SESAA

2015 Annual Report

Southeast Saskatchewan
Airshed Association

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List of Terms and Definitions

24-hour	A calendar day, average is calculated midnight-to-midnight
8-hour	8-hour running average for O_3 Canada-Wide Standards
SAAQS	Saskatchewan Ambient Air Quality Standard
AQHI	Air Quality Health Index
AQI	Air Quality Index
AMG	Air Monitoring Guidelines for Saskatchewan, March 2012
Calm	1-hour average wind speed lower than 1 km/hour
CO	Carbon monoxide
CWS	Canada-Wide-Standards
ET	Ambient temperature
H_2S	Hydrogen sulphide
NH_3	Ammonia
NO_2	Nitrogen dioxide
NO	Nitric oxide
NOx	Oxides of nitrogen
O_3	Ozone
PM_{10}	Particulate matter with aerodynamic diameter less than 10 microns (or 0.01 mm)
$PM_{2.5}$	Particulate matter with aerodynamic diameter less than 2.5 µm, referred to as fine or respirable particles
QA/QC	Quality Assurance / Quality Control
RH	Relative humidity
SO_2	Sulphur dioxide
WD	Wind direction
WS	Wind speed

Units of Measurement

average	arithmetic average = n Xi / n
m/s	meter per second
km/hr	kilometer per hour
µg/m^3	microgram per cubic meter
ppb	part per billion by volume
mm	millimeter
°C	degree centigrade
%	percent of relative humidity, instrument uptime, etc.
Degree	angle of wind direction from the north

MESSAGE FROM THE EXECUTIVE DIRECTOR

2015 was an excellent year for SESAA. An expanded air quality monitoring network in southeastern Saskatchewan made for another busy year. SESAA is very pleased to inform our members that eight (8) continuous air monitoring sites are now operating in the region and providing real-time data on the airshed's website. SESAA will continue to explore every opportunity to collaborate with other agencies in bringing additional air quality monitoring into the region. In summary, SESAA now manages a continuous air monitoring network which consists of eight monitoring sites, including the City of Estevan.

In March of 2015 WYAMZ asked contractors to reply to a request for proposal to maintain, calibrate and record the data from our instruments. The contract was awarded to the Saskatchewan Research Council.

The forest fires of late June and early July impacted all areas of the province. In the SESAA we recorded PM 2.5 in excess of 185 ($\mu g/m^3$). The smoke was hard on the equipment but things were operating normally again when the smoke cleared and the instruments were maintained.

Our goal is to collect credible and defensible air quality data and provide excellent service to our members. The credibility and strength of the continuous monitoring network is scientifically and financially sound. With this very robust network in place SESAA's Board of Directors has discontinued the passive monitoring program indefinitely.

We have and are continuing to communicate the work we do in many ways. When we do a presentation or place an article or a story in a newspaper we highlight our members wherever possible. We list our members on our website and do as much as we can to inform the public the names of our member companies. This communication work is very important to SESAA and to its members.

In 2015, our communication initiatives included:

- News articles in the Regina Leader Post; the Saskatoon Star Phoenix; the Weyburn Review; the Estevan Mercury; CTV Regina News Interviews; Saskatchewan Oil and Gas Show, Weyburn.
- Saskatchewan Association of Rural Municipalities (SARM) the Councillor Newsletter Article.
- Quarterly SESAA E-bulletins to all members to keep them informed of any new developments, meeting dates and any other pertinent air quality information.
- Quarterly meetings of Board of Directors meetings at which anyone is welcome to attend.
- We have also done "Go To Meeting" style of meetings with Rural and Urban Municipality Offices. Three of these meetings were done in 2015.
- SESAA had a booth at Saskatchewan Oil Show in June 2015 which was very well attended. We gave away printed material with information about our Association as well as pens, Frisbees and balloons; all with the SESAA website address. We are booked for the Oil Show in 2017.

As a part of Clean Air Day on June 3, 2015, the Southeast Saskatchewan Airshed Association held the first ever "Clean Air Leadership Awards" in Weyburn, Saskatchewan.

Leadership Awards were presented to the following organizations:

- Bronze Award to Cenovus Energy Inc. for their Mobile Gas Monitoring Platform
- Silver Award to SaskPower for their Carbon Capture and Storage (CCS) Project
- Gold Award to the City of Weyburn Environmental Resource Committee

The Nominations for the Awards were judged by an independent panel of knowledgeable people with expertise in environment and health. The panel included Mr. Tim Macaulay, Saskatchewan Ministry of Health; Dr. Dena McMartin, University of Regina; Dr. Shelley Kirychuk, University of Saskatchewan. The Awards were presented by Dr. Kevin McCullum, Chief Engineer, Saskatchewan Ministry of Environment.

SESAA thanks all companies and organizations that submitted nominations.

2015 was another successful year for the SESAA. The Association continues to maintain a high level of membership support in the region, allowing us to collect and report good air quality information to the citizens of southeast Saskatchewan. The SESAA plans to continue building on its success in 2016. Future plans include reviewing and maintaining our network monitoring needs and continuing the development and delivery of a strong communications program that reaches out to organizations such as municipalities, Chambers of Commerce, high school classes, and home and school meetings. SESAA thanks all of our members for their committed participation.

EXECUTIVE SUMMARY

The Southeast Saskatchewan Airshed Association (SESAA), established in October 2005, was Saskatchewan's first airshed association with a mandate to monitor ambient air quality in the southeast region of the Province. SESAA is a collaborative group of industry, government, nongovernment organizations, and private citizens. The airshed covers an area of 36,800 square kilometres and includes 45 municipalities. Major economic activities in the region include agriculture, oil and gas, mining, power generation, and transportation.

SESAA manages a continuous air monitoring network. The continuous air monitoring network consists of seven airpointers® near Esterhazy, Glen Ewen, Oxbow, Stoughton, Wauchope, Wawota, and Weyburn, as well as a monitoring station in Estevan which was transferred to SESAA in the summer of 2014 (see Figure 1). The eight continuous air monitoring stations measure real-time data for sulphur dioxide (SO_2), hydrogen sulphide (H_2S), nitrogen oxides (NO, NO_2, NO_X), ozone (O_3), fine particulate matter ($PM_{2.5}$), ambient temperature, relative humidity (RH), precipitation, wind speed (WS) and wind direction (WD).

Quarterly calibrations and routine maintenance were performed in accordance with a Quality Assurance Plan provided to SESAA by contractors responsible for the maintenance, calibration and data management for the airshed. Calibrations were performed in March, June, August-September, and November on all airpointers, and in September and November for Estevan.

The continuous data is available live on the internet; it includes hourly concentrations of SO_2, H_2S, NO/NO_2/NO_X, $PM_{2.5}$ and O_3. The first airshed site monitoring data was originally made available in early 2011 on the SESAA website (Reference 1).

Four of the monitoring stations were made possible in 2013 through a matching grant provided to SESAA by the Western Economic Diversification Canada (WEDC) Office in Saskatoon. One was made possible in 2014 through a grant provided by the Saskatchewan Ministry of the Economy. The final site was made possible through a generous donation by SaskPower of its station located in the City of Estevan. SESAA began managing the site in the summer of 2014. SESAA is very grateful to the Ministry of the Economy and to SaskPower for providing us with these stations to manage and further enhance our network. Thanks and recognition also needs to be given to the Saskatchewan Ministry of Environment for providing SESAA with a fine particulate monitor, along with meteorological equipment for the Estevan station.

The installation of continuous monitors throughout the region is helping SESAA meet its monitoring goal. Monitoring also allow the Association to show companies already operating or considering operating in the area that this is a good place to invest because we know the air quality is being monitored, and it is of relatively good quality. SESAA is very excited about what

the WEDC initiative; the Ministry of the Economy grant and the SaskPower Station have brought to the Association's monitoring capabilities.

Table ES-1 summarizes the annual averages of continuous air quality data; the measured air quality was within the Saskatchewan Ambient Air Quality Standards (SAAQS), with the exception of H_2S, SO_2 and $PM_{2.5}$. There were a total of 1 exceedance events for 1-hour average SO_2, 373 exceedance events for 1-hour average H_2S, 66 exceedance events for 24-hour average H_2S, and 59 exceedance events for 24-hour average $PM_{2.5}$. The air quality within the SESAA network was rated Low Risk or Good for more than 94% of the time according to the Air Quality Health Index-rated stations, and more than 96% of the time for Air Quality Index-rated stations.

The Saskatchewan Environmental Code was released on June 1, 2015. The new Saskatchewan Ambient Air Quality Standards (SAAQS) resulted in some changes to the acceptable concentrations of a variety of pollutants.

The unprecedented severity of the 2015 forest fire season negatively impacted the air quality in the SESAA region in late-June, July and August of 2015. High concentrations of $PM_{2.5}$ were noted across much of the airshed and the entire province of Saskatchewan.

The fine particulate matter released from the fires also resulted in some operational issues, and ultimately some data loss, at a number of stations. Operational issues throughout 2015 resulted in at least one month's data being invalidated for one or more parameters for each station. Detailed monthly and annual instrument uptimes can be found in the station summary tables in Appendices B-I.

Table ES-1 Annual Average Concentrations for Continuous Parameters for 2015

Pollutant	Conc. Unit	Annual Average Concentrations for Continuous Data							
		Esterhazy	Estevan	Glen Ewen	Oxbow	Stoughton	Wauchope	Wawota	Weyburn
SO_2	ppb	[a]	2.1	1.2	1.2	0.5	0.7	[a]	1.6
H_2S	ppb	[a]	[a]	0.7	0.6	1.0	1.4	[a]	0.9
NO	ppb	0.3	2.7	0.4	0.3	0.5	[a]	0.3	0.5
NO_2	ppb	1.6	3.6	1.9	1.5	2.1	[a]	1.3	1.8
NO_X	ppb	1.8	6.1	2.2	1.8	2.6	[a]	1.7	2.3
O_3	ppb	32.5	[a]	27.2	[a]	[a]	[a]	31.0	29.4
$PM_{2.5}$	µg/m^3	6.2	4.8	[a]	6.4	7.1	9.8	8.1	6.8

[a] Parameter was not monitored

1 INTRODUCTION

1.1 History

The Southeast Saskatchewan Airshed Association (SESAA) is a collaborative group of industry, non-government organizations, government, and private citizens. SESAA was established in 2005 with a mandate to collect credible, scientifically defensible air quality data and to make this data available to the public. We also provide a forum for open communication of air quality concerns among all sectors of society. Membership in the airshed association is currently voluntary, with emitting members sharing funding responsibilities for monitoring programs and studies. SESAA covers an area of 36,800 square kilometres, including 45 municipalities. The airshed boundaries were established based on common history, meteorology, and funding considerations. Major economic activities in the region include agriculture, oil and gas, mining, power generation, and transportation.

Membership in SESAA is voluntary. The current membership includes members of the agriculture, oil and gas, mining and power generation sectors. The Government of Saskatchewan Ministries of Environment, Economy, and Health, as well as representatives of the City of Estevan and Rural Municipality of Tecumseh No. 65, also participate as members of the Board of Directors. SESAA's operating budget consists of membership fees, environmental footprint, and emissions-based fees assessed to facilities operating within the airshed.

SESAA began monitoring in March of 2010 with the installation of the Weyburn airpointer. The second station was installed at Glen Ewen in May 2012. The Stoughton, Esterhazy, Wawota, and Wauchope stations began operation in 2013 following a grant provided to SESAA by the Western Economic Diversification Canada (WEDC) office in Saskatoon. The monitoring station at Estevan was transferred from SaskPower to SESAA in 2014, and SESAA took over management of the station in summer of 2014. The Oxbow station began operation in December 2014 through a grant provided by the Saskatchewan Ministry of the Economy.

1.2 SESAA Mission

The SESAA mission is to collect credible, scientifically defensible air quality data for the southeast Saskatchewan region, and to make this data freely available to all stakeholders. Our objective is to bring together stakeholders from all backgrounds to identify local air quality issues and to develop innovative solutions for managing these issues.

1.3 Saskatchewan Environmental Code

The Saskatchewan Environmental Code was proclaimed on June 1, 2015, replacing a number of pieces of legislation. The Saskatchewan Ambient Air Quality Standards (SAAQS) (Reference 5)

had been in force under The Clean Air Act (1989). The proclamation of the Environmental Code resulted in the repeal of The Potash Refining Air Emissions Regulations, an update to The Clean Air Act, and many other changes. The new SAAQS (Reference 6) under the new Environmental Code brought Saskatchewan's ambient air quality standards in line with other Canadian provinces under an agreement with the Canadian Council of Ministers of the Environment (CCME). This resulted in some changes to the acceptable concentrations of a variety of pollutants. See Table 1 for previous Saskatchewan Ambient Air Quality Standards and Table 2 for the new SAAQS.

Table 1 Saskatchewan Ambient Air Quality Standards (1989)

Pollutant	Units	Average Concentration For Applicable Time Period				
		1 hour	8 hours	24 hours	30 days	Annual
Suspended Particulates (TSP)	**µg/m^3**			120		70*
Settleable Particulates	**µg/m^3**				2	
Soil Index	**COH units**			1.5		
Potash	**mg/cm^2 K or Cl**				0.15	
Sulphur Dioxide (SO_2)	**µg/m^3 (ppb)**	450 (170)		150 (60)		30 (10)**
Sulfation	**mg SO_3/100 cm^2**				30	
Carbon Monoxide (CO)	**µg/m^3 (ppb)**	15,000 (13,000)	6,000 (5,000)			
Ozone (O_3)	**µg/m^3 (ppb)**	160 (80)				
Nitrogen Dioxide (NO_2)	**µg/m^3 (ppb)**	400 (200)				100 (50)**
Hydrogen Sulphide (H_2S)	**µg/m^3 (ppb)**	15 (10.8)		5 (3.6)		

*Geometric Means

**Arithmetic Means

Table 2 Saskatchewan Ambient Air Quality Standards (2015)

Pollutant	Units	Saskatchewan Ambient Air Quality Standards (2015)			
		1 hour	8 hours	24 hours	Annual
Particulate Matter ($PM_{2.5}$)	**µg/m³**			28 [a]	10
Particulate Matter (PM_{10})	**µg/m³**			50	
Total Suspended Particulates (TSP)	**µg/m³**			100	60 [b]
Nitrogen Dioxide (NO_2)	**µg/m³ (ppb)**	300 (159)		200 (106)	45 [c] (24)
Sulphur Dioxide (SO_2)	**µg/m³ (ppb)**	450 (172)		125 (48)	20 [c] (8)
Hydrogen Sulphide (H_2S)	**µg/m³ (ppb)**	15 (11)		5 (3.6)	
Ozone (O_3)	**µg/m³ (ppb)**	160 (82)	124 [d] (63)		
Carbon Monoxide (CO)	**µg/m³ (ppb)**	15,000 (13,000)	6,000 (5,000)		

[a] The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations.
[b] Geometric means
[c] Arithmetic means
[d] The 3-year average of the annual 4th-highest daily maximum 8-hour average concentrations.

1.4 SESAA Air Monitoring Network

Air quality data collected by SESAA is used to investigate the trends in air quality resulting from emissions of anthropogenic sources (industry, motor vehicles, etc.) and natural processes (such as forest fires, decomposition of organic matter, etc.).

The SESAA air monitoring network includes eight stations: seven airpointer continuous monitoring stations near Esterhazy, Glen Ewen, Oxbow, Stoughton, Wauchope, Wawota and Weyburn, and one monitoring station in Estevan (see Figure 1 for a map of the SESAA air monitoring stations). Data for Estevan is only available from July 1, 2015 on.

Table 3 shows the parameters measured at each station. The SESAA continuous air monitoring network measures sulphur dioxide (SO_2), hydrogen sulphide (H_2S), nitrogen oxides (NO, NO_2, NO_x), ozone (O_3), fine particulate matter ($PM_{2.5}$), ambient temperature, relative humidity (RH), precipitation, wind speed (WS) and wind direction (WD). Real-time air monitoring data is available on the SESAA website at: www.sesaa.ca.

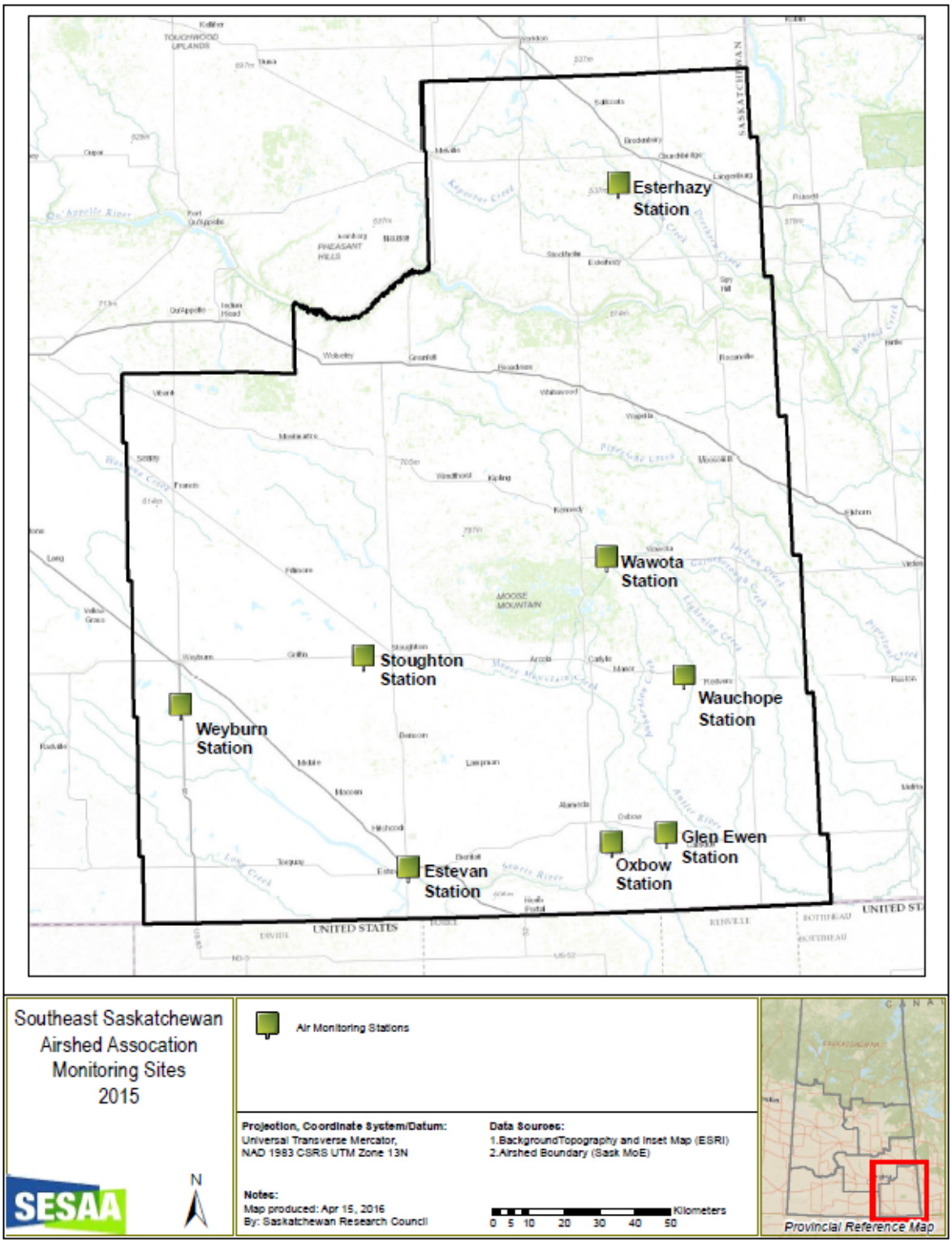

Figure 1 Ambient air monitoring sites of the Southeast Saskatchewan Airshed Association

Table 3 SESAA monitoring station measurement parameters

Parameter	Esterhazy	Estevan	Glen Ewen	Oxbow	Stoughton	Wauchope	Wawota	Weyburn
SO_2		✓	✓	✓	✓	✓		✓
H_2S			✓	✓	✓	✓		✓
NO	✓	✓	✓	✓	✓		✓	✓
NO_2	✓	✓	✓	✓	✓		✓	✓
NO_X	✓	✓	✓	✓	✓		✓	✓
O_3	✓		✓				✓	✓
$PM_{2.5}$	✓	✓		✓	✓	✓	✓	✓
Ambient Temperature	✓	✓	✓	✓	✓	✓	✓	✓
Relative Humidity	✓		✓	✓	✓	✓	✓	✓
Precipitation	✓		✓	✓	✓	✓	✓	✓
Wind Speed	✓	✓	✓	✓	✓	✓	✓	✓
Wind Direction	✓	✓	✓	✓	✓	✓	✓	✓

2 AIR QUALITY MONITORING

2.1 Forest Fires 2015

The 2015 forest fire season in Saskatchewan was record-breaking for the severity and impact of fires (see Figure 2). As of September 2, 2015, nearly four million hectares of forest had burned (Reference 2). In addition to thousands of people from northern Saskatchewan being evacuated due to the immediate danger of the fires, smoke made its way to the southeast part of the province. The high concentrations of airborne particulate as a result of the fires negatively impacted the air quality in the SESAA region, as well as the operations of many of the air monitoring stations. This resulted in intermittent particulate matter and gaseous pollutant concentration data loss from the end of June to the end of August.

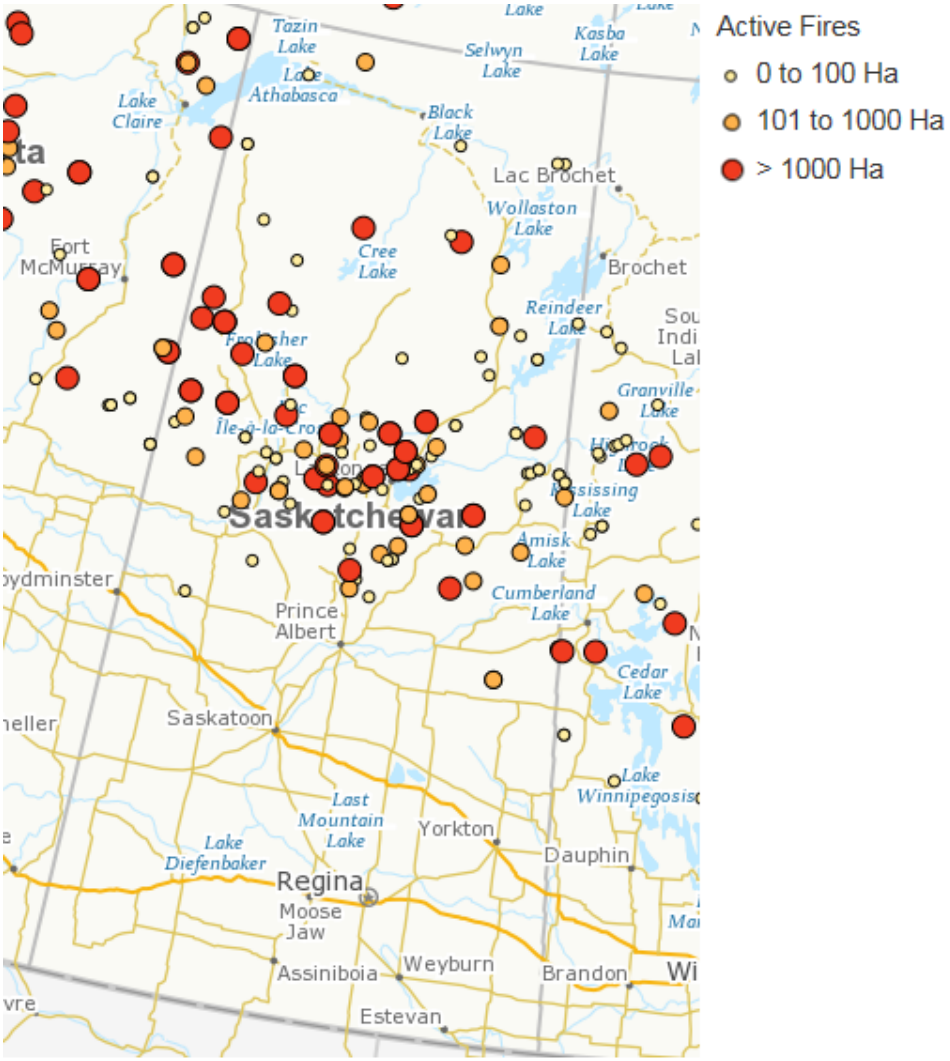

Figure 2 Active forest fires in Saskatchewan on July 7, 2015 (GeoGratis)

2.2 Exceedances above the SAAQS

The SESAA air monitoring network measures air pollutant concentrations to indicate the quality of air in the airshed. When the air quality worsens as a result of an exceedance above the SAAQS, the source of the exceedance is investigated and reported to the Ministry of Environment and to SESAA as soon as reasonably achievable.

Table 4 summarizes the SAAQS and the number of exceedances recorded in 2015. A total of 1 exceedance events for 1-hour average SO_2, 373 exceedance events for 1-hour average H_2S, 66 exceedance events for 24-hour average H_2S, and 59 exceedance events for 24-hour average $PM_{2.5}$ were recorded. The detailed exceedance summaries are presented in Appendix J.

Table 4 Summary of exceedances in 2015

Parameter	No. of Stations	Average Type	SAAQS (ppb)	No. of Exceedances
SO_2	1	1-hour	172	1
		24-hour	48	
		Annual	8	
H_2S	5	1-hour	11	373
	4	24-hour	3.6	66
NO_2		1-hour	159	
		24-hour	106	
		Annual	24	
O_3		1-hour	82	
	4	8-hour	63	27[ab]
$PM_{2.5}$	7	24-hour	28 µg/m^3	59
		Annual	10 µg/m^3	

[a] These events do not necessarily constitute an exceedance because the standard applies to 3-year average of the annual 4th-highest daily maximum 8-hour average concentration

[b] Number of days with 8-hour period exceeding SAAQS threshold for O_3

2.3 Wind Speed and Direction

Wind speed and wind direction are important factors that influence regional air quality. The diffusion and dispersion of air pollutant emissions are greatly impacted by variations in wind speed and corresponding air turbulence. Different degrees of turbulence are created by variable mixing conditions due to the vertical gradient of ambient temperatures and terrain roughness unique to each station.

Figure 3 shows the wind roses for the SESAA stations in 2015. According to the Beaufort Wind Scale (Reference 7), the prevailing winds in SESAA was typically classified as Light Air (<1.4 m/s

or 5.0 km/hr), Light Breeze (<3.1 m/s or 11.2 km/hr), and Gentle to Moderate Breeze (<7.8 m/s or 28.1 km/hr). Fresh to Strong Breezes (>7.8 m/s or 28.1 km/hr) were more frequent at Estevan (9.7%), with the next highest proportion of fresh to strong winds at the Glen Ewen (3.0%) and Weyburn (2.9%) stations. Near gale winds (≥13.6 m/s or 49.0 km/hr) occurred at Estevan (1.0%) and Weyburn (0.1%). The occurrence frequency of calm wind (≤0.3 m/s or 1.1 km/hr) ranged from 0.6% (Estevan) to 6.4% (Oxbow).

The prevailing wind direction varied among the monitoring stations. Generally, the prevailing wind direction was from the northwest and southeast quadrants. The Wauchope station exhibited a higher frequency of west winds. The Stoughton station recorded a higher frequency of east winds. The detailed frequency distribution tables and wind roses are presented in the Appendices:

Table B-10, Table C-8, Table D-11, Table E-11, Table F-11, Table G-8, Table H-10, and Table I-12.

The Estevan wind sensor was noted to have malfunctioned at some point in 2015. Due to this issue, all wind data for Estevan contained in this report was taken from Environment Canada's station in Estevan. This may factor in to the stronger winds observed at Estevan as the Environment Canada tower is 10 m high compared to approximately 2 – 3 m high for most other stations.

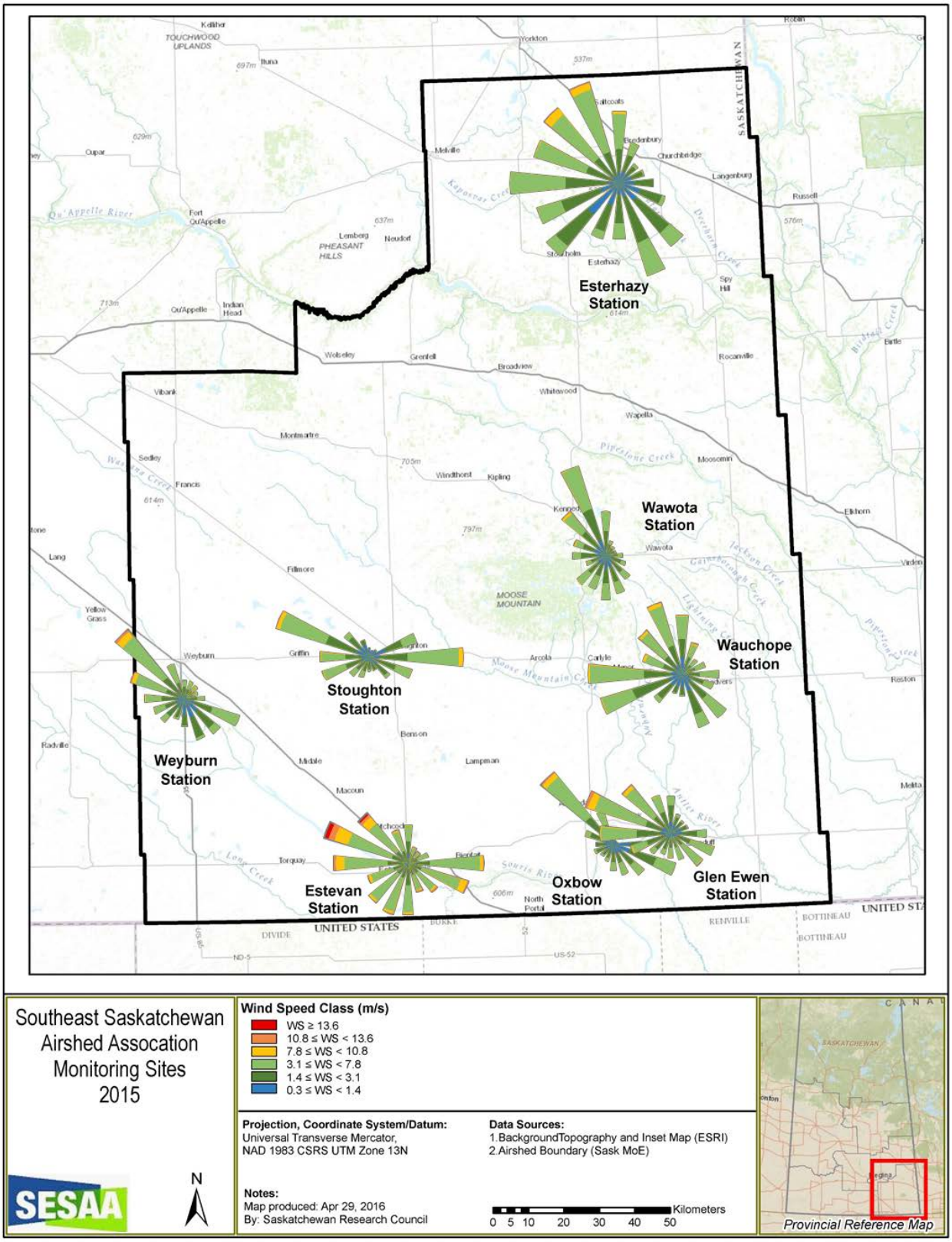

Figure 3 Wind roses for SESAA stations, 2015

2.4 Continuous Air Quality Data

2.4.1 Sulphur Dioxide (SO_2)

Sulphur dioxide (SO_2) is a colourless gas with a pungent irritating odour. At concentrations above 300 ppb, it can be detected by taste and odour. The health effects caused by exposure to high levels of SO_2 include breathing problems, respiratory illness, changes in lung function, and worsening respiratory and cardiovascular disease. People with asthma or chronic lung or heart disease are the most susceptible to SO_2 exposure. Trees and crops can also be damaged by high SO_2 concentrations.

SO_2, along with nitrogen oxides, are the main precursors of acid rain, which contributes to the acidification of lakes and streams, and accelerated corrosion of buildings. SO_2 in the air can form microscopic acid aerosols, which can have serious health implications.

Anthropogenic SO_2 emission sources are primarily from combustion of sulphur-containing fuels (e.g. gasoline, natural gas and coal) and processing of sulphur containing ores. The major emission sources for SO_2 include large industrial sources such as power plants, petroleum refineries, iron and steel mills, fertilizer plants, pulp and paper mills, and smelters, as well as small industries, such as small oil and gas plants, batteries and well flares.

The Saskatchewan Ambient Air Quality Standards (SAAQS) for sulphur dioxide are:

- 1-hour average SAAQS = 450 $\mu g/m^3$ (172 ppb)
- 24-hour average SAAQS = 125 $\mu g/m^3$ (48 ppb)
- Annual average SAAQS = 20 $\mu g/m^3$ (8 ppb)

Table 5 presents the summary statistics for SO_2. The annual average concentration range was from 0.5 ppb to 2.1 ppb among the six stations. The maximum 1-hour concentration of 186.5 ppb and the maximum 24-hour concentration of 20.5 ppb were detected at the Estevan station. There was one exceedance event at Estevan for the 1-hour average concentration of SO_2 in 2015 (see Table 6); no other stations reported an exceedance for SO_2 in 2015.

Figures 4 to 9 present the pollutant roses for 1-hour average concentration for SO_2. The measured concentration at all stations was low; greater than 90% of the data was less than 5 ppb (the blue and dark green petals). The pollutant roses indicate that the Estevan, Glen Ewen, and Weyburn stations detected more high concentration events (>5 ppb) than the other stations. The high concentration events at the Estevan station tended to be associated with the winds from the southwest quadrant. At the Glen Ewen station, the high concentration events were associated with the winds from the west quadrant. The high concentration events at the Weyburn station tended to be associated with winds from the southeast quadrant.

The detailed frequency distribution tables for 1-hour average SO_2 data are presented in the Appendices: Table C-2, Table D-2, Table E-2, Table F-2, Table G-2, and I-2.

Table 5 Summary statistics for SO_2 in 2015

Monitoring Station	Annual Average	Instrument Uptime	Maximum SO_2 Conc. and Occurrence Time			
	ppb	%	1-Hr Max		24-Hr Max	
Estevan	2.1	96.0	186.5	2015-12-06 20:00	20.5	2015-12-06
Glen Ewen	1.2	91.9%	56.5	2015-08-10 09:00	7.0	2015-01-05
Oxbow	1.2	85.8%	28.9	2015-02-09 04:00	4.8	2015-12-02
Stoughton	0.5	95.0%	16.7	2015-12-20 20:00	3.4	2015-11-12
Wauchope	0.7	92.2%	12.7	2015-02-23 06:00	3.9	2015-02-23
Weyburn	1.6	86.8%	37.9	2015-07-03 10:00	8.3	2015-12-19

Table 6 Number of exceedance events for SO_2 in 2015

Monitoring Station	Number of Exceedance Events for Saskatchewan SO_2 Ambient Air Quality Standard (SAAQS)		
	1-hr SAAQS (172 ppb)	24-hr SAAQS (48 ppb)	Annual SAAQS (8 ppb)
Estevan	1	0	0
Glen Ewen	0	0	0
Oxbow	0	0	0
Stoughton	0	0	0
Wauchope	0	0	0
Weyburn	0	0	0

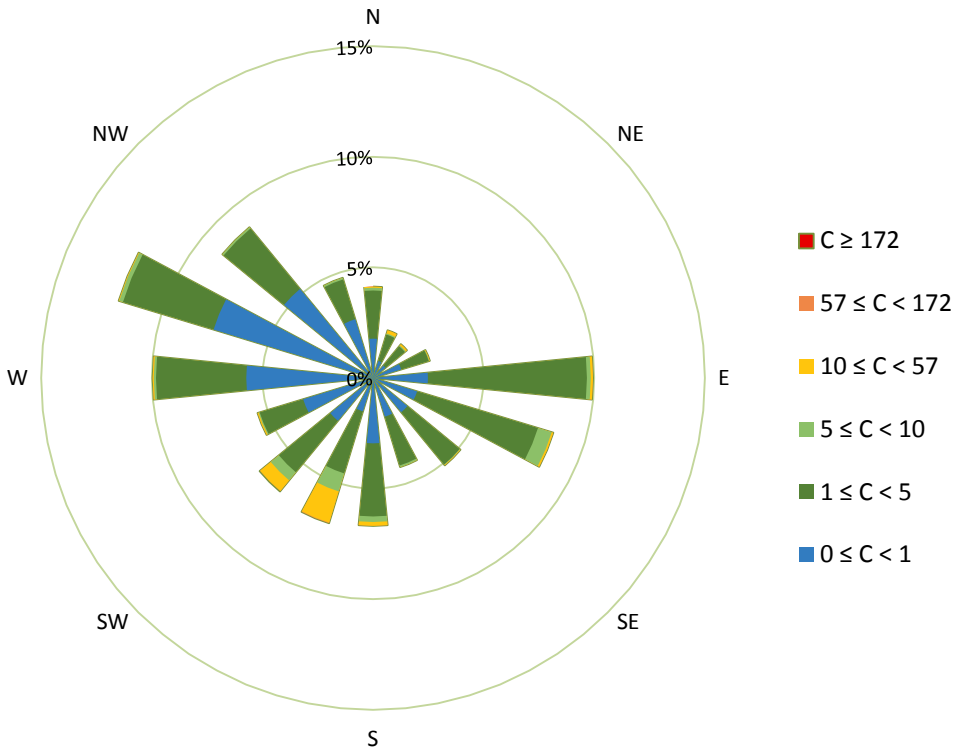

Figure 4 **Pollutant rose for 1-hour average SO_2 data at the Estevan Station (ppb)**

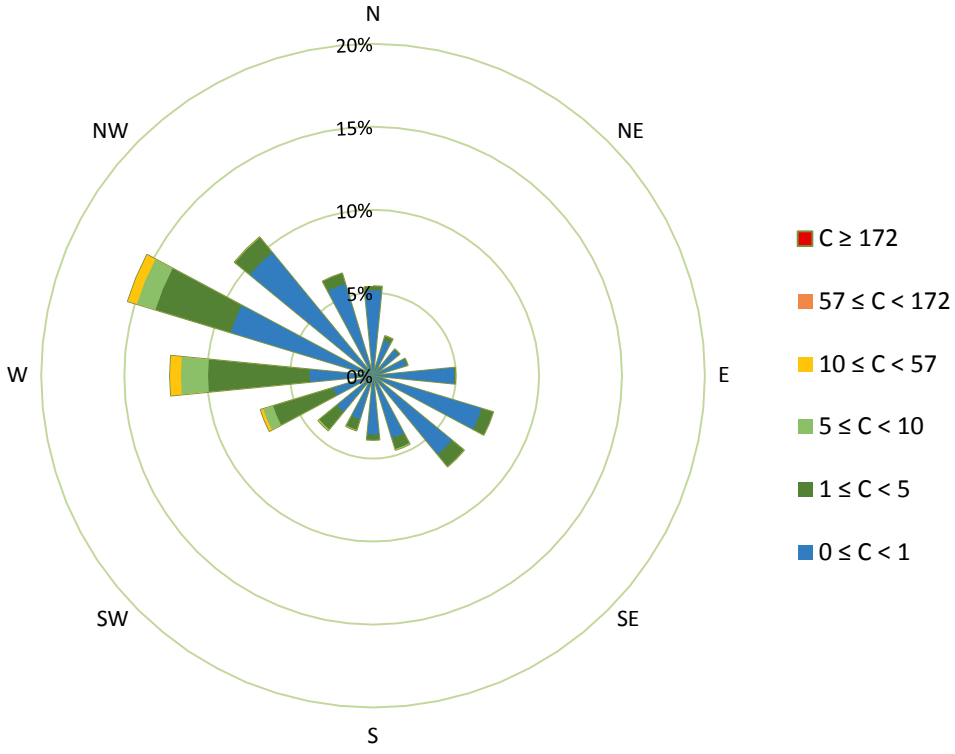

Figure 5 **Pollutant rose for 1-hour average SO_2 data at the Glen Ewen Station (ppb)**

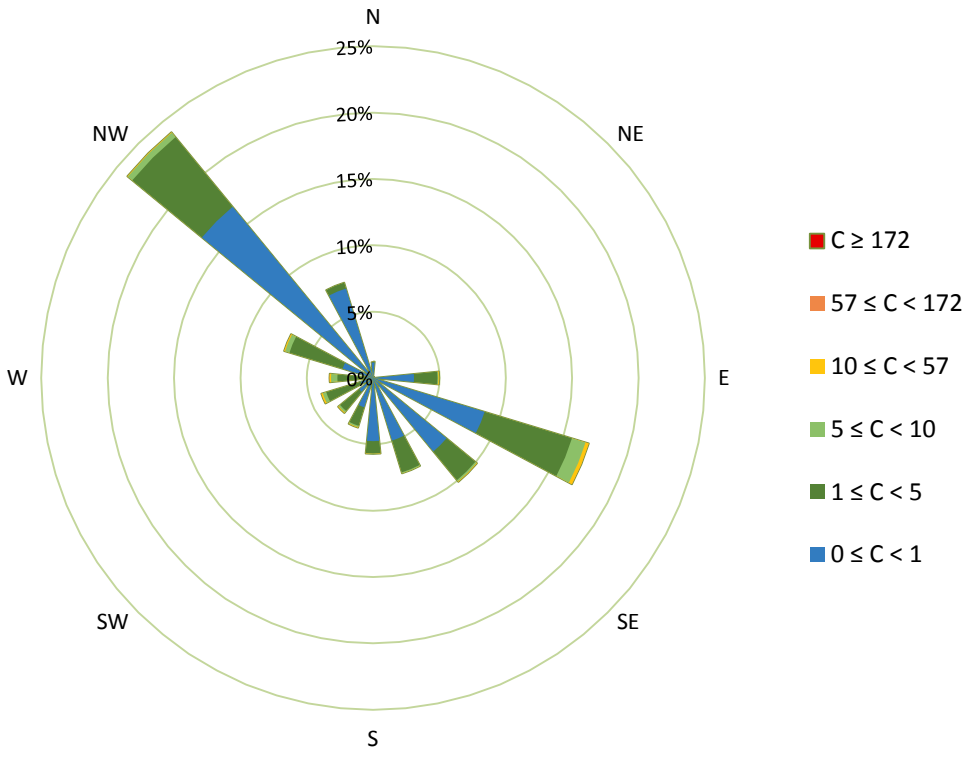

Figure 6 **Pollutant rose for 1-hour average SO_2 data at the Oxbow Station (ppb)**

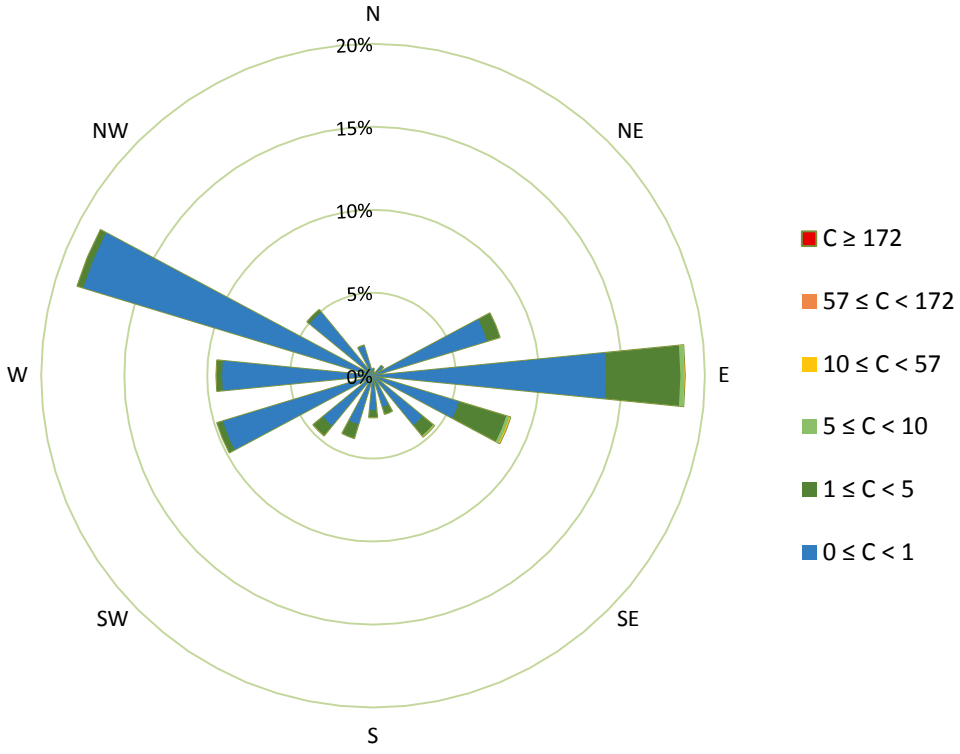

Figure 7 **Pollutant rose for 1-hour average SO_2 data at the Stoughton Station (ppb)**

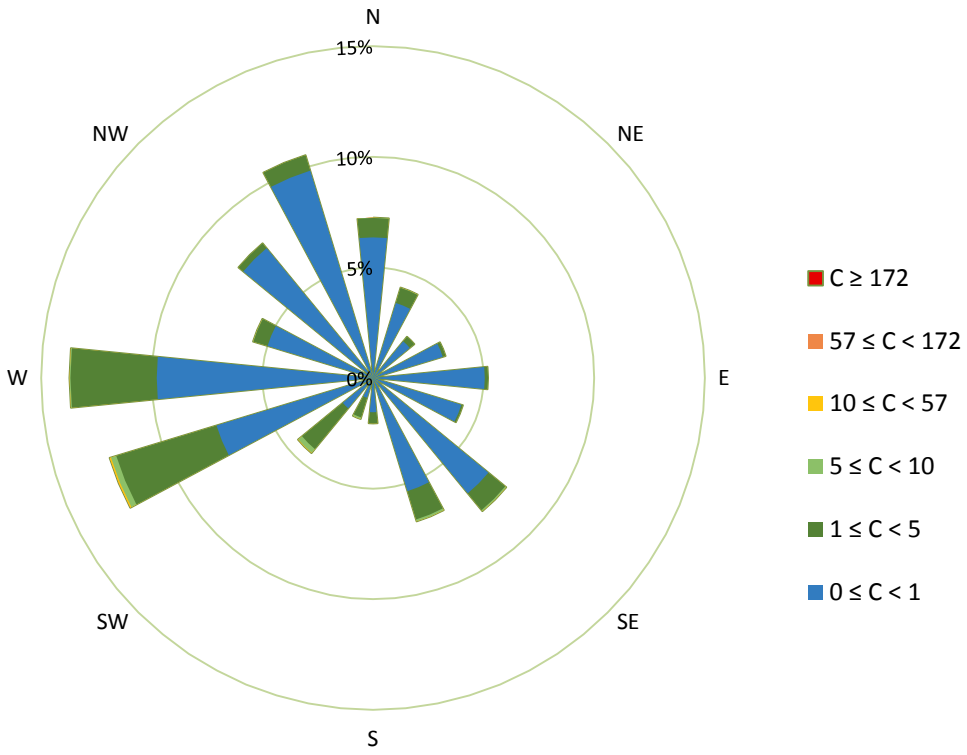

Figure 8 **Pollutant rose for 1-hour average SO_2 data at the Wauchope Station (ppb)**

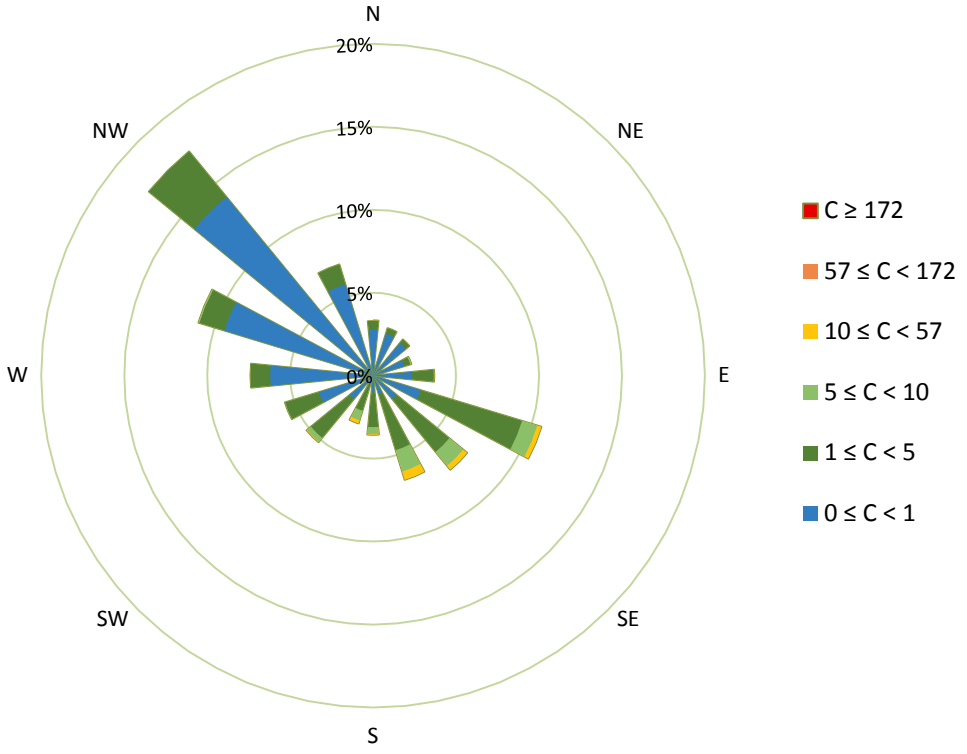

Figure 9 **Pollutant rose for 1-hour average SO_2 data at the Weyburn Station (ppb)**

2.4.2 Hydrogen Sulphide (H_2S)

Hydrogen sulphide (H_2S) is a colourless gas with a characteristic "rotten egg" odour. It is produced both naturally and through anthropogenic emission sources. H_2S occurs naturally in coal, crude oil, natural gas, oil, sulphur hot springs, volcanic gases, sloughs, swamps and lakes. The major anthropogenic emission sources include natural gas and petroleum production, wastewater treatment, pulp and paper mills, rayon textile manufacturing, and tar and asphalt manufacturing. Decomposition of organic matter by bacteria under anaerobic conditions releases H_2S as well, forming the characteristic odour commonly associated with sewers, sewage lagoons, and swamps.

Hydrogen sulphide is a highly toxic and flammable gas. It is heavier than air and tends to accumulate at the bottom of poorly ventilated spaces and in low-lying topography. Although very pungent at first, it quickly deadens the sense of smell at concentrations of 100-200 ppm (Reference 8). Potential victims of H_2S poisoning may be unaware of its presence until it is too late.

The Saskatchewan Ambient Air Quality Standards (SAAQS) for hydrogen sulphide are:

- 1-hour average SAAQS = 15 µg/m^3 (11 ppb)
- 24-hour average SAAQS = 5 µg/m^3 (3.6 ppb)

Table 7 presents summary statistics for H_2S. The annual average concentration ranged from 0.6 ppb to 1.4 ppb among the five stations. The maximum 1-hour concentration of 118.6 ppb, and the maximum 24-hour concentration of 14.0 ppb were both detected at the Wauchope station.

Although H_2S concentration was generally low at all stations in comparison with the SAAQS for the majority of the time, there were occasional spikes causing exceedances of the 1-hour and 24-hour SAAQS. Table 8 summarizes the number of exceedance events for H_2S. The complete lists of exceedances can be found in Appendix J.

Figures 10 through 14 present the pollutant roses for 1-hour average concentration of H_2S. The measured concentration was low at all stations for the majority of the time; greater than 91% of the data was less than 3.6 ppb (the blue and dark green petals). There was a general trend where most of the high concentration events (>5 ppb) were associated with Light Air wind conditions (≤1.4 m/s or 5.0 km/hr).

At the Glen Ewen station, the exceedance and high concentration events (>5 ppb) were primarily associated with the W and WNW (west and west-northwest) directions. 96% of the 1-hour exceedance events were associated with Light Air wind conditions.

At the Oxbow station, the exceedance and high concentration events (>5 ppb) were primarily associated with the W and WNW (west and west-northwest) directions. All four of the 1-hour exceedance events were associated with Light Air wind conditions.

At the Stoughton station, the exceedances and high concentration events (>5 ppb) were associated with the east and west directions. 87% of the 1-hour exceedance events were associated with Light Air wind conditions.

At the Wauchope station, the exceedances and high concentration events (>5 ppb) were associated with the north, northwest, and west directions. 93% of the 1-hour exceedance events were associated with Light Air wind conditions.

At the Weyburn station, the exceedances and high concentration events (>5 ppb) were primarily associated with the SE-S (southeast to south) directions. The projected area is where more industrial activities exist, such as upstream oil and gas industry. All of the 1-hour exceedance events were detected during Light Air wind conditions.

The detailed frequency distribution tables for 1-hour average H_2S data are presented in the Appendices: Table D-7, Table E-6, Table F-6, Table G-3, and I-7.

Table 7 Summary statistics for H_2S in 2015

Monitoring Station	Annual Average	Instrument Uptime	Maximum H_2S Conc. and Occurrence Time			
	ppb	%	1-Hr Max		24-Hr Max	
Glen Ewen	0.7	89.3%	31.7	2015-06-26 06:00	4.7	2015-06-14
Oxbow	0.6	85.6%	17.2	2015-06-14 06:00	3.5	2015-07-07
Stoughton	1.0	94.8%	45.8	2015-06-10 06:00	10.9	2015-06-10
Wauchope	1.4	85.3%	118.6	2015-08-01 05:00	14.0	2015-08-10
Weyburn	0.9	86.8%	32.7	2015-10-30 02:00	4.4	2015-08-24

Table 8 Number of exceedance events for H_2S in 2015

Monitoring Station	Number of Exceedance Events for Saskatchewan H_2S Ambient Air Quality Standard (SAAQS)	
	1-hr SAAQS (11 ppb)	24-hr SAAQS (3.6 ppb)
Glen Ewen	45	12
Oxbow	4	0
Stoughton	129	22
Wauchope	183	30
Weyburn	12	2

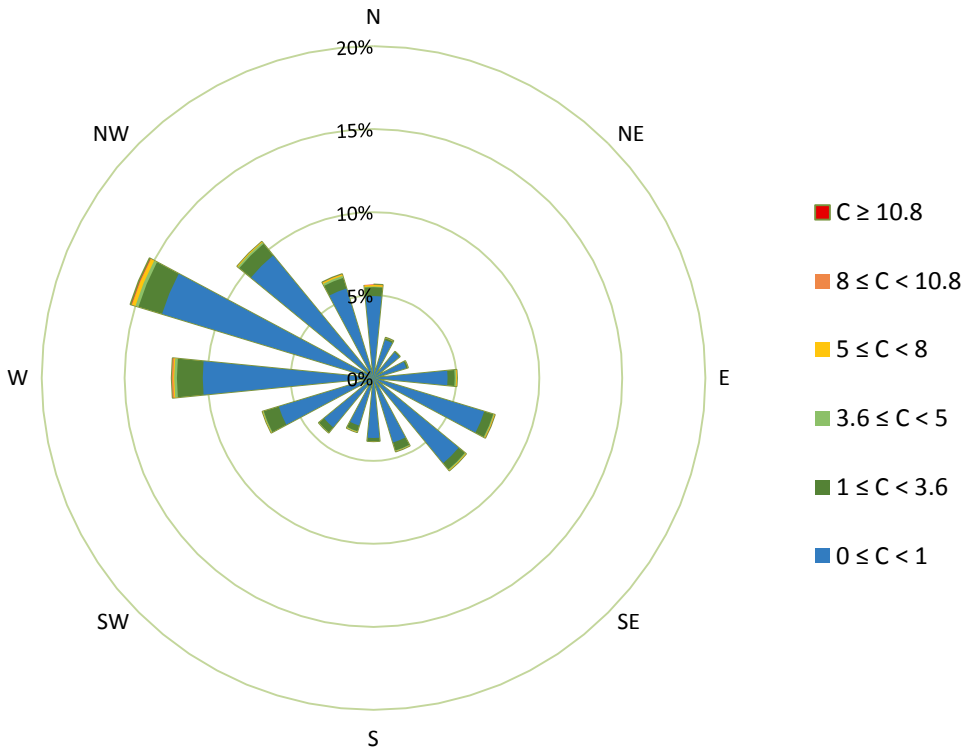

Figure 10 **Pollutant rose for 1-hour average H_2S data at the Glen Ewen Station (ppb)**

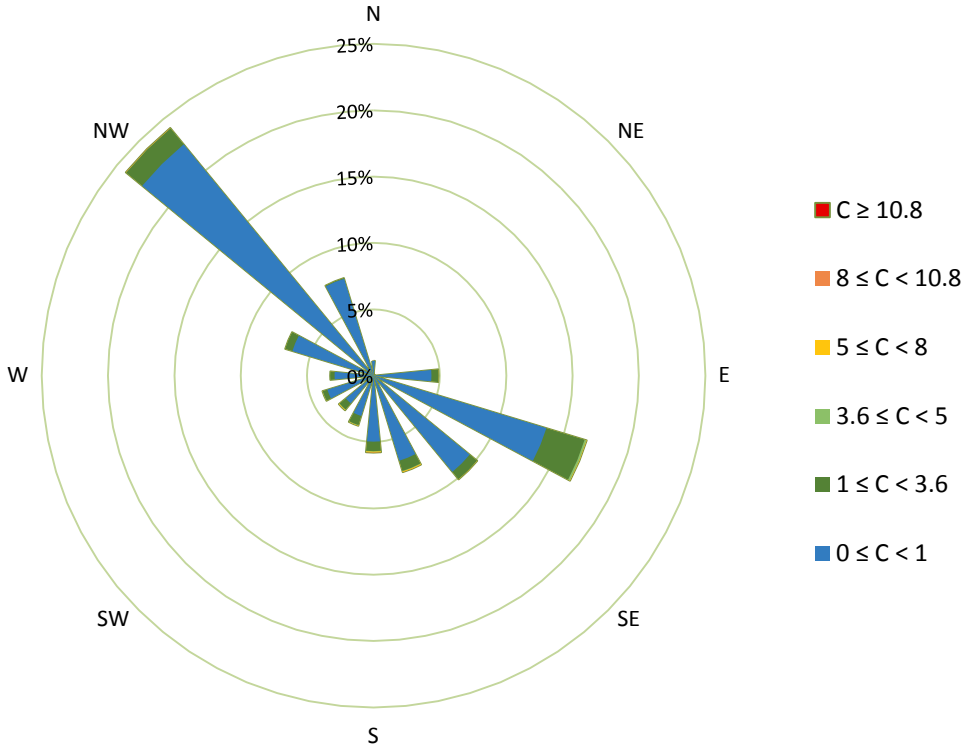

Figure 11 **Pollutant rose for 1-hour average H_2S data at the Oxbow Station (ppb)**

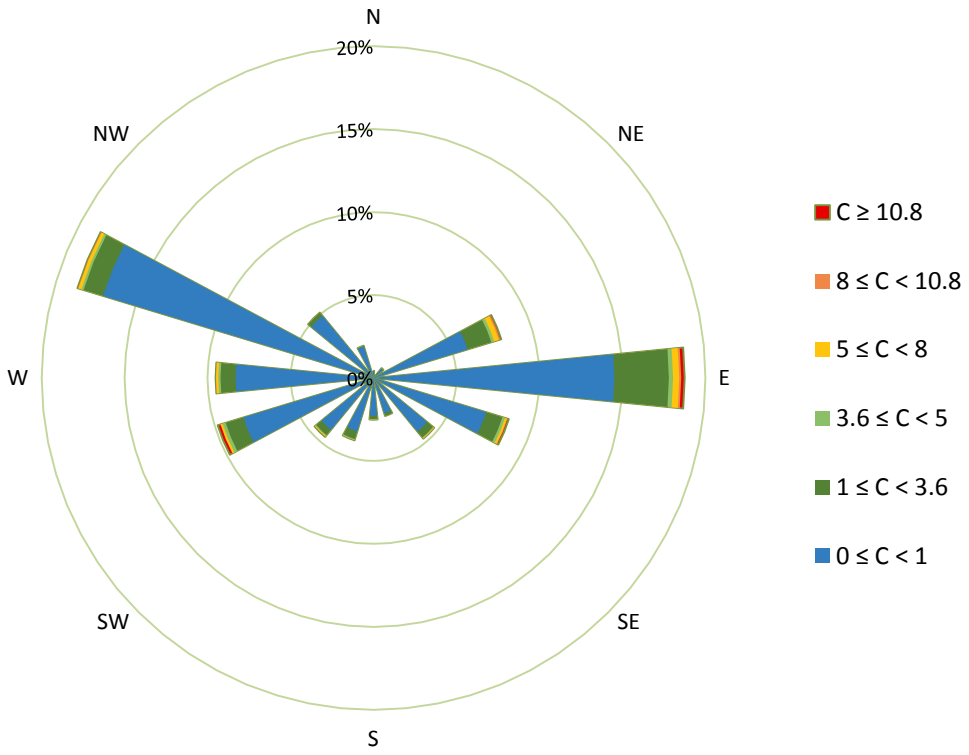

Figure 12 **Pollutant rose for 1-hour average H_2S data at the Stoughton Station (ppb)**

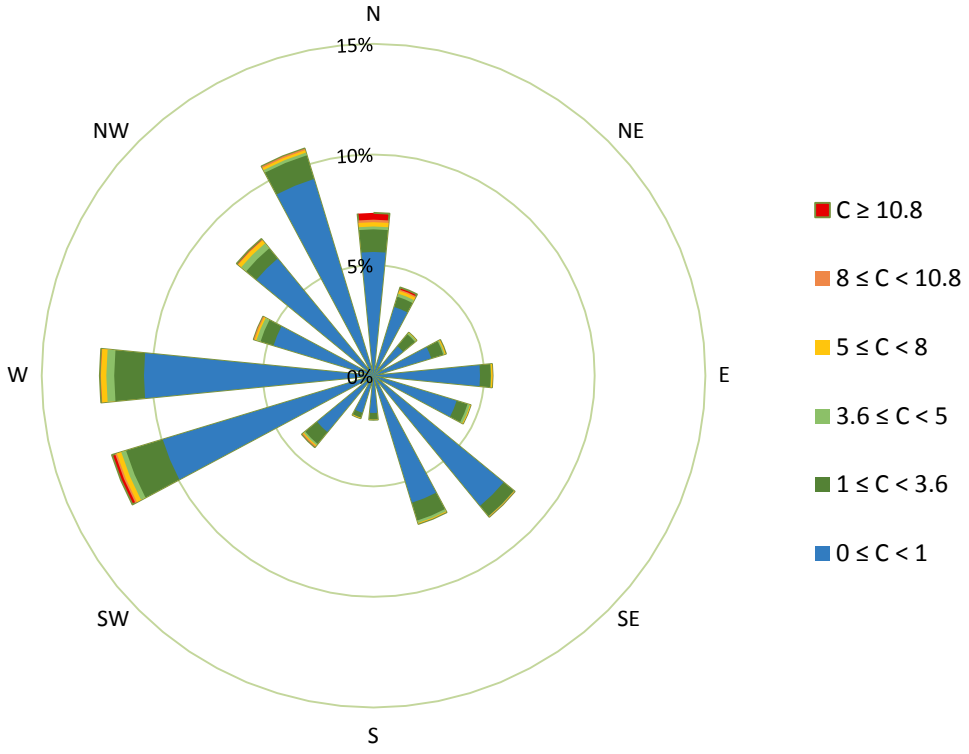

Figure 13 **Pollutant rose for 1-hour average H_2S data at the Wauchope Station (ppb)**

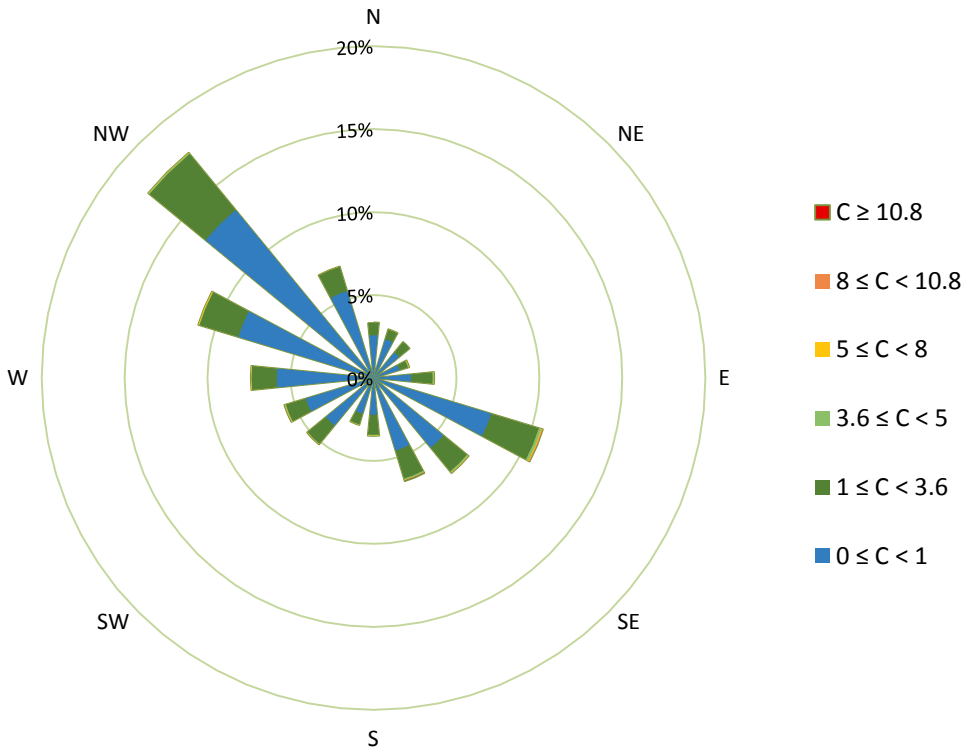

Figure 14 Pollutant rose for 1-hour average H_2S data at the Weyburn Station (ppb)

2.4.3 Nitrogen Dioxide (NO_2)

Nitrogen oxides, also known as oxides of nitrogen (NO_X), is a collective term for nitric oxide (NO) and nitrogen dioxide (NO_2). Nitric oxide is a colorless, flammable gas with a slight odour. Nitrogen dioxide is a reddish brown, non-flammable gas with a pungent, irritating odour. NO_2 is of more interest than NO from both a health and acid rain perspective.

NO_X can cause respiratory disease, damage vegetation, and reduce visibility. The primary concern with NO_X emissions is their contribution to formation of ground-level ozone, smog and acid rain.

NO_X emissions are mainly produced by fossil fuel combustion. High temperature conditions during combustion result in the formation of NO_X as a by-product. The major anthropogenic emission sources for NO_X are associated with fuel combustion, including both stationary sources, such as power plants, oil and gas industries, incinerators, as well as mobile sources such as automobiles. Non-combustion sources, for example nitric acid manufacture, welding processes and the use of explosives, comprise the smaller emission sources. In large cities, motor vehicle emission is the major source of NO_X.

The Saskatchewan Ministry of Environment regulates ambient air concentration for nitrogen dioxide, but not nitric oxide. The Saskatchewan Ambient Air Quality Standards (SAAQS) for nitrogen dioxide are:

- 1-hour average SAAQS = 300 μg/m^3 (159 ppb)
- 24-hour average SAAQS = 200 μg/m^3 (106 ppb)
- Annual average SAAQS = 45 μg/m^3 (24 ppb)

Table 9 presents summary statistics for NO_2 for 2015. The measured NO_2 concentration was low at all stations in comparison with the SAAQS. The annual average concentration ranged from 1.3 ppb to 3.6 ppb. The maximum 1-hour concentration of 42.7 ppb and the maximum 24-hour concentration of 12.7 ppb were detected at the Oxbow and Estevan stations, respectively. There were no exceedances of the 1-hour, 24-hour, or annual SAAQS in 2015 (see Table 10).

Figures 15 through 21 present the pollutant roses for 1-hour average NO_2. The concentration at all stations was generally low; greater than 92% of the data was less than 5 ppb (the blue color petals), with the exception of Estevan (78.5%). While industrial activities, such as upstream oil and gas industry and/or coal-fired power plants, could be the potential sources, vehicular emissions may not be excluded. Some stations (e.g., Estevan, Weyburn) detected a diurnal trend showing a double-crest pattern with the peak NO_2 concentrations during the morning and afternoon/evening commuting hours. NO_2 concentrations tended to be lowest early-to-mid afternoon.

The detailed frequency distribution tables for 1-hour NO_2 data are presented in Appendices: Table B-3, Table C-4, Table D-4, Table E-4, Table F-4, Table H-3, and Table I-4. Summaries for NO can be found in in Tables B-2, C-3, D-3, E-3, F-3, H-2, and I-3. The summary tables for NO_X are in Tables B-4, C-5, D-5, E-5, F-5, H-4, and I-5.

Table 9 Summary statistics for NO_2

Monitoring Station	Annual Average	Instrument Uptime	Maximum NO_2 Conc. and Occurrence Time			
	ppb	%	1-Hr Max		24-Hr Max	
Esterhazy	1.6	72.1%	25.1	2015-05-25 01:00	9.0	2015-05-26
Estevan	3.6	96.0%	29.3	2015-12-08 17:00	12.7	2015-11-30
Glen Ewen	1.9	91.8%	14.8	2015-11-30 08:00	5.2	2015-01-13
Oxbow	1.5	90.7%	42.7	2015-12-27 10:00	5.9	2015-12-27
Stoughton	2.1	93.6%	23.6	2015-02-27 21:00	9.4	2015-02-27
Wawota	1.3	94.5%	21.0	2015-11-29 21:00	5.3	2015-11-29
Weyburn	1.8	82.6%	20.2	2015-05-23 23:00	6.4	2015-05-24

Table 10 Number of exceedance events for NO_2

Monitoring Station	Number of Exceedance Events for Saskatchewan NO_2 Ambient Air Quality Standard (SAAQS)		
	1-hr SAAQS (159 ppb)	24-hr SAAQS (106 ppb)	Annual SAAQS (24 ppb)
Esterhazy	0	0	0
Estevan	0	0	0
Glen Ewen	0	0	0
Oxbow	0	0	0
Stoughton	0	0	0
Wawota	0	0	0
Weyburn	0	0	0

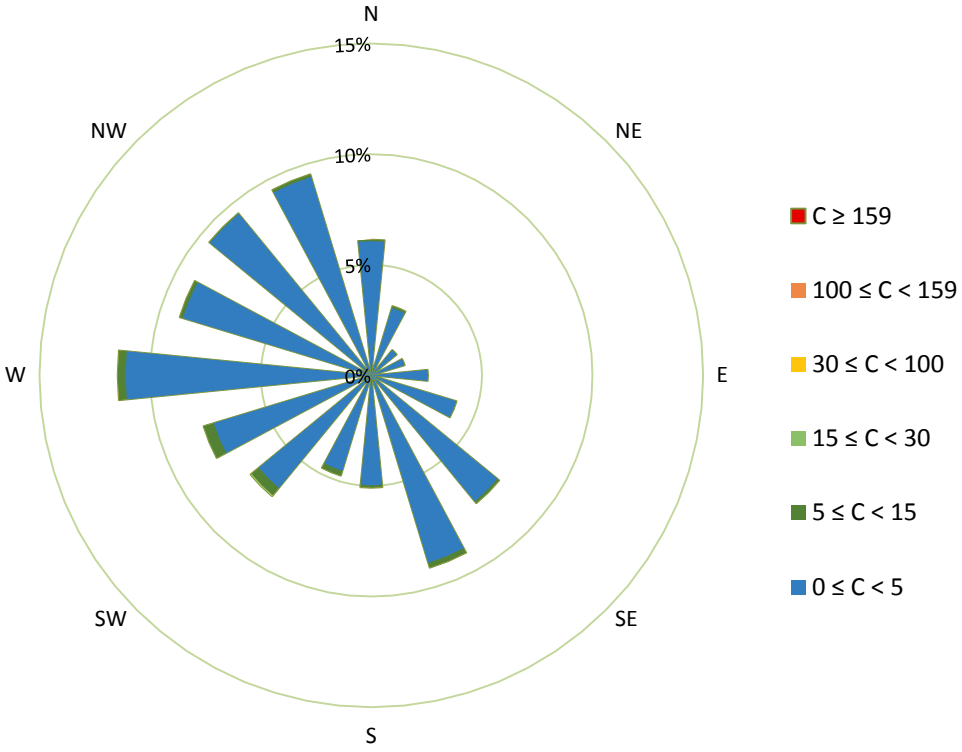

Figure 15 Pollutant rose for 1-hour average NO_2 data at the Esterhazy Station (ppb)

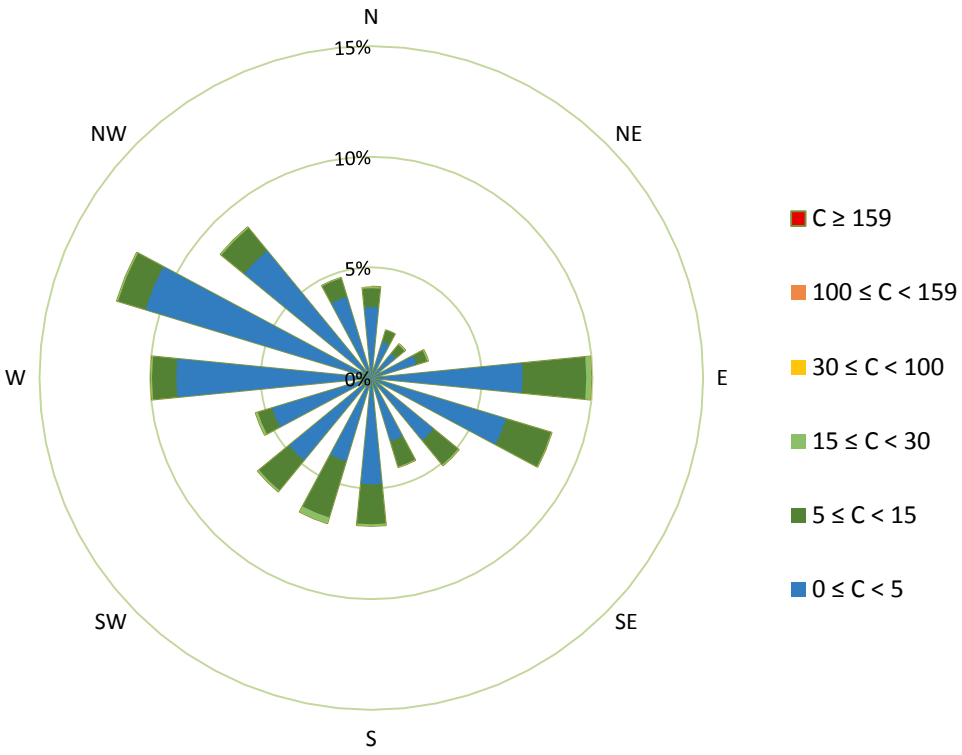

Figure 16 **Pollutant rose for 1-hour average NO_2 data at the Estevan Station (ppb)**

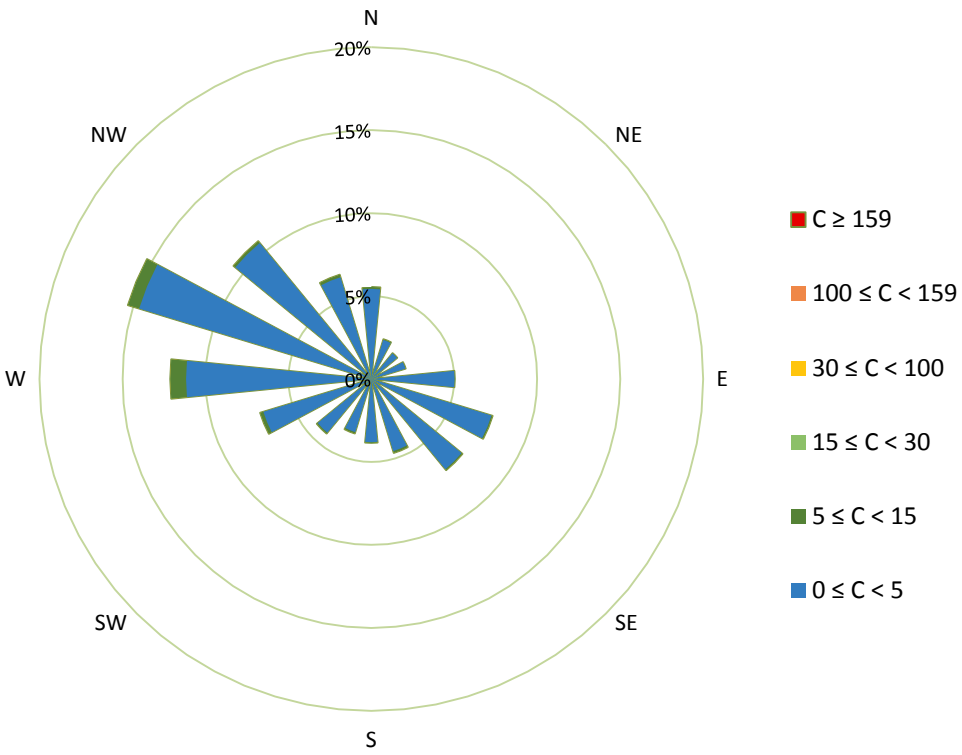

Figure 17 **Pollutant rose for 1-hour average NO_2 data at the Glen Ewen Station (ppb)**

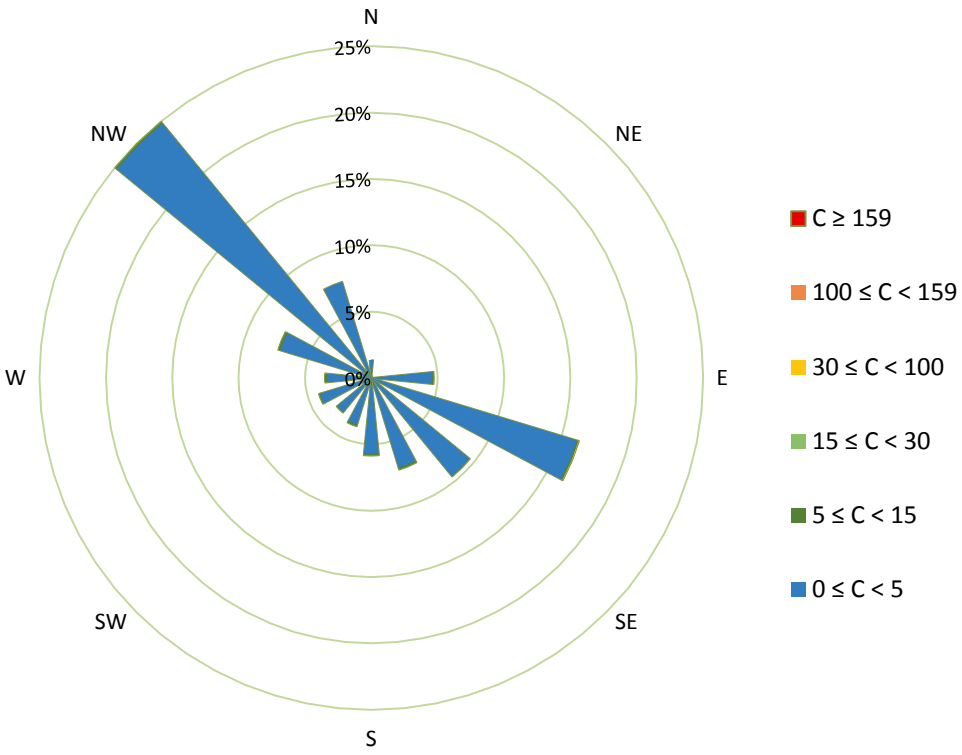

Figure 18 **Pollutant rose for 1-hour average NO_2 data at the Oxbow Station (ppb)**

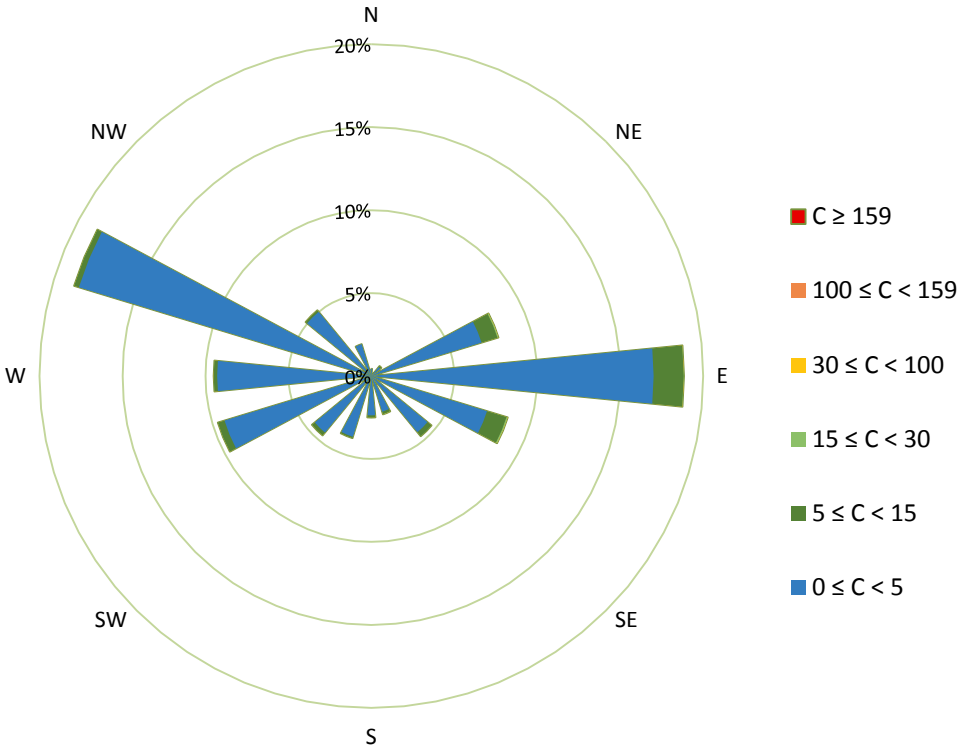

Figure 19 **Pollutant rose for 1-hour average NO_2 data at the Stoughton Station (ppb)**

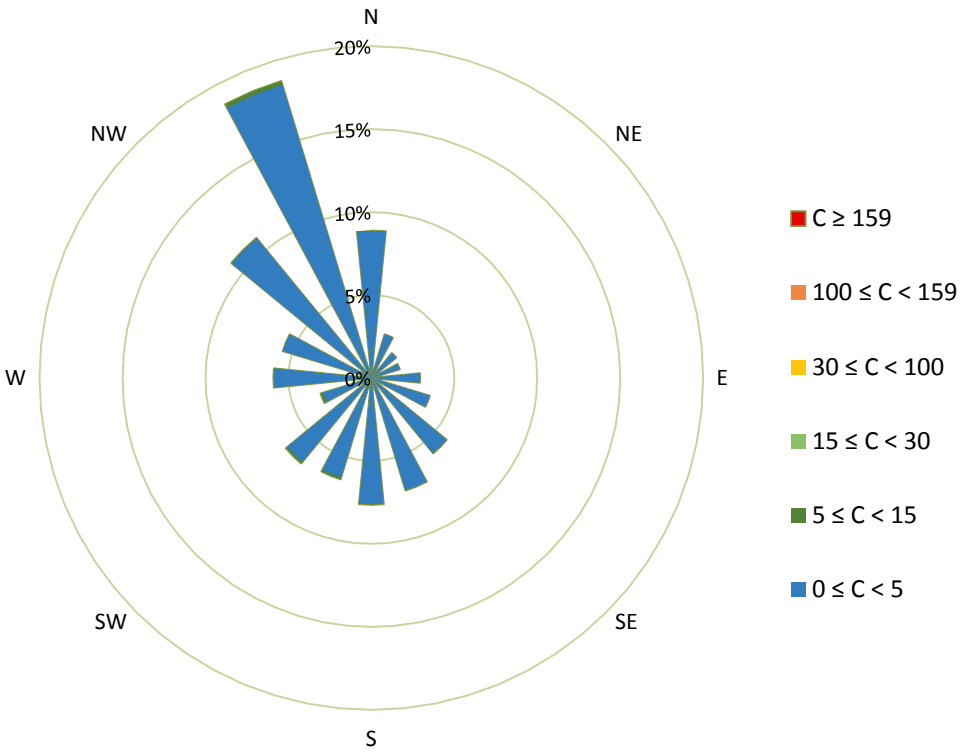

Figure 20 **Pollutant rose for 1-hour average NO_2 data at the Wawota Station (ppb)**

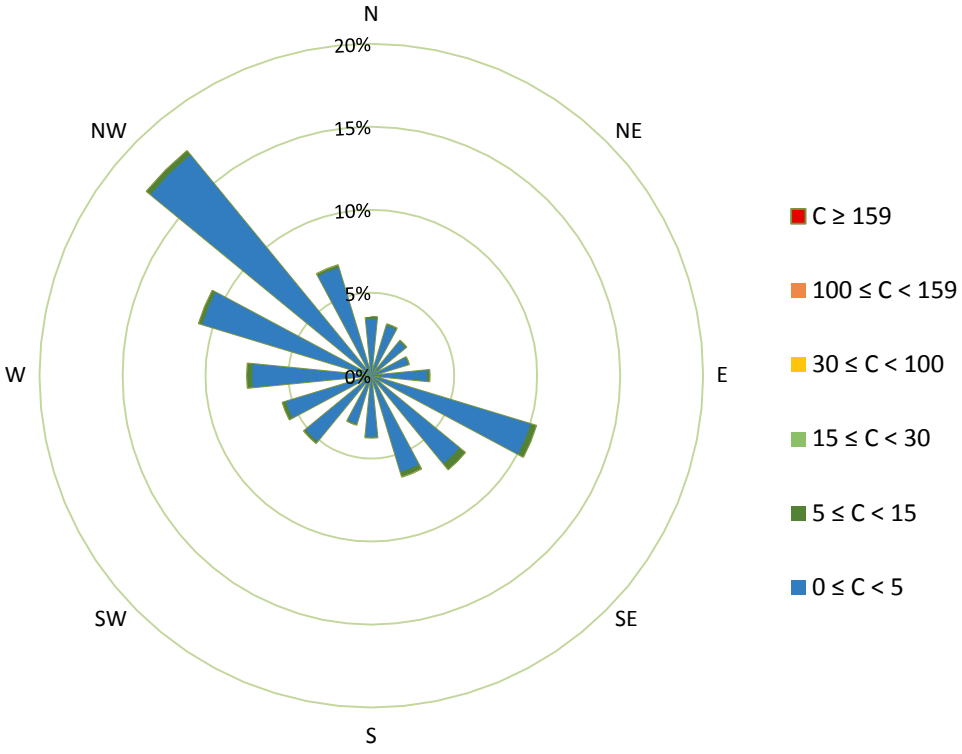

Figure 21 **Pollutant rose for 1-hour average NO_2 data at the Weyburn Station (ppb)**

2.4.4 Ozone (O_3)

Ozone (O_3) is a colourless, odourless gas at ambient concentrations and is a major component of smog. Ozone can be formed by electrical discharges and high energy electromagnetic radiation. In indoor environments, ozone can be present as a result of electronic equipment such as ionic air purifiers, laser printers, photocopiers, and arc welders.

In the ambient air, O_3 is a "secondary" pollutant, meaning it is not directly emitted from a source. Instead, ozone is produced from photochemical reactions between oxides of nitrogen (NO_X) and volatile organic compounds (VOC) in the presence of sunlight. Ground-level ozone could be from intrusion of ozone from the stratosphere, mixing from the upper troposphere, local photochemistry and the medium and long-range transport. There are split opinions regarding relative importance of these mechanisms. A study in Regina suggested that high ozone events could be due to downward transport from the stratosphere (Reference 4).

Exposure to ozone has been linked to premature mortality and a range of morbidity health endpoints, such as hospital admissions and asthma symptoms. Acute exposure to high concentrations of ozone can cause eye irritation and breathing difficulty. Ozone can significantly impact vegetation and decrease the productivity of some crops. It damages cotton, acetate, nylon, polyester and other textile materials. Ozone can also damage other synthetic materials, cause cracks in rubber, accelerate fading of dyes, and speed deterioration of some paints and coatings.

The Saskatchewan Ambient Air Quality Standard (SAAQS) for ozone is:

- 1-hour average SAAQS = 160 µg/m^3 (82 ppb)
- 8-hour average SAAQS = 124 µg/m^3 (63 ppb)

Table 11 presents summary statistics for O_3. The annual average concentration ranged from 27.2 ppb to 32.7 ppb. The maximum 1-hour concentration of 78 ppb was detected at the Weyburn station. The maximum 8-hour average concentration of 76 ppb was detected at the Weyburn station. There was no exceedance of the 1-hour SAAQS (Table 12).

Figures 22 through 25 present the pollutant roses for 1-hour average concentration of O_3. The pollutant roses did not show an apparent directional trend for high concentration events, indicating high O_3 events may be impacted by regional air quality trends and less likely a localized source.

The detailed frequency distribution table for the pollutant roses are presented in Appendices: Table B-5, Table D-6, Table H-5, and Table I-6.

Table 11 Summary statistics for O_3 in 2015

Monitoring Station	Annual Average	Instrument Uptime	Maximum O_3 Conc. and Occurrence Time			
	ppb	%	1-Hr Max		8-Hr Max	
Esterhazy	32.5	72.5%	72.8	2015-05-23 20:00	71.1	2015-05-23
Glen Ewen	27.2	91.9%	73.1	2015-05-24 17:00	71.4	2015-05-24
Wawota	31.0	94.9%	71.4	2015-05-24 18:00	69.0	2015-05-24
Weyburn	29.4	87.0%	78.3	2015-05-24 16:00	75.8	2015-05-24

Table 12 Number of exceedance events for O_3 in 2015

Monitoring Station	Number of Exceedance Events for Saskatchewan O_3 Ambient Air Quality Standard (SAAQS)	
	1-hr SAAQS (82 ppb)	8-hr SAAQS[ab] (63 ppb)
Esterhazy	0	6
Glen Ewen	0	5
Wawota	0	4
Weyburn	0	12

[a] These events do not necessarily constitute an exceedance because the standard applies to 3-year average of the annual 4th-highest daily maximum 8-hour average concentration

[b] Number of days with 8-hour period exceeding SAAQS threshold for O_3

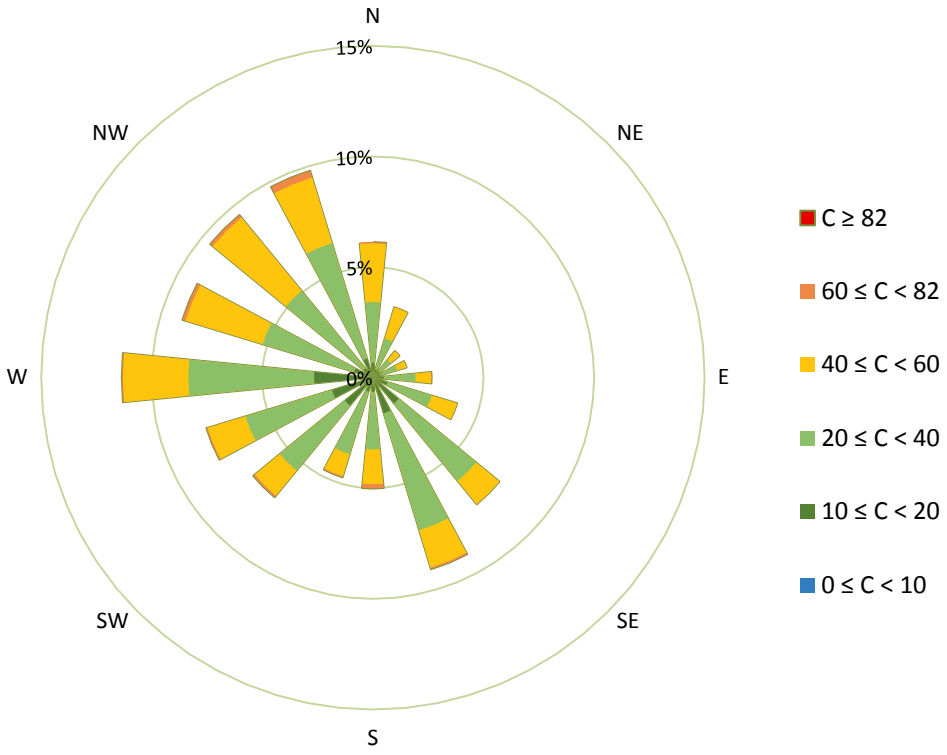

Figure 22 Pollutant rose for 1-hour average O_3 data at the Esterhazy Station (ppb)

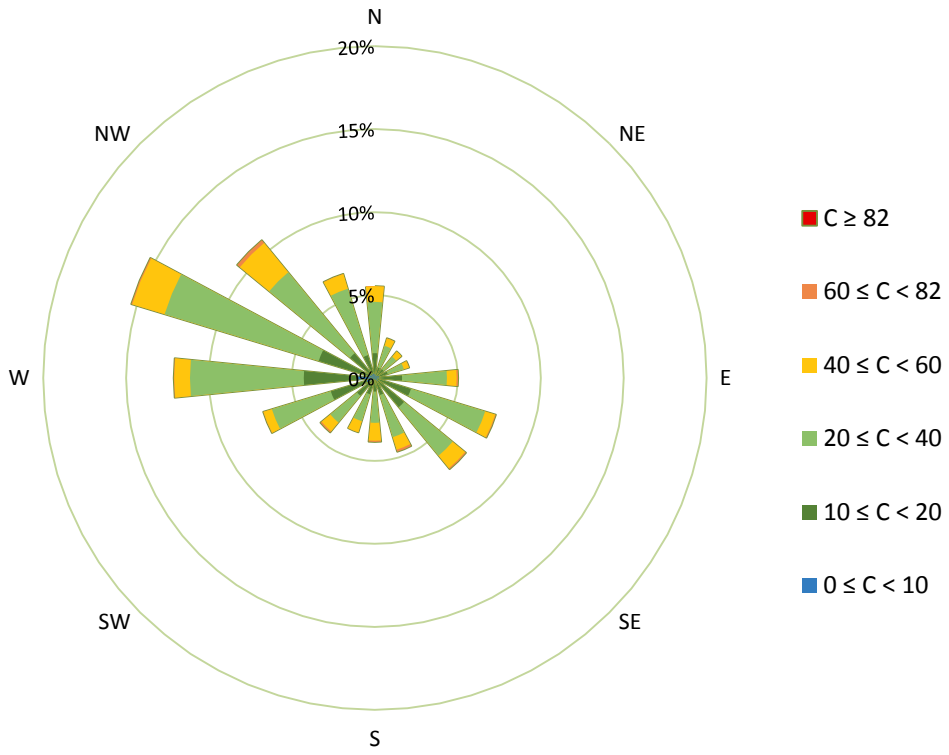

Figure 23 **Pollutant rose for 1-hour average O_3 data at the Glen Ewen Station (ppb)**

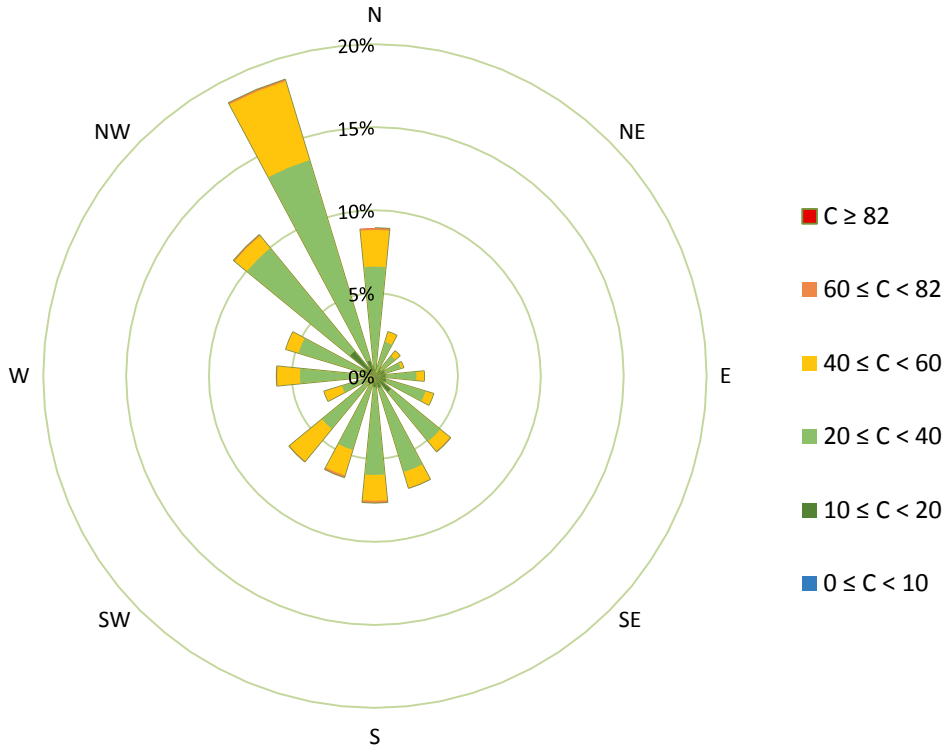

Figure 24 **Pollutant rose for 1-hour average O_3 data at the Wawota Station (ppb)**

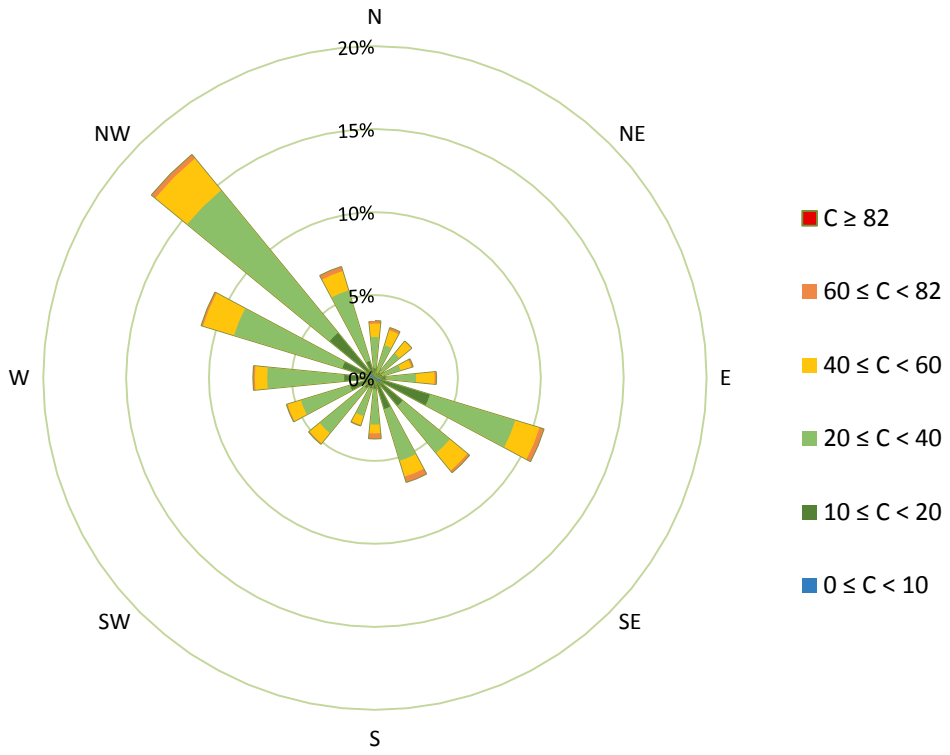

Figure 25 Pollutant rose for 1-hour average O_3 data at the Weyburn Station (ppb)

2.4.5 Fine Particulate Matter ($PM_{2.5}$)

Particulate matter is unique among air pollutants, as it is identified by its size rather than by its composition. The major concern for particulate matter deals with small particles referred to as inhalable particulate, or PM_{10}. PM_{10} is defined as particles that have an aerodynamic diameter less than 10 microns (or 0.01 mm). PM_{10} can be divided into two groups of particles based on size: fine particles and coarse particles. The fine particles are those particles with an aerodynamic diameter smaller than 2.5 microns (0.0025 mm) and are identified as $PM_{2.5}$. In contrast, coarse particles are those with aerodynamic diameter greater than 2.5 microns and less than 10 microns.

Fine particles are generally emitted from activities such as industrial and residential combustion, and from vehicle exhaust. Fine particles are also formed in the atmosphere when gases such as sulphur dioxide, nitrogen oxides, and volatile organic compounds, emitted by combustion activities, are transformed by chemical reactions in the air.

Adverse health effects from breathing air with a high $PM_{2.5}$ concentration include: premature death, increased respiratory symptoms and disease, chronic bronchitis, and decreased lung function particularly for individuals with asthma. Particulate matter can clog stomatal openings of plants and interfere with photosynthesis functions, leading to growth stunting or mortality in some plant species.

The Saskatchewan Ambient Air Quality Standards (SAAQS) for $PM_{2.5}$ are:

- 24-hour average SAAQS = 28 µg/m^3
- Annual average SAAQS = 10 µg/m^3

Table 13 presents the summary statistics for $PM_{2.5}$. The annual average concentration ranged from 4.8 µg/m^3 to 9.8 µg/m^3. The maximum 1-hour concentration of 519 µg/m^3 and the maximum 24-hour concentration of 185 µg/m^3 were detected at the Wauchope and Weyburn stations, respectively.

Due to the wide-reaching effects of forest fires in northern Saskatchewan in June, July and August of 2015, $PM_{2.5}$ concentrations were abnormally high. There were 59 exceedances of the 28 µg/m^3 24-hour standard (see Table 14). Most of these exceedances were due to wildfire smoke. The complete lists of exceedances can be found in Appendix J.

Currently the only station that has 3 years of continuous $PM_{2.5}$ data available is Weyburn. The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations at Weyburn is 30.9 µg/m^3, which exceeds the 28 µg/m^3 standard (see Table 14). Values for the annual 98th percentile of the daily 24-hour average concentrations for the current reporting year are presented in Table 13 for all stations. These values are calculated according to the methodology presented in Reference 9.

Figures 26 through 32 present the pollutant roses for 1-hour average concentration of $PM_{2.5}$. Generally, the high concentration events (e.g. >10 µg/m^3 in the yellow, orange and red petals) were associated with all wind directions. There were no apparent directional trends identifiable from the pollutant roses.

The detailed frequency distribution tables for the pollutant roses are presented in Appendices: Table B-6, Table C-6, Table E-7, Table F-7, Table G-4, Table H-6, and Table I-8.

Table 13 Summary Statistics for $PM_{2.5}$ in 2015

Monitoring Station	Annual Average	Instrument Uptime	Maximum $PM_{2.5}$ Conc. and Occurrence Time				98th Percentile for 24-Hr Data	
	µg/m^3	%	1-Hr Max		24-Hr Max		Annual	3-Yr Avg
Esterhazy	6.2	95.5%	314.1	2015-06-29 21:00	107.3	2015-06-29	29.5	N/A
Estevan	4.8	96.0%	63.4	2015-08-29 20:00	37.8	2015-08-29	19.7	N/A
Oxbow	6.4	93.7%	288.5	2015-07-08 05:00	124.8	2015-08-29	16.1	N/A
Stoughton	7.1	82.5%	386.0	2015-06-29 19:00	133.6	2015-07-03	67.3	N/A
Wauchope	9.8	96.7%	518.5	2015-08-24 20:00	136.9	2015-07-03	52.9	N/A
Wawota	8.1	99.2%	454.4	2015-06-29 23:00	127.3	2015-07-03	57.6	N/A
Weyburn	6.8	91.2%	290.3	2015-06-29 18:00	185.4	2015-07-03	59.6	30.9

Table 14 Number of exceedance events for $PM_{2.5}$ in 2015

Monitoring Station	Number of Exceedance Events for Saskatchewan $PM_{2.5}$ Ambient Air Quality Standard (SAAQS)		3-Yr Avg of 98th Percentile for 24-Hr Data Exceeds 28 µg/m³
	24-hr SAAQS [a] (28 µg/m³)	Annual SAAQS (10 µg/m³)	
Esterhazy	9	0	N/A
Estevan	2	0	N/A
Oxbow	4	0	N/A
Stoughton	7	0	N/A
Wauchope	19	0	N/A
Wawota	10	0	N/A
Weyburn	8	0	Yes

[a] SAAQS applies to 3-year average of the annual 98th percentile of the 24-hour average concentrations

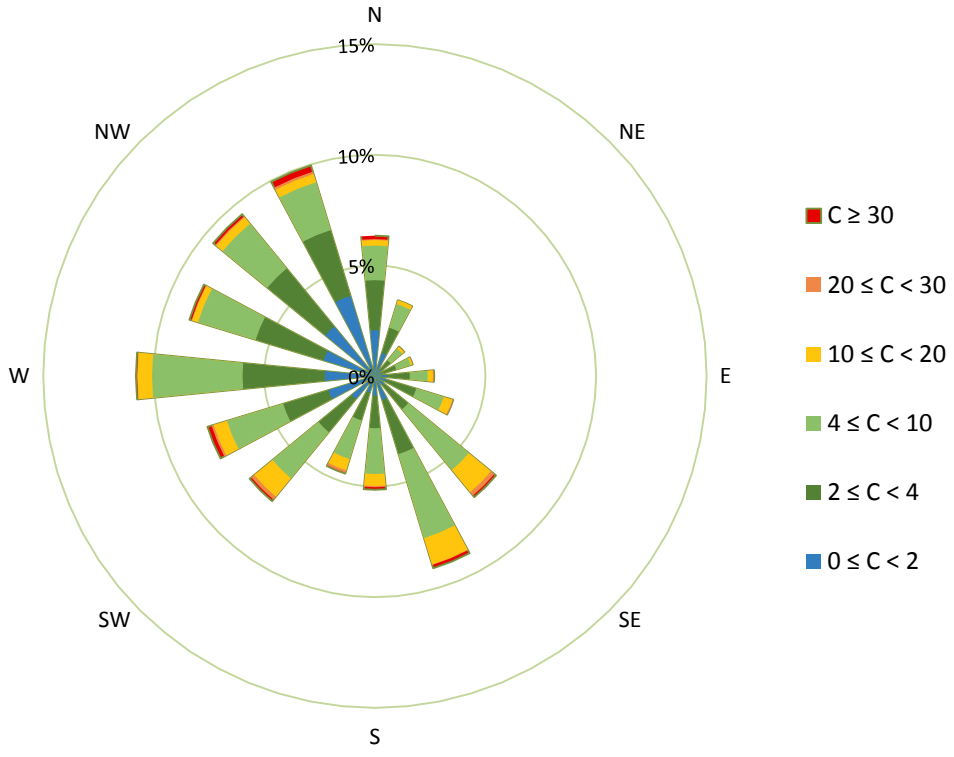

Figure 26 Pollutant rose for 1-hour average $PM_{2.5}$ data at the Esterhazy Station (µg/m³)

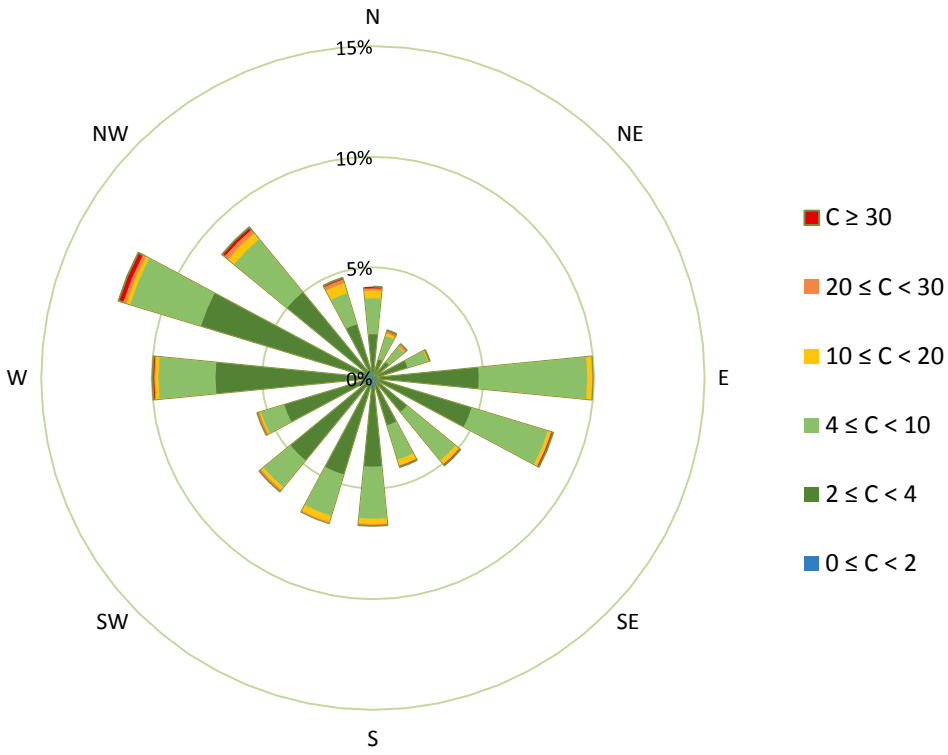

Figure 27 **Pollutant rose for 1-hour average $PM_{2.5}$ data at the Estevan Station (µg/m^3)**

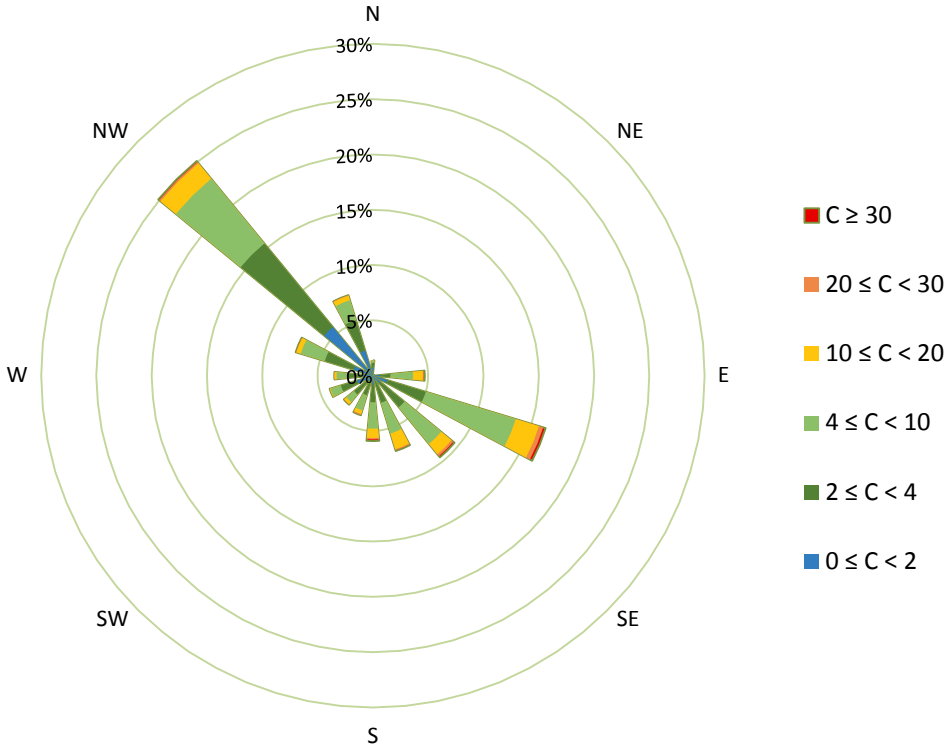

Figure 28 **Pollutant rose for 1-hour average $PM_{2.5}$ data at the Oxbow Station (µg/m^3)**

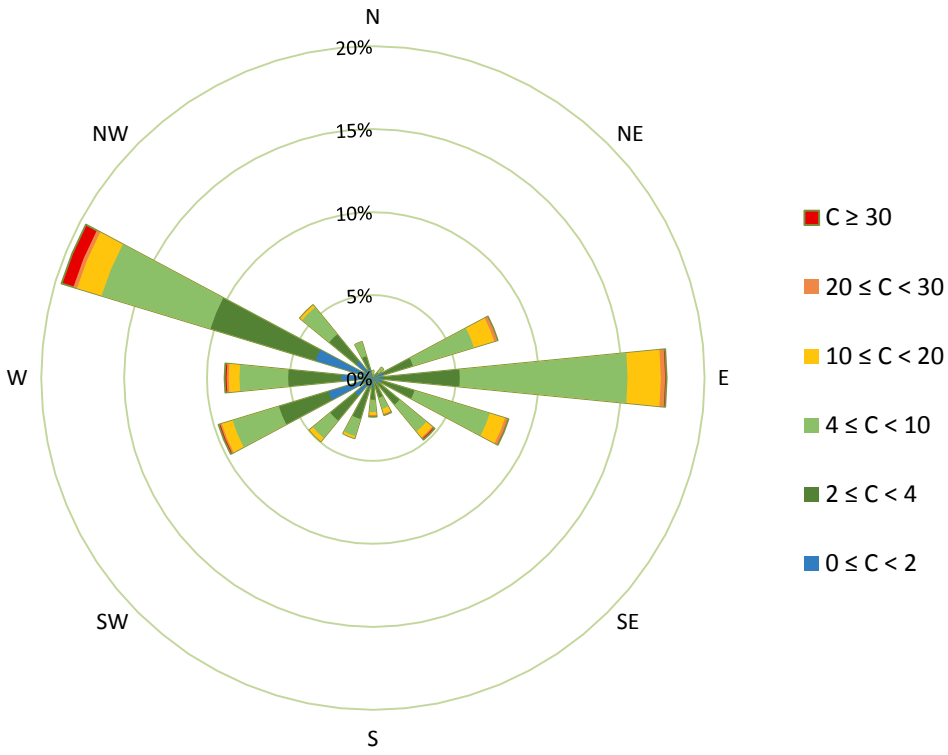

Figure 29 **Pollutant rose for 1-hour average $PM_{2.5}$ data at the Stoughton Station (µg/m^3)**

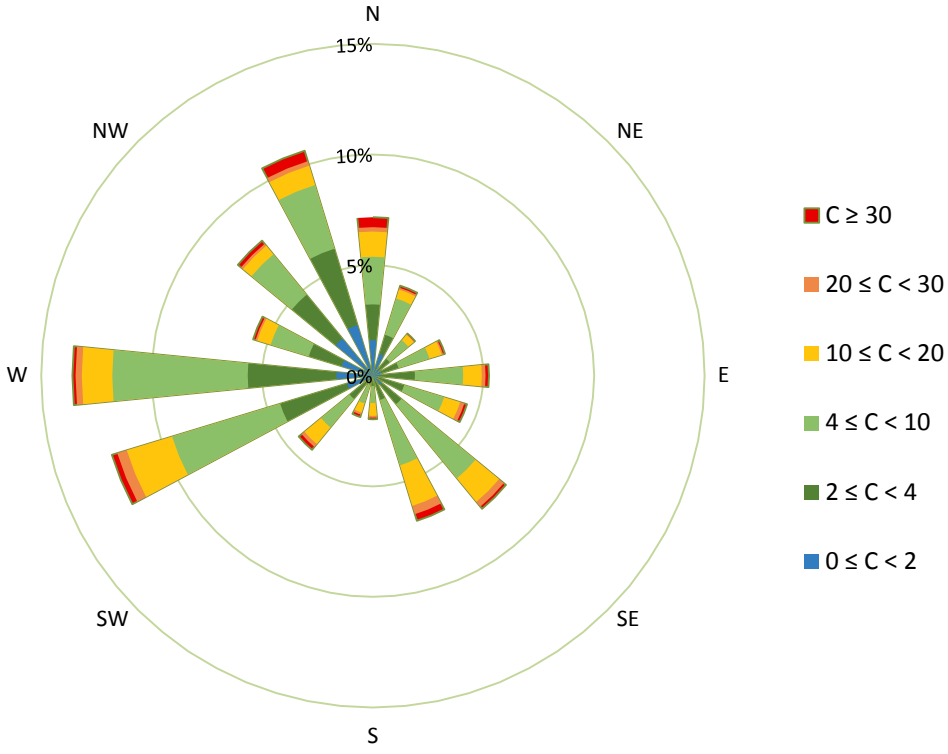

Figure 30 **Pollutant rose for 1-hour average $PM_{2.5}$ data at the Wauchope Station (µg/m^3)**

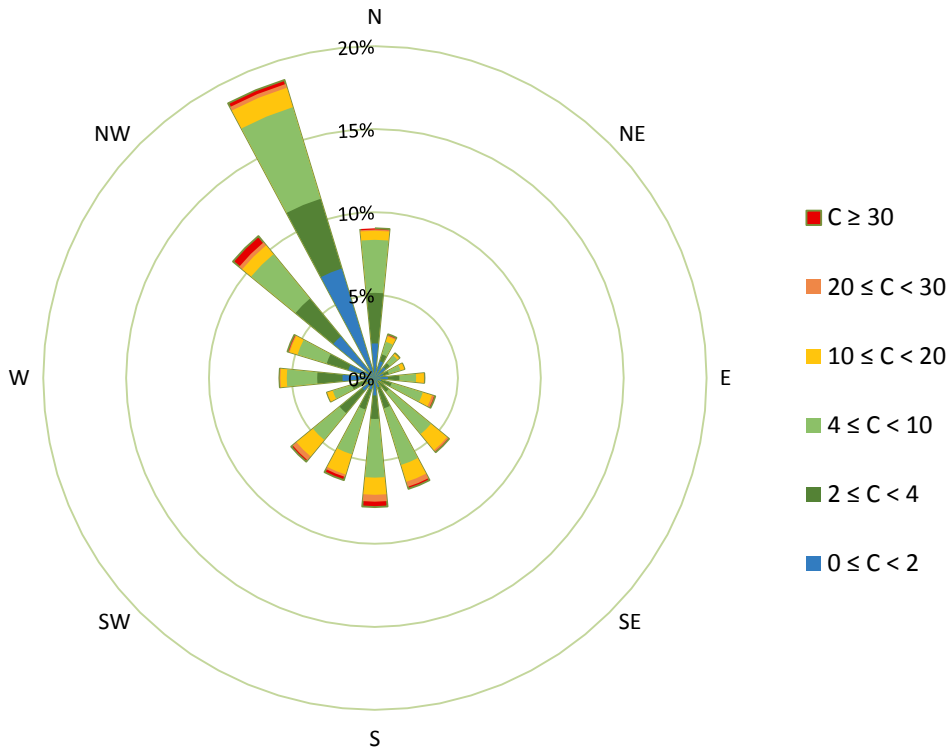

Figure 31 **Pollutant rose for 1-hour average $PM_{2.5}$ data at the Wawota Station (µg/m^3)**

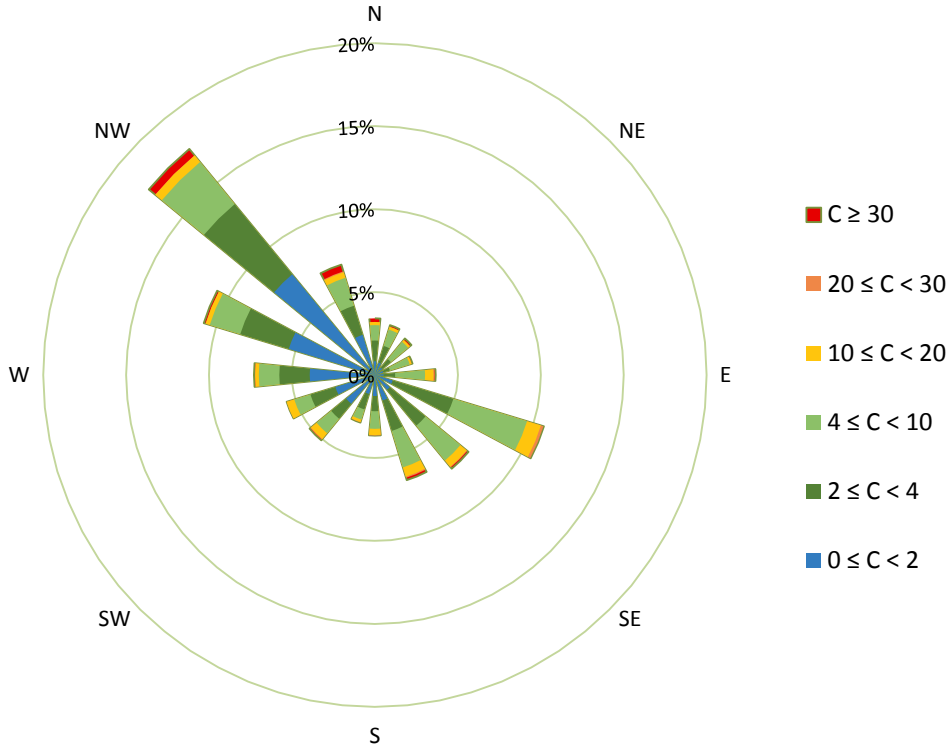

Figure 32 **Pollutant rose for 1-hour average $PM_{2.5}$ data at the Weyburn Station (µg/m^3)**

2.5 Air Quality Health Index (AQHI)

The Air Quality Health Index (AQHI) is a health protection tool that is designed to help the public make decisions to protect their health by limiting short-term exposure to air pollution, and adjusting their activity levels during increased levels of air pollution. The AQHI uses readings from three air pollutants to calculate a single numerical value as the indicator of health risk. The three pollutants are fine particulate matter ($PM_{2.5}$), nitrogen dioxide (NO_2), and ground-level ozone (O_3). All three pollutants are required to calculate the AQHI.

Figure 33 summarizes the AQHI rating and the health messages for the at-risk population and the general population. The health risk is classified in categories by AQHI: Low Risk (1 to 3), Moderate Risk (4 to 6), High Risk (7 to 10), and Very High Risk (above 10).

The Esterhazy, Wawota and Weyburn stations are eligible for AQHI reporting. Table 15 summarizes the occurrence statistics for AQHI by the health risk categories. Generally, the air quality was good from health risk perspectives; more than 94% of time the AQHI was rated in the Low Risk category. The frequency of Moderate Risk category ranged from 1.8% to 4.2% for the three stations. High Risk air quality was detected at the Wawota station 0.7% of the time, and at Weyburn 0.9% of the time, mainly due to heavy smoke ($PM_{2.5}$) during forest fire season. Very High Risk air quality was detected at Wawota 0.2% of the time and at Weyburn 0.5% of the time, again due to heavy smoke ($PM_{2.5}$) during the summer fire season.

The fine particulate matter released from the forest fires resulted in some operational issues, and ultimately some data loss at a number of stations including Esterhazy. Due to this data loss, Table 15 shows 0.0% High and Very High Risk AQHI ratings detected at Esterhazy. In reality, there were periods with high risk, however the number of hours was not recorded.

Health Risk	Air Quality Health Index	Health Messages	
		At Risk Population*	General Population
Low	1 - 3	**Enjoy** your usual outdoor activities.	**Ideal** air quality for outdoor activities.
Moderate	4 - 6	**Consider reducing** or rescheduling strenuous activities outdoors if you are experiencing symptoms.	**No need to modify** your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.
High	7 - 10	**Reduce** or reschedule strenuous activities outdoors. Children and the elderly should also take it easy.	**Consider reducing** or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.
Very High	Above 10	**Avoid** strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.	**Reduce** or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

Figure 33 **Health Risk Classification and Health Messages for Air Quality Health Index (Environment Canada)**

Table 15 **Summary of Occurrence Statistics for AQHI Rating**

Monitoring Station	Occurrence Statistics	Occurrence Hours and Frequency by AQHI Risk Rating			
		Low Risk	Moderate Risk	High Risk	Very High Risk
Esterhazy	Occurrence Hours	6092	114	0	0
	Occurrence Frequency	98.2%	1.8%	0.0%	0.0%
Wawota	Occurrence Hours	7933	238	55	14
	Occurrence Frequency	96.3%	2.9%	0.7%	0.2%
Weyburn	Occurrence Hours	6830	301	67	36
	Occurrence Frequency	94.4%	4.2%	0.9%	0.5%

2.6 Air Quality Index (AQI)

The Estevan, Glen Ewen, Oxbow and Stoughton stations do not meet the reporting requirements for AQHI. The Air Quality Index (AQI) is used as an alternative index. The AQI index system is developed to provide the public with a meaningful and comparable measure of outdoor air quality. The AQI index is calculated from readings of five major air pollutants: SO_2, NO_2, O_3, $PM_{2.5}$, and carbon monoxide (CO). H_2S is not included as part of the AQI due to the fact that at low concentrations H_2S is a nuisance (odour) pollutant and not a health effect pollutant. A minimum of three pollutants is required to calculate AQI. Air quality is rated in four categories according to AQI value: Good (0 to 25), Fair (26 to 50), Poor (51 to 100), and Very Poor (>100). Table 16 summarizes the effects associated with the AQI ratings.

Table 17 summarizes the occurrence statistics for AQI rating. The Estevan station's AQI was calculated using SO_2, NO_2, and $PM_{2.5}$, as the station does not measure CO or O_3. The Glen Ewen AQI was calculated from SO_2, NO_2, and O_3, as the airpointer does not measure CO or $PM_{2.5}$. The Oxbow and Stoughton AQIs were calculated from SO_2, NO_2, and $PM_{2.5}$, as the airpointers do not measure CO or O_3.

The Air Quality Index at the Estevan station was rated Good for 97.6% of time, Fair 2.0% of time, and Poor 0.4% of the time. The Poor rating occurred on July 3 and again on August 29 and was due to high concentrations of $PM_{2.5}$. Estevan did not fall under the Very Poor category in 2015.

AQI at the Glen Ewen station was rated Good for 87.2% of time and Fair 12.8% of time. In 2015, the AQI rating never fell in the Poor or Very Poor category. Fair air quality was mostly detected between February and September.

The Air Quality Index at the Oxbow station was rated Good for 96.7% of time, was rated Fair 2.7% of time, Poor 0.3% of the time, and Very Poor 0.3% of the time. The Poor and Very Poor ratings were due to an increase in $PM_{2.5}$ concentration.

The Air Quality Index at the Stoughton station was rated Good for 96.2% of time, Fair 2.5% of the time, Poor 0.4% of the time, and Very Poor 1.0% of the time. The Poor and Very Poor ratings were due to an increase in $PM_{2.5}$ concentration. Generally, deteriorated air quality was more common in the summer months with spikes in June and July, but Poor and Very Poor air quality ratings did occur throughout the year.

Table 16 AQI Rating and Effect Description

AQI	Air Quality Rating	Effect Description
0-25	Good	Desirable Range: No known harmful effects to soil, water, vegetation, animals, materials, visibility or human health. The long-term goal is for air quality to be in this range all of the time in Canada.
26-50	Fair	Acceptable Range: Adequate protection against harmful effects to soil, water, vegetation, animals, materials, visibility and human health.
51-100	Poor	Tolerable Range: Not all aspects of human health or the environment are adequately protected from possible adverse effects. Long-term control action may be necessary, depending on the frequency, duration and circumstances of the readings.
>100	Very Poor	Intolerable Range: Continued high readings could pose a risk to public health.

Table 17 Summary of Occurrence Statistics for AQI Rating

Monitoring Station	Occurrence Statistics	Occurrence Hours and Frequency by AQHI Risk Rating			
		Good	Fair	Poor	Very Poor
Estevan	Occurrence Hours	4140	84	17	0
	Occurrence Frequency	97.6%	2.0%	0.4%	0.0%
Glen Ewen	Occurrence Hours	7010	1028	0	0
	Occurrence Frequency	87.2%	12.8%	0.0%	0.0%
Oxbow	Occurrence Hours	7199	199	24	21
	Occurrence Frequency	96.7%	2.7%	0.3%	0.3%
Stoughton	Occurrence Hours	6572	172	24	66
	Occurrence Frequency	96.2%	2.5%	0.4%	1.0%

3 AUDITED FINANCIAL STATEMENT

The 2015 audited financial summary for the SESAA is presented in the following table. The complete audited report is presented in Appendix K.

Table 18 SESAA Financial Summary for the Year 2015

Southeast Saskatchewan Airshed Association Inc.
Statement of Financial Position
As at December 31, 2015

	2015	2014
Assets		
Current		
Cash	101,993	64,903
Prepaid expenses and deposits	3,987	7,227
Goods and Services Tax receivable	-	3,370
	105,980	75,500
Capital assets *(Note 3)*	475,303	594,128
	581,283	669,628
Liabilities		
Current		
Accounts payable and accruals	27,281	21,889
Current portion deferred contributions *(Note 4)*	70,900	70,900
Goods and Services Tax payable	2,631	-
	100,812	92,789
Deferred contributions *(Note 4)*	137,250	208,149
	238,062	300,938
Net Assets		
Unrestricted net assets	343,221	368,690
	581,283	669,628

Approved on behalf of the Board of Directors

Darlene Sakires

Holland Thompson

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APPENDIX A SASKATCHEWAN AMBIENT AIR QUALITY STANDARDS

Table A-1 Saskatchewan Ambient Air Quality Standards (SAAQS)

TABLE 20: SASKATCHEWAN AMBIENT AIR QUALITY STANDARDS ($\mu g/m^3$)				
Air Pollutant	**1 Hour**	**8 Hours**	**24 Hours**	**Annual**
Particulate Matter ($PM_{2.5}$)			28[a]	10
Particulate Matter (PM_{10})			50	
Total Suspended Particulates (TSP)			100	60[b]
Nitrogen Dioxide (NO_2)	300 (159 ppb)		200 (106 ppb)	45[c] (24 ppb)
Sulphur Dioxide (SO_2)	450 (172 ppb)		125 (48 ppb)	20[c] (8 ppb)
Hydrogen Sulphide (H_2S)	15 (11 ppb)		5 (3.6 ppb)	
Ozone (O_3)	160 (82 ppb)	124[d] (63 ppb)		
Carbon Monoxide (CO)	15,000 (13,000 ppb)	6,000 (5,000 ppb)		

Footnotes

(a) The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations.
(b) Geometric means
(c) Arithmetic means
(d) The 3-year average of the annual 4th-highest daily maximum 8-hour average concentrations.

APPENDIX B ESTERHAZY STATION: CONTINUOUS MONITORING DATA

Table B-1 Esterhazy Station: Summary Statistics for Continuous Air Monitoring Results for 2015

Parameter	Unit	Calibration Hours	Hours of Valid Data	Annual Percent Uptime	Summary Statistics for 1-Hour Data		
					Average	Minimum	Maximum
NO	ppb	268	6318	72.1%	0.3	< 0.1	32.9
NO_2	ppb	268	6319	72.1%	1.6	< 0.1	25.1
NO_x	ppb	268	6319	72.1%	1.8	< 0.1	40.4
O_3	ppb	261	6348	72.5%	32.5	3.7	72.8
$PM_{2.5}$	$\mu g/m^3$	2	8370	95.5%	6.2	< 0.1	314.1
Precipitation (total)	mm	0	8708	99.4%	553.6	< 0.1	46.6
Ambient Temperature	˚C	0	8708	99.4%	3.9	(34.5)	33.1
Relative Humidity	%	0	8708	99.4%	68.2	16.5	93.7
Wind Speed	m/s	0	8708	99.4%	2.8	Calm	12.4

Table B-2 Esterhazy Station: Summary of Airpointer NO Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	712	95.7%	0.2	3.4	0.6	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
February	642	95.5%	0.2	3.0	0.7	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
March	705	94.8%	0.3	10.7	1.0	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
April	688	95.6%	0.2	1.5	0.3	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	705	94.8%	0.3	7.9	1.5	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
June	374	51.9%	0.7	32.9	2.1	97.9%	1.6%	0.3%	0.3%	0.0%	0.0%
July	0	0.0%	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
August	0	0.0%	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
September	370	51.4%	0.3	4.1	0.7	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
October	712	95.7%	0.3	4.9	0.9	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
November	680	94.4%	0.2	3.7	0.6	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
December	730	98.1%	0.4	20.9	2.2	99.7%	0.1%	0.1%	0.0%	0.0%	0.0%
Annual	6318	72.1%	0.3	32.9	2.2	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%

Table B-3 Esterhazy Station: Summary of Airpointer NO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	1-Hour Exceedance (no.)	Maximum 24-Hr Conc. (ppb)	24-Hour Exceedance (no.)	Percent of Data in each Concentration Range					
								0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	712	95.7%	1.8	8.7	-	4.4	-	96.5%	3.5%	0.0%	0.0%	0.0%	0.0%
February	642	95.5%	1.5	13.4	-	4.9	-	95.8%	4.2%	0.0%	0.0%	0.0%	0.0%
March	705	94.8%	1.4	7.7	-	3.5	-	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%
April	688	95.6%	1.1	3.9	-	2.4	-	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	705	94.8%	2.2	25.1	-	9.0	-	91.9%	6.8%	1.3%	0.0%	0.0%	0.0%
June	374	51.9%	3.2	15.4	-	6.2	-	78.1%	21.7%	0.3%	0.0%	0.0%	0.0%
July	0	0.0%	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
August	0	0.0%	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
September	371	51.5%	1.0	8.5	-	2.4	-	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%
October	712	95.7%	1.1	9.6	-	2.3	-	99.4%	0.6%	0.0%	0.0%	0.0%	0.0%
November	680	94.4%	1.3	7.5	-	3.7	-	98.2%	1.8%	0.0%	0.0%	0.0%	0.0%
December	730	98.1%	1.8	12.9	-	4.9	-	96.8%	3.2%	0.0%	0.0%	0.0%	0.0%
Annual	6319	72.1%	1.6	25.1	0	9.0	0	96.2%	3.7%	0.2%	0.0%	0.0%	0.0%

Table B-4 Esterhazy Station: Summary of Airpointer NO_X Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	Maximum 24-Hr Conc. (ppb)	Percent of Data in each Concentration Range					
						0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	712	95.7%	1.9	8.6	4.9	95.6%	4.4%	0.0%	0.0%	0.0%	0.0%
February	642	95.5%	1.7	13.5	5.5	94.2%	5.8%	0.0%	0.0%	0.0%	0.0%
March	705	94.8%	1.6	15.0	4.3	97.9%	2.0%	0.1%	0.0%	0.0%	0.0%
April	688	95.6%	1.2	4.3	2.4	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	705	94.8%	2.4	28.1	10.4	91.1%	7.5%	1.4%	0.0%	0.0%	0.0%
June	374	51.9%	3.9	40.4	8.3	76.5%	19.8%	3.5%	0.3%	0.0%	0.0%
July	0	0.0%	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
August	0	0.0%	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
September	371	51.5%	1.3	9.3	2.8	97.8%	2.2%	0.0%	0.0%	0.0%	0.0%
October	712	95.7%	1.4	10.0	3.2	98.5%	1.5%	0.0%	0.0%	0.0%	0.0%
November	680	94.4%	1.5	11.1	4.1	97.8%	2.2%	0.0%	0.0%	0.0%	0.0%
December	730	98.1%	2.2	33.8	7.1	94.0%	5.8%	0.1%	0.1%	0.0%	0.0%
Annual	6319	72.1%	1.8	40.4	10.4	95.1%	4.5%	0.4%	0.0%	0.0%	0.0%

Table B-5 Esterhazy Station: Summary of Airpointer O_3 Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	1-Hour Exceedance (no.)	Maximum 24-Hr Conc. (ppb)	Percent of Data in each Concentration Range					
							0 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 40	40 ≤ C < 60	60 ≤ C < 82	C ≥ 82
January	711	95.6%	37.47	48.7	-	44.8	0.0%	0.0%	65.0%	35.0%	0.0%	0.0%
February	633	94.2%	41.23	56.2	-	50.5	0.0%	0.0%	46.0%	54.0%	0.0%	0.0%
March	712	95.7%	41.21	62.0	-	55.0	0.0%	2.0%	42.1%	55.1%	0.8%	0.0%
April	689	95.7%	37.77	59.1	-	48.0	0.0%	1.6%	58.1%	40.3%	0.0%	0.0%
May	712	95.7%	39.56	72.8	-	51.9	0.8%	7.0%	43.4%	41.7%	7.0%	0.0%
June	379	52.6%	37.88	67.2	-	48.7	2.6%	7.1%	42.5%	42.5%	5.3%	0.0%
July	0	0.0%	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
August	0	0.0%	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
September	371	51.5%	23.61	43.6	-	30.9	2.4%	32.9%	60.9%	3.8%	0.0%	0.0%
October	712	95.7%	22.89	45.5	-	31.8	2.2%	37.1%	57.9%	2.8%	0.0%	0.0%
November	699	97.1%	22.26	36.6	-	34.1	0.7%	40.2%	59.1%	0.0%	0.0%	0.0%
December	730	98.1%	20.44	32.2	-	29.0	2.3%	43.6%	54.1%	0.0%	0.0%	0.0%
Annual	6348	72.5%	32.48	72.8	-	55.0	1.0%	17.1%	53.1%	27.6%	1.2%	0.0%

Table B-6 Esterhazy Station: Summary of Airpointer $PM_{2.5}$ Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. ($\mu g/m^3$)	Maximum 1-Hr Conc. ($\mu g/m^3$)	Maximum 24-Hr Conc. ($\mu g/m^3$)	24-Hour Exceedance (no.)	Percent of Data in each Concentration Range					
							0 ≤ C < 2	2 ≤ C < 4	4 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 30	C ≥ 30
January	744	100.0%	4.1	30.6	8.8	-	22.6%	36.0%	37.1%	4.0%	0.1%	0.1%
February	672	100.0%	4.3	16.4	7.4	-	12.1%	41.1%	44.9%	1.9%	0.0%	0.0%
March	744	100.0%	4.4	18.7	9.3	-	26.1%	32.9%	33.5%	7.5%	0.0%	0.0%
April	720	100.0%	4.4	58.2	10.2	-	34.9%	25.6%	30.7%	7.4%	0.8%	0.7%
May	744	100.0%	7.0	40.7	16.5	-	20.4%	18.1%	37.2%	19.8%	3.8%	0.7%
June	661	91.8%	11.3	314.1	107.3	2	17.5%	19.8%	35.6%	18.3%	4.5%	4.2%
July	634	85.2%	12.1	195.0	81.8	5	10.1%	25.7%	39.0%	12.1%	5.4%	7.7%
August	721	96.9%	8.6	92.4	47.1	2	17.1%	24.1%	37.6%	12.2%	4.2%	4.9%
September	577	80.1%	5.1	29.3	10.1	-	20.3%	32.1%	36.4%	10.7%	0.5%	0.0%
October	744	100.0%	5.5	58.7	18.2	-	21.2%	31.5%	33.5%	11.3%	1.7%	0.8%
November	668	92.8%	4.0	18.1	10.3	-	30.1%	36.5%	27.5%	5.8%	0.0%	0.0%
December	741	99.6%	4.7	55.0	13.6	-	20.8%	36.3%	36.3%	6.1%	0.1%	0.4%
Annual	8370	95.5%	6.2	314.1	107.3	9	21.3%	30.0%	35.7%	9.7%	1.7%	1.6%

Table B-7 Esterhazy Station: Summary of Airpointer Precipitation Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Total Precip.	Maximum 1-Hr Precip.	Maximum 24-Hr Precip.	Percent of Data in each Precipitation Range					
	(no.)	(%)	(mm)	(mm)	(mm)	<=5	5 ~ 10	10 ~ 25	25 ~ 50	50 ~ 75	>75
January	744	100.0%	0.1	0.1	0.1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
February	672	100.0%	2.5	1.6	2.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
March	744	100.0%	2.6	2.1	2.1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
April	720	100.0%	4.0	1.0	1.4	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	744	100.0%	50.9	9.1	22.8	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
June	680	94.4%	62.1	15.9	25.9	99.4%	0.4%	0.1%	0.0%	0.0%	0.0%
July	744	100.0%	263.7	46.6	100.0	98.3%	0.5%	0.9%	0.3%	0.0%	0.0%
August	744	100.0%	39.0	6.7	12.1	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
September	719	99.9%	65.3	14.0	40.7	99.3%	0.6%	0.1%	0.0%	0.0%	0.0%
October	744	100.0%	49.3	7.9	18.5	99.6%	0.4%	0.0%	0.0%	0.0%	0.0%
November	712	98.9%	10.9	2.4	5.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
December	741	99.6%	3.1	1.4	2.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Annual	8708	99.4%	553.6	46.6	100.0	99.7%	0.2%	0.1%	0.0%	0.0%	0.0%

Table B-8 Esterhazy Station: Summary of Airpointer Ambient Temperature Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Temp.	Minimum 1-Hr Temp.	Maximum 1-Hr Temp.	Percent of Data in each Temperature Range					
	(no.)	(%)	(˚C)	(˚C)	(˚C)	<=-30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	744	100.0%	(12.6)	(34.5)	3.9	2.3%	39.0%	50.0%	8.7%	0.0%	0.0%
February	672	100.0%	(18.3)	(34.0)	(0.6)	1.5%	71.0%	27.5%	0.0%	0.0%	0.0%
March	744	100.0%	(2.9)	(28.7)	12.5	0.0%	9.3%	55.1%	35.6%	0.0%	0.0%
April	720	100.0%	5.4	(7.3)	23.8	0.0%	0.0%	26.0%	65.7%	8.3%	0.0%
May	744	100.0%	10.9	(2.8)	27.3	0.0%	0.0%	5.0%	67.6%	27.4%	0.0%
June	680	94.4%	16.7	2.7	28.8	0.0%	0.0%	0.0%	38.2%	61.8%	0.0%
July	744	100.0%	19.1	7.9	33.1	0.0%	0.0%	0.0%	19.4%	79.3%	1.3%
August	744	100.0%	17.5	4.1	32.2	0.0%	0.0%	0.0%	37.0%	61.6%	1.5%
September	719	99.9%	12.6	(1.1)	29.4	0.0%	0.0%	0.6%	71.2%	28.2%	0.0%
October	744	100.0%	6.6	(3.0)	22.9	0.0%	0.0%	8.7%	85.1%	6.2%	0.0%
November	712	98.9%	(1.7)	(16.1)	12.6	0.0%	1.1%	51.8%	47.1%	0.0%	0.0%
December	741	99.6%	(8.1)	(28.0)	8.1	0.0%	16.3%	68.2%	15.5%	0.0%	0.0%
Annual	8708	99.4%	3.9	(34.5)	33.1	0.3%	11.1%	24.5%	41.1%	22.7%	0.2%

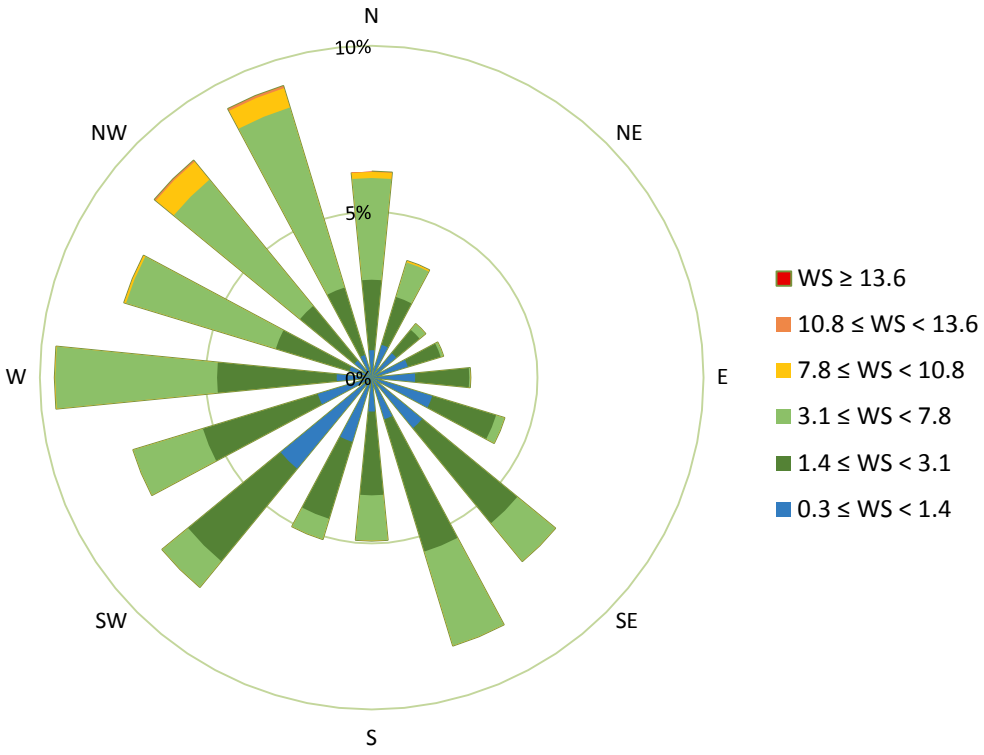
Table B-9 Esterhazy Station: Summary of Airpointer Relative Humidity Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average RH	Minimum 1-Hr RH	Maximum 1-Hr RH	Percent of Data in each Relative Humidity Range					
	(no.)	(%)	(%)	(%)	(%)	<=15	15 ~ 30	30 ~ 60	60 ~ 80	80 ~ 90	>90
January	744	100.0%	74	52	89	0.0%	0.0%	3.6%	73.4%	23.0%	0.0%
February	672	100.0%	69	43	85	0.0%	0.0%	10.4%	87.6%	1.9%	0.0%
March	744	100.0%	70	32	88	0.0%	0.0%	20.7%	58.9%	20.4%	0.0%
April	720	100.0%	55	18	88	0.0%	11.9%	43.1%	36.1%	8.9%	0.0%
May	744	100.0%	53	16	90	0.0%	20.0%	37.8%	28.0%	14.1%	0.1%
June	680	94.4%	62	27	93	0.0%	2.1%	42.1%	34.4%	17.8%	3.7%
July	744	100.0%	72	26	94	0.0%	0.4%	26.6%	30.6%	29.6%	12.8%
August	744	100.0%	72	33	93	0.0%	0.0%	26.3%	32.9%	29.2%	11.6%
September	719	99.9%	68	27	93	0.0%	1.9%	27.5%	40.1%	22.8%	7.6%
October	744	100.0%	72	30	92	0.0%	0.0%	23.9%	40.5%	28.8%	6.9%
November	712	98.9%	76	45	91	0.0%	0.0%	6.5%	54.8%	36.2%	2.5%
December	741	99.6%	75	47	88	0.0%	0.0%	4.2%	61.9%	33.9%	0.0%
Annual	8708	99.4%	68	16	94	0.0%	3.1%	22.7%	48.1%	22.4%	3.8%

Table B-10 Esterhazy Station: Airpointer Wind Frequency Table for the Year 2015

Wind Direction Sector	Percent Data in each Wind Speed Range, wind speed unit m/s						
	0.3 ≤ WS < 1.4	1.4 ≤ WS < 3.1	3.1 ≤ WS < 7.8	7.8 ≤ WS < 10.8	10.8 ≤ WS < 13.6	WS ≥ 13.6	Totals
North NorthEast	1.0%	1.5%	1.1%	0.0%	0.0%	0.0%	3.7%
NorthEast	1.0%	0.9%	0.2%	0.0%	0.0%	0.0%	2.1%
East NorthEast	1.1%	1.0%	0.1%	0.0%	0.0%	0.0%	2.3%
East	1.3%	1.6%	0.0%	0.0%	0.0%	0.0%	3.0%
East SouthEast	1.9%	2.0%	0.3%	0.0%	0.0%	0.0%	4.2%
SouthEast	2.0%	3.7%	1.5%	0.0%	0.0%	0.0%	7.2%
South SouthEast	1.3%	4.2%	3.0%	0.0%	0.0%	0.0%	8.4%
South	1.0%	2.5%	1.4%	0.0%	0.0%	0.0%	4.9%
South SouthWest	2.0%	2.4%	0.6%	0.0%	0.0%	0.0%	5.1%
Southwest	3.5%	3.6%	1.0%	0.0%	0.0%	0.0%	8.2%
West SouthWest	1.7%	3.6%	2.2%	0.0%	0.0%	0.0%	7.5%
West	1.1%	3.6%	4.9%	0.0%	0.0%	0.0%	9.6%
West NorthWest	0.7%	2.3%	4.7%	0.1%	0.0%	0.0%	7.8%
NorthWest	0.7%	2.1%	4.9%	0.7%	0.0%	0.0%	8.5%
North NorthWest	0.7%	2.1%	5.7%	0.6%	0.1%	0.0%	9.2%
North	0.8%	2.1%	3.1%	0.2%	0.0%	0.0%	6.2%
Total	21.9%	39.4%	34.6%	1.6%	0.1%	0.0%	97.7%

Percent Calm (<0.3 m/s)	2.4%
Number of Valid Hourly-Average Data	8708
Total Workable Hours in Time Period	8760



APPENDIX C ESTEVAN STATION: CONTINUOUS MONITORING DATA

Table C-1 Estevan Station: Summary Statistics for Continuous Air Monitoring Results for 2015

Parameter	Unit	Calibration Hours	Hours of Valid Data	Annual Percent Uptime	Summary Statistics for 1-Hour Data		
					Average	Minimum	Maximum
SO_2	ppb	9	4241	96.0%	2.1	< 0.1	186.5
NO	ppb	9	4239	96.0%	2.7	< 0.1	64.7
NO_2	ppb	9	4241	96.0%	3.6	< 0.1	29.3
NO_x	ppb	9	4241	96.0%	6.1	< 0.1	94.0
$PM_{2.5}$	µg/m^3	2	4241	96.0%	4.8	< 0.1	63.4
Ambient Temperature	˚C	2	4388	99.4%	7.2	(16.2)	25.8
Wind Speed	m/s	0	4263	96.5%	4.6	Calm	21.4

Table C-2 Estevan Station: Summary of SO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	(no.)	0 ≤ C < 1	1 ≤ C < 5	5 ≤ C < 10	10 ≤ C < 57	57 ≤ C < 172	C ≥ 172
January	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
February	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
March	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
April	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
May	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
June	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
July	744	100.0%	1.2	51.4	-	4.9	-	76.2%	19.2%	3.2%	1.3%	0.0%	0.0%
August	738	99.2%	2.2	25.9	-	5.9	-	45.8%	48.0%	3.4%	2.8%	0.0%	0.0%
September	563	78.2%	1.9	32.7	-	6.3	-	39.1%	53.5%	4.4%	3.0%	0.0%	0.0%
October	737	99.1%	1.3	27.0	-	4.3	-	85.3%	11.7%	2.0%	0.9%	0.0%	0.0%
November	715	99.3%	2.8	71.8	-	10.4	-	68.4%	22.8%	3.4%	5.3%	0.1%	0.0%
December	744	100.0%	3.2	186.5	1	20.5	-	33.3%	60.2%	2.4%	3.6%	0.3%	0.1%
Annual	4241	96.0%	2.1	186.5	1	20.5	0	58.7%	35.3%	3.1%	2.8%	0.1%	0.0%

Table C-3 Estevan Station: Summary of NO Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	Maximum 24-Hr Conc. (ppb)	Percent of Data in each Concentration Range					
						0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
February	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
March	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
April	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
May	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
June	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
July	744	100.0%	1.8	25.0	3.6	97.7%	2.0%	0.3%	0.0%	0.0%	0.0%
August	738	99.2%	3.1	18.0	4.5	95.3%	4.6%	0.1%	0.0%	0.0%	0.0%
September	563	78.2%	3.0	17.7	5.2	86.0%	13.9%	0.2%	0.0%	0.0%	0.0%
October	735	98.8%	2.6	55.7	5.4	87.9%	11.7%	0.3%	0.1%	0.0%	0.0%
November	715	99.3%	3.2	60.9	12.2	85.2%	12.3%	1.4%	1.1%	0.0%	0.0%
December	744	100.0%	2.5	64.7	7.4	91.8%	6.6%	1.2%	0.4%	0.0%	0.0%
Annual	4239	96.0%	2.7	64.7	12.2	90.9%	8.3%	0.6%	0.3%	0.0%	0.0%

Table C-4 Estevan Station: Summary of NO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	1-Hour Exceedance (no.)	Maximum 24-Hr Conc. (ppb)	24-Hour Exceedance (no.)	Percent of Data in each Concentration Range					
								0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
February	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
March	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
April	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
May	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
June	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
July	744	100.0%	2.4	21.0	-	4.5	-	94.0%	5.8%	0.3%	0.0%	0.0%	0.0%
August	738	99.2%	2.6	21.0	-	7.2	-	88.8%	10.8%	0.4%	0.0%	0.0%	0.0%
September	563	78.2%	2.4	20.0	-	5.4	-	89.2%	10.1%	0.7%	0.0%	0.0%	0.0%
October	737	99.1%	3.8	23.3	-	7.5	-	76.3%	22.7%	1.1%	0.0%	0.0%	0.0%
November	715	99.3%	4.2	24.9	-	12.7	-	72.9%	24.2%	2.9%	0.0%	0.0%	0.0%
December	744	100.0%	5.7	29.3	-	9.2	-	52.4%	44.6%	3.0%	0.0%	0.0%	0.0%
Annual	4241	96.0%	3.6	29.3	0	12.7	0	78.5%	20.1%	1.4%	0.0%	0.0%	0.0%

Table C-5 Estevan Station: Summary of NO_X Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	Maximum 24-Hr Conc. (ppb)	Percent of Data in each Concentration Range					
						0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
February	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
March	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
April	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
May	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
June	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
July	744	100.0%	3.4	44.8	6.6	83.5%	14.8%	1.6%	0.1%	0.0%	0.0%
August	738	99.2%	5.7	29.0	10.5	63.3%	34.1%	2.6%	0.0%	0.0%	0.0%
September	563	78.2%	5.4	30.4	10.2	62.0%	33.4%	4.4%	0.2%	0.0%	0.0%
October	737	99.1%	6.4	60.8	12.5	53.1%	38.9%	7.7%	0.3%	0.0%	0.0%
November	715	99.3%	7.4	75.9	24.9	52.0%	37.5%	7.6%	2.9%	0.0%	0.0%
December	744	100.0%	8.2	94.0	14.6	31.3%	60.1%	7.0%	1.6%	0.0%	0.0%
Annual	4241	96.0%	6.1	94.0	24.9	57.4%	36.6%	5.2%	0.9%	0.0%	0.0%

Table C-6 Estevan Station: Summary of $PM_{2.5}$ Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. ($\mu g/m^3$)	Maximum 1-Hr Conc. ($\mu g/m^3$)	Maximum 24-Hr Conc. ($\mu g/m^3$)	24-Hour Exceedance (no.)	Percent of Data in each Concentration Range					
							0 ≤ C < 2	2 ≤ C < 4	4 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 30	C ≥ 30
January	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
February	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
March	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
April	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
May	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
June	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
July	744	100.0%	7.3	49.8	32.7	1	13.6%	30.9%	34.5%	13.3%	4.2%	3.5%
August	738	99.2%	6.3	63.4	37.8	1	6.4%	36.9%	47.6%	4.6%	2.6%	2.0%
September	563	78.2%	3.8	11.1	6.1	-	9.9%	54.7%	34.8%	0.5%	0.0%	0.0%
October	737	99.1%	3.9	11.4	5.4	-	0.0%	65.8%	33.9%	0.3%	0.0%	0.0%
November	715	99.3%	3.8	23.3	6.7	-	1.0%	71.2%	27.1%	0.4%	0.3%	0.0%
December	744	100.0%	3.6	13.6	4.9	-	0.0%	76.1%	23.7%	0.3%	0.0%	0.0%
Annual	4241	96.0%	4.8	63.4	37.8	2	5.0%	55.9%	33.6%	3.4%	1.2%	1.0%

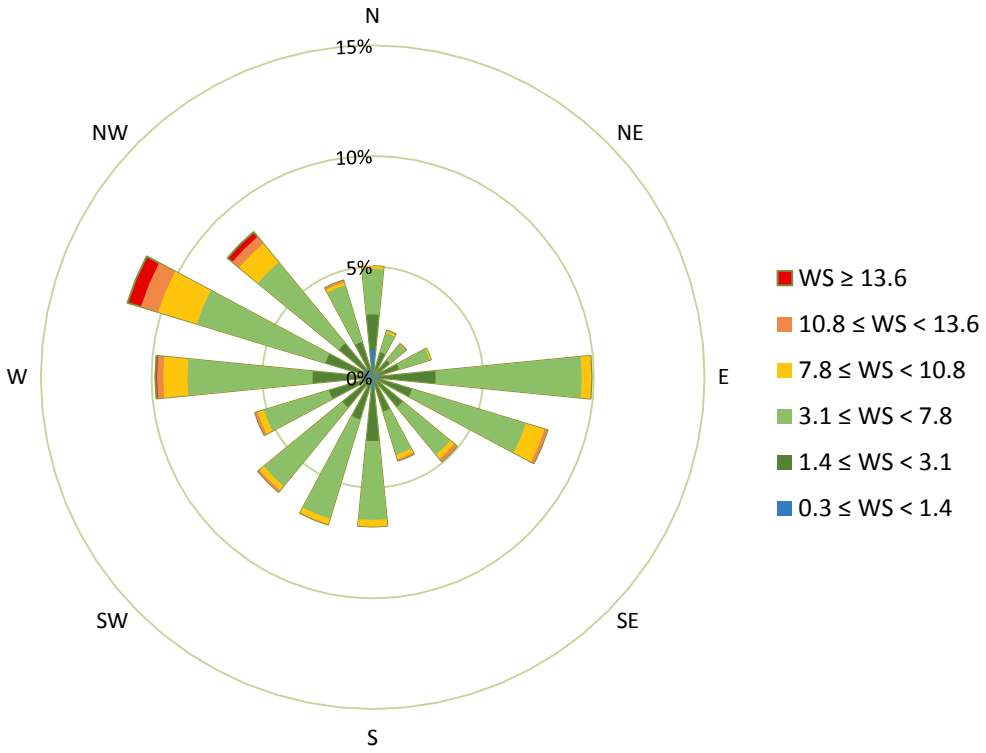
Table C-7 Estevan Station: Summary of Ambient Temperature Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Temp.	Minimum 1-Hr Temp.	Maximum 1-Hr Temp.	Percent of Data in each Temperature Range					
	(no.)	(%)	(˚C)	(˚C)	(˚C)	<=-30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
February	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
March	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
April	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
May	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
June	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
July	744	100.0%	14.6	6.7	23.2	0.0%	0.0%	0.0%	56.5%	43.5%	0.0%
August	738	99.2%	14.1	3.6	25.8	0.0%	0.0%	0.0%	57.6%	42.4%	0.0%
September	710	98.6%	10.8	1.9	24.1	0.0%	0.0%	0.0%	84.9%	15.1%	0.0%
October	737	99.1%	6.0	(1.0)	18.8	0.0%	0.0%	2.6%	95.9%	1.5%	0.0%
November	715	99.3%	0.4	(10.1)	11.2	0.0%	0.0%	38.3%	61.7%	0.0%	0.0%
December	744	100.0%	(2.9)	(16.2)	7.4	0.0%	0.8%	73.5%	25.7%	0.0%	0.0%
Annual	4388	99.4%	7.2	(16.2)	25.8	0.0%	0.1%	19.1%	63.5%	17.2%	0.0%

Table C-8 Estevan Station: Wind Frequency Table for the Year 2015

Wind Direction Sector	Percent Data in each Wind Speed Range, wind speed unit m/s						
	0.3 ≤ WS < 1.4	1.4 ≤ WS < 3.1	3.1 ≤ WS < 7.8	7.8 ≤ WS < 10.8	10.8 ≤ WS < 13.6	WS ≥ 13.6	Totals
North NorthEast	0.2%	1.0%	0.9%	0.1%	0.0%	0.0%	2.2%
NorthEast	0.2%	0.8%	0.9%	0.0%	0.0%	0.0%	1.9%
East NorthEast	0.3%	1.0%	1.4%	0.1%	0.0%	0.0%	2.7%
East	0.4%	2.4%	6.6%	0.4%	0.0%	0.0%	9.9%
East SouthEast	0.3%	1.5%	5.4%	0.9%	0.1%	0.0%	8.3%
SouthEast	0.2%	1.5%	2.8%	0.2%	0.2%	0.0%	4.9%
South SouthEast	0.4%	1.2%	2.0%	0.2%	0.1%	0.0%	3.9%
South	0.6%	2.3%	3.6%	0.3%	0.0%	0.0%	6.8%
South SouthWest	0.4%	1.6%	4.7%	0.3%	0.0%	0.0%	7.0%
Southwest	0.3%	1.5%	4.6%	0.3%	0.1%	0.0%	6.7%
West SouthWest	0.4%	1.6%	3.1%	0.3%	0.1%	0.0%	5.6%
West	0.4%	2.3%	5.7%	1.1%	0.3%	0.1%	9.8%
West NorthWest	0.4%	1.9%	6.1%	1.8%	0.8%	0.6%	11.6%
NorthWest	0.5%	1.5%	4.7%	1.1%	0.4%	0.3%	8.5%
North NorthWest	0.4%	1.3%	2.7%	0.1%	0.1%	0.0%	4.6%
North	1.2%	1.6%	2.1%	0.1%	0.0%	0.0%	5.0%
Total	6.6%	25.0%	57.2%	7.4%	2.3%	1.0%	99.4%

Percent Calm (<0.3 m/s)	0.6%
Number of Valid Hourly-Average Data	4263
Total Workable Hours in Time Period	4416



APPENDIX D GLEN EWEN STATION: CONTINUOUS MONITORING DATA

Table D-1 Glen Ewen Station: Summary Statistics for Continuous Air Monitoring Results for 2015

Parameter	Unit	Calibration Hours	Hours of Valid Data	Annual Percent Uptime	Summary Statistics for 1-Hour Data		
					Average	Minimum	Maximum
SO_2	ppb	334	8050	91.9%	1.2	< 0.1	56.5
NO	ppb	334	8040	91.8%	0.4	< 0.1	19.8
NO_2	ppb	334	8040	91.8%	1.9	< 0.1	14.8
NO_x	ppb	334	8040	91.8%	2.2	< 0.1	36.6
O_3	ppb	334	8050	91.9%	27.2	1.0	73.1
H_2S	ppb	383	7827	89.4%	0.7	< 0.1	31.7
Precipitation (total)	mm	0	8393	95.8%	358.4	< 0.1	23.7
Ambient Temperature	˚C	0	8393	95.8%	4.6	(34.4)	37.4
Relative Humidity	%	0	8393	95.8%	70.7	16.2	94.8
Wind Speed	m/s	0	8386	95.7%	3.2	Calm	19.5

Table D-2 Glen Ewen Station: Summary of Airpointer SO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	(no.)	0 ≤ C < 1	1 ≤ C < 5	5 ≤ C < 10	10 ≤ C < 57	57 ≤ C < 172	C ≥ 172
January	711	95.6%	2.3	36.0	-	7.0	-	53.9%	32.2%	9.1%	4.8%	0.0%	0.0%
February	643	95.7%	1.6	14.7	-	3.7	-	57.9%	36.1%	4.5%	1.6%	0.0%	0.0%
March	707	95.0%	1.2	22.6	-	5.6	-	74.3%	19.9%	4.2%	1.6%	0.0%	0.0%
April	359	49.9%	0.7	16.5	-	1.7	-	86.4%	10.9%	1.4%	1.4%	0.0%	0.0%
May	697	93.7%	0.6	21.5	-	3.0	-	89.5%	8.8%	1.0%	0.7%	0.0%	0.0%
June	680	94.4%	1.0	27.8	-	4.1	-	75.9%	22.1%	1.3%	0.7%	0.0%	0.0%
July	712	95.7%	1.1	27.6	-	3.2	-	78.1%	19.0%	2.1%	0.8%	0.0%	0.0%
August	709	95.3%	0.9	56.5	-	4.3	-	81.5%	15.9%	1.8%	0.7%	0.0%	0.0%
September	680	94.4%	0.8	8.9	-	1.9	-	81.6%	16.2%	2.2%	0.0%	0.0%	0.0%
October	712	95.7%	0.8	11.7	-	2.9	-	83.8%	14.2%	1.8%	0.1%	0.0%	0.0%
November	708	98.3%	1.2	31.3	-	6.1	-	74.4%	20.6%	3.2%	1.7%	0.0%	0.0%
December	732	98.4%	1.5	25.3	-	5.4	-	63.3%	29.4%	5.6%	1.8%	0.0%	0.0%
Annual	8050	91.9%	1.2	56.5	0	7.0	0	74.6%	20.8%	3.3%	1.3%	0.0%	0.0%

Table D-3 Glen Ewen Station: Summary of Airpointer NO Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	711	95.6%	0.5	6.6	0.9	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
February	643	95.7%	0.5	5.5	1.3	99.5%	0.5%	0.0%	0.0%	0.0%	0.0%
March	706	94.9%	0.4	11.9	2.3	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
April	358	49.7%	0.2	1.7	0.4	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	695	93.4%	0.3	5.5	0.6	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
June	675	93.8%	0.3	3.6	0.7	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
July	712	95.7%	0.4	7.7	0.7	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
August	709	95.3%	0.3	6.7	0.8	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
September	680	94.4%	0.3	5.9	0.6	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
October	712	95.7%	0.3	3.8	0.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
November	708	98.3%	0.4	19.8	1.9	99.7%	0.1%	0.1%	0.0%	0.0%	0.0%
December	731	98.3%	0.3	5.6	0.8	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
Annual	8040	91.8%	0.4	19.8	2.3	99.8%	0.1%	0.0%	0.0%	0.0%	0.0%

Table D-4 Glen Ewen Station: Summary of Airpointer NO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	(no.)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	711	95.6%	2.9	13.3	-	5.2	-	89.7%	10.3%	0.0%	0.0%	0.0%	0.0%
February	643	95.7%	2.4	10.8	-	4.5	-	92.7%	7.3%	0.0%	0.0%	0.0%	0.0%
March	706	94.9%	1.9	13.0	-	4.6	-	98.2%	1.8%	0.0%	0.0%	0.0%	0.0%
April	358	49.7%	1.7	6.2	-	3.3	-	99.2%	0.8%	0.0%	0.0%	0.0%	0.0%
May	695	93.4%	2.4	7.8	-	4.4	-	92.1%	7.9%	0.0%	0.0%	0.0%	0.0%
June	675	93.8%	2.2	13.2	-	3.5	-	98.4%	1.6%	0.0%	0.0%	0.0%	0.0%
July	712	95.7%	1.4	7.3	-	3.0	-	99.4%	0.6%	0.0%	0.0%	0.0%	0.0%
August	709	95.3%	1.4	8.0	-	3.8	-	98.0%	2.0%	0.0%	0.0%	0.0%	0.0%
September	680	94.4%	1.2	8.0	-	2.1	-	99.0%	1.0%	0.0%	0.0%	0.0%	0.0%
October	712	95.7%	1.4	6.5	-	2.3	-	99.4%	0.6%	0.0%	0.0%	0.0%	0.0%
November	708	98.3%	1.5	14.8	-	4.6	-	97.3%	2.7%	0.0%	0.0%	0.0%	0.0%
December	731	98.3%	1.9	10.4	-	4.6	-	95.8%	4.2%	0.0%	0.0%	0.0%	0.0%
Annual	8040	91.8%	1.9	14.8	0	5.2	0	96.5%	3.5%	0.0%	0.0%	0.0%	0.0%

Table D-5 Glen Ewen Station: Summary of Airpointer NO_X Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	711	95.6%	3.3	17.3	6.0	82.7%	17.2%	0.1%	0.0%	0.0%	0.0%
February	643	95.7%	2.9	16.0	5.7	86.8%	13.1%	0.2%	0.0%	0.0%	0.0%
March	706	94.9%	2.2	23.4	6.8	95.5%	4.2%	0.3%	0.0%	0.0%	0.0%
April	358	49.7%	1.9	6.4	3.5	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%
May	695	93.4%	2.6	11.0	4.7	89.4%	10.6%	0.0%	0.0%	0.0%	0.0%
June	675	93.8%	2.5	14.7	3.9	95.9%	4.1%	0.0%	0.0%	0.0%	0.0%
July	712	95.7%	1.9	13.2	3.4	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%
August	709	95.3%	1.9	10.0	4.3	96.5%	3.5%	0.0%	0.0%	0.0%	0.0%
September	680	94.4%	1.5	9.3	2.6	97.9%	2.1%	0.0%	0.0%	0.0%	0.0%
October	712	95.7%	1.7	8.7	2.7	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%
November	708	98.3%	2.2	36.6	7.6	92.1%	7.6%	0.1%	0.1%	0.0%	0.0%
December	731	98.3%	2.3	14.5	5.3	93.0%	7.0%	0.0%	0.0%	0.0%	0.0%
Annual	8040	91.8%	2.2	36.6	7.6	93.7%	6.2%	0.1%	0.0%	0.0%	0.0%

Table D-6 Glen Ewen Station: Summary of Airpointer O_3 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	0 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 40	40 ≤ C < 60	60 ≤ C < 82	C ≥ 82
January	711	95.6%	30.6	41.6	-	38.3	0.1%	4.6%	94.1%	1.1%	0.0%	0.0%
February	643	95.7%	35.2	47.8	-	43.5	0.0%	0.0%	84.8%	15.2%	0.0%	0.0%
March	707	95.0%	33.8	49.0	-	44.2	0.0%	6.4%	68.3%	25.3%	0.0%	0.0%
April	361	50.1%	33.1	60.1	-	46.3	0.0%	13.0%	62.0%	24.7%	0.3%	0.0%
May	697	93.7%	38.8	73.1	-	47.8	0.3%	5.6%	50.9%	35.9%	7.3%	0.0%
June	680	94.4%	35.4	62.6	-	49.6	1.8%	11.6%	47.2%	37.4%	2.1%	0.0%
July	712	95.7%	26.4	53.9	-	34.1	5.5%	26.8%	55.2%	12.5%	0.0%	0.0%
August	709	95.3%	23.7	57.9	-	37.7	12.8%	31.2%	44.9%	11.1%	0.0%	0.0%
September	680	94.4%	20.6	54.1	-	32.3	12.1%	42.1%	43.8%	2.1%	0.0%	0.0%
October	712	95.7%	18.5	38.7	-	25.0	15.2%	45.9%	38.9%	0.0%	0.0%	0.0%
November	707	98.2%	16.4	32.0	-	25.3	17.8%	53.2%	29.0%	0.0%	0.0%	0.0%
December	731	98.3%	18.1	30.5	-	27.1	5.3%	56.1%	38.6%	0.0%	0.0%	0.0%
Annual	8050	91.9%	27.2	73.1	-	49.6	6.2%	25.5%	54.3%	13.2%	0.8%	0.0%

Table D-7 Glen Ewen Station: Summary of Airpointer H_2S Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	1-Hour Exceedance (no.)	Maximum 24-Hr Conc. (ppb)	24-Hour Exceedance (no.)	Percent of Data in each Concentration Range					
								0 ≤ C < 1	1 ≤ C < 3.6	3.6 ≤ C < 5	5 ≤ C < 8	8 ≤ C < 10.8	C ≥ 10.8
January	679	91.3%	0.2	4.6	-	0.8	-	98.8%	1.0%	0.1%	0.0%	0.0%	0.0%
February	614	91.4%	0.1	5.4	-	0.6	-	99.7%	0.2%	0.0%	0.2%	0.0%	0.0%
March	673	90.5%	0.2	2.1	-	0.5	-	99.6%	0.4%	0.0%	0.0%	0.0%	0.0%
April	342	47.5%	0.3	2.6	-	0.7	-	97.4%	2.6%	0.0%	0.0%	0.0%	0.0%
May	665	89.4%	0.6	15.8	1	2.8	-	86.9%	11.6%	0.5%	0.6%	0.3%	0.2%
June	650	90.3%	1.6	31.7	11	4.7	3	63.7%	23.2%	4.8%	3.8%	2.6%	1.8%
July	712	95.7%	2.2	23.2	23	4.6	6	46.3%	37.9%	4.8%	6.0%	1.7%	3.2%
August	709	95.3%	1.5	20.5	10	4.5	3	60.1%	29.6%	4.7%	2.5%	1.7%	1.4%
September	680	94.4%	0.7	7.5	-	2.1	-	81.9%	16.0%	1.6%	0.4%	0.0%	0.0%
October	712	95.7%	0.3	3.2	-	0.7	-	95.1%	4.9%	0.0%	0.0%	0.0%	0.0%
November	681	94.6%	0.2	1.2	-	0.6	-	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
December	711	95.6%	0.2	6.8	-	0.9	-	99.3%	0.4%	0.0%	0.3%	0.0%	0.0%
Annual	7827	89.4%	0.7	31.7	45	4.7	12	85.0%	11.2%	1.4%	1.2%	0.5%	0.6%

Table D-8 Glen Ewen Station: Summary of Airpointer Precipitation Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Total Precip. (mm)	Maximum 1-Hr Precip. (mm)	Maximum 24-Hr Precip. (mm)	Percent of Data in each Precipitation Range					
						<=5	5 ~ 10	10 ~ 25	25 ~ 50	50 ~ 75	>75
January	743	99.9%	2.0	1.7	2.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
February	672	100.0%	10.0	6.4	9.8	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
March	740	99.5%	2.2	1.0	1.3	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
April	384	53.3%	0.9	0.4	0.4	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	728	97.8%	39.1	10.2	19.7	99.7%	0.1%	0.1%	0.0%	0.0%	0.0%
June	719	99.9%	104.7	23.7	54.6	99.4%	0.3%	0.3%	0.0%	0.0%	0.0%
July	744	100.0%	52.4	10.5	10.5	99.6%	0.1%	0.3%	0.0%	0.0%	0.0%
August	741	99.6%	48.1	10.1	30.5	99.6%	0.3%	0.1%	0.0%	0.0%	0.0%
September	717	99.6%	79.1	13.9	52.8	99.2%	0.7%	0.1%	0.0%	0.0%	0.0%
October	744	100.0%	11.4	3.3	4.4	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
November	718	99.7%	6.7	1.3	3.1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
December	743	99.9%	1.8	0.4	1.4	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Annual	8393	95.8%	358.4	23.7	54.6	99.8%	0.1%	0.1%	0.0%	0.0%	0.0%

Table D-9 Glen Ewen Station: Summary of Airpointer Ambient Temperature Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Temp.	Minimum 1-Hr Temp.	Maximum 1-Hr Temp.	Percent of Data in each Temperature Range					
	(no.)	(%)	(˚C)	(˚C)	(˚C)	<=-30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	743	99.9%	(10.9)	(31.6)	4.6	1.6%	33.4%	55.5%	9.6%	0.0%	0.0%
February	672	100.0%	(16.4)	(34.4)	(0.9)	1.9%	55.8%	42.3%	0.0%	0.0%	0.0%
March	740	99.5%	(1.6)	(29.9)	17.0	0.0%	10.0%	43.9%	45.7%	0.4%	0.0%
April	384	53.3%	4.5	(7.9)	22.3	0.0%	0.0%	33.3%	57.6%	9.1%	0.0%
May	728	97.8%	10.9	(2.1)	26.6	0.0%	0.0%	3.0%	70.6%	26.4%	0.0%
June	719	99.9%	17.5	5.6	30.7	0.0%	0.0%	0.0%	36.2%	63.4%	0.4%
July	744	100.0%	19.6	8.0	30.1	0.0%	0.0%	0.0%	18.4%	81.5%	0.1%
August	741	99.6%	18.5	3.3	37.4	0.0%	0.0%	0.0%	33.7%	61.0%	5.3%
September	717	99.6%	13.7	(1.4)	32.9	0.0%	0.0%	0.7%	58.6%	39.3%	1.4%
October	744	100.0%	7.0	(4.8)	25.6	0.0%	0.0%	12.5%	78.8%	8.7%	0.0%
November	718	99.7%	(1.5)	(19.2)	13.0	0.0%	2.4%	47.5%	50.1%	0.0%	0.0%
December	743	99.9%	(7.3)	(27.3)	9.4	0.0%	14.3%	68.4%	17.4%	0.0%	0.0%
Annual	8393	95.8%	4.6	(34.4)	37.4	0.3%	9.8%	25.2%	39.2%	24.9%	0.6%

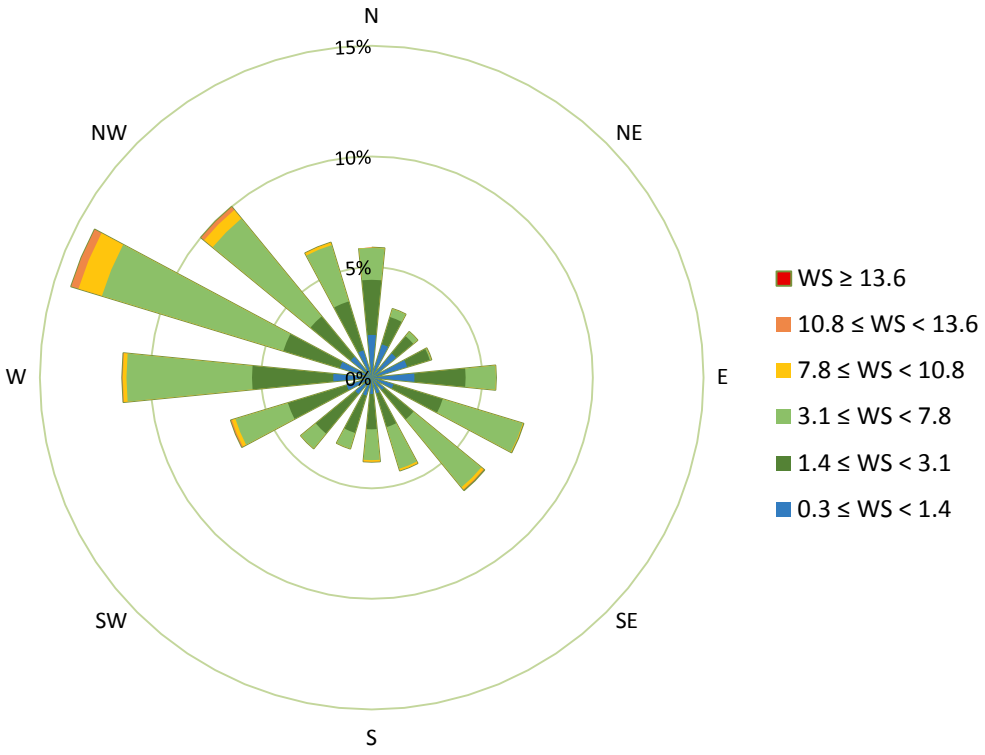
Table D-10 Glen Ewen Station: Summary of Airpointer Relative Humidity Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average RH	Minimum 1-Hr RH	Maximum 1-Hr RH	Percent of Data in each Relative Humidity Range					
	(no.)	(%)	(%)	(%)	(%)	<=15	15 ~ 30	30 ~ 60	60 ~ 80	80 ~ 90	>90
January	743	99.9%	76	47	91	0.0%	0.0%	1.3%	60.4%	37.0%	1.2%
February	672	100.0%	74	53	87	0.0%	0.0%	3.7%	75.4%	20.8%	0.0%
March	740	99.5%	73	30	92	0.0%	0.1%	12.3%	54.5%	29.1%	4.1%
April	384	53.3%	66	22	91	0.0%	4.2%	31.3%	35.2%	28.4%	1.0%
May	728	97.8%	58	18	92	0.0%	13.0%	37.1%	33.0%	13.3%	3.6%
June	719	99.9%	66	29	94	0.0%	0.1%	38.8%	29.8%	23.2%	8.1%
July	744	100.0%	72	30	94	0.0%	0.0%	27.2%	28.8%	30.1%	14.0%
August	741	99.6%	66	16	94	0.0%	3.8%	34.4%	26.2%	24.3%	11.3%
September	717	99.6%	69	27	95	0.0%	0.8%	30.5%	30.3%	25.0%	13.4%
October	744	100.0%	71	29	93	0.0%	0.5%	23.7%	37.9%	30.1%	7.8%
November	718	99.7%	77	41	93	0.0%	0.0%	12.3%	42.5%	33.0%	12.3%
December	743	99.9%	78	36	92	0.0%	0.0%	6.9%	47.0%	41.2%	5.0%
Annual	8393	95.8%	71	16	95	0.0%	1.8%	21.3%	41.8%	28.0%	7.1%

Table D-11 Glen Ewen Station: Airpointer Wind Frequency Table for the Year 2015

Wind Direction Sector	Percent Data in each Wind Speed Range, wind speed unit m/s						
	0.3 ≤ WS < 1.4	1.4 ≤ WS < 3.1	3.1 ≤ WS < 7.8	7.8 ≤ WS < 10.8	10.8 ≤ WS < 13.6	WS ≥ 13.6	Totals
North NorthEast	1.6%	1.3%	0.4%	0.0%	0.0%	0.0%	3.2%
NorthEast	1.4%	1.0%	0.3%	0.0%	0.0%	0.0%	2.7%
East NorthEast	1.7%	1.1%	0.1%	0.0%	0.0%	0.0%	2.8%
East	1.9%	2.3%	1.4%	0.0%	0.0%	0.0%	5.6%
East SouthEast	1.0%	2.3%	3.8%	0.0%	0.0%	0.0%	7.2%
SouthEast	0.7%	1.7%	4.0%	0.1%	0.0%	0.0%	6.6%
South SouthEast	0.7%	1.6%	2.0%	0.1%	0.0%	0.0%	4.4%
South	0.7%	1.6%	1.4%	0.1%	0.0%	0.0%	3.8%
South SouthWest	0.8%	1.8%	0.7%	0.0%	0.0%	0.0%	3.4%
Southwest	1.0%	2.3%	0.9%	0.0%	0.0%	0.0%	4.1%
West SouthWest	1.2%	2.8%	2.5%	0.2%	0.0%	0.0%	6.7%
West	1.7%	3.7%	5.7%	0.2%	0.0%	0.0%	11.3%
West NorthWest	1.5%	2.7%	8.6%	1.1%	0.3%	0.0%	14.2%
NorthWest	1.2%	2.3%	5.7%	0.5%	0.2%	0.0%	10.0%
North NorthWest	1.3%	2.3%	2.7%	0.1%	0.0%	0.0%	6.4%
North	1.9%	2.5%	1.4%	0.0%	0.0%	0.0%	5.9%
Total	20.5%	33.3%	41.3%	2.4%	0.6%	0.0%	98.2%

Percent Calm (<0.3 m/s)	1.9%
Number of Valid Hourly-Average Data	8386
Total Workable Hours in Time Period	8760



APPENDIX E OXBOW STATION: CONTINUOUS MONITORING DATA

Table E-1 Oxbow Station: Summary Statistics for Continuous Air Monitoring Results for 2015

Parameter	Unit	Calibration Hours	Hours of Valid Data	Annual Percent Uptime	Summary Statistics for 1-Hour Data		
					Average	Minimum	Maximum
SO_2	ppb	187	7512	85.8%	1.2	< 0.1	28.9
NO	ppb	208	7979	91.1%	0.3	< 0.1	88.5
NO_2	ppb	208	7949	90.8%	1.5	< 0.1	42.7
NO_x	ppb	208	7968	91.0%	1.8	< 0.1	131.1
H_2S	ppb	187	7500	85.6%	0.6	< 0.1	17.2
$PM_{2.5}$	$\mu g/m^3$	2	8208	93.7%	6.4	< 0.1	288.5
Precipitation (total)	mm	0	8232	94.0%	339.4	< 0.1	30.3
Ambient Temperature	˚C	0	8232	94.0%	4.1	(35.1)	37.9
Relative Humidity	%	0	8232	94.0%	68.3	16.4	93.9
Wind Speed	m/s	0	8232	94.0%	2.4	Calm	14.1

Table E-2 Oxbow Station: Summary of Airpointer SO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	711	95.6%	0.4	27.8	1.3	98.9%	1.0%	0.1%	0.0%	0.0%	0.0%
February	643	95.7%	0.6	44.2	2.9	99.1%	0.8%	0.0%	0.2%	0.0%	0.0%
March	704	94.6%	0.3	18.0	1.6	99.3%	0.6%	0.1%	0.0%	0.0%	0.0%
April	688	95.6%	0.2	4.9	0.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	708	95.2%	0.3	31.2	1.7	99.6%	0.3%	0.0%	0.1%	0.0%	0.0%
June	482	66.9%	0.3	7.5	0.7	99.6%	0.2%	0.0%	0.0%	0.0%	0.2%
July	598	80.4%	0.3	4.4	0.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
August	562	75.5%	0.3	6.5	0.6	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%
September	698	96.9%	0.3	5.7	0.7	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
October	738	99.2%	0.2	7.8	0.5	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
November	717	99.6%	0.2	4.0	0.7	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
December	731	98.3%	0.6	88.5	7.5	98.9%	0.7%	0.0%	0.4%	0.0%	0.0%
Annual	7979	91.1%	0.3	88.5	7.5	99.6%	0.3%	0.0%	0.1%	0.0%	0.0%

Table E-3 Oxbow Station: Summary of Airpointer NO Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	711	95.6%	0.4	27.8	1.3	98.9%	1.0%	0.1%	0.0%	0.0%	0.0%
February	643	95.7%	0.6	44.2	2.9	99.1%	0.8%	0.0%	0.2%	0.0%	0.0%
March	704	94.6%	0.3	18.0	1.6	99.3%	0.6%	0.1%	0.0%	0.0%	0.0%
April	688	95.6%	0.2	4.9	0.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	708	95.2%	0.3	31.2	1.7	99.6%	0.3%	0.0%	0.1%	0.0%	0.0%
June	482	66.9%	0.3	7.5	0.7	99.6%	0.2%	0.0%	0.0%	0.0%	0.2%
July	598	80.4%	0.3	4.4	0.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
August	562	75.5%	0.3	6.5	0.6	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%
September	698	96.9%	0.3	5.7	0.7	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
October	738	99.2%	0.2	7.8	0.5	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
November	717	99.6%	0.2	4.0	0.7	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
December	731	98.3%	0.6	88.5	7.5	98.9%	0.7%	0.0%	0.4%	0.0%	0.0%
Annual	7979	91.1%	0.3	88.5	7.5	99.6%	0.3%	0.0%	0.1%	0.0%	0.0%

Table E-4 Oxbow Station: Summary of Airpointer NO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	(no.)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	711	95.6%	1.1	10.3	-	3.4	-	98.3%	1.7%	0.0%	0.0%	0.0%	0.0%
February	643	95.7%	1.8	17.8	-	3.6	-	96.6%	3.3%	0.2%	0.0%	0.0%	0.0%
March	704	94.6%	1.3	8.7	-	4.2	-	98.3%	1.7%	0.0%	0.0%	0.0%	0.0%
April	688	95.6%	1.0	6.5	-	2.2	-	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
May	708	95.2%	1.7	15.5	-	4.2	-	96.6%	3.2%	0.1%	0.0%	0.0%	0.0%
June	482	66.9%	1.9	7.0	-	3.4	-	98.8%	1.0%	0.0%	0.0%	0.0%	0.2%
July	598	80.4%	1.7	9.8	-	2.8	-	96.0%	4.0%	0.0%	0.0%	0.0%	0.0%
August	541	72.7%	1.3	8.3	-	3.8	-	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%
September	687	95.4%	1.1	11.1	-	3.0	-	98.8%	1.2%	0.0%	0.0%	0.0%	0.0%
October	740	99.5%	1.5	6.9	-	2.2	-	99.6%	0.4%	0.0%	0.0%	0.0%	0.0%
November	717	99.6%	1.5	7.7	-	3.7	-	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%
December	731	98.3%	1.7	42.7	-	5.9	-	97.9%	1.6%	0.0%	0.4%	0.0%	0.0%
Annual	7949	90.8%	1.5	42.7	0	5.9	0	98.2%	1.7%	0.0%	0.0%	0.0%	0.0%

Table E-5 Oxbow Station: Summary of Airpointer NO_X Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	Maximum 24-Hr Conc. (ppb)	Percent of Data in each Concentration Range					
						0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	711	95.6%	1.5	38.1	4.7	96.3%	3.5%	0.0%	0.1%	0.0%	0.0%
February	643	95.7%	2.0	61.5	4.5	93.5%	6.4%	0.0%	0.2%	0.0%	0.0%
March	704	94.6%	1.5	20.7	5.4	96.7%	3.1%	0.1%	0.0%	0.0%	0.0%
April	688	95.6%	1.2	8.9	2.7	99.4%	0.6%	0.0%	0.0%	0.0%	0.0%
May	708	95.2%	2.0	46.7	5.9	94.1%	5.6%	0.1%	0.1%	0.0%	0.0%
June	482	66.9%	2.2	14.5	4.2	97.5%	2.3%	0.0%	0.0%	0.0%	0.2%
July	598	80.4%	1.9	10.8	3.3	95.0%	5.0%	0.0%	0.0%	0.0%	0.0%
August	563	75.7%	1.6	9.6	3.9	98.4%	1.6%	0.0%	0.0%	0.0%	0.0%
September	684	95.0%	1.5	14.6	3.7	98.1%	1.9%	0.0%	0.0%	0.0%	0.0%
October	740	99.5%	1.7	12.4	2.5	98.6%	1.4%	0.0%	0.0%	0.0%	0.0%
November	717	99.6%	1.7	10.7	4.2	97.2%	2.8%	0.0%	0.0%	0.0%	0.0%
December	731	98.3%	2.4	131.1	13.4	96.4%	2.7%	0.4%	0.1%	0.3%	0.0%
Annual	7968	91.0%	1.8	131.1	13.4	96.8%	3.1%	0.1%	0.1%	0.0%	0.0%

Table E-6 Oxbow Station: Summary of Airpointer H_2S Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	1-Hour Exceedance (no.)	Maximum 24-Hr Conc. (ppb)	24-Hour Exceedance (no.)	Percent of Data in each Concentration Range					
								0 ≤ C < 1	1 ≤ C < 3.6	3.6 ≤ C < 5	5 ≤ C < 8	8 ≤ C < 10.8	C ≥ 10.8
January	711	95.6%	0.6	6.9	-	1.4	-	84.8%	15.0%	0.0%	0.1%	0.0%	0.0%
February	561	83.5%	0.2	1.7	-	0.5	-	98.4%	1.6%	0.0%	0.0%	0.0%	0.0%
March	304	40.9%	0.3	3.0	-	0.5	-	98.7%	1.3%	0.0%	0.0%	0.0%	0.0%
April	689	95.7%	0.3	2.5	-	0.7	-	97.0%	3.0%	0.0%	0.0%	0.0%	0.0%
May	711	95.6%	0.4	4.2	-	1.2	-	90.9%	8.9%	0.3%	0.0%	0.0%	0.0%
June	498	69.2%	0.9	17.2	4	3.1	-	77.5%	17.9%	2.2%	1.0%	0.6%	0.8%
July	598	80.4%	1.2	8.7	-	3.4	-	61.5%	33.1%	2.0%	2.8%	0.5%	0.0%
August	545	73.3%	0.8	6.2	-	1.4	-	75.4%	24.0%	0.4%	0.2%	0.0%	0.0%
September	697	96.8%	0.9	10.6	-	1.7	-	74.5%	23.5%	1.6%	0.3%	0.1%	0.0%
October	740	99.5%	0.6	3.8	-	1.0	-	90.0%	9.9%	0.1%	0.0%	0.0%	0.0%
November	715	99.3%	0.5	3.2	-	1.3	-	90.2%	9.8%	0.0%	0.0%	0.0%	0.0%
December	731	98.3%	0.4	3.2	-	0.8	-	95.9%	4.1%	0.0%	0.0%	0.0%	0.0%
Annual	7500	85.6%	0.6	17.2	4	3.4	0	86.2%	12.8%	0.5%	0.3%	0.1%	0.1%

Table E-7 Oxbow Station: Summary of Airpointer $PM_{2.5}$ Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	(no.)	0 ≤ C < 2	2 ≤ C < 4	4 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 30	C ≥ 30
January	743	99.9%	4.3	24.4	8.9	-	23.7%	33.0%	37.1%	6.1%	0.1%	0.0%
February	672	100.0%	5.1	16.4	9.7	-	7.0%	33.6%	53.0%	6.4%	0.0%	0.0%
March	743	99.9%	4.7	27.8	10.8	-	21.7%	31.6%	37.6%	8.3%	0.8%	0.0%
April	720	100.0%	4.9	42.3	16.6	-	31.0%	24.9%	35.1%	6.1%	2.5%	0.4%
May	744	100.0%	7.2	52.7	14.0	-	16.5%	19.1%	41.9%	19.2%	2.0%	1.2%
June	521	72.4%	6.6	35.5	13.2	-	11.3%	23.0%	48.8%	14.6%	1.7%	0.6%
July	580	78.0%	8.9	288.5	55.9	1	7.8%	27.9%	41.2%	16.9%	4.5%	1.7%
August	566	76.1%	15.3	227.1	124.8	3	12.9%	19.4%	36.4%	19.4%	1.8%	10.1%
September	712	98.9%	6.2	47.9	14.5	-	11.4%	27.9%	42.8%	15.9%	1.8%	0.1%
October	744	100.0%	6.0	37.1	12.2	-	15.2%	29.6%	37.9%	15.3%	1.6%	0.4%
November	720	100.0%	5.2	41.5	15.8	-	20.7%	38.9%	27.2%	11.1%	1.1%	1.0%
December	743	99.9%	5.1	46.3	12.2	-	16.3%	38.0%	34.7%	10.8%	0.1%	0.1%
Annual	8208	93.7%	6.4	288.5	124.8	4	16.7%	29.2%	39.2%	12.3%	1.4%	1.1%

Table E-8 Oxbow Station: Summary of Airpointer Precipitation Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Total Precip.	Maximum 1-Hr Precip.	Maximum 24-Hr Precip.	Percent of Data in each Precipitation Range					
	(no.)	(%)	(mm)	(mm)	(mm)	<=5	5 ~ 10	10 ~ 25	25 ~ 50	50 ~ 75	>75
January	743	99.9%	3.0	1.4	2.9	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
February	672	100.0%	19.7	16.0	18.7	99.9%	0.0%	0.1%	0.0%	0.0%	0.0%
March	744	100.0%	2.2	0.9	1.4	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
April	720	100.0%	1.7	0.4	0.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	744	100.0%	38.5	7.1	14.7	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
June	521	72.4%	98.0	30.3	49.8	98.7%	1.2%	0.0%	0.2%	0.0%	0.0%
July	603	81.0%	49.5	27.3	27.4	99.8%	0.0%	0.0%	0.2%	0.0%	0.0%
August	566	76.1%	40.0	14.5	30.6	99.6%	0.2%	0.2%	0.0%	0.0%	0.0%
September	712	98.9%	68.7	18.5	57.1	99.4%	0.3%	0.3%	0.0%	0.0%	0.0%
October	744	100.0%	10.8	2.0	3.9	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
November	720	100.0%	6.3	1.2	3.1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
December	743	99.9%	0.9	0.3	0.8	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Annual	8232	94.0%	339.4	30.3	57.1	99.8%	0.1%	0.0%	0.0%	0.0%	0.0%

Table E-9 Oxbow Station: Summary of Airpointer Ambient Temperature Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Temp.	Minimum 1-Hr Temp.	Maximum 1-Hr Temp.	Percent of Data in each Temperature Range					
	(no.)	(%)	(˚C)	(˚C)	(˚C)	<=-30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	743	99.9%	(10.5)	(32.2)	4.8	1.1%	33.6%	53.0%	12.2%	0.0%	0.0%
February	672	100.0%	(15.9)	(35.1)	(1.2)	1.5%	52.7%	45.8%	0.0%	0.0%	0.0%
March	744	100.0%	(1.2)	(27.7)	19.5	0.0%	10.2%	41.3%	46.8%	1.7%	0.0%
April	720	100.0%	6.0	(8.1)	22.6	0.0%	0.0%	23.6%	63.6%	12.8%	0.0%
May	744	100.0%	11.0	(3.4)	26.6	0.0%	0.0%	2.7%	70.2%	27.2%	0.0%
June	521	72.4%	16.6	6.7	29.6	0.0%	0.0%	0.0%	44.3%	55.7%	0.0%
July	603	81.0%	20.0	7.6	30.8	0.0%	0.0%	0.0%	16.3%	83.1%	0.7%
August	566	76.1%	19.1	2.9	37.9	0.0%	0.0%	0.0%	30.9%	61.7%	7.4%
September	712	98.9%	13.9	0.6	33.1	0.0%	0.0%	0.0%	57.2%	41.4%	1.4%
October	744	100.0%	7.3	(4.1)	26.1	0.0%	0.0%	11.7%	78.6%	9.7%	0.0%
November	720	100.0%	(1.4)	(19.5)	13.4	0.0%	2.8%	46.1%	51.1%	0.0%	0.0%
December	743	99.9%	(7.0)	(27.0)	10.1	0.0%	13.1%	68.8%	18.2%	0.0%	0.0%
Annual	8232	94.0%	4.1	(35.1)	37.9	0.2%	9.7%	25.9%	41.5%	22.0%	0.7%

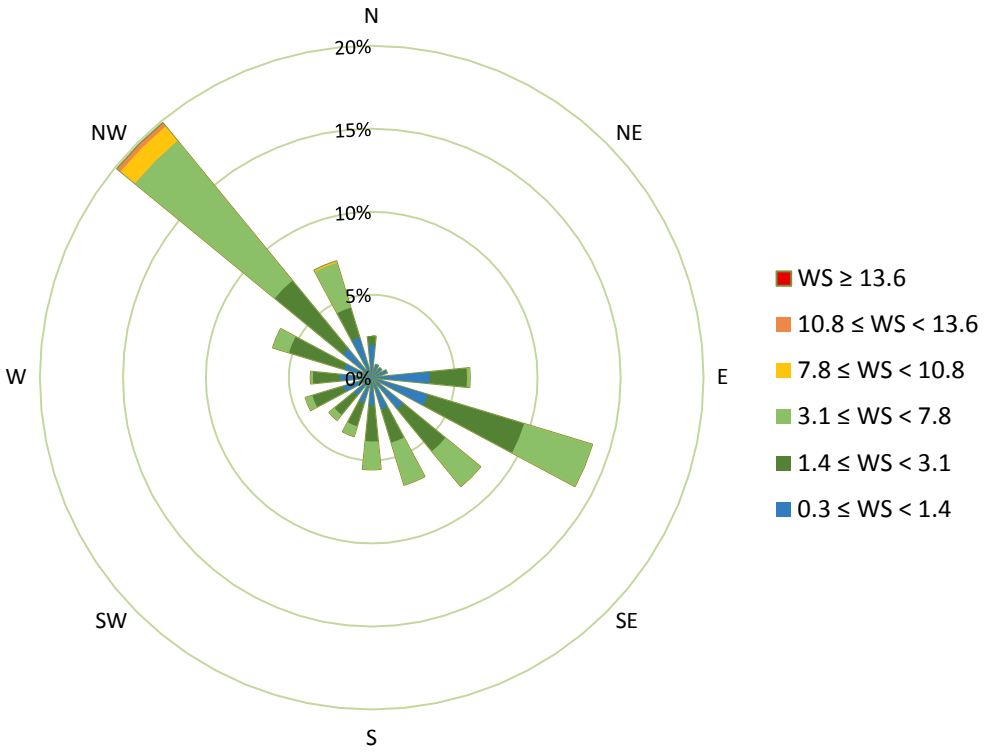
Table E-10 Oxbow Station: Summary of Airpointer Relative Humidity Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average RH	Minimum 1-Hr RH	Maximum 1-Hr RH	Percent of Data in each Relative Humidity Range					
	(no.)	(%)	(%)	(%)	(%)	<=15	15 ~ 30	30 ~ 60	60 ~ 80	80 ~ 90	>90
January	743	99.9%	76	49	91	0.0%	0.0%	2.3%	62.2%	34.5%	1.1%
February	672	100.0%	73	45	87	0.0%	0.0%	6.1%	74.3%	19.6%	0.0%
March	744	100.0%	72	28	92	0.0%	0.4%	17.9%	51.6%	26.1%	4.0%
April	720	100.0%	56	17	90	0.0%	14.6%	38.6%	30.6%	15.6%	0.7%
May	744	100.0%	57	19	93	0.0%	13.4%	39.2%	28.8%	14.9%	3.6%
June	521	72.4%	65	29	94	0.0%	0.4%	41.5%	30.1%	21.3%	6.7%
July	603	81.0%	69	24	93	0.0%	1.0%	33.5%	29.0%	29.2%	7.3%
August	566	76.1%	63	16	94	0.0%	6.2%	38.0%	27.2%	21.0%	7.6%
September	712	98.9%	67	26	94	0.0%	0.8%	33.8%	32.0%	22.1%	11.2%
October	744	100.0%	70	26	93	0.0%	0.7%	26.7%	40.6%	25.5%	6.5%
November	720	100.0%	75	42	92	0.0%	0.0%	13.5%	46.7%	34.4%	5.4%
December	743	99.9%	76	34	90	0.0%	0.0%	7.7%	53.7%	38.6%	0.0%
Annual	8232	94.0%	68	16	94	0.0%	3.2%	24.1%	42.9%	25.4%	4.4%

Table E-11 Oxbow Station: Airpointer Wind Frequency Table for the Year 2015

Wind Direction Sector	Percent Data in each Wind Speed Range, wind speed unit m/s						
	0.3 ≤ WS < 1.4	1.4 ≤ WS < 3.1	3.1 ≤ WS < 7.8	7.8 ≤ WS < 10.8	10.8 ≤ WS < 13.6	WS ≥ 13.6	Totals
North NorthEast	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%
NorthEast	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%
East NorthEast	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%
East	3.5%	2.3%	0.2%	0.0%	0.0%	0.0%	5.9%
East SouthEast	3.5%	6.1%	4.3%	0.0%	0.0%	0.0%	13.9%
SouthEast	2.4%	3.3%	2.7%	0.0%	0.0%	0.0%	8.5%
South SouthEast	2.0%	2.1%	2.7%	0.0%	0.0%	0.0%	6.8%
South	1.7%	2.2%	1.7%	0.0%	0.0%	0.0%	5.5%
South SouthWest	1.6%	1.5%	0.6%	0.0%	0.0%	0.0%	3.7%
Southwest	1.4%	1.5%	0.4%	0.0%	0.0%	0.0%	3.3%
West SouthWest	1.8%	2.0%	0.4%	0.0%	0.0%	0.0%	4.2%
West	1.9%	1.6%	0.1%	0.0%	0.0%	0.0%	3.7%
West NorthWest	1.7%	3.5%	1.0%	0.0%	0.0%	0.0%	6.2%
NorthWest	2.2%	5.3%	10.9%	1.1%	0.2%	0.0%	19.9%
North NorthWest	2.5%	1.9%	2.8%	0.1%	0.0%	0.0%	7.3%
North	2.0%	0.5%	0.0%	0.0%	0.0%	0.0%	2.5%
Total	30.8%	33.7%	27.9%	1.2%	0.3%	0.0%	93.9%

Percent Calm (<0.3 m/s)	6.4%
Number of Valid Hourly-Average Data	8232
Total Workable Hours in Time Period	8760



APPENDIX F STOUGHTON STATION: CONTINUOUS MONITORING DATA

Table F-1 Stoughton Station: Summary Statistics for Continuous Air Monitoring Results for 2015

Parameter	Unit	Calibration Hours	Hours of Valid Data	Annual Percent Uptime	Summary Statistics for 1-Hour Data		
					Average	Minimum	Maximum
SO_2	ppb	325	8322	95.0%	0.5	< 0.1	16.7
NO	ppb	394	8201	93.6%	0.5	< 0.1	28.7
NO_2	ppb	394	8201	93.6%	2.1	< 0.1	23.6
NO_x	ppb	394	8202	93.6%	2.6	< 0.1	39.9
H_2S	ppb	325	8302	94.8%	1.0	< 0.1	45.8
$PM_{2.5}$	$\mu g/m^3$	2	7223	82.5%	7.1	< 0.1	386.0
Precipitation (total)	mm	0	8551	97.6%	455.9	< 0.1	21.9
Ambient Temperature	˚C	0	8556	97.7%	4.5	(34.8)	38.5
Relative Humidity	%	0	8551	97.6%	68.7	17.8	93.3
Wind Speed	m/s	0	8550	97.6%	2.8	Calm	12.9

Table F-2 Stoughton Station: Summary of Airpointer SO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	(no.)	0 ≤ C < 1	1 ≤ C < 5	5 ≤ C < 10	10 ≤ C < 57	57 ≤ C < 172	C ≥ 172
January	712	95.7%	0.7	8.0	-	2.5	-	80.8%	18.5%	0.7%	0.0%	0.0%	0.0%
February	643	95.7%	0.7	10.6	-	3.3	-	84.0%	14.8%	1.1%	0.2%	0.0%	0.0%
March	703	94.5%	0.5	5.6	-	2.0	-	87.3%	12.4%	0.3%	0.0%	0.0%	0.0%
April	689	95.7%	0.5	5.8	-	1.6	-	89.6%	10.3%	0.1%	0.0%	0.0%	0.0%
May	663	89.1%	0.5	11.3	-	2.4	-	89.7%	9.7%	0.5%	0.2%	0.0%	0.0%
June	680	94.4%	0.5	7.3	-	1.7	-	88.4%	10.9%	0.7%	0.0%	0.0%	0.0%
July	712	95.7%	0.5	5.4	-	1.5	-	88.1%	11.8%	0.1%	0.0%	0.0%	0.0%
August	712	95.7%	0.5	5.4	-	1.5	-	86.1%	13.8%	0.1%	0.0%	0.0%	0.0%
September	683	94.9%	0.5	6.7	-	1.9	-	90.0%	9.5%	0.4%	0.0%	0.0%	0.0%
October	721	96.9%	0.5	15.7	-	1.6	-	91.3%	7.9%	0.7%	0.1%	0.0%	0.0%
November	683	94.9%	0.4	11.5	-	3.4	-	96.5%	3.4%	0.0%	0.1%	0.0%	0.0%
December	721	96.9%	0.7	16.7	-	3.0	-	82.4%	16.5%	0.7%	0.4%	0.0%	0.0%
Annual	8322	95.0%	0.5	16.7	0	3.4	0	87.8%	11.6%	0.5%	0.1%	0.0%	0.0%

Table F-3 Stoughton Station: Summary of Airpointer NO Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	704	94.6%	0.6	12.3	3.7	97.9%	2.1%	0.0%	0.0%	0.0%	0.0%
February	643	95.7%	0.5	7.6	2.1	99.5%	0.5%	0.0%	0.0%	0.0%	0.0%
March	696	93.5%	0.4	22.0	1.5	99.4%	0.4%	0.1%	0.0%	0.0%	0.0%
April	685	95.1%	0.3	20.2	2.5	99.6%	0.1%	0.3%	0.0%	0.0%	0.0%
May	646	86.8%	0.3	24.2	1.7	99.5%	0.2%	0.3%	0.0%	0.0%	0.0%
June	665	92.4%	0.4	21.0	1.6	98.8%	0.9%	0.3%	0.0%	0.0%	0.0%
July	712	95.7%	0.5	7.7	1.1	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
August	712	95.7%	0.5	20.7	2.0	99.2%	0.7%	0.1%	0.0%	0.0%	0.0%
September	682	94.7%	0.5	25.6	2.2	99.3%	0.6%	0.1%	0.0%	0.0%	0.0%
October	690	92.7%	0.6	28.7	2.6	99.4%	0.4%	0.1%	0.0%	0.0%	0.0%
November	655	91.0%	0.5	17.2	2.7	98.6%	1.2%	0.2%	0.0%	0.0%	0.0%
December	711	95.6%	0.6	27.3	4.7	98.5%	1.4%	0.1%	0.0%	0.0%	0.0%
Annual	8201	93.6%	0.5	28.7	4.7	99.1%	0.7%	0.1%	0.0%	0.0%	0.0%

Table F-4 Stoughton Station: Summary of Airpointer NO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	(no.)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	704	94.6%	3.2	20.4	-	9.3	-	81.7%	17.6%	0.7%	0.0%	0.0%	0.0%
February	643	95.7%	2.6	23.6	-	9.4	-	89.9%	9.5%	0.6%	0.0%	0.0%	0.0%
March	696	93.5%	2.2	13.5	-	6.3	-	92.0%	8.0%	0.0%	0.0%	0.0%	0.0%
April	685	95.1%	1.4	12.3	-	3.7	-	97.5%	2.5%	0.0%	0.0%	0.0%	0.0%
May	646	86.8%	1.8	15.8	-	5.2	-	94.0%	5.9%	0.2%	0.0%	0.0%	0.0%
June	665	92.4%	2.3	12.3	-	3.4	-	93.7%	6.3%	0.0%	0.0%	0.0%	0.0%
July	712	95.7%	2.0	9.8	-	4.4	-	94.7%	5.3%	0.0%	0.0%	0.0%	0.0%
August	712	95.7%	2.0	12.3	-	4.6	-	94.1%	5.9%	0.0%	0.0%	0.0%	0.0%
September	682	94.7%	1.5	11.4	-	4.0	-	96.8%	3.2%	0.0%	0.0%	0.0%	0.0%
October	690	92.7%	2.0	17.5	-	4.1	-	92.2%	7.7%	0.1%	0.0%	0.0%	0.0%
November	655	91.0%	1.8	15.9	-	6.6	-	93.1%	6.7%	0.2%	0.0%	0.0%	0.0%
December	711	95.6%	2.6	16.7	-	7.1	-	88.3%	11.4%	0.3%	0.0%	0.0%	0.0%
Annual	8201	93.6%	2.1	23.6	0	9.4	0	92.3%	7.5%	0.2%	0.0%	0.0%	0.0%

Table F-5 Stoughton Station: Summary of Airpointer NO_X Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	704	94.6%	3.8	30.6	12.9	77.3%	20.6%	2.0%	0.1%	0.0%	0.0%
February	643	95.7%	3.1	24.3	11.4	84.6%	14.6%	0.8%	0.0%	0.0%	0.0%
March	696	93.5%	2.5	30.8	7.6	89.2%	10.3%	0.3%	0.1%	0.0%	0.0%
April	685	95.1%	1.7	30.0	6.1	96.2%	3.4%	0.4%	0.0%	0.0%	0.0%
May	646	86.8%	2.1	39.9	6.2	93.2%	6.3%	0.3%	0.2%	0.0%	0.0%
June	665	92.4%	2.7	33.4	4.7	90.5%	9.0%	0.3%	0.2%	0.0%	0.0%
July	712	95.7%	2.5	12.7	5.0	90.9%	9.1%	0.0%	0.0%	0.0%	0.0%
August	712	95.7%	2.5	32.8	6.6	90.7%	8.6%	0.6%	0.1%	0.0%	0.0%
September	683	94.9%	2.0	35.9	5.7	94.7%	4.8%	0.3%	0.1%	0.0%	0.0%
October	690	92.7%	2.6	39.9	6.0	86.5%	12.9%	0.4%	0.1%	0.0%	0.0%
November	655	91.0%	2.4	33.1	9.0	89.8%	9.2%	0.9%	0.2%	0.0%	0.0%
December	711	95.6%	3.2	35.7	11.8	84.8%	13.6%	1.4%	0.1%	0.0%	0.0%
Annual	8202	93.6%	2.6	39.9	12.9	89.0%	10.2%	0.6%	0.1%	0.0%	0.0%

Table F-6 Stoughton Station: Summary of Airpointer H_2S Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	(no.)	0 ≤ C < 1	1 ≤ C < 3.6	3.6 ≤ C < 5	5 ≤ C < 8	8 ≤ C < 10.8	C ≥ 10.8
January	704	94.6%	0.4	14.0	1	1.5	-	90.8%	8.8%	0.3%	0.0%	0.0%	0.1%
February	639	95.1%	0.3	3.4	-	0.6	-	95.9%	4.1%	0.0%	0.0%	0.0%	0.0%
March	699	94.0%	0.3	3.3	-	0.6	-	96.0%	4.0%	0.0%	0.0%	0.0%	0.0%
April	689	95.7%	0.2	2.0	-	0.5	-	97.4%	2.6%	0.0%	0.0%	0.0%	0.0%
May	661	88.8%	0.7	17.6	3	3.4	-	82.8%	14.5%	1.5%	0.6%	0.2%	0.5%
June	681	94.6%	3.3	45.8	62	10.9	9	55.1%	22.8%	4.7%	4.6%	3.8%	9.1%
July	712	95.7%	2.5	33.9	31	8.8	5	53.7%	26.0%	5.2%	8.7%	2.1%	4.4%
August	712	95.7%	2.5	24.5	29	5.8	7	49.9%	27.9%	6.0%	8.1%	3.9%	4.1%
September	681	94.6%	1.0	11.6	1	2.5	-	69.9%	25.8%	1.8%	2.1%	0.3%	0.1%
October	720	96.8%	0.5	8.1	-	4.2	1	88.9%	9.9%	0.3%	0.8%	0.1%	0.0%
November	683	94.9%	0.3	1.7	-	0.8	-	98.1%	1.9%	0.0%	0.0%	0.0%	0.0%
December	721	96.9%	0.3	15.7	2	1.6	-	96.7%	2.9%	0.1%	0.0%	0.0%	0.3%
Annual	8302	94.8%	1.0	45.8	129	10.9	22	81.1%	12.6%	1.7%	2.1%	0.9%	1.6%

Table F-7 Stoughton Station: Summary of Airpointer $PM_{2.5}$ Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	(no.)	0 ≤ C < 2	2 ≤ C < 4	4 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 30	C ≥ 30
January	744	100.0%	4.5	26.1	9.6	-	25.0%	28.4%	40.3%	5.9%	0.4%	0.0%
February	672	100.0%	5.3	67.2	13.3	-	6.7%	27.7%	61.8%	3.4%	0.0%	0.4%
March	742	99.7%	4.5	23.0	9.0	-	19.9%	38.1%	33.0%	8.5%	0.4%	0.0%
April	720	100.0%	4.7	27.2	16.6	-	22.9%	28.2%	41.8%	5.8%	1.3%	0.0%
May	693	93.1%	6.3	44.7	14.2	-	11.1%	26.4%	46.2%	15.6%	0.6%	0.1%
June	703	97.6%	9.8	386.0	88.9	2	9.7%	23.8%	46.2%	16.6%	1.6%	2.1%
July	314	42.2%	40.1	232.3	133.6	5	0.3%	4.8%	26.8%	22.0%	13.4%	32.8%
August	0	0.0%	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
September	593	82.4%	4.8	43.5	10.4	-	17.0%	36.8%	37.8%	7.1%	1.0%	0.3%
October	611	82.1%	6.6	56.4	14.6	-	12.8%	26.8%	40.8%	16.9%	2.1%	0.7%
November	687	95.4%	5.2	34.0	11.6	-	12.5%	41.0%	36.0%	9.8%	0.6%	0.1%
December	744	100.0%	4.8	19.3	13.7	-	10.1%	44.5%	39.4%	6.0%	0.0%	0.0%
Annual	7223	82.5%	7.1	386.0	133.6	7	14.3%	31.1%	41.6%	10.0%	1.3%	1.8%

Table F-8 Stoughton Station: Summary of Airpointer Precipitation Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Total Precip.	Maximum 1-Hr Precip.	Maximum 24-Hr Precip.	Percent of Data in each Precipitation Range					
	(no.)	(%)	(mm)	(mm)	(mm)	<=5	5 ~ 10	10 ~ 25	25 ~ 50	50 ~ 75	>75
January	744	100.0%	0.9	0.3	0.6	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
February	672	100.0%	2.7	1.2	1.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
March	742	99.7%	3.5	2.0	2.1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
April	720	100.0%	167.1	14.0	51.8	97.8%	1.3%	1.0%	0.0%	0.0%	0.0%
May	693	93.1%	46.5	4.3	12.8	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
June	720	100.0%	32.9	8.2	9.2	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
July	744	100.0%	52.0	16.7	18.6	99.9%	0.0%	0.1%	0.0%	0.0%	0.0%
August	744	100.0%	34.7	4.5	19.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
September	716	99.4%	92.3	21.9	74.5	99.0%	0.7%	0.3%	0.0%	0.0%	0.0%
October	625	84.0%	13.2	3.4	5.1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
November	687	95.4%	7.1	2.1	2.6	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
December	744	100.0%	3.1	1.3	2.4	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Annual	8551	97.6%	455.9	21.9	74.5	99.7%	0.2%	0.1%	0.0%	0.0%	0.0%

Table F-9 Stoughton Station: Summary of Airpointer Ambient Temperature Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Temp.	Minimum 1-Hr Temp.	Maximum 1-Hr Temp.	Percent of Data in each Temperature Range					
	(no.)	(%)	(˚C)	(˚C)	(˚C)	<=-30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	744	100.0%	(11.1)	(34.4)	4.6	2.3%	32.1%	55.2%	10.3%	0.0%	0.0%
February	672	100.0%	(16.6)	(34.8)	(1.7)	1.9%	57.0%	41.1%	0.0%	0.0%	0.0%
March	742	99.7%	(2.0)	(29.1)	18.1	0.0%	10.4%	42.7%	46.4%	0.5%	0.0%
April	720	100.0%	5.8	(6.7)	23.3	0.0%	0.0%	21.3%	69.2%	9.6%	0.0%
May	693	93.1%	10.4	(2.0)	26.4	0.0%	0.0%	2.7%	74.3%	22.9%	0.0%
June	720	100.0%	17.9	6.7	31.0	0.0%	0.0%	0.0%	33.6%	65.4%	1.0%
July	744	100.0%	19.9	8.7	31.8	0.0%	0.0%	0.0%	17.1%	80.6%	2.3%
August	744	100.0%	18.8	4.8	38.5	0.0%	0.0%	0.0%	33.1%	61.3%	5.6%
September	720	100.0%	13.4	(0.0)	33.6	0.0%	0.0%	0.7%	62.9%	35.0%	1.4%
October	626	84.1%	6.4	(2.2)	24.8	0.0%	0.0%	14.5%	77.5%	8.0%	0.0%
November	687	95.4%	(1.9)	(17.2)	13.2	0.0%	2.8%	50.2%	47.0%	0.0%	0.0%
December	744	100.0%	(7.7)	(29.5)	8.6	0.0%	14.8%	69.2%	16.0%	0.0%	0.0%
Annual	8556	97.7%	4.5	(34.8)	38.5	0.4%	9.7%	24.9%	40.1%	24.1%	0.9%

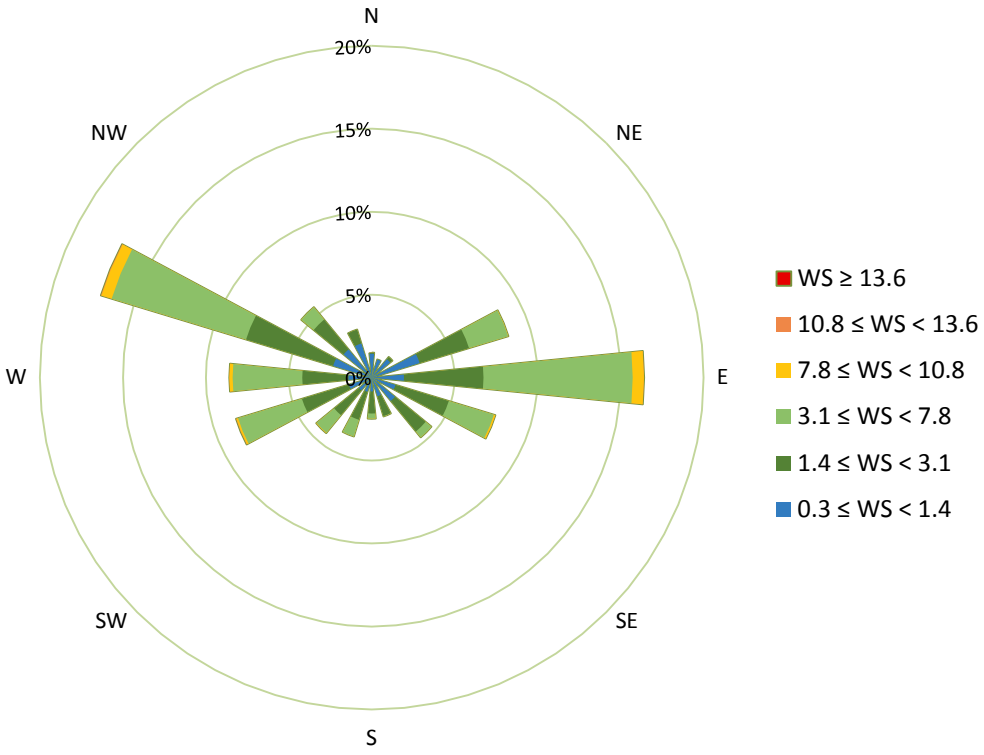
Table F-10 Stoughton Station: Summary of Airpointer Relative Humidity Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average RH	Minimum 1-Hr RH	Maximum 1-Hr RH	Percent of Data in each Relative Humidity Range					
	(no.)	(%)	(%)	(%)	(%)	<=15	15 ~ 30	30 ~ 60	60 ~ 80	80 ~ 90	>90
January	744	100.0%	77	57	90	0.0%	0.0%	0.3%	58.2%	41.3%	0.3%
February	672	100.0%	74	58	88	0.0%	0.0%	1.3%	81.0%	17.7%	0.0%
March	742	99.7%	75	42	91	0.0%	0.0%	9.4%	53.4%	34.1%	3.1%
April	720	100.0%	59	21	90	0.0%	10.6%	36.3%	38.9%	14.3%	0.0%
May	693	93.1%	58	18	91	0.0%	11.5%	36.2%	36.8%	14.4%	1.0%
June	720	100.0%	60	26	92	0.0%	2.6%	45.1%	32.9%	16.9%	2.4%
July	744	100.0%	68	24	93	0.0%	2.0%	31.0%	31.7%	27.0%	8.2%
August	744	100.0%	62	18	93	0.0%	6.7%	39.0%	25.5%	22.0%	6.7%
September	716	99.4%	65	24	92	0.0%	2.2%	35.5%	33.9%	22.2%	6.1%
October	625	84.0%	71	32	92	0.0%	0.0%	24.6%	36.3%	35.0%	4.0%
November	687	95.4%	76	45	92	0.0%	0.0%	8.6%	53.7%	35.7%	2.0%
December	744	100.0%	77	42	90	0.0%	0.0%	4.3%	56.9%	38.2%	0.7%
Annual	8551	97.6%	69	18	93	0.0%	3.0%	22.7%	44.8%	26.6%	2.9%

Table F-11 Stoughton Station: Airpointer Wind Frequency Table for the Year 2015

Wind Direction Sector	Percent Data in each Wind Speed Range, wind speed unit m/s						
	0.3 ≤ WS < 1.4	1.4 ≤ WS < 3.1	3.1 ≤ WS < 7.8	7.8 ≤ WS < 10.8	10.8 ≤ WS < 13.6	WS ≥ 13.6	Totals
North NorthEast	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
NorthEast	1.4%	0.2%	0.0%	0.0%	0.0%	0.0%	1.6%
East NorthEast	3.0%	3.1%	2.5%	0.0%	0.0%	0.0%	8.6%
East	1.9%	4.8%	9.0%	0.7%	0.0%	0.0%	16.4%
East SouthEast	1.5%	3.4%	2.8%	0.1%	0.0%	0.0%	7.8%
SouthEast	1.8%	2.4%	0.5%	0.0%	0.0%	0.0%	4.7%
South SouthEast	1.2%	1.3%	0.0%	0.0%	0.0%	0.0%	2.4%
South	0.8%	1.3%	0.3%	0.0%	0.0%	0.0%	2.5%
South SouthWest	0.9%	1.8%	1.1%	0.0%	0.0%	0.0%	3.7%
Southwest	1.0%	1.9%	1.4%	0.0%	0.0%	0.0%	4.3%
West SouthWest	1.4%	3.0%	4.0%	0.1%	0.0%	0.0%	8.5%
West	1.4%	2.8%	4.2%	0.2%	0.0%	0.0%	8.6%
West NorthWest	2.4%	5.5%	8.5%	0.6%	0.0%	0.0%	17.1%
NorthWest	2.2%	2.3%	1.0%	0.0%	0.0%	0.0%	5.5%
North NorthWest	2.2%	0.9%	0.0%	0.0%	0.0%	0.0%	3.0%
North	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	1.5%
Total	25.8%	34.6%	35.2%	1.8%	0.1%	0.0%	97.4%

Percent Calm (<0.3 m/s)	2.7%
Number of Valid Hourly-Average Data	8550
Total Workable Hours in Time Period	8760



APPENDIX G WAUCHOPE STATION: CONTINUOUS MONITORING DATA

Table G-1 Wauchope Station: Summary Statistics for Continuous Air Monitoring Results for 2015

Parameter	Unit	Calibration Hours	Hours of Valid Data	Annual Percent Uptime	Summary Statistics for 1-Hour Data		
					Average	Minimum	Maximum
SO_2	ppb	388	8073	92.2%	0.7	< 0.1	12.7
H_2S	ppb	361	7473	85.3%	1.4	< 0.1	118.6
$PM_{2.5}$	$\mu g/m^3$	2	8471	96.7%	9.8	< 0.1	518.5
Precipitation (total)	mm	0	8474	96.7%	295.0	< 0.1	24.4
Ambient Temperature	˚C	0	8474	96.7%	4.0	(34.6)	37.3
Relative Humidity	%	0	8474	96.7%	68.8	19.0	93.2
Wind Speed	m/s	0	8458	96.6%	3.0	Calm	12.4

Table G-2 Wauchope Station: Summary of Airpointer SO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	(no.)	0 ≤ C < 1	1 ≤ C < 5	5 ≤ C < 10	10 ≤ C < 57	57 ≤ C < 172	C ≥ 172
January	704	94.6%	0.9	8.6	-	2.7	-	66.8%	32.1%	1.1%	0.0%	0.0%	0.0%
February	643	95.7%	1.0	12.7	-	3.9	-	71.4%	24.9%	3.1%	0.6%	0.0%	0.0%
March	707	95.0%	0.5	5.9	-	1.7	-	85.6%	14.0%	0.4%	0.0%	0.0%	0.0%
April	689	95.7%	0.4	4.5	-	1.2	-	89.6%	10.4%	0.0%	0.0%	0.0%	0.0%
May	548	73.7%	0.4	8.6	-	1.0	-	92.5%	7.1%	0.2%	0.0%	0.0%	0.2%
June	567	78.8%	0.6	7.0	-	1.5	-	85.0%	14.6%	0.4%	0.0%	0.0%	0.0%
July	711	95.6%	0.7	6.7	-	1.8	-	84.1%	15.5%	0.4%	0.0%	0.0%	0.0%
August	712	95.7%	0.5	8.9	-	1.4	-	88.8%	11.1%	0.1%	0.0%	0.0%	0.0%
September	683	94.9%	0.5	6.0	-	1.4	-	90.3%	9.5%	0.1%	0.0%	0.0%	0.0%
October	712	95.7%	0.5	5.1	-	1.3	-	91.0%	8.8%	0.1%	0.0%	0.0%	0.0%
November	687	95.4%	0.7	10.0	-	2.7	-	84.4%	14.4%	1.0%	0.1%	0.0%	0.0%
December	711	95.6%	1.3	8.3	-	3.1	-	48.0%	50.6%	1.4%	0.0%	0.0%	0.0%
Annual	8073	92.2%	0.7	12.7	0	3.9	0	81.2%	18.0%	0.7%	0.1%	0.0%	0.0%

Table G-3 Wauchope Station: Summary of Airpointer H_2S Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	(no.)	0 ≤ C < 1	1 ≤ C < 3.6	3.6 ≤ C < 5	5 ≤ C < 8	8 ≤ C < 10.8	C ≥ 10.8
January	96	12.9%	0.4	3.6	-	2.2	-	90.6%	8.3%	1.0%	0.0%	0.0%	0.0%
February	643	95.7%	0.2	2.5	-	0.4	-	98.0%	2.0%	0.0%	0.0%	0.0%	0.0%
March	707	95.0%	0.2	3.1	-	0.7	-	97.2%	2.8%	0.0%	0.0%	0.0%	0.0%
April	689	95.7%	0.2	5.3	-	0.7	-	97.7%	2.2%	0.0%	0.1%	0.0%	0.0%
May	547	73.5%	0.6	16.3	2	2.8	-	88.8%	7.5%	1.3%	1.5%	0.4%	0.5%
June	576	80.0%	2.8	59.7	31	11.2	4	54.5%	24.3%	6.9%	5.4%	3.5%	5.4%
July	711	95.6%	4.1	114.8	67	12.7	11	42.6%	30.4%	6.5%	7.2%	3.9%	9.4%
August	712	95.7%	4.6	118.6	73	14.0	13	43.0%	26.3%	8.1%	8.8%	3.5%	10.3%
September	683	94.9%	1.4	24.1	10	5.0	2	64.7%	28.6%	2.6%	1.9%	0.7%	1.5%
October	712	95.7%	0.8	10.3	-	2.3	-	83.7%	13.5%	0.8%	1.4%	0.6%	0.0%
November	687	95.4%	0.4	4.8	-	1.3	-	93.3%	6.4%	0.3%	0.0%	0.0%	0.0%
December	711	95.6%	0.4	4.2	-	0.8	-	94.5%	5.2%	0.3%	0.0%	0.0%	0.0%
Annual	7473	85.3%	1.4	118.6	183	14.0	30	78.1%	13.5%	2.4%	2.4%	1.1%	2.4%

Table G-4 Wauchope Station: Summary of Airpointer $PM_{2.5}$ Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	(no.)	0 ≤ C < 2	2 ≤ C < 4	4 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 30	C ≥ 30
January	740	99.5%	4.2	20.5	8.5	-	19.2%	38.0%	39.2%	3.5%	0.1%	0.0%
February	672	100.0%	4.9	19.8	9.5	-	10.7%	31.1%	53.1%	5.1%	0.0%	0.0%
March	744	100.0%	4.4	21.9	9.1	-	19.6%	35.8%	39.4%	5.0%	0.3%	0.0%
April	720	100.0%	5.5	31.3	13.1	-	24.3%	25.0%	36.0%	13.3%	1.3%	0.1%
May	573	77.0%	9.9	110.7	20.4	-	15.5%	11.7%	36.5%	26.0%	6.3%	4.0%
June	608	84.4%	12.5	162.8	41.8	3	5.4%	11.5%	40.1%	28.3%	6.1%	8.6%
July	743	99.9%	23.3	194.4	136.9	8	0.4%	13.3%	35.5%	23.6%	10.6%	16.6%
August	744	100.0%	22.8	518.5	107.3	8	3.4%	15.2%	31.2%	25.4%	7.8%	17.1%
September	719	99.9%	10.5	65.6	22.1	-	7.1%	14.5%	37.7%	30.0%	7.1%	3.6%
October	744	100.0%	7.8	56.1	20.7	-	11.0%	18.8%	44.6%	21.5%	2.3%	1.7%
November	720	100.0%	5.7	48.3	17.0	-	20.8%	27.6%	37.1%	12.4%	1.7%	0.4%
December	744	100.0%	5.6	33.0	17.5	-	17.3%	29.0%	41.5%	9.8%	2.2%	0.1%
Annual	8471	96.7%	9.8	518.5	136.9	19	13.0%	22.9%	39.3%	16.7%	3.8%	4.4%

Table G-5 Wauchope Station: Summary of Airpointer Precipitation Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Total Precip.	Maximum 1-Hr Precip.	Maximum 24-Hr Precip.	Percent of Data in each Precipitation Range					
	(no.)	(%)	(mm)	(mm)	(mm)	<=5	5 ~ 10	10 ~ 25	25 ~ 50	50 ~ 75	>75
January	741	99.6%	0.0	0.0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
February	672	100.0%	0.9	0.2	0.3	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
March	744	100.0%	2.9	1.4	1.7	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
April	720	100.0%	1.9	0.4	0.6	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	573	77.0%	52.1	9.2	29.7	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
June	610	84.7%	72.8	15.7	24.8	99.2%	0.5%	0.3%	0.0%	0.0%	0.0%
July	743	99.9%	39.5	9.6	9.9	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
August	744	100.0%	20.9	7.3	14.7	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
September	719	99.9%	87.8	24.4	70.1	99.3%	0.4%	0.3%	0.0%	0.0%	0.0%
October	744	100.0%	9.4	2.1	3.8	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
November	720	100.0%	3.9	1.1	2.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
December	744	100.0%	3.0	1.7	2.9	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Annual	8474	96.7%	295.0	24.4	70.1	99.8%	0.1%	0.0%	0.0%	0.0%	0.0%

Table G-6 Wauchope Station: Summary of Airpointer Ambient Temperature Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Temp.	Minimum 1-Hr Temp.	Maximum 1-Hr Temp.	Percent of Data in each Temperature Range					
	(no.)	(%)	(˚C)	(˚C)	(˚C)	<=-30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	741	99.6%	(12.0)	(34.6)	3.8	1.3%	34.8%	57.2%	6.6%	0.0%	0.0%
February	672	100.0%	(17.3)	(33.0)	(0.6)	1.2%	64.3%	34.5%	0.0%	0.0%	0.0%
March	744	100.0%	(2.8)	(27.9)	13.3	0.0%	10.8%	47.4%	41.8%	0.0%	0.0%
April	720	100.0%	5.4	(7.3)	22.2	0.0%	0.0%	25.1%	65.6%	9.3%	0.0%
May	573	77.0%	10.0	(1.8)	25.1	0.0%	0.0%	4.5%	72.3%	23.2%	0.0%
June	610	84.7%	18.2	6.8	29.8	0.0%	0.0%	0.0%	27.7%	72.3%	0.0%
July	743	99.9%	19.6	8.9	30.1	0.0%	0.0%	0.0%	17.6%	82.2%	0.1%
August	744	100.0%	18.4	5.0	37.3	0.0%	0.0%	0.0%	34.1%	61.2%	4.7%
September	719	99.9%	13.6	(1.4)	32.4	0.0%	0.0%	0.4%	63.0%	35.2%	1.4%
October	744	100.0%	6.8	(4.8)	24.2	0.0%	0.0%	12.5%	80.9%	6.6%	0.0%
November	720	100.0%	(1.7)	(17.1)	12.8	0.0%	1.7%	49.3%	49.0%	0.0%	0.0%
December	744	100.0%	(7.9)	(27.6)	8.1	0.0%	16.3%	69.1%	14.7%	0.0%	0.0%
Annual	8474	96.7%	4.0	(34.6)	37.3	0.2%	10.7%	25.7%	39.1%	23.7%	0.5%

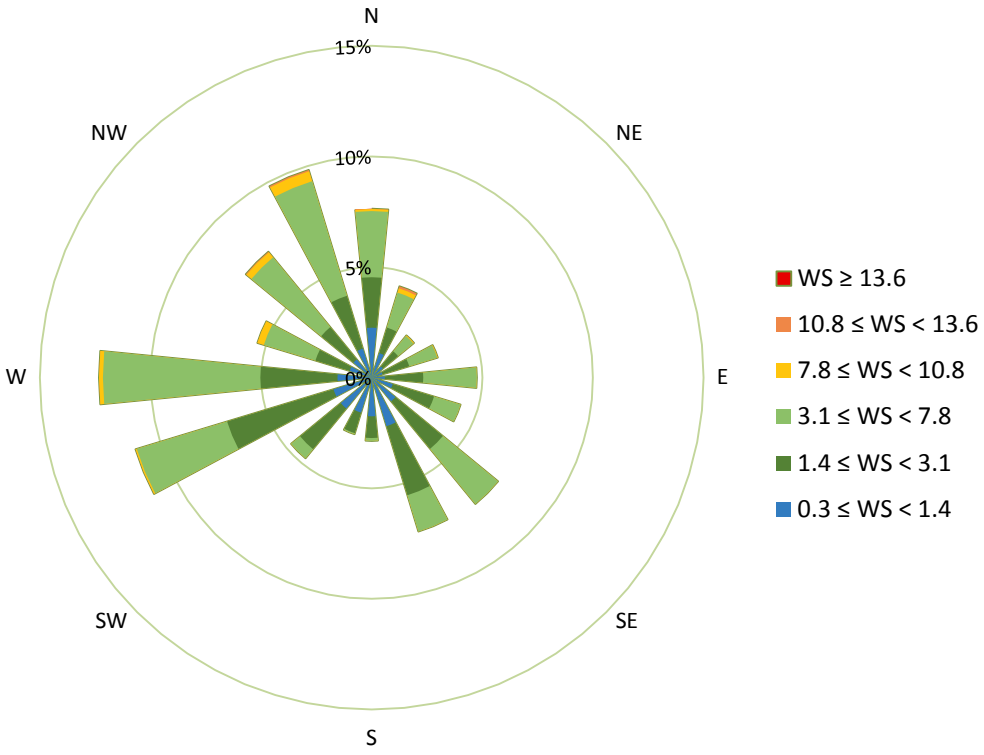
Table G-7 Wauchope Station: Summary of Airpointer Relative Humidity Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average RH	Minimum 1-Hr RH	Maximum 1-Hr RH	Percent of Data in each Relative Humidity Range					
	(no.)	(%)	(%)	(%)	(%)	<=15	15 ~ 30	30 ~ 60	60 ~ 80	80 ~ 90	>90
January	741	99.6%	76	48	90	0.0%	0.0%	3.6%	59.8%	36.6%	0.0%
February	672	100.0%	72	54	86	0.0%	0.0%	5.4%	86.5%	8.2%	0.0%
March	744	100.0%	74	33	90	0.0%	0.0%	11.6%	57.0%	31.2%	0.3%
April	720	100.0%	58	22	90	0.0%	7.4%	41.7%	37.9%	13.1%	0.0%
May	573	77.0%	57	20	93	0.0%	15.9%	35.3%	28.8%	16.4%	3.7%
June	610	84.7%	63	26	93	0.0%	0.7%	43.1%	33.4%	19.3%	3.4%
July	743	99.9%	70	32	93	0.0%	0.0%	29.1%	35.1%	29.2%	6.6%
August	744	100.0%	65	19	93	0.0%	3.6%	35.5%	31.0%	23.3%	6.6%
September	719	99.9%	67	25	93	0.0%	1.8%	32.4%	33.2%	22.4%	10.2%
October	744	100.0%	70	28	92	0.0%	0.4%	26.9%	41.1%	26.9%	4.7%
November	720	100.0%	75	40	92	0.0%	0.0%	11.5%	48.9%	33.9%	5.7%
December	744	100.0%	76	39	89	0.0%	0.0%	6.6%	57.8%	35.6%	0.0%
Annual	8474	96.7%	69	19	93	0.0%	2.3%	23.1%	46.1%	25.1%	3.4%

Table G-8 Wauchope Station: Airpointer Wind Frequency Table for the Year 2015

Wind Direction Sector	Percent Data in each Wind Speed Range, wind speed unit m/s						
	0.3 ≤ WS < 1.4	1.4 ≤ WS < 3.1	3.1 ≤ WS < 7.8	7.8 ≤ WS < 10.8	10.8 ≤ WS < 13.6	WS ≥ 13.6	Totals
North NorthEast	1.2%	1.2%	1.7%	0.2%	0.1%	0.0%	4.3%
NorthEast	0.7%	0.9%	0.9%	0.0%	0.0%	0.0%	2.5%
East NorthEast	0.5%	1.3%	1.3%	0.0%	0.0%	0.0%	3.1%
East	0.6%	1.7%	2.4%	0.0%	0.0%	0.0%	4.8%
East SouthEast	1.0%	2.0%	1.3%	0.0%	0.0%	0.0%	4.2%
SouthEast	1.4%	2.8%	3.2%	0.0%	0.0%	0.0%	7.4%
South SouthEast	2.3%	3.3%	1.7%	0.0%	0.0%	0.0%	7.3%
South	1.7%	1.0%	0.1%	0.0%	0.0%	0.0%	2.9%
South SouthWest	1.7%	1.0%	0.0%	0.0%	0.0%	0.0%	2.7%
Southwest	1.8%	2.4%	0.5%	0.0%	0.0%	0.0%	4.7%
West SouthWest	1.8%	5.0%	4.3%	0.1%	0.0%	0.0%	11.2%
West	1.5%	3.5%	7.1%	0.2%	0.0%	0.0%	12.3%
West NorthWest	1.0%	1.6%	2.4%	0.3%	0.0%	0.0%	5.4%
NorthWest	1.1%	1.9%	4.1%	0.3%	0.0%	0.0%	7.4%
North NorthWest	1.4%	2.5%	5.4%	0.5%	0.1%	0.0%	9.8%
North	2.3%	2.3%	3.0%	0.1%	0.0%	0.0%	7.6%
Total	21.9%	34.2%	39.5%	1.7%	0.2%	0.0%	97.5%

Percent Calm (<0.3 m/s)	2.6%
Number of Valid Hourly-Average Data	8458
Total Workable Hours in Time Period	8760



APPENDIX H WAWOTA STATION: CONTINUOUS MONITORING DATA

Table H-1 Wawota Station: Summary Statistics for Continuous Air Monitoring Results for 2015

Parameter	Unit	Calibration Hours	Hours of Valid Data	Annual Percent Uptime	Summary Statistics for 1-Hour Data		
					Average	Minimum	Maximum
NO	ppb	380	6884	78.6%	0.3	< 0.1	26.1
NO_2	ppb	380	6887	78.6%	1.3	< 0.1	21.0
NO_x	ppb	380	6887	78.6%	1.7	< 0.1	41.0
O_3	ppb	381	6922	79.0%	31.0	3.0	71.4
$PM_{2.5}$	$\mu g/m^3$	2	7229	82.5%	8.1	< 0.1	454.4
Precipitation (total)	mm	0	8731	99.7%	349.0	< 0.1	23.4
Ambient Temperature	˚C	0	7269	83.0%	4.4	(31.6)	36.2
Relative Humidity	%	0	8731	99.7%	68.7	18.8	92.9
Wind Speed	m/s	0	7232	82.6%	2.6	Calm	13.6

Table H-2 Wawota Station: Summary of Airpointer NO Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	712	95.7%	0.3	8.6	1.1	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
February	643	95.7%	0.4	7.0	0.8	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%
March	692	93.0%	0.3	8.3	0.8	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
April	687	95.4%	0.3	9.8	0.8	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
May	694	93.3%	0.3	13.8	1.1	99.3%	0.7%	0.0%	0.0%	0.0%	0.0%
June	652	90.6%	0.2	5.4	0.6	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%
July	708	95.2%	0.3	10.7	1.1	99.3%	0.7%	0.0%	0.0%	0.0%	0.0%
August	704	94.6%	0.4	9.2	0.7	99.6%	0.4%	0.0%	0.0%	0.0%	0.0%
September	680	94.4%	0.3	4.0	0.8	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
October	712	95.7%	0.4	10.5	0.9	99.2%	0.8%	0.0%	0.0%	0.0%	0.0%
November	682	94.7%	0.4	11.1	1.1	99.1%	0.9%	0.0%	0.0%	0.0%	0.0%
December	711	95.6%	0.5	26.1	2.9	99.3%	0.4%	0.3%	0.0%	0.0%	0.0%
Annual	8277	94.5%	0.3	26.1	2.9	99.6%	0.4%	0.0%	0.0%	0.0%	0.0%

Table H-3 Wawota Station: Summary of Airpointer NO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	(no.)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	712	95.7%	1.9	9.2	-	4.1	-	96.5%	3.5%	0.0%	0.0%	0.0%	0.0%
February	643	95.7%	1.4	8.1	-	3.1	-	98.4%	1.6%	0.0%	0.0%	0.0%	0.0%
March	692	93.0%	1.4	5.8	-	2.4	-	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
April	687	95.4%	1.3	6.9	-	2.6	-	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
May	694	93.3%	1.6	9.1	-	2.8	-	98.8%	1.2%	0.0%	0.0%	0.0%	0.0%
June	652	90.6%	1.5	6.8	-	2.8	-	99.4%	0.6%	0.0%	0.0%	0.0%	0.0%
July	708	95.2%	1.0	4.5	-	2.1	-	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
August	704	94.6%	0.8	8.5	-	1.9	-	99.3%	0.7%	0.0%	0.0%	0.0%	0.0%
September	683	94.9%	0.7	6.9	-	1.6	-	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
October	712	95.7%	1.3	7.2	-	2.0	-	99.2%	0.8%	0.0%	0.0%	0.0%	0.0%
November	683	94.9%	1.4	21.0	-	5.3	-	96.9%	2.6%	0.4%	0.0%	0.0%	0.0%
December	711	95.6%	1.6	14.9	-	5.2	-	97.3%	2.7%	0.0%	0.0%	0.0%	0.0%
Annual	8281	94.5%	1.3	21.0	0	5.3	0	98.8%	1.2%	0.0%	0.0%	0.0%	0.0%

Table H-4 Wawota Station: Summary of Airpointer NO_X Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	712	95.7%	2.3	17.7	4.9	93.7%	6.2%	0.1%	0.0%	0.0%	0.0%
February	643	95.7%	1.7	9.2	3.6	96.6%	3.4%	0.0%	0.0%	0.0%	0.0%
March	692	93.0%	1.6	14.0	3.0	99.0%	1.0%	0.0%	0.0%	0.0%	0.0%
April	687	95.4%	1.5	12.0	2.9	98.5%	1.5%	0.0%	0.0%	0.0%	0.0%
May	694	93.3%	1.8	22.7	3.3	97.7%	2.2%	0.1%	0.0%	0.0%	0.0%
June	652	90.6%	1.7	8.3	3.1	98.5%	1.5%	0.0%	0.0%	0.0%	0.0%
July	708	95.2%	1.3	15.2	2.7	99.0%	0.8%	0.1%	0.0%	0.0%	0.0%
August	704	94.6%	1.2	12.1	2.3	98.2%	1.8%	0.0%	0.0%	0.0%	0.0%
September	683	94.9%	1.0	7.6	2.0	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
October	712	95.7%	1.7	17.3	3.0	97.2%	2.7%	0.1%	0.0%	0.0%	0.0%
November	683	94.9%	1.9	21.3	6.0	94.1	5.3%	0.6%	0.0%	0.0%	0.0%
December	711	95.6%	2.1	41.0	6.0	94.2	5.3%	0.1%	0.3%	0.0%	0.0%
Annual	8281	94.5%	1.7	41.0	6.0	97.2%	2.7%	0.1%	0.0%	0.0%	0.0%

Table H-5 Wawota Station: Summary of Airpointer O_3 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	0 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 40	40 ≤ C < 60	60 ≤ C < 82	C ≥ 82
January	712	95.7%	32.1	40.8	-	36.8	0.0%	2.0%	97.2%	0.8%	0.0%	0.0%
February	643	95.7%	35.7	46.5	-	42.3	0.0%	0.0%	84.8%	15.2%	0.0%	0.0%
March	692	93.0%	35.7	51.3	-	46.4	0.1%	2.5%	63.9%	33.5%	0.0%	0.0%
April	687	95.4%	36.0	56.3	-	46.0	0.0%	4.9%	62.2%	32.9%	0.0%	0.0%
May	706	94.9%	39.7	71.4	-	53.8	0.0%	5.5%	42.6%	46.5%	5.4%	0.0%
June	671	93.2%	37.7	62.1	-	48.6	1.2%	5.7%	48.3%	44.0%	0.9%	0.0%
July	710	95.4%	32.1	57.8	-	45.9	2.5%	12.4%	60.0%	25.1%	0.0%	0.0%
August	706	94.9%	27.8	60.0	-	47.3	7.9%	23.7%	50.1%	18.1%	0.1%	0.0%
September	683	94.9%	27.4	62.2	-	43.7	1.9%	19.5%	70.6%	7.9%	0.1%	0.0%
October	712	95.7%	23.8	45.0	-	34.6	6.5%	28.5%	63.2%	1.8%	0.0%	0.0%
November	682	94.7%	21.1	37.5	-	28.7	4.7%	37.1%	58.2%	0.0%	0.0%	0.0%
December	711	95.6%	23.8	38.3	-	30.7	1.3%	21.0%	77.8%	0.0%	0.0%	0.0%
Annual	8315	94.9%	31.0	71.4	-	53.8	2.2%	13.7%	64.9%	18.7%	0.6%	0.0%

Table H-6 Wawota Station: Summary of Airpointer $PM_{2.5}$ Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	(no.)	0 ≤ C < 2	2 ≤ C < 4	4 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 30	C ≥ 30
January	744	100.0%	3.9	25.6	9.7	-	34.1%	27.3%	32.8%	5.6%	0.1%	0.0%
February	672	100.0%	4.4	19.3	9.5	-	18.5%	29.9%	48.4%	3.3%	0.0%	0.0%
March	742	99.7%	4.0	21.4	10.1	-	40.6%	19.5%	31.9%	7.4%	0.5%	0.0%
April	719	99.9%	4.1	34.8	15.8	-	38.0%	23.4%	32.3%	4.5%	1.8%	0.1%
May	738	99.2%	6.6	39.7	13.9	-	19.4%	17.8%	43.5%	16.5%	2.6%	0.3%
June	706	98.1%	12.9	454.4	82.3	2	9.2%	15.2%	44.3%	22.2%	4.5%	4.5%
July	742	99.7%	22.0	198.8	127.3	6	0.9%	14.2%	43.4%	20.5%	6.3%	14.7%
August	740	99.5%	14.1	147.8	71.3	2	10.9%	13.2%	28.9%	30.7%	7.8%	8.4%
September	682	94.7%	8.8	39.2	20.3	-	4.3%	20.2%	44.6%	23.8%	6.5%	0.7%
October	744	100.0%	7.2	126.4	22.3	-	20.2%	17.1%	44.5%	14.4%	2.4%	1.5%
November	718	99.7%	4.6	42.0	10.7	-	30.8%	29.0%	29.2%	10.6%	0.1%	0.3%
December	744	100.0%	4.7	36.6	10.6	-	25.0%	30.4%	37.1%	6.7%	0.7%	0.1%
Annual	8691	99.2%	8.1	454.4	127.3	10	21.1%	21.4%	38.3%	13.9%	2.8%	2.6%

Table H-7 Wawota Station: Summary of Airpointer Precipitation Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Total Precip.	Maximum 1-Hr Precip.	Maximum 24-Hr Precip.	Percent of Data in each Precipitation Range					
	(no.)	(%)	(mm)	(mm)	(mm)	<=5	5 ~ 10	10 ~ 25	25 ~ 50	50 ~ 75	>75
January	744	100.0%	0.1	0.0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
February	672	100.0%	0.9	0.3	0.6	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
March	743	99.9%	3.0	2.3	2.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
April	719	99.9%	2.1	0.6	0.9	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	738	99.2%	38.9	4.1	13.3	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
June	707	98.2%	72.0	17.4	24.6	99.3%	0.4%	0.3%	0.0%	0.0%	0.0%
July	742	99.7%	59.6	23.4	25.1	99.9%	0.0%	0.1%	0.0%	0.0%	0.0%
August	740	99.5%	37.4	8.1	21.4	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
September	720	100.0%	110.1	17.8	73.7	98.8%	0.7%	0.6%	0.0%	0.0%	0.0%
October	744	100.0%	18.3	3.0	4.9	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
November	718	99.7%	2.7	0.5	1.3	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
December	744	100.0%	4.2	2.2	3.7	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Annual	8731	99.7%	349.0	23.4	73.7	99.8%	0.1%	0.1%	0.0%	0.0%	0.0%

Table H-8 Wawota Station: Summary of Airpointer Ambient Temperature Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Temp.	Minimum 1-Hr Temp.	Maximum 1-Hr Temp.	Percent of Data in each Temperature Range					
	(no.)	(%)	(˚C)	(˚C)	(˚C)	<=-30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	744	100.0%	(10.6)	(31.6)	8.4	1.2%	31.7%	55.2%	11.8%	0.0%	0.0%
February	672	100.0%	(16.3)	(31.4)	(1.5)	1.2%	58.2%	40.6%	0.0%	0.0%	0.0%
March	743	99.9%	(1.8)	(27.8)	13.0	0.0%	7.7%	50.1%	42.3%	0.0%	0.0%
April	719	99.9%	5.2	(9.3)	21.7	0.0%	0.0%	26.1%	64.8%	9.0%	0.0%
May	738	99.2%	10.3	(4.3)	25.1	0.0%	0.0%	5.3%	69.2%	25.5%	0.0%
June	707	98.2%	16.6	2.8	28.5	0.0%	0.0%	0.0%	38.0%	62.0%	0.0%
July	742	99.7%	19.1	7.1	29.4	0.0%	0.0%	0.0%	20.9%	79.1%	0.0%
August	740	99.5%	17.6	4.0	36.2	0.0%	0.0%	0.0%	38.1%	58.2%	3.6%
September	720	100.0%	13.1	(2.3)	31.2	0.0%	0.0%	1.0%	64.4%	34.2%	0.4%
October	744	100.0%	6.6	(4.9)	23.3	0.0%	0.0%	14.7%	76.9%	8.5%	0.0%
November	718	99.7%	(1.5)	(18.1)	14.3	0.0%	1.1%	52.5%	46.4%	0.0%	0.0%
December	744	100.0%	(7.1)	(29.0)	9.3	0.0%	15.6%	60.6%	23.8%	0.0%	0.0%
Annual	8731	99.7%	6.1	(31.6)	36.2	0.2%	9.3%	25.5%	41.6%	23.1%	0.3%

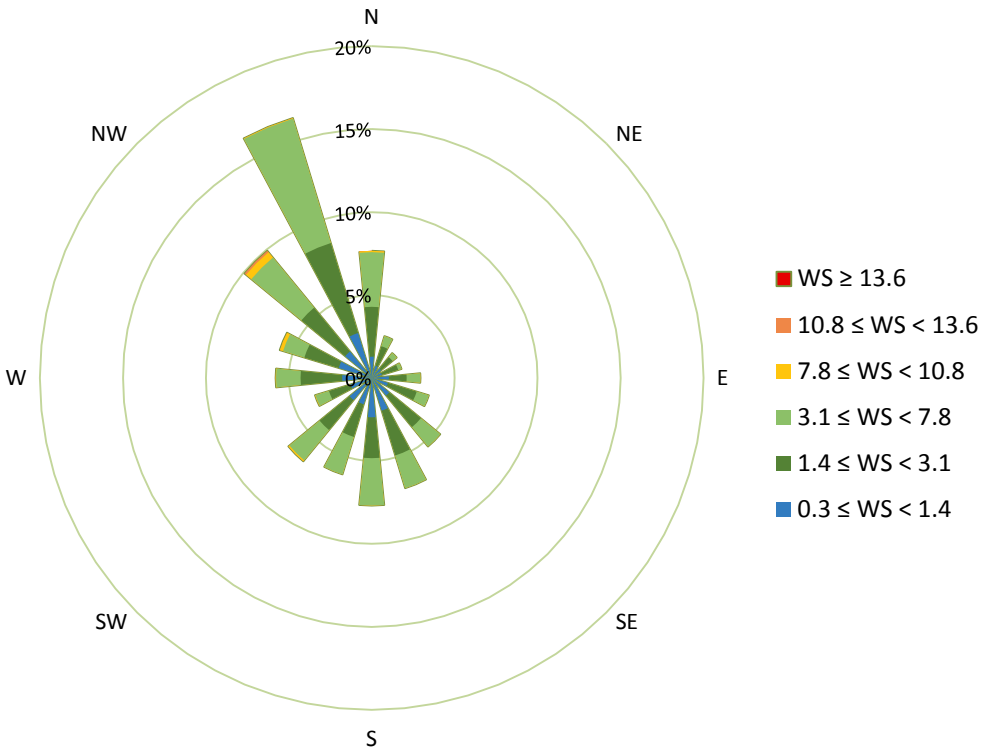
Table H-9 Wawota Station: Summary of Airpointer Relative Humidity Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average RH	Minimum 1-Hr RH	Maximum 1-Hr RH	Percent of Data in each Relative Humidity Range					
	(no.)	(%)	(%)	(%)	(%)	<=15	15 ~ 30	30 ~ 60	60 ~ 80	80 ~ 90	>90
January	744	100.0%	76	41	92	0.0%	0.0%	7.8%	53.4%	36.7%	2.2%
February	672	100.0%	73	34	88	0.0%	0.0%	10.7%	67.1%	22.2%	0.0%
March	743	99.9%	71	31	92	0.0%	0.0%	22.5%	43.2%	30.0%	4.3%
April	719	99.9%	58	21	91	0.0%	10.6%	40.1%	30.9%	17.9%	0.6%
May	738	99.2%	56	19	93	0.0%	13.8%	41.2%	26.2%	14.0%	4.9%
June	707	98.2%	64	28	93	0.0%	0.4%	42.9%	33.9%	15.6%	7.2%
July	742	99.7%	70	33	93	0.0%	0.0%	30.3%	33.3%	24.0%	12.4%
August	740	99.5%	67	23	93	0.0%	1.8%	37.0%	25.5%	24.7%	10.9%
September	720	100.0%	66	28	92	0.0%	0.7%	38.2%	31.5%	17.6%	11.9%
October	744	100.0%	70	31	92	0.0%	0.0%	30.8%	26.6%	35.2%	7.4%
November	718	99.7%	76	32	92	0.0%	0.0%	14.5%	37.5%	30.1%	18.0%
December	744	100.0%	76	32	91	0.0%	0.0%	17.5%	28.8%	52.2%	1.6%
Annual	8731	99.7%	69	19	93	0.0%	2.3%	27.8%	36.3%	26.8%	6.8%

Table H-10 Wawota Station: Airpointer Wind Frequency Table for the Year 2015

Wind Direction Sector	Percent Data in each Wind Speed Range, wind speed unit m/s						
	0.3 ≤ WS < 1.4	1.4 ≤ WS < 3.1	3.1 ≤ WS < 7.8	7.8 ≤ WS < 10.8	10.8 ≤ WS < 13.6	WS ≥ 13.6	Totals
North NorthEast	0.8%	1.2%	0.6%	0.0%	0.0%	0.0 %	2.6%
NorthEast	0.7%	0.9%	0.3%	0.0%	0.0%	0.0 %	1.9%
East NorthEast	0.6%	1.0%	0.2%	0.0%	0.0%	0.0 %	1.9%
East	1.0%	1.1%	0.8%	0.0%	0.0%	0.0 %	2.9%
East SouthEast	1.0%	1.8%	0.8%	0.0%	0.0%	0.0 %	3.6%
SouthEast	1.4%	2.5%	1.5%	0.0%	0.0%	0.0 %	5.3%
South SouthEast	2.1%	2.8%	2.1%	0.0%	0.0%	0.0 %	6.9%
South	2.4%	2.5%	2.9%	0.0%	0.0%	0.0 %	7.7%
South SouthWest	1.7%	2.1%	2.4%	0.0%	0.0%	0.0 %	6.1%
Southwest	1.7%	2.3%	2.4%	0.1%	0.0%	0.0 %	6.5%
West SouthWest	1.3%	1.4%	0.9%	0.0%	0.0%	0.0 %	3.6%
West	1.8%	2.5%	1.5%	0.0%	0.0%	0.0 %	5.8%
West NorthWest	2.1%	2.2%	1.3%	0.2%	0.0%	0.0 %	5.8%
NorthWest	2.1%	3.4%	3.9%	0.4%	0.1%	0.0 %	9.9%
North NorthWest	2.8%	5.7%	7.8%	0.0%	0.0%	0.0 %	16.4%
North	1.3%	3.0%	3.3%	0.1%	0.0%	0.0 %	7.7%
Total	24.7%	36.3%	32.6%	0.9%	0.1%	0.0 %	94.7%

Percent Calm (<0.3 m/s)	5.5%
Number of Valid Hourly-Average Data	8646
Total Workable Hours in Time Period	8760


N
NE
E
SE
S
SW
W
NW
20%
15%
10%
5%
0%
WS ≥ 13.6
10.8 ≤ WS < 13.6
7.8 ≤ WS < 10.8
3.1 ≤ WS < 7.8
1.4 ≤ WS < 3.1
0.3 ≤ WS < 1.4

APPENDIX I WEYBURN STATION: CONTINUOUS MONITORING DATA

Table I-1 Weyburn Station: Summary Statistics for Continuous Air Monitoring Results for 2015

Parameter	Unit	Calibration Hours	Hours of Valid Data	Annual Percent Uptime	Summary Statistics for 1-Hour Data		
					Average	Minimum	Maximum
SO_2	ppb	332	7601	86.8%	1.6	< 0.1	37.9
NO	ppb	338	7233	82.6%	0.5	< 0.1	12.4
NO_2	ppb	338	7235	82.6%	1.8	< 0.1	20.2
NO_x	ppb	338	7234	82.6%	2.3	< 0.1	26.5
O_3	ppb	346	7618	87.0%	29.4	0.6	78.3
H_2S	ppb	332	7601	86.8%	0.9	< 0.1	32.7
$PM_{2.5}$	$\mu g/m^3$	2	7991	91.2%	6.8	< 0.1	290.3
Precipitation (total)	mm	0	8051	91.9%	360.4	< 0.1	13.8
Ambient Temperature	˚C	0	8051	91.9%	4.2	(32.8)	38.0
Relative Humidity	%	0	8051	91.9%	67.3	16.4	92.5
Wind Speed	m/s	0	8048	91.9%	3.0	Calm	14.1

Table I-2 Weyburn Station: Summary of Airpointer SO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Conc.	Maximum 1-Hr Conc.	1-Hour Exceedance	Maximum 24-Hr Conc.	24-Hour Exceedance	Percent of Data in each Concentration Range					
	(no.)	(%)	(ppb)	(ppb)	(no.)	(ppb)	(no.)	0 ≤ C < 1	1 ≤ C < 5	5 ≤ C < 10	10 ≤ C < 57	57 ≤ C < 172	C ≥ 172
January	712	95.7%	1.4	15.3	-	4.1	-	63.9%	30.2%	4.6%	1.3%	0.0%	0.0%
February	643	95.7%	1.8	19.9	-	5.1	-	48.4%	43.5%	6.4%	1.7%	0.0%	0.0%
March	693	93.1%	1.2	16.0	-	4.9	-	68.4%	27.3%	3.0%	1.3%	0.0%	0.0%
April	688	95.6%	1.4	14.5	-	4.5	-	66.1%	27.3%	5.1%	1.5%	0.0%	0.0%
May	708	95.2%	1.3	15.7	-	3.8	-	69.8%	24.0%	4.9%	1.3%	0.0%	0.0%
June	678	94.2%	1.5	34.3	-	3.8	-	54.1%	41.3%	3.8%	0.7%	0.0%	0.0%
July	712	95.7%	1.5	37.9	-	4.7	-	62.8%	30.8%	5.5%	1.0%	0.0%	0.0%
August	562	75.5%	1.9	27.5	-	8.1	-	58.2%	34.3%	3.7%	3.7%	0.0%	0.0%
September	110	15.3%	1.8	7.9	-	2.8	-	26.4%	69.1%	4.5%	0.0%	0.0%	0.0%
October	701	94.2%	2.2	22.9	-	6.0	-	27.1%	64.5%	7.0%	1.4%	0.0%	0.0%
November	683	94.9%	1.3	17.5	-	3.9	-	66.3%	29.0%	3.1%	1.6%	0.0%	0.0%
December	711	95.6%	1.7	18.4	-	8.2	-	60.9%	29.3%	7.9%	2.0%	0.0%	0.0%
Annual	7601	86.8%	1.6	37.9	0	8.2	0	58.3%	35.1%	5.0%	1.5%	0.0%	0.0%

Table I-3 Weyburn Station: Summary of Airpointer NO Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	Maximum 24-Hr Conc. (ppb)	Percent of Data in each Concentration Range					
						0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	696	93.5%	0.6	4.3	1.2	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
February	637	94.8%	0.6	4.4	1.2	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
March	354	47.6%	0.5	4.2	0.9	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
April	679	94.3%	0.3	1.6	0.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	708	95.2%	0.3	4.2	0.8	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
June	670	93.1%	0.7	11.8	2.3	99.1%	0.9%	0.0%	0.0%	0.0%	0.0%
July	712	95.7%	0.4	2.9	0.7	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
August	562	75.5%	0.4	3.6	0.8	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
September	120	16.7%	0.4	1.8	0.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
October	702	94.4%	0.5	4.5	0.9	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
November	682	94.7%	0.5	8.4	1.3	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
December	711	95.6%	0.5	12.4	1.2	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
Annual	7233	82.6%	0.5	12.4	2.3	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%

Table I-4 Weyburn Station: Summary of Airpointer NO_2 Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	1-Hour Exceedance (no.)	Maximum 24-Hr Conc. (ppb)	24-Hour Exceedance (no.)	Percent of Data in each Concentration Range					
								0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	696	93.5%	2.0	10.8	-	5.7	-	93.2%	6.8%	0.0%	0.0%	0.0%	0.0%
February	637	94.8%	2.2	19.6	-	4.7	-	95.1%	4.6%	0.3%	0.0%	0.0%	0.0%
March	354	47.6%	1.3	6.7	-	2.4	-	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%
April	679	94.3%	1.2	11.1	-	3.7	-	99.4%	0.6%	0.0%	0.0%	0.0%	0.0%
May	708	95.2%	2.4	20.2	-	6.4	-	91.0%	8.8%	0.3%	0.0%	0.0%	0.0%
June	670	93.1%	3.3	15.8	-	6.4	-	81.9%	17.9%	0.1%	0.0%	0.0%	0.0%
July	712	95.7%	1.6	12.2	-	5.1	-	95.6%	4.4%	0.0%	0.0%	0.0%	0.0%
August	562	75.5%	1.3	5.5	-	2.7	-	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%
September	121	16.8%	1.2	10.5	-	1.7	-	96.7%	3.3%	0.0%	0.0%	0.0%	0.0%
October	703	94.5%	1.8	7.7	-	3.0	-	99.1%	0.9%	0.0%	0.0%	0.0%	0.0%
November	682	94.7%	1.2	8.0	-	2.5	-	99.4%	0.6%	0.0%	0.0%	0.0%	0.0%
December	711	95.6%	1.9	8.7	-	4.1	-	93.0%	7.0%	0.0%	0.0%	0.0%	0.0%
Annual	7235	82.6%	1.8	20.2	0	6.4	0	94.9%	5.1%	0.1%	0.0%	0.0%	0.0%

Table I-5 Weyburn Station: Summary of Airpointer NO_X Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	Maximum 24-Hr Conc. (ppb)	Percent of Data in each Concentration Range					
						0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 159	C ≥ 159
January	696	93.5%	2.3	11.2	6.7	88.5%	11.5%	0.0%	0.0%	0.0%	0.0%
February	637	94.8%	2.8	20.5	5.8	89.0%	10.5%	0.5%	0.0%	0.0%	0.0%
March	354	47.6%	1.8	7.6	3.3	96.9%	3.1%	0.0%	0.0%	0.0%	0.0%
April	679	94.3%	1.4	11.6	4.0	98.8%	1.2%	0.0%	0.0%	0.0%	0.0%
May	708	95.2%	2.7	21.4	7.1	89.4%	9.9%	0.7%	0.0%	0.0%	0.0%
June	670	93.1%	4.0	26.5	8.6	75.8%	22.7%	1.5%	0.0%	0.0%	0.0%
July	712	95.7%	2.0	12.9	5.7	93.1%	6.9%	0.0%	0.0%	0.0%	0.0%
August	562	75.5%	1.7	7.9	3.3	96.6%	3.4%	0.0%	0.0%	0.0%	0.0%
September	121	16.8%	1.6	11.4	2.2	95.9%	4.1%	0.0%	0.0%	0.0%	0.0%
October	702	94.4%	2.3	9.5	3.9	97.6%	2.4%	0.0%	0.0%	0.0%	0.0%
November	682	94.7%	1.7	16.4	3.8	96.8%	3.1%	0.1%	0.0%	0.0%	0.0%
December	711	95.6%	2.4	16.8	4.8	88.6%	11.3%	0.1%	0.0%	0.0%	0.0%
Annual	7234	82.6%	2.3	26.5	8.6	91.7%	8.0%	0.3%	0.0%	0.0%	0.0%

Table I-6 Weyburn Station: Summary of Airpointer O_3 Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	1-Hour Exceedance (no.)	Maximum 24-Hr Conc. (ppb)	Percent of Data in each Concentration Range					
							0 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 40	40 ≤ C < 60	60 ≤ C < 82	C ≥ 82
January	712	95.7%	29.13	41.2	-	35.4	2.2%	4.9%	92.6%	0.3%	0.0%	0.0%
February	643	95.7%	33.06	46.7	-	42.2	0.0%	0.5%	91.9%	7.6%	0.0%	0.0%
March	694	93.3%	32.61	57.2	-	41.0	0.3%	6.3%	73.9%	19.5%	0.0%	0.0%
April	688	95.6%	37.48	63.6	-	46.6	0.0%	6.1%	52.2%	40.8%	0.9%	0.0%
May	709	95.3%	40.54	78.3	-	49.1	0.1%	7.9%	42.9%	36.2%	12.8%	0.0%
June	679	94.3%	38.02	73.9	-	45.1	3.7%	14.4%	34.0%	38.4%	9.4%	0.0%
July	712	95.7%	29.29	69.6	-	37.4	5.5%	21.8%	50.4%	21.2%	1.1%	0.0%
August	562	75.5%	26.39	56.7	-	40.4	10.7%	25.3%	45.0%	19.0%	0.0%	0.0%
September	121	16.8%	25.02	43.0	-	32.9	9.9%	23.1%	59.5%	7.4%	0.0%	0.0%
October	703	94.5%	19.52	40.8	-	26.7	13.8%	41.1%	45.0%	0.1%	0.0%	0.0%
November	684	95.0%	18.25	34.6	-	27.6	9.6%	53.4%	37.0%	0.0%	0.0%	0.0%
December	711	95.6%	19.43	34.1	-	29.5	3.8%	51.9%	44.3%	0.0%	0.0%	0.0%
Annual	7618	87.0%	29.37	78.3	-	49.1	4.5%	21.3%	55.5%	16.4%	2.2%	0.0%

Table I-7 Weyburn Station: Summary of Airpointer H_2S Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. (ppb)	Maximum 1-Hr Conc. (ppb)	1-Hour Exceedance (no.)	Maximum 24-Hr Conc. (ppb)	24-Hour Exceedance (no.)	Percent of Data in each Concentration Range					
								0 ≤ C < 1	1 ≤ C < 3.6	3.6 ≤ C < 5	5 ≤ C < 8	8 ≤ C < 10.8	C ≥ 10.8
January	710	95.4%	1.0	17.5	1	2.2	-	67.2%	31.3%	0.6%	0.8%	0.0%	0.1%
February	643	95.7%	0.8	8.4	-	1.8	-	73.7%	25.8%	0.3%	0.0%	0.2%	0.0%
March	693	93.1%	0.6	10.2	-	1.9	-	87.0%	11.7%	0.7%	0.3%	0.3%	0.0%
April	688	95.6%	0.6	9.6	-	1.8	-	89.5%	8.6%	0.9%	0.7%	0.3%	0.0%
May	709	95.3%	0.7	7.7	-	2.1	-	80.5%	16.1%	2.1%	1.3%	0.0%	0.0%
June	679	94.3%	1.5	16.8	2	3.1	-	45.5%	47.0%	3.8%	3.1%	0.3%	0.3%
July	712	95.7%	1.3	14.5	1	2.8	-	52.7%	43.0%	2.7%	1.5%	0.0%	0.1%
August	562	75.5%	1.6	19.1	3	4.4	1	42.0%	51.8%	3.4%	1.4%	0.9%	0.5%
September	110	15.3%	1.1	3.8	-	1.6	-	50.9%	48.2%	0.9%	0.0%	0.0%	0.0%
October	700	94.1%	1.4	32.7	1	4.0	1	38.3%	59.3%	1.3%	0.7%	0.3%	0.1%
November	684	95.0%	0.5	8.9	-	1.3	-	93.3%	6.0%	0.1%	0.4%	0.1%	0.0%
December	711	95.6%	0.6	24.6	4	2.8	-	93.4%	5.3%	0.3%	0.1%	0.3%	0.6%
Annual	7601	86.8%	0.9	32.7	12	4.4	2	69.6%	27.7%	1.4%	0.9%	0.2%	0.2%

Table I-8 Weyburn Station: Summary of Airpointer $PM_{2.5}$ Monitoring Results for the Year 2015

Month	Valid 1-Hr data (no.)	Operational Time (%)	Average Conc. ($\mu g/m^3$)	Maximum 1-Hr Conc. ($\mu g/m^3$)	Maximum 24-Hr Conc. ($\mu g/m^3$)	24-Hour Exceedance (no.)	Percent of Data in each Concentration Range					
							0 ≤ C < 2	2 ≤ C < 4	4 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 30	C ≥ 30
January	744	100.0%	1.6	12.3	4.6	-	72.6%	19.1%	7.8%	0.5%	0.0%	0.0%
February	672	100.0%	2.7	13.3	7.0	-	48.2%	34.2%	16.7%	0.9%	0.0%	0.0%
March	741	99.6%	2.9	10.6	6.0	-	26.2%	58.3%	15.4%	0.1%	0.0%	0.0%
April	720	100.0%	4.2	82.6	12.8	-	21.4%	50.1%	23.1%	4.3%	0.7%	0.4%
May	743	99.9%	6.7	37.0	11.2	-	0.7%	24.4%	61.6%	11.2%	2.0%	0.1%
June	717	99.6%	16.3	290.3	154.8	2	0.0%	0.0%	64.6%	30.4%	0.4%	4.6%
July	744	100.0%	27.0	282.1	185.4	6	9.8%	15.5%	39.2%	12.9%	3.8%	18.8%
August	587	78.9%	5.4	49.4	13.5	-	20.6%	28.8%	37.0%	12.4%	0.9%	0.3%
September	128	17.8%	4.4	21.2	7.0	-	25.8%	23.4%	46.1%	3.9%	0.8%	0.0%
October	735	98.8%	2.9	72.8	6.5	-	40.5%	41.4%	16.6%	1.2%	0.0%	0.3%
November	716	99.4%	2.1	14.0	6.6	-	66.5%	20.4%	12.2%	1.0%	0.0%	0.0%
December	744	100.0%	2.9	14.7	6.2	-	49.9%	24.6%	23.9%	1.6%	0.0%	0.0%
Annual	7991	91.2%	6.8	290.3	185.4	8	32.4%	28.7%	29.1%	6.8%	0.7%	2.3%

Table I-9 Weyburn Station: Summary of Airpointer Precipitation Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Total Precip.	Maximum 1-Hr Precip.	Maximum 24-Hr Precip.	Percent of Data in each Precipitation Range					
	(no.)	(%)	(mm)	(mm)	(mm)	<=5	5 ~ 10	10 ~ 25	25 ~ 50	50 ~ 75	>75
January	744	100.0%	7.3	1.7	5.1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
February	672	100.0%	19.0	8.0	9.4	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%
March	739	99.3%	11.5	2.8	5.7	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
April	720	100.0%	8.7	1.1	2.8	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
May	743	99.9%	73.7	6.8	30.8	99.6%	0.4%	0.0%	0.0%	0.0%	0.0%
June	718	99.7%	44.8	7.6	13.7	99.3%	0.7%	0.0%	0.0%	0.0%	0.0%
July	744	100.0%	101.3	13.8	18.5	99.1%	0.7%	0.3%	0.0%	0.0%	0.0%
August	636	85.5%	40.1	7.5	25.6	99.4%	0.6%	0.0%	0.0%	0.0%	0.0%
September	128	17.8%	0.1	0.1	0.1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
October	743	99.9%	45.4	9.4	22.2	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%
November	720	100.0%	6.5	1.4	3.5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
December	744	100.0%	1.9	0.6	0.7	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Annual	8051	91.9%	360.4	13.8	30.8	99.7%	0.2%	0.0%	0.0%	0.0%	0.0%

Table I-10 Weyburn Station: Summary of Airpointer Ambient Temperature Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average Temp.	Minimum 1-Hr Temp.	Maximum 1-Hr Temp.	Percent of Data in each Temperature Range					
	(no.)	(%)	(˚C)	(˚C)	(˚C)	<=-30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	744	100.0%	(9.7)	(32.8)	7.1	1.3%	32.1%	49.7%	16.8%	0.0%	0.0%
February	672	100.0%	(14.9)	(32.8)	2.6	1.0%	47.9%	49.4%	1.6%	0.0%	0.0%
March	739	99.3%	(1.0)	(29.0)	20.4	0.0%	9.7%	39.2%	49.5%	1.5%	0.0%
April	720	100.0%	6.0	(7.9)	24.9	0.0%	0.0%	21.8%	67.2%	11.0%	0.0%
May	743	99.9%	11.0	(3.4)	26.6	0.0%	0.0%	3.8%	70.3%	26.0%	0.0%
June	718	99.7%	17.8	5.6	31.2	0.0%	0.0%	0.0%	34.1%	63.9%	1.9%
July	744	100.0%	19.5	7.3	32.2	0.0%	0.0%	0.0%	19.1%	78.2%	2.7%
August	635	85.3%	18.4	3.3	38.0	0.0%	0.0%	0.0%	37.3%	55.6%	7.1%
September	128	17.8%	13.5	(1.1)	31.2	0.0%	0.0%	3.9%	52.3%	42.2%	1.6%
October	744	100.0%	7.0	(3.6)	26.9	0.0%	0.0%	10.6%	79.8%	9.5%	0.0%
November	720	100.0%	(1.5)	(19.5)	14.9	0.0%	2.9%	46.8%	50.3%	0.0%	0.0%
December	744	100.0%	(7.0)	(30.7)	10.5	0.4%	11.6%	67.6%	20.4%	0.0%	0.0%
Annual	8051	91.9%	4.2	(32.8)	38.0	0.2%	9.2%	26.1%	41.1%	22.4%	1.0%

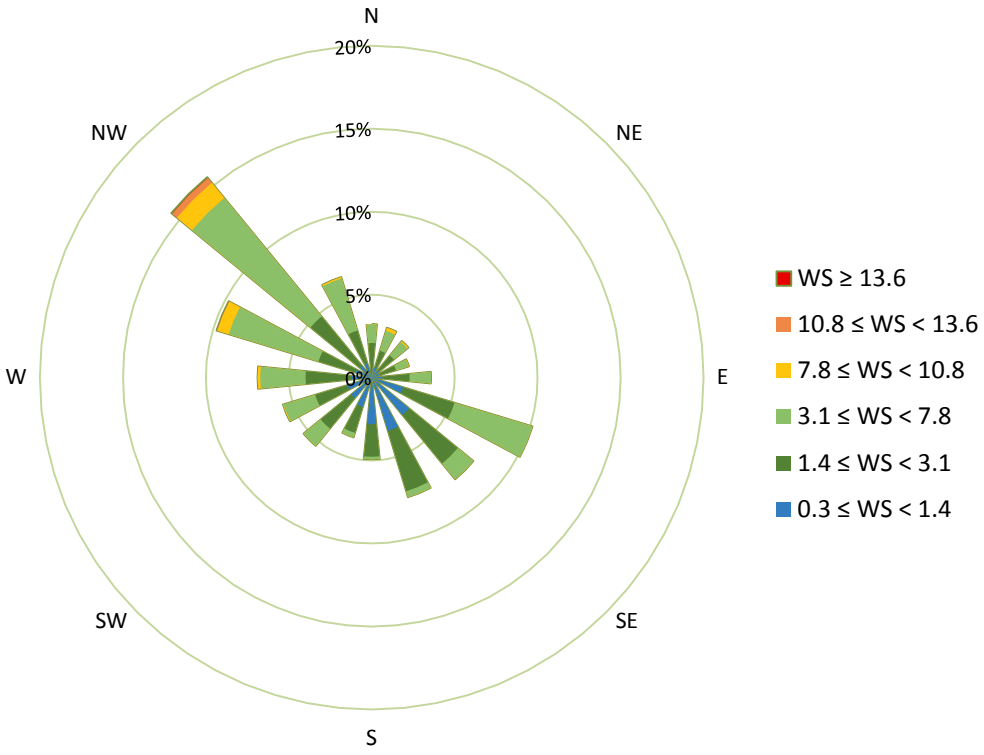
Table I-11 Weyburn Station: Summary of Airpointer Relative Humidity Monitoring Results for the Year 2015

Month	Valid 1-Hr data	Operational Time	Average RH	Minimum 1-Hr RH	Maximum 1-Hr RH	Percent of Data in each Relative Humidity Range					
	(no.)	(%)	(%)	(%)	(%)	<=15	15 ~ 30	30 ~ 60	60 ~ 80	80 ~ 90	>90
January	744	100.0%	75	52	90	0.0%	0.0%	2.2%	65.6%	32.0%	0.3%
February	672	100.0%	74	53	88	0.0%	0.0%	3.0%	79.0%	18.0%	0.0%
March	739	99.3%	72	28	90	0.0%	0.4%	16.4%	53.7%	28.1%	1.4%
April	720	100.0%	57	18	88	0.0%	14.6%	35.1%	37.6%	12.6%	0.0%
May	743	99.9%	55	16	90	0.0%	17.2%	34.6%	33.1%	15.1%	0.0%
June	718	99.7%	59	22	92	0.0%	7.1%	43.0%	30.2%	18.9%	0.7%
July	744	100.0%	68	24	92	0.0%	2.2%	29.8%	32.8%	29.4%	5.8%
August	636	85.5%	62	18	92	0.0%	9.1%	35.5%	24.7%	27.0%	3.6%
September	128	17.8%	57	23	91	0.0%	10.9%	43.0%	32.8%	9.4%	3.9%
October	743	99.9%	70	27	92	0.0%	0.9%	24.6%	37.6%	34.9%	2.0%
November	720	100.0%	73	34	91	0.0%	0.0%	16.1%	51.3%	31.4%	1.3%
December	744	100.0%	75	37	89	0.0%	0.0%	8.6%	52.4%	39.0%	0.0%
Annual	8051	91.9%	67	16	92	0.0%	4.7%	22.9%	45.1%	25.9%	1.4%

Table I-12 Weyburn Station: Airpointer Wind Frequency Table for the Year 2015

Wind Direction Sector	Percent Data in each Wind Speed Range, wind speed unit m/s						
	0.3 ≤ WS < 1.4	1.4 ≤ WS < 3.1	3.1 ≤ WS < 7.8	7.8 ≤ WS < 10.8	10.8 ≤ WS < 13.6	WS ≥ 13.6	Totals
North NorthEast	0.7%	1.0%	1.3%	0.2%	0.0%	0.0%	3.1%
NorthEast	0.6%	1.2%	1.0%	0.1%	0.0%	0.0%	2.9%
East NorthEast	0.5%	1.0%	0.8%	0.0%	0.0%	0.0%	2.3%
East	0.6%	1.6%	1.3%	0.0%	0.0%	0.0%	3.6%
East SouthEast	2.0%	3.2%	4.9%	0.0%	0.0%	0.0%	10.1%
SouthEast	2.9%	3.8%	1.2%	0.0%	0.0%	0.0%	7.9%
South SouthEast	3.4%	3.8%	0.4%	0.0%	0.0%	0.0%	7.5%
South	2.8%	2.0%	0.1%	0.0%	0.0%	0.0%	4.9%
South SouthWest	1.8%	1.7%	0.3%	0.0%	0.0%	0.0%	3.8%
Southwest	1.6%	2.4%	1.3%	0.0%	0.0%	0.0%	5.3%
West SouthWest	1.5%	2.0%	2.0%	0.0%	0.0%	0.0%	5.6%
West	1.3%	2.7%	2.7%	0.2%	0.0%	0.0%	6.9%
West NorthWest	1.0%	2.3%	5.7%	0.7%	0.0%	0.0%	9.8%
NorthWest	0.9%	3.9%	9.2%	1.2%	0.4%	0.1%	15.6%
North NorthWest	0.9%	2.1%	3.3%	0.1%	0.0%	0.0%	6.3%
North	0.5%	1.5%	1.1%	0.0%	0.0%	0.0%	3.2%
Total	23.0%	36.3%	36.7%	2.5%	0.4%	0.1%	99.0%

Percent Calm (<0.3 m/s)	1.1%
Number of Valid Hourly-Average Data	8048
Total Workable Hours in Time Period	8760



APPENDIX J SESAA EXCEEDANCE SUMMARY

Table J-1 Esterhazy Station: Summary of Exceedances for 24-hour SAAQS for the Year 2015

24-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event						
Pollutant	Conc.	Exceedance Day dd-mmm-yy	WS m/s	WD deg	AQHI -	Rain mm	NO_2 ppb	O_3 ppb	$PM_{2.5}$ $\mu g/m^3$
$PM_{2.5}$	107.3	29-Jun-15	1.6	299.4	No Data	No Data	No Data	No Data	107.3
$PM_{2.5}$	57.7	30-Jun-15	1.2	129.4	No Data	No Data	No Data	No Data	57.7
$PM_{2.5}$	60.2	1-Jul-15	1.4	219.4	No Data	No Data	No Data	No Data	60.2
$PM_{2.5}$	81.8	2-Jul-15	1.9	309.5	No Data	No Data	No Data	No Data	81.8
$PM_{2.5}$	69.6	5-Jul-15	2.6	310.3	No Data	No Data	No Data	No Data	69.6
$PM_{2.5}$	29.5	8-Jul-15	2.0	302.7	No Data	No Data	No Data	No Data	29.5
$PM_{2.5}$	28.4	9-Jul-15	2.9	218.5	No Data	No Data	No Data	No Data	28.4
$PM_{2.5}$	38.4	29-Aug-15	1.8	207.1	No Data	No Data	No Data	No Data	38.4
$PM_{2.5}$	47.1	30-Aug-15	1.5	186.1	No Data	0.0	No Data	No Data	47.1

Table J-2 Estevan Station: Summary of Exceedances for 1-hour SAAQS for the Year 2015

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event					
Pollutant	Conc.	Exceedance Time dd-mmm-yy hh:mm	WS m/s	WD deg	AQI -	SO_2 ppb	NO_2 ppb	$PM_{2.5}$ $\mu g/m^3$
SO_2	186.5	6-Dec-15 20:00	6.4	220.0	34.9	186.5	23.2	4.9

Table J-3 Estevan Station: Summary of Exceedances for 24-hour SAAQS for the Year 2015

24-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event					
Pollutant	Conc.	Exceedance Day dd-mmm-yy	WS m/s	WD deg	AQI -	SO_2 ppb	NO_2 ppb	$PM_{2.5}$ $\mu g/m^3$
$PM_{2.6}$	32.7	3-Jul-15	2.0	213.0	39.3	1.2	4.5	32.7
$PM_{2.5}$	37.8	29-Aug-15	3.0	182.9	43.4	4.3	7.2	37.8

Table J-4 Glen Ewen Station: Summary of Exceedances for 1-hour SAAQS for the Year 2015

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event								
Pollutant	Conc.	Exceedance Time dd-mmm-yy hh:mm	WS m/s	WD deg	AQI -	Rain mm	SO_2 ppb	NO_2 ppb	O_3 ppb	H_2S ppb	$PM_{2.5}$ µg/m^3
H_2S	15.8	25-May-15 02:00	0.4	295.9	16.7	-	0.0	4.9	25.9	15.8	-
H_2S	11.3	10-Jun-15 07:00	0.9	294.0	10.3	-	1.1	4.0	15.8	11.3	-
H_2S	13.0	14-Jun-15 03:00	0.7	270.0	13.3	-	0.8	2.7	20.3	13.0	-
H_2S	18.7	14-Jun-15 05:00	0.8	273.5	9.1	-	0.8	2.8	13.9	18.7	-
H_2S	17.8	14-Jun-15 06:00	0.8	241.4	7.6	-	1.2	2.7	11.6	17.8	-
H_2S	16.9	21-Jun-15 05:00	1.1	283.3	11.1	-	0.8	2.6	17.0	16.9	-
H_2S	19.0	21-Jun-15 06:00	1.2	285.5	10.7	-	0.7	2.7	16.4	19.0	-
H_2S	19.3	26-Jun-15 02:00	0.4	334.3	3.2	-	0.5	4.3	4.9	19.3	-
H_2S	18.7	26-Jun-15 03:00	0.2	67.7	2.3	-	0.5	4.2	3.6	18.7	-
H_2S	31.7	26-Jun-15 06:00	0.5	256.6	1.7	0.0	0.4	3.8	2.6	31.7	-
H_2S	12.5	28-Jun-15 06:00	1.7	287.7	8.4	-	0.4	3.0	12.9	12.5	-
H_2S	12.6	28-Jun-15 07:00	2.2	295.0	12.2	-	1.1	2.7	18.7	12.6	-
H_2S	12.0	1-Jul-15 05:00	0.4	350.3	3.4	-	0.2	3.0	5.2	12.0	-
H_2S	14.7	1-Jul-15 06:00	0.6	1.7	3.4	0.0	0.1	3.0	5.2	14.7	-
H_2S	11.2	1-Jul-15 07:00	0.5	251.8	3.5	-	0.4	2.3	5.3	11.2	-
H_2S	11.6	2-Jul-15 04:00	0.8	333.5	8.8	-	0.1	2.9	13.4	11.6	-
H_2S	19.9	3-Jul-15 07:00	0.5	291.3	2.7	0.0	0.7	3.7	4.2	19.9	-
H_2S	13.6	3-Jul-15 08:00	0.5	283.5	6.4	0.0	1.3	3.2	9.8	13.6	-
H_2S	11.5	4-Jul-15 06:00	0.4	71.4	6.3	-	0.5	3.0	9.7	11.5	-
H_2S	11.7	5-Jul-15 04:00	1.2	348.7	8.6	-	0.4	2.1	13.1	11.7	-
H_2S	11.0	6-Jul-15 04:00	1.0	355.6	8.0	-	0.3	2.1	12.3	11.0	-
H_2S	11.9	6-Jul-15 05:00	0.7	356.9	6.4	-	0.3	2.1	9.8	11.9	-
H_2S	14.3	6-Jul-15 06:00	0.9	5.9	5.8	-	0.4	2.0	8.9	14.3	-
H_2S	13.5	6-Jul-15 07:00	1.0	357.4	5.9	0.0	0.4	1.7	9.1	13.5	-
H_2S	16.5	15-Jul-15 04:00	0.1	202.6	4.8	-	0.2	2.9	7.3	16.5	-
H_2S	23.2	15-Jul-15 05:00	0.1	263.1	4.2	-	0.3	3.0	6.5	23.2	-
H_2S	13.6	15-Jul-15 06:00	0.4	287.3	2.7	-	0.3	2.5	4.2	13.6	-
H_2S	19.9	21-Jul-15 03:00	0.3	20.7	4.6	-	0.5	1.9	7.0	19.9	-
H_2S	16.1	21-Jul-15 04:00	0.1	316.8	3.2	-	0.5	2.0	4.8	16.1	-
H_2S	19.7	21-Jul-15 05:00	0.1	248.0	2.5	-	0.5	1.6	3.8	19.7	-
H_2S	17.6	21-Jul-15 06:00	0.3	82.0	2.3	-	0.5	3.4	3.5	17.6	-
H_2S	11.2	25-Jul-15 03:00	0.7	357.1	12.2	-	0.7	2.1	18.7	11.2	-
H_2S	12.0	25-Jul-15 04:00	0.2	16.9	11.0	-	0.7	2.6	16.9	12.0	-
H_2S	12.9	25-Jul-15 05:00	0.1	93.9	9.6	-	0.6	2.9	14.7	12.9	-
H_2S	13.0	25-Jul-15 06:00	0.2	120.0	7.2	-	0.6	3.4	11.1	13.0	-
H_2S	13.5	1-Aug-15 01:00	0.3	267.0	5.9	-	0.2	1.8	9.0	13.5	-
H_2S	17.0	1-Aug-15 05:00	0.1	359.3	4.1	-	0.1	2.2	6.4	17.0	-
H_2S	20.5	1-Aug-15 06:00	0.1	326.0	2.4	-	0.2	2.9	3.7	20.5	-
H_2S	12.5	1-Aug-15 07:00	0.1	59.3	6.0	-	0.6	1.8	9.1	12.5	-
H_2S	10.9	4-Aug-15 02:00	0.6	14.5	6.2	-	0.3	2.0	9.6	10.9	-
H_2S	10.9	4-Aug-15 02:00	0.6	14.5	6.2	-	0.3	2.0	9.6	10.9	-
H_2S	14.7	4-Aug-15 04:00	1.1	17.0	6.3	-	0.3	1.6	9.6	14.7	-
H_2S	12.2	4-Aug-15 05:00	0.7	9.1	5.7	-	0.4	2.3	8.7	12.2	-
H_2S	17.7	10-Aug-15 00:00	0.6	296.5	4.1	-	0.2	3.4	6.3	17.7	-
H_2S	18.6	10-Aug-15 01:00	0.7	273.0	2.6	-	0.1	2.9	4.0	18.6	-

Table J-5 Glen Ewen Station: Summary of Exceedances for 24-hour SAAQS for the Year 2015

24-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Day dd-mmm-yy	WS m/s	WD deg	AQI -	Rain mm	SO_2 ppb	NO_2 ppb	O_3 ppb	H_2S ppb
H_2S	4.7	14-Jun-15	2.8	281.4	21.5	-	1.4	2.4	33.9	4.7
H_2S	4.7	26-Jun-15	1.1	199.9	20.1	0.1	1.3	2.9	31.6	4.7
H_2S	4.1	28-Jun-15	2.0	293.2	19.5	-	0.6	1.8	30.6	4.1
H_2S	3.7	01-Jul-15	0.7	201.2	13.9	0.1	1.4	2.3	21.4	3.7
H_2S	3.8	03-Jul-15	1.5	209.7	16.8	0.1	1.1	2.2	26.0	3.8
H_2S	4.1	06-Jul-15	1.4	239.9	15.0	0.1	0.5	1.5	23.0	4.1
H_2S	4.5	15-Jul-15	1.2	199.8	19.7	2.1	0.9	1.8	30.9	4.5
H_2S	4.6	21-Jul-15	2.5	141.3	12.3	0.7	0.6	1.2	18.8	4.6
H_2S	4.2	25-Jul-15	2.0	108.2	17.2	-	0.7	1.6	26.8	4.2
H_2S	4.5	01-Aug-15	1.7	186.6	17.4	-	0.7	1.1	27.1	4.5
H_2S	4.2	04-Aug-15	2.5	91.0	14.0	0.0	0.4	1.2	21.4	4.2
H_2S	4.0	10-Aug-15	1.1	216.6	13.8	-	4.3	1.3	21.2	4.0

Table J-6 Oxbow Station: Summary of Exceedances for 1-hour SAAQS for the Year 2015

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time dd-mmm-yy hh:mm	WS m/s	WD deg	AQI -	Rain mm	SO_2 ppb	NO_2 ppb	H_2S ppb	$PM_{2.5}$ $\mu g/m^3$
H_2S	11.8	10-Jun-15 06:00	0.2	213.2	9.9	-	0.4	3.5	11.8	7.9
H_2S	11.1	14-Jun-15 03:00	0.5	138.5	7.8	-	0.0	3.1	11.1	6.3
H_2S	17.2	14-Jun-15 06:00	0.6	163.6	9.1	-	0.5	3.1	17.2	7.2
H_2S	12.9	14-Jun-15 07:00	0.5	209.1	7.4	-	1.1	4.2	12.9	6.0

Table J-7 Oxbow Station: Summary of Exceedances for 24-hour SAAQS for the Year 2015

24-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Day dd-mmm-yy	WS m/s	WD deg	AQI -	Rain mm	SO_2 ppb	NO_2 ppb	H_2S ppb	$PM_{2.5}$ $\mu g/m^3$
$PM_{2.5}$	55.9	8-Jul-15	1.1	267.3	61.1	-	1.7	2.1	1.4	55.9
$PM_{2.5}$	30.9	28-Aug-15	1.0	233.1	37.9	-	2.0	2.6	0.8	30.9
$PM_{2.5}$	124.8	29-Aug-15	1.2	188.6	137.2	-	2.1	3.8	1.2	124.8
$PM_{2.5}$	65.0	30-Aug-15	1.5	163.8	71.2	-	2.2	2.2	0.9	65.0

Table J-8 Stoughton Station: Summary of Exceedances for 1-hour SAAQS for the Year 2015

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time dd-mmm-yy hh:mm	WS m/s	WD deg	AQI -	Rain mm	SO_2 ppb	NO_2 ppb	H_2S ppb	$PM_{2.5}$ $\mu g/m^3$
H_2S	14.0	10-Jan-15 07:00	2.9	314.2	5.5	-	1.0	4.8	14.0	4.4
H_2S	14.4	26-May-15 05:00	1.0	250.6	7.8	-	0.8	6.5	14.4	6.2
H_2S	17.6	26-May-15 06:00	1.1	244.3	3.9	-	0.4	4.0	17.6	3.1
H_2S	12.0	26-May-15 07:00	0.9	255.2	3.8	-	1.0	5.0	12.0	3.1
H_2S	15.7	8-Jun-15 00:00	1.2	243.8	N/A	-	0.2	-	15.7	10.6
H_2S	17.1	8-Jun-15 01:00	1.2	243.1	12.6	-	0.1	5.1	17.1	10.0
H_2S	20.4	8-Jun-15 02:00	1.1	242.8	14.0	-	0.1	5.6	20.4	11.2
H_2S	33.3	8-Jun-15 03:00	1.2	248.9	15.4	-	0.3	6.1	33.3	12.3
H_2S	23.1	8-Jun-15 04:00	1.0	254.2	17.0	-	0.3	5.8	23.1	13.3
H_2S	38.7	8-Jun-15 05:00	0.7	267.1	19.0	-	0.2	6.3	38.7	14.5
H_2S	21.3	8-Jun-15 06:00	1.0	256.8	16.0	-	0.1	5.5	21.3	12.6
H_2S	16.8	10-Jun-15 01:00	0.3	285.1	24.4	-	0.1	4.4	16.8	17.9
H_2S	26.1	10-Jun-15 02:00	0.8	299.8	18.6	-	0.2	4.9	26.1	14.3
H_2S	30.9	10-Jun-15 03:00	0.5	282.2	16.0	-	0.1	5.3	30.9	12.6
H_2S	25.8	10-Jun-15 04:00	0.5	321.2	14.0	-	0.2	6.5	25.8	11.2
H_2S	25.8	10-Jun-15 04:00	0.5	321.2	14.0	-	0.2	6.5	25.8	11.2
H_2S	42.3	10-Jun-15 05:00	0.2	20.6	11.6	-	0.3	6.3	42.3	9.3
H_2S	45.8	10-Jun-15 06:00	0.3	70.8	12.5	-	0.3	6.3	45.8	10.0
H_2S	30.0	10-Jun-15 07:00	0.2	57.7	9.4	-	0.4	6.4	30.0	7.5
H_2S	13.4	11-Jun-15 01:00	0.2	325.8	22.7	-	0.1	3.6	13.4	16.8
H_2S	15.0	11-Jun-15 02:00	0.3	350.8	21.1	-	0.1	3.7	15.0	15.8
H_2S	15.7	11-Jun-15 03:00	0.3	358.5	16.5	-	0.2	3.1	15.7	12.9
H_2S	18.4	11-Jun-15 04:00	0.3	20.3	20.4	-	0.5	3.4	18.4	15.4
H_2S	22.7	11-Jun-15 05:00	0.2	351.3	16.0	-	0.6	3.7	22.7	12.6

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time	WS	WD	AQI	Rain	SO_2	NO_2	H_2S	$PM_{2.5}$
		dd-mmm-yy hh:mm	m/s	deg	-	mm	ppb	ppb	ppb	$\mu g/m^3$
H_2S	28.6	11-Jun-15 06:00	0.3	263.6	15.3	-	0.7	2.8	28.6	12.2
H_2S	26.2	11-Jun-15 07:00	0.0	227.9	9.0	-	0.9	3.5	26.2	7.2
H_2S	14.4	13-Jun-15 01:00	0.8	215.9	12.6	-	0.1	3.6	14.4	10.1
H_2S	12.0	13-Jun-15 02:00	1.1	222.1	17.7	-	0.2	3.7	12.0	13.7
H_2S	11.5	14-Jun-15 00:00	0.3	73.7	10.2	-	0.1	6.4	11.5	8.2
H_2S	14.0	14-Jun-15 01:00	0.2	84.2	10.5	-	0.0	4.8	14.0	8.4
H_2S	26.4	14-Jun-15 03:00	0.2	338.2	11.0	-	0.0	5.6	26.4	8.8
H_2S	42.9	14-Jun-15 04:00	0.1	60.0	13.2	-	0.0	4.5	42.9	10.6
H_2S	30.2	14-Jun-15 05:00	0.5	150.3	12.2	-	0.1	6.9	30.2	9.8
H_2S	12.7	14-Jun-15 06:00	0.7	208.6	10.0	-	0.2	4.6	12.7	8.0
H_2S	11.9	18-Jun-15 05:00	0.2	341.8	4.5	-	0.3	2.5	11.9	3.6
H_2S	13.0	18-Jun-15 06:00	0.4	60.3	4.9	-	0.3	3.0	13.0	4.0
H_2S	15.7	21-Jun-15 02:00	0.5	315.9	5.8	-	(0.1)	2.5	15.7	4.6
H_2S	21.8	21-Jun-15 03:00	0.2	275.8	8.7	-	0.0	2.8	21.8	7.0
H_2S	26.9	21-Jun-15 04:00	0.2	316.4	12.3	-	0.0	2.7	26.9	9.9
H_2S	34.3	21-Jun-15 05:00	0.4	183.4	9.1	-	0.1	3.1	34.3	7.3
H_2S	19.5	21-Jun-15 06:00	0.1	115.2	9.8	-	(0.0)	3.9	19.5	7.9
H_2S	17.0	21-Jun-15 07:00	0.6	136.7	6.5	-	0.2	4.0	17.0	5.2
H_2S	17.5	23-Jun-15 05:00	0.3	153.9	17.5	-	0.5	3.5	17.5	13.6
H_2S	11.6	23-Jun-15 06:00	0.7	120.0	16.3	-	1.6	4.3	11.6	12.8
H_2S	20.5	24-Jun-15 05:00	0.6	291.8	17.0	-	0.2	2.5	20.5	13.2
H_2S	12.0	25-Jun-15 03:00	0.5	64.4	13.4	-	0.1	3.9	12.0	10.7
H_2S	14.5	25-Jun-15 04:00	0.8	63.6	17.5	-	0.0	7.0	14.5	13.5
H_2S	15.4	26-Jun-15 05:00	1.3	78.6	N/A	-	0.3	-	15.4	16.3
H_2S	18.6	26-Jun-15 06:00	1.2	80.8	20.1	-	0.2	4.2	18.6	15.2

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time	WS	WD	AQI	Rain	SO_2	NO_2	H_2S	$PM_{2.5}$
		dd-mmm-yy hh:mm	m/s	deg	-	mm	ppb	ppb	ppb	$\mu g/m^3$
H_2S	19.8	26-Jun-15 07:00	1.2	116.6	12.5	-	1.1	4.6	19.8	10.0
H_2S	11.6	26-Jun-15 08:00	1.6	117.0	6.5	-	1.3	3.0	11.6	5.2
H_2S	14.5	28-Jun-15 00:00	0.2	252.9	21.8	-	(0.0)	3.8	14.5	16.3
H_2S	26.8	28-Jun-15 01:00	0.4	263.9	28.1	-	0.0	5.1	26.8	20.2
H_2S	39.3	28-Jun-15 03:00	1.1	257.9	N/A	-	0.1	-	39.3	18.2
H_2S	23.7	28-Jun-15 04:00	1.0	260.9	24.7	-	0.1	3.7	23.7	18.0
H_2S	25.7	28-Jun-15 05:00	0.9	268.6	24.8	-	0.1	2.8	25.7	18.2
H_2S	14.8	28-Jun-15 06:00	1.7	258.4	16.9	-	0.0	3.5	14.8	13.2
H_2S	13.4	29-Jun-15 03:00	0.7	247.4	18.8	-	0.1	4.4	13.4	14.4
H_2S	15.4	29-Jun-15 04:00	0.6	293.0	16.4	-	0.4	3.4	15.4	12.8
H_2S	17.7	29-Jun-15 05:00	0.7	249.7	14.5	-	0.4	3.0	17.7	11.6
H_2S	16.6	29-Jun-15 06:00	1.2	252.2	14.4	-	0.4	2.5	16.6	11.5
H_2S	11.7	29-Jun-15 07:00	0.8	300.1	11.4	-	0.8	2.0	11.7	9.1
H_2S	11.9	30-Jun-15 01:00	0.4	293.5	N/A	-	0.5	-	11.9	-
H_2S	18.3	30-Jun-15 02:00	0.1	307.8	N/A	-	0.9	4.3	18.3	-
H_2S	15.6	30-Jun-15 04:00	0.3	323.2	N/A	0.1	0.6	4.0	15.6	-
H_2S	14.9	30-Jun-15 05:00	1.7	72.4	N/A	0.0	0.4	3.9	14.9	-
H_2S	12.3	30-Jun-15 07:00	0.8	63.3	N/A	2.1	0.3	2.6	12.3	-
H_2S	13.9	1-Jul-15 04:00	0.1	28.0	40.7	-	0.4	4.9	13.9	34.4
H_2S	14.8	1-Jul-15 05:00	0.1	56.5	42.8	-	0.4	4.5	14.8	37.1
H_2S	33.7	1-Jul-15 06:00	0.2	286.1	32.4	-	0.3	5.2	33.7	23.8
H_2S	33.9	1-Jul-15 07:00	0.3	313.0	39.3	-	0.3	4.5	33.9	32.6
H_2S	11.7	1-Jul-15 08:00	0.4	358.0	37.4	-	0.9	2.3	11.7	30.1
H_2S	16.0	2-Jul-15 01:00	0.1	221.7	133.3	-	0.7	9.8	16.0	121.2
H_2S	24.9	2-Jul-15 03:00	0.2	308.3	106.6	-	0.8	8.2	24.9	96.9

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time	WS	WD	AQI	Rain	SO_2	NO_2	H_2S	$PM_{2.5}$
		dd-mmm-yy hh:mm	m/s	deg	-	mm	ppb	ppb	ppb	$\mu g/m^3$
H_2S	30.0	2-Jul-15 04:00	1.2	249.6	108.5	-	0.6	7.6	30.0	98.6
H_2S	10.9	2-Jul-15 06:00	0.9	268.7	125.7	-	0.5	5.3	10.9	114.3
H_2S	13.3	2-Jul-15 07:00	1.0	291.8	68.2	-	0.3	4.1	13.3	62.3
H_2S	21.3	3-Jul-15 01:00	0.5	284.8	162.7	-	0.8	8.4	21.3	147.9
H_2S	18.0	3-Jul-15 02:00	0.3	282.6	191.3	-	1.1	6.1	18.0	173.9
H_2S	24.0	3-Jul-15 03:00	0.2	288.4	140.3	-	1.1	5.9	24.0	127.6
H_2S	22.3	3-Jul-15 04:00	0.2	54.1	143.8	-	0.9	5.6	22.3	130.8
H_2S	20.9	3-Jul-15 05:00	0.7	66.7	137.0	-	1.0	5.1	20.9	124.6
H_2S	23.5	3-Jul-15 06:00	0.3	318.4	144.1	-	1.1	6.4	23.5	131.0
H_2S	30.5	3-Jul-15 07:00	0.4	326.5	120.4	-	1.0	4.2	30.5	109.5
H_2S	16.0	3-Jul-15 08:00	0.4	74.6	131.4	-	1.3	4.7	16.0	119.4
H_2S	12.2	5-Jul-15 01:00	1.1	297.0	32.2	-	0.2	2.9	12.2	23.5
H_2S	12.7	6-Jul-15 05:00	0.5	290.8	74.7	-	0.4	1.9	12.7	68.1
H_2S	14.1	6-Jul-15 06:00	0.3	294.5	50.6	-	0.5	1.5	14.1	46.4
H_2S	10.9	6-Jul-15 07:00	0.4	322.5	37.4	-	0.6	1.1	10.9	30.2
H_2S	13.6	21-Jul-15 03:00	1.6	83.2	N/A	-	0.3	4.9	13.6	-
H_2S	11.1	21-Jul-15 05:00	1.9	79.3	N/A	-	0.6	3.1	11.1	-
H_2S	12.4	21-Jul-15 06:00	2.4	87.9	N/A	-	0.7	3.8	12.4	-
H_2S	12.4	24-Jul-15 05:00	1.0	217.5	N/A	-	0.1	3.6	12.4	-
H_2S	12.2	26-Jul-15 04:00	1.3	79.0	N/A	-	0.3	2.9	12.2	-
H_2S	11.1	26-Jul-15 05:00	1.7	104.7	N/A	-	0.3	2.6	11.1	-
H_2S	11.6	31-Jul-15 05:00	0.7	300.1	N/A	-	0.6	3.3	11.6	-
H_2S	17.6	31-Jul-15 06:00	0.4	309.2	N/A	-	0.3	3.0	17.6	-
H_2S	13.9	1-Aug-15 02:00	0.8	72.2	N/A	-	0.3	4.8	13.9	-
H_2S	15.1	1-Aug-15 03:00	1.2	92.7	N/A	-	0.2	5.3	15.1	-

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time	WS	WD	AQI	Rain	SO_2	NO_2	H_2S	$PM_{2.5}$
		dd-mmm-yy hh:mm	m/s	deg	-	mm	ppb	ppb	ppb	$\mu g/m^3$
H_2S	16.5	1-Aug-15 04:00	1.4	98.4	N/A	-	0.2	2.3	16.5	-
H_2S	13.4	1-Aug-15 07:00	1.9	107.2	N/A	-	0.8	3.6	13.4	-
H_2S	13.8	3-Aug-15 03:00	0.4	283.2	N/A	-	0.1	2.0	13.8	-
H_2S	16.8	3-Aug-15 04:00	0.4	300.0	N/A	-	0.1	2.2	16.8	-
H_2S	20.4	3-Aug-15 05:00	0.4	267.6	N/A	-	0.2	2.0	20.4	-
H_2S	12.3	3-Aug-15 06:00	0.4	286.5	N/A	-	0.1	1.9	12.3	-
H_2S	11.9	9-Aug-15 01:00	0.2	52.3	N/A	-	0.1	2.4	11.9	-
H_2S	13.2	9-Aug-15 04:00	0.2	31.6	N/A	-	0.3	2.6	13.2	-
H_2S	17.1	9-Aug-15 05:00	0.4	82.8	N/A	-	0.3	5.9	17.1	-
H_2S	18.4	9-Aug-15 07:00	0.5	350.3	N/A	-	0.1	3.5	18.4	-
H_2S	13.5	9-Aug-15 08:00	0.5	2.0	N/A	-	0.4	2.5	13.5	-
H_2S	11.0	10-Aug-15 03:00	0.8	74.9	N/A	-	0.1	3.3	11.0	-
H_2S	21.8	10-Aug-15 04:00	0.9	70.2	N/A	-	0.1	4.0	21.8	-
H_2S	20.2	10-Aug-15 06:00	0.8	80.9	N/A	-	0.1	6.8	20.2	-
H_2S	24.5	10-Aug-15 07:00	1.3	78.6	N/A	-	0.2	4.0	24.5	-
H_2S	15.2	10-Aug-15 08:00	1.6	107.1	N/A	-	0.8	3.7	15.2	-
H_2S	16.5	13-Aug-15 07:00	0.6	69.7	N/A	-	0.2	4.7	16.5	-
H_2S	17.4	14-Aug-15 04:00	2.2	81.8	N/A	-	1.2	2.9	17.4	-
H_2S	20.6	14-Aug-15 05:00	2.0	83.8	N/A	-	1.1	2.0	20.6	-
H_2S	17.7	14-Aug-15 06:00	2.2	87.3	N/A	-	1.6	3.6	17.7	-
H_2S	14.8	14-Aug-15 07:00	2.1	93.5	N/A	-	1.6	4.2	14.8	-
H_2S	11.1	21-Aug-15 05:00	0.6	79.6	N/A	-	0.2	3.4	11.1	-
H_2S	10.9	24-Aug-15 07:00	0.4	57.4	N/A	-	0.0	2.8	10.9	-
H_2S	11.0	29-Aug-15 03:00	1.4	75.5	N/A	-	0.2	3.2	11.0	-
H_2S	12.4	29-Aug-15 05:00	1.6	92.2	N/A	-	0.2	4.6	12.4	-
H_2S	13.1	29-Aug-15 06:00	1.5	96.7	N/A	-	0.3	3.0	13.1	-
H_2S	12.2	29-Aug-15 07:00	1.7	88.8	N/A	-	0.3	3.0	12.2	-
H_2S	11.6	10-Sep-15 06:00	0.3	290.4	2.9	-	0.1	1.2	11.6	2.4
H_2S	15.7	9-Dec-15 18:00	0.3	106.5	2.9	0.0	0.3	8.3	15.7	2.3
H_2S	12.3	9-Dec-15 19:00	0.8	83.3	10.2	0.7	0.2	9.4	12.3	8.2

Table J-9 Stoughton Station: Summary of Exceedances for 24-hour SAAQS for the Year 2015

24-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Day dd-mmm-yy	WS m/s	WD deg	AQI -	Rain mm	SO_2 ppb	NO_2 ppb	H_2S ppb	$PM_{2.5}$ µg/m^3
H_2S	8.3	8-Jun-15	1.8	232.7	8.6	-	0.3	3.4	8.3	6.8
H_2S	10.9	10-Jun-15	1.2	204.3	10.3	-	0.5	3.2	10.9	8.2
H_2S	7.1	11-Jun-15	1.4	185.2	15.6	-	1.7	3.0	7.1	12.4
H_2S	7.3	14-Jun-15	3.0	240.9	5.5	-	0.1	2.6	7.3	4.4
H_2S	7.0	21-Jun-15	1.4	155.0	4.8	1.5	0.5	2.2	7.0	3.9
H_2S	4.2	26-Jun-15	1.7	118.6	9.6	0.1	0.6	3.1	4.2	7.7
H_2S	7.5	28-Jun-15	1.3	269.7	18.7	-	0.1	2.0	7.5	14.3
H_2S	5.0	29-Jun-15	1.5	266.3	80.5	0.1	0.5	2.4	5.0	73.4
H_2S	6.0	30-Jun-15	0.9	199.4	97.8	5.6	0.5	2.8	6.0	88.9
H_2S	6.5	1-Jul-15	0.7	264.7	76.7	-	0.9	3.6	6.5	69.9
H_2S	6.7	2-Jul-15	1.7	275.1	83.3	0.0	0.7	4.2	6.7	75.9
H_2S	8.8	3-Jul-15	1.1	162.0	146.9	-	1.5	4.4	8.8	133.6
H_2S	3.8	6-Jul-15	0.9	268.6	33.9	-	0.3	1.4	3.8	25.7
H_2S	4.0	31-Jul-15	1.3	267.2	N/A	-	0.3	2.1	4.0	-
H_2S	4.7	1-Aug-15	1.4	178.7	N/A	-	0.7	2.2	4.7	-
H_2S	4.6	3-Aug-15	1.1	249.9	N/A	-	0.2	1.3	4.6	-
H_2S	5.3	9-Aug-15	0.7	197.0	N/A	-	0.3	1.6	5.3	-
H_2S	5.8	10-Aug-15	1.4	114.7	N/A	-	0.4	2.9	5.8	-
H_2S	3.8	13-Aug-15	1.1	121.9	N/A	0.1	0.4	2.1	3.8	-
H_2S	5.0	14-Aug-15	3.0	132.4	N/A	-	0.8	2.3	5.0	-
H_2S	4.3	29-Aug-15	1.6	127.0	N/A	-	0.6	4.6	4.3	-
H_2S	4.2	1-Oct-15	1.4	176.2	N/A	-	0.3	2.6	4.2	-
$PM_{2.5}$	73.4	29-Jun-15	1.5	266.3	80.5	0.1	0.5	2.4	5.0	73.4
$PM_{2.5}$	88.9	30-Jun-15	0.9	199.4	97.8	5.6	0.5	2.8	6.0	88.9
$PM_{2.5}$	69.9	1-Jul-15	0.7	264.7	76.7	-	0.9	3.6	6.5	69.9
$PM_{2.5}$	75.9	2-Jul-15	1.7	275.1	83.3	0.0	0.7	4.2	6.7	75.9
$PM_{2.5}$	133.6	3-Jul-15	1.1	162.0	146.9	-	1.5	4.4	8.8	133.6
$PM_{2.5}$	69.0	5-Jul-15	2.8	290.4	75.7	0.4	0.4	2.3	3.3	69.0
$PM_{2.5}$	67.3	8-Jul-15	1.9	252.9	73.8	0.0	0.4	1.2	1.6	67.3

Table J-10 Wauchope Station: Summary of Exceedances for 1-hour SAAQS for the Year 2015

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time dd-mmm-yy hh:mm	WS m/s	WD deg	Rain mm	SO_2 ppb	NO_2 ppb	O_3 ppb	H_2S ppb	$PM_{2.5}$ µg/m^3
H_2S	12.2	24-May-15 03:00	0.4	351.7	-	0.3	-	-	12.2	30.6
H_2S	16.3	24-May-15 04:00	0.1	74.8	-	0.3	-	-	16.3	24.5
H_2S	13.9	9-Jun-15 03:00	0.1	72.1	-	1.5	-	-	13.9	16.2
H_2S	11.0	9-Jun-15 04:00	1.6	321.5	-	1.1	-	-	11.0	17.4
H_2S	32.1	11-Jun-15 05:00	0.3	347.7	-	0.1	-	-	32.1	11.3
H_2S	29.4	11-Jun-15 06:00	0.4	263.7	-	0.1	-	-	29.4	11.9
H_2S	11.9	11-Jun-15 07:00	1.2	325.8	-	0.8	-	-	11.9	51.4
H_2S	12.9	13-Jun-15 01:00	0.6	63.9	-	-	-	-	12.9	20.7
H_2S	14.6	13-Jun-15 03:00	0.6	205.8	-	(0.0)	-	-	14.6	20.6
H_2S	13.4	14-Jun-15 01:00	0.4	303.9	-	(0.0)	-	-	13.4	8.3
H_2S	18.0	14-Jun-15 02:00	0.3	312.8	-	(0.0)	-	-	18.0	8.7
H_2S	27.1	14-Jun-15 03:00	0.2	36.6	-	0.0	-	-	27.1	7.8
H_2S	22.5	14-Jun-15 04:00	0.4	233.1	-	(0.0)	-	-	22.5	8.1
H_2S	53.7	14-Jun-15 05:00	0.1	191.1	-	0.1	-	-	53.7	6.8
H_2S	27.1	14-Jun-15 06:00	1.2	250.0	-	0.1	-	-	27.1	7.1
H_2S	13.0	14-Jun-15 07:00	2.1	252.9	-	0.3	-	-	13.0	7.8
H_2S	11.0	16-Jun-15 04:00	0.3	190.3	-	0.5	-	-	11.0	7.1
H_2S	18.9	16-Jun-15 05:00	0.4	187.9	-	0.8	-	-	18.9	6.9
H_2S	11.9	18-Jun-15 06:00	1.2	3.2	-	0.0	-	-	11.9	4.3
H_2S	11.5	23-Jun-15 05:00	1.4	254.5	-	0.6	-	-	11.5	15.1
H_2S	11.5	23-Jun-15 05:00	1.4	254.5	-	0.6	-	-	11.5	15.1
H_2S	11.9	23-Jun-15 06:00	1.4	237.0	-	0.8	-	-	11.9	15.7
H_2S	16.8	25-Jun-15 00:00	0.2	81.4	-	0.4	-	-	16.8	23.1
H_2S	20.6	25-Jun-15 02:00	0.1	39.2	-	0.3	-	-	20.6	18.4

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time dd-mmm-yy hh:mm	WS m/s	WD deg	Rain mm	SO_2 ppb	NO_2 ppb	O_3 ppb	H_2S ppb	$PM_{2.5}$ $\mu g/m^3$
H_2S	31.6	25-Jun-15 03:00	0.2	323.8	-	0.2	-	-	31.6	19.7
H_2S	59.7	25-Jun-15 04:00	0.5	7.9	-	0.2	-	-	59.7	12.0
H_2S	50.6	25-Jun-15 06:00	0.2	120.1	-	0.2	-	-	50.6	16.7
H_2S	37.2	25-Jun-15 07:00	0.0	11.5	-	0.4	-	-	37.2	15.1
H_2S	12.8	25-Jun-15 08:00	0.1	305.0	-	2.3	-	-	12.8	11.5
H_2S	12.0	26-Jun-15 03:00	0.3	196.4	-	0.0	-	-	12.0	10.3
H_2S	18.6	26-Jun-15 06:00	0.5	234.9	-	0.8	-	-	18.6	11.7
H_2S	15.1	27-Jun-15 06:00	1.4	149.7	-	0.2	-	-	15.1	13.0
H_2S	22.0	29-Jun-15 02:00	1.0	253.2	-	0.2	-	-	22.0	22.6
H_2S	15.8	1-Jul-15 02:00	0.4	5.1	-	0.3	-	-	15.8	28.1
H_2S	24.4	1-Jul-15 03:00	0.5	15.0	-	0.2	-	-	24.4	27.9
H_2S	27.9	1-Jul-15 04:00	0.7	3.3	-	0.2	-	-	27.9	27.6
H_2S	27.6	1-Jul-15 05:00	0.6	353.9	-	0.1	-	-	27.6	27.9
H_2S	38.8	1-Jul-15 06:00	0.6	356.9	-	0.2	-	-	38.8	26.0
H_2S	41.4	1-Jul-15 07:00	0.9	10.0	0.0	0.2	-	-	41.4	23.9
H_2S	17.7	1-Jul-15 08:00	0.5	334.4	-	0.8	-	-	17.7	26.5
H_2S	18.2	2-Jul-15 03:00	0.5	336.1	-	0.8	-	-	18.2	104.7
H_2S	31.8	2-Jul-15 04:00	0.9	324.6	-	0.6	-	-	31.8	96.6
H_2S	17.6	2-Jul-15 05:00	0.9	312.6	-	0.7	-	-	17.6	89.6
H_2S	18.1	2-Jul-15 06:00	0.9	262.0	-	0.6	-	-	18.1	89.2
H_2S	20.3	2-Jul-15 07:00	0.9	278.4	-	0.6	-	-	20.3	89.8
H_2S	14.3	2-Jul-15 08:00	1.2	330.9	-	0.6	-	-	14.3	73.7
H_2S	24.5	3-Jul-15 01:00	0.4	9.5	-	1.1	-	-	24.5	118.8
H_2S	21.9	3-Jul-15 02:00	0.5	313.9	-	1.2	-	-	21.9	159.5
H_2S	21.4	3-Jul-15 03:00	0.8	274.2	-	1.3	-	-	21.4	183.1

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time dd-mmm-yy hh:mm	WS m/s	WD deg	Rain mm	SO_2 ppb	NO_2 ppb	O_3 ppb	H_2S ppb	$PM_{2.5}$ $\mu g/m^3$
H_2S	26.3	3-Jul-15 04:00	0.8	275.6	-	1.3	-	-	26.3	187.9
H_2S	35.1	3-Jul-15 05:00	0.3	287.7	-	1.2	-	-	35.1	160.0
H_2S	34.5	3-Jul-15 06:00	1.0	260.6	-	1.4	-	-	34.5	147.4
H_2S	15.0	3-Jul-15 07:00	0.8	288.5	-	1.5	-	-	15.0	168.3
H_2S	12.7	4-Jul-15 06:00	0.2	219.7	-	0.7	-	-	12.7	62.6
H_2S	18.1	4-Jul-15 07:00	0.8	161.9	-	0.7	-	-	18.1	65.4
H_2S	11.6	5-Jul-15 02:00	1.0	7.2	-	0.5	-	-	11.6	14.3
H_2S	13.2	5-Jul-15 03:00	1.5	5.3	-	0.6	-	-	13.2	15.9
H_2S	17.4	5-Jul-15 04:00	0.8	352.6	-	0.8	-	-	17.4	18.1
H_2S	11.5	5-Jul-15 05:00	2.1	12.1	-	0.8	-	-	11.5	28.8
H_2S	10.9	6-Jul-15 05:00	1.3	358.3	-	0.5	-	-	10.9	36.4
H_2S	11.8	6-Jul-15 06:00	1.4	359.9	-	0.3	-	-	11.8	25.2
H_2S	11.0	7-Jul-15 04:00	1.0	226.4	-	0.6	-	-	11.0	17.6
H_2S	18.3	7-Jul-15 05:00	0.6	223.4	-	0.9	-	-	18.3	18.1
H_2S	18.7	7-Jul-15 06:00	0.8	225.7	-	0.9	-	-	18.7	20.7
H_2S	14.6	10-Jul-15 06:00	0.4	261.3	-	0.4	-	-	14.6	24.3
H_2S	11.5	12-Jul-15 05:00	0.2	144.1	-	0.2	-	-	11.5	10.4
H_2S	25.6	12-Jul-15 06:00	0.4	211.8	-	0.2	-	-	25.6	10.8
H_2S	17.4	14-Jul-15 23:00	0.3	303.4	-	0.3	-	-	17.4	28.4
H_2S	11.8	15-Jul-15 00:00	1.1	249.6	-	0.1	-	-	11.8	32.3
H_2S	21.4	15-Jul-15 02:00	0.4	322.7	-	0.3	-	-	21.4	35.9
H_2S	40.9	15-Jul-15 03:00	0.5	334.3	-	0.2	-	-	40.9	23.8
H_2S	16.1	15-Jul-15 04:00	0.1	254.1	-	0.3	-	-	16.1	21.0
H_2S	42.0	15-Jul-15 05:00	0.1	218.4	-	0.2	-	-	42.0	21.9
H_2S	114.8	15-Jul-15 06:00	0.7	303.8	4.5	0.2	-	-	114.8	16.3

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time dd-mmm-yy hh:mm	WS m/s	WD deg	Rain mm	SO_2 ppb	NO_2 ppb	O_3 ppb	H_2S ppb	$PM_{2.5}$ $\mu g/m^3$
H_2S	18.6	15-Jul-15 07:00	0.3	171.8	1.0	0.7	-	-	18.6	13.5
H_2S	12.0	17-Jul-15 00:00	0.6	320.1	-	0.4	-	-	12.0	10.7
H_2S	11.4	17-Jul-15 01:00	1.1	274.0	-	0.2	-	-	11.4	12.1
H_2S	13.7	17-Jul-15 02:00	0.9	235.7	-	0.3	-	-	13.7	11.6
H_2S	22.3	21-Jul-15 00:00	0.3	358.0	-	0.3	-	-	22.3	27.4
H_2S	29.3	21-Jul-15 01:00	0.2	316.8	-	0.2	-	-	29.3	28.2
H_2S	48.4	21-Jul-15 03:00	0.4	355.6	-	0.2	-	-	48.4	13.1
H_2S	44.6	21-Jul-15 04:00	0.4	353.3	-	0.2	-	-	44.6	11.1
H_2S	61.4	21-Jul-15 05:00	0.4	16.5	-	0.4	-	-	61.4	7.9
H_2S	35.8	21-Jul-15 06:00	0.1	125.9	-	0.1	-	-	35.8	10.8
H_2S	11.4	24-Jul-15 06:00	2.1	257.2	-	-	-	-	11.4	5.7
H_2S	22.1	24-Jul-15 23:00	0.3	359.6	-	0.2	-	-	22.1	16.1
H_2S	18.8	25-Jul-15 00:00	0.6	7.4	-	0.2	-	-	18.8	19.3
H_2S	14.8	25-Jul-15 01:00	0.8	7.6	-	0.2	-	-	14.8	21.6
H_2S	16.6	25-Jul-15 02:00	0.9	1.9	-	0.2	-	-	16.6	18.2
H_2S	21.3	25-Jul-15 03:00	1.0	8.2	-	0.3	-	-	21.3	15.7
H_2S	28.9	25-Jul-15 04:00	1.1	6.6	-	0.4	-	-	28.9	15.1
H_2S	28.9	25-Jul-15 04:00	1.1	6.6	-	0.4	-	-	28.9	15.1
H_2S	33.0	25-Jul-15 05:00	1.3	10.7	-	0.3	-	-	33.0	14.8
H_2S	18.6	25-Jul-15 06:00	0.9	15.9	-	0.5	-	-	18.6	16.1
H_2S	14.4	25-Jul-15 07:00	0.6	91.5	-	0.7	-	-	14.4	11.3
H_2S	11.2	26-Jul-15 06:00	2.0	257.5	-	0.8	-	-	11.2	11.8
H_2S	20.8	27-Jul-15 01:00	0.5	359.5	-	0.2	-	-	20.8	5.0
H_2S	27.0	27-Jul-15 02:00	0.9	13.0	-	0.3	-	-	27.0	5.4
H_2S	22.8	27-Jul-15 03:00	0.8	12.7	-	0.4	-	-	22.8	6.4

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time	WS	WD	Rain	SO_2	NO_2	O_3	H_2S	$PM_{2.5}$
		dd-mmm-yy hh:mm	m/s	deg	mm	ppb	ppb	ppb	ppb	µg/m^3
H_2S	11.1	27-Jul-15 04:00	1.2	64.6	-	0.4	-	-	11.1	10.1
H_2S	11.6	27-Jul-15 06:00	1.7	4.5	0.0	0.5	-	-	11.6	7.2
H_2S	17.5	1-Aug-15 01:00	0.2	2.7	-	0.1	-	-	17.5	19.8
H_2S	21.0	1-Aug-15 03:00	0.3	267.8	-	0.4	-	-	21.0	15.7
H_2S	48.5	1-Aug-15 04:00	0.1	22.1	-	0.3	-	-	48.5	7.8
H_2S	118.6	1-Aug-15 05:00	0.2	24.8	-	0.3	-	-	118.6	8.4
H_2S	64.5	1-Aug-15 06:00	0.6	258.2	-	0.3	-	-	64.5	17.8
H_2S	11.1	3-Aug-15 06:00	1.4	310.4	-	0.3	-	-	11.1	6.9
H_2S	14.5	4-Aug-15 00:00	0.4	353.5	-	0.3	-	-	14.5	14.1
H_2S	21.1	4-Aug-15 01:00	0.5	11.6	-	0.3	-	-	21.1	25.6
H_2S	27.3	4-Aug-15 02:00	0.7	10.5	-	0.2	-	-	27.3	16.8
H_2S	39.8	4-Aug-15 03:00	0.8	8.6	-	0.3	-	-	39.8	11.9
H_2S	33.1	4-Aug-15 04:00	0.9	7.8	-	0.3	-	-	33.1	12.2
H_2S	23.5	4-Aug-15 05:00	0.9	8.3	-	0.4	-	-	23.5	11.4
H_2S	44.9	4-Aug-15 06:00	1.1	13.7	-	0.4	-	-	44.9	11.2
H_2S	20.8	4-Aug-15 07:00	1.0	26.4	-	0.6	-	-	20.8	10.8
H_2S	14.4	9-Aug-15 01:00	0.4	324.3	-	0.1	-	-	14.4	9.5
H_2S	32.5	9-Aug-15 02:00	0.6	356.3	-	0.0	-	-	32.5	12.9
H_2S	28.2	9-Aug-15 03:00	0.5	358.5	-	0.0	-	-	28.2	9.6
H_2S	24.9	9-Aug-15 04:00	0.5	0.7	-	0.2	-	-	24.9	8.6
H_2S	19.9	9-Aug-15 05:00	0.6	348.7	-	0.1	-	-	19.9	8.0
H_2S	33.1	9-Aug-15 07:00	0.7	7.7	-	0.0	-	-	33.1	8.5
H_2S	12.9	9-Aug-15 23:00	0.4	319.8	-	0.1	-	-	12.9	61.1
H_2S	24.7	10-Aug-15 00:00	0.5	21.1	-	0.1	-	-	24.7	25.5
H_2S	29.3	10-Aug-15 01:00	0.4	336.2	-	0.1	-	-	29.3	22.2

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time dd-mmm-yy hh:mm	WS m/s	WD deg	Rain mm	SO_2 ppb	NO_2 ppb	O_3 ppb	H_2S ppb	$PM_{2.5}$ $\mu g/m^3$
H_2S	43.3	10-Aug-15 02:00	0.4	351.0	-	0.1	-	-	43.3	15.2
H_2S	43.3	10-Aug-15 02:00	0.4	351.0	-	0.1	-	-	43.3	15.2
H_2S	55.6	10-Aug-15 03:00	0.4	22.1	-	0.1	-	-	55.6	13.6
H_2S	43.5	10-Aug-15 04:00	0.5	338.5	-	0.2	-	-	43.5	15.7
H_2S	81.0	10-Aug-15 06:00	0.5	347.9	-	0.2	-	-	81.0	13.7
H_2S	58.8	11-Aug-15 07:00	0.1	227.5	-	0.6	-	-	58.8	15.2
H_2S	11.6	12-Aug-15 22:00	0.3	325.5	-	0.4	-	-	11.6	101.7
H_2S	14.9	13-Aug-15 00:00	0.3	263.2	-	0.2	-	-	14.9	60.9
H_2S	72.0	13-Aug-15 01:00	0.5	352.3	-	0.2	-	-	72.0	84.8
H_2S	23.7	13-Aug-15 03:00	0.9	356.4	-	0.3	-	-	23.7	38.4
H_2S	11.8	13-Aug-15 04:00	2.1	8.0	-	0.8	-	-	11.8	31.2
H_2S	14.8	13-Aug-15 07:00	0.7	305.4	-	0.9	-	-	14.8	24.7
H_2S	13.4	17-Aug-15 03:00	0.8	324.4	-	0.2	-	-	13.4	6.6
H_2S	16.8	17-Aug-15 04:00	0.8	287.0	-	0.1	-	-	16.8	6.5
H_2S	16.8	17-Aug-15 05:00	1.1	268.2	-	0.0	-	-	16.8	5.2
H_2S	21.8	17-Aug-15 06:00	0.2	2.1	-	0.2	-	-	21.8	5.6
H_2S	26.3	17-Aug-15 07:00	0.6	18.1	-	0.2	-	-	26.3	5.9
H_2S	14.8	17-Aug-15 08:00	1.0	18.2	-	0.4	-	-	14.8	7.3
H_2S	16.2	18-Aug-15 00:00	0.8	339.3	-	0.1	-	-	16.2	5.4
H_2S	11.2	18-Aug-15 05:00	0.7	24.4	-	0.2	-	-	11.2	5.5
H_2S	15.1	19-Aug-15 04:00	1.3	358.4	-	0.6	-	-	15.1	8.8
H_2S	15.8	19-Aug-15 05:00	1.4	4.3	-	0.4	-	-	15.8	8.7
H_2S	14.9	19-Aug-15 06:00	1.2	5.9	-	0.6	-	-	14.9	8.4
H_2S	12.7	19-Aug-15 07:00	1.4	359.9	-	0.9	-	-	12.7	8.7
H_2S	12.8	21-Aug-15 04:00	1.3	4.3	-	0.4	-	-	12.8	11.4

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event							
Pollutant	Conc.	Exceedance Time dd-mmm-yy hh:mm	WS m/s	WD deg	Rain mm	SO_2 ppb	NO_2 ppb	O_3 ppb	H_2S ppb	$PM_{2.5}$ $\mu g/m^3$
H_2S	13.9	21-Aug-15 05:00	1.1	359.8	-	0.4	-	-	13.9	11.4
H_2S	15.3	21-Aug-15 06:00	1.0	359.2	-	0.4	-	-	15.3	12.8
H_2S	20.6	21-Aug-15 07:00	1.5	14.2	-	0.5	-	-	20.6	12.7
H_2S	16.1	24-Aug-15 04:00	0.8	348.2	-	0.3	-	-	16.1	5.3
H_2S	12.5	24-Aug-15 05:00	0.9	325.6	-	0.3	-	-	12.5	5.5
H_2S	13.7	24-Aug-15 07:00	0.6	16.4	-	0.5	-	-	13.7	4.0
H_2S	14.1	27-Aug-15 01:00	1.1	6.1	-	0.5	-	-	14.1	57.0
H_2S	13.4	27-Aug-15 02:00	1.0	9.9	-	0.4	-	-	13.4	57.7
H_2S	12.6	27-Aug-15 03:00	0.5	348.0	-	0.3	-	-	12.6	50.2
H_2S	12.0	27-Aug-15 04:00	0.5	304.5	-	0.2	-	-	12.0	40.5
H_2S	20.0	27-Aug-15 05:00	0.6	344.1	-	0.3	-	-	20.0	93.5
H_2S	25.0	27-Aug-15 06:00	0.5	354.9	-	0.2	-	-	25.0	70.0
H_2S	32.9	27-Aug-15 07:00	0.7	18.0	-	0.2	-	-	32.9	161.2
H_2S	23.0	29-Aug-15 03:00	0.1	113.5	-	0.3	-	-	23.0	48.4
H_2S	21.8	29-Aug-15 04:00	0.1	68.2	-	0.4	-	-	21.8	52.7
H_2S	51.1	29-Aug-15 05:00	0.2	285.2	-	0.4	-	-	51.1	52.0
H_2S	12.2	29-Aug-15 06:00	0.4	207.6	-	0.2	-	-	12.2	60.0
H_2S	12.4	29-Aug-15 07:00	1.0	246.8	-	0.4	-	-	12.4	59.9
H_2S	13.6	29-Aug-15 22:00	0.5	9.6	-	0.5	-	-	13.6	209.0
H_2S	16.3	29-Aug-15 23:00	0.6	349.9	-	0.5	-	-	16.3	214.0
H_2S	12.8	30-Aug-15 00:00	0.7	359.4	-	0.4	-	-	12.8	204.9
H_2S	27.5	30-Aug-15 01:00	0.5	17.7	-	0.6	-	-	27.5	200.5
H_2S	23.3	30-Aug-15 02:00	0.7	10.1	-	0.7	-	-	23.3	192.2
H_2S	21.7	30-Aug-15 23:00	0.3	357.7	-	0.4	-	-	21.7	38.3
H_2S	13.8	1-Sep-15 04:00	1.1	249.0	-	0.4	-	-	13.8	12.1
H_2S	15.1	1-Sep-15 05:00	1.2	244.0	-	0.4	-	-	15.1	11.8
H_2S	15.5	1-Sep-15 07:00	1.0	265.7	-	0.9	-	-	15.5	12.0
H_2S	16.3	2-Sep-15 04:00	1.2	2.3	-	0.9	-	-	16.3	17.9
H_2S	19.4	2-Sep-15 06:00	1.3	5.2	-	0.8	-	-	19.4	17.8
H_2S	24.1	2-Sep-15 07:00	1.0	9.8	-	0.8	-	-	24.1	21.0
H_2S	17.6	2-Sep-15 08:00	1.1	19.8	-	1.0	-	-	17.6	19.5
H_2S	17.3	29-Sep-15 03:00	0.2	10.6	-	0.4	-	-	17.3	9.8
H_2S	10.8	29-Sep-15 04:00	0.6	270.6	-	0.2	-	-	10.8	9.1
H_2S	13.2	29-Sep-15 05:00	0.1	204.0	-	0.4	-	-	13.2	10.4

Table J-11 Wauchope Station: Summary of Exceedances for 24-hour SAAQS for the Year 2015

24-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event					
Pollutant	Conc.	Exceedance Day dd-mmm-yy	WS m/s	WD deg	Rain mm	SO_2 ppb	H_2S ppb	$PM_{2.5}$ $\mu g/m^3$
H_2S	4.8	11-Jun-15	1.4	215.7	-	0.9	4.8	16.2
H_2S	8.5	14-Jun-15	3.1	264.6	0.0	0.5	8.5	5.2
H_2S	11.2	25-Jun-15	0.7	185.2	24.8	0.5	11.2	11.6
H_2S	4.1	26-Jun-15	0.9	206.1	0.2	1.5	4.1	9.9
H_2S	9.8	1-Jul-15	0.7	192.8	0.0	0.6	9.8	42.2
H_2S	6.7	2-Jul-15	1.8	305.5	-	0.9	6.7	88.6
H_2S	9.1	3-Jul-15	0.9	212.9	-	1.8	9.1	136.9
H_2S	4.4	5-Jul-15	2.4	258.9	0.1	0.9	4.4	65.9
H_2S	4.2	6-Jul-15	1.9	195.5	0.0	0.5	4.2	31.9
H_2S	4.9	7-Jul-15	1.4	212.2	-	0.9	4.9	28.0
H_2S	4.2	14-Jul-15	1.5	216.4	-	0.3	4.2	12.1
H_2S	12.7	15-Jul-15	0.9	232.4	6.7	0.5	12.7	17.7
H_2S	11.5	21-Jul-15	1.8	167.9	0.7	0.5	11.5	11.7
H_2S	8.2	25-Jul-15	1.9	84.5	-	0.6	8.2	12.4
H_2S	6.1	27-Jul-15	3.5	90.2	0.3	0.5	6.1	5.9
H_2S	13.7	1-Aug-15	2.2	164.5	-	1.0	13.7	10.3
H_2S	10.7	4-Aug-15	1.8	98.7	-	0.4	10.7	11.2
H_2S	8.5	9-Aug-15	1.2	228.3	-	0.2	8.5	9.0
H_2S	14.0	10-Aug-15	0.9	226.6	-	0.7	14.0	12.2
H_2S	6.0	11-Aug-15	1.8	201.6	-	0.7	6.0	13.2
H_2S	8.0	13-Aug-15	1.5	160.4	-	0.7	8.0	28.9
H_2S	6.7	17-Aug-15	1.1	166.6	0.0	0.4	6.7	5.4
H_2S	4.3	18-Aug-15	1.2	170.9	3.4	0.4	4.3	6.6
H_2S	4.8	19-Aug-15	1.2	161.8	-	0.5	4.8	7.4

24-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event					
Pollutant	Conc.	Exceedance Day dd-mmm-yy	WS m/s	WD deg	Rain mm	SO_2 ppb	H_2S ppb	$PM_{2.5}$ $\mu g/m^3$
H_2S	4.5	21-Aug-15	3.2	83.3	-	0.5	4.5	12.4
H_2S	7.1	27-Aug-15	1.0	175.0	-	0.6	7.1	56.0
H_2S	7.8	29-Aug-15	1.2	207.6	-	1.4	7.8	107.3
H_2S	5.9	30-Aug-15	1.8	201.4	-	1.0	5.9	86.8
H_2S	4.2	1-Sep-15	1.6	220.4	-	1.4	4.2	17.0
H_2S	5.0	2-Sep-15	2.5	99.2	-	0.6	5.0	22.1
$PM_{2.5}$	32.9	28-Jun-15	2.0	304.3	0.0	0.7	3.0	32.9
$PM_{2.5}$	41.8	29-Jun-15	1.8	209.2	-	0.6	3.4	41.8
$PM_{2.5}$	34.6	30-Jun-15	1.6	106.3	0.0	0.7	2.3	34.6
$PM_{2.5}$	42.2	1-Jul-15	0.7	192.8	0.0	0.6	9.8	42.2
$PM_{2.5}$	88.6	2-Jul-15	1.8	305.5	-	0.9	6.7	88.6
$PM_{2.5}$	136.9	3-Jul-15	0.9	212.9	-	1.8	9.1	136.9
$PM_{2.5}$	49.4	4-Jul-15	1.4	105.3	9.9	1.7	2.8	49.4
$PM_{2.5}$	65.9	5-Jul-15	2.4	258.9	0.1	0.9	4.4	65.9
$PM_{2.5}$	31.9	6-Jul-15	1.9	195.5	0.0	0.5	4.2	31.9
$PM_{2.5}$	28.0	7-Jul-15	1.4	212.2	-	0.9	4.9	28.0
$PM_{2.5}$	52.9	8-Jul-15	2.2	248.9	-	0.5	1.9	52.9
$PM_{2.5}$	30.0	12-Aug-15	1.8	247.6	-	0.7	2.6	30.0
$PM_{2.5}$	28.9	13-Aug-15	1.5	160.4	-	0.7	8.0	28.9
$PM_{2.5}$	85.9	24-Aug-15	0.8	240.4	-	0.4	3.5	85.9
$PM_{2.5}$	34.5	26-Aug-15	1.8	163.2	-	0.8	1.0	34.5
$PM_{2.5}$	56.0	27-Aug-15	1.0	175.0	-	0.6	7.1	56.0
$PM_{2.5}$	50.1	28-Aug-15	1.2	209.6	-	0.6	2.4	50.1
$PM_{2.5}$	107.3	29-Aug-15	1.2	207.6	-	1.4	7.8	107.3
$PM_{2.5}$	86.8	30-Aug-15	1.8	201.4	-	1.0	5.9	86.8

Table J-12 Wawota Station: Summary of Exceedances for 24-hour SAAQS for the Year 2015

24-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event						
Pollutant	Conc.	Exceedance Day dd-mmm-yy	WS m/s	WD deg	AQHI -	Rain mm	NO_2 ppb	O_3 ppb	$PM_{2.5}$ $\mu g/m^3$
$PM_{2.5}$	78.8	29-Jun-15	1.3	217.4	5.9	0.0	1.7	38.2	78.8
$PM_{2.5}$	82.3	30-Jun-15	1.1	175.0	5.3	0.2	1.3	24.4	82.3
$PM_{2.5}$	44.4	1-Jul-15	0.7	271.2	3.6	-	1.7	26.0	44.4
$PM_{2.5}$	117.2	2-Jul-15	1.5	292.5	7.5	-	1.5	33.9	117.2
$PM_{2.5}$	127.3	3-Jul-15	1.0	212.5	8.1	-	1.8	33.7	127.3
$PM_{2.5}$	43.5	4-Jul-15	1.4	203.5	4.3	2.6	1.9	39.8	43.5
$PM_{2.5}$	66.0	5-Jul-15	1.7	319.8	4.8	-	2.1	28.6	66.0
$PM_{2.5}$	57.6	8-Jul-15	1.6	301.4	4.3	0.0	0.9	28.0	57.6
$PM_{2.5}$	66.0	29-Aug-15	1.4	199.5	5.1	-	1.9	34.4	66.0
$PM_{2.5}$	71.3	30-Aug-15	1.3	214.3	5.2	-	1.5	31.9	71.3

Table J-13 Weyburn Station: Summary of Exceedances for 1-hour SAAQS for the Year 2015

1-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event								
Pollutant	Conc.	Exceedance Time dd-mmm-yy hh:mm	WS m/s	WD deg	AQHI -	Rain mm	SO_2 ppb	NO_2 ppb	O_3 ppb	H_2S ppb	$PM_{2.5}$ µg/m^3
H_2S	17.5	12-Jan-15 02:00	0.5	202.3	1.7	-	-	6.5	21.6	17.5	0.1
H_2S	16.8	3-Jun-15 06:00	0.8	60.5	1.3	0.1	1.3	9.2	3.5	16.8	6.3
H_2S	13.6	29-Jun-15 05:00	0.3	62.0	2.2	-	1.0	5.2	19.0	13.6	17.2
H_2S	14.5	14-Jul-15 22:00	0.5	178.7	2.2	-	1.5	4.0	27.4	14.5	9.5
H_2S	18.2	24-Aug-15 02:00	0.6	189.0	0.6	-	0.6	3.2	6.0	18.2	0.6
H_2S	19.1	24-Aug-15 03:00	0.6	187.6	0.7	-	1.1	3.3	7.7	19.1	0.7
H_2S	12.5	24-Aug-15 04:00	0.6	113.5	0.6	-	1.3	2.8	6.4	12.5	0.5
H_2S	32.7	30-Oct-15 02:00	1.1	161.4	0.6	0.1	8.7	1.7	7.8	32.7	1.9
H_2S	13.5	18-Dec-15 20:00	0.7	160.2	1.3	-	0.4	6.5	13.1	13.5	1.3
H_2S	14.9	26-Dec-15 07:00	0.8	146.8	0.7	-	0.9	0.5	12.5	14.9	0.5
H_2S	24.6	26-Dec-15 08:00	1.1	159.7	0.9	-	15.3	2.3	12.2	24.6	0.8
H_2S	16.2	26-Dec-15 09:00	1.1	163.6	0.9	-	15.9	1.7	13.5	16.2	0.9

Table J-14 Weyburn Station: Summary of Exceedances for 24-hour SAAQS for the Year 2015

24-Hour Exceedance Pollutant			Other Parameters During the Exceedance Event								
Pollutant	Conc.	Exceedance Day dd-mmm-yy	WS m/s	WD deg	AQHI -	Rain mm	SO_2 ppb	NO_2 ppb	O_3 ppb	H_2S ppb	$PM_{2.5}$ $\mu g/m^3$
$PM_{2.5}$	74.7	29-Jun-15	2.2	146.7	5.6	1.0	1.6	4.7	31.0	3.1	74.7
$PM_{2.5}$	154.8	30-Jun-15	1.5	127.9	9.1	3.3	0.4	4.2	24.4	0.8	154.8
$PM_{2.5}$	167.4	1-Jul-15	1.6	226.1	9.8	0.2	0.4	4.2	24.2	0.9	167.4
$PM_{2.5}$	99.7	2-Jul-15	2.3	299.2	6.9	0.1	0.3	5.1	32.4	1.0	99.7
$PM_{2.5}$	185.4	3-Jul-15	1.0	192.6	11.3	0.1	4.7	4.1	35.4	1.9	185.4
$PM_{2.5}$	48.2	4-Jul-15	2.5	141.1	4.2	0.3	3.2	2.6	32.3	1.1	48.2
$PM_{2.5}$	76.4	5-Jul-15	3.5	323.3	5.3	0.5	0.5	2.8	28.2	1.2	76.4
$PM_{2.5}$	59.6	8-Jul-15	1.6	274.3	4.3	0.1	1.1	1.2	26.6	1.3	59.6
H_2S	4.4	24-Aug-15	1.4	148.7	1.4	-	3.1	2.0	23.3	4.4	1.5
H_2S	4.0	20-Oct-15	3.4	162.2	1.4	3.1	6.0	1.7	19.5	4.0	4.3

MNP LLP

Southeast Saskatchewan Airshed Association Inc.

Financial Statements

December 31, 2015

ACCOUNTING › CONSULTING › TAX
100, 1219 - 5TH STREET, ESTEVAN SK, S4A 0Z5
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Management's Responsibility

To the Members of Southeast Saskatchewan Airshed Association Inc.:

Management is responsible for the preparation and presentation of the accompanying financial statements, including responsibility for significant accounting judgments and estimates in accordance with Canadian accounting standards for not-for-profit organizations. This responsibility includes selecting appropriate accounting principles and methods, and making decisions affecting the measurement of transactions in which objective judgment is required.

In discharging its responsibilities for the integrity and fairness of the financial statements, management designs and maintains the necessary accounting systems and related internal controls to provide reasonable assurance that transactions are authorized, assets are safeguarded and financial records are properly maintained to provide reliable information for the preparation of financial statements.

The Board of Directors is composed primarily of Directors who are neither management nor employees of the Organization. The Board is responsible for overseeing management in the performance of its financial reporting responsibilities and for approving the financial information. The Board fulfils these responsibilities by reviewing the financial information prepared by management and discussing relevant matters with management and external auditors. The Board is also responsible for recommending the appointment of the Organization's external auditors.

MNP LLP is appointed by the directors to audit the financial statements and report directly to them; their report follows. The external auditors have full and free access to, and may meet periodically and separately with, both the Board and management to discuss their audit findings.

April 6, 2016

Independent Auditors' Report

To the Members of Southeast Saskatchewan Airshed Association Inc.:

We have audited the accompanying financial statements of Southeast Saskatchewan Airshed Association Inc. which comprise the statement of financial position as at December 31, 2015 and the statements of revenue and expenses and changes in net assets and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained in our audit is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Southeast Saskatchewan Airshed Association Inc. as at December 31, 2015 and the results of its operations and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations.

Estevan, Saskatchewan

April 6, 2016

MNP LLP

Chartered Professional Accountants

Southeast Saskatchewan Airshed Association Inc.
Statement of Financial Position
As at December 31, 2015

	2015	2014
Assets		
Current		
Cash	101,993	64,903
Prepaid expenses and deposits	3,987	7,227
Goods and Services Tax receivable	-	3,370
	105,980	75,500
Capital assets *(Note 3)*	475,303	594,128
	581,283	669,628
Liabilities		
Current		
Accounts payable and accruals	27,281	21,889
Current portion deferred contributions *(Note 4)*	70,900	70,900
Goods and Services Tax payable	2,631	-
	100,812	92,789
Deferred contributions *(Note 4)*	137,250	208,149
	238,062	300,938
Net Assets		
Unrestricted net assets	343,221	368,690
	581,283	669,628

Approved on behalf of the Board of Directors

Darlene Sakires

Holland Thompson

The accompanying notes are an integral part of these financial statements

Southeast Saskatchewan Airshed Association Inc.
Statement of Revenue and Expenses and Changes in Net Assets
For the year ended December 31, 2015

	2015	*2014*
Revenue		
Membership fees	**290,278**	259,095
Amortization of deferred contributions *(Note 4)*	**70,900**	55,450
Contributions	**-**	50,500
Grant revenue	**-**	20,000
Interest	**-**	32
	361,178	385,077
Expenses		
Advertising	**3,704**	1,780
Air monitoring	**112,014**	130,906
Amortization	**118,826**	126,985
Bank charges	**135**	293
Insurance	**12,174**	16,474
Licences and fees	**246**	214
Management fees	**53,690**	54,280
Meetings	**749**	351
Office and data collection	**5,740**	4,820
Professional fees	**7,880**	6,657
Repairs and maintenance	**69,924**	14,883
Travel	**1,565**	875
	386,647	358,518
(Deficiency) excess of revenue over expenses	**(25,469)**	26,559
Net assets, beginning of year	**368,690**	342,131
Net assets, end of year	**343,221**	368,690

The accompanying notes are an integral part of these financial statements

Southeast Saskatchewan Airshed Association Inc.

Statement of Cash Flows

For the year ended December 31, 2015

	2015	*2014*
Cash provided by (used for) the following activities:		
Operating		
Cash receipts from grants	**-**	174,499
Cash receipts from membership fees	**290,278**	259,095
Cash paid to suppliers	**(253,188)**	(293,784)
	37,090	139,810
Investing		
Purchase of equipment	**-**	(122,380)
Increase in cash resources	**37,090**	17,430
Cash resources, beginning of year	**64,903**	47,473
Cash resources, end of year	**101,993**	64,903

The accompanying notes are an integral part of these financial statements

1. Incorporation and nature of the organization

Southeast Saskatchewan Airshed Association Inc. (the "Organization") was incorporated under The Non-Profit Corporations Act, 1995 on October 7, 2005, and is exempt from income taxes. In order to maintain its status as a not-for-profit organization under the Act, the Organization must meet certain requirements within the Act. In the opinion of management these requirements have been met.

The Organization collects and monitors ambient air quality data in Southeast Saskatchewan and makes this data available to all members.

2. Significant accounting policies

The financial statements have been prepared in accordance with Canadian accounting standards for Not-for-profit organizations as issued by the Accounting Standards Board in Canada and include the following significant accounting policies:

Cash and cash equivalents

Cash and cash equivalents include balances with banks and short-term investments with maturities of three months or less.

Equipment

Purchased capital assets are recorded at cost. Contributed capital assets are recorded at fair value at the date of contribution if fair value can be reasonably determined.

Amortization is provided using the declining balance method at rates intended to amortize the cost of assets over their estimated useful lives.

	Rate
Equipment	20 %

Revenue recognition

The Organization follows the deferral method of accounting for contributions. Restricted contributions are recognized as revenue in the year in which the related expenses are incurred. Unrestricted contributions are recognized as revenue when received. Membership fees are recognized when received.

Financial instruments

The Organization recognizes its financial instruments when the Organization becomes party to the contractual provisions of the financial instrument. All financial instruments are initially recorded at their fair value, including financial assets and liabilities originated and issued in a related party transaction with management.

At initial recognition, the Organization may irrevocably elect to subsequently measure any financial instrument at fair value. The Organization has not made such an election during the year. All financial assets and liabilities are subsequently measured at amortized cost.

Transaction costs and financing fees are added to the carrying amount for those financial instruments subsequently measured at amortized cost or cost.

2. Significant accounting policies *(Continued from previous page)*

Financial asset impairment

The Organization assesses impairment of all of its financial assets measured at cost or amortized cost. The Organization groups assets for impairment testing when available information is not sufficient to permit identification of each individually impaired financial asset in the group. When there is an indication of impairment, the Organization determines whether it has resulted in a significant adverse change in the expected timing or amount of future cash flows during the year. If so, the Organization reduces the carrying amount of any impaired financial assets to the highest of: the present value of cash flows expected to be generated by holding the assets; the amount that could be realized by selling the assets; and the amount expected to be realized by exercising any rights to collateral held against those assets. Any impairment, which is not considered temporary, is included in current year excess of revenue over expenses.

The Organization reverses impairment losses on financial assets when there is a decrease in impairment and the decrease can be objectively related to an event occurring after the impairment loss was recognized. The amount of the reversal is recognized in the excess of revenue over expenses in the year the reversal occurs.

Measurement uncertainty

The preparation of financial statements in conformity with Canadian accounting standards for not-for-profit organizations requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period.

Amortization is based on the estimated useful lives of equipment.

These estimates and assumptions are reviewed periodically and, as adjustments become necessary they are reported in excess of revenue over expenses in the periods in which they become known.

Long-lived assets

Long-lived assets consist of equipment. Long-lived assets held (or used) are measured and amortized as described in the applicable accounting policies.

When the Organization determines that a long-lived asset no longer has any long-term service potential to the Organization, the excess of its net carrying amount over any residual value is recognized as an expense in the statement of revenue and expenses. Write-downs are not reversed.

3. Capital assets

	Cost	***Accumulated amortization***	***2015 Net book value***	*2014 Net book value*
Equipment	**837,840**	**362,537**	**475,303**	594,128

During the year, capital assets were acquired at an aggregate cost of $nil (2014 - $172,380), of which $nil (2014 - $50,000) were acquired by means of contribution and $nil (2014 - $172,380) were acquired in cash.

4. Deferred contributions

Deferred capital contributions consist of the unamortized amount of contributions received for the purchase of equipment. Recognition of these amounts as revenue is deferred to periods when the related equipment are amortized. Changes in deferred capital contributions are as follows:

	2015	*2014*
Balance, beginning of year	**279,049**	180,000
Amount received during the year	**-**	154,499
Less: Amount recognized as revenue during the year	**(70,899)**	(55,450)
Balance, end of year	**208,150**	279,049
Less: current portion	**70,900**	70,900
Balance, end of year	**137,250**	208,149

5. Financial instruments

The Organization, as part of its operations, carries a number of financial instruments. It is management's opinion that the Organization is not exposed to significant interest, currency, credit, liquidity or other price risks arising from these financial instruments except otherwise disclosed.

Liquidity risk

Liquidity risk is the risk that the Organization will encounter difficulty in meeting obligations associated with financial liabilities. The Organization's exposure to liquidity risk is dependent on the collection of membership fee revenue and obligations to sustain operations.

6. Related party transactions

The Organization has entered into a contract agreement for management services with Terry Gibson Consulting Inc., expiring November 2016. The contract is based on hours required, to a maximum of $60,000. Any overage is required to be approved by the Board of Directors. Included in expenses for the current year are $53,690 (2014 - $54,280) of management fees. The expenses were incurred in the normal course of operations and measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties.

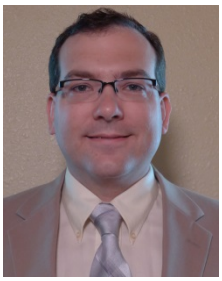
7. Commitment

The entity has the following commitment for operations:

Equipment maintenance	
2016	$33,500

APPENDIX L BOARD OF DIRECTORS AND ALTERNATES

Holland Thompson Board Chair, Mosaic Potash Esterhazy



Holland Thompson grew up in rural Minnesota and attended Florida Institute of Technology, graduating in 1996 with a BS in Chemical Engineering. He has 18 years of environmental experience in various industries, including waste management, printed circuit board manufacturing, phosphate fertilizer manufacturing and potash mining. Holland has held various roles with Mosaic for the past 7 years and relocated from Florida to Esterhazy, SK in 2012 to assume his current position of Environmental Manager for Mosaic's Esterhazy facilities.

Debbie Nielsen Vice Chair (Director, Environment, SaskPower)

Ms. Nielsen has worked with SaskPower in a variety of capacities dealing with environmental issues and programs for the past 22 years. In her current capacity she manages SaskPower's corporate environmental department which provides technical, analytical, environmental and regulatory decision-making support to the company's business units and support groups.

Engaging with key environmental stakeholders to develop a better understanding of issues is also a key responsibility of her position. She is a strong believer that by working in collaborative partnerships such as the airshed association, more sustainable outcomes can be achieved.

Alternate: Mike Zeleny

Darlene Sakires Secretary Treasurer, Canadian Natural Resources Limited

Ms. Sakires is an Environmental Coordinator who is responsible for CNRL's Environmental Management Plan and Environmental Operating Guidelines. She manages site decommissioning and remediation projects across the prairies, ensuring compliance with environmental regulatory requirements in all aspects of the company's operations. She is active on a variety of committees, including the Saskatchewan Petroleum Industry Government Environmental Committee and the Saskatchewan Environmental Managers Association.

Alternate: John Hutt

Dean Pylypuk Saskatchewan Industry & Resources

Dean Pylypuk is the Regional Manager for Area 4 with The Ministry of Energy and Resources. Dean began his career in the oil and gas industry in 1972 working throughout Western Canada and the Arctic Islands. In 1980 the Pylypuk family moved overseas where Dean was employed as a Rig Manager with Kenting Drilling UK. Returning to Canada, Dean joined the Petroleum Development Branch of the then Department of Energy and Mines in July of 1984 and has been head quartered in Estevan from that time to present. A graduate of the University of Regina Extension Program, Mr. Pylypuk has two certificates in Administration and has been a member of Saskatchewan Applied Science Technologists and Technicians since 1987.

Alternate: Todd Han

Gerald Knibbs Councillor, Rural Municipality of Tecumseh Number 65

Mr. Knibbs is an organic grain farmer near Stoughton. He currently serves as a counsellor for the R.M. of Tecumsch. He and his wife Dawn were born and raised in the area and are currently raising their family in their community. Air and water quality are important issues now and in the future

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Brian Johnson Councillor, City of Estevan

Brian has served as an Estevan City Councillor for the past 12 years and recently re-elected for another term. He presently works at SaskPower at BDPS as a Electrical Supervisor, he has been working with this Crown Corporation for 36 years now.

Kristin Waroma Health Representative

Kristin Waroma is the Senior Public Health Inspector for Sun Country Health Region based in the Weyburn office. She has been working in public health since 2008. Her health inspector duties include water, wastewaster, food safety, communicable disease control, recreational water, land use reviews, tobacco control, indoor and outdoor air quality and many other programs. She enjoys the challenges of working in busy Southeastern Saskatchewan.

Terry Gibson Executive Director

Mr. Gibson brings more than 30 years of Public Health/Environmental Health experience to the position. He has held the positions of President of the Saskatchewan Public Health Association and Vice-Chair of the Saskatchewan Epidemiology Association. He teaches Public Health Protection at the University of Saskatchewan Master of Public Health Program and has served on many provincial and national boards and committees. Terry is committed to working with industry and regulators in a consensus decision making process to ensure that the health of the environment of south east Saskatchewan is always protected.

APPENDIX M SESAA MEMBER COMPANIES

- 101033165 Saskatchewan Ltd.
- 618555 Saskatchewan Ltd. TDL Petroleum
- Abenteuer Resources Corp.
- Admiralty Oils
- Advantage Oil and Gas
- Aldon Oils
- Antoinway Resources
- Apache Canada Ltd.
- ARC Resources
- ATCO Energy Solutions
- AvenEx Energy
- Barracuda Energy
- Base Resources Inc.
- Baytex
- Black Rider Resources Inc.
- Bluebird Resources
- Bonterra Energy
- Border Energy Ltd
- Brown Bros. Resources
- Brownstone Resources Ltd.
- Bulldog Oil and Gas
- Caje Holdings Ltd.
- Canada Capital Energy
- Canadian Natural Resources Limited
- Can Era Energy Corp.
- Caprice Resources
- Cenovus Energy Inc.
- C-Group Energy
- Cheveyo Energy
- Chinook Iteration
- Clan Oil
- Coast Resources
- Condor Canada
- Conoco Phillips
- Contact Exploration
- Crescent Point Resources Partnership
- Daylight Energy
- Devon Canada Corporation
- Diaz Resources Ltd.
- EERG Energy ULC
- Elkhorn Resources
- Elswick Energy Ltd.
- Enermark Inc.
- Enerplus Corporation
- Fairborne Energy Ltd.
- Federated Co-op
- Firesky Energy
- Flagstone Energy
- Frank R. Lee Investments
- Freehold Royalties
- Freemantle Petroleum
- GKN Resources Ltd.
- Golden Key Oil
- Gold River Oil and Gas
- Grand Bow Petroleum Limited
- Halo Exploration
- Halvar Resources
- Harvest Operations
- Highrock Energy
- Hillsdale Drilling
- Hummingbird Energy Inc (Virtus group)
- Husky Oil Operations Limited
- JDM Petroleum
- Jedi Exploration & Development
- K and S Investments Ltd.
- Kenwood Resources Ltd.
- Keystone Royalty

- Kinwest 2008 Energy
- Kiwi Resources Ltd.
- Kootenay Energy
- Lakeco Holdings
- Lakeview Energy
- Legacy Oil and Gas
- Lightstream Resources Ltd.
- Long Fortune
- Longview Oil
- Magellan Resources Ltd.
- Mancal Energy Inc.
- Marquee Energy LTD
- Midale Petroleums Ltd.
- Molopo Energy
- Mosaic
- NAL Resources Limited
- Nexxtep Resources
- Noramera Bioenergy
- Novus Energy Inc.
- Nuloch Resources Inc.
- Omatius Oil & Gas Ltd.
- Oneex Operations
- Openfield Oil
- Painted Pony Petroleum
- Pemoco Ltd.
- Penn West Petroleum Ltd.
- Petrex Energy
- Petro One Energy
- Petrox Resources
- Pinecrest Energy
- Phase Energy Ltd.
- Pinto Resources
- Plains Midstream
- Postell Energy
- Potash Corp.
- Powder Mountain
- Primrose Drilling Ventures Ltd.
- Questerre Energy Corporation
- Red Beds Resources Ltd.
- Regent Resources Ltd.
- Renegade Petroleum
- Rife Resources
- Runcible Oil Corp.
- Saskatchewan Environmental Industry and Managers Association SEIMA
- SaskEnergy Incorporated/ TransGas Limited
- Sask Power
- Prairie Mines and Royalty (Sherritt Coal)
- Silver Bay Resources Ltd.
- Skywest Energy
- Southern Exploration
- Spartan Energy
- Spectrum Resource Group
- Spyglass Resources
- Sure Energy Inc.
- T-45 Oil Corporation
- Tamarack Acquisition Corp
- TAQA North
- T. Bird Oil Ltd.
- Terra Energy
- Tetonka Resources
- Texalta Petroleum Ltd.
- TORC Oil and Gas
- TransGas/SaskEnergy
- Triwest Exploration
- Valleyview Petroleums Ltd.
- Vermillion Resources
- Villanova Resources Inc.
- Villanova 4 Oil
- Viterra Inc.
- Willbrow Resources
- Williston Hunter Canada Inc.
- Zargon Oil & Gas Ltd.