



Peace Airshed Zone Association
Ambient Air Quality Monitoring Program
Annual Report
2018

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List of Acronyms

AAAQDW	Alberta Ambient Air Quality Data Warehouse
AAAQO	Alberta Ambient Air Quality Objective and Guideline
AEP	Alberta Environment and Parks
CH ₄	Methane
CO	Carbon monoxide
ET	Ambient temperature
H ₂ S	Hydrogen sulphide
NMHC	Non-methane hydrocarbons
NO	Nitric oxide
NO ₂	Nitrogen dioxide
NO _x	Total oxides of nitrogen
O ₃	Ozone
PM _{2.5}	Fine particulate matter
ppb	Parts per billion
ppm	Parts per million
RH	Relative humidity
SO ₂	Sulphur dioxide
THC	Total hydrocarbons
TRS	Total Reduced Sulfur
µg/m ³	Micrograms per cubic meter



February 28, 2020

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**RE: 2018 Annual Ambient Air Quality Monitoring Report
Peace Airshed Zone Association**

Enclosed is the 2018 Annual Ambient Air Quality Monitoring Report for the continuous and passive ambient air quality monitoring stations of the Peace Airshed Zone Association (PAZA) regional air quality monitoring network, as operated in the year 2018.

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

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In 2018, PAZA retained the services of: WSP for the operation and maintenance of the continuous monitoring station; Dawn Ewan for the operation and maintenance of the passive monitoring sites; Andersen Science Consulting for the data validation and reporting for the continuous and passive monitoring stations.

The PAZA network operated continuous monitoring at a total of 8 sites in 2018 – Beaverlodge, Donnelly, Evergreen Park, Henry Pirker, Smoky Heights, Valleyview, Portable-Rycroft and Portable-Wembley. Data in this report includes all sites monitored in 2018. The passive monitoring network operated at 32 sites in 2018.

The continuous air monitoring stations measured the following parameters in 2018:

Parameter:	Station(s):
Sulphur Dioxide (SO₂)	All
Nitrogen Dioxide (NO₂ , NO, NO _x)	Beaverlodge, Henry Pirker, Portable-Rycroft, Portable-Wembley
Ozone (O₃)	Beaverlodge, Henry Pirker, Portable-Rycroft, Portable-Wembley
Carbon Monoxide (CO)	Henry Pirker
Total Hydrocarbons (THC)	Henry Pirker, Portable-Rycroft, Portable-Wembley
Methane (CH₄)	Henry Pirker, Portable-Rycroft, Portable-Wembley
Non-Methane Hydrocarbon (NMHC)	Henry Pirker, Portable-Rycroft, Portable-Wembley
Total Reduced Sulfur (TRS)	Evergreen Park, Smoky Heights, Portable-Rycroft, Portable-Wembley
Hydrogen Sulfide (H₂S)	Donnelly, Henry Pirker, Valleyview
Particulate Matter (PM_{2.5})	Beaverlodge, Evergreen Park, Henry Pirker, Smoky Heights, Portable-Rycroft, Portable-Wembley
Wind Speed & Wind Direction (WS & WD)	All
Relative Humidity (RH)	Beaverlodge, Evergreen Park, Henry Pirker, Valleyview
Temperature (Temp)	All

AAAQO Exceedances Report:

There were 2 1-hour exceedances of the AAAQO for H₂S (10 ppb) recorded in 2018.

There was 1 1-hour exceedance of the AAAQO for O₃ (82 ppb) recorded in 2018.

There were 527 1-hour and 57 24-hour exceedances of the AAAQO for PM_{2.5} (80/30 µg/m³) recorded in 2018.

Station Name	Date	Start Time	End Time	H ₂ S Concentration	Reference Number
		(MST)	(MST)	(ppb)	
Henry Pirker	07-Nov-18	03:00	04:00	10.2	346363
Henry Pirker	07-Nov-18	04:00	05:00	12.0	346363

Station Name	Date	Start Time	End Time	O ₃ Concentration	Reference Number
		(MST)	(MST)	(ppb)	
Henry Pirker	20-Jun-18	11:00	12:00	82.6	341644

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
		(MST)	(MST)	(µg/m ³)	
Beaverlodge	16-Jan-18	17:00	18:00	115.8	333790
Beaverlodge	16-Jan-18	18:00	19:00	109.6	333790
Smoky Heights	23-Jan-18	18:00	19:00	124.0	334034
Henry Pirker	26-Jan-18	20:00	21:00	82.4	333791
Smoky Heights	27-Jan-18	10:00	11:00	84.8	334132
Beaverlodge	24-May-18	09:00	10:00	89.5	338589
Beaverlodge	24-May-18	10:00	11:00	99.0	338589
Henry Pirker	24-May-18	12:00	13:00	108.3	338607
Henry Pirker	30-Jun-18	23:00	00:00	131.8	340365
Rycroft-Portable	07-Aug-18	13:00	14:00	84.3	341902
Smoky Heights	07-Aug-18	13:00	14:00	99.4	341901
Rycroft-Portable	07-Aug-18	14:00	15:00	88.2	341902
Smoky Heights	07-Aug-18	14:00	15:00	107.7	341901
Smoky Heights	08-Aug-18	15:00	16:00	82.6	342041
Smoky Heights	08-Aug-18	16:00	17:00	115.4	342041
Beaverlodge	08-Aug-18	16:00	17:00	118.4	342001
Rycroft-Portable	08-Aug-18	16:00	17:00	87.5	342002
Smoky Heights	08-Aug-18	17:00	18:00	99.7	342041
Beaverlodge	08-Aug-18	17:00	18:00	116.0	342001
Rycroft-Portable	08-Aug-18	17:00	18:00	83.3	342002
Beaverlodge	08-Aug-18	18:00	19:00	112.5	342001

Station Name	Date	Start Time	End Time	PM_{2.5} Concentration	Reference Number
Beaverlodge	08-Aug-18	19:00	20:00	89.4	342001
Evergreen Park	08-Aug-18	19:00	20:00	92.3	342040
Henry Pirker	08-Aug-18	19:00	20:00	120.1	342039
Evergreen Park	08-Aug-18	20:00	21:00	104.1	342040
Henry Pirker	08-Aug-18	20:00	21:00	114.7	342039
Evergreen Park	08-Aug-18	21:00	22:00	99.9	342040
Henry Pirker	08-Aug-18	21:00	22:00	99.9	342039
Evergreen Park	08-Aug-18	22:00	23:00	91.1	342040
Henry Pirker	08-Aug-18	22:00	23:00	89.9	342039
Evergreen Park	08-Aug-18	23:00	00:00	81.8	342040
Henry Pirker	08-Aug-18	23:00	00:00	82.1	342039
Evergreen Park	09-Aug-18	03:00	04:00	82.6	342171
Evergreen Park	09-Aug-18	04:00	05:00	86.8	342171
Henry Pirker	09-Aug-18	04:00	05:00	87.3	342168
Evergreen Park	09-Aug-18	05:00	06:00	88.1	342171
Henry Pirker	09-Aug-18	05:00	06:00	98.2	342168
Evergreen Park	09-Aug-18	06:00	07:00	84.2	342171
Henry Pirker	09-Aug-18	06:00	07:00	89.8	342168
Beaverlodge	09-Aug-18	06:00	07:00	82.4	342166
Evergreen Park	09-Aug-18	07:00	08:00	92.1	342171
Henry Pirker	09-Aug-18	07:00	08:00	83.0	342168
Beaverlodge	09-Aug-18	07:00	08:00	81.5	342166
Evergreen Park	09-Aug-18	08:00	09:00	90.8	342171
Beaverlodge	09-Aug-18	08:00	09:00	81.8	342166
Evergreen Park	09-Aug-18	09:00	10:00	99.7	342171
Rycroft-Portable	09-Aug-18	09:00	10:00	85.4	342172
Rycroft-Portable	09-Aug-18	10:00	11:00	99.7	342172
Beaverlodge	09-Aug-18	11:00	12:00	84.7	342166
Rycroft-Portable	09-Aug-18	11:00	12:00	133.6	342172
Beaverlodge	09-Aug-18	12:00	13:00	111.0	342166
Henry Pirker	09-Aug-18	12:00	13:00	94.4	342168
Rycroft-Portable	09-Aug-18	12:00	13:00	149.6	342172
Beaverlodge	09-Aug-18	13:00	14:00	122.3	342166
Henry Pirker	09-Aug-18	13:00	14:00	107.4	342168
Rycroft-Portable	09-Aug-18	13:00	14:00	145.1	342172
Beaverlodge	09-Aug-18	14:00	15:00	132.4	342166
Henry Pirker	09-Aug-18	14:00	15:00	139.7	342168
Rycroft-Portable	09-Aug-18	14:00	15:00	128.5	342172
Evergreen Park	09-Aug-18	14:00	15:00	157.5	342171

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
Beaverlodge	09-Aug-18	15:00	16:00	114.5	342166
Henry Pirker	09-Aug-18	15:00	16:00	136.7	342168
Rycroft-Portable	09-Aug-18	15:00	16:00	87.2	342172
Evergreen Park	09-Aug-18	15:00	16:00	149.6	342171
Beaverlodge	09-Aug-18	16:00	17:00	82.2	342166
Henry Pirker	09-Aug-18	16:00	17:00	134.8	342168
Evergreen Park	09-Aug-18	16:00	17:00	145.7	342171
Henry Pirker	09-Aug-18	17:00	18:00	125.2	342168
Evergreen Park	09-Aug-18	17:00	18:00	143.5	342171
Henry Pirker	09-Aug-18	18:00	19:00	113.9	342168
Smoky Heights	09-Aug-18	18:00	19:00	94.0	342176
Evergreen Park	09-Aug-18	18:00	19:00	135.0	342171
Rycroft-Portable	09-Aug-18	18:00	19:00	82.6	342172
Henry Pirker	09-Aug-18	19:00	20:00	113.0	342168
Smoky Heights	09-Aug-18	19:00	20:00	147.6	342176
Evergreen Park	09-Aug-18	19:00	20:00	122.5	342171
Rycroft-Portable	09-Aug-18	19:00	20:00	82.0	342172
Henry Pirker	09-Aug-18	20:00	21:00	106.1	342168
Smoky Heights	09-Aug-18	20:00	21:00	130.8	342176
Evergreen Park	09-Aug-18	20:00	21:00	124.1	342171
Henry Pirker	09-Aug-18	21:00	22:00	108.3	342168
Smoky Heights	09-Aug-18	21:00	22:00	141.9	342176
Evergreen Park	09-Aug-18	21:00	22:00	116.4	342171
Rycroft-Portable	09-Aug-18	21:00	22:00	103.6	342172
Henry Pirker	09-Aug-18	22:00	23:00	112.1	342168
Smoky Heights	09-Aug-18	22:00	23:00	136.5	342176
Evergreen Park	09-Aug-18	22:00	23:00	108.6	342171
Beaverlodge	09-Aug-18	22:00	23:00	86.4	342166
Rycroft-Portable	09-Aug-18	22:00	23:00	106.4	342172
Henry Pirker	09-Aug-18	23:00	00:00	117.8	342168
Smoky Heights	09-Aug-18	23:00	00:00	125.6	342176
Evergreen Park	09-Aug-18	23:00	00:00	105.8	342171
Beaverlodge	09-Aug-18	23:00	00:00	87.9	342166
Rycroft-Portable	09-Aug-18	23:00	00:00	117.3	342172
Smoky Heights	09-Aug-18	00:00	01:00	114.8	342176
Evergreen Park	09-Aug-18	00:00	01:00	84.3	342171
Smoky Heights	09-Aug-18	01:00	02:00	114.2	342176
Evergreen Park	09-Aug-18	01:00	02:00	82.5	342171
Smoky Heights	09-Aug-18	02:00	03:00	125.9	342176

Station Name	Date	Start Time	End Time	PM_{2.5} Concentration	Reference Number
Smoky Heights	09-Aug-18	03:00	04:00	136.8	342176
Smoky Heights	09-Aug-18	04:00	05:00	140.2	342176
Smoky Heights	09-Aug-18	05:00	06:00	140.4	342176
Beaverlodge	10-Aug-18	02:00	03:00	81.9	342263
Beaverlodge	10-Aug-18	03:00	04:00	89.0	342263
Beaverlodge	10-Aug-18	05:00	06:00	109.0	342263
Beaverlodge	10-Aug-18	06:00	07:00	254.1	342263
Beaverlodge	10-Aug-18	07:00	08:00	263.9	342263
Evergreen Park	10-Aug-18	07:00	08:00	84.7	342265
Beaverlodge	10-Aug-18	08:00	09:00	254.5	342263
Evergreen Park	10-Aug-18	08:00	09:00	87.1	342265
Beaverlodge	10-Aug-18	09:00	10:00	239.8	342263
Evergreen Park	10-Aug-18	09:00	10:00	144.5	342265
Beaverlodge	10-Aug-18	10:00	11:00	231.9	342263
Evergreen Park	10-Aug-18	10:00	11:00	174.6	342265
Beaverlodge	10-Aug-18	11:00	12:00	225.0	342263
Evergreen Park	10-Aug-18	11:00	12:00	200.0	342265
Beaverlodge	10-Aug-18	12:00	13:00	210.0	342263
Evergreen Park	10-Aug-18	12:00	13:00	194.0	342265
Beaverlodge	10-Aug-18	13:00	14:00	169.2	342263
Evergreen Park	10-Aug-18	13:00	14:00	179.6	342265
Beaverlodge	10-Aug-18	14:00	15:00	137.9	342263
Evergreen Park	10-Aug-18	14:00	15:00	148.5	342265
Rycroft-Portable	10-Aug-18	14:00	15:00	115.4	342267
Beaverlodge	10-Aug-18	15:00	16:00	110.0	342263
Evergreen Park	10-Aug-18	15:00	16:00	139.9	342265
Rycroft-Portable	10-Aug-18	15:00	16:00	84.4	342267
Beaverlodge	10-Aug-18	16:00	17:00	122.0	342263
Evergreen Park	10-Aug-18	16:00	17:00	125.2	342265
Beaverlodge	10-Aug-18	17:00	18:00	172.1	342263
Evergreen Park	10-Aug-18	17:00	18:00	134.4	342265
Beaverlodge	10-Aug-18	18:00	19:00	164.8	342263
Evergreen Park	10-Aug-18	18:00	19:00	142.2	342265
Beaverlodge	10-Aug-18	19:00	20:00	135.3	342263
Evergreen Park	10-Aug-18	19:00	20:00	155.4	342265
Beaverlodge	10-Aug-18	20:00	21:00	92.5	342263
Evergreen Park	10-Aug-18	20:00	21:00	119.8	342265
Beaverlodge	10-Aug-18	21:00	22:00	82.0	342263
Beaverlodge	10-Aug-18	22:00	23:00	98.4	342263

Station Name	Date	Start Time	End Time	PM_{2.5} Concentration	Reference Number
Beaverlodge	10-Aug-18	23:00	00:00	109.5	342263
Henry Pirker	10-Aug-18	00:00	01:00	114.2	342266
Evergreen Park	10-Aug-18	00:00	01:00	103.7	342265
Rycroft-Portable	10-Aug-18	00:00	01:00	115.2	342267
Evergreen Park	10-Aug-18	01:00	02:00	101.2	342265
Henry Pirker	10-Aug-18	01:00	02:00	112.0	342266
Rycroft-Portable	10-Aug-18	01:00	02:00	90.0	342267
Evergreen Park	10-Aug-18	02:00	03:00	99.8	342265
Henry Pirker	10-Aug-18	02:00	03:00	107.7	342266
Rycroft-Portable	10-Aug-18	02:00	03:00	83.5	342267
Evergreen Park	10-Aug-18	03:00	04:00	99.7	342265
Henry Pirker	10-Aug-18	03:00	04:00	105.5	342266
Rycroft-Portable	10-Aug-18	03:00	04:00	93.4	342267
Evergreen Park	10-Aug-18	04:00	05:00	96.3	342265
Henry Pirker	10-Aug-18	04:00	05:00	95.3	342266
Rycroft-Portable	10-Aug-18	04:00	05:00	95.8	342267
Henry Pirker	10-Aug-18	05:00	06:00	87.4	342266
Rycroft-Portable	10-Aug-18	05:00	06:00	93.5	342267
Henry Pirker	10-Aug-18	06:00	07:00	110.6	342266
Smoky Heights	10-Aug-18	06:00	07:00	134.5	342268
Rycroft-Portable	10-Aug-18	06:00	07:00	112.2	342267
Henry Pirker	10-Aug-18	07:00	08:00	139.9	342266
Smoky Heights	10-Aug-18	07:00	08:00	129.4	342268
Rycroft-Portable	10-Aug-18	07:00	08:00	158.4	342267
Henry Pirker	10-Aug-18	08:00	09:00	153.6	342266
Smoky Heights	10-Aug-18	08:00	09:00	124.8	342268
Rycroft-Portable	10-Aug-18	08:00	09:00	168.2	342267
Henry Pirker	10-Aug-18	09:00	10:00	246.3	342266
Smoky Heights	10-Aug-18	09:00	10:00	126.1	342268
Rycroft-Portable	10-Aug-18	09:00	10:00	218.6	342267
Henry Pirker	10-Aug-18	10:00	11:00	281.4	342266
Smoky Heights	10-Aug-18	10:00	11:00	113.2	342268
Rycroft-Portable	10-Aug-18	10:00	11:00	244.5	342267
Henry Pirker	10-Aug-18	11:00	12:00	271.3	342266
Smoky Heights	10-Aug-18	11:00	12:00	104.8	342268
Rycroft-Portable	10-Aug-18	11:00	12:00	230.8	342267
Henry Pirker	10-Aug-18	12:00	13:00	236.1	342266
Smoky Heights	10-Aug-18	12:00	13:00	162.6	342268
Rycroft-Portable	10-Aug-18	12:00	13:00	167.6	342267

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
Henry Pirker	10-Aug-18	13:00	14:00	188.1	342266
Smoky Heights	10-Aug-18	13:00	14:00	312.2	342268
Henry Pirker	10-Aug-18	14:00	15:00	167.2	342266
Smoky Heights	10-Aug-18	14:00	15:00	306.4	342268
Henry Pirker	10-Aug-18	15:00	16:00	134.5	342266
Smoky Heights	10-Aug-18	15:00	16:00	331.7	342268
Henry Pirker	10-Aug-18	16:00	17:00	104.4	342266
Smoky Heights	10-Aug-18	16:00	17:00	312.3	342268
Henry Pirker	10-Aug-18	17:00	18:00	94.9	342266
Smoky Heights	10-Aug-18	17:00	18:00	281.2	342268
Henry Pirker	10-Aug-18	18:00	19:00	84.4	342266
Smoky Heights	10-Aug-18	18:00	19:00	230.0	342268
Smoky Heights	10-Aug-18	19:00	20:00	168.8	342268
Smoky Heights	10-Aug-18	20:00	21:00	123.9	342268
Smoky Heights	10-Aug-18	21:00	22:00	81.8	342268
Smoky Heights	10-Aug-18	22:00	23:00	93.4	342268
Smoky Heights	10-Aug-18	23:00	00:00	91.3	342268
Henry Pirker	11-Aug-18	01:00	02:00	94.7	342319
Evergreen Park	11-Aug-18	02:00	03:00	83.6	342318
Henry Pirker	11-Aug-18	02:00	03:00	88.8	342319
Beaverlodge	11-Aug-18	00:00	01:00	115.5	312317
Beaverlodge	11-Aug-18	01:00	02:00	123.4	312317
Beaverlodge	11-Aug-18	02:00	03:00	95.8	312317
Beaverlodge	14-Aug-18	06:00	07:00	83.6	342483
Henry Pirker	14-Aug-18	07:00	08:00	91.1	342481
Evergreen Park	14-Aug-18	08:00	09:00	88.5	342486
Henry Pirker	14-Aug-18	08:00	09:00	109.9	342481
Henry Pirker	14-Aug-18	09:00	10:00	81.1	342481
Beaverlodge	14-Aug-18	14:00	15:00	93.5	342483
Beaverlodge	14-Aug-18	15:00	16:00	109.8	342483
Evergreen Park	14-Aug-18	15:00	16:00	102.1	342486
Henry Pirker	14-Aug-18	15:00	16:00	120.8	342481
Beaverlodge	14-Aug-18	16:00	17:00	145.0	342483
Evergreen Park	14-Aug-18	16:00	17:00	111.2	342486
Henry Pirker	14-Aug-18	16:00	17:00	114.7	342481
Beaverlodge	14-Aug-18	17:00	18:00	160.5	342483
Evergreen Park	14-Aug-18	17:00	18:00	173.4	342486
Henry Pirker	14-Aug-18	17:00	18:00	170.7	342481
Beaverlodge	14-Aug-18	18:00	19:00	197.9	342483

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
Evergreen Park	14-Aug-18	18:00	19:00	190.8	342486
Henry Pirker	14-Aug-18	18:00	19:00	209.7	342481
Beaverlodge	14-Aug-18	19:00	20:00	166.1	342483
Evergreen Park	14-Aug-18	19:00	20:00	167.7	342486
Henry Pirker	14-Aug-18	19:00	20:00	154.0	342481
Beaverlodge	14-Aug-18	20:00	21:00	165.4	342483
Evergreen Park	14-Aug-18	20:00	21:00	124.8	342486
Henry Pirker	14-Aug-18	20:00	21:00	149.8	342481
Beaverlodge	14-Aug-18	21:00	22:00	172.4	342483
Evergreen Park	14-Aug-18	21:00	22:00	146.7	342486
Henry Pirker	14-Aug-18	21:00	22:00	169.4	342481
Beaverlodge	14-Aug-18	22:00	23:00	152.6	342483
Evergreen Park	14-Aug-18	22:00	23:00	147.1	342486
Henry Pirker	14-Aug-18	22:00	23:00	172.5	342481
Rycroft-Portable	14-Aug-18	22:00	23:00	130.9	342478
Beaverlodge	14-Aug-18	23:00	00:00	164.5	342483
Evergreen Park	14-Aug-18	23:00	00:00	143.4	342486
Henry Pirker	14-Aug-18	23:00	00:00	189.5	342481
Rycroft-Portable	14-Aug-18	23:00	00:00	160.2	342478
Smoky Heights	14-Aug-18	00:00	01:00	99.8	342480
Smoky Heights	14-Aug-18	01:00	02:00	140.1	342480
Smoky Heights	14-Aug-18	02:00	03:00	139.2	342480
Smoky Heights	14-Aug-18	03:00	04:00	203.4	342480
Smoky Heights	14-Aug-18	04:00	05:00	193.3	342480
Smoky Heights	14-Aug-18	05:00	06:00	169.0	342480
Smoky Heights	14-Aug-18	06:00	07:00	170.9	342480
Smoky Heights	14-Aug-18	07:00	08:00	175.9	342480
Beaverlodge	15-Aug-18	00:00	01:00	191.3	342562
Evergreen Park	15-Aug-18	00:00	01:00	154.2	342564
Henry Pirker	15-Aug-18	00:00	01:00	216.4	342565
Rycroft-Portable	15-Aug-18	00:00	01:00	160.9	342566
Beaverlodge	15-Aug-18	01:00	02:00	222.3	342562
Evergreen Park	15-Aug-18	01:00	02:00	166.4	342564
Henry Pirker	15-Aug-18	01:00	02:00	293.0	342565
Rycroft-Portable	15-Aug-18	01:00	02:00	132.5	342566
Beaverlodge	15-Aug-18	02:00	03:00	240.4	342562
Evergreen Park	15-Aug-18	02:00	03:00	214.4	342564
Henry Pirker	15-Aug-18	02:00	03:00	317.2	342565
Rycroft-Portable	15-Aug-18	02:00	03:00	87.0	342566

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
Beaverlodge	15-Aug-18	03:00	04:00	227.2	342562
Evergreen Park	15-Aug-18	03:00	04:00	239.6	342564
Henry Pirker	15-Aug-18	03:00	04:00	286.7	342565
Beaverlodge	15-Aug-18	04:00	05:00	164.0	342562
Evergreen Park	15-Aug-18	04:00	05:00	246.2	342564
Henry Pirker	15-Aug-18	04:00	05:00	276.4	342565
Beaverlodge	15-Aug-18	05:00	06:00	128.9	342562
Evergreen Park	15-Aug-18	05:00	06:00	213.9	342564
Henry Pirker	15-Aug-18	05:00	06:00	288.3	342565
Beaverlodge	15-Aug-18	06:00	07:00	96.2	342562
Evergreen Park	15-Aug-18	06:00	07:00	187.5	342564
Henry Pirker	15-Aug-18	06:00	07:00	193.3	342565
Evergreen Park	15-Aug-18	07:00	08:00	151.9	342564
Henry Pirker	15-Aug-18	07:00	08:00	87.6	342565
Evergreen Park	15-Aug-18	08:00	09:00	123.5	342564
Smoky Heights	15-Aug-18	08:00	09:00	168.1	342567
Smoky Heights	15-Aug-18	09:00	10:00	155.8	342567
Smoky Heights	15-Aug-18	10:00	11:00	154.2	342567
Smoky Heights	15-Aug-18	11:00	12:00	157.8	342567
Smoky Heights	15-Aug-18	12:00	13:00	140.4	342567
Smoky Heights	15-Aug-18	13:00	14:00	110.5	342567
Henry Pirker	16-Aug-18	10:00	11:00	94.5	342644
Evergreen Park	16-Aug-18	11:00	12:00	94.4	342643
Henry Pirker	16-Aug-18	11:00	12:00	119.7	342644
Evergreen Park	16-Aug-18	12:00	13:00	85.6	342643
Henry Pirker	16-Aug-18	12:00	13:00	111.8	342644
Beaverlodge	16-Aug-18	13:00	14:00	92.5	342642
Henry Pirker	16-Aug-18	13:00	14:00	108.8	342644
Beaverlodge	16-Aug-18	14:00	15:00	101.9	342642
Henry Pirker	16-Aug-18	14:00	15:00	112.2	342644
Beaverlodge	16-Aug-18	15:00	16:00	102.6	342642
Henry Pirker	16-Aug-18	15:00	16:00	111.9	342644
Beaverlodge	16-Aug-18	16:00	17:00	89.1	342642
Henry Pirker	16-Aug-18	16:00	17:00	85.3	342644
Rycroft-Portable	16-Aug-18	18:00	19:00	82.3	342645
Rycroft-Portable	16-Aug-18	19:00	20:00	91.2	342645
Rycroft-Portable	16-Aug-18	20:00	21:00	108.9	342645
Beaverlodge	16-Aug-18	20:00	21:00	119.3	342642
Rycroft-Portable	16-Aug-18	21:00	22:00	96.0	342645

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
Beaverlodge	16-Aug-18	21:00	22:00	149.3	342642
Beaverlodge	16-Aug-18	22:00	23:00	191.6	342642
Beaverlodge	16-Aug-18	23:00	00:00	184.3	342642
Smoky Heights	16-Aug-18	14:00	15:00	102.6	342646
Smoky Heights	16-Aug-18	15:00	16:00	115.4	342646
Smoky Heights	16-Aug-18	16:00	17:00	96.8	342646
Smoky Heights	16-Aug-18	17:00	18:00	83.8	342646
Henry Pirker	17-Aug-18	00:00	01:00	213.5	342728
Henry Pirker	17-Aug-18	01:00	02:00	227.7	342728
Rycroft-Portable	17-Aug-18	01:00	02:00	97.6	342729
Henry Pirker	17-Aug-18	02:00	03:00	220.7	342728
Rycroft-Portable	17-Aug-18	02:00	03:00	123.7	342729
Evergreen Park	17-Aug-18	03:00	04:00	97.3	342726
Henry Pirker	17-Aug-18	03:00	04:00	206.7	342728
Rycroft-Portable	17-Aug-18	03:00	04:00	144.8	342729
Evergreen Park	17-Aug-18	04:00	05:00	136.7	342726
Henry Pirker	17-Aug-18	04:00	05:00	199.3	342728
Rycroft-Portable	17-Aug-18	04:00	05:00	149.5	342729
Evergreen Park	17-Aug-18	05:00	06:00	122.7	342726
Henry Pirker	17-Aug-18	05:00	06:00	205.4	342728
Rycroft-Portable	17-Aug-18	05:00	06:00	146.6	342729
Evergreen Park	17-Aug-18	06:00	07:00	128.9	342726
Henry Pirker	17-Aug-18	06:00	07:00	213.1	342728
Rycroft-Portable	17-Aug-18	06:00	07:00	144.3	342729
Evergreen Park	17-Aug-18	07:00	08:00	136.5	342726
Henry Pirker	17-Aug-18	07:00	08:00	212.6	342728
Rycroft-Portable	17-Aug-18	07:00	08:00	138.8	342729
Evergreen Park	17-Aug-18	08:00	09:00	141.3	342726
Henry Pirker	17-Aug-18	08:00	09:00	239.3	342728
Rycroft-Portable	17-Aug-18	08:00	09:00	134.0	342729
Evergreen Park	17-Aug-18	09:00	10:00	140.1	342726
Henry Pirker	17-Aug-18	09:00	10:00	247.1	342728
Rycroft-Portable	17-Aug-18	09:00	10:00	126.3	342729
Evergreen Park	17-Aug-18	10:00	11:00	137.8	342726
Henry Pirker	17-Aug-18	10:00	11:00	233.2	342728
Rycroft-Portable	17-Aug-18	10:00	11:00	125.2	342729
Evergreen Park	17-Aug-18	11:00	12:00	157.5	342726
Henry Pirker	17-Aug-18	11:00	12:00	219.0	342728
Rycroft-Portable	17-Aug-18	11:00	12:00	101.4	342729

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
Evergreen Park	17-Aug-18	12:00	13:00	166.0	342726
Henry Pirker	17-Aug-18	12:00	13:00	232.6	342728
Rycroft-Portable	17-Aug-18	12:00	13:00	89.8	342729
Evergreen Park	17-Aug-18	13:00	14:00	187.7	342726
Henry Pirker	17-Aug-18	13:00	14:00	246.0	342728
Evergreen Park	17-Aug-18	14:00	15:00	196.1	342726
Henry Pirker	17-Aug-18	14:00	15:00	278.2	342728
Evergreen Park	17-Aug-18	15:00	16:00	251.7	342726
Henry Pirker	17-Aug-18	15:00	16:00	315.9	342728
Evergreen Park	17-Aug-18	16:00	17:00	209.5	342726
Henry Pirker	17-Aug-18	16:00	17:00	232.7	342728
Evergreen Park	17-Aug-18	17:00	18:00	97.1	342726
Beaverlodge	17-Aug-18	22:00	23:00	81.5	342725
Beaverlodge	17-Aug-18	23:00	00:00	93.9	342725
Beaverlodge	17-Aug-18	00:00	01:00	161.2	342725
Beaverlodge	17-Aug-18	01:00	02:00	162.2	342725
Beaverlodge	17-Aug-18	02:00	03:00	160.6	342725
Beaverlodge	17-Aug-18	03:00	04:00	157.6	342725
Beaverlodge	17-Aug-18	04:00	05:00	161.1	342725
Beaverlodge	17-Aug-18	05:00	06:00	166.1	342725
Beaverlodge	17-Aug-18	06:00	07:00	170.4	342725
Beaverlodge	17-Aug-18	07:00	08:00	170.3	342725
Beaverlodge	17-Aug-18	08:00	09:00	176.8	342725
Beaverlodge	17-Aug-18	09:00	10:00	188.1	342725
Beaverlodge	17-Aug-18	10:00	11:00	204.6	342725
Beaverlodge	17-Aug-18	11:00	12:00	210.4	342725
Beaverlodge	17-Aug-18	12:00	13:00	219.7	342725
Beaverlodge	17-Aug-18	13:00	14:00	183.3	342725
Beaverlodge	17-Aug-18	14:00	15:00	96.8	342725
Smoky Heights	17-Aug-18	18:00	19:00	121.4	342730
Smoky Heights	17-Aug-18	19:00	20:00	168.9	342730
Smoky Heights	17-Aug-18	20:00	21:00	178.0	342730
Smoky Heights	17-Aug-18	21:00	22:00	173.2	342730
Smoky Heights	17-Aug-18	22:00	23:00	166.9	342730
Smoky Heights	17-Aug-18	23:00	00:00	161.1	342730
Smoky Heights	17-Aug-18	00:00	01:00	150.0	342730
Smoky Heights	17-Aug-18	01:00	02:00	147.3	342730
Smoky Heights	17-Aug-18	02:00	03:00	147.7	342730
Smoky Heights	17-Aug-18	03:00	04:00	145.4	342730

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
Smoky Heights	17-Aug-18	04:00	05:00	159.3	342730
Smoky Heights	17-Aug-18	05:00	06:00	193.4	342730
Smoky Heights	17-Aug-18	06:00	07:00	196.5	342730
Smoky Heights	17-Aug-18	07:00	08:00	168.4	342730
Smoky Heights	17-Aug-18	08:00	09:00	178.9	342730
Evergreen Park	18-Aug-18	00:00	01:00	93.6	342805
Henry Pirker	18-Aug-18	00:00	01:00	84.4	342806
Evergreen Park	18-Aug-18	01:00	02:00	106.0	342805
Henry Pirker	18-Aug-18	01:00	02:00	109.5	342806
Evergreen Park	18-Aug-18	02:00	03:00	110.9	342805
Henry Pirker	18-Aug-18	02:00	03:00	145.7	342806
Evergreen Park	18-Aug-18	03:00	04:00	144.6	342805
Henry Pirker	18-Aug-18	03:00	04:00	169.5	342806
Evergreen Park	18-Aug-18	04:00	05:00	123.3	342805
Henry Pirker	18-Aug-18	04:00	05:00	134.4	342806
Evergreen Park	18-Aug-18	05:00	06:00	103.0	342805
Henry Pirker	18-Aug-18	05:00	06:00	89.8	342806
Evergreen Park	18-Aug-18	06:00	07:00	91.3	342805
Evergreen Park	18-Aug-18	07:00	08:00	84.3	342805
Evergreen Park	18-Aug-18	08:00	09:00	85.3	342805
Evergreen Park	18-Aug-18	09:00	10:00	81.2	342805
Beaverlodge	18-Aug-18	00:00	01:00	116.9	342804
Beaverlodge	18-Aug-18	01:00	02:00	160.9	342804
Beaverlodge	18-Aug-18	02:00	03:00	192.3	342804
Beaverlodge	18-Aug-18	03:00	04:00	159.6	342804
Beaverlodge	18-Aug-18	04:00	05:00	95.9	342804
Smoky Heights	18-Aug-18	09:00	10:00	89.4	342808
Smoky Heights	18-Aug-18	10:00	11:00	98.3	342808
Smoky Heights	21-Aug-18	11:00	12:00	89.8	342999
Smoky Heights	21-Aug-18	12:00	13:00	86.5	342999
Beaverlodge	22-Aug-18	02:00	03:00	88.2	343100
Beaverlodge	22-Aug-18	03:00	04:00	87.5	343100
Rycroft-Portable	22-Aug-18	03:00	04:00	122.4	343103
Beaverlodge	22-Aug-18	04:00	05:00	97.7	343100
Rycroft-Portable	22-Aug-18	04:00	05:00	176.5	343103
Beaverlodge	22-Aug-18	05:00	06:00	104.0	343100
Rycroft-Portable	22-Aug-18	05:00	06:00	180.0	343103
Henry Pirker	22-Aug-18	05:00	06:00	95.8	343102
Beaverlodge	22-Aug-18	06:00	07:00	111.1	343100

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
Rycroft-Portable	22-Aug-18	06:00	07:00	165.5	343103
Henry Pirker	22-Aug-18	06:00	07:00	107.8	343102
Beaverlodge	22-Aug-18	07:00	08:00	106.0	343100
Rycroft-Portable	22-Aug-18	07:00	08:00	177.0	343103
Henry Pirker	22-Aug-18	07:00	08:00	122.8	343102
Beaverlodge	22-Aug-18	08:00	09:00	113.3	343100
Rycroft-Portable	22-Aug-18	08:00	09:00	215.0	343103
Henry Pirker	22-Aug-18	08:00	09:00	102.8	343102
Beaverlodge	22-Aug-18	09:00	10:00	170.2	343100
Rycroft-Portable	22-Aug-18	09:00	10:00	225.6	343103
Henry Pirker	22-Aug-18	09:00	10:00	126.0	343102
Beaverlodge	22-Aug-18	10:00	11:00	270.0	343100
Evergreen Park	22-Aug-18	10:00	11:00	125.9	343101
Rycroft-Portable	22-Aug-18	10:00	11:00	200.1	343103
Henry Pirker	22-Aug-18	10:00	11:00	220.9	343102
Beaverlodge	22-Aug-18	11:00	12:00	323.4	343100
Evergreen Park	22-Aug-18	11:00	12:00	246.4	343101
Rycroft-Portable	22-Aug-18	11:00	12:00	144.8	343103
Henry Pirker	22-Aug-18	11:00	12:00	345.0	343102
Beaverlodge	22-Aug-18	12:00	13:00	201.5	343100
Evergreen Park	22-Aug-18	12:00	13:00	292.3	343101
Evergreen Park	22-Aug-18	12:00	13:00	95.5	343101
Rycroft-Portable	22-Aug-18	12:00	13:00	149.1	343103
Henry Pirker	22-Aug-18	12:00	13:00	334.2	343102
Beaverlodge	22-Aug-18	13:00	14:00	138.2	343100
Evergreen Park	22-Aug-18	13:00	14:00	293.7	343101
Rycroft-Portable	22-Aug-18	13:00	14:00	146.6	343103
Henry Pirker	22-Aug-18	13:00	14:00	303.6	343102
Beaverlodge	22-Aug-18	14:00	15:00	132.0	343100
Evergreen Park	22-Aug-18	14:00	15:00	252.3	343101
Rycroft-Portable	22-Aug-18	14:00	15:00	126.1	343103
Henry Pirker	22-Aug-18	14:00	15:00	157.3	343102
Beaverlodge	22-Aug-18	15:00	16:00	130.3	343100
Evergreen Park	22-Aug-18	15:00	16:00	217.1	343101
Rycroft-Portable	22-Aug-18	15:00	16:00	91.9	343103
Henry Pirker	22-Aug-18	15:00	16:00	135.2	343102
Beaverlodge	22-Aug-18	16:00	17:00	126.0	343100
Evergreen Park	22-Aug-18	16:00	17:00	145.0	343101
Henry Pirker	22-Aug-18	16:00	17:00	137.9	343102

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
Beaverlodge	22-Aug-18	17:00	18:00	155.9	343100
Evergreen Park	22-Aug-18	17:00	18:00	118.9	343101
Henry Pirker	22-Aug-18	17:00	18:00	140.7	343102
Beaverlodge	22-Aug-18	18:00	19:00	184.3	343100
Evergreen Park	22-Aug-18	18:00	19:00	152.1	343101
Henry Pirker	22-Aug-18	18:00	19:00	169.3	343102
Beaverlodge	22-Aug-18	19:00	20:00	173.7	343100
Evergreen Park	22-Aug-18	19:00	20:00	184.5	343101
Henry Pirker	22-Aug-18	19:00	20:00	210.4	343102
Beaverlodge	22-Aug-18	20:00	21:00	159.3	343100
Evergreen Park	22-Aug-18	20:00	21:00	183.8	343101
Henry Pirker	22-Aug-18	20:00	21:00	213.4	343102
Rycroft-Portable	22-Aug-18	20:00	21:00	107.9	343103
Beaverlodge	22-Aug-18	21:00	22:00	157.0	343100
Evergreen Park	22-Aug-18	21:00	22:00	171.7	343101
Henry Pirker	22-Aug-18	21:00	22:00	190.5	343102
Rycroft-Portable	22-Aug-18	21:00	22:00	136.2	343103
Beaverlodge	22-Aug-18	22:00	23:00	171.8	343100
Evergreen Park	22-Aug-18	22:00	23:00	167.5	343101
Henry Pirker	22-Aug-18	22:00	23:00	171.5	343102
Rycroft-Portable	22-Aug-18	22:00	23:00	128.3	343103
Beaverlodge	22-Aug-18	23:00	00:00	205.6	343100
Evergreen Park	22-Aug-18	23:00	00:00	159.6	343101
Henry Pirker	22-Aug-18	23:00	00:00	173.3	343102
Rycroft-Portable	22-Aug-18	23:00	00:00	125.6	343103
Evergreen Park	22-Aug-18	00:00	01:00	164.0	343101
Evergreen Park	22-Aug-18	01:00	02:00	156.1	343101
Evergreen Park	22-Aug-18	02:00	03:00	152.6	343101
Evergreen Park	22-Aug-18	03:00	04:00	125.8	343101
Smoky Heights	22-Aug-18	13:00	14:00	164.9	343104
Smoky Heights	22-Aug-18	14:00	15:00	160.4	343104
Smoky Heights	22-Aug-18	15:00	16:00	158.5	343104
Smoky Heights	22-Aug-18	16:00	17:00	149.0	343104
Smoky Heights	22-Aug-18	17:00	18:00	127.0	343104
Smoky Heights	22-Aug-18	18:00	19:00	186.8	343104
Smoky Heights	22-Aug-18	19:00	20:00	290.6	343104
Smoky Heights	22-Aug-18	20:00	21:00	337.5	343104
Smoky Heights	22-Aug-18	21:00	22:00	266.3	343104
Smoky Heights	22-Aug-18	22:00	23:00	175.3	343104

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
Smoky Heights	22-Aug-18	23:00	00:00	82.1	343104
Smoky Heights	22-Aug-18	00:00	01:00	97.3	343104
Smoky Heights	22-Aug-18	01:00	02:00	136.1	343104
Smoky Heights	22-Aug-18	02:00	03:00	143.3	343104
Smoky Heights	22-Aug-18	03:00	04:00	163.7	343104
Smoky Heights	22-Aug-18	04:00	05:00	165.7	343104
Smoky Heights	22-Aug-18	05:00	06:00	169.6	343104
Evergreen Park	23-Aug-18	13:00	14:00	83.2	343101
Beaverlodge	23-Aug-18	00:00	01:00	217.1	343100
Henry Pirker	23-Aug-18	00:00	01:00	199.2	343102
Beaverlodge	23-Aug-18	01:00	02:00	236.8	343100
Henry Pirker	23-Aug-18	01:00	02:00	201.0	343102
Beaverlodge	23-Aug-18	02:00	03:00	244.2	343100
Henry Pirker	23-Aug-18	02:00	03:00	200.8	343102
Beaverlodge	23-Aug-18	03:00	04:00	244.2	343100
Beaverlodge	23-Aug-18	04:00	05:00	151.7	343100
Smoky Heights	23-Aug-18	06:00	07:00	151.9	343104
Beaverlodge	25-Aug-18	03:00	04:00	82.0	343100
Beaverlodge	25-Aug-18	04:00	05:00	95.1	343100
Beaverlodge	25-Aug-18	05:00	06:00	97.1	343100
Beaverlodge	25-Aug-18	06:00	07:00	97.6	343100
Beaverlodge	25-Aug-18	07:00	08:00	95.4	343100
Beaverlodge	25-Aug-18	08:00	09:00	94.5	343100
Beaverlodge	25-Aug-18	09:00	10:00	94.0	343100
Beaverlodge	25-Aug-18	10:00	11:00	105.3	343100
Henry Pirker	25-Aug-18	11:00	12:00	107.0	343102
Beaverlodge	25-Aug-18	11:00	12:00	100.3	343100
Henry Pirker	25-Aug-18	12:00	13:00	97.9	343102
Smoky Heights	25-Aug-18	07:00	08:00	92.6	343104
Henry Pirker	22-Oct-18	19:00	20:00	82.3	342093
Evergreen Park	15-Nov-18	02:00	03:00	95.0	346647
Evergreen Park	16-Nov-18	17:00	18:00	137.4	346717
Beaverlodge	22-Dec-19	13:00	14:00	99.9	347854
Henry Pirker	29-Dec-19	04:00	05:00	123.9	347960
Henry Pirker	29-Dec-19	05:00	06:00	254.6	347960
Henry Pirker	29-Dec-19	06:00	07:00	333.2	347960
Henry Pirker	29-Dec-19	07:00	08:00	80.2	347960
Portable-Wembley	29-Dec-19	08:00	09:00	80.0	347967

H₂S exceedances have no clear attribution.

Ozone exceedance is attributed to natural formation on hot and stable summer days.

All May through August PM_{2.5} exceedances are attributed to wildfire smoke. PM exceedances at Smoky Heights and Evergreen Park are due to known local sources. Other exceedances have no direct attribution and are likely due to winter inversion events.

Monitoring Uptime Notes:

The following table summarizes uptimes below 90% in 2018.

Station	Parameter	Month	Reason
Beaverlodge	NO/NO ₂ /NO _x	May	Instrument Failure
Beaverlodge	RH	February-April, September-December	Instrument Failure
Beaverlodge	WS/WD	January-February	Instrument Failure
Evergreen Park	TRS	July-August	Data Review
Henry Pirker	CO	July-August, October-December	Data Review
Henry Pirker	H ₂ S	July-August	Data Review
Henry Pirker	NO/NO ₂ /NO _x	June-July, September-November	Data Review
Henry Pirker	PM _{2.5}	June	Data Review
Henry Pirker	SO ₂	August-September	Data Review
Henry Pirker	THC/CH ₄ /NMHC	April-July	Data Review
Henry Pirker	TRS	January-April	Data Review
Rycroft	O ₃	February-April	Data Review
Rycroft	TRS	April-October	Data Review
Smoky Heights	TRS	July	Data Review
Valleyview	H ₂ S	June-July	Data Review
Valleyview	RH	January-April	Instrument Failure
Wembley	O ₃	November	Instrument Failure
Wembley	THC/CH ₄ /NMHC	November	Instrument Failure

Changes to monitoring in 2018:

H₂S analyzer was installed at Henry Pirker April 5.

Portable station was relocated from Rycroft to Wembley at the end of October.

Deviations from authorized monitoring methods:

Trees nearby to Valleyview air monitoring station exceed the height allowed under section 2.3 of the siting criteria in Chapter 3 of the AMD. This variance was authorized in writing by the director on February 4, 2019.

Changes made after monthly reports submitted:

A review of operational activities and associated data validation was undertaken in 2019. The following table summarizes the date ranges for which data was invalidated as a result of that review:

Station	Parameter	Start Date	End Date
Henry Pirker	TRS	06/12/2017	05/04/2018
Rycroft	NO/NO ₂ /NO _x	07/12/2017	08/01/2018
Rycroft	O ₃	09/02/2018	17/04/2018
Henry Pirker	THC/CH ₄ /NMHC	06/04/2018	31/05/2018
Rycroft	TRS	12/04/2018	14/06/2018
Henry Pirker	PM _{2.5}	09/06/2018	11/06/2018
Henry Pirker	THC/CH ₄ /NMHC	19/06/2018	12/07/2018
Henry Pirker	NO/NO ₂ /NO _x	20/06/2018	10/07/2018
Valleyview	H ₂ S	25/06/2018	22/07/2018
Henry Pirker	CO	11/07/2018	20/08/2018
Henry Pirker	H ₂ S	11/07/2018	20/08/2018
Evergreen Park	TRS	17/07/2018	04/08/2018
Rycroft	TRS	19/07/2018	17/10/2018
Smoky Heights	TRS	21/07/2018	27/07/2018
Rycroft	NO/NO ₂ /NO _x	25/07/2018	02/08/2018
Henry Pirker	SO ₂	17/08/2018	21/09/2018
Henry Pirker	NO/NO ₂ /NO _x	11/09/2018	07/11/2018
Henry Pirker	CO	09/10/2018	04/12/2018
Rycroft	All Parameters	17/10/2018	31/10/2018
Wembley	THC/CH ₄ /NMHC	23/12/2018	24/12/2018

Data deletions or resubmissions to Alberta Ambient Air Quality Data Warehouse:

Data was resubmitted for December 2017 through December 2018 to reflect the changes noted above. Henry Pirker H₂S data was erroneously reported as TRS data April 6, 2018-December 31, 2018 and was removed in the data resubmission.

Missed Calibrations:

None. Calibrations performed on the parameters and during the periods noted above are considered invalid.

Annual Report Notes:

5-year annual average charts are truncated or not supplied for the following reasons:

Henry Pirker TRS data was invalidated from December 2017 to the end of operation in April 2018; 5-year chart from 2013-2017 is provided.

Henry Pirker H₂S began operation in 2018, no chart provided.

Donnelly and Rycroft stations began operation in August 2016, 3 year charts provided.

Wembley station began operation in 2018, no charts provided.

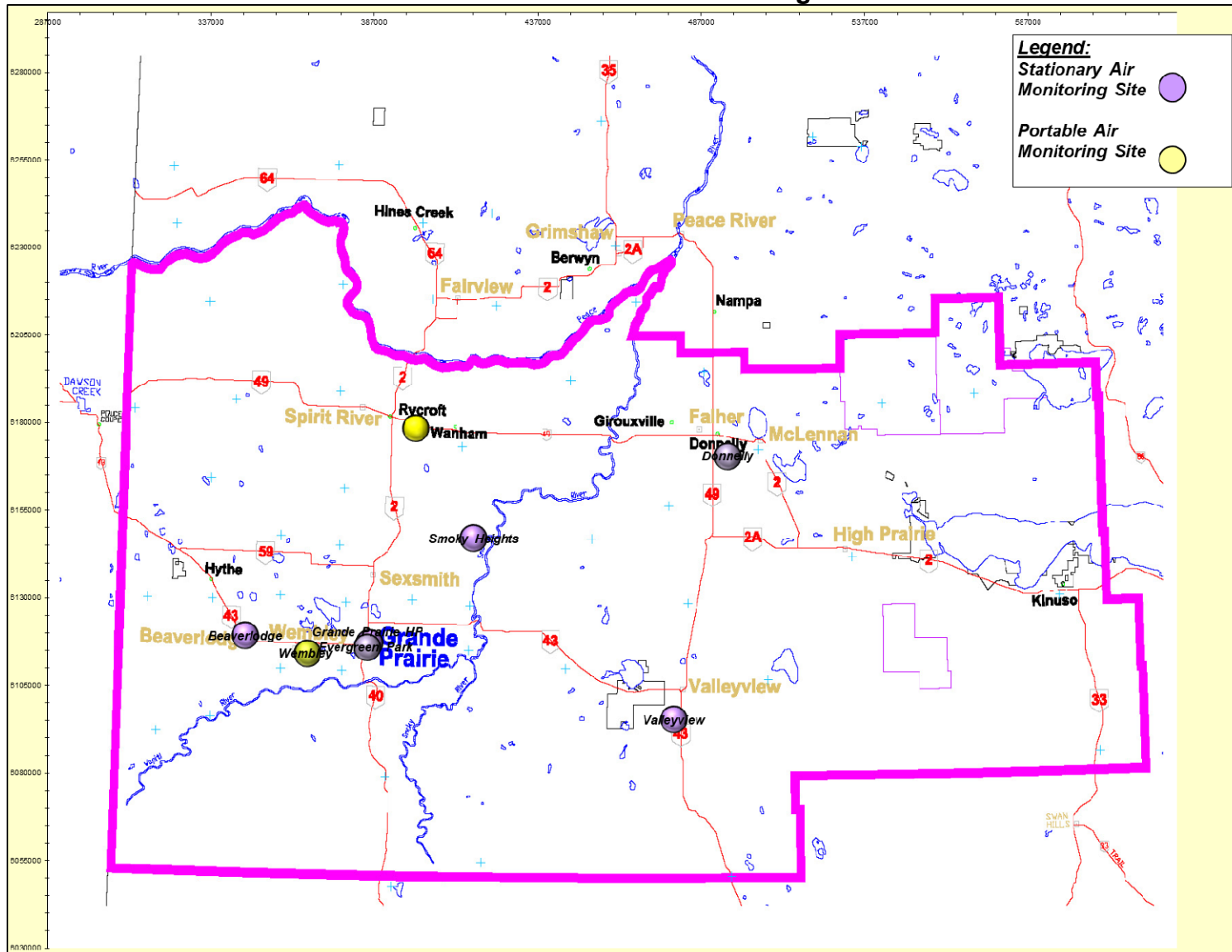
I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements.

X 

Mandeep Dhaliwal

Air Quality Program Manager, CRAZ

Location of Continuous Air Monitoring Stations



PAZA
BEAVERLODGE
CONTINUOUS AMBIENT AIR MONITORING STATION

2018
ANNUAL SUMMARY TABLES

Sulphur Dioxide (SO₂) – Beaverlodge 2018 Summary and Frequency Distribution

Beaverlodge SO ₂ (ppb)												2018								
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance			Percentage of Readings in Concentration Range					
												30-Day	24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340
January	711	0.45	1.62	Jan 01	0.15	Jan 15	3.23	Jan 01 04:00	0.07	Jan 08 18:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	642	0.49	2.02	Feb 11	0.10	Feb 27	8.80	Feb 11 18:00	0.02	Feb 27 18:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	708	0.80	3.82	Mar 14	0.12	Mar 23	18.76	Mar 14 14:00	0.03	Mar 31 07:00	99.73	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	687	0.47	1.60	Apr 09	0.06	Apr 22	5.01	Apr 29 21:00	0.00	Apr 18 16:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	704	0.21	0.67	May 16	0.03	May 27	3.87	May 16 06:00	0.00	May 28 18:00	99.19	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	687	0.20	0.83	Jun 19	0.01	Jun 26	2.19	Jun 19 01:00	0.00	Jun 02 12:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	693	0.31	0.99	Jul 29	0.05	Jul 07	2.89	Jul 30 15:00	0.00	Jul 08 04:00	98.12	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	708	0.41	1.16	Aug 10	0.02	Aug 30	2.75	Aug 10 08:00	0.00	Aug 30 23:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	685	0.10	0.34	Sep 19	0.01	Sep 12	3.03	Sep 19 12:00	0.00	Sep 01 01:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	710	0.14	0.38	Oct 22	0.03	Oct 31	2.29	Oct 03 13:00	0.00	Oct 20 15:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	687	0.18	0.53	Nov 18	0.02	Nov 01	1.57	Nov 13 16:00	0.01	Nov 02 00:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	710	0.37	1.42	Dec 28	0.04	Dec 02	3.52	Dec 28 15:00	0.00	Dec 02 06:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8332	0.34	3.82	Mar 14	0.01	Sep 12	18.76	Mar 14 14:00	0.00	Apr 18 16:00	99.8	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00

AAAQO Objectives: Annual: 8 ppb, 30-Day: 11 ppb, 24-Hr: 48 ppb, 1-Hr: 172 ppb

Nitric Oxide (NO) – Beaverlodge 2018 Summary and Frequency Distribution

Beaverlodge NO (ppb)												2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range				
												0 - 25	25 - 50	50 - 110	110 - 210	>210
January	695	2.30	20.76	Jan 12	0.10	Jan 19	71.26	Jan 12 13:00	0.00	Jan 01 16:00	98.25	97.70	1.87	0.43	0.00	0.00
February	639	0.84	3.68	Feb 05	0.13	Feb 23	23.47	Feb 05 16:00	0.00	Feb 01 01:00	100.00	100.00	0.00	0.00	0.00	0.00
March	705	1.44	7.56	Mar 08	0.17	Mar 22	37.39	Mar 06 10:00	0.00	Mar 16 00:00	99.73	99.43	0.57	0.00	0.00	0.00
April	686	0.78	4.28	Apr 02	0.10	Apr 29	27.56	Apr 02 10:00	0.00	Apr 02 02:00	100.00	99.85	0.15	0.00	0.00	0.00
May	609	0.20	0.47	May 31	0.05	May 03	2.91	May 18 07:00	0.00	May 03 02:00	87.77	100.00	0.00	0.00	0.00	0.00
June	685	0.34	0.97	Jun 01	0.08	Jun 10	8.94	Jun 19 08:00	0.00	Jun 02 23:00	100.00	100.00	0.00	0.00	0.00	0.00
July	693	0.36	1.34	Jul 25	0.08	Jul 02	11.96	Jul 31 07:00	0.00	Jul 13 02:00	98.12	100.00	0.00	0.00	0.00	0.00
August	703	0.27	0.75	Aug 01	0.07	Aug 12	5.68	Aug 01 07:00	0.00	Aug 16 21:00	100.00	100.00	0.00	0.00	0.00	0.00
September	683	0.39	2.70	Sep 07	0.06	Sep 20	13.73	Sep 07 09:00	0.00	Sep 04 23:00	99.58	100.00	0.00	0.00	0.00	0.00
October	707	0.39	1.51	Oct 23	0.06	Oct 15	8.03	Oct 31 10:00	0.00	Oct 07 01:00	100.00	100.00	0.00	0.00	0.00	0.00
November	685	1.50	8.90	Nov 27	0.14	Nov 09	35.06	Nov 21 14:00	0.00	Nov 05 02:00	100.00	99.56	0.44	0.00	0.00	0.00
December	709	1.20	6.92	Dec 01	0.03	Dec 12	26.17	Dec 01 13:00	0.00	Dec 03 06:00	100.00	99.86	0.14	0.00	0.00	0.00
Annual	8199	0.84	20.76	Jan 12	0.03	Dec 12	71.26	Jan 12 13:00	0.00	Jan 01 16:00	98.6	99.79	0.21	0.00	0.00	0.00

No AAAQO

Nitrogen Dioxide (NO₂) – Beaverlodge 2018 Summary and Frequency Distribution

Beaverlodge NO ₂ (ppb)													2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance	Percentage of Readings in Concentration Range				
												1-Hr	0 - 25	25 - 50	50 - 110	110 - 159	>159
January	695	7.75	25.28	Jan 12	1.71	Jan 09	37.14	Jan 11 18:00	0.11	Jan 07 02:00	98.25	0	96.26	3.74	0.00	0.00	0.00
February	639	4.33	13.47	Feb 06	1.03	Feb 27	35.69	Feb 06 19:00	0.36	Feb 27 03:00	100.00	0	99.22	0.78	0.00	0.00	0.00
March	705	5.19	15.97	Mar 08	1.33	Mar 01	34.57	Mar 31 23:00	0.55	Mar 30 02:00	99.73	0	99.43	0.57	0.00	0.00	0.00
April	686	3.08	11.62	Apr 09	1.13	Apr 22	37.78	Apr 02 06:00	0.00	Apr 04 08:00	100.00	0	99.85	0.15	0.00	0.00	0.00
May	609	2.12	3.58	May 16	0.84	May 26	22.87	May 07 19:00	0.00	May 15 15:00	87.77	0	100.00	0.00	0.00	0.00	0.00
June	685	2.41	5.23	Jun 20	0.66	Jun 11	15.17	Jun 20 06:00	0.22	Jun 11 23:00	100.00	0	100.00	0.00	0.00	0.00	0.00
July	693	2.34	4.35	Jul 05	1.02	Jul 02	9.41	Jul 05 06:00	0.30	Jul 02 17:00	98.12	0	100.00	0.00	0.00	0.00	0.00
August	703	2.94	5.51	Aug 10	1.28	Aug 04	11.59	Aug 10 06:00	0.48	Aug 05 17:00	100.00	0	100.00	0.00	0.00	0.00	0.00
September	683	2.35	5.19	Sep 07	1.04	Sep 12	10.04	Sep 07 06:00	0.04	Sep 21 02:00	99.58	0	100.00	0.00	0.00	0.00	0.00
October	707	4.02	13.13	Oct 23	1.18	Oct 02	22.93	Oct 24 04:00	0.30	Oct 15 01:00	100.00	0	100.00	0.00	0.00	0.00	0.00
November	685	6.47	19.04	Nov 26	2.05	Nov 05	33.15	Nov 21 17:00	0.36	Nov 18 04:00	100.00	0	99.12	0.88	0.00	0.00	0.00
December	709	6.93	16.83	Dec 18	2.07	Dec 12	29.77	Dec 18 18:00	0.38	Dec 12 04:00	100.00	0	99.58	0.42	0.00	0.00	0.00
Annual	8199	4.19	25.28	Jan 12	0.66	Jun 11	37.78	Apr 02 06:00	0.00	Apr 04 08:00	98.6	0	99.66	0.34	0.00	0.00	0.00

AAAQO Objectives: Annual: 24 ppb, 1-Hr: 159 ppb

Total Oxides of Nitrogen (NO_x) – Beaverlodge 2018 Summary and Frequency Distribution

Beaverlodge NO _x (ppb)													2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range					
												0 - 25	25 - 50	50 - 110	110 - 210	>210	
January	695	10.14	46.05	Jan 12	2.04	Jan 09	100.08	Jan 12 13:00	0.19	Jan 07 02:00	98.25	91.37	6.47	2.16	0.00	0.00	
February	639	5.16	16.00	Feb 06	1.16	Feb 27	43.38	Feb 05 16:00	0.36	Feb 27 02:00	100.00	98.28	1.72	0.00	0.00	0.00	
March	705	6.62	23.48	Mar 08	1.60	Mar 22	57.76	Mar 08 10:00	0.55	Mar 30 02:00	99.73	97.30	2.27	0.43	0.00	0.00	
April	686	3.86	14.47	Apr 09	1.22	Apr 22	49.30	Apr 02 10:00	0.31	Apr 22 00:00	100.00	99.27	0.73	0.00	0.00	0.00	
May	609	2.30	3.77	May 16	0.92	May 26	23.16	May 07 19:00	0.00	May 15 16:00	87.77	100.00	0.00	0.00	0.00	0.00	
June	685	2.77	6.09	Jun 20	0.73	Jun 11	21.92	Jun 19 08:00	0.23	Jun 11 23:00	100.00	100.00	0.00	0.00	0.00	0.00	
July	693	2.71	5.06	Jul 05	1.11	Jul 02	19.16	Jul 25 07:00	0.39	Jul 14 15:00	98.12	100.00	0.00	0.00	0.00	0.00	
August	703	3.21	5.94	Aug 10	1.40	Aug 04	14.36	Aug 01 07:00	0.56	Aug 05 15:00	100.00	100.00	0.00	0.00	0.00	0.00	
September	683	2.75	7.87	Sep 07	1.13	Sep 20	19.82	Sep 07 09:00	0.02	Sep 21 02:00	99.58	100.00	0.00	0.00	0.00	0.00	
October	707	4.41	14.58	Oct 23	1.33	Oct 02	25.75	Oct 23 09:00	0.29	Oct 15 01:00	100.00	99.86	0.14	0.00	0.00	0.00	
November	685	8.02	27.53	Nov 27	2.59	Nov 09	60.65	Nov 21 14:00	0.41	Nov 18 04:00	100.00	95.04	4.38	0.58	0.00	0.00	
December	709	8.14	21.15	Dec 18	2.14	Dec 12	43.29	Dec 18 18:00	0.39	Dec 12 04:00	100.00	96.05	3.95	0.00	0.00	0.00	
Annual	8199	5.04	46.05	Jan 12	0.73	Jun 11	100.08	Jan 12 13:00	0.00	May 15 16:00	98.6	98.56	1.23	0.21	0.00	0.00	

No AAAQO

Ozone (O₃) – Beaverlodge 2018 Summary and Frequency Distribution

Beaverlodge O ₃ (ppb)													2018						
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance		Percentage of Readings in Concentration Range					
												24-Hr	1-Hr	0 - 2	2 - 10	10 - 20	20 - 40	40 - 82	>82
January	710	24.38	37.71	Jan 02	6.23	Jan 12	42.54	Jan 18 20:00	1.18	Jan 13 00:00	100.00	0	1.83	9.58	22.25	63.94	2.39	0.00	
February	641	37.24	44.16	Feb 23	25.88	Feb 06	46.63	Feb 12 16:00	6.85	Feb 06 19:00	100.00	0	0.00	0.47	1.40	56.63	41.50	0.00	
March	708	38.44	49.59	Mar 14	28.05	Mar 06	61.06	Mar 14 14:00	9.51	Mar 21 06:00	99.73	0	0.00	0.14	0.99	53.25	45.62	0.00	
April	687	44.11	50.28	Apr 24	36.87	Apr 05	60.93	Apr 28 18:00	18.69	Apr 02 06:00	100.00	0	0.00	0.00	0.15	24.45	75.40	0.00	
May	699	37.56	47.92	May 03	21.76	May 31	57.66	May 19 16:00	5.49	May 31 08:00	98.66	0	0.00	0.57	2.43	53.79	43.20	0.00	
June	686	31.37	48.14	Jun 19	24.03	Jun 14	76.60	Jun 19 16:00	5.74	Jun 13 06:00	100.00	0	0.00	0.87	9.77	74.49	14.87	0.00	
July	694	23.19	33.00	Jul 16	14.51	Jul 03	49.02	Jul 25 21:00	1.59	Jul 24 06:00	98.12	0	0.29	5.62	33.43	56.34	4.32	0.00	
August	708	20.94	35.84	Aug 22	10.46	Aug 23	45.07	Aug 21 18:00	1.89	Aug 27 07:00	100.00	0	0.14	13.42	35.45	48.87	2.12	0.00	
September	687	18.16	28.28	Sep 24	8.70	Sep 17	36.45	Sep 24 13:00	0.92	Sep 07 07:00	100.00	0	0.73	18.20	38.43	42.65	0.00	0.00	
October	710	24.63	44.81	Oct 17	12.12	Oct 07	52.44	Oct 17 04:00	2.95	Oct 11 07:00	100.00	0	0.00	5.35	32.39	56.48	5.77	0.00	
November	687	20.84	32.59	Nov 19	2.12	Nov 27	38.63	Nov 13 19:00	0.12	Nov 27 19:00	100.00	0	3.64	15.28	20.96	60.12	0.00	0.00	
December	710	24.39	36.29	Dec 12	6.94	Dec 01	42.84	Dec 07 18:00	0.30	Dec 01 19:00	100.00	0	2.25	10.56	20.70	65.21	1.27	0.00	
Annual	8327	28.70	50.28	Apr 24	2.12	Nov 27	76.60	Jun 19 16:00	0.12	Nov 27 19:00	99.7	0	0.74	6.84	18.78	53.61	20.03	0.00	

AAAQO Objectives: 1-Hr: 82 ppb

Particulate Matter (PM_{2.5}) – Beaverlodge 2018 Summary and Frequency Distribution

Beaverlodge PM _{2.5} (µg/m ³)													2018						
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance		Percentage of Readings in Concentration Range					
												24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30
January	741	5.79	34.08	Jan 16	0.69	Jan 02	115.78	Jan 16 18:00	0.00	Jan 13 13:00	99.73	1	2	41.70	29.69	14.17	6.88	5.67	1.89
February	672	2.18	4.94	Feb 11	0.71	Feb 13	13.09	Feb 08 03:00	0.42	Feb 03 07:00	100.00	0	0	57.44	39.43	2.98	0.15	0.00	0.00
March	742	4.46	12.43	Mar 14	1.79	Mar 28	22.29	Mar 14 22:00	0.57	Mar 28 14:00	99.73	0	0	21.56	54.58	19.68	2.70	1.48	0.00
April	714	4.04	8.92	Apr 09	1.46	Apr 03	13.75	Apr 24 15:00	0.09	Apr 29 01:00	100.00	0	0	26.33	52.38	18.91	2.38	0.00	0.00
May	736	5.80	21.76	May 24	1.16	May 29	99.01	May 24 11:00	0.14	May 29 12:00	98.92	0	2	16.98	50.54	21.88	7.74	2.31	0.54
June	720	5.30	27.93	Jun 21	0.20	Jun 26	74.12	Jun 21 13:00	0.00	Jun 02 09:00	100.00	0	0	44.72	24.17	15.97	10.14	3.75	1.25
July	666	5.40	16.13	Jul 28	0.23	Jul 07	30.67	Jul 30 16:00	0.00	Jul 01 03:00	89.52	0	0	33.18	35.29	14.86	11.41	5.11	0.15
August	690	44.94	153.09	Aug 22	4.85	Aug 30	323.44	Aug 22 11:00	1.84	Aug 27 14:00	93.41	13	123	0.14	6.96	21.88	14.93	15.07	41.01
September	720	4.89	23.48	Sep 02	2.12	Sep 12	41.53	Sep 02 13:00	1.41	Sep 14 15:00	100.00	0	0	20.69	57.22	18.06	1.39	1.53	1.11
October	744	4.76	9.25	Oct 24	2.15	Oct 14	14.24	Oct 24 00:00	1.19	Oct 25 16:00	100.00	0	0	18.82	52.02	26.34	2.82	0.00	0.00
November	719	7.69	22.04	Nov 21	1.32	Nov 28	37.87	Nov 12 02:00	0.06	Nov 28 14:00	100.00	0	0	10.99	34.77	33.10	14.33	6.12	0.70
December	744	5.13	15.31	Dec 22	0.07	Dec 13	99.94	Dec 22 14:00	0.00	Dec 05 00:00	100.00	0	1	41.94	26.88	16.26	10.35	3.90	0.67
Annual	8608	8.25	153.09	Aug 22	0.07	Dec 13	323.44	Aug 22 11:00	0.00	Jan 13 13:00	98.4	14	128	25.53	39.18	20.01	7.42	3.73	4.12

AAAQO Objectives: 24-Hr: 30 µg/m³, 1-Hr: 80 µg/m³

Ambient Temperature (ET) – Beaverlodge 2018 Summary

Beaverlodge											2018
Ambient Temperature (°C)											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	744	-9.8	3.2	Jan 02	-31.1	Jan 11	6.0	Jan 02 16:00	-35.4	Jan 11 09:00	100.0
February	672	-12.3	2.2	Feb 13	-23.3	Feb 03	3.4	Feb 13 11:00	-28.4	Feb 04 10:00	100.0
March	742	-6.0	2.9	Mar 15	-15.2	Mar 03	7.6	Mar 15 16:00	-23.7	Mar 31 06:00	99.7
April	720	0.5	13.4	Apr 27	-12.9	Apr 05	21.6	Apr 27 16:00	-19.8	Apr 01 06:00	100.0
May	736	14.3	22.4	May 23	7.9	May 31	29.4	May 23 17:00	1.6	May 29 05:00	98.9
June	720	14.9	24.2	Jun 20	9.1	Jun 05	31.2	Jun 20 17:00	3.5	Jun 05 05:00	100.0
July	729	16.6	22.1	Jul 29	10.8	Jul 07	29.9	Jul 28 18:00	4.6	Jul 08 06:00	98.0
August	744	15.7	20.9	Aug 09	8.8	Aug 30	28.5	Aug 09 16:00	4.9	Aug 20 07:00	100.0
September	720	5.2	12.4	Sep 07	-2.6	Sep 12	20.5	Sep 07 17:00	-5.8	Sep 30 07:00	100.0
October	744	4.0	14.5	Oct 17	-3.4	Oct 02	20.7	Oct 16 15:00	-7.0	Oct 03 07:00	100.0
November	720	-2.3	4.8	Nov 13	-13.4	Nov 16	8.9	Nov 19 15:00	-16.0	Nov 07 09:00	100.0
December	744	-6.5	0.7	Dec 19	-15.5	Dec 30	4.0	Dec 19 15:00	-17.5	Dec 30 09:00	100.0
Annual	8735	2.9	24.2	Jun 20	-31.1	Jan 11	31.2	Jun 20 17:00	-35.4	Jan 11 09:00	99.7

Relative Humidity (RH) – Beaverlodge 2018 Summary

Beaverlodge											2018
Relative Humidity (%)											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	730	78.3	96.3	Jan 15	59.5	Jan 06	100.0	Jan 08 07:00	45.6	Jan 06 15:00	98.1
February	0	-	-	-	-	-	-	-	-	-	0.0
March	0	-	-	-	-	-	-	-	-	-	0.0
April	0	-	-	-	-	-	-	-	-	-	0.0
May	689	48.1	85.1	May 31	28.4	May 15	100.0	May 17 03:00	17.2	May 28 16:00	92.6
June	720	58.1	79.3	Jun 25	40.8	Jun 17	100.0	Jun 01 09:00	21.5	Jun 18 19:00	100.0
July	729	73.0	100.0	Jul 22	40.8	Jul 16	100.0	Jul 02 04:00	21.1	Jul 15 18:00	98.0
August	744	70.4	99.9	Aug 05	39.8	Aug 22	100.0	Aug 01 03:00	29.1	Aug 22 20:00	100.0
September	81	74.1	79.2	Sep 03	72.2	Sep 01	95.7	Sep 04 02:00	55.8	Sep 01 13:00	11.3
October	263	56.4	67.6	Oct 25	43.6	Oct 20	94.8	Oct 06 20:00	27.0	Oct 23 15:00	35.4
November	54	75.7	69.0	Nov 22	69.0	Nov 22	97.9	Nov 25 04:00	43.8	Nov 22 16:00	7.5
December	64	76.1	73.2	Dec 19	73.2	Dec 19	97.6	Dec 25 11:00	56.7	Dec 19 15:00	8.6
Annual	4074	65.7	100.0	Jul 22	28.4	May 15	100.0	Jan 08 07:00	17.2	May 28 16:00	46.0

Wind Speed (WS) – Beaverlodge 2018 Summary

Beaverlodge											Wind Speed (km/h)											2018
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)											
January	256	7.9	24.8	Jan 06	2.4	Jan 05	37.9	Jan 06 15:00	0.0	Jan 03 04:00	34.4											
February	200	16.0	26.9	Feb 23	8.0	Feb 25	43.2	Feb 26 14:00	0.2	Feb 21 02:00	29.8											
March	736	12.2	37.3	Mar 22	4.4	Mar 12	44.1	Mar 21 20:00	0.3	Mar 06 12:00	98.9											
April	720	14.5	25.5	Apr 30	5.8	Apr 09	39.0	Apr 21 17:00	0.9	Apr 10 08:00	100.0											
May	736	22.9	32.3	May 26	14.2	May 06	48.5	May 28 13:00	1.7	May 13 16:00	98.9											
June	720	24.5	38.3	Jun 26	15.3	Jun 20	47.1	Jun 26 11:00	2.9	Jun 20 03:00	100.0											
July	728	23.1	29.8	Jul 11	9.1	Jul 28	38.5	Jul 14 01:00	3.3	Jul 28 19:00	97.9											
August	743	11.0	19.8	Aug 31	4.3	Aug 20	39.7	Aug 31 14:00	0.1	Aug 16 07:00	99.9											
September	720	9.2	16.2	Sep 25	3.7	Sep 19	39.3	Sep 25 17:00	0.0	Sep 03 22:00	100.0											
October	744	10.1	25.9	Oct 20	3.1	Oct 23	49.9	Oct 20 12:00	0.2	Oct 23 04:00	100.0											
November	720	6.0	14.1	Nov 09	2.2	Nov 07	36.7	Nov 13 19:00	0.1	Nov 06 09:00	100.0											
December	744	8.3	29.3	Dec 12	2.1	Dec 18	48.6	Dec 12 13:00	0.2	Dec 07 15:00	100.0											
Annual	7767	14.0	38.3	Jun 26	2.1	Dec 18	49.9	Oct 20 12:00	0.0	Jan 03 04:00	88.3											

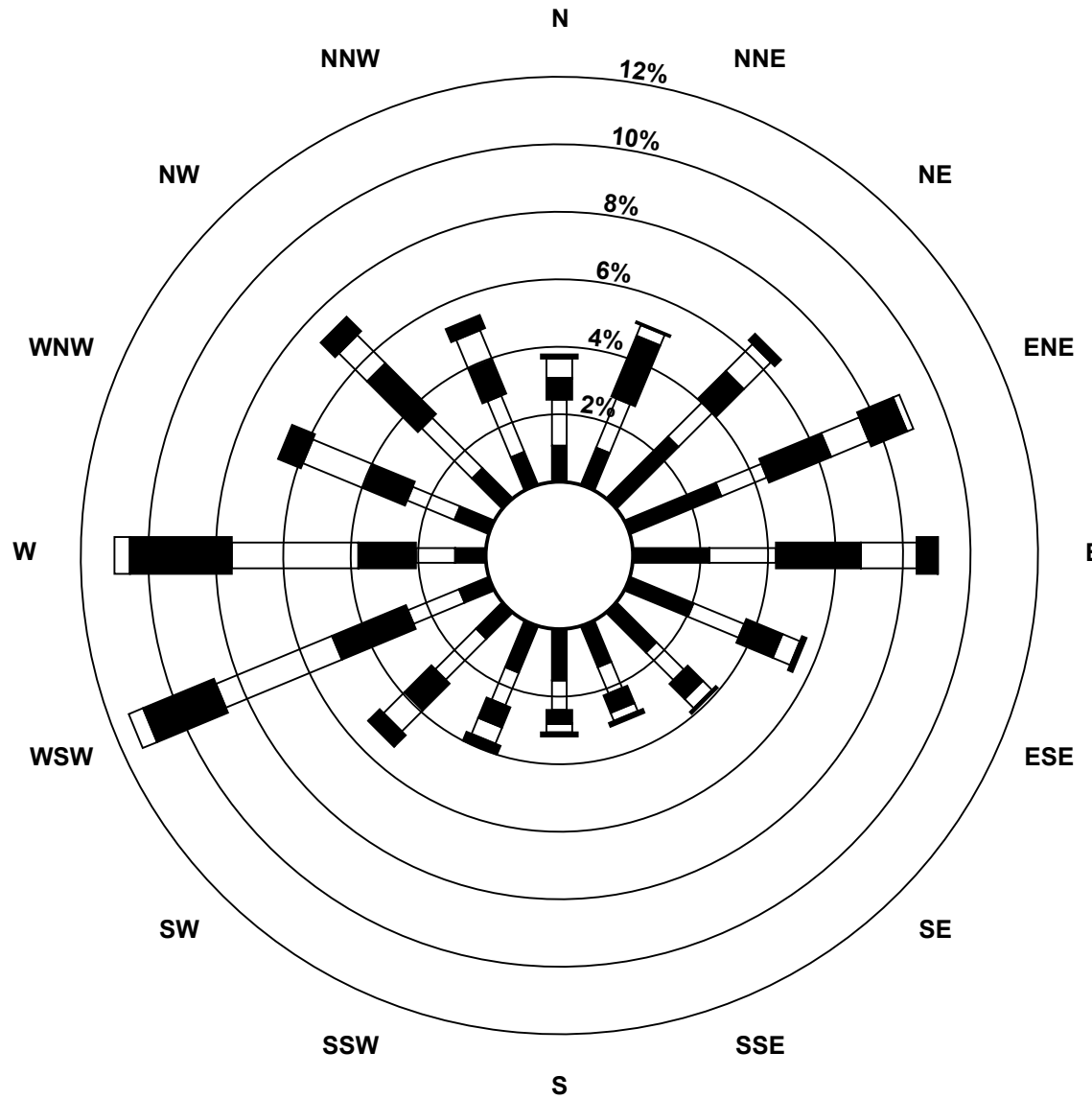
Wind Speed and Wind Direction Frequency Distribution – Beaverlodge 2018 Summary

Beaverlodge								2018
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	288	1.13	1.35	0.62	0.56	0.12	0.00	3.78
NNE	399	1.27	1.64	1.94	0.33	0.05	0.00	5.23
NE	504	2.73	1.42	1.11	1.09	0.26	0.00	6.61
ENE	686	3.16	1.42	1.93	1.18	1.11	0.20	8.99
E	675	2.28	1.91	2.44	1.60	0.60	0.01	8.85
ESE	415	2.03	1.60	1.13	0.54	0.14	0.00	5.44
SE	293	1.65	1.13	0.62	0.37	0.08	0.00	3.84
SSE	231	1.31	0.81	0.54	0.25	0.12	0.00	3.03
S	237	1.49	0.85	0.39	0.25	0.12	0.00	3.11
SSW	296	1.46	1.02	0.63	0.50	0.28	0.00	3.88
SW	393	1.09	1.65	1.09	0.85	0.43	0.04	5.15
WSW	865	0.96	1.66	2.36	3.66	2.25	0.45	11.34
WSW	846	0.96	1.18	1.70	3.80	3.00	0.45	11.09
WNW	507	1.14	1.61	1.31	1.87	0.71	0.00	6.65
NW	563	1.31	2.23	2.11	1.14	0.59	0.00	7.38
NNW	430	1.17	2.01	1.15	0.90	0.41	0.00	5.64
Totals	7628	25.13	23.49	21.07	18.89	10.28	1.14	100

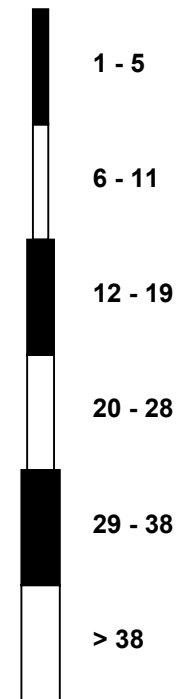
Wind Rose

Wind Speed (WS) (km/h)

Beaverlodge - 2018

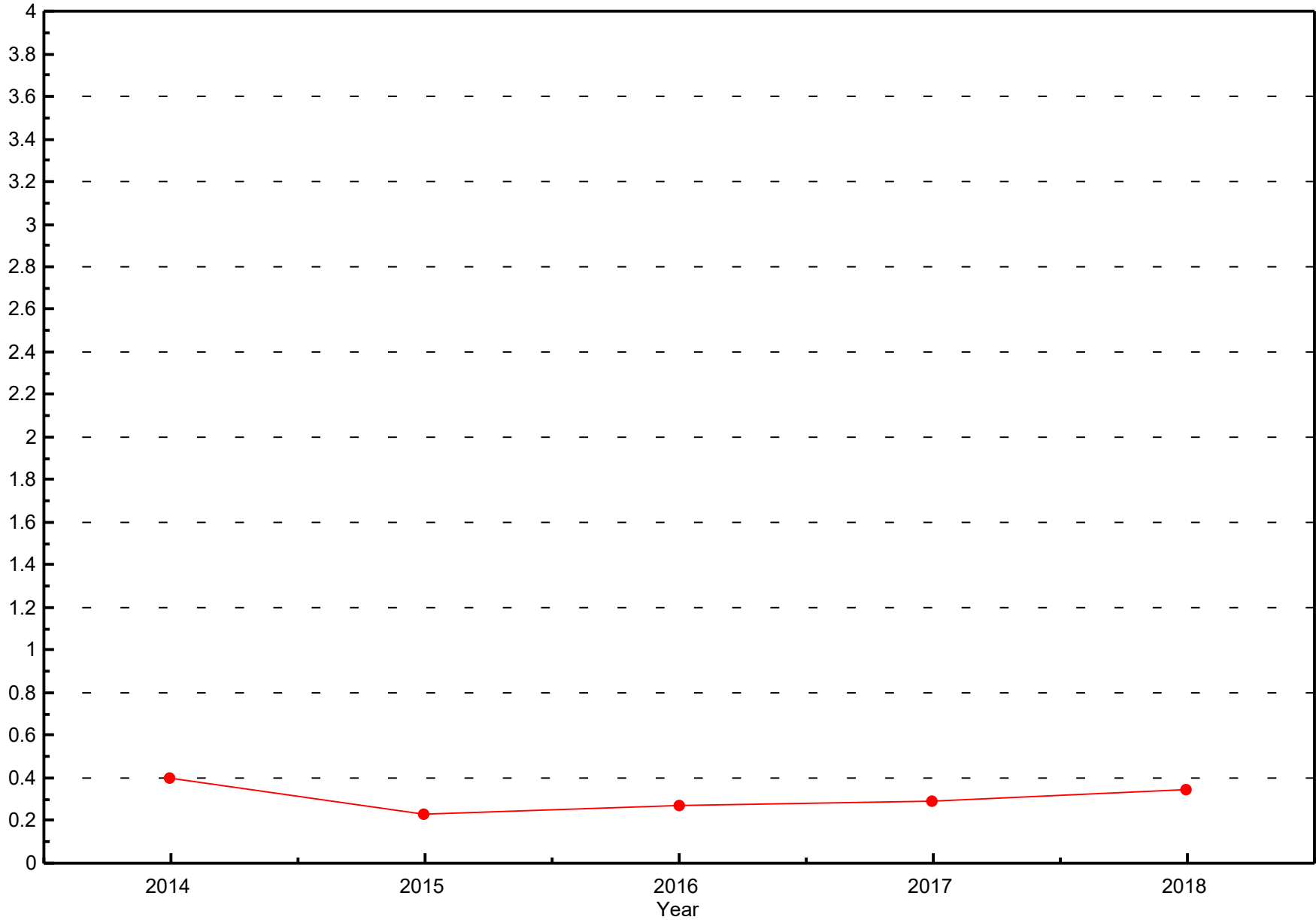


Wind Speed Classes (km/h)



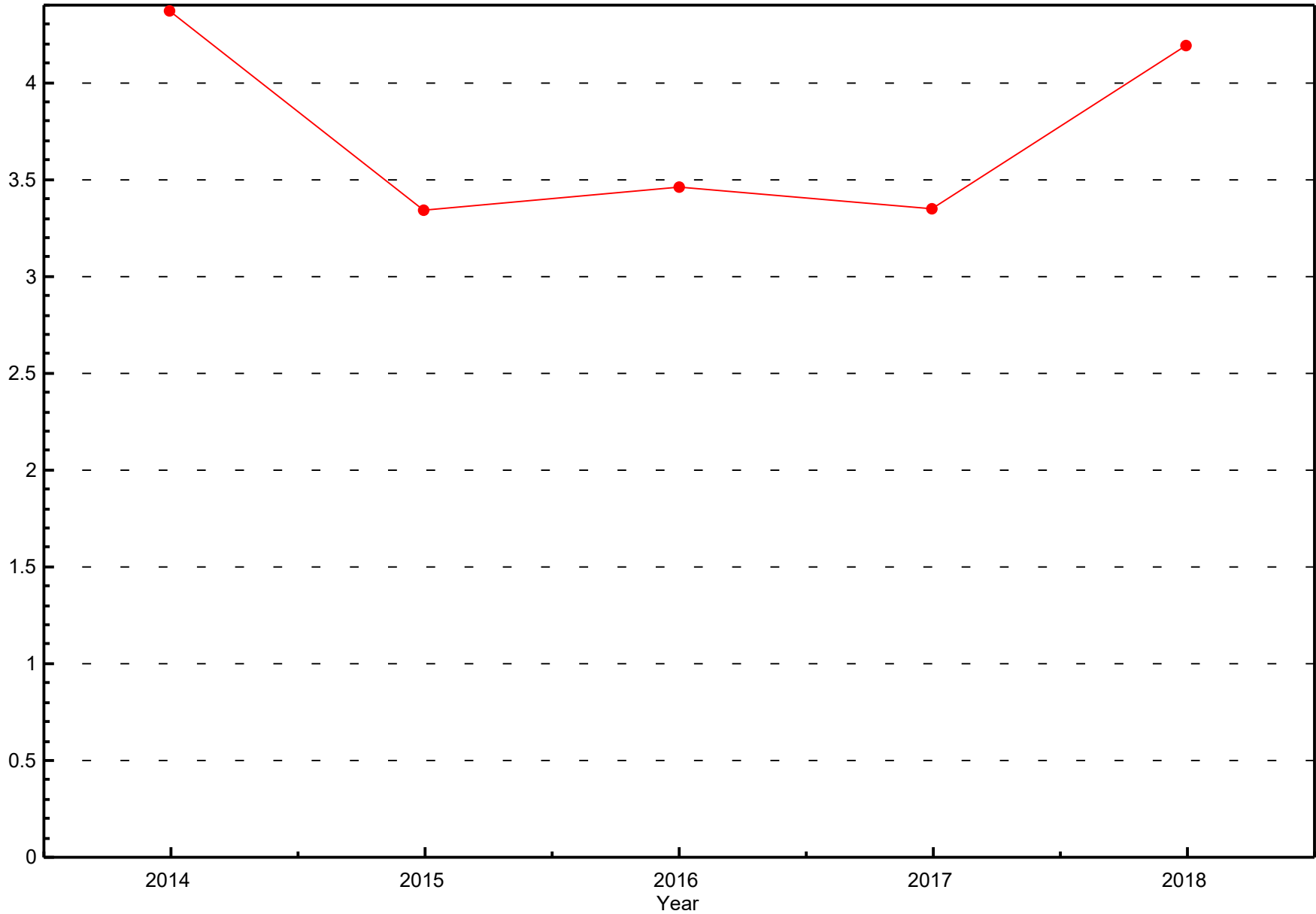
5-Year Annual Averages

Sulphur Dioxide (SO₂) - ppb
Beaverlodge (2014 to 2018)



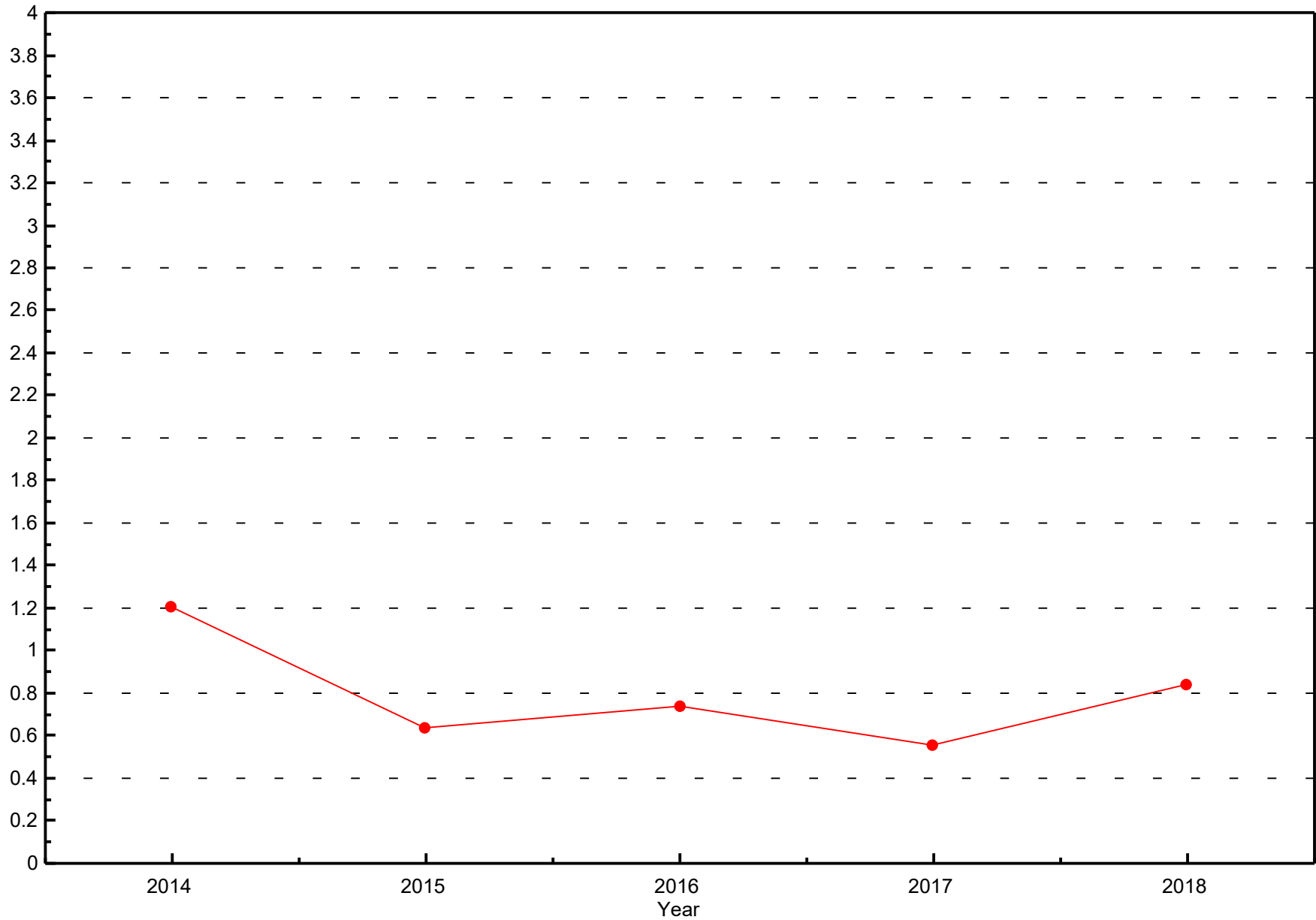
5-Year Annual Averages

**Nitrogen Dioxide (NO₂) - ppb
Beaverlodge (2014 to 2018)**



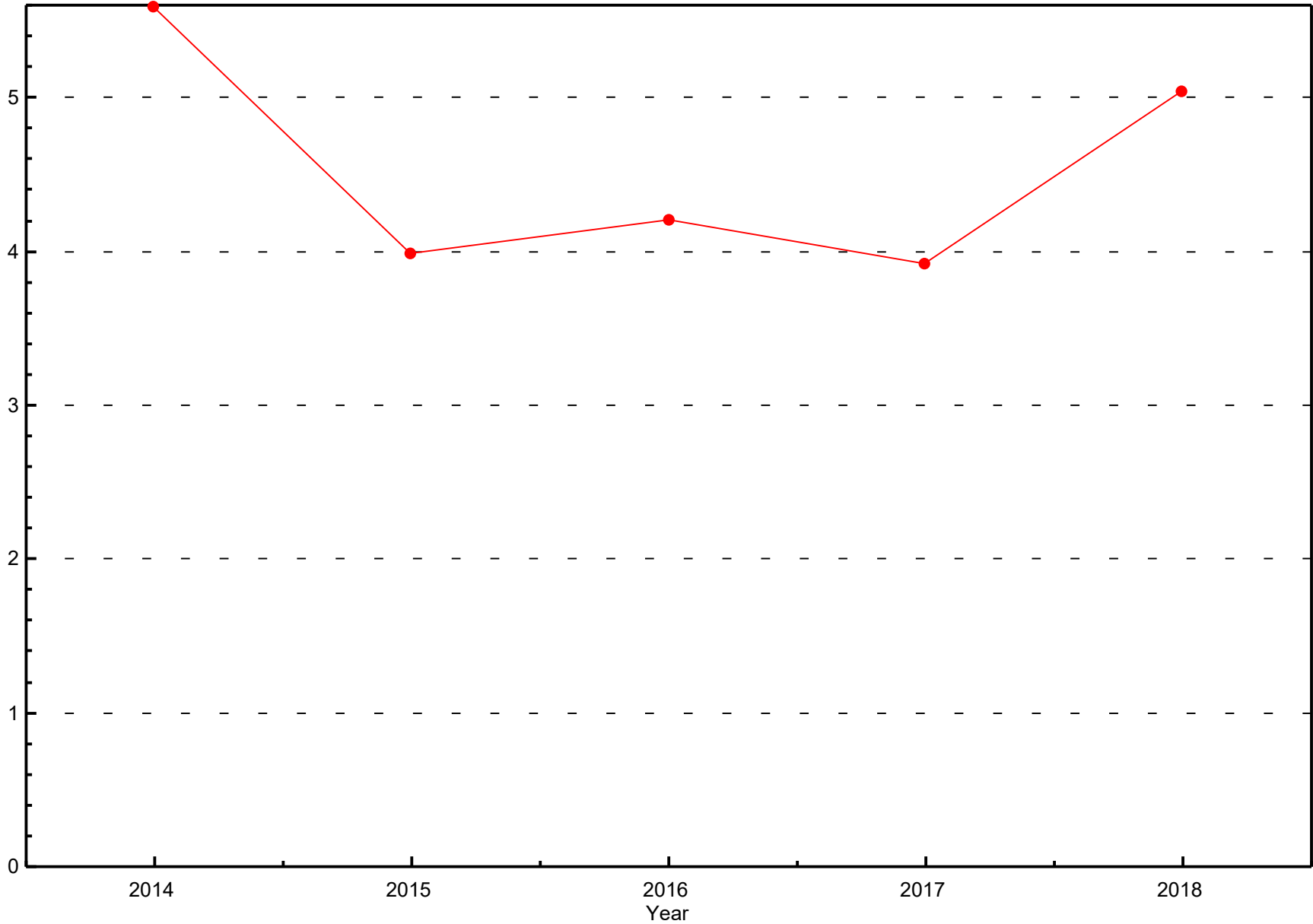
5-Year Annual Averages

**Nitrogen Oxide (NO) - ppb
Beaverlodge (2014 to 2018)**



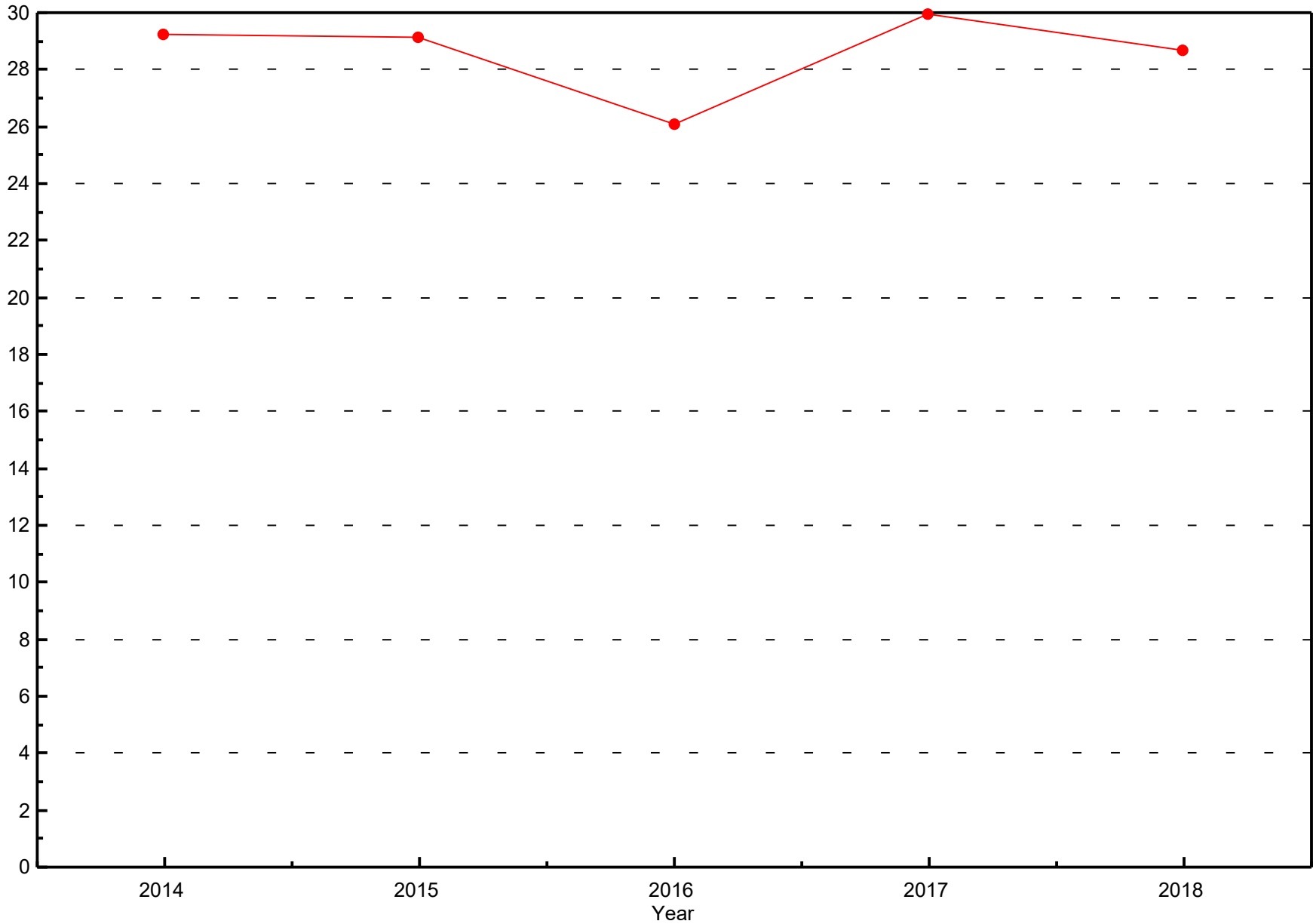
5-Year Annual Averages

Oxides of Nitrogen (NO_x) - ppb
Beaverlodge (2014 to 2018)

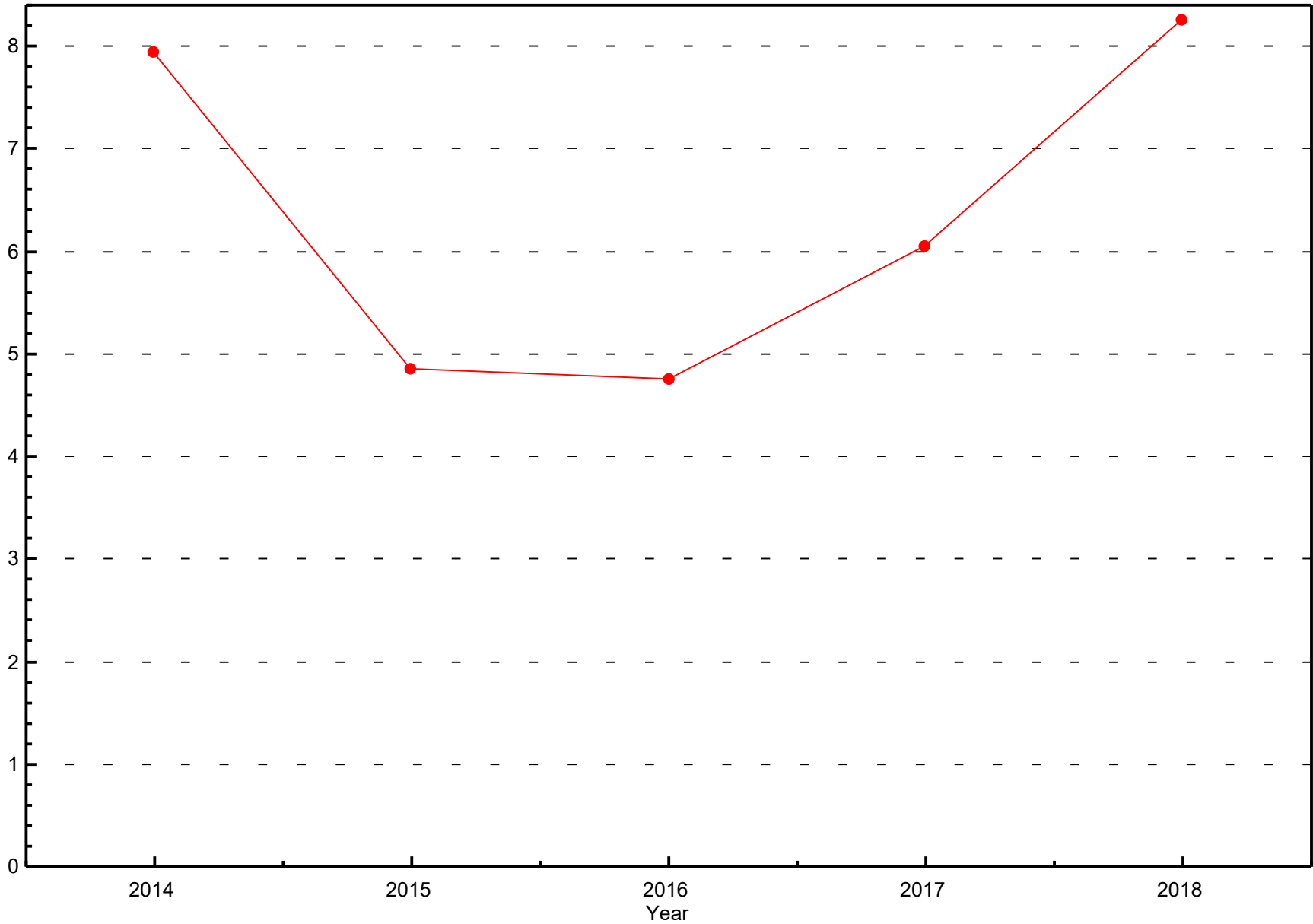


5-Year Annual Averages

Ozone (O₃) - ppb
Beaverlodge (2014 to 2018)

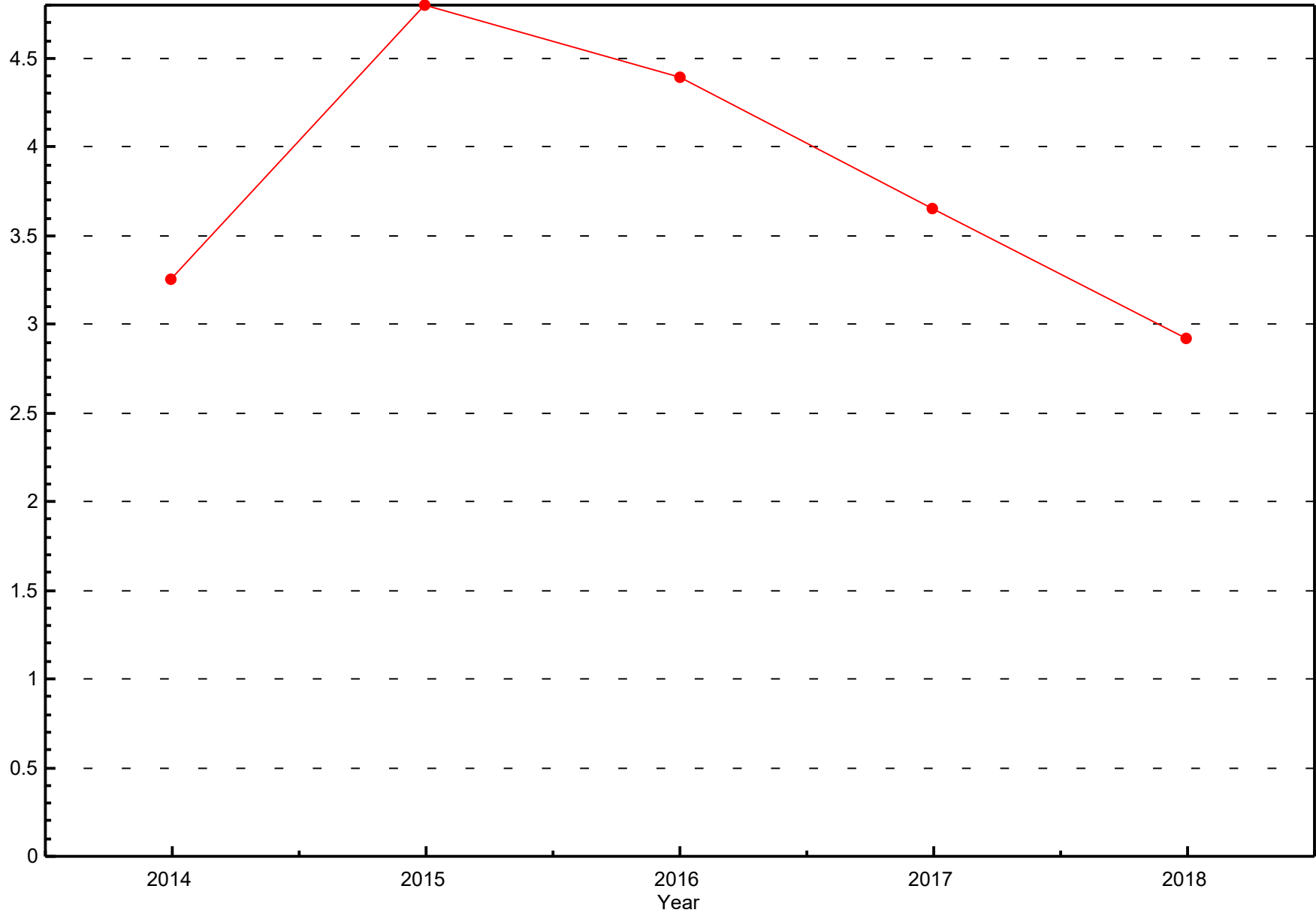


**5-Year Annual Averages Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Beaverlodge (2014 to 2018)**



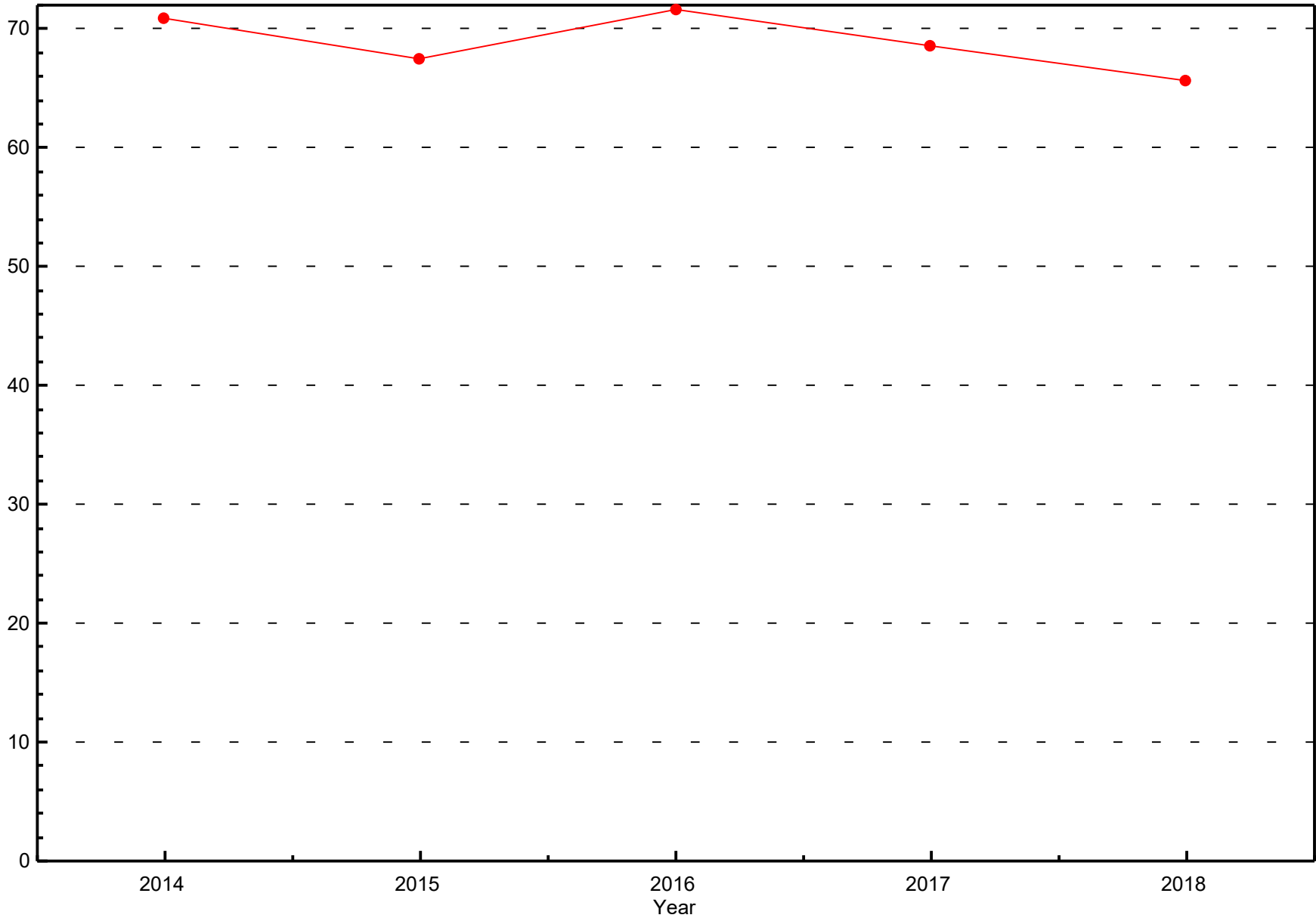
5-Year Annual Averages

External Temperature (ET) - °C
Beaverlodge (2014 to 2018)



5-Year Annual Averages

**Relative Humidity (RH) - %
Beaverlodge (2014 to 2018)**



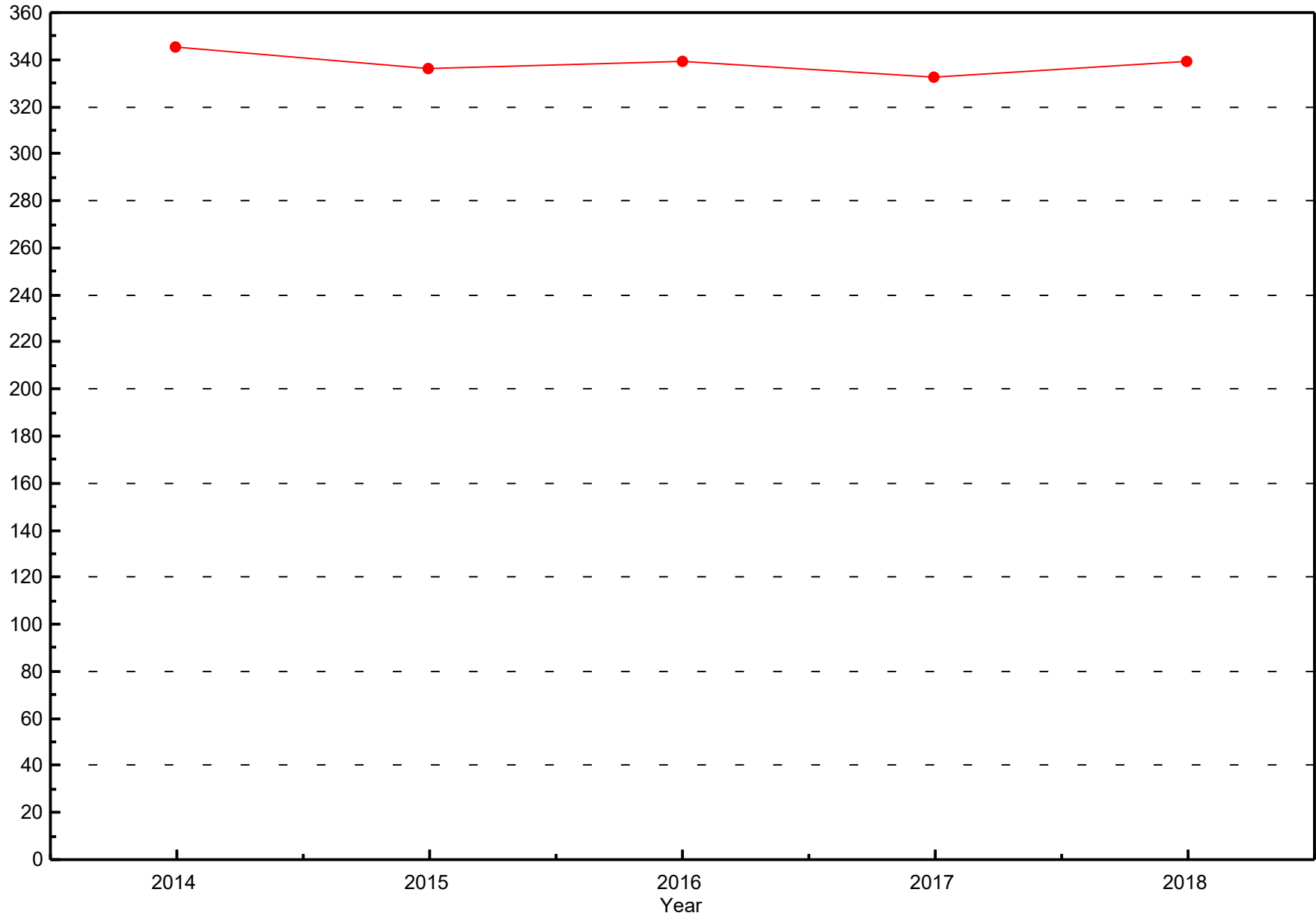
5-Year Annual Averages

**Wind Speed (WS) - km/h
Beaverlodge (2014 to 2018)**



5-Year Annual Averages

**Wind Direction (WD) - deg
Beaverlodge (2014 to 2018)**



PAZA
EVERGREEN PARK
CONTINUOUS AMBIENT AIR MONITORING STATION

2018
ANNUAL SUMMARY TABLES

Sulphur Dioxide (SO₂) – Evergreen Park 2018 Summary and Frequency Distribution

Evergreen Park												SO ₂ (ppb)			2018							
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance			Percentage of Readings in Concentration Range							
												30-Day	24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340		
January	704	0.36	1.27	Jan 10	0.06	Jan 15	21.41	Jan 10 13:00	0.00	Jan 14 16:00	99.19	0	0	0	99.86	0.14	0.00	0.00	0.00	0.00		
February	639	0.59	3.79	Feb 19	0.10	Feb 14	26.04	Feb 19 09:00	0.00	Feb 02 18:00	100.00	0	0	0	99.84	0.16	0.00	0.00	0.00	0.00		
March	709	0.44	1.63	Mar 31	0.05	Mar 29	9.82	Mar 31 11:00	0.00	Mar 04 23:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
April	686	0.23	0.85	Apr 01	0.04	Apr 22	1.78	Apr 01 17:00	0.00	Apr 03 14:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
May	708	0.15	0.56	May 23	0.02	May 04	5.14	May 21 02:00	0.00	May 01 01:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
June	685	0.21	0.84	Jun 27	0.01	Jun 26	3.09	Jun 09 19:00	0.00	Jun 01 02:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
July	707	0.15	0.43	Jul 26	0.03	Jul 31	5.11	Jul 27 10:00	0.00	Jul 06 14:00	99.87	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
August	706	0.21	1.06	Aug 14	0.02	Aug 11	7.40	Aug 14 18:00	0.00	Aug 01 18:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
September	686	0.11	0.27	Sep 04	0.00	Sep 28	2.65	Sep 04 14:00	0.00	Sep 01 03:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
October	710	0.21	0.75	Oct 22	0.00	Oct 07	5.18	Oct 22 13:00	0.00	Oct 01 01:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
November	678	0.29	0.80	Nov 09	0.04	Nov 23	9.27	Nov 09 10:00	0.00	Nov 01 15:00	99.03	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
December	710	0.34	0.73	Dec 15	0.09	Dec 23	4.69	Dec 15 03:00	0.00	Dec 01 03:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
Annual	8328	0.27	3.79	Feb 19	0.00	Oct 07	26.04	Feb 19 09:00	0.00	Jan 14 16:00	99.8	0	0	0	99.98	0.02	0.00	0.00	0.00	0.00		

AAAQO Objectives: Annual: 8 ppb, 30-Day: 11 ppb, 24-Hr: 48 ppb, 1-Hr: 172 ppb

Total Reduced Sulphur (TRS) – Evergreen Park 2018 Summary and Frequency Distribution

Evergreen Park												TRS (ppb)					2018			
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range								
												0 - 1	1 - 2.5	2.5 - 5	5 - 7.5	7.5 - 10	>10			
January	703	0.32	0.86	Jan 12	0.10	Jan 22	3.44	Jan 29 19:00	0.00	Jan 22 03:00	99.19	98.58	1.28	0.14	0.00	0.00	0.00			
February	639	0.30	0.64	Feb 04	0.16	Feb 13	1.54	Feb 10 00:00	0.07	Feb 17 16:00	100.00	98.90	1.10	0.00	0.00	0.00	0.00			
March	709	0.28	0.51	Mar 12	0.11	Mar 24	1.54	Mar 07 11:00	0.03	Mar 30 12:00	100.00	99.58	0.42	0.00	0.00	0.00	0.00			
April	686	0.22	0.43	Apr 01	0.09	Apr 18	0.90	Apr 13 11:00	0.00	Apr 14 12:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00			
May	709	0.31	1.01	May 13	0.11	May 02	4.85	May 13 08:00	0.00	May 02 05:00	100.00	96.05	2.82	1.13	0.00	0.00	0.00			
June	684	0.19	0.36	Jun 20	0.08	Jun 08	1.03	Jun 20 12:00	0.00	Jun 01 03:00	100.00	99.85	0.15	0.00	0.00	0.00	0.00			
July	372	0.19	0.34	Jul 09	0.12	Jul 11	2.05	Jul 09 15:00	0.00	Jul 07 01:00	52.82	99.73	0.27	0.00	0.00	0.00	0.00			
August	625	0.50	0.96	Aug 10	0.28	Aug 16	3.28	Aug 10 00:00	0.08	Aug 31 01:00	89.52	98.40	1.12	0.48	0.00	0.00	0.00			
September	685	0.35	0.50	Sep 08	0.21	Sep 04	1.46	Sep 06 15:00	0.00	Sep 10 05:00	100.00	99.85	0.15	0.00	0.00	0.00	0.00			
October	709	0.44	0.72	Oct 22	0.20	Oct 02	1.88	Oct 11 17:00	0.00	Oct 19 05:00	100.00	98.59	1.41	0.00	0.00	0.00	0.00			
November	678	0.49	1.36	Nov 07	0.24	Nov 18	8.11	Nov 07 09:00	0.02	Nov 17 19:00	99.03	93.51	6.05	0.00	0.29	0.15	0.00			
December	709	0.60	1.05	Dec 07	0.36	Dec 14	2.90	Dec 01 14:00	0.00	Dec 01 04:00	100.00	90.27	9.45	0.28	0.00	0.00	0.00			
Annual	7908	0.35	1.36	Nov 07	0.08	Jun 08	8.11	Nov 07 09:00	0.00	Jan 22 03:00	95.0	97.72	2.07	0.18	0.03	0.01	0.00			

No AAAQO

Particulate Matter (PM_{2.5}) – Evergreen Park 2018 Summary and Frequency Distribution

Evergreen Park														PM _{2.5} (µg/m ³)					2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance		Percentage of Readings in Concentration Range						
												24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30	
January	735	5.05	17.00	Jan 16	0.82	Jan 31	48.21	Jan 16 21:00	0.00	Jan 01 17:00	98.79	0	0	33.33	36.05	18.78	8.44	2.72	0.68	
February	670	2.07	8.06	Feb 12	0.02	Feb 13	40.21	Feb 12 12:00	0.00	Feb 01 13:00	100.00	0	0	64.78	28.51	4.93	1.04	0.60	0.15	
March	742	3.69	9.68	Mar 14	0.48	Mar 29	24.68	Mar 12 10:00	0.00	Mar 01 22:00	100.00	0	0	43.13	35.85	17.12	2.96	0.94	0.00	
April	718	3.86	10.59	Apr 09	0.71	Apr 06	55.29	Apr 30 16:00	0.00	Apr 02 13:00	100.00	0	0	39.28	39.69	16.02	4.04	0.56	0.42	
May	739	5.72	15.60	May 24	0.61	May 09	54.60	May 24 13:00	0.00	May 06 12:00	99.60	0	0	22.60	40.19	25.58	7.71	3.52	0.41	
June	716	6.58	18.02	Jun 21	0.70	Jun 26	75.69	Jun 10 02:00	0.00	Jun 02 08:00	100.00	0	0	32.26	29.05	19.55	11.17	5.73	2.23	
July	739	5.26	15.25	Jul 28	0.57	Jul 02	37.14	Jul 28 20:00	0.00	Jul 01 01:00	99.87	0	0	39.65	29.77	13.13	11.37	5.68	0.41	
August	737	36.57	133.37	Aug 22	0.29	Aug 30	293.68	Aug 22 13:00	0.00	Aug 01 03:00	100.00	10	110	12.21	15.74	11.40	8.96	18.59	33.11	
September	717	2.35	18.78	Sep 02	0.00	Sep 09	38.35	Sep 02 13:00	0.00	Sep 01 01:00	100.00	0	0	71.97	16.74	6.28	2.23	1.95	0.84	
October	741	4.97	15.36	Oct 20	0.47	Oct 02	56.47	Oct 20 10:00	0.00	Oct 01 02:00	100.00	0	0	38.73	32.93	17.54	5.40	4.18	1.21	
November	710	7.92	16.77	Nov 21	1.88	Nov 01	137.40	Nov 16 18:00	0.00	Nov 01 13:00	99.03	0	2	19.15	33.94	21.13	15.35	9.01	1.41	
December	742	5.56	17.14	Dec 07	0.87	Dec 20	58.42	Dec 29 05:00	0.00	Dec 05 01:00	100.00	0	0	30.73	35.31	20.08	9.97	3.23	0.67	
Annual	8706	7.52	133.37	Aug 22	0.00	Sep 09	293.68	Aug 22 13:00	0.00	Jan 01 17:00	99.8	10	112	37.17	31.10	16.01	7.44	4.77	3.51	

AAAQO Objectives: 24-Hr: 30 µg/m³, 1-Hr: 80 µg/m³

Ambient Temperature (ET) – Evergreen Park 2018 Summary

Evergreen Park											Ambient Temperature (°C)		2018
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)		
January	744	-11.2	1.0	Jan 06	-33.0	Jan 11	6.7	Jan 02 16:00	-37.7	Jan 11 09:00	100.0		
February	672	-12.9	3.1	Feb 13	-29.9	Feb 04	4.0	Feb 13 15:00	-36.7	Feb 04 08:00	100.0		
March	744	-6.5	2.8	Mar 20	-18.0	Mar 31	9.1	Mar 15 16:00	-28.6	Mar 31 07:00	100.0		
April	720	0.5	12.5	Apr 28	-14.9	Apr 05	24.6	Apr 27 18:00	-24.5	Apr 01 07:00	100.0		
May	744	14.4	20.3	May 23	9.6	May 31	30.8	May 23 17:00	2.2	May 18 05:00	100.0		
June	720	15.4	23.2	Jun 20	9.4	Jun 05	32.0	Jun 20 17:00	1.1	Jun 05 05:00	100.0		
July	743	16.8	21.8	Jul 29	11.6	Jul 01	30.6	Jul 28 18:00	3.4	Jul 08 05:00	99.9		
August	744	15.6	21.1	Aug 14	9.4	Aug 30	29.7	Aug 09 17:00	4.3	Aug 31 06:00	100.0		
September	720	5.4	13.2	Sep 07	-1.6	Sep 12	20.3	Sep 07 17:00	-7.2	Sep 30 07:00	100.0		
October	744	3.1	12.0	Oct 15	-2.1	Oct 02	21.4	Oct 16 15:00	-6.1	Oct 23 08:00	100.0		
November	713	-4.0	3.4	Nov 18	-14.2	Nov 07	10.3	Nov 19 15:00	-23.0	Nov 17 06:00	99.0		
December	744	-8.6	0.6	Dec 12	-15.6	Dec 30	4.1	Dec 19 16:00	-22.9	Dec 31 04:00	100.0		
Annual	8752	2.4	23.2	Jun 20	-33.0	Jan 11	32.0	Jun 20 17:00	-37.7	Jan 11 09:00	99.9		

Relative Humidity (RH) – Evergreen Park 2018 Summary

Evergreen Park											2018
Relative Humidity (%)											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	744	80.4	93.1	Jan 16	58.4	Jan 06	98.3	Jan 17 01:00	41.9	Jan 06 16:00	100.0
February	672	65.8	77.7	Feb 14	49.7	Feb 27	91.5	Feb 26 03:00	33.0	Feb 19 17:00	100.0
March	744	71.7	89.3	Mar 21	54.1	Mar 10	98.3	Mar 21 09:00	28.7	Mar 31 18:00	100.0
April	720	58.9	90.5	Apr 16	42.8	Apr 23	96.7	Apr 11 03:00	17.2	Apr 23 16:00	100.0
May	744	49.5	82.6	May 17	32.8	May 12	98.0	May 17 04:00	13.9	May 14 19:00	100.0
June	720	58.1	77.3	Jun 14	41.2	Jun 28	98.6	Jun 04 03:00	19.3	Jun 17 19:00	100.0
July	743	69.2	90.2	Jul 20	42.3	Jul 11	99.1	Jul 08 08:00	17.1	Jul 15 18:00	99.9
August	744	69.3	91.9	Aug 12	43.6	Aug 07	99.5	Aug 13 08:00	25.0	Aug 22 16:00	100.0
September	720	79.2	94.5	Sep 16	59.2	Sep 20	99.0	Sep 28 10:00	30.9	Sep 04 18:00	100.0
October	744	68.4	95.3	Oct 07	37.4	Oct 15	98.8	Oct 12 07:00	13.7	Oct 16 15:00	100.0
November	713	86.4	96.4	Nov 03	72.9	Nov 18	98.4	Nov 03 05:00	48.0	Nov 19 15:00	99.0
December	744	80.5	93.6	Dec 01	54.3	Dec 12	95.9	Dec 01 09:00	41.2	Dec 12 14:00	100.0
Annual	8752	69.8	96.4	Nov 03	32.8	May 12	99.5	Aug 13 08:00	13.7	Oct 16 15:00	99.9

Wind Speed (WS) – Evergreen Park 2018 Summary

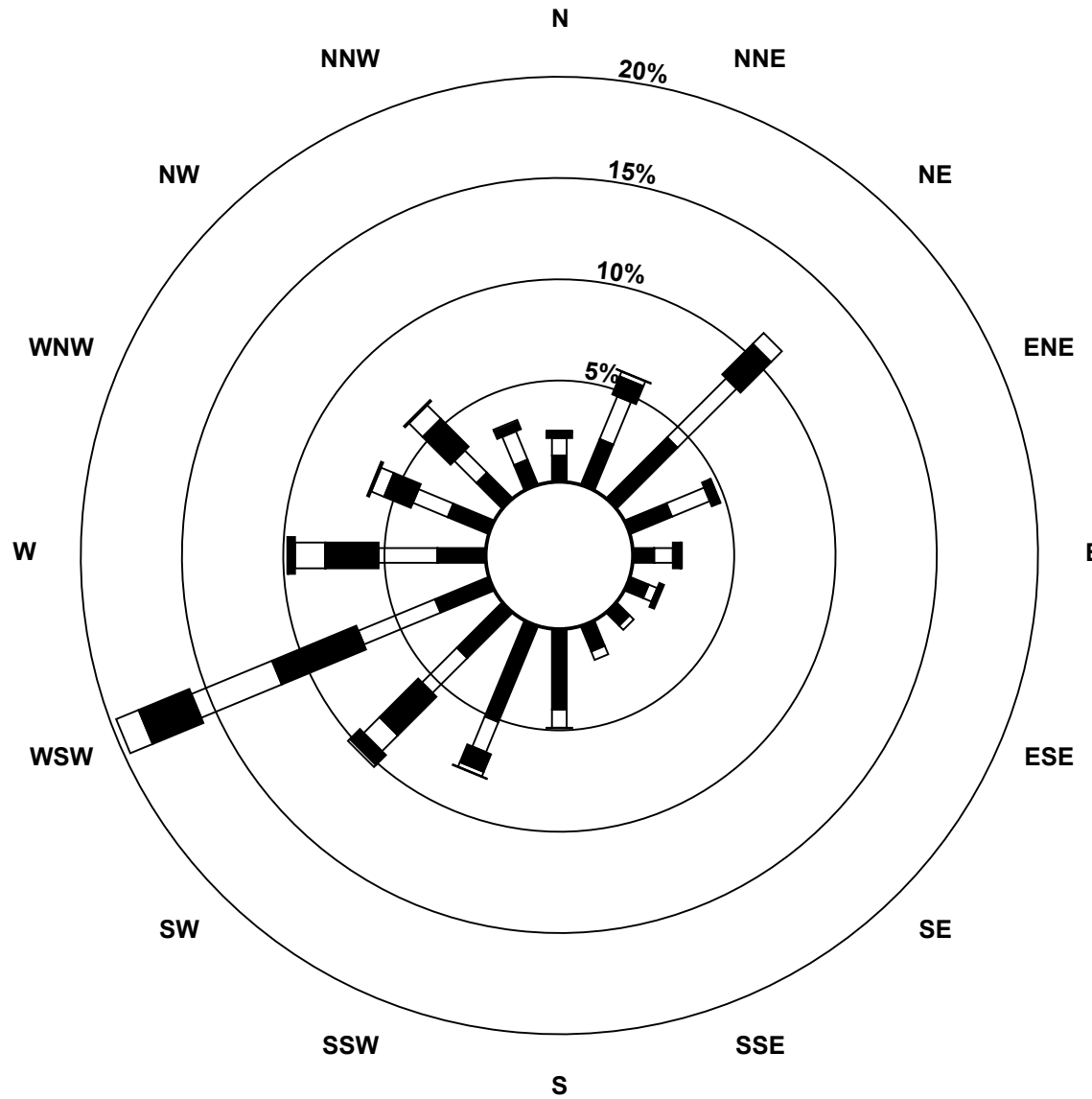
Evergreen Park											2018
Wind Speed (km/h)											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	724	6.1	28.6	Jan 06	1.3	Jan 04	49.7	Jan 06 19:00	0.1	Jan 02 19:00	97.3
February	670	11.7	35.3	Feb 13	2.2	Feb 04	54.7	Feb 13 05:00	0.0	Feb 15 01:00	99.7
March	744	8.8	21.2	Mar 22	3.3	Mar 08	35.7	Mar 23 05:00	0.0	Mar 18 23:00	100.0
April	720	11.4	22.3	Apr 22	3.2	Apr 09	44.1	Apr 30 16:00	0.0	Apr 30 03:00	100.0
May	744	12.4	33.4	May 02	3.8	May 22	54.1	May 02 14:00	0.1	May 14 03:00	100.0
June	720	12.5	36.2	Jun 11	3.0	Jun 19	50.0	Jun 11 14:00	0.0	Jun 19 23:00	100.0
July	743	9.5	27.4	Jul 11	2.1	Jul 25	35.0	Jul 11 10:00	0.0	Jul 09 07:00	99.9
August	744	9.2	19.7	Aug 06	3.5	Aug 19	42.8	Aug 06 12:00	0.1	Aug 20 00:00	100.0
September	720	7.2	19.8	Sep 01	1.9	Sep 13	36.3	Sep 01 01:00	0.0	Sep 14 04:00	100.0
October	744	9.0	26.2	Oct 20	1.2	Oct 22	54.3	Oct 20 13:00	0.0	Oct 22 21:00	100.0
November	713	5.4	15.0	Nov 04	1.0	Nov 25	41.2	Nov 18 03:00	0.0	Nov 25 02:00	99.0
December	744	6.2	28.4	Dec 12	0.9	Dec 01	48.5	Dec 12 13:00	0.0	Dec 07 23:00	100.0
Annual	8730	9.1	36.2	Jun 11	0.9	Dec 01	54.7	Feb 13 05:00	0.0	Jul 09 07:00	99.7

Wind Speed and Wind Direction Frequency Distribution – Evergreen Park 2018 Summary

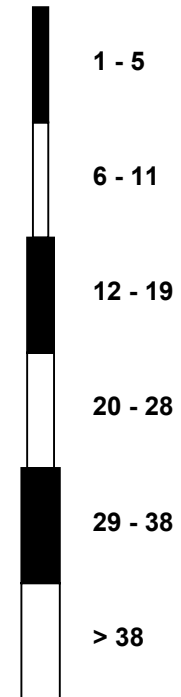
Evergreen Park								2018
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	203	1.46	0.86	0.31	0.01	0.00	0.00	2.64
NNE	503	2.69	2.48	1.10	0.23	0.03	0.00	6.54
NE	903	4.59	4.40	2.04	0.70	0.00	0.00	11.73
ENE	372	2.34	2.07	0.40	0.03	0.00	0.00	4.83
E	179	1.07	0.84	0.35	0.06	0.00	0.00	2.33
ESE	128	1.01	0.42	0.23	0.00	0.00	0.00	1.66
SE	87	0.87	0.26	0.00	0.00	0.00	0.00	1.13
SSE	130	1.27	0.42	0.00	0.00	0.00	0.00	1.69
S	378	4.05	0.83	0.03	0.00	0.00	0.00	4.91
SSW	594	5.11	1.49	0.87	0.22	0.03	0.00	7.72
SW	778	3.36	2.39	2.51	1.07	0.65	0.13	10.11
WSW	1481	3.01	4.08	4.24	4.09	2.64	1.18	19.24
WSW	725	2.43	2.82	2.44	1.38	0.31	0.04	9.42
WNW	483	2.17	1.90	1.48	0.62	0.10	0.00	6.28
NW	500	1.95	1.51	2.00	0.96	0.08	0.00	6.50
NNW	253	1.36	1.47	0.36	0.09	0.00	0.00	3.29
Totals	7697	38.74	28.23	18.37	9.47	3.83	1.35	100

Wind Rose

Wind Speed (WS) (km/h)
Evergreen Park - 2018

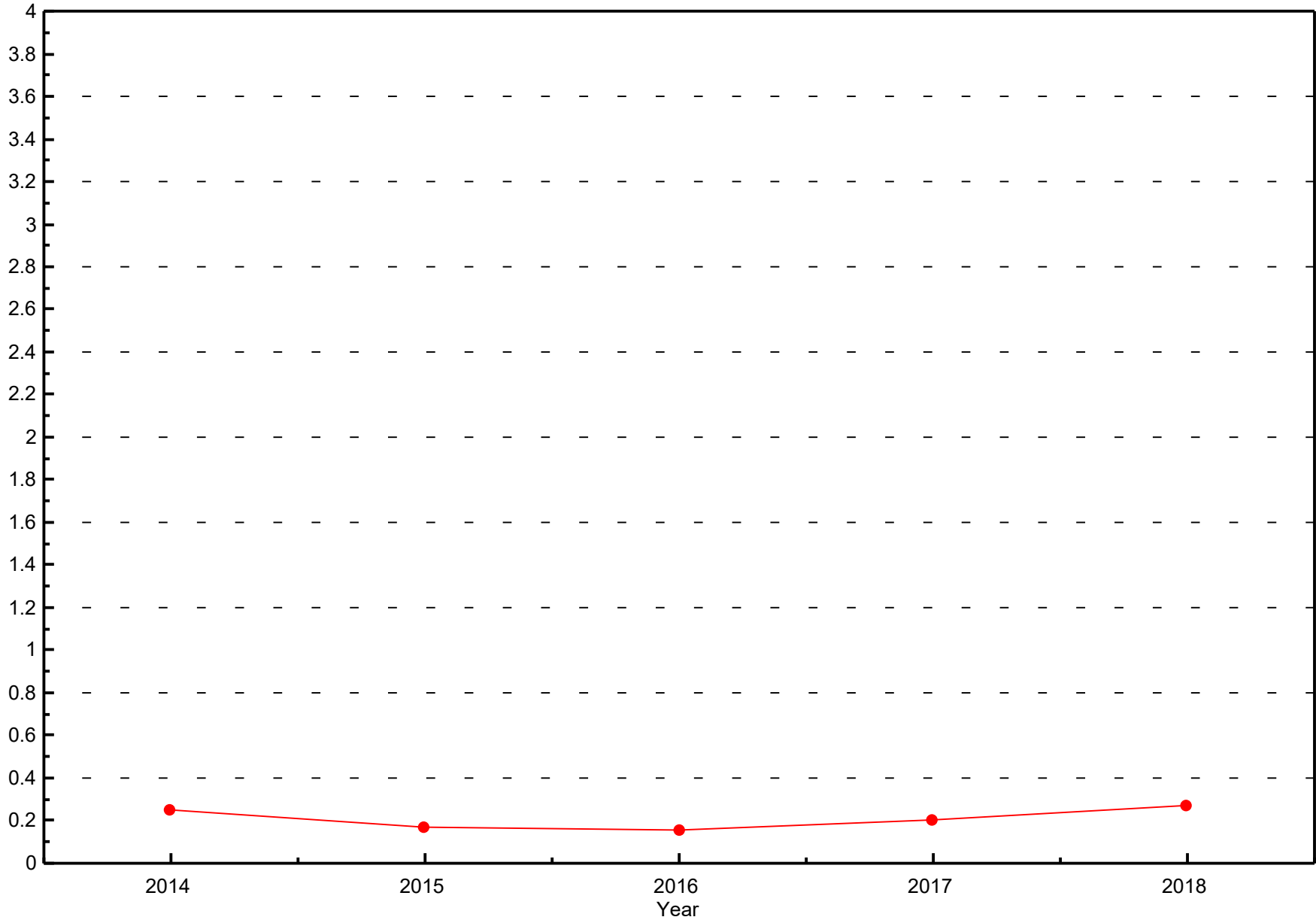


Wind Speed Classes (km/h)



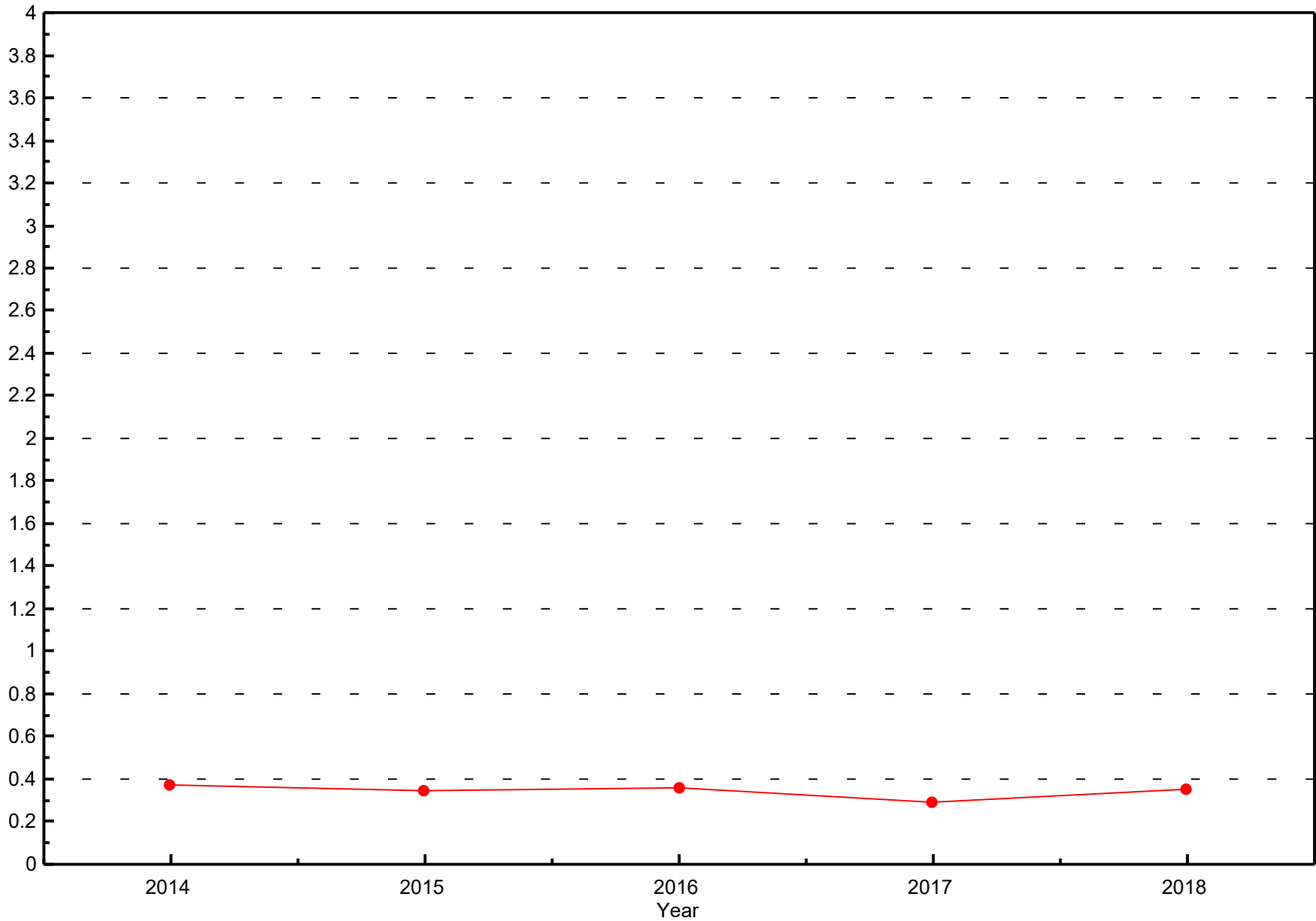
5-Year Annual Averages

Sulphur Dioxide (SO₂) - ppb
Evergreen Park (2014 to 2018)

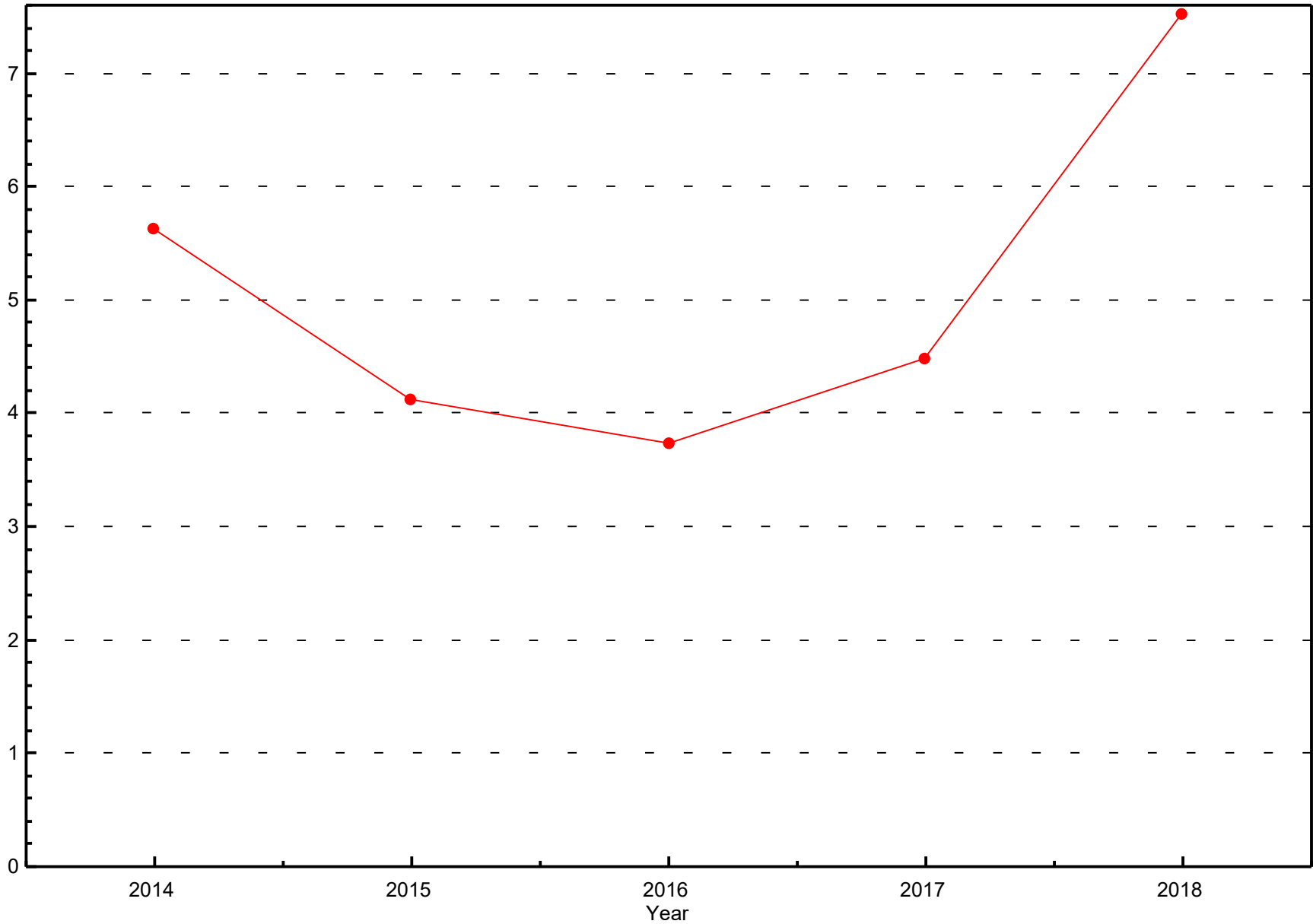


5-Year Annual Averages

**Total Reduced Sulphur (TRS) - ppb
Evergreen Park (2014 to 2018)**

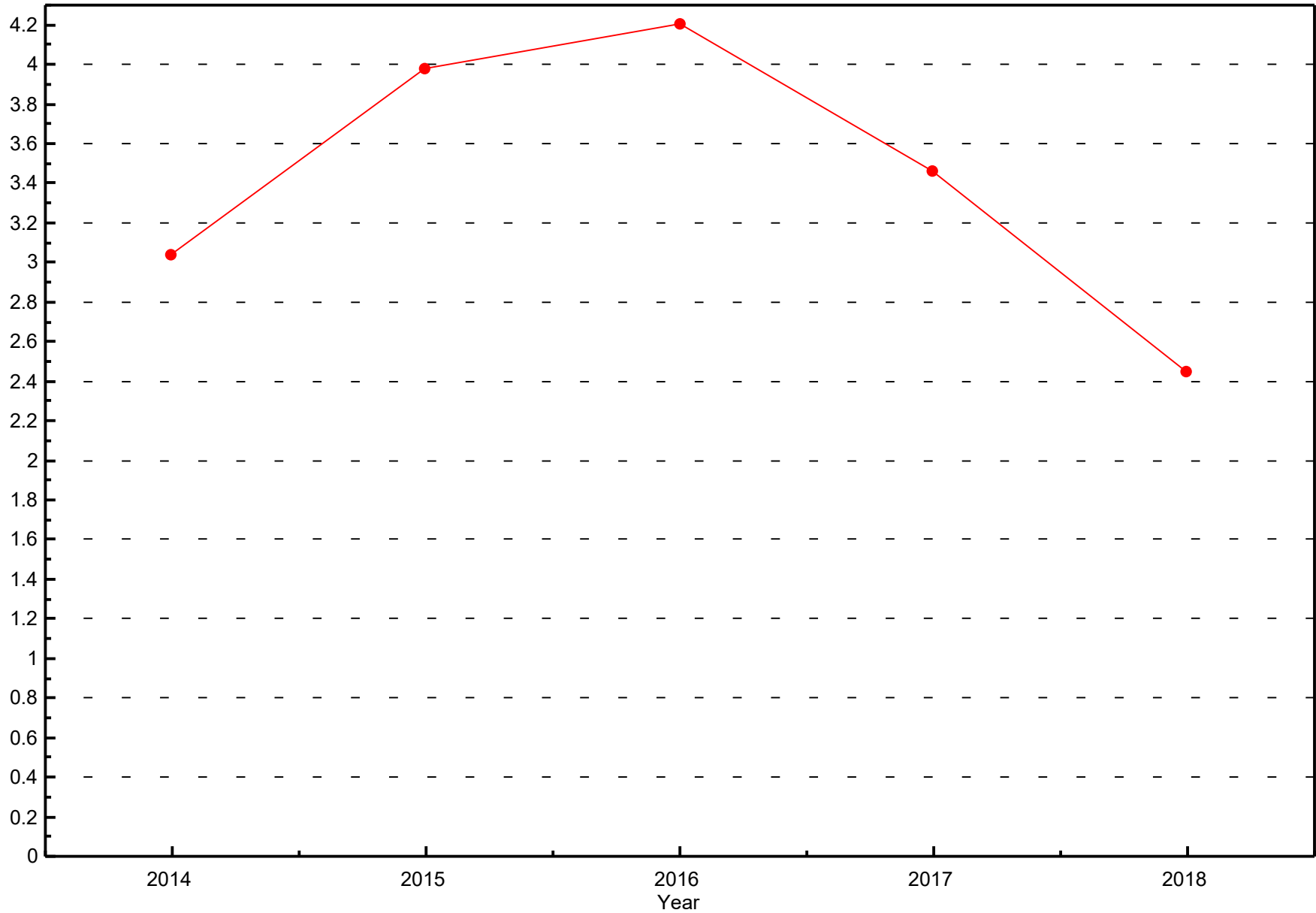


5-Year Annual Averages Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Evergreen Park (2014 to 2018)



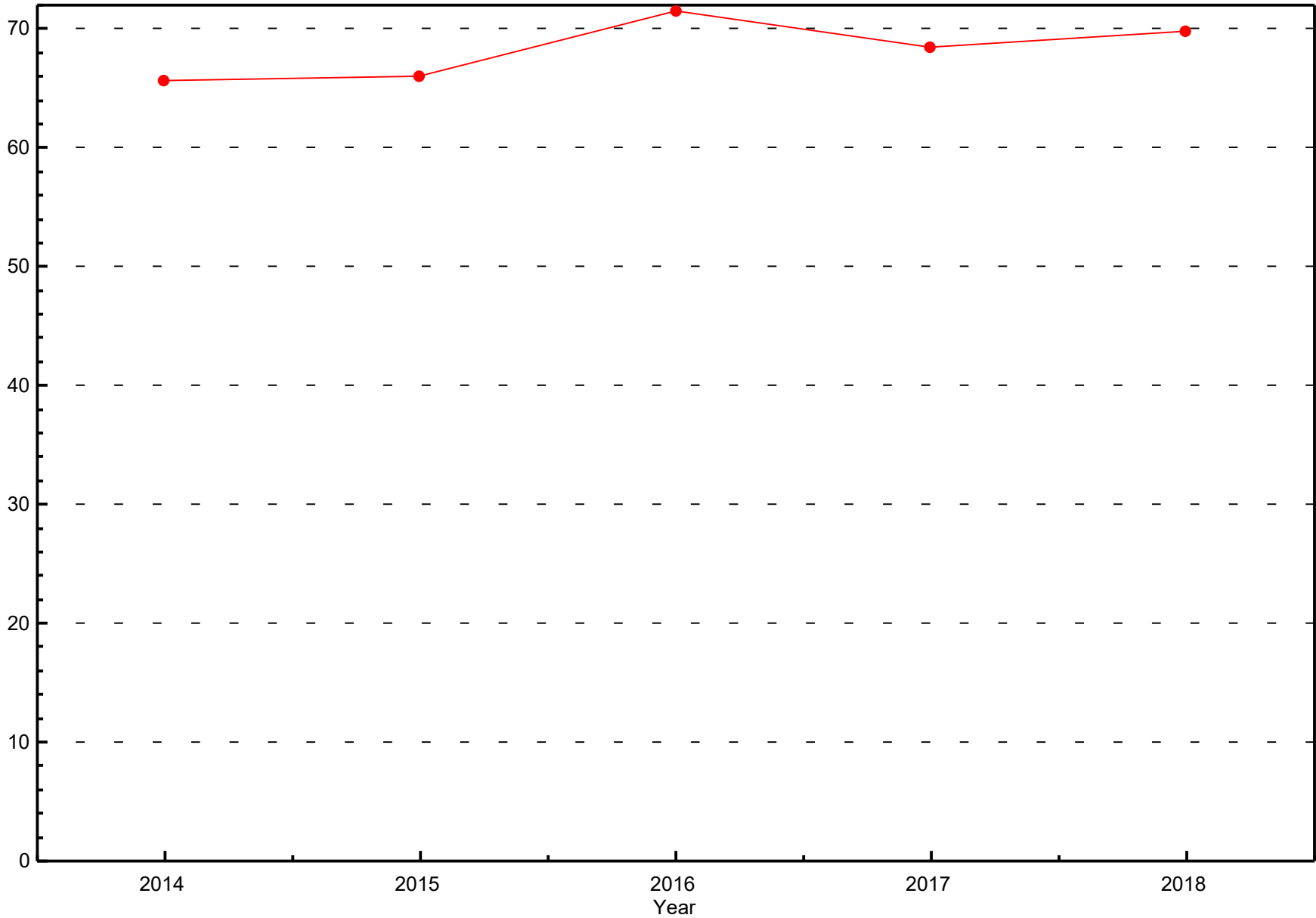
5-Year Annual Averages

External Temperature (ET) - °C
Evergreen Park (2014 to 2018)



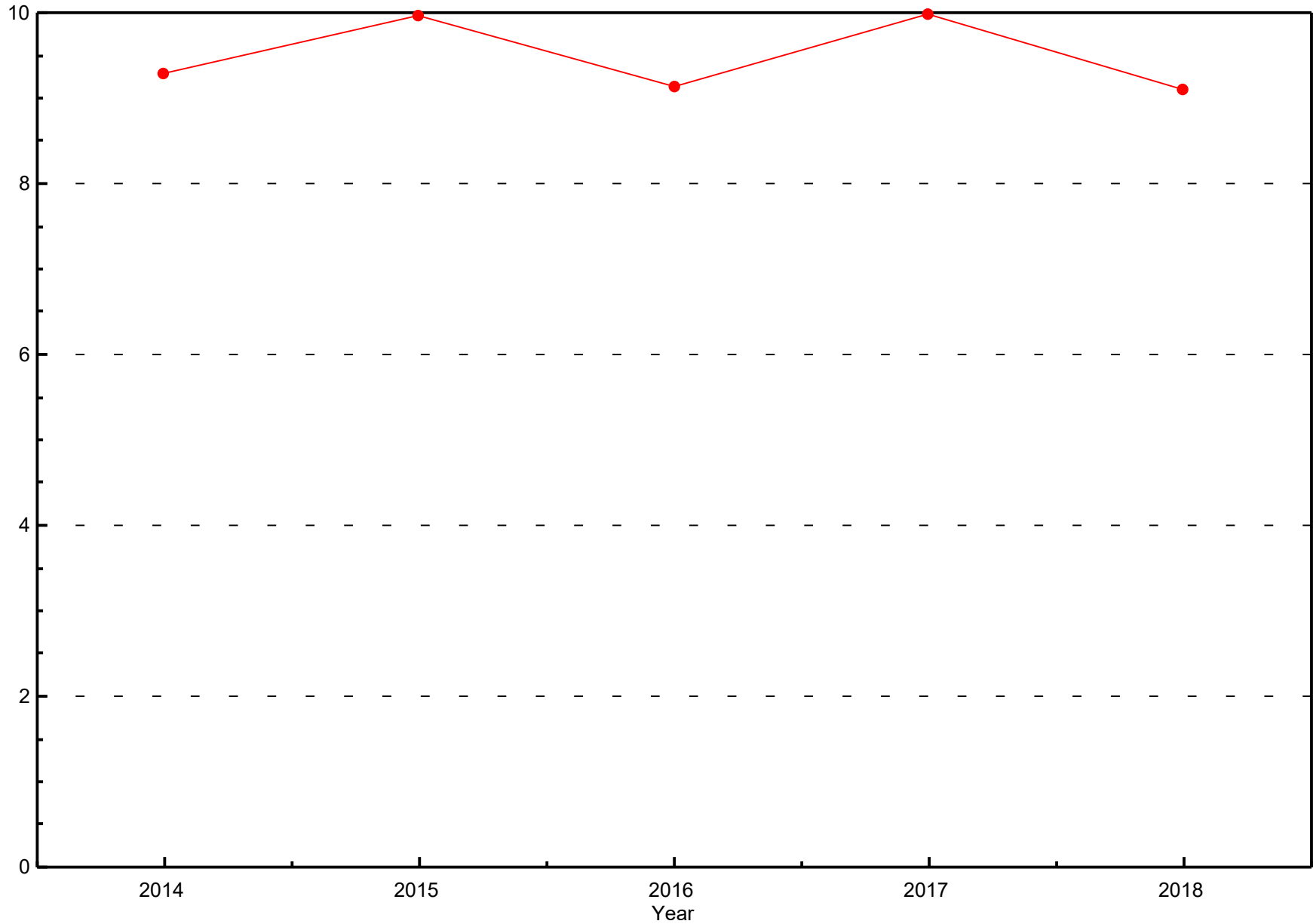
5-Year Annual Averages

**Relative Humidity (RH) - %
Evergreen Park (2014 to 2018)**



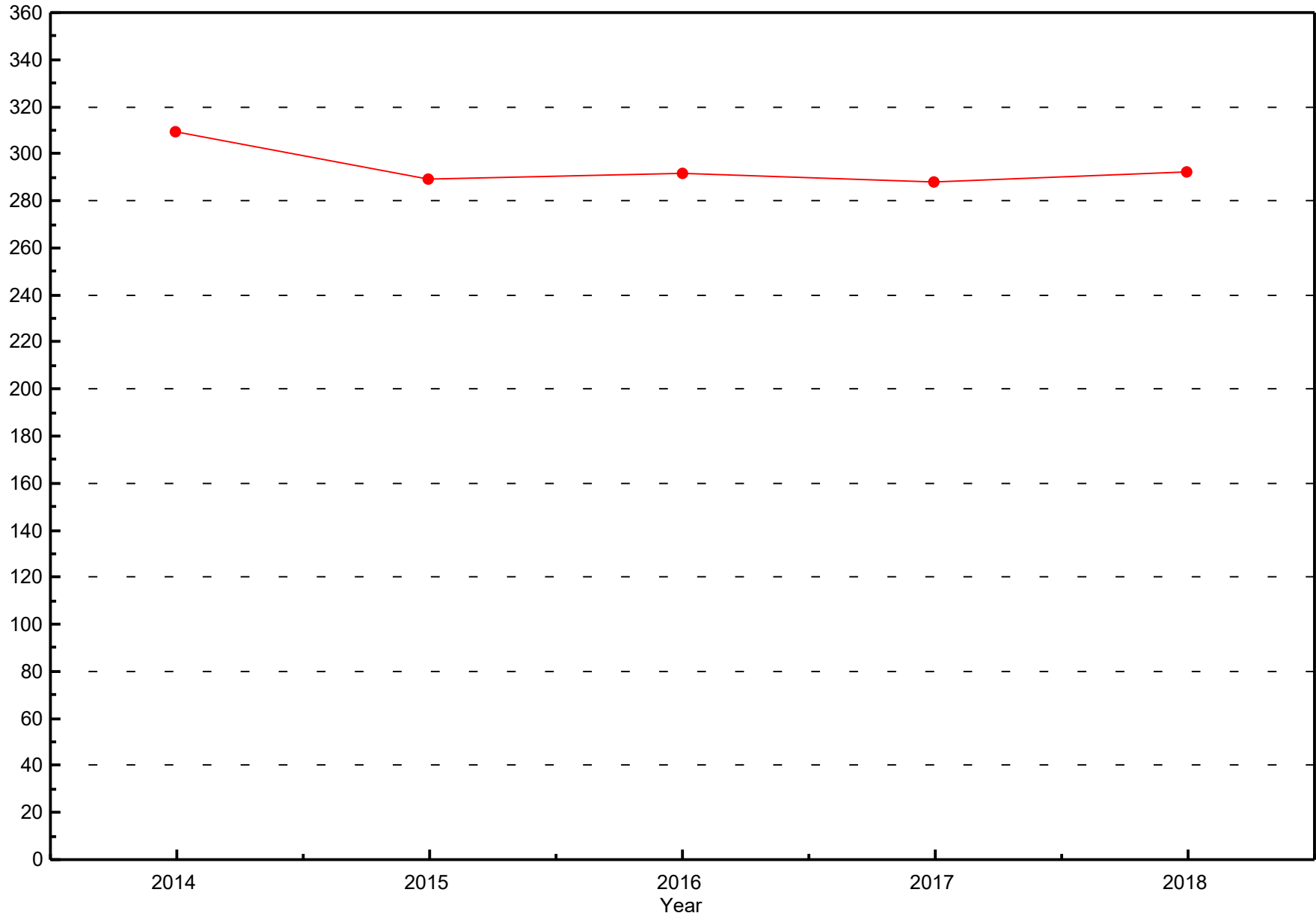
5-Year Annual Averages

Wind Speed (WS) - km/h
Evergreen Park (2014 to 2018)



5-Year Annual Averages

**Wind Direction (WD) - deg
Evergreen Park (2014 to 2018)**



PAZA

HENRY PIRKER

CONTINUOUS AMBIENT AIR MONITORING STATION

2018

ANNUAL SUMMARY TABLES

Sulphur Dioxide (SO₂) – Henry Pirker 2018 Summary and Frequency Distribution

Henry Pirker												SO ₂ (ppb)						2018		
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance			Percentage of Readings in Concentration Range					
												30-Day	24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340
January	709	0.72	1.68	Jan 01	0.34	Jan 09	4.90	Jan 29 20:00	0.19	Jan 10 07:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	631	0.84	2.67	Feb 27	0.17	Feb 14	15.98	Feb 27 05:00	0.00	Feb 12 18:00	98.66	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.57	1.66	Mar 15	0.12	Mar 21	3.09	Mar 03 07:00	0.00	Mar 02 19:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	681	0.55	5.15	Apr 01	0.09	Apr 22	9.31	Apr 01 15:00	0.00	Apr 01 01:00	99.17	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	701	0.15	0.39	May 23	0.02	May 27	2.05	May 03 03:00	0.00	May 14 02:00	99.19	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	649	0.14	0.42	Jun 17	0.01	Jun 26	2.58	Jun 17 18:00	0.00	Jun 01 01:00	94.86	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	706	0.28	0.73	Jul 06	0.08	Jul 11	5.82	Jul 26 14:00	0.00	Jul 11 12:00	99.87	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	376	0.22	0.52	Aug 09	0.05	Aug 12	2.84	Aug 01 19:00	0.00	Aug 16 17:00	53.49	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	438	0.26	1.03	Sep 12	0.07	Sep 13	22.88	Sep 12 13:00	0.00	Sep 11 14:00	65.28	0	0	0	99.77	0.23	0.00	0.00	0.00	0.00
October	708	0.26	0.71	Oct 22	0.06	Oct 20	2.44	Oct 22 15:00	0.00	Oct 03 00:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	685	0.38	0.74	Nov 13	0.12	Nov 23	2.31	Nov 03 11:00	0.04	Nov 02 02:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	709	0.57	1.78	Dec 13	0.23	Dec 24	6.72	Dec 13 21:00	0.08	Dec 14 18:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	7702	0.42	5.15	Apr 01	0.01	Jun 26	22.88	Sep 12 13:00	0.00	Feb 12 18:00	92.5	0	0	0	99.99	0.01	0.00	0.00	0.00	0.00

AAAQO Objectives: Annual: 8 ppb, 30-Day: 11 ppb, 24-Hr: 48 ppb, 1-Hr: 172 ppb

Hydrogen Sulfide (H₂S) – Henry Pirker 2018 Summary and Frequency Distribution

Henry Pirker												H ₂ S (ppb)				2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance		Percentage of Readings in Concentration Range						
												24-Hr	1-Hr	0 - 1	1 - 2.5	2.5 - 5	5 - 7.5	7.5 - 10	>10	
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	584	0.16	0.29	Apr 27	0.03	Apr 22	0.67	Apr 24 08:00	0.00	Apr 06 01:00	100.00	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
May	708	0.16	0.37	May 22	0.02	May 02	3.24	May 22 07:00	0.00	May 01 12:00	100.00	0	0	98.45	1.41	0.14	0.00	0.00	0.00	0.00
June	664	0.13	0.36	Jun 19	0.01	Jun 26	1.47	Jul 01 00:00	0.00	Jun 01 16:00	96.67	0	0	99.55	0.45	0.00	0.00	0.00	0.00	0.00
July	240	0.21	0.40	Jul 10	0.06	Jul 02	2.31	Jul 10 05:00	0.00	Jul 01 16:00	34.27	0	0	97.92	2.08	0.00	0.00	0.00	0.00	0.00
August	257	0.21	0.40	Aug 21	0.03	Aug 29	1.81	Aug 21 02:00	0.00	Aug 22 22:00	37.10	0	0	98.83	1.17	0.00	0.00	0.00	0.00	0.00
September	685	0.14	0.32	Sep 05	0.02	Sep 09	0.67	Sep 23 07:00	0.00	Sep 01 09:00	100.00	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
October	708	0.23	0.64	Oct 22	0.02	Oct 02	1.55	Oct 17 10:00	0.00	Oct 01 14:00	100.00	0	0	98.73	1.27	0.00	0.00	0.00	0.00	0.00
November	684	0.44	2.22	Nov 07	0.09	Nov 04	12.02	Nov 07 05:00	0.00	Nov 01 15:00	100.00	0	2	93.27	5.99	0.29	0.15	0.00	0.29	0.00
December	708	0.38	0.92	Dec 07	0.08	Dec 04	1.68	Dec 07 19:00	0.00	Dec 04 05:00	100.00	0	0	94.77	5.23	0.00	0.00	0.00	0.00	0.00
Annual	5238	0.23	2.22	Nov 07	0.01	Jun 26	12.02	Nov 07 05:00	0.00	Apr 06 01:00	85.3	0	2	97.86	2.07	0.04	0.02	0.00	0.00	0.02

AAAQO Objectives: 24-Hr: 3 ppb, 1-Hr: 10 ppb

Nitric Oxide (NO) – Henry Pirker 2018 Summary and Frequency Distribution

Henry Pirker												NO (ppb)					2018
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range					
												0 - 25	25 - 50	50 - 110	110 - 210	>210	
January	708	17.35	61.94	Jan 05	0.65	Jan 09	169.37	Jan 05 11:00	0.13	Jan 01 17:00	100.00	75.99	12.15	9.04	2.82	0.00	
February	638	11.67	56.41	Feb 05	0.21	Feb 13	151.31	Feb 08 22:00	0.00	Feb 22 23:00	100.00	84.01	8.15	6.43	1.41	0.00	
March	707	5.77	24.41	Mar 06	0.63	Mar 01	102.31	Mar 13 09:00	0.01	Mar 03 03:00	100.00	93.35	4.95	1.70	0.00	0.00	
April	685	2.14	10.42	Apr 13	0.24	Apr 29	56.64	Apr 13 11:00	0.01	Apr 18 03:00	100.00	98.83	0.88	0.29	0.00	0.00	
May	706	0.53	2.18	May 23	0.13	May 21	17.29	May 07 07:00	0.01	May 14 22:00	100.00	100.00	0.00	0.00	0.00	0.00	
June	106	0.61	1.02	Jun 03	0.26	Jun 02	8.61	Jun 03 06:00	0.01	Jun 03 01:00	16.39	100.00	0.00	0.00	0.00	0.00	
July	489	1.01	3.62	Jul 25	0.22	Jul 13	24.88	Jul 26 08:00	0.00	Jul 29 15:00	69.35	100.00	0.00	0.00	0.00	0.00	
August	702	1.32	4.26	Aug 20	0.14	Aug 06	37.06	Aug 20 07:00	0.00	Aug 03 01:00	100.00	99.86	0.14	0.00	0.00	0.00	
September	239	1.82	4.81	Sep 05	0.24	Sep 01	26.75	Sep 05 08:00	0.00	Sep 07 03:00	35.28	98.74	1.26	0.00	0.00	0.00	
October	0	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	
November	534	21.23	59.18	Nov 20	1.09	Nov 15	201.83	Nov 20 20:00	0.02	Nov 10 22:00	78.47	69.66	16.85	12.17	1.31	0.00	
December	708	15.72	68.35	Dec 07	0.14	Dec 21	157.14	Dec 07 19:00	0.00	Dec 14 01:00	100.00	80.23	8.19	10.17	1.41	0.00	
Annual	6222	8.04	68.35	Dec 07	0.13	May 21	201.83	Nov 20 20:00	0.00	Jul 29 15:00	75.0	90.30	5.01	4.00	0.69	0.00	

No AAAQO

Nitrogen Dioxide (NO₂) – Henry Pirker 2018 Summary and Frequency Distribution

Henry Pirker												NO ₂ (ppb)					2018
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance	Percentage of Readings in Concentration Range				
												1-Hr	0 - 25	25 - 50	50 - 110	110 - 159	>159
January	708	19.55	39.19	Jan 04	5.23	Jan 30	55.10	Jan 13 18:00	2.08	Jan 07 01:00	100.00	0	63.56	34.89	1.55	0.00	0.00
February	638	19.03	44.19	Feb 05	5.66	Feb 13	63.68	Feb 05 07:00	2.57	Feb 27 00:00	100.00	0	70.69	24.45	4.86	0.00	0.00
March	707	16.18	30.96	Mar 08	4.16	Mar 22	59.85	Mar 14 07:00	1.53	Mar 24 13:00	100.00	0	77.51	20.65	1.84	0.00	0.00
April	685	10.35	27.19	Apr 09	3.94	Apr 29	46.73	Apr 04 22:00	1.28	Apr 29 01:00	100.00	0	88.76	11.24	0.00	0.00	0.00
May	706	4.63	10.46	May 23	2.27	May 27	27.67	May 24 07:00	0.78	May 29 13:00	100.00	0	99.72	0.28	0.00	0.00	0.00
June	106	4.33	5.96	Jun 03	2.82	Jun 04	18.78	Jun 03 06:00	1.28	Jun 03 13:00	16.39	0	100.00	0.00	0.00	0.00	0.00
July	489	4.75	7.18	Jul 17	1.99	Jul 23	16.59	Jul 28 00:00	0.73	Jul 14 17:00	69.35	0	100.00	0.00	0.00	0.00	0.00
August	702	5.81	10.37	Aug 09	2.61	Aug 12	26.99	Aug 17 07:00	0.81	Aug 05 16:00	100.00	0	99.57	0.43	0.00	0.00	0.00
September	239	4.80	8.04	Sep 07	1.64	Sep 09	19.38	Sep 06 21:00	0.79	Sep 03 16:00	35.28	0	100.00	0.00	0.00	0.00	0.00
October	0	-	-	-	-	-	-	-	-	-	0.00	0	0.00	0.00	0.00	0.00	0.00
November	534	19.39	31.36	Nov 20	6.10	Nov 15	49.30	Nov 17 13:00	1.64	Nov 18 04:00	78.47	0	70.04	29.96	0.00	0.00	0.00
December	708	17.52	34.74	Dec 07	2.98	Dec 21	44.20	Dec 15 20:00	1.09	Dec 21 05:00	100.00	0	71.61	28.39	0.00	0.00	0.00
Annual	6222	12.62	44.19	Feb 05	1.64	Sep 09	63.68	Feb 05 07:00	0.73	Jul 14 17:00	75.0	0	84.18	15.02	0.80	0.00	0.00

AAAQO Objectives: Annual: 24 ppb, 1-Hr: 159 ppb

Total Oxides of Nitrogen (NOx) – Henry Pirker 2018 Summary and Frequency Distribution

Henry Pirker												NOx (ppb)					2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range						
												0 - 25	25 - 50	50 - 110	110 - 210	>210		
January	708	36.90	96.48	Jan 04	5.79	Jan 30	220.02	Jan 03 00:00	1.80	Jan 07 01:00	100.00	55.65	18.50	20.34	5.23	0.28		
February	638	30.89	101.10	Feb 05	5.89	Feb 13	213.11	Feb 08 22:00	2.51	Feb 14 01:00	100.00	64.89	16.46	13.17	5.33	0.16		
March	707	22.17	51.35	Mar 06	5.09	Mar 22	158.20	Mar 13 09:00	2.15	Mar 24 13:00	100.00	70.58	18.67	9.90	0.85	0.00		
April	685	12.64	35.07	Apr 09	4.27	Apr 29	92.99	Apr 13 11:00	1.36	Apr 29 01:00	100.00	86.13	11.24	2.63	0.00	0.00		
May	706	5.24	12.81	May 23	2.51	May 26	41.58	May 24 07:00	0.89	May 29 13:00	100.00	98.58	1.42	0.00	0.00	0.00		
June	106	5.01	7.06	Jun 03	3.15	Jun 04	27.60	Jun 03 06:00	1.46	Jun 03 13:00	16.39	99.06	0.94	0.00	0.00	0.00		
July	489	5.78	8.96	Jul 25	2.38	Jul 23	38.74	Jul 26 08:00	0.70	Jul 15 15:00	69.35	99.39	0.61	0.00	0.00	0.00		
August	702	7.22	13.78	Aug 20	2.96	Aug 04	51.23	Aug 20 07:00	0.63	Aug 05 16:00	100.00	97.72	2.14	0.14	0.00	0.00		
September	239	6.72	12.23	Sep 07	2.18	Sep 09	39.29	Sep 05 08:00	1.09	Sep 01 02:00	35.28	97.07	2.93	0.00	0.00	0.00		
October	0	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00		
November	534	40.86	90.91	Nov 20	7.30	Nov 15	249.17	Nov 20 20:00	1.67	Nov 18 04:00	78.47	40.64	27.90	27.15	3.93	0.37		
December	708	33.46	103.48	Dec 07	3.18	Dec 21	201.80	Dec 07 19:00	1.14	Dec 21 05:00	100.00	55.93	22.46	16.81	4.80	0.00		
Annual	6222	20.80	103.48	Dec 07	2.18	Sep 09	249.17	Nov 20 20:00	0.63	Aug 05 16:00	75.0	76.81	12.25	8.83	2.05	0.07		

No AAAQO

Ozone (O₃) – Henry Pirker 2018 Summary and Frequency Distribution

Henry Pirker												O ₃ (ppb)					2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance	Percentage of Readings in Concentration Range					
												1-Hr	0 - 2	2 - 10	10 - 20	20 - 40	40 - 82	>82
January	710	14.98	31.61	Jan 06	2.26	Jan 05	39.77	Jan 01 19:00	1.12	Jan 04 07:00	100.00	0	16.34	24.23	22.39	37.04	0.00	0.00
February	640	24.63	38.88	Feb 13	5.33	Feb 06	44.40	Feb 28 15:00	0.04	Feb 21 06:00	100.00	0	8.75	12.34	12.66	57.50	8.75	0.00
March	710	28.17	40.01	Mar 29	13.23	Mar 04	56.93	Mar 14 17:00	0.12	Mar 07 01:00	100.00	0	4.93	6.76	11.97	60.14	16.20	0.00
April	685	36.87	46.37	Apr 14	28.11	Apr 20	56.50	Apr 24 17:00	2.06	Apr 13 06:00	99.86	0	0.00	3.65	8.18	40.44	47.74	0.00
May	708	35.50	44.45	May 19	24.70	May 31	69.93	May 23 13:00	1.10	May 07 06:00	100.00	0	0.14	1.69	7.77	51.98	38.42	0.00
June	664	28.85	39.22	Jun 19	23.78	Jun 16	82.55	Jun 20 12:00	1.20	Jun 18 05:00	96.67	1	0.75	4.37	12.50	70.18	12.05	0.15
July	707	19.17	28.57	Jul 16	5.46	Jul 10	55.65	Jul 28 18:00	1.12	Jul 31 03:00	99.87	0	1.41	23.20	34.09	36.63	4.67	0.00
August	705	19.49	31.76	Aug 22	11.46	Aug 23	53.46	Aug 21 17:00	0.87	Aug 13 06:00	100.00	0	1.84	17.02	37.30	39.29	4.54	0.00
September	687	17.01	26.27	Sep 24	7.66	Sep 17	39.57	Sep 07 18:00	0.71	Sep 04 06:00	100.00	0	4.51	19.07	37.55	38.86	0.00	0.00
October	708	17.53	28.20	Oct 18	4.33	Oct 22	49.10	Oct 16 14:00	0.30	Oct 19 06:00	100.00	0	15.96	13.70	28.25	39.97	2.12	0.00
November	684	10.68	26.25	Nov 05	0.86	Nov 27	35.24	Nov 17 22:00	0.02	Nov 27 19:00	100.00	0	31.58	24.12	23.39	20.91	0.00	0.00
December	709	12.97	32.53	Dec 21	1.50	Dec 28	39.48	Jan 01 00:00	0.01	Dec 02 00:00	100.00	0	22.00	28.21	21.16	28.63	0.00	0.00
Annual	8317	22.10	46.37	Apr 14	0.86	Nov 27	82.55	Jun 20 12:00	0.01	Dec 02 00:00	99.7	1	8.76	14.53	21.56	43.79	11.35	0.01

AAAQO Objectives: 1-Hr: 82 ppb

Carbon Monoxide (CO) – Henry Pirker 2018 Summary and Frequency Distribution

Henry Pirker												CO (ppm)		2018					
Month	# of Readings	Average	8-hr Maximum	Date	8-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance		Percentage of Readings in Concentration Range					
												8-Hr	1-Hr	0 - 1	2 - 3	4 - 5	6 - 10	>10	
January	700	0.5	0.9	Jan 02	0.2	Jan 14	2.1	Jan 13 19:00	0.2	Jan 10 14:00	99.1	0	0	0	96.14	3.86	0	0	
February	638	0.3	0.4	Feb 05	0.2	Feb 01	1.4	Feb 22 09:00	0.1	Feb 03 03:00	100.0	0	0	0	99.69	0.31	0	0	
March	707	0.3	0.4	Mar 15	0.2	Mar 24	0.9	Mar 13 09:00	0.2	Mar 30 15:00	100.0	0	0	0	100	0	0	0	
April	685	0.2	0.3	Apr 13	0.1	Apr 06	0.7	Apr 13 10:00	0.0	Apr 06 16:00	100.0	0	0	0.73	99.27	0	0	0	
May	705	0.2	0.2	May 23	0.1	May 29	0.4	May 24 13:00	0.1	May 29 13:00	100.0	0	0	0	100	0	0	0	
June	666	0.1	0.3	Jun 19	0.0	Jun 08	0.4	Jun 29 07:00	0.0	Jun 08 03:00	96.7	0	0	11.86	88.14	0	0	0	
July	241	0.2	0.2	Jul 06	0.1	Jul 01	0.4	Jul 05 19:00	0.1	Jul 11 03:00	34.3	0	0	0.41	99.59	0	0	0	
August	262	0.3	0.7	Aug 22	0.2	Aug 30	1.8	Aug 22 11:00	0.0	Aug 23 04:00	37.8	0	0	3.44	95.8	0.76	0	0	
September	685	0.2	0.3	Sep 02	0.1	Sep 12	0.5	Sep 19 21:00	0.1	Sep 12 10:00	100.0	0	0	0.15	99.85	0	0	0	
October	196	0.2	0.2	Oct 06	0.1	Oct 02	0.4	Oct 04 08:00	0.1	Oct 02 12:00	28.1	0	0	0	100	0	0	0	
November	0	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	
December	625	0.3	0.6	Dec 08	0.2	Dec 21	1.4	Dec 29 06:00	0.1	Jan 01 00:00	88.6	0	0	0	98.4	1.6	0	0	
Annual	6110	0.2	0.9	Jan 02	0.0	Jun 08	2.1	Jan 13 19:00	0.0	Jun 08 03:00	73.7	0	0	1.59	97.73	0.68	0.00	0.00	

AAAQO Objectives: 8-Hr: 5 ppm, 1-Hr: 13 ppm

Total Hydrocarbons (THC) – Henry Pirker 2018 Summary and Frequency Distribution

Henry Pirker												THC (ppm)						2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range							
												0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 5.0	5.0 - 10.0	>10.0		
January	708	2.06	2.64	Jan 12	1.63	Jan 06	3.93	Jan 12 06:00	1.44	Jan 03 23:00	100.00	1.69	31.50	58.05	8.76	0.00	0.00		
February	639	2.11	2.57	Feb 04	1.92	Feb 13	2.96	Feb 20 22:00	1.71	Feb 08 12:00	100.00	0.00	28.79	65.26	5.95	0.00	0.00		
March	709	2.09	2.44	Mar 13	1.93	Mar 20	4.34	Mar 13 09:00	1.30	Mar 02 13:00	100.00	0.14	43.58	52.19	4.09	0.00	0.00		
April	123	2.11	2.26	Apr 01	1.99	Apr 04	2.58	Apr 01 05:00	1.93	Apr 03 11:00	18.47	0.00	51.22	42.28	6.50	0.00	0.00		
May	9	-	-	-	-	-	-	-	-	-	1.88	0.00	77.78	22.22	0.00	0.00	0.00		
June	410	2.01	2.14	Jun 19	1.94	Jun 11	2.91	Jun 19 04:00	1.91	Jun 17 17:00	59.72	0.00	65.12	33.90	0.98	0.00	0.00		
July	445	2.07	2.34	Jul 27	1.93	Jul 20	3.75	Jul 27 03:00	1.87	Jul 18 19:00	62.90	0.00	56.18	37.08	6.74	0.00	0.00		
August	703	2.06	2.38	Aug 09	1.90	Aug 29	3.54	Aug 09 05:00	1.86	Aug 29 16:00	100.00	0.00	58.04	37.13	4.84	0.00	0.00		
September	612	1.99	2.20	Sep 23	1.91	Sep 21	4.70	Sep 23 07:00	1.86	Sep 25 17:00	90.28	0.00	75.16	23.86	0.98	0.00	0.00		
October	708	2.04	2.44	Oct 23	1.89	Oct 15	3.05	Oct 23 05:00	1.84	Oct 15 15:00	100.00	0.00	63.98	31.36	4.66	0.00	0.00		
November	683	2.22	2.99	Nov 13	1.90	Nov 01	6.31	Nov 13 02:00	1.87	Nov 01 14:00	100.00	0.00	41.58	34.85	23.28	0.29	0.00		
December	704	2.34	3.03	Dec 18	2.03	Dec 12	4.33	Dec 18 16:00	1.99	Dec 11 22:00	100.00	0.00	1.70	71.16	27.13	0.00	0.00		
Annual	6453	2.11	3.03	Dec 18	1.63	Jan 06	6.31	Nov 13 02:00	1.30	Mar 02 13:00	77.8	0.21	46.08	44.95	8.73	0.03	0.00		

No AAAQO

Methane (CH₄) – Henry Pirker 2018 Summary and Frequency Distribution

Henry Pirker												CH ₄ (ppm)						2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range							
												0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 5.0	5.0 - 10.0	>10.0		
January	708	2.06	2.64	Jan 12	1.63	Jan 06	3.93	Jan 12 06:00	1.44	Jan 03 23:00	100.00	1.69	31.78	57.77	8.76	0.00	0.00		
February	639	2.11	2.57	Feb 04	1.92	Feb 13	2.96	Feb 20 22:00	1.70	Feb 08 12:00	100.00	0.00	30.36	63.69	5.95	0.00	0.00		
March	709	2.09	2.43	Mar 13	1.94	Mar 20	4.34	Mar 13 09:00	1.30	Mar 02 13:00	100.00	0.14	43.86	51.90	4.09	0.00	0.00		
April	123	2.10	2.26	Apr 01	1.99	Apr 04	2.58	Apr 01 05:00	1.94	Apr 03 11:00	18.47	0.00	51.22	42.28	6.50	0.00	0.00		
May	9	-	-	-	-	-	-	-	-	-	1.88	0.00	77.78	22.22	0.00	0.00	0.00		
June	410	2.01	2.14	Jun 19	1.94	Jun 11	2.90	Jun 19 04:00	1.91	Jun 17 17:00	59.72	0.00	65.61	33.41	0.98	0.00	0.00		
July	445	2.07	2.34	Jul 27	1.93	Jul 20	3.75	Jul 27 03:00	1.87	Jul 18 19:00	62.90	0.00	57.08	36.40	6.52	0.00	0.00		
August	703	2.06	2.38	Aug 09	1.90	Aug 29	3.54	Aug 09 05:00	1.86	Aug 29 16:00	100.00	0.00	58.04	37.13	4.84	0.00	0.00		
September	612	1.99	2.20	Sep 23	1.91	Sep 21	4.70	Sep 23 07:00	1.86	Sep 25 17:00	90.28	0.00	75.98	23.04	0.98	0.00	0.00		
October	708	2.02	2.31	Oct 23	1.88	Oct 15	2.87	Oct 22 05:00	1.84	Oct 15 15:00	100.00	0.00	64.83	32.34	2.82	0.00	0.00		
November	683	2.18	2.95	Nov 13	1.90	Nov 01	6.29	Nov 13 02:00	1.87	Nov 01 14:00	100.00	0.00	43.34	40.70	15.67	0.29	0.00		
December	704	2.29	2.81	Dec 18	2.02	Dec 12	3.77	Dec 18 16:00	1.98	Dec 11 22:00	100.00	0.00	2.41	74.29	23.30	0.00	0.00		
Annual	6453	2.09	2.95	Nov 13	1.63	Jan 06	6.29	Nov 13 02:00	1.30	Mar 02 13:00	77.8	0.21	46.84	45.66	7.26	0.03	0.00		

No AAAQO

Non-Methane Hydrocarbon (NMHC) – Henry Pirker 2018 Summary and Frequency Distribution

Henry Pirker												NMHC (ppm)						2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range							
												0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 5.0	5.0 - 10.0	>10.0		
January	708	0.00	0.01	Jan 01	0.00	Jan 07	0.06	Jan 03 01:00	0.00	Jan 02 03:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00		
February	639	0.00	0.00	Feb 08	0.00	Feb 01	0.01	Feb 08 12:00	0.00	Feb 01 02:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00		
March	709	0.00	0.00	Mar 31	0.00	Mar 03	0.00	Mar 31 14:00	0.00	Mar 01 02:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00		
April	123	0.00	0.00	Apr 02	0.00	Apr 04	0.00	Apr 02 20:00	0.00	Apr 01 01:00	18.47	100.00	0.00	0.00	0.00	0.00	0.00		
May	9	-	-	-	-	-	-	-	-	-	1.88	100.00	0.00	0.00	0.00	0.00	0.00		
June	410	0.00	0.00	Jun 15	0.00	Jun 01	0.00	Jun 15 06:00	0.00	Jun 01 01:00	59.72	100.00	0.00	0.00	0.00	0.00	0.00		
July	445	0.00	0.03	Jul 13	0.00	Jul 27	0.76	Jul 13 09:00	0.00	Jul 12 15:00	62.90	100.00	0.00	0.00	0.00	0.00	0.00		
August	703	0.00	0.00	Aug 22	0.00	Aug 02	0.00	Aug 22 20:00	0.00	Aug 01 02:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00		
September	612	0.00	0.01	Sep 29	0.00	Sep 01	0.10	Sep 29 03:00	0.00	Sep 01 01:00	90.28	100.00	0.00	0.00	0.00	0.00	0.00		
October	708	0.01	0.13	Oct 23	0.00	Oct 06	0.43	Oct 23 04:00	0.00	Oct 01 03:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00		
November	683	0.05	0.25	Nov 08	0.00	Nov 04	0.90	Nov 20 20:00	0.00	Nov 02 00:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00		
December	704	0.05	0.23	Dec 08	0.00	Dec 21	0.55	Dec 18 16:00	0.00	Dec 01 01:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00		
Annual	6453	0.01	0.25	Nov 08	0.00	Jan 07	0.90	Nov 20 20:00	0.00	Jan 02 03:00	77.8	100.00	0.00	0.00	0.00	0.00	0.00		

No AAAQO

Particulate Matter (PM_{2.5}) – Henry Pirker 2018 Summary and Frequency Distribution

Henry Pirker												PM _{2.5} (µg/m ³)								2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance		Percentage of Readings in Concentration Range							
												24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30		
January	732	8.25	27.04	Jan 16	2.04	Jan 09	82.39	Jan 16 21:00	1.01	Jan 06 18:00	98.39	0	1	9.02	41.53	26.09	12.57	8.88	1.91		
February	662	4.30	10.71	Feb 05	1.09	Feb 13	38.47	Feb 05 09:00	1.02	Feb 14 00:00	98.51	0	0	39.12	37.61	16.16	5.14	1.81	0.15		
March	744	5.52	13.18	Mar 15	1.74	Mar 26	23.31	Mar 15 08:00	1.42	Mar 10 14:00	100.00	0	0	17.07	47.45	26.61	7.12	1.75	0.00		
April	715	5.50	13.44	Apr 09	0.61	Apr 14	40.10	Apr 27 23:00	0.16	Apr 14 15:00	100.00	0	0	24.48	42.66	22.52	7.27	2.38	0.70		
May	744	6.97	23.60	May 24	1.81	May 09	108.29	May 24 13:00	0.00	May 25 13:00	100.00	0	1	14.65	40.73	27.15	12.23	3.90	1.34		
June	611	6.13	20.24	Jun 20	0.78	Jun 26	131.78	Jul 01 00:00	0.00	Jun 04 08:00	85.97	0	1	39.93	24.39	17.51	11.78	4.91	1.47		
July	743	4.74	16.73	Jul 28	0.02	Jul 07	21.62	Jul 28 06:00	0.00	Jul 01 02:00	99.87	0	0	39.97	30.96	15.34	10.36	3.36	0.00		
August	742	43.33	176.37	Aug 17	1.03	Aug 30	345.00	Aug 22 11:00	0.06	Aug 30 03:00	100.00	12	116	4.04	16.04	14.29	10.24	16.17	39.22		
September	720	4.03	25.59	Sep 02	0.85	Sep 12	46.77	Sep 02 14:00	0.02	Sep 09 08:00	100.00	0	0	36.25	50.83	8.75	1.11	1.53	1.53		
October	744	6.57	15.96	Oct 22	1.82	Oct 30	82.32	Oct 22 20:00	0.71	Oct 29 15:00	100.00	0	1	18.01	40.73	25.00	10.22	5.51	0.54		
November	703	11.71	25.36	Nov 21	3.63	Nov 30	72.96	Nov 07 21:00	0.45	Nov 09 20:00	97.78	0	0	3.98	31.29	23.04	14.65	23.04	3.98		
December	738	10.09	43.06	Dec 29	0.83	Dec 21	333.18	Dec 29 06:00	0.00	Dec 12 06:00	100.00	1	4	21.54	28.05	16.40	17.89	12.47	3.66		
Annual	8598	9.89	176.37	Aug 17	0.02	Jul 07	345.00	Aug 22 11:00	0.00	May 25 13:00	98.4	13	124	22.24	36.18	19.89	9.94	7.05	4.70		

AAAQO Objectives: 24-Hr: 30 µg/m³, 1-Hr: 80 µg/m³

Ambient Temperature (ET) – Henry Pirker 2018 Summary

Henry Pirker												Ambient Temperature (°C)		2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)				
January	744	-11.1	1.3	Jan 03	-34.0	Jan 11	5.5	Jan 03 16:00	-40.0	Jan 11 07:00	100.0				
February	672	-13.5	2.3	Feb 13	-31.3	Feb 04	5.6	Feb 28 14:00	-37.9	Feb 04 02:00	100.0				
March	744	-6.5	2.8	Mar 15	-18.3	Mar 31	11.1	Mar 15 14:00	-28.1	Mar 31 06:00	100.0				
April	720	0.6	12.7	Apr 27	-15.1	Apr 01	25.7	Apr 27 16:00	-26.6	Apr 01 05:00	100.0				
May	744	15.0	22.9	May 23	9.8	May 01	31.2	May 23 16:00	1.4	May 01 06:00	100.0				
June	696	16.2	24.9	Jun 20	10.8	Jun 10	33.5	Jun 19 16:00	3.1	Jun 05 05:00	96.7				
July	743	17.8	22.8	Jul 29	11.9	Jul 01	31.5	Jul 28 18:00	5.1	Jul 08 06:00	99.9				
August	744	16.5	22.1	Aug 09	9.7	Aug 30	30.9	Aug 09 16:00	5.8	Aug 31 05:00	100.0				
September	720	6.2	14.7	Sep 07	-1.2	Sep 12	21.7	Sep 07 17:00	-5.7	Sep 30 07:00	100.0				
October	744	3.8	11.9	Oct 17	-1.4	Oct 02	21.3	Oct 16 15:00	-5.4	Oct 03 07:00	100.0				
November	720	-3.6	3.5	Nov 18	-14.5	Nov 07	9.5	Nov 19 15:00	-23.4	Nov 17 06:00	100.0				
December	744	-8.0	0.2	Dec 12	-15.7	Dec 30	4.8	Dec 10 14:00	-22.7	Dec 31 04:00	100.0				
Annual	8735	2.9	24.9	Jun 20	-34.0	Jan 11	33.5	Jun 19 16:00	-40.0	Jan 11 07:00	99.7				

Relative Humidity (RH) – Henry Pirker 2018 Summary

Henry Pirker											2018
Relative Humidity (%)											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	744	71.5	82.3	Jan 16	56.1	Jan 11	87.3	Jan 19 21:00	47.2	Jan 11 15:00	100.0
February	672	61.2	71.4	Feb 14	52.8	Feb 27	84.1	Feb 26 03:00	32.4	Feb 28 15:00	100.0
March	744	65.2	82.5	Mar 21	49.2	Mar 30	88.6	Mar 21 09:00	24.0	Mar 30 16:00	100.0
April	720	56.3	80.6	Apr 16	41.2	Apr 23	87.5	Apr 13 05:00	17.7	Apr 27 16:00	100.0
May	744	46.5	74.4	May 17	32.3	May 15	88.3	May 31 05:00	14.3	May 14 18:00	100.0
June	696	54.7	71.1	Jun 14	43.7	Jun 17	89.4	Jun 04 02:00	17.9	Jun 18 18:00	96.7
July	743	63.2	81.8	Jul 03	39.5	Jul 16	90.4	Jul 21 00:00	16.9	Jul 15 17:00	99.9
August	744	63.1	82.6	Aug 12	43.1	Aug 22	90.8	Aug 13 03:00	24.1	Aug 22 16:00	100.0
September	720	70.7	83.1	Sep 16	52.8	Sep 20	89.9	Sep 08 03:00	33.9	Sep 04 18:00	100.0
October	744	62.3	84.2	Oct 12	34.8	Oct 17	89.3	Oct 12 06:00	14.8	Oct 16 14:00	100.0
November	720	76.7	86.3	Nov 02	66.7	Nov 17	88.3	Nov 02 01:00	48.9	Nov 17 14:00	100.0
December	744	71.5	83.3	Dec 01	55.7	Dec 12	85.6	Dec 01 01:00	40.7	Dec 07 15:00	100.0
Annual	8735	63.6	86.3	Nov 02	32.3	May 15	90.8	Aug 13 03:00	14.3	May 14 18:00	99.7

Wind Speed (WS) – Henry Pirker 2018 Summary

Henry Pirker											2018
Wind Speed (km/h)											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	687	5.5	16.9	Jan 06	2.1	Jan 05	28.8	Jan 01 17:00	0.1	Jan 23 01:00	92.3
February	631	7.5	23.1	Feb 13	2.6	Feb 07	41.6	Feb 12 02:00	0.2	Feb 12 13:00	93.9
March	727	5.5	12.3	Mar 22	2.2	Mar 11	28.2	Mar 31 22:00	0.1	Mar 19 05:00	97.7
April	711	7.2	14.3	Apr 22	2.3	Apr 09	51.7	Apr 03 01:00	0.1	Apr 13 07:00	98.8
May	744	8.7	20.1	May 02	2.4	May 13	36.1	May 02 13:00	0.1	May 13 14:00	100.0
June	696	8.9	25.4	Jun 11	2.2	Jun 19	36.0	Jun 11 17:00	0.2	Jun 03 20:00	96.7
July	743	6.9	15.2	Jul 11	2.1	Jul 25	23.4	Jul 11 09:00	0.0	Jul 27 23:00	99.9
August	744	6.4	12.8	Aug 03	2.1	Aug 19	31.2	Aug 31 15:00	0.1	Aug 19 22:00	100.0
September	720	5.4	12.5	Sep 08	1.8	Sep 19	26.3	Sep 08 15:00	0.1	Sep 08 03:00	100.0
October	744	6.2	17.2	Oct 20	1.5	Oct 22	33.8	Oct 20 13:00	0.1	Oct 22 05:00	100.0
November	716	4.1	10.7	Nov 09	1.4	Nov 20	33.1	Nov 16 20:00	0.1	Nov 28 06:00	99.4
December	739	5.0	18.1	Dec 21	1.1	Dec 28	27.4	Dec 21 13:00	0.0	Dec 11 00:00	99.3
Annual	8602	6.4	25.4	Jun 11	1.1	Dec 28	51.7	Apr 03 01:00	0.0	Dec 11 00:00	98.2

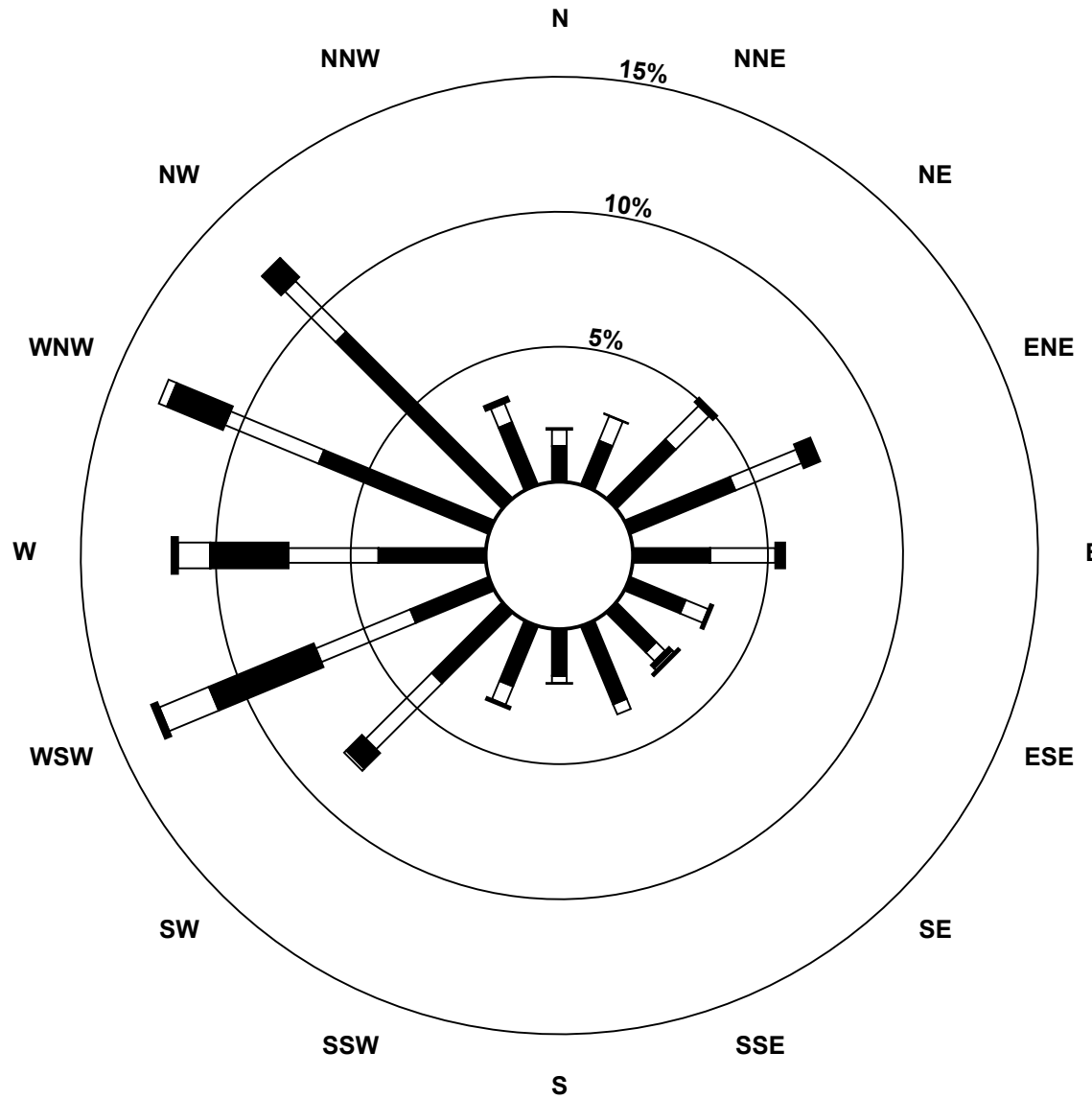
Wind Speed and Wind Direction Frequency Distribution – Henry Pirker 2018 Summary

Henry Pirker								2018
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	185	1.42	0.81	0.06	0.00	0.00	0.00	2.29
NNE	225	1.76	1.00	0.02	0.00	0.00	0.00	2.79
NE	419	3.26	1.72	0.21	0.00	0.00	0.00	5.19
ENE	642	4.35	2.96	0.64	0.00	0.00	0.00	7.95
E	461	2.91	2.47	0.33	0.00	0.00	0.00	5.71
ESE	254	2.20	0.83	0.11	0.00	0.00	0.00	3.15
SE	231	2.09	0.42	0.16	0.09	0.06	0.04	2.86
SSE	273	3.00	0.38	0.00	0.00	0.00	0.00	3.38
S	161	1.72	0.25	0.02	0.00	0.00	0.00	1.99
SSW	252	2.33	0.69	0.10	0.00	0.00	0.00	3.12
SW	619	3.48	3.29	0.79	0.10	0.00	0.00	7.67
WSW	1039	3.08	3.59	3.98	1.97	0.25	0.00	12.87
WSW	902	3.90	3.22	2.69	1.14	0.22	0.00	11.17
WNW	1059	6.83	3.78	2.20	0.31	0.00	0.00	13.12
NW	1048	9.04	2.86	1.05	0.02	0.00	0.00	12.98
NNW	303	2.73	0.85	0.17	0.00	0.00	0.00	3.75
Totals	8073	54.11	29.13	12.56	3.63	0.53	0.04	100

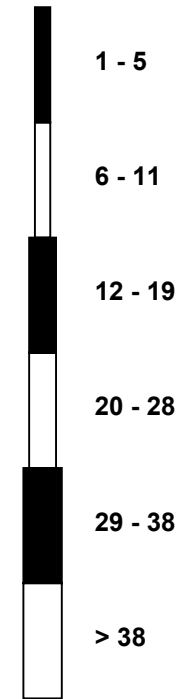
Wind Rose

Wind Speed (WS) (km/h)

Henry Pirker - 2018

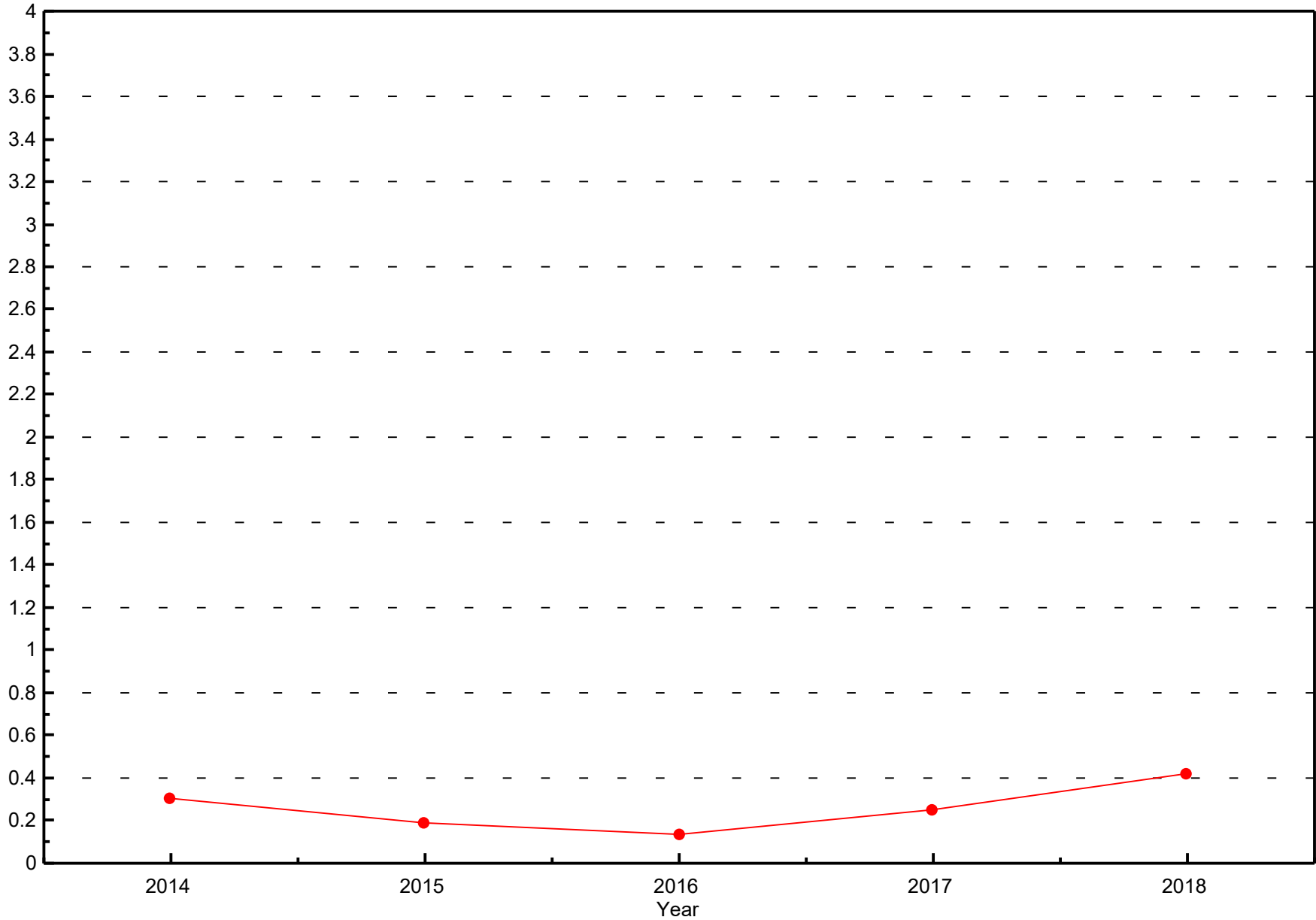


Wind Speed Classes (km/h)



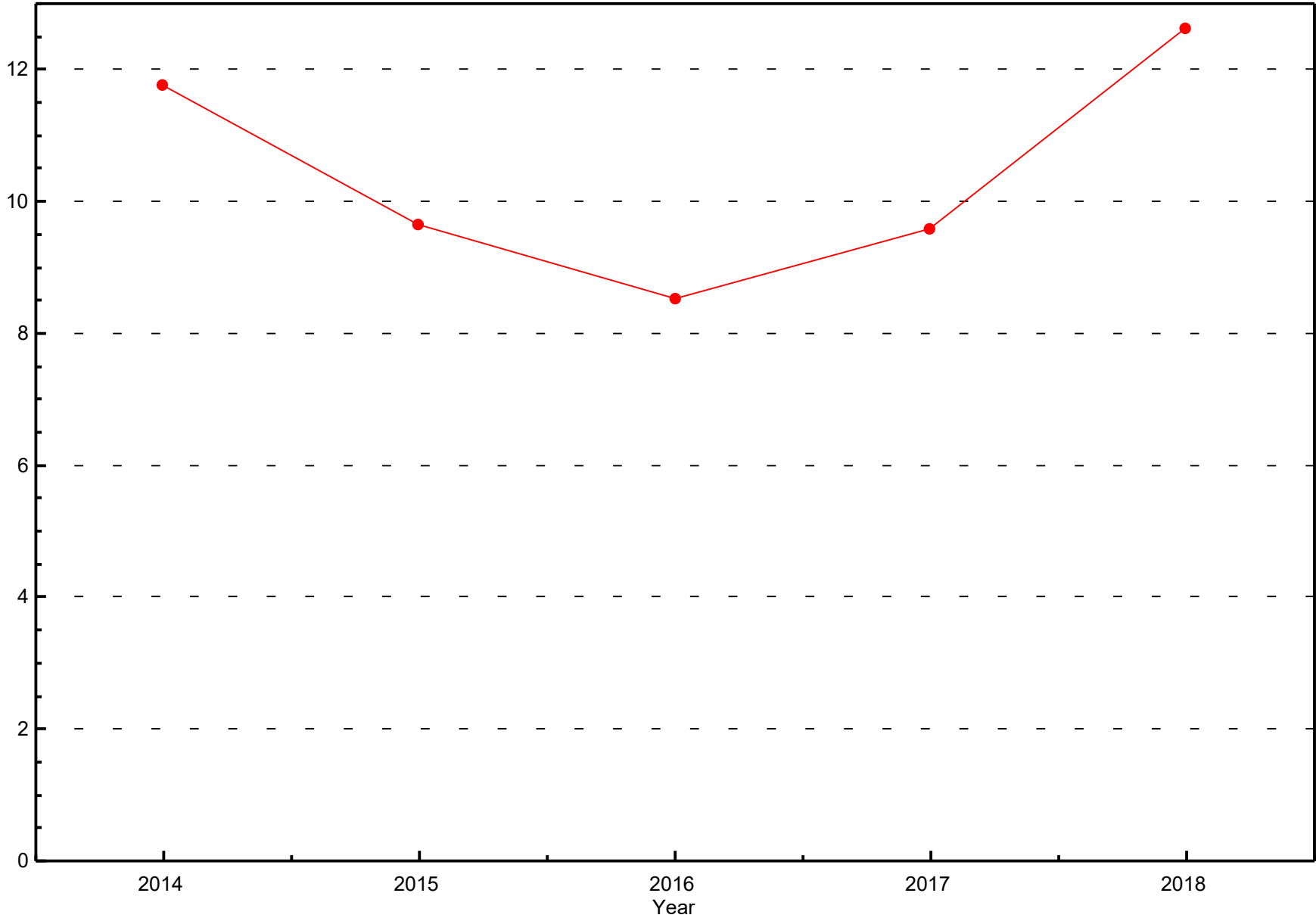
5-Year Annual Averages

Sulphur Dioxide (SO₂) - ppb
Henry Pirker (2014 to 2018)



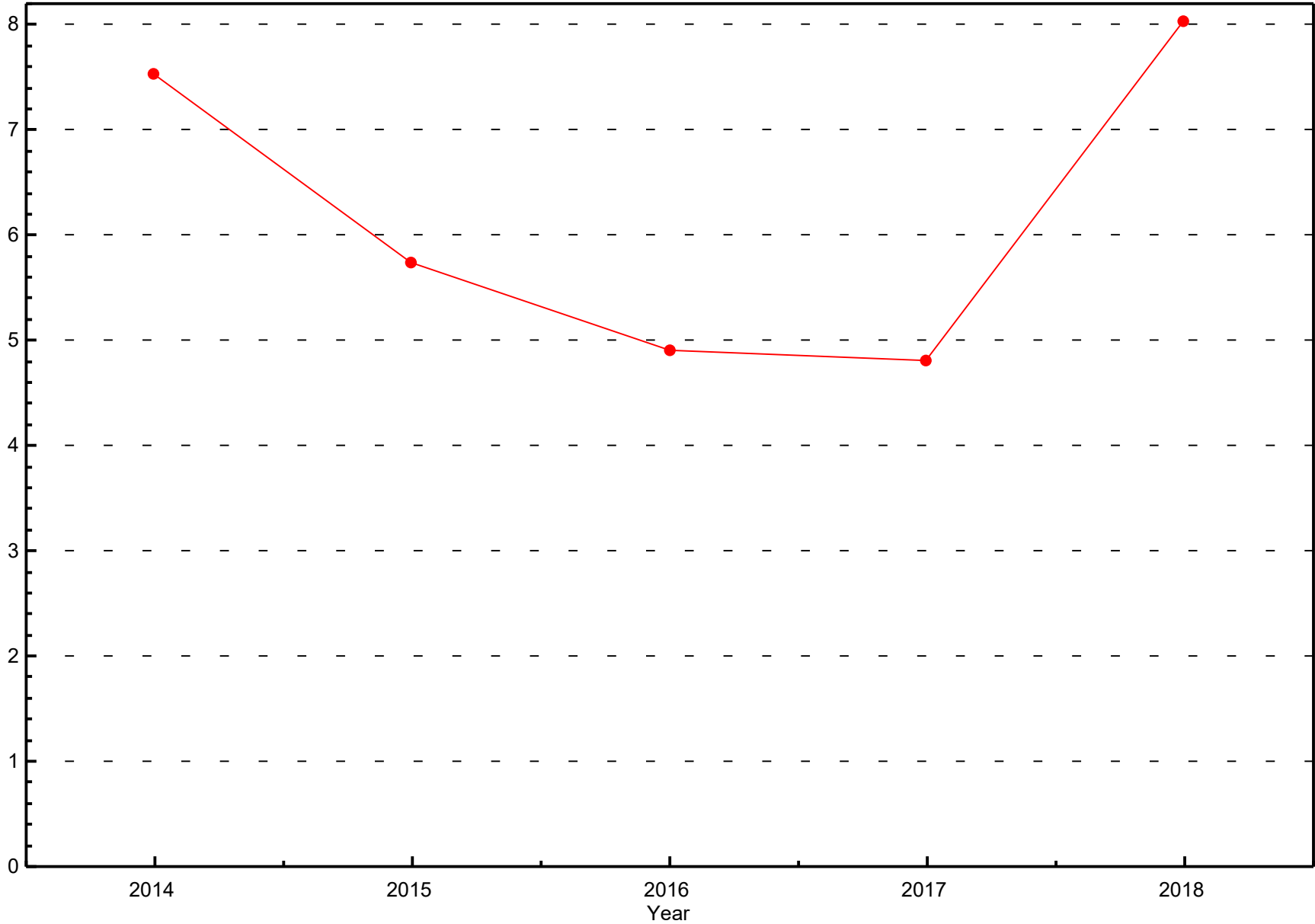
5-Year Annual Averages

Nitrogen Dioxide (NO₂) - ppb
Henry Pirker (2014 to 2018)



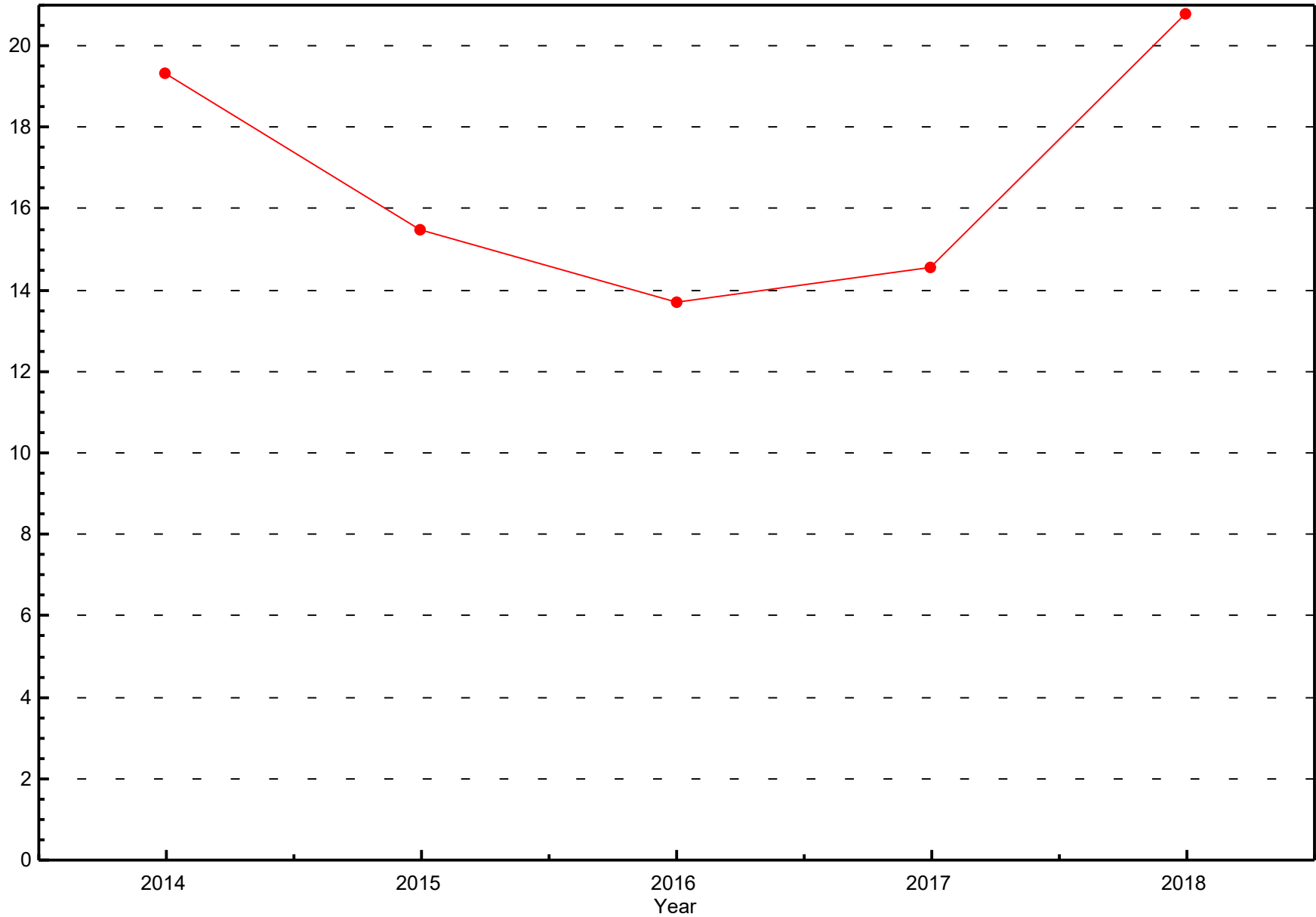
5-Year Annual Averages

Nitrogen Oxide (NO) - ppb
Henry Pirker (2014 to 2018)



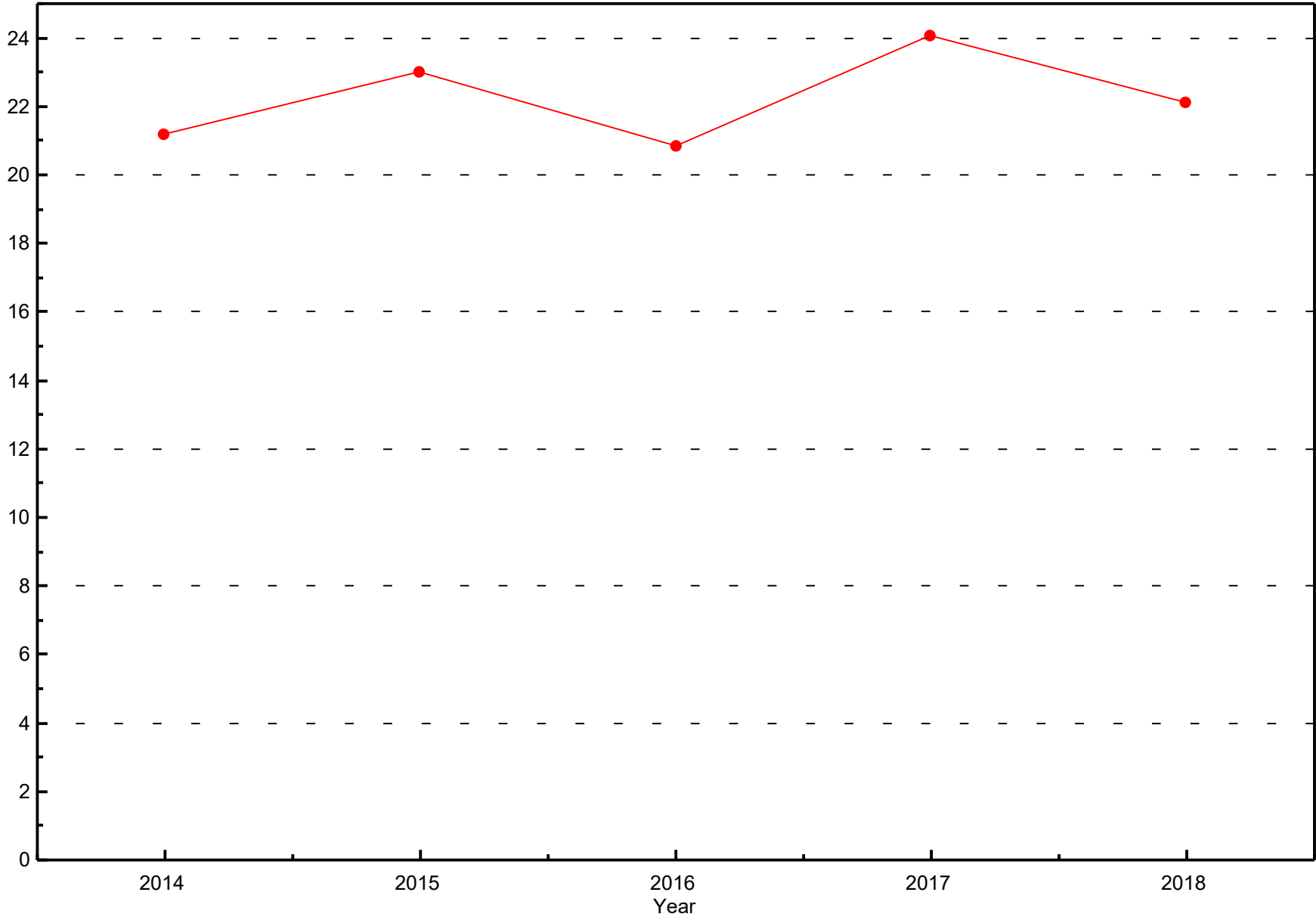
5-Year Annual Averages

Oxides of Nitrogen (NO_x) - ppb
Henry Pirker (2014 to 2018)



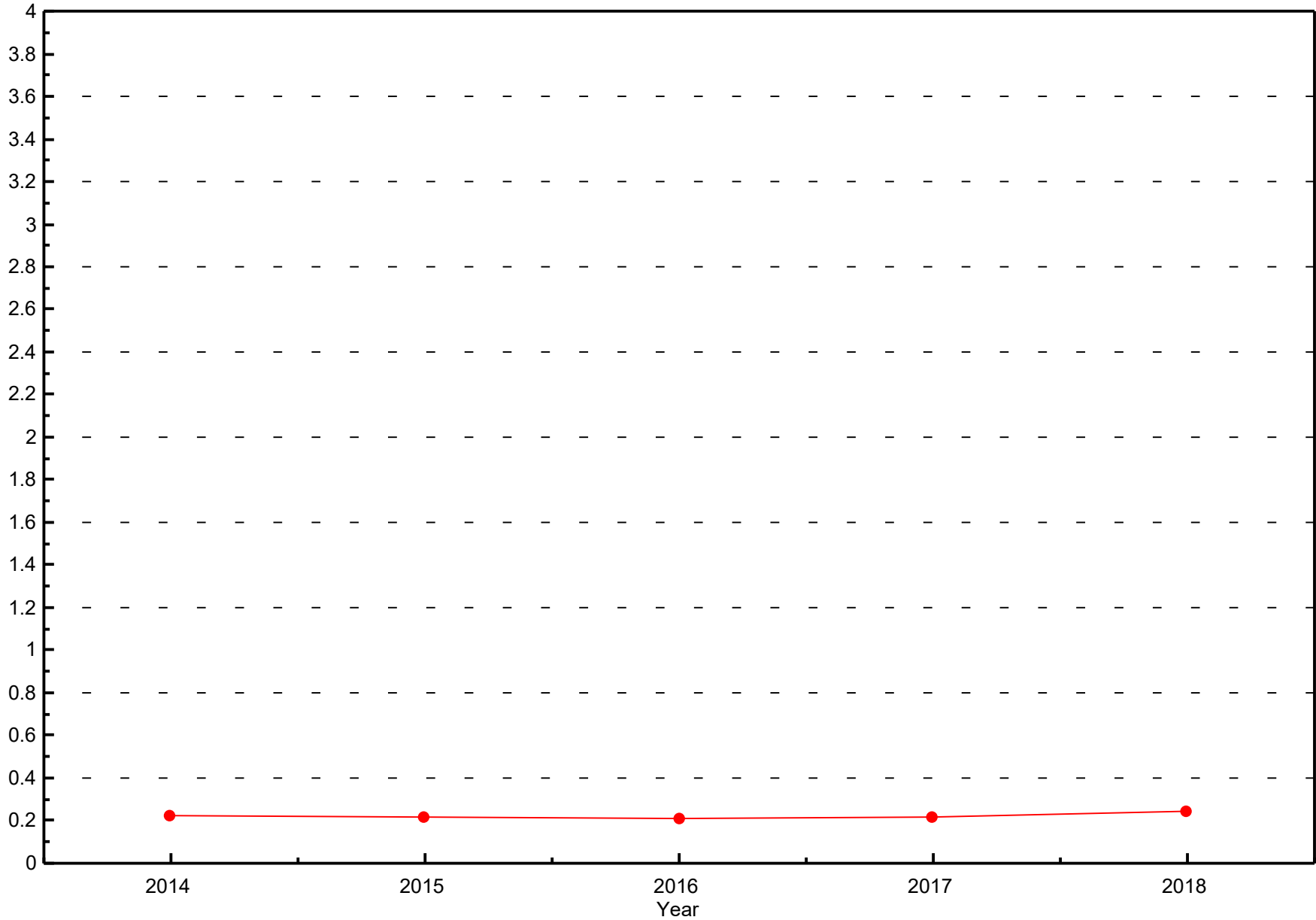
5-Year Annual Averages

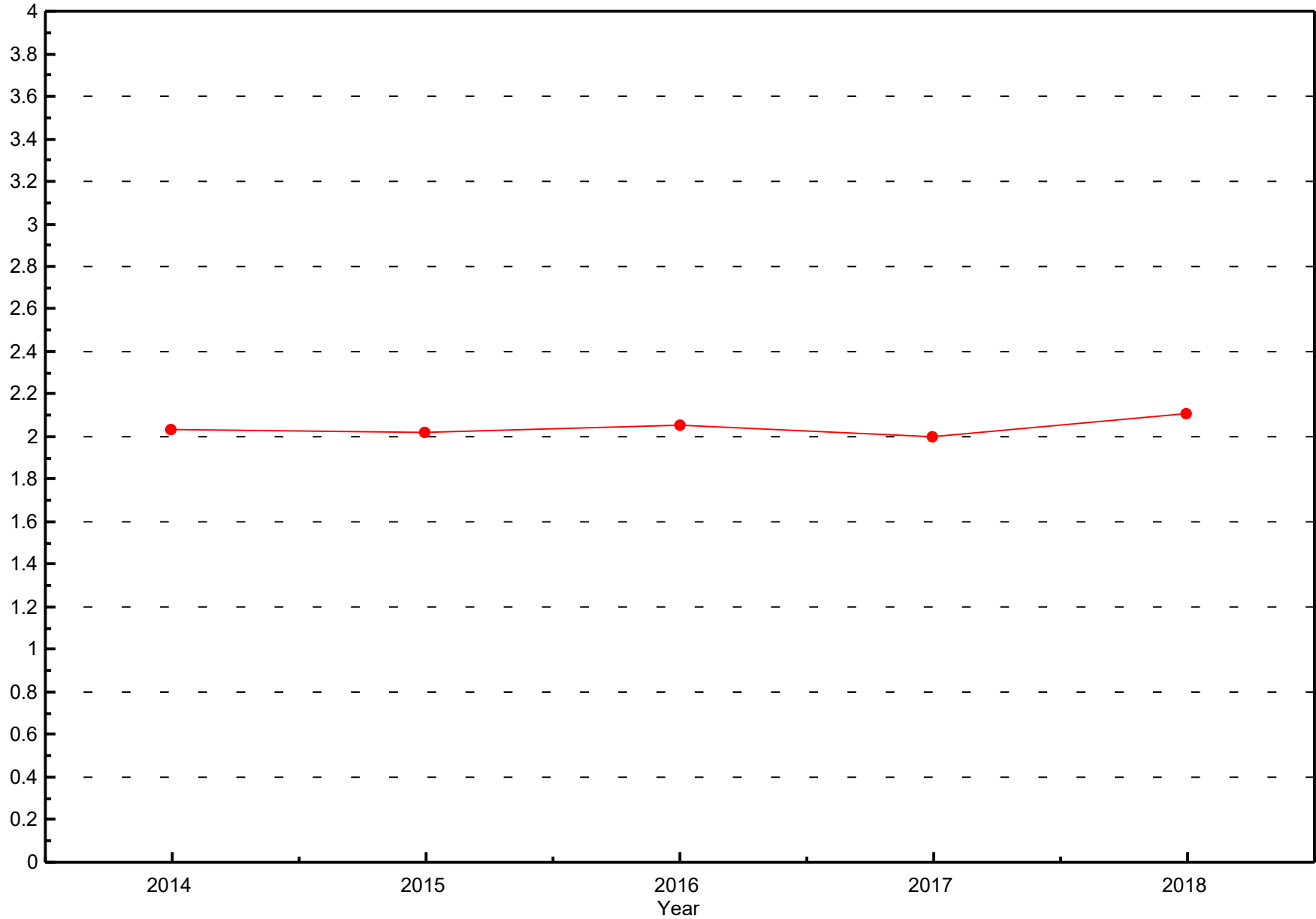
Ozone (O₃) - ppb
Henry Pirker (2014 to 2018)



5-Year Annual Averages

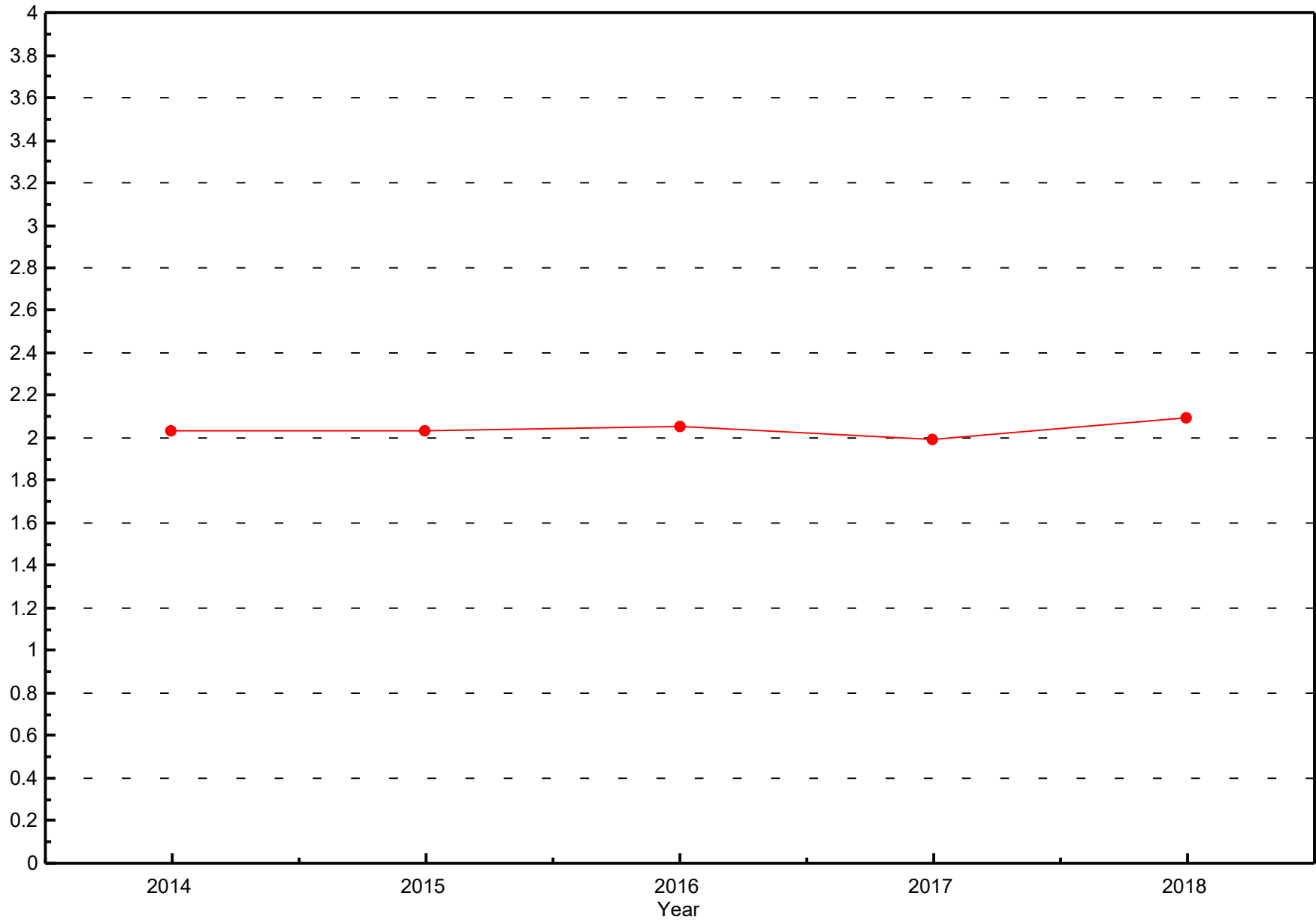
Carbon Monoxide (CO) - ppm
Henry Pirker (2014 to 2018)



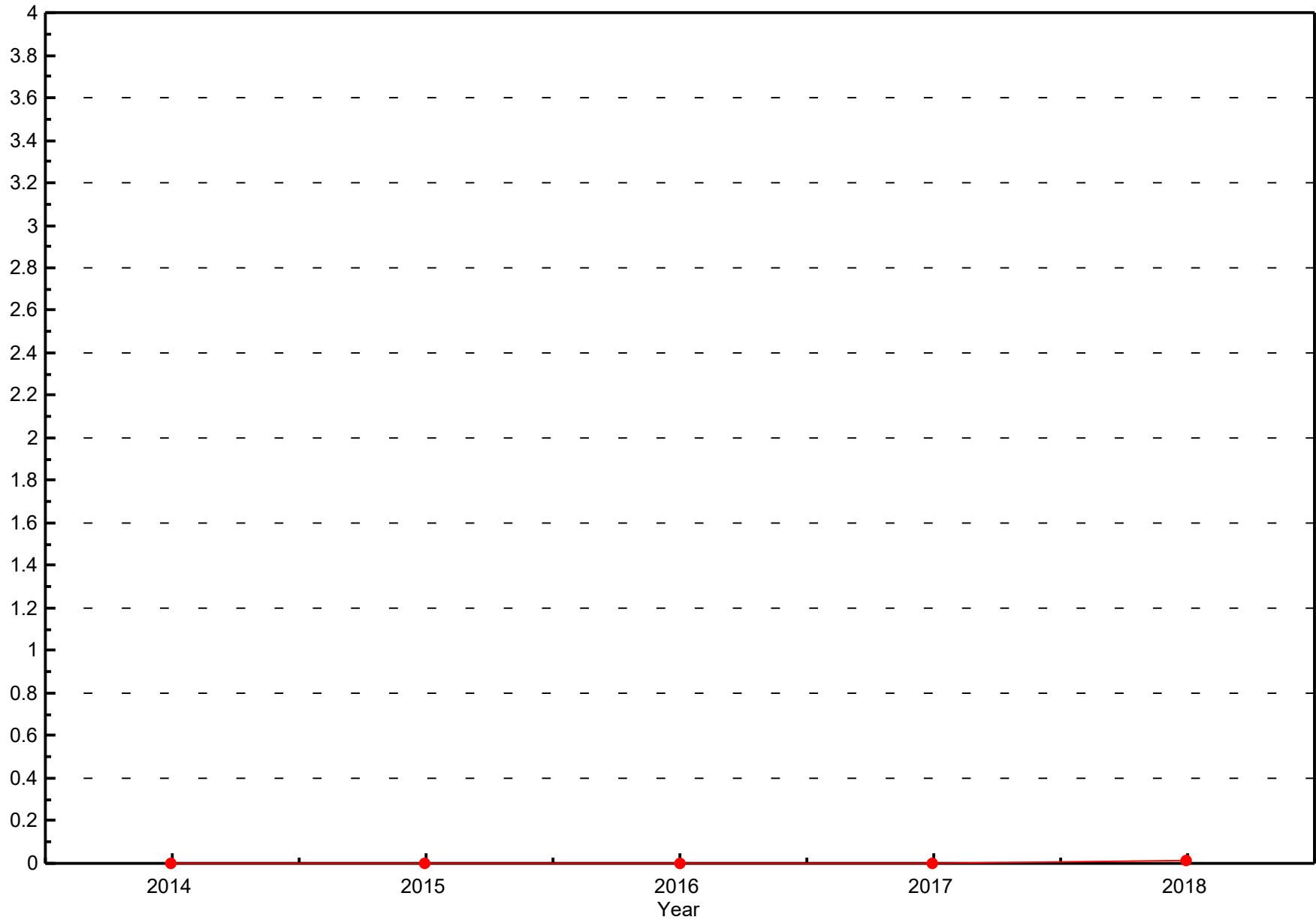


5-Year Annual Averages

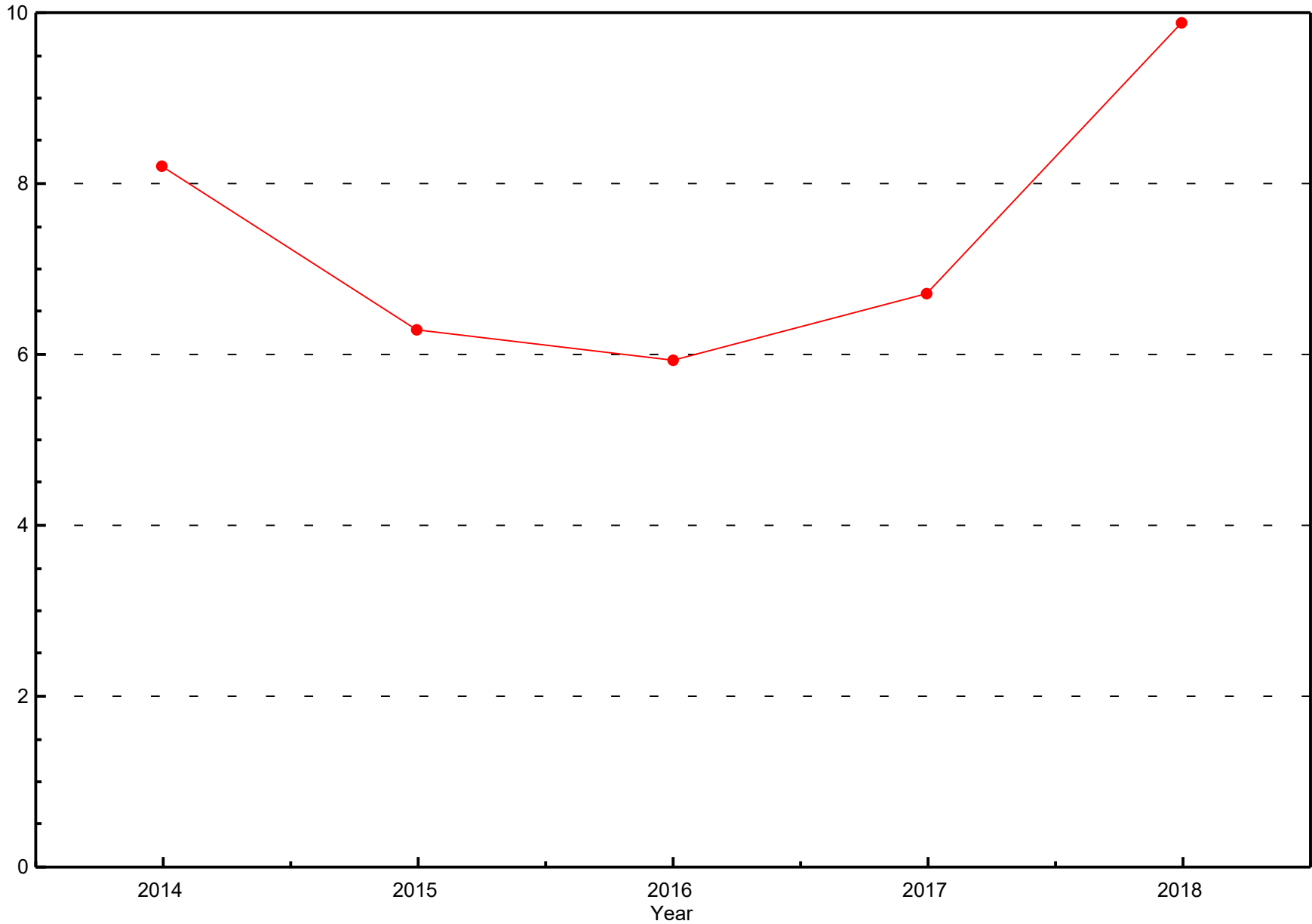
Methane (CH₄) - ppm
Henry Pirker (2014 to 2018)



5-Year Annual Averages Non Methane Hydrocarbon (NMHC) - ppm
Henry Pirker (2014 to 2018)

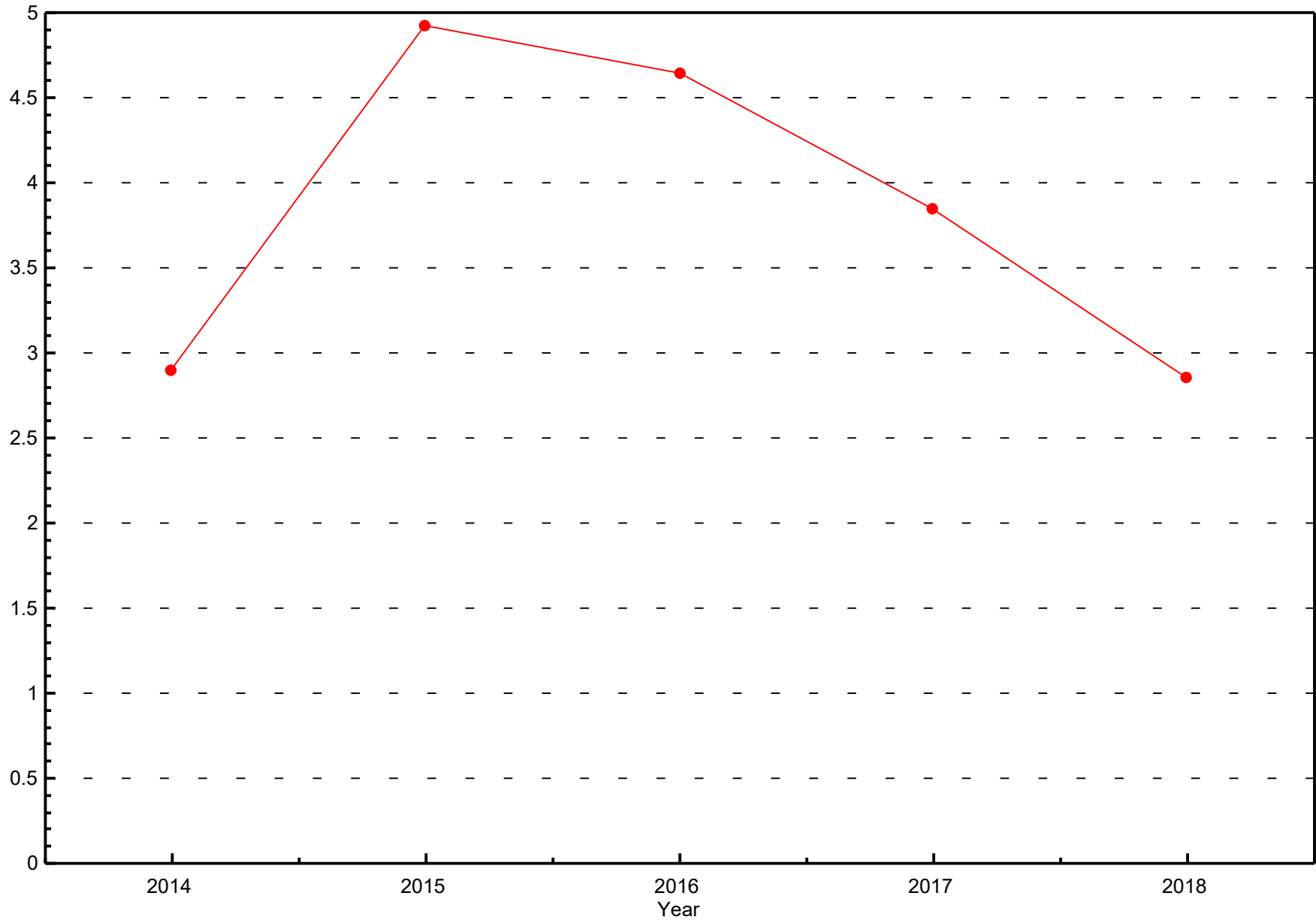


5-Year Annual Averages Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Henry Pirker (2014 to 2018)



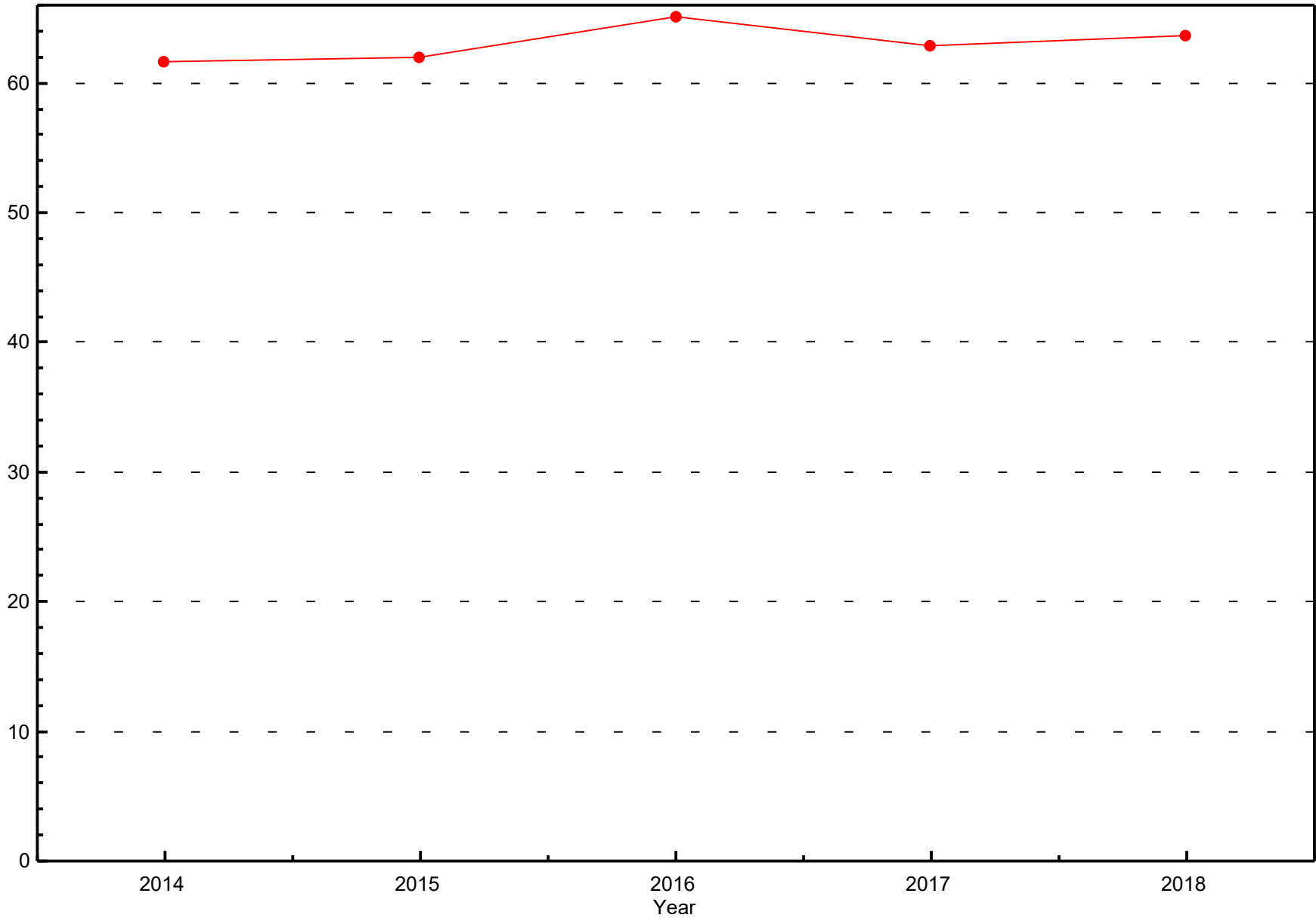
5-Year Annual Averages

External Temperature (ET) - °C
Henry Pirker (2014 to 2018)



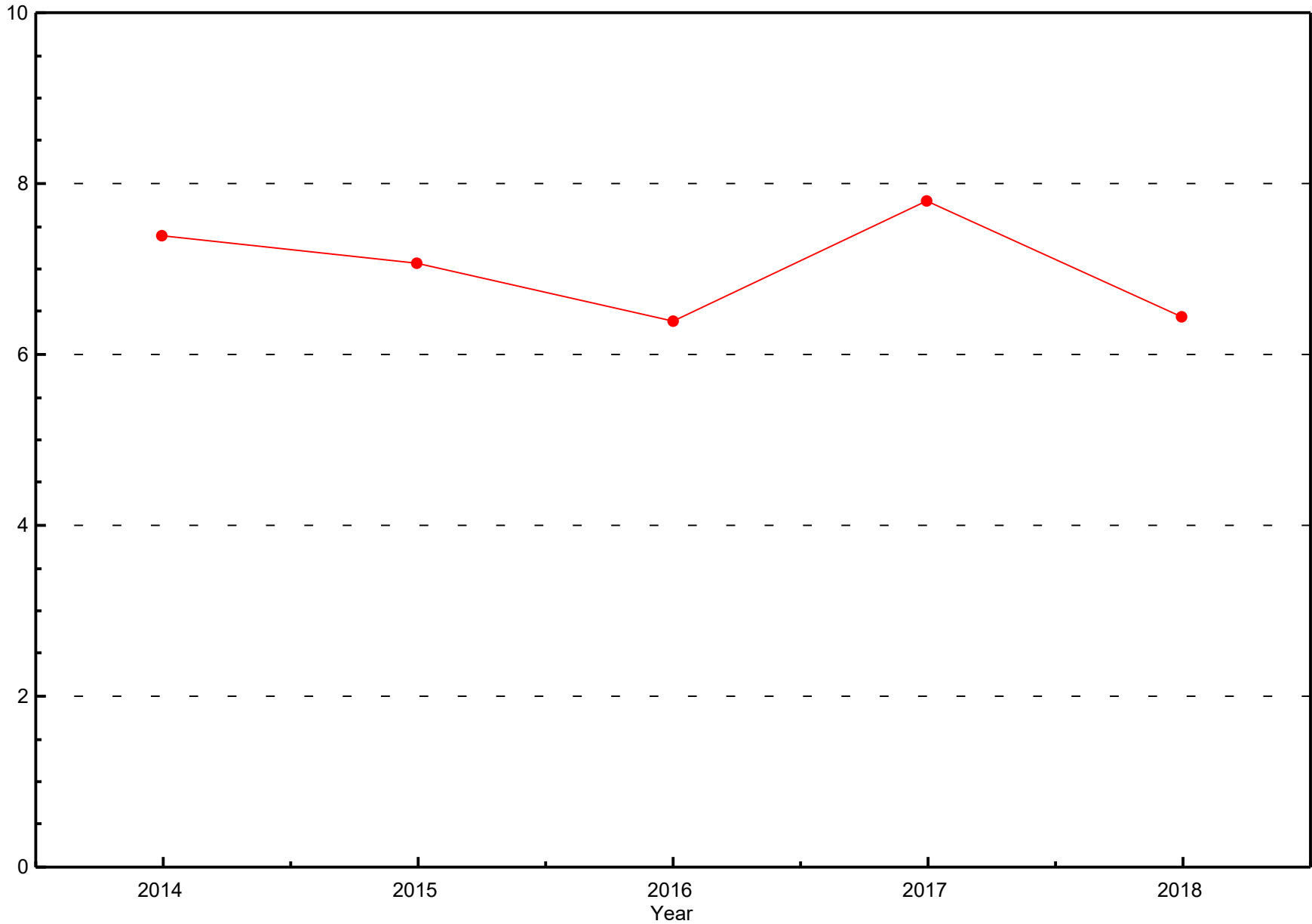
5-Year Annual Averages

**Relative Humidity (RH) - %
Henry Pirker (2014 to 2018)**



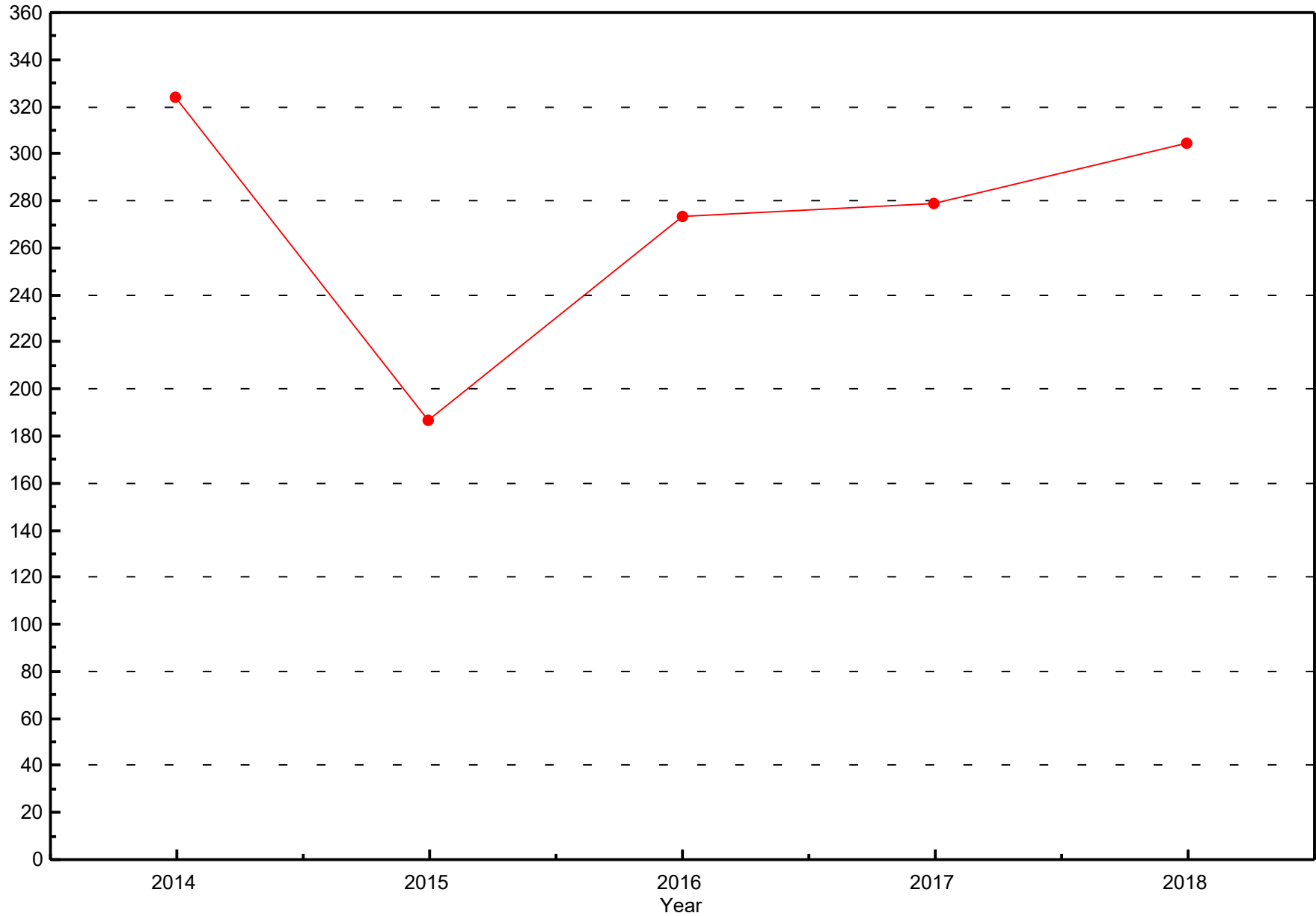
5-Year Annual Averages

Wind Speed (WS) - km/h
Henry Pirker (2014 to 2018)



5-Year Annual Averages

Wind Direction (WD) - deg
Henry Pirker (2014 to 2018)



PAZA

SMOKY HEIGHTS

CONTINUOUS AMBIENT AIR MONITORING STATION

2018

ANNUAL SUMMARY TABLES

Sulphur Dioxide (SO₂) – Smoky Heights 2018 Summary and Frequency Distribution

Smoky Heights												SO ₂ (ppb)			2018						
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance			Percentage of Readings in Concentration Range						
												30-Day	24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340	
January	709	0.85	3.23	Jan 01	0.12	Jan 09	9.44	Jan 01 08:00	0.00	Jan 25 12:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
February	639	0.84	2.85	Feb 10	0.15	Feb 02	7.39	Feb 10 02:00	0.00	Feb 02 10:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
March	709	0.85	2.04	Mar 12	0.08	Mar 21	12.64	Mar 18 20:00	0.00	Mar 21 23:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
April	678	0.49	2.10	Apr 01	0.14	Apr 16	22.58	Apr 01 15:00	0.00	Apr 21 16:00	98.75	0	0	0	99.85	0.15	0.00	0.00	0.00	0.00	0.00
May	707	0.32	1.32	May 05	0.01	May 17	5.79	May 12 06:00	0.00	May 02 18:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
June	663	0.31	1.39	Jun 28	0.08	Jun 13	7.38	Jun 09 16:00	0.00	Jun 02 22:00	96.81	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
July	669	0.23	0.84	Jul 01	0.02	Jul 20	6.15	Jul 01 02:00	0.00	Jul 01 01:00	94.35	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
August	706	0.31	0.89	Aug 03	0.01	Aug 26	5.50	Aug 03 08:00	0.00	Aug 02 19:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
September	686	0.19	0.81	Sep 26	0.00	Sep 09	6.44	Sep 26 01:00	0.00	Sep 08 19:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
October	709	0.25	0.85	Oct 16	0.05	Oct 08	3.37	Oct 03 00:00	0.00	Oct 01 18:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
November	685	0.34	0.79	Nov 14	0.03	Nov 01	2.11	Nov 14 13:00	0.01	Nov 04 07:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
December	709	0.56	1.68	Dec 17	0.08	Dec 01	4.97	Dec 17 20:00	0.00	Dec 01 05:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	8269	0.46	3.23	Jan 01	0.00	Sep 09	22.58	Apr 01 15:00	0.00	Jan 25 12:00	99.2	0	0	0	99.99	0.01	0.00	0.00	0.00	0.00	0.00

AAAQO Objectives: Annual: 8 ppb, 30-Day: 11 ppb, 24-Hr: 48 ppb, 1-Hr: 172 ppb

Total Reduced Sulphur (TRS) – Smoky Heights 2018 Summary and Frequency Distribution

Smoky Heights												TRS (ppb)			2018					
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range								
												0 - 1	1 - 2.5	2.5 - 5	5 - 7.5	7.5 - 10	>10			
January	708	0.46	0.97	Jan 01	0.27	Jan 08	3.81	Jan 10 22:00	0.19	Jan 18 01:00	100.00	95.34	4.52	0.14	0.00	0.00	0.00			
February	639	0.46	0.68	Feb 06	0.23	Feb 13	1.43	Feb 20 04:00	0.17	Feb 13 14:00	100.00	98.12	1.88	0.00	0.00	0.00	0.00			
March	709	0.45	0.99	Mar 04	0.28	Mar 23	3.75	Mar 04 08:00	0.18	Mar 09 04:00	100.00	97.32	2.40	0.28	0.00	0.00	0.00			
April	677	0.37	0.65	Apr 22	0.26	Apr 06	0.97	Apr 23 22:00	0.00	Apr 30 06:00	98.75	100.00	0.00	0.00	0.00	0.00	0.00			
May	708	0.39	0.64	May 15	0.27	May 18	1.60	May 15 06:00	0.16	May 23 19:00	100.00	98.45	1.55	0.00	0.00	0.00	0.00			
June	661	0.35	0.46	Jun 03	0.22	Jun 13	1.47	Jun 03 05:00	0.00	Jun 20 17:00	96.81	99.70	0.30	0.00	0.00	0.00	0.00			
July	581	0.37	0.56	Jul 28	0.24	Jul 03	1.29	Jul 17 04:00	0.11	Jul 03 15:00	82.12	99.66	0.34	0.00	0.00	0.00	0.00			
August	703	0.56	1.17	Aug 30	0.35	Aug 13	1.90	Aug 15 03:00	0.00	Aug 06 04:00	100.00	93.88	6.12	0.00	0.00	0.00	0.00			
September	685	0.40	0.71	Sep 07	0.29	Sep 16	2.22	Sep 07 21:00	0.21	Sep 11 19:00	100.00	98.83	1.17	0.00	0.00	0.00	0.00			
October	709	0.53	0.93	Oct 29	0.28	Oct 01	2.29	Oct 13 19:00	0.21	Oct 01 13:00	100.00	91.96	8.04	0.00	0.00	0.00	0.00			
November	685	0.63	1.33	Nov 07	0.43	Nov 04	3.96	Nov 07 11:00	0.30	Nov 01 15:00	100.00	97.37	2.04	0.58	0.00	0.00	0.00			
December	709	0.50	0.88	Dec 08	0.34	Dec 26	1.44	Dec 08 10:00	0.27	Dec 15 09:00	100.00	98.73	1.27	0.00	0.00	0.00	0.00			
Annual	8174	0.46	1.33	Nov 07	0.22	Jun 13	3.96	Nov 07 11:00	0.00	Apr 30 06:00	98.1	97.39	2.52	0.09	0.00	0.00	0.00			

No AAAQO

Particulate Matter (PM_{2.5}) – Smoky Heights 2018 Summary and Frequency Distribution

Smoky Heights												PM _{2.5} (µg/m ³)						2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance		Percentage of Readings in Concentration Range					
												24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30
January	717	5.83	16.80	Jan 05	0.55	Jan 31	123.98	Jan 23 19:00	0.00	Jan 01 23:00	96.37	0	2	39.19	27.06	16.46	10.18	6.42	0.70
February	670	2.65	10.85	Feb 06	0.01	Feb 13	59.54	Feb 07 23:00	0.00	Feb 01 12:00	99.70	0	0	61.94	26.72	7.31	2.99	0.60	0.45
March	743	3.76	10.99	Mar 15	0.94	Mar 01	42.94	Mar 13 22:00	0.17	Mar 24 14:00	99.87	0	0	42.13	38.36	14.94	2.69	1.75	0.13
April	705	3.74	7.84	Apr 11	0.06	Apr 21	35.61	Apr 03 18:00	0.00	Apr 02 18:00	98.75	0	0	41.13	39.15	14.75	3.26	1.42	0.28
May	743	7.38	20.77	May 24	1.86	May 09	58.19	May 24 15:00	0.00	May 09 03:00	100.00	0	0	7.94	47.11	26.78	11.71	4.85	1.62
June	695	5.71	19.02	Jun 19	0.39	Jun 26	40.05	Jun 21 18:00	0.00	Jun 02 07:00	96.53	0	0	33.81	30.07	22.01	8.63	4.46	1.01
July	741	6.22	15.52	Jul 28	1.05	Jul 02	32.37	Jul 15 23:00	0.00	Jul 08 05:00	99.60	0	0	15.52	44.53	24.97	11.34	3.37	0.27
August	723	37.11	145.53	Aug 22	0.46	Aug 30	337.52	Aug 22 12:00	0.00	Aug 30 01:00	97.85	10	91	6.50	18.53	15.49	8.58	16.60	34.30
September	720	3.56	23.31	Sep 02	0.01	Sep 09	54.19	Sep 07 21:00	0.00	Sep 01 04:00	100.00	0	0	52.92	32.64	8.61	2.08	2.64	1.11
October	744	4.79	11.26	Oct 24	0.22	Oct 02	44.53	Oct 22 20:00	0.00	Oct 02 07:00	100.00	0	0	25.67	47.72	20.03	4.84	1.21	0.54
November	720	9.98	20.80	Nov 21	4.30	Nov 05	67.14	Nov 19 22:00	0.93	Nov 05 14:00	100.00	0	0	3.19	33.89	32.50	16.39	10.28	3.75
December	744	6.62	22.11	Dec 08	2.04	Dec 12	68.31	Dec 31 05:00	0.45	Dec 20 13:00	100.00	0	0	20.97	42.20	20.83	8.20	6.72	1.08
Annual	8665	8.14	145.53	Aug 22	0.01	Feb 13	337.52	Aug 22 12:00	0.00	Jan 01 23:00	99.1	10	91	28.93	35.84	18.82	7.60	5.04	3.77

AAAQO Objectives: 24-Hr: 30 µg/m³, 1-Hr: 80 µg/m³

Table 26. Ambient Temperature (ET) – Smoky Heights 2018 Summary

Smoky Heights												Ambient Temperature (°C)		2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)				
												January	744	-12.0	0.5
February	672	-14.4	1.5	Feb 13	-29.4	Feb 04	2.9	Feb 13 15:00	-35.0	Feb 04 09:00	100.0				
March	744	-6.9	1.3	Mar 16	-17.6	Mar 31	7.4	Mar 15 16:00	-26.5	Mar 31 02:00	100.0				
April	711	-0.3	11.4	Apr 28	-13.5	Apr 01	21.1	Apr 27 18:00	-25.9	Apr 01 07:00	98.8				
May	744	14.2	22.0	May 23	8.9	May 01	30.4	May 23 16:00	0.9	May 29 04:00	100.0				
June	690	14.8	22.1	Jun 18	8.8	Jun 05	31.3	Jun 19 15:00	0.8	Jun 05 04:00	95.8				
July	741	16.4	21.3	Jul 29	11.5	Jul 07	28.9	Jul 28 18:00	5.3	Jul 08 05:00	99.6				
August	744	14.9	19.9	Aug 09	8.7	Aug 24	28.4	Aug 09 16:00	2.7	Aug 20 06:00	100.0				
September	720	5.2	13.9	Sep 07	-1.4	Sep 12	19.1	Sep 07 17:00	-7.3	Sep 30 07:00	100.0				
October	744	2.9	11.7	Oct 17	-2.0	Oct 02	20.4	Oct 16 16:00	-6.2	Oct 23 06:00	100.0				
November	720	-4.3	1.8	Nov 14	-16.6	Nov 07	6.1	Nov 13 21:00	-22.2	Nov 07 08:00	100.0				
December	744	-8.7	0.5	Dec 13	-16.5	Dec 26	3.3	Dec 10 08:00	-21.7	Dec 28 04:00	100.0				
Annual	8718	1.9	22.1	Jun 18	-34.1	Jan 11	31.3	Jun 19 15:00	-38.0	Jan 11 10:00	99.5				

Wind Speed (WS) – Smoky Heights 2018 Summary

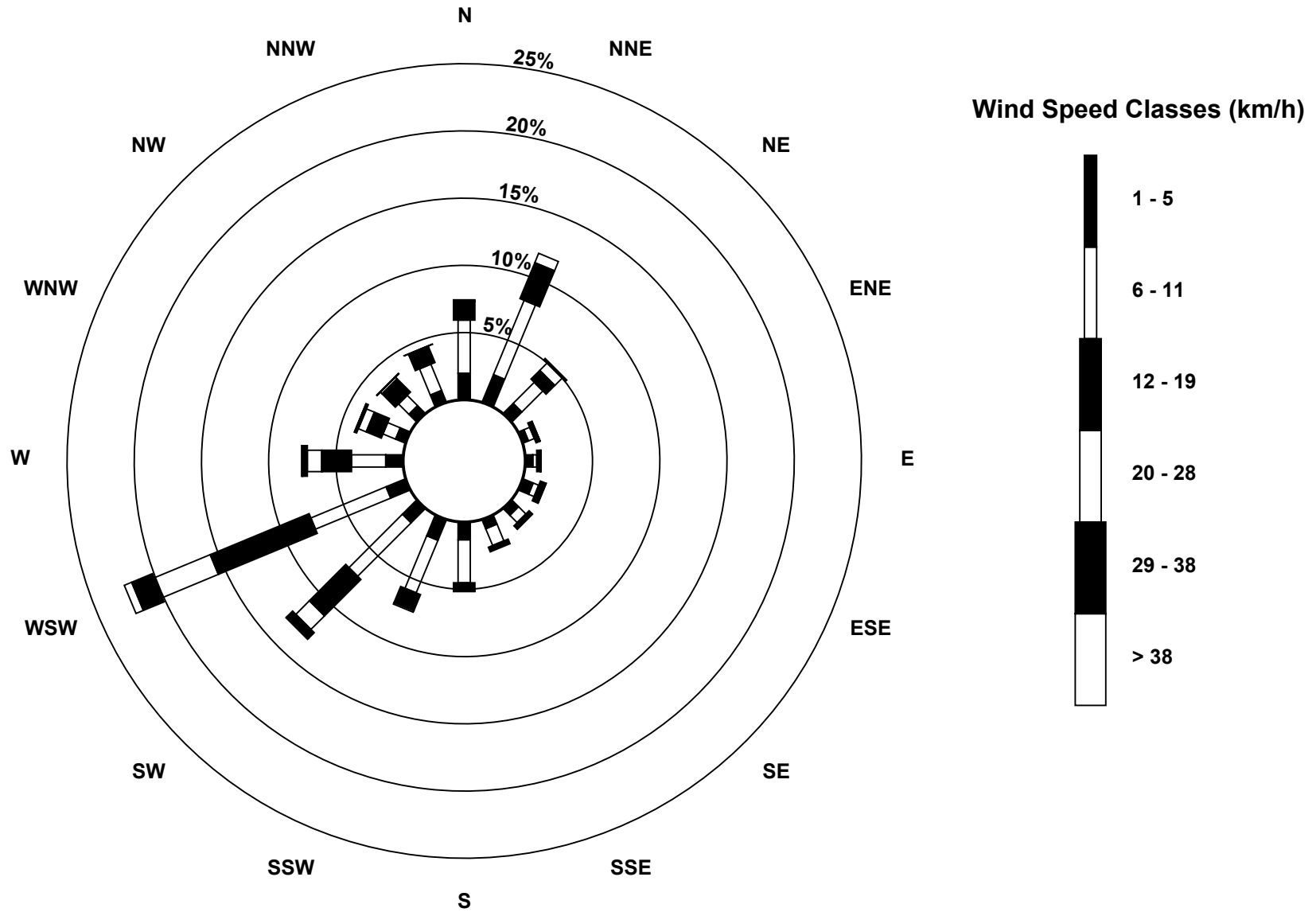
Smoky Heights		Wind Speed (km/h)									2018
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	734	10.5	23.5	Jan 06	3.8	Jan 27	42.3	Jan 18 13:00	0.5	Jan 27 04:00	98.7
February	672	14.1	38.6	Feb 13	5.2	Feb 01	49.5	Feb 13 15:00	0.7	Feb 05 21:00	100.0
March	744	10.8	27.0	Mar 22	4.3	Mar 11	33.6	Mar 22 17:00	0.1	Mar 05 19:00	100.0
April	711	12.5	20.9	Apr 22	4.9	Apr 01	40.5	Apr 22 01:00	0.2	Apr 01 04:00	98.8
May	744	14.1	29.0	May 26	5.1	May 19	48.2	May 02 15:00	0.4	May 18 07:00	100.0
June	700	13.5	31.5	Jun 26	4.4	Jun 18	48.6	Jun 11 15:00	0.7	Jun 14 13:00	97.2
July	743	10.8	23.1	Jul 11	2.8	Jul 24	37.9	Jul 01 16:00	0.1	Jul 18 00:00	99.9
August	744	11.1	20.1	Aug 31	3.8	Aug 19	40.4	Aug 31 16:00	0.1	Aug 15 22:00	100.0
September	720	8.9	18.9	Sep 01	3.2	Sep 13	32.2	Sep 08 14:00	0.7	Sep 13 06:00	100.0
October	744	11.5	25.2	Oct 20	5.3	Oct 10	50.6	Oct 20 12:00	0.2	Oct 02 09:00	100.0
November	720	9.7	18.0	Nov 09	3.8	Nov 30	44.6	Nov 18 00:00	0.3	Nov 26 20:00	100.0
December	744	11.3	30.7	Dec 12	2.8	Dec 01	47.8	Dec 12 14:00	0.7	Dec 02 01:00	100.0
Annual	8720	11.5	38.6	Feb 13	2.8	Jul 24	50.6	Oct 20 12:00	0.1	Jul 18 00:00	99.5

Wind Speed and Wind Direction Frequency Distribution – Smoky Heights 2018 Summary

Smoky Heights								2018
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	359	1.08	1.59	1.29	0.21	0.00	0.00	4.17
NNE	265	0.96	1.39	0.69	0.03	0.00	0.00	3.08
NE	251	1.13	1.07	0.53	0.19	0.00	0.00	2.92
ENE	324	2.08	1.10	0.52	0.06	0.00	0.00	3.76
E	687	3.73	2.90	1.34	0.01	0.00	0.00	7.98
ESE	908	4.18	5.14	1.23	0.00	0.00	0.00	10.55
SE	321	1.68	1.60	0.44	0.00	0.00	0.00	3.73
SSE	231	1.24	1.20	0.22	0.02	0.00	0.00	2.68
S	735	1.23	3.18	3.67	0.45	0.00	0.00	8.54
SSW	1128	1.27	4.96	6.45	0.43	0.00	0.00	13.11
SW	742	1.17	3.18	3.61	0.56	0.09	0.00	8.62
WSW	791	1.22	2.51	3.00	1.73	0.66	0.07	9.19
WSW	758	1.07	2.87	2.71	1.23	0.73	0.20	8.81
WNW	507	0.88	2.13	1.73	0.91	0.23	0.01	5.89
NW	285	0.99	1.45	0.79	0.08	0.00	0.00	3.31
NNW	314	1.08	1.70	0.86	0.01	0.00	0.00	3.65
Totals	8606	25.01	37.99	29.08	5.93	1.72	0.28	100

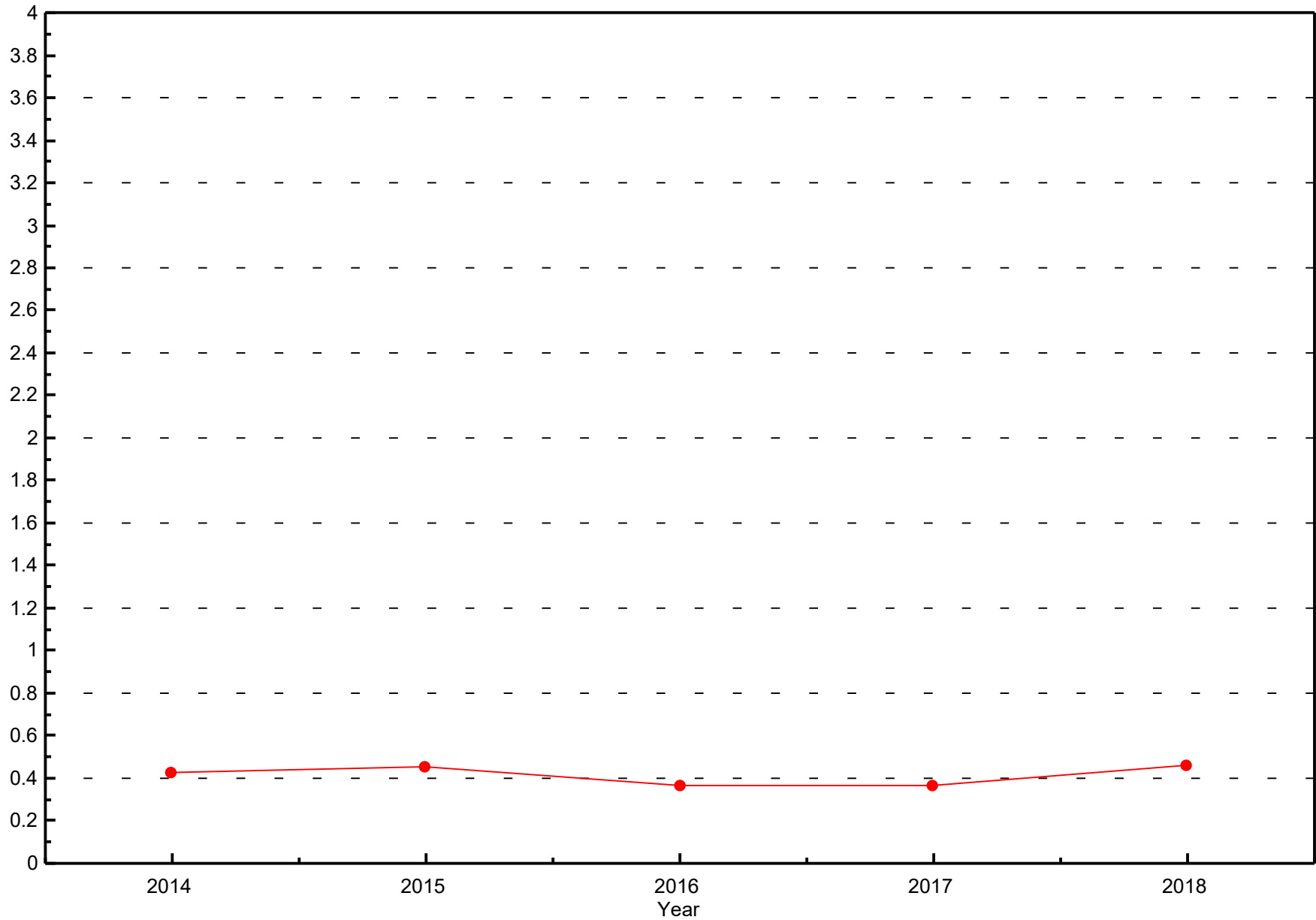
Wind Rose

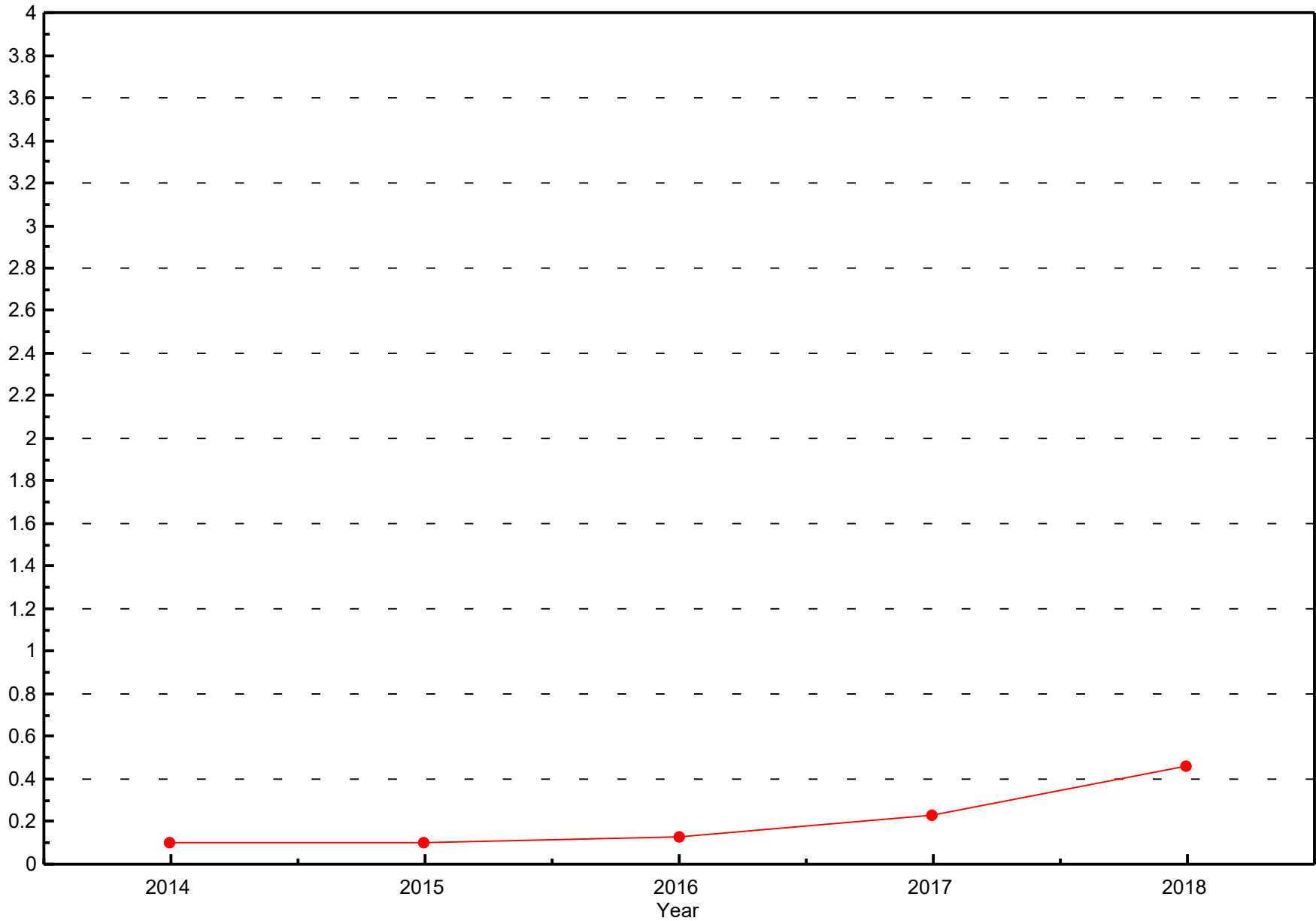
Wind Speed (WS) (km/h)
Smoky Heights - January 2018



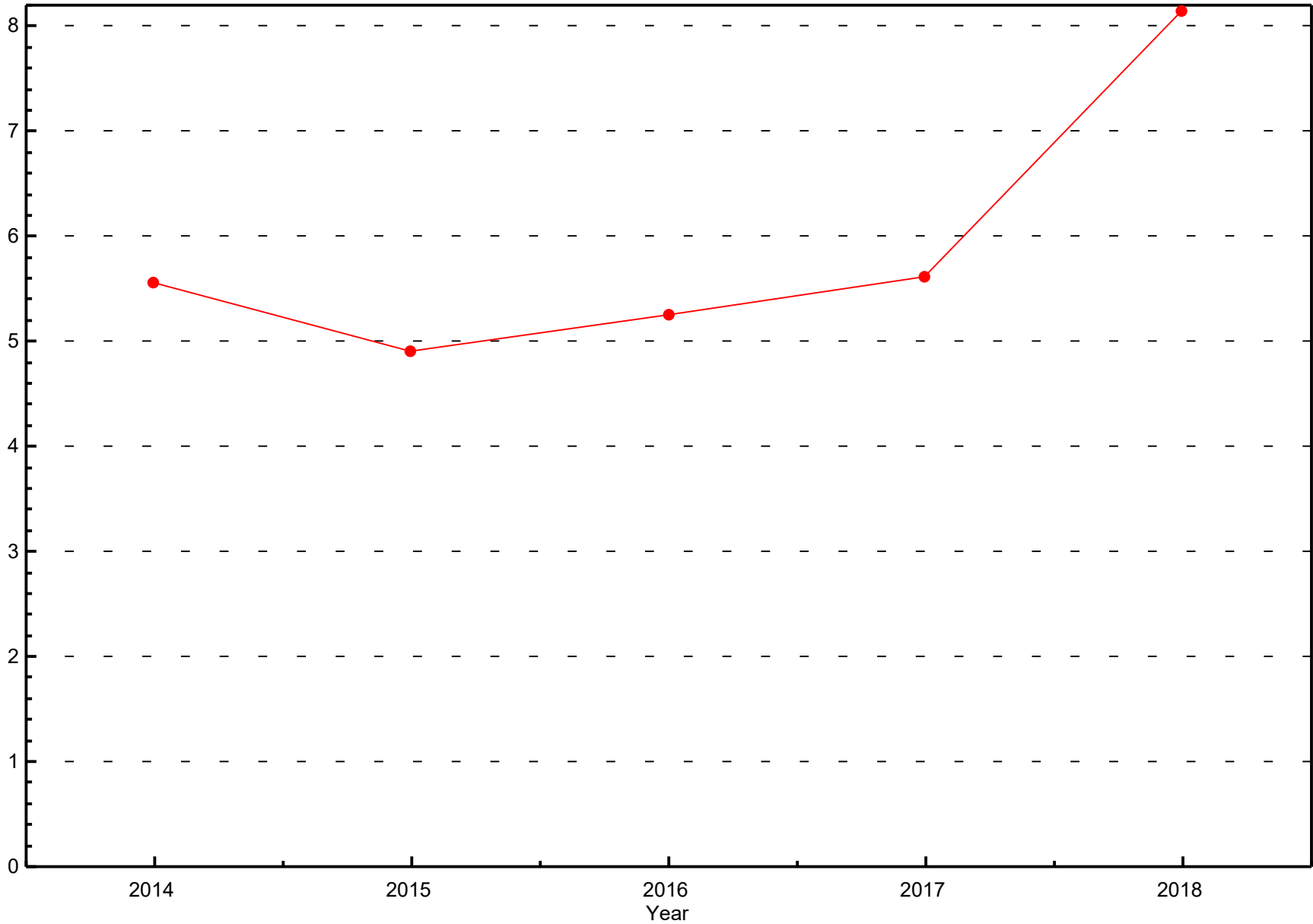
5-Year Annual Averages

Sulphur Dioxide (SO₂) - ppb
Smoky Heights (2014 to 2018)



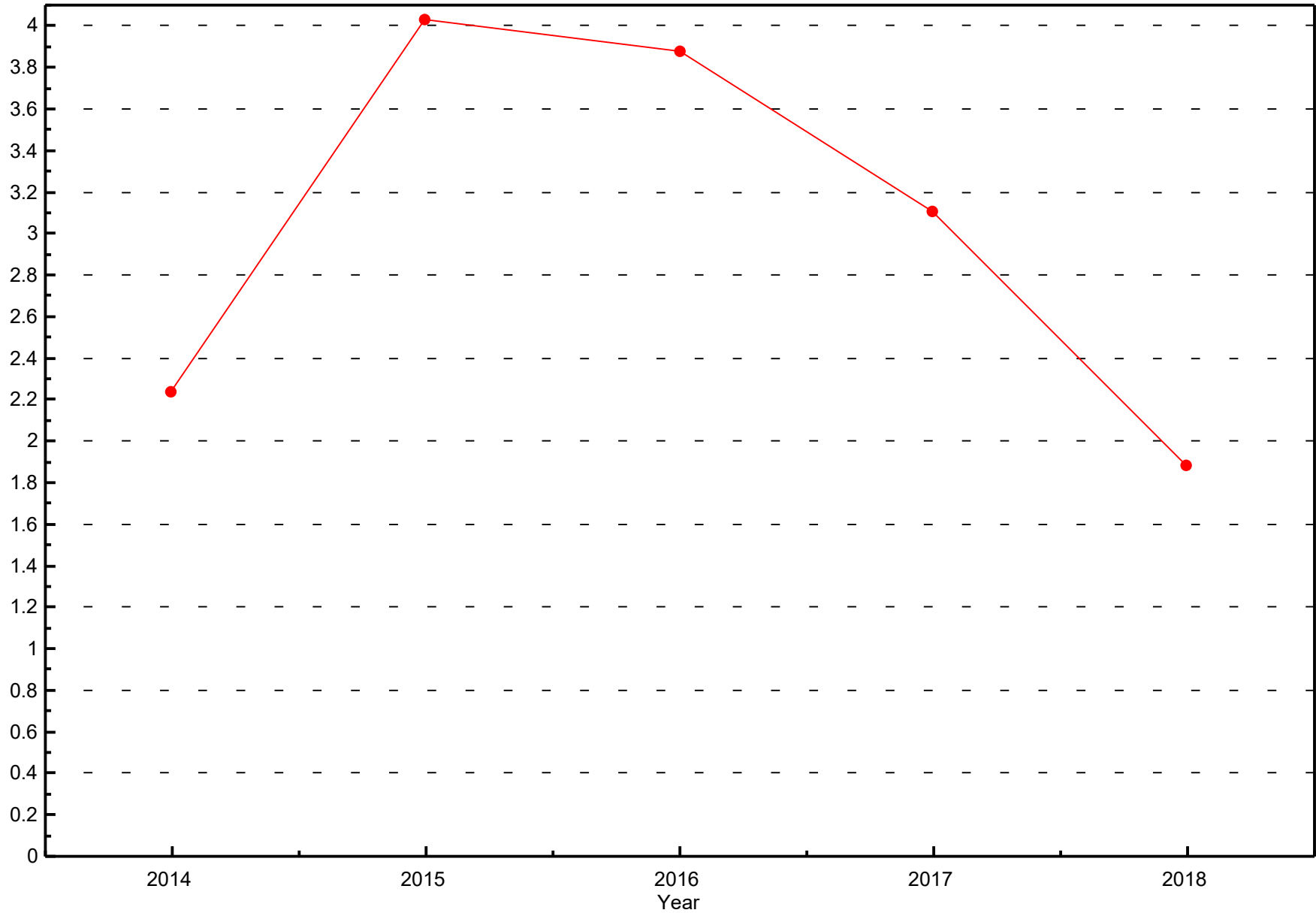


5-Year Annual Averages Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Smoky Heights (2014 to 2018)



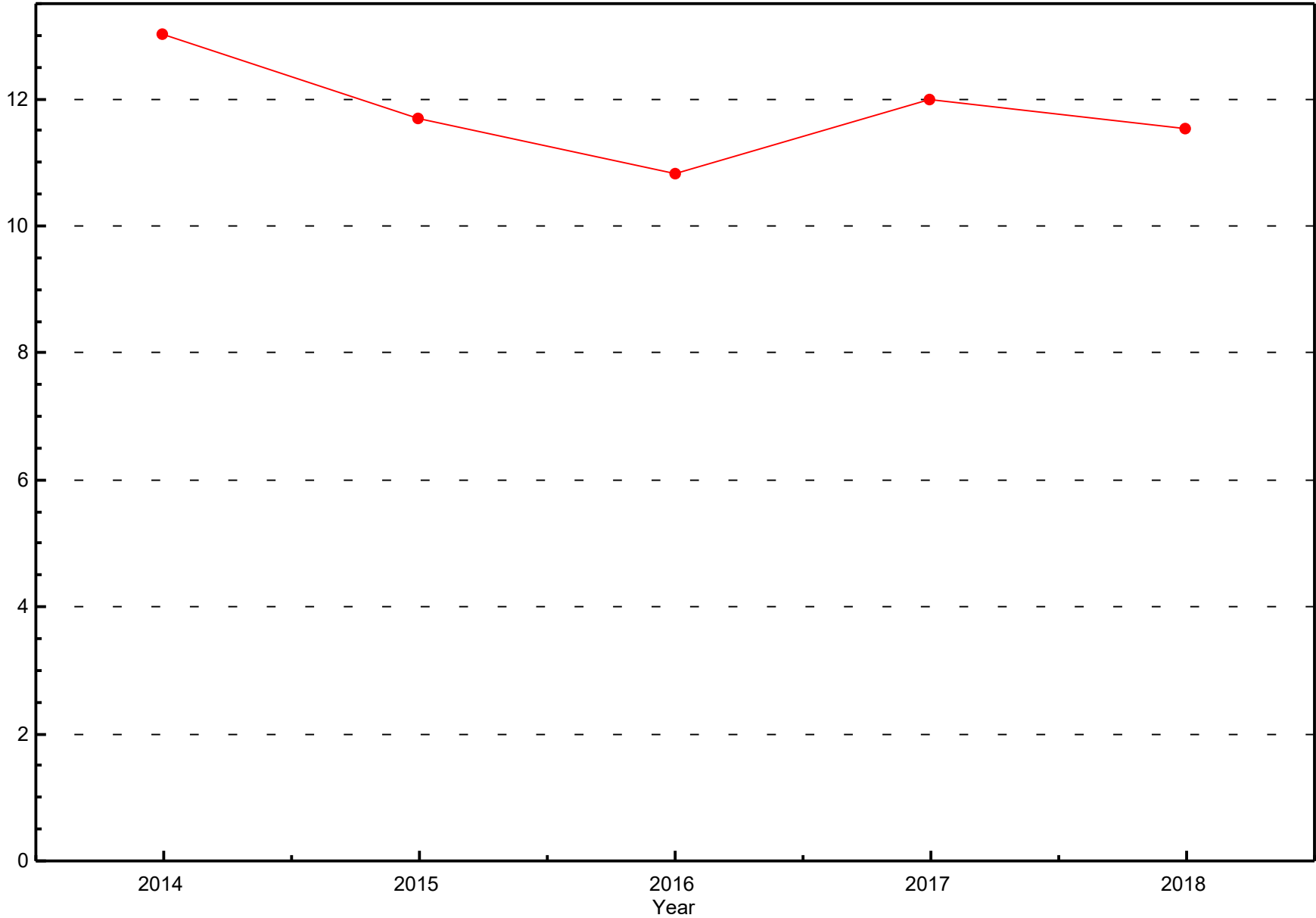
5-Year Annual Averages

External Temperature (ET) - °C
Smoky Heights (2014 to 2018)



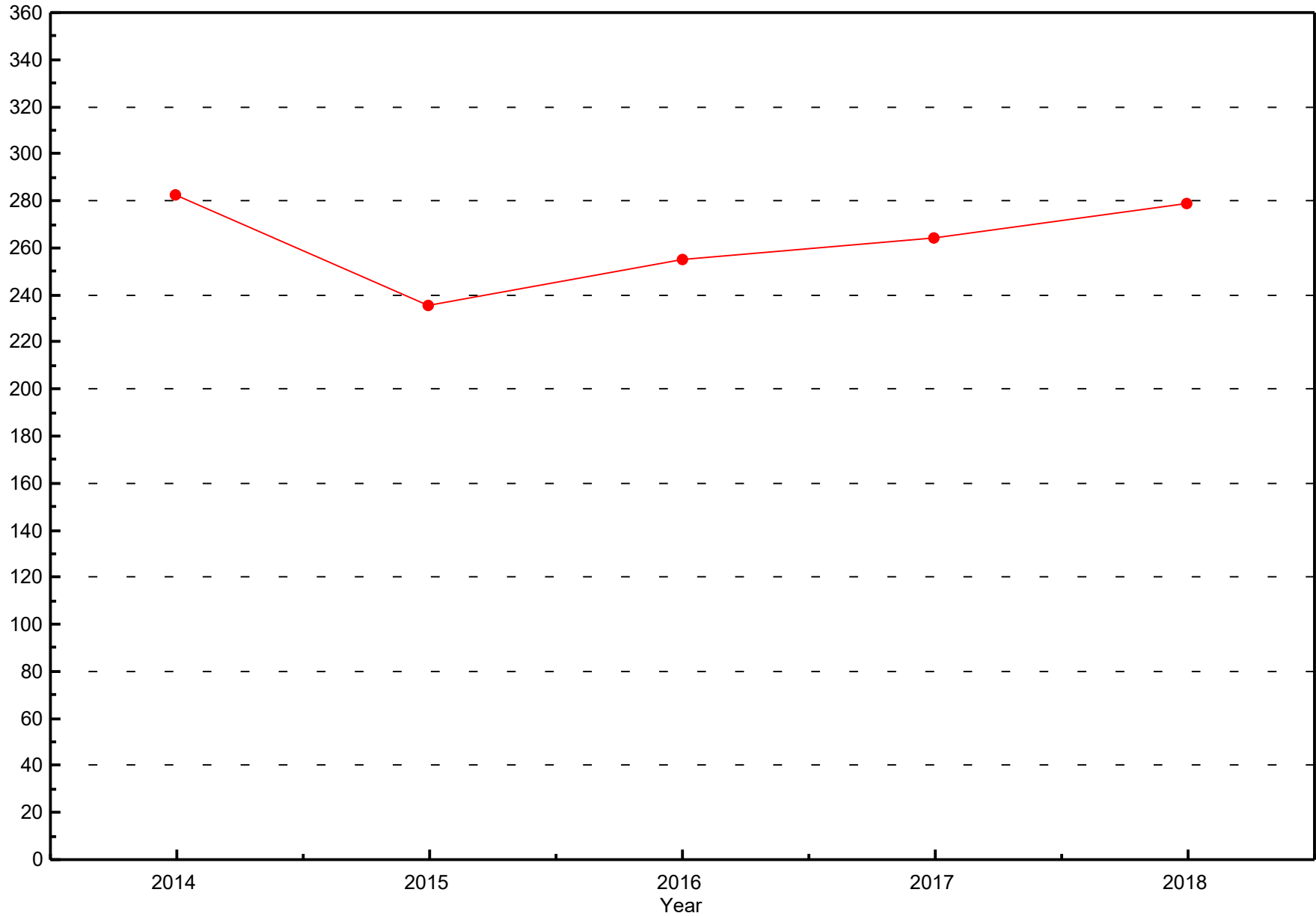
5-Year Annual Averages

**Wind Speed (WS) - km/h
Smoky Heights (2014 to 2018)**



5-Year Annual Averages

**Wind Direction (WD) - deg
Smoky Heights (2014 to 2018)**



PAZA
VALLEYVIEW
CONTINUOUS AMBIENT AIR MONITORING STATION

2018
ANNUAL SUMMARY TABLES

Sulphur Dioxide (SO₂) – Valleyview 2018 Summary and Frequency Distribution

Valleyview												SO ₂ (ppb)					2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance			Percentage of Readings in Concentration Range						
												30-Day	24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340	
January	709	0.75	11.00	Jan 06	0.01	Jan 09	31.32	Jan 06 13:00	0.00	Jan 08 13:00	100.00	0	0	0	99.15	0.85	0.00	0.00	0.00	0.00	
February	639	0.62	1.92	Feb 13	0.00	Feb 07	8.77	Feb 23 21:00	0.00	Feb 02 20:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	
March	709	0.70	2.35	Mar 14	0.07	Mar 24	10.63	Mar 14 12:00	0.00	Mar 23 22:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	
April	688	0.72	6.07	Apr 25	0.00	Apr 16	35.37	Apr 25 00:00	0.00	Apr 01 05:00	100.00	0	0	0	99.42	0.58	0.00	0.00	0.00	0.00	
May	702	0.60	3.36	May 02	0.01	May 17	27.19	May 03 00:00	0.00	May 01 10:00	99.06	0	0	0	99.86	0.14	0.00	0.00	0.00	0.00	
June	686	0.71	2.80	Jun 28	0.02	Jun 03	13.07	Jun 28 01:00	0.00	Jun 01 02:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	
July	696	0.16	2.16	Jul 01	0.00	Jul 17	8.68	Jul 01 05:00	0.00	Jul 02 16:00	98.39	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	
August	705	0.49	2.56	Aug 14	0.01	Aug 25	12.28	Aug 02 16:00	0.00	Aug 02 06:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	
September	686	0.44	3.44	Sep 26	0.01	Sep 29	14.71	Sep 26 18:00	0.00	Sep 02 06:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	
October	710	0.17	1.36	Oct 30	0.01	Oct 02	8.64	Oct 30 11:00	0.00	Oct 01 19:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	
November	684	0.31	1.56	Nov 10	0.02	Nov 01	5.87	Nov 10 13:00	0.00	Nov 01 01:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	
December	709	0.31	1.00	Dec 21	0.03	Dec 10	4.89	Dec 12 16:00	0.00	Dec 05 02:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	
Annual	8323	0.50	11.00	Jan 06	0.00	Feb 07	35.37	Apr 25 00:00	0.00	Jan 08 13:00	99.8	0	0	0	99.87	0.13	0.00	0.00	0.00	0.00	

AAAQO Objectives: Annual: 8 ppb, 30-Day: 11 ppb, 24-Hr: 48 ppb, 1-Hr: 172 ppb

Hydrogen Sulphide (H₂S) – Valleyview 2018 Summary and Frequency Distribution

Valleyview												H ₂ S (ppb)					2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance		Percentage of Readings in Concentration Range							
												24-Hr	1-Hr	0 - 1	1 - 2.5	2.5 - 5	5 - 7.5	7.5 - 10	>10		
January	709	0.32	1.60	Jan 04	0.01	Jan 09	7.26	Jan 04 21:00	0.00	Jan 01 12:00	100.00	0	0	93.79	4.94	0.71	0.56	0.00	0.00		
February	638	0.14	0.29	Feb 05	0.03	Feb 02	1.22	Feb 25 22:00	0.00	Feb 01 06:00	100.00	0	0	99.84	0.16	0.00	0.00	0.00	0.00		
March	708	0.19	0.52	Mar 06	0.00	Mar 02	2.43	Mar 04 22:00	0.00	Mar 01 04:00	100.00	0	0	98.45	1.55	0.00	0.00	0.00	0.00		
April	686	0.16	0.32	Apr 13	0.02	Apr 04	3.06	Apr 22 02:00	0.00	Apr 01 01:00	100.00	0	0	99.42	0.44	0.15	0.00	0.00	0.00		
May	700	0.14	0.32	May 30	0.03	May 21	1.06	May 19 05:00	0.00	May 01 01:00	98.92	0	0	99.86	0.14	0.00	0.00	0.00	0.00		
June	562	0.14	0.30	Jun 17	0.03	Jun 05	1.29	Jun 20 03:00	0.00	Jun 01 02:00	81.94	0	0	99.64	0.36	0.00	0.00	0.00	0.00		
July	125	0.13	0.17	Jul 29	0.10	Jul 31	0.45	Jul 26 21:00	0.00	Jul 27 08:00	18.01	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
August	703	0.18	0.37	Aug 21	0.02	Aug 16	1.73	Aug 11 04:00	0.00	Aug 01 13:00	99.73	0	0	99.86	0.14	0.00	0.00	0.00	0.00		
September	685	0.14	0.39	Sep 14	0.03	Sep 05	1.06	Sep 27 05:00	0.00	Sep 01 05:00	100.00	0	0	99.85	0.15	0.00	0.00	0.00	0.00		
October	710	0.11	0.32	Oct 04	0.01	Oct 07	1.26	Oct 04 02:00	0.00	Oct 01 14:00	100.00	0	0	99.58	0.42	0.00	0.00	0.00	0.00		
November	681	0.18	0.43	Nov 25	0.03	Nov 02	1.39	Nov 25 20:00	0.00	Nov 01 14:00	100.00	0	0	99.27	0.73	0.00	0.00	0.00	0.00		
December	707	0.26	0.77	Dec 05	0.03	Dec 12	4.28	Dec 05 19:00	0.00	Dec 02 09:00	100.00	0	0	95.76	3.68	0.57	0.00	0.00	0.00		
Annual	7614	0.18	1.60	Jan 04	0.00	Mar 02	7.26	Jan 04 21:00	0.00	Jan 01 12:00	91.6	0	0	98.65	1.17	0.13	0.05	0.00	0.00		

AAAQO Objectives: 24-Hr: 3 ppb, 1-Hr: 10 ppb

Ambient Temperature (ET) – Valleyview 2018 Summary

Valleyview											2018
Ambient Temperature (°C)											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	744	-10.8	1.1	Jan 06	-33.6	Jan 11	5.5	Jan 18 18:00	-39.8	Jan 11 09:00	100.0
February	672	-12.9	2.1	Feb 13	-28.1	Feb 04	4.6	Feb 13 09:00	-34.6	Feb 04 08:00	100.0
March	744	-5.3	2.8	Mar 20	-16.1	Mar 31	9.7	Mar 13 17:00	-27.9	Mar 31 07:00	100.0
April	720	1.2	14.0	Apr 27	-15.2	Apr 05	23.4	Apr 27 19:00	-25.9	Apr 01 07:00	100.0
May	719	14.5	22.3	May 23	7.3	May 10	30.7	May 23 18:00	2.3	May 18 06:00	96.6
June	720	17.5	24.7	Jun 19	12.4	Jun 11	34.0	Jun 20 15:00	4.6	Jun 03 06:00	100.0
July	732	18.9	22.8	Jul 18	14.1	Jul 01	32.6	Jul 29 16:00	8.6	Jul 25 06:00	98.4
August	744	17.2	22.8	Aug 09	11.3	Aug 24	32.4	Aug 09 16:00	5.7	Aug 20 06:00	100.0
September	720	8.7	16.8	Sep 07	2.3	Sep 12	23.7	Sep 07 15:00	-4.3	Sep 30 07:00	100.0
October	744	6.1	13.5	Oct 15	1.7	Oct 02	24.2	Oct 17 15:00	-2.2	Oct 05 06:00	100.0
November	720	0.0	5.0	Nov 14	-9.3	Nov 07	10.0	Nov 19 14:00	-15.6	Nov 17 02:00	100.0
December	744	-3.8	3.9	Dec 12	-10.5	Dec 06	8.4	Dec 14 16:00	-14.7	Dec 06 09:00	100.0
Annual	8723	4.3	24.7	Jun 19	-33.6	Jan 11	34.0	Jun 20 15:00	-39.8	Jan 11 09:00	99.6

Relative Humidity (RH) – Valleyview 2018 Summary

Valleyview											2018
Relative Humidity (%)											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	20	46.1	46.1	Jan 01	46.1	Jan 01	67.4	Jan 01 20:00	23.7	Jan 01 15:00	2.7
February	0	-	-	-	-	-	-	-	-	-	0.0
March	0	-	-	-	-	-	-	-	-	-	0.0
April	0	-	-	-	-	-	-	-	-	-	0.0
May	51	70.3	72.2	May 30	69.4	May 31	100.0	May 31 00:00	36.3	May 30 17:00	6.9
June	720	66.5	83.3	Jun 14	53.7	Jun 26	100.0	Jun 02 00:00	20.8	Jun 17 17:00	100.0
July	732	75.5	96.4	Jul 03	59.3	Jul 11	100.0	Jul 02 04:00	24.6	Jul 15 16:00	98.4
August	744	80.5	100.0	Aug 23	60.5	Aug 14	100.0	Aug 01 04:00	29.3	Aug 22 14:00	100.0
September	720	82.6	98.2	Sep 16	64.3	Sep 20	100.0	Sep 01 22:00	32.4	Sep 19 15:00	100.0
October	744	73.7	98.4	Oct 29	41.8	Oct 17	100.0	Oct 07 02:00	15.3	Oct 17 15:00	100.0
November	720	92.4	99.4	Nov 03	83.9	Nov 26	100.0	Nov 01 04:00	62.8	Nov 22 16:00	100.0
December	744	85.8	99.6	Dec 01	56.9	Dec 12	100.0	Dec 01 01:00	41.6	Dec 12 15:00	100.0
Annual	5195	79.4	100.0	Aug 23	41.8	Oct 17	100.0	May 31 00:00	15.3	Oct 17 15:00	59.0

Wind Speed (WS) – Valleyview 2018 Summary

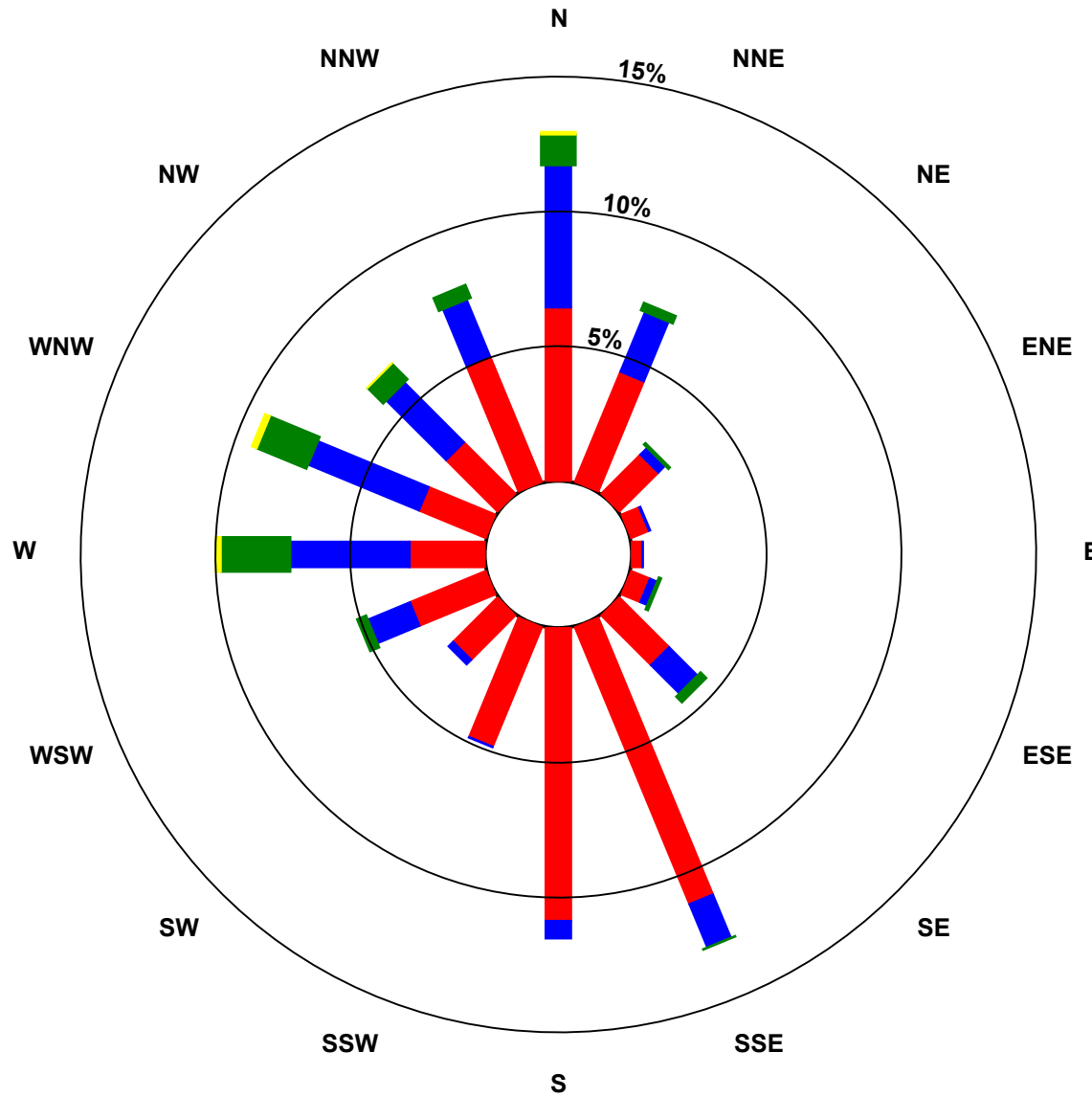
Valleyview											Wind Speed (km/h)											2018
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)											
January	744	3.3	10.9	Jan 09	0.4	Jan 12	14.9	Jan 09 11:00	0.0	Jan 11 19:00	100.0											
February	672	4.8	10.6	Feb 14	1.1	Feb 04	25.2	Feb 14 03:00	0.0	Feb 09 06:00	100.0											
March	744	4.2	10.8	Mar 01	1.5	Mar 12	19.0	Mar 01 15:00	0.0	Mar 21 00:00	100.0											
April	720	5.2	12.1	Apr 22	1.3	Apr 09	20.3	Apr 22 02:00	0.0	Apr 27 04:00	100.0											
May	737	4.7	10.0	May 02	1.1	May 22	27.1	May 02 15:00	0.0	May 16 03:00	99.1											
June	720	4.9	17.6	Jun 11	1.2	Jun 18	24.5	Jun 11 19:00	0.0	Jun 20 02:00	100.0											
July	732	3.9	11.1	Jul 02	0.6	Jul 25	19.1	Jul 07 10:00	0.0	Jul 26 00:00	98.4											
August	744	3.0	7.6	Aug 03	0.7	Aug 20	17.3	Aug 03 17:00	0.0	Aug 21 01:00	100.0											
September	720	3.6	8.8	Sep 01	1.0	Sep 14	18.0	Sep 11 20:00	0.0	Sep 11 06:00	100.0											
October	744	3.9	11.0	Oct 20	1.2	Oct 23	24.5	Oct 20 13:00	0.0	Oct 24 00:00	100.0											
November	720	3.0	10.5	Nov 15	0.7	Nov 21	21.2	Nov 15 21:00	0.0	Nov 02 09:00	100.0											
December	744	3.2	11.7	Dec 21	0.7	Dec 28	23.8	Dec 12 15:00	0.1	Dec 05 19:00	100.0											
Annual	8741	4.0	17.6	Jun 11	0.4	Jan 12	27.1	May 02 15:00	0.0	Oct 24 00:00	99.8											

Wind Speed and Wind Direction Frequency Distribution – Valleyview 2018 Summary

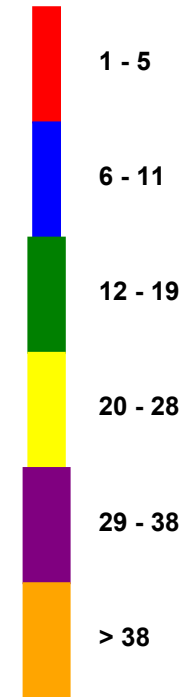
Valleyview								2018
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	162	1.88	1.99	0.57	0.17	0.00	0.00	4.61
NNE	97	1.54	1.17	0.06	0.00	0.00	0.00	2.76
NE	76	1.37	0.80	0.00	0.00	0.00	0.00	2.16
ENE	87	1.99	0.48	0.00	0.00	0.00	0.00	2.48
E	98	2.05	0.74	0.00	0.00	0.00	0.00	2.79
ESE	125	2.02	1.54	0.00	0.00	0.00	0.00	3.56
SE	276	2.42	5.01	0.43	0.00	0.00	0.00	7.86
SSE	283	2.51	4.36	1.14	0.06	0.00	0.00	8.06
S	116	2.08	1.11	0.11	0.00	0.00	0.00	3.30
SSW	75	1.20	0.80	0.14	0.00	0.00	0.00	2.14
SW	41	0.85	0.09	0.09	0.11	0.03	0.00	1.17
WSW	67	1.14	0.28	0.31	0.14	0.03	0.00	1.91
WSW	154	1.71	0.71	1.28	0.63	0.06	0.00	4.38
WNW	679	4.07	9.48	5.21	0.54	0.03	0.00	19.33
NW	855	4.87	16.88	2.53	0.06	0.00	0.00	24.35
NNW	321	1.65	4.13	3.08	0.26	0.03	0.00	9.14
Totals	3512	33.34	49.57	14.95	1.96	0.17	0.00	100

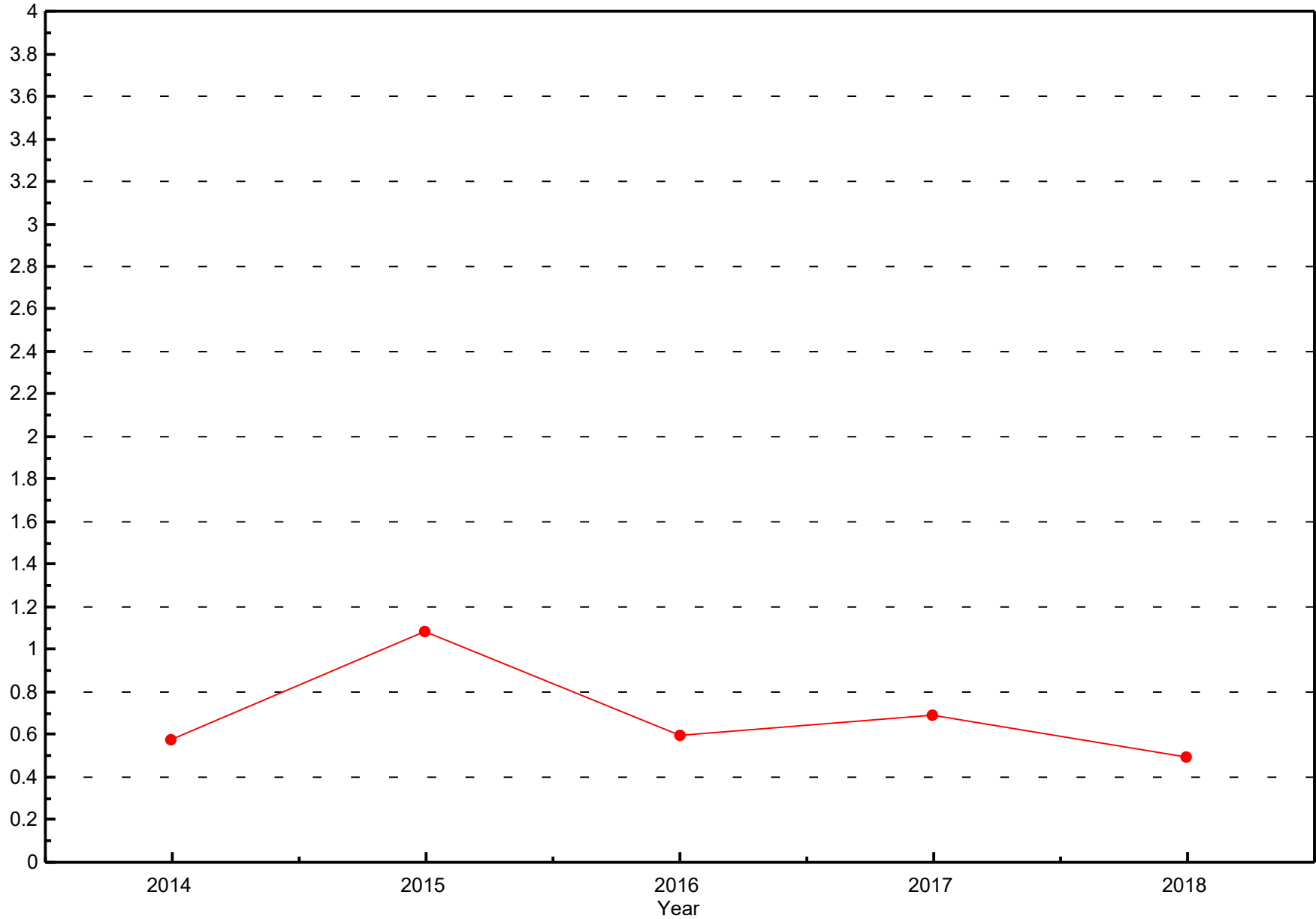
Wind Rose

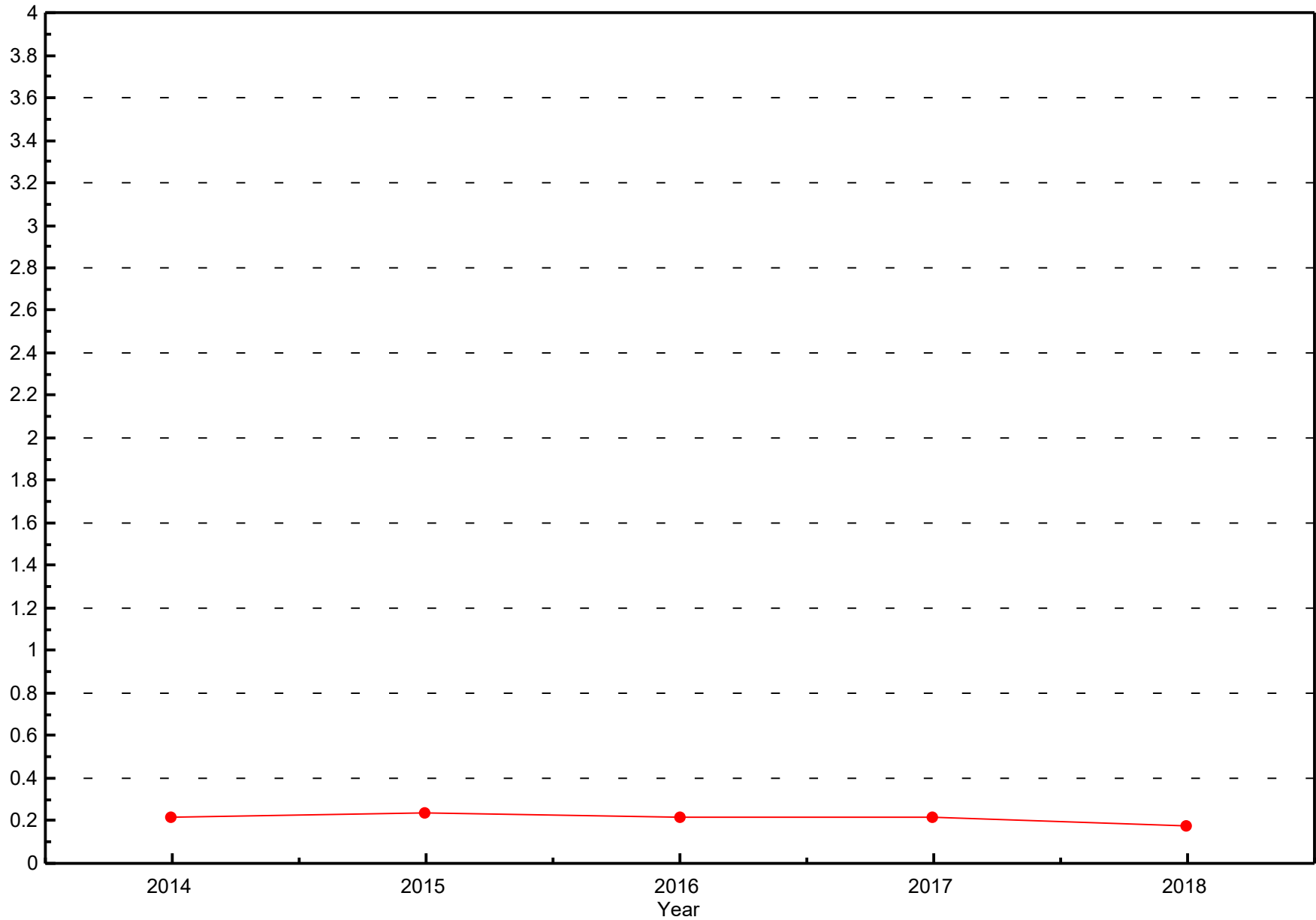
Wind Speed (WS) (km/h)
Valleyview - 2018



Wind Speed Classes (km/h)

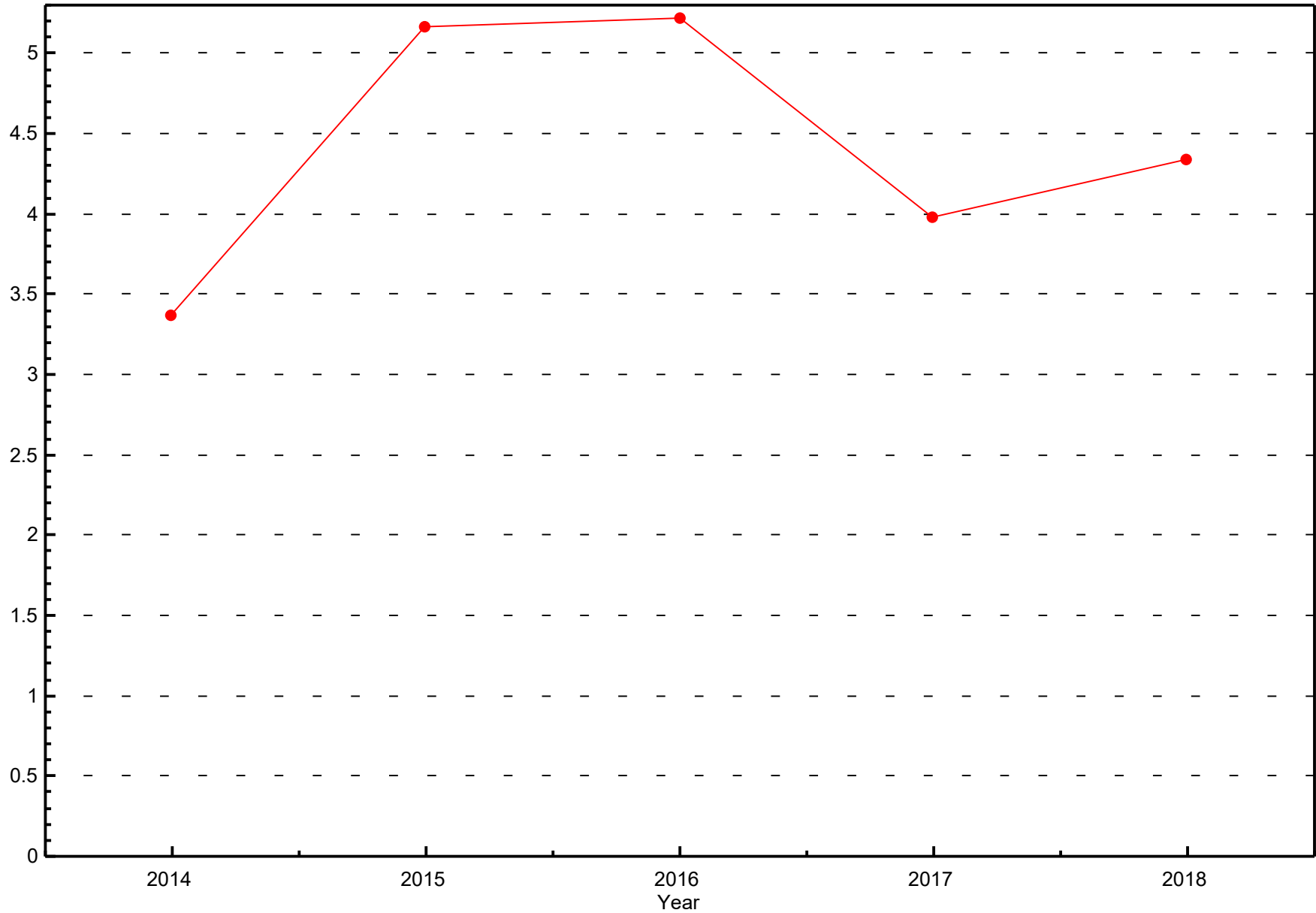






5-Year Annual Averages

External Temperature (ET) - °C
Valleyview (2014 to 2018)



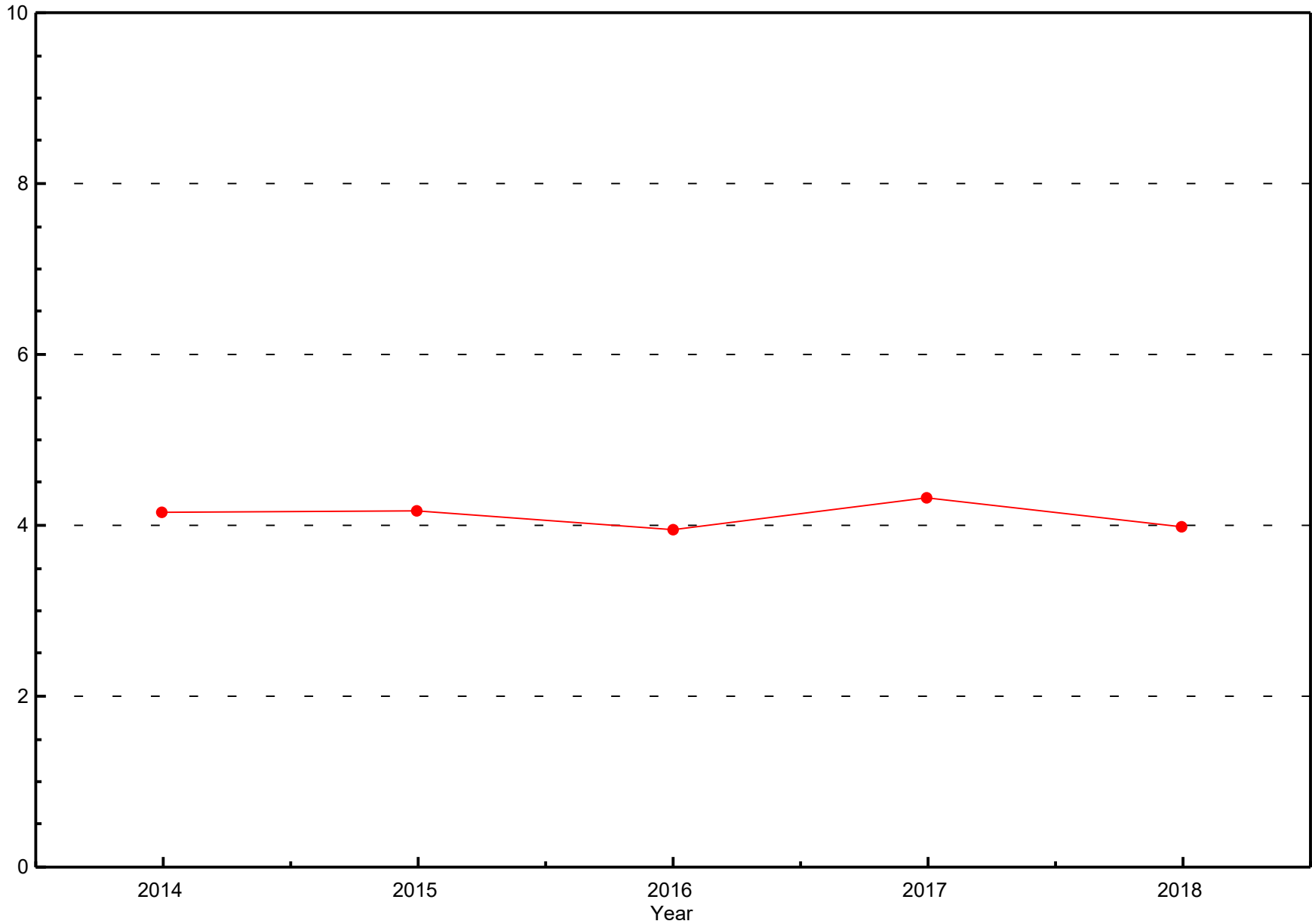
5-Year Annual Averages

**Relative Humidity (RH) - %
Valleyview (2014 to 2018)**



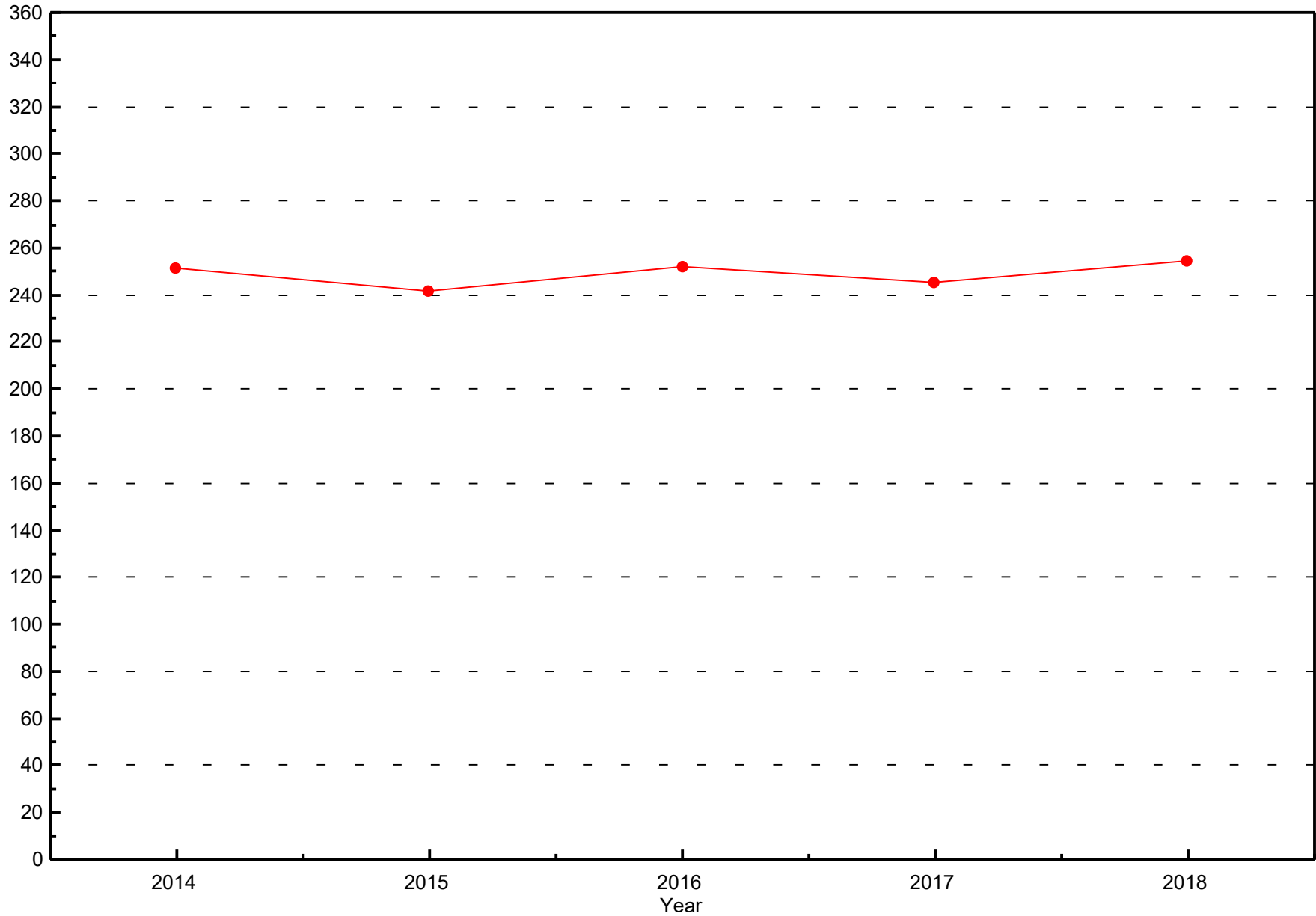
5-Year Annual Averages

**Wind Speed (WS) - km/h
Valleyview (2014 to 2018)**



5-Year Annual Averages

**Wind Direction (WD) - deg
Valleyview (2014 to 2018)**



PAZA
Donnelly
CONTINUOUS AMBIENT AIR MONITORING STATION
2018
ANNUAL SUMMARY TABLES

Sulphur Dioxide (SO₂) – Donnelly 2018 Summary and Frequency Distribution

Donnelly													SO ₂ (ppb)					2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance			Percentage of Readings in Concentration Range							
												30-Day	24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340		
January	709	1.30	2.21	Jan 29	1.03	Jan 20	3.26	Jan 29 14:00	0.94	Jan 21 04:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
February	640	0.31	1.26	Feb 09	0.02	Feb 13	1.96	Feb 09 09:00	0.00	Feb 01 02:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
March	709	0.48	1.35	Mar 15	0.07	Mar 29	3.63	Mar 10 01:00	0.00	Mar 23 06:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
April	685	0.17	0.94	Apr 01	0.00	Apr 29	2.01	Apr 01 12:00	0.00	Apr 03 00:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
May	708	0.11	0.26	May 24	0.00	May 31	1.30	May 23 22:00	0.00	May 01 01:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
June	680	0.10	0.32	Jun 29	0.00	Jun 11	4.64	Jun 22 09:00	0.00	Jun 01 01:00	99.17	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
July	709	0.10	0.42	Jul 26	0.01	Jul 03	1.68	Jul 26 09:00	0.00	Jul 01 01:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
August	699	0.17	0.44	Aug 17	0.00	Aug 01	0.90	Aug 08 11:00	0.00	Aug 01 01:00	99.33	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
September	663	0.11	0.30	Sep 22	0.01	Sep 12	2.69	Sep 22 11:00	0.00	Sep 08 16:00	96.53	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
October	709	0.11	0.43	Oct 16	0.00	Oct 12	1.45	Oct 17 11:00	0.00	Oct 04 03:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
November	685	0.23	0.90	Nov 07	0.00	Nov 30	1.39	Nov 14 16:00	0.00	Nov 01 01:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
December	709	0.28	0.87	Dec 07	0.01	Dec 14	1.90	Dec 30 05:00	0.00	Dec 01 01:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		
Annual	8305	0.29	2.21	Jan 29	0.00	Jun 11	4.64	Jun 22 09:00	0.00	Feb 01 02:00	99.6	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00		

AAAQO Objectives: Annual: 8 ppb, 30-Day: 11 ppb, 24-Hr: 48 ppb, 1-Hr: 172 ppb

Hydrogen Sulphide (H₂S) – Donnelly 2018 Summary and Frequency Distribution

Donnelly													H ₂ S (ppb)					2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance		Percentage of Readings in Concentration Range								
												24-Hr	1-Hr	0 - 1	1 - 2.5	2.5 - 5	5 - 7.5	7.5 - 10	>10			
January	708	0.90	1.06	Jan 27	0.74	Jan 02	2.20	Jan 17 17:00	0.62	Jan 02 01:00	100.00	0	0	83.05	16.95	0.00	0.00	0.00	0.00			
February	639	0.13	0.51	Feb 17	0.00	Feb 01	1.01	Feb 16 18:00	0.00	Feb 01 02:00	100.00	0	0	99.84	0.16	0.00	0.00	0.00	0.00			
March	708	0.16	0.55	Mar 12	0.02	Mar 07	1.15	Mar 12 09:00	0.00	Mar 02 16:00	100.00	0	0	99.29	0.71	0.00	0.00	0.00	0.00			
April	685	0.11	0.52	Apr 25	0.01	Apr 20	1.35	Apr 25 18:00	0.00	Apr 01 07:00	100.00	0	0	99.12	0.88	0.00	0.00	0.00	0.00			
May	708	0.10	0.31	May 09	0.00	May 05	0.78	May 28 04:00	0.00	May 01 13:00	100.00	0	0	100.00	0.00	0.00	0.00	0.00	0.00			
June	674	0.11	0.34	Jun 26	0.00	Jun 17	1.12	Jun 25 19:00	0.00	Jun 01 01:00	98.89	0	0	99.85	0.15	0.00	0.00	0.00	0.00			
July	708	0.19	0.56	Jul 31	0.01	Jul 17	2.01	Jul 31 07:00	0.00	Jul 02 17:00	100.00	0	0	98.87	1.13	0.00	0.00	0.00	0.00			
August	700	0.28	1.28	Aug 12	0.08	Aug 29	5.16	Aug 12 08:00	0.00	Aug 05 14:00	99.33	0	0	98.43	0.57	0.86	0.14	0.00	0.00			
September	661	0.20	0.46	Sep 27	0.02	Sep 01	1.63	Sep 27 08:00	0.00	Sep 01 01:00	96.53	0	0	98.79	1.21	0.00	0.00	0.00	0.00			
October	710	0.18	0.46	Oct 13	0.01	Oct 08	1.93	Oct 12 06:00	0.00	Oct 07 16:00	100.00	0	0	99.44	0.56	0.00	0.00	0.00	0.00			
November	684	0.25	0.42	Nov 17	0.14	Nov 06	0.78	Nov 16 11:00	0.00	Nov 02 01:00	100.00	0	0	100.00	0.00	0.00	0.00	0.00	0.00			
December	708	0.14	0.27	Dec 20	0.02	Dec 09	0.54	Dec 18 15:00	0.00	Dec 07 22:00	100.00	0	0	100.00	0.00	0.00	0.00	0.00	0.00			
Annual	8293	0.23	1.28	Aug 12	0.00	May 05	5.16	Aug 12 08:00	0.00	Feb 01 02:00	99.6	0	0	98.02	1.89	0.07	0.01	0.00	0.00			

AAAQO Objectives: 24-Hr: 3 ppb, 1-Hr: 10 ppb

Ambient Temperature (ET) – Donnelly 2018 Summary

Donnelly Ambient Temperature (°C) 2018											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	744	-11.8	1.1	Jan 17	-32.0	Jan 11	3.8	Jan 17 14:00	-37.9	Jan 12 00:00	100.0
February	672	-13.9	0.2	Feb 13	-25.8	Feb 03	5.6	Feb 28 15:00	-29.0	Feb 11 09:00	100.0
March	744	-6.7	1.2	Mar 20	-16.9	Mar 30	9.2	Mar 12 17:00	-24.9	Mar 05 08:00	100.0
April	720	-0.1	13.7	Apr 28	-15.6	Apr 05	22.6	Apr 27 19:00	-22.5	Apr 03 04:00	100.0
May	744	14.9	24.1	May 23	8.3	May 01	31.6	May 23 16:00	2.6	May 01 02:00	100.0
June	720	15.5	25.4	Jun 20	8.9	Jun 05	32.4	Jun 20 17:00	3.3	Jun 05 05:00	100.0
July	744	16.8	21.9	Jul 28	11.7	Jul 01	28.4	Jul 28 17:00	5.9	Jul 24 04:00	100.0
August	739	15.6	22.6	Aug 09	7.7	Aug 24	28.6	Aug 09 17:00	5.4	Aug 24 07:00	99.3
September	695	5.2	10.8	Sep 05	-1.3	Sep 30	19.7	Sep 07 14:00	-6.4	Sep 30 06:00	96.5
October	744	3.4	13.0	Oct 17	-2.1	Oct 08	20.3	Oct 17 14:00	-6.6	Oct 02 08:00	100.0
November	720	-3.8	3.9	Nov 13	-14.4	Nov 16	6.7	Nov 13 22:00	-18.9	Nov 08 06:00	100.0
December	744	-7.5	1.4	Dec 13	-19.1	Dec 26	3.9	Dec 11 21:00	-22.3	Dec 25 22:00	100.0
Annual	8730	2.4	25.4	Jun 20	-32.0	Jan 11	32.4	Jun 20 17:00	-37.9	Jan 12 00:00	99.7

Wind Speed (WS) – Donnelly 2018 Summary

Donnelly Wind Speed (km/h) 2018											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	744	8.4	18.2	Jan 06	1.7	Jan 20	37.1	Jan 18 15:00	0.2	Jan 12 21:00	100.0
February	672	11.4	24.2	Feb 27	3.9	Feb 07	40.8	Feb 26 23:00	0.3	Feb 08 07:00	100.0
March	744	8.4	17.2	Mar 22	4.0	Mar 17	26.2	Mar 23 10:00	0.3	Mar 12 17:00	100.0
April	720	10.5	21.3	Apr 22	4.3	Apr 01	33.8	Apr 22 02:00	0.4	Apr 05 04:00	100.0
May	744	12.5	24.4	May 26	5.3	May 19	43.4	May 28 14:00	1.0	May 16 04:00	100.0
June	720	12.5	35.5	Jun 11	3.8	Jun 18	47.2	Jun 11 18:00	0.5	Jun 18 16:00	100.0
July	744	9.6	19.1	Jul 14	3.2	Jul 25	30.2	Jul 14 11:00	0.4	Jul 30 10:00	100.0
August	739	10.1	19.6	Aug 31	3.6	Aug 11	28.7	Aug 31 13:00	0.7	Aug 19 20:00	99.3
September	695	8.0	17.1	Sep 01	3.1	Sep 14	25.6	Sep 25 16:00	0.1	Sep 28 02:00	96.5
October	744	10.9	25.1	Oct 20	4.9	Oct 05	44.3	Oct 20 14:00	0.2	Oct 28 23:00	100.0
November	720	9.2	15.1	Nov 13	3.9	Nov 30	28.0	Nov 14 06:00	0.3	Nov 05 16:00	100.0
December	744	11.0	30.4	Dec 12	2.4	Dec 27	46.6	Dec 12 12:00	0.3	Dec 01 16:00	100.0
Annual	8730	10.2	35.5	Jun 11	1.7	Jan 20	47.2	Jun 11 18:00	0.1	Sep 28 02:00	99.7

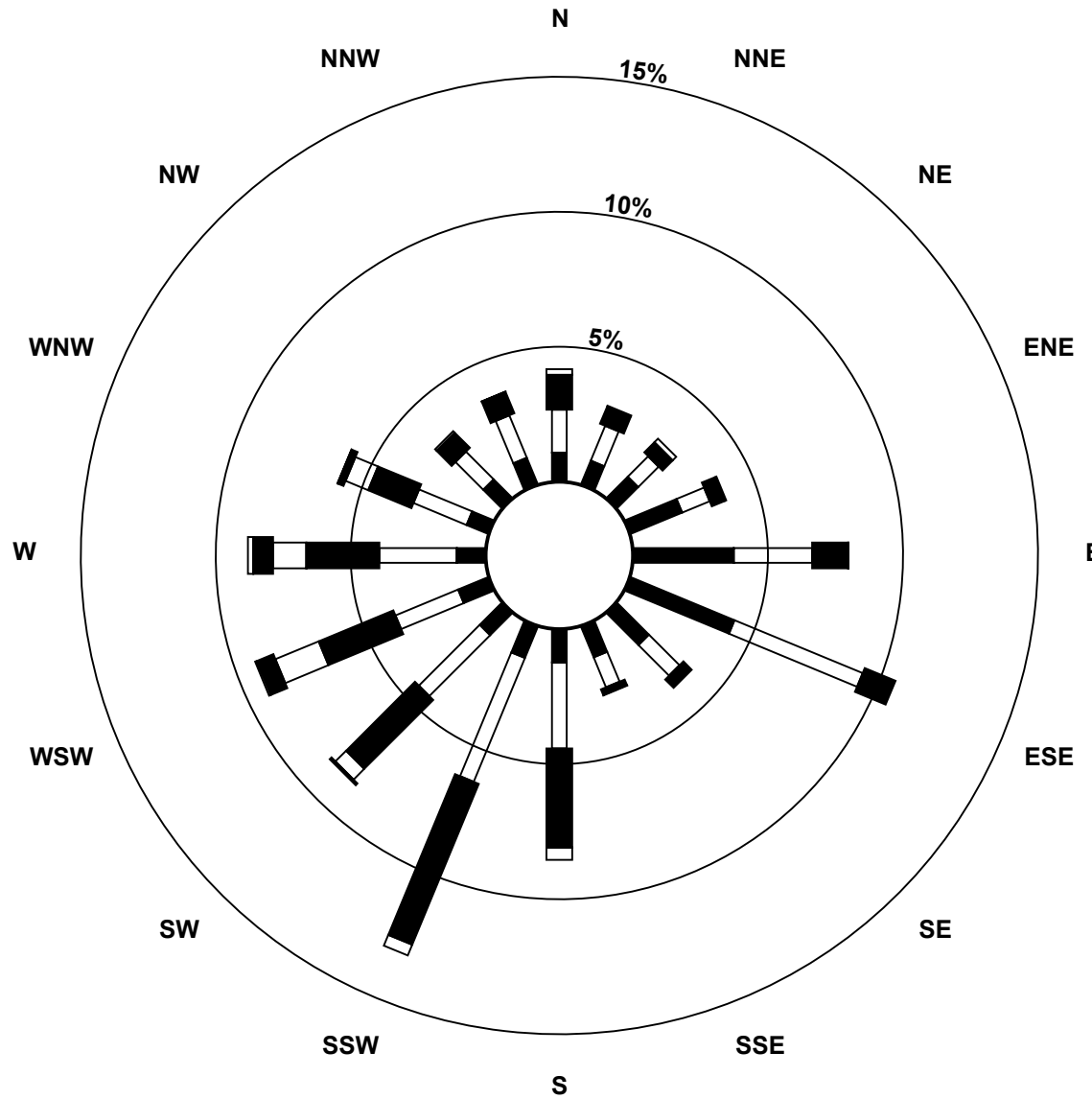
Wind Speed and Wind Direction Frequency Distribution – Donnelly 2018 Summary

Donnelly								2018
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	359	1.08	1.59	1.29	0.21	0.00	0.00	4.17
NNE	265	0.96	1.39	0.69	0.03	0.00	0.00	3.08
NE	251	1.13	1.07	0.53	0.19	0.00	0.00	2.92
ENE	324	2.08	1.10	0.52	0.06	0.00	0.00	3.76
E	687	3.73	2.90	1.34	0.01	0.00	0.00	7.98
ESE	908	4.18	5.14	1.23	0.00	0.00	0.00	10.55
SE	321	1.68	1.60	0.44	0.00	0.00	0.00	3.73
SSE	231	1.24	1.20	0.22	0.02	0.00	0.00	2.68
S	735	1.23	3.18	3.67	0.45	0.00	0.00	8.54
SSW	1128	1.27	4.96	6.45	0.43	0.00	0.00	13.11
SW	742	1.17	3.18	3.61	0.56	0.09	0.00	8.62
WSW	791	1.22	2.51	3.00	1.73	0.66	0.07	9.19
WSW	758	1.07	2.87	2.71	1.23	0.73	0.20	8.81
WNW	507	0.88	2.13	1.73	0.91	0.23	0.01	5.89
NW	285	0.99	1.45	0.79	0.08	0.00	0.00	3.31
NNW	314	1.08	1.70	0.86	0.01	0.00	0.00	3.65
Totals	8606	25.01	37.99	29.08	5.93	1.72	0.28	100

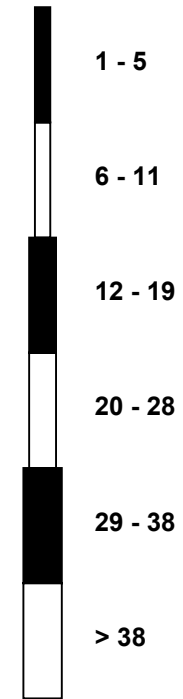
Wind Rose

Wind Speed (WS) (km/h)

Donnelly - 2018

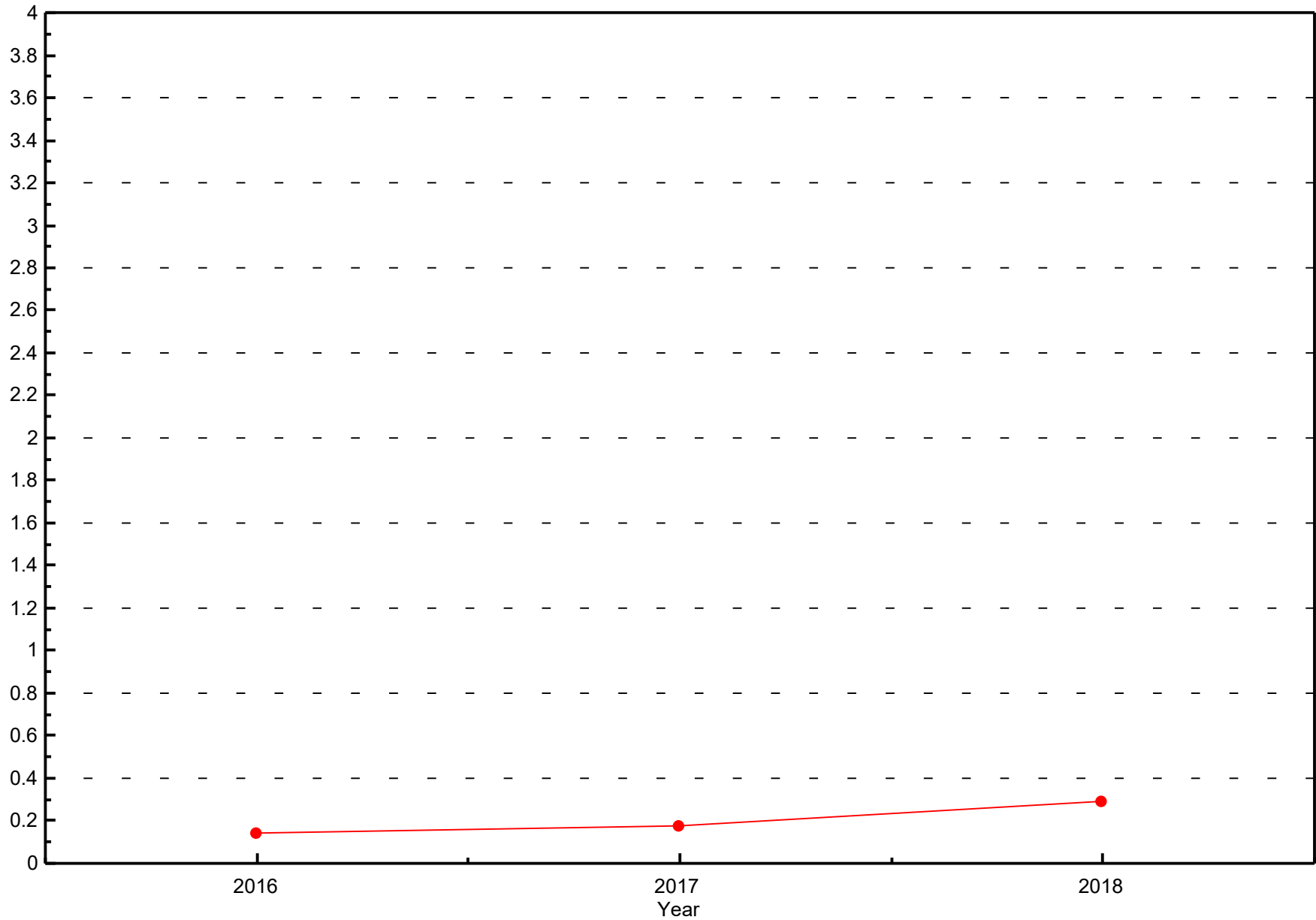


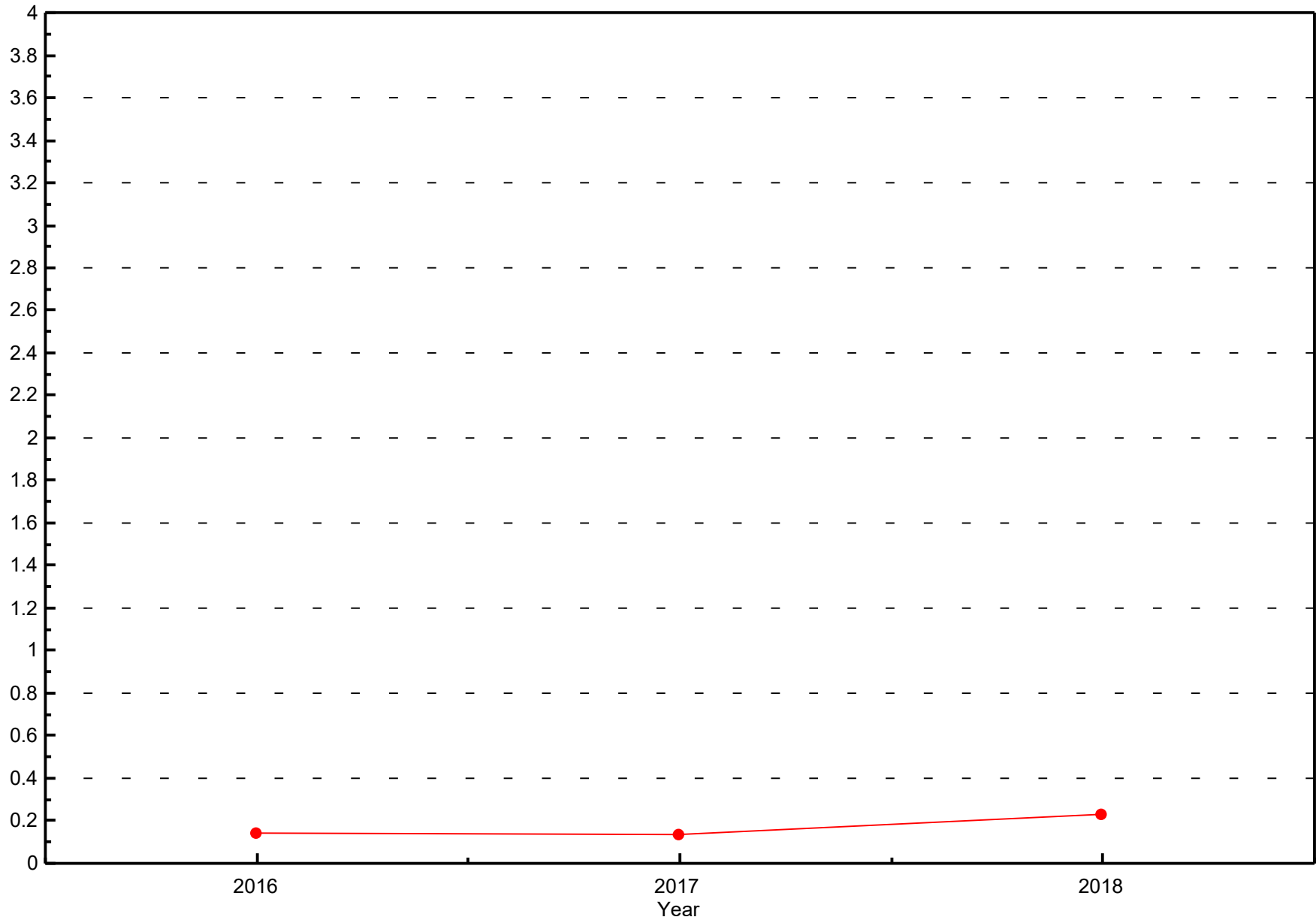
Wind Speed Classes (km/h)



5-Year Annual Averages

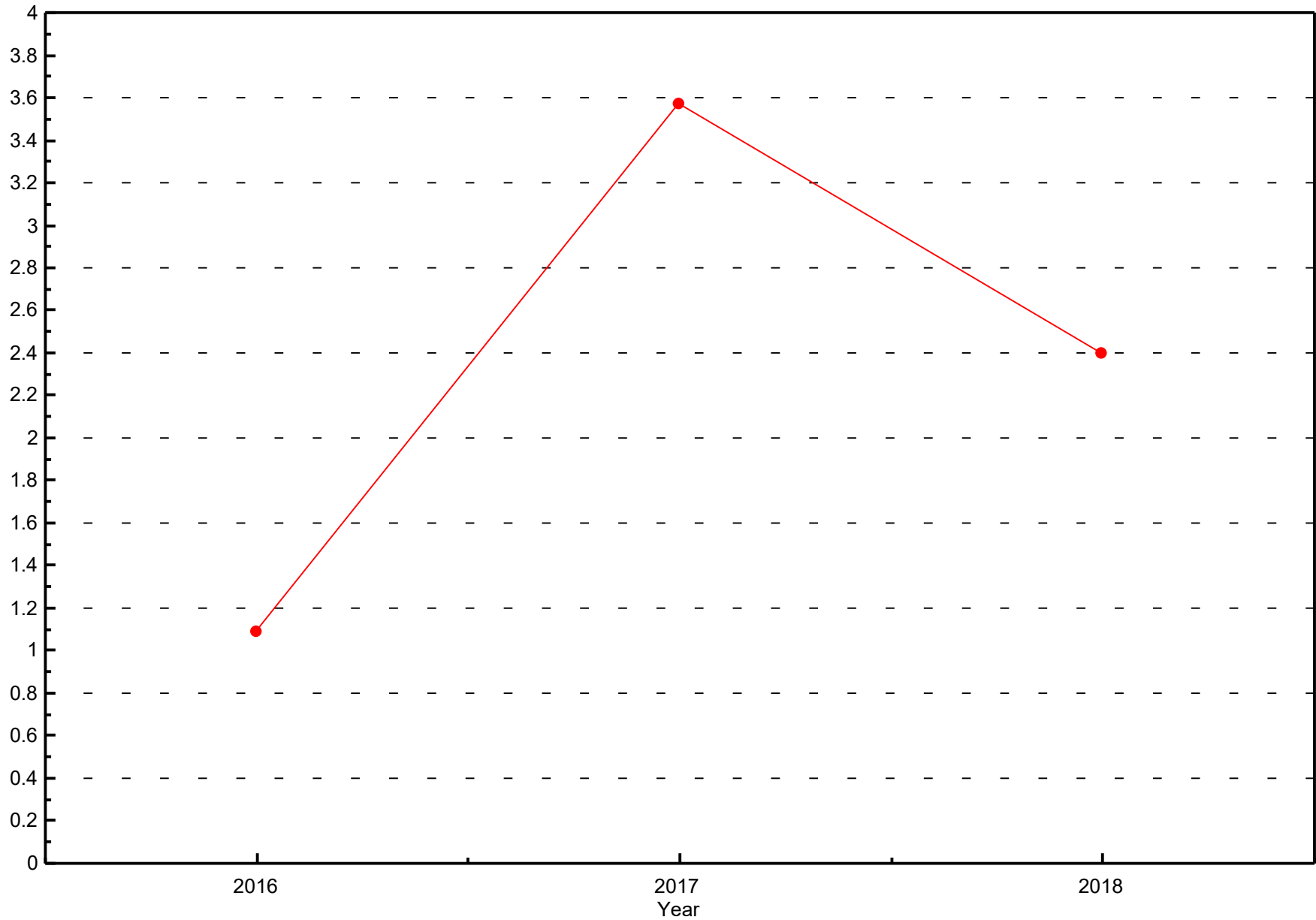
Sulphur Dioxide (SO₂) - ppb
Donnelly (2016 to 2018)





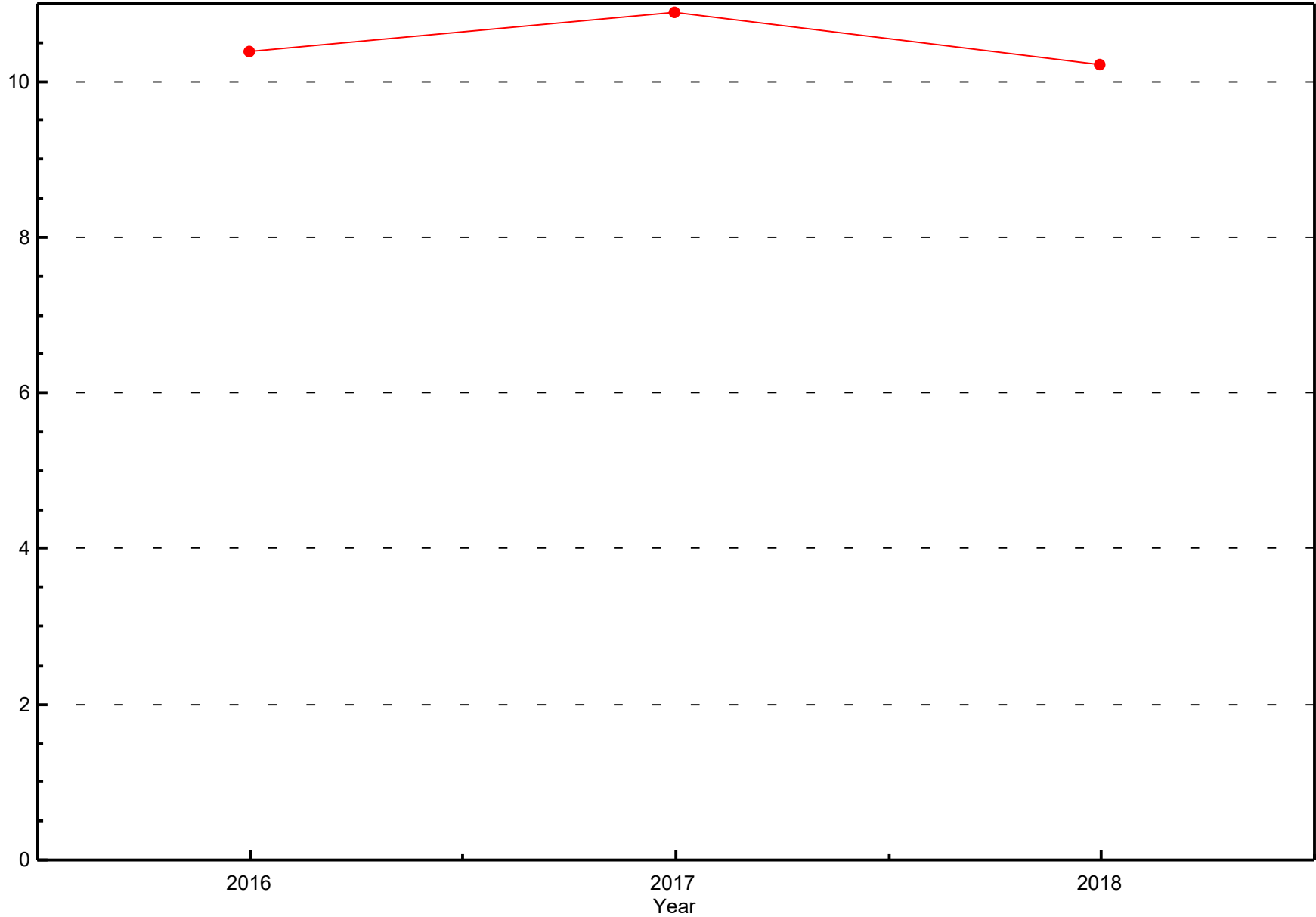
5-Year Annual Averages

External Temperature (ET) - °C
Donnelly (2016 to 2018)



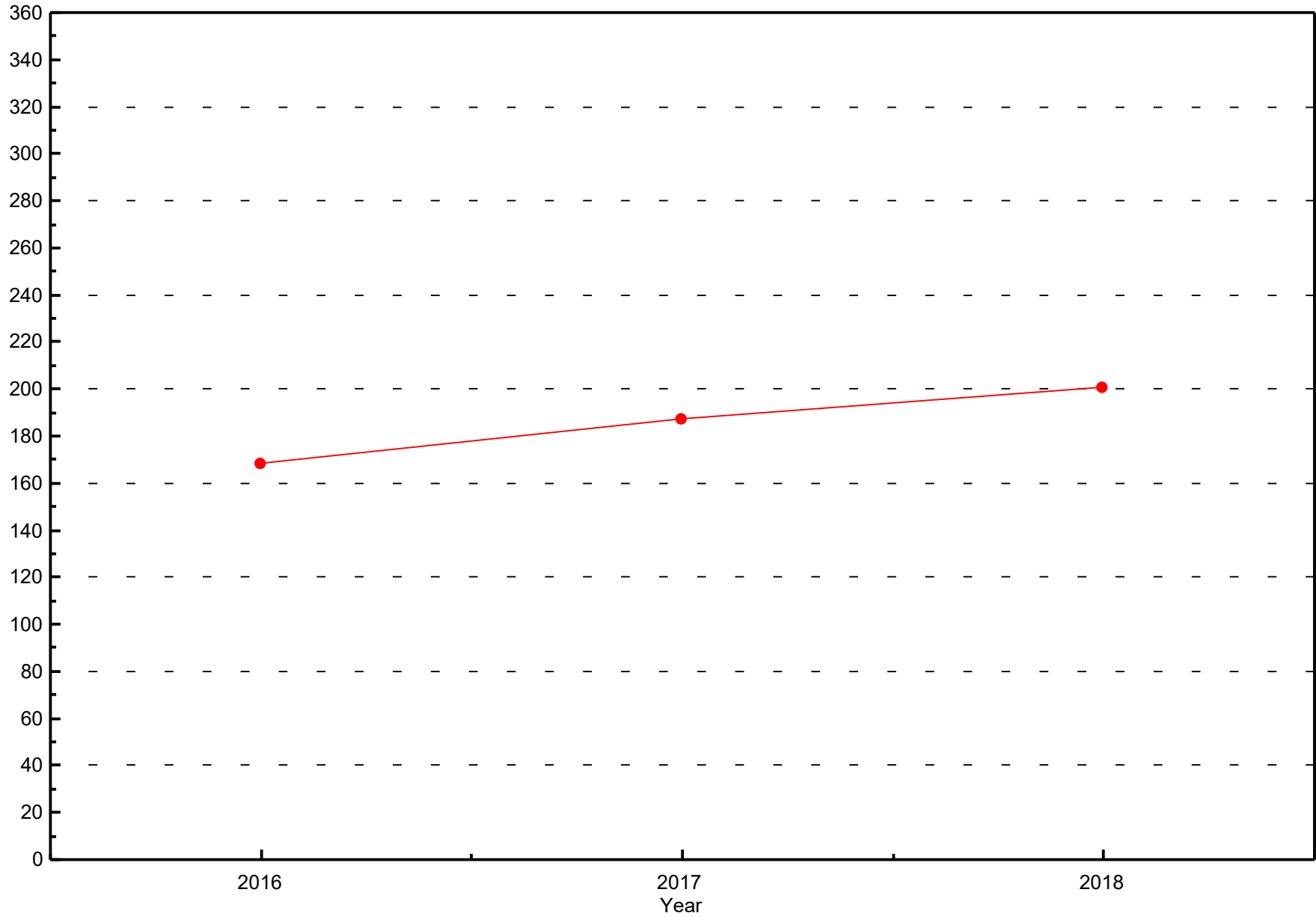
5-Year Annual Averages

Wind Speed (WS) - km/h
Donnelly (2016 to 2018)



5-Year Annual Averages

**Wind Direction (WD) - deg
Donnelly (2016 to 2018)**



PAZA

Rycroft-Portable
CONTINUOUS AMBIENT AIR MONITORING STATION

2018
ANNUAL SUMMARY TABLES

Sulphur Dioxide (SO₂) – Rycroft-Portable 2018 Summary and Frequency Distribution

Rycroft-Portable		SO ₂ (ppb)										2018									
Month	# of Readings	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)	AAAQO Exceedance			Percentage of Readings in Concentration Range						
			Maximum	Date	Minimum	Date	Maximum	Date	Minimum	Date		30-Day	24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340	
January	708	0.64	1.80	Jan 16	0.07	Jan 31	4.26	Jan 13 03:00	0.00	Jan 31 18:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
February	639	0.50	1.06	Feb 09	0.01	Feb 02	3.80	Feb 27 19:00	0.00	Feb 01 20:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
March	708	0.58	1.73	Mar 31	0.00	Mar 25	3.74	Mar 31 14:00	0.00	Mar 24 04:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
April	685	0.34	1.06	Apr 01	0.00	Apr 16	2.70	Apr 19 21:00	0.00	Apr 04 02:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
May	681	0.21	0.62	May 04	0.01	May 18	2.45	May 04 13:00	0.00	May 01 01:00	97.04	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
June	675	0.25	0.48	Jun 17	0.03	Jun 12	2.97	Jun 27 13:00	0.00	Jun 02 03:00	98.61	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
July	709	0.25	0.78	Jul 11	0.01	Jul 02	6.22	Jul 11 03:00	0.00	Jul 01 02:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
August	698	0.30	0.79	Aug 22	0.02	Aug 12	5.22	Aug 07 14:00	0.00	Aug 01 02:00	99.06	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
September	685	0.09	0.27	Sep 01	0.00	Sep 29	1.60	Sep 04 13:00	0.00	Sep 01 17:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
October	380	0.16	0.47	Oct 15	0.01	Oct 12	1.78	Oct 04 11:00	0.00	Oct 01 01:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	6568	0.34	1.80	Jan 16	0.00	Apr 16	6.22	Jul 11 03:00	0.00	Jan 31 18:00	99.5	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	0.00

AAAQO Objectives: Annual: 8 ppb, 30-Day: 11 ppb, 24-Hr: 48 ppb, 1-Hr: 172 ppb

Total Reduced Sulphur (TRS) – Rycroft-Portable 2018 Summary and Frequency Distribution

Rycroft-Portable		TRS (ppb)										2018							
Month	# of Readings	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)	Percentage of Readings in Concentration Range							
			Maximum	Date	Minimum	Date	Maximum	Date	Minimum	Date		0 - 1	1 - 2.5	2.5 - 5	5 - 7.5	7.5 - 10	>10		
January	709	0.11	0.26	Jan 16	0.01	Jan 07	1.10	Jan 01 01:00	0.00	Jan 04 17:00	100.00	99.86	0.14	0.00	0.00	0.00	0.00	0.00	0.00
February	639	0.14	0.21	Feb 12	0.06	Feb 27	0.70	Feb 12 09:00	0.00	Feb 19 02:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March	708	0.16	0.24	Mar 05	0.05	Mar 19	2.12	Mar 09 01:00	0.00	Mar 02 17:00	100.00	99.72	0.28	0.00	0.00	0.00	0.00	0.00	0.00
April	263	0.11	0.20	Apr 05	0.05	Apr 09	0.34	Apr 04 00:00	0.00	Apr 02 14:00	38.61	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	370	0.16	0.35	Jun 30	0.02	Jun 15	4.94	Jun 30 21:00	0.00	Jun 14 22:00	54.17	99.73	0.00	0.27	0.00	0.00	0.00	0.00	0.00
July	425	0.11	0.20	Jul 05	0.03	Jul 08	0.69	Jul 18 20:00	0.00	Jul 02 10:00	60.08	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
August	0	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
September	0	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
October	0	-	-	-	-	-	-	-	-	-	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	3114	0.13	0.35	Jun 30	0.01	Jan 07	4.94	Jun 30 21:00	0.00	Jan 04 17:00	45.4	99.87	0.10	0.03	0.00	0.00	0.00	0.00	0.00

No AAAQO

Nitric Oxide (NO) – Rycroft-Portable 2018 Summary and Frequency Distribution

Rycroft-Portable NO (ppb)												2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range				
												0 - 25	25 - 50	50 - 110	110 - 210	>210
January	538	1.06	3.37	Jan 16	0.08	Jan 09	19.59	Jan 11 13:00	0.00	Jan 08 23:00	76.34	100.00	0.00	0.00	0.00	0.00
February	638	0.76	3.47	Feb 05	0.05	Feb 24	13.69	Feb 05 13:00	0.00	Feb 04 08:00	100.00	100.00	0.00	0.00	0.00	0.00
March	708	0.98	3.21	Mar 08	0.07	Mar 24	28.23	Mar 08 10:00	0.00	Mar 01 01:00	100.00	99.86	0.14	0.00	0.00	0.00
April	684	0.44	1.88	Apr 05	0.03	Apr 16	13.77	Apr 03 06:00	0.00	Apr 01 04:00	100.00	100.00	0.00	0.00	0.00	0.00
May	680	0.31	1.22	May 31	0.09	May 03	6.20	May 26 03:00	0.00	May 01 18:00	97.04	100.00	0.00	0.00	0.00	0.00
June	673	1.68	6.43	Jun 21	0.28	Jun 05	23.60	Jun 21 19:00	0.06	Jun 06 23:00	98.61	100.00	0.00	0.00	0.00	0.00
July	561	0.83	1.76	Jul 04	0.19	Jul 24	9.08	Jul 10 21:00	0.03	Jul 23 22:00	79.03	100.00	0.00	0.00	0.00	0.00
August	660	0.24	0.62	Aug 15	0.07	Aug 21	9.36	Aug 16 00:00	0.00	Aug 14 21:00	94.35	100.00	0.00	0.00	0.00	0.00
September	684	0.25	0.61	Sep 28	0.06	Sep 16	8.30	Sep 25 08:00	0.00	Sep 04 04:00	100.00	100.00	0.00	0.00	0.00	0.00
October	380	0.29	0.80	Oct 11	0.07	Oct 08	4.98	Oct 11 21:00	0.00	Oct 14 04:00	100.00	100.00	0.00	0.00	0.00	0.00
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	6206	0.69	6.43	Jun 21	0.03	Apr 16	28.23	Mar 08 10:00	0.00	Jan 08 23:00	94.5	99.98	0.02	0.00	0.00	0.00

No AAAQO

Nitrogen Dioxide (NO₂) – Rycroft-Portable 2018 Summary and Frequency Distribution

Rycroft-Portable NO ₂ (ppb)												2018					
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance	Percentage of Readings in Concentration Range				
												1-Hr	0 - 25	25 - 50	50 - 110	110 - 159	>159
January	538	5.13	13.53	Jan 12	0.72	Jan 09	26.05	Jan 13 03:00	0.19	Jan 09 00:00	76.34	0	99.81	0.19	0.00	0.00	0.00
February	638	3.89	12.16	Feb 05	1.07	Feb 24	35.06	Feb 07 22:00	0.27	Feb 11 04:00	100.00	0	99.37	0.63	0.00	0.00	0.00
March	708	3.96	10.78	Mar 13	0.87	Mar 25	25.36	Mar 13 18:00	0.34	Mar 30 02:00	100.00	0	99.86	0.14	0.00	0.00	0.00
April	684	2.10	4.73	Apr 05	0.61	Apr 29	21.55	Apr 08 06:00	0.44	Apr 29 01:00	100.00	0	100.00	0.00	0.00	0.00	0.00
May	680	2.27	4.58	May 30	0.90	May 09	15.38	May 16 01:00	0.33	May 27 17:00	97.04	0	100.00	0.00	0.00	0.00	0.00
June	673	4.97	13.71	Jun 21	1.20	Jun 26	25.39	Jun 21 00:00	0.49	Jun 02 17:00	98.61	0	99.70	0.30	0.00	0.00	0.00
July	561	2.24	3.53	Jul 05	0.82	Jul 23	10.23	Jul 18 23:00	0.26	Jul 22 13:00	79.03	0	100.00	0.00	0.00	0.00	0.00
August	660	1.89	4.03	Aug 10	0.79	Aug 12	8.53	Aug 11 03:00	0.38	Aug 12 08:00	94.35	0	100.00	0.00	0.00	0.00	0.00
September	684	1.27	2.87	Sep 26	0.19	Sep 13	13.08	Sep 24 20:00	0.00	Sep 13 01:00	100.00	0	100.00	0.00	0.00	0.00	0.00
October	380	1.95	3.59	Oct 04	0.70	Oct 08	7.83	Oct 01 01:00	0.21	Oct 02 10:00	100.00	0	100.00	0.00	0.00	0.00	0.00
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	6206	2.98	13.71	Jun 21	0.19	Sep 13	35.06	Feb 07 22:00	0.00	Sep 13 01:00	94.5	0	99.87	0.13	0.00	0.00	0.00

AAAQO Objectives: Annual: 24 ppb, 1-Hr: 159 ppb

Total Oxides of Nitrogen (NOx) – Rycroft-Portable 2018 Summary and Frequency Distribution

Rycroft-Portable NOx (ppb)												2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range				
												0 - 25	25 - 50	50 - 110	110 - 210	>210
January	538	6.24	17.00	Jan 12	0.80	Jan 09	33.24	Jan 11 13:00	0.20	Jan 09 00:00	76.34	98.51	1.49	0.00	0.00	0.00
February	638	4.68	15.80	Feb 05	1.13	Feb 24	43.97	Feb 07 22:00	0.27	Feb 11 03:00	100.00	98.90	1.10	0.00	0.00	0.00
March	708	4.96	14.04	Mar 13	0.92	Mar 25	49.29	Mar 08 10:00	0.36	Mar 30 02:00	100.00	98.59	1.41	0.00	0.00	0.00
April	684	2.52	6.65	Apr 05	0.70	Apr 16	33.77	Apr 05 01:00	0.48	Apr 16 05:00	100.00	99.56	0.44	0.00	0.00	0.00
May	680	2.58	5.46	May 30	0.98	May 09	16.62	May 16 01:00	0.43	May 27 17:00	97.04	100.00	0.00	0.00	0.00	0.00
June	673	6.70	20.29	Jun 21	1.62	Jun 26	43.78	Jun 21 19:00	0.80	Jun 02 17:00	98.61	95.39	4.61	0.00	0.00	0.00
July	561	3.06	5.15	Jul 05	1.04	Jul 24	15.87	Jul 10 21:00	0.41	Jul 22 13:00	79.03	100.00	0.00	0.00	0.00	0.00
August	660	2.12	4.39	Aug 10	0.90	Aug 12	14.21	Aug 16 00:00	0.47	Aug 12 08:00	94.35	100.00	0.00	0.00	0.00	0.00
September	684	1.52	3.18	Sep 26	0.21	Sep 13	15.36	Sep 24 20:00	0.00	Sep 13 01:00	100.00	100.00	0.00	0.00	0.00	0.00
October	380	2.27	4.43	Oct 04	0.81	Oct 08	10.77	Oct 11 21:00	0.25	Oct 02 10:00	100.00	100.00	0.00	0.00	0.00	0.00
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	6206	3.68	20.29	Jun 21	0.21	Sep 13	49.29	Mar 08 10:00	0.00	Sep 13 01:00	94.5	99.05	0.95	0.00	0.00	0.00

No AAAQO

Ozone (O₃) – Rycroft-Portable 2018 Summary and Frequency Distribution

Rycroft-Portable O ₃ (ppb)												2018						
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance 1-Hr	Percentage of Readings in Concentration Range					
													0 - 2	2 - 10	10 - 20	20 - 40	40 - 82	>82
January	709	24.93	37.24	Jan 02	7.17	Jan 05	43.71	Jan 18 14:00	0.58	Jan 06 00:00	100.00	0	0.99	7.76	21.44	68.12	1.69	0.00
February	171	29.12	33.43	Feb 02	24.46	Feb 05	36.38	Feb 02 05:00	6.49	Feb 07 22:00	27.53	0	0.00	1.17	7.02	91.81	0.00	0.00
March	0	-	-	-	-	-	-	-	-	-	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
April	306	44.90	51.11	Apr 24	42.43	Apr 21	60.32	Apr 27 18:00	29.50	Apr 30 07:00	44.86	0	0.00	0.00	0.00	22.88	77.12	0.00
May	707	38.00	47.95	May 19	23.38	May 31	66.90	May 23 14:00	5.40	May 30 04:00	100.00	0	0.00	0.99	7.50	45.26	46.25	0.00
June	670	31.95	44.20	Jun 19	23.56	Jun 15	75.95	Jun 20 11:00	5.44	Jun 15 23:00	98.61	0	0.00	3.28	14.48	58.96	23.28	0.00
July	709	25.68	35.32	Jul 16	15.08	Jul 31	49.82	Jul 26 15:00	4.37	Jul 31 06:00	100.00	0	0.00	2.40	25.81	66.01	5.78	0.00
August	700	25.21	41.20	Aug 22	15.56	Aug 23	56.02	Aug 17 16:00	5.55	Aug 01 05:00	99.06	0	0.00	4.00	31.86	56.29	7.86	0.00
September	685	20.21	28.42	Sep 26	10.65	Sep 17	39.94	Sep 25 15:00	2.26	Sep 28 02:00	100.00	0	0.00	11.24	40.15	48.61	0.00	0.00
October	380	22.17	34.84	Oct 16	13.91	Oct 12	47.99	Oct 16 14:00	4.19	Oct 12 05:00	100.00	0	0.00	6.32	42.37	45.79	5.53	0.00
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	5037	28.35	51.11	Apr 24	7.17	Jan 05	75.95	Jun 20 11:00	0.58	Jan 06 00:00	77.0	0	0.14	4.62	22.96	55.37	16.90	0.00

AAAQO Objectives: 1-Hr: 82 ppb

Total Hydrocarbon (THC) – Rycroft-Portable 2018 Summary and Frequency Distribution

Rycroft-Portable												THC (ppm)						2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range							
												0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 5.0	5.0 - 10.0	>10.0		
January	678	1.97	2.11	Jan 05	1.89	Jan 09	2.37	Jan 22 18:00	1.83	Jan 18 14:00	95.83	0.00	74.78	25.22	0.00	0.00	0.00		
February	638	1.93	2.05	Feb 05	1.86	Feb 23	2.15	Feb 05 11:00	1.84	Feb 27 00:00	100.00	0.00	89.03	10.97	0.00	0.00	0.00		
March	690	1.93	2.06	Mar 17	1.86	Mar 02	2.24	Mar 07 07:00	1.73	Mar 15 18:00	97.18	0.00	83.33	16.67	0.00	0.00	0.00		
April	676	1.97	2.03	Apr 13	1.89	Apr 04	2.12	Apr 13 06:00	1.85	Apr 04 02:00	98.89	0.00	76.18	23.82	0.00	0.00	0.00		
May	707	1.96	2.00	May 20	1.91	May 12	2.15	May 24 07:00	1.82	May 15 05:00	100.00	0.00	84.44	15.56	0.00	0.00	0.00		
June	653	1.92	2.01	Jun 24	1.83	Jun 29	2.08	Jun 20 04:00	1.72	Jun 21 13:00	95.83	0.00	91.73	8.27	0.00	0.00	0.00		
July	690	1.88	2.00	Jul 31	1.77	Jul 06	2.15	Jul 26 07:00	1.68	Jul 06 15:00	98.12	0.00	88.41	11.59	0.00	0.00	0.00		
August	698	1.96	2.02	Aug 01	1.87	Aug 29	2.15	Aug 01 06:00	1.82	Aug 14 17:00	99.06	0.00	80.80	19.20	0.00	0.00	0.00		
September	679	1.92	2.02	Sep 07	1.87	Sep 26	2.09	Sep 08 03:00	1.83	Sep 29 12:00	98.89	0.00	92.78	7.22	0.00	0.00	0.00		
October	368	1.88	1.92	Oct 01	1.84	Oct 12	2.39	Oct 01 07:00	1.79	Oct 12 11:00	97.98	0.00	98.91	1.09	0.00	0.00	0.00		
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Annual	6477	1.93	2.11	Jan 05	1.77	Jul 06	2.39	Oct 01 07:00	1.68	Jul 06 15:00	98.2	0.00	85.33	14.67	0.00	0.00	0.00		

No AAAQO

Methane (CH₄) – Rycroft-Portable 2018 Summary and Frequency Distribution

Rycroft-Portable												CH ₄ (ppm)						2018	
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range							
												0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 5.0	5.0 - 10.0	>10.0		
January	678	1.97	2.11	Jan 05	1.89	Jan 09	2.19	Jan 05 11:00	1.83	Jan 18 14:00	95.83	0.00	75.81	24.19	0.00	0.00	0.00		
February	638	1.93	2.04	Feb 05	1.85	Feb 23	2.15	Feb 05 11:00	1.83	Feb 27 00:00	100.00	0.00	89.97	10.03	0.00	0.00	0.00		
March	690	1.93	2.05	Mar 17	1.85	Mar 02	2.24	Mar 07 07:00	1.72	Mar 15 18:00	97.18	0.00	84.20	15.80	0.00	0.00	0.00		
April	676	1.96	2.03	Apr 13	1.89	Apr 04	2.11	Apr 13 06:00	1.85	Apr 04 02:00	98.89	0.00	78.11	21.89	0.00	0.00	0.00		
May	707	1.94	1.99	May 20	1.90	May 12	2.13	May 24 07:00	1.80	May 15 05:00	100.00	0.00	89.82	10.18	0.00	0.00	0.00		
June	653	1.91	2.01	Jun 24	1.82	Jun 29	2.07	Jun 20 04:00	1.71	Jun 21 13:00	95.83	0.00	93.87	6.13	0.00	0.00	0.00		
July	690	1.88	2.00	Jul 31	1.76	Jul 11	2.14	Jul 26 07:00	1.68	Jul 06 15:00	98.12	0.00	89.57	10.43	0.00	0.00	0.00		
August	698	1.95	2.02	Aug 01	1.86	Aug 29	2.14	Aug 01 06:00	1.82	Aug 14 17:00	99.06	0.00	83.38	16.62	0.00	0.00	0.00		
September	679	1.92	2.01	Sep 07	1.86	Sep 26	2.09	Sep 08 03:00	1.82	Sep 29 12:00	98.89	0.00	93.37	6.63	0.00	0.00	0.00		
October	368	1.87	1.92	Oct 01	1.84	Oct 12	2.38	Oct 01 07:00	1.78	Oct 12 11:00	97.98	0.00	98.91	1.09	0.00	0.00	0.00		
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Annual	6477	1.93	2.11	Jan 05	1.76	Jul 11	2.38	Oct 01 07:00	1.68	Jul 06 15:00	98.2	0.00	87.10	12.90	0.00	0.00	0.00		

No AAAQO

Non-Methane Hydrocarbon (NMHC) – Rycroft-Portable 2018 Summary and Frequency Distribution

Rycroft-Portable NMHC (ppm)												2018					
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range					
												0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 5.0	5.0 - 10.0	>10.0
January	678	0.00	0.01	Jan 22	0.00	Jan 09	0.27	Jan 22 18:00	0.00	Jan 01 01:00	95.83	100.00	0.00	0.00	0.00	0.00	0.00
February	638	0.00	0.00	Feb 23	0.00	Feb 01	0.00	Feb 23 12:00	0.00	Feb 01 02:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
March	690	0.00	0.00	Mar 09	0.00	Mar 02	0.00	Mar 29 21:00	0.00	Mar 01 01:00	97.18	100.00	0.00	0.00	0.00	0.00	0.00
April	676	0.00	0.00	Apr 09	0.00	Apr 06	0.00	Apr 01 18:00	0.00	Apr 01 01:00	98.89	100.00	0.00	0.00	0.00	0.00	0.00
May	707	0.00	0.00	May 20	0.00	May 02	0.00	May 20 04:00	0.00	May 01 05:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
June	653	0.00	0.00	Jun 30	0.00	Jun 01	0.03	Jun 30 21:00	0.00	Jun 01 01:00	95.83	100.00	0.00	0.00	0.00	0.00	0.00
July	704	0.00	0.00	Jul 23	0.00	Jul 03	0.00	Jul 30 19:00	0.00	Jul 01 01:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
August	698	0.00	0.00	Aug 09	0.00	Aug 01	0.00	Aug 09 06:00	0.00	Aug 01 01:00	99.06	100.00	0.00	0.00	0.00	0.00	0.00
September	679	0.00	0.00	Sep 15	0.00	Sep 01	0.00	Sep 14 21:00	0.00	Sep 01 01:00	98.89	100.00	0.00	0.00	0.00	0.00	0.00
October	368	0.00	0.00	Oct 04	0.00	Oct 05	0.00	Oct 04 12:00	0.00	Oct 01 01:00	97.98	100.00	0.00	0.00	0.00	0.00	0.00
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	6491	0.00	0.01	Jan 22	0.00	Jan 09	0.27	Jan 22 18:00	0.00	Jan 01 01:00	98.4	100.00	0.00	0.00	0.00	0.00	0.00

No AAAQO

Particulate Matter (PM_{2.5}) – Rycroft-Portable 2018 Summary and Frequency Distribution

Rycroft-Portable PM _{2.5} (µg/m ³)												2018							
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance		Percentage of Readings in Concentration Range					
												24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30
January	742	2.96	12.19	Jan 16	0.30	Jan 07	18.03	Jan 16 18:00	0.00	Jan 01 19:00	99.73	0	0	47.71	40.43	8.09	3.50	0.27	0.00
February	669	0.85	2.43	Feb 08	0.06	Feb 23	9.62	Feb 08 13:00	0.00	Feb 01 11:00	100.00	0	0	85.05	14.65	0.30	0.00	0.00	0.00
March	740	2.14	5.91	Mar 14	0.27	Mar 25	10.80	Mar 11 21:00	0.00	Mar 01 18:00	100.00	0	0	60.00	35.14	4.86	0.00	0.00	0.00
April	718	1.97	4.74	Apr 09	0.25	Apr 20	15.67	Apr 30 18:00	0.00	Apr 01 19:00	100.00	0	0	63.65	32.73	3.06	0.56	0.00	0.00
May	743	5.45	13.24	May 24	0.81	May 27	68.56	May 23 22:00	0.00	May 01 13:00	100.00	0	0	27.46	42.53	18.71	7.13	3.10	1.08
June	709	2.85	8.17	Jun 21	0.13	Jun 26	17.94	Jun 24 16:00	0.00	Jun 01 17:00	98.61	0	0	54.87	29.06	13.12	2.82	0.14	0.00
July	741	3.76	25.80	Jul 29	0.24	Jul 01	52.14	Jul 29 15:00	0.00	Jul 01 01:00	100.00	0	0	52.36	29.15	8.77	6.34	2.56	0.81
August	730	29.59	123.61	Aug 22	0.22	Aug 30	244.52	Aug 10 10:00	0.00	Aug 23 13:00	98.92	10	69	9.18	18.36	15.48	12.74	13.56	30.68
September	720	1.68	17.85	Sep 02	0.00	Sep 09	46.27	Sep 02 12:00	0.00	Sep 01 04:00	100.00	0	0	78.89	15.69	3.61	0.83	0.14	0.83
October	397	2.30	5.61	Oct 04	0.40	Oct 08	18.64	Oct 04 02:00	0.00	Oct 02 00:00	100.00	0	0	53.90	40.05	4.53	1.26	0.25	0.00
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	6909	5.55	123.61	Aug 22	0.00	Sep 09	244.52	Aug 10 10:00	0.00	Jan 01 19:00	99.7	10	69	52.81	29.50	8.33	3.69	2.12	3.54

AAAQO Objectives: 24-Hr: 30 µg/m³, 1-Hr: 80 µg/m³

Ambient Temperature (ET) – Rycroft-Portable 2018 Summary

Rycroft-Portable Ambient Temperature (°C) 2018											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	744	-12.5	0.8	Jan 17	-35.4	Jan 11	5.6	Jan 17 15:00	-39.3	Jan 11 09:00	100.0
February	672	-13.5	1.3	Feb 13	-26.4	Feb 04	7.9	Feb 28 14:00	-31.6	Feb 04 09:00	100.0
March	744	-7.3	2.3	Mar 20	-17.1	Mar 05	11.4	Mar 15 14:00	-25.6	Mar 05 08:00	100.0
April	720	0.1	13.5	Apr 27	-14.1	Apr 05	23.2	Apr 27 15:00	-24.2	Apr 06 02:00	100.0
May	744	14.9	22.6	May 23	9.1	May 01	31.4	May 23 17:00	1.8	May 10 05:00	100.0
June	720	15.6	25.1	Jun 20	9.8	Jun 05	33.4	Jun 20 14:00	4.3	Jun 05 05:00	100.0
July	744	16.9	21.7	Jul 28	11.9	Jul 07	29.5	Jul 28 15:00	4.5	Jul 08 04:00	100.0
August	737	15.8	21.9	Aug 09	8.8	Aug 24	29.7	Aug 09 15:00	4.8	Aug 31 05:00	99.1
September	720	5.4	12.3	Sep 07	-1.3	Sep 30	18.5	Sep 04 17:00	-8.5	Sep 30 06:00	100.0
October	397	2.1	11.6	Oct 16	-1.8	Oct 05	21.2	Oct 16 15:00	-7.6	Oct 11 03:00	100.0
November	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-
Annual	6942	4.0	25.1	Jun 20	-35.4	Jan 11	33.4	Jun 20 14:00	-39.3	Jan 11 09:00	99.9

Wind Speed (WS) – Rycroft-Portable 2018 Summary

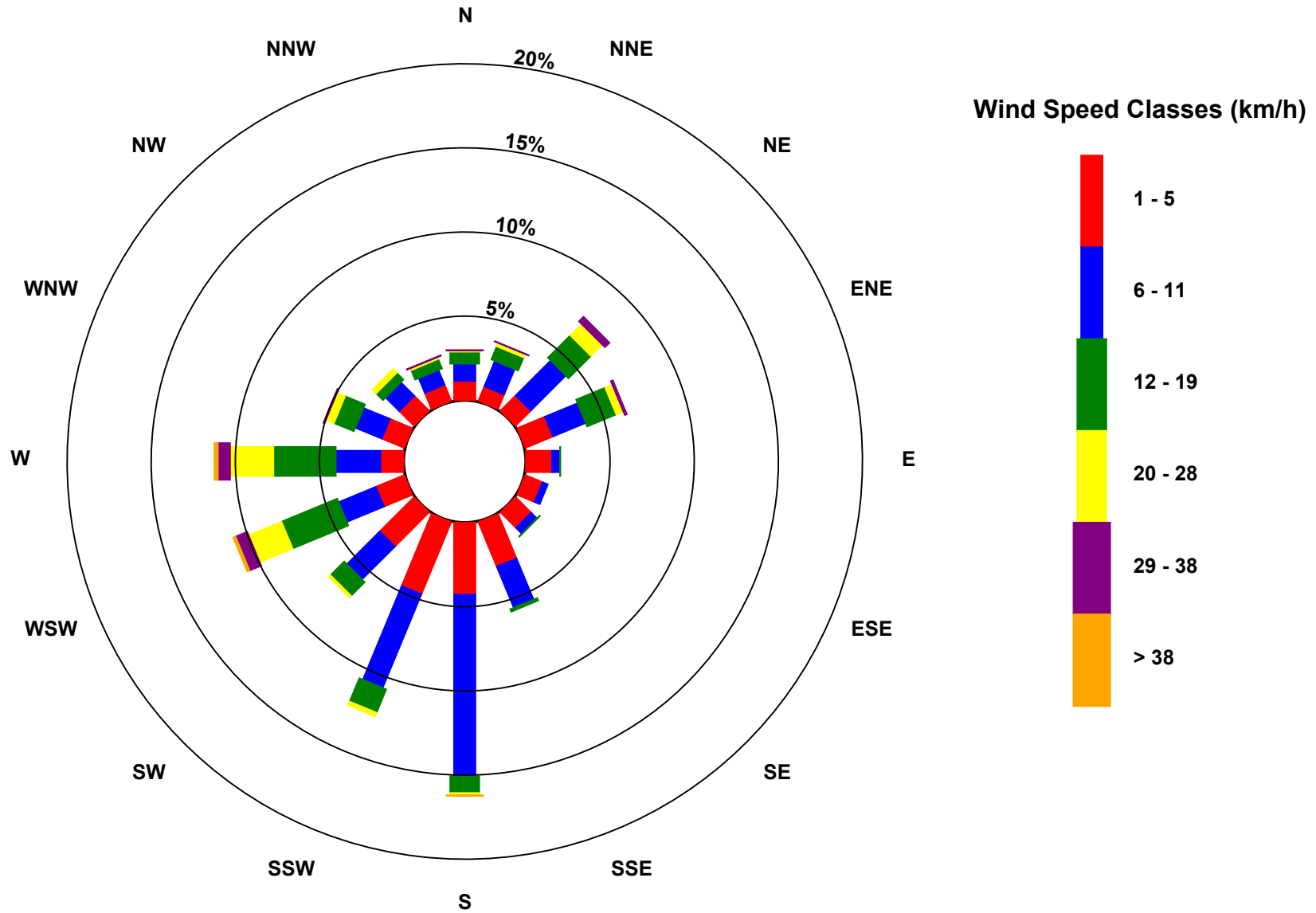
Rycroft-Portable Wind Speed (km/h) 2018											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	742	8.0	19.3	Jan 30	1.9	Jan 12	28.6	Jan 08 08:00	0.1	Jan 15 17:00	99.7
February	672	10.3	19.0	Feb 13	3.9	Feb 07	38.2	Feb 13 03:00	0.5	Feb 10 03:00	100.0
March	744	10.0	27.3	Mar 22	3.7	Mar 08	35.7	Mar 02 02:00	0.4	Mar 13 02:00	100.0
April	719	10.8	19.2	Apr 22	4.6	Apr 08	39.9	Apr 30 17:00	0.5	Apr 27 10:00	99.9
May	744	12.0	21.5	May 12	4.9	May 23	44.4	May 02 14:00	0.5	May 10 08:00	100.0
June	720	11.5	34.9	Jun 11	4.4	Jun 19	49.6	Jun 11 14:00	0.5	Jun 15 04:00	100.0
July	744	9.4	19.9	Jul 01	3.2	Jul 24	32.7	Jul 01 14:00	0.6	Jul 31 02:00	100.0
August	737	8.0	16.4	Aug 30	4.8	Aug 11	29.5	Aug 03 16:00	0.1	Aug 16 05:00	99.1
September	704	7.4	14.9	Sep 24	2.3	Sep 13	40.5	Sep 12 11:00	0.1	Sep 12 22:00	97.8
October	394	9.3	15.9	Oct 14	3.9	Oct 10	29.9	Oct 15 00:00	0.3	Oct 05 08:00	99.2
November	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-
Annual	6920	9.7	34.9	Jun 11	1.9	Jan 12	49.6	Jun 11 14:00	0.1	Jan 15 17:00	99.6

Wind Speed and Wind Direction Frequency Distribution – Rycroft-Portable 2018 Summary

Rycroft-Portable								2018
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	204	1.15	1.02	0.72	0.07	0.01	0.00	2.98
NNE	250	0.93	1.64	0.85	0.22	0.01	0.00	3.65
NE	509	1.27	2.95	1.88	0.95	0.38	0.00	7.43
ENE	434	1.78	2.10	1.87	0.45	0.13	0.00	6.34
E	140	1.55	0.48	0.01	0.00	0.00	0.00	2.04
ESE	99	1.11	0.34	0.00	0.00	0.00	0.00	1.45
SE	124	1.30	0.50	0.01	0.00	0.00	0.00	1.81
SSE	388	2.86	2.64	0.16	0.00	0.00	0.00	5.67
S	1111	4.28	10.79	0.99	0.15	0.00	0.01	16.23
SSW	849	4.64	6.02	1.50	0.23	0.00	0.00	12.40
SW	474	2.88	2.76	1.15	0.13	0.00	0.00	6.92
WSW	740	1.83	2.40	3.58	2.12	0.74	0.15	10.81
WSW	770	1.37	2.66	3.71	2.57	0.73	0.20	11.25
WNW	343	1.45	1.69	1.29	0.51	0.07	0.00	5.01
NW	224	1.24	1.14	0.57	0.32	0.00	0.00	3.27
NNW	188	1.04	0.95	0.61	0.12	0.03	0.00	2.75
Totals	6847	30.68	40.08	18.91	7.84	2.12	0.37	100

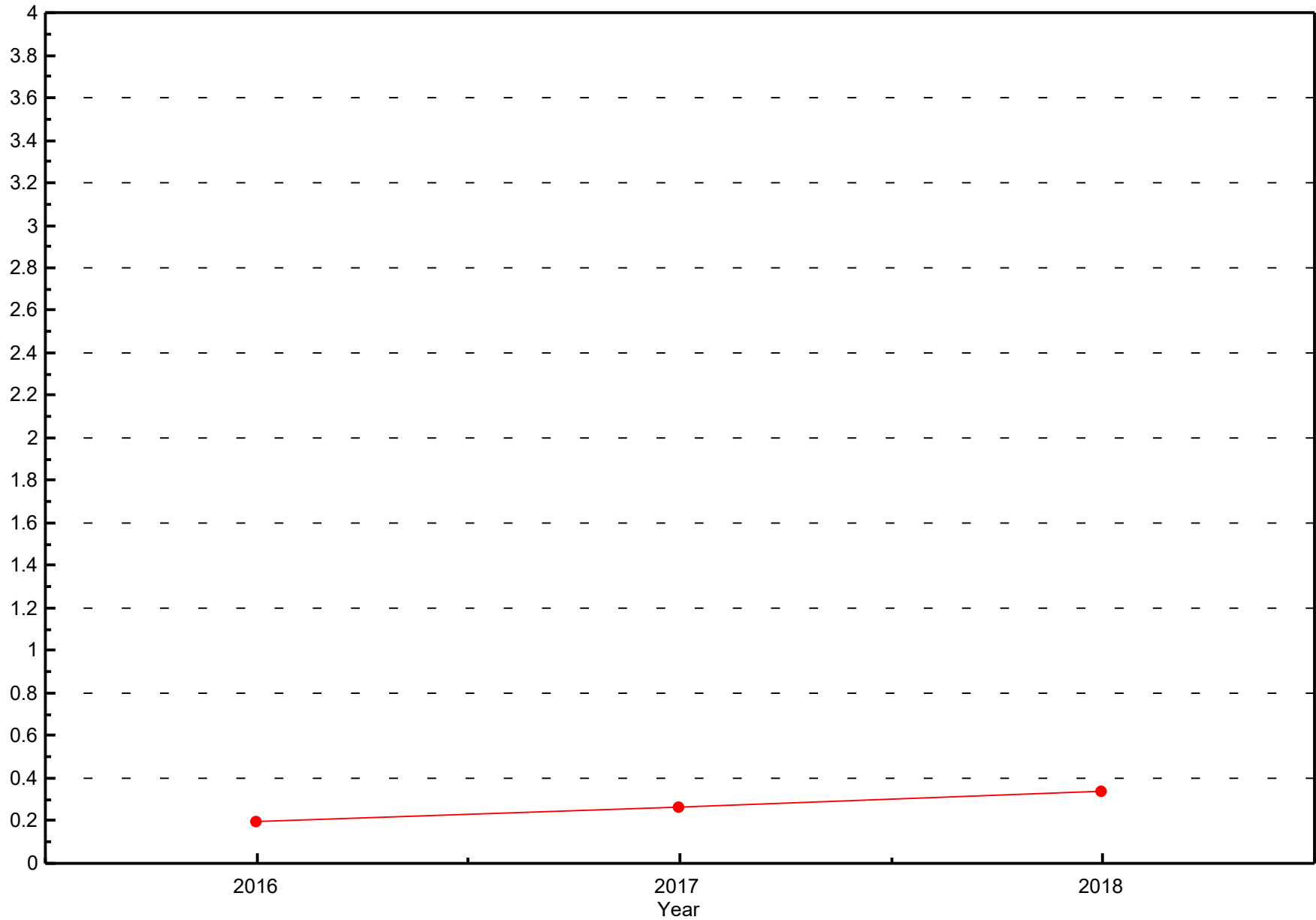
Wind Rose

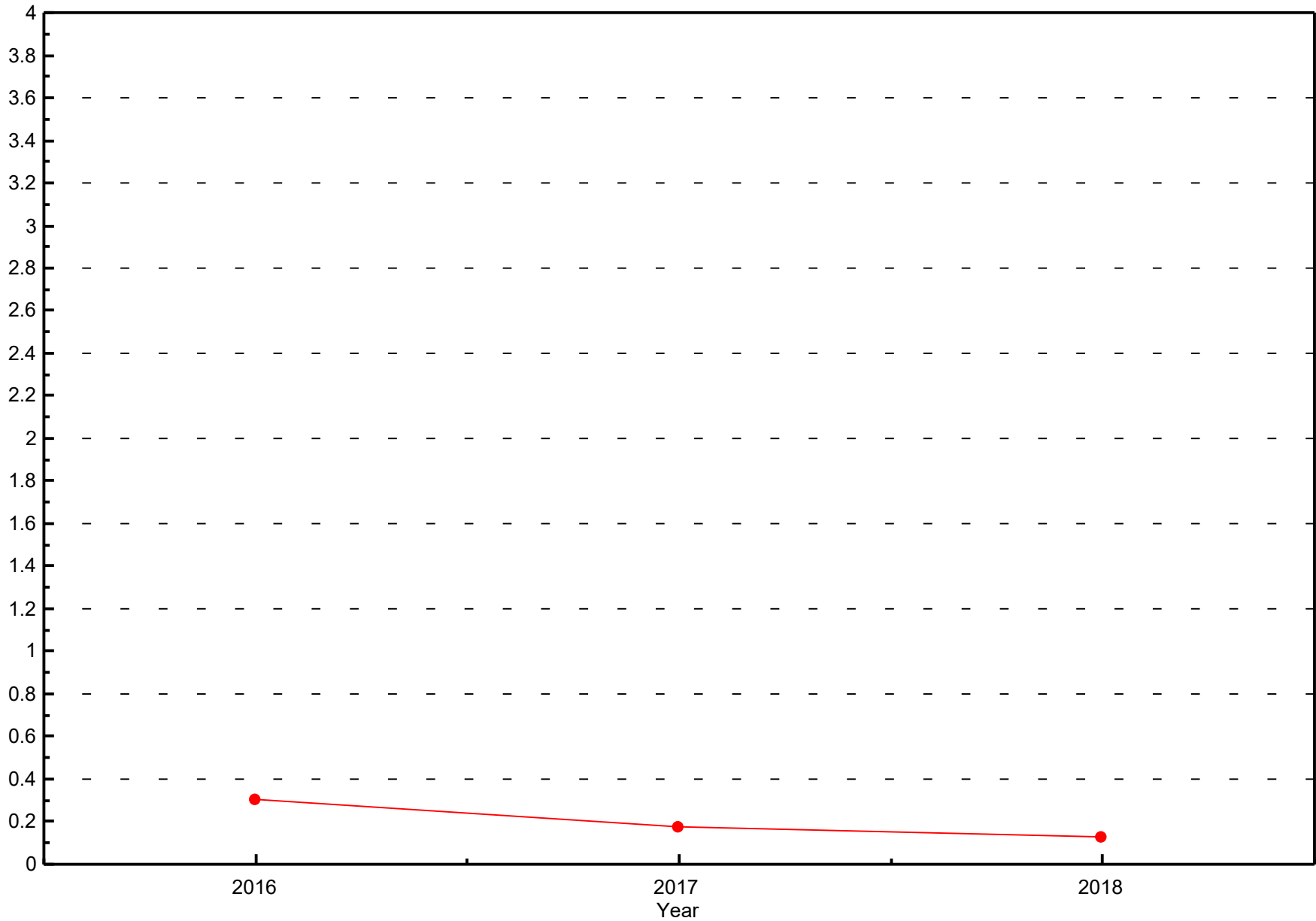
Wind Speed (WS) (km/h)
Portable Rycroft - 2018



5-Year Annual Averages

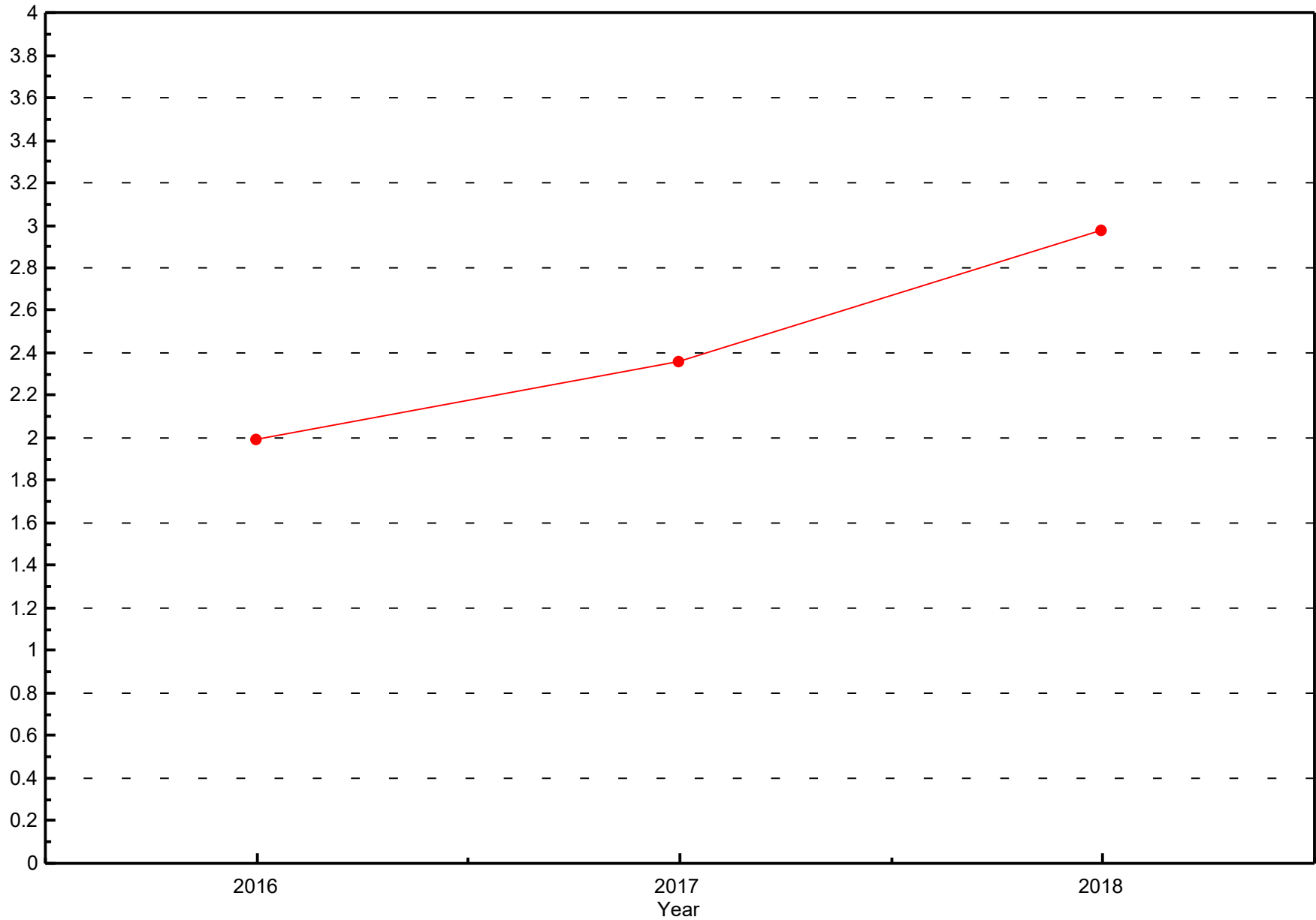
Sulphur Dioxide (SO₂) - ppb
Portable Rycroft (2016 to 2018)





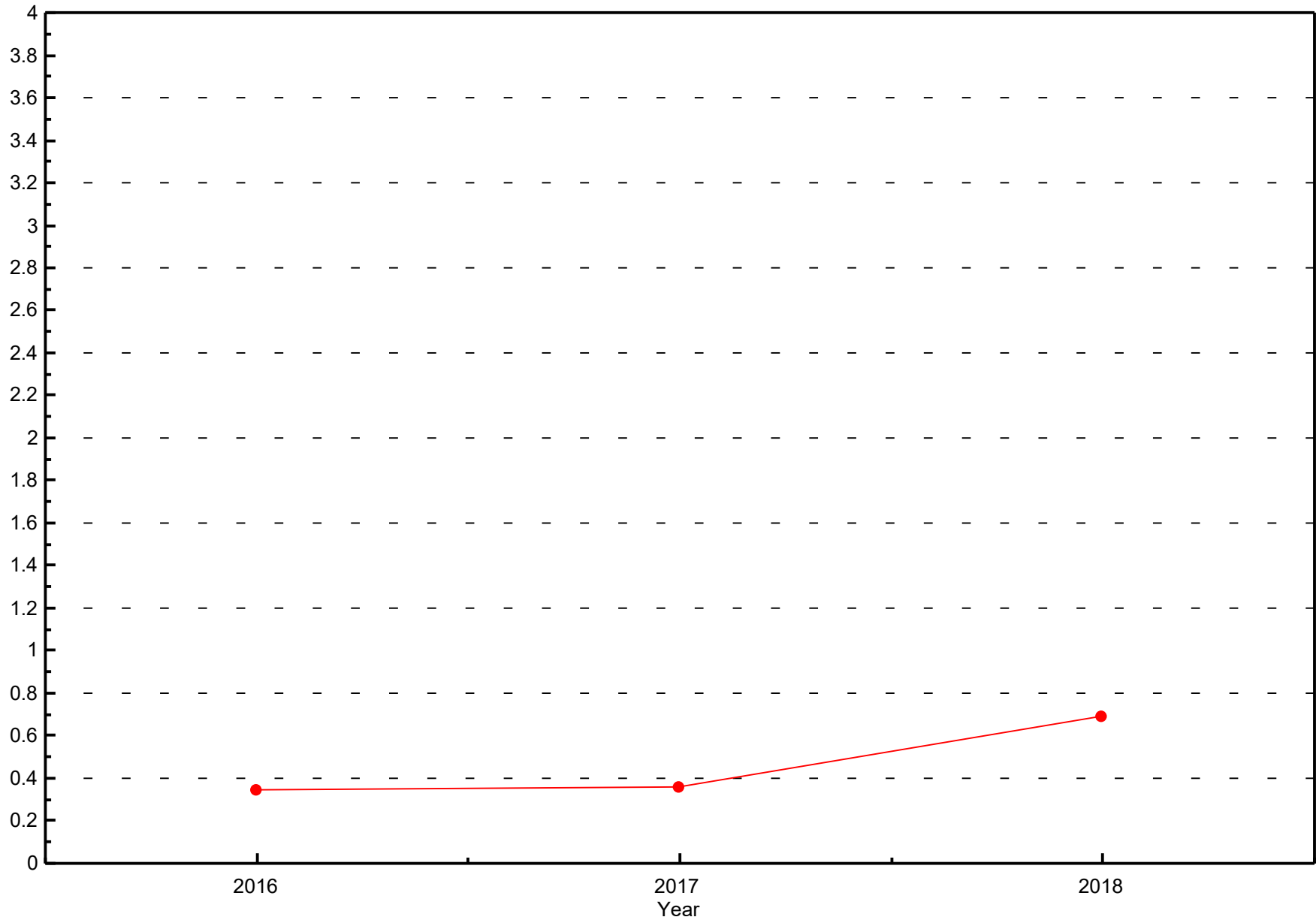
5-Year Annual Averages

Nitrogen Dioxide (NO₂) - ppb
Portable Rycroft (2016 to 2018)



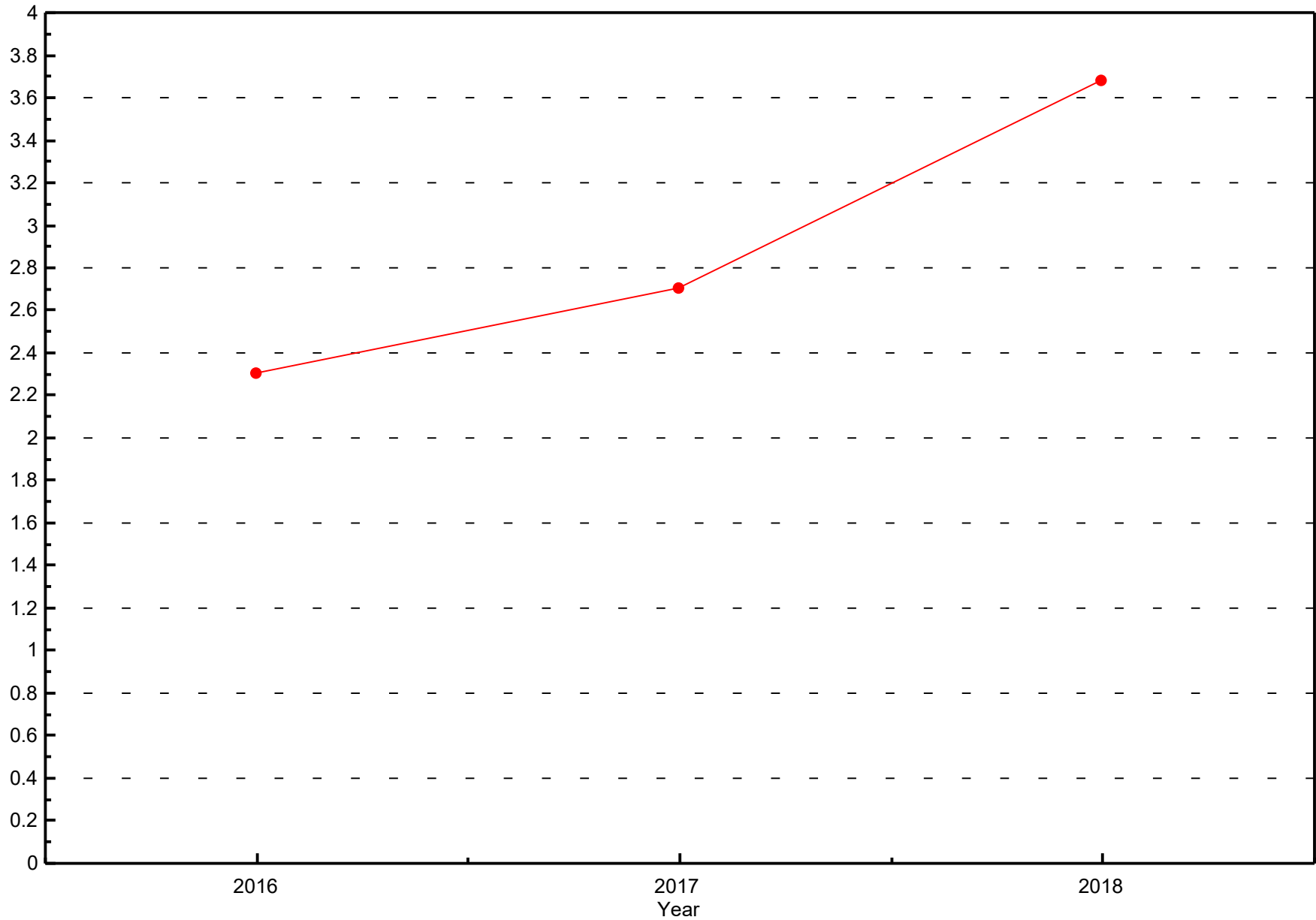
5-Year Annual Averages

Nitrogen Oxide (NO) - ppb
Portable Rycroft (2016 to 2018)



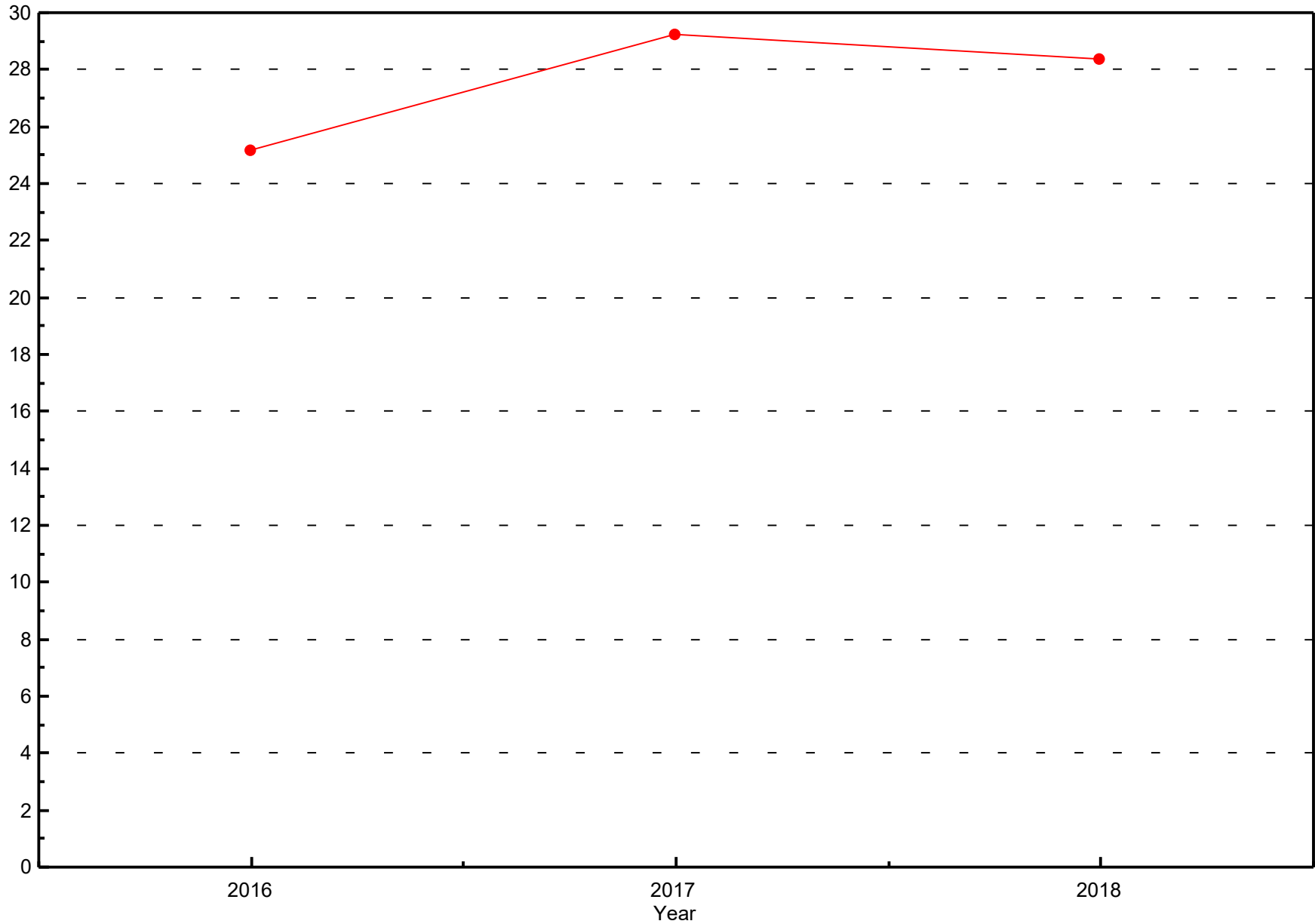
5-Year Annual Averages

Oxides of Nitrogen (NO_x) - ppb
Portable Rycroft (2016 to 2018)



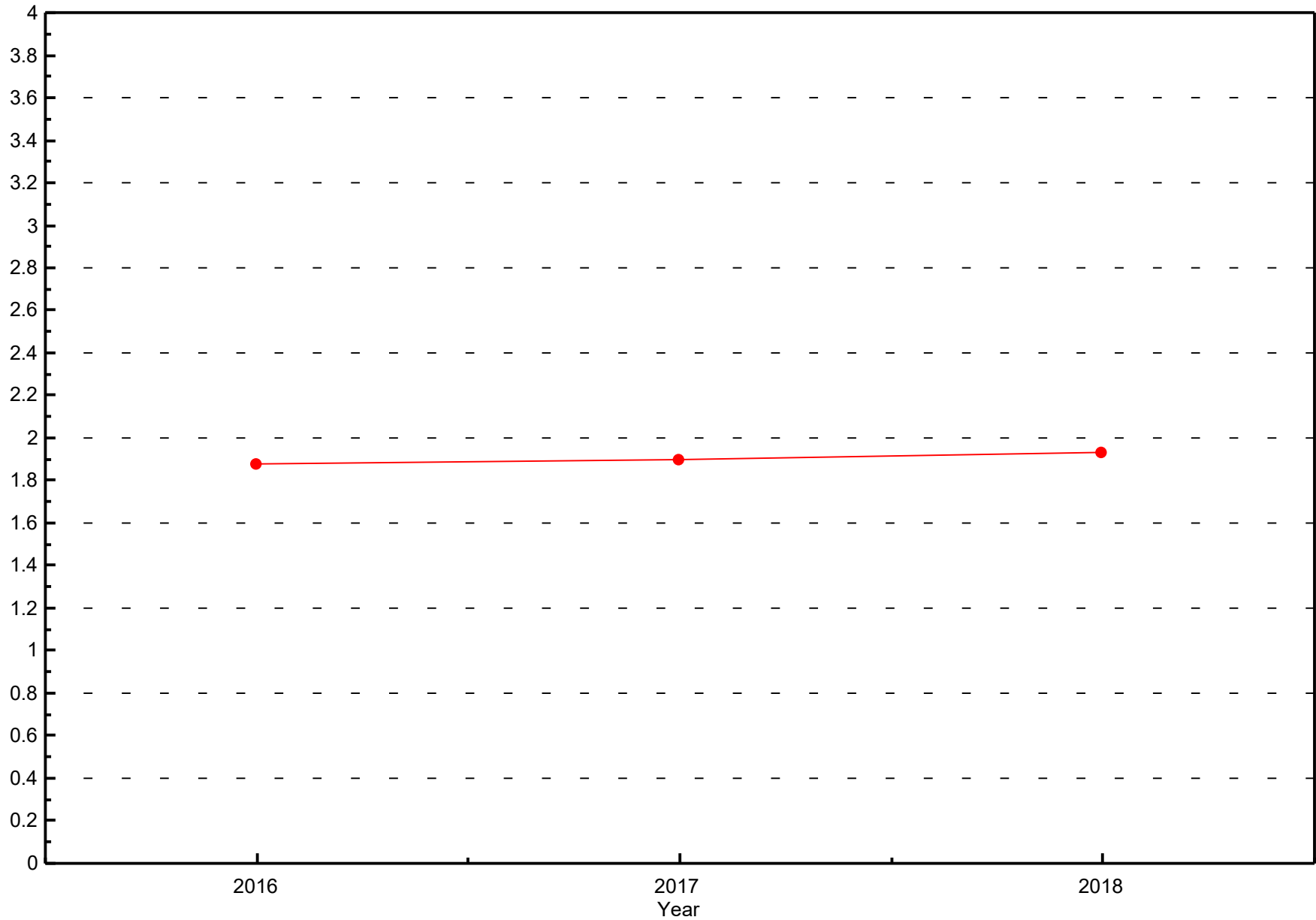
5-Year Annual Averages

Ozone (O₃) - ppb
Portable Rycroft (2016 to 2018)



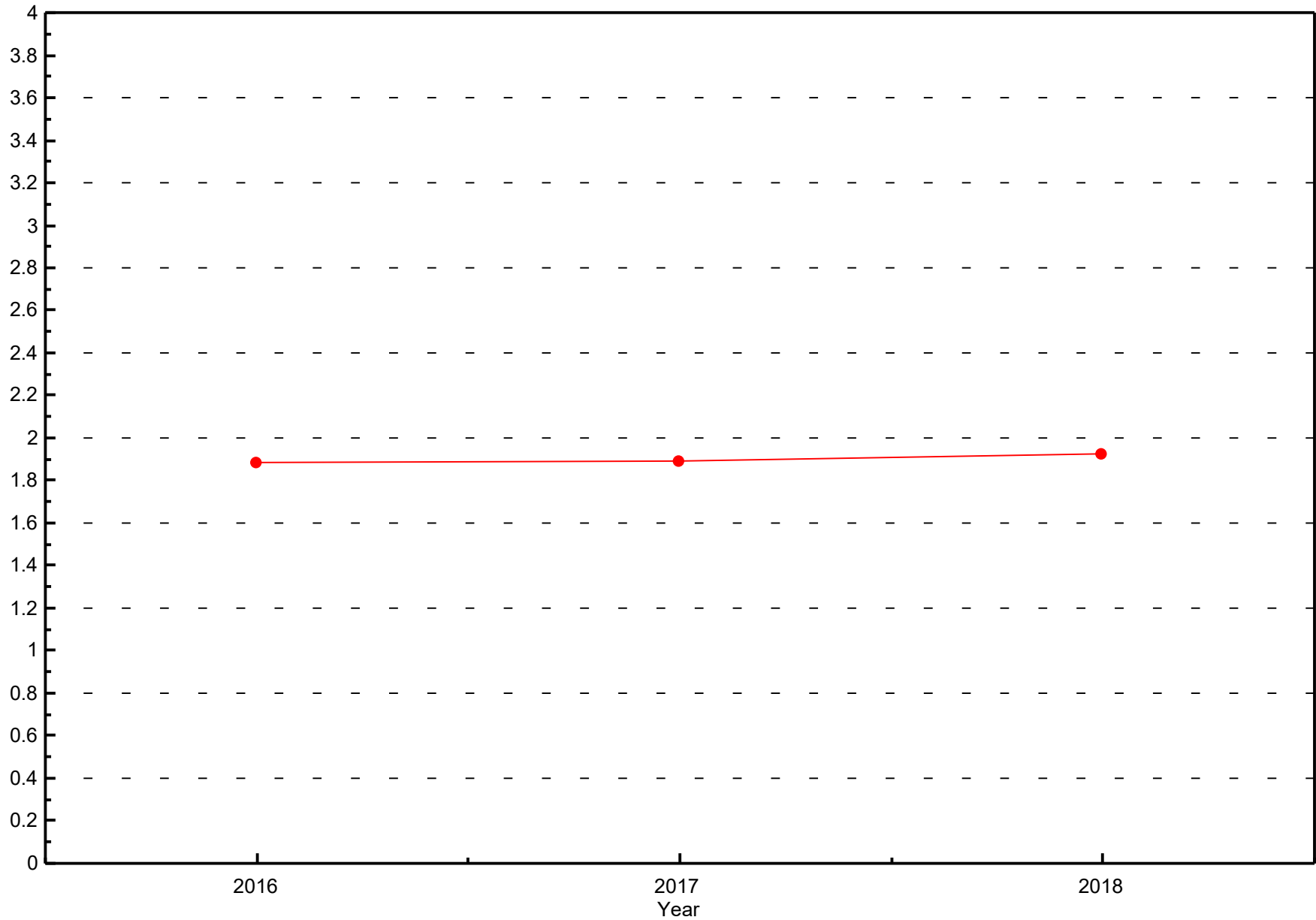
5-Year Annual Averages

**Total Hydrocarbons (THC) - ppm
Portable Rycroft (2016 to 2018)**

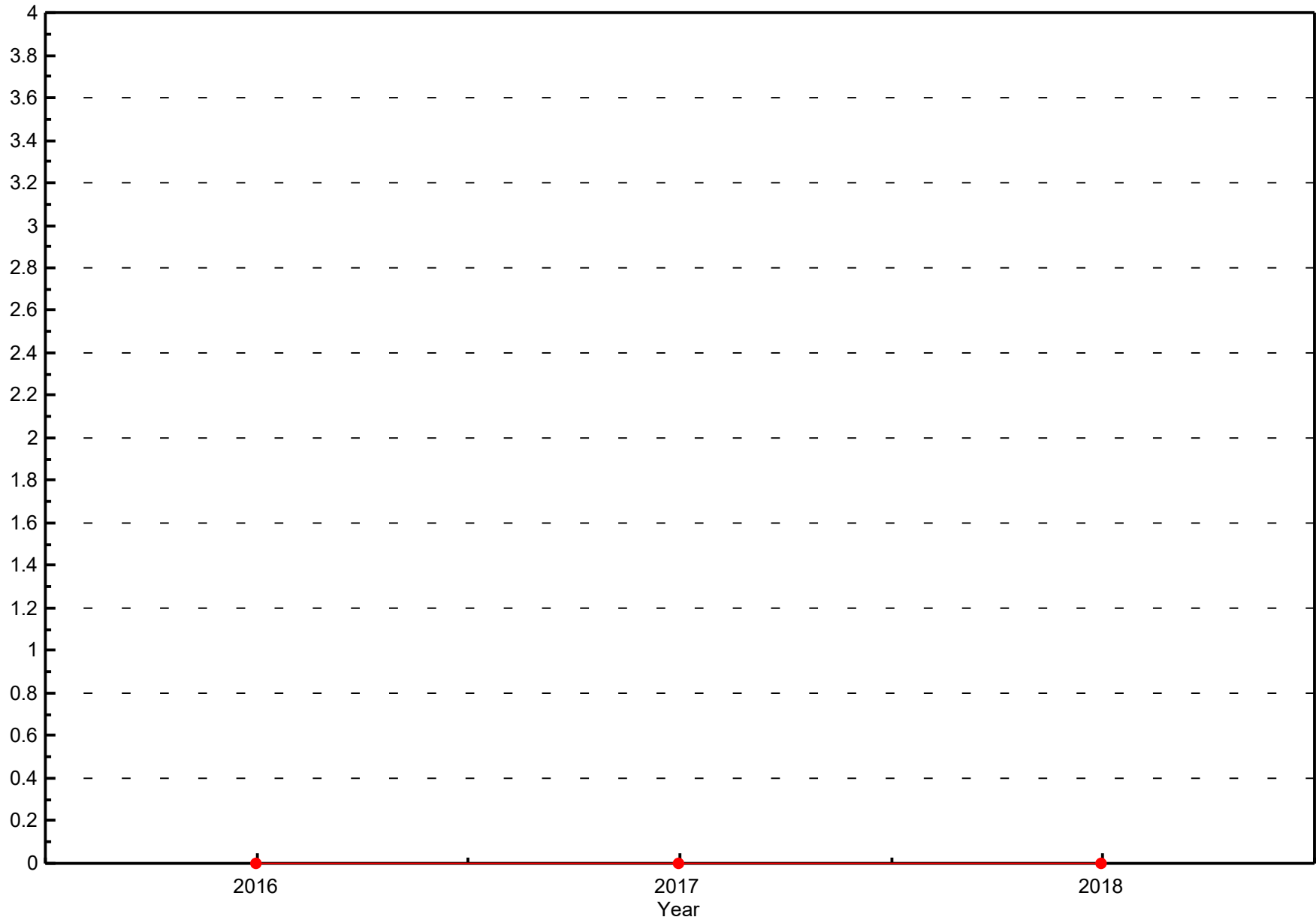


5-Year Annual Averages

Methane (CH₄) - ppm
Portable Rycroft (2016 to 2018)

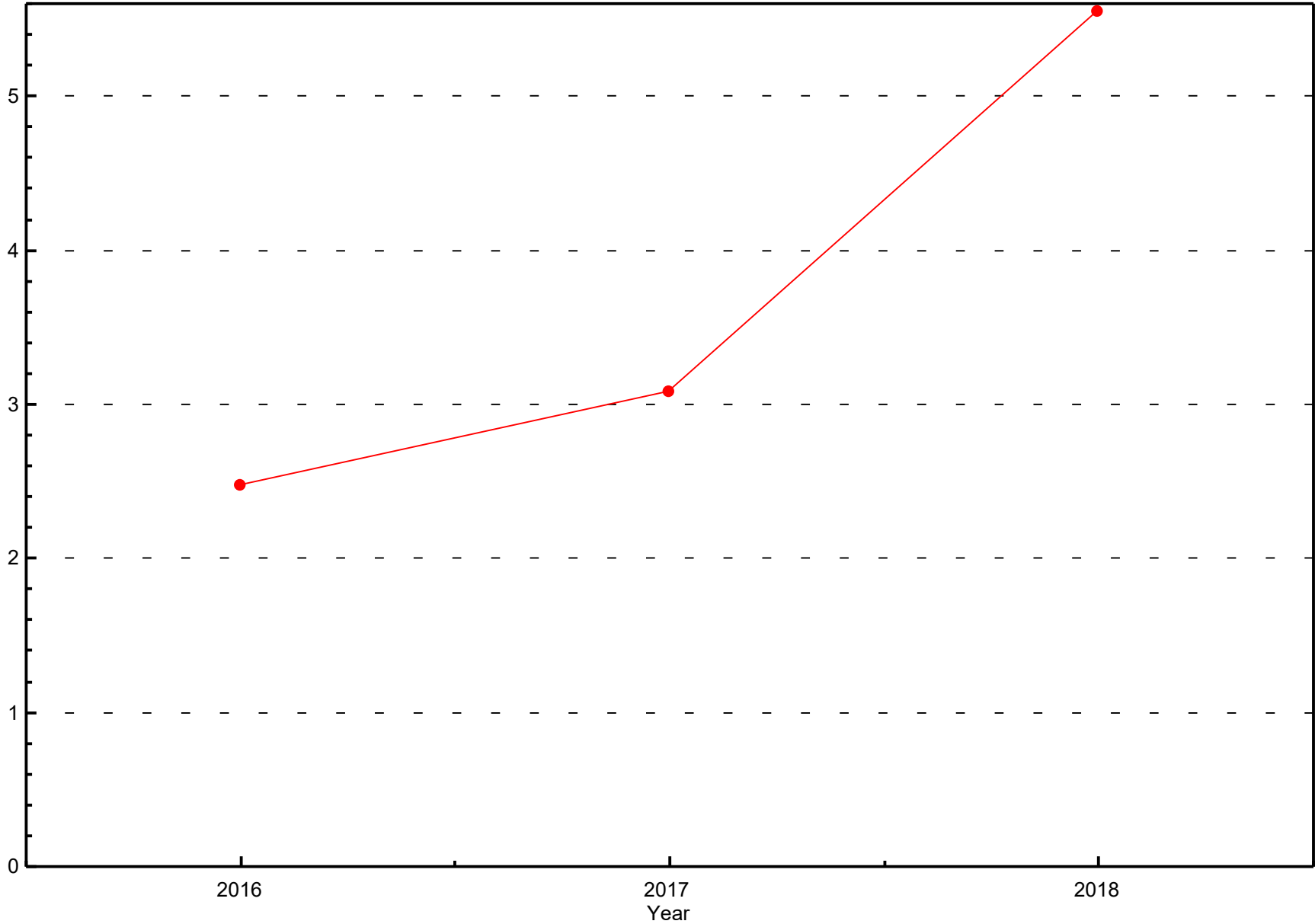


5-Year Annual Averages Non Methane Hydrocarbon (NMHC) - ppm
Portable Rycroft (2016 to 2018)



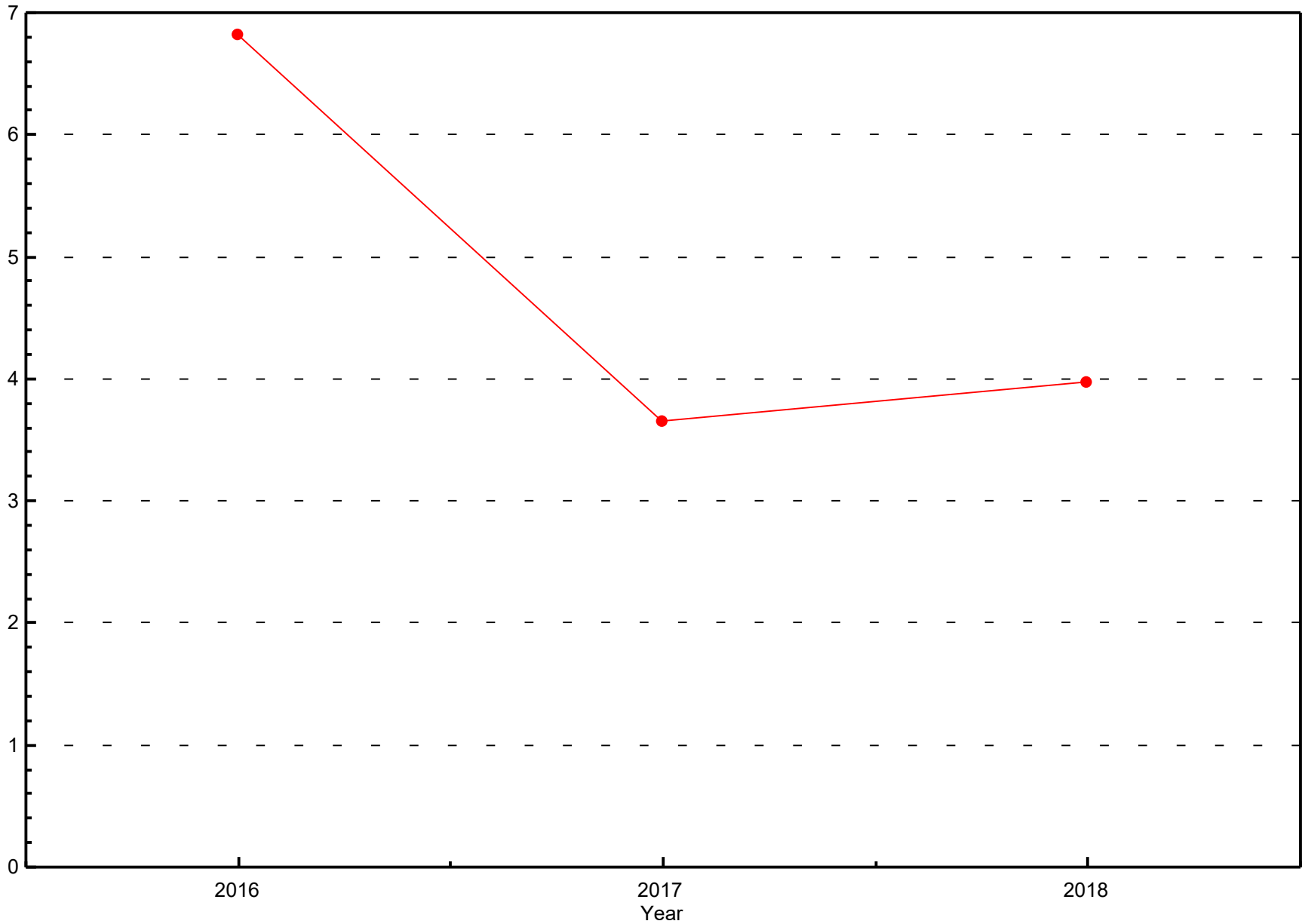
5-Year Annual Averages

**PM2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Portable Rycroft (2016 to 2018)**



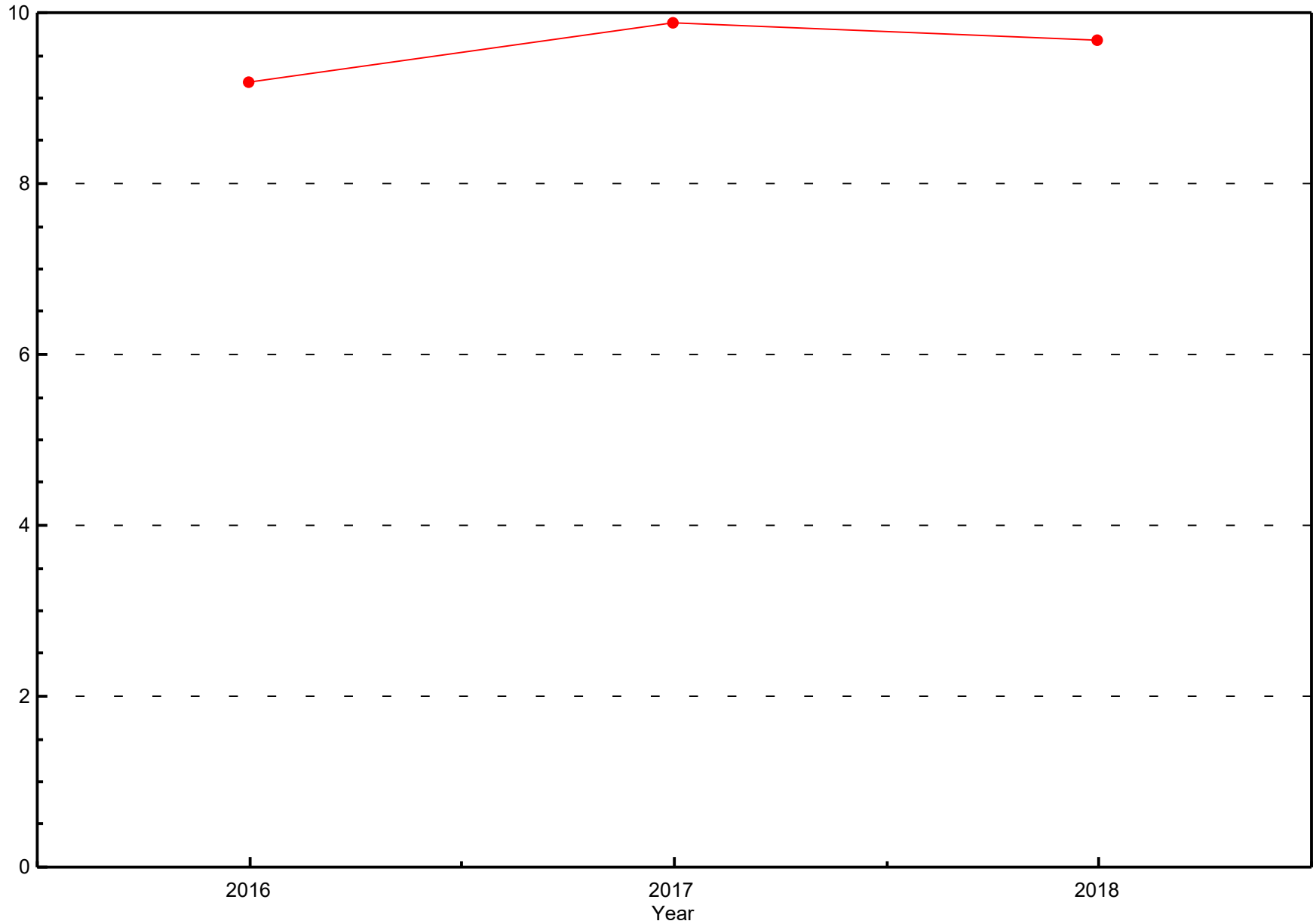
5-Year Annual Averages

External Temperature (ET) - °C
Portable Rycroft (2016 to 2018)



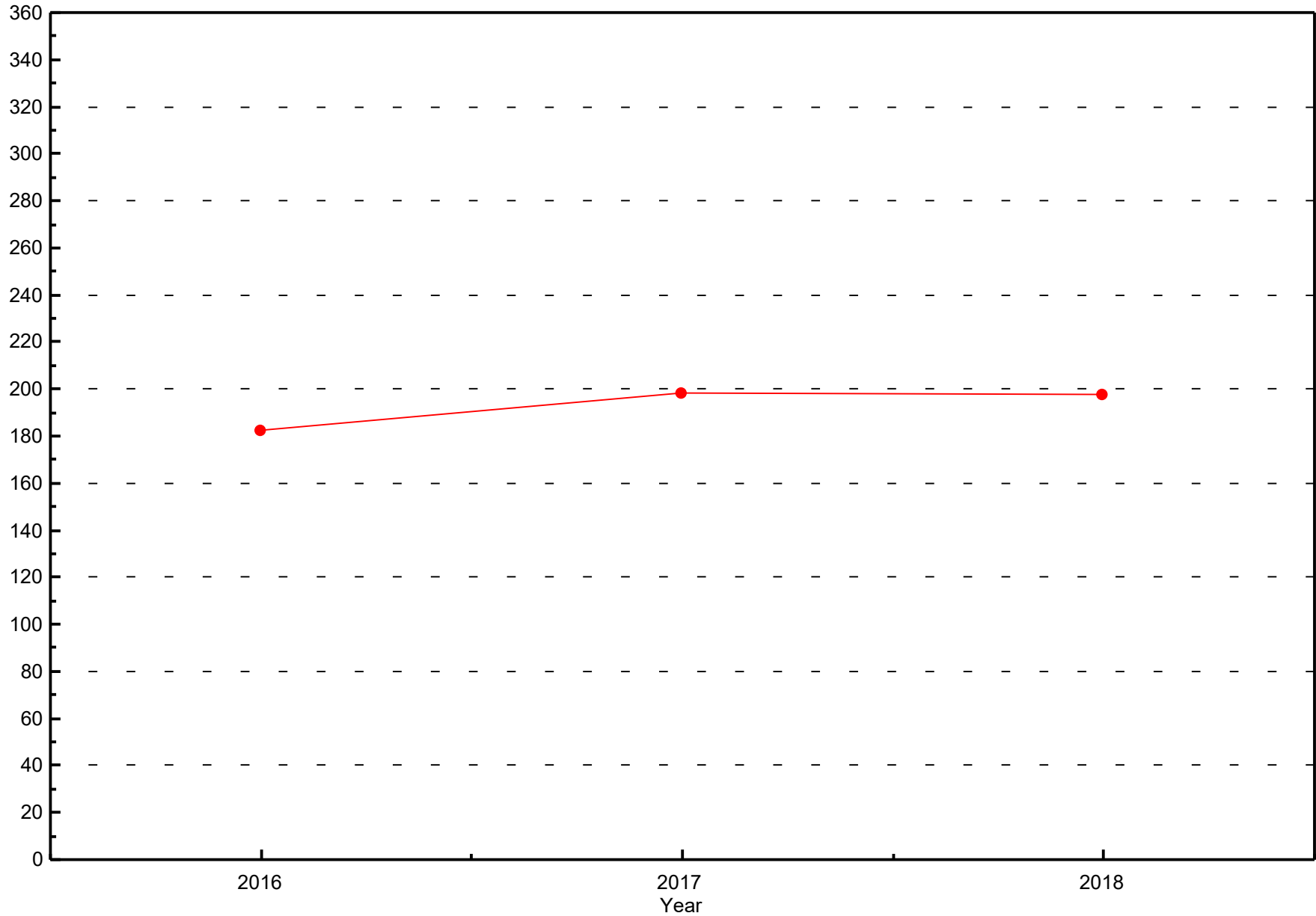
5-Year Annual Averages

Wind Speed (WS) - km/h
Portable Rycroft (2016 to 2018)



5-Year Annual Averages

Wind Direction (WD) - deg
Portable Rycroft (2016 to 2018)



PAZA

Wembley-Portable
CONTINUOUS AMBIENT AIR MONITORING STATION

2018
ANNUAL SUMMARY TABLES

Sulphur Dioxide (SO₂) – Wembley-Portable 2018 Summary and Frequency Distribution

Wembley-Portable SO ₂ (ppb)												2018									
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance			Percentage of Readings in Concentration Range						
												30-Day	24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340	
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
November	685	0.16	0.49	Nov 11	0.00	Nov 23	3.25	Nov 16 16:00	0.00	Nov 01 19:00	100.00	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	
December	705	0.28	0.94	Dec 11	0.01	Dec 07	4.90	Dec 11 19:00	0.00	Dec 01 06:00	99.46	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	
Annual	1473	0.22	0.94	Dec 11	0.00	Nov 23	4.90	Dec 11 19:00	0.00	Oct 30 17:00	99.7	0	0	0	100.00	0.00	0.00	0.00	0.00	0.00	

AAAQO Objectives: Annual: 8 ppb, 30-Day: 11 ppb, 24-Hr: 48 ppb, 1-Hr: 172 ppb

Total Reduced Sulphur (TRS) – Wembley-Portable 2018 Summary and Frequency Distribution

Wembley-Portable TRS (ppb)												2018								
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range								
												0 - 1	1 - 2.5	2.5 - 5	5 - 7.5	7.5 - 10	>10			
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	688	0.13	0.38	Nov 25	0.03	Nov 14	0.70	Nov 02 19:00	0.00	Nov 02 01:00	100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
December	705	0.16	0.33	Dec 18	0.06	Dec 14	0.73	Dec 29 06:00	0.00	Dec 15 08:00	99.46	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	1476	0.14	0.38	Nov 25	0.03	Nov 14	0.73	Dec 29 06:00	0.00	Oct 28 18:00	99.7	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

No AAAQO

Nitric Oxide (NO) – Wembley-Portable 2018 Summary and Frequency Distribution

Wembley-Portable NO (ppb)												2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range				
												0 - 25	25 - 50	50 - 110	110 - 210	>210
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	684	1.71	14.39	Nov 25	0.15	Nov 09	23.73	Nov 25 07:00	0.00	Nov 05 06:00	100.00	100.00	0.00	0.00	0.00	0.00
December	704	1.44	10.08	Dec 18	0.05	Dec 04	22.57	Dec 18 16:00	0.00	Dec 03 22:00	99.46	100.00	0.00	0.00	0.00	0.00
Annual	1470	1.51	14.39	Nov 25	0.05	Dec 04	23.73	Nov 25 07:00	0.00	Oct 31 03:00	99.7	100.00	0.00	0.00	0.00	0.00

No AAAQO

Nitrogen Dioxide (NO₂) – Wembley-Portable 2018 Summary and Frequency Distribution

Wembley-Portable NO ₂ (ppb)												2018					
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance	Percentage of Readings in Concentration Range				
												1-Hr	0 - 25	25 - 50	50 - 110	110 - 159	>159
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
November	684	5.92	16.43	Nov 26	1.48	Nov 18	28.81	Nov 21 19:00	0.44	Nov 19 16:00	100.00	0	99.56	0.44	0.00	0.00	0.00
December	704	7.15	18.70	Dec 18	1.10	Dec 21	29.56	Dec 06 21:00	0.19	Dec 10 20:00	99.46	0	99.29	0.71	0.00	0.00	0.00
Annual	1470	6.36	18.70	Dec 18	1.10	Dec 21	29.56	Dec 06 21:00	0.19	Dec 10 20:00	99.7	0	99.42	0.58	0.00	0.00	0.00

AAAQO Objectives: Annual: 24 ppb, 1-Hr: 159 ppb

Total Oxides of Nitrogen (NOx) – Wembley-Portable 2018 Summary and Frequency Distribution

Wembley-Portable NOx (ppb)												2018				
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range				
												0 - 25	25 - 50	50 - 110	110 - 210	>210
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	684	7.68	30.63	Nov 25	1.72	Nov 18	40.86	Nov 25 07:00	0.56	Nov 18 00:00	100.00	95.61	4.39	0.00	0.00	0.00
December	704	8.66	29.04	Dec 18	1.15	Dec 21	46.01	Dec 17 22:00	0.38	Dec 04 10:00	99.46	94.32	5.68	0.00	0.00	0.00
Annual	1470	7.92	30.63	Nov 25	1.15	Dec 21	46.01	Dec 17 22:00	0.38	Dec 04 10:00	99.7	94.96	5.04	0.00	0.00	0.00

No AAAQO

Ozone (O₃) – Wembley-Portable 2018 Summary and Frequency Distribution

Wembley-Portable O ₃ (ppb)												2018						
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance	Percentage of Readings in Concentration Range					
												1-Hr	0 - 2	2 - 10	10 - 20	20 - 40	40 - 82	>82
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
November	575	17.88	31.24	Nov 14	1.72	Nov 27	40.41	Nov 13 21:00	0.42	Nov 26 03:00	84.03	0	10.61	17.91	23.65	47.65	0.17	0.00
December	706	20.45	38.02	Dec 12	2.53	Dec 18	41.07	Dec 12 12:00	0.00	Dec 17 19:00	99.46	0	8.22	14.02	27.76	49.01	0.99	0.00
Annual	1364	19.44	38.02	Dec 12	1.72	Nov 27	41.07	Dec 12 12:00	0.00	Dec 17 19:00	91.7	0	9.12	14.73	28.14	47.39	0.62	0.00

AAAQO Objectives: 1-Hr: 82 ppb

Total Hydrocarbon (THC) – Wembley-Portable 2018 Summary and Frequency Distribution

Wembley-Portable THC (ppm)												2018					
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range					
												0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 5.0	5.0 - 10.0	>10.0
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	602	2.03	2.47	Nov 21	1.90	Nov 05	2.83	Nov 28 06:00	1.84	Nov 17 22:00	89.72	0.00	65.12	31.40	3.49	0.00	0.00
December	684	2.13	2.54	Dec 18	1.92	Dec 14	2.84	Dec 18 16:00	1.87	Dec 14 10:00	97.31	0.00	28.51	64.04	7.46	0.00	0.00
Annual	1368	2.08	2.54	Dec 18	1.90	Nov 05	2.84	Dec 18 16:00	1.83	Nov 01 00:00	93.5	0.00	43.51	50.89	5.59	0.00	0.00

No AAAQO

Methane (CH₄) – Wembley-Portable 2018 Summary and Frequency Distribution

Wembley-Portable CH ₄ (ppm)												2018					
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range					
												0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 5.0	5.0 - 10.0	>10.0
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	602	2.02	2.45	Nov 21	1.89	Nov 05	2.81	Nov 28 06:00	1.83	Nov 17 21:00	89.72	0.00	67.28	29.40	3.32	0.00	0.00
December	684	2.11	2.51	Dec 18	1.89	Dec 14	2.81	Dec 18 16:00	1.84	Dec 14 10:00	97.31	0.00	35.09	58.48	6.43	0.00	0.00
Annual	1368	2.06	2.51	Dec 18	1.89	Nov 05	2.81	Dec 18 16:00	1.81	Nov 01 00:00	93.5	0.00	48.10	46.93	4.97	0.00	0.00

No AAAQO

Non-Methane Hydrocarbon (NMHC) – Wembley-Portable 2018 Summary and Frequency Distribution

Wembley-Portable NMHC (ppm)												2018					
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	Percentage of Readings in Concentration Range					
												0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 5.0	5.0 - 10.0	>10.0
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	602	0.00	0.00	Nov 18	0.00	Nov 01	0.04	Nov 18 17:00	0.00	Nov 01 01:00	89.72	100.00	0.00	0.00	0.00	0.00	0.00
December	684	0.00	0.00	Dec 08	0.00	Dec 01	0.02	Dec 08 12:00	0.00	Dec 01 01:00	97.31	100.00	0.00	0.00	0.00	0.00	0.00
Annual	1368	0.00	0.00	Nov 18	0.00	Oct 30	0.04	Nov 18 17:00	0.00	Oct 28 09:00	93.5	100.00	0.00	0.00	0.00	0.00	0.00

No AAAQO

Particulate Matter (PM_{2.5}) – Wembley-Portable 2018 Summary and Frequency Distribution

Wembley-Portable PM _{2.5} (µg/m ³)												2018							
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)	AAAQO Exceedance		Percentage of Readings in Concentration Range					
												24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	719	5.92	13.96	Nov 21	1.18	Nov 30	40.53	Nov 12 19:00	0.00	Nov 03 10:00	100.00	0	0	26.70	33.94	23.50	11.27	4.31	0.28
December	739	3.88	10.12	Dec 02	0.36	Dec 12	80.04	Dec 29 08:00	0.00	Dec 03 08:00	99.46	0	1	43.03	33.29	17.86	3.65	1.89	0.27
Annual	1545	4.69	13.96	Nov 21	0.36	Dec 12	80.04	Dec 29 08:00	0.00	Oct 29 12:00	99.7	0	1	37.40	33.42	19.04	6.92	2.95	0.27

AAAQO Objectives: 24-Hr: 30 µg/m³, 1-Hr: 80 µg/m³

Ambient Temperature (ET) – Wembley-Portable 2018 Summary

Wembley-Portable Ambient Temperature (°C) 2018											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-
November	717	-3.7	3.9	Nov 18	-14.8	Nov 16	10.6	Nov 19 15:00	-23.7	Nov 17 06:00	99.6
December	740	-8.0	0.6	Dec 13	-15.9	Dec 26	4.3	Dec 11 16:00	-23.0	Dec 31 03:00	99.5
Annual	1547	-5.4	5.4	Oct 30	-15.9	Dec 26	10.6	Nov 19 15:00	-23.7	Nov 17 06:00	99.5

Wind Speed (WS) – Wembley-Portable 2018 Summary

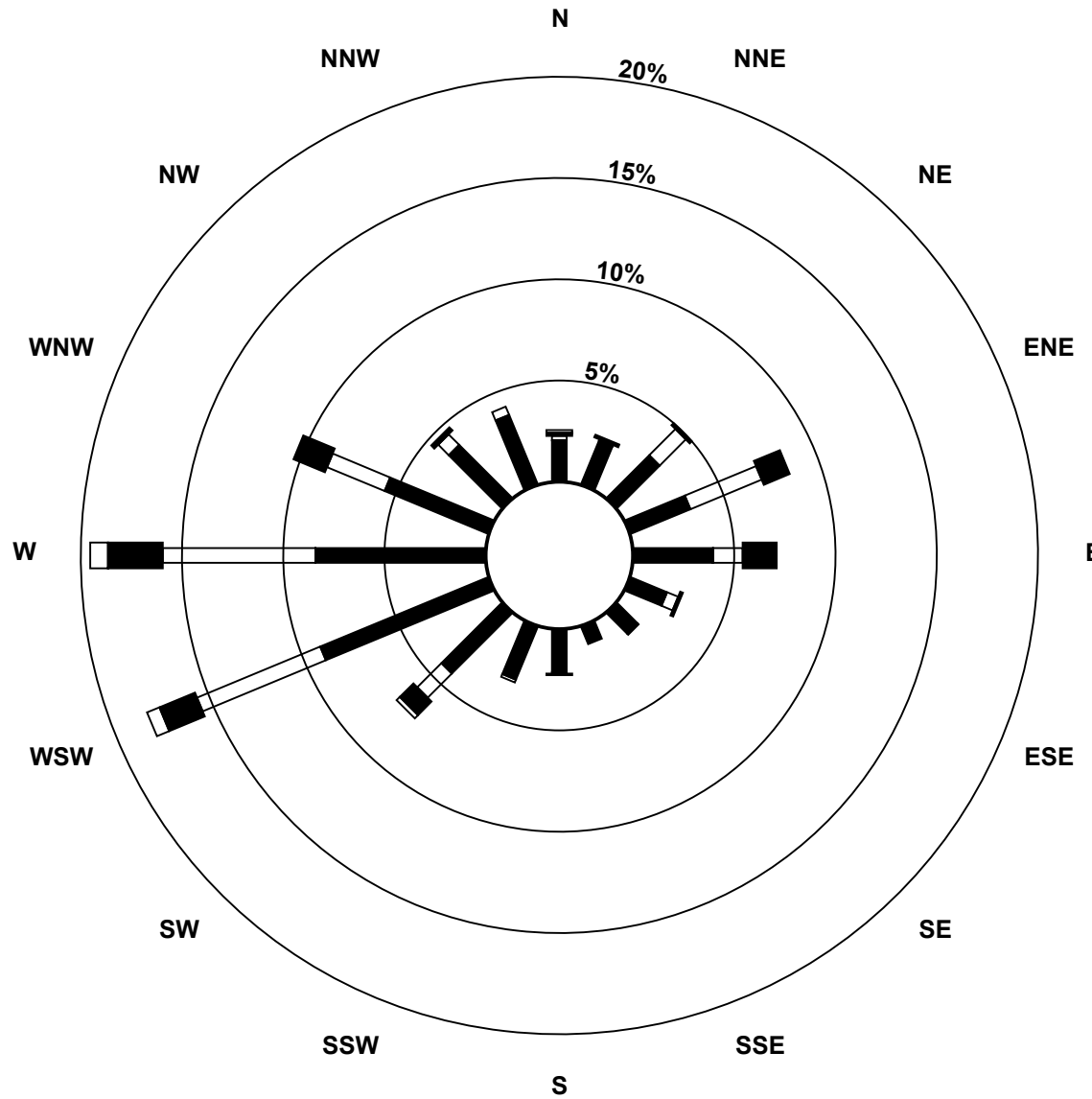
Wembley-Portable Wind Speed (km/h) 2018											
Month	# of Readings	Average	24-hr Maximum	Date	24-hr Minimum	Date	1-hr Maximum	Date	1-hr Minimum	Date	Operational Time (%)
January	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-
November	656	5.3	10.9	Nov 15	1.7	Nov 25	23.1	Nov 15 19:00	0.1	Nov 13 08:00	91.1
December	723	5.8	15.2	Dec 21	1.5	Dec 01	25.5	Dec 12 12:00	0.2	Dec 07 12:00	97.2
Annual	1469	5.6	15.2	Dec 21	1.5	Dec 01	25.5	Dec 12 12:00	0.1	Nov 13 08:00	94.1

Wind Speed and Wind Direction Frequency Distribution – Wembley-Portable 2018 Summary

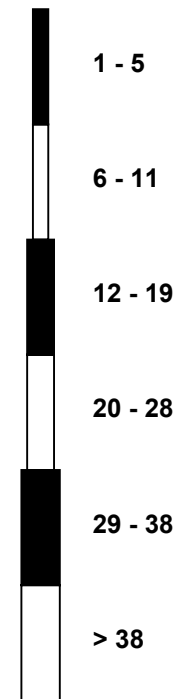
Wembley-Portable								2018
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	35	2.05	0.22	0.15	0.15	0.00	0.00	2.56
NNE	35	2.34	0.07	0.07	0.07	0.00	0.00	2.56
NE	68	3.00	1.83	0.15	0.00	0.00	0.00	4.97
ENE	115	3.22	3.80	1.39	0.00	0.00	0.00	8.41
E	97	3.95	1.46	1.68	0.00	0.00	0.00	7.10
ESE	37	1.98	0.59	0.15	0.00	0.00	0.00	2.71
SE	21	1.46	0.07	0.00	0.00	0.00	0.00	1.54
SSE	13	0.95	0.00	0.00	0.00	0.00	0.00	0.95
S	31	2.12	0.07	0.07	0.00	0.00	0.00	2.27
SSW	41	2.85	0.15	0.00	0.00	0.00	0.00	3.00
SW	97	4.24	1.68	0.95	0.22	0.00	0.00	7.10
WSW	248	9.00	6.58	1.90	0.66	0.00	0.00	18.14
WSW	267	8.41	7.53	2.71	0.88	0.00	0.00	19.53
WNW	141	5.56	3.07	1.68	0.00	0.00	0.00	10.31
NW	64	3.73	0.73	0.22	0.00	0.00	0.00	4.68
NNW	57	3.73	0.44	0.00	0.00	0.00	0.00	4.17
Totals	1367	58.60	28.31	11.12	1.98	0.00	0.00	100

Wind Rose

Wind Speed (WS) (km/h)
Wembley - 2018



Wind Speed Classes (km/h)



PAZA

PASSIVE MONITORING

2018

ANNUAL SUMMARY TABLES

Table 46. SO₂ Passive - 2018 Summary

MONITORING SITE	Sulphur Dioxide Passive (parts per billion)													MAXIMUM VALUE	ANNUAL AVERAGE
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
1	Silver Valley*													0.0	-
2	Bay Tree	0.3	0.3	0.5	0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.3	0.5	0.2
3	Forth Creek	0.3	0.3	N/S	0.4	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.4	0.4	0.3
4	Gordondale*													0.0	-
5	Boone Creek**										0.3	0.4		0.4	0.3
7	Steepprock Creek*										0.2	0.3		0.3	0.3
9	Spirit River	0.4	0.4	0.5	0.3	0.2	0.3	0.3	0.3	0.1	0.2	0.3	0.4	0.5	0.3
10	Woking*													0.0	-
11	Webber Creek**										0.3	0.6		0.6	0.4
12	Hythe	0.5	0.4	0.7	0.4	0.2	0.3	0.2	0.3	0.2	0.2	0.3	0.4	0.7	0.3
14	Sylvester	0.2	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.4	0.2
16	Beaverlodge	0.5	0.5	0.7	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.8	0.8	0.4
17	Poplar**										0.3	0.1		0.3	0.2
18	Saddle Hills	0.9	0.7	0.6	0.4	0.2	0.6	0.5	0.2	0.2	0.2	0.3	0.5	0.9	0.5
19	Wanham	0.5	0.5	0.5	0.4	0.2	0.4	0.1	0.3	0.2	0.3	0.4	0.4	0.5	0.3
20	Shaftesbury*													0.0	-
21	Eaglesham	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.2
23	Bear Lake*													0.0	-
24	Wembley	0.4	0.4	N/S	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.3	0.4	0.2
25	Pinto Creek	0.2	0.3	0.4	0.5	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.5	0.2
26	Flyingshot*													0.0	-
27	Grande Prairie I	0.6	0.4	0.7	0.4	0.2	0.3	0.3	0.2	0.2	0.2	0.4	0.6	0.7	0.4
28	Clairmont Lake													0.0	-
29	Smoky Heights	0.8	0.7	0.8	0.5	0.4	0.4	0.5	0.3	0.2	0.3	0.4	0.6	0.8	0.5
30	Fitzsimmons	0.3	0.3	0.4	0.4	0.1	0.3	0.1	0.2	0.1	0.2	0.2	0.4	0.4	0.2
32	Gold Creek	0.5	0.5	0.4	0.5	0.5	0.3	0.5	0.2	0.3	0.4	0.3	0.4	0.5	0.4
33	Wapiti*													0.0	-
34	Puskwaskau*													0.0	-
35	Jean Cote	0.3	0.2	0.5	0.2	0.1	0.1	0.2	0.3	0.1	0.1	0.3	0.3	0.5	0.2
36	Guy	0.2	0.2	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.2
37	Crooked Creek	0.3	0.3	0.5	0.2	0.2	0.2	0.2	0.1	0.1	0.3	0.3	0.2	0.5	0.2
38	Karr Creek*													0.0	-
39	Clouston Creek	0.4	0.2	0.4	0.5	0.1	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.5	0.3
40	McLennan	0.3	0.2	0.6	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.6	0.3
41	Valleyview*													0.0	-
42	Sunset House	0.4	0.3	0.4	0.3	0.2	0.1	0.6	0.2	0.1	0.2	0.4	0.4	0.6	0.3
43	High Prairie													0.0	-
44	Peavine	0.2	0.2	0.3	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.3	0.2
45	Gift Lake*													0.0	-
46	Little Smoky	0.3	0.2	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.2
47	Kinuso	0.2	0.1	0.3	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.2
48	Deer Mountain*													0.0	-
49	Grande Prairie HP	0.4	0.5	0.5	0.4	0.2	0.2	0.2	0.2	0.2	N/S	0.4		0.5	0.3
62	East Prairie	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1
* Monitoring at these sites discontinued January 2018															
** Monitoring at these sites resumed November 2018															
Average		0.4	0.3	0.5	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.3		0.3
Peak		0.9	0.7	0.8	0.5	0.5	0.6	0.6	0.3	0.3	0.4	0.4	0.8	0.9	

BDL=Below Detection Limit (>0.02ppm); N/A=Sample not collected (damaged, missing, inaccessible, etc)

Table 47. NO₂ Passive - 2018 Summary

MONITORING SITE	Nitrogen Dioxide Passive (parts per billion)												MAXIMUM VALUE	ANNUAL AVERAGE	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
1	Silver Valley*													0.0	-
2	Bay Tree	0.4	0.6	0.8	0.3	0.3	0.5	0.4	0.5	0.6	1.1	1.5	1.6	1.6	0.7
3	Forth Creek	1.5	0.4	N/S	0.4	0.2	0.2	0.3	0.2	0.4	0.3	0.3	0.4	1.5	0.4
4	Gordondale*													0.0	-
5	Boone Creek**											0.3	0.4	0.4	0.3
7	Steepprock Creek*											0.2	0.3	0.3	0.3
9	Spirit River	1.7	0.7	0.4	0.3	1.5	4.1	0.3	0.3	0.1	0.2	0.3	1.8	4.1	1.0
10	Woking*													0.0	-
11	Webber Creek**											0.3	0.6	0.6	0.4
12	Hythe	3.8	0.9	0.6	0.3	0.8	1.2	0.8	0.6	0.2	0.2	0.3	0.4	3.8	0.8
14	Sylvester	4.3	0.5	0.5	0.1	0.6	0.4	0.3	0.4	0.9	0.7	1.1	1.6	4.3	1.0
16	Beaverlodge	3.2	1.3	1.4	0.6	0.6	1.0	0.9	1.0	1.3	2.1	4.2	4.3	4.3	1.8
17	Poplar**											3.8	4.2	4.2	4.0
18	Saddle Hills	1.6	0.6	0.3	0.1	0.4	1.4	0.3	0.4	0.5	1.0	1.7	1.4	1.7	0.8
19	Wanham	1.4	0.4	0.3	BDL	0.6	1.1	0.5	0.5	0.5	1.2	1.9	1.1	1.9	0.9
20	Shaftesbury*													0.0	-
21	Eaglesham	1.4	0.5	0.2	0.1	1.1	3.8	0.5	0.4	0.4	1.3	1.2	2.4	3.8	1.1
23	Bear Lake*													0.0	-
24	Wembley	3.8	1.3		0.5	1.5	2.1	0.9	0.8	1.1	2.5	3.8	6.7	6.7	2.3
25	Pinto Creek	3.1	0.4	0.5	0.2	0.3	0.7	0.5	0.5	0.6	1.0	1.6	2.3	3.1	1.0
26	Flyingshot*													0.0	-
27	Grande Prairie I	18.8	6.9	7.0	3.6	2.5	2.6	1.9	2.2	3.8	6.3	12.8	14.1	18.8	6.9
28	Clairmont Lake													0.0	-
29	Smoky Heights	2.9	1.5	0.9	0.4	0.9	1.7	0.6	0.7	0.7	2.1	3.3	4.3	4.3	1.7
30	Fitzsimmons	2.9	1.4	0.6	0.5	0.7	1.2	Missing	1.1	0.9	2.0	3.2	0.4	3.2	1.4
32	Gold Creek	3.4	3.6	2.4	1.2	1.3	1.1	1.1	1.4	1.6	4.2	4.4	8.4	8.4	2.8
33	Wapiti*													0.0	-
34	Puskwaskau*													0.0	-
35	Jean Cote	4.6	0.7	0.4	0.2	0.3	1.8	0.8	0.4	0.6	1.1	1.3	2.4	4.6	1.2
36	Guy	1.7	0.5	0.2	0.2	2.4	4.9	0.9	0.4	0.5	1.1	1.3	1.1	4.9	1.3
37	Crooked Creek	2.9	1.2	0.8	BDL	0.7	1.8	0.5	0.6	0.6	2.3	3.2	3.3	3.3	1.6
38	Karr Creek*													0.0	-
39	Clouston Creek	2.2	0.6	0.4	0.2	0.7	1.9	0.5	0.4	0.4	1.1	2.2	2.4	2.4	1.1
40	McLennan	2.5	0.9	0.4	0.2	1.3	2.5	0.6	0.4	0.9	1.1	1.3	2.2	2.5	1.2
41	Valleyview*													0.0	-
42	Sunset House	1.6	0.6	0.2	BDL	0.4	0.6	0.3	0.5	0.5	0.9	1.4	1.3	1.6	0.8
43	High Prairie													0.0	-
44	Peavine	1.0	0.3	0.2	BDL	0.2	0.3	0.2	0.2	0.2	0.6	1.4	1.2	1.4	0.5
45	Gift Lake*													0.0	-
46	Little Smoky	5.9	2.8	1.7	1.5	1.0	0.9	0.9	1.3	1.9	3.9	3.5	6.6	6.6	2.6
47	Kinuso	2.5	0.8	0.4	0.3	0.3	0.5	0.4	0.4	0.4	0.9	1.4	1.8	2.5	0.8
48	Deer Mountain*													0.0	-
49	Grande Prairie HP	4.3	7.5	6.0	3.4	1.4	1.9	1.6	2.8	3.1	8.3	N/S	13.7	13.7	4.9
62	East Prairie	1.3	0.2	0.2	0.2	0.1	0.4	0.2	0.2	0.2	0.6	0.7	1.3	1.3	0.5
Average		3.3	1.4	1.1	0.7	0.8	1.6	0.6	0.7	0.9	1.9	2.2	3.1		1.5
Peak		18.8	7.5	7.0	3.6	2.5	4.9	1.9	2.8	3.8	8.3	12.8	14.1	18.8	

* Monitoring at these sites discontinued January 2018

** Monitoring at these sites resumed November 2018

BDL=Below Detection Limit (>0.03ppm); N/A=Sample not collected (damaged, missing, inaccessible, etc)

Table 48. O₃ Passive - 2018 Summary

MONITORING SITE		Ozone Passive (parts per billion)												MAXIMUM VALUE	ANNUAL AVERAGE
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
1	Silver Valley*													0.0	-
2	Bay Tree	28.7	41.5	46.9	45.5	43.6	35.5	21.8	26.8	BDL	41.2	29.3	40.2	46.9	36.5
3	Forth Creek*													0.0	-
4	Gordondale*													N/A	-
5	Boone Creek*													0.0	-
7	Steepprock Creek*													0.0	-
9	Spirit River*													0.0	-
10	Woking*													0.0	-
11	Webber Creek*													0.0	-
12	Hythe*													0.0	-
14	Sylvester*													0.0	-
16	Beaverlodge*													0.0	-
17	Poplar*													0.0	-
18	Saddle Hills*													0.0	-
19	Wanham*													0.0	-
20	Shaftesbury*													0.0	-
21	Eaglesham*													0.0	-
23	Bear Lake*													0.0	-
24	Wembley*													0.0	-
25	Pinto Creek*													0.0	-
26	Flyingshot*													0.0	-
27	Grande Prairie I*													0.0	-
28	Clairmont Lake*													0.0	-
29	Smoky Heights*													0.0	-
30	Fitzsimmons*													0.0	-
32	Gold Creek*													0.0	-
33	Wapiti*													0.0	-
34	Puskwaskau*													0.0	-
35	Jean Cote*													0.0	-
36	Guy*													0.0	-
37	Crooked Creek	33.9	48.1	50.5	50.6	47.1	31.9	24.2	21.6	23.0	25.6	N/S	30.8	50.6	35.2
38	Karr Creek*													0.0	-
39	Clouston Creek*													0.0	-
40	McLennan*													0.0	-
41	Valleyview*													0.0	-
42	Sunset House*													0.0	-
43	High Prairie*													0.0	-
44	Peavine*													0.0	-
45	Gift Lake*													0.0	-
46	Little Smoky*													0.0	-
47	Kinuso	36.8	42.5	51.9	44.7	37.3	30.8	22.3	26.6	23.6	26.0	28.7	30.4	51.9	33.4
48	Deer Mountain*													0.0	-
49	Grande Prairie HP*													0.0	-
62	East Prairie*													0.0	-

* Monitoring at these sites discontinued January 2018

Average	33.1	44.0	49.8	47.0	42.7	32.7	22.8	25.0	23.3	30.9	29.0	33.8			35.0
Peak	36.8	48.1	51.9	50.6	47.1	35.5	24.2	26.8	23.6	41.2	29.3	40.2	51.9		

BDL=Below Detection Limit (>0.01ppm); N/A=Sample not collected (damaged, missing, inaccessible, etc)

Table 49. H₂S Passive - 2018 Summary

MONITORING SITE		Hydrogen Sulphide Passive (parts per billion)												MAXIMUM VALUE	ANNUAL AVERAGE
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
1	Gift Lake*													0.0	-
2	Girouxville 3	0.5	0.2	N/S	0.3	0.4	0.2	0.3	0.3	0.1	Damaged	0.4	0.5	0.5	0.3
3	Girouxville 4	0.4	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.4	0.2
4	Guy	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1
* Monitoring at this site discontinued January 2018															
	Average	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.1	0.2	0.3	0.3		0.2
	Peak	0.5	0.2	0.1	0.3	0.4	0.2	0.3	0.3	0.2	0.2	0.4	0.5	0.5	

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End of Report**