

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: East Parker Street Textile Mill Fire

**From: 11/17/23
2:01 PM**

**To: 11/18/23
8:17 AM**



Station 1 - Melville Street (South)							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 1	VOC	No	829	0	0 - 0 ppb	0 ppb	9000 ppb
	CO	No	829	1	0 - 3 ppm	0 ppm	83 ppm
	H ₂ S	No	829	0	0 - 0 ppm	0 ppm	0.51 ppm
	O ₂	No	829	829	20.9 - 20.9 %	20.9 %	<19.5 or >23 %
	LEL	No	829	374	0 - 4 %	1.3 %	10 %
	HCN	No	829	0	0 - 0 ppm	0 ppm	2 ppm
DustTrak 1	PM-2.5	See PM2.5 Action Level Sheet	1073	1073	16 - 111 µg/m3	38.6 µg/m3	See PM2.5 Action Level Sheet
SPM Flex 1	Phosgene	No	1073	0	0 - 0 ppm	0 ppm	0.3 ppm

Station 2 - East Parker Street (West)							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 2	VOC	No	840	0	0 - 0 ppb	0 ppb	9000 ppb
	CO	No	840	0	0 - 0 ppm	0 ppm	83 ppm
	H ₂ S	No	840	0	0 - 0 ppm	0 ppm	0.51 ppm
	O ₂	No	840	840	20.9 - 20.9 %	20.9 %	<19.5 or >23 %
	LEL	No	840	0	0 - 0 %	0 %	10 %
	HCN	No	840	0	0 - 0 ppm	0 ppm	2 ppm
DustTrak 2	PM-2.5	See PM2.5 Action Level Sheet	1096	913	0 - 161 µg/m3	27.1 µg/m3	See PM2.5 Action Level Sheet
SPM Flex 2	Phosgene	No	1097	0	0 - 0 ppm	0 ppm	0.3 ppm

Station 3 - Jeffery Street (North)							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 3	VOC	No	810	2	0 - 428 ppb	0.6 ppb	9000 ppb
	CO	No	810	2	0 - 5 ppm	0 ppm	83 ppm
	H ₂ S	No	810	0	0 - 0 ppm	0 ppm	0.51 ppm
	O ₂	Yes	810	810	18.2 - 22.5 %	20.1 %	<19.5 or >23 %
	LEL	No	810	0	0 - 0 %	0 %	10 %
	HCN	No	810	0	0 - 0 ppm	0 ppm	2 ppm
DustTrak 3	PM-2.5	See PM2.5 Action Level Sheet	1055	1055	7 - 323 µg/m3	53.8 µg/m3	See PM2.5 Action Level Sheet
SPM Flex 3	Phosgene	No	1055	0	0 - 0 ppm	0 ppm	0.3 ppm

Station 4 - East Parker Street (East)							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 4	VOC	No	840	0	0 - 0 ppb	0 ppb	9000 ppb
	CO	No	840	5	0 - 13 ppm	0 ppm	83 ppm
	H ₂ S	Yes	840	3	0 - 1.3 ppm	0 ppm	0.51 ppm
	O ₂	No	840	840	20.9 - 20.9 %	20.9 %	<19.5 or >23 %
	LEL	No	840	0	0 - 0 %	0 %	10 %
	HCN	No	840	0	0 - 0 ppm	0 ppm	2 ppm
DustTrak 4	PM-2.5	See PM2.5 Action Level Sheet	994	994	6 - 3640 µg/m3	171.4 µg/m3	See PM2.5 Action Level Sheet
SPM Flex 4	Phosgene	Yes	994	1	0 - 2 ppm	0 ppm	0.3 ppm

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Notes:		Analyte	Definition	Action Level Reference
%	Percent	VOC	Volatile Organic Compounds	AEGL-1 8hr for Benzene
<	Less than	CO	Carbon Monoxide	AEGL-2 1hr
>	Greater than	H2S	Hydrogen Sulfide	AEGL-1 1hr
AEGL	Acute Exposure Guideline Levels for Airborne Chemicals	O2	Oxygen	29 CFR 1910.146, Confined Spaces
C/m	Counts (ionization events) per minute	LEL	Lower Explosive Limit	29 CFR 1910.146, Confined Spaces
mg/m3	milligrams per cubic meter	NH3	Ammonia	AEGL-1 1hr
min	Minute	SO2	Sulfur Dioxide	AEGL-1 1hr
PAC	Protective Action Criteria	Cl2	Chlorine	AEGL-1 1hr
PEL	Permissible exposure limit	HCN	Hydrogen Cyanide	AEGL-1 1hr
ppb	Parts per billion	NO	Nitric Oxide	PAC-1 (compare Cl2 and H2S PAC-1 to AEGL-1)
ppm	Parts per million	γ	Gamma-wave Radiation	Lowest 3x median (background) for RAEs in period
PM	Particulate matter	PM-2.5	Particulate Matter <2.5 microns	EPA AQI Categories for PM2.5
SOG	Standard Operating Guidelines	Phosgene	Phosgene (COCl2)	AEGL-2 1hr
SPM	Single Point Monitor	α/β/γ	Alpha, Beta and Gamma Radiation	Lowest 3x median (background) for Ludlums in period
TEEL	Temporary Emergency Exposure Limit			
TLV	Threshold limit value			
μg/m3	Micrograms per cubic meter			
μrem/h	Microrem per hour			
α	Alpha radiation (Ludlum 2241-2 can measure α under specific configuration)			
β	Beta radiation (Ludlum 2241-2 can measure β under specific configuration)			
γ	Gamma-wave radiation			

Discussion:

The total run time for this period is 18 hours. Stations were taken down and demobilized on the morning of Saturday, November 18. Samples that were taken over the last 3 days have been sent to laboratories for analysis and preliminary results will be available within the next few days.

Station 1 was fully operational. The period average particulate reading for this location is 38.6 ug/m3 which is a Level of Health Concern equal to Unhealthy for Sensitive Groups in the attached PM2.5 Action Levels table. No other adverse detections were measured. The DustTrak and AreaRAE were calibrated on the evening of 11/17/2023

Station 2 was fully operational. The period average particulate reading for this location is 27.1 ug/m3 which is a Level of Health Concern equal to Moderate in the attached table. No other adverse detections were measured. The DustTrak and AreaRAE were calibrated on the evening of 11/17/2023

Station 3 was fully operational. The period average for particulate reading for this location is 53.8 ug/m3 which is a Level of Health Concern equal to Unhealthy for Sensitive Groups in the attached table. No other adverse detections were measured. The DustTrak and AreaRAE were calibrated on the evening of 11/17/2023

Station 4 was fully operational. The period average for particulate reading for this location is 171.4 ug/m3 which is a Level of Health Concern equal to Very Unhealthy in the attached table. However, this period only ran for 18 hours, not a full 24 hours. The highest concentrations at this station are observed at night and the lowest concentrations during the day, which was not included in the measurement. If the daytime concentrations were included at an average of anything less than 80 ug/m3, the 24-hour average would fall in the Unhealthy category as it did during the previous period. Beginning at 6pm, PM2.5 was consistently above 60 ug/mg3 with a peak of 2970 ug/m3 occurring at 7pm and a peak of 4030 ug/m3 at 11pm. During the daytime hours preceeding 6pm, concentrations were below 15 ug/m3. The DustTrak and AreaRAE were calibrated on the evening of 11/17/2023

PM _{2.5} (Particulate Matter ≤ 2.5 microns) Community Action Threshold Levels				
For Unified Command Use				
1-Hour Average (µg/m ³)	24-Hour Average (µg/m ³)	Level of Health Concern	Meaning	Action
0.0 - 40.0	0.0-12.0	Good	Air Quality is considered satisfactory, and air pollution poses little or no risk.	Implement communication plan.
40.1 - 80.0	12.1 - 35.4	Moderate	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.	Issue public announcement about health effects. Stay out of areas with visible smoke.
80.1 - 175.0	35.5 - 55.4	Unhealthy for Sensitive Groups	Members of sensitive groups may experience health effects. The general public is not likely to be affected.	Recommend evacuation or shelter-in-place for sensitive populations.
175.1 - 300.0	55.5 - 150.4	Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.	Consider closing schools and cancelling outdoor events. Recommend shelter-in-place for affected neighborhoods.
300.1 - 500.0	150.5 - 250.4	Very Unhealthy	Health warnings of emergency conditions. The entire population is more likely to be affected.	Consider closing schools and cancel all outdoor events. Recommend shelter-in-place and/or evacuation for affected neighborhoods.
> 500.0	> 250.5	Hazardous	Health alert: everyone may experience more serious health effects.	Recommend closing schools & cancel outdoor events. Recommend closing workplaces and evacuating affected neighborhoods.

See The National Ambient Air Quality Standards for Particle Pollution REVISED AIR QUALITY STANDARDS FOR PARTICLE POLLUTION AND UPDATES TO THE AIR QUALITY INDEX (AQI) (https://www.epa.gov/sites/default/files/2016-04/documents/2012_aqi_factsheet.pdf)