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REVISED PROPOSAL FOR CONTAINMENT REMEDY SWANNANOA DJJDP PROPERTY

Swannanoa, Buncombe County, North Carolina
IHSB Inventory No. NONCD0002801

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December 28, 2015

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PROFESSIONAL CERTIFICATION

This Revised Proposal for Containment Remedy for the Swannanoa DJJDP Property in Swannanoa, North Carolina has been prepared under the responsible charge of the following Professional Geologist registered in the State of North Carolina.

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1.0 INTRODUCTION AND STATEMENT OF PURPOSE

This document presents a Revised Proposal for Containment Remedy (PCR) for the State of North Carolina, Department of Juvenile Justice and Delinquency Prevention (DJJDP) property in Swannanoa, North Carolina (the "site"). The PCR has been prepared in accordance with the Administrative Agreement (AA) between the State of North Carolina, Department of Administration (DOA) and the North Carolina Department of Environmental Quality (NCDEQ), Division of Waste Management (DWM), Superfund Section, dated July 15, 2014, the provisions of the Registered Environmental Consultant (REC) program as defined under N.C.G.S. 130A-310.9(c) and 15A NCAC 13C .0300, and the Superfund Section, Inactive Hazardous Sites Branch (IHSB) *Registered Environmental Consultant Program Implementation Guidance* (the "REC Guidance"), dated October 2015.

An original PCR, dated November 19, 2015, was submitted to IHSB in November 2015. Based on comments received regarding the November 2015 PCR in an e-mail from Matt Aufman of IHSB to Pete Dressel of Piedmont Geologic, dated December 7, 2015, this revised PCR has been prepared. Revisions include corrections to risk-calculation parameters (Section 6.0) and completion of additional site soil/sampling analysis, focusing on a possible former coal-storage area (Section 3.0).

The approximately 5-acre site parcel is part of an approximately 268± acre State-owned collection of property parcels that have historically been used for a variety of functions. The site contains remnants of an incinerator/crematorium that was originally utilized by the former Moore General Hospital, a U.S. Army hospital and training facility that operated from 1942-47. The site also contains an unpermitted solid waste landfill of undocumented origin and assorted surface refuse/debris resulting from undocumented dumping activities apparently spanning decades.

A site Remedial Investigation (RI) was completed in 2014-2015 to finalize the characterization of the nature, extent, and magnitude of historical waste disposal at the site and related contamination in site soils, groundwater, surface water, sediment, and air resulting from the historical waste disposal. The RI was conducted in accordance with the site *Remedial Investigation Plan*, dated August 15, 2014, prepared by Piedmont Geologic, which was certified and submitted to IHSB in August 2014. The RI also incorporated the results of previous site assessment activities that were completed in 2010-2013. The certified *Final Remedial Investigation Report,* dated August 31, 2015, was submitted to IHSB on September 3, 2015.

Results of the RI indicate that site soil, sediment, and surface water contain constituents of concern (COCs), primarily consisting of metals, but also including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), dioxins, and polychlorinated biphenyls (PCBs), at concentrations above unrestricted IHSB standards. Site groundwater does not contain COCs at concentrations above

North Carolina groundwater standards based on 2014-2015 groundwater sampling/analysis. Site sediment and surface-water impacts are limited to one small area at the base of the unpermitted landfill.

Site soil remediation to unrestricted IHSB standards (i.e., Residential Health-Based Preliminary Soil Remediation Goals (PSRGs)) is determined to be infeasible due to the widespread lateral and vertical distributions of metals, primarily manganese, in site soils, which would require excavation, in the absence of other potentially applicable remediation technologies, of a large area of the site (>51,000 square feet) to potential depths of more than 20 feet in some areas, without reasonable assurance of meeting the unrestricted IHSB standard in post-remediation confirmation (i.e., post-excavation) soil samples. In addition, deforestation of a large part of the site would be required. Remediation to Industrial Health-Based PSRGs could be a feasible alternative. However, this land-use classification would require physical site barriers (i.e., fencing) that would be difficult to maintain with the forested setting of the site and would be incompatible with the State's vision of the character of its property moving forward. For these reasons, risk-based remediation to alternate soil cleanup levels, in accordance with appropriate land-use restrictions is proposed.

2.0 GENERAL SITE INFORMATION

2.1 Site Location and Description

A portion of the United States Geological Survey (USGS) 7.5-minute quadrangle map containing the site, and illustrating site and area topography, land-use, and roadways, is provided in Figure 1. The site layout is shown in Figures 2 through 4. Site photographs are provided in Appendix A. The site is located off of Clover Lane in Swannanoa, Buncombe County, North Carolina 28711 (no specific street address). Clover Lane is a private road that connects, through the former Swannanoa 4-H Camp, with publicly operated Woodland Drive. The latitude and longitude of the center of the site are 35.61921ºN and -85.37660ºW, respectively.

The DJJDP site is located within an approximately 268± acre assemblage of properties owned by the State of North Carolina that have historically been used for a variety of functions. There are two main State-owned properties that comprise the assemblage, referred to as the "northern" property (PIN 9699-67-4268; Deed Book/Page 0946/0527) and the "southern" property (PIN 9699-74-4844; Deed Book/Page 0946/0527). The site is located within a portion of both properties, at the southeast corner of the northern property and the northeast corner of the southern property. An aerial image showing the combined State properties, provided by the DOA, State Property Office, is provided as Figure 5. The image in Figure 5 shows additional property divisions that are labeled as "deeded acres." According to the State Property Office, these are not actually deeded and recorded properties but unofficial parcel allotments assigned to various agencies within State government. There is no zoning designation for these State-owned properties.

The site contains a former hospital crematorium/incinerator (hereinafter referred to as "incinerator"), an unpermitted solid-waste landfill, and assorted surface refuse/debris, which are the subjects of site investigation and remediation. The total area encompassing the landfill, former incinerator, and surface refuse/debris measures approximately 2.5 acres. This area is currently enclosed by a 6-feet tall security fence, topped with barbed wire, preventing access by the public. Access to the site is via an asphalt drive through a locked gate.

For the purposes of site assessment and remediation under the July 15, 2014 AA, the DJJDP site "property" has been officially designated as an approximately 5-acre parcel containing the former incinerator, associated landfill, and all delineated areas of surface dumping and associated contamination. A survey plat for the designated site parcel is provided in Appendix B. Most of the parcel (approximately 85%) is part of the southern State-owned property discussed above (PIN 9699-74-4844) and contains the former incinerator, most of the landfill, and most of the delineated areas of surface refuse/debris and associated

contamination. The remaining parcel portion (approximately 15%) is part of the northern State-owned property (PIN 9699-67-4268) and contains a small portion of the landfill and a small area of surface refuse/debris and associated contamination.

A former Swannanoa 4-H Camp is located directly to the north and west of the site, on the northern State-owned property and a portion of the southern State-owned property. The camp was closed around 2014. According to the North Carolina State University Property Office, which manages the former 4-H Camp property, the camp is to be leased to the Black Mountain Home for Children, Youth, and Families for a period up to 60 years.

The North Carolina Juvenile Evaluation Center (JEC) and the Black Mountain Correctional Center for Women (BMCC) are located to the south of the site, on the southern State-owned property. The North Carolina State Veterans Home is located southwest of the site, also on the southern State-owned property. Residences are situated west of the State-property complex along Woodland Drive. The Charles D. Owen (Owen) High School property is located directly east of the site. A portion of the eastern fence line at the DJJDP site encroaches on the Owen High School property.

The site is situated in a mountainous terrain typical of the Blue Ridge Geological Province (discussed below in Section 2.4). Topographic profiles of the site are provided in Figure 6. The site topography slopes generally from high points on the north and west sides of the site property to low points on the south side of the site property, with an overall topographic relief of approximately 45 feet. The surface of the unpermitted landfill forms a topographic plateau in the approximate center of the site. A thick growth of kudzu covers the surface of the landfill and adjacent areas during the growing season. The remainder of the site contains primarily brush and pine/hardwood trees. An asphalt circle drive is situated around the perimeter of the former incinerator structure.

The site is in a Class C watershed in accordance with 15A NCAC 2B. A drainage swale is located along the eastern boundary of the site, running generally from north to south. This conveys water only during rainfall events. The swale joins a narrow intermittent stream that originates, at what has been coined a "wet-weather spring" (MEG/SynTerra, 2010), at the base of the unpermitted landfill near the southwest corner of the site fence and flows generally south and southwest, crossing under Clover Lane south of the site (Figure 2). A separate drainage swale/intermittent stream joins the main intermittent stream, running south-southwest from the Owen High School property. No water was observed in intermittent stream channels during site visits by Piedmont Geologic from August through October 2011. Surface water was observed periodically during site visits from November 2014 to July 2015.

Five groundwater monitoring wells installed in September 2011 are located at the site property. Locations of site monitoring wells are shown in Figure 4, and monitoring well construction details are listed in Table 1. Monitoring well depths range from 15-feet below grade in the topographically low area in the southeast corner of the site to approximately 40-feet below grade in the topographically high areas in the northern and southwest site areas and the interior area of the unpermitted landfill.

2.2 Site History, Waste Management Practices, and Environmental Permits

2.2.1 Site History

The site is a portion of an approximately 268± acre assemblage of properties that were acquired by the U.S. government from the State of North Carolina in 1943. The combined properties, including the portion containing the DJJDP site, were utilized by the U.S. Army for the Moore General Hospital as well as a field hospital unit for the training of officers, nurses, and enlisted men. In 1947, the hospital lands and improvements were transferred to the Veterans Administration (VA) for use as a VA hospital. The properties were transferred from the U.S. government back to the State of North Carolina in 1955 and 1961. The VA hospital was closed in 1959. The northern property was developed into a 4H camp by North Carolina State University (NCSU) and the southern property was transitioned into the JEC and BMCC by the North Carolina Department of Justice (DOJ). The North Carolina State Veterans Home, a nursing-home facility for wounded veterans, was constructed on the southern property, southwest of the site, in 2011-2012.

According to the North Carolina Department of Agriculture and Consumer Services and the Swannanoa Pride Coalition website, the assemblage of State properties comprising the site was used as the North Carolina Agricultural Test Farm from 1908 until the U.S. government's acquisition of the property in 1942. No further information regarding the North Carolina Agricultural Test Farm has been found.

The former incinerator at the DJJDP site was originally part of the Moore General Hospital facility, and was apparently used both by the Moore General Hospital and the subsequent VA hospital. It is concluded that the unpermitted landfill at the site was used for disposal of ash from the incinerator as well as for disposal of trash/refuse from the hospital facilities to the south. No historical records regarding the origin or operation of either the incinerator or unpermitted landfill have been found.

2.2.2 Waste Management Practices

According to a March 19, 1993 Project Planning Sheet prepared by the U.S. Army Corps of Engineers (USACE), the unpermitted landfill at the site operated from 1942 to 1947; however, no records are available regarding the contents of the unpermitted landfill or the landfill-management practices. It was

assumed by the USACE, based on the former hospital base operations, that the landfill wastes included vehicle maintenance wastes (i.e., waste oils), waste solvents, fuels, corrosion control materials, and waste paint. However, this assumption cannot be verified based on observations made during test-pit excavations in the landfill in March 2013 or based on the results of laboratory analysis of 2010-2015 site soil and groundwater samples. Similarly, no records are available regarding the historical usage of the incinerator. It is assumed that the incinerator handled typical hospital wastes and human remains. Based on March 2013 test-pit observations, the landfill received incinerator ash and hospital trash/refuse, with the latter appearing to be of a predominantly domestic or institutional nature as opposed to industrial nature. No records exist regarding the origin of the site surface refuse/debris, much of which appears to be consistent with "moonlight" dumping practices. The surface refuse/debris includes rusted 55-gallon drum skeletons, paint containers, automobile parts, appliances, children's toys, demolition debris, wooden pallets, scrap metal, and metal cans.

2.2.3 Environmental Permits

Based on a review of available site historical information, plus a search of standard federal and state environmental records completed in March 2013, the site has no known current or historical Resource Conservation and Recovery Act (RCRA) permits or status, nor any other known Federal or State environmental permits.

2.3 Water-Supply Wells, Springs, and Surface-Water Intakes

According to MEG/SynTerra (2009c), and as confirmed by Piedmont Geologic in March 2013 (Piedmont Geologic, 2014), the site area is served by a public water-supply system managed by the City of Asheville. A water-supply well survey for the area within a ½-mile radius of the site was completed by Piedmont Geologic in March-April 2013 in support of the RI Workplan. Findings of the water-supply well survey are summarized as follows. Locations of confirmed, suspected, and possible water-supply wells are shown in Figure 7.

- A confirmed water-supply well is located at a residence at 320 Woodland Drive.
- Probable water-supply wells are located at 11 Hope View Drive, 15 Hope View Drive, 25 Hope View Drive, 29 Hope View Drive, and 37 Hope View Drive.
- A possible water-supply well is located at 331 Woodland Drive.
- An out-of-service water-supply well is located at Owen High School. The well is capped and school officials have no plans to place the well into service.

With the exception of Owen High School, all of the water-supply-well locations listed above are northwest of the site, near the limit of the ½-mile-radius survey area. None of the water-supply wells are located in the apparent downgradient direction of groundwater flow at the site.

No surface-water intakes for water supply are located within the ½-mile radius of the site. No springs are indicated on the U.S.G.S quadrangle map containing the site (Figure 1), nor were any springs observed in the ½-mile radius of the site. A wet-weather spring is situated at the base of the landfill near the southeast corner of the site. The wet-weather spring does not represent a source of water supply.

2.4 Site Geologic/Hydrogeologic Setting

The site is situated within the Blue Ridge Geologic Province. According to the Geologic Map of North Carolina (1985), bedrock at the site is assigned to the Ashe Metamorphic Suite and Tallulah Falls Formation and consists of foliated to massive, locally conglomeritic metagraywacke, inter-layered and gradational with mica schist, muscovite-biotite gneiss, and rare graphitic schist.

Competent bedrock in the Blue Ridge Geologic province is often overlain by variable thicknesses of saprolite and soil, collectively referred to as "overburden." Saprolite consists of rock that has been subject to chemical weathering, removing up to 60% of the rock mass by solution, but not affecting volume (Cleaves, 1974). Thicknesses of the overburden in the Blue Ridge Geologic Province vary considerably, with the greatest thicknesses (typically up to 45-60 feet) occurring within the foot slopes of mountains.

Groundwater in the Blue Ridge Geologic Province occurs in the overburden under unconfined conditions, and in the underlying bedrock under both unconfined and confined conditions. Groundwater in the overburden occurs within pore spaces of the unconsolidated medium, including relict bedrock structures (i.e., fractures, foliations, etc.). Due to the typical fine-grained nature of saprolite, the formation normally possesses a relatively low permeability and is not usually utilized for groundwater production. Groundwater in the underlying bedrock occurs along zones of secondary porosity, such as fractures, foliations, solution voids, etc.

Based on soil boring logs generated during the 1999 USACE site assessment and the various phases of site assessments completed by MEG/SynTerra and Piedmont Geologic from 2010 to 2015, native site soils and saprolite, to the explored depth of approximately 45-feet below grade, consist of micaceous silty/clayey sand mixtures to depths of around 10 to 15-feet below grade, underlain by saprolitic micaceous sandy silt/clay, with the latter exhibiting some relic structures associated with the parent bedrock. Competent bedrock has not been penetrated by any on-site borings to the explored depth of 45-feet below grade.

Site water-table elevation data based on gauging of site monitoring wells in September 2011 and November 2014 are listed in Table 2. The site water table has been measured in site monitoring wells at depths ranging from approximately 3 to 33 feet below grade, with the deepest groundwater levels in the topographically high areas of the site to the north and west, and the shallowest groundwater levels in the topographically low area of the site to the south. Site water-table contour maps, based on September 2011 and November 2014 groundwater levels in site monitoring wells, are provided in Figures 8 and 9. The water-table contour maps indicate a southerly direction of apparent groundwater flow at the site, consistent with site topography as well as a previous site water-table contour map developed by USACE (1999). Water-table gradients calculated from 1999 (USACE, 1999) and 2011-2014 water-table contour maps range from approximately 0.03 ft/ft to 0.05 ft/ft, respectively.

2.5 Environmentally Sensitive Areas

An investigation of potential environmentally sensitive areas was completed for the site and surrounding properties in March-April 2013 as part of the RI Workplan. A summary of findings is provided as follows.

- Four rare animal and plant species are recorded as being present within a 1-mile radius of the site, listed as follows. No records of these being within the site boundaries exist.
    - Warbling Vireo (*Vireo gilvus*) – Significantly Rare.
    - Timber Rattlesnake (*Crotalus horridus*) – Special Concern.
    - Mole salamander (*Ambystoma talpoideum*) – Special Concern.
    - Shooting star (*Primula meadia*) – Threatened.
- The nearest mapped wetlands are located approximately 2/3-mile east of the site. No wetlands are mapped within the site boundaries or on adjacent properties.

A wet-weather spring is situated at the base of the landfill near the southeast corner of the site. The wet-weather spring does not represent a source of water supply, and is not included in any State or Federal database as an environmentally sensitive feature.

3.0 ADDITIONAL SITE SOIL SAMPLING AND ANALYSIS

As requested in the December 7, 2015 e-mail from IHSB to Piedmont Geologic, additional site soil sampling/analysis was completed in December 2015. The activity was conducted for a possible former coal-storage area, which had been inadvertently left out of previous soil sampling/analysis efforts. The possible former coal-storage area, located in the northwest portion of the site, is shown in Figure 4.

Soil sampling in the possible former coal-storage area was conducted on December 16, 2015. The area is evident through observations of small, fine-gravel size, fragments of coal scattered on the ground surface, along the side and base of a sharp topographic slope along the northwest site margin. Soil samples were collected from a location where the side and slope meet, with the location designated as LPS-57 (Figure 4).

One soil sample was collected from the 0-6 inch depth interval utilizing a stainless-steel sampling trowel, and one soil sample was collected from the 6-12 inch depth interval utilizing a stainless-steel hand auger. The trowel and hand auger were cleaned prior to use with a soap and tap water wash and distilled water rinse. A new, unused, pair of nitrile sampling gloves was worn during collection and processing of each soil sample. Soil samples obtained from each sampling interval were immediately packed into laboratory containers, labeled, and placed on ice in a cooler. The samples were submitted under chain of custody to Environmental Science Corp. in Mt. Juliet, Tennessee for analysis of Hazardous Substances List (HSL) metals by EPA Method 6010/7471 and SVOCs by EPA Method 8270. The laboratory was instructed to delay analysis of the 6-12 inch depth interval sample pending evaluation of analysis results for the 0-6 inch depth interval sample.

The laboratory report of results for the 0-6 inch depth interval soil sample is provided in Appendix C. Results of laboratory analysis are summarized as follows.

Results of Laboratory Analysis of December 2015:
Soil Sample LPS-57 (0-6 inches)*

Laboratory Analysis Method	Analysis Result (mg/kg)
EPA Method 6010/7471*	
Beryllium	0.368
Chromium	8.39
Copper	28.6
Lead	44.3
Manganese	857
Nickel	5.99
Zinc	18.5
EPA Method 8270	
Semi-volatile organics	ND

* Detected metals are listed.
ND = No method analytes detected.

With the exception of manganese, all of the detected metals concentrations in soil-sample LPS-57 are below Residential Health-Based and Protection-of-Groundwater PSRGs. The detected manganese concentration is above the Residential Health-Based and Protection-of-Groundwater PSRGs, and above the site statistical background concentration, but below the value used for site risk calculations (Section 6.0). As a result, no further action with respect to the possible former coal-storage area is warranted, as discussed in Sections 5.0.

4.0 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

The primary goals of the RI process were to: 1) identify all releases of hazardous substances to the environment; 2) characterize the chemical nature of releases; 3) delineate the lateral and vertical distributions of contamination; 4) identify potential contaminant exposure pathways; and 5) characterize site conditions sufficiently to conduct a feasibility study of remediation alternatives and to support a proposed remedy. Based on the results of site activities conducted from 2010 to 2015 (Piedmont Geologic, 2015), these goals have been met for the site, as outlined in the following summary of findings.

For reference, site maps depicting results of laboratory analysis of site soil, sediment, and surface-water samples are presented as Figures 10 through 12. Depictions of the lateral/vertical configurations of the unpermitted landfill are provided in Figures 13 and 14. Summaries of laboratory analysis results for site soil, sediment, surface-water, and groundwater samples collected from 2010 to 2015 are provided in Table 3-27. Additional information regarding methods and results of historical site assessments may be found in reports listed in Section 7.0.

4.1 Identification of Hazardous Substance Releases and Chemical Nature of Releases

Site releases appear to be threefold in nature, described as follows.

- The primary mode of releases of hazardous substances at the site was the operation of the former incinerator and associated unpermitted landfill by the U.S. Army and, subsequently, the U.S. Veterans Administration, as part of the management of the Moore General Hospital and subsequent VA hospital during the 1940s to 1950s. The interior of the former incinerator, which appears to have handled typical hospital wastes and human remains (although none of the latter have been reportedly observed) continues to contain ash, plus associated slag and coal, from its former operation. The unpermitted landfill was apparently created for disposal of ash from the incinerator, then other hospital waste streams, the residuals of which are composed of glass, tile, and metal fragments, as well as other materials, were mixed with the incinerator/crematorium wastes. Near the end of the operating life of the landfill, apparently demolition debris was added to the top of the landfill, and the landfill surface was capped with soil ranging in thickness from approximately 2 inches to 18 inches (MEG/SynTerra, 2010). The non-incinerator-related components of the landfill appear to be of a predominantly domestic or institutional nature as opposed to industrial nature. Primary contaminants in the landfill are metals, including arsenic, lead, and manganese. Secondary contaminants, at minor concentrations, may include VOCs,

SVOCs, pesticides, and dioxins (although not all of the latter were detected at concentrations above PSRGs).

- The secondary mode of site releases was the "moonlight" dumping of surface refuse/debris, most likely by area residents and businesses. The surface refuse/debris includes rusted 55-gallon drum skeletons, metal cans (primarily paint-can-type), automobile parts, appliances, children's toys, demolition debris, wooden pallets, and scrap metal. These materials are exposed around the perimeter of the landfill. Much of the material is innocuous in nature. However, samples of apparent residual paint waste, or similar chemical waste, materials in exposed paint-can-type containers, primarily along the southern landfill margin, contained substantial concentrations of metals, including antimony, arsenic, copper, lead, mercury, and zinc, with some secondary concentrations of VOCs and SVOCs. Based on the nature of the waste debris and date stamps on product labels, the waste debris dumping appears to have occurred prior to the mid-1990s.
- The tertiary mode of site releases is related to the eight abandoned 1-2 ton electrical transformers that were discovered south of the former incinerator in 2008 and removed from the site, along with approximately 84 tons of soil excavated from beneath the transformers, in 2009. Subsequent to the transformer and soil excavation/disposal, PCBs were detected in soil samples collected from a depth of 0-12 inches below grade at one location in the former area of the transformers.

Information regarding specific contaminants in site media is discussed in more detail as follows.

4.2 Contaminant Inventory and Lateral/Vertical Distributions of Contaminants

4.2.1 Incinerator and Unpermitted Landfill Contents

The following analytes have been detected at concentrations above Residential Health-Based and/or Protection-of-Groundwater PSRGs, plus site statistical background concentrations for metals, in incinerator-waste and landfill-waste composite samples (Tables 8-9).

- Arsenic.
- Lead.
- Silver.
- PCE.
- Total hexachlorodibenzo-p-dioxin.

The landfill and incinerator waste materials do not meet the definitions of listed hazardous waste under 40 CFR 261. The waste materials are not classified as characteristically hazardous waste based on waste characterization analysis.

The lateral/vertical distributions of the above analytes in the incinerator waste and landfill waste are controlled by the physical confinements of the incinerator and the lateral/vertical limits of the landfill, respectively. The incinerator waste is confined within the interior of the former incinerator, the location of which is shown in the various site figures (e.g., Figure 4). The volume of ash/slag within the incinerator is not known but is estimated to be less than 20 cubic yards.

The delineated lateral and vertical distribution of the landfill is shown in Figures 4 and 6. The surface area of the landfill is estimated to be approximately 26,762 square feet (0.6 acres). The volume of landfill materials is estimated to be between approximately 5,683 and 6,385 cubic yards (Piedmont Geologic, 2011).

Distributions of residual incinerator-waste and landfill-waste materials outside of the limits of the incinerator and landfill are discussed with respect to site soils below.

4.2.2 Surface Refuse/Debris

The following analytes have been detected at concentrations above Residential Health-Based and/or Protection-of-Groundwater PSRGs, plus site statistical background concentrations for metals, in April 2010 samples of residual wastes in exposed containers (paint-can-type) found amongst the surface refuse/debris along the southern margin of the unpermitted landfill (Table 3).

- Antimony.
- Arsenic.
- Cadmium.
- Copper.
- Lead.
- Manganese.
- Mercury.
- Selenium.
- Zinc.
- Isopropylbenzene.
- Benzo (a) anthracene.
- Chrysene.

According to MEG (personal communication, 2013), the exposed waste was residual material, with a thick or hardened consistency, such as paint of similar material, found in the interior of exposed and open metal cans.

The surface refuse/debris does not meet the definitions of listed hazardous waste under 40 CFR 261. TCLP metals analysis of an exposed-waste sample indicated that the material did not meet the classification of characteristically hazardous waste based on metals toxicity (MEG, 2010).

As discussed above, other surface refuse/debris materials include rusted 55-gallon drum skeletons, metal cans (primarily paint-can-type), automobile parts, appliances, children's toys, demolition debris, wooden pallets, and scrap metal, which appears mostly innocuous in nature. Areas of exposed ash, slag, and coal are situated to the north of the former incinerator. Contaminants associated with these materials are discussed below in Section 4.2.5.

The lateral distributions of the surface refuse/debris is shown in various site figures (e.g., Figure 4). The materials rest on the ground surface and are not buried to any significant depth. The estimated total generalized area of surface refuse/debris is approximately 27,781 square feet.

4.2.3 Groundwater

Groundwater samples from on-site monitoring wells were collected for laboratory analysis in September 2011, November 2014, and April 2015 (Tables 15 and 21). No VOCs were detected in the September 2011 groundwater samples, and no VOCs, SVOCs, and pesticides/PCBs were detected in the November 2014 groundwater samples. One SVOC compound, di-n-butyl phthalate, was detected in one of the September 2011 groundwater samples, at a concentration well below the 2L groundwater standard. Dioxin cogeners were detected in the November 2014 groundwater samples from the on-site monitoring wells. TEQ values for these samples were well below the 2L standard.

Manganese was detected in all six of the September 2011 on-site groundwater samples, with detected concentrations (55 ug/L to 280 ug/L) in three samples above the 2L standard of 50 ug/L (Table 15). Silver was detected in one of the September 2011 on-site groundwater samples at a concentration of 40 ug/L, above the 2L standard of 20 ug/L. Manganese was detected in only two of the November 2014 groundwater samples, at concentrations well below the 2L standard. Manganese was detected in two of the three November 2014 offsite (i.e., background) groundwater samples at concentrations above the 2L standard (detected concentrations of 64 ug/L and 110 ug/L). No other metals were detected in any of the

November 2014 groundwater samples. Neither lead, manganese, nor silver were detected in the April 2015 groundwater samples collected from the on-site monitoring wells.

Based on the results of 2011-2015 groundwater sampling/analysis, site groundwater does not appear to be impacted by site contaminants at concentrations that would constitute any violation of 2L standards or are above natural background concentrations for metals. The higher manganese concentrations detected in the on-site groundwater samples in September 2011 appear to be associated with the wells being newly installed and developed.

Based on results of groundwater sampling/analysis, no further action with respect to site groundwater is warranted.

4.2.4 Sediment and Surface Water

The following analytes have been detected in sediment samples from the site intermittent stream at concentrations above U.S. EPA screening values and/or the IHSB Residential Health-Based PSRG (i.e., for analytes with no U.S. EPA screening value) (Tables 6 and 23).

- Antimony.
- Arsenic.
- Cadmium.
- Copper.
- Lead.
- Mercury.
- Nickel.
- Zinc.
- pp-DDT.
- Dioxins (based on TEQ).

As for the surface-water samples, the above analytes were detected at concentrations above U.S. EPA screening values only in the sediment sample collected from the wet-weather spring at the base of the landfill near the southwest corner of the site fence. No analytes have been detected in sediment samples collected from the downstream sample location.

The following analytes have been detected in surface water samples from the site intermittent stream at concentrations above U.S. EPA screening values and/or North Carolina 2B standards (Tables 7 and 24).

- Copper.
- Lead.
- Zinc.

The above metals were detected at concentrations above U.S. EPA screening values and/or North Carolina 2B standards only in the surface-water sample collected from the wet-weather spring at the base of the landfill near the southwest corner of the site fence. No analytes have been detected in surface-water samples collected from the downstream sample location.

4.2.5 Soil

The following analytes have been detected in site landfill-perimeter soil samples at concentrations above PSRGs (Residential Health-Based and/or Protection of Groundwater) and statistical background concentrations (for metals). The list excludes contaminants in exposed-waste samples, which are discussed above in Section 4.2.2.

Soil Contaminants Detected at Concentrations above Residential Health-Based and Protection-of-Groundwater PSRGs

>Residential Health-Based PSRG	>Protection-of Groundwater PSRG
Antimony	Antimony
Arsenic	Arsenic
Cadmium	Cadmium
Lead	Lead
Manganese	Manganese
Thallium	Selenium
Hexavalent chromium	Silver
Benzo (a) anthracene	Thallium
Benzo (a) pyrene	Zinc
Chrysene	Benzo (a) anthracene
Pentachlorophenol	Benzo (a) pyrene
	1-Methylnaphthalene
	Naphthalene
	Pentachlorophenol
	PCB-1242
	PCB-1260
	2,3,7,8-TCDD

In accordance with IHSB Guidance, lateral and vertical delineation of all the above analytes has been established to the levels of the Residential Health-Based PSRGs for site soils, with the exceptions noted below. Site maps showing the delineated lateral and vertical distributions of the above COCs are provided in Appendix D.

Manganese is the most prevalent, and laterally distributed, site soil contaminant, with soil concentrations above Residential Health-Based PSRGs and the statistical site background concentration covering much of the area within the site fence, and two small areas outside of the site fence. Based on the results of subsurface (i.e., >6-inches below grade) soil sampling/analysis, soil manganese concentrations above the Residential Health-Based PSRG and statistical site background concentration are limited to the upper 6-inches of soil over the majority of the site. Deeper distributions of soil manganese concentrations above the Residential Health-Based PSRG, down to approximately 24-feet below grade, are present in soils adjacent to the former incinerator. The highest concentrations of manganese were detected at the location of LPS-33 in soil samples collected from depths of approximately 6-feet and 10-feet below grade.

Antimony, arsenic, cadmium, and lead distributions, at concentrations above Residential Health-Based PSRGs and statistical site background concentrations, are situated in the area of surface refuse/debris at the southern perimeter of the landfill and the area of exposed ash and slag along the northeast perimeter of the landfill. Arsenic and lead are also distributed in the area surrounding the former incinerator. Silver is distributed in the area surrounding the former incinerator and the area of exposed ash and slag along the northeast perimeter of the landfill. Selenium is distributed in the area of surface refuse/debris at the southern landfill perimeter and the area surrounding the former incinerator. Zinc is distributed in four small areas along the southern and eastern perimeter of the landfill. Detections of most of these metals are consistent with the detections of metals in September 2011 incinerator and landfill waste samples.

Thallium, benzo (a) pyrene, DDD, DDE, and DDT were detected at concentrations above Residential Health-Based PSRGs (and the statistical site background concentration for thallium) in only one location adjacent to the north side of the former incinerator. Naphthalene was detected at a concentration above the Residential Health-Based PSRG in only one soil sample located east of the former incinerator, and chrysene was detected at a concentration above the Residential Health-Based PSRG in only one soil sample located at the southeast landfill perimeter. Based on the results of subsurface-soil sampling/analysis, all of the above contaminants occur at concentrations above the Residential Health-Based PSRG and statistical site background concentration in only the upper 6-inches of soil.

PCBs were detected at concentrations above Residential Health-Based PSRGs in only one location (LPS-37), in the area where transformers were abandoned. PCB-1242 was detected at concentrations above the Residential Health-Based PSRG and Protection-of-Groundwater PSRG to depths of 24-inches below grade at that location. Pentachlorophenol was detected at concentrations above Residential Health-Based PSRGs in only one location (LPS-36), in the area of exposed ash and slag along the northeast landfill perimeter, to a depth of 36-inches below grade.

The site soil manganese distribution is inclusive of the distributions of all the remaining site contaminants listed and discussed above, and would be the primary driver with respect to site soil remediation if the Residential Health-Based PSRGs were to remain the site soil cleanup goals. Site soil contaminants at concentrations above Residential Health-Based PSRGs (and statistical site background concentrations for metals) do no extend east of the unpermitted landfill apparently as a result of the steep hillside leading east upward toward the Owen High School facility, which prevented migration of surface-soil contaminants to the east.

With respect to the sub-landfill soil samples collected in September 2011 (Table 12), only manganese was detected, in only one sample, at a concentration above Residential Health-Based PSRGs and statistical site background concentrations, based on analysis of soil samples from ≥10-feet below grade from the offsite background monitoring-well borings. Considering that the detected manganese concentrations in the shallower (i.e., directly below the base of the landfill) sub-landfill samples, including the shallower soil sample from LFB-5 (5-7 feet below grade) were all below Residential Health-Based PSRGs, the higher detected manganese concentrations in deeper samples are considered to be consistent with background conditions (the highest detected manganese concentration of 900 mg/kg is within 10% of the deep soil background manganese concentration of 815 mg/kg), and sub-landfill soil does not appear to be impacted by the landfill materials.

4.3 Identification of Potential Contaminant Exposure Pathways

Site media with contaminant concentrations above unrestricted land-use standards include surface and subsurface soils, surface water associated with the wet-weather spring at the base of the landfill near the southwest corner of the site fence, and sediments beneath the wet-weather spring. Groundwater and soil vapor are concluded to be not impacted by historical site activities.

Surface water and sediment contamination (primarily metals) appears to be isolated to the immediate area of the wet-weather spring at the southeast landfill margin. The downstream delineating surface-water/sediment samples are approximately 65 feet from the wet-weather spring. Surface-water/sediments at the spring location are spread in a low, flat, area approximately 5-feet wide by 20-feet long, with water depths less-than 3-4 inches deep (when water is present) that funnels into a narrow stream channel, approximately 2-3 feet wide and 1-2 feet deep. The spring does not appear to support any significant macro-fauna or micro-flora, and is not conducive to any sort of recreational activity or consumption by humans. The primary mode of human exposure to surface-water/sediment contaminants would appear to be dermal adsorption through direct contact by persons walking through the spring or across the directly downgradient stream channel, with incidental ingestion being secondary in nature.

The primary contaminants in the unpermitted landfill material and former-incinerator ash are metals, with VOCs, SVOCs, and dioxin being of a secondary nature. The primary contaminants in landfill-perimeter soils, and residual exposed wastes, are metals, with VOCs and SVOCs being of a secondary, and isolated, nature. The primary mode of human exposure to these materials is incidental ingestion and dermal absorption through direct contact. Incidental inhalation through dust generation is also a potential exposure pathway, although this appears to be currently limited through the heavy vegetative cover across the site.

PCE is the only VOC detected at concentrations above Residential Health-Based PSRGs in the landfill materials. No VOCs were detected at concentrations above Residential Health-Based PSRGs in the landfill-perimeter soil samples. Because the approach for landfill remediation is excavation and disposal at a licensed offsite disposal facility, and no new site structures are planned, human exposures to VOCs through soil-vapor intrusion are not considered viable.

5.0 INFORMATION IN SUPPORT OF CONTAINMENT REMEDY

5.1 Introduction

Early in the remedial action evaluation process, it became apparent that remediation of site soils to the levels of Residential Health-Based PSRGs (i.e., unrestricted IHSB standards) would be impracticable primarily due to the ubiquitous distribution of elevated manganese concentrations both laterally and vertically across the site, which would necessitate the removal of a large area (>51,000 square feet), and associated volume/mass, of soil to depths up to 20+ feet below grade, without reasonable assurance that results of post-remediation confirmation sampling would indicate successful achievement of remediation standards. Site remediation under an Industrial land-use classification was also not desirable due to the physical site barriers that such an approach would require, as such barriers would detract from the natural aspect of the site and surrounding properties. Adjustments of PSRGs through averaging did not provide relief, again due primarily to the aforementioned distribution of manganese and other COC concentrations.

In response to the above, IHSB was contacted in October 2015 with a request to assist in the development of alternate soil cleanup goals for the site. As any site remedy that would involve leaving contaminants in place above IHSB unrestricted use standards (i.e., the Residential Health-Based PSRGs) is considered to be on-site "containment", such notification is also required under 15A NCAC 13C .0306(i)(2).

Through discussions between Piedmont Geologic and IHSB, it was determined that the site layout and usage meets the intention of a "Parks and Recreation" land-use classification, whereby visitations to the site property by the public at large are reasonably expected to be infrequent and primarily pedestrian in nature. Limited site remediation will be conducted in support of this approach.

Additional details are provided as follows.

5.2 Proposed Use of Site

Following completion of site remedial actions described below in Section 5.3, it is proposed that the site be left as undeveloped, partially wooded, land with no prescribed purpose. The existing site security fence will be removed and a vegetative barrier will be put in place to prevent vehicle access via the current asphalt drive.

With the removal of the former incinerator, which has previously acted as a curiosity attractant, and with the continued blockage of the site to vehicle traffic, no site visitors are expected with the exception of

potential occasional pedestrian traffic from the adjacent school or camp. The site could be converted in the future to a greenway for use by the adjacent camp, through the installation of walking/running trails. However, there are no current plans for this action.

5.3 Proposed Site Remedial Goals and Actions

The site soil cleanup goal for lead contamination is the Residential Health-Based PSRG (400 mg/kg). The soil cleanup goals for PCB congeners are the Residential Health-Based PSRGs. The soil cleanup goals for the remaining site soil COCs are the alternate soil cleanup levels discussed below in Section 6.0. Based on detected site soil lead and PCB concentrations, plus concentrations of other metals in one site area, limited site soil remediation is required, in addition to removal of the unpermitted landfill and former incinerator contents.

Site cleanup goals for sediment are the U.S. EPA Region 4 Waste Management Division Sediment Screening Values for Hazardous Waste Sites (November 2001) and the Residential Health-Based PSRGs. Based on these cleanup goals (Tables 6, 14, and 23), remediation of sediment in the drainage swale/intermittent stream at the base of the unpermitted landfill is warranted.

Site cleanup goals for surface water in the site drainage swale/intermittent stream are the U.S. EPA Region 4 Waste Management Division Freshwater Screening Values for Hazardous Waste Sites (November 2001). Surface-water COC concentrations above these levels were detected in surface water samples collected from the drainage swale/intermittent stream at the base of the unpermitted landfill (Tables 7 and 24). With removal of the associated sediments at that location, plus the unpermitted landfill contents, it is expected that surface-water COC concentrations will be reduced to levels below the cleanup goals.

Site groundwater cleanup goals are the North Carolina groundwater standards under 15A NCAC 2L .0202. Based on 2014-2015 site groundwater sampling/analysis, groundwater does not contain site COC concentrations above 2L standards. As a result, no site groundwater remediation is necessary.

A summary of proposed site remedial actions is presented as follows, based on the summary of RI findings presented in Section 4.0. A map illustrating the proposal remedial actions is provided as Figure 15.

1. The unpermitted landfill contents, along with partially and fully exposed containers along the southern margin of the landfill, will be excavated and transported offsite for disposal at a permitted landfill.

2. The former incinerator structure, which represents a potential attraction to potential site visitors, will be demolished and transported offsite for disposal at a permitted facility, along with the residual ash within the structure.
3. Site surface refuse/debris outside of the permitted landfill will be collected and transported offsite for disposal at a permitted landfill.
4. The area at and around landfill-perimeter sample E-10 (Figure 15) will be excavated to a depth of 1-foot below grade to remove high concentrations of metals (antimony, arsenic, lead, and zinc) at that location. Excavated soils will be transported offsite for disposal at a permitted landfill.
5. The areas at and around landfill-perimeter samples LPS-1, LPS-3, and LPS-13 will be excavated to a depth of 6-inches below grade to remove concentrations of lead greater-than 400 mg/kg at those locations. Excavated soils will be transported offsite for disposal at a permitted landfill.
6. The areas at and around landfill-perimeter samples E-1/LPS-37 will be excavated to a depth of 2-feet below grade to remove concentrations of PCBs at those locations. Excavated soils will be transported offsite for disposal at a permitted landfill.
7. Sediments in the wet-weather spring at the southeast base of the unpermitted landfill, which is part of the drainage swale/intermittent stream along the eastern perimeter of the site, will be excavated and transported offsite for disposal at a permitted landfill.

Additional details regarding the site remedial actions, including post-excavation soil sampling/analysis for confirmation of soil-remediation goals (Section 6.0), will be included in the Remedial Action Plan to follow this PCR.

5.4 Exclusion of Protection-of-Groundwater PSRG for Site Soil Contaminants

In accordance with the REC Guidance, with the exception of PCBs, the Protection-of-Groundwater PSRGs do not apply to the site due to the following.

- Results of site groundwater sampling/analysis, including monitoring wells within and immediately downgradient of the unpermitted landfill and landfill perimeter soils have indicated concentrations of site COC below North Carolina 2L standards.
- On-site waste disposal/releases occurred more than 15-years ago.

It cannot be demonstrated that the electrical transformers that were discovered at the site in 2008 were placed on site more than 15 years ago. As a result, site soils containing PCBs at concentrations above Protection-of-Groundwater PSRGs will be remediated, as discussed in Section 5.3.

5.5 Site Property Deed Book/Page Numbers

Currently, the site "property" is an approximately 5-acre surveyed portion of the two properties totaling approximately 268 acres that are formally owned by the State of North Carolina, as specified in the property deeds (Section 2.1 and Appendix B), referred to as the "northern" property (Deed Book/Page 0946/0527) and the "southern" property (Deed Book/Page 0946/0527). No *Notice of an Inactive Hazardous Substance of Waste Disposal Site* is presently recorded for either of these properties. As part of the RAP implementation, s separate individual deeded property will be created for the site property and recorded with the Buncombe County Register of Deeds, based on the survey plat in Appendix B. The deed will incorporate a Notice of an Inactive Hazardous Substance or Waste Disposal Site and a Declaration of Perpetual Land-Use Restrictions (DPLUR), as developed by IHSB and DOA, in accordance with the procedures outlined in Appendix F of the REC Guidance. There are no lease agreements and/or encumbrances that exist for the property to be created.

5.6 Consent of Property Owner to Imposition of Land-Use Restrictions

Written consent of DOA to the imposition of land-use restrictions is provided in Appendix E, following the format in Appendix F of the REC guidance. There are no known non-financial encumbrances/restrictions for the site property as described in Section 5.5.

5.7 Inspections, Maintenance, and Progress Reporting

There are no physical markers or barriers (i.e., fences, signs, paved areas, etc.) to remain in place following completion of site remediation; therefore, no maintenance of such features will be required. Annual site inspections will be conducted to ensure that any/all LURs remain in compliance. The site property deed recorded at the Buncombe County Register of Deed's office will be checked annually to ensure that the DPLUR and Notice of an Inactive Hazardous Substance or Waste Disposal Site are still recorded. An annual report of LUR compliance, following the format presented in Attachment F-2 of the REC Guidance, will be submitted to IHSB.

6.0 RISK-BASED REMEDIATION EVALUATION

Risk calculations were completed by the IHSB staff toxicologist for the parks and recreation scenario utilizing a calculator spreadsheet developed by U.S. EPA, utilizing the highest-detected concentrations of all site COCs, excluding areas of soil to be remediated as described in Section 5.3. The soil COC concentrations utilized in the model, which constitute alternate soil cleanup levels for the site, are listed as follows. Copies of the IHSB risk-calculation spreadsheets are provided in Appendix F.

Summary of Highest Detected Soil Contaminant Concentrations for Risk Calculations

Soil Contaminant	Highest Concentration (mg/kg)	Soil Contaminant	Highest Concentration (mg/kg)
Acenaphthylene	0.011	4,4-DDD	0.34
Acetone	0.622	4,4-DDE	1.0
Antimony	124	4,4-DDT	3.3
Arsenic	10	Di-n-Octylphthalate	0.028
Benzene	0.0028	p-Isopropyltoluene	0.0073
Benzo(a)anthracene	0.0073	Manganese	2,400
Benzo(a)pyrene	0.0088	Mercury	0.87
Beryllium	2.2	Methyl acetate	0.278
Bis(2-ethylhexyl)phthalate	0.56	Naphthalene	0.24
2-Butanone	0.040	Nickel	54.9
Butyl benzyl phthalate	1.3	Pentachlorophenol	21
Cadmium	37.9	Selenium	6.9
2-Chloronaphthalene	0.049	Silver	4.4
Chromium (III)	62	Thallium	5.6
Chromium (VI)	1.2	Zinc	2,370
Copper	110	2,3,7,8-TCDD	3.1×10^{-6}

For the risk calculations, it was assumed that children under age six would visit the site a total of 45 times per year for a duration of 2 hours on each visit, children and teenagers age 6-16 would visit the site a total of 104 days per year for a duration of 2 hours on each visit, and adults above age sixteen would visit the site a total of 74.5 times per year for a duration of 2 hours on each visit. These assumptions are assumed to be conservative by IHSB (Appendix F). Results of these calculations (Appendix F) indicate acceptable total cancer risk ($<10^{-4}$) and total non-cancer hazard quotient (<1). These results support the site containment remedy as proposed in Section 5.0.

7.0 REFERENCES

Cleaves, E. T., 1974, *Petrologic and Chemical Investigation of Chemical Weathering in Mafic Rocks, Eastern Piedmont of Maryland*: Maryland Geological Survey, Report of Investigation, v.25, 28 p.

Mountain Environmental Group/SynTerra, August 5, 2009a, *Draft Site Assessment and Corrective Action Plan for the Suspected Transformer Disposal Area Located on the Moore General Army Hospital Site.*

Mountain Environmental Group, September 16, 2009b, *Progress Report – Swannanoa DJJDP Property.*

Mountain Environmental Group/SynTerra, September 30, 2009c, *Draft Site Assessment Work Plan for the Solid Waste Landfill/Former Transformer Area Located on the DJJDP Property, Swannanoa, Buncombe County.*

Mountain Environmental Group/SynTerra, July 15, 2010, *Phase I Remedial Investigation Report for the Solid Waste Landfill/Former Transformer Area Located on the DJJDP Property, Swannanoa, Buncombe County.*

North Carolina Geological Survey, 1985, *Geologic Map of North Carolina*.

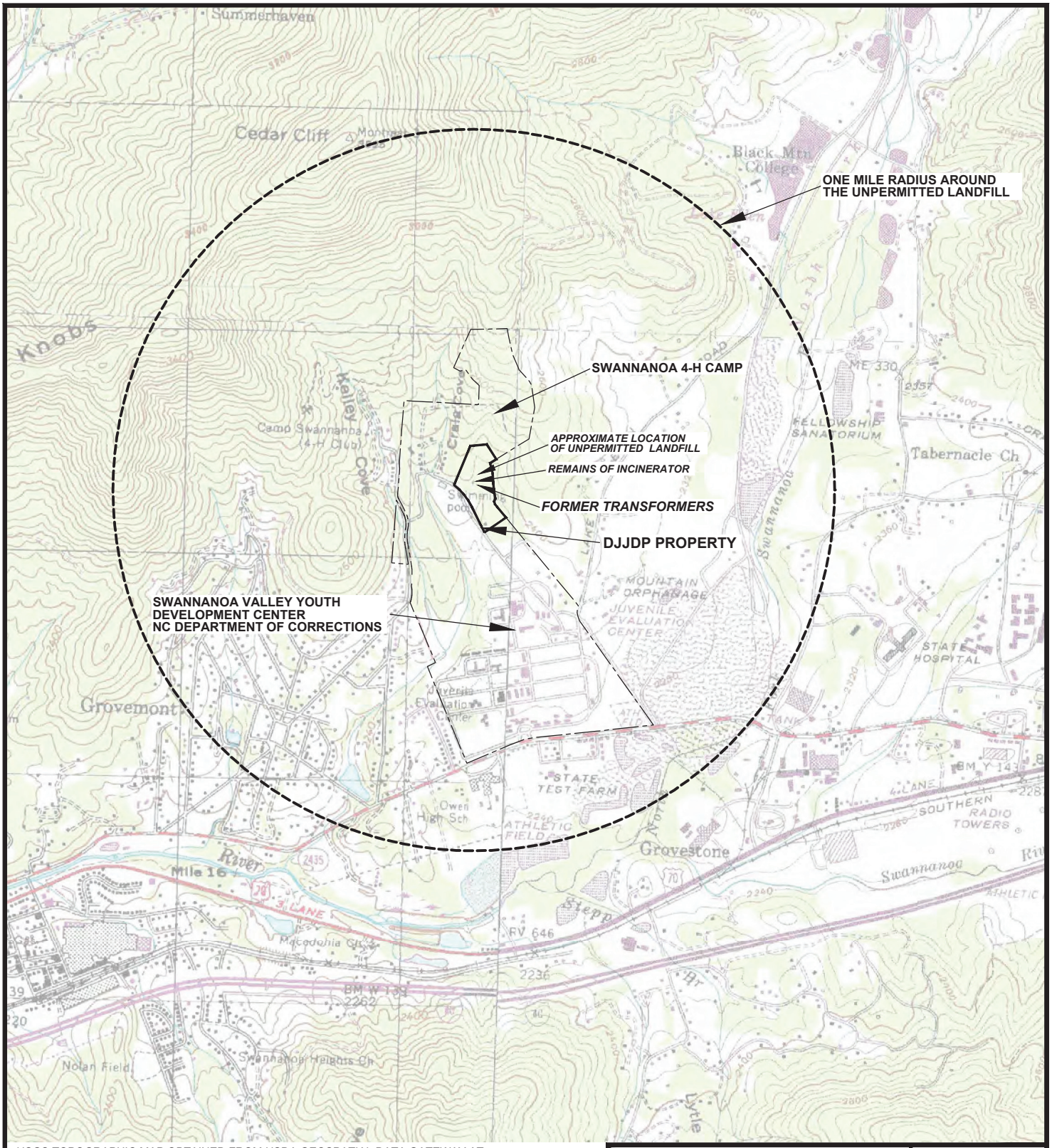
Piedmont Geologic, P.C., December 14, 2011, *Phase II Remedial Investigation Report, Department of Juvenile Justice and Delinquency Prevention Property.*

Piedmont Geologic, P.C., August 15, 2014, *Remedial Investigation Plan, Swannanoa DJJDP Property.*

Piedmont Geologic, P.C., August 31, 2015, *Final Remedial Investigation Report, Swannanoa DJJDP Property.*

United States Army Corps of Engineers, November 1999, *Preliminary Site Investigation Report, Former Moore General Hospital Landfill, Swannanoa, North Carolina.*

FIGURES



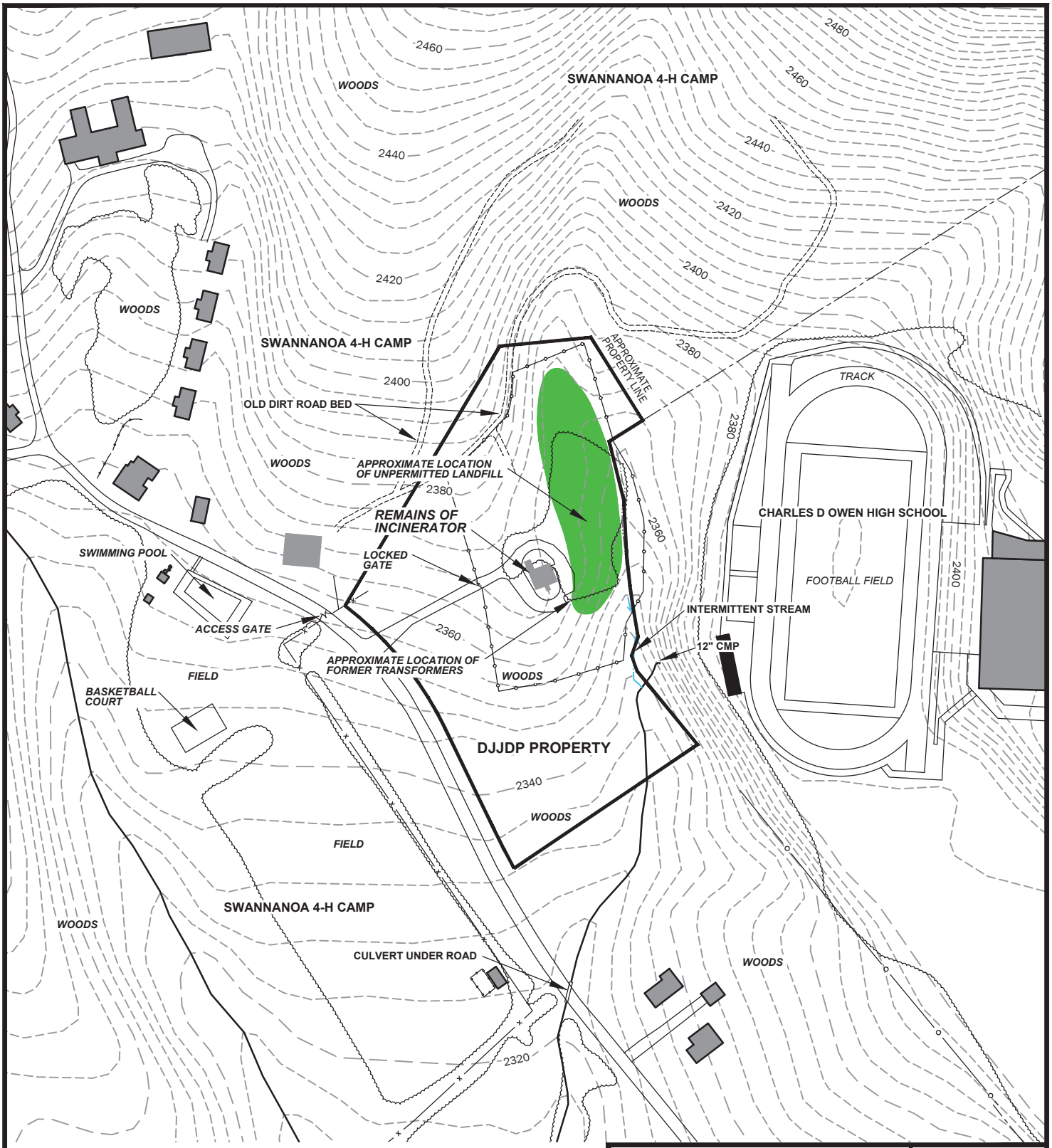
USGS TOPOGRAPHIC MAP OBTAINED FROM USDA GEOSPATIAL DATA GATEWAY AT
http://datagateway.nrcs.usda.gov/

Scale (ft.)

0 2000 4000

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:		
Drawing Date: 11/13/13		
ACAD File: Fig 1.dwg		
Designed: PD	Site Location Map	
Detailed: PD	Client: Swannanoa - DJJDP Property	Project No.: 1304
Checked: PD	Location: Swannanoa, North Carolina	Figure: 1



Map based on 2006 aerials obtained from Buncombe County Geographical Information System at: http://www.buncombecounty.org/governing/depts/GIS/dataDownload.asp

Scale (ft.)

0 200 400

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	11/13/13
ACAD File:	Fig 2.dwg
Designed: PD	Site and Vicinity Map
Detailed: PD	Client: Swannanoa - DJJDP Property
Project No.:	1304
Checked: PD	Location: Swannanoa, North Carolina
Figure:	2

SOURCES:
PROPERTY LINE BASED ON SURVEY BY DENNIS CLINKSCALES, PLS - DATED SEPTEMBER 18, 2009
2006 AERIAL PHOTOGRAPHS OBTAINED FROM BUNCOMBE COUNTY GIS AT
http://www.buncombecounty.org/governing/depts/GIS/dataDownload.asp

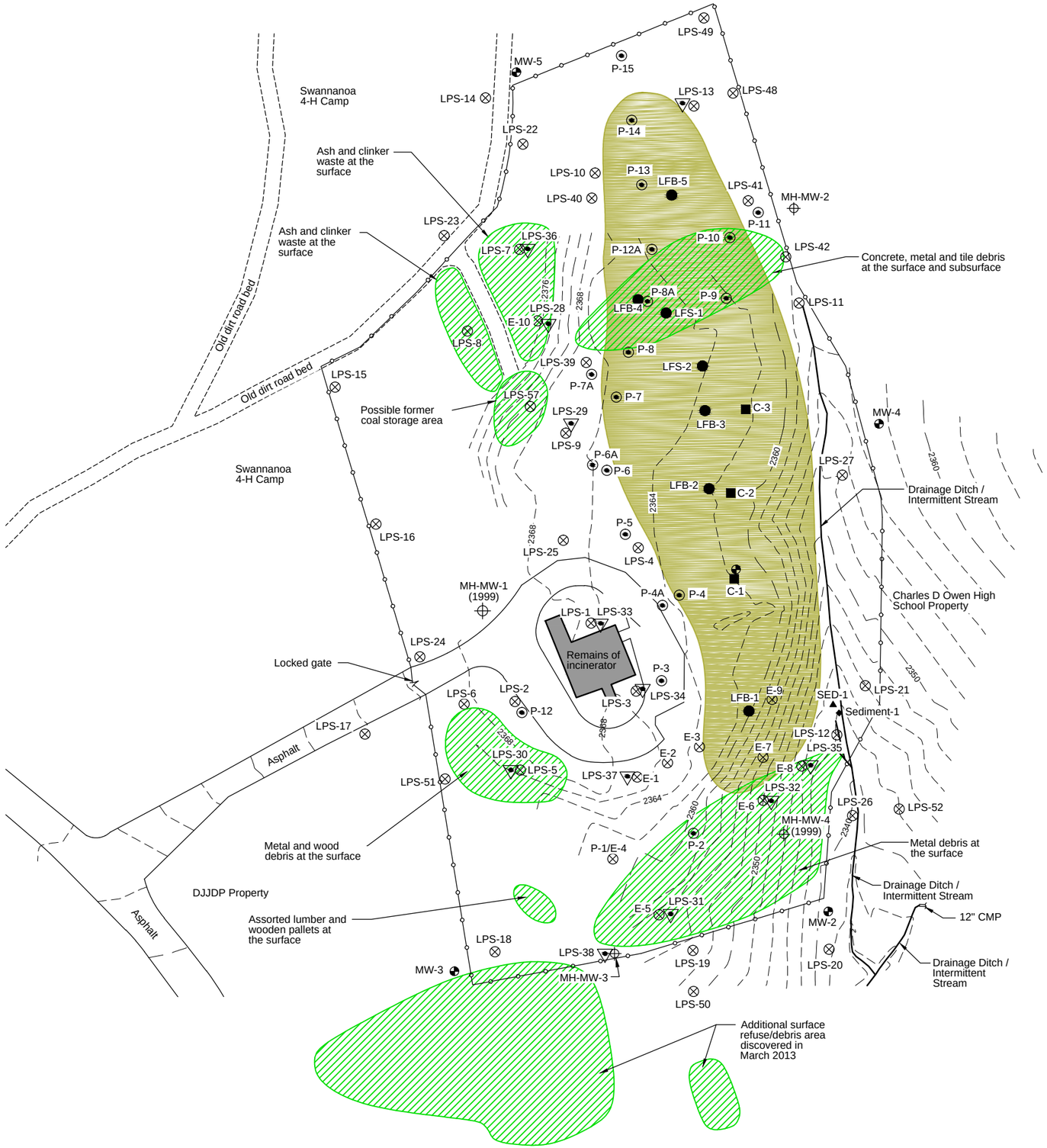
Figure provided courtesy of MEG (2010)

Scale (ft.)
0 300 600

N

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:		
Drawing Date: 11/13/13		
ACAD File: Fig 3.dwg		
Designed: PD	Aerial Photograph of Site Area	
Detailed: PD	Client: Swannanoa - DJJDP Property	Project No.: 1304
Checked: PD	Location: Swannanoa, North Carolina	Figure: 3



LEGEND:

P-10	Landfill Perimeter Exploratory Boring
LFB-1	Landfill Interior Boring/Sample
C-1	Landfill Cap-Thickness Boring
LPS-1	Surface Soil Sample
	Subsurface Soil Sample
SED-2	Sediment Sample
MW-1	Monitoring Well
MH-MW-1	Monitoring Well - Decommissioned
	Approximate Extent Of Landfill
	Surface Refuse/Debris Area
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

Scale (ft.)

0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:		
Drawing Date: 12/28/15		
ACAD File: Fig 4.dwg		
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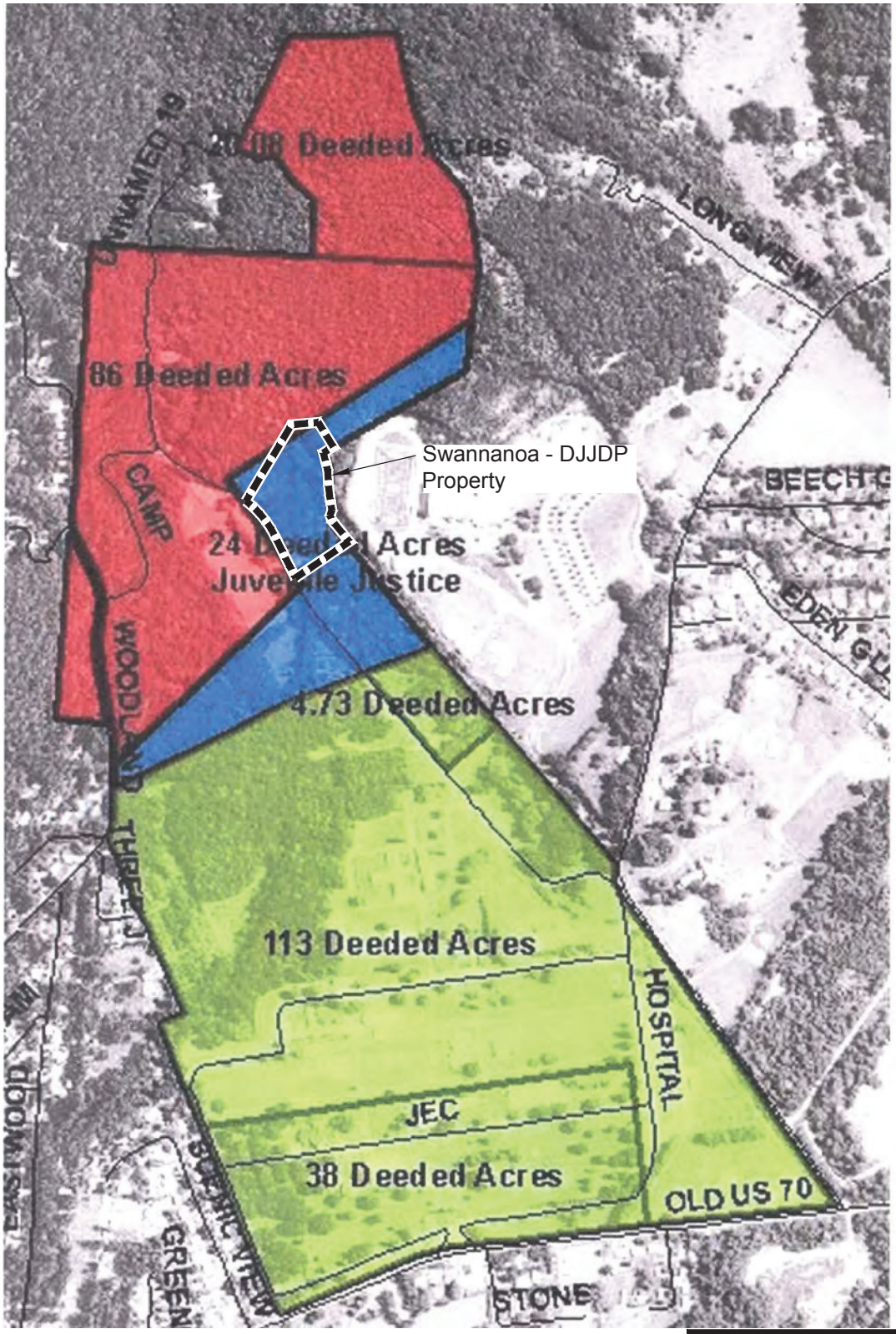


Note:

Blue and green shaded area is "southern" State of North Carolina property (PIN 9699-74-4844).

Red shaded area is "northern" State of North Carolina property (PIN 9699-67-4268).

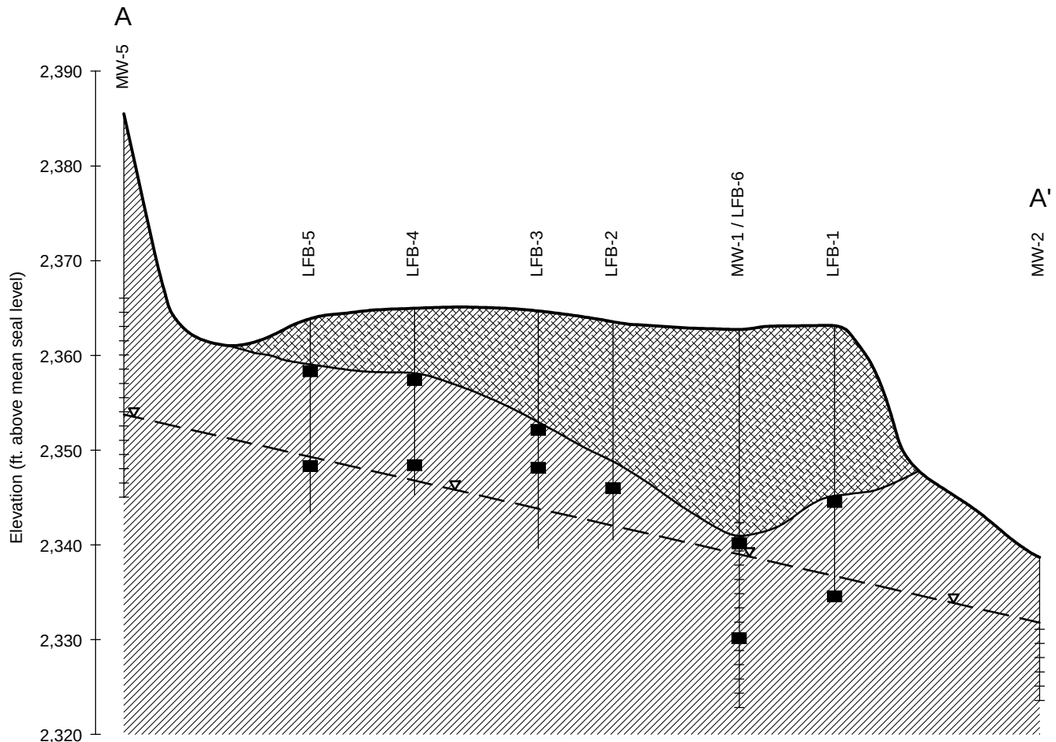
Image provided by DOA - State Property Office

Estimated Scale (ft.)

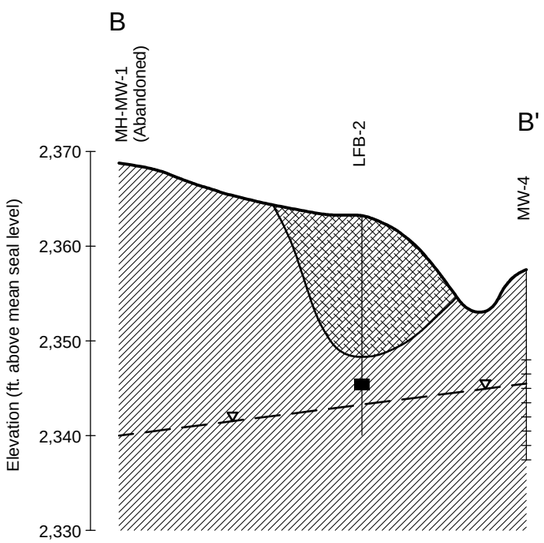
0 800 1600

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:		
Drawing Date: 11/13/13		
ACAD File: Fig 5.dwg		
Designed: PD	State Property Parcel Designations	
Detailed: PD	Client: Swannanoa - DJJDP Property	Project No.: 1304
Checked: PD	Location: Swannanoa, North Carolina	Figure: 5



Section A-A'



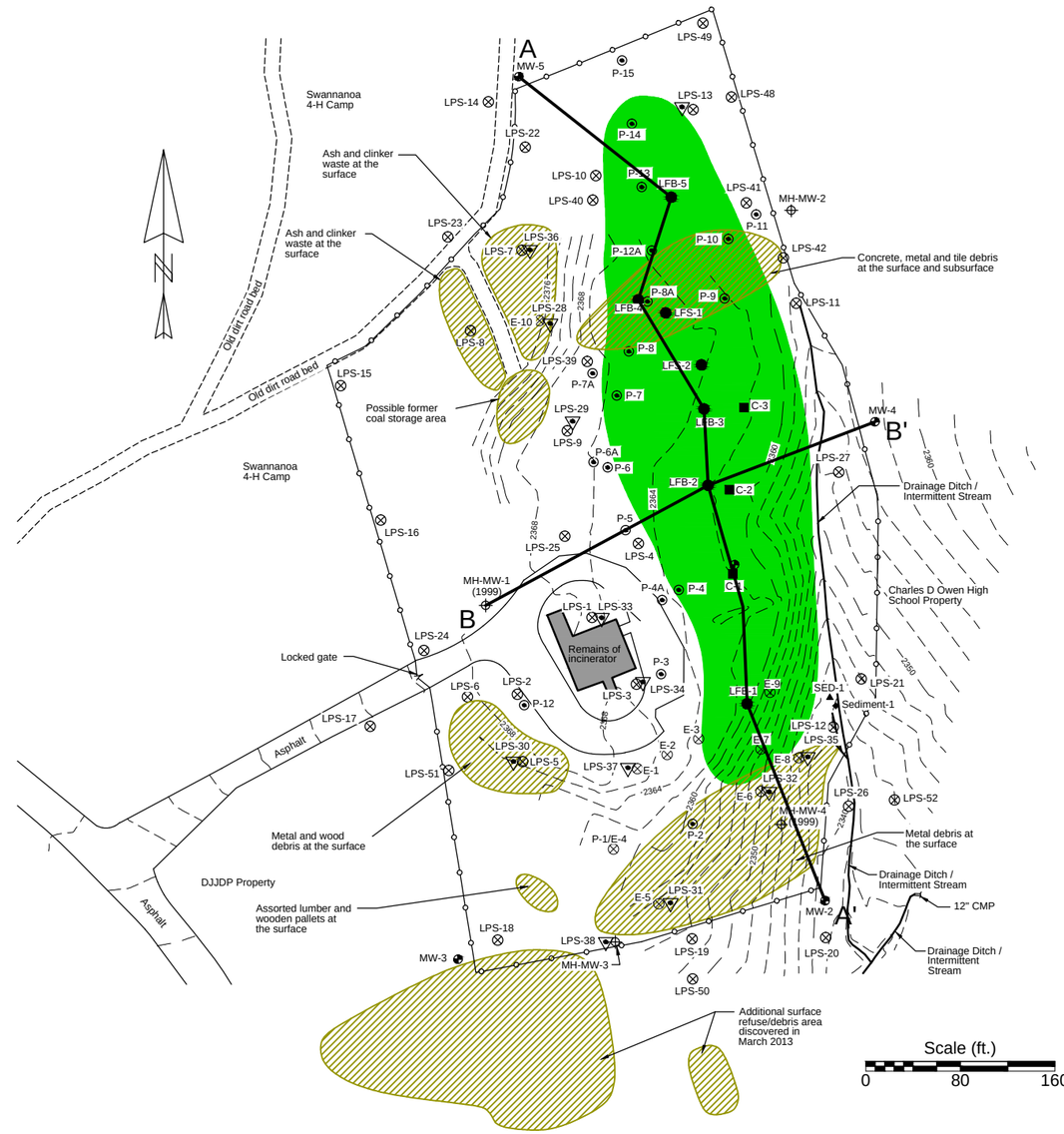
Section B-B'

Legend:

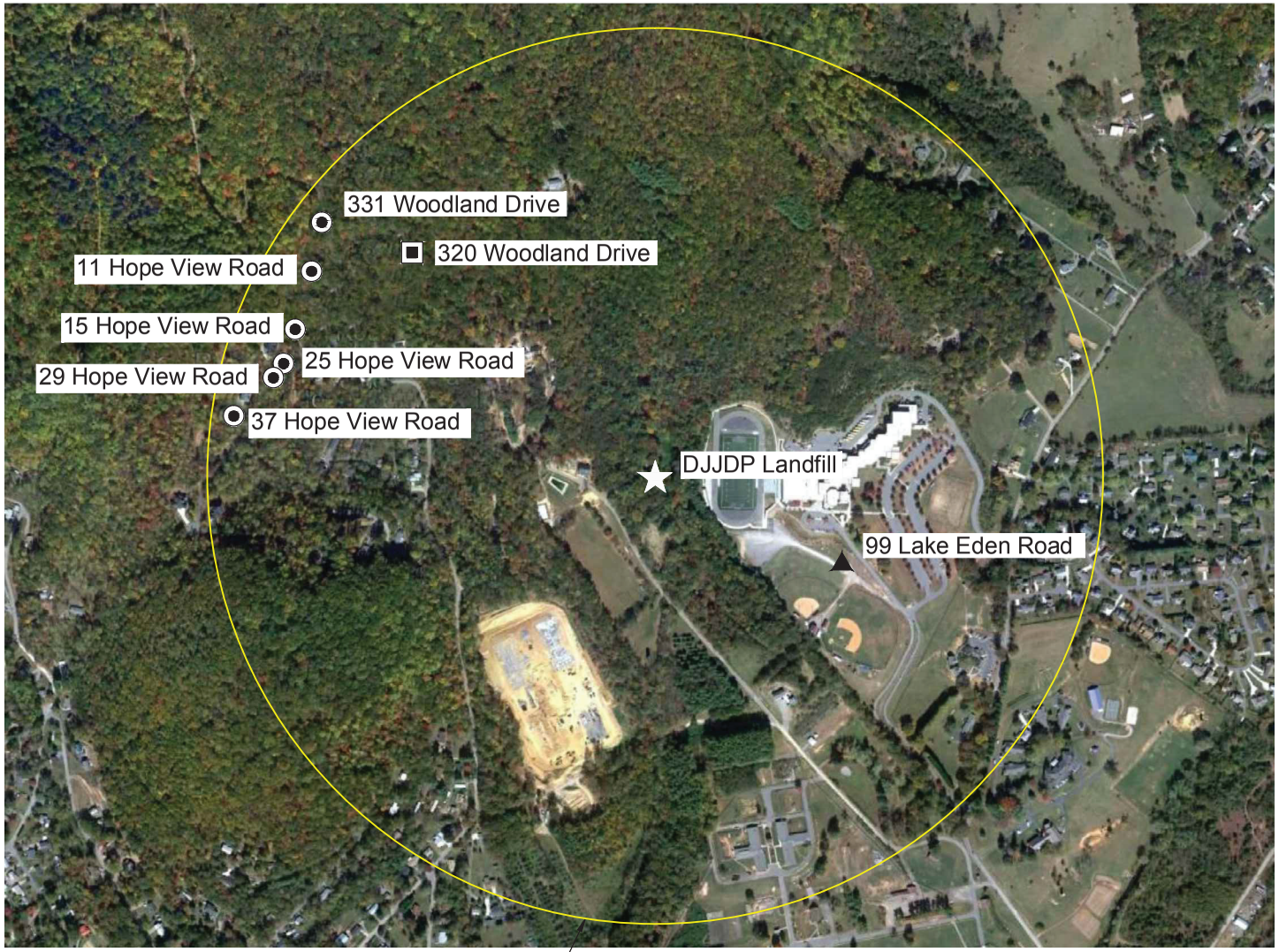
- Landfill Material
- Native Soil: micaceous silty / clayey sand and sandy silt / clay; saprolitic in lower sections
- Groundwater surface - Sept. 19, 2011
- Landfill soil boring with soil sample depth
- Monitoring well casing screen and interval

Scale (ft.)
0 80 160

Horizontal scale: 1" = 80'
Vertical scale: 1" = 8
Vertical Exaggeration = 10x



PIEDMONT GEOLOGIC SMART EARTH SOLUTIONS		Gauging Date:
		Drawing Date: 6/30/15
		ACAD File: Fig 6.dwg
Designed: PD	Topographic Profiles and Geologic Cross Sections	
Detailed: PD	Client: Swannanoa - DJJDP Property	Project No.: 1404
Checked: PD	Location: Swannanoa, North Carolina	Figure: 6



Legend

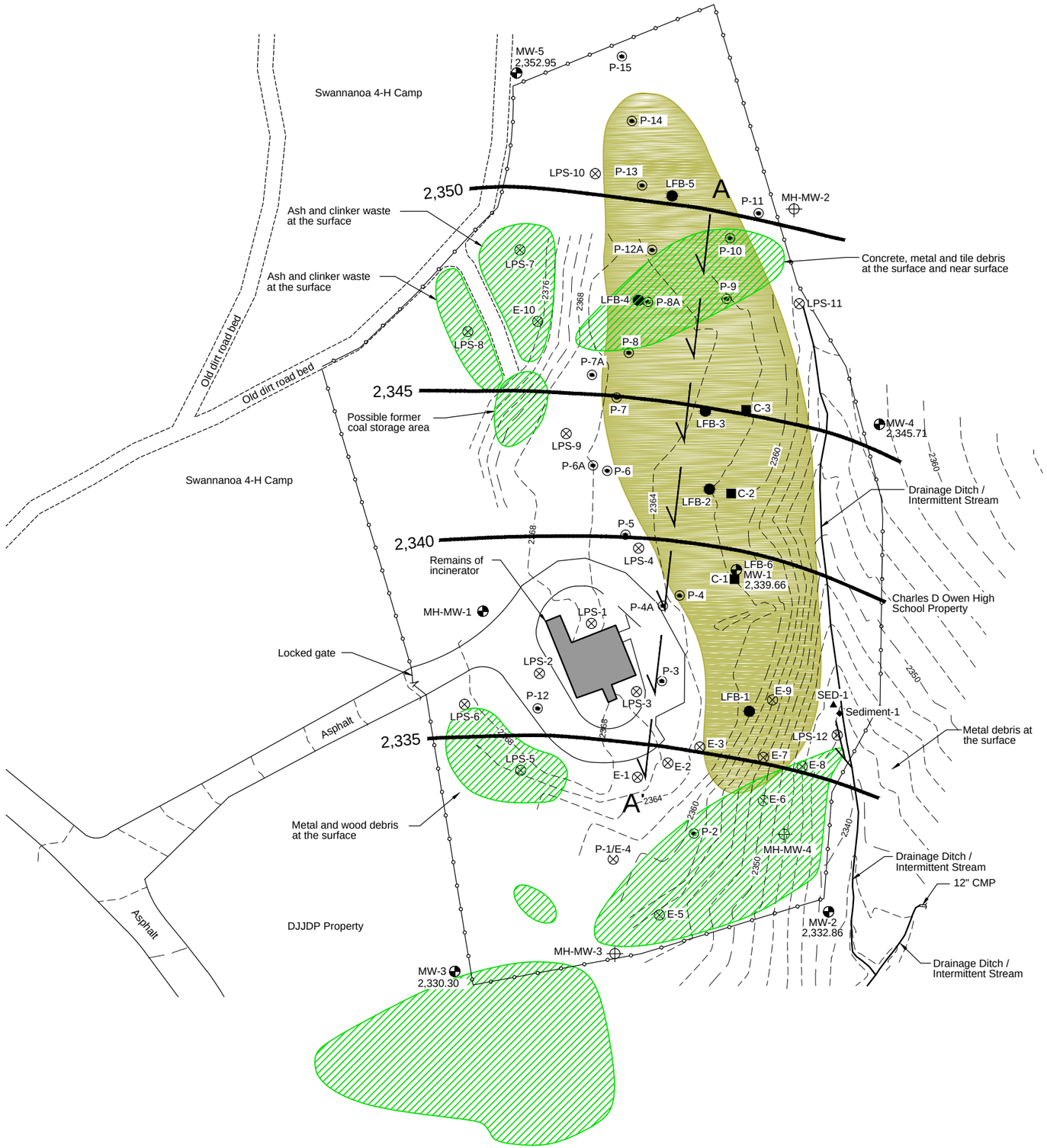
- Confirmed water supply well
- Probable water supply well
- Out-of-service (capped) water supply well

Scale (ft.)

0 1000 2000

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:		
Drawing Date: 11/13/13		
ACAD File: Fig 7.dwg		
Designed: GM	Results of Water Supply Survey	
Detailed: GM	Client: Swannanoa - DJJDP Property	Project No.: 1304
Checked: GM	Location: Swannanoa, North Carolina	Figure: 7



LEGEND:

P-10	Landfill Perimeter Exploratory Boring
LFB-1	Landfill Interior Boring/Sample
C-1	Landfill Cap-Thickness Boring
LPS-1	Surface Soil Sample
	Subsurface Soil Sample
SED-2	Sediment Sample
MW-1 2,339.66	Monitoring Well
MH-MW-1	Monitoring Well - Decommissioned
	Approximate Extent Of Landfill
	Surface Refuse/Debris area
	Fence Line
2360	Topographic Contour (ft. rel. MSL)
2,350	Water-Table Contour (Feet Above MSL)
	Direction of Groundwater Flow

Potentiometric Gradient A-A':

$$i = \frac{15 \text{ ft.}}{292 \text{ ft.}} = 0.05 \text{ ft. / ft.}$$

Figure based on survey by Dennis Clinkscales,
PLS plat dated September 18, 2009

Scale (ft.)

0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	9/19/11
Drawing Date:	6/30/15
ACAD File:	Fig 8.dwg
Designed: PD	Water-Table Contour Map: 9/19/11
Detailed: PD	Client: Swannanoa - DJJDP Property
Project No.:	1404
Checked: PD	Location: Swannanoa, North Carolina
Figure:	8

LEGEND:

P-10	Landfill Perimeter Exploratory Boring
LFB-1	Landfill Interior Boring/Sample
C-1	Landfill Cap-Thickness Boring
LPS-1	Surface Soil Sample
	Subsurface Soil Sample
SED-2	Sediment Sample
MW-1	Monitoring Well
MH-MW-1	Monitoring Well - Decommissioned
	Approximate Extent Of Landfill
	Surface Refuse/Debris area
	Fence Line
2360	Topographic Contour (ft. rel. MSL)
2,350	Water-Table Contour (Feet Above MSL)
	Direction of Groundwater Flow

Potentiometric Gradient A-A':

$$i = \frac{15 \text{ ft.}}{286 \text{ ft.}} = 0.05 \text{ ft. / ft.}$$

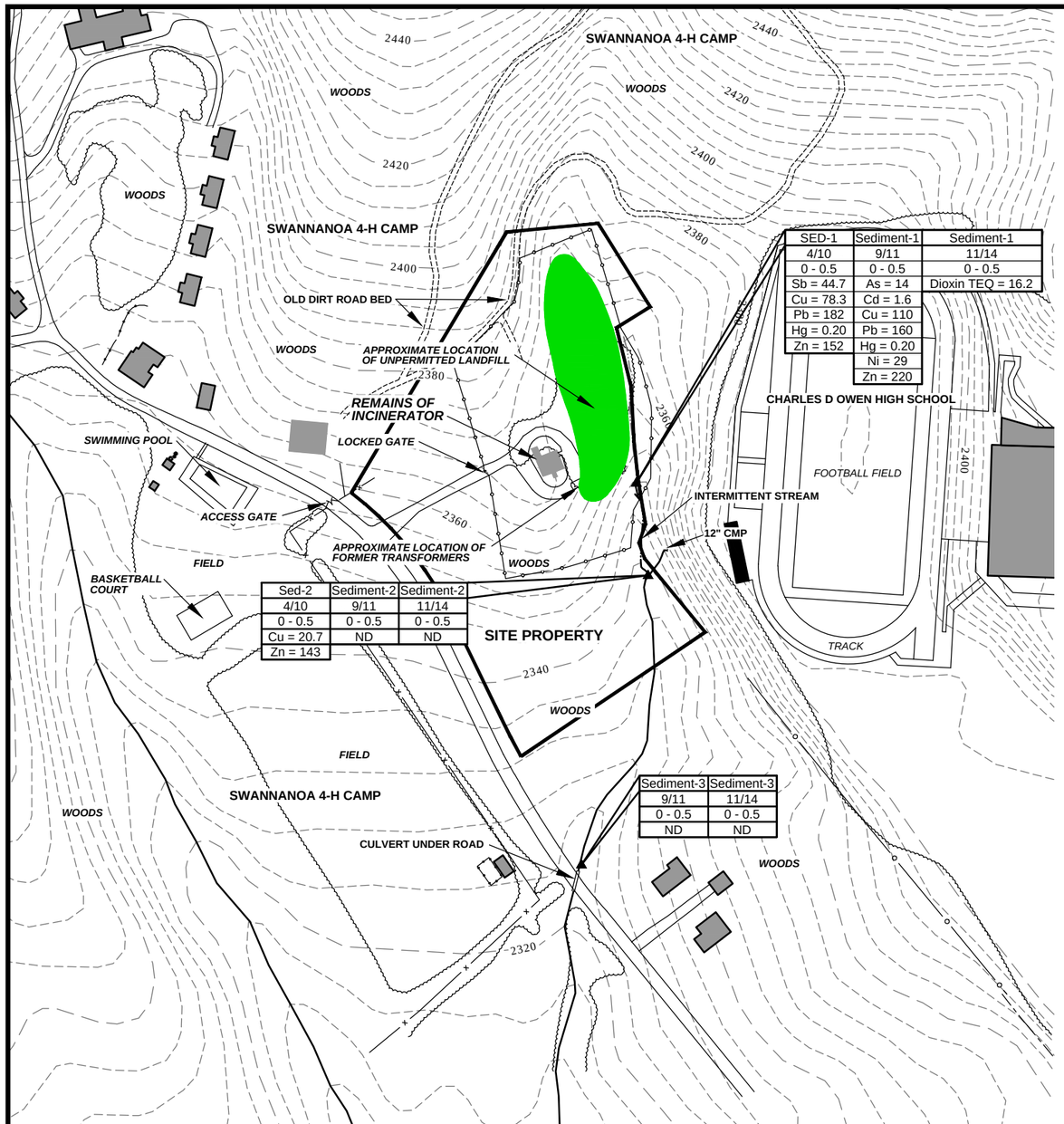
Scale (ft.)

0 60 120

Figure based on survey by Dennis Clinkscales, PLS plat dated September 18, 2009

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

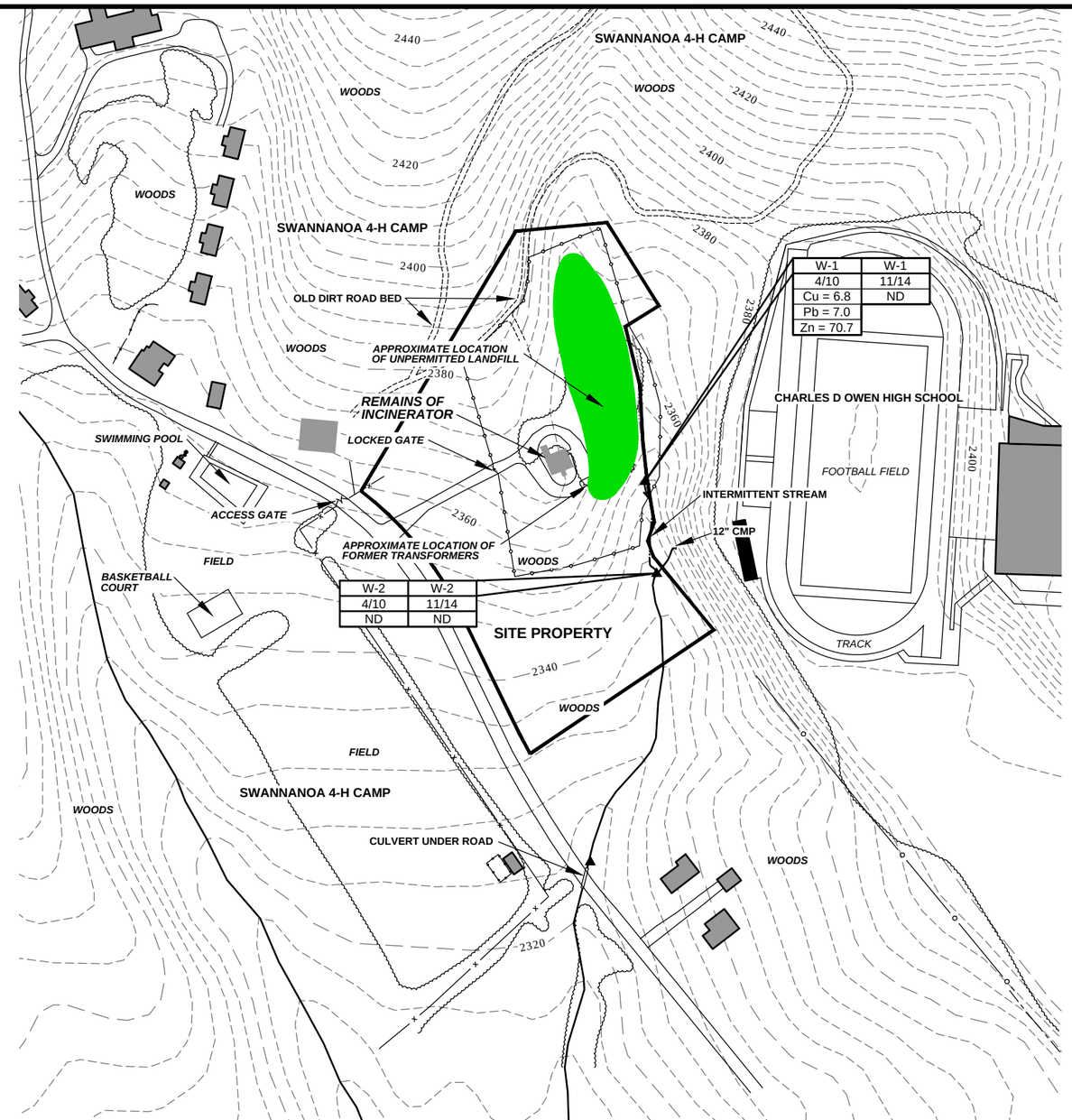
Gauging Date:		
Drawing Date: 6/30/15		
ACAD File: Fig 9.dwg		
Designed: PD	Water-Table Contour Map: 11/12/14	
Detailed: PD	Client: Swannanoa - DJJDP Property	Project No.: 1404
Checked: PD	Location: Swannanoa, North Carolina	Figure: 9



SED-1	Sediment-1	Sediment-1
4/10	9/11	11/14
0 - 0.5	0 - 0.5	0 - 0.5
Sb = 44.7	As = 14	Dioxin TEQ = 16.2
Cu = 78.3	Cd = 1.6	
Pb = 182	Cu = 110	
Hg = 0.20	Pb = 160	
Zn = 152	Hg = 0.20	
	Ni = 29	
	Zn = 220	

Sed-2	Sediment-2	Sediment-2
4/10	9/11	11/14
0 - 0.5	0 - 0.5	0 - 0.5
Cu = 20.7	ND	ND
Zn = 143		

Sediment-3	Sediment-3
9/11	11/14
0 - 0.5	0 - 0.5
ND	ND



W-1	W-1
4/10	11/14
Cu = 6.8	ND
Pb = 7.0	
Zn = 70.7	

W-2	W-2
4/10	11/14
ND	ND

LEGEND

▲ SED-3 Sediment Sample Locations

SED-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above U.S. EPA Region 4 Screening Values are listed.

ND = No compounds detected at concentrations above U.S. EPA Region 4 Screening Values

Scale (ft.)

0 100 200

LEGEND

▲ W-3 Surface Water Sample Location

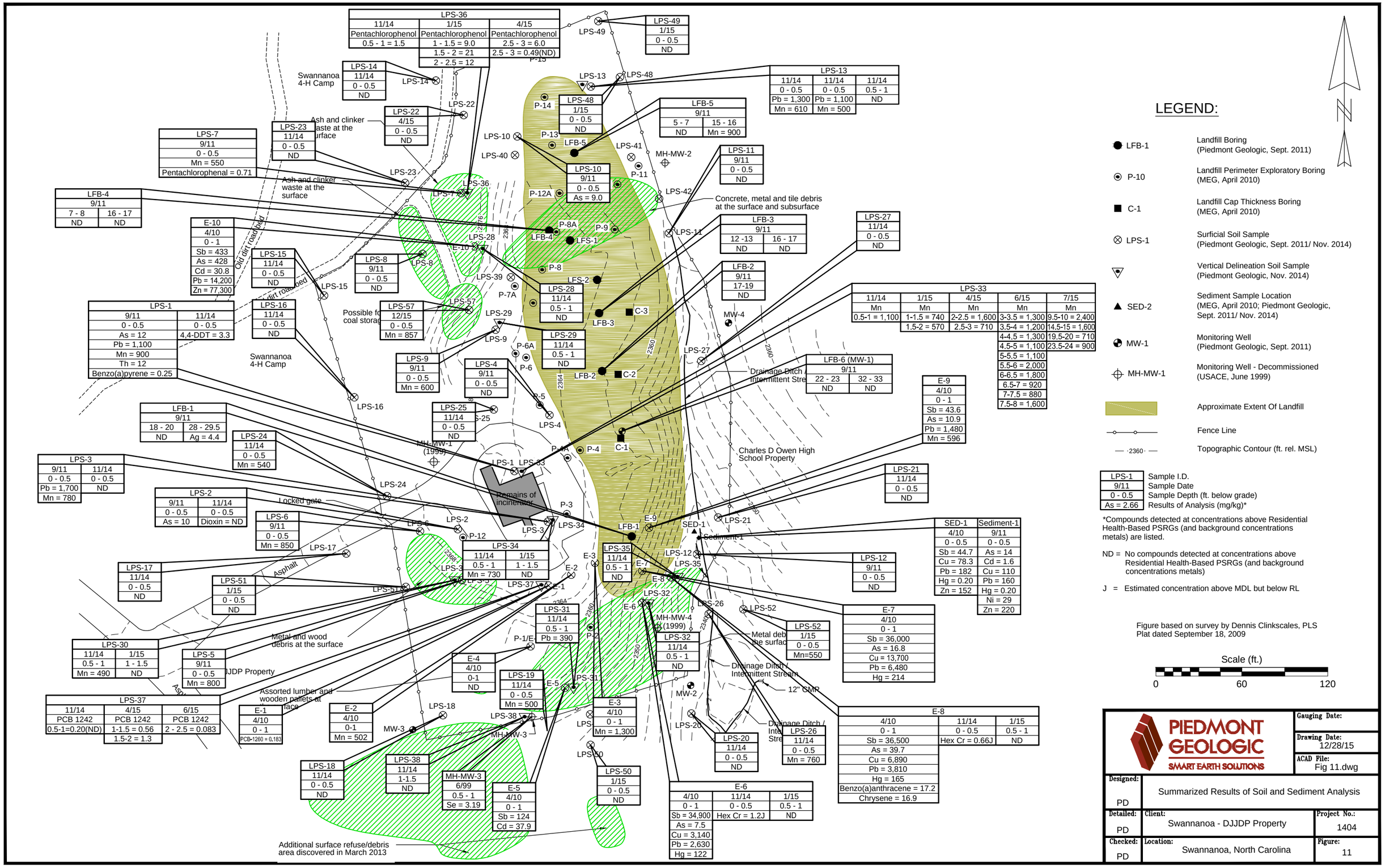
W-1	Sample I.D.
4/10	Sample Date
Cu = 6.8	Results of Analysis (ug/L)*

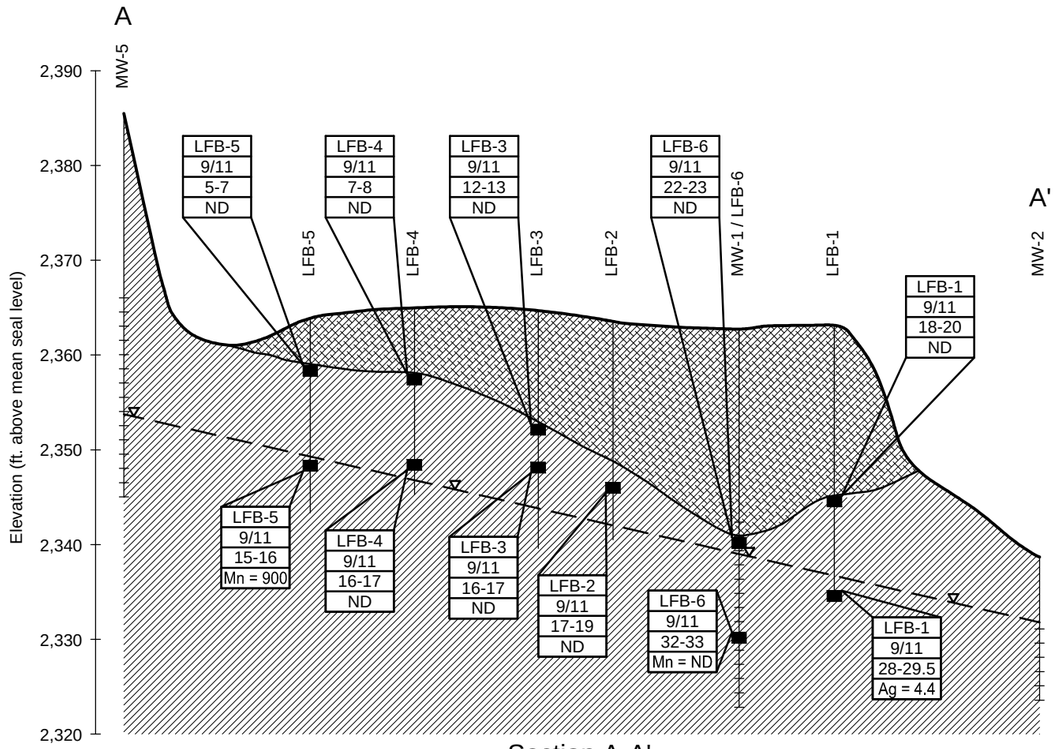
*Compounds detected at concentrations above U.S. EPA Region 4 Screening Values are listed.

ND = No compounds detected at concentrations above U.S. EPA Region 4 Screening Values

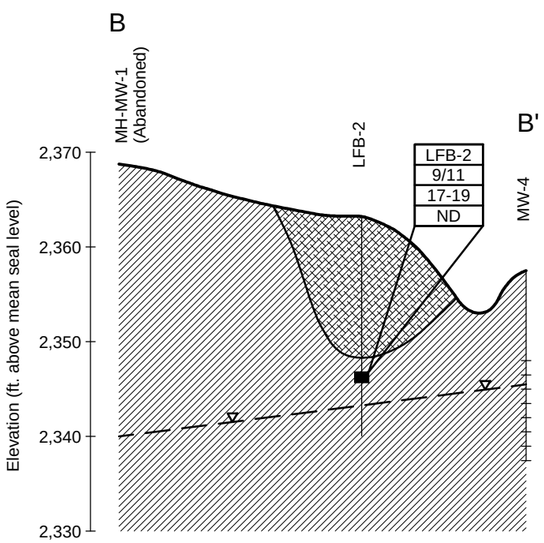
PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	11/9/15
ACAD File:	Fig 10.dwg
Designed: PD	Summarized Results of Surface Water & Sediment Analysis
Detailed: PD	Client: Swannanoa - DJJDP Property; Project No.: 1404
Checked: PD	Location: Swannanoa, North Carolina; Figure: 10


LEGEND:
LFB-1 Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10 Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1 Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1 Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2 Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
MW-1 Monitoring Well (Piedmont Geologic, Sept. 2011)
MH-MW-1 Monitoring Well - Decommissioned (USACE, June 1999)
Approximate Extent Of Landfill
Fence Line
2360 Topographic Contour (ft. rel. MSL)
LPS-1 Sample I.D.
9/11 Sample Date
0 - 0.5 Sample Depth (ft. below grade)
As = 2.66 Results of Analysis (mg/kg)*
*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.
ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)
J = Estimated concentration above MDL but below RL
Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009
Scale (ft.)
0 60 120
LPS-36 11/14 Pentachlorophenol 0.5 - 1 = 1.5; 1/15 Pentachlorophenol 1 - 1.5 = 9.0; 1.5 - 2 = 21; 2 - 2.5 = 12; 4/15 Pentachlorophenol 2.5 - 3 = 6.0; 2.5 - 3 = 0.49(ND)
LPS-49 1/15 0 - 0.5 ND
LPS-14 11/14 0 - 0.5 ND
LPS-22 4/15 0 - 0.5 ND
LPS-23 11/14 0 - 0.5 ND
LPS-7 9/11 0 - 0.5 Mn = 550 Pentachlorophenal = 0.71
LPS-48 1/15 0 - 0.5 ND
LPS-13 11/14 0 - 0.5 Pb = 1,300 Mn = 610; 11/14 0 - 0.5 Pb = 1,100 Mn = 500; 11/14 0.5 - 1 ND
LFB-5 9/11 5 - 7 ND; 15 - 16 Mn = 900
LPS-10 9/11 0 - 0.5 As = 9.0
LPS-11 9/11 0 - 0.5 ND
LFB-4 9/11 7 - 8 ND; 16 - 17 ND
E-10 4/10 0 - 1 Sb = 433 As = 428 Cd = 30.8 Pb = 14,200 Zn = 77,300
LPS-15 11/14 0 - 0.5 ND
LPS-8 9/11 0 - 0.5 ND
LFB-3 9/11 12 -13 ND; 16 - 17 ND
LPS-27 11/14 0 - 0.5 ND
LFB-2 9/11 17-19 ND
LPS-28 11/14 0.5 - 1 ND
LPS-29 11/14 0.5 - 1 ND
LPS-33 11/14 Mn 0.5-1 = 1,100; 1/15 Mn 1-1.5 = 740; 1.5-2 = 570; 4/15 Mn 2-2.5 = 1,600; 2.5-3 = 710; 6/15 Mn 3-3.5 = 1,300; 3.5-4 = 1,200; 4-4.5 = 1,300; 4.5-5 = 1,100; 5-5.5 = 1,100; 5.5-6 = 2,000; 6-6.5 = 1,800; 6.5-7 = 920; 7-7.5 = 880; 7.5-8 = 1,600; 7/15 Mn 9.5-10 = 2,400; 14.5-15 = 1,600; 19.5-20 = 710; 23.5-24 = 900
LPS-1 9/11 0 - 0.5 As = 12 Pb = 1,100 Mn = 900 Th = 12 Benzo(a)pyrene = 0.25; 11/14 0 - 0.5 4,4-DDT = 3.3
LPS-16 11/14 0 - 0.5 ND
LPS-57 12/15 0 - 0.5 Mn = 857
LPS-9 9/11 0 - 0.5 Mn = 600
LPS-4 9/11 0 - 0.5 ND
LFB-6 (MW-1) 9/11 22 - 23 ND; 32 - 33 ND
E-9 4/10 0 - 1 Sb = 43.6 As = 10.9 Pb = 1,480 Mn = 596
LFB-1 9/11 18 - 20 ND; 28 - 29.5 Ag = 4.4
LPS-25 11/14 0 - 0.5 ND
LPS-24 11/14 0 - 0.5 Mn = 540
LPS-3 9/11 0 - 0.5 Pb = 1,700 Mn = 780; 11/14 0 - 0.5 ND
LPS-2 9/11 0 - 0.5 As = 10; 11/14 0 - 0.5 Dioxin = ND
LPS-21 11/14 0 - 0.5 ND
LPS-6 9/11 0 - 0.5 Mn = 850
LPS-34 11/14 0.5 - 1 Mn = 730; 1/15 1 - 1.5 ND
LPS-35 11/14 0.5 - 1 ND
SED-1 4/10 0 - 0.5 Sb = 44.7 Cu = 78.3 Pb = 182 Hg = 0.20 Zn = 152; Sediment-1 9/11 0 - 0.5 As = 14 Cd = 1.6 Cu = 110 Pb = 160 Hg = 0.20 Ni = 29 Zn = 220
LPS-12 9/11 0 - 0.5 ND
LPS-17 11/14 0 - 0.5 ND
LPS-51 1/15 0 - 0.5 ND
LPS-31 11/14 0.5 - 1 Pb = 390
LPS-32 11/14 0.5 - 1 ND
LPS-52 1/15 0 - 0.5 Mn=550
E-7 4/10 0 - 1 Sb = 36,000 As = 16.8 Cu = 13,700 Pb = 6,480 Hg = 214
LPS-30 11/14 0.5 - 1 Mn = 490; 1/15 1 - 1.5 ND
LPS-5 9/11 0 - 0.5 Mn = 800
E-4 4/10 0-1 ND
LPS-19 11/14 0 - 0.5 Mn = 500
E-3 4/10 0 - 1 Mn = 1,300
LPS-37 11/14 PCB 1242 0.5-1=0.20(ND); 4/15 PCB 1242 1-1.5 = 0.56 1.5-2 = 1.3; 6/15 PCB 1242 2 - 2.5 = 0.083
E-1 4/10 0 - 1 PCB-1260 = 0.183
E-2 4/10 0-1 Mn = 502
LPS-20 11/14 0 - 0.5 ND
LPS-26 11/14 0 - 0.5 Mn = 760
E-8 4/10 0 - 1 Sb = 36,500 As = 39.7 Cu = 6,890 Pb = 3,810 Hg = 165 Benzo(a)anthracene = 17.2 Chrysene = 16.9; 11/14 0 - 0.5 Hex Cr = 0.66J; 1/15 0.5 - 1 ND
LPS-18 11/14 0 - 0.5 ND
LPS-38 11/14 1-1.5 ND
MH-MW-3 6/99 0.5 - 1 Se = 3.19
E-5 4/10 0 - 1 Sb = 124 Cd = 37.9
LPS-50 1/15 0 - 0.5 ND
E-6 4/10 0 - 1 Sb = 34,900 As = 7.5 Cu = 3,140 Pb = 2,630 Hg = 122; 11/14 0 - 0.5 Hex Cr = 1.2J; 1/15 0.5 - 1 ND
Swannanoa 4-H Camp
Ash and clinker waste at the surface
Old dirt road bed
Concrete, metal and tile debris at the surface and subsurface
Possible fo coal storag
Drainage Ditch / Intermittent Stre
Charles D Owen High School Property
Remains of incinerator
Locked gate
Asphalt
Metal and wood debris at the surface
DJJDP Property
Assorted lumber and wooden pallets at surface
12" CMP
Additional surface refuse/debris area discovered in March 2013
MH-MW-1 (1999)
MH-MW-2
MH-MW-4 (1999)
MW-1
MW-2
MW-3
MW-4
Gauging Date:
Drawing Date: 12/28/15
ACAD File: Fig 11.dwg
PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS
Designed: PD
Summarized Results of Soil and Sediment Analysis
Detailed: PD
Client: Swannanoa - DJJDP Property
Project No.: 1404
Checked: PD
Location: Swannanoa, North Carolina
Figure: 11



Section A-A'



Section B-B'

Legend:

- Landfill Material
- Native Soil: micaceous silty / clayey sand and sandy silt / clay; saprolitic in lower sections
- Groundwater surface - Sept. 19, 2011
- Landfill soil boring with soil sample depth
- Monitoring well casing screen and interval

LFB-1	Sample I.D.
9/11	Sample Date
28-29.5	Sample Depth (ft. below grade)
Ag = 4.4	Results of Analysis (mg/kg)*

*Compounds/Metals detected at concentrations above PSRGs and background concentrations (metals) are listed.

ND = No compounds/metals detected at concentrations above PSRGS and background concentrations (metals)

Scale (ft.)
0 80 160

Horizontal scale: 1" = 80'
Vertical scale: 1" = 8
Vertical Exaggeration = 10x

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:		
Drawing Date: 6/30/15		
ACAD File: Fig 12.dwg		
Designed: PD	Geologic Cross Sections with Results of Soil Analysis	
Detailed: PD	Client: Swannanoa - DJJDP Property	Project No.: 1404
Checked: PD	Location: Swannanoa, North Carolina	Figure: 12

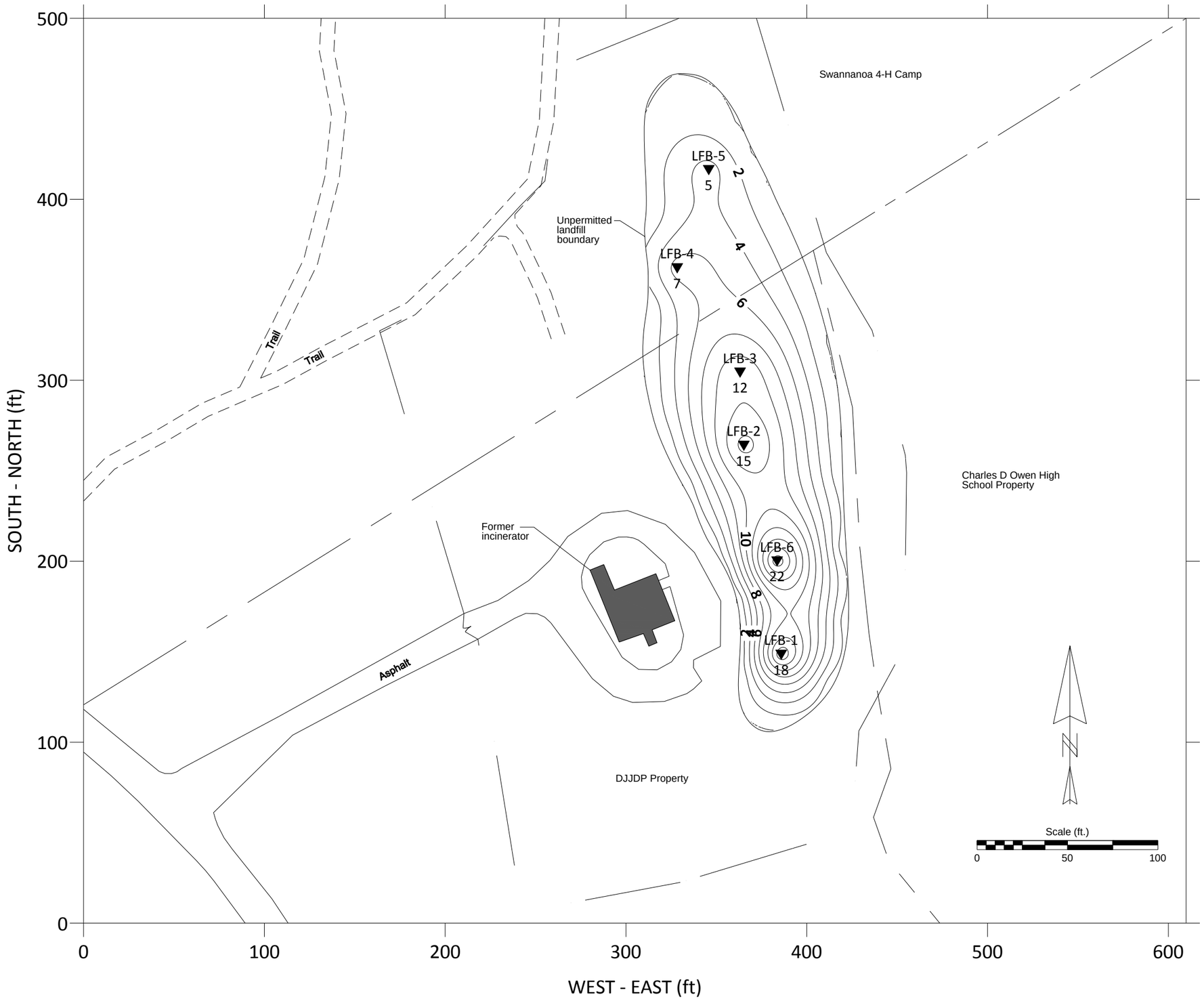
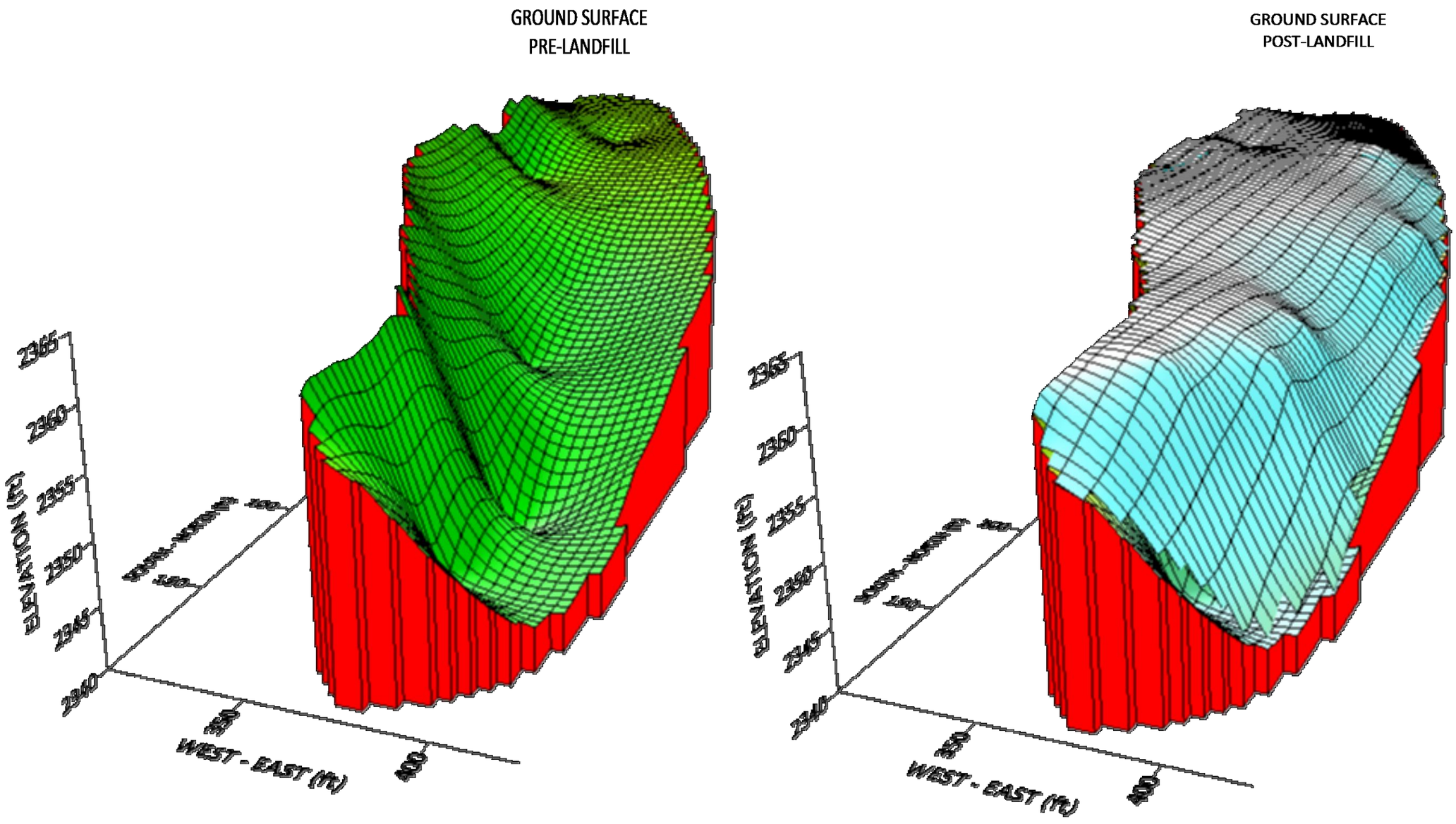


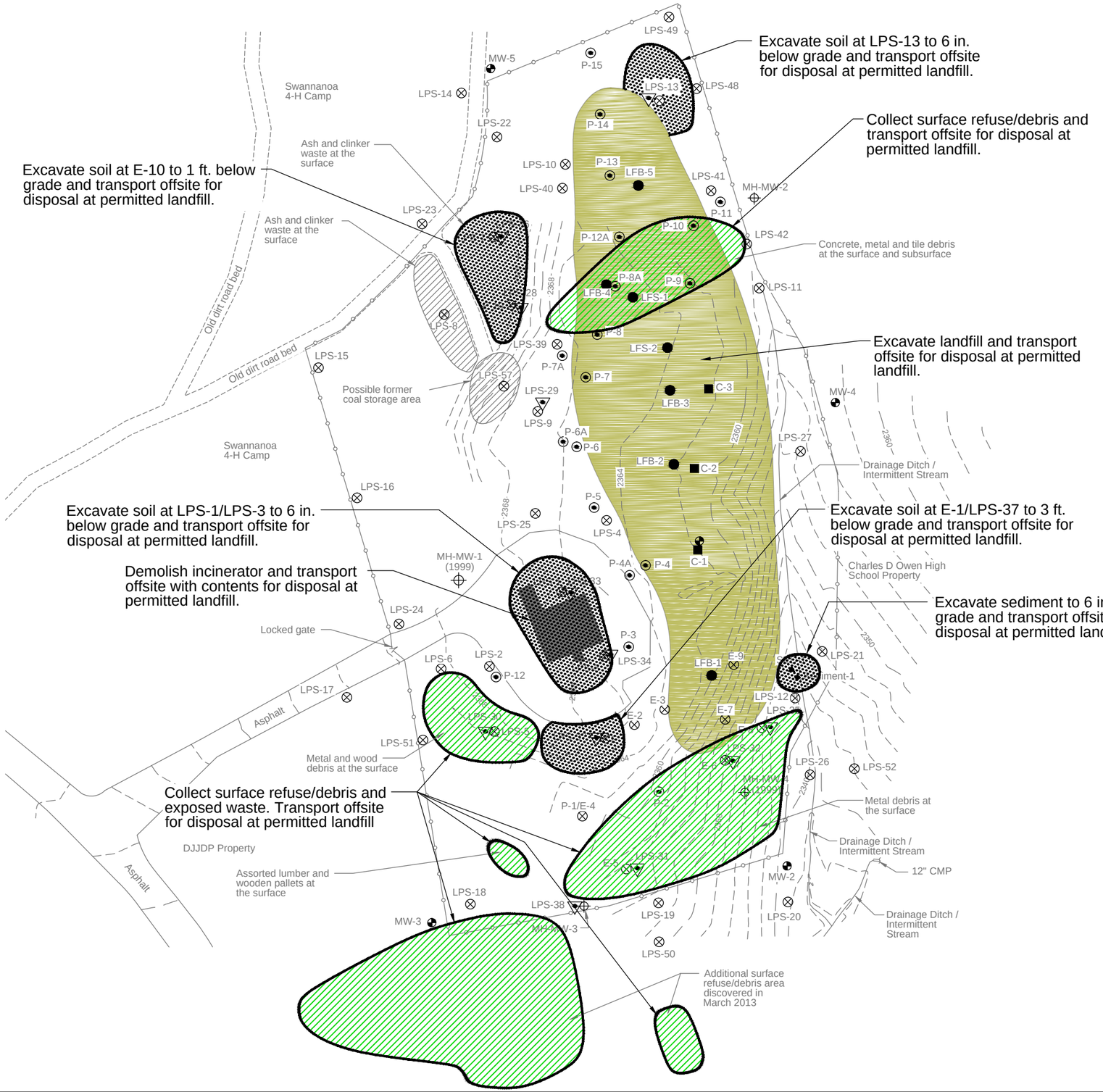
FIGURE 13
LANDFILL THICKNESS CONTOUR MAP
DJJDP SWANNANOA PROPERTY
SWANNANOA, NORTH CAROLINA

Contours in feet of landfill thickness



VIEW FROM SOUTH-SOUTHEAST LOOKING NORTH-NORTHWEST.
GREEN SURFACE (LEFT) REPRESENTS GROUND SURFACE PRIOR TO LANDFILL.
LIGHT-BLUE SURFACE (RIGHT) REPRESENTS PRESENT GROUND SURFACE AFTER LANDFILL.

FIGURE 14
COMPARISON OF PRE-LANDFILL AND POST-LANDFILL GROUND SURFACE
SWANNANOA - DJJDP PROPERTY



LEGEND:

P-10	Landfill Perimeter Exploratory Boring
LFB-1	Landfill Interior Boring/Sample
C-1	Landfill Cap-Thickness Boring
LPS-1	Surface Soil Sample
	Subsurface Soil Sample
SED-2	Sediment Sample
MW-1	Monitoring Well
MH-MW-1	Monitoring Well - Decommissioned
	Approximate Extent Of Landfill
	Surface Refuse/Debris Area
	Fence Line
2360	Topographic Contour (ft. rel. MSL)
	Landfill-Perimeter Area to be Excavated

Scale (ft.)

0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	12/28/15
ACAD File:	Fig 15.dwg
Designed: PD	Summary of Proposed Site Remedial Action
Detailed: PD	Client: Swannanoa - DJJDP Property
Project No.:	1404
Checked: PD	Location: Swannanoa, North Carolina
Figure:	15

TABLES

TABLE 1
GROUNDWATER MONITORING WELL CONSTRUCTION DETAILS

Swannanoa DJJDP Property
Swannanoa, North Carolina

Well I.D.	Well Location	Date Installed	Total Depth (1)	Well Screen/ Casing I.D.	Well Screen/ Casing Material	Screen Interval (1)	Screen Slot Size	TOC Elev. (2)
MW-1	Onsite	9/15/2011	40	2"	Sch 40 PVC	20-40	0.010"	2,366.04
MW-2	Onsite	9/15/2011	15	2"	Sch 40 PVC	10-15	0.010"	2,342.13
MW-3	Onsite	9/15/2011	40	2"	Sch 40 PVC	20-40	0.010"	2,354.09
MW-4	Onsite	9/15/2011	20	2"	Sch 40 PVC	10-20	0.010"	2,361.42
MW-5	Onsite	9/16/2011	40	2"	Sch 40 PVC	20-40	0.010"	2,388.88
MW-6	Offsite	11/11/2014	20	2"	Sch 40 PVC	10-20	0.010"	NS
MW-7	Offsite	11/11/2014	15	2"	Sch 40 PVC	5-15	0.010"	NS
MW-8	Offsite	11/11/2014	20	2"	Sch 40 PVC	10-20	0.010"	NS

(1) Measured in feet below grade.
(2) Measured in feet relative to mean sea level.
TOC = Top of casing
NS = Not surveyed.

TABLE 2
MONITORING-WELL GAUGING DATA

Swannanoa DJJDP Property
Swannanoa, North Carolina

Well	Date	TOC Elevation (ft) (1)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft) (1)
MW-1	9/19/2011	2,366.04	26.38	2,339.66
	11/12/2014	2,366.04	19.49	2,346.55
	4/29/2015	2,366.04	18.49	2,347.55
MW-2	9/19/2011	2,342.13	9.27	2,332.86
	11/12/2014	2,342.13	5.39	2,336.74
	4/29/2015	2,342.13	5.05	2,337.08
MW-3	9/19/2011	2,354.09	23.79	2,330.30
	11/12/2014	2,354.09	19.58	2,334.51
	4/29/2015	2,354.09	17.85	2,336.24
MW-4	9/19/2011	2,361.42	15.71	2,345.71
	11/12/2014	2,361.42	9.97	2,351.45
	4/29/2015	2,361.42	8.49	2,352.93
MW-5	9/19/2011	2,388.88	35.93	2,352.95
	11/12/2014	2,388.88	31.59	2,357.29
	4/29/2015	2,388.88	29.27	2,359.61
MW-6	11/12/2014	NS	7.42	NA
MW-7	11/12/2014	NS	4.99	NA
MW-8	11/12/2014	NS	8.31	NA

(1) = Relative to site datum
TOC = Top of casing
NS = Not surveyed.
NA = Not applicable.

TABLE 3
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: METALS, VOCs, SVOCs, AND PCBs
LANDFILL-PERIMETER SOIL AND EXPOSED-WASTE SAMPLES COLLECTED APRIL 2010 (1)

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.: **Sample Date:**	**E-1** **4/15/10**	**E-2** **4/15/10** **4/21/10***	**E-3** **4/15/10** **4/21/10***	**E-4** **4/20/10**	**E-5** **4/20/10**	**E-6** **4/20/10**	**E-7** **4/20/10**	**E-8** **4/15/10** **4/20/10***	**E-9** **4/15/10** **4/20/10***	**E-10** **4/16/10** **4/20/10****	**Statistical Background (3)**	**PSRG (2)** **Residential Health-Based**	**Industrial Health-Based**	**Protection of Groundwater**
Hazardous Substance List Metals EPA Method 6010B/7471 (mg/kg)														
Antimony	**1.5**	**2.9**	<3.0	0.63	**124**	**34,900**	**36,000**	**36,500**	**43.6**	**433**	1.3	6.2	94	0.9
Arsenic	<0.48	3.0	3.7	6.1	2.5	**7.5**	**16.8**	**39.7**	**10.9**	**428**	7.4	0.68	3	5.8
Beryllium	0.98	**1.9**	**1.9**	0.35	0.35	0.26	<0.12	0.36	0.99	0.51	1.6	32	460	63
Cadmium	**2.0**	<0.56	<0.61	<0.093	**37.9**	**0.61**	**0.59**	**1.9**	**3.4**	**30.8**	0.55	14	200	3.0
Chromium	24.6	33.2	28.0	4.2	26.1	**1,560**	**16,800**	**4,340**	43.4	**67.2**	57	24,000	100,000	360,000
Copper	27.4	40.0	**47.8**	19.0	**77.5**	**3,140**	**13,700**	**6,890**	**134**	21.0	47	620	9,400	700
Lead	16.8	29.1	21.7	10.6	**285**	**2,630**	**6,480**	**3,810**	**1,480**	**14,200**	47	400	800	270
Manganese	124	**502**	**1,300**	81.6	471	281	83.6	372	**596**	134	482	360	5,200	65
Mercury	0.033	0.038	0.028	0.015	**0.55**	**122**	**214**	**165**	**0.21**	0.017	0.081	1.9	3.1	1.0
Nickel	10.4	15.0	**54.9**	6.8	**39.5**	9.2	18.0	**40.1**	22.2	4.4	26	300	4,400	130
Selenium	1.3	<5.6	<6.1	<0.93	<1.2	1.3	**6.1**	**3.1**	<1.9	<0.88	2.8	78	1,200	2.1
Silver	<0.48	<2.8	<3.0	<0.46	<0.58	**0.62**	**1.1**	<0.54	**7.0**	**3.6**	0.60	78	1,200	3.4
Thallium	<0.97	<5.6	<6.1	<0.93	<1.2	<1.0	**2.9**	<1.1	<1.9	<0.88	1.4	0.16	2.4	0.28
Zinc	22.6	64.0	72.7	16.1	**2,370**	**124**	**184**	**420**	**1,540**	**77,300**	78	4,600	70,000	1,200
Volatile Organic Compounds EPA Method 8260B (mg/kg) (4)														
Acetone	<0.113	<0.109	0.138	0.622	0.502	<17.7	<38.9	<7.09	0.324	0.323	--	12,000	100,000	24
Isopropylbenzene	<0.0057	<0.0055	<0.0058	<0.0149	<0.0104	<0.885	3.06	<0.355	<0.0078	<0.0075	--	270	270	1.3
Methyl acetate	<0.0113	<0.0109	<0.0116	0.278	<0.0208	4.16	<3.89	<0.709	<0.0156	<0.015	--	16,000	29,000	NG
o-Xylene	<0.0057	<0.0055	<0.0058	<0.0149	<0.0104	<0.885	4.0	<0.355	<0.0078	<0.0075	--	130	434	NG
Toluene	<0.0057	<0.0055	<0.0058	<0.0149	<0.0104	<0.885	<1.95	<0.355	<0.0078	0.0162	--	820	820	5.5
Semivolatile Organic Compounds EPA Method 8270D (mg/kg) (4)														
Benzo (a) anthracene	<0.429	<0.419	<2.08	<0.398	<2.25	<43.2	<122	17.2	<26.2	<0.422	--	0.16	2.9	0.18
Chrysene	<0.429	<0.419	<2.08	<0.398	<2.25	<43.2	<122	16.9	<26.2	<0.422	--	16	29	18
Pyrene	<0.429	<0.419	<2.08	<0.398	<2.25	<43.2	<122	12.4	<26.2	<0.422	--	360	4,600	220
Polychlorinated Biphenyls EPA Method 8082 (mg/kg) (3)														
PCB-1260	0.183	<0.0419	<0.0416	<0.797	0.107	<0.432	<0.975	<2.25	<2.10	<0.0422	--	1		0.14

(1) Samples E-6 through E-9 were exposed-waste samples. The remaining samples were surface-soil samples collected from 0-12 inches below grade.
(2) PSRG = Inactive Hazardous Sites Branch - Preliminary Soil Remediation Goal (September 2015).
(3) Derived from background soil samples collected in September 2011.
(4) Method compounds detected in one or more samples are listed.
* Sample for volatile organic compound analysis collected on latter date. Sample for all other analysis methods collected on earlier date.
** Sample for metals analysis collected on earlier date. Sample for all other analysis methods collected on latter date.
Concentrations listed in bold type are above statistical background concentration (metals).
Concentrations listed in blue-shaded cells are above Protection-of-Groundwater PSRG.
Concentrations listed in yellow-shaded cells are above Residential-Health-Based PSRG.
Concentrations listed in green-shaded cells are above Residential-Health-Based PSRG and Protection-of-Groundwater PSRG.
Concentrations listed in orange-shaded cells are above Residential Health-Based PSRG and Industrial Health-Based PSRG.
Concentrations listed in red-shaded cells are above Residential Health-Based PSRG, Industrial Health-Based PSRG, and Protection-of-Groundwater PSRG.
NG = No PSRG exists.

TABLE 4
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
TENTATIVELY IDENTIFIED COMPOUNDS
LANDFILL-PERIMETER SOIL AND EXPOSED-WASTE SAMPLES COLLECTED APRIL 2010

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**E-1**	**E-2**	**E-3**	**E-7**	**E-8**	**E-9**	**PSRG (1)**		
Sample Date:	**4/15/10**	**4/15/10 4/21/10***	**4/15/10 4/21/10***	**4/20/10**	**4/15/10 4/20/10***	**4/15/10 4/20/10***	**Residential Health-Based**	**Industrial Health-Based**	**Protection of Groundwater**
Tentatively Identified Compounds by EPA Methods 8260 and 8270 (mg/kg)									
1,1' - (1,3 Propanediyel) bis-benzene	ND	ND	ND	ND	ND	0.118	NG	NG	NG
1,2,3,5-Tetramethyl-benzene	ND	ND	ND	51.2	ND	ND	NG	NG	NG
16-Hentriacontanone	ND	0.399	ND	ND	ND	ND	NG	NG	NG
1-Ethyl-3,5-dimethyl-benzene	ND	ND	ND	46.4	ND	ND	NG	NG	NG
1-Methyl-4-propylbenzene	ND	ND	ND	11	ND	ND	NG	NG	NG
1-Methylnaphthalene	ND	ND	ND	ND	ND	0.114	18	73	0.055
1-Phenanthrene carboxylic acid	ND	ND	ND	ND	1.28	ND	NG	NG	NG
2,4a,8,8-Tetramethyldecahyd	ND	3.5	ND	ND	ND	ND	NG	NG	NG
2,7,10-Trimethyl-dodecane	ND	ND	ND	ND	ND	0.174	NG	NG	NG
3-Methyl-decane	ND	ND	ND	24.8	ND	ND	NG	NG	NG
4,6-Dimethyl-dodecane	ND	ND	ND	ND	3.85	ND	NG	NG	NG
5-Bromo-4-oxo-4,5,6,7-tetrahydro-2,1,3-benzoxadiazol-4-one	0.621	ND	ND	ND	ND	ND	NG	NG	NG
5-Methyl-decane	ND	ND	ND	9.52	ND	ND	NG	NG	NG
Decahydro-1,6-dimethyl-4'(1-methylethyl)-naphthalene	ND	0.0177	ND	ND	ND	ND	NG	NG	NG
Decahydro-2-Napthalenol	ND	ND	ND	ND	1.69	ND	NG	NG	NG
Decahydro-4,4,8,9,10-pentamethylnaphthalene	ND	0.752	ND	ND	ND	ND	NG	NG	NG
Decahydro-8a-ethyl-1,1,4a,6	ND	8.25	ND	ND	ND	ND	NG	NG	NG
Eicosanoic acid	ND	ND	ND	ND	6.89	ND	NG	NG	NG
Friedelan-3-one	ND	ND	2.5	ND	ND	ND	NG	NG	NG
Hexadecanoic acid	ND	ND	ND	ND	36	ND	NG	NG	NG
n-Hexadecanoic acid	ND	ND	ND	45.6	ND	ND	NG	NG	NG
Octadecanoic acid	ND	ND	ND	ND	19.8	ND	NG	NG	NG
Stigmast-4-en-3-one	ND	0.311	ND	ND	ND	ND	NG	NG	NG
Styrene	ND	ND	ND	ND	ND	0.308	870	870	0.92
Tetradecanoic acid	ND	ND	ND	ND	7.66	ND	NG	NG	NG

(1) PSRG = Inactive Hazardous Sites Branch - Preliminary Soil Remediation Goal (September 2015).
NG = No PSRG exists. ND = Not detected.
* Sample for EPA Method 8260 analysis collected on latter date. Sample for EPA Method 8270 analysis collected on earlier date.
Concentrations listed in blue-shaded cells are above Protection-of-Groundwater PSRG.
Concentrations listed in yellow-shaded cells are above Residential-Health-Based PSRG.
Concentrations listed in green-shaded cells are above Residential-Health-Based PSRG and Protection-of-Groundwater PSRG.
Concentrations listed in orange-shaded cells are above Residential Health-Based PSRG and Industrial Health-Based PSRG.
Concentrations listed in red-shaded cells are above Residential Health-Based PSRG, Industrial Health-Based PSRG, and Protection-of-Groundwater PSRG.

TABLE 5
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
TOXICITY CHARACTERISTIC LEACHING PROCEDURE
EXPOSED-WASTE SAMPLE COLLECTED MAY 2010

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.: **Sample Date:**	**Exposed Surface Waste (E-7)** **5/26/10**	**RCRA Hazardous Waste Criteria (1)**
TCLP Metals **EPA Method 6010B/7470A (mg/L)**		
Arsenic	<0.050	5.0
Barium	1.9	100
Cadmium	<0.0050	1.0
Chromium	0.090	5.0
Lead	0.96	5.0
Mercury	0.0936	0.2
Selenium	<0.050	1.0
Silver	<0.025	5.0
TCLP Volatile Organics **EPA Method 8260B (mg/L)**		
Benzene	<0.165	0.5
Carbon tetrachloride	<0.165	0.5
Chlorobenzene	<0.165	100
Chloroform	<0.165	6.0
1,2-Dichloroethane	<0.165	0.5
1,1-Dichloroethene	<0.165	0.7
2-Butanone (MEK)	<0.165	200
Tetrachloroethene	<0.165	0.7
Trichloroethene	<0.165	0.5
Vinyl chloride	<0.165	0.2
TCLP Semivolatile Organics **EPA Method 8270C (mg/L)**		
1,4-Dichlorobenzene	<0.050	7.5
2,4-Dinitrotoluene	<0.050	0.13
Hexachlorobenzene	<0.050	0.13
Hexachloro-1,3-butadiene	<0.050	0.5
Hexachloroethane	<0.050	3.0
Nitrobenzene	<0.050	2.0
Pyridine	<0.050	5.0
3&4-Methyl Phenol	<0.050	400
2-Methylphenol	<0.050	200
Pentachlorophenol	<0.050	100
2,4,5-Trichlorophenol	<0.050	400
2,4,6-Trichlorophenol	<0.050	2.0

(1) 40 CFR 261.24.

TABLE 6
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
SEDIMENT SAMPLES COLLECTED APRIL 2010

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.: **Sample Date:**	**SED-1** **4/15/10** **4/21/10***	**SED-2** **4/15/10** **4/21/10***	**EPA Screening Value** **(1)**
Hazardous Substance List Metals **EPA Method 6010B/7471 (mg/kg)**			
Antimony	**44.7**	1.9	12
Arsenic	1.8	2.0	7.24
Beryllium	0.54	1.5	32 (2)
Cadmium	0.37	<0.32	1
Chromium	13.7	27.8	52.3
Copper	**78.3**	**20.7**	18.7
Lead	**182**	19.1	30.2
Manganese	141	297	360 (2)
Mercury	**0.20**	0.025	0.13
Nickel	11.1	13.7	15.9
Selenium	1.4	<3.2	78 (2)
Silver	<0.55	<1.6	2
Thallium	<1.1	<3.2	0.16 (2)
Zinc	**152**	**143**	124
Volatile Organics **EPA Method 8260B (mg/kg)**			
Volatile organics	ND	ND	NA
Semi-Volatile Organics **EPA Method 8270D (mg/kg) (3)**			
Di-n-butyl phthalate	0.979	<0.532	1,200 (2)
Polychlorinated Biphenyls **EPA Method 8082 (mg/kg)**			
Polychlorinated biphenyls	ND	ND	33
Tentatively Identified Compounds **EPA Methods 8260 and 8270 (mg/kg)**			
1,1,2,2-Tetrachloroethane	ND	0.395	NS
1-Bromo-3-methyl-2-butene	0.871	ND	NS
2,3-Dimethyl-1-pentene	ND	0.745	NS
3,3-Dimethyl-1-pentene	ND	0.876	NS
Bromo-cyclopentane	0.688	ND	NS
Friedelan-3-one	0.211	ND	NS
p,p-DDT	**0.378**	ND	0.0033

(1) U.S. EPA Region 4 Waste Mgt. Division Sediment Screening Values for Hazardous Waste Sites (Nov. 2001).
(2) No EPA screening value exists. Value listed is IHSB Residential Health-Based PSRG (March 2015).
(3) Method compounds detected in one or more samples are listed.
* Sample for volatile organic compound analysis collected on latter date.
Sample for all other analysis methods collected on earlier date.
NS = No EPA screening level or PSRG exists.
ND = Not detected.
NA = Not applicable.
Concentrations listed in bold type are above EPA screening level or PSRG.

TABLE 7
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
SURFACE-WATER SAMPLES COLLECTED APRIL 2010

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**W-1**	**W-2**	**NC 2B**	**EPA Screening Value (2)**	
Sample Date:	**4/20/10**	**4/20/10**	**Standard (1)**	**Acute Screening Value**	**Chronic Screening Value**
Hazardous Substance List Metals EPA Method 6010/7470 (ug/L)					
Antimony	<5.0	<5.0	NS	1,300	160
Arsenic	<5.0	<5.0	50 (a)	360	190
Beryllium	<1.0	<1.0	6.5 (a)	16	0.53
Cadmium	<1.0	<1.0	2 (a)	1.79	0.66
Chromium	<5.0	<5.0	50 (a)	984.32	117.32
Copper	**6.8**	<5.0	7 (a)	9.22	6.54
Lead	**7.0**	<5.0	25 (a)	33.78	1.32
Manganese	<5.0	21.5	NS	NS	NS
Mercury	<0.20	<5.0	0.012 (a)	2.4	0.012
Nickel	<5.0	<5.0	88 (a)	789	87.71
Selenium	<10.0	<10.0	5 (a)	20	5
Silver	<5.0	<5.0	0.06 (a)	1.23	0.012
Thallium	<10.0	<10.0	0.47	140	4.0
Zinc	**70.7**	58.7	50 (a)	65.04	58.91
Volatile Organics EPA Method 8260B (ug/L) (3)					
Tetrachloroethene	1.5	1.6	3.3 (b)	528	84
Semi-Volatile Organics EPA Method 8270D (ug/L)					
Semivolatile organics	ND	ND	NA	NA	NA
Polychlorinated Bipenyls EPA Method 8082 (ug/L)					
Polychlorinated biphenyls	ND	ND	NA	NA	NA
Tentatively Identified Compounds EPA Methods 8260 and 8270 (mg/kg)					
Tentatively identified compounds	ND	ND	NA	NA	NA

(1) North Carolina surface water standard under 15A NCAC 2B (May 2007).
(a) Freshwater aquatic life criteria. (b) human health criteria.
(2) U.S. EPA Region 4 Waste Mgt. Division Freshwater Screening Values for Hazardous Waste Sites (November 2001).
(3) Method compounds detected in one or more samples are listed.
NS = No 2B standard or EPA screening level exists.
ND = No method compounds detected.
NA = Not applicable.
Concentrations listed in bold type are above NC 2B standard or EPA screening level.

TABLE 8
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
VOCs, SVOCs, METALS, PESTICDES, PCBs, AND WET CHEMISTRY
INCINERATOR-WASTE AND LANDFILL-WASTE COMPOSITE SAMPLES COLLECTED SEPTEMBER 2011

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**Incinerator-Waste Composite**	**Landfill-Waste Composite**	**Statistical Background (1)**	**PSRG (2)**	
Sample Date:	**9/13/11**	**9/15/11**		**Residential Health-Based**	**Protection of Groundwater**
EPA Method 9056 (mg/kg)					
Nitrate	64	8.6	--	26,000	NG
Sulfate	4,100	210	--	NG	NG
EPA Method 350.1 (mg/kg)					
Ammonia	<5.5	<6.4	--	NG	6.4
EPA Method 8315 (mg/kg)					
Formaldehyde	<1.8	<2.0	--	2,400	2.4
EPA Method 9045D (mg/kg)					
Corrosivity	Non-Corrosive	Non-Corrosive	--	--	--
EPA Method D93/1010A (mg/kg)					
Ignitability (at 170 deg. F)	Did Not Ignite	Did Not Ignite	--	--	--
EPA Method 9012B (mg/kg)					
Reactive Cyanide	<0.140	<0.125	--	NG	NG
EPA Method 9034/9030B (mg/kg)					
Reactive Sulfide	<28	<25	--	NG	NG
Hazardous Substance List Metals					
EPA Method 6010B/7471 (mg/kg)					
Antimony	<1.1	<13	1.3	6.2	0.9
Arsenic	1.5	**11**	7.4	0.67	5.8
Beryllium	0.22	<1.3	1.6	32	63
Cadmium	0.55	**0.65**	0.55	14	3.0
Chromium (total)	30	45	57	24,000	360,000
Copper	**60**	**220**	47	620	700
Lead	**330**	**1,300**	47	400	270
Manganese	160	360	482	360	65
Mercury	**0.17**	**0.23**	0.081	1.9	1.0
Nickel	**27**	26	26	300	130
Selenium	<1.1	<13	2.8	78	2.1
Silver	**1.8**	**9.4**	0.60	78	3.4
Thallium	<5.5	<13	8.0	0.16	0.28
Zinc	**700**	**880**	78	4,600	1,200
Volatile Organics					
EPA Method 8260B (mg/kg) (3)					
Acetone	<0.062	0.19	--	12,000	24
Benzene	0.0052	0.010	--	1.2	0.0073
2-Butanone (MEK)	<0.012	0.014	--	5,400	16
Tetrachloroethene	<0.0012	0.025	--	16	0.005
Semivolatile Organics					
EPA Method 8270D (mg/kg)					
Semivolatile Organics	ND	ND	--	--	--
Pesticides/PCBs					
EPA Method 8081/8082 (mg/kg) (3)					
4,4-DDE	0.052	0.077	--	1.6	0.24
4,4-DDT	0.15	0.074	--	1.9	0.34

(1) Derived from background soil samples collected September 2011.
(2) PSRG = Inactive Hazardous Sites Branch - Prelim. Soil Remediation Goal (March 2015).
(3) Method compounds detected in one or more samples are listed.

NG = PSRG not established.
ND = No method analytes detected.

Concentrations listed in bold type are above statistical background concentration (metals).
Concentrations listed in yellow-shaded cells are above Residential-Health-Based PSRG.
Concentrations listed in blue-shaded cells are above Protection-of-Groundwater PSRG.
Concentrations listed in green-shaded cells are above Residential-Health-Based PSRG and Protection-of-Groundwater PSRG.

TABLE 9
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: DIOXINS/FURANS
CINERATOR-WASTE AND LANDFILL-WASTE COMPOSITE SAMPLES COLLECTED SEPTEMBER 20

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**Incinerator-Waste Composite**	**Landfill-Waste Composite**	**PSRG (1)**	
Sample Date:	**9/13/11**	**9/15/11**	**Residential Health-Based**	**Protection of Groundwater**
Dioxins/Furans EPA Method 8290 (pg/g)				
2,3,7,8-TCDD	1.54 J	4.3	4.8	1.1
1,2,3,7,8-PeCDD	7.63 J	4.44 J	NG	NG
1,2,3,4,7,8-HxCDD	6.61 J	4.17 J	NG	NG
1,2,3,6,7,8-HxCDD	16.2	12.1	NG	NG
1,2,3,7,8,9-HxCDD	12.3	7.1	NG	NG
1,2,3,4,6,7,8-HpCDD	231	378	NG	NG
1,2,3,4,6,7,8,9-OCDD	1,560	9,780 (4)	NG	NG
Total Tetrachlorodibenzo-p-dioxin	108	88.5	NG	NG
Total Pentachlorodibenzo-p-dioxin	140	86.4	NG	NG
Total Hexachlorodibenzo-p-dioxin	209	126	100	NG
Total Heptachlorodibenzo-p-dioxin	432	734	NG	NG
2,3,7,8-TCDF	83 U (2)	73.7	NG	NG
1,2,3,7,8-PeCDF	25.7	14.6	NG	NG
2,3,4,7,8-PeCDF	47.1	22.8	NG	NG
1,2,3,4,7,8-HxCDF	65.9 (3)	19.2	NG	NG
1,2,3,6,7,8-HxCDF	26.8	18.5	NG	NG
2,3,4,6,7,8-HxCDF	26.7	19.6	NG	NG
1,2,3,7,8,9-HxCDF	1.78 J	0.781 J	NG	NG
1,2,3,4,6,7,8-HpCDF	76.0	141	NG	NG
1,2,3,4,7,8,9-HpCDF	6.25 J	7.6	NG	NG
1,2,3,4,6,7,8,9-OCDF	53	283	NG	NG
Total Tetrachlorodibenzofuran	469	464	NG	NG
Total Pentachlorodibenzofuran	443	332	NG	NG
Total Hexachlorodibenzofuran	244	217	NG	NG
Total Heptachlorodibenzofuran	123	327	NG	NG
Total Toxic Equivalency (TEQ) World Health Organization, 2005				
TEQ, WHO 2005, ND=0, pg/g	45.3	34.5	51	--

(1) PSRG = Inactive Hazardous Sites Branch - Preliminary Soil Remediation Goal (September 2015).
(2) Peak detected exceeds retention time by (from internal standard) by greater than 3 seconds.
(3) EMPC/Merged peak.
(4) EMCL - exceeds maximum calibration limit.

NG = No PSRG exists.
J = Estimated value.
U = Not detected.

Concentrations listed in blue-shaded cells are above Protection-of-Groundwater PSRG.
Concentrations listed in yellow-shaded cells are above Residential-Health-Based PSRG.

TABLE 10
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: TENTATIVELY IDENTIFIED COMPOUNDS
INCINERATOR-WASTE AND LANDFILL-WASTE COMPOSITE SAMPLES COLLECTED SEPTEMBER 2011

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**Incinerator-Waste Composite**	**Landfill-Waste Composite**	**PSRG (1)**		
Sample Date:	**9/13/11**	**9/15/11**	**Residential Health-Based**	**Industrial Health-Based**	**Protection of Groundwater**
Tentatively Identified Compounds					
EPA Method 8260 and 8270 (mg/kg)					
Benzene, 1,4-difluoro-	0.055	ND	NG	NG	NG
Benzene, methyl-, trifluoro deriv.	0.061	ND	NG	NG	NG
Benzene, 1-bromo-2-fluoro	0.049	ND	NG	NG	NG
C6D5CD3	0.075	ND	NG	NG	NG
1,4-Dichlorobenzene-d4	0.062	ND	2.6	11	0.07
1,1-Dichloro-2,2-bis(p-chlorophenyl)ethane; Benzene	0.0574	ND	NG	NG	NG
Eicosane	0.0825	ND	NG	NG	NG
Methane, dibromofluoro	0.024	ND	NG	NG	NG
10-Methylnonadecane	ND	0.5289	NG	NG	NG
Naphthalene, 1,2,3,4-tetrahydro-1,4-dimethyl	0.024	ND	NG	NG	NG
Naphthalene, 6-ethyl-1,2,3,4-tetrahydro	0.027	ND	NG	NG	NG
Naphthalene, 1,2,3,4-tetrahydro-1,5,7-trimethyl	0.017	ND	NG	NG	NG
Octadecanal	0.2097	ND	NG	NG	NG
Propane, 2-bromo-1-chloro	0.026	ND	NG	NG	NG
Tetradecanal	0.171	ND	NG	NG	NG

(1) PSRG = Inactive Hazardous Sites Branch - Preliminary Soil Remediation Goal (September 2015).
NG = No PSRG exists. ND = Not detected.

TABLE 11
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
TOXICITY CHARACTERISTIC LEACHING PROCEDURE
INCINERATOR-WASTE AND LANDFILL-WASTE COMPOSITE SAMPLES COLLECTED SEPTEMBER 2011

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.: **Sample Date:**	**Incinerator-Waste Composite** **9/13/11**	**Landfill-Waste Composite** **9/15/11**	**RCRA Hazardous Waste Criteria** **(1)**
TCLP Metals **EPA Method 6010B/7470A (mg/L)**			
Arsenic	<0.050	<0.050	5.0
Barium	0.16	1.6	100
Cadmium	<0.050	<0.050	1.0
Chromium	<0.050	<0.050	5.0
Lead	0.12	1.1	5.0
Mercury	<0.0010	<0.0010	0.2
Selenium	<0.050	<0.050	1.0
Silver	<0.050	<0.050	5.0
TCLP Volatile Organics **EPA Method 8260B (mg/L)**			
Benzene	<0.050	<0.050	0.5
Carbon tetrachloride	<0.050	<0.050	0.5
Chlorobenzene	<0.050	<0.050	100
Chloroform	<0.25	<0.25	6.0
1,2-Dichloroethane	<0.050	<0.050	0.5
1,1-Dichloroethene	<0.050	<0.050	0.7
2-Butanone (MEK)	<0.50	<0.50	200
Tetrachloroethene	<0.050	<0.050	0.7
Trichloroethene	<0.050	<0.050	0.5
Vinyl chloride	<0.050	<0.050	0.2
TCLP Semivolatile Organics **EPA Method 8270C (mg/L)**			
1,4-Dichlorobenzene	<0.10	<0.10	7.5
2,4-Dinitrotoluene	<0.10	<0.10	0.13
Hexachlorobenzene	<0.10	<0.10	0.13
Hexachloro-1,3-butadiene	<0.10	<0.10	0.5
Hexachloroethane	<0.10	<0.10	3.0
Nitrobenzene	<0.10	<0.10	2.0
Pyridine	<0.10	<0.10	5.0
3&4-Methyl Phenol	<0.10	<0.10	400
2-Methylphenol	<0.10	<0.10	200
Pentachlorophenol	<0.10	<0.10	100
2,4,5-Trichlorophenol	<0.10	<0.10	400
2,4,6-Trichlorophenol	<0.10	<0.10	2.0

(1) 40 CFR 261.24.

TABLE 12
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
SUB-LANDFILL SOIL SAMPLES COLLECTED SEPTEMBER 2011

Swannanoa DJJDP Property
Swannanoa, North Carolina

Boring I.D.:	**LFB-1**	**LFB-1**	**LFB-2**	**LFB-3**	**LFB-3**	**LFB-4**	**LFB-4**	**LFB-5**	**LFB-5**	**LFB-5**	**LFB-6**	**LFB-6**	**Statistical**	**PSRG (1)**		
Sample Depth (feet):	**18-20**	**28-29.5**	**17-19**	**12-13**	**16-17**	**7-8**	**16-17**	**5-7**	**5-7 (duplicate)**	**15-16**	**22-23**	**32-33**	**Background**	**Residential Health-Based**	**Industrial Health-Based**	**Protection of Groundwater**
Sample Date:	**9/14/11**	**9/14/11**	**9/14/11**	**9/14/11**	**9/14/11**	**9/14/11**	**9/14/11**	**9/14/11**	**9/14/11**	**9/14/11**	**9/15/11**	**9/15/11**	**(2)**			
Hazardous Substance List Metals EPA Method 6010B/7471 (mg/kg)																
Antimony	<12	<7.2	<1.2	<1.3	<1.3	<1.2	<1.4	<1.2	<1.2	<1.2	<1.3	<6.8	1.3	6.2	94	0.9
Arsenic	<1.2	<7.2	2.4	4.6	2.6	3.5	3.0	4.2	3.5	3.3	3.7	<6.8	7.4	0.68	3	5.8
Beryllium	0.15	<0.72	<0.12	<0.13	<0.13	<0.12	0.33	0.36	0.36	0.13	0.15	<1.4	1.6	32	460	63
Cadmium	<0.30	**2.7**	<0.30	**0.81**	<0.32	**0.72**	**1.1**	**1.3**	**1.1**	**0.98**	**1.2**	<1.7	0.55	14	200	3.0
Chromium	34	**61**	21	35	23	48	50	47	36	49	42	26	57	24,000	100,000	360,000
Copper	31	**53**	23	46	20	30	29	**54**	**48**	20	40	20	47	620	9,400	700
Lead	22	19	11	**60**	13	21	17	**70**	41	16	26	18	47	400	800	270
Manganese	270	350	28	87	79	260	100	260	230	**900**	380	640	815	360	5,200	65
Mercury	0.027	<0.029	0.050	0.041	0.059	0.072	0.046	0.073	**0.084**	0.026	0.030	<0.027	0.081	1.9	3.1	1.0
Nickel	14	26	10	15	10	11	13	14	12	10	13	**28**	26	300	4,400	130
Selenium	<12	<7.2	<1.2	<1.3	<1.3	<1.2	<1.4	<1.2	<1.2	<1.2	<1.3	<6.8	2.8	78	1,200	2.1
Silver	**0.82**	**4.4**	<0.59	**1.8**	<0.63	**1.2**	**1.4**	**1.5**	**1.3**	**1.4**	**1.5**	<3.4	0.60	78	1,200	3.4
Thallium	<12	<7.2	<1.2	<1.3	<1.3	<1.2	<1.4	<1.2	<1.2	<6.1	<1.3	<6.8	1.4	0.16	2.4	0.28
Zinc	38	**160**	18	53	21	24	20	46	38	24	31	**100**	78	4,600	70,000	1,200
Volatile Organics EPA Method 8260B (mg/kg) (3)																
Acetone	0.11	0.094	<0.059	<0.063	<0.063	<0.059	<0.072	<0.058	NA	<0.061	<0.067	<0.068	--	12,000	100,000	24
Benzene	0.0013	<0.0014	<0.0012	0.0028	<0.0013	<0.0012	<0.0014	<0.0012	NA	<0.0012	<0.0013	<0.0014	--	1.2	5.1	0.0073
p-Isopropyltoluene	<0.0012	<0.0014	<0.0012	<0.0013	<0.0013	<0.0012	<0.0014	0.0028	NA	<0.0012	<0.0013	<0.0014	--	NG	NG	0.68
Semivolatile Organics EPA Method 8270D (mg/kg) (3)																
Bis (2-ethylhexyl) phthalate	<0.40	<0.48	0.56	<0.42	<0.42	<0.39	<0.48	<0.39	<1.9	<0.40	<0.44	<0.45	--	39	160	7.2

(1) PSRG = Inactive Hazardous Sites Branch - Preliminary Soil Remediation Goal (September 2015).
(2) Derived from background soil samples collected in September 2011 and November 2014.
(3) Method compounds detected in one or more samples are listed.
NG = No PSRG exists.
Concentrations listed in bold type are above statistical background concentration (metals).
Concentrations listed in blue-shaded cells are above Protection-of-Groundwater PSRG.
Concentrations listed in yellow-shaded cells are above Residential-Health-Based PSRG.
Concentrations listed in green-shaded cells are above Residential-Health-Based PSRG and Protection-of-Groundwater PSRG.
Concentrations listed in orange-shaded cells are above Residential Health-Based PSRG and Industrial Health-Based PSRG.
Concentrations listed in red-shaded cells are above Residential Health-Based PSRG, Industrial Health-Based PSRG, and Protection-of-Groundwater PSRG.

TABLE 13
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
LANDFILL-PERIMETER SOIL SAMPLES COLLECTED SEPTEMBER 2011 (1)

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**LPS-1**	**LPS-2**	**LPS-3**	**LPS-4**	**LPS-5**	**LPS-6**	**LPS-7**	**LPS-8**	**LPS-9**	**LPS-10**	**LPS-11**	**LPS-12**	**LPS-12 dup**	**Statistical**	**PSRG (2)**		
Sample Date:	**9/13/11**	**9/13/11**	**9/13/11**	**9/13/11**	**9/13/11**	**9/13/11**	**9/13/11**	**9/13/11**	**9/13/11**	**9/13/11**	**9/13/11**	**9/13/11**	**9/13/11 (duplicate)**	**Background (3)**	**Residential Health-Based**	**Industrial Health-Based**	**Protection of Groundwater**
Hazardous Substance List Metals EPA Method 6010B/7471 (mg/kg)																	
Antimony	<6.4	<1.4	<12	<32	<12	<12	<12	<12	<24	<6.2	<14	<7.9	**2.4**	1.3	6.2	94	0.9
Arsenic	**12**	**10**	7.3	<1.6	<1.2	<1.2	4.4	<1.2	<1.2	**9.0**	3.9	2.4	3.6	7.4	0.68	3	5.8
Beryllium	**2.3**	**2.2**	<1.2	0.92	<0.12	<0.12	0.31	<0.12	0.54	1.2	<1.4	<0.16	<0.16	1.6	32	460	63
Cadmium	<1.6	<0.35	**3.0**	<0.40	<0.29	<0.31	**0.67**	<0.30	<0.30	<0.31	<0.34	<0.40	0.45	0.55	14	200	3.0
Chromium	34	14	33	**62**	15	38	28	25	40	9.9	34	40	39	57	24,000	100,000	360,000
Copper	**210**	**53**	47	**110**	34	**50**	**53**	**56**	**76**	35	35	25	28	47	620	9,400	700
Lead	**1,100**	**120**	**1,700**	**51**	32	**52**	**230**	35	**48**	**150**	**160**	**56**	**53**	47	400	800	270
Manganese	**900**	350	**780**	210	**800**	**850**	**550**	350	**600**	170	400	61	50	482	360	5,200	65
Mercury	**0.26**	0.070	**0.28**	0.069	0.049	0.058	**0.87**	0.056	0.068	0.056	**0.75**	**0.13**	**0.14**	0.081	1.9	3.1	1.0
Nickel	**44**	15	18	18	16	22	13	13	16	13	26	16	14	26	300	4,400	130
Selenium	**26**	**6.9**	<12	<16	<12	<12	<12	<12	<12	<1.2	<14	<1.6	<1.6	2.8	78	1,200	2.1
Silver	**18**	**0.92**	**3.7**	**2.1**	**0.76**	**1.0**	**1.0**	**1.0**	**1.4**	<0.62	**1.1**	<0.79	<0.79	0.60	78	1,200	3.4
Thallium	**12**	**3.1**	<12	<16	<12	<12	<12	<12	<12	<6.2	<14	<7.9	<1.6	1.4	0.16	2.4	0.28
Zinc	**1,700**	**100**	**470**	52	65	75	**830**	31	59	57	**160**	**130**	**110**	78	4,600	70,000	1,200
Volatile Organics EPA Method 8260B (mg/kg) (4)																	
Acetone	0.72	0.46	0.82	0.39	<4.0	0.50	0.53	0.38	0.24	0.32	0.53	0.17	NA	--	12,000	100,000	24
Benzene	<0.0017	<0.0015	<0.0014	<0.0016	<0.080	<0.0015	<0.0014	<0.0013	<0.0012	<0.0018	0.0016	<0.0016	NA	--	1.2	5.1	0.0073
p-Isopropyltoluene	0.0024	0.0073	0.0016	<0.0016	<0.080	<0.0015	0.0019	<0.0013	<0.0012	<0.0018	<0.0015	0.0023	NA	--	NG	NG	0.68
2-Butanone (MEK)	0.040	0.034	0.036	0.027	<0.80	0.040	0.033	0.023	0.015	0.027	0.022	<0.016	NA	--	5,400	38,000	16
Semivolatile Organics EPA Method 8270D (mg/kg) (4)																	
Acenaphthylene	0.25	<0.23	<0.21	<0.053	<0.039	<0.041	<0.041	<0.040	<0.039	<0.041	<0.22	<0.052	<0.26	--	NG	NG	21
Benzo (a) pyrene	0.25	<0.23	<0.21	<0.053	<0.039	<0.041	<0.041	<0.040	<0.039	<0.041	<0.22	<0.052	<0.26	--	0.016	0.29	0.059
2-Chloronaphthalene	<0.21	<0.23	<0.21	<0.053	<0.039	<0.041	<0.041	<0.040	<0.039	0.049	<0.22	<0.052	<0.26	--	960	12,000	NG
Naphthalene	<0.21	0.24	<0.21	<0.053	<0.039	<0.041	<0.041	<0.040	<0.039	0.046	<0.22	<0.052	<0.26	--	3.8	17	0.21
Pentachlorophenol	<2.1	<2.3	<2.1	<0.53	<0.39	<0.41	0.71	<0.40	<0.40	<0.42	<2.3	<0.53	<2.6	--	1.0	4.0	0.031

(1) Samples for volatile organics analysis collected from 6-12 inches below grade. Samples for all other analysis collected from 0-6 inches below grade.
(2) PSRG = Inactive Hazardous Sites Branch - Preliminary Soil Remediation Goal (September 2015).
(3) Derived from background soil samples collected in September 2011. NA = Not analyzed
(4) Method compounds detected in one or more samples are listed. NG = No PSRG exists.

Concentrations listed in bold type are above statistical background concentration (metals).

Concentrations listed in blue-shaded cells are above Protection-of-Groundwater PSRG.
Concentrations listed in yellow-shaded cells are above Residential-Health-Based PSRG.
Concentrations listed in green-shaded cells are above Residential-Health-Based PSRG and Protection-of-Groundwater PSRG.
Concentrations listed in orange-shaded cells are above Residential Health-Based PSRG and Industrial Health-Based PSRG.
Concentrations listed in red-shaded cells are above Residential Health-Based PSRG, Industrial Health-Based PSRG, and Protection-of-Groundwater PSRG.

TABLE 14
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
SEDIMENT SAMPLES COLLECTED SEPTEMBER 2011

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.: **Sample Date:**	**Sediment-1** **9/20/11**	**Sediment-2** **9/20/11**	**Sediment-3** **9/20/11**	**EPA Screening Value** **(1)**
Hazardous Substance List Metals **EPA Method 6010B/7471 (mg/kg)**				
Antimony	7.0	<1.3	<1.4	12
Arsenic	**14**	3.0	2.4	7.24
Beryllium	<0.20	<0.13	<0.14	32 (2)
Cadmium	**1.6**	0.34	<0.36	1
Chromium	39	23	13	52.3
Copper	**110**	11	8.5	18.7
Lead	**160**	8.9	8.3	30.2
Manganese	120	94	150	360 (2)
Mercury	**0.20**	<0.027	<0.029	0.13
Nickel	**29**	8.9	7.9	15.9
Selenium	<2.0	<1.3	<1.4	78 (2)
Silver	<0.98	<0.67	<0.72	2
Thallium	<2.0	<1.3	<1.4	0.16 (2)
Zinc	**220**	94	68	124
Volatile Organics **EPA Method 8260B (mg/kg) (3)**				
Acetone	0.12	<0.067	<0.72	12,000 (2)
Semi-Volatile Organics **EPA Method 8270D (mg/kg) (3)**				
Di-n-butyl phthalate	5.2	<0.44	<0.48	1,200 (2)

(1) U.S. EPA Region 4 Waste Mgt. Div. Sediment Screening Value for Hazardous Waste Sites (Nov. 2001).
(2) No EPA screening value exists. Value listed is IHSB Residential Health-Based PSRG.
(3) Method compounds detected in one or more samples are listed.
Concentrations listed in bold type are above EPA screening value.

TABLE 15
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
VOCs, SVOCs, and METALS
GROUNDWATER SAMPLES COLLECTED SEPTEMBER 2011

Swannanoa DJJDP Property
Swannanoa, North Carolina

Well I.D.: **Sample Date:**	**MW-1** **9/19/11**	**MW-1** **9/19/11** **(duplicate)**	**MW-2** **9/19/11**	**MW-3** **9/19/11**	**MW-4** **9/20/11**	**MW-5** **9/20/11**	**NC 2L** **Standard** **(1)**
Hazardous Substance List Metals **EPA Method 6010B/6020/7470A (ug/L)**							
Antimony	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1 (2)
Arsenic	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10
Beryllium	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	4 (2)
Cadmium	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2
Chromium	<10	<10	<10	<10	<10	<10	10
Copper	<20	<20	<20	<20	<20	<20	1,000
Lead	1.2	2.4	<1.0	<1.0	<1.0	<1.0	15
Manganese	41	**55**	**280**	31	39	**140**	50
Mercury	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	1
Nickel	<20	<20	<20	<20	<20	<20	100
Selenium	<20	<20	<20	<20	<20	<20	20
Silver	<10	<10	<10	<10	**40**	<10	20
Thallium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.2 (2)
Zinc	<30	<30	<30	<30	<30	<30	1,000
Volatile Organics **EPA Method 8260B (ug/L)**							
Volatile organic compounds	ND	ND	ND	ND	ND	ND	NA
Semivolatile Organics **EPA Method 8270D (ug/L) (3)**							
Di-n-butyl phthalate	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	700

(1) North Carolina groundwater standard per 15A NCAC 2L .0202 (April 2013).
(2) Value listed is NCDENR Interim Maximum Allowable Concentration (IMAC).
(3) Method compounds detected in one or more samples are listed.
ND = No method analytes detected.
NA = Not applicable.
Concentrations listed in bold type are above NC 2L groundwater standard or IMAC.

TABLE 16
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
RADIOCHEMISTRY
GROUNDWATER SAMPLES COLLECTED SEPTEMBER 2011

Swannanoa DJJDP Property
Swannanoa, North Carolina

Well I.D.: **Sample Date:**	**MW-1** **9/19/11**	**MW-2** **9/19/11**	**MW-3** **9/19/11**	**MW-4** **9/20/11**	**MW-5** **9/20/11**
Bi-214					
Mean Activity (pCi/L)	227.0	248.0	173.0	187.0	241.0
Uncertainty (pCi/L) (1)	6.6	5.7	5.5	4.8	5.7
K-40					
Mean Activity (pCi/L)	72.70	24.70	--	--	29.10
Uncertainty (pCi/L) (1)	21	13	--	--	13
Pb-212					
Mean Activity (pCi/L)	24.60	8.860	8.140	10.70	7.160
Uncertainty (pCi/L) (1)	1.7	1.0	1.1	1.0	1.0
Pb-214					
Mean Activity (pCi/L)	229.0	252.0	168.0	182.0	233.0
Uncertainty (pCi/L) (1)	5.7	5.5	4.6	4.4	5.3
Ti-208					
Mean Activity (pCi/L)	8.570	--	2.450	4.010	3.380
Uncertainty (pCi/L) (1)	1.6	--	1.2	0.98	0.98

(1) Uncertainty quoted at one sigma.

TABLE 17
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: METALS, VOCs, AND SVOCs
TEST-PIT SOIL SAMPLES COLLECTED NOVEMBER 2014

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**TP-10**	**TP-11**	**TP-12**	**TP-13**	**TP-14**	**TP-15 (duplicate of TP-12)**	**Statistical Background (2)**	**PSRG (1)**	
								Residential Health-Based	**Protection of Groundwater**
Test Pit Area:	**Area 1**	**Area 1**	**Area 5**	**Area 2**	**Area 6**				
Sample Date:	**11/11/14**	**11/11/14**	**11/11/14**	**11/11/14**	**11/11/14**	**11/11/14**			
Hazardous Substance List Metals EPA Method 6010B/7471 (mg/kg)									
Antimony	<2.3	<2.9	<2.7	<2.4	<2.7	NA	1.3	6.2	0.9
Arsenic	<2.3	<2.9	<2.7	<2.4	<2.7	NA	7.4	0.67	5.8
Beryllium	0.96	0.30	0.27	0.55	0.60	NA	1.6	32	63
Cadmium	**0.62**	<0.73	<0.69	<0.60	<0.68	NA	0.55	14	3.0
Chromium	43	30	13	24	**60**	NA	57	24,000	360,000
Copper	**52**	39	41	17	20	NA	47	620	700
Lead	30	**60**	16	12	15	NA	47	400	270
Manganese	200	22	58	83	120	NA	482	360	65
Mercury	<0.023	0.032	<0.027	<0.024	0.078	NA	0.081	1.9	1.0
Nickel	14	**83**	4.7	7.7	6.1	NA	26	300	130
Selenium	<2.3	<2.9	<2.7	<2.4	<2.7	NA	2.8	78	2.1
Silver	<1.1	<1.4	<1.4	<1.2	<1.4	NA	0.60	78	3.4
Thallium	<2.3	<2.9	<2.7	<2.4	<2.7	NA	8.0	0.16	0.28
Zinc	52	28	32	23	30	NA	78	4,600	1,200
Volatile Organics EPA Method 8260B (mg/kg) (3)									
Acetone	0.12	<0.073	0.086	0.11	0.12	0.070	--	12,000	24
Semivolatile Organics EPA Method 8270D (mg/kg) (3)									
Semivolatile organics	ND	ND	ND	ND	ND	NA	--	--	--

(1) PSRG = Inactive Hazardous Sites Branch - Preliminary Soil Remediation Goal (March 2015).
(2) Derived from background soil samples collected September 2011.
(3) Method compounds detected in one or more samples are listed.
Concentrations listed in bold type are above statistical background concentration (metals).
Concentrations listed in yellow-shaded cells are above Residential-Health-Based PSRG.
Concentrations listed in blue-shaded cells are above Protection-of-Groundwater PSRG.
Concentrations listed in green-shaded cells are above Residential-Health-Based PSRG and Protection-of-Groundwater PSRG.

TABLE 18
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: TENTATIVELY IDENTIFIED COMPOUNDS
TEST-PIT SOIL SAMPLES COLLECTED NOVEMBER 2014

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**TP-10**	**TP-11**	**TP-12**	**TP-13**	**TP-14**	**PSRG (1)**	
Test Pit Area:	**Area 1**	**Area 1**	**Area 5**	**Area 2**	**Area 6**	**Residential**	**Protection of**
Sample Date:	**11/11/14**	**1/11/14**	**1/11/14**	**1/11/14**	**1/11/14**	**Health-Based**	**Groundwater**
Tentatively Identified Compounds by EPA Methods 8260 and 8270 (mg/kg)							
2,6,10-Dodecatrien-1-ol-3,7,11-tr	ND	ND	0.027	ND	ND	NG	NG
Tetradecanoic acid	ND	ND	ND	0.027	ND	NG	NG
Octadecanamide	ND	ND	ND	0.028	ND	NG	NG
1-1'-(6-hydroxy-2,5-benz) Ethanone	ND	ND	ND	ND	0.055	NG	NG
Hexadecanoic acid	0.023	ND	ND	ND	ND	NG	NG
9-Nonadecene	0.024	ND	ND	ND	ND	NG	NG
Octadecanoic acid	0.024	ND	ND	ND	ND	NG	NG
Cyclotrisiloxane, hexamethyl	0.045	ND	ND	ND	ND	NG	NG
Cyclopentasiloxane, decamethyl	0.251	ND	ND	ND	ND	NG	NG
Cyclohexasiloxane, dodecamethyl	0.255	ND	ND	ND	ND	NG	NG

(1) PSRG = Inactive Hazardous Sites Branch - Preliminary Soil Remediation Goal (March 2015).
NG = No PSRG exists.
ND = Not detected.

TABLE 19
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
BACKGROUND SOIL SAMPLES COLLECTED SEPTEMBER 2011 AND NOVEMBER 2014

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**BGS-1**	**BGS-2**	**BGS-3**	**BGS-4**	**BGS-5**		**Statistical Evaluation (1)**		
Sample Depth (ft below grade):	**0.5-1.0**	**0.5-1.0**	**0.5-1.0**	**0.5-1.0**	**0.5-1.0**		**Mean**	**Standard Deviation**	**Mean + 2X Std. Dev.**
Sample Date:	**9/20/11**	**9/20/11**	**9/20/11**	**9/20/11**	**9/20/11**				
HSL Metals									
EPA Method 6010B/7471 (mg/kg)									
Antimony	<1.2	<1.2	<1.1	<1.1	<1.2		1.2	0.06	1.3
Arsenic	3.6	3.4	4.6	6.4	4.8		4.6	1.2	7.4
Beryllium	0.12	<0.12	<1.1	<1.1	<0.59		0.6	0.5	1.6
Cadmium	0.32	<0.29	0.48	0.40	0.44		0.39	0.080	0.55
Chromium	39	15	33	32	46		33	12	57
Copper	15	41	32	15	22		25	11	47
Lead	16	44	17	14	16		21	13	47
Manganese	160	230	430	280	130		246	118	482
Mercury	0.031	<0.023	0.036	0.031	0.076		0.039	0.021	0.081
Nickel	9.4	6.1	18	18	18		14	6	26
Selenium	2.3	<1.2	<1.1	<1.1	2.1		1.6	0.6	2.8
Silver	<0.58	<0.58	<0.56	<0.57	<0.59		0.58	0.011	0.60
Thallium	<5.8	<1.2	<5.6	<1.1	<1.2		1.2	0.06	1.4
Zinc	35	59	56	57	24		46	16	78
Sample I.D.:	**MW-6-1**	**MW-6-2**	**MW-7-1**	**MW-7-2**	**MW-8-1**	**MW-8-2**	**Statistical Evaluation (1)**		
Sample Depth (ft below grade):	**15**	**20**	**10**	**15**	**15**	**20**	**Mean**	**Standard Deviation**	**Mean + 2X Std. Dev.**
Sample Date:	**11/11/14**	**11/11/14**	**11/11/14**	**11/11/14**	**11/11/14**	**11/11/14**			
EPA Method 6010C (mg/kg)									
Arsenic	<2.6	<2.8	<17	<18	<2.6	<13	9.3	7.5	24.3
Manganese	140	180	120	820	130	230	270	272	815
Silver	<1.3	<1.4	<1.7	<1.8	<1.3	<6.7	2.4	2.1	6.6

(1) Non-detected concentrations are assumed to be equal to detection limit for the statistical evaluation.

Outlier not used in statistical evaluation.

TABLE 20
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
BACKGROUND GROUNDWATER SAMPLES NOVEMBER 2014

Swannanoa DJJDP Property
Swannanoa, North Carolina

Well I.D.: **Sample Date:**	**MW-6** **11/13/14**	**MW-7** **11/13/14**	**MW-8** **11/13/14**	**NC 2L** **Standard** **(1)**
Hazardous Substance List Metals **EPA Method 6010B/6020/7470A (ug/L)**				
Antimony	<2.0	<2.0	<2.0	1 (2)
Arsenic	<2.0	<2.0	<2.0	10
Beryllium	<2.0	<2.0	<2.0	4 (2)
Cadmium	<5.0	<5.0	<5.0	2
Chromium	<10	<10	<10	10
Copper	<20	<20	<20	1,000
Lead	<2.0	2.6	<2.0	15
Manganese	**110**	36	**64**	50
Mercury	<0.20	<0.20	<0.20	1
Nickel	<20	<20	<20	100
Selenium	<20	<20	<20	20
Silver	<10	<10	<10	20
Thallium	<2.0	<2.0	<2.0	0.2 (2)
Zinc	<50	<50	<50	1,000

(1) North Carolina groundwater standard per 15A NCAC 2L .0202 (April 2013).
(2) Value listed is NCDENR Interim Maximum Allowable Concentration (IMAC).
Concentrations listed in bold type are above NC 2L groundwater standard.

TABLE 21
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
METALS, VOCs, SVOCs, PESTICIDES, PCBs, AND DIOXINS/FURANS
GROUNDWATER SAMPLES COLLECTED FROM ON-SITE MONITORING WELLS
NOVEMBER 2014 AND APRIL 2015

Swannanoa DJJDP Property
Swannanoa, North Carolina

Well I.D.: **Sample Date:**	**MW-1** **11/13/14**	**MW-1** **11/13/14** **(dupl.*)**	**MW-2** **11/13/14**	**MW-3** **11/13/14**	**MW-4** **11/13/14**	**MW-5** **11/13/14**	**NC 2L Std.** **(1)**
Hazardous Substance List Metals **EPA Method 6010B/6020/7470A (ug/L)**							
Antimony	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	1 (2)
Arsenic	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	10
Beryllium	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	4 (2)
Cadmium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2
Chromium	<10	<10	<10	<10	<10	<10	10
Copper	<20	<20	<20	<20	<20	<20	1,000
Lead	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	15
Manganese	<10	<10	11	<10	<10	16	50
Mercury	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	1
Nickel	<20	<20	<20	<20	<20	<20	100
Selenium	<20	<20	<20	<20	<20	<20	20
Silver	<10	<10	<10	<10	<10	<10	20
Thallium	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.2 (2)
Zinc	<50	<50	<50	<50	<50	<50	1,000
Volatile Organics **EPA Method 8260B (ug/L)**							
Volatile organic compounds	ND	ND	ND	ND	ND	ND	NA
Semivolatile Organics **EPA Method 8270D (ug/L)**							
Semivolatile organic compounds	ND	ND	ND	ND	ND	ND	NA
Pesticides/PCBs **EPA Method 8082 (ug/L)**							
Pesticides/PCBs	ND	ND	ND	ND	ND	ND	NA
Dioxins/Furans **EPA Method 8290 (pg/L) (4)**							
1,2,3,4,6,7,8-HpCDD	<6.46	<6.54	5.49 J	<4.69	<4.38	<6.19	NS
1,2,3,4,6,7,8,9-OCDD	9.00 J	119	27.5 J	10.8 JK	16.0 JK	52.9 J	NS
Total Heptachlorodibenzo-p-dioxin	<6.46	<6.54	5.49 J	<4.69	<4.38	<6.19	NS
TEQ WHO 2005, ND=0	0.0027	0.0357	0.0632	0.00324	0.00479	0.0159	0.2 (3)
Well I.D.: **Sample Date:**		**MW-1** **4/29/15**	**MW-2** **4/29/15**	**MW-3** **4/29/15**	**MW-4** **4/29/15**	**MW-5** **4/29/15**	**NC 2L Std.** **(1)**
Hazardous Substance List Metals **EPA Method 6010B/6020/7470A (ug/L)**							
Lead		<5.0	<5.0	<5.0	<5.0	<5.0	15
Manganese		<10	<10	<10	<10	<10	50
Silver		<10	<10	<10	<10	<10	20

(1) North Carolina groundwater standard per 15A NCAC 2L .0202 (April 2013).
(2) Value listed is NCDENR Interim Maximum Allowable Concentration (IMAC).
(3) Value represents NC 2L standard for 2,3,7,8-TCDD.
(4) Laboratory method compounds detected in one or more samples are listed.
* Duplicate of sample MW-1, identified as sample "MW-9" in laboratory report.
NS = North Carolina groundwater standard not established.
ND = No laboratory method compounds detected.
NA = Not applicable.
J = estimated value.
K = estimated maximum possible concentration (EMPC).
Concentrations listed in bold type are above NC 2L groundwater standard or IMAC.

TABLE 22
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
TENTATIVELY IDENTIFIED COMPOUNDS
GROUNDWATER SAMPLES COLLECTED NOVEMBER 2014

Swannanoa DJJDP Property
Swannanoa, North Carolina

Well I.D.: **Sample Date:**	**MW-1** **11/13/14**	**MW-1** **11/13/14** **(duplicate)**	**MW-2** **11/13/14**	**MW-3** **11/13/14**	**MW-4** **11/13/14**	**MW-5** **11/13/14**	**NC 2L** **Standard** **(1)**
Volatile Organics **EPA Method 8260B (ug/L)** Volatile organic compounds	ND	ND	ND	ND	ND	ND	NA
Semivolatile Organics **EPA Method 8270D (ug/L)** 3-Eicosene	ND	ND	ND	43	10	ND	NA
1-Octadecene	ND	ND	ND	ND	ND	10	NS

(1) North Carolina groundwater standard per 15A NCAC 2L .0202 (April 2013).
(2) Value listed is NCDENR Interim Maximum Allowable Concentration (IMAC).
ND = Not detected.
NA = Not applicable.
NS = No NC 2L standard exists.
Concentrations listed in bold type are above NC 2L groundwater standard or IMAC.

TABLE 23
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
SEDIMENT SAMPLES COLLECTED NOVEMBER 2014

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.: **Sample Depth (feet):** **Sample Date:**	**Sediment-1** **0-0.25** **11/10/14**	**Sediment-2** **0-0.25** **11/10/14**	**Sediment-3** **0-0.25** **11/10/14**	**Sediment-3 (1)** **0-0.25** **11/10/14**	**EPA Screening Value (2)**
Pesticides/PCBs **EPA Method 8081 (mg/kg) (3)**					
4,4-DDT	**0.10**	<0.025	<0.026	<0.026	0.0033
Dioxins/Furans **EPA Method 8290 (pg/g)**					
2,3,7,8-TCDD	<0.181	<0.214	<0.15	<0.161	--
1,2,3,7,8-PeCDD	<0.391	<0.241	<0.233	<0.297	--
1,2,3,4,7,8-HxCDD	<1.37	<0.469	<0.368	<0.507	--
1,2,3,6,7,8-HxCDD	19.6	<0.456	<0.359	<0.492	--
1,2,3,7,8,9-HxCDD	1.72 J	<0.49	<0.387	<0.529	--
1,2,3,4,6,7,8-HpCDD	735	2.17 J	7.41	12.1	--
1,2,3,4,6,7,8,9-OCDD	7,520 E	212	214	341	--
2,3,7,8-TCDF	0.726 J	0.326 J	0.259 J	0.272 J	--
1,2,3,7,8-PeCDF	<0.379	<0.199	<0.151	<0.132	--
2,3,4,7,8-PeCDF	<0.373	<0.196	<0.148	<0.13	--
1,2,3,4,7,8-HxCDF	3.38 J	<0.243	<0.157	<0.156	--
1,2,3,6,7,8-HxCDF	2.36 J	<0.221	<0.142	<0.141	--
2,3,4,6,7,8-HxCDF	3.37 J	<0.235	<0.152	<0.151	--
1,2,3,7,8,9-HxCDF	<1.45	<0.275	<0.178	<0.177	--
1,2,3,4,6,7,8-HpCDF	274	<0.283	0.338 J	0.383 J	--
1,2,3,4,7,8,9-HpCDF	18.6	<0.376	<0.298	<0.267	--
1,2,3,4,6,7,8,9-OCDF	1,880	<0.906	0.459 J	0.650 K	--
Total Tetrachlorodibenzo-p-dioxin	<0.181	<0.214	<0.15	<0.161	--
Total Pentachlorodibenzo-p-dioxin	1.32 J	<0.241	<0.233	0.524 J	--
Total Hexachlorodibenzo-p-dioxin	74.7	<0.456	3.62 J	4.24 J	--
Total Heptachlorodibenzo-p-dioxin	1,270	4.74 J	14.7	24.5	--
Total Tetrachlorodibenzofuran	0.726 J	0.326 J	0.681 J	0.653 J	--
Total Pentachlorodibenzofuran	12.1	<0.196	0.312 J	<0.0626	--
Total Hexachlorodibenzofuran	212	<0.221	0.215 J	<0.141	--
Total Heptachlorodibenzofuran	1,410	<0.283	0.781 J	1.01 J	--
TEQ WHO 2005 ND = 0	**16.2**	0.118	0.168	0.254	2.5

(1) Duplicate sample for Sediment-3, labeled "Sediment-4" in chain of custody and laboratory report.
(2) U.S. EPA Region 4 Waste Management Division Sediment Screening Value for Hazardous Waste Sites (November 2001).
(3) Method compounds detected in one or more samples are listed.
J = Estimated value.
K = Estimated maximum possible concentration.
E = Concentration exceeds instrument calibration range.
Concentrations in bold type are above U.S. EPA Region 4 Waste Management Division Sediment Screening Values.

TABLE 24
SUMMARIZED RESULTS OF LABORATORY ANALYSIS
SURFACE-WATER SAMPLES COLLECTED NOVEMBER 2014

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**W-1**	**W-2**	**W-2 (2)**	**EPA Screening Value (1)**	
Sample Date:	**11/10/14**	**11/10/14**	**11/10/14**	**Acute Screening Value**	**Chronic Screening Value**
Volatile Organic Compounds					
EPA Method 8260 (ug/L)					
1,4-Dioxane	<3.0	<3.0	NA	NS (3)	NS (3)
Pesticides/PCBs					
EPA Method 8081 (ug/L)					
Pesticides/PCBs	ND	ND	ND	--	--
Dioxins/Furans					
EPA Method 8290 (pg/L)					
2,3,7,8-TCDD	<5	<3.67	<3.31	100,000	10
1,2,3,7,8-PeCDD	<2.45	<3.3	<1.87	--	--
1,2,3,4,7,8-HxCDD	<4.9	<3.43	<2.65	--	--
1,2,3,6,7,8-HxCDD	6.76 J	<3.33	<2.57	--	--
1,2,3,7,8,9-HxCDD	<5.14	<3.59	<2.77	--	--
1,2,3,4,6,7,8-HpCDD	164	<7.5	<5.16	--	--
1,2,3,4,6,7,8,9-OCDD	1,640	91.1 J	86.0 J	--	--
2,3,7,8-TCDF	<5.83	<4.09	<3.76	--	--
1,2,3,7,8-PeCDF	<2.81	<2.1	<1.65	--	--
2,3,4,7,8-PeCDF	<2.77	<2.06	<1.62	--	--
1,2,3,4,7,8-HxCDF	<3.7	<2.32	<2.03	--	--
1,2,3,6,7,8-HxCDF	<3.36	<2.1	<1.85	--	--
2,3,4,6,7,8-HxCDF	<3.58	<2.24	<1.97	--	--
1,2,3,7,8,9-HxCDF	<4.21	<2.64	<2.31	--	--
1,2,3,4,6,7,8-HpCDF	73.8	<3.18	<2.25	--	--
1,2,3,4,7,8,9-HpCDF	<9.27	<4.19	<2.99	--	--
1,2,3,4,6,7,8,9-OCDF	344	<11.9	<7.25	--	--
Total Tetrachlorodibenzo-p-dioxin	<5	<3.67	<3.31	--	--
Total Pentachlorodibenzo-p-dioxin	<2.45	<3.3	<1.87	--	--
Total Hexachlorodibenzo-p-dioxin	21.2 J	<3.33	<2.57	--	--
Total Heptachlorodibenzo-p-dioxin	344	<7.5	<5.16	--	--
Total Tetrachlorodibenzofuran	<5.83	<4.09	<3.76	--	--
Total Pentachlorodibenzofuran	<1.9	<2.06	<1.62	--	--
Total Hexachlorodibenzofuran	59.6	<2.1	<1.85	--	--
Total Heptachlorodibenzofuran	292	<3.18	<2.25	--	--
TEQ WHO 2005 ND = 0	3.64	0.0273	0.0258	100,000	10

(1) U.S. EPA Region 4 Waste Management Division Freshwater Screening Value for Hazardous Waste Sites (November 2001).
(2) Duplicate sample for W-2, labeled "W-2" in chain of custody and laboratory report.
(3) North Carolina 2B standard is 80 ug/L for Class C surface waters.
J = Estimated value.
NA = Not analyzed.
NS = No screening value exists.

TABLE 25
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: METALS, PESTICIDES, PCBs, AND SVOCs
LANDFILL-PERIMETER SOIL SAMPLES COLLECTED NOVEMBER 2014 TO DECEMBER 2015

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**E-6-1114**	**E-6-0115**	**E-8-1114**	**E-8-0115**	**LPS-1-1114**	**LPS-2-1114**	**LPS-3-1114**	**LPS-13**	**LPS-13**	**LPS-13-0115**	**LPS-14**	**LPS-14**	**LPS-15**	**LPS-16**	**LPS-17**	**LPS-18**	**LPS-19**
Sample Depth (inches):	**0-6**	**6-12**	**0-6**	**6-12**	**0-6**	**0-6**	**0-6**	**0-6**	**0-6 (2)**	**6-12**	**0-6**	**0-6 (3)**	**0-6**	**0-6**	**0-6**	**0-6**	**0-6**
Sample Date:	**11/19/14**	**1/22/15**	**11/19/14**	**1/22/15**	**11/19/14**	**11/19/14**	**11/19/14**	**11/12/14**	**11/12/14**	**1/21/15**	**11/12/14**	**11/12/14**	**11/12/14**	**11/13/14**	**11/13/14**	**11/13/14**	**11/14/14**
Hazardous Substance List Metals																	
EPA Method 6010B/7471 (mg/kg)																	
Antimony	NA	NA	NA	NA	NA	NA	NA	<3.0	<3.0	NA	<2.6	<2.6	<2.4	<2.5	<2.2	<2.8	<2.6
Arsenic	NA	NA	NA	NA	NA	NA	NA	2.1 J	1.8 J	NA	<2.6	<2.6	2.4 J	2.2 J	4.5	2.8	2.1 J
Lead	NA	NA	NA	NA	NA	NA	NA	**1,300**	**1,100**	**74**	22	25	16	21	**62**	**56**	**120**
Manganese	NA	NA	NA	NA	NA	NA	NA	**610**	**500**	180	170	200	48	54	160	450	**500**
Selenium	NA	NA	NA	NA	NA	NA	NA	<3.0	<3.0	NA	1.1 J	<2.6	<2.4	<2.5	0.98 J	<2.8	<2.6
Silver	NA	NA	NA	NA	NA	NA	NA	<1.5	<1.5	NA	<1.3	<1.3	<1.2	<1.2	<1.1	<1.4	<1.3
Thallium	NA	NA	NA	NA	NA	NA	NA	<3.0	<3.0	NA	<2.6	<2.6	<2.4	<2.5	<2.2	<2.8	<2.6
Zinc	NA	NA	NA	NA	NA	NA	NA	41	35	NA	27	28	15	17	64	**180**	**160**
EPA Method 7471 (mg/kg)																	
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA Method 7199 (mg/kg)																	
Hexavalent chromium	1.2 J	<0.26	0.66 J	<0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
EPA Method 8081 (mg/kg) (1)																	
4,4-DDD	NA	NA	NA	NA	0.34	<0.030	<0.032	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4-DDE	NA	NA	NA	NA	1.0	<0.030	0.036	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4-DDT	NA	NA	NA	NA	3.3	<0.030	0.082	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
EPA Method 8082 (mg/kg) (1)																	
PCB 1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB 1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organics																	
EPA Method 8270D (mg/kg) (1)																	
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (a) anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (a) pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzylbutyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-ethylhexyl) phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 25 (continued)
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: METALS, PESTICIDES, PCBs, AND SVOCs
LANDFILL-PERIMETER SOIL SAMPLES COLLECTED NOVEMBER 2014 TO DECEMBER 2015

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**LPS-20**	**LPS-21**	**LPS-22**	**LPS-22**	**LPS-22-0415**	**LPS-22-0415**	**LPS-23**	**LPS-24**	**LPS-24-0415**	**LPS-25**	**LPS-25**	**LPS-26**	**LPS-27**	**LPS-28**	**LPS-29**	**LPS-30**	**LPS-30-0115**
Sample Depth (inches):	**0-6**	**0-6**	**0-6**	**0-6**	**6-12**	**6-12**	**0-6**	**0-6**	**6-12**	**0-6**	**0-6**	**0-6**	**0-6**	**6-12**	**6-12**	**6-12**	**12-18**
				(4)		**(5)**					**(6)**						
Sample Date:	**11/14/14**	**11/14/14**	**11/14/14**	**11/14/14**	**4/28/15**	**4/28/15**	**11/18/14**	**11/18/14**	**4/28/15**	**11/18/14**	**11/18/14**	**11/18/14**	**11/18/14**	**11/19/14**	**11/19/14**	**11/19/14**	**1/22/15**
Hazardous Substance List Metals																	
EPA Method 6010B/7471 (mg/kg)																	
Antimony	<4.0	<2.6	<2.8	<2.8	NA	NA	<2.7	<2.9	NA	<3.0	<2.9	<4.8	<2.7	<2.6	<2.5	<2.6	NA
Arsenic	2.6 J	2.0 J	3.1	2.9	NA	NA	1.3 J	3.4	NA	4.3	4.0	2.3 J	2.3 J	1.4 J	<2.5	1.2 J	NA
Lead	36	40	40	24	NA	NA	29	**74**	NA	**370**	31	43	30	29	26	23	NA
Manganese	280	97	340	**490**	430	310	130	**540**	170	280	250	**760**	340	400	230	**490**	100
Selenium	<4.0	<2.6	1.1 J	<2.8	NA	NA	<2.7	<2.9	NA	<3.0	<2.9	<4.8	<2.7	<2.6	<2.5	<2.6	NA
Silver	<2.0	<1.3	<1.4	<1.4	NA	NA	<1.4	<1.4	NA	0.49 J	0.54 J	<2.4	<1.3	<1.3	<1.2	0.60 J	NA
Thallium	<4.0	<2.6	<2.8	<2.8	NA	NA	<2.7	<2.9	NA	<3.0	<2.9	<4.8	<2.7	<2.6	**1.8 J**	**2.3 J**	NA
Zinc	40	34	**610**	**1,700**	NA	NA	22	**96**	NA	**210**	**180**	60	42	32	33	36	NA
EPA Method 7471 (mg/kg)																	
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA Method 7199 (mg/kg)																	
Hexavalent chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
EPA Method 8081 (mg/kg) (1)																	
4,4-DDD	NA	<0.026	NA	NA	NA	NA	NA	NA	NA	<0.030	<0.029	NA	<0.027	NA	NA	NA	NA
4,4-DDE	NA	<0.026	NA	NA	NA	NA	NA	NA	NA	<0.030	<0.029	NA	<0.027	NA	NA	NA	NA
4,4-DDT	NA	<0.026	NA	NA	NA	NA	NA	NA	NA	<0.030	<0.029	NA	<0.027	NA	NA	NA	NA
PCBs																	
EPA Method 8082 (mg/kg) (1)																	
PCB 1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB 1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organics																	
EPA Method 8270D (mg/kg) (1)																	
Acenaphthylene	NA	NA	<0.47	<0.46	NA	NA	<0.045	<0.48	NA	<0.49	<0.48	<0.078	<0.044	NA	NA	NA	NA
Benzo (a) anthracene	NA	NA	<0.47	<0.46	NA	NA	<0.045	<0.48	NA	<0.49	<0.48	<0.078	<0.044	NA	NA	NA	NA
Benzo (a) pyrene	NA	NA	<0.47	<0.46	NA	NA	<0.045	<0.48	NA	<0.49	<0.48	<0.078	<0.044	NA	NA	NA	NA
Benzylbutyl phthalate	NA	NA	1.3 J	1.2 J	NA	NA	<0.45	<4.8	NA	<4.9	<4.9	<0.79	<0.45	NA	NA	NA	NA
Bis (2-ethylhexyl) phthalate	NA	NA	<4.7	<4.7	NA	NA	<0.45	<4.8	NA	<4.9	<4.9	<0.79	0.12 J	NA	NA	NA	NA
Di-n-octyl phthalate	NA	NA	<4.7	<4.7	NA	NA	<0.45	<4.8	NA	<4.9	<4.9	0.028 J	<0.45	NA	NA	NA	NA
Pentachlorophenol	NA	NA	<4.7	<4.7	NA	NA	<0.45	<4.8	NA	<4.9	<4.9	<0.79	<0.45	NA	NA	NA	NA

TABLE 25 (continued)
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: METALS, PESTICIDES, PCBs, AND SVOCs
LANDFILL-PERIMETER SOIL SAMPLES COLLECTED NOVEMBER 2014 TO DECEMBER 2015

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**LPS-31**	**LPS-32**	**LPS-33**	**LPS-33-0115**	**LPS-33-0115**	**LPS-33-0415**	**LPS-33-0415**	**LPS-33-0615**	**LPS-33-0615**	**LPS-33-0615**	**LPS-33-0615**	**LPS-33-0615**	**LPS-33-0615**	**LPS-33-0615**	**LPS-33-0615**	**LPS-33-0615**	**LPS-33-0615**
Sample Depth (inches):	**6-12**	**6-12**	**6-12**	**12-18**	**18-24**	**24-30**	**30-36**	**36-42**	**36-42 (7)**	**42-48**	**48-54**	**54-60**	**60-66**	**66-72**	**72-78**	**78-84**	**84-90**
Sample Date:	**11/19/14**	**11/19/14**	**11/19/14**	**1/22/15**	**1/22/15**	**4/28/15**	**4/28/15**	**6/10/15**	**6/10/15**	**6/10/15**	**6/10/15**	**6/10/15**	**6/10/15**	**6/10/15**	**6/10/15**	**6/10/15**	**6/10/15**
Hazardous Substance List Metals																	
EPA Method 6010C (mg/kg)																	
Antimony	<2.6	<2.8	<2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	<2.6	2.3 J	<2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	**390**	21	**120**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	250	340	**1,100**	**740**	**570**	**1,600**	**710**	**1,300**	**1,200**	**1,200**	**1,300**	**1,100**	**1,100**	**2,000**	**1,800**	**920**	**880**
Selenium	<2.6	<2.8	<2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	<1.3	**0.92 J**	**0.79 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	**5.6**	<2.8	**2.0 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	**610**	33	**300**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA Method 7471 (mg/kg)																	
Mercury	NA	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA Method 7199 (mg/kg)																	
Hexavalent chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
EPA Method 8081 (mg/kg) (1)																	
4,4-DDD	NA	NA	NA	<0.0016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4-DDE	NA	NA	NA	0.0035 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4-DDT	NA	NA	NA	0.0046 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
EPA Method 8082 (mg/kg) (1)																	
PCB 1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB 1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organics																	
EPA Method 8270D (mg/kg) (1)																	
Acenaphthylene	NA	NA	<0.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (a) anthracene	NA	NA	<0.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (a) pyrene	NA	NA	<0.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzylbutyl phthalate	NA	NA	<4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-ethylhexyl) phthalate	NA	NA	<4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octyl phthalate	NA	NA	<4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	<4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 25 (continued)
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: METALS, PESTICIDES, PCBs, AND SVOCs
LANDFILL-PERIMETER SOIL SAMPLES COLLECTED NOVEMBER 2014 TO DECEMBER 2015

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**LPS-33-0615**	**LPS-33-0715**	**LPS-33-0715**	**LPS-33-0715**	**LPS-33-0715**	**LPS-33-0715**	**LPS-34**	**LPS-34-0115**	**LPS-35**	**LPS-36**	**LPS-36-0115**	**LPS-36-0115**	**LPS-36-0415**	**LPS-36-0415**	**LPS-36-0415**	**LPS-37**	**LPS-37-0415**
Sample Depth (inches):	**90-96**	**114-120**	**114-120 (8)**	**174-180**	**234-240**	**282-288**	**6-12**	**12-18**	**6-12**	**6-12**	**12-18**	**18-24**	**24-30**	**30-36**	**36-42**	**6-12**	**12-18**
Sample Date:	**6/10/15**	**7/21/15**	**7/21/15**	**7/21/15**	**7/21/15**	**7/21/15**	**11/20/14**	**1/22/15**	**11/20/14**	**11/20/14**	**1/21/15**	**1/21/15**	**4/28/15**	**4/28/15**	**4/28/15**	**11/20/14**	**4/28/15**
Hazardous Substance List Metals																	
EPA Method 6010C (mg/kg)																	
Antimony	NA	NA	NA	NA	NA	NA	<2.7	NA	**3.6**	<2.5	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	<2.7	NA	2.1 J	1.7 J	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	**220**	NA	**110**	20	NA	NA	NA	NA	NA	NA	NA
Manganese	**1,600**	**2,400**	**2,200**	**1,600**	**710**	**900**	**730**	390	190	320	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	<2.7	NA	<3.5	<2.5	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	**0.82 J**	NA	0.49 J	**0.67 J**	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	<2.7	NA	1.3 J	**1.7 J**	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	63	NA	**130**	76	NA	NA	NA	NA	NA	NA	NA
EPA Method 7471 (mg/kg)																	
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	0.82	NA	NA	NA	NA	NA	NA	NA	NA
EPA Method 7199 (mg/kg)																	
Hexavalent chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
EPA Method 8081 (mg/kg) (1)																	
4,4-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
EPA Method 8082 (mg/kg) (1)																	
PCB 1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.20	0.56
PCB 1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.14	<0.023
Semivolatile Organics																	
EPA Method 8270D (mg/kg) (1)																	
Acenaphthylene	NA	NA	NA	NA	NA	NA	0.011 J	NA	<0.057	<0.041	NA	NA	NA	NA	NA	NA	NA
Benzo (a) anthracene	NA	NA	NA	NA	NA	NA	0.0073 J	NA	<0.057	<0.041	NA	NA	NA	NA	NA	NA	NA
Benzo (a) pyrene	NA	NA	NA	NA	NA	NA	0.0088 J	NA	<0.057	<0.041	NA	NA	NA	NA	NA	NA	NA
Benzylbutyl phthalate	NA	NA	NA	NA	NA	NA	<0.46	NA	<0.58	<0.41	NA	NA	NA	NA	NA	NA	NA
Bis (2-ethylhexyl) phthalate	NA	NA	NA	NA	NA	NA	<0.46	NA	<0.58	<0.41	NA	NA	NA	NA	NA	NA	NA
Di-n-octyl phthalate	NA	NA	NA	NA	NA	NA	<0.46	NA	<0.58	<0.41	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	<0.46	NA	<0.58	1.5	9.0	21	12	6.0	0.49	NA	NA

TABLE 25 (continued)
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: METALS, PESTICIDES, PCBs, AND SVOCs
LANDFILL-PERIMETER SOIL SAMPLES COLLECTED NOVEMBER 2014 TO DECEMBER 2015

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**LPS-37-0415**	**LPS-37-0615**	**LPS-38**	**LPS-48**	**LPS-48**	**LPS-49**	**LPS-50**	**LPS-51**	**LPS-52**	**LPS-57**	**Statistical**	**PSRG (11)**		
Sample Depth (inches):	**18-24**	**24-30**	**12-18**	**0-6**	**0-6 (9)**	**0-6**	**0-6**	**0-6**	**0-6**	**0-6**	**Background**	**Residential-Health Based**	**Industrial Health Based**	**Protection of Groundwater**
Sample Date:	**4/28/15**	**6/10/15**	**11/20/14**	**1/21/15**	**1/21/15**	**1/21/15**	**1/22/15**	**1/22/15**	**1/22/15**	**12/16/15**	**(10)**			
Hazardous Substance List Metals														
EPA Method 6010C (mg/kg)														
Antimony	NA	NA	<2.4	NA	NA	NA	NA	NA	NA	<2.62	1.3	6.2	94	0.9
Arsenic	NA	NA	<2.4	NA	NA	NA	NA	NA	NA	<2.62	7.4	0.68	3	5.8
Lead	NA	NA	13	**67**	**72**	42	NA	NA	NA	44.3	47	400	800	270
Manganese	NA	NA	140	310	270	310	140	220	**550**	**857**	482	360	5,200	65
Selenium	NA	NA	<2.4	NA	NA	NA	NA	NA	NA	<2.62	2.8	78	1,200	2.1
Silver	NA	NA	0.54 J	NA	NA	NA	NA	NA	NA	<1.31	0.60	78	1,200	3.4
Thallium	NA	NA	<2.4	NA	NA	NA	NA	NA	NA	<2.62	1.4	0.16	2.4	0.28
Zinc	NA	NA	23	NA	NA	NA	NA	NA	NA	18.5	78	4,600	70,000	1,200
EPA Method 7471 (mg/kg)														
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.032	--	1.9	3.1	1.0
EPA Method 7199 (mg/kg)														
Hexavalent chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	0.3	6.3	3.8
Pesticides														
EPA Method 8081 (mg/kg) (1)														
4,4-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	2.3	9.6	0.24
4,4-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	2.0	9.3	0.24
4,4-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	1.9	8.5	0.34
PCBs														
EPA Method 8082 (mg/kg) (1)														
PCB 1242	1.3	0.083	NA	NA	NA	NA	NA	NA	NA	NA	--	1.0		0.14
PCB 1254	<0.022	<0.026	NA	NA	NA	NA	NA	NA	NA	NA	--	1.0		0.14
Semivolatile Organics														
EPA Method 8270D (mg/kg) (1)														
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0432	--	NG	NG	21
Benzo (a) anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0432	--	0.16	2.9	0.18
Benzo (a) pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0432	--	0.016	0.29	0.059
Benzylbutyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.436	--	290	1,200	150
Bis (2-ethylhexyl) phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.436	--	39	160	7.2
Di-n-octyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.436	--	130	1,600	280
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.436	--	1.0	4.0	0.031

(1) Method compounds detected in one or more samples are listed.
(2) Duplicate sample for LPS-13, labeled "LPS-46" in chain of custody and laboratory report.
(3) Duplicate sample for LPS-14, labeled "LPS-47" in chain of custody and laboratory report.
(4) Duplicate sample for LPS-22, labeled "LPS-45" in chain of custody and laboratory report.
(5) Duplicate sample for LPS-22, labeled "LPS-54" in chain of custody and laboratory report.
(6) Duplicate sample for LPS-25, labeled "LPS-44" in chain of custody and laboratory report.
(7) Duplicate sample for LPS-33, labeled "LPS-55" in chain of custody and laboratory report.
(8) Duplicate sample for LPS-33, labeled "LPS-56" in chain of custody and laboratory report.
(9) Duplicate sample for LPS-48, labeled "LPS-53" in chain of custody and laboratory report.
(10) Statistical background concentration, derived from background soil samples collected September 2011.
(11) PSRG = Inactive Hazardous Sites Branch - Preliminary Soil Remediation Goal (September 2015).
J = Estimated concentration; above method detection limit but below reporting limit.
NG = No PSRG exists.
NA = Not analyzed.

Concentrations listed in bold type are above statistical background concentration (metals).
Concentrations listed in blue-shaded cells are above Protection-of-Groundwater PSRG.
Concentrations listed in yellow-shaded cells are above Residential-Health-Based PSRG.
Concentrations listed in green-shaded cells are above Residential-Health-Based PSRG and Protection-of-Groundwater PSRG.
Concentrations listed in orange-shaded cells are above Residential Health-Based PSRG and Industrial Health-Based PSRG.
Concentrations listed in red-shaded cells are above Residential Health-Based PSRG, Industrial Health-Based PSRG, and Protection-of-Groundwater PSRG.

TABLE 26
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: DIOXINS/FURANS
LANDFILL-PERIMETER SOIL SAMPLES COLLECTED NOVEMBER 2014

Swannanoa DJJDP Property
Swannanoa, North Carolina

Sample I.D.:	**LPS-1-1114**	**LPS-2-1114**	**LPS-3-1114**	**LPS-21**	**LPS-25**	**LPS-25 (1)**	**LPS-27**	**PSRG (2)**	
Sample Depth (inches below grade):	**0-6**	**0-6**	**0-6**	**0-6**	**0-6**	**0-6**	**0-6**		
Sample Date:	**11/19/2014**	**11/19/2014**	**11/19/2014**	**11/14/2014**	**11/18/2014**	**11/18/2014**	**11/18/2014**	**Residential HB**	**Protection of GW**
Dioxins/Furans									
EPA Method 8290 (pg/g)									
2,3,7,8-TCDD	<0.461	1.95	3.1	<0.232	0.440 J	<0.355	<0.235	4.8	1.1
1,2,3,7,8-PeCDD	1.58 J	1.58 J	9.16	0.463 JK	1.34 JK	1.48 J	<0.454	NG	NG
1,2,3,4,7,8-HxCDD	1.45 J	1.28 J	4.82 J	0.476 J	1.83 J	1.77 J	<0.72	NG	NG
1,2,3,6,7,8-HxCDD	3.92 J	4.65 J	7.96	1.10 J	4.17 J	5.26 J	0.814 J	NG	NG
1,2,3,7,8,9-HxCDD	2.91 J	2.79 J	7.17 J	0.831 J	2.30 J	3.53 J	0.806 J	NG	NG
1,2,3,4,6,7,8-HpCDD	79.0	122	80.2	21.0	129	145	33.7	NG	NG
1,2,3,4,6,7,8,9-OCDD	2,030	6,200 E	3,580	1,070	10,200 E	11,700 E	3,630	NG	NG
2,3,7,8-TCDF	4.48	5.99	27.4	1.6	3.47	4.20	0.903 J	NG	NG
1,2,3,7,8-PeCDF	1.78 J	2.07 J	19.8	1.13 J	3.14 J	3.67 J	0.597 J	NG	NG
2,3,4,7,8-PeCDF	6.58 J	4.01 J	20.2	1.25 J	5.08 J	6.51 J	0.624 J	NG	NG
1,2,3,4,7,8-HxCDF	2.76 J	2.17 J	15.0	0.677 J	4.21 J	5.19 J	0.618 J	NG	NG
1,2,3,6,7,8-HxCDF	3.50 J	1.45 J	12.5	0.674 J	3.44 J	4.55 J	<0.36	NG	NG
2,3,4,6,7,8-HxCDF	5.04 J	2.04 J	13.4	0.806 J	5.07 J	6.16 J	0.500 J	NG	NG
1,2,3,7,8,9-HxCDF	<0.491 Q	<0.439	2.65 J	<0.401	1.18 J	1.34 J	<0.449	NG	NG
1,2,3,4,6,7,8-HpCDF	33.2	29.3	40.1	3.57 J	25.1	34.4	1.90 J	NG	NG
1,2,3,4,7,8,9-HpCDF	1.93 J	0.820 J	2.50 J	<0.411	1.73 J	2.42 J	<0.613	NG	NG
1,2,3,4,6,7,8,9-OCDF	79.7	19.3	26.3	4.83 J	39.8	53.8	1.56 J	NG	NG
Total Tetrachlorodibenzo-p-dioxin	12.0	69.2	82.6	1.20 J	5.58	11.5	0.280 J	NG	NG
Total Pentachlorodibenzo-p-dioxin	17.7 Q	95.1	94.5	1.65 J	11.9	14.2	0.648 J	NG	NG
Total Hexachlorodibenzo-p-dioxin	41.0 Q	63.8	96.1	9.01	39.4	49.7	8.14	100	NS
Total Heptachlorodibenzo-p-dioxin	171	242	166	40.0	298	330	70.2	NG	NG
Total Tetrachlorodibenzofuran	75.1	77.4	430	6.58	54.2	74.2	4.12	NG	NG
Total Pentachlorodibenzofuran	107	61.1	273	10.1	65.8	81.7	4.77 J	NG	NG
Total Hexachlorodibenzofuran	85.3 Q	42.9	139	7.44	55.1	73.0	3.75 J	NG	NG
Total Heptachlorodibenzofuran	88.3	55.6	70.5	6.42 J	61.4	81.2	1.90 J	NG	NG
Total Toxic Equivalency (TEQ)									
World Health Organization, 2005									
ND = 0; pg/g	7.79	10.2	30.3	1.59	9.25	12.1	2.02	51	--

(1) Duplicate sample for LPS-25, labeled "LPS-44" in chain of custody and laboratory report.
(2) PSRG = Inactive Hazardous Sites Branch - Preliminary Soil Remediation Goal (September 2015).
J = Estimated value.
K = Estimated maximum possible concentration.
E = Concentration exceeds instrument calibration range.
Q = Quantitative interference.
NG = No PSRG exists.
Concentrations listed in yellow-shaded cells are above Residential-Health-Based PSRG.
Concentrations listed in blue-shaded cells are above Protection-of-Groundwater PSRG.
Concentrations listed in green-shaded cells are above Residential-Health-Based PSRG and Protection-of-Groundwater PSRG.

TABLE 27
SUMMARIZED RESULTS OF LABORATORY ANALYSIS: SPLP EXTRACTION
LANDFILL-PERIMETER SOIL SAMPLES COLLECTED NOVEMBER 2014

Swannanoa DJJDP Property
Swannanoa, North Carolina

Boring I.D.: **Sample Depth (feet):** **Sample Date:**	**E-2-1114** **0-0.5** **11/18/14**	**E-3-1114** **0-0.5** **11/18/14**	**E-6-1114** **0-0.5** **11/19/14**	**E-8-1114** **0-0.5** **11/19/14**	**E-10-1114** **0-0.5** **11/19/14**	**E-10-1114 (1)** **0-0.5** **11/19/14**	**LPS-1-1114** **0-0.5** **11/19/14**	**LPS-3-1114** **0-0.5** **11/19/14**	**NC 2L** **Standard** **(2)**
SPLP Metals **EPA Method 6010C (µg/L)**									
Antimony	<20	<20	<20	45	<20	<20	12 J	<20	NS
Arsenic	<20	<20	<20	<20	<20	<20	<20	<20	10
Lead	7.5	**20**	15	**25**	5.4	5.6	**61**	**410**	15
Manganese	15	**110**	58	41	15	17	49	41	50
Selenium	<20	<20	<20	<20	<20	<20	<20	<20	20
Silver	<10	<10	<10	<10	<10	<10	<10	<10	20
Thallium	<20	<20	<20	<20	<20	<20	<20	<20	NS
Zinc	170	49 J	140	180	210	170	220	300	1,000

(1) Duplicate sample for E-10-1114, labeled "E-11-1114" in chain of custody and laboratory report.
(2) North Carolina groundwater standard under 15A NCAC 2L (April 2013). NS = No NC 2L standard exists.
J = Estimated concentration; above method detection limit but below reporting limit.
Concentrations in bold type are above North Carolina groundwater standard.

APPENDIX A

SITE PHOTOGRAPHS

Photo 1. Surface of unpermitted landfill – looking south (May 7, 2009)

Photo 2. Surface of unpermitted landfill – looking north (May 7, 2009)

Photo 3. Exterior of former incinerator/crematorium (May 29, 2008)

Photo 4. Interior of former incinerator/crematorium (June 3, 2010)

Photo 5. Surface waste debris on southeast side of landfill (June 3, 2010)

Photo 6. Surface waste debris in southern site area (June 3, 2010)

Photo 7. Slag waste on surface in northwest site area (June 3, 2010)

Photo 8. Scrap metal in western site area (May 29, 2008)

Photo 9. Wood pallets in western site area (May 29, 2008)

Photo 10. Abandoned transformers – removed from site in 2009 (May 29, 2008)

Photo 11. Exterior of former incinerator/crematorium (March 14, 2013)

Photo 12. “Wet weather spring” at southeast landfill margin (April 28, 2015)

Photo 13. Rock scree at southeast site perimeter - intermittent stream is in foreground (April 28, 2015)

APPENDIX B

SITE PROPERTY SURVEY PLAT AND DEEDS

NOTES:

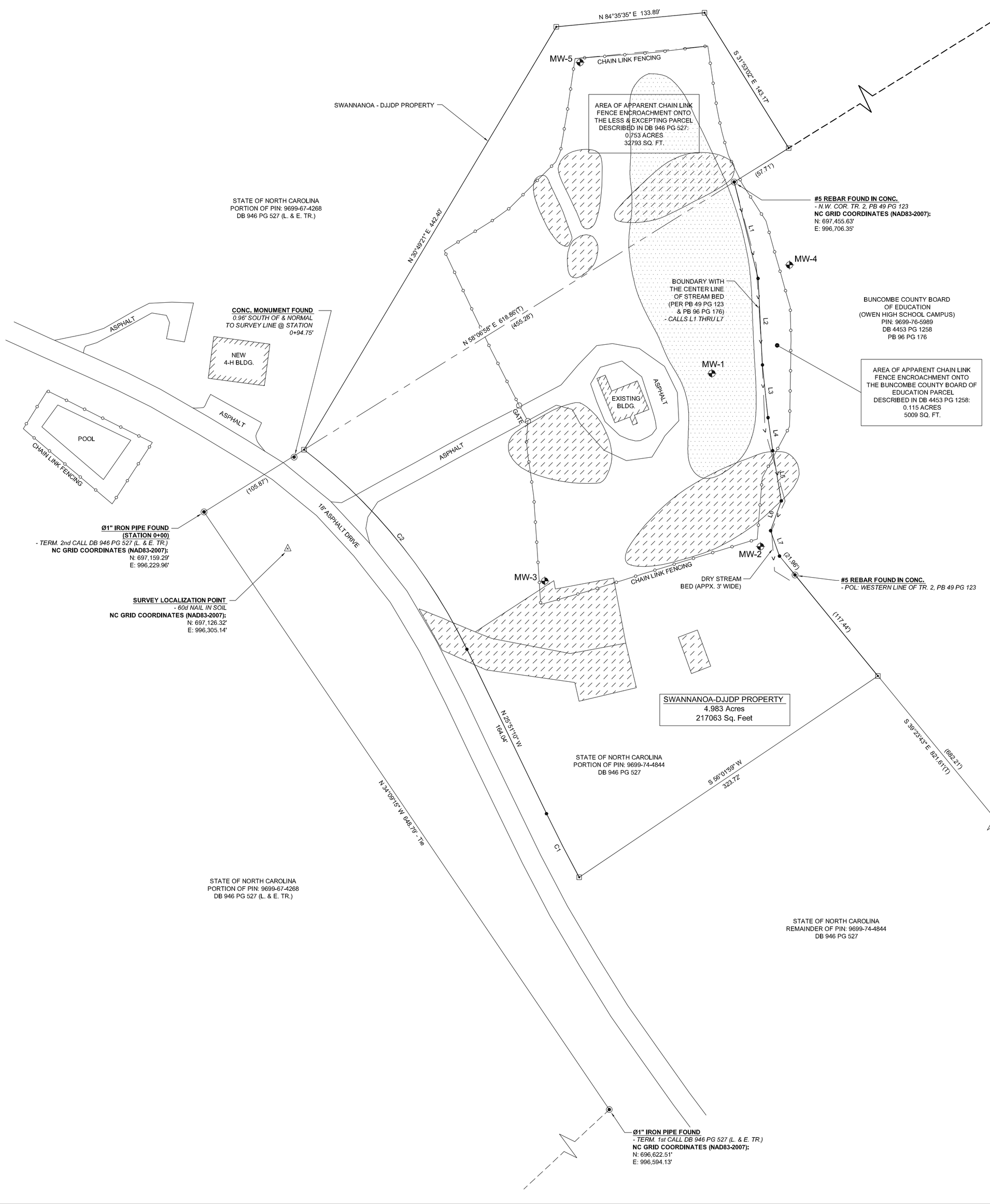
1) A PORTION OF THIS PROPERTY IS LOCATED IN A SPECIAL FLOOD HAZARD ZONE AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY PER D.F.I.R.M.#37/0096900J, DATED EFFECTIVE 1/6/2010. REFER TO THIS MAP FOR THE LIMITS OF THIS HAZARD ZONE.

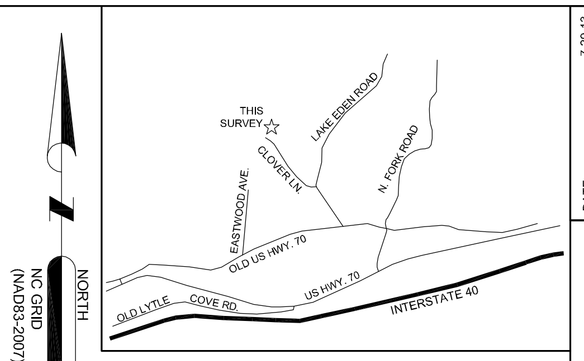
2) THIS SURVEY DOES NOT REPRESENT A FULL BOUNDARY SURVEY OF THE PROPERTY ILLUSTRATED. LINES SHOWN HEREON AS DASHED ARE COMPOSITE IN NATURE (TAKEN FROM RECORD DATA) AND HAVE NOT BEEN SURVEYED IN THE FIELD. LINES SHOWN AS SOLID HAVE BEEN FIELD SURVEYED AND VERIFIED. (SEE THE LEGEND FOR A LINE-TYPE KEY ON SURVEYED AND COMPOSITE LINES)

4) ALL BUILDINGS, SURFACE AND SUBSURFACE IMPROVEMENTS ON AND ADJACENT TO THE PROPERTY SHOWN HEREON ARE NOT NECESSARILY SHOWN. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT SURVEYED OR CONSIDERED AS PART OF THIS SURVEY. NO EVIDENCE OR STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND CONDITIONS, CONTAINERS, OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS PROPERTY.

5) AREAS BY COORDINATE COMPUTATION.

6) ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES. THE COMBINED GRID FACTOR FOR THIS SURVEY IS 0.99978614.





VICINITY MAP
NOT TO SCALE

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	1385.00'	64.32'	64.32'	N 27°11'00" W
C2	500.64'	233.61'	231.49'	N 39°13'14" W

LINE TABLE

LINE	BEARING	DISTANCE
L1	S 13°55'26" E	89.22'
L2	S 02°54'26" E	77.82'
L3	S 06°00'50" E	47.65'
L4	S 08°02'57" E	29.95'
L5	S 09°45'38" E	45.77'
L6	S 19°50'40" W	28.46'
L7	S 19°20'51" E	24.18'

REFERENCES:

- DB 946 PG 527
- PB 49 PG 123
- PB 96 PG 176
- UNRECORDED SURVEY BY FREELAND - CLINKSCALES & ASSOCIATES OF NC, INC. BEARING DRAWING # S09093 AND BEING DATED 9-19-09.
- UNTITLED MAP PROVIDED BY THE STATE OF NC

LEGEND & ABBREVIATIONS :

PB. . PLAT BOOK
DB. . DEED BOOK
PG . . PAGE
R/W . . RIGHT OF WAY
PIN . . PARCEL IDENTIFICATION NUMBER
● CALCULATED POINT (NOT SET IN FIELD)
RECOVERED MONUMENT (SIZE AND TYPE AS NOTED)
#4 REBAR W/ "McAbee" ID CAP SET
APPX. . . APPROXIMATELY
BLDG. . . BUILDING
BOUNDARY LINE (FIELD VERIFIED)
COMPOSITE BOUNDARY LINE (PLOTTED FROM RECORD DATA)
CONC. . . CONCRETE
COR. . . CORNER
L. & E. . . LESS & EXCEPTING
POL . . POINT ON LINE
(T) . . TOTAL DISTANCE
TERM. . . TERMINUS
TR. . . TRACT
AREA OF LANDFILL*
AREA OF SURFICIAL DEBRIS*
MW. . MONITORING WELL*

* THESE ITEMS ARE APPROXIMATE AND WERE DERIVED FROM AN UNRECORDED PLAT BY DENNIS CLINKSCALES DATED SEPTEMBER 18, 2009.

GLOBAL POSITIONING SYSTEM CERTIFICATION

I, **ERIC S. MCABEE**, HEREBY CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL GPS SURVEY MADE UNDER MY SUPERVISION; THAT THIS GPS SURVEY WAS PERFORMED TO **CLASS 1** FGDC SPECIFICATIONS AND THAT I USED **THE NCGS VRS RTK NETWORK**; GPS FIELD PROCEDURES AND COORDINATES WERE OBTAINED BY **THE RTK NETWORK SOLUTIONS**; THAT THIS SURVEY WAS PERFORMED ON **10/8/10** USING **A TRIMBLE 5800 DUAL FREQUENCY RECEIVER**, AND ALL COORDINATES ARE BASED ON THE **NORTH AMERICAN DATUM OF 1983 - 2007 UPGRADED POSITIONS**.

THIS PLAT HAS NOT BEEN REVIEWED OR APPROVED AS A SPECIAL SUBDIVISION BY THE BUNCOMBE COUNTY PLANNING AND DEVELOPMENT OFFICE. UNTIL SUCH TIME AS THIS PLAT IS APPROVED AND SIGNED BY SAID OFFICE, THIS PLAT CANNOT BE USED FOR CONVEYANCE OR RECORDATION.

I, **ERIC S. MCABEE**, CERTIFY THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN AN AREA OF THE COUNTY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.

I, **ERIC S. MCABEE**, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY PERFORMED UNDER MY SUPERVISION; DEED DESCRIPTION RECORDED IN BOOK **946** PAGE **527**; THAT THE RATIO OF PRECISION AS CALCULATED BY LATITUDES AND DEPARTURES IS **1: 10,000+** FOR TRADITIONAL SURVEYING METHODS; THAT THE GLOBAL POSITIONING SYSTEM (GPS) OBSERVATIONS WERE PERFORMED TO THE GEOSPATIAL POSITIONING ACCURACY STANDARDS, PART 2: STANDARDS FOR GEODETIC NETWORKS AT THE **0.04' HOR. & 0.08' VERT.** ACCURACY CLASSIFICATION (95% CONFIDENCE) USING **RTK NETWORK SOLUTIONS**; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 (F)(11)**(A)** AS AMENDED. WITNESS MY ORIGINAL SIGNATURE AND SEAL THIS THE **29TH** DAY OF **JULY, 2013.**

PRELIMINARY
NOT FOR CONVEYANCE OR RECORDANCE

L-4095

SCALE 1" = 50'

50' 25' 0 50' 100' 150'

DATE: 7-29-13
PROJECT NO.: 10754
DRAWING NO.: G-13-3113
DRAWN BY: JBW/ESM
SCALE: 1" = 50'

SUBDIVISION SURVEY OF THE PROPERTY OF :

SWANNANOA - DJJDP PROPERTY

OF A PORTION OF THE :

STATE OF NORTH CAROLINA PROPERTIES

BLACK MOUNTAIN TOWNSHIP
BUNCOMBE COUNTY, N.C.

PIN: 9699-67-4268
PIN: 9699-74-4844

NO.	DATE	DESCRIPTION	BY

NORTH CAROLINA PROFESSIONAL SEAL L-4095 LAND SURVEYOR ERIC S. MCABEE

McABEE & ASSOCIATES, P.A.
PROFESSIONAL LAND SURVEYING
Eric S. McAbee, PLS
J. Barry West, PLS
Wallace S. McAbee, PLS (Emeritus)
Fax (828) 628-1294
Telephone (828) 628-1295
3 McAbee Way, Fairview, North Carolina 28730
www.mcabeesurvey.com Firm License Number: C-694

756/649

exception deed in 946/527

QUITCLAIM DEED

STATE OF GEORGIA)
)
COUNTY OF FULTON)

992-6

THIS DEED, made this the 15th day of March, 1955, by the UNITED STATES OF AMERICA, acting by and through the Administrator of General Services, under and pursuant to the powers and authority contained in the provisions of the Federal Property and Administrative Services Act of 1949, approved June 30, 1949 (63 Stat. 377) as amended, and regulations and orders promulgated thereunder, party of the first part, to the STATE OF NORTH CAROLINA, party of the second part.

992-6

WITNESSETH:

That the party of the first part, for and in consideration of the sum of THREE THOUSAND ONE HUNDRED AND NO/100 DOLLARS ($3100.00) to it paid by the party of the second part, the receipt of which is hereby acknowledged, does, subject to the conditions hereinafter expressed and set out, hereby remise, release and forever quitclaim unto the said STATE OF NORTH CAROLINA, its successors and assigns, all its right, title, interest, claim and property in and to that certain tract or parcel of land, situate, lying and being in the County of Buncombe, in the State of North Carolina, and being more particularly described as follows, to-wit:

Commencing at a concrete monument in the north right-of-way margin of U. S. Highway No. 70, said monument being at the intersection of the southermost corner of the U. S. Veterans Administration Hospital property with U. S. Highway No. 70, thence along property line of U. S. Veterans Administration Hospital N. 22 deg. 52 min. W, 1600.75 ft. to a concrete monument; thence N. 30 deg. 04 min. E., 101.60 feet to a concrete monument; thence N. 87 deg. 51 min. E., 35.00 feet to a concrete monument; thence N. 24 deg. 00 min. W, 954.6 feet to a concrete monument; thence S. 79 deg. 25 min. W, 10.00 feet to a concrete monument; thence N. 6 deg. 14 min. E., 254.82 feet, to a point, said point being on the eastern margin of a road and being the point of beginning of the parcel of property hereby conveyed; thence N. 46 deg. 15 min. E. 1275.1 feet to a point; thence N. 35 deg. 00 min. W, 650 feet to a point; thence N. 57 deg. 00 min. E. 1400 feet to a point on the eastern boundary of said hospital reservation property; thence N. 5 deg. 06 min. E., 480 feet to a stake in pile of rocks, said stake being the northeastern corner of said hospital reservation property; thence N. 88 deg. 28 min. W. 1933.54 feet to a small white oak; said point being the northwest corner of said hospital reservation property; thence S. 2 deg. 54 min. W. 2348.94 feet to a stake at a fence corner; thence S. 85 deg. 57 min. E. 262.70 feet to a point, said point being on the eastern edge of a road; thence S. 4 deg. 04 min. E. 343.00 feet to the point of beginning, and containing 56.53 acres, more or less; together with all the improvements located thereon.

SUBJECT, HOWEVER, to all existing permits, easements, and rights-of-way for roads, highways, railroads, pipelines, public utilities and for City of Asheville, North Carolina water mains and County of Buncombe, North Carolina sewer lines.

The property hereby conveyed has heretofore been declared surplus to the needs of the UNITED STATES OF AMERICA, is presently under the jurisdiction of the General Services Administration, is available for disposal and its disposal has been heretofore authorized by the Administrator of General Services acting pursuant to the above referred to laws, regulations and orders.

TO HAVE AND TO HOLD the hereinabove described tract or parcel of land, subject to the conditions hereinbefore expressed and set out, to the said party of the second part, its successors and assigns, forever.

IN WITNESS WHEREOF, the UNITED STATES OF AMERICA has caused these presents to be executed in its name and on its behalf the day and year first above written.

UNITED STATES OF AMERICA
Acting by and through
Administrator of General Services

By Lloyd Gensel 376

LLOYD GENSEL
Deputy Regional Director
Public Buildings Service
General Services Administration
Region IV, Atlanta, Georgia

STATE OF GEORGIA)
)
COUNTY OF FULTON)

I, EVA W. FULLER, a notary public in and for said county and state, hereby certify that on this day, LLOYD GENSEL, who is personally well known to me as the Deputy Regional Director, Public Buildings Service, General Services Administration, Region IV, Atlanta, Georgia, an agency of the UNITED STATES OF AMERICA, and the person who executed the foregoing and annexed deed, personally appeared before me in said county and state, and acknowledged that he, as said Deputy Regional Director, Public Buildings Service, General Services Administration, Region IV, Atlanta, Georgia, by authority of law which authorizes the execution of said instrument without requiring the seal of the UNITED STATES OF AMERICA to be affixed thereto, executed the same for the purposes therein expressed as the free act and deed of the UNITED STATES OF AMERICA, and that said instrument is the act and deed of the UNITED STATES OF AMERICA.

Given under my hand and seal the 15th day of March, 1955.

Eva W. Fuller
EVA W. FULLER, Notary Public
Georgia, State at Large
My Commission expires March

NORTH CAROLINA, BUNCOMBE COUNTY
The foregoing Certificate of Eva W. Fuller a Notary Public of Fulton Ga., Justice of the Peace
the County of
duly authenticated by his Notarial Seal thereto attached is adjudged to be correct. Let the instrument and the certificates be registered.
This 6th day of April 1955
Deputy Clerk Superior Court, Buncombe County

Registered April 11, 1955 at 11:39 a.m.
Registrar of Deeds

QUITCLAIM DEED

THIS DEED, made this 7th day of March, in the year one thousand nine hundred sixty-one, by and between the UNITED STATES OF AMERICA, acting by and through the Secretary of Health, Education, and Welfare, acting by and through the Regional Director, Region III, Department of Health, Education, and Welfare, under and pursuant to the powers and authority contained in the provisions of the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended (hereinafter referred to as the Act), party of the first part, and the State of North Carolina, acting by and through the Governor, party of the second part;

WITNESSETH:

WHEREAS, by letter dated November 10, 1960, certain surplus real property, hereinafter described, was assigned by the Regional Commissioner, Region 4, General Services Administration, to the Secretary of Health, Education, and Welfare, that said property was needed for educational and public health uses in accordance with the provisions of the Act; and

WHEREAS, the party of the second part has made a firm offer to purchase the aforesaid property under the provisions of the Act and has made application for a one hundred (100%) per cent public benefit allowance, and the Secretary of Health, Education, and Welfare, is desirous of approving such sale; and

WHEREAS, the Regional Commissioner, Region 4, General Services Administration, by aforesaid letter of assignment dated November 10, 1960, advised that no objections will be interposed to the proposed transfer of said property to the party of the second part; and

WHEREAS, the party of the first part has accepted said offer of the party of the second part;

NOW THEREFORE, the party of the first part, for and in consideration of the observance and performance by the party of the second part of the covenants, conditions, restrictions, and reservations hereinafter contained,

and other good and valuable consideration, the receipt whereof is hereby acknowledged, the party of the first part has remised, released and forever quitclaimed, and by these presents doth hereby remise, release, and forever quitclaim to the party of the second part, and its successors and assigns, all of the right, title and interest as the party of the first part has in and to that certain tract or parcel of land containing approximately 212.24 acres, more or less, known as the Veterans Administration Hospital (Swannanoa Division), Oteen, North Carolina, situate, lying and being in Buncombe County, North Carolina, and more particularly described as follows, to wit:

Beginning at the intersection of the centerline of U. S. Highway #70 with the property line of Mrs. W. Y. Porter, said intersection being the most southerly corner of the herein described tract; thence N 23° 10' W, 1584 feet along the property line of Mrs. W. Y. Porter to the center line of a small creek; thence up the creek as it meanders, N 55° E, 99.3 feet; thence N 14° E, 3.5 feet; thence leaving the creek, N 23° 10' W 977 feet; thence S 80° 53' W, 10 feet along the property line of James Metcalf, et ux to a point in the center line of a road; thence along the center line of said road N 02° E, 250 feet to a corner of the North Carolina State Test Farm; thence continuing along the center line of said road N 04° 04' W, 336.5 feet to a stake in the center of said road; thence leaving said road N 85° 57' W, 277.2 feet to a stake at the intersection of two fences; thence N 03° 41' E, 2440.06 feet to an oak; thence S 87° 11' E, 1938.10 feet to a stake in a pile of rocks; thence S 05° 07' W, 1911.98 feet to a concrete monument, formerly a pine; thence with the property line of the Mountain Orphanage S 42° 08' E, 1483.8 feet; thence S 39° 32' E, 779.5 feet; thence S 35° 28' E, 200.4 feet, thence S 37° 36' E, 1039.5 feet to the center line of U. S. Route 70; thence with the center line of U. S. Route 70, S 79° 55' W, 1886.1 feet to the point of curvature of a curve having a radius of 1132 feet; thence with the arc of the above mentioned curve, the long chord of which has a course of S 74° 26' W, 314.4 feet, to the point of tangency; thence, continuing along said center line S 63° 57' W, 92.5 feet, S 67° W, 718 feet, to the point of beginning;

except that portion conveyed by deed dated March 15, 1955, from the United States of America to the State of North Carolina, more particularly described as follows:

Commencing at a concrete monument in the north right-of-way margin of U. S. Highway No. 70, said monument being at the intersection of the southermost corner of the U. S. Veterans Administration Hospital property with U. S. Highway No. 70, thence along property line of U. S. Veterans Administration Hospital N 22° 52' W, 1600.75 feet to a concrete monument; thence N 30° 04' E, 101.60 feet to a concrete monument; thence N 87° 51' E, 35.00 feet to a concrete monument; thence N 24° 00' W, 954.6 feet to a concrete monument; thence S 79° 25' W, 10.00 feet to a concrete monument; thence N 6° 14' E,

254.82 feet, to a point, said point being on the eastern margin of a road and being the point of beginning of the parcel of property hereby conveyed; thence N 46° 15' E, 1275.1 feet to a point; thence N 35° 00' W, 650 feet to a point; thence N 57° 00' E, 1400 feet to a point on the eastern boundary of said hospital reservation property; thence N 5° 06' E, 480 feet to a stake in pile of rocks, said stake being the northeastern corner of said hospital reservation property; thence N 88° 28' W, 1933.54 feet to a small white oak, said point being the northwest corner of said hospital reservation property; thence S 2° 54' W, 2348.94 feet to a stake at a fence corner; thence S 85° 57' E, 262.70 feet to a point, said point being on the eastern edge of a road; thence S 4° 04' E, 343.00 feet to the point of beginning, and containing 56.53 acres, more or less.

TOGETHER WITH the following described easements:

E-1

Beginning at a point in the center line of U. S. Highway #70, same point being S 82° 39' W, 1078 feet, more or less, from the point where aforementioned center line intersects the Northeast property line of the State of North Carolina; thence S 17° 15' W, parallel to and 4 feet from the center line of the proposed sewer right-of-way, 606 feet, more or less; thence S 2° 45' W parallel to and four feet from the aforementioned center line, 870 feet, more or less; thence S 11° 38' W, parallel to and 4 feet from the aforementioned sewer right-of-way center line, 214 feet to a point in a north property line of Howard Melton; thence with his line, S 61° 43' E, 10 feet, more or less; thence N 11° 38' E, parallel to and 4 feet from the aforementioned center line, 220 feet, more or less; thence N 2° 45' E, parallel to and 4 feet from the sewer right-of-way center line, 865 feet, more or less; thence N 17° 15' E, parallel to and four feet from the aforementioned center line, 617 feet, more or less, to a point in the center line of U. S. Highway #70; thence with said center line, S 82° 39' W, 10 feet to the place of beginning and containing 0.31 acres, more or less, being the same land as described in easement from the State of North Carolina to United States of America dated February 4, 1943.

E-2

Beginning at a point at a Southwest property line of the State of North Carolina, same point having a bearing S 36° 57' W, 2229 feet, more or less, from a point where the center line of U. S. Highway 70 intersects the Northeast property line of the State of North Carolina; thence S 61° 43' E, 8.35 feet; thence S 11° 38' W, 90.53 feet; thence S 10° 30' W, 356.0 feet; thence S 16° 30' E, crossing the North bank of the North fork of the Swannanoa River at 31 1/2 feet, in all a distance of 173.3 feet to a point on the property of Howard Melton South of the Swannanoa River; thence S 54° 28' W, 8.47 feet; thence N 16° 30' W, again crossing the North fork of Swannanoa River, a distance of 178.0 feet to a point; thence N 10° 30' E, 358.0 feet; thence N 11° 38' E, 93.0 feet to the beginning, containing 0.11 acre, more or less, being the same land as described

in judgment entered on the 7th day of January 1946 in Civil No. 465 in the District Court of the United States for the Western District of North Carolina.

E-5

On the waters of Swannanoa River, being a part of the old Cliff lands, on the south side of the Swannanoa River, near the mouth of Flat Creek; beginning at a stake on the Southern Railroad where it crosses the Mill Cove Branch on a culvert, and runs with the Railroad, North 62° E, 22 poles to a stake; thence S 75° E, 52 poles to a stake; thence N 14° E, 13 1/4 poles to a stake; thence S 60° 40' E, 71 poles to a small pine in the Stepp line originally the line of lot No. 6; thence with said line, N 81 poles to a small black oak on the south bank of Flat Creek; thence up the Creek as it meanders; 7 1/2 poles to a maple on the north bank of Flat Creek, it being the southwest corner of the tract conveyed by T. B. Lytle and others to Charles Cliff; thence still with the meanders of Flat Creek, a westerly course, 45 poles to a chestnut stump, the beginning corner of the tract above referred to; thence still with the meanders of said Creek, S 80° E 16 poles and N 34° E 8 poles to a stake on the bank of said Creek; thence N 9° W, 151 1/2 poles to a stake, at the southeast corner of the School Lot; thence with the line of the School lot, N 77° W, 32 poles to a stake on the bank of the North fork of Swannanoa River; thence down and with the meanders of said River, the following courses and distances, to wit: S 28° W, 13 poles and S 32° W, 42 poles to a stake at a short turn, with a sycamore marked as a pointer; thence S 8° E, 92 poles to a stake in the center line of the right of way of the Southern Railroad; thence with said center line of said Railroad, S 62° W, 100.5 poles to a stake, corner of Lot No. 5; thence N 10 1/2° W, with the line of Lot No. 5, 51 poles to a maple on the bank of Flat Creek, near its mouth; thence down said creek to Swannanoa River; thence down the River, with its meanders, the following courses and distances: S 60° W, 29 poles, West 18 poles, and North 62° W, 36 poles to a sycamore, the old Williams corner; thence with the old Williams line S 10 1/2° E, 95 poles to a stake at the Mill Cove Branch; then up and with the meanders of said branch about N 75° E, to the place of beginning, being the same land as described in Warranty Deed of Easement recorded in the Office of Register of Deeds for Buncombe County, North Carolina, in Book No. 552 at Page 118.

TOGETHER WITH all and singular the tenements and hereditaments thereunto belonging, including the following improvements located on the above-described premises:

a. All items of fixtures, equipment and other personalty located thereon, as fully described and set forth in a list marked Schedule "A", attached hereto and made a part hereof.

b. All buildings and improvements as fully described and set forth in a list marked Schedule "B", attached hereto and made a part hereof; PROVIDED, HOWEVER, that the structure on the property conveyed herein referred to

as the "Chapel" and identified as Building No. 220, heretofore used for religious purposes, shall hereinafter and during its useful life be used as a shrine or memorial or for religious purposes.

c. All streets and roads and pavements, railroad tracks and the railroad bridge, located within the boundaries of the property being conveyed herein.

TOGETHER WITH the utility systems, said utility systems include the water system, the sewage disposal system, the electrical distribution system and the heating system consisting of the following distribution lines: water mains, water service, sewer system mains, sewer house laterals, electric overhead distribution, electrical service, electrical underground distribution, electrical exterior lighting, electrical distribution line transformers, electrical substation transmission and heating lines.

The above-described premises are transferred subject to all existing easements.

TO HAVE AND TO HOLD the foregoing described property unto the party of the second part and its successors and assigns forever; provided, however, that this deed is made and accepted upon each of the following conditions subsequent, which shall be binding upon and enforceable against the party of the second part, its successors and assigns and each of them as follows:

1. That for a period of twenty (20) years from the date of this deed the above-described property herein conveyed shall be utilized continuously for education and public health purposes in accordance with the proposed program and plan as set forth in the Application of the party of the second part dated June 28, 1960, and for no other purposes.

2. That during the aforesaid period of twenty (20) years, the party of the second part will resell, lease, mortgage, or encumber, or otherwise dispose of the above-described property or any part thereof or interest therein only as the Department of Health, Education, and Welfare, or its successor in function in accordance with its existing regulations may authorize in writing.

3. That one year from the date of this deed and annually thereafter for the aforesaid period of twenty (20) years unless the Department of Health, Education, and Welfare, or its successor in function otherwise directs, the party of the second part will file with the Department of Health, Education, and Welfare, or its successor in function, reports on the operation and maintenance of the above-described property and will furnish, as requested, such other pertinent data evidencing continuous use of the property for the purposes specified in the above-identified Application.

In the event of a breach of any of the conditions set forth above, whether caused by legal or other inability of the party of the second part, its successors or assigns, to perform any of the obligations herein set forth, all right, title, and interest in and to the above-described property shall, at its option, revert to and become the property of the UNITED STATES OF AMERICA, which shall have an immediate right of entry thereon, and the party of the second part, its successors or assigns, shall forfeit all right, title, and interest in and to the above-described property and in any and all of the tenements, hereditaments, and appurtenances thereunto belonging; PROVIDED HOWEVER, that the failure of the Department of Health, Education, and Welfare, or its successor in function, to insist in any one or more instances upon complete performance of any of said conditions shall not be construed as a waiver or a relinquishment of future performance of such conditions, but the party of the second part's obligations with respect to such future performance shall continue in full force and effect; PROVIDED FURTHER, that in the event the UNITED STATES OF AMERICA fails to exercise its option to re-enter the premises for such breach of said conditions within twenty-one (21) years from the date of this conveyance, the conditions set forth above together with all rights of the UNITED STATES OF AMERICA to re-enter as in this paragraph provided, shall, as of that date terminate and be extinguished.

In the event title to the above-described premises is reverted to the UNITED STATES OF AMERICA for noncompliance or voluntarily reconveyed in lieu of reverter, the party of the second part at the option of the Department of Health, Education, and Welfare, or its successor in function, shall be responsible and shall be required to reimburse the UNITED STATES OF AMERICA for the decreased value of the above-described property not due to reasonable wear and tear, acts of God, and alterations and conversions made by the party of the second part to adapt the property to the educational and public health use for which the property was acquired. The UNITED STATES OF AMERICA shall, in addition thereto, be reimbursed for such damage including such costs as may be incurred in recovering title to or possession of the above-described property, as it may sustain as a result of the noncompliance.

The party of the second part may secure abrogation of the conditions numbered 1, 2, and 3, herein by:

a. Obtaining the consent of the Department of Health, Education, and Welfare, or its successor in function; and

b. Payment to the UNITED STATES OF AMERICA of the public benefit allowance granted to the party of the second part of one hundred (100%) per cent from the current market value of one million, seventeen thousand, eight hundred ($1,017,800.00) dollars, less a credit at the rate of five (5%) per cent for each twelve (12) months during which the property has been utilized in accordance with the program and plan specified in the above-identified Application.

The party of the second part by the acceptance of this deed, covenants and agrees, for itself, its successors and assigns, that in the event the property conveyed hereby is sold, leased, mortgaged, encumbered, or otherwise disposed of, or is used for purposes other than those set forth in the above-identified program and plan without the consent of the Department of Health, Education, and Welfare, all revenues or the reasonable value, as determined by the Department of Health, Education, and Welfare, of benefits

to the party of the second part deriving directly or indirectly from such sale, lease, mortgage, encumbrance, disposal, or use, shall be considered to have been received and held in trust by the party of the second part for the party of the first part and shall be subject to the direction and control of the Department of Health, Education, and Welfare.

The party of the second part by the acceptance of this deed, further covenants and agrees for itself, its successors and assigns, that the party of the first part shall participate in the proceeds of any insurance payable to the party of the second part after loss where the party of the second part carries insurance against damage to or loss of property caused by fire, windstorm, or other hazards, to the extent of the unamortized public benefit allowance. Where the party of the second part agrees to utilize the entire insurance loss proceeds for repair or replacement there shall be no claim to any of the proceeds by the party of the first part.

The party of the second part, by the acceptance of this deed, further covenants and agrees, for itself, its successors and assigns, that the party of the first part shall have the right during any period of emergency declared by the President, or by the Congress of the United States, to the full unrestricted possession, control, and use of the property hereby conveyed, or any portion thereof, including any additions or improvements thereto made subsequent to this conveyance. Prior to the expiration or termination of the period of restricted use by the transferee, such use may be either exclusive or nonexclusive and shall not impose any obligation upon the Government to pay rent or any other fees or charges during the period of emergency, except that the Government shall (i) bear the entire cost of maintenance of such portion of the property used by it exclusively or over which it may have exclusive possession or control, (ii) pay the fair share, commensurate with the use of the cost of maintenance of such of the property as it may use nonexclusively or over which it may have nonexclusive possession or control, (iii) pay a fair rental for the use of improvements or additions to the premises made by the party of the second part without Government aid, and (iv) be responsible for any damage caused by its use, reasonable wear and tear, and acts of God and the common enemy excepted.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed as of the 7th day of March, 1961.

992-6 UNITED STATES OF AMERICA
Acting by and through the
Secretary of Health, Education,
and Welfare

By: Edmund Baxter
Edmund Baxter
Regional Director
Region III
Department of Health, Education,
and Welfare

WITNESSES:

Sarah C. Cantebury
Alexandra T. Medlin

ACKNOWLEDGMENT

COMMONWEALTH OF VIRGINIA)
) to wit:
COUNTY OF ALBEMARLE)

I, Arnita G. Maupin, a notary public in and for the Commonwealth of Virginia, and County aforesaid, do hereby certify that Edmund Baxter, whose name is signed to the writing above, bearing date on the 7th day of March, 1961, personally appeared before me this day and acknowledged the due execution of the foregoing instrument in my County aforesaid.

Witness my hand and official seal this 7th day of March, 1961.

NOTARY PUBLIC COUNTY OF ALBEMARLE

(SEAL)

Arnita G. Maupin
Notary Public

My Commission Expires 8-26-62.

ACCEPTANCE

We, Terry Sanford, Governor, and Thad Eure, Secretary of State of the State of North Carolina, respectively, pursuant to the authority contained in a resolution of the Council of State adopted on the 20 day of March, 1961, hereby accept the foregoing Quitclaim Deed dated the 7th day of March, 1961, from the UNITED STATES OF AMERICA, acting by and through the Secretary of Health, Education, and Welfare, by the Regional Director, Region III, Department of Health, Education, and Welfare, and by this acceptance, the undersigned agree to assume and be bound by all of the covenants, conditions, exceptions, reservations, and restrictions therein set forth.

Witness the following signatures and seals this 22 day of March, 1961.

Terry Sanford, Governor
State of North Carolina

ATTEST:

Thad Eure
Secretary of State
State of North Carolina

ACKNOWLEDGMENT

STATE OF NORTH CAROLINA

COUNTY OF WAKE

I, Claire Eastman Nickels, a Notary Public in and for said County and State, do hereby certify that on this 22 day of March, 1961, personally came before me, Terry Sanford, Governor of the State of North Carolina, and Thad Eure, Secretary of State of North Carolina, who, being by me duly sworn, says each for himself, that he knows the Great Seal of the State of North Carolina, and that the seal affixed to the foregoing instrument is the Great Seal of the State, and that the name of the State of North Carolina was subscribed thereby by Terry Sanford, Governor of said State, and that said Terry Sanford as Governor of said State, and said Thad Eure as Secretary of State, subscribed their names thereto; that the said Great Seal of the State of North Carolina was affixed thereto by virtue of a resolution of the Council of State and by the Governor of said State, and the said instrument is the act and deed of the State of North Carolina.

IN WITNESS WHEREOF, I have hereunto set my hand and notarial seal on this the 22 day of March 1961.

Claire Eastman Nickels
Notary Public

My Commission expires: 1-8-63

(SEAL)

STATE OF NORTH CAROLINA
COUNTY OF BUNCOMBE

The foregoing certificates of Anita H. Maupin and Claire Eastman Nickels Notaries Public of the State and County designated, each duly authenticated by Notarial or Private Seals thereto attached, are adjudged to be correct. Let the instrument with the certificates be registered.

This the ~~30~~ 29 day of August, 1966.

Belle Ledbetter
Deputy Clerk Superior Court

Registered this the 29 day of August, 1966 at 4:20, P M

William L. Briggs
Register of Deeds
Elizabeth Batchelor Dep

VETERANS ADMINISTRATION HOSPITAL
SWANNANOA DIVISION

OTEEN, NORTH CAROLINA

SCHEDULE "A"

Related Personal Property as reported on 17 pages of Standard Form 118C, dated September 22, 1960, under Holding Agency No. 5060-15-61:

Number	Item	Unit	No. of Units	Fair Value (Total)
03 0310	Anesthetic Mch Metric Cab	Each	1	$ 402.50
03 0600	Basal Meta App 110V AC	"	1	86.12
03 0750	Bone Set Oper Luck 110V	"	1	135.00
03 1000	Cab Ent Such Press 110V	"	1	94.62
03 1095	Electrocardiograph Portabl	"	1	326.00
03 1145	Case Bronchoscopic 5 Tray	"	1	428.00
03 1360	Cautery Hosp Size Portble	"	1	17.75
03 1538	Cuspidor Fountain Eent	"	2	39.50
03 2100	Dermatome Set Padgett	Set	1	147.50
03 2602	Electro/Surg Unit Prt Acc	Each	1	232.50
03 2697	Evacuator Gastro C/Suctn	"	4	151.00
03 3890	Frame Trial Large W/Acc	"	1	95.00
03 3905	Frame Trial Lens St Revol	"	1	21.78
03 4450	Lamp Slit Statnary 110V	"	1	204.50
03 4700	Oxygenaton App Nas Cat	"	1	27.50
03 4750	Otoscope / Opthalscope	Set	2	33.52
03 4810	Perimeter Ferre/Rnd W/Acc	Each	1	70.00
03 4950	Pneumothorax Apparatus	"	2	58.67
03 4963	Pneumothorx Zavod Aneroid	"	2	78.30
03 5000	Phorometer Floor Stand	"	1	79.50
03 5280	Refractometer Inst B/Lomb	"	1	146.00
03 5675	Riviting Machine Ortho	"	1	50.00
03 6120	Sigmoidscpe Buie Mayo Acc	"	1	13.50
03 6150	Sphygmo Mercurial Stand	"	1	14.36
03 6220	Sphygmomanometr Mercurial	"	1	9.88
03 6950	Tent Oxy Refrig 110V AC	"	6	1323.00
03 7477	Washer Hypo/Syringe Comp	"	1	184.75
04 0520	Balance Analytical	"	1	62.50
04 0710	Balance Drug Disp 41/2KGM	"	1	16.20
04 0720	Balance Pres 120 GM Cap	"	2	68.73
04 1680	Centrifuge AC DC Size 1	"	1	246.00
04 1840	Centrifuge Small 110V	"	2	40.30
04 4525	Washer Lab Glassware	"	1	63.94
04 5080	Microscope Binocular	"	1	106.33
04 5180	Microscope Burton/Fresmel	"	1	6.13
04 5280	Microscope Binoc Inclined	"	1	51.07
04 5440	Microtome Clinical Auto	"	2	101.25
04 6350	Projectr Micro B/Lomb Cmp	"	1	199.50
04 7410	Shaker Clin W/Platfrm/Crd	"	1	51.50
04 7440	Shaker Clin Pipet 115V	"	1	42.50
05 1355	Bin Plaster 2 Compartment	"	1	29.88
05 1500	Cabinet Dental 10 Drawers	"	3	204.00
05 1802	Casting Machine Small	"	1	10.92
05 1810	Casting Mch Centrifugl Cmp	"	1	21.94
05 2100	Chair Dental Operating	"	4	545.00
05 4200	Furnace Lab Mfle TY 110V	"	2	175.00
05 4795	Lamp Dent Op Rhein Type	"	3	61.05
05 5095	Lathe Dental 110V 60 CY	"	1	39.65
05 6005	OP Unit Dentl 110V Ritter	"	3	975.00
05 6300	Machine Soldering Dental	"	1	18.70

VA Hosp., Oteen, N.C.
Related Personalty
Schedule "A"

Number	Item	Unit	No. of Units	Fair Value (Total)
05 7800	Surveyor Clasp	Each	1	$ 13.00
05 8100	Trimmer Port Dntl 110V	"	1	24.96
05 9400	Flag Chapel Christian	"	1	17.50
05 9450	Flag US Indoor 31/3X51/2	"	1	13.12
06 1415	Cassette Chngr Ster Uprt	"	1	691.00
06 1700	Changeover Device F/Gen	"	1	61.50
06 2710	Dryer Film 18 Cap Hosp Typ	"	2	269.00
06 2800	Fluoroscope Vert 110V AC	"	5	2497.17
06 2810	Fluoroscope Vert Keleyket	"	1	483.00
06 5018	XRay Field Unit Port Grid	"	1	133.50
06 5043	XRay Unit 2 Tube 200MA Cmp	"	2	4722.00
06 5070	Mch XRay Stat 60/140KVP	"	1	1044.00
06 5250	XRay Unit Dental MBL 110V	"	1	332.00
06 6200	Spot Flm Attachment 6 Casset	"	1	176.00
06 6552	Stereoscope Large GE Comp	"	1	205.50
06 7352	Tbl XRay Urological 110V	"	1	885.00
06 7505	Tube Unit XRay Shock/P	"	1	699.50
07 0132	Baker Therapeutic El Port	"	4	104.00
07 0277	Bed Fracture Zimmer No 2	"	2	158.25
07 0350	Bed Hospital Adjustable	"	201	2702.45
07 0985	Cab Inst/Dress Mtl W/E	"	3	235.19
07 1345	Cab Med Ward Mtl On Legs	"	1	45.18
07 1448	Cab Util Med 1 Door W/E	"	15	249.97
07 1452	Cab Utility Lg 2 Dr Enamel	"	4	159.04
07 1822	Cart Med 2 SH Wheeled Enam	"	5	265.15
07 2100	Chair Invalid Wheel	"	5	105.15
07 2520	Chair Specialists	"	1	46.00
07 2750	Conveyor Tray E/Ht M/Vest	"	14	1429.47
07 2760	Conveyor Food Electric	"	1	200.48
07 2763	Conveyor Tray El Merr/824	"	2	240.03
07 2792	Dsk Nurse Rec Dbl/Ped 9DW	"	2	126.00
07 2802	Dsk Nurs WD Chart/Comp 1D	"	1	29.97
07 2865	Diathermy App 13/66M/Cycl	"	4	1080.00
07 2940	Diathermy App 27 120Megac	"	1	298.00
07 3013	Dispensr Soap Sngl Prt Ft	"	2	50.00
07 3015	Dispensr Soap Prt Dbl 1 Qt	"	3	108.75
07 3165	Dolly Mattress 7FT 2 Matt	"	1	43.15
07 3460	Hygeaire Unit Mod HUVM/30	"	2	36.85
07 3470	Lamp Exam Eent	"	1	12.50
07 3500	Lmp Infr Rd Typ Z 12 600W	"	7	103.95
07 3780	Lamp Oper Ceil 110V 60CY	"	1	147.50
07 3852	Lamp Op Port Exam G/Neck	"	2	53.11
07 4145	Lamp Oper Ceiling 12 Beam	"	1	150.25
07 4340	Lamp Ultravlt Mercury Lge	"	1	90.50
07 4345	Lamp Ultra/V Hanovia/Luxr	"	1	85.83
07 4379	Light Floor Stand	"	1	18.00
07 4450	Manometer N0596/E	"	1	13.20
07 4630	Pad Op Table 3 Sectional	"	1	20.03
07 5040	Scale Physicians	"	12	144.60
07 5260	Screen Bed Fold Mtl 3 Panl	"	2	33.47
07 5460	Sinusoidal Mch Mtr Gen TY	"	1	87.50
07 5525	Sinusoidl Mch Polysine Md	"	2	392.51
07 5810	Stand Bowl Double Crm	"	2	50.00
07 5880	Stand Bowl Single Crm	"	3	39.90
07 5950	Stand Instr Adjustble Crm	"	1	38.13
07 5952	Stand Instrument Adj W/E	"	1	4.29
07 6020	Stand Utility Crm	"	1	79.00
07 6270	Sterilizer Drum 14 in	"	2	15.90
07 6380	Sterlzr El Dental Instrmt	"	2	86.45
07 6437	Sterilizer Inst El Cabnet	"	2	66.00
07 6440	Sterilizer Instr 16X6X4 in	"	6	55.38
07 7072	Stretcher Wheel Crm Det	"	5	235.25
07 7300	Table Bedside Cab Type	"	193	2488.68

VA Hosp., Oteeh, N.C.
Related Personalty
Schedule "A"

Number	Item	Unit	No. of Units	Fair Value (Total)
07 7555	Table Instrmnt W/E 18X33	Each	5	$ 22.10
07 7582	Tbl Inst/Utility S/S Top	"	8	114.60
07 8060	Table Operating Complete	"	2	78.00
07 8210	Tbl Oper Pedestal Complt	"	2	235.00
07 8340	Tbl Ortho/Frac/Surgcl Op	"	1	372.00
07 8400	Table Overbed Adj	"	19	350.27
07 8677	Truck Util 2SH Galv/Enam	"	7	261.03
07 8890	Walker Invalid Adult	"	1	22.00
07 9546	Sinusoidl Gnrtr Teca CD7	"	1	100.00
07 9547	Sinusoidl Gnrtr Teca Sp3	"	1	100.00
11 0500	Dispenser Lub Oil 60 Gal	"	6	135.00
11 6450	Pump Lubrigun Mod 437 2Hse	"	1	15.00
11 6453	Pump Lub Bulk Type Sz 2	"	1	27.35
11 6525	Pump Sump Electric lin	"	1	25.00
13 0400	Combustion Tst St 800/101	"	1	25.56
13 8075	Tester Gauge Style GC/110	"	1	22.50
16 0161	Ampl/F/E- 5 T3 RCA	"	1	22.50
16 0177	Amplifier RCA 175W	"	1	27.50
16 6890	Kit Code Practice Records	"	1	17.50
16 7253	Speaker Ex/Proof 30W ACC	"	1	30.73
16 9057	Phonograph Port Victrola	"	1	50.98
17 1003	Charger Battery Firestone	"	1	15.00
17 1005	Charger Battry Valley 115V	"	1	23.53
17 1007	Charger Battry Prt Alln 110V	"	1	100.00
17 1350	Dispensr Air Fresh El Prt	"	1	7.48
17 2495	Fan Elec Oscillating 12 in	"	65	460.85
17 2560	Fan Elec Oscillating 16 in	"	30	281.70
17 3405	Heater El Therm/D 5KW Prt	"	3	61.38
17 5192	Motor Elec Singer 1/4 HP	"	1	17.50
17 5210	Mtr Myers/Robbins 7 1/2	"	1	25.00
17 5212	Motor Westinghouse 71/2 HP	"	1	25.00
17 6214	Proj M/P 16 MM Ampro Comp	"	1	150.98
17 6251	Projector Bell/H W/Speakr	"	1	127.98
17 6315	Proj M/P 16MM Sound Port	"	1	166.12
17 6380	Proj Slide/F Mod/CC 35MM	"	1	9.00
17 7860	Transformer 71/2 KVA	"	2	102.75
17 7880	Transformer 15 KVA	"	1	75.00
17 7885	Transformer 25 KVA 6900	"	1	106.09
17 7890	Transformer 371/2 KVA	"	1	112.50
17 8895	Weldr Out/F El Arc Mobile	"	1	187.31
18 0862	Camera Fold Kodak/M Case	"	1	17.50
18 1651	Editor Mtn/P F/16MM Film	"	1	47.50
18 4510	Lamp Phtrgrphc Stnd Type	"	1	29.06
18 6245	Printr Contact East/M8X10	"	1	29.17
18 6954	Rewinder Set PH/416A	"	1	2.00
18 7361	Scale Fltfm Prt 50 To 10M	"	4	51.68
18 7548	Straightnr Print 18 in Elc	"	1	34.87
18 7610	Table Drawing Adj Top	"	2	31.50
26 0279	Bed Single Metal	"	47	470.00
26 0450	Bench Wd Waiting Room Typ	"	2	30.00
26 0631	Buffet 22x66x40 Walnut	"	2	32.27
26 0678	Cab Card Catalog 6 Drawer	"	1	34.62
26 0681	Cab Card Catalog 2S 14 Drw	"	1	21.00
26 0686	Cab Card Stl 18 Drawr	"	1	12.50
26 0715	Cab Crushed Ice 100 lb Cap	"	4	277.86
26 0740	Cabinet File Kardex Metl	"	1	22.50
26 0770	Cabinet Kardex 7 Slides	"	1	58.17
26 0864	Cab Catalog 12 Tr Wd Rem/R	"	1	63.53
26 0888	Cab Tool Stl 9/11 Drawers	"	1	8.02
26 0890	Cabinet Tub File Vert Stl	"	1	38.58
26 0988	Chr Arm Hepple/W Wd Uph	"	2	26.90
26 0990	Chair Arm Uph Wood	"	6	36.12

VA Hosp., Oteen, N.C.
Related Personalty
Schedule "A"

Number	Item	Unit	No. of Units	Fair Value (Total)
26 0992	Chr Lounge Arm Lthr Uphol	Each	80	$ 1102.80
26 0999	Chr Wo/A Aluminum Tubing	"	1	10.40
26 1030	Chr Livng/Rm W/A Uph Wd	"	9	231.30
26 1140	Chair Office w/o Arms Wd	"	28	53.48
26 1151	Chair Typist Rot Posture	"	4	55.53
26 1170	Chair Office w/arms Wd	"	46	284.05
26 1201	Chr Fltfrm Rocker Pad/Wd	"	2	43.00
26 1203	Chr Rock Flatfrm w/a Uph	"	1	21.90
26 1260	Chair Rotary w/Arms Wood	"	27	206.66
26 1350	Chair Typist Wood	"	22	96.58
26 1480	Chair Schoolroom W/A Wood	"	33	160.22
26 1605	Closet China Wood	"	3	44.80
26 1606	Chest Wood & Mtl 3 & 4 Drs	"	35	437.50
26 1609	Chair Easy Arm Tub Stl Fr	"	12	180.00
26 1611	Chair Easy Arm Wd Lth Uph	"	18	315.00
26 1680	Davenport Uph Wd	"	4	174.96
26 1800	Desk Off Sngl Pedstl Wood	"	13	136.50
26 1823	Dsk Off Sm Fl Sngl/Ped Wd	"	33	538.06
26 1825	Desk Off Wd Table Typ 2DW	"	13	208.13
26 1830	Desk Off Exec Flat Top Wd	"	27	749.37
26 1852	Dsk Off Fl Dbl/Pd/Face Wd	"	1	23.13
26 1872	Desk Off Secretary Comprt	"	3	63.68
26 1902	Desk Off Typewrtr Wd Army	"	4	65.42
26 1915	Desk Typ Dbl/Ped Drp/C Wd	"	6	139.08
26 2090	Dresser Wd W/O Mirror	"	1	28.18
26 2660	Settee Bamboo	"	1	15.00
26 3472	Glider Porch Metal	"	1	24.98
26 4440	Locker Steel Sgl Clothing	"	34	332.35
26 4449	Locker Stl O/G Cab 2 Door	"	1	11.83
26 4464	Locker Steel Double	"	1	8.01
26 4466	Locker Steel 3 Sections	"	36	405.00
26 4850	Mattress Dbl Innerspring	"	2	27.42
26 6768	Refrig 5cft Elec. Frigi/D	"	2	135.69
26 6780	Refrig 6 Cft Kelvinator	"	12	717.06
26 6805	Refrig 6/2 Cft Elec West/H	"	1	72.54
26 6848	Refrig 7 Cft Elec Frigi/D	"	10	635.95
26 7210	Safe Field Key Lock	"	3	75.00
26 7226	Safe Iron York 22x34x21 in	"	1	75.00
26 7274	Safe Iron Acme 25x25x30 in	"	1	73.33
26 7285	Safe Mtl Victor 72x40x36	"	1	146.03
26 7422	Seat Stl/Wd Up/R WO/L 4 DW	"	1	431.08
26 7430	Table Exam Stl W & Enamel	"	1	12.50
26 7440	Section Furn Wd 4 Drwrs	"	7	103.32
26 7460	Sect Stl 4 Drwrs	"	6	58.15
26 7480	Sectiбn Furn Stl 4 Drwr	"	1	29.32
26 7690	Settee Leathr Uph	"	22	781.77
26 7700	Settee Wood Uph	"	3	95.89
26 8002	Tbl Dine Ext 42x60 Walnut	"	6	108.45
26 8004	Tbl Dine Lino/Top 36x72	"	2	19.30
26 8228	Table Library Wood	"	3	61.50
26 8273	Table Office Wood 36x44 in	"	1	13.50
26 8282	Table Office Wood 24x36 in	"	1	13.50
26 8284	Table Office Wood 50x32 in	"	5	66.72
26 8286	Table Office Wood 60x30 in	"	2	26.85
26 8287	Table Office Wood 60x32 in	"	1	13.50
26 8289	Table Office Wood 60x36 in	"	1	13.50
26 8295	Table Office Wood 43x114 in	"	1	13.34
26 8354	Table Office Steel	"	1	14.23
26 9150	Chr Arm Lounge Wd/Mtl Pad	"	5	68.87
26 9580	Settee Uph Beige	"	4	107.30
27 0470	Rug 7 x 9 ft	"	9	181.84
27 0474	Rug 8 x 9 ft	"	2	40.69

Number	Item	Unit	No. of Units	Fair Value (total)
27 0484	Rug 9 x 10 ft	Each	1	19.30
27 0485	Rug 9 ft x 10 ft 7 in	"	1	19.30
27 0493	Rug 8 ft 6 in by 11 ft 10 in	"	1	23.77
27 0497	Rug 8 x 12 ft	"	1	12.82
27 0502	Rug 9 x 12 ft	"	9	270.58
27 0503	Rug 9 x 15 ft	"	3	109.89
27 0504	Rug 10 x 12 ft	"	1	15.93
27 0506	Rug 9 ft 6 in by 12 ft	"	1	30.07
27 0507	Rug 9 ft by 13 ft 7 in	"	1	30.06
27 0523	Rug 14 ft 9 in by 28 ft 11 in	"	1	20.35
27 2255	Rug 27 in. x 42 ft	"	1	54.98
27 2292	Rug 4 ft 7 in by 27 ft	"	1	73.50
27 2303	Rug 4 ft 7 in by 43 ft 6 in	"	1	118.12
27 2358	Rug Wl Burgundy 9 x 11 ft	"	1	44.63
27 2365	Rug Wl 11 x 14 ft	"	1	110.25
33 4010	Nozzle Fog 11/2 in	"	1	15.00
33 6000	Pipe Play Airfoam Model 1	"	1	60.00
33 7000	Shut/Off Water Hose	"	1	12.50
36 4900	Organ Elec Hammond	"	1	800.00
36 5800	Organ Portable	"	1	37.50
36 5904	Piano Complt Steinway 113	"	1	190.75
36 9450	Piano Spinet Estey	"	1	150.00
37 0450	Bars Exercise Parallel	"	1	26.00
37 4923	Mask Gas Burrell Type	"	2	34.88
37 7750	Tbl Pool/Bill 41/2 x 9 ACC	"	3	435.84
37 8910	Weights Pulley Exercise	"	1	6.44
38 4870	Moppng Outft Truck Hvy/D	"	1	69.60
40 0815	Cleaner/Tester Spark Plug	"	1	16.65
40 0850	Collector Dust Suct Type	"	1	65.10
40 1215	Drill Elec Prt Lght/Duty	"	1	12.90
40 1227	Drill El Prt 0/3/8 in S10X	"	1	40.00
40 1228	Drill Elec Portable 1/4 in	"	1	16.25
40 1232	Drill Elec Prt Hvy 3/4 in	"	1	37.45
40 1392	Drill Pres Hvy Atlas Mod 63	"	1	22.28
40 1530	Drill Elec Port 1/2 in	"	3	87.00
40 2405	Grindr El Stone Whl Mtr	"	1	20.07
40 2507	Grindr 2W B/Line 1/2 HP	"	1	18.00
40 2685	Grindr Bnch Balder 11/2 HP	"	1	20.00
40 3525	Jointer 6 in Delta	"	1	11.25
40 4370	Lathe Atlas 10 in W&ACC	"	1	30.00
40 4372	Lathe Bnch/Cab S/Cut 10 in	"	1	62.50
40 4503	Lathe 13 in 1/4 HP S Bend	"	1	289.82
40 4597	Lathe W/Wrk Crescnt 48 in	"	1	64.00
40 4601	Lathe W/Wrk Dlta Flr 12 in	"	1	63.75
40 4903	Mch Grind/Jointer/Planer	"	1	130.00
40 4908	Mch Flr/Polish El 14 in	"	2	229.50
40 4915	Mch Pol & Scrb Flr El 15 in	"	1	63.00
40 4917	Mch Flr Polishing 16 in	"	3	265.12
40 4941	Mch Fl Pol/Scr Lawlr 18 in	"	3	292.50
40 5991	Planer Crescent 24x8 5 HP	"	1	785.00
40 5993	Planer 24 x 8 Newman No 600	"	1	785.50
40 7280	Sander Disk Fl Typ Mtr Dr	"	1	117.33
40 7318	Saw Bnd 14 in El Tbl 14 x 14	"	1	67.50
40 7352	Saw Circ 10 in Tbl El Dlta	"	2	194.77
40 7365	Saw Elec Port Dewalt 5 HP	"	1	104.95
40 7392	Saw Jig wo/Motor 4 in Opng	"	1	37.50
40 7516	Shaper Wood Flr Walk/Tur	"	1	86.65
40 7630	Spray Insecticide 1 Qt	"	1	14.70
41 0306	Anvil Blacksmth 100 lb	"	1	5.28
41 0703	Brake Sheet Metal Sz 818	"	1	50.00
41 0780	Cleaner Sewer Manual 2 CBL	"	1	17.75
41 1625	Expander Tube 3 in Ideal/A	"	1	15.90

VA Hosp., Oteen, N.C.
Related Personalty
Schedule "A"

Number	Item	Unit	No. of Units	Fair Value (Total)
41 2087	Forge Blacksmith Elec.	Each	1	$ 37.50
41 2092	Mch Foldr Sht/Mtl Bench	"	1	50.00
41 2210	Mch Groovr Hnd Cap 22 Ga	"	1	41.05
41 2847	Chain Hoist 1 Ton	"	1	20.25
41 3011	Anvil Blacksmith 155 lb	"	1	12.00
41 3757	Jack Hyd Walker 10 Ton	"	1	42.80
41 3925	Kettle Asphalt 55 Gal Cap	"	1	25.30
41 4370	Kit Tool Test Service Men	Set	1	32.62
41 4670	Ladder Folding 12 Ft	Each	1	16.17
41 4904	Mch Key Make Cabnt/Tools	"	1	31.44
41 5950	Press Arbor 5 Ton Canedy/2	"	1	7.50
41 6895	Roller Mch Slip Sheet Mtl	"	1	15.00
41 7309	Shear Bench 8 in Cut Barth	"	1	30.00
41 7315	Shear Mtl Cut Beverly B2A	"	1	37.50
41 7340	Spreader Tire Pneum Type	"	1	26.25
41 7704	Thrd Set USS L/Giant N040	Set	1	9.00
41 7706	Thrd Set B/S SAE 1/4701 in	"	1	13.37
41 7709	Thrd Set B/S NF 1/4701 in	"	1	13.11
41 7847	Tongs Pipe 4/18 in w/Chain	Each	2	46.75
41 7883	Torch Set Oxy/Acetylene	"	1	18.72
41 7885	Torch Acety/Weld w/Acces	"	1	37.66
41 8378	Wise Pipe No 40 Reed	"	1	30.00
41 9118	Wrench Set Sockt 9/32/3/4	Set	1	15.00
41 9122	Wrench Set Sockt 1/2 in Dr	"	1	22.01
41 9123	Wrench Set Black Hawk	"	2	40.00
54 4728	Mch Comp/Lst Sund/S W/St	Each	1	182.50
54 5050	Mch Dup AB/Dick Mod 438F	"	1	352.95
54 7851	Typewriter Std Remington	"	1	93.15
54 7854	Typewriter Std Royal	"	7	245.00
54 7880	Typewriter Std Underwood	"	2	70.00
54 8089	Typewriter Royal 16 in	"	1	88.35
54 9500	Globe Terr Revolve W/Stnd	"	1	12.50
58 7853	Truck Fire Segrave 1942	"	1	3250.00
58 8900	Unloader Coal Under Car	"	1	155.00
62 0165	Alter Hangings Complete	Set	1	158.68
62 0840	Candelabra Brass Chapel	Each	1	28.50
62 0870	Candlestk Brass 24 in Chpl	"	2	24.00
62 0970	Cloth Alter Linen White	"	1	14.93
62 1100	Communion Set Indv Cup	Set	1	67.74
62 3002	Draperies Chapel Complete	"	10	221.40
62 7450	Sets Alter Appointmnt Brs	Each	1	51.50
64 0500	Block Meat 30x30 in	"	4	48.08
64 0850	Coffee Maker Elec 48 cup	"	1	36.50
64 1275	Dispenser Cream Mtl Cont	"	1	20.82
64 1900	Extractor Fruit Juice Ele	"	1	18.27
64 4800	Mch Chopper Buflo Type	"	1	150.00
64 4905	Mch Cube Steak/Tenderizer	"	1	103.92
64 4975	Mch Meat / Bone Cutting	"	1	150.00
64 4990	Machine Meat Grinding	"	1	250.00
64 4995	Mch Meat Slicing Globe	"	1	500.00
64 5030	Mch Veg Cutting / Slicing	"	1	257.00
64 5300	Mixer Vertical 80 x 100 Qt	"	1	500.00
64 6930	Rack Tray SS 6 Shelf 24 Tra	"	1	116.86
64 7500	Slicer Meat Elec 1/4 HP Mtr	"	1	157.44
64 7510	Stand Griddle 36x21x8 in	"	2	48.75
64 7602	Tbl Cafe Mtl Compositn TP	"	11	357.72
64 7603	Tbl Cafe Mtl Comp/Tp SStl	"	4	176.00
64 7613	Tbl Cooks Wrk 36x96 in	"	2	60.00
64 7660	Table Kitchen Mtl 96 in Lg	"	2	372.50
64 7707	Tbl Kitchn Wd 72x36 in	"	4	82.74
64 7813	Tbl Work Mtl 120x30x36	"	1	27.50
65 3100	Hotplate Elec Port 2 Unit	"	8	88.27

VA Hosp., Oteen, N.C.
Related Personalty

Schedule "A"

Number	Item	Unit	No. of Units	Fair Value (Total)
65 3150	Kiln Ceramic 14x14x14	Each	1	$ 92.50
65 7890	Toaster Cnvyr Typ Elec	"	1	100.00
65 7915	Toaster El Auto Hvy Duty	"	7	246.68
66 0863	Cab Print Imposing Hamltn	"	1	52.70
66 0865	Cabinet Press Print	"	2	10.00
66 1046	Cleaner Vac Port 3/4 HP	"	1	68.11
66 1048	Cleanr Vac Hnd Such W/Att	"	1	12.62
66 1076	Cleanr Vac Hoover W/Att	"	1	28.79
66 1078	Cleaner Vac Hamiltn/Beach	"	1	25.00
66 1100	Cleaner Vacuum El Eureka	"	5	157.35
66 1115	Compressor 2 HP on Cart	"	1	25.00
66 1156	Conveyor Food Electric	"	8	1128.00
66 1215	Convyr Whl Grav Strt 10 Ft	"	5	65.00
66 1268	Mch Coal Crsh 2 HP Grundlr	"	1	62.50
66 4610	Loom 4 Harness 32 in	"	1	24.90
66 4618	Loom 4H Foot Type 42 in	"	1	31.50
66 4879	Mch Sew Household Belt Ft	"	1	29.94
66 4968	Mch Wash Cl Auto Frigidre	"	1	132.50
66 4973	Mixer Concrete 1/2 Bag Gas	"	1	72.50
66 6200	Press Printing Small	"	1	50.23
66 6204	Press Job Print Brandt/K	"	1	250.00
69 0811	Car Railroad Push F/Morse	"	1	52.65
69 7675	Truck Book w/Top Shelf	"	1	30.00
69 7700	Truck Dish Steel 3 Tier	"	5	193.79
69 7733	Truck Ice w/Push Handle	"	1	84.42
69 7740	Truck Crushed Ice 150 Lb C	"	1	62.37
69 7743	Truck Hnd Elevate 2500 Lb	"	1	51.48
69 7760	Truck Library 3 Shlf	"	1	11.00
69 7814	Truck Tray Stl Opn 6 Shlf	"	1	26.51
69 9200	Cart Craft	"	6	129.00
70 2836	Harrow Disc 24 Disc Olivr	"	1	50.00
70 5083	Mowr In Tow 3 un Worthngtn	"	2	815.00
70 5125	Mch Lawn Mowing	"	1	247.50
70 5181	Mowr Lawn Pwr Rot Whirl/W	"	1	73.20
70 5184	Mower Power Rotary 21 in	"	2	84.36
70 5207	Mowr Lawn Powr Rot Size/B	"	1	226.50
70 5213	Mowr Lawn Pwr Rot/Rl Toro	"	1	217.95
78 0201	Ambulance 1P Cadillac	"	1	1894.65
78 0225	Angledozer 5 Ft w/Hydro/Sc	"	1	98.38
78 0707	Bus GMC 29 Passenger 1952	"	1	2447.93
78 6075	Station Wagn Chev 8P 1950	"	1	702.97
78 6086	Tractor Rub Tire Farm Typ	"	1	1066.59
78 7491	Tractor Caterpiller 1942	"	1	300.00
78 7644	Trailer Auto Utility 2 Whl	"	1	25.00
78 7649	Truck Dump Ford 11/2T 1954	"	1	992.79
78 7656	Truck Pickup Chev 1952	"	1	720.77
78 7679	Truck P/up Chev 3/4T 1950	"	1	575.55
~~78 7682~~	~~Truck St Ford 11/2 T 1952~~	~~"~~	~~1~~	~~1202.62~~
78 7683	Truck St Ford 11/2T 1952	"	1	1172.25
78 7687	Truck Stake Body Dodge	"	1	1111.21
78 7690	Truck Tractr Ind Interntl	"	1	371.56
7-6235	Stand Irrigator	"	9	45.00
5-2400	Cabinet, Dental Instrument	"	1	15.00
5-2100	Chair, Dental Operating	"	1	137.50
5-6005	Unit, Dental Operating	"	1	325.00

VA Hosp., Oteen, N.C.
Related Personalty
Schedule "A"

Number	Item	Unit	No. of Units	Fair Value (Total)

Reported without itemization:

Office furnishings and equipment	$1375.00
Quarters Furnishings	2800.00
Library Books	5910.00
Medical and Dental Supplies & Equipment	1300.00
Kitchen and Dining Room Supplies & Equipment	2400.00
Miscellaneous Tools	20[illegible].00
Linens and Blankets	1273.00
Printing Supplies	1844.00

Fixed operating equipment, installed, as reported on 4 pages of Standard Form 118C, dated September 22, 1960, under Holding Agency No. 5060-16-61:

04 0042	Bactrlgcl Sfty Hood Sta Md	Each	2	$ 200.00
04 0050	Bench Work Laboratory	"	1	200.00
04 3100	Still Water	"	1	100.00
04 3980	Tbl Wk Lab Lead 15x6 Ft	"	1	200.00
06 2450	Pass Box XRay Film	"	2	75.00
06 3250	Tank Developing XRay	"	4	693.39
06 4100	Washer Developer Bar Ray	"	2	250.00
07 0900	Cubicle Rods 2 Section	Lot	2	100.00
07 0910	Cubicle Rods 3 Section	"	2	125.00
97 1980	Hydrotherapy Tanks	Each	3	300.00
07 3140	Sterilizer Autoclave	"	1	750.00
07 3150	Sterilizer Bed Pan	"	13	2600.00
07 3160	Sterilizer Amer Ster Co.	"	3	350.00
07 3170	Sterilizer Utensil	"	67	14825.00
07 3180	Sterile Water Apparatus	"	2	150.00
11 2150	Pump Gasoline	"	1	250.00
11 2300	Pump Sump Dmsto Auto RNGO	"	1	22.32
16 1000	Fire Alarm System	"	1	250.00
16 2840	Radio System	Lot	1	500.00
17 0200	Air Cond Unit Crysler 5T	Each	2	500.00
18 2450	Recorder Sterilizer	"	1	75.00
18 3280	Scales Weighing Overhead	"	1	150.00
26 0850	Cab Built in Approx 100 Ft	Lot	2	500.00
26 0900	Cabinet Built in	Each	2	40.00
26 1000	Chapel Equip w/Acces	Lot	1	500.00
26 3010	Shelv Approx 50 Lin Ft	"	1	125.00
26 3015	Shelving Built in 100 Ft	"	1	250.00
26 3018	Shelving Built in 6 Sect	"	1	150.00
27 1950	Draperies / Rigging Thtr	"	2	750.00
30 0600	Eye Wash / Drnch Shwr Unt	Each	1	82.98
30 1945	Sink Aseptic Technique	"	3	112.50
30 1950	Sink Built in Cab Type	"	1	100.00
30 1973	Sink Kitchen SS	"	1	100.00
30 1975	Sink Laboratory	"	4	150.00
30 1995	Sink Pot Washing	"	4	250.00
30 2015	Sink Surgeons Scrub	"	1	75.00
64 0938	Box Proof 4x61/2x8 Ft	"	1	300.00
64 2009	Cooker Veg 2 Comp	"	1	550.00
64 2010	Cooker Veg Stm 3 Cmpt	"	1	375.00
64 3016	Kettle Steam 25 Gal	"	1	75.00
64 3017	Kettle Steam Alum 30 Gal	"	4	300.00
64 3020	Kettle Steam 60 Gal	"	3	375.00
64 3050	Table Steam Food Warming	"	3	950.00
64 3055	Table Steam SS	"	1	700.00
64 4205	Urn Coffee 60 Gal	"	1	250.00
64 4209	Urn Coffee 2 Unit	"	1	250.00

VA Hosp., Oteen, N.C.
Related Personalty
Schedule "A"

Number	Item	Unit	No. of Units	Fair Value (Total)
65 1700	Fryer Deep Fat	Each	1	$ 150.00
65 1875	Griddle Elec Griswold	"	4	575.00
65 1890	Griddle Electric Monarch	"	1	100.00
65 2870	Oven Baking 2 Compartment	"	2	1150.00
65 2875	Oven Baking 3 Compartment	"	2	2325.00
65 3207	Range Electric Commercial	"	13	1900.00
65 3210	Range Electric Household	"	42	2200.00
65 3800	Toaster Conveyor Savoy	"	1	50.00
65 6210	Range Electric Household	"	9	450.00
66 0450	Compressor Air West W&Tnk	"	1	150.00
66 0590	Cooler Water Sunroc	"	8	400.00
66 0600	Crusher Ice Champion	"	1	100 00
66 1140	Freezer Walk in 2 Sect	"	1	500.00
66 1900	Lift Car Hydraulic	"	1	200.00
66 2280	Mch Dsh Wsh Champion	"	3	3750.00
66 2290	Machine Dishwashing	"	1	1250.00
66 2440	Mch Glass Wshing Lab	"	1	250.00
66 2450	Mch Ice Making Carrier	"	4	2000.00
66 2500	Mch Potato Peeler Toledo	"	1	200.00
66 3125	Refrigerator Morgue 6 Unt	"	1	1250.00
66 3200	Refrig. Walk in Typ/Compr	"	5	3000.00
66 3205	Refrig Walk in 2 Compmnt	"	1	500.00
66 6600	Spotter Car 5 HP	"	1	63.33
17-0300	Air Conditioning Unit	"	1	1098.35
		Total -		$153,043.55

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SCHEDULE "B"

Building No.	Description	Building No.	Description
1	Administrative	322	Ward
2	Quarters	324	Telephone Office
3	Quarters	401	Clinic
4	Quarters	402	Ward
5	Quarters	403	Ward
6	Quarters	404	Ward
7	Quarters	405	Ward
8	Clinic	406	Ward
9	Quarters	408	Ward
10	Quarters	410	Mess Hall
11	Club	411	Ward
13	Quarters	412	Ward
14	Clinic	413	Ward
15	Quarters	414	Ward
16	Laboratory	415	Ward
17	Quarters	416	Ward
21	Quarters	417	Ward
22	Depot Storage	418	Ward
26	Storage	420	Ward
30	Sentry House	421	Ward
201	Surgery	421A	Administration
202	Clinic	422	Boiler House
203	Clinic	423	Latrine
204	Ward	424	Ward
205	Ward	501	Mess Hall
206	Ward	502	Ward
208	Ward	503	Administration
210	Ward	504	Ward
212	Ward	505	Shop
213	Ward	506	Ward
214	Ward	507	Storage
215	Ward	508	Ward
216	Ward	509	Storage
217	Ward	510	Ward
218	Ward	511	Storage
219	Ward	512	Ward
220	Chapel	513	Storage
221	Library	514	Ward
222	Boiler House	516	Ward
224	Animal House	517	Boiler House
226	Ward	518	Ward
228	Scale House	519	Cold Storage
301	F-X	520	Ward
302	Clinic	522	Ward
303	Recreation	524	Swimming Pool - Filter and Bath
304	Ward		
306	Ward	601	Supply
308	Ward	602	Fire Station
310	Ward	603	Storage
311	Ward	604	Storage
312	Ward	605	Storage
313	Ward	606	Storage
314	Ward	607	Storage
315	Ward	608	Storage
316	Ward	610	Laundry
318	Ward	612	Storage
319	Post Office	614	Guard House
320	Ward	618	Shop - Storage
321	Ward	620	Shop - Storage

Building No.	Description
622	Shop - Storage
624	Boiler House
626	Morgue
628	Garage
630	Gas Station
632	Administration
634	Shop
636	Garage
638	Storage
640	Latrine
642	Warehouse
644	Shed
646	Storage
648	Storage
650	Shop
652	Theatre
654	Deep Freeze Storage
704	Quarters
705	Quarters
706	Quarters
707	Quarters
708	Shed
709	Quarters
735	Residence
736	Residence
737	Residence
738	Residence
739	Residence
740	Residence
741	Residence
742	Residence
743	Garage
744	Garage
745	Garage
746	Garage
747	Garage
748	Garage
800	Residence
801	Residence
802	Garage
803	Incinerator
804	Valve & Meter House
None	Flag Pole - 72' High
None	Central Corridor - Brick
None	Corridor "A"
None	Corridor "B"
None	Corridor "C"
None	Corridor "D"
None	West Corridor
None	East Corridor
None	Open Corridor
None	Short-Closed Corridors
None	Connecting Corridor 704-705
None	Fence Woven Wire

APPENDIX C

LABORATORY REPORT

ANALYTICAL REPORT

December 23, 2015

Piedmont Geologic

Sample Delivery Group:	L807647
Samples Received:	12/17/2015
Project Number:	1404
Description:	NCDOA-Swannanoa
Site:	SWANNANOA, NC
Report To:	Mr. Pete Dressel 6003 Chapel Hill Road Suite 145 Raleigh, NC 27607

Entire Report Reviewed By:

Jimmy Hunt
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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LPS-57 0-6IN L807647-01 Solid

Collected by	Collected date/time	Received date/time
P Dressel	12/16/15 11:22	12/17/15 07:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG836895	1	12/19/15 10:05	12/21/15 10:50	BRJ
Metals (ICP) by Method 6010C	WG837577	1	12/22/15 10:37	12/22/15 20:27	ST
Semi Volatile Organic Compounds (GC/MS) by Method 8270D	WG837248	1	12/18/15 12:14	12/22/15 00:22	ADF
Total Solids by Method 2540 G-2011	WG837463	1	12/21/15 15:24	12/21/15 15:30	MEL

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jimmy Hunt
Technical Service Representative

Total Solids by Method 2540 G-2011

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	76.3		1	12/21/2015 15:30	WG837463

Mercury by Method 7471A

Analyte	Result (dry) ug/kg	Qualifier	RDL (dry) ug/kg	Dilution	Analysis date / time	Batch
Mercury	32.3		26.2	1	12/21/2015 10:50	WG836895

Metals (ICP) by Method 6010C

Analyte	Result (dry) ug/kg	Qualifier	RDL (dry) ug/kg	Dilution	Analysis date / time	Batch
Antimony	ND		2620	1	12/22/2015 20:27	WG837577
Arsenic	ND		2620	1	12/22/2015 20:27	WG837577
Beryllium	368		262	1	12/22/2015 20:27	WG837577
Cadmium	ND		655	1	12/22/2015 20:27	WG837577
Chromium	8390		1310	1	12/22/2015 20:27	WG837577
Copper	28600		2620	1	12/22/2015 20:27	WG837577
Lead	44300	B	655	1	12/22/2015 20:27	WG837577
Manganese	857000		1310	1	12/22/2015 20:27	WG837577
Nickel	5990		2620	1	12/22/2015 20:27	WG837577
Selenium	ND		2620	1	12/22/2015 20:27	WG837577
Silver	ND		1310	1	12/22/2015 20:27	WG837577
Thallium	ND		2620	1	12/22/2015 20:27	WG837577
Zinc	18500		6550	1	12/22/2015 20:27	WG837577

Semi Volatile Organic Compounds (GC/MS) by Method 8270D

Analyte	Result (dry) ug/kg	Qualifier	RDL (dry) ug/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		43.2	1	12/22/2015 00:22	WG837248
Acenaphthylene	ND		43.2	1	12/22/2015 00:22	WG837248
Anthracene	ND		43.2	1	12/22/2015 00:22	WG837248
Benzidine	ND		436	1	12/22/2015 00:22	WG837248
Benzo(a)anthracene	ND		43.2	1	12/22/2015 00:22	WG837248
Benzo(b)fluoranthene	ND		43.2	1	12/22/2015 00:22	WG837248
Benzo(k)fluoranthene	ND		43.2	1	12/22/2015 00:22	WG837248
Benzo(g,h,i)perylene	ND		43.2	1	12/22/2015 00:22	WG837248
Benzo(a)pyrene	ND		43.2	1	12/22/2015 00:22	WG837248
Bis(2-chlorethoxy)methane	ND		436	1	12/22/2015 00:22	WG837248
Bis(2-chloroethyl)ether	ND		436	1	12/22/2015 00:22	WG837248
Bis(2-chloroisopropyl)ether	ND		436	1	12/22/2015 00:22	WG837248
4-Bromophenyl-phenylether	ND		436	1	12/22/2015 00:22	WG837248
2-Chloronaphthalene	ND		43.2	1	12/22/2015 00:22	WG837248
4-Chlorophenyl-phenylether	ND		436	1	12/22/2015 00:22	WG837248
Chrysene	ND		43.2	1	12/22/2015 00:22	WG837248
Dibenz(a,h)anthracene	ND		43.2	1	12/22/2015 00:22	WG837248
3,3-Dichlorobenzidine	ND	J3 J6	436	1	12/22/2015 00:22	WG837248
2,4-Dinitrotoluene	ND		436	1	12/22/2015 00:22	WG837248
2,6-Dinitrotoluene	ND		436	1	12/22/2015 00:22	WG837248
Fluoranthene	ND		43.2	1	12/22/2015 00:22	WG837248
Fluorene	ND		43.2	1	12/22/2015 00:22	WG837248
Hexachlorobenzene	ND		436	1	12/22/2015 00:22	WG837248
Hexachloro-1,3-butadiene	ND		436	1	12/22/2015 00:22	WG837248
Hexachlorocyclopentadiene	ND		436	1	12/22/2015 00:22	WG837248
Hexachloroethane	ND		436	1	12/22/2015 00:22	WG837248
Indeno(1,2,3-cd)pyrene	ND		43.2	1	12/22/2015 00:22	WG837248

Semi Volatile Organic Compounds (GC/MS) by Method 8270D

Analyte	Result (dry) ug/kg	Qualifier	RDL (dry) ug/kg	Dilution	Analysis date / time	Batch
Isophorone	ND		436	1	12/22/2015 00:22	WG837248
2-Methylnaphthalene	ND		43.2	1	12/22/2015 00:22	WG837248
Naphthalene	ND		43.2	1	12/22/2015 00:22	WG837248
Nitrobenzene	ND		436	1	12/22/2015 00:22	WG837248
n-Nitrosodimethylamine	ND		436	1	12/22/2015 00:22	WG837248
n-Nitrosodiphenylamine	ND		436	1	12/22/2015 00:22	WG837248
n-Nitrosodi-n-propylamine	ND		436	1	12/22/2015 00:22	WG837248
Phenanthrene	ND		43.2	1	12/22/2015 00:22	WG837248
Benzylbutyl phthalate	ND		436	1	12/22/2015 00:22	WG837248
Bis(2-ethylhexyl)phthalate	ND		436	1	12/22/2015 00:22	WG837248
Di-n-butyl phthalate	ND		436	1	12/22/2015 00:22	WG837248
Diethyl phthalate	ND		436	1	12/22/2015 00:22	WG837248
Dimethyl phthalate	ND		436	1	12/22/2015 00:22	WG837248
Di-n-octyl phthalate	ND		436	1	12/22/2015 00:22	WG837248
Pyrene	ND		43.2	1	12/22/2015 00:22	WG837248
1,2,4-Trichlorobenzene	ND		436	1	12/22/2015 00:22	WG837248
4-Chloro-3-methylphenol	ND		436	1	12/22/2015 00:22	WG837248
2-Chlorophenol	ND		436	1	12/22/2015 00:22	WG837248
2,4-Dichlorophenol	ND		436	1	12/22/2015 00:22	WG837248
2,4-Dimethylphenol	ND		436	1	12/22/2015 00:22	WG837248
4,6-Dinitro-2-methylphenol	ND		436	1	12/22/2015 00:22	WG837248
2,4-Dinitrophenol	ND		436	1	12/22/2015 00:22	WG837248
2-Nitrophenol	ND		436	1	12/22/2015 00:22	WG837248
4-Nitrophenol	ND		436	1	12/22/2015 00:22	WG837248
Pentachlorophenol	ND	J4 J5	436	1	12/22/2015 00:22	WG837248
Phenol	ND		436	1	12/22/2015 00:22	WG837248
2,4,6-Trichlorophenol	ND		436	1	12/22/2015 00:22	WG837248
(S) 2-Fluorophenol	*74.7*		*21.1-116*		*12/22/2015 00:22*	WG837248
(S) Phenol-d5	*74.7*		*26.3-121*		*12/22/2015 00:22*	WG837248
(S) Nitrobenzene-d5	*82.6*		*21.9-129*		*12/22/2015 00:22*	WG837248
(S) 2-Fluorobiphenyl	*81.6*		*34.9-129*		*12/22/2015 00:22*	WG837248
(S) 2,4,6-Tribromophenol	*96.5*		*21.6-142*		*12/22/2015 00:22*	WG837248
(S) p-Terphenyl-d14	*65.1*		*21.5-128*		*12/22/2015 00:22*	WG837248

QUALITY CONTROL SUMMARY

L807647-01

Method Blank (MB)

(MB) 12/21/15 15:30

Analyte	MB Result	MB Qualifier	MB RDL
	%		%
Total Solids	0.000700		

L807500-01 Original Sample (OS) • Duplicate (DUP)

(OS) 12/21/15 15:30 • (DUP) 12/21/15 15:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	92.7	93.2	1	0.513		5

Laboratory Control Sample (LCS)

(LCS) 12/21/15 15:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	49.9	99.9	85.0-115	

Method Blank (MB)

(MB) 12/21/15 10:26

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Mercury	ND		0.0200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 12/21/15 10:29 • (LCSD) 12/21/15 10:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury	0.300	0.255	0.261	85	87	80-120			3	20

L807614-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/21/15 10:35 • (MS) 12/21/15 10:38 • (MSD) 12/21/15 10:44

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.300	0.00765	0.273	0.262	88	85	1	75-125			4	20

Method Blank (MB)

(MB) 12/22/15 21:53

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Antimony	ND		2.00
Arsenic	ND		2.00
Beryllium	ND		0.200
Cadmium	ND		0.500
Chromium	ND		1.00
Copper	ND		2.00
Lead	0.671		0.500
Manganese	ND		1.00
Nickel	ND		2.00
Selenium	ND		2.00
Silver	ND		1.00
Thallium	ND		2.00
Zinc	ND		5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 12/22/15 21:56 • (LCSD) 12/22/15 21:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Antimony	100	101	105	101	105	80-120			4	20
Arsenic	100	97.0	101	97	101	80-120			4	20
Beryllium	100	99.1	103	99	103	80-120			3	20
Cadmium	100	97.0	101	97	101	80-120			4	20
Chromium	100	97.8	101	98	101	80-120			3	20
Copper	100	99.2	103	99	103	80-120			3	20
Lead	100	101	106	101	106	80-120			5	20
Manganese	100	97.7	101	98	101	80-120			3	20
Nickel	100	97.7	102	98	102	80-120			4	20
Selenium	100	101	106	101	106	80-120			5	20
Silver	100	96.0	99.1	96	99	80-120			3	20
Thallium	100	99.4	104	99	104	80-120			4	20
Zinc	100	98.1	102	98	102	80-120			4	20

L807608-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/22/15 20:05 • (MS) 12/22/15 20:14 • (MSD) 12/22/15 20:18

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	100	ND	107	99.5	107	99	1	75-125			7	20
Arsenic	100	2.24	110	105	108	103	1	75-125			4	20
Beryllium	100	0.0406	101	96.6	101	97	1	75-125			4	20
Cadmium	100	0.151	108	103	108	103	1	75-125			5	20
Chromium	100	9.29	102	99.4	93	90	1	75-125			3	20
Copper	100	10.5	115	114	104	103	1	75-125			1	20
Lead	100	11.9	116	112	104	100	1	75-125			4	20
Manganese	100	353	362	516	8	163	1	75-125	J6	J3 J5	35	20
Nickel	100	11.9	112	109	100	97	1	75-125			2	20
Selenium	100	1.21	113	108	112	107	1	75-125			5	20
Silver	100	ND	109	104	109	104	1	75-125			4	20
Thallium	100	ND	96.5	93.1	97	93	1	75-125			4	20
Zinc	100	55.7	132	133	76	78	1	75-125			1	20

Method Blank (MB)

(MB) 12/21/15 15:48

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Acenaphthene	ND		0.0330
Acenaphthylene	ND		0.0330
Anthracene	ND		0.0330
Benzidine	ND		0.333
Benzo(a)anthracene	ND		0.0330
Benzo(b)fluoranthene	ND		0.0330
Benzo(k)fluoranthene	ND		0.0330
Benzo(g,h,i)perylene	ND		0.0330
Benzo(a)pyrene	ND		0.0330
Bis(2-chlorethoxy)methane	ND		0.333
Bis(2-chloroethyl)ether	ND		0.333
Bis(2-chloroisopropyl)ether	ND		0.333
4-Bromophenyl-phenylether	ND		0.333
2-Chloronaphthalene	ND		0.0330
4-Chlorophenyl-phenylether	ND		0.333
Chrysene	ND		0.0330
Dibenz(a,h)anthracene	ND		0.0330
3,3-Dichlorobenzidine	ND		0.333
2,4-Dinitrotoluene	ND		0.333
2,6-Dinitrotoluene	ND		0.333
Fluoranthene	ND		0.0330
Fluorene	ND		0.0330
Hexachlorobenzene	ND		0.333
Hexachloro-1,3-butadiene	ND		0.333
Hexachlorocyclopentadiene	ND		0.333
Hexachloroethane	ND		0.333
Indeno(1,2,3-cd)pyrene	ND		0.0330
Isophorone	ND		0.333
2-Methylnaphthalene	ND		0.0330
Naphthalene	ND		0.0330
Nitrobenzene	ND		0.333
n-Nitrosodimethylamine	ND		0.333
n-Nitrosodiphenylamine	ND		0.333
n-Nitrosodi-n-propylamine	ND		0.333
Phenanthrene	ND		0.0330
Benzylbutyl phthalate	ND		0.333

Method Blank (MB)

(MB) 12/21/15 15:48

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Bis(2-ethylhexyl)phthalate	ND		0.333
Di-n-butyl phthalate	ND		0.333
Diethyl phthalate	ND		0.333
Dimethyl phthalate	ND		0.333
Di-n-octyl phthalate	ND		0.333
Pyrene	ND		0.0330
1,2,4-Trichlorobenzene	ND		0.333
4-Chloro-3-methylphenol	ND		0.333
2-Chlorophenol	ND		0.333
2,4-Dichlorophenol	ND		0.333
2,4-Dimethylphenol	ND		0.333
4,6-Dinitro-2-methylphenol	ND		0.333
2,4-Dinitrophenol	ND		0.333
2-Nitrophenol	ND		0.333
4-Nitrophenol	ND		0.333
Pentachlorophenol	ND		0.333
Phenol	ND		0.333
2,4,6-Trichlorophenol	ND		0.333
(S) Nitrobenzene-d5	*87.2*		*21.9-129*
(S) 2-Fluorobiphenyl	*90.8*		*34.9-129*
(S) p-Terphenyl-d14	*103*		*21.5-128*
(S) Phenol-d5	*86.2*		*26.3-121*
(S) 2-Fluorophenol	*83.4*		*21.1-116*
(S) 2,4,6-Tribromophenol	*96.4*		*21.6-142*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 12/21/15 15:02 • (LCSD) 12/21/15 15:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.667	0.631	0.563	94.6	84.4	48.9-107			11.4	20
Acenaphthylene	0.667	0.656	0.579	98.3	86.8	49.2-111			12.4	20
Anthracene	0.667	0.652	0.588	97.7	88.1	52.0-112			10.3	20
Benzidine	0.667	0.0414	0.0174	6.21	2.61	0.000-48.0		J3	81.8	40
Benzo(a)anthracene	0.667	0.642	0.569	96.2	85.4	52.3-106			12.0	20
Benzo(b)fluoranthene	0.667	0.627	0.568	94.1	85.1	51.3-106			10.0	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 12/21/15 15:02 • (LCSD) 12/21/15 15:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzo(k)fluoranthene	0.667	0.673	0.560	101	84.0	52.9-107			18.4	20
Benzo(g,h,i)perylene	0.667	0.670	0.584	101	87.6	45.8-108			13.8	20
Benzo(a)pyrene	0.667	0.650	0.568	97.5	85.1	51.9-106			13.6	20
Bis(2-chlorethoxy)methane	0.667	0.583	0.514	87.4	77.0	44.9-108			12.7	20
Bis(2-chloroethyl)ether	0.667	0.559	0.490	83.8	73.5	32.5-112			13.1	26
Bis(2-chloroisopropyl)ether	0.667	0.574	0.506	86.1	75.8	40.4-99.0			12.7	20.7
4-Bromophenyl-phenylether	0.667	0.661	0.577	99.0	86.5	51.4-110			13.5	20
2-Chloronaphthalene	0.667	0.636	0.563	95.4	84.4	47.1-105			12.2	20
4-Chlorophenyl-phenylether	0.667	0.604	0.538	90.6	80.6	48.1-108			11.6	20
Chrysene	0.667	0.638	0.562	95.7	84.3	54.4-110			12.6	20
Dibenz(a,h)anthracene	0.667	0.663	0.578	99.3	86.7	45.7-111			13.6	20
3,3-Dichlorobenzidine	0.667	0.510	0.424	76.5	63.6	21.0-101			18.4	22
2,4-Dinitrotoluene	0.667	0.688	0.610	103	91.5	53.0-112			12.1	20
2,6-Dinitrotoluene	0.667	0.676	0.606	101	90.9	51.6-110			10.9	20
Fluoranthene	0.667	0.660	0.587	98.9	88.1	53.7-110			11.6	20
Fluorene	0.667	0.625	0.556	93.7	83.3	51.1-109			11.8	20
Hexachlorobenzene	0.667	0.654	0.577	98.0	86.6	43.2-104			12.4	20.1
Hexachloro-1,3-butadiene	0.667	0.543	0.466	81.3	69.8	41.5-112			15.2	20
Hexachlorocyclopentadiene	0.667	0.385	0.337	57.7	50.6	13.5-123			13.1	20.7
Hexachloroethane	0.667	0.544	0.479	81.6	71.8	36.2-103			12.8	22.7
Indeno(1,2,3-cd)pyrene	0.667	0.661	0.583	99.1	87.5	47.5-109			12.5	20
Isophorone	0.667	0.646	0.568	96.9	85.1	28.8-104			12.9	20
2-Methylnaphthalene	0.667	0.560	0.497	84.0	74.5	48.0-101			12.0	20
Naphthalene	0.667	0.565	0.488	84.8	73.2	43.4-103			14.7	20
Nitrobenzene	0.667	0.617	0.538	92.5	80.6	40.7-109			13.8	21
n-Nitrosodimethylamine	0.667	0.545	0.464	81.7	69.6	18.1-122			16.0	23.5
n-Nitrosodiphenylamine	0.667	0.636	0.566	95.4	84.9	48.8-107			11.6	20
n-Nitrosodi-n-propylamine	0.667	0.597	0.533	89.5	80.0	43.3-109			11.3	20
Phenanthrene	0.667	0.640	0.568	95.9	85.1	51.6-107			11.9	20
Benzylbutyl phthalate	0.667	0.677	0.602	102	90.2	47.5-115			11.8	20
Bis(2-ethylhexyl)phthalate	0.667	0.688	0.606	103	90.9	48.1-116			12.6	20.5
Di-n-butyl phthalate	0.667	0.686	0.613	103	92.0	49.7-113			11.1	20
Diethyl phthalate	0.667	0.648	0.578	97.2	86.6	52.0-112			11.5	20
Dimethyl phthalate	0.667	0.646	0.578	96.9	86.7	51.4-108			11.1	20
Di-n-octyl phthalate	0.667	0.683	0.612	102	91.8	49.6-112			10.9	22
Pyrene	0.667	0.638	0.553	95.7	82.9	47.1-108			14.4	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 12/21/15 15:02 • (LCSD) 12/21/15 15:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,2,4-Trichlorobenzene	0.667	0.544	0.475	81.6	71.2	39.8-100			13.6	20
4-Chloro-3-methylphenol	0.667	0.655	0.588	98.3	88.1	51.1-113			10.9	20
2-Chlorophenol	0.667	0.549	0.483	82.3	72.4	40.8-103			12.8	20
2,4-Dichlorophenol	0.667	0.614	0.538	92.1	80.7	46.2-109			13.1	20
2,4-Dimethylphenol	0.667	0.547	0.523	82.0	78.3	42.2-110			4.53	20
4,6-Dinitro-2-methylphenol	0.667	0.706	0.667	106	100	23.1-119			5.62	23.7
2,4-Dinitrophenol	0.667	0.557	0.511	83.6	76.6	10.0-105			8.74	36.5
2-Nitrophenol	0.667	0.673	0.594	101	89.0	44.2-113			12.6	20.9
4-Nitrophenol	0.667	0.705	0.629	106	94.4	34.8-109			11.3	20
Pentachlorophenol	0.667	0.840	0.768	126	115	16.2-102	J4	J4	8.87	22.9
Phenol	0.667	0.588	0.512	88.1	76.8	41.5-106			13.7	20
2,4,6-Trichlorophenol	0.667	0.668	0.592	100	88.7	44.4-108			12.1	20
(S) Nitrobenzene-d5				*86.3*	*74.0*	*21.9-129*				
(S) 2-Fluorobiphenyl				*90.6*	*79.0*	*34.9-129*				
(S) p-Terphenyl-d14				*99.0*	*84.0*	*21.5-128*				
(S) Phenol-d5				*86.9*	*73.4*	*26.3-121*				
(S) 2-Fluorophenol				*84.1*	*72.3*	*21.1-116*				
(S) 2,4,6-Tribromophenol				*105*	*91.3*	*21.6-142*				

L807647-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/22/15 00:22 • (MS) 12/22/15 00:45 • (MSD) 12/22/15 01:08

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.667	ND	0.587	0.577	87.9	86.5	1	32.2-134			1.70	27.3
Acenaphthylene	0.667	ND	0.585	0.571	87.8	85.7	1	38.7-129			2.43	25.9
Anthracene	0.667	ND	0.586	0.573	87.9	85.9	1	32.3-137			2.23	28.4
Benzidine	0.667	ND	0.000	0.000	0.000	0.000	1	0.000-49.9			0.000	40
Benzo(a)anthracene	0.667	ND	0.506	0.520	75.8	78.0	1	33.3-124			2.77	29
Benzo(b)fluoranthene	0.667	ND	0.571	0.607	85.6	91.0	1	23.3-133			6.05	30.3
Benzo(k)fluoranthene	0.667	ND	0.598	0.644	89.6	96.6	1	31.0-129			7.43	26.7
Benzo(g,h,i)perylene	0.667	ND	0.195	0.206	29.3	30.9	1	10.0-127			5.52	31.9
Benzo(a)pyrene	0.667	ND	0.497	0.527	74.6	79.0	1	28.2-128			5.73	28.4
Bis(2-chlorethoxy)methane	0.667	ND	0.558	0.534	83.7	80.0	1	35.0-132			4.50	26.1
Bis(2-chloroethyl)ether	0.667	ND	0.550	0.525	82.4	78.8	1	28.8-128			4.55	33.6
Bis(2-chloroisopropyl)ether	0.667	ND	0.546	0.530	81.8	79.4	1	31.8-118			2.98	31.7

L807647-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/22/15 00:22 • (MS) 12/22/15 00:45 • (MSD) 12/22/15 01:08

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
4-Bromophenyl-phenylether	0.667	ND	0.540	0.537	81.0	80.6	1	39.0-130			0.550	26
2-Chloronaphthalene	0.667	ND	0.576	0.566	86.4	84.9	1	37.5-123			1.73	26.5
4-Chlorophenyl-phenylether	0.667	ND	0.537	0.544	80.4	81.5	1	37.9-123			1.32	25.9
Chrysene	0.667	ND	0.505	0.507	75.7	76.0	1	36.3-129			0.430	28
Dibenz(a,h)anthracene	0.667	ND	0.245	0.258	36.8	38.7	1	10.5-128			5.13	29.5
3,3-Dichlorobenzidine	0.667	ND	0.00687	0.0160	1.03	2.40	1	10.0-129	J6	J3 J6	79.8	40
2,4-Dinitrotoluene	0.667	ND	0.634	0.628	95.0	94.1	1	27.8-147			0.880	29.7
2,6-Dinitrotoluene	0.667	ND	0.614	0.586	92.0	87.8	1	36.5-137			4.64	29.7
Fluoranthene	0.667	ND	0.629	0.625	94.3	93.7	1	27.9-138			0.580	26.9
Fluorene	0.667	ND	0.580	0.570	87.0	85.5	1	34.0-133			1.80	27.1
Hexachlorobenzene	0.667	ND	0.529	0.532	79.3	79.8	1	34.4-116			0.610	25.4
Hexachloro-1,3-butadiene	0.667	ND	0.494	0.492	74.0	73.7	1	36.5-125			0.420	29.7
Hexachlorocyclopentadiene	0.667	ND	0.0814	0.0742	12.2	11.1	1	10.0-124			9.25	37.5
Hexachloroethane	0.667	ND	0.435	0.399	65.2	59.8	1	11.3-143			8.64	31.9
Indeno(1,2,3-cd)pyrene	0.667	ND	0.239	0.250	35.8	37.6	1	10.0-128			4.85	31.5
Isophorone	0.667	ND	0.615	0.577	92.2	86.5	1	25.7-116			6.36	27.7
2-Methylnaphthalene	0.667	0.00616	0.530	0.510	78.5	75.6	1	28.7-128			3.71	30.7
Naphthalene	0.667	0.00478	0.554	0.530	82.3	78.7	1	36.4-121			4.39	27.2
Nitrobenzene	0.667	ND	0.613	0.588	91.9	88.1	1	30.9-134			4.22	27.8
n-Nitrosodimethylamine	0.667	ND	0.515	0.496	77.1	74.4	1	19.2-127			3.59	32
n-Nitrosodiphenylamine	0.667	ND	0.492	0.467	73.7	70.0	1	26.8-133			5.14	25.9
n-Nitrosodi-n-propylamine	0.667	ND	0.556	0.533	83.4	79.9	1	33.0-134			4.25	28.2
Phenanthrene	0.667	ND	0.572	0.569	85.8	85.3	1	30.8-137			0.600	26.5
Benzylbutyl phthalate	0.667	ND	0.520	0.545	78.0	81.7	1	33.4-128			4.63	28.5
Bis(2-ethylhexyl)phthalate	0.667	0.00808	0.512	0.533	75.6	78.7	1	21.8-141			3.98	35.2
Di-n-butyl phthalate	0.667	0.00876	0.557	0.571	82.1	84.2	1	32.2-133			2.47	25.9
Diethyl phthalate	0.667	ND	0.633	0.613	94.9	91.9	1	39.4-136			3.22	25.5
Dimethyl phthalate	0.667	ND	0.601	0.584	90.1	87.6	1	35.8-137			2.88	25.4
Di-n-octyl phthalate	0.667	ND	0.463	0.503	69.4	75.4	1	28.5-128			8.22	32.5
Pyrene	0.667	ND	0.514	0.522	77.0	78.3	1	24.1-130			1.72	29.9
1,2,4-Trichlorobenzene	0.667	ND	0.526	0.499	78.8	74.9	1	36.5-114			5.14	28.4
4-Chloro-3-methylphenol	0.667	ND	0.612	0.576	91.8	86.3	1	27.0-154			6.09	26.6
2-Chlorophenol	0.667	ND	0.533	0.511	79.9	76.6	1	33.2-121			4.23	29.3
2,4-Dichlorophenol	0.667	ND	0.582	0.555	87.2	83.2	1	34.8-134			4.78	27.3
2,4-Dimethylphenol	0.667	ND	0.460	0.400	68.9	60.0	1	12.3-149			13.8	32.3
4,6-Dinitro-2-methylphenol	0.667	ND	0.405	0.395	60.7	59.2	1	10.0-144			2.56	32.7

L807647-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/22/15 00:22 • (MS) 12/22/15 00:45 • (MSD) 12/22/15 01:08

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-Dinitrophenol	0.667	ND	0.361	0.357	54.1	53.5	1	10.0-121			1.06	39.4
2-Nitrophenol	0.667	ND	0.656	0.631	98.3	94.5	1	29.5-144			3.88	29.9
4-Nitrophenol	0.667	ND	0.733	0.710	110	106	1	20.0-133			3.20	30.2
Pentachlorophenol	0.667	ND	0.956	0.918	143	138	1	10.0-139	J5		4.10	28.3
Phenol	0.667	ND	0.526	0.495	78.9	74.2	1	25.1-130			6.12	29.6
2,4,6-Trichlorophenol	0.667	ND	0.636	0.606	95.3	90.9	1	33.8-133			4.71	28.1
(S) Nitrobenzene-d5					*86.5*	*85.8*		*21.9-129*				
(S) 2-Fluorobiphenyl					*81.5*	*79.8*		*34.9-129*				
(S) p-Terphenyl-d14					*68.8*	*74.0*		*21.5-128*				
(S) Phenol-d5					*75.4*	*73.0*		*26.3-121*				
(S) 2-Fluorophenol					*76.4*	*74.8*		*21.1-116*				
(S) 2,4,6-Tribromophenol					*101*	*97.2*		*21.6-142*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
B	The same analyte is found in the associated blank.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

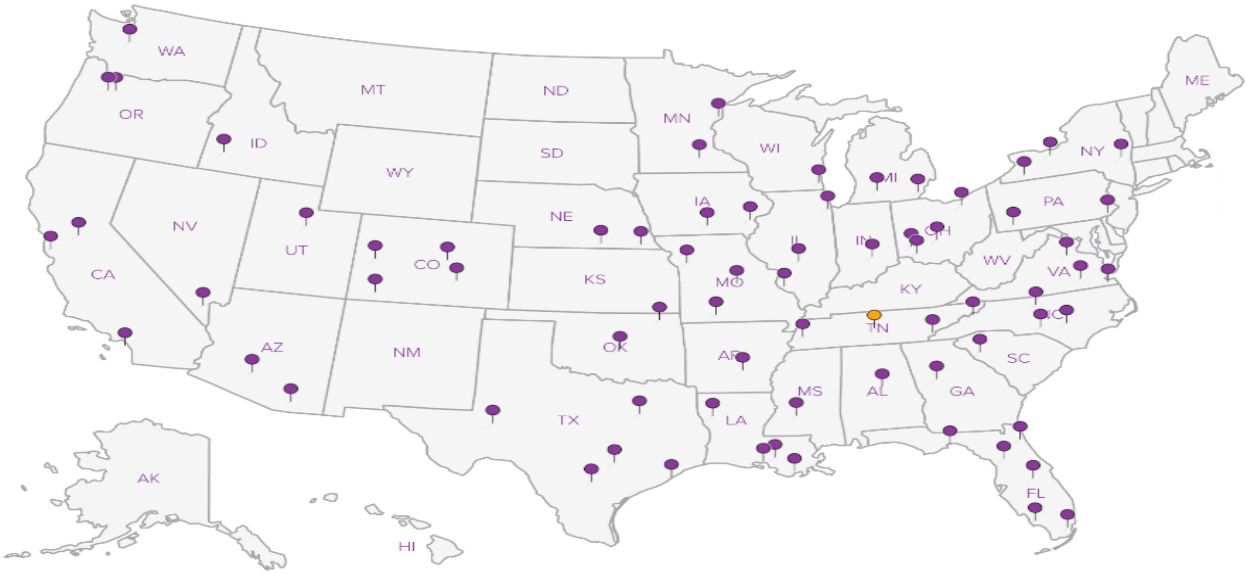
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
Piedmont Geologic
6003-145 Chapel Hill Road
Raleigh, NC 27607

Billing Information:
PACE QUOTE:
PIEGEO 0617HS

Report to: **Pete Dressel**

Email To: **pjdressel@piedmontgeologic.com**

Project Description: **NCDOA Swannanoa**

City/State Collected: SWANNANOA, NC

Phone: **(919) 854-9700**
Fax:

Client Project # 1404

Lab Project #

Collected by (print): P. DRESSEL

Site/Facility ID #

P.O. #

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No ___Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	HSL Metals x 6000/7000: 2 oz clear jar	SV8270: 4 oz clear jar									Rem./Contaminant	Sample # (lab only)
LPS-57 (0-6")	GRAB	SOIL	0-6"	12-16-15	1122	2	X	X										-01
LPS-57 (6-12")	GRAB	SOIL	6-12"	12-16-15	1138	2	X	X		HOLD ANALYSIS PENDING NOTIFICATION								

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks: ANALYZE 0-6" SAMPLE. HOLD 6-12" SAMPLE PENDING NOTIFICATION

pH _____ Temp _____
Flow _____ Other _____

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
[signature]	12/16/15	17:20	[signature]
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
[signature]	12/16/15	18:00	[signature]

Samples returned via: ☐ UPS SWA ☐ FedEx ☐ Courier ☐ Client

Temp: 0 2.1°C °C Bottles Received: 4=2oz 4=4oz

Date: 12/17/15 Time: 0730

Chain of Custody Page ___ of ___

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L807647
G212

Acctnum: **PIEGEO**
Template:
Prelogin:
TSR:
Cooler:
Shipped Via:

Hold # **12-053**

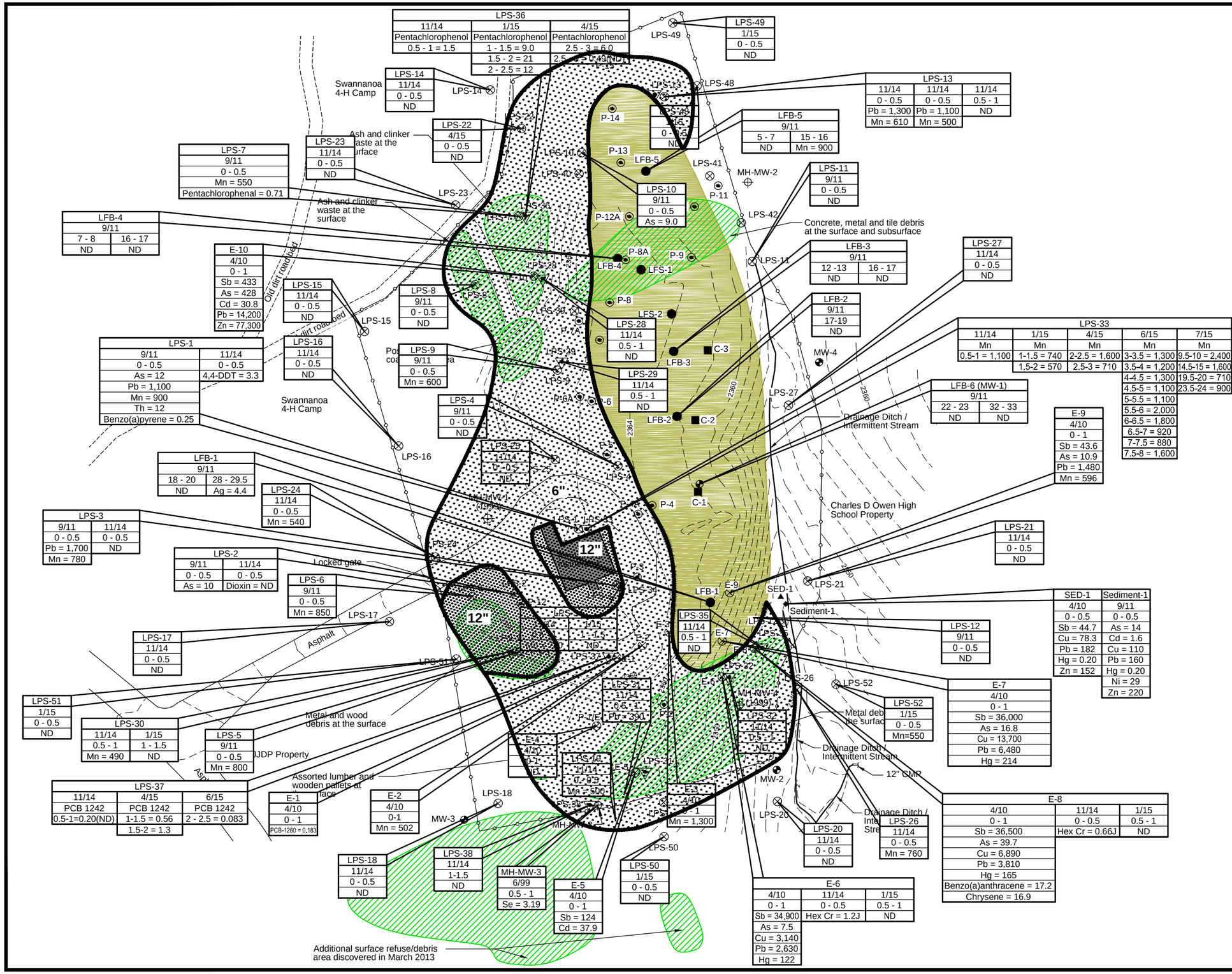
Condition: (lab use only) ok Toll

COC Seal Intact: ✓Y ___N ___NA

pH Checked: NCF:

APPENDIX D

MAPS OF CONTAMINANT DISTRIBUTIONS IN SITE SOILS



LEGEND:

LFB-1	Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10	Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1	Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1	Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
	Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2	Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
MW-1	Monitoring Well (Piedmont Geologic, Sept. 2011)
MH-MW-1	Monitoring Well - Decommissioned (USACE, June 1999)
	Approximate Extent Of Landfill
	Area of contaminated concentration above Residential Health-Based PSRG and background concentrations (metals)
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

LPS-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.

ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)

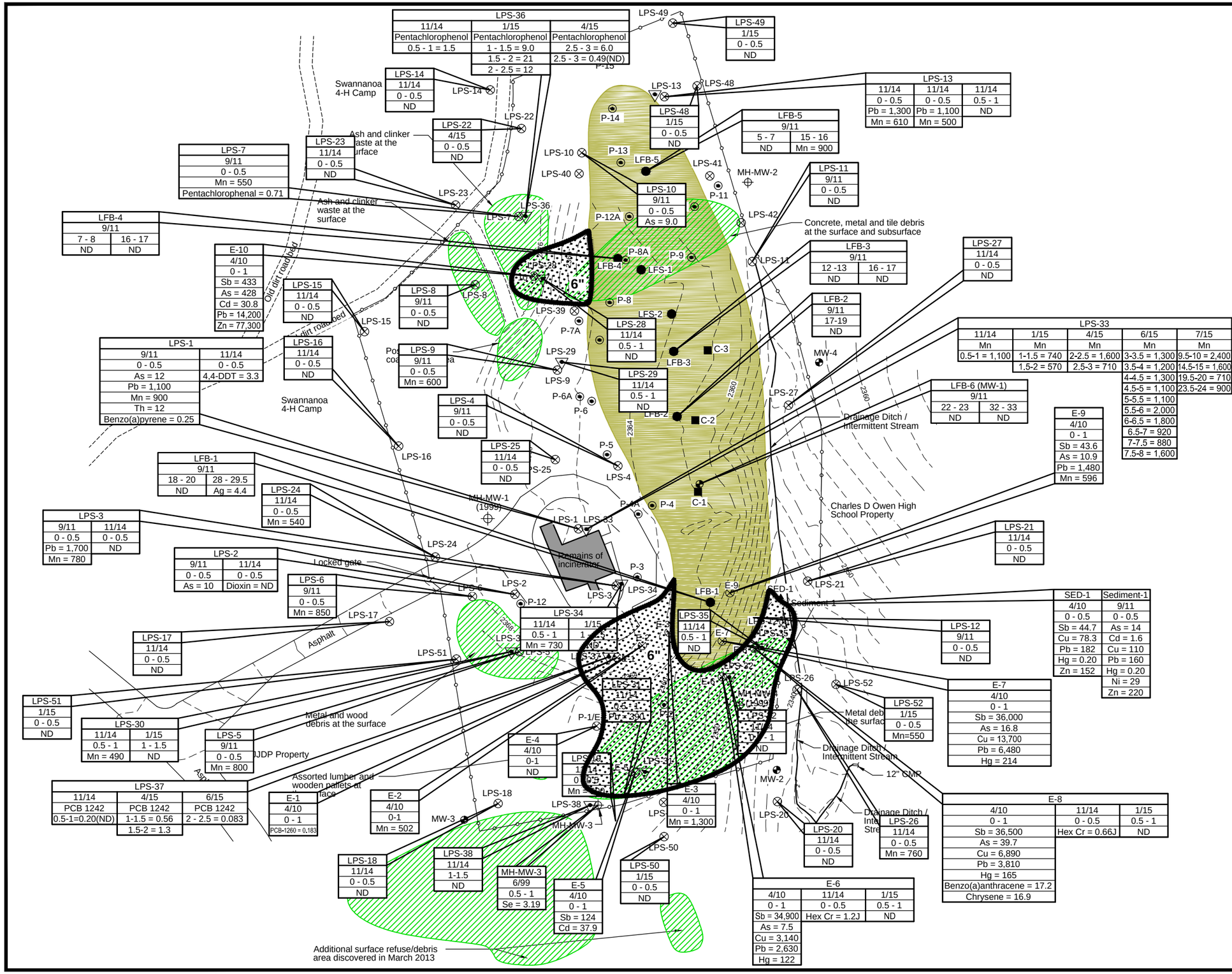
J = Estimated concentration above MDL but below RL

Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009

Scale (ft.)
0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:
Drawing Date: 6/30/15
ACAD File: Fig G-1.dwg
Designed: PD
Distribution of Manganese in Soil
Detailed: PD
Client: Swannanoa - DJJDP Property
Project No.: 1404
Checked: PD
Location: Swannanoa, North Carolina
Figure: G-1



LEGEND:

LFB-1	Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10	Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1	Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1	Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
	Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2	Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
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	Approximate Extent Of Landfill
	Area of contaminated concentration above Residential Health-Based PSRG and background concentrations (metals)
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

LPS-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.

ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)

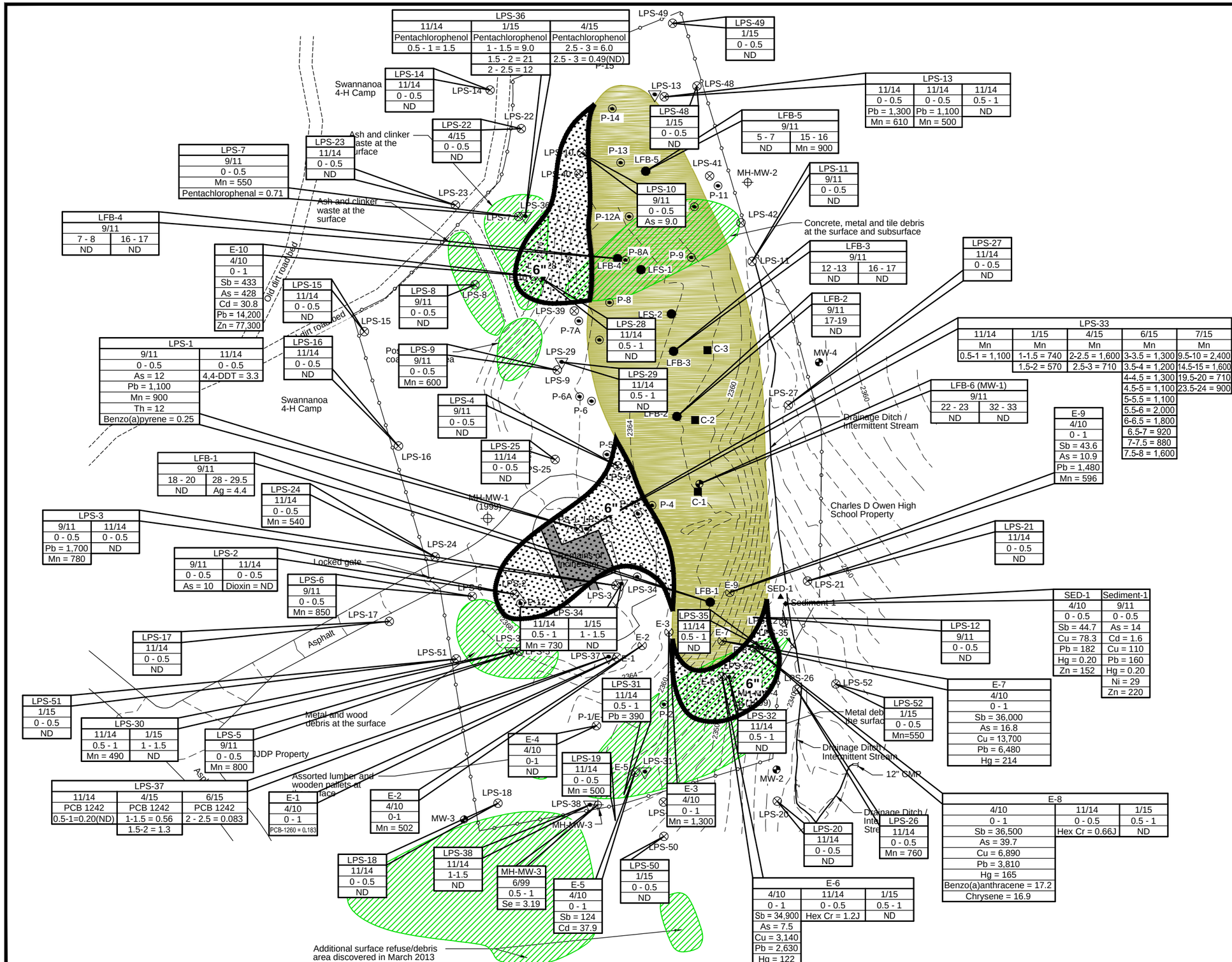
J = Estimated concentration above MDL but below RL

Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009

Scale (ft.)
0 60 120

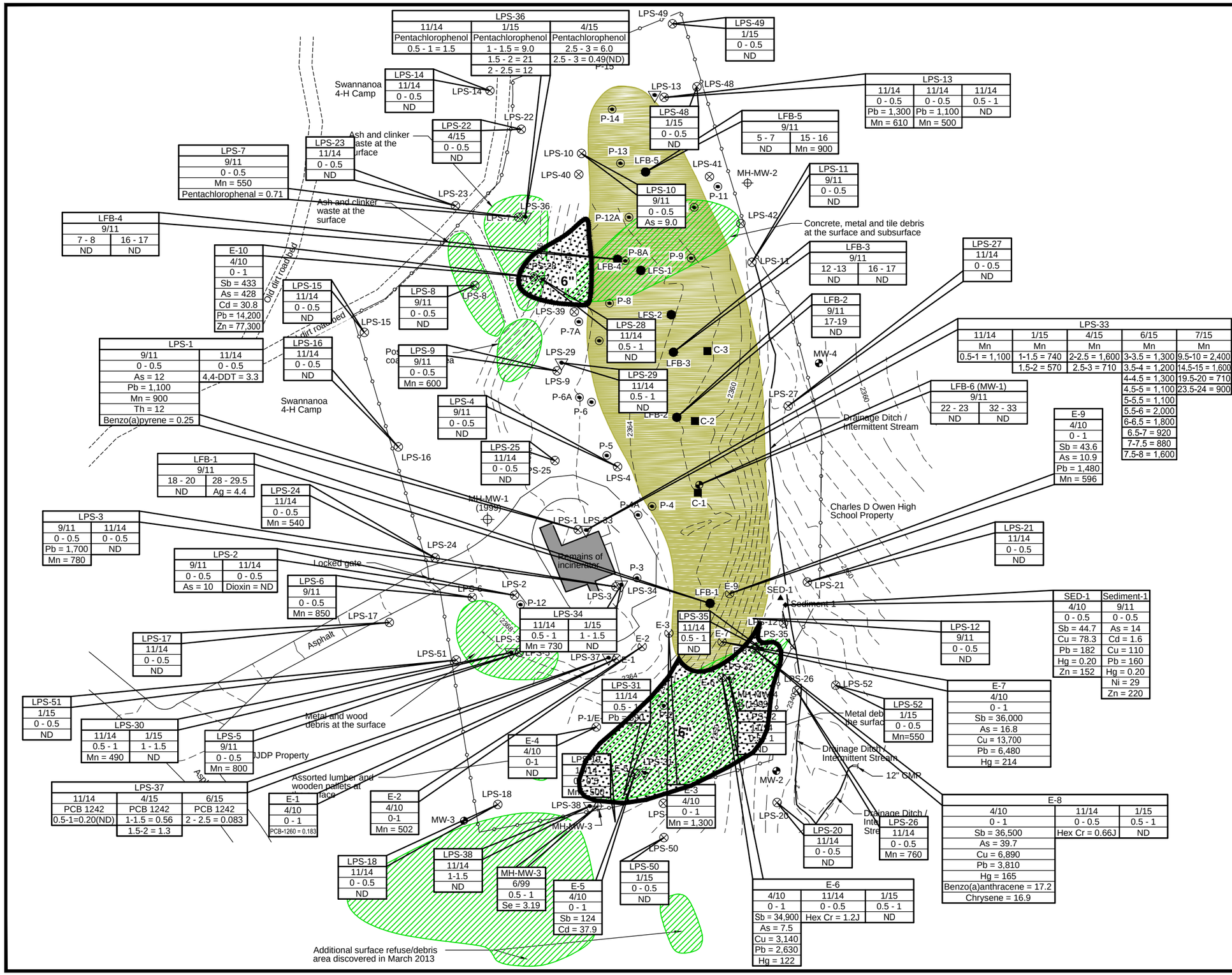
PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	6/30/15
ACAD File:	Fig G-2.dwg
Designed:	PD
	Distribution of Antimony in Soil
Detailed:	PD
Client:	Swannanoa - DJJDP Property
Project No.:	1404
Checked:	PD
Location:	Swannanoa, North Carolina
Figure:	G-2



PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	6/30/15
ACAD File:	Fig G-3.dwg
Designed: PD	Distribution of Arsenic in Soil
Detailed: PD	Client: Swannanoa - DJJDP Property
Project No.:	1404
Checked: PD	Location: Swannanoa, North Carolina
Figure:	G-3



LEGEND:

LFB-1	Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10	Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1	Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1	Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
	Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2	Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
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	Approximate Extent Of Landfill
	Area of contaminated concentration above Residential Health-Based PSRG and background concentrations (metals)
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

LPS-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.

ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)

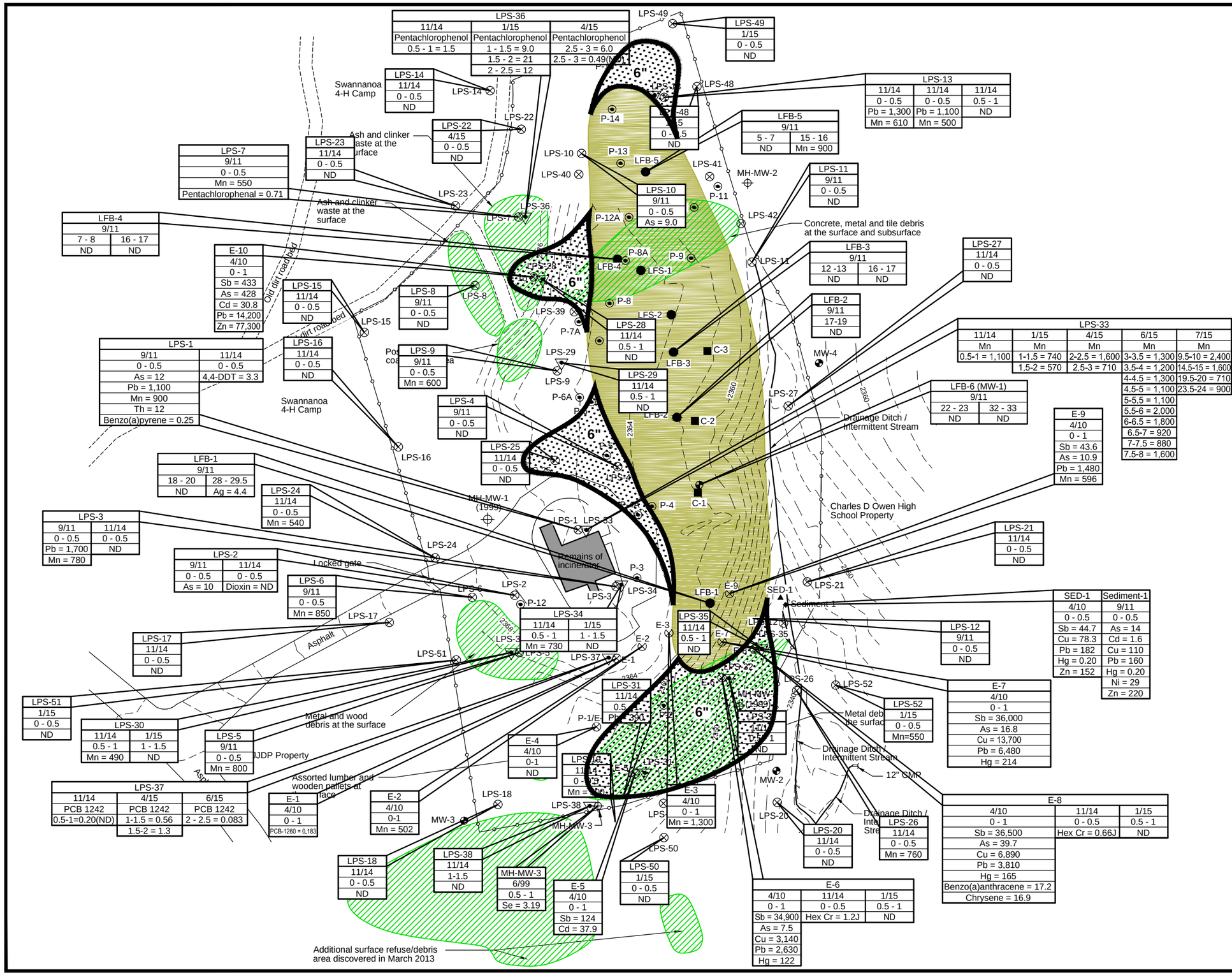
J = Estimated concentration above MDL but below RL

Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009

Scale (ft.)
0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	6/30/15
ACAD File:	Fig G-4.dwg
Designed: PD	Distribution of Cadmium in Soil
Detailed: PD	Client: Swannanoa - DJJDP Property
Project No.:	1404
Checked: PD	Location: Swannanoa, North Carolina
Figure:	G-4



LEGEND:

LFB-1	Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10	Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1	Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1	Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
	Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2	Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
MW-1	Monitoring Well (Piedmont Geologic, Sept. 2011)
MH-MW-1	Monitoring Well - Decommissioned (USACE, June 1999)
	Approximate Extent Of Landfill
	Area of contaminated concentration above Residential Health-Based PSRG and background concentrations (metals)
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

LPS-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.

ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)

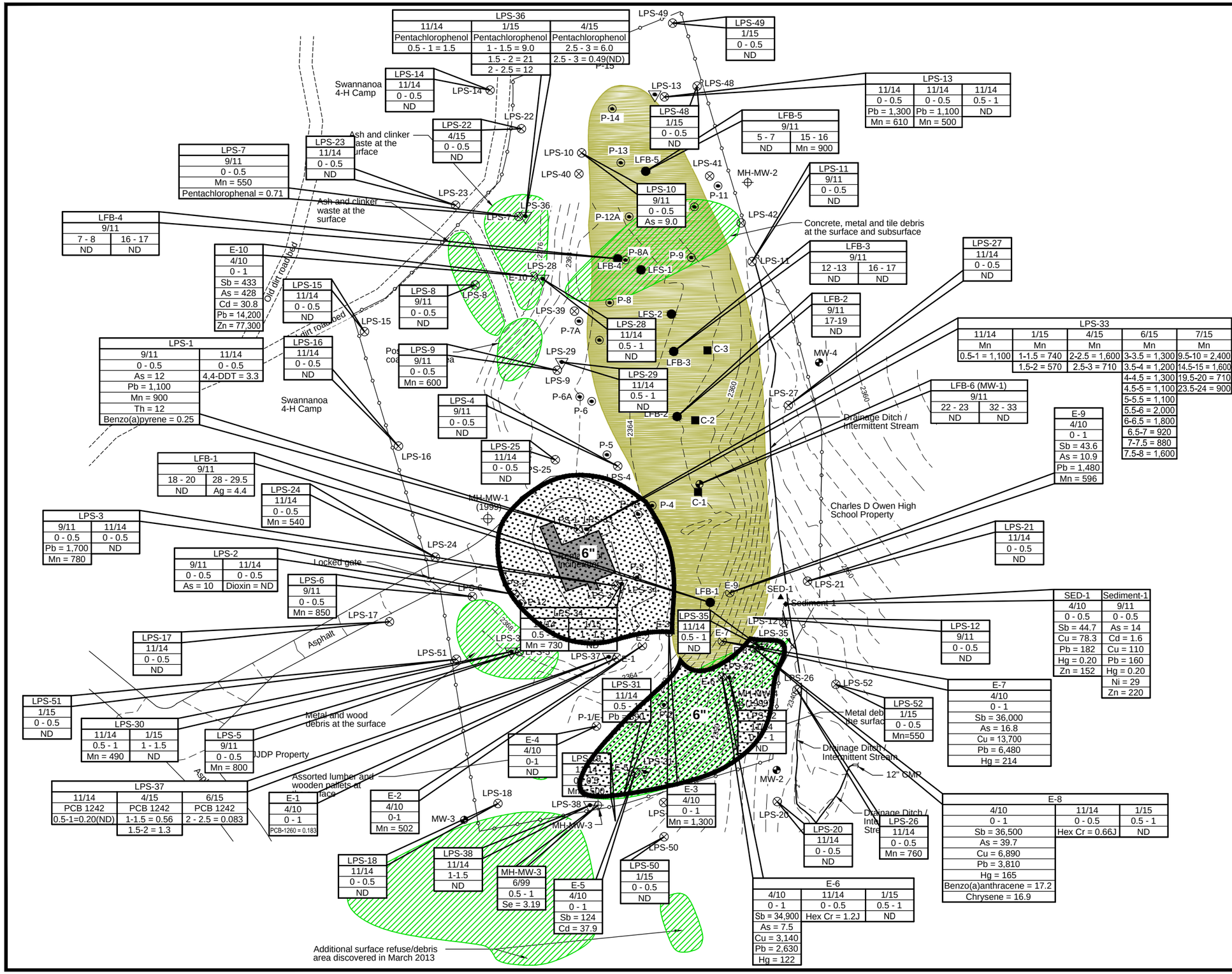
J = Estimated concentration above MDL but below RL

Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009

Scale (ft.)
0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	6/30/15
ACAD File:	Fig G-5.dwg
Designed: PD	Distribution of Lead in Soil
Detailed: PD	Client: Swannanoa - DJJDP Property
Project No.:	1404
Checked: PD	Location: Swannanoa, North Carolina
Figure:	G-5



LEGEND:

LFB-1	Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10	Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1	Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1	Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
	Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2	Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
MW-1	Monitoring Well (Piedmont Geologic, Sept. 2011)
MH-MW-1	Monitoring Well - Decommissioned (USACE, June 1999)
	Approximate Extent Of Landfill
	Area of contaminated concentration above Residential Health-Based PSRG and background concentrations (metals)
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

LPS-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.

ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)

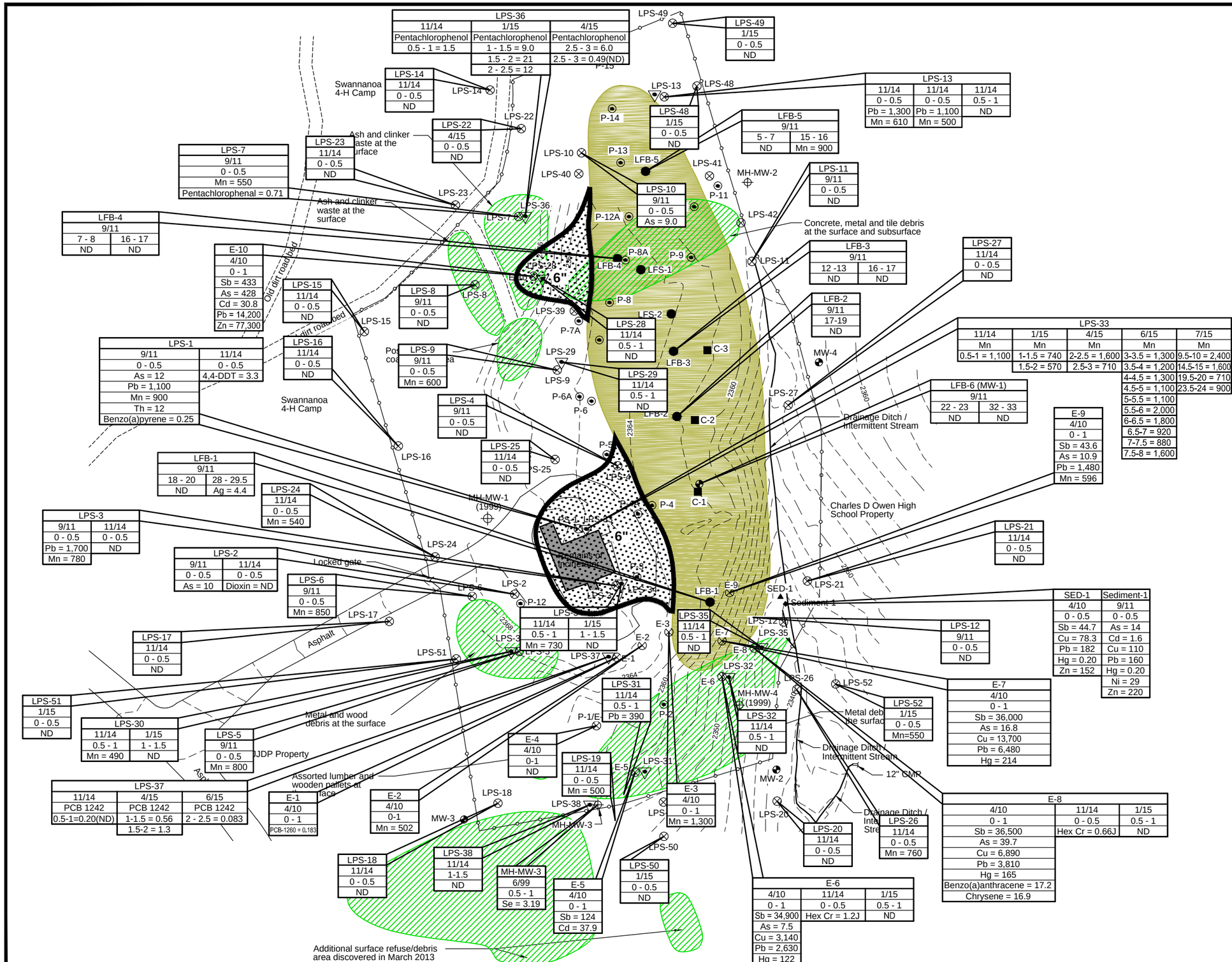
J = Estimated concentration above MDL but below RL

Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009

Scale (ft.)
0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	6/30/15
ACAD File:	Fig G-6.dwg
Designed: PD	Distribution of Selenium in Soil
Detailed: PD	Client: Swannanoa - DJJDP Property
Project No.:	1404
Checked: PD	Location: Swannanoa, North Carolina
Figure:	G-6



LEGEND:

LFB-1	Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10	Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1	Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1	Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
	Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2	Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
MW-1	Monitoring Well (Piedmont Geologic, Sept. 2011)
MH-MW-1	Monitoring Well - Decommissioned (USACE, June 1999)
	Approximate Extent Of Landfill
	Area of contaminated concentration above Residential Health-Based PSRG and background concentrations (metals)
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

LPS-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.

ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)

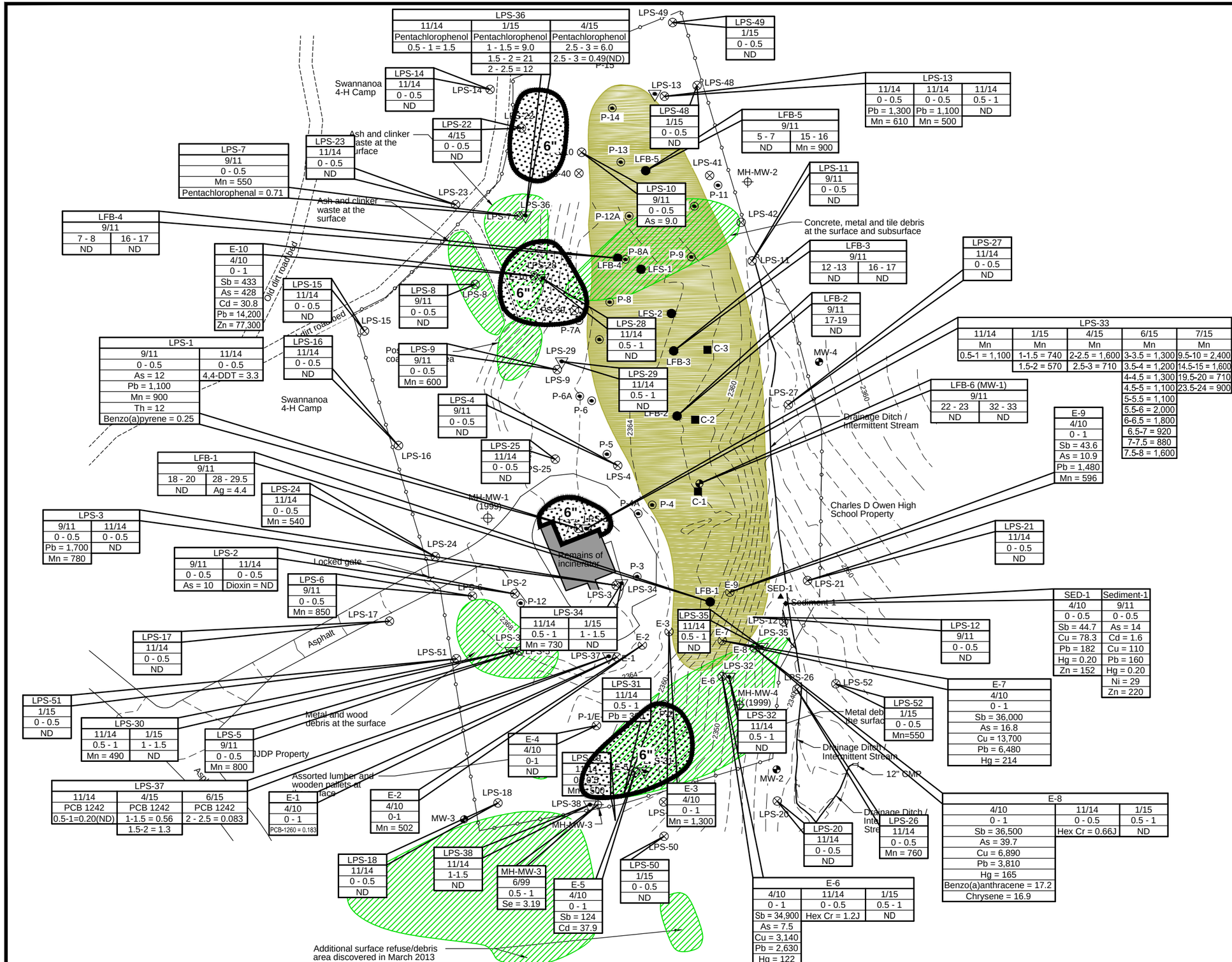
J = Estimated concentration above MDL but below RL

Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009

Scale (ft.)
0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	6/30/15
ACAD File:	Fig G-7.dwg
Designed:	PD
Detailed:	PD
Checked:	PD
Distribution of Silver in Soil	
Client:	Swannanoa - DJJDP Property
Project No.:	1404
Location:	Swannanoa, North Carolina
Figure:	G-7



LEGEND:

LFB-1	Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10	Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1	Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1	Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
	Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2	Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
MW-1	Monitoring Well (Piedmont Geologic, Sept. 2011)
MH-MW-1	Monitoring Well - Decommissioned (USACE, June 1999)
	Approximate Extent Of Landfill
	Area of contaminated concentration above Residential Health-Based PSRG and background concentrations (metals)
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

LPS-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.

ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)

J = Estimated concentration above MDL but below RL

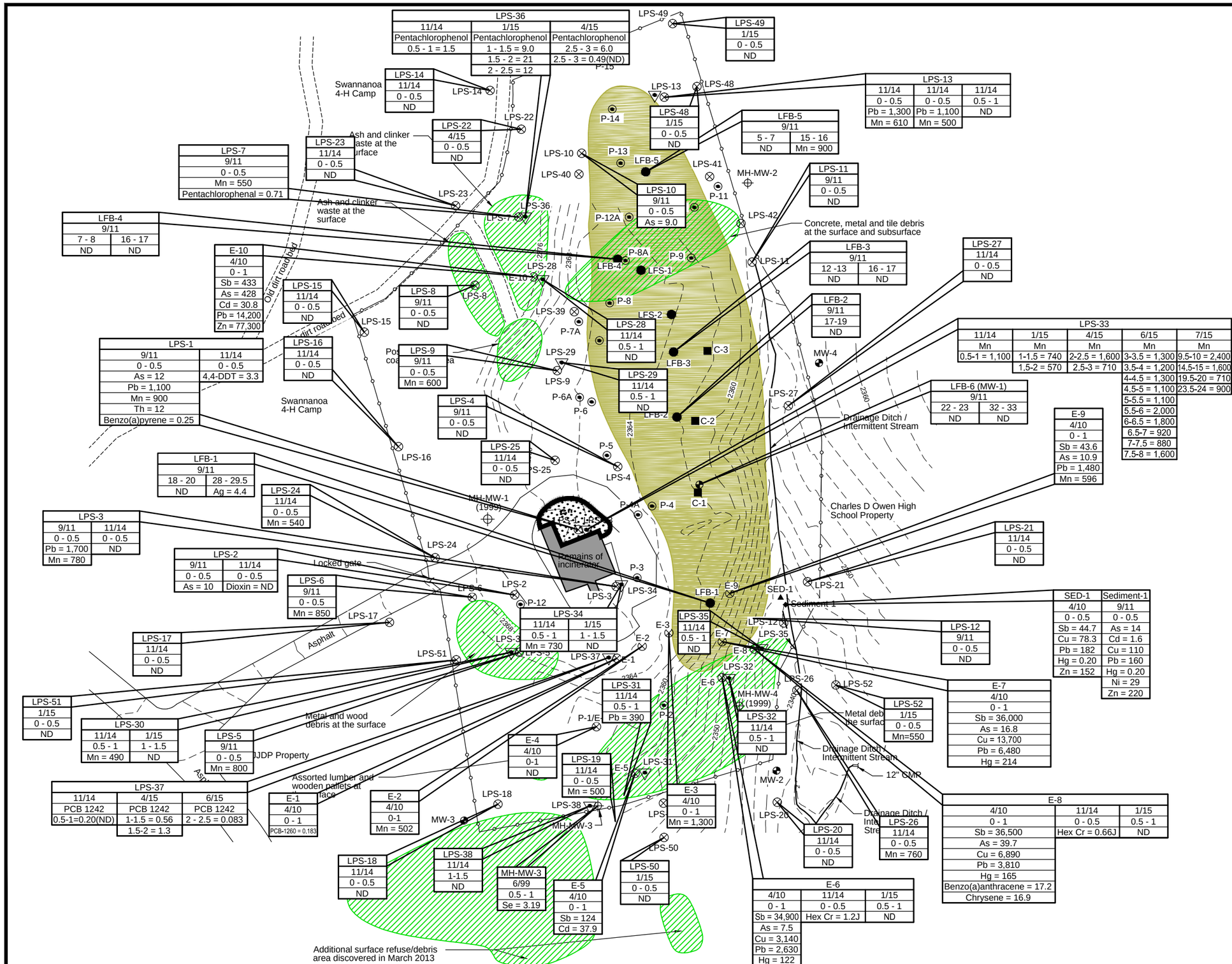
Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009

Scale (ft.)
0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:
Drawing Date: 6/30/15
ACAD File: Fig G-8.dwg

Designed: PD
Distribution of Zinc in Soil
Detailed: PD
Client: Swannanoa - DJJDP Property
Project No.: 1404
Checked: PD
Location: Swannanoa, North Carolina
Figure: G-8



LEGEND:

LFB-1	Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10	Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1	Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1	Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
	Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2	Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
MW-1	Monitoring Well (Piedmont Geologic, Sept. 2011)
MH-MW-1	Monitoring Well - Decommissioned (USACE, June 1999)
	Approximate Extent Of Landfill
	Area of contaminated concentration above Residential Health-Based PSRG and background concentrations (metals)
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

LPS-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.

ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)

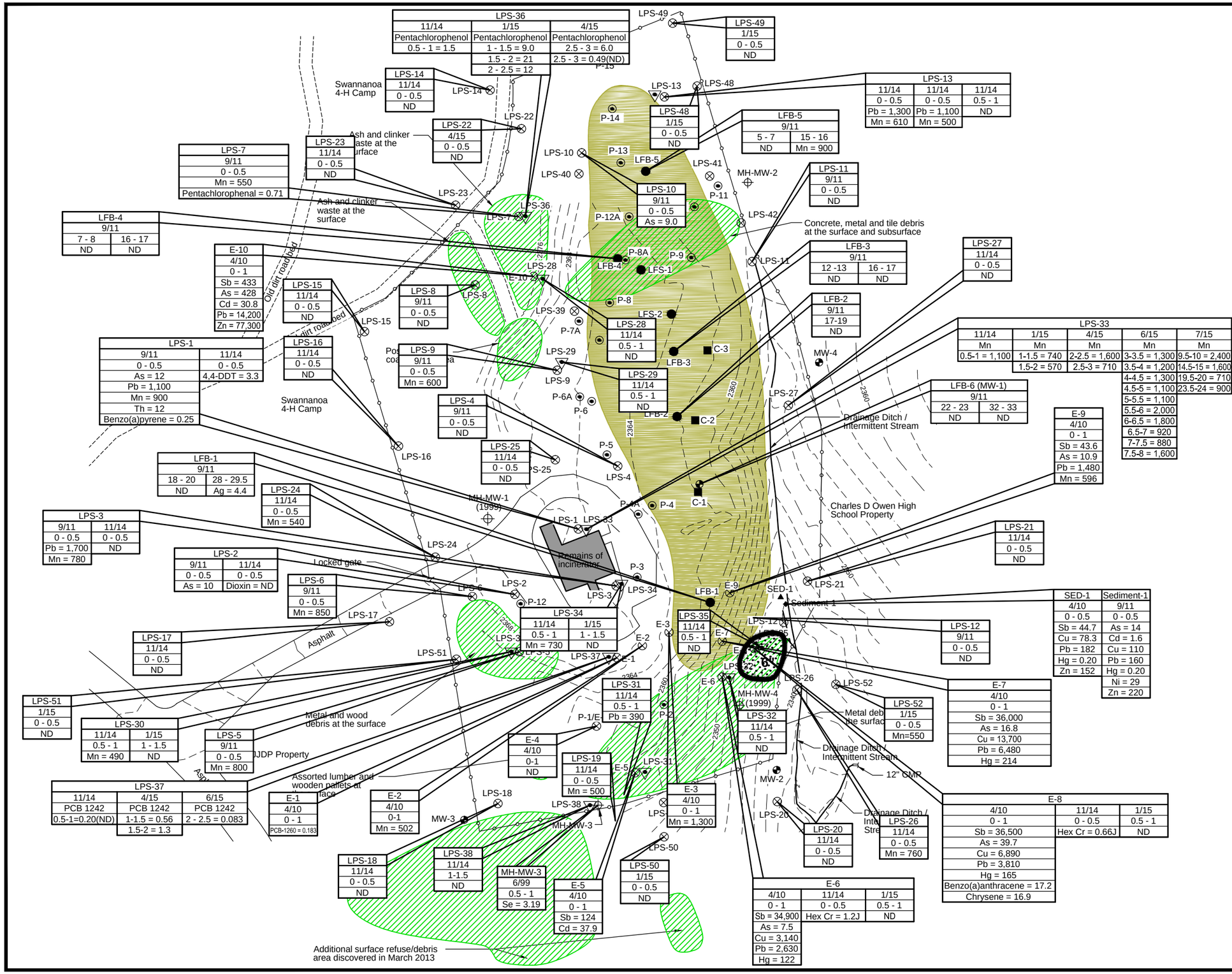
J = Estimated concentration above MDL but below RL

Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009

Scale (ft.)
0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	6/30/15
ACAD File:	Fig G-9.dwg
Designed: PD	Distribution of Thallium, DDD, DDE, DDT and Benzo (a) pyrene in Soil
Detailed: PD	Client: Swannanoa - DJJDP Property
Project No.:	1404
Checked: PD	Location: Swannanoa, North Carolina
Figure:	G-9



LEGEND:

LFB-1	Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10	Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1	Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1	Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
	Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2	Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
MW-1	Monitoring Well (Piedmont Geologic, Sept. 2011)
MH-MW-1	Monitoring Well - Decommissioned (USACE, June 1999)
	Approximate Extent Of Landfill
	Area of contaminated concentration above Residential Health-Based PSRG and background concentrations (metals)
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

LPS-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.

ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)

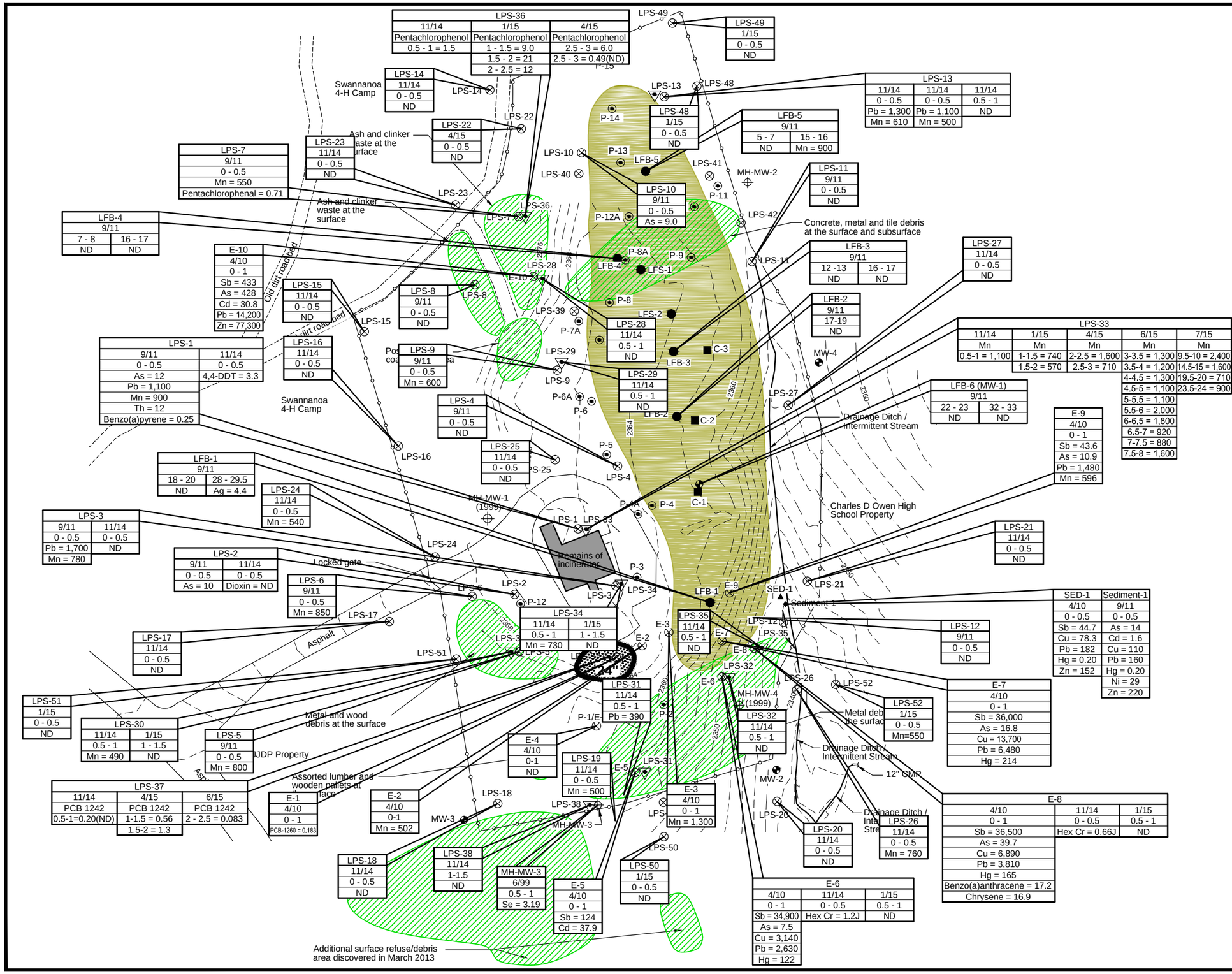
J = Estimated concentration above MDL but below RL

Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009

Scale (ft.)
0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	6/30/15
ACAD File:	Fig G-10.dwg
Designed: PD	Distribution of Chrysene in Soil
Detailed: PD	Client: Swannanoa - DJJDP Property
Project No.:	1404
Checked: PD	Location: Swannanoa, North Carolina
Figure:	G-10



LEGEND:

LFB-1	Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10	Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1	Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1	Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
	Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2	Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
MW-1	Monitoring Well (Piedmont Geologic, Sept. 2011)
MH-MW-1	Monitoring Well - Decommissioned (USACE, June 1999)
	Approximate Extent Of Landfill
	Area of contaminated concentration above Residential Health-Based PSRG and background concentrations (metals)
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

LPS-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.

ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)

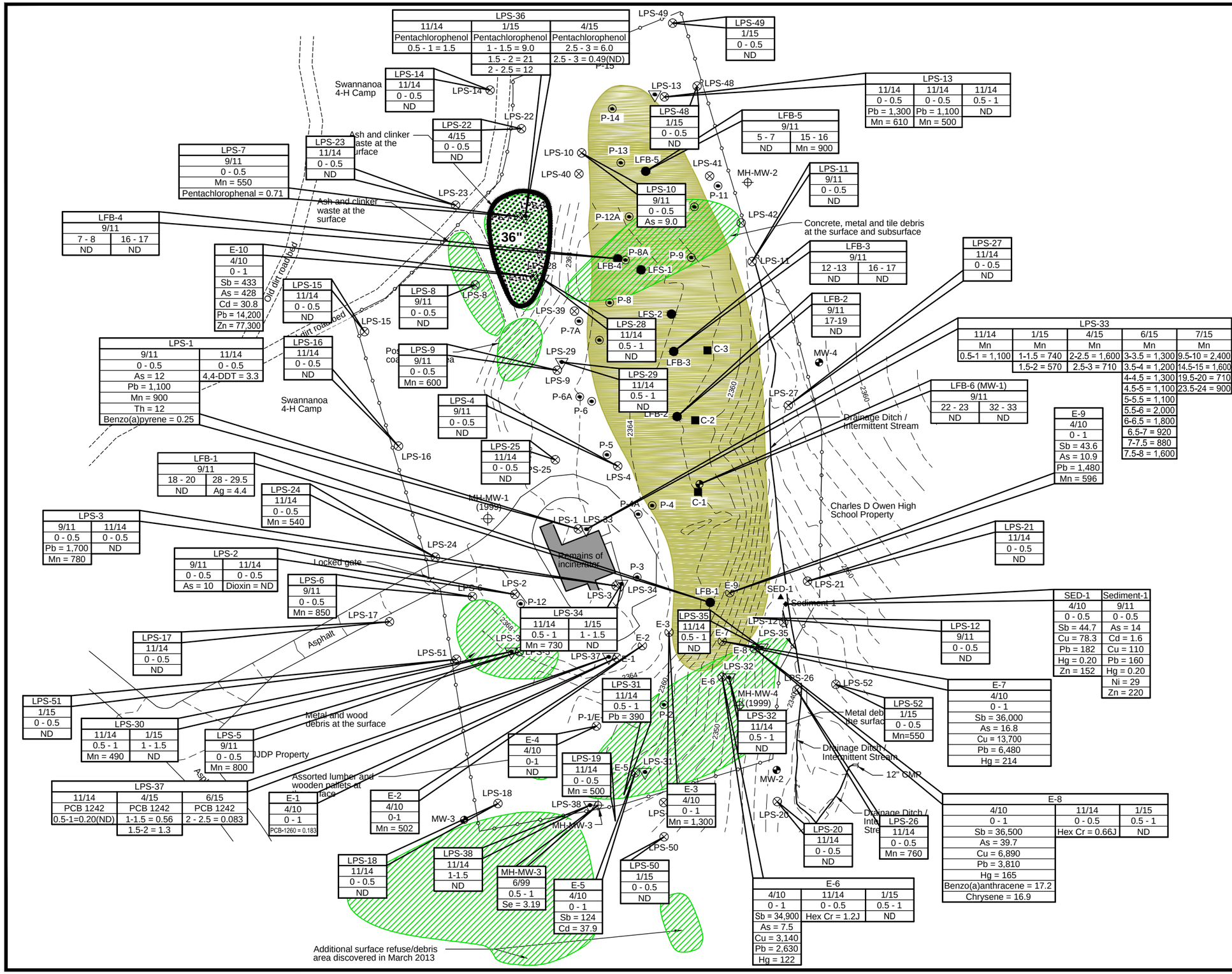
J = Estimated concentration above MDL but below RL

Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009

Scale (ft.)
0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	6/30/15
ACAD File:	Fig G-11.dwg
Designed: PD	Distribution of PCBs in Soil
Detailed: PD	Client: Swannanoa - DJJDP Property
Project No.:	1404
Checked: PD	Location: Swannanoa, North Carolina
Figure:	G-11



LEGEND:

LFB-1	Landfill Boring (Piedmont Geologic, Sept. 2011)
P-10	Landfill Perimeter Exploratory Boring (MEG, April 2010)
C-1	Landfill Cap Thickness Boring (MEG, April 2010)
LPS-1	Surficial Soil Sample (Piedmont Geologic, Sept. 2011/ Nov. 2014)
	Vertical Delineation Soil Sample (Piedmont Geologic, Nov. 2014)
SED-2	Sediment Sample Location (MEG, April 2010; Piedmont Geologic, Sept. 2011/ Nov. 2014)
MW-1	Monitoring Well (Piedmont Geologic, Sept. 2011)
MH-MW-1	Monitoring Well - Decommissioned (USACE, June 1999)
	Approximate Extent Of Landfill
	Area of contaminated concentration above Residential Health-Based PSRG and background concentrations (metals)
	Fence Line
2360	Topographic Contour (ft. rel. MSL)

LPS-1	Sample I.D.
9/11	Sample Date
0 - 0.5	Sample Depth (ft. below grade)
As = 2.66	Results of Analysis (mg/kg)*

*Compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals) are listed.

ND = No compounds detected at concentrations above Residential Health-Based PSRGs (and background concentrations metals)

J = Estimated concentration above MDL but below RL

Figure based on survey by Dennis Clinkscales, PLS
Plat dated September 18, 2009

Scale (ft.)
0 60 120

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

Gauging Date:	
Drawing Date:	6/30/15
ACAD File:	Fig G-12.dwg
Designed: PD	Distribution of Pentachlorophenol in Soil
Detailed: PD	Client: Swannanoa - DJJDP Property
Project No.:	1404
Checked: PD	Location: Swannanoa, North Carolina
Figure:	G-12

APPENDIX E

WRITTEN CONSENT FOR LAND-USE RESTRICTIONS

North Carolina Department of Administration (DOA), which manages the real property located at Clover Lane, Swannanoa, Buncombe County, North Carolina owned by the State of North Carolina, hereby states that it is agreeable to investigate the imposition of Land Use Restrictions ("Restrictions") partially or completely in lieu of actual remediation of hazardous substances at the property. DOA understands the State may refuse to consent upon review of the actual Restrictions.

William D. Sessoms

Signature of DOA Representative

William D. Sessoms
DOA, State Construction Office

APPENDIX F

IHSB RISK CALCULATION WORKSHEETS

Site-specific
Recreator Equation Inputs for Soil

Variable	Value
TR (target cancer risk) unitless	0.000001
SA_{recsc} (skin surface area - child) cm^2/day	2373
SA_{recsa} (skin surface area - adult) cm^2/day	6032
SA_{0-2} (skin surface area - mutagenic) cm^2/day	2373
SA_{2-6} (skin surface area - mutagenic) cm^2/day	2373
SA_{6-16} (skin surface area - mutagenic) cm^2/day	6032
SA_{16-30} (skin surface area - mutagenic) cm^2/day	6032
SA_{recsa} (skin surface area - adult) cm^2/day	6032
THQ (target hazard quotient) unitless	0.2
LT (lifetime - recreator) year	70
$IFS_{rec-adj}$ (age-adjusted soil ingestion factor) mg/kg	5462.5
$DFS_{rec-adj}$ (age-adjusted soil dermal factor) mg/kg	16407.02
$IFSM_{rec-adj}$ (mutagenic age-adjusted soil ingestion factor) mg/kg	23662.5
$DFSM_{rec-adj}$ (mutagenic age-adjusted soil dermal factor) mg/kg	64404.06
EF_{0-2} (exposure frequency) day/year	45
EF_{2-6} (exposure frequency) day/year	45
EF_{6-16} (exposure frequency) day/year	104
EF_{16-30} (exposure frequency) day/year	45
EF_{recsc} (exposure frequency - child) day/year	45
EF_{recsa} (exposure frequency - adult) day/year	74.5
EF_{recsa} (exposure frequency - adult) day/year	74.5
EF_{recs} (exposure frequency - recreator) day/year	67.692
IRS_{0-2} (soil intake rate) mg/day	200
IRS_{2-6} (soil intake rate) mg/day	200
IRS_{6-16} (soil intake rate) mg/day	100
IRS_{16-30} (soil intake rate) mg/day	100
IRS_{recsc} (soil intake rate - child) mg/day	200
IRS_{recsa} (soil intake rate - adult) mg/day	100
IRS_{recsa} (soil intake rate - adult) mg/day	100
ED_{0-2} (exposure duration) year	2
ED_{2-6} (exposure duration) year	4
ED_{6-16} (exposure duration) year	10
ED_{16-30} (exposure duration) year	10
ED_{recsc} (exposure duration - child) year	6
ED_{recsa} (exposure duration - adult) year	20
ED_{recsa} (exposure duration - adult) year	20
ED_{recs} (exposure duration - recreator) year	26
ET_{0-2} (exposure time) hr/day	2
ET_{2-6} (exposure time) hr/day	2

$ET_{6\text{-}16}$ (exposure time) hr/day	2
$ET_{16\text{-}30}$ (exposure time) hr/day	2
ET_{recsc} (exposure time - child) hr/day	2
ET_{recsa} (exposure time - adult) hr/day	2
ET_{recsa} (exposure time - adult) hr/day	2
ET_{recs} (exposure time - recreator) hr/day	2
$BW_{0\text{-}2}$ (body weight) kg	15
$BW_{2\text{-}6}$ (body weight) kg	15
$BW_{6\text{-}16}$ (body weight) kg	80
$BW_{16\text{-}30}$ (body weight) kg	80
BW_{recsc} (body weight - child) kg	15
BW_{recsa} (body weight - adult) kg	80
BW_{recsa} (body weight - adult) kg	80
$AF_{0\text{-}2}$ (skin adherence factor) mg/cm^2	0.2
$AF_{2\text{-}6}$ (skin adherence factor) mg/cm^2	0.2
$AF_{6\text{-}16}$ (skin adherence factor) mg/cm^2	0.07
$AF_{16\text{-}30}$ (skin adherence factor) mg/cm^2	0.07
AF_{recsc} (skin adherence factor - child) mg/cm^2	0.2
AF_{recsa} (skin adherence factor - adult) mg/cm^2	0.07
AF_{recsa} (skin adherence factor - adult) mg/cm^2	0.07
City (Climate Zone) PEF Selection	Default
A_s (acres)	0.5
Q/C_{wp} (g/m^2-s per kg/m^3)	93.77
PEF (particulate emission factor) m^3/kg	1359344438
A (PEF Dispersion Constant)	16.2302
B (PEF Dispersion Constant)	18.7762
C (PEF Dispersion Constant)	216.108
V (fraction of vegetative cover) unitless	0.5
U_m (mean annual wind speed) m/s	4.69
U_t (equivalent threshold value)	11.32
F(x) (function dependant on U_m/U_t) unitless	0.194
City (Climate Zone) VF Selection	Default
A_s (acres)	0.5
Q/C_{vol} (g/m^2-s per kg/m^3)	68.18
foc (fraction organic carbon in soil) g/g	0.006
ρ_b (dry soil bulk density) g/cm^3	1.5
ρ_s (soil particle density) g/cm^3	2.65
θ_w (water-filled soil porosity) L_{water}/L_{soil}	0.15
T (exposure interval) s	819936000
A (VF Dispersion Constant)	11.911
B (VF Dispersion Constant)	18.4385
C (VF Dispersion Constant)	209.7845
City (Climate Zone) VF_{ml} Selection	Default
VF_s (volitization factor) m^3/kg	.

Q/C_{vol} (g/m^2-s per kg/m^3)	68.18365
A_s (acres)	0.5
T (exposure interval) yr	26
d_s (depth of source) m	.
ρ_b (dry soil bulk density) g/cm^3	1.5
A (VF Dispersion Constant - Mass Limit)	11.911
B (VF Dispersion Constant - Mass Limit)	18.4385
C (VF Dispersion Constant - Mass Limit)	209.7845

Output generated 06NOV2015:18:10:24

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Inhalation Unit Risk (ug/m^3)$^{-1}$	IUR Ref	Subchronic RfD (mg/kg-day)	Subchronic RfD Ref	Subchronic RfC (mg/m^3)	Subchronic RfC Ref	GIABS	ABS	RBA	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)
Acenaphthylene	208-96-8	No	Yes	-		-		-		-		1	0.13	1	1.89E+05	-	1.36E+09	-
Acetone	67-64-1	No	Yes	-		-		2.00E+00	A	3.09E+01	A	1	-	1	1.37E+04	1.14E+05	1.36E+09	-
Antimony (metallic)	7440-36-0	No	Yes	-		-		4.00E-04	P	-		0.15	-	1	-	-	1.36E+09	-
Arsenic, Inorganic	7440-38-2	No	Yes	1.50E+00	I	4.30E-03	I	3.00E-04	I	1.50E-05	C	1	0.03	0.6	-	-	1.36E+09	5.20E+00
Benz[a]anthracene	56-55-3	Yes	Yes	7.30E-01	W	1.10E-04	C	-		-		1	0.13	1	4.41E+06	-	1.36E+09	1.48E+00
Benzene	71-43-2	No	Yes	5.50E-02	I	7.80E-06	I	1.00E-02	P	8.00E-02	P	1	-	1	3.54E+03	1.82E+03	1.36E+09	8.50E+01
Benzo[a]pyrene	50-32-8	Yes	No	7.30E+00	I	1.10E-03	C	-		-		1	0.13	1	-	-	1.36E+09	1.48E-01
Beryllium and compounds	7440-41-7	No	Yes	-		2.40E-03	I	5.00E-03	H	2.00E-05	I	0.007	-	1	-	-	1.36E+09	-
Bis(2-ethylhexyl)phthalate	117-81-7	No	No	1.40E-02	I	2.40E-06	C	1.00E-01	A	-		1	0.1	1	-	-	1.36E+09	3.34E+02
Butyl Benzyl Phthalate	85-68-7	No	No	1.90E-03	P	-		2.00E+00	H	-		1	0.1	1	-	-	1.36E+09	2.46E+03
Cadmium (Diet)	7440-43-9	No	Yes	-		1.80E-03	I	1.00E-03	I	1.00E-05	A	0.025	0.001	1	-	-	1.36E+09	-
Chloronaphthalene, Beta-	91-58-7	No	Yes	-		-		2.00E-01	P	-		1	0.13	1	7.99E+04	-	1.36E+09	-
Chromium(III), Insoluble Salts	16065-83-1	No	No	-		-		1.50E+00	H	5.00E-03	A	0.013	-	1	-	-	1.36E+09	-
Chromium(VI)	18540-29-9	Yes	No	5.00E-01	J	8.40E-02	S	5.00E-03	A	3.00E-04	A	0.025	-	1	-	-	1.36E+09	2.16E+00
Copper	7440-50-8	No	Yes	-		-		1.00E-02	A	-		1	-	1	-	-	1.36E+09	-
DDD	72-54-8	No	No	2.40E-01	I	6.90E-05	C	-		-		1	0.1	1	-	-	1.36E+09	1.95E+01
DDE, p,p'-	72-55-9	No	Yes	3.40E-01	I	9.70E-05	C	-		-		1	-	1	2.10E+06	-	1.36E+09	1.38E+01
DDT	50-29-3	No	No	3.40E-01	I	9.70E-05	I	5.00E-04	A	-		1	0.03	1	-	-	1.36E+09	1.38E+01
Mercury (elemental)	7439-97-6	No	Yes	-		-		-		3.00E-04	H	1	-	1	3.47E+04	3.13E+00	1.36E+09	-
Methyl Acetate	79-20-9	No	Yes	-		-		1.00E+00	S	1.00E-01	S	1	-	1	8.12E+03	2.90E+04	1.36E+09	-
Butanone)	78-93-3	No	Yes	-		-		2.00E+00	H	1.00E+00	H	1	-	1	1.22E+04	2.84E+04	1.36E+09	-
Naphthalene	91-20-3	No	Yes	-		3.40E-05	C	6.00E-01	A	3.00E-03	I	1	0.13	1	4.63E+04	-	1.36E+09	-
Nickel Soluble Salts	7440-02-0	No	Yes	-		2.60E-04	C	2.00E-02	H	2.00E-04	A	0.04	-	1	-	-	1.36E+09	-
Octyl Phthalate, di-N-	117-84-0	No	No	-		-		1.00E-01	P	-		1	0.1	1	-	-	1.36E+09	-
Pentachlorophenol	87-86-5	No	No	4.00E-01	I	5.10E-06	C	1.00E-03	A	-		1	0.25	1	-	-	1.36E+09	1.17E+01
Selenium	7782-49-2	No	Yes	-		-		5.00E-03	H	2.00E-02	C	1	-	1	-	-	1.36E+09	-
Silver	7440-22-4	No	Yes	-		-		5.00E-03	H	-		0.04	-	1	-	-	1.36E+09	-
TCDD, 2,3,7,8-	1746-01-6	No	Yes	1.30E+05	C	3.80E+01	C	2.00E-08	A	4.00E-08	C	1	0.03	1	1.96E+06	-	1.36E+09	3.60E-05
Thallium (Soluble Salts)	7440-28-0	No	Yes	-		-		4.00E-05	S	-		1	-	1	-	-	1.36E+09	-
Zinc and Compounds	7440-66-6	No	Yes	-		-		3.00E-01	A	-		1	-	1	-	-	1.36E+09	-

Output generated 06NOV2015:18:10:24

Chemical	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL Child HQ=0.2 (mg/kg)	Dermal SL Child HQ=0.2 (mg/kg)	Inhalation SL Child HQ=0.2 (mg/kg)	Noncarcinogenic SL Child HI=0.2 (mg/kg)	Ingestion SL Adult HQ=0.2 (mg/kg)	Dermal SL Adult HQ=0.2 (mg/kg)	Inhalation SL Adult HQ=0.2 (mg/kg)	Noncarcinogenic SL Adult HI=0.2 (mg/kg)	Screening Level (mg/kg)
Acenaphthylene	-	-	-	-	-	-	-	-	-	-	-	
Acetone	-	-	-	2.43E+05	-	8.22E+06	2.36E+05	1.57E+06	-	4.96E+06	1.19E+06	2.36E+05 sat
Antimony (metallic)	-	-	-	4.87E+01	-	-	4.87E+01	3.14E+02	-	-	3.14E+02	4.87E+01 nc
Arsenic, Inorganic	3.46E+01	5.51E+04	4.52E+00	6.08E+01	5.13E+02	3.97E+05	5.44E+01	3.92E+02	1.86E+03	2.40E+05	3.23E+02	4.52E+00 ca*
Benz[a]anthracene	4.18E+00	2.45E+03	1.09E+00	-	-	-	-	-	-	-	-	1.09E+00 ca
Benzene	-	7.90E+01	4.09E+01	1.22E+03	-	5.51E+03	9.96E+02	7.84E+03	-	3.33E+03	2.34E+03	4.09E+01 ca*
Benzo[a]pyrene	4.18E-01	7.56E+04	1.09E-01	-	-	-	-	-	-	-	-	1.09E-01 ca
Beryllium and compounds	-	9.87E+04	9.87E+04	6.08E+02	-	5.29E+05	6.08E+02	3.92E+03	-	3.20E+05	3.87E+03	6.08E+02 nc
Bis(2-ethylhexyl)phthalate	1.11E+03	9.87E+07	2.57E+02	1.22E+04	5.13E+04	-	9.83E+03	7.84E+04	1.86E+05	-	5.51E+04	2.57E+02 ca*
Butyl Benzyl Phthalate	8.20E+03	-	1.89E+03	2.43E+05	1.03E+06	-	1.97E+05	1.57E+06	3.71E+06	-	1.10E+06	1.89E+03 ca
Cadmium (Diet)	-	1.32E+05	1.32E+05	1.22E+02	1.28E+03	2.65E+05	1.11E+02	7.84E+02	4.64E+03	1.60E+05	6.68E+02	1.11E+02 nc
Chloronaphthalene, Beta-	-	-	-	2.43E+04	7.89E+04	-	1.86E+04	1.57E+05	2.86E+05	-	1.01E+05	1.86E+04 nc
Chromium(III), Insoluble Salts	-	-	-	1.83E+05	-	1.32E+08	1.82E+05	1.18E+06	-	7.99E+07	1.16E+06	1.82E+05 max
Chromium(VI)	-	9.90E+02	2.15E+00	6.08E+02	-	7.94E+06	6.08E+02	3.92E+03	-	4.80E+06	3.92E+03	2.15E+00 ca
Copper	-	-	-	1.22E+03	-	-	1.22E+03	7.84E+03	-	-	7.84E+03	1.22E+03 nc
DDD	6.49E+01	3.43E+06	1.50E+01	-	-	-	-	-	-	-	-	1.50E+01 ca
DDE, p,p'-	-	3.77E+03	1.37E+01	-	-	-	-	-	-	-	-	1.37E+01 ca
DDT	1.53E+02	2.44E+06	1.26E+01	6.08E+01	8.55E+02	-	5.68E+01	3.92E+02	3.09E+03	-	3.48E+02	1.26E+01 ca**
Mercury (elemental)	-	-	-	-	-	2.03E+02	2.03E+02	-	-	1.22E+02	1.22E+02	1.22E+02 sat
Methyl Acetate	-	-	-	1.22E+05	-	1.58E+04	1.40E+04	7.84E+05	-	9.55E+03	9.43E+03	9.43E+03 nc
Methyl Ethyl Ketone (2-Butanone)	-	-	-	2.43E+05	-	2.37E+05	1.20E+05	1.57E+06	-	1.43E+05	1.31E+05	1.20E+05 sat
Naphthalene	-	2.37E+02	2.37E+02	7.30E+04	2.37E+05	2.71E+03	2.58E+03	4.70E+05	8.57E+05	1.63E+03	1.63E+03	2.37E+02 ca**
Nickel Soluble Salts	-	9.11E+05	9.11E+05	2.43E+03	-	5.29E+06	2.43E+03	1.57E+04	-	3.20E+06	1.56E+04	2.43E+03 nc
Octyl Phthalate, di-N-	-	-	-	1.22E+04	5.13E+04	-	9.83E+03	7.84E+04	1.86E+05	-	5.51E+04	9.83E+03 nc
Pentachlorophenol	1.56E+01	4.64E+07	6.68E+00	1.22E+02	2.05E+02	-	7.64E+01	7.84E+02	7.43E+02	-	3.81E+02	6.68E+00 ca*
Selenium	-	-	-	6.08E+02	-	5.29E+08	6.08E+02	3.92E+03	-	3.20E+08	3.92E+03	6.08E+02 nc
Silver	-	-	-	6.08E+02	-	-	6.08E+02	3.92E+03	-	-	3.92E+03	6.08E+02 nc
TCDD, 2,3,7,8-	3.99E-04	8.98E-03	3.29E-05	2.43E-03	3.42E-02	1.53E+00	2.27E-03	1.57E-02	1.24E-01	9.21E-01	1.37E-02	3.29E-05 ca*
Thallium (Soluble Salts)	-	-	-	4.87E+00	-	-	4.87E+00	3.14E+01	-	-	3.14E+01	4.87E+00 nc
Zinc and Compounds	-	-	-	3.65E+04	-	-	3.65E+04	2.35E+05	-	-	2.35E+05	3.65E+04 nc

Site-specific
Recreator Risk for Soil

Chemical	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Inhalation Unit Risk (ug/m^3)$^{-1}$	IUR Ref	Subchronic RfD (mg/kg-day)	Subchronic RfD Ref	Subchronic RfC (mg/m^3)	Subchronic RfC Ref	GIABS	ABS	RBA	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Concentration (mg/kg)	Ingestion Risk TR=1.0E-6	Dermal Risk TR=1.0E-6
Acenaphthylene	-		-		-		-		1	0.13	1	189000	-	1360000000	0.011	-	-
Acetone	-		-		2	A	30.9	A	1	-	1	13700	114000	1360000000	0.622	-	-
Antimony (metallic)	-		-		0.0004	P	-		0.15	-	1	-	-	1360000000	124	-	-
Arsenic, Inorganic	1.5	I	0.0043	I	0.0003	I	0.000015	C	1	0.03	0.6	-	-	1360000000	10	1.92E-06	2.89E-07
Benz[a]anthracene	0.73	W	0.00011	C	-		-		1	0.13	1	4410000	-	1360000000	0.0073	4.94E-09	1.75E-09
Benzene	0.055	I	0.0000078	I	0.01	P	0.08	P	1	-	1	3540	1820	1360000000	0.0028	3.29E-11	-
Benzo[a]pyrene	7.3	I	0.0011	C	-		-		1	0.13	1	-	-	1360000000	0.0088	5.95E-08	2.11E-08
Beryllium and compounds	-		0.0024	I	0.005	H	0.00002	I	0.007	-	1	-	-	1360000000	2.2	-	-
Bis(2-ethylhexyl)phthalate	0.014	I	0.0000024	C	0.1	A	-		1	0.1	1	-	-	1360000000	0.56	1.68E-09	5.03E-10
Butyl Benzyl Phthalate	0.0019	P	-		2	H	-		1	0.1	1	-	-	1360000000	1.3	5.28E-10	1.59E-10
Cadmium (Diet)	-		0.0018	I	0.001	I	0.00001	A	0.025	0.001	1	-	-	1360000000	37.9	-	-
Chloronaphthalene, Beta-	-		-		0.2	P	-		1	0.13	1	79900	-	1360000000	0.049	-	-
Chromium(III), Insoluble Salts	-		-		1.5	H	0.005	A	0.013	-	1	-	-	1360000000	62	-	-
Chromium(VI)	0.5	J	0.084	S	0.005	A	0.0003	A	0.025	-	1	-	-	1360000000	1.2	5.56E-07	-
Copper	-		-		0.01	A	-		1	-	1	-	-	1360000000	110	-	-
DDD	0.24	I	0.000069	C	-		-		1	0.1	1	-	-	1360000000	0.34	1.74E-08	5.24E-09
DDE, p,p'-	0.34	I	0.000097	C	-		-		1	-	1	2100000	-	1360000000	1	7.27E-08	-
DDT	0.34	I	0.000097	I	0.0005	A	-		1	0.03	1	-	-	1360000000	3.3	2.4E-07	2.16E-08
Mercury (elemental)	-		-		-		0.0003	H	1	-	1	34700	3.13	1360000000	0.87	-	-
Methyl Acetate	-		-		1	S	0.1	S	1	-	1	8120	29000	1360000000	0.276	-	-
Butanone)	-		-		2	H	1	H	1	-	1	12200	28400	1360000000	0.04	-	-
Naphthalene	-		0.000034	C	0.6	A	0.003	I	1	0.13	1	46300	-	1360000000	0.24	-	-
Nickel Soluble Salts	-		0.00026	C	0.02	H	0.0002	A	0.04	-	1	-	-	1360000000	54.9	-	-
Octyl Phthalate, di-N-	-		-		0.1	P	-		1	0.1	1	-	-	1360000000	0.028	-	-
Pentachlorophenol	0.4	I	0.0000051	C	0.001	A	-		1	0.25	1	-	-	1360000000	21	0.0000018	0.00000135
Selenium	-		-		0.005	H	0.02	C	1	-	1	-	-	1360000000	6.9	-	-
Silver	-		-		0.005	H	-		0.04	-	1	-	-	1360000000	4.4	-	-
TCDD, 2,3,7,8-	130000	C	38	C	0.00000002	A	0.00000004	C	1	0.03	1	1960000	-	1360000000	0.0000303	8.42E-07	7.59E-08
Thallium (Soluble Salts)	-		-		0.00004	S	-		1	-	1	-	-	1360000000	5.6	-	-
Zinc and Compounds	-		-		0.3	A	-		1	-	1	-	-	1360000000	2370	-	-
**Total Risk/HI*	-		-		-		-		-	-	-	-	-	-	-	*5.5E-06*	*1.76E-06*

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Chemical	Inhalation Risk TR=1.0E-6	Carcinogenic Risk TR=1.0E-6	Ingestion Risk Child HQ=0.2	Dermal Risk Child HQ=0.2	Inhalation Risk Child HQ=0.2	Noncarcinogenic Risk Child HI=0.2	Ingestion Risk Adult HQ=0.2	Dermal Risk Adult HQ=0.2	Inhalation Risk Adult HQ=0.2	Noncarcinogenic Risk Adult HI=0.2
Acenaphthylene	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	5.11E-07	-	1.51E-08	0.000000526	7.93E-08	-	2.51E-08	0.000000104
Antimony (metallic)	-	-	0.51	-	-	0.51	0.0791	-	-	0.0791
Arsenic, Inorganic	1.82E-10	0.00000221	0.0329	0.0039	0.00000504	0.0368	0.0051	0.00108	0.00000834	0.00619
Benz[a]anthracene	2.98E-12	6.68E-09	-	-	-	-	-	-	-	-
Benzene	3.55E-11	6.84E-11	0.00000046	-	0.000000102	0.000000562	7.14E-08	-	0.000000168	0.00000024
Benzo[a]pyrene	1.16E-13	8.05E-08	-	-	-	-	-	-	-	-
Beryllium and compounds	2.23E-11	2.23E-11	0.000723	-	0.000000831	0.000724	0.000112	-	0.00000138	0.000114
Bis(2-ethylhexyl)phthalate	5.68E-15	2.18E-09	0.00000921	2.18E-06	-	0.0000114	0.00000143	6.03E-07	-	0.00000203
Butyl Benzyl Phthalate	-	6.87E-10	0.00000107	2.54E-07	-	0.00000132	0.000000166	7E-08	-	0.000000236
Cadmium (Diet)	2.88E-10	2.88E-10	0.0623	0.00591	0.0000286	0.0682	0.00967	0.00163	0.0000474	0.0114
Chloronaphthalene, Beta-	-	-	4.03E-07	1.24E-07	-	0.000000527	6.25E-08	3.43E-08	-	9.68E-08
Salts	-	-	0.0000679	-	9.37E-08	0.000068	0.0000105	-	0.000000155	0.0000107
Chromium(VI)	1.21E-09	0.000000557	0.000395	-	3.02E-08	0.000395	0.0000612	-	5.01E-08	0.0000613
Copper	-	-	0.0181	-	-	0.0181	0.00281	-	-	0.00281
DDD	9.91E-14	2.27E-08	-	-	-	-	-	-	-	-
DDE, p,p'-	2.65E-10	0.000000073	-	-	-	-	-	-	-	-
DDT	1.35E-12	0.000000261	0.0108	0.000772	-	0.0116	0.00168	0.000213	-	0.0019
Mercury (elemental)	-	-	-	-	0.000859	0.000859	-	-	0.00142	0.00142
Methyl Acetate	-	-	4.54E-07	-	0.00000349	0.00000395	7.04E-08	-	0.00000578	0.00000585
Butanone)	-	-	3.29E-08	-	3.37E-08	6.66E-08	5.1E-09	-	5.58E-08	6.09E-08
Naphthalene	1.01E-09	1.01E-09	6.58E-07	2.03E-07	0.0000177	0.0000186	0.000000102	5.6E-08	0.0000294	0.0000295
Nickel Soluble Salts	6.03E-11	6.03E-11	0.00451	-	0.00000207	0.00451	0.0007	-	0.00000343	0.000704
Octyl Phthalate, di-N-	-	-	0.00000046	1.09E-07	-	0.000000569	7.14E-08	3.02E-08	-	0.000000102
Pentachlorophenol	4.52E-13	0.00000314	0.0345	0.0205	-	0.055	0.00536	0.00566	-	0.011
Selenium	-	-	0.00227	-	2.61E-09	0.00227	0.000352	-	4.32E-09	0.000352
Silver	-	-	0.00145	-	-	0.00145	0.000225	-	-	0.000225
TCDD, 2,3,7,8-	3.37E-09	0.000000921	0.00249	0.000177	0.00000397	0.00267	0.000387	0.000049	0.00000658	0.000442
Thallium (Soluble Salts)	-	-	0.23	-	-	0.23	0.0357	-	-	0.0357
Zinc and Compounds	-	-	0.013	-	-	0.013	0.00202	-	-	0.00202
**Total Risk/HI*	*6.45E-09*	*0.00000726*	*0.923*	*0.0312*	*0.000921*	*0.955*	*0.143*	*0.00863*	*0.00152*	*0.153*

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Inhalation Unit Risk (ug/m^3)$^{-1}$	IUR Ref	Subchronic RfD (mg/kg-day)	Subchronic RfD Ref	Subchronic RfC (mg/m^3)	Subchronic RfC Ref	GIABS	ABS	RBA	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)
Manganese (Non-diet)	7439-96-5	No	Yes	-		-		2.40E-02	S	5.00E-05	I	0.04	-	1	-	-	1.36E+09	-

Output generated 06NOV2015:18:28:33

Chemical	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL Child HQ=0.2 (mg/kg)	Dermal SL Child HQ=0.2 (mg/kg)	Inhalation SL Child HQ=0.2 (mg/kg)	Noncarcinogenic SL Child HI=0.2 (mg/kg)	Ingestion SL Adult HQ=0.2 (mg/kg)	Dermal SL Adult HQ=0.2 (mg/kg)	Inhalation SL Adult HQ=0.2 (mg/kg)	Noncarcinogenic SL Adult HI=0.2 (mg/kg)	Screening Level (mg/kg)
Manganese (Non-diet)	-	-	-	2.92E+03	-	1.32E+06	2.91E+03	1.88E+04	-	7.99E+05	1.84E+04	2.91E+03 nc

Site-specific
Recreator Risk for Soil

Chemical	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Inhalation Unit Risk (ug/m^3)$^{-1}$	IUR Ref	Subchronic RfD (mg/kg-day)	Subchronic RfD Ref	Subchronic RfC (mg/m^3)	Subchronic RfC Ref	GIABS	ABS	RBA	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Concentration (mg/kg)	Ingestion Risk TR=1.0E-6	Dermal Risk TR=1.0E-6	Inhalation Risk TR=1.0E-6
Manganese (Non-diet)	-		-		0.024	S	0.00005	I	0.04	-	1	-	-	1360000000	2400	-	-	-
**Total Risk/HI*	-		-		-		-		-	-	-	-	-	-	-	-	-	-

Output generated 06NOV2015:18:28:33

Chemical	Carcinogenic Risk TR=1.0E-6	Ingestion Risk Child HQ=0.2	Dermal Risk Child HQ=0.2	Inhalation Risk Child HQ=0.2	Noncarcinogenic Risk Child HI=0.2	Ingestion Risk Adult HQ=0.2	Dermal Risk Adult HQ=0.2	Inhalation Risk Adult HQ=0.2	Noncarcinogenic Risk Adult HI=0.2
Manganese (Non-diet)	-	0.164	-	0.000363	0.165	0.0255	-	0.000601	0.0261
	-	*0.164*	*-*	*0.000363*	*0.165*	*0.0255*	*-*	*0.000601*	*0.0261*