

2019 Air Monitoring Results



Air Quality Health Index (AQHI) Ratings

The AQHI describes the level of health risk associated with an AQHI number. The higher the index number, the greater the health risks. The risk levels are further categorized as *low*, *moderate*, *high* or *very high*. Go to [our website's AQHI page](#) for more information. Seven of FAP's ten continuous air monitoring stations measure the substances required to calculate the AQHI.

FAP - 2019		Risk Level (% of time)			
Station Name	Hours Monitored	Low	Moderate	High	Very High
Bruderheim	8,472	94.17%	5.44%	0.34%	0.05%
Elk Island	8,332	94.86%	4.72%	0.36%	0.06%
Fort Saskatchewan	8,198	90.77%	8.94%	0.24%	0.05%
Gibbons	8,403	92.41%	7.19%	0.33%	0.07%
Lamont County	8,558	95.54%	4.31%	0.11%	0.05%
Redwater	8,309	93.33%	6.29%	0.30%	0.07%
Bon Accord*	1,379	85.93%	13.56%	0.51%	-
Chipman **	4,434	100.00%	-	-	-
Total Hours	56,085	52,638	3,270	148	29

FAP - 2019		Risk Level (# of hours)			
Station Name	Hours Monitored	Low	Moderate	High	Very High
Bruderheim	8,472	7,978	461	29	4
Elk Island	8,332	7,904	393	30	5
Fort Saskatchewan	8,198	7,441	733	20	4
Gibbons	8,403	7,765	604	28	6
Lamont County	8,558	8,176	369	9	4
Redwater	8,309	7,755	523	25	6
Bon Accord*	1,379	1,185	187	7	-
Chipman **	4,434	4,434	-	-	-
Total Hours	56,085	52,638	3,270	148	29

*The portable station operated at Bon Accord from January 1 to February 27, 2019.

**The portable station operated at Chipman from June 1 to December 31, 2019.

Hours with a High or Very High Risk AQHI Rating - 2019

This table shows the number of hours with a high or very high risk AQHI rating during 2019, when they occurred and the likely cause, when identifiable.

Event Dates	FAP Continuous Air Quality Monitoring Station														Total Hours	Attributed Cause
	Bruderheim		Elk Island		Fort Sask.		Gibbons		Lamont County		Redwater		Portable*			
	High Risk	Very High Risk	High Risk	Very High Risk	High Risk	Very High Risk	High Risk	Very High Risk	High Risk	Very High Risk	High Risk	Very High Risk	High Risk	Very High Risk		
Jan. 13, 14	10	-	16	-	-	-	-	-	-	-	-	-	-	-	26	Wintertime inversion
Feb. 9, 10	-	-	1	-	-	-	2	-	2	-	-	-	-	-	5	Multiple sources east of station combined with inversion
Feb. 14	-	-	-	-	-	-	8	-	-	-	-	-	7	-	15	
Feb. 27	-	-	3	-	-	-	-	-	-	-	-	-	-	-	3	Local influence very near the station
March 20	5	-	4	-	-	-	-	-	-	-	-	-	-	-	9	Wintertime inversion
March 21	-	-	-	-	6	-	-	-	-	-	-	-	-	-	6	Wintertime inversion
March 22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	Wintertime inversion
March 23	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	Wintertime inversion
May 28	-	-	4	-	2	-	-	-	-	-	-	-	-	-	6	Summer-time smog
May 30, 31	12	4	2	5	4	4	11	6	6	4	16	6	-	-	80	Smoke from wildfires
June 1	2	-	-	-	3	-	3	-	1	-	6	-	-	-	15	
June 8	-	-	-	-	3	-	3	-	-	-	3	-	-	-	9	
Nov. 3	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	Unknown
Total Hours	29	4	30	5	20	4	28	6	9	4	25	6	7	-	177	

* The Portable station operated at Bon Accord from January 1 to February 27 and at Chipman from June 1 to December 31.

Summary of Exceedances - 2019

Air quality measurements are compared hourly to the [Alberta Ambient Air Quality Objectives](#) (AAAQO). Any exceedance of an AAAQO is reported to the Alberta Government and the cause of the exceedance investigated.

One Hour Exceedances - 2019			
Parameter	Exceedances	Date	Attributed Cause
Fine Particulate (PM _{2.5})	2	February 9	Wintertime inversion
	1	February 10	Multiple sources east of station combined with inversion conditions
	1	February 13	
	12	February 14	
	2	March 21	Wintertime inversion
	1	March 23	
Hydrogen Sulphide (H ₂ S)	1	May 22	Local industry
	1	May 26	
Ozone (O ₃)	24	May 28	Summertime smog
Fine Particulate (PM _{2.5})	55	May 30	Wildfire smoke
	30	May 31	
	5	June 1	
Hydrogen Sulphide (H ₂ S)	1	June 1	Local industry
Fine Particulate (PM _{2.5})	9	June 8	Wildfire smoke
Hydrogen Sulphide (H ₂ S)	3	July 16	Local industry
	1	July 16	Local wetlands
	1	September 18	Undetermined
Fine Particulate (PM _{2.5})	1	November 3	Undetermined
Hydrogen Sulphide (H ₂ S)	1	December 9	Undetermined
Total Exceedances	152		

24 Hour Exceedances - 2019			
Parameter	Exceedances	Date	Attributed Cause
Fine Particulate (PM _{2.5})	7	January 13	Wintertime inversion
	1	February 13	Multiple sources east of station combined with inversion conditions
	3	February 14	
	4	March 21	Wintertime inversion
	4	March 22	
	1	March 23	
	7	May 30	Wildfire smoke
	4	May 31	
	7	June 1	
Hydrogen Sulphide (H ₂ S)	1	July 16	Local industry
Total Exceedances	39		

Summary Exceedances - 2013-2019

Parameter Measured		2019	2018	2017	2016	2015	2014	2013
Ammonia (NH ₃)	1-hr	-	-	1	-	4	-	-
Benzene (C ₆ H ₆)	1-hr	-	-	-	-	2	5	-
Carbon Monoxide (CO)	1-hr	-	-	-	-	-	-	-
	8-hr	-	-	-	-	-	-	-
Ethyl Benzene (C ₆ H ₅ CH ₂ CH ₃)	1-hr	-	-	-	-	-	-	-
Ethylene (C ₂ H ₄)	1-hr	-	-	-	-	-	-	-
	3-day	-	-	-	-	-	-	-
	Annual	-	-	-	-	-	-	-
Fine Particulate Matter (PM _{2.5})	1-hr	119	810	69	35	144	13	15
	24-hr	38	117	29	11	27	12	11
Hydrogen Sulphide (H ₂ S)	1-hr	9	20	-	-	3	-	147
	24-hr	1	4	-	-	1	-	29
Nitrogen Dioxide (NO ₂)	1-hr	-	-	-	-	-	-	-
	24-hr	-	-	-	-	-	-	-
	Annual	-	-	-	-	-	-	-
Ozone (O ₃)	1-hr	24	6	-	-	3	-	-
Styrene (C ₆ H ₅ CH=CH ₂)	1-hr	-	-	-	-	-	-	-
Sulphur Dioxide (SO ₂)	1-hr	-	-	38	51	34	26	6
	24-hr	-	-	9	9	6	3	2
	30-day	-	-	1	2	-	-	-
	Annual	-	-	-	-	-	-	-
Toluene (C ₆ H ₅ CH ₃)	1-hr	-	-	-	-	-	-	-
Xylenes (o-, m- and p- isomers)	1-hr	-	-	-	-	-	-	-
Total Exceedances		191	957	147	108	224	59	210