2020 Air Quality Monitoring Results

FORT AIR PARTNERSHIP
We Monitor the Air You Breathe

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 - 2020		AQHI Risk Level (% of time)			
Station Name	**Hours Monitored**	**Low**	**Moderate**	**High**	**Very High**
Bruderheim	8,459	94.60%	5.38%	0.02%	-
Elk Island	8,374	98.39%	1.61%	-	-
Fort Saskatchewan	8,101	94.32%	5.58%	0.10%	-
Gibbons	8,407	92.24%	7.71%	0.05%	-
Lamont County	8,428	98.28%	1.72%	-	-
Redwater	8,217	97.70%	2.30%	-	-
Chipman*	3,543	97.21%	2.79%	-	-
Sturgeon County**	3,500	98.91%	1.03%	0.06%	-
Total hours	**57,029**	**54,854**	**2,159**	**16**	**-**

FAP - 2020		AQHI Risk Level (# of hours)			
Station Name	**Hours Monitored**	**Low**	**Moderate**	**High**	**Very High**
Bruderheim	8,459	8,002	455	2	-
Elk Island	8,374	8,239	135	-	-
Fort Saskatchewan	8,101	7,641	452	8	-
Gibbons	8,407	7,755	648	4	-
Lamont County	8,428	8,283	145	-	-
Redwater	8,217	8,028	189	-	-
Chipman*	3,543	3,444	99	-	-
Sturgeon County**	3,500	3,462	36	2	-
Total hours	**57,029**	**54,854**	**2,159**	**16**	**-**

**The portable station operated at Chipman from January 1 to May 31, 2020.*
***The portable station reported AQHI in Sturgeon County from August 1 to December 31, 2020.*

Hours with a High or Very High Risk AQHI Rating - 2020

This table shows the number of hours with a high or very high risk AQHI rating during 2020, when they occurred and the likely cause, when identifiable.

Event Dates	FAP Continuous Air Quality Monitoring Station														Total Hours	Attributed Cause
	Bruder-heim		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. 25	2	-	-	-	3	-	-	-	-	-	-	-	-	-	**5**	Wintertime inversion
Jan. 26	-	-	-	-	2	-	-	-	-	-	-	-	-	-	**2**	
Jan. 27	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**	
Jan. 29	-	-	-	-	3	-	-	-	-	-	-	-	-	-	**3**	
Apr 24	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**	Unknown local source
June 5	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**	Structure fire near station
Sept. 27	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**	Local residential yard waste burning
Dec. 27	-	-	-	-	-	-	-	-	-	-	-	-	2	-	**2**	Regional conditions
Total hours	**2**	**-**	**-**	**-**	**8**	**-**	**4**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**16**	

***** *The portable reported the AQHI at Chipman from January 1 to May 31 and at the Sturgeon County site from August 1 to December 31, 2020.*

Summary of Exceedances - 2020

Air quality measurements are compared continuously to both 1-hour and 24-hour 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 - 2020			
Parameter	**Exceedances**	**Date**	**Attributed Cause**
Fine Particulate Matter ($PM_{2.5}$)	1	January 27	Wintertime inversion
	1	April 24	Unknown localized source
	1	June 5	Structure fire near the air monitoring station
Hydrogen Sulphide (H_2S)	1	July 24	Natural due to wetlands
	3	July 31	
	1	August 5	Local industry
	1	August 23	Natural due to wetlands
	1	September 19	Town wastewater lagoons
Fine Particulate Matter ($PM_{2.5}$)	1	September 27	Local residential yard waste burning
	2	December 27	Regional conditions
Total hours	**13**		

24 Hour Exceedances - 2020			
Parameter	**Exceedances**	**Date**	**Attributed Cause**
Fine Particulate Matter ($PM_{2.5}$)	7	January 25	Wintertime inversion
	2	January 26	
	1	January 27	
	2	January 28	
	1	January 29	
Hydrogen Sulphide (H_2S)	1	July 31	Natural due to wetlands
Fine Particulate Matter ($PM_{2.5}$)	6	September 19	Smoke from U.S. wildfires
Total hours	**20**		

Summary Exceedances: 2016-2020

Parameter Measured		2020	2019	2018	2017	2016
Ammonia (NH_3)	1-hr	-	-	-	1	-
Benzene (C_6H_6)	1-hr	-	-	-	-	-
Carbon Monoxide (CO)	1-hr	-	-	-	-	-
	8-hr	-	-	-	-	-
Ethyl Benzene ($C_6H_5CH_2CH_3$)	1-hr	-	-	-	-	-
Ethylene (C_2H_4)	1-hr	-	-	-	-	-
	3-day	-	-	-	-	-
	Annual	-	-	-	-	-
Fine Particulate Matter ($PM_{2.5}$)	1-hr	6	119	810	69	35
	24-hr	19	38	117	29	11
Hydrogen Sulphide (H_2S)	1-hr	7	9	20	-	-
	24-hr	1	1	4	-	-
Nitrogen Dioxide (NO_2)	1-hr	-	-	-	-	-
	24-hr	-	-	-	-	-
	Annual	-	-	-	-	-
Ozone (O_3)	1-hr	-	24	6	-	-
Styrene ($C_6H_5CH=CH_3$)	1-hr	-	-	-	-	-
Sulphur Dioxide (SO_2)	1-hr	-	-	-	38	51
	24-hr	-	-	-	9	9
	30-day	-	-	-	1	2
	Annual	-	-	-	-	-
Toluene ($C_6H_5CH_3$)	1-hr	-	-	-	-	-
Xylenes (o-, m- and p- isomers)	1-hr	-	-	-	-	-
Total hours		**33**	**191**	**957**	**147**	**108**