

Plantation Pipeline Gasoline Pipe Line Release
Double Oak Mountain, AL
Preliminary Summary of Air Monitoring Results
September 8, 2014

Prepared by
Center for Toxicology and Environmental Health, L.L.C. (CTEH®)

Introduction

On August 23, 2014, Center for Toxicology and Environmental Health, LLC (CTEH®) was contacted by Plantation Pipe Line to initiate air monitoring in support of response activities following a gasoline pipeline release in Double Oak Mountain, AL. Site monitoring consisted of manually-logged real-time monitoring as well as remote-telemetry monitoring.

This submittal summarizes air monitoring data for September 7, 2014 00:00 to September 8, 2014 00:00.

Real-time Air Monitoring

All instrumentation was calibrated at least once per day or per manufacturer's recommendations. Manually-logged monitoring was conducted for benzene, percent of the Lower Explosive Limit (LEL), oxygen (O₂), and Volatile Organic Compounds (VOCs), with instruments such as RAESystems® MultiRAEs (MRs), and RAESystems® UltraRAEs. Table 1 summarizes data for manually-logged real-time readings in the Work Area and Roll-off Staging Area.

Table 1: Manually-Logged Real-Time Air Monitoring Summary¹
September 7, 2014 00:00 – September 8, 2014 00:00

Analyte	Instrument	Number of Readings	Number of Detections	Average of Detections	Concentration Range
Roll-off Staging Area					
Benzene	UltraRAE	6	0	NA	<0.05 ppm
LEL	MultiRAE Plus	1	0	NA	<1 %
VOC	MultiRAE Plus	11	1	1.4 ppm	1.4 – 1.4 ppm
Work Area					
Benzene	UltraRAE	8	6	0.08 ppm	0.05 – 0.2 ppm
LEL	MultiRAE Plus	12	0	NA	<1 %
O ₂	MultiRAE Plus	9	9	20.9 %	20.9 - 20.9 %
VOC	MultiRAE Plus	35	8	2.5 ppm	0.5 - 5.4 ppm

¹Please note: The data set displayed here has not undergone complete QA/QC analysis and is presented in a preliminary format.

²Maximum detections preceded by the "<" symbol are considered non-detects at or above reporting limit value to the right.

Personal Sampling

In accordance with the Occupational Safety and Health Administration (OSHA) benzene standard 29 CFR 1910.1028, analytical air samples (3M 3520 organic vapor badges) were collected in the breathing space of representative workers to monitor personal exposures to selected petroleum mixture constituents during work activities. In accordance with the OSHA access to employee exposure and medical records standard 29 CFR 1910.1020, notification letters will be produced for delivery to employees sampled. All analytical samples were shipped to an off-site accredited laboratory for chemical analysis. A detailed list of personal sampling results from the work area is provided in Table 4.

Table 4: Personal Air Sampling Results¹
August 24, 2014 – August 27, 2014

Sample Date	Sample ID	Sample Duration	Benzene (ppm)	Ethyl Benzene (ppm)	Naphthalene (ppm)	N-Hexane (ppm)	Toluene (ppm)	Xylene (ppm)
8/24/2014	NT5436^	555	<0.03	<0.07	<0.32	0.1	0.1	<0.24
	NW7912^	379	<0.05	<0.1	<0.47	<0.1	<0.1	<0.34
	WA5387^	483	0.09	<0.08	<0.36	0.31	0.38	<0.27
	WA5458^	1440	0.05	<0.03	<0.12	0.14	0.18	0.14
	WB2699^	181	0.2	<0.2	<0.97	0.77	0.62	<0.72
	WB3172^	631	1.4*	5.1*	1.6*	4.9*	19*	27*
	WB3397^	628	0.16	0.09	<0.28	0.58	0.76	0.44
8/25/2014	NT5611	517	<0.03	<0.08	<0.34	<0.08	0.1	<0.25
	NT5675^	311	<0.06	<0.1	<0.57	<0.1	<0.1	<0.42
	NV5817	558	<0.03	<0.07	<0.32	<0.08	<0.07	<0.23
8/26/2014	WA5298	429	0.07	<0.1	<0.41	0.24	0.33	<0.3
	WB3173	452	0.05	<0.09	<0.39	0.22	0.27	<0.29
	WB3243	468	0.04	<0.09	<0.38	0.2	0.24	<0.28
	WP8037	609	<0.03	<0.07	<0.29	0.1	0.17	<0.21
	WP8117	616	0.04	<0.07	<0.29	0.19	0.31	<0.21
	WB3166	490	0.04	<0.08	<0.36	0.2	0.25	<0.27
8/27/2014	WP8181	435	<0.04	<0.09	<0.41	<0.1	0.2	<0.3
	WP8209	485	0.1	<0.08	<0.36	0.28	0.41	<0.27
	WP8240	537	0.05	<0.08	<0.33	0.1	0.23	<0.24

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* - Individual wearing this exposure badge tripped, resulting in the badge falling to the ground and breaking open near the released product.

For this reason, the result of this sample may be anomalous and not representative of the individual's exposure to these volatile organic compounds

^ - Lab Results have level 2 validation through a third party validator.

Area Sampling

Analytical air samples (3M 3520 organic vapor badges) were collected in the surrounding community to monitor community exposures to selected petroleum mixture constituents during work activities. All analytical samples were shipped to an off-site accredited laboratory for chemical analysis. A detailed list of area sampling results is provided in Table 5. A map detailing sample locations is provided in appendix A.

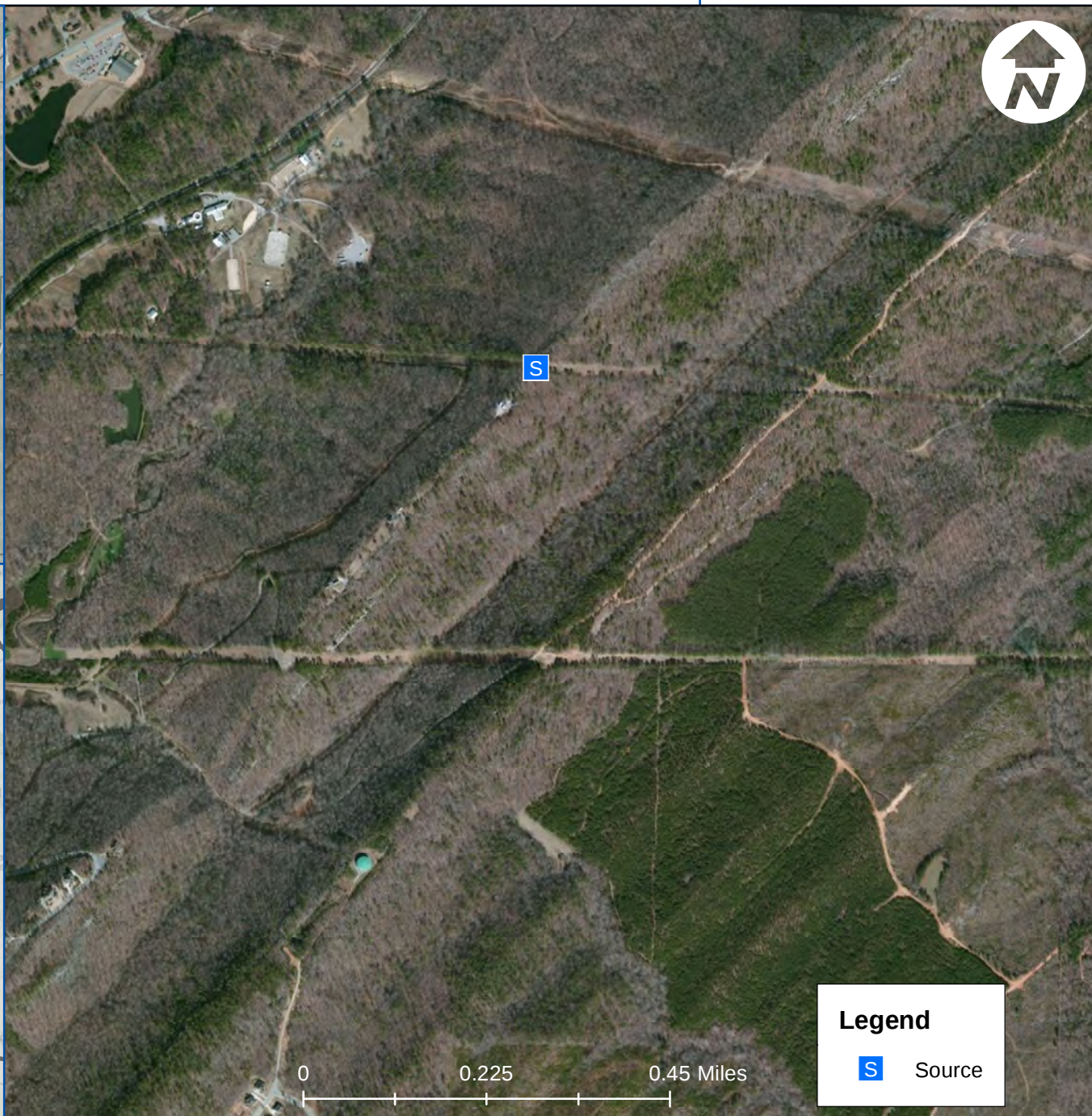
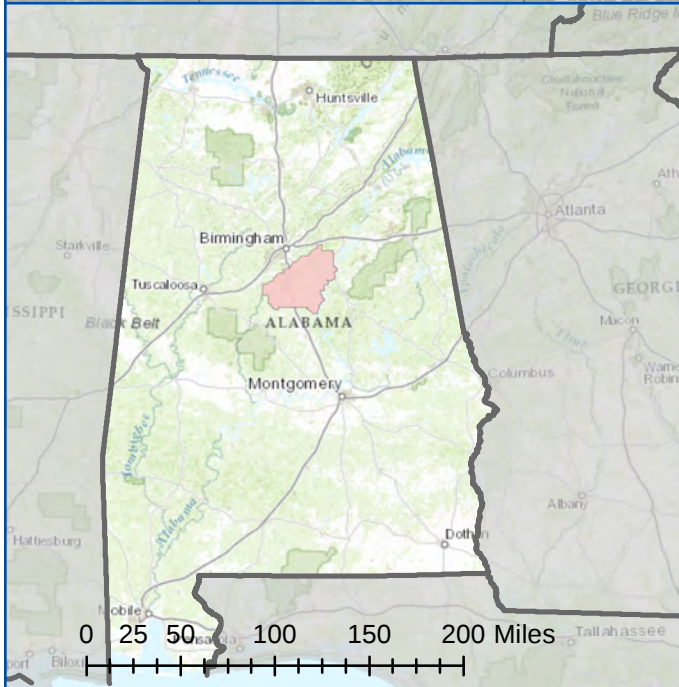
Table 5: Area Air Sampling Results¹
August 24, 2014 – August 26, 2014

Sample Date	Location	Sample ID	Benzene (ppm)	Ethyl Benzene (ppm)	Naphthalene (ppm)	N-Hexane (ppm)	Toluene (ppm)	Xylene (ppm)
8/24/2014	AS-003	NT5862	<0.04	<0.08	<0.36	<0.09	<0.08	<0.27
	AS-004	WB2716	<0.04	<0.08	<0.35	<0.09	<0.08	<0.26
8/25/2014	AS-002	NT5690	<0.04	<0.09	<0.37	<0.09	<0.09	<0.27
	AS-005	NT5454	<0.04	<0.08	<0.36	<0.09	<0.08	<0.27
	AS-009	WP8044	<0.03	<0.08	<0.34	<0.08	<0.08	<0.25
	AS-011	WP8081	<0.03	<0.08	<0.34	<0.08	<0.08	<0.25
8/26/2014	AS-006	WB3160	<0.04	<0.09	<0.37	<0.09	<0.09	<0.27
	AS-007	WB3302	<0.04	<0.09	<0.37	<0.09	<0.09	<0.27
	AS-008	WP8035	<0.04	<0.08	<0.36	<0.09	<0.08	<0.27
	AS-010	WP8076	<0.04	<0.09	<0.37	<0.09	<0.09	<0.27

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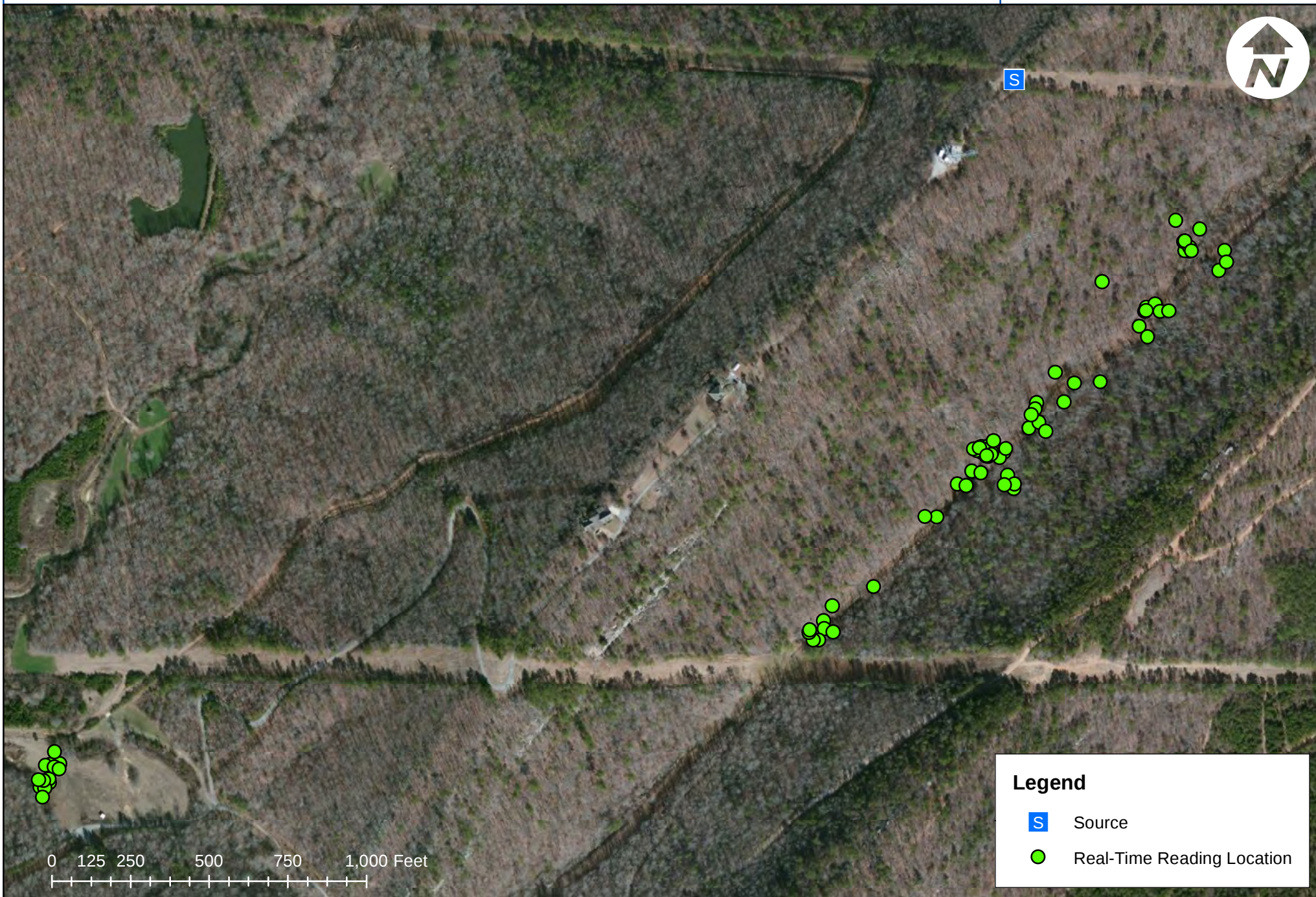
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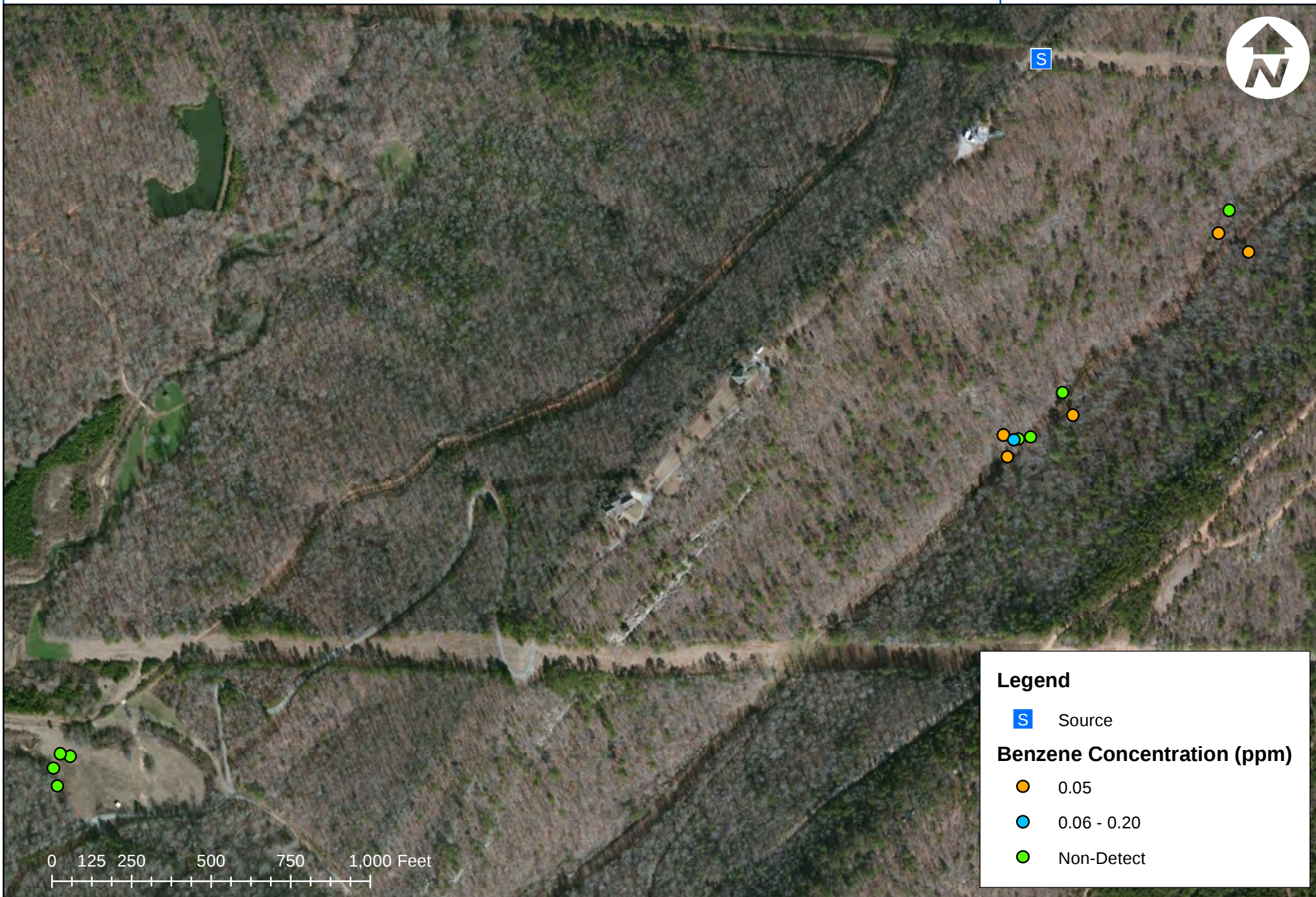
Appendix A: Incident Maps

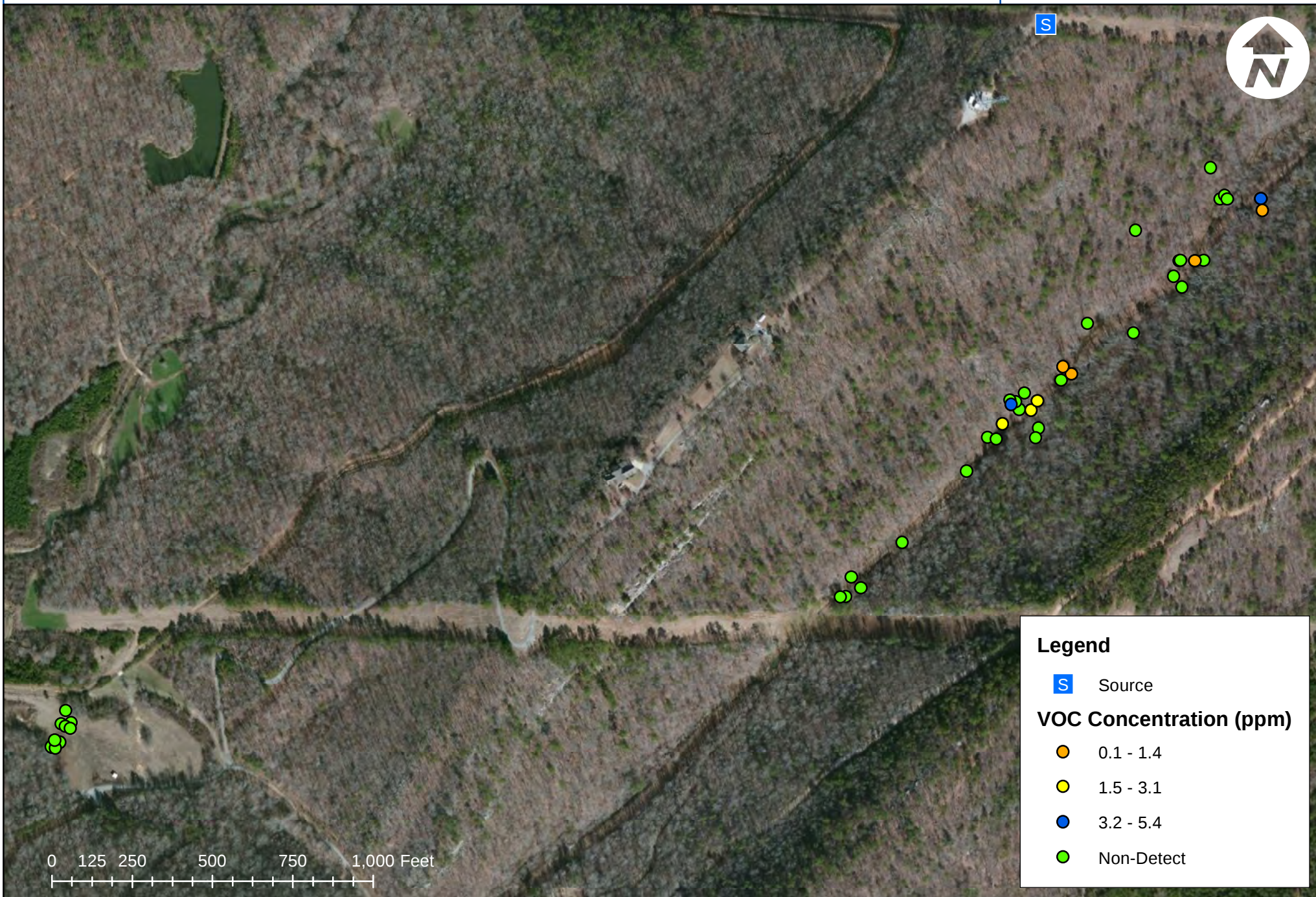


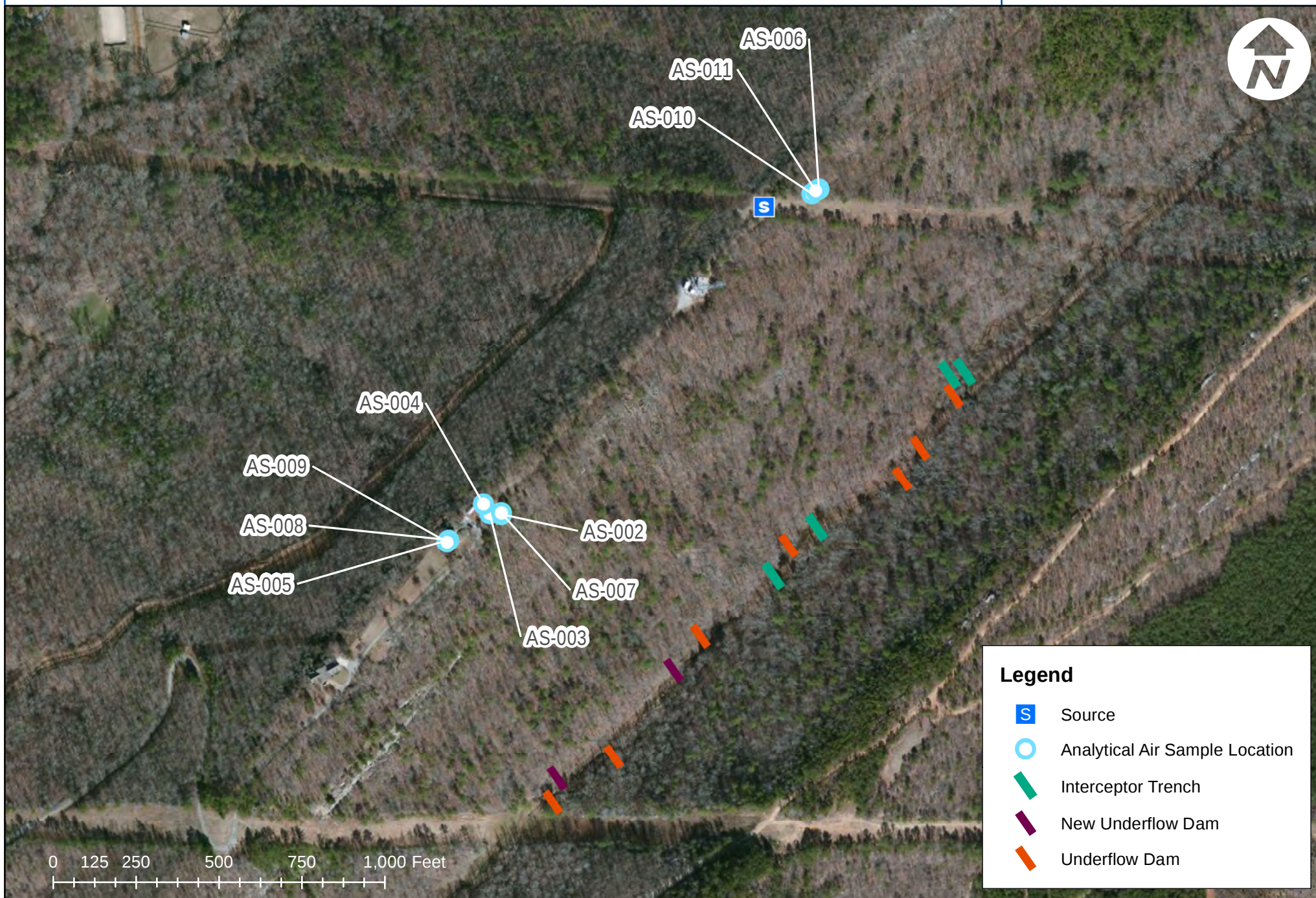
Legend

S Source









Legend

- S Source
- Analytical Air Sample Location
- Interceptor Trench
- Underflow Dam

Appendix B: Calibration Logs

30909

Client

Plankton / Kinki Margha

Location

Polham, AL

1/5	0422	AR9	292-504101	Quad	5070, 20.9%	912283	9114	
1/5	0435	AR10	292-504111	150 Quad	100 ppm 50%, 20.9%	955489	9114	EC
7/6	0455	M12	095-522061	150 Quad	100 ppm 50%, 20.9%	955459	9114	MM
7/6	0760	M12	095-527929	150 Quad	50%, 20.9%	955451	9114	MM
7/6	0705	M12	095-528024	150 Quad	50%, 100 ppm 20.9%	955451	9114	MM
9/6	0710	M12	095-527915	150 Quad	100%, 20.9%	955459	9114	MM
9/6	0715	UR	596-90157	benzene	5 ppm	968504	5117	MM
9/6	0720	UR	596-905842	benzene	5 ppm	968504	5117	MM
9/6	0930	UR	596-901384	benzene	5 ppm	968504	5117	EC
9/7	0638	M12	095-528061	150 quad	100 ppm 50%, 20.9%	971552	9114	DS
9/7	0644	M12	095-528024	150 quad	100 ppm 50%, 20.9%	971552	9114	DS
9/7	0655	UR	596-905847	benzene	5 ppm	968504	5117	DS