February 17, 2017

Mr. Rick Jardine
U.S. Environmental Protection Agency
61 Forsyth Street, SW
Atlanta, Georgia 30303

Subject: Interim Removal Investigation Report (2014-2015), Rev. 0
35th Avenue Superfund Site
Technical Direction Document (TDD) No. 0002/OT-02-002
Contract No. EP-S4-15-01

Dear Mr. Jardine:

Oneida Total Integrated Enterprises (OTIE), Superfund Technical Assessment Response Team (START), has completed Revision 1 of the Interim Removal Investigation report (2014-2015) for the 35th Avenue Superfund site in Jefferson County, Birmingham, Alabama.

Please contact me at (678) 355-5550 if you have any questions or comments. We have appreciated the opportunity to complete this removal investigation.

Sincerely,

Russell Henderson
START Senior Scientist
Project Manager

Enclosure

cc: Katrina Jones, EPA Project Officer
Greg Kowalski, START Program Manager (w/o enclosure)
START File

INTERIM REMOVAL INVESTIGATION REPORT
2014-2015

35TH AVENUE SUPERFUND SITE
BIRMINGHAM, JEFFERSON COUNTY, ALABAMA

Revision 1

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 4
61 Forsyth Street
Atlanta, Georgia 30303

Prepared by:

Oneida Total Integrated Enterprises
Superfund Technical Assessment and Response Team
1220 Kennestone Circle, Suite 106
Marietta, Georgia 30066

Contract No.	:	EP-S4-15-01
TDD Number	:	0002/OT-02-002
Date Submitted	:	February 17, 2017
EPA OSC	:	Rick Jardine
Telephone No.	:	404-562-9587

Limari Krebs
Senior Environmental Chemist
Author

Russell Henderson
Deputy Program Manager/Site PM
Technical Reviewer

CONTENTS

1.0 SCOPE 1

1.1 Overview 1
1.2 Project Approach 1
1.3 Report Organization 2

2.0 BACKGROUND 3

2.1 Site Description 3
2.2 Site History 3
2.3 Regional Geology 5
2.4 Hydrogeology 6

3.0 CHARACTERIZATION METHODS AND PROCEDURES 7

3.1 Sample Location Determination 7
3.2 General Sample Collection Procedures 7
3.3 Sample Analyses 8
3.4 Data Quality 8

4.0 RESULTS 10

4.1 Field Observations 10
4.2 Analytical Results 10

5.0 CONCLUSIONS 12

6.0 REFERENCES 13

APPENDICES

APPENDIX A – FIGURES

Figure 1 – Topographical Map
Figure 2 – Study Area Map
Figure 3 – Lead, BaP TEQ, and Benzo(a)pyrene Results Map – Collegeville
Figure 4 – Lead, BaP TEQ, and Benzo(a)pyrene Results Map – Harriman Park
Figure 5 – Lead, BaP TEQ, and Benzo(a)pyrene Results Map – Fairmont

APPENDIX B – TABLES

Table 1 – Summary of Samples Collected
Table 2 – Sample Logbooks and Laboratory Reports
Table 3 – Analytical Results of Surface Soil Samples
Table 4 – Summary of Cleanup Goal Exceedances

APPENDIX C – PHOTOGRAPHIC LOG

APPENDIX D – LOGBOOK NOTES

APPENDIX E – DATA VALIDATION MEMORANDUM AND LABORATORY ANALYTICAL REPORTS

EXECUTIVE SUMMARY

Oneida Total Integrated Enterprises (OTIE), Superfund Technical Assessment and Response Team (START), conducted a Removal Investigation at the 35th Avenue Superfund Site, located in Birmingham, Jefferson County, Alabama (the site). The study area for the site encompasses 2,060 residential and residential-use (childcare facilities; church playgrounds; City Parks and playgrounds; and schools) parcels located in the neighborhoods of Fairmont, Collegeville, and Harriman Park. The extent of the study area encompasses the area south of 49th Street, east of 26th Street/Highway 31, north of 27th Avenue, and west of the railroad lines. It is a mixture of residential properties surrounded by industrial facilities historically associated with limestone quarry operations, foundries, recycling, and coke and chemical manufacturing operations. Previous investigations have shown elevated levels of carcinogenic polycyclic aromatic hydrocarbons (cPAH), arsenic, and lead in surficial soils. Unless specifically identified in this report, the residential and residential-use parcels located within this boundary will be collectively referred to as "35th Avenue Site".

This removal investigation was conducted to identify the nature and extent of contamination in the surface soils of residential and residential-use parcels located within the study boundary of the site. The analytical data gathered during the investigation was used to determine whether hazardous constituents associated with historic or current operations at the site or nearby facilities have been released into the environment and pose a threat to human health and/or the environment.

The work conducted under Contract Number (No.) EP-S4-15-01, Technical Direction Document (TDD) No. 0002/OT-02-002 included surface soil sampling; however this report only summarizes the surface soil sampling activities conducted from February 18, 2014 through May 19, 2015. It focused on 19 properties where access was granted by the property owner to the United States Environmental Protection Agency (USEPA) following the completion of the November 2012 through June 2013 Emergency Response, Removal, and Protection Branch (ERRPB) Removal Investigation. Field investigation activities included the collection of composite surface soil samples (0-4 inches below ground surface) to assess whether polycyclic aromatic hydrocarbons (PAHs), arsenic, or lead require further evaluation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

START collected a total 46 surface soil samples from 39 locations (19 parcels), and submitted them to Testamerica Laboratories, Savannah, Georgia for PAH, arsenic, and lead analysis. A subset of the samples were also analyzed for aluminum and iron to assess for interferences associated with Inductively Coupled Plasma (ICP) spectrometry.

To assess the significance of the laboratory results, soil samples were compared to the Cleanup Goals established for the site. These goals were based on Region 4 Removal Management Levels (RML) for residential soil. Analytical data showed elevated levels of benzo(a)pyrene, calculated BaP TEQ, and lead in 6 locations

comprising 5 parcels. CV0799A, CV0799B, CV0824A, and CV1061A had lead concentrations of 430 milligrams per kilogram (mg/kg), 640 mg/kg, 470 mg/kg, and 500 mg/kg, respectively. CV1063B had benzo(a)pyrene (and therefore BaP equivalents) and lead at concentrations of 2.3 mg/kg and 610 mg/kg, respectively; and CV0815B was elevated for the calculated BaP equivalent value only (1.72 mg/kg).

1.0 SCOPE

1.1 OVERVIEW

Oneida Total Integrated Enterprises (OTIE), Superfund Technical Assessment and Response Team (START), was tasked by the U.S. Environmental Protection Agency (USEPA) Region 4 to perform a Removal Investigation at the 35th Avenue Superfund Site, located in Birmingham, Jefferson County, Alabama. The general purpose of a Removal Investigation is to collect information to determine whether hazardous constituents associated with historic or current operations at the site or nearby facilities have been released into the environment and pose a threat to human health and/or the environment. The scope of this removal investigation was to conduct sampling and analysis activities to identify the nature and extent of contamination in residential and residential-use properties located within the study boundary of the site. The work was conducted under Contract Number (No.) EP-S4-15-01, Technical Direction Document (TDD) No. 0002/OT-02-002.

This Interim Removal Investigation Report summarizes relevant data and findings of field investigation activities conducted by START at 19 residential and residential-use parcels from February 18, 2014 through May 19, 2015.

As part of this investigation, surface soils were sampled to assess whether polycyclic aromatic hydrocarbons (PAHs), arsenic, or lead are present at concentrations warranting further consideration under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) by the EPA Superfund Division. Soil samples were submitted to a private laboratory for low-level semivolatile organic compound (SVOC) analysis of the target compound list (TCL) polycyclic aromatic hydrocarbons (PAHs), total arsenic, and total lead. A subset of the samples were also analyzed for aluminum and iron to assess for interferences associated with Inductively Coupled Plasma (ICP) spectrometry.

The work performed under this phase of the project has consisted of START (OTIE) personnel documenting field investigation activities with logbook notes and digital photographs, collecting surface soil samples from properties where written access was granted to the USEPA Emergency Response, Removal, and Protection Branch (ERRPB), and submitting samples for laboratory analyses. All activities and procedures conducted by START were performed in accordance with the EPA Region 4 Science and Ecosystem Support Division (SESD) Field Branches Quality System and Technical Procedures (FBQSTP) and the site-specific Quality Assurance Project Plan (QAPP)/Site Sampling Plan (SSP) approved on October 18, 2012 (Refs. 1; 2).

1.2 PROJECT APPROACH

The study area for the site is a mixture of residential properties surrounded by industrial facilities historically associated with limestone quarrying, foundries, recycling, and coke and chemical manufacturing operations. It

encompasses approximately 2,060 residential and residential-use (childcare facilities; church playgrounds; City Parks and playgrounds; and schools) parcels located south of 49th Street, east of 26th Street/Highway 31, north of 27th Avenue, and west of the railroad lines (Figures 1 and 2, Appendix A).

Previous investigations at the site indicated the presence of elevated levels of carcinogenic polycyclic aromatic hydrocarbons (cPAH), arsenic, and lead in the surface soils of residential properties (see Section 2.2). The purpose of this phase of the USEPA ERRPB investigation was to determine the extent of contamination in the surface soil at 19 residential and residential-use properties not previously assessed during the 2012-2013 Removal Investigation. The analytical data gathered during this field investigation will provide USEPA with information to determine if removal actions are necessary at individual properties within the study boundary.

The project scope and objectives associated with the removal investigation at the site was detailed in a site-specific QAPP/SSP approved on September 29, 2012 (Rev. 0) and on October 18, 2012 (Rev. 1) (Ref. 2).

Figures 3, 4, and 5 presented in Appendix A illustrate the properties that were sampled during this removal field investigation.

1.3 REPORT ORGANIZATION

The site background information that guided the sampling approach is presented in Section 2. The procedures of the sampling and analyses are summarized in Section 3. Specific details on sampling and analyses for this site are provided in the QAPP/SSP (Ref. 2). The results of the sampling and analyses are provided in Section 4. Final conclusions are discussed in Section 5. References cited in the text are provided in Section 6.

Figures and summary tables are provided as Appendices A and B, respectively. A photographic log for the removal investigation is provided as Appendix C and copies of the field logbook notes are presented as Appendix D. The analytical reports generated by the laboratory, as well as the Data Validation summaries prepared by START chemists, are provided as Appendix E.

2.0 BACKGROUND

The following presents the site description, background historical information, and surrounding area descriptions used to guide selection of sample locations and analytical methodology for potential contaminants of concern.

2.1 SITE DESCRIPTION

The site encompasses three residential neighborhoods: Fairmont, Collegeville, and Harriman Park, in Birmingham, Jefferson County Alabama (Appendix A, Figures 1 and 2). The geographic coordinates for the approximate center of the site are 33.561625 North latitude and -86.802568 West longitude. The Fairmont neighborhood comprises the western portion of the site, Collegeville the southern portion, and Harriman Park the eastern portion.

Residential dwellings and the Hudson School in the Collegeville neighborhood were present in 1929 based on a review of a Sanborn Fire Insurance Map for the same year (1929, V. 9, Sheets 953 and 954). The Harriman Park neighborhood was constructed in the early 1950's based on a review of the 1951 aerial photograph of North Birmingham (CPM 6H-25). Construction of residential dwellings in the Fairmont neighborhood appear to have begun by 1951 and continued through the late 1970's.

The site lies within the Birmingham Valley District of the Alabama Valley and Ridge Physiographic section (Appendix A, Figure 1). The Birmingham Valley is bounded by Sands Mountain to the northwest and Red Mountain to the southeast. Elevations at the site range from approximately 650 feet above mean sea level (amsl) in the Fairmont neighborhood to 560 feet amsl in Harriman Park.

According to the Federal Emergency Management Agency (FEMA), a large portion of the Collegeville neighborhood is located in a 100-year flood plain (Flood Plain Panel 01073C).

2.2 SITE HISTORY

In April 2005, CH2MHill, on behalf of Sloss Industries (Sloss), conducted supplemental off-site soil sampling as part of an effort to complete Environmental Indicator (EI) determinations at the Sloss Industries facility (currently ERP Compliant Coke). One surface soil sample (0- to 2-foot interval) was collected from each of 35 properties (homes, schools, and a park) within residential areas adjacent to the facility. The analytical results showed elevated concentrations of individual cPAHs and arsenic in several soil samples. CH2MHill concluded that off-site soils were affected by benzo(a)pyrene and that the concentrations of benzo(a)pyrene decreased with increasing distance from the Sloss facility. However, because low-level PAH concentrations are anthropogenic (associated with urban environments), they recommended that background soil samples be collected from undisturbed locations, unaffected by the site, in order to assess the natural concentrations of PAHs in the general

area. They also concluded that the elevated concentrations of arsenic detected in off-site soils were generally naturally occurring (Ref. 4).

In July 2009, CH2MHill, on behalf of Walter Coke (formerly Sloss), assessed the surface soils at 65 residential properties, a Public Housing, a right-of-way, a church, a drainage ditch from the Walter Coke property to Harriman Park, an off-site Walter Coke property, and four schools (the former Carver High School, the former Hudson School, Riggins Alternative School, and the Calloway Head Start School) as part of a voluntary cooperation effort between the USEPA Resource Conservation and Recovery Act (RCRA) and Walter Coke, Inc. Results indicated that surface soils at portions of 23 of the properties exhibited benzo(a)pyrene toxicity equivalence (BaP TEQ) values exceeding 1.5 milligrams per kilogram (mg/kg) and/or sieved arsenic values exceeding 37 mg/kg (Ref. 5).

In September 2010, USEPA SESD conducted background sampling in and around the Robinwood Neighborhood in response to Walter Coke's position that the PAHs detected in residential soil samples they collected in 2005 and 2009 are the result of years of contribution from multiple sources, both non-industrial and industrial; and, in the case of arsenic, naturally occurring in the rock and soil. Twenty (20) sample locations were selected and sampled in and around the Robinwood area ranging from 4.5 to 9 miles northeast of Walter Coke. Thirteen of the locations had BaP TEQ values less than 0.1 mg/kg; four locations had BaP TEQ values between 0.1 mg/kg and 0.5 mg/kg; two locations had BaP TEQ values between 0.5 mg/kg and 1.0 mg/kg; and one location had a BaP TEQ greater than 1.0 mg/kg (1.1 mg/kg). All but one location had surface soil arsenic concentrations below 6 mg/kg (Ref. 6).

Because Hudson School was under construction during the 2009 sampling event, Walter Coke elected to resample soil at the school property in September 2010 after construction of the new school was completed. Five point composite surface soil samples were collected from 14 areas (each consisting of ¼ to ½ acre) on the new Hudson School property. Three of the 14 locations had BaP TEQ greater than 1.5 mg/kg (Ref. 7).

In January 2011, CH2MHill submitted to Walter Coke a Technical Memorandum summarizing the work to remove soils contaminated with cBaP at Riggins School and Hudson School (Ref. 8). Following receipt of School Board approvals and access, work began at Hudson School on March 10, 2011, and site restoration was completed on June 8, 2011. Approximately 52,000 cubic feet of soil were removed from the Hudson School property and replaced with imported backfill. Surface soil was removed to a depth of 2 feet bgs (Ref. 9). There is no file material available to document a removal at the Riggins School.

In June 2011, CH2MHill, on behalf of Walter Coke, submitted a Remedial Action Work Plan to remove residential surface soils identified as exceeding the USEPA's cleanup levels at 23 residential properties located within the Harriman Park and Collegeville neighborhoods pursuant to agreements reached between Walter Coke

and USEPA RCRA Region 4 (Ref. 10). Removal activities, including the excavation and replacement of soils with clean fill were completed at 16 of the 23 properties. The remaining 7 properties declined access (Ref. 11).

From November 2012 through June 2013, the surface soils of 1,116 residential and residential-use parcels were sampled as part of the EPA ERRPB Removal Investigation. Sampling was conducted to identify the nature and extent of contamination in the surface soils (0-4 inches bgs) of parcels located within the study boundary of the site. A total 3,160 (2,976 composite and 184 grab) surface soil samples were collected primarily for PAH and RCRA metals analysis. Field samples were screened ex situ for RCRA metals concentrations using a Niton XL3t X-Ray Fluorescence (XRF) instrument to efficiently identify properties with elevated concentrations in soil. A portion of 1,823 field samples were sieved using a 2-millimeter sieve, and screened in order to assess the lead uptake of the contamination. Of the 3,160 soil samples collected, all but three were analyzed TCL PAH. XRF field screening results and laboratory analytical data showed arsenic and/or lead concentrations exceeding the Removal Management Levels (RMLs) dated July 2012 for direct contact with residential soil in 450 locations in 324 parcels. Analytical data show elevated levels of PAHs, primarily benzo(a)pyrene, at concentrations exceeding the RML of 1.5 mg/kg in 145 locations in 102 parcels (Ref. 3).

On September 25, 2013, EPA issued an Action Memorandum documenting a proposed TCRA at the 35th Avenue Site (Ref. 12). The proposed action included excavation of contaminated soils up to 12 inches bgs at those parcels that far exceed the RML (last update: December 2012). A second Action Memorandum was issued on March 12, 2014 that identified an amended scope of work to allow for an expanded lateral and vertical excavation of contaminated soil to a maximum excavation depth up to 24 inches bgs. The purpose for the amendment was to minimize disruption of impacted community members while optimizing use of government resources (Ref. 13).

No other previous investigations are documented in the available file material.

2.3 REGIONAL GEOLOGY

The site is located within the Valley and Ridge physiographic province of the State. More specifically, the site is within the Birmingham-Big Canoe Valley District with elevations ranging from approximately 500 feet in Jefferson County to approximately 600 feet in neighboring St. Clair County. The geology and physiography of this province is quite complex because the region was strongly affected by large-scale tectonic activity during the Appalachian orogeny. The site is in the Appalachian fold and thrust belt, consisting of shallow marine to deltaic Paleozoic sedimentary strata deposited on a continental platform. Regionally, strata generally strike to the northeast-southwest with southeast dip. Across strike, the fold and thrust belt is characterized by folds associated with large thrust-fault ramps. Regionally, the ridges dividing the valleys and the rock types that cap them are as follows: Weisner ridges, quartzite; western edge of the Northern Piedmont, slate; Cahaba ridges, sandstone and

conglomerate; and Blount Mountain, sandstone. These rocks are highly resistant to weathering, are not significantly faulted, and are relatively impermeable (Ref. 14).

2.4 HYDROGEOLOGY

The site is underlain by the Valley and Ridge aquifer system. The Valley and Ridge aquifer system is comprised of aquifers consisting of limestone, sandstone, and fractured rock that are exposed in valleys and separated by ridges. The complex geologic structure of the area has caused regional discontinuity of rock units so major aquifers or aquifer systems are not continuous. A given major aquifer may be present in adjacent valleys; however, the two valleys may not be hydraulically connected due to faulting or folding. The water-bearing formation within the aquifer system at the site is the Conasauga Formation. Limestone of the Conasauga Formation in the Birmingham-Big Canoe Valley yields substantial amounts of water where the dominantly calcareous and steeply dipping strata contain well-developed dissolution channels. Groundwater flow is primarily from the higher altitudes adjacent to the ridges toward the center of the valleys. In addition, ground water moves "down valley" in the direction of streamflow. Groundwater recharge is through the infiltration of precipitation, mostly rain supplemented by occasional snow. Most other rock units of Cambrian to Devonian age are included within the Valley and Ridge aquifer system because they do not form effective barriers to ground water movement among permeable units of the Valley and Ridge aquifer system. However, these other units also are not significant sources of ground water (Ref 14).

3.0 CHARACTERIZATION METHODS AND PROCEDURES

The following sections describe the field investigation activities, data analyses, and data validation procedures used to obtain the results of this Removal Investigation. A photographic log and logbook notes are included in Appendix C and Appendix D, respectively. A complete copy of the laboratory analytical results and the data validation reports for each data package, are provided in Appendix E.

3.1 SAMPLE LOCATION DETERMINATION

The Interim Removal Investigation included sampling of 19 residential and residential-use parcels located within the study boundary where written access had been granted to the USEPA by the property owner. Composite surface soil samples (0 to 4 inches below ground surface [bgs]) were collected based on the parcel size, as indicated by the Jefferson County Tax Assessor's Office. For residential properties with a total parcel lot size equal to or less than (≤) 5,000 square feet - the front yard and back yards of each property were sampled. For residential properties with a total parcel lot size greater than (>) 5,000 square feet and ≤ ¼- acre - the property was divided into two roughly equal surface areas and each area was sampled. Residential properties over ¼-acre in parcel lot size were divided into ¼-acre sections and each section was sampled. An additional composite soil sample was also collected from the properties with substantial side yards (primarily corner lots). Paved areas, soil under stationary fixed structures, and areas influenced with drip lines and burn areas were not sampled.

Each field sampling team used a Trimble® Global Positioning System (GPS) instrument equipped with ESRI ArcMap® to identify the parcel boundary for each property investigated. The sample location coordinates (in decimal degree format) for all soil aliquots were collected and recorded using a Trimble® GPS instrument. The exact number of aliquots per sample was determined in the field based on sampling area size but did not exceed five points. Geographic coordinates for one of the aliquots for each sampling location are presented in Appendix B, Table 1.

3.2 GENERAL SAMPLE COLLECTION PROCEDURES

From February 18, 2014 through May 19, 2015, START field team personnel collected a total of 46 composite surface soil samples from 19 parcels at the site. A summary of the samples collected and the analyses performed is presented in Table 1 provided in Appendix B. Figures 3 to 5 presented in Appendix A show the parcels sampled as part of this investigation. All field observations and descriptions were recorded in the logbook (Appendix D).

Sampling was conducted in accordance with the site-specific QAPP/SSP (Ref. 2). All surface soil samples were collected from the 0 to 4 inches bgs depth interval. Where encountered, sod or grass turf was first scraped off

with a flat shovel prior to sampling. Sampling jars and bags were filled with the minimum soil volume needed to conduct the necessary analysis. Any remaining sample volume, and scraped sod or grass turf, was returned to the individual aliquot points.

3.3 SAMPLE ANALYSES

All soil samples were submitted to TestAmerica Laboratories, Inc. of Savannah, Georgia, a NELAC Institute certified laboratory, for total arsenic, total lead, and low-level PAH analysis. One sample, CV0815A-CS-0-4", was initially analyzed in August 2014 for metals only. It was resampled in May 2015 (labeled CV0815A-CS0-4") and analyzed for both metals and PAH. Finally, in order to assess the effect of aluminum and iron on ICP lead and arsenic analysis, 22 samples were analyzed for total aluminum and iron.

The laboratory project numbers for each of the samples analyzed by analysis is presented in Table 2 provided in Appendix B.

3.4 DATA QUALITY

The data were reviewed by START in general accordance with the USEPA "Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Organic Methods Data Review" dated October 1999, USEPA CLP NFG for Low Concentration Organic Methods Data Review dated June 2001, and USEPA CLP NFG for Inorganic Data Review dated October 2004. Sample results were qualified based on the results of the data review. Criteria for acceptability of data were based upon available site information, analytical method requirements, guidance documents, and professional judgment.

Organic data validation consisted of a review of holding times, instrument performance checks, initial and continuing calibrations, surrogate recoveries, blank results, matrix spike and matrix spike duplicate (MS/MSD) results, laboratory control sample (LCS) results, internal standard response, and target compound identification and quantitation.

Inorganic data validation consisted of a review of holding times, initial and continuing calibrations, blank results, inductively coupled plasma interference check sample results, LCS results, post digestion spike results, serial dilution results, duplicate sample results, MS/MSD results, and sample result quantitation.

Aluminum and iron were added to the analyte list for the samples collected from August 2014 through November 2014 because SESD was concerned with the well-known spectral line interference when using Inductively Coupled Argon Plasma Emission Spectrometer (ICAP) analysis caused by large amounts of naturally occurring iron and aluminum with transition metals such as arsenic and lead. This is a greater concern where only the "axial view" is utilized with trace analysis. Axial viewing allows for greater signal to noise ratio sensitivity near the

limit of detection (LOD). Modern ICAP instrumentation uses a duo view (both radial and axial viewing) that largely eliminates spectral emission line interferences when operated by a competent analyst. As the values for both arsenic and lead Cleanup Goals are an order of magnitude above their respective LODs, aluminum and iron were shown to have no affect as far as the 35th Avenue Superfund Site is concerned, and the analysis of aluminum and iron was subsequently eliminated for the samples collected in May 2015.

Overall, the sample analytical data generated by TestAmerica is acceptable for use as qualified by START chemists based on criteria for acceptability of data described in the CLP NFG, analytical methods, guidance documents, and professional judgement. Electronic copies of the START Data Validation Memos prepared for each of the packaged are included in Appendix E.

4.0 RESULTS

The following sections summarize the field investigation results. For comparative purposes analytical results were compared to Cleanup Goals established for the site based on the December 2013 Region 4 RMLs for direct contact with residential soil. RMLs are generic risk-based levels derived from equations combining exposure assumptions with chemical-specific toxicity values. They are provided for multiple exposure pathways and for chemicals with both carcinogenic and noncarcinogenic effects. RMLs correspond to either a 10-4 risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens. For this project, EPA ERRPB used the RMLs (December 2013 Update) to assist them in identifying properties where further action may be necessary.

To simplify PAH evaluation, the benzo(a)pyrene (BaP) equivalent was also calculated. It is based on the EPA 1993 toxicity equivalency factors and the concentrations of the seven individual cPAHs. The BaP equivalent calculation is based on a BaP toxicity equivalence factor multiplied by the concentration of the PAH for each of the following seven carcinogenic PAHs:

BaP equivalents = (0.1) benzo(a)anthracene + (1.0) benzo(a)pyrene + (0.1)benzo(b)fluoranthene + (0.01) benzo(k)fluoranthene + (0.001)chrysene + (0.1) indeno(1,2,3-cd)pyrene

BaP equivalent values were compared against the Cleanup Goal for benzo(a)pyrene.

4.1 FIELD OBSERVATIONS

Detailed descriptions of the field observations are provided on the logbook notes located in Appendix D. Although this data does not necessarily confirm the presence or absence of contamination, in conjunction with the results of laboratory testing, it can be used to help determine the extent of contamination that may need to be addressed.

4.2 ANALYTICAL RESULTS

A total of 46 soil samples (40 field samples and 6 field duplicates) were submitted to laboratory for low-level PAH analysis and arsenic/lead analysis. Laboratory analytical results for soil samples are provided in Table 3 located in Appendix B. Full analytical data packages are provided in Appendix E.

All samples except CV0815A-CS-0-4", had at a minimum of one PAH compound detected. cPAH compounds detected included benzo(a)anthracene in 38 samples at concentrations ranging from 0.086 mg/kg to 2.8 mg/kg, benzo(a)pyrene in 44 samples at concentrations ranging from 0.024J mg/kg to 2.3 mg/kg, benzo(b)fluoranthene in 44 samples at concentrations ranging from 0.038J mg/kg to 3.1 mg/kg, benzo(k)fluoranthene in 40 samples at concentrations ranging from 0.046J mg/kg to 1.4 mg/kg, chrysene in 44 samples at concentrations ranging from

0.036J mg/kg to 2.9 mg/kg, dibenz(a,h)anthracene in 21 samples at concentrations ranging from 0.04J mg/kg to 0.55 mg/kg, and indeno(1,2,3-cd)pyrene in 32 samples at concentrations ranging from 0.051J mg/kg to 1.4 mg/kg.

All of the samples collected had detected concentrations of arsenic and lead. Arsenic concentrations ranged from 5.1 mg/kg to 55 mg/kg, and lead concentrations ranged from 31 mg/kg to 640 mg/kg.

Compounds detected in soil samples at concentrations exceeding the associated Cleanup Goal included benzo(a)pyrene, the calculated BaP equivalent, and lead. Benzo(a)pyrene was detected in one sample (CV1063B-CS0-4") at a concentration of 2.3 mg/kg exceeding the Cleanup Goal of 1.5 mg/kg. The calculated BaP equivalent exceeded the Cleanup Goal of 1.5 mg/kg in two samples, CV0815B-CS-0-4" and CV1063B-CS0-4". Lead was detected in five samples (CV0799A-CSD, CV0799B-CS, CV0824A-CS0-4", CV1061A-CS0-4", and CV1063B-CS0-4") at concentrations above the Cleanup Goal of 400 mg/kg. Table 4 located in Appendix B summarizes the Cleanup Goal exceedance results.

5.0 CONCLUSIONS

Soil sampling events in support of a removal investigation were performed at the site from February 18, 2014 through May 19, 2015. Sampling was conducted at 19 residential and residential-use parcels where access was granted by the property owner to the United States Environmental Protection Agency (USEPA) following the completion of the November 2012 through June 2013 Emergency Response, Removal, and Protection Branch (ERRPB) Removal Investigation. Field investigation activities included the collection of composite surface soil samples (0-4 inches bgs) to assess whether PAHs, arsenic, and/or lead were present at concentrations warranting federal intervention under the CERCLA.

A total of 46 soil samples (40 field samples and 6 field duplicates) were collected from 39 locations. Analytical data show elevated levels of benzo(a)pyrene, BaP equivalents, and lead in 6 locations comprising 5 parcels. CV0799A, CV0799B, CV0824A, and CV1061A had lead at 430 mg/kg, 640 mg/kg, 470 mg/kg, and 500 mg/kg, respectively. CV1063B had benzo(a)pyrene (and therefore BaP equivalents) and lead at concentrations of 2.3 mg/kg and 610 mg/kg, respectively. CV0815B was elevated for the calculated BaP equivalent value only (1.72 mg/kg).

Further activities at the site will be determined by the USEPA.

6.0 REFERENCES

1. United States Environmental Protection Agency (USEPA) Science and Ecosystem Support Division (SESD). Field Branches Quality Systems and Technical Procedures. Last Update October 2013.

2. Oneida Total Integrated Enterprises (OTIE). Quality Assurance Project Plan. Phase I Removal Properties Subsurface Soil Sampling Event, Revision 0. 35th Avenue Removal Site. January 14, 2014

3. OTIE. Removal Investigation Report. Revision 0. 35th Avenue Superfund Site. December 31, 2013.

4. CH2MHill. Consolidated Overview of Environmental Data in Support of the Environmental Indicator Determination. Sloss Industries, Birmingham, Alabama. July 2005

5. CH2MHill. Residential Sampling Report. Walter Coke, Inc., Birmingham, Alabama. December 2009, Revised May 2011.

6. USEPA SESD. Sampling Investigation Report for Walter Energy, Inc. (a.k.a. Walter Coke and Sloss Industries). Final Report Revision 1. February 10, 2011.

7. CH2MHill. Technical Memorandum. Prepared for Walter Coke, Inc., Birmingham, Alabama. 2010 Surface Soil Sampling - Hudson School. September 28, 2010

8. CH2MHill. Technical Memorandum – Prepared for Walter Coke, Inc., Birmingham, Alabama. Voluntary Cleanup Procedures for Riggins School (Fairmont) & Hudson School (Collegeville). January 13, 2011

9. CH2MHill. Technical Memorandum – Prepared for Walter Coke, Inc., - Birmingham, Alabama. Hudson School (Collegeville) Voluntary Cleanup Report. June 17, 2011.

10. CH2MHill. Residential Soil Remedial Action Work Plan-Phase 1. Walter Coke, Inc., Birmingham, Alabama. May 2011, Revised June 2011.

11. Walter Coke Energy, Inc. Residential Soil Remedial Action Work Plan Progress Report #2. August 19, 2011.

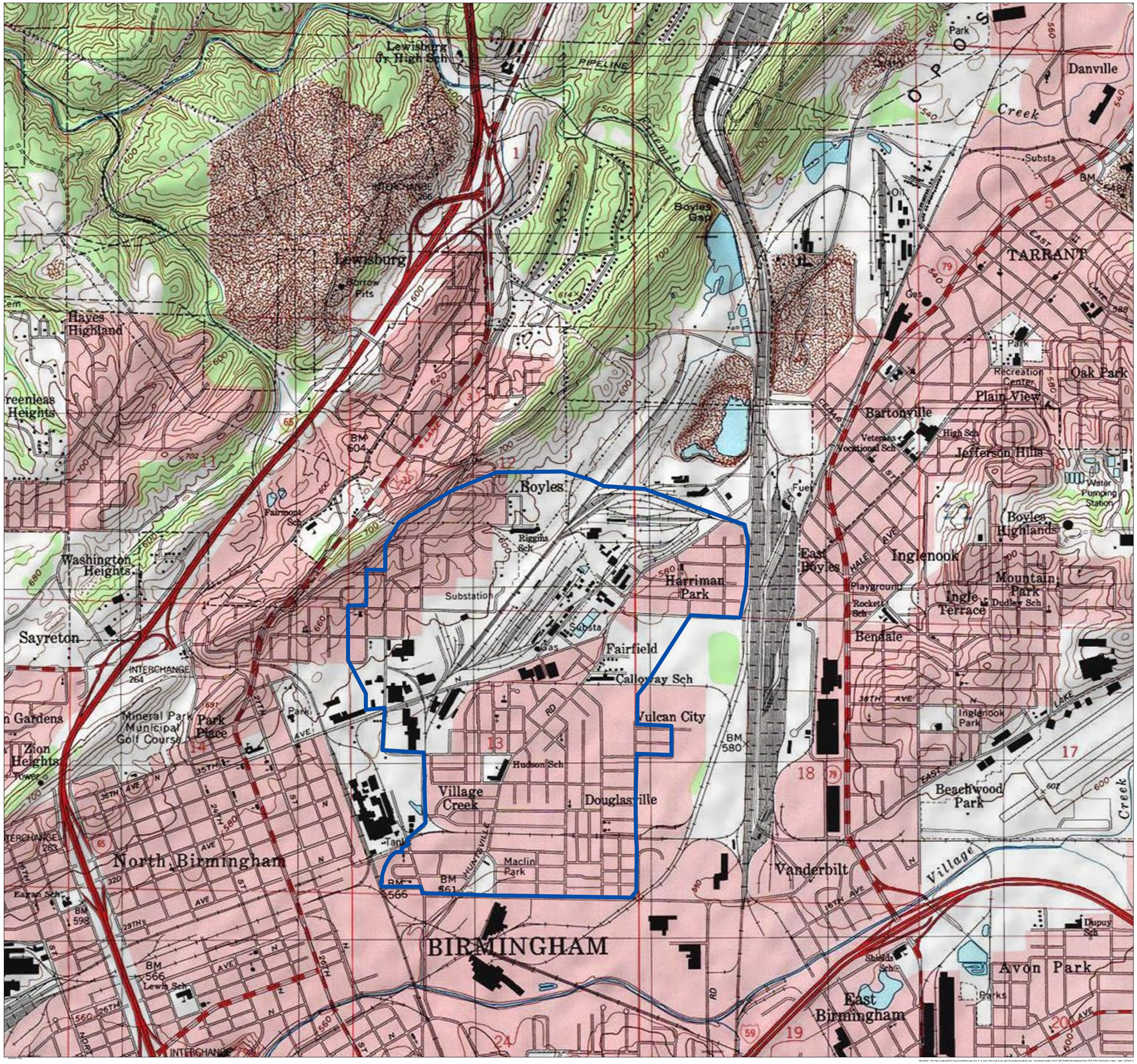
12. Action Memorandum. Request for a Time-Critical Removal Action at 35th Avenue Site, Birmingham, AL. From: Richard L. Jardine, On Scene Coordinator, EPA Emergency Response, Removal, and Protection Branch (ERRPB). To: Franklin E. Hill, Director, EPA Superfund Division. September 25, 2013

13. Action Memorandum. Amended Scope for the Time-Critical Removal Action at 35th Avenue Site, Birmingham, AL. From: Richard L. Jardine, On Scene Coordinator, EPA ERRPB. To: Franklin E. Hill, Director, EPA Superfund Division. March 12, 2014.

14. Geological Survey of Alabama. Hydrogeology and Vulnerability to Contamination of Major Aquifers in Alabama: Area 4. Circular 199D. 2005.

APPENDIX A

FIGURES

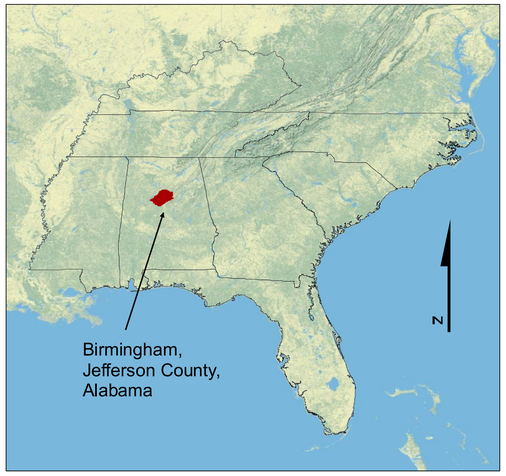


Legend

Study Area

Notes:
USGS Topo Quad. 1:24,000 scale of
Quad Birmingham North Date published: 1978.
Quad ID: 33086-E7

Feet
0 1,850 3,700

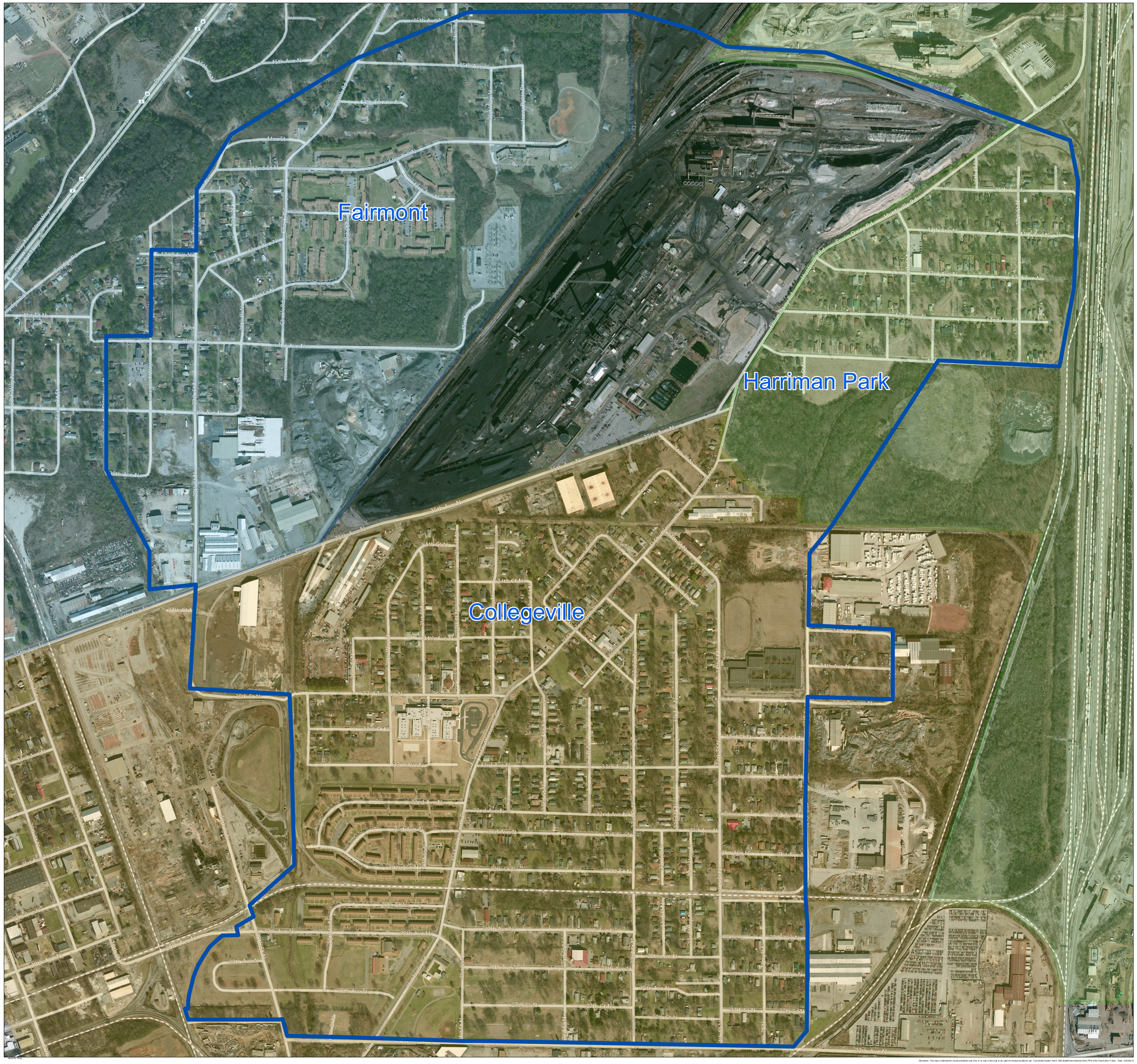


United States Environmental Protection Agency

35TH AVENUE SUPERFUND SITE
BIRMINGHAM,
JEFFERSON COUNTY,
ALABAMA
TDD No. 0002/OT-02-002

FIGURE 1
TOPOGRAPHICAL MAP

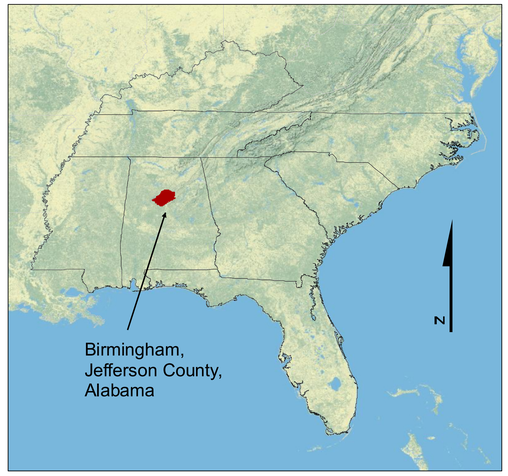
OTIE
An Oneida Nation Company



Legend

- Study Area
- Fairmont
- Collegeville
- Harriman Park

Feet
0 750 1,500

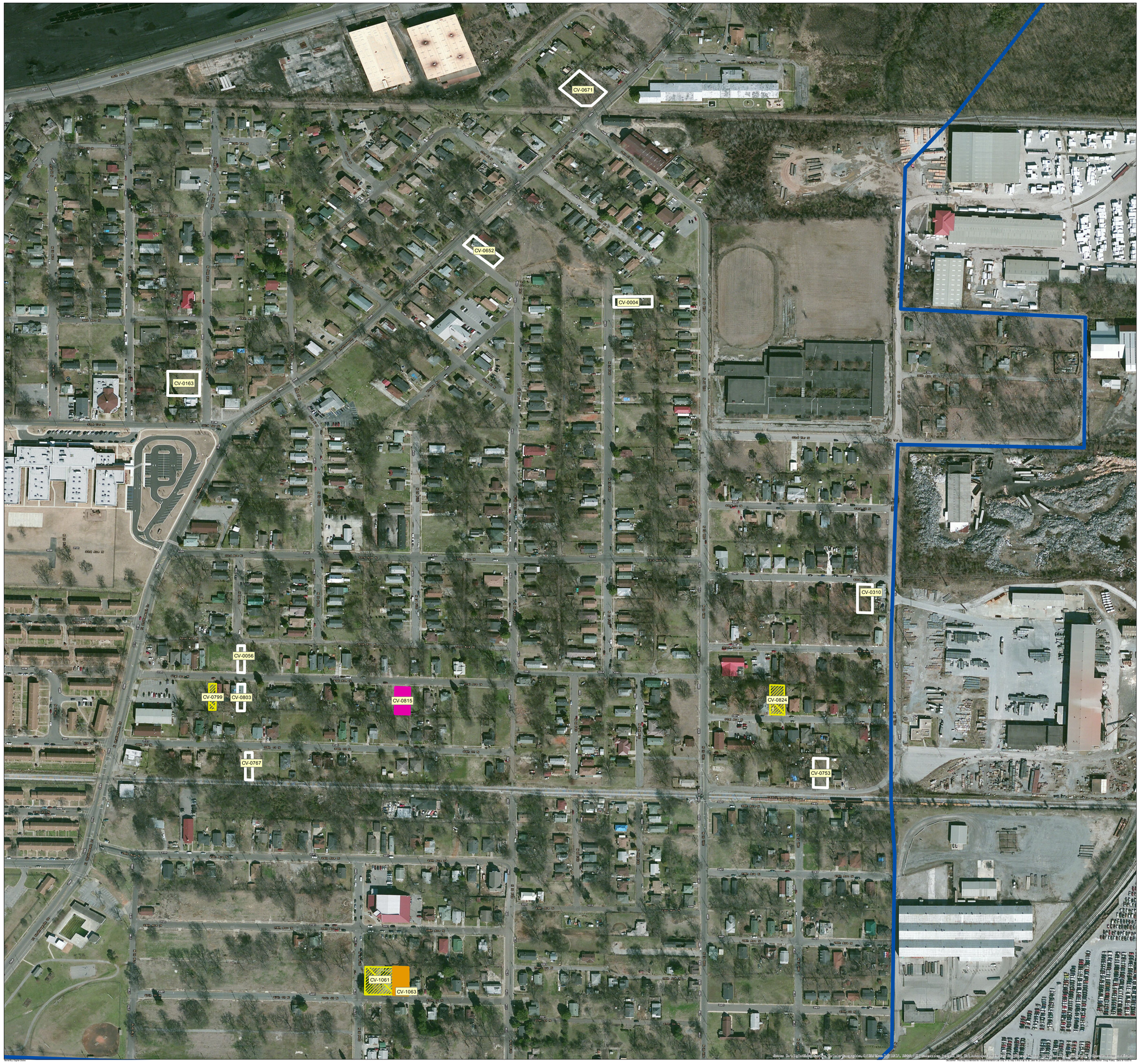


United States Environmental Protection Agency

35TH AVENUE SUPERFUND SITE
BIRMINGHAM,
JEFFERSON COUNTY,
ALABAMA
TDD No. 0002/OT-02-002

FIGURE 2
STUDY AREA MAP

OTIE
An Oneida Nation Company



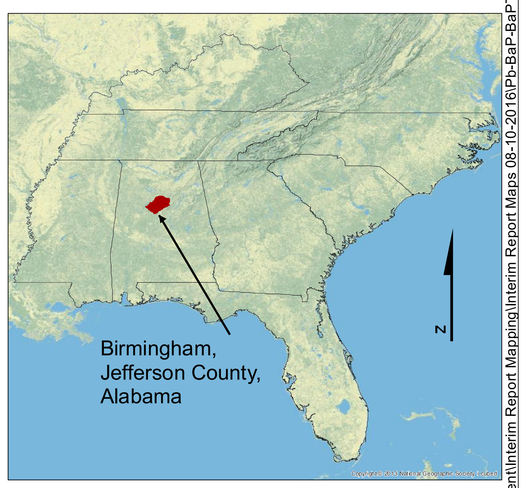
Legend

- BaP TEQ Exceedance
- Benzo(a)pyrene, BaP TEQ, and Lead Exceedance
- Lead Exceedance
- Sampled Parcel
- EPA Study Line

Note: Exceedance level is based on the Cleanup Goal
Benzo[a]pyrene Cleanup Goal = 1.5 milligrams per kilogram (mg/kg).
BaP TEQ Cleanup Goal =1.5 mg/kg
Lead Cleanup = 400 mg/kg

BaP TEQ - Benzo(a)pyrene Toxic Equivalence Quotient

Feet
0 425 850



35TH AVENUE SUPERFUND SITE
BIRMINGHAM
JEFFERSON COUNTY
ALABAMA
TDD NO. 0002/OT-02-002

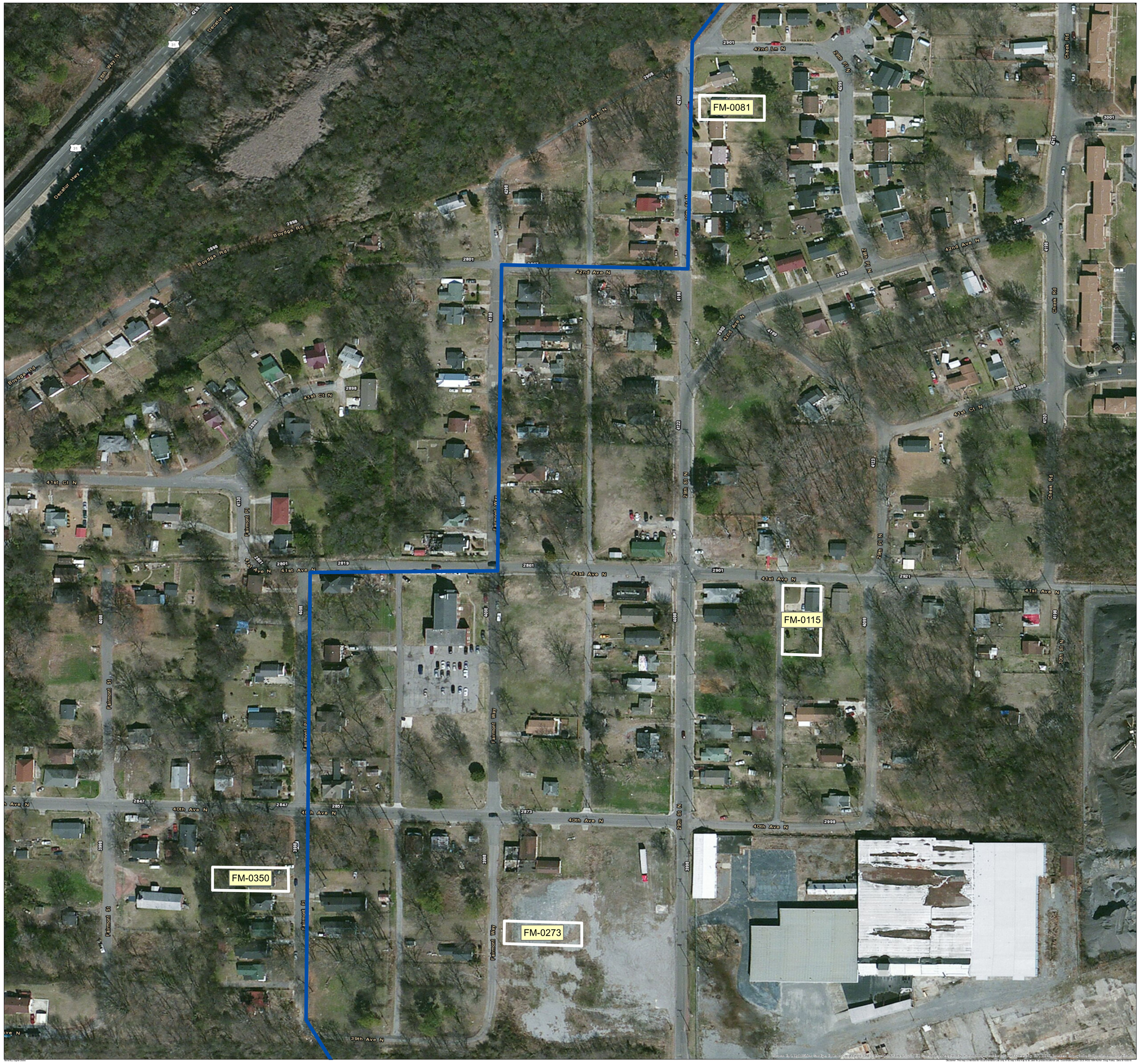
FIGURE 3
LEAD, BaP TEQ, AND
BENZO(A)PYRENE SAMPLING

RESULTS MAP
COLLEGEVILLE

United States Environmental Protection Agency

OTIE
An Oneida Nation Company

Path: F:\GIS_Workspace\Walter Coke Removal AKA 35th Ave Coke 2014076-1006\Walter Coke Sampling Event\Interim Report Maps 08-10-2016\Pb-BaP-BaPTEQ Sample Results Parcels_Collegeville 08-10-2016.mxd

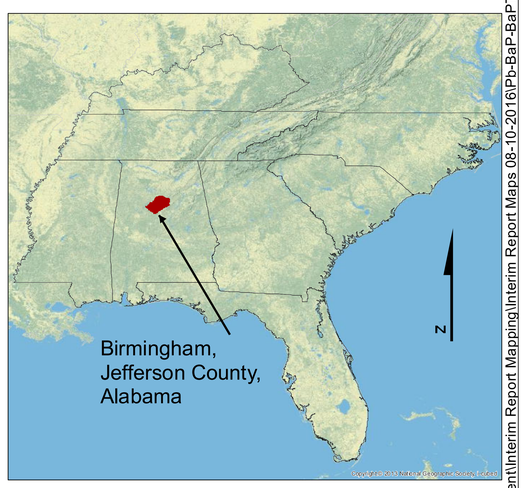


Legend

Sampled Parcel

EPA Study Line

Feet
0 200 400



35TH AVENUE SUPERFUND SITE
BIRMINGHAM
JEFFERSON COUNTY
ALABAMA
TDD NO. 0002/OT-02-002

FIGURE 4
LEAD, BaP TEQ, AND
BENZO(A)PYRENE SAMPLING

RESULTS MAP
FAIRMONT

United States Environmental Protection Agency

OTIE
An Oneida Nation Company

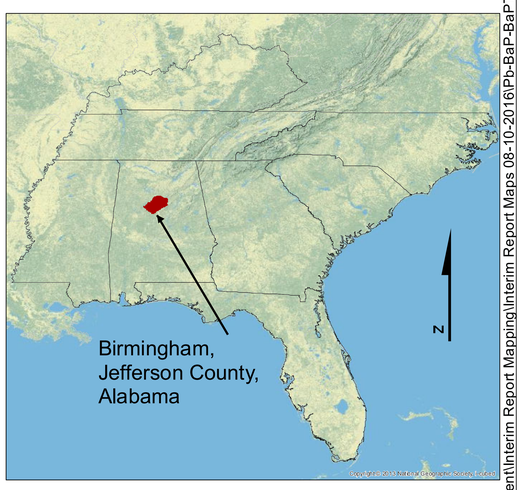
Path: F:\GIS Workspace\Walter Coke Removal AKA 35th Ave Coke 20140076-1006\Walter Coke Sampling Event\Interim Report Maps 08-10-2016\Pb-BaP-BaPTEQ Sample Results Parcels Fairmont 08-10-2016.mxd

Legend

Sampled Parcel

EPA Study Line

Feet
0 220 440



35TH AVENUE SUPERFUND SITE
BIRMINGHAM
JEFFERSON COUNTY
ALABAMA
TDD NO. 0002/OT-02-002

FIGURE 5
LEAD, BaP TEQ, AND
BENZO(A)PYRENE SAMPLING

RESULTS MAP
HARRIMAN PARK

United States Environmental Protection Agency

OTIE
An Oneida Nation Company

Path: F:\GIS Workspace\Walter Coke Removal AKA 35th Ave Coke 2014076-1006\Walter Coke Sampling Event\Interim Report Mapping\Interim Report Maps 08-10-2016\Pb-BaP-BaPTEQ Sample Results Parcels Hairriman Park 08-10-2016.mxd

APPENDIX B

TABLES

TABLE 1
35th AVENUE SUPERFUND SITE
SUMMARY OF SAMPLES COLLECTED

Location	Latitude	Longitude	Sample Date	Sample Number	Sample Collection	Aliquots	Sample Type	Sub Location	LLPAH (8270D)	As, Pb (6010C)	Al, Fe (6010C)
CV0004A	33.55838200000	-86.79936900000	8/18/2014	CV0004A-CS4"	Comp.	3	Field Sample	Front Yard	X	X	X
CV0004B	33.55838800000	-86.79906500000	8/18/2014	CV0004B-CS4"	Comp.	3	Field Sample	Back Yard	X	X	X
CV0056A	33.56727800000	-86.81137000000	4/23/2014	CV0056A-CS	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0056B	33.56728500000	-86.81110700000	4/23/2014	CV0056B-CS	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0163A	33.55738200000	-86.80430300000	8/18/2014	CV0163A-CS4"	Comp.	5	Field Sample	Vacant Lot	X	X	X
CV0163B	33.55750400000	-86.80428600000	8/18/2014	CV0163B-CS4"	Comp.	5	Field Sample	Vacant Lot	X	X	X
CV0310A	33.55515400000	-86.79650300000	5/19/2015	CV0310A-CS0-4"	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0310B	33.55501100000	-86.79659500000	5/19/2015	CV0310B-CS0-4"	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0652A	33.55914700000	-86.80103000000	2/19/2014	CV0652A-CS	Comp.	5	Field Sample	Front/Side Yard	X	X	
CV0652A	33.55914700000	-86.80103000000	2/19/2014	CV0652A-CSD	Comp.	5	Field Duplicate	Front/Side Yard	X	X	
CV0652B	33.55895700000	-86.80080300000	2/19/2014	CV0652B-CS	Comp.	5	Field Sample	Back Yard	X	X	
CV0671A	33.56096800000	-86.79979400000	2/18/2014	CV0671A-CS-SP	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0671B	33.56066500000	-86.79967000000	2/18/2014	CV0671B-CS-SP	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0671C	33.55752400000	-86.80430400000	2/18/2014	CV0671C-CS-SP	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0753A	33.55293500000	-86.79704400000	10/7/2014	CV0753A-CS (0-4")	Comp.	5	Field Sample	Vacant Lot	X	X	X
CV0753A	33.55293500000	-86.79704400000	10/7/2014	CV0753A-CSD (0-4")	Comp.	5	Field Duplicate	Vacant Lot	X	X	X
CV0753B	33.55309100000	-86.79701600000	10/7/2014	CV0753B-CS (0-4")	Comp.	5	Field Sample	Vacant Lot	X	X	X
CV0767A	33.55322400000	-86.80354300000	2/18/2014	CV0767A-CS-SP	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0799A	33.55403200000	-86.80399200000	4/23/2014	CV0799A-CS	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0799A	33.55403200000	-86.80399200000	4/23/2014	CV0799A-CSD	Comp.	5	Field Duplicate	Vacant Lot	X	X	
CV0799B	33.55389500000	-86.80398900000	4/23/2014	CV0799B-CS	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0803A	33.55403200000	-86.80368800000	4/23/2014	CV0803A-CS	Comp.	3	Field Sample	Front Yard	X	X	
CV0803B	33.55379700000	-86.80363400000	4/23/2014	CV0803B-CS	Comp.	5	Field Sample	Back Yard	X	X	
CV0815A	33.55393200000	-86.80185200000	8/25/2014	CV0815A-CS-0-4''	Comp.	5	Field Sample	Vacant Lot		X	X
CV0815B	33.55380600000	-86.80184800000	8/25/2014	CV0815B-CS-0-4''	Comp.	5	Field Sample	Vacant Lot	X	X	X
CV0815A	33.55393200000	-86.80185200000	5/18/2015	CV0815A-CS0-4"	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0824A	33.55370200000	-86.79758100000	5/18/2015	CV0824A-CS0-4"	Comp.	5	Field Sample	Vacant Lot	X	X	
CV0824A	33.55370200000	-86.79758100000	5/18/2015	CV0824A-CSD0-4"	Comp.	5	Field Duplicate	Vacant Lot	X	X	
CV0824B	33.55386100000	-86.79757700000	5/18/2015	CV0824B-CS0-4"	Comp.	5	Field Sample	Vacant Lot	X	X	
CV1061A	33.55052100000	-86.80193800000	11/13/2014	CV1061A-CS0-4"	Comp.	5	Field Sample	Front/Side Yard	X	X	X
CV1061B	33.55063200000	-86.80219600000	11/13/2014	CV1061B-CS0-4"	Comp.	5	Field Sample	Side Yard	X	X	X
CV1063A	33.55051500000	-86.80178600000	11/13/2014	CV1063A-CS0-4"	Comp.	5	Field Sample	Front/Side Yard	X	X	X
CV1063A	33.55051500000	-86.80178600000	11/13/2014	CV1063A-CSD0-4"	Comp.	5	Field Duplicate	Front/Side Yard	X	X	X
CV1063B	33.55073600000	-86.80185100000	11/13/2014	CV1063B-CS0-4"	Comp.	5	Field Sample	Back Yard	X	X	X
FM0081A	33.56731600000	-86.81141100000	4/1/2014	FM0081A-CS	Comp.	5	Field Sample	Front Yard	X	X	
FM0081B	33.56733400000	-86.81116400000	4/1/2014	FM0081B-CS	Comp.	5	Field Sample	Back Yard	X	X	
FM0115A	33.56433200000	-86.81081400000	2/19/2014	FM0115A-CS	Comp.	4	Field Sample	Front Yard	X	X	
FM0115B	33.56400400000	-86.81068400000	2/19/2014	FM0115B-CS	Comp.	5	Field Sample	Back Yard	X	X	

TABLE 1
35th AVENUE SUPERFUND SITE
SUMMARY OF SAMPLES COLLECTED

Location	Latitude	Longitude	Sample Date	Sample Number	Sample Collection	Aliquots	Sample Type	Sub Location	LLPAH (8270D)	As, Pb (6010C)	Al, Fe (6010C)
FM0273A	33.56234400000	-86.81255400000	2/20/2014	FM0273A-CS	Comp.	3	Field Sample	Vacant Lot	X	X	
FM0350A	33.56260900000	-86.81389100000	8/19/2014	FM0350A-CS4"	Comp.	5	Field Sample	Front Yard	X	X	X
FM0350A	33.56260900000	-86.81389100000	8/19/2014	FM0350A-CSD4"	Comp.	5	Field Duplicate	Front Yard	X	X	X
FM0350B	33.56264400000	-86.81421300000	8/19/2014	FM0350B-CS4"	Comp.	5	Field Sample	Back Yard	X	X	X
FM0350C	33.56256500000	-86.81401400000	8/19/2014	FM0350C-CS4"	Comp.	3	Field Sample	Side Yard	X	X	X
FM0350D	33.56269600000	-86.81397200000	8/19/2014	FM0350D-CS4"	Comp.	3	Field Sample	Side Yard	X	X	X
HP0082A	33.56515000000	-86.79549300000	9/4/2014	HP0082A-CS4	Comp.	5	Field Sample	Vacant Lot	X	X	X
HP0082B	33.56534900000	-86.79548000000	9/4/2014	HP0082B-CS4	Comp.	5	Field Sample	Vacant Lot	X	X	X

Notes:

(####) - SW846-Methodology
Al, Fe - Aluminum and iron analysis
As, Pb - Arsenic and lead analysis
LLPAH - Low-level semivolatile organic compound analysis

TABLE 2
35th AVENUE SUPERFUND SITE
SAMPLE LOGBOOKS AND LABORATORY REPORTS

Location	Sample Number	Logbook	Lab SDG	LLPAH (8270D)	As, Pb (6010C)	Al, Fe (6010C)
CV0004A	CV0004A-CS4"	LB00104	680-104534-01	X	X	X
CV0004B	CV0004B-CS4"	LB00104	680-104534-01	X	X	X
CV0056A	CV0056A-CS	LB00100	680-100786-01	X	X	
CV0056B	CV0056B-CS	LB00100	680-100786-01	X	X	
CV0163A	CV0163A-CS4"	LB00104	680-104534-01	X	X	X
CV0163B	CV0163B-CS4"	LB00104	680-104534-01	X	X	X
CV0310A	CV0310A-CS0-4"	LB00119	680-112846-01	X	X	
CV0310B	CV0310B-CS0-4"	LB00119	680-112846-01	X	X	
CV0652A	CV0652A-CS	LB00098	680-98824-01	X	X	
CV0652A	CV0652A-CSD	LB00098	680-98824-01	X	X	
CV0652B	CV0652B-CS	LB00098	680-98824-01	X	X	
CV0671A	CV0671A-CS-SP	LB00098	680-98824-01	X	X	
CV0671B	CV0671B-CS-SP	LB00098	680-98824-01	X	X	
CV0671C	CV0671C-CS-SP	LB00098	680-98824-01	X	X	
CV0753A	CV0753A-CS (0-4")	LB00108a	680-106200-03	X	X	X
CV0753A	CV0753A-CSD (0-4")	LB00108a	680-106200-03	X	X	X
CV0753B	CV0753B-CS (0-4")	LB00108a	680-106200-04	X	X	X
CV0767A	CV0767A-CS-SP	LB00098	680-98824-01	X	X	
CV0799A	CV0799A-CS	LB00100	680-100786-01	X	X	
CV0799A	CV0799A-CSD	LB00100	680-100786-01	X	X	
CV0799B	CV0799B-CS	LB00100	680-100786-01	X	X	
CV0803A	CV0803A-CS	LB00100	680-100786-01	X	X	
CV0803B	CV0803B-CS	LB00100	680-100786-01	X	X	
CV0815A	CV0815A-CS-0-4''	LB00105	680-104727-01		X	X
CV0815A	CV0815A-CS0-4"	LB00119	680-112846-01	X	X	
CV0815B	CV0815B-CS-0-4''	LB00105	680-104727-01	X	X	X
CV0824A	CV0824A-CS0-4"	LB00119	680-112846-01	X	X	
CV0824A	CV0824A-CSD0-4"	LB00119	680-112846-01	X	X	
CV0824B	CV0824B-CS0-4"	LB00119	680-112846-01	X	X	
CV1061A	CV1061A-CS0-4''	LB00110	680-107310-1	X	X	X
CV1061B	CV1061B-CS0-4''	LB00110	680-107310-1	X	X	X
CV1063A	CV1063A-CS0-4''	LB00110	680-107310-1	X	X	X
CV1063A	CV1063A-CSD0-4''	LB00110	680-107310-1	X	X	X
CV1063B	CV1063B-CS0-4''	LB00110	680-107310-1	X	X	X
FM0081A	FM0081A-CS	LB00099	680-100107-01	X	X	
FM0081B	FM0081B-CS	LB00099	680-100107-01	X	X	
FM0115A	FM0115A-CS	LB00098	680-98824-01	X	X	
FM0115B	FM0115B-CS	LB00098	680-98824-01	X	X	
FM0273A	FM0273A-CS	LB00098	680-98824-01 / -03	X	X	
FM0350A	FM0350A-CS4"	LB00104	680-104534-01	X	X	X
FM0350A	FM0350A-CSD4"	LB00104	680-104534-01	X	X	X
FM0350B	FM0350B-CS4"	LB00104	680-104534-01	X	X	X
FM0350C	FM0350C-CS4"	LB00104	680-104534-01	X	X	X

TABLE 2
35th AVENUE SUPERFUND SITE
SAMPLE LOGBOOKS AND LABORATORY REPORTS

Location	Sample Number	Logbook	Lab SDG	LLPAH (8270D)	As, Pb (6010C)	Al, Fe (6010C)
FM0350D	FM0350D-CS4"	LB00104	680-104534-01	X	X	X
HP0082A	HP0082A-CS4	LB00106	680-104968-02	X	X	X
HP0082B	HP0082B-CS4	LB00106	680-104968-02	X	X	X

Notes:

Al, Fe - Aluminum and iron analysis
As, Pb - Arsenic and lead analysis
LLPAH - Low-level semivolatile organic compound analysis
SDG - Sample Delivery Group

TABLE 3
35th AVENUE SUPERFUND SITE
ANALYTICAL RESULTS FOR SURFACE SOIL SAMPLES

Sample ID	Cleanup Goal[a]	CV0004A-CS4"	CV0004B-CS4"	CV0056A-CS	CV0056B-CS	CV0163A-CS4"	CV0163B-CS4"
Location ID		CV0004A	CV0004B	CV0056A	CV0056B	CV0163A	CV0163B
Parcel Number		012200131010075000	012200131010075000	012200134021020000	012200134021020000	012200131026009000	012200131026009000
Street Number		3389	3389	3128	3128	3342	3342
Street Name		33rd Pl N	33rd Pl N	31st Ave N	31st Ave N	31st Way N	31st Way N
Sublocation		Front Yard	Back Yard	Vacant Lot	Vacant Lot	Vacant Lot	Vacant Lot
Sample Date		8/18/2014	8/18/2014	4/23/2014	4/23/2014	8/18/2014	8/18/2014
Sample Type		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Collection		Comp.	Comp.	Comp.	Comp.	Comp.	Comp
PAH (mg/kg)							
1-Methylnaphthalene	1600	0.077 J	0.085 J	0.048 J	0.057 J	0.099 J	0.053 J
2-Methylnaphthalene	690	0.077 J	0.12 J	0.058 J	0.066 J	0.11 J	0.062 J
Acenaphthene	10000	0.083 UJ	0.083 UJ	0.078 U	0.08 U	0.083 UJ	0.082 UJ
Acenaphthylene	NL	0.083 UJ	0.083 UJ	0.078 U	0.08 U	0.083 UJ	0.082 UJ
Anthracene	52000	0.064 J	0.054 J-	0.078 U	0.08 U	0.083 UJ	0.082 UJ
Benzo(a)anthracene	15	0.41 J	0.24 J	0.13	0.086	0.17 J	0.22 J
Benzo(a)pyrene	1.5	0.39 J	0.22 J	0.12	0.075 J	0.17 J	0.23 J
Benzo(b)fluoranthene	15	0.66 J	0.37 J	0.19	0.14	0.28 J	0.37 J
Benzo(g,h,i)perylene	NL	0.33 J	0.16 J	0.086	0.065 J	0.16 J	0.19 J
Benzo(k)fluoranthene	150	0.26 J	0.14 J	0.064 J	0.046 J	0.13 J	0.13 J
Chrysene	1500	0.47 J	0.32 J	0.15	0.12	0.22 J	0.26 J
Dibenz(a,h)anthracene	1.5	0.097 J	0.083 UJ	0.078 U	0.08 U	0.047 J	0.082 UJ
Fluoranthene	6900	0.73 J	0.42 J	0.21	0.14	0.26 J	0.34 J
Fluorene	6900	0.083 UJ	0.083 UJ	0.078 U	0.08 U	0.083 UJ	0.082 UJ
Indeno(1,2,3-cd)pyrene	15	0.25 J	0.11 J	0.059 J	0.08 U	0.082 J	0.12 J
Naphthalene	360	0.054 J	0.1 J	0.078 U	0.039 J	0.076 J	0.061 J
Phenanthrene	NL	0.4 J	0.35 J	0.12	0.12	0.2 J	0.18 J
Pyrene	5200	0.64 J	0.39 J	0.23	0.16	0.27 J	0.34 J
BaP TEQ	1.5	0.6263	0.3381	0.19904	0.14326	0.2737	0.3459
Metals, Total (mg/kg)							
Aluminum	230000	7100	12000	NA	NA	13000	11000
Iron	160000	18000	43000	NA	NA	28000	53000
Arsenic	61	9.9	19	33	25	20	33
Lead	400	140	120	210	170	150	300

Notes:

[a] - Based on the December 2013 USEPA Removal Management Levels
BaP TEQ - Benzo(a)pyrene Toxic Equivalency Quotient
bold and shaded - Concentration exceeds the RML for residential soi
J - Value is estimated
mg/kg - Milligrams per kilogram
NA - Not analyzed
PAH - Polycyclic aromatic hydrocarbons
SQL - Sample quantitation limit
U - Analyte not detected above the associated SQL

TABLE 3
35th AVENUE SUPERFUND SITE
ANALYTICAL RESULTS FOR SURFACE SOIL SAMPLES

Sample ID	Cleanup Goal[a]	CV0268A-CS-0-4"-DUP	CV0310A-CS0-4"	CV0310B-CS0-4"	CV0652A-CS	CV0652A-CSD	CV0652B-CS
Location ID		CV0268A	CV0310A	CV0310B	CV0652A	CV0652A	CV0652B
Parcel Number		012200131025012000	012200134015002000	012200134015002000	012200131010039000	012200131010039000	012200131010039000
Street Number		3352	3445	3445	3701	3701	3701
Street Name		32nd St N	33rd Ave N	33rd Ave N	Huntsville Rd	Huntsville Rd	Huntsville Rd
Sublocation		Front/Side Yard	Vacant Lot	Vacant Lot	Front/Side Yard	Front/Side Yard	Back Yard
Sample Date		8/25/2014	5/19/2015	5/19/2015	2/19/2014	2/19/2014	2/19/2014
Sample Type		Field Duplicate	Field Sample	Field Sample	Field Sample	Field Duplicate	Field Sample
Collection		Comp.	Comp.	Comp.	Comp.	Comp.	Comp.
PAH (mg/kg)							
1-Methylnaphthalene	1600	0.15 U	0.49 U	0.48 U	0.065 J	0.094	0.06 J
2-Methylnaphthalene	690	0.15 U	0.49 U	0.48 U	0.083 J	0.13	0.082 J
Acenaphthene	10000	0.15 U	0.49 U	0.48 U	0.086 U	0.088 U	0.088 U
Acenaphthylene	NL	0.15 U	0.49 U	0.48 U	0.086 U	0.088 U	0.088 U
Anthracene	52000	0.15 U	0.49 U	0.48 U	0.086 U	0.088 U	0.088 U
Benzo(a)anthracene	15	0.29	0.49 U	0.48 U	0.22	0.23	0.2
Benzo(a)pyrene	1.5	0.24	0.15 J	0.18 J	0.22	0.23	0.22
Benzo(b)fluoranthene	15	0.43	0.26 J	0.35 J	0.35	0.34	0.34
Benzo(g,h,i)perylene	NL	0.16	0.49 U	0.48 U	0.16	0.16	0.12
Benzo(k)fluoranthene	150	0.16	0.49 U	0.48 U	0.17	0.13	0.15
Chrysene	1500	0.35	0.24 J	0.35 J	0.29	0.32	0.28
Dibenz(a,h)anthracene	1.5	0.15 U	0.49 U	0.48 U	0.086 U	0.088 U	0.088 U
Fluoranthene	6900	0.38	0.3 J	0.32 J	0.46	0.39	0.33
Fluorene	6900	0.15 U	0.49 U	0.48 U	0.086 U	0.088 U	0.088 U
Indeno(1,2,3-cd)pyrene	15	0.14 J	0.49 U	0.48 U	0.098	0.11	0.096
Naphthalene	360	0.15 U	0.49 U	0.48 U	0.08 J	0.11	0.093
Phenanthrene	NL	0.13 J	0.32 J	0.29 J	0.33	0.27	0.22
Pyrene	5200	0.34	0.25 J	0.26 J	0.44	0.42	0.32
BaP TEQ	1.5	0.4061	0.47485	0.5089	0.3344	0.3465	0.3319
Metals, Total (mg/kg)							
Aluminum	230000	9300	NA	NA	NA	NA	NA
Iron	160000	52000	NA	NA	NA	NA	NA
Arsenic	61	38	22	24	20	22	29
Lead	400	290	190	260	300	320	220

Notes:

[a] - Based on the December 2013 USEPA Removal Management Levels
BaP TEQ - Benzo(a)pyrene Toxic Equivalency Quotient
bold and shaded - Concentration exceeds the RML for residential soi
J - Value is estimated
mg/kg - Milligrams per kilogram
NA - Not analyzed
PAH - Polycyclic aromatic hydrocarbons
SQL - Sample quantitation limit
U - Analyte not detected above the associated SQL

TABLE 3
35th AVENUE SUPERFUND SITE
ANALYTICAL RESULTS FOR SURFACE SOIL SAMPLES

Sample ID	Cleanup Goal[a]	CV0671A-CS-SP	CV0671B-CS-SP	CV0671C-CS-SP	CV0753A-CS (0-4")	CV0753A-CSD (0-4")	CV0753B-CS (0-4")
Location ID		CV0671A	CV0671B	CV0671C	CV0753A	CV0753A	CV0753B
Parcel Number		012200131006007000	012200131006007000	012200131006007000	012200134017018000	012200134017018000	012200134017018000
Street Number		3904	3904	3904	3428	3428	3428
Street Name		Huntsville Rd	Huntsville Rd	Huntsville Rd	30th Ave N	30th Ave N	30th Ave N
Sublocation		Vacant Lot	Vacant Lot	Vacant Lot	Vacant Lot	Vacant Lot	Vacant Lot
Sample Date		2/18/2014	2/18/2014	2/18/2014	10/7/2014	10/7/2014	10/7/2014
Sample Type		Field Sample	Field Sample	Field Sample	Field Sample	Field Duplicate	Field Sample
Collection		Comp.	Comp.	Comp.	Comp.	Comp.	Comp.
PAH (mg/kg)							
1-Methylnaphthalene	1600	0.17	0.074 J	0.061 J	0.21	0.14	0.35
2-Methylnaphthalene	690	0.24	0.092	0.072 J	0.24	0.16	0.25
Acenaphthene	10000	0.091 U	0.09 U	0.088 U	0.077 U	0.076 U	0.077 U
Acenaphthylene	NL	0.091 U	0.09 U	0.088 U	0.077 U	0.076 U	0.077 U
Anthracene	52000	0.049 J	0.09 U	0.088 U	0.045 J	0.043 J	0.059 J
Benzo(a)anthracene	15	0.23	0.15	0.16	0.25	0.28	0.29 J
Benzo(a)pyrene	1.5	0.21	0.15	0.18	0.21	0.26	0.23 J
Benzo(b)fluoranthene	15	0.4	0.29	0.27	0.39	0.44	0.39 J
Benzo(g,h,i)perylene	NL	0.16	0.12	0.13	0.18	0.18	0.16 J
Benzo(k)fluoranthene	150	0.14	0.094	0.14	0.12	0.14	0.12 J
Chrysene	1500	0.4	0.26	0.22	0.34	0.39	0.39 J
Dibenz(a,h)anthracene	1.5	0.072 J	0.052 J	0.051 J	0.06 J	0.11	0.071 J
Fluoranthene	6900	0.36	0.28	0.24	0.32	0.4	0.4 J
Fluorene	6900	0.091 U	0.09 U	0.088 U	0.077 U	0.076 U	0.077 U
Indeno(1,2,3-cd)pyrene	15	0.15	0.079 J	0.073 J	0.1 J	0.13 J	0.11 J
Naphthalene	360	0.23	0.13	0.09	0.17	0.13	0.17
Phenanthrene	NL	0.37	0.19	0.19	0.33	0.29	0.67 J
Pyrene	5200	0.36	0.32	0.24	0.35	0.44	0.37 J
BaP TEQ	1.5	0.3654	0.25744	0.2849	0.3486	0.4603	0.3851
Metals, Total (mg/kg)							
Aluminum	230000	NA	NA	NA	11000	13000	13000
Iron	160000	NA	NA	NA	38000 J	79000 J	41000
Arsenic	61	27	39	42	25	32	28
Lead	400	270	160	170	370	360	340

Notes:

[a] - Based on the December 2013 USEPA Removal Management Levels
BaP TEQ - Benzo(a)pyrene Toxic Equivalency Quotient
bold and shaded - Concentration exceeds the RML for residential soi
J - Value is estimated
mg/kg - Milligrams per kilogram
NA - Not analyzed
PAH - Polycyclic aromatic hydrocarbons
SQL - Sample quantitation limit
U - Analyte not detected above the associated SQL

TABLE 3
35th AVENUE SUPERFUND SITE
ANALYTICAL RESULTS FOR SURFACE SOIL SAMPLES

Sample ID	Cleanup Goal[a]	CV0767A-CS-SP	CV0799A-CS	CV0799A-CSD	CV0799B-CS	CV0803A-CS	CV0803B-CS
Location ID		CV0767A	CV0799A	CV0799A	CV0799B	CV0803A	CV0803B
Parcel Number		012200134023016000	012200134022023000	012200134022023000	012200134022023000	012200134022019000	012200134022019000
Street Number		3143	3123	3123	3123	3131	3131
Street Name		30th Ct N	31st Ave N	31st Ave N	31st Ave N	31st Ave N	31st Ave N
Sublocation		Vacant Lot	Vacant Lot	Vacant Lot	Vacant Lot	Front Yard	Back Yard
Sample Date		2/18/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014
Sample Type		Field Sample	Field Sample	Field Duplicate	Field Sample	Field Sample	Field Sample
Collection		Comp.	Comp.	Comp.	Comp.	Comp.	Comp.
PAH (mg/kg)							
1-Methylnaphthalene	1600	0.081 U	0.046 J	0.057 J	0.083 J	0.11	0.12
2-Methylnaphthalene	690	0.081 U	0.051 J	0.058 J	0.093	0.11	0.15
Acenaphthene	10000	0.081 U	0.085 U	0.08 U	0.087 U	0.083 U	0.082 U
Acenaphthylene	NL	0.081 U	0.085 U	0.08 U	0.087 U	0.083 U	0.082 U
Anthracene	52000	0.081 U	0.085 U	0.08 U	0.087 U	0.083 U	0.051 J
Benzo(a)anthracene	15	0.11	0.23	0.21	0.26	0.16	0.26
Benzo(a)pyrene	1.5	0.12	0.17	0.16	0.22	0.13 J	0.2
Benzo(b)fluoranthene	15	0.16	0.31	0.28	0.39	0.24 J	0.39
Benzo(g,h,i)perylene	NL	0.11	0.12	0.11	0.17	0.054 J	0.15
Benzo(k)fluoranthene	150	0.094	0.11	0.094	0.15	0.059 J	0.1
Chrysene	1500	0.15	0.27	0.22	0.31	0.2 J	0.33
Dibenz(a,h)anthracene	1.5	0.04 J	0.085 U	0.08 U	0.087 U	0.083 U	0.041 J
Fluoranthene	6900	0.21	0.43	0.38	0.46	0.28 J	0.37
Fluorene	6900	0.081 U	0.085 U	0.08 U	0.087 U	0.083 U	0.082 U
Indeno(1,2,3-cd)pyrene	15	0.084	0.096	0.11	0.13	0.057 J	0.14
Naphthalene	360	0.081 U	0.085 U	0.08 U	0.058 J	0.076 J	0.11
Phenanthrene	NL	0.1	0.23	0.24	0.24	0.26 J	0.31
Pyrene	5200	0.21	0.41	0.32	0.46	0.32 J	0.51
BaP TEQ	1.5	0.19784	0.2799	0.26314	0.3461	0.21979	0.3243
Metals, Total (mg/kg)							
Aluminum	230000	NA	NA	NA	NA	NA	NA
Iron	160000	NA	NA	NA	NA	NA	NA
Arsenic	61	13	36	28	52	18 J+	32
Lead	400	77	380	**430**	**640**	190	290

Notes:

[a] - Based on the December 2013 USEPA Removal Management Levels
BaP TEQ - Benzo(a)pyrene Toxic Equivalency Quotient
bold and shaded - Concentration exceeds the RML for residential soi
J - Value is estimated
mg/kg - Milligrams per kilogram
NA - Not analyzed
PAH - Polycyclic aromatic hydrocarbons
SQL - Sample quantitation limit
U - Analyte not detected above the associated SQL

TABLE 3
35th AVENUE SUPERFUND SITE
ANALYTICAL RESULTS FOR SURFACE SOIL SAMPLES

Sample ID	Cleanup Goal[a]	CV0815A-CS-0-4''	CV0815A-CS0-4"	CV0815B-CS-0-4''	CV0824A-CS0-4"	CV0824A-CSD0-4"	CV0824B-CS0-4"
Location ID		CV0815A	CV0815A	CV0815B	CV0824A	CV0824A	CV0824B
Parcel Number		012200134022007000	012200134022007000	012200134022007000	012200134016018000	012200134016018000	012200134016018000
Street Number		3221	3221	3221	3416	3416	3416
Street Name		31st Ave N	31st Ave N	31st Ave N	31st Ave N	31st Ave N	31st Ave N
Sublocation		Vacant Lot	Vacant Lot	Vacant Lot	Vacant Lot	Vacant Lot	Vacant Lot
Sample Date		8/25/2014	5/18/2015	8/25/2014	5/18/2015	5/18/2015	5/18/2015
Sample Type		Field Sample	Field Sample	Field Sample	Field Sample	Field Duplicate	Field Sample
Collection		Comp.	Comp.	Comp.	Comp.	Comp.	Comp.
PAH (mg/kg)							
1-Methylnaphthalene	1600	NA	0.49 U	0.15 U	0.45 U	0.44 U	0.5 U
2-Methylnaphthalene	690	NA	0.49 U	0.077 J	0.45 U	0.44 U	0.27 J
Acenaphthene	10000	NA	0.49 U	0.23 J	0.45 U	0.44 U	0.5 U
Acenaphthylene	NL	NA	0.49 U	0.15 U	0.45 U	0.44 U	0.5 U
Anthracene	52000	NA	0.49 U	0.52 J	0.45 U	0.44 U	0.5 U
Benzo(a)anthracene	15	NA	0.49 U	1.5	0.45 U	0.44 U	0.28 J
Benzo(a)pyrene	1.5	NA	0.49 U	1.2 J	0.19 J	0.2 J	0.27 J
Benzo(b)fluoranthene	15	NA	0.49 U	1.4 J	0.38 J	0.38 J	0.56
Benzo(g,h,i)perylene	NL	NA	0.49 U	0.45 J	0.45 U	0.44 U	0.5 U
Benzo(k)fluoranthene	150	NA	0.49 U	0.76 J	0.45 U	0.14 J	0.18 J
Chrysene	1500	NA	0.49 U	1.4 J	0.26 J	0.26 J	0.41 J
Dibenz(a,h)anthracene	1.5	NA	0.49 U	0.17 J	0.45 U	0.44 U	0.5 U
Fluoranthene	6900	NA	0.49 U	2.7	0.45 U	0.23 J	0.32 J
Fluorene	6900	NA	0.49 U	0.2 J	0.45 U	0.44 U	0.5 U
Indeno(1,2,3-cd)pyrene	15	NA	0.49 U	0.44 J	0.45 U	0.44 U	0.5 U
Naphthalene	360	NA	0.49 U	0.2 J	0.45 U	0.44 U	0.5 U
Phenanthrene	NL	NA	0.49 U	1.8	0.45 U	0.44 U	0.25 J
Pyrene	5200	NA	0.49 U	2	0.45 U	0.44 U	0.29 J
BaP TEQ	1.5	NA	0.5684	**1.7256**	0.50285	0.506	0.6349
Metals, Total (mg/kg)							
Aluminum	230000	11000	NA	8900	NA	NA	NA
Iron	160000	41000	NA	41000	NA	NA	NA
Arsenic	61	18	32	20 J	23	27	28
Lead	400	49	290 J-	67	**470**	370	320

Notes:

[a] - Based on the December 2013 USEPA Removal Management Levels
BaP TEQ - Benzo(a)pyrene Toxic Equivalency Quotient
bold and shaded - Concentration exceeds the RML for residential soi
J - Value is estimated
mg/kg - Milligrams per kilogram
NA - Not analyzed
PAH - Polycyclic aromatic hydrocarbons
SQL - Sample quantitation limit
U - Analyte not detected above the associated SQL

TABLE 3
35th AVENUE SUPERFUND SITE
ANALYTICAL RESULTS FOR SURFACE SOIL SAMPLES

Sample ID	Cleanup Goal[a]	CV1061A-CS0-4''	CV1061B-CS0-4''	CV1063A-CS0-4''	CV1063A-CSD0-4''	CV1063B-CS0-4''	FM0081A-CS
Location ID		CV1061A	CV1061B	CV1063A	CV1063A	CV1063B	FM0081A
Parcel Number		012200134036008000	012200134036008000	012200134036009000	012200134036009000	012200134036009000	012200123011002000
Street Number		3204	3204	3208	3208	3208	4229
Street Name		27th Ct N	27th Ct N	27th Ct N	27th Ct N	27th Ct N	29th St N
Sublocation		Front/Side Yard	Side Yard	Front/Side Yard	Front/Side Yard	Back Yard	Front Yard
Sample Date		11/13/2014	11/13/2014	11/13/2014	11/13/2014	11/13/2014	4/1/2014
Sample Type		Field Sample	Field Sample	Field Sample	Field Duplicate	Field Sample	Field Sample
Collection		Comp.	Comp.	Comp.	Comp.	Comp.	Comp.
PAH (mg/kg)							
1-Methylnaphthalene	1600	0.12	0.055 J	0.11	0.11	0.91	0.069 U
2-Methylnaphthalene	690	0.11	0.065 J	0.14	0.13	0.97	0.069 U
Acenaphthene	10000	0.079 U	0.078 U	0.082 U	0.081 U	0.93	0.069 U
Acenaphthylene	NL	0.079 U	0.078 U	0.082 U	0.081 U	0.081 U	0.069 U
Anthracene	52000	0.041 J	0.078 U	0.082 U	0.081 U	1.3	0.069 U
Benzo(a)anthracene	15	0.24	0.2	0.31	0.27	2.8	0.069 U
Benzo(a)pyrene	1.5	0.24	0.23	0.32	0.28	**2.3**	0.024 J
Benzo(b)fluoranthene	15	0.39	0.43	0.61	0.52	3.1	0.049 J
Benzo(g,h,i)perylene	NL	0.23	0.21	0.28	0.23	1.4	0.069 U
Benzo(k)fluoranthene	150	0.17	0.13	0.18	0.16	1.4	0.047 J
Chrysene	1500	0.39	0.32	0.44	0.39	2.9	0.04 J
Dibenz(a,h)anthracene	1.5	0.069 J	0.078	0.11	0.085	0.55	0.069 U
Fluoranthene	6900	0.41	0.37	0.38	0.38	5.1	0.042 J
Fluorene	6900	0.079 U	0.078 U	0.082 U	0.081 U	0.71	0.069 U
Indeno(1,2,3-cd)pyrene	15	0.17	0.18	0.22	0.21	1.4	0.069 U
Naphthalene	360	0.092	0.056 J	0.13	0.13	1.2	0.069 U
Phenanthrene	NL	0.34	0.27	0.26	0.26	6.4	0.069 U
Pyrene	5200	0.39	0.33	0.42	0.34	5	0.044 J
BaP TEQ	1.5	0.3946	0.3935	0.5502	0.4705	**3.623**	0.07117
Metals, Total (mg/kg)							
Aluminum	230000	13000	13000	13000	13000	13000	NA
Iron	160000	69000	77000	45000	46000	46000	NA
Arsenic	61	55	41	25	26	27	5.9
Lead	400	**500**	370	310	320	**610**	31

Notes:

[a] - Based on the December 2013 USEPA Removal Management Levels
BaP TEQ - Benzo(a)pyrene Toxic Equivalency Quotient
bold and shaded - Concentration exceeds the RML for residential soi
J - Value is estimated
mg/kg - Milligrams per kilogram
NA - Not analyzed
PAH - Polycyclic aromatic hydrocarbons
SQL - Sample quantitation limit
U - Analyte not detected above the associated SQL

TABLE 3
35th AVENUE SUPERFUND SITE
ANALYTICAL RESULTS FOR SURFACE SOIL SAMPLES

Sample ID	Cleanup Goal[a]	FM0081B-CS	FM0115A-CS	FM0115B-CS	FM0273A-CS	FM0350A-CS4"	FM0350A-CSD4"
Location ID		FM0081B	FM0115A	FM0115B	FM0273A	FM0350A	FM0350A
Parcel Number		012200123011002000	012200132003016000	012200132003016000	012200132007003000	012200141009013000	012200141009013000
Street Number		4229	2917	2917	3911	3928	3928
Street Name		29th St N	41st Ave N	41st Ave N	Fairmont Way	Fairmont Pl N	Fairmont Pl N
Sublocation		Back Yard	Front Yard	Back Yard	Vacant Lot	Front Yard	Front Yard
Sample Date		4/1/2014	2/19/2014	2/19/2014	2/20/2014	8/19/2014	8/19/2014
Sample Type		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Duplicate
Collection		Comp.	Comp.	Comp.	Comp.	Comp.	Comp.
PAH (mg/kg)							
1-Methylnaphthalene	1600	0.067 U	0.083 UJ	0.088 U	0.09 U	0.087 J	0.071 J
2-Methylnaphthalene	690	0.067 U	0.083 UJ	0.088 U	0.052 J	0.096 J	0.079 J
Acenaphthene	10000	0.067 U	0.083 UJ	0.088 U	0.09 U	0.085 UJ	0.085 UJ
Acenaphthylene	NL	0.067 U	0.083 UJ	0.088 U	0.09 U	0.085 UJ	0.085 UJ
Anthracene	52000	0.067 U	0.083 UJ	0.088 U	0.085 J	0.087 J	0.074 J
Benzo(a)anthracene	15	0.067 U	0.11 J	0.094	0.33	0.67 J	0.6 J
Benzo(a)pyrene	1.5	0.027 J	0.1 J	0.094	0.31	0.7 J	0.58 J
Benzo(b)fluoranthene	15	0.038 J	0.16 J	0.13	0.44	1.1 J	0.92 J
Benzo(g,h,i)perylene	NL	0.067 U	0.075 J	0.088 U	0.19	0.33 J	0.42 J
Benzo(k)fluoranthene	150	0.067 U	0.091 J	0.069 J	0.15	0.45 J	0.4 J
Chrysene	1500	0.036 J	0.16 J	0.13	0.38	0.86 J	0.7 J
Dibenz(a,h)anthracene	1.5	0.067 U	0.083 UJ	0.088 U	0.064 J	0.11 J	0.16 J
Fluoranthene	6900	0.042 J	0.21 J	0.18	0.73	1.3 J	1.1 J
Fluorene	6900	0.067 U	0.083 UJ	0.088 U	0.09 U	0.085 UJ	0.085 UJ
Indeno(1,2,3-cd)pyrene	15	0.067 U	0.083 U	0.088 U	0.15	0.34 J	0.33 J
Naphthalene	360	0.067 U	0.083 UJ	0.088 U	0.057 J	0.082 J	0.062 J
Phenanthrene	NL	0.034 J	0.096 J	0.099	0.37	0.59 J	0.44 J
Pyrene	5200	0.039 J	0.2 J	0.15	0.62	1 J	0.82 J
BaP TEQ	1.5	0.071695	0.17516	0.16679	0.4713	1.0341	0.936
Metals, Total (mg/kg)							
Aluminum	230000	NA	NA	NA	NA	9100	7100
Iron	160000	NA	NA	NA	NA	26000	20000
Arsenic	61	5.1	13 J-	7.8	20	19	14
Lead	400	35	85	91	84	210	210

Notes:

[a] - Based on the December 2013 USEPA Removal Management Levels
BaP TEQ - Benzo(a)pyrene Toxic Equivalency Quotient
bold and shaded - Concentration exceeds the RML for residential soi
J - Value is estimated
mg/kg - Milligrams per kilogram
NA - Not analyzed
PAH - Polycyclic aromatic hydrocarbons
SQL - Sample quantitation limit
U - Analyte not detected above the associated SQL

TABLE 3
35th AVENUE SUPERFUND SITE
ANALYTICAL RESULTS FOR SURFACE SOIL SAMPLES

Sample ID	Cleanup Goal[a]	FM0350B-CS4"	FM0350C-CS4"	FM0350D-CS4"	HP0082A-CS4	HP0082B-CS4
Location ID		FM0350B	FM0350C	FM0350D	HP0082A	HP0082B
Parcel Number		012200141009013000	012200141009013000	012200141009013000	012300073011022000	012300073011022000
Street Number		3928	3928	3928	3528	3528
Street Name		Fairmont Pl N	Fairmont Pl N	Fairmont Pl N	42nd Ave N	42nd Ave N
Sublocation		Back Yard	Side Yard	Side Yard	Vacant Lot	Vacant Lot
Sample Date		8/19/2014	8/19/2014	8/19/2014	9/4/2014	9/4/2014
Sample Type		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Collection		Comp.	Comp.	Comp.	Comp.	Comp.
PAH (mg/kg)						
1-Methylnaphthalene	1600	0.12 J	0.085 UJ	0.091 J	0.097 J	0.095 J
2-Methylnaphthalene	690	0.15 J	0.085 UJ	0.099 J	0.12 J	0.12 J
Acenaphthene	10000	0.1 J	0.085 UJ	0.086 UJ	0.16 U	0.15 U
Acenaphthylene	NL	0.075 UJ	0.085 UJ	0.086 UJ	0.16 U	0.15 U
Anthracene	52000	0.2 J	0.085 UJ	0.091 J	0.16 U	0.15 U
Benzo(a)anthracene	15	0.89 J	0.14 J	0.54 J	0.13 J	0.15
Benzo(a)pyrene	1.5	0.9 J	0.16 J	0.52 J	0.12 J	0.13 J
Benzo(b)fluoranthene	15	1.5 J	0.31 J	0.91 J	0.24	0.28
Benzo(g,h,i)perylene	NL	0.41 J	0.084 J	0.21 J	0.081 J	0.1 J
Benzo(k)fluoranthene	150	0.51 J	0.091 J	0.29 J	0.088 J	0.097 J
Chrysene	1500	1.1 J	0.2 J	0.63 J	0.24	0.27
Dibenz(a,h)anthracene	1.5	0.12 J	0.085 UJ	0.062 J	0.16 U	0.15 U
Fluoranthene	6900	1.7 J	0.3 J	1.2 J	0.24	0.29
Fluorene	6900	0.076 J	0.085 UJ	0.086 UJ	0.16 U	0.15 U
Indeno(1,2,3-cd)pyrene	15	0.43 J	0.051 J	0.21 J	0.16 U	0.15 U
Naphthalene	360	0.12 J	0.085 UJ	0.073 J	0.1 J	0.11 J
Phenanthrene	NL	1.1 J	0.16 J	0.64 J	0.2	0.22
Pyrene	5200	1.4 J	0.24 J	0.85 J	0.19	0.24
BaP TEQ	1.5	1.3181	0.25551	0.7572	0.24828	0.25917
Metals, Total (mg/kg)						
Aluminum	230000	11000	7400	7800	18000	17000
Iron	160000	38000	19000	15000	53000	89000
Arsenic	61	23	11	9.7	26	39
Lead	400	140	300	180	340	96

Notes:

[a] - Based on the December 2013 USEPA Removal Management Levels
BaP TEQ - Benzo(a)pyrene Toxic Equivalency Quotient
bold and shaded - Concentration exceeds the RML for residential soi
J - Value is estimated
mg/kg - Milligrams per kilogram
NA - Not analyzed
PAH - Polycyclic aromatic hydrocarbons
SQL - Sample quantitation limit
U - Analyte not detected above the associated SQL

TABLE 4
35th AVENUE SUPERFUND SITE
SUMMARY OF CLEANUP GOAL EXCEEDANCES

Location	Sample Collection	Sample Type	Sub_Location	PAH (mg/kg)		Metals (mg/kg)
				Benzo(a)pyrene	BaP TEQ	Lead (coarse)
				CG = 1.5	CG = 1.5	CG = 400
CV0004A	Comp.	Field Sample	Front Yard			
CV0004B	Comp.	Field Sample	Back Yard			
CV0056A	Comp.	Field Sample	Vacant Lot			
CV0056B	Comp.	Field Sample	Vacant Lot			
CV0163A	Comp.	Field Sample	Vacant Lot			
CV0163B	Comp	Field Sample	Vacant Lot			
CV0310A	Comp.	Field Sample	Vacant Lot			
CV0310B	Comp.	Field Sample	Vacant Lot			
CV0652A	Comp.	Field Sample	Front/Side Yard			
CV0652A	Comp.	Field Duplicate	Front/Side Yard			
CV0652B	Comp.	Field Sample	Vacant Lot			
CV0671A	Comp.	Field Sample	Vacant Lot			
CV0671B	Comp.	Field Sample	Vacant Lot			
CV0671C	Comp.	Field Sample	Vacant Lot			
CV0753A	Comp.	Field Sample	Vacant Lot			
CV0753A	Comp.	Field Duplicate	Vacant Lot			
CV0753B	Comp.	Field Sample	Vacant Lot			
CV0767A	Comp.	Field Sample	Vacant Lot			
CV0799A	Comp.	Field Sample	Vacant Lot			
CV0799A	Comp.	Field Duplicate	Vacant Lot			430
CV0799B	Comp.	Field Sample	Vacant Lot			640
CV0803A	Comp.	Field Sample	Front Yard			
CV0803B	Comp.	Field Sample	Back Yard			
CV0815A	Comp.	Field Sample	Vacant Lot			
CV0815A	Comp.	Field Sample	Vacant Lot			
CV0815B	Comp.	Field Sample	Vacant Lot		1.72	
CV0824A	Comp.	Field Sample	Vacant Lot			470
CV0824A	Comp.	Field Duplicate	Vacant Lot			
CV0824B	Comp.	Field Sample	Vacant Lot			
CV1061A	Comp.	Field Sample	Front/Side Yard			500
CV1061B	Comp.	Field Sample	Side Yard			
CV1063A	Comp.	Field Sample	Front/Side Yard			
CV1063A	Comp.	Field Duplicate	Front/Side Yard			
CV1063B	Comp.	Field Sample	Back Yard	2.3	3.62	610
FM0081A	Comp.	Field Sample	Front Yard			
FM0081B	Comp.	Field Sample	Back Yard			
FM0115A	Comp.	Field Sample	Front Yard			
FM0115B	Comp.	Field Sample	Back Yard			
FM0273A	Comp.	Field Sample	Vacant Lot			
FM0350A	Comp.	Field Sample	Front Yard			
FM0350A	Comp.	Field Duplicate	Front Yard			
FM0350B	Comp.	Field Sample	Back Yard			

TABLE 4
35th AVENUE SUPERFUND SITE
SUMMARY OF CLEANUP GOAL EXCEEDANCES

Location	Sample Collection	Sample Type	Sub_Location	PAH (mg/kg)		Metals (mg/kg)
				Benzo(a)pyrene	BaP TEQ	Lead (coarse)
				CG = 1.5	CG = 1.5	CG = 400
FM0350C	Comp.	Field Sample	Side Yard			
FM0350D	Comp.	Field Sample	Side Yard			
HP0082A	Comp.	Field Sample	Vacant Lot			
HP0082B	Comp.	Field Sample	Vacant Lot			

Notes:

BaP TEQ - Benzo(a)pyrene Toxic Equivalence Quotient
CG - Cleanup Goal
mg/kg - Milligrams per kilogram
PAH - Polycyclic aromatic hydrocarbon

APPENDIX C

PHOTOGRAPHIC LOG

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0004 **Date:** August 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Front yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0004 **Date:** August 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample CV0004A-CS4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0004 **Date:** August 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 3:** Backyard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0004 **Date:** August 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 4:** View of sample CV0004B-CS4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0056 **Date:** April 23, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 5:** Vacant Lot	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0056 **Date:** April 23, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0056A-CS	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0056 **Date:** April 23, 2015 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0056B-CS	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0163 **Date:** August 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Vacant Lot	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0163 **Date:** August 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0163A-CS4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0163 **Date:** August 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0163B-CS4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0310 **Date:** May 19, 2015 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Vacant Lot	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0310 **Date:** May 19, 2015 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0310A-CS0-4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0310 **Date:** May 19, 2015 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0310B-CS0-4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0652 **Date:** February 19, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Front/side yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0652 **Date:** February 19, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0652A-CS	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0652 **Date:** February 19, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Back Yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0652 **Date:** February 19, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0652B-CS	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0671 **Date:** February 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Vacant Lot	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0671 **Date:** February 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0671A-CS-SP	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0671 **Date:** February 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0671B-CS-SP	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0671 **Date:** February 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0671C-CS-SP	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0767 **Date:** February 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** Vacant Lot.	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0767 **Date:** February 18, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 6:** View of sample CV0767A-CS-SP	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0799 **Date:** April 23, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Vacant Lot	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0803 **Date:** April 23, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Front yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0803 **Date:** April 23, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample CV0803A-CS	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0803 **Date:** April 23, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Backyard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0803 **Date:** April 23, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample CV0803B-CS	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0815 **Date:** May 18, 2015 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Vacant Lot	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0815 **Date:** May 18, 2015 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample CV0815A-CS-0-4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0824 **Date:** May 18, 2015 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Vacant Lot	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0824 **Date:** May 18, 2015 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample CV0824A-CS0-4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-0824 **Date:** May 18, 2015 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample CV0824B-CS0-4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-1061 **Date:** November 13, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Front/Side Yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-1061 **Date:** November 13, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample CV1061A-CS0-4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-1061 **Date:** November 13, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Side Yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-1061 **Date:** November 13, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample CV1061B-CS0-4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-1063 **Date:** November 13, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Front/Side Yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-1063 **Date:** November 13, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample CV1063A-CS0-4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-1063 **Date:** November 13, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Back Yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** CV-1063 **Date:** November 13, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample CV1063B-CS0-4"	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** FM-0115 **Date:** February 29, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Front yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** FM-0115 **Date:** February 29, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample FM0115A-CS	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** FM-0115 **Date:** February 29, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Back yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** FM-0115 **Date:** February 29, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample FM0115B-CS	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** FM-0273 **Date:** February 20, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Vacant Lot.	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** FM-0273 **Date:** February 20, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample FM0273A-CS	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** FM-0350 **Date:** August 19, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Front yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** FM-0350 **Date:** August 19, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Back yard	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** FM-0350 **Date:** August 19, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Side Yard	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** FM-0350 **Date:** August 19, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Side yard	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** HP-0082 **Date:** September 4, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 1:** Vacant Lot	
Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** HP-0082 **Date:** September 4, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample HP0082A-CS4	

Site: 35th Avenue Superfund Site **Contract:** EP-S4-15-01 **TDD:** 002/OT-02-002 **OSC:** Rick Jardine **Property ID:** HP-0082 **Date:** September 4, 2014 **Photographer:** Ryan Stubbs **Official Photograph No. 2:** View of sample HP0082B-CS4	

APPENDIX D

LOGBOOK NOTES

LB000098

United States Environmental Protection Agency
Region 4

OTIE
Oneida Total Integrated Enterprises

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

35TH AVENUE REMOVAL INVESTIGATION
BIRMINGHAM, ALABAMA
JEFF CROWLEY, ON-SCENE COORDINATOR

FIELD SAMPLING LOGBOOK

Book 1 **of** 1

Inclusive Dates: 2/18/14 – 2/20/14

List of Sampling Team in logbook:

Name	Initials	Organization/Duties
Maivimer Berrios-Cartagena	MBC	OTIE, Team Leader
JERRY PARTAP	J.P	OTIE

ADDRESS: [illegible] PROPERTY ID: CVC671

DATE: 2/18/14 ARRIVAL TIME: 1140A

Other pertinent information (weather conditions, etc.):

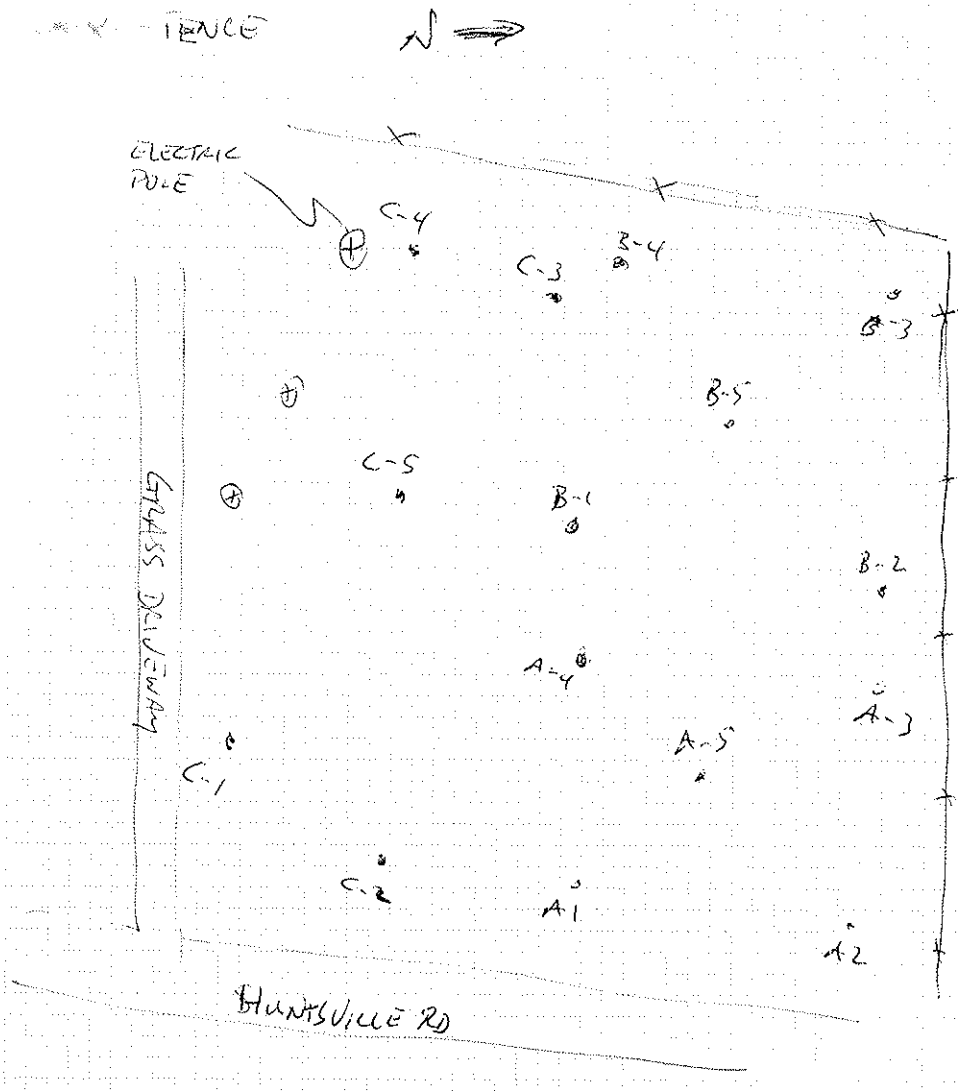
Heavy Cut

PROPERTY COMMENTS:

[illegible] LOT w/ TREES, LOT DEPRESSED FROM ROAD & ALLEY

[illegible] GRASS w/ GRASS + DEBRIS

Grid for property sketch



STATION ID: CV0671A **SAMPLE ID:** CV0671A-CS

SAMPLE COLLECTION TIME: 1153

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: (Yes) or No *If yes, indicate* **Duplicate/split sample station ID:** CV0671A-CS

GPS Coordinates: Trimble [X] Instrument #: 5225542011 4 Logged? (Y) or N

Aliquot #1: *Latitude:* 33.560736 N *Longitude* -86.799592 W

Media description: DK BWN SILTY CLAY, DAMP W/GRAVEL, NO ODOR

Aliquot #2 *Latitude:* 33.560876 N *Longitude* -86.799412 W

Media description: DK BWN SILTY CLAY, DAMP W/GRAVEL, NO ODOR

Aliquot #3: *Latitude:* 33.561085 N *Longitude* -86.799702 W

Media description: DK BWN SILTY CLAY, DAMP W/GRAVEL, NO ODOR

Aliquot #4: *Latitude:* 33.560821 N *Longitude* -86.799685 W

Media description: DK BWN SILTY CLAY W/COAL FRAGS + GRAVEL, NO ODOR, DAMP

Aliquot #5: *Latitude:* ~~DK~~ 33.560862 N *Longitude* -86.799544 W

Media description: DK BWN SILTY CLAY W/COAL FRAGS + GRAVEL, NO ODOR, DAMP

STATION ID: CV0671B **SAMPLE ID:** CV0671B-CS

SAMPLE COLLECTION TIME: 1210

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: (Yes) or No *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: 5225542011 4 Logged? (Y) or N

Aliquot #1: *Latitude:* 33.560836 N *Longitude* -86.799712 W

Media description: DK BWN SILTY CLAY W/COAL FRAGS, GRAVEL + METAL DEBRIS, DAMP, NO ODOR

Aliquot #2 *Latitude:* 33.56098 N *Longitude* -86.79956 W

Media description: DK BWN SILTY CLAY W/ DAMP, NO ODOR

Aliquot #3: *Latitude:* 33.560961 N *Longitude* -86.799533 W

Media description: BWN SILTY CLAY W/GRAVEL, DAMP, NO ODOR

Aliquot #4: *Latitude:* ~~BWN~~ BR 33.560978 N *Longitude* -86.799874 W

Media description: BWN SILTY CLAY W/GRAVEL, DAMP, NO ODOR

Aliquot #5: *Latitude:* 33.560969 N *Longitude* -86.799679 W

Media description: DK BWN SILTY CLAY W/COAL FRAGS + GRAVEL, NO ODOR, DAMP

ADDRESS: _____ **PROPERTY ID:** _____

DATE: _____ **ARRIVAL TIME:** _____

Other pertinent information (weather conditions, etc.):

_____

PROPERTY COMMENTS:

_____

_____

_____

_____

Grid for property sketch

LP

Same as page 6

STATION ID: CV0671C **SAMPLE ID:** CV0671C-C5

SAMPLE COLLECTION TIME: 1227

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: (Yes) or No *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [✓] Instrument #: 5220554 20114 Logged? (Y) or N

Aliquot #1: *Latitude:* 33.560638 N *Longitude* -86.799707 W

Media description: BWN SILTY CLAY W/SLAG, DAMP, NO ODOR

Aliquot #2 *Latitude:* 33.560716 N *Longitude* -86.799609 W

Media description: BWN CLAYEY SILT, DAMP, NO ODOR

Aliquot #3: *Latitude:* 33.560905 N *Longitude* -86.799935 W

Media description: BWN CLAYEY SILT, W/GLASS, GRAVEL, DAMP, NO ODOR

Aliquot #4: *Latitude:* 33.560795 N *Longitude* -86.800009 W

Media description: BWN/ORANGE CLAYEY SILT, W/GRAVEL + COAL TARS, DAMP, NO ODOR

Aliquot #5: *Latitude:* 33.560737 N *Longitude* -86.799797 W

Media description: DK BWN SILTY CLAY W/SLAG, GLASS, DAMP, NO ODOR, COAL TARS

STATION ID: **SAMPLE ID:**

SAMPLE COLLECTION TIME:

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: *Yes or No If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [ ] Instrument #: Logged? Y or N

Aliquot #1: *Latitude:* N *Longitude* W

Media description:

Aliquot #2 *Latitude:* N *Longitude* W

Media description:

Aliquot #3: *Latitude:* N *Longitude* W

Media description:

Aliquot #4: *Latitude:* N *Longitude* W

Media description:

Aliquot #5: *Latitude:* N *Longitude* W

Media description:

ADDRESS: 3043 30TH CT N PROPERTY ID: CV0767

DATE: 2/18/14 ARRIVAL TIME: 1330

Other pertinent information (weather conditions, etc.):

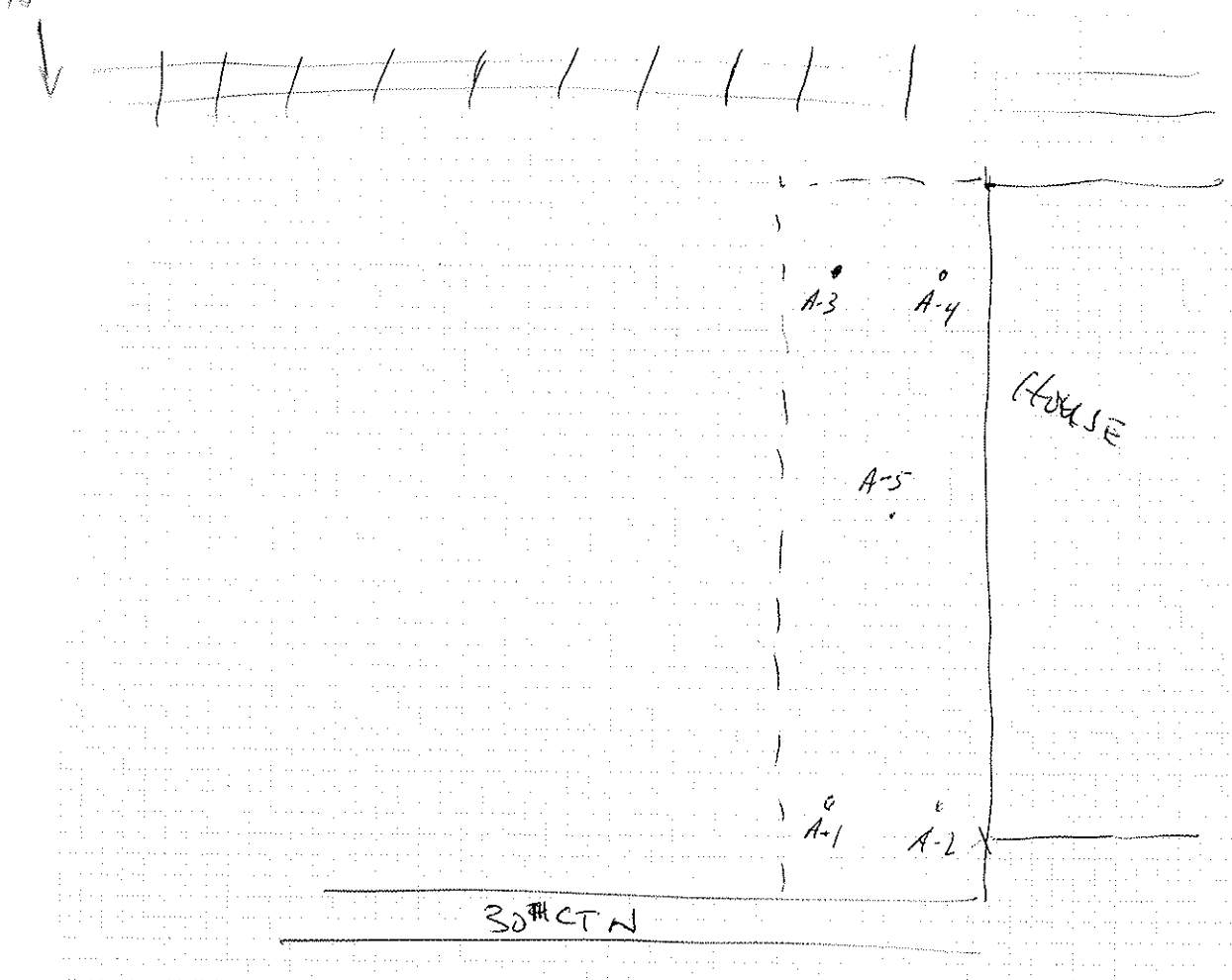
~~[illegible]~~ CLOUDY 66°F

PROPERTY COMMENTS:

VACANT LOT; LAW CUT GRASS; ONE TREE ON LOT

SMALL TRACT OF PROPERTY

Grid for property sketch



STATION ID: CV0767A SAMPLE ID: CV0767A-CS

SAMPLE COLLECTION TIME: 1355

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

NORTHSIDE FACING 30th CTN AND SOUTHSIDE FACING RAILROAD

Collection: Composite or Grab MS/MSD? Y or N

Field Duplicate or Split: Yes or No If yes, indicate Duplicate/split sample station ID:

GPS Coordinates: Trimble [X] Instrument #: 52255420114 Logged? Y or N

Aliquot #1: *Latitude:* 33.553236 N *Longitude* -86.803574 W

Media description: BWN CLAY, DRY W/ GRAVEL, NO ODOR

Aliquot #2 *Latitude:* 33.553231 N *Longitude* -86.803636 W

Media description: DK BWN SILT W/ TRACE CLAY, DRY, NO ODOR

Aliquot #3: *Latitude:* 33.553151 N *Longitude* -86.803607 W

Media description: ORANGE SANDY CLAY, DRY W/ GRAVEL, NO ODOR, ~~DRY~~ (SP)

Aliquot #4: *Latitude:* 33.553~~072~~069 N *Longitude* -86.803~~562~~361 W

Media description: BWN/ORANGE SILTY CLAY W/ COAL FRAGS + GRAVEL, DRY, NO ODOR

Aliquot #5: *Latitude:* 33.553072 N *Longitude* -86.803562 W

Media description: ORANGE SANDY CLAY W/ GRAVEL, DRY, NO ODOR

STATION ID: SAMPLE ID:

SAMPLE COLLECTION TIME:

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Collection: Composite or Grab MS/MSD? Y or N

Field Duplicate or Split: Yes or No If yes, indicate Duplicate/split sample station ID:

GPS Coordinates: Trimble [ ] Instrument #: Logged? Y or N

Aliquot #1: *Latitude:* N *Longitude* W

Media description:

Aliquot #2 *Latitude:* N *Longitude* W

Media description:

Aliquot #3: *Latitude:* N *Longitude* W

Media description:

Aliquot #4: *Latitude:* N *Longitude* W

Media description:

Aliquot #5: *Latitude:* N *Longitude* W

Media description:

ADDRESS: 2917 41ST AVE N PROPERTY ID: FM 0115

DATE: 2/19/14 ARRIVAL TIME: 0830

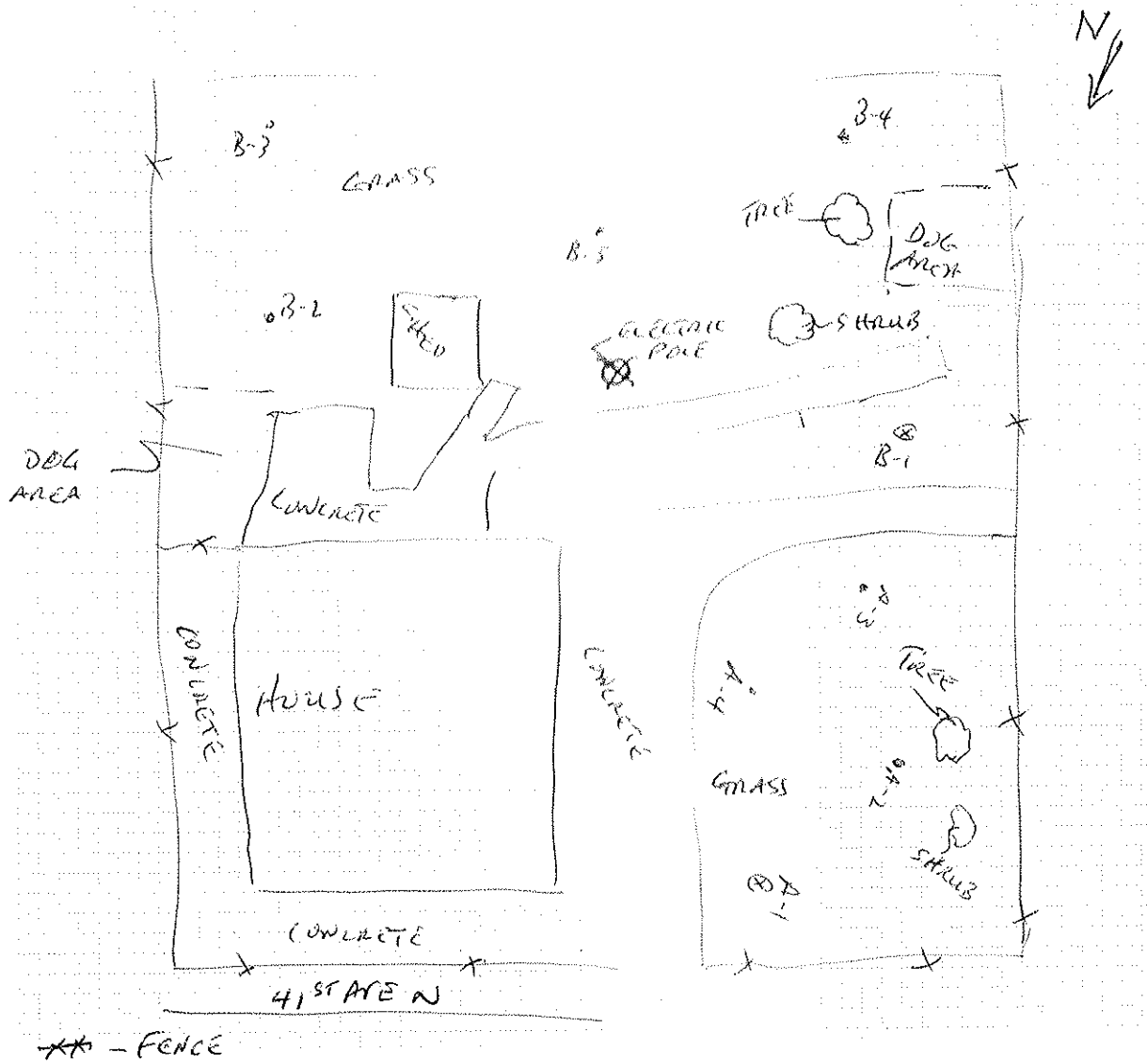
Other pertinent information (weather conditions, etc.):

CLOUDY 62°F

PROPERTY COMMENTS:

HOUSE; PAVED AREAS; BACKYARD GRASS AND PORTION OF FRONT; DRIVEWAY CONCRETE; DOGS IN BACKYARD

Grid for property sketch



STATION ID: FM011SA **SAMPLE ID:** FM011SA-CS

SAMPLE COLLECTION TIME: 0851

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

(SAMPLE ALIQUOTS , front yard

Collection: (Composite) or Grab **MS/MSD?** (Y) or N FM011SA-CS @0851

Field Duplicate or Split: Yes or (No) *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: 5225542011 4 Logged? (Y) or N

Aliquot #1: *Latitude:* 33.564399 N *Longitude* -86.810751 W

Media description: DK BWN SANDY SILT W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

Aliquot #2 *Latitude:* 33.564407 N *Longitude* -86.810803 W

Media description: DK BWN SANDY SILT W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

Aliquot #3: *Latitude:* 33.564332 N *Longitude* -86.810814 W

Media description: DK BWN SANDY SILT W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

Aliquot #4: *Latitude:* 33.564437 N *Longitude* -86.810767 W

Media description: DK BWN SANDY SILT W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

Aliquot #5: ~~*Latitude:*~~ N *Longitude* W

Media description: J.P

STATION ID: FM011SB **SAMPLE ID:** FM011SB-CS

SAMPLE COLLECTION TIME: 0902

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

back yard

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: Yes or (No) *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: 5225542011 4 Logged? (Y) or N

Aliquot #1: *Latitude:* 33.564219 N *Longitude* -86.810839 W

Media description: DK BWN SANDY SILT W/COAL, BRICK, GLASS, DAMP, NO ODOR

Aliquot #2 *Latitude:* 33.56411 N *Longitude* -86.81066 W

Media description: TAN/ORANGE SILTY CLAY, DAMP, NO ODOR

Aliquot #3: *Latitude:* 33.564004 N *Longitude* -86.810654 W

Media description: BWN SILTY CLAY W/BRICK + GRAVEL, DAMP, NO ODOR

Aliquot #4: *Latitude:* 33.56405 N *Longitude* -86.810754 W

Media description: BWN SILTY CLAY, DAMP, NO ODOR

Aliquot #5: *Latitude:* 33.564106 N *Longitude* -86.810754 W

Media description: BWN SILTY CLAY W/GRAVEL, NO ODOR, DAMP

ADDRESS: 3701 FL SHUTTLESWORTH DR **PROPERTY ID:** CV0652

DATE: 2/19/14 **ARRIVAL TIME:** 0920

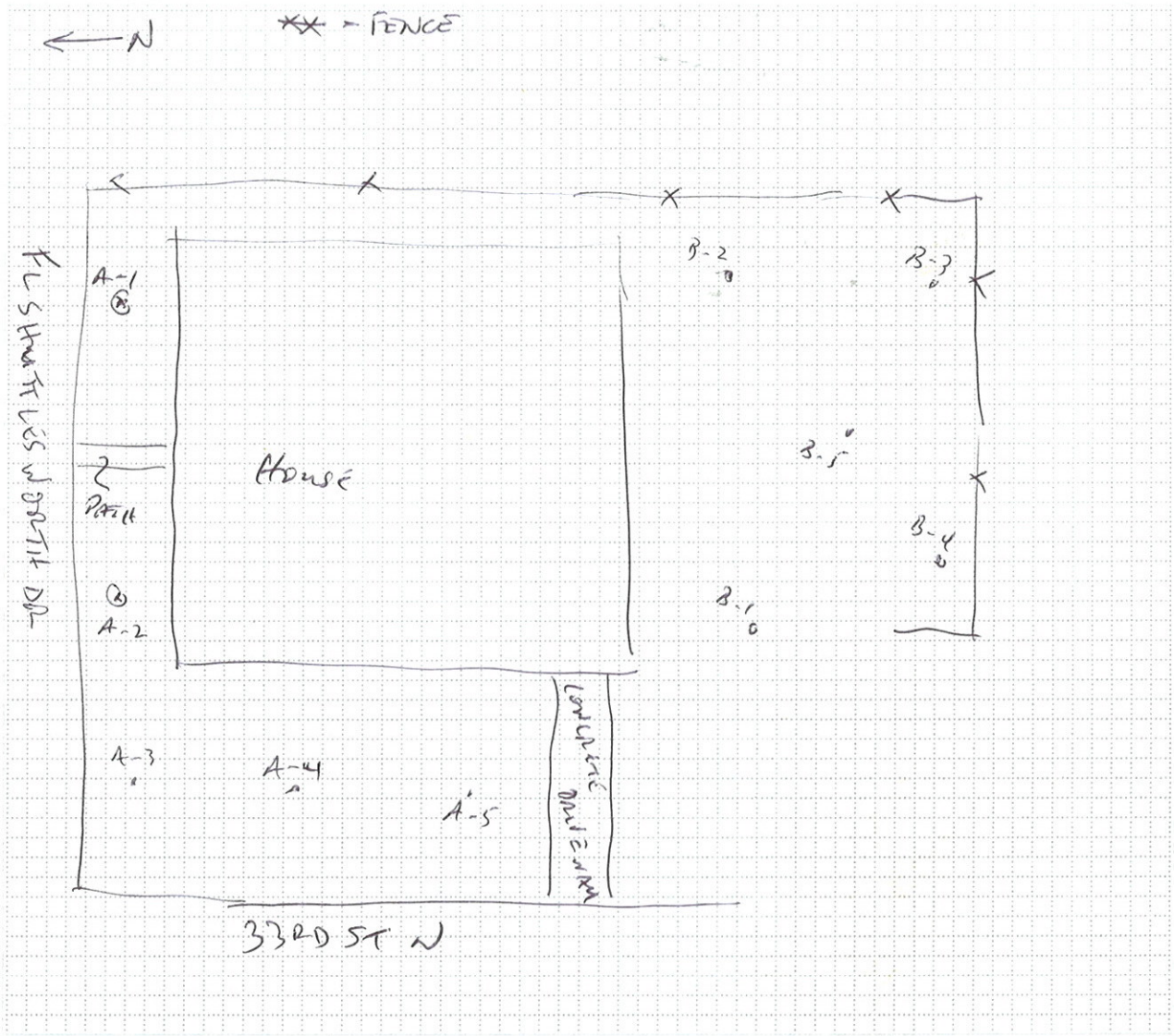
Other pertinent information (weather conditions, etc.):

PARTLY CLOUDY 62°F

PROPERTY COMMENTS:

VACANT HOUSE

Grid for property sketch



STATION ID: CV0652A **SAMPLE ID:** CV0652A-CS

SAMPLE COLLECTION TIME: 0935

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

FRONT/SIDE

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: (Yes) or No *If yes, indicate* **Duplicate/split sample station ID:** CV0652A-CSD @0938

GPS Coordinates: Trimble [X] Instrument #: 5225542011Y Logged? (Y) or N

Aliquot #1: *Latitude:* 33.559112 N *Longitude* -86.801033 W

Media description: BWN SANDY ~~SILT~~ CLAY W/GRAVEL, DAMP, NO ODOR

Aliquot #2 *Latitude:* 33.559057 N *Longitude* -86.801075 W

Media description: BWN SANDY SILT W/GRAVEL + BRICK, DAMP, NO ODOR

Aliquot #3: *Latitude:* 33.559004 N *Longitude* -86.801051 W

Media description: BWN SANDY CLAY W/GRAVEL + COAL, DAMP, NO ODOR

Aliquot #4: *Latitude:* 33.558975 N *Longitude* -86.801011 W

Media description: BWN SILT W/GRAVEL + SLAG, WET, NO ODOR

Aliquot #5: *Latitude:* 33.558941 N *Longitude* -86.800956 W

Media description: BWN SILT W/SLAG, COAL + GRAVEL, WET, NO ODOR

STATION ID: CV0652B **SAMPLE ID:** CV0652B-CS

SAMPLE COLLECTION TIME: 0943

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

BACK

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: Yes or (No) *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: 5225542011Y Logged? (Y) or N

Aliquot #1: *Latitude:* 33.558939 N *Longitude* -86.800771 W

Media description: DK BWN ~~SILTY SAND~~ SANDY CLAY W/GRAVEL + COAL FRAGS, NO ODOR, DAMP

Aliquot #2 *Latitude:* 33.558863 N *Longitude* -86.800857 W

Media description: DK BWN ~~SILTY SAND~~ SANDY CLAY W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

Aliquot #3: *Latitude:* 33.558707 N *Longitude* -86.800932 W

Media description: DK BWN SANDY CLAY W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

Aliquot #4: *Latitude:* 33.558832 N *Longitude* -86.800796 W

Media description: DK BWN SANDY SILT W/COAL FRAGS + GRAVEL, DAMP, NO ODOR

Aliquot #5: *Latitude:* 33.558872 N *Longitude* -86.800786 W

Media description: BWN SANDY CLAY W/GRAVEL, DAMP, NO ODOR

FAIRMONT WAY N

ADDRESS: 3911 ~~FAIRWAY N~~ **PROPERTY ID:** Fm 0213

DATE: 2/20/14 **ARRIVAL TIME:** 1045

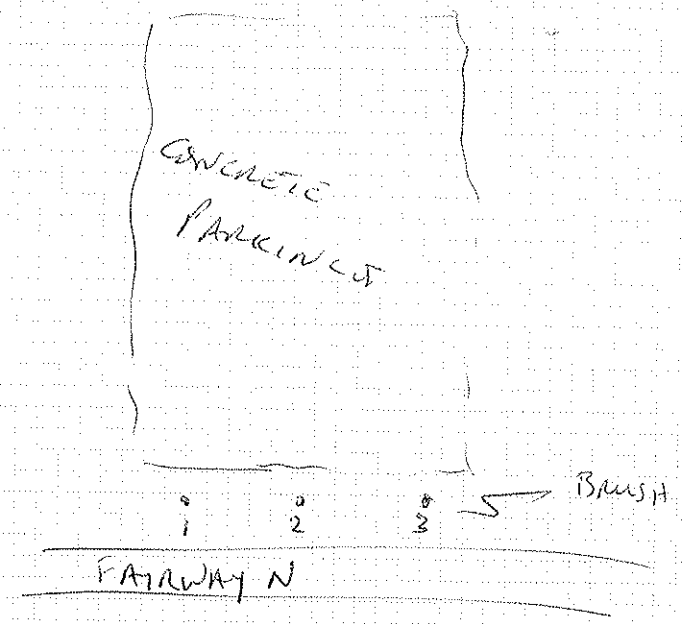
Other pertinent information (weather conditions, etc.):

CLOUDY / LIGHT DRIZZLE 66°F

PROPERTY COMMENTS:

JP ~~CONCRETE~~ CONCRETE / GRAVEL PARKING LOT

Grid for property sketch



STATION ID: FM0273A **SAMPLE ID:** FM0273A-CS

SAMPLE COLLECTION TIME: 1115

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

front area of parcel

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes or* (No) *If yes, indicate* **Duplicate/split sample station ID:** _____

GPS Coordinates: Trimble [X] Instrument #: 5225542014 Logged? (Y) or N

Aliquot #1: *Latitude:* 33.562372 N *Longitude* -86.812552 W

Media description: DK BWN SILTY CLAY, DAMP w/ GRAVEL, NO ODOR

Aliquot #2 *Latitude:* 33.562344 N *Longitude* -86.812554 W

Media description: DK BWN SILTY CLAY w/ GRAVEL + COAL FRAGS, DAMP, NO ODOR

Aliquot #3: *Latitude:* 33.562277 N *Longitude* -86.812555 W

Media description: DK BWN SILTY CLAY w/ GRAVEL + COAL FRAGS, DAMP, NO ODOR

Aliquot #4: *Latitude:* _____ N *Longitude* _____ W

Media description: _____

Aliquot #5: *Latitude:* _____ N *Longitude* _____ W

Media description: _____

STATION ID: _____ **SAMPLE ID:** _____

SAMPLE COLLECTION TIME: _____

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

_____

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: *Yes or No If yes, indicate* **Duplicate/split sample station ID:** _____

GPS Coordinates: Trimble [ ] Instrument #: _____ Logged? Y or N

Aliquot #1: *Latitude:* _____ N *Longitude* _____ W

Media description: _____

Aliquot #2 *Latitude:* _____ N *Longitude* _____ W

Media description: _____

Aliquot #3: *Latitude:* _____ N *Longitude* _____ W

Media description: _____

Aliquot #4: *Latitude:* _____ N *Longitude* _____ W

Media description: _____

Aliquot #5: *Latitude:* _____ N *Longitude* _____ W

Media description: _____

ADDRESS: _____ **PROPERTY ID:** _____

DATE: _____ **ARRIVAL TIME:** _____

Other pertinent information (weather conditions, etc.):

_____

PROPERTY COMMENTS:

_____

_____

_____

_____

Grid for property sketch

End of this logbook

LB00099

United States Environmental Protection Agency
Region 4

OTIE
Oneida Total Integrated Enterprises

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

35TH AVENUE REMOVAL INVESTIGATION
BIRMINGHAM, ALABAMA
JEFF CROWLEY, ON-SCENE COORDINATOR

FIELD SAMPLING LOGBOOK

Book 1 **of** 1

Inclusive Dates: 4/1/14 — 4/3/14

List of Sampling Team in logbook:

Name	Initials	Organization/Duties
JERRY PARTAP	J.P	OTIE ,Team Leader
Nairimer Berrios-Cartagena	[illegible]	OTIE

ADDRESS: 4229 29th Street N. **PROPERTY ID:** FM0081

DATE: 4/1/2014 **ARRIVAL TIME:** 1611

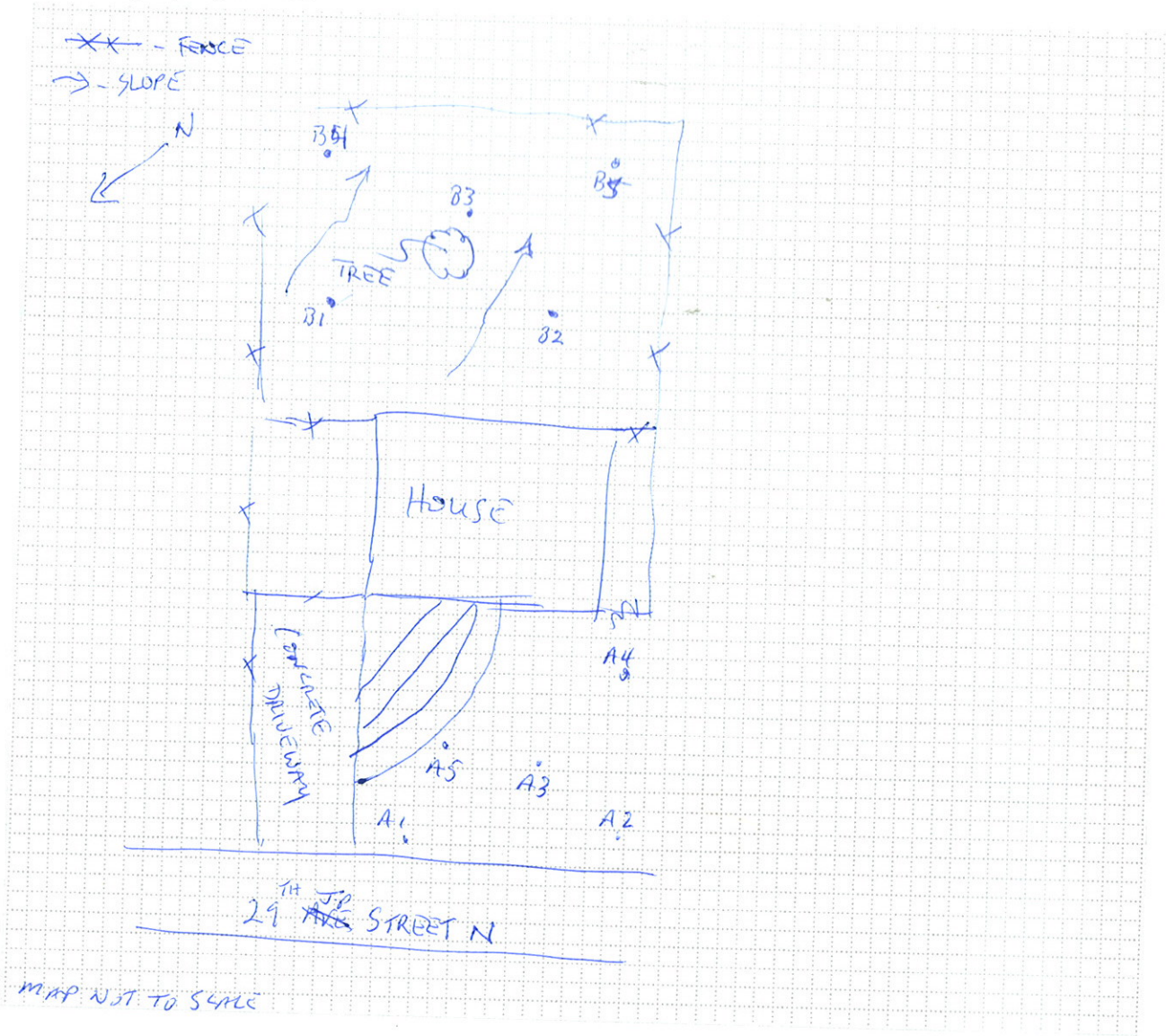
Other pertinent information (weather conditions, etc.):

Cloudy @ 79°F ; wind SW 7MPH

PROPERTY COMMENTS:

HOUSE (OCCUPIED), FRONT + BACK YARD, CONCRETE DRIVEWAY

Grid for property sketch



STATION ID: FM0081 **SAMPLE ID:** FM0081A-CS

SAMPLE COLLECTION TIME: 1635

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

front yard

Collection: Composite or Grab **MS/MSD?** Y or N FM0081A-CS

Field Duplicate or Split: *Yes or No If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: 019599 Logged? Y or N

Aliquot #1: *Latitude:* 33.567316 N *Longitude* -86.811411 W

Media description: RED/BWN CLAY W/SILT W/GRAVEL, ~~DRY~~ J.P, NO ODOR, DAMP

Aliquot #2 *Latitude:* 33.567245 N *Longitude* -86.811412 W

Media description: RED/BWN SANDY CLAY, ~~DRY~~ J.P, NO ODOR, DAMP

Aliquot #3: *Latitude:* 33.~~811137~~ 567278 N *Longitude* -86.81137 W

Media description: RED/BWN SANDY CLAY, DAMP, NO ODOR

Aliquot #4: *Latitude:* 33.567242 N *Longitude* -86.811349 W

Media description: LT. BWN SILTY CLAY, DAMP, NO ODOR

Aliquot #5: *Latitude:* 33.567312 N *Longitude* -86.811361 W

Media description: RED/BWN CLAY W/SILT, GRAVEL, NO ODOR, DAMP

STATION ID: FM0081 **SAMPLE ID:** FM0081B-CS

SAMPLE COLLECTION TIME: 1645

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

back yard

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: *Yes or No If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: 019599 Logged? Y or N

Aliquot #1: *Latitude:* ~~36.~~ 33.567334 N *Longitude* -86.811164 W

Media description: REDDISH SANDY CLAY, DRY, NO ODOR

Aliquot #2 *Latitude:* 33.567251 N *Longitude* -86.811175 W

Media description: BWN SILTY CLAY, DRY, NO ODOR

Aliquot #3: *Latitude:* 33.567285 N *Longitude* -86.811107 W

Media description: BWN SILTY CLAY, DRY, NO ODOR

Aliquot #4: *Latitude:* 33.567335 N *Longitude* -86.811048 W

Media description: BWN SILTY CLAY, DRY, NO ODOR

Aliquot #5: *Latitude:* 33.567248 N *Longitude* -86.811031 W

Media description: BWN SANDY CLAY, DRY, NO ODOR

LB00100

United States Environmental Protection Agency
Region 4

OTIE
Oneida Total Integrated Enterprises

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

35TH AVENUE REMOVAL INVESTIGATION
BIRMINGHAM, ALABAMA
JEFF CROWLEY, ON-SCENE COORDINATOR

FIELD SAMPLING LOGBOOK

Book 1 **of** 1

Inclusive Dates: 4/23/14 - 4/23/14

List of Sampling Team in logbook:

Name	Initials	Organization/Duties
Nair Berrios-Cartagena		OTIE, Team Leader
Amanda Nisler	AN	Field Team Member

ADDRESS: 3131 31st Ave N **PROPERTY ID:** CV0803A

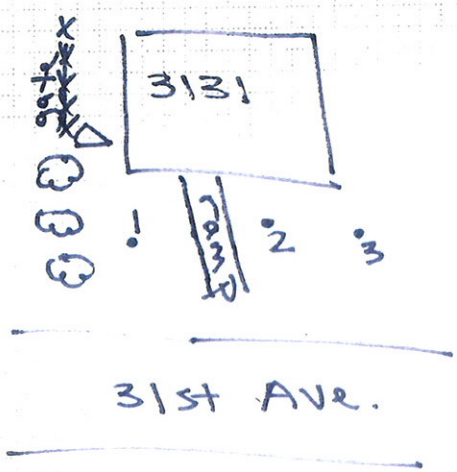
DATE: 4/23/14 **ARRIVAL TIME:** 10:25

Other pertinent information (weather conditions, etc.):

Sunny, 70°

PROPERTY COMMENTS:

Grid for property sketch



STATION ID: CV0803 **SAMPLE ID:** CV0803A-CS

SAMPLE COLLECTION TIME: 1035

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Front yard

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes or (No) If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? (Y) or N

Aliquot #1: *Latitude:* 33.55036871 N *Longitude* -86.80362455660 W

Media description: Dk. brown silty clay w/ coal bits

Aliquot #2 *Latitude:* 33.55403398 N *Longitude* -86.80366907 4 W

Media description: Dk. brown silty clay w/ coal bits

Aliquot #3: *Latitude:* 33.80369723300 N *Longitude* -86.80369723330 W

Media description: Dk. brown silty clay w/ coal bits

Aliquot #4: *Latitude:* — N *Longitude* — W

Media description: —

Aliquot #5: *Latitude:* — N *Longitude* — W

Media description: —

STATION ID: CV0803 **SAMPLE ID:** CV0803B-CS

SAMPLE COLLECTION TIME: 1039

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Back yard

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes or (No) If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? (Y) or N

Aliquot #1: *Latitude:* 33.55379945430 N *Longitude* -86.80370124570 W

Media description: Dk. brown silty clay w/ coal bits

Aliquot #2 *Latitude:* 33.55380018780 N *Longitude* -86.80362763660 W

Media description: Dk. brown sandy clay w/ tiny coal bits

Aliquot #3: *Latitude:* 33.55377943810 N *Longitude* -86.80360316400 W

Media description: Lgt. Brown sandy clay

Aliquot #4: *Latitude:* 33.55375873970 N *Longitude* -86.80369647760 W

Media description: Lgt. Brown sandy clay w/ trash

Aliquot #5: *Latitude:* 33.55375597070 N *Longitude* -86.80362789210 W

Media description: Dk. brown sandy clay w/ coal bits

ADDRESS: 3123 31st Ave N **PROPERTY ID:** CN0799 A TM

DATE: 4/23/14 **ARRIVAL TIME:** 1050

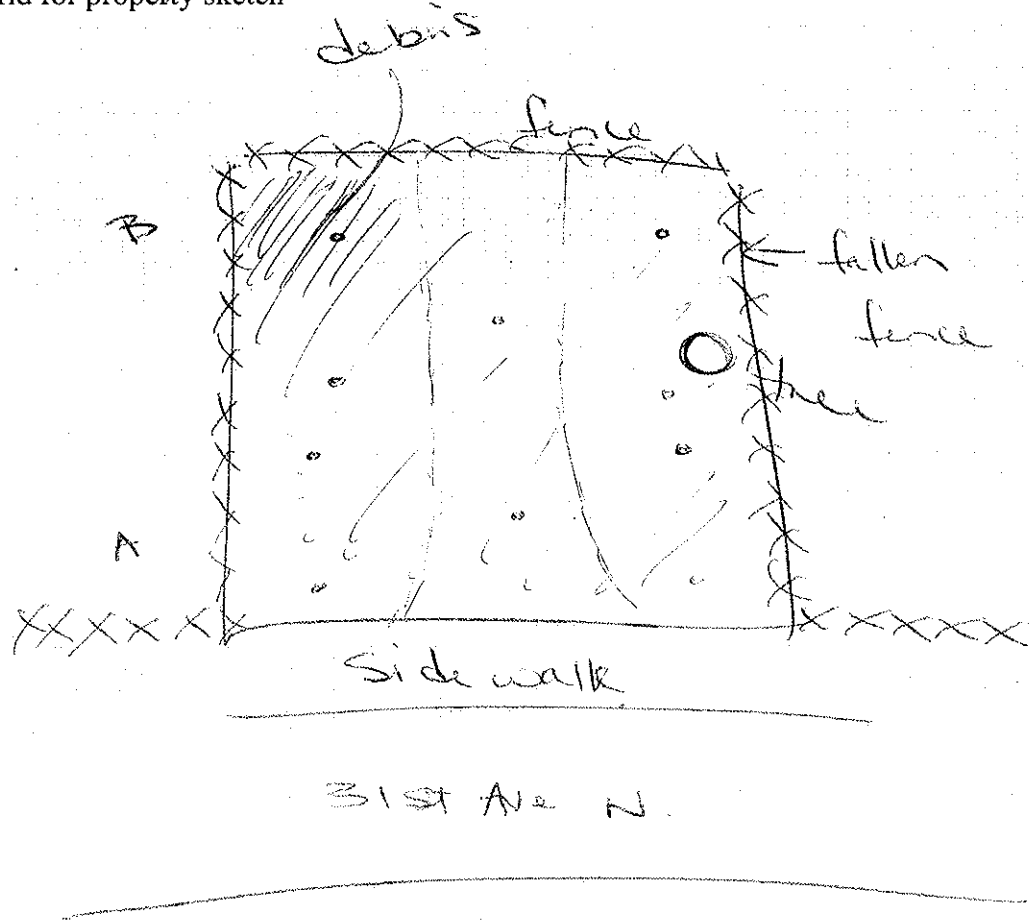
Other pertinent information (weather conditions, etc.):

Sunny, 70°

PROPERTY COMMENTS:

Vacant lot

Grid for property sketch



STATION ID: CV0799 **SAMPLE ID:** CV0799A-CS

SAMPLE COLLECTION TIME: 1105

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Front of lot near sidewalk.

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: (Yes) or No *If yes, indicate* **Duplicate/split sample station ID:** 11:10 Dup. CV0799A-CSD

GPS Coordinates: Trimble [X] Instrument #: _____ Logged? (Y) or N

Aliquot #1: *Latitude:* 33.55405133010 N *Longitude* -86.80398639830 W

Media description: Red-brown sandy clay

Aliquot #2 *Latitude:* 33.55405493940 N *Longitude* -86.80405690420 W

Media description: Dark Brown sandy clay

Aliquot #3: *Latitude:* 33.55401004180 N *Longitude* -86.80401603650 W

Media description: Dark brown sandy clay

Aliquot #4: *Latitude:* 33.55395469370 N *Longitude* -86.80397963020 W

Media description: Red-Brown sandy clay

Aliquot #5: *Latitude:* 33.80404735630 N *Longitude* -86.80404735630 W

Media description: Brown sandy clay

STATION ID: CV0799 **SAMPLE ID:** CV0799B-CS

SAMPLE COLLECTION TIME: 1115

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Back of lot

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes or No If yes, indicate* **Duplicate/split sample station ID:** _____

GPS Coordinates: Trimble [X] Instrument #: _____ Logged? (Y) or N

Aliquot #1: *Latitude:* 33.55375524850 N *Longitude* -86.80398332590 W

Media description: Dk. brown sandy clay

Aliquot #2 *Latitude:* 33.55386608590 N *Longitude* -86.80405913310 W

Media description: Dk. brown sandy clay w/ coal

Aliquot #3: *Latitude:* 33.55379920380 N *Longitude* -86.80403220030 W

Media description: Dk. brown sandy clay

Aliquot #4: *Latitude:* 33.55376140680 N *Longitude* -86.80400748930 W

Media description: Dk. brown sandy clay

Aliquot #5: *Latitude:* 33.55375524850 N *Longitude* -86.80406495340 W

Media description: Dk. brown sandy clay w/ coal

ADDRESS: 3128 31st Ave North **PROPERTY ID:** CV00056

DATE: 4/23/14 **ARRIVAL TIME:** 1120

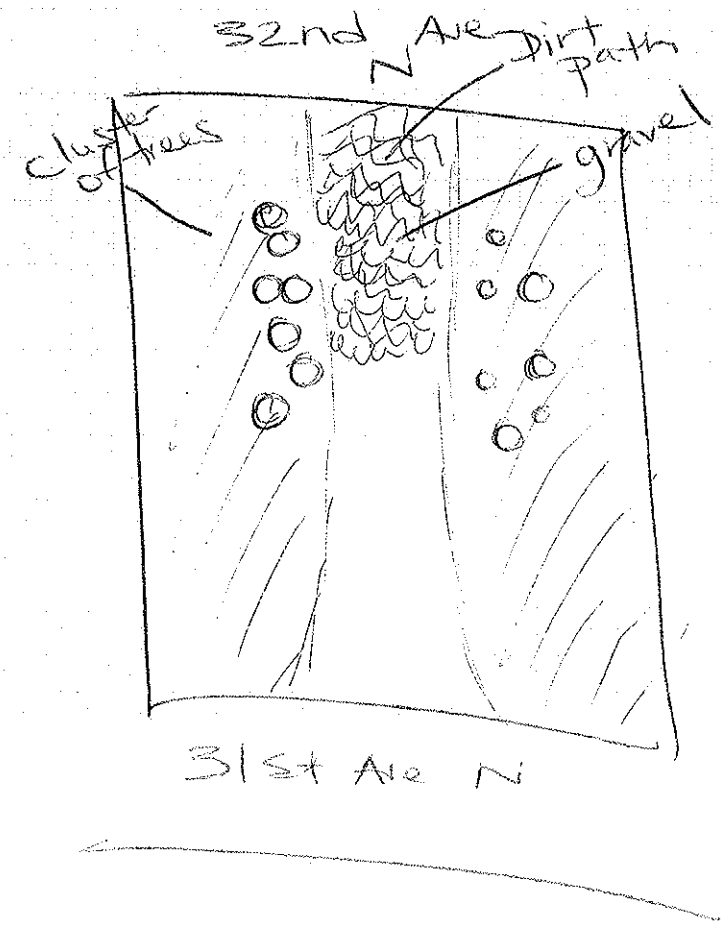
Other pertinent information (weather conditions, etc.):

Sunny, 72°

PROPERTY COMMENTS:

Vacant lot

Grid for property sketch



STATION ID: CV0056 **SAMPLE ID:** CV0056A-CS

SAMPLE COLLECTION TIME: 1130

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Front of lot

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes* or (*No*) *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? (Y) or N

Aliquot #1: *Latitude:* 33.554186386 20 N *Longitude* -86.80369442630 W

Media description: Dk. brown sandy clay w/terra cotta/brick pieces, coal

Aliquot #2 *Latitude:* 33.554184720 50 N *Longitude* -86.80363161680 W

Media description: Lt. brown sandy clay

Aliquot #3: *Latitude:* 33.554258872 40 N *Longitude* -86.80366527490 W

Media description: Lt. brown sandy clay w/bits of metal

Aliquot #4: *Latitude:* 33.554301288 50 N *Longitude* -86.80369048790 W

Media description: Brown sandy clay w/plastic trash

Aliquot #5: *Latitude:* 33.554391361880 N *Longitude* -86.80363387020 W

Media description: Yellow-brown sandy clay

STATION ID: CV0056 **SAMPLE ID:** CV0056B-CS

SAMPLE COLLECTION TIME: 1140

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Back of lot - gravel at back

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes* or (*No*) *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? (Y) or N

Aliquot #1: *Latitude:* 33.554358232 50 N *Longitude* -86.80368280610 W

Media description: Mostly gravel - Dirt is Dk. brown

Aliquot #2 *Latitude:* 33.554359882 90 N *Longitude* -86.80363555440 W

Media description: Mostly gravel - Soil is Dk. brown

Aliquot #3: *Latitude:* 33.554321111 790 N *Longitude* -86.80364365040 W

Media description: Mostly gravel - Soil is Dk. brown

Aliquot #4: *Latitude:* 33.554182543 50 N *Longitude* -86.80362623350 W

Media description: Dk. brown soil, small bits of coal

Aliquot #5: *Latitude:* 33.554182689 10 N *Longitude* -86.80362623350 W

Media description: Dk. brown-black soil w/ glass, coal

LB000104

United States Environmental Protection Agency
Region 4

OTIE
Oneida Total Integrated Enterprises

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

35TH AVENUE REMOVAL INVESTIGATION
BIRMINGHAM, ALABAMA
JEFF CROWLEY, ON-SCENE COORDINATOR

FIELD SAMPLING LOGBOOK

Book 1 **of** 1

Inclusive Dates: 8/18/14 - 8/20/14

List of Sampling Team in logbook:

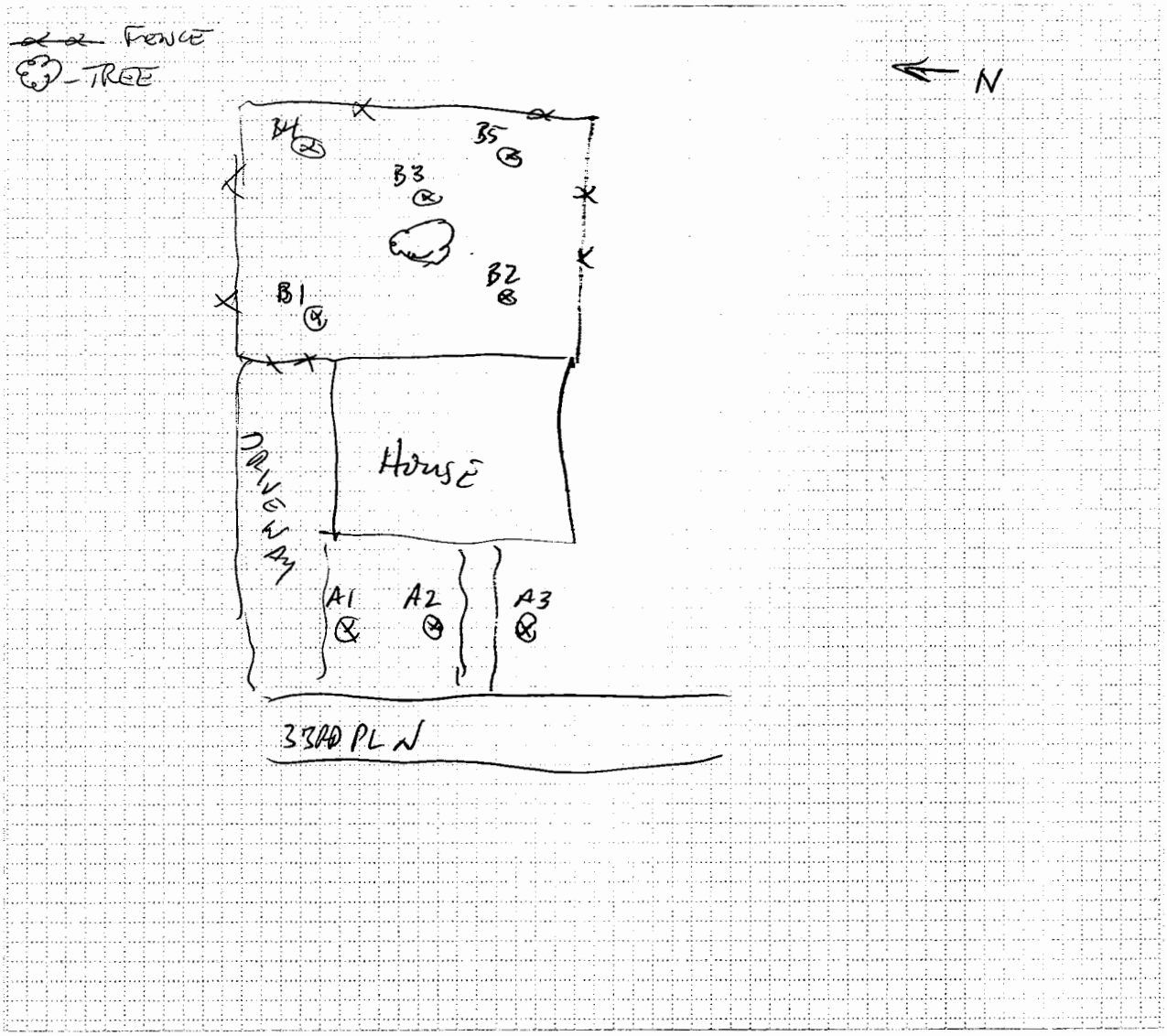
Name	Initials	Organization/Duties
Jerry Patuap	JP	OTIE, Team Leader
Nairimar Barrios-Castagna	NBC	OTIE

ADDRESS: 3389 33RD PLACE NORTH **PROPERTY ID:** CV0004
DATE: 8/18/14 **ARRIVAL TIME:** 1445

Other pertinent information (weather conditions, etc.):
CLOUDY 87°F

PROPERTY COMMENTS:

Grid for property sketch



ATION ID: CV 0004A SAMPLE ID: CV0004A-CS4"

MPLE COLLECTION TIME: 1515

cription of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):
3.3% MOISTURE

lection: (Composite) or Grab MS/MSD? Y or (N)

d Duplicate or Split: Yes or (No) If yes, indicate Duplicate/split sample station ID:

S Coordinates: Trimble [✓] Instrument #: Logged? Y or N

uot #1: Latitude: 33.558415816000 N Longitude -86.799361957 50 W
Media description: GRASS, BWN SANDY CLAY W/GRAVEL + COAL FRAGMENTS, DRY, NO ODOR

uot #2 Latitude: 33.558381751 00 N Longitude -86.799369200 50 W
Media description: SAA

uot #3: Latitude: 33.558361298 20 N Longitude -86.799361663 420 W
Media description: SAA

uot #4: Latitude: N Longitude W
Media description:

uot #5: Latitude: N Longitude W
Media description:

- SAME AS ABOVE

TION ID: CV0004B SAMPLE ID: CV0004B-CS4"

PLE COLLECTION TIME: 1545

iption of sample location (front, (back) side yard; vegetable garden; play set; ditch, etc):
6 % MOISTURE * HEAVY RAIN FOR 30 MINS

tion: (Composite) or Grab MS/MSD? Y or (N)

Duplicate or Split: Yes or (No) If yes, indicate Duplicate/split sample station ID:

oordinates: Trimble [✓] Instrument #: Logged? (Y) or N

t #1: Latitude: 33.558425594 20 N Longitude -86.799146535 80 W
Media description: GRASS, DK BWN TO BLACK SAND W/SOME CLAY, COAL FRAGS, GRAVEL, DAMP, NO ODOR

t #2 Latitude: 33.558381719 50 N Longitude -86.799113084 50 W
Media description: SAA

t #3: Latitude: 33.558387905 40 N Longitude -86.799064689 30 W
Media description: SAA

#4: Latitude: 33.558424197 60 N Longitude -86.798991854 10 W
Media description: SAA

#5: Latitude: 33.558373704 80 N Longitude -86.798994968 0 W
Media description: SAA

SAA - SAME AS ABOVE

ADDRESS: 3342 31ST WAY NORTH **PROPERTY ID:** CV0163

DATE: 8/18/14 **ARRIVAL TIME:** 1600

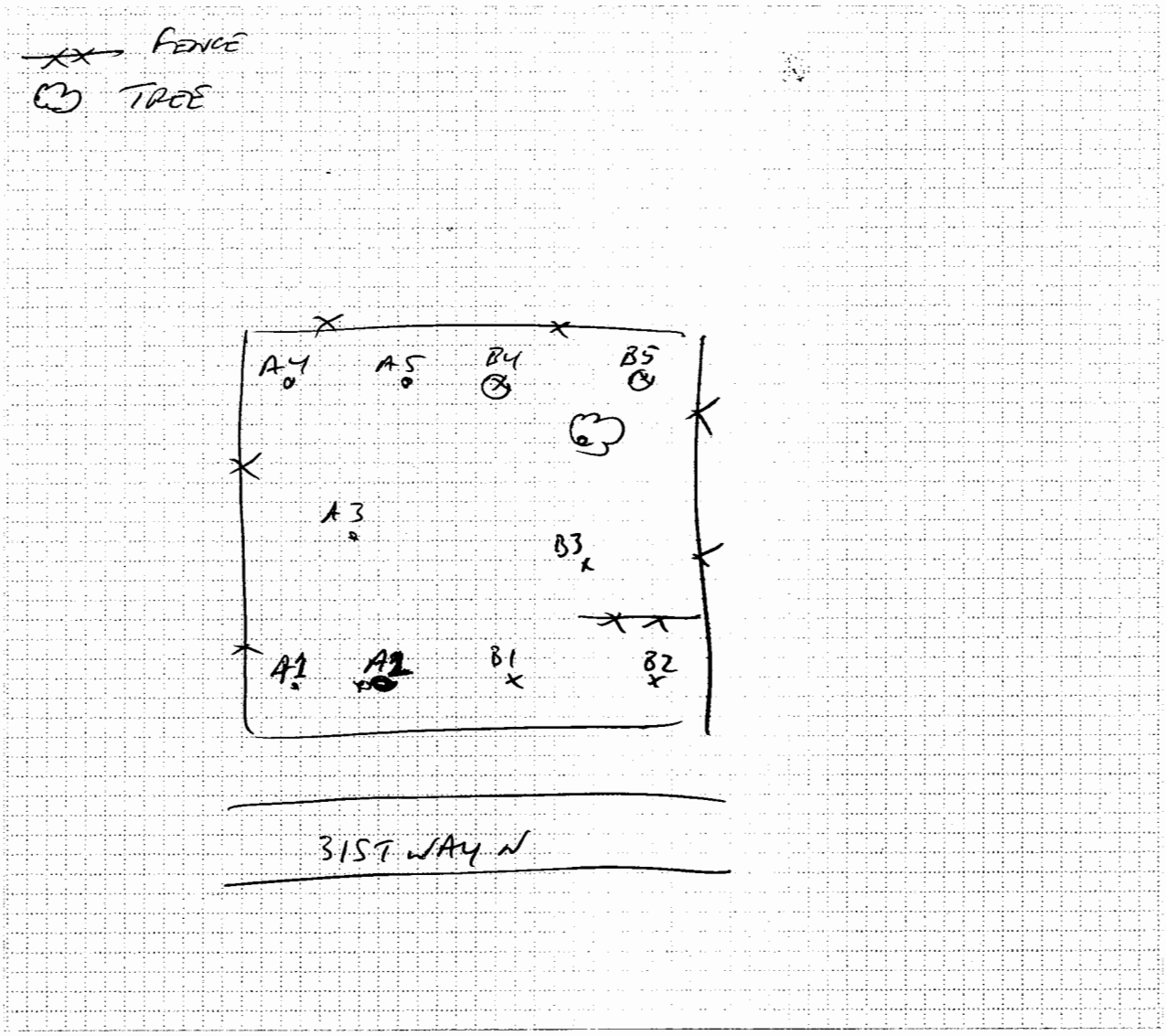
Other pertinent information (weather conditions, etc.):

CLOUDY/WET 75°F

PROPERTY COMMENTS:

VACANT LOT

Grid for property sketch



ION ID: CV0163A SAMPLE ID: CV0163A-CS4"

PLE COLLECTION TIME: 1620

iption of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):
1 % MOISTURE

tion: Composite or Grab MS/MSD? Y or N

Duplicate or Split: Yes or No If yes, indicate Duplicate/split sample station ID:

Coordinates: Trimble [X] Instrument #: Logged? Y or N

t #1: Latitude: 33.55734555340 N Longitude -86.80417558423 W
Media description: GRASS, BWN SANDY SILT W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

t #2 Latitude: 33.55741216230 N Longitude -86.80417013150 W
Media description: GRASS, ORANGE CLAY, DAMP, NO ODOR

t #3: Latitude: 33.55738170520 N Longitude -86.80430338140 W
Media description: GRASS DK BWN SANDY SILT W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

t #4: Latitude: 33.55734173030 N Longitude -86.80445376330 W
Media description: GRASS DK BWN SANDY SILT, W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

t #5: Latitude: 33.55743111980 N Longitude -86.80445376330 W
Media description: GRASS, DK BWN SANDY SILT W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

ION ID: CV0163B SAMPLE ID: CV0163B-CS4"

LE COLLECTION TIME: 1640

ption of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):
0 % MOISTURE

tion: Composite or Grab MS/MSD? Y or N

uplicate or Split: Yes or No If yes, indicate Duplicate/split sample station ID: CV0163B-CS4"

oordinates: Trimble [X] Instrument #: Logged? Y or N

t #1: Latitude: 33.55745975150 N Longitude -86.80416442080 W
Media description: GRASS BWN SANDY SILT W/GRAVEL, DAMP, NO ODOR

#2 Latitude: 33.55754921930 N Longitude -86.80416442080 W
Media description: GRASS, BWN SANDY SILT W/GRAVEL, DAMP, NO ODOR

#3: Latitude: 33.55750353360 N Longitude -86.80428624920 W
Media description: GRASS, DK BWN SANDY SILT W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

#4: Latitude: 33.55746355870 N Longitude -86.80444614900 W
Media description: GRASS, DK BWN SANDY SILT W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

#5: Latitude: 33.55756254420 N Longitude -86.80442901690 W
Media description: GRASS, DK BWN SANDY SILT W/GRAVEL + COAL FRAGS, DAMP, NO ODOR

ADDRESS: 3928 FAIRMONT PL N **PROPERTY ID:** FM0350

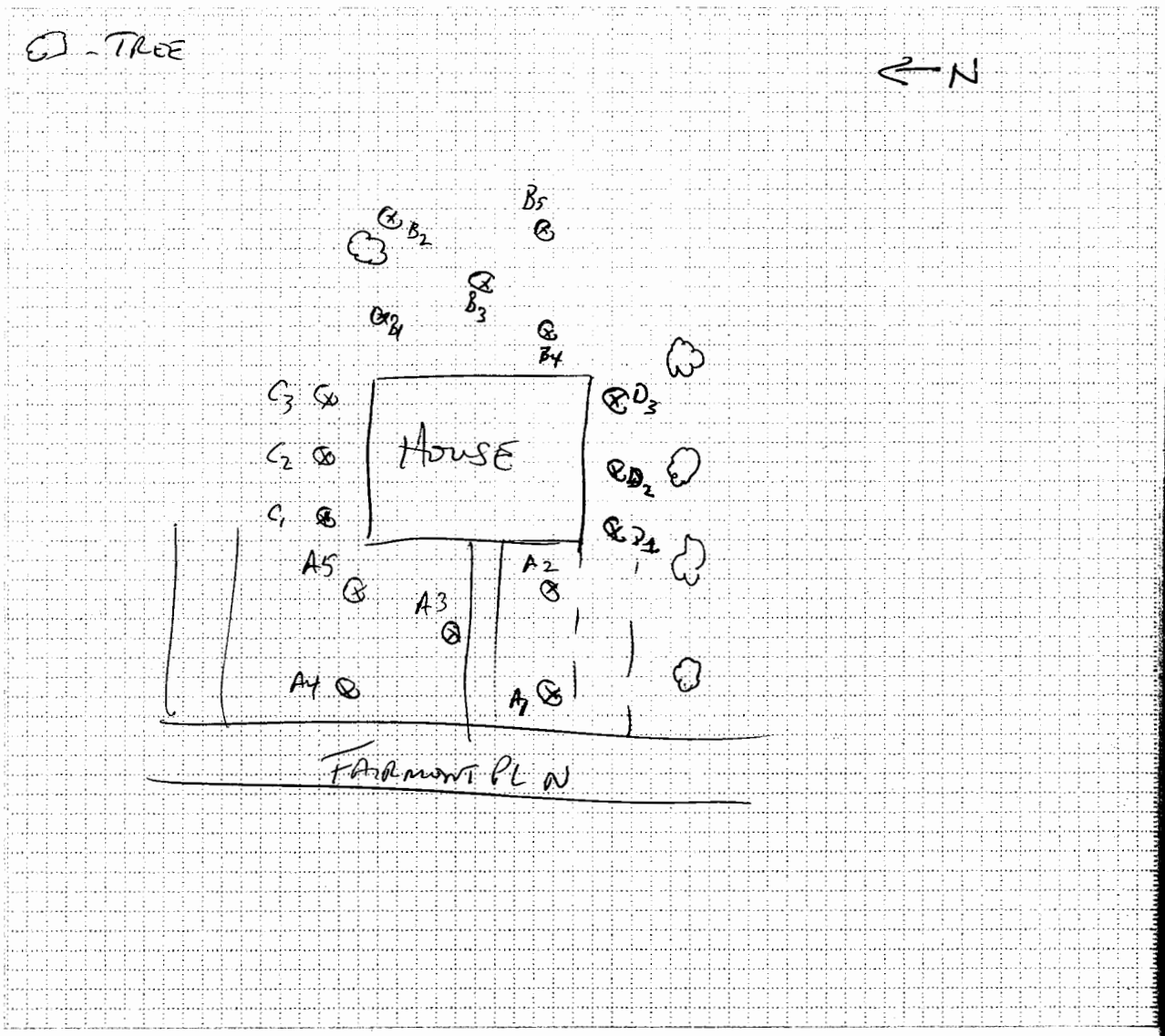
DATE: 8/19/14 **ARRIVAL TIME:** 1345

Other pertinent information (weather conditions, etc.):

SUNNY 90°F

PROPERTY COMMENTS:

Grid for property sketch



STATION ID: FM0350A **SAMPLE ID:** FM0350A-CS4"

SAMPLE COLLECTION TIME: 1445

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):
6.0% MOISTURE 7.3% MOISTURE - FM0350A-CSD4"

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: Yes or No *If yes, indicate* **Duplicate/split sample station ID:** FM0350A-CSD4" @ 1450

GPS Coordinates: Trimble [✓] Instrument #: _____ Logged? Y or N

Aliquot #1: *Latitude:* 33.562624237300 N *Longitude* -86.813854463270 W
Media description: GRASS, DK BWN SANDY SILT W/GRAVEL, DRY, NO ODOR

Aliquot #2 *Latitude:* 33.562641313100 N *Longitude* -86.813917226400 W
Media description: SAA

Aliquot #3: *Latitude:* 33.562609419200 N *Longitude* -86.813891490900 W
Media description: SAA

Aliquot #4: *Latitude:* 33.562606525900 N *Longitude* -86.813853116040 W
Media description: SAA

Aliquot #5: *Latitude:* 33.562564506500 N *Longitude* -86.813913644900 W
Media description: SAA

* SAA - SAME AS ABOVE

STATION ID: FM0350B **SAMPLE ID:** FM0350B-CS4"

SAMPLE COLLECTION TIME: 1515

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):
7.9% MOISTURE

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: Yes or No *If yes, indicate* **Duplicate/split sample station ID:** _____

GPS Coordinates: Trimble [✓] Instrument #: _____ Logged? Y or N

Aliquot #1: *Latitude:* 33.562533518870 N *Longitude* -86.814136294400 W
Media description: GRASS, DK BWN SANDY SILT W/GRAVEL COAL FRAGS, BRICKS + GLASS, DRY, NO ODOR

Aliquot #2 *Latitude:* 33.562594016730 N *Longitude* -86.814220102400 W
Media description: SAA

Aliquot #3: *Latitude:* 33.562644174600 N *Longitude* -86.814212518400 W
Media description: SAA

Aliquot #4: *Latitude:* 33.562664084700 N *Longitude* -86.814274850700 W
Media description: SAA

Aliquot #5: *Latitude:* 33.562660658200 N *Longitude* -86.814151955900 W
Media description: SAA

* SAA - SAME AS ABOVE

ADDRESS: _____ **PROPERTY ID:** _____

DATE: _____ **ARRIVAL TIME:** _____

Other pertinent information (weather conditions, etc.):

_____

PROPERTY COMMENTS:

_____

_____

_____

_____

Grid for property sketch

STATION ID: FM035DC **SAMPLE ID:** FM035DC-CS4"

SAMPLE COLLECTION TIME: 1500

Description of sample location (front, back, side yard, vegetable garden; play set; ditch, etc):
7.5% MOISTURE

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes or* (No) *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? (Y) or N

Aliquot #1: *Latitude:* 33.562570495 10 N *Longitude* -86.813963209 40 W

Media description: GRASS, DARK BROWN SANDY SILT w/ COAL FRAGS, GRAVEL, BRICKS, DRY, NO ODOR

Aliquot #2 *Latitude:* 33.562565311 00 N *Longitude* -86.814014435 40 W

Media description: SAA

Aliquot #3: *Latitude:* 33.562565098 20 N *Longitude* -86.814063393 20 W

Media description: SAA

Aliquot #4: *Latitude:* N *Longitude* W

Media description:

Aliquot #5: *Latitude:* ~~N Longitude~~ W

Media description:

*SAA - SAME AS ABOVE

STATION ID: FM035DD **SAMPLE ID:** FM035DD-CS4"

SAMPLE COLLECTION TIME: 1530

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):
8.7% MOISTURE

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes or* (No) *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? (Y) or N

Aliquot #1: *Latitude:* 33.562696211 20 N *Longitude* -86.813971927 90 W

Media description: BLACK SANDY SILT w/ COAL FRAGS, GRAVEL, BRICKS, GLASS, DRY, NO ODOR

Aliquot #2 *Latitude:* 33.562701274 40 N *Longitude* -86.814071191 70 W

Media description: SAA

Aliquot #3: *Latitude:* 33.562673906 60 N *Longitude* -86.814116686 50 W

Media description: SAA

Aliquot #4: *Latitude:* N *Longitude* W

Media description:

Aliquot #5: *Latitude:* N *Longitude* W

Media description:

*SAA - SAME AS ABOVE

ADDRESS: _____ **PROPERTY ID:** _____

DATE: _____ **ARRIVAL TIME:** _____

Other pertinent information (weather conditions, etc.):

_____

PROPERTY COMMENTS:

_____

_____

_____

_____

Grid for property sketch

LB001055

United States Environmental Protection Agency
Region 4

35TH AVENUE REMOVAL INVESTIGATION
BIRMINGHAM, ALABAMA
JEFF CROWLEY, ON-SCENE COORDINATOR

FIELD SAMPLING LOGBOOK

Book 1 **of** 1

Inclusive Dates: August 25TH 2014 (1 DAY ONLY)

List of Sampling Team in logbook:

Name	Initials	Organization/Duties
R. Henderson		OTIE, Team Leader
E. Morris		OTIE - Sampler
G. Kowalski	GK	OTIE - Sampler

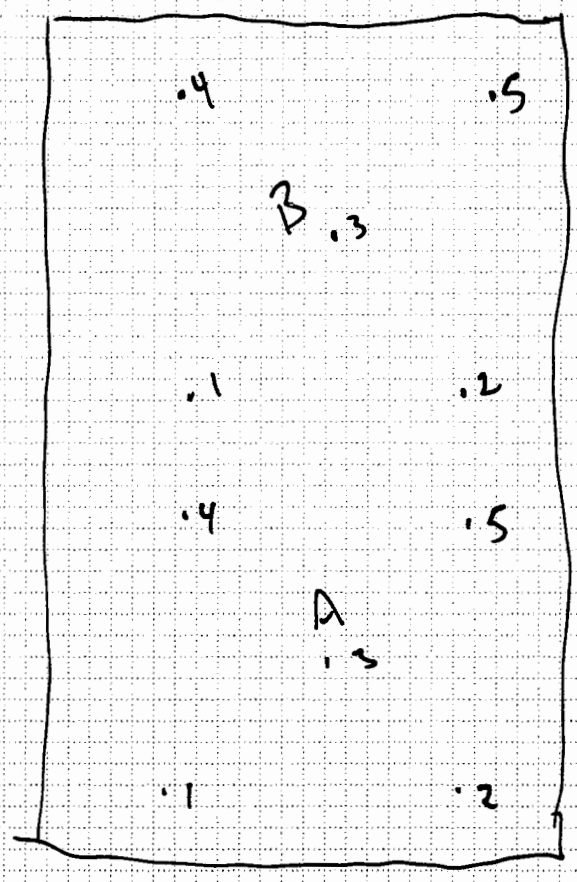
ADDRESS: 3221 31ST AVE N **PROPERTY ID:** CV-0815

DATE: 8/25/14 **ARRIVAL TIME:** 1650

Other pertinent information (weather conditions, etc.):

PROPERTY COMMENTS:

Grid for property sketch



STATION ID: CVØ815A- **SAMPLE ID:** CVØ815A-CSØ-4

SAMPLE COLLECTION TIME: 17ØØ

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

FRONT YARD

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: Yes or No *If yes, indicate* **Duplicate/split sample station ID:** _____

GPS Coordinates: Trimble [ ] Instrument #: _____ Logged? Y or N

Aliquot #1: *Latitude:* 33.55414495840 N *Longitude* -86.80119758940 W

Media description: _____

Aliquot #2 *Latitude:* 33.55414263460 N *Longitude* -86.80108728790 W

Media description: _____

Aliquot #3: *Latitude:* 33.55423415430 N *Longitude* -86.80116494270 W

Media description: _____

Aliquot #4: *Latitude:* 33.55432905530 N *Longitude* -86.80119646640 W

Media description: _____

Aliquot #5: *Latitude:* 33.55432549190 N *Longitude* -86.80109739170 W

Media description: _____

STATION ID: CVØ815B **SAMPLE ID:** CVØ815B-CSØ-4

SAMPLE COLLECTION TIME: 1715

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

BACK YARD

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: Yes or No *If yes, indicate* **Duplicate/split sample station ID:** _____

GPS Coordinates: Trimble [ ] Instrument #: _____ Logged? Y or N

Aliquot #1: *Latitude:* 33.55434992970 N *Longitude* -86.80120570480 W

Media description: _____

Aliquot #2 *Latitude:* 33.55434231470 N *Longitude* -86.80110519640 W

Media description: _____

Aliquot #3: *Latitude:* 33.55437277180 N *Longitude* -86.80115240490 W

Media description: _____

Aliquot #4: *Latitude:* 33.55440322890 N *Longitude* -86.80122397910 W

Media description: _____

Aliquot #5: *Latitude:* 33.55440322890 N *Longitude* -86.80110824210 W

Media description: _____

ADDRESS: _____ PROPERTY ID: _____

DATE: _____ ARRIVAL TIME: _____

Other pertinent information (weather conditions, etc.):

_____

PROPERTY COMMENTS:

_____

_____

_____

_____

Grid for property sketch

End of logbook LFK

LB000105

United States Environmental Protection Agency
Region 4

OTIE
Oneida Total Integrated Enterprises

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

35TH AVENUE REMOVAL INVESTIGATION
BIRMINGHAM, ALABAMA
JEFF CROWLEY, ON-SCENE COORDINATOR

FIELD SAMPLING LOGBOOK

Book 1 **of** ____

Inclusive Dates: 9/3/2014 -

List of Sampling Team in logbook:

Name	Initials	Organization/Duties
		,Team Leader
Nairimer Barrios-Cartagena	NM	OTIE, sampler
Ryan Stubbs	RS	OTIE/Sampler
Jeremy Patelar	JP	OTIE

ADDRESS: 3528 42nd Ave North **PROPERTY ID:** HP0082

DATE: 9/4/14 **ARRIVAL TIME:** 1100

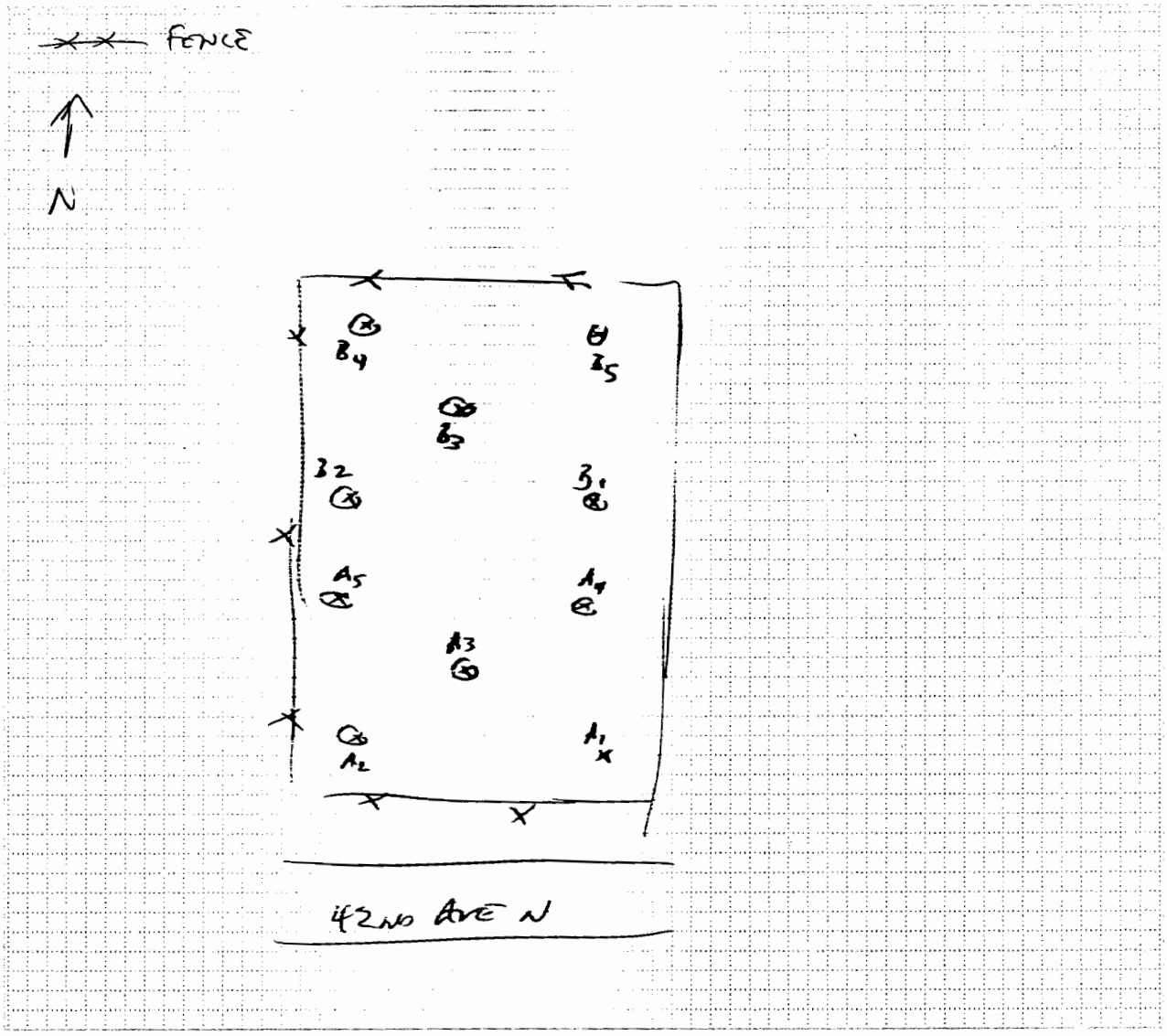
Other pertinent information (weather conditions, etc.):

81°F CLOUDY

PROPERTY COMMENTS:

VACANT LOT

Grid for property sketch



STATION ID: HP 0082A **SAMPLE ID:** HP0082A-CS4"

SAMPLE COLLECTION TIME: 1110

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

VACANT LOT, FRONT 10.1% MOISTURE

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes or* (No) *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? (Y) or N

Aliquot #1: *Latitude:* 33.565093132 40 N *Longitude* -86.795449965 70 W

Media description: BWN SANDY SILT W/GRAVEL, COAL FRAGS, GLASS, DRY, NO ODOR

Aliquot #2 *Latitude:* 33.565096233 00 N *Longitude* -86.795526003 80 W

Media description: BWN SANDY SILT W/GRAVEL, COAL FRAGS, GLASS, DRY, NO ODOR

Aliquot #3: *Latitude:* 33.565149999 200 N *Longitude* -86.795492610 90 W

Media description: BWN SANDY SILT W/GRAVEL, COAL FRAGS, GLASS, DRY, NO ODOR

Aliquot #4: *Latitude:* 33.565209748 80 N *Longitude* -86.795538222 90 W

Media description: BWN SANDY SILT W/GRAVEL, COAL FRAGS, GLASS, DRY, NO ODOR

Aliquot #5: *Latitude:* 33.565205452 70 N *Longitude* -86.795437516 760 W

Media description: BWN SANDY SILT W/GRAVEL, COAL FRAGS, GLASS, DRY, NO ODOR

STATION ID: HP0082B **SAMPLE ID:** HP0082B-CS4"

SAMPLE COLLECTION TIME: 1120

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

VACANT LOT; VACANT LOT B 7.5% MOISTURE

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes or* (No) *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? (Y) or N

Aliquot #1: *Latitude:* 33.565251345 70 N *Longitude* -86.795448438 10 W

Media description: BWN SANDY SILT W/GRAVEL, COAL FRAGS, GLASS, DRY, NO ODOR

Aliquot #2 *Latitude:* 33.565248426 80 N *Longitude* - 86.795532123 40 W

Media description: BWN SANDY SILT W/GRAVEL, COAL FRAGS, GLASS, DRY, NO ODOR

Aliquot #3: *Latitude:* 33.565349471 10 N *Longitude* -86.795480087 50 W

Media description: BWN SANDY SILT W/GRAVEL, COAL FRAGS, GLASS, DRY, NO ODOR

Aliquot #4: *Latitude:* 33.565427727 0 N *Longitude* -86.795514458 80 W

Media description: BWN SANDY SILT W/GRAVEL, COAL FRAGS, GLASS, DRY, NO ODOR

Aliquot #5: *Latitude:* 33.565424413 40 N *Longitude* -86.795450952 70 W

Media description: BWN SANDY SILT W/GRAVEL, COAL FRAGS, GLASS, DRY, NO ODOR

LB000108a

United States Environmental Protection Agency
Region 4

OTIE
Oneida Total Integrated Enterprises

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

35TH AVENUE REMOVAL INVESTIGATION
BIRMINGHAM, ALABAMA
JEFF CROWLEY, ON-SCENE COORDINATOR

FIELD SAMPLING LOGBOOK

Book ____ **of** ____

Inclusive Dates: 10-6-14 [redacted]

List of Sampling Team in logbook:

Name	Initials	Organization/Duties
_____	_____	_____,Team Leader
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

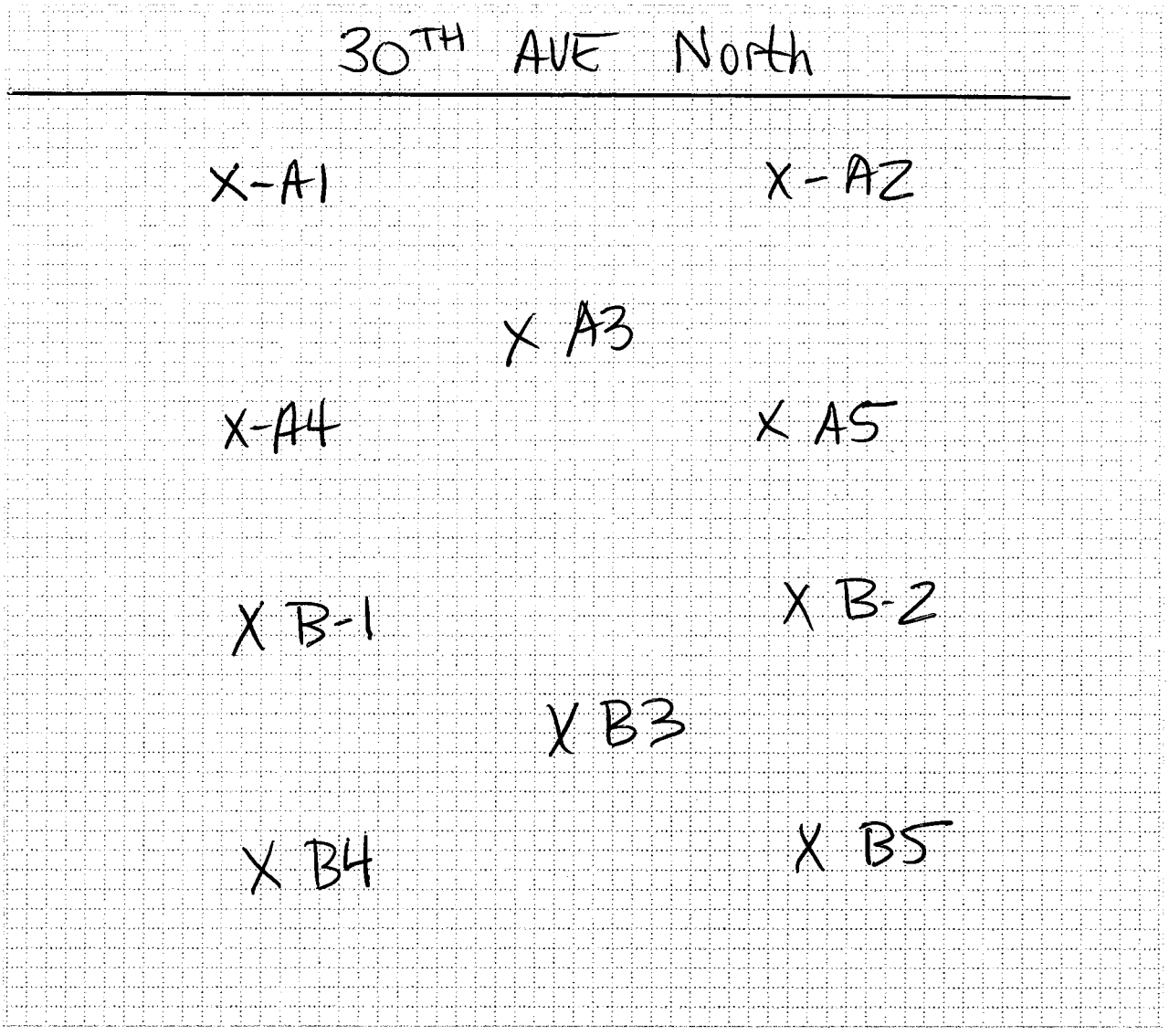
ADDRESS: 3428 30TH AVE N **PROPERTY ID:** CV0753

DATE: 6/7/14 **ARRIVAL TIME:** 1600

Other pertinent information (weather conditions, etc.):

PROPERTY COMMENTS:

Grid for property sketch



STATION ID: CV0753A SAMPLE ID: CV0753A-CS(0-4")

SAMPLE COLLECTION TIME: 1610

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):
FRONT YARD

Collection: Composite or Grab MS/MSD? Y or N

Field Duplicate or Split: Yes or No If yes, indicate Duplicate/split sample station ID: CV0753A-CSD(0-4")

GPS Coordinates: Trimble [ ] Instrument #: _____ Logged? Y or N

Aliquot #1: Latitude: 33.552892 N Longitude -86.796998 W
Media description: Brown silt loam

Aliquot #2 Latitude: 33.552891 N Longitude -86.797076 W
Media description: Brown silt loam

Aliquot #3: Latitude: 33.552935 N Longitude -86.797044 W
Media description: Brown silt loam

Aliquot #4: Latitude: 33.552996 N Longitude -86.796994 W
Media description: Brown silt loam

Aliquot #5: Latitude: 33.553009 N Longitude -86.797082 W
Media description: Brown silt loam

STATION ID: CV0753B SAMPLE ID: CV0753B-CS(0-4")

SAMPLE COLLECTION TIME: 1620

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):
BACK YARD

Collection: Composite or Grab MS/MSD? Y or N

Field Duplicate or Split: Yes or No If yes, indicate Duplicate/split sample station ID: _____

GPS Coordinates: Trimble [ ] Instrument #: _____ Logged? Y or N

Aliquot #1: Latitude: _____ N Longitude _____ W
Media description: Brown silt loam

Aliquot #2 Latitude: _____ N Longitude _____ W
Media description: Brown silt loam

Aliquot #3: Latitude: _____ N Longitude _____ W
Media description: Brown silt loam

Aliquot #4: Latitude: _____ N Longitude _____ W
Media description: Brown silt loam

Aliquot #5: Latitude: _____ N Longitude _____ W
Media description: Brown silt loam

LBØØ110

United States Environmental Protection Agency
Region 4

OTIE
Oneida Total Integrated Enterprises

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

35TH AVENUE REMOVAL INVESTIGATION
BIRMINGHAM, ALABAMA
JEFF CROWLEY, ON-SCENE COORDINATOR

FIELD SAMPLING LOGBOOK

Book 1 **of** 1

Inclusive Dates: November 13, 2014

List of Sampling Team in logbook:

Name	Initials	Organization/Duties
Russell Henderson	RH	OTIE, Team Leader
Nairimer Berrios-Cartagena	NBC	OTIE

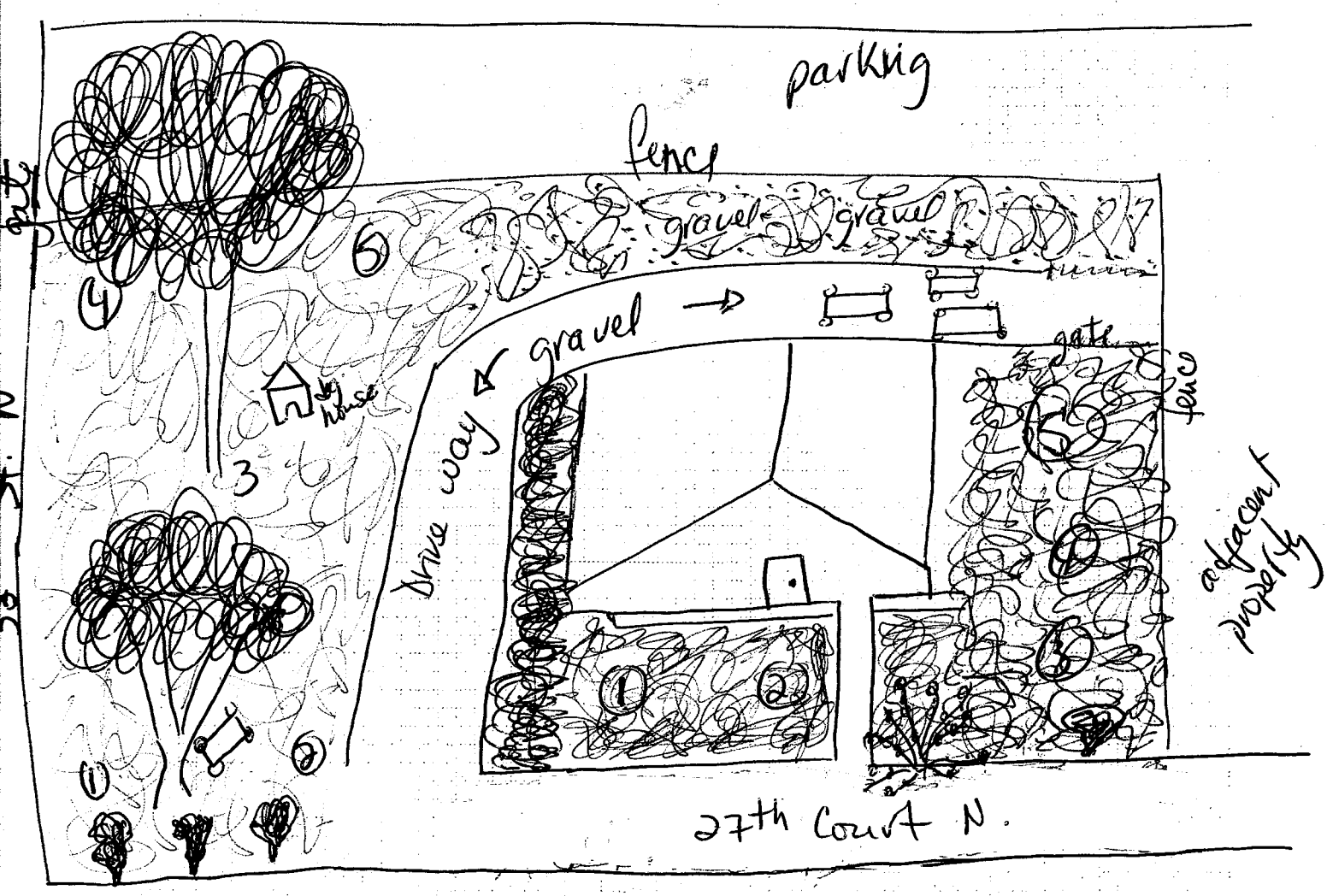
ADDRESS: 3004 27th Ct. N **PROPERTY ID:** CV 1061

DATE: 11/13/14 **ARRIVAL TIME:** 1010

Other pertinent information (weather conditions, etc.):
37°F cloudy wind N 14mph

PROPERTY COMMENTS:
new property asked to be sampled

Grid for property sketch



STATION ID: CU 1061 A **SAMPLE ID:** CU 1061A-CS0-4"

SAMPLE COLLECTION TIME: 1035

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

front/side ~~back~~ yards

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes or* (No) *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? (Y) or N

Aliquot #1: *Latitude:* 33.550503 N *Longitude* -86.802035 W

Media description: brown silt w/ organic debris

Aliquot #2 *Latitude:* 33.550501 N *Longitude* -86.801983 W

Media description: same as #1

Aliquot #3: *Latitude:* 33.550521 N *Longitude* -86.801938 W

Media description: same as #1

Aliquot #4: *Latitude:* 33.550583 N *Longitude* -86.801939 W

Media description: same as #1

Aliquot #5: *Latitude:* 33.550642 N *Longitude* -86.801938 W

Media description: same as #1

STATION ID: CU 1061 B **SAMPLE ID:** CU1061B-CS0-4"

SAMPLE COLLECTION TIME: 1040

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

left side yard

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: *Yes or* (No) *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? (Y) or N

Aliquot #1: *Latitude:* 33.550508 N *Longitude* -86.802206 W

Media description: brown silt w/ organic debris

Aliquot #2 *Latitude:* 33.550508 N *Longitude* -86.802116 W

Media description: same as #1

Aliquot #3: *Latitude:* 33.550632 N *Longitude* -86.802196 W

Media description: same as #1

Aliquot #4: *Latitude:* 33.550771 N *Longitude* -86.802233 W

Media description: same as #1

Aliquot #5: *Latitude:* 33.550767 N *Longitude* -86.802146 W

Media description: brown silt w/ gravel, glass & organic debris

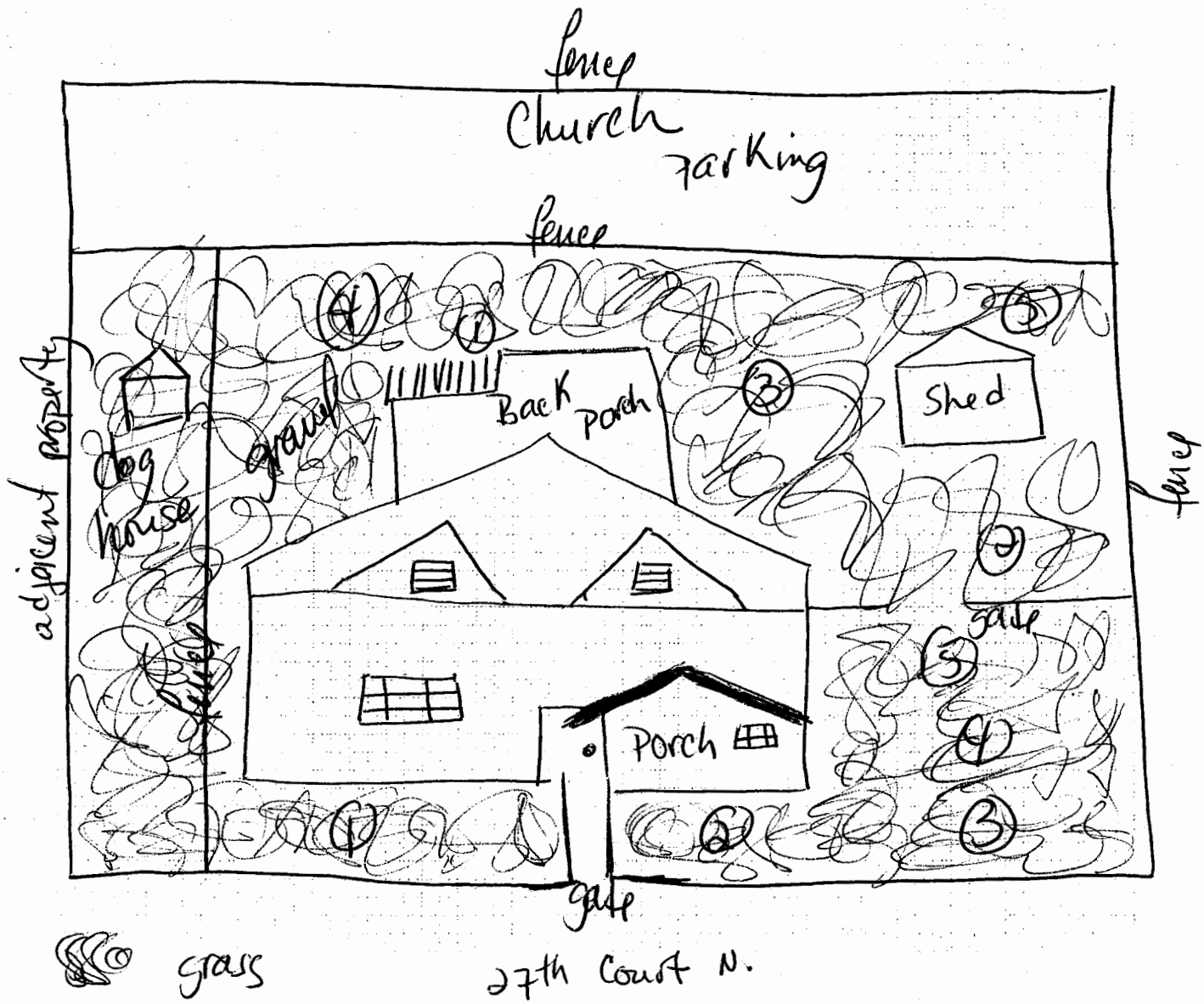
ADDRESS: 3208 27th ~~Ave~~ Ct N **PROPERTY ID:** CU1063

DATE: 11/13/14 **ARRIVAL TIME:** 1048

Other pertinent information (weather conditions, etc.):
37°F cloudy; wind → N 14 mph

PROPERTY COMMENTS:
new property; relative to Mrs. McCord from 3204 27th Court N.

Grid for property sketch



STATION ID: CV1063A **SAMPLE ID:** CV1063A-CS0-4"

SAMPLE COLLECTION TIME: 1105

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

front / side yard

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: (Yes) or No *If yes, indicate* **Duplicate/split sample station ID:** CV1063A-CSD 0-4" @ 1110

GPS Coordinates: Trimble [X] Instrument #: _____ Logged? (Y) or N

Aliquot #1: *Latitude:* 33.557488 N *Longitude* -86.804176 W

Media description: brown silt w/ grass

Aliquot #2 *Latitude:* 33.557357 N *Longitude* -86.804174 W

Media description: brown silt w/grass

Aliquot #3: *Latitude:* 33.557406 N *Longitude* -86.804289 W

Media description: brown silt w/grass

Aliquot #4: *Latitude:* 33.557348 N *Longitude* -86.804453 W

Media description: brown silt w/grass

Aliquot #5: *Latitude:* 33.557429 N *Longitude* -86.804444 W

Media description: brow silt w/grass

STATION ID: CV1063B **SAMPLE ID:** CV1063B-CS0-4"

SAMPLE COLLECTION TIME: 1115

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

back yard

Collection: (Composite) or Grab **MS/MSD?** Y or (N)

Field Duplicate or Split: Yes or (No) *If yes, indicate* **Duplicate/split sample station ID:** _____

GPS Coordinates: Trimble [X] Instrument #: _____ Logged? (Y) or N

Aliquot #1: *Latitude:* 33.557453 N *Longitude* -86.804179 W

Media description: brown silt

Aliquot #2 *Latitude:* 33.557562 N *Longitude* -86.804170 W

Media description: brown silt

Aliquot #3: *Latitude:* 33.557524 N *Longitude* -86.804304 W

Media description: brown silt

Aliquot #4: *Latitude:* 33.557458 N *Longitude* -86.804444 W

Media description: brown silt

Aliquot #5: *Latitude:* 33.557574 N *Longitude* -86.804460 W

Media description: brown silt

LBXX119

United States Environmental Protection Agency
Region 4

OTIE
Oneida Total Integrated Enterprises

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

35TH AVENUE REMOVAL INVESTIGATION
BIRMINGHAM, ALABAMA
JEFF CROWLEY, ON-SCENE COORDINATOR

FIELD SAMPLING LOGBOOK

Book 1 **of** 1

Inclusive Dates: 5/18/2015 to 5/19/2015

List of Sampling Team in logbook:

Name	Initials	Organization/Duties
Jerry Partap	JP	OTIE ,Team Leader
Nairimar Berrios-Cartagena	NBC	OTIE

ADDRESS: 3416 31ST AVE N **PROPERTY ID:** CV0824
DATE: 5/18/15 **ARRIVAL TIME:** 1400

Other pertinent information (weather conditions, etc.):
85°F - PARTLY CLOUDY

PROPERTY COMMENTS:
VACANT PROPERTY; TREE IN MIDDLE; HEAVY VEGETATION

Grid for property sketch
SEE MAP AT BACK OF LOGBOOK

STATION ID: CV0824A **SAMPLE ID:** CV0824A-CS0-4

SAMPLE COLLECTION TIME: 1454

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: *Yes or No* *If yes, indicate* **Duplicate/split sample station ID:** CV0824A-CS004 @1459

GPS Coordinates: Trimble [X] Instrument #: Logged? Y or N

Aliquot #1: *Latitude:* 33.55370160810 N *Longitude* -86.79758056440 W

Media description: GRASS, BLACK TOPSOIL, DRY, SANDY SILT; 2-4 - GRAVEL, DRY, NO ODOR

Aliquot #2 *Latitude:* 33.55370118030 N *Longitude* -86.79748836430 W

Media description: GRASS, BLACK TOPSOIL, DRY SANDY SILT; 2-4 - GRAVEL, DRY, NO ODOR

Aliquot #3: *Latitude:* 33.55376976550 N *Longitude* -86.79749853460 W

Media description: GRASS, BLACK TOPSOIL, DRY, SANDY SILT, 2-4 - GRAVEL, DRY, NO ODOR

Aliquot #4: *Latitude:* 33.55382534720 N *Longitude* -86.79758206920 W

Media description: GRASS, TOPSOIL BLACK SANDY SILT; 2-4 - GRAVEL, DRY, NO ODOR

Aliquot #5: *Latitude:* 33.55383311720 N *Longitude* -86.79745912430 W

Media description: GRASS, BLACK TOPSOIL, SANDY SILT COAL FRAGS; 2-4 - GRAVEL

STATION ID: CV0824B **SAMPLE ID:** CV0824B-CS0-4

SAMPLE COLLECTION TIME: 1513

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: *Yes or No* *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? Y or N

Aliquot #1: *Latitude:* 33.55386109380 N *Longitude* -86.79757669520 W

Media description: GRASS, TOPSOIL BLACK SANDY SILT W/ COAL FRAGS

Aliquot #2: *Latitude:* 33.55385306080 N *Longitude* -86.79745776890 W

Media description: GRASS, TOPSOIL SANDY SILT LT BWN, DRY, NO ODOR

Aliquot #3: *Latitude:* 33.55390694820 N *Longitude* -86.79751533700 W

Media description: SAA AS ALIQUOT #1

Aliquot #4: *Latitude:* 33.55399271060 N *Longitude* -86.79757718440 W

Media description: SAA AS ALIQUOT #1

Aliquot #5: *Latitude:* 33.55397781400 N *Longitude* -86.79746148220 W

Media description: SAME AS ALIQUOT #1

SAA - SAME AS ABOVE

ADDRESS: 3221 31ST AVE N **PROPERTY ID:** CV0815

DATE: 5/18/15 **ARRIVAL TIME:** 1550

Other pertinent information (weather conditions, etc.):

85 of PARTLY CLOUDY

PROPERTY COMMENTS:

VACANT LOT

PAHs ONLY

Grid for property sketch

SEE MAP AT BACK OF LOGBOOK

STATION ID: CV0815A **SAMPLE ID:** CV0815A-CS 0-4

SAMPLE COLLECTION TIME: 1600

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

1 SAMPLE LOCATION

Collection: Composite or Grab **MS/MSD?** Y or N JP 5/15/15

Field Duplicate or Split: *Yes or No* *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [✓] Instrument #: Logged? Y or N

Aliquot #1: *Latitude:* 33.55414495840 N *Longitude* -86.80119758940 W

Media description: GRASS, SANDY SILT BRN, W/ GRAVEL, DRY NO ODOR, SLAG + COAL FRAGS ~~SAMPLE DESCRIPTION PREVIOUSLY RECORDED~~ 5/15/15

Aliquot #2 *Latitude:* 33.55414263460 N *Longitude* -86.80108728790 W

Media description: JP ~~SAA~~ GRASS, BRN SILTY CLAY W/ GRAVEL, COAL FRAGS, DEBRIS ~~SAMPLE DESCRIPTION PREVIOUSLY RECORDED~~ 5/15/15

Aliquot #3: *Latitude:* 33.55423415430 N *Longitude* -86.80116494270 W

Media description: JP 5/15/15 ~~SAMPLE~~ SAA AS ALIQUOT #2

Aliquot #4: *Latitude:* 33.55432905530 N *Longitude* -86.80119646640 W

Media description: GRASS, BLACK SANDY SILT W/ GRAVEL + COAL, DRY, NO ODOR

Aliquot #5: *Latitude:* 33.55432549190 N *Longitude* -86.80109739178 W

Media description: SAA. AS ALIQUOT #4

STATION ID: **SAMPLE ID:**

SAMPLE COLLECTION TIME:

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: *Yes or No* *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [ ] Instrument #: Logged? Y or N

Aliquot #1: *Latitude:* N *Longitude* W

Media description:

JP 5/15/15

Aliquot #2: *Latitude:* N *Longitude* W

Media description:

Aliquot #3: *Latitude:* N *Longitude* W

Media description:

Aliquot #4: *Latitude:* N *Longitude* W

Media description:

Aliquot #5: *Latitude:* N *Longitude* W

Media description:

ADDRESS: 3445 33RD AVE N **PROPERTY ID:** CV0310

DATE: 5/19/15 **ARRIVAL TIME:** 1200

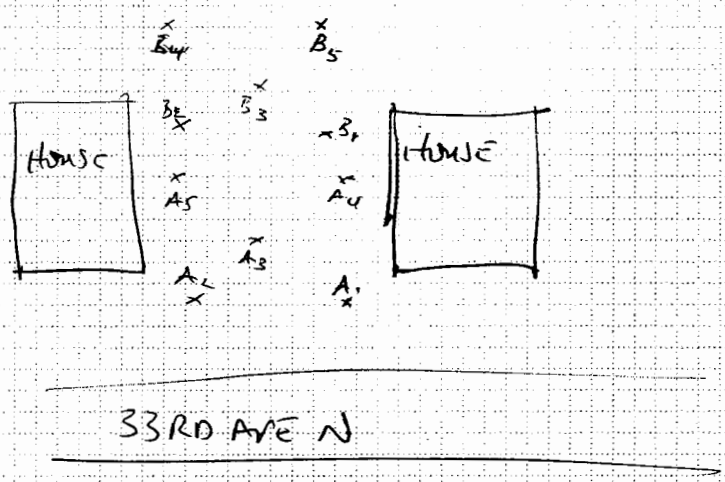
Other pertinent information (weather conditions, etc.):

~~VACANT LOT~~ JP 5/19/15 ~~JB~~ JP 5/19/15 73°F PARTLY CLOUDY

PROPERTY COMMENTS:

VACANT LOT

Grid for property sketch



STATION ID: CV0310A **SAMPLE ID:** CV0310A - CS044

SAMPLE COLLECTION TIME: 1210

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: *Yes or No* *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? Y or N

Aliquot #1: *Latitude:* 33.555154340 60 N *Longitude* -86.79650342160 W

Media description: GRASS, BLACK SANDY SILT W/ COAL, GRAVEL, DRY, NO ODOR

Aliquot #2 *Latitude:* 33.55515109530 N *Longitude* -86.79659872550 W

Media description: SAA AS ALIQUOT # 1

Aliquot #3: *Latitude:* 33.55509550980 N *Longitude* -86.79655450640 W

Media description: SAA AS ALIQUOT # 1

Aliquot #4: *Latitude:* 33.55504458750 N *Longitude* -86.79649977500 W

Media description: SAA AS ALIQUOT # 1

Aliquot #5: *Latitude:* 33.55504381840 N *Longitude* -86.79659306360 W

Media description: SAA AS ALIQUOT # 1

STATION ID: CV0310B **SAMPLE ID:** CV0310B - CS0-4

SAMPLE COLLECTION TIME: 1220

Description of sample location (front, back, side yard; vegetable garden; play set; ditch, etc):

Collection: Composite or Grab **MS/MSD?** Y or N

Field Duplicate or Split: *Yes or No* *If yes, indicate* **Duplicate/split sample station ID:**

GPS Coordinates: Trimble [X] Instrument #: Logged? Y or N

Aliquot #1: *Latitude:* 33.55501101040 N *Longitude* -86.79659540500 W

Media description: GRASS, BLACK SANDY SILT W/ COAL + GRAVEL, DRY, NO ODOR

Aliquot #2 *Latitude:* 33.55501406020 N *Longitude* -86.79649886230 W

Media description: SAA AS ALIQUOT # 1

Aliquot #3: *Latitude:* 33.55494592650 N *Longitude* -86.79654311010 W

Media description: SAA AS ALIQUOT # 1

Aliquot #4: *Latitude:* 33.55486027100 N *Longitude* -86.79648679850 W

Media description: SAA AS ALIQUOT # 1

Aliquot #5: *Latitude:* 33.55487616250 N *Longitude* -86.79660154290 W

Media description: SAA AS ALIQUOT # 1

APPENDIX E

DATA VALIDATION MEMORANDUM
AND LABORATORY ANALYTICAL REPORTS