



Arkansas Department of Health

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Governor Asa Hutchinson

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Arkansas Department of Health Review of Community Air Monitoring for Total Volatile Organic Compounds (VOCs) and Other Gases Near Trafalgar Road Fire

The Arkansas Department of Health (ADH) has evaluated air monitoring data collected at the Trafalgar Road fire in Bella Vista by the 61st Civil Support Team (CST) from the Arkansas National Guard. This three-day data collection was to establish a baseline prior to beginning site remediation.

Air data were collected from within the community immediately adjacent to the Trafalgar Road fire at the following locations: Mary Ann Lane, Knoyle Road, Webb Lane, and Sutherland Lane. The air was monitored for the following parameters: lower explosive limit (LEL), oxygen percentage (O₂), hydrogen sulfide (H₂S), hydrogen cyanide (HCN), carbon monoxide (CO), and total volatile organic compounds (VOCs). LEL is defined as the lowest concentration of a gas or vapor in the air that is capable of producing a flash of fire in the presence of a spark, flame, or heat. The equipment used during the three-day collection period monitored each of these parameters simultaneously.

The air data collected from within the community show that total VOCs, and other gases produced by burning, were below public health risk levels. Total VOCs and CO were detected on February 26 and 28 (see Tables 1 and 3); however, these low readings do not indicate a risk to public health. Some data points generated on day one were not validated; therefore, they could not be quantified, and were not included in the evaluation process. Although low levels of HCN were detected at three locations, and CO was detected at one location on February 26 (see Table 1), these readings were not validated. HCN was not detected at any location for the remainder of the data collection period.

Based on these data, there is no evidence to indicate a potential risk to public health from chemicals in the air from the Trafalgar Road fire. Residents near the Trafalgar Road fire should continue to limit outdoor activity during smoky conditions to reduce their exposure to smoke and particulate matter.

Date	Public Health Evaluation
February 26, 2019	Below Levels of Public Health Concern
February 27, 2019	Below Levels of Public Health Concern
February 28, 2019	Below Levels of Public Health Concern

The ADH will continue to review air monitoring data as provided by the 61st CST from the Arkansas National Guard. For inquiries related to air monitoring evaluations, contact ADH Environmental Epidemiology at adh.ts@arkansas.gov.

TABLE 1: 61st Civil Support Team Air Monitoring Data Summary-26FEB2019

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 1 Mary Ann Lane	Lower Explosive Limit	519	0	0	0	0	%
	Oxygen Percentage	519	21.2	21.5	21.3	19.5 to 22	%
	Hydrogen Sulfide	519	0	0	0	0.07	ppm
	Hydrogen Cyanide	519	0	0.5**	0	0	ppm
	Carbon Monoxide	519	0	0	0	9	ppm
	Volatile Organic Compounds	519	0	0	0	1	ppm

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 2 Knoyle Road	Lower Explosive Limit	510	0	0	0	0	%
	Oxygen Percentage	510	21.3	22.1	21.6	19.5 to 22	%
	Hydrogen Sulfide	510	0	0	0	0.07	ppm
	Hydrogen Cyanide	510	0	0.5**	0	0	ppm
	Carbon Monoxide	510	0	0	0	9	ppm
	Volatile Organic Compounds	510	0	0.01	0.00002	1	ppm

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 3 Webb Lane	Lower Explosive Limit	502	0	0	0	0	%
	Oxygen Percentage	502	20.9	20.9	20.9	19.5 to 22	%
	Hydrogen Sulfide	502	0	0	0	0.07	ppm
	Hydrogen Cyanide	502	0	0.5**	0	0	ppm
	Carbon Monoxide	502	0	0	0	9	ppm
	Volatile Organic Compounds	502	0	0.12	0.036	1	ppm

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 4 Sutherland Lane	Lower Explosive Limit	498	0	0	0	0	%
	Oxygen Percentage	498	20.9	20.9	20.9	19.5 to 22	%
	Hydrogen Sulfide	498	0	0	0	0.07	ppm
	Hydrogen Cyanide	498	0	0	0	0	ppm
	Carbon Monoxide	498	0	10**	0.76	9	ppm
	Volatile Organic Compounds	498	0	0.25	0.003	1	ppm

*The parameter-specific screening levels are used to determine which chemicals to evaluate further for potential public health concern.

ppm: parts per million

**Some data points generated on day one were not validated; therefore, they could not be quantified, and were not included in the evaluation process. Starting day two, any data collected using AreaRAE monitors that exceeded the screening value would be validated using a second device (MultiRAE). Staff would then use a calibrated MultiRAE and physically go to the monitoring site(s) in question and either verify or discount the reading as legitimate or spurious by the two-point verification.

TABLE 2: 61st Civil Support Team Air Monitoring Data Summary-27FEB2019

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 1 Mary Ann Lane	Lower Explosive Limit	490	0	0	0	0	%
	Oxygen Percentage	490	20.9	21.1	20.9	19.5 to 22	%
	Hydrogen Sulfide	490	0	0	0	0.07	ppm
	Hydrogen Cyanide	490	0	0	0	0	ppm
	Carbon Monoxide	490	0	0	0	9	ppm
	Volatile Organic Compounds	490	0	0	0	1	ppm

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 2 Knoyle Road	Lower Explosive Limit	492	0	0	0	0	%
	Oxygen Percentage	492	20.9	20.9	20.9	19.5 to 22	%
	Hydrogen Sulfide	492	0	0	0	0.07	ppm
	Hydrogen Cyanide	492	0	0	0	0	ppm
	Carbon Monoxide	492	0	0	0	9	ppm
	Volatile Organic Compounds	492	0	0	0	1	ppm

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 3 Webb Lane	Lower Explosive Limit	485	0	0	0	0	%
	Oxygen Percentage	485	20.9	20.9	20.9	19.5 to 22	%
	Hydrogen Sulfide	485	0	0	0	0.07	ppm
	Hydrogen Cyanide	485	0	0	0	0	ppm
	Carbon Monoxide	485	0	0	0	9	ppm
	Volatile Organic Compounds	485	0	0	0	1	ppm

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 4 Sutherland Lane	Lower Explosive Limit	483	0	0	0	0	%
	Oxygen Percentage	483	20.5	20.9	20.9	19.5 to 22	%
	Hydrogen Sulfide	483	0	0	0	0.07	ppm
	Hydrogen Cyanide	483	0	0	0	0	ppm
	Carbon Monoxide	483	0	0	0	9	ppm
	Volatile Organic Compounds	483	0	0	0	1	ppm

*The parameter-specific screening levels are used to determine which chemicals to evaluate further for potential public health concern.
ppm: parts per million

TABLE 3: 61st Civil Support Team Air Monitoring Data Summary-28FEB2019

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 1 Mary Ann Lane	Lower Explosive Limit	521	0	0	0	0	%
	Oxygen Percentage	521	20.9	21.2	20.9	19.5 to 22	%
	Hydrogen Sulfide	521	0	0	0	0.07	ppm
	Hydrogen Cyanide	521	0	0	0	0	ppm
	Carbon Monoxide	521	0	0	0	9	ppm
	Volatile Organic Compounds	521	0	0	0	1	ppm

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 2 Knoyle Road	Lower Explosive Limit	483	0	0	0	0	%
	Oxygen Percentage	483	20.9	21.3	20.9	19.5 to 22	%
	Hydrogen Sulfide	483	0	0	0	0.07	ppm
	Hydrogen Cyanide	483	0	0	0	0	ppm
	Carbon Monoxide	483	0	0	0	9	ppm
	Volatile Organic Compounds	483	0	0	0	1	ppm

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 3 Webb Lane	Lower Explosive Limit	516	0	0	0	0	%
	Oxygen Percentage	516	20.5	20.9	20.9	19.5 to 22	%
	Hydrogen Sulfide	516	0	0	0	0.07	ppm
	Hydrogen Cyanide	516	0	0	0	0	ppm
	Carbon Monoxide	516	0	0	0	9	ppm
	Volatile Organic Compounds	516	0	0	0	1	ppm

Location	Parameter	Number of Readings	Minimum Concentration Detected	Maximum Concentration Detected	Average Concentration	Screening Level*	Units
Unit 4 Sutherland Lane	Lower Explosive Limit	483	0	0	0	0	%
	Oxygen Percentage	483	20.5	20.9	20.9	19.5 to 22	%
	Hydrogen Sulfide	483	0	0	0	0.07	ppm
	Hydrogen Cyanide	483	0	0	0	0	ppm
	Carbon Monoxide	483	0	9	0.02	9	ppm
	Volatile Organic Compounds	483	0	0.9	0.002	1	ppm

*The parameter-specific screening levels are used to determine which chemicals to evaluate further for potential public health concern.
ppm: parts per million