



**PAMZ** | Parkland Airshed  
Management Zone

**Parkland Airshed Management Zone**  
**Ambient Air Monitoring Network**

**February 2012**  
**Continuous Ambient Air Quality Monitoring Program**  
**Monthly Report**

**Operations and Maintenance:**



**Data Validation and Report:**  
**Whiteley Enterprises Inc.**



March 27, 2012

Alberta Environment and Water  
 Enforcement and Monitoring Division  
 11th Floor, Oxbridge Place  
 9820-106 Street  
 Edmonton, Alberta  
 T6B 2X3

**RE: Parkland Airshed Management Zone – February 2012 – Ambient Air Quality Monitoring Report**

Enclosed is the Parkland Airshed Management Zone (PAMZ) Ambient Air Monitoring Network Report for the month of **February 2012**. This report is submitted by PAMZ on behalf of the following Member Companies' Facilities, to satisfy the requirement contained in their Operating Approvals:

<b>Company</b>	<b>Facility</b>	<b>Approval No.</b>
BP Canada Energy Company	North Caroline	10158-01-00
BP Canada Energy Company	South Caroline	1071-01-00
Bonavista Petroleum Limited	Carstairs-Crossfield	351-02-00
Penn West Energy	West Gilby	11437-01-00
Conoco Phillips Canada Limited	Medicine River	381-01-00
Harmattan Gas Processing L.P.	Harmattan	10154-02-01
Husky Oil Operations Limited	Ram River	57-01-00
Imperial Oil Resources Limited	Wilson Creek	10264-01-00
Keyera Energy Limited	Gilby	1333-02-00
Keyera Energy Limited	Homeglen-Rimbey	865-01-00
Keyera Energy Limited	Nevis	261-01-00
Keyera Energy Limited	Strachan	1351-01-00
ExxonMobil Oil Canada Limited	Lone Pine	11341-02-00
NAL Resources	Sylvan Lake	249-01-00
Penn West Petroleum Limited	Wimborne	359-01-00
PetroCanada	East Gilby	1717-02-00
Shell Canada Limited	Burnt Timber	295-01-00
Shell Canada Limited	Shantz	11379-01-00
Shell Canada Limited	Caroline	11323-01-00

Included in this report is a summary of the monthly continuous monitoring that includes detailed hourly average reports and multipoint calibration reports of all instruments. Operations (which include calibrations and maintenance) of the PAMZ air monitoring network were performed by FOCUS Corporation. Operational summaries can be found on the "Continuous Air Quality Data Summary" and the "Continuous Equipment Summary" pages of the report.

The concentrations of the reported air quality parameters of SO<sub>2</sub>, H<sub>2</sub>S, NO<sub>2</sub>, CO and O<sub>3</sub> were within all applicable Provincial and National objectives for all four continuous monitoring sites. The PM<sub>2.5</sub> concentrations were within all applicable Provincial and National objectives for the Caroline, Bluffton and Crossfield-Carstairs continuous monitoring site; however the PM<sub>2.5</sub> at the Red Deer Riverside site had one 24-hour exceedence of the Alberta Ambient Air Quality Objective (AAAQO):

- **Red Deer Riverside: Alberta Environment and Water (AEW) Reference # 256362.**

Details of site locations are as follows.

**Caroline Station:**

- ◆ Located on the Schmiemann dairy farm at 51° 56' 49" N and 114° 41' 51" W with an elevation of 1135 meters, the site is stationary and operates year round.

**Red Deer – Riverside:**

- ◆ Located in the city limits of Red Deer on Riverside Drive (52° 17' 56" N and 113° 47' 37" N) and an elevation of 868 meters, the site is a stationary site and operates year round.

**Bluffton (Martha Station):**

- ◆ Located at the Isaac residence, approximately 6 kilometers northeast of the town of Bluffton (northeast corner of the intersection of Township Rd 44 and Range Rd 23, LSD 4-3-44-2 W5M; (52° 45' 23.85" N and 114° 13' 7.51" W). The Bluffton Site is a mobile site and the Martha station will be at this site from February 9<sup>th</sup> to March 7<sup>th</sup>, 2012.

**Crossfield - Carstairs (McCoy Station):**

- ◆ Located approximately 1.2 km east of Highway 2 and 1.3 km south of Township Road 294 at 10-13-29-1 W5; (51° 29' 24" N and 114° 00' 28" W), and an elevation of 1046 meters. The site is a mobile site and from February 2<sup>nd</sup> to April 2012 the McCoy station will be at the Crossfield–Carstairs site.

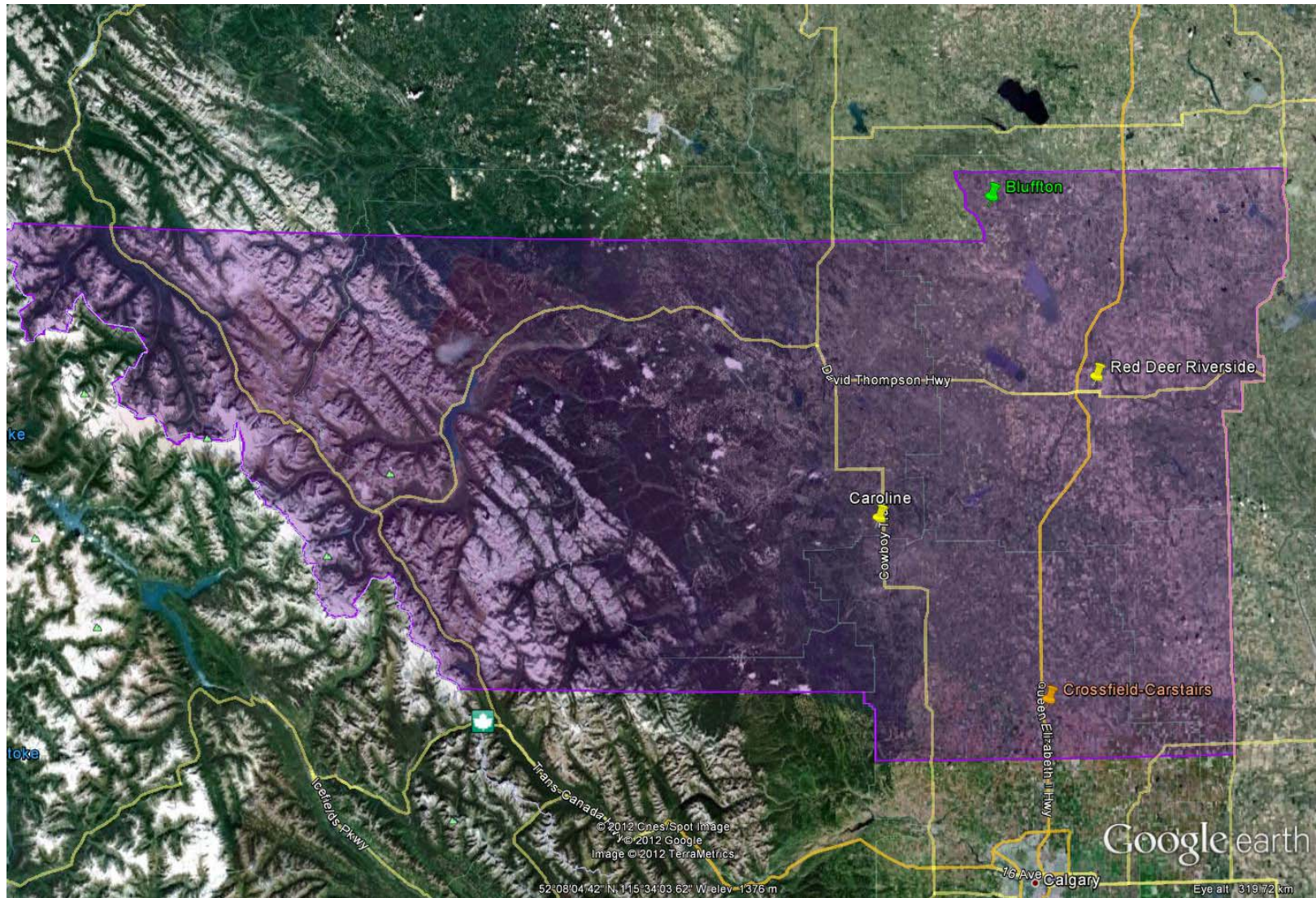
Enclosed are the summary results for the PAMZ Passive Monitoring Network. The samples were prepared and analyzed by Maxxam Analytics Inc. at their facility in Edmonton, AB. The samples were installed and removed by Gene's Maintenance Services of Leduc, AB. There were no exceedences of the SO<sub>2</sub> 30-day AAAQO objective (11 ppb).

If you have any questions concerning the report please contact the undersigned at 403.862.7046.

Regards,

Kevin Warren  
PAMZ Executive Director

---



**PAMZ Air Monitoring Stations February 2012**

## PAMZ Continuous Air Quality Monitoring Data Summary

<b>Ambient Air Quality Data Summary for the Month of February 2012</b>																
<b>Parkland Airshed Management Zone</b>						<b>Maximum Recorded Values</b>										
						1-hr										24-hr / 8-hr
<b>Pollutant (units)</b>	<b>Objectives</b>			<b>Station</b>	<b>Monthly Average</b>	<b>Conc</b>	<b>Day</b>	<b>WSPD (km/hr)</b>	<b>WDIR (Sector)</b>	<b>Conc</b>	<b>Day</b>	<b>Exceedence</b>			<b>Operational Time (%)</b>	
	1-hr	24-hr	30-day									1-hr	24-hr	30-day		
SO <sub>2</sub> (ppb)	172	48	11	Bluffton	0.8	15.8	Feb-29 19:00	10	NNW	4.3	Feb-29	0	0	0	100.0%	
SO <sub>2</sub> (ppb)	172	48	11	Caroline	0.6	7.6	Feb-29 23:00	14	NW	2.4	Feb-29	0	0	0	99.0%	
SO <sub>2</sub> (ppb)	172	48	11	Red Deer - Riverside	0.3	3.6	Feb-06 13:00	7	SE	0.6	Feb-28	0	0	0	99.7%	
SO <sub>2</sub> (ppb)	172	48	11	Crossfield-Carstairs	0.6	10.0	Feb-07 22:00	14	S	1.4	Feb-07	0	0	0	96.4%	
TRS (ppb)	10	3	-	Bluffton	0.3	3.4	Mar-01 12:00	19	NW	0.7	Feb-29	0	0	-	100.0%	
TRS (ppb)	10	3	-	Caroline	0.4	1.2	Feb-17 15:00	13	SE	0.6	Feb-19	0	0	-	95.8%	
TRS (ppb)	10	3	-	Crossfield-Carstairs	0.3	1.5	Feb-07 22:00	14	S	0.5	Feb-27	0	0	-	96.2%	
H <sub>2</sub> S (ppb)	10	3	-	Red Deer - Riverside	0.3	1.9	Feb-03 03:00	4	SSW	0.6	Feb-29	0	0	-	99.7%	
NO <sub>2</sub> (ppb)	159	106	-	Bluffton	5.1	32.4	Feb-29 19:00	10	NNW	16.0	Feb-29	0	0	-	100.0%	
NO (ppb)	-	-	-	Bluffton	1.0	15.3	Feb-28 11:00	6	SE	4.1	Feb-29	-	-	-	100.0%	
NO <sub>x</sub> (ppb)	-	-	-	Bluffton	6.1	36.9	Feb-29 19:00	10	NNW	20.1	Feb-29	-	-	-	100.0%	
NO <sub>2</sub> (ppb)	159	106	-	Caroline	3.7	22.3	Feb-29 22:00	13	NNW	8.0	Feb-29	0	0	-	99.6%	
NO (ppb)	-	-	-	Caroline	0.5	5.4	Feb-28 13:00	4	ESE	1.1	Feb-11	-	-	-	99.6%	
NO <sub>x</sub> (ppb)	-	-	-	Caroline	4.1	22.6	Feb-29 22:00	13	NNW	8.8	Feb-29	-	-	-	99.6%	
NO <sub>2</sub> (ppb)	159	106	-	Red Deer - Riverside	17.2	45.7	Feb-29 11:00	1	S	31.4	Feb-29	0	0	-	99.7%	
NO (ppb)	-	-	-	Red Deer - Riverside	11.4	97.6	Feb-22 10:00	5	S	28.7	Feb-28	-	-	-	99.7%	
NO <sub>x</sub> (ppb)	-	-	-	Red Deer - Riverside	28.6	141.9	Feb-29 11:00	1	S	58.2	Feb-29	-	-	-	99.7%	
NO <sub>2</sub> (ppb)	159	106	-	Crossfield-Carstairs	6.9	36.0	Feb-27 23:00	1	NE	14.1	Feb-27	0	0	-	96.4%	
NO (ppb)	-	-	-	Crossfield-Carstairs	1.1	19.9	Feb-04 20:00	5	SW	4.4	Feb-27	-	-	-	96.4%	
NO <sub>x</sub> (ppb)	-	-	-	Crossfield-Carstairs	7.9	54.9	Feb-27 23:00	1	NE	18.5	Feb-27	-	-	-	96.4%	
O <sub>3</sub> (ppb)	82	-	-	Bluffton	29.5	45.7	Mar-04 16:00	13	ESE	40.2	Mar-04	0	0	-	100.0%	
O <sub>3</sub> (ppb) - 8-hr	0			Bluffton						43.8	Mar-04	-				
O <sub>3</sub> (ppb)	82	-	-	Caroline	33.0	62.8	Feb-27 17:00	9	E	42.0	Feb-23	0	0	-	99.6%	
O <sub>3</sub> (ppb) - 8-hr	65			Caroline						48.5	Feb-08	-				
O <sub>3</sub> (ppb)	82	-	-	Red Deer - Riverside	15.1	34.8	Feb-22 14:00	29	NW	24.9	Feb-23	0	-	-	93.1%	
O <sub>3</sub> (ppb) - 8-hr	65			Red Deer - Riverside						30.5	Feb-24	-				
O <sub>3</sub> (ppb)	82	-	-	Crossfield-Carstairs	23.9	43.5	Feb-08 16:00	12	NNW	32.1	Feb-23	0	0	-	96.1%	
O <sub>3</sub> (ppb) - 8-hr	65			Crossfield-Carstairs						38.9	Feb-08	-				
CO (ppm)	13	-		Red Deer - Riverside	0.2	0.7	Feb-12 23:00	2	S	0.3	Feb-29	0	0	-	99.7%	
CO (ppm) - 8-hr	5			Red Deer - Riverside						0.6	Feb-13	-				

## PAMZ Continuous Air Quality Monitoring Data Summary (continued)

THC (ppm)	-	-	-	Bluffton	1.9	4.6	Feb-09 16:00	2	ENE	2.2	Feb-29	-	-	-	99.5%
THC (ppm)	-	-	-	Caroline	2.1	2.6	Feb-29 20:00	10	N	2.3	Feb-27	-	-	-	99.1%
THC (ppm)	-	-	-	Red Deer - Riverside	2.0	3.6	Feb-29 11:00	1	S	2.5	Feb-29	-	-	-	99.1%
THC (ppm)	-	-	-	Crossfield-Carstairs	2.4	3.5	Feb-27 21:00	3	ESE	2.7	Feb-27	-	-	-	95.8%
CH <sub>4</sub> (ppm)	-	-	-	Bluffton	1.9	2.7	Feb-16 13:00	3	E	2.2	Feb-29	-	-	-	99.5%
CH <sub>4</sub> (ppm)	-	-	-	Red Deer - Riverside	1.8	3.0	Feb-29 10:00	2	S	2.4	Feb-29	-	-	-	99.1%
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	-	Bluffton	2.7	36.6	Feb-16 11:00	1	WSW	9.3	Feb-28	0	0	-	100.0%
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	-	Caroline	2.4	22.0	Feb-27 18:00	7	E	9.1	Feb-10	0	0	-	100.0%
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	-	Red Deer - Riverside	12.3	46.4	Feb-29 23:00	7	N	33.0	Feb-29	0	1	-	98.4%
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	-	Crossfield-Carstairs	3.6	33.2	Feb-06 20:00	10	SSE	8.6	Feb-10	0	0	-	81.5%
Temp (°C)				Bluffton	-6.5	8.0	Feb-12 16:00			-0.6	Feb-13				100.0%
Temp (°C)				Caroline	-4.5	11.0	Feb-12 15:00			1.1	Feb-04				100.0%
Temp (°C)				Red Deer - Riverside	-6.8	8.1	Feb-21 17:00			-1.7	Feb-17				99.7%
Temp (°C)				Crossfield-Carstairs	-4.9	13.0	Feb-04 15:00			1.0	Feb-04				96.3%
RH (%)				Bluffton	75.9	96.8	Feb-03 20:00			93.6	Mar-05				100.0%
RH (%)				Caroline	68.8	96.5	Feb-25 00:00			89.4	Feb-25				100.0%
RH (%)				Red Deer - Riverside	73.8	95.8	Feb-21 17:00			91.2	Feb-19				99.7%
RH (%)				Crossfield-Carstairs	68.9	94.3	Feb-25 04:00			86.6	Feb-25				96.3%
SR (W/m <sup>2</sup> )				Bluffton	170.2	975.3	Mar-06 14:00			255.7	Mar-06				100.0%
SR (W/m <sup>2</sup> )				Caroline	144.7	911.4	Feb-21 14:00			214.0	Feb-27				100.0%
WSPD v (km/hr)				Bluffton	3.2	41.0	Feb-22 13:00			18.0	Feb-23				100.0%
WSPD v (km/hr)				Caroline	3.6	29.0	Feb-21 13:00			17.0	Feb-10				99.3%
WSPD v (km/hr)				Red Deer - Riverside	2.2	29.0	Feb-22 14:00			12.0	Feb-11				99.7%
WSPD v (km/hr)				Crossfield-Carstairs	2.2	23.0	Feb-07 14:00			15.0	Feb-07				96.5%
WDIR (sector)*				Bluffton	NNW										100.0%
WDIR (sector)*				Caroline	WNW										99.3%
WDIR (sector)*				Red Deer - Riverside	SSW										99.7%
WDIR (sector)*				Crossfield-Carstairs	WSW										96.5%



**PAMZ** | Parkland Airshed  
Management Zone

# Caroline Station

## Ambient Air Quality Monitoring Monthly Summary Tables, Graphs and Roses

# Caroline - Continuous Air Quality Monitoring Data Summary

Ambient Air Quality Data Summary for the Month of February 2012																
Parkland Airshed Management Zone						Maximum Recorded Values										
Pollutant (units)	Objectives			Station	Monthly Average	1-hr				24-hr / 8-hr		Exceedence			Operational Time (%)	
	1-hr	24-hr	30-day			Conc	Day	WSPD (km/hr)	WDIR (Sector)	Conc	Day	1-hr	24-hr	30-day		
SO <sub>2</sub> (ppb)	172	48	11	Caroline	0.6	7.6	Feb-29 23:00	14	NW	2.4	Feb-29	0	0	0	99.0%	
TRS (ppb)	10	3	-	Caroline	0.4	1.2	Feb-17 15:00	13	SE	0.6	Feb-19	0	0	-	95.8%	
NO <sub>2</sub> (ppb)	159	106	-	Caroline	3.7	22.3	Feb-29 22:00	13	NNW	8.0	Feb-29	0	0	-	99.6%	
NO (ppb)	-	-	-	Caroline	0.5	5.4	Feb-28 13:00	4	ESE	1.1	Feb-11	-	-	-	99.6%	
NO <sub>x</sub> (ppb)	-	-	-	Caroline	4.1	22.6	Feb-29 22:00	13	NNW	8.8	Feb-29	-	-	-	99.6%	
O <sub>3</sub> (ppb)	82	-	-	Caroline	33.0	62.8	Feb-27 17:00	9	E	42.0	Feb-23	0	0	-	99.6%	
O <sub>3</sub> (ppb) - 8-hr				Caroline						48.5	Feb-08					
THC (ppm)	-	-	-	Caroline	2.1	2.6	Feb-29 20:00	10	N	2.3	Feb-27	-	-	-	99.1%	
PM <sub>2.5</sub> (ug/m <sup>3</sup> )	80	30	-	Caroline	2.4	22.0	Feb-27 18:00	7	E	9.1	Feb-10	0	0	-	100.0%	
Temp (°C)				Caroline	-4.5	11.0	Feb-12 15:00			1.1	Feb-04				100.0%	
RH (%)				Caroline	68.8	96.5	Feb-25 00:00			89.4	Feb-25				100.0%	
SR (W/m <sup>2</sup> )				Caroline	144.7	911.4	Feb-21 14:00			214.0	Feb-27				100.0%	
WSPD v (km/hr)				Caroline	3.6	29.0	Feb-21 13:00			17.0	Feb-10				99.3%	
WDIR (Sector)				Caroline	WNW										99.3%	



# Caroline - Continuous Air Quality Monitoring Station & Equipment Summary

<b>Caroline</b>			
<b>General Station and Equipment Issues:</b>			
Routine monthly calibrations were performed on February 14 <sup>th</sup> (SO <sub>2</sub> , NO <sub>x</sub> & PM <sub>2.5</sub> ), February 15 <sup>th</sup> (O <sub>3</sub> & THC), February 16 <sup>th</sup> (TRS) and February 17 <sup>th</sup> (TRS).			
Parameter	Make	Model	Notes
<b>SO<sub>2</sub></b>	API	100A	Four (4) hours were flagged for maintenance on February 14 <sup>th</sup> due to pump rebuild. Three (3) hours were flagged for maintenance on February 17 <sup>th</sup> to clean glassware.
<b>TRS</b>	API	100E	Nine (9) hours were flagged invalid due to baseline drift. Twenty (20) hours were flagged for maintenance on February 16 <sup>th</sup> & 17 <sup>th</sup> (Lamp peaked & UV filter replaced & allowed time for conditioning prior to calibration).
<b>NO<sub>2</sub>/NO/NO<sub>x</sub></b>	TECO/API 200E	42C	Three (3) hours were flagged for maintenance on February 17 <sup>th</sup> to clean glassware.
<b>O<sub>3</sub></b>	TEI	49C	Three (3) hours were flagged for maintenance on February 17 <sup>th</sup> to clean glassware.
<b>PM<sub>2.5</sub></b>	Met One	BAM 1020	No operational issues were observed.
<b>THC</b>	TEI	51I	Three (3) hours were flagged invalid due to tech activity. Three (3) hours were flagged for maintenance on February 17 <sup>th</sup> to clean glassware.
<b>ET</b>	Met One	083D	No operational issues were observed.
<b>RH</b>	Met One	083D	No operational issues were observed.
<b>SR</b>	Licor	096-1	No operational issues were observed.
<b>WS/WD</b>	Blue Sky	857	Five (5) hours were flagged invalid due to instrument flatlining (freezing conditions).



# Red Deer Riverside Station

Ambient Air Quality Monitoring

Monthly Summary

Tables, Graphs and Roses

# Red Deer Riverside - Continuous Air Quality Monitoring Data Summary

Ambient Air Quality Data Summary for the Month of February 2012																
Parkland Airshed Management Zone						Maximum Recorded Values										
		Objectives			Station	Monthly Average	1-hr	24-hr / 8-hr			Exceedence			Operational		
Pollutant (units)	1-hr	24-hr	30-day			Conc	Day	WSPD (km/hr)	WDIR (Sector)	Conc	Day	1-hr	24-hr	30-day	Time (%)	
SO <sub>2</sub> (ppb)	172	48	11	Red Deer - Riverside	0.3	3.6	Feb-06 13:00	7	SE	0.6	Feb-28	0	0	0	99.7%	
H <sub>2</sub> S (ppb)	10	3	-	Red Deer - Riverside	0.3	1.9	Feb-03 03:00	4	SSW	0.6	Feb-29	0	0	-	99.7%	
NO <sub>2</sub> (ppb)	159	106	-	Red Deer - Riverside	17.2	45.7	Feb-29 11:00	1	S	31.4	Feb-29	0	0	-	99.7%	
NO (ppb)	-	-	-	Red Deer - Riverside	11.4	97.6	Feb-22 10:00	5	S	28.7	Feb-28	-	-	-	99.7%	
NO <sub>x</sub> (ppb)	-	-	-	Red Deer - Riverside	28.6	141.9	Feb-29 11:00	1	S	58.2	Feb-29	-	-	-	99.7%	
O <sub>3</sub> (ppb)	82	-	-	Red Deer - Riverside	15.1	34.8	Feb-22 14:00	29	NW	24.9	Feb-23	0	-	-	93.1%	
O <sub>3</sub> (ppb) - 8-hr				Red Deer - Riverside						30.5	Feb-24		-			
CO (ppm)	13	-	-	Red Deer - Riverside	0.2	0.7	Feb-12 23:00	2	S	0.3	Feb-29	0	0	-	99.7%	
CO (ppm) - 8-hr		5		Red Deer - Riverside						0.6	Feb-13		-			
THC (ppm)	-	-	-	Red Deer - Riverside	2.0	3.6	Feb-29 11:00	1	S	2.5	Feb-29	-	-	-	99.1%	
CH <sub>4</sub> (ppm)	-	-	-	Red Deer - Riverside	1.8	3.0	Feb-29 10:00	2	S	2.4	Feb-29	-	-	-	99.1%	
PM <sub>2.5</sub> (ug/m <sup>3</sup> )	80	30	-	Red Deer - Riverside	12.3	46.4	Feb-29 23:00	7	N	33.0	Feb-29	0	1	-	98.4%	
Temp (°C)	-	-	-	Red Deer - Riverside	-6.8	8.1	Feb-21 17:00			-1.7	Feb-17				99.7%	
RH (%)	-	-	-	Red Deer - Riverside	73.8	95.8	Feb-19 21:00			91.2	Feb-19				99.7%	
WSPD v (km/hr)	-	-	-	Red Deer - Riverside	2.2	29.0	Feb-22 14:00			12.0	Feb-11				99.7%	
WDIR (Sector)	-	-	-	Red Deer - Riverside	SSW										99.7%	

# Red Deer Riverside - Continuous Air Quality Monitoring Station & Equipment Summary

Red Deer Riverside			
<p><b>General Station and Equipment Issues:</b>            Monthly calibrations were performed on February 6<sup>th</sup> (O<sub>3</sub>), February 10<sup>th</sup> (SO<sub>2</sub>, NO<sub>x</sub> &amp; O<sub>3</sub>), February 15<sup>th</sup> (H<sub>2</sub>S &amp; CO), February 19<sup>th</sup> (THC / CH<sub>4</sub>) and February 21<sup>st</sup> (THC / CH<sub>4</sub> &amp; PM<sub>2.5</sub>). On February 19<sup>th</sup> two (2) hours were flagged due to a second power outage, all parameters were affected.</p>			
Parameter	Make	Model	Notes
SO <sub>2</sub>	TEI	43A	A total of two (2) hours were flagged invalid due to above noted power failure.
H <sub>2</sub> S	TEI	45C	A total of two (2) hours were flagged invalid due to above noted power failure.
NO <sub>2</sub> /NO/NO <sub>x</sub>	TEI	42C	A total of two (2) hours were flagged invalid due to above noted power failure.
O <sub>3</sub>	TEI	49i	On February 4 <sup>th</sup> & 5 <sup>th</sup> - twenty-two (22) hours were flagged invalid due to problem with connections; three (3) hours were flagged for maintenance. On February 9 <sup>th</sup> & 10 <sup>th</sup> - seventeen (17) hours were flagged invalid and four (4) hours were flagged for maintenance to repair solenoid connections. A total of two (2) hours were flagged invalid due to above noted power failure.
PM <sub>2.5</sub>	R&P	TEOM 1400AB	Nine (9) hours were flagged for baseline drift. Sample head cleaned on February 21 <sup>st</sup> . A total of two (2) hours were flagged invalid due to above noted power failure. On February 29 <sup>th</sup> there was one 24-hour exceedence of the AAAQO: 33 µg/m <sup>3</sup> <b>AEW Reference # 256362.</b>
CO	TEI	48C	A total of two (2) hours were flagged invalid due to above noted power failure.
THC / CH <sub>4</sub>	TEI	55C	Spans on February 18 <sup>th</sup> & 19 <sup>th</sup> were less than target, six (6) hours were flagged for maintenance (reseated boards & checked all fittings & connections). Spans were outside the target from February 27 <sup>th</sup> to March 1 <sup>st</sup> due to low span gas.
ET	n/a	n/a	A total of two (2) hours were flagged invalid due to above noted power



			failure.
<b>RH</b>	n/a	n/a	A total of two (2) hours were flagged invalid due to above noted power failure.
<b>WSWD</b>	Blue Sky	857	A total of two (2) hours were flagged invalid due to above noted power failure.



# Bluffton - Martha Portable Station

Ambient Air Quality Monitoring  
Monthly Summary  
Tables, Graphs and Roses

# Bluffton (Martha) - Continuous Air Quality Monitoring Data Summary

Ambient Air Quality Data Summary for the Month of February 2012																
Parkland Airshed Management Zone						Maximum Recorded Values										
Pollutant (units)	Objectives			Station	Monthly Average	1-hr				24-hr / 8-hr		Exceedence			Operational Time (%)	
	1-hr	24-hr	30-day			Conc	Day	WSPD (km/hr)	WDIR (Sector)	Conc	Day	1-hr	24-hr	30-day		
SO <sub>2</sub> (ppb)	172	48	11	Bluffton	0.8	15.8	Feb-29 19:00	10	NNW	4.3	Feb-29	0	0	0	100.0%	
TRS (ppb)	10	3	-	Bluffton	0.3	3.4	Mar-01 12:00	19	NW	0.7	Feb-29	0	0	-	100.0%	
NO <sub>2</sub> (ppb)	159	106	-	Bluffton	5.1	32.4	Feb-29 19:00	10	NNW	16.0	Feb-29	0	0	-	100.0%	
NO (ppb)	-	-	-	Bluffton	1.0	15.3	Feb-28 11:00	6	SE	4.1	Feb-29	-	-	-	100.0%	
NO <sub>x</sub> (ppb)	-	-	-	Bluffton	6.1	36.9	Feb-29 19:00	10	NNW	20.1	Feb-29	-	-	-	100.0%	
O <sub>3</sub> (ppb)	82	-	-	Bluffton	29.5	45.7	Mar-04 16:00	13	ESE	40.2	Mar-04	0	0	-	100.0%	
O <sub>3</sub> (ppb) - 8-hr				Bluffton						43.8	Mar-04					
THC (ppm)	-	-	-	Bluffton	1.9	4.6	Feb-09 16:00	2	ENE	2.2	Feb-29	-	-	-	99.5%	
CH <sub>4</sub> (ppb)	-	-	-	Bluffton	1.9	2.7	Feb-16 13:00	3	E	2.2	Feb-29	-	-	-	99.5%	
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	-	Bluffton	2.7	36.6	Feb-16 11:00	1	WSW	9.3	Feb-28	0	0	-	100.0%	
Temp (°C)				Bluffton	-6.5	8.0	Feb-12 16:00			-0.6	Feb-13				100.0%	
RH (%)				Bluffton	75.9	96.8	Feb-03 20:00			93.6	Mar-05				100.0%	
SR (W/m <sup>2</sup> )				Bluffton	170.2	975.3	Mar-06 14:00			255.7	Mar-06				100.0%	
WSPD v (km/hr)				Bluffton	3.2	41.0	Feb-22 13:00			18.0	Feb-23				100.0%	
WDIR (Sector)				Bluffton	NNW										100.0%	

## Bluffton (Martha) - Continuous Air Quality Monitoring Station & Equipment Summary

<b>Bluffton (Martha)</b>			
<b>General Station and Equipment Issues:</b>			
Installation calibrations were performed on February 9 <sup>th</sup> (SO <sub>2</sub> , NO <sub>x</sub> & THC/CH <sub>4</sub> ) and February 10 <sup>th</sup> (TRS, O <sub>3</sub> & PM <sub>2.5</sub> ). Removal calibrations were performed on March 6 <sup>th</sup> (SO <sub>2</sub> , TRS, NO <sub>x</sub> , O <sub>3</sub> & THC/CH <sub>4</sub> ).			
Parameter	Make	Model	Notes
<b>SO<sub>2</sub></b>	API	100A	No operational issues were noted.
<b>TRS</b>	API	100A	No operational issues were noted. (Note: a large maximum spike on March 1 <sup>st</sup> at 12:00 – possible vehicle parked near station)
<b>NO<sub>2</sub>/NO/NO<sub>x</sub></b>	API	200A	No operational issues were noted.
<b>O<sub>3</sub></b>	API	400A	No operational issues were noted.
<b>PM<sub>2.5</sub></b>	Met One	BAM 1020	No operational issues were noted. Sample head was cleaned on February 10 <sup>th</sup> .
<b>THC/CH<sub>4</sub></b>	TEI	55C	Three (3) hours were flagged invalid due to tech activity at the station. Spans were outside the target range February 16 <sup>th</sup> & 17 <sup>th</sup> – single point calibration performed to check response. Spans were also outside the target range on February 22 <sup>nd</sup> , 27 <sup>th</sup> & March 2 <sup>nd</sup> – the span cylinder was low - span cylinder was changed out March 2 <sup>nd</sup> .
<b>ET</b>	Met One	083D	No operational issues were noted.
<b>RH</b>	Met One	083D	No operational issues were noted.
<b>SR</b>	Met One	096-1	No operational issues were noted.
<b>WS/WD</b>	RM Young	014A	No operational issues were noted.





**PAMZ** | Parkland Airshed  
Management Zone

# Crossfield-Carstairs (McCoy) Portable Station

Ambient Air Quality Monitoring  
Monthly Summary  
Tables, Graphs and Roses

# Crossfield-Carstairs (McCoy) - Continuous Air Quality Monitoring Data Summary

Ambient Air Quality Data Summary for the Month of February 2012																
Parkland Airshed Management Zone					Maximum Recorded Values											
Pollutant (units)	Objectives			Station	Monthly Average	1-hr				24-hr / 8-hr		Exceedence			Operational Time (%)	
	1-hr	24-hr	30-day			Conc	Day		WSPD (km/hr)	WDIR (Sector)	Conc	Day	1-hr	24-hr		30-day
SO <sub>2</sub> (ppb)	172	48	11	Crossfield-Carstairs	0.6	10.0	Feb-07 22:00	14	S	1.4	Feb-07	0	0	0	96.4%	
TRS (ppb)	10	3	-	Crossfield-Carstairs	0.3	1.5	Feb-07 22:00	14	S	0.5	Feb-27	0	0	-	96.2%	
NO <sub>2</sub> (ppb)	159	106	-	Crossfield-Carstairs	6.9	36.0	Feb-27 23:00	1	NE	14.1	Feb-27	0	0	-	96.4%	
NO (ppb)	-	-	-	Crossfield-Carstairs	1.1	19.9	Feb-04 20:00	5	SW	4.4	Feb-27	-	-	-	96.4%	
NO <sub>x</sub> (ppb)	-	-	-	Crossfield-Carstairs	7.9	54.9	Feb-27 23:00	1	NE	18.5	Feb-27	-	-	-	96.4%	
O <sub>3</sub> (ppb)	82	-	-	Crossfield-Carstairs	23.9	43.5	Feb-08 16:00	12	NNW	32.1	Feb-23	0	0	-	96.1%	
O <sub>3</sub> (ppb) - 8-hr				Crossfield-Carstairs						38.9	Feb-08					
THC (ppm)	-	-	-	Crossfield-Carstairs	2.41	3.5	Feb-27 21:00	3	ESE	2.7	Feb-27	-	-	-	95.8%	
PM <sub>2.5</sub> (ug/m <sup>3</sup> )	80	30	-	Crossfield-Carstairs	3.6	33.2	Feb-06 20:00	10	SSE	8.6	Feb-10	0	0	-	81.5%	
Temp (°C)	-	-	-	Crossfield-Carstairs	-4.9	13.0	Feb-04 15:00			1.0	Feb-04				96.3%	
RH (%)	-	-	-	Crossfield-Carstairs	68.9	94.3	Feb-25 04:00			86.6	Feb-25				96.3%	
WSPD v (km/hr)	-	-	-	Crossfield-Carstairs	2.2	23.0	Feb-07 14:00			15.0	Feb-07				96.5%	
WDIR (sector)	-	-	-	Crossfield-Carstairs	WSW										96.5%	

# Crossfield-Carstairs (McCoy) - Continuous Air Quality Monitoring Station & Equipment Summary

<b>Crossfield-Carstairs (McCoy)</b>			
<b>General Station and Equipment Issues:</b>			
Installation calibrations were performed on February 2 <sup>nd</sup> (TRS) and February 3 <sup>rd</sup> (SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> & THC). On February 28 <sup>th</sup> and 29 <sup>th</sup> – twenty-four (24) hours were flagged invalid due to data acquisition (DAS) failure, all parameters were affected.			
Parameter	Make	Model	Notes
<b>SO<sub>2</sub></b>	API	100A	No operational issues were noted, other than above noted DAS failure.
<b>TRS</b>	API	100A	No operational issues were noted, other than above noted DAS failure.
<b>NO<sub>2</sub>/NO/NO<sub>x</sub></b>	API	200E/T200	No operational issues were noted, other than above noted DAS failure.
<b>O<sub>3</sub></b>	API	400	A power failure resulted in one (1) hour of invalid data on February 9 <sup>th</sup> . Twenty-four (24) hours were flagged invalid due to above noted DAS failure.
<b>PM<sub>2.5</sub></b>	Met One	BAM 1020	Sample head was cleaned on February 3 <sup>rd</sup> . A power failure resulted in two (2) hours of invalid data on February 9 <sup>th</sup> . One hundred & sixteen (116) hours were flagged invalid due to motor spring assembly failure (parts were ordered). As a result the analyzer is less than 90% operational – AEW Reference # 257068.
<b>THC</b>	TEI	51C-LT	Four (4) hours were flagged invalid due to flame out – relit on February 8 <sup>th</sup> . Twenty-four (24) hours were flagged invalid due to above noted DAS failure.
<b>ET</b>	Met One	N/A	A power failure resulted in one (1) hour of invalid data on February 9 <sup>th</sup> . Twenty-four (24) hours were flagged invalid due to above noted DAS failure.
<b>RH</b>	Met One	N/A	A power failure resulted in one (1) hour of invalid data on February 9 <sup>th</sup> . Twenty-four (24) hours were flagged invalid due to above noted DAS failure.
<b>WS/WD</b>	Met One	014 / 024	No operational issues were noted, other than above noted DAS failure.



**PAMZ** | Parkland Airshed  
Management Zone

# PAMZ Passive Network

## Monthly Summary Tables and Bubble Charts