Air Monitoring Summary Tables

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

Project Name: Biolabs Chlorine Fire

From: **10/4/24 5:00 PM** ***To:*** **10/5/24 *5:00 AM***

Station 2 - Mammy's							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	617	1	0-208 ppb	0.34 ppb	9000 ppb 8hr avg
	H2S	No	617	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	No	1234	0	0-0 ppm	0 ppm	0.5 ppm 1hr avg
SPM Flex	HYDROGEN CHLORIDE (HCL)	No	13354	0	0-0 ppm	0 ppm	1.8 ppm 1hr avg
SPM Flex	PHOSGENE (COCL2)	No	13843	0	0-0 ppb	0 ppb	300 ppb 1hr avg

Station 8- Iris Drive SW Near Pyro Fireworks							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	587	11	0-644 ppb	1.13 ppb	9000 ppb 8hr avg
	H2S	No	587	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	Yes	1194	120	0-3.3 ppm	0.16 ppm	0.5 ppm 1hr avg

Station 10 - Gated Community Near Rockdale Plaza Shopping Center							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	597	2	0-2866 ppb	9.60 ppb	9000 ppb 8hr avg
	H2S	No	597	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	No	1196	6	0-0 ppm	0.03 ppm	0.5 ppm 1hr avg

Station 11 -Patrick & Associates Inc							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	603	7	0-226 ppb	1.58 ppb	9000 ppb 8hr avg
	H2S	No	603	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	Yes	1456	608	0-2.3 ppm	0.50 ppm	0.5 ppm 1hr avg
SPM Flex	PHOSGENE (COCL2)	No	699	0	0-0 ppb	0 ppb	300 ppb 1hr avg

Station 13- Intersection of Old Covington Highway and 3rd Avenue							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	588	0	0-0 ppb	0 ppb	9000 ppb 8hr avg
	H2S	No	588	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	No	1176	0	0-0 ppm	0 ppm	0.5 ppm 1hr avg

Station 14 - Smyrna Road							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	592	0	0-0 ppb	0 ppb	9000 ppb 8hr avg
	H2S	No	592	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	No	1184	1180	0-0.50 ppm	0.28 ppm	0.5 ppm 1hr avg

Station 16 - Corner of General Arts and Farmers Rd							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	595	0	0-0 ppb	0 ppb	9000 ppb 8hr avg
	H2S	No	595	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	No	1190	796	0-0.40 ppm	0.12 ppm	0.5 ppm 1hr avg

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Project Name: Biolabs Chlorine Fire

From: **10/4/24 5:00 PM** ***To:*** **10/5/24 *5:00 AM***

Notes:

% Percent

< Less than

> Greater than

AEGL Acute Exposure Guideline Levels for Airborne Chemicals

C/m Counts (ionization events) per minute

µg/m³ Micrograms 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

Analyte	Definition	Action Level Reference
CL2	Chlorine	AEGL-1 1hr
H2S	Hydrogen Sulfide	AEGL-1 1hr
HYDROGEN CHLORIDE (HCL)	Hydrogen Chloride	AEGL-1 1hr
PHOSGENE (COCL2)	Phosgene ($COCl_2$)	AEGL-2 1hr
VOC	Volatile Organic Compounds	AEGL-1 8hr

Air Monitoring Summary Tables – Review

Project Name: **Bio Lab Chlorine**

The EPA uses air monitoring instruments with real-time alerts to track air quality during an emergency response. This air monitoring summary table report is used by EPA and local responders to review the thousands of measurements that can be collected in a single day.

The following is a review of station results for the time period from 5:00pm on 10/4/2024 to 5:00am on 10/5/2024:

- **Station 2:** No issues observed
- **Station 8:** From 7:24pm to 7:50pm there were sustained measurements of Cl2 with a peak of 3.3ppm; the maximum 1-hour average was 1.02ppm and the maximum 8-hour average was 0.13ppm. A calibration of the instrument was conducted at 1:00am; these data were erroneously reported as a Cl2 detection in a previous version of this report.
- **Station 10:** No issues observed. A calibration of the instrument was conducted at 2:30am; these data were erroneously reported as a Cl2 detection in a previous version of this report.
- **Station 11:** From 8:30pm to 5:00am there were sustained measurements of Cl2 from 0.1 to 2ppm with a peak of 2.3ppm. The maximum known 1-hour average during this period was 1.2ppm and the maximum 8-hour average during this period was 0.41ppm. A calibration of the instrument was conducted at 4:00am; these data were erroneously reported as a Cl2 detection in a previous version of this report.
- **Station 13:** No issues observed
- **Station 14:** Throughout the operational period there were sustained measurements of Cl2 from 0.1ppm to 0.5ppm; the maximum 1-hour average was 0.4ppm and the maximum 8-hour average was 0.36ppm.
- **Station 16:** From 8:20pm to 5:00am there were sustained measurements of Cl2 0.1ppm to 0.4ppm; the maximum 1-hour average was 0.25ppm and the maximum 8-hour average was 0.19ppm.

Air Monitoring Summary Tables – Explanation of Tables

Project Name: **Bio Lab Chlorine**

The following information is provided in each report:

- **Station** – at the top of each table is a name and location for each air monitoring station. These are mobile stations that may change over time and new station numbers are established. Previously used station numbers will not appear on this report.
- **Instrument** – this is the model of instrument being used to measure the air. Some stations may use multiple instruments, and some instruments may measure multiple things at once
- **Analyte** – these are the chemicals or other compounds that the instrument is measuring:
  - **VOC**: Volatile Organic Compounds; this is not a specific chemical but includes a long list of possible chemicals, many of which have strong odors
  - **CO**: Carbon Monoxide; this compound is commonly associated with combustion (i.e. fires)
  - **H2S**: Hydrogen Sulfide; this is a default sensor for the instrument and is used for industrial safety
  - **LEL**: Lower-Explosive Limit; this is a default sensor for the instrument and is used for industrial safety
  - **O2**: Oxygen; this is a default sensor for the instrument and is used for industrial safety
  - **Cl2**: Chlorine; chlorine gas is an inhalation hazard with a pungent suffocating odor and is a contaminant of concern for the site
  - **HCl:** Hydrogen Chloride; a corrosive gas with a sharp, pungent odor and is a contaminant of concern for the site
  - **COCl2:** Phosgene; a potential combustion product that EPA monitors for at chemical and industrial fires
- **Action Level Exceedance** – is an easy-to-read determination whether one of the Action Levels in the column on the right ***may have*** been exceeded. The action levels are based on *averages over time* but this column may say "Yes" whenever a single measurement exceeds that number. This helps responders assess whether further protective measures are needed.
- **Number of Readings** – the number of measurements collected by the sensor, usually collected once every second or every minute.
- **Number of Detections** – the number of measurements greater than zero
- **Concentration Range** – the minimum and maximum measurement that was collected
- **Period Average** – the average measurement for the entire collection period
- **Action Levels** – based on the most protective AEGLs (Acute Exposure Guideline Levels) which are used by emergency responders when dealing with chemical spills or other exposures and describe the human health effects from once-in-a-lifetime, or rare, exposure to airborne chemicals. Further information is available at EPA.gov/AEGL.