrations

TABLE 4.1.2.2 - GREEN ACRES ROAD $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	31	100.0%	2.4	7.0	0
	February	28	100.0%	2.2	4.0	0
	March	29	93.5%	4.8	8.1	0
	April	30	100.0%	4.5	8.7	0
	May	27	87.1%	4.4	12.3	0
	June	30	100.0%	3.0	11.9	0
	July	30	96.8%	2.5	4.3	0
	August	27	87.1%	3.1	7.6	0
	September	28	93.3%	2.4	5.5	0
	October	29	93.5%	3.1	5.7	0
	November	28	93.3%	3.6	6.1	0
	December	29	93.5%	3.5	6.3	0
Annual		346	94.8%	3.3	12.3	0
2022	January	31	100.0%	4.1	7.2	0
	February	27	96.4%	3.7	7.1	0
	March	31	100.0%	3.9	6.3	0
	April	30	100.0%	4.2	8.0	0
	May	24	77.4%	4.0	6.0	0
	June	30	100.0%	3.7	7.2	0
	July	31	100.0%	5.2	10.2	0
	August	24	77.4%	3.2	7.8	0
	September	24	80.0%	4.6	8.4	0
	October	27	87.1%	4.4	9.1	0
	November	26	86.7%	3.6	7.2	0
	December	31	100.0%	4.0	6.6	0
Annual		336	92.1%	4.1	10.2	0

Observations in µg/m³

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



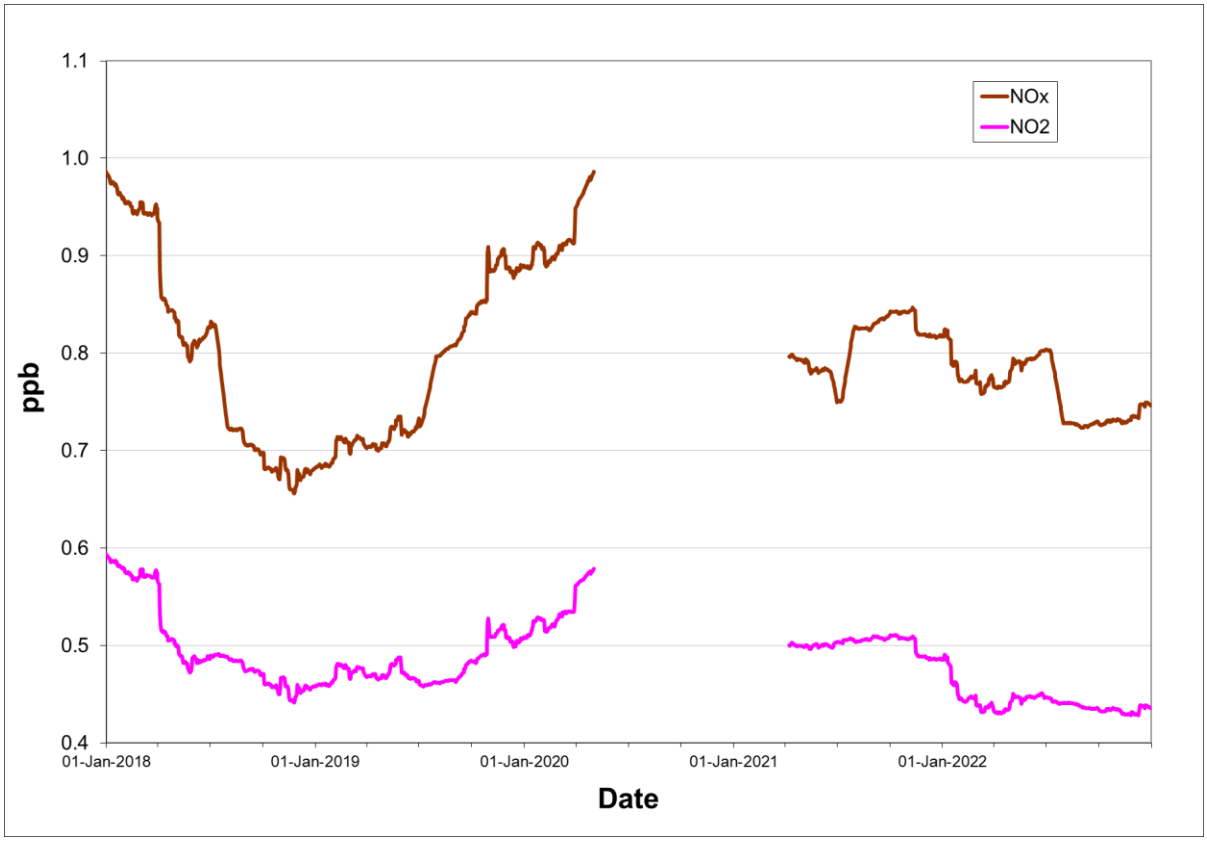
Rolling annual average of daily concentrations

TABLE 4.1.2.3 - GREEN ACRES ROAD NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	713	95.8%	1.3	0.9	22.6	17.5	9.1	6.1	0	0
	February	562	83.6%	0.7	0.4	20.3	14.9	1.4	1.1	0	0
	March	708	95.2%	1.1	0.7	36.1	20.4	5.2	3.9	0	0
	April	690	95.8%	0.8	0.5	4.9	3.8	1.3	1.0	0	0
	May	638	85.8%	0.8	0.5	23.9	9.7	2.1	1.4	0	0
	June	651	90.4%	0.5	0.4	11.9	4.9	1.2	0.8	0	0
	July	710	95.4%	1.4	0.4	9.0	4.3	2.9	1.3	0	0
	August	617	82.9%	0.6	0.4	2.7	1.7	0.7	0.5	0	0
	September	651	90.4%	0.6	0.3	14.8	2.6	1.1	0.6	0	0
	October	705	94.8%	0.6	0.4	6.5	3.8	1.3	0.9	0	0
	November	665	92.4%	0.6	0.4	8.8	6.0	1.3	1.0	0	0
	December	673	90.5%	0.7	0.4	8.1	6.3	1.3	0.9	0	0
Annual		7983	91.1%	0.8	0.5	36.1	20.4	9.1	6.1	0	0
2022	January	713	95.8%	0.8	0.5	14.6	10.4	2.9	2.1	0	0
	February	621	92.4%	0.9	0.5	11.5	8.1	1.7	1.1	0	0
	March	709	95.3%	0.9	0.5	26.9	13.2	2.9	1.9	0	0
	April	690	95.8%	1.0	0.6	19.1	13.2	3.1	2.0	0	0
	May	668	89.8%	0.9	0.6	21.9	13.6	3.5	2.3	0	0
	June	688	95.6%	0.7	0.4	5.1	3.0	1.3	0.7	0	0
	July	689	92.6%	0.6	0.3	2.2	1.2	0.9	0.5	0	0
	August	705	94.8%	0.5	0.3	2.1	1.3	0.7	0.4	0	0
	September	558	77.5%	0.7	0.3	1.6	0.9	0.8	0.4	0	0
	October	713	95.8%	0.6	0.3	5.1	4.0	1.0	0.7	0	0
	November	626	86.9%	0.7	0.4	9.1	7.2	1.8	1.3	0	0
	December	711	95.6%	0.8	0.5	13.4	9.9	3.3	2.4	0	0
Annual		8091	92.4%	0.7	0.4	26.9	13.6	3.5	2.4	0	0

Observations in ppb

FIGURE 4.1.2.3 - GREEN ACRES ROAD ANNUAL NO_X / NO_2 CONCENTRATIONS



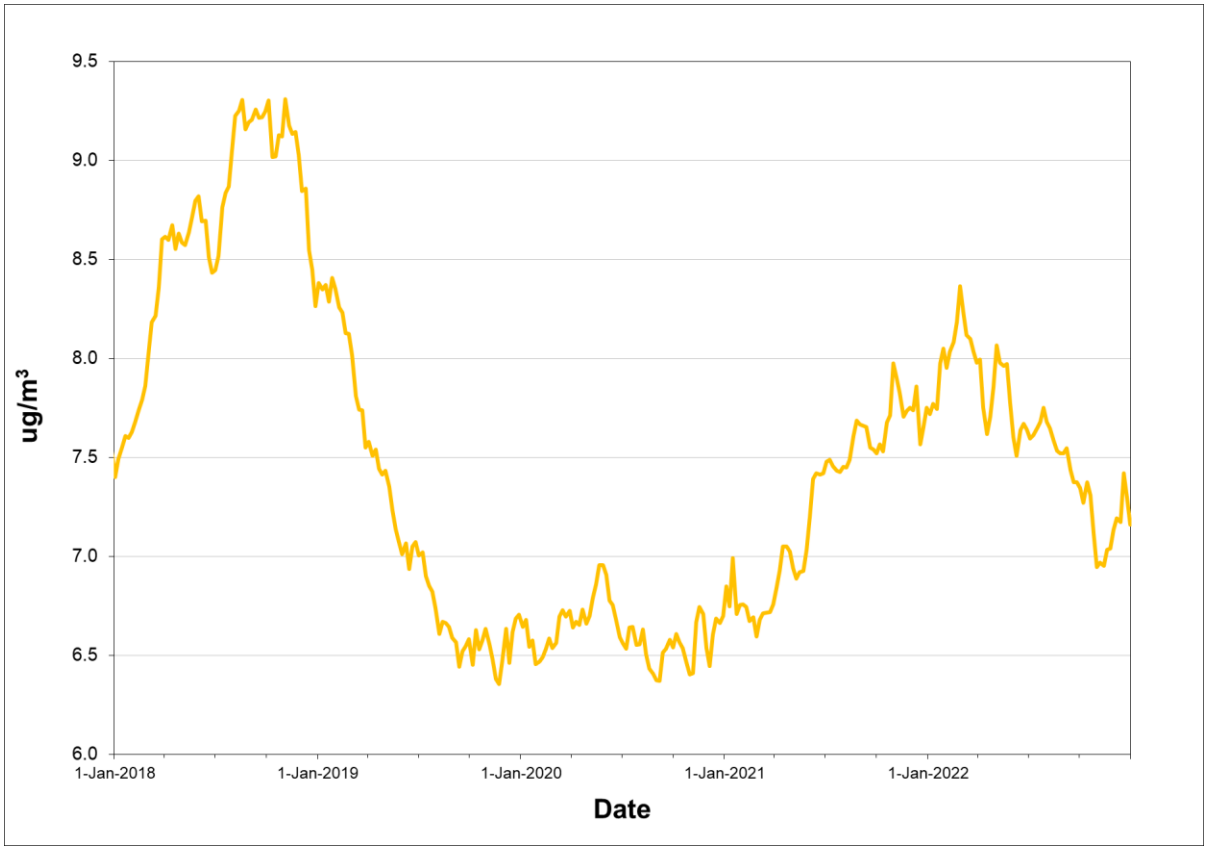
Rolling annual average of hourly concentrations

TABLE 4.1.2.4 - GREEN ACRES ROAD TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	5	100.0%	5.7	12.5	0
	February	4	80.0%	6.5	9.4	0
	March	5	100.0%	12.6	18.1	0
	April	5	100.0%	10.6	18.9	0
	May	5	100.0%	7.1	15.6	0
	June	5	100.0%	11.1	20.7	0
	July	5	100.0%	5.4	6.9	0
	August	5	100.0%	7.6	9.2	0
	September	5	100.0%	6.6	11.8	0
	October	6	100.0%	8.7	35.2	0
	November	5	100.0%	5.3	10.8	0
	December	5	100.0%	9.0	18.4	0
Annual		60	98.4%	7.7	35.2	0
2022	January	5	100.0%	9.0	11.6	0
	February	5	100.0%	10.8	20.0	0
	March	5	100.0%	7.1	8.8	0
	April	5	100.0%	8.8	18.8	0
	May	5	100.0%	6.2	16.9	0
	June	5	100.0%	9.0	20.0	0
	July	5	100.0%	6.5	8.5	0
	August	5	100.0%	5.3	8.0	0
	September	5	100.0%	5.2	11.7	0
	October	5	100.0%	4.3	8.5	0
	November	5	100.0%	7.2	9.5	0
	December	6	100.0%	9.3	17.3	0
Annual		61	100.0%	7.2	20.0	0

Observations in µg/m³

FIGURE 4.1.2.4 - GREEN ACRES ROAD ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.1.3 Indian Pond Drive

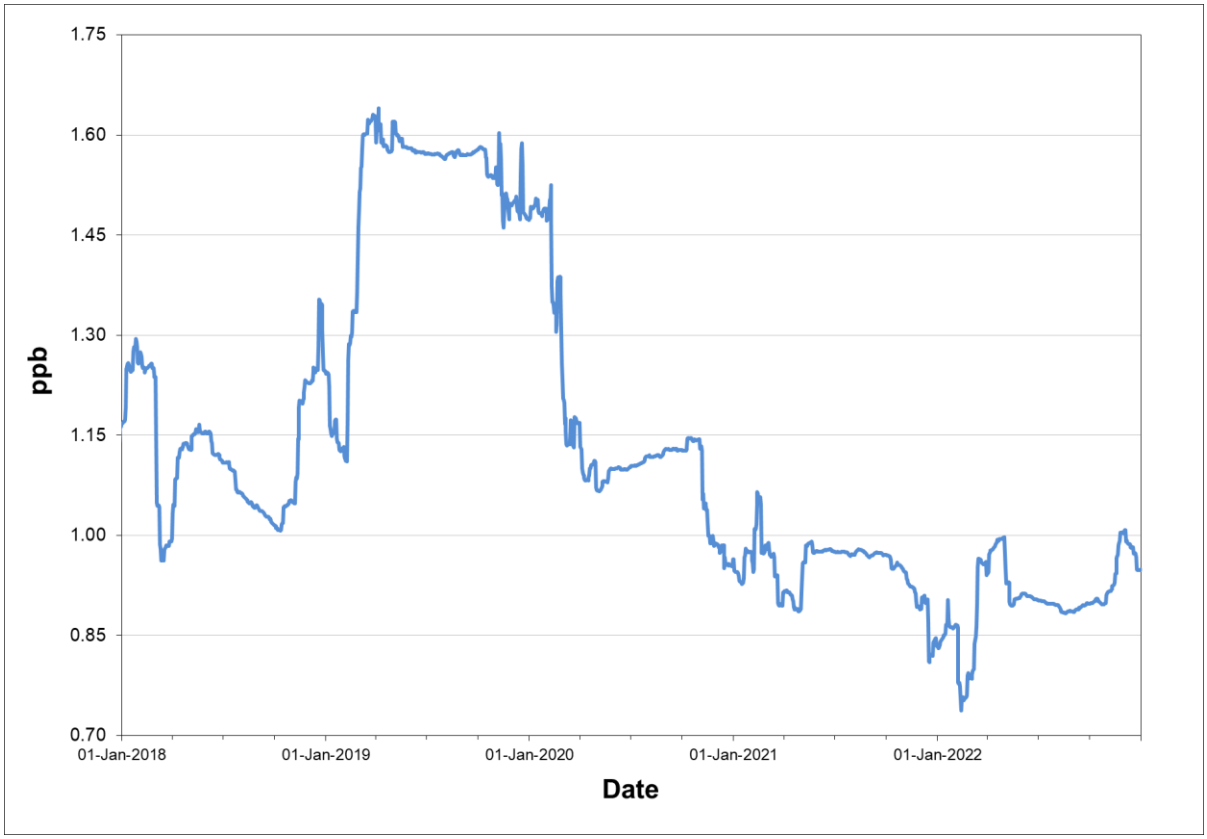
The Indian Pond Drive station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ on a continuous basis and TPM on a 1 day in 6 day cycle consistent with the NAPS defined schedule. The air quality standards for any pollutant were not exceeded on any occasion in 2022. Tables 4.1.3.1 through 4.1.3.4 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 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	655	88.0%	1.1	36.0	27.2	11.1	0	0	0
	February	622	92.6%	2.5	68.6	59.8	28.5	0	0	0
	March	666	89.5%	0.9	52.3	31.8	7.2	0	0	0
	April	688	95.6%	0.4	5.4	3.5	1.0	0	0	0
	May	708	95.2%	1.7	43.4	32.2	10.1	0	0	0
	June	694	96.4%	0.4	4.8	2.3	0.7	0	0	0
	July	686	92.2%	0.4	0.7	0.6	0.6	0	0	0
	August	565	75.9%	0.4	0.7	0.6	0.5	0	0	0
	September	684	95.0%	0.4	0.9	0.8	0.5	0	0	0
	October	608	81.7%	0.3	4.8	1.4	0.7	0	0	0
	November	665	92.4%	0.3	4.8	2.8	0.6	0	0	0
	December	593	79.7%	1.2	35.8	21.8	7.3	0	0	0
Annual		7834	89.4%	0.8	68.6	59.8	28.5	0	0	0
2022	January	705	94.8%	1.4	60.0	32.6	15.6	0	0	0
	February	625	93.0%	1.6	58.8	41.3	10.5	0	0	0
	March	654	87.9%	2.8	70.2	56.9	21.2	0	0	0
	April	679	94.3%	1.0	41.5	30.7	9.1	0	0	0
	May	705	94.8%	0.8	13.1	6.2	3.0	0	0	0
	June	673	93.5%	0.3	0.7	0.7	0.6	0	0	0
	July	710	95.4%	0.3	1.2	0.6	0.6	0	0	0
	August	656	88.2%	0.3	0.8	0.5	0.5	0	0	0
	September	559	77.6%	0.4	1.1	0.7	0.6	0	0	0
	October	703	94.5%	0.5	29.7	16.5	4.4	0	0	0
	November	662	91.9%	1.4	41.6	34.9	8.2	0	0	0
	December	611	82.1%	0.5	7.6	3.9	1.9	0	0	0
Annual		7942	90.7%	0.9	70.2	56.9	21.2	0	0	0

Observations in ppb

FIGURE 4.1.3.1 - INDIAN POND DRIVE ANNUAL SO_2 CONCENTRATIONS



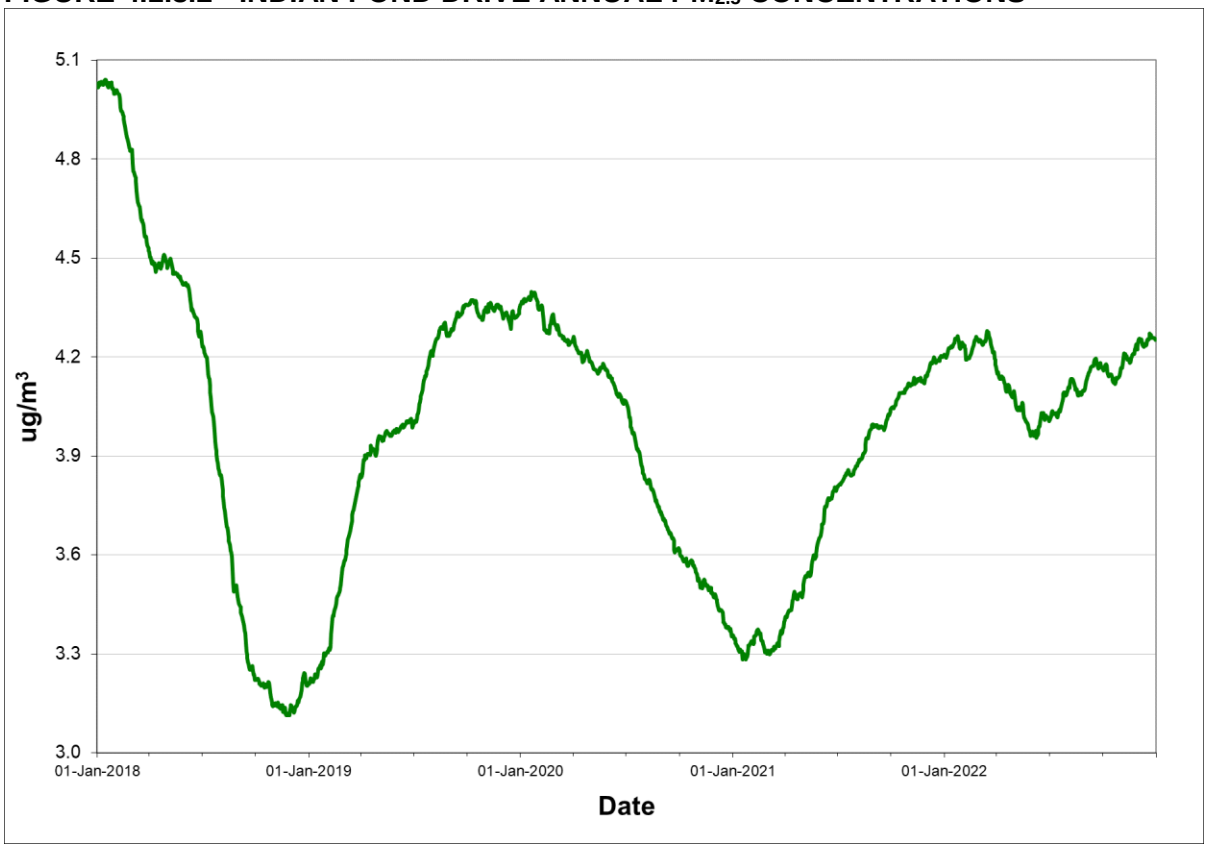
Rolling annual average of hourly concentrations

TABLE 4.1.3.2 - INDIAN POND DRIVE $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	28	90.3%	4.1	10.1	0
	February	28	100.0%	4.1	14.6	0
	March	27	87.1%	5.5	10.5	0
	April	30	100.0%	4.9	9.5	0
	May	31	100.0%	5.4	13.6	0
	June	30	100.0%	4.2	13.9	0
	July	29	93.5%	2.6	4.9	0
	August	24	77.4%	3.8	7.2	0
	September	29	96.7%	3.3	7.3	0
	October	25	80.6%	3.7	9.1	0
	November	28	93.3%	4.2	7.4	0
	December	25	80.6%	4.3	6.4	0
Annual		334	91.5%	4.2	14.6	0
2022	January	30	96.8%	4.5	9.0	0
	February	26	92.9%	4.2	6.8	0
	March	28	90.3%	4.5	9.5	0
	April	24	80.0%	4.0	7.5	0
	May	31	100.0%	4.2	10.5	0
	June	30	100.0%	4.6	8.6	0
	July	31	100.0%	3.7	6.1	0
	August	28	90.3%	4.0	8.8	0
	September	22	73.3%	3.9	9.8	0
	October	21	67.7%	3.5	7.4	0
	November	30	100.0%	5.1	10.2	0
	December	25	80.6%	4.6	10.0	0
Annual		326	89.3%	4.3	10.5	0

Observations in µg/m³

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



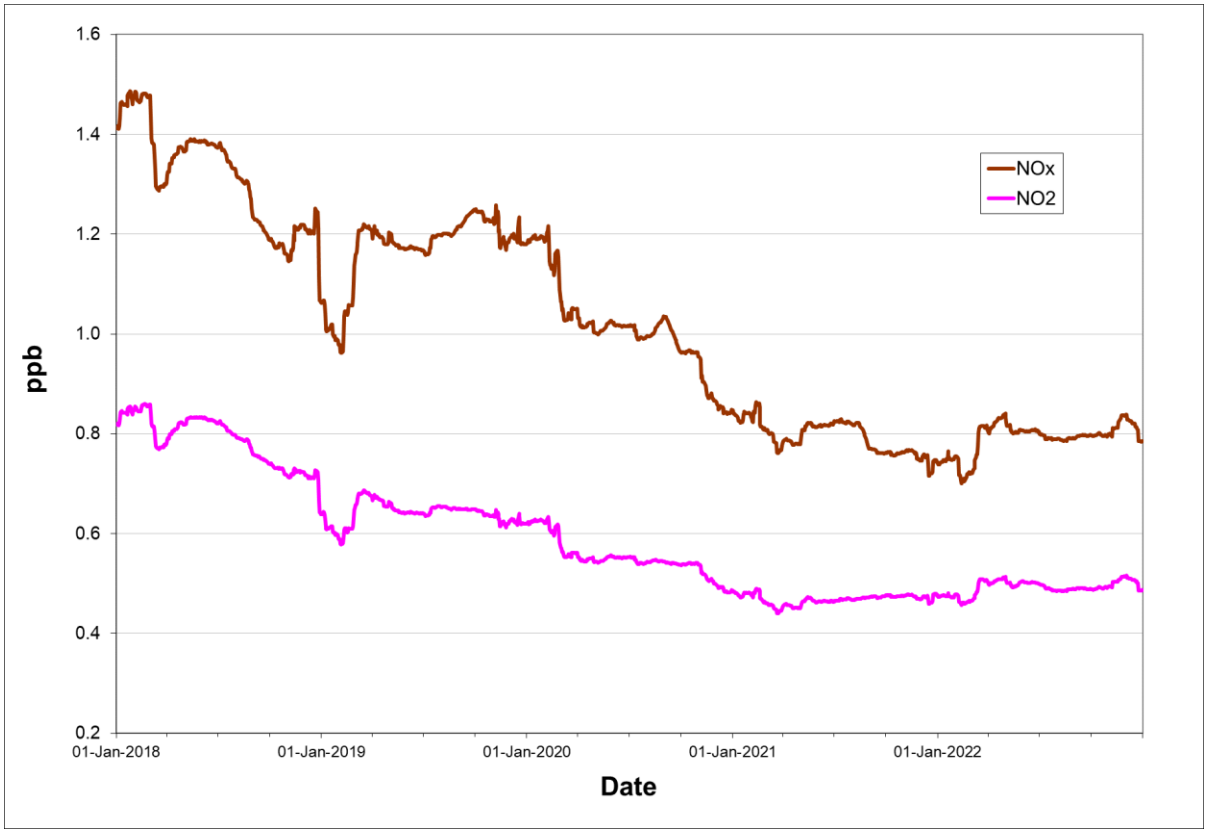
Rolling annual average of daily concentrations

TABLE 4.1.3.3 - INDIAN POND DRIVE NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	656	88.2%	0.8	0.5	15.8	6.7	4.8	2.1	0	0
	February	622	92.6%	1.3	0.7	28.2	10.4	12.1	5.1	0	0
	March	667	89.7%	0.7	0.5	23.2	9.4	3.4	1.5	0	0
	April	690	95.8%	0.6	0.5	8.0	6.2	1.9	1.6	0	0
	May	710	95.4%	1.0	0.6	16.9	7.0	4.3	2.1	0	0
	June	688	95.6%	0.5	0.4	11.9	4.2	1.5	0.8	0	0
	July	686	92.2%	0.7	0.5	12.3	6.8	2.8	1.9	0	0
	August	566	76.1%	0.5	0.3	5.1	3.6	0.8	0.6	0	0
	September	685	95.1%	0.5	0.3	4.7	3.7	0.8	0.6	0	0
	October	611	82.1%	0.6	0.4	9.6	3.8	1.0	0.7	0	0
	November	663	92.1%	0.6	0.4	18.6	4.5	1.6	0.9	0	0
	December	595	80.0%	1.1	0.7	22.4	17.2	8.2	5.3	0	0
Annual		7839	89.5%	0.7	0.5	28.2	17.2	12.1	5.3	0	0
2022	January	705	94.8%	0.9	0.5	27.5	8.9	7.1	3.1	0	0
	February	598	89.0%	0.9	0.6	21.8	10.0	3.5	1.8	0	0
	March	607	81.6%	1.8	1.0	31.0	12.6	9.7	4.5	0	0
	April	680	94.4%	1.0	0.6	18.5	10.3	4.0	1.7	0	0
	May	706	94.9%	0.7	0.5	8.8	6.7	1.6	1.1	0	0
	June	675	93.8%	0.5	0.3	3.6	1.8	0.8	0.6	0	0
	July	696	93.5%	0.5	0.3	10.0	3.6	1.0	0.6	0	0
	August	658	88.4%	0.5	0.4	13.5	9.7	2.2	1.6	0	0
	September	559	77.6%	0.5	0.3	5.3	4.4	0.9	0.7	0	0
	October	705	94.8%	0.6	0.4	10.3	4.5	1.9	1.1	0	0
	November	649	90.1%	1.0	0.7	19.2	12.1	6.8	4.4	0	0
	December	611	82.1%	0.5	0.4	7.1	3.3	1.3	0.8	0	0
Annual		7849	89.6%	0.8	0.5	31.0	12.6	9.7	4.5	0	0

Observations in ppb

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 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	5	100.0%	7.0	19.2	0
	February	5	100.0%	11.2	19.0	0
	March	5	100.0%	14.0	19.4	0
	April	5	100.0%	12.4	22.6	0
	May	5	100.0%	12.5	18.1	0
	June	5	100.0%	11.9	16.7	0
	July	5	100.0%	6.7	8.5	0
	August	5	100.0%	9.5	11.7	0
	September	5	100.0%	8.8	16.3	0
	October	6	100.0%	7.5	46.7	0
	November	5	100.0%	8.6	19.2	0
	December	5	100.0%	13.9	22.1	0
Annual		61	100.0%	10.0	46.7	0
2022	January	5	100.0%	10.1	13.3	0
	February	5	100.0%	10.2	23.5	0
	March	5	100.0%	7.6	21.9	0
	April	5	100.0%	5.9	18.1	0
	May	5	100.0%	5.5	9.9	0
	June	5	100.0%	11.4	13.2	0
	July	5	100.0%	9.1	16.5	0
	August	5	100.0%	6.9	10.4	0
	September	5	100.0%	6.2	11.5	0
	October	5	100.0%	5.7	10.8	0
	November	5	100.0%	8.2	15.6	0
	December	6	100.0%	9.2	28.2	0
Annual		61	100.0%	7.8	28.2	0

Observations in µg/m³

FIGURE 4.1.3.4 - INDIAN POND DRIVE ANNUAL TPM CONCENTRATIONS

Rolling annual average of daily concentrations

4.1.4 Indian Pond Road

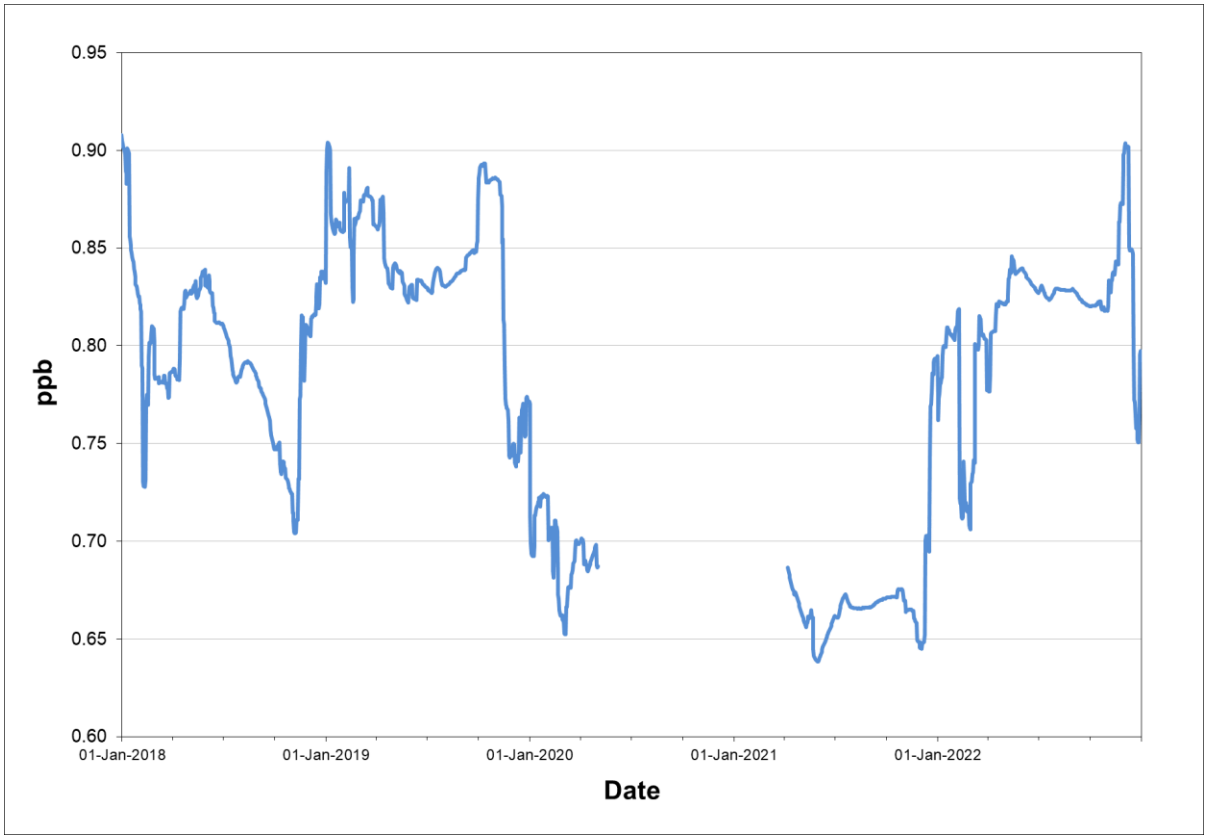
The Indian Pond Road station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ on a continuous basis and TPM on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For all pollutants, the air quality standards were not exceeded on any occasion in 2022. Tables 4.1.4.1 through 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 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	705	94.8%	0.7	29.5	16.6	8.0	0	0	0
	February	644	95.8%	2.6	71.7	67.2	35.6	0	0	0
	March	710	95.4%	0.8	52.2	31.2	9.5	0	0	0
	April	684	95.0%	0.4	10.1	4.5	1.5	0	0	0
	May	712	95.7%	0.5	21.3	9.8	1.6	0	0	0
	June	685	95.1%	0.5	2.9	1.4	0.8	0	0	0
	July	704	94.6%	0.4	1.2	1.1	0.9	0	0	0
	August	713	95.8%	0.3	0.7	0.5	0.4	0	0	0
	September	684	95.0%	0.4	1.0	0.5	0.5	0	0	0
	October	707	95.0%	0.4	9.3	4.9	1.6	0	0	0
	November	690	95.8%	0.4	8.9	5.1	1.6	0	0	0
	December	710	95.4%	2.2	62.6	48.2	18.2	0	0	0
Annual		8348	95.3%	0.8	71.7	67.2	35.6	0	0	0
2022	January	711	95.6%	0.8	24.1	13.8	4.4	0	0	0
	February	640	95.2%	1.3	44.0	35.6	11.8	0	0	0
	March	710	95.4%	1.6	91.6	65.5	22.6	0	0	0
	April	687	95.4%	0.9	33.6	30.8	8.2	0	0	0
	May	699	94.0%	0.7	40.2	22.3	4.0	0	0	0
	June	685	95.1%	0.4	1.0	0.8	0.5	0	0	0
	July	711	95.6%	0.4	0.9	0.7	0.5	0	0	0
	August	713	95.8%	0.3	0.6	0.5	0.4	0	0	0
	September	688	95.6%	0.3	0.4	0.4	0.4	0	0	0
	October	713	95.8%	0.4	6.9	2.7	0.7	0	0	0
	November	663	92.1%	1.4	55.0	32.8	7.7	0	0	0
	December	711	95.6%	1.0	34.8	26.2	11.3	0	0	0
Annual		8331	95.1%	0.8	91.6	65.5	22.6	0	0	0

Observations in ppb

FIGURE 4.1.4.1 - INDIAN POND ROAD ANNUAL SO_2 CONCENTRATIONS



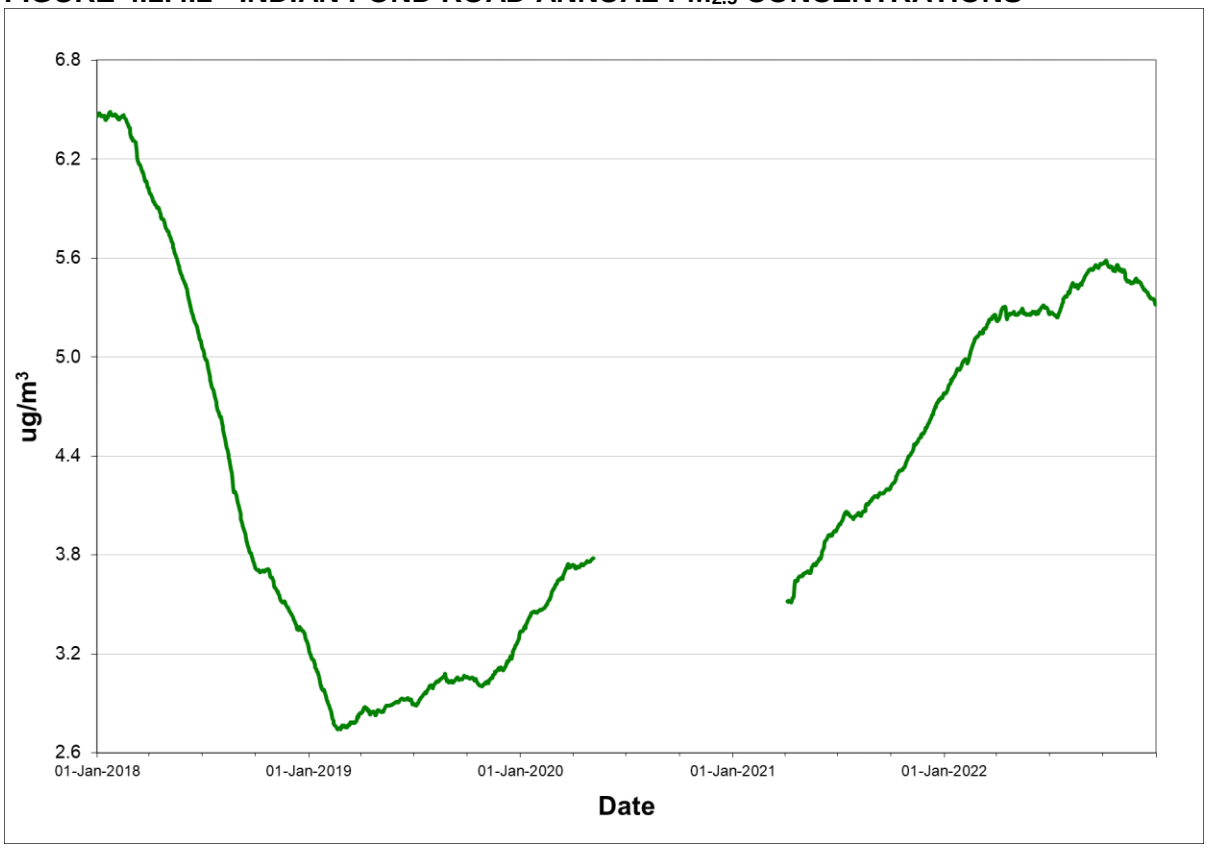
Rolling annual average of hourly concentrations

TABLE 4.1.4.2 - INDIAN POND ROAD $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	31	100.0%	4.5	8.3	0
	February	28	100.0%	4.8	14.0	0
	March	31	100.0%	5.8	10.0	0
	April	30	100.0%	5.6	23.3	0
	May	31	100.0%	4.8	13.8	0
	June	30	100.0%	4.3	14.4	0
	July	31	100.0%	3.2	6.0	0
	August	31	100.0%	3.5	8.2	0
	September	29	96.7%	3.0	6.7	0
	October	31	100.0%	5.1	10.4	0
	November	30	100.0%	6.2	12.1	0
	December	31	100.0%	6.4	10.4	0
Annual		364	99.7%	4.8	23.3	0
2022	January	31	100.0%	6.6	12.8	0
	February	26	92.9%	7.2	10.3	0
	March	31	100.0%	7.0	11.8	0
	April	30	100.0%	6.1	9.9	0
	May	31	100.0%	4.7	6.8	0
	June	30	100.0%	4.2	9.0	0
	July	31	100.0%	4.5	7.9	0
	August	31	100.0%	4.9	9.2	0
	September	30	100.0%	4.0	8.7	0
	October	27	87.1%	4.5	10.5	0
	November	30	100.0%	5.5	8.2	0
	December	31	100.0%	4.7	8.6	0
Annual		359	98.4%	5.3	12.8	0

Observations in µg/m³

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



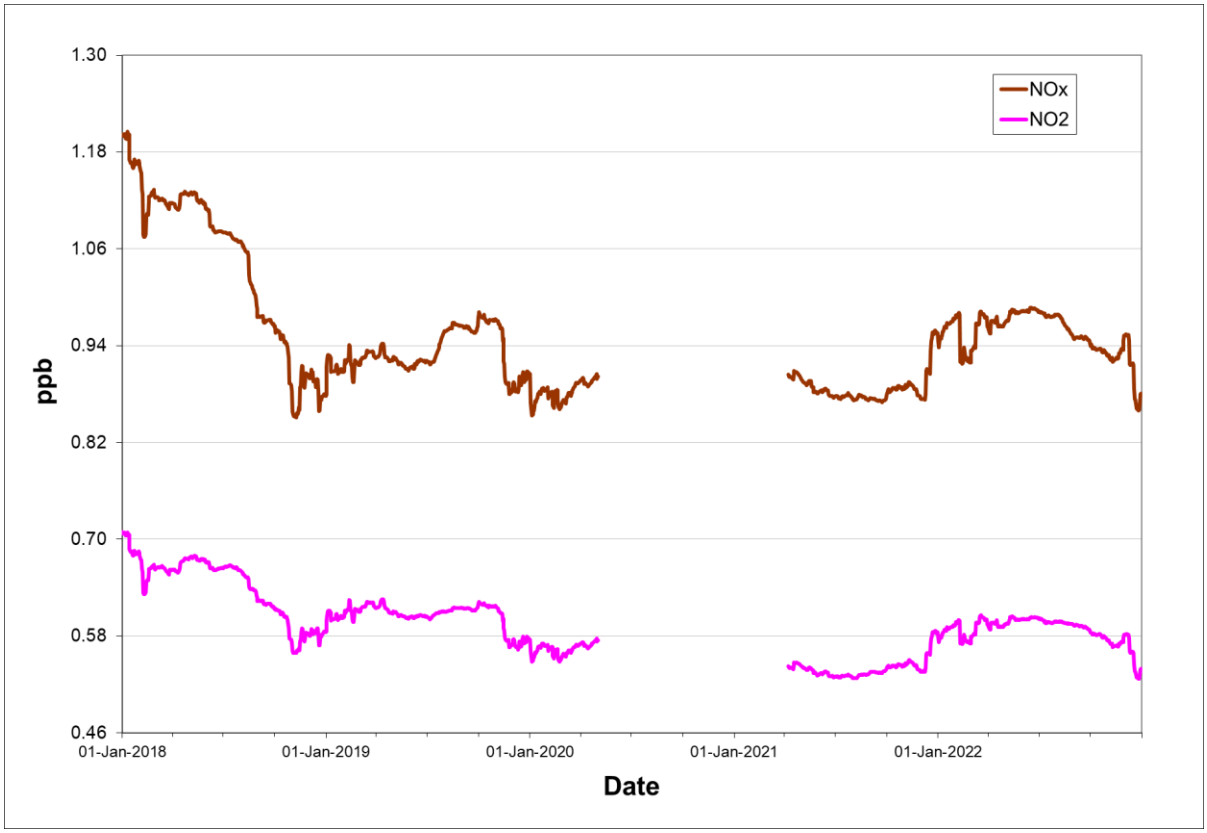
Rolling annual average of daily concentrations

TABLE 4.1.4.3 - INDIAN POND ROAD NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	705	94.8%	0.8	0.6	16.4	10.1	4.6	3.0	0	0
	February	643	95.7%	1.9	1.2	39.6	19.4	21.6	10.7	0	0
	March	711	95.6%	0.9	0.5	21.8	12.0	4.7	2.5	0	0
	April	686	95.3%	0.9	0.6	8.6	6.0	3.3	2.4	0	0
	May	713	95.8%	0.7	0.4	11.8	6.5	1.6	1.0	0	0
	June	688	95.6%	0.7	0.4	5.8	2.6	1.4	0.7	0	0
	July	682	91.7%	0.7	0.4	6.0	2.4	1.5	1.0	0	0
	August	713	95.8%	0.9	0.3	11.0	4.6	1.7	0.8	0	0
	September	686	95.3%	0.7	0.4	7.8	4.7	1.9	1.0	0	0
	October	682	91.7%	0.8	0.5	11.7	5.2	1.7	1.3	0	0
	November	690	95.8%	0.8	0.6	17.7	8.2	2.5	1.7	0	0
	December	711	95.6%	1.8	1.1	33.6	16.1	11.4	6.9	0	0
Annual		8310	94.9%	1.0	0.6	39.6	19.4	21.6	10.7	0	0
2022	January	713	95.8%	1.0	0.7	14.3	9.5	3.0	1.8	0	0
	February	640	95.2%	1.2	0.9	23.7	12.6	6.8	3.9	0	0
	March	711	95.6%	1.4	0.8	44.8	19.0	11.6	5.7	0	0
	April	690	95.8%	0.9	0.6	21.0	11.4	4.8	2.7	0	0
	May	698	93.8%	0.9	0.5	23.4	11.6	2.7	1.5	0	0
	June	682	94.7%	0.7	0.4	11.8	4.9	2.2	0.9	0	0
	July	713	95.8%	0.6	0.3	12.2	3.1	1.3	0.7	0	0
	August	712	95.7%	0.5	0.3	7.4	2.8	0.9	0.5	0	0
	September	687	95.4%	0.6	0.3	10.3	3.4	1.2	0.6	0	0
	October	713	95.8%	0.6	0.4	9.4	3.5	1.2	0.9	0	0
	November	652	90.6%	1.1	0.6	27.6	13.1	4.8	2.4	0	0
	December	710	95.4%	0.9	0.6	15.5	8.9	5.3	3.1	0	0
Annual		8321	95.0%	0.9	0.5	44.8	19.0	11.6	5.7	0	0

Observations in ppb

FIGURE 4.1.4.3 - INDIAN POND ROAD ANNUAL NO_X / NO_2 CONCENTRATIONS



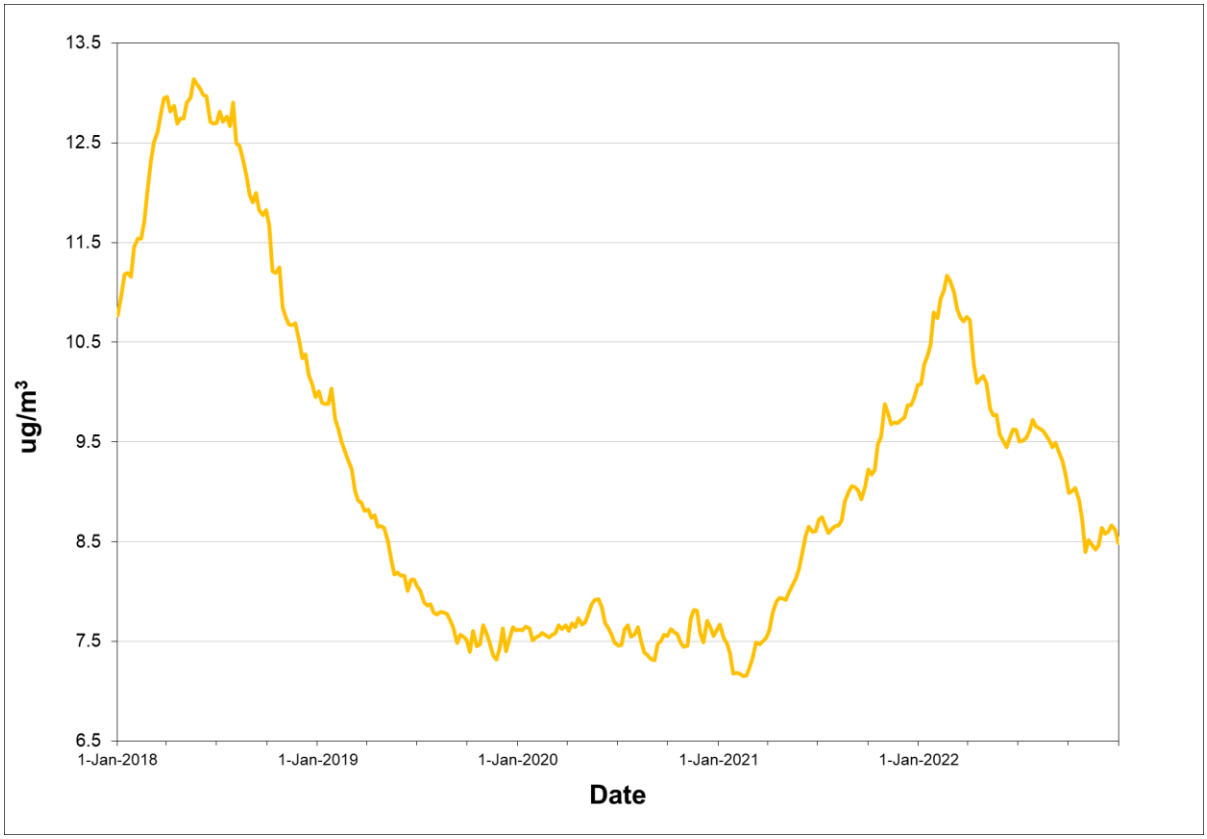
Rolling annual average of hourly concentrations

TABLE 4.1.4.4 - INDIAN POND ROAD TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	5	100.0%	5.1	12.2	0
	February	4	80.0%	9.7	21.3	0
	March	5	100.0%	13.4	17.1	0
	April	5	100.0%	13.6	25.5	0
	May	5	100.0%	12.4	17.5	0
	June	5	100.0%	11.4	17.9	0
	July	5	100.0%	7.6	10.5	0
	August	5	100.0%	9.5	14.0	0
	September	5	100.0%	9.5	29.9	0
	October	6	100.0%	13.0	51.6	0
	November	5	100.0%	6.9	10.6	0
	December	5	100.0%	12.9	23.2	0
Annual		60	98.4%	10.1	51.6	0
2022	January	5	100.0%	11.8	14.6	0
	February	5	100.0%	14.1	31.9	0
	March	5	100.0%	9.0	18.1	0
	April	5	100.0%	6.8	13.1	0
	May	5	100.0%	6.0	17.9	0
	June	5	100.0%	12.1	20.3	0
	July	5	100.0%	8.6	10.3	0
	August	5	100.0%	7.4	10.4	0
	September	5	100.0%	6.0	11.7	0
	October	5	100.0%	5.4	9.0	0
	November	5	100.0%	8.0	11.7	0
	December	6	100.0%	10.9	15.4	0
Annual		61	100.0%	8.5	31.9	0

Observations in µg/m³

FIGURE 4.1.4.4 - INDIAN POND ROAD ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.1.5 Lawrence Pond Road

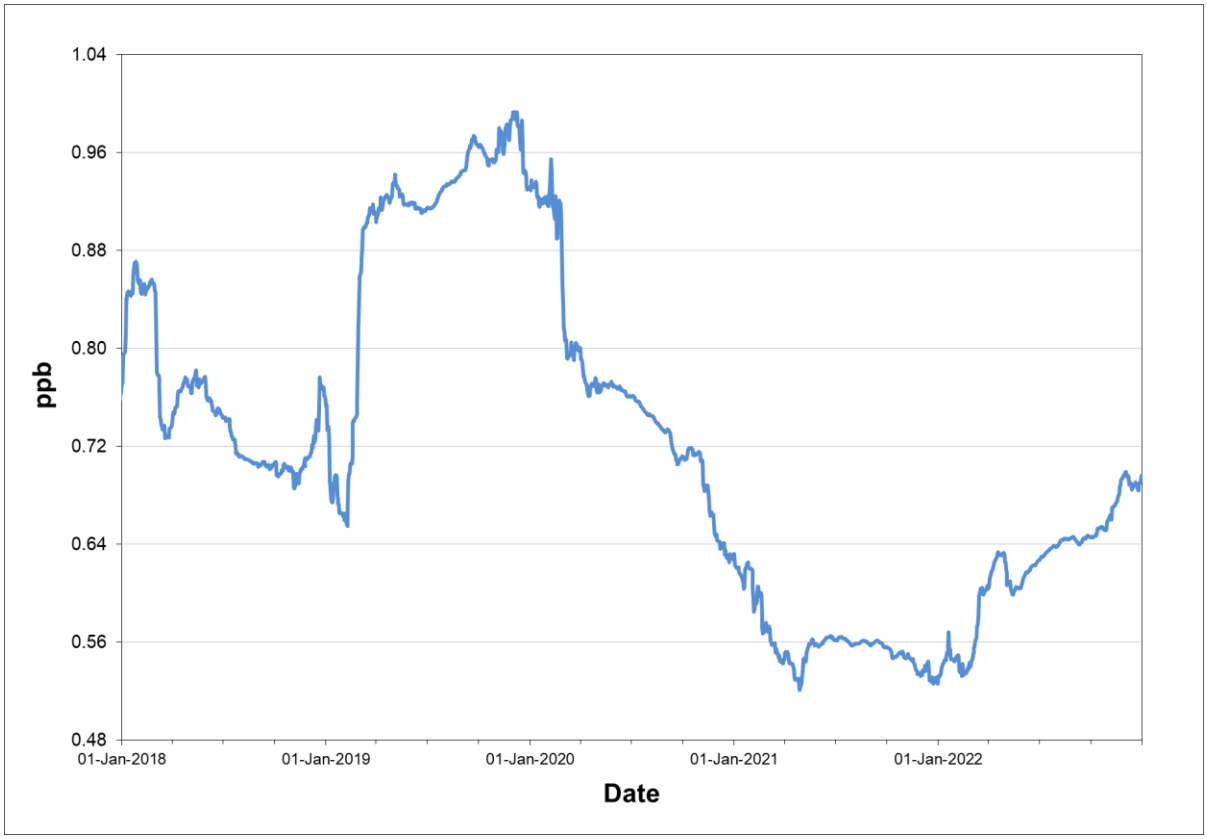
The Lawrence Pond Road station monitors the ambient levels of SO_2, NO_x/ NO_2, $PM_{2.5}$ on a continuous basis and TPM on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For all pollutants, the air quality standards were not exceeded on any occasion in 2022. Tables 4.1.5.1 through 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 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	712	95.7%	0.6	13.6	9.3	5.6	0	0	0
	February	644	95.8%	1.2	19.1	16.0	6.8	0	0	0
	March	706	94.9%	0.7	14.7	8.8	2.4	0	0	0
	April	689	95.7%	0.5	21.5	15.1	3.0	0	0	0
	May	713	95.8%	0.8	15.5	10.3	3.8	0	0	0
	June	683	94.9%	0.3	4.8	1.9	0.7	0	0	0
	July	713	95.8%	0.3	0.6	0.6	0.4	0	0	0
	August	712	95.7%	0.3	0.7	0.4	0.4	0	0	0
	September	684	95.0%	0.4	0.9	0.7	0.5	0	0	0
	October	653	87.8%	0.3	4.4	3.1	1.3	0	0	0
	November	690	95.8%	0.4	8.0	4.4	1.7	0	0	0
	December	708	95.2%	0.6	10.7	7.3	2.6	0	0	0
Annual		8307	94.8%	0.5	21.5	16.0	6.8	0	0	0
2022	January	713	95.8%	0.8	20.9	14.7	6.6	0	0	0
	February	612	91.1%	1.2	16.7	10.9	4.0	0	0	0
	March	565	75.9%	1.6	17.1	11.3	6.9	0	0	0
	April	690	95.8%	0.7	10.6	6.3	2.1	0	0	0
	May	711	95.6%	0.6	11.1	6.5	1.9	0	0	0
	June	684	95.0%	0.5	1.6	1.2	1.1	0	0	0
	July	706	94.9%	0.4	1.8	0.9	0.6	0	0	0
	August	713	95.8%	0.4	0.9	0.7	0.5	0	0	0
	September	687	95.4%	0.4	1.3	0.9	0.7	0	0	0
	October	706	94.9%	0.5	12.7	8.3	2.3	0	0	0
	November	690	95.8%	0.8	14.1	10.8	3.9	0	0	0
	December	711	95.6%	0.6	13.0	5.5	2.5	0	0	0
Annual		8188	93.5%	0.7	20.9	14.7	6.9	0	0	0

Observations in ppb

FIGURE 4.1.5.1 - LAWRENCE POND ROAD ANNUAL SO_2 CONCENTRATIONS



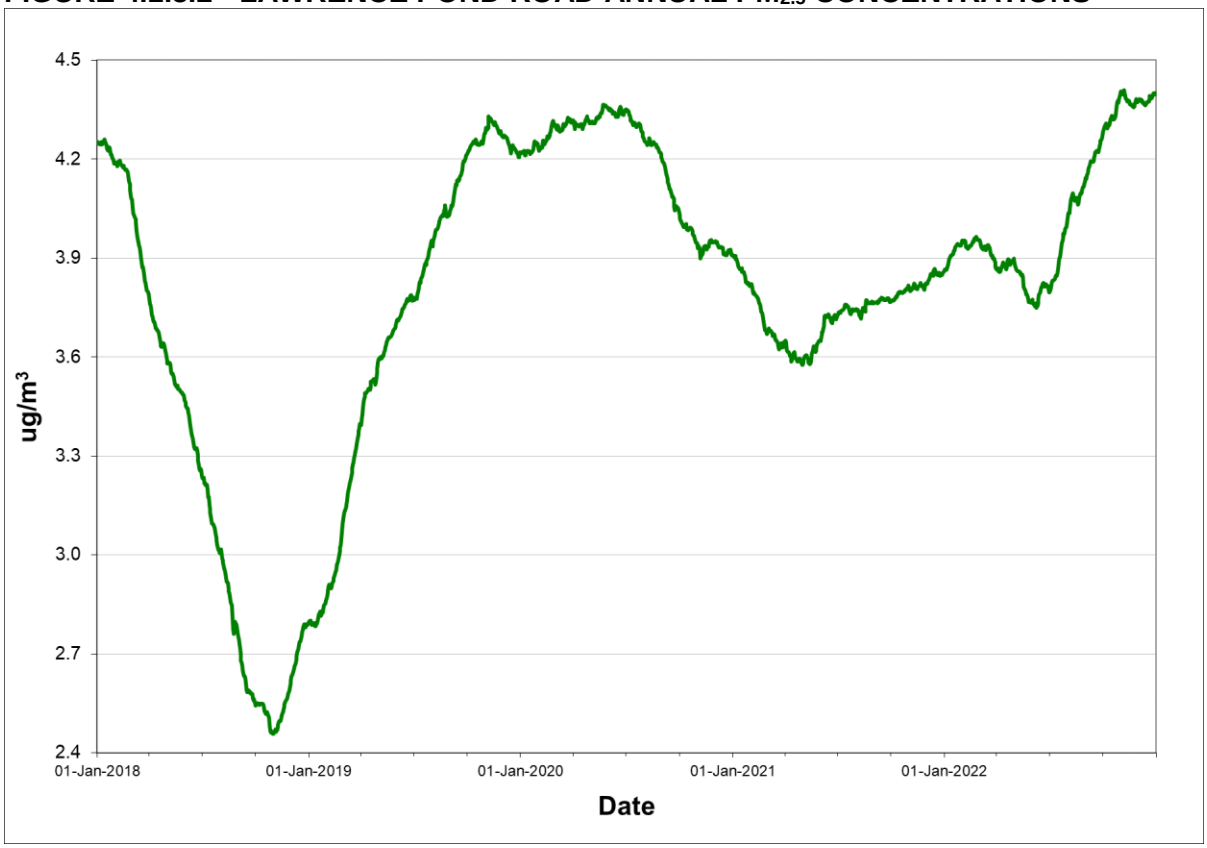
Rolling annual average of hourly concentrations

TABLE 4.1.5.2 - LAWRENCE POND ROAD $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	31	100.0%	3.7	6.8	0
	February	28	100.0%	4.4	10.3	0
	March	31	100.0%	5.2	8.3	0
	April	30	100.0%	4.0	8.2	0
	May	31	100.0%	4.9	13.7	0
	June	30	100.0%	3.8	12.5	0
	July	27	87.1%	2.8	4.5	0
	August	31	100.0%	3.1	7.8	0
	September	30	100.0%	2.6	5.3	0
	October	31	100.0%	3.5	6.7	0
	November	30	100.0%	4.2	7.3	0
	December	31	100.0%	4.0	7.1	0
Annual		361	98.9%	3.9	13.7	0
2022	January	31	100.0%	4.8	8.1	0
	February	28	100.0%	4.4	7.4	0
	March	31	100.0%	4.2	6.6	0
	April	30	100.0%	4.3	8.0	0
	May	31	100.0%	3.4	6.0	0
	June	30	100.0%	4.1	7.8	0
	July	31	100.0%	5.4	8.9	0
	August	31	100.0%	4.6	9.6	0
	September	30	100.0%	4.3	9.1	0
	October	27	87.1%	5.1	10.1	0
	November	30	100.0%	3.9	6.9	0
	December	31	100.0%	4.3	7.6	0
Annual		361	98.9%	4.4	10.1	0

Observations in µg/m³

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



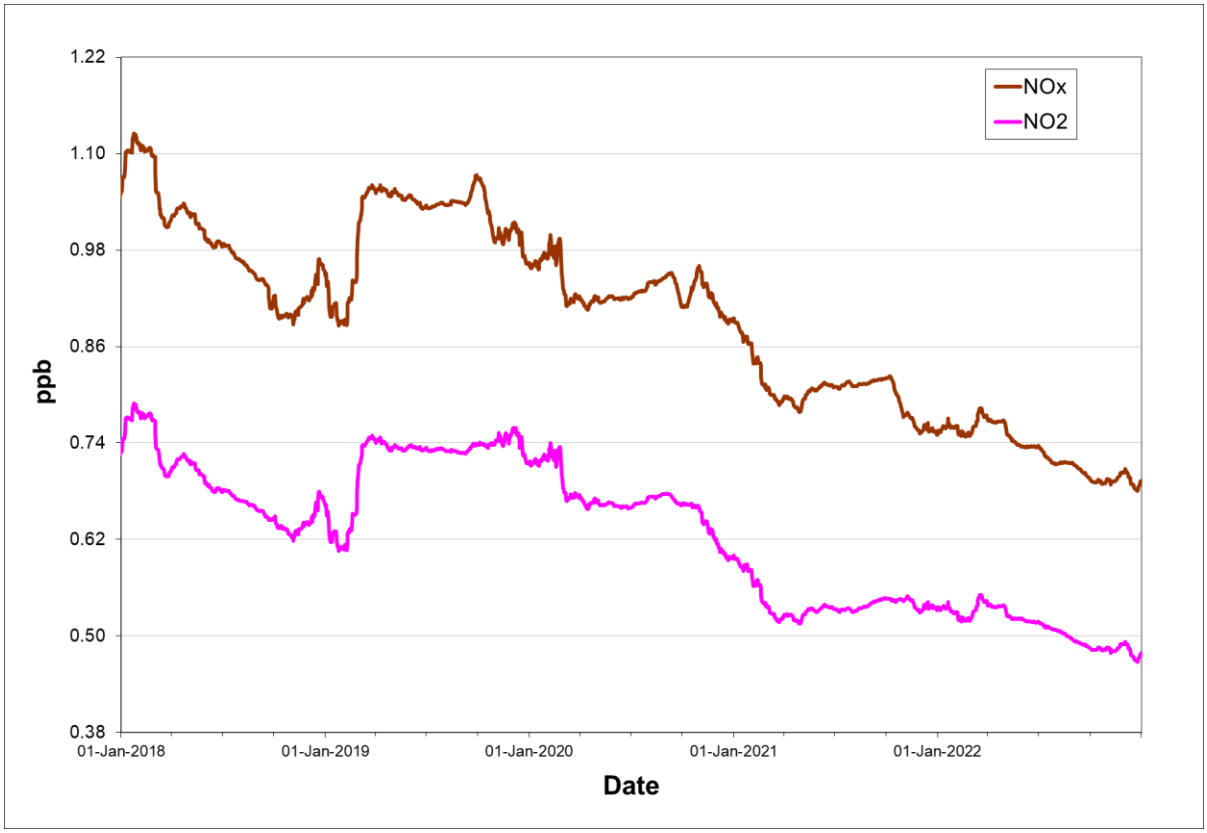
Rolling annual average of daily concentrations

TABLE 4.1.5.3 - LAWRENCE POND ROAD NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	712	95.7%	0.8	0.7	7.2	6.4	3.1	2.8	0	0
	February	644	95.8%	1.1	0.9	13.2	12.3	4.9	4.1	0	0
	March	709	95.3%	0.8	0.6	10.1	8.5	1.8	1.4	0	0
	April	689	95.7%	0.6	0.5	8.9	7.2	1.8	1.5	0	0
	May	713	95.8%	0.9	0.6	8.7	7.7	2.1	1.6	0	0
	June	687	95.4%	0.6	0.4	2.9	2.2	0.8	0.7	0	0
	July	713	95.8%	0.7	0.4	4.6	3.2	1.6	1.1	0	0
	August	711	95.6%	0.5	0.4	2.1	1.9	0.8	0.6	0	0
	September	685	95.1%	0.7	0.4	2.5	2.1	1.0	0.7	0	0
	October	676	90.9%	0.7	0.4	5.1	4.5	1.5	1.0	0	0
	November	690	95.8%	0.6	0.4	7.8	7.5	2.0	1.8	0	0
	December	617	82.9%	0.8	0.7	8.8	8.2	2.5	2.0	0	0
Annual		8246	94.1%	0.8	0.5	13.2	12.3	4.9	4.1	0	0
2022	January	713	95.8%	0.9	0.7	18.8	13.1	5.1	4.4	0	0
	February	618	92.0%	1.0	0.8	16.3	14.8	2.6	2.2	0	0
	March	711	95.6%	1.1	0.8	11.7	8.6	3.9	3.2	0	0
	April	673	93.5%	0.6	0.4	6.6	4.6	1.1	0.8	0	0
	May	710	95.4%	0.6	0.4	10.7	9.4	1.3	1.1	0	0
	June	660	91.7%	0.6	0.4	3.9	2.2	1.0	0.7	0	0
	July	707	95.0%	0.5	0.3	2.9	1.8	1.0	0.8	0	0
	August	713	95.8%	0.6	0.3	2.1	1.8	0.8	0.4	0	0
	September	688	95.6%	0.5	0.3	5.4	4.3	0.8	0.6	0	0
	October	690	92.7%	0.7	0.4	7.2	4.8	1.6	1.1	0	0
	November	666	92.5%	0.7	0.5	8.8	8.1	2.2	1.7	0	0
	December	711	95.6%	0.7	0.5	9.5	8.6	2.5	2.2	0	0
Annual		8260	94.3%	0.7	0.5	18.8	14.8	5.1	4.4	0	0

Observations in ppb

FIGURE 4.1.5.3 - LAWRENCE POND ROAD ANNUAL NO_X / NO_2 CONCENTRATIONS



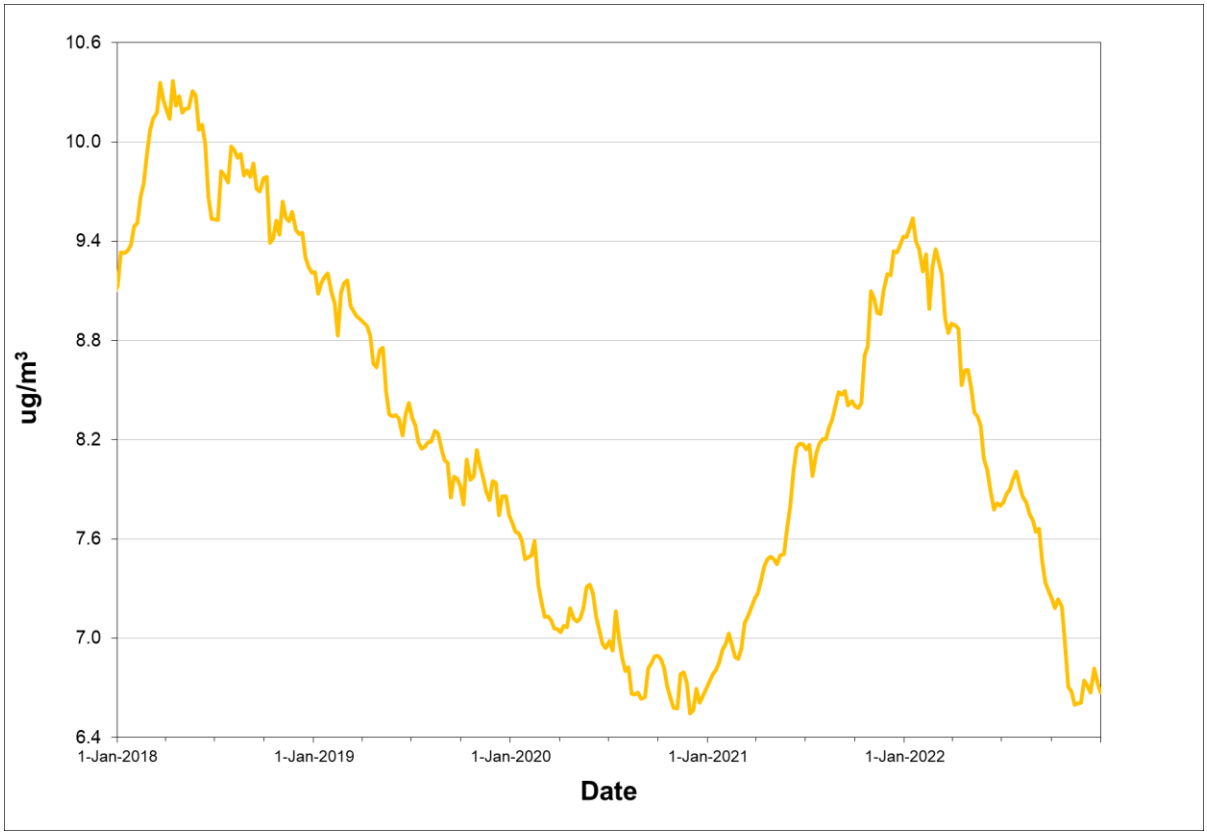
Rolling annual average of hourly concentrations

TABLE 4.1.5.4 - LAWRENCE POND ROAD TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	5	100.0%	9.5	11.9	0
	February	5	100.0%	8.0	12.9	0
	March	5	100.0%	11.6	13.5	0
	April	5	100.0%	11.0	14.0	0
	May	5	100.0%	10.7	19.4	0
	June	5	100.0%	13.4	23.3	0
	July	5	100.0%	7.1	10.1	0
	August	5	100.0%	9.5	11.4	0
	September	5	100.0%	9.0	14.9	0
	October	6	100.0%	8.6	41.6	0
	November	5	100.0%	7.2	10.3	0
	December	5	100.0%	9.7	13.8	0
Annual		61	100.0%	9.4	41.6	0
2022	January	5	100.0%	8.6	12.4	0
	February	5	100.0%	8.0	25.6	0
	March	5	100.0%	6.4	19.7	0
	April	5	100.0%	7.5	15.3	0
	May	5	100.0%	4.9	10.1	0
	June	5	100.0%	8.7	13.0	0
	July	4	80.0%	10.2	14.9	0
	August	5	100.0%	6.1	7.8	0
	September	5	100.0%	4.5	9.9	0
	October	5	100.0%	3.6	9.9	0
	November	5	100.0%	5.8	10.8	0
	December	6	100.0%	9.6	20.2	0
Annual		60	98.4%	6.7	25.6	0

Observations in µg/m³

FIGURE 4.1.5.4 - LAWRENCE POND ROAD ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.1.6 NL Hydro Property Boundary

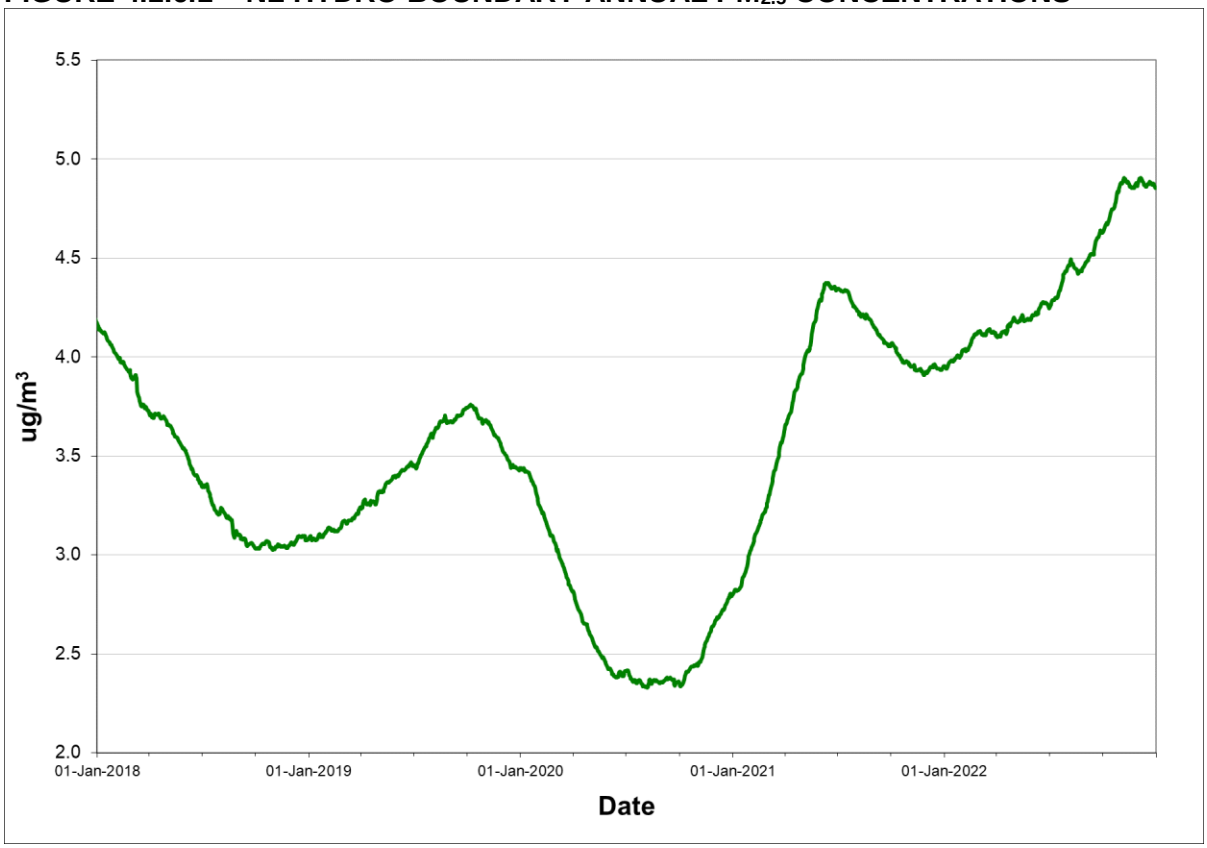
The NL Hydro Property Boundary station monitors the ambient levels of $PM_{2.5}$ on a continuous basis and TPM on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For both pollutants, the air quality standards were not exceeded on any occasion in 2022. Tables 4.1.6.1 through 4.1.6.2 provide summary information on the level of air contaminants measured at NL Hydro 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 – NL HYDRO BOUNDARY $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	31	100.0%	4.4	9.6	0
	February	28	100.0%	4.5	9.7	0
	March	31	100.0%	5.9	9.3	0
	April	30	100.0%	5.1	9.6	0
	May	29	93.5%	5.7	15.0	0
	June	30	100.0%	3.7	13.4	0
	July	31	100.0%	2.0	3.9	0
	August	31	100.0%	3.0	10.5	0
	September	26	86.7%	2.0	5.5	0
	October	30	96.8%	2.4	6.6	0
	November	30	100.0%	4.0	6.3	0
	December	31	100.0%	4.6	7.9	0
Annual		358	98.1%	4.0	15.0	0
2022	January	30	96.8%	5.3	9.7	0
	February	28	100.0%	5.7	9.2	0
	March	31	100.0%	5.7	7.9	0
	April	30	100.0%	6.2	11.1	0
	May	28	90.3%	5.8	8.0	0
	June	28	93.3%	4.2	8.4	0
	July	31	100.0%	4.2	7.3	0
	August	31	100.0%	3.3	8.1	0
	September	30	100.0%	4.2	8.6	0
	October	27	87.1%	5.4	11.3	0
	November	30	100.0%	4.0	7.9	0
	December	31	100.0%	4.5	8.3	0
Annual		355	97.3%	4.9	11.3	0

Observations in µg/m³

FIGURE 4.1.6.1 – NL HYDRO BOUNDARY ANNUAL $PM_{2.5}$ CONCENTRATIONS



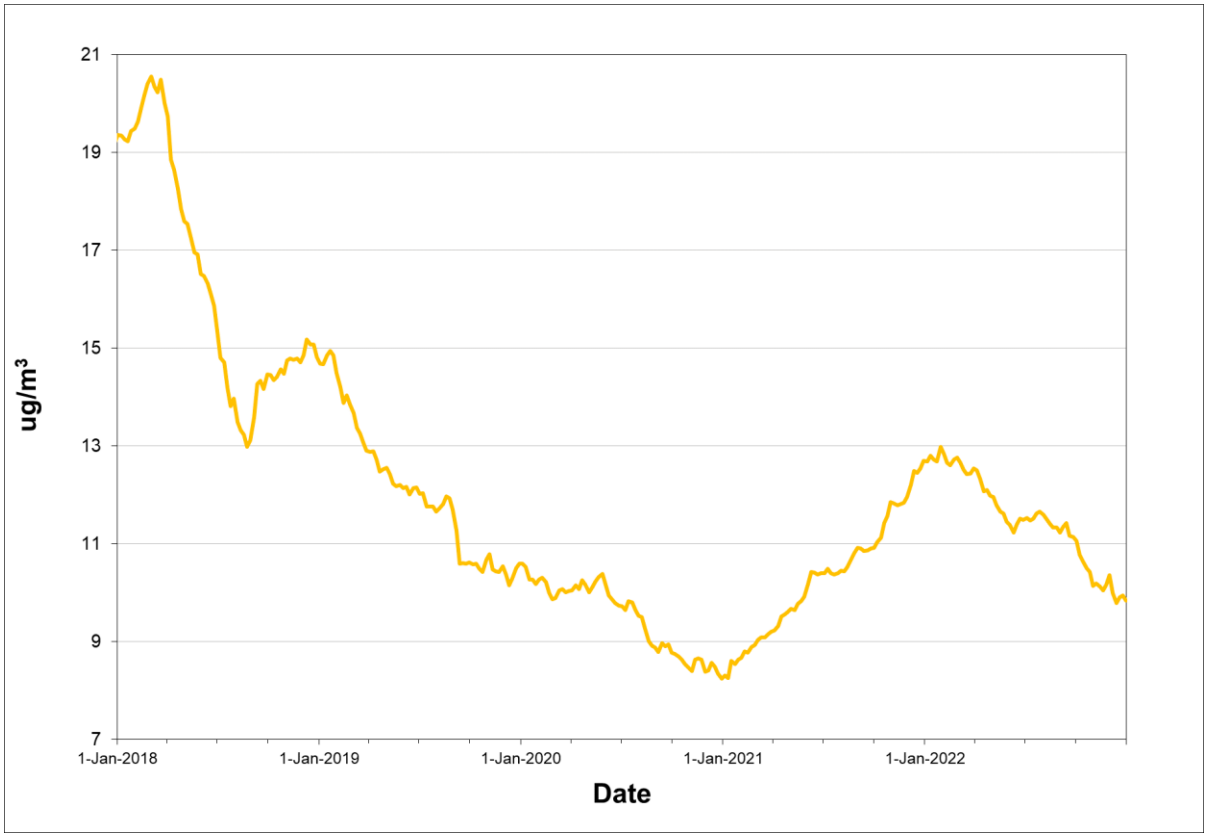
Rolling annual average of daily concentrations

TABLE 4.1.6.2 – NL HYDRO BOUNDARY TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	5	100.0%	12.5	25.7	0
	February	5	100.0%	14.6	29.7	0
	March	5	100.0%	13.9	17.0	0
	April	5	100.0%	15.3	22.1	0
	May	5	100.0%	13.3	18.0	0
	June	5	100.0%	11.6	19.1	0
	July	5	100.0%	7.9	13.3	0
	August	5	100.0%	10.2	13.5	0
	September	5	100.0%	11.4	16.9	0
	October	6	100.0%	14.7	37.4	0
	November	5	100.0%	10.1	16.7	0
	December	5	100.0%	20.9	41.7	0
Annual		61	100.0%	12.7	41.7	0
2022	January	4	80.0%	17.5	51.4	0
	February	4	80.0%	11.5	28.7	0
	March	5	100.0%	11.3	25.1	0
	April	5	100.0%	9.0	13.0	0
	May	5	100.0%	7.8	13.7	0
	June	5	100.0%	12.1	18.6	0
	July	5	100.0%	9.3	12.1	0
	August	5	100.0%	7.3	10.2	0
	September	4	80.0%	8.9	14.3	0
	October	5	100.0%	5.7	9.7	0
	November	5	100.0%	10.7	18.9	0
	December	6	100.0%	12.5	25.4	0
Annual		58	95.1%	9.8	51.4	0

Observations in µg/m³

FIGURE 4.1.6.2 – NL HYDRO BOUNDARY ANNUAL TPM CONCENTRATIONS

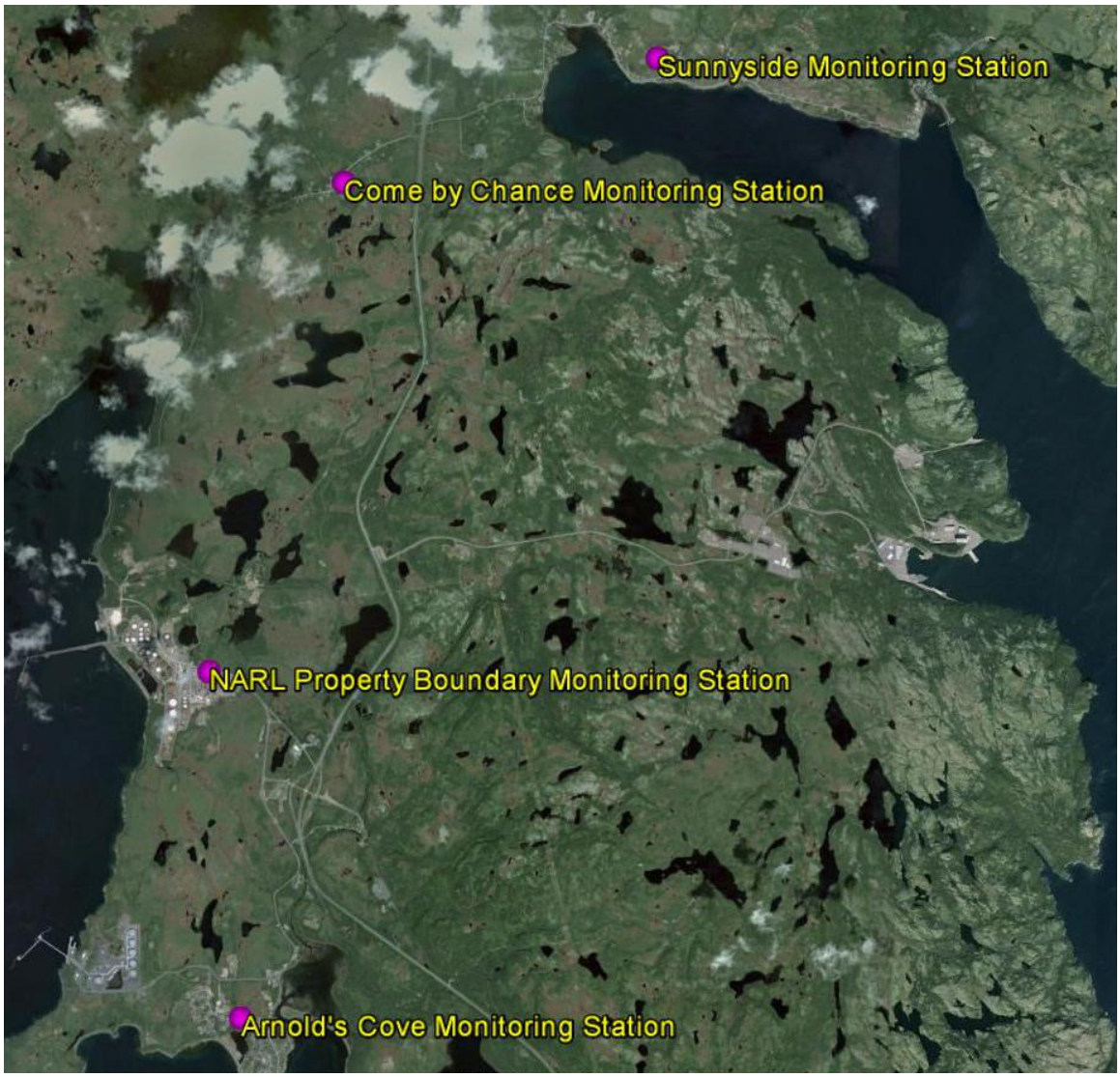


Rolling annual average of daily concentrations

4.2 Braya Renewable Fuels

Braya Renewable Fuels (Braya) operated monitoring stations at four locations in 2022. These stations are installed to monitor the air quality near Braya's refinery in Come-by-Chance and are located at Arnold's Cove, Come-by-Chance, Sunnyside and the Braya property boundary. The locations of these monitoring stations are identified in Figure 4.2.1. In April 2020, the refinery, when under ownership of North Atlantic Refining Limited (NARL), went into warm idle owing to a drop in product demand caused by the Covid-19 pandemic. The refinery was subsequently sold to Braya who are currently in the process of converting the facility from a crude oil refinery to a renewable fuels refinery. By years end the refinery was not yet in operation.

FIGURE 4.2.1 - BRAYA AMBIENT MONITORING STATIONS



4.2.1 Arnold's Cove

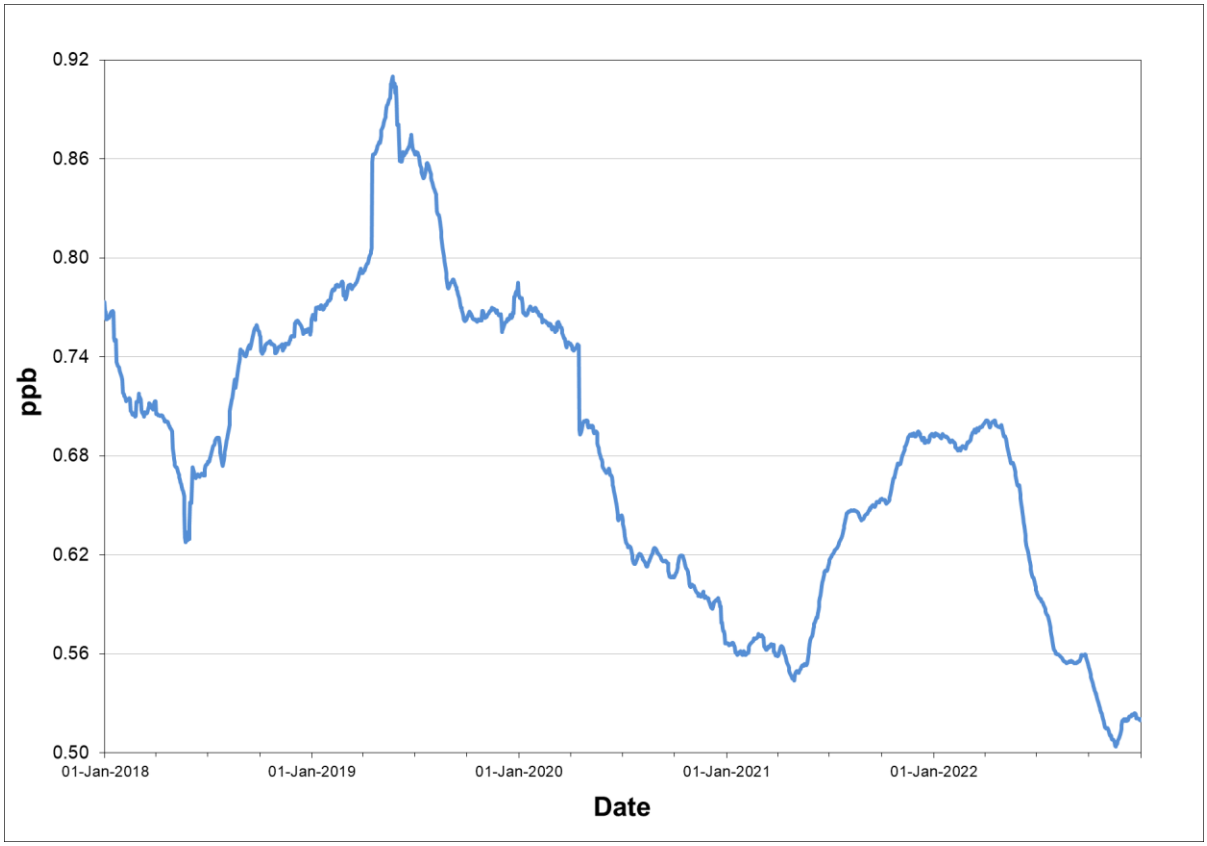
The Arnold's Cove station monitors the ambient levels of SO_2 and $PM_{2.5}$ on a continuous basis and is located near Tricentia Academy School. For SO_2, the air quality standards were not exceeded on any occasion in 2022. The $PM_{2.5}$ 24-hour air quality standard was exceed twice, once in January and once in February. In both cases the elevated levels were deemed to be a function of adverse meteorological conditions as opposed to a particular emission source. 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 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	710	95.4%	0.5	4.6	1.9	0.7	0	0	0
	February	668	99.4%	0.6	1.5	1.2	0.8	0	0	0
	March	738	99.2%	0.5	1.1	0.9	0.7	0	0	0
	April	706	98.1%	0.6	4.1	2.3	0.9	0	0	0
	May	742	99.7%	1.1	5.3	2.6	1.5	0	0	0
	June	711	98.8%	1.1	2.1	1.9	1.6	0	0	0
	July	728	97.8%	0.8	4.1	1.9	1.5	0	0	0
	August	738	99.2%	0.5	1.0	0.8	0.7	0	0	0
	September	714	99.2%	0.5	3.5	1.1	0.8	0	0	0
	October	740	99.5%	0.9	7.7	3.1	1.2	0	0	0
	November	716	99.4%	0.6	4.4	2.0	1.2	0	0	0
	December	733	98.5%	0.5	3.8	2.1	1.0	0	0	0
Annual		8644	98.7%	0.7	7.7	3.1	1.6	0	0	0
2022	January	668	89.8%	0.4	1.3	1.2	0.9	0	0	0
	February	662	98.5%	0.6	4.0	1.6	0.9	0	0	0
	March	730	98.1%	0.6	7.2	2.8	1.2	0	0	0
	April	718	99.7%	0.6	6.7	2.8	1.0	0	0	0
	May	742	99.7%	0.7	3.9	1.5	1.0	0	0	0
	June	704	97.8%	0.4	4.6	2.0	0.8	0	0	0
	July	739	99.3%	0.4	5.4	2.1	0.7	0	0	0
	August	740	99.5%	0.4	1.0	0.7	0.6	0	0	0
	September	713	99.0%	0.5	1.2	1.0	0.8	0	0	0
	October	740	99.5%	0.5	6.9	3.3	1.2	0	0	0
	November	717	99.6%	0.7	7.3	3.0	1.2	0	0	0
	December	734	98.7%	0.5	1.3	1.0	0.8	0	0	0
Annual		8607	98.3%	0.5	7.3	3.3	1.2	0	0	0

Observations in ppb

FIGURE 4.2.1.1 - ARNOLD'S COVE ANNUAL SO_2 CONCENTRATIONS



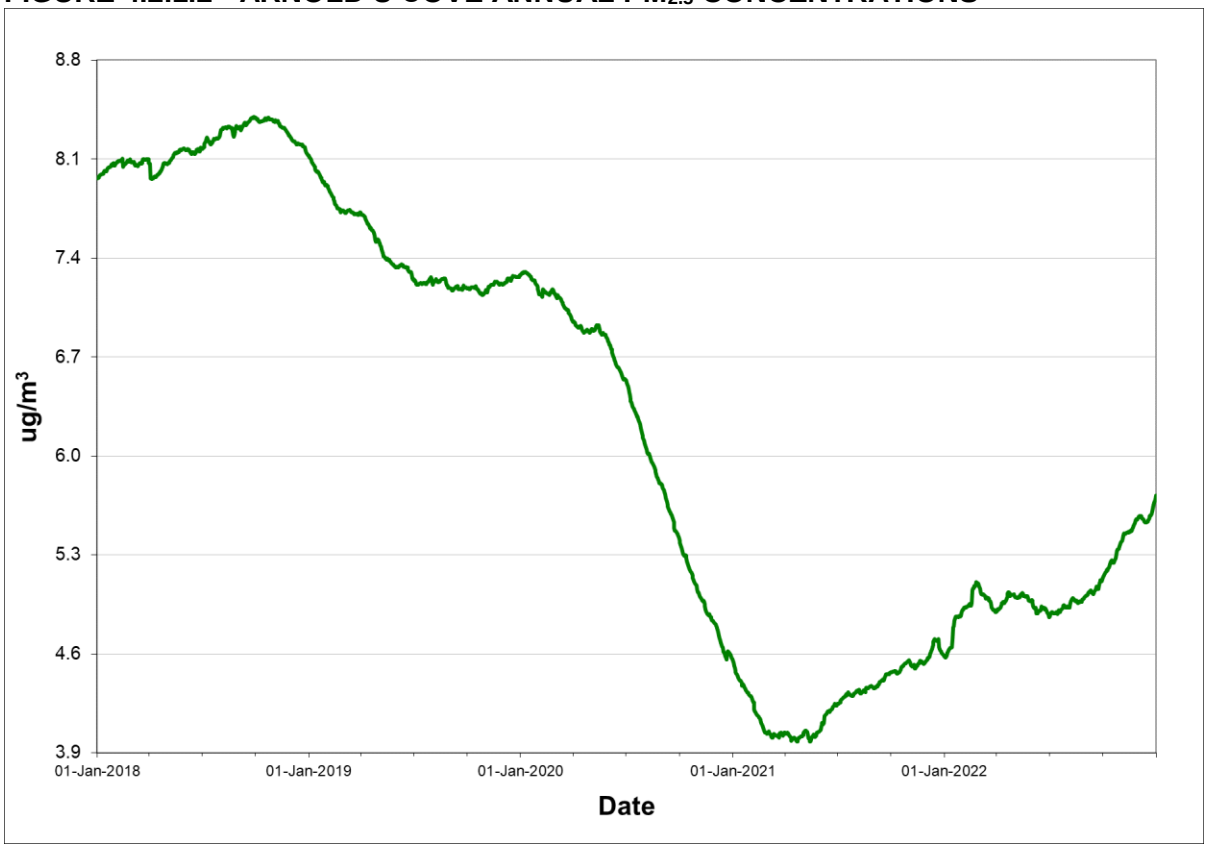
Rolling annual average of hourly concentrations

TABLE 4.2.1.2 - ARNOLD'S COVE $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	31	100.0%	2.8	8.8	0
	February	23	82.1%	3.7	6.4	0
	March	31	100.0%	6.5	13.0	0
	April	29	96.7%	5.6	15.5	0
	May	31	100.0%	5.5	11.8	0
	June	28	93.3%	5.7	18.0	0
	July	31	100.0%	3.6	6.8	0
	August	31	100.0%	3.9	8.5	0
	September	30	100.0%	3.7	8.3	0
	October	31	100.0%	3.6	7.0	0
	November	30	100.0%	5.0	10.9	0
	December	25	80.6%	5.5	11.2	0
Annual		351	96.2%	4.6	18.0	0
2022	January	31	100.0%	6.5	31.3	1
	February	28	100.0%	6.4	36.3	1
	March	12	38.7%	3.0	6.4	0
	April	28	93.3%	7.1	10.8	0
	May	26	83.9%	5.0	7.5	0
	June	26	86.7%	4.3	14.4	0
	July	31	100.0%	4.4	8.2	0
	August	22	71.0%	4.5	11.8	0
	September	29	96.7%	5.0	14.1	0
	October	26	83.9%	6.3	12.1	0
	November	30	100.0%	6.9	10.7	0
	December	31	100.0%	7.2	11.4	0
Annual		320	87.7%	5.7	36.3	2

Observations in µg/m³

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

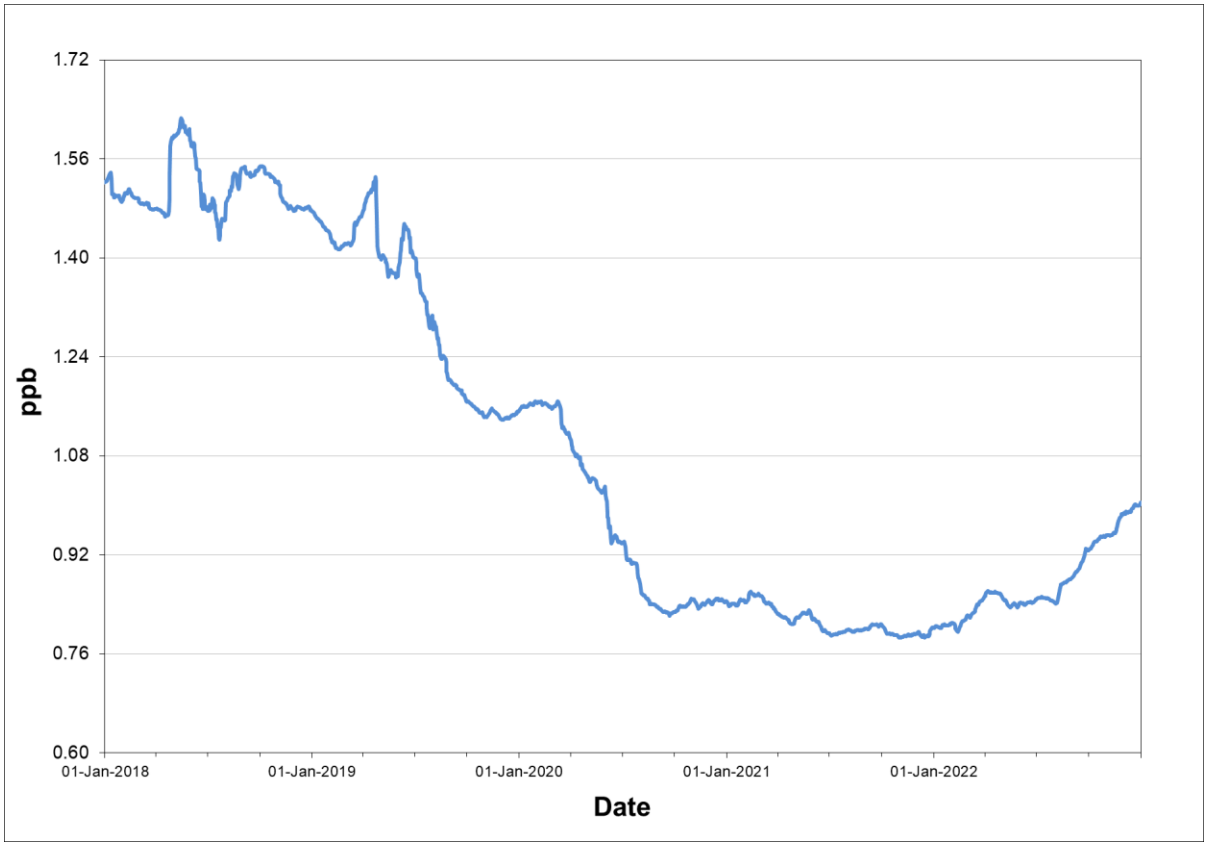
The Come by Chance station, located near the town office, monitors the ambient levels of SO_2 and $PM_{2.5}$ on a continuous basis. For both pollutants, the air quality standards were not exceeded on any occasion in 2022. Tables 4.2.2.1 through 4.2.2.2 provide summary information on the level of air 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 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	707	95.0%	1.0	7.1	3.3	1.4	0	0	0
	February	667	99.3%	1.0	3.6	2.5	2.0	0	0	0
	March	739	99.3%	0.7	3.8	1.7	1.2	0	0	0
	April	713	99.0%	0.7	2.8	1.3	1.2	0	0	0
	May	743	99.9%	1.0	7.1	3.1	1.7	0	0	0
	June	713	99.0%	0.6	5.5	2.4	1.0	0	0	0
	July	741	99.6%	0.7	1.3	1.2	1.0	0	0	0
	August	742	99.7%	0.6	1.3	1.0	0.9	0	0	0
	September	713	99.0%	0.6	1.9	1.8	1.2	0	0	0
	October	738	99.2%	0.6	1.5	1.4	1.1	0	0	0
	November	713	99.0%	0.9	3.7	1.7	1.6	0	0	0
	December	742	99.7%	1.1	7.2	3.9	1.8	0	0	0
Annual		8671	99.0%	0.8	7.2	3.9	2.0	0	0	0
2022	January	742	99.7%	1.0	3.4	2.5	2.0	0	0	0
	February	667	99.3%	1.2	3.9	2.3	1.9	0	0	0
	March	701	94.2%	1.1	7.1	3.6	2.1	0	0	0
	April	715	99.3%	0.7	2.2	1.5	1.3	0	0	0
	May	714	96.0%	0.9	5.0	1.8	1.6	0	0	0
	June	712	98.9%	0.7	4.0	1.8	1.0	0	0	0
	July	742	99.7%	0.7	1.6	1.4	1.3	0	0	0
	August	572	76.9%	1.1	3.1	2.8	2.4	0	0	0
	September	709	98.5%	1.2	2.6	2.5	2.3	0	0	0
	October	739	99.3%	0.9	7.2	1.8	1.4	0	0	0
	November	714	99.2%	1.3	3.0	2.8	2.5	0	0	0
	December	735	98.8%	1.3	3.0	2.3	2.0	0	0	0
Annual		8462	96.6%	1.0	7.2	3.6	2.5	0	0	0

Observations in ppb

FIGURE 4.2.2.1 - COME BY CHANCE ANNUAL SO_2 CONCENTRATIONS



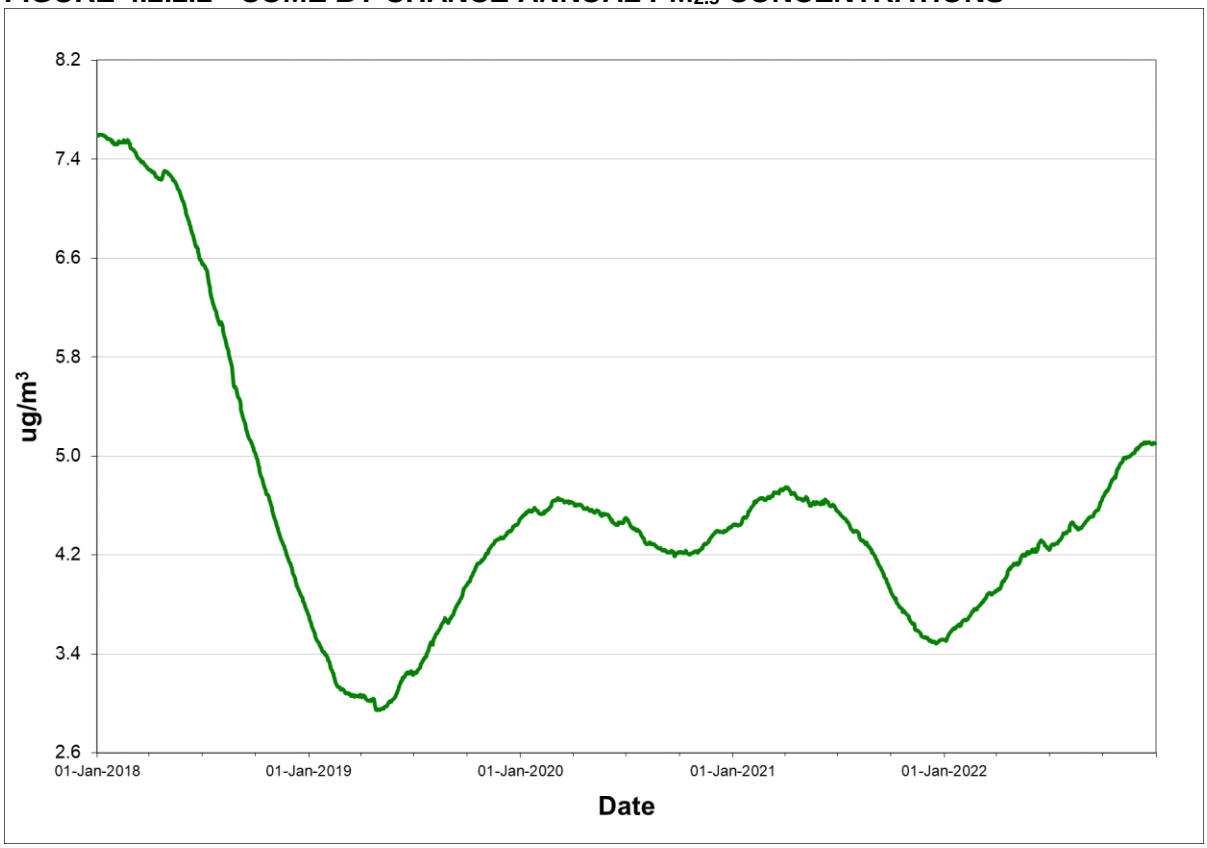
Rolling annual average of hourly concentrations

TABLE 4.2.2.2 - COME BY CHANCE $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	31	100.0%	4.9	10.0	0
	February	25	89.3%	5.3	9.0	0
	March	26	83.9%	4.3	8.8	0
	April	30	100.0%	3.1	9.9	0
	May	31	100.0%	3.7	10.7	0
	June	29	96.7%	4.2	15.6	0
	July	31	100.0%	2.8	6.2	0
	August	31	100.0%	3.3	7.6	0
	September	30	100.0%	1.5	3.0	0
	October	31	100.0%	2.0	9.8	0
	November	29	96.7%	3.3	5.7	0
	December	24	77.4%	4.4	7.2	0
Annual		348	95.3%	3.5	15.6	0
2022	January	31	100.0%	6.5	9.4	0
	February	28	100.0%	6.6	9.3	0
	March	30	96.8%	5.8	12.3	0
	April	30	100.0%	5.7	9.9	0
	May	31	100.0%	5.0	6.6	0
	June	26	86.7%	4.3	9.5	0
	July	31	100.0%	4.4	7.1	0
	August	31	100.0%	4.2	13.8	0
	September	25	83.3%	3.5	10.4	0
	October	31	100.0%	5.2	10.7	0
	November	29	96.7%	4.8	9.5	0
	December	29	93.5%	5.0	7.6	0
Annual		352	96.4%	5.1	13.8	0

Observations in µg/m³

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



Rolling annual average of daily concentrations

4.2.3 Sunnyside

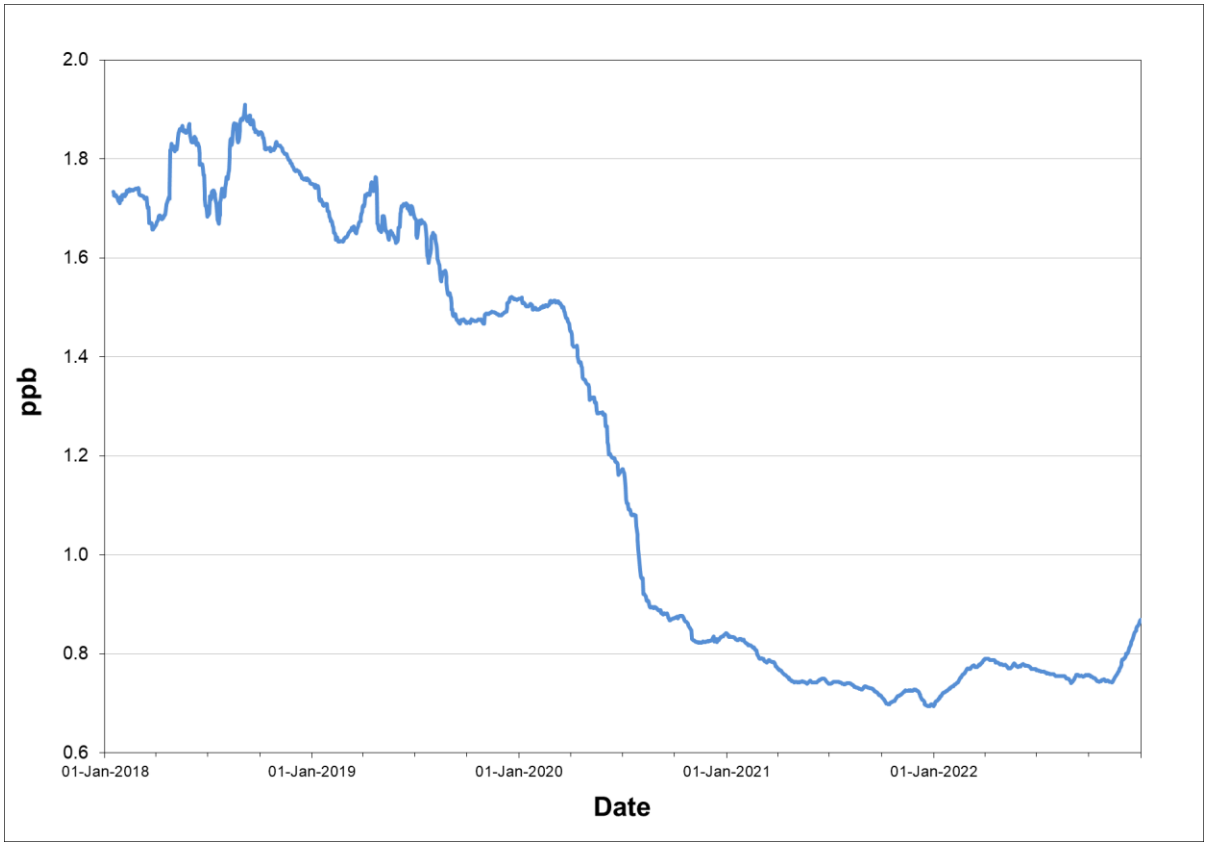
The Sunnyside station monitors are located near the town office and measure the ambient levels of SO_2 and $PM_{2.5}$ on a continuous basis. For SO_2, the air quality standards were not exceeded on any occasion in 2022, however on three occasions in March the $PM_{2.5}$ 24-hour air quality standard was exceeded. In all three instances the exceedances appeared to be weather related, due to high winds and precipitation as opposed to a particular emission source. 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 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	703	94.5%	0.5	3.4	1.5	0.8	0	0	0
	February	667	99.3%	0.5	3.8	1.1	0.8	0	0	0
	March	737	99.1%	0.8	2.0	1.5	1.3	0	0	0
	April	712	98.9%	0.7	3.3	1.9	1.0	0	0	0
	May	743	99.9%	1.0	7.5	3.2	1.3	0	0	0
	June	712	98.9%	0.9	7.2	2.9	1.1	0	0	0
	July	740	99.5%	0.6	3.7	1.2	1.1	0	0	0
	August	742	99.7%	0.8	3.7	1.3	1.1	0	0	0
	September	713	99.0%	0.5	3.9	1.6	0.8	0	0	0
	October	738	99.2%	0.8	4.3	1.3	1.2	0	0	0
	November	713	99.0%	0.7	3.8	1.7	1.2	0	0	0
	December	742	99.7%	0.7	1.5	1.3	1.0	0	0	0
Annual		8662	98.9%	0.7	7.5	3.2	1.3	0	0	0
2022	January	741	99.6%	0.9	3.8	1.9	1.4	0	0	0
	February	669	99.6%	1.0	4.3	2.2	1.5	0	0	0
	March	723	97.2%	1.0	7.2	3.0	1.5	0	0	0
	April	713	99.0%	0.5	6.0	2.2	1.1	0	0	0
	May	693	93.1%	0.9	4.5	2.6	1.4	0	0	0
	June	711	98.8%	0.8	5.2	2.8	1.5	0	0	0
	July	740	99.5%	0.5	1.2	1.1	0.9	0	0	0
	August	742	99.7%	0.6	2.8	1.4	1.1	0	0	0
	September	712	98.9%	0.7	4.7	2.1	1.4	0	0	0
	October	741	99.6%	0.7	4.3	2.3	1.3	0	0	0
	November	672	93.3%	1.2	3.4	3.3	2.4	0	0	0
	December	727	97.7%	1.6	3.4	3.4	2.4	0	0	0
Annual		8584	98.0%	0.9	7.2	3.4	2.4	0	0	0

Observations in ppb

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 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	31	100.0%	4.3	9.5	0
	February	23	82.1%	4.1	12.3	0
	March	29	93.5%	5.7	12.7	0
	April	30	100.0%	5.5	22.7	0
	May	31	100.0%	4.7	11.6	0
	June	28	93.3%	4.2	15.3	0
	July	31	100.0%	2.6	5.4	0
	August	31	100.0%	3.2	7.6	0
	September	30	100.0%	2.4	5.1	0
	October	31	100.0%	2.7	7.0	0
	November	30	100.0%	4.1	10.4	0
	December	27	87.1%	5.5	25.2	1
Annual		352	96.4%	4.1	25.2	1
2022	January	31	100.0%	6.5	19.6	0
	February	28	100.0%	5.1	10.9	0
	March	31	100.0%	9.4	80.3	3
	April	30	100.0%	4.8	7.7	0
	May	31	100.0%	3.7	5.8	0
	June	26	86.7%	3.7	8.3	0
	July	31	100.0%	4.5	7.3	0
	August	29	93.5%	3.8	10.1	0
	September	22	73.3%	3.0	9.3	0
	October	20	64.5%	8.2	12.8	0
	November	16	53.3%	5.8	9.3	0
	December	31	100.0%	4.9	7.5	0
Annual		326	89.3%	5.3	80.3	3

Observations in µg/m³

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

Rolling annual average of daily concentrations

4.2.4 Braya Property Boundary

The Braya Property Boundary station monitors the ambient levels of SO_2 and $PM_{2.5}$. Given its proximity to the process area of Braya, this station routinely records ambient levels of SO_2 and $PM_{2.5}$ in excess of the air quality standards. In 2022 however, none of the SO_2 air quality standards were exceeded due to the refinery being non-operational. For $PM_{2.5}$, the monitor recorded two exceedances of the 24-hour air quality standard, once in January and once in March. In both instances high wind and precipitation were the major contributing factor to the elevated levels and not any particular emission source.

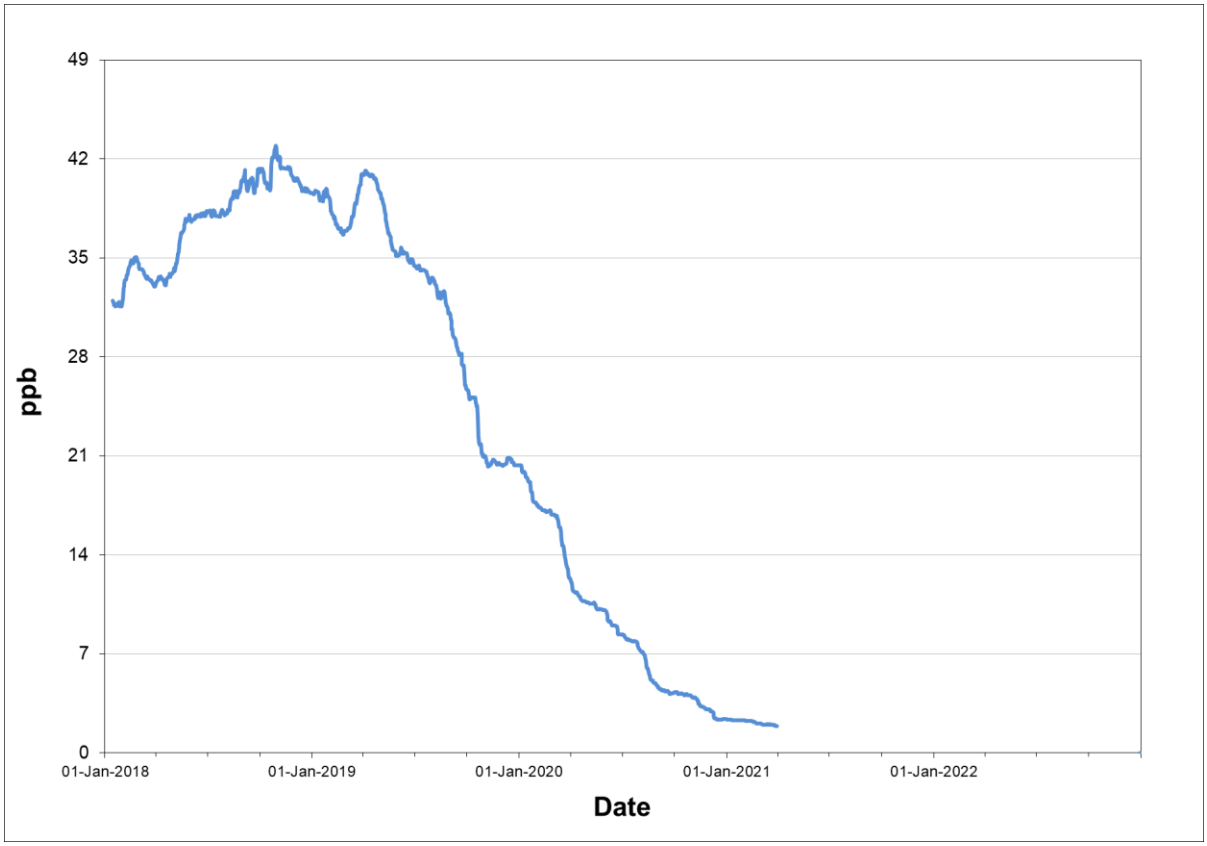
Tables 4.2.4.1 through 4.2.4.2 provide summary information on the level of air contaminants measured at Braya Property Boundary, while Figures 4.2.4.1 and 4.2.4.2 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.2.4.1 - BRAYA BOUNDARY SO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	698	93.8%	0.7	15.1	14.7	5.4	0	0	0
	February	594	88.4%	0.6	6.4	3.0	1.3	0	0	0
	March	0	0.0%							
	April	0	0.0%							
	May	241	32.4%	1.1	13.8	7.1	4.0	0	0	0
	June	715	99.3%	0.7	8.4	5.8	2.5	0	0	0
	July	739	99.3%	0.6	11.0	9.5	3.9	0	0	0
	August	742	99.7%	1.1	17.4	15.4	4.7	0	0	0
	September	713	99.0%	1.3	15.9	14.1	4.4	0	0	0
	October	740	99.5%	0.8	18.5	7.8	2.2	0	0	0
	November	715	99.3%	0.8	13.8	12.9	4.6	0	0	0
	December	740	99.5%	0.8	9.9	6.2	1.8	0	0	0
Annual		6637	75.8%		18.5	15.4	5.4	0	0	0
2022	January	16	2.2%	0.1	0.2	0.1	0.0	0	0	0
	February	0	0.0%							
	March	389	52.3%	0.5	4.4	4.2	1.1	0	0	0
	April	715	99.3%	0.5	10.1	5.1	1.6	0	0	0
	May	741	99.6%	0.8	9.6	4.3	2.3	0	0	0
	June	685	95.1%	0.3	2.4	1.4	0.6	0	0	0
	July	734	98.7%	0.3	10.5	3.7	0.7	0	0	0
	August	741	99.6%	0.5	21.1	7.4	1.4	0	0	0
	September	599	83.2%	0.3	0.9	0.6	0.4	0	0	0
	October	736	98.9%	0.5	9.4	1.6	0.9	0	0	0
	November	712	98.9%	0.4	1.2	0.8	0.6	0	0	0
	December	736	98.9%	0.4	1.1	0.7	0.6	0	0	0
Annual		6804	77.7%		21.1	7.4	2.3	0	0	0

Observations in ppb

FIGURE 4.2.4.1 - BRAYA BOUNDARY ANNUAL SO_2 CONCENTRATIONS



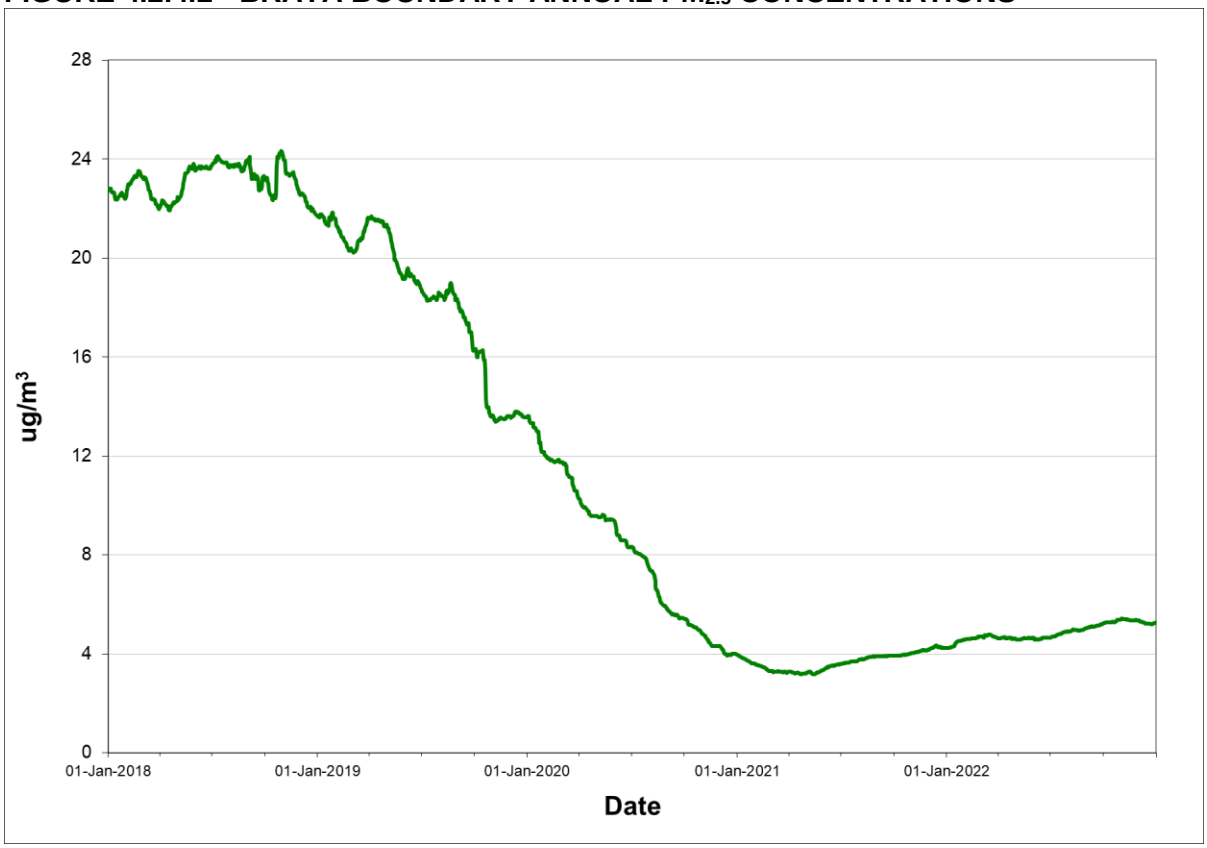
Rolling annual average of hourly concentrations

TABLE 4.2.4.2 - BRAYA BOUNDARY $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	24	77.4%	1.9	4.3	0
	February	26	92.9%	3.9	7.7	0
	March	31	100.0%	6.6	11.2	0
	April	30	100.0%	4.9	16.8	0
	May	31	100.0%	5.4	11.7	0
	June	30	100.0%	5.2	17.5	0
	July	31	100.0%	3.3	7.3	0
	August	31	100.0%	3.5	7.0	0
	September	30	100.0%	2.7	5.5	0
	October	27	87.1%	2.7	4.3	0
	November	30	100.0%	5.1	13.7	0
	December	27	87.1%	4.9	15.5	0
Annual		348	95.3%	4.2	17.5	0
2022	January	31	100.0%	6.5	34.1	1
	February	22	78.6%	5.6	17.9	0
	March	24	77.4%	6.3	34.1	1
	April	23	76.7%	4.7	8.2	0
	May	30	96.8%	5.7	10.3	0
	June	26	86.7%	5.3	12.0	0
	July	30	96.8%	6.0	10.0	0
	August	26	83.9%	4.8	15.2	0
	September	30	100.0%	4.7	11.1	0
	October	27	87.1%	5.0	13.6	0
	November	27	90.0%	4.3	9.3	0
	December	31	100.0%	4.2	7.5	0
Annual		327	89.6%	5.3	34.1	2

Observations in µg/m³

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



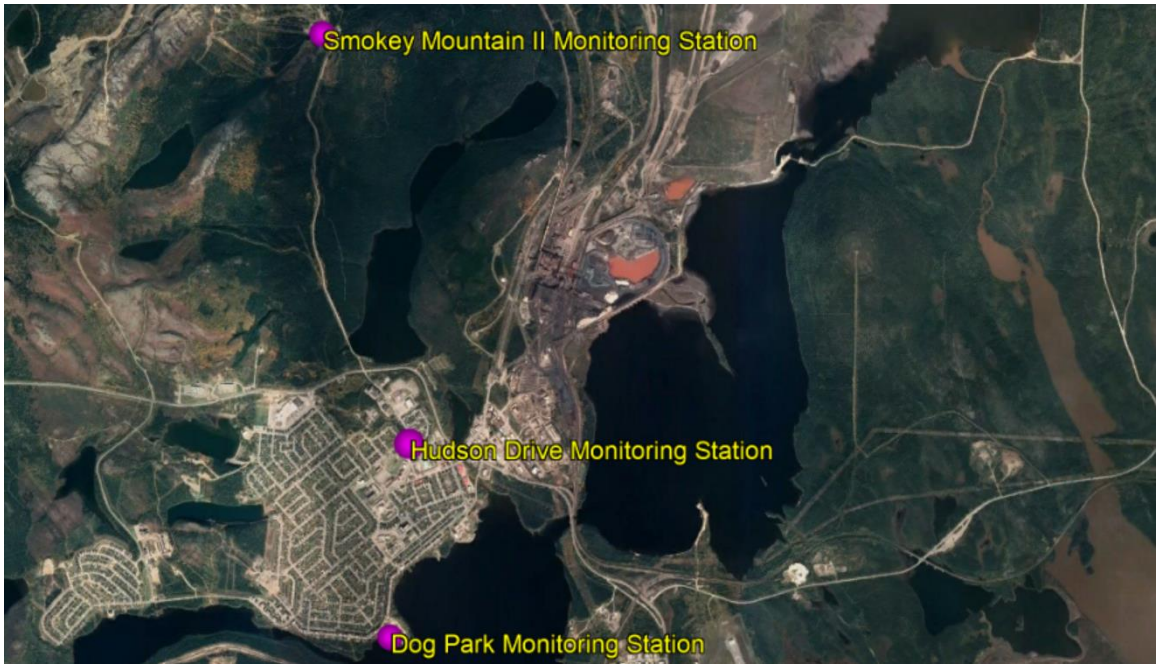
Rolling annual average of hourly concentrations

4.3 Iron Ore Company of Canada

The Iron Ore Company of Canada (IOC) operated three monitoring stations in Labrador City in 2022, and they are located near the Dog Park, on Hudson Drive near the Firehall and on Smokey Mountain Road near the ski hill. The locations of these monitoring stations are identified in Figure 4.3.1. The Dog Park station was formerly known as the Indian Point station.

In 2013, IOC, in conjunction with the then Environment Canada and the then Department of Environment and Conservation, became the first industrial operation in the province to operate an ozone monitor. The installation of the ozone monitor at the Hudson Drive (Firehall) location designated the station as a NAPS equivalent for the purpose of generating an hourly AQHI reading.

FIGURE 4.3.1 - IOC AMBIENT MONITORING STATIONS



4.3.1 Dog Park

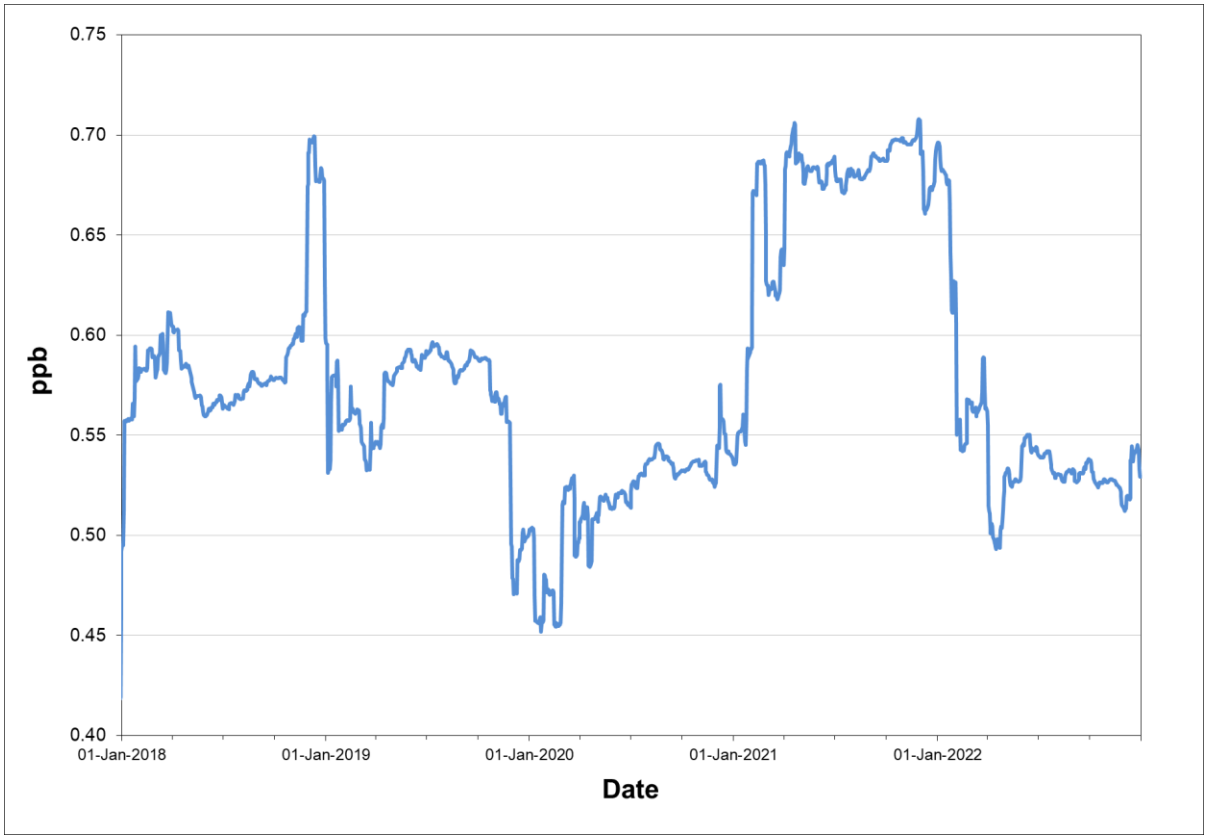
The Dog Park station, previously called the Indian Point station, monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ and TPM on a continuous basis. For SO_2, NO_x / NO_2, and $PM_{2.5}$, the air quality standards were not exceeded on any occasion in 2022. For TPM there were two exceedances of the 24-hour air quality standard, both occurring in May. In both instances, atmospheric conditions were conducive to surface dust lift-off from sources in the general area. Tables 4.3.1.1 through 4.3.1.4 provide summary information on the level of air contaminants measured at the Dog Park while Figures 4.3.1.1 through 4.3.1.4 present the graphical representation of the annual trends.

TABLE 4.3.1.1 - DOG PARK SO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	744	100.0%	1.4	26.9	24.4	9.6	0	0	0
	February	665	99.0%	1.6	43.2	35.6	20.6	0	0	0
	March	743	99.9%	0.8	25.8	16.8	6.2	0	0	0
	April	720	100.0%	1.4	29.0	24.3	14.6	0	0	0
	May	742	99.7%	0.3	4.7	2.9	1.3	0	0	0
	June	665	92.4%	0.4	6.6	5.6	2.2	0	0	0
	July	741	99.6%	0.4	10.6	5.4	1.3	0	0	0
	August	744	100.0%	0.3	2.7	1.6	0.7	0	0	0
	September	706	98.1%	0.3	6.2	3.2	1.5	0	0	0
	October	736	98.9%	0.4	9.4	5.8	1.8	0	0	0
	November	714	99.2%	0.4	6.5	4.4	1.8	0	0	0
	December	744	100.0%	0.7	10.6	8.4	3.7	0	0	0
Annual		8664	98.9%	0.7	43.2	35.6	20.6	0	0	0
2022	January	742	99.7%	0.6	18.8	12.4	5.2	0	0	0
	February	669	99.6%	0.8	44.2	24.6	8.4	0	0	0
	March	737	99.1%	0.7	31.6	25.0	6.5	0	0	0
	April	720	100.0%	0.9	16.0	13.3	3.4	0	0	0
	May	744	100.0%	0.5	16.3	13.1	3.3	0	0	0
	June	699	97.1%	0.5	14.0	9.5	2.9	0	0	0
	July	744	100.0%	0.3	5.4	2.6	0.8	0	0	0
	August	713	95.8%	0.4	7.8	4.5	1.2	0	0	0
	September	707	98.2%	0.4	5.4	3.2	1.4	0	0	0
	October	740	99.5%	0.3	3.5	2.4	0.8	0	0	0
	November	718	99.7%	0.2	2.6	1.6	0.5	0	0	0
	December	744	100.0%	0.8	31.2	23.1	7.1	0	0	0
Annual		8677	99.1%	0.5	44.2	25.0	8.4	0	0	0

Observations in ppb

FIGURE 4.3.1.1 - DOG PARK ANNUAL SO_2 CONCENTRATIONS



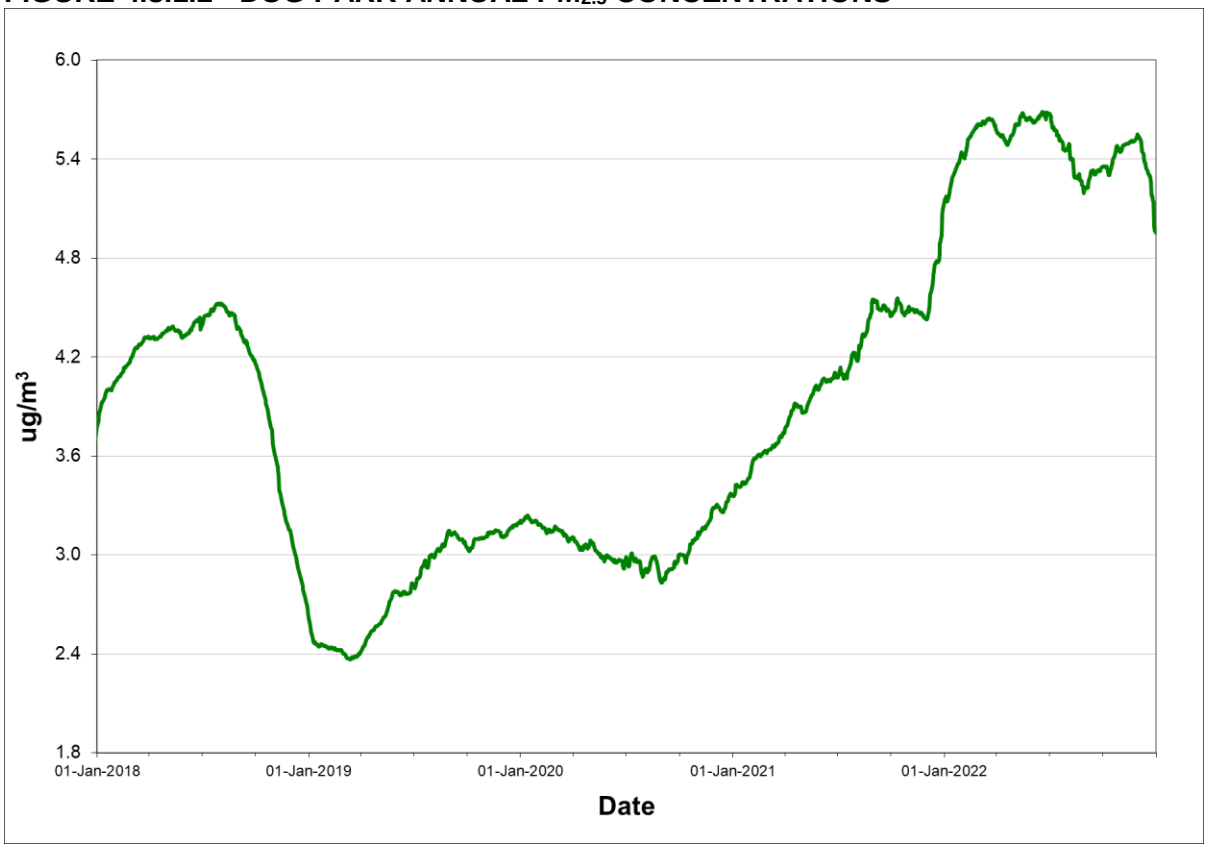
Rolling annual average of hourly concentrations

TABLE 4.3.1.2 - DOG PARK $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2021	January	31	100.0%	3.5	13.3	0
	February	28	100.0%	3.9	12.5	0
	March	31	100.0%	4.3	9.2	0
	April	30	100.0%	4.9	8.7	0
	May	30	96.8%	4.8	10.3	0
	June	23	76.7%	4.2	13.5	0
	July	31	100.0%	6.7	17.8	0
	August	31	100.0%	8.4	25.7	1
	September	28	93.3%	2.8	6.1	0
	October	26	83.9%	3.4	8.3	0
	November	30	100.0%	2.7	5.7	0
	December	30	96.8%	11.2	50.9	3
Annual		349	95.6%	5.1	50.9	4
2022	January	31	100.0%	6.8	10.1	0
	February	28	100.0%	6.2	13.9	0
	March	31	100.0%	3.9	7.3	0
	April	26	86.7%	4.6	9.0	0
	May	31	100.0%	5.5	14.6	0
	June	24	80.0%	4.8	14.1	0
	July	31	100.0%	4.4	11.8	0
	August	29	93.5%	5.7	11.3	0
	September	28	93.3%	4.4	10.9	0
	October	30	96.8%	4.7	10.3	0
	November	28	93.3%	3.9	8.3	0
	December	26	83.9%	4.2	7.8	0
Annual		343	94.0%	5.0	14.6	0

Observations in µg/m^3

FIGURE 4.3.1.2 - DOG PARK ANNUAL $PM_{2.5}$ CONCENTRATIONS



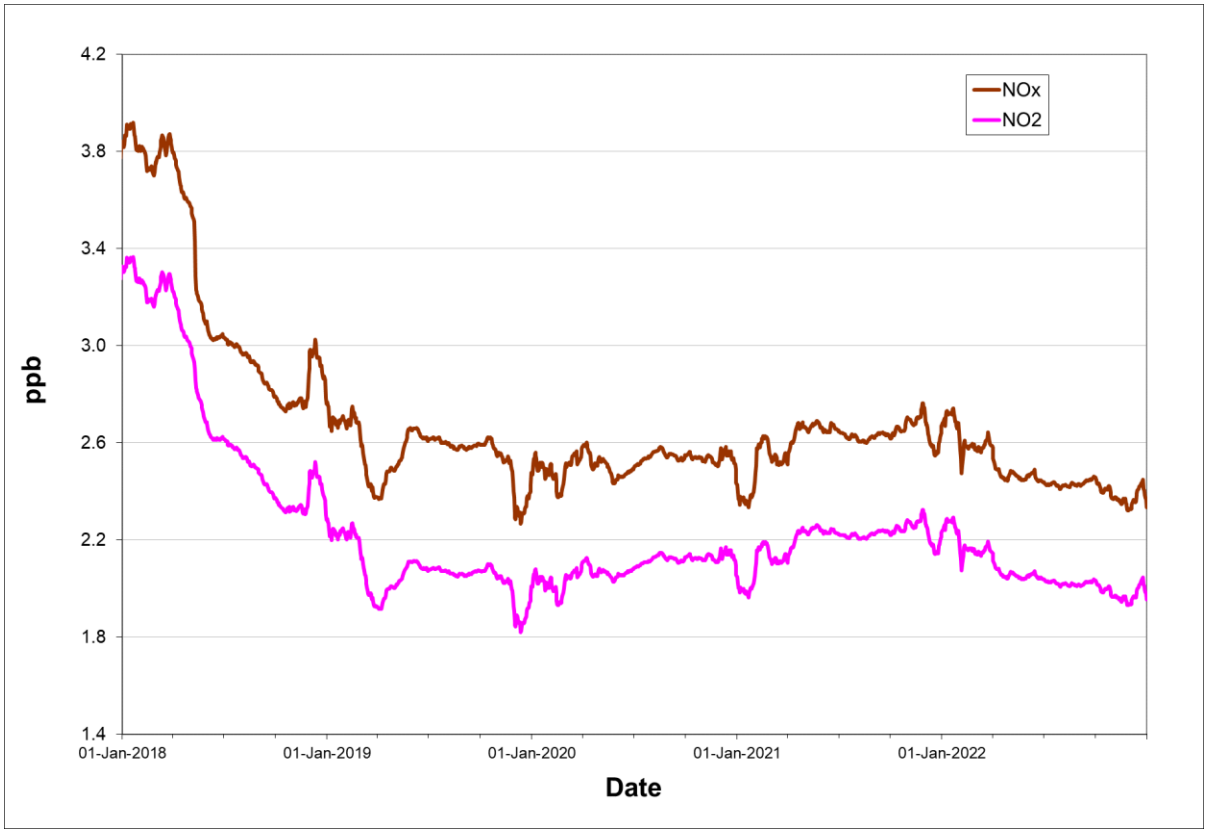
Rolling annual average of hourly concentrations

TABLE 4.3.1.3 - DOG PARK NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	744	100.0%	4.2	3.5	40.8	33.1	14.9	11.7	0	0
	February	665	99.0%	5.3	4.2	52.3	36.7	25.8	18.5	0	0
	March	743	99.9%	3.0	2.6	29.6	21.3	8.0	6.3	0	0
	April	720	100.0%	4.0	3.2	35.4	24.8	17.1	11.0	0	0
	May	742	99.7%	1.7	1.5	15.2	11.4	4.1	3.3	0	0
	June	664	92.2%	1.8	1.4	26.0	13.6	11.4	5.8	0	0
	July	742	99.7%	1.5	1.3	14.1	10.8	3.6	2.9	0	0
	August	744	100.0%	1.4	1.2	11.7	10.7	2.6	2.2	0	0
	September	706	98.1%	1.3	1.1	10.8	8.5	2.8	2.3	0	0
	October	740	99.5%	2.5	2.0	22.5	18.5	6.8	6.1	0	0
	November	714	99.2%	2.5	2.2	42.4	20.0	7.8	6.7	0	0
	December	744	100.0%	3.1	2.6	56.5	31.2	15.2	12.2	0	0
Annual		8668	98.9%	2.7	2.2	56.5	36.7	25.8	18.5	0	0
2022	January	742	99.7%	3.9	3.2	53.6	34.0	17.0	12.5	0	0
	February	669	99.6%	4.3	3.4	43.1	38.1	16.4	13.6	0	0
	March	737	99.1%	3.2	2.6	35.0	21.4	9.3	7.4	0	0
	April	720	100.0%	2.5	2.1	24.3	15.7	5.6	4.5	0	0
	May	744	100.0%	1.7	1.4	19.5	10.8	5.1	3.8	0	0
	June	682	94.7%	1.6	1.3	15.3	13.3	3.6	2.8	0	0
	July	744	100.0%	1.2	1.0	14.3	6.6	2.8	2.2	0	0
	August	713	95.8%	1.6	1.3	14.2	7.8	3.1	2.4	0	0
	September	707	98.2%	1.6	1.3	16.5	8.0	3.7	2.9	0	0
	October	740	99.5%	1.4	1.2	14.3	13.1	5.6	4.0	0	0
	November	718	99.7%	2.0	1.9	20.7	14.5	7.4	6.7	0	0
	December	744	100.0%	3.2	2.8	40.2	24.9	11.0	8.3	0	0
Annual		8660	98.9%	2.3	2.0	53.6	38.1	17.0	13.6	0	0

Observations in ppb

FIGURE 4.3.1.3 - DOG PARK ANNUAL NO_X / NO_2 CONCENTRATIONS



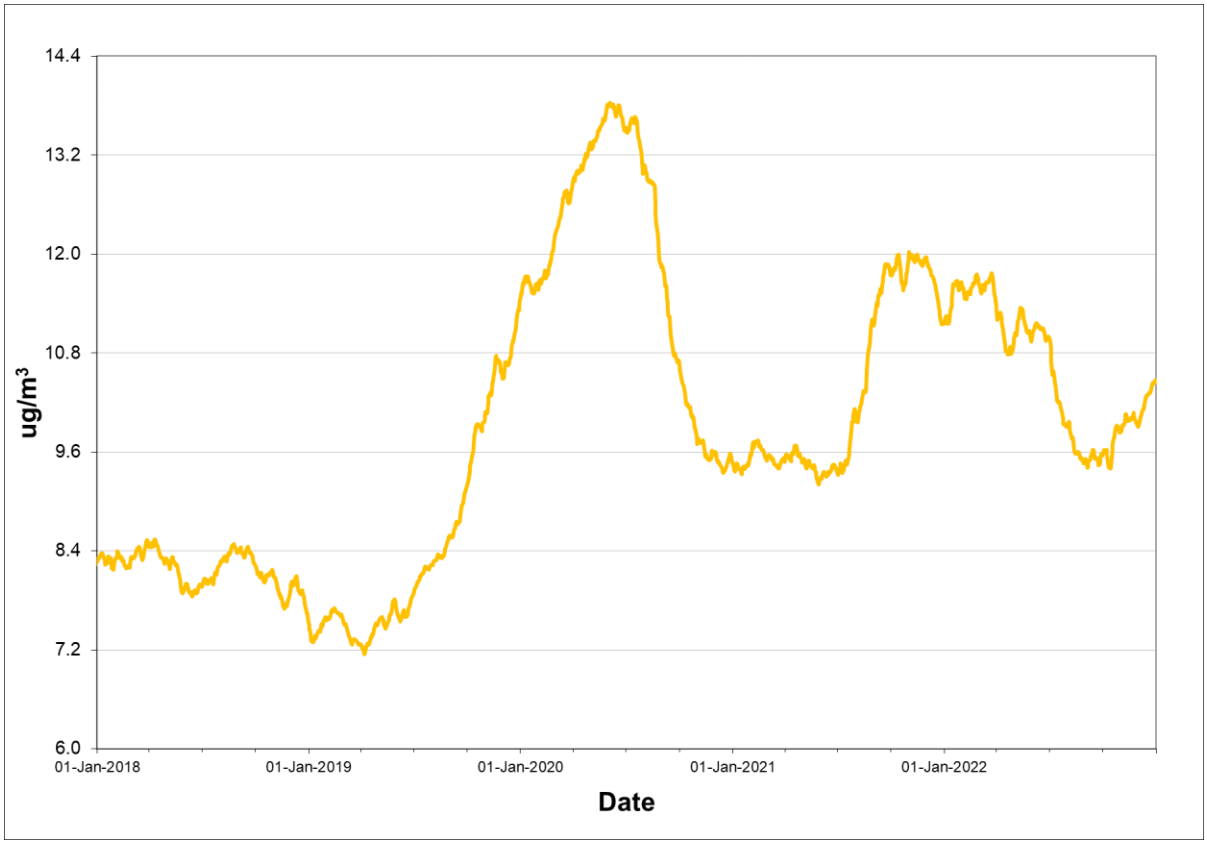
Rolling annual average of hourly concentrations

TABLE 4.3.1.4 - DOG PARK TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	29	93.5%	8.7	51.5	0
	February	23	82.1%	12.5	60.5	0
	March	29	93.5%	14.5	66.8	0
	April	27	90.0%	23.0	74.1	0
	May	30	96.8%	16.2	58.7	0
	June	22	73.3%	15.5	99.0	0
	July	30	96.8%	27.5	138.9	2
	August	31	100.0%	18.4	63.0	0
	September	28	93.3%	7.1	58.7	0
	October	24	77.4%	4.4	28.5	0
	November	29	96.7%	6.3	28.5	0
	December	31	100.0%	4.0	6.8	0
Annual		333	91.2%	11.2	138.9	2
2022	January	31	100.0%	13.5	62.2	0
	February	28	100.0%	13.7	78.5	0
	March	31	100.0%	10.8	47.4	0
	April	30	100.0%	13.2	75.7	0
	May	31	100.0%	16.7	186.9	2
	June	24	80.0%	15.3	51.0	0
	July	30	96.8%	8.2	24.6	0
	August	28	90.3%	11.8	35.1	0
	September	29	96.7%	7.7	27.1	0
	October	31	100.0%	7.2	22.8	0
	November	30	100.0%	7.1	39.9	0
	December	26	83.9%	6.8	21.8	0
Annual		349	95.6%	10.5	186.9	2

Observations in µg/m³

FIGURE 4.3.1.4 - DOG PARK ANNUAL TPM CONCENTRATIONS



Rolling annual average of hourly concentrations

4.3.2 Hudson Drive (Firehall)

The Hudson Drive (Firehall) station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$, PM_{10}, TPM and O_3 on a continuous basis. In September 2021, the $PM_{2.5}$ BAM was replaced with a Teledyne API T640 capable of measuring both $PM_{2.5}$ and PM_{10}. This replacement was made for consistency with other NAPS stations. For SO_2, $PM_{2.5,}$ and NO_2 the associated air quality standards were not exceeded on any occasion in 2022. The 24-hour PM_{10} air quality standard was exceeded eight times in 2022, specifically four times in April and four times in May. The 24-hour TPM air quality standard was exceeded on ten occasions, specifically four times in April, five times in May and once in June. On all occasions the atmospheric conditions were conducive to surface dust lift-off from sources in the general area.

Issues with the O_3 monitor commencing in November resulted in data being invalidated from the middle of November until the end of the year. Despite no valid data collection for half on November and all of December, the 8-hour O_3 air quality standard was still exceeded on two-hundred-and-eighty-five occasions in 2022, specifically:

Month	# of 8-Hour O_3 Exceedances
January	15
February	37
March	44
April	62
May	57
June	13
July	1
August	6
September	1
October	35
November	14
TOTAL	**285**

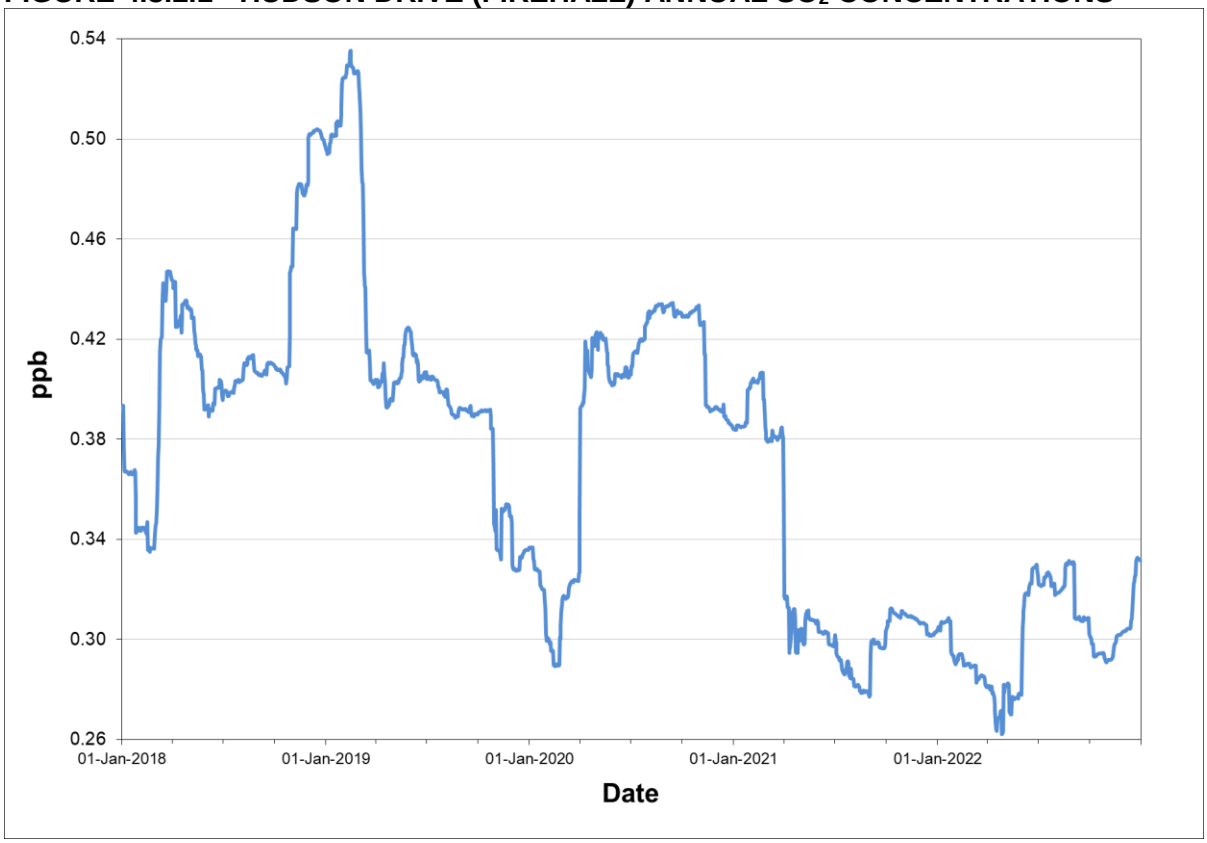
Tables 4.3.2.1 through 4.3.2.5 provide summary information on the level of air contaminants measured at Hudson Drive (Firehall) while Table 4.3.2.6 provides the AQHI levels for 2022. Figures 4.3.2.1 through 4.3.2.5 provide the graphical representation of the annual trends for each pollutant and Figure 4.3.2.6 provides the AQHI frequency distribution for 2022.

TABLE 4.3.2.1 - HUDSON DRIVE (FIREHALL) SO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	744	100.0%	0.4	29.4	21.3	4.7	0	0	0
	February	669	99.6%	0.2	6.2	3.9	1.0	0	0	0
	March	744	100.0%	0.3	21.4	9.9	2.7	0	0	0
	April	720	100.0%	0.6	15.6	13.5	3.5	0	0	0
	May	739	99.3%	0.3	21.1	10.8	3.4	0	0	0
	June	702	97.5%	0.2	6.2	3.3	1.2	0	0	0
	July	742	99.7%	0.3	12.3	7.3	1.7	0	0	0
	August	744	100.0%	0.2	5.5	2.0	0.4	0	0	0
	September	707	98.2%	0.5	27.9	15.0	6.0	0	0	0
	October	741	99.6%	0.3	16.8	10.8	1.9	0	0	0
	November	718	99.7%	0.1	0.6	0.3	0.2	0	0	0
	December	744	100.0%	0.1	1.8	1.2	0.3	0	0	0
Annual		8714	99.5%	0.3	29.4	21.3	6.0	0	0	0
2022	January	742	99.7%	0.2	9.2	4.4	1.2	0	0	0
	February	668	99.4%	0.2	4.1	2.9	0.7	0	0	0
	March	741	99.6%	0.2	3.1	1.5	0.5	0	0	0
	April	720	100.0%	0.6	36.9	27.1	7.1	0	0	0
	May	744	100.0%	0.3	10.6	7.8	2.6	0	0	0
	June	699	97.1%	0.8	32.8	20.8	5.9	0	0	0
	July	744	100.0%	0.2	6.7	4.8	1.2	0	0	0
	August	645	86.7%	0.3	11.2	6.5	1.6	0	0	0
	September	707	98.2%	0.2	2.9	1.9	0.6	0	0	0
	October	740	99.5%	0.2	0.5	0.3	0.2	0	0	0
	November	718	99.7%	0.3	9.0	4.7	1.0	0	0	0
	December	744	100.0%	0.5	24.5	10.0	2.2	0	0	0
Annual		8612	98.3%	0.3	36.9	27.1	7.1	0	0	0

Observations in ppb

FIGURE 4.3.2.1 - HUDSON DRIVE (FIREHALL) ANNUAL SO_2 CONCENTRATIONS



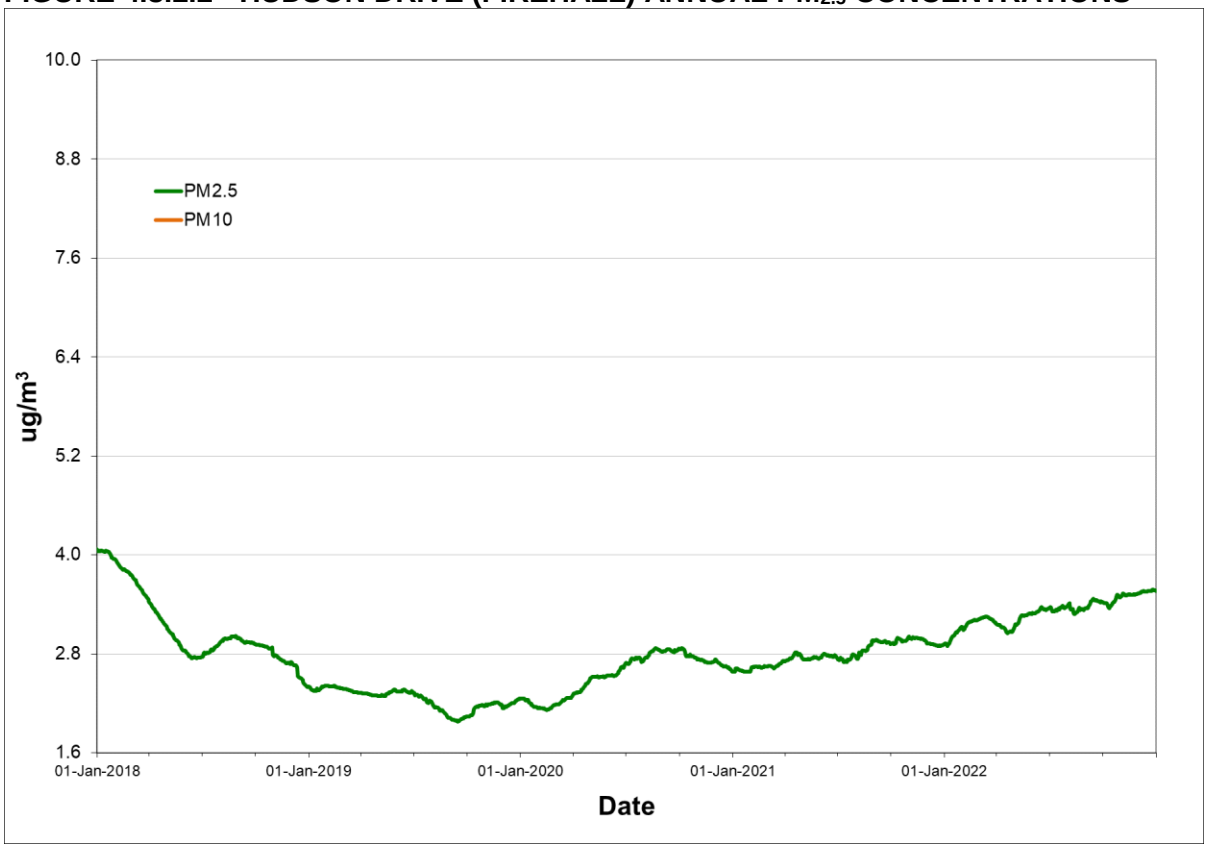
Rolling annual average of hourly concentrations

TABLE 4.3.2.2 - HUDSON DRIVE (FIREHALL) $PM_{2.5}$ / PM_{10} SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average $PM_{2.5}$	Average PM_{10}	24-Hour Maximum $PM_{2.5}$	24-Hour Maximum PM_{10}	Regulatory Exceedances $PM_{2.5}$ (>25)	Regulatory Exceedances PM_{10} (>50)
2021	January	31	100.0%	2.1		11.9		0	
	February	28	100.0%	3.2		13.7		0	
	March	29	93.5%	3.4		6.7		0	
	April	30	100.0%	3.6		9.9		0	
	May	31	100.0%	1.9		6.4		0	
	June	25	83.3%	3.0		7.6		0	
	July	31	100.0%	3.7		13.7		0	
	August	31	100.0%	5.2		23.1		0	
	September	28	93.3%	2.0	7.6	4.4	12.7	0	0
	October	31	100.0%	3.1	10.1	7.8	25.7	0	0
	November	30	100.0%	1.6	5.5	4.9	25.7	0	0
	December	31	100.0%	2.1	5.8	4.8	13.6	0	0
Annual		356	97.5%	2.9		23.1	25.7	0	0
2022	January	27	87.1%	4.8		9.1		0	0
	February	28	100.0%	4.3		8.3		0	0
	March	31	100.0%	2.9	8.6	6.0	31.4	0	0
	April	30	100.0%	2.8	19.4	7.5	74.5	0	4
	May	31	100.0%	4.0	24.4	11.4	106.0	0	4
	June	29	96.7%	3.9	13.8	8.6	31.4	0	0
	July	31	100.0%	4.0	8.6	12.6	20.2	0	0
	August	31	100.0%	4.9	11.2	12.4	27.7	0	0
	September	29	96.7%	3.0	7.0	10.1	17.2	0	0
	October	31	100.0%	3.7	8.5	13.6	27.8	0	0
	November	30	100.0%	2.2	6.3	8.9	19.1	0	0
	December	31	100.0%	2.5	6.3	6.7	13.3	0	0
Annual		359	98.4%	3.6	9.7	13.6	106.0	0	8

Observations in $\mu g/m^3$

FIGURE 4.3.2.2 - HUDSON DRIVE (FIREHALL) ANNUAL $PM_{2.5}$ CONCENTRATIONS



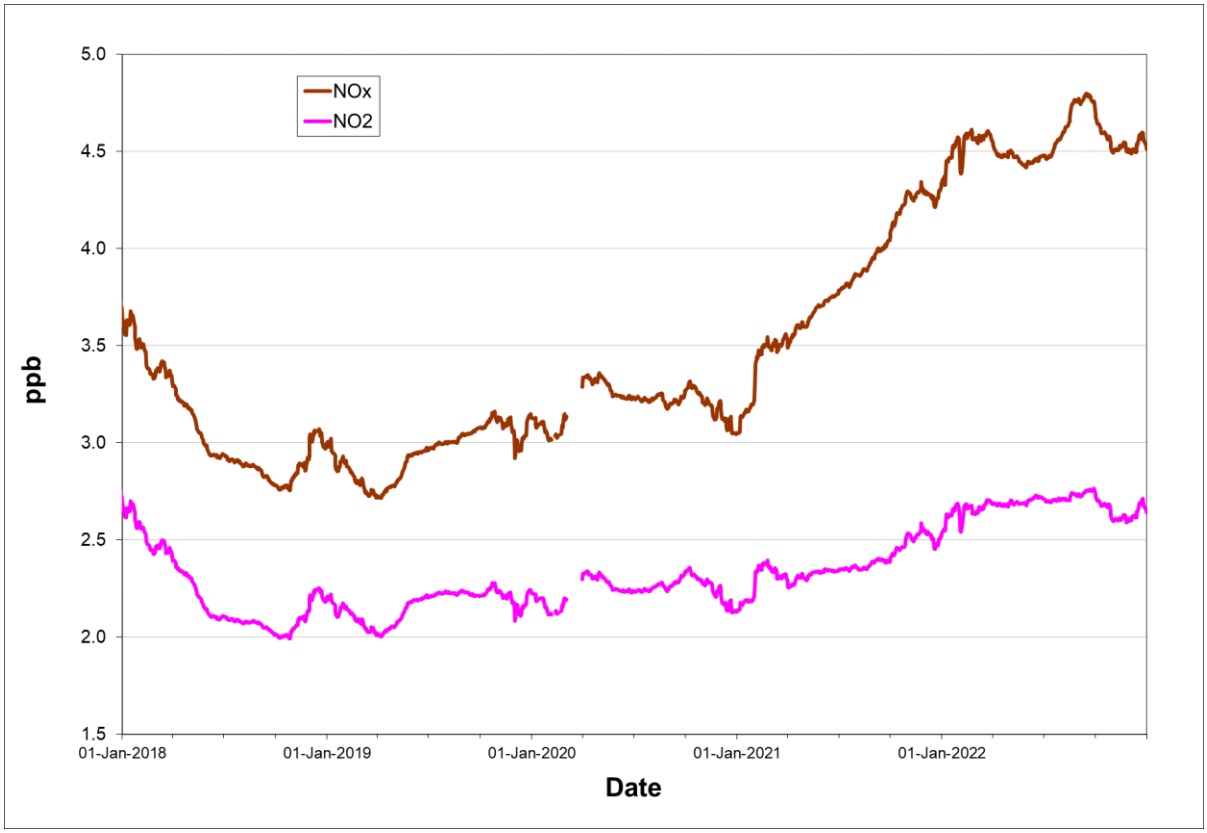
Rolling annual average of hourly concentrations

TABLE 4.3.2.3 - HUDSON DRIVE (FIREHALL) NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	740	99.5%	5.0	3.0	256.9	48.9	29.2	13.1	0	0
	February	667	99.3%	7.5	4.8	87.4	38.0	40.9	26.9	0	0
	March	744	100.0%	5.4	2.8	90.4	31.9	10.0	6.2	0	0
	April	720	100.0%	3.8	2.2	32.1	25.1	8.2	5.9	0	0
	May	710	95.4%	2.9	1.6	23.2	11.8	5.8	4.3	0	0
	June	698	96.9%	2.8	1.5	29.2	15.4	4.8	4.0	0	0
	July	742	99.7%	3.2	1.8	54.8	13.2	6.7	3.9	0	0
	August	744	100.0%	3.2	1.7	45.5	17.7	5.8	3.4	0	0
	September	704	97.8%	4.3	1.9	55.3	19.1	12.1	5.8	0	0
	October	736	98.9%	5.4	3.3	40.3	32.0	10.1	8.3	0	0
	November	698	96.9%	3.6	2.8	41.1	27.1	12.3	9.9	0	0
	December	742	99.7%	5.1	3.2	63.8	31.0	15.5	13.3	0	0
Annual		8645	98.7%	4.3	2.5	256.9	48.9	40.9	26.9	0	0
2022	January	742	99.7%	7.6	4.6	118.5	42.1	26.9	17.2	0	0
	February	657	97.8%	7.6	4.4	82.4	35.7	24.9	17.0	0	0
	March	741	99.6%	5.2	3.4	74.6	37.7	14.9	10.4	0	0
	April	720	100.0%	3.1	2.2	50.3	24.6	11.4	6.5	0	0
	May	743	99.9%	2.0	1.6	27.0	17.9	5.3	3.9	0	0
	June	700	97.2%	3.6	1.9	38.4	19.4	7.9	4.7	0	0
	July	687	92.3%	4.1	1.6	23.5	12.3	6.7	3.4	0	0
	August	741	99.6%	5.5	2.1	44.3	17.3	11.4	6.3	0	0
	September	706	98.1%	3.7	2.0	41.1	12.9	7.5	4.4	0	0
	October	736	98.9%	2.9	1.6	36.3	12.9	7.7	4.5	0	0
	November	714	99.2%	3.8	2.8	50.6	23.8	11.0	7.5	0	0
	December	743	99.9%	5.1	3.6	53.1	28.6	17.0	10.5	0	0
Annual		8630	98.5%	4.5	2.6	118.5	42.1	26.9	17.2	0	0

Observations in ppb

FIGURE 4.3.2.3 - HUDSON DRIVE (FIREHALL) ANNUAL NO_X / NO_2 CONCENTRATIONS



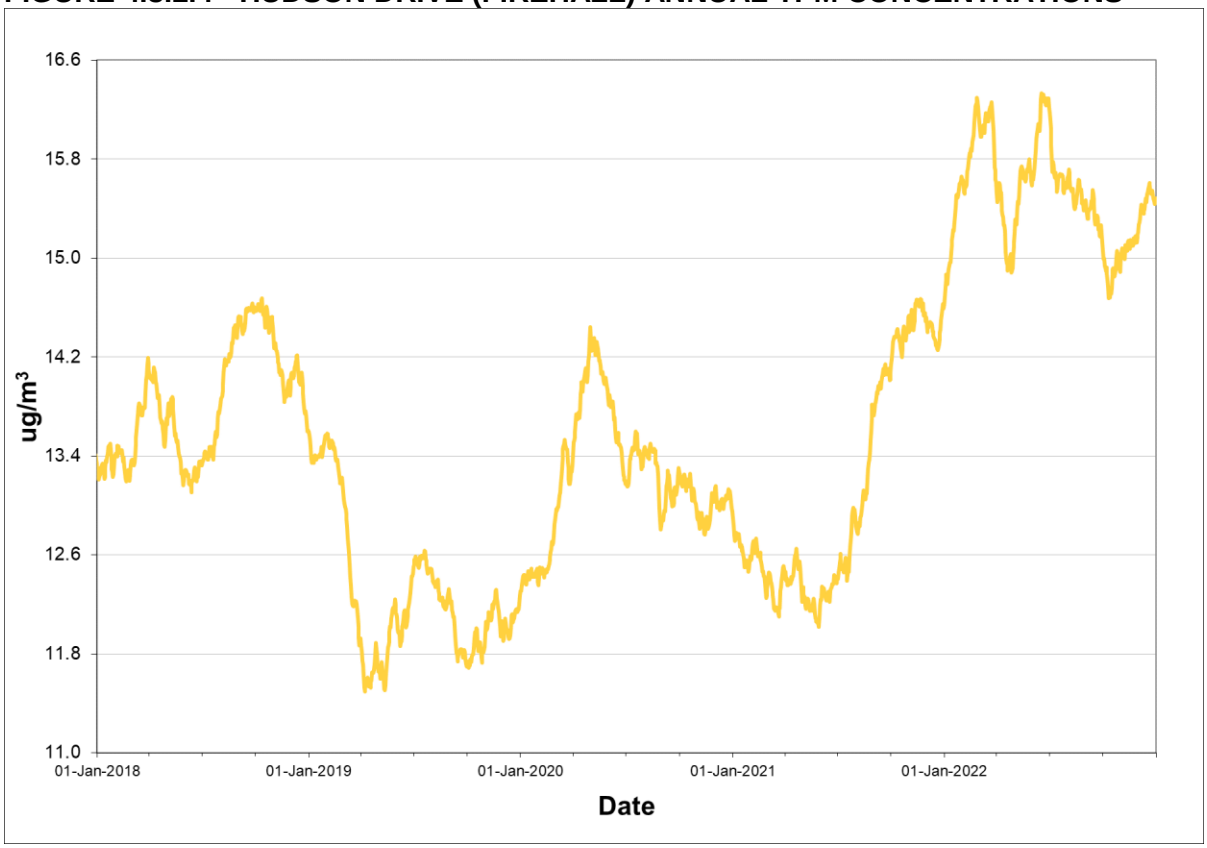
Rolling annual average of hourly concentrations

TABLE 4.3.2.4 - HUDSON DRIVE (FIREHALL) TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	24	77.4%	6.3	43.7	0
	February	27	96.4%	9.5	58.0	0
	March	31	100.0%	20.3	213.4	2
	April	26	86.7%	49.6	226.5	5
	May	31	100.0%	24.4	119.4	0
	June	25	83.3%	18.6	124.1	1
	July	31	100.0%	20.1	164.5	1
	August	31	100.0%	16.4	44.3	0
	September	26	86.7%	11.2	37.4	0
	October	26	83.9%	12.8	56.3	0
	November	30	100.0%	7.7	76.5	0
	December	31	100.0%	8.9	39.4	0
Annual		339	92.9%	14.6	226.5	9
2022	January	31	100.0%	16.0	40.8	0
	February	28	100.0%	15.3	67.3	0
	March	31	100.0%	13.3	93.9	0
	April	30	100.0%	28.5	177.2	4
	May	31	100.0%	35.2	240.8	5
	June	22	73.3%	35.5	124.6	1
	July	31	100.0%	13.0	34.8	0
	August	31	100.0%	14.9	66.8	0
	September	29	96.7%	8.8	36.5	0
	October	31	100.0%	10.9	43.3	0
	November	30	100.0%	9.8	75.6	0
	December	29	93.5%	10.8	52.5	0
Annual		354	97.0%	15.5	240.8	10

Observations in µg/m³

FIGURE 4.3.2.4 - HUDSON DRIVE (FIREHALL) ANNUAL TPM CONCENTRATIONS



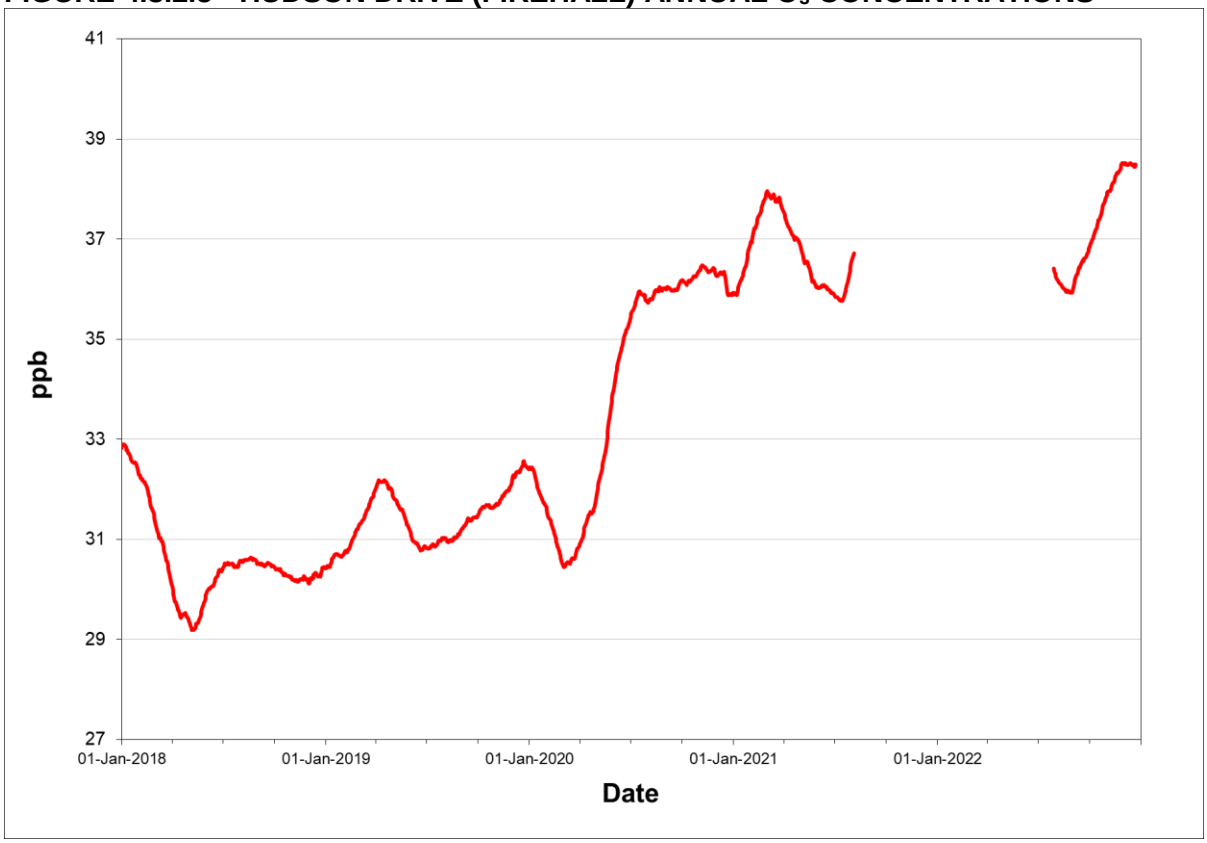
Rolling annual average of hourly concentrations

TABLE 4.3.2.5 - HUDSON DRIVE (FIREHALL) O_3 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>82)	Regulatory Exceedances 8-Hour (>44)
2021	January	744	100.0%	39.4	60.1	55.2	0	19
	February	629	93.6%	37.3	56.0	54.4	0	22
	March	744	100.0%	40.9	76.7	71.8	0	24
	April	720	100.0%	43.5	65.1	57.7	0	36
	May	676	90.9%	44.3	66.0	62.3	0	44
	June	294	40.8%	49.2	77.4	69.7	0	27
	July	0	0.0%					
	August	9	1.2%	11.6	19.2	10.6	0	0
	September	664	92.2%	22.2	54.0	41.8	0	0
	October	744	100.0%	30.2	56.5	44.5	0	2
	November	716	99.4%	32.1	44.7	44.0	0	0
	December	744	100.0%	37.3	50.5	49.0	0	8
Annual		6684	76.3%		77.4	71.8	0	182
2022	January	742	99.7%	37.4	51.9	50.8	0	15
	February	672	100.0%	41.2	54.4	53.1	0	37
	March	739	99.3%	41.0	55.8	53.7	0	44
	April	720	100.0%	46.4	59.1	55.2	0	62
	May	744	100.0%	46.4	67.9	65.5	0	57
	June	704	97.8%	35.3	63.6	57.6	0	13
	July	744	100.0%	28.9	53.0	44.7	0	1
	August	743	99.9%	32.4	61.3	56.4	0	6
	September	707	98.2%	33.4	54.4	44.9	0	1
	October	744	100.0%	42.6	63.0	58.3	0	35
	November	387	53.8%	40.7	59.6	51.5	0	14
	December	0	0.0%					
Annual		7646	87.3%		67.9	65.5	0	285

Observations in ppb

FIGURE 4.3.2.5 - HUDSON DRIVE (FIREHALL) ANNUAL O_3 CONCENTRATIONS

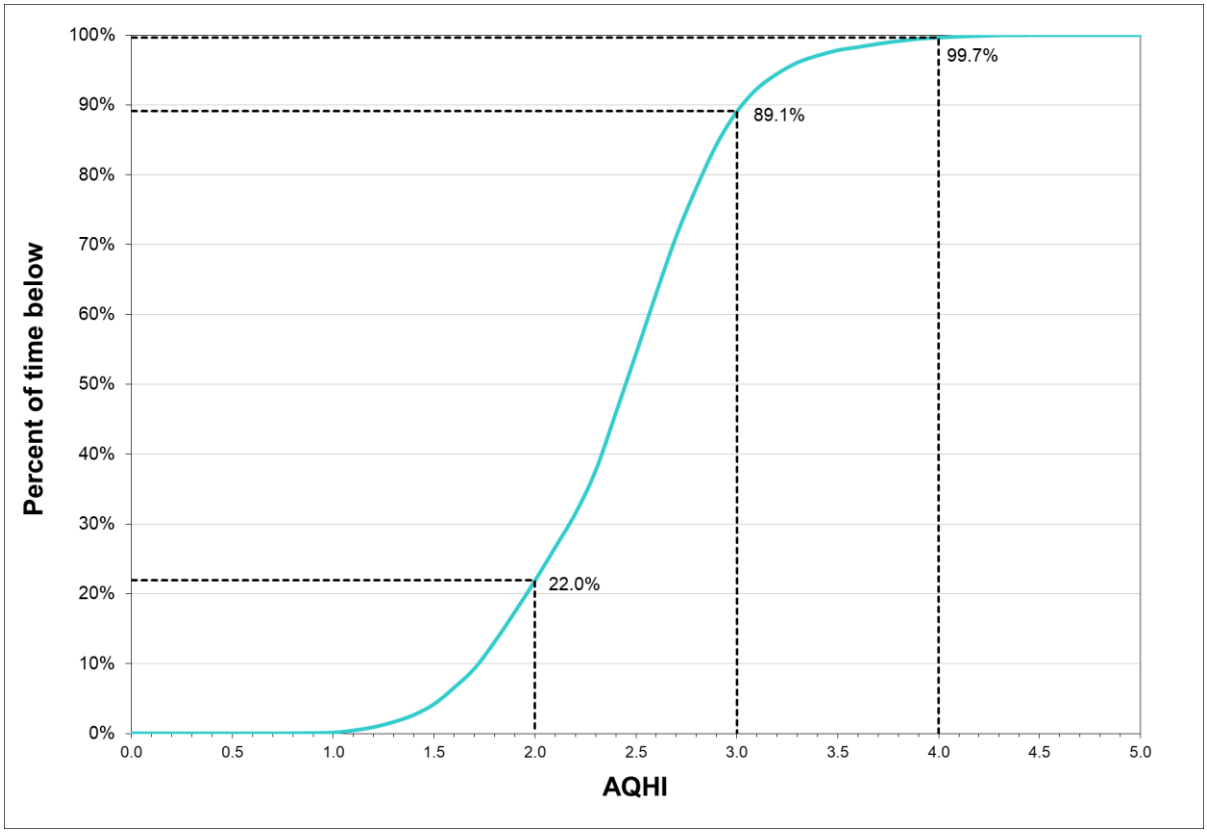


Rolling annual average of hourly concentrations

TABLE 4.3.2.6 - HUDSON DRIVE (FIREHALL) AQHI SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 3-Hour
2021	January	742	99.7%	2.4	4.3
	February	629	93.6%	2.5	4.9
	March	722	97.0%	2.5	4.4
	April	720	100.0%	2.6	4.2
	May	647	87.0%	2.5	3.7
	June	211	29.3%	2.8	4.1
	July	0			
	August	7	0.9%	0.8	1.0
	September	657	91.3%	1.4	2.9
	October	736	98.9%	2.0	3.7
	November	697	96.8%	2.0	2.9
	December	739	99.3%	2.3	3.4
Annual		6507	74.3%		4.9
2022	January	658	88.4%	2.6	4.2
	February	657	97.8%	2.7	4.4
	March	738	99.2%	2.6	3.7
	April	720	100.0%	2.7	4.2
	May	744	100.0%	2.7	4.3
	June	695	96.5%	2.2	4.0
	July	688	92.5%	1.9	3.1
	August	742	99.7%	2.1	3.8
	September	707	98.2%	2.1	3.2
	October	736	98.9%	2.5	4.0
	November	387	53.8%	2.4	3.3
	December	0			
Annual		7472	85.3%		4.4

FIGURE 4.3.2.6 - HUDSON DRIVE (FIREHALL) AQHI FREQUENCY DISTRIBUTION 2022



e.g. 89.1% 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 SO_2, NO_x / NO_2, and $PM_{2.5}$ air quality standards were not exceeded on any occasion in 2022. For TPM the 24-hour air quality standard was exceeded on two occasions in November. Activities from Moss Pit appeared to be the major contributing factor to the TPM exceedances.

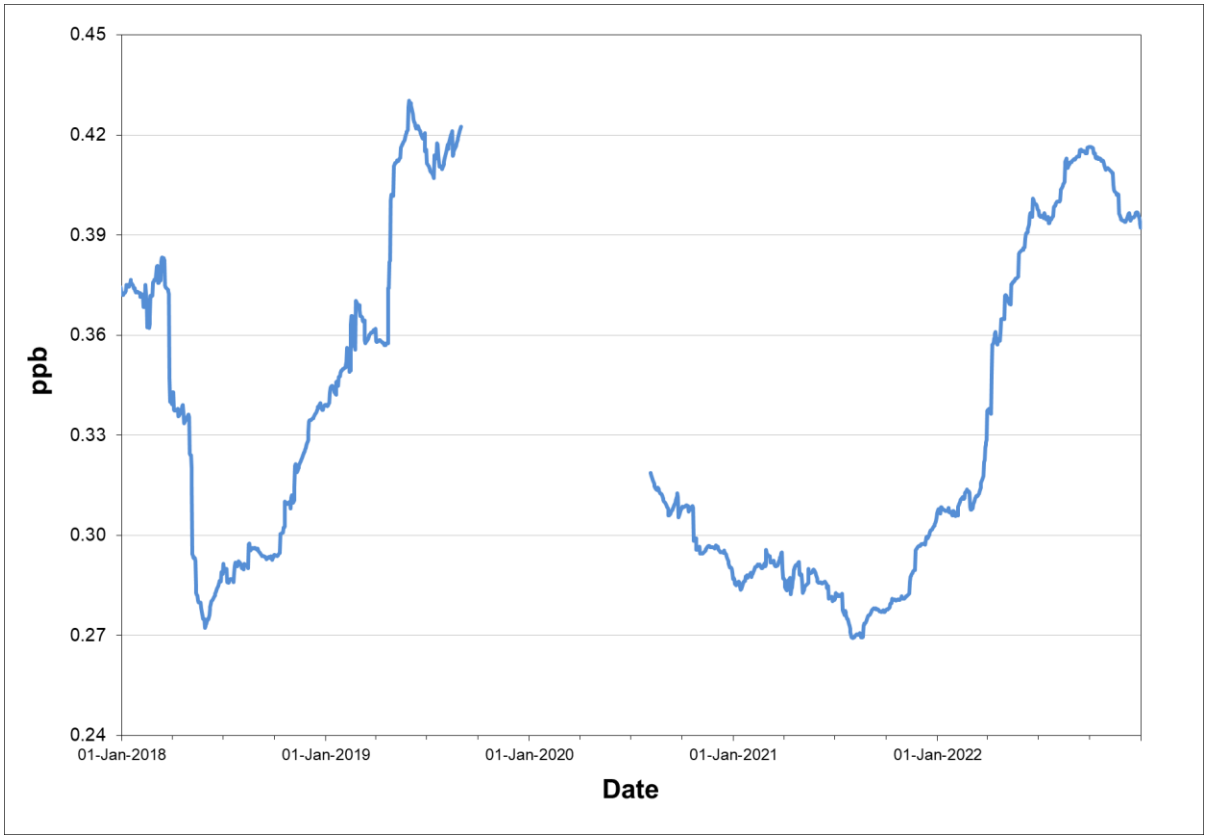
Tables 4.3.3.1 through 4.3.3.4 provide summary information on the level of air contaminants measured at Smokey Mountain II. Figures 4.3.3.1 through 4.3.3.4 provide the graphical representation of the annual trends for each pollutant.

TABLE 4.3.3.1 - SMOKEY MOUNTAIN II SO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	744	100.0%	0.3	6.6	4.5	0.8	0	0	0
	February	663	98.7%	0.3	20.6	10.7	1.7	0	0	0
	March	744	100.0%	0.3	6.6	4.4	0.9	0	0	0
	April	720	100.0%	0.4	11.3	4.5	1.1	0	0	0
	May	744	100.0%	0.4	12.3	7.0	1.7	0	0	0
	June	702	97.5%	0.3	3.6	1.6	0.6	0	0	0
	July	655	88.0%	0.2	8.6	5.3	0.9	0	0	0
	August	723	97.2%	0.3	9.3	5.7	1.4	0	0	0
	September	707	98.2%	0.3	3.5	1.2	0.5	0	0	0
	October	741	99.6%	0.3	7.3	2.8	0.7	0	0	0
	November	717	99.6%	0.4	9.8	6.7	2.3	0	0	0
	December	744	100.0%	0.3	5.3	2.9	0.8	0	0	0
Annual		8604	98.2%	0.3	20.6	10.7	2.3	0	0	0
2022	January	744	100.0%	0.3	3.7	2.9	0.9	0	0	0
	February	667	99.3%	0.3	11.8	7.3	1.3	0	0	0
	March	739	99.3%	0.6	18.9	7.5	3.6	0	0	0
	April	719	99.9%	0.7	17.9	12.2	4.6	0	0	0
	May	744	100.0%	0.6	17.7	12.3	2.7	0	0	0
	June	700	97.2%	0.4	12.6	6.2	2.5	0	0	0
	July	744	100.0%	0.3	13.8	5.5	1.2	0	0	0
	August	743	99.9%	0.4	11.1	10.0	2.0	0	0	0
	September	693	96.3%	0.4	8.9	4.7	1.1	0	0	0
	October	739	99.3%	0.2	0.9	0.4	0.3	0	0	0
	November	718	99.7%	0.2	4.7	2.1	0.5	0	0	0
	December	744	100.0%	0.3	0.6	0.5	0.4	0	0	0
Annual		8694	99.2%	0.4	18.9	12.3	4.6	0	0	0

Observations in ppb

FIGURE 4.3.3.1 - SMOKEY MOUNTAIN II ANNUAL SO_2 CONCENTRATIONS



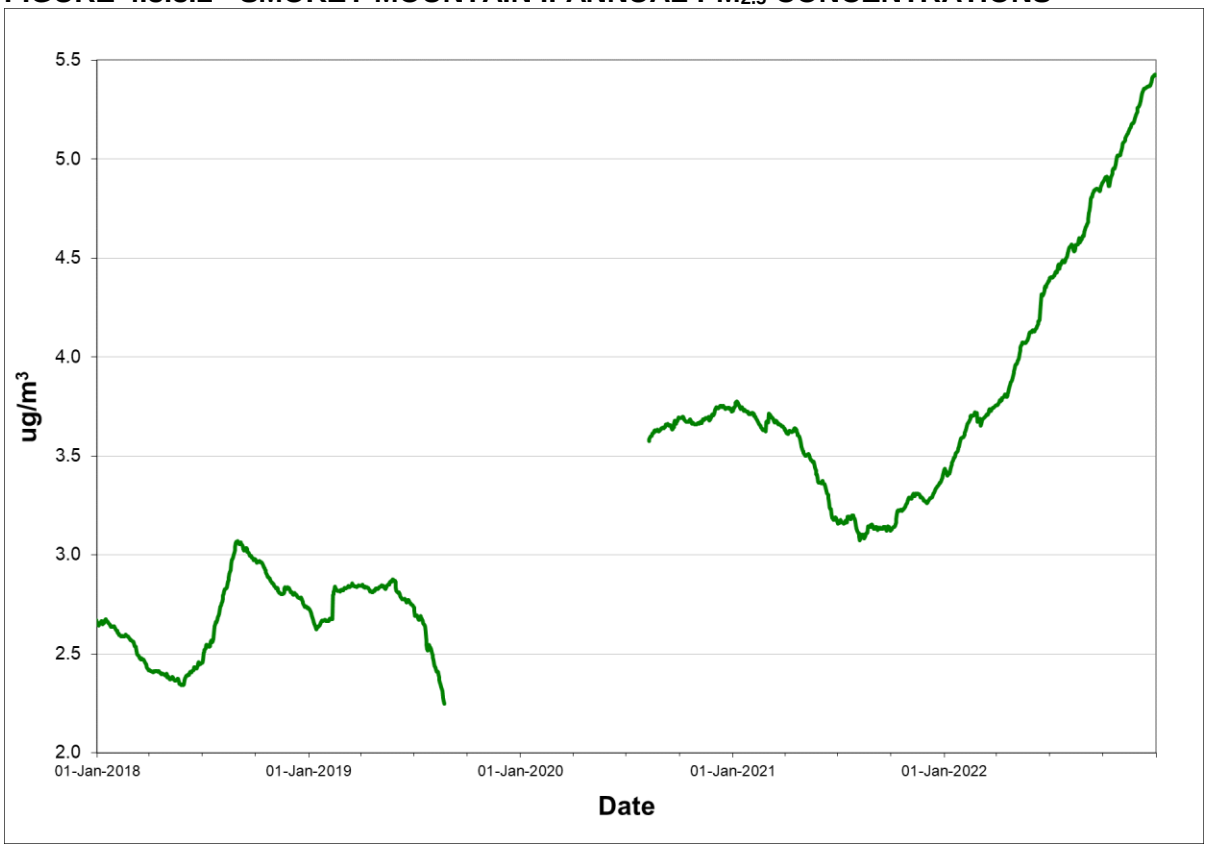
Rolling annual average of hourly concentrations

TABLE 4.3.3.2 - SMOKEY MOUNTAIN II $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	29	93.5%	2.4	6.8	0
	February	27	96.4%	3.0	19.5	0
	March	31	100.0%	3.8	18.3	0
	April	30	100.0%	3.2	7.3	0
	May	30	96.8%	2.9	7.0	0
	June	24	80.0%	2.4	6.1	0
	July	29	93.5%	3.6	13.6	0
	August	29	93.5%	4.6	14.0	0
	September	29	96.7%	3.7	6.8	0
	October	23	74.2%	5.1	10.3	0
	November	30	100.0%	2.5	5.1	0
	December	31	100.0%	4.1	6.8	0
Annual		342	93.7%	3.4	19.5	0
2022	January	31	100.0%	4.3	6.9	0
	February	28	100.0%	4.1	7.2	0
	March	31	100.0%	4.7	7.2	0
	April	30	100.0%	5.1	7.5	0
	May	31	100.0%	5.2	8.5	0
	June	24	80.0%	6.1	17.2	0
	July	30	96.8%	5.1	11.2	0
	August	31	100.0%	6.1	10.8	0
	September	28	93.3%	6.6	14.3	0
	October	31	100.0%	6.6	12.8	0
	November	30	100.0%	5.3	10.7	0
	December	29	93.5%	6.1	11.1	0
Annual		354	97.0%	5.4	17.2	0

Observations in µg/m³

FIGURE 4.3.3.2 - SMOKEY MOUNTAIN II ANNUAL $PM_{2.5}$ CONCENTRATIONS



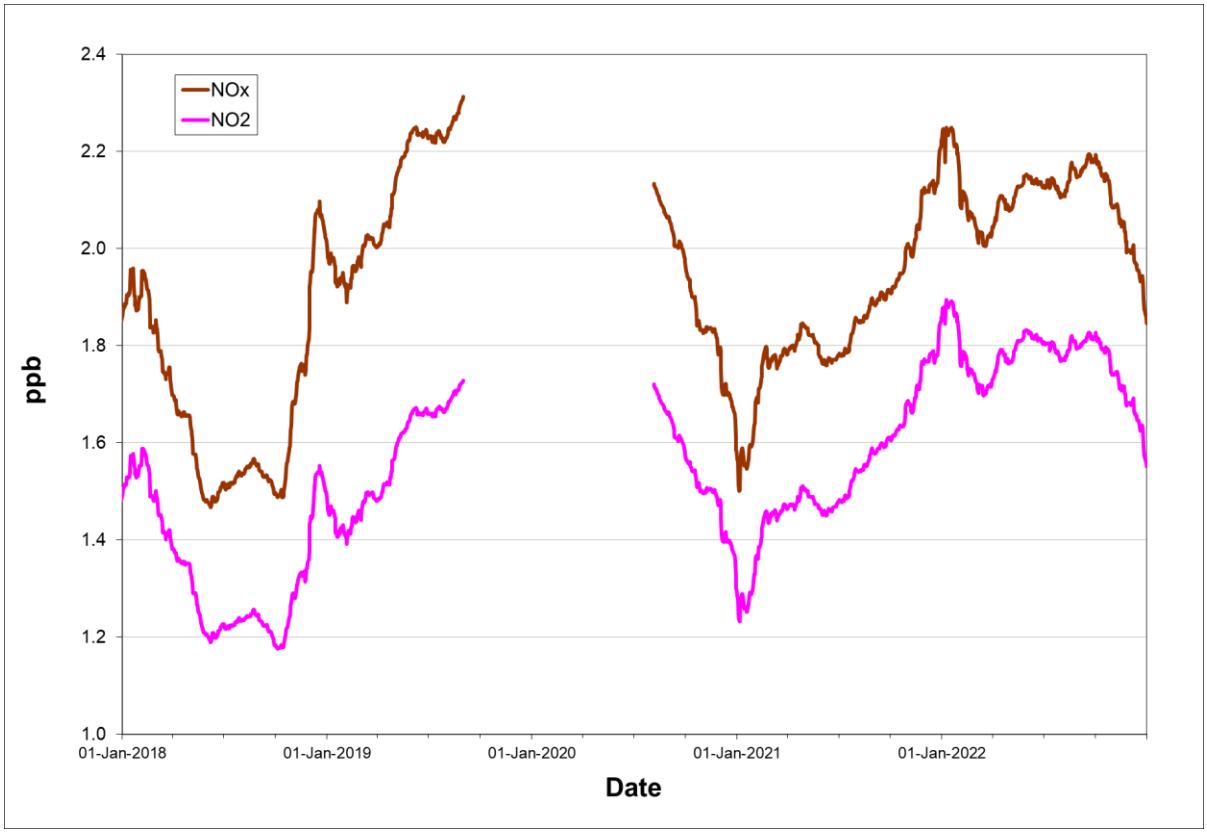
Rolling annual average of hourly concentrations

TABLE 4.3.3.3 - SMOKEY MOUNTAIN II NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	741	99.6%	3.6	2.8	76.2	29.9	25.1	14.5	0	0
	February	670	99.7%	3.7	3.0	69.4	41.6	20.4	15.6	0	0
	March	743	99.9%	2.2	1.8	22.7	19.4	5.9	5.3	0	0
	April	717	99.6%	1.9	1.6	34.9	31.4	8.1	7.1	0	0
	May	744	100.0%	0.7	0.6	10.4	10.2	2.7	2.4	0	0
	June	700	97.2%	1.4	1.2	22.2	21.7	4.0	3.4	0	0
	July	742	99.7%	1.9	1.6	39.0	18.7	5.0	4.6	0	0
	August	723	97.2%	1.6	1.3	18.8	14.8	4.6	3.8	0	0
	September	706	98.1%	1.4	1.1	46.2	16.2	4.6	3.7	0	0
	October	741	99.6%	2.5	2.1	29.4	22.5	7.0	6.4	0	0
	November	717	99.6%	2.9	2.4	142.7	54.7	11.3	9.9	0	0
	December	744	100.0%	3.1	2.7	36.0	33.4	13.0	12.0	0	0
Annual		8688	99.2%	2.2	1.9	142.7	54.7	25.1	15.6	0	0
2022	January	744	100.0%	2.9	2.4	66.6	37.9	22.4	15.8	0	0
	February	670	99.7%	2.2	1.9	26.2	18.8	9.5	8.1	0	0
	March	739	99.3%	2.1	1.7	55.3	33.0	9.8	7.7	0	0
	April	719	99.9%	2.3	2.0	30.4	25.2	7.8	6.5	0	0
	May	744	100.0%	1.6	1.5	15.7	15.7	5.1	4.4	0	0
	June	702	97.5%	1.1	0.9	18.3	12.7	3.6	2.7	0	0
	July	744	100.0%	1.6	1.1	136.9	23.8	6.6	3.0	0	0
	August	743	99.9%	2.1	1.7	33.0	18.3	4.9	4.1	0	0
	September	693	96.3%	1.8	1.4	62.3	14.7	5.6	3.0	0	0
	October	741	99.6%	1.3	1.1	29.1	21.6	6.2	5.0	0	0
	November	719	99.9%	1.8	1.7	23.3	21.7	5.5	5.3	0	0
	December	743	99.9%	1.3	1.2	35.4	22.6	6.4	5.2	0	0
Annual		8701	99.3%	1.8	1.6	136.9	37.9	22.4	15.8	0	0

Observations in ppb

FIGURE 4.3.3.3 - SMOKEY MOUNTAIN II ANNUAL NO_X / NO_2 CONCENTRATIONS



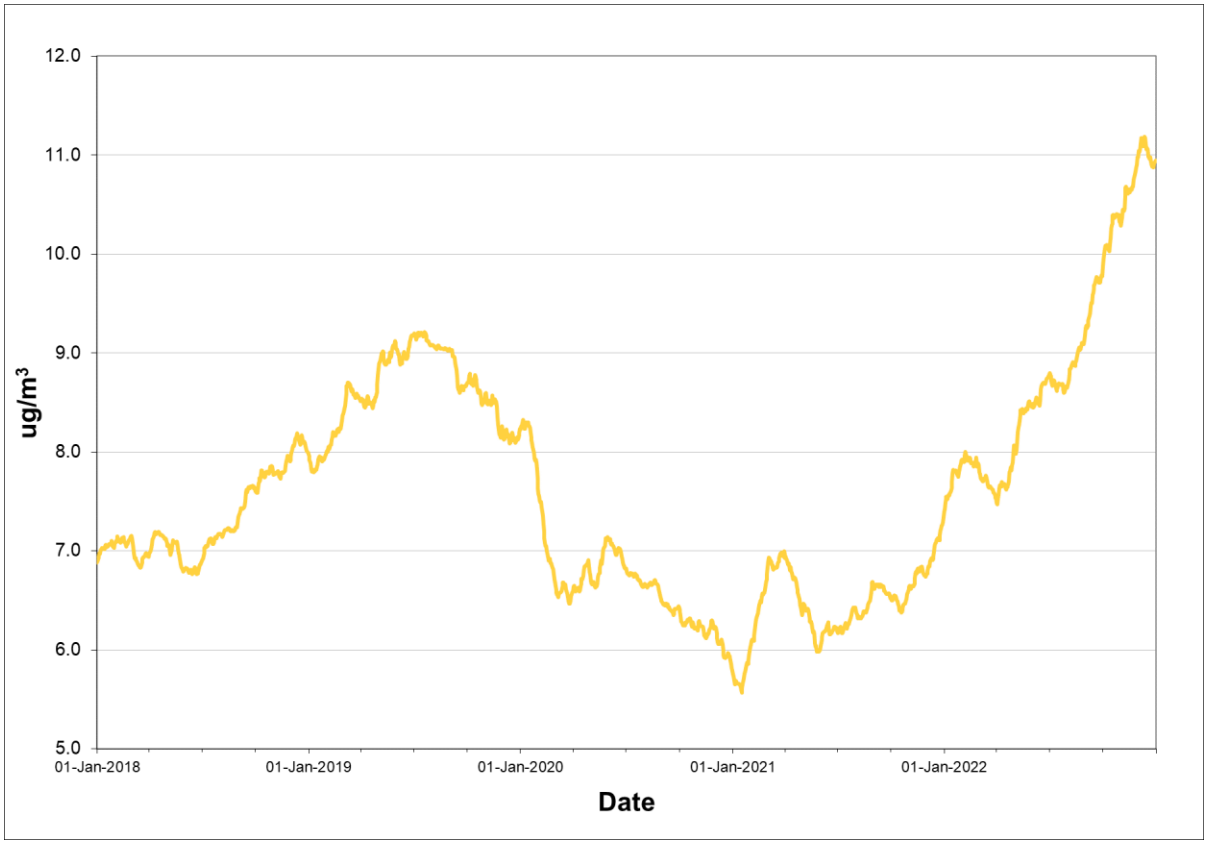
Rolling annual average of hourly concentrations

TABLE 4.3.3.4 - SMOKEY MOUNTAIN II TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	26	83.9%	5.4	23.9	0
	February	28	100.0%	13.0	87.6	0
	March	31	100.0%	14.9	106.0	0
	April	30	100.0%	4.9	55.3	0
	May	31	100.0%	6.2	57.3	0
	June	24	80.0%	9.5	33.2	0
	July	31	100.0%	11.0	61.5	0
	August	29	93.5%	7.9	26.2	0
	September	29	96.7%	3.9	22.6	0
	October	24	77.4%	4.5	24.8	0
	November	30	100.0%	6.0	49.9	0
	December	30	96.8%	8.6	68.2	0
Annual		343	94.0%	7.4	106.0	0
2022	January	31	100.0%	12.5	51.5	0
	February	28	100.0%	12.1	48.8	0
	March	29	93.5%	9.0	56.3	0
	April	30	100.0%	10.9	79.2	0
	May	31	100.0%	10.5	91.0	0
	June	23	76.7%	16.8	43.2	0
	July	31	100.0%	9.4	18.6	0
	August	31	100.0%	15.5	43.0	0
	September	28	93.3%	8.2	19.0	0
	October	31	100.0%	9.9	53.0	0
	November	25	83.3%	12.8	167.9	2
	December	29	93.5%	8.2	32.8	0
Annual		347	95.1%	10.9	167.9	2

Observations in µg/m³

FIGURE 4.3.3.4 - SMOKEY MOUNTAIN II ANNUAL TPM CONCENTRATIONS



Rolling annual average of hourly concentrations

4.4 Tacora Resources

In 2022 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 the Tacora iron ore mine, concentrator / processing facility and the tailings near Wabush. The location of these monitoring stations are identified in Figure 4.4.1.

FIGURE 4.4.1 - TACORA RESOURCES AMBIENT MONITORING STATIONS

4.4.1 Bond Street

The Bond Street monitoring station is located near the Provincial Building and measured SO_2, $PM_{2.5}$ and TPM on a continuous basis in 2022. For both SO_2 and $PM_{2.5}$ there were no exceedances of the associated air quality standards were recorded on any occasion during the year. For TPM, there was an exceedance of the 24-hour standard in May. The exceedance was attributable to fugitive dust episode stemming from mining operations in the vicinity, and enhanced by high winds and low humidity.

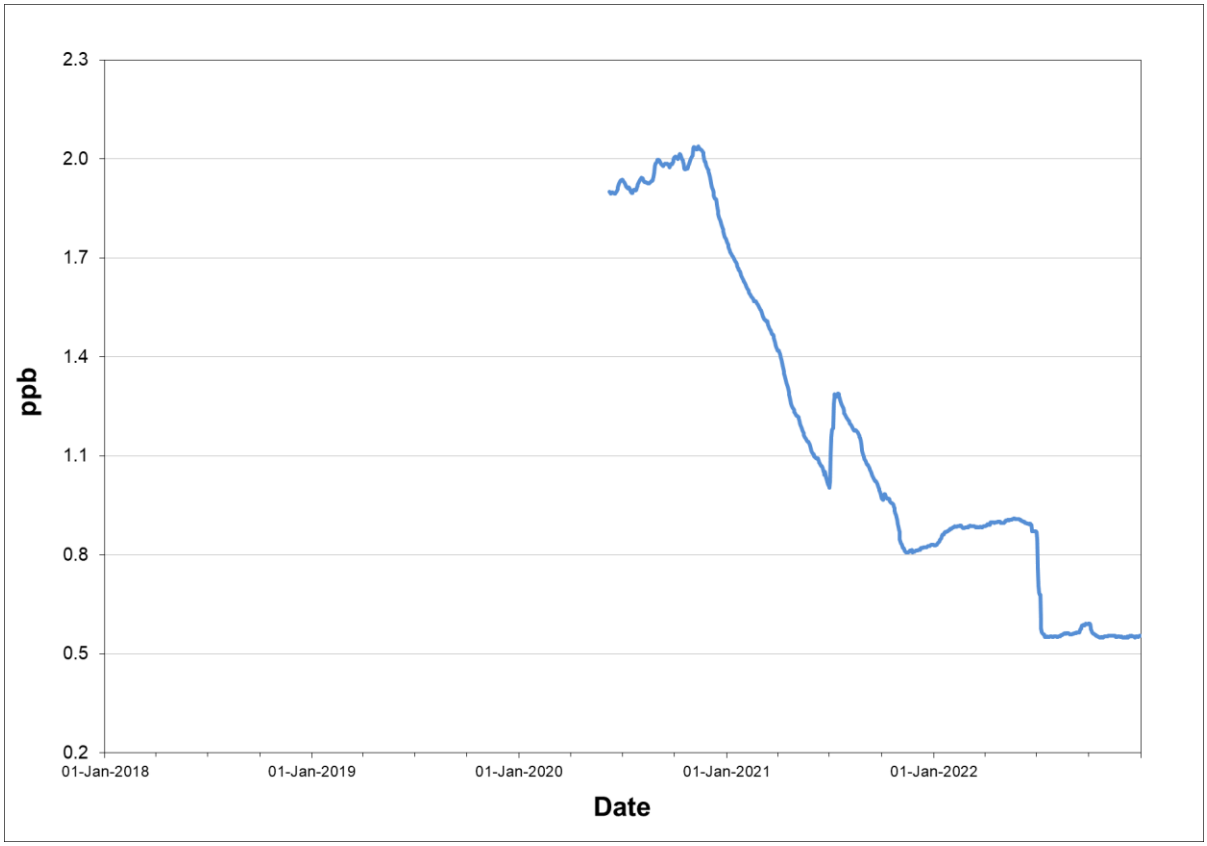
Tables 4.4.1.1 to 4.4.1.3 provide summary information of air contaminants measured at Bond Street, while Figures 4.4.1.1 to 4.4.1.3 provide a graphical representation of the annual trend of SO_2, $PM_{2.5}$ and TPM respectively.

TABLE 4.4.1.1 - BOND STREET SO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	652	87.6%	0.3	10.1	5.2	1.4	0	0	0
	February	657	97.8%	0.6	8.6	4.7	1.9	0	0	0
	March	744	100.0%	0.6	10.4	6.9	1.6	0	0	0
	April	719	99.9%	0.3	8.9	5.6	0.9	0	0	0
	May	735	98.8%	0.4	4.8	2.2	0.8	0	0	0
	June	695	96.5%	0.9	59.4	31.4	7.1	0	0	0
	July	730	98.1%	4.1	83.2	79.8	30.5	0	0	0
	August	667	89.7%	0.6	8.1	3.8	1.5	0	0	0
	September	661	91.8%	0.3	5.7	3.9	1.0	0	0	0
	October	728	97.8%	0.8	24.3	21.8	4.9	0	0	0
	November	715	99.3%	0.5	7.5	5.3	1.1	0	0	0
	December	739	99.3%	0.5	7.6	5.0	1.5	0	0	0
Annual		8442	96.4%	0.8	83.2	79.8	30.5	0	0	0
2022	January	720	96.8%	0.9	20.5	8.4	3.1	0	0	0
	February	608	90.5%	0.6	11.1	4.5	1.2	0	0	0
	March	681	91.5%	0.6	13.5	9.5	1.9	0	0	0
	April	714	99.2%	0.4	19.4	7.9	2.4	0	0	0
	May	743	99.9%	0.5	10.2	4.6	1.4	0	0	0
	June	675	93.8%	0.4	3.8	2.4	1.2	0	0	0
	July	740	99.5%	0.5	3.8	2.3	0.9	0	0	0
	August	733	98.5%	0.6	12.4	6.3	2.0	0	0	0
	September	696	96.7%	0.8	9.7	6.9	2.6	0	0	0
	October	736	98.9%	0.4	3.7	2.9	0.9	0	0	0
	November	718	99.7%	0.4	3.8	2.8	1.0	0	0	0
	December	666	89.5%	0.6	12.2	8.2	2.3	0	0	0
Annual		8430	96.2%	0.6	20.5	9.5	3.1	0	0	0

Observations in ppb

FIGURE 4.4.1.1 - BOND STREET ANNUAL SO_2 CONCENTRATIONS



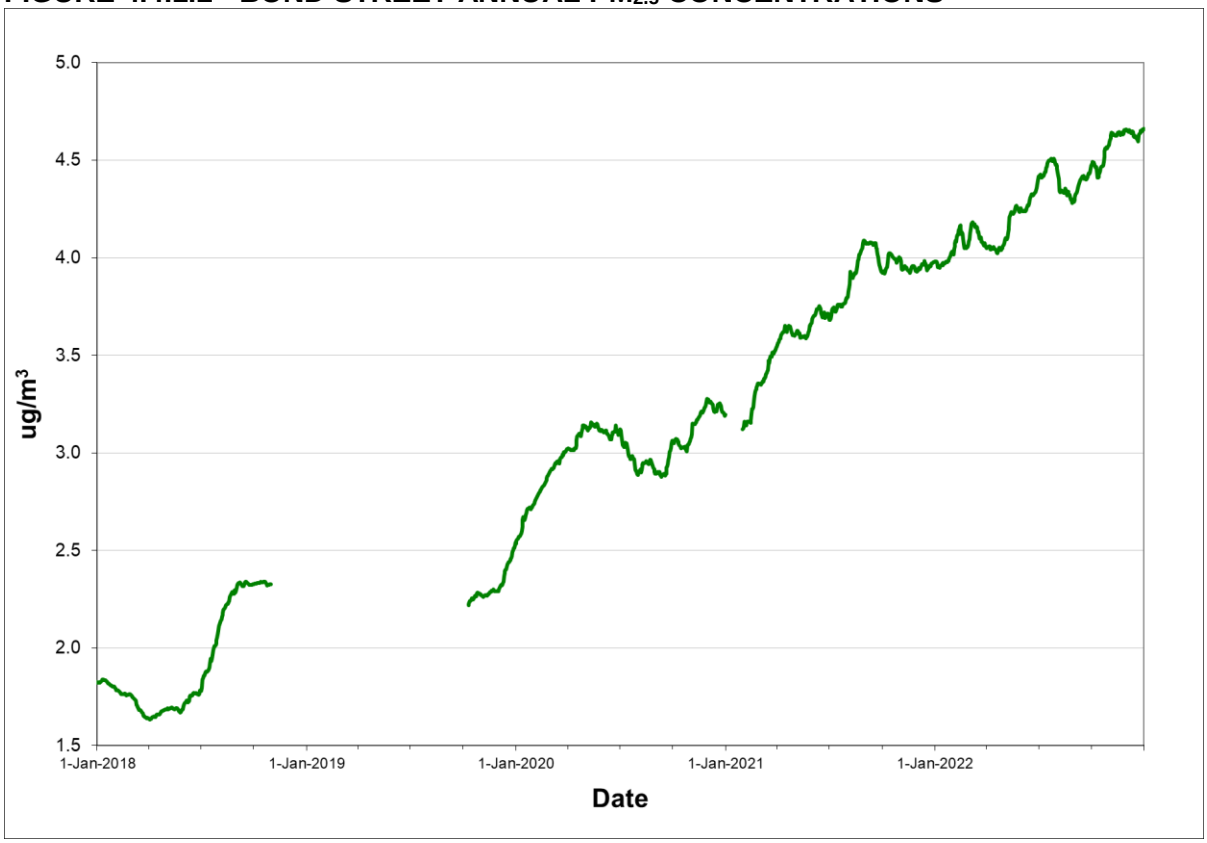
Rolling annual average of daily concentrations

TABLE 4.4.1.2 - BOND STREET $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	27	87.1%	3.5	12.4	0
	February	28	100.0%	5.9	14.0	0
	March	31	100.0%	4.6	11.8	0
	April	30	100.0%	3.0	8.2	0
	May	29	93.5%	2.5	9.4	0
	June	29	96.7%	2.6	7.4	0
	July	25	80.6%	4.2	10.1	0
	August	29	93.5%	7.6	24.1	0
	September	29	96.7%	2.3	7.5	0
	October	31	100.0%	3.8	11.9	0
	November	30	100.0%	3.5	7.3	0
	December	25	80.6%	4.3	9.8	0
Annual		343	94.0%	4.0	24.1	0
2022	January	4	12.9%	4.7	6.0	0
	February	24	85.7%	6.7	11.5	0
	March	27	87.1%	4.6	13.3	0
	April	30	100.0%	3.1	8.1	0
	May	31	100.0%	4.5	16.4	0
	June	27	90.0%	4.4	8.0	0
	July	27	87.1%	5.0	11.3	0
	August	29	93.5%	5.6	11.4	0
	September	29	96.7%	4.3	6.8	0
	October	31	100.0%	4.8	11.0	0
	November	30	100.0%	4.4	9.0	0
	December	31	100.0%	4.4	12.4	0
Annual		320	87.7%	4.7	16.4	0

Observations in µg/m³

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



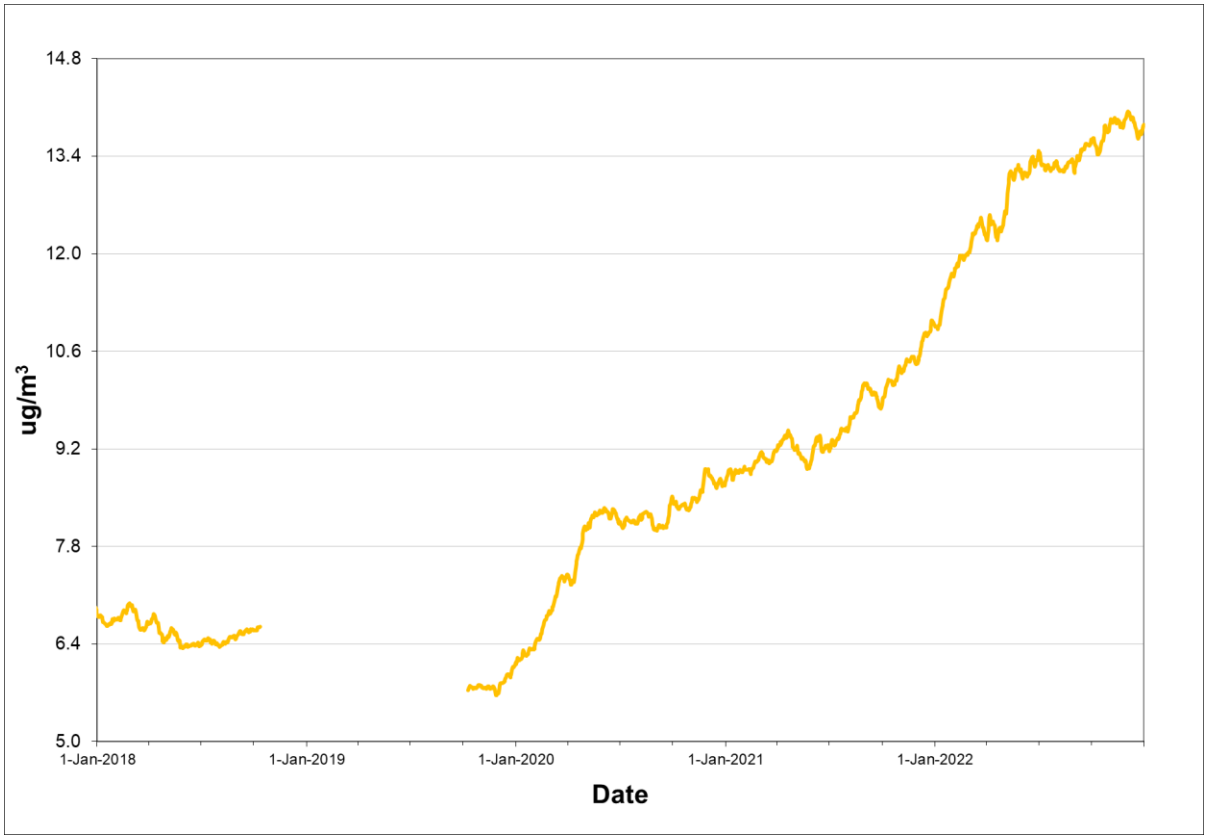
Rolling annual average of daily concentrations

TABLE 4.4.1.3 - BOND STREET TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	27	87.1%	6.3	35.3	0
	February	24	85.7%	11.1	31.2	0
	March	31	100.0%	10.6	69.0	0
	April	28	93.3%	15.0	75.0	0
	May	29	93.5%	12.8	74.4	0
	June	29	96.7%	12.3	71.1	0
	July	24	77.4%	16.3	83.8	0
	August	26	83.9%	17.7	39.8	0
	September	21	70.0%	6.5	18.0	0
	October	26	83.9%	11.0	38.0	0
	November	30	100.0%	8.6	31.8	0
	December	28	90.3%	9.4	26.5	0
Annual		323	88.5%	11.0	83.8	0
2022	January	31	100.0%	13.1	41.9	0
	February	28	100.0%	15.5	50.3	0
	March	31	100.0%	13.0	44.5	0
	April	30	100.0%	17.1	78.5	0
	May	28	90.3%	27.2	129.3	1
	June	25	83.3%	15.4	35.0	0
	July	31	100.0%	14.2	32.3	0
	August	29	93.5%	15.0	46.0	0
	September	29	96.7%	11.9	27.9	0
	October	31	100.0%	12.6	59.8	0
	November	30	100.0%	10.1	26.8	0
	December	28	90.3%	8.5	50.7	0
Annual		351	96.2%	13.9	129.3	1

Observations in µg/m³

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 is located near the J.R. Smallwood School. The station measures $PM_{2.5}$ and TPM on a continuous basis. Both monitors did not record an exceedance in 2022. In late November the datalogger was hacked, resulting in no data collection and requiring replacement. This work had not been completed by the end of the 2022.

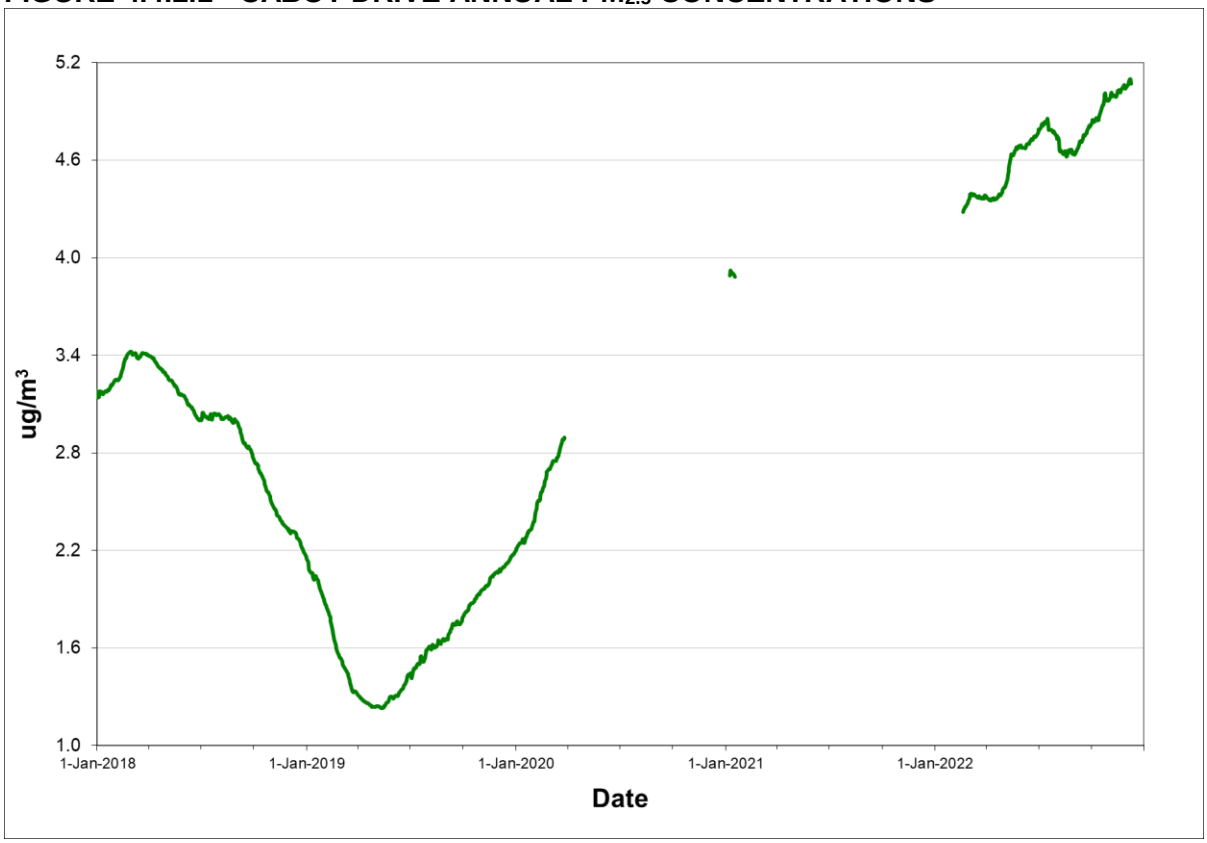
Tables 4.4.2.1 and 4.4.2.2 provide summary information of air contaminants measured at Cabot Drive while figures 4.4.2.1 and 4.4.2.2 present the annual trend of $PM_{2.5}$ and TPM respectively.

TABLE 4.4.2.1 - CABOT DRIVE $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	7	22.6%	5.4	15.3	0
	February	2	7.1%	5.4	7.4	0
	March	7	22.6%	3.0	4.5	0
	April	25	83.3%	2.8	10.3	0
	May	31	100.0%	2.5	7.0	0
	June	26	86.7%	3.2	8.6	0
	July	26	83.9%	5.8	19.7	0
	August	30	96.8%	7.4	24.6	0
	September	27	90.0%	2.6	7.6	0
	October	31	100.0%	3.5	10.7	0
	November	30	100.0%	3.8	9.2	0
	December	31	100.0%	4.4	13.7	0
Annual		273	74.8%		24.6	0
2022	January	29	93.5%	6.1	10.3	0
	February	27	96.4%	6.1	10.0	0
	March	31	100.0%	4.4	13.0	0
	April	28	93.3%	3.5	6.3	0
	May	29	93.5%	5.6	11.8	0
	June	26	86.7%	4.4	8.0	0
	July	19	61.3%	5.7	12.4	0
	August	30	96.8%	6.2	15.3	0
	September	13	43.3%	4.6	10.4	0
	October	11	35.5%	5.2	9.5	0
	November	23	76.7%	4.4	8.7	0
	December	0				
Annual		266	72.9%		15.3	0

Observations in µg/m³

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



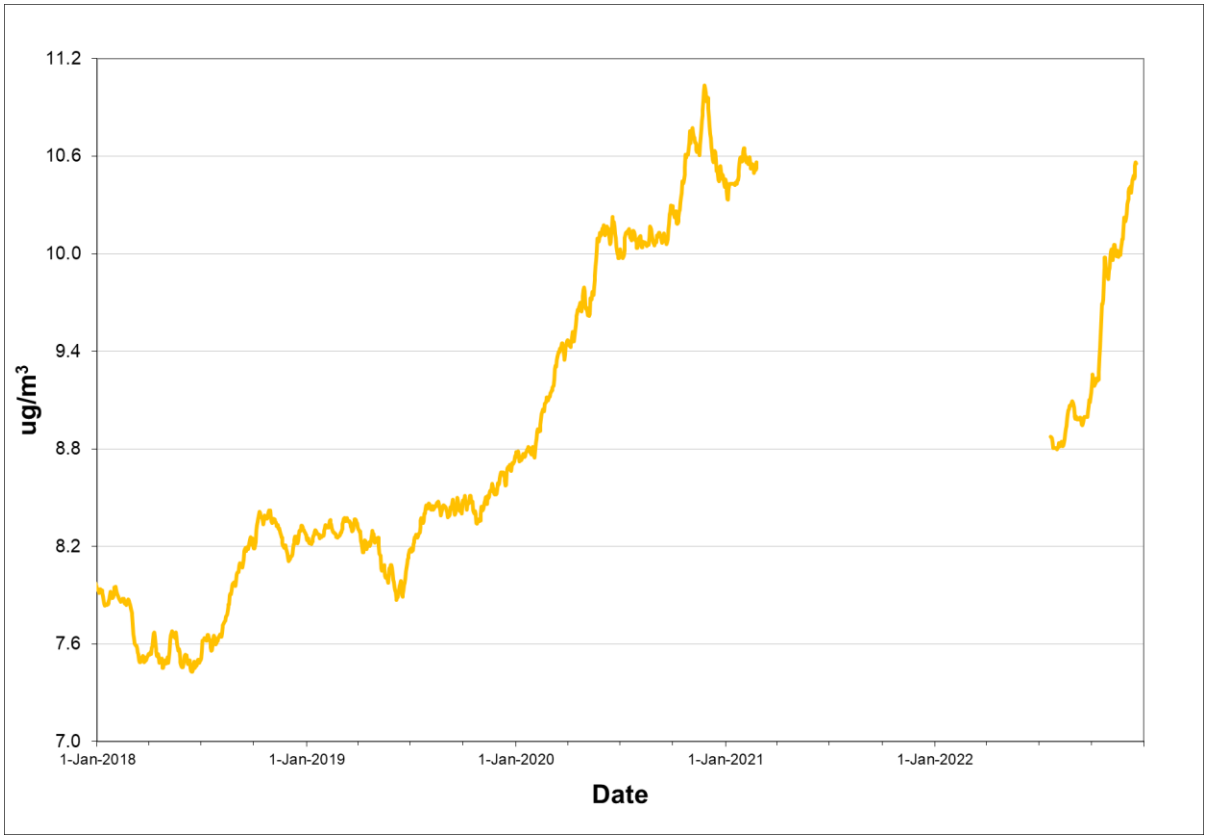
Rolling annual average of daily concentrations

TABLE 4.4.2.2 - CABOT DRIVE TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	6	19.4%	4.7	29.3	0
	February	2	7.1%	5.8	8.0	0
	March	8	25.8%	14.3	87.6	0
	April	29	96.7%	14.7	66.7	0
	May	14	45.2%	15.7	45.0	0
	June	0	0.0%			
	July	0	0.0%			
	August	0	0.0%			
	September	6	20.0%	3.8	15.5	0
	October	29	93.5%	3.9	41.2	0
	November	30	100.0%	5.9	19.1	0
	December	21	67.7%	6.4	29.5	0
Annual		145	39.7%		87.6	0
2022	January	23	74.2%	9.2	18.3	0
	February	28	100.0%	9.1	37.3	0
	March	31	100.0%	8.0	34.3	0
	April	28	93.3%	15.7	98.6	0
	May	29	93.5%	21.7	103.2	0
	June	29	96.7%	11.8	35.0	0
	July	24	77.4%	8.0	29.1	0
	August	28	90.3%	11.9	37.7	0
	September	17	56.7%	8.0	19.5	0
	October	11	35.5%	8.1	28.2	0
	November	23	76.7%	7.6	66.8	0
	December	0	0.0%			
Annual		271	74.2%		103.2	0

Observations in µg/m³

FIGURE 4.4.2.2 - CABOT DRIVE ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.5 Corner Brook Pulp and Paper

In 2022, Corner Brook Pulp and Paper (CBPP) operated one monitoring station near CBPP's paper mill operation on Main Street. The location of this monitoring station is identified in Figure 4.5.1.

FIGURE 4.5.1 - CBPP AMBIENT MONITORING STATION

4.5.1 Main Street

The Main Street monitoring station is located at Hotel Corner Brook. The station monitors ambient levels of SO_2, $PM_{2.5}$ and TPM on a continuous basis. The station, until July 2018 monitored TPM on a 1-day in 6-day cycle, however the manual monitor was replaced with the continuous monitor. For SO_2 and $PM_{2.5}$, there were no recorded exceedances of the associated air quality standards in 2022. The TPM monitor was taken off-line in early February due to mechanical issues and not repaired / replaced by year end as CBPP are in the process of upgrading their monitoring network.

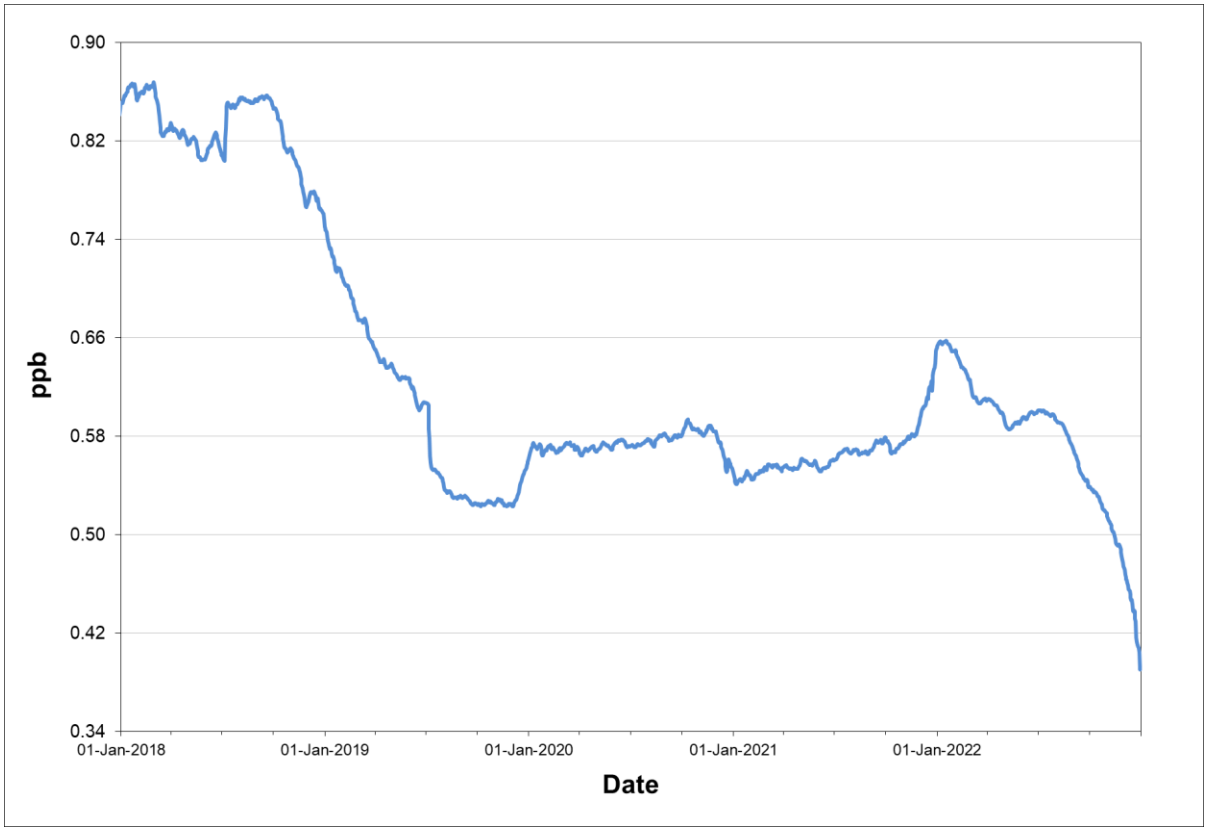
Tables 4.5.1.1 through 4.5.1.3 provide summary information on the level of air contaminants measured at the Main Street Station, while Figures 4.5.1.1 through 4.5.1.3 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.5.1.1 - MAIN STREET SO_2 SUMMARY 2021 & 2022

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>344)	Regulatory Exceedances 3-Hour (>229)	Regulatory Exceedances 24-Hour (>115)
2021	January	744	100.0%	0.7	1.3	1.2	1.1	0	0	0
	February	672	100.0%	0.7	1.3	1.2	1.0	0	0	0
	March	743	99.9%	0.6	1.7	1.6	1.4	0	0	0
	April	714	99.2%	0.5	1.3	1.0	0.9	0	0	0
	May	744	100.0%	0.5	1.3	1.2	1.1	0	0	0
	June	715	99.3%	0.5	2.4	1.2	1.0	0	0	0
	July	713	95.8%	0.5	6.6	2.7	0.9	0	0	0
	August	743	99.9%	0.5	2.2	1.7	0.8	0	0	0
	September	719	99.9%	0.6	1.2	1.2	1.0	0	0	0
	October	642	86.3%	0.6	1.5	1.4	1.1	0	0	0
	November	720	100.0%	0.8	1.7	1.7	1.5	0	0	0
	December	712	95.7%	1.5	19.1	17.0	4.8	0	0	0
Annual		8581	98.0%	0.7	19.1	17.0	4.8	0	0	0
2022	January	247	33.2%	0.6	1.1	1.1	0.7	0	0	0
	February	661	98.4%	0.4	0.8	0.8	0.5	0	0	0
	March	702	94.4%	0.4	1.1	1.1	0.6	0	0	0
	April	595	82.6%	0.3	0.9	0.9	0.6	0	0	0
	May	678	91.1%	0.5	1.7	1.2	0.7	0	0	0
	June	418	58.1%	0.5	2.3	0.9	0.6	0	0	0
	July	701	94.2%	0.4	1.9	1.6	0.7	0	0	0
	August	709	95.3%	0.3	0.6	0.5	0.3	0	0	0
	September	642	89.2%	0.2	0.6	0.4	0.3	0	0	0
	October	731	98.3%	0.3	0.6	0.6	0.5	0	0	0
	November	716	99.4%	0.4	1.0	0.9	0.7	0	0	0
	December	640	86.0%	0.6	1.2	1.1	0.8	0	0	0
Annual		7440	84.9%	0.4	2.3	1.6	0.8	0	0	0

Observations in ppb

FIGURE 4.5.1.1 - MAIN STREET ANNUAL SO_2 CONCENTRATIONS



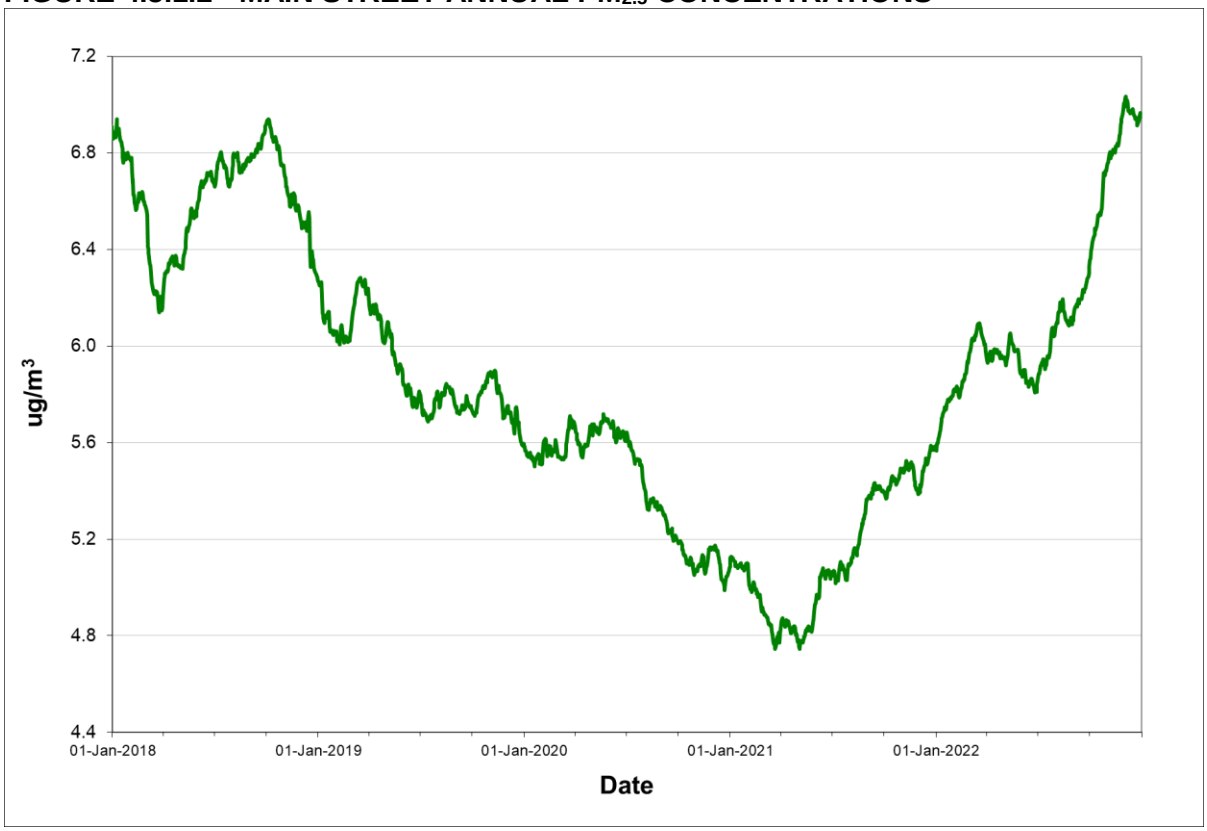
Rolling annual average of hourly concentrations

TABLE 4.5.1.2 - MAIN STREET $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	24	77.4%	4.2	13.2	0
	February	28	100.0%	5.6	12.3	0
	March	22	71.0%	7.1	16.5	0
	April	30	100.0%	5.1	10.9	0
	May	31	100.0%	7.2	15.9	0
	June	30	100.0%	6.5	19.3	0
	July	29	93.5%	5.5	17.0	0
	August	31	100.0%	6.8	16.9	0
	September	30	100.0%	3.7	10.9	0
	October	26	83.9%	5.0	13.1	0
	November	30	100.0%	4.0	9.7	0
	December	31	100.0%	6.3	16.3	0
Annual		342	93.7%	5.6	19.3	0
2022	January	31	100.0%	6.8	12.8	0
	February	28	100.0%	7.5	14.7	0
	March	31	100.0%	6.8	13.5	0
	April	30	100.0%	5.0	14.2	0
	May	16	51.6%	7.0	18.9	0
	June	18	60.0%	6.4	12.3	0
	July	31	100.0%	7.8	14.0	0
	August	31	100.0%	7.3	18.9	0
	September	25	83.3%	6.1	11.0	0
	October	31	100.0%	9.6	22.3	0
	November	30	100.0%	6.9	14.8	0
	December	27	87.1%	5.5	13.0	0
Annual		329	90.1%	6.9	22.3	0

Observations in µg/m³

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



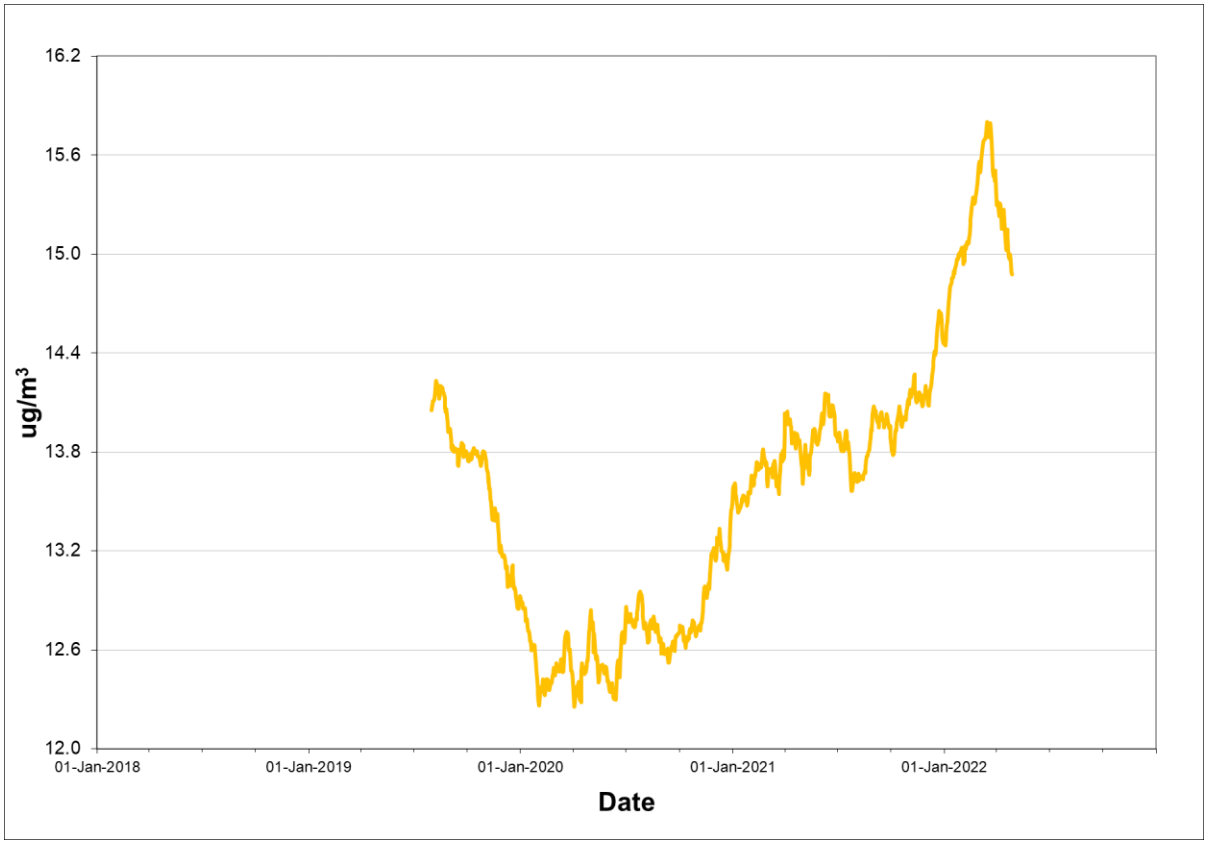
Rolling annual average of hourly concentrations

TABLE 4.5.1.3 - MAIN STREET TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	31	100.0%	6.4	17.9	0
	February	28	100.0%	10.5	91.4	0
	March	31	100.0%	16.4	102.5	0
	April	30	100.0%	21.8	104.6	0
	May	31	100.0%	24.9	116.6	0
	June	30	100.0%	23.7	74.0	0
	July	29	93.5%	17.7	53.1	0
	August	31	100.0%	20.2	39.8	0
	September	30	100.0%	11.6	23.8	0
	October	26	83.9%	12.2	34.9	0
	November	30	100.0%	10.9	32.8	0
	December	31	100.0%	10.5	26.4	0
Annual		358	98.1%	14.5	116.6	0
2022	January	31	100.0%	9.9	16.8	0
	February	2	7.1%	12.7	15.9	0
	March	0	0.0%			
	April	0	0.0%			
	May	0	0.0%			
	June	0	0.0%			
	July	0	0.0%			
	August	0	0.0%			
	September	0	0.0%			
	October	0	0.0%			
	November	0	0.0%			
	December	0	0.0%			
Annual		33	9.0%			

Observations in µg/m³

FIGURE 4.5.1.3 - MAIN STREET ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.6 Vale Newfoundland and Labrador Limited - Voisey's Bay

In 2022, Vale Newfoundland and Labrador Limited 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, near the Crusher and at the Port Site near the concentrate storage facility. The location 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 NO_x / NO_2, the air quality standards were not exceeded on any occasion in 2022, however for $PM_{2.5}$, the 24-hour air quality standard was exceeded on three occasions, twice in October and once in November. All three exceedances were related to general dusting due to dry conditions.

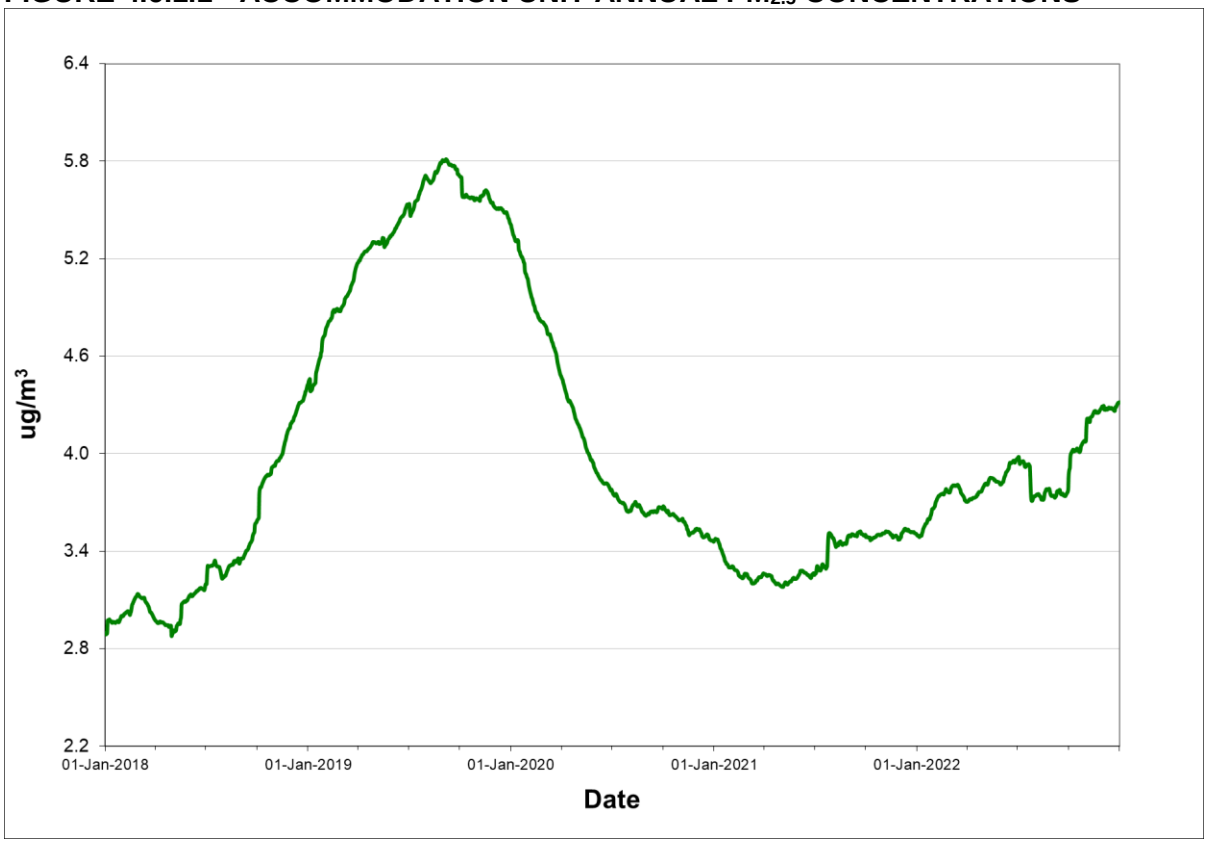
Tables 4.6.1.1 through 4.6.1.2 provide summary information on the level of air contaminants measured at the Accommodation Unit, while Figures 4.6.1.1 through 4.6.1.2 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.6.1.1 - ACCOMMODATION UNIT $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	31	100.0%	3.1	6.0	0
	February	28	100.0%	3.9	8.0	0
	March	31	100.0%	4.1	7.5	0
	April	30	100.0%	2.2	4.6	0
	May	28	90.3%	3.0	5.7	0
	June	30	100.0%	2.9	7.4	0
	July	31	100.0%	6.2	35.7	2
	August	31	100.0%	4.1	8.7	0
	September	30	100.0%	3.2	9.7	0
	October	23	74.2%	2.5	6.9	0
	November	28	93.3%	2.7	8.0	0
	December	31	100.0%	3.7	12.5	0
Annual		352	96.4%	3.5	35.7	2
2022	January	31	100.0%	4.9	10.3	0
	February	28	100.0%	5.1	8.9	0
	March	28	90.3%	3.5	5.7	0
	April	28	93.3%	3.2	5.6	0
	May	31	100.0%	3.3	6.5	0
	June	30	100.0%	4.8	8.5	0
	July	31	100.0%	3.6	5.6	0
	August	31	100.0%	4.1	9.8	0
	September	30	100.0%	3.7	7.8	0
	October	24	77.4%	6.9	35.2	2
	November	28	93.3%	5.4	37.2	1
	December	25	80.6%	3.9	10.3	0
Annual		345	94.5%	4.3	37.2	3

Observations in µg/m³

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



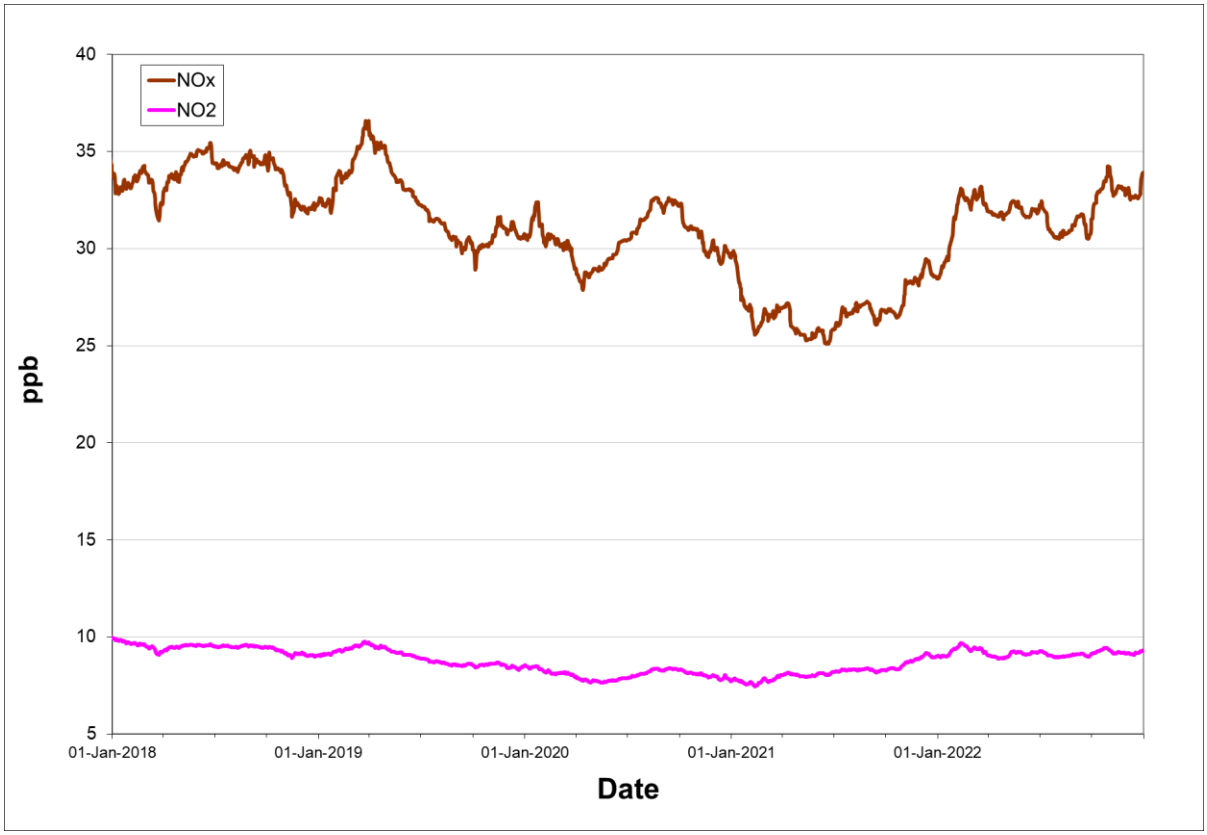
Rolling annual average of daily concentrations

TABLE 4.6.1.2 - ACCOMMODATION UNIT NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	720	96.8%	35.0	13.0	465.4	49.5	179.2	28.3	0	0
	February	670	99.7%	53.4	16.6	496.8	59.5	121.0	32.2	0	0
	March	743	99.9%	38.9	13.0	642.3	75.1	169.2	35.3	0	0
	April	677	94.0%	12.3	5.8	486.6	40.9	110.3	16.3	0	0
	May	740	99.5%	15.1	4.8	405.2	46.2	132.0	19.0	0	0
	June	720	100.0%	16.7	4.9	476.7	31.9	124.7	16.8	0	0
	July	680	91.4%	29.9	6.8	360.6	30.8	107.5	18.4	0	0
	August	737	99.1%	23.7	6.0	437.1	34.3	130.6	16.3	0	0
	September	718	99.7%	23.2	5.8	420.3	38.2	191.6	21.3	0	0
	October	741	99.6%	19.7	8.0	275.9	36.7	72.4	22.6	0	0
	November	719	99.9%	42.9	11.9	496.6	37.4	217.4	25.3	0	0
	December	741	99.6%	31.5	11.6	313.5	38.3	113.8	23.0	0	0
Annual		8606	98.2%	28.4	9.0	642.3	75.1	217.4	35.3	0	0
2022	January	744	100.0%	71.9	17.5	630.5	51.3	232.3	28.0	0	0
	February	672	100.0%	57.9	15.1	447.7	42.3	147.2	28.3	0	0
	March	741	99.6%	38.3	10.3	446.7	49.6	162.7	28.4	0	0
	April	718	99.7%	11.0	4.4	447.3	40.9	81.4	12.6	0	0
	May	740	99.5%	16.2	7.2	203.0	52.3	80.3	28.1	0	0
	June	697	96.8%	21.6	6.4	263.5	30.9	93.1	14.0	0	0
	July	743	99.9%	10.3	3.6	328.3	25.1	84.9	11.2	0	0
	August	742	99.7%	31.0	7.3	398.2	38.9	165.9	23.8	0	0
	September	717	99.6%	27.2	6.6	576.8	33.1	174.6	17.1	0	0
	October	735	98.8%	51.3	10.3	617.8	34.9	231.8	24.0	0	0
	November	720	100.0%	27.8	9.9	409.0	38.7	85.9	19.9	0	0
	December	743	99.9%	42.3	12.9	511.8	41.3	242.9	31.5	0	0
Annual		8712	99.5%	33.9	9.3	630.5	52.3	242.9	31.5	0	0

Observations in ppb

FIGURE 4.6.1.2 - ACCOMMODATION UNIT ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations

4.6.2 Crusher Site

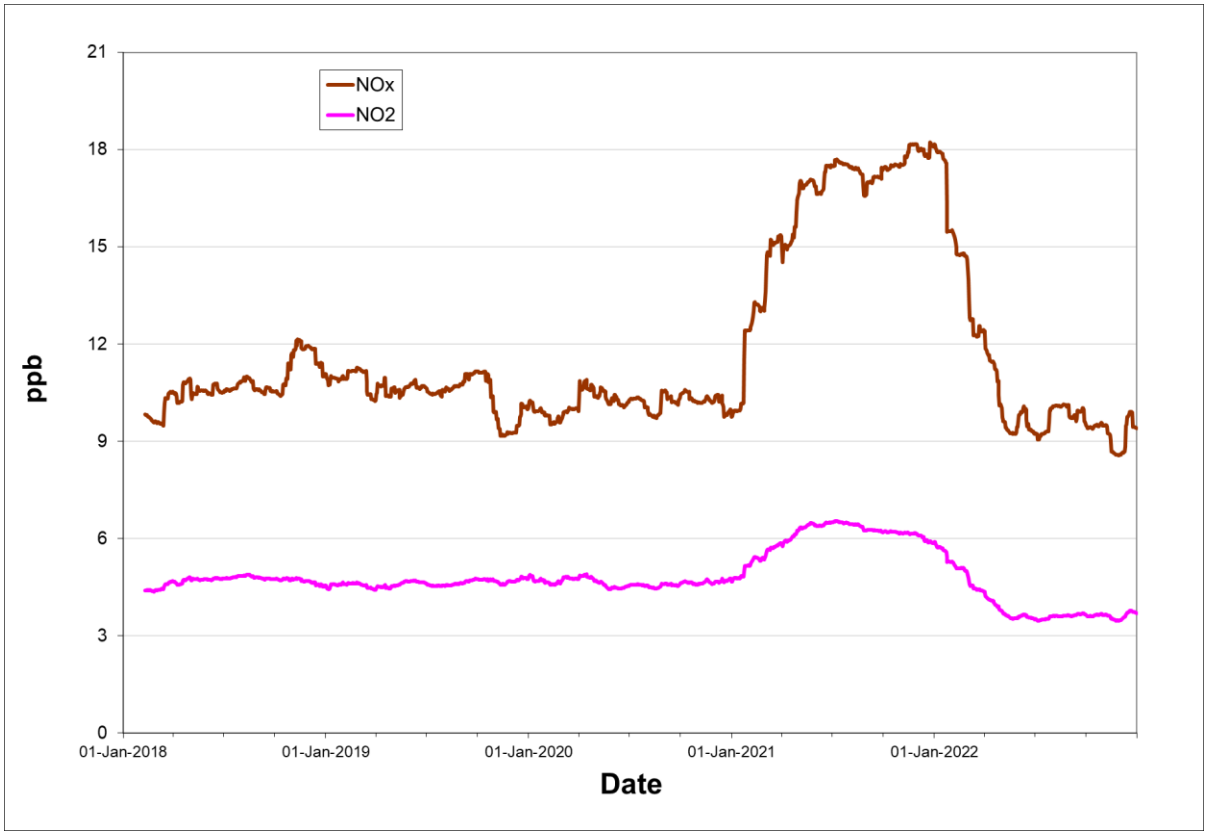
The Crusher Site station monitors the ambient levels of NO_x / NO_2 on a continuous basis. The air quality standards were not exceeded on any occasion in 2022. Table 4.6.2.1 provides summary information on the level of air contaminants measured at the Crusher Site, while Figure 4.6.2.1 provides a graphical representation of the annual trend.

TABLE 4.6.2.1 - CRUSHER SITE NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	715	96.1%	35.5	9.8	664.1	81.1	476.1	60.6	0	0
	February	659	98.1%	15.6	7.2	467.4	80.2	123.7	26.9	0	0
	March	732	98.4%	36.6	11.1	615.4	83.1	225.0	38.7	0	0
	April	706	98.1%	35.2	10.3	535.9	66.3	168.3	36.3	0	0
	May	723	97.2%	15.1	6.0	491.1	51.0	109.2	18.5	0	0
	June	710	98.6%	17.4	5.5	283.2	29.9	117.4	17.9	0	0
	July	744	100.0%	6.2	2.9	297.1	26.8	64.3	8.8	0	0
	August	730	98.1%	5.2	2.5	102.1	18.7	23.1	6.9	0	0
	September	709	98.5%	18.9	3.7	437.2	17.0	140.4	8.8	0	0
	October	739	99.3%	7.1	3.4	171.4	32.8	30.3	11.9	0	0
	November	713	99.0%	14.5	4.8	548.8	31.0	114.1	11.7	0	0
	December	707	95.0%	10.7	3.5	502.7	31.6	174.5	15.4	0	0
Annual		8587	98.0%	18.1	5.9	664.1	83.1	476.1	60.6	0	0
2022	January	744	100.0%	4.3	2.9	113.4	29.7	27.6	14.4	0	0
	February	647	96.3%	5.4	3.4	90.4	36.1	30.1	18.5	0	0
	March	739	99.3%	9.4	3.5	483.4	23.6	114.0	9.2	0	0
	April	717	99.6%	7.9	3.5	200.1	22.3	37.6	7.0	0	0
	May	729	98.0%	6.8	3.0	392.1	23.2	66.7	8.0	0	0
	June	709	98.5%	14.8	5.1	288.5	36.8	72.3	11.1	0	0
	July	744	100.0%	15.4	4.0	310.6	35.0	138.0	18.2	0	0
	August	744	100.0%	6.3	2.8	133.9	18.8	24.0	6.5	0	0
	September	720	100.0%	11.9	4.0	280.5	29.6	99.8	13.5	0	0
	October	740	99.5%	6.4	3.3	131.7	22.8	44.0	13.6	0	0
	November	720	100.0%	3.5	2.7	36.1	23.1	13.8	11.2	0	0
	December	735	98.8%	20.3	6.1	603.1	41.3	253.3	24.7	0	0
Annual		8688	99.2%	9.4	3.7	603.1	41.3	253.3	24.7	0	0

Observations in ppb

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 air quality standard was exceeded on eight occasions in 2022, due in large part to the construction and associated activities of new silos in the general vicinity which began in the spring of 2021. One exceedance was also attributable to ship-loading activities. Of the eight exceedances, one occurred in May, one occurred in June, two in August, one in September and three in October.

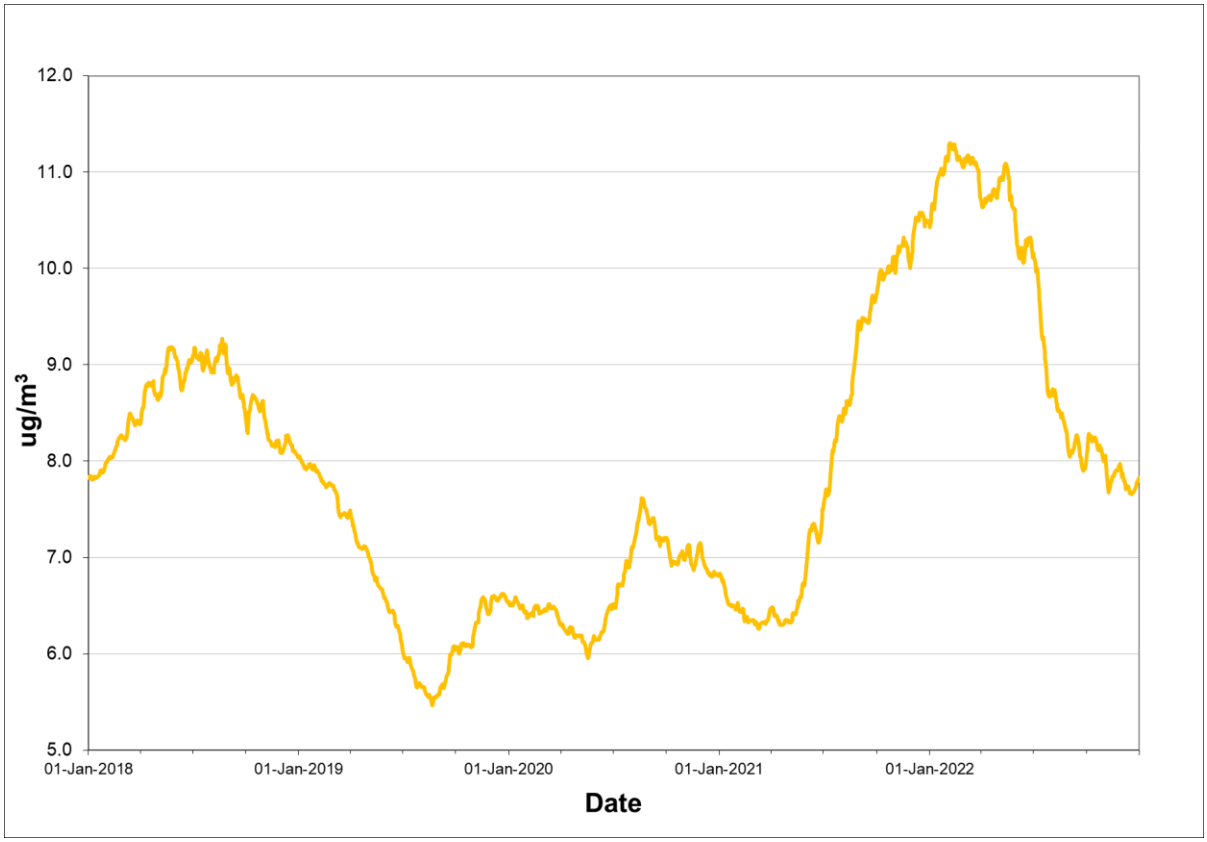
Table 4.6.3.1 provides summary information on the level of air contaminants measured at the Port Site, while Figure 4.6.3.1 provides a graphical representation of the annual trend.

TABLE 4.6.3.1 - PORT SITE TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	31	100.0%	3.1	9.3	0
	February	28	100.0%	5.3	15.7	0
	March	31	100.0%	7.0	62.7	0
	April	26	86.7%	3.6	20.2	0
	May	31	100.0%	11.0	236.0	3
	June	30	100.0%	21.8	233.9	5
	July	25	80.6%	55.9	382.0	7
	August	31	100.0%	41.9	292.0	8
	September	28	93.3%	13.9	186.4	2
	October	25	80.6%	11.7	45.8	0
	November	30	100.0%	9.0	264.4	2
	December	31	100.0%	6.0	63.0	0
Annual		347	95.1%	10.5	382.0	27
2022	January	31	100.0%	6.2	55.5	0
	February	28	100.0%	4.8	24.1	0
	March	31	100.0%	4.9	15.5	0
	April	30	100.0%	4.6	17.5	0
	May	31	100.0%	7.4	180.4	1
	June	30	100.0%	15.9	157.9	1
	July	31	100.0%	7.0	44.7	0
	August	31	100.0%	17.5	264.6	2
	September	30	100.0%	12.0	143.5	1
	October	25	80.6%	11.9	515.4	3
	November	26	86.7%	7.4	31.5	0
	December	30	96.8%	5.3	40.3	0
Annual		354	97.0%	7.8	515.4	8

Observations in µg/m³

FIGURE 4.6.3.1 - PORT SITE ANNUAL TPM CONCENTRATIONS



Rolling annual average of daily concentrations

4.7 Vale Newfoundland and Labrador Limited - Long Harbour

Vale Newfoundland and Labrador Limited operates a monitoring network in the Long Harbour / Mt. Arlington Heights area to monitor the air quality near its Hydromet Nickel Processing facility. The network monitors levels of NO_x / NO_2 as well as $PM_{2.5}$ and PM_{10}. In 2022, Vale operated two stations; near the Community Centre in Long Harbour, and near the Access Road to the Hydromet facility. Vale had previously operated a third station along the main road in Long Harbour, however that station was decommissioned in August 2021. The location of the monitoring 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 monitors the ambient levels of $PM_{2.5}$, PM_{10} and NO_x / NO_2 on a continuous basis. In May 2021, the $PM_{2.5}$ BAM was replaced with a Teledyne API T640 capable of measuring both $PM_{2.5}$ and PM_{10}. The air quality standards for all pollutants was not exceeded in 2022.

On November 23, 2021 the datalogger at this site was hit by a cyber attack, resulting in no data collection until the issue was resolved. Data from the T640 was able to be retrieved directly from the monitor, however data from the NO_x / NO_2 monitor was not. Full service was not re-instated until April 2022.

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) $PM_{2.5}$ / PM_{10} SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average $PM_{2.5}$	Average PM_{10}	24-Hour Maximum $PM_{2.5}$	24-Hour Maximum PM_{10}	Regulatory Exceedances $PM_{2.5}$ (>25)	Regulatory Exceedances PM_{10} (>50)
2021	January	31	100.0%	3.9		9.4		0	
	February	28	100.0%	4.8		13.1		0	
	March	31	100.0%	7.4		15.1		0	
	April	19	63.3%	5.8		25.0		0	
	May	6	19.4%	5.7	11.7	8.9	17.7	0	0
	June	30	100.0%	5.1	9.9	19.6	29.9	0	0
	July	31	100.0%	4.2	8.1	8.1	14.4	0	0
	August	31	100.0%	5.3	10.2	9.7	20.5	0	0
	September	30	100.0%	4.4	9.6	8.1	18.5	0	0
	October	31	100.0%	2.9	6.3	5.3	10.9	0	0
	November	30	100.0%	3.8	8.4	7.6	16.9	0	0
	December	31	100.0%	3.7	8.5	7.5	17.1	0	0
Annual		329	90.1%	4.6		25.0	29.9	0	0
2022	January	31	100.0%	4.3	9.5	7.8	18.3	0	0
	February	28	100.0%	4.4	9.7	10.9	23.6	0	0
	March	31	100.0%	4.4	9.6	7.7	17.9	0	0
	April	30	100.0%	4.1	8.8	8.5	18.6	0	0
	May	31	100.0%	3.4	6.9	7.1	14.9	0	0
	June	30	100.0%	3.6	7.3	8.7	17.8	0	0
	July	31	100.0%	5.2	9.5	9.2	18.4	0	0
	August	31	100.0%	4.1	7.6	9.0	15.5	0	0
	September	30	100.0%	3.8	8.6	11.6	27.6	0	0
	October	31	100.0%	4.4	9.4	10.3	18.8	0	0
	November	30	100.0%	4.4	9.8	11.0	21.0	0	0
	December	29	93.5%	3.7	8.1	9.1	16.7	0	0
Annual		363	99.5%	4.2	8.7	11.6	27.6	0	0

Observations in $\mu g/m^3$

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

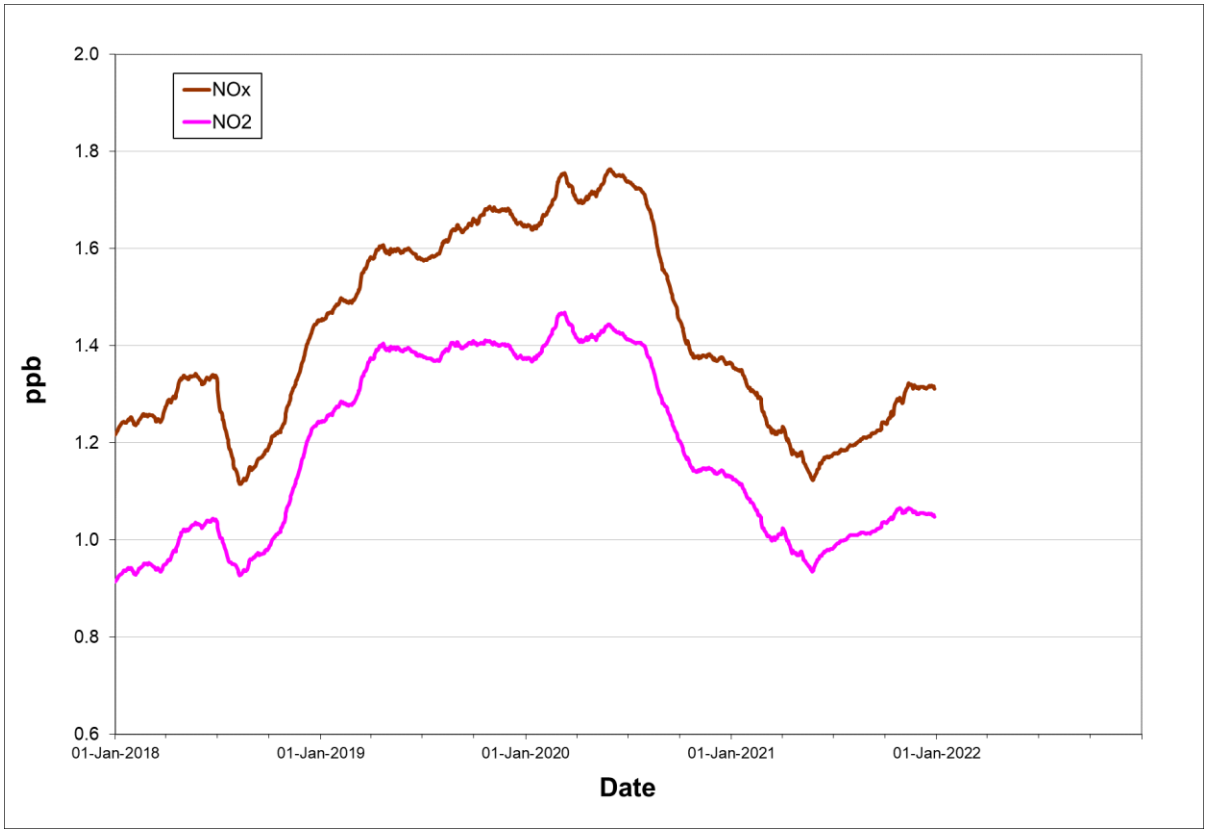
Rolling annual average of daily concentrations

TABLE 4.7.1.2 - COMMUNITY CENTRE (AM1) NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	637	85.6%	1.5	1.4	8.1	7.1	3.4	2.8	0	0
	February	613	91.2%	1.6	1.3	5.1	4.3	2.4	2.0	0	0
	March	669	89.9%	1.7	1.7	6.7	6.3	3.0	2.9	0	0
	April	649	90.1%	1.5	1.3	7.1	6.6	3.7	3.0	0	0
	May	739	99.3%	1.4	1.2	6.3	4.8	3.3	2.8	0	0
	June	718	99.7%	1.2	0.9	11.1	5.1	3.5	2.0	0	0
	July	742	99.7%	0.7	0.6	6.9	5.9	1.3	1.1	0	0
	August	742	99.7%	0.6	0.3	6.8	4.1	1.4	0.7	0	0
	September	717	99.6%	0.9	0.6	12.3	9.6	3.2	2.1	0	0
	October	742	99.7%	1.5	1.0	13.4	6.0	5.4	2.4	0	0
	November	535	74.3%	2.2	1.5	12.5	5.5	4.8	2.7	0	0
	December	0									
Annual		7503	85.7%	1.3	1.0	13.4	9.6	5.4	3.0	0	0
2022	January	0	0.0%								
	February	50	7.4%	1.0	0.9	2.0	1.8	1.5	1.4	0	0
	March	105	14.1%	1.6	1.5	5.4	4.4	2.3	2.0	0	0
	April	610	84.7%	1.9	1.4	32.9	5.6	4.6	3.5	0	0
	May	742	99.7%	1.8	1.4	6.7	5.4	3.3	2.7	0	0
	June	719	99.9%	1.2	0.8	10.1	4.6	3.7	2.3	0	0
	July	742	99.7%	0.4	0.3	3.8	2.8	0.7	0.6	0	0
	August	741	99.6%	0.4	0.3	3.8	3.1	0.7	0.5	0	0
	September	718	99.7%	0.6	0.3	5.4	2.8	1.6	0.8	0	0
	October	743	99.9%	1.2	0.7	13.4	4.4	2.8	1.5	0	0
	November	717	99.6%	1.8	1.4	8.4	5.6	4.1	2.2	0	0
	December	699	94.0%	1.9	1.5	8.9	7.1	3.2	2.7	0	0
Annual		6586	75.2%			32.9	7.1	4.6	3.5	0	0

Observations in ppb

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



Rolling annual average of hourly concentrations

4.7.2 Access Road (AM3)

The Access Road (AM3) station is installed near the Vale security gate and monitors the ambient levels of $PM_{2.5}$, PM_{10} and NO_x / NO_2 on a continuous basis. For all pollutants, the associated air quality standards were not exceeded during 2022. In May 2021, the BAM $PM_{2.5}$ was replaced with a Teledyne API T640 capable of measuring both $PM_{2.5}$ and PM_{10}. Also in May 2021 the NO_x / NO_2 monitor was replaced with the NO_x / NO_2 monitor from AM2, resulting in more stable data. Additionally, owing to the cyber attack at AM1 in 2021, the datalogger was removed on November 25, 2021 as a precaution. Data thereafter was retrieved from the T640, however data from the NO_x / NO_2 monitor could not. Full service was not re-instated until April 2022.

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.

TABLE 4.7.2.1 - ACCESS ROAD (AM3) $PM_{2.5}$ / PM_{10} SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average $PM_{2.5}$	Average PM_{10}	24-Hour Maximum $PM_{2.5}$	24-Hour Maximum PM_{10}	Regulatory Exceedances $PM_{2.5}$ (>25)	Regulatory Exceedances PM_{10} (>50)
2021	January	31	100.0%	4.8		10.3		0	
	February	28	100.0%	5.2		10.6		0	
	March	31	100.0%	6.9		11.4		0	
	April	13	43.3%	6.2		18.0		0	
	May	6	19.4%	5.8	12.7	11.3	23.4	0	0
	June	30	100.0%	4.7	10.1	17.7	27.3	0	0
	July	31	100.0%	4.0	8.8	8.2	14.7	0	0
	August	31	100.0%	5.3	10.7	9.5	20.5	0	0
	September	30	100.0%	4.4	10.4	7.6	17.5	0	0
	October	31	100.0%	2.9	7.5	4.8	17.5	0	0
	November	30	100.0%	3.8	9.8	7.5	18.8	0	0
	December	31	100.0%	3.6	8.7	7.7	18.4	0	0
Annual		323	88.5%			18.0	27.3	0	0
2022	January	31	100.0%	4.2	9.7	8.1	19.5	0	0
	February	28	100.0%	4.0	9.1	10.1	22.2	0	0
	March	31	100.0%	4.3	10.0	7.6	17.0	0	0
	April	30	100.0%	3.9	9.1	7.9	18.2	0	0
	May	31	100.0%	3.3	7.5	6.8	14.8	0	0
	June	30	100.0%	3.6	8.2	8.4	18.6	0	0
	July	29	93.5%	5.0	9.7	9.0	17.1	0	0
	August	31	100.0%	4.0	7.8	8.7	15.0	0	0
	September	28	93.3%	3.8	8.9	11.8	29.2	0	0
	October	29	93.5%	4.6	10.5	10.1	22.9	0	0
	November	28	93.3%	4.2	9.6	10.6	20.4	0	0
	December	20	64.5%	3.1	7.1	7.4	16.6	0	0
Annual		346	94.8%	4.0	9.0	11.8	29.2	0	0

Observations in $\mu g/m^3$

FIGURE 4.7.2.1 - ACCESS ROAD (AM3) ANNUAL $PM_{2.5}$ CONCENTRATIONS

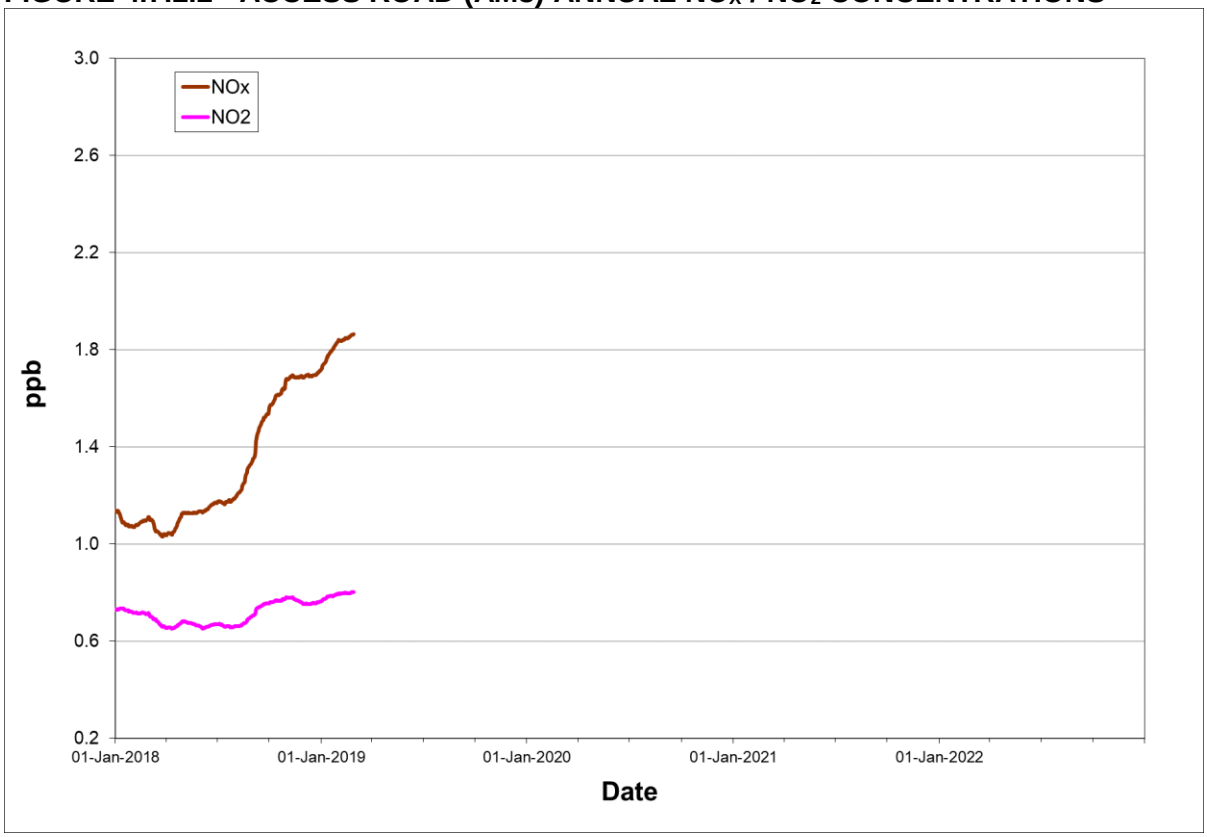
Rolling annual average of daily concentrations

TABLE 4.7.2.2 - ACCESS ROAD (AM3) NO_X / NO_2 SUMMARY 2021 & 2022

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 (>213)	Exceedances 24-Hour (>106)
2021	January	127	17.1%	2.7	1.3	11.4	5.7	4.9	2.2	0	0
	February	104	15.5%	2.1	1.1	8.5	5.1	3.4	1.9	0	0
	March	0	0.0%								
	April	0	0.0%								
	May	441	59.3%	1.5	0.6	15.1	4.6	3.8	1.4	0	0
	June	717	99.6%	1.2	0.7	16.1	6.6	3.6	2.8	0	0
	July	741	99.6%	1.5	0.9	13.5	6.9	3.2	1.9	0	0
	August	742	99.7%	1.2	0.6	15.3	4.7	3.4	1.2	0	0
	September	715	99.3%	1.4	0.6	16.0	7.2	5.2	2.4	0	0
	October	741	99.6%	2.8	1.2	19.4	8.0	6.6	2.6	0	0
	November	588	81.7%	1.9	0.9	32.2	9.3	7.4	2.7	0	0
	December	0									
Annual		4916	56.1%			32.2	9.3	7.4	2.8	0	0
2022	January	0	0.0%								
	February	272	40.5%	0.7	0.5	4.4	2.3	1.3	0.8	0	0
	March	0	0.0%								
	April	40	5.6%	2.2	1.6	6.6	5.0	2.6	1.8	0	0
	May	741	99.6%	1.5	0.8	17.2	5.4	4.1	1.9	0	0
	June	717	99.6%	1.3	0.6	13.3	6.8	3.0	1.6	0	0
	July	713	95.8%	0.9	0.5	12.9	4.2	2.5	1.1	0	0
	August	741	99.6%	1.3	0.6	10.9	3.4	3.3	1.1	0	0
	September	698	96.9%	1.9	0.6	13.1	5.5	5.9	1.4	0	0
	October	730	98.1%	1.8	0.9	36.0	5.2	6.7	1.8	0	0
	November	693	96.3%	1.4	0.8	13.3	5.5	3.0	1.5	0	0
	December	492	66.1%	1.4	1.0	10.0	6.6	2.8	1.7	0	0
Annual		5837	66.6%			36.0	6.8	6.7	1.9	0	0

Observations in ppb

FIGURE 4.7.2.2 - ACCESS ROAD (AM3) ANNUAL NO_X / NO_2 CONCENTRATIONS



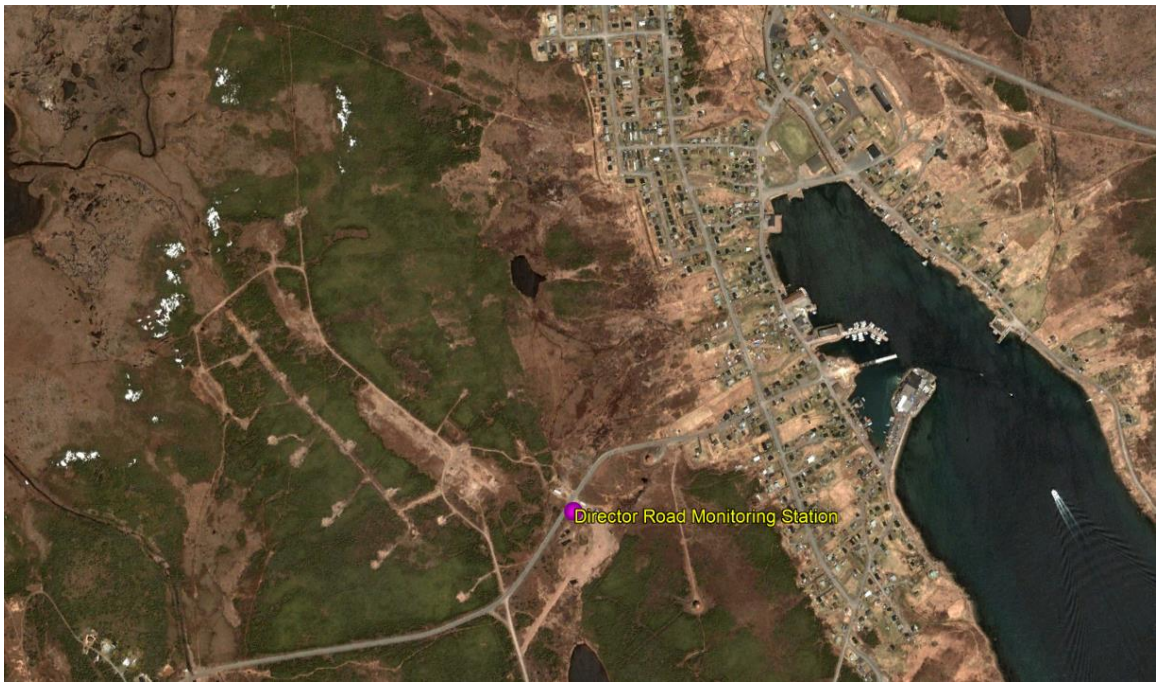
Rolling annual average of hourly concentrations

4.8 Canada Fluorspar (NL) Inc.

In 2018, Canada Fluorspar (NL) Inc. began operation of its fluorspar mine west of the town of St. Lawrence. The company installed continuous $PM_{2.5}$, NO_X / NO_2 and TPM ambient monitors on Director Drive, between the mine site and the town of St. Lawrence. The location of the monitoring station is shown in Figure 4.8.1.

In February 2022, the facility was placed into receivership and by the end of 2022 a new owner had not been secured. The ambient monitoring station however remained in operation during the year.

FIGURE 4.8.1 - CFI AMBIENT MONITORING STATION



4.8.1 Director Drive

The Director Drive station was installed in early 2017 with various monitors being commissioned throughout the year. Table 4.8.1.1 presents the results for $PM_{2.5}$, Table 4.8.1.2 the results for NO_x / NO_2, and Table 4.8.1.3 the results for TPM while Figures 4.8.1.1 through 4.8.1.3 provide a graphical representation of the annual trend of $PM_{2.5}$, NO_x / NO_2, and TPM respectively. There were no exceedances of the associated air quality standards during the year.

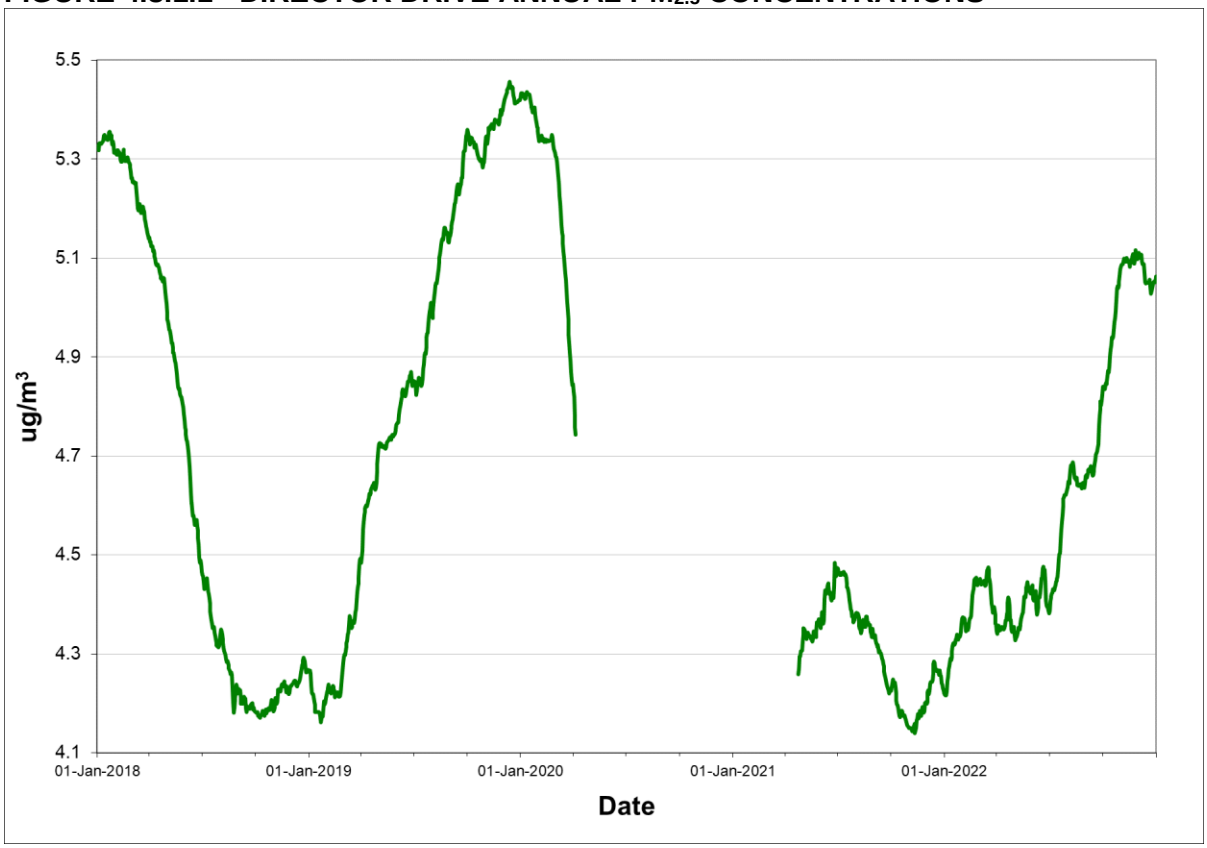
The NO_x / NO_2 monitor experience many operational issues during the year, resulting in no valid data collection from the middle of April onwards.

TABLE 4.8.1.1 - DIRECTOR DRIVE $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	31	100.0%	3.8	11.0	0
	February	28	100.0%	4.0	9.1	0
	March	31	100.0%	6.0	12.3	0
	April	28	93.3%	4.7	14.1	0
	May	31	100.0%	4.7	10.1	0
	June	30	100.0%	6.0	17.6	0
	July	31	100.0%	3.1	6.1	0
	August	31	100.0%	3.8	8.4	0
	September	30	100.0%	2.7	5.6	0
	October	28	90.3%	2.4	4.9	0
	November	26	86.7%	5.2	10.0	0
	December	31	100.0%	4.3	8.8	0
Annual		356	97.5%	4.2	17.6	0
2022	January	31	100.0%	5.5	9.6	0
	February	28	100.0%	4.9	11.1	0
	March	30	96.8%	5.1	8.1	0
	April	27	90.0%	4.6	9.6	0
	May	25	80.6%	5.9	9.5	0
	June	30	100.0%	5.4	13.0	0
	July	31	100.0%	6.0	10.1	0
	August	30	96.8%	3.9	7.1	0
	September	30	100.0%	4.7	15.6	0
	October	31	100.0%	5.5	11.5	0
	November	26	86.7%	5.4	9.5	0
	December	31	100.0%	3.9	8.7	0
Annual		350	95.9%	5.1	15.6	0

Observations in µg/m³

FIGURE 4.8.1.1 - DIRECTOR DRIVE ANNUAL $PM_{2.5}$ CONCENTRATIONS



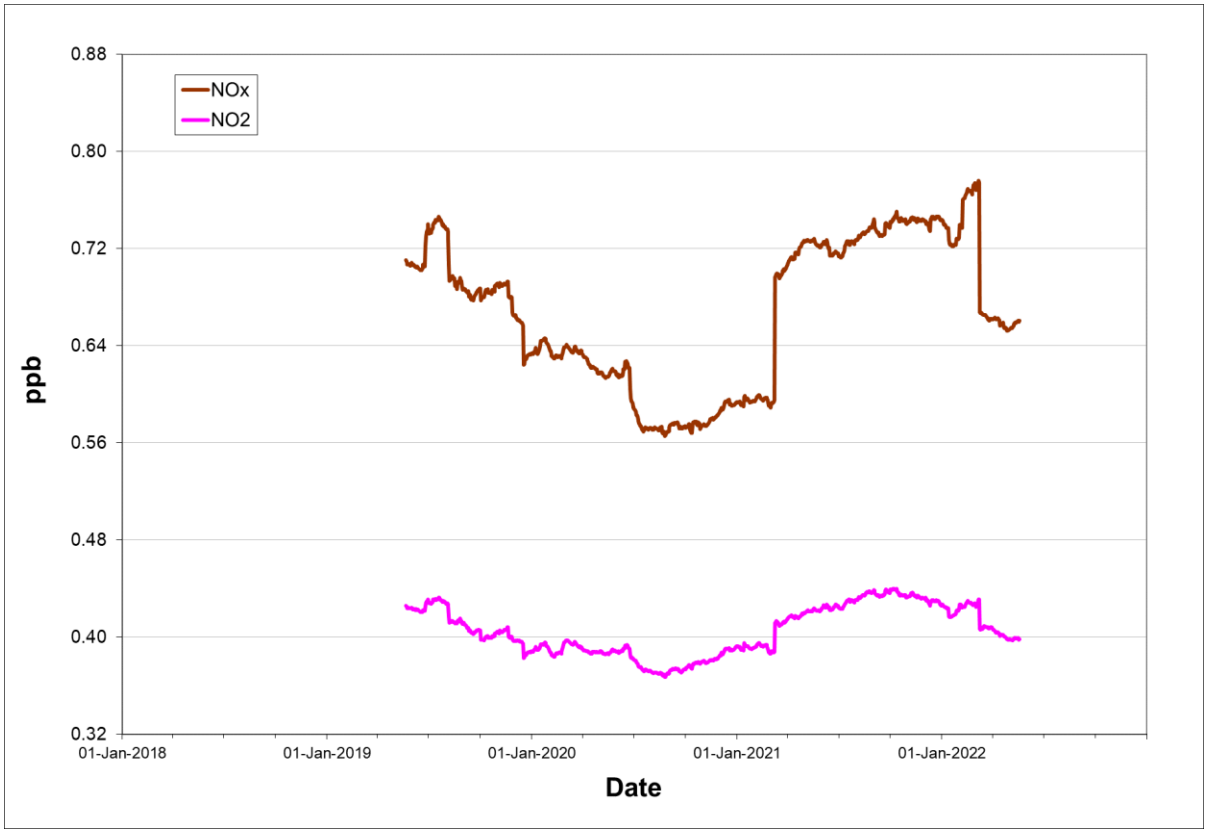
Rolling annual average of hourly concentrations

TABLE 4.8.1.2 - DIRECTOR DRIVE NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	744	100.0%	0.6	0.4	52.1	42.5	3.8	2.6	0	0
	February	671	99.9%	0.5	0.4	16.3	10.2	1.1	0.7	0	0
	March	392	52.7%	2.9	0.9	253.5	56.3	36.6	8.7	0	0
	April	524	72.8%	0.7	0.4	26.5	7.9	2.0	0.9	0	0
	May	742	99.7%	0.5	0.4	9.4	5.2	0.9	0.6	0	0
	June	718	99.7%	0.6	0.4	8.6	2.9	1.4	1.0	0	0
	July	744	100.0%	0.7	0.4	31.1	8.3	2.0	0.9	0	0
	August	744	100.0%	0.7	0.5	16.6	5.4	1.9	1.0	0	0
	September	690	95.8%	0.6	0.4	67.0	19.3	3.5	1.3	0	0
	October	742	99.7%	0.7	0.4	17.0	7.8	1.5	0.7	0	0
	November	719	99.9%	0.6	0.4	12.9	6.9	1.6	0.8	0	0
	December	741	99.6%	0.6	0.3	33.1	7.3	3.7	1.3	0	0
Annual		8171	93.3%	0.7	0.4	253.5	56.3	36.6	8.7	0	0
2022	January	742	99.7%	0.5	0.4	35.9	17.6	2.1	1.2	0	0
	February	654	97.3%	1.1	0.4	192.1	28.1	8.6	1.6	0	0
	March	741	99.6%	0.6	0.4	25.5	8.0	2.1	1.1	0	0
	April	324	45.0%	0.5	0.2	5.8	2.6	1.0	0.3	0	0
	May	0	0.0%								
	June	0	0.0%								
	July	0	0.0%								
	August	0	0.0%								
	September	0	0.0%								
	October	0	0.0%								
	November	0	0.0%								
	December	0	0.0%								
Annual		2461	28.1%								

Observations in ppb

FIGURE 4.8.1.2 - DIRECTOR DRIVE ANNUAL NO_X / NO_2 CONCENTRATIONS



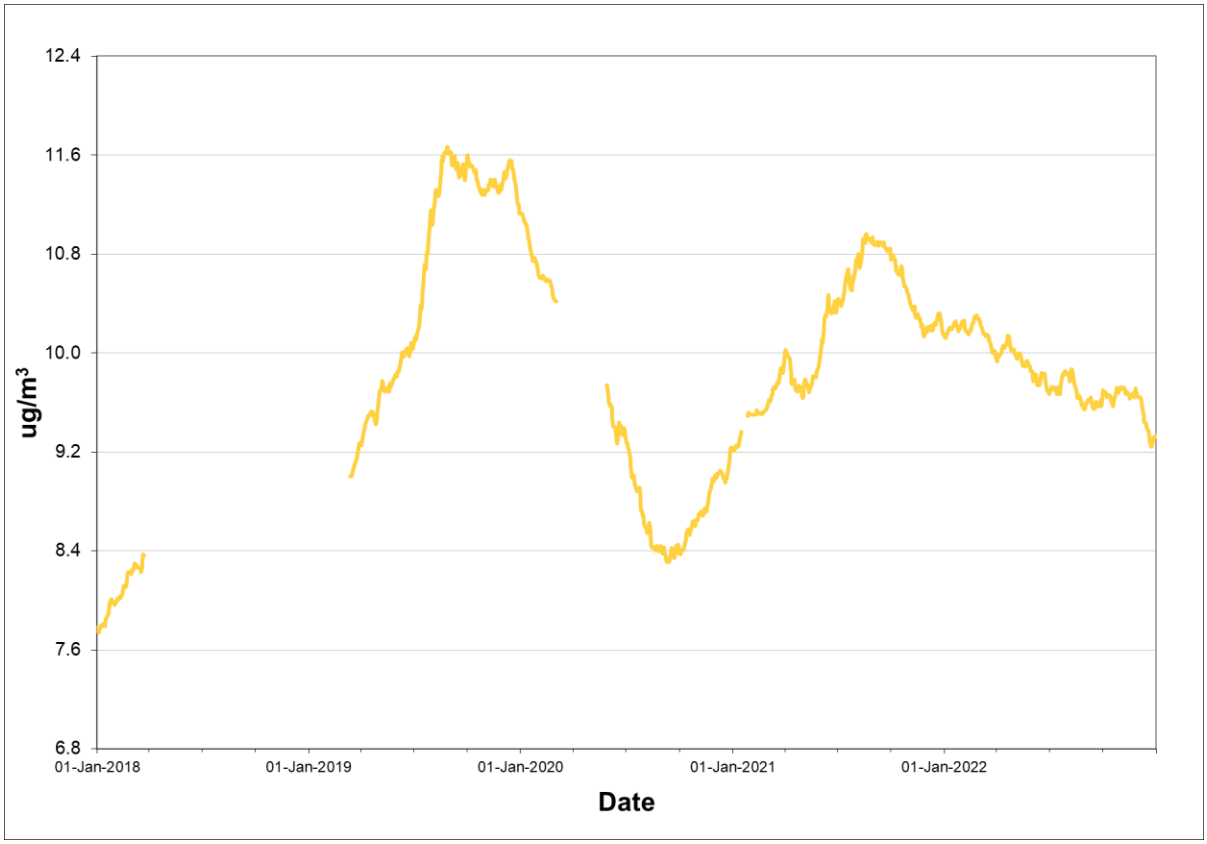
Rolling annual average of hourly concentrations

TABLE 4.8.1.3 - DIRECTOR DRIVE TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	10	32.3%	11.0	22.8	0
	February	18	64.3%	10.4	24.4	0
	March	31	100.0%	14.9	25.7	0
	April	28	93.3%	8.6	30.1	0
	May	31	100.0%	13.5	29.5	0
	June	30	100.0%	11.5	53.2	0
	July	28	90.3%	7.8	28.3	0
	August	31	100.0%	9.3	22.8	0
	September	30	100.0%	8.1	15.5	0
	October	25	80.6%	7.7	26.1	0
	November	29	96.7%	10.6	20.1	0
	December	31	100.0%	10.6	19.6	0
Annual		322	88.2%	10.1	53.2	0
2022	January	31	100.0%	11.7	20.3	0
	February	28	100.0%	10.6	22.2	0
	March	28	90.3%	10.6	15.7	0
	April	26	86.7%	9.3	16.5	0
	May	26	83.9%	11.1	20.8	0
	June	30	100.0%	9.3	28.1	0
	July	31	100.0%	9.7	21.2	0
	August	30	96.8%	6.6	14.7	0
	September	30	100.0%	8.9	25.5	0
	October	31	100.0%	8.9	17.5	0
	November	25	83.3%	9.8	18.4	0
	December	31	100.0%	7.3	16.0	0
Annual		347	95.1%	9.3	28.1	0

Observations in µg/m³

FIGURE 4.8.1.3 - DIRECTOR DRIVE ANNUAL TPM CONCENTRATIONS



Rolling annual average of hourly concentrations

4.9 Atlantic Minerals Limited

In late 2016 / early 2017, Atlantic Minerals Limited installed continuous $PM_{2.5}$ and TPM ambient monitors to the west of their Port-au-Port mining operation to measure the potential impacts from of their mining operation. The location of the monitoring station is shown in Figure 4.9.1.

FIGURE 4.9.1 - ATLANTIC MINERALS AMBIENT MONITORING STATION

4.9.1 AML Property Boundary

The AML Property Boundary station measures $PM_{2.5}$ and TPM. Table 4.9.1.1 presents the results for $PM_{2.5}$, while Table 4.9.1.2 the results for TPM. There were no $PM_{2.5}$ exceedances however there were five TPM exceedances of the associated air quality standards during the year. The TPM exceedances occurred in May (1), June (1), August (2) and October (1) and were associated with stockpiling and port activities at the AML site.

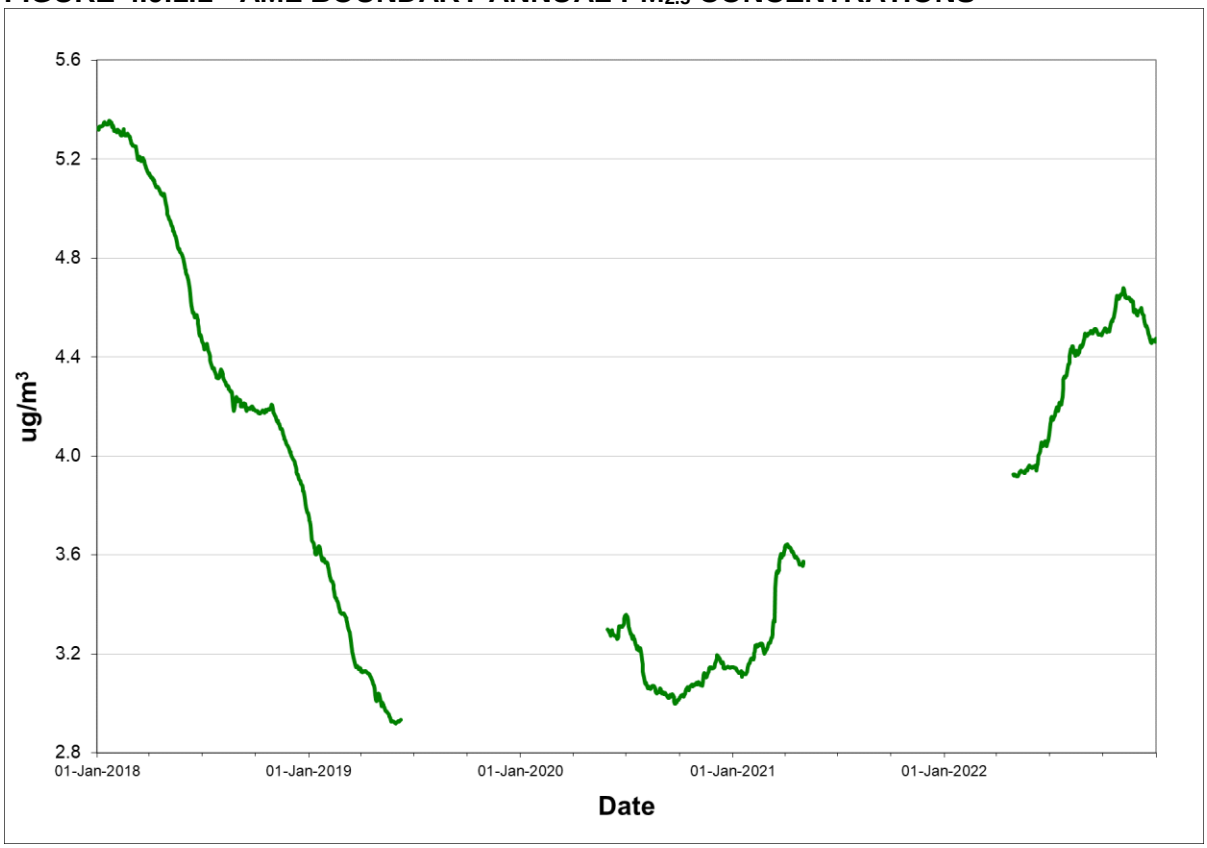
Annual graphics for $PM_{2.5}$ and TPM are presented in Figures 4.9.1.1 and 4.9.1.2 respectively.

TABLE 4.9.1.1 - AML BOUNDARY $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	25	80.6%	3.6	7.0	0
	February	26	92.9%	4.2	9.8	0
	March	31	100.0%	7.0	43.6	1
	April	12	40.0%	3.4	4.6	0
	May	0	0.0%			
	June	26	86.7%	3.6	13.7	0
	July	30	96.8%	3.0	9.9	0
	August	31	100.0%	4.4	8.8	0
	September	15	50.0%	3.4	5.3	0
	October	26	83.9%	2.8	6.0	0
	November	29	96.7%	4.4	16.2	0
	December	31	100.0%	4.6	7.8	0
Annual		282	77.3%	4.2	43.6	1
2022	January	20	64.5%	5.3	10.8	0
	February	21	75.0%	4.4	11.4	0
	March	31	100.0%	3.3	6.0	0
	April	30	100.0%	3.9	6.3	0
	May	31	100.0%	4.2	8.0	0
	June	30	100.0%	5.1	9.9	0
	July	31	100.0%	5.7	12.1	0
	August	31	100.0%	6.1	10.9	0
	September	28	93.3%	3.9	5.8	0
	October	31	100.0%	4.8	10.4	0
	November	30	100.0%	3.5	8.5	0
	December	31	100.0%	3.5	7.3	0
Annual		345	94.5%	4.5	12.1	0

Observations in µg/m³

FIGURE 4.9.1.1 - AML BOUNDARY ANNUAL $PM_{2.5}$ CONCENTRATIONS



Rolling annual average of hourly concentrations

TABLE 4.9.1.2 - AML BOUNDARY TPM SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m³)
2021	January	25	80.6%	4.7	16.0	0
	February	25	89.3%	5.6	14.3	0
	March	31	100.0%	7.2	21.7	0
	April	30	100.0%	6.4	81.3	0
	May	31	100.0%	10.4	152.2	1
	June	30	100.0%	11.4	64.1	0
	July	31	100.0%	7.6	33.2	0
	August	31	100.0%	10.5	51.8	0
	September	27	90.0%	9.2	73.4	0
	October	27	87.1%	7.7	54.7	0
	November	29	96.7%	6.7	17.9	0
	December	31	100.0%	5.8	28.5	0
Annual		348	95.3%	7.6	152.2	1
2022	January	22	71.0%	7.0	18.1	0
	February	25	89.3%	7.2	21.0	0
	March	27	87.1%	5.4	9.5	0
	April	30	100.0%	6.0	16.7	0
	May	31	100.0%	10.0	135.8	1
	June	15	50.0%	14.1	130.5	1
	July	17	54.8%	17.7	56.0	0
	August	31	100.0%	14.9	183.4	2
	September	28	93.3%	8.6	26.0	0
	October	31	100.0%	13.0	160.2	1
	November	30	100.0%	9.2	58.0	0
	December	31	100.0%	7.0	96.9	0
Annual		318	87.1%	9.1	183.4	5

Observations in µg/m³

FIGURE 4.9.1.2 - AML BOUNDARY ANNUAL TPM CONCENTRATIONS

Rolling annual average of hourly concentrations

4.10 Tata Steel Minerals Canada

In 2018, TSMC began their mining operation in western Labrador, northwest of Schefferville, QC. Concurrently, a monitoring station was installed near the TSMC camp site. Figure 4.10.1 indicates the location of this monitoring station.

FIGURE 4.10.1 - TSMC AMBIENT MONITORING STATION

4.10.1 TSMC Camp Site

The TSMC Camp Site ambient air monitoring station measures $PM_{2.5}$ and NO_x / NO_2. Table 4.10.1.1 presents the results for $PM_{2.5}$ while Table 4.10.1.2 the results for NO_x / NO_2. Due to ongoing maintenance issues, the $PM_{2.5}$ monitor continued to be off-line for the first quarter and a half of 2022. There were no exceedances of the either the $PM_{2.5}$ or the NO_2 air quality standard.

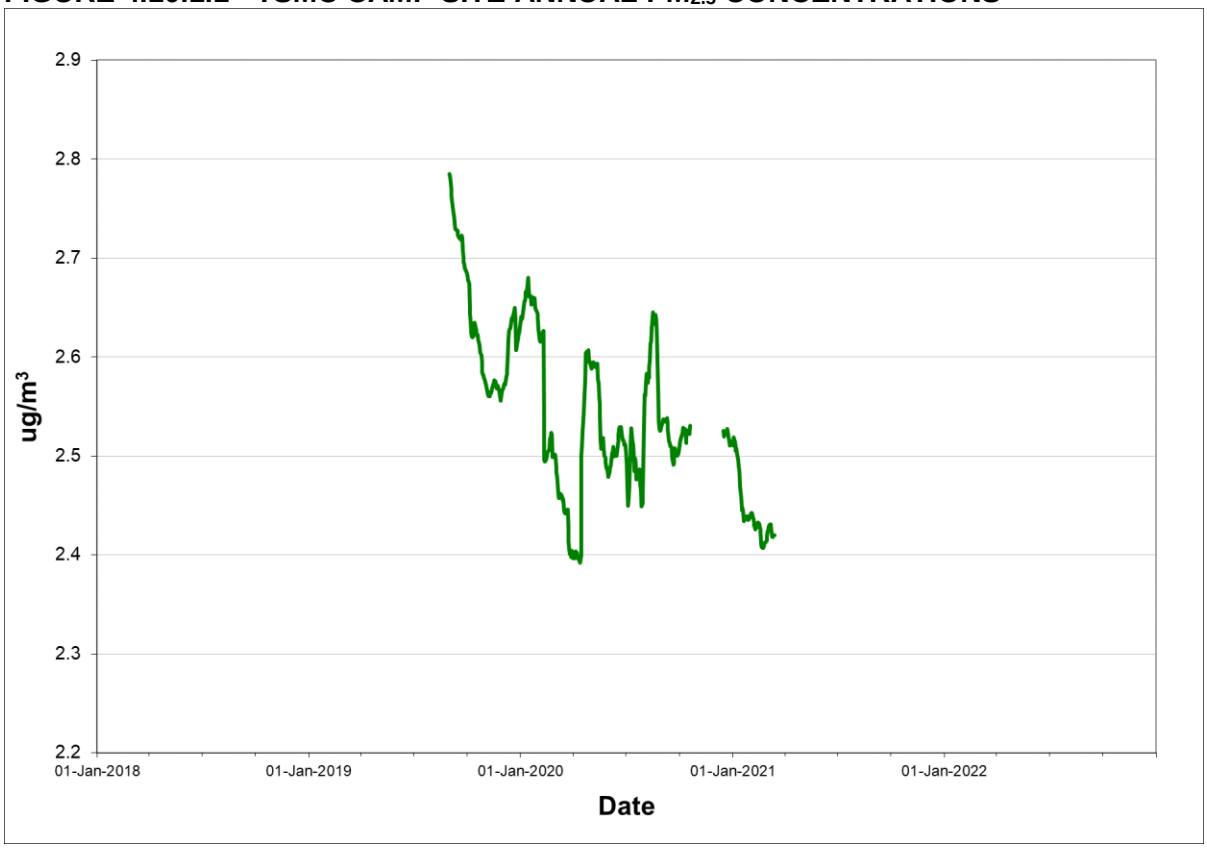
Figures 4.10.1.1 and 4.10.1.2 present the annualized trend for $PM_{2.5}$ and NO_x / NO_2 respectively.

TABLE 4.10.1.1 - TSMC CAMP SITE $PM_{2.5}$ SUMMARY 2021 & 2022

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m³)
2021	January	30	96.8%	1.6	3.3	0
	February	10	35.7%	1.5	2.0	0
	March	0	0.0%			
	April	0	0.0%			
	May	0	0.0%			
	June	0	0.0%			
	July	0	0.0%			
	August	0	0.0%			
	September	0	0.0%			
	October	0	0.0%			
	November	0	0.0%			
	December	0	0.0%			
Annual		40	11.0%			
2022	January	0	0.0%			
	February	0	0.0%			
	March	0	0.0%			
	April	0	0.0%			
	May	22	71.0%	3.9	6.7	0
	June	28	93.3%	4.6	14.7	0
	July	30	96.8%	4.0	8.9	0
	August	21	67.7%	5.9	18.8	0
	September	21	70.0%	2.7	4.1	0
	October	30	96.8%	3.3	6.8	0
	November	27	90.0%	3.9	5.3	0
	December	24	77.4%	4.0	11.8	0
Annual		203	55.6%		18.8	0

Observations in µg/m³

FIGURE 4.10.1.1 - TSMC CAMP SITE ANNUAL $PM_{2.5}$ CONCENTRATIONS



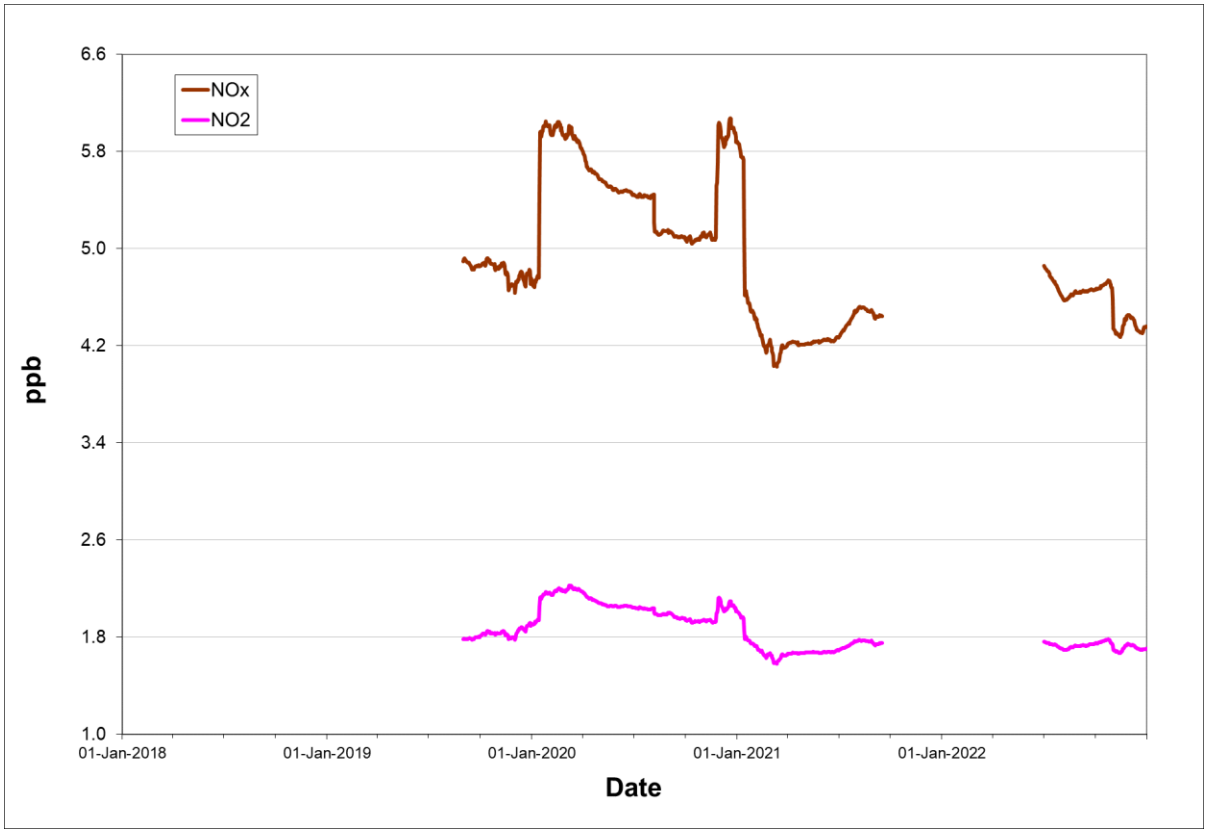
Rolling annual average of hourly concentrations

TABLE 4.10.1.2 - TSMC CAMP SITE NO_X / NO_2 SUMMARY 2021 & 2022

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	(>213)	(>106)
2021	January	724	97.3%	4.2	2.1	68.3	30.7	12.4	5.6	0	0
	February	668	99.4%	4.9	2.2	62.3	33.4	11.7	5.6	0	0
	March	723	97.2%	5.0	2.3	298.2	50.3	17.2	7.7	0	0
	April	714	99.2%	1.2	0.6	25.0	11.9	3.6	1.7	0	0
	May	740	99.5%	1.4	0.7	30.2	9.0	4.1	1.5	0	0
	June	715	99.3%	1.8	0.9	42.8	13.0	4.7	2.7	0	0
	July	32	4.3%	0.4	0.4	1.4	1.8	0.2	0.4	0	0
	August	575	77.3%	1.7	1.0	20.4	13.2	5.5	3.2	0	0
	September	702	97.5%	1.9	0.9	31.6	13.4	7.2	2.8	0	0
	October	736	98.9%	2.1	1.1	48.8	24.4	8.3	4.7	0	0
	November	716	99.4%	7.5	2.2	782.4	89.0	87.3	15.1	0	0
	December	739	99.3%	5.1	2.0	93.5	26.5	18.7	6.0	0	0
Annual		7784	88.9%			782.4	89.0	87.3	15.1	0	0
2022	January	635	85.3%	6.4	2.3	228.7	33.7	13.5	6.8	0	0
	February	668	99.4%	8.8	3.2	94.2	34.4	27.3	10.4	0	0
	March	740	99.5%	14.3	3.9	773.9	108.6	209.9	35.0	0	0
	April	690	95.8%	2.7	1.3	44.5	21.8	8.6	4.1	0	0
	May	733	98.5%	1.9	1.0	50.7	22.0	6.6	3.7	0	0
	June	719	99.9%	0.8	0.5	16.2	10.6	2.4	1.6	0	0
	July	744	100.0%	2.0	1.1	26.2	14.7	7.3	4.2	0	0
	August	743	99.9%	2.4	1.3	51.7	22.4	6.1	3.7	0	0
	September	716	99.4%	2.3	1.2	31.9	11.9	4.6	3.6	0	0
	October	741	99.6%	2.3	1.1	49.9	15.9	6.8	3.2	0	0
	November	718	99.7%	4.8	2.1	69.4	21.3	21.3	8.1	0	0
	December	744	100.0%	3.9	1.6	68.3	19.6	15.0	4.7	0	0
Annual		8591	98.1%	4.4	1.7	773.9	108.6	209.9	35.0	0	0

Observations in ppb

FIGURE 4.10.1.2 - TSMC CAMP SITE ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations