2024 Q2 (April-June)
Air Quality Monitoring Results

Heartland Air Monitoring Partnership
We Monitor the Air You Breathe

Air Quality Health Index (AQHI) Ratings

The AQHI is calculated by the Government of Alberta using data collected at HAMP air monitoring stations. The AQHI is a measure of air quality that pertains to human health.

AQHI levels are low, moderate, high, or very high. The risk to health increases as the index level rises.

New in 2024, Alberta has implemented a revised AQHI that will provide earlier health risk warnings to Albertans during exceptional or rapidly changing wildfire events.

Under the original AQHI formula for calculating health risk, a high risk rating was triggered when $PM_{2.5}$ levels exceeded a threshold[1] of 80 micrograms per cubic metre of air (ug/m^3). With the new AQHI, a high risk rating will now be triggered by a lower $PM_{2.5}$ measurement of 60 ug/m^3.

The new AQHI was first developed and piloted in B.C. when officials found that residents near large wildfires were not getting adequate warnings in rapidly changing conditions to reduce their exposure to smoke. The change is now being adopted by provinces and territories across Canada to provide consistent reporting, especially during wildfires.

Due to this change, we will likely see an increased number of high and very high AQHI ratings during air quality events, some of which the source may be undetermined, as was the case this quarter and reflected in the table below titled "Hours with a High or Very High Risk AQHI Rating".

Visit our Alberta Quality Health Index for more information. Seven of HAMP's 10 continuous air monitoring stations monitor substances whereby the AQHI can be calculated.

HAMP – 2024 Q2		Risk Level (% of time in each)			
Station Name	**Hours Monitored**	**Low**	**Moderate**	**High**	**Very High**
Bruderheim	2121	95.99%	2.78%	0.71%	0.52%
Elk Island	2147	96.60%	2.00%	0.79%	0.61%
Fort Saskatchewan	2073	96.09%	1.93%	0.39%	1.59%
Gibbons	2154	97.03%	1.35%	0.28%	1.34%
Lamont	2092	95.51%	3.68%	0.48%	0.33%
Redwater	2088	97.03%	1.58%	0.91%	0.48%
Thorhild*	1894	97.04%	1.85%	0.69%	0.42%
Total hours	**14569**	14054	316	88	111

*The Keith Purves Portable station began operations in Thorhild in April 2024.

Hours with a High or Very High Risk AQHI Rating

HAMP Continuous Air Quality Monitoring Station																
Event Dates	**Bruderheim**		**Elk Island**		**Fort Sask.**		**Gibbons**		**Lamont**		**Redwater**		**Thorhild**		**Total Hours**	**Attributed Cause**
	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		
April 2	-	-	-	-	3	2	-	-	-	-	-	-	-	-	**5**	Undetermined
April 17	1	1	-	-	-	-	-	-	-	-	-	-	-	-	**2**	Undetermined
May 11,12	8	5	17	13	5	31	6	29	10	7	19	10	13	8	**181**	Wildfire Smoke
June 3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**	Undetermined
June 11	2	2	-	-	-	-	-	-	-	-	-	-	-	-	**4**	Undetermined
June 23,24	2	3	-	-	-	-	-	-	-	-	-	-	-	-	**5**	Undetermined
Total Hours	15	11	17	13	8	33	6	29	10	7	19	10	13	8	**199**	

Summary of Exceedances

There were 25 exceedances of the 1-hour, and 18 exceedances of the 24-hour objective in the second quarter of 2024.

One Hour Exceedances*			
Parameter	**Exceedances**	**Date**	**Attributed Cause**
$PM_{2.5}$	2	April 1,2	Undetermined
$PM_{2.5}$	7	June 11, 23	Undetermined
H_2S	8	April 11,12,15,20	Natural causes due to ice melt
H_2S	7	April 24, 28	Undetermined
H_2S	1	May 9	Undetermined

*NOTE: The wildfire bulk smoke reporting protocol enacted by the Alberta Government does not require the reporting of 1-hr $PM_{2.5}$ exceedances due to wildfire smoke separately from the data submissions. The concentration did exceed the reporting level 132 times due to wildfire smoke on May 11 and 12.

24-Hour Exceedances			
Parameter	**Exceedances**	**Date**	**Attributed Cause**
$PM_{2.5}$	14	May 11,12	Wildfire smoke
$PM_{2.5}$	1	June 23	Undetermined
H_2S	1	April 12	Natural causes due to ice melt
H_2S	2	April 24, 28	Undetermined