

Trip Report - #4 and Final

Powell Lead Site Removal Site Evaluation

**Big Stone Gap, Wise County, Virginia
TDD No: T501-15-07-016
DCN: 03088-2-01-FA-0664**

Contract No.: EP-S3-15-03
June 26, 2017



**EPA Region III
START5 - West**
Superfund Technical Assessment and Response Team

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ATTACHMENT:

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1.0 INTRODUCTION

TechLaw, Inc.'s (TechLaw) Superfund Technical Assessment and Response Team (START) was tasked by the United States Environmental Protection Agency (USEPA) to prepare a Trip Report that summarizes the analytical results for specific samples that were collected during the fourth sampling event that was conducted on June 18, 2015, at the Powell Lead Site, located in Big Stone Gap, Wise County, Virginia. This report is the fourth and final Trip Report for sampling activities on Site. The first three reports are dated June 3, 2014, July 28, 2014, and March 22, 2015, and should be referenced for analytical results from sampling activities at the Site. The third Trip Report was written specifically to determine the extent of surface soil contamination in the mounded area of the Site, referred to as "Area 1". The purpose of this report is to summarize sampling activities that were conducted during the June 18, 2015 sampling event, focusing on the samples that were collected in areas of the Site other than Area 1. Sampling activities conducted during the fourth sampling event were conducted under Contract No. EP-S3-15-03, TDD Number T501-15-07-016.

2.0 BACKGROUND

2.1 Site Description

The Powell Lead Site (Site) is located near the intersection of Short Street N and Main Avenue W in Big Stone Gap, Wise County, Virginia. The approximate coordinates of the Site are N 36° 51'36.78" and W 82° 47'44.80".

Area 1 of the Site is a mounded area of soils and debris, covered with thick vegetation. The elevation differential, according to Google Earth®, is approximately six feet from the native surface soils and the crest of the mounded area. According to ESRI ArcMap®, the approximate length of the mound is 161 feet and the width is 86 feet. Using courthouse records located on Wise County Virginia's website, it was determined that Robinette Scrap Metal Processing Corporation owns the mounded area of the Site, Area 1. Robinette Scrap Metal Processing was identified as a Potential Responsible Party (PRP).

Area 1 of the Site is located north of railroad tracks, and is surrounded by a residential area. A metal recycling facility is located directly to the east of Area 1. Following previously conducted sampling events, it was determined by the EPA that elevated levels of polychlorinated biphenyls (PCBs) and lead were present in the mounded portion of Area 1. Therefore, under an order from EPA, the PRP erected a fence around the portion of Area 1 that was identified to

contain elevated Site contaminants. Outside of the fence perimeter, there are no security features to restrict access to Area 1.

2.2 Site History

The Site was first identified by the Virginia Department of Environmental Quality (VDEQ), who corresponded with the Virginia Department of Emergency Management (VDEM) concerning the Site. A report was provided to VDEM Tolbert that indicated scrap metal, miscellaneous debris, and drums were buried at the Site. VDEM Tolbert contacted EPA OSC Cruz and requested assistance to assess the Site for the presence of potential hazardous substances. On November 14, 2014, OSC Cruz mobilized to the Site and met with VDEM Tolbert and VDEQ Sneed to conduct a windshield assessment. Pieces of transformers, battery casings, construction debris, scrap metal, and oil staining were observed in the soils of one of the parcels located outside the Robinette fence line, across the street from several residential properties. The parcel, owned by Robinette, consisted of a vegetated mound near a playground, where children were observed playing. The mound did not appear to be naturally created, and there were no barriers between this area of the Site and the playground. The OSC determined that soil samples should be collected to determine if elevated levels of metals or PCBs existed in the Site soils. The OSC contacted a representative of Robinette and obtained verbal access to the property to collect soil samples.

On March 19, 2014, the first sampling assessment was conducted in Area 1. During the assessment, OSC Cruz, VDEQ, and START traversed the mounded pile and selected 22 screening locations. START utilized a portable X-Ray Fluorescence (XRF) unit and conducted in situ screening for metals at each of the 22 selected locations. The XRF screening data ranged from <5.8 to 1,267 parts per million (ppm). Six of these 22 screening locations were selected to collect surface soil samples. The locations were selected by choosing a variety of different lead screening values that ranged from 11 to 1,267 ppm. A total of eight discreet grab surface soil samples, including one duplicate sample and one background sample, were collected from Area 1 of the Site. Lead was detected at concentrations up to 1,880 milligrams per kilogram (mg/kg) in the surface soil samples. Aroclor-1242 was detected at concentrations up to 11,000 micrograms per kilogram (ug/kg) and aroclor-1254 was detected at concentrations up to 20,000 ug/kg in the surface soil samples.

OSC Cruz corresponded with both VDEM and VDEQ in order to identify areas of the Site that required further investigation. Following review of the validated analytical data from the first and second sampling events that were performed at

the Site, it was determined that the contamination did not extend to the north, south, or west of Area 1. However, it was unclear if the contamination extended in a direction to the east of Area 1. Therefore, OSC Cruz determined that additional sampling was warranted to determine the extent of contamination.

The third sampling event was conducted at the Site on January 21, 2015. During this sampling event, OSC Cruz selected six locations to the east of the Area 1 fence line to collect surface soil samples. The purpose of this sampling event was to determine if the contamination extended from the mounded pile towards the parking/roll-off storage area. A total of seven discrete grab surface soil samples, including one duplicate sample, were collected from Area 1 of the Site. Following receipt of the validated laboratory results, it was determined that aroclors were detected in the soils at four of the six sample locations at concentrations above EPA's Regional Screening Levels (RSLs) for residential soil with a target cancer risk (TR) of $1\text{E-}06$ and a target hazard quotient (HQ) of 1.0. However, lead was detected above the EPA RSL of 400 mg/kg in two locations; both locations were directly east of the fence and lead was detected at 1,550 and 502 mg/kg.

Following review of the results from the January 2015 sampling event and discussions with VDEM, OSC Bartos determined that the extent of contamination was not yet defined on the Site. Therefore, on June 18, 2015, OSC Bartos and START returned to the Site and determined a sampling strategy. Surface soil samples were collected from seven additional locations in Area 1, with focus in both the area where elevated lead concentrations were determined during the prior sampling event and in the parking/roll-off area located to the east of the mounded pile. Lead was detected at concentrations up to 1,550 mg/kg in the surface soil samples. Lead concentrations exceeded the EPA RSL of 400 mg/kg in six of the 14 samples. Aroclor-1254 was detected at concentrations up to 4,900 ug/kg. Aroclor-1242 was detected at concentrations up to 1,270 ug/kg. Aroclor-1254 concentrations exceeded the EPA RSL of 240 ug/kg in 10 of the 15 samples and Aroclor-1242 concentrations exceeded the EPA RSL of 230 ug/kg in four of the 15 samples. Six of the 15 samples had aroclor concentrations exceeding the 1 ppm cleanup level for PCB remediation waste in high occupancy areas as specified in 40 CFR Part 761.61(a)(4)(i)(A).

3.0 SITE ASSESSMENT AND ACTIVITIES

In order to determine if the lead contamination was migrating off of the Robinette property, OSC Bartos determined that three additional areas of the Site required

investigation. These three distinct areas included the perimeter of the Robinette property, between the scrap metal storage and along the railroad tracks, a storm water drain that was located along the northern perimeter of the Robinette property, and a residential area located to the south of the Robinette property, where a stream flowed, suspected to originate from beneath both the Robinette property and the railroad tracks.

All of the samples collected were analyzed for Target Analyte List (TAL) metals and Target Compound List (TCL) aroclors. During this sampling assessment, a Geographic Positioning System (GPS) Trimble unit was utilized to obtain coordinates for all of the sample locations. The sample that was collected from the stream on the residential property was covered in heavy foliage; therefore, the GPS coordinate was not exact and was estimated using aerial photography and knowledge by the sample collection staff.

Figures included in this report include the following:

Figure 1: Lead concentrations focused in Area 1.

Figure 2: Focused on sample results at the Robinette location.

Figure 3: Focused on sample results from the residential area.

Figure 4: Analytical results from the storm drain.

Figure 5: Overall reference to samples collected during this event and Area 1.

Photographs of the individual sample locations are included in Attachment 1, Site Photographs.

4.0 ANALYTICAL RESULTS

4.1 Surface Soils: TAL Metals

Lead was detected at a concentration of 1,540 mg/kg in one of the three discreet sampling locations above EPA's RSL of 400 mg/kg. This location was PL-36, on the Robinette property.

Arsenic concentrations in all of the three discreet samples collected during this sampling events exceeded the EPA RSL of 0.68 mg/kg for Residential soil. Arsenic concentrations in the samples ranged from 3.3 to 30.8 mg/kg.

Refer to Table 1, Soil Samples Inorganic Data Summary, for the complete validated analytical results for metals analysis. The data summary tables were exported through use of Scribe[®] software which included upload of the validated analytical data reports provided by the EPA Environmental Services Assistance Team (ESAT).

4.2 Surface Soils: TCL Aroclors

Aroclor-1254 was detected at sample location PL-36 at a concentration of 700 ug/kg. This location was on the Robinette property. No aroclors were detected at the location on the residential property, in concentrations above EPA's RSLs. Due to limited volume of sediment in the storm drain, a sample could not be collected for analysis of Aroclors.

Refer to Table 2, Soil Samples Aroclors Data Summary, for the complete validated analytical results for Aroclors. The data summary tables were exported through use of Scribe[®] software which included upload of the validated analytical data reports provided by the EPA ESAT.

5.0 SUMMARY

During the sampling assessment that was conducted on June 18, 2015, three discreet soil/sediment samples were collected from three separate areas of the site: a residential area, storm drain, and along the perimeter of the Robinette property, adjacent to the railroad tracks. A duplicate soil/sediment sample was collected in the residential area location. All of the samples collected were analyzed for TAL metals and TCL aroclors. (Note: Additional soil samples were collected in Area 1 of the Site during the June 18, 2015 sampling assessment; Reference Trip Report 3 for the Site dated March 22, 2016, for a summary of the analytical results from those samples.)

Lead was detected at a concentration of 1,540 mg/kg in the surface soil sample (PL-36) at the Robinette location, which exceeds the EPA RSL of 400 mg/kg.

Aroclor-1254 was detected at a concentration of 700 ug/kg in the surface soil at the Robinette location (PL-36), which exceeded the EPA RSL of 240 ug/kg. However, this concentration did not exceed the 1 ppm cleanup level for PCB remediation waste in high occupancy areas as specified in 40 CFR Part 761.61(a)(4)(i)(A).

Figure 2 depicts the samples that contain concentrations of lead and Aroclor-1254 that exceed the EPA RSLs for residential soil with a TR of 1E-06 and a HQ of 1.0.

OSC Bartos continues correspondence with the Virginia Department of Health and the Agency for Toxic Substances and Disease Registry to determine if there is an imminent health threat posed by the Site.

TABLES

**Table 1- Soil Samples
Inorganic Data Summary**

CLP Sample Number: Sample #: Sampling Location: Sample Type Matrix: Units: Date Sampled: Date Analyzed:				MC0AB4 PL-36 Robinette Field Sample Soil mg/kg 6/18/2015 6/22/2015		MC0AB5 PL-37 Storm Drain Field Sample Soil mg/kg 6/18/2015 6/22/2015		MC0AB6 PL-38 Residential Field Duplicate of PL-39 Soil mg/kg 6/18/2015 6/22/2015		MC0AB7 PL-39 Residential Field Duplicate of PL-38 Soil mg/kg 6/18/2015 6/22/2015	
Shading Yellow - Result Exceeds RSL Residential Soil											
Parameter	CAS No.	RSL ResSoil mg/kg	Analysis	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	7429-90-5	78000	E200.7	2470		3090		3390		3330	
Antimony	7440-36-0	31	E200.7	9.3	J	5.9	UJ	5.6	UJ	6.7	UJ
Arsenic	7440-38-2	0.68	E200.7	30.8	J	5	J	3.3	J	3.6	J
Barium	7440-39-3	16000	E200.7	146		72.6		36.8		37.1	
Beryllium	7440-41-7	1600	E200.7	0.46	U	0.49	U	0.46	U	0.56	U
Cadmium	7440-43-9	78	E200.7	1.3	J	0.81	J	0.28	J	0.25	J
Calcium	7440-70-2		E200.7	4580	J	225000	J	3380	J	1340	J
Chromium	7440-47-3		E200.7	13.5	J	15.1	J	8.3	J	8.8	J
Cobalt	7440-48-4	23	E200.7	4.2	J	3.5	J	5.1		4.9	J
Copper	7440-50-8	3100	E200.7	56.4		47.3		11		11	
Iron	7439-89-6	55000	E200.7	11400	J	22500	J	14500	J	10100	J
Lead	7439-92-1	400	E200.7	1540	J	37.3	J	55.8	J	41.5	J
Magnesium	7439-95-4		E200.7	610		13000		592		659	
Manganese	7439-96-5	1900	E200.7	180	J	506	J	336	J	334	J
Nickel	7440-02-0	1500	E200.7	11.7	J	12.6	J	7.2	J	6.6	J
Potassium	7440-09-7		E200.7	456	U	692	J+	463	U	561	U
Selenium	7782-49-2	390	E200.7	3.2	UJ	3.4	UJ	3.2	UJ	3.9	UJ
Silver	7440-22-4	390	E200.7	0.91	U	0.98	U	0.93	U	1.1	U
Sodium	7440-23-5		E200.7	456	U	488	U	463	U	561	U
Thallium	7440-28-0	0.78	E200.7	2.3	U	2.4	U	2.3	U	2.8	U
Vanadium	7440-62-2	390	E200.7	9		6.6		7.7		8	
Zinc	7440-66-6	23000	E200.7	266		203		63		60.6	
Mercury	7439-97-6	11	E245.5	0.62		0.041	J	0.028	J	0.02	J

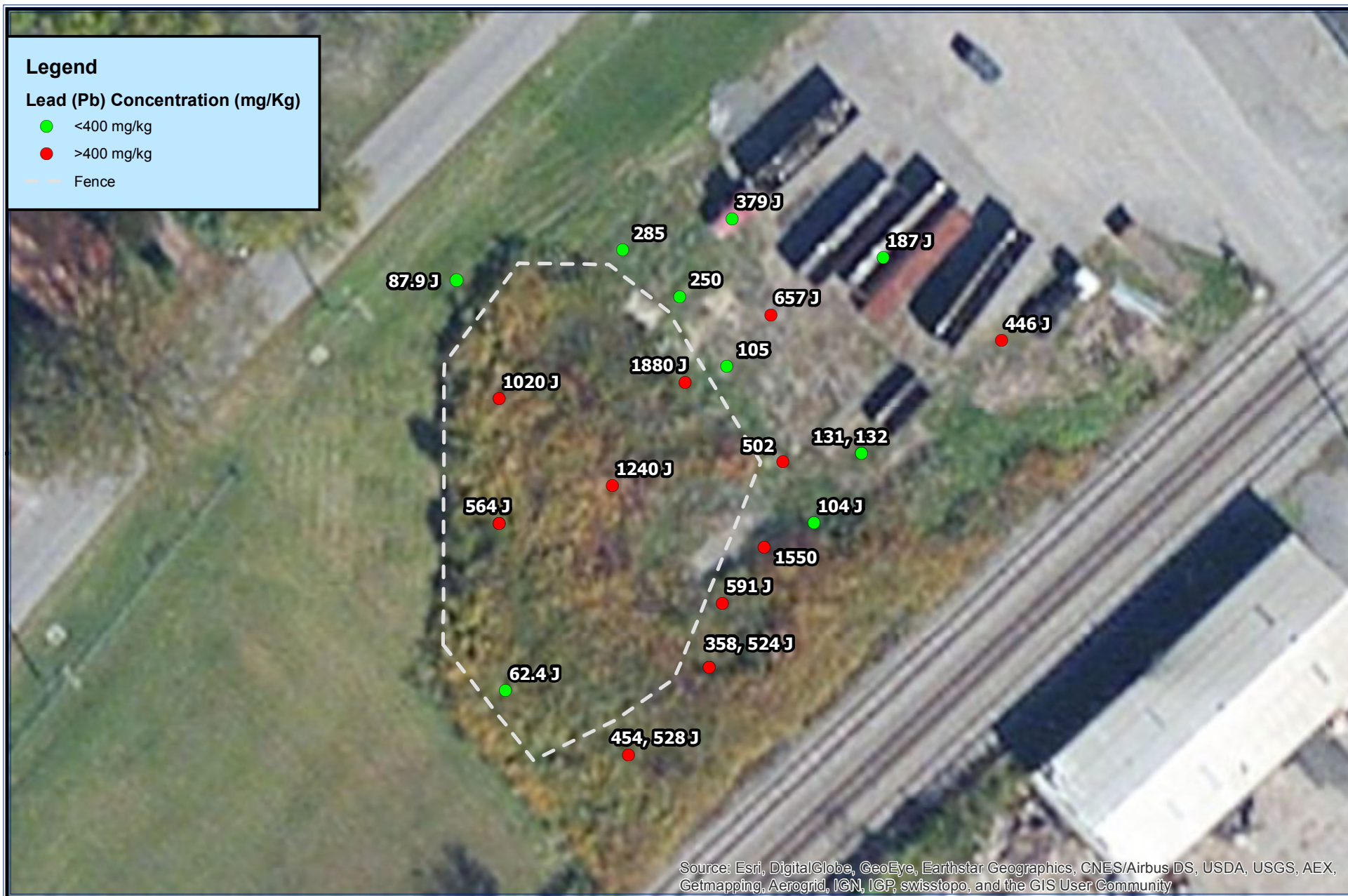
RSL for Residential Soil (TR=1E-06, HQ=1) June 2017

**Table 2 - Soil Samples
Aroclors Data Summary**

CLP/DAS Sample Number: Sample #: Sampling Location: Sample Type Matrix: Units: Date Sampled: Date Analyzed:				C0AB4 PL-36 Robinette Field Sample Soil ug/kg 6/18/2015 6/22/2015		C0AB6 PL-38 Residential Field Duplicate of PL-39 Soil ug/kg 6/18/2015 6/22/2015		C0AB7 PL-39 Residential Field Duplicate of PL-38 Soil ug/kg 6/18/2015 6/22/2015	
Shading Yellow - Result Exceeds RSL Residential Soil									
Parameter	CAS No.	RSL ResSoil ug/kg	Analysis	Result	Q	Result	Q	Result	Q
AROCLOR-1016	12674-11-2	6700	E608	150	J	43	U	45	U
AROCLOR-1221	11104-28-2	200	E608	34	U	43	U	45	U
AROCLOR-1232	11141-16-5	170	E608	34	U	43	U	45	U
AROCLOR-1242	53469-21-9	230	E608	34	U	43	U	45	U
AROCLOR-1248	12672-29-6	230	E608	34	U	43	U	45	U
AROCLOR-1254	11097-69-1	240	E608	700		63		9.4	J
AROCLOR-1260	11096-82-5	240	E608	34	U	43	U	45	U
AROCLOR-1262	37324-23-5		E608	34	U	43	U	45	U
AROCLOR-1268	11100-14-4		E608	34	U	43	U	45	U

RSL for Residential Soil (TR=1E-06, HQ=1) June 2017

FIGURES

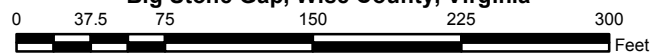




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Figure 2: Lead and PCB Concentrations - Sample PL-36
Powell Lead Site
Big Stone Gap, Wise County, Virginia



Map By: MD

Date Modified:
6/21/2017

1:1,166



Source:
Base Layers procured from ESRI
Online Resources.

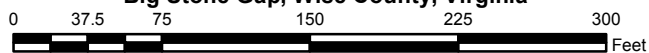
Note:
Depicted location was generated using a
combination of GPS and georeferenced imagery.



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Figure 3: Lead Concentrations - Samples PL-38/39
Powell Lead Site
Big Stone Gap, Wise County, Virginia



Map By: MD

Date Modified:
6/21/2017

1:1,166



Source:
Base Layers procured from ESRI
Online Resources.

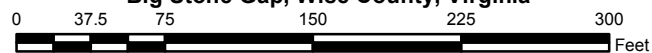
Note:
Depicted location was generated using a
combination of GPS and georeferenced imagery.



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Figure 4: Lead Concentration - Sample PL-37
Powell Lead Site
Big Stone Gap, Wise County, Virginia



Map By: MD

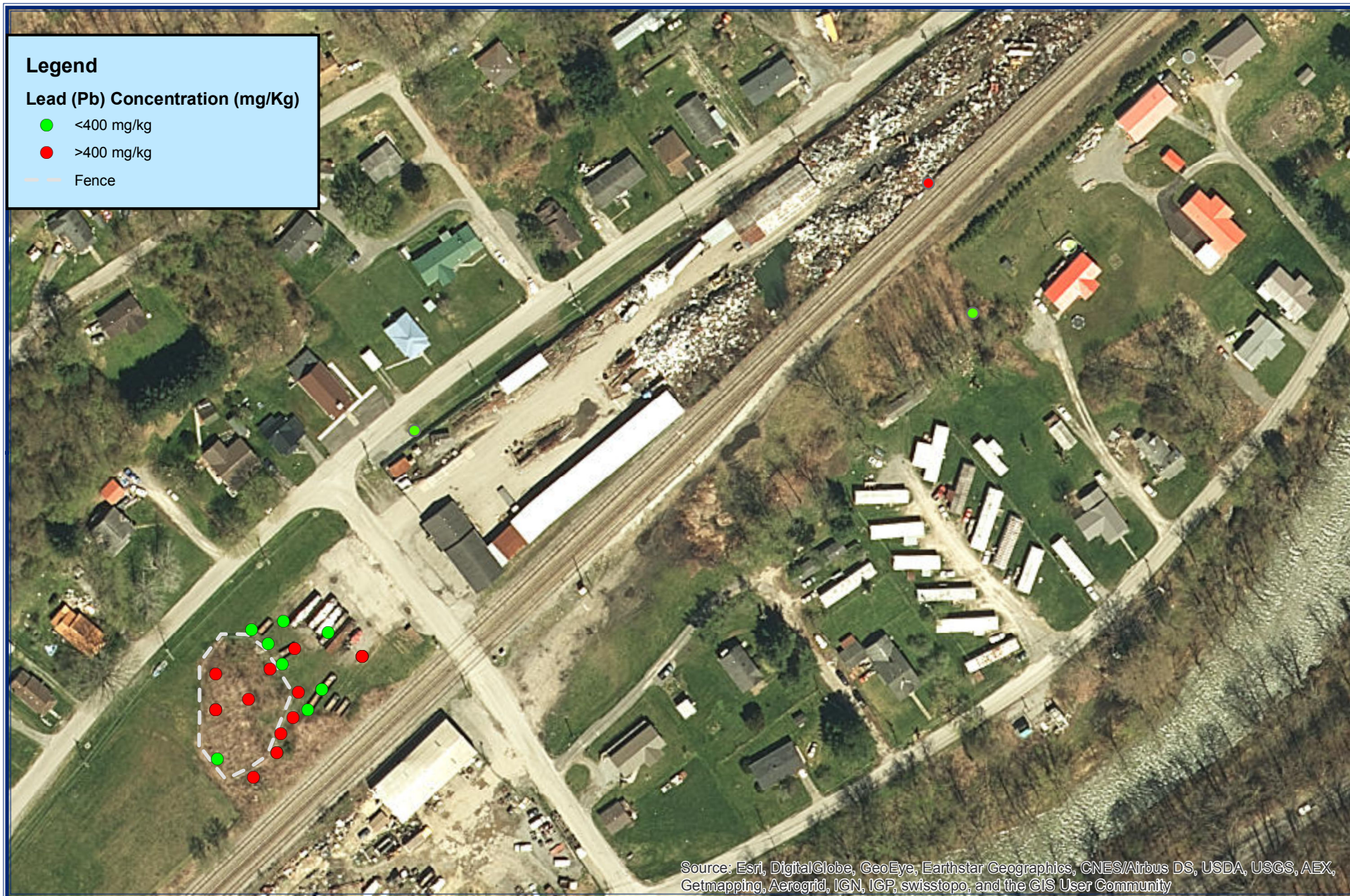
Date Modified:
6/21/2017

1:1,166



Source:
Base Layers procured from ESRI
Online Resources.

Note:
Depicted location was generated using a
combination of GPS and georeferenced imagery.



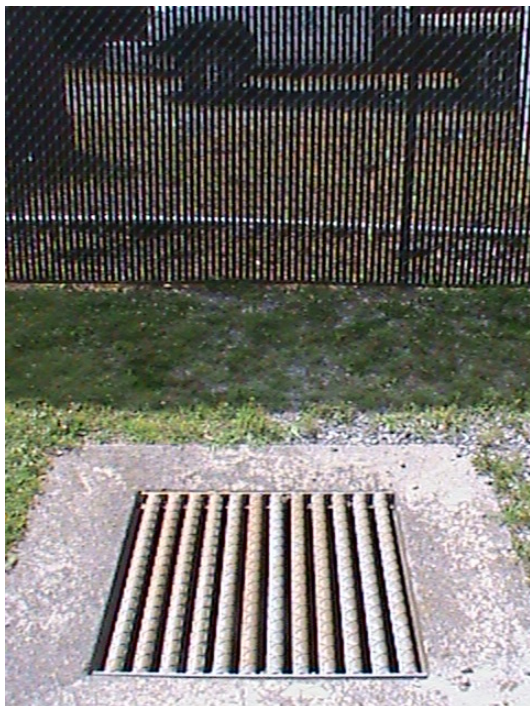
ATTACHMENT 1:
PHOTOGRAPHIC LOG



Date: June 18, 2015
Photograph 1: Location of Sample PL-36



Date: June 18, 2015
Photograph 2: View across from Sample PL-36



Date: June 18, 2015
Photograph 3: Location of Sample PL-37



Date: June 18, 2015
Photograph 4: Location of Sample PL-37



Date: June 18, 2015
Photograph 5: Stream near residences and Samples PL-38/39



Date: June 18, 2015
Photograph 6: Location of Samples PL-38/39



Date: June 18, 2015
Photograph 7: Drain pipe near the location of Samples PL-38/39



Date: June 18, 2015
Photograph 8: Residential yard adjacent to the location of Samples PL-38/39