



Peace Airshed Zone Association

Ambient Air Monitoring Network Summary

**Continuous Ambient Air Quality Monitoring Program
Annual Report
2014**

Operations



Peace Airshed Zone Association
2013 Annual Ambient Air Monitoring Report

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February 26th, 2015

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

RE: Peace Airshed Zone Association (PAZA) – 2014 Annual Ambient Air Monitoring Report

Please find enclosed for your review the Peace Airshed Zone Association (PAZA) 2014 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 Reno and will be referred to as the Reno-Portable station in this report and operated until June 19th, 2014. It was relocated to the Clairmont area and began operation on June 19th, 2014.

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 seven (7) 1-hr averages of hydrogen sulphide above the AAAQO of 10 ppb and one (1) 24-hr average above the AAAQO of 3 ppb.

There were ninety-six (96) 1-hr averages of PM_{2.5} above the Alberta Ambient Air Quality Guideline (AAAQG) of 80 µg/m³ and forty (40) 24-hr averages above the AAAQO of 30 µg/m³.

	Date	Time (Hour Ending)	Location	Recorded Concentration ($\mu\text{g}/\text{m}^3$)
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jan	11:00	Smoky Heights	189
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jan	12:00	Smoky Heights	132
One (1) 1-hr average $\text{PM}_{2.5}$	28-Feb	22:00	Smoky Heights	101
One (1) 1-hr average $\text{PM}_{2.5}$	1-Mar	0:00	Smoky Heights	174
One (1) 1-hr average $\text{PM}_{2.5}$	1-Mar	2:00	Smoky Heights	130
One (1) 1-hr average $\text{PM}_{2.5}$	1-Mar	3:00	Smoky Heights	113
One (1) 1-hr average $\text{PM}_{2.5}$	1-Mar	4:00	Smoky Heights	112
One (1) 1-hr average $\text{PM}_{2.5}$	8-Jul	21:00	Smoky Heights	84
One (1) 1-hr average $\text{PM}_{2.5}$	8-Jul	23:00	Smoky Heights	92
One (1) 1-hr average $\text{PM}_{2.5}$	9-Jul	0:00	Smoky Heights	108
One (1) 1-hr average $\text{PM}_{2.5}$	11-Jul	8:00	Beaverlodge	84
One (1) 1-hr average $\text{PM}_{2.5}$	11-Jul	9:00	Beaverlodge	95
One (1) 1-hr average $\text{PM}_{2.5}$	11-Jul	10:00	Beaverlodge	92
One (1) 1-hr average $\text{PM}_{2.5}$	12-Jul	8:00	Beaverlodge	104
One (1) 1-hr average $\text{PM}_{2.5}$	12-Jul	9:00	Beaverlodge	104
One (1) 1-hr average $\text{PM}_{2.5}$	12-Jul	10:00	Beaverlodge	83
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	7:00	Evergreen Park	104
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	8:00	Henry Pirker	132
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	8:00	Evergreen Park	136
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	9:00	Henry Pirker	382
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	9:00	Evergreen Park	115
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	10:00	Henry Pirker	234
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	10:00	Evergreen Park	83
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	11:00	Henry Pirker	134
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	11:00	Beaverlodge	86
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	11:00	Clairmont	102
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	12:00	Henry Pirker	89
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	13:00	Smoky Heights	86
One (1) 1-hr average $\text{PM}_{2.5}$	13-Jul	13:00	Clairmont	93
One (1) 1-hr average $\text{PM}_{2.5}$	14-Jul	2:00	Evergreen Park	113
One (1) 1-hr average $\text{PM}_{2.5}$	14-Jul	11:00	Henry Pirker	83
One (1) 1-hr average $\text{PM}_{2.5}$	14-Jul	12:00	Henry Pirker	110
One (1) 1-hr average $\text{PM}_{2.5}$	14-Jul	13:00	Henry Pirker	180
One (1) 1-hr average $\text{PM}_{2.5}$	14-Jul	14:00	Henry Pirker	206

	Date	Time (Hour Ending)	Location	Recorded Concentration ($\mu\text{g}/\text{m}^3$)
One (1) 1-hr average $\text{PM}_{2.5}$	14-Jul	17:00	Beaverlodge	94
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	8:00	Henry Pirker	111
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	8:00	Beaverlodge	83
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	9:00	Henry Pirker	189
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	9:00	Evergreen Park	85
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	9:00	Beaverlodge	123
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	10:00	Henry Pirker	138
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	10:00	Evergreen Park	87
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	10:00	Beaverlodge	134
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	11:00	Henry Pirker	114
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	11:00	Beaverlodge	99
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	21:00	Clairmont	88
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	22:00	Smoky Heights	93
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	22:00	Clairmont	87
One (1) 1-hr average $\text{PM}_{2.5}$	15-Jul	23:00	Smoky Heights	94
One (1) 1-hr average $\text{PM}_{2.5}$	16-Jul	15:00	Henry Pirker	91
One (1) 1-hr average $\text{PM}_{2.5}$	16-Jul	18:00	Henry Pirker	86
One (1) 1-hr average $\text{PM}_{2.5}$	16-Jul	19:00	Henry Pirker	137
One (1) 1-hr average $\text{PM}_{2.5}$	16-Jul	20:00	Henry Pirker	131
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	15:00	Beaverlodge	96
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	16:00	Beaverlodge	131
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	17:00	Beaverlodge	124
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	17:00	Clairmont	89
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	18:00	Evergreen Park	101
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	18:00	Clairmont	84
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	19:00	Evergreen Park	99
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	19:00	Beaverlodge	88
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	20:00	Evergreen Park	98
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	20:00	Beaverlodge	85
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	20:00	Clairmont	96
One (1) 1-hr average $\text{PM}_{2.5}$	18-Jul	21:00	Evergreen Park	86
One (1) 1-hr average $\text{PM}_{2.5}$	21-Jul	9:00	Beaverlodge	102
One (1) 1-hr average $\text{PM}_{2.5}$	1-Aug	6:00	Henry Pirker	82
One (1) 1-hr average $\text{PM}_{2.5}$	1-Aug	7:00	Henry Pirker	87

	Date	Time (Hour Ending)	Location	Recorded Concentration ($\mu\text{g}/\text{m}^3$)
One (1) 1-hr average $\text{PM}_{2.5}$	1-Aug	8:00	Henry Pirker	88
One (1) 1-hr average $\text{PM}_{2.5}$	4-Aug	10:00	Henry Pirker	89
One (1) 1-hr average $\text{PM}_{2.5}$	4-Aug	11:00	Henry Pirker	87
One (1) 1-hr average $\text{PM}_{2.5}$	4-Aug	12:00	Henry Pirker	88
One (1) 1-hr average $\text{PM}_{2.5}$	4-Aug	13:00	Henry Pirker	95
One (1) 1-hr average $\text{PM}_{2.5}$	13-Aug	20:00	Smoky Heights	88
One (1) 1-hr average $\text{PM}_{2.5}$	13-Aug	20:00	Clairmont	81
One (1) 1-hr average $\text{PM}_{2.5}$	13-Aug	21:00	Smoky Heights	86
One (1) 1-hr average $\text{PM}_{2.5}$	13-Aug	22:00	Clairmont	81
One (1) 1-hr average $\text{PM}_{2.5}$	14-Aug	1:00	Smoky Heights	93
One (1) 1-hr average $\text{PM}_{2.5}$	14-Aug	18:00	Beaverlodge	82
One (1) 1-hr average $\text{PM}_{2.5}$	14-Aug	19:00	Beaverlodge	103
One (1) 1-hr average $\text{PM}_{2.5}$	14-Aug	20:00	Smoky Heights	94
One (1) 1-hr average $\text{PM}_{2.5}$	14-Aug	20:00	Beaverlodge	103
One (1) 1-hr average $\text{PM}_{2.5}$	14-Aug	20:00	Clairmont	102
One (1) 1-hr average $\text{PM}_{2.5}$	14-Aug	21:00	Smoky Heights	90
One (1) 1-hr average $\text{PM}_{2.5}$	14-Aug	21:00	Beaverlodge	91
One (1) 1-hr average $\text{PM}_{2.5}$	14-Aug	22:00	Beaverlodge	86
One (1) 1-hr average $\text{PM}_{2.5}$	17-Aug	12:00	Beaverlodge	100
One (1) 1-hr average $\text{PM}_{2.5}$	17-Aug	13:00	Henry Pirker	92
One (1) 1-hr average $\text{PM}_{2.5}$	19-Sep	10:00	Evergreen Park	108
One (1) 1-hr average $\text{PM}_{2.5}$	19-Sep	11:00	Evergreen Park	87
One (1) 1-hr average $\text{PM}_{2.5}$	19-Sep	12:00	Evergreen Park	90
One (1) 1-hr average $\text{PM}_{2.5}$	19-Sep	13:00	Evergreen Park	82
One (1) 1-hr average $\text{PM}_{2.5}$	19-Sep	14:00	Smoky Heights	127
One (1) 1-hr average $\text{PM}_{2.5}$	29-Oct	0:00	Clairmont	98
One (1) 1-hr average $\text{PM}_{2.5}$	18-Dec	15:00	Evergreen Park	81
One (1) 1-hr average $\text{PM}_{2.5}$	18-Dec	16:00	Evergreen Park	92
	Date	Time (Hour Ending)	Location	Recorded Concentration (ppb)
One (1) 1-hr average H_2S	25-Feb	13:00	Valleyview	19.4
One (1) 1-hr average H_2S	25-Feb	14:00	Valleyview	14.6
One (1) 1-hr average H_2S	25-Feb	15:00	Valleyview	13.4

	Date	Time (Hour Ending)	Location	Recorded Concentration ($\mu\text{g}/\text{m}^3$)
One (1) 1-hr average H ₂ S	7-May	22:00	Falher	16.1
One (1) 1-hr average H ₂ S	6-Oct	20:00	Valleyview	36.8
One (1) 1-hr average H ₂ S	7-Oct	5:00	Valleyview	32.3
One (1) 1-hr average H ₂ S	7-Oct	6:00	Valleyview	36.8

The passive monitoring network consists of forty-six (46) sampling locations. The parameters measured at each site are sulphur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃) and/or hydrogen sulphide (H₂S). 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/>.

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

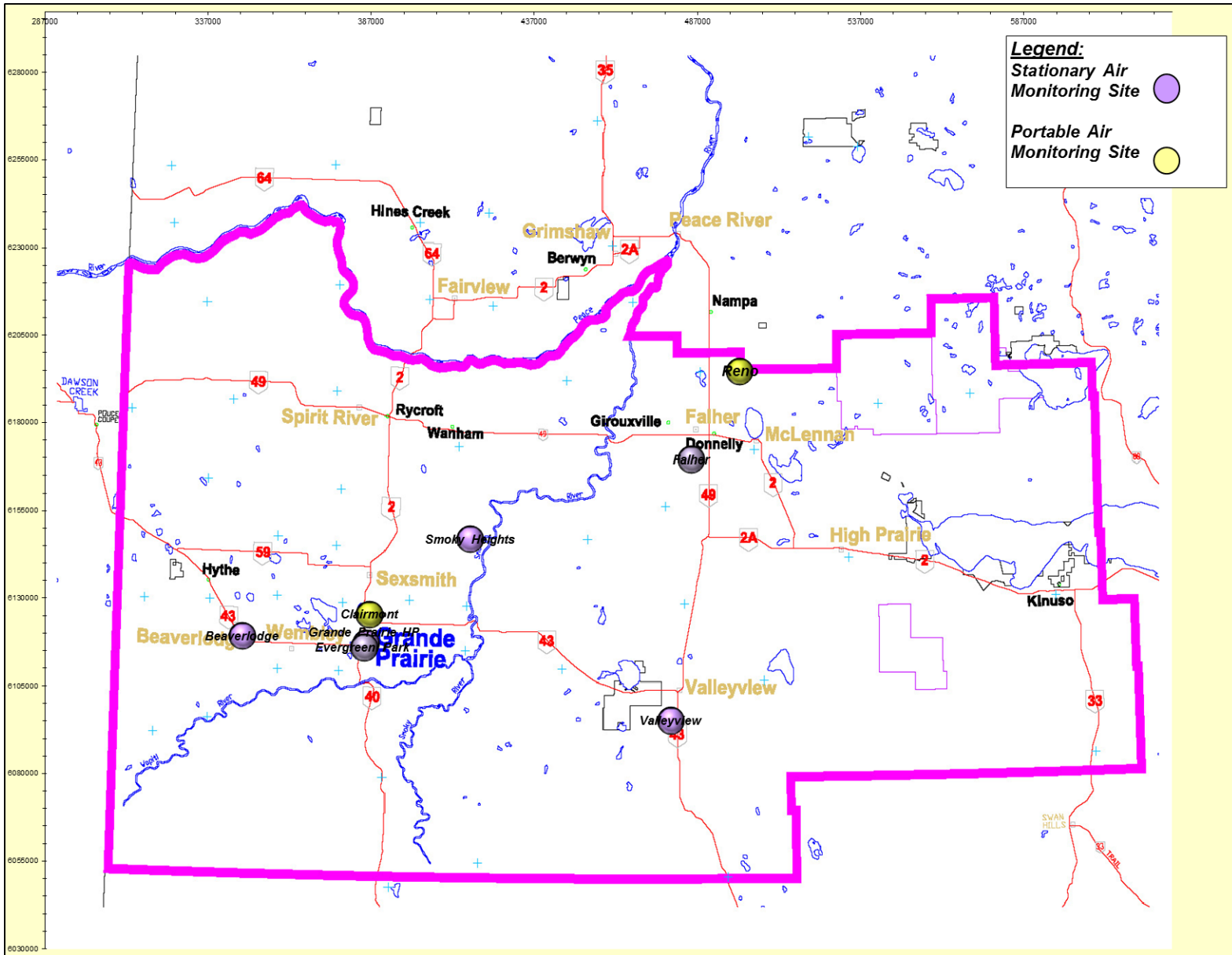


Figure 1. Peace Airshed Zone Association – Continuous Air Monitoring Network

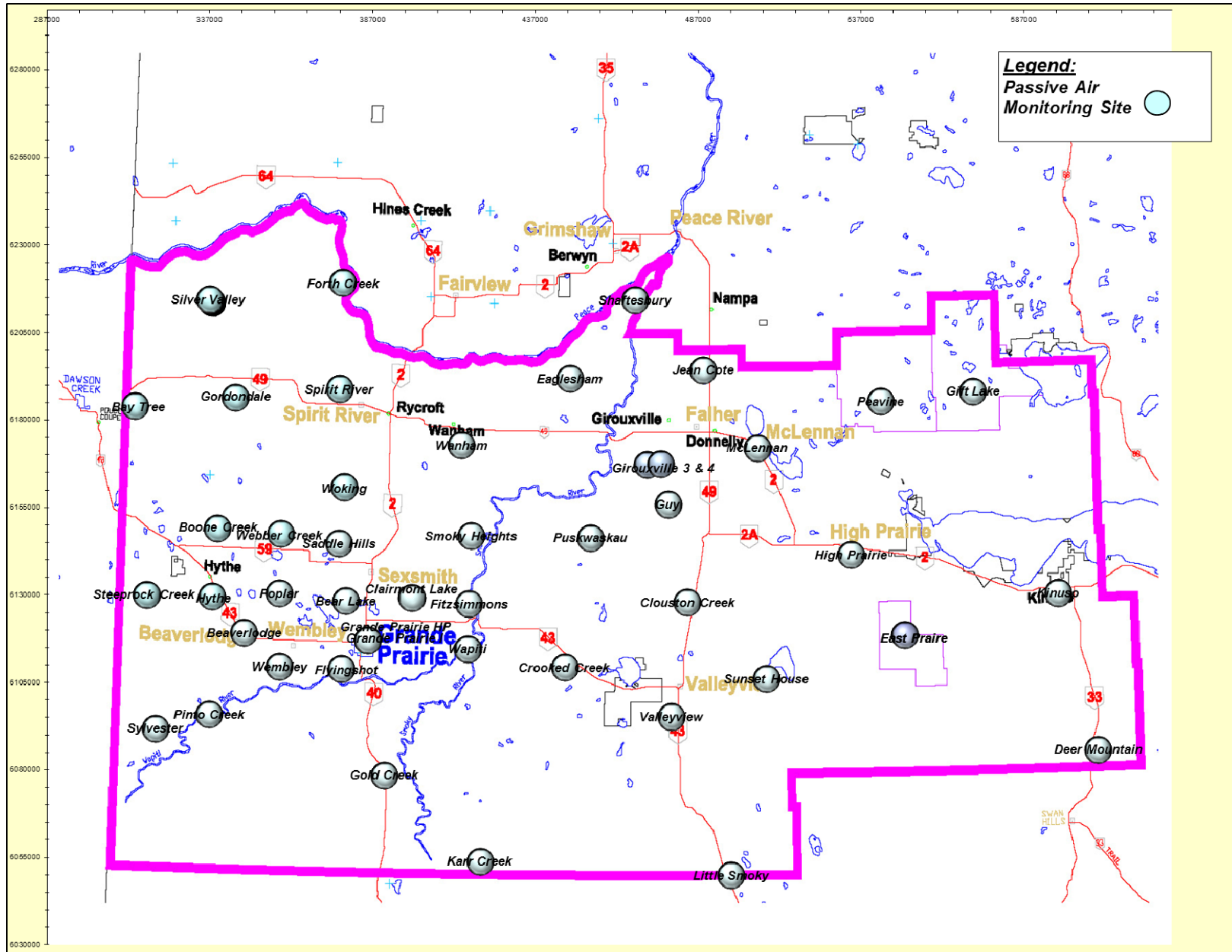


Figure 2. Peace Airshed Zone Association – Passive Air Monitoring Network

PAZA

HENRY PIRKER

CONTINUOUS AMBIENT AIR MONITORING STATION

2014

ANNUAL SUMMARY TABLES

Table 1. Henry Pirker - Key Parameters – Continuous Monitoring Data – 2014 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	0.31	2.50	Nov 13	19.06	Jan 12 00:00	99.6	0	0
Nitrogen Dioxide NO₂ measured in ppb	Henry Pirker	11.77	42.22	Feb 26	68.33	Dec 18 16:00	99.5	0	0
Ozone O₃ measured in ppb	Henry Pirker	21.2	41.41	Apr 19	70.34	Jul 14 14:00	99.5	0	0
Carbon Monoxide CO measured in ppm	Henry Pirker	0.22	0.63	Dec 18	2.53	Jan 17 20:00	99.9	-	0
Total Hydrocarbons THC measured in ppm	Henry Pirker	2.03	2.96	Dec 18	4.91	Apr 21 04:00	97.4	-	-
Total Reduced Sulphur TRS measured in ppb	Henry Pirker	0.34	0.98	Dec 18	1.87	Jan 17 20:00	99.8	-	-
Particulate Matter PM_{2.5} measured in µg/m³	Henry Pirker	8.20	65.19	Jul 15	381.72	Jul 13 09:00	99.4	12	25

Table 2. Sulphur Dioxide (SO₂) – Henry Pirker 2014 Summary and Frequency Distribution

Henry Pirker		SO ₂ (ppb)										2014			
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	709	0.38	1.46	Jan 11	19.06	Jan 12 00:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	640	0.58	1.46	Feb 16	4.27	Feb 16 13:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	707	0.56	2.23	Mar 03	4.87	Mar 23 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	684	0.27	0.98	Apr 29	5.66	Apr 04 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	706	0.11	0.36	May 09	1.78	May 09 03:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	682	0.12	0.62	Jun 05	4.19	Jun 05 08:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	706	0.15	0.84	Jul 26	6.14	Jul 30 10:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	702	0.14	0.56	Aug 09	2.37	Aug 09 07:00	99.1	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	681	0.11	0.29	Sep 16	1.05	Sep 29 10:00	99.6	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	707	0.17	0.55	Oct 20	1.86	Oct 19 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	685	0.59	2.50	Nov 13	4.89	Nov 14 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	690	0.53	1.11	Dec 16	2.07	Dec 09 12:00	97.5	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8299	0.31	2.50	Nov 13	19.06	Jan 12 00:00	99.6	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 3. Nitrogen Dioxide (NO₂) – Henry Pirker 2014 Summary and Frequency Distribution

Henry Pirker		NO ₂ (ppb)										2014			
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	707	18.52	36.21	Jan 20	62.74	Jan 17 20:00	100.0	0	0	70.16	28.15	1.70	0.00	0.00	
February	638	21.58	42.22	Feb 26	62.98	Feb 07 00:00	100.0	0	0	60.50	36.68	2.82	0.00	0.00	
March	705	12.31	29.30	Mar 08	54.02	Mar 05 21:00	100.0	0	0	88.09	11.63	0.28	0.00	0.00	
April	682	7.33	17.48	Apr 07	40.18	Apr 07 21:00	100.0	0	0	94.87	5.13	0.00	0.00	0.00	
May	706	5.06	8.44	May 22	24.88	May 08 06:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	
June	681	4.46	7.54	Jun 13	20.96	Jun 12 07:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	
July	674	4.95	9.64	Jul 15	21.86	Jul 13 23:00	96.4	0	0	100.00	0.00	0.00	0.00	0.00	
August	700	5.17	11.06	Aug 13	22.96	Aug 13 23:00	99.2	0	0	100.00	0.00	0.00	0.00	0.00	
September	674	6.31	11.09	Sep 16	34.93	Sep 22 11:00	99.2	0	0	99.55	0.45	0.00	0.00	0.00	
October	706	10.25	19.29	Oct 21	32.86	Oct 18 20:00	100.0	0	0	97.03	2.97	0.00	0.00	0.00	
November	684	18.49	38.68	Nov 30	61.34	Nov 17 15:00	100.0	0	0	66.67	32.46	0.88	0.00	0.00	
December	690	27.26	41.40	Dec 18	68.33	Dec 18 16:00	99.7	0	0	31.01	68.12	0.87	0.00	0.00	
Annual	8247	11.77	42.22	Feb 26	68.33	Dec 18 16:00	99.5	0	0	85.24	14.24	0.52	0.00	0.00	

Table 4. Ozone (O₃) – Henry Pirker 2014 Summary and Frequency Distribution

Henry Pirker O ₃ (ppb) 2014															
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 - 2	2 - 10	10 - 20	20 - 40	40 - 82	>82
January	710	21.28	36.43	Jan 15	48.06	Jan 17 00:00	100.0	0	0	9.44	19.01	15.77	49.01	6.76	0.00
February	639	18.95	35.49	Feb 03	41.23	Feb 27 17:00	100.0	0	0	10.95	20.19	18.62	49.14	1.10	0.00
March	702	21.06	32.91	Mar 01	36.78	Mar 01 16:00	100.0	0	0	2.56	12.54	17.52	67.38	0.00	0.00
April	665	28.96	41.41	Apr 19	52.89	Apr 20 17:00	97.5	0	0	1.95	4.96	13.53	60.30	19.25	0.00
May	697	32.89	40.06	May 09	54.62	May 18 17:00	98.4	0	0	0.00	3.59	11.62	56.53	28.26	0.00
June	684	27.92	35.47	Jun 23	52.44	Jun 13 16:00	99.7	0	0	0.44	5.85	17.40	61.70	14.62	0.00
July	705	25.12	36.61	Jul 29	70.34	Jul 14 14:00	99.7	0	0	0.14	9.22	24.82	54.61	11.21	0.00
August	698	24.10	34.93	Aug 05	55.79	Aug 02 14:00	99.5	0	0	1.58	10.17	23.21	56.88	8.17	0.00
September	682	17.45	26.99	Sep 23	40.39	Sep 23 15:00	99.6	0	0	6.45	16.57	35.34	41.50	0.15	0.00
October	708	14.74	32.05	Oct 11	38.78	Oct 08 15:00	100.0	0	0	15.82	27.97	21.89	34.32	0.00	0.00
November	686	13.65	30.38	Nov 18	37.80	Nov 15 17:00	100.0	0	0	10.20	33.09	25.36	31.34	0.00	0.00
December	709	8.37	35.71	Dec 31	40.43	Dec 31 04:00	100.0	0	0	37.09	31.73	16.93	14.10	0.14	0.00
Annual	8285	21.18	41.41	Apr 19	70.34	Jul 14 14:00	99.5	0	0	7.53	15.92	20.36	48.62	7.56	0.00

Table 5. Carbon Monoxide (CO) – Henry Pirker 2014 Summary and Frequency Distribution

Henry Pirker CO (ppm) 2014															
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 - 0.1	0.1 - 1.0	1.0 - 2.5	2.5 - 5.0	5.0 - 13.0	> 13.0
January	709	0.27	0.61	Jan 17	2.53	Jan 17 20:00	100.0	0	0	0.00	98.73	1.13	0.14	0.00	0.00
February	640	0.27	0.45	Feb 26	1.38	Feb 18 10:00	100.0	0	0	0.00	99.84	0.16	0.00	0.00	0.00
March	708	0.22	0.42	Mar 08	1.17	Mar 19 08:00	100.0	0	0	1.84	98.02	0.14	0.00	0.00	0.00
April	683	0.21	0.29	Apr 07	0.71	Apr 07 22:00	99.7	0	0	0.00	100.00	0.00	0.00	0.00	0.00
May	708	0.18	0.22	May 18	0.48	May 25 00:00	100.0	0	0	0.00	100.00	0.00	0.00	0.00	0.00
June	684	0.17	0.22	Jun 02	0.45	Jun 12 06:00	99.7	0	0	2.63	97.37	0.00	0.00	0.00	0.00
July	705	0.22	0.58	Jul 13	2.45	Jul 13 10:00	99.7	0	0	8.51	90.21	1.28	0.00	0.00	0.00
August	702	0.21	0.42	Aug 01	0.79	Aug 01 07:00	99.5	0	0	8.40	91.60	0.00	0.00	0.00	0.00
September	681	0.16	0.23	Sep 21	0.49	Sep 14 21:00	99.6	0	0	14.83	85.17	0.00	0.00	0.00	0.00
October	708	0.19	0.30	Oct 21	1.27	Oct 24 09:00	100.0	0	0	5.93	93.93	0.14	0.00	0.00	0.00
November	686	0.23	0.47	Nov 01	1.42	Nov 01 23:00	100.0	0	0	3.35	96.06	0.58	0.00	0.00	0.00
December	708	0.35	0.63	Dec 18	1.50	Dec 02 09:00	100.0	0	0	0.00	99.01	0.99	0.00	0.00	0.00
Annual	8322	0.22	0.63	Dec 18	2.53	Jan 17 20:00	99.9	0	0	3.85	95.81	0.33	0.01	0.00	0.00

Table 6. Total Hydrocarbons (THC) – Henry Pirker 2014 Summary and Frequency Distribution

Henry Pirker															THC (ppm)		2014	
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	525	2.09	2.39	Jan 08	2.95	Jan 09 04:00	74.9	0	0	0.00	46.10	47.05	6.86	0.00	0.00			
February	638	2.12	2.47	Feb 26	3.04	Feb 15 10:00	100.0	0	0	0.00	36.21	56.90	6.90	0.00	0.00			
March	708	2.04	2.33	Mar 08	3.41	Mar 09 05:00	100.0	0	0	0.00	47.32	50.28	2.40	0.00	0.00			
April	686	2.07	2.44	Apr 21	4.91	Apr 21 04:00	100.0	0	0	0.00	47.52	48.10	4.37	0.00	0.00			
May	680	1.95	2.09	May 05	3.26	May 05 05:00	96.0	0	0	0.00	83.53	15.74	0.74	0.00	0.00			
June	677	1.77	2.06	Jun 02	2.74	Jun 18 06:00	99.4	0	0	0.00	92.17	7.24	0.59	0.00	0.00			
July	706	1.99	2.22	Jul 15	3.02	Jul 11 02:00	99.7	0	0	0.14	71.25	24.93	3.68	0.00	0.00			
August	704	1.98	2.35	Aug 25	4.33	Aug 25 06:00	99.3	0	0	0.00	79.55	15.63	4.83	0.00	0.00			
September	684	1.91	2.21	Sep 15	4.11	Sep 15 04:00	99.9	0	0	0.00	84.21	14.77	1.02	0.00	0.00			
October	708	2.02	2.22	Oct 10	3.03	Oct 14 02:00	100.0	0	0	0.00	62.29	34.46	3.25	0.00	0.00			
November	683	2.10	2.46	Nov 17	4.51	Nov 29 07:00	99.9	0	0	0.00	48.17	44.66	7.17	0.00	0.00			
December	708	2.36	2.96	Dec 18	4.75	Dec 01 22:00	100.0	0	0	0.00	19.07	43.08	37.85	0.00	0.00			
Annual	8107	2.03	2.96	Dec 18	4.91	Apr 21 04:00	97.4	0	0	0.01	60.89	33.25	5.85	0.00	0.00			

*No Alberta Environment Objectives or Guidelines for THC

Table 7. Total Reduced Sulphur (TRS) – Henry Pirker 2014 Summary and Frequency Distribution

Henry Pirker															TRS (ppb)		2014	
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	710	0.55	0.90	Jan 20	1.87	Jan 17 20:00	100.0	0	0	94.93	5.07	0.00	0.00	0.00	0.00			
February	639	0.60	0.88	Feb 07	1.57	Feb 26 21:00	100.0	0	0	94.68	5.32	0.00	0.00	0.00	0.00			
March	706	0.49	0.76	Mar 08	1.36	Mar 08 10:00	100.0	0	0	98.44	1.56	0.00	0.00	0.00	0.00			
April	686	0.47	0.78	Apr 30	1.44	Apr 30 10:00	100.0	0	0	99.42	0.58	0.00	0.00	0.00	0.00			
May	709	0.37	0.65	May 19	1.71	May 05 05:00	100.0	0	0	98.45	1.55	0.00	0.00	0.00	0.00			
June	679	0.15	0.26	Jun 23	1.06	Jun 14 06:00	99.7	0	0	99.85	0.15	0.00	0.00	0.00	0.00			
July	699	0.25	0.44	Jul 13	0.76	Jul 13 03:00	99.2	0	0	100.00	0.00	0.00	0.00	0.00	0.00			
August	701	0.20	0.38	Aug 02	1.64	Aug 02 09:00	99.5	0	0	99.71	0.29	0.00	0.00	0.00	0.00			
September	681	0.17	0.52	Sep 13	1.30	Sep 13 09:00	99.6	0	0	99.41	0.59	0.00	0.00	0.00	0.00			
October	706	0.16	0.31	Oct 25	1.05	Oct 03 01:00	100.0	0	0	99.86	0.14	0.00	0.00	0.00	0.00			
November	685	0.27	0.53	Nov 17	1.19	Nov 10 21:00	100.0	0	0	99.85	0.15	0.00	0.00	0.00	0.00			
December	708	0.44	0.98	Dec 18	1.68	Dec 09 12:00	100.0	0	0	96.05	3.95	0.00	0.00	0.00	0.00			
Annual	8309	0.34	0.98	Dec 18	1.87	Jan 17 20:00	99.8	0	0	98.44	1.56	0.00	0.00	0.00	0.00			

*No Alberta Environment Objectives or Guidelines for TRS

Table 8. Particulate Matter (PM_{2.5}) – Henry Pirker 2014 Summary and Frequency Distribution

Henry Pirker		PM _{2.5} (µg/m ³)										2014			
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	741	5.47	14.87	Jan 01	34.41	Jan 01 04:00	99.6	0	0	29.42	37.79	18.89	11.07	2.70	0.13
February	641	6.76	14.40	Feb 26	25.79	Feb 26 13:00	95.4	0	0	11.70	37.60	35.26	12.64	2.81	0.00
March	741	4.79	15.85	Mar 08	34.44	Mar 08 09:00	99.6	0	0	28.34	44.26	19.97	5.13	1.89	0.40
April	720	4.58	10.84	Apr 30	41.22	Apr 14 22:00	100.0	0	0	26.39	51.81	14.31	5.56	1.81	0.14
May	744	5.03	8.67	May 18	23.49	May 11 05:00	100.0	0	0	15.46	56.85	20.16	6.59	0.94	0.00
June	718	5.05	10.18	Jun 24	50.41	Jul 01 00:00	99.7	0	0	15.88	53.90	24.65	4.87	0.56	0.14
July	742	16.71	65.19	Jul 15	381.72	Jul 13 09:00	99.7	5	17	3.64	36.93	24.26	10.65	10.24	14.29
August	739	15.21	47.95	Aug 04	94.82	Aug 04 13:00	99.3	6	8	5.28	26.93	30.58	10.01	13.40	13.80
September	719	5.92	16.37	Sep 22	34.17	Sep 13 12:00	99.9	0	0	36.16	30.88	13.49	12.80	5.84	0.83
October	744	5.16	10.44	Oct 29	20.39	Oct 22 23:00	100.0	0	0	20.97	45.97	25.81	6.99	0.27	0.00
November	719	10.60	29.47	Nov 13	47.58	Nov 13 08:00	99.9	0	0	0.00	38.80	28.23	13.91	15.30	3.76
December	741	12.79	30.88	Dec 18	43.74	Dec 18 16:00	99.6	1	0	8.37	22.13	21.32	16.87	25.78	5.53
Annual	8709	8.20	65.19	Jul 15	381.72	Jul 13 09:00	99.4	12	25	17.06	40.78	23.05	9.73	6.32	3.07

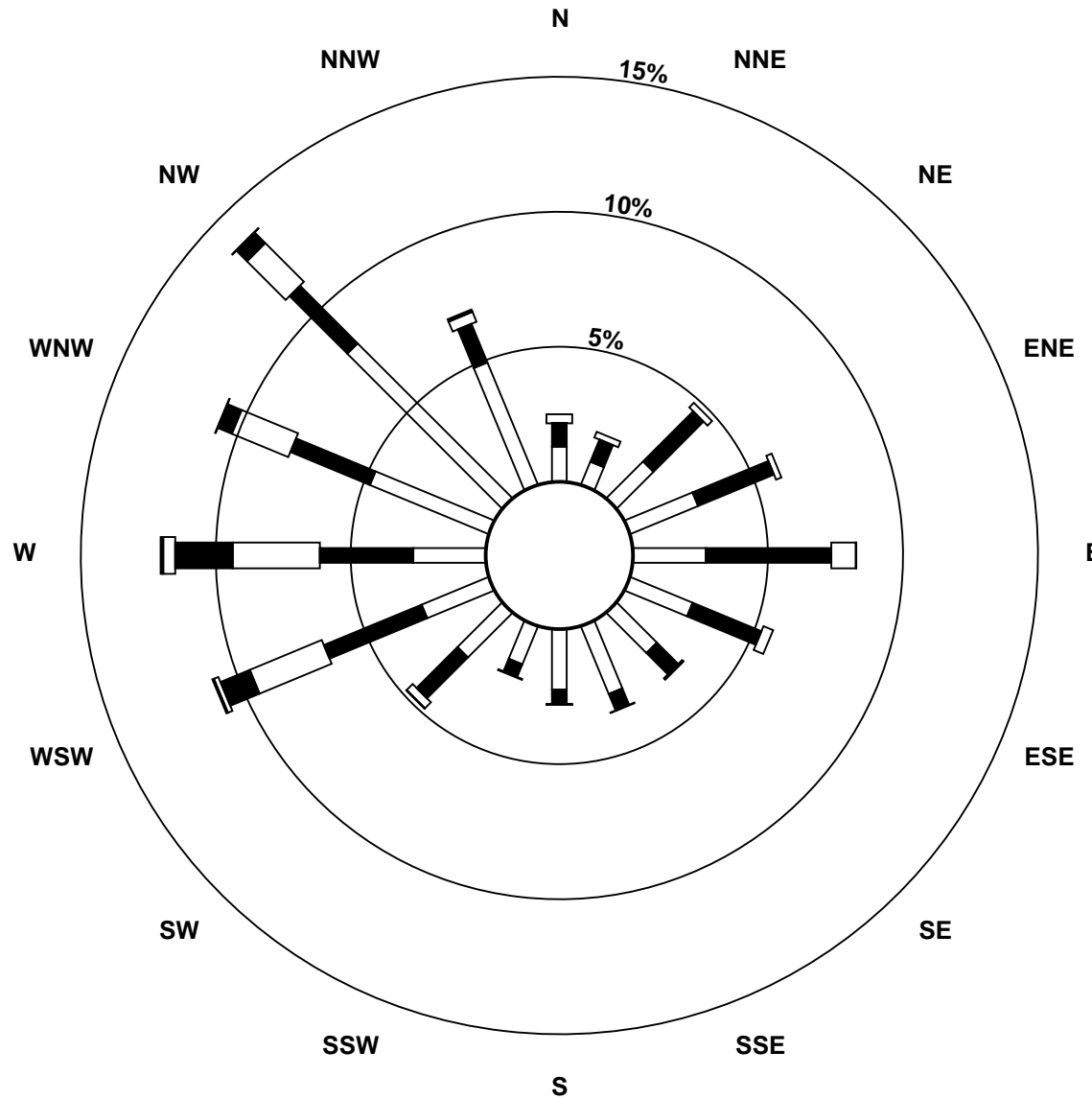
Table 9. Wind Speed and Wind Direction Frequency Distribution – Henry Pirker 2014 Summary

Henry Pirker								2014
Direction	# of Readings	% of wind speed (km/hr)						Totals
		1 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	209	1.31	0.86	0.34	0.00	0.00	0.00	2.50
NNE	170	0.92	0.89	0.23	0.00	0.00	0.00	2.04
NE	400	1.93	2.62	0.24	0.00	0.00	0.00	4.79
ENE	499	2.72	3.04	0.22	0.00	0.00	0.00	5.98
E	690	2.70	4.65	0.91	0.01	0.00	0.00	8.27
ESE	471	2.50	2.76	0.38	0.00	0.00	0.00	5.64
SE	275	2.11	1.11	0.06	0.01	0.00	0.00	3.29
SSE	283	2.71	0.66	0.02	0.00	0.00	0.00	3.39
S	234	2.24	0.53	0.02	0.01	0.00	0.00	2.80
SSW	172	1.52	0.50	0.04	0.00	0.00	0.00	2.06
SW	402	2.34	2.14	0.31	0.02	0.00	0.00	4.82
WSW	910	2.68	3.92	2.89	1.17	0.18	0.06	10.90
WSW	1005	2.68	3.46	3.22	2.13	0.44	0.10	12.04
WNW	901	4.76	3.19	2.26	0.56	0.02	0.00	10.80
NW	1146	8.11	3.02	2.02	0.56	0.01	0.00	13.73
NNW	579	4.90	1.55	0.40	0.10	0.00	0.00	6.94
Totals	8346	46.13	34.90	13.56	4.59	0.66	0.16	100

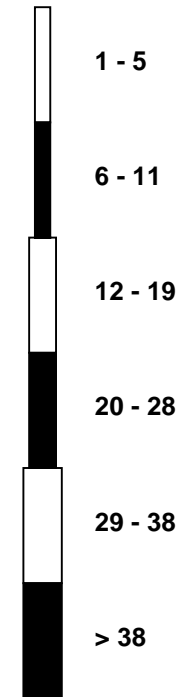
Wind Rose

Wind Speed (WS) (km/h)

Henry Pirker - 2014



Wind Speed Classes (km/h)



PAZA

EVERGREEN PARK

CONTINUOUS AMBIENT AIR MONITORING STATION

2014

ANNUAL SUMMARY TABLES

Table 10. Evergreen Park - Key Parameters – Continuous Monitoring Data – 2014 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	0.25	2.50	Nov 12	13.82	Nov 12 14:00	99.6	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	5.62	42.53	Jul 15	136.22	Jul 13 08:00	99.3	7	17

Table 11. Sulphur Dioxide (SO₂) – Evergreen Park 2014 Summary and Frequency Distribution

Evergreen Park		SO ₂ (ppb)										2014			
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	0.22	0.59	Jan 04	2.90	Jan 27 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	640	0.33	1.09	Feb 12	6.56	Feb 12 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	708	0.40	2.00	Mar 03	2.67	Mar 02 15:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	685	0.19	0.80	Apr 30	4.51	Apr 30 23:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	702	0.11	0.39	May 01	1.87	May 01 01:00	99.1	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	686	0.18	1.35	Jun 04	12.17	Jun 04 12:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	707	0.22	0.55	Jul 30	8.37	Jul 30 10:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	709	0.20	0.47	Aug 13	2.31	Aug 02 13:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	673	0.26	1.14	Sep 13	3.02	Sep 11 11:00	98.2	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	708	0.18	0.89	Oct 13	9.85	Oct 13 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	668	0.44	2.50	Nov 12	13.82	Nov 12 14:00	97.6	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	709	0.32	0.90	Dec 02	2.36	Dec 02 12:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8305	0.25	2.50	Nov 12	13.82	Nov 12 14:00	99.6	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 12. Total Reduced Sulphur (TRS) – Evergreen Park 2014 Summary and Frequency Distribution

Evergreen Park		TRS (ppb)										2014			
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 2014 Summary and Frequency Distribution

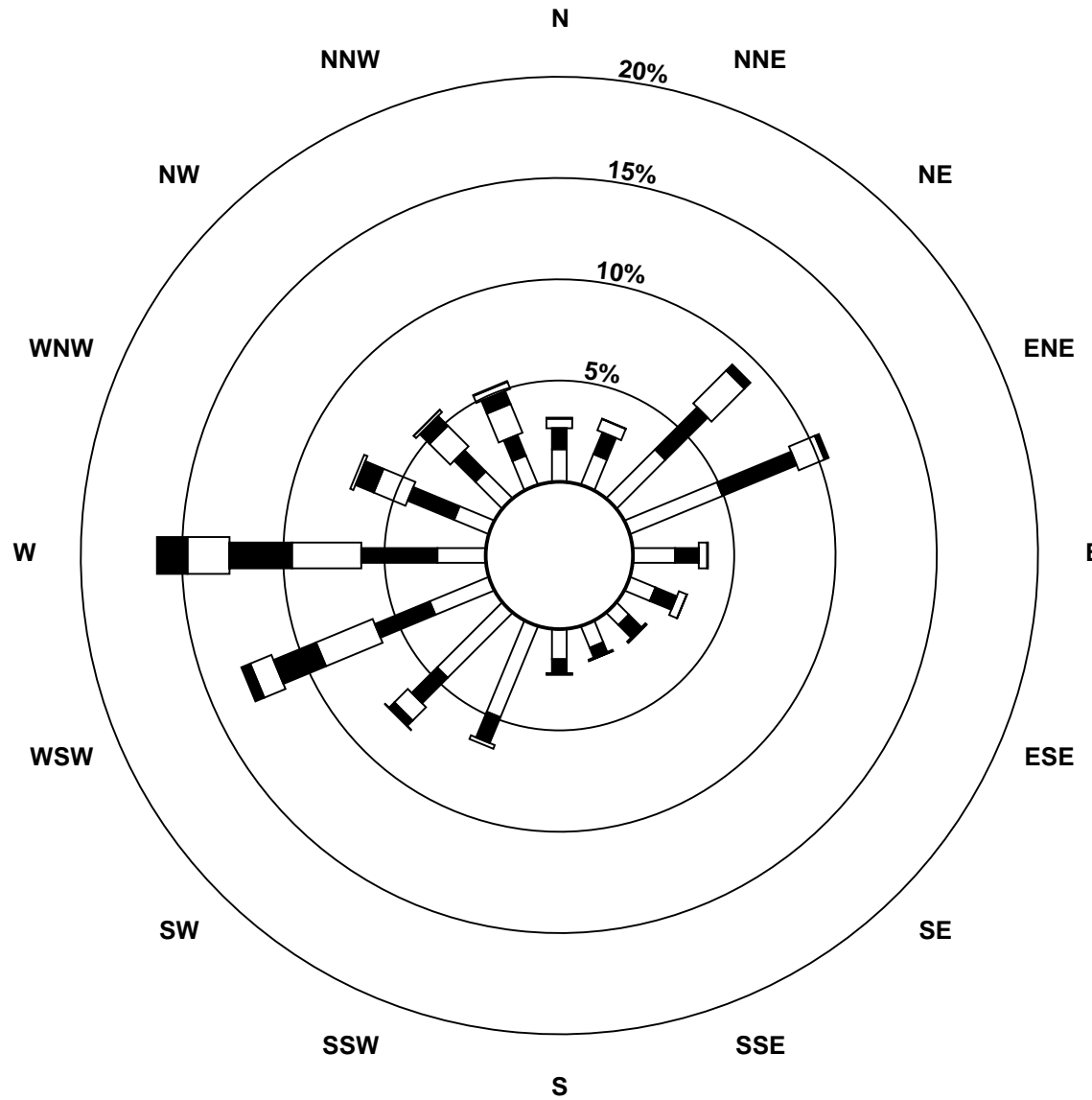
Evergreen Park		PM _{2.5} (µg/m ³)										2014			
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30
January	740	2.66	11.55	Jan 01	36.38	Jan 01 21:00	99.6	0	0	57.43	29.86	8.51	3.51	0.41	0.27
February	671	3.45	8.27	Feb 26	30.19	Feb 26 10:00	99.9	0	0	43.22	35.92	17.73	2.53	0.45	0.15
March	743	2.86	11.65	Mar 31	25.93	Mar 31 07:00	99.9	0	0	55.59	29.61	12.11	1.88	0.81	0.00
April	716	2.81	12.00	Apr 01	25.05	Apr 01 08:00	99.7	0	0	50.70	38.55	7.68	2.37	0.70	0.00
May	736	3.85	7.90	May 21	31.36	May 10 23:00	98.9	0	0	37.09	43.89	13.32	4.62	0.95	0.14
June	715	3.90	9.77	Jun 24	40.40	Jun 24 17:00	99.3	0	0	36.36	43.78	13.71	4.34	1.68	0.14
July	740	12.59	42.53	Jul 15	136.22	Jul 13 08:00	99.9	3	11	19.46	29.46	20.81	7.97	9.19	13.11
August	743	12.92	38.40	Aug 15	73.99	Aug 01 08:00	99.9	4	0	16.69	27.05	18.44	12.65	13.06	12.11
September	711	5.09	24.42	Sep 19	107.87	Sep 19 10:00	98.9	0	4	47.54	26.30	13.50	7.74	2.95	1.97
October	743	2.96	7.84	Oct 11	46.45	Oct 11 15:00	100.0	0	0	55.18	32.03	8.61	2.42	1.48	0.27
November	702	5.86	15.83	Nov 20	31.85	Nov 04 15:00	97.5	0	0	25.50	35.90	23.22	11.25	3.99	0.14
December	734	8.18	25.92	Dec 18	91.53	Dec 18 16:00	98.7	0	2	27.38	23.02	17.85	20.03	9.95	1.77
Annual	8694	5.62	42.53	Jul 15	136.22	Jul 13 08:00	99.3	7	17	39.39	32.84	14.59	6.77	3.85	2.56

Table 14. Wind Speed and Wind Direction Frequency Distribution – Evergreen Park 2014 Summary

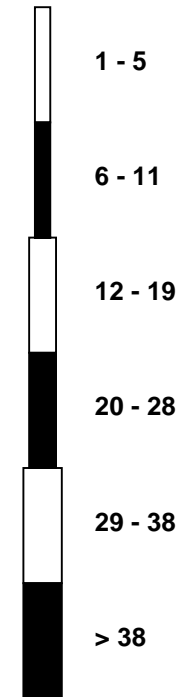
Evergreen Park								2014
Direction	# of Readings	% of wind speed (km/hr)						Totals
		1 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	244	1.61	1.04	0.47	0.05	0.00	0.00	3.17
NNE	263	1.64	1.16	0.60	0.03	0.00	0.00	3.42
NE	698	3.40	2.95	2.30	0.42	0.00	0.00	9.07
ENE	808	4.94	3.96	1.38	0.22	0.00	0.00	10.50
E	285	2.08	1.17	0.42	0.04	0.00	0.00	3.70
ESE	225	1.35	1.14	0.42	0.01	0.00	0.00	2.92
SE	140	0.84	0.88	0.08	0.01	0.00	0.00	1.82
SSE	134	1.14	0.52	0.06	0.01	0.00	0.00	1.74
S	173	1.48	0.69	0.06	0.01	0.00	0.00	2.25
SSW	495	4.86	1.38	0.19	0.00	0.00	0.00	6.43
SW	588	4.53	1.78	0.94	0.38	0.01	0.00	7.64
WSW	1000	3.14	2.94	3.03	2.27	1.13	0.48	12.99
WSW	1250	2.39	3.75	3.43	3.08	2.08	1.51	16.24
WNW	552	1.84	2.48	1.70	0.97	0.17	0.00	7.17
NW	434	1.87	1.48	1.44	0.68	0.16	0.01	5.64
NNW	409	1.56	1.10	1.55	0.69	0.36	0.05	5.31
Totals	7698	38.69	28.42	18.06	8.87	3.91	2.05	100

Wind Rose

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



Wind Speed Classes (km/h)



PAZA
SMOKY HEIGHTS
CONTINUOUS AMBIENT AIR MONITORING STATION

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Table 15. Smoky Heights - Key Parameters – Continuous Monitoring Data – 2014 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	0.43	3.07	Feb 17	16.94	Feb 09 17:00	100.0	0	0
Total Reduced Sulphur TRS measured in ppb	Smoky Heights	0.10	1.25	Dec 01	3.08	Dec 01 02:00	99.9	-	-
Particulate Matter PM_{2.5} measured in µg/m³	Smoky Heights	5.56	45.54	Aug 14	188.66	Jan 15 01:00	99.1	8	19

Table 16. Sulphur Dioxide (SO₂) – Smoky Heights 2014 Summary and Frequency Distribution

Smoky Heights		SO ₂ (ppb)										2014			
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	0.69	1.55	Jan 16	9.71	Jan 15 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	638	0.78	3.07	Feb 17	16.94	Feb 09 17:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	708	0.70	2.13	Mar 05	8.99	Mar 07 03:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	685	0.45	1.19	Apr 06	5.68	Apr 09 03:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	707	0.22	0.60	May 30	2.98	May 21 07:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	686	0.15	0.53	Jun 03	4.84	Jun 21 23:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	706	0.17	0.83	Jul 26	5.70	Jul 26 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	709	0.20	0.81	Aug 19	4.91	Aug 30 01:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	686	0.23	0.86	Sep 02	4.16	Sep 02 04:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	709	0.24	0.65	Oct 24	5.03	Oct 08 10:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	686	0.59	1.99	Nov 13	9.44	Nov 10 17:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	709	0.75	2.03	Dec 31	6.32	Dec 16 13:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8339	0.43	3.07	Feb 17	16.94	Feb 09 17:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 17. Total Reduced Sulphur (TRS) – Smoky Heights 2014 Summary and Frequency Distribution

Smoky Heights		TRS (ppb)										2014			
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	709	0.14	0.31	Jan 08	0.89	Jan 09 09:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	638	0.12	0.21	Feb 06	1.35	Feb 25 18:00	100.0	0	0	99.84	0.16	0.00	0.00	0.00	0.00
March	707	0.06	0.14	Mar 09	0.41	Mar 13 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	684	0.05	0.14	Apr 05	0.78	Apr 04 09:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	705	0.05	0.14	May 14	0.56	May 14 07:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	684	0.11	0.35	Jun 22	2.74	Jun 22 04:00	100.0	0	0	99.27	0.58	0.15	0.00	0.00	0.00
July	708	0.11	0.49	Jul 17	2.62	Jul 17 04:00	100.0	0	0	98.87	0.99	0.14	0.00	0.00	0.00
August	704	0.07	0.26	Aug 03	1.56	Aug 03 06:00	99.5	0	0	99.29	0.71	0.00	0.00	0.00	0.00
September	685	0.11	0.27	Sep 23	0.93	Sep 13 23:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	708	0.04	0.12	Oct 30	0.50	Oct 18 18:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	685	0.10	0.35	Nov 14	1.29	Dec 01 00:00	100.0	0	0	99.85	0.15	0.00	0.00	0.00	0.00
December	708	0.26	1.25	Dec 01	3.08	Dec 01 02:00	100.0	0	0	96.47	3.11	0.42	0.00	0.00	0.00
Annual	8325	0.10	1.25	Dec 01	3.08	Dec 01 02:00	99.9	0	0	99.61	0.37	0.03	0.00	0.00	0.00

*No Alberta Environment Objectives or Guidelines for TRS

Table 18. Particulate Matter (PM_{2.5}) – Smoky Heights 2014 Summary and Frequency Distribution

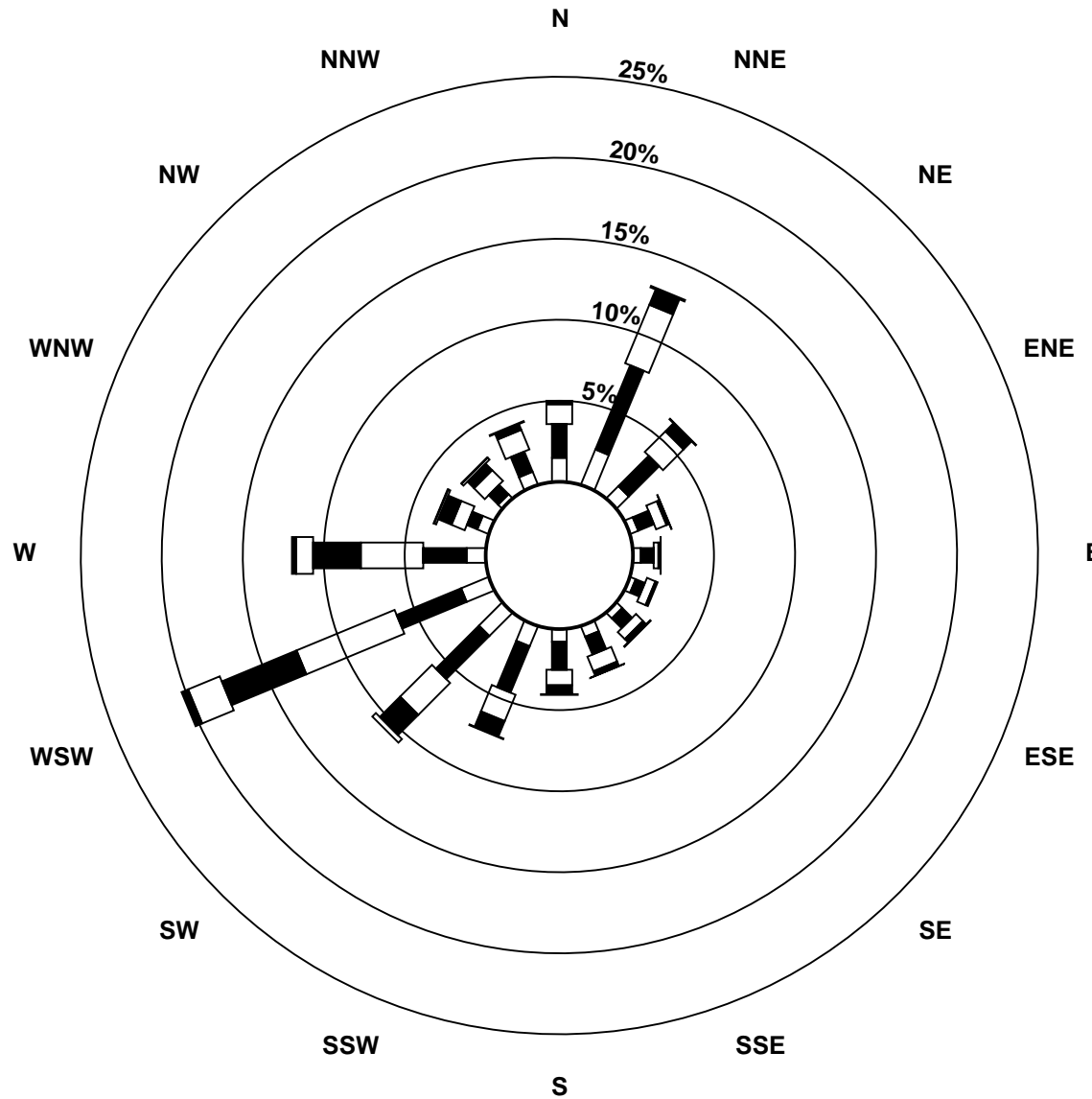
Smoky Heights		PM _{2.5} (µg/m ³)										2014			
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range					
								24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30
January	738	3.01	23.14	Jan 15	188.66	Jan 15 01:00	99.3	0	2	60.70	27.10	8.54	1.63	1.49	0.54
February	670	4.67	17.64	Feb 28	168.16	Mar 01 00:00	100.0	0	2	42.09	36.27	14.18	3.13	2.99	1.34
March	740	3.68	24.73	Mar 01	130.11	Mar 01 02:00	99.5	0	3	54.32	33.78	6.49	1.76	1.89	1.76
April	718	2.72	7.38	Apr 02	33.01	Apr 02 16:00	99.7	0	0	49.03	43.59	5.15	1.39	0.70	0.14
May	738	3.88	10.96	May 20	73.34	May 20 22:00	99.6	0	0	41.19	44.85	9.08	2.44	1.08	1.36
June	713	3.40	10.17	Jun 03	48.20	Jun 03 22:00	99.0	0	0	37.73	48.67	10.66	1.96	0.70	0.28
July	742	11.87	37.65	Jul 15	107.81	Jul 09 00:00	99.7	4	6	25.61	25.20	17.25	10.92	9.30	11.73
August	741	12.51	45.54	Aug 14	94.25	Aug 14 20:00	99.6	4	5	19.70	21.73	22.54	13.50	12.15	10.39
September	674	4.28	14.08	Sep 17	127.34	Sep 19 14:00	93.6	0	1	48.96	31.60	8.16	6.53	4.15	0.59
October	742	2.24	5.81	Oct 29	47.04	Oct 16 19:00	100.0	0	0	58.89	33.56	6.60	0.81	0.00	0.13
November	718	7.01	24.16	Nov 13	67.57	Nov 11 00:00	99.7	0	0	23.40	37.47	20.61	8.77	7.38	2.37
December	742	7.05	21.18	Dec 17	63.76	Dec 07 01:00	99.7	0	0	31.13	24.93	20.22	13.34	9.03	1.35
Annual	8676	5.56	45.54	Aug 14	188.66	Jan 15 01:00	99.1	8	19	42.30	33.77	11.55	5.36	4.27	2.76

Table 19. Wind Speed and Wind Direction Frequency Distribution – Smoky Heights 2014 Summary

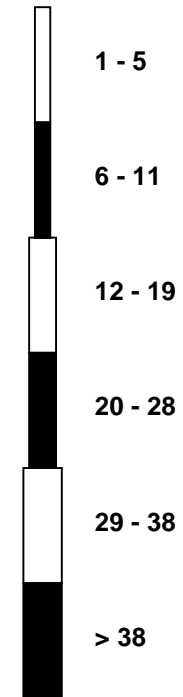
Smoky Heights								2014
Direction	# of Readings	% of wind speed (km/hr)						Totals
		1 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	409	1.48	2.08	1.22	0.22	0.00	0.00	5.00
NNE	1062	2.35	5.63	3.90	1.02	0.10	0.00	12.99
NE	511	1.06	2.64	1.80	0.70	0.05	0.00	6.25
ENE	203	0.54	1.05	0.70	0.17	0.02	0.00	2.48
E	140	0.48	0.80	0.29	0.13	0.01	0.00	1.71
ESE	138	0.37	0.61	0.56	0.15	0.00	0.00	1.69
SE	187	0.49	0.86	0.61	0.28	0.05	0.00	2.29
SSE	259	0.70	1.19	0.98	0.29	0.01	0.00	3.17
S	332	0.78	1.73	0.95	0.55	0.05	0.00	4.06
SSW	593	1.33	3.10	1.76	1.02	0.05	0.00	7.26
SW	870	2.02	3.77	2.78	1.77	0.31	0.00	10.64
WSW	1654	1.84	4.31	6.55	4.99	2.12	0.44	20.24
WSW	978	1.17	2.68	3.85	2.95	1.04	0.27	11.97
WNW	277	0.76	0.70	0.88	0.88	0.13	0.04	3.39
NW	236	0.35	0.82	0.94	0.58	0.16	0.04	2.89
NNW	324	0.87	1.35	1.31	0.38	0.06	0.00	3.96
Totals	8173	16.59	33.29	29.10	16.08	4.16	0.78	100

Wind Rose

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



Wind Speed Classes (km/h)



**PAZA
BEAVERLODGE
CONTINUOUS AMBIENT AIR MONITORING STATION**

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Table 20. Beaverlodge - Key Parameters – Continuous Monitoring Data – 2014 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	0.40	2.74	Feb 12	10.08	Mar 31 14:00	100.0	0	0
Nitrogen Dioxide NO₂ measured in ppb	Beaverlodge	4.37	24.30	Dec 16	37.85	Dec 05 18:00	99.7	0	0
Ozone O₃ measured in ppb	Beaverlodge	29.22	47.46	Apr 22	66.59	Jul 29 18:00	100.0	0	0
Particulate Matter PM_{2.5} measured in µg/m³	Beaverlodge	7.95	49.12	Jul 15	133.79	Jul 15 10:00	86.3	7	24

Table 21. Sulphur Dioxide (SO₂) – Beaverlodge 2014 Summary and Frequency Distribution

Beaverlodge SO ₂ (ppb) 2014															
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	1.30	Jan 04	3.72	Jan 04 20:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	641	0.62	2.74	Feb 12	8.72	Feb 12 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	708	0.71	2.48	Mar 03	10.08	Mar 31 14:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	686	0.30	1.07	Apr 01	2.45	Apr 01 13:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	709	0.18	0.56	May 04	2.52	May 04 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	687	0.11	0.30	Jun 07	2.60	Jun 26 23:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	709	0.59	1.66	Jul 16	8.89	Jul 16 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	710	0.54	1.42	Aug 15	2.96	Aug 13 23:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	687	0.15	0.48	Sep 23	2.50	Sep 23 06:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	710	0.18	0.46	Oct 07	4.14	Oct 07 12:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	687	0.61	1.88	Nov 20	5.12	Nov 12 23:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	711	0.48	1.07	Dec 09	2.85	Dec 07 13:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8355	0.40	2.74	Feb 12	10.08	Mar 31 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 22. Nitrogen Dioxide (NO₂) – Beaverlodge 2014 Summary and Frequency Distribution

Beaverlodge NO ₂ (ppb) 2014														
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	686	5.53	15.68	Jan 27	31.50	Jan 27 19:00	96.8	0	0	98.40	1.60	0.00	0.00	0.00
February	632	6.99	14.46	Feb 14	30.77	Feb 10 03:00	100.0	0	0	98.89	1.11	0.00	0.00	0.00
March	702	4.17	10.75	Mar 05	24.66	Mar 31 23:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00
April	684	2.17	6.36	Apr 01	17.43	Apr 01 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
May	705	1.78	3.09	May 12	11.88	May 12 08:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
June	684	2.00	4.21	Jun 27	16.68	Jun 27 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
July	705	2.37	5.20	Jul 14	12.24	Jul 14 06:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
August	706	2.50	4.63	Aug 13	12.77	Aug 13 09:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
September	684	2.39	3.99	Sep 16	16.38	Sep 22 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
October	708	4.21	8.63	Oct 17	15.74	Oct 09 09:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00
November	686	7.31	19.17	Nov 12	28.92	Nov 13 00:00	100.0	0	0	98.10	1.90	0.00	0.00	0.00
December	709	11.20	24.30	Dec 16	37.85	Dec 05 18:00	100.0	0	0	91.54	8.46	0.00	0.00	0.00
Annual	8291	4.37	24.30	Dec 16	37.85	Dec 05 18:00	99.7	0	0	98.90	1.10	0.00	0.00	0.00

Table 23. Ozone (O₃) – Beaverlodge 2014 Summary and Frequency Distribution

Beaverlodge O ₃ (ppb) 2014															
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	710	32.47	44.16	Jan 16	49.68	Jan 17 00:00	100.0	0	0	0.14	4.51	10.14	59.44	25.77	0.00
February	641	30.82	40.04	Feb 18	47.89	Feb 26 14:00	100.0	0	0	0.00	1.09	9.05	75.66	14.20	0.00
March	706	37.81	47.09	Mar 29	53.25	Mar 29 21:00	99.7	0	0	0.00	0.00	2.12	51.42	46.46	0.00
April	686	39.58	47.46	Apr 22	56.37	Apr 21 17:00	100.0	0	0	0.00	0.00	0.73	48.98	50.29	0.00
May	710	36.03	44.54	May 09	54.16	May 07 17:00	100.0	0	0	0.00	0.28	3.52	62.54	33.66	0.00
June	687	30.12	39.86	Jun 12	52.86	Jun 13 17:00	100.0	0	0	0.00	1.60	13.68	66.96	17.76	0.00
July	706	28.21	39.82	Jul 29	66.59	Jul 29 18:00	100.0	0	0	0.00	1.84	21.95	63.46	12.75	0.00
August	709	28.05	39.71	Aug 05	59.05	Aug 05 16:00	100.0	0	0	0.00	2.26	18.19	68.83	10.72	0.00
September	687	22.14	32.93	Sep 23	47.83	Sep 21 18:00	100.0	0	0	0.00	6.84	35.08	57.06	1.02	0.00
October	710	21.55	33.32	Oct 11	40.11	Oct 07 16:00	100.0	0	0	3.10	15.92	20.99	59.86	0.14	0.00
November	687	23.61	34.68	Nov 18	42.21	Dec 01 00:00	100.0	0	0	0.00	8.15	24.75	65.79	1.31	0.00
December	710	20.42	38.09	Dec 31	48.96	Dec 09 21:00	100.0	0	0	5.07	21.83	21.41	48.59	3.10	0.00
Annual	8349	29.22	47.46	Apr 22	66.59	Jul 29 18:00	100.0	0	0	0.71	5.42	15.16	60.59	18.13	0.00

Table 24. Particulate Matter (PM_{2.5}) – Beaverlodge 2014 Summary and Frequency Distribution

Beaverlodge PM _{2.5} (µg/m ³) 2014															
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	732	7.94	13.91	Jan 27	27.10	Jan 28 05:00	98.4	0	0	6.97	28.96	41.39	19.67	3.01	0.00
February	663	8.90	14.08	Feb 14	27.60	Feb 13 19:00	98.7	0	0	3.32	17.35	53.39	24.13	1.81	0.00
March	727	8.41	14.47	Mar 05	24.23	Mar 09 05:00	98.1	0	0	8.94	24.90	34.11	29.57	2.48	0.00
April	670	7.70	14.73	Apr 03	36.53	Apr 12 13:00	93.1	0	0	15.22	27.61	34.03	15.97	6.72	0.45
May	258	6.65	9.75	May 11	35.19	May 11 02:00	34.7	0	0	15.89	41.09	27.13	9.69	5.04	1.16
June	125	3.20	5.28	Jun 27	10.00	Jun 27 15:00	18.3	0	0	32.00	55.20	12.80	0.00	0.00	0.00
July	744	14.23	49.12	Jul 15	133.79	Jul 15 10:00	100.0	5	18	22.58	25.40	18.41	9.68	10.75	13.17
August	741	12.12	41.55	Aug 14	103.15	Aug 14 20:00	99.6	2	6	26.86	16.46	19.84	12.42	13.77	10.66
September	684	3.04	13.08	Sep 17	16.97	Sep 17 20:00	95.0	0	0	54.82	28.65	9.21	7.31	0.00	0.00
October	743	2.94	7.76	Oct 30	25.94	Oct 30 07:00	100.0	0	0	48.45	35.53	13.46	2.15	0.40	0.00
November	719	6.50	14.26	Nov 12	25.90	Nov 21 19:00	99.9	0	0	19.89	33.94	26.84	14.74	4.59	0.00
December	739	8.63	27.30	Dec 08	45.15	Dec 08 20:00	99.3	0	0	32.34	21.79	10.83	13.80	19.76	1.49
Annual	7545	7.95	49.12	Jul 15	133.79	Jul 15 10:00	86.3	7	24	23.93	27.10	25.70	14.41	6.28	2.57

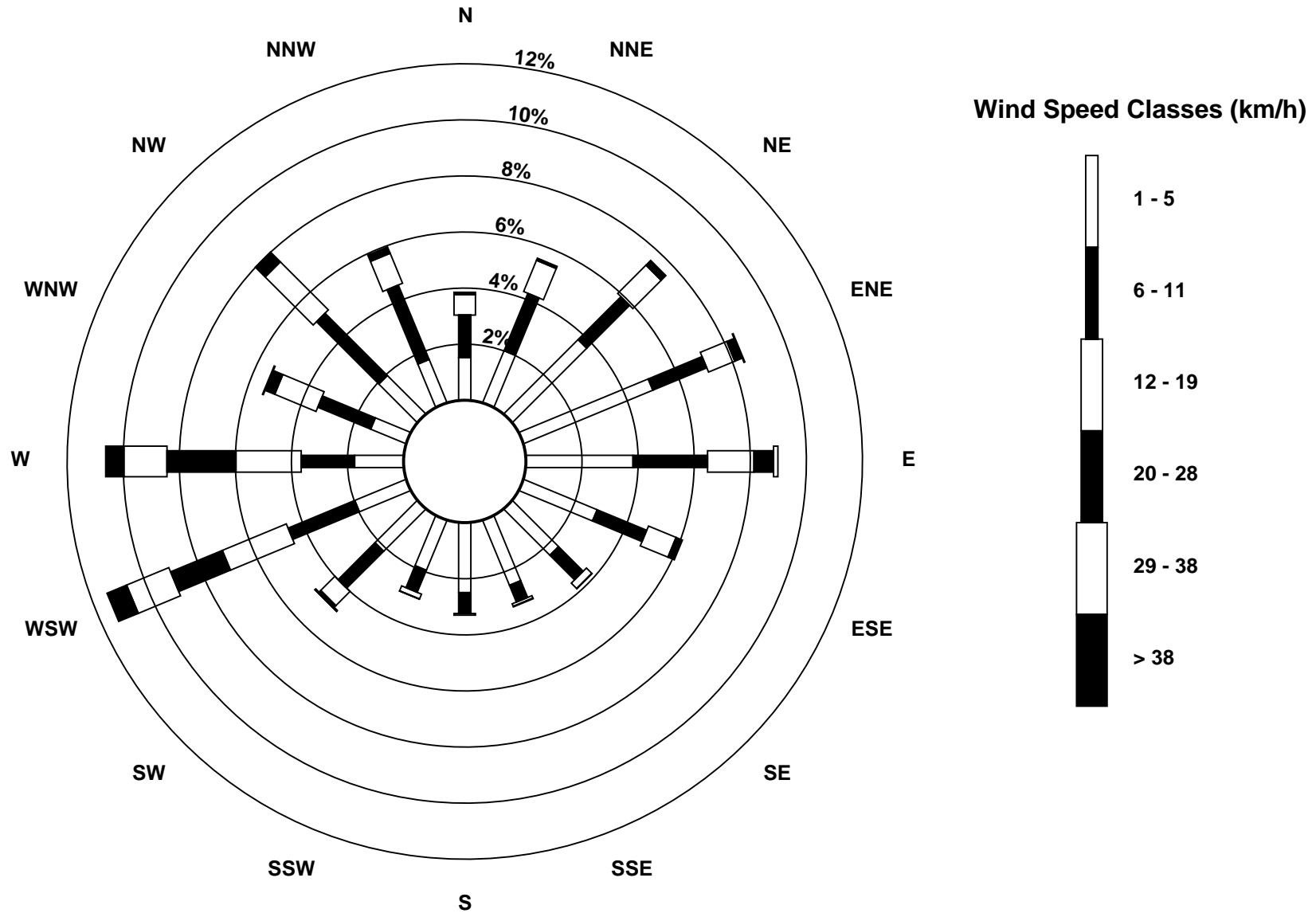
Table 25. Wind Speed and Wind Direction Frequency Distribution – Beaverlodge 2014 Summary

Beaverlodge								2014
Direction	# of Readings	% of wind speed (km/hr)						Totals
		1 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	326	1.52	1.51	0.73	0.08	0.00	0.00	3.85
NNE	466	2.01	2.21	1.21	0.08	0.00	0.00	5.51
NE	641	3.75	2.16	1.43	0.24	0.00	0.00	7.58
ENE	711	4.99	2.08	1.02	0.28	0.04	0.00	8.40
E	760	3.82	2.66	1.65	0.70	0.15	0.00	8.98
ESE	513	2.84	1.91	1.06	0.25	0.00	0.00	6.06
SE	326	2.33	1.24	0.27	0.01	0.00	0.00	3.85
SSE	277	2.51	0.65	0.09	0.02	0.00	0.00	3.27
S	279	2.49	0.74	0.06	0.00	0.00	0.00	3.30
SSW	252	1.93	0.85	0.19	0.01	0.00	0.00	2.98
SW	409	2.13	1.86	0.72	0.08	0.04	0.01	4.83
WSW	965	1.97	2.58	2.47	2.00	1.63	0.76	11.41
WSW	899	1.75	1.90	2.33	2.46	1.54	0.65	10.63
WNW	457	1.36	2.04	1.60	0.37	0.04	0.00	5.40
NW	677	1.94	3.14	2.42	0.50	0.00	0.00	8.00
NNW	503	1.67	2.87	1.16	0.25	0.00	0.00	5.94
Totals	8461	38.99	30.42	18.41	7.33	3.43	1.42	100

Wind Rose

Wind Speed (WS) (km/h)

Beaverlodge - 2014



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Table 26. Valleyview - Key Parameters – Continuous Monitoring Data – 2014 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	0.57	6.18	Nov 18	109.39	Nov 18 01:00	99.5	0	0
Hydrogen Sulphide H₂S measured in ppb	Valleyview	0.22	3.61	Oct 07	36.31	Oct 07 06:00	99.5	1	6

Table 27. Sulphur Dioxide (SO₂) – Valleyview 2014 Summary and Frequency Distribution

Valleyview		SO ₂ (ppb)										2014			
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	701	0.83	4.74	Jan 23	19.07	Jan 15 20:00	98.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	640	0.62	2.40	Feb 17	9.87	Feb 17 13:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	701	0.71	2.35	Mar 12	9.33	Mar 11 15:00	98.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	686	0.54	2.37	Apr 09	15.71	Apr 30 18:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	686	0.43	3.41	May 30	11.81	May 30 06:00	96.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	685	0.63	3.92	Jun 09	36.79	Jun 09 09:00	100.0	0	0	99.85	0.15	0.00	0.00	0.00	0.00
July	707	0.62	2.94	Jul 26	11.63	Jul 26 09:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	707	0.66	1.70	Aug 18	8.13	Aug 26 15:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	685	0.50	3.25	Sep 20	16.88	Sep 20 02:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	708	0.55	5.73	Oct 12	17.65	Oct 12 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	686	0.47	6.18	Nov 18	109.39	Nov 18 01:00	100.0	0	0	99.71	0.15	0.15	0.00	0.00	0.00
December	704	0.33	1.59	Dec 31	7.50	Dec 13 16:00	99.2	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8296	0.57	6.18	Nov 18	109.39	Nov 18 01:00	99.5	0	0	99.96	0.02	0.01	0.00	0.00	0.00

Table 28. Hydrogen Sulphide (H₂S) – Valleyview 2014 Summary and Frequency Distribution

Valleyview		H ₂ S (ppb)										2014			
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	702	0.21	0.44	Jan 08	1.79	Jan 21 15:00	98.9	0	0	99.29	0.71	0.00	0.00	0.00	0.00
February	639	0.31	2.58	Feb 25	18.97	Feb 25 13:00	100.0	0	3	97.50	1.72	0.31	0.00	0.00	0.47
March	700	0.15	0.38	Mar 19	1.39	Mar 19 07:00	98.9	0	0	99.71	0.29	0.00	0.00	0.00	0.00
April	686	0.16	0.43	Apr 30	1.68	Apr 22 04:00	100.0	0	0	98.54	1.46	0.00	0.00	0.00	0.00
May	683	0.19	0.38	May 20	2.53	May 20 02:00	96.9	0	0	99.56	0.29	0.15	0.00	0.00	0.00
June	685	0.19	0.54	Jun 19	2.45	Jun 19 06:00	100.0	0	0	98.10	1.90	0.00	0.00	0.00	0.00
July	706	0.19	0.56	Jul 10	4.62	Jul 10 10:00	100.0	0	0	98.87	0.99	0.14	0.00	0.00	0.00
August	707	0.18	0.37	Aug 03	1.17	Aug 28 01:00	100.0	0	0	99.86	0.14	0.00	0.00	0.00	0.00
September	684	0.15	0.32	Sep 30	2.14	Sep 30 21:00	100.0	0	0	99.56	0.44	0.00	0.00	0.00	0.00
October	707	0.35	3.61	Oct 07	36.31	Oct 07 06:00	100.0	1	3	97.45	1.56	0.42	0.14	0.00	0.42
November	686	0.26	0.98	Nov 12	3.62	Nov 12 09:00	100.0	0	0	96.94	2.62	0.44	0.00	0.00	0.00
December	704	0.30	0.66	Dec 07	1.77	Dec 18 16:00	99.2	0	0	97.73	2.27	0.00	0.00	0.00	0.00
Annual	8289	0.22	3.61	Oct 07	36.31	Oct 07 06:00	99.5	1	6	98.60	1.19	0.12	0.01	0.00	0.07

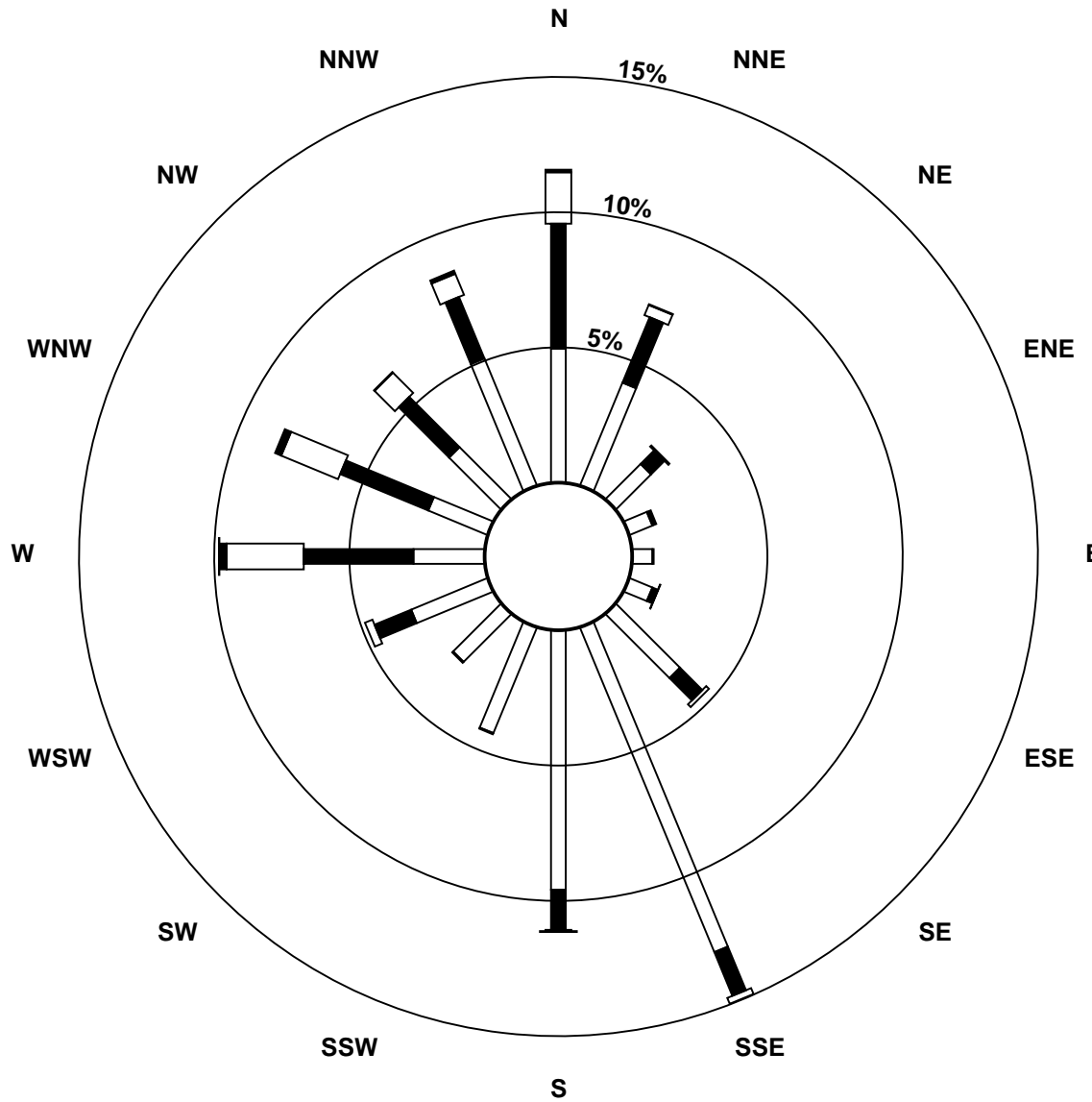
Table 29. Wind Speed and Wind Direction Frequency Distribution – Valleyview 2014 Summary

Valleyview								2014
Direction	# of Readings	% of wind speed (km/hr)						Totals
		1 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	742	4.96	4.62	1.90	0.09	0.00	0.00	11.57
NNE	460	4.12	2.62	0.41	0.03	0.00	0.00	7.17
NE	167	1.84	0.70	0.06	0.00	0.00	0.00	2.60
ENE	69	0.92	0.16	0.00	0.00	0.00	0.00	1.08
E	51	0.75	0.05	0.00	0.00	0.00	0.00	0.80
ESE	74	0.92	0.22	0.02	0.00	0.00	0.00	1.15
SE	299	3.35	1.17	0.14	0.00	0.00	0.00	4.66
SSE	960	12.99	1.75	0.23	0.00	0.00	0.00	14.97
S	715	9.59	1.48	0.03	0.02	0.03	0.00	11.15
SSW	274	4.23	0.05	0.00	0.00	0.00	0.00	4.27
SW	164	2.51	0.05	0.00	0.00	0.00	0.00	2.56
WSW	309	3.06	1.47	0.30	0.00	0.00	0.00	4.82
WSW	630	2.64	4.05	2.85	0.27	0.00	0.02	9.82
WNW	540	2.37	3.52	2.28	0.25	0.00	0.00	8.42
NW	413	2.71	2.64	1.06	0.03	0.00	0.00	6.44
NNW	546	5.08	2.46	0.84	0.12	0.00	0.00	8.51
Totals	6413	62.03	26.99	10.12	0.81	0.03	0.02	100

Wind Rose

Wind Speed (WS) (km/h)

Valleyview - 2014



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Table 30. Falher - Key Parameters – Continuous Monitoring Data – 2014 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	0.19	0.99	Feb 16	6.20	Jan 01 11:00	99.3	0	0
Hydrogen Sulphide H₂S measured in ppb	Falher	0.19	1.54	May 07	16.06	May 07 22:00	99.3	0	1

Table 31. Sulphur Dioxide (SO₂) – Falher 2014 Summary and Frequency Distribution

Falher		SO ₂ (ppb)										2014			
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	705	0.19	0.92	Jan 01	6.20	Jan 01 11:00	99.5	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	640	0.27	0.99	Feb 16	4.53	Feb 25 16:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.23	0.61	Mar 31	2.40	Mar 31 17:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	639	0.19	0.67	Apr 03	3.56	Apr 19 19:00	93.2	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	708	0.10	0.26	May 25	3.10	May 25 09:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	680	0.14	0.40	Jun 12	3.14	Jun 27 10:00	99.3	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	709	0.16	0.41	Jul 02	1.98	Jul 12 09:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	709	0.24	0.71	Aug 14	2.48	Aug 14 17:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	686	0.16	0.35	Sep 16	1.54	Sep 27 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	708	0.15	0.40	Oct 30	2.61	Oct 30 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	683	0.20	0.87	Nov 17	2.30	Nov 17 10:00	99.6	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	711	0.28	0.71	Dec 02	1.93	Dec 17 12:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8287	0.19	0.99	Feb 16	6.20	Jan 01 11:00	99.3	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 32. Hydrogen Sulphide (H₂S) – Falher 2014 Summary and Frequency Distribution

Falher		H ₂ S (ppb)										2014			
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	705	0.15	0.30	Jan 13	0.58	Jan 05 01:00	99.5	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	640	0.22	0.89	Feb 19	2.28	Feb 18 10:00	100.0	0	0	96.72	3.28	0.00	0.00	0.00	0.00
March	707	0.06	0.15	Mar 08	0.70	Mar 06 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	639	0.07	0.22	Apr 27	1.02	Apr 10 22:00	93.2	0	0	99.84	0.16	0.00	0.00	0.00	0.00
May	708	0.25	1.54	May 07	16.06	May 07 22:00	100.0	0	1	96.33	2.12	0.85	0.14	0.28	0.28
June	678	0.21	0.55	Jun 23	2.57	Jun 23 07:00	99.3	0	0	97.79	2.06	0.15	0.00	0.00	0.00
July	706	0.25	0.64	Jul 17	4.67	Jul 17 06:00	100.0	0	0	98.02	1.70	0.28	0.00	0.00	0.00
August	706	0.26	0.64	Aug 22	3.02	Aug 22 05:00	100.0	0	0	96.88	2.97	0.14	0.00	0.00	0.00
September	684	0.32	0.99	Sep 15	6.48	Sep 16 00:00	100.0	0	0	93.57	5.12	1.02	0.29	0.00	0.00
October	707	0.16	0.48	Oct 30	1.83	Oct 21 08:00	100.0	0	0	98.30	1.70	0.00	0.00	0.00	0.00
November	680	0.12	0.35	Nov 06	1.16	Nov 01 20:00	99.6	0	0	99.85	0.15	0.00	0.00	0.00	0.00
December	709	0.17	0.49	Dec 02	0.95	Dec 13 13:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8269	0.19	1.54	May 07	16.06	May 07 22:00	99.3	0	1	98.11	1.60	0.21	0.04	0.02	0.02

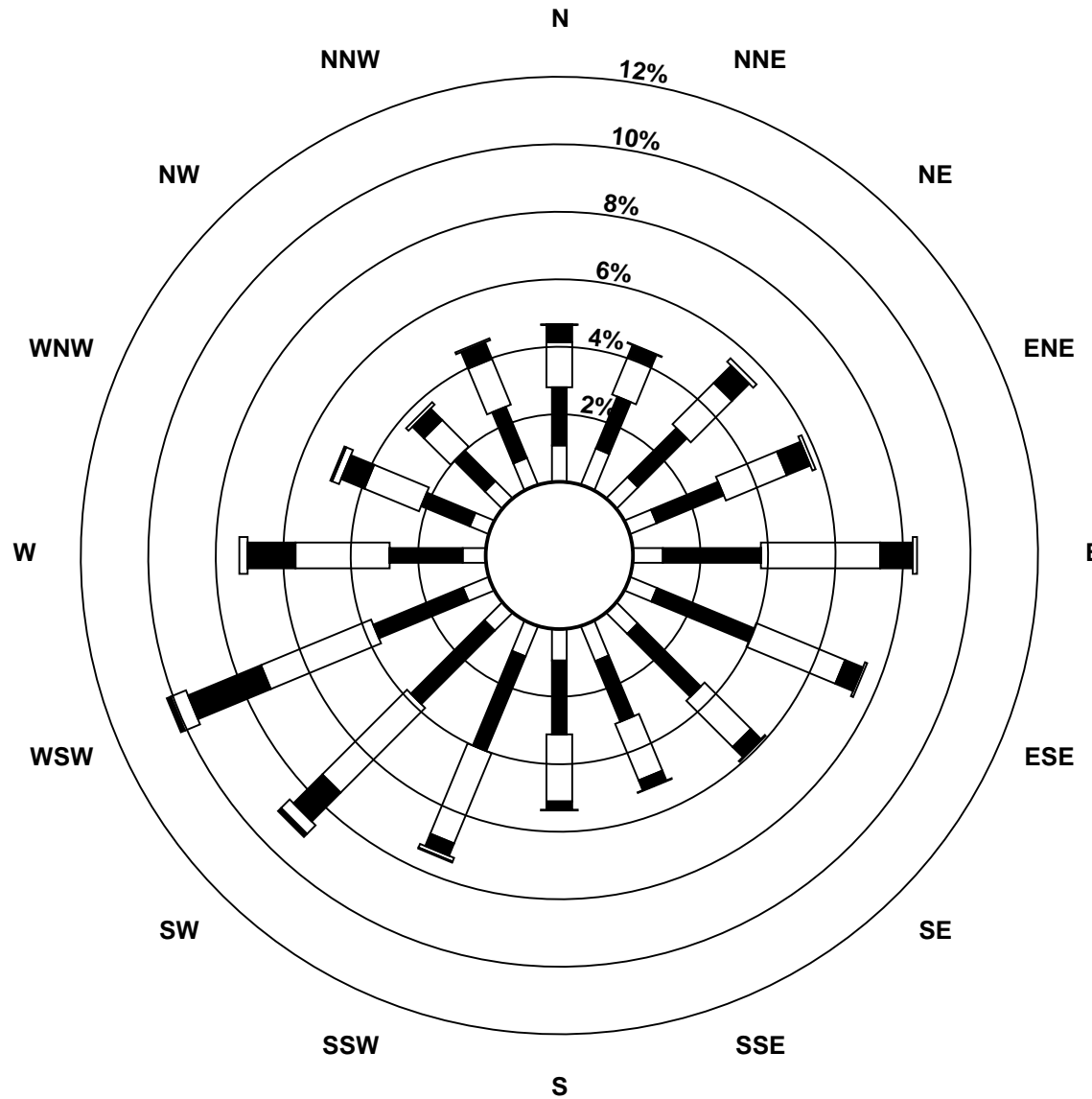
Table 33. Wind Speed and Wind Direction Frequency Distribution – Falher 2014 Summary

Falher								2014
Direction	# of Readings	% of wind speed (km/hr)						Totals
		1 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	401	1.08	1.72	1.34	0.51	0.01	0.00	4.66
NNE	381	1.16	1.66	1.22	0.36	0.02	0.00	4.43
NE	476	0.90	2.05	1.73	0.72	0.14	0.00	5.53
ENE	500	0.85	2.15	1.95	0.76	0.10	0.00	5.81
E	724	0.88	2.91	3.53	0.96	0.13	0.00	8.42
ESE	642	0.86	3.12	2.85	0.57	0.07	0.00	7.46
SE	509	0.88	2.64	1.94	0.42	0.03	0.00	5.92
SSE	448	1.12	1.94	1.81	0.31	0.02	0.00	5.21
S	462	0.93	2.19	1.99	0.24	0.02	0.00	5.37
SSW	640	0.96	3.03	2.89	0.40	0.12	0.03	7.44
SW	780	0.74	3.08	3.55	1.21	0.36	0.13	9.07
WSW	876	0.83	2.87	3.53	2.34	0.49	0.13	10.18
WSW	628	0.69	2.16	2.79	1.42	0.24	0.00	7.30
WNW	425	0.60	1.56	1.76	0.74	0.22	0.06	4.94
NW	318	0.72	1.28	1.12	0.48	0.10	0.00	3.70
NNW	392	0.86	1.64	1.46	0.53	0.06	0.00	4.56
Totals	8602	14.07	35.99	35.47	11.97	2.15	0.35	100

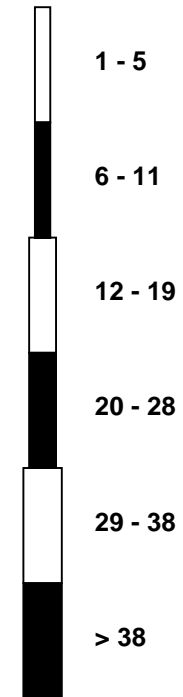
Wind Rose

Wind Speed (WS) (km/h)

Falher - 2014



Wind Speed Classes (km/h)



PAZA

Reno-Portable

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Table 34. Reno-Portable - Key Parameters – Continuous Monitoring Data – 2014 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 SO₂ measured in ppb	Reno-Portable	0.23	1.40	Nov 01	4.78	Dec 22 04:00	92.4	0	0
Nitrogen Dioxide NO₂ measured in ppb	Reno-Portable	2.50	7.95	Feb 26	23.68	Feb 27 05:00	98.8	0	0
Ozone O₃ measured in ppb	Reno-Portable	34.08	47.27	Feb 07	55.78	Oct 07 02:00	98.8	0	0
Total Hydrocarbons THC measured in ppm	Reno-Portable	2.12	2.41	Nov 01	3.62	Dec 22 04:00	98.3	-	-
Total Reduced Sulphur TRS measured in ppb	Reno-Portable	0.29	0.60	Dec 07	1.09	Nov 27 06:00	98.8	-	-
Particulate Matter PM_{2.5} measured in µg/m³	Reno-Portable	1.93	5.24	Nov 21	28.56	Nov 21 08:00	97.6	0	0

Table 35. Sulphur Dioxide (SO₂) – Reno-Portable 2014 Summary and Frequency Distribution

Reno Portable		SO ₂ (ppb)										2014			
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	388	0.22	0.51	Jan 20	1.97	Jan 30 18:00	54.8	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	637	0.43	1.40	Feb 16	3.22	Feb 16 03:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	707	0.33	1.40	Mar 05	4.07	Mar 04 12:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	685	0.21	1.04	Apr 03	4.78	Apr 03 18:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	708	0.08	0.29	May 17	1.24	May 31 06:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	417	0.12	0.34	Jun 13	1.99	Jun 08 02:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	3542	0.23	1.40	Nov 01	4.78	Dec 22 04:00	92.4	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 36. Nitrogen Dioxide (NO₂) – Reno-Portable 2014 Summary and Frequency Distribution

Reno Portable		NO ₂ (ppb)										2014			
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	656	2.61	6.05	Jan 28	12.51	Jan 31 23:00	93.0	0	0	100.00	0.00	0.00	0.00	0.00	
February	637	3.43	7.95	Feb 26	23.68	Feb 27 05:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	
March	706	1.85	5.51	Mar 05	10.48	Mar 31 23:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	
April	683	1.41	3.39	Apr 01	10.70	Apr 20 02:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	
May	706	2.52	6.19	May 30	15.03	May 30 02:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	
June	417	3.72	5.68	Jun 01	21.86	Jun 19 03:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Annual	3805	2.50	7.95	Feb 26	23.68	Feb 27 05:00	98.8	0	0	100.00	0.00	0.00	0.00	0.00	

Table 37. Ozone (O₃) – Reno-Portable 2014 Summary and Frequency Distribution

Reno Portable		O ₃ (ppb)											2014		
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	660	33.29	41.82	Jan 14	47.39	Jan 14 16:00	93.0	0	0	0.00	0.00	3.48	84.85	11.67	0.00
February	640	31.20	41.15	Feb 18	45.17	Feb 18 17:00	100.0	0	0	0.00	0.00	2.81	88.13	9.06	0.00
March	708	39.63	47.27	Mar 12	52.48	Mar 12 14:00	100.0	0	0	0.00	0.00	0.00	52.40	47.60	0.00
April	685	38.30	47.20	Apr 22	54.35	Apr 22 20:00	100.0	0	0	0.00	0.00	0.88	54.01	45.11	0.00
May	709	32.49	42.76	May 18	54.31	May 19 13:00	100.0	0	0	0.14	1.13	9.73	63.19	25.81	0.00
June	420	29.57	41.98	Jun 12	55.78	Jun 12 17:00	100.0	0	0	0.24	1.90	23.10	53.57	21.19	0.00
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	3822	34.08	47.27	Feb 07	55.78	Oct 07 02:00	98.8	0	0	0.06	0.78	12.59	67.46	19.15	0.00

Table 38. Total Reduced Sulphur (TRS) – Reno-Portable 2014 Summary and Frequency Distribution

Reno Portable		TRS (ppb)											2014		
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	658	0.30	0.43	Jan 10	0.64	Jan 03 17:00	93.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	639	0.28	0.44	Feb 11	0.78	Feb 11 14:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	706	0.31	0.60	Mar 08	0.89	Mar 06 04:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	685	0.26	0.41	Apr 01	0.58	Apr 01 05:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	709	0.29	0.46	May 15	1.09	May 12 02:00	100.0	0	0	99.86	0.14	0.00	0.00	0.00	0.00
June	420	0.31	0.52	Jun 12	0.79	Jun 11 07:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	3817	0.29	0.60	Dec 07	1.09	Nov 27 06:00	98.8	0	0	99.98	0.02	0.00	0.00	0.00	0.00

*No Alberta Environment Objectives or Guidelines for TRS

Table 39. Total Hydrocarbon (THC) – Reno-Portable 2014 Summary and Frequency Distribution

Reno Portable														THC (ppm)		2014	
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	646	2.23	2.41	Jan 04	3.14	Jan 10 15:00	91.1	0	0	0.00	1.86	93.34	4.80	0.00	0.00		
February	641	2.20	2.34	Feb 06	2.97	Feb 27 05:00	100.0	0	0	0.00	2.50	96.41	1.09	0.00	0.00		
March	694	2.08	2.24	Mar 28	3.62	Mar 28 01:00	98.9	0	0	0.00	28.39	70.89	0.72	0.00	0.00		
April	683	2.13	2.36	Apr 14	2.74	Apr 14 19:00	99.7	0	0	0.00	9.22	89.75	1.02	0.00	0.00		
May	709	2.05	2.13	May 12	2.25	May 11 07:00	100.0	0	0	0.00	17.07	82.93	0.00	0.00	0.00		
June	419	2.01	2.06	Jun 06	2.25	Jun 02 02:00	100.0	0	0	0.24	42.96	56.80	0.00	0.00	0.00		
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Annual	3792	2.12	2.41	Nov 01	3.62	Dec 22 04:00	98.3	0	0	0.04	17.00	81.69	1.27	0.00	0.00		

*No Alberta Environment Objectives or Guidelines for THC

Table 40. Particulate Matter (PM_{2.5}) – Reno-Portable 2014 Summary and Frequency Distribution

Reno Portable														PM _{2.5} (µg/m ³)		2014	
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	667	1.85	5.22	Jan 08	25.96	Jan 20 02:00	89.7	0	0	66.57	25.34	7.80	0.15	0.15	0.00		
February	645	2.61	5.14	Feb 19	13.59	Feb 24 16:00	96.9	0	0	46.67	45.12	7.60	0.62	0.00	0.00		
March	739	1.49	3.96	Mar 07	16.23	Mar 20 09:00	99.7	0	0	70.37	28.82	0.68	0.14	0.00	0.00		
April	718	1.52	4.67	Apr 01	11.07	Apr 01 11:00	99.7	0	0	66.99	31.62	1.25	0.14	0.00	0.00		
May	742	2.05	5.20	May 31	28.56	May 10 20:00	99.7	0	0	60.78	34.77	3.64	0.27	0.54	0.00		
June	441	2.09	5.24	Jun 03	12.38	Jun 03 19:00	100.0	0	0	54.65	41.95	3.17	0.23	0.00	0.00		
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
August	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
September	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
October	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Annual	3952	1.93	5.24	Nov 21	28.56	Nov 21 08:00	97.6	0	0	61.01	34.60	4.02	0.26	0.12	0.00		

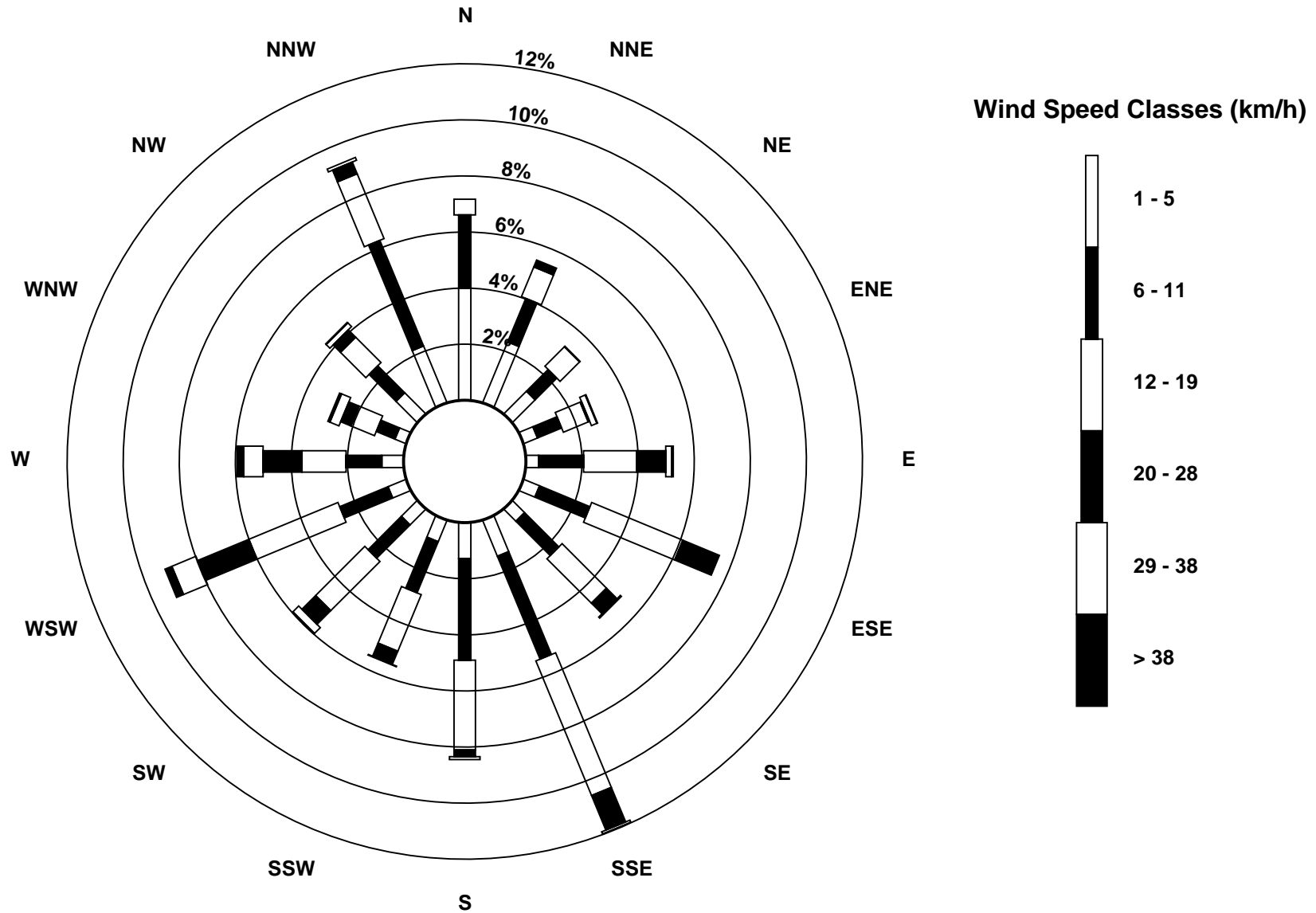
Table 41. Wind Speed and Wind Direction Frequency Distribution – Reno-Portable 2014 Summary

Reno Portable								2014
Direction	# of Readings	% of wind speed (km/hr)						Totals
		1 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	269	4.00	2.61	0.56	0.00	0.00	0.00	7.17
NNE	204	2.35	1.68	1.15	0.27	0.00	0.00	5.44
NE	122	1.15	1.09	0.99	0.03	0.00	0.00	3.25
ENE	102	0.53	0.93	0.96	0.05	0.21	0.03	2.72
E	197	0.45	1.60	1.89	1.04	0.21	0.05	5.25
ESE	281	0.61	1.95	3.52	1.41	0.00	0.00	7.49
SE	194	0.61	1.73	2.24	0.53	0.05	0.00	5.17
SSE	449	1.39	3.97	5.20	1.33	0.08	0.00	11.97
S	317	1.28	3.62	3.20	0.24	0.11	0.00	8.45
SSW	207	0.83	1.97	2.19	0.51	0.03	0.00	5.52
SW	224	0.80	1.68	2.48	0.69	0.29	0.03	5.97
WSW	344	0.69	1.87	3.44	1.97	0.93	0.27	9.17
WSW	223	0.77	1.28	1.57	1.39	0.69	0.24	5.94
WNW	108	0.43	0.72	0.91	0.40	0.35	0.08	2.88
NW	161	1.07	1.36	1.28	0.37	0.19	0.03	4.29
NNW	350	2.19	4.08	2.51	0.45	0.11	0.00	9.33
Totals	3752	19.14	32.14	34.06	10.69	3.25	0.72	100

Wind Rose

Wind Speed (WS) (km/h)

Portable Reno - 2014



PAZA

Clairmont-Portable
CONTINUOUS AMBIENT AIR MONITORING STATION

2014
ANNUAL SUMMARY TABLES

Table 42. Clairmont-Portable - Key Parameters – Continuous Monitoring Data – 2014 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 SO₂ measured in ppb	Clairmont-Portable	0.40	2.37	Nov 01	6.75	Dec 22 04:00	99.9	0	0
Nitrogen Dioxide NO₂ measured in ppb	Clairmont-Portable	7.96	36.59	Dec 01	102.10	Dec 09 14:00	56.3	0	0
Ozone O₃ measured in ppb	Clairmont-Portable	20.22	39.54	Feb 07	69.76	Oct 07 02:00	99.9	0	0
Total Hydrocarbons THC measured in ppm	Clairmont-Portable	2.26	3.88	Nov 01	5.05	Dec 22 04:00	98.9	-	-
Total Reduced Sulphur TRS measured in ppb	Clairmont-Portable	0.44	1.10	Dec 07	4.47	Nov 27 06:00	99.6	-	-
Particulate Matter PM_{2.5} measured in µg/m³	Clairmont-Portable	6.53	40.99	Nov 21	102.20	Nov 21 08:00	98.1	6	11

Table 43. Sulphur Dioxide (SO₂) – Clairmont-Portable 2014 Summary and Frequency Distribution

Clairmont Portable		SO ₂ (ppb)										2014			
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 - 20	20 - 60	60 - 110	110 - 170	170 - 340	>340
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	239	0.40	1.07	Jun 21	6.75	Jun 24 11:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	706	0.33	0.91	Jul 26	4.77	Jul 25 12:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	705	0.27	0.53	Aug 14	2.31	Aug 11 10:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	683	0.22	0.63	Sep 24	2.97	Sep 07 01:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	708	0.29	0.76	Oct 28	6.72	Oct 06 12:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	685	0.64	2.37	Nov 13	4.40	Nov 13 11:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	709	0.64	1.25	Dec 06	5.24	Dec 28 23:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	4435	0.40	2.37	Nov 01	6.75	Dec 22 04:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00

Table 44. Nitrogen Dioxide (NO₂) – Clairmont-Portable 2014 Summary and Frequency Distribution

Clairmont Portable		NO ₂ (ppb)										2014			
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 - 25	25 - 50	50 - 110	110 - 210	>210	
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
June	237	3.64	5.03	Jun 27	18.20	Jun 21 23:00	100.0	0	0	100.00	0.00	0.00	0.00	0.00	
July	705	3.90	7.96	Jul 15	18.15	Jul 31 01:00	99.9	0	0	100.00	0.00	0.00	0.00	0.00	
August	703	3.63	6.94	Aug 13	17.42	Aug 14 08:00	99.7	0	0	100.00	0.00	0.00	0.00	0.00	
September	682	4.44	9.10	Sep 18	28.63	Sep 18 07:00	100.0	0	0	99.71	0.29	0.00	0.00	0.00	
October	706	6.19	13.82	Oct 20	27.16	Oct 27 16:00	100.0	0	0	99.72	0.28	0.00	0.00	0.00	
November	683	10.61	31.60	Nov 30	50.55	Nov 17 14:00	99.9	0	0	91.36	8.49	0.15	0.00	0.00	
December	708	20.35	36.59	Dec 01	102.10	Dec 09 14:00	100.0	0	0	61.72	38.14	0.14	0.00	0.00	
Annual	4424	7.96	36.59	Dec 01	102.10	Dec 09 14:00	56.3	0	0	93.96	5.99	0.05	0.00	0.00	

Table 45. Ozone (O₃) – Clairmont-Portable 2014 Summary and Frequency Distribution

Clairmont Portable O ₃ (ppb) 2014															
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	236	26.57	36.74	Jun 23	49.17	Jun 23 19:00	100.0	0	0	0.00	6.78	22.03	60.17	11.02	0.00
July	708	25.81	39.54	Jul 14	69.76	Jul 14 13:00	100.0	0	0	0.00	8.62	25.42	53.67	12.29	0.00
August	707	25.01	35.83	Aug 05	52.36	Aug 02 16:00	99.7	0	0	0.57	7.07	25.46	58.56	8.35	0.00
September	686	18.14	28.42	Sep 19	39.59	Sep 23 16:00	100.0	0	0	4.81	18.22	33.53	43.44	0.00	0.00
October	708	16.81	31.48	Oct 11	39.58	Oct 08 14:00	100.0	0	0	7.06	23.73	32.63	36.58	0.00	0.00
November	685	17.59	33.32	Nov 18	39.10	Nov 15 17:00	99.9	0	0	4.53	22.63	30.36	42.48	0.00	0.00
December	709	11.63	33.29	Dec 31	43.95	Dec 09 20:00	100.0	0	0	16.78	37.66	21.72	23.41	0.42	0.00
Annual	4439	20.22	39.54	Feb 07	69.76	Oct 07 02:00	99.9	0	0	4.82	0.78	12.59	67.46	19.15	0.00

Table 46. Total Reduced Sulphur (TRS) – Clairmont-Portable 2014 Summary and Frequency Distribution

Clairmont Portable TRS (ppb) 2014															
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	214	0.31	0.52	Jun 30	1.99	Jun 27 06:00	100.0	0	0	97.66	2.34	0.00	0.00	0.00	0.00
July	684	0.45	0.80	Jul 18	2.93	Jul 18 05:00	97.0	0	0	94.74	4.97	0.29	0.00	0.00	0.00
August	705	0.44	0.66	Aug 16	3.72	Aug 08 04:00	100.0	0	0	95.04	4.54	0.43	0.00	0.00	0.00
September	684	0.54	1.06	Sep 22	3.52	Sep 22 02:00	100.0	0	0	88.74	9.06	2.19	0.00	0.00	0.00
October	708	0.36	0.69	Oct 05	2.46	Oct 05 04:00	100.0	0	0	97.32	2.68	0.00	0.00	0.00	0.00
November	684	0.37	0.67	Nov 20	1.46	Nov 02 01:00	99.9	0	0	99.12	0.88	0.00	0.00	0.00	0.00
December	708	0.63	1.10	Dec 18	4.47	Dec 12 12:00	100.0	0	0	90.96	8.76	0.28	0.00	0.00	0.00
Annual	4387	0.44	1.10	Dec 07	4.47	Nov 27 06:00	99.6	0	0	94.80	4.75	0.46	0.00	0.00	0.00

*No Alberta Environment Objectives or Guidelines for TRS

Table 47. Total Hydrocarbon (THC) – Clairmont-Portable 2014 Summary and Frequency Distribution

Clairmont Portable															THC (ppm)		2014	
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
June	217	2.14	2.22	Jun 27	3.02	Jun 27 06:00	100.0	0	0	0.00	5.99	90.78	3.23	0.00	0.00			
July	655	2.13	3.02	Jul 15	4.46	Jul 15 22:00	92.9	0	0	0.00	43.51	42.29	14.20	0.00	0.00			
August	708	2.03	2.43	Aug 13	3.77	Aug 13 02:00	100.0	0	0	0.00	63.28	29.38	7.34	0.00	0.00			
September	678	2.04	2.30	Sep 22	3.71	Sep 29 06:00	99.9	0	0	0.00	57.37	37.61	5.01	0.00	0.00			
October	709	2.15	2.44	Oct 17	4.02	Oct 17 22:00	100.0	0	0	0.14	15.94	78.00	5.92	0.00	0.00			
November	685	2.42	3.10	Nov 13	4.00	Nov 14 01:00	99.9	0	0	0.00	0.73	68.18	31.09	0.00	0.00			
December	702	2.90	3.88	Dec 18	5.05	Dec 18 06:00	100.0	0	0	0.00	0.00	30.63	69.23	0.14	0.00			
Annual	4354	2.26	3.88	Nov 01	5.05	Dec 22 04:00	98.9	0	0	0.02	26.69	53.84	19.43	0.02	0.00			

*No Alberta Environment Objectives or Guidelines for THC

Table 48. Particulate Matter (PM_{2.5}) – Clairmont-Portable 2014 Summary and Frequency Distribution

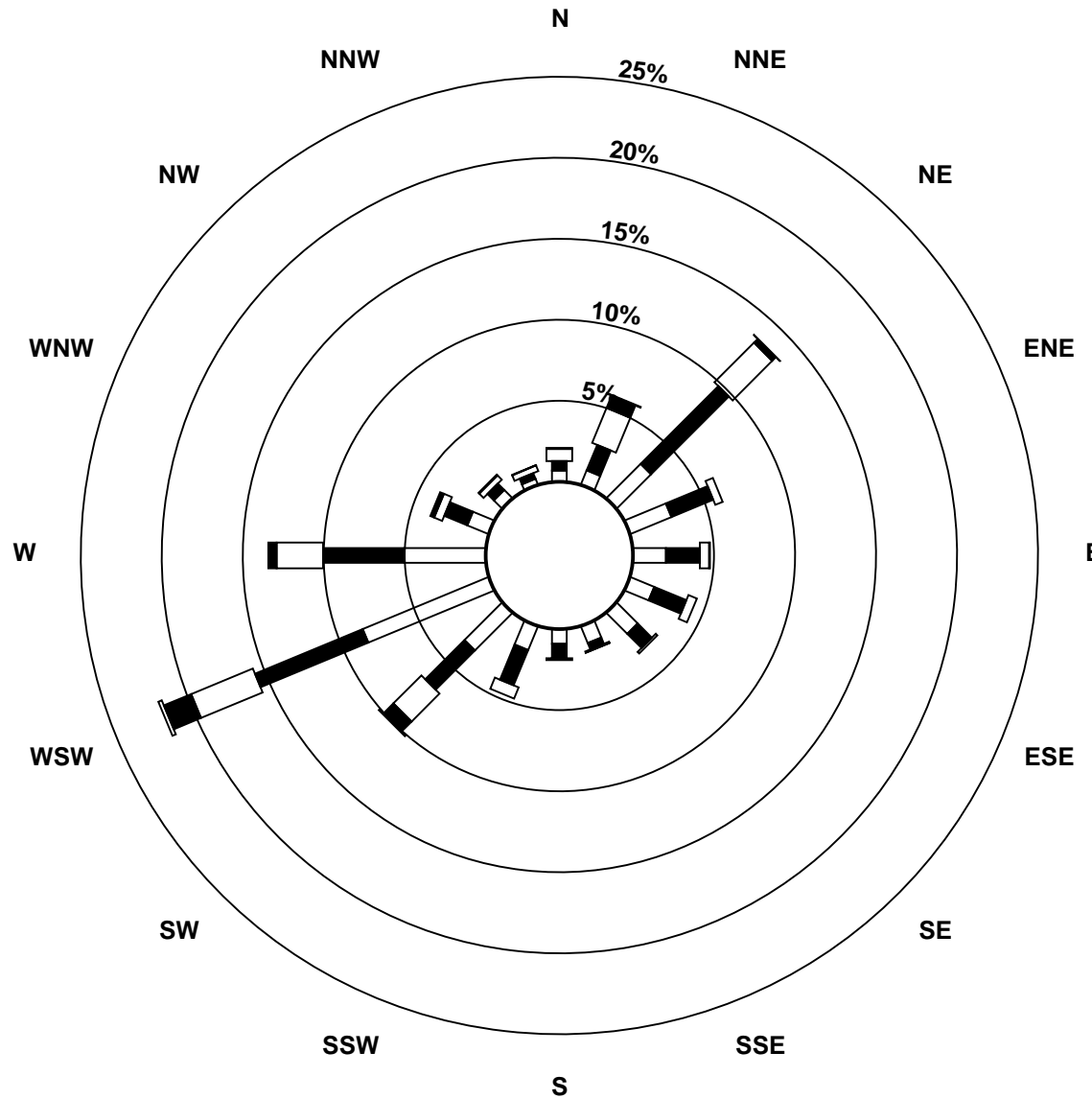
Clairmont Portable															PM _{2.5} (µg/m ³)		2014	
Month	# of Readings	Average	24-hr Maximum	Date	1-hr Maximum	Date	Operational Time (%)	AAAQO		Number of Readings in Concentration Range								
								24-Hr	1-Hr	0 - 2	2 - 6	6 - 11	11 - 17	17 - 30	> 30			
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
June	269	3.13	6.79	Jun 27	24.21	Jun 28 00:00	98.9	0	0	51.30	32.34	11.90	3.72	0.74	0.00			
July	743	10.67	36.80	Jul 15	102.20	Jul 13 11:00	99.9	3	7	29.74	27.46	15.34	7.94	8.75	10.77			
August	740	11.28	40.99	Aug 14	101.96	Aug 14 20:00	99.5	3	3	24.46	23.78	19.59	11.89	10.81	9.46			
September	717	4.15	15.89	Sep 17	37.86	Sep 21 21:00	99.6	0	0	48.54	26.22	14.09	7.95	2.65	0.56			
October	743	2.75	10.17	Oct 29	98.28	Oct 29 00:00	100.0	0	1	53.16	36.47	8.48	1.21	0.27	0.40			
November	637	6.37	13.75	Nov 20	47.75	Nov 13 15:00	88.9	0	0	24.80	34.54	24.80	9.58	4.40	1.88			
December	742	7.34	15.96	Dec 19	27.65	Dec 16 19:00	99.7	0	0	22.51	25.88	25.47	18.60	7.55	0.00			
Annual	4591	6.53	40.99	Nov 21	102.20	Nov 21 08:00	98.1	6	11	36.36	29.53	17.10	8.70	5.02	3.30			

Table 49. Wind Speed and Wind Direction Frequency Distribution – Clairmont-Portable 2014 Summary

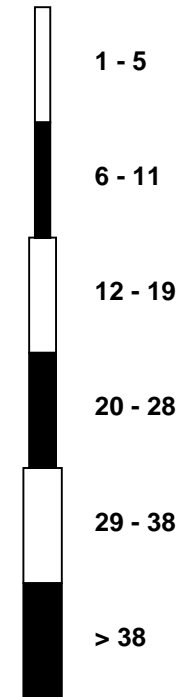
Clairmont Portable								2014
Direction	# of Readings	% of wind speed (km/hr)						Totals
		1 - 5	6 - 11	12 - 19	20 - 28	29 - 38	> 38	
N	90	0.70	0.58	0.75	0.07	0.00	0.00	2.10
NNE	251	0.96	1.70	2.33	0.82	0.05	0.00	5.85
NE	583	3.01	6.78	3.45	0.33	0.02	0.00	13.58
ENE	259	2.75	2.80	0.49	0.00	0.00	0.00	6.03
E	204	2.03	2.10	0.58	0.05	0.00	0.00	4.75
ESE	185	1.61	2.14	0.56	0.00	0.00	0.00	4.31
SE	138	1.84	1.23	0.14	0.00	0.00	0.00	3.22
SSE	70	1.12	0.42	0.07	0.02	0.00	0.00	1.63
S	82	0.91	0.89	0.12	0.00	0.00	0.00	1.91
SSW	201	1.58	2.35	0.75	0.00	0.00	0.00	4.68
SW	433	3.29	3.42	2.45	0.86	0.07	0.00	10.09
WSW	935	8.41	7.20	4.12	1.82	0.23	0.00	21.78
WSW	576	5.03	5.01	2.87	0.51	0.00	0.00	13.42
WNW	161	1.42	1.54	0.54	0.26	0.00	0.00	3.75
NW	74	0.72	0.56	0.37	0.07	0.00	0.00	1.72
NNW	50	0.40	0.37	0.37	0.02	0.00	0.00	1.16
Totals	4292	35.76	39.10	19.94	4.82	0.37	0.00	100

Wind Rose

Wind Speed (WS) (km/h)
Portable Clairmont - 2014



Wind Speed Classes (km/h)



PAZA

PASSIVE MONITORING

2014

ANNUAL SUMMARY TABLES

Table 50. SO₂ Passive - 2014 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	0.6	0.4	0.6	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.7	0.6	0.7	0.4
2	Bay Tree	0.6	0.3	0.4	0.3	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.6	0.2
3	Forth Creek	0.3	0.4	0.6	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.4	0.6	0.6	0.3
4	Gordondale	0.5	0.6	0.5	0.3	0.2	0.2	0.3	0.3	0.2	0.4	0.1	1.0	1.0	0.4
5	Boone Creek	0.4	0.5	0.6	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.4	0.4	0.6	0.3
7	Steeprock Creek	0.2	0.3	0.5	0.2	0.1	0.1	0.2	BDL	0.1	0.1	0.2	0.2	0.5	0.2
9	Spirit River	0.3	0.3	0.4	0.2	0.1	0.2	0.3	0.1	0.1	0.2	0.3	0.5	0.5	0.3
10	Woking	0.5	0.4	0.4	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.8	0.8	0.3
11	Webber Creek	0.6	0.6	0.6	0.3	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.5	0.6	0.3
12	Hythe	0.3	0.4	0.4	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.6	0.3	0.6	0.2
14	Sylvester	0.1	0.3	0.3	0.1	0.1	0.1	BDL	BDL	0.1	BDL	0.2	0.1	0.3	0.1
16	Beaverlodge	0.3	0.4	0.6	0.5	0.2	0.1	0.1	0.1	0.1	0.2	0.7	0.4	0.7	0.3
17	Poplar	0.4	0.4	0.6	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.6	0.2
18	Saddle Hills	0.5	0.6	0.5	0.2	0.2	0.2	0.3	0.2	0.1	0.2	0.6	0.4	0.6	0.3
19	Wanham	0.4	0.3	0.4	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.1	0.5	0.5	0.3
20	Shaftesbury	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.4	0.3	0.4	0.2
21	Eaglesham	0.3	0.2	0.2	0.3	0.1	0.3	0.2	0.1	0.1	0.1	0.5	0.2	0.5	0.2
23	Bear Lake	0.4	0.5	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.6	0.5	0.6	0.3
24	Wembley	0.3	0.3	0.4	0.2	N/S	0.1	0.1	0.1	BDL	0.1	0.1	0.3	0.4	0.2
25	Pinto Creek	0.2	0.5	0.4	0.1	0.1	0.0	BDL	BDL	BDL	BDL	0.6	0.1	0.6	0.3
26	Flyingshot	0.2	0.3	0.3	0.2	0.3	0.1	0.1	0.1	BDL	0.1	0.4	0.3	0.4	0.2
27	Grande Prairie I	0.4	0.4	0.4	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.4	0.6	0.6	0.2
28	Clairmont Lake	0.4	0.7	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.9	0.9	0.3
29	Smoky Heights	0.7	0.6	0.6	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.6	0.7	0.4
30	Fitzsimmons	0.3	0.2	0.3	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.2
32	Gold Creek	0.2	0.2	0.5	0.1	0.2	N/S	0.1	0.1	0.2	0.2	0.3	0.1	0.5	0.2
33	Wapiti	0.3	0.3	0.5	N/S	0.1	0.2	0.1	0.2	0.1	0.3	0.3	0.3	0.5	0.2
34	Puskaskau	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.1	BDL	BDL	0.2	0.1	0.2	0.1
35	Jean Cote	0.1	0.3	0.3	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2
36	Guy	0.2	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.2
37	Crooked Creek	0.2	0.2	0.5	0.2	0.1	0.2	0.1	0.1	BDL	0.1	0.3	0.3	0.5	0.2
38	Karr Creek	0.1	0.3	0.4	0.1	0.2	0.1	0.1	BDL	BDL	0.1	0.4	0.1	0.4	0.2
39	Clouston Creek	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.5	0.5	0.2
40	McLennan	0.3	0.3	0.4	0.6	0.5	0.2	0.4	0.2	0.2	0.1	0.2	0.4	0.6	0.3
41	Valleyview	0.2	0.6	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.8	0.6	0.8	0.3
42	Sunset House	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.4	0.5	0.5	0.2
43	High Prairie	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	BDL	0.1	0.5	0.3	0.5	0.2
44	Peavine	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.3	0.2
45	Gift Lake	0.1	0.2	0.2	0.1	BDL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
46	Little Smoky	0.1	0.2	0.5	0.4	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.5	0.2
47	Kinuso	0.1	0.2	0.3	0.2	0.1	0.1	BDL	BDL	0.1	0.1	0.8	0.2	0.8	0.2
48	Deer Mountain	0.2	0.3	0.3	0.2	BDL	0.1	0.1	BDL	0.1	0.2	0.4	0.2	0.4	0.2
49	Grande Prairie HP	0.4	0.5	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.3	0.5	0.2
62	East Prairie	0.1	0.2	0.2	0.2	BDL	0.0	0.1	0.1	0.1	0.1	0.6	0.1	0.6	0.2
Average		0.3	0.4	0.4	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.4	0.4		0.2
Peak		0.7	0.7	0.6	0.6	0.5	0.3	0.4	0.3	0.2	0.4	0.8	1.0	1.0	

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

Table 51. NO₂ Passive - 2014 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	1.0	1.1	BDL	0.2	0.4	0.9	0.9	0.7	0.9	1.0	1.3	2.8	2.8	1.0
2	Bay Tree	0.9	0.9	0.3	0.4	0.4	0.4	0.6	0.2	1.0	1.2	2.5	4.8	4.8	1.1
3	Forth Creek	0.2	0.7	BDL	0.2	0.5	0.5	0.6	0.4	0.6	1.3	2.5	1.8	2.5	0.8
4	Gordondale	1.1	1.2	BDL	0.3	0.5	0.8	0.9	0.7	0.8	1.3	1.8	3.5	3.5	1.2
5	Boone Creek	0.9	1.0	BDL	0.2	0.6	0.6	0.6	0.5	0.6	1.4	2.0	1.8	2.0	0.9
7	Steeprock Creek	0.6	0.8	BDL	0.3	0.2	0.2	0.5	0.3	0.5	0.9	2.0	2.4	2.4	0.8
9	Spirit River	1.1	0.8	0.1	0.4	0.8	2.1	1.1	0.7	0.8	1.3	2.1	3.3	3.3	1.2
10	Woking	0.7	0.9	BDL	0.3	0.5	0.8	0.9	0.4	0.6	1.0	3.7	2.2	3.7	1.1
11	Webber Creek	1.4	1.8	BDL	BDL	1.2	1.9	0.9	0.8	1.1	1.5	0.6	4.9	4.9	1.6
12	Hythe	1.4	1.9	0.2	0.8	0.8	1.0	0.9	0.6	0.7	1.5	1.1	4.3	4.3	1.3
14	Sylvester	0.8	0.9	BDL	0.6	1.0	0.6	0.6	0.3	0.5	1.0	0.7	1.7	1.7	0.8
16	Beaverlodge	2.3	2.9	0.6	0.6	0.7	0.6	0.8	1.0	1.4	2.5	2.6	6.2	6.2	1.9
17	Poplar	1.2	2.0	0.3	0.5	1.9	2.1	0.7	0.5	0.7	1.7	1.2	5.0	5.0	1.5
18	Saddle Hills	0.8	0.7	BDL	0.2	0.4	0.4	0.4	0.3	0.5	1.1	0.9	1.3	1.3	0.6
19	Wanham	0.8	0.7	BDL	0.3	0.4	0.7	0.4	0.3	0.7	0.7	1.6	2.5	2.5	0.8
20	Shaftesbury	0.5	1.0	0.4	0.3	0.6	1.3	0.7	0.4	0.8	1.1	2.9	3.4	3.4	1.1
21	Eaglesham	0.5	0.6	BDL	0.2	0.8	4.1	1.5	0.4	1.2	1.7	0.7	2.4	4.1	1.3
23	Bear Lake	1.9	1.8	0.1	0.6	1.7	1.2	1.3	1.1	1.2	4.5	1.2	7.6	7.6	2.0
24	Wembley	N/S	3.5	0.6	0.9	N/S	2.0	1.3	1.2	2.0	2.7	2.0	6.0	6.0	2.2
25	Pinto Creek	1.0	1.2	BDL	0.4	0.3	0.2	0.4	0.4	0.4	1.2	4.3	3.0	4.3	1.2
26	Flyingshot	2.2	3.4	0.9	0.9	0.9	0.8	0.9	0.7	0.9	2.9	0.9	6.8	6.8	1.8
27	Grande Prairie I	8.9	9.9	2.9	3.2	3.5	2.5	1.6	2.3	3.7	6.3	3.1	22.6	22.6	5.9
28	Clairmont Lake	1.5	1.6	BDL	0.4	0.8	0.8	1.1	1.2	0.9	1.9	1.6	4.1	4.1	1.4
29	Smoky Heights	2.0	2.0	0.4	0.4	0.5	0.6	0.7	0.5	1.0	1.9	1.5	6.1	6.1	1.5
30	Fitzsimmons	1.7	1.3	BDL	0.3	0.6	0.8	0.9	0.6	1.0	1.1	0.9	7.2	7.2	1.5
32	Gold Creek	2.8	2.5	0.7	0.8	0.7	0.7	1.2	1.3	1.7	3.1	1.2	8.0	8.0	2.1
33	Wapiti	1.6	1.8	0.1	N/S	0.4	0.5	0.7	0.8	0.9	1.6	1.6	6.9	6.9	1.5
34	Puskwaskau	0.7	0.9	BDL	BDL	0.3	0.2	0.4	0.2	0.5	0.3	0.9	1.0	1.0	0.5
35	Jean Cote	0.7	1.4	BDL	0.3	1.6	3.3	1.6	0.9	1.0	1.9	3.2	1.8	3.3	1.6
36	Guy	0.9	0.9	BDL	0.2	1.6	4.3	2.2	0.7	1.1	1.2	3.4	2.5	4.3	1.7
37	Crooked Creek	1.7	1.8	BDL	0.2	0.5	0.8	0.5	0.6	0.7	1.5	5.2	4.6	5.2	1.6
38	Karr Creek	1.2	1.1	BDL	0.4	0.4	0.3	0.8	0.7	0.8	1.1	1.9	2.0	2.0	1.0
39	Clouston Creek	1.5	1.0	0.2	0.3	0.9	2.5	0.7	0.4	0.7	0.9	3.3	2.9	3.3	1.3
40	McLennan	1.0	1.3	BDL	0.5	1.8	2.7	1.4	0.6	0.9	1.3	2.5	2.8	2.8	1.5
41	Valleyview	0.8	1.6	0.2	0.3	0.7	0.8	0.6	0.5	0.7	1.3	14.4	2.6	14.4	2.0
42	Sunset House	0.7	0.8	BDL	0.1	0.2	0.4	0.4	0.6	0.4	1.3	1.4	1.6	1.6	0.7
43	High Prairie	1.5	1.4	0.4	0.5	0.9	1.1	0.6	0.5	0.6	1.1	0.7	2.9	2.9	1.0
44	Peavine	0.8	0.8	BDL	BDL	0.1	BDL	0.2	0.3	0.3	0.5	5.3	1.2	5.3	1.1
45	Gift Lake	0.7	1.2	BDL	0.1	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	1.2	0.4
46	Little Smoky	3.5	4.5	0.6	1.0	1.0	0.5	1.0	1.2	1.4	2.1	2.9	6.1	6.1	2.2
47	Kinuso	1.2	1.1	BDL	BDL	0.3	BDL	0.3	0.2	0.4	0.9	1.2	2.7	2.7	0.9
48	Deer Mountain	0.5	0.7	BDL	0.2	0.2	0.2	0.3	0.3	0.3	0.9	3.2	1.7	3.2	0.8
49	Grande Prairie HP	10.2	9.8	4.0	2.9	1.6	1.4	1.4	1.9	3.3	6.8	2.9	21.5	21.5	5.7
62	East Prairie	0.5	0.3	BDL	0.4	0.2	BDL	0.2	0.3	0.2	0.5	12.4	1.4	12.4	1.7
Average		1.6	1.8	0.7	0.5	0.8	1.2	0.8	0.7	0.9	1.7	2.6	4.4		1.5
Peak		10.2	9.9	4.0	3.2	3.5	4.3	2.2	2.3	3.7	6.8	14.4	22.6	22.6	

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

Table 52. O₃ Passive - 2014 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	45.8	44.2	48.9	42.6	34.1	34.2	27.8	25.9	20.3	24.5	33.0	25.1	48.9	33.9
2	Bay Tree	41.5	40.2	41.1	38.6	37.4	29.0	25.0	27.8	23.0	22.7	34.0	23.7	41.5	32.0
3	Forth Creek	18.2	45.3	39.8	43.8	42.8	36.9	30.2	29.9	26.7	25.6	36.0	31.9	45.3	33.9
4	Gordondale	52.5	40.3	48.5	43.2	39.3	33.6	31.3	28.5	29.5	29.9	37.9	32.5	52.5	37.3
5	Boone Creek	39.5	40.4	42.3	34.6	35.9	26.8	20.5	19.3	20.1	19.6	23.0	24.7	42.3	28.9
7	Steeprock Creek	44.4	41.7	43.6	39.8	41.0	30.3	23.1	26.8	21.9	26.3	29.0	33.3	44.4	33.4
9	Spirit River	39.4	40.4	38.0	49.3	34.8	30.9	29.0	27.3	22.5	23.3	28.7	25.0	49.3	32.4
10	Woking	36.1	39.7	43.3	44.5	33.3	30.3	28.4	26.8	23.7	25.3	32.8	30.7	44.5	32.9
11	Webber Creek	40.3	39.1	45.0	38.7	29.4	30.0	25.7	21.9	18.3	19.1	25.7	23.1	45.0	29.7
12	Hythe	38.1	37.4	42.8	36.9	32.7	27.0	24.2	23.6	21.1	19.1	31.6	21.4	42.8	29.7
14	Sylvester	32.3	37.5	38.5	27.4	31.0	27.1	24.3	17.8	19.3	16.8	30.5	23.3	38.5	27.1
16	Beaverlodge	36.6	38.2	46.3	48.1	39.8	36.8	31.3	27.4	28.4	25.9	29.1	24.7	48.1	34.4
17	Poplar	41.6	39.4	39.5	39.4	33.6	34.4	26.5	24.2	18.4	18.1	26.3	25.6	41.6	30.6
18	Saddle Hills	46.0	42.0	44.1	34.2	35.9	30.4	28.6	23.9	22.0	21.4	33.5	31.3	46.0	32.8
19	Wanham	38.8	42.7	35.4	43.7	38.8	34.0	31.9	32.5	24.3	26.0	24.2	29.3	43.7	33.5
20	Shaftesbury	20.4	40.0	40.6	44.2	33.8	32.0	36.5	33.6	33.6	21.3	35.5	26.7	44.2	33.2
21	Eaglesham	37.3	38.2	41.1	37.3	31.3	26.7	23.1	21.5	16.5	17.5	32.5	23.0	41.1	28.8
23	Bear Lake	46.1	43.4	48.0	35.6	38.2	28.7	28.2	24.9	18.4	21.3	28.3	23.4	48.0	32.0
24	Wembley	38.4	39.8	47.0	36.6	N/S	27.9	20.3	21.2	16.5	19.6	32.4	21.8	47.0	29.2
25	Pinto Creek	40.8	38.4	41.8	37.0	37.4	29.4	31.5	21.4	18.7	20.5	29.9	26.3	41.8	31.1
26	Flyingshot	34.5	35.3	39.0	38.2	37.8	32.0	20.5	20.4	16.9	19.9	35.7	21.0	39.0	29.3
27	Grande Prairie I	32.6	31.7	36.9	35.8	33.1	28.5	26.6	25.0	20.1	15.3	25.9	14.2	36.9	27.1
28	Clairmont Lake	48.1	46.8	49.5	41.0	37.0	30.3	31.8	27.3	25.9	26.3	33.1	27.5	49.5	35.4
29	Smoky Heights	40.1	39.0	46.5	45.2	38.1	37.9	38.0	35.8	31.2	24.0	33.2	24.5	46.5	36.1
30	Fitzsimmons	37.6	41.0	40.5	39.7	28.1	27.3	21.8	22.3	18.7	17.9	31.5	17.0	41.0	28.6
32	Gold Creek	34.3	30.6	38.2	32.6	31.2	23.0	19.5	16.6	15.2	17.1	18.4	10.5	38.2	23.9
33	Wapiti	42.2	39.4	48.0	N/S	34.2	30.5	30.7	26.1	19.2	20.8	34.2	17.3	48.0	31.1
34	Puskaskau	35.1	36.3	37.9	40.8	31.9	21.2	18.3	19.3	17.7	16.1	38.4	21.8	40.8	27.9
35	Jean Cote	20.7	43.5	48.2	52.2	34.0	29.9	27.0	25.1	21.8	19.9	20.9	35.1	52.2	31.5
36	Guy	41.6	40.3	40.8	42.8	33.8	29.7	23.1	22.9	21.0	19.0	28.5	26.3	42.8	30.8
37	Crooked Creek	42.3	43.6	46.6	45.2	35.9	28.0	27.9	19.2	21.4	21.8	31.6	20.4	46.6	32.0
38	Karr Creek	33.6	35.1	36.3	31.1	30.9	26.9	18.1	16.7	15.7	20.7	23.3	17.2	36.3	25.5
39	Clouston Creek	44.9	37.4	37.8	46.2	34.5	30.4	23.3	22.2	21.3	19.9	41.8	28.1	46.2	32.3
40	McLennan	43.8	41.7	44.1	47.3	31.1	34.7	28.2	24.7	21.7	20.4	31.4	28.3	47.3	33.1
41	Valleyview	40.3	38.1	37.5	42.9	37.3	33.0	27.4	26.3	24.1	22.1	32.5	36.5	42.9	33.2
42	Sunset House	45.4	42.0	39.8	46.9	41.9	34.9	39.4	28.6	26.3	26.9	18.1	35.5	46.9	35.5
43	High Prairie	44.9	39.6	42.9	43.9	34.8	30.2	20.1	20.3	19.5	23.7	28.7	26.5	44.9	31.3
44	Peavine	38.4	37.1	38.0	43.0	32.2	26.5	27.4	20.2	18.1	21.5	29.3	23.9	43.0	29.6
45	Gift Lake	44.6	35.4	36.3	39.3	29.7	29.8	18.1	19.8	15.5	15.5	15.5	15.5	44.6	26.2
46	Little Smoky	36.6	28.4	34.6	37.7	33.5	28.5	22.3	18.6	14.1	15.3	31.8	18.7	37.7	26.7
47	Kinuso	36.3	36.1	35.7	37.9	31.2	25.1	18.0	16.4	16.2	20.2	33.2	21.0	37.9	27.3
48	Deer Mountain	47.0	37.3	34.6	44.0	29.7	25.5	22.5	17.7	23.0	21.5	30.9	29.0	47.0	30.2
49	Grande Prairie HP	28.9	25.9	38.5	40.5	37.3	39.4	29.7	27.2	21.5	15.0	33.7	12.8	40.5	29.2
62	East Prairie	37.0	36.0	36.4	37.9	29.0	31.1	21.2	17.6	17.1	20.9	26.6	21.6	37.9	27.7
Average		38.8	38.8	41.4	40.6	34.6	30.2	26.1	23.7	21.1	21.0	30.0	24.5		30.9
Peak		52.5	46.8	49.5	52.2	42.8	39.4	39.4	35.8	33.6	29.9	41.8	36.5	52.5	

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

Table 53. H₂S Passive - 2014 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	Gift Lake	0.1	0.2	0.2	BDL	0.1	0.1	0.1	0.1	0.1	BDL	0.1	0.1	0.2	0.1
2	Girouxville 3	0.6	0.4	BDL	0.2	0.2	0.1	0.2	0.2	BDL	0.1	0.3	0.4	0.6	0.3
3	Girouxville 4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.2
Average		0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.3		0.2
Peak		0.6	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.6	

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

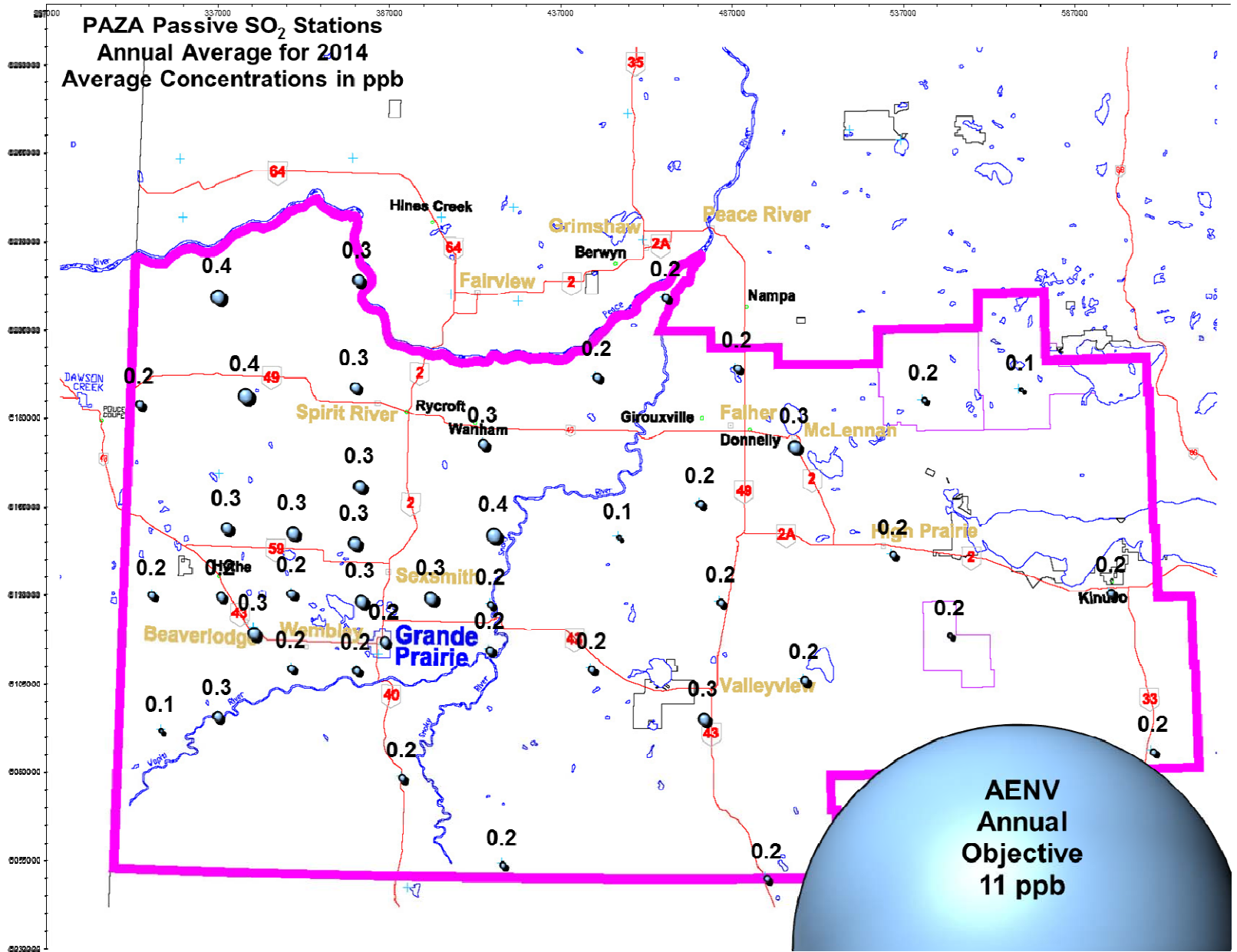


Figure 11. PAZA SO₂ Bubble Chart – 2014 Annual Average

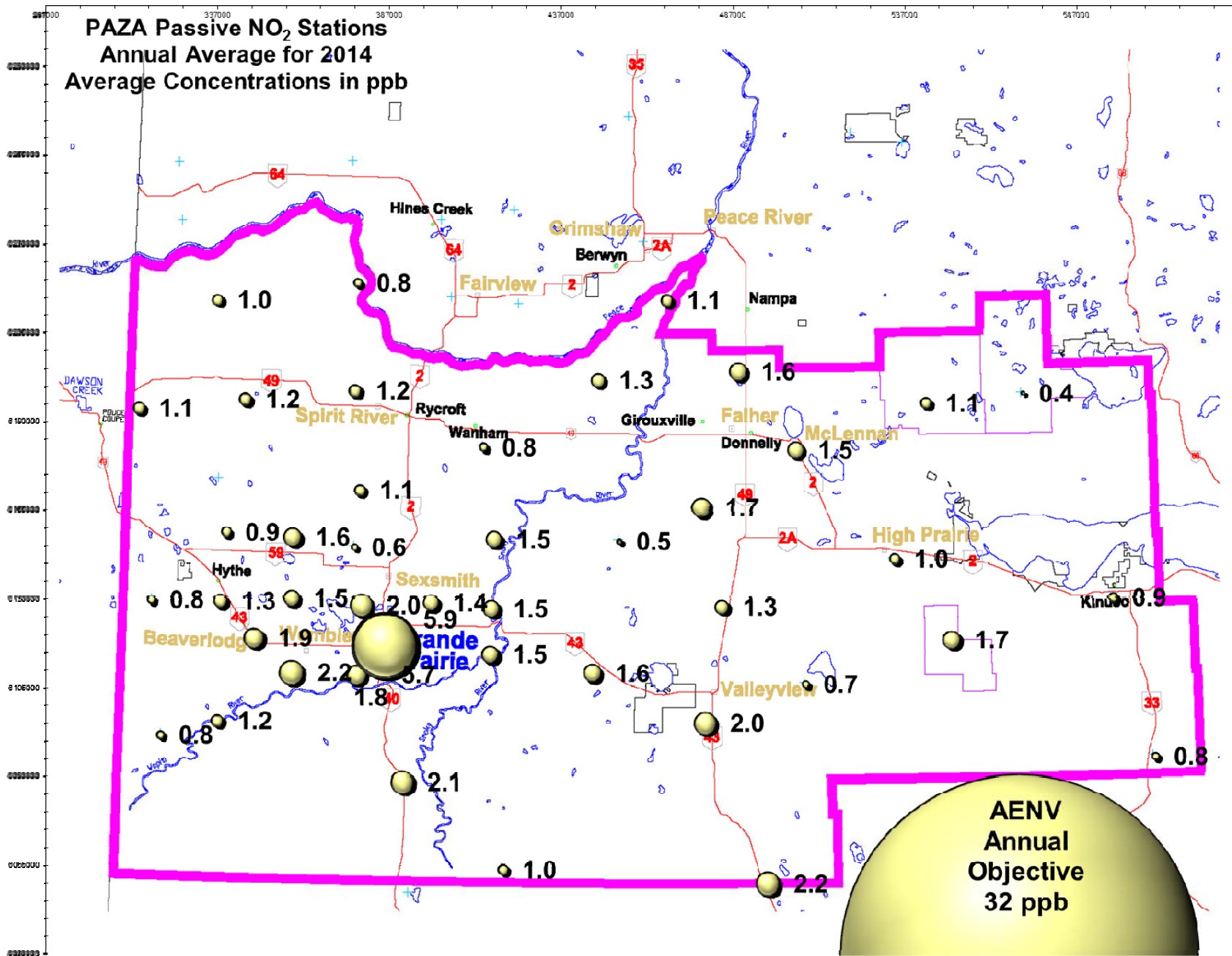


Figure 12. PAZA NO₂ Bubble Chart– 2014 Annual Average

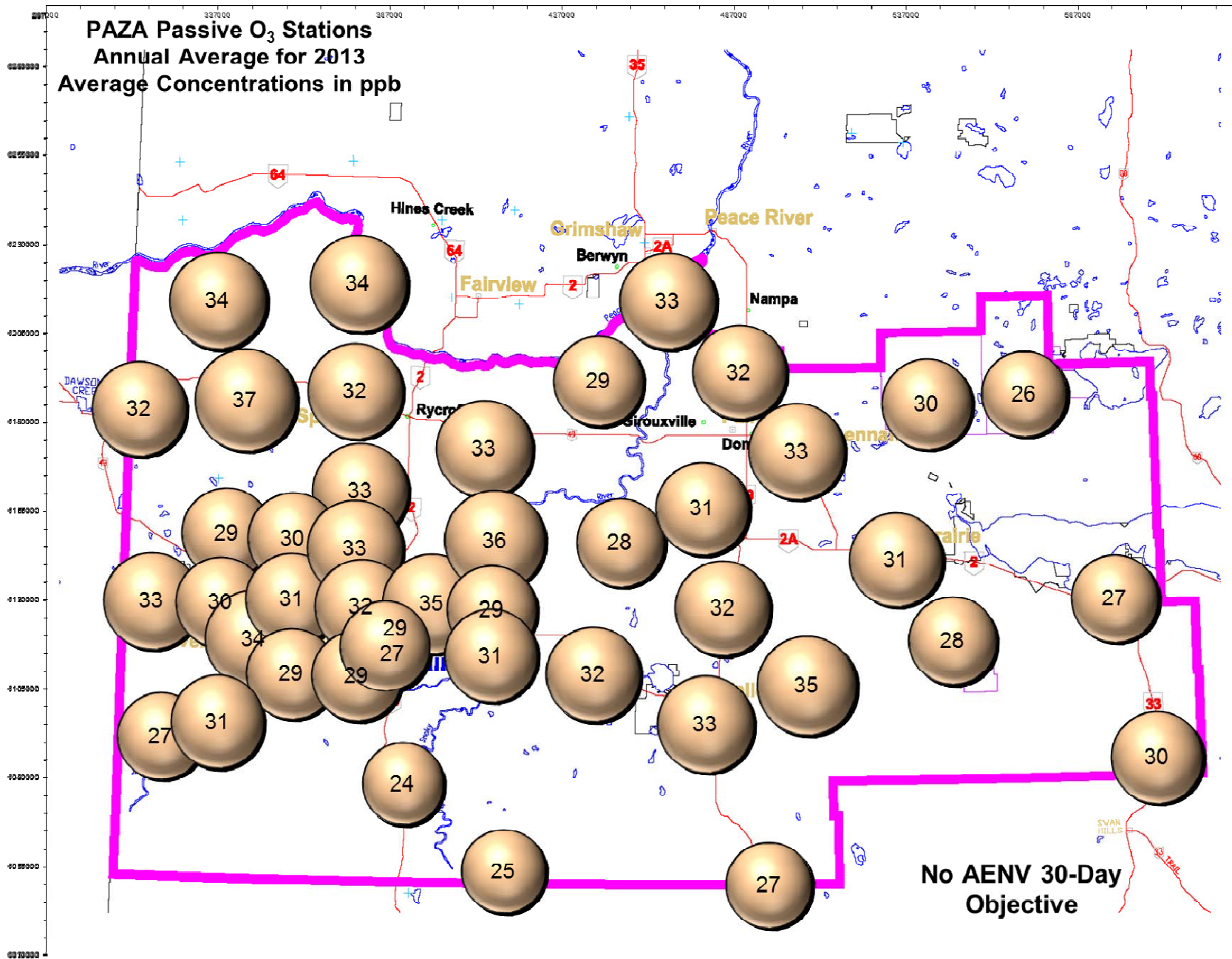


Figure 13. PAZA O₃ Bubble Chart – 2014 Annual Average

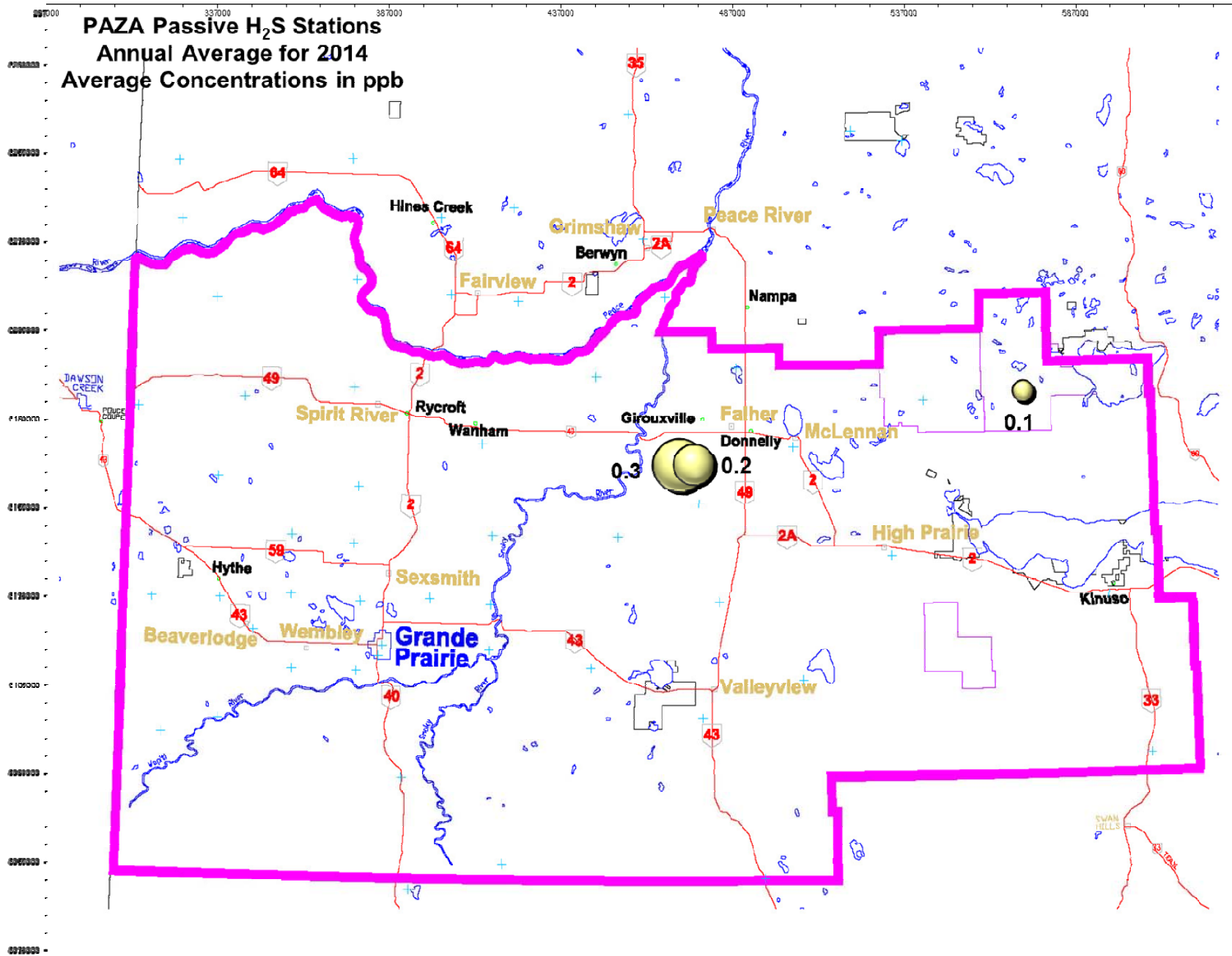


Figure 14. PAZA H₂S Bubble Chart – 2014 Annual Average