

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: 11/16/23
2:01 PM

To: 11/17/23
2:00 PM



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	1438	1	0 - 28 ppb	0 ppb	9000 ppb
	CO	No	1438	0	0 - 0 ppm	0 ppm	83 ppm
	H ₂ S	No	1438	0	0 - 0 ppm	0 ppm	0.51 ppm
	O ₂	No	1438	1438	20.9 - 20.9 %	20.9 %	<19.5 or >23 %
	LEL	No	1438	0	0 - 0 %	0 %	10 %
	HCN	No	1438	1	0 - 0.1 ppm	0 ppm	2 ppm
DustTrak 1	PM-2.5	See PM2.5 Action Level Sheet	1440	1440	13 - 245 µg/m3	52 µg/m3	See PM2.5 Action Level Sheet
SPM Flex 1	Phosgene	No	1439	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	1439	3	0 - 51 ppb	0.1 ppb	9000 ppb
	CO	No	1439	1	0 - 4 ppm	0 ppm	83 ppm
	H ₂ S	No	1439	0	0 - 0 ppm	0 ppm	0.51 ppm
	O ₂	No	1439	1439	20.9 - 20.9 %	20.9 %	<19.5 or >23 %
	LEL	No	1439	0	0 - 0 %	0 %	10 %
	HCN	No	1439	0	0 - 0 ppm	0 ppm	2 ppm
DustTrak 2	PM-2.5	See PM2.5 Action Level Sheet	1439	1125	0 - 452 µg/m3	26.9 µg/m3	See PM2.5 Action Level Sheet
SPM Flex 2	Phosgene	No	1439	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	1439	0	0 - 0 ppb	0 ppb	9000 ppb
	CO	No	1439	1	0 - 13 ppm	0 ppm	83 ppm
	H ₂ S	No	1439	0	0 - 0 ppm	0 ppm	0.51 ppm
	O ₂	Yes	1439	1439	16.8 - 23.7 %	19.6 %	<19.5 or >23 %
	LEL	No	1439	0	0 - 0 %	0 %	10 %
	HCN	No	1439	0	0 - 0 ppm	0 ppm	2 ppm
DustTrak 3	PM-2.5	See PM2.5 Action Level Sheet	1440	1440	9 - 386 µg/m3	31.7 µg/m3	See PM2.5 Action Level Sheet
SPM Flex 3	Phosgene	No	1439	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	1438	1	0 - 36 ppb	0 ppb	9000 ppb
	CO	No	1438	0	0 - 0 ppm	0 ppm	83 ppm
	H ₂ S	No	1438	0	0 - 0 ppm	0 ppm	0.51 ppm
	O ₂	No	1438	1438	20.9 - 20.9 %	20.9 %	<19.5 or >23 %
	LEL	No	1438	0	0 - 0 %	0 %	10 %
	HCN	No	1438	0	0 - 0 ppm	0 ppm	2 ppm
DustTrak 4	PM-2.5	See PM2.5 Action Level Sheet	1418	1418	7 - 1580 µg/m3	72.2 µg/m3	See PM2.5 Action Level Sheet
SPM Flex 4	Phosgene	Yes	1419	1	0 - 2 ppm	0 ppm	0.3 ppm

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		Analyte	Definition	Action Level Reference
Notes:				
%	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 24 hours.

Station 1 was fully operational. The period average particulate reading for this location is 52 ug/m3 which is a Level of Health Concern equal to Unhealthy for Sensitive Groups in the attached PM2.5 Action Levels table. Detections of VOCs are not unusual and the small detection of HCN are normal variations for the instrument. Higher concentrations of particulates were experienced overnight, after temperatures fell a heavier smoke was observed in the area. No detections of VOCs, CO, HCN or H2S were seen as part of the smoke event.

Station 2 was fully operational. The period average particulate reading for this location is 26.9 ug/m3 which is a Level of Health Concern equal to Moderate in the attached table. Detections of VOCs are not unusual. An elevated concentration of particulates was observed from 9am to 10am reaching a peak of 452 ug/m3 but returned to below 10 ug/m3 after 10am.

Station 3 was fully operational. The period average for particulate reading for this location is 31.7 ug/m3 which is a Level of Health Concern equal to Moderate in the attached table. No other adverse detections were measured.

Station 4 had to be restarted twice but was operational for a vast majority of the period. The period average for particulate reading for this location is 72.2 ug/m3 which is a Level of Health Concern equal to Unhealthy in the attached table. Detections of VOCs are not unusual. An elevated concentration of particulates was observed from 3am to 4am with a peak of 1410 ug/m3 then returning to less than 10 ug/m3. Another elevated concentration was observed from 8am to 830am with a peak of 2150 ug/m3 then returning to 20 ug/m3. Air samples were taken overnight which will measure composition of the smoke. Those samples are being sent to a laboratory for analysis.

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)