Peace Airshed Zone Association

Ambient Air Monitoring Network Summary

Ambient Air Quality Monitoring Program

Monthly Report

March 2023

April 30, 2023

Alberta Environment and Parks
11th Floor, Oxbridge Place
9820-106 Street
Edmonton Alberta T5K 2J6

Subject: **Peace Airshed Zone Association (PAZA)**
March 2023 Ambient Air Quality Monitoring Report

Please find enclosed the PAZA Ambient Air Quality Monitoring Network Report for the month of March 2023.

The representative of the Person Responsible for this monitoring program is:

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This report was prepared by Dr. Kevin McCullum, P.Eng., and reviewed by Mandeep Dhaliwal.

PAZA has retained the services of WSP Canada Inc. to conduct continuous ambient monitoring and Dr. Kevin McCullum, P.Eng. to provide data validation and reporting.

This report is submitted by PAZA on behalf of the industrial member companies to satisfy the requirements of the facility Operating Approvals listed in Table A

The monthly summary report includes the operational summaries and hourly continuous monitoring and monthly passive results. The Milner station is being reported under the PAZA Monthly report.

Continuous Monitoring:

Eight (8) Stations including Henry Pirker (Grande Prairie), Dunes, Smoky Heights, Beaverlodge, Valleyview, Donnelly, Poplar-Portable and Milner.
Detailed Summaries are included in the report.

Calibration and Data Submission:

Monthly report, hourly data and calibration reports for March 2023 were submitted to the ETS data system.

Table A. PAZA members with Facility Operating Approvals

Company	Facility	LSD	EPEA Approval No.
Advantage Oil & Gas Ltd.	Glacier	05-02-076-13-W6	00262479-00-00
Alberta Power (2000) Ltd. (an ATCO company)	Sturgeon	SW-06-069-21-W5	00010283-02-02
ATCO Power Canada	Poplar Hill	11-19-073-08-W6	00067774-01-01
ATCO Power Canada	Valleyview	SW-06-069-21-W5	00147709-01-01
AltaGas Ltd.	Pouce Coupe	03-03-081-13-W6	00247673-00-00
	Ante Creek	02-26-068-25-W5	00266694-00-00
	Gordondale	02-26-068-25-W5	00287474-00-00
Apache Canada Ltd.	House Mountain	01-08-070-10-W5	00010137-02-02
Birchcliff Energy Ltd.	Pouce Coupe	03-22-078-12-W6	00252529-00-00
Canadian Natural Resources Limited	Bonanza	11-25-081-11-W6	00000029-01-00
	Progress/Gordondale	01-01-077-10-W6	00010036-02-00
	Gold Creek	13-26-067-05-W6	00010446-02-00
	Teepee Creek	SE-2-074-04-W6	00001635-02-00
	Sturgeon/Valleyview	02-02-069-22-W5	00001633-02-00
Canfor Forest Products	Grande Prairie	SW-23-071-06-W6	00152645-01-00
Conocophillips Canada Energy Partnership	Wembley	06-19-073-08-W6	00000212-01-00
Encana Corporation	Sexsmith	04-08-075-07-W6	00010002-01-00
Enerplus Resources	Pouce Coupe	SW-06-069-21-W5	00001464-02-03
Exshaw Oil Corporation	Spirit River	03-10-077-07-W6	00344521-00-00
Grande Prairie Generation Inc.	Northern Prairie Power Project	04-19-073-08-W6	00238762-00-00
Inception Exploration Ltd.	Gold Creek	03-26-069-05-W6	00335317-00-02
KANATA Energy Group Ltd.	Valhalla	13-21-076-09-W6	00017620-02-02
Long Run Exploration	Eaglesham	01-25-076-01-W6	00241532-00-00
	Kakut	14-12-075-03-W6	00248469-00-00
	Donnelly	06-01-077-21-W5	00000087-02-00
	Puskwaskau	03-26-074-01-W6	00017524-01-00
Longview Oil Corp.	Sunset House	06-22-070-20-W5	00138884-01-00
Milner Power Limited Partnership	H.R. Milner thermal electric power plant	SE-15-058-08-W6	00009814-03-03
NorthRiver Midstream Inc.	Fourth Creek	16-11-082-09-W6	00000263-01-00
	Gordondale	11-26-079-09-W6	00011495-01-01
	Pouce Coupe/Bonanza	03-23-080-13-W6	00070203-01-01
Penn West Petroleum Ltd.	Tangent	13-29-080-23-W5	00001746-02-00
	Pouce Coupe	16-07-078-11-W6	00000614-01-00
Petrus Resources	Rycroft	08-25-077-06-W6	00011351-02-00
	Spirit River	08-34-077-06-W6	00011096-02-00
Strathcona Resources Ltd.	Jayar Sour Gas Processing Plant	06-08-062-03 W6	03612040-00-00
Suncor Energy Inc.	Progress	07-22-078-09-W6	00011428-02-00
Tidewater Midstream and Infrastructure Ltd.	Pipestone Sour Gas Plant	NW-35-70-9 W6	00403309-00-00
Veresen Energy	Hythe Brainard	11-18-074-12-W6	00010910-02-00
Weyerhaeuser Canada	Grande Prairie Pulp and Wood Plant	01-14-070-05-W6	00000113-02-00

Concentrations in excess of the Clean Air (Maximum Levels) Regulation:

There were five $PM_{2.5}$ 1hr readings above the AAAQG and one $PM_{2.5}$ 24hr reading above the AAAQO, the following is a summary of the readings.

1-hr readings above the $PM_{2.5}$ AAAQG (80 µg/m³) was recorded as:

Reference Number	Site	Date	From MST	To MST	Hour average (µg/m³)	WS km/hr	WD degrees
410869	Milner	2023-03-22	03:00	04:00	91.1	1.8	272
411230	Milner	2023-03-31	04:00	05:00	108.6	0.5	274
411230	Milner	2023-03-31	05:00	06:00	156.2	1.1	256
411230	Milner	2023-03-31	16:00	17:00	89.3	11.6	223
411230	Milner	2023-03-31	17:00	18:00	86.4	8.3	223

24-hr readings above the daily $PM_{2.5}$ AAAQO (29 µg/m³) as:

Reference Number	Site	Date	Day average (µg/m³)	WS km/hr	WD degrees
411230	Milner	2023-03-31	51.4	5.1	246

1-hr reading of TRS (>10ppb as H_2S) was recorded as:

Reference Number	Site	Date	From MST	To MST	Hour average (ppb)	WS km/hr	WD degrees
410998	Dunes	2023-03-26	00:00	01:00	10.2	1.2	225

Operational times less than 90 percent:

Poplar CH4/NMHC are not in operation.

All other instruments were in operation >90% during the month.

Air Incidents

None were reported.

Deviations from Authorized Monitoring Methods

None were reported.

Passive Monitoring

- 53 Stations throughout the PAZA zone
  - Passive sample analyses were performed by Bureau Veritas Laboratories
- **There were four new sites added for passive monitoring, Kakwa sites 1 to 4.**
- There were 20 duplicates sampled in the month of March.
- Eight SO_2 duplicates located at Spirit River, Saddle Hills, Wanham, Jean Cote, Duvernay 2, Kakwa 4, Milner Pipeline, Jayar5 Camp; RPD ranging from 0% to 34% (no fails)
- One O_3 duplicate located at Kinuso; RPD 5% (no fails)

- Six NO_2 duplicates at Forth Creek, Eaglesham, McLennan, Deer Mountain, Kakwa 1, Milner Bridge, Jayar1 Plant; RPD ranging from 7% to 76% (one fail, Forth Creek, 0.0 and 0.1 ppb)
- Four H_2S duplicates, Duvernay 2, Girouxville 3, Kakwa 3, Jayar3 Bone Yard; RPD 4% to 148% (one fail; Duvernay 2, 0.12 and 0.02 ppb)
- There were no exceedances of the AAAQOs for all monitored parameters at any of the passive monitoring stations during this month.

Dustfall Monitoring

- Five Stations collected Total Dustfall and Fixed Dustfall
- There was one duplicate sampled collected for each in the month of March.
  - RPD ranged from 5% to 7%
- Total dustfall ranged from 11.7 to 77.1 mg/100cm²/30day.
- There were no readings above the AAAQG during the month.

I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization, and reporting requirements.

Mandeep Dhaliwal, B.Sc., P.Chem.
Program Manager

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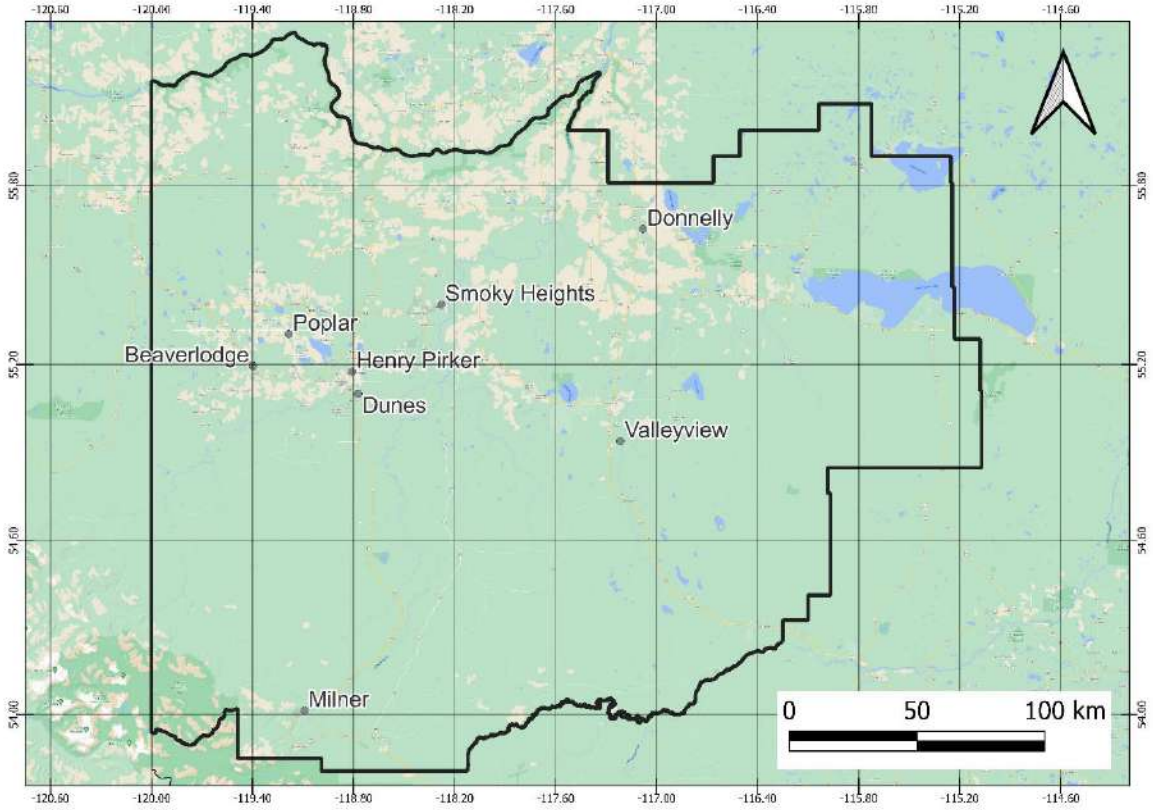
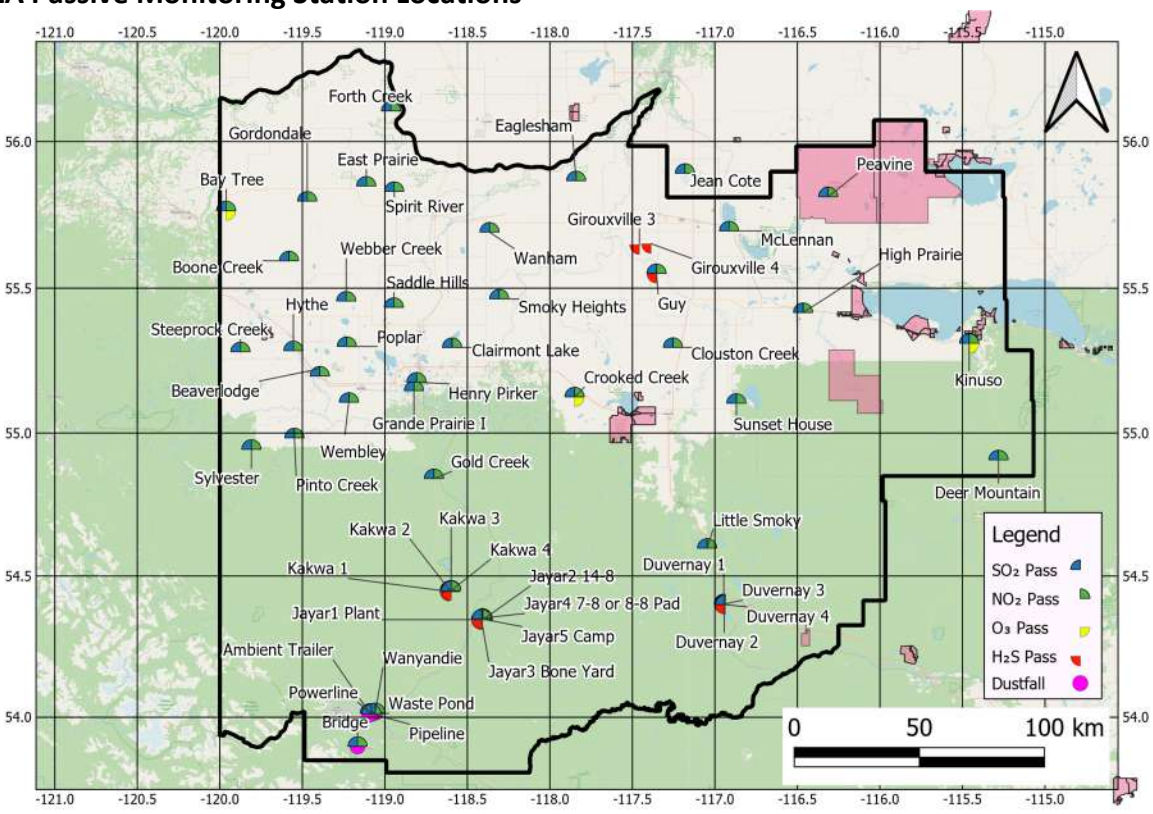
PAZA Continuous Monitoring Station Locations



PAZA Passive Monitoring Station Locations



1 March Monthly Station Summaries

The following summaries are for the equipment and data results from the continuous ambient monitoring network

1.1 Beaverlodge Air Monitoring Station

PAZA - March 2023 Beaverlodge Station Report

Parameter	March Average	Minimum	Valid	Operational	1-hour Max	1-hour Objective	1-hour Max Day and Time	24-hour Max	24-hour Objective	24-hour Max Day	Exceedance 1hr	Exceedance 8hr	Exceedance 24hr	Exceedance 30d	Calibration Date
NO (ppb)	1.9	0.0	95.2%	100.0%	30.6	-	Mar-14 13:00	6.0	-	Mar-14	-	-	-	-	Mar 03, 2023
NO_2 (ppb)	6.7	0.6	95.2%	100.0%	43.8	159	Mar-20 07:00	14.3	-	Mar-15	0	-	-	-	Mar 03, 2023
NO_x (ppb)	8.5	0.6	95.2%	100.0%	55.7	-	Mar-20 07:00	20.0	-	Mar-14	-	-	-	-	Mar 03, 2023
O_3 (ppb)	37.2	7.2	91.4%	96.0%	58.4	76	Mar-20 18:00	46.1	-	Mar-16	0	-	-	-	Mar 03, 2023
$PM_{2.5}$ (µg/m³)	5.0	0.0	99.6%	100.0%	19.7	80	Mar-31 05:00	9.0	29	Mar-20	0	-	0	-	Mar 02, 2023
SO_2 (ppb)	1.3	0.0	94.6%	99.3%	19.2	172	Mar-14 16:00	4.2	48	Mar-15	0	-	0	0	Mar 02, 2023

	Average	Minimum	Valid	Operational	Maximum
Temp (°C)	-6.9	-22.3	100.0%	100.0%	9.0
RH (%)	65.4	25.2	100.0%	100.0%	98.3
WS (km/hr)	6.8	0.0	100.0%	100.0%	38.9
WD (deg)	3	0.2	100.0%	100.0%	359.5

Note: Valid hours must be greater than 75%
Operational hours must be greater than 90%

Average Wind Direction 3 N

Update Summary:

Parameter	Make	Model	Equipment summary
$NO/NO_2/NO_X$	Thermo	42i	No Operational issues noted
O_3	Thermo	49iQ	Mar26 stopped logging, maintenance 2hrs manual span check, data removed to last good span 28hrs
$PM_{2.5}$	Sharp	5030	No Operational issues noted
SO_2	Thermo	43i-TLE	Perm tube issue, manual span checks (4hrs); Data removed loss of flow (1hr)
Met Equip	MetOne	50.5	No Operational issues noted

1.2 Dunes Air Monitoring Station

PAZA - March 2023 Dunes Station Report

Parameter	March Average	Minimum	Valid	Operational	1-hour Max	1-hour Objective	1-hour Max Day and Time	24-hour Max	24-hour Objective	24-hour Max Day	Exceedance 1hr	Exceedance 8hr	Exceedance 24hr	Exceedance 30d	Calibration Date
$PM_{2.5}$ (µg/m³)	4.8	0.0	99.6%	100.0%	17.8	80	Mar-16 08:00	9.7	29	Mar-18	0	-	0	-	Mar-21-2023
SO_2 (ppb)	0.8	0.0	95.2%	100.0%	29.6	172	Mar-15 15:00	6.8	48	Mar-15	0	-	0	0	Mar-21-2023
TRS (ppb)	0.3	0.0	95.2%	100.0%	10.2	-	Mar-26 01:00	1.0	-	Mar-26	-	-	-	-	Mar-21-2023

	Average	Minimum	Valid	Operational	Maximum
Temp (°C)	-7.7	-26.4	100.0%	100.0%	11.0
RH (%)	64.8	18.6	100.0%	100.0%	94.9
WS (km/hr)	3.6	0.0	100.0%	100.0%	13.4
WD (deg)	2	0.0	100.0%	100.0%	360.0

Note: Valid hours must be greater than 75%
Operational hours must be greater than 90%

Average Wind Direction 2 N

Update Summary:

Parameter	Make	Model	Equipment summary
$PM_{2.5}$	Thermo	TEOM AB	No Operational issues noted
SO_2	TECO	43i	No Operational issues noted
TRS	TECO	43C	No Operational issues noted
Met Equip	Gil/RMYoung	MetPak/RMY86004	No Operational issues noted

1.3 Grande Prairie - Henry Pirker Air Monitoring Station

PAZA - March 2023 Henry Pirker Station Report

Parameter	March Average	Minimum	Valid	Operational	1-hour Max	1-hour Objective	1-hour Max Day and Time	8-hour / 24-hour Max	8-hour / 24-hour Objective	8-hour / 24-hour Max Day	Exceedance 1hr	Exceedance 8hr	Exceedance 24hr	Exceedance 30d	Calibration Date
NO (ppb)	6.2	0.0	94.9%	99.9%	90.4	-	Mar-01 12:00	25.5	-	Mar-01	-	-	-	-	Mar 07, 2023
NO_2 (ppb)	16.2	1.0	94.9%	99.9%	59.1	159	Mar-16 22:00	35.5	-	Mar-17	0	-	-	-	Mar 07, 2023
NO_x (ppb)	22.5	1.3	94.9%	99.9%	133.8	-	Mar-01 12:00	56.8	-	Mar-17	-	-	-	-	Mar 07, 2023
O_3 (ppb)	28.5	0.5	95.2%	99.9%	54.3	76	Mar-25 16:00	39.8	-	Mar-26	0	-	-	-	Mar 07, 2023
$PM_{2.5}$ (µg/m³)	8.6	0.4	99.7%	100.0%	26.5	80	Mar-15 22:00	14.2	29	Mar-31	0	-	0	-	Mar 09, 2023
SO_2 (ppb)	0.7	0.0	94.5%	99.2%	21.5	172	Mar-15 20:00	5.2	48	Mar-15	0	-	0	0	Mar 07, 2023
H_2S (ppb)	0.3	0.0	95.2%	99.9%	2.4	10	Mar-24 11:00	0.6	3	Mar-17	0	-	0	-	Mar 09, 2023
CH_4 (ppm)	2.2	1.9	95.3%	100.0%	3.6	-	Mar-28 23:00	2.4	-	Mar-01	-	-	-	-	Mar 08, 2023
THC (ppm)	2.2	1.9	95.3%	100.0%	3.9	-	Mar-28 23:00	2.5	-	Mar-16	-	-	-	-	Mar 08, 2023
NMHC (ppm)	0.0	0.0	95.3%	100.0%	0.4	-	Mar-19 06:00	0.2	-	Mar-19	-	-	-	-	Mar 08, 2023
CO (ppm)	0.2	0.1	95.3%	100.0%	1.0	13	Mar-16 21:00	0.4	5	Mar-16	0	0	-	-	Mar 08, 2023

	Average	Minimum	Valid	Operational	Maximum
Temp (°C)	-6.7	-25.7	100.0%	100.0%	14.5
RH (%)	59.2	23.2	100.0%	100.0%	83.7
SR (W/m²)	108.8	0.0	100.0%	100.0%	548.3
WS (km/hr)	4.5	0.3	100.0%	100.0%	25.8
WD (deg)	331	0.3	100.0%	100.0%	358.8

Note: Valid hours must be greater than 75%
Operational hours must be greater than 90%

Average Wind Direction 331 NNW

Update Summary:

Parameter	Make	Model	Equipment summary
$NO/NO_2/NO_X$	Thermo	42IQ	Loss of flow though manifold (1hr)
O_3	TECO	49I	Loss of flow though manifold (1hr)
$PM_{2.5}$	API	T640	No Operational issues noted
SO_2	TEI	43I-TLE	Started Calibration then switched to other cal gear based on slow response (5hrs marked as maintenance)
H_2S	TEI	450i	Loss of flow though manifold (1hr)
$THC/CH_4/NMHC$	TEI	55i	THC is slowly dropping through month to below 2.0
CO	TEI	48I-TLE	No Operational issues noted
Met Equip	MetOne	50.5	No Operational issues noted

1.4 Smoky Heights Air Monitoring Station

PAZA - March 2023 Smoky Heights Station Report

Parameter	March Average	Minimum	Valid	Operational	1-hour Max	1-hour Objective	1-hour Max Day and Time	24-hour Max	24-hour Objective	24-hour Max Day	Exceedance 1hr	Exceedance 8hr	Exceedance 24hr	Exceedance 30d	Calibration Date
$PM_{2.5}$ (µg/m³)	4.5	0.0	98.7%	99.3%	31.4	80	Mar-16 22:00	7.8	29	Mar-21	0	-	0	-	Mar 20, 2023
SO_2 (ppb)	0.6	0.0	94.1%	99.3%	26.4	172	Mar-15 22:00	3.1	48	Mar-15	0	-	0	0	Mar 20, 2023
TRS (ppb)	0.2	0.0	94.6%	99.3%	2.8	-	Mar-18 04:00	0.5	-	Mar-17	-	-	-	-	Mar 20, 2023

	Average	Minimum	Valid	Operational	Maximum
Temp (°C)	-7.7	-22.9	99.3%	99.3%	8.9
WS (km/hr)	9.9	0.3	99.3%	99.3%	35.2
WD (deg)	320	0.0	99.3%	99.3%	360.0

Note: Valid hours must be greater than 75%
Operational hours must be greater than 90%

Average Wind Direction 320 WNW

Update Summary:

Parameter	Make	Model	Equipment summary
$PM_{2.5}$	Sharp	5030	March 28 power failure (5 hrs)
SO_2	TECO	43i	March 28 power failure (5 hrs)
TRS	TEI	43I APSAA	March 28 power failure (5 hrs)
Met Equip	MetOne	50.5	March 28 power failure (5 hrs)

1.5 Valleyview Air Monitoring Station

PAZA - March 2023 Valleyview Station Report

Parameter	March Average	Minimum	Valid	Operational	1-hour Max	1-hour Objective	1-hour Max Day and Time	24-hour Max	24-hour Objective	24-hour Max Day	Exceedance 1hr	Exceedance 8hr	Exceedance 24hr	Exceedance 30d	Calibration Date
SO_2 (ppb)	0.2	0.0	95.3%	100.0%	1.3	172	Mar-11 15:00	0.5	48	Mar-09	0	-	0	0	Mar 16, 2023
H_2S (ppb)	0.1	0.0	95.3%	100.0%	1.1	10	Mar-17 21:00	0.3	3	Mar-25	0	-	0	-	Mar 16, 2023

	Average	Minimum	Valid	Operational	Maximum
Temp (°C)	-6.5	-26.6	100.0%	100.0%	12.0
RH (%)	67.8	24.1	100.0%	100.0%	98.5
WS (km/hr)	4.0	0.0	100.0%	100.0%	16.5
WD (deg)	335	0.1	100.0%	100.0%	360.0

Note: Valid hours must be greater than 75%
Operational hours must be greater than 90%

Average Wind Direction	335	NW

Update Summary:

Parameter	Make	Model	Equipment summary
SO_2	TEI	43i-APSCB	No Operational issues noted during the month
H_2S	TEI	450i-APHAA / 43C	No Operational issues noted during the month
Met Equip	RMYoung	RMY86004	No Operational issues noted during the month

1.6 Donnelly Air Monitoring Station

PAZA - March 2023 Donnelly Station Report

Parameter	March Average	Minimum	Valid	Operational	1-hour Max	1-hour Objective	1-hour Max Day and Time	24-hour Max	24-hour Objective	24-hour Max Day	Exceedance 1hr	Exceedance 8hr	Exceedance 24hr	Exceedance 30d	Calibration Date
SO_2 (ppb)	0.3	0.0	95.3%	100.0%	7.9	172	Mar-28 10:00	2.1	48	Mar-28	0	-	0	0	Mar 27, 2023
H_2S (ppb)	0.1	0.0	95.2%	100.0%	0.4	10	Mar-02 06:00	0.1	3	Mar-24	0	-	0	-	Mar 27, 2023

	Average	Minimum	Valid	Operational	Maximum
Temp (°C)	-7.8	-27.3	100.0%	100.0%	10.2
WS (km/hr)	7.9	0.2	100.0%	100.0%	39.2
WD (deg)	157	1.0	100.0%	100.0%	359.3

Note: Valid hours must be greater than 75%
Operational hours must be greater than 90%

Average Wind Direction	157	SSE

Update Summary:

Parameter	Make	Model	Equipment summary
SO_2	Teco	43i	No Operational issues noted during the month
H2S	Thermo	45C	No Operational issues noted during the month
Met Equip	RMYoung	5103	No Operational issues noted during the month

1.7 Poplar Air Monitoring Station

PAZA - March 2023 Poplar Station Report

Parameter	March Average	Minimum	Valid	Operational	1-hour Max	1-hour Objective	1-hour Max Day and Time	24-hour Max	24-hour Objective	24-hour Max Day	Exceedance 1hr	Exceedance 8hr	Exceedance 24hr	Exceedance 30d	Calibration Date
NO (ppb)	2.0	0.0	93.6%	98.5%	31.6	-	Mar-01 12:00	6.6	-	Mar-18	-	-	-	-	Mar 14, 2023
NO_2 (ppb)	7.8	0.6	93.6%	98.5%	35.0	159	Mar-21 07:00	19.0	-	Mar-18	0	-	-	-	Mar 14, 2023
NO_x (ppb)	9.9	0.7	93.6%	98.5%	52.5	-	Mar-01 12:00	25.8	-	Mar-18	-	-	-	-	Mar 14, 2023
O_3 (ppb)	36.5	9.9	93.6%	98.3%	55.3	76	Mar-20 17:00	44.0	-	Mar-20	0	-	-	-	Mar 14, 2023
$PM_{2.5}$ (µg/m³)	3.0	0.0	94.6%	95.3%	33.7	80	Mar-15 12:00	11.0	29	Mar-15	0	-	0	-	Mar 15, 2023
SO_2 (ppb)	1.3	0.0	93.0%	97.7%	10.2	172	Mar-06 06:00	2.7	48	Mar-15	0	-	0	0	Mar 13, 2023
TRS (ppb)	0.3	0.0	91.9%	96.5%	7.0	-	Mar-17 13:00	0.7	-	Mar-14	-	-	-	-	Mar 15, 2023
CH4 (ppm)	removed Dec 12, 2022														
THC (ppm)	2.4	2.1	93.7%	98.5%	3.6	-	Mar-17 13:00	2.9	-	Mar-18	-	-	-	-	Mar 15, 2023
NMHC (ppm)	removed Dec 12, 2022														

	Average	Minimum	Valid	Operational	Maximum
Temp (°C)	-9.6	-26.4	98.5%	98.5%	7.5
WS (km/hr)	7.6	0.2	98.0%	98.0%	37.7
WD (deg)	346	0.4	98.0%	98.0%	357.9

Note: Valid hours must be greater than 75%
Operational hours must be greater than 90%

Average Wind Direction	346	NNW

Update Summary:

Parameter	Make	Model	Equipment summary
$NO/NO_2/NO_X$	TEI	42i	Mar 14, 20, 23 loss of comm (11hrs)
O_3	TEI	49I	Mar 14, 20, 23 loss of comm (11hrs); Flow issue on March 13 (2hrs)
$PM_{2.5}$	Thermo	TEOM AB	Mar 14, 20, 23 loss of comm (11hrs); excessive negative drift <-3µg/m³ (24hrs)
SO_2	TEI	43I	Mar 14, 20, 23 loss of comm (11hrs); pump failed Mar 13, rebuilt pump installed, data from last good span to cal removed (6hrs)
TRS	TEI	43I	Mar 14, 20, 23 loss of comm (11hrs); TRS as found span >10%, removal cal and PMT adjustment marked as maintenance (2hrs) data to last good span removed (11hrs); Flow issue on March 13 (2hrs)
THC	TEI	55i / 51Ii-LT	CH4, NMHC not in service; Mar 14, 20, 23 loss of comm (11hrs); replaced hydrogen cylinder
Met Equip	MetOne	50.5	Mar 14, 20, 23 loss of comm for ET/RH (11hrs); WD/WS failure due to cold (5hrs), comm failure (10hrs)

1.8 Milner Air Monitoring Station

PAZA - March 2023 Milner Station Report

Parameter	March Average	Minimum	Valid	Operational	1-hour Max	1-hour Objective	1-hour Max Day and Time	24-hour Max	24-hour Objective	24-hour Max Day	Exceedance 1hr	Exceedance 8hr	Exceedance 24hr	Exceedance 30d	Calibration Date
NO (ppb)	2.3	0.0	94.6%	99.6%	68.9	-	Mar-14 09:00	10.9	-	Mar-14	-	-	-	-	Mar 24, 2023
NO_2 (ppb)	3.4	0.0	94.6%	99.6%	30.0	159	Mar-14 09:00	8.0	-	Mar-14	0	-	-	-	Mar 24, 2023
NO_x (ppb)	6.0	0.0	94.6%	99.6%	98.9	-	Mar-14 09:00	18.7	-	Mar-14	-	-	-	-	Mar 24, 2023
$PM_{2.5}$ (µg/m³)	8.2	0.0	97.7%	98.1%	156.2	80	Mar-31 06:00	51.4	29	Mar-31	5	-	1	-	Mar 24, 2023

	Average	Minimum	Valid	Operational	Maximum
WS (km/hr)	5.6	0.0	100.0%	100.0%	29.8
WD (deg)	263	0.2	100.0%	100.0%	359.0

Note: Valid hours must be greater than 75%
Operational hours must be greater than 90%

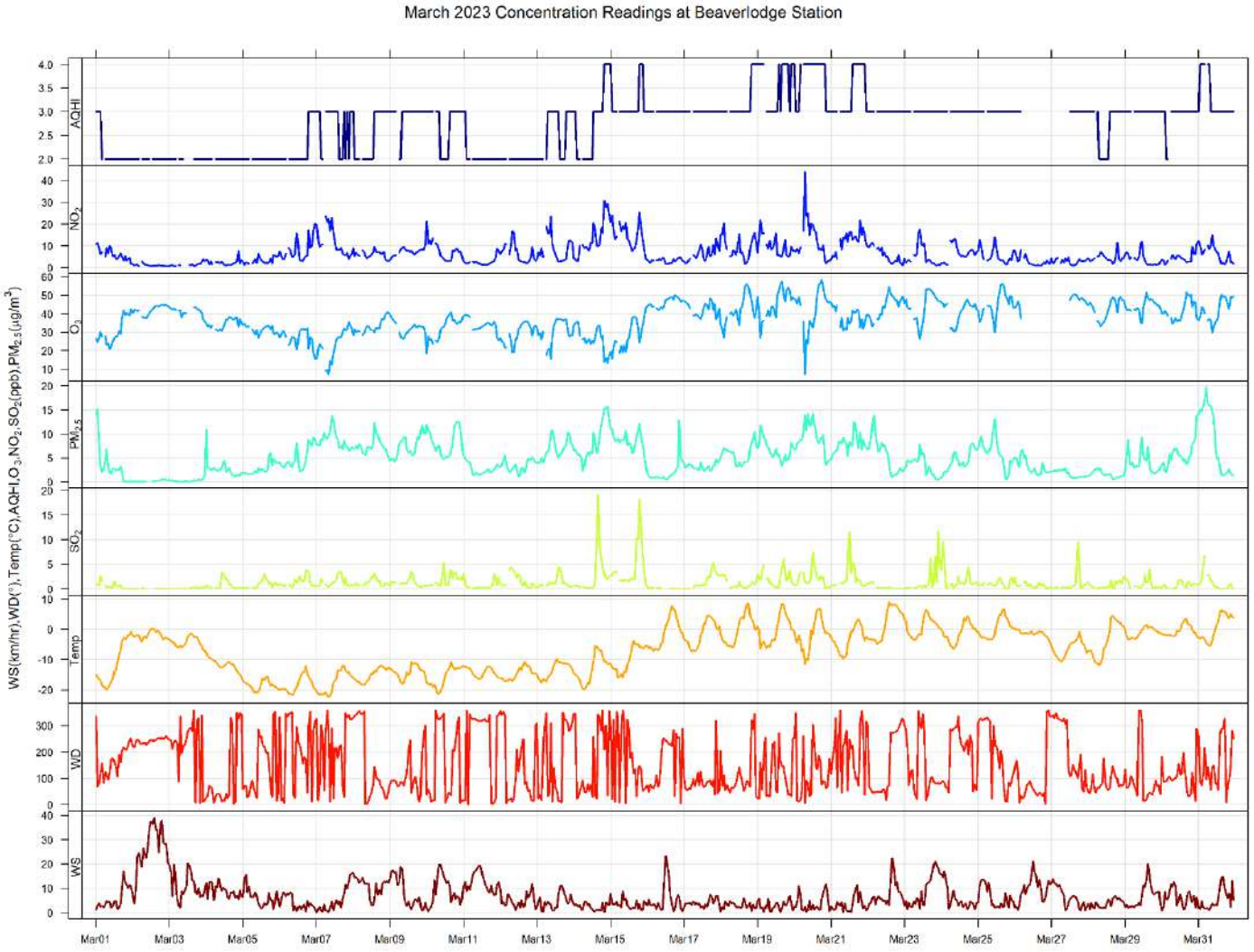
Average Wind Direction 263 W

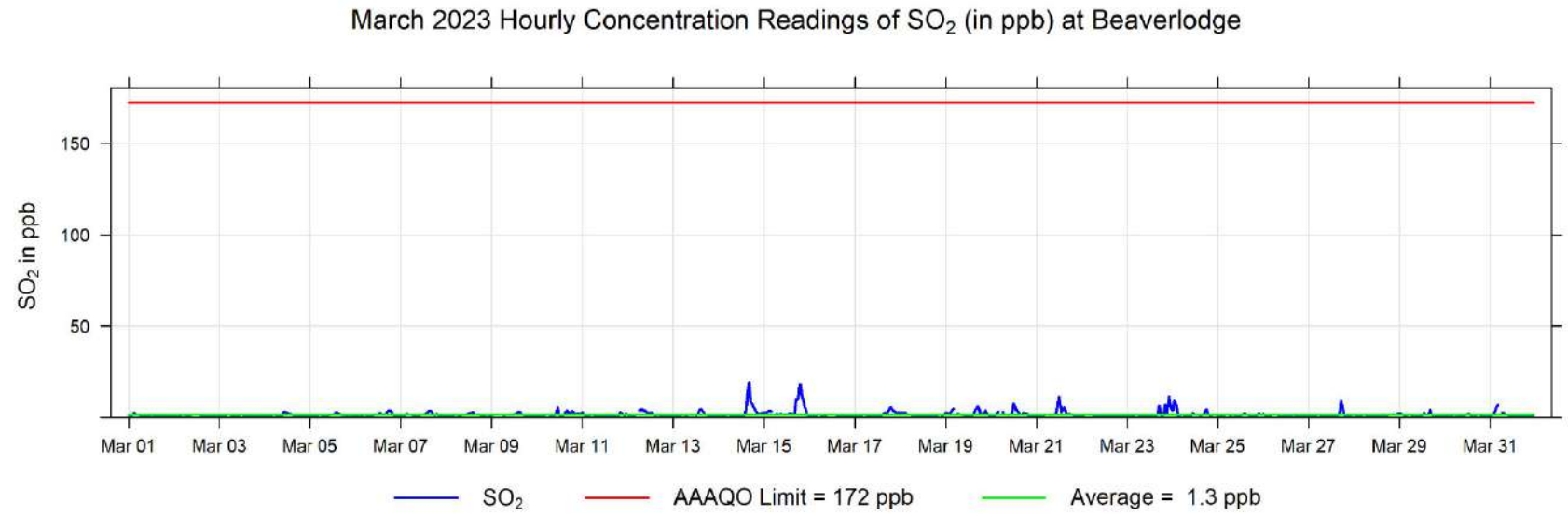
Update Summary:

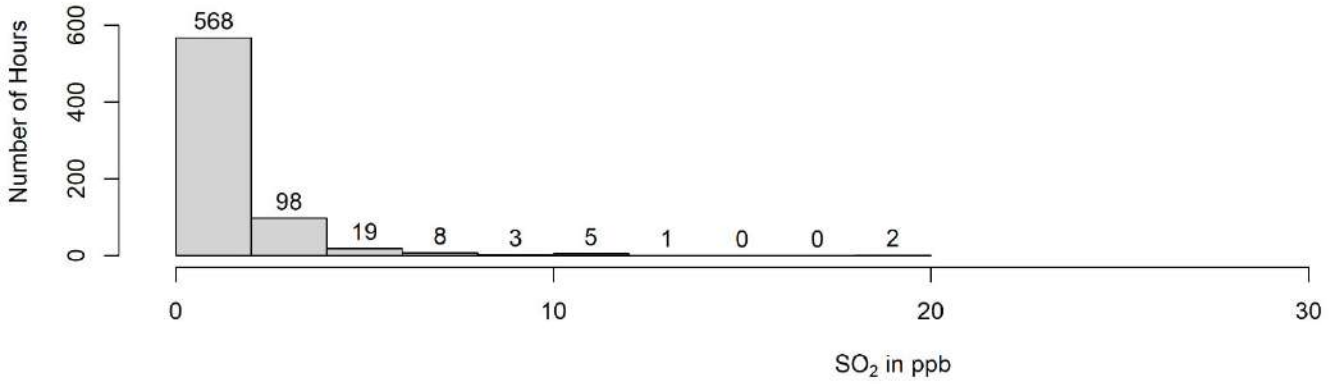
Parameter	Make	Model	Equipment summary
$NO/NO_2/NO_x$	Thermo	42i	March 24, 28 span check maintenance (3hrs)
$PM_{2.5}$	TEOM	AB	14 hours of data <-3µg/m³ removed; 5hrs above AAAQG and one 24hr above AAAQO
Met Equip	MetOne	50.5	No Operational issues noted

2 Beaverlodge Charts

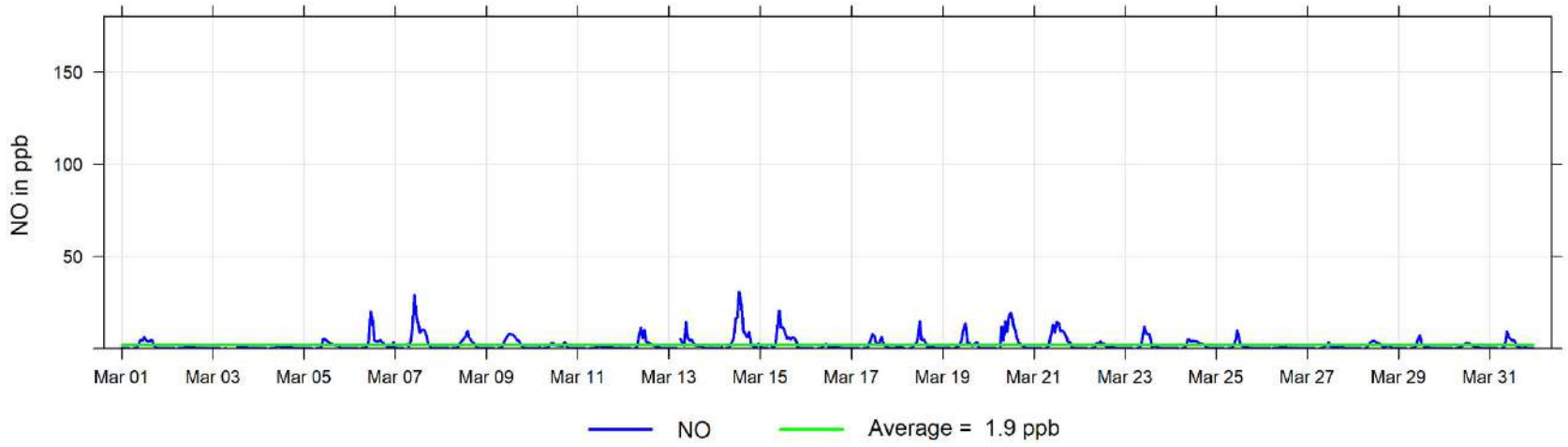
The following pages include the charts and histograms for Beaverlodge Station



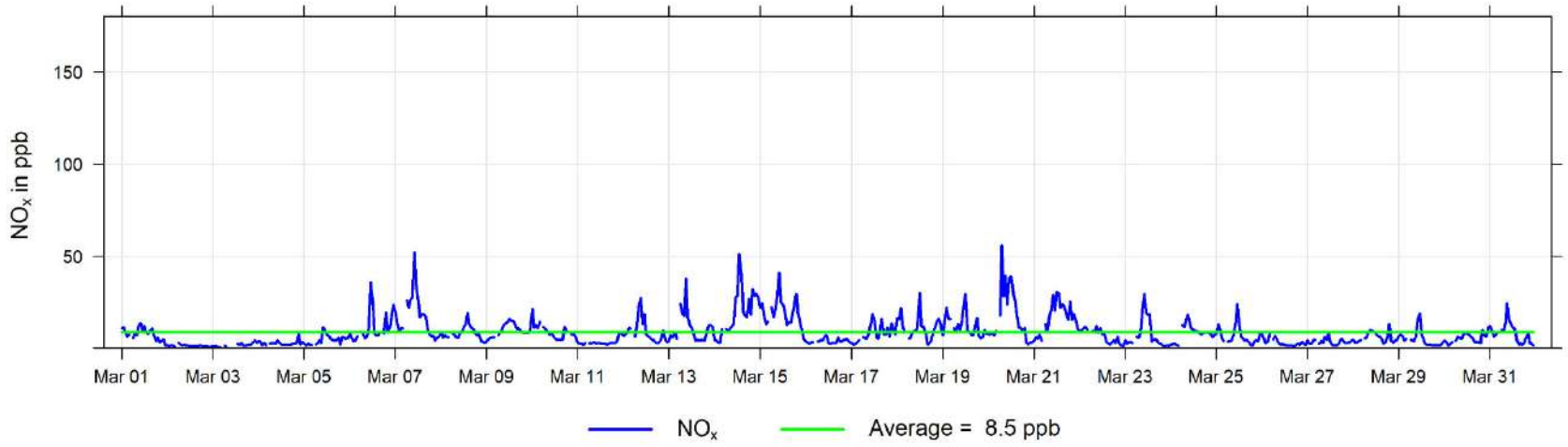

March 2023 Hourly Concentration Readings of SO2 (in ppb) at Beaverlodge
SO2 in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
SO2
AAAQO Limit = 172 ppb
Average = 1.3 ppb

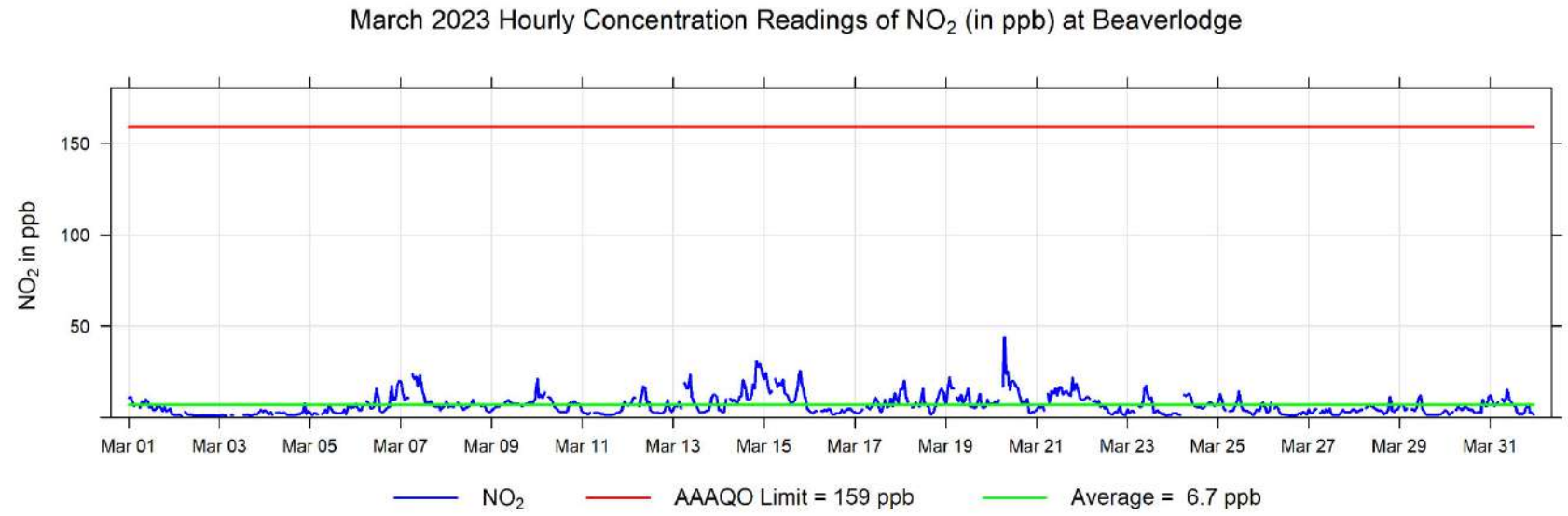

Number of Hours
0
200
400
600
568
98
19
8
3
5
1
0
0
2
0
10
20
30
SO2 in ppb

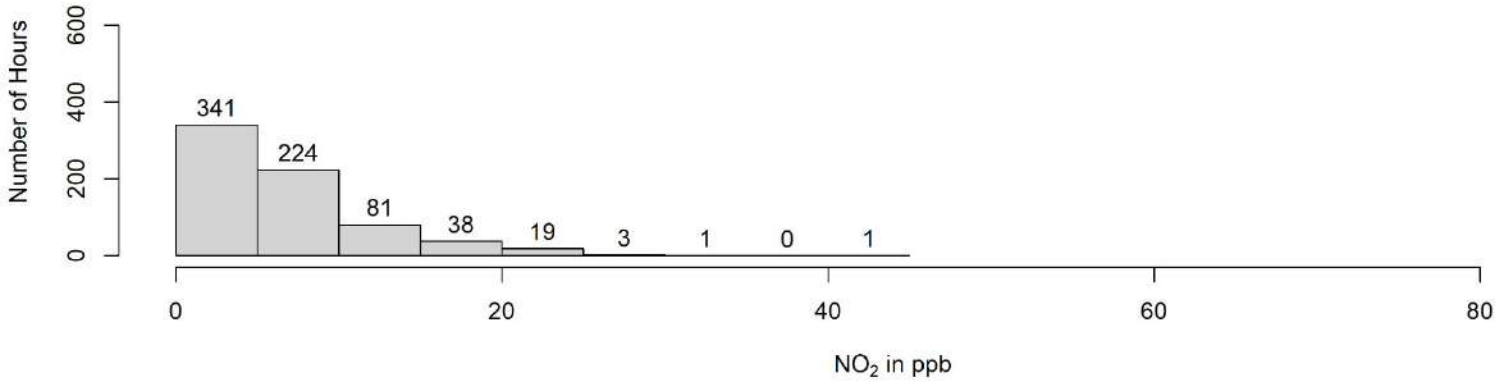
March 2023 Hourly Concentration Readings of NO (in ppb) at Beaverlodge

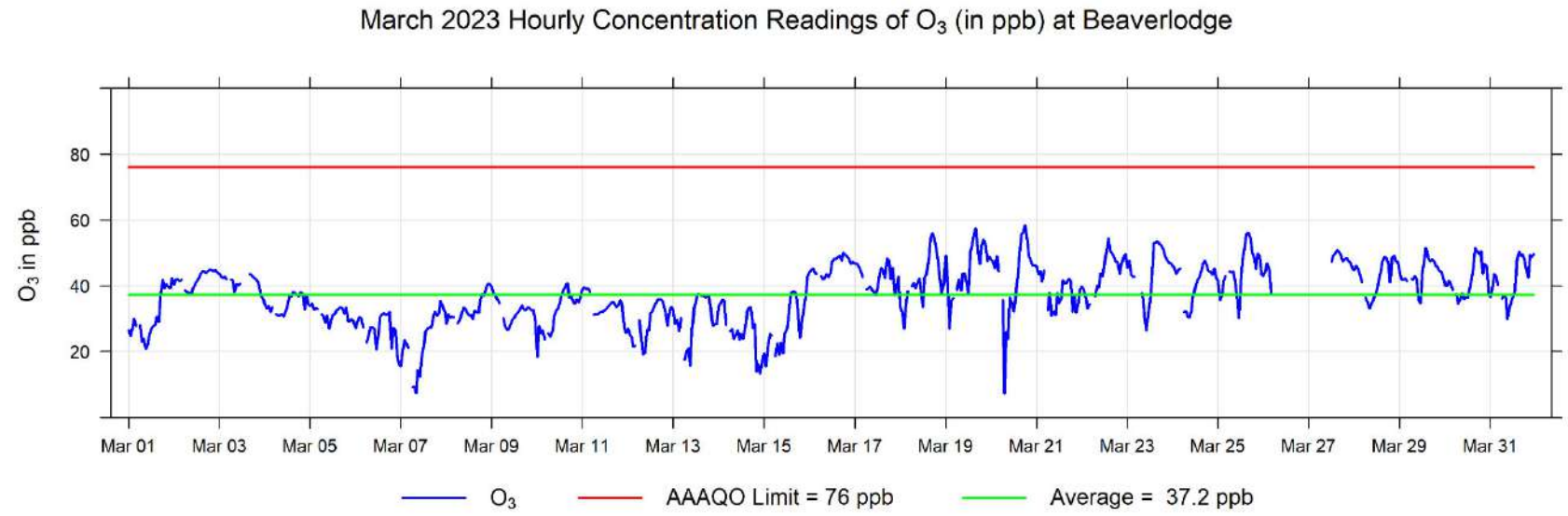


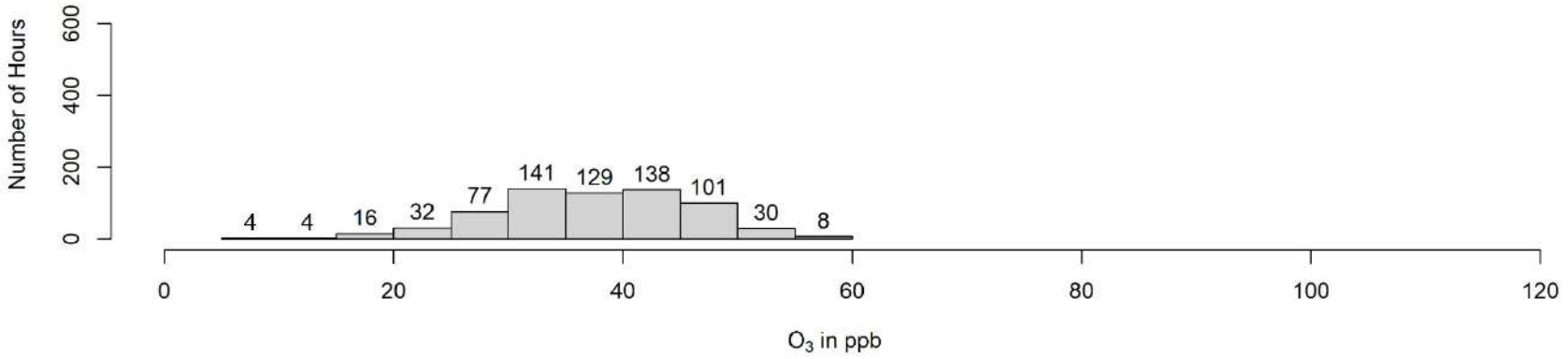
March 2023 Hourly Concentration Readings of NO_x (in ppb) at Beaverlodge

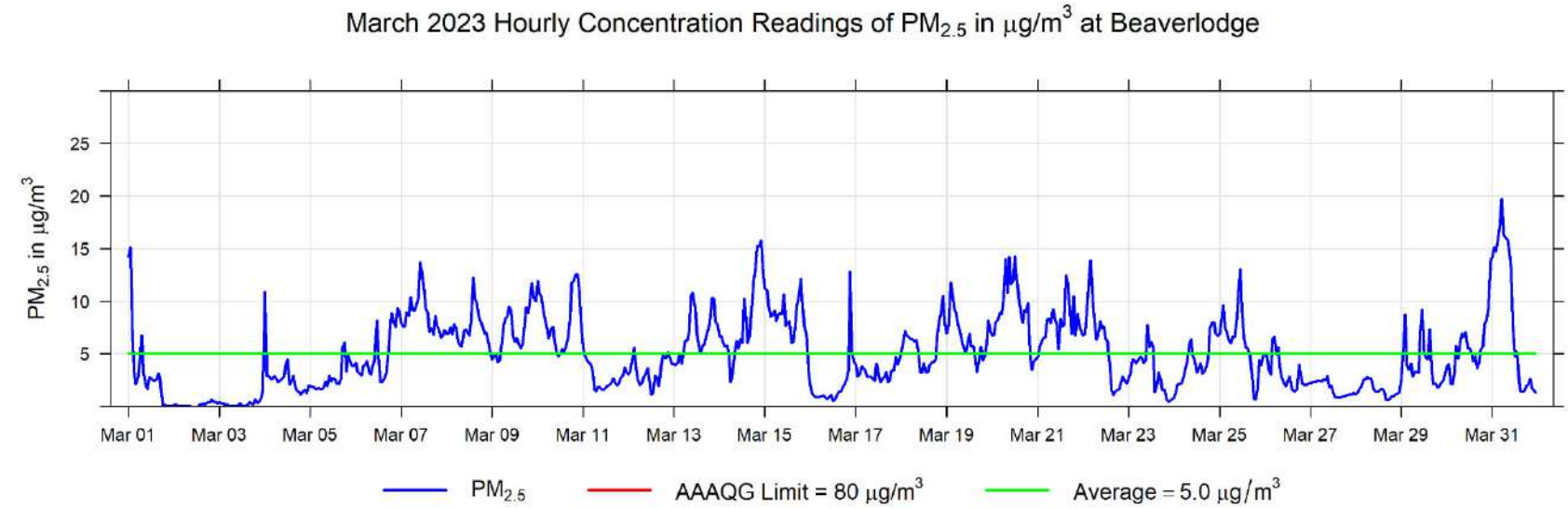


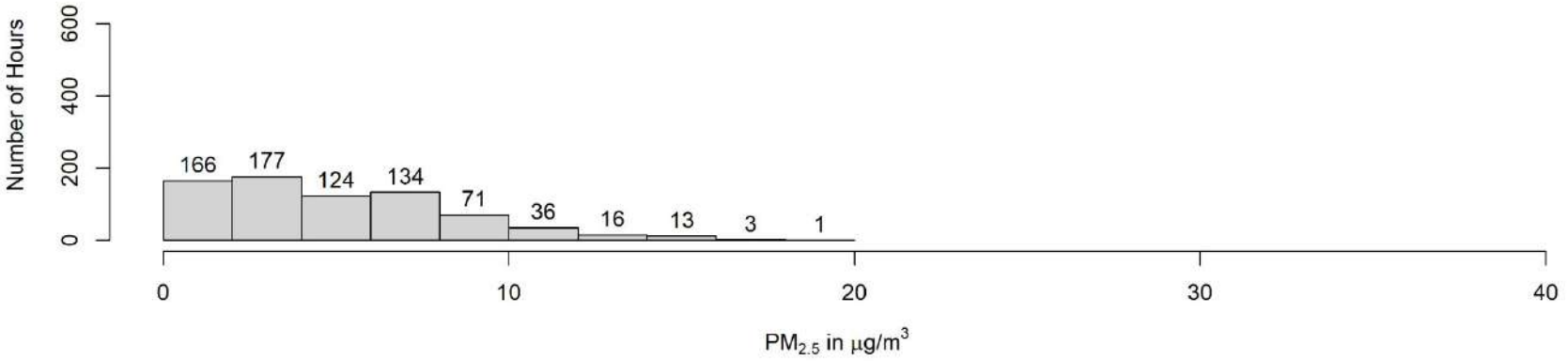

March 2023 Hourly Concentration Readings of NO2 (in ppb) at Beaverlodge
NO2 in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
NO2
AAAQO Limit = 159 ppb
Average = 6.7 ppb

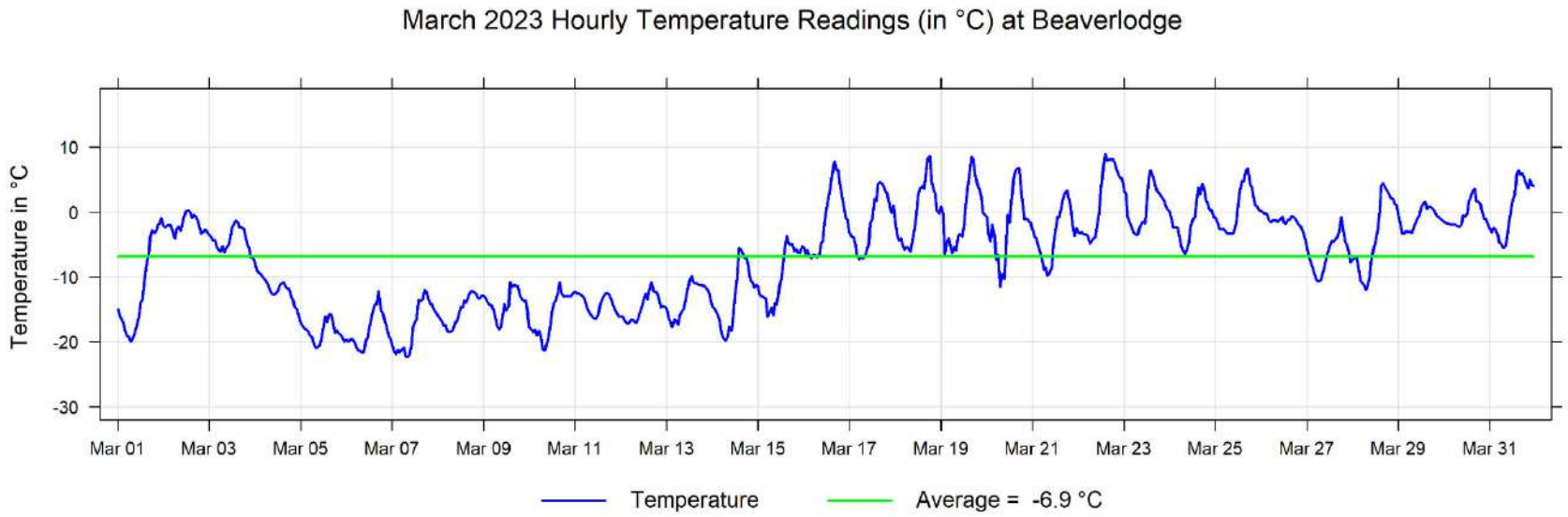

Number of Hours
0
200
400
600
341
224
81
38
19
3
1
0
1
0
20
40
60
80
NO2 in ppb

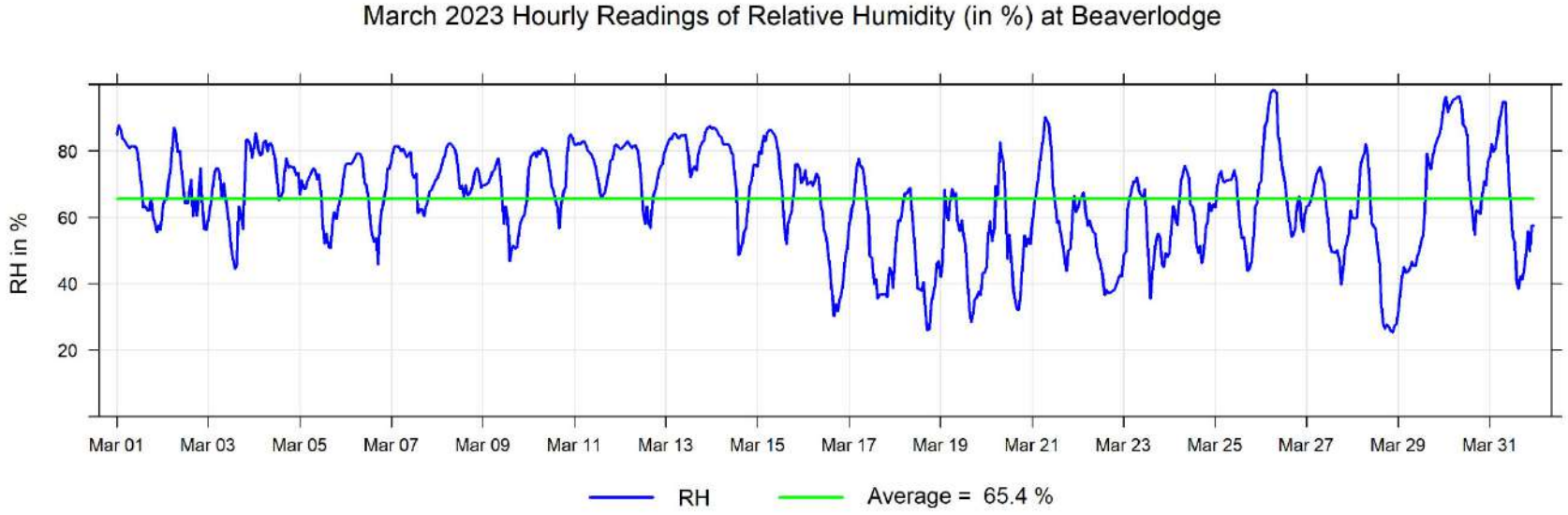

March 2023 Hourly Concentration Readings of O_3 (in ppb) at Beaverlodge
O_3 in ppb
80
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
O_3
AAAQO Limit = 76 ppb
Average = 37.2 ppb

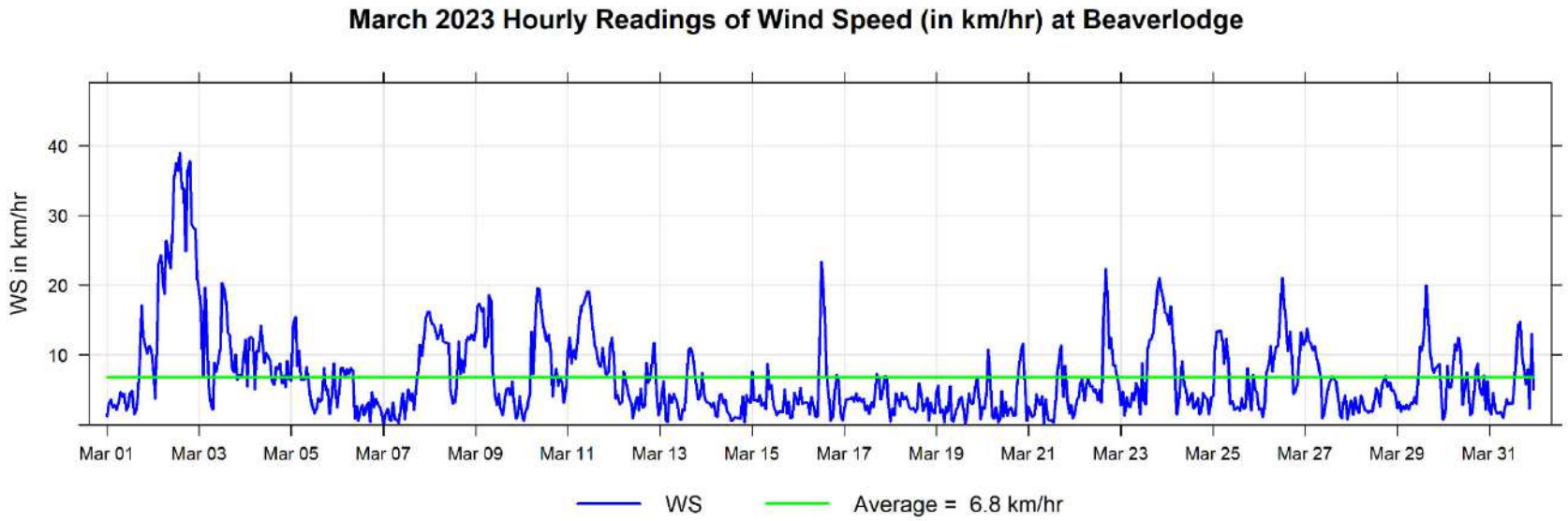

Number of Hours
0
200
400
600
4
4
16
32
77
141
129
138
101
30
8
0
20
40
60
80
100
120
O_3 in ppb

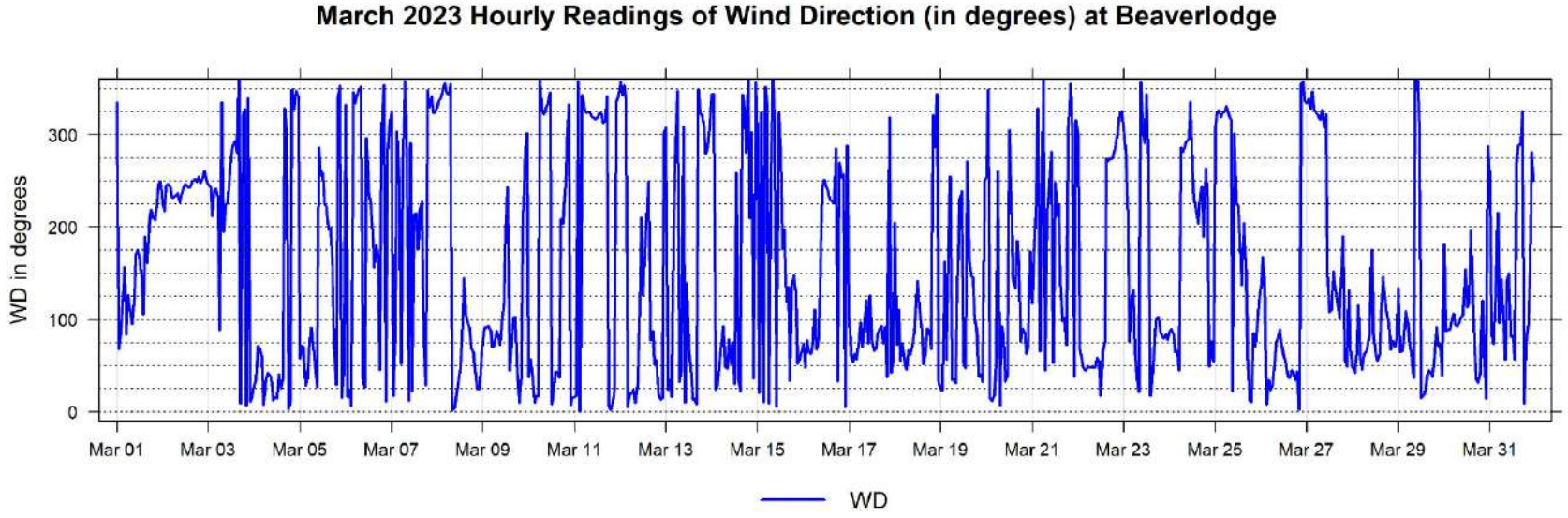

March 2023 Hourly Concentration Readings of PM2.5 in µg/m3 at Beaverlodge
PM2.5 in µg/m3
25
20
15
10
5
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
PM2.5
AAAQG Limit = 80 µg/m3
Average = 5.0 µg/m3

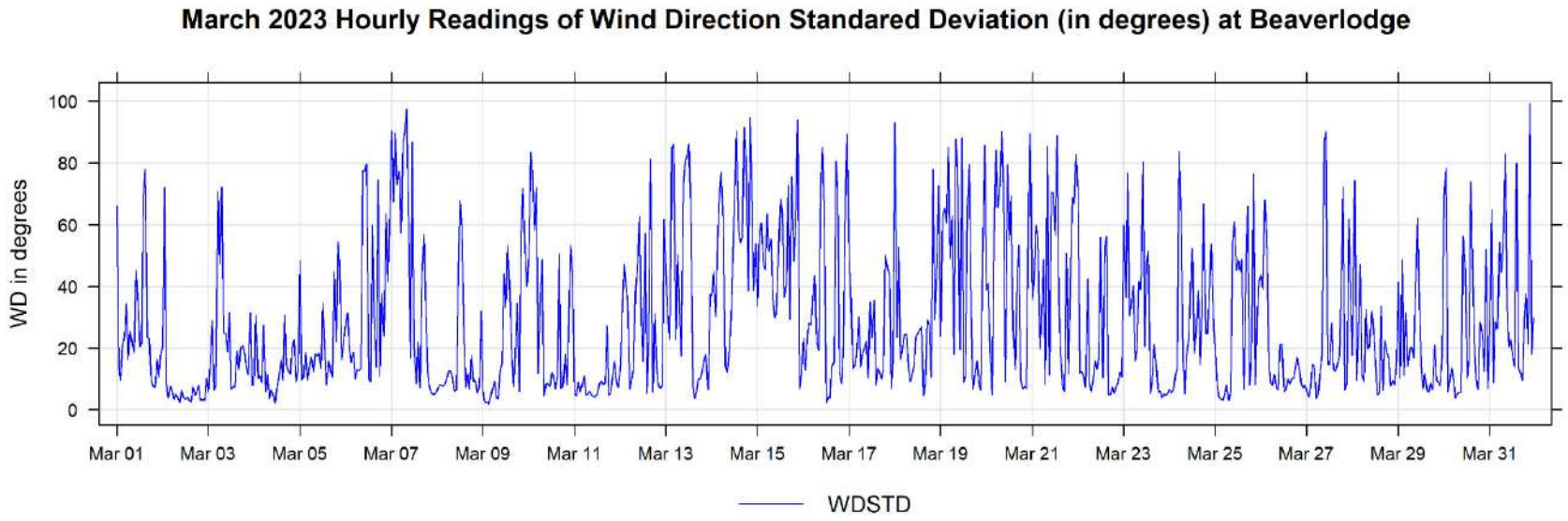

Number of Hours
0
200
400
600
166
177
124
134
71
36
16
13
3
1
0
10
20
30
40
PM2.5 in µg/m3

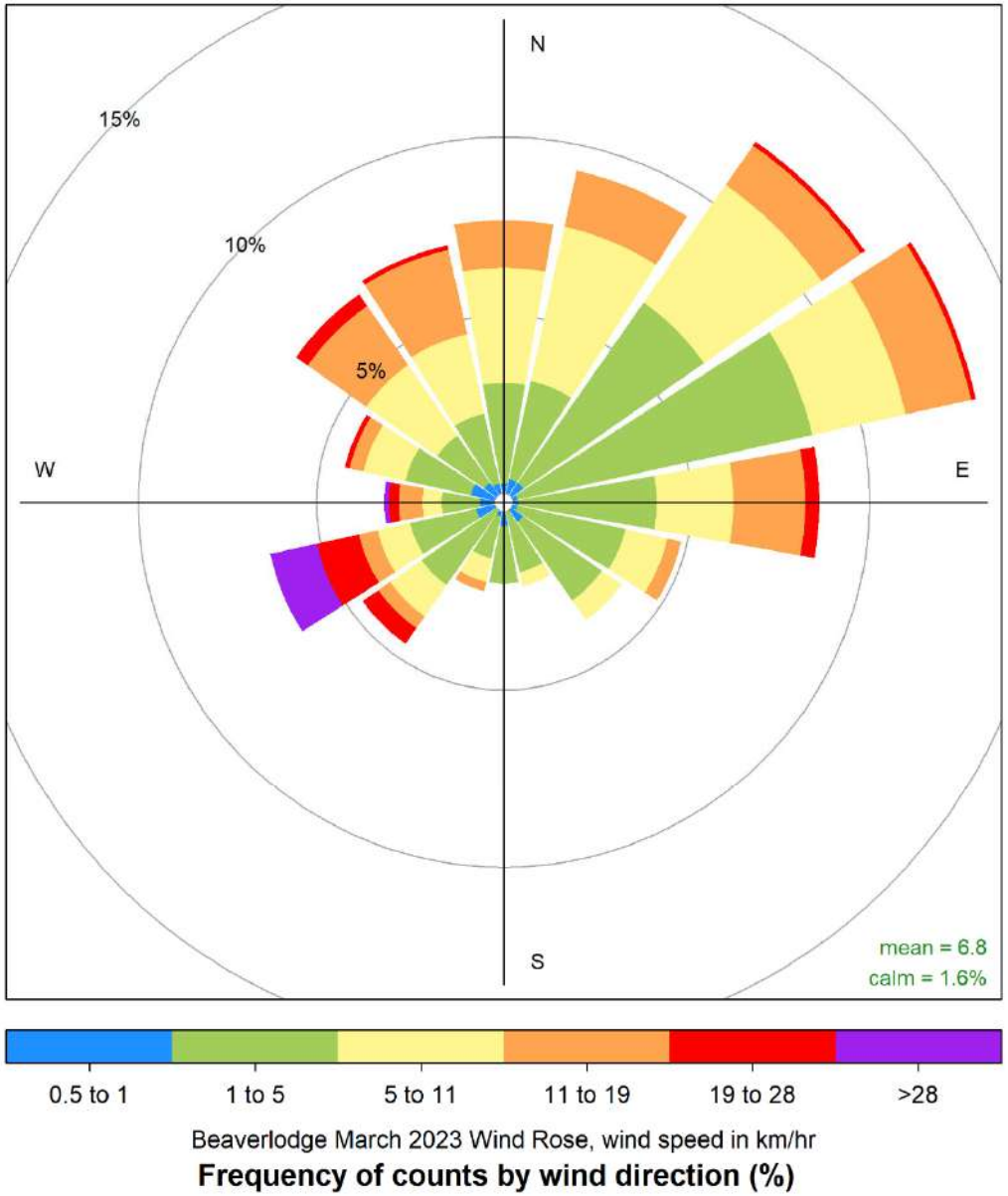

March 2023 Hourly Temperature Readings (in °C) at Beaverlodge
Temperature in °C
10
0
-10
-20
-30
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
Temperature
Average = -6.9 °C


March 2023 Hourly Readings of Relative Humidity (in %) at Beaverlodge
RH in %
80
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
RH
Average = 65.4 %


March 2023 Hourly Readings of Wind Speed (in km/hr) at Beaverlodge
WS in km/hr
40
30
20
10
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WS
Average = 6.8 km/hr

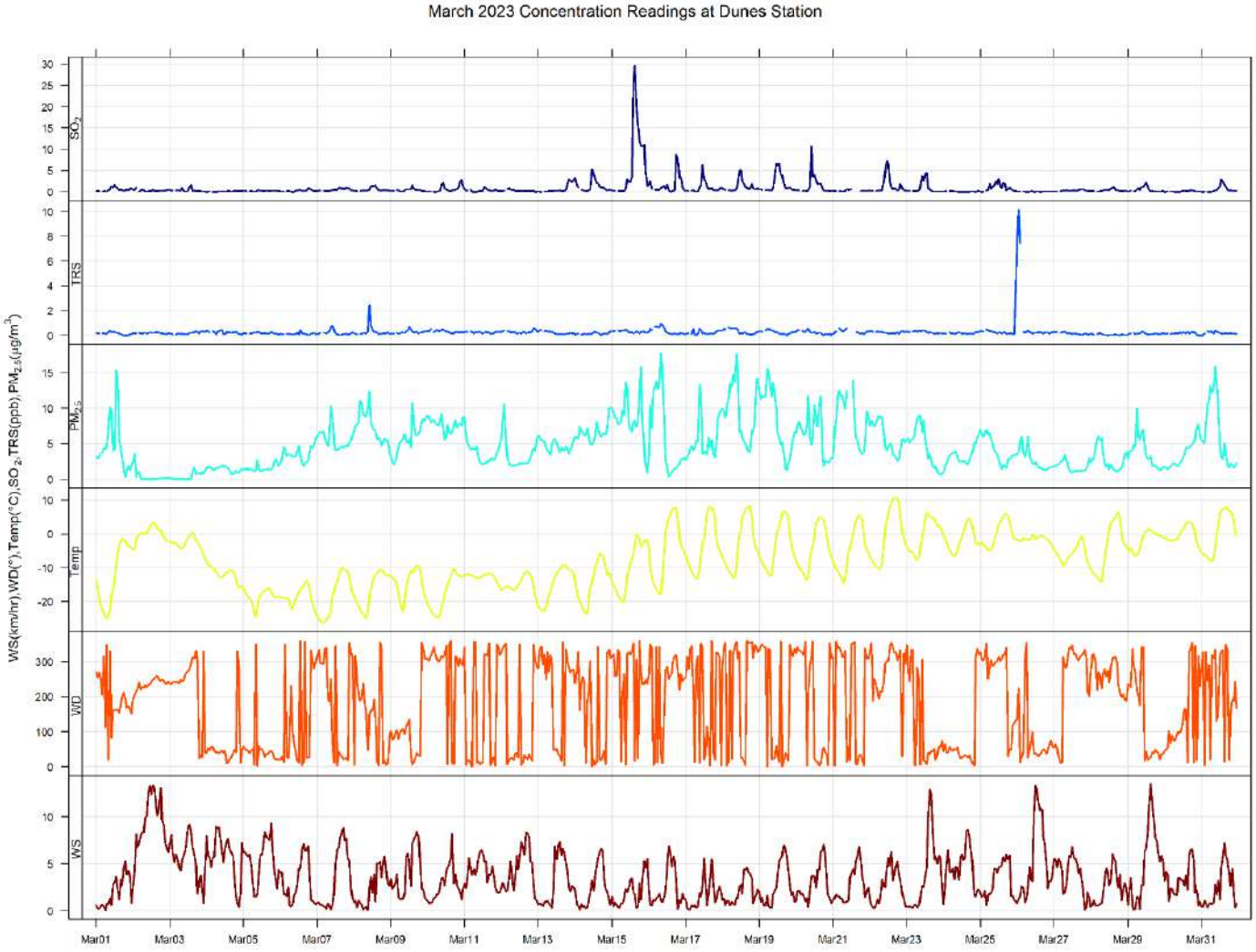

March 2023 Hourly Readings of Wind Direction (in degrees) at Beaverlodge
WD in degrees
300
200
100
0
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WD

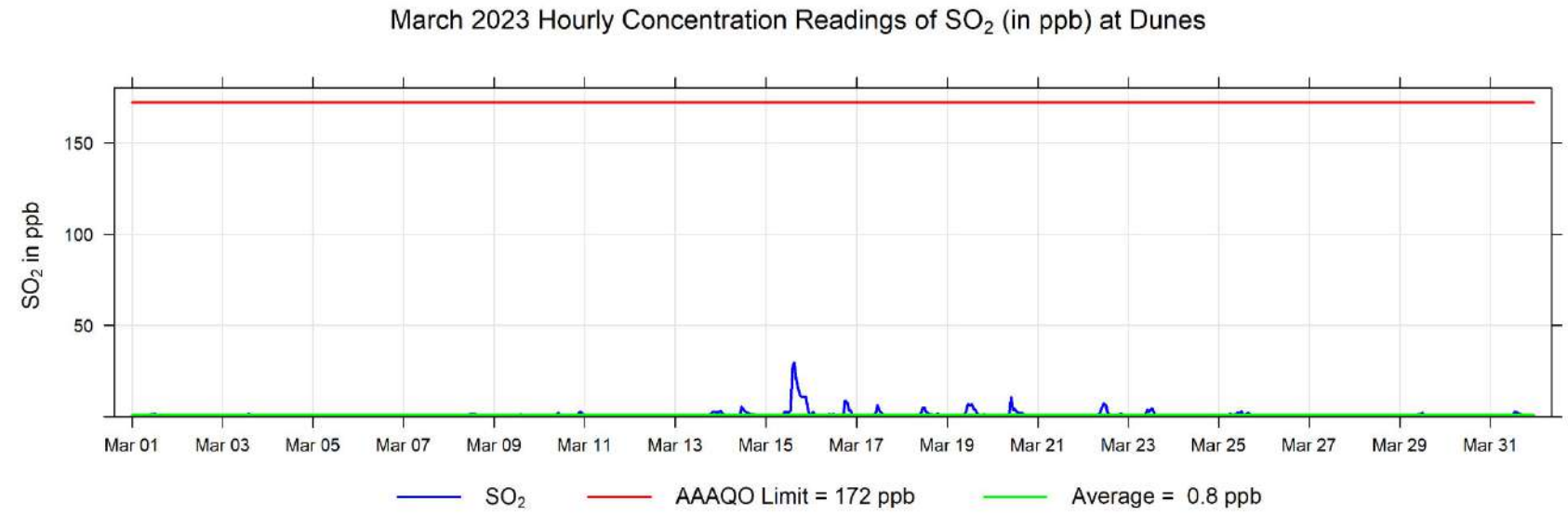

March 2023 Hourly Readings of Wind Direction Standared Deviation (in degrees) at Beaverlodge
WD in degrees
100
80
60
40
20
0
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WDSTD

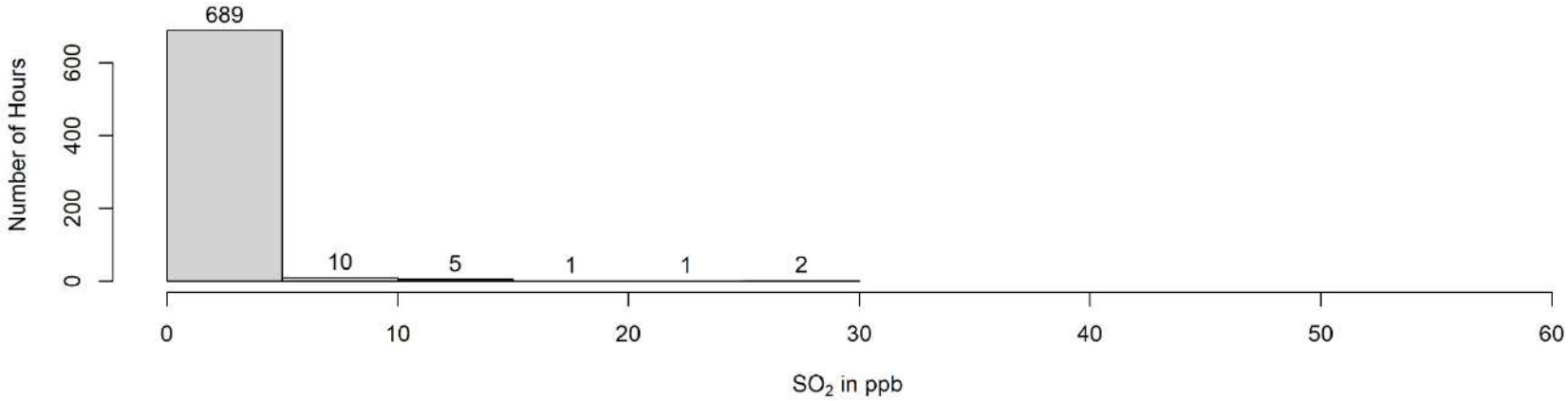

N
15%
10%
5%
W
E
S
mean = 6.8
calm = 1.6%
0.5 to 1
1 to 5
5 to 11
11 to 19
19 to 28
>28
Beaverlodge March 2023 Wind Rose, wind speed in km/hr
Frequency of counts by wind direction (%)

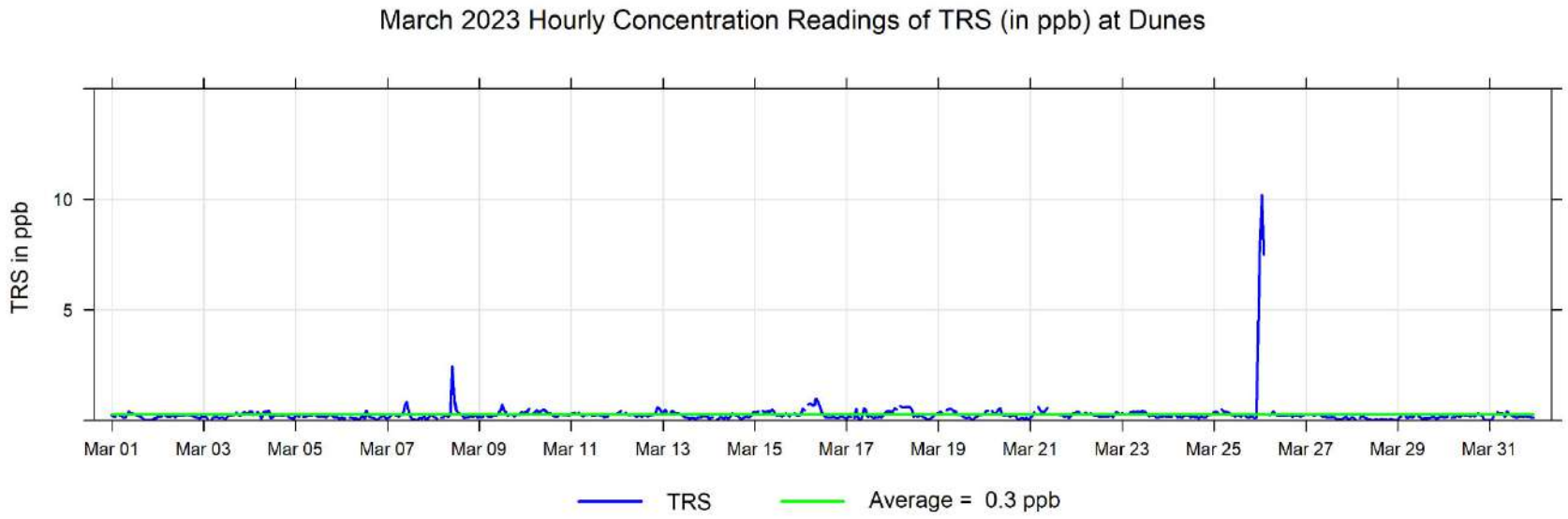
3 Dunes Charts

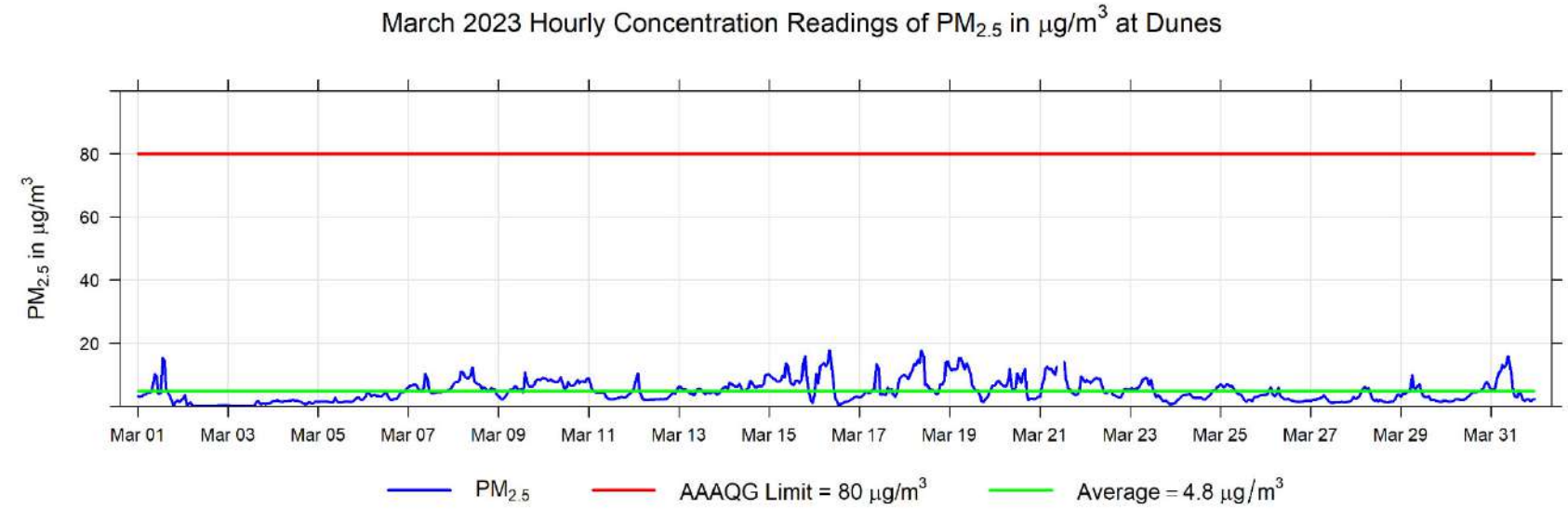
The following pages include the charts and histograms for Dunes Station

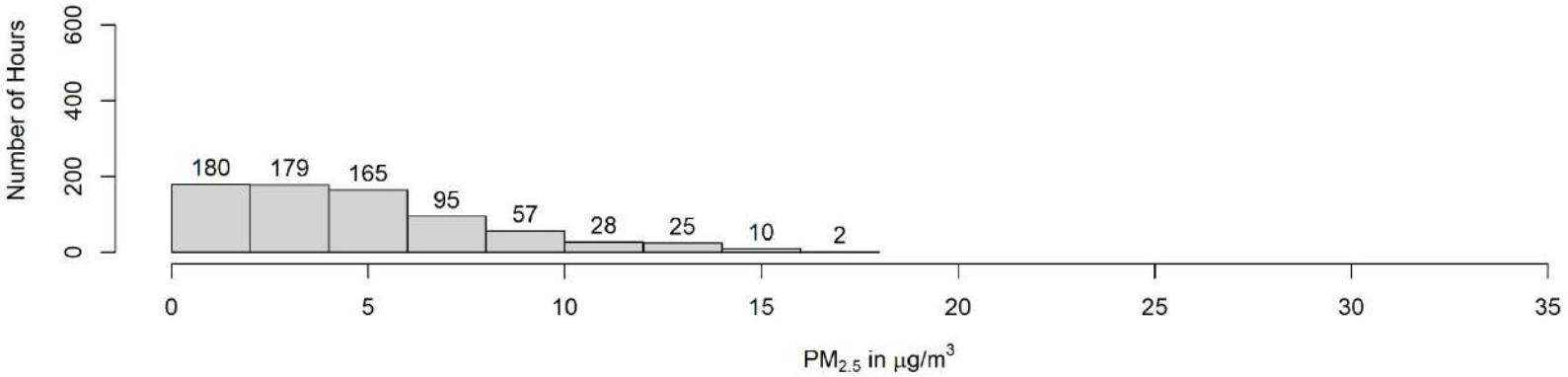


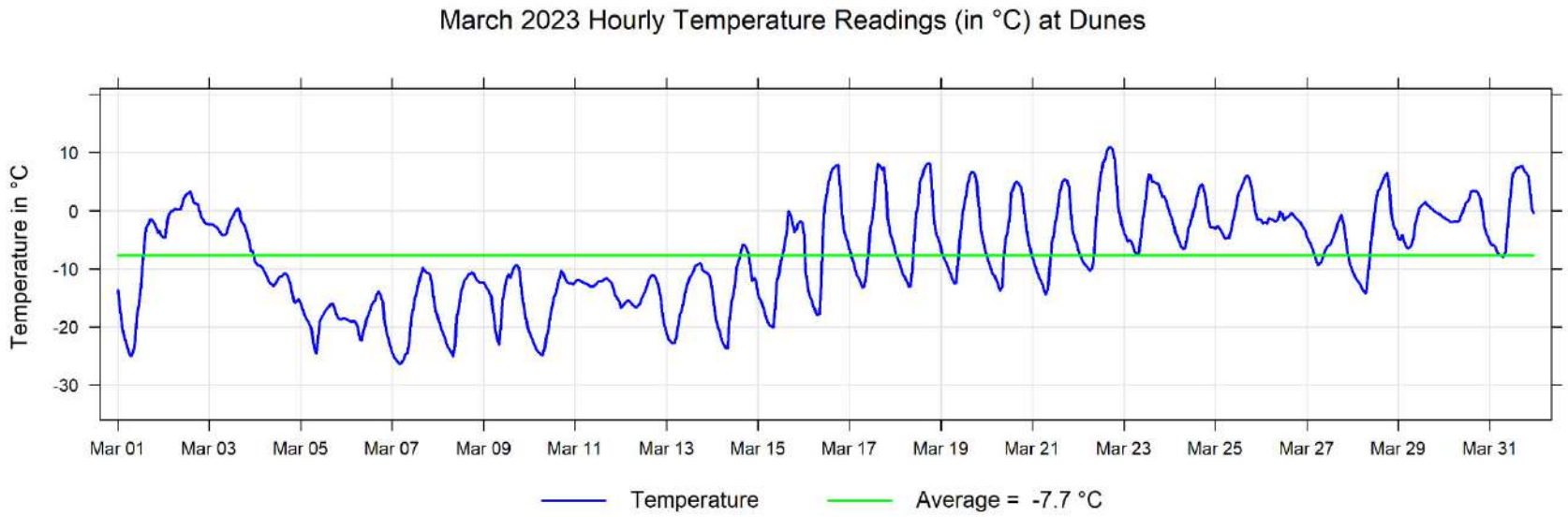

March 2023 Hourly Concentration Readings of SO_2 (in ppb) at Dunes
SO_2 in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
SO_2
AAAQO Limit = 172 ppb
Average = 0.8 ppb

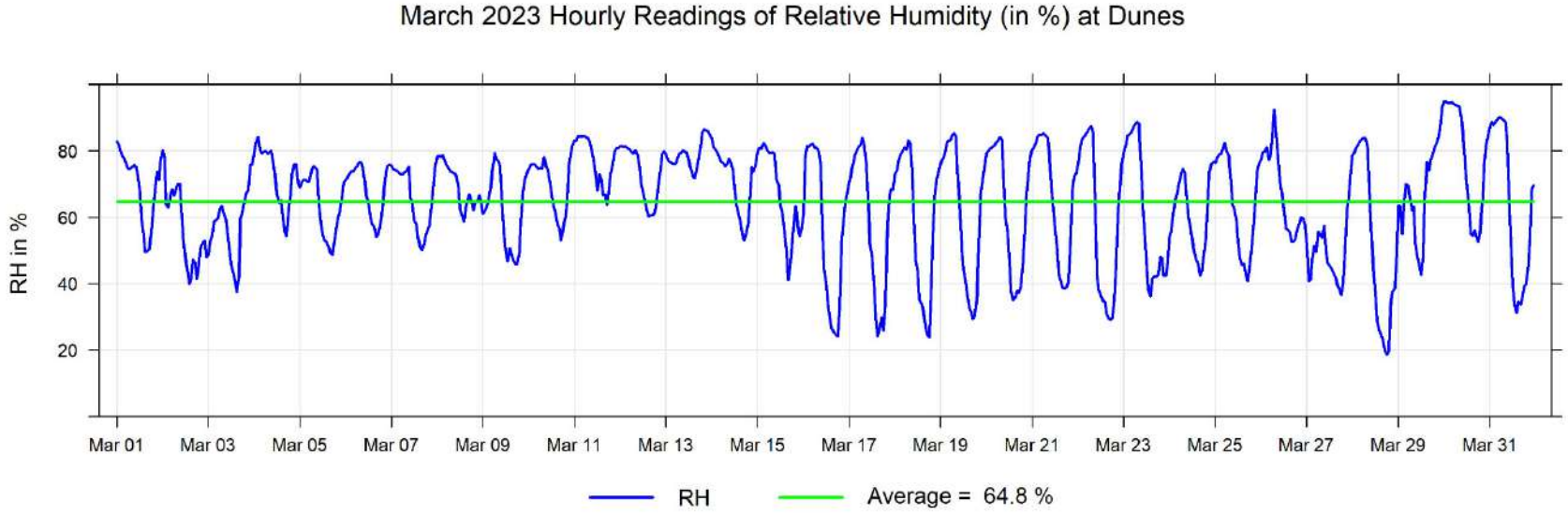

Number of Hours
0
200
400
600
689
10
5
1
1
2
0
10
20
30
40
50
60
SO_2 in ppb


March 2023 Hourly Concentration Readings of TRS (in ppb) at Dunes
TRS in ppb
10
5
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
TRS
Average = 0.3 ppb

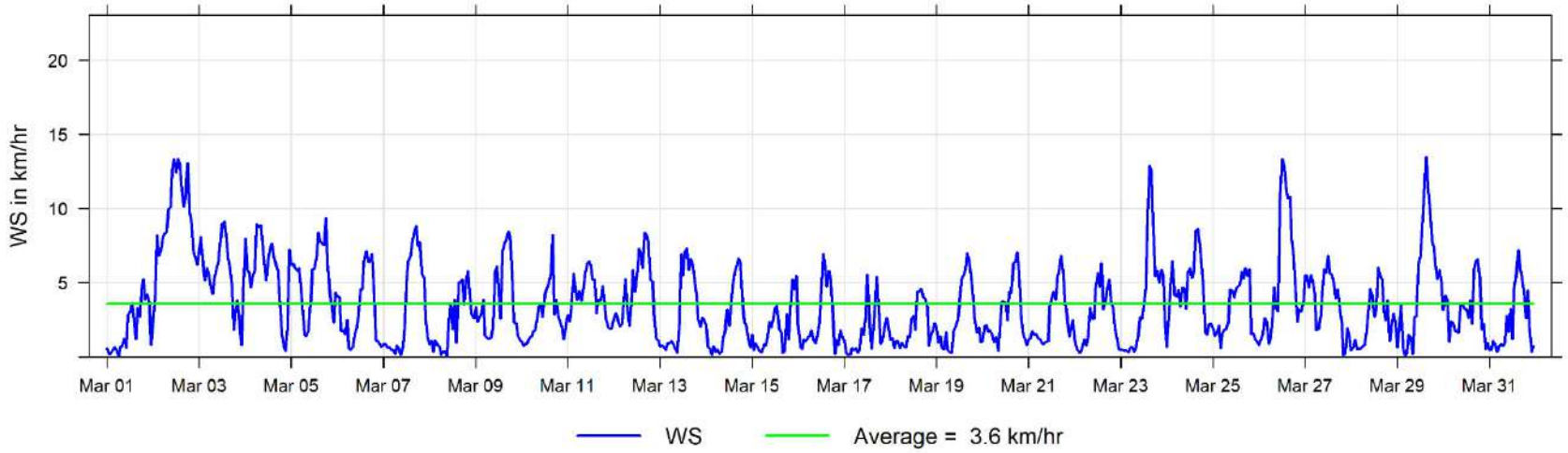

March 2023 Hourly Concentration Readings of PM2.5 in µg/m3 at Dunes
PM2.5 in µg/m3
80
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
PM2.5
AAAQG Limit = 80 µg/m3
Average = 4.8 µg/m3


Number of Hours
0
200
400
600
180
179
165
95
57
28
25
10
2
0
5
10
15
20
25
30
35
PM2.5 in µg/m3

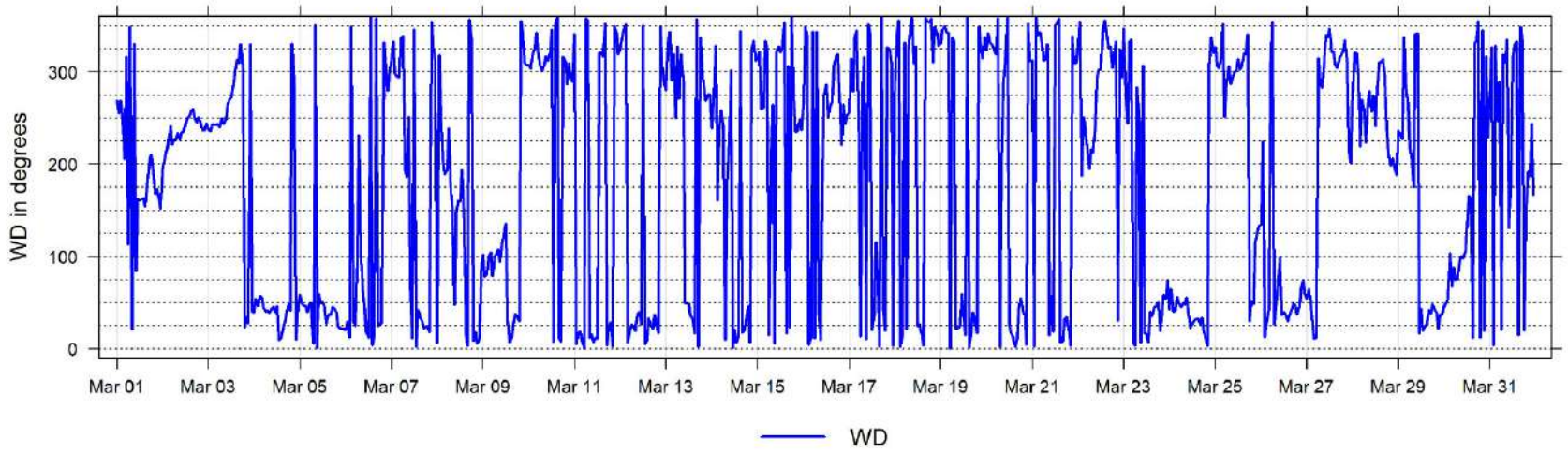

March 2023 Hourly Temperature Readings (in °C) at Dunes
Temperature in °C
10
0
-10
-20
-30
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
Temperature
Average = -7.7 °C

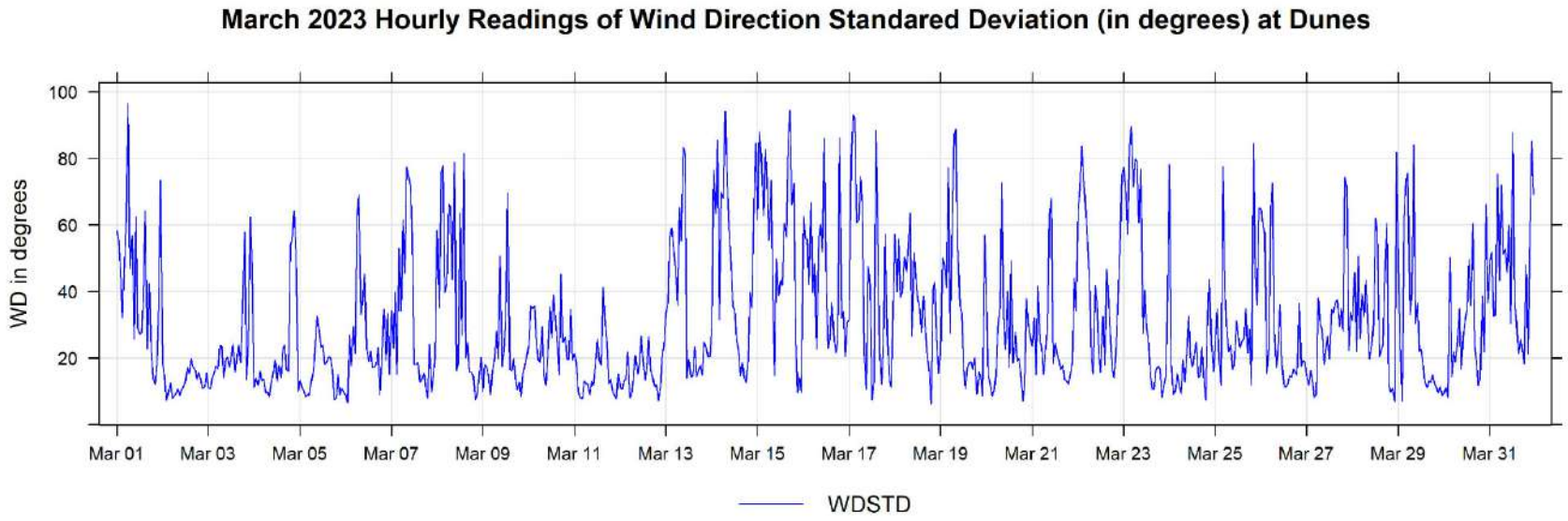

March 2023 Hourly Readings of Relative Humidity (in %) at Dunes
RH in %
80
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
RH
Average = 64.8 %

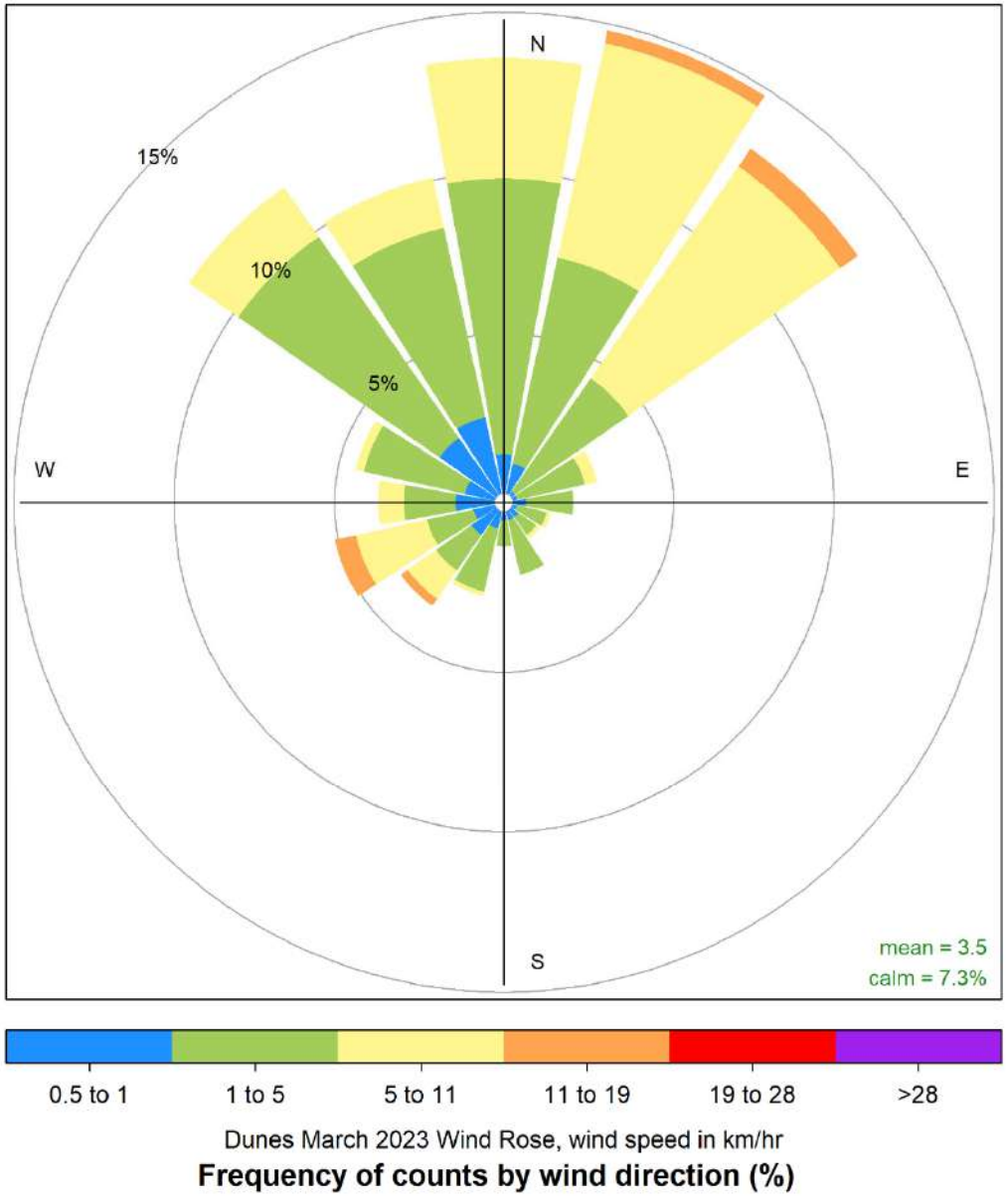
March 2023 Hourly Readings of Wind Speed (in km/hr) at Dunes



March 2023 Hourly Readings of Wind Direction (in degrees) at Dunes

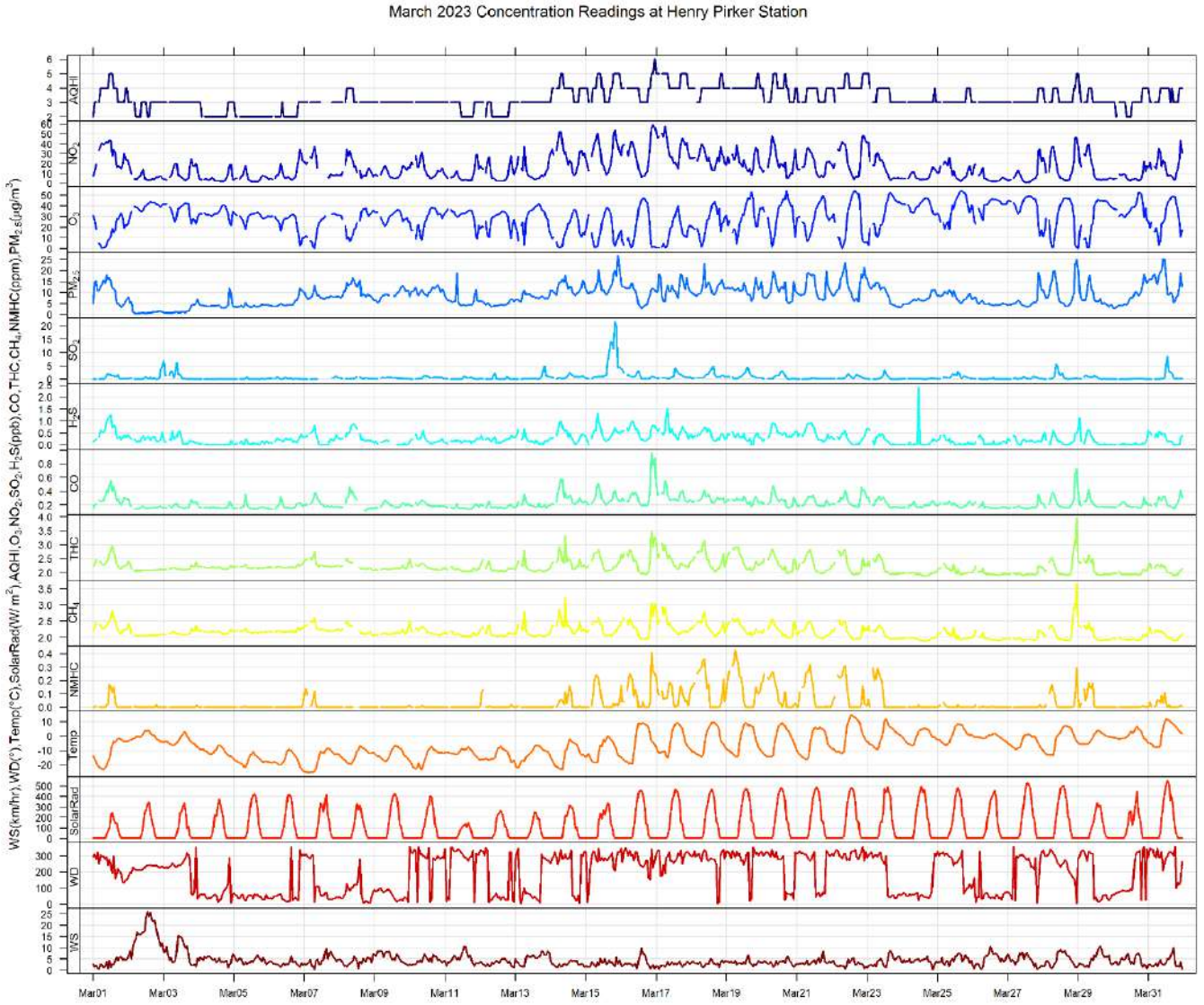


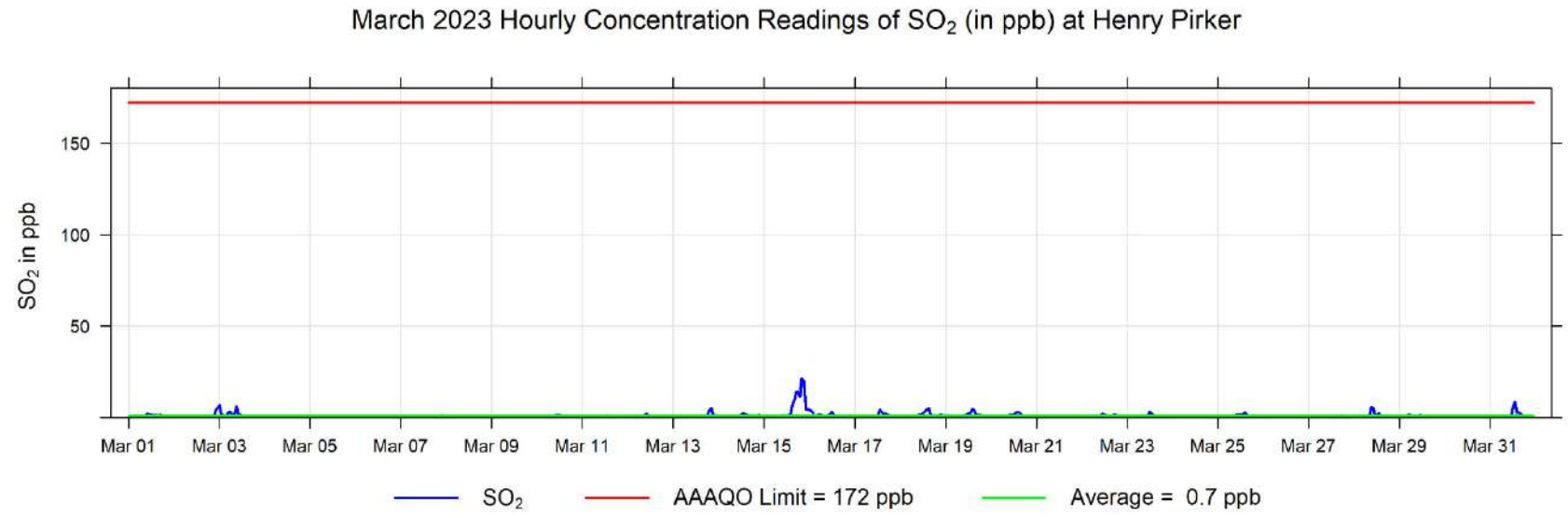

March 2023 Hourly Readings of Wind Direction Standared Deviation (in degrees) at Dunes
WD in degrees
100
80
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WDSTD

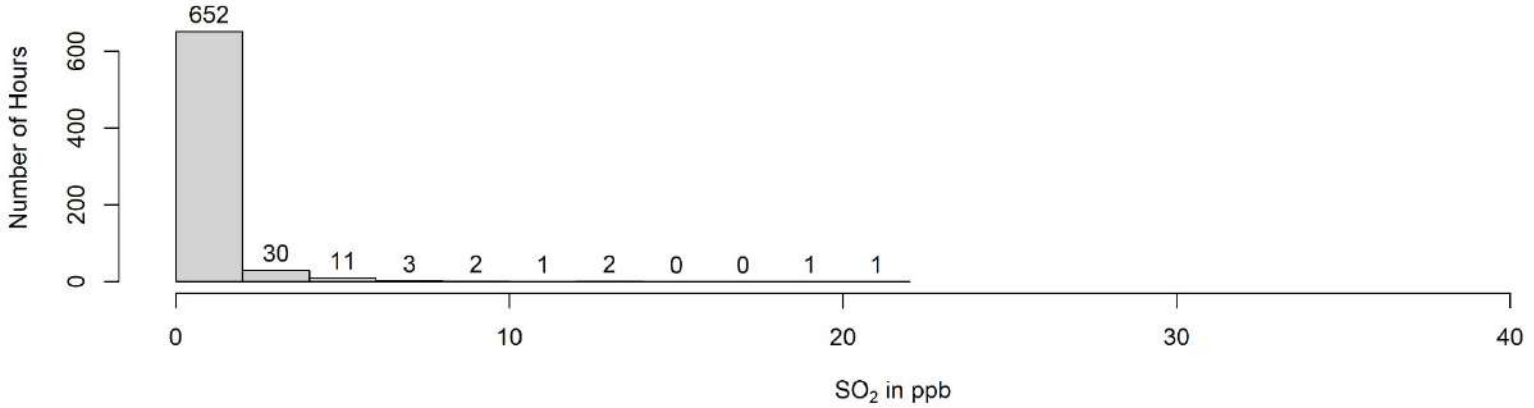

N
15%
10%
5%
W
E
S
mean = 3.5
calm = 7.3%
0.5 to 1
1 to 5
5 to 11
11 to 19
19 to 28
>28
Dunes March 2023 Wind Rose, wind speed in km/hr
Frequency of counts by wind direction (%)

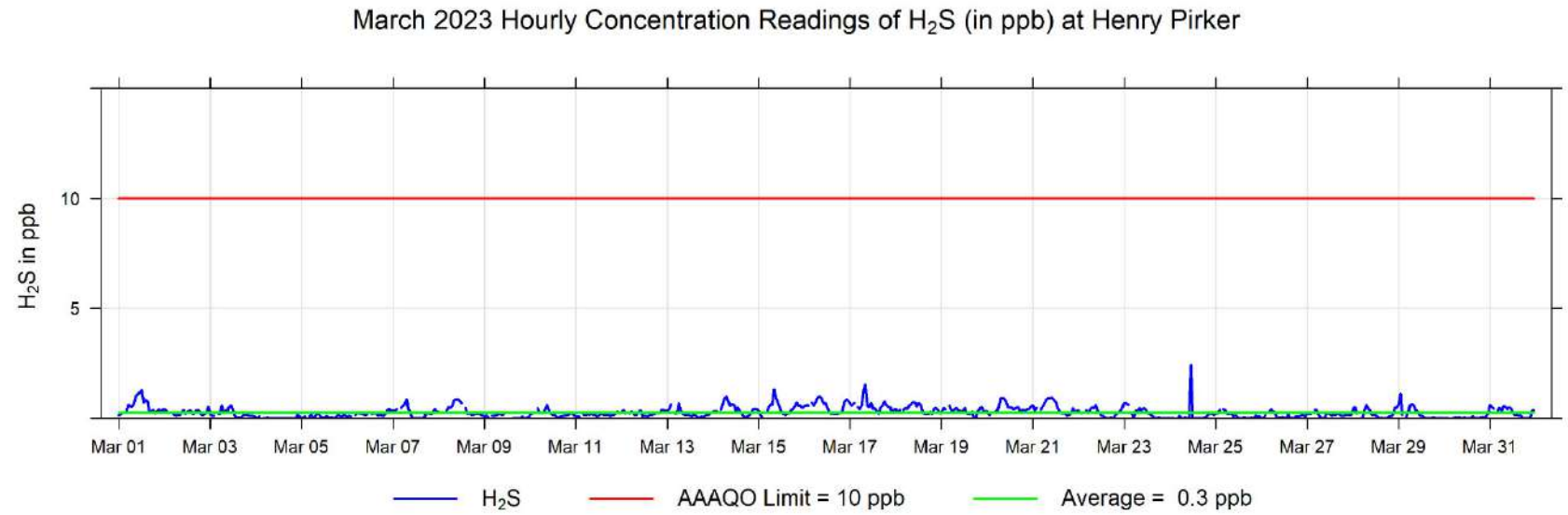
4 Grande Prairie - Henry Pirker Charts

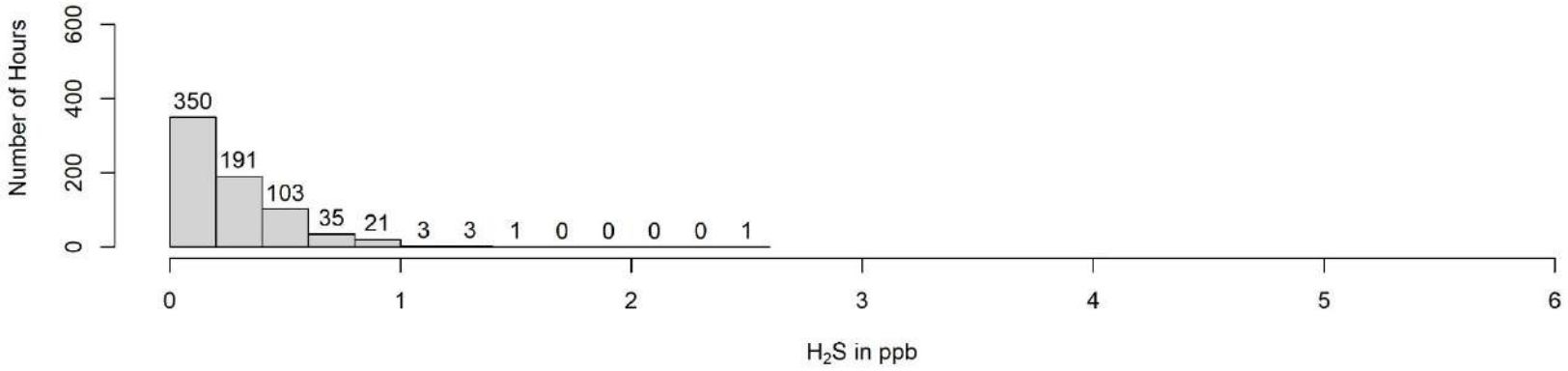
The following pages include the charts and histograms for Henry Pirker Station in Grande Prairie



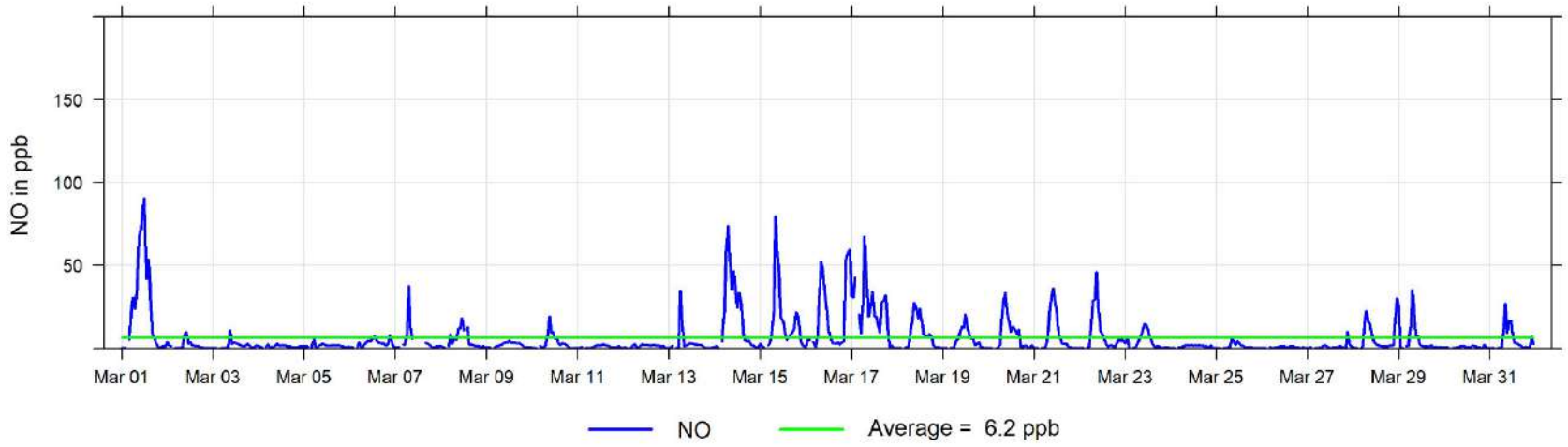

March 2023 Hourly Concentration Readings of SO2 (in ppb) at Henry Pirker
SO2 in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
SO2
AAAQO Limit = 172 ppb
Average = 0.7 ppb


Number of Hours
0
200
400
600
652
30
11
3
2
1
2
0
0
1
1
0
10
20
30
40
SO2 in ppb

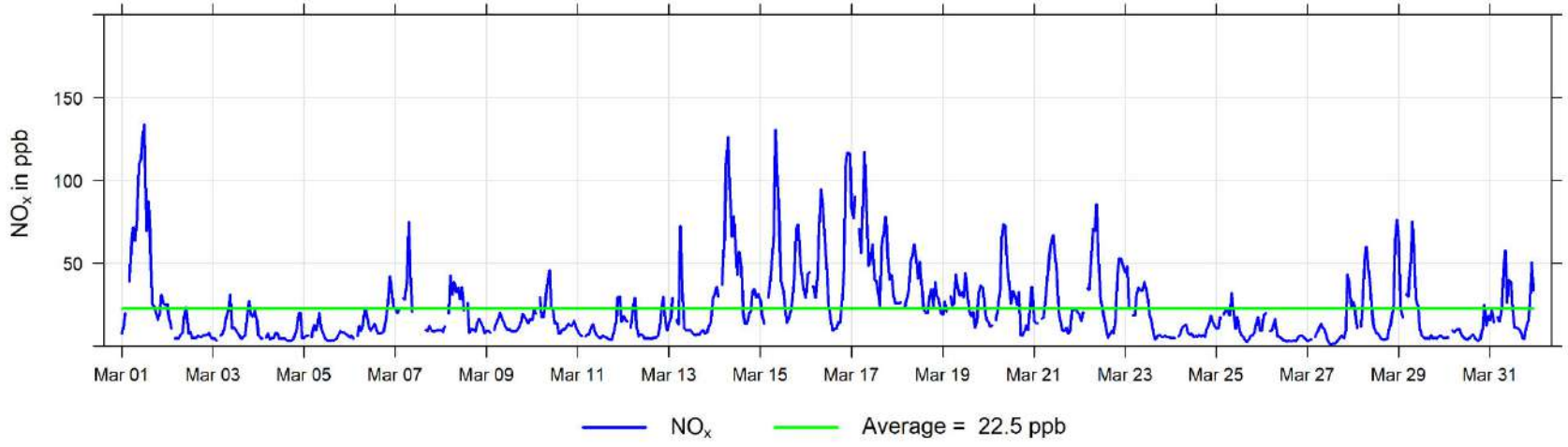

March 2023 Hourly Concentration Readings of H2S (in ppb) at Henry Pirker
H2S in ppb
10
5
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
H2S
AAAQO Limit = 10 ppb
Average = 0.3 ppb

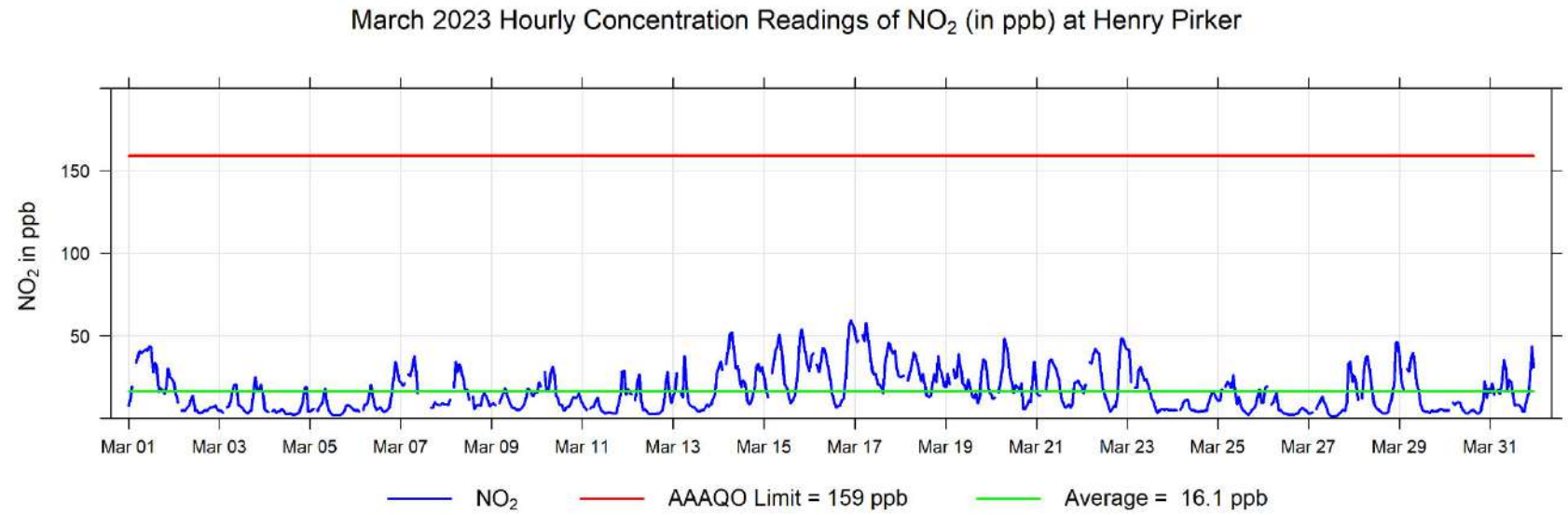

Number of Hours
0
200
400
600
350
191
103
35
21
3
3
1
0
0
0
0
1
0
1
2
3
4
5
6
H2S in ppb

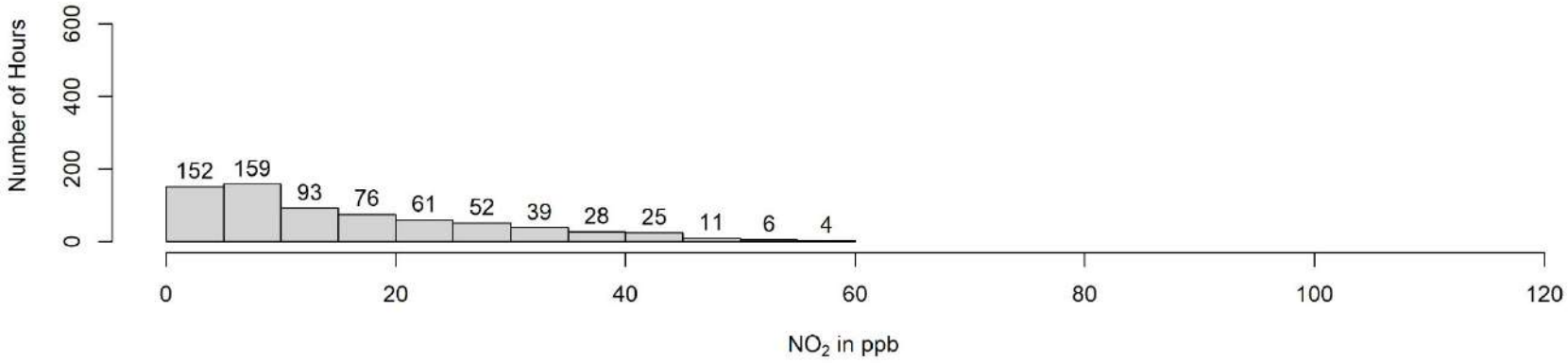
March 2023 Hourly Concentration Readings of NO (in ppb) at Henry Pirker

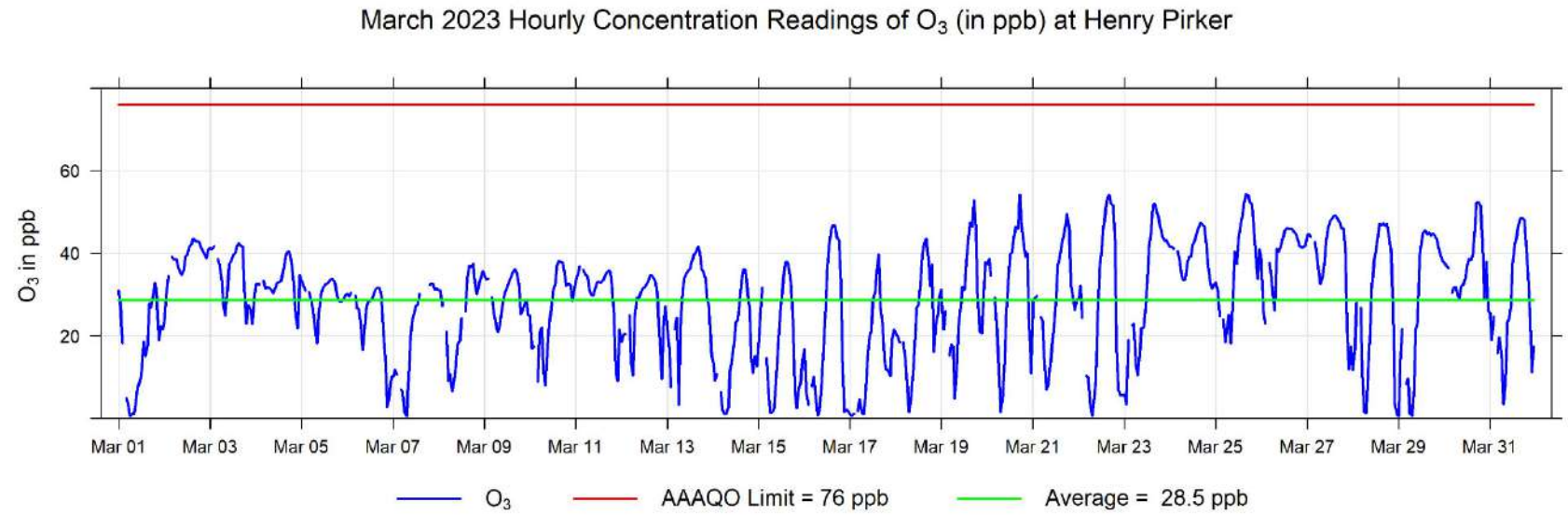


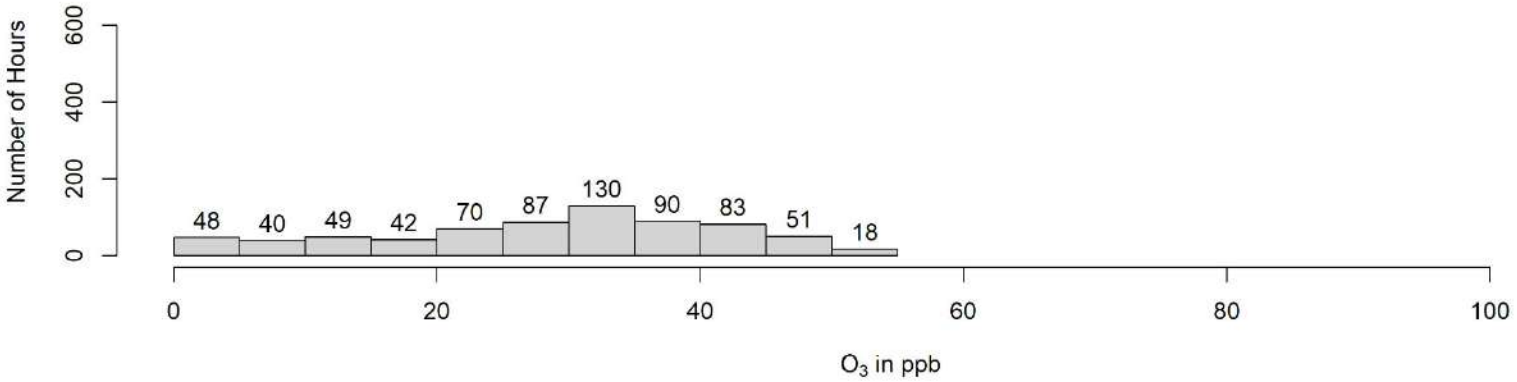
March 2023 Hourly Concentration Readings of NO_x (in ppb) at Henry Pirker

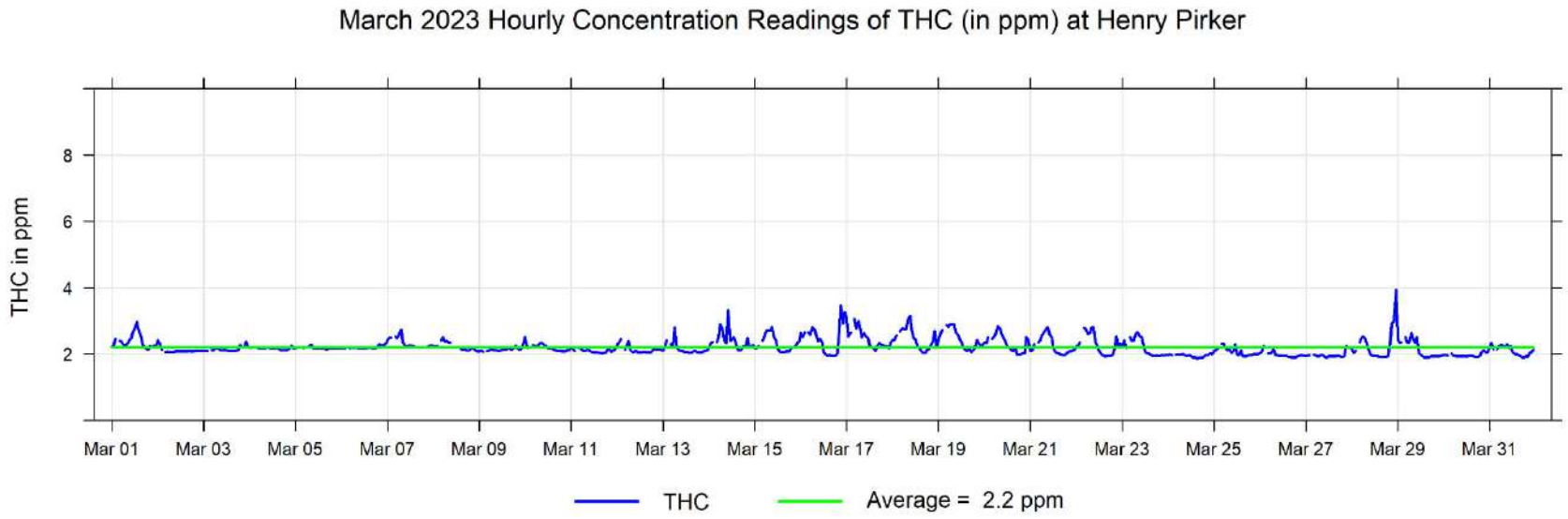


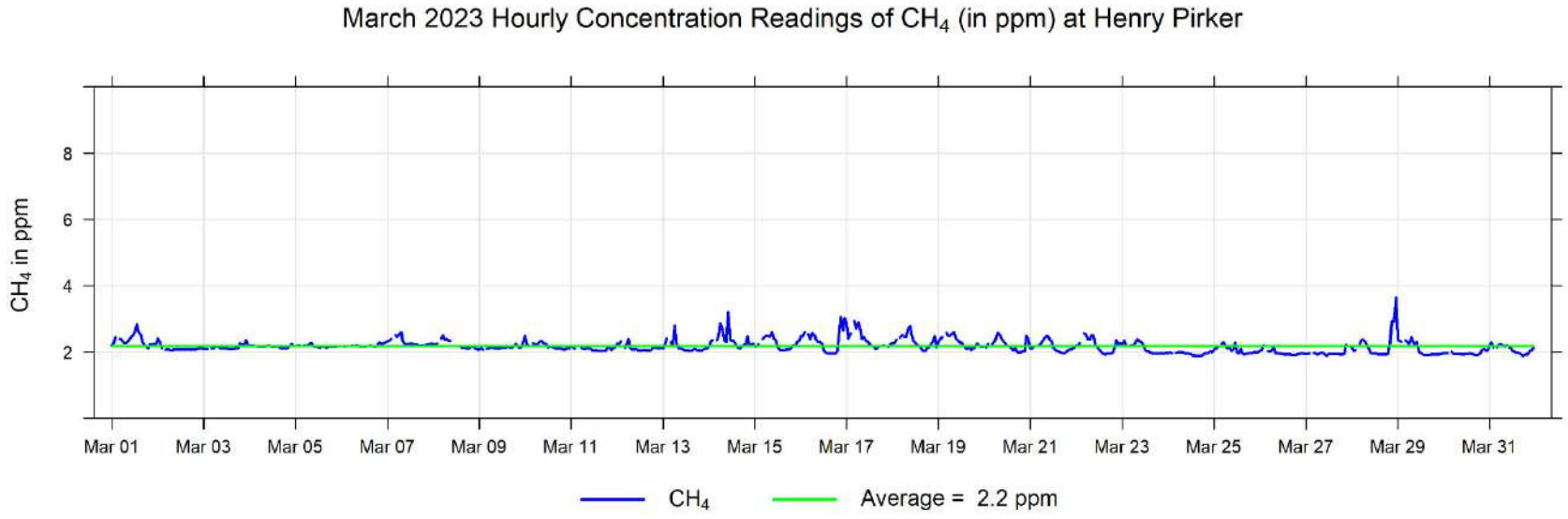

March 2023 Hourly Concentration Readings of NO2 (in ppb) at Henry Pirker
NO2 in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
NO2
AAAQO Limit = 159 ppb
Average = 16.1 ppb

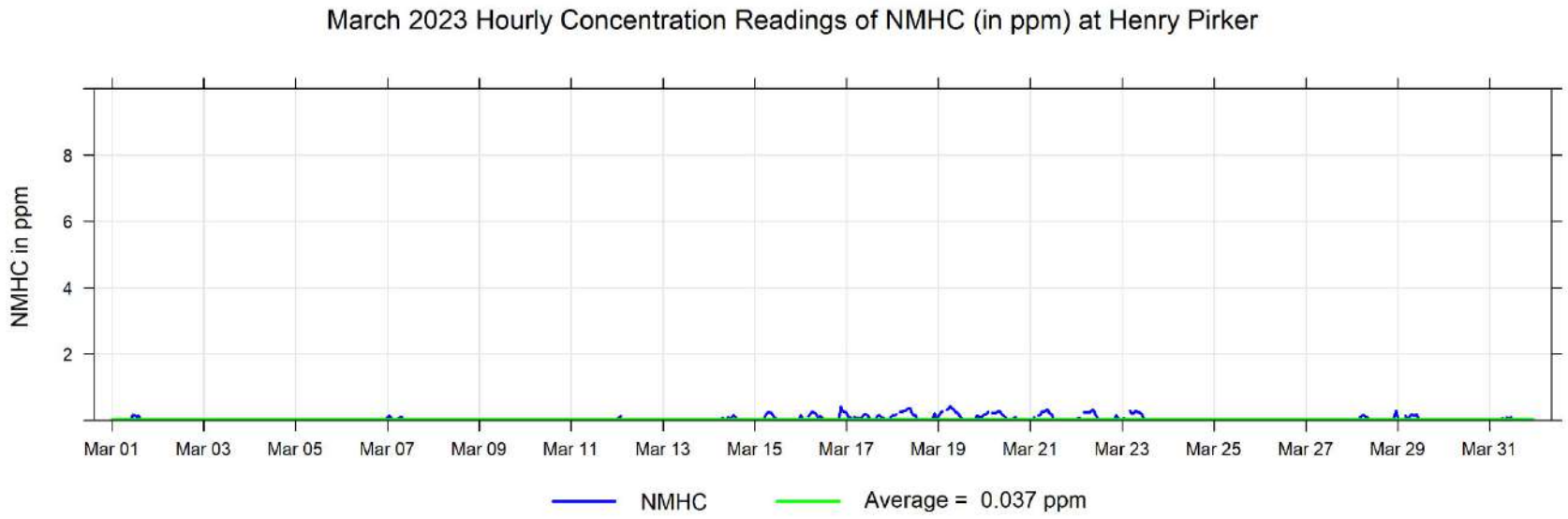

Number of Hours
0
200
400
600
152
159
93
76
61
52
39
28
25
11
6
4
0
20
40
60
80
100
120
NO2 in ppb

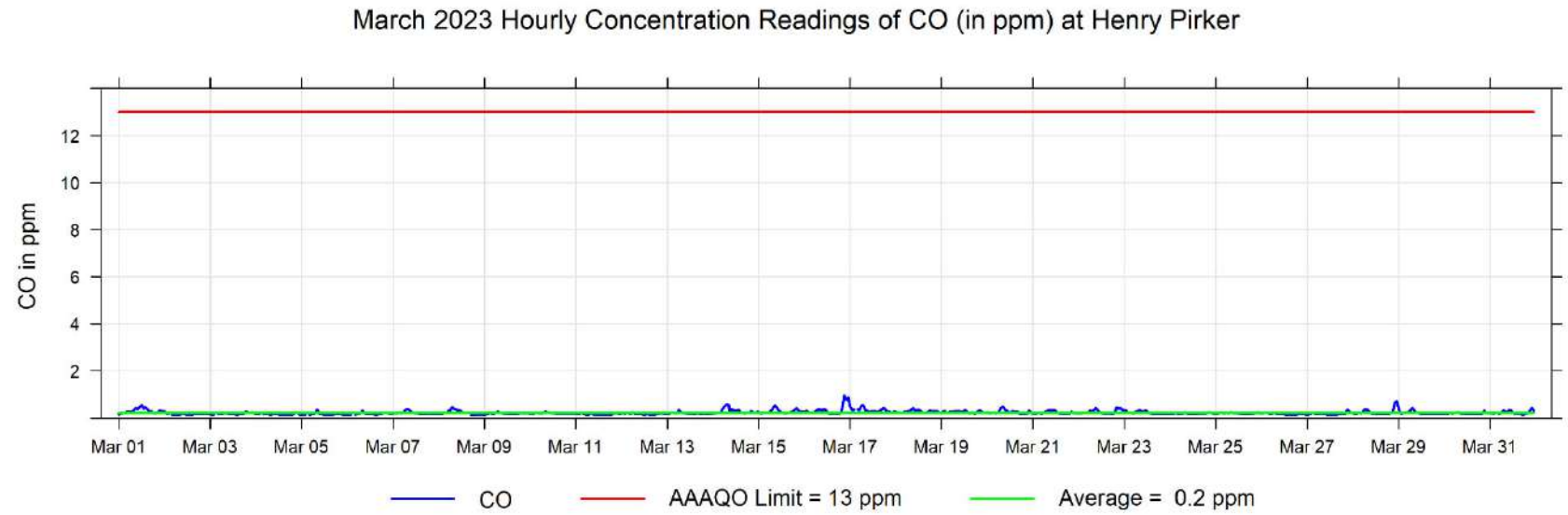

March 2023 Hourly Concentration Readings of O_3 (in ppb) at Henry Pirker
O_3 in ppb
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
O_3
AAAQO Limit = 76 ppb
Average = 28.5 ppb

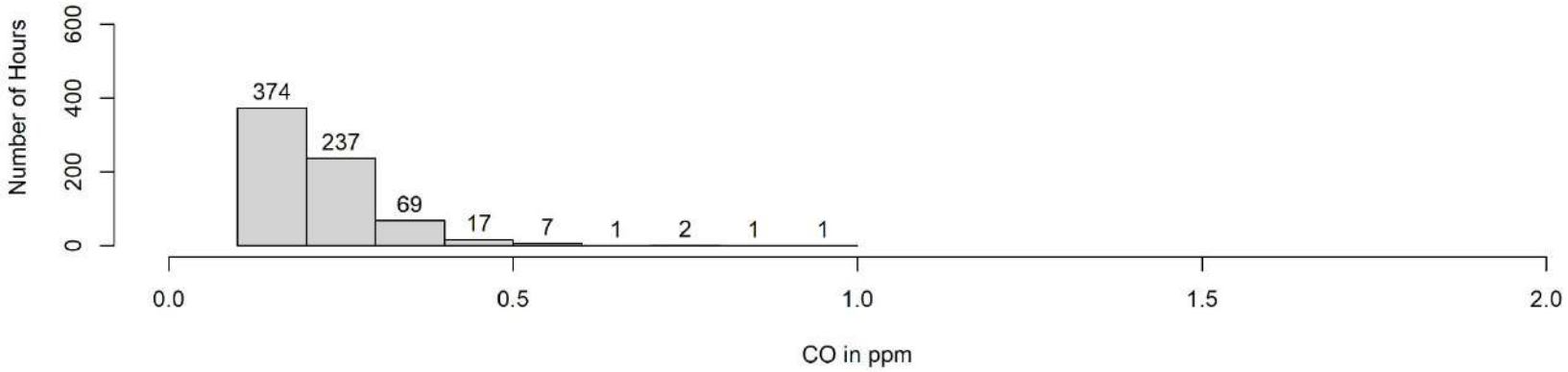

Number of Hours
0
200
400
600
48
40
49
42
70
87
130
90
83
51
18
0
20
40
60
80
100
O_3 in ppb

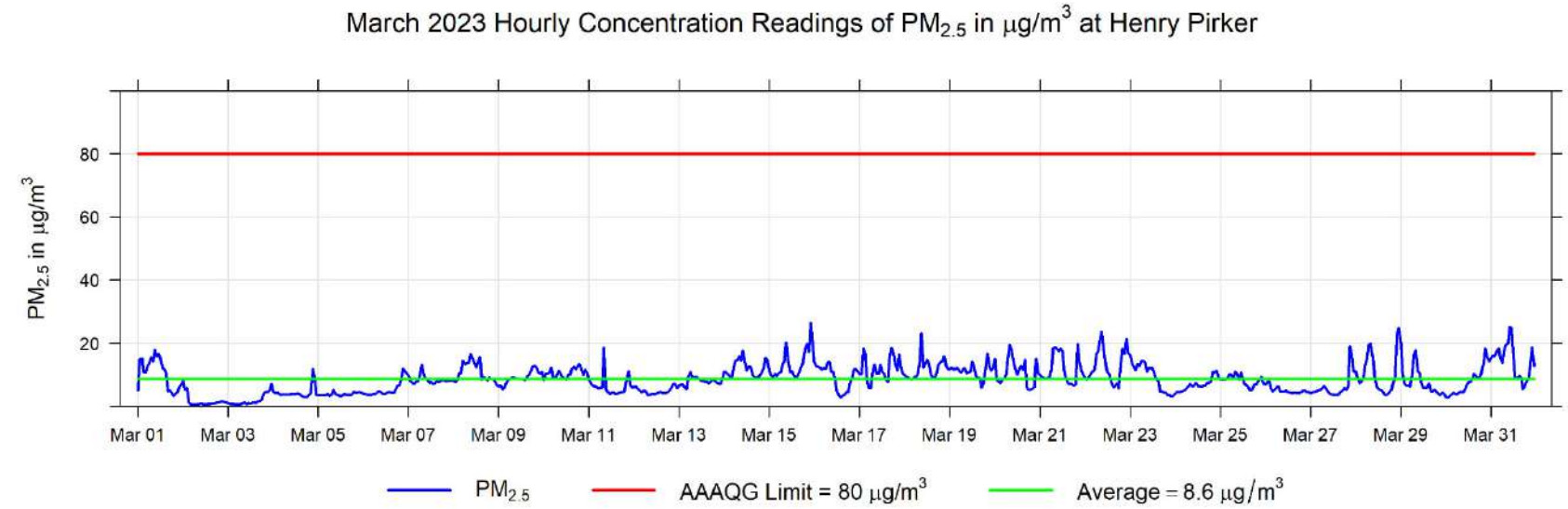

March 2023 Hourly Concentration Readings of THC (in ppm) at Henry Pirker
THC in ppm
8
6
4
2
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
THC
Average = 2.2 ppm

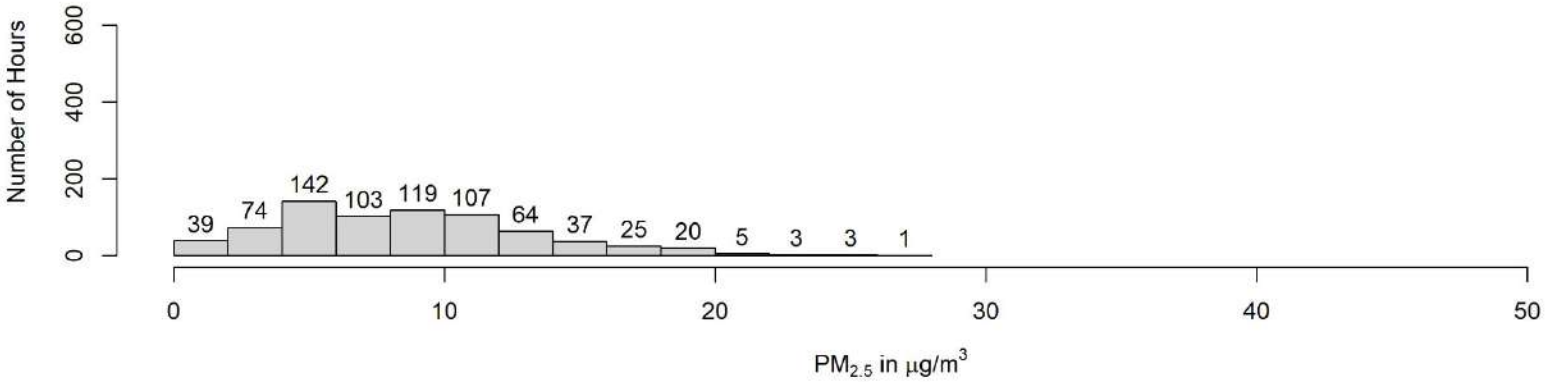

March 2023 Hourly Concentration Readings of CH4 (in ppm) at Henry Pirker
CH4 in ppm
8
6
4
2
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
CH4
Average = 2.2 ppm

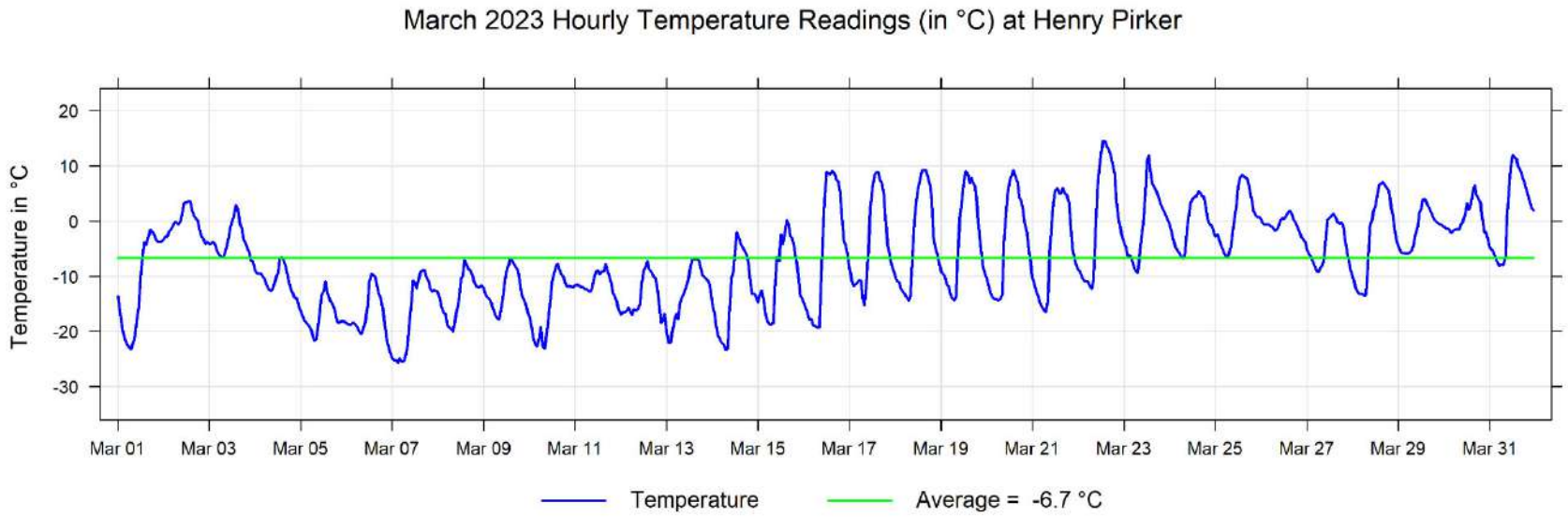

March 2023 Hourly Concentration Readings of NMHC (in ppm) at Henry Pirker
NMHC in ppm
8
6
4
2
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
NMHC
Average = 0.037 ppm

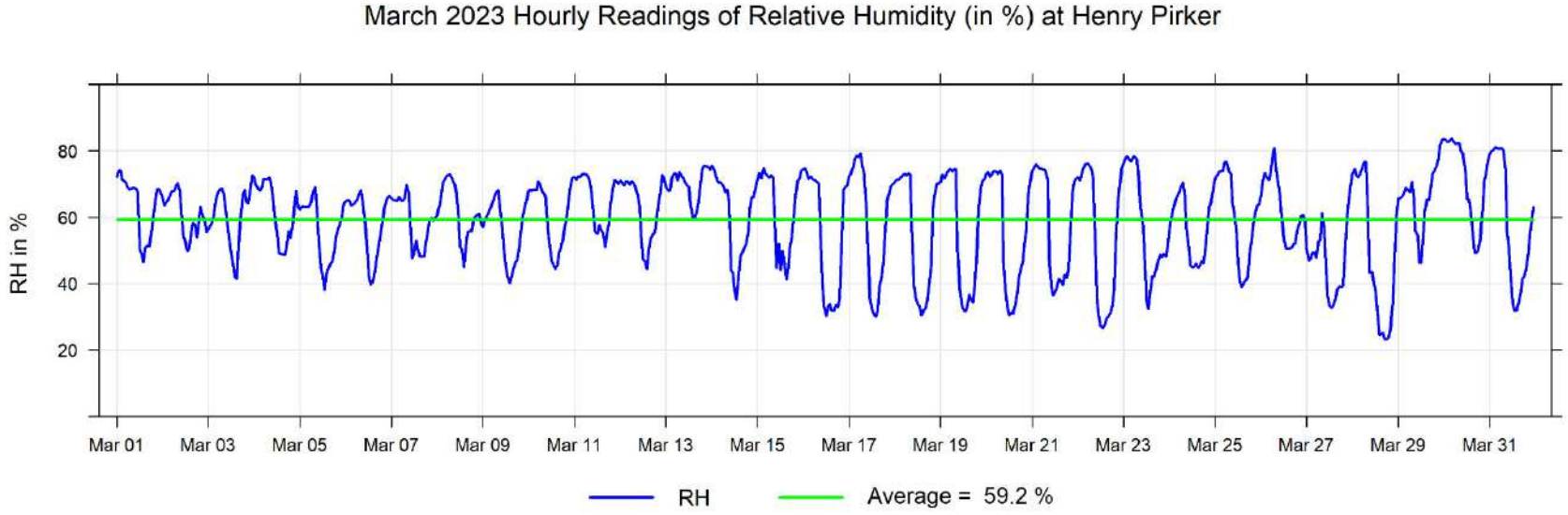

March 2023 Hourly Concentration Readings of CO (in ppm) at Henry Pirker
CO in ppm
12
10
8
6
4
2
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
CO
AAAQO Limit = 13 ppm
Average = 0.2 ppm


Number of Hours
0
200
400
600
374
237
69
17
7
1
2
1
1
0.0
0.5
1.0
1.5
2.0
CO in ppm

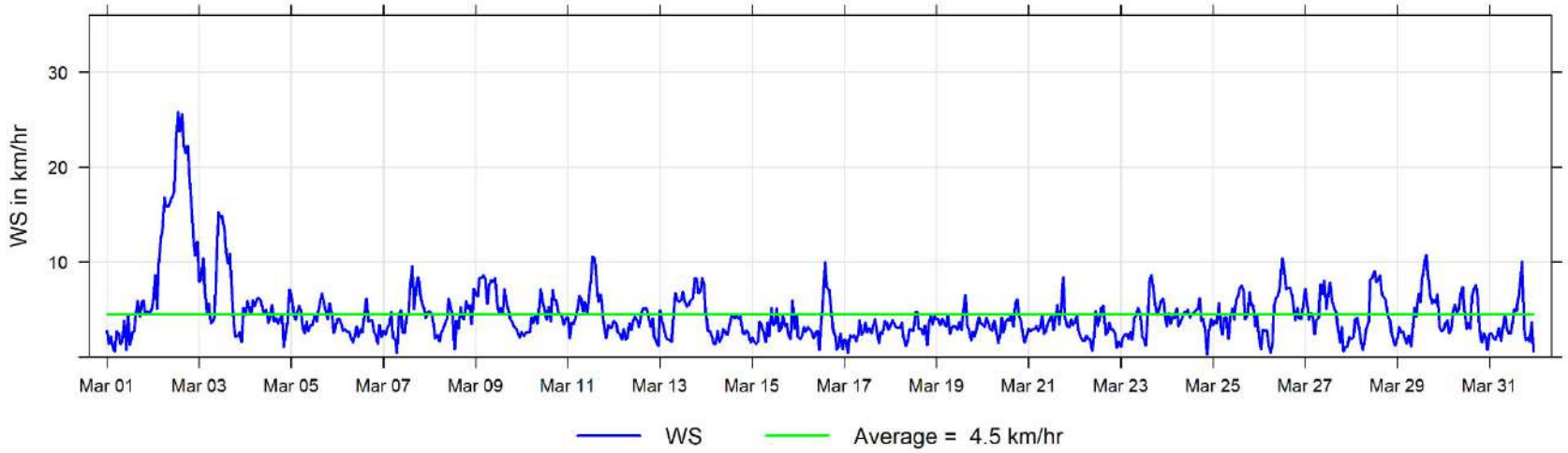

March 2023 Hourly Concentration Readings of PM2.5 in µg/m3 at Henry Pirker
PM2.5 in µg/m3
80
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
PM2.5
AAAQG Limit = 80 µg/m3
Average = 8.6 µg/m3


Number of Hours
0
200
400
600
39
74
142
103
119
107
64
37
25
20
5
3
3
1
0
10
20
30
40
50
PM2.5 in µg/m3

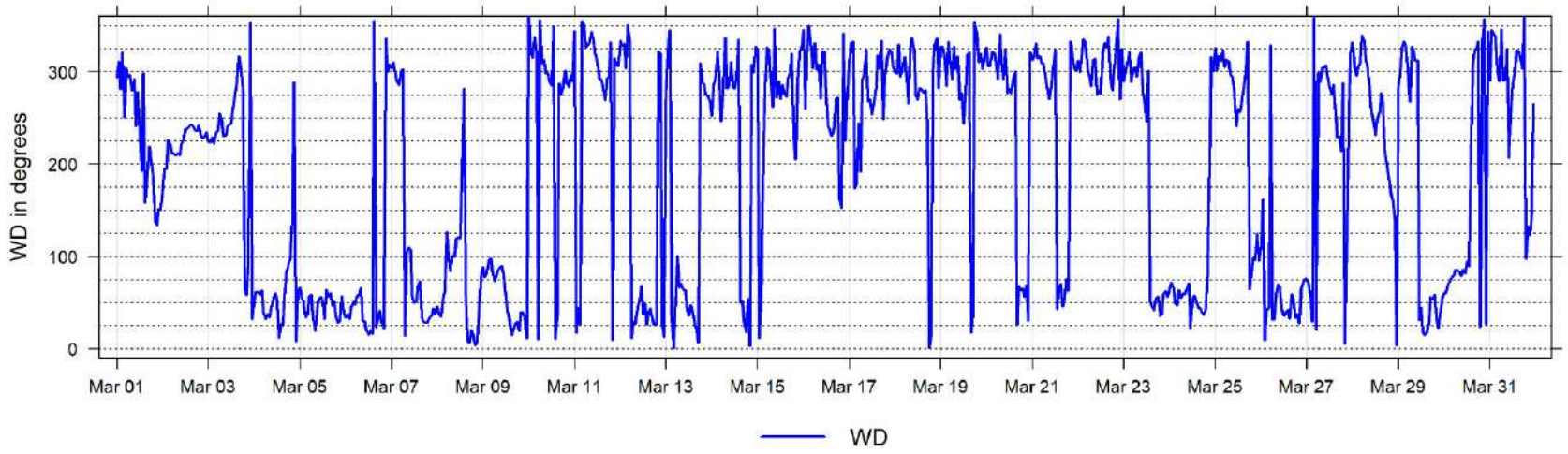

March 2023 Hourly Temperature Readings (in °C) at Henry Pirker
Temperature in °C
20
10
0
-10
-20
-30
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
Temperature
Average = -6.7 °C

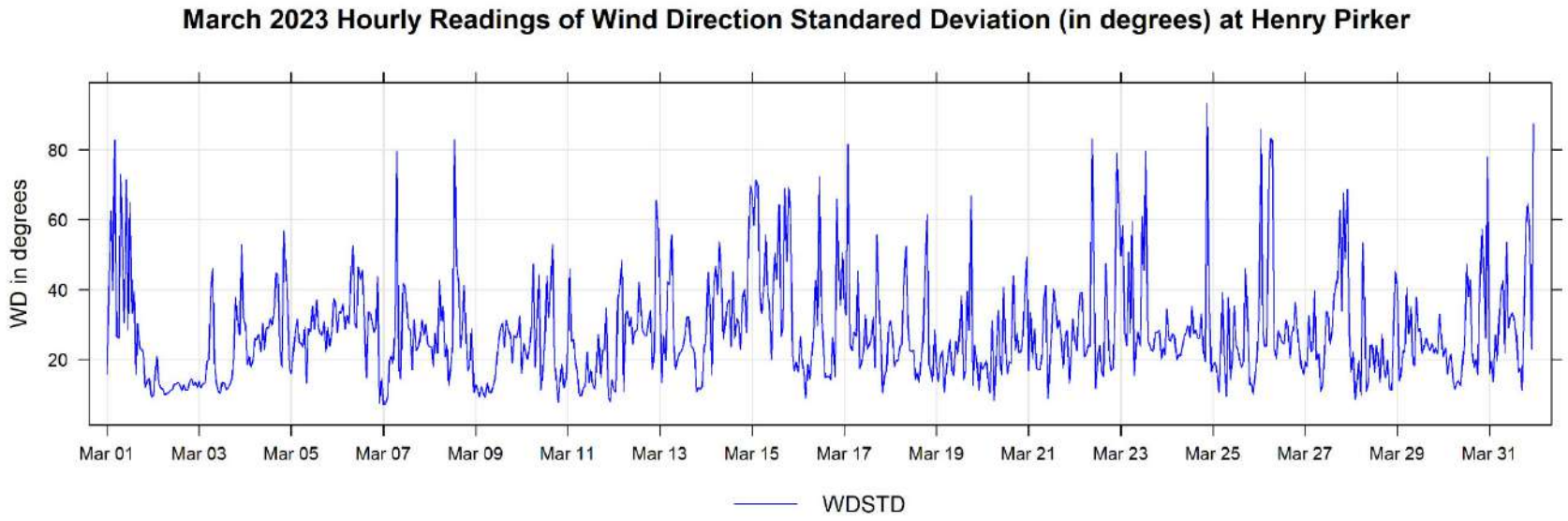

March 2023 Hourly Readings of Relative Humidity (in %) at Henry Pirker
RH in %
80
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
RH
Average = 59.2 %

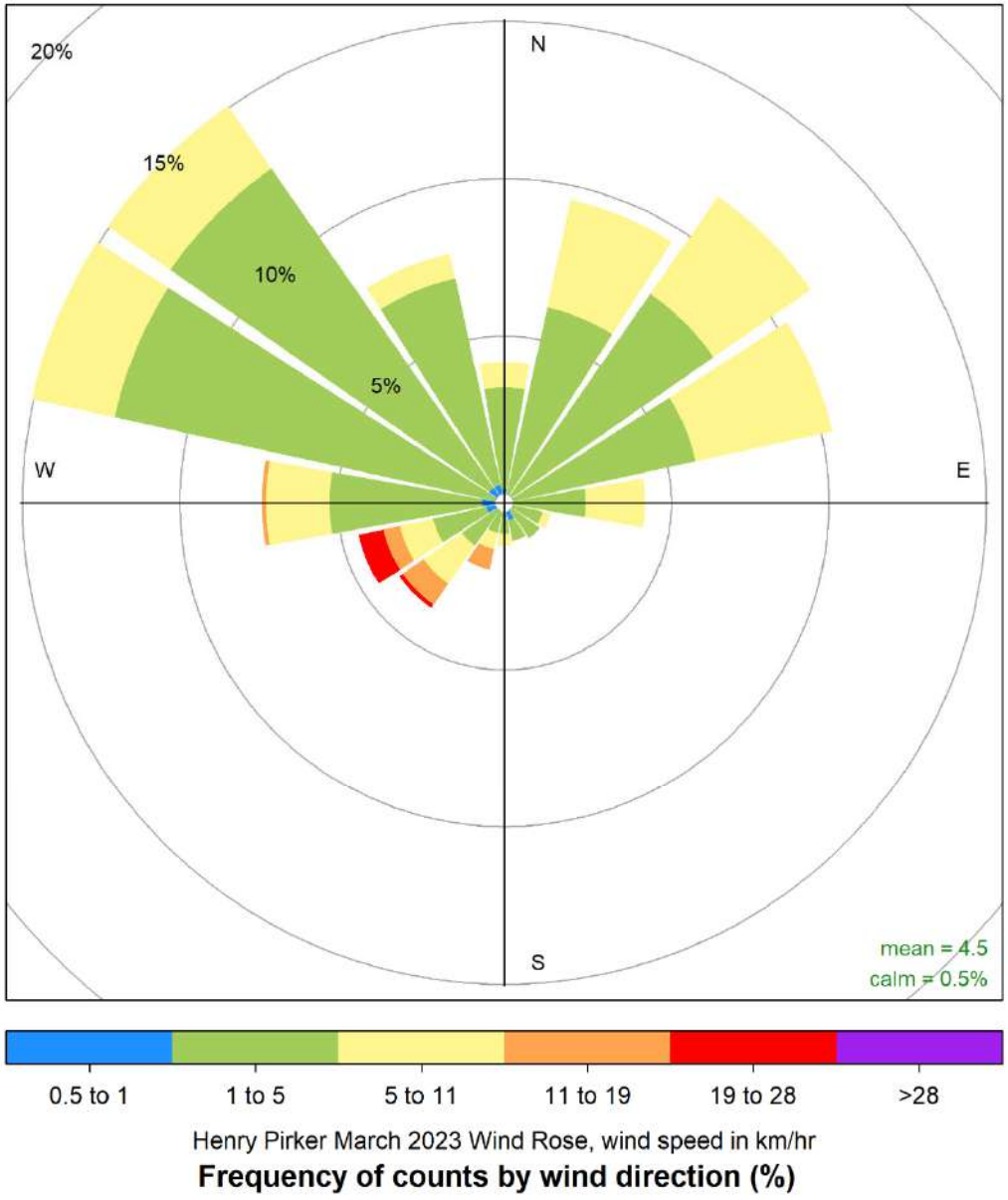
March 2023 Hourly Readings of Wind Speed (in km/hr) at Henry Pirker



March 2023 Hourly Readings of Wind Direction (in degrees) at Henry Pirker

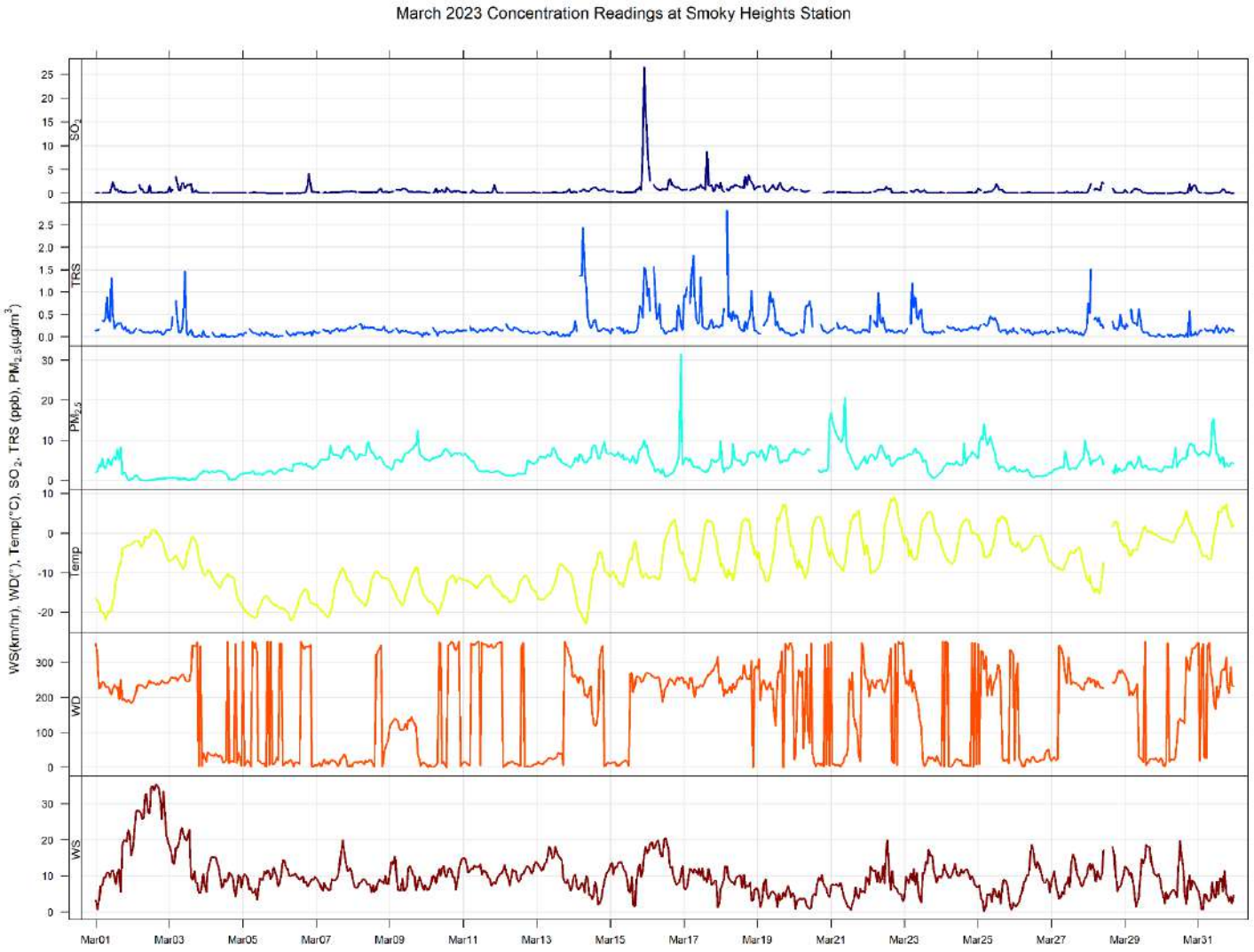


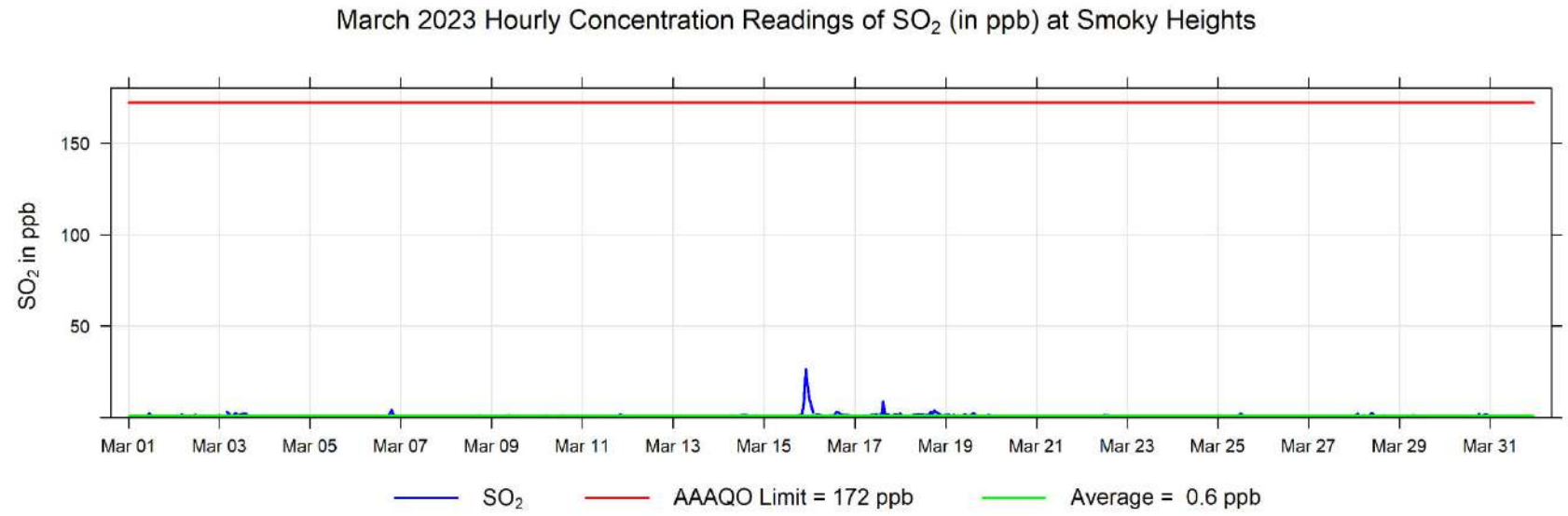

March 2023 Hourly Readings of Wind Direction Standared Deviation (in degrees) at Henry Pirker
WD in degrees
80
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WDSTD

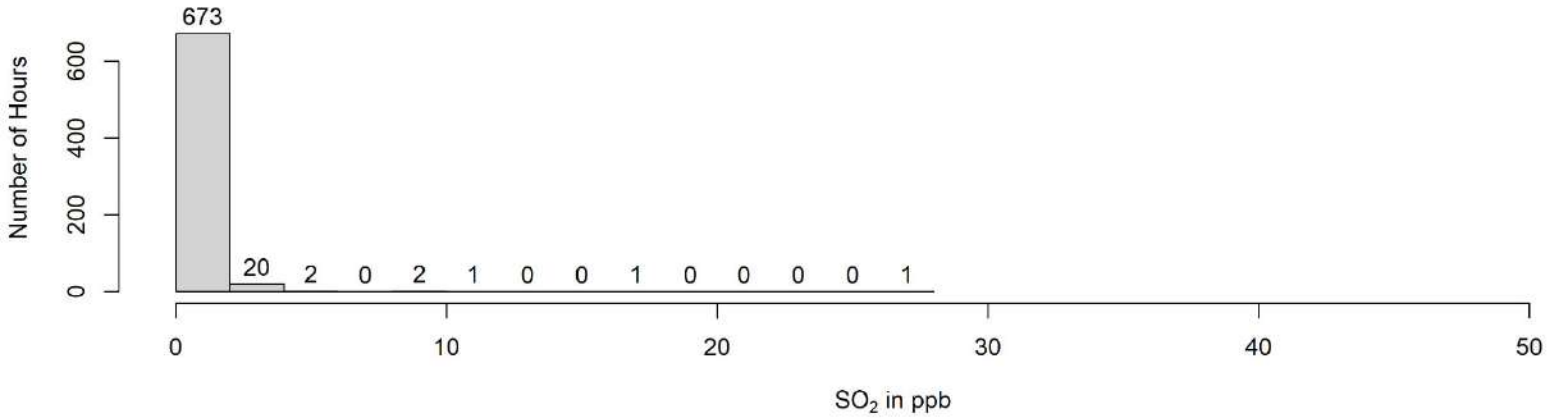

20%
15%
10%
5%
N
W
E
S
mean = 4.5
calm = 0.5%
0.5 to 1
1 to 5
5 to 11
11 to 19
19 to 28
>28
Henry Pirker March 2023 Wind Rose, wind speed in km/hr
Frequency of counts by wind direction (%)

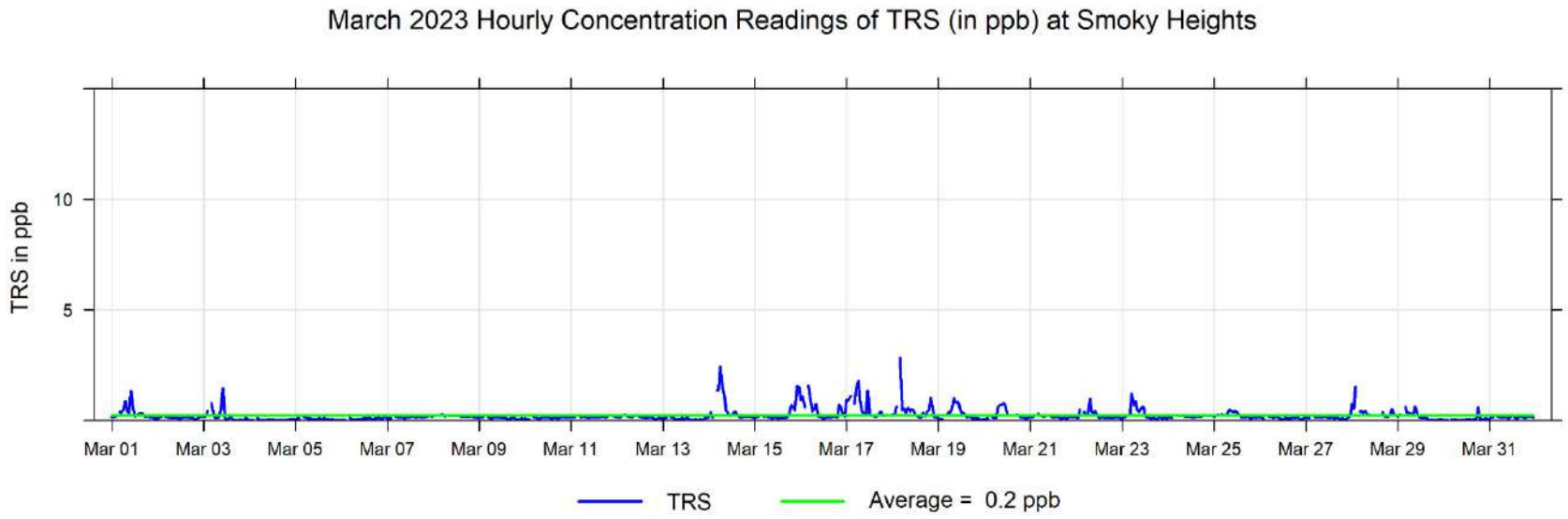
5 Smoky Heights Charts

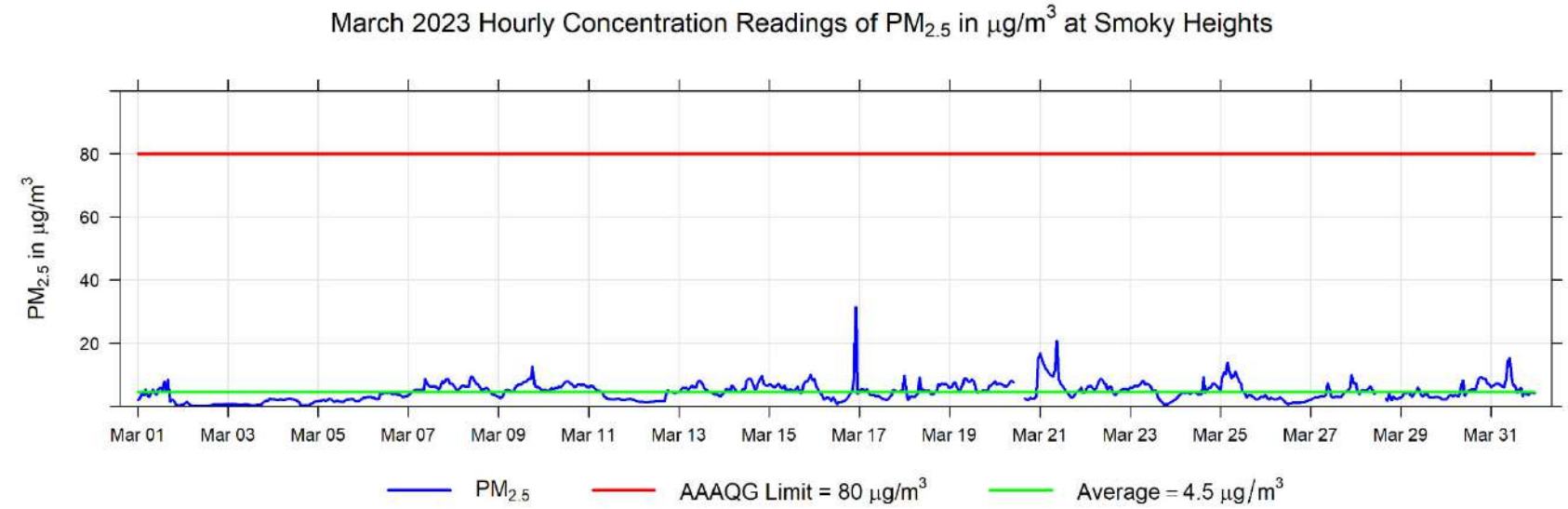
The following pages include the charts and histograms for Smoky Heights Station

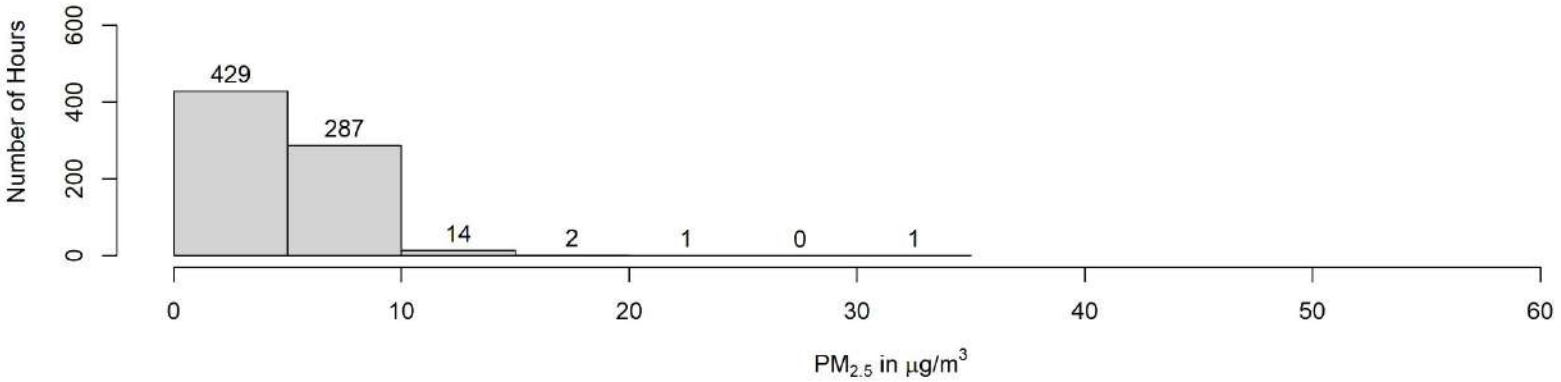


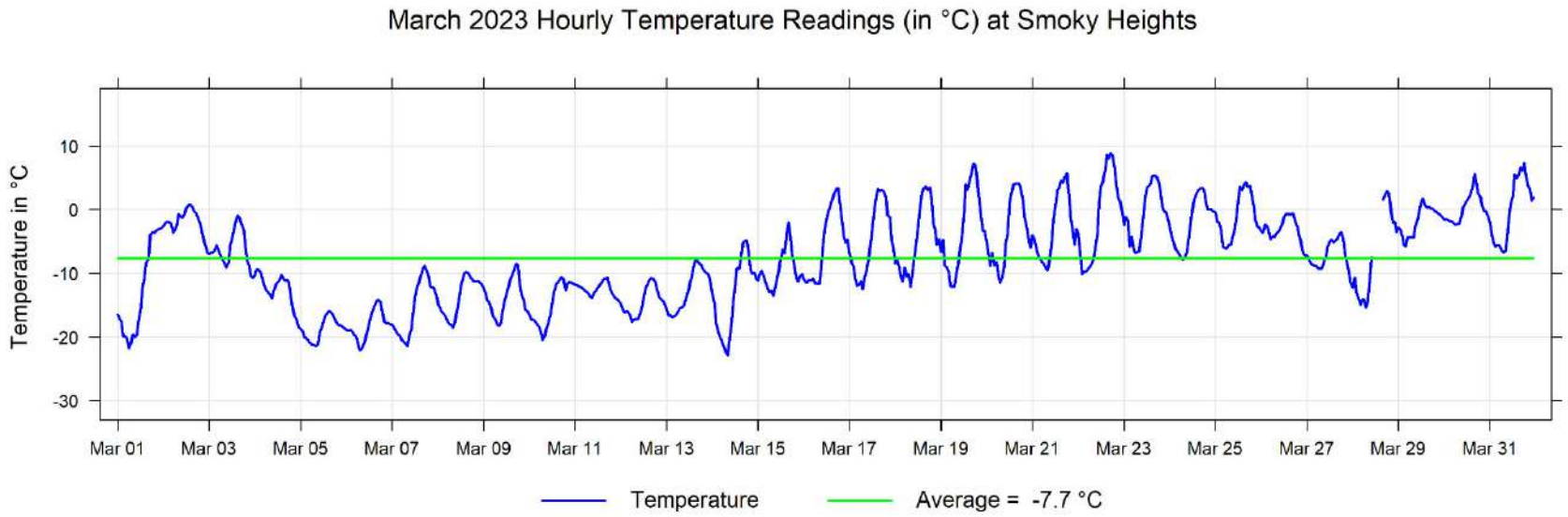

March 2023 Hourly Concentration Readings of SO_2 (in ppb) at Smoky Heights
SO_2 in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
SO_2
AAAQO Limit = 172 ppb
Average = 0.6 ppb

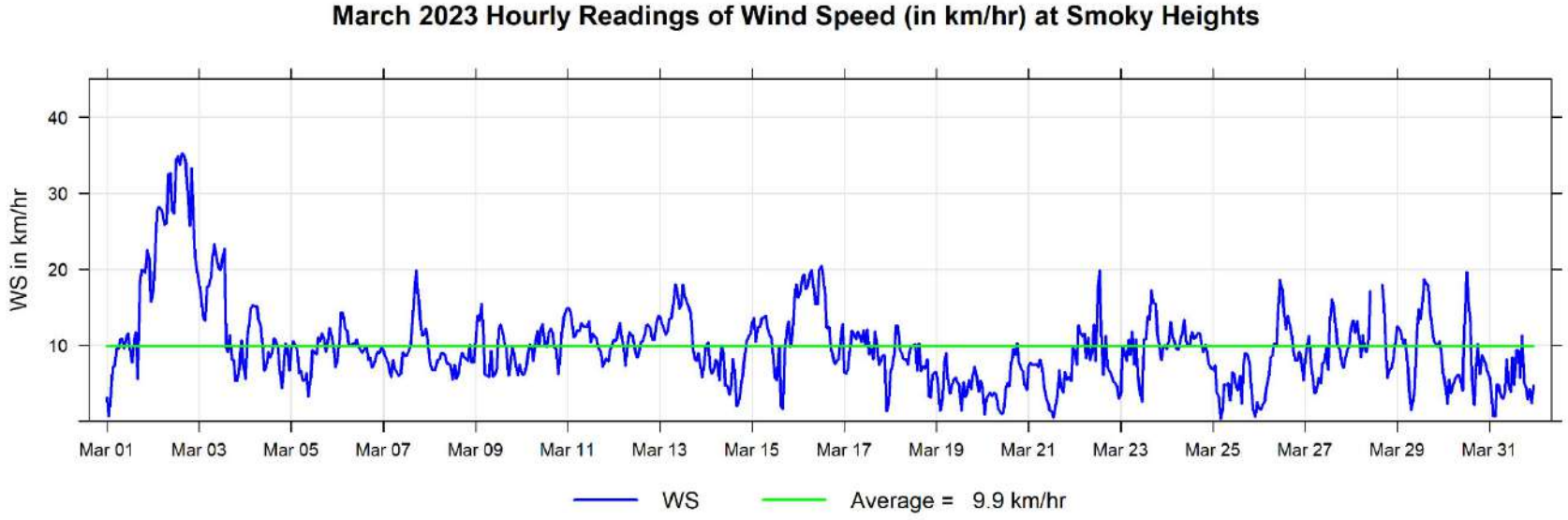

Number of Hours
0
200
400
600
673
20
2
0
2
1
0
0
1
0
0
0
0
1
0
10
20
30
40
50
SO_2 in ppb


March 2023 Hourly Concentration Readings of TRS (in ppb) at Smoky Heights
TRS in ppb
10
5
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
TRS
Average = 0.2 ppb

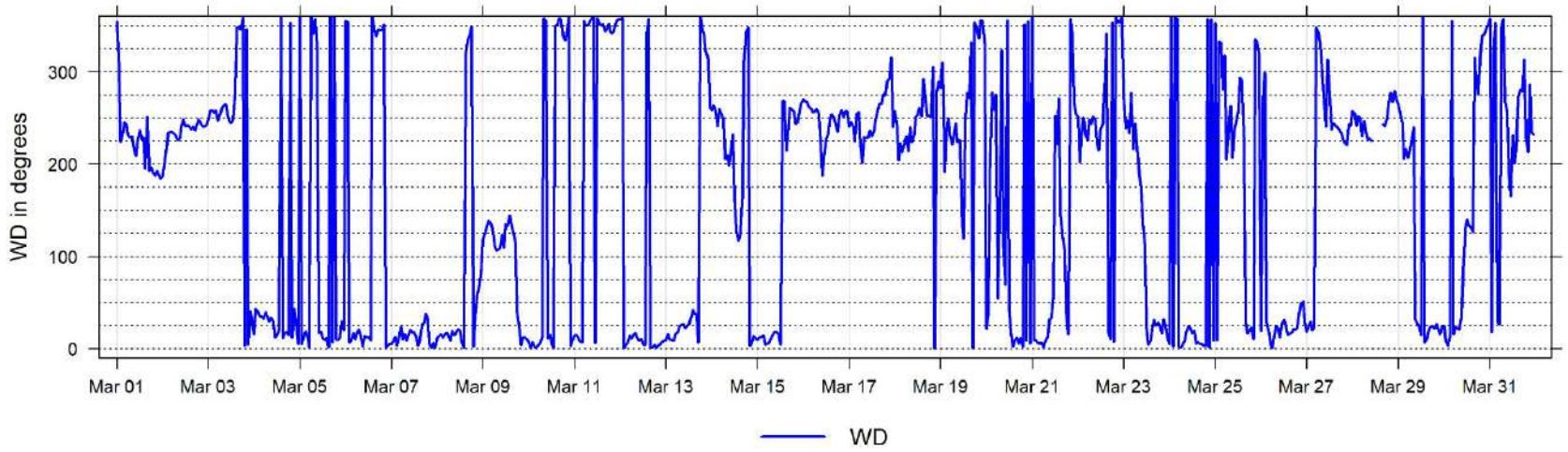

March 2023 Hourly Concentration Readings of PM2.5 in µg/m3 at Smoky Heights
PM2.5 in µg/m3
80
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
PM2.5
AAAQG Limit = 80 µg/m3
Average = 4.5 µg/m3


Number of Hours
0
200
400
600
429
287
14
2
1
0
1
0
10
20
30
40
50
60
PM2.5 in µg/m3

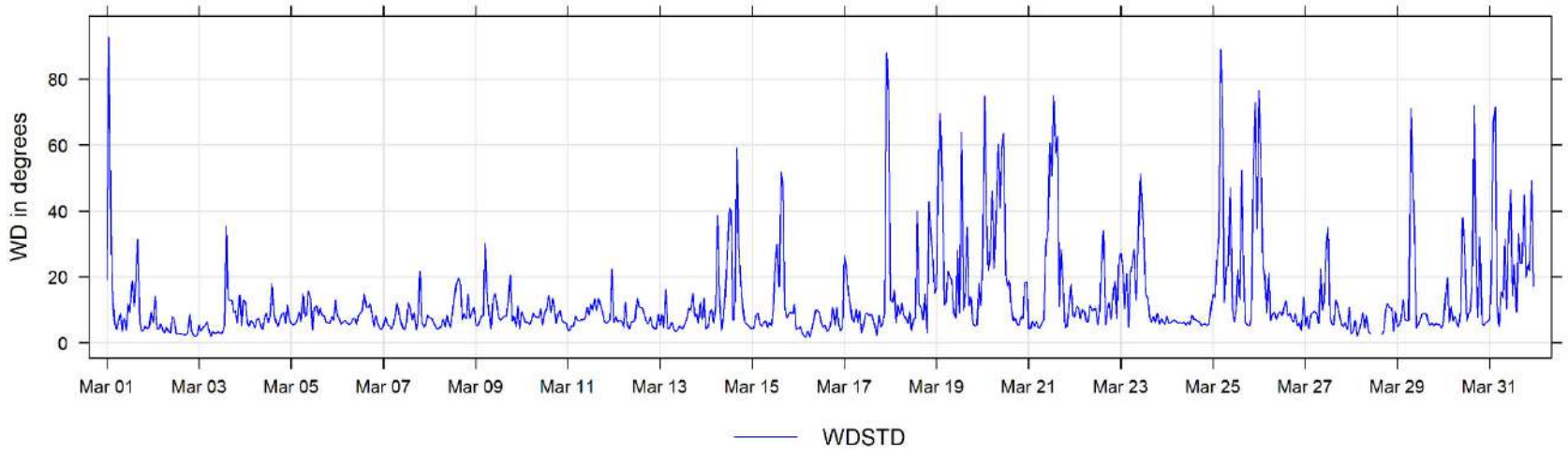

March 2023 Hourly Temperature Readings (in °C) at Smoky Heights
Temperature in °C
10
0
-10
-20
-30
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
Temperature
Average = -7.7 °C

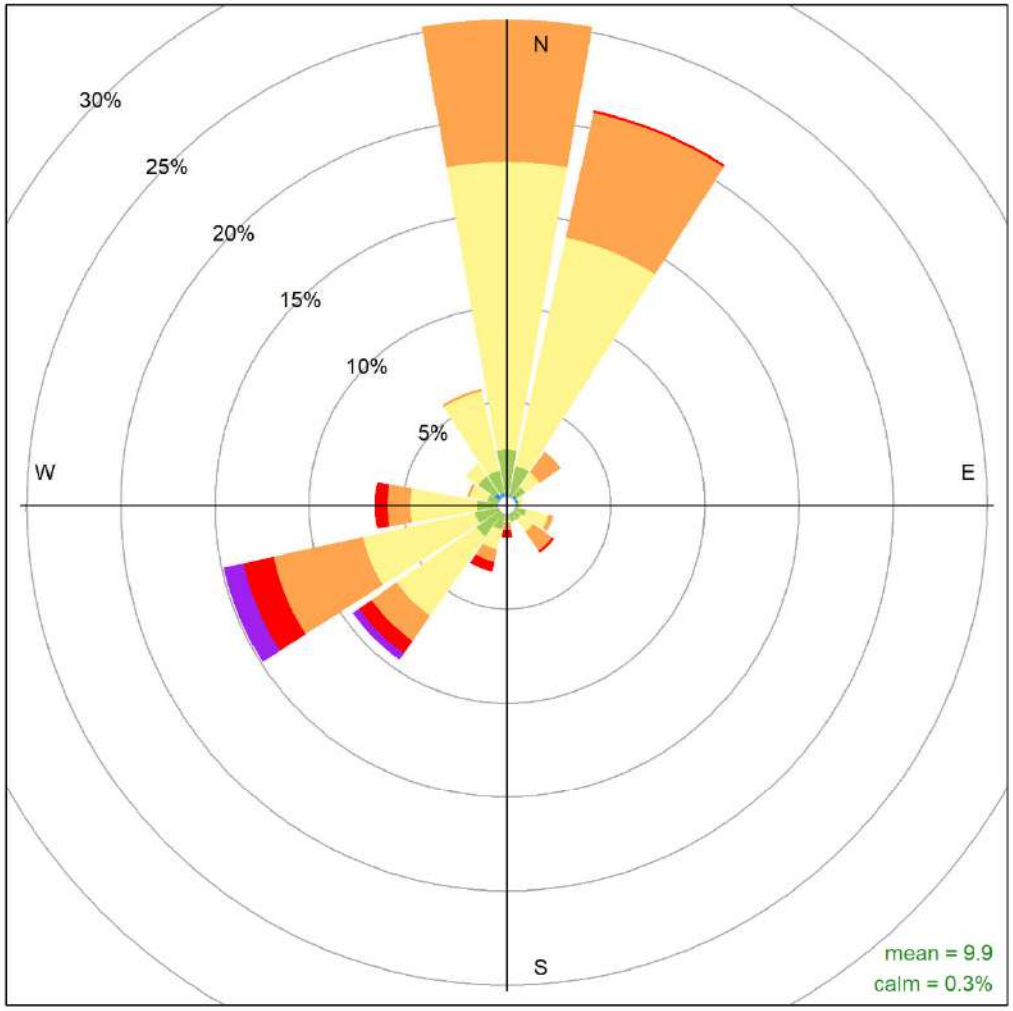

March 2023 Hourly Readings of Wind Speed (in km/hr) at Smoky Heights
WS in km/hr
40
30
20
10
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WS
Average = 9.9 km/hr

March 2023 Hourly Readings of Wind Direction (in degrees) at Smoky Heights



March 2023 Hourly Readings of Wind Direction Standared Deviation (in degrees) at Smoky Heights



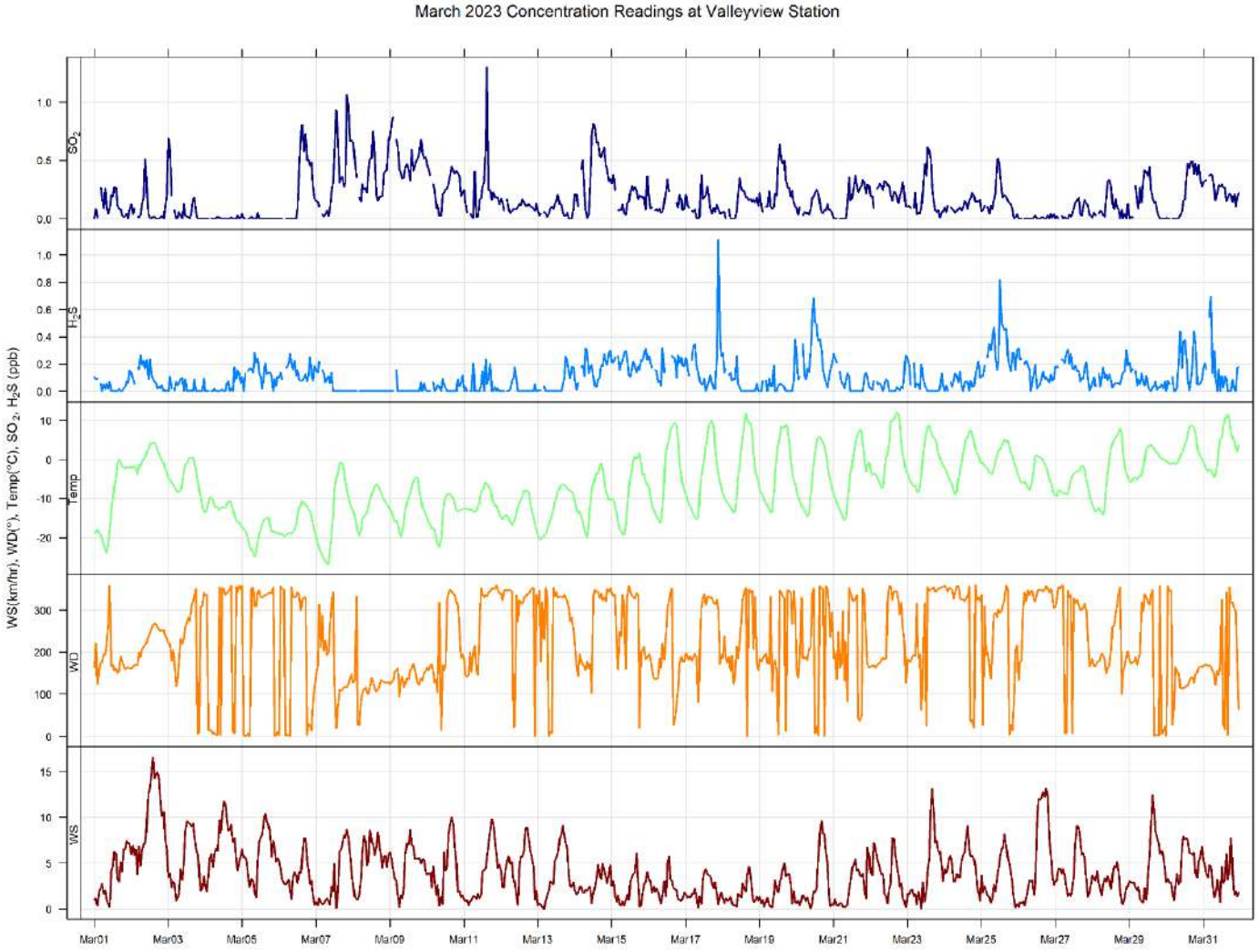


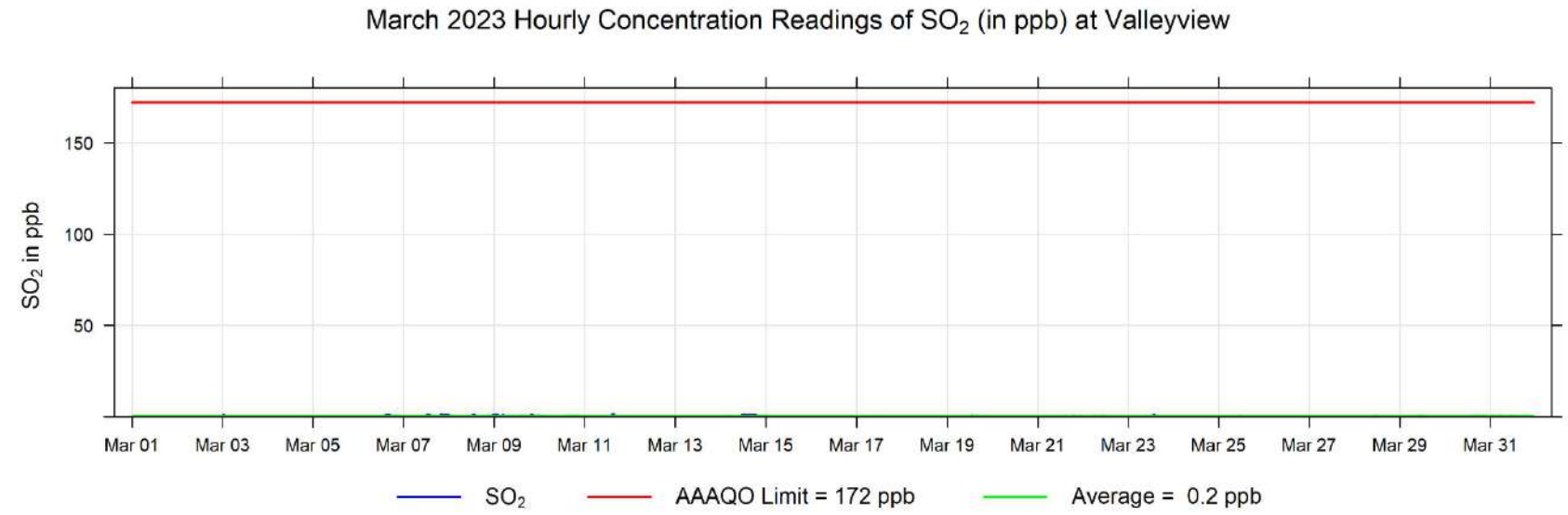
Smoky Heights March 2023 Wind Rose, wind speed in km/hr

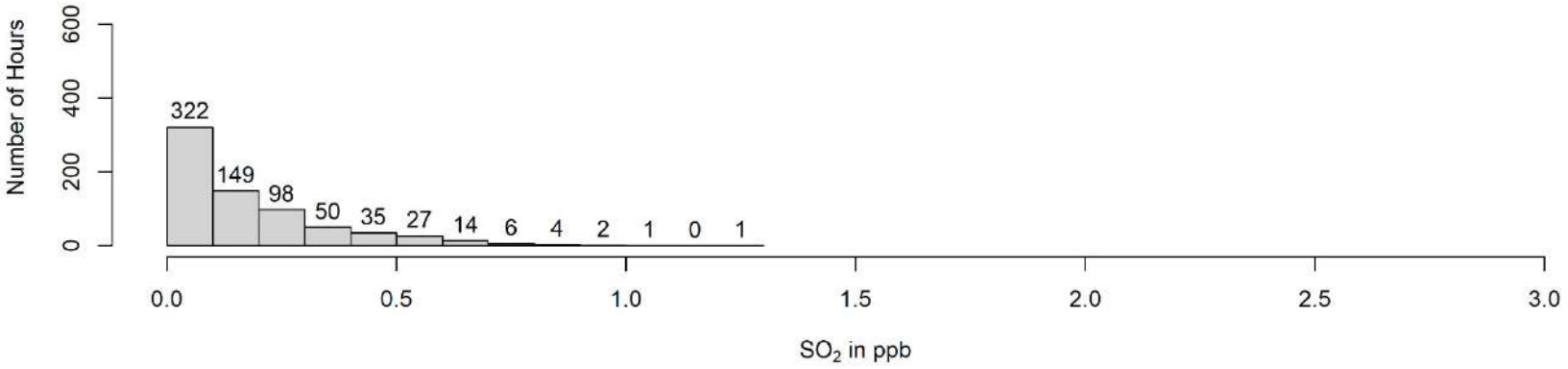
Frequency of counts by wind direction (%)

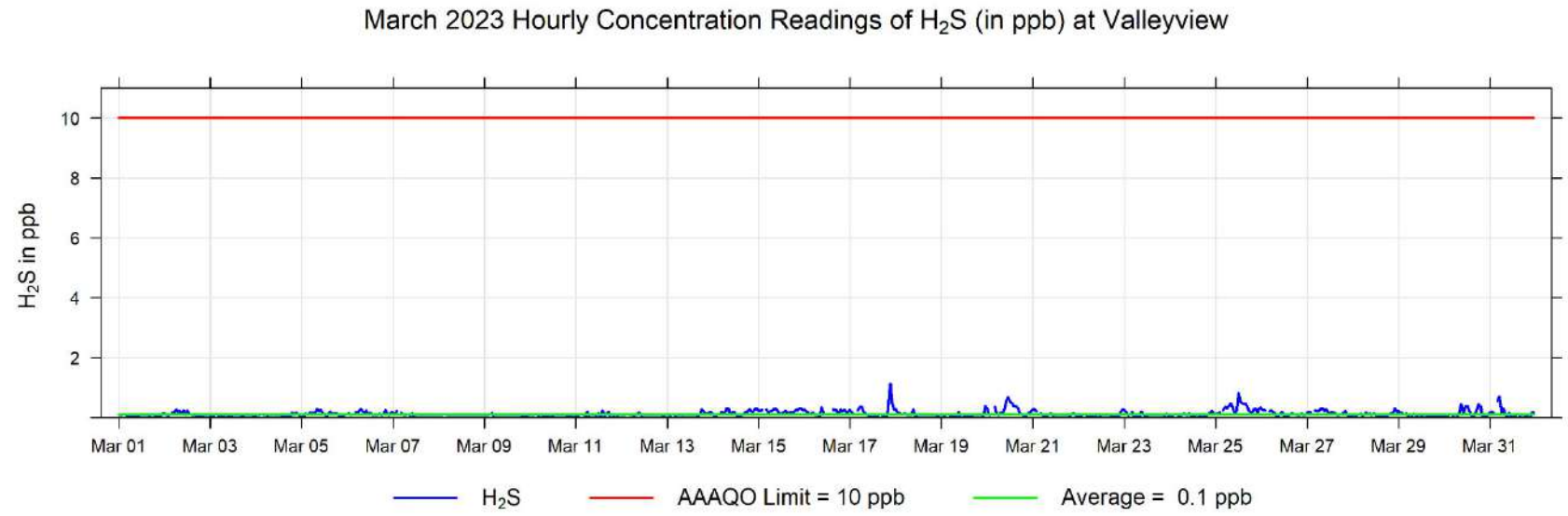
6 Valleyview Charts

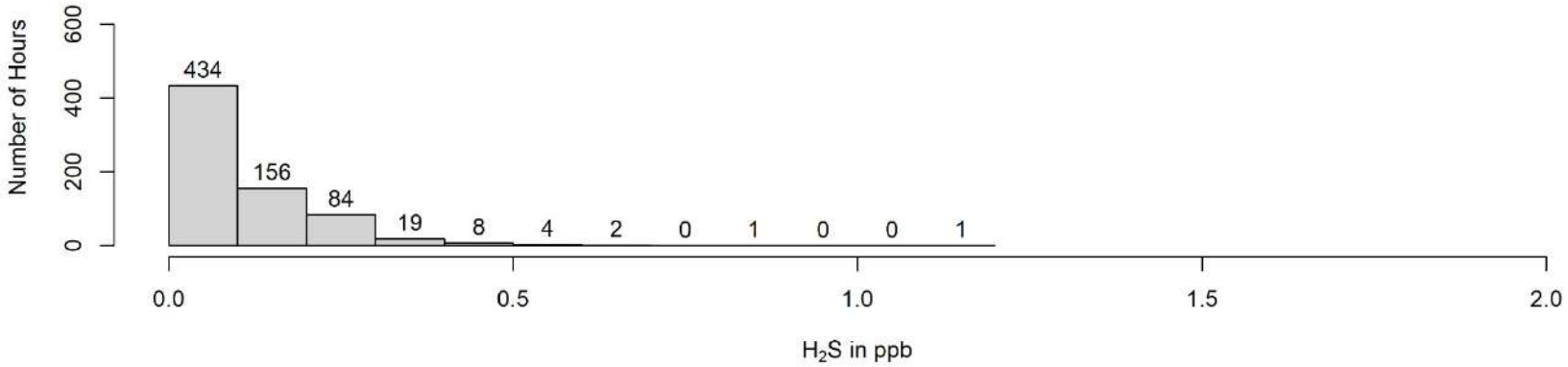
The following pages include the charts and histograms for Valleyview Station

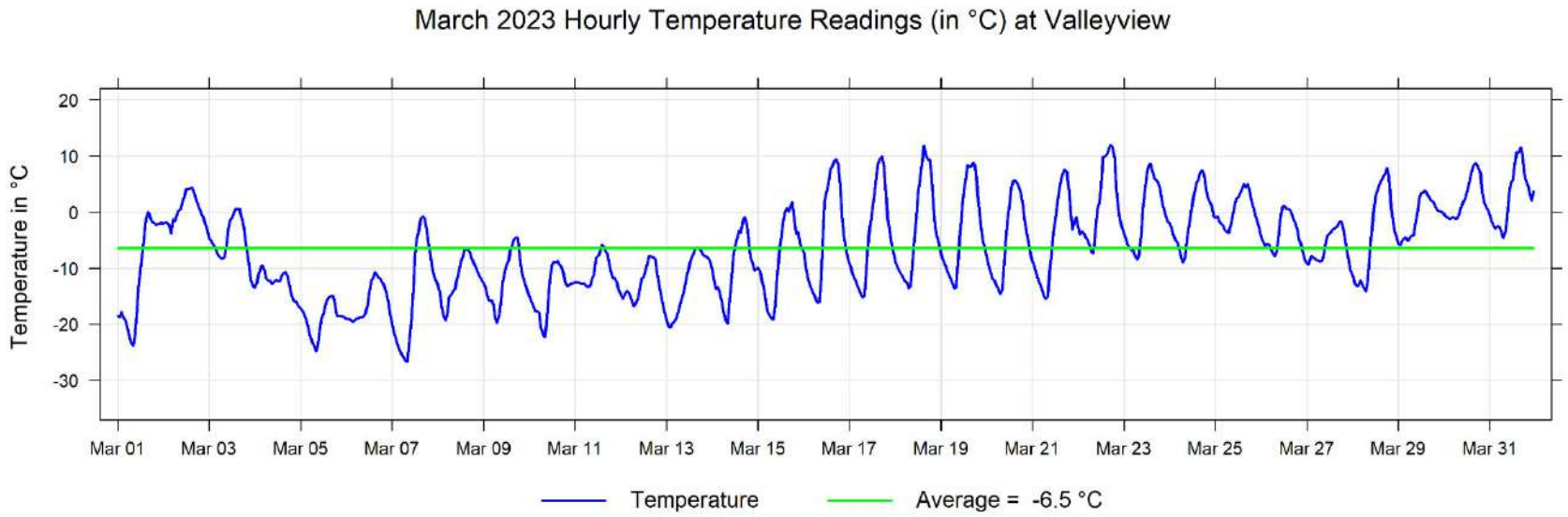


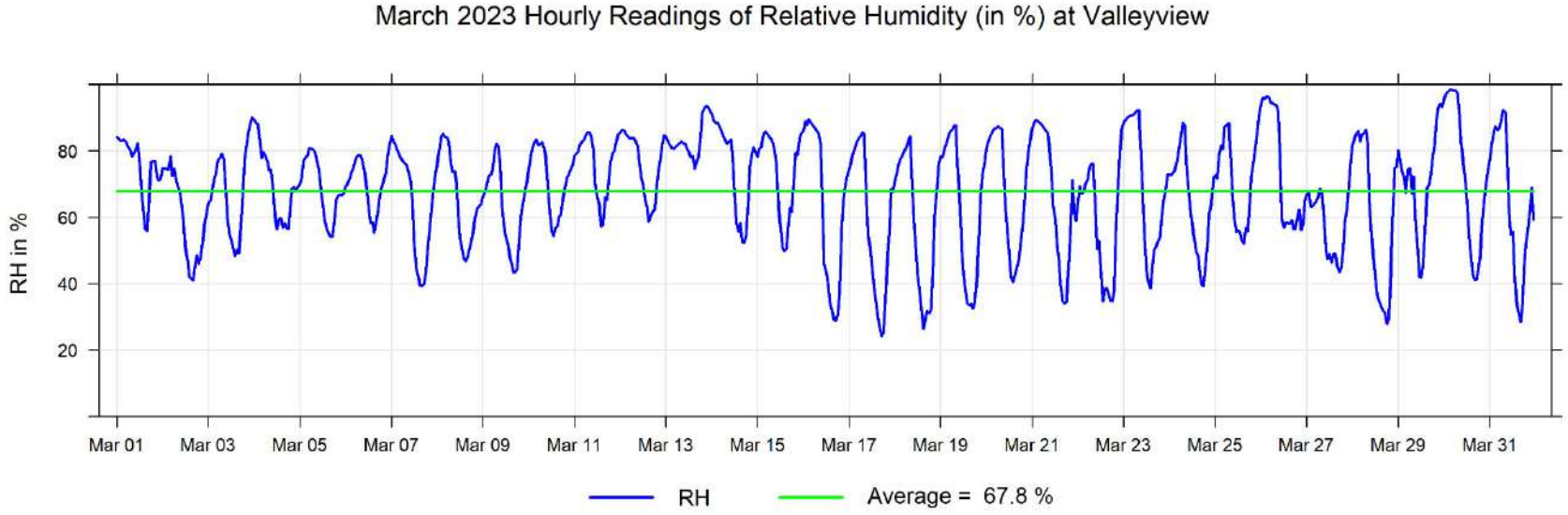

March 2023 Hourly Concentration Readings of SO_2 (in ppb) at Valleyview
SO_2 in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
SO_2
AAAQO Limit = 172 ppb
Average = 0.2 ppb

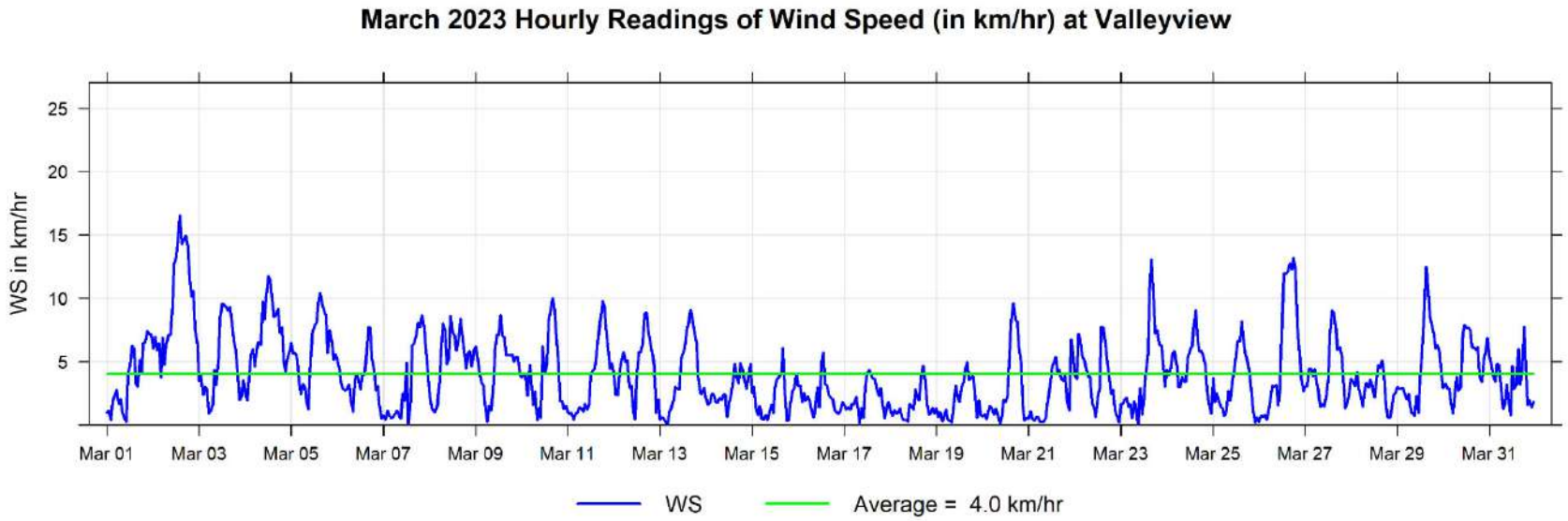

Number of Hours
0
200
400
600
322
149
98
50
35
27
14
6
4
2
1
0
1
0.0
0.5
1.0
1.5
2.0
2.5
3.0
SO_2 in ppb

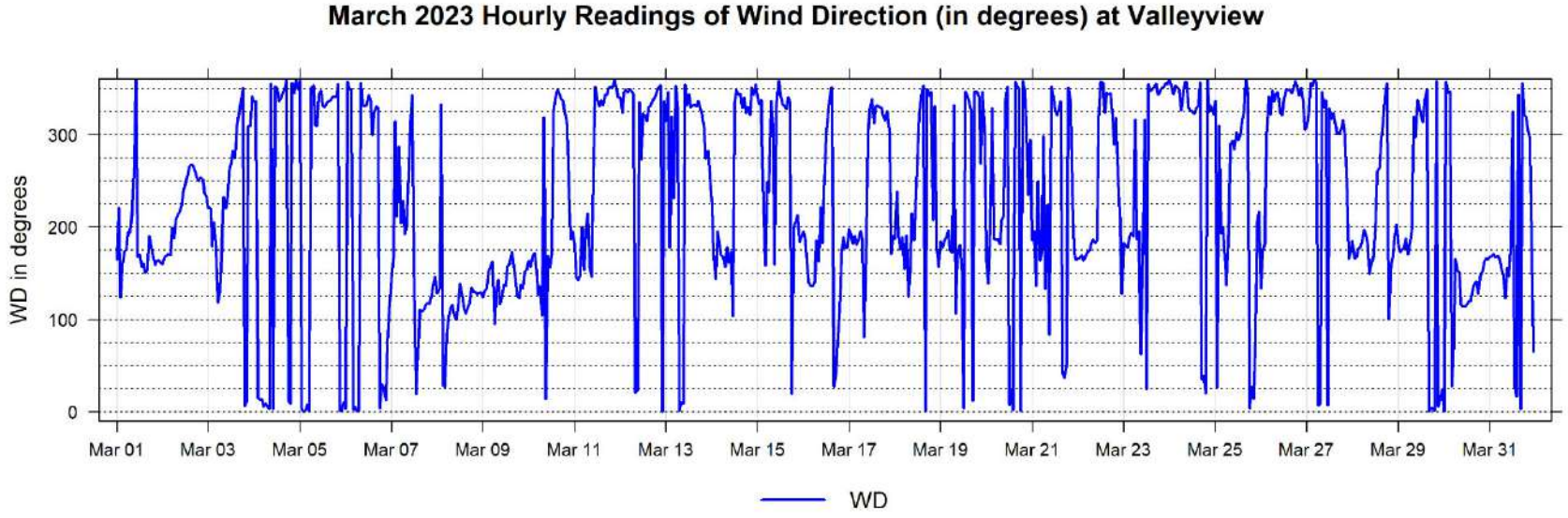

March 2023 Hourly Concentration Readings of H2S (in ppb) at Valleyview
H2S in ppb
10
8
6
4
2
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
H2S
AAAQO Limit = 10 ppb
Average = 0.1 ppb

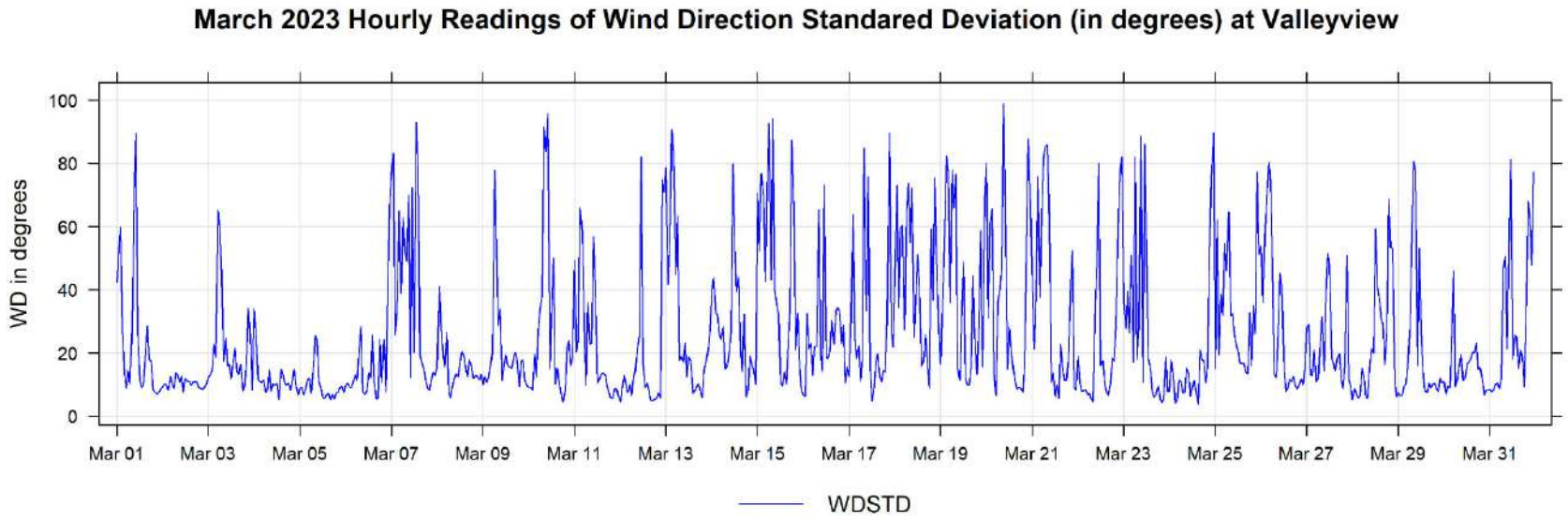

Number of Hours
0
200
400
600
434
156
84
19
8
4
2
0
1
0
0
1
0.0
0.5
1.0
1.5
2.0
H2S in ppb

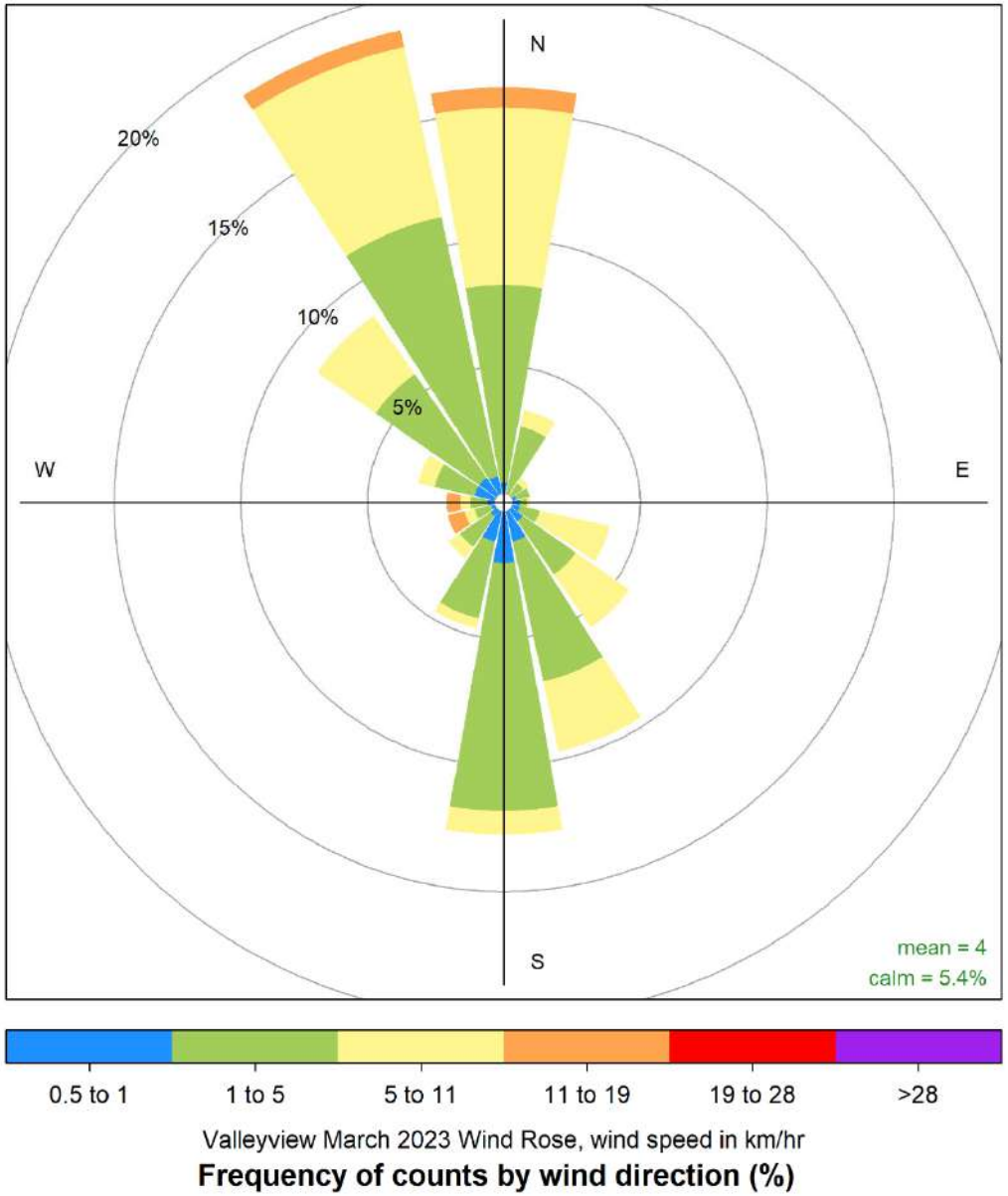

March 2023 Hourly Temperature Readings (in °C) at Valleyview
Temperature in °C
20
10
0
-10
-20
-30
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
Temperature
Average = -6.5 °C


March 2023 Hourly Readings of Relative Humidity (in %) at Valleyview
RH in %
80
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
RH
Average = 67.8 %


March 2023 Hourly Readings of Wind Speed (in km/hr) at Valleyview
WS in km/hr
25
20
15
10
5
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WS
Average = 4.0 km/hr

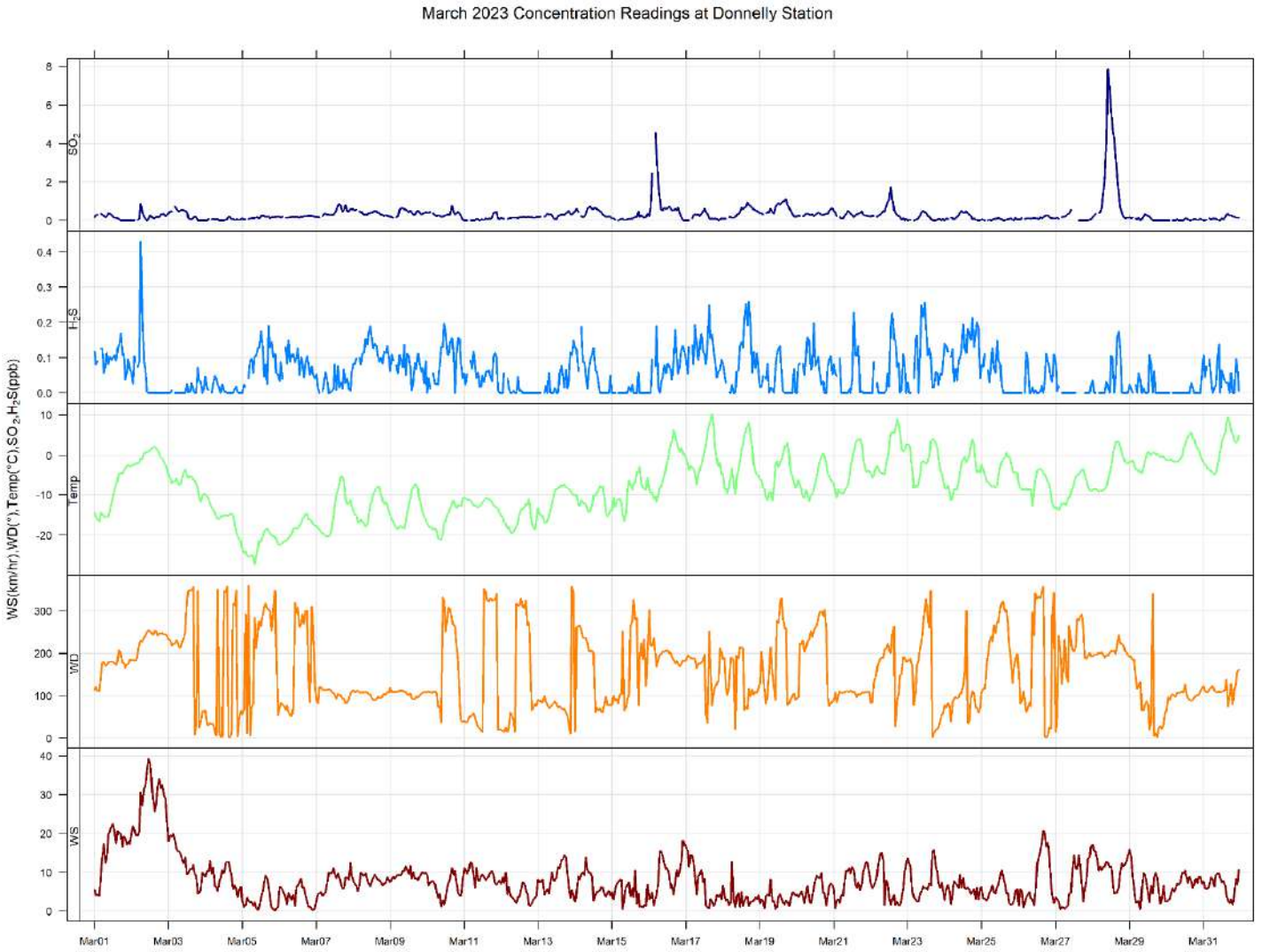

March 2023 Hourly Readings of Wind Direction (in degrees) at Valleyview
WD in degrees
300
200
100
0
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WD

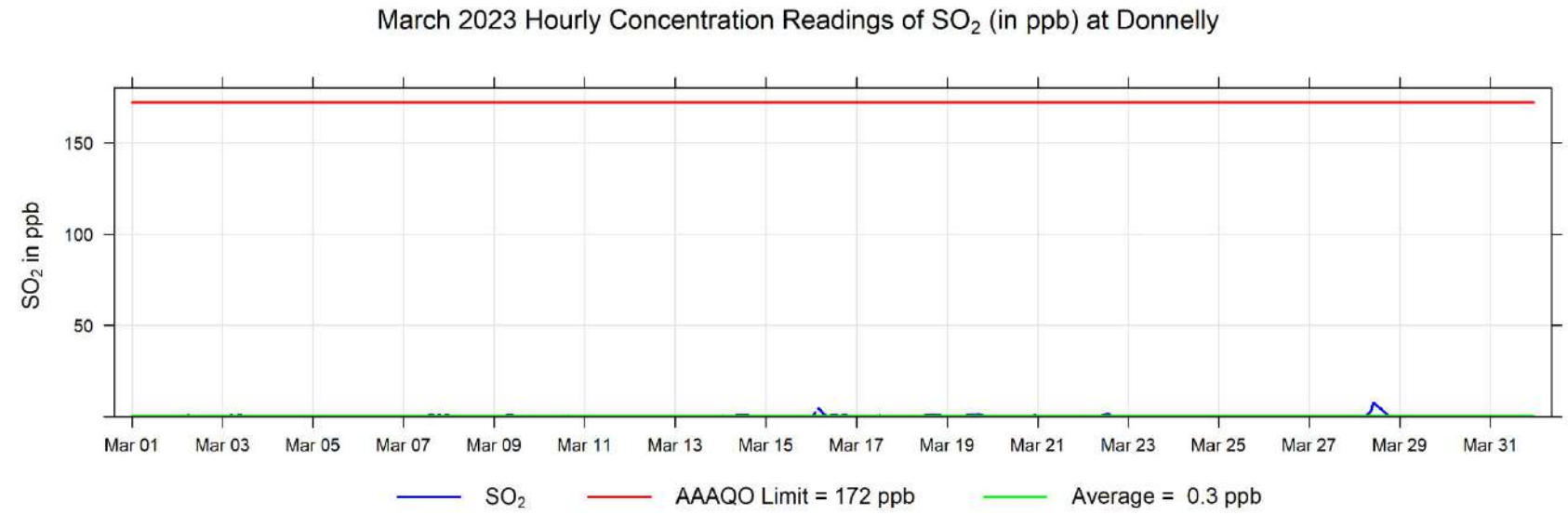

March 2023 Hourly Readings of Wind Direction Standared Deviation (in degrees) at Valleyview
WD in degrees
100
80
60
40
20
0
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WDSTD

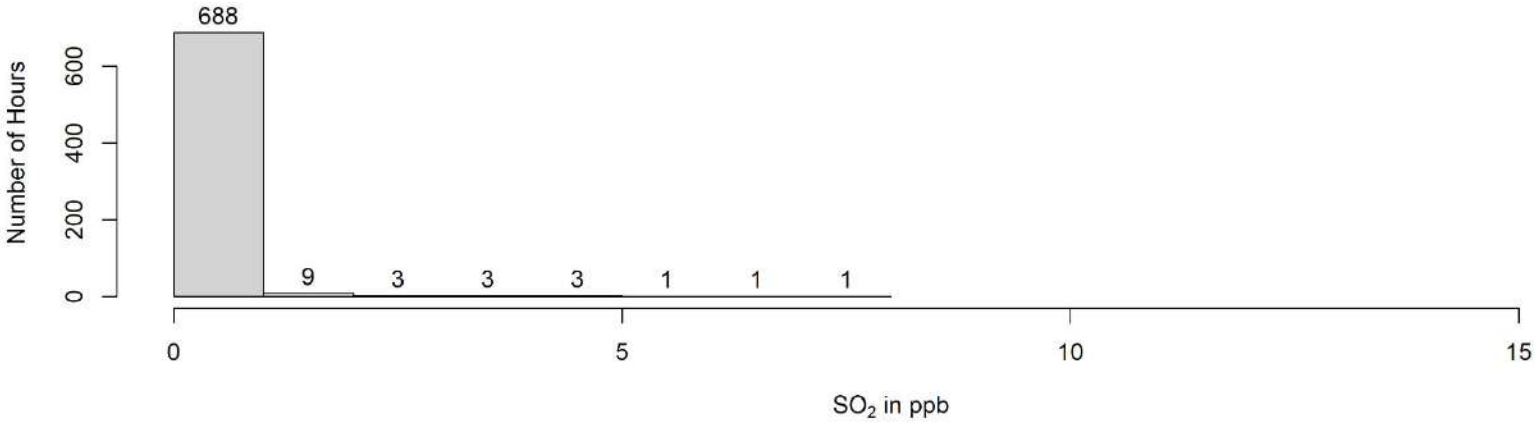

N
20%
15%
10%
5%
W
E
S
mean = 4
calm = 5.4%
0.5 to 1
1 to 5
5 to 11
11 to 19
19 to 28
>28
Valleyview March 2023 Wind Rose, wind speed in km/hr
Frequency of counts by wind direction (%)

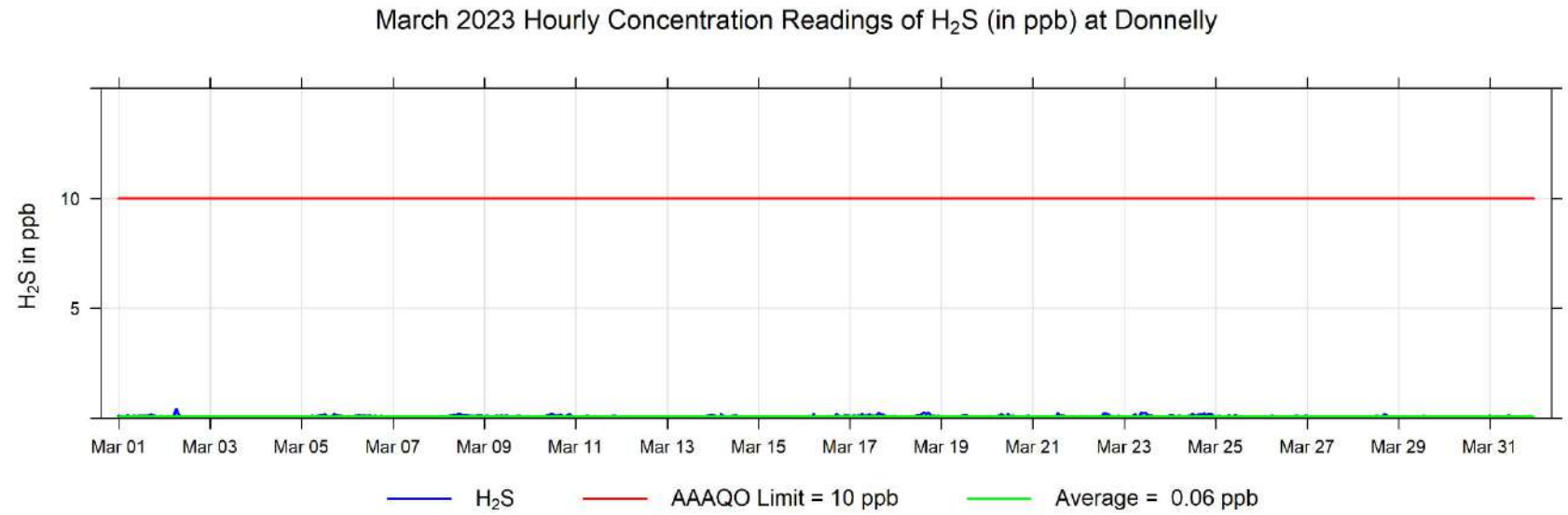
7 Donnelly Charts

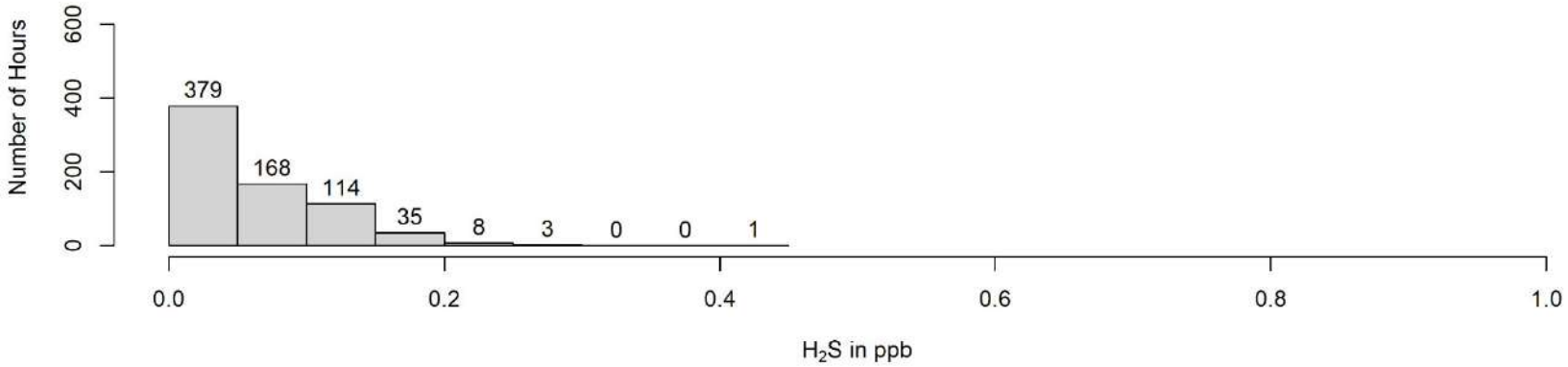
The following pages include the charts and histograms for Donnelly Station



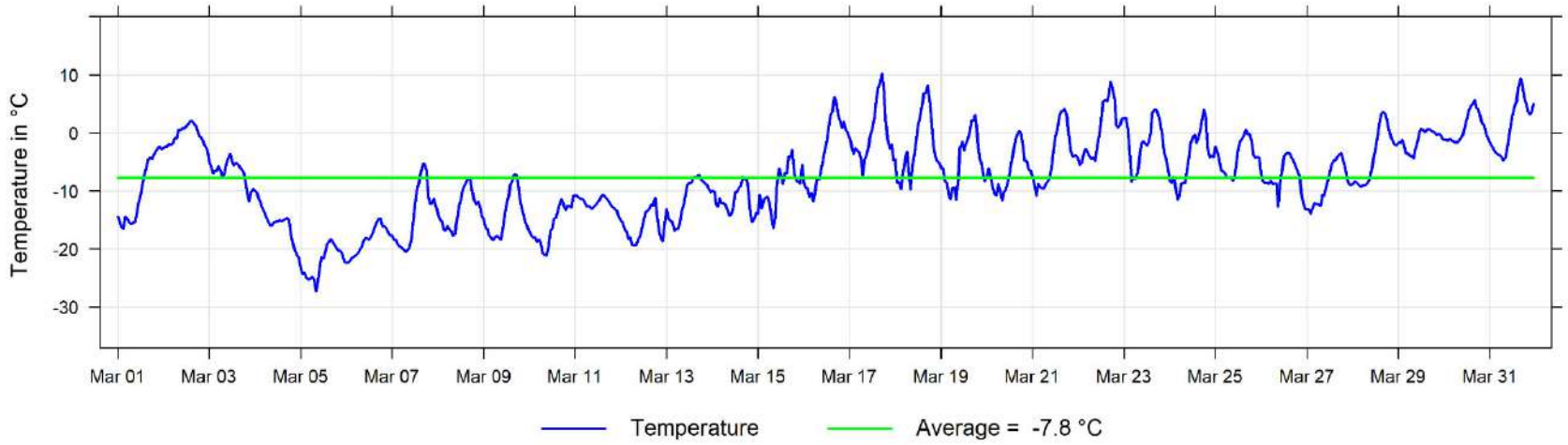

March 2023 Hourly Concentration Readings of SO2 (in ppb) at Donnelly
SO2 in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
SO2
AAAQO Limit = 172 ppb
Average = 0.3 ppb


Number of Hours
0
200
400
600
688
9
3
3
3
1
1
1
0
5
10
15
SO2 in ppb

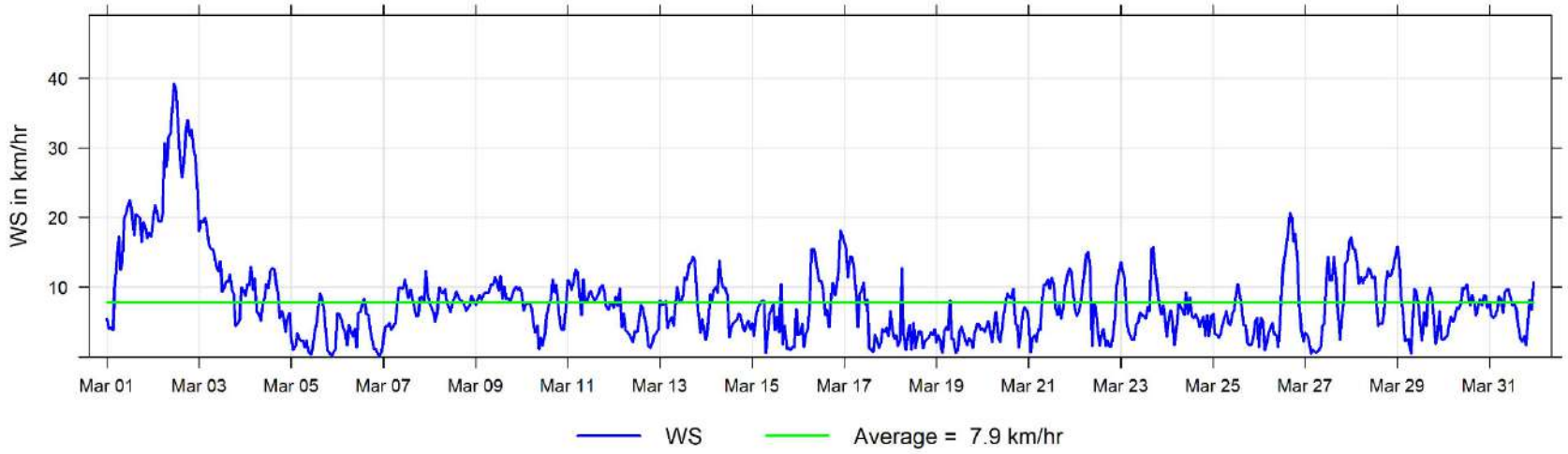

March 2023 Hourly Concentration Readings of H_2S (in ppb) at Donnelly
H_2S in ppb
10
5
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
H_2S
AAAQO Limit = 10 ppb
Average = 0.06 ppb

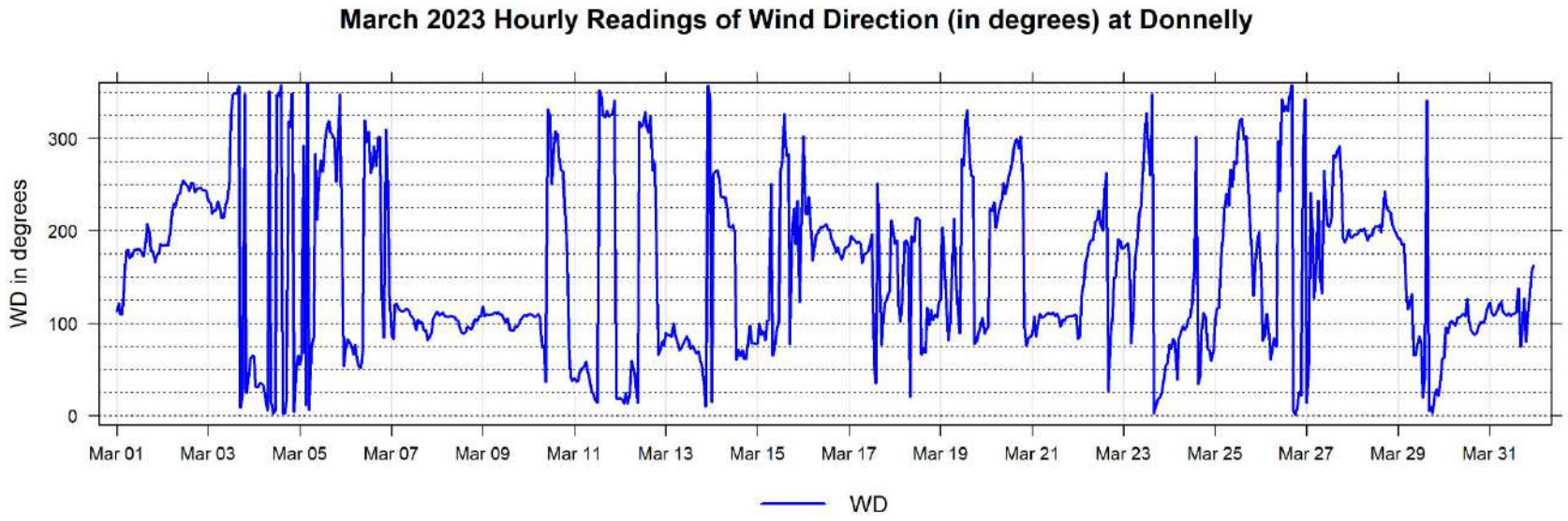

Number of Hours
0
200
400
600
379
168
114
35
8
3
0
0
1
0.0
0.2
0.4
0.6
0.8
1.0
H_2S in ppb

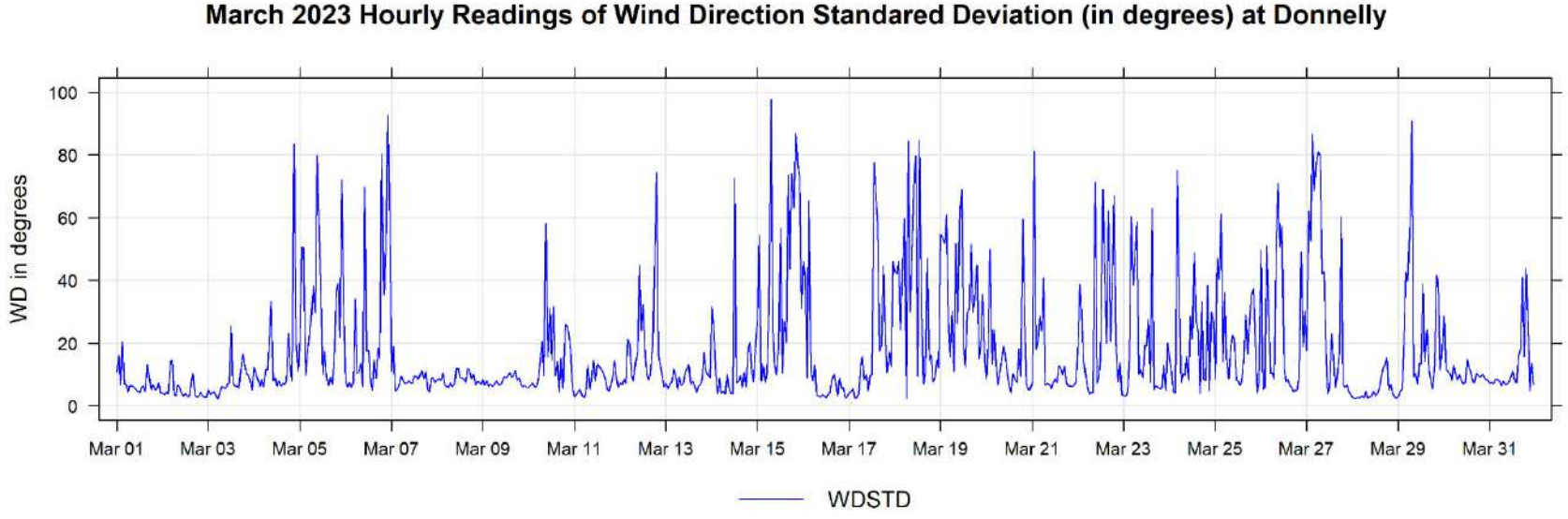
March 2023 Hourly Temperature Readings (in °C) at Donnelly

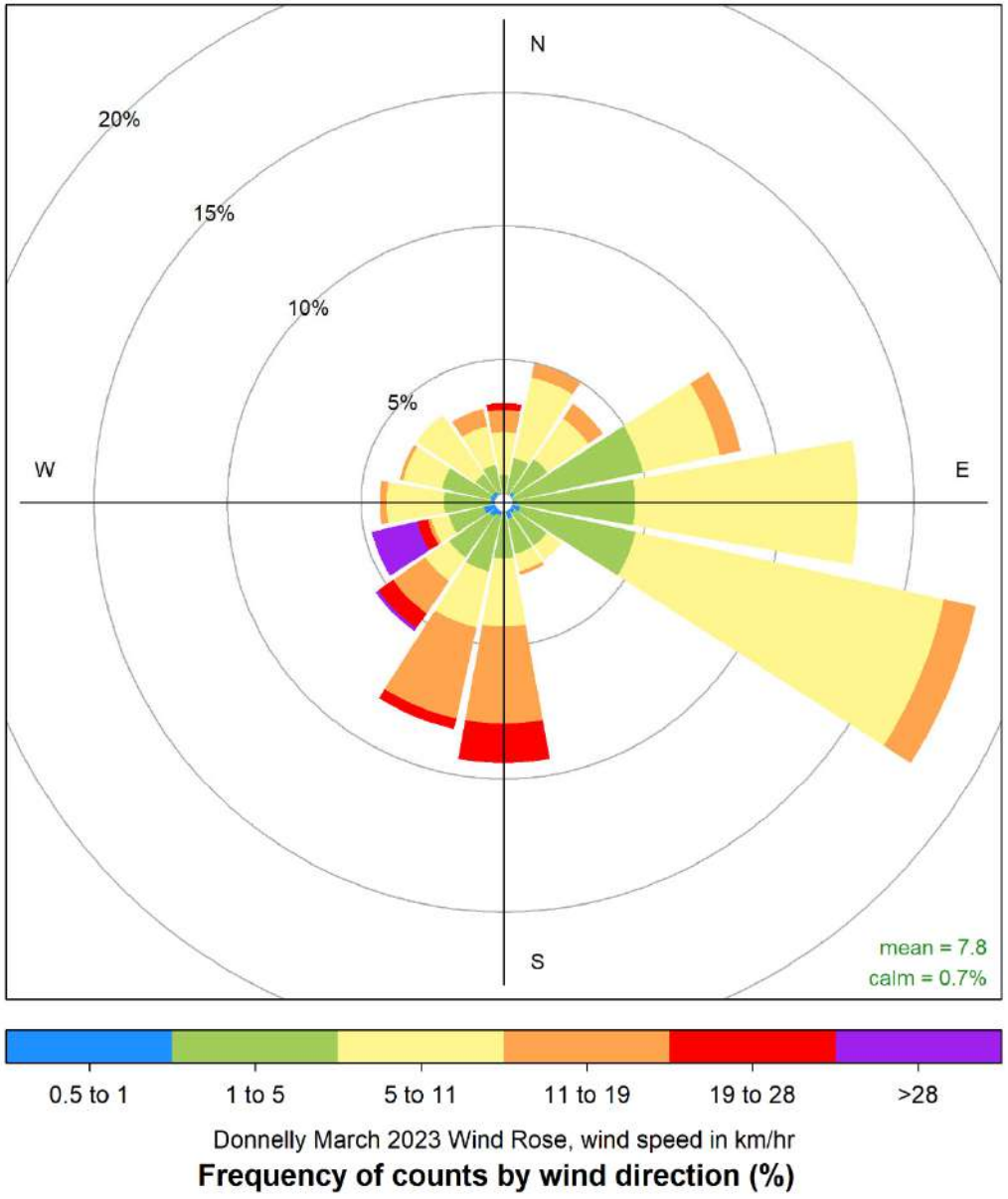


March 2023 Hourly Readings of Wind Speed (in km/hr) at Donnelly



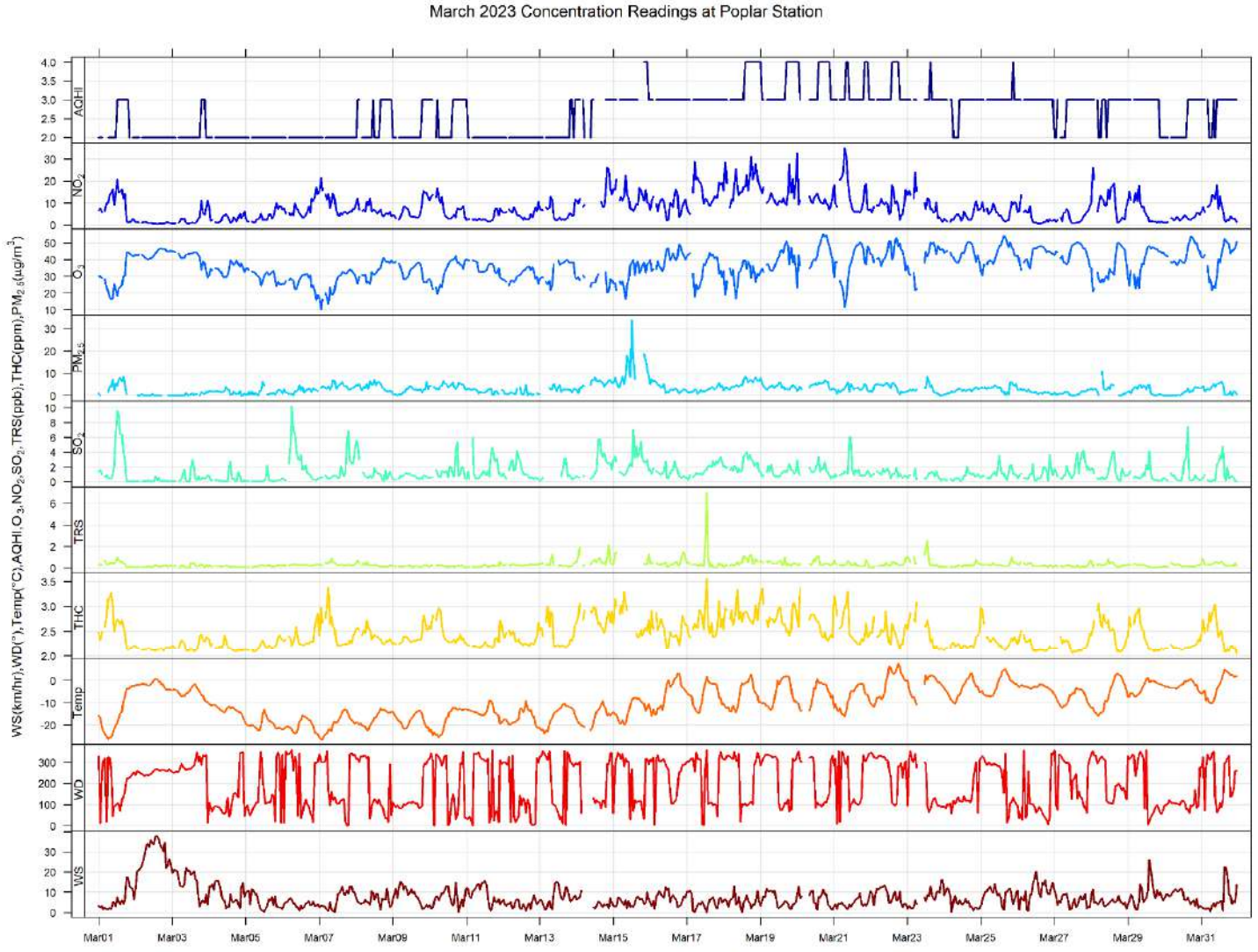

March 2023 Hourly Readings of Wind Direction (in degrees) at Donnelly
WD in degrees
0
100
200
300
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WD

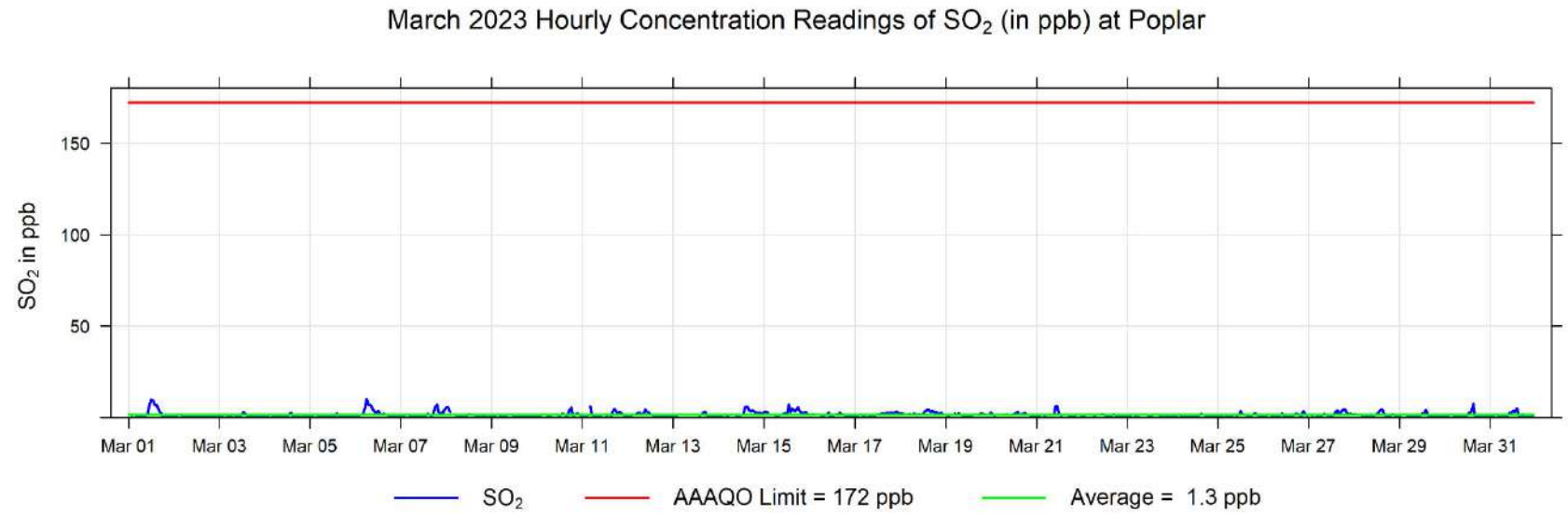

March 2023 Hourly Readings of Wind Direction Standared Deviation (in degrees) at Donnelly
WD in degrees
0
20
40
60
80
100
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WDSTD

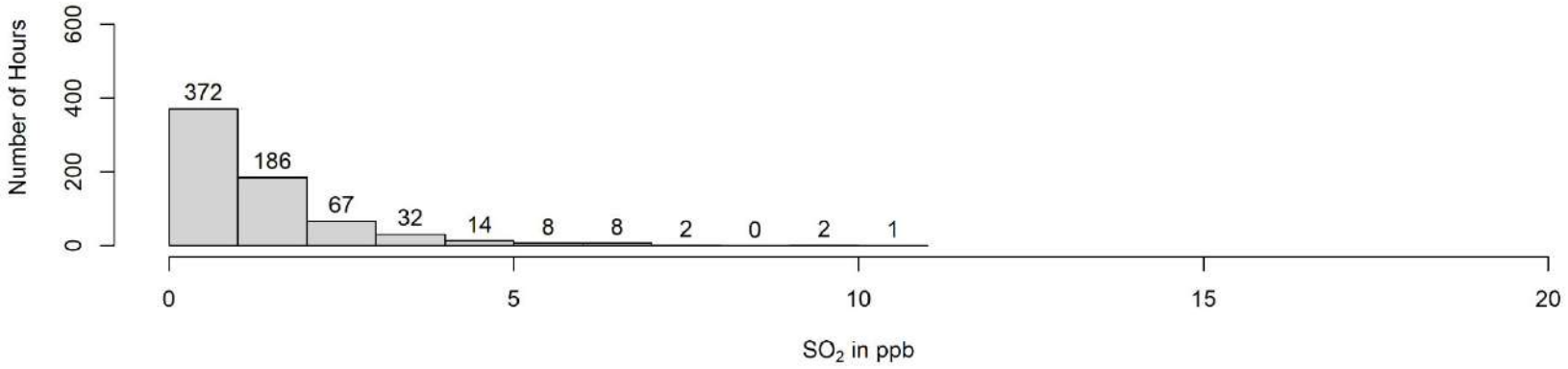

N
20%
15%
10%
5%
W
E
S
mean = 7.8
calm = 0.7%
0.5 to 1
1 to 5
5 to 11
11 to 19
19 to 28
>28
Donnelly March 2023 Wind Rose, wind speed in km/hr
Frequency of counts by wind direction (%)

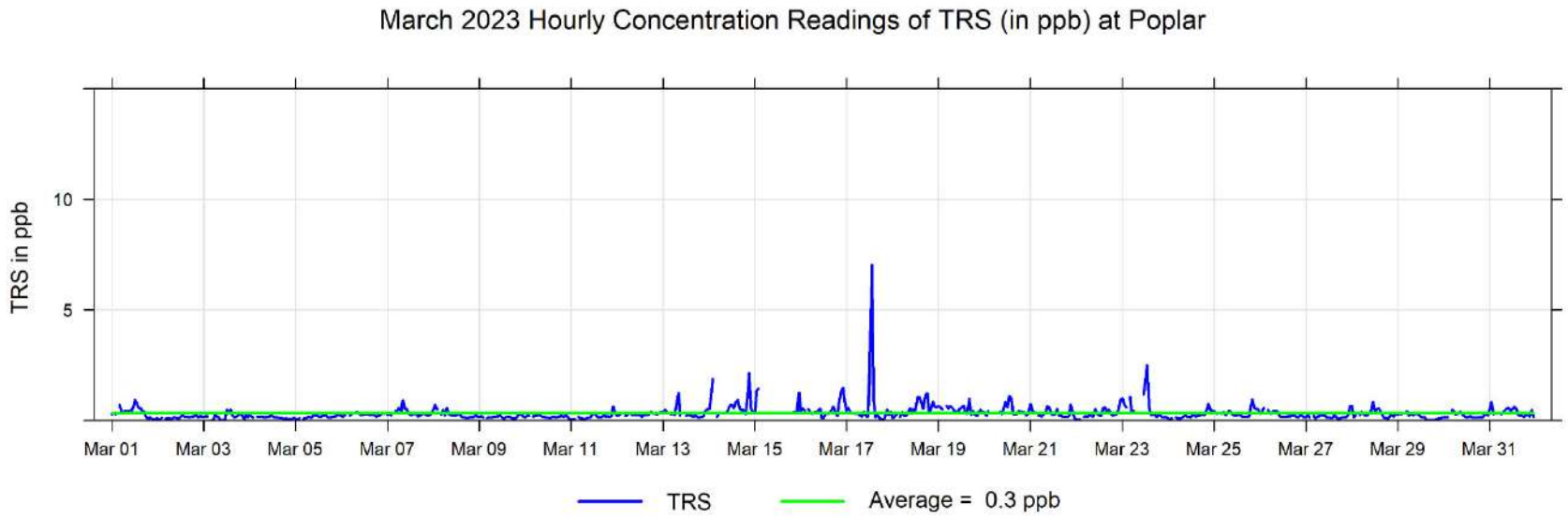
8 Poplar (Portable) Charts

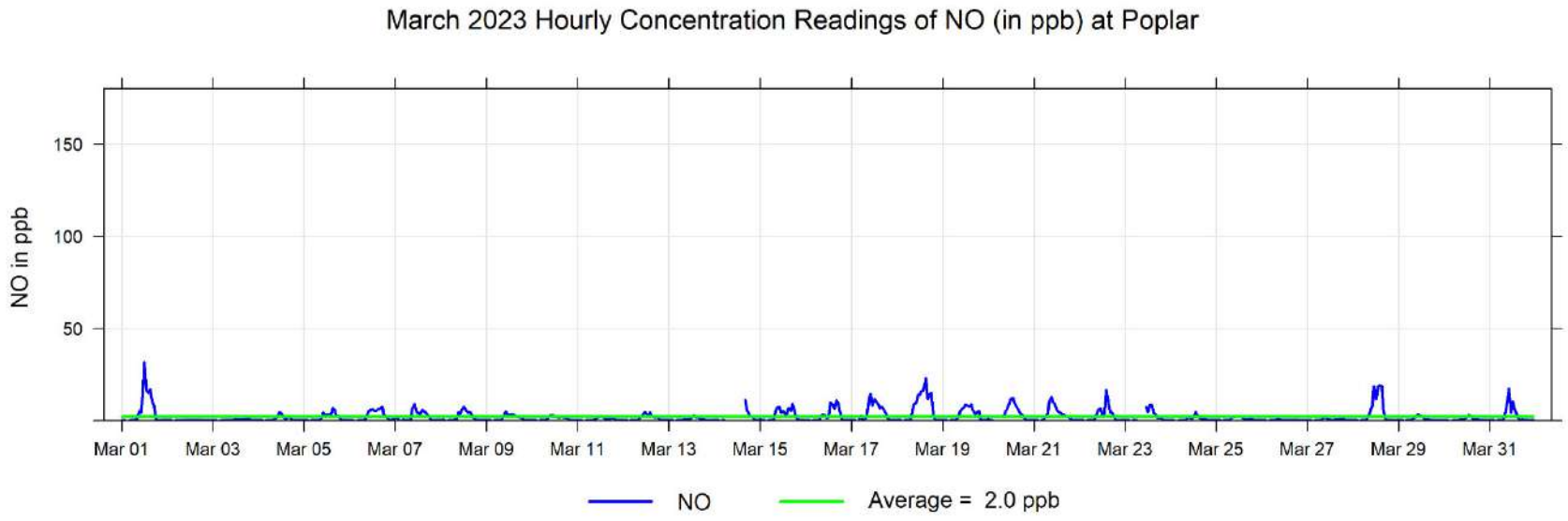
The following pages include the charts and histograms for Poplar Portable Station

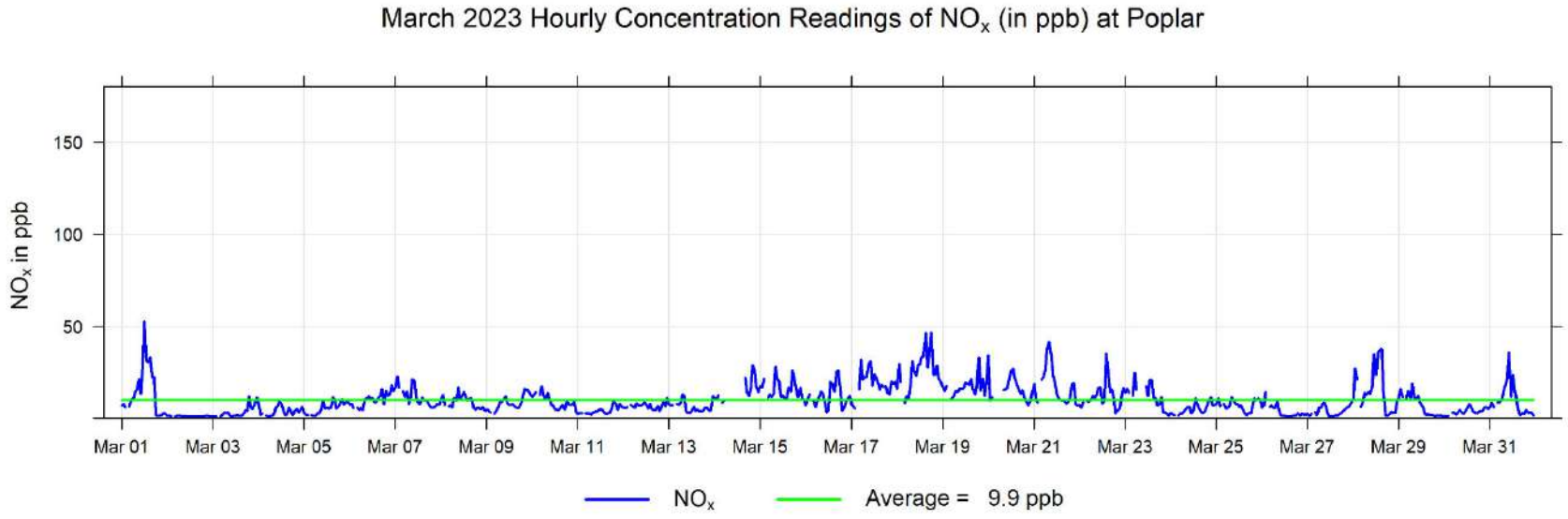


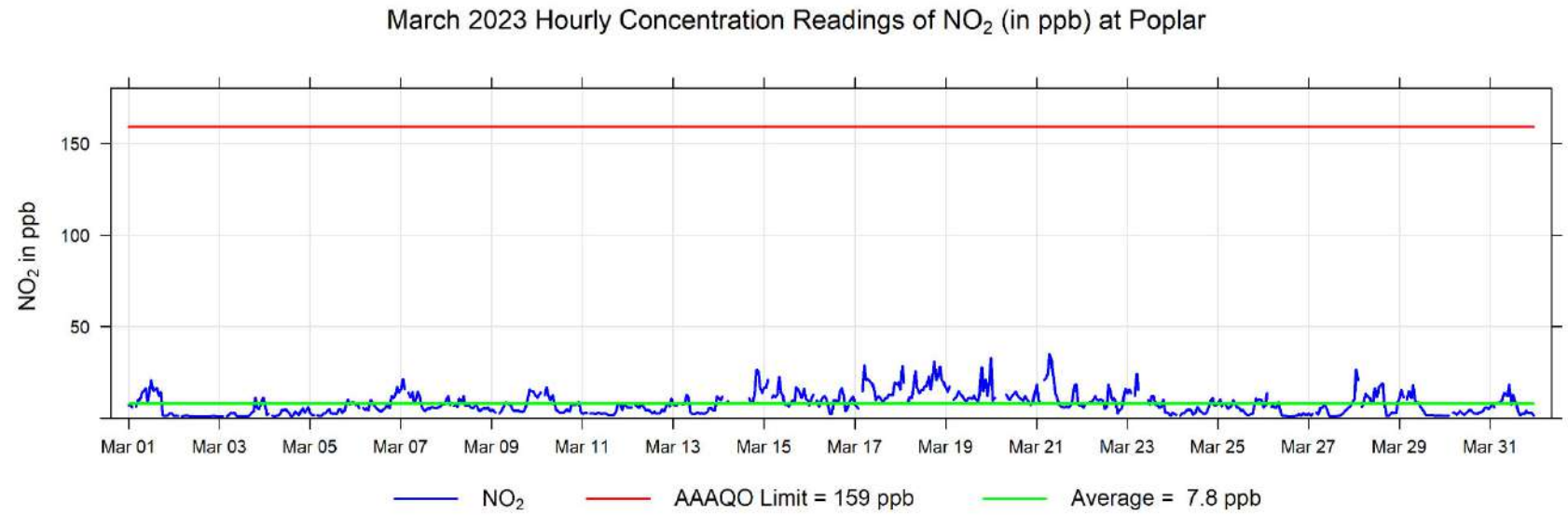

March 2023 Hourly Concentration Readings of SO_2 (in ppb) at Poplar
SO_2 in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
SO_2
AAAQO Limit = 172 ppb
Average = 1.3 ppb

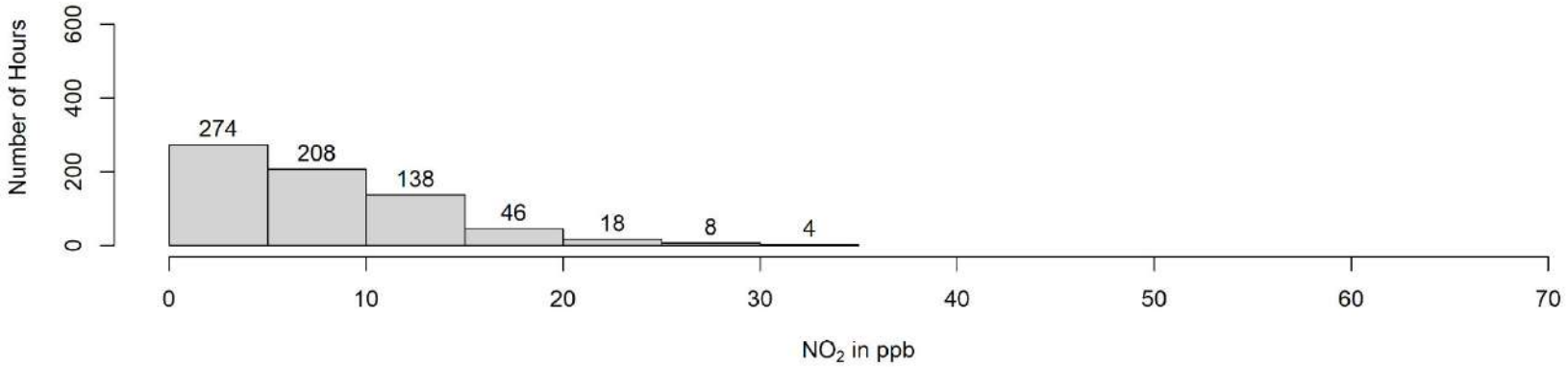

Number of Hours
0
200
400
600
372
186
67
32
14
8
8
2
0
2
1
0
5
10
15
20
SO_2 in ppb

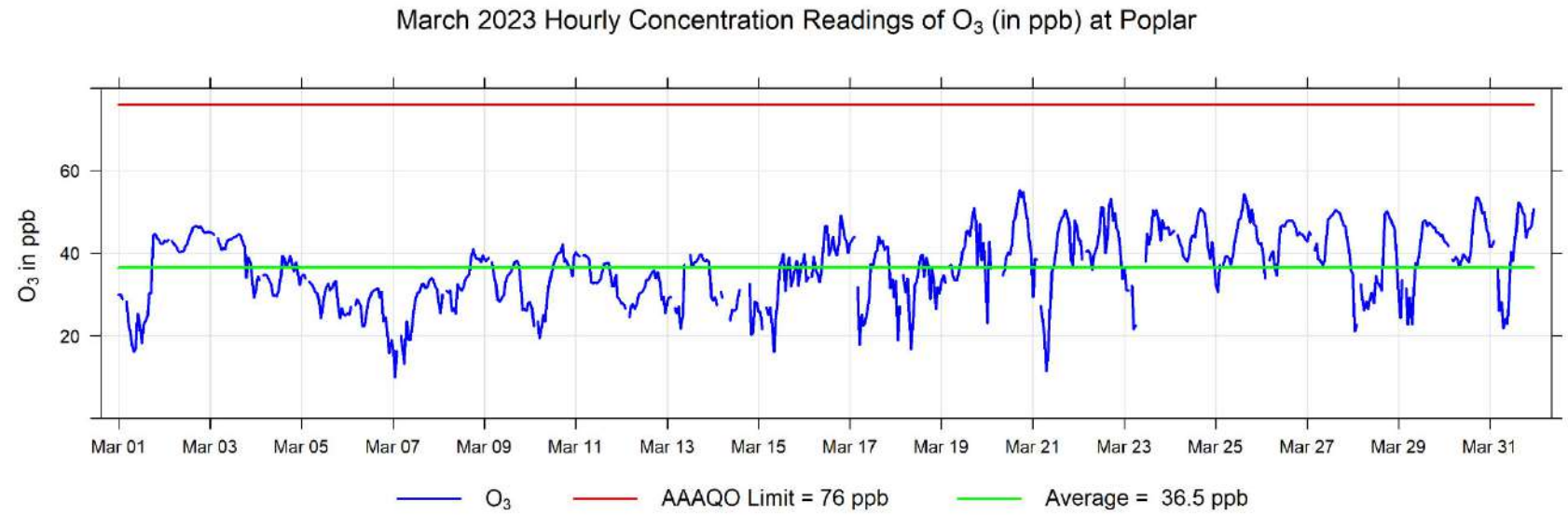

March 2023 Hourly Concentration Readings of TRS (in ppb) at Poplar
TRS in ppb
10
5
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
TRS
Average = 0.3 ppb

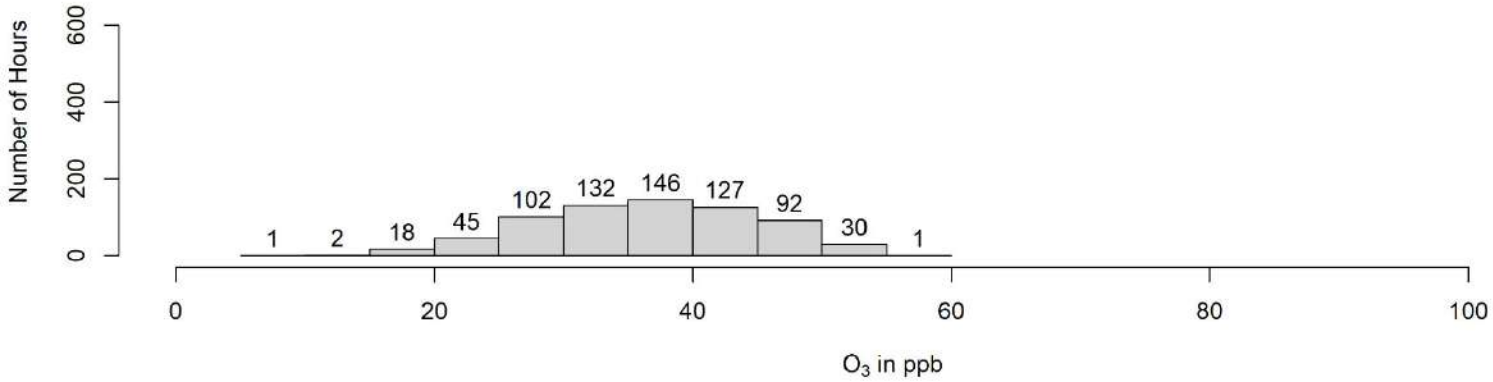

March 2023 Hourly Concentration Readings of NO (in ppb) at Poplar
NO in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
NO
Average = 2.0 ppb

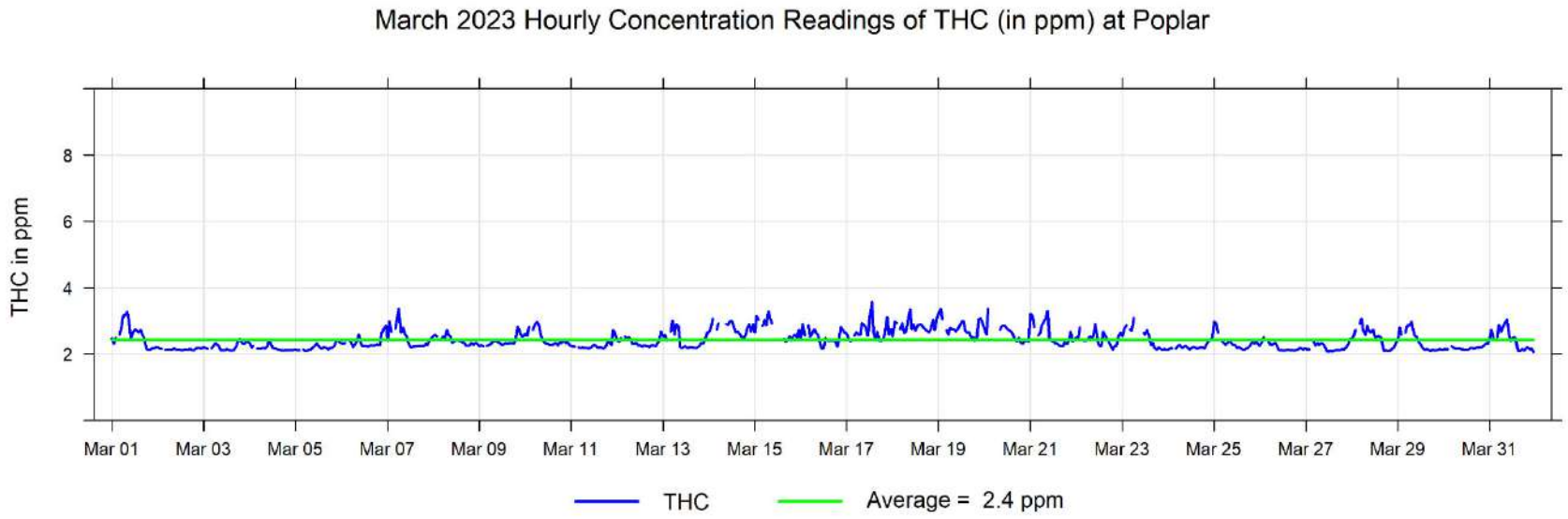

March 2023 Hourly Concentration Readings of NOx (in ppb) at Poplar
NOx in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
NOx
Average = 9.9 ppb

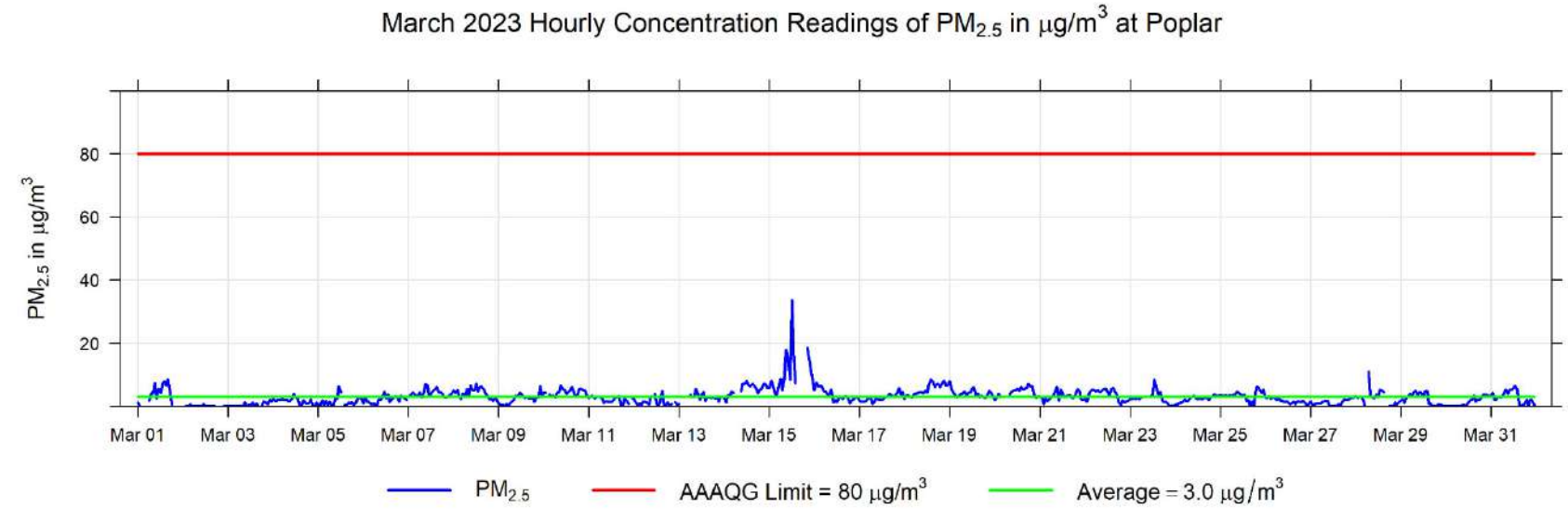

March 2023 Hourly Concentration Readings of NO2 (in ppb) at Poplar
NO2 in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
NO2
AAAQO Limit = 159 ppb
Average = 7.8 ppb

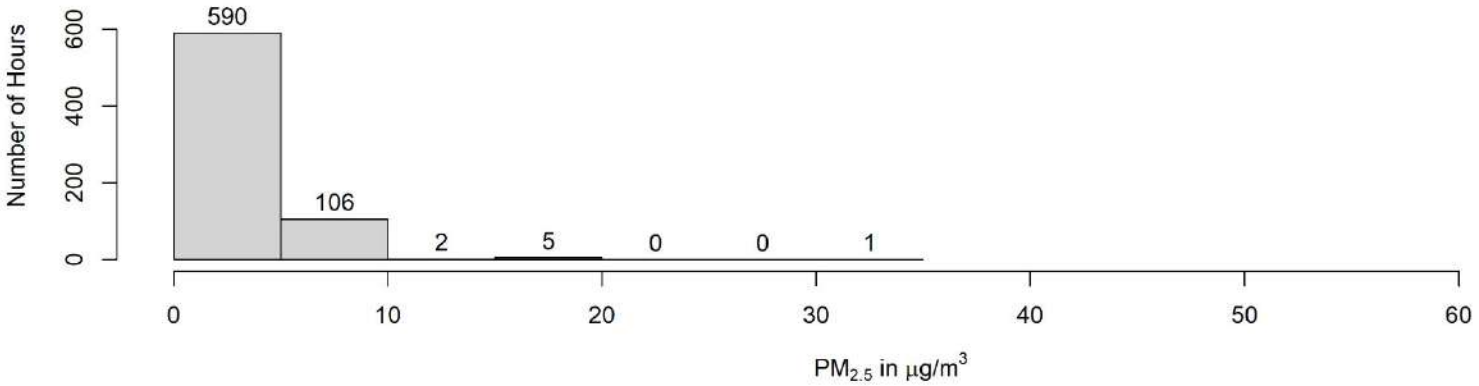

Number of Hours
0
200
400
600
274
208
138
46
18
8
4
0
10
20
30
40
50
60
70
NO2 in ppb

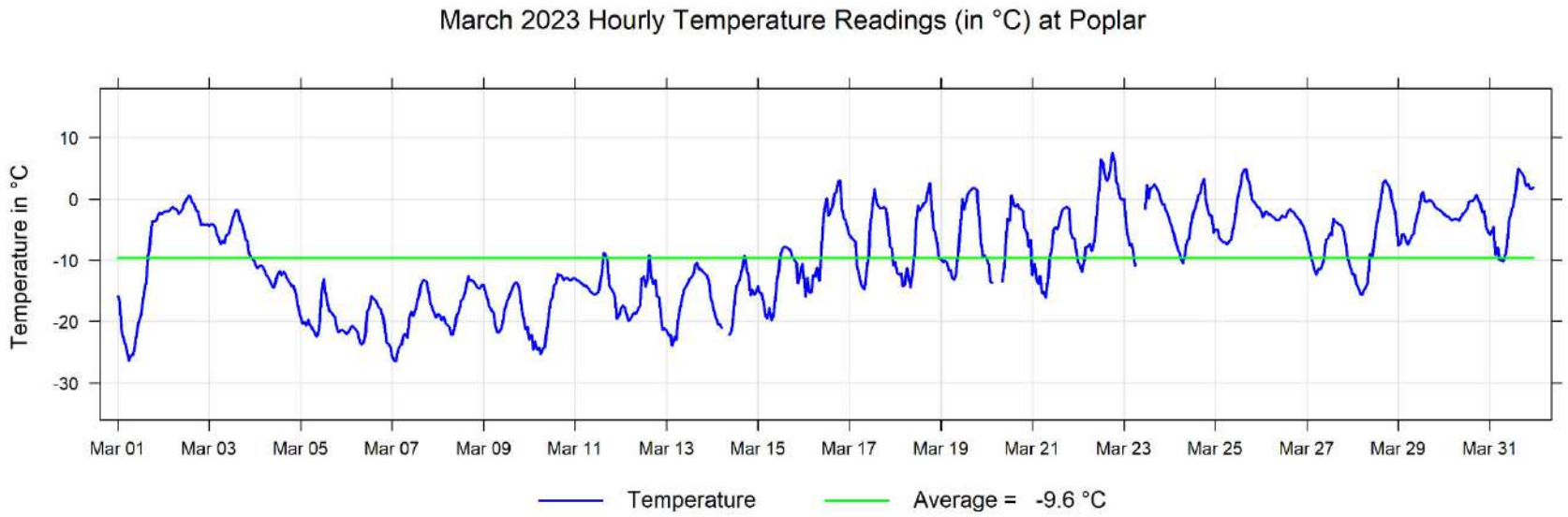

March 2023 Hourly Concentration Readings of O_3 (in ppb) at Poplar
O_3 in ppb
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
O_3
AAAQO Limit = 76 ppb
Average = 36.5 ppb

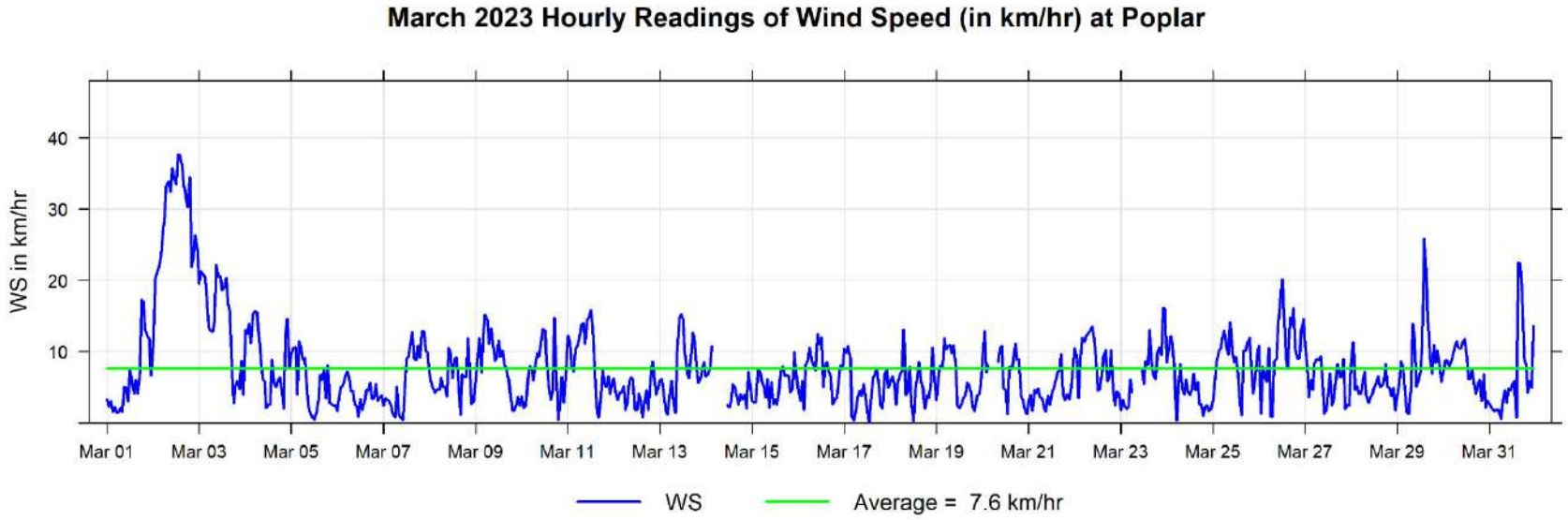

Number of Hours
0
200
400
600
1
2
18
45
102
132
146
127
92
30
1
0
20
40
60
80
100
O_3 in ppb


March 2023 Hourly Concentration Readings of THC (in ppm) at Poplar
THC in ppm
8
6
4
2
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
THC
Average = 2.4 ppm

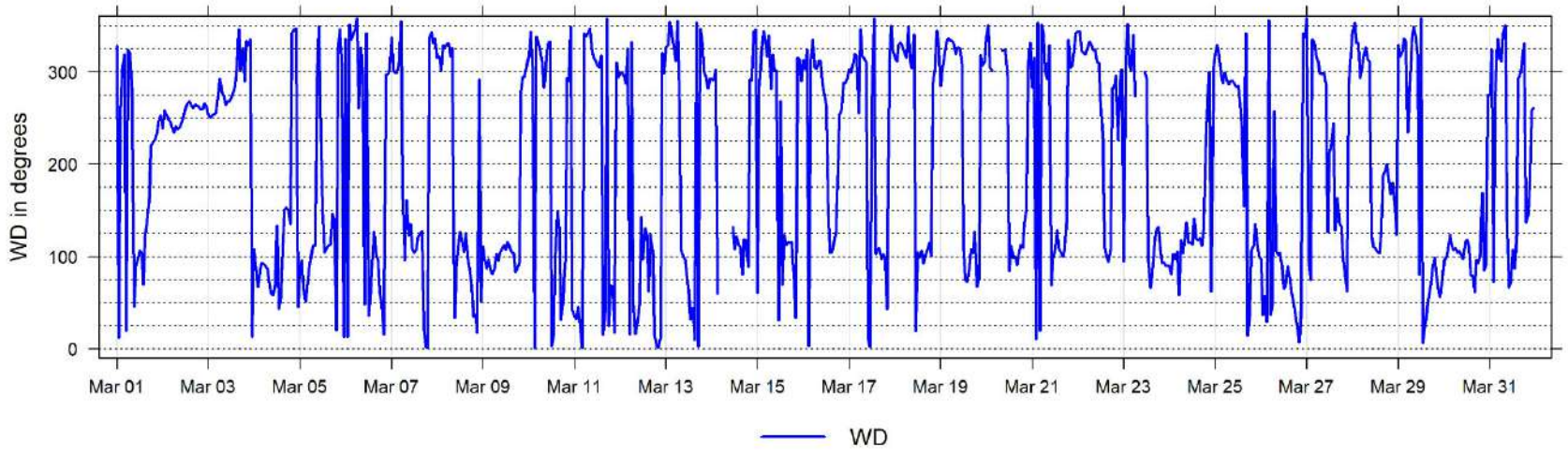

March 2023 Hourly Concentration Readings of PM2.5 in µg/m3 at Poplar
PM2.5 in µg/m3
80
60
40
20
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
PM2.5
AAAQG Limit = 80 µg/m3
Average = 3.0 µg/m3


Number of Hours
0
200
400
600
590
106
2
5
0
0
1
0
10
20
30
40
50
60
PM2.5 in µg/m3

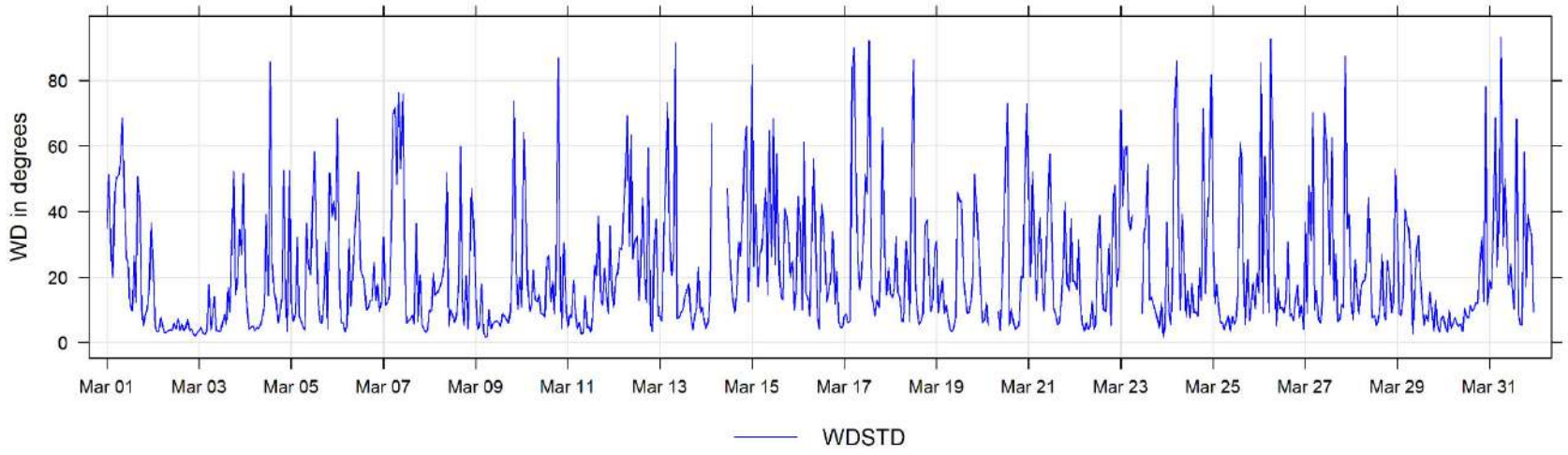

March 2023 Hourly Temperature Readings (in °C) at Poplar
Temperature in °C
10
0
-10
-20
-30
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
Temperature
Average = -9.6 °C

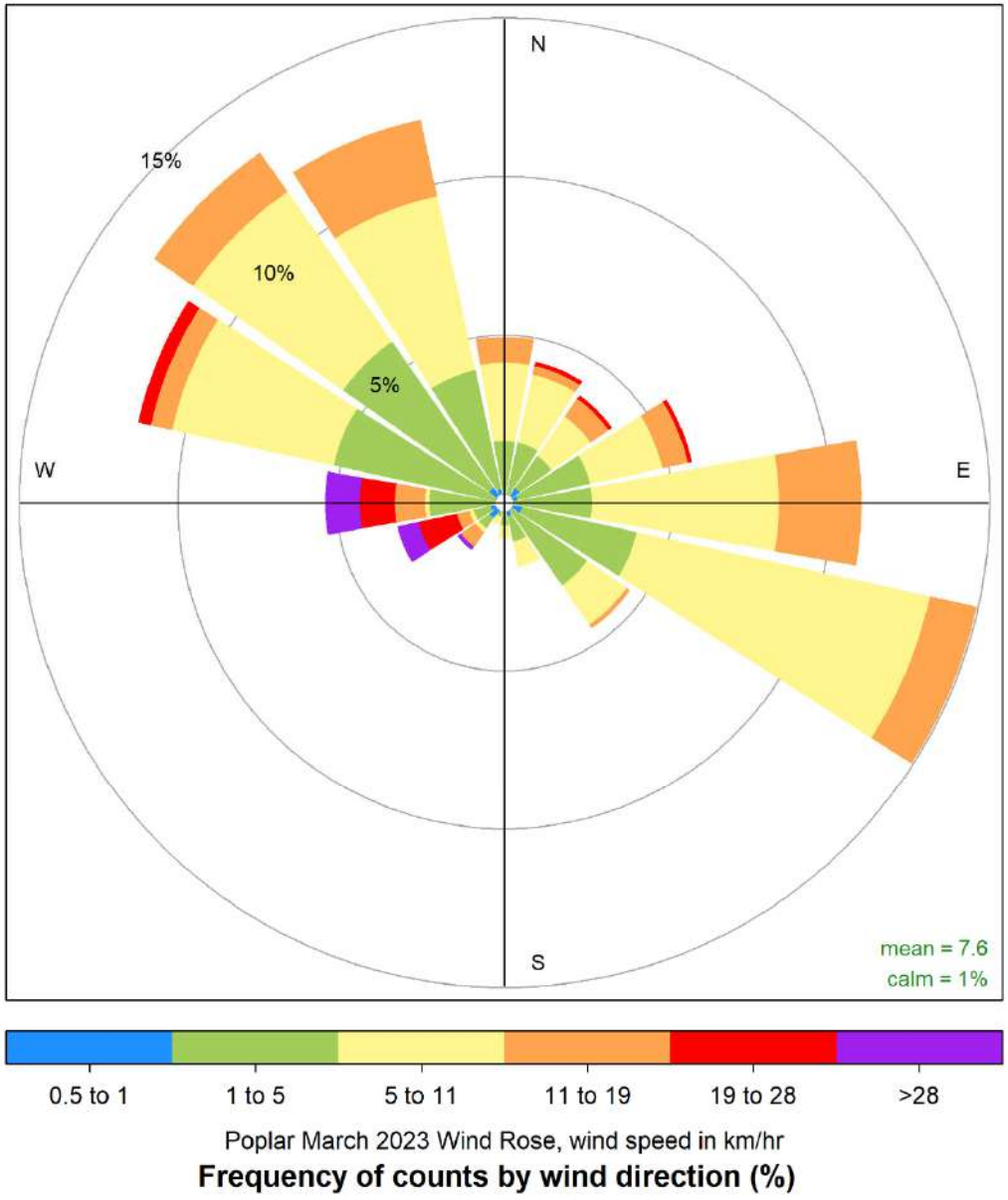

March 2023 Hourly Readings of Wind Speed (in km/hr) at Poplar
WS in km/hr
40
30
20
10
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WS
Average = 7.6 km/hr

March 2023 Hourly Readings of Wind Direction (in degrees) at Poplar



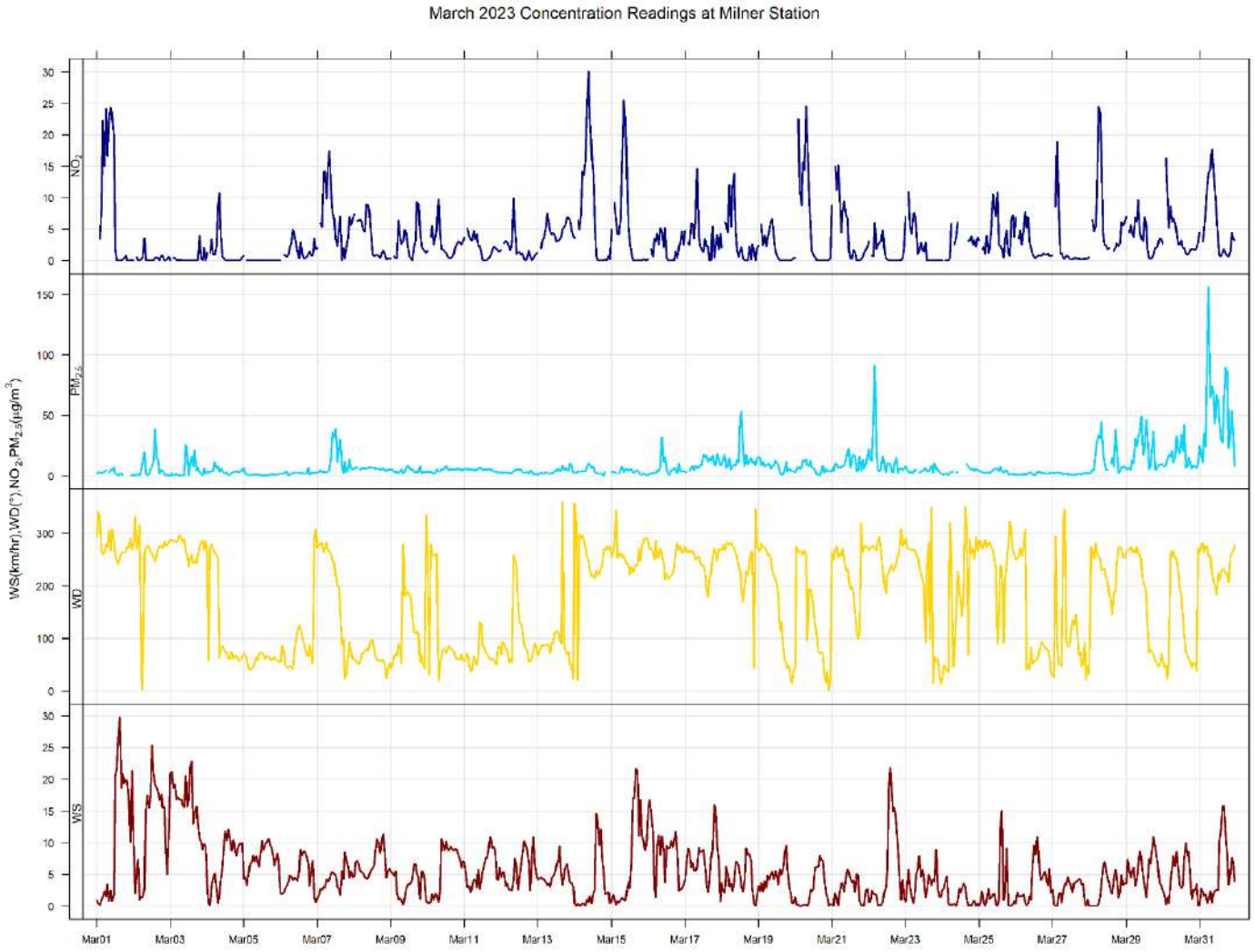
March 2023 Hourly Readings of Wind Direction Standared Deviation (in degrees) at Poplar

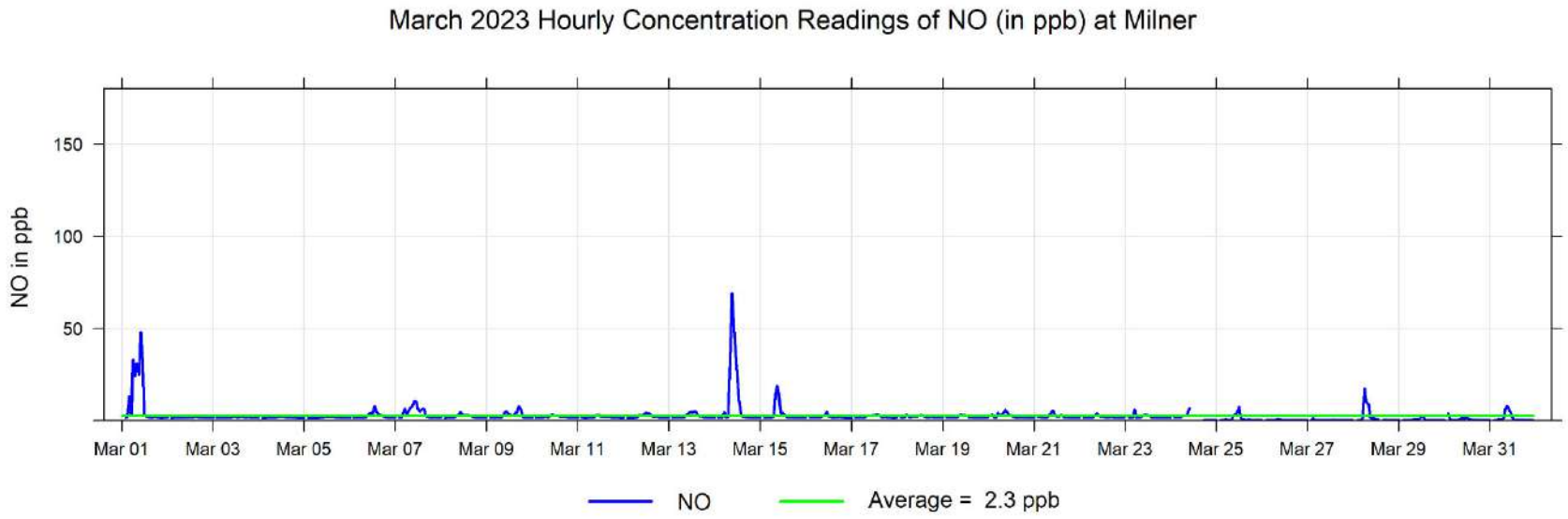


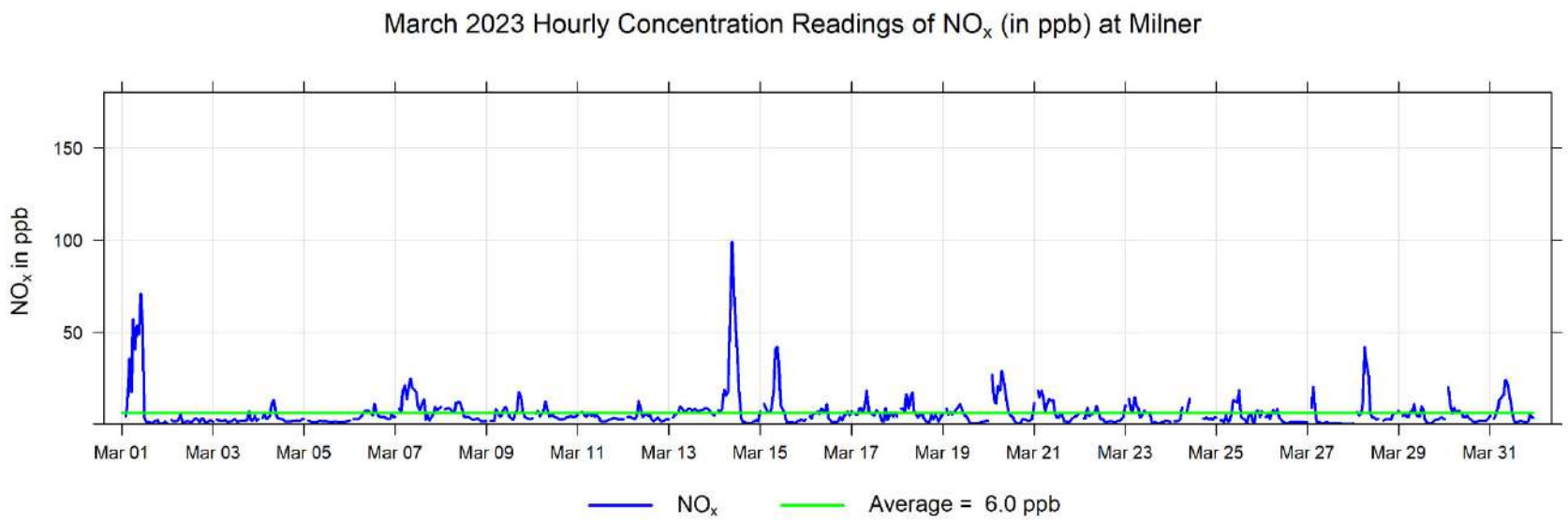

N
15%
10%
5%
W
E
S
mean = 7.6
calm = 1%
0.5 to 1
1 to 5
5 to 11
11 to 19
19 to 28
>28
Poplar March 2023 Wind Rose, wind speed in km/hr
Frequency of counts by wind direction (%)

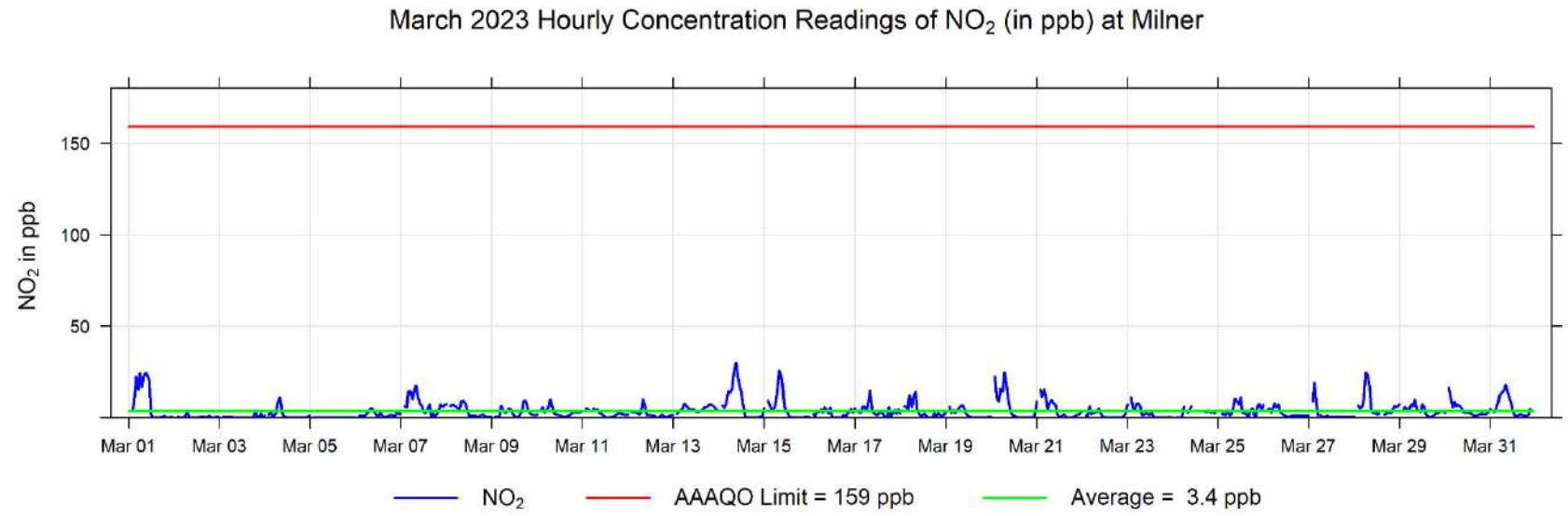
9 Milner Charts

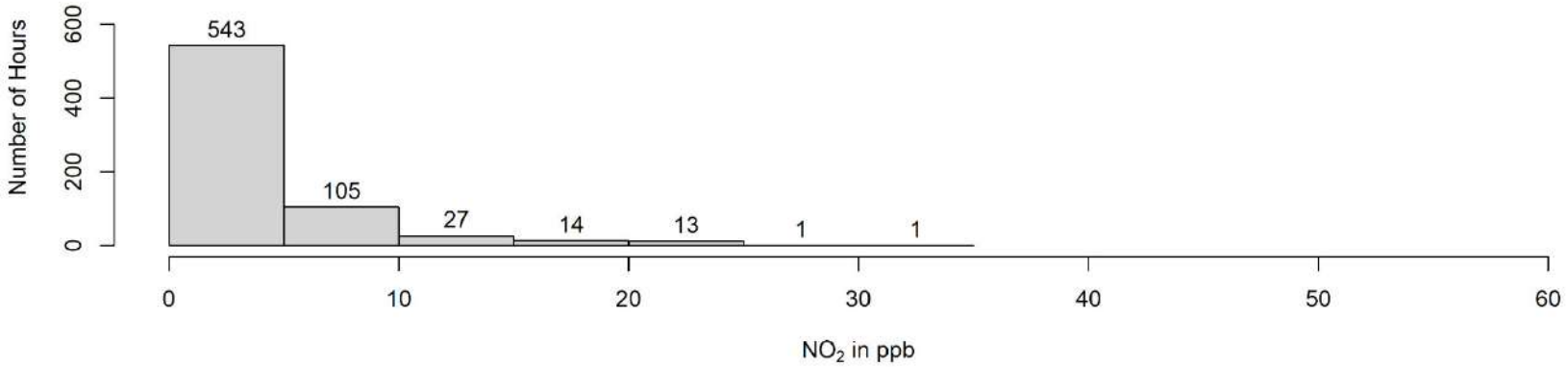
The following pages include the charts and histograms for Milner Station

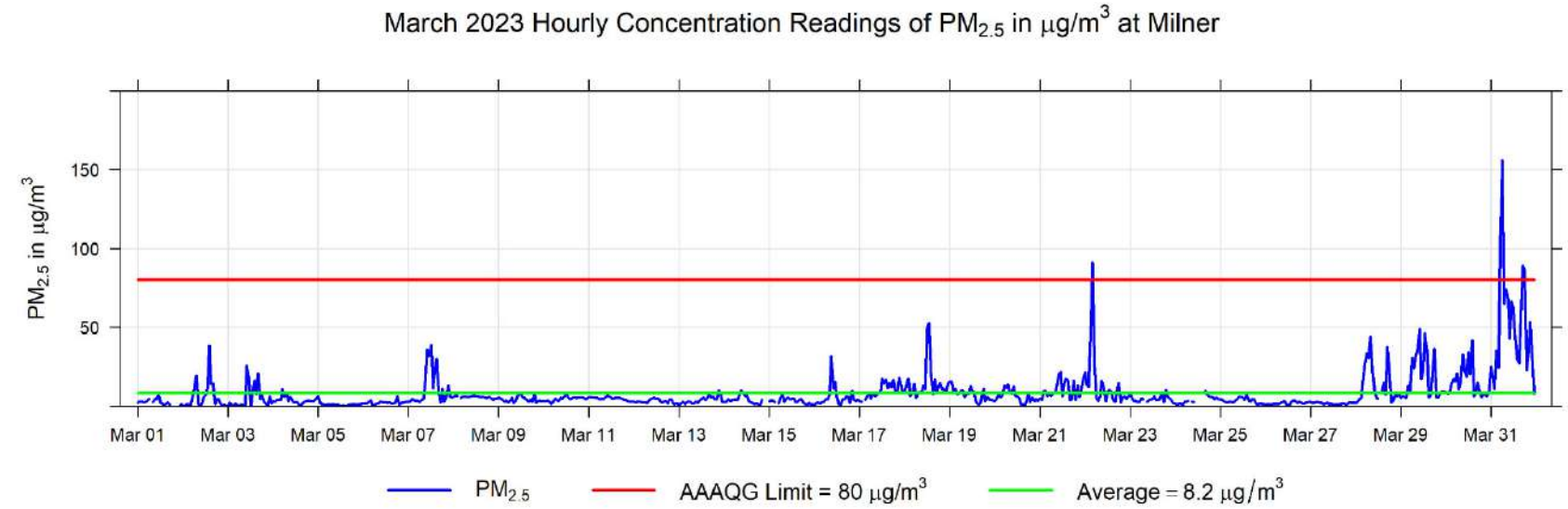


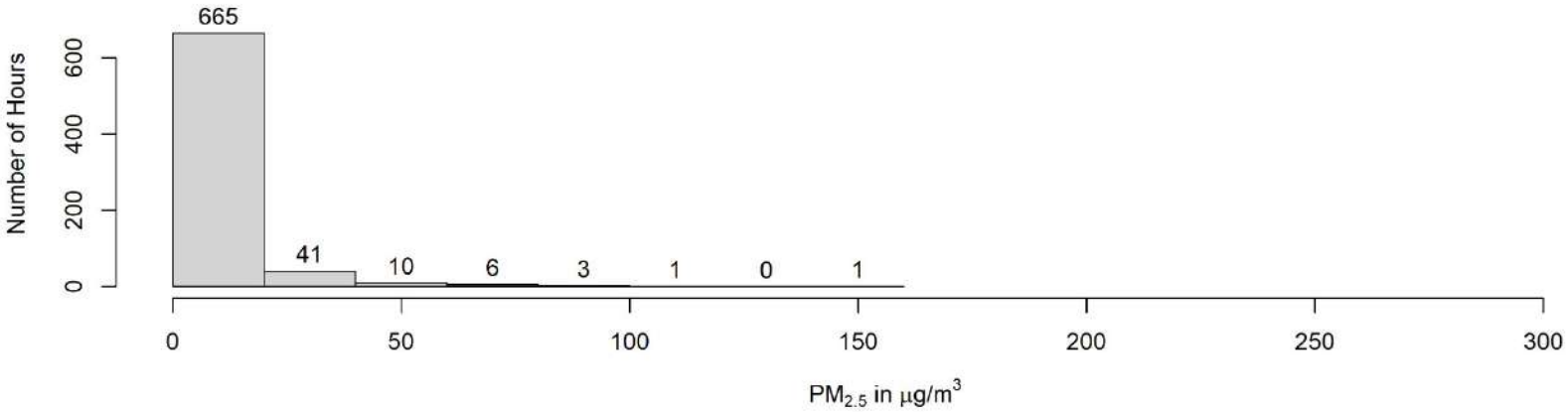

March 2023 Hourly Concentration Readings of NO (in ppb) at Milner
NO in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
NO
Average = 2.3 ppb

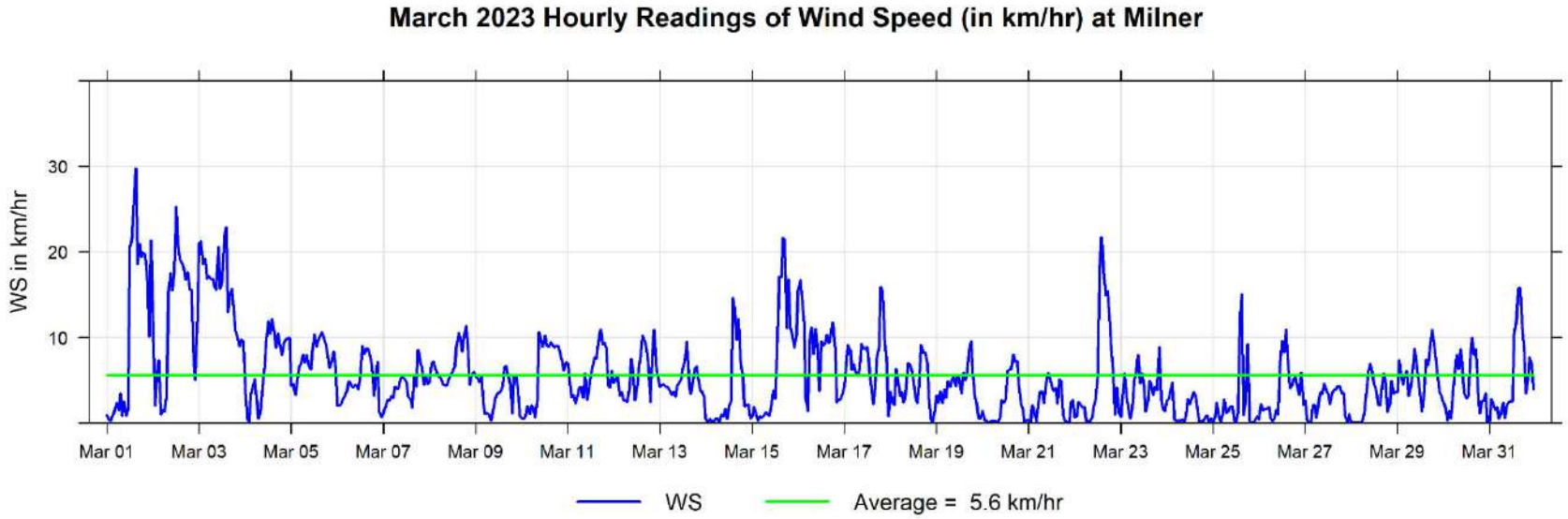

March 2023 Hourly Concentration Readings of NOx (in ppb) at Milner
NOx in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
NOx
Average = 6.0 ppb

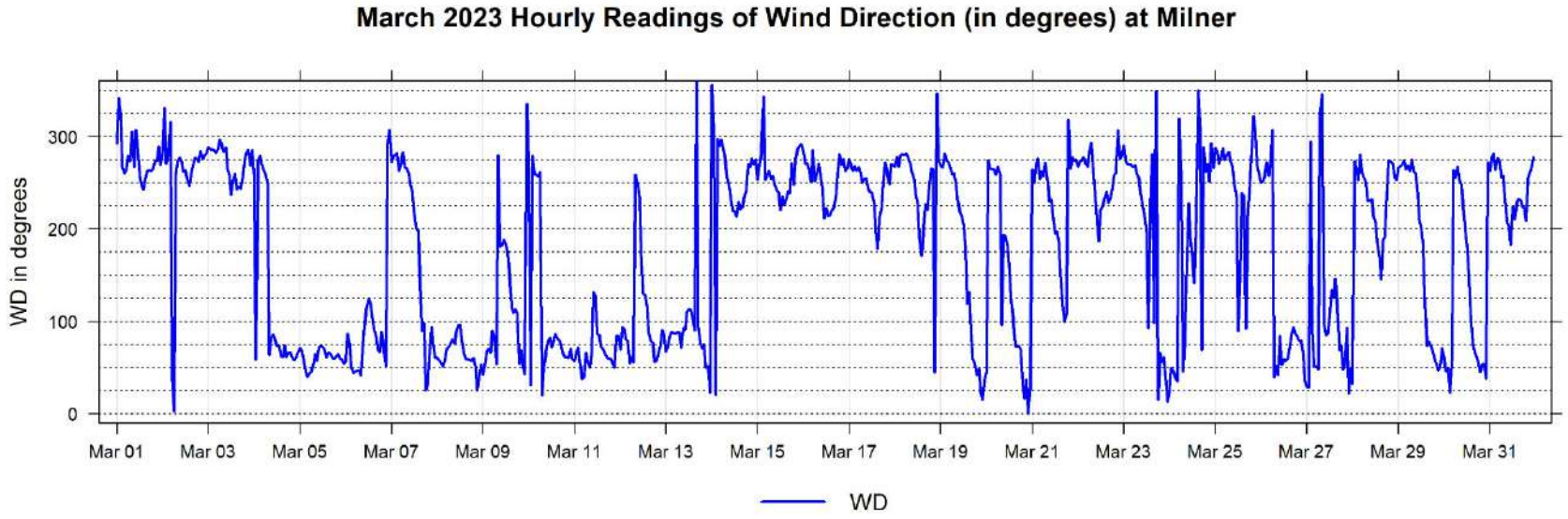

March 2023 Hourly Concentration Readings of NO2 (in ppb) at Milner
NO2 in ppb
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
NO2
AAAQO Limit = 159 ppb
Average = 3.4 ppb

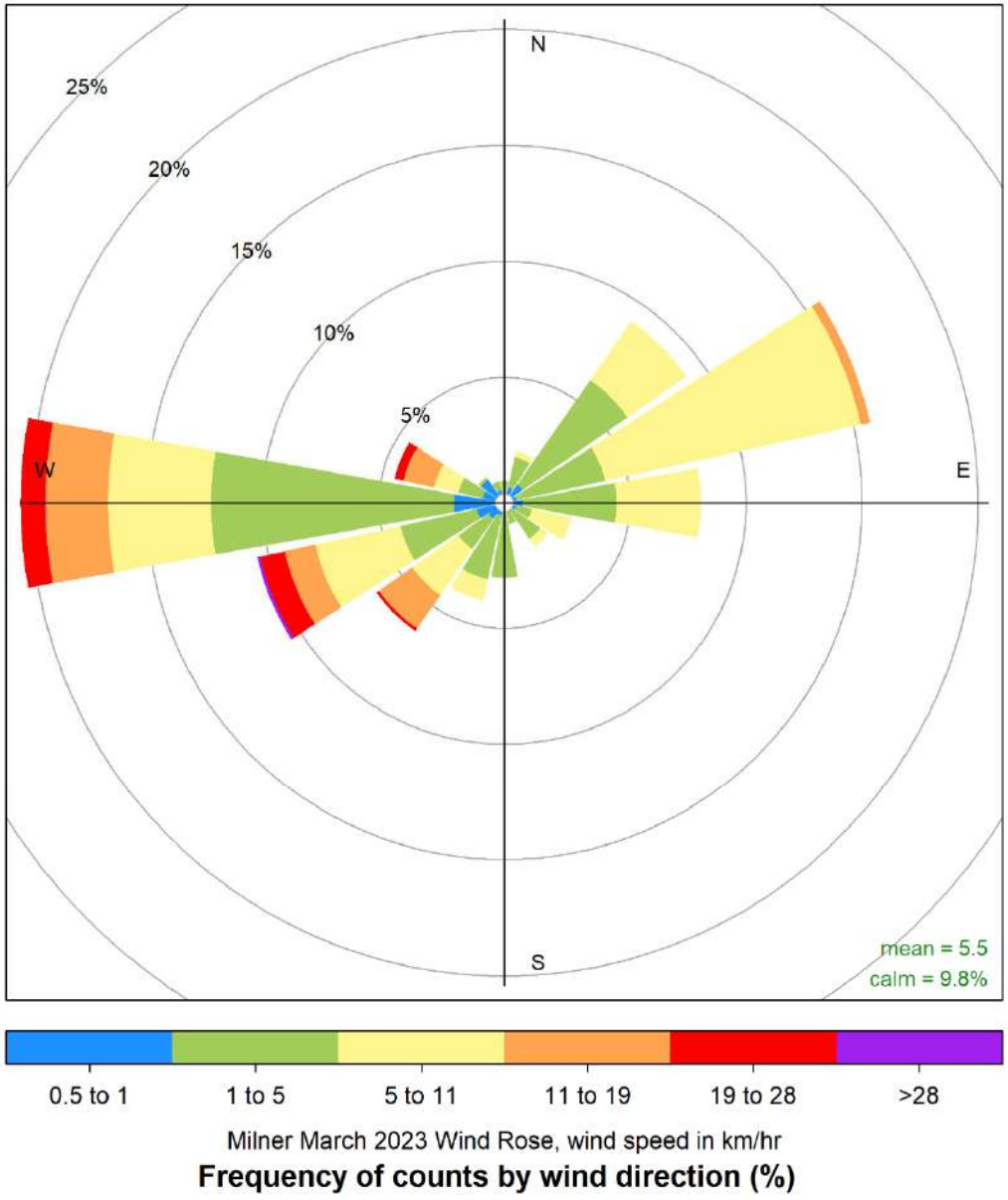

Number of Hours
0
200
400
600
543
105
27
14
13
1
1
0
10
20
30
40
50
60
NO2 in ppb


March 2023 Hourly Concentration Readings of PM2.5 in µg/m3 at Milner
PM2.5 in µg/m3
150
100
50
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
PM2.5
AAAQG Limit = 80 µg/m3
Average = 8.2 µg/m3

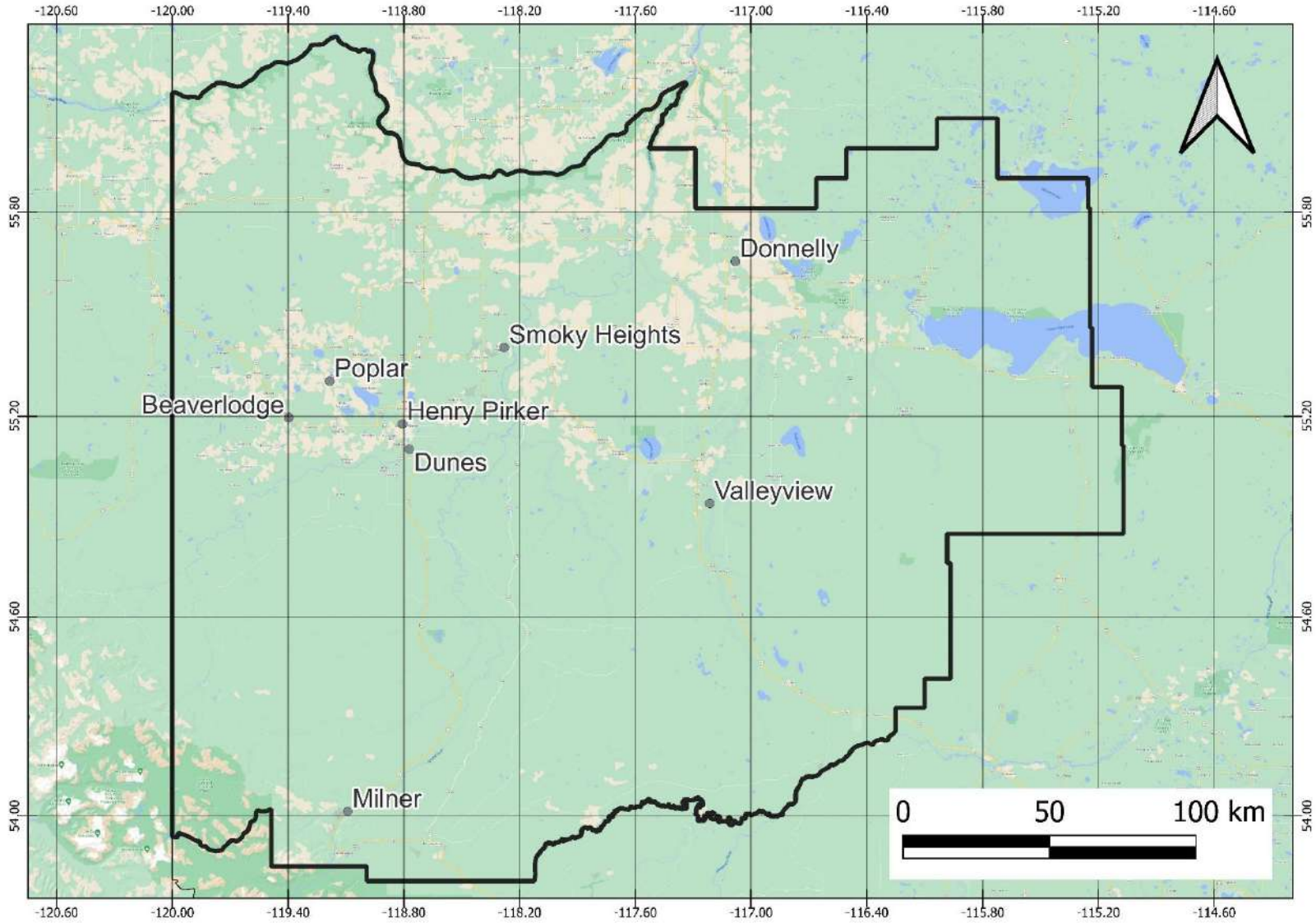

Number of Hours
0
200
400
600
665
41
10
6
3
1
0
1
0
50
100
150
200
250
300
PM2.5 in µg/m3


March 2023 Hourly Readings of Wind Speed (in km/hr) at Milner
WS in km/hr
30
20
10
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WS
Average = 5.6 km/hr


March 2023 Hourly Readings of Wind Direction (in degrees) at Milner
WD in degrees
300
200
100
0
Mar 01
Mar 03
Mar 05
Mar 07
Mar 09
Mar 11
Mar 13
Mar 15
Mar 17
Mar 19
Mar 21
Mar 23
Mar 25
Mar 27
Mar 29
Mar 31
WD


N
E
S
W
25%
20%
15%
10%
5%
mean = 5.5
calm = 9.8%
0.5 to 1
1 to 5
5 to 11
11 to 19
19 to 28
>28
Milner March 2023 Wind Rose, wind speed in km/hr
Frequency of counts by wind direction (%)

10 Concentration Summaries and Roses for PAZA



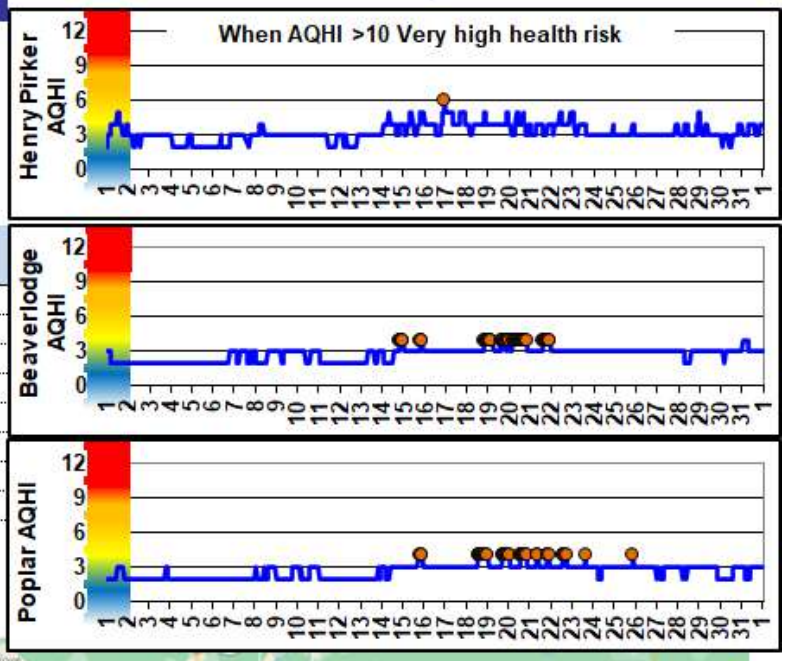
10.1 Air Quality Health Index (AQHI) Plots

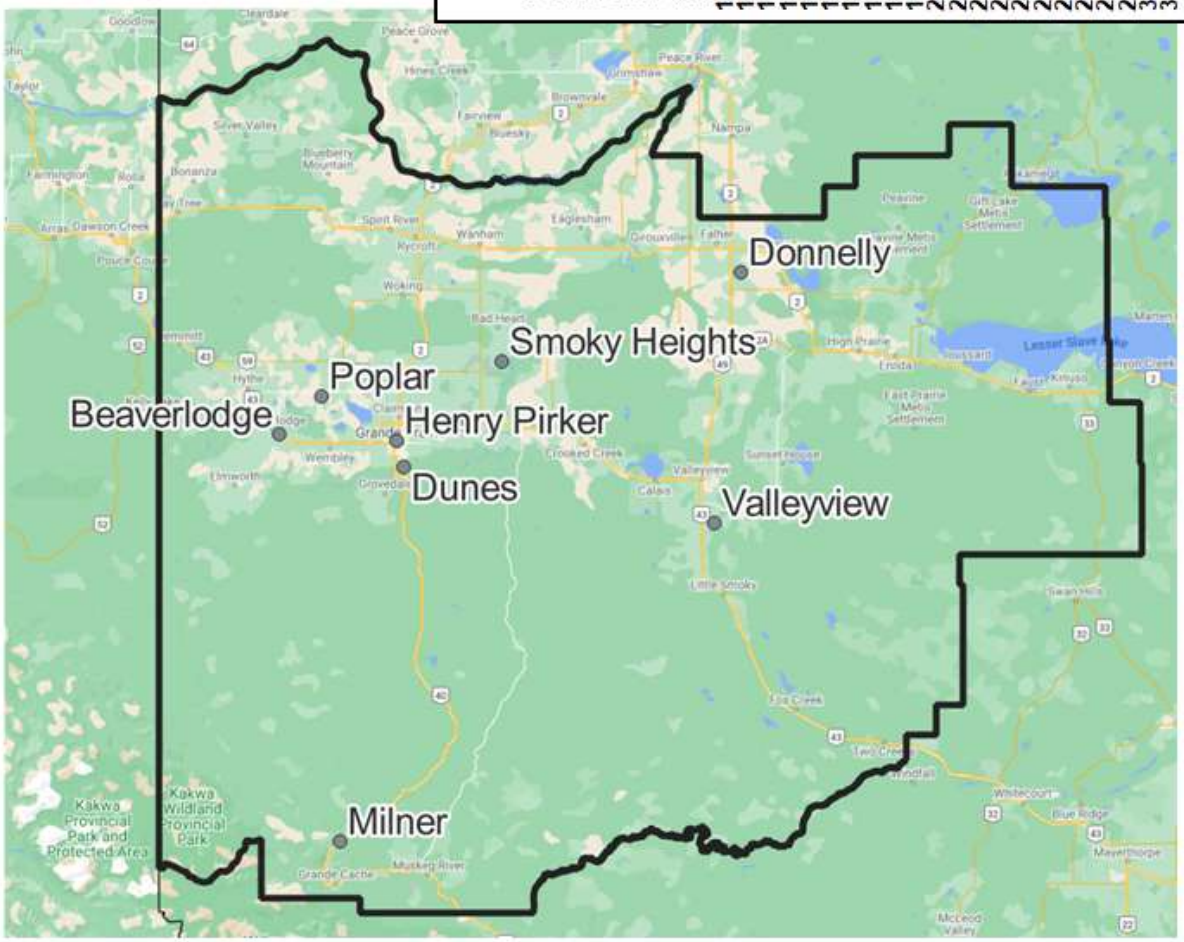
PAZA - March 2023 Continuous Station Summary

March 2023 AQHI Station Summary

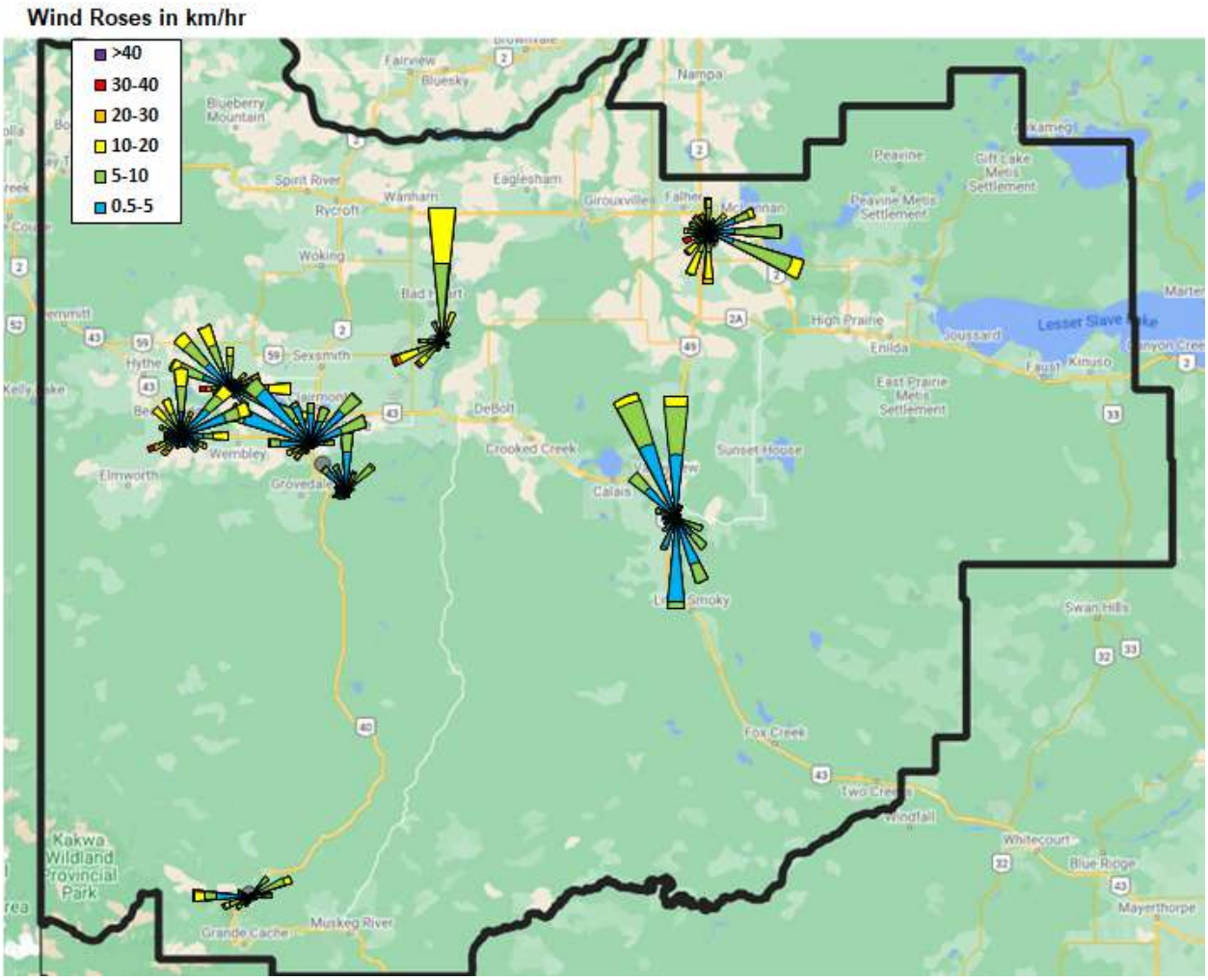
PAZA
Peace Airshed Zone Association

Station	Average AQHI	Max AQHI
Dunes	-	-
Henry Pirker AQHI	3.3	6
Smoky Heights	-	-
Beaverlodge AQHI	2.8	4
Valleyview	-	-
Donnelly	-	-
Poplar AQHI	2.6	4
Milner	-	-



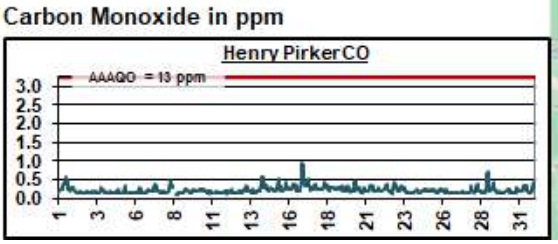


10.2 Wind Roses



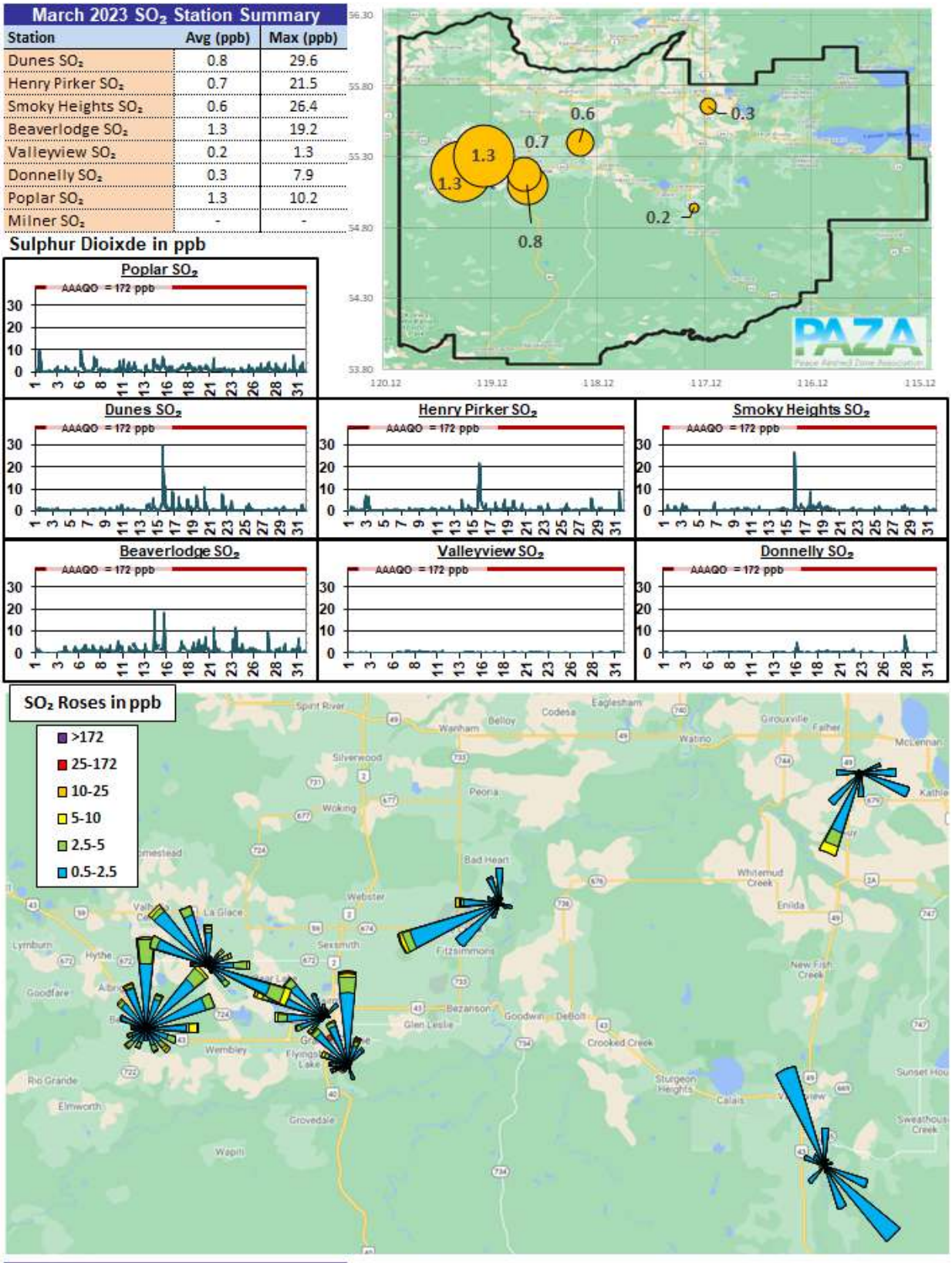
10.3 Carbon Monoxide (CO) Plots

March 2023 CO Station Summary		
Station	Avg (ppm)	Max (ppm)
Henry Pirker CO	0.23	0.96



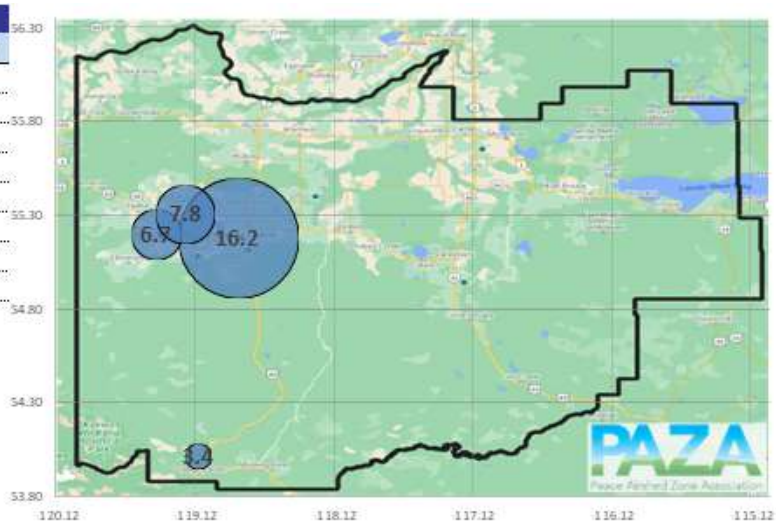
10.4 Sulphur Dioxide (SO_2) Plots

March 2023 SO_2 Station Summary		
Station	Avg (ppb)	Max (ppb)
Dunes SO_2	0.8	29.6
Henry Pirker SO_2	0.7	21.5
Smoky Heights SO_2	0.6	26.4
Beaverlodge SO_2	1.3	19.2
Valleyview SO_2	0.2	1.3
Donnelly SO_2	0.3	7.9
Poplar SO_2	1.3	10.2
Milner SO_2	-	-

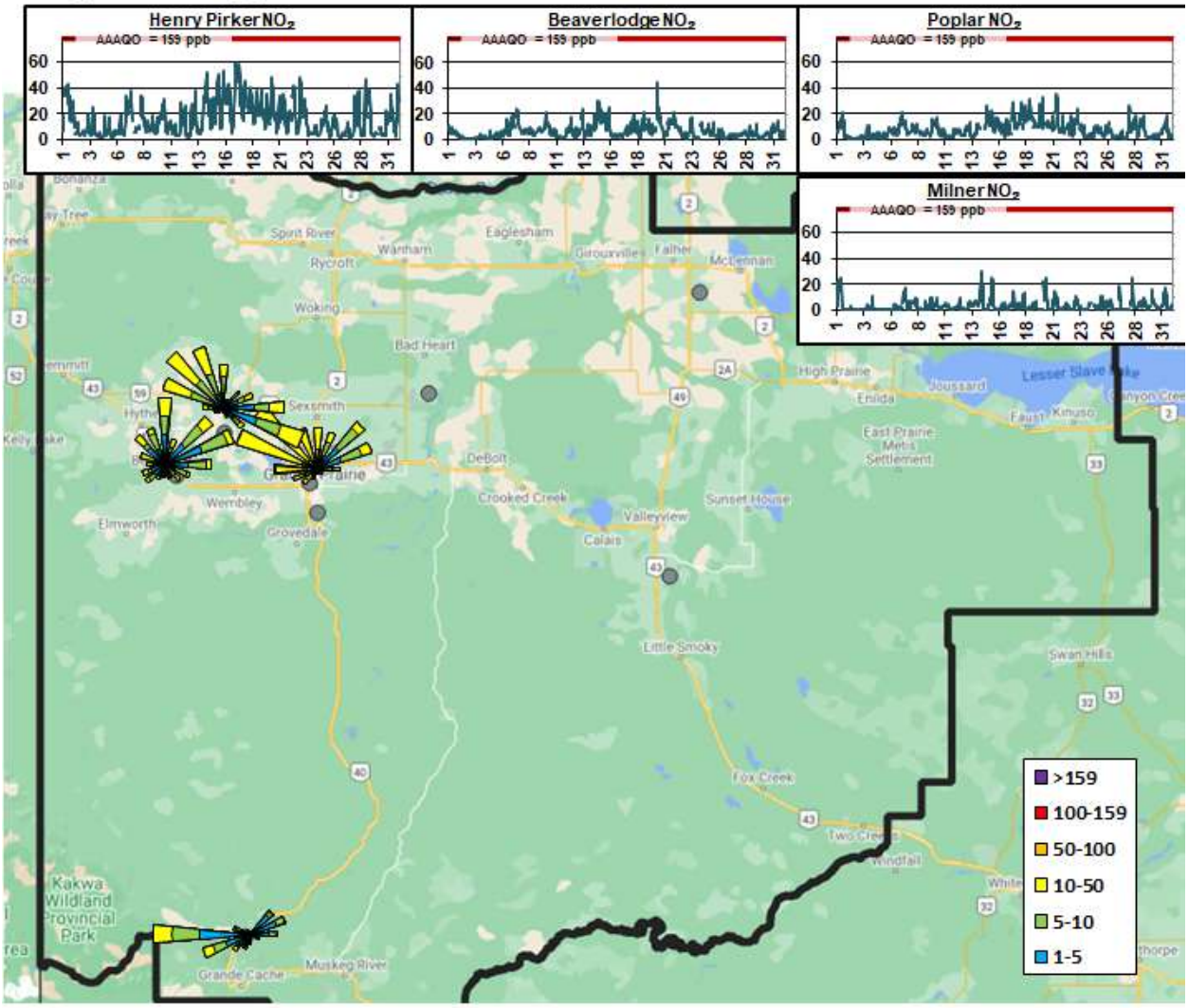


10.5 Nitrogen Dioxide (NO_2) Plots

March 2023 NO_2 Station Summary		
Station	Avg (ppb)	Max (ppb)
Dunes NO_2	-	-
Henry Pirker NO_2	16.2	59.1
Smoky Heights NO_2	-	-
Beaverlodge NO_2	6.7	43.8
Valleyview NO_2	-	-
Donnelly NO_2	-	-
Poplar NO_2	7.8	35.0
Milner NO_2	3.4	30.0

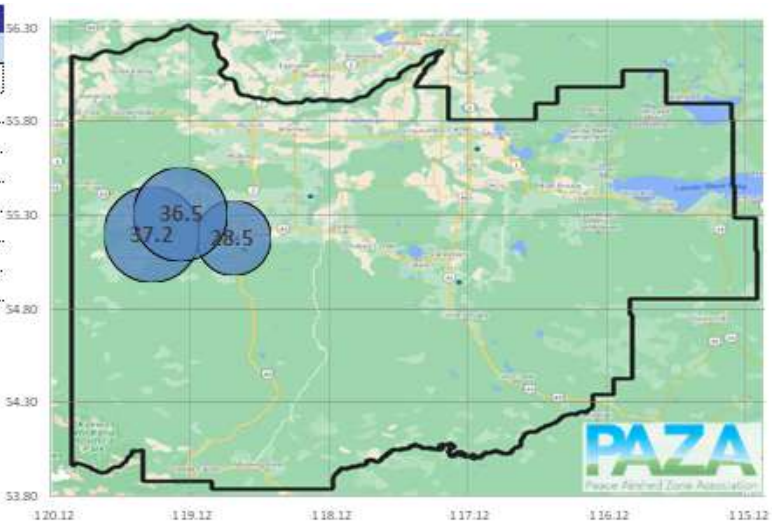


Nitrogen Dioixde in ppb



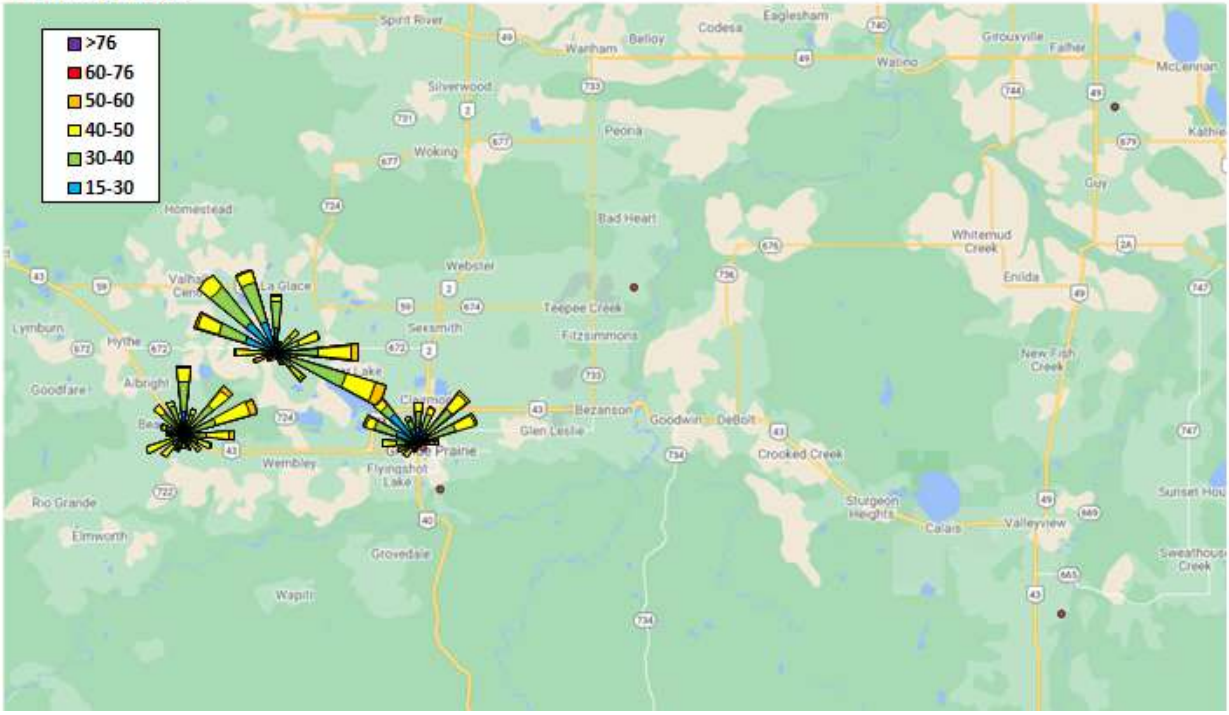
10.6 Ozone (O_3) Plots

March 2023 O_3 Station Summary		
Station	Avg (ppb)	Max (ppb)
Dunes O_3	-	-
Henry Pirker O_3	28.5	54.3
Smoky Heights O_3	-	-
Beaverlodge O_3	37.2	58.4
Valleyview O_3	-	-
Donnelly O_3	-	-
Poplar O_3	36.5	55.3
Milner O_3	-	-



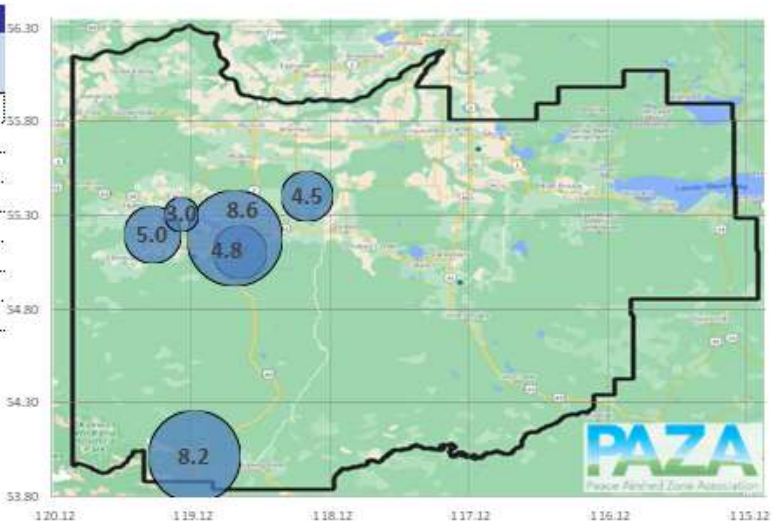
Ozone in ppb

O_3 Roses in ppb

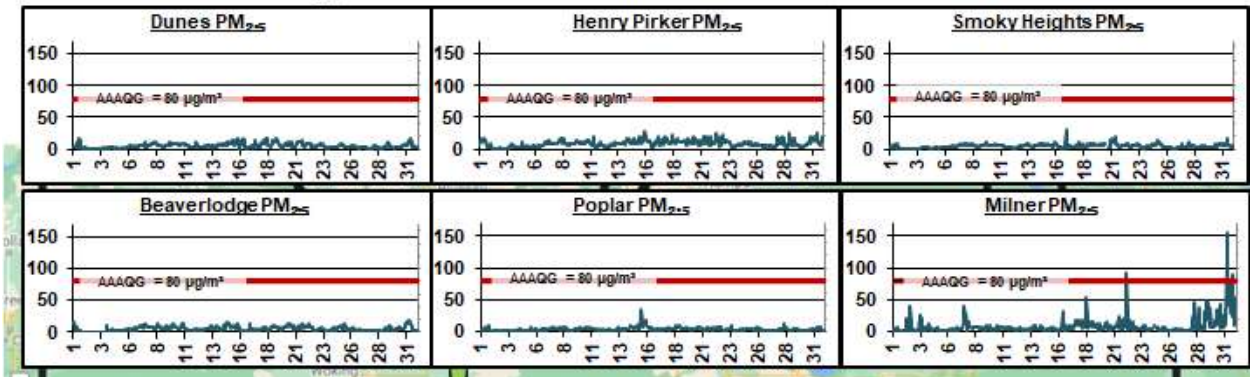


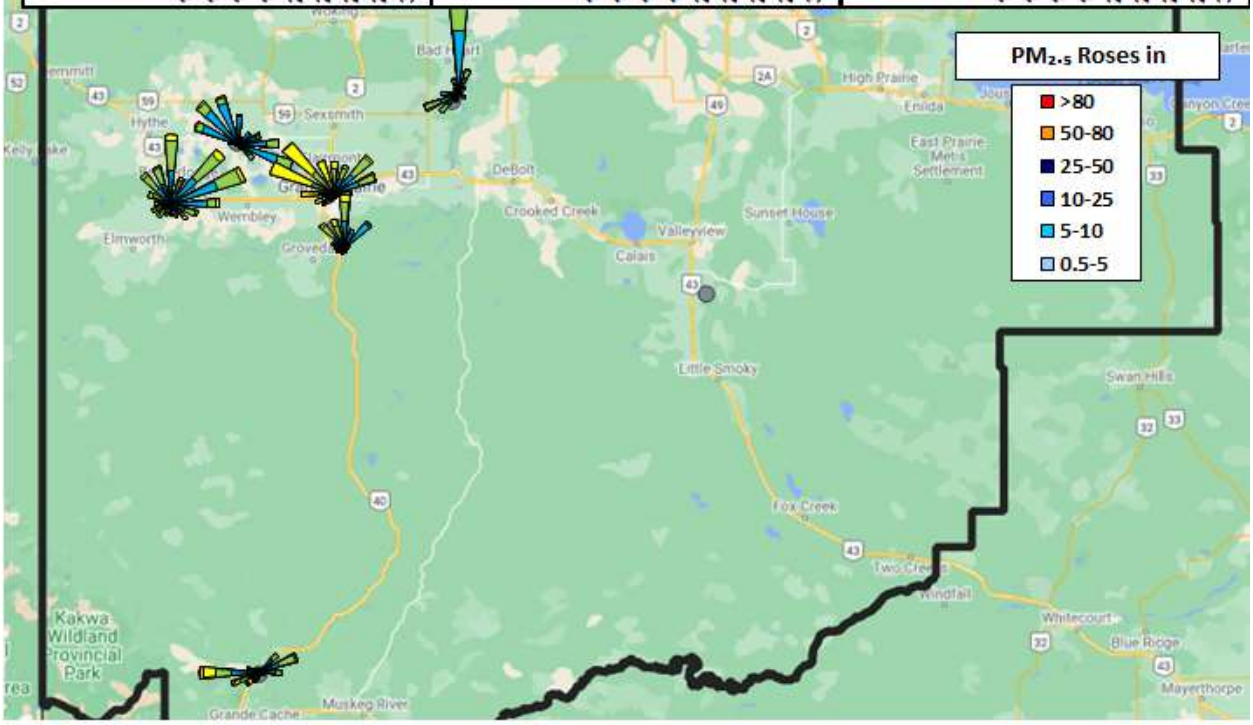
10.7 Fine Particulate Matter ($PM_{2.5}$) Plots

March 2023 $PM_{2.5}$ Station Summary		
Station	Avg µg/m³	Max µg/m³
Dunes $PM_{2.5}$	4.8	17.8
Henry Pirker $PM_{2.5}$	8.6	26.5
Smoky Heights $PM_{2.5}$	4.5	31.4
Beaverlodge $PM_{2.5}$	5.0	19.7
Valleyview $PM_{2.5}$	-	-
Donnelly $PM_{2.5}$	-	-
Poplar $PM_{2.5}$	3.0	33.7
Milner $PM_{2.5}$	8.2	156.2



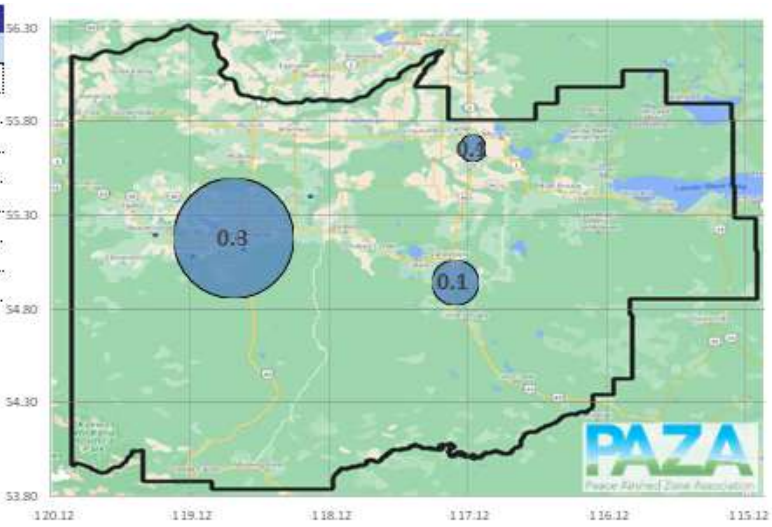
Fine Particulate Matter in µg/m³



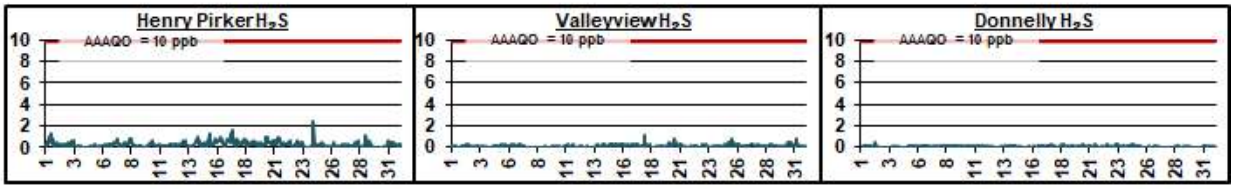


10.8 Hydrogen Sulphide (H_2S) Plots

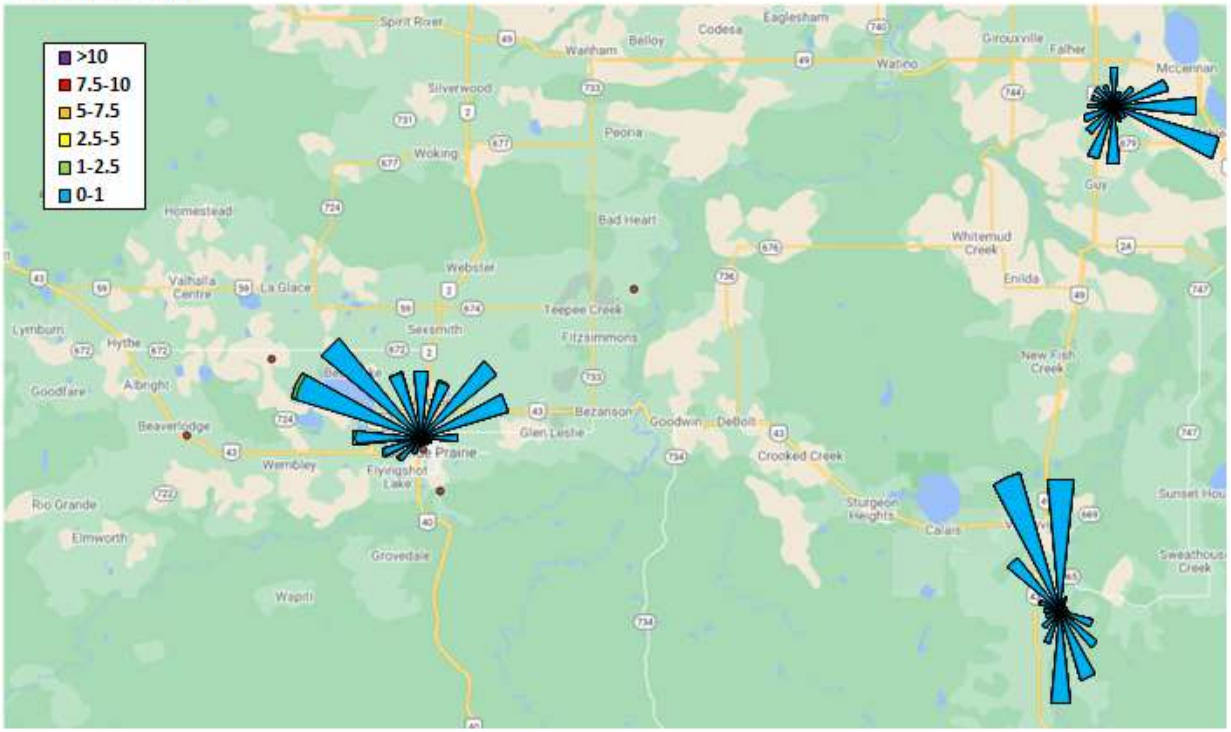
March 2023 H_2S Station Summary		
Station	Avg (ppb)	Max (ppb)
Dunes H_2S	-	-
Henry Pirker H_2S	0.3	2.4
Smoky Heights H_2S	-	-
Beaverlodge H_2S	-	-
Valleyview H_2S	0.1	1.1
Donnelly H_2S	0.1	0.4
Poplar H_2S	-	-
Milner H_2S	-	-



Hydrogen Sulphide in ppb

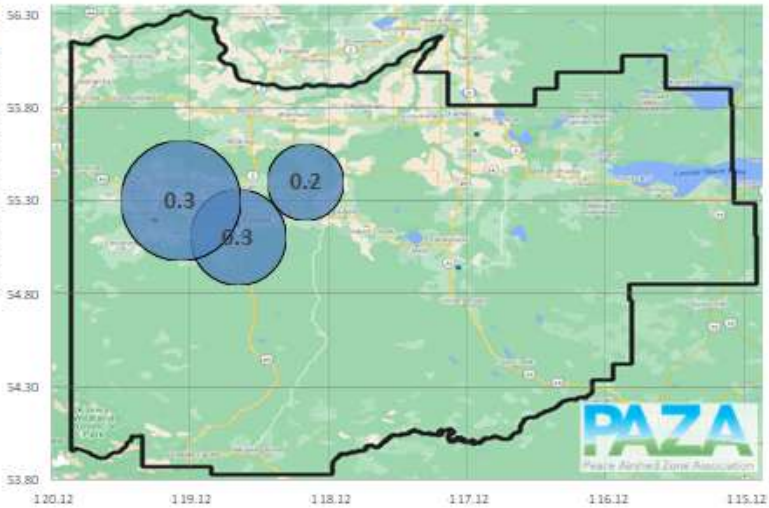


H_2S Roses in ppb

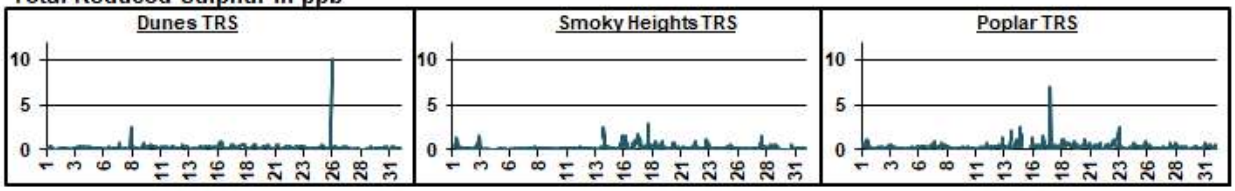


10.9 Total Reduced Sulphur (TRS) Plots

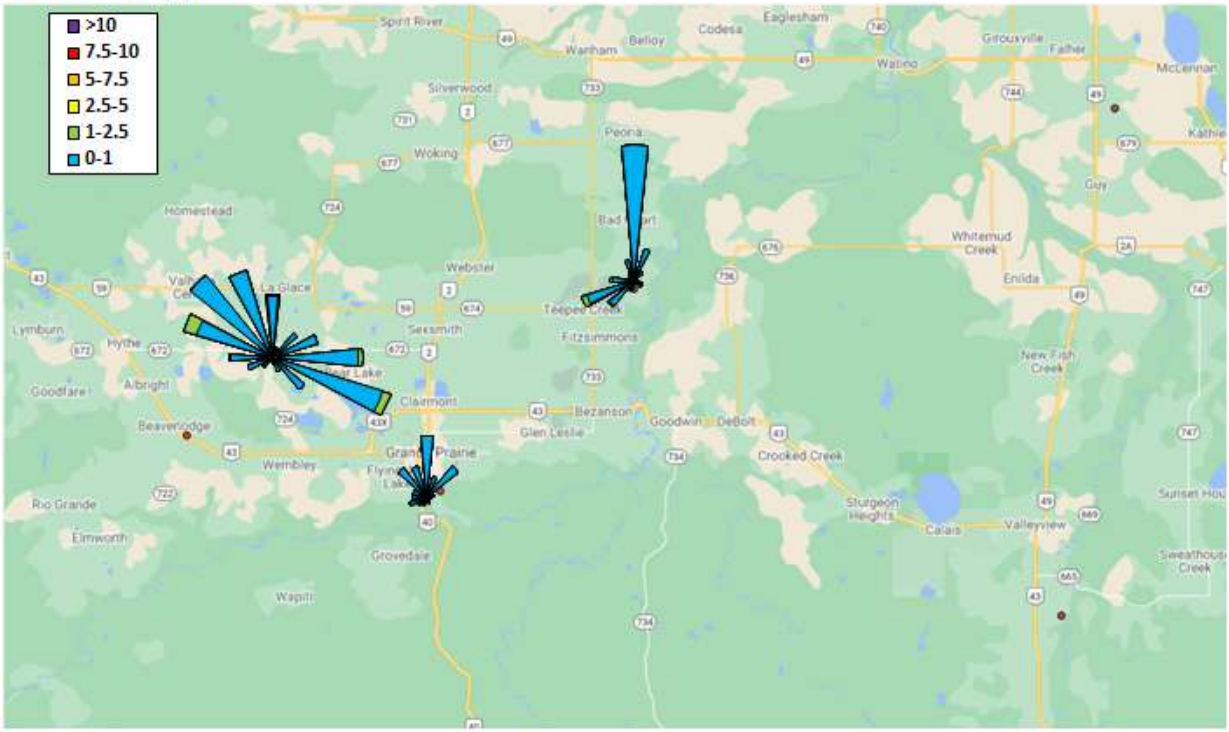
March 2023 TRS Station Summary		
Station	Avg (ppb)	Max (ppb)
Dunes TRS	0.3	10.2
Henry Pirker TRS	-	-
Smoky Heights TRS	0.2	2.8
Beaverlodge TRS	-	-
Valleyview TRS	-	-
Donnelly TRS	-	-
Poplar TRS	0.3	7.0
Milner TRS	-	-



Total Reduced Sulphur in ppb



TRS Roses in ppb

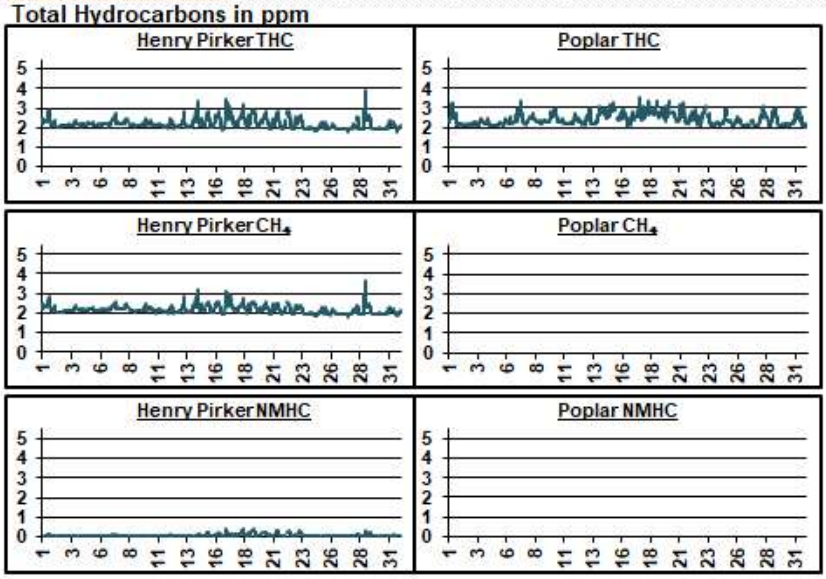


10.10 Total Hydrocarbon (THC) Plots

March 2023 THC Station Summary

Station	Total Hydrocarbons		Methane		Non-Methane HCs	
	Avg (ppm)	Max (ppm)	Avg (ppm)	Max (ppm)	Avg (ppm)	Max (ppm)
Dunes THC	-	-	-	-	-	-
Henry Pirker THC	2.2	3.9	2.2	3.6	0.0	0.4
Smoky Heights THC	-	-	-	-	-	-
Beaverlodge THC	-	-	-	-	-	-
Valleyview THC	-	-	-	-	-	-
Donnelly THC	-	-	-	-	-	-
Poplar THC	2.4	3.6	-	-	-	-

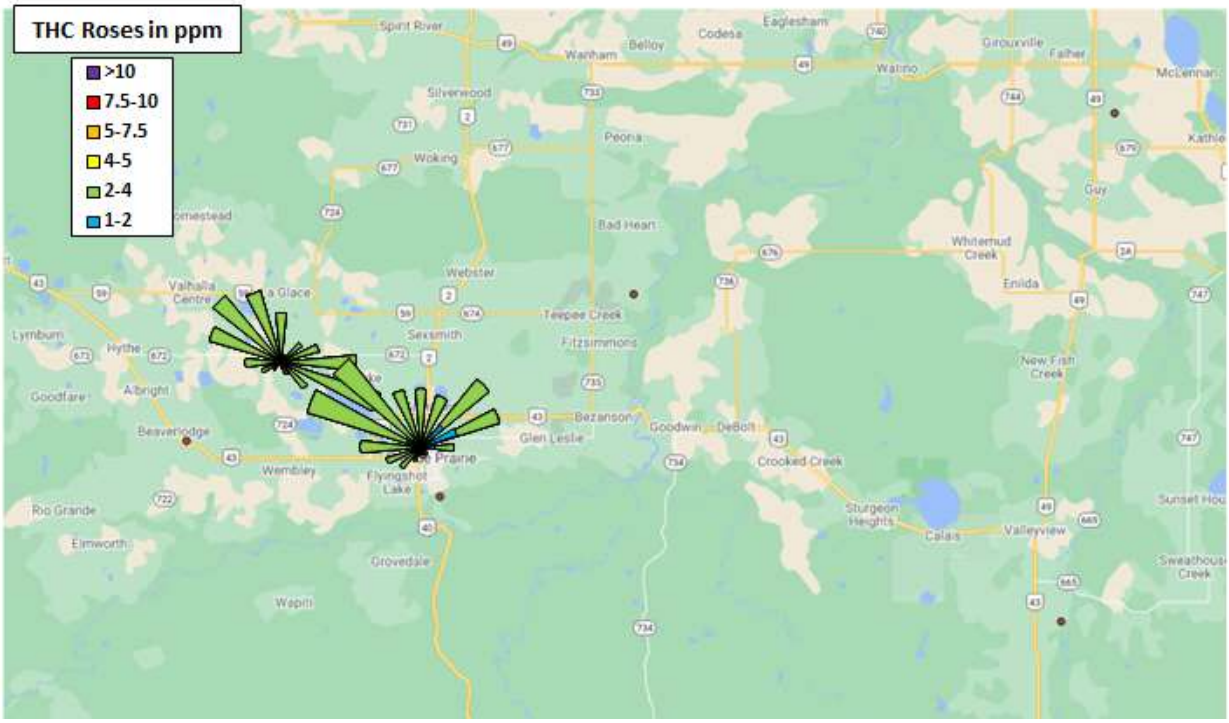
Total Hydrocarbons in ppm



Total Hydrocarbons (THC)

Methane (CH_4)

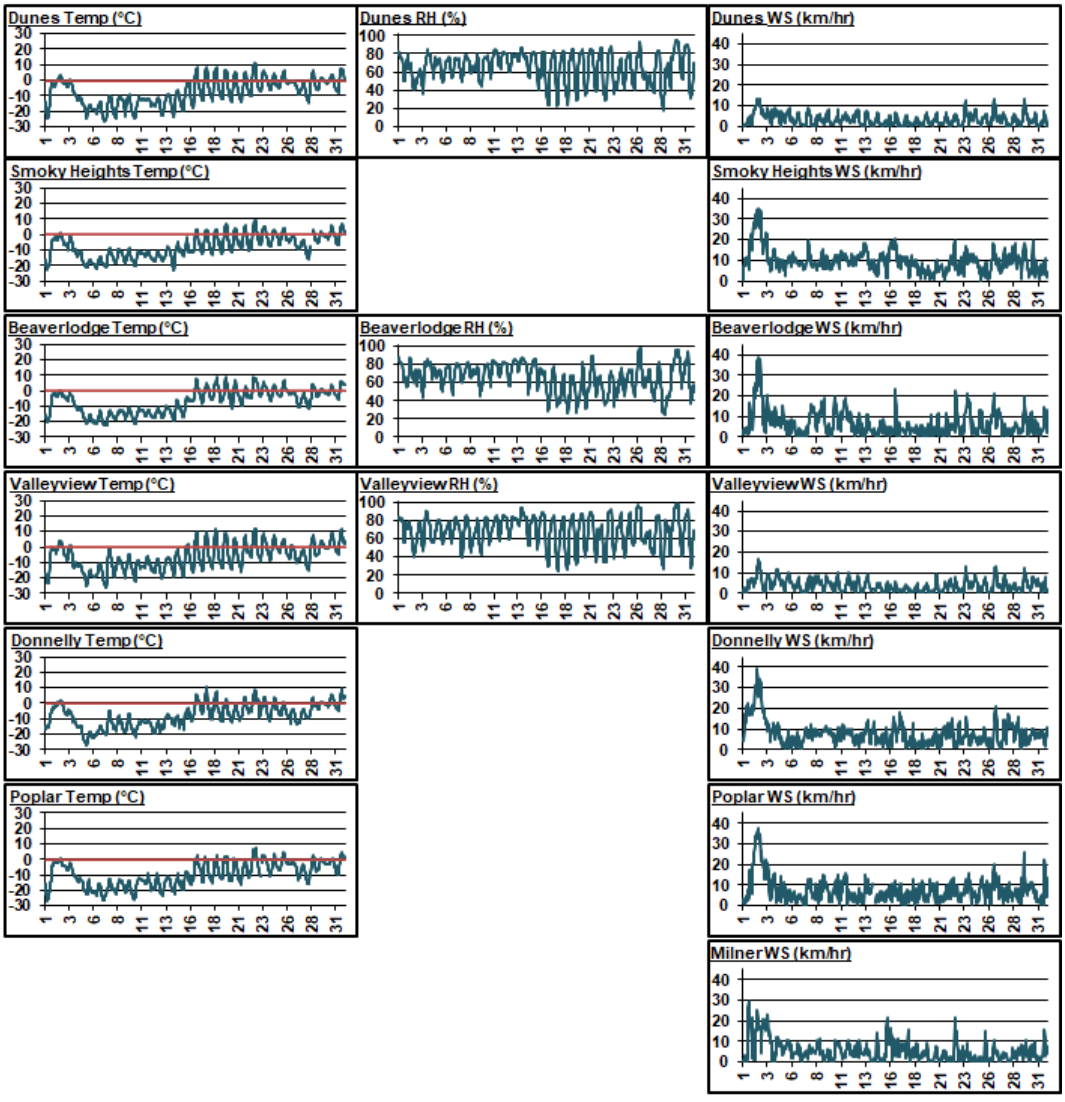
Non-Methane Hydrocarbons (NMHC)

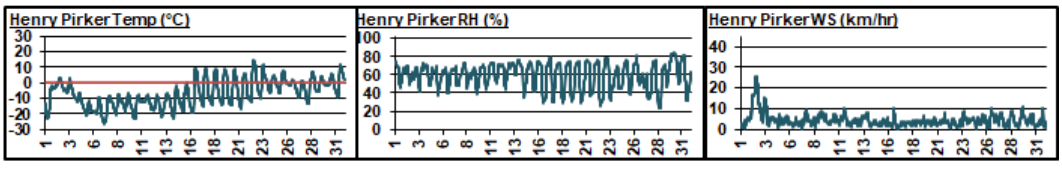


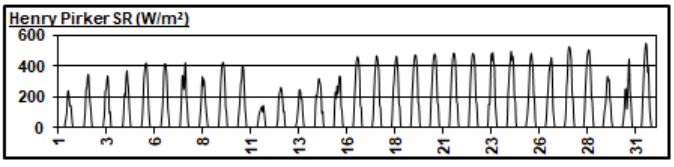
10.11 Meteorology Summary

March 2023 Meterological Summary						
Station	Temp (°C)	RH (%)	SR (W/m²)	WS (km/hr)	WD (deg)	WD
Dunes	-7.7	64.8	-	3.6	2	N
Henry Pirker	-6.7	59.2	108.8	4.5	331	NNW
Smoky Heights	-7.7	-	-	9.9	320	NW
Beaverlodge	-6.9	65.4	-	6.8	3	N
Valleyview	-6.5	67.8	-	4.0	335	NNW
Donnelly	-7.8	-	-	7.9	157	SSE
Poplar	-9.6	-	-	7.6	346	NNW
Milner	-	-	-	5.6	267	W

Temp (°C) Outside Temperature
RH (%) Relative Humidity
SR (W/m²) Solar Radiation
WS (km/hr) Wind Speed
WD (deg) Wind Direction
WD Wind Direction







11 Passive Monitoring Data

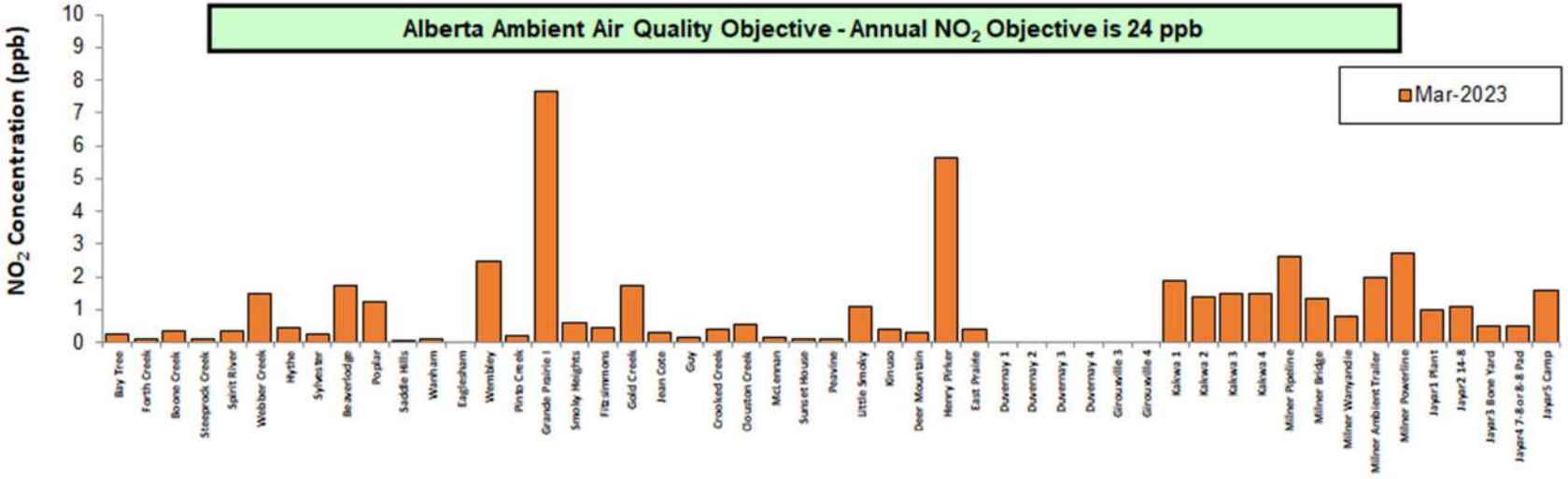
Peace Airshed Zone Association - PAZA Passive Stations for March 2023

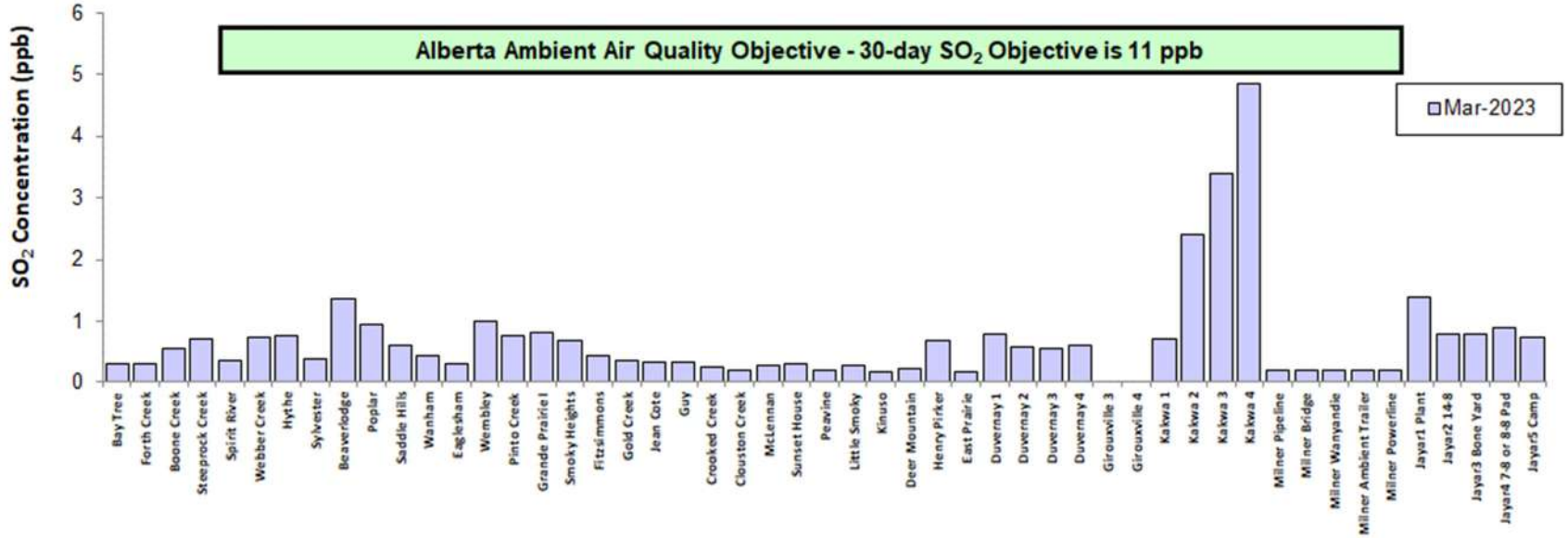
Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	H2S ppb	LSD
Duplicates						
3a	Forth Creek			**0.05**		04-13-082-07 W6M
3b	Forth Creek			**0.11**		
9a	Spirit River	**0.3**				08-12-079-07 W6M
9b	Spirit River	**0.4**				
18a	Saddle Hills	**0.7**				04-25-074-07 W6M
18b	Saddle Hills	**0.6**				
19a	Wanham	**0.5**				16-22-077-03 W6M
19b	Wanham	**0.4**				
21a	Eaglesham			**0.0**		16-21-079-25 W5M
21b	Eaglesham			**0.0**		
35a	Jean Cote	**0.3**				12-35-079-21 W5M
35b	Jean Cote	**0.3**				
40a	McLennan			**0.2**		03-29-077-19 W5M
40b	McLennan			**0.1**		
47a	Kinuso		**39.8**			12-10-073-10 W5M
47b	Kinuso		**41.8**			
48a	Deer Mountain			**0.3**		15-22-068-09 W5M
48b	Deer Mountain			**0.3**		
D2a	Duvernay 2	**0.5**			**0.12**	04-33-062-20 W5M
D2b	Duvernay 2	**0.7**			**0.02**	
G3a	Girouxville 3				**0.82**	14-02-077-23 W5M
G3b	Girouxville 3				**0.82**	
K1a	Kakwa 1			**1.8**		01-13-063-05 W6M
K1b	Kakwa 1			**2.0**		
K3a	Kakwa 3				**0.14**	12-18-063-04 W6M
K3b	Kakwa 3				**0.11**	
K4a	Kakwa 4	**4.7**				06-18-063-04 W6M
K4b	Kakwa 4	**5.0**				
M9Aa	Milner Pipeline	**0.2**				12-14-058-08 W6M
M9Ab	Milner Pipeline	**0.2**				
M5a	Milner Bridge			**1.4**		08-06-057-08 W6M
M5b	Milner Bridge			**1.3**		
J1a	Jayar1 Plant			**0.7**		06-08-062-03 W6M
J1b	Jayar1 Plant			**0.6**		
J3a	Jayar3 Bone Yard				**0.1**	14-08-062-03 W6M
J3b	Jayar3 Bone Yard				**0.1**	
J5a	Jayar5 Camp	**0.8**				11-08-062-03 W6M
J5b	Jayar5 Camp	**0.7**				

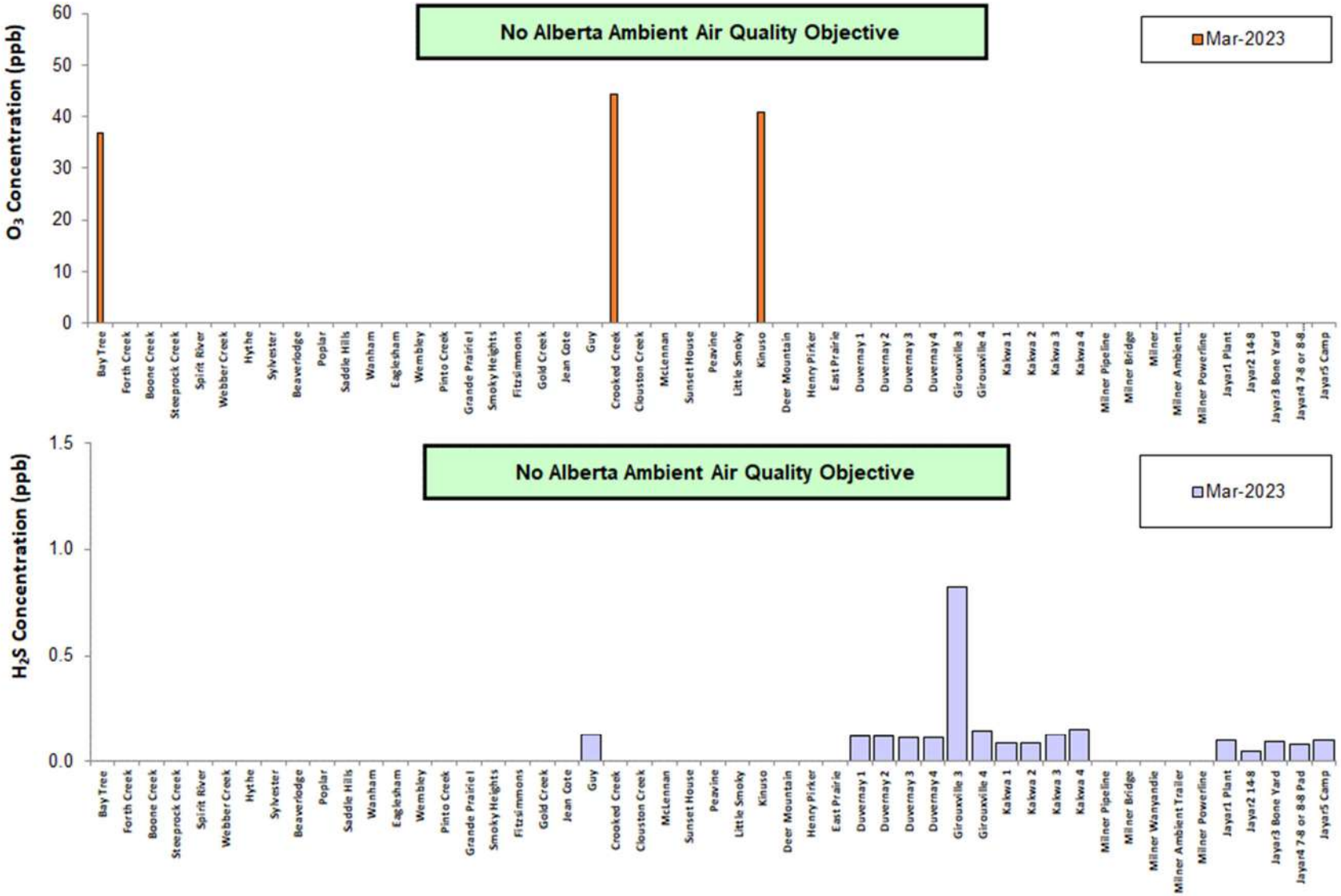
Station Name	SO2 ppb	O3 ppb	NO2 ppb	H2S ppb	LSD
Bay Tree	0.3	36.7	0.3	-	13-16-078-13 W6M
Forth Creek	0.3	-	0.1	-	04-13-082-07 W6M
Boone Creek	0.6	-	0.3	-	01-23-076-11 W6M
Steeprock Creek	0.7	-	0.1	-	09-35-072-13 W6M
Spirit River	0.3	-	0.3	-	08-12-079-07 W6M
Webber Creek	0.7	-	1.5	-	09-36-074-09 W6M
Hythe	0.8	-	0.4	-	14-36-072-11 W6M
Sylvester	0.4	-	0.2	-	08-06-069-12 W6M
Beaverlodge	1.4	-	1.8	-	15-36-071-10 W6M
Poplar	1.0	-	1.2	-	13-06-073-08 W6M
Saddle Hills	0.6	-	0.1	-	04-25-074-07 W6M
Wanham	0.4	-	0.1	-	16-22-077-03 W6M
Eaglesham	0.3	-	0.0	-	16-21-079-25 W5M
Wembley	1.0	-	2.5	-	12-31-070-08 W6M
Pinto Creek	0.8	-	0.2	-	04-24-069-11 W6M
Grande Prairie I	0.8	-	7.6	-	08-15-071-06 W6M
Smoky Heights	0.7	-	0.6	-	04-06-075-02 W6M
Fitzsimmons	0.4	-	0.5	-	15-36-072-03 W6M
Gold Creek	0.3	-	1.7	-	06-33-067-05 W6M
Jean Cote	0.3	-	0.3	-	12-35-079-21 W5M
Guy	0.3	-	0.2	0.1	03-04-076-22 W5M
Crooked Creek	0.2	44.4	0.4	-	16-01-071-26 W5M
Clouston Creek	0.2	-	0.5	-	12-01-073-22 W5M
McLennan	0.3	-	0.1	-	03-29-077-19 W5M
Sunset House	0.3	-	0.1	-	05-32-070-19 W5M
Peavine	0.2	-	0.1	-	03-05-079-15 W5M
Little Smoky	0.3	-	1.1	-	12-01-065-21 W5M
Kinuso	0.2	40.8	0.4	-	12-10-073-10 W5M
Deer Mountain	0.2	-	0.3	-	15-22-068-09 W5M
Henry Pirker	0.7	-	5.7	-	17-26-071-06 W6M
East Prairie	0.2	-	0.4	-	11-13-079-08 W6M
Duvernay 1	0.8	-	-	0.12	04-33-062-20 W5M
Duvernay 2	0.6	-	-	0.12	04-33-062-20 W5M
Duvernay 3	0.6	-	-	0.11	04-33-062-20 W5M
Duvernay 4	0.6	-	-	0.11	04-33-062-20 W5M
Girouxville 3	-	-	-	0.82	14-02-077-23 W5M
Girouxville 4	-	-	-	0.15	04-08-077-22 W5M
Kakwa 1	0.7	-	1.9	0.09	01-13-063-05 W6M
Kakwa 2	2.4	-	1.4	0.09	08-13-063-05 W6M
Kakwa 3	3.4	-	1.5	0.13	12-18-063-04 W6M
Kakwa 4	4.9	-	1.5	0.15	06-18-063-04 W6M
Milner Pipeline	0.2	-	2.6	-	12-14-058-08 W6M
Milner Bridge	0.2	-	1.4	-	08-06-057-08 W6M
Milner Wanyandie	0.2	-	0.8	-	11-13-058-08 W6M
Milner Ambient Trailer	0.2	-	2.0	-	09-15-058-08 W6M
Milner Powerline	0.2	-	2.7	-	06-14-058-08 W6M
Jayar1 Plant	1.4	-	1.0	0.10	06-08-062-03 W6M
Jayar2 14-8	0.8	-	1.1	0.05	07-08-062-03 W6M
Jayar3 Bone Yard	0.8	-	0.5	0.10	14-08-062-03 W6M
Jayar4 7-8 or 8-8 Pad	0.9	-	0.5	0.08	10-08-062-03 W6M
Jayar5 Camp	0.8	-	1.6	0.10	11-08-062-03 W6M

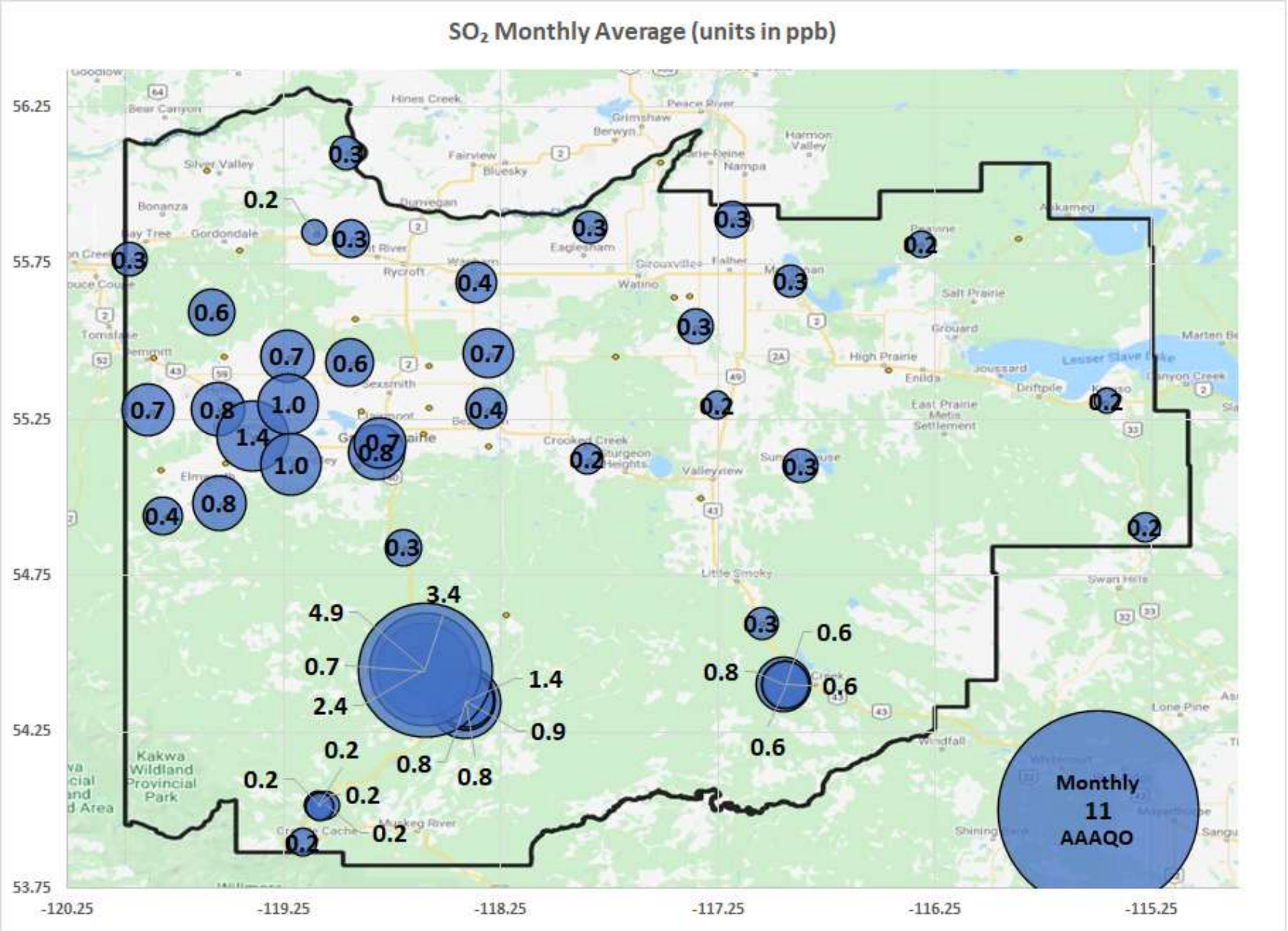
Passive Summary for March 2023

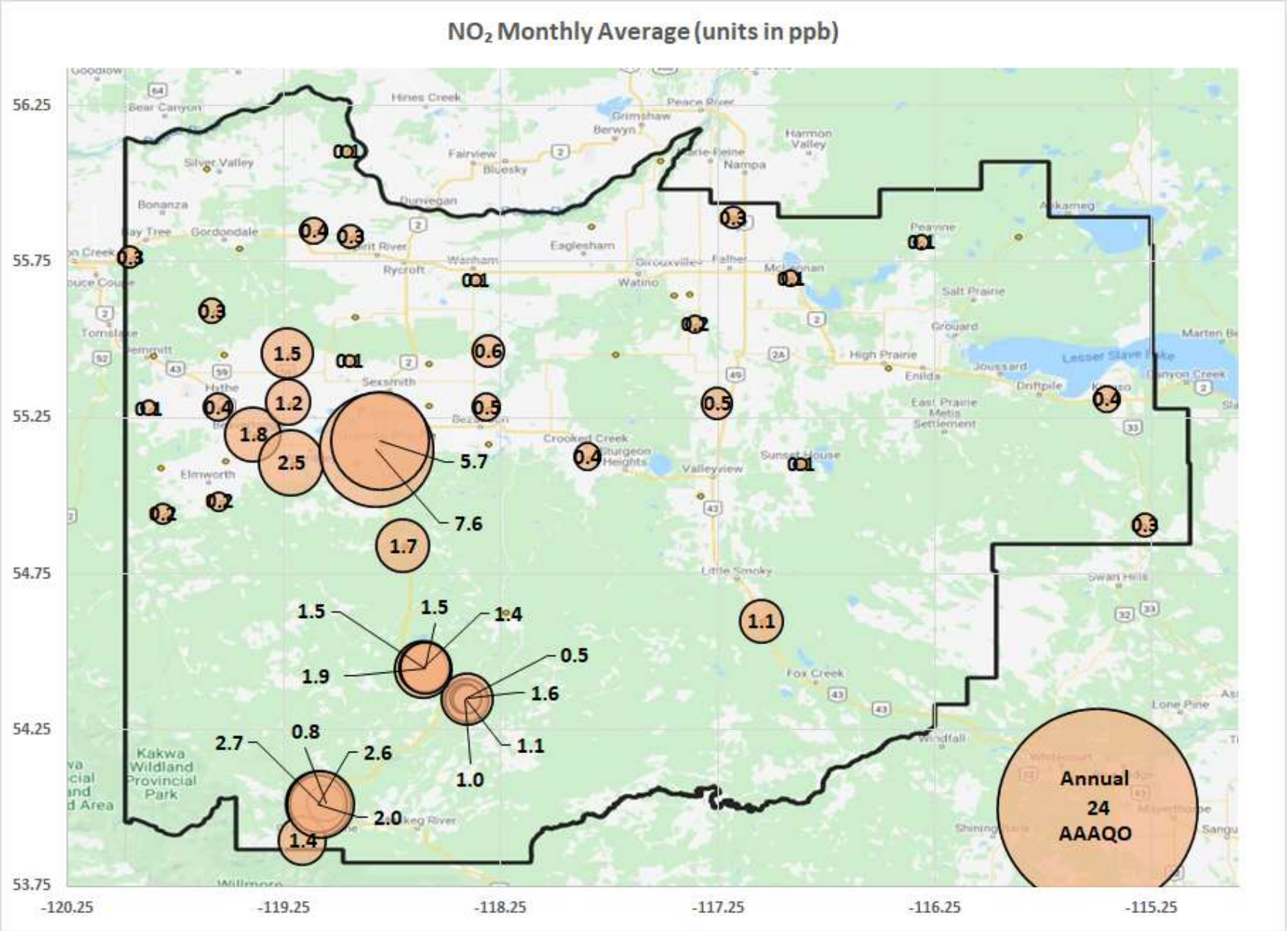
Stats	Sulphur Dioxide SO_2	Ozone O_3	Nitrogen Dioxide NO_2	Hydrogen Sulphide H_2S
	ppb	ppb	ppb	ppb
Passive Summary for March 2023 (PAZA)				
Mean	0.7	40.6	1.1	0.2
Standard Deviation	0.8	3.8	1.4	0.2
Minimum	0.2 East Prairie (#50)	36.7 Bay Tree (#2)	0.0 Eaglesham (#21)	0.1 Jayar2 14-8 (#J2)
Maximum	4.9 Kakwa 4 (#K4)	44.4 Crooked Creek (#37)	7.6 Grande Prairie I (#27)	0.8 Girouxville 3 (#G3)
Continuous and Passive Monitoring Comparision				
PAZA Beaverlodge Station	**1.3**	**37.2**	**6.7**	-
Beaverlodge Passive (#16)	**1.4**	-	**1.8**	-
PAZA Henry Pirker Station	**0.7**	**28.5**	**16.2**	**0.3**
Henry Pirker passive (#49)	**0.7**	-	**5.7**	-
Milner Station	-	-	**3.4**	-
Milner passive (M4)	**0.2**	-	**2.0**	-

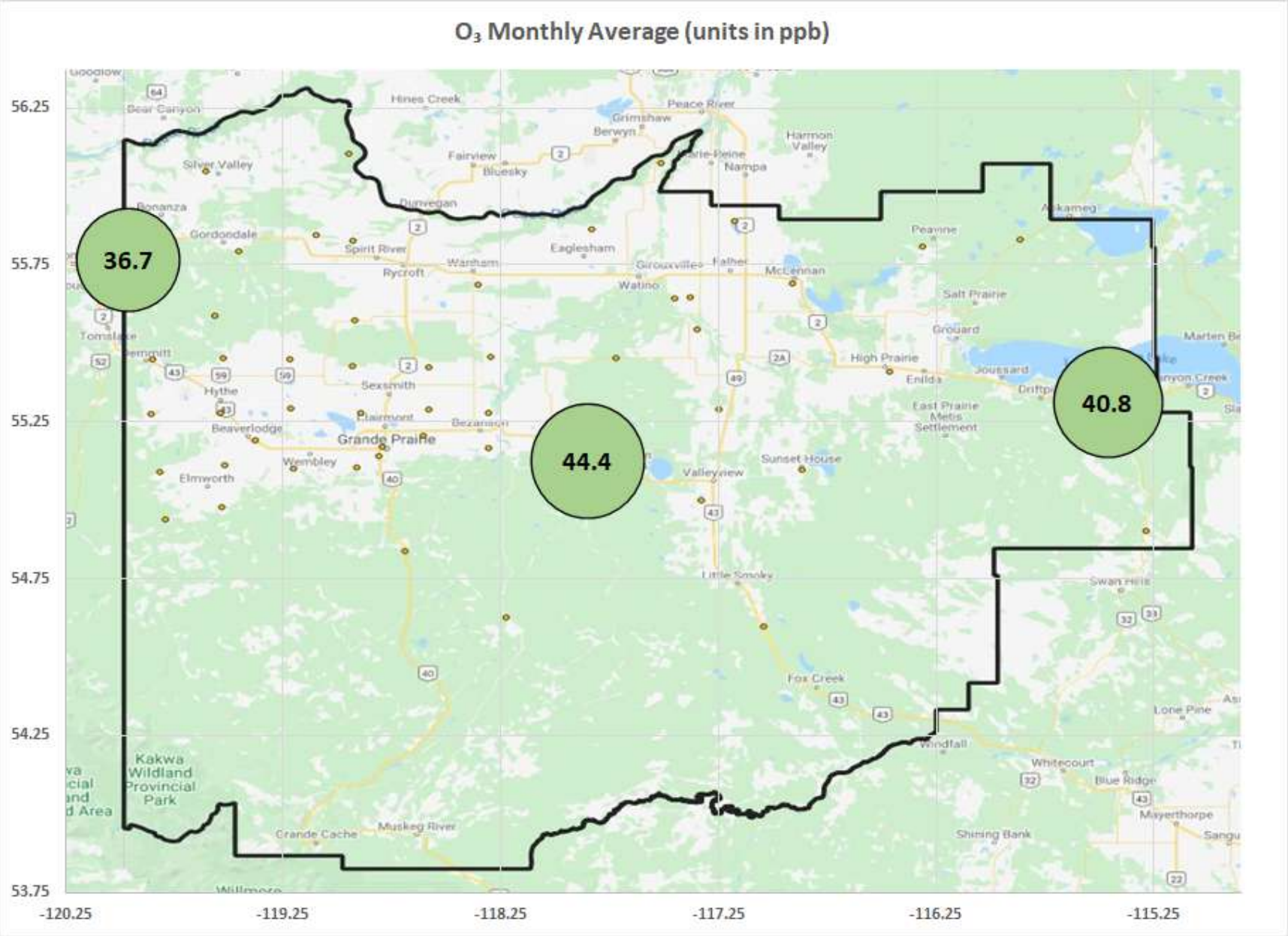

Alberta Ambient Air Quality Objective - Annual NO2 Objective is 24 ppb
NO2 Concentration (ppb)
Mar-2023
0
1
2
3
4
5
6
7
8
9
10
Bay Tree
Forth Creek
Boone Creek
Steeprock Creek
Spirit River
Webber Creek
Hythe
Sylvester
Beaverlodge
Poplar
Saddle Hills
Wanham
Eaglesham
Wembley
Pinto Creek
Grande Prairie I
Smoky Heights
Fitzsimmons
Gold Creek
Jean Cote
Guy
Crooked Creek
Clouston Creek
McLennan
Sunset House
Peavine
Little Smoky
Kinuso
Deer Mountain
Henry Pirker
East Prairie
Duvernay 1
Duvernay 2
Duvernay 3
Duvernay 4
Grouxville 3
Grouxville 4
Kakwa 1
Kakwa 2
Kakwa 3
Kakwa 4
Milner Pipeline
Milner Bridge
Milner Wanyandie
Milner Ambient Trailer
Milner Powerline
Jayar1 Plant
Jayar2 14-8
Jayar3 Bone Yard
Jayar4 7-8 or 8-8 Pad
Jayar5 Camp

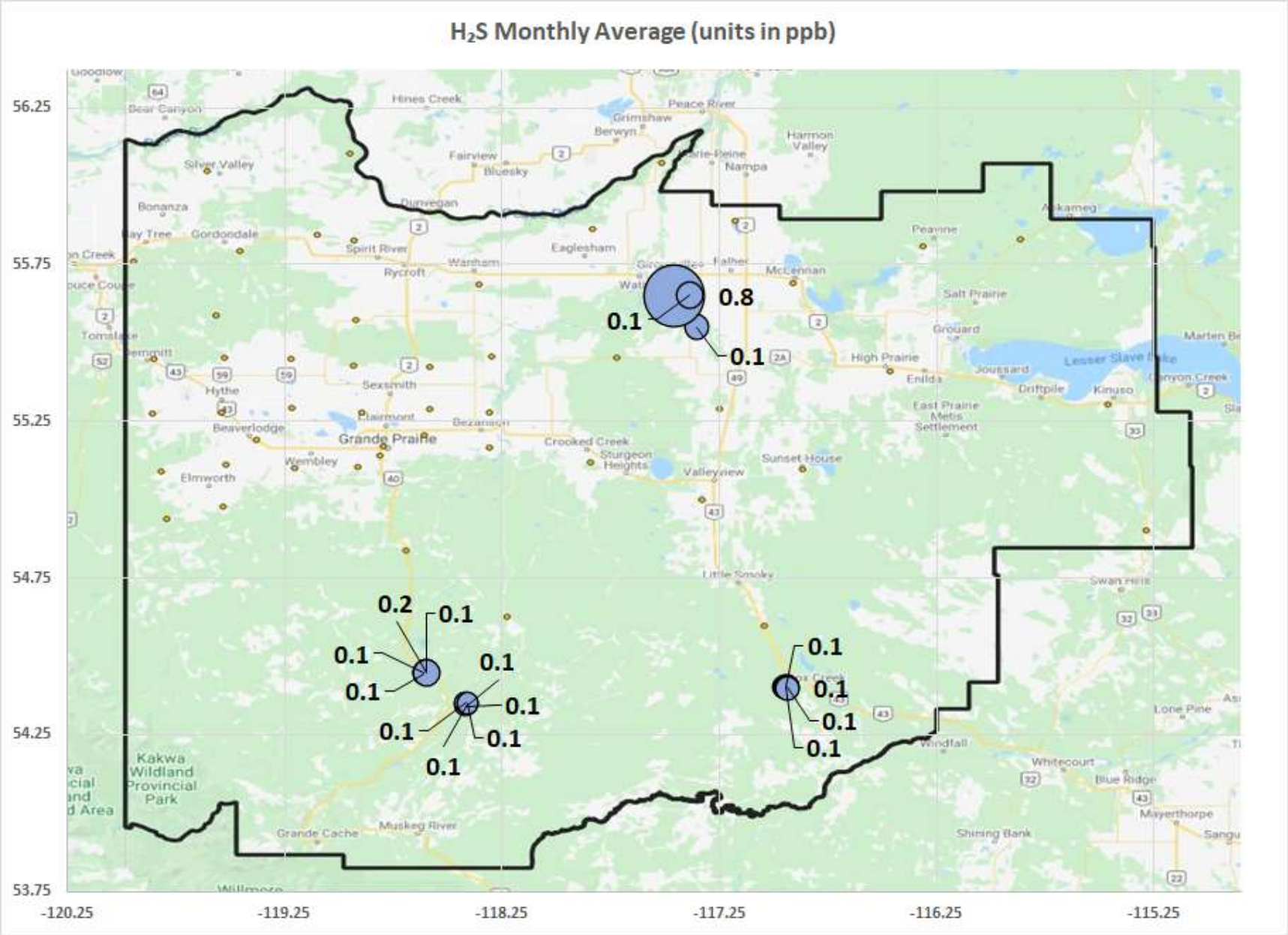

Alberta Ambient Air Quality Objective - 30-day SO2 Objective is 11 ppb
SO2 Concentration (ppb)
Mar-2023
0
1
2
3
4
5
6
Bay Tree
Forth Creek
Boone Creek
Steeprock Creek
Spirit River
Webber Creek
Hythe
Sylvester
Beaverlodge
Poplar
Saddle Hills
Wanham
Eaglesham
Wembley
Pinto Creek
Grande Prairie I
Smoky Heights
Fitzsimmons
Gold Creek
Jean Cote
Guy
Crooked Creek
Clouston Creek
McLennan
Sunset House
Peavine
Little Smoky
Kinuso
Deer Mountain
Henry Pirker
East Prairie
Duvernay 1
Duvernay 2
Duvernay 3
Duvernay 4
Grouxville 3
Grouxville 4
Kakwa 1
Kakwa 2
Kakwa 3
Kakwa 4
Milner Pipeline
Milner Bridge
Milner Wanyandie
Milner Ambient Trailer
Milner Powerline
Jayar1 Plant
Jayar2 14-8
Jayar3 Bone Yard
Jayar4 7-8 or 8-8 Pad
Jayar5 Camp


No Alberta Ambient Air Quality Objective
Mar-2023
O3 Concentration (ppb)
60
50
40
30
20
10
0
Bay Tree
Forth Creek
Boone Creek
Steeprock Creek
Spirit River
Webber Creek
Hythe
Sylvester
Beaverlodge
Poplar
Saddle Hills
Wanham
Eaglesham
Wembley
Pinto Creek
Grande Prairie I
Smoky Heights
Fitzsimmons
Gold Creek
Jean Cote
Guy
Crooked Creek
Clouston Creek
McLennan
Sunset House
Peavine
Little Smoky
Kinuso
Deer Mountain
Henry Pirker
East Prairie
Duvernay 1
Duvernay 2
Duvernay 3
Duvernay 4
Girouxville 3
Girouxville 4
Kakwa 1
Kakwa 2
Kakwa 3
Kakwa 4
Milner Pipeline
Milner Bridge
Milner
Milner Ambient
Milner Powerline
Jayar1 Plant
Jayar2 14-8
Jayar3 Bone Yard
Jayar4 7-8 or 8-8
Jayar5 Camp
No Alberta Ambient Air Quality Objective
Mar-2023
H2S Concentration (ppb)
1.5
1.0
0.5
0.0
Bay Tree
Forth Creek
Boone Creek
Steeprock Creek
Spirit River
Webber Creek
Hythe
Sylvester
Beaverlodge
Poplar
Saddle Hills
Wanham
Eaglesham
Wembley
Pinto Creek
Grande Prairie I
Smoky Heights
Fitzsimmons
Gold Creek
Jean Cote
Guy
Crooked Creek
Clouston Creek
McLennan
Sunset House
Peavine
Little Smoky
Kinuso
Deer Mountain
Henry Pirker
East Prairie
Duvernay 1
Duvernay 2
Duvernay 3
Duvernay 4
Girouxville 3
Girouxville 4
Kakwa 1
Kakwa 2
Kakwa 3
Kakwa 4
Milner Pipeline
Milner Bridge
Milner Wanyandie
Milner Ambient Trailer
Milner Powerline
Jayar1 Plant
Jayar2 14-8
Jayar3 Bone Yard
Jayar4 7-8 or 8-8 Pad
Jayar5 Camp


SO2 Monthly Average (units in ppb)
56.25
55.75
55.25
54.75
54.25
53.75
-120.25
-119.25
-118.25
-117.25
-116.25
-115.25
Monthly
11
AAAQO


NO2 Monthly Average (units in ppb)
56.25
55.75
55.25
54.75
54.25
53.75
-120.25
-119.25
-118.25
-117.25
-116.25
-115.25
Hines Creek
Peace River
Grimshaw
Berwyn
Harmon Valley
Silver Valley
Fairview
Bluesky
Nampa
Bonanza
Dunvegan
Bay Tree
Gordondale
Eaglesham
Rycroft
Watino
Pearsine
Salt Prairie
Grouard
High Prairie
Enilda
Joussard
Driftpile
East Prairie Metis Settlement
Sexsmith
Hythe
Elmworth
Crooked Creek
Valleyview
Sunset House
Little Smoky
Fox Creek
Swan Hills
Lone Pine
Kakwa Wildland Provincial Park
Annual 24 AAAQO
0.01
0.3
0.4
0.6
0.5
0.2
1.5
1.2
1.8
2.5
5.7
7.6
1.7
1.4
1.9
1.6
1.1
1.0
2.7
0.8
2.6
2.0

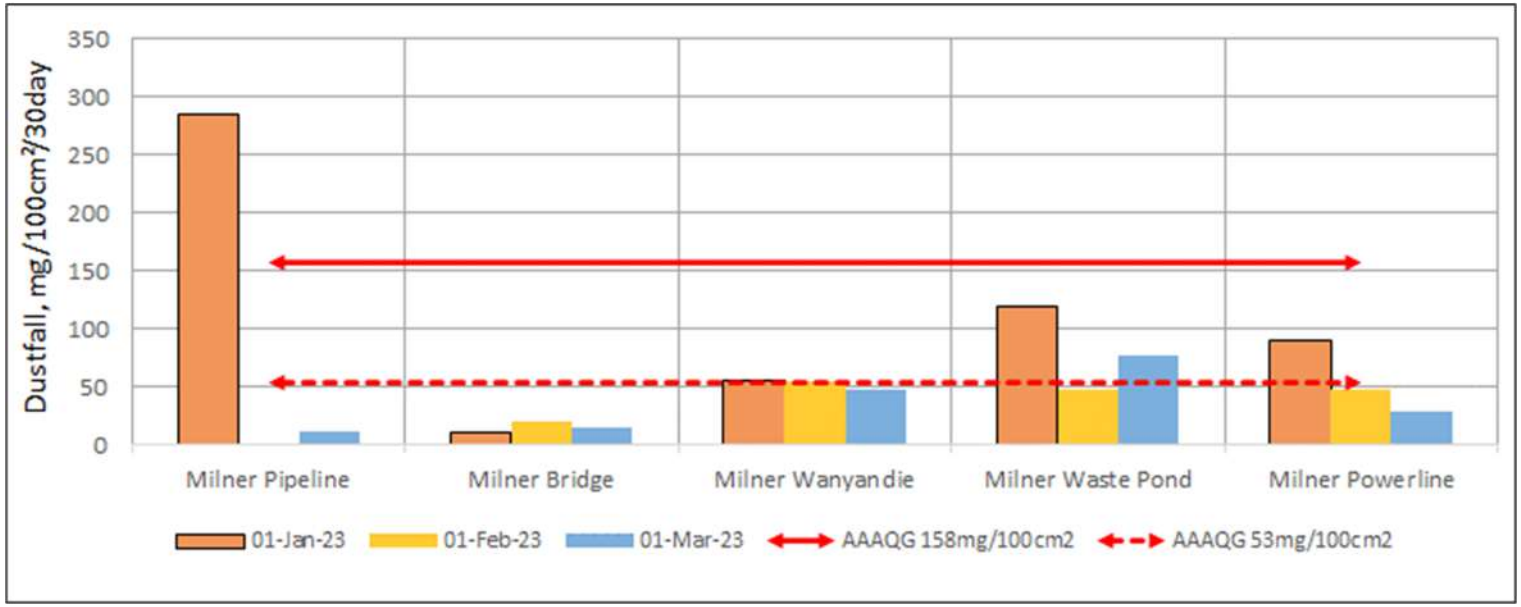

O3 Monthly Average (units in ppb)
36.7
44.4
40.8
56.25
55.75
55.25
54.75
54.25
53.75
-120.25
-119.25
-118.25
-117.25
-116.25
-115.25
Hines Creek
Peace River
Grimshaw
Berwyn
Harmon Valley
Fairview
Bluesky
Nampa
Dunvegan
Gordondale
Spirit River
Eaglesham
Rycroft
Warburn
Girouxville
Father
McLennan
Watino
Peavine
Salt Prairie
Grouard
High Prairie
Enilda
Joussard
East Prairie Metis Settlement
Hythe
Sexsmith
Beaverlodge
Grande Prairie
Wembley
Elmworth
Valleyview
Sunset House
Little Smoky
Swan Hills
Fox Creek
Lone Pine
Windfall
Whitecourt
Blue Ridge
Mayerthorpe
Kakwa Wildland Provincial Park
Muskeg River
Shining Bank


H2S Monthly Average (units in ppb)
56.25
55.75
55.25
54.75
54.25
53.75
-120.25
-119.25
-118.25
-117.25
-116.25
-115.25
0.8
0.1
0.1
0.2
0.1
0.1
0.1
0.1
0.1
0.1
0.1
0.1
0.1
0.1
0.1
Grande Prairie
Kakwa Wildland Provincial Park
Peace River
Fairview
Dunvegan
Spirit River
Rycroft
Eaglesham
Sexsmith
Beaverlodge
Wembley
Elmworth
Crooked Creek
Sturgeon Heights
Valleyview
Sunset House
High Prairie
Grouard
Salt Prairie
Peavine
Driftpile
Kinuso
East Prairie Metis Settlement
Swan Hills
Whitecourt
Blue Ridge
Mayerthorpe
Lone Pine
Windfall
Grande Cache
Muskeg River
Shining Bank

12 Dustfall Monitoring Data

Milner Dustfall Samples March 2023

Exposure Month	Year	Sample	Total Dustfall (30 day) mg/100cm²/30day	Fixed Dustfall (30 day) mg/100cm²/30day	Exposure days	Field Notes
March	2023	Milner Pipeline	11.7	9.6	32	
March	2023	Milner Bridge	14.5	2.8	32	
March	2023	Milner Wanyandie	47.5	24.1	32	
March	2023	Milner Waste Pond	77.1	10.3	32	
March	2023	Milner Powerline	28.9	10.3	32	
March	2023	Milner Powerline Dup	30.3	9.6	32	RPD= 5% / 7%



13 End of Report

End of Report

Peace Airshed Zone Association

Ambient Air Monitoring Report

March 2023