

FORT MILL SCHOOL DISTRICT

Perimeter Air Quality Monitoring Program
Flint Hill Elementary School

Monthly Perimeter Air Monitoring Report

April 1 – 30, 2026

Prepared by:

Citadel Environmental Health & Safety, Inc.

Prepared for:

Fort Mill School District

1.0 PURPOSE

This report presents a summary of continuous perimeter air quality monitoring data collected at Flint Hill Elementary School for the period of April 1 through April 30, 2026. The monitoring is conducted under the Community Air Monitoring Plan (CAMP) established for the Fort Mill School District in coordination with Citadel Environmental Health and Safety, Inc. (Citadel EHS).

The purpose of the perimeter air quality monitoring program is to provide ongoing, real-time assessment of ambient air quality in the vicinity of the school and nearby industrial operations. Data are evaluated against the tiered threshold framework defined in the CAMP to determine whether observed conditions warrant internal review, district notification, or coordinated response.

2.0 MONITORING OVERVIEW

Two continuous air monitoring stations are positioned along the perimeter of Flint Hill Elementary School to capture ambient air quality conditions from both the upwind and downwind directions relative to the adjacent Silfab Solar manufacturing facility.

2.1 Monitor Locations

NE Monitor (Downwind): Positioned on the northeast side of the school property, between the school and the Silfab facility. Based on the prevailing west-southwest (WSW) wind direction, this monitor is downwind of the school and upwind of the facility and is positioned to detect any emissions in close proximity to the school.

SW Monitor (Upwind): Positioned on the southwest side of the school property, upwind of both the school and the Silfab facility under prevailing wind conditions. This monitor captures baseline ambient air quality and serves as a reference point for comparison with the downwind station.

2.2 Monitored Parameters

Both stations continuously measure the following parameters at 15-minute intervals: Particulate Matter (PM_{2.5} and PM₁₀), Methane (CH₄), Volatile Organic Compounds (VOCs), as well as meteorological data including wind speed, wind direction, temperature, relative humidity, and barometric pressure.

3.0 MONITORING FRAMEWORK

The CAMP defines a tiered response framework with three escalating threshold levels for each monitored parameter. Exceedance of a threshold on a 15-minute rolling average triggers the corresponding response protocol.

Table 1. CAMP Threshold Summary

Parameter	Notification (15-min, NE only)	Alert (15-min, NE&SW)	Action (15-min, NE&SW)	NAAQS (24-hr, NE&SW)
PM _{2.5} (µg/m ³)	30	60	—	35
PM ₁₀ (µg/m ³)	40	80	—	150
Methane (ppm)	3	7	10	—
VOCs (ppm)	0.25	0.50	5.00	—

Notification Level: Internal Citadel EHS review; no external notification required. **Alert Level:** District notification required per CAMP Section 6.2. **Action Level:** Emergency coordination between Citadel EHS, the district, and relevant agencies.

4.0 SCOPE OF WORK

No facility incidents were reported to Citadel EHS during the April 2026 monitoring period. The exceedance data presented in Section 5.0 are evaluated in the context of meteorological conditions, directional analysis, and regional air quality patterns.

5.0 DATA ANALYSIS

The following section presents all 15-minute rolling average readings that exceeded CAMP notification or alert thresholds during the reporting period. Each exceedance event is presented with corresponding data from both the NE (downwind) and SW (upwind) monitors, along with wind direction observations and contextual notes.

5.1 PM2.5 Exceedances

The NE monitor recorded one PM2.5 Notification Level event during the reporting period. On April 25, five readings exceeded the 30 $\mu\text{g}/\text{m}^3$ threshold between 07:30 and 08:30 (peak 31.3 $\mu\text{g}/\text{m}^3$ at 08:15). The SW monitor recorded elevated readings during the same period but remained below the notification threshold (peak 20.7 $\mu\text{g}/\text{m}^3$). Wind was from the south-southwest at low speed (0.4–0.8 m/s), consistent with early morning atmospheric conditions. Both monitors showed gradually declining concentrations through the mid-morning hours.

The SW monitor recorded no PM2.5 exceedances during the reporting period.

No PM2.5 readings reached the Alert level or Action level at either monitor during the April monitoring period. Overall, PM2.5 concentrations remained low throughout the month.

5.2 PM10 Exceedances

PM10 exceedances at the NE monitor included two Alert Level events and two additional Notification Level events. The SW monitor recorded one Notification Level event during the reporting period.

The NE monitor recorded two PM10 Notification Level events during the reporting period. On April 16, a single reading reached 41.9 $\mu\text{g}/\text{m}^3$ at 14:30 with wind from the southwest at 2.9 m/s; the SW monitor was 8.1 $\mu\text{g}/\text{m}^3$ at the same time, indicating a localized source near the NE monitor. On April 27, a single reading reached 49.1 $\mu\text{g}/\text{m}^3$ at 09:45 with wind from the northwest at 1.0 m/s; the SW monitor was 32.4 $\mu\text{g}/\text{m}^3$, suggesting both monitors were affected but the NE monitor more so. Both events were brief, consisting of single isolated readings that were not sustained.

The SW monitor recorded one PM10 Notification Level event during the reporting period. On April 13, a single reading reached 51.4 $\mu\text{g}/\text{m}^3$ at 07:45 with wind from the south-southwest at 1.5 m/s. The NE monitor recorded 21.8 $\mu\text{g}/\text{m}^3$ at the same time. This was a brief, isolated spike consistent with transient conditions.

Overall, the Notification Level events were consistent with transient conditions and localized particulate generation and did not indicate sustained impacts attributable to site activities.

The table below summarizes the Alert Level events at the NE monitor. No PM10 Alert Level events were recorded at the SW monitor during this reporting period.

Table 2. NE Monitor (Downwind) — PM10 Alert Level Events

Date	Time Range	Peak ($\mu\text{g}/\text{m}^3$)	Duration	Level	Notes
Apr 2	09:45 – 14:00	96.7	~4.3 hrs	Alert	Intermittent spikes (7 readings above $40 \mu\text{g}/\text{m}^3$, not sustained). NE only; SW readings ~13–14 $\mu\text{g}/\text{m}^3$. Wind SW at 2–3 m/s. Daytime; school in session.
Apr 23	14:45	165.8	Single	Alert	Highest PM10 reading of the reporting period. Single isolated spike. NE only; SW reading was $12.3 \mu\text{g}/\text{m}^3$. Wind WSW/SSW at 2.0 m/s. Daytime; school in session.

5.3 Methane and VOC Exceedances

No methane or VOC readings exceeded CAMP thresholds at either monitor during the April 2026 reporting period. The NE monitor recorded a maximum methane reading of 1.92 ppm, and the SW monitor recorded a maximum of 1.88 ppm; both remained well below the 3 ppm notification threshold. All VOC readings were at or near 0.00 ppm at both stations (NE max: 0.11 ppm; SW max: 0.02 ppm), well below the 0.25 ppm notification threshold.

5.4 24-Hour Rolling Averages

The 24-hour rolling averages for all parameters remained below their respective National Ambient Air Quality Standards (NAAQS) throughout the reporting period at both monitors. The highest 24-hour PM2.5 average was $19.52 \mu\text{g}/\text{m}^3$ at the NE monitor on April 24 (well below the $35 \mu\text{g}/\text{m}^3$ standard), and the highest PM10 average was $25.41 \mu\text{g}/\text{m}^3$ at the NE monitor on April 24 (well below the $150 \mu\text{g}/\text{m}^3$ standard). The short-term fluctuations captured in the 15-minute data did not translate into sustained air quality conditions of regulatory concern.

Table 3. NE Monitor — Daily Averages (April 1–30)

Date	CH4 (ppm)	VOC (ppm)	PM2.5 ($\mu\text{g}/\text{m}^3$)	PM10 ($\mu\text{g}/\text{m}^3$)	Temp ($^{\circ}\text{C}$)	RH (%)
Apr 1	1.20	0.00	13.32	19.11	24.7	61.3
Apr 2	1.17	0.00	9.30	19.38	24.5	55.8
Apr 3	1.18	0.00	6.09	10.47	23.8	63.5
Apr 4	1.16	0.00	7.24	12.26	23.8	70.3
Apr 5	1.23	0.00	6.50	11.87	19.9	90.6
Apr 6	1.29	0.00	2.60	5.91	15.9	55.6
Apr 7	1.32	0.01	3.61	6.69	17.7	50.4
Apr 8	1.42	0.00	4.23	7.02	15.0	38.1
Apr 9	1.48	0.00	7.31	11.76	15.4	40.7
Apr 10	1.40	0.01	7.15	11.60	18.1	52.9
Apr 11	1.25	0.01	7.04	10.86	22.2	50.2
Apr 12	1.29	0.00	11.75	15.63	23.2	50.6

Date	CH4 (ppm)	VOC (ppm)	PM2.5 (µg/m³)	PM10 (µg/m³)	Temp (°C)	RH (%)
Apr 13	1.13	0.00	5.53	9.48	23.1	58.3
Apr 14	1.10	0.00	7.74	11.93	24.6	52.4
Apr 15	1.04	0.00	11.70	16.25	26.1	44.4
Apr 16	1.02	0.00	7.50	13.12	26.4	44.4
Apr 17	1.01	0.00	5.50	10.20	26.5	47.4
Apr 18	1.08	0.01	7.51	12.03	26.4	52.2
Apr 19	1.11	0.00	4.48	8.35	19.9	47.1
Apr 20	1.29	0.00	3.04	6.56	16.9	49.0
Apr 21	1.28	0.00	3.40	7.42	17.9	36.3
Apr 22	1.17	0.00	8.53	14.38	21.6	45.2
Apr 23	1.12	0.00	14.40	23.00	23.8	42.6
Apr 24	1.07	0.00	19.52	25.41	24.7	43.6
Apr 25	1.06	0.00	16.08	20.63	23.4	59.9
Apr 26	1.05	0.00	5.64	8.86	21.4	71.3
Apr 27	1.11	0.00	1.54	4.09	19.1	52.4
Apr 28	1.17	0.00	3.64	5.94	16.6	79.9
Apr 29	1.03	0.00	8.55	11.79	23.1	70.9
Apr 30	1.01	0.00	3.95	8.07	22.3	59.4
Action/ Exceedance Limits	10 (15-min avg.)	5.00 (15- min avg.)	35	150	n/a	n/a

Table 4. SW Monitor — Daily Averages (April 1–30)

Date	CH4 (ppm)	VOC (ppm)	PM2.5 (µg/m³)	PM10 (µg/m³)	Temp (°C)	RH (%)
Apr 1	1.41	0.00	10.43	16.48	24.8	60.2
Apr 2	1.31	0.00	7.67	14.10	24.6	55.0
Apr 3	1.27	0.00	5.55	10.17	24.1	61.6
Apr 4	1.25	0.00	6.52	11.88	24.0	68.1
Apr 5	1.20	0.00	5.79	10.61	20.1	86.3
Apr 6	1.15	0.00	2.08	4.34	15.7	52.1
Apr 7	1.29	0.00	2.90	5.25	17.8	48.4
Apr 8	1.26	0.00	3.63	5.73	15.2	37.4
Apr 9	1.35	0.00	5.52	9.00	15.2	41.2
Apr 10	1.47	0.00	5.87	10.09	18.0	52.5
Apr 11	1.56	0.00	5.79	9.02	21.9	50.0

Date	CH4 (ppm)	VOC (ppm)	PM2.5 (µg/m³)	PM10 (µg/m³)	Temp (°C)	RH (%)
Apr 12	1.55	0.00	8.01	11.10	23.0	50.2
Apr 13	1.40	0.00	5.21	9.57	23.2	57.2
Apr 14	1.43	0.00	6.12	9.91	24.2	53.4
Apr 15	1.44	0.00	7.96	11.92	25.9	45.8
Apr 16	1.39	0.00	6.04	10.57	26.1	45.2
Apr 17	1.41	0.00	4.87	9.10	26.5	46.3
Apr 18	1.43	0.00	5.75	9.39	26.1	51.6
Apr 19	1.15	0.00	3.70	6.92	19.4	45.7
Apr 20	1.19	0.00	2.58	5.02	16.3	50.0
Apr 21	1.29	0.00	2.91	5.70	17.9	36.1
Apr 22	1.45	0.00	6.52	11.02	21.1	45.9
Apr 23	1.54	0.00	9.87	15.42	23.4	43.4
Apr 24	1.54	0.00	12.71	17.52	24.2	44.1
Apr 25	1.47	0.00	10.86	14.69	22.8	59.8
Apr 26	1.36	0.00	4.32	6.50	21.8	67.2
Apr 27	1.29	0.00	1.22	2.91	19.4	50.6
Apr 28	1.31	0.00	3.36	5.25	16.5	78.0
Apr 29	1.51	0.00	5.93	8.37	23.1	69.1
Apr 30	1.44	0.00	3.34	6.35	22.5	55.8
Action/ Exceedance Limits	10 (15-min avg.)	5.00 (15- min avg.)	35	150	n/a	n/a

6.0 OBSERVATIONS AND CONCLUSIONS

The April 2026 monitoring period was characterized by a relatively low number of exceedance events. PM10 was the only parameter to exceed alert-level CAMP thresholds, and only at the NE (downwind) monitor. PM2.5 produced a single notification-level event. No methane or VOC exceedances were observed at either station. The following observations summarize the key findings:

PM10 exceedances during April occurred exclusively at the NE (downwind) monitor. The two alert-level PM10 events on April 2 and April 23 were recorded only at the NE monitor, while the SW monitor showed baseline-level concentrations during the same periods. On April 2, intermittent PM10 spikes above 40 µg/m³ (peak 96.7 µg/m³) were observed between 09:45 and 14:00 with wind consistently from the south-southwest at 2–3 m/s. The SW monitor remained steady at approximately 13–14 µg/m³ throughout this period. On April 23, a single PM10 spike reached 165.8 µg/m³ at 14:45 with the SW monitor reading 12.3 µg/m³. In both cases, the localized nature of the exceedances and the absence of corresponding SW elevations suggest a source between the two monitors or in close proximity to the NE station.

The directional pattern in April differed from earlier reporting periods. In March 2026, PM_{2.5} and PM₁₀ exceedances were predominantly observed at the SW (upwind) monitor with higher readings than the NE station, suggesting a source to the south or southwest of both monitors. In April, exceedances occurred exclusively at the NE monitor under south-southwesterly winds, which is consistent with a source located between the two monitors or along the school perimeter rather than a distant regional source.

The alert-level PM₁₀ events occurred during daytime hours when school was in session. The April 2 event (09:45–14:00) and the April 23 event (14:45) both occurred during normal school hours. However, the intermittent and localized nature of these spikes is consistent with transient sources such as construction activity, vehicle traffic, or grounds maintenance rather than sustained industrial emissions.

All 24-hour rolling averages for all parameters remained below NAAQS action levels throughout the reporting period at both monitors (Tables 3 and 4). The highest daily PM_{2.5} average was 19.52 µg/m³ at the NE monitor on April 24 and 12.71 µg/m³ at the SW monitor, both well below the 35 µg/m³ NAAQS standard. The highest daily PM₁₀ average was 25.41 µg/m³ at the NE monitor, well below the 150 µg/m³ standard.

Based on the actions and thresholds established in the CAMP, the alert-level exceedances identified during this period warranted district notification per CAMP Section 6.2. No exceedances reached the Action Level, which would require emergency coordination between Citadel EHS, the district, and relevant agencies.

7.0 LIMITATIONS

The data presented in this report reflect ambient air conditions measured at two fixed monitoring locations along the school perimeter. While the dual-station configuration provides directional context, it does not capture conditions at every point on or near the campus. Readings are influenced by meteorological factors, including wind speed and direction, temperature, and atmospheric stability, which can vary over short distances and timeframes.

Fifteen-minute rolling averages are used for threshold comparison as defined in the CAMP. Short-duration exceedances (single 15-minute readings) may reflect transient conditions and do not necessarily indicate sustained exposure. The 24-hour rolling averages provide a complementary measure for comparison against federal NAAQS standards.

This report is based on data as received from the monitoring instruments. Citadel EHS performs routine quality assurance and quality control procedures; however, instrument calibration, sensor drift, or data transmission interruptions may occasionally affect individual readings.

8.0 SIGNATURES

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