

# Air Monitoring Summary Tables

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

**Project Name: Doral Florida Facility Fire**

**From: 2/17/23  
7:00 AM**

**To: 2/18/23  
6:59 AM**



Explanation of Readings							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
Air monitoring instrument used to collect measurements	Acronym of contaminant being measured. The acronyms are defined in a table on the next page	A simple calculation of whether any single measurement exceeded the action level on the right. NOTE: This uses instant measurements only, NOT a calculated average over time (ex. 8hr).	The number of measurements recorded in the database. Some instruments log averages over a few minutes while others record readings every second.	A simple filter indicating non-zero measurements	The minimum and maximum measurements recorded over the period	The average over the period	The basis for action levels are provided in a table on the next page

Station 1 - South Fenceline							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 1	VOC	No	1411	0	0 - 0 ppb	0 ppb	1000 ppb
	CO	No	1411	9	0 - 13 ppm	0 ppm	83 ppm
	H <sub>2</sub> S	No	1411	0	0 - 0 ppm	0 ppm	0.51 ppm
	LEL	No	1411	1411	3 - 7 %	4.6 %	10 %
	Cl <sub>2</sub>	No	1411	0	0 - 0 ppm	0 ppm	0.5 ppm
DustTrak 1	PM-2.5	See PM2.5 Action Level Sheet	1304	1304	1 - 89 µg/m3	18 µg/m3	See PM2.5 Action Level Sheet

Station 2 - Southeast Corner of Stack							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
DustTrak 2	PM-2.5	See PM2.5 Action Level Sheet	Instrument removed for community air monitoring, no 24-hr avg				See PM2.5 Action Level Sheet

Station 3 - West Fenceline							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 3	VOC	No	1412	1	0 - 40 ppb	0 ppb	1000 ppb
	CO	No	1412	35	0 - 7 ppm	0.1 ppm	83 ppm
	H <sub>2</sub> S	No	1412	0	0 - 0 ppm	0 ppm	0.51 ppm
	LEL	No	1412	0	0 - 0 %	0 %	10 %
	Cl <sub>2</sub>	No	1412	1	0 - 0.1 ppm	0 ppm	0.5 ppm
DustTrak 3	PM-2.5	See PM2.5 Action Level Sheet	1402	1402	4 - 314 µg/m3	22.4 µg/m3	See PM2.5 Action Level Sheet

Station 4 - North Fenceline							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 4	VOC	No	1410	1	0 - 45 ppb	0 ppb	1000 ppb
	CO	No	1410	21	0 - 7 ppm	0.1 ppm	83 ppm
	H <sub>2</sub> S	No	1410	0	0 - 0 ppm	0 ppm	0.51 ppm
	LEL	No	1410	0	0 - 0 %	0 %	10 %
	Cl <sub>2</sub>	No	1410	0	0 - 0 ppm	0 ppm	0.5 ppm
DustTrak 4	PM-2.5	See PM2.5 Action Level Sheet	22465	22463	0 - 339 µg/m3	34.32 µg/m3	See PM2.5 Action Level Sheet

Notes:

%	Percent
<	Less than
>	Greater than
AEGL	Acute Exposure Guideline Levels for Airborne Chemicals
C/m	Counts (ionization events) per minute
mg/m <sup>3</sup>	milligrams per cubic meter
min	Minute
PAC	Protective Action Criteria
PEL	Permissible exposure limit
ppb	Parts per billion
ppm	Parts per million
PM	Particulate matter
SOG	Standard Operating Guidelines
SPM	Single Point Monitor
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold limit value
µg/m <sup>3</sup>	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

Analyte	Definition	Action Level Reference
VOC	Volatile Organic Compounds	TEEL-0,15 minute TWA for Benzene
CO	Carbon Monoxide	AEGL-2 1hr
H <sub>2</sub> S	Hydrogen Sulfide	AEGL-1 1hr
O <sub>2</sub>	Oxygen	29 CFR 1910.146, Confined Spaces
LEL	Lower Explosive Limit	29 CFR 1910.146, Confined Spaces
NH <sub>3</sub>	Ammonia	AEGL-1 1hr
SO <sub>2</sub>	Sulfur Dioxide	AEGL-1 1hr
Cl <sub>2</sub>	Chlorine	AEGL-1 1hr
HCN	Hydrogen Cyanide	AEGL-1 1hr
NO	Nitric Oxide	PAC-1 (compare Cl <sub>2</sub> and H <sub>2</sub> S PAC-1 to AEGL-1)
γ	Gamma-wave Radiation	Lowest 3x median (background) for RAEs in period
PM-2.5	Particulate Matter <2.5 microns	
α/β/γ	Alpha, Beta and Gamma Radiation	Lowest 3x median (background) for Ludlums in period

**DATA REVIEW**

\*\*\*\*NOTE1\*\*\*\* Data for AreaRAE at Station 2 does not appear in this report. In order to distribute this report as quickly as possible, all other data is being reported. Data from AreaRAE at Station 2 will be distributed in an updated report.

\*\*\*\*NOTE2\*\*\*\* Some locations will be changed on 2/18/2023 due to changing wind conditions. Data for tomorrow's data summary report will not cover a full period of 7am to 7am at new locations due to time required to move instruments. The EPA AreaRAEs will stand down on 2/18/2023 and will not be reported in tomorrow's data summary report

**Station 1 – South Fenceline**

PM2.5 from 7am to 2pm was below 10 µg/m<sup>3</sup>. Remote data collection went down at 2pm and data was recovered manually. The 24-hour average for this location was 18 µg/m<sup>3</sup> which corresponds to a "Moderate" level of health concern (see Community Action Threshold Levels table, attached)

H<sub>2</sub>S, Cl<sub>2</sub> and VOC remained at zero. CO had six single measurements at from 3ppm to 13ppm but none were sustained beyond an instantaneous reading.

**Station 2 – Southeast Corner of Stack**

PM2.5 instrument removed from this location during the operational period to perform down-wind community air monitoring. There is no 24-hour average available for this instrument. Please note that this location is on-site on the waste stack and is not at the fenceline.

Instrument was non-operational and replaced at 9:30am.

**Station 3 – West Fenceline**

PM2.5 concentrations remained below 20µg/m<sup>3</sup> before 7pm and experienced a moderate rise and fall event to only 60µg/m<sup>3</sup> from 7pm to 3am. Isolated instantaneous peaks of over 300 µg/m<sup>3</sup> and 200 µg/m<sup>3</sup> occurred at 7:30am and 10:30pm, respectively, but these were not sustained or repeated and are likely anomalies. The 24-hour average for this location was 22.4 µg/m<sup>3</sup> which corresponds to a "Moderate" level of health concern

H<sub>2</sub>S remained at zero. One instantaneous and non-sustained Cl<sub>2</sub> readings was recorded at 0.1ppm. From 4pm to 4:30pm multiple readings of CO at 2-3ppm were recorded and were sustained for approximately 20 minutes. A brief detection of VOC was observed at 0.040ppm

**Station 4 – North Fenceline**

PM2.5 showed a sustained elevated concentrations frequently over 100 µg/m<sup>3</sup> and up to 339 µg/m<sup>3</sup> from 7am to 1pm and again from 1:45pm to 2:30pm. Concentrations reduced significantly to mostly below 20 µg/m<sup>3</sup> from 2pm to 10pm. At 10pm remote data transmission failed. Data were recovered from the instrument. Concentrations were confirmed to remain mostly near 20 µg/m<sup>3</sup> until 7am. The 24-hour average for this location was 34.32 µg/m<sup>3</sup> which corresponds to a "Moderate" level of health concern

H<sub>2</sub>S and Cl<sub>2</sub> remained at zero. A rise and fall of CO was measured for 20 minutes around 11pm with a maximum concentration of 7ppm. A brief detection of VOC was observed at 0.045ppm

## PM<sub>2.5</sub> (Particulate Matter ≤ 2.5 microns) Community Action Threshold Levels

1-Hour Average (µg/m <sup>3</sup> )	24-Hour Average (µg/m <sup>3</sup> )	Level of Health Concern	Meaning	Action
0.0 - 40.0	0.0-12.0	<b>Good</b>	Air Quality is considered satisfactory, and air pollution poses little or no risk.	Implement communication plan.
40.1 - 80.0	12.1 - 35.4	<b>Moderate</b>	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	<b>Unhealthy for Sensitive Groups</b>	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	<b>Unhealthy</b>	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	<b>Very Unhealthy</b>	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	<b>Hazardous</b>	Health alert: everyone may experience more serious health effects.	Recommend closing schools & cancel outdoor events. Recommend closing workplaces and evacuating affected neighborhoods.