

# 2022 Air Quality Monitoring Results



## Air Quality Health Index (AQHI) Ratings

The AQHI is calculated by the Government of Alberta using data collected at FAP air monitoring stations. The AQHI is a measure of air quality as it pertains to human health. AQHI levels are low, moderate, high, or very high. Risk to health increases as the index level rises. 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 - 2022		Risk Level (% of time in each)			
Station Name	Hours Monitored	Low	Moderate	High	Very High
Bruderheim	8303	94.65%	5.25%	0.10%	0.00%
Elk Island	8513	96.99%	2.64%	0.24%	0.13%
Fort Saskatchewan	8189	91.45%	8.27%	0.28%	0.00%
Gibbons	8550	92.95%	6.48%	0.54%	0.03%
Lamont County	6933	97.00%	2.94%	0.06%	0.00%
Redwater	8215	95.87%	3.91%	0.22%	0.00%
Town of Lamont*	6908	95.87%	4.13%	0.00%	0.00%
<b>Total hours</b>	<b>55611</b>	<b>52776</b>	<b>2702</b>	<b>119</b>	<b>14</b>

\*Town of Lamont data includes the Town of Lamont Keith Purves Portable (Jan-Aug) air monitoring station and the new Town of Lamont permanent continuous air monitoring station starting in November.

## Hours with a High or Very High Risk AQHI Rating

FAP Continuous Air Quality Monitoring Station																			
Event Dates		Event Cause		Bruderheim		Elk Island		Fort Sask.		Gibbons		Lamont County		Redwater		Town of Lamont*		Total Hours	Attributed Cause
Event Dates		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	High Risk	Very High Risk		
Aug 20-22				5		4		4		1		2						16	Wildfire smoke
Sep 2-5				1		4		18				8						31	Wildfire smoke
Sep 10-11		3		10		15		23	3	1								55	Wildfire smoke
Oct 9												1						1	Local campfire

<b>Oct 19</b>	1		2	11					2		7				<b>23</b>	Regional met conditions and controlled burn at Elk Island Park
<b>Nov 11</b>							1								<b>1</b>	Wintertime inversion
<b>Dec 31</b>	4		2												<b>6</b>	Wintertime inversion
<b>Total Hours</b>	8	-	20	11	23	-	46	3	4	-	18	-	-	-	<b>133</b>	

\*Town of Lamont data includes the Town of Lamont Keith Purves Portable (Jan-Aug) air monitoring station and the new Town of Lamont permanent continuous air monitoring station starting in November.

### Summary of Exceedances

Air quality measurements are compared continuously to both one and 24-hour [Alberta Ambient Air Quality Objectives](#) (AAAQO). Any exceedance of an AAAQO is reported to the Alberta Government and the likely cause of the exceedance investigated. The following table details what substances exceeded an AAAQO, when they occurred and if it can be determined, the likely cause.

One Hour Exceedances			
Parameter	Exceedances	Date	Attributed Cause
PM <sub>2.5</sub>	1	3 June 2022	undetermined
H <sub>2</sub> S	2	July 14, 18	Natural, due to wetlands
H <sub>2</sub> S	1	July 23	Industry responsible
H <sub>2</sub> S	14	August 3, 16, 18, 22, 23, 24, & 31 September 18	Natural, due to wetlands
H <sub>2</sub> S	1	August 25	Undetermined
O <sub>3</sub>	3	August 20	Summertime smog
PM <sub>2.5</sub>	14	August 22	Wildfire smoke
PM <sub>2.5</sub>	1	September 1	Harvest dust
PM <sub>2.5</sub>	31	September 4, 5	Wildfire smoke
PM <sub>2.5</sub>	45	September 10, 11	Wildfire smoke
H <sub>2</sub> S	1	October 3	Natural, due to wetlands
PM <sub>2.5</sub>	3	October 8, 18	Local fire pit

<b>PM<sub>2.5</sub></b>	12	October 18,19	Controlled burn (Elk Island Park)
<b>PM<sub>2.5</sub></b>	3	October 19	Regional meteorological conditions
<b>PM<sub>2.5</sub></b>	3	November 11	Wintertime inversion
<b>PM<sub>2.5</sub></b>	1	December 15	Brush burning
<b>PM<sub>2.5</sub></b>	4	December 30, 31	Wintertime inversion

<b>24-Hour Exceedances</b>			
<b>Parameter</b>	<b>Exceedances</b>	<b>Date</b>	<b>Attributed Cause</b>
<b>PM<sub>2.5</sub></b>	9	August 22, 23	Wildfire smoke
<b>H<sub>2</sub>S</b>	1	August 23	Natural, due to wetlands
<b>PM<sub>2.5</sub></b>	8	September 3, 4	Wildfire smoke
<b>PM<sub>2.5</sub></b>	11	September 10, 11	Wildfire smoke
<b>PM<sub>2.5</sub></b>	1	October 18	Local fire pit
<b>PM<sub>2.5</sub></b>	2	October 18,19	Controlled burn (Elk Island Park)
<b>PM<sub>2.5</sub></b>	8	October 18,19	Regional meteorological conditions
<b>PM<sub>2.5</sub></b>	5	November 10,11	Wintertime inversion
<b>PM<sub>2.5</sub></b>	1	November 14	Undetermined
<b>PM<sub>2.5</sub></b>	1	December 15	Brush burning
<b>PM<sub>2.5</sub></b>	7	December 30, 31	Wintertime inversion

### Summary Exceedances: 2018-2022

The following table details the number of exceedances for substances measured by FAP across all stations in the past five years.

Parameter Measured		2022	2021	2020	2019	2018
Ammonia (NH <sub>3</sub> )	1-hr	-	-	-	-	-
	8-hr	-	-	-	-	-
Benzene (C <sub>6</sub> H <sub>6</sub> )	1-hr	-	-	-	-	-
Carbon Monoxide (CO)	1-hr	-	-	-	-	-
	8-hr	-	-	-	-	-
Ethyl Benzene (C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> CH <sub>3</sub> )	1-hr	-	-	-	-	-
Ethylene (C <sub>2</sub> H <sub>4</sub> )	1-hr	-	-	-	-	-
	3-day	-	-	-	-	-
	Annual	-	-	-	-	-
Fine Particulate Matter (PM <sub>2.5</sub> )	1-hr	118	393	6	119	810
	24-hr	53	60	19	38	117
Hydrogen Sulphide (H <sub>2</sub> S)	1-hr	19	16	7	9	20
	24-hr	1	1	1	1	4
Nitrogen Dioxide (NO <sub>2</sub> )	1-hr	-	-	-	-	-
	24-hr	-	-	-	-	-
	Annual	-	-	-	-	-
Ozone (O <sub>3</sub> )	1-hr	3	3	-	24	6
Styrene (C <sub>6</sub> H <sub>5</sub> CH=CH <sub>3</sub> )	1-hr	-	-	-	-	-
Sulphur Dioxide (SO <sub>2</sub> )	1-hr	-	-	-	-	-
	24-hr	-	-	-	-	-
	30-day	-	-	-	-	-
	Annual	-	-	-	-	-
Toluene (C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> )	1-hr	-	-	-	-	-
Xylenes (o-, m- and p- isomers)	1-hr	-	-	-	-	-
<b>Total</b>		<b>194</b>	<b>473</b>	<b>33</b>	<b>191</b>	<b>957</b>