



# 2019 Air Quality Monitoring Results

## Supplementary Data

**New Brunswick Department of Environment and Local Government  
Environmental Reporting Series  
2021**

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This report provides detailed, site-specific air quality information, and is provided as a companion document to the Department of Environment and Local Government's "Air Quality Monitoring Results 2019" report, which is available electronically via the DELG website:

[www.gnb.ca/environment](http://www.gnb.ca/environment)

The information, graphics, and tables presented in this document are intended to illustratively summarize the data collected via New Brunswick's air quality monitoring networks in 2019. This information is provided without context or interpretation. Interpretation and background information related to key contaminants and datasets can be found in the "Air Quality Monitoring Results 2019" report. For background information about other air contaminants please refer to the following resource:

[Government of Canada - Toxic Substances List](#)

**Feedback**

We are interested in your feedback on this report. All suggestions will be considered, and if possible, incorporated in future reports. You may contact the Air and Water Sciences Branch, Department of Environment and Local Government (DELG) at [elg/egl-info@gnb.ca](mailto:elg/egl-info@gnb.ca) with any comments.

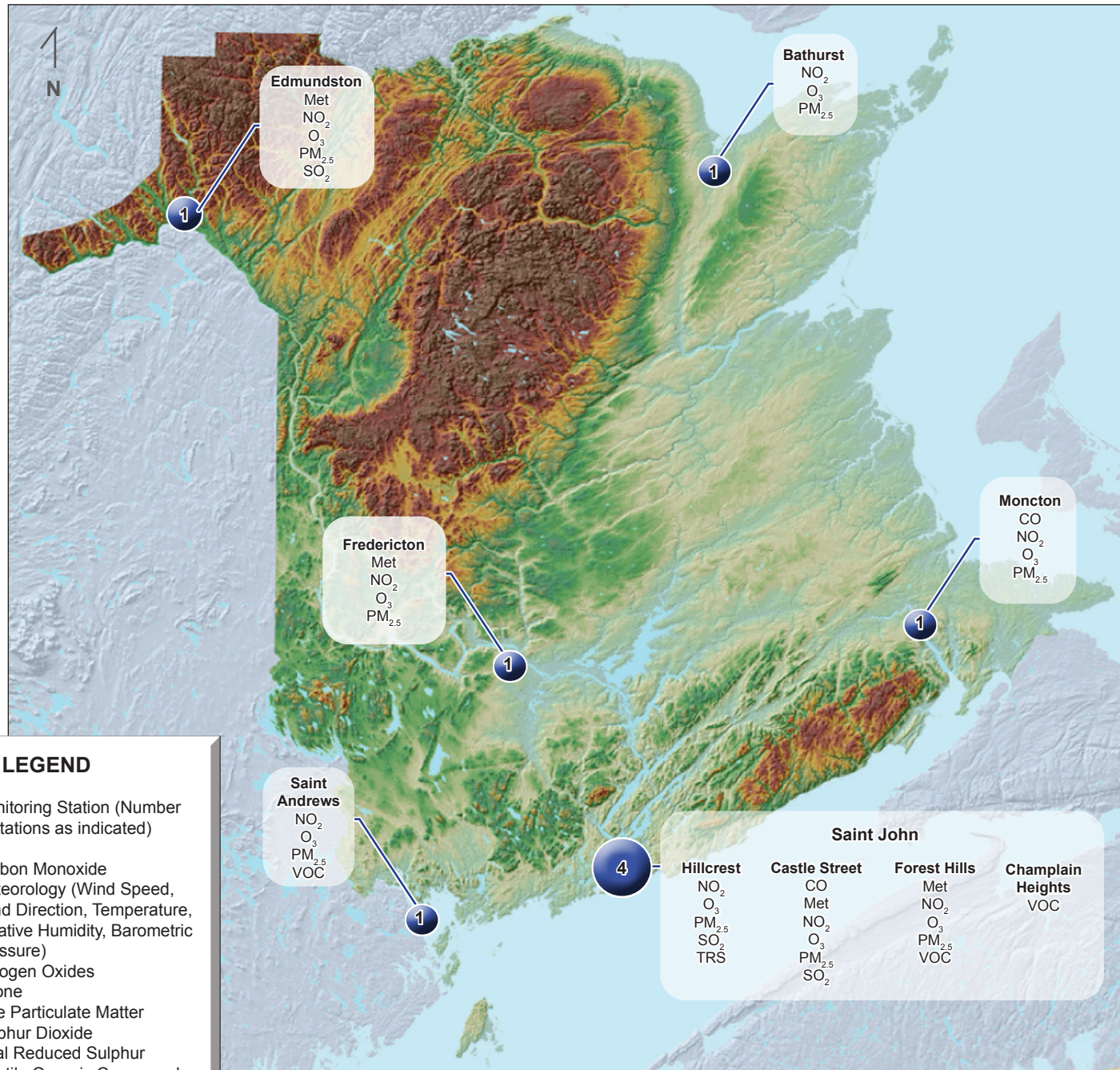
## TABLE OF CONTENTS

<b>PART I: THE PROVINCIAL AIR QUALITY MONITORING NETWORK: Stations Operated by the Province.....</b>	<b>1</b>
Network Map - New Brunswick Air Quality Monitoring Network, Stations Operated by the Province.....	2
Continuous Air Quality Monitoring Results.....	3
Carbon Monoxide.....	3
Nitrogen Dioxide.....	4
Ozone.....	6
Fine Particulate Matter.....	9
Sulphur Dioxide.....	11
Total Reduced Sulphur.....	12
Volatile Organic Compounds, Saint John Region.....	13
Air Toxics.....	13
Ozone Depleting Substances.....	14
Smog-Forming.....	15
<b>PART II: ACID PRECIPITATION MONITORING NETWORK.....</b>	<b>16</b>
Network Map - New Brunswick Acid Precipitation Monitoring Network.....	17
Sulphate and Nitrate Deposition Trends.....	18
Network-wide Annual Mean Sulphate and Nitrate Concentration Trends.....	21
<b>PART III: THE PROVINCIAL AIR QUALITY MONITORING NETWORK: Stations Operated by Industry.....</b>	<b>24</b>
Network Map - New Brunswick Air Quality Monitoring Network, Stations Operated by Industry.....	25
Industry-Operated Monitoring Network Results.....	26
Glencore, Belledune.....	26
NB Power, Belledune.....	28
NB Power, Millbank.....	32
NB Power, Coleson Cove.....	35
Irving Oil Ltd., Saint John.....	37
Irving Pulp and Paper, Saint John.....	42
J. D. Irving Ltd. Lake Utopia Paper, Lake Utopia.....	43
Twin Rivers Paper Company, Edmundston.....	44
AV Group - Nackawic.....	45
AV Group - Atholville.....	46
Arbec Forest Products, Miramichi.....	47
<b>PART IV: DETAILED STATION LOCATION MAPS.....</b>	<b>48</b>
Saint John Region.....	49
Atholville and Belledune.....	50
Edmundston and Lower Newcastle.....	51

## List of Acronyms and Abbreviations

CO	Carbon Monoxide
eq/ha/yr	Equivalents (molar equivalent acidity) per hectare per year
PM <sub>2.5</sub>	Fine Particulate Matter (less than 2.5 microns)
H <sub>2</sub> S	Hydrogen Sulphide
kg/ha/yr	Kilograms per hectare per year
Met	Meteorology (Wind Speed, Wind Direction, Temperature, Relative Humidity, Barometric pressure)
µg/m <sup>3</sup>	Micrograms per cubic meter
meq/L	Milliequivalents (molar equivalent acidity) per litre
mg/L	Milligrams per litre
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
O <sub>3</sub>	Ozone
ppb	Parts per billion
ppm	Parts per million
SO <sub>2</sub>	Sulphur Dioxide
TRS	Total Reduced Sulphur
TSP	Total Suspended Particulate
VOC	Volatile Organic Compound

**PART I:**  
**THE PROVINCIAL AIR QUALITY MONITORING NETWORK:**  
**STATIONS OPERATED BY THE PROVINCE**

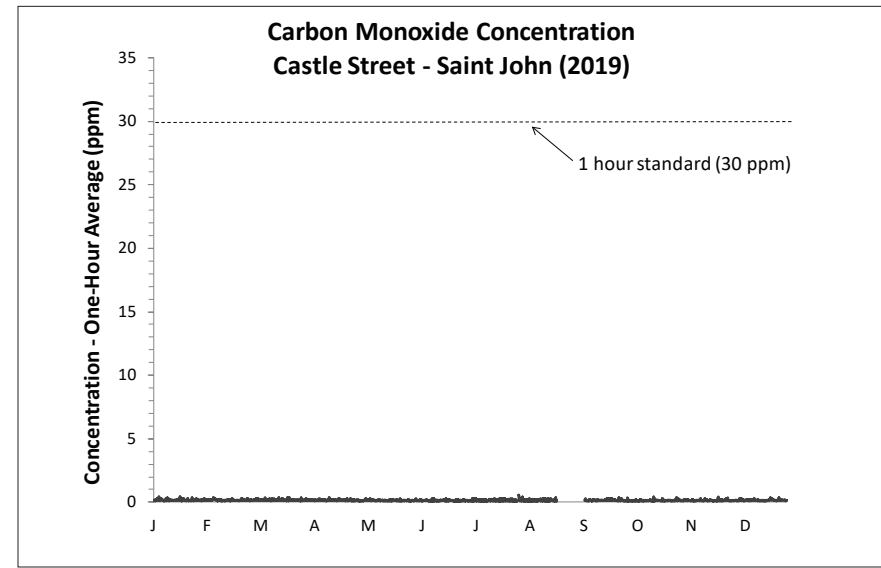
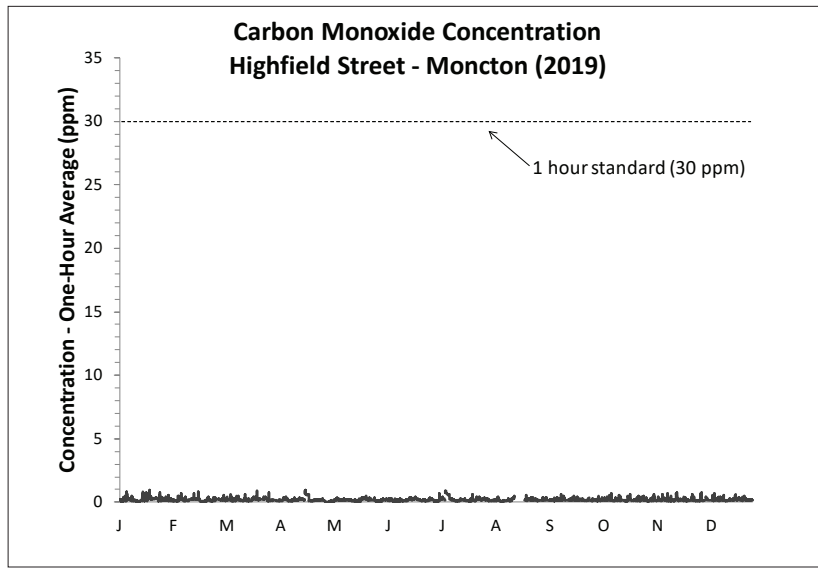


**LEGEND**

	Monitoring Station (Number of stations as indicated)
CO	Carbon Monoxide
Met	Meteorology (Wind Speed, Wind Direction, Temperature, Relative Humidity, Barometric Pressure)
NO <sub>x</sub>	Nitrogen Oxides
O <sub>3</sub>	Ozone
PM <sub>2.5</sub>	Fine Particulate Matter
SO <sub>2</sub>	Sulphur Dioxide
TRS	Total Reduced Sulphur
VOC	Volatile Organic Compounds

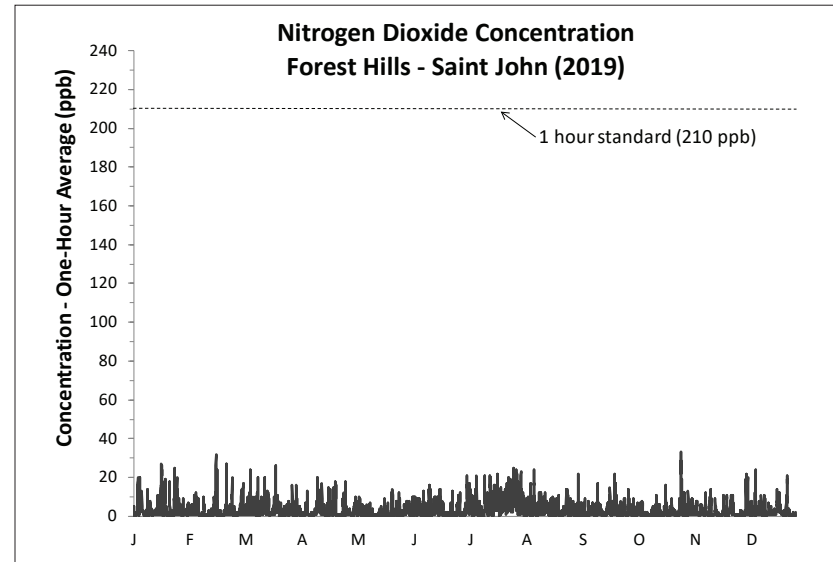
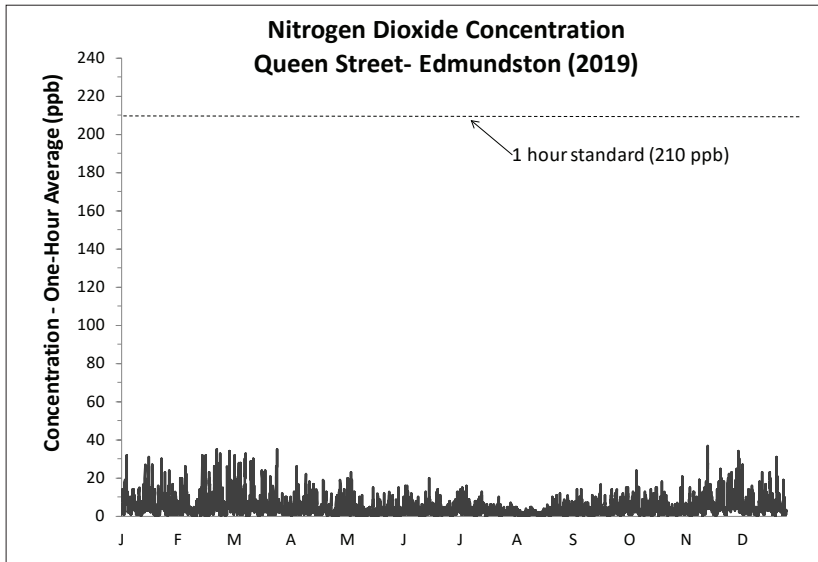
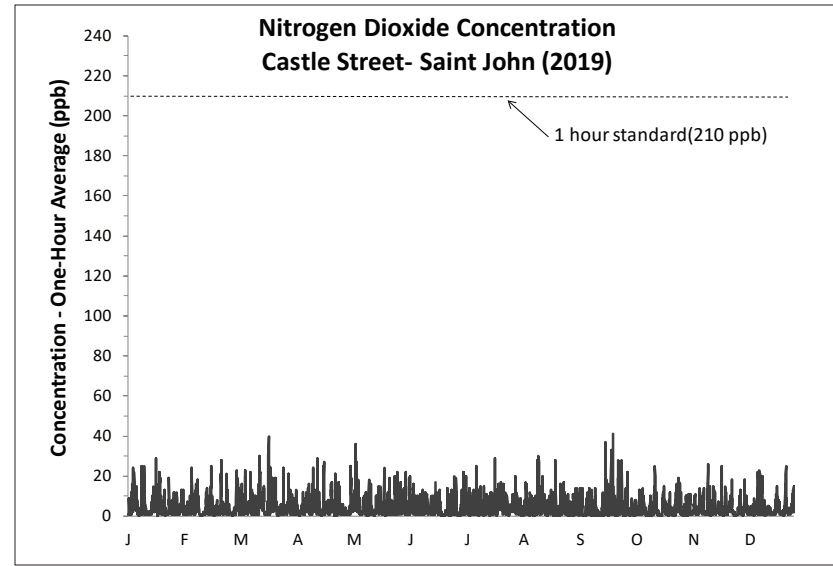
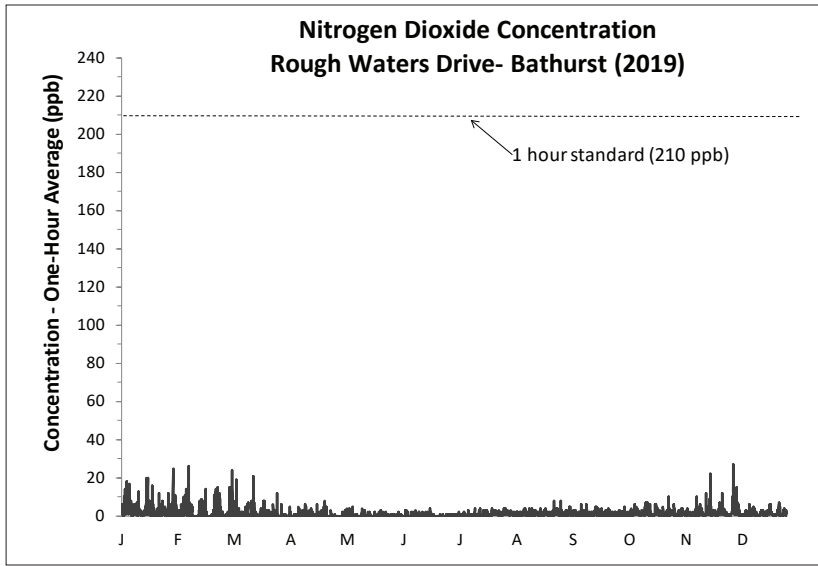
## PART I: STATIONS OPERATED BY THE PROVINCE - Continuous Air Quality Monitoring Results

### Carbon Monoxide



# PART I: STATIONS OPERATED BY THE PROVINCE - Continuous Air Quality Monitoring Results

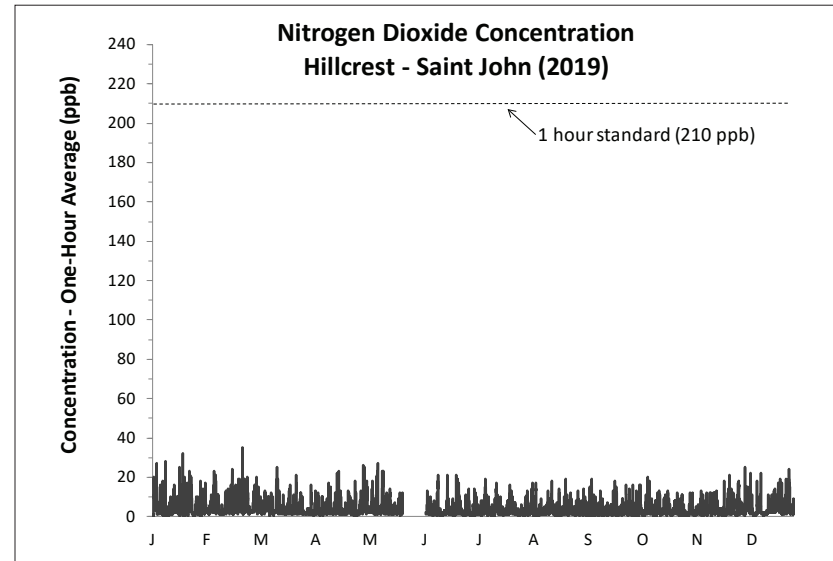
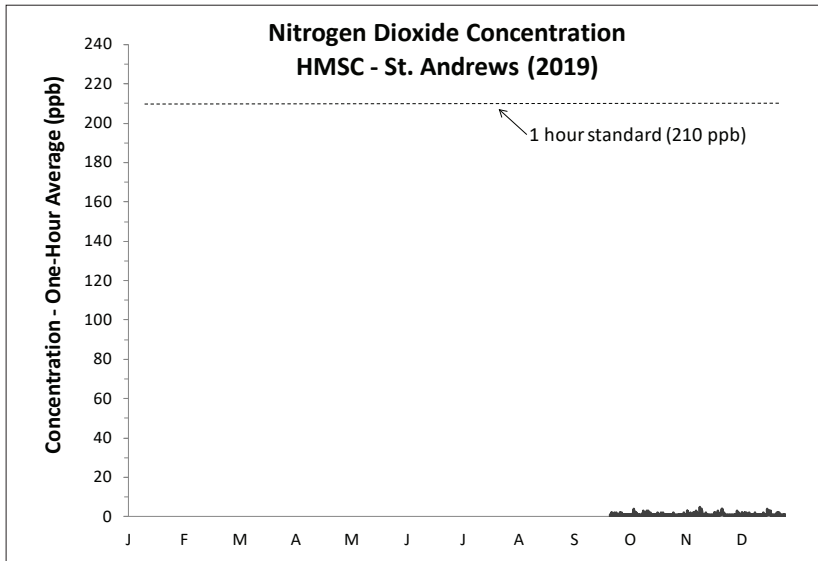
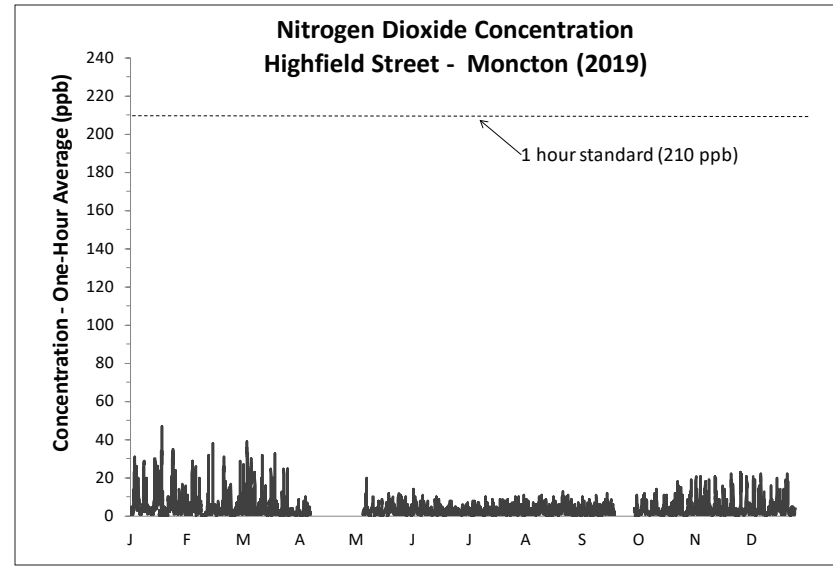
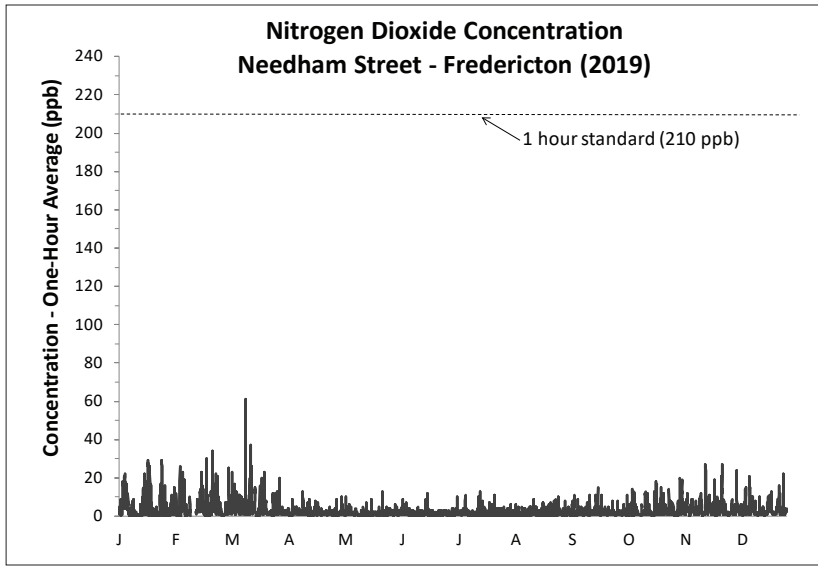
## Nitrogen Dioxide





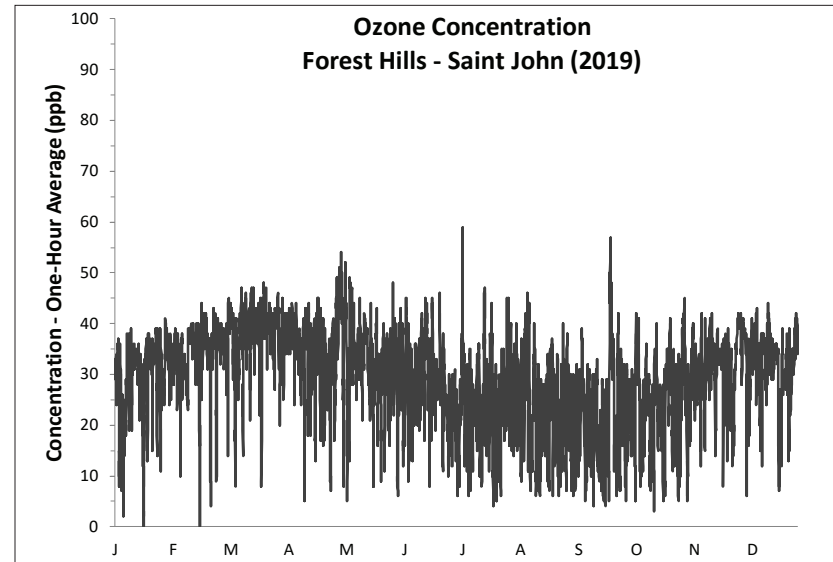
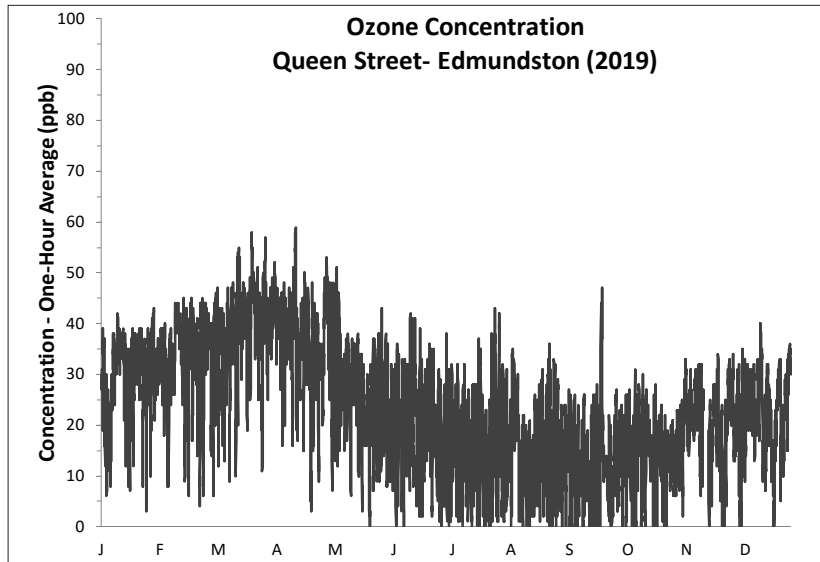
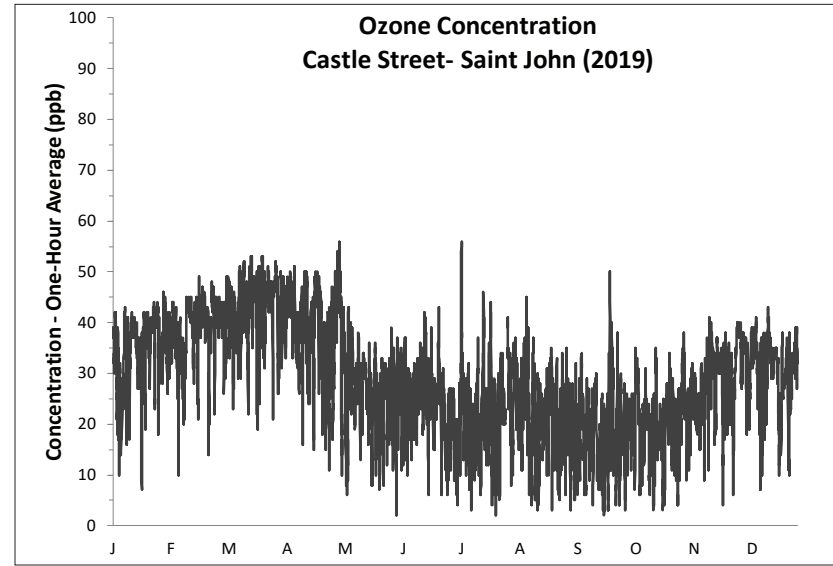
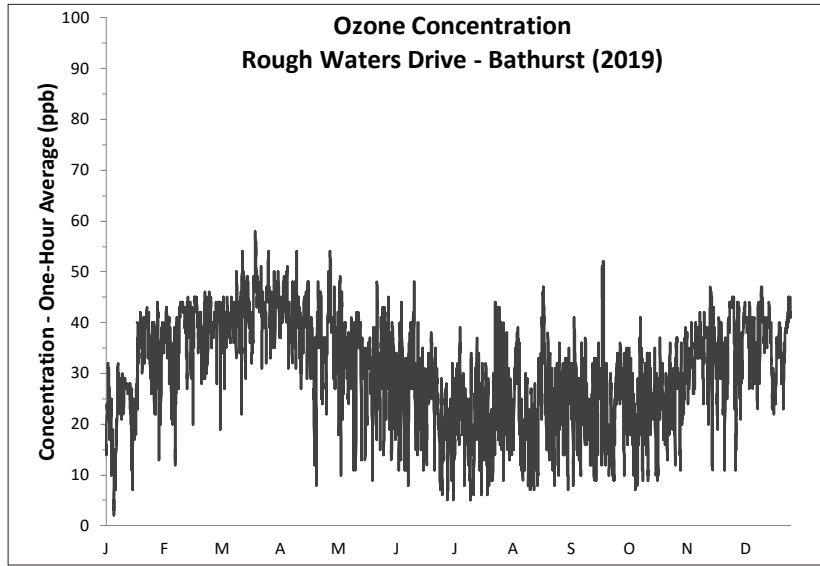
# PART I: STATIONS OPERATED BY THE PROVINCE - Continuous Air Quality Monitoring Results

## Nitrogen Dioxide



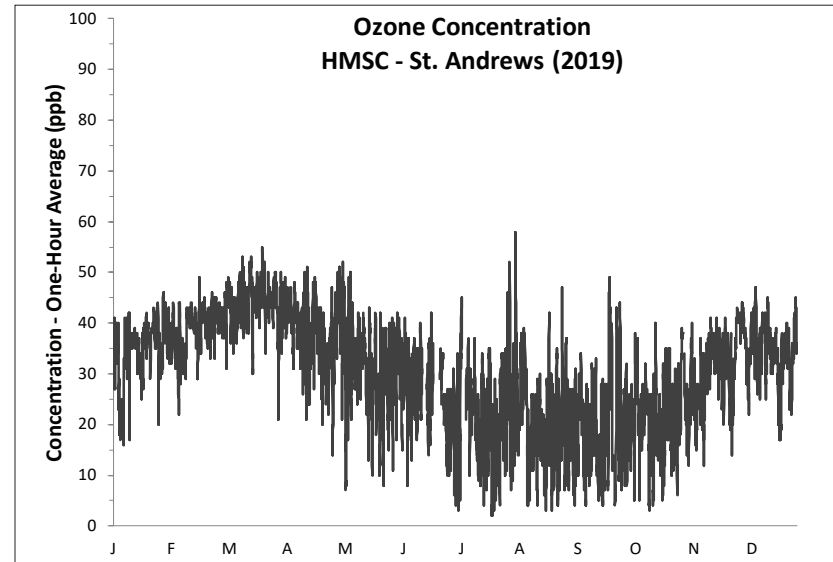
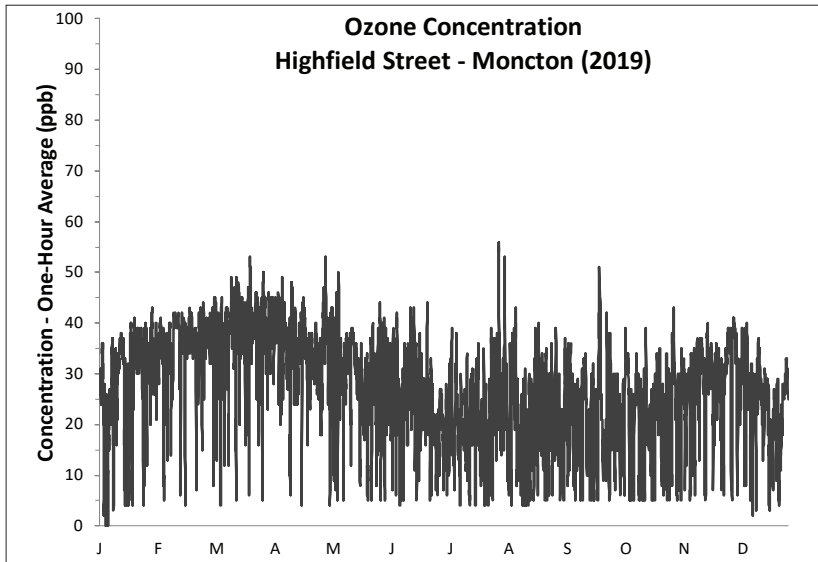
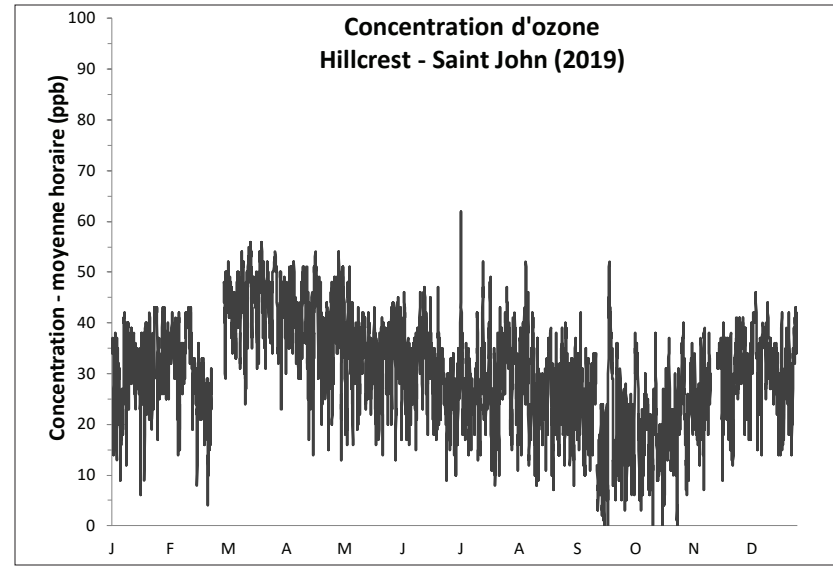
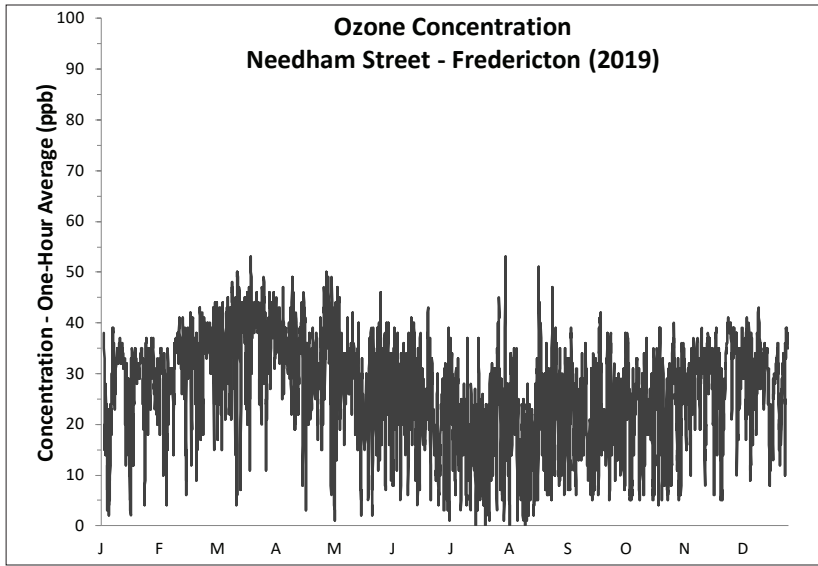
# PART I: STATIONS OPERATED BY THE PROVINCE - Continuous Air Quality Monitoring Results

## Ozone



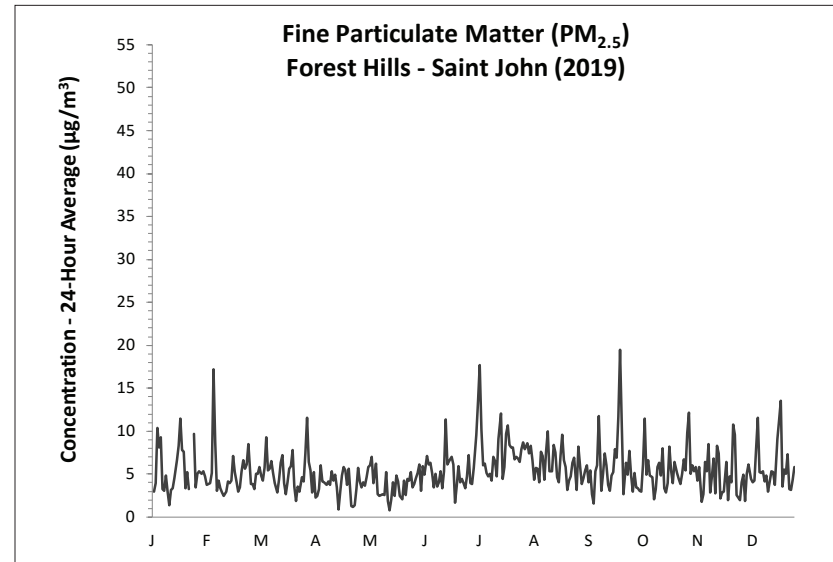
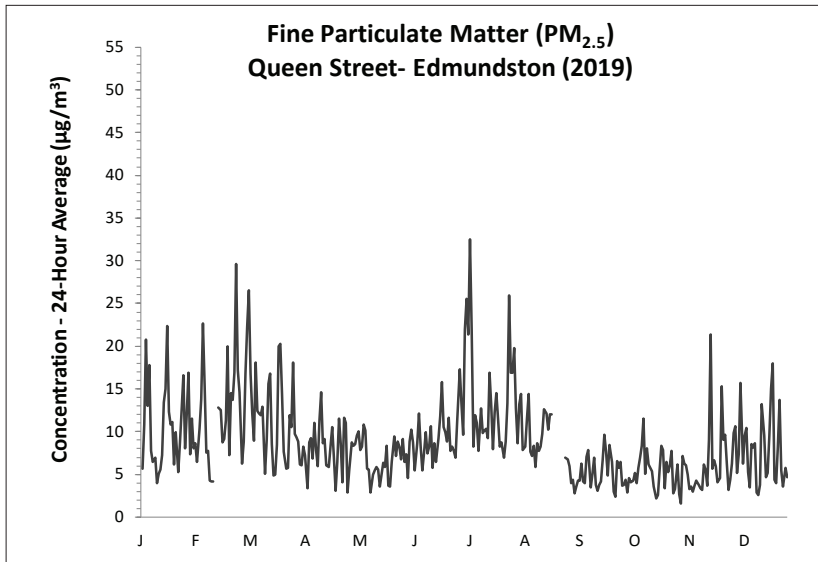
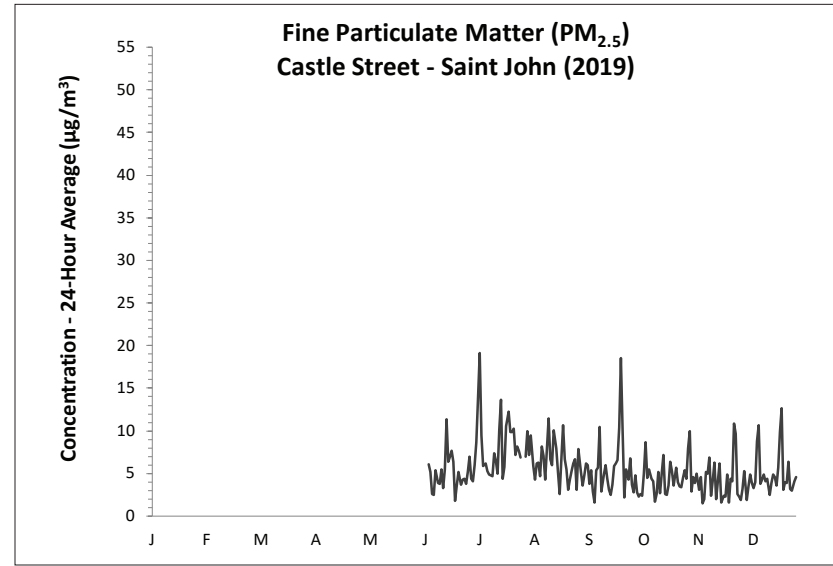
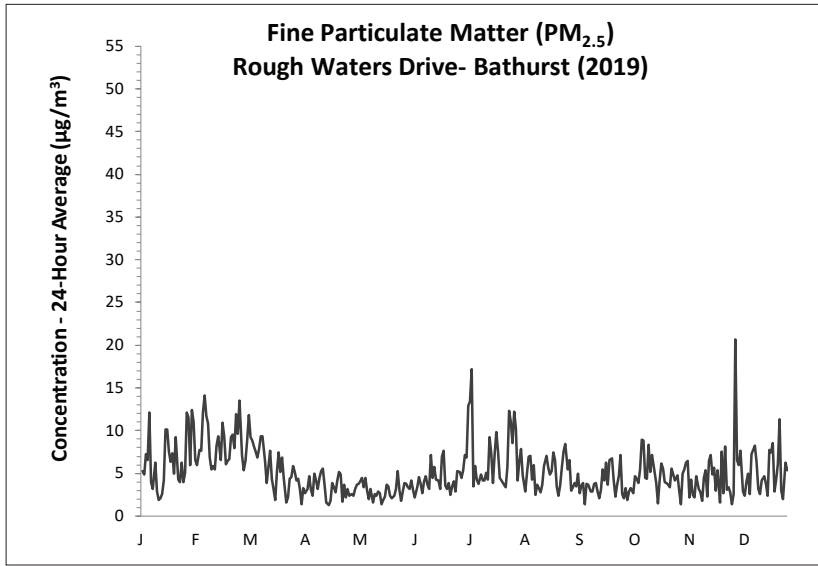
# PART I: STATIONS OPERATED BY THE PROVINCE - Continuous Air Quality Monitoring Results

## Ozone



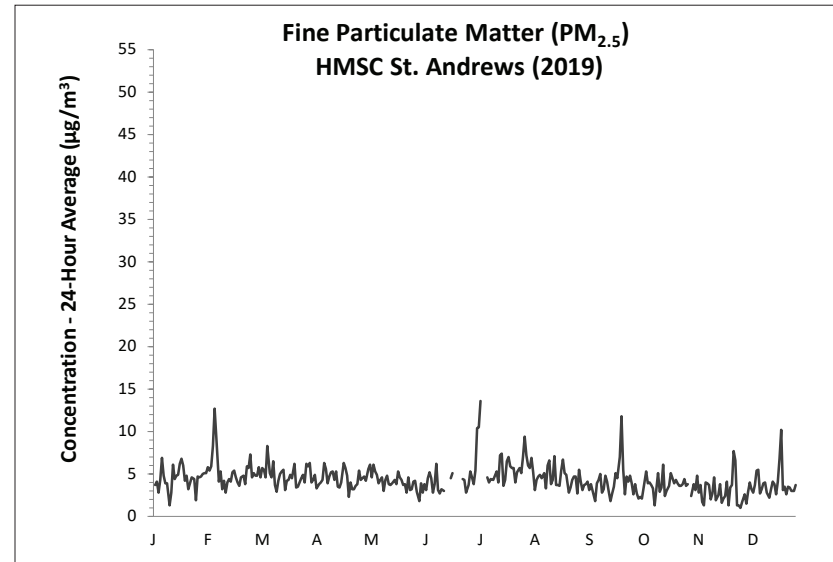
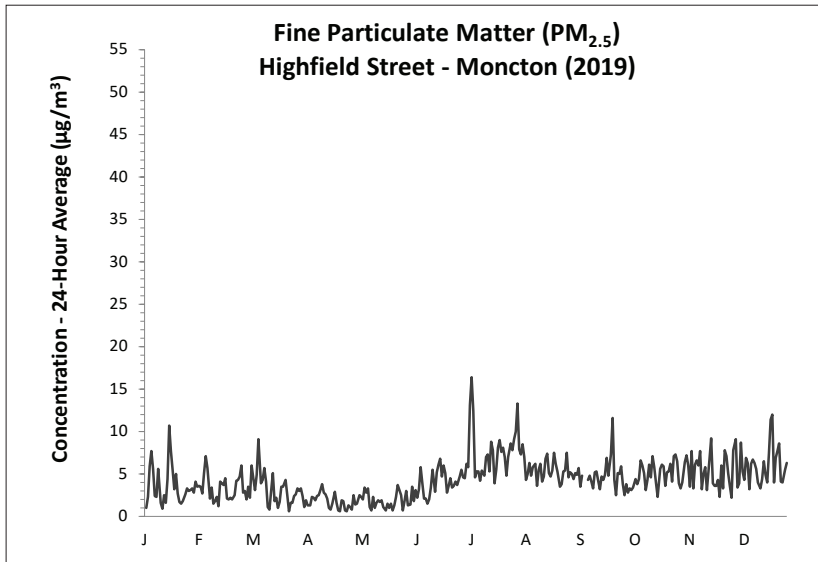
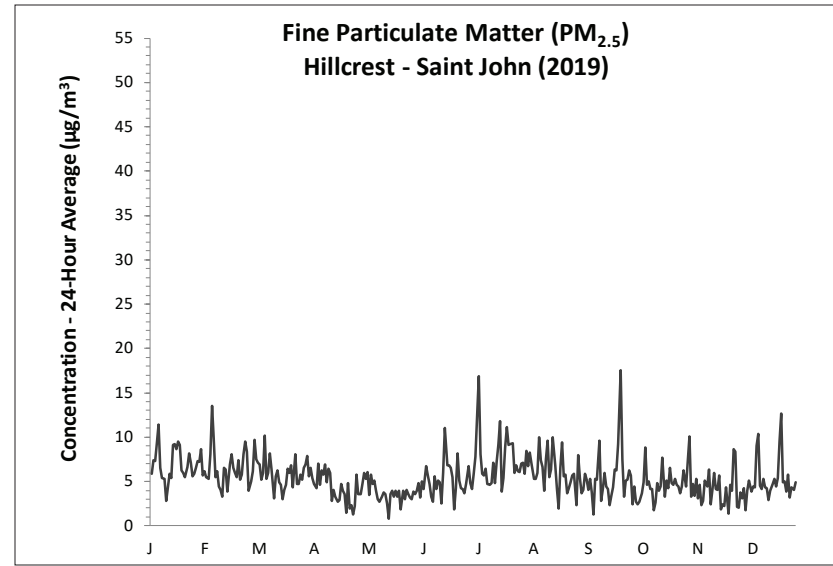
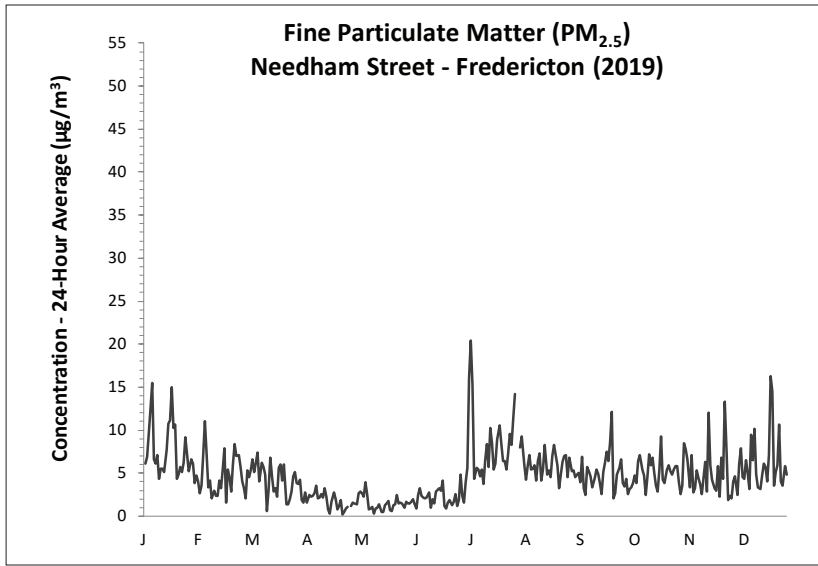
# PART I: STATIONS OPERATED BY THE PROVINCE - Continuous Air Quality Monitoring Results

## Fine Particulate Matter



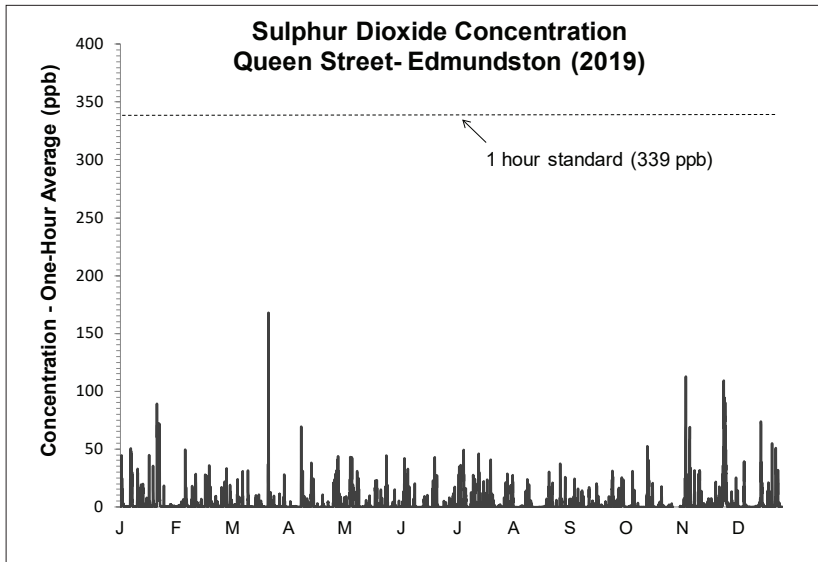
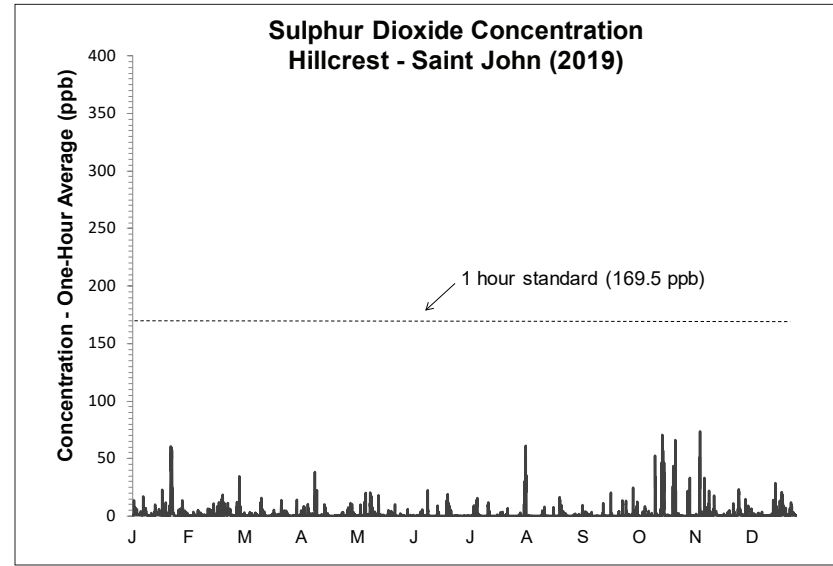
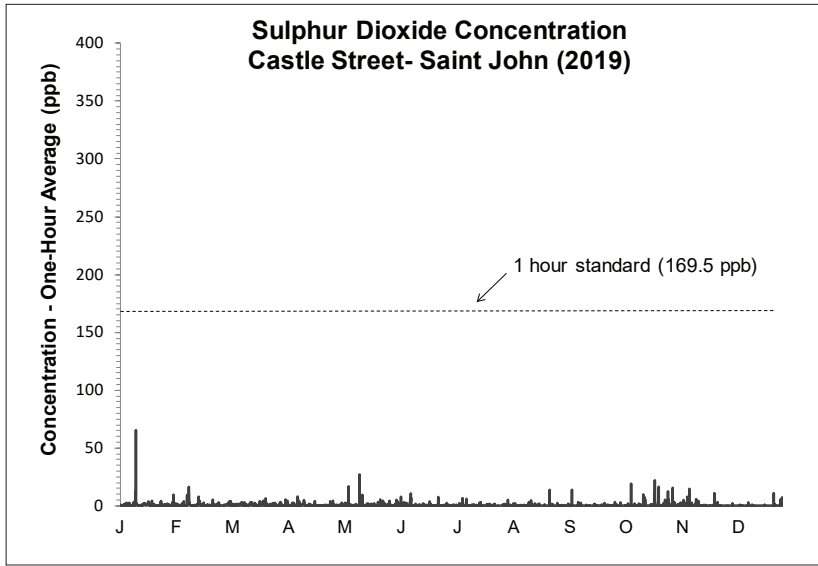
# PART I: STATIONS OPERATED BY THE PROVINCE - Continuous Air Quality Monitoring Results

## Fine Particulate Matter



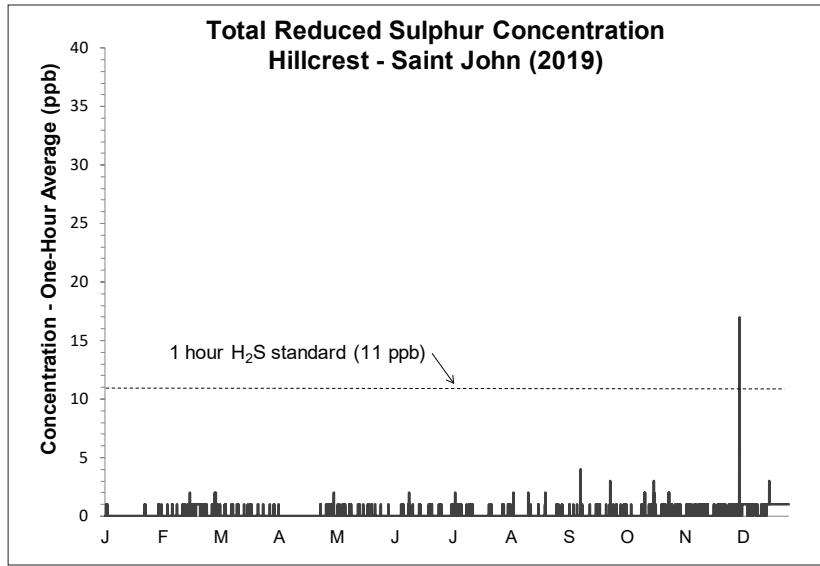
# PART I: STATIONS OPERATED BY THE PROVINCE - Continuous Air Quality Monitoring Results

## Sulphur Dioxide



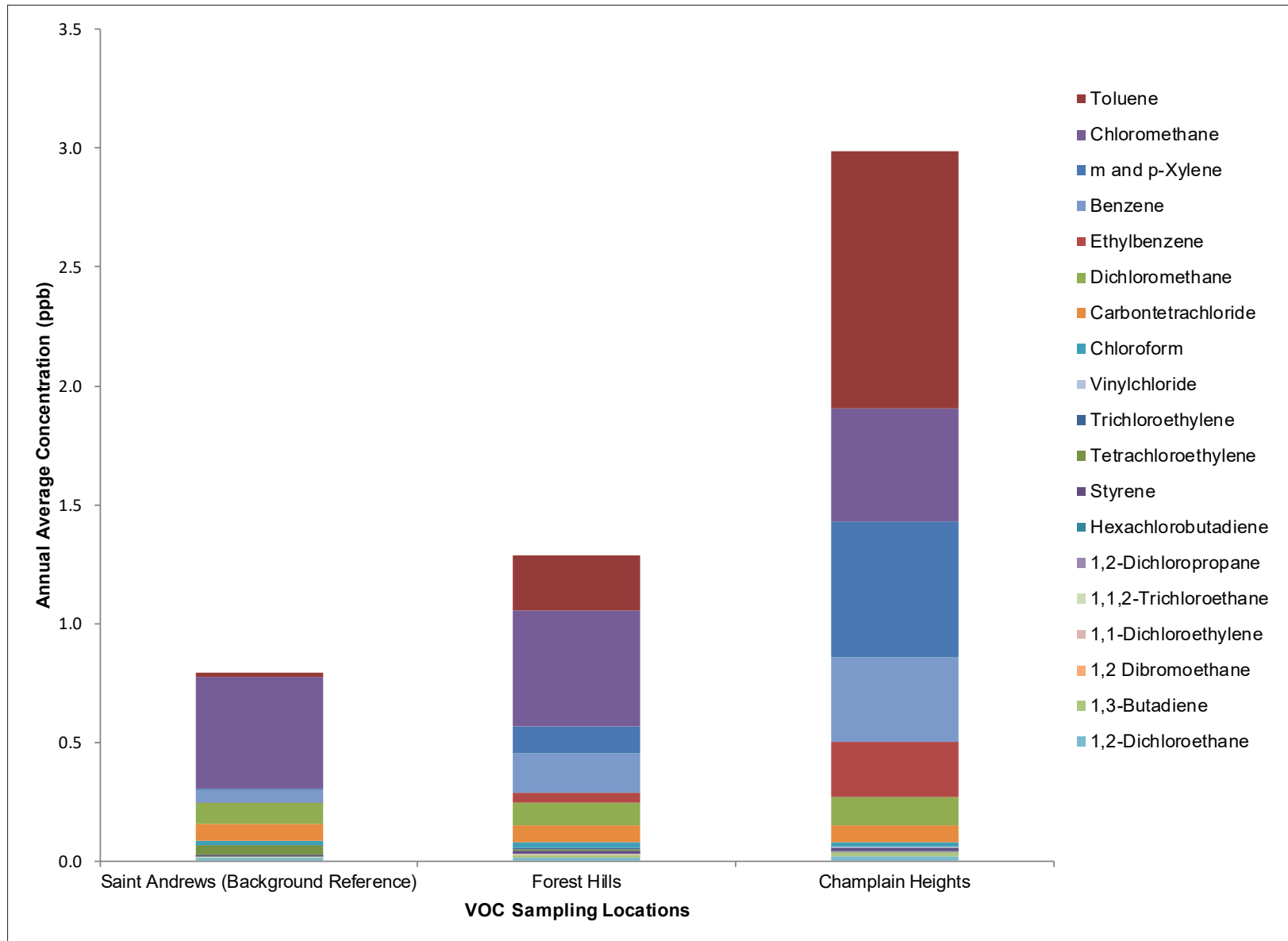
# PART I: STATIONS OPERATED BY THE PROVINCE - Continuous Air Quality Monitoring Results

## Total Reduced Sulphur



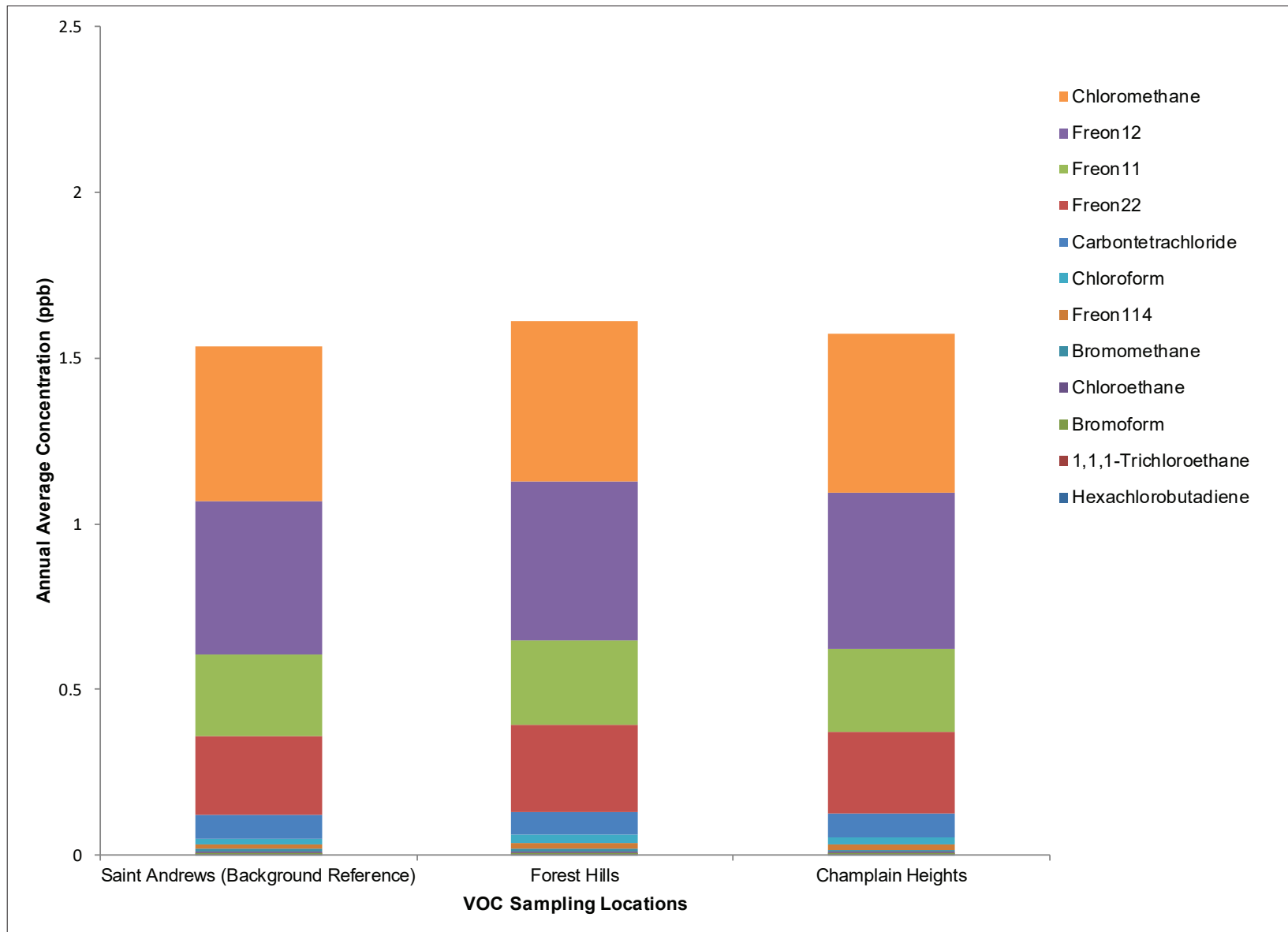
**PART I: STATIONS OPERATED BY THE PROVINCE - Volatile Organic Compounds, Saint John Region**

**Air Toxics - 2019 Annual Average Concentration Range Chart**

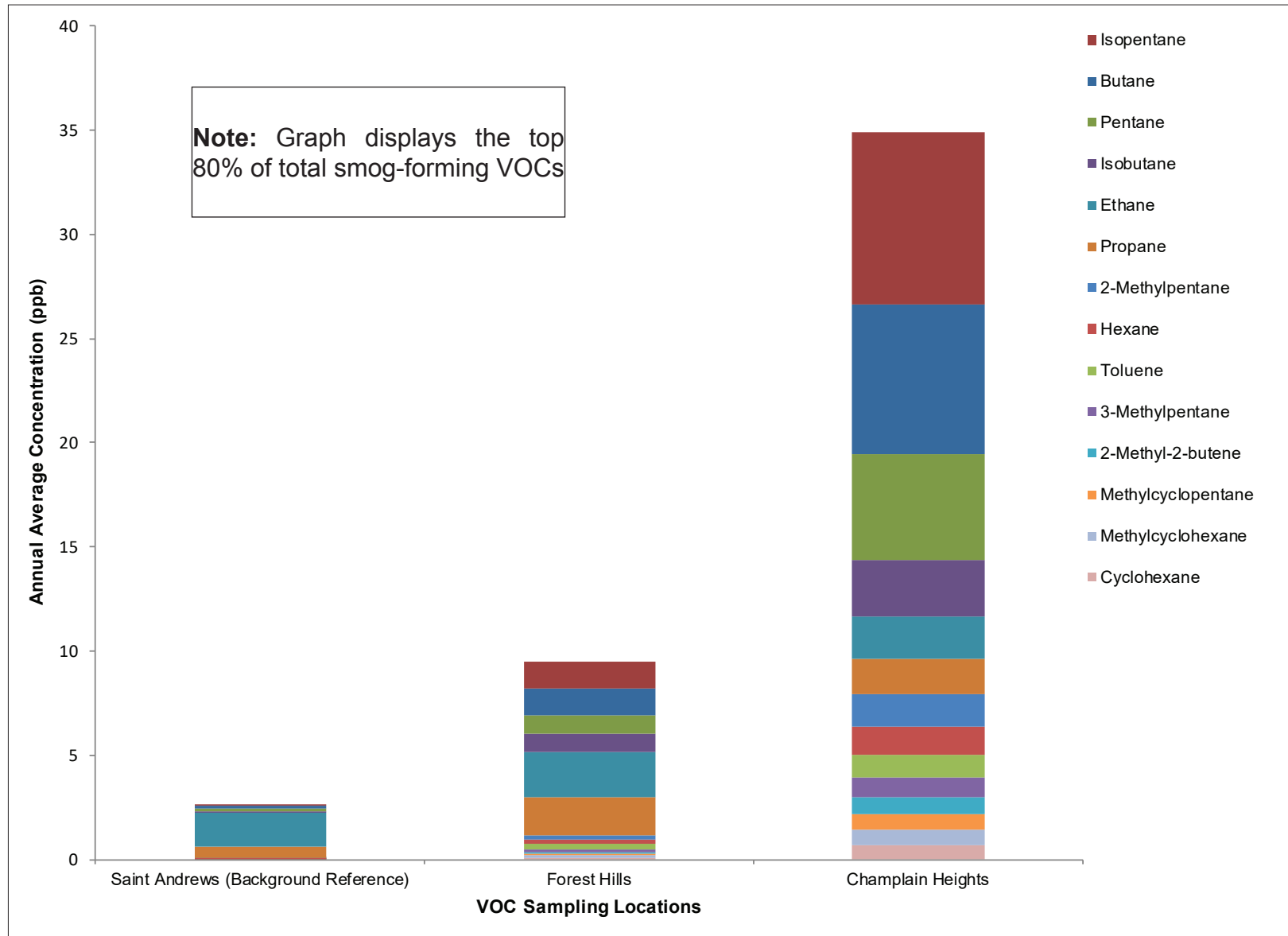




**PART I: STATIONS OPERATED BY THE PROVINCE - Volatile Organic Compounds, Saint John Region**  
**Ozone Depleting Substances - 2019 Annual Average Concentration Range Chart**



**PART I: STATIONS OPERATED BY THE PROVINCE - Volatile Organic Compounds, Saint John Region**  
**Smog-Forming VOCs - 2019 Annual Average Concentration Range Chart**



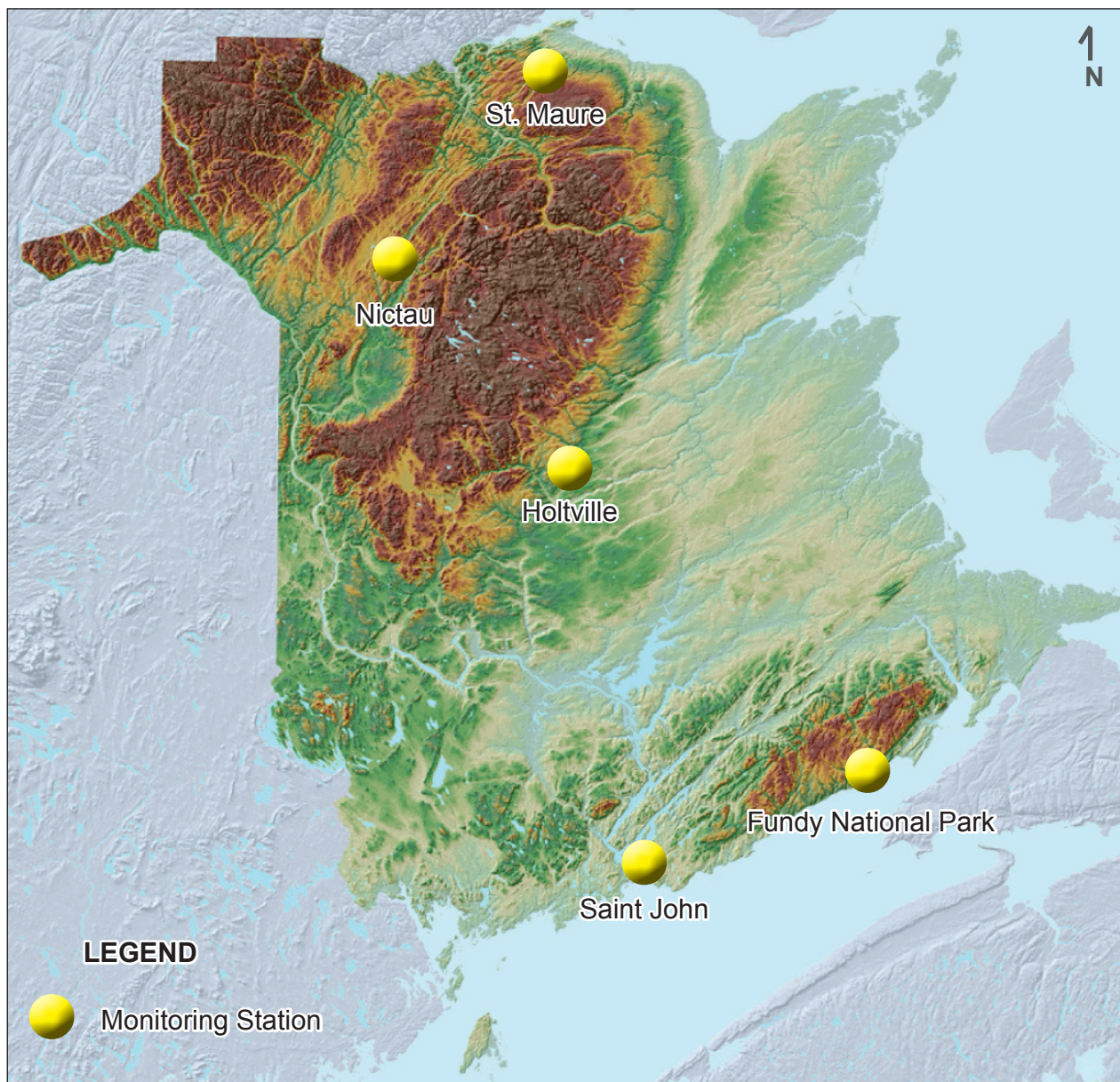
**PART I: STATIONS OPERATED BY THE PROVINCE - Volatile Organic Compounds, Saint John Region**  
**Aldehydes - 2019 Annual Average Concentrations Table**

<b>Parameter</b>	<b>Forest Hills, Annual Mean (ppb)</b>
2-Pentanone/Isovaleraldehyde	0.0006
Acetaldehyde	0.2046
Acetone	0.3754
Acrolein	--
Benzaldehyde	0.0158
Butanal	0.0050
Crotonaldehyde	0.0055
Formaldehyde	1.7876
Hexanal	0.0076
Methyl Ethyl Ketone	0.0416
Methyl Isobutyl Ketone	0.0036
m-Tolualdehyde	0.0004
Propionaldehyde	0.0237
p-Tolualdehyde	0.0208
Valeraldehyde	0.0029

-- insufficient data

**PART II:**  
**ACID PRECIPITATION MONITORING NETWORK**

# 2019 Acid Precipitation Network Map



## PART II: ACID PRECIPITATION MONITORING NETWORK - Sulphate and Nitrate Deposition Trends

### Annual Sulphate and Nitrate Wet Deposition (eq/ha/yr) at New Brunswick Monitoring Sites, 2010-2019

Site	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
St. Maure	177.00	168.80	120.53	121.30	140.76	86.68	95.41	85.79*	108.07	104.44
Robertville	184.26	173.56	118.33	124.20	168.35	85.95	--	--	--	--
Nictau	121.21	150.02	96.50	108.13	119.96	80.73	71.17	81.29	59.98**	64.82
Trout Brook	135.17	134.02	101.20	100.78	116.05	65.07	--	--	--	--
Holtville	122.63	184.33	98.19	127.23	126.63	78.33	73.59	99.39	117.31	89.33
Harcourt	159.91	139.40	91.68	99.92	120.67	74.02	--	--	--	--
South Oromocto Lake	163.31	164.09	128.81	154.73	150.02	107.51	--	--	--	--
Pennfield	290.78	--	228.24	265.32	223.61	179.91	--	--	--	--
Lakewood Heights	194.27	--	169.58	193.66	164.38	144.65	173.21	134.98	203.97	219.52
Fundy	226.37	263.55	208.08	249.13	200.13	143.40	126.30	122.62	206.17	198.28

\*41 weeks of data

\*\*42 weeks of data

-- insufficient data

## PART II: ACID PRECIPITATION MONITORING NETWORK - Sulphate and Nitrate Deposition Trends

**Annual Sulphate Wet Deposition (kg/ha/yr) at New Brunswick Monitoring Sites, 2010-2019**

Site	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
St. Maure	7.80	7.19	5.17	5.06	5.92	3.60	3.97	3.58*	4.56	4.18
Robertville	8.06	7.38	4.92	5.17	7.13	3.51	--	--	--	--
Nictau	5.01	6.07	3.77	4.25	4.65	3.02	2.59	3.07	2.26**	2.40
Trout Brook	5.69	5.49	4.09	4.01	4.71	2.46	--	--	--	--
Holtville	4.99	7.52	3.88	5.02	5.00	2.92	2.79	3.86	4.43	3.33
Harcourt	6.76	5.69	3.67	3.92	4.82	2.77	--	--	--	--
South Oromocto Lake	6.77	6.73	5.16	6.24	5.96	4.00	--	--	--	--
Pennfield	12.49	---	9.65	11.28	9.31	7.30	--	--	--	--
Lakewood Heights	8.29	---	7.20	8.20	8.12	5.98	7.28	5.63	8.68	9.34
Fundy	9.65	11.20	8.86	10.64	8.21	5.82	5.14	5.09	8.52	8.31

\*41 weeks of data

\*\*42 weeks of data

-- insufficient data

## PART II: ACID PRECIPITATION MONITORING NETWORK - Sulphate and Nitrate Deposition Trends

**Annual Nitrate Wet Deposition (kg/ha/yr) at New Brunswick Monitoring Sites, 2010-2019**

Site	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
St. Maure	0.90	1.18	0.80	0.99	1.09	0.72	0.80	0.70*	0.81	1.08
Robertville	1.02	1.24	0.99	1.03	1.17	0.79	--	--	--	--
Nictau	1.05	1.46	1.12	1.23	1.44	1.11	1.07	1.08	0.80**	0.92
Trout Brook	1.04	1.23	1.00	1.07	1.11	0.86	--	--	--	--
Holtville	1.16	1.72	1.08	1.41	1.40	1.08	0.97	1.19	1.56	1.24
Harcourt	1.19	1.30	0.95	1.14	1.26	1.01	--	--	--	--
South Oromocto Lake	1.39	1.49	1.33	1.54	1.61	1.51	--	--	--	--
Pennfield	1.90	--	1.70	1.89	1.85	1.74	--	--	--	--
Lakewood Heights	1.35	--	1.22	1.42	1.57	1.25	1.34	1.10	1.44	1.56
Fundy	1.58	1.89	1.46	1.71	1.81	1.39	1.20	1.03	1.79	1.57

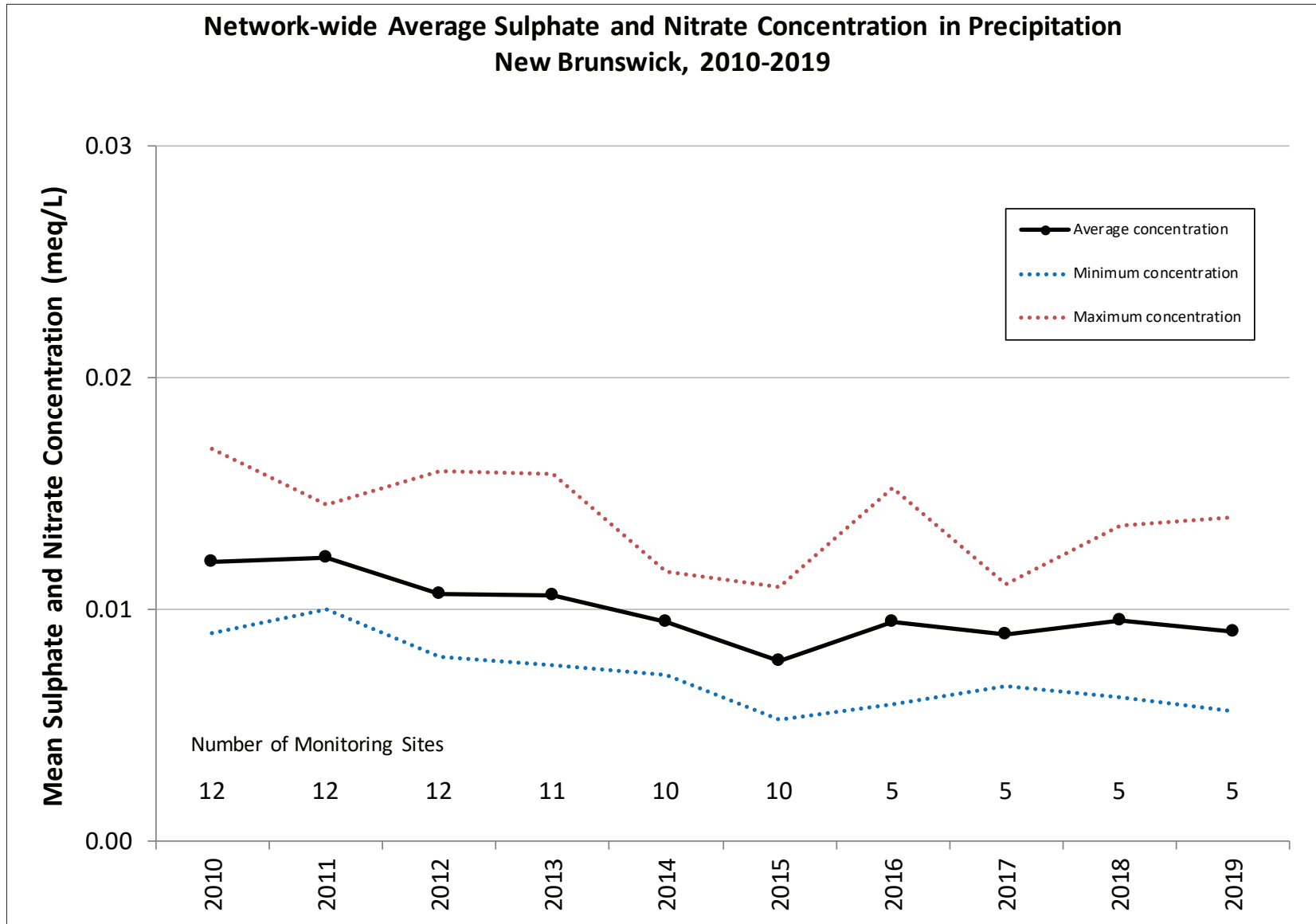
\*41 weeks of data

\*\*42 weeks of data

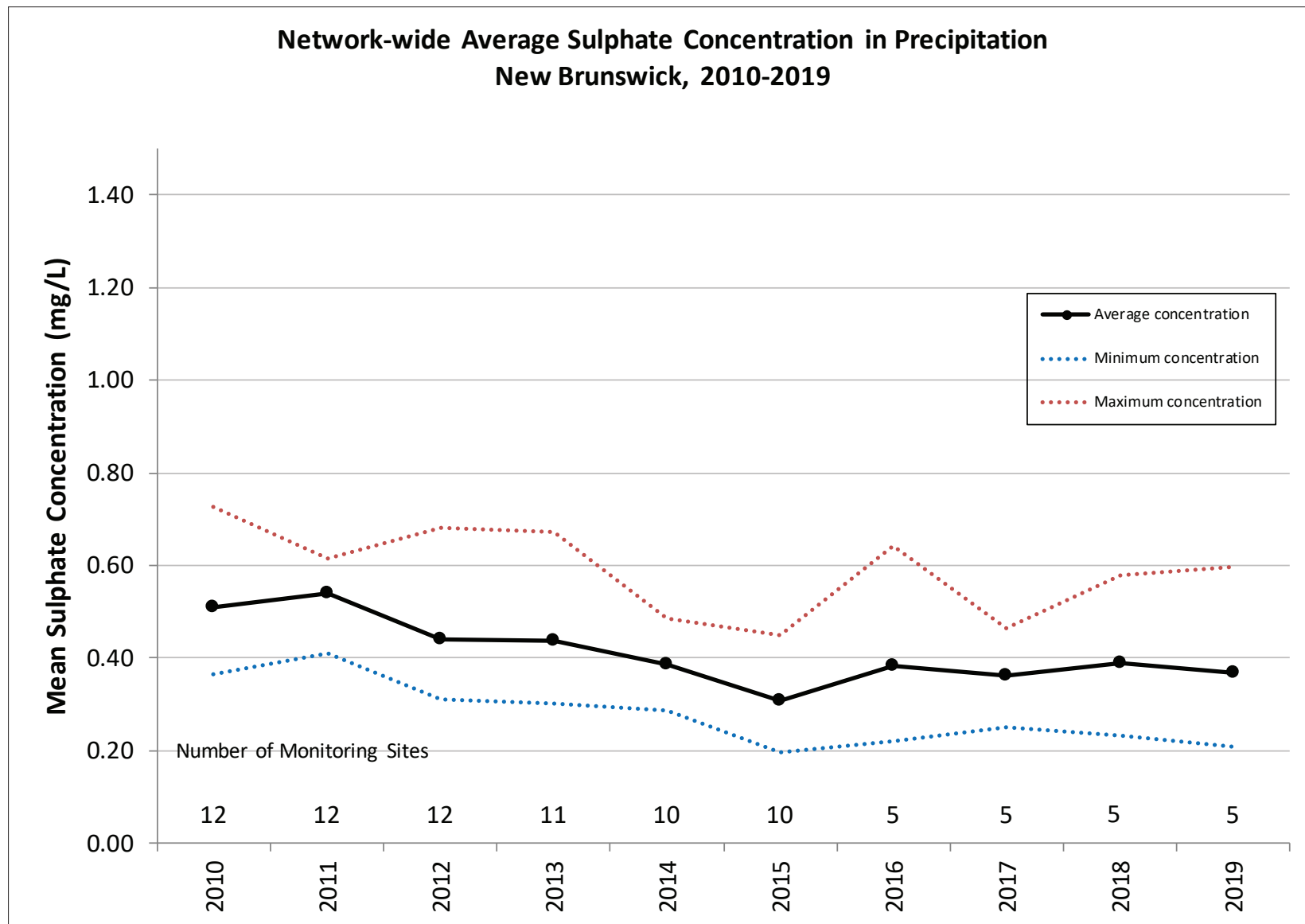
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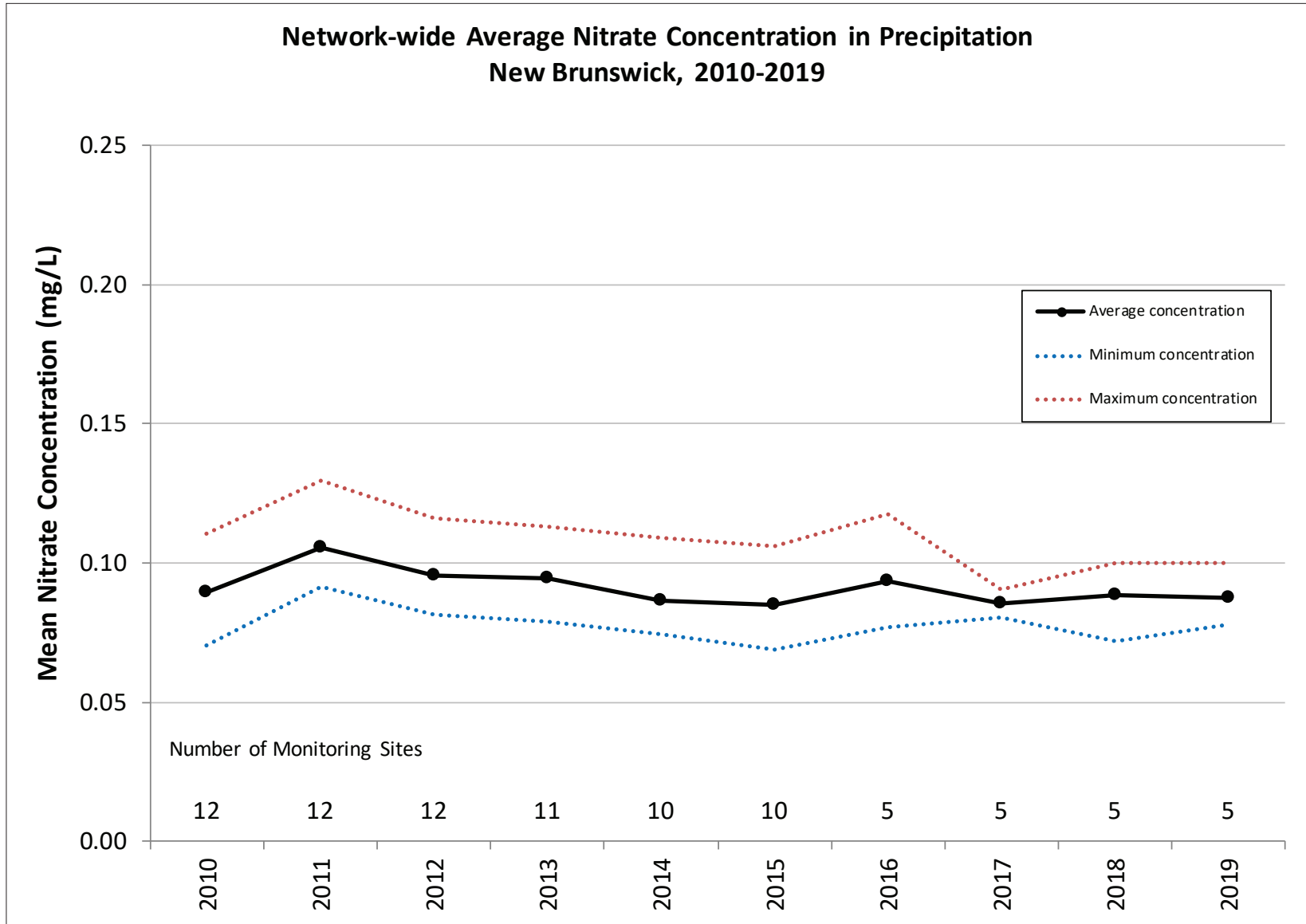
**PART II: ACID PRECIPITATION MONITORING NETWORK - Network-wide Annual Mean Sulphate and Nitrate Concentration Trends**



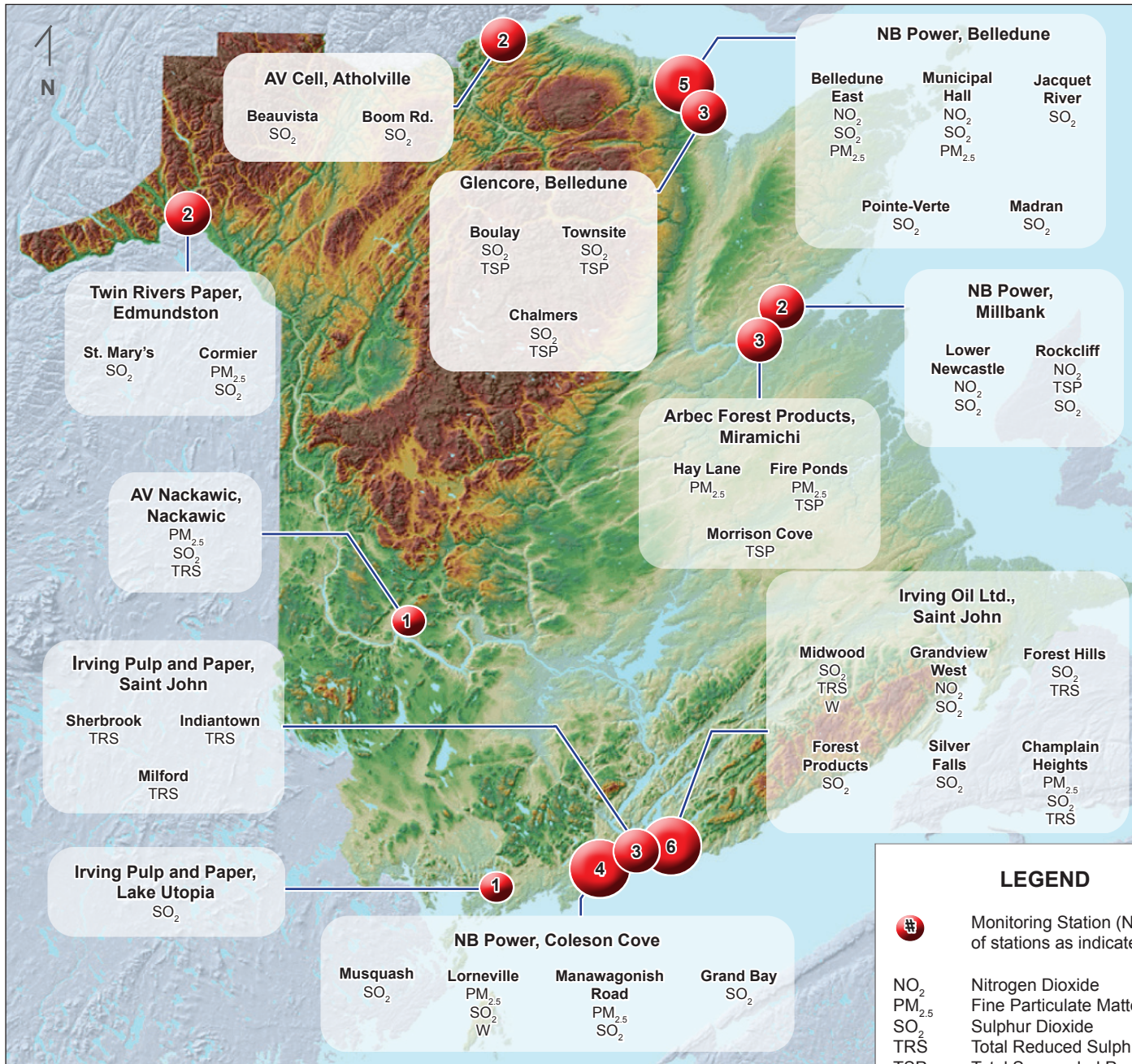
**PART II: ACID PRECIPITATION MONITORING NETWORK - Network-wide Annual Mean Sulphate and Nitrate Concentration Trends**



**PART II: ACID PRECIPITATION MONITORING NETWORK - Network-wide Annual Mean Sulphate and Nitrate Concentration Trends**



**PART III:**  
**THE PROVINCIAL AIR QUALITY MONITORING NETWORK:**  
**STATIONS OPERATED BY INDUSTRY**

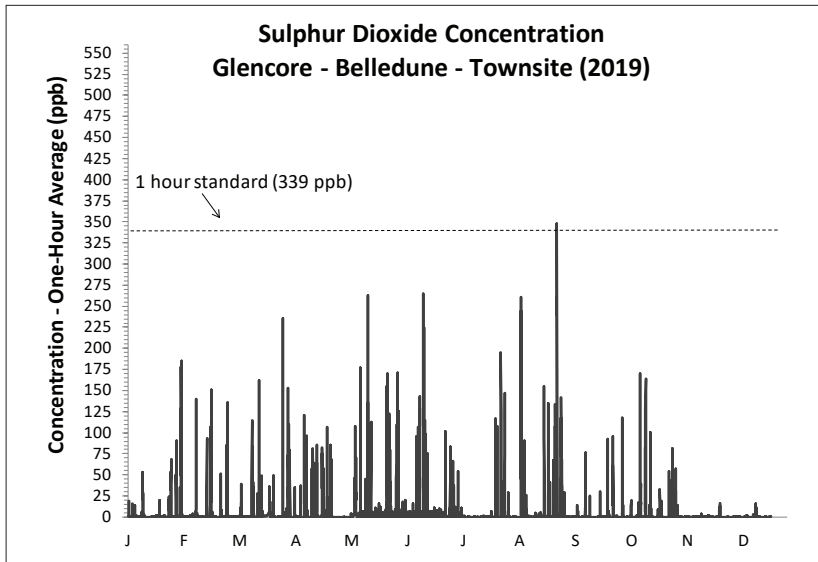
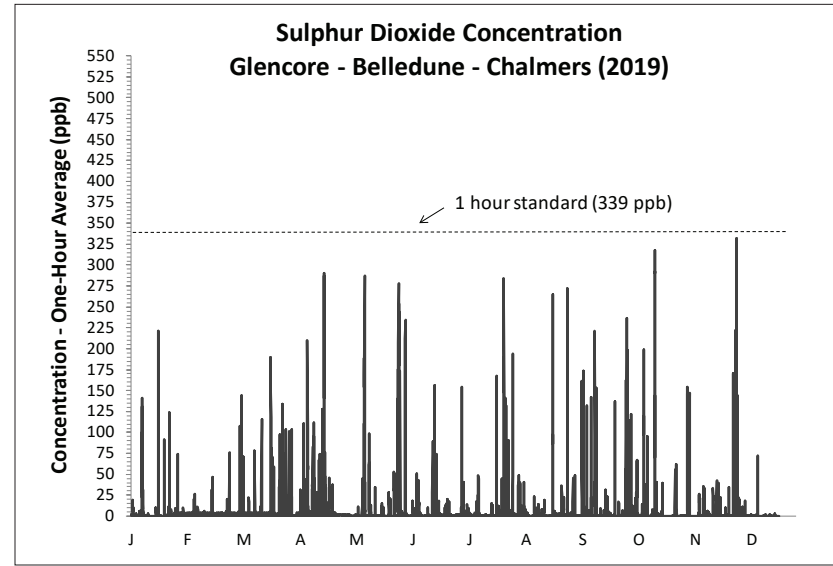
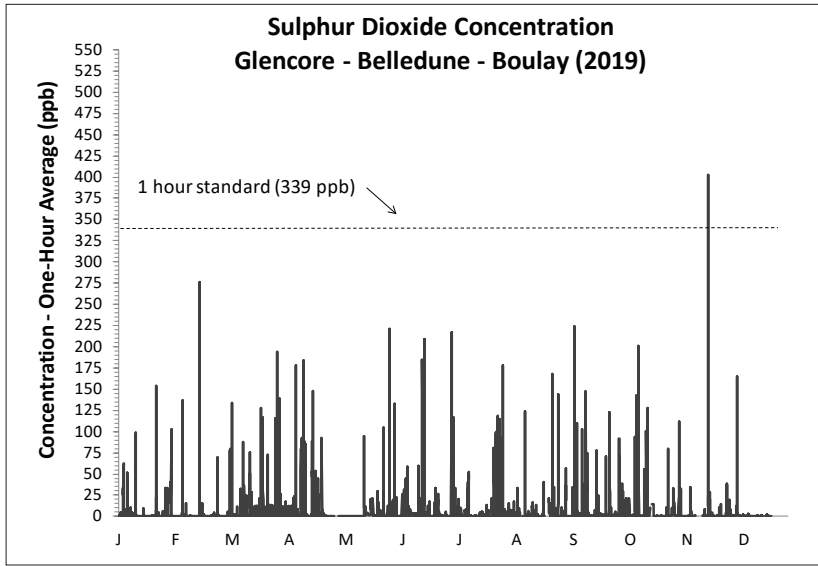


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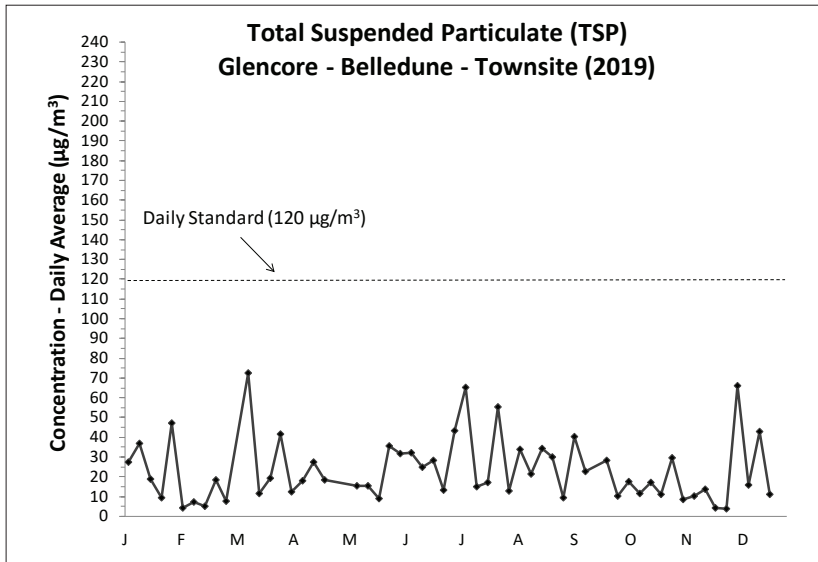
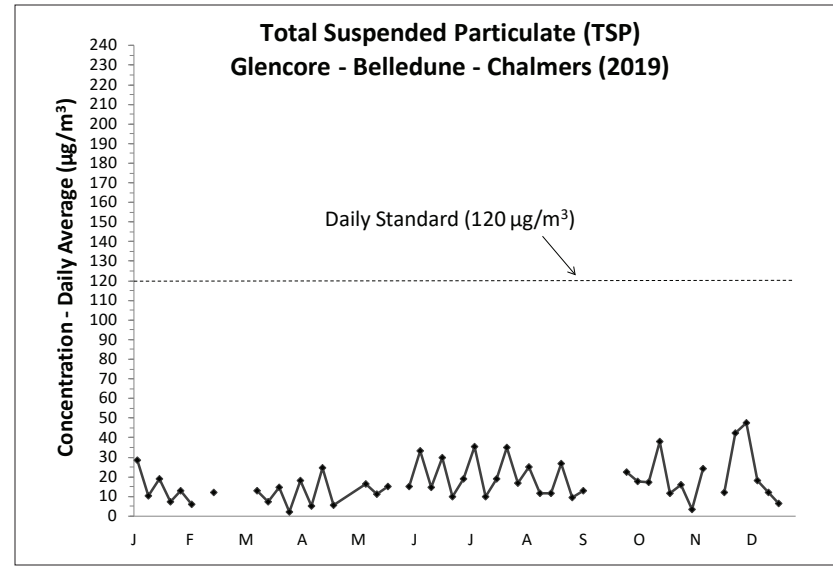
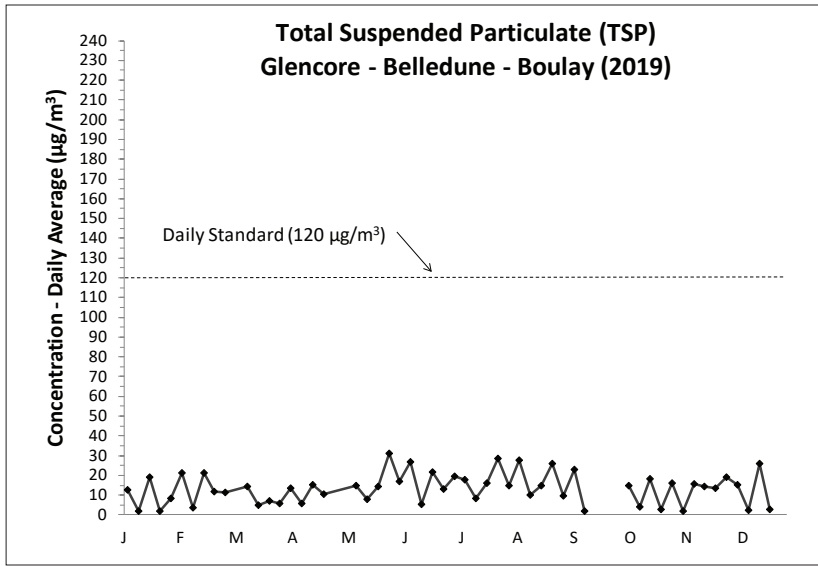
Monitoring Station (Number of stations as indicated)

NO<sub>2</sub> Nitrogen Dioxide  
 PM<sub>2.5</sub> Fine Particulate Matter  
 SO<sub>2</sub> Sulphur Dioxide  
 TRS Total Reduced Sulphur  
 TSP Total Suspended Particulate  
 W Wind Speed & Direction

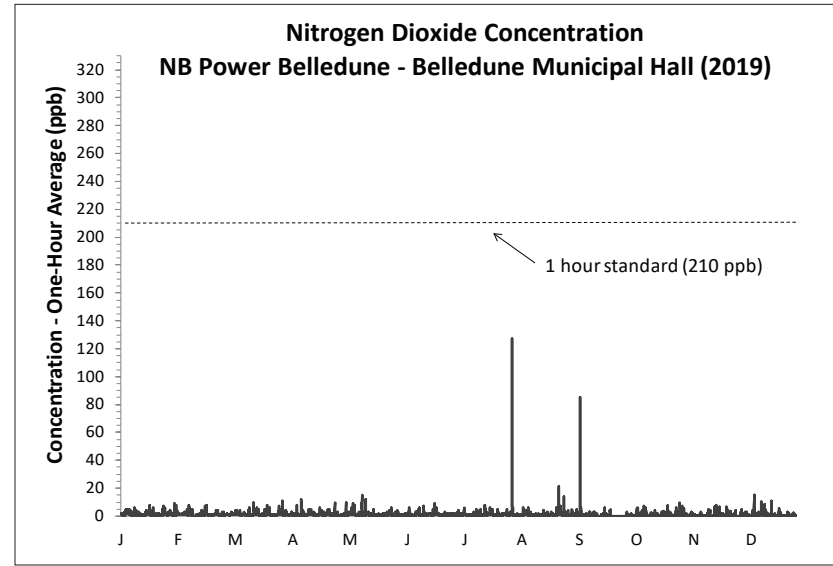
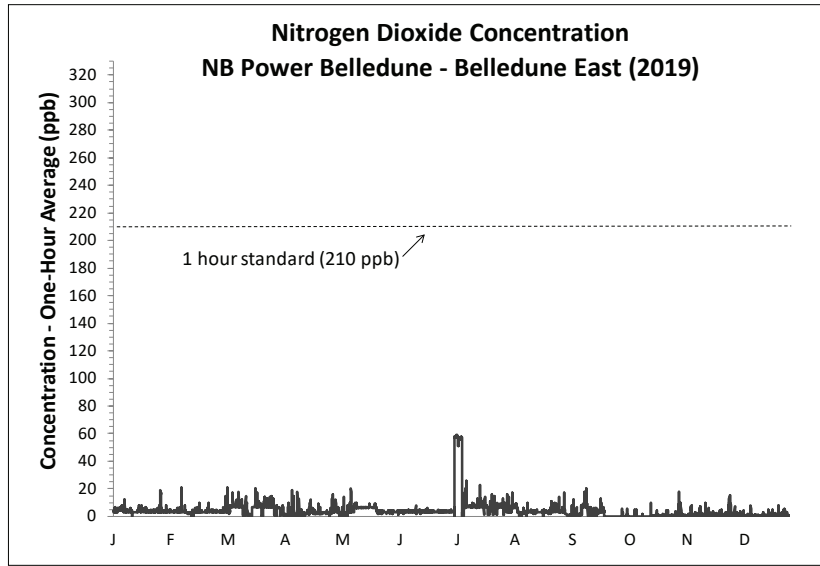
**PART III: STATIONS OPERATED BY INDUSTRY - Glencore, Belledune - Sulphur Dioxide**



**PART III: STATIONS OPERATED BY INDUSTRY - Glencore, Belledune - Total Suspended Particulate**

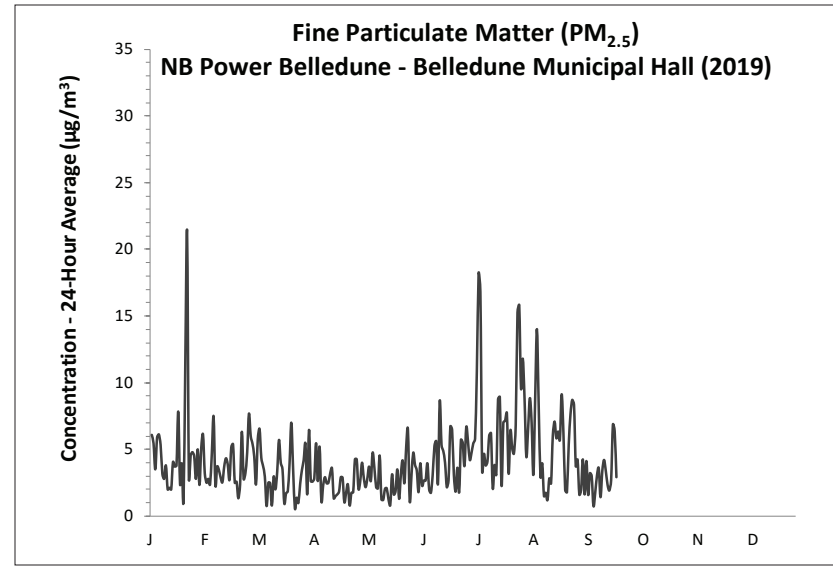
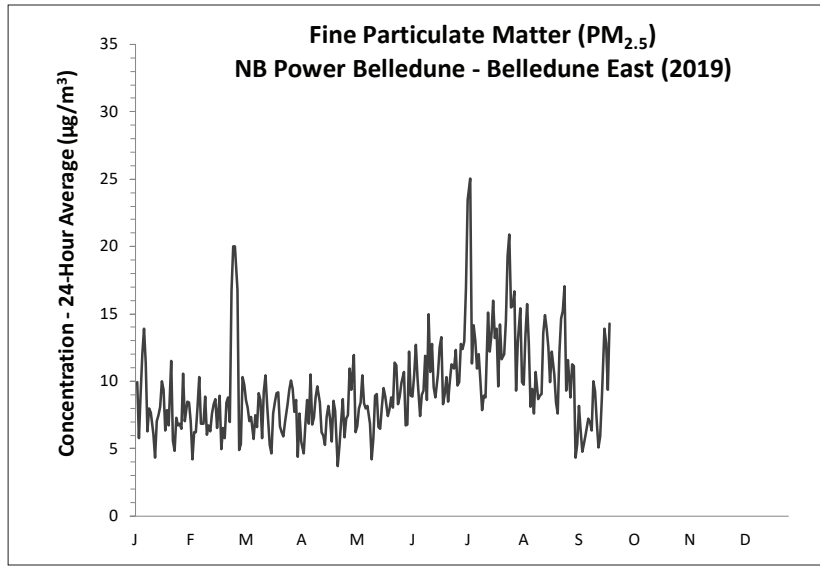


**PART III: STATIONS OPERATED BY INDUSTRY - NB Power, Belledune - Nitrogen Dioxide**

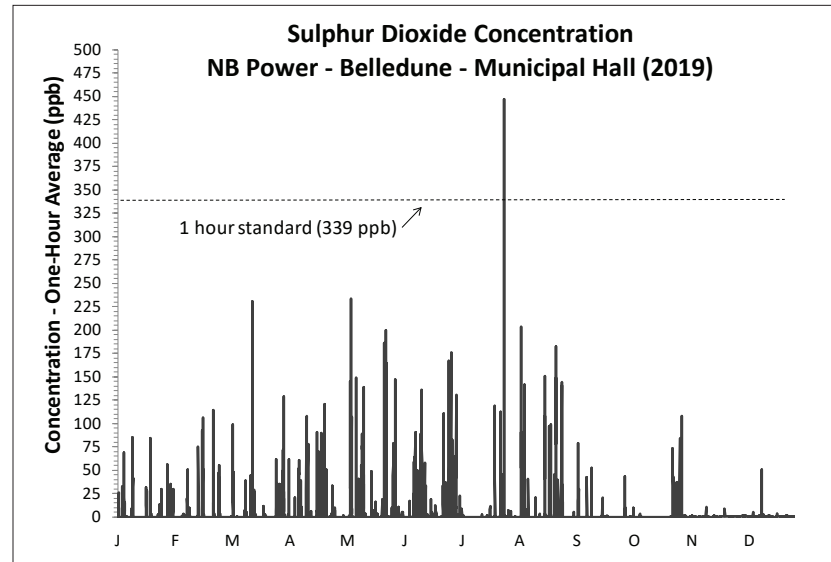
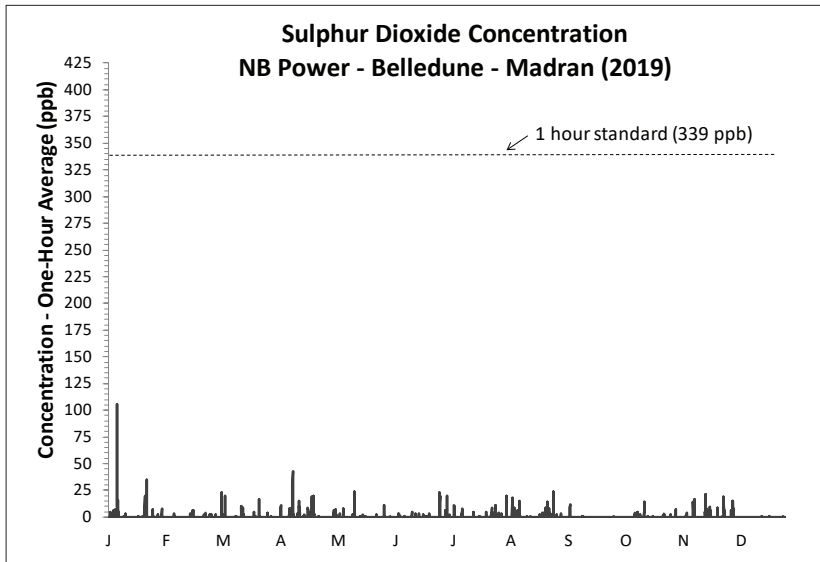
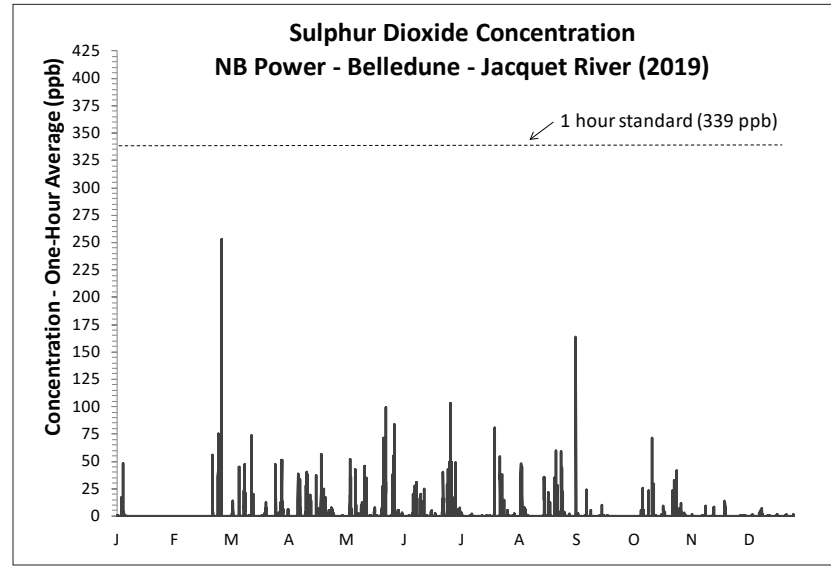
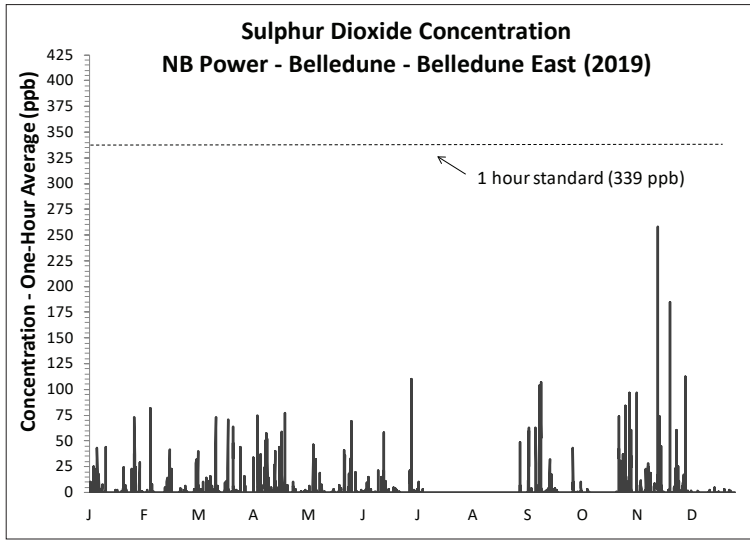




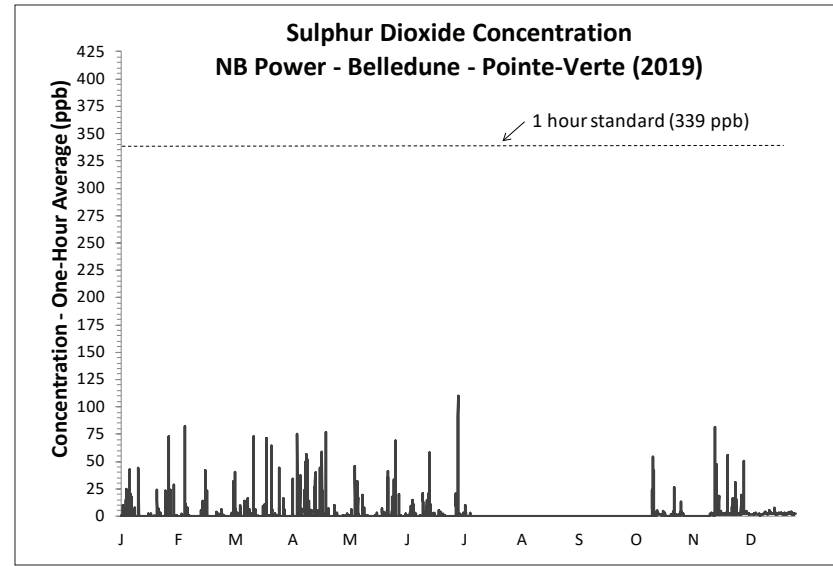
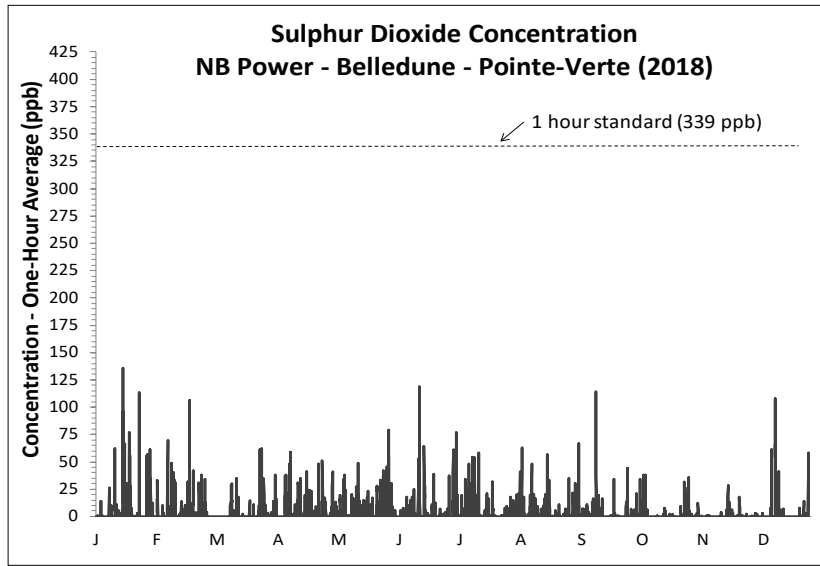
**PART III: STATIONS OPERATED BY INDUSTRY - NB Power, Belledune - Fine Particulate Matter**



**PART III: STATIONS OPERATED BY INDUSTRY - NB Power, Belledune - Sulphur Dioxide**

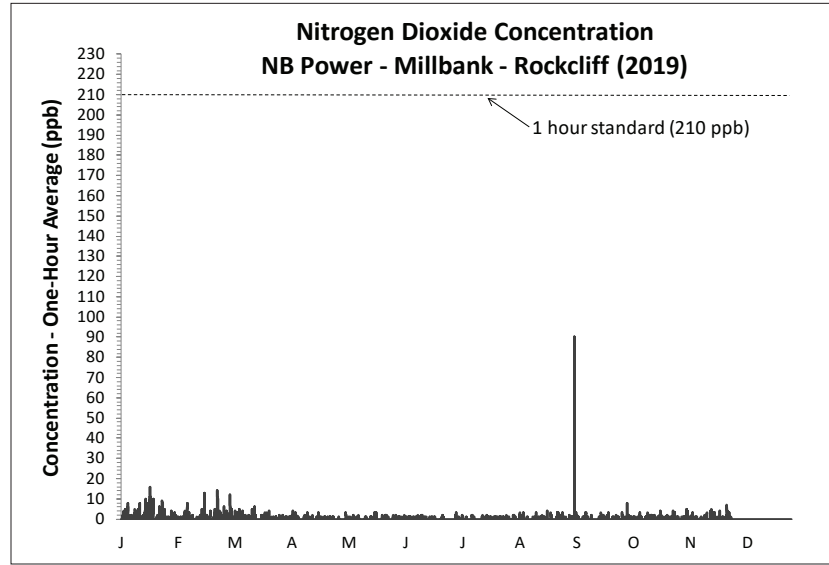


### PART III: STATIONS OPERATED BY INDUSTRY - NB Power, Belledune - Sulphur Dioxide



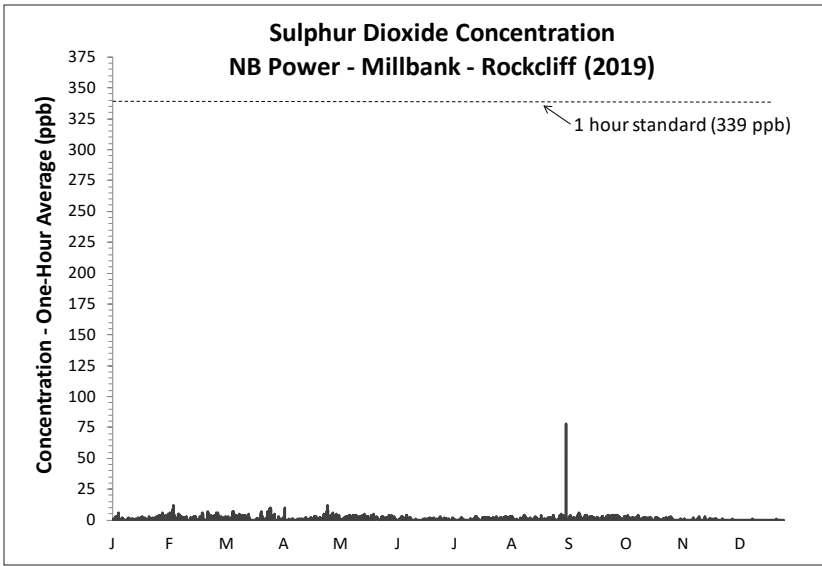
**PART III: INDUSTRY-OPERATED NETWORKS - NB Power, Millbank - Nitrogen Dioxide**

Nitrogen Dioxide Concentration  
NB Power - Millbank - Lower Newcastle  
  
Data Not Available

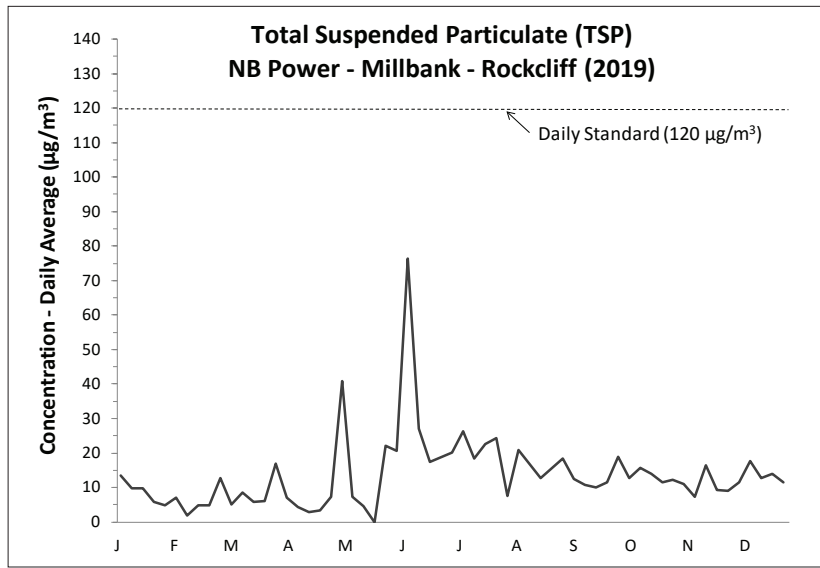


**PART III: INDUSTRY-OPERATED NETWORKS - NB Power, Millbank - Sulphur Dioxide**

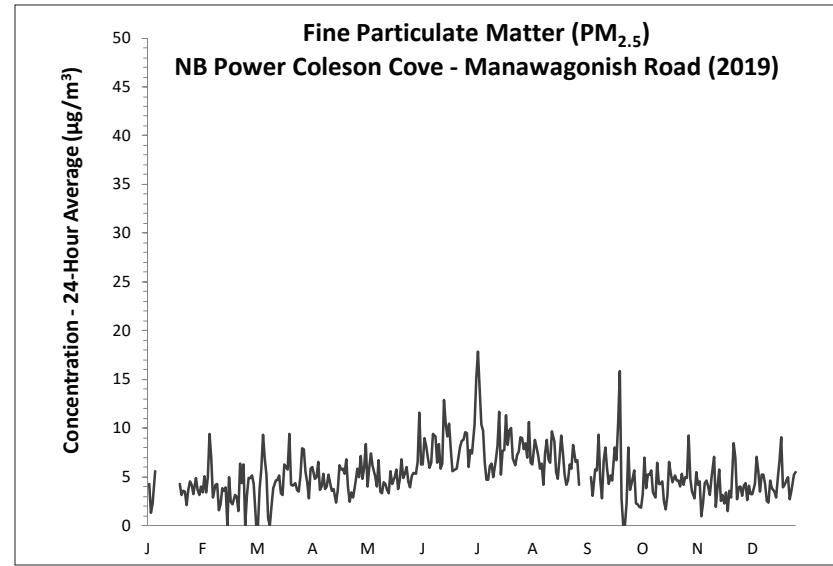
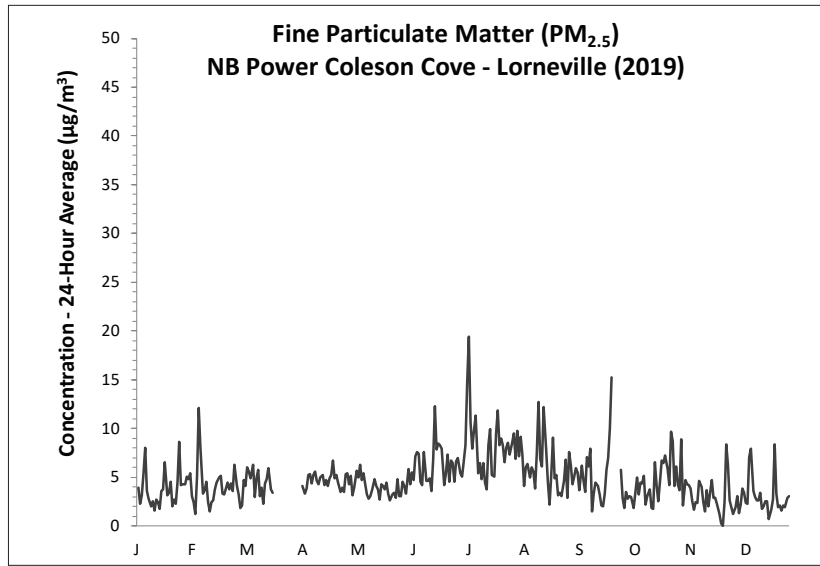
Sulphur Dioxide Concentration  
NB Power - Millbank - Lower Newcastle  
  
Data Not Available



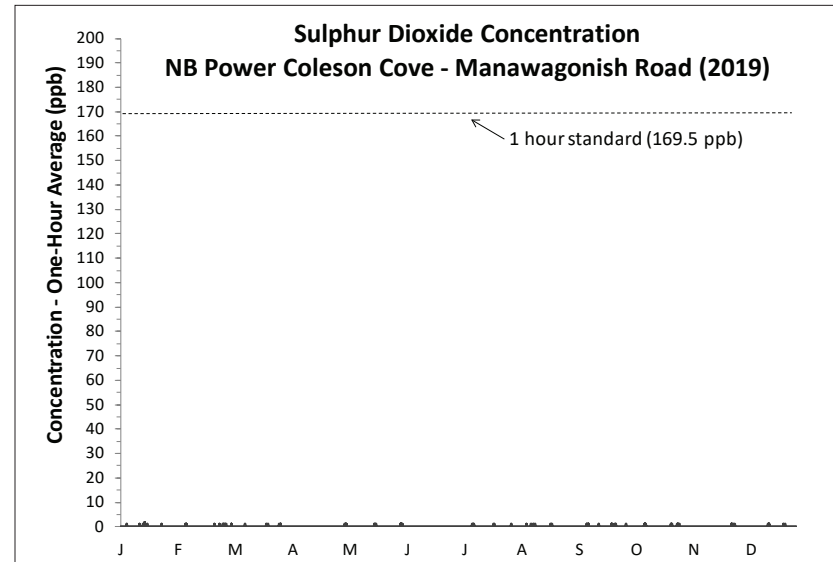
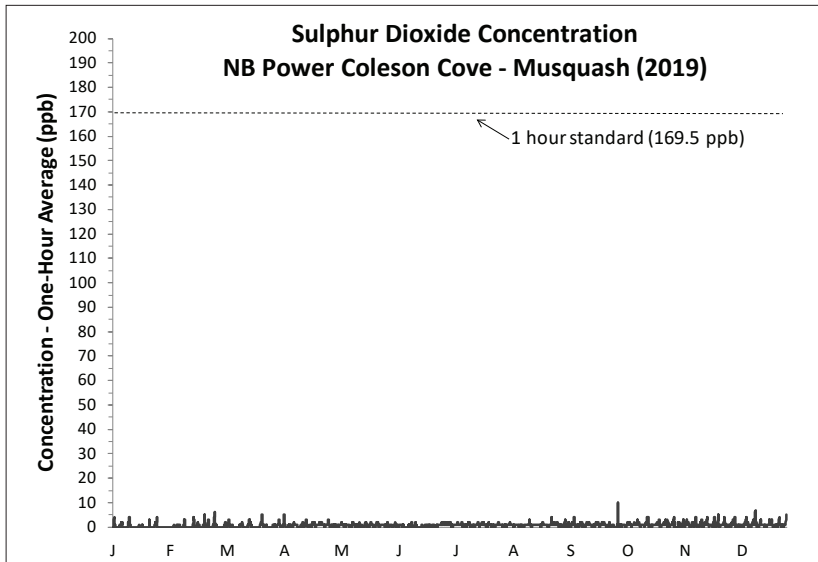
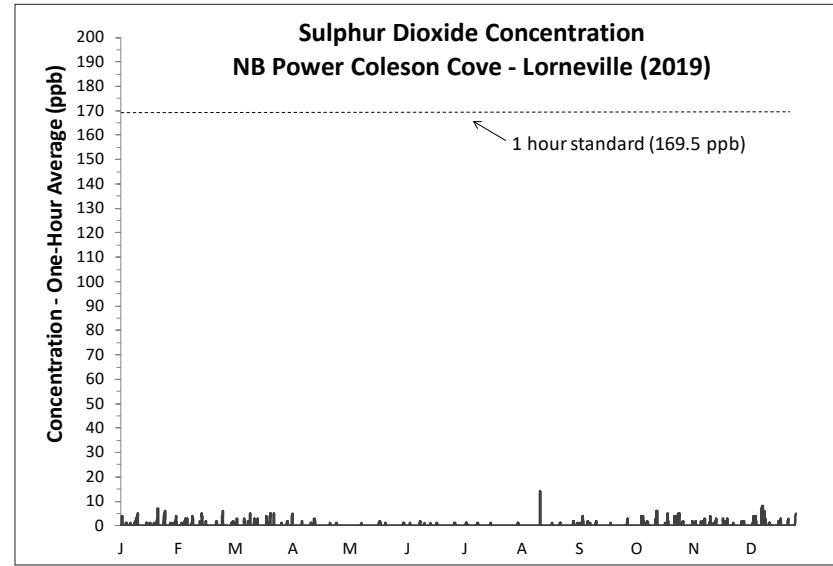
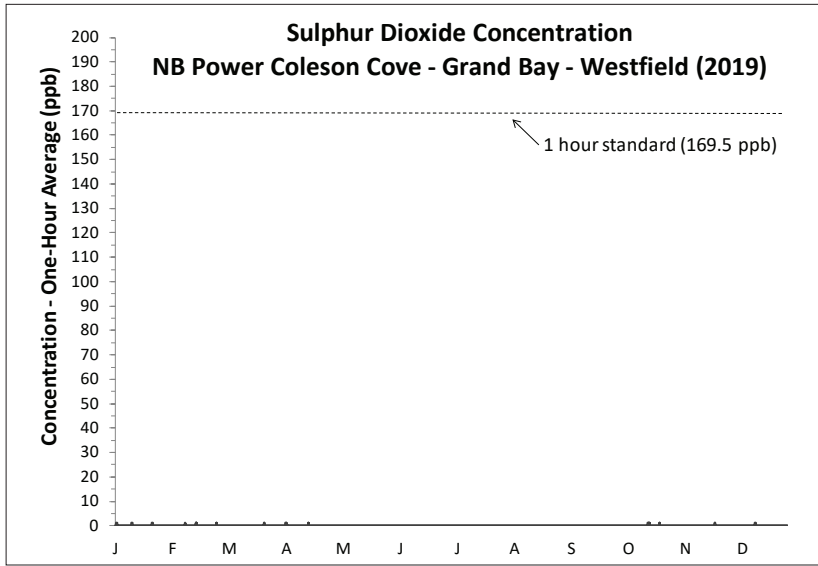
### PART III: STATIONS OPERATED BY INDUSTRY - NB Power, Millbank - Total Suspended Particulate



**PART III: STATIONS OPERATED BY INDUSTRY - NB Power, Coleson Cove - Fine Particulate Matter**



**PART III: STATIONS OPERATED BY INDUSTRY - NB Power, Coleson Cove - Sulphur Dioxide**



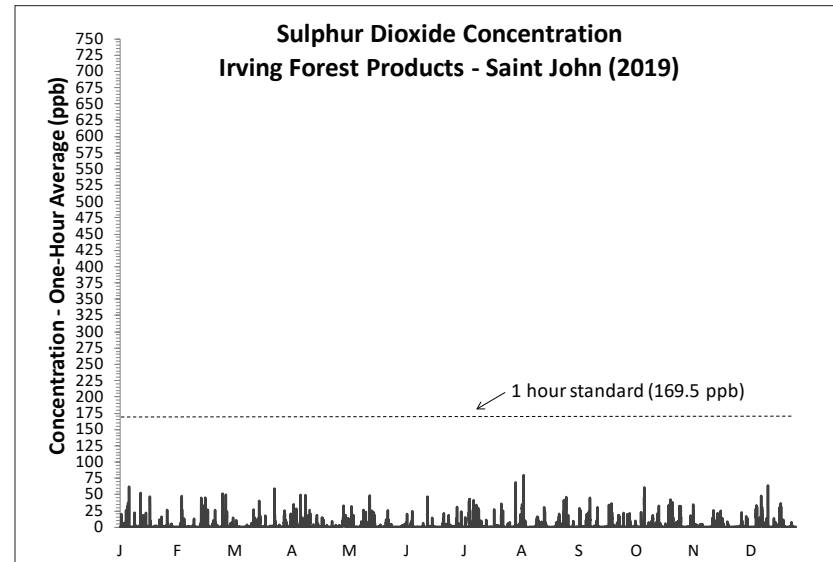
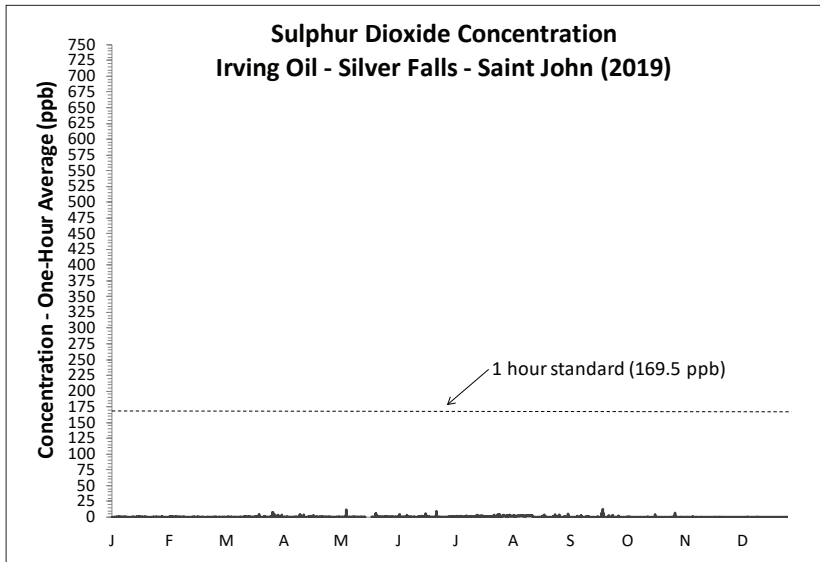
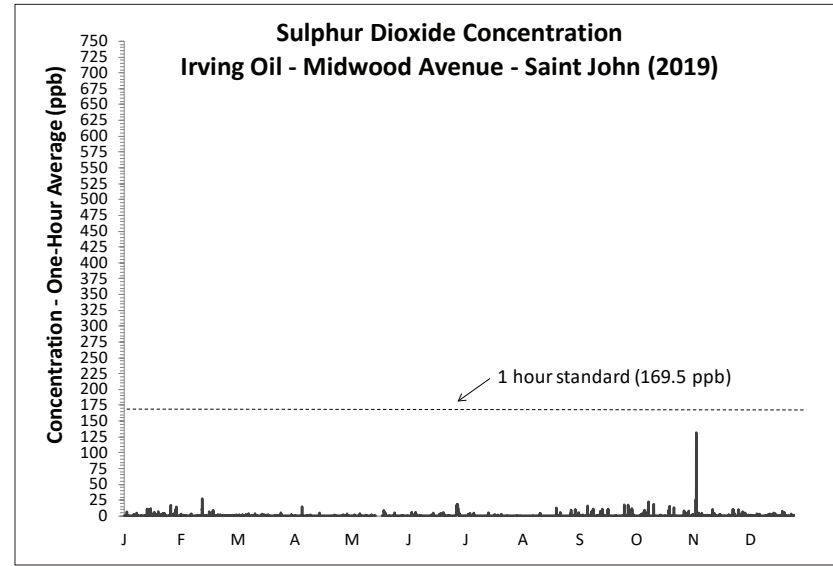
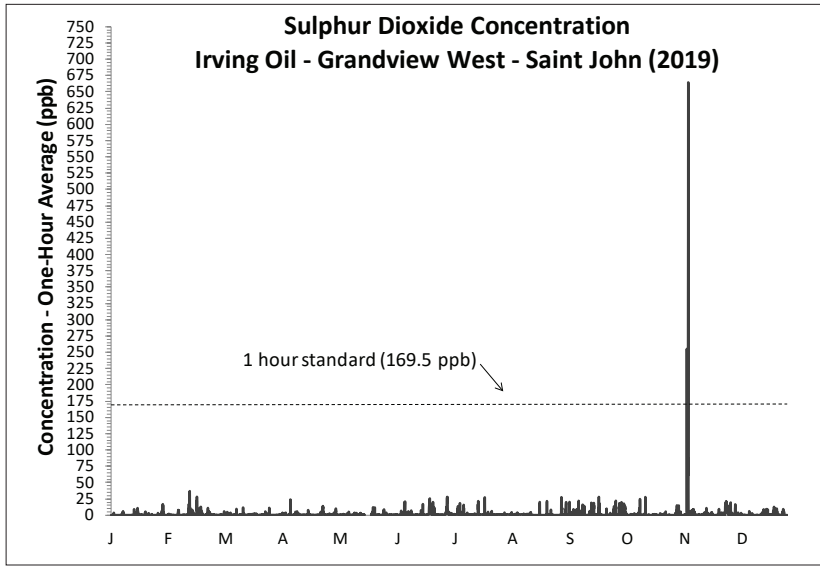


**PART III: STATIONS OPERATED BY INDUSTRY - Irving Oil Ltd., Saint John - Nitrogen Dioxide**

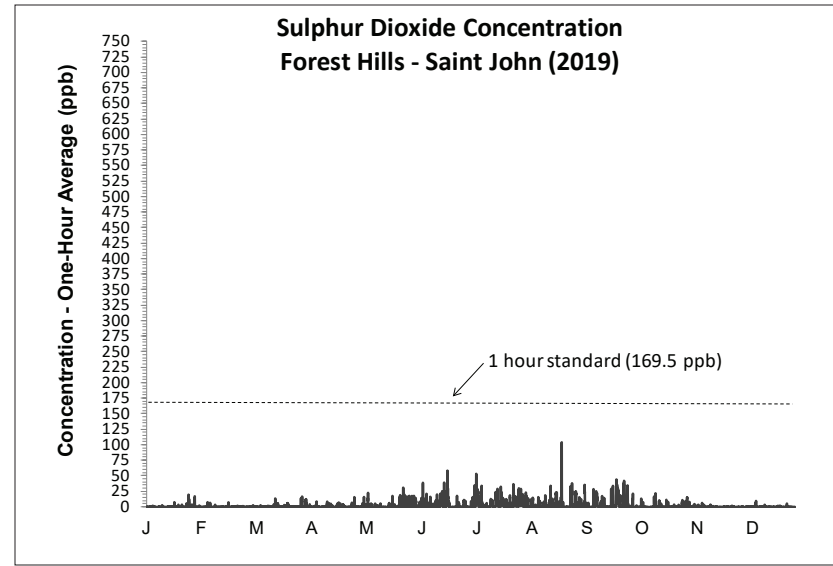
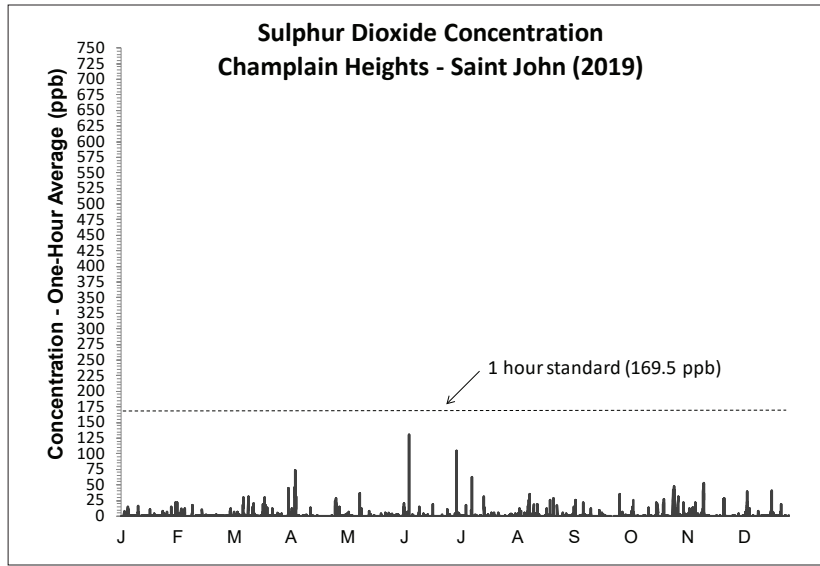
Nitrogen Dioxide Concentration  
Irving Oil Ltd. - Saint John - Grandview West

Data Not Available

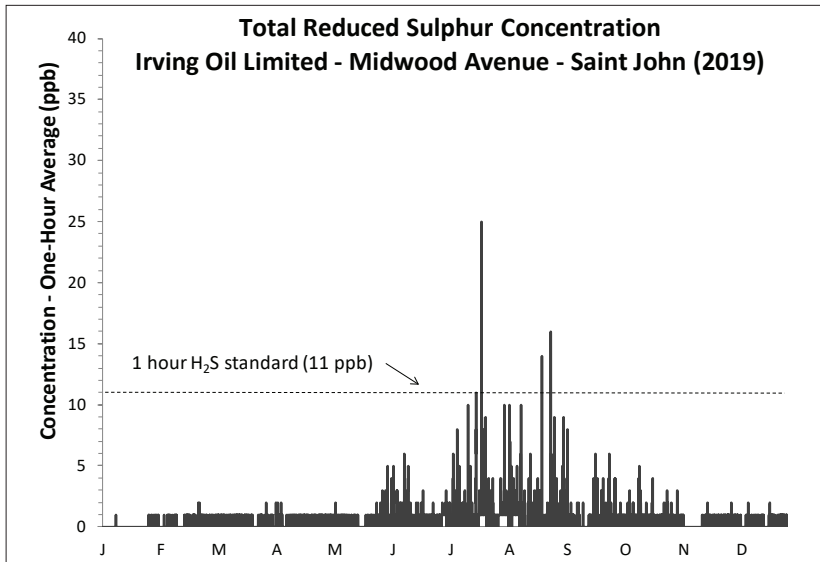
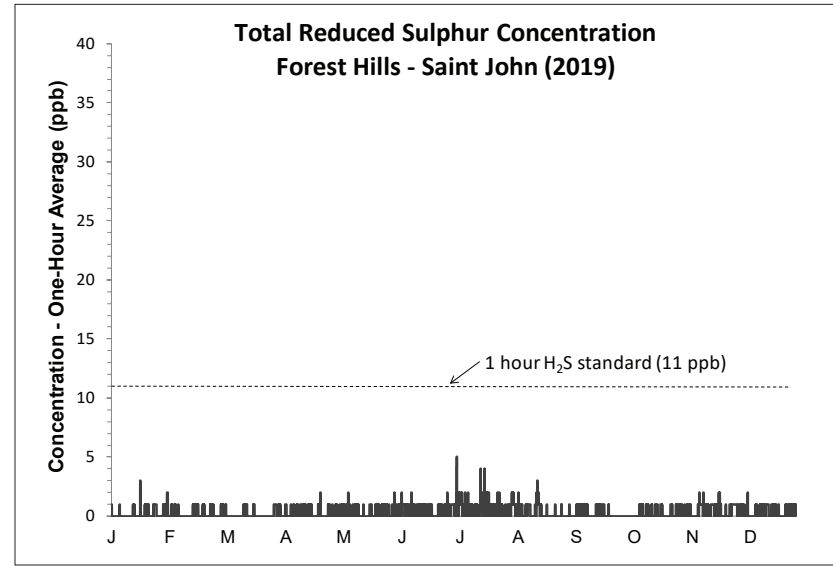
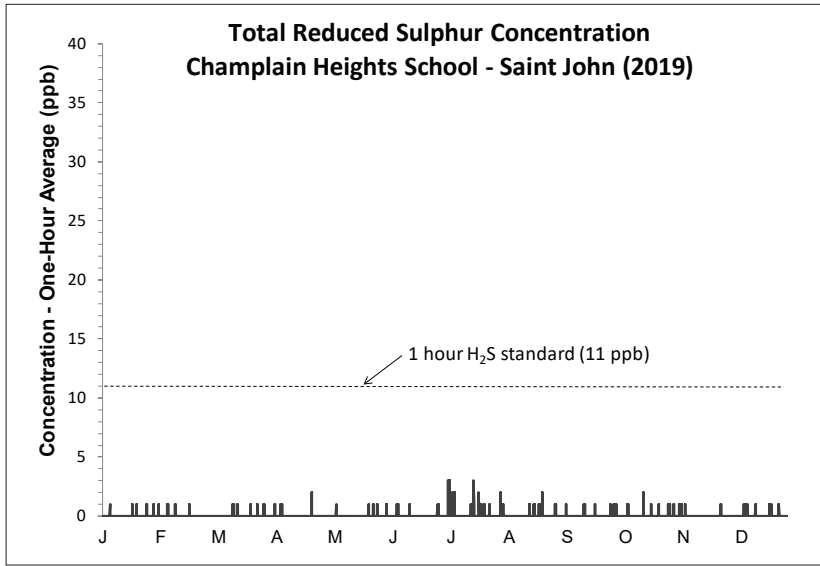
**PART III: STATIONS OPERATED BY INDUSTRY - Irving Oil Ltd., Saint John - Sulphur Dioxide**



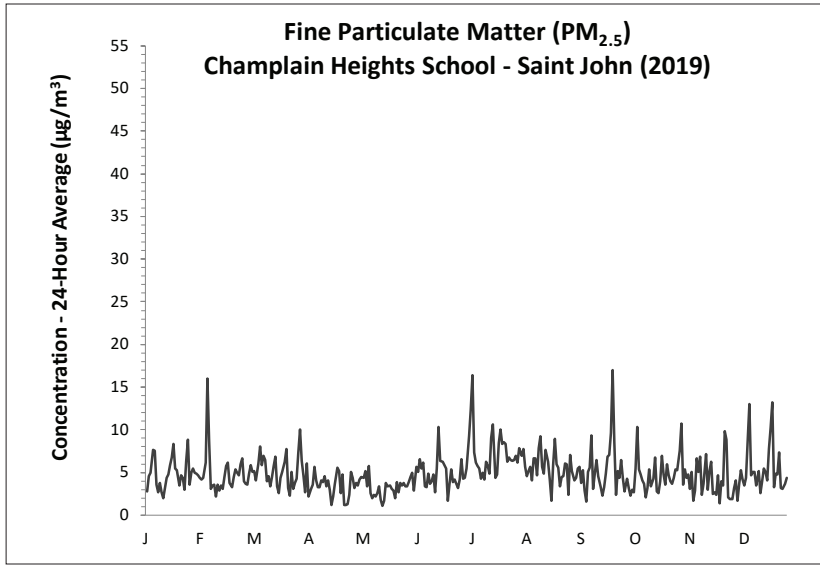
**PART III: STATIONS OPERATED BY INDUSTRY - Irving Oil Ltd., Saint John - Sulphur Dioxide**



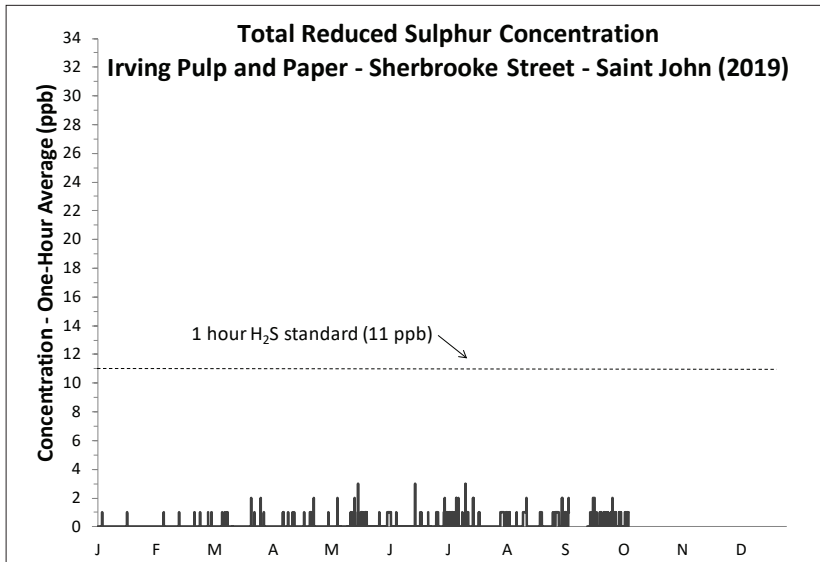
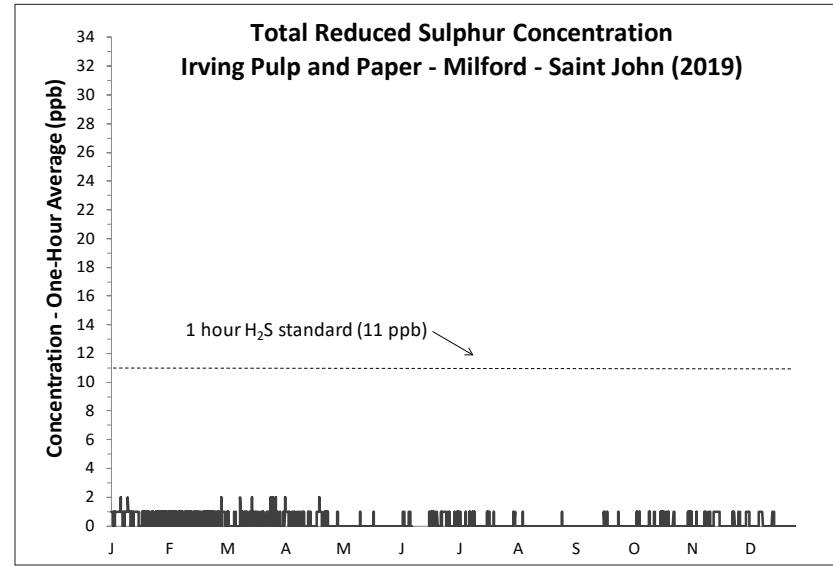
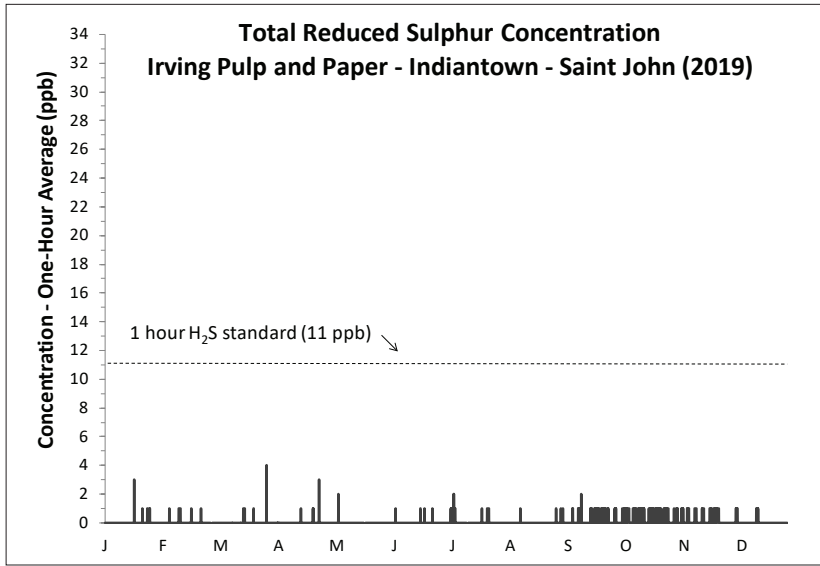
**PART III: STATIONS OPERATED BY INDUSTRY - Irving Oil Ltd., Saint John - Total Reduced Sulphur**



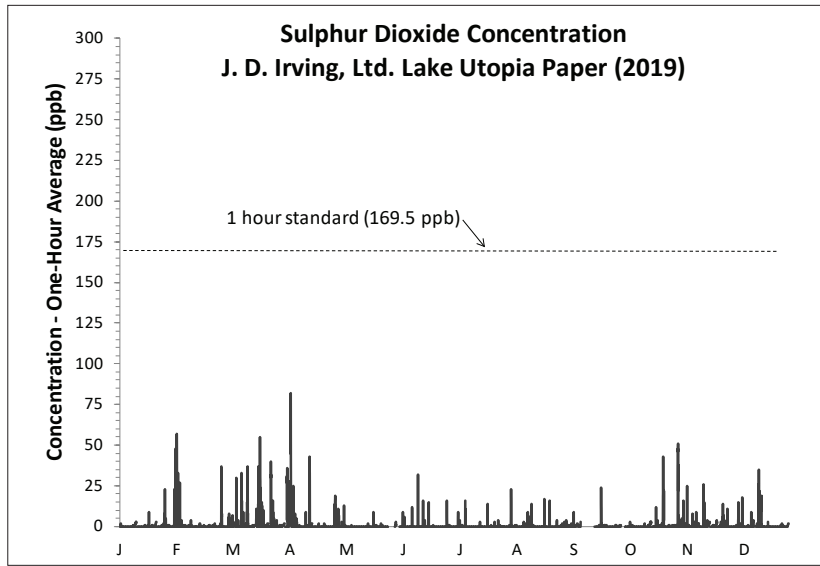
**PART III: STATIONS OPERATED BY INDUSTRY - Irving Oil Ltd., Saint John - Fine Particulate Matter**



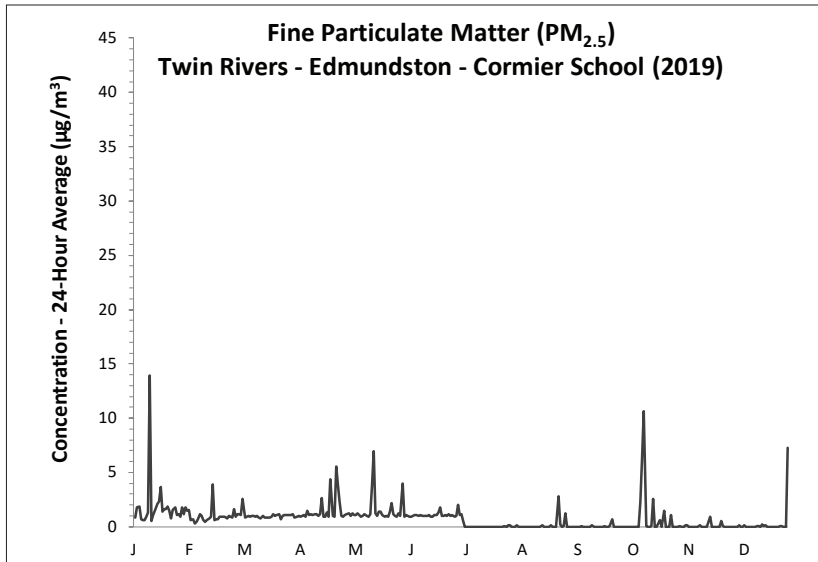
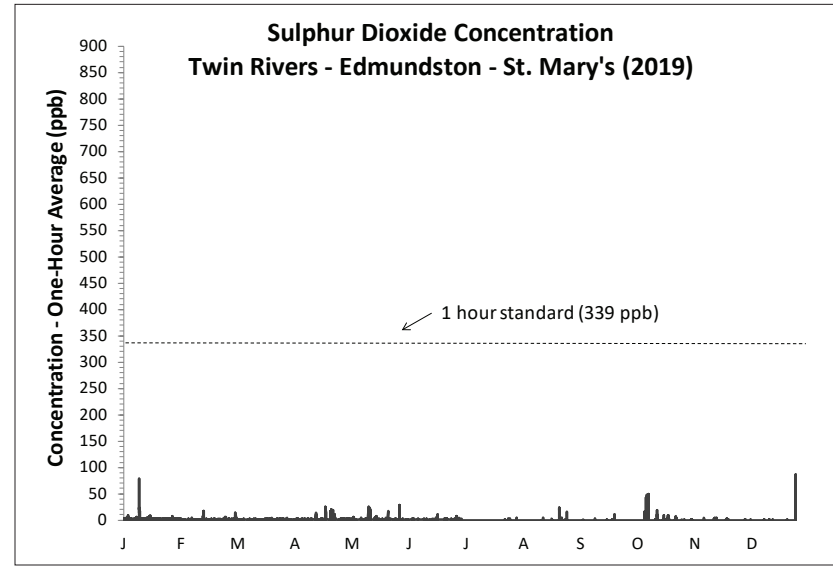
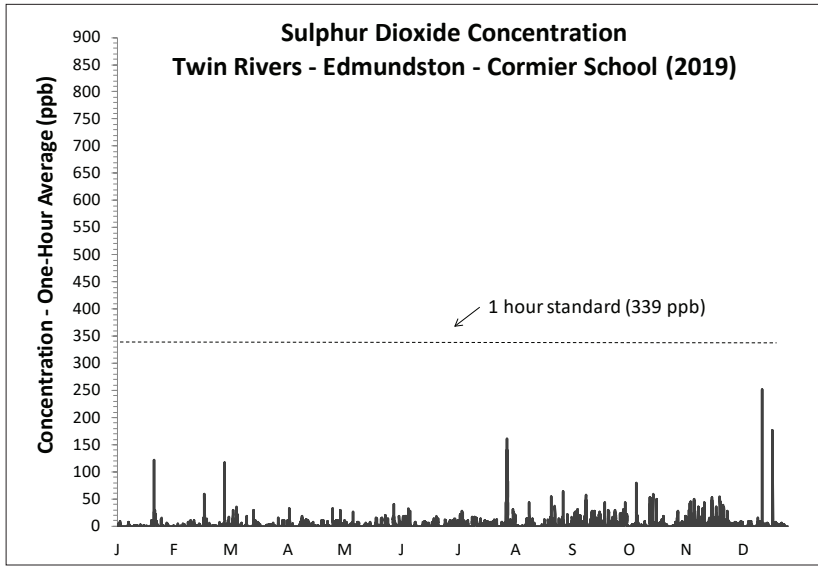
**PART III: STATIONS OPERATED BY INDUSTRY - Irving Pulp and Paper, Saint John - Total Reduced Sulphur**



**PART III: STATIONS OPERATED BY INDUSTRY - J. D. Irving, Ltd. Lake Utopia Paper - Sulphur Dioxide**

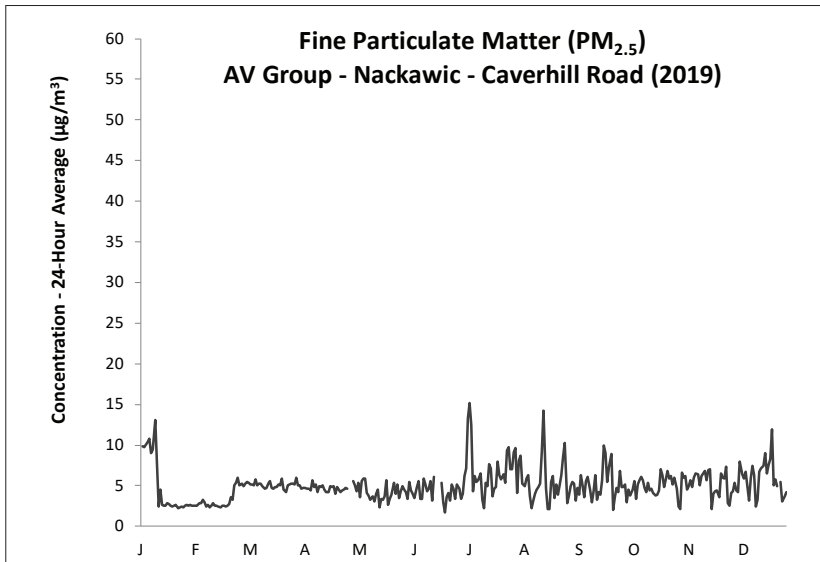
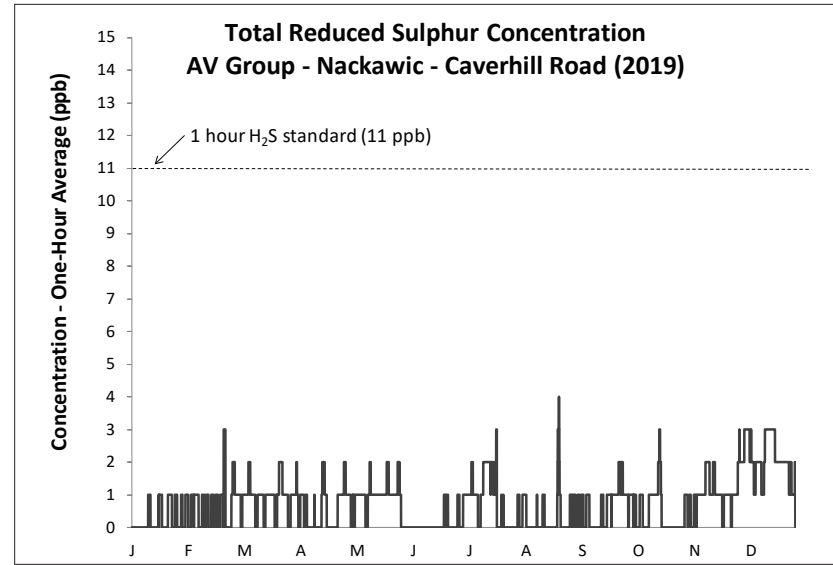
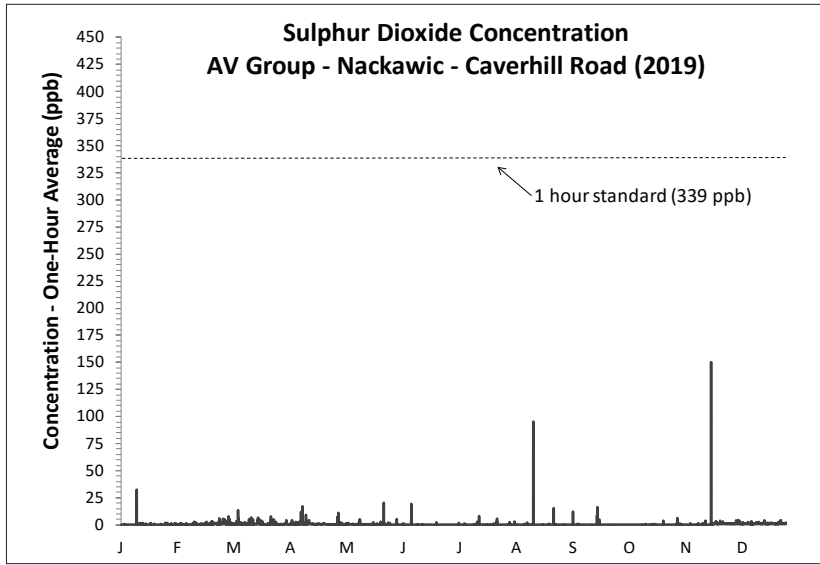


### PART III: STATIONS OPERATED BY INDUSTRY - Twin Rivers Paper Company, Edmundston - All Parameters

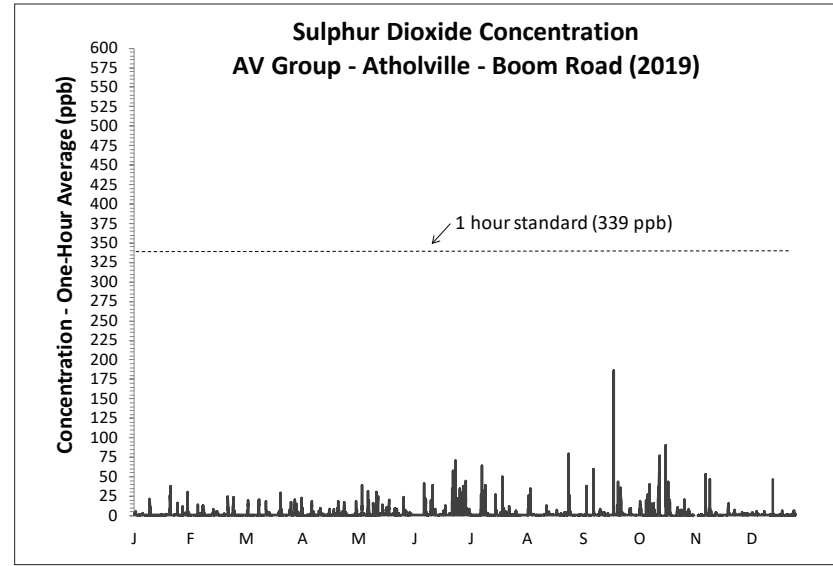
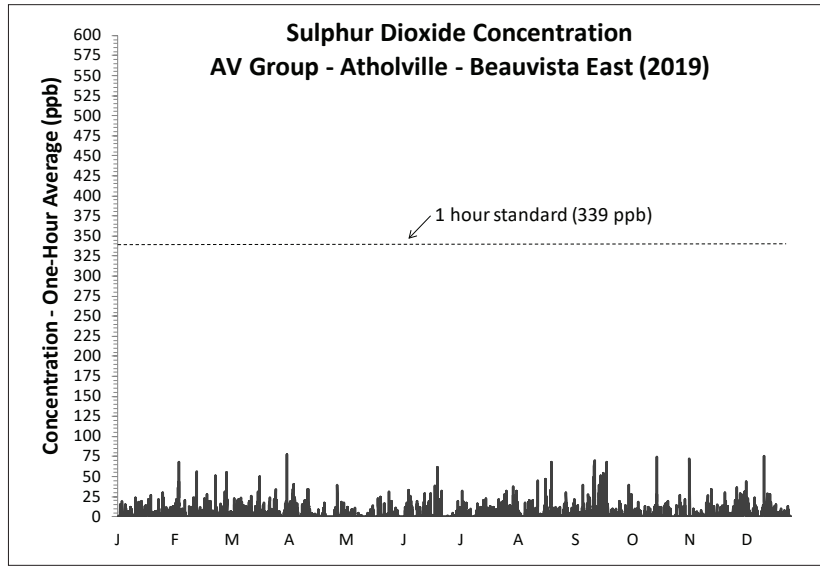




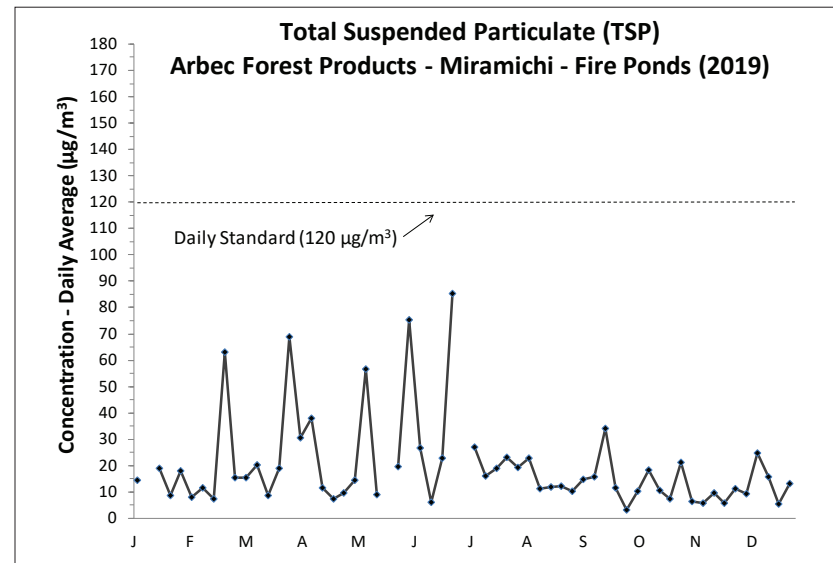
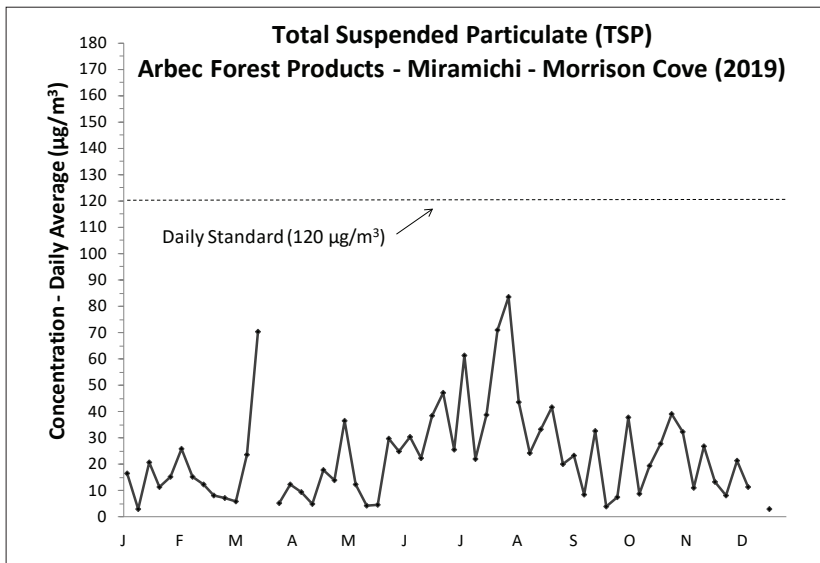
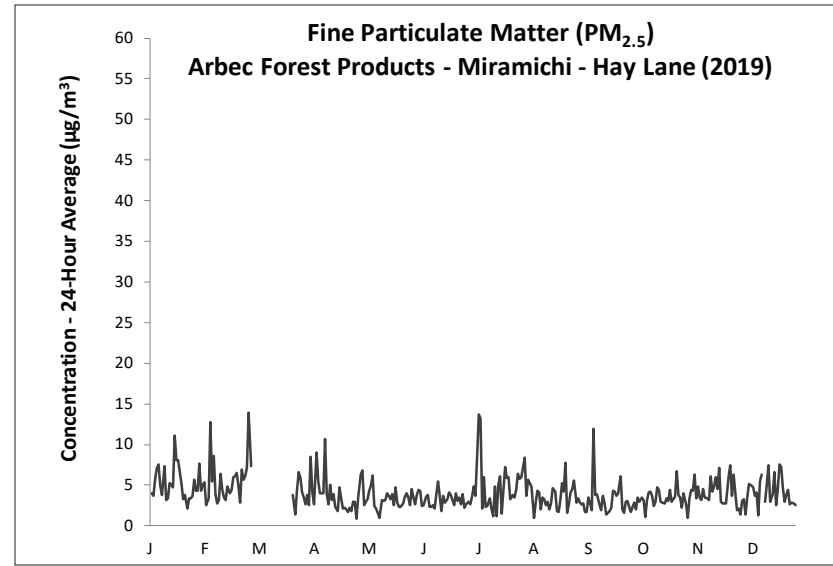
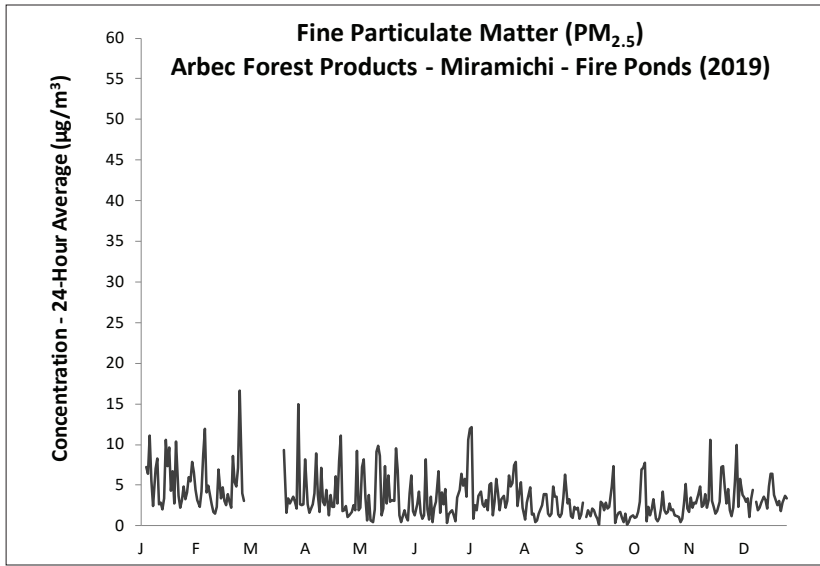
**PART III: STATIONS OPERATED BY INDUSTRY - AV Group - Nackawic - All Parameters**



### PART III: STATIONS OPERATED BY INDUSTRY - AV Group - Atholville - Sulphur Dioxide



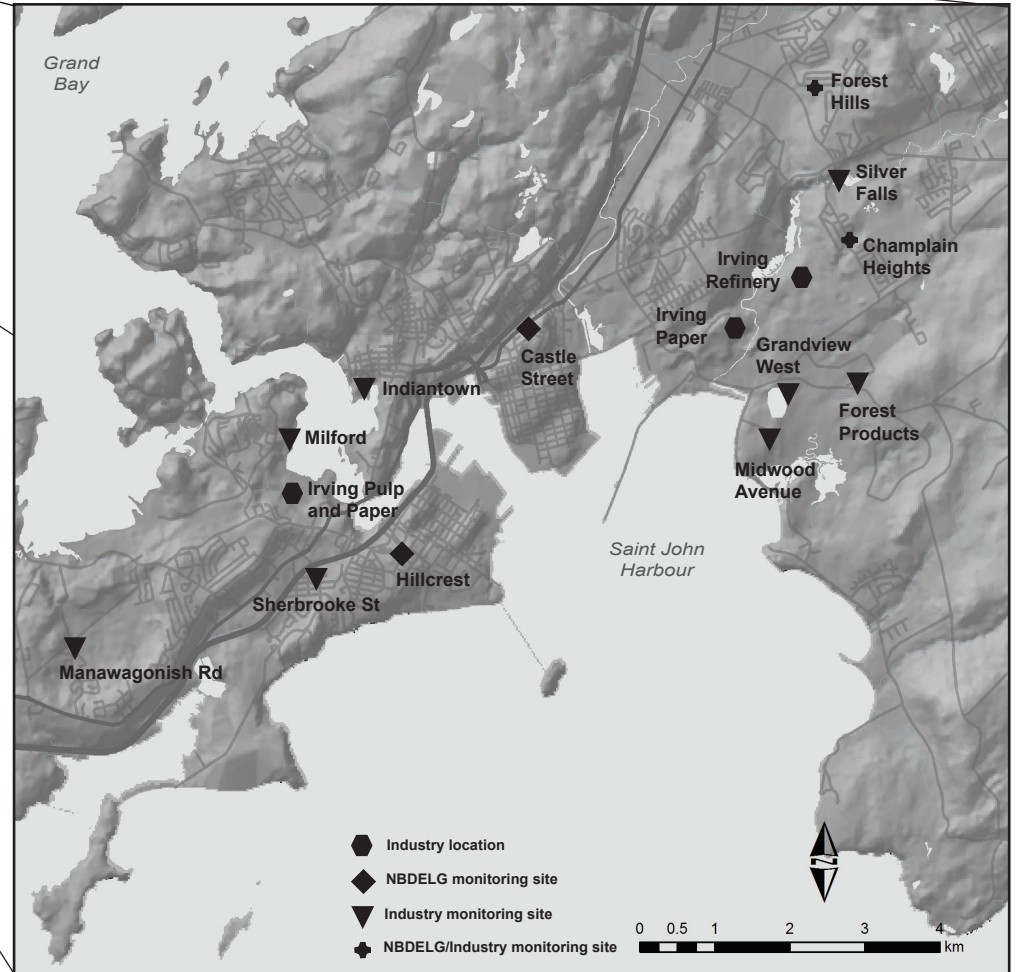
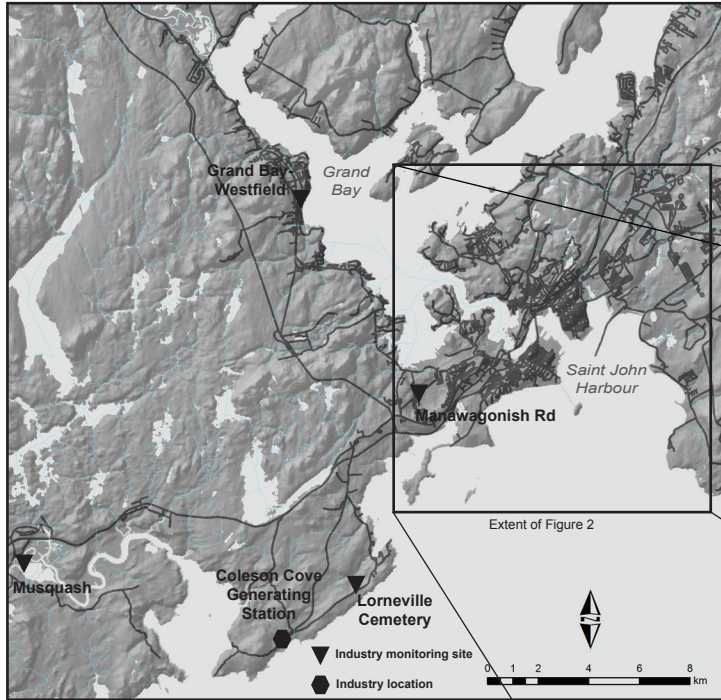
**PART III: STATIONS OPERATED BY INDUSTRY - Arbec Forest Products, Miramichi- All Parameters**



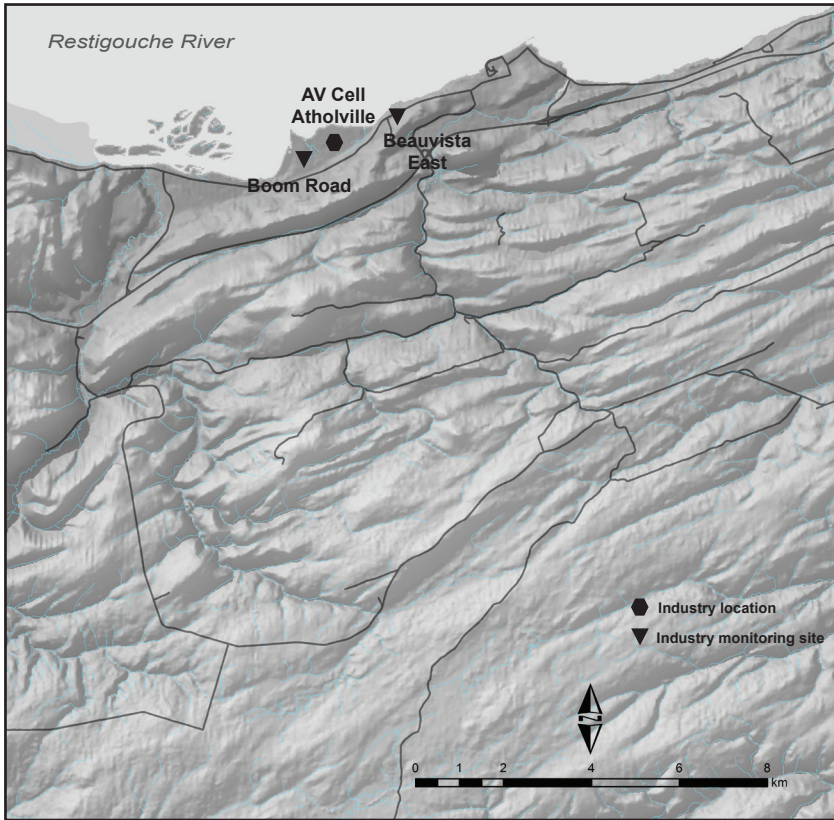
**PART IV:**  
**DETAILED STATION LOCATION MAPS**

**PART IV: DETAILED STATION LOCATION MAPS - Saint John Region**

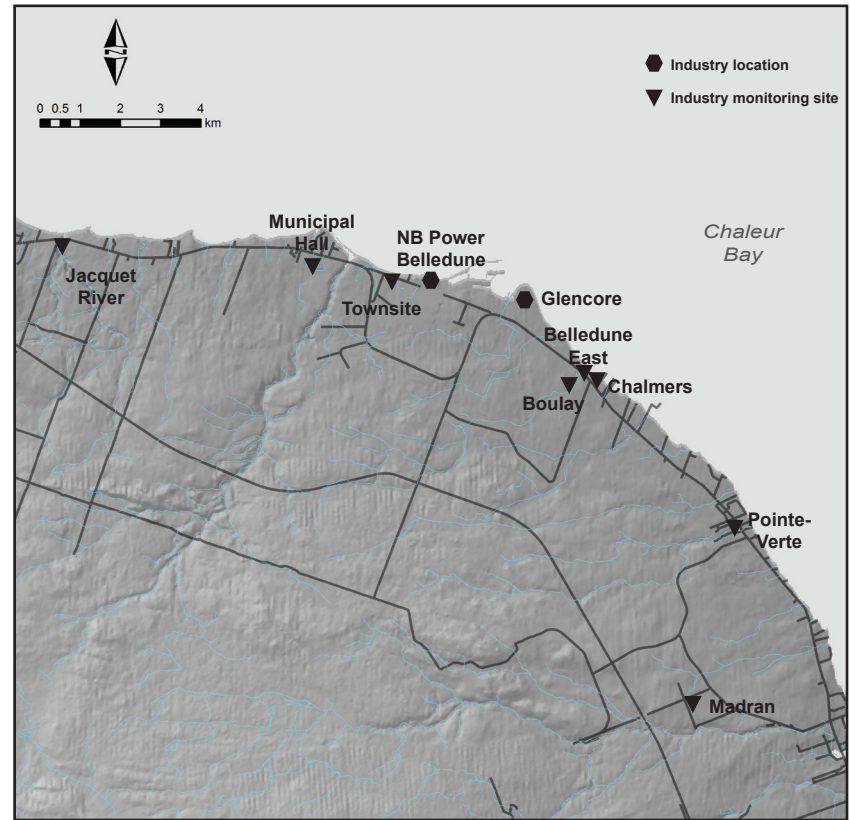
**Grand Bay/Musquash/Saint John Area**



# PART IV: DETAILED STATION LOCATION MAPS - Atholville and Belledune

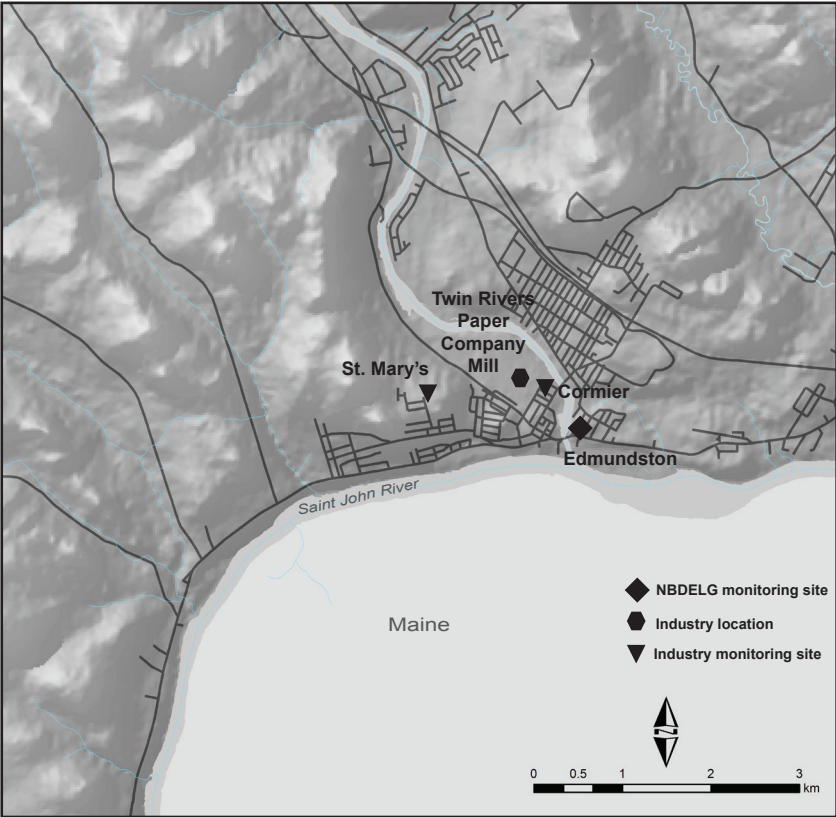


Atholville Area

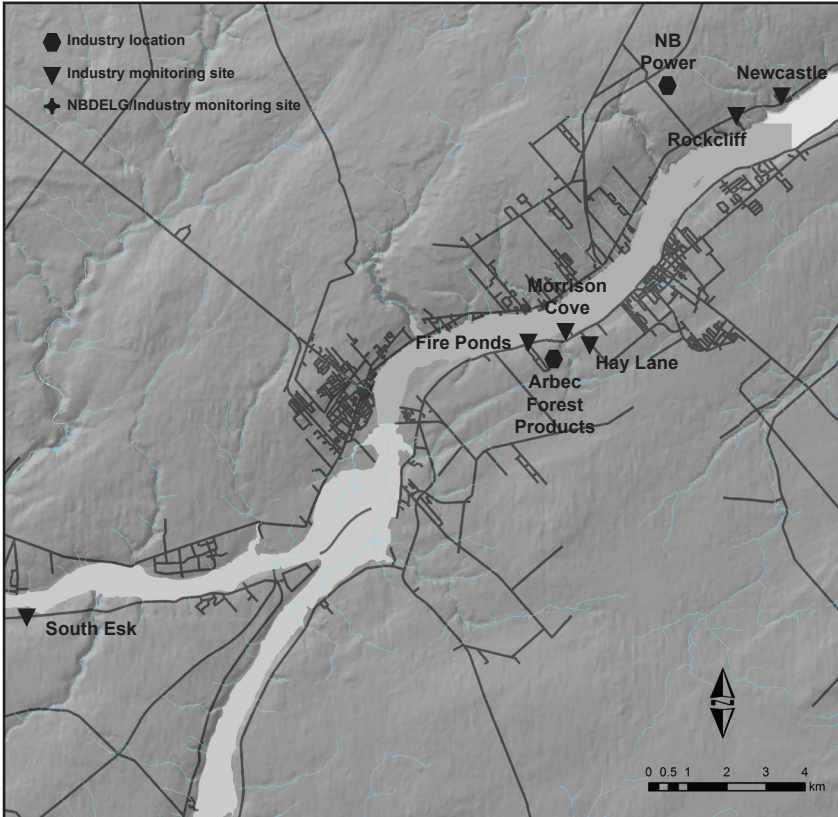


Belledune Area

**PART IV: DETAILED STATION LOCATION MAPS - Edmundston and Lower Newcastle**



Edmundston Area



Lower Newcastle