

Ambient Air and Sound

Monthly Report

STONEY TRAIL AGGREGATE RESOURCE

BURNCO

LAFARGE



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Materials

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Authors Note

Due to equipment failure during the upgrade process from previous monitoring systems - July does not contain any Temperature, Sound, PM2.5, or TSP data from the remote trailer. The trailer that previous systems were hosted in went through extensive upgrades in preparation for new monitor systems. When trailer upgrades were complete and previous systems reconnected until new systems were ready for installation; equipment failure corrupted data from the start of the month and during the final recordings for the month.

Once data corruption was identified, temporary sound monitors were installed in August until all new monitors were installed and operational.

No complaints were received in July.

This report summarizes the ambient air quality, meteorological data and sound data collected at the Stoney Trail Aggregate Resource (STAR) pit monitoring locations for the month.

Meteorological Data Results

Table 1 provides a summary of the meteorological data recorded at STAR during the month. Monitor

details can be found in the STAR Monitoring Appendix.

Table 1: STAR meteorological data

Parameter	Monthly Average	1-Hour	
		Maximum	Minimum
Wind Speed	12.34	42.6	1.65
Wind Direction	SSW	NW	WSW
Temperature	N/A	N/A	N/A
Precipitation(mm)	54.7mm*		

*Monthly total accumulation of precipitation (mm)

The wind rose (Figure 1) illustrates the frequency of wind speed and direction for the month

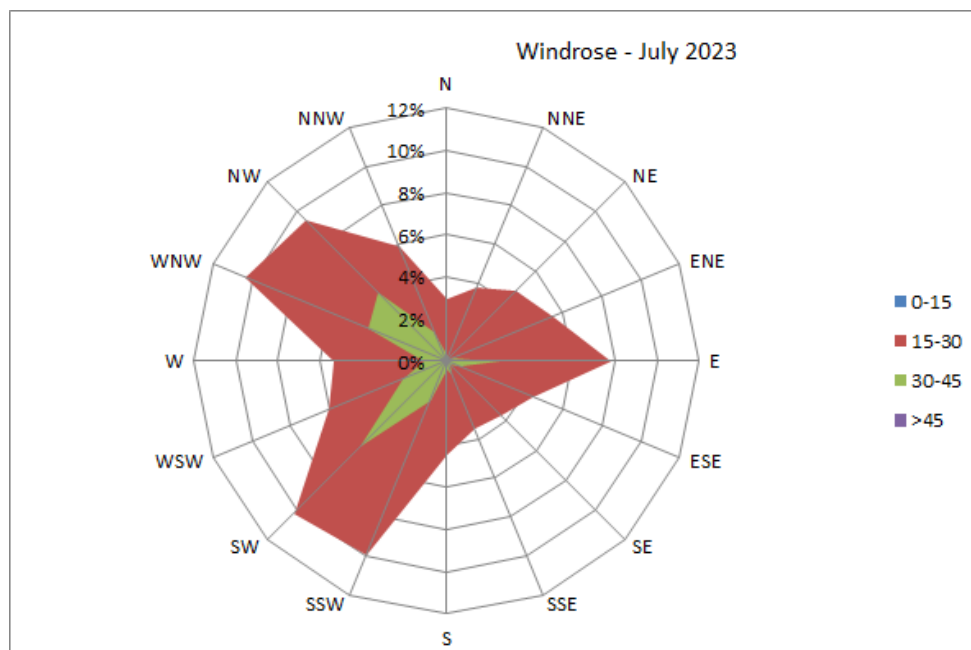


Figure 1: Monthly wind rose from the scale house station

Particulate Data Results

Table 2 provides a summary of the particulate data recorded at STAR during the month. STAR compares its data to Alberta’s ambient air quality objectives (AAAQO) and guidelines (AAAQG) guidelines as well as to the Calgary Region Airshed Zone’s (CRAZ) northwest particulate monitor data, details of which, both can be found in STAR Monitoring Appendix.

Table 2: STAR data summary for particulate data

Parameter	Monthly Average	CRAZ	1-Hour Average		24-Hour Average	
		PM2.5 Average	Maximum Concentration	Events vs AAAQO or AAAQG	Maximum Concentration	Events vs AAAQO
PM _{2.5} (ug/m ³)	N/A	22.46	N/A	0	N/A	0
TSP (ug/m ³)	N/A		N/A	-	N/A	0

Notes: See authors note at top of report. Equipment failure when reconnecting monitoring equipment.

Figure 2 graphically illustrates the time series for hourly concentrations of PM_{2.5}, while Figure 3 and 4 shows daily average concentrations recorded during the month for particulate matter.

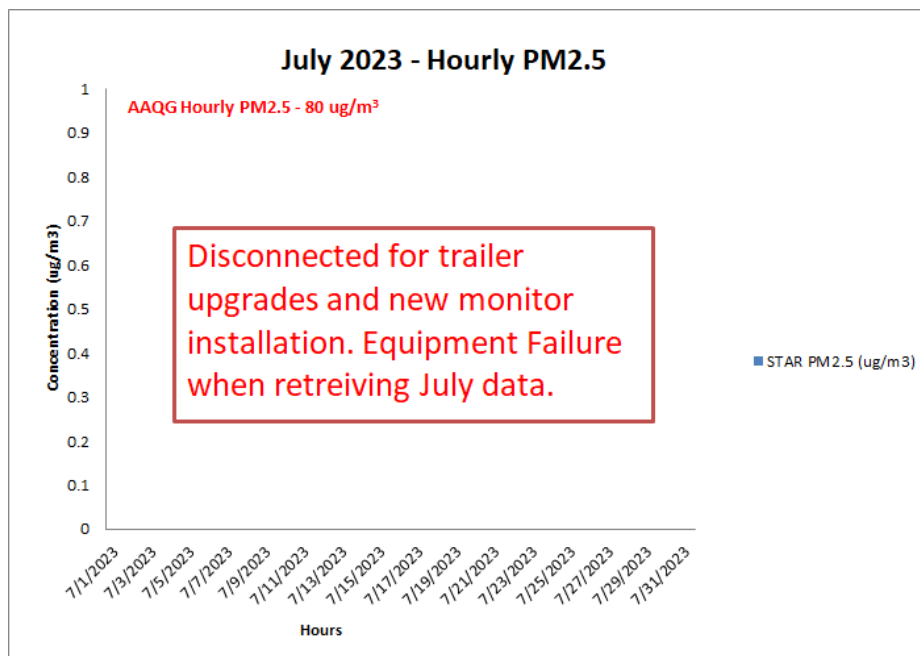


Figure 2: 1-hour concentrations of PM_{2.5} STAR

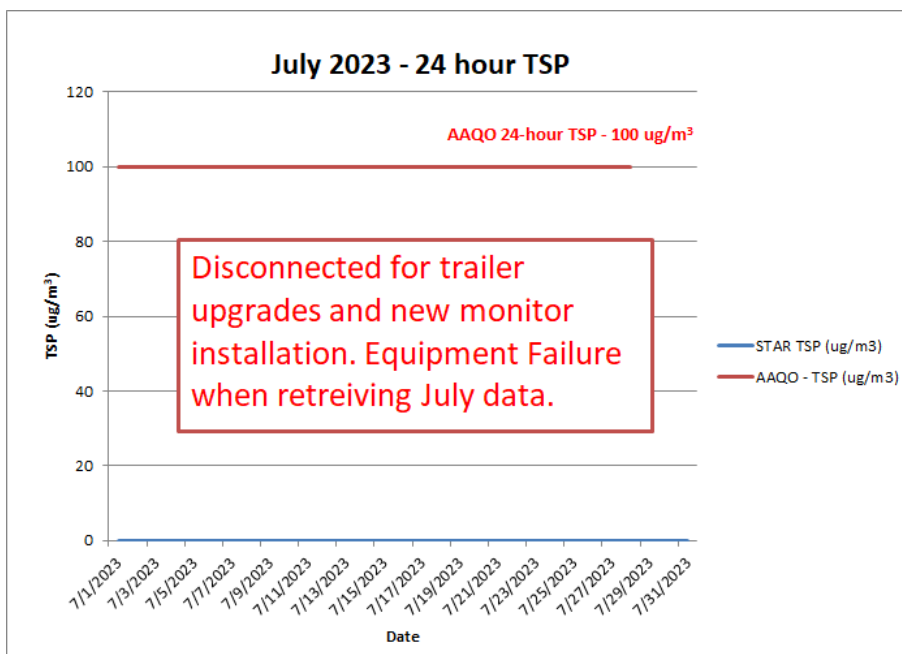


Figure 3: 24-hour concentrations of TSP at STAR

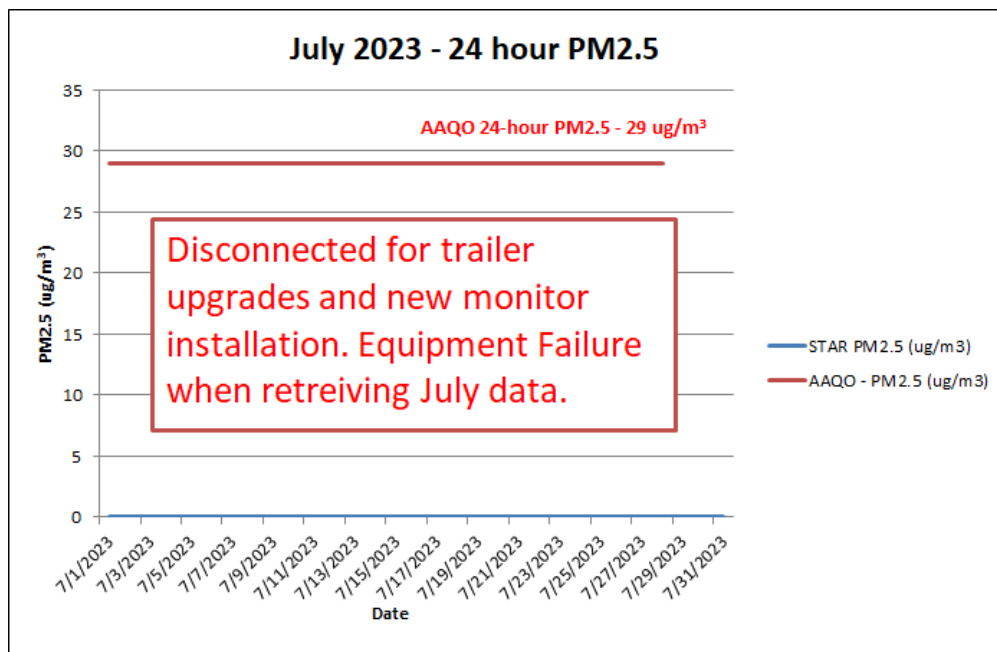


Figure 4: 24-hour concentrations of PM_{2.5} at STAR

The results from the STAR Pit and the CRAZ station for PM_{2.5} are shown graphically below (Figure 5).

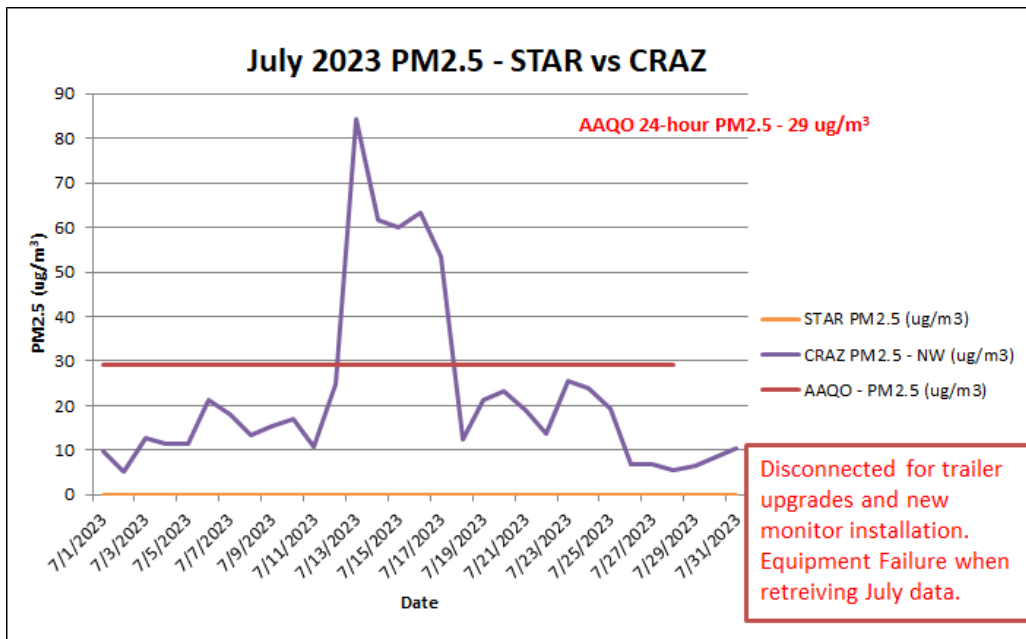


Figure 5: CRAZ and STAR Comparison for PM_{2.5}

Notes: Spikes in CRAZ Data due to local wildfire smoke.

Sound Data

A summary of the sound data during the month can be found in Table 3. STAR compares its data to the City of Calgary guidelines for residential areas that can be found in the STAR Monitoring Appendix.

Table 3: STAR data summary for sound data

Parameter	Monthly Average (dba)	Maximum 1-Hour Sound Level (dBA)	Events vs Target
Sound Level Day Time	N/A	N/A	0
Sound Level Nighttime	N/A	N/A	0

Notes: See authors note at top of report. Once data corruption was identified, temporary sound monitors were installed in August until all new monitors were installed and operational. Manual measurements to be taken with handheld device periodically or if complaints arise.

Sound Complaints: None

Figure 6 shows the graphical representation of hourly sound levels at the STAR pit. Figure 7 shows the month of hours for the sound levels at the STAR pit, this graphical representation shows the average of each hour every day to determine trends in a day over a month of readings.

As sound can be impacted by a variety of conditions, data is considered invalid if the wind speed is above 11.5 km/hour and rainfall is greater than 3mm/hour.

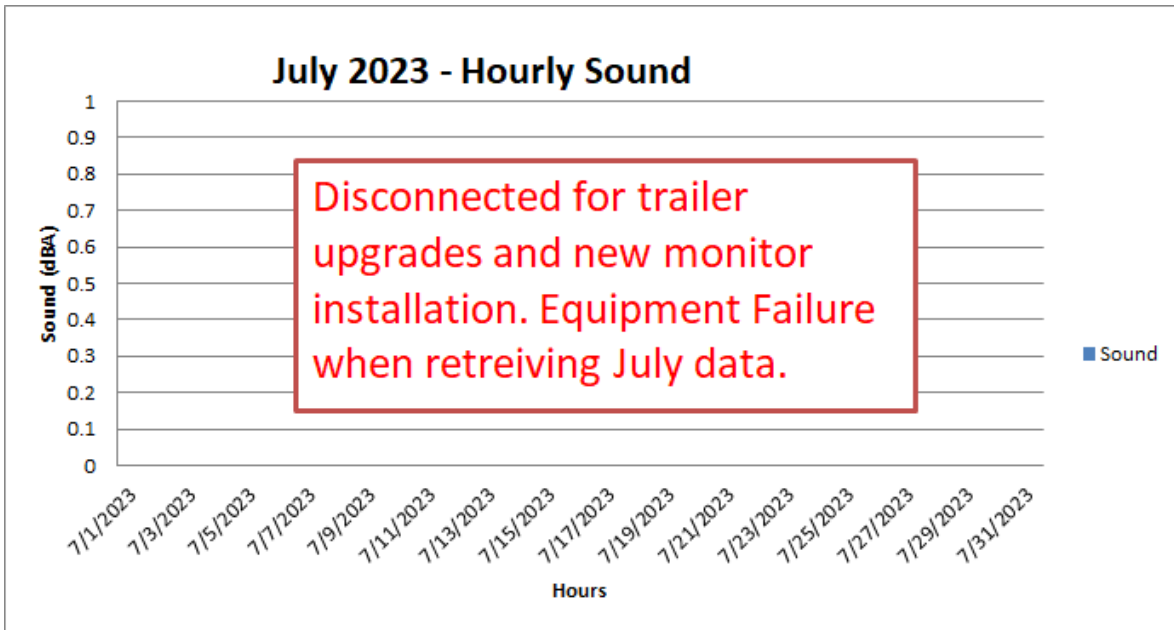


Figure 6: Hourly sound level at the STAR Pit

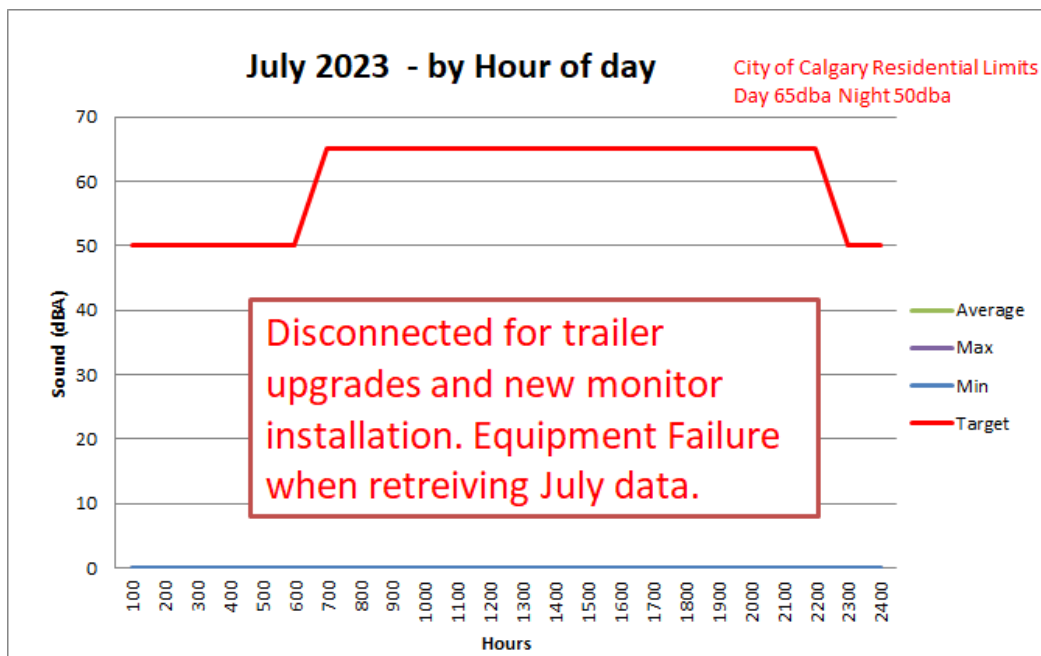


Figure 7: Month of Hours sound levels at the STAR

It is important to note that the monitoring stations are located inside the perimeter berms, adjacent to operations and not beyond the site boundaries. Measurements are intended to help monitor and measure the internal operations performance and are not representative of the lower offsite levels.