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ENVIRONMENTAL RESOURCES MANAGEMENT (ERM)

BELLA VISTA TRAFALGAR ROAD FIRE – PHASE I REMEDIAL ACTION

Daily Summary

Bella Vista, Arkansas

May 18, 2019

Project #111327

1.0 Introduction

Environmental Resources Management (ERM) requested that CTEH conduct air monitoring in the community surrounding the Trafalgar Road Fire located in Bella Vista, Arkansas during the Phase I Remedial Action. CTEH arrived on-site on May 15, 2019 and began air monitoring operations. Activities were comprised of real-time air monitoring.

This report summarizes air monitoring data collected from May 18, 2019 07:00 CDT to May 19, 2019 07:00 CDT.

2.0 Air Monitoring and Sampling Methods

CTEH developed and implemented an Air Monitoring and Sampling, Noise Monitoring, and Hazard Communication Plan (SAP) to document and quantify the release of fugitive emissions (if any) produced by the fire. All instrumentation was calibrated at least once per day or per manufacturer's recommendations. Target analytes were measured as carbon monoxide (CO), 2.5-micron particulate matter ($PM_{2.5}$), and volatile organic compounds (VOCs) using handheld instruments such as RAE Systems MultiRAEs and TSI SidePak™ AM520 Aerosol Monitors.

Hand-held air monitoring consisted of roaming air monitoring in the surrounding community. Additionally, fixed monitoring locations were established for periodic visitation by field personnel to track trends in air quality (if any). All hand-held air monitoring was conducted in the breathing zone.

3.0 Air Monitoring Results

Figures 1 – 6 in **Attachment A** depicts the site location and hand-held monitoring locations for this reporting period.

Table 1 summarizes the results for hand-held air monitoring readings and **Table 2** summarizes hand-held air monitoring results by their respecting fixed real-time location (FRT).

Table 1: Community Monitoring Hand-Held Real-Time Air Monitoring Results

Location	Analyte	Instrument	# of Readings	# of Detections	Detection Range
Community Monitoring	CO	MultiRAE	221	0	< 1 ppm
	PM2.5	AM520	222	222	0.001 – 0.126 mg/m^3
	Sound Level	SLM	2	2	65.3 – 67.4 dB(A)
	VOCs	MultiRAE	223	0	< 0.1 ppm

[1]Maximum detections preceded by the "<" symbol are considered non-detections below the limit of detection (LoD) value to the right.

Table 2: Fixed Monitoring Location Air Monitoring Results

Location Code	Analyte	Instrument	# of Readings	# of Detections	Average of Detections	Detection Range
AS-005	PM2.5	AM520	1	1	0.016 mg/m^3	0.016 mg/m^3
FRT-001	CO	MultiRAE	7	0	-	< 1 ppm
	PM2.5	AM520	7	7	0.008 mg/m^3	0.001 - 0.023 mg/m^3
	VOCs	MultiRAE	7	0	-	< 0.1 ppm
FRT-002	CO	MultiRAE	8	0	-	< 1 ppm
	PM2.5	AM520	11	11	0.012 mg/m^3	0.001 - 0.031 mg/m^3
	VOCs	MultiRAE	8	0	-	< 0.1 ppm
FRT-003	CO	MultiRAE	8	0	-	< 1 ppm
	PM2.5	AM520	10	10	0.014 mg/m^3	0.002 - 0.035 mg/m^3
	VOCs	MultiRAE	9	0	-	< 0.1 ppm
FRT-004	CO	MultiRAE	10	0	-	< 1 ppm
	PM2.5	AM520	11	11	0.029 mg/m^3	0.008 - 0.124 mg/m^3
	VOCs	MultiRAE	10	0	-	< 0.1 ppm
FRT-005	CO	MultiRAE	11	0	-	< 1 ppm
	PM2.5	AM520	10	10	0.034 mg/m^3	0.004 - 0.079 mg/m^3
	VOCs	MultiRAE	11	0	-	< 0.1 ppm
FRT-006	CO	MultiRAE	10	0	-	< 1 ppm
	PM2.5	AM520	10	10	0.026 mg/m^3	0.005 - 0.045 mg/m^3
	VOCs	MultiRAE	10	0	-	< 0.1 ppm
FRT-007	CO	MultiRAE	8	0	-	< 1 ppm
	PM2.5	AM520	8	8	0.012 mg/m^3	0.003 - 0.036 mg/m^3
	VOCs	MultiRAE	8	0	-	< 0.1 ppm
FRT-008	CO	MultiRAE	7	0	-	< 1 ppm
	PM2.5	AM520	7	7	0.014 mg/m^3	0.001 - 0.04 mg/m^3
	VOCs	MultiRAE	7	0	-	< 0.1 ppm
FRT-009	CO	MultiRAE	8	0	-	< 1 ppm
	PM2.5	AM520	8	8	0.016 mg/m^3	0.002 - 0.037 mg/m^3

Location Code	Analyte	Instrument	# of Readings	# of Detections	Average of Detections	Detection Range
	VOCs	MultiRAE	8	0	-	< 0.1 ppm
	CO	MultiRAE	9	0	-	< 1 ppm
FRT-010	PM2.5	AM520	9	9	0.017 mg/m^3	0.002 - 0.05 mg/m^3
	VOCs	MultiRAE	9	0	-	< 0.1 ppm
	CO	MultiRAE	7	0	-	< 1 ppm
FRT-011	PM2.5	AM520	7	7	0.012 mg/m^3	0.001 - 0.039 mg/m^3
	VOCs	MultiRAE	7	0	-	< 0.1 ppm
	CO	MultiRAE	8	0	-	< 1 ppm
FRT-012	PM2.5	AM520	8	8	0.015 mg/m^3	0.001 - 0.043 mg/m^3
	VOCs	MultiRAE	8	0	-	< 0.1 ppm
	CO	MultiRAE	8	0	-	< 1 ppm
FRT-013	PM2.5	AM520	8	8	0.01 mg/m^3	0.001 - 0.022 mg/m^3
	VOCs	MultiRAE	8	0	-	< 0.1 ppm
	CO	MultiRAE	9	0	-	< 1 ppm
FRT-014	PM2.5	AM520	9	9	0.015 mg/m^3	0.001 - 0.033 mg/m^3
	VOCs	MultiRAE	9	0	-	< 0.1 ppm
	CO	MultiRAE	10	0	-	< 1 ppm
FRT-015	PM2.5	AM520	10	10	0.014 mg/m^3	0.005 - 0.034 mg/m^3
	VOCs	MultiRAE	10	0	-	< 0.1 ppm

[1]Maximum detections preceded by the "<" symbol are considered non-detections below the limit of detection (LoD) value to the right.
[2] Particulate matter averages are provided for additional context. Due to the uneven temporal distribution of particulate matter monitoring data at these locations, averages may be biased and are not directly comparable to National Ambient Air Quality Standards (NAAQS).

The data collected during this reporting period suggest that under certain conditions, smoke constituents may exceed levels such as those described in the SAP, and thus, actions may be required when these events are sustained.

4.0 Weather Conditions

Figure 8 in **Attachment B** contains a wind rose depicting wind speed and direction for this reporting period.

Attachment A

CTEH Air Sampling and Monitoring Locations

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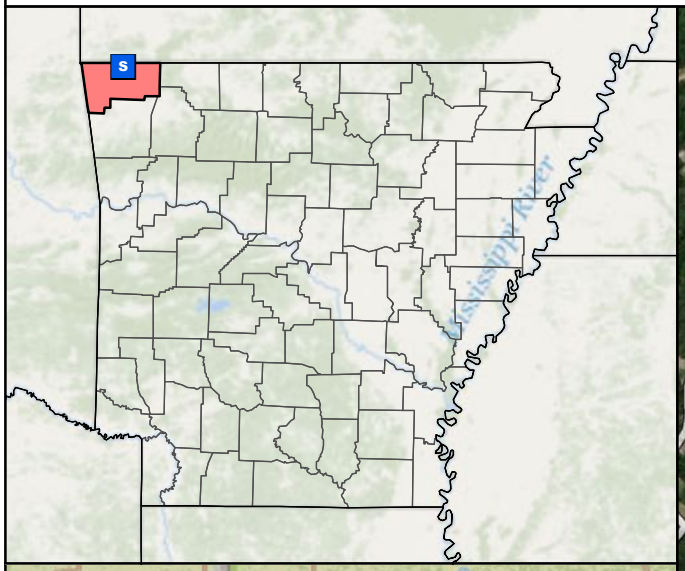
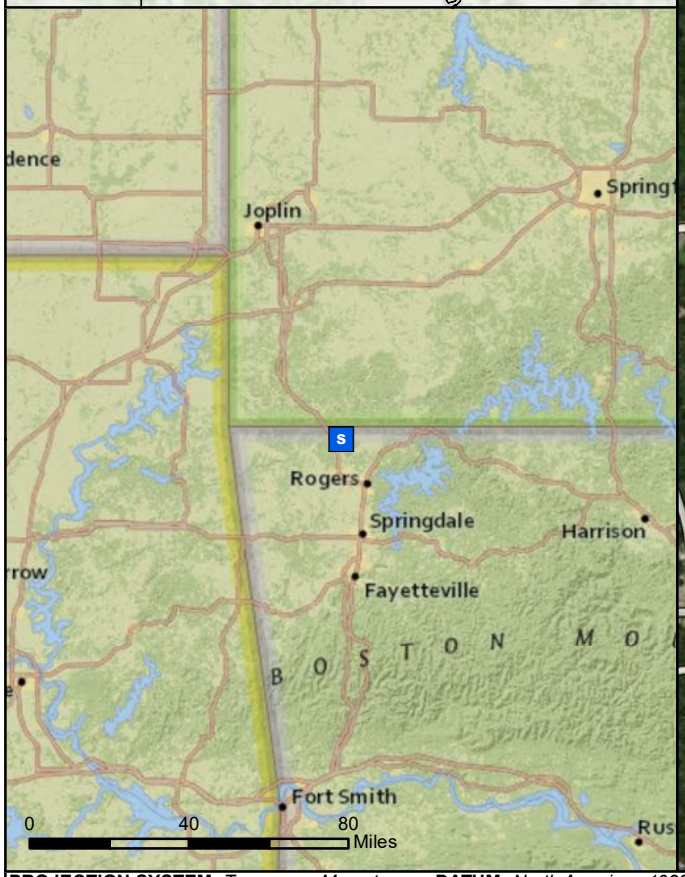
Figure 1: Incident Location

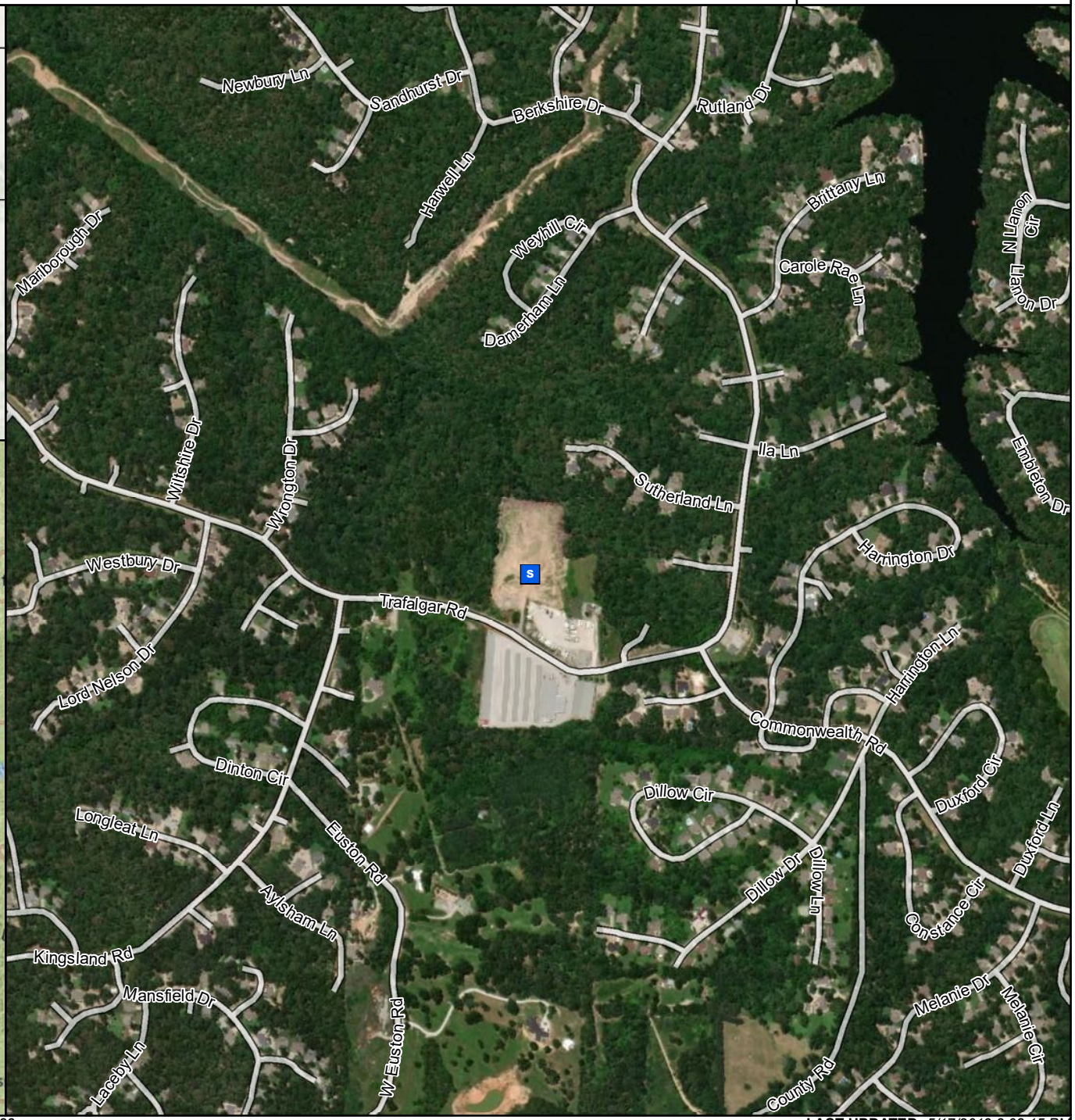
Bella Vista Refuse Fire

0 500 1,000 2,000 Feet

Project: 111327
Client: ERM
City: Bella Vista, AR
County: Benton







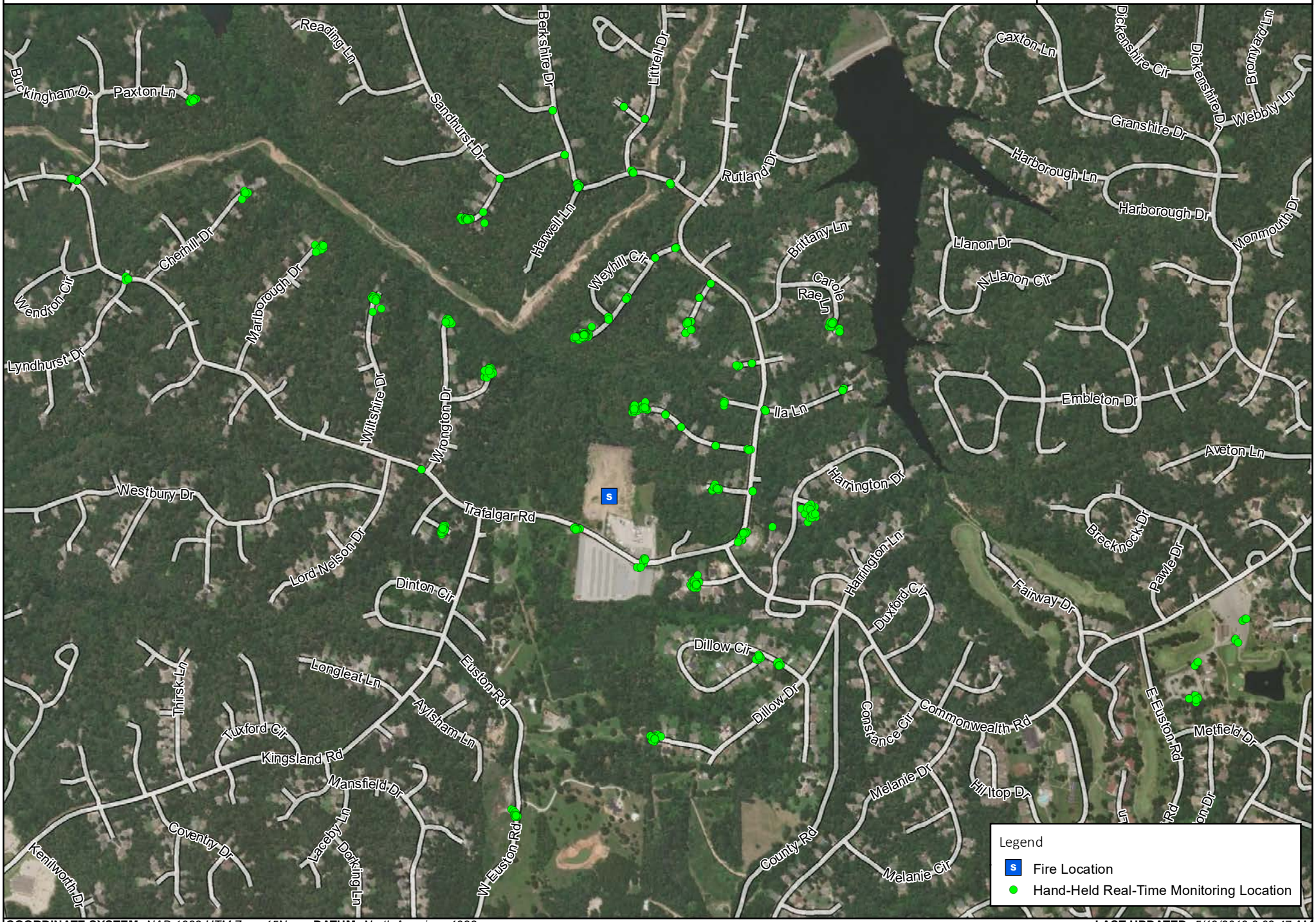
PROJECTION SYSTEM: *Transverse Mercator* **DATUM:** *North American 1983* **LAST UPDATED:** *5/17/2019 3:08:15 PM*

Figure 2: Hand-Held Real-Time Air Monitoring Locations

Bella Vista Trafalgar Road Fire

0 500 1,000 Feet

Project: 111327
Client: ERM
City: Bella Vista, AR
County: Benton



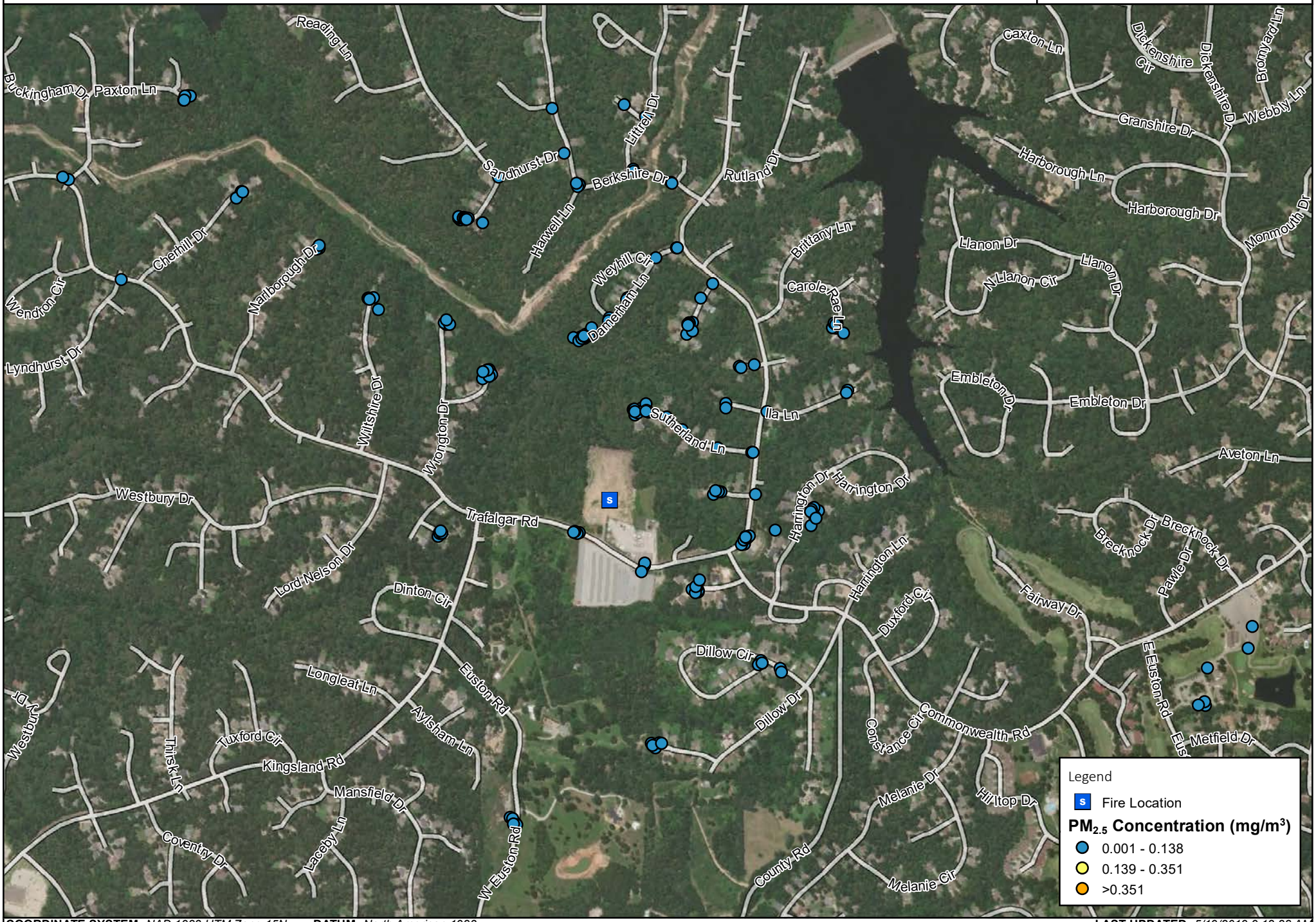
COORDINATE SYSTEM: *NAD 1983 UTM Zone 15N* **DATUM:** *North American 1983* **LAST UPDATED:** *5/19/2019 9:09:47 AM*

Figure 3: Real-Time Air Monitoring Locations ($PM_{2.5}$)

Bella Vista Trafalgar Road Fire

0 500 1,000 Feet

Project: 111327
Client: ERM
City: Bella Vista, AR
County: Benton



Legend

- Fire Location
- **$PM_{2.5}$ Concentration (mg/m^3)**
  - 0.001 - 0.138
  - 0.139 - 0.351
  - >0.351

COORDINATE SYSTEM: *NAD 1983 UTM Zone 15N* **DATUM:** *North American 1983*

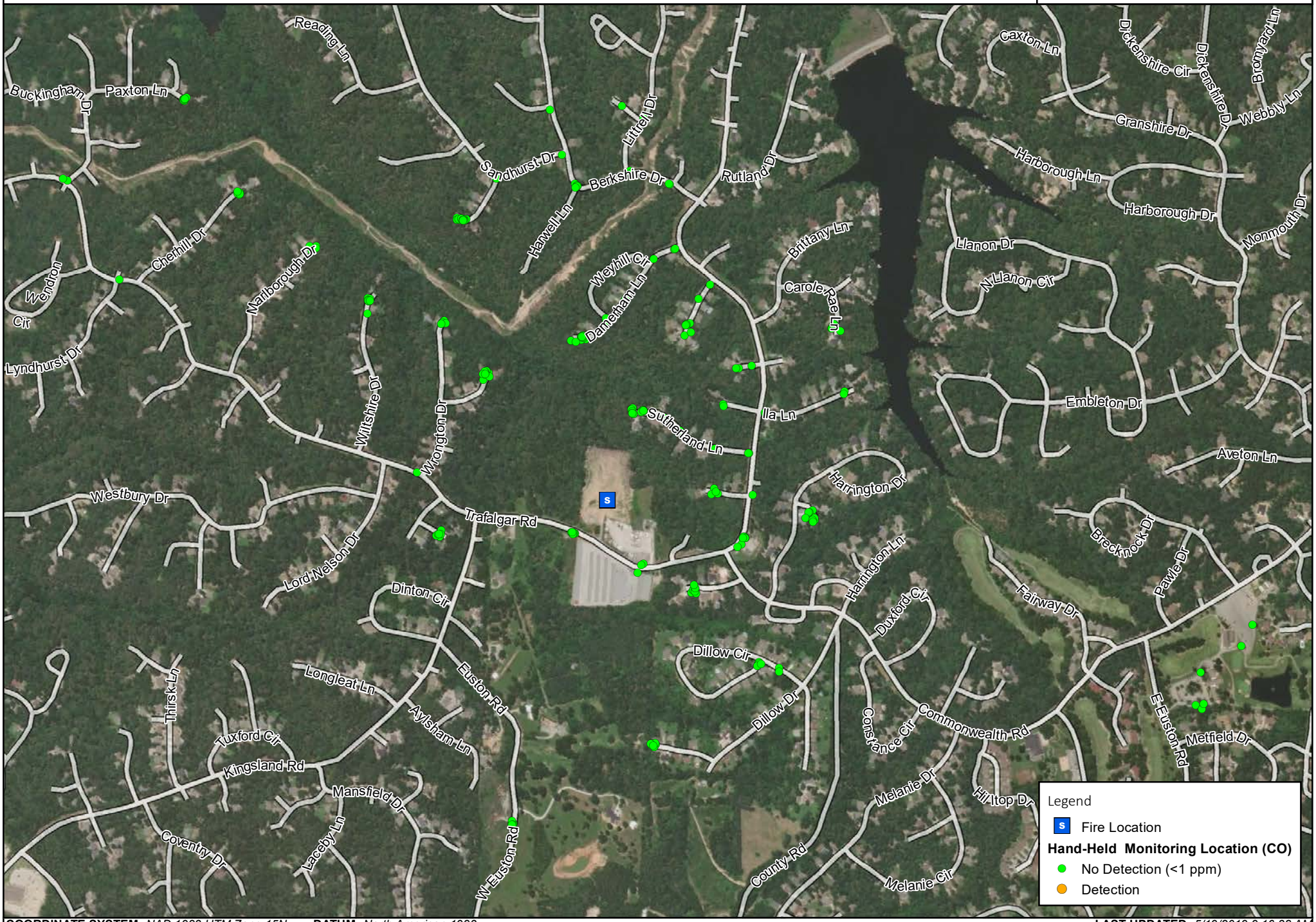
LAST UPDATED: *5/19/2019 9:12:28 AM*

Figure 4: Real-Time Air Monitoring Locations (CO)

Bella Vista Trafalgar Road Fire

0 500 1,000 Feet

Project: 111327
Client: ERM
City: Bella Vista, AR
County: Benton



Legend

- S Fire Location
- **Hand-Held Monitoring Location (CO)**
- No Detection (<1 ppm)
- Detection

COORDINATE SYSTEM: *NAD 1983 UTM Zone 15N* **DATUM:** *North American 1983*

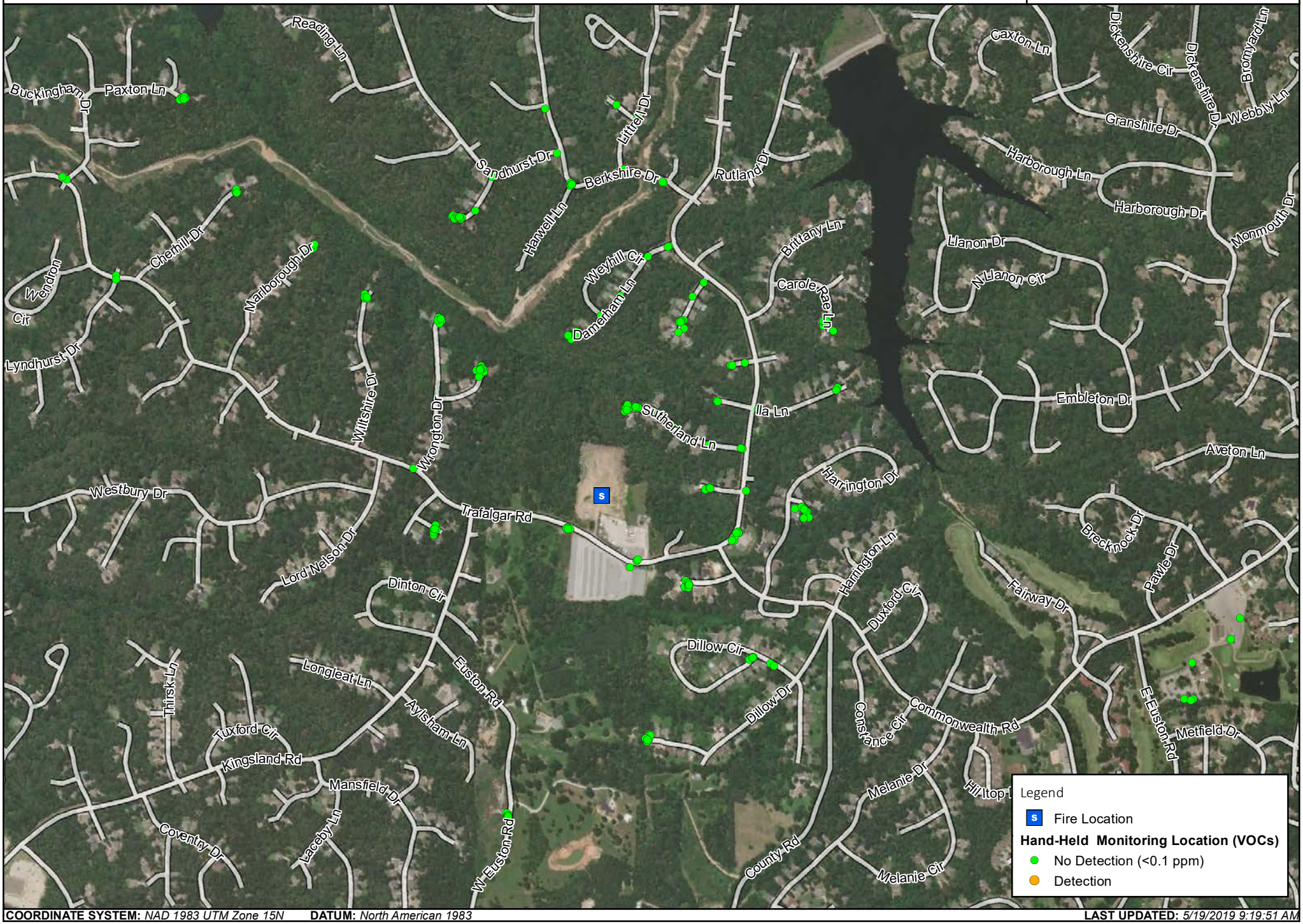
LAST UPDATED: *5/19/2019 9:16:38 AM*

Figure 5: Real-Time Air Monitoring Locations (VOCs)

Bella Vista Trafalgar Road Fire

0 500 1,000 Feet

Project: 111327
Client: ERM
City: Bella Vista, AR
County: Benton



Legend

- S Fire Location

Hand-Held Monitoring Location (VOCs)

- No Detection (<0.1 ppm)
- Detection

COORDINATE SYSTEM: *NAD 1983 UTM Zone 15N* **DATUM:** *North American 1983*

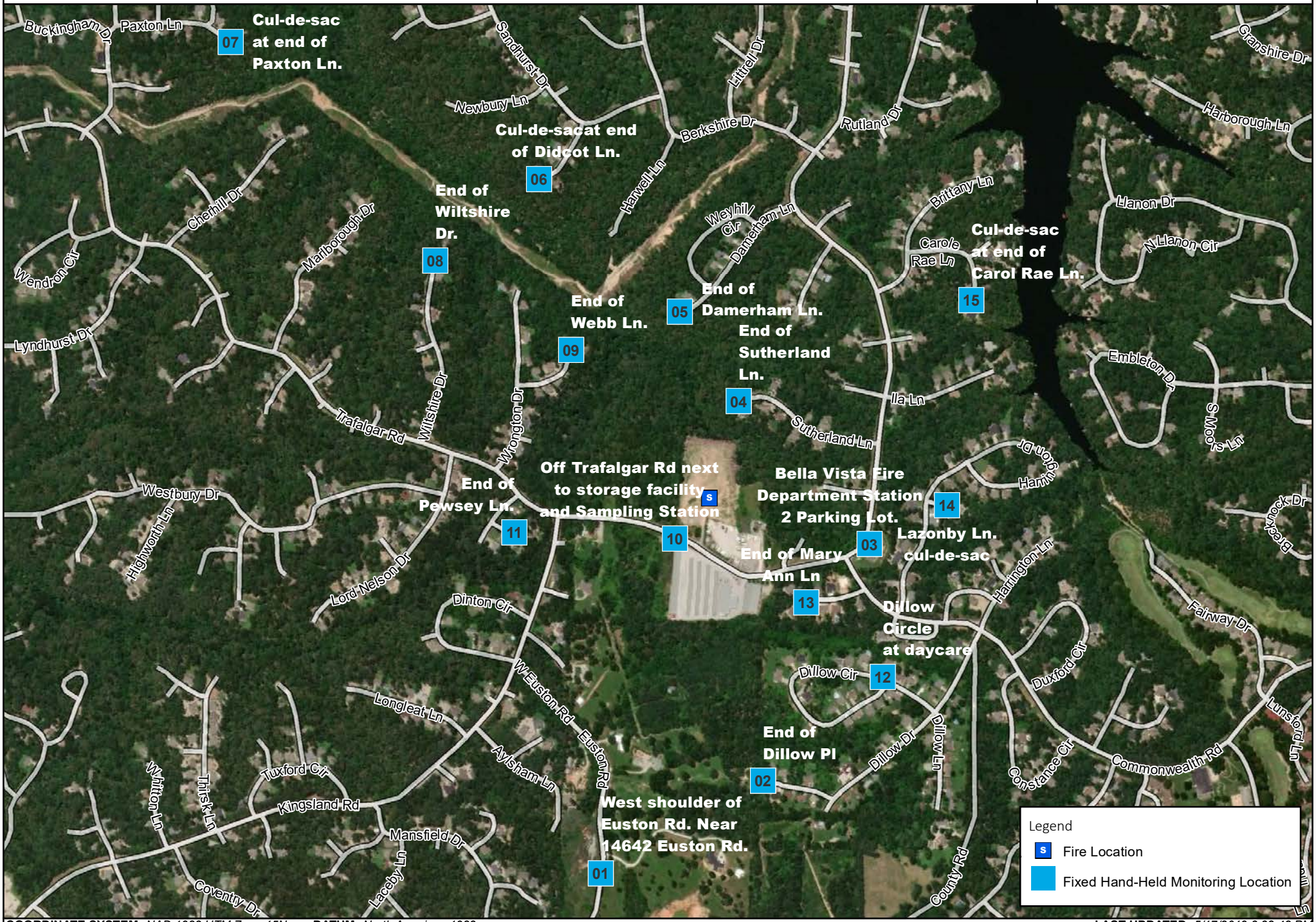
LAST UPDATED: *5/19/2019 9:19:51 AM*

Figure 6: Fixed Hand-Held Real-Time Air Monitoring Locations

Bella Vista Trafalgar Road Fire

0 500 1,000 Feet

Project: 111327
Client: ERM
City: Bella Vista, AR
County: Benton



COORDINATE SYSTEM: *NAD 1983 UTM Zone 15N* **DATUM:** *North American 1983* **LAST UPDATED:** *5/17/2019 3:32:48 PM*

Attachment B

Meteorological Conditions

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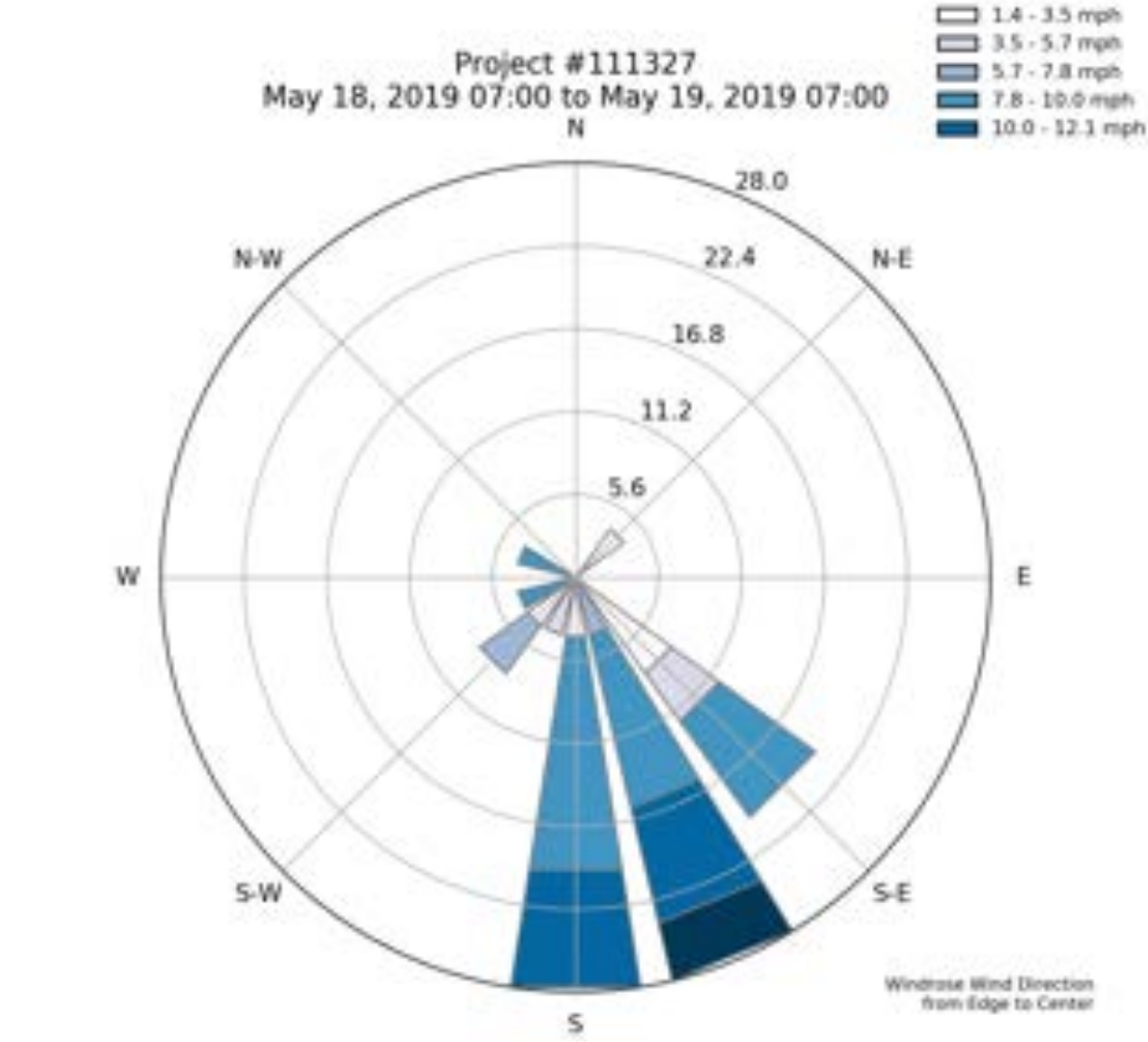
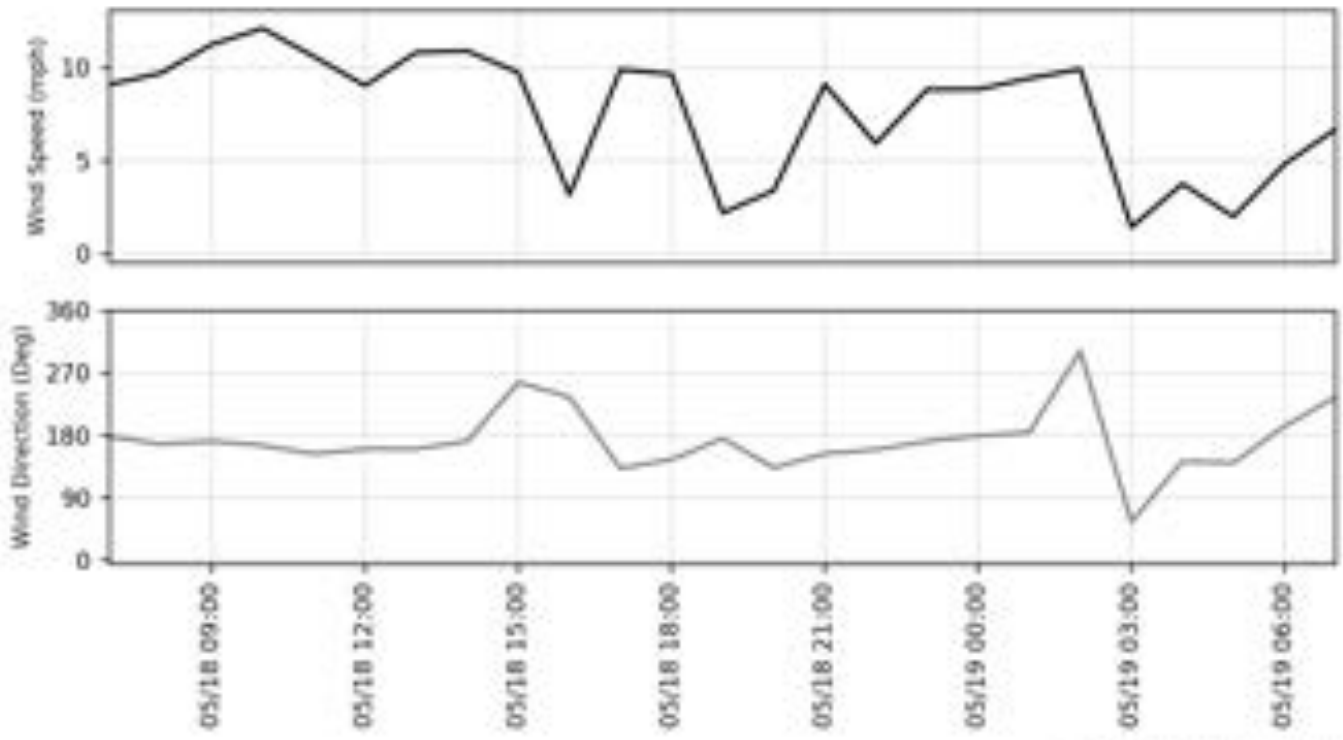

Project #111327
May 18, 2019 07:00 to May 19, 2019 07:00
1.4 - 3.5 mph
3.5 - 5.7 mph
5.7 - 7.8 mph
7.8 - 10.0 mph
10.0 - 12.1 mph
N
N-E
E
S-E
S
S-W
W
N-W
28.0
22.4
16.8
11.2
5.6
Windrose Wind Direction
from Edge to Center


Wind Speed (mph)
10
5
0
Wind Direction (Deg)
360
270
180
90
0
05/18 09:00
05/18 12:00
05/18 15:00
05/18 18:00
05/18 21:00
05/19 00:00
05/19 03:00
05/19 06:00