



Peace Airshed Zone Association

Ambient Air Monitoring Network Summary

**Continuous Ambient Air Quality Monitoring Program
Annual Report
2015**

Operations



Peace Airshed Zone Association 2013 Annual Ambient Air Monitoring Report

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February 29th, 2016

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

RE: Peace Airshed Zone Association (PAZA) – 2015 Annual Ambient Air Monitoring Report

Please find enclosed for your review the Peace Airshed Zone Association (PAZA) 2015 Ambient Air Monitoring Network Annual Report.

This report is submitted by PAZA on behalf of the industrial member companies to satisfy the requirements of the following facility Operating Approvals:

Company	Facility	LSD	EPEA Approval Number
Advantage Oil & Gas Ltd.	Glacier	05-02-076-13-W6	262479-00-00
Alberta Power (2000) Ltd. (an ATCO company)	Sturgeon	SW-06-069-21-W5	10283-02-02
ATCO Power Canada	Poplar Hill	11-19-073-08-W6	67774-01-01
ATCO Power Canada	Valleyview	SW-06-069-21-W5	147709-01-01
AltaGas Ltd.	Pouce Coupe	03-03-081-13-W6	247673-00-00
	Ante Creek	02-26-068-25-W5	266694-00-00
	Gordondale	16-31-78-11-W6M	287474-00-00
Apache Canada Ltd.	House Mountain	01-08-070-10-W5	10137-02-02
Birchcliff Energy Ltd.	Pouce Coupe	03-22-078-12-W6	252529-00-00
Canadian Natural Resources Limited	Bonanza	11-25-081-11-W6	00000029-01-00
	Progress/Gordondale	01-01-077-10-W6	00010036-02-00

Company	Facility	LSD	EPEA Approval Number
	Gold Creek	13-26-067-05-W6	00010446-02-00
	Teepee Creek	SE-2-074-04-W6	00001635-02-00
	Sturgeon/Valleyview	02-02-069-22-W5	1633-02-00
Canfor Forest Products	Grande Prairie	SW-23-071-06-W6	152645-01-00
Conocophillips Canada Energy Partnership	Wembley	06-19-073-08-W6	00000212-01-00
Devon Canada	NW Belloy (Dunvegan)	16-36-079-03-W6	00009810-02-00
	Eaglesham (South)	02-14-077-25-W5	00047669-01-00
	North Normanville	03-36-079-23-W5	00047455-01-00
	West Culp	05-34-078-25-W6	00136284-00-00
	Cecil	08-15-084-08-W6	00010032-02-00
Encana Corporation	Sexsmith	04-08-075-07-W6	00010002-01-00
Enerplus Resources	Pouce Coupe	SW-06-069-21-W5	1464-02-03
Grande Prairie Generation Inc.	Northern Prairie Power Project	04-19-073-08-W6	00238762-00-00
Long Run Exploration	Eaglesham	01-25-076-01-W6	00241532-00-00
	Kakut	14-12-075-03-W6	00248469-00-00
	Donnelly	06-01-077-21-W5	00000087-02-00
	Puskwaskau	03-26-074-01-W6	00017524-01-00
Longview Oil Corp.	Sunset House	06-22-070-20-W5	138884-01-00
Penn West Petroleum Ltd.	Tangent	13-29-080-23-W5	00001746-02-00

Company	Facility	LSD	EPEA Approval Number
	Pouce Coupe	16-07-078-11-W6	00000614-01-00
Petrus Resources	Rycroft	08-25-077-06-W6	11351-02-00
	Spirit River	08-34-077-06-W6	11096-02-00
Spectra Energy Midstream Corporation	Fourth Creek	16-11-082-09-W6	00000263-01-00
	Gordondale	11-26-079-09-W6	00011495-01-01
	Pouce Coupe/Bonanza	3-23-080-13-W6	00070203-01-01
Suncor Energy Inc.	Progress	07-22-078-09-W6	00011428-02-00
TAQA North Ltd.	Valhalla	13-21-076-09-W6	00017620-01-00
Veresen Energy	Hythe Brainard	11-18-074-12-W6	00010910-02-00
Weyerhaeuser Canada	Grande Prairie Pulp and Wood Plant	01-14-070-05-W6	00000113-02-00

The PAZA network consists of seven continuous air monitoring stations including Henry Pirker (Grande Prairie), Evergreen Park, Smoky Heights, Beaverlodge, Valleyview, Falher and a portable station. The portable station was located in Clairmont and will be referred to as the Clairmont-Portable station in this report and operated between June 19th, 2014 and September 30th 2015. The portable station was idle for the balance of 2015.

There were no 1-hour, 24-hour or annual averages of sulphur dioxide, nitrogen dioxide, ozone, or carbon monoxide above the Alberta Ambient Air Quality Objectives (AAAQO).

There were five (5) 1-hr averages of hydrogen sulphide above the AAAQO of 10 pbb.

There were fifteen (15) 1-hr averages of PM_{2.5} above the Alberta Ambient Air Quality Guideline (AAAQG) of 80 µg/m³.

	Date	Time (Hour Ending)	Location	Recorded Concentration ($\mu\text{g}/\text{m}^3$)
One (1) 1-hr average $\text{PM}_{2.5}$	21-Mar	10:00	Beaverlodge	86.2
One (1) 1-hr average $\text{PM}_{2.5}$	22-Mar	1:00	Beaverlodge	81.9
One (1) 1-hr average $\text{PM}_{2.5}$	10-Apr	20:00	Clairmont	92.0
One (1) 1-hr average $\text{PM}_{2.5}$	23-May	4:00	Henry Pirker	161.4
One (1) 1-hr average $\text{PM}_{2.5}$	22-May	22:00	Clairmont	89.8
One (1) 1-hr average $\text{PM}_{2.5}$	24-May	21:00	Clairmont	143.9
One (1) 1-hr average $\text{PM}_{2.5}$	1-Jul	0:00	Henry Pirker	110.6
One (1) 1-hr average $\text{PM}_{2.5}$	8-Jun	11:00	Evergreen Park	98.0
One (1) 1-hr average $\text{PM}_{2.5}$	11-Jun	20:00	Evergreen Park	144.2
One (1) 1-hr average $\text{PM}_{2.5}$	11-Jun	21:00	Evergreen Park	99.8
One (1) 1-hr average $\text{PM}_{2.5}$	21-Jun	1:00	Clairmont	89.5
One (1) 1-hr average $\text{PM}_{2.5}$	9-Jul	23:00	Beaverlodge	92.8
One (1) 1-hr average $\text{PM}_{2.5}$	27-Nov	20:00	Henry Pirker	97.7
One (1) 1-hr average $\text{PM}_{2.5}$	13-Dec	11:00	Smoky Heights	86.3
One (1) 1-hr average $\text{PM}_{2.5}$	28-Dec	4:00	Smoky Heights	100.8
	Date	Time (Hour Ending)	Location	Recorded Concentration (ppb)
One (1) 1-hr average H_2S	2-Feb	19:00	Valleyview	14.1
One (1) 1-hr average H_2S	22-Mar	23:00	Valleyview	13.2
One (1) 1-hr average H_2S	3-Dec	14:00	Valleyview	13.7
One (1) 1-hr average H_2S	3-Dec	15:00	Valleyview	24.5
One (1) 1-hr average H_2S	3-Dec	16:00	Valleyview	14.5

The passive monitoring network consists of forty-six (46) sampling locations. The parameters measured at each site are sulphur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3) and/or hydrogen sulphide (H_2S). There were no exceedences of the AAAQO for sulphur dioxide, nitrogen dioxide, ozone, or hydrogen sulphide.

Figure 1 shows the location of the continuous monitoring sites, and Figure 2 shows the location of the passive monitoring sites.

Additional information about PAZA, including its membership, objectives and details on the monitoring network are included on the web at <http://www.PAZA.ca/>.



www.paza.ca

We trust that the report satisfies your requirements and if you have any questions or concerns please contact Patrick Andersen, PAZA Program Manager 780.833.4343 or 403.505.1041

Sincerely,

On Behalf of the Peace Airshed Zone Association,

Patrick Andersen, B.Sc.
Program Manager

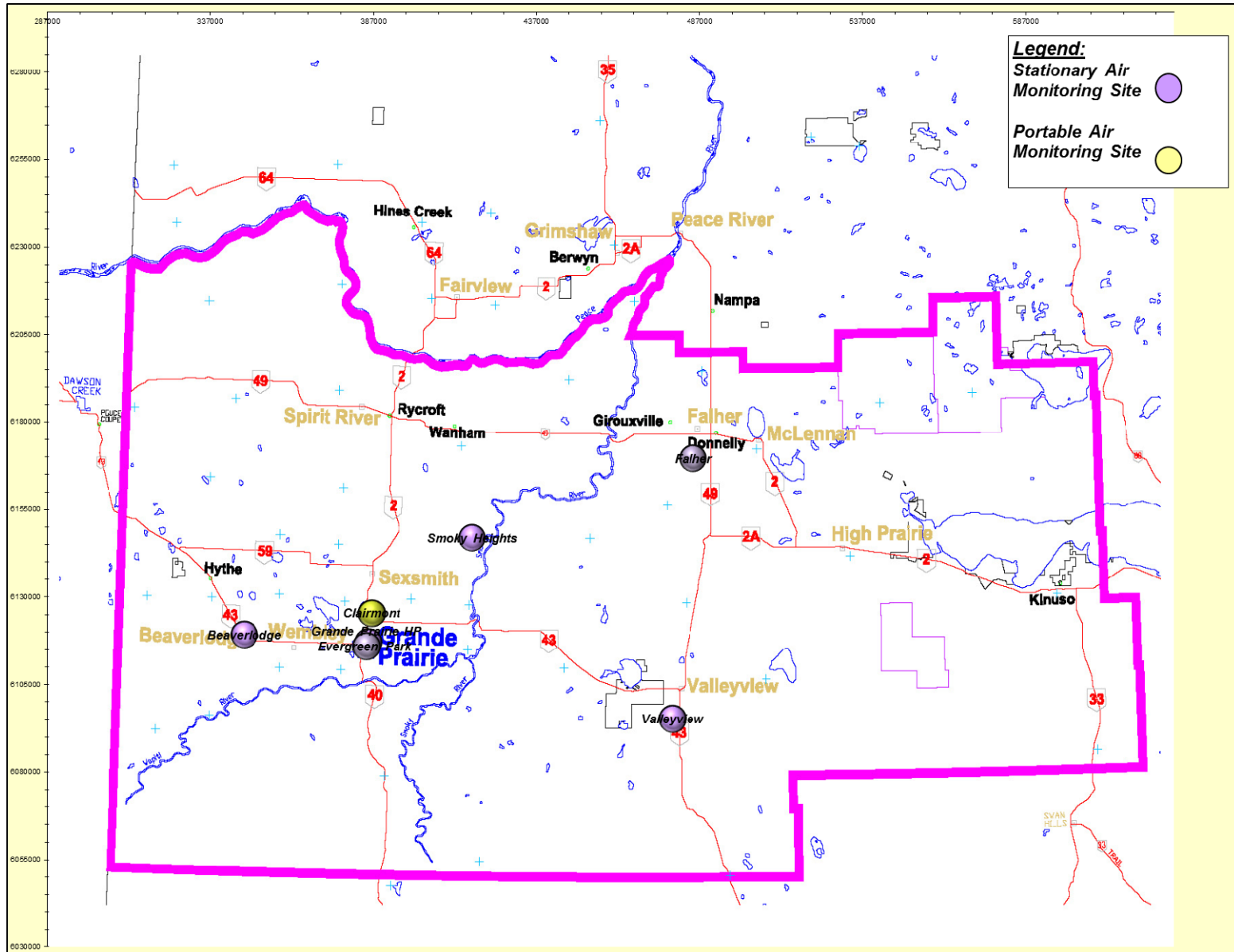


Figure 1. Peace Airshed Zone Association – Continuous Air Monitoring Network

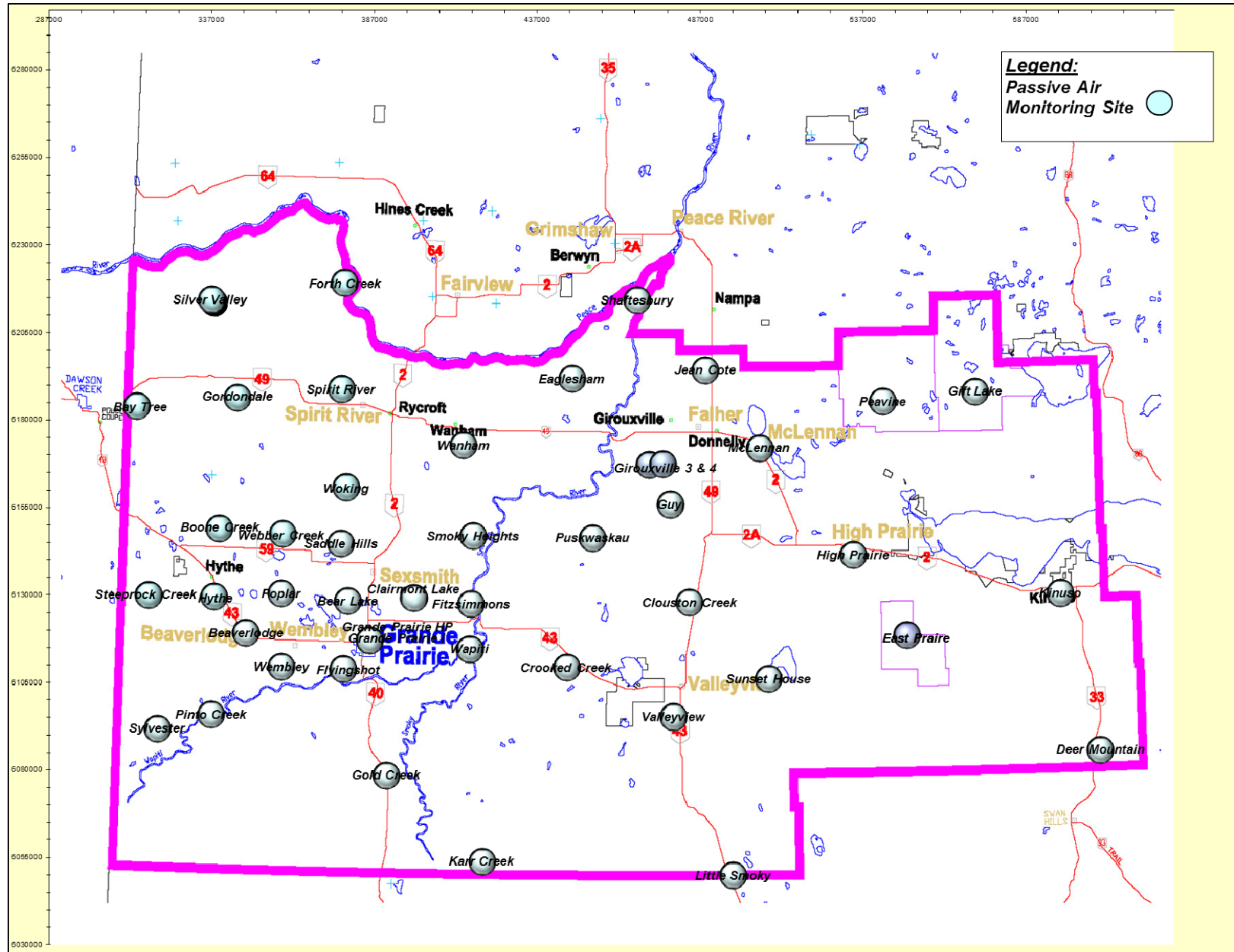


Figure 2. Peace Airshed Zone Association – Passive Air Monitoring Network

PAZA

HENRY PIRKER

CONTINUOUS AMBIENT AIR MONITORING STATION

2015

ANNUAL SUMMARY TABLES

Table 1. Henry Pirker - Key Parameters – Continuous Monitoring Data – 2015 Summary

Parameter	Monitoring Station	Annual Average	Maximum Values				Operational Time (%)	Readings above AAAQO	
			24-hr	Date	1-hr	Date		24-hr	1-hr
Sulphur Dioxide SO₂ measured in ppb	Henry Pirker	0.19	1.76	Feb 12	10.93	Mar 03 15:00	99.9	0	0
Nitrogen Dioxide NO₂ measured in ppb	Henry Pirker	9.65	38.27	Jan 12	71.70	Feb 04 15:00	99.9	0	0
Ozone O₃ measured in ppb	Henry Pirker	23.01	54.17	May 12	73.23	May 25 15:00	99.9	0	0
Carbon Monoxide CO measured in ppm	Henry Pirker	0.22	0.75	Feb 12	1.85	Nov 28 23:00	99.8	-	0
Total Hydrocarbons THC measured in ppm	Henry Pirker	2.02	2.90	Jan 12	5.09	Apr 10 04:00	97.3	-	-
Total Reduced Sulphur TRS measured in ppb	Henry Pirker	0.23	0.85	Dec 10	2.63	Dec 10 05:00	99.9	-	-
Particulate Matter PM_{2.5} measured in µg/m³	Henry Pirker	6.29	29.89	May 26	161.39	May 23 04:00	99.7	0	3

Table 2. Sulphur Dioxide (SO₂) – Henry Pirker 2015 Summary and Frequency Distribution

Henry Pirker		SO ₂ (ppb)										2015			
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340
January	708	0.36	0.99	Jan 10	3.01	Jan 10 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	638	0.51	1.76	Feb 12	4.95	Feb 20 03:00	99.4	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.21	1.13	Mar 03	10.93	Mar 03 15:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	685	0.13	0.28	Apr 20	1.75	Apr 20 15:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	708	0.28	0.69	May 07	7.62	May 07 12:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	684	0.09	0.34	Jun 13	2.01	Jun 13 01:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	709	0.11	0.70	Jul 17	3.93	Jul 17 01:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	708	0.10	0.37	Aug 14	2.16	Aug 14 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	681	0.10	0.48	Sep 03	2.60	Sep 03 10:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	708	0.08	0.26	Oct 17	1.42	Oct 17 13:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	686	0.21	0.83	Nov 03	6.78	Nov 26 22:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	707	0.14	0.63	Dec 14	5.43	Dec 14 15:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8331	0.19	1.76	Feb 12	10.93	Mar 03 15:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 3. Nitrogen Dioxide (NO₂) – Henry Pirker 2015 Summary and Frequency Distribution

Henry Pirker		NO ₂ (ppb)										2015			
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 25	25 - 50	50 - 110	110 - 210	>210	
January	706	20.34	38.27	Jan 12	67.08	Jan 12 23:00	99.7	0	0	62.89	35.55	1.56	0.00	0.00	
February	632	14.06	36.72	Feb 04	71.70	Feb 04 15:00	99.4	0	0	82.28	16.93	0.79	0.00	0.00	
March	707	11.16	22.09	Mar 13	46.16	Mar 14 08:00	99.9	0	0	87.84	12.16	0.00	0.00	0.00	
April	683	5.50	12.11	Apr 09	35.36	Apr 10 00:00	100.0	0	0	97.80	2.20	0.00	0.00	0.00	
May	707	5.21	13.08	May 08	36.91	May 08 00:00	100.0	0	0	99.01	0.99	0.00	0.00	0.00	
June	683	4.01	7.16	Jun 10	20.20	Jun 10 00:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	
July	707	3.15	5.45	Jul 08	13.16	Jul 08 04:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	
August	707	3.99	6.88	Aug 27	17.81	Aug 31 23:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	
September	684	5.43	10.18	Sep 30	25.16	Sep 30 23:00	100.0	0	0	99.85	0.15	0.00	0.00	0.00	
October	707	9.63	17.23	Oct 28	40.48	Oct 30 09:00	100.0	0	0	96.75	3.25	0.00	0.00	0.00	
November	684	15.29	32.85	Nov 28	57.08	Nov 19 10:00	100.0	0	0	79.09	20.18	0.73	0.00	0.00	
December	706	18.23	34.27	Dec 01	44.18	Dec 01 17:00	99.9	0	0	80.45	19.55	0.00	0.00	0.00	
Annual	8313	9.65	38.27	Jan 12	71.70	Feb 04 15:00	99.9	0	0	91.56	8.30	0.14	0.00	0.00	

Table 4. Ozone (O₃) – Henry Pirker 2015 Summary and Frequency Distribution

Henry Pirker O ₃ (ppb) 2015															
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 2	2 - 10	10 - 20	20 - 40	40 - 82	>82
January	708	14.69	31.84	Jan 01	36.65	Jan 01 19:00	100.0	0	0	14.83	26.55	20.90	37.71	0.00	0.00
February	636	21.96	35.70	Feb 24	44.24	Feb 28 16:00	99.4	0	0	2.20	19.34	15.88	60.69	1.89	0.00
March	708	28.87	40.58	Mar 08	48.68	Mar 17 17:00	99.9	0	0	2.12	8.19	11.86	62.57	15.25	0.00
April	685	33.10	46.70	Apr 30	54.05	Apr 27 16:00	100.0	0	0	1.31	3.50	8.03	57.66	29.49	0.00
May	709	40.25	54.17	May 12	73.23	May 25 15:00	100.0	0	0	0.85	1.27	5.92	37.80	54.16	0.00
June	684	28.55	41.00	Jun 06	52.63	Jun 27 13:00	99.7	0	0	0.44	3.07	20.03	60.96	15.50	0.00
July	704	26.01	35.76	Jul 03	57.34	Jul 11 20:00	100.0	0	0	0.00	2.84	21.45	69.89	5.82	0.00
August	708	23.27	29.23	Aug 19	45.04	Aug 26 16:00	100.0	0	0	0.00	11.02	25.71	61.30	1.98	0.00
September	687	20.52	30.52	Sep 25	40.15	Sep 12 13:00	100.0	0	0	1.31	17.76	26.06	54.73	0.15	0.00
October	709	17.64	33.51	Oct 13	44.31	Oct 10 07:00	100.0	0	0	13.96	15.94	25.39	43.86	0.85	0.00
November	686	14.60	37.49	Nov 21	39.73	Nov 21 03:00	100.0	0	0	22.74	22.30	19.83	35.13	0.00	0.00
December	708	6.78	19.71	Dec 18	37.63	Dec 31 22:00	99.9	0	0	42.51	31.50	15.82	10.17	0.00	0.00
Annual	8332	23.01	54.17	May 12	73.23	May 25 15:00	99.9	0	0	8.47	13.02	17.95	49.45	11.10	0.00

Table 5. Carbon Monoxide (CO) – Henry Pirker 2015 Summary and Frequency Distribution

Henry Pirker CO (ppm) 2015															
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 0.1	0.1 - 1.0	1.0 - 2.5	2.5 - 5.0	5.0 - 13.0	> 13.0
January	693	0.28	0.57	Jan 12	1.59	Jan 12 23:00	100.0	0	0	1.73	97.40	0.87	0.00	0.00	0.00
February	630	0.29	0.75	Feb 12	1.46	Feb 12 22:00	98.7	0	0	0.16	97.94	1.90	0.00	0.00	0.00
March	709	0.24	0.33	Mar 13	0.92	Mar 16 08:00	100.0	0	0	0.85	99.15	0.00	0.00	0.00	0.00
April	684	0.20	0.31	Apr 10	0.69	Apr 10 03:00	100.0	0	0	0.58	99.42	0.00	0.00	0.00	0.00
May	706	0.18	0.29	May 08	0.70	May 23 04:00	99.7	0	0	1.98	98.02	0.00	0.00	0.00	0.00
June	683	0.16	0.25	Jun 01	0.41	Jun 18 23:00	99.7	0	0	2.05	97.95	0.00	0.00	0.00	0.00
July	708	0.15	0.31	Jul 10	0.52	Jul 09 22:00	100.0	0	0	3.11	96.89	0.00	0.00	0.00	0.00
August	709	0.14	0.17	Aug 26	0.39	Aug 30 00:00	100.0	0	0	2.82	97.18	0.00	0.00	0.00	0.00
September	686	0.15	0.21	Sep 30	0.57	Oct 01 00:00	100.0	0	0	2.19	97.81	0.00	0.00	0.00	0.00
October	708	0.21	0.29	Oct 29	0.93	Oct 30 09:00	100.0	0	0	1.98	98.02	0.00	0.00	0.00	0.00
November	686	0.29	0.72	Nov 28	1.85	Nov 28 23:00	100.0	0	0	0.00	97.67	2.33	0.00	0.00	0.00
December	705	0.35	0.64	Dec 01	1.04	Dec 01 19:00	99.6	0	0	0.14	99.57	0.28	0.00	0.00	0.00
Annual	8307	0.22	0.75	Feb 12	1.85	Nov 28 23:00	99.8	0	0	1.57	98.08	0.36	0.00	0.00	0.00

Table 6. Total Hydrocarbons (THC) – Henry Pirker 2015 Summary and Frequency Distribution

Henry Pirker															THC (ppm)		2015	
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	*AAQO		Number of Readings in Concentration Range								
								24-Hr	1-Hr	0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 5.0	5.0 - 10.0	>10.0			
January	707	2.10	2.90	Jan 12	3.16	Jan 12 23:00	100.0	0	0	0.00	52.90	36.21	10.89	0.00	0.00			
February	631	2.07	2.40	Feb 18	3.10	Feb 27 17:00	99.3	0	0	0.00	51.82	42.79	5.39	0.00	0.00			
March	708	2.02	2.25	Mar 29	4.05	Mar 30 08:00	100.0	0	0	0.00	65.25	32.49	2.26	0.00	0.00			
April	682	1.97	2.57	Apr 10	5.09	Apr 10 04:00	100.0	0	0	0.00	87.10	8.65	3.96	0.29	0.00			
May	708	1.95	2.20	May 08	3.31	May 08 03:00	100.0	0	0	0.00	86.86	10.31	2.82	0.00	0.00			
June	683	1.89	1.97	Jun 25	3.26	Jun 25 06:00	99.7	0	0	0.00	88.29	11.27	0.44	0.00	0.00			
July	680	1.90	2.06	Jul 31	2.74	Jul 31 03:00	96.1	0	0	0.00	90.88	8.38	0.74	0.00	0.00			
August	544	1.87	2.06	Aug 27	2.86	Aug 05 06:00	77.7	0	0	1.47	85.11	12.50	0.92	0.00	0.00			
September	686	1.98	2.19	Sep 30	4.00	Sep 30 07:00	100.0	0	0	0.00	75.36	23.32	1.31	0.00	0.00			
October	706	2.09	2.40	Oct 07	3.60	Oct 07 07:00	100.0	0	0	0.00	48.44	45.33	6.23	0.00	0.00			
November	684	2.09	2.74	Nov 25	4.82	Nov 25 01:00	99.7	0	0	0.00	54.09	38.01	7.89	0.00	0.00			
December	681	2.27	2.83	Dec 29	3.57	Dec 06 21:00	96.1	0	0	0.00	12.78	66.96	20.26	0.00	0.00			
Annual	8100	2.02	2.90	Jan 12	5.09	Apr 10 04:00	97.3	0	0	0.10	67.48	27.59	4.80	0.03	0.00			

*No Alberta Environment Objectives or Guidelines for THC

Table 7. Total Reduced Sulphur (TRS) – Henry Pirker 2015 Summary and Frequency Distribution

Henry Pirker															TRS (ppb)		2015	
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	*AAQO		Number 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	707	0.28	0.82	Jan 11	1.08	Jan 11 20:00	100.0	0	0	99.43	0.57	0.00	0.00	0.00	0.00			
February	635	0.27	0.56	Feb 12	1.55	Feb 13 03:00	99.4	0	0	99.37	0.63	0.00	0.00	0.00	0.00			
March	709	0.19	0.38	Mar 03	0.86	Mar 03 23:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00			
April	682	0.17	0.29	Apr 27	0.72	Apr 10 08:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00			
May	708	0.15	0.33	May 13	0.73	May 21 09:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00			
June	677	0.13	0.58	Jun 02	1.98	Jul 01 00:00	99.3	0	0	99.85	0.15	0.00	0.00	0.00	0.00			
July	707	0.14	0.32	Jul 12	1.28	Jul 12 03:00	100.0	0	0	99.58	0.42	0.00	0.00	0.00	0.00			
August	708	0.24	0.39	Aug 09	0.80	Aug 29 08:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00			
September	685	0.16	0.31	Sep 09	1.19	Sep 09 09:00	100.0	0	0	99.71	0.29	0.00	0.00	0.00	0.00			
October	707	0.25	0.50	Oct 07	1.26	Oct 07 08:00	100.0	0	0	99.43	0.57	0.00	0.00	0.00	0.00			
November	686	0.30	0.69	Nov 28	1.75	Nov 09 18:00	100.0	0	0	98.10	1.90	0.00	0.00	0.00	0.00			
December	707	0.43	0.85	Dec 10	2.63	Dec 10 05:00	99.9	0	0	98.02	1.84	0.14	0.00	0.00	0.00			
Annual	8318	0.23	0.85	Dec 10	2.63	Dec 10 05:00	99.9	0	0	99.48	0.51	0.01	0.00	0.00	0.00			

*No Alberta Environment Objectives or Guidelines for TRS

Table 8. Particulate Matter (PM_{2.5}) – Henry Pirker 2015 Summary and Frequency Distribution

Henry Pirker		PM _{2.5} (µg/m ³)										2015			
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30
January	733	6.54	18.80	Jan 12	55.87	Jan 21 14:00	98.9	0	0	23.47	36.97	22.51	11.05	5.46	0.55
February	668	6.53	20.53	Feb 12	59.41	Feb 15 21:00	99.4	0	0	19.76	45.66	17.22	11.08	4.49	1.80
March	744	4.64	11.62	Mar 01	28.54	Mar 04 01:00	100.0	0	0	27.96	46.37	18.95	5.24	1.48	0.00
April	720	3.67	12.21	Apr 10	32.78	Apr 10 03:00	100.0	0	0	33.33	54.72	8.61	1.67	1.39	0.28
May	743	9.08	29.89	May 26	161.39	May 23 04:00	99.9	0	1	8.61	37.28	29.07	12.38	9.69	2.96
June	717	6.11	15.61	Jun 30	110.63	Jul 01 00:00	99.7	0	1	8.79	52.02	27.48	9.76	1.81	0.14
July	743	7.18	27.52	Jul 10	52.55	Jul 09 22:00	99.9	0	0	23.55	44.68	12.38	7.00	10.63	1.75
August	744	3.82	7.81	Aug 27	15.16	Aug 27 03:00	100.0	0	0	26.88	57.80	14.11	1.21	0.00	0.00
September	720	3.40	6.72	Sep 24	16.71	Sep 02 04:00	100.0	0	0	39.58	49.03	10.56	0.83	0.00	0.00
October	731	5.15	9.93	Oct 07	29.39	Oct 24 21:00	98.3	0	0	19.56	46.51	27.63	4.92	1.37	0.00
November	720	7.55	19.45	Nov 27	97.66	Nov 27 20:00	100.0	0	1	18.06	38.61	21.94	13.89	5.28	2.22
December	743	11.73	21.54	Dec 01	57.11	Dec 06 20:00	99.9	0	0	5.65	16.69	30.69	27.46	17.23	2.29
Annual	8726	6.29	29.89	May 26	161.39	May 23 04:00	99.7	0	3	22.25	43.49	20.00	8.53	4.75	0.98

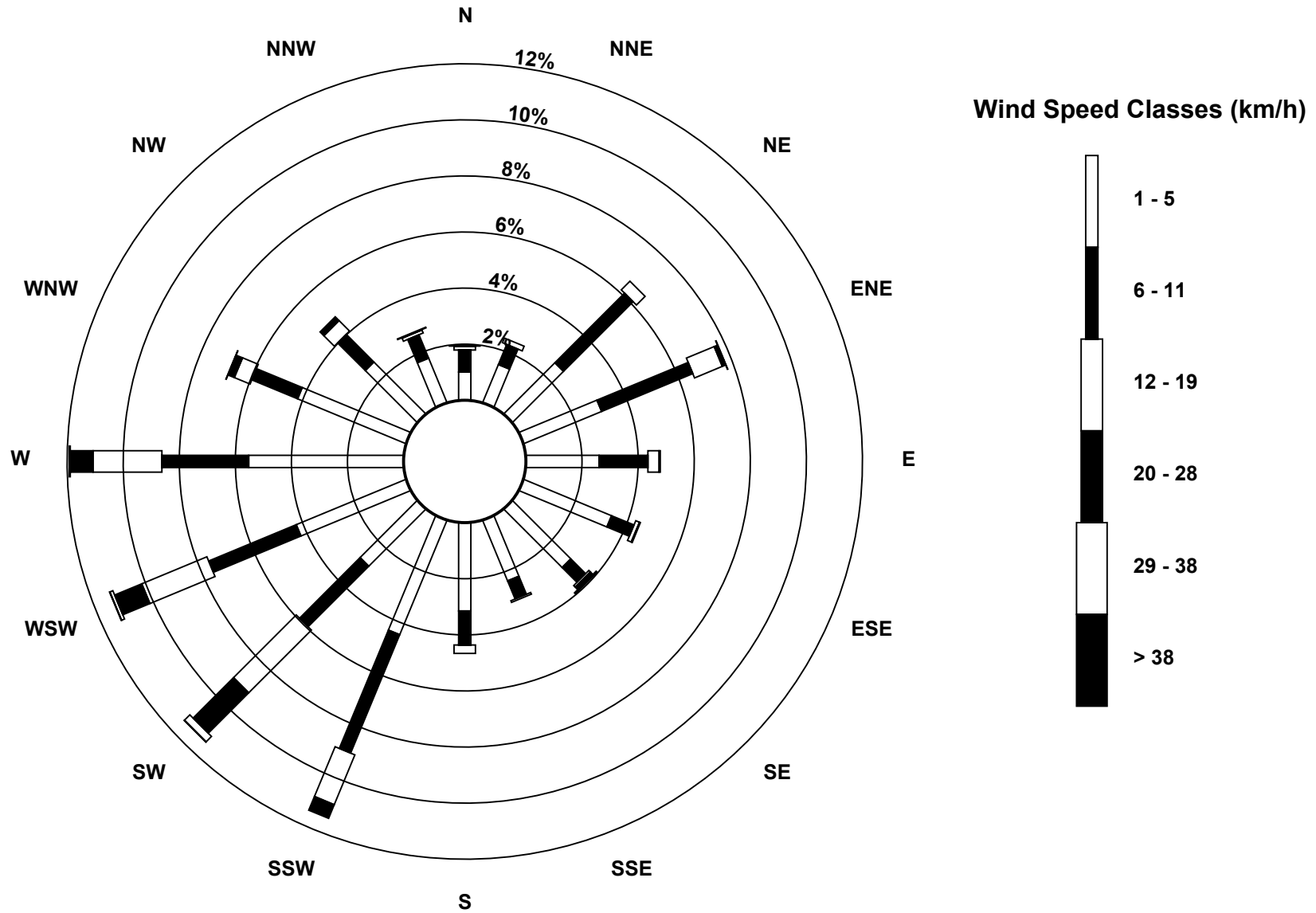
Table 9. Wind Speed and Wind Direction Frequency Distribution – Henry Pirker 2015 Summary

Henry Pirker								2015
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	151	1.01	0.79	0.13	0.01	0.01	0.00	1.95
NNE	188	1.47	0.77	0.18	0.00	0.00	0.00	2.43
NE	506	2.58	3.51	0.44	0.00	0.00	0.00	6.53
ENE	600	3.01	3.52	1.07	0.13	0.01	0.00	7.74
E	371	2.61	1.74	0.40	0.04	0.00	0.00	4.79
ESE	344	3.39	0.86	0.14	0.04	0.00	0.00	4.44
SE	306	2.94	0.75	0.08	0.13	0.05	0.00	3.95
SSE	240	2.34	0.70	0.06	0.00	0.00	0.00	3.10
S	361	3.15	1.21	0.30	0.00	0.00	0.00	4.66
SSW	886	4.41	4.57	1.92	0.53	0.00	0.00	11.44
SW	885	2.88	3.06	3.16	2.04	0.27	0.01	11.42
WSW	876	4.23	3.38	2.52	1.05	0.12	0.01	11.31
WSW	924	5.52	3.10	2.45	0.81	0.04	0.00	11.93
WNW	528	4.18	1.77	0.61	0.25	0.01	0.00	6.81
NW	367	2.62	1.39	0.53	0.19	0.00	0.00	4.74
NNW	215	1.72	0.90	0.12	0.01	0.03	0.00	2.77
Totals	7748	48.06	32.03	14.11	5.23	0.54	0.03	100

Wind Rose

Wind Speed (WS) (km/h)

Henry Pirker - 2015



PAZA
EVERGREEN PARK
CONTINUOUS AMBIENT AIR MONITORING STATION

2015
ANNUAL SUMMARY TABLES

Table 10. Evergreen Park - Key Parameters – Continuous Monitoring Data – 2015 Summary

Parameter	Monitoring Station	Annual Average	Maximum Values				Operational Time (%)	Readings above AAAQO	
			24-hr	Date	1-hr	Date		24-hr	1-hr
Sulphur Dioxide SO₂ measured in ppb	Evergreen Park	0.17	1.14	Feb 11	10.38	Feb 22 14:00	99.8	0	0
Total Reduced Sulphur TRS measured in ppb	Evergreen Park	0.37	1.29	Dec 20	4.85	Dec 10 22:00	99.2	-	-
Particulate Matter PM_{2.5} measured in µg/m³	Evergreen Park	4.12	26.45	Jun 11	144.23	Jun 11 20:00	99.6	0	3

Table 11. Sulphur Dioxide (SO₂) – Evergreen Park 2015 Summary and Frequency Distribution

Evergreen Park		SO ₂ (ppb)										2015			
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340
January	694	0.23	0.82	Jan 12	1.52	Jan 10 16:00	98.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	641	0.36	1.14	Feb 11	10.38	Feb 22 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.16	0.56	Mar 03	2.82	Mar 01 16:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	684	0.11	0.30	Apr 16	2.44	Apr 16 19:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	705	0.19	0.53	May 07	8.21	May 07 12:00	99.5	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	685	0.13	0.28	Jun 02	1.33	Jun 30 19:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	708	0.16	0.59	Jul 17	3.23	Jul 17 01:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	709	0.10	0.35	Aug 14	0.85	Aug 14 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	686	0.10	0.30	Sep 24	4.02	Sep 24 17:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	705	0.10	0.21	Oct 26	1.34	Oct 16 13:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	686	0.15	0.43	Nov 30	2.04	Nov 03 08:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	708	0.24	0.53	Dec 21	1.40	Dec 08 21:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8320	0.17	1.14	Feb 11	10.38	Feb 22 14:00	99.8	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 12. Total Reduced Sulphur (TRS) – Evergreen Park 2015 Summary and Frequency Distribution

Evergreen Park		TRS (ppb)										2015			
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	*AAAQO		Number 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	710	0.40	0.85	Jan 08	2.62	Jan 05 07:00	100.0	0	0	94.65	5.21	0.14	0.00	0.00	0.00
February	639	0.42	1.01	Feb 26	2.01	Feb 26 10:00	100.0	0	0	95.93	4.07	0.00	0.00	0.00	0.00
March	658	0.31	0.61	Mar 08	1.89	Mar 09 03:00	93.4	0	0	98.33	1.67	0.00	0.00	0.00	0.00
April	683	0.28	0.68	Apr 23	1.61	Apr 23 10:00	100.0	0	0	99.27	0.73	0.00	0.00	0.00	0.00
May	699	0.27	0.53	May 22	2.72	May 08 08:00	99.1	0	0	99.14	0.72	0.14	0.00	0.00	0.00
June	685	0.30	0.51	Jun 13	2.03	Jun 14 02:00	100.0	0	0	99.27	0.73	0.00	0.00	0.00	0.00
July	706	0.32	0.62	Jul 14	1.39	Jul 18 10:00	100.0	0	0	98.87	1.13	0.00	0.00	0.00	0.00
August	708	0.32	0.70	Aug 15	2.73	Aug 02 08:00	100.0	0	0	98.31	1.55	0.14	0.00	0.00	0.00
September	683	0.32	0.51	Sep 13	2.06	Sep 13 08:00	100.0	0	0	98.98	1.02	0.00	0.00	0.00	0.00
October	708	0.31	0.83	Oct 20	2.95	Oct 19 12:00	100.0	0	0	97.46	2.12	0.42	0.00	0.00	0.00
November	667	0.43	1.07	Nov 13	3.49	Nov 13 09:00	97.6	0	0	95.80	3.90	0.30	0.00	0.00	0.00
December	709	0.74	1.29	Dec 20	4.85	Dec 10 22:00	100.0	0	0	77.15	22.57	0.28	0.00	0.00	0.00
Annual	8255	0.37	1.29	Dec 20	4.85	Dec 10 22:00	99.2	0	0	96.05	3.83	0.12	0.00	0.00	0.00

*No Alberta Environment Objectives or Guidelines for TRS

Table 13. Particulate Matter (PM_{2.5}) – Evergreen Park 2015 Summary and Frequency Distribution

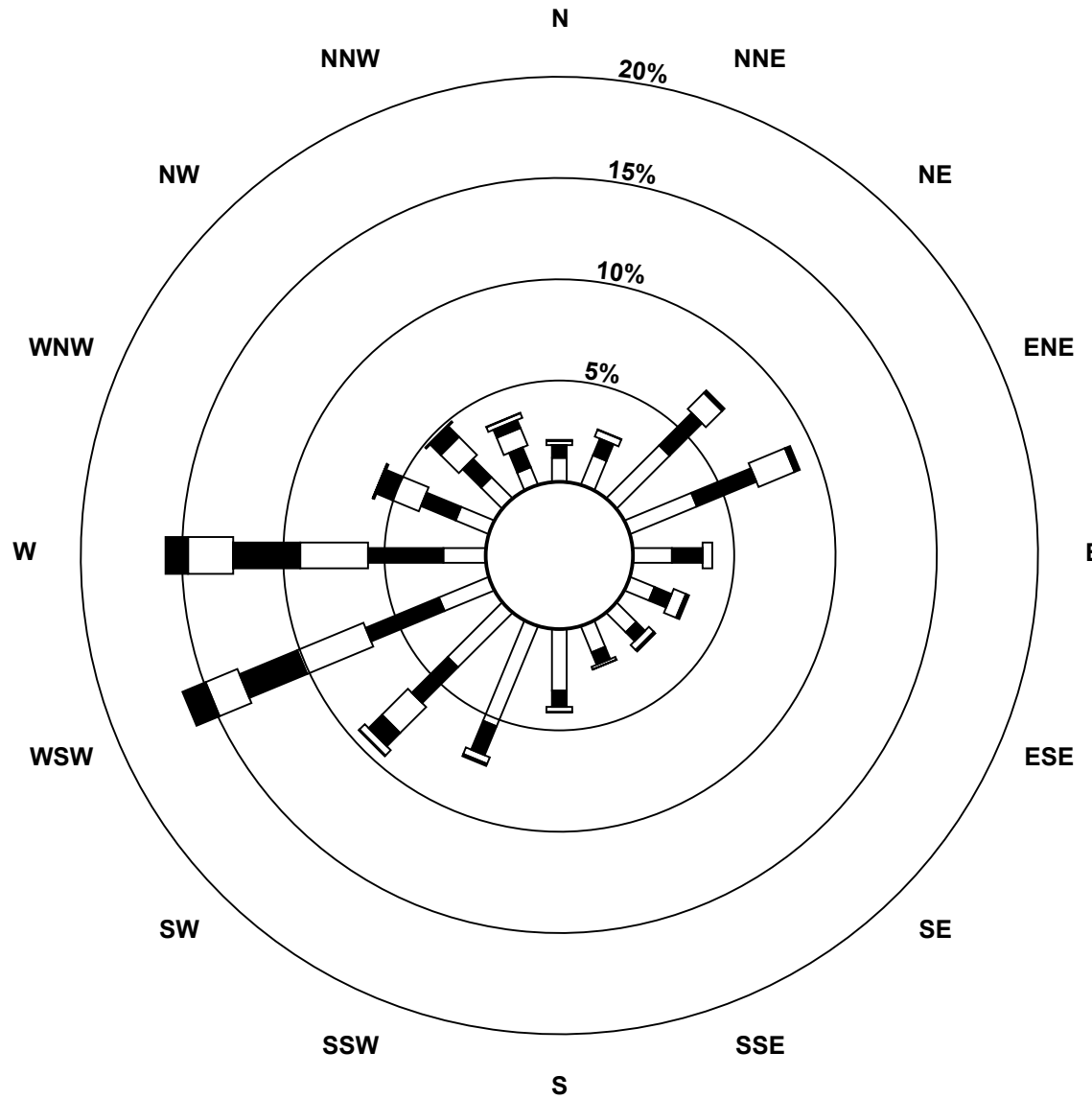
Evergreen Park		PM _{2.5} (µg/m ³)										2015			
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30
January	726	3.15	11.10	Jan 12	23.22	Jan 12 16:00	97.9	0	0	50.41	29.48	16.12	3.86	0.14	0.00
February	665	3.73	12.30	Feb 18	32.56	Feb 04 15:00	99.0	0	0	46.92	33.53	12.18	5.26	1.95	0.15
March	742	2.64	9.95	Mar 14	63.83	Mar 14 06:00	99.7	0	0	57.55	31.54	7.14	2.70	0.67	0.40
April	717	2.80	8.34	Apr 12	47.65	Apr 28 15:00	100.0	0	0	55.65	33.19	7.67	1.53	1.67	0.28
May	736	5.18	14.76	May 24	26.02	May 24 10:00	99.3	0	0	29.21	40.63	16.03	10.05	4.08	0.00
June	718	6.16	26.45	Jun 11	144.23	Jun 11 20:00	99.7	0	3	27.99	39.00	20.75	6.55	3.62	2.09
July	740	6.68	23.79	Jul 10	58.91	Jul 04 09:00	100.0	0	0	42.16	23.65	12.97	7.16	11.49	2.57
August	741	2.70	6.98	Aug 27	25.32	Aug 27 13:00	99.6	0	0	50.20	39.14	8.10	2.02	0.54	0.00
September	718	2.37	5.53	Sep 30	53.00	Sep 26 14:00	99.7	0	0	63.09	26.74	6.69	2.92	0.42	0.14
October	741	3.11	6.55	Oct 07	24.55	Oct 08 11:00	99.7	0	0	49.53	33.33	12.69	3.64	0.81	0.00
November	718	4.11	11.06	Nov 30	27.49	Nov 30 16:00	100.0	0	0	39.14	37.47	15.32	6.27	1.81	0.00
December	742	6.74	13.87	Dec 12	39.43	Dec 04 18:00	100.0	0	0	21.16	32.61	25.07	16.31	4.72	0.13
Annual	8704	4.12	26.45	Jun 11	144.23	Jun 11 20:00	99.6	0	3	44.38	33.32	13.42	5.71	2.68	0.48

Table 14. Wind Speed and Wind Direction Frequency Distribution – Evergreen Park 2015 Summary

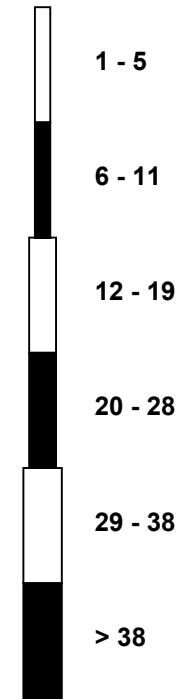
Evergreen Park								2015
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	161	1.18	0.63	0.21	0.05	0.00	0.00	2.07
NNE	221	1.57	0.89	0.36	0.03	0.00	0.00	2.84
NE	564	3.69	2.27	1.13	0.17	0.00	0.00	7.26
ENE	696	3.56	3.18	1.93	0.28	0.00	0.00	8.96
E	304	1.92	1.52	0.48	0.00	0.00	0.00	3.91
ESE	236	1.30	0.91	0.64	0.18	0.00	0.00	3.04
SE	189	1.36	0.62	0.33	0.12	0.00	0.00	2.43
SSE	171	1.39	0.66	0.14	0.01	0.00	0.00	2.20
S	319	3.04	0.80	0.26	0.01	0.00	0.00	4.11
SSW	571	5.34	1.54	0.35	0.12	0.00	0.00	7.35
SW	736	3.81	2.50	1.81	0.93	0.37	0.05	9.47
WSW	1254	2.65	3.93	3.54	3.09	1.70	1.24	16.14
WSW	1229	2.10	3.72	3.35	3.31	2.23	1.12	15.82
WNW	464	1.76	1.85	1.44	0.82	0.08	0.01	5.97
NW	374	1.47	1.29	1.26	0.73	0.05	0.01	4.81
NNW	281	0.94	1.06	0.93	0.42	0.24	0.03	3.62
Totals	7770	37.09	27.35	18.16	10.27	4.67	2.46	100

Wind Rose

Wind Speed (WS) (km/h)
Evergreen Park - 2015



Wind Speed Classes (km/h)



PAZA

SMOKY HEIGHTS

CONTINUOUS AMBIENT AIR MONITORING STATION

2015

ANNUAL SUMMARY TABLES

Table 15. Smoky Heights - Key Parameters – Continuous Monitoring Data – 2015 Summary

Parameter	Monitoring Station	Annual Average	Maximum Values				Operational Time (%)	Readings above AAAQO	
			24-hr	Date	1-hr	Date		24-hr	1-hr
Sulphur Dioxide SO₂ measured in ppb	Smoky Heights	0.45	2.71	Feb 12	17.42	Mar 30 08:00	99.7	0	0
Total Reduced Sulphur TRS measured in ppb	Smoky Heights	0.10	0.84	Jun 10	7.23	Jun 10 05:00	99.3	-	-
Particulate Matter PM_{2.5} measured in µg/m³	Smoky Heights	4.90	30.15	Jul 11	100.78	Dec 28 04:00	99.5	0	2

Table 16. Sulphur Dioxide (SO₂) – Smoky Heights 2015 Summary and Frequency Distribution

Smoky Heights		SO ₂ (ppb)						2015							
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340
January	707	0.78	1.93	Jan 19	8.49	Jan 25 18:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	639	0.93	2.71	Feb 12	11.42	Feb 14 22:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	708	0.64	1.66	Mar 30	17.42	Mar 30 08:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	682	0.37	0.98	Apr 23	6.58	Apr 12 23:00	99.4	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	709	0.30	0.78	May 02	5.60	May 02 03:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	681	0.30	0.94	Jun 21	9.18	Jun 12 05:00	99.3	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	701	0.33	0.91	Jul 14	5.73	Jul 18 04:00	99.3	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	700	0.31	1.78	Aug 13	15.05	Aug 13 13:00	98.8	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	687	0.26	0.80	Sep 20	3.03	Sep 20 10:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	708	0.37	1.19	Oct 13	5.31	Oct 30 22:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	686	0.39	0.99	Nov 27	6.78	Nov 04 20:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	703	0.51	1.92	Dec 16	8.24	Dec 16 11:00	99.1	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8311	0.45	2.71	Feb 12	17.42	Mar 30 08:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 17. Total Reduced Sulphur (TRS) – Smoky Heights 2015 Summary and Frequency Distribution

Smoky Heights		TRS (ppb)						2015							
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	*AAAQO		Number 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	706	0.13	0.50	Jan 11	1.06	Jan 12 06:00	100.0	0	0	99.72	0.28	0.00	0.00	0.00	0.00
February	639	0.11	0.30	Feb 04	0.53	Feb 18 20:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.05	0.12	Mar 19	0.24	Mar 25 12:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	680	0.05	0.14	Apr 20	0.50	Apr 20 04:00	99.4	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	707	0.07	0.28	May 27	0.68	May 22 06:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	680	0.10	0.84	Jun 10	7.23	Jun 10 05:00	99.3	0	0	98.68	1.03	0.00	0.29	0.00	0.00
July	702	0.19	0.36	Jul 27	2.82	Jul 02 02:00	99.3	0	0	99.57	0.14	0.28	0.00	0.00	0.00
August	698	0.25	0.40	Aug 05	0.90	Aug 03 00:00	98.8	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	674	0.06	0.19	Sep 12	0.78	Sep 13 05:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	705	0.04	0.14	Oct 07	0.47	Oct 05 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	676	0.06	0.34	Nov 30	0.74	Nov 23 08:00	98.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	678	0.14	0.45	Dec 21	1.23	Dec 30 00:00	95.8	0	0	99.41	0.59	0.00	0.00	0.00	0.00
Annual	8254	0.10	0.84	Jun 10	7.23	Jun 10 05:00	99.3	0	0	99.78	0.17	0.02	0.02	0.00	0.00

*No Alberta Environment Objectives or Guidelines for TRS

Table 18. Particulate Matter (PM_{2.5}) – Smoky Heights 2015 Summary and Frequency Distribution

Smoky Heights		PM _{2.5} (µg/m ³)										2015			
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30
January	738	3.00	11.53	Jan 06	68.05	Jan 06 20:00	99.2	0	0	53.52	30.76	13.41	1.08	0.81	0.41
February	670	3.59	9.93	Feb 12	33.61	Feb 13 00:00	99.7	0	0	43.58	36.42	15.07	4.03	0.75	0.15
March	741	1.80	5.47	Mar 22	30.91	Mar 23 00:00	99.6	0	0	66.94	28.21	3.78	0.40	0.54	0.13
April	716	1.73	3.94	Apr 10	12.15	Apr 28 18:00	99.4	0	0	66.62	30.87	1.96	0.56	0.00	0.00
May	739	5.66	17.20	May 27	59.78	May 26 05:00	99.7	0	0	29.23	41.81	15.16	7.31	5.41	1.08
June	715	6.32	12.34	Jun 30	46.60	Jun 10 15:00	99.3	0	0	15.80	41.26	30.77	7.83	3.78	0.56
July	739	8.98	30.15	Jul 11	78.15	Jul 09 21:00	99.3	0	0	16.24	43.71	15.97	8.66	8.39	7.04
August	734	5.00	10.31	Aug 24	62.00	Aug 02 22:00	98.7	0	0	13.76	62.81	17.71	4.22	0.82	0.68
September	720	3.38	7.75	Sep 24	25.36	Sep 24 21:00	100.0	0	0	26.67	62.50	10.14	0.42	0.28	0.00
October	737	4.53	11.18	Oct 07	73.83	Oct 06 15:00	100.0	0	0	19.27	59.57	18.59	1.49	0.54	0.54
November	720	5.35	15.82	Nov 05	32.28	Nov 09 02:00	100.0	0	0	26.39	40.83	22.50	7.50	2.64	0.14
December	737	9.31	25.28	Dec 11	100.78	Dec 28 04:00	99.1	0	2	7.60	37.58	28.63	15.20	6.78	4.21
Annual	8706	4.90	30.15	Jul 11	100.78	Dec 28 04:00	99.5	0	2	32.06	43.02	16.15	4.92	2.59	1.27

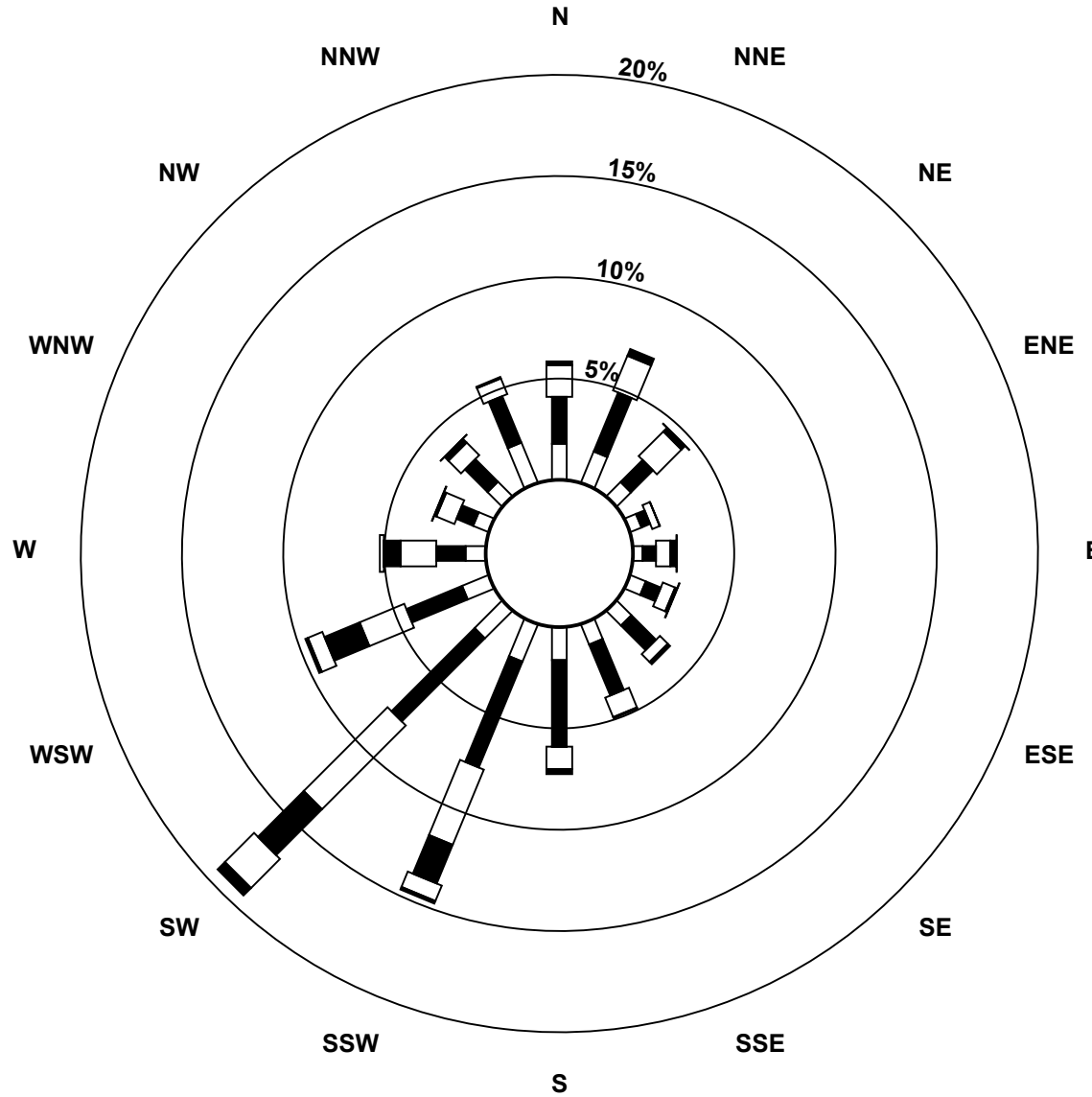
Table 19. Wind Speed and Wind Direction Frequency Distribution – Smoky Heights 2015 Summary

Smoky Heights								2015
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	505	1.78	2.32	1.56	0.19	0.00	0.00	5.85
NNE	607	1.67	3.15	1.85	0.36	0.00	0.00	7.04
NE	390	1.00	1.54	1.72	0.25	0.01	0.00	4.52
ENE	127	0.60	0.46	0.39	0.01	0.00	0.00	1.47
E	186	0.48	0.66	0.71	0.30	0.01	0.00	2.16
ESE	208	0.83	0.80	0.65	0.10	0.02	0.00	2.41
SE	298	1.03	1.72	0.54	0.16	0.00	0.00	3.45
SSE	424	1.08	2.72	1.04	0.07	0.00	0.00	4.91
S	626	1.62	4.28	1.10	0.25	0.00	0.00	7.26
SSW	1268	1.99	5.66	4.02	2.06	0.82	0.14	14.70
SW	1668	1.92	5.81	5.85	3.20	2.03	0.52	19.33
WSW	826	1.41	2.98	2.39	1.88	0.78	0.14	9.57
WSW	451	1.00	1.45	1.76	0.82	0.20	0.00	5.23
WNW	242	0.82	0.89	0.96	0.10	0.02	0.00	2.80
NW	324	1.02	1.58	0.88	0.27	0.01	0.00	3.76
NNW	478	2.14	2.48	0.83	0.08	0.00	0.00	5.54
Totals	8628	20.41	38.49	26.27	10.12	3.91	0.80	100

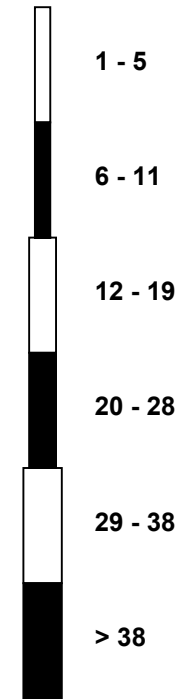
Wind Rose

Wind Speed (WS) (km/h)

Smoky Heights - 2015



Wind Speed Classes (km/h)



PAZA
BEAVERLODGE
CONTINUOUS AMBIENT AIR MONITORING STATION

2015
ANNUAL SUMMARY TABLES

Table 20. Beaverlodge - Key Parameters – Continuous Monitoring Data – 2015 Summary

Parameter	Monitoring Station	Annual Average	Maximum Values				Operational Time (%)	Readings above AAAQO	
			24-hr	Date	1-hr	Date		24-hr	1-hr
Sulphur Dioxide SO₂ measured in ppb	Beaverlodge	0.23	2.62	Feb 10	14.16	Feb 10 16:00	99.6	0	0
Nitrogen Dioxide NO₂ measured in ppb	Beaverlodge	3.34	20.20	Jan 09	34.92	Feb 04 20:00	99.6	0	0
Ozone O₃ measured in ppb	Beaverlodge	29.13	53.30	May 12	72.61	May 24 15:00	99.6	0	0
Particulate Matter PM_{2.5} measured in µg/m³	Beaverlodge	4.85	27.98	May 24	92.81	Jul 09 23:00	98.1	0	3

Table 21. Sulphur Dioxide (SO₂) – Beaverlodge 2015 Summary and Frequency Distribution

Beaverlodge SO ₂ (ppb) 2015															
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340
January	710	0.33	0.89	Jan 05	1.79	Jan 05 04:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	641	0.73	2.62	Feb 10	14.16	Feb 10 16:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.28	0.97	Mar 03	3.24	Mar 03 20:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	687	0.14	0.83	Apr 25	2.76	Apr 25 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	710	0.28	0.64	May 15	4.49	May 15 15:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	687	0.16	0.62	Jun 16	3.87	Jun 17 06:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	710	0.10	0.45	Jul 06	2.18	Jul 06 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	710	0.11	0.46	Aug 15	1.94	Aug 14 13:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	664	0.10	0.30	Sep 24	1.03	Sep 22 11:00	96.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	702	0.14	0.49	Oct 28	4.53	Oct 28 23:00	98.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	687	0.16	1.11	Nov 08	7.04	Nov 08 16:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	710	0.26	0.77	Dec 20	1.64	Dec 08 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8327	0.23	2.62	Feb 10	14.16	Feb 10 16:00	99.6	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 22. Nitrogen Dioxide (NO₂) – Beaverlodge 2015 Summary and Frequency Distribution

Beaverlodge NO ₂ (ppb) 2015														
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range				
								24-Hr	1-Hr	0 - 25	25 - 50	50 - 110	110 - 210	>210
January	702	5.88	20.20	Jan 09	34.86	Jan 09 09:00	99.5	0	0	98.01	1.99	0.00	0.00	0.00
February	638	4.53	11.92	Feb 17	34.92	Feb 04 20:00	100.0	0	0	99.53	0.47	0.00	0.00	0.00
March	706	2.63	6.33	Mar 23	19.62	Mar 23 06:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
April	686	1.54	2.55	Apr 21	9.68	Apr 02 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
May	708	2.24	3.54	May 21	14.26	May 23 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
June	681	1.88	4.55	Jun 29	15.38	Jun 29 09:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
July	704	1.59	3.32	Jul 11	9.39	Jul 28 06:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00
August	708	2.01	3.32	Aug 25	15.17	Aug 14 04:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
September	660	2.18	4.89	Sep 24	10.38	Sep 22 07:00	96.7	0	0	100.00	0.00	0.00	0.00	0.00
October	701	3.48	8.20	Oct 28	16.53	Oct 28 08:00	98.9	0	0	100.00	0.00	0.00	0.00	0.00
November	686	3.52	10.00	Nov 30	28.60	Nov 30 19:00	100.0	0	0	99.85	0.15	0.00	0.00	0.00
December	709	8.53	17.19	Dec 27	26.75	Dec 21 17:00	100.0	0	0	99.44	0.56	0.00	0.00	0.00
Annual	8289	3.34	20.20	Jan 09	34.92	Feb 04 20:00	99.6	0	0	99.73	0.27	0.00	0.00	0.00

Table 23. Ozone (O₃) – Beaverlodge 2015 Summary and Frequency Distribution

Beaverlodge O ₃ (ppb) 2015															
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 2	2 - 10	10 - 20	20 - 40	40 - 82	>82
January	705	27.27	37.01	Jan 17	39.58	Jan 25 22:00	99.5	0	0	1.56	2.84	20.99	74.61	0.00	0.00
February	641	28.95	40.09	Feb 24	46.31	Feb 28 20:00	100.0	0	0	0.00	2.18	12.32	78.47	7.02	0.00
March	710	38.49	45.77	Mar 30	52.26	Mar 17 18:00	100.0	0	0	0.00	0.00	0.85	50.42	48.73	0.00
April	686	38.20	47.68	Apr 30	55.33	Apr 27 15:00	100.0	0	0	0.00	0.00	3.21	51.90	44.90	0.00
May	709	42.68	53.30	May 12	72.61	May 24 15:00	100.0	0	0	0.00	0.00	1.83	38.36	59.80	0.00
June	686	29.59	43.59	Jun 06	58.50	Jun 03 17:00	100.0	0	0	0.00	1.90	17.64	65.74	14.72	0.00
July	710	25.61	36.13	Jul 03	51.19	Jul 02 19:00	100.0	0	0	0.00	2.11	21.55	71.27	5.07	0.00
August	710	24.68	32.45	Aug 26	44.89	Aug 26 17:00	100.0	0	0	0.00	5.35	24.51	68.03	2.11	0.00
September	664	23.00	30.72	Sep 12	39.18	Sep 12 22:00	96.7	0	0	0.00	10.24	23.64	66.11	0.00	0.00
October	702	25.36	37.13	Oct 13	44.25	Oct 18 15:00	98.9	0	0	0.14	3.99	24.64	70.09	1.14	0.00
November	688	27.95	40.65	Nov 27	42.53	Nov 27 06:00	100.0	0	0	0.58	6.69	14.53	74.85	3.34	0.00
December	710	17.61	38.81	Dec 31	42.08	Jan 01 00:00	100.0	0	0	4.79	27.32	27.04	39.15	1.69	0.00
Annual	8321	29.13	53.30	May 12	72.61	May 24 15:00	99.6	0	0	0.60	5.24	16.08	62.24	15.84	0.00

Table 24. Particulate Matter (PM_{2.5}) – Beaverlodge 2015 Summary and Frequency Distribution

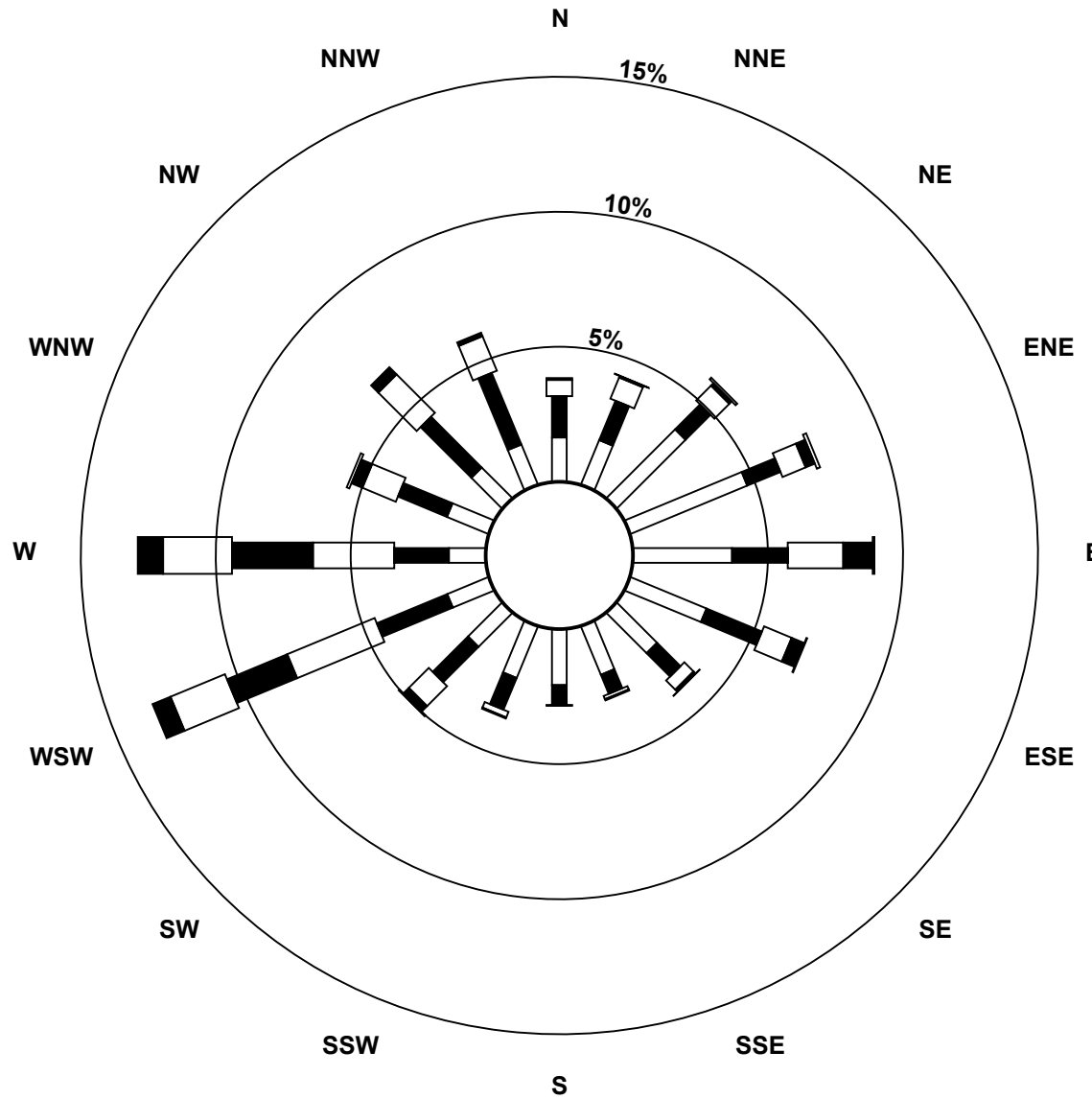
Beaverlodge PM _{2.5} (µg/m ³) 2015															
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30
January	665	3.63	9.26	Jan 09	27.32	Jan 14 23:00	89.5	0	0	44.21	32.78	16.54	5.41	1.05	0.00
February	618	3.97	11.25	Feb 17	21.57	Feb 17 10:00	92.0	0	0	34.14	42.72	19.58	2.59	0.97	0.00
March	730	3.78	8.50	Mar 24	85.77	Mar 21 10:00	99.9	0	2	60.27	22.47	9.59	3.15	2.88	1.64
April	720	2.83	6.67	Apr 06	10.88	Apr 06 06:00	100.0	0	0	45.00	45.14	9.86	0.00	0.00	0.00
May	743	8.67	27.98	May 24	70.42	May 24 01:00	99.9	0	0	10.50	33.92	30.15	15.07	7.54	2.83
June	719	5.82	12.61	Jun 03	39.68	Jun 14 12:00	99.9	0	0	13.21	49.93	27.96	5.98	2.09	0.83
July	744	6.19	24.38	Jul 10	92.81	Jul 09 23:00	100.0	0	1	26.48	44.22	15.32	6.18	6.05	1.75
August	740	3.70	7.19	Aug 27	21.34	Aug 03 04:00	100.0	0	0	28.78	56.08	12.70	2.30	0.14	0.00
September	696	3.03	5.38	Sep 24	11.66	Sep 05 03:00	96.7	0	0	39.08	51.44	9.05	0.43	0.00	0.00
October	736	3.91	7.01	Oct 25	14.53	Oct 15 19:00	98.9	0	0	29.21	51.63	17.66	1.49	0.00	0.00
November	720	4.02	8.61	Nov 03	27.09	Nov 05 12:00	100.0	0	0	19.58	65.00	12.64	1.81	0.97	0.00
December	744	8.18	19.04	Dec 11	33.74	Dec 23 06:00	100.0	0	0	16.13	27.69	29.03	16.53	9.81	0.81
Annual	8575	4.85	27.98	May 24	92.81	Jul 09 23:00	98.1	0	3	30.32	43.59	17.55	5.17	2.69	0.68

Table 25. Wind Speed and Wind Direction Frequency Distribution – Beaverlodge 2015 Summary

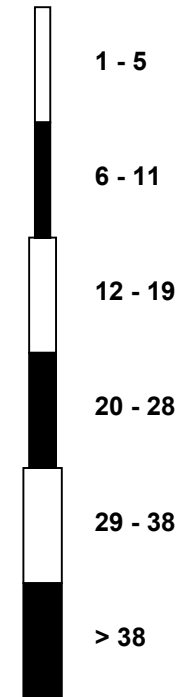
Beaverlodge								2015
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	327	1.65	1.53	0.60	0.07	0.00	0.00	3.85
NNE	364	1.79	1.58	0.85	0.06	0.01	0.00	4.28
NE	502	3.61	1.31	0.78	0.13	0.08	0.00	5.90
ENE	633	4.69	1.33	0.93	0.36	0.13	0.00	7.45
E	760	3.67	2.06	2.06	1.09	0.06	0.00	8.94
ESE	589	3.06	2.22	1.11	0.51	0.04	0.00	6.93
SE	335	2.12	1.22	0.48	0.11	0.01	0.00	3.94
SSE	245	1.94	0.76	0.13	0.05	0.00	0.00	2.88
S	241	2.07	0.74	0.02	0.00	0.00	0.00	2.83
SSW	307	2.07	1.27	0.22	0.05	0.00	0.00	3.61
SW	426	1.79	1.85	1.05	0.28	0.05	0.00	5.01
WSW	1131	1.66	2.82	3.51	2.41	2.19	0.72	13.30
WSW	1096	1.36	2.02	3.01	3.00	2.55	0.94	12.89
WNW	469	1.67	1.96	1.34	0.44	0.11	0.00	5.52
NW	566	1.61	2.66	2.01	0.38	0.00	0.00	6.66
NNW	511	1.61	2.87	1.39	0.14	0.00	0.00	6.01
Totals	8502	36.37	28.21	19.48	9.07	5.22	1.66	100

Wind Rose

Wind Speed (WS) (km/h)
Beaverlodge - 2015



Wind Speed Classes (km/h)



PAZA
VALLEYVIEW
CONTINUOUS AMBIENT AIR MONITORING STATION

2015
ANNUAL SUMMARY TABLES

Table 26. Valleyview - Key Parameters – Continuous Monitoring Data – 2015 Summary

Parameter	Monitoring Station	Annual Average	Maximum Values				Operational Time (%)	Readings above AAAQO	
			24-hr	Date	1-hr	Date		24-hr	1-hr
Sulphur Dioxide SO₂ measured in ppb	Valleyview	1.08	21.59	Nov 21	111.96	Mar 12 10:00	99.8	0	0
Hydrogen Sulphide H₂S measured in ppb	Valleyview	0.24	3.15	Dec 03	24.29	Dec 03 15:00	99.8	0	5

Table 27. Sulphur Dioxide (SO₂) – Valleyview 2015 Summary and Frequency Distribution

Valleyview SO ₂ (ppb) 2015															
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340
January	707	0.63	3.46	Jan 16	12.26	Jan 16 20:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	641	0.43	1.44	Feb 19	8.29	Feb 19 09:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	710	0.75	5.64	Mar 12	111.96	Mar 12 10:00	100.0	0	0	99.86	0.00	0.00	0.14	0.00	0.00
April	671	0.96	4.61	Apr 29	28.86	Apr 29 19:00	98.1	0	0	99.70	0.30	0.00	0.00	0.00	0.00
May	709	0.33	1.70	May 01	6.56	May 01 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	687	0.85	6.66	Jun 20	33.53	Jun 28 10:00	100.0	0	0	98.98	1.02	0.00	0.00	0.00	0.00
July	708	3.15	10.80	Jul 28	49.69	Jul 26 09:00	100.0	0	0	96.47	3.53	0.00	0.00	0.00	0.00
August	709	1.18	5.19	Aug 06	44.17	Aug 04 02:00	100.0	0	0	99.29	0.71	0.00	0.00	0.00	0.00
September	686	1.44	7.50	Sep 03	31.00	Sep 20 23:00	100.0	0	0	99.13	0.87	0.00	0.00	0.00	0.00
October	707	1.34	8.63	Oct 12	85.73	Oct 12 18:00	100.0	0	0	98.87	0.99	0.14	0.00	0.00	0.00
November	686	1.63	21.59	Nov 21	102.72	Nov 21 23:00	100.0	0	0	98.10	0.87	1.02	0.00	0.00	0.00
December	709	0.27	2.06	Dec 16	8.07	Dec 16 12:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8330	1.08	21.59	Nov 21	111.96	Mar 12 10:00	99.8	0	0	99.20	0.70	0.10	0.01	0.00	0.00

Table 28. Hydrogen Sulphide (H₂S) – Valleyview 2015 Summary and Frequency Distribution

Valleyview H ₂ S (ppb) 2015															
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number 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	707	0.33	1.15	Jan 08	5.57	Jan 08 20:00	100.0	0	0	94.63	4.81	0.28	0.28	0.00	0.00
February	639	0.28	2.12	Feb 02	14.02	Feb 02 19:00	100.0	0	1	98.12	0.94	0.31	0.16	0.16	0.31
March	709	0.22	0.88	Mar 22	13.07	Mar 22 23:00	100.0	0	1	98.31	1.55	0.00	0.00	0.00	0.14
April	672	0.25	0.69	Apr 28	3.44	Apr 26 23:00	98.1	0	0	95.54	3.72	0.74	0.00	0.00	0.00
May	709	0.21	0.75	May 26	4.61	May 26 11:00	100.0	0	0	96.47	3.10	0.42	0.00	0.00	0.00
June	686	0.19	0.52	Jun 22	4.47	Jun 22 05:00	100.0	0	0	98.40	1.31	0.29	0.00	0.00	0.00
July	707	0.31	0.95	Jul 27	7.64	Jul 27 22:00	100.0	0	0	95.05	3.54	1.13	0.14	0.14	0.00
August	708	0.17	0.35	Aug 26	3.08	Aug 12 14:00	100.0	0	0	98.73	1.13	0.14	0.00	0.00	0.00
September	685	0.20	0.61	Sep 14	4.33	Sep 14 05:00	100.0	0	0	97.96	1.61	0.44	0.00	0.00	0.00
October	708	0.16	0.41	Oct 12	4.73	Oct 12 19:00	100.0	0	0	99.44	0.42	0.14	0.00	0.00	0.00
November	686	0.15	0.36	Nov 22	3.86	Nov 05 06:00	100.0	0	0	98.98	0.87	0.15	0.00	0.00	0.00
December	709	0.36	3.15	Dec 03	24.29	Dec 03 15:00	100.0	0	3	97.04	2.40	0.14	0.00	0.00	0.42
Annual	8325	0.24	3.15	Dec 03	24.29	Dec 03 15:00	99.8	0	5	97.38	2.13	0.35	0.05	0.02	0.07

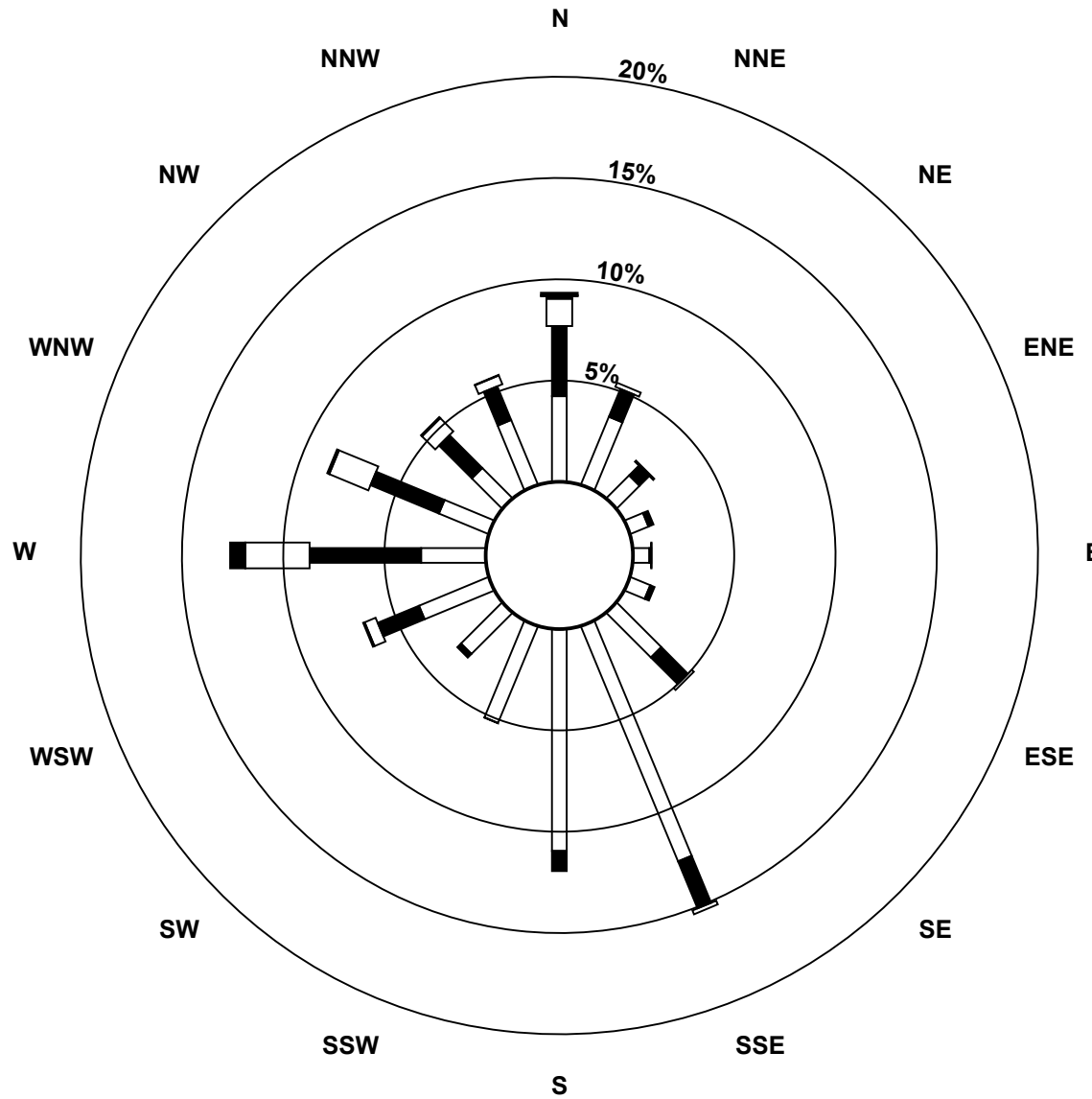
Table 29. Wind Speed and Wind Direction Frequency Distribution – Valleyview 2015 Summary

Valleyview								2015
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	602	4.23	3.46	1.35	0.12	0.05	0.12	9.33
NNE	344	3.63	1.49	0.22	0.00	0.00	0.00	5.33
NE	152	1.60	0.68	0.08	0.00	0.00	0.00	2.36
ENE	80	0.98	0.26	0.00	0.00	0.00	0.00	1.24
E	59	0.81	0.09	0.00	0.02	0.00	0.00	0.91
ESE	84	1.07	0.23	0.00	0.00	0.00	0.00	1.30
SE	330	3.12	1.86	0.14	0.00	0.00	0.00	5.12
SSE	985	12.56	2.51	0.20	0.00	0.00	0.00	15.27
S	770	10.95	0.99	0.00	0.00	0.00	0.00	11.94
SSW	334	5.16	0.02	0.00	0.00	0.00	0.00	5.18
SW	202	2.87	0.26	0.00	0.00	0.00	0.00	3.13
WSW	425	3.72	2.20	0.59	0.08	0.00	0.00	6.59
WSW	814	3.19	5.50	3.18	0.74	0.00	0.00	12.62
WNW	549	2.65	3.66	2.09	0.11	0.00	0.00	8.51
NW	348	2.11	2.29	0.91	0.08	0.00	0.00	5.40
NNW	371	3.46	1.80	0.47	0.03	0.00	0.00	5.75
Totals	6449	62.10	27.32	9.23	1.18	0.05	0.12	100

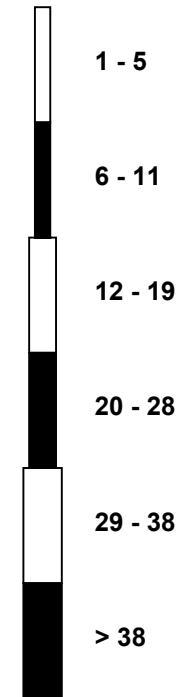
Wind Rose

Wind Speed (WS) (km/h)

Valleyview - 2015



Wind Speed Classes (km/h)



PAZA
FALHER
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Table 30. Falher - Key Parameters – Continuous Monitoring Data – 2015 Summary

Parameter	Monitoring Station	Annual Average	Maximum Values				Operational Time (%)	Readings above AAAQO	
			24-hr	Date	1-hr	Date		24-hr	1-hr
Sulphur Dioxide SO₂ measured in ppb	Falher	0.15	0.84	Feb 26	2.57	Feb 10 08:00	99.9	0	0
Hydrogen Sulphide H₂S measured in ppb	Falher	0.19	2.15	Apr 19	8.74	Apr 19 07:00	98.8	0	0

Table 31. Sulphur Dioxide (SO₂) – Falher 2015 Summary and Frequency Distribution

Falher		SO ₂ (ppb)										2015			
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340
January	708	0.21	0.72	Jan 05	1.51	Jan 07 06:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	640	0.27	0.84	Feb 26	2.57	Feb 10 08:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.12	0.38	Mar 18	0.89	Mar 18 12:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	686	0.10	0.21	Apr 14	1.55	Apr 14 15:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	709	0.11	0.34	May 18	0.87	May 10 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	685	0.12	0.41	Jun 17	0.70	Jun 10 04:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	712	0.16	0.75	Jul 11	1.14	Jul 10 17:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	710	0.12	0.26	Aug 16	0.72	Aug 16 10:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	682	0.12	0.23	Sep 07	1.07	Sep 11 23:00	99.2	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	707	0.12	0.39	Oct 17	0.91	Oct 17 03:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	686	0.18	0.61	Nov 28	1.58	Nov 25 01:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	708	0.17	0.43	Dec 01	1.48	Dec 13 01:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8342	0.15	0.84	Feb 26	2.57	Feb 10 08:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 32. Hydrogen Sulphide (H₂S) – Falher 2015 Summary and Frequency Distribution

Falher		H ₂ S (ppb)										2015			
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number 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	616	0.18	0.63	Jan 08	2.28	Jan 08 14:00	87.1	0	0	98.38	1.62	0.00	0.00	0.00	0.00
February	639	0.14	0.35	Feb 12	0.56	Feb 12 10:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.09	0.21	Mar 24	1.10	Mar 24 07:00	100.0	0	0	99.72	0.28	0.00	0.00	0.00	0.00
April	685	0.27	2.15	Apr 19	8.74	Apr 19 07:00	100.0	0	0	96.06	1.61	1.02	0.73	0.58	0.00
May	708	0.15	0.38	May 27	3.67	May 27 01:00	100.0	0	0	98.73	1.13	0.14	0.00	0.00	0.00
June	686	0.27	0.82	Jun 17	4.06	Jun 10 01:00	100.0	0	0	96.06	3.21	0.73	0.00	0.00	0.00
July	712	0.21	0.55	Jul 07	3.75	Jul 07 07:00	100.0	0	0	98.46	1.40	0.14	0.00	0.00	0.00
August	707	0.25	0.87	Aug 27	5.44	Aug 27 04:00	100.0	0	0	95.33	3.96	0.42	0.28	0.00	0.00
September	680	0.28	0.93	Sep 13	6.28	Sep 09 07:00	99.2	0	0	94.41	4.12	1.32	0.15	0.00	0.00
October	707	0.22	0.66	Oct 07	4.72	Oct 31 08:00	100.0	0	0	95.90	3.25	0.85	0.00	0.00	0.00
November	685	0.11	0.31	Nov 06	1.99	Nov 06 06:00	100.0	0	0	99.56	0.44	0.00	0.00	0.00	0.00
December	710	0.15	0.42	Dec 25	0.69	Dec 09 08:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8244	0.19	2.15	Apr 19	8.74	Apr 19 07:00	98.8	0	0	97.70	1.76	0.39	0.10	0.05	0.00

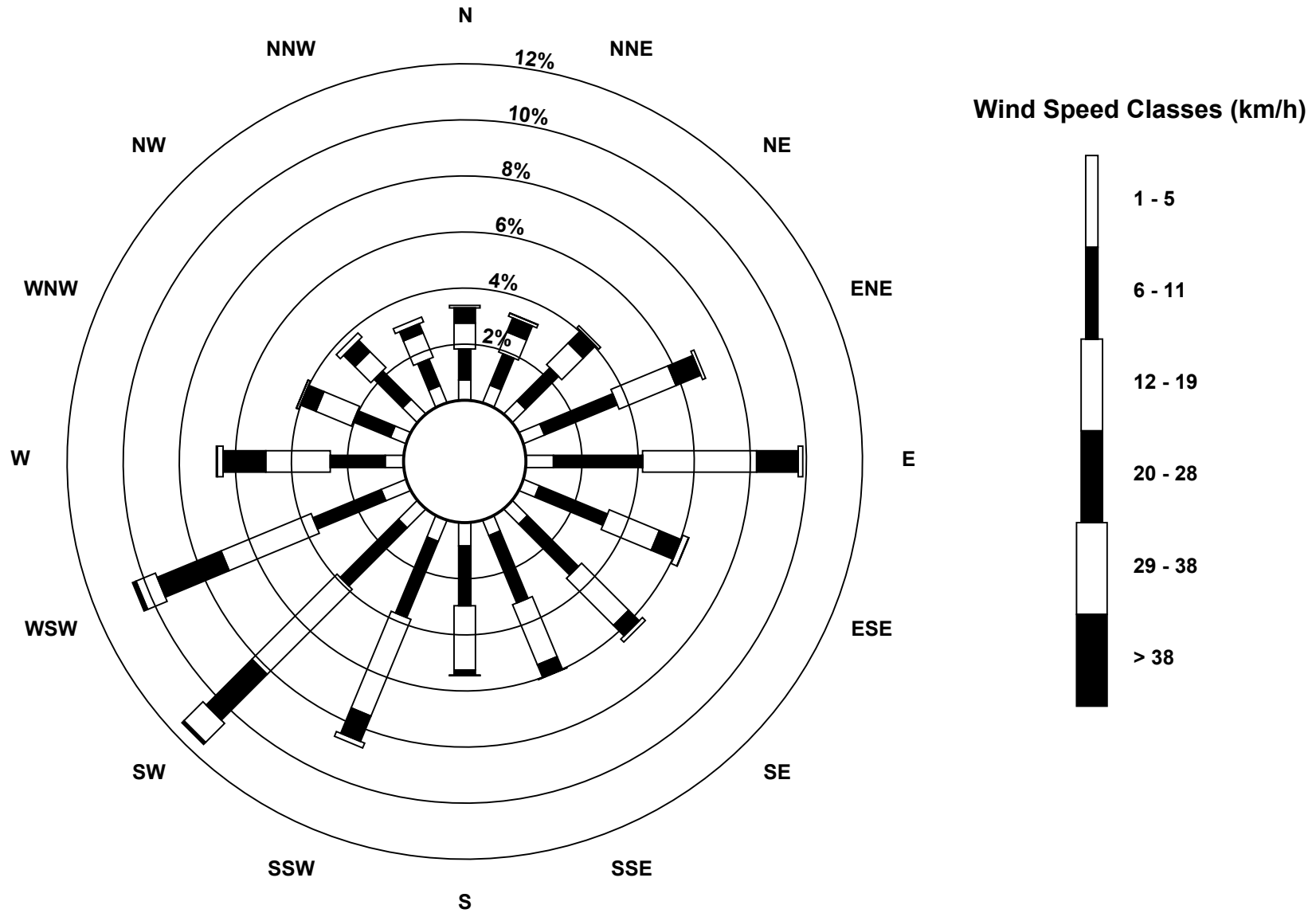
Table 33. Wind Speed and Wind Direction Frequency Distribution – Falher 2015 Summary

Falher		2015						
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	294	0.73	1.11	0.92	0.54	0.09	0.00	3.39
NNE	289	0.68	1.21	0.77	0.54	0.12	0.01	3.33
NE	358	0.67	1.66	1.08	0.62	0.09	0.00	4.12
ENE	598	0.81	2.81	2.20	0.96	0.12	0.00	6.89
E	857	0.98	3.18	4.07	1.49	0.16	0.00	9.87
ESE	542	0.61	2.63	1.93	0.84	0.22	0.01	6.24
SE	554	0.76	2.57	2.37	0.53	0.15	0.00	6.38
SSE	522	0.59	2.60	2.31	0.48	0.01	0.01	6.01
S	474	0.83	2.13	2.29	0.18	0.01	0.01	5.46
SSW	751	0.82	2.94	3.73	0.98	0.18	0.00	8.65
SW	1002	0.94	2.94	4.28	2.31	0.96	0.10	11.54
WSW	905	0.96	2.64	3.48	2.46	0.75	0.14	10.42
WSW	580	0.66	1.96	2.30	1.52	0.21	0.03	6.68
WNW	356	0.60	1.44	1.37	0.60	0.08	0.01	4.10
NW	326	0.74	1.44	0.81	0.56	0.21	0.00	3.75
NNW	275	0.66	1.02	0.94	0.36	0.18	0.00	3.17
Totals	8683	12.01	34.26	34.87	14.98	3.54	0.33	100

Wind Rose

Wind Speed (WS) (km/h)

Falher - 2015



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Table 34. Clairmont-Portable - Key Parameters – Continuous Monitoring Data – 2015 Summary

Parameter	Monitoring Station	Annual Average	24-hr	Maximum Values		Operational Time (%)	Readings above AAAQO		
				Date	1-hr		Date	24-hr	1-hr
Sulphur Dioxide SO ₂ measured in ppb	Clairmont-Portable	0.36	1.90	Nov 01	12.37	Dec 22 04:00	99.6	0	0
Nitrogen Dioxide NO ₂ measured in ppb	Clairmont-Portable	5.47	30.48	Jan 12	58.82	Jan 13 08:00	100.0	0	0
Ozone O ₃ measured in ppb	Clairmont-Portable	28.15	56.27	May 12	74.89	May 24 14:00	99.6	0	0
Total Hydrocarbons THC measured in ppm	Clairmont-Portable	2.14	3.90	Nov 01	7.45	Dec 22 04:00	96.9	-	-
Total Reduced Sulphur TRS measured in ppb	Clairmont-Portable	0.41	1.48	Dec 07	7.70	Nov 27 06:00	99.5	-	-
Particulate Matter PM _{2.5} measured in µg/m ³	Clairmont-Portable	3.47	23.82	May 21	143.88	May 24 21:00	99.4	0	4

Table 35. Sulphur Dioxide (SO₂) – Clairmont-Portable 2015 Summary and Frequency Distribution

Clairmont Portable SO ₂ (ppb) 2015															
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340
January	708	0.54	1.73	Jan 10	6.65	Jan 10 10:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	639	0.77	1.90	Feb 12	5.47	Feb 20 06:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.38	1.32	Mar 03	4.22	Mar 03 16:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	686	0.23	0.49	Apr 04	1.58	Apr 18 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	708	0.41	0.89	May 28	12.37	May 28 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	684	0.24	0.57	Jun 28	2.44	Jun 16 07:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	708	0.21	0.59	Jul 06	2.98	Jul 19 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	684	0.23	0.75	Aug 08	3.45	Aug 24 09:00	96.6	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	683	0.18	0.38	Sep 20	1.27	Sep 20 10:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	6209	0.36	1.90	Nov 01	12.37	Dec 22 04:00	99.6	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 36. Nitrogen Dioxide (NO₂) – Clairmont-Portable 2015 Summary and Frequency Distribution

Clairmont Portable NO ₂ (ppb) 2015														
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range				
								24-Hr	1-Hr	0 - 25	25 - 50	50 - 110	110 - 210	>210
January	706	14.31	30.48	Jan 12	58.82	Jan 13 08:00	100.0	0	0	76.77	22.95	0.28	0.00	0.00
February	636	9.34	26.12	Feb 12	53.74	Feb 04 14:00	99.9	0	0	90.09	9.75	0.16	0.00	0.00
March	707	6.18	13.66	Mar 03	33.98	Mar 05 09:00	100.0	0	0	98.30	1.70	0.00	0.00	0.00
April	684	3.49	7.74	Apr 27	29.40	Apr 13 07:00	100.0	0	0	99.71	0.29	0.00	0.00	0.00
May	708	3.20	7.43	May 27	20.37	May 22 06:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
June	683	3.54	6.19	Jun 09	17.37	Jun 09 02:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00
July	707	2.62	4.88	Jul 08	16.07	Jul 08 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
August	708	2.92	4.62	Aug 27	16.21	Aug 27 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
September	682	3.65	7.19	Sep 08	19.20	Sep 28 11:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	6221	5.47	30.48	Jan 12	58.82	Jan 13 08:00	99.95	0	0	96.10	3.85	0.05	0.00	0.00

Table 37. Ozone (O₃) – Clairmont-Portable 2015 Summary and Frequency Distribution

Clairmont Portable O ₃ (ppb)															2015
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 2	2 - 10	10 - 20	20 - 40	40 - 82	>82
January	709	21.65	38.09	Jan 25	43.33	Jan 26 00:00	100.0	0	0	6.06	16.50	20.03	54.30	3.10	0.00
February	640	24.95	37.43	Feb 05	43.34	Feb 24 13:00	100.0	0	0	2.97	12.19	13.28	70.31	1.25	0.00
March	709	33.04	40.20	Mar 10	50.41	Mar 17 17:00	100.0	0	0	0.00	1.55	7.62	71.09	19.75	0.00
April	683	33.56	46.11	Apr 30	54.80	Apr 27 16:00	100.0	0	0	0.00	2.05	8.78	59.88	29.28	0.00
May	711	42.40	56.27	May 12	74.89	May 24 14:00	100.0	0	0	0.00	0.98	4.92	36.15	57.95	0.00
June	685	29.36	40.58	Jun 06	58.15	Jun 27 14:00	99.9	0	0	0.00	2.19	20.15	59.42	18.25	0.00
July	709	25.58	35.70	Jul 07	60.20	Jul 11 19:00	100.0	0	0	0.00	3.24	25.67	64.32	6.77	0.00
August	686	22.56	29.77	Aug 26	43.52	Aug 26 18:00	96.6	0	0	0.15	11.81	28.28	57.29	2.48	0.00
September	686	20.24	27.99	Sep 18	38.74	Sep 12 13:00	99.9	0	0	2.04	15.31	27.84	54.81	0.00	0.00
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	6218	28.15	56.27	May 12	74.89	May 24 14:00	99.6	0	0	1.25	7.31	17.40	58.62	15.43	0.00

Table 38. Total Reduced Sulphur (TRS) – Clairmont-Portable 2015 Summary and Frequency Distribution

Clairmont Portable TRS (ppb)															2015
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	*AAAQO		Number 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	0.48	0.93	Jan 11	4.53	Jan 31 19:00	100.0	0	0	95.20	4.66	0.14	0.00	0.00	0.00
February	639	0.47	1.48	Feb 17	7.70	Feb 17 08:00	100.0	0	0	96.40	2.50	0.94	0.00	0.16	0.00
March	707	0.38	0.54	Mar 27	1.49	Mar 25 02:00	100.0	0	0	99.01	0.99	0.00	0.00	0.00	0.00
April	684	0.35	0.56	Apr 09	2.47	Apr 09 00:00	100.0	0	0	98.54	1.46	0.00	0.00	0.00	0.00
May	702	0.36	0.64	May 24	2.03	May 27 05:00	98.9	0	0	98.72	1.28	0.00	0.00	0.00	0.00
June	683	0.39	0.80	Jun 27	2.87	Jun 16 04:00	100.0	0	0	98.24	1.61	0.15	0.00	0.00	0.00
July	708	0.38	0.58	Jul 31	1.93	Jul 13 06:00	100.0	0	0	97.74	2.26	0.00	0.00	0.00	0.00
August	685	0.46	0.84	Aug 27	5.38	Aug 27 04:00	96.6	0	0	91.82	7.01	1.02	0.15	0.00	0.00
September	685	0.38	0.98	Sep 14	4.65	Sep 09 07:00	100.0	0	0	94.60	4.82	0.58	0.00	0.00	0.00
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	6201	0.41	1.48	Dec 07	7.70	Nov 27 06:00	99.5	0	0	96.70	2.95	0.31	0.02	0.02	0.00

Table 39. Total Hydrocarbon (THC) – Clairmont-Portable 2015 Summary and Frequency Distribution

Clairmont Portable														THC (ppm)		2015	
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	*AAAQO		Number of Readings in Concentration Range							
								24-Hr	1-Hr	0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 5.0	5.0 - 10.0	>10.0		
January	658	2.53	3.90	Jan 12	4.66	Jan 11 19:00	93.4	0	0	0.00	0.00	62.46	37.54	0.00	0.00		
February	578	2.41	3.01	Feb 03	3.69	Feb 04 05:00	90.3	0	0	0.00	0.00	72.15	27.85	0.00	0.00		
March	650	2.25	2.54	Mar 04	3.65	Mar 04 09:00	91.9	0	0	0.00	1.54	87.08	11.38	0.00	0.00		
April	684	2.13	2.24	Apr 10	2.89	Apr 09 22:00	100.0	0	0	0.00	0.00	98.39	1.61	0.00	0.00		
May	681	2.01	2.21	May 08	2.93	May 27 05:00	96.2	0	0	6.61	23.64	68.58	1.17	0.00	0.00		
June	687	2.02	2.41	Jun 09	7.45	Jun 09 16:00	100.0	0	0	0.00	63.61	34.93	1.31	0.15	0.00		
July	709	1.99	2.19	Jul 08	3.23	Jul 08 22:00	100.0	0	0	0.00	72.50	25.11	2.40	0.00	0.00		
August	709	2.00	2.23	Aug 02	3.82	Aug 27 03:00	100.0	0	0	0.14	69.96	25.81	4.09	0.00	0.00		
September	686	1.95	2.14	Sep 17	2.88	Sep 09 07:00	100.0	0	0	0.15	76.24	21.87	1.75	0.00	0.00		
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Annual	6042	2.14	3.90	Nov 01	7.45	Dec 22 04:00	96.9	0	0	0.77	34.17	55.15	9.90	0.02	0.00		

Table 40. Particulate Matter (PM_{2.5}) – Clairmont-Portable 2015 Summary and Frequency Distribution

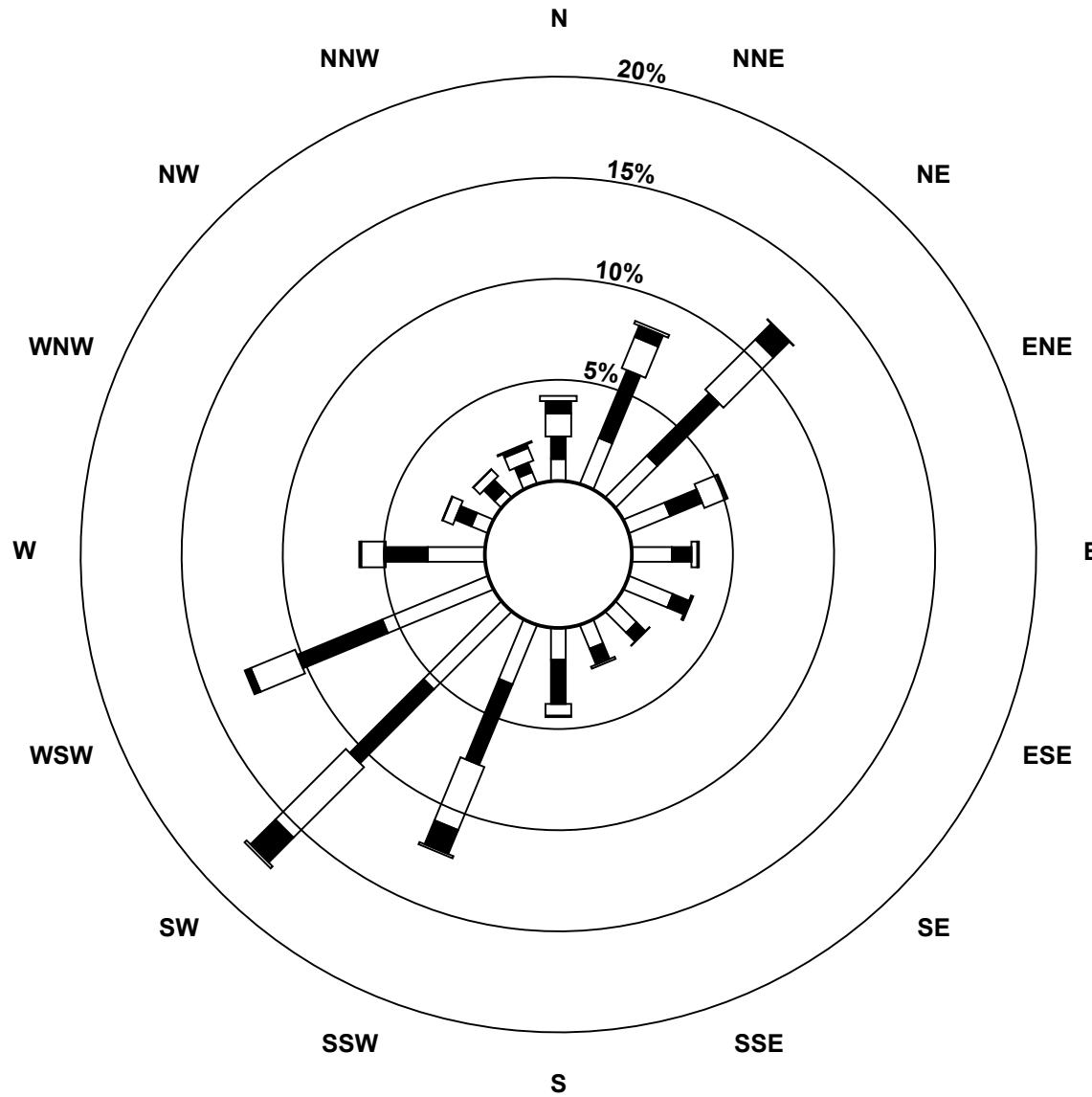
Clairmont Portable														PM _{2.5} (µg/m ³)		2015	
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range							
								24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30		
January	740	3.29	11.78	Jan 12	25.60	Jan 12 12:00	99.6	0	0	50.00	31.08	13.38	4.73	0.81	0.00		
February	669	3.66	13.18	Feb 04	28.99	Feb 04 13:00	99.6	0	0	44.99	37.37	10.01	5.98	1.64	0.00		
March	728	2.28	5.69	Mar 01	18.87	Mar 01 19:00	97.9	0	0	54.40	39.15	5.91	0.41	0.14	0.00		
April	717	2.37	16.06	Apr 10	91.96	Apr 10 20:00	100.0	0	1	62.62	28.59	6.69	1.26	0.42	0.42		
May	742	6.70	23.82	May 21	143.88	May 24 21:00	99.7	0	2	26.68	40.16	17.65	8.22	4.58	2.70		
June	719	3.95	9.35	Jun 29	89.54	Jun 12 01:00	100.0	0	1	41.45	37.55	15.58	4.03	1.25	0.14		
July	730	5.12	23.31	Jul 10	49.86	Jul 09 22:00	98.1	0	0	50.00	24.38	10.27	6.58	7.26	1.51		
August	742	2.15	5.95	Aug 24	33.26	Aug 24 21:00	99.7	0	0	58.49	36.12	4.72	0.40	0.13	0.13		
September	718	1.69	5.37	Sep 30	42.66	Sep 24 19:00	99.7	0	0	71.31	24.23	3.76	0.56	0.00	0.14		
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Annual	6505	3.47	23.82	May 21	143.88	May 24 21:00	99.4	0	4	51.10	33.18	9.77	3.57	1.80	0.56		

Table 41. Wind Speed and Wind Direction Frequency Distribution – Clairmont-Portable 2015 Summary

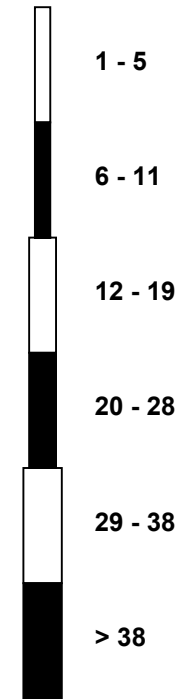
Clairmont Portable								2015
Direction	# of Readings	% of wind speed (km/hr)						Totals
		0 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	260	1.08	1.12	1.13	0.61	0.26	0.00	4.21
NNE	525	2.46	3.63	1.67	0.60	0.15	0.00	8.50
NE	736	2.93	4.34	3.51	1.10	0.03	0.00	11.91
ENE	319	2.20	1.72	1.17	0.08	0.00	0.00	5.16
E	205	1.97	0.97	0.29	0.08	0.00	0.00	3.32
ESE	205	2.35	0.86	0.06	0.05	0.00	0.00	3.32
SE	130	1.47	0.61	0.02	0.00	0.00	0.00	2.10
SSE	137	1.26	0.84	0.11	0.00	0.00	0.00	2.22
S	272	1.57	2.18	0.58	0.06	0.00	0.00	4.40
SSW	757	3.17	4.30	3.38	1.28	0.11	0.00	12.25
SW	1076	5.44	5.16	4.94	1.73	0.15	0.00	17.41
WSW	797	5.65	4.55	2.38	0.32	0.00	0.00	12.90
WSW	384	2.83	2.07	1.21	0.10	0.00	0.00	6.21
WNW	144	0.87	0.87	0.55	0.03	0.00	0.00	2.33
NW	105	0.47	0.74	0.47	0.02	0.00	0.00	1.70
NNW	127	0.63	0.50	0.68	0.18	0.06	0.00	2.06
Totals	6179	36.37	34.47	22.16	6.25	0.76	0.00	100

Wind Rose

Wind Speed (WS) (km/h)
Portable Clairmont - 2015



Wind Speed Classes (km/h)



PAZA

PASSIVE MONITORING

2015

ANNUAL SUMMARY TABLES

Table 42. SO₂ Passive - 2015 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	0.5	0.2	0.3	0.1	0.2	0.2	0.2	0.2	BDL	0.2	0.2	0.5	0.5	0.2
2	Bay Tree	0.3	0.4	0.4	0.1	0.3	0.2	0.2	0.1	BDL	0.1	0.1	0.3	0.4	0.2
3	Forth Creek	0.3	0.4	0.8	0.1	0.2	0.2	0.2	0.1	0.5	0.1	0.3	0.4	0.8	0.3
4	Gordondale	0.6	0.5	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.3	0.4	0.6	0.3
5	Boone Creek	0.3	0.6	0.2	0.2	0.5	0.1	0.1	0.1	BDL	BDL	0.1	0.2	0.6	0.2
7	Steeprock Creek	0.2	0.4	0.2	0.1	0.4	0.1	0.2	0.4	BDL	BDL	0.1	0.3	0.4	0.2
9	Spirit River	0.5	0.3	0.3	0.2	0.2	0.2	0.2	0.3	BDL	0.2	0.3	0.3	0.5	0.3
10	Woking	0.5	0.5	0.2	0.2	0.3	0.3	0.3	0.1	BDL	0.3	0.5	0.5	0.5	0.3
11	Webber Creek	0.5	0.7	0.3	0.2	0.4	0.1	0.3	0.1	BDL	0.2	0.2	0.5	0.7	0.3
12	Hythe	0.3	0.6	0.6	0.2	0.3	0.1	0.2	0.2	BDL	0.1	0.2	0.4	0.6	0.3
14	Sylvester	0.1	0.2	0.3	BDL	0.3	BDL	0.1	0.4	BDL	BDL	BDL	0.1	0.4	0.2
16	Beaverlodge	0.2	0.6	0.3	0.2	0.3	0.2	0.1	0.2	BDL	0.1	0.1	0.4	0.6	0.2
17	Poplar	0.3	0.7	0.4	0.1	0.5	0.2	0.2	0.1	0.1	0.1	0.3	0.4	0.7	0.3
18	Saddle Hills	0.3	0.5	0.3	0.3	0.4	0.2	0.3	0.3	0.1	0.1	0.2	0.4	0.5	0.3
19	Wanham	0.4	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.1	0.3	0.1	0.4	0.5	0.3
20	Shaftesbury	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	BDL	0.1	0.2	0.3	0.3	0.2
21	Eaglesham	0.3	0.3	0.3	0.1	0.2	0.1	0.1	0.1	BDL	0.1	0.1	0.2	0.3	0.2
23	Bear Lake	0.5	0.7	0.4	0.1	0.3	0.1	0.2	0.3	BDL	0.1	0.2	0.3	0.7	0.3
24	Wembley	0.2	0.6	0.2	0.1	0.3	0.2	0.1	0.1	BDL	0.1	0.2	0.2	0.6	0.2
25	Pinto Creek	0.1	0.3	0.2	0.1	0.2	BDL	0.1	0.1	BDL	BDL	BDL	0.2	0.3	0.1
26	Flyingshot	0.2	0.4	0.4	0.1	0.4	0.2	0.2	0.1	BDL	0.1	0.2	0.2	0.4	0.2
27	Grande Prairie I	0.3	0.3	0.3	0.1	0.4	0.2	0.2	0.3	BDL	0.1	0.2	0.2	0.4	0.2
28	Clairmont Lake	0.5	0.7	0.2	0.2	0.4	0.2	0.2	0.1	BDL	0.2	0.3	0.5	0.7	0.3
29	Smoky Heights	0.8	0.8	0.3	0.3	0.3	0.4	0.3	0.2	BDL	0.2	0.2	0.5	0.8	0.4
30	Fitzsimmons	0.2	0.3	0.2	0.1	0.3	0.2	0.1	0.1	BDL	0.2	0.1	0.2	0.3	0.2
32	Gold Creek	0.2	0.2	0.4	0.1	0.7	0.2	0.2	0.2	BDL	0.1	0.4	0.2	0.7	0.3
33	Wapiti	0.2	0.3	0.2	0.1	0.3	0.2	0.1	0.3	BDL	0.1	0.2	0.2	0.3	0.2
34	Puskwaskau	0.1	0.3	0.3	0.1	0.2	0.1	0.1	0.5	BDL	BDL	0.3	0.1	0.5	0.2
35	Jean Cote	0.3	0.3	0.7	0.1	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.2	0.7	0.2
36	Guy	0.2	0.3	0.6	0.1	0.3	0.2	0.1	0.5	BDL	0.1	0.3	0.2	0.6	0.2
37	Crooked Creek	0.2	0.3	0.2	0.1	0.3	0.1	0.1	0.2	0.1	0.1	0.2	0.3	0.3	0.2
38	Karr Creek	0.1	0.2	0.2	BDL	0.2	BDL	0.1	0.3	BDL	BDL	0.1	0.2	0.3	0.2
39	Clouston Creek	0.2	0.3	0.2	0.1	0.3	BDL	0.1	0.1	BDL	0.1	0.4	0.4	0.4	0.2
40	McLennan	0.2	0.3	0.6	0.1	0.3	0.2	0.2	0.3	0.1	0.1	0.2	0.2	0.6	0.2
41	Valleyview	0.2	0.3	0.4	0.1	0.5	0.3	0.1	0.1	BDL	0.1	0.1	0.4	0.5	0.2
42	Sunset House	0.3	0.4	0.7	0.1	0.4	0.2	0.1	0.2	BDL	0.2	0.1	0.4	0.7	0.3
43	High Prairie	0.1	0.2	0.4	0.1	0.2	BDL	0.1	0.2	BDL	0.1	0.1	0.2	0.4	0.2
44	Peavine	0.1	0.2	0.2	0.1	0.3	BDL	0.1	0.1	0.2	0.1	0.4	0.1	0.4	0.2
45	Gift Lake	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1
46	Little Smoky	0.1	0.3	0.7	0.1	0.1	0.2	0.1	0.3	BDL	0.1	0.1	0.2	0.7	0.2
47	Kinuso	0.1	0.3	0.3	0.1	0.4	0.1	0.1	0.3	BDL	0.1	0.1	0.1	0.4	0.2
48	Deer Mountain	0.2	0.3	0.2	0.1	0.2	0.1	0.2	0.2	BDL	0.1	0.1	0.1	0.3	0.2
49	Grande Prairie HP	0.3	0.4	0.3	0.1	0.4	BDL	0.2	0.3	0.1	0.1	0.2	0.6	0.6	0.3
62	East Prairie	0.1	0.2	0.6	0.1	0.2	0.2	0.1	0.1	BDL	0.1	0.1	0.1	0.6	0.2
Average		0.3	0.4	0.3	0.1	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.3		0.2
Peak		0.8	0.8	0.8	0.3	0.7	0.4	0.3	0.5	0.5	0.3	0.5	0.6	0.8	

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

Table 43. NO₂ Passive - 2015 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	1.5	1.2	0.4	0.3	0.7	N/S	0.8	0.6	0.5	2.1	1.8	1.4	2.1	1.0
2	Bay Tree	1.4	1.3	0.6	0.4	0.8	0.4	0.5	0.4	0.6	1.2	0.9	2.5	2.5	0.9
3	Forth Creek	1.2	0.7	0.7	0.2	0.5	0.4	0.5	0.4	0.5	1.7	0.7	1.5	1.7	0.7
4	Gordondale	1.2	1.3	1.0	0.6	0.5	0.4	0.5	0.3	0.9	1.3	1.2	2.2	2.2	1.0
5	Boone Creek	1.1	0.8	1.1	0.7	0.4	0.8	0.3	0.5	0.5	0.8	1.0	1.7	1.7	0.8
7	Steeprock Creek	0.7	0.4	0.5	0.2	0.5	BDL	0.2	0.7	0.2	0.9	0.5	1.6	1.6	0.6
9	Spirit River	1.3	1.3	0.7	0.4	1.1	2.7	1.0	0.5	1.2	2.5	1.0	1.7	2.7	1.3
10	Woking	1.0	0.8	0.6	0.2	0.6	0.8	0.5	0.5	0.7	1.4	1.0	1.4	1.4	0.8
11	Webber Creek	2.4	1.1	0.6	1.6	1.0	1.5	0.6	0.6	0.7	2.0	2.6	2.8	2.8	1.5
12	Hythe	1.2	1.3	1.0	0.5	1.5	1.2	0.4	0.9	0.6	3.2	1.4	3.4	3.4	1.4
14	Sylvester	0.9	0.5	1.2	0.4	1.0	0.3	0.3	0.8	0.2	0.9	0.3	1.2	1.2	0.7
16	Beaverlodge	3.1	1.8	1.1	0.5	0.8	0.6	0.4	0.2	1.0	2.6	1.7	4.4	4.4	1.5
17	Poplar	2.3	1.2	1.2	0.4	0.9	1.6	0.6	0.3	0.7	3.8	1.7	3.9	3.9	1.6
18	Saddle Hills	1.7	0.7	0.6	0.2	0.7	0.5	0.4	1.2	0.5	1.0	0.9	1.3	1.7	0.8
19	Wanham	1.0	0.6	0.7	0.3	0.9	0.9	0.3	0.3	0.4	1.1	0.8	2.0	2.0	0.8
20	Shaftesbury	1.3	1.4	0.5	0.2	1.1	1.1	0.4	0.6	0.4	1.1	1.0	1.3	1.4	0.9
21	Eaglesham	1.1	0.6	2.6	0.9	3.7	1.5	0.2	0.9	0.4	1.1	1.3	1.3	3.7	1.3
23	Bear Lake	2.8	1.4	1.1	1.9	3.1	3.0	0.9	0.4	1.3	2.5	3.0	2.8	3.1	2.0
24	Wembley	2.1	1.4	0.8	1.0	1.7	1.5	0.9	0.3	1.2	3.2	1.6	3.9	3.9	1.6
25	Pinto Creek	1.3	0.6	1.1	0.3	0.7	0.3	0.3	0.9	0.6	1.3	0.7	2.4	2.4	0.9
26	Flyingshot	2.6	2.3	1.4	0.6	1.2	0.7	0.5	0.4	1.0	2.8	2.2	4.0	4.0	1.6
27	Grande Prairie I	9.8	8.7	0.4	2.9	2.6	1.6	1.6	0.2	1.4	10.8	12.0	14.7	14.7	5.6
28	Clairmont Lake	2.4	1.6	0.5	0.5	1.1	1.1	0.6	0.1	1.0	1.6	2.3	3.5	3.5	1.4
29	Smoky Heights	3.5	1.7	0.7	0.4	0.4	1.0	0.3	0.5	0.7	1.3	N/S	N/S	3.5	1.1
30	Fitzsimmons	2.9	1.4	0.6	0.4	0.6	0.8	0.5	2.7	0.7	1.7	2.1	2.8	2.9	1.4
32	Gold Creek	7.1	3.1	0.4	1.0	1.1	0.9	0.5	0.3	1.2	7.3	4.5	5.8	7.3	2.7
33	Wapiti	3.1	1.5	0.3	0.6	0.5	0.8	0.8	0.4	0.9	1.5	2.5	3.2	3.2	1.3
34	Puskwaskau	0.7	0.8	1.3	0.2	0.3	0.2	0.2	0.3	0.2	0.8	0.7	0.7	1.3	0.5
35	Jean Cote	1.0	0.7	2.1	0.7	2.1	7.3	2.6	0.1	1.9	3.9	2.4	1.5	7.3	2.2
36	Guy	0.8	0.8	4.3	0.5	1.8	6.3	1.2	0.2	0.7	0.9	1.0	1.3	6.3	1.7
37	Crooked Creek	2.6	1.6	0.6	0.4	0.5	0.9	0.3	0.5	0.5	1.8	2.2	3.0	3.0	1.2
38	Karr Creek	1.4	0.9	1.2	0.5	0.6	0.4	0.4	1.1	0.4	0.9	1.1	1.9	1.9	0.9
39	Clouston Creek	1.1	0.9	1.2	0.2	1.0	1.4	0.4	1.3	0.5	0.8	2.1	1.8	2.1	1.1
40	McLennan	1.3	0.7	N/S	N/S	2.1	4.9	1.7	0.3	0.7	1.7	2.0	2.1	4.9	1.7
41	Valleyview	1.8	1.2	1.0	0.7	0.5	0.8	0.4	0.4	0.6	2.3	1.4	3.5	3.5	1.2
42	Sunset House	0.8	0.6	1.2	0.3	0.2	0.4	0.5	BDL	0.4	1.3	1.2	2.3	2.3	0.8
43	High Prairie	1.3	1.0	0.7	0.5	1.4	1.9	0.6	0.1	0.4	1.6	1.4	1.5	1.9	1.0
44	Peavine	0.7	0.4	0.8	0.3	BDL	0.3	0.1	0.5	0.1	0.5	0.8	0.7	0.8	0.5
45	Gift Lake	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.1	0.7	1.1	0.4
46	Little Smoky	5.7	3.0	1.7	1.1	0.9	0.8	0.7	0.4	1.2	2.8	3.7	4.5	5.7	2.2
47	Kinuso	1.0	0.7	1.3	0.2	0.2	0.4	0.3	0.3	0.3	2.5	0.9	1.4	2.5	0.8
48	Deer Mountain	0.7	0.5	2.8	BDL	0.2	0.3	0.2	1.2	0.2	0.6	0.8	0.8	2.8	0.8
49	Grande Prairie HP	14.5	N/S	1.2	2.4	1.6	1.3	1.0	0.8	3.1	12.1	11.9	15.3	15.3	5.9
62	East Prairie	0.7	0.5	0.5	0.5	0.2	BDL	BDL	1.8	0.1	0.4	0.8	0.7	1.8	0.6
Average		2.2	1.3	1.0	0.6	1.0	1.3	0.6	0.6	0.7	2.2	2.0	2.8		1.4
Peak		14.5	8.7	4.3	2.9	3.7	7.3	2.6	2.7	3.1	12.1	12.0	15.3	15.3	

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

Table 44. O₃ Passive - 2015 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	40.9	44.2	38.0	42.7	39.9	56.2	29.6	24.8	25.2	31.9	25.9	16.3	56.2	34.6
2	Bay Tree	39.7	35.0	37.1	48.8	41.9	30.4	21.5	20.3	23.9	24.0	27.2	18.6	48.8	30.7
3	Forth Creek	38.4	39.2	41.9	47.8	50.3	34.5	30.9	23.5	27.5	30.1	33.8	21.4	50.3	35.0
4	Gordondale	41.0	47.0	44.1	47.3	42.1	35.5	28.7	25.8	29.6	30.3	33.0	27.4	47.3	36.0
5	Boone Creek	42.8	36.9	39.0	39.0	40.5	30.5	24.8	26.5	23.2	22.2	33.5	19.2	42.8	31.5
7	Steepprock Creek	41.6	38.3	38.0	50.3	43.6	33.7	25.6	21.0	24.1	33.3	42.3	24.1	50.3	34.7
9	Spirit River	36.0	38.1	35.7	37.8	39.0	32.0	25.6	22.2	26.5	27.0	34.5	21.0	39.0	31.3
10	Woking	37.1	45.5	35.3	40.2	43.3	30.6	28.2	19.7	24.1	27.5	33.5	25.0	45.5	32.5
11	Webber Creek	32.9	41.8	25.3	39.9	49.7	32.6	20.3	22.3	22.6	26.2	23.3	14.7	49.7	29.3
12	Hythe	37.4	40.6	34.4	38.7	46.6	26.0	26.9	23.5	23.0	24.0	29.6	17.1	46.6	30.7
14	Sylvester	36.5	34.8	35.8	33.8	37.7	24.7	20.2	21.8	18.7	22.3	26.6	16.5	37.7	27.4
16	Beaverlodge	36.9	40.2	36.9	41.5	50.0	40.8	29.0	25.3	32.4	26.7	31.1	21.4	50.0	34.3
17	Poplar	37.6	38.4	35.2	37.4	51.4	36.6	26.5	19.5	23.7	21.6	30.6	15.8	51.4	31.2
18	Saddle Hills	38.8	44.6	44.2	45.4	54.3	31.0	32.6	27.6	23.8	26.3	33.4	23.7	54.3	35.5
19	Wanham	38.3	41.4	32.7	43.3	39.9	34.7	32.0	21.3	31.6	31.3	38.4	23.1	43.3	34.0
20	Shaftesbury	35.2	46.4	41.4	41.4	39.3	33.8	30.9	25.2	27.1	28.2	34.0	18.4	46.4	33.4
21	Eaglesham	36.7	40.3	39.6	39.0	36.8	31.9	39.2	21.9	24.6	19.9	24.3	17.3	40.3	30.9
23	Bear Lake	36.7	40.8	32.5	39.5	44.0	34.6	24.9	19.6	26.1	19.5	26.7	18.5	44.0	30.3
24	Wembley	42.2	40.8	36.4	34.9	41.3	30.3	27.1	18.0	22.8	22.7	25.0	16.2	42.2	29.8
25	Pinto Creek	37.7	38.4	34.5	39.8	39.2	30.6	21.0	25.0	21.4	24.5	32.5	17.4	39.8	30.2
26	Flyingshot	31.1	36.4	33.8	38.6	46.3	28.8	26.9	18.1	19.6	22.3	22.6	14.6	46.3	28.3
27	Grande Prairie I	28.6	27.9	41.3	38.0	44.1	35.9	27.9	25.6	23.5	19.1	24.5	15.3	44.1	29.3
28	Clairmont Lake	41.0	49.2	30.7	47.2	41.2	36.6	32.1	21.6	24.1	21.9	32.3	22.2	49.2	33.3
29	Smoky Heights	38.7	40.7	39.1	47.4	52.4	41.3	30.5	17.9	28.7	27.6	25.6	17.1	52.4	33.9
30	Fitzsimmons	32.6	36.4	38.9	38.8	47.6	26.8	21.7	24.1	21.9	20.5	22.7	18.9	47.6	29.2
32	Gold Creek	22.6	28.9	42.7	35.8	37.3	25.9	20.6	18.5	15.5	25.8	16.8	9.1	42.7	25.0
33	Wapiti	36.2	42.3	32.2	38.3	39.8	31.5	27.8	29.7	22.3	24.3	28.3	16.8	42.3	30.8
34	Puskwaskau	31.2	35.0	27.4	35.0	40.7	24.5	16.5	20.2	19.4	23.7	29.8	14.8	40.7	26.5
35	Jean Cote	41.5	47.6	37.5	35.0	41.8	28.9	23.3	25.2	22.9	24.1	26.4	25.1	47.6	31.6
36	Guy	36.4	42.1	40.9	40.0	45.0	28.3	25.2	17.3	23.4	25.6	34.2	20.1	45.0	31.6
37	Crooked Creek	35.1	41.4	29.0	44.8	46.5	31.3	22.1	21.7	23.3	25.5	30.9	20.0	46.5	31.0
38	Karr Creek	29.0	38.1	40.3	34.8	38.2	31.9	18.9	22.2	15.9	17.6	25.4	16.9	40.3	27.4
39	Clouston Creek	37.2	43.7	40.3	41.7	46.5	34.1	21.4	18.6	24.2	25.8	29.0	20.4	46.5	31.9
40	McLennan	36.3	44.7	39.7	38.1	44.0	35.5	24.8	23.2	23.4	26.3	27.1	21.0	44.7	32.0
41	Valleyview	32.7	40.3	39.5	37.9	49.0	35.7	25.6	17.6	28.6	33.4	29.1	21.1	49.0	32.5
42	Sunset House	40.7	41.3	40.1	53.3	55.2	40.9	28.8	16.6	28.5	34.7	37.7	30.6	55.2	37.4
43	High Prairie	40.9	42.7	36.4	38.4	51.2	31.9	28.9	21.2	24.0	26.1	26.6	20.3	51.2	32.4
44	Peavine	34.9	35.8	44.0	38.5	42.4	30.6	20.2	22.6	19.7	24.2	26.3	17.4	44.0	29.7
45	Gift Lake	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	25.0	18.6	25.0	16.5
46	Little Smoky	27.7	35.3	35.3	36.9	39.6	36.5	18.9	76.2	15.9	25.7	23.0	16.1	76.2	32.2
47	Kinuso	32.6	36.8	39.0	43.7	39.8	30.7	24.7	21.5	20.8	22.3	21.7	16.2	43.7	29.1
48	Deer Mountain	69.4	36.2	33.5	43.4	41.4	30.3	24.1	21.0	21.8	22.7	22.2	21.2	69.4	32.3
49	Grande Prairie HP	23.5	27.8	30.7	41.0	44.4	35.3	28.5	17.7	26.7	19.0	20.6	10.6	44.4	27.2
62	East Prairie	32.5	37.3	35.9	45.6	40.7	25.9	20.5	27.4	16.4	22.5	26.9	14.0	45.6	28.8
Average		36.2	39.0	36.4	40.4	43.2	32.4	25.5	23.1	23.4	24.9	28.5	18.9		31.0
Peak		69.4	49.2	44.2	53.3	55.2	56.2	39.2	76.2	32.4	34.7	42.3	30.6	76.2	

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

Table 45. H₂S Passive - 2015 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	0.1	0.1	0.1	BDL	BDL	0.1	0.1	0.1	BDL	0.1	0.3	0.3	0.3	0.1
2	Girouxville 3	0.4	0.2	0.2	0.1	0.1	N/S	N/S	0.2	0.2	0.3	0.3	0.3	0.4	0.2
3	Girouxville 4	0.4	0.3	0.3	0.1	0.2	0.2	0.4	0.3	0.2	0.3	0.3	0.3	0.4	0.3
Average		0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.2	
Peak		0.4	0.3	0.3	0.1	0.2	0.2	0.4	0.3	0.2	0.3	0.3	0.3	0.4	

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

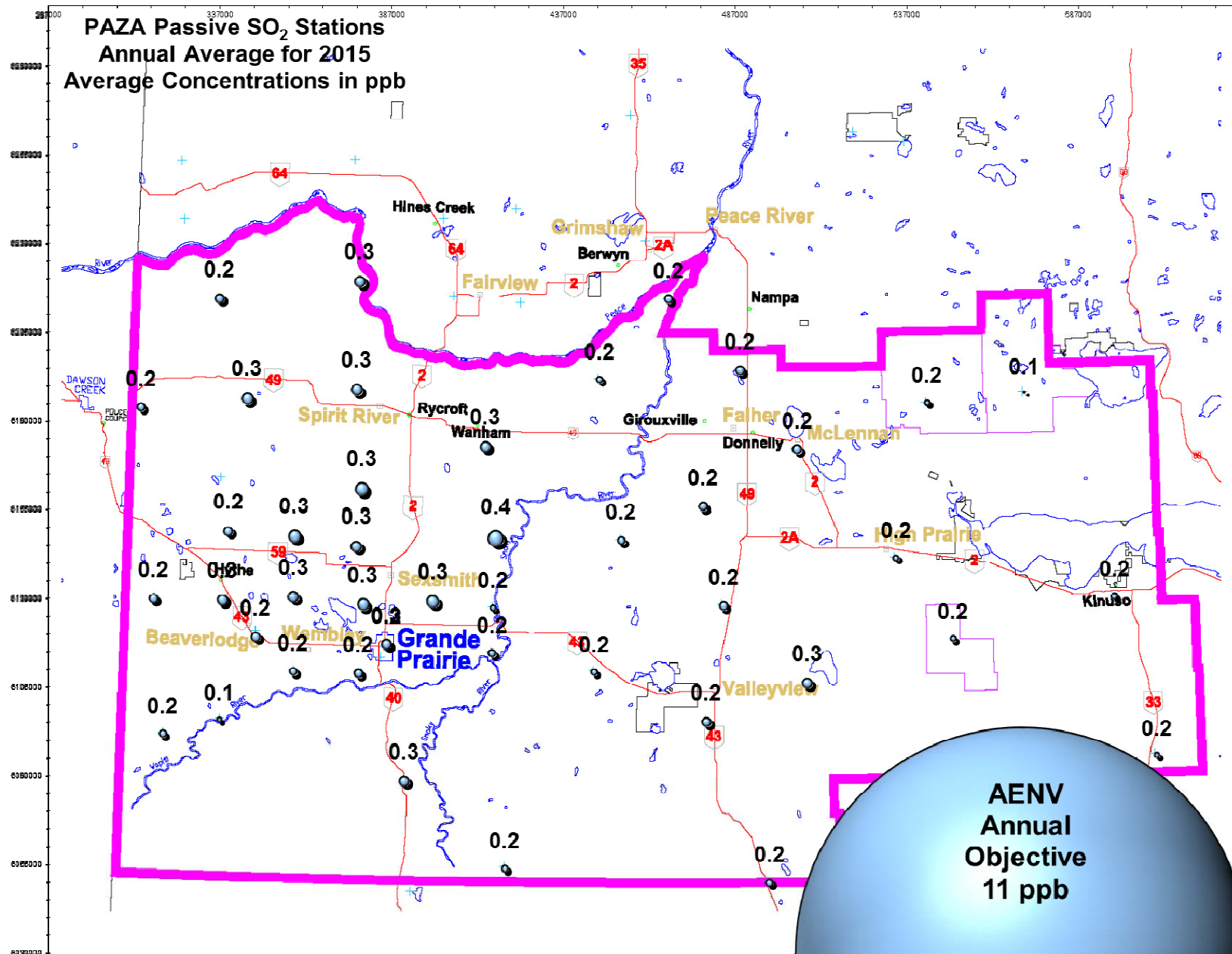


Figure 11. PAZA SO₂ Bubble Chart – 2015 Annual Average

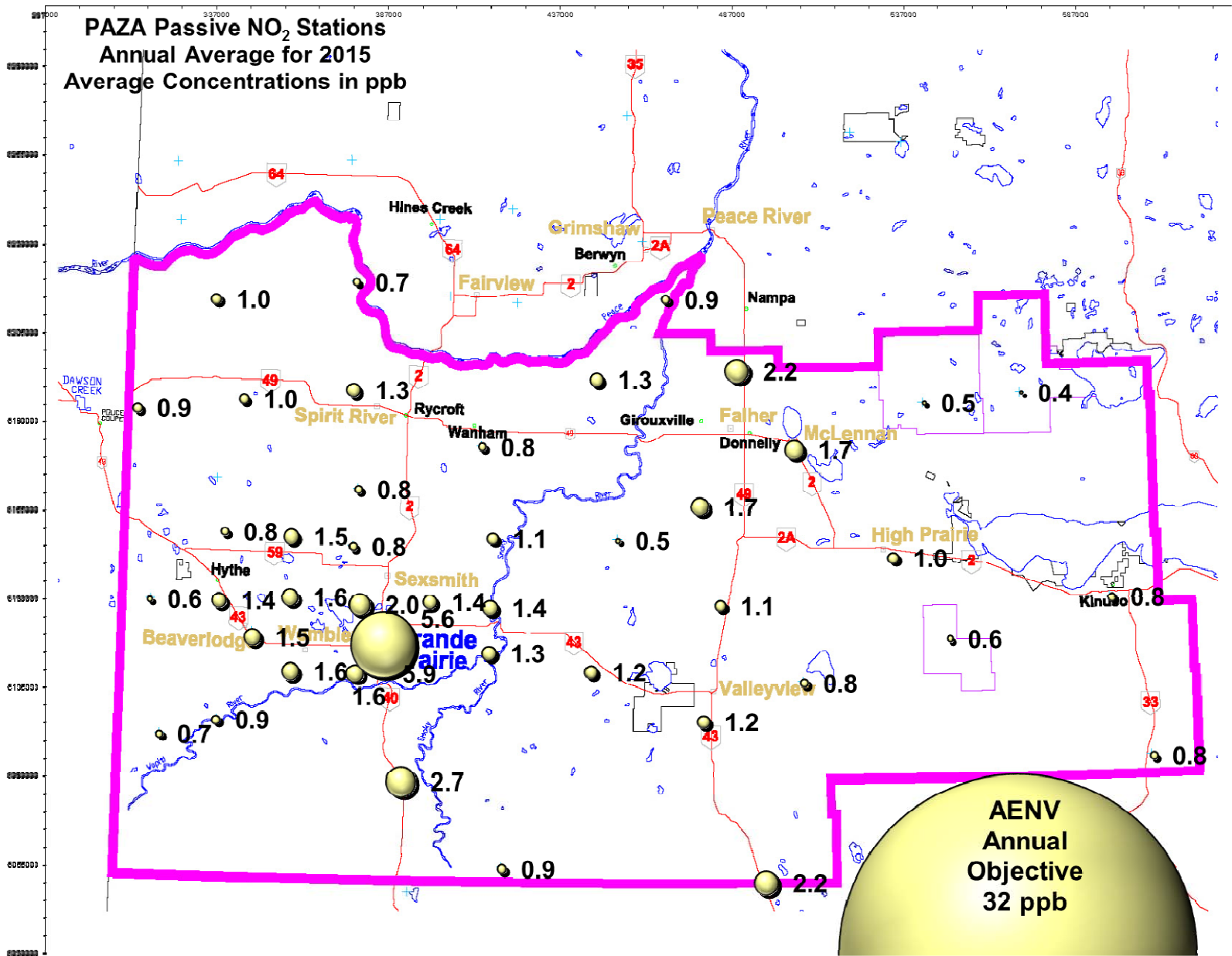


Figure 12. PAZA NO₂ Bubble Chart– 2015 Annual Average

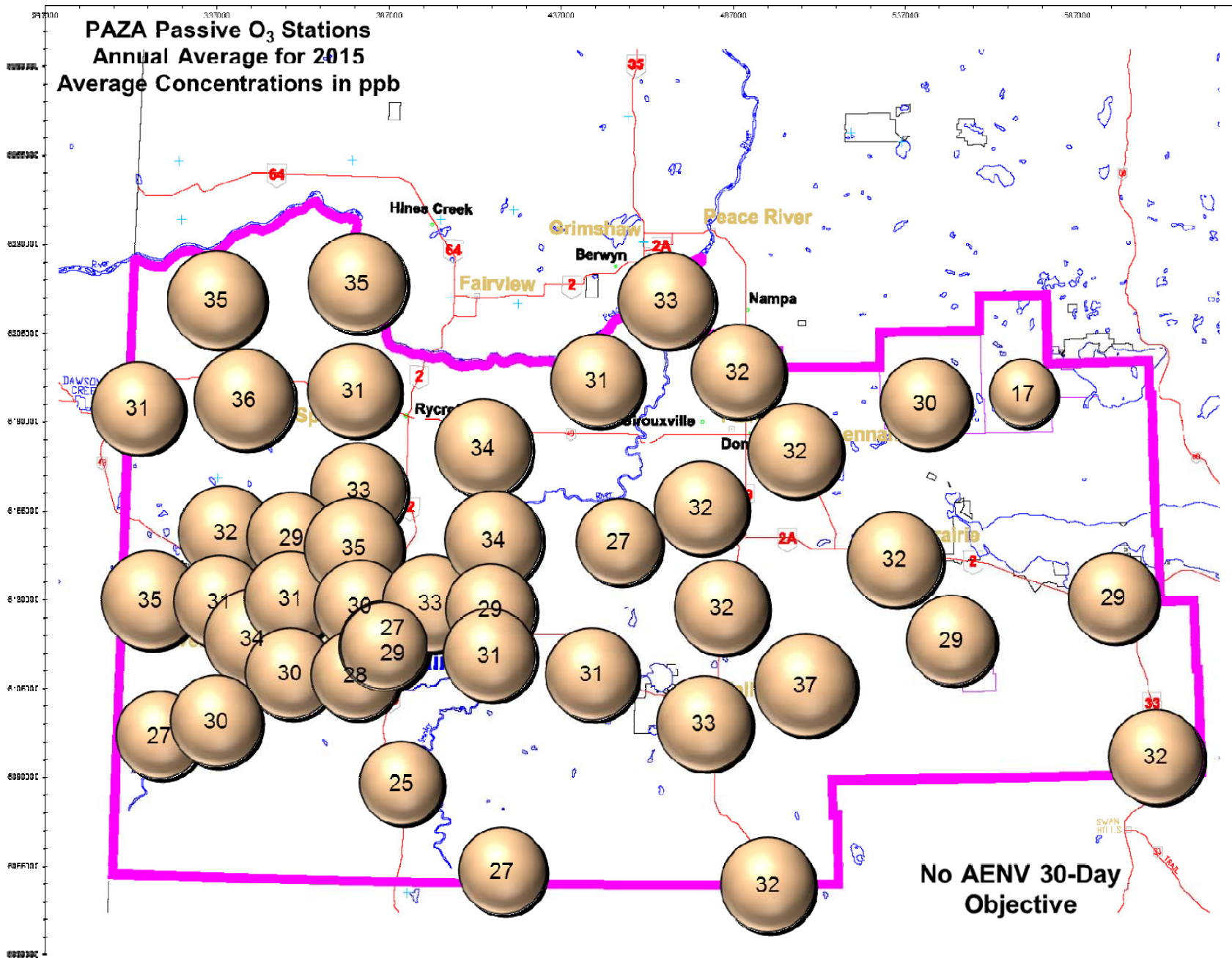


Figure 13. PAZA O₃ Bubble Chart – 2015 Annual Average

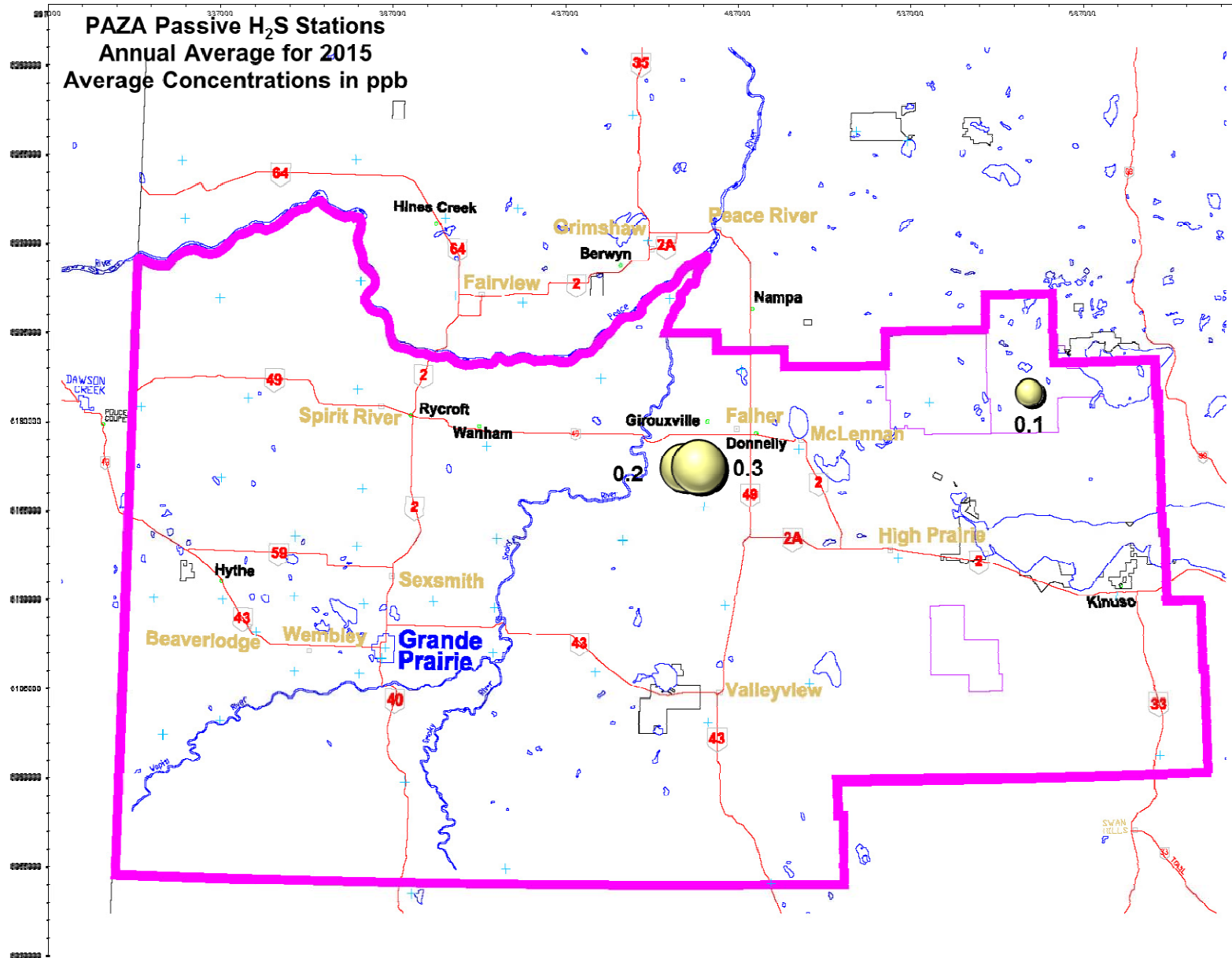


Figure 14. PAZA H₂S Bubble Chart – 2015 Annual Average