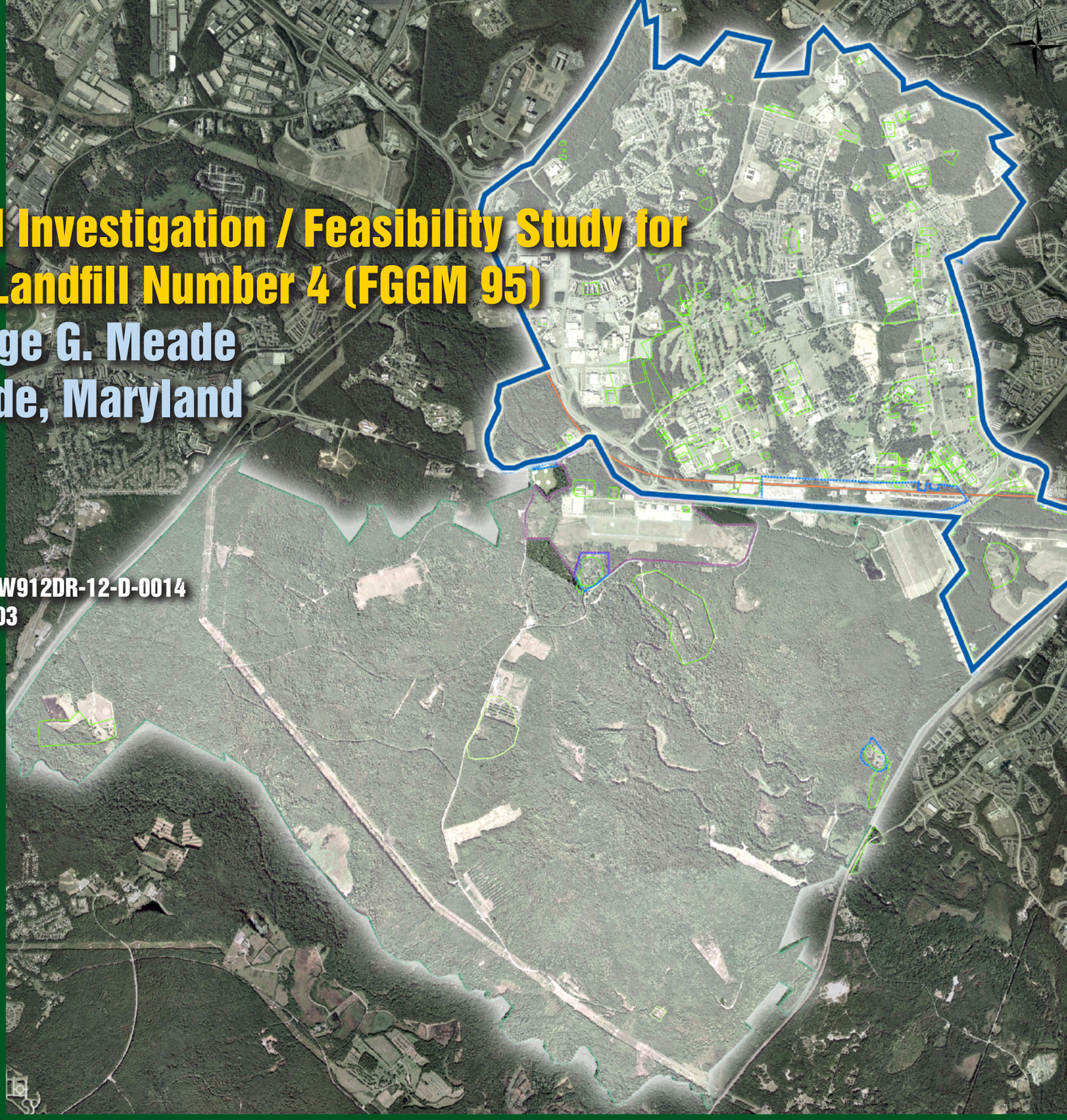
Final

Remedial Investigation / Feasibility Study for Inactive Landfill Number 4 (FGGM 95)

Fort George G. Meade
Fort Meade, Maryland



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Prepared for:

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Baltimore District

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Project no. 60444826

The views, opinions, and/or findings contained in the report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation.

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March 23, 2020

Environmental Division

Mr. Robert Stroud
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Dear Mr. Stroud:

Enclosed please find the *Final Remedial Investigation/Feasibility Study (RI/FS) for Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland* (Report). The *Final RI/FS* was revised based on the comments received from the U.S. Environmental Protection Agency and the Maryland Department of the Environment (MDE) on February 4, 2020, and November 25, 2019, respectively. Responses to comments are provided in Appendix L of the Report.

Copies of the Report have been furnished to Elisabeth Green (MDE), Timothy Peck (Baltimore District, USACE), Fran Coulters (U.S. Army Environmental Command), and the Fort George G. Meade Restoration Advisory Board.

Per the Federal Facility Agreement, please provide approval within 30 calendar days of receipt. Written correspondence should be addressed to Fort George G. Meade, Attention: IMME-PWE (George B. Knight), 4216 Roberts Ave, Suite 5115, Fort Meade, MD 20755-7068 or george.b.knight7.civ@mail.mil.

If you have any questions, please feel free to contact Erin Geiger at (301) 677-9168 or me at (301) 677-7999.

Sincerely,

George B. Knight, PG
Program Manager, Installation Restoration Program
Directorate of Public Works-Environmental Division

Enclosure

F I N A L

REMEDIAL INVESTIGATION/FEASIBILITY STUDY FOR INACTIVE LANDFILL NUMBER 4 (FGGM 95) FORT GEORGE G. MEADE, MD

Prepared for

U.S. Army Corps of Engineers
Baltimore District
2 Hopkins Plaza,
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°F	Degrees Fahrenheit
µg/L	Micrograms per liter
AECOM	AECOM Technical Services, Inc.
ARAR	Applicable or relevant and appropriate requirement
AVS	Acid volatile sulfide
BERA	Baseline Ecological Risk Assessment
bgs	Below ground surface
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
Cm/sec	Centimeters per second
COC	Chemical of concern
COMAR	Code of Maryland Regulations
COPC	Constituent of potential concern
Cr(VI)	Hexavalent chromium
CSM	Conceptual site model
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DLA	Defense Logistics Agency
DO	Dissolved oxygen
DPW	Directorate of Public Works
EA	EA Engineering, Science, and Technology
Eco-SSLs	Ecological-Soil Screening Levels
FFA	Federal Facility Agreement
FFIRP	Federal Facilities Installation Restoration Program
FGGM	Fort George G. Meade
FID	Flame ionization detector
FS	Feasibility Study
Ft	Foot/feet
Ft/min	Feet per minute
HHRA	Human health risk assessment
HQs	Hazard Quotients
IAL4	Inactive Landfill Number 4
IDW	Investigation derived waste
LTM	Long-term monitoring
LTMgt	Long-term management

LUC	Land use control
MCL	Maximum contaminant level
MDC	Maximum detected concentration
MDE	Maryland Department of the Environment
NAVD 88	North American Vertical Datum of 1988
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFA	No further action
NOAA	National Oceanic and Atmospheric Administration
NPDWR	National Primary Drinking Water Regulation
O&M	Operation and maintenance
ORP	Oxidation reduction potential
PA	Preliminary Assessment
PA/SI	Preliminary Assessment / Site Investigation
PCB	Polychlorinated biphenyl
PID	Photoionization detector
ppm	Parts per million
PP	Proposed plan
PRGs	Preliminary Remediation Goals
PVC	Polyvinyl chloride
RAGS	Risk Assessment Guidance for Superfund
RAO	Remedial action objective
RCRA	Resource Conservation and Recovery Act
Rd Emb	road embankment
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RSL	Regional screening level
SEM	Simultaneously extracted metals
SHA	State Highway Administration
SI	Site investigation
SLERA	Screening Level Ecological Risk Assessment
SVOC	Semi-volatile organic compound
TBC	To be considered
TCD	Thermal conductivity detector
TCDD	Tetrachlordibenzo-p-dioxin
TEQ	Toxic equivalency
THQ	target hazard quotient
TOC	Total organic carbon

TPH	Total petroleum hydrocarbon
TPH-DRO	Total petroleum hydrocarbon – diesel range organics
TPH-GRO	Total petroleum hydrocarbon – gasoline range organics
TR	target cancer risk
UFP-QAPP	Uniform Federal Policy – Quality Assurance Project Plan
UPA	Upper Patapsco aquifer
URS	URS Group, Inc.
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USATHAMA	United States Army Corps of Engineers Toxic and Hazardous Materials Agency
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
UU/UE	unlimited use and unrestricted exposure
VISL	Vapor intrusion screening level
VOC	Volatile organic compound

This Remedial Investigation/ Feasibility Study (RI/FS) is for Inactive Landfill Number 4 (IAL4) (FGGM-95) at Fort George G. Meade (FGGM), Anne Arundel County, Maryland. IAL4 is located along the southwestern border of FGGM, north of and adjacent to State Route 32 (Route 32).

The purpose of the RI is to describe the occurrence and distribution of contamination and the findings of the baseline human health and ecological risk assessments. The scope of the RI is to determine the nature and extent of contamination at IAL4 resulting from solid waste disposal from past site operations and to determine the thickness and extent of the soil cover at IAL4. The results of the RI were used to complete a human health risk assessment (HHRA) and screening level ecological risk assessment (SLERA).

The purpose of the FS is to identify technologies to mitigate or manage site contamination to ensure acceptable human health and ecological risks and to assemble the applicable technologies into site remedial/management alternatives that fulfill human and environmental health objectives.

IAL4 has been included in three previous environmental studies, and samples were collected at IAL4 in 1991, 2008, and 2013. The previous studies identified metals in groundwater and metals and 2,3,7,8- tetrachlordibenzo-p-dioxin (TCDD) in subsurface soil as potentially elevating risk at IAL4.

Based on the 5 May 2017 groundwater level measurements, the water table aquifer at IAL4 slopes to the south and east off the flanks of the surrounding ridges. Locally, the surface water runoff from the Route 32 highway embankment flows north toward IAL4. Depth to groundwater at IAL4 during drilling and installation of the wells varies from 10 ft below ground surface (bgs) immediately north of the landfill to 26 ft bgs northeast of the landfill, where the elevation of the ground surface is higher.

For the RI, soil gas samples were collected from six onsite locations and two offsite locations (eight total); 10 trenches and four test pits were excavated across IAL4 to visually document the nature and extent of buried waste; seven surface soil samples and seven subsurface soil samples were collected to characterize those media; three additional monitoring wells were installed and all eight monitoring wells were sampled twice to characterize groundwater; and eight sediment samples were collected to characterize sediment. No surface water was available for sampling or analysis.

Solid waste was identified in nine of the 10 trenches excavated for the RI. Solid waste was similar in all nine of the trenches and consisted primarily of a mixture of household trash and construction debris, with some automotive debris (oil filters, a license plate, a steering wheel, car batteries, and belts). Some solid waste was observed in the four test pits, but this waste is not attributed to the landfill. The landfill boundary was identified in seven of the 10 trenches excavated at IAL4 to date. The southern boundary for the landfill could not be established positively; therefore, a revised landfill boundary was delineated for IAL4. Based on the revised boundary, the areal extent of the landfill encompasses approximately 2.4 acres. For costing, it was assumed an additional 0.5 acres extends underneath Route 32. Based on the areal extent and the thickness of solid waste as determined through trenches and borings logs, the estimated total volume of solid waste is 29,200 cubic yards.

The HHRA identified the following risk levels and chemicals causing the risk:

- The carcinogenic target risk level for groundwater (assuming potable use) was exceeded for the hypothetical future onsite resident (lifetime) due to arsenic.
- The non-carcinogenic target risk level for groundwater (assuming potable use) was exceeded for the hypothetical future onsite resident (child and adult) due to arsenic, cobalt, and iron.
- Methane detected at soil gas point SG-01 exceeded the Code of Maryland Regulations (COMAR) regulation of 5 percent.

The SLERA was refined consistent with the initial stage of a Baseline Ecological Risk Assessment (BERA) Step 3 to reduce uncertainty in the SLERA conclusions and to refine the recommendations presented in the report by applying more realistic exposure assumptions. Based the results of the BERA Step 3 refinements, only the benthic invertebrate and small insectivorous mammal assessment endpoints had concentrations of COCs above BERA Step 3 refined benchmarks (sediment exposure only). Using a weight-of-evidence approach, the BERA Step 3 COCs in sediment (p-isopropyltoluene, benzoic acid, and 2378-TCDD-TEQ) were determined to have low potential to exert adverse population-level effects. Based on this information, potential ecological risks at IAL4 are low, and no further action to evaluate or address potential ecological impacts is recommended.

The results of the HHRA indicate that there are unacceptable risks to human health under current and future land use scenarios. In addition, buried waste remains in place at IAL4 prohibiting unrestricted land use. Therefore, the following remedial action objectives (RAOs) were established for IAL4:

- To prevent human contact with buried and surficial waste that may pose a physical hazard;
- To meet ARARs and be protective of the hypothetical future resident ingestion of shallow groundwater containing concentrations of arsenic, cobalt, and iron above their respective target risk levels; and
- To eliminate exposure to concentrations of methane in soil gas that may cause an explosive risk and to prevent human inhalation of methane in soil gas at the property boundary above the COMAR 26.04.07.03B(9) guidelines of 5 percent by volume.

Five remedial alternatives were evaluated and assessed with respect to meeting the applicable RAOs (It should be noted that, in accordance with the NCP, there is an expectation that aquifers will be restored to their beneficial uses.):

- Alternative 1 — No Action
- Alternative 2 — Land Use Controls (LUCs) and Long-Term Monitoring (LTM) of soil gas and groundwater.
- Alternative 3 — 2-foot Soil Cover, Long-Term Management (LTMgt) of the cover, LUCs, and LTM of soil gas and groundwater. However, in accordance with the NCP, there is an expectation that aquifers will be restored to their beneficial uses.

- Alternative 4 — Installation of an Impermeable Soil/Geosynthetic Cover across IAL4 in Accordance with COMAR 26.04.07.21, delineation of soil gas, LUCs, LTMgt of the Cover, and LTM of soil gas and groundwater
- Alternative 5 — Excavation with offsite disposal, backfill with clean fill, and installation of an impermeable cap over trash remaining under the slope to Route 32, LUCs, LTMgt of the Cover, and LTM of groundwater.

Under current conditions, unacceptable risks are posed to future human receptors if the future land use becomes residential. Alternative 1 includes no means to reduce these risks and does not meet the threshold criterion of protection of human health and the environment. Alternative 2 would not meet ARARs and would not achieve all the RAOs, specifically the reduction of toxicity, mobility, and volume of waste. However, LUCs are already in place downgradient of IAL4; Route 32 and Tipton Airfield restrict building on those properties and the use of shallow water for potable purposes. Also, there is no complete groundwater pathway. However, in accordance with the NCP, there is an expectation that aquifers will be restored to their beneficial uses. Alternative 3 will not meet the state's landfill capping ARAR unless it can be shown that the soil cover is as effective as a low-permeability geotextile membrane. Alternatives 4 and 5 would meet ARARs and achieve RAOs; however, Alternative 5 would be more difficult to implement and less cost effective.

1.0 INTRODUCTION

This Remedial Investigation Feasibility Study (RI/FS) is for Inactive Landfill Number 4 (IAL4) (FGGM-95) at Fort George G. Meade (FGGM), Anne Arundel County, Maryland (**Figure 1-1**).

1.1 Authority

This work is being performed under United States Army Corps of Engineers (USACE), Baltimore District contract number W912DR-12-D-0014, delivery order 0003, contract line item 0005. This site is being investigated under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] 300), with coordination and input from the United States Environmental Protection Agency (USEPA) Region III, the Maryland Department of the Environment (MDE) Federal Facilities Installation Restoration Program (FFIRP), and as appropriate, with the other signatories of the FGGM Federal Facility Agreement (i.e., Architect of the Capitol and the Department of Interior). Any coordination with other groups within MDE, such as the Solid Waste Program, will be handled by the FFIRP. This investigation also complies with the FGGM Federal Facility Agreement (FFA) (USEPA, 2009a). The work described herein was performed in accordance with Uniform Federal Policy – Quality Assurance Project Plan (UFP-QAPP; AECOM 2016d) Addendum No. 7 – *Remedial Investigation Work Plan for Inactive Landfill Four* (AECOM, 2017) and Accident Prevention Plan (APP; AECOM 2016a) Addendum 2 (AECOM, 2016b).

1.2 RI/FS Objective and Purpose

The objectives of the RI/FS are to characterize the nature and extent of buried waste and site-related contamination, quantify site-related contamination risks to human and ecological receptors, and evaluate remedial options. Data provided from earlier studies completed at IAL4, as well as the data collected between 4 April 2016 and 21 September 2017, were used to complete a baseline human health risk assessment (HHRA) and a screening-level ecological risk assessment (SLERA) for IAL4.

The purpose of the RI portion of this report is to summarize the RI field activities; characterize site conditions including the occurrence and distribution of contamination; determine the nature and extent of buried waste and environmental impacts at IAL4; and assess risk to human health and the environment through the findings of the HHRA and SLERA, which are intended to evaluate the significance of the contamination. The baseline risk assessment includes the calculation of residual contaminant concentrations posing acceptable human and ecological risks, also referred to as preliminary remediation goals, which serve as input to the FS.

Per 40 CFR 300.430(a)(2), the purpose of the FS is to assess site conditions and develop and evaluate remedial alternatives to assist in the selection of an appropriate action for IAL4. The FS portion of this document has been prepared to determine applicable or relevant and appropriate requirements (ARARs); develop and present remedial action objectives (RAOs); develop remedial alternatives to identify technologies to attain RAOs; and analyze the remedial alternatives. The FS also estimates capital and operation and maintenance (O&M) costs for each

alternative and evaluates the alternatives using USEPA's threshold and balancing criteria. Based on the evaluation, the FS proposes a preferred alternative.

Collectively, the RI/FS findings are the basis for the Proposed Plan (PP), Record of Decision (ROD), and the implementation of remedial actions for IAL4. The PP and ROD will appear as separate future documents.

1.3 Scope

The scope of this RI/FS report is to present: (1) the nature and extent of contamination, fate and transport of contaminants in the environment, and risk assessments for surface soil, subsurface soil, sediment, and groundwater; and (2) the results of the evaluation of remedial alternatives for meeting the RAOs for any chemicals of concern (COCs) or primary risk driver identified in these media. In accordance with CERCLA, remedial alternatives are to be cost effective; use permanent solutions and alternative treatment technologies to the maximum extent practicable; and satisfy the preference for treatment that reduces volume, toxicity, or mobility to the maximum practical extent.

1.4 Site Location and Description

IAL4 is along the southwestern border of FGGM (**Figure 1-2**) north of and adjacent to State Route 32 (Route 32). IAL4 is located about 1,000 feet (ft) west of the Defense Logistics Agency (DLA) Disposition Services (formerly called the Defense Property Disposal Office Salvage Yard and the Defense Reutilization and Marketing Office), which is topographically higher than IAL4. Runoff from the DLA Disposition Services parking lots enters the drainage swales around IAL4. **Figure 1-3** shows the historic outlines of IAL4. Note two different boundaries are depicted on the figure; one boundary is identified in the *Final Base Closure Parcel Site Inspection Study* (EA, 1992), and the other boundary line is identified in the *Ground-water Sampling Report* (USACHPPM, 2008).

Although IAL4 is not located within the Base Realignment and Closure (BRAC) parcel, it was identified as an Area of Interest in the *Final Base Closure Parcel Site Inspection Study, Volume 1* (EA, 1992) because, as stated in the site investigation (SI) study, it was formerly used as a rubble landfill and there is a possibility for contaminants (if present) to migrate to the BRAC parcel.

According to the *Final Base Closure Parcel Site Inspection Study* (EA, 1992), IAL4 is approximately 2 acres in size and was used during the 1950s until the 1970s for the disposal of rubble (EA, 1992). A review of historic aerial photographs confirms that IAL4 was active from the 1950s to the 1970s. **Figures 1-4** and **1-5** present IAL4 through a series of historic and recent aerial photographs and historic maps. The USACE offered the following guidance on the anti-aircraft range identified in the circa 1952 map on **Figure 1-5**:

> "Based on the location of IAL4 over former firing points and not a possible impact area, the USACE considers it a low-probability condition at this time…. During execution of RI field work, Environmental & Munitions Design Center recommends that an unexploded ordnance technician be onsite during intrusive activities to identify possible encountered Munitions and Explosives of Concern. If that becomes reality, then the site will need to be re-evaluated for the Munitions

and Explosives of Concern conditions and RI field work methods may need to change" (USACE, 2016).

No Munitions and Explosives of Concern were encountered during RI field work. A Military Munitions Response Program Preliminary Assessment would be conducted if any former range evidence is uncovered during construction or other intrusive activity at this site.

Figure 1-6 is a LIDAR image of IAL4 and the surrounding area. Linear features trending north-northeast to south-southwest can be seen on the figure. These are interpreted to be manmade features. The northern and eastern extents of the linear features at IAL4 seem to correspond with the change in elevation that drops off to a drainage swale. This corresponds with the EA (1992) outline of the boundary of IAL4. The southern extent of the linear features corresponds with a fence that prevents access to Route 32. The western extent of the linear features is obscured by the elevated dirt roadway. **Figure 1-6** illustrates the IAL4 boundary based on the LIDAR Hillshade imagery. This boundary was used for the RI.

IAL4 is currently wooded and the topography is hummocky. An unmaintained dirt road is in the northern, eastern, and western portions of IAL4, but it does not define the landfill boundaries. A "very low gradient drainage swale" (EA, 1992, page 3-28) defines the northern boundary of the landfill. The drainage swale is 4 to 10 ft lower in elevation than the surrounding ground surface (**Figure 1-6**). The low-lying area that contains the drainage swale is approximately 100 to 150 ft wide. The unmaintained dirt road is located north, west, and east of the drainage swale. North and east of the dirt road, the topography continues to rise. West of the road, the land declines approximately 10 ft. There are additional unmaintained dirt roads west of IAL4.

There are two drainage swales at IAL4 (**Figure 1-7**). Swale 1 starts south of monitoring well ILF4-MW-40, between MW-40 and COE-3. Runoff within this swale flows to the west and northwest before it flows through a culvert under the elevated dirt road to the west. Swale 2 begins on the north side of the landfill, south of monitoring well COE-3. Runoff from this swale flows east then south to a culvert beneath Route 32. This culvert also receives runoff from an eastern and a western swale that parallel Route 32 and converge with swale 2 just before entering the culvert that goes under Route 32. The eastern swale parallels Route 32 along and within a dirt roadway between the DLA Disposition Services and Route 32 and receives runoff from the DLA Disposition Services and Route 32. The western swale, associated with highway construction, parallels Route 32 and receives runoff from Route 32 and IAL4.

1.5 Previous Environmental Investigations of IAL4

IAL4 has been included in three previous environmental studies; the *Final Base Closure Parcel Site Inspection Study* (EA, 1992), the *Ground-Water Sampling Report* (USACHPPM, 2008), and the *Preliminary Assessment / Site Investigation (PA/SI) of FGGM* (URS, 2015). Samples were collected at IAL4 in 1991, 2008, and 2013. **Figure 1-8** shows all previous sample locations.

1.5.1 1991 Site Inspection

In 1991 (EA, 1992), one sediment sample (SS-18) and five groundwater samples (at wells COE-3, MW-39, MW-40, MW-41S, and MW-41D) were collected at IAL4 (EA, 1992). The sediment and groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, and 23 metals (both dissolved and total in the

groundwater samples). **Tables 1-1** and **1-2** present the detections from the sediment and groundwater sampling, respectively. The report from this sampling event indicated that the groundwater flow direction is to the southeast (EA, 1992).

The results from the SI are as follows:

> **"**No VOCs were detected in groundwater… Bis(2-ethylhexyl)phthalate was the only SVOC detected in groundwater… Low level pesticides … did not exceed regulatory criteria. Only two total metals (lead and chromium) in COE-3 exceeded NPDWR [National Primary Drinking Water Regulations] criteria. There were no dissolved metals data that exceeded NPDWR criteria. A low-level concentration of toluene was the only VOC detected in SS-18, … and may be attributed to background values. The metals values reported in SS-18 were within the background values for soils "typical of the site" (EA, 1992, page 3-31).

Analytical sheets of all compounds analyzed are provided in **Appendix A**. Note that toluene is not typically a background chemical in soil.

1.5.2 2008 Sampling

In 2008, four groundwater monitoring wells (MW-39, MW-40, MW-41S, and MW-41D) were sampled, and one sediment sample (SED1) and a duplicate (SED1A) were collected (**Tables 1-1** and **1-2**). All samples were analyzed for VOCs, SVOCs, pesticides, polychlorinated biphenyl (PCB), and select total metals.

Results from the USACHPPM (2008) study are as follows: "No VOCs, SVOCs, pesticides, or PCBs were detected in the groundwater samples. Metals were detected in groundwater, but no concentrations exceed the NPDWR maximum contaminant levels (MCLs). Acetone was the only VOC detected in the sediment sample. Four SVOC compounds were detected in the sediment samples; however, only 2-methylnaphthalene was detected above the quantification limit. The pesticide DDE [Dichlorodiphenyldichloroethylene] was detected at very low concentrations. DDD [Dichlorodiphenyldichloroethane] was found in the duplicate sample but was below the detection limit in SED1. Arsenic, barium, cadmium, chromium, and lead were detected at low concentrations [mercury was also detected but not included in this list]" (USACHPPM, 2008, page 6). Analytical sheets of all compounds analyzed are provided in **Appendix B**.

1.5.3 2013 PA/SI

1.5.3.1 PA

A PA of IAL4 was conducted in 2012 (URS, 2012). A USEPA-approved risk-based screening approach was used to evaluate the previously collected chemical data. This risk-based screening approach is presented in the UFP-QAPP (AECOM, 2016). Sediment and groundwater chemical data were collected during previous studies of IAL4 and were evaluated during the PA. Based on the 2008 sediment samples, the cumulative screening assessment results for sediment were below the site-specific cancer risk threshold of $5x10^{-5}$, and the non-cancer hazard index threshold of 0.5. Based on the 2008 groundwater samples, the cumulative screening assessment results for groundwater with total metals were above the site-specific cancer risk threshold of $5x10^{-5}$ but below the non-cancer threshold of 0.5. The cancer risk driver was chromium; the conservative

hexavalent chromium regional screening level (RSL) value was used in the risk-based screening, and the PA recommended NFA for both sediment and groundwater at IAL4.

While the 1992 SI stated that IAL4 was reportedly used as a rubble landfill, this had not yet been confirmed by intrusive testing when the PA was conducted. Therefore, the PA recommended that four test pits be excavated within the landfill to characterize its composition.

1.5.3.2 SI

The SI of IAL4 was conducted in April of 2013 (URS, 2015) and followed the recommendations put forward in the PA (URS, 2012).

1.5.3.2.1 SI Test Pits, Sample Collection, and Observations during Field Activities

Figure 1-8 shows the locations of the SI test pits. No water was encountered during excavation of the test pits. Four test pits were proposed in the PA, but six were excavated during the SI. Debris of a non-hazardous nature (household trash, construction debris, automotive parts, slag, bricks, and coal) was discovered in four test pits (IAL4-1, IAL4-4, IAL4-5, and IAL4-6). The other two pits (IAL4-2 and IAL4-3) did not show any signs of debris, except for the occasional bottle, although there was surface debris and slag in the areas of the test pits. The solid waste observed on IAL4 was a combination of household trash (cans, bottles, porcelain dishes, and cups) and construction debris (bricks, coal, and occasional slag). In general, the SI revealed solid waste extending from approximately 6 inches to 8 feet below the surface. Part of a 1958 newspaper was recovered from one of the test pits. All observed subsurface waste was within the boundary of the landfill inferred from the LIDAR (Sanborn Map Company, Inc., 2011) data.

The PA did not recommend soil samples be collected; however, subsurface soil samples were collected from test pits IAL4-1 (petroleum staining was observed) and IAL4-6 (randomly selected because the trash found here was typical of the other test pits). Test pit IAL4-1 was the only location where an elevated photoionization detector (PID) reading (10 parts per million [ppm]) and an odor (petroleum) were noted, even though all test pit locations were screened with the PID. Test pit IAL4-1 was sampled from an interval of 7 to 8 ft bgs and analyzed for VOCs, SVOCs, total petroleum hydrocarbon – gasoline range organics (TPH-GRO), TPH-diesel range organics (TPH-DRO), metals, PCBs, and dioxins. A sample representative of site conditions was collected from IAL4-6 from an interval of 8 to 10 ft bgs and analyzed for VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, PCBs, herbicides, pesticides, and dioxins.

Detected compounds are presented in **Table 1-3**. Analytical sheets of all compounds analyzed are provided in **Appendix C**. A log of photographs taken during the PA/SI is included in **Appendix D**.

1.5.3.2.2 Risk-Based Dioxin/Furan Evaluation

Table 1-4 presents the dioxin and furan congeners that were detected in subsurface soils at IAL4. The raw laboratory data for each sample is presented along with any laboratory and data validation flags. Because USEPA has limited toxicity data available for the several dioxin and furan congeners, the detected congener concentrations were adjusted to a 2,3,7,8-tetrachlordibenzo-p-dioxin (TCDD) equivalency. This is accomplished by multiplying the raw laboratory data by a toxicity equivalency factor (TEF) that corresponds to the congener's relative

toxicity to TCDD. The last column in **Table 1-4** presents each sample's 2,3,7,8-TCDD equivalency, which was used in the PA/SI risk analysis.

1.5.3.2.3 SI Conclusions and Recommendations

SI subsurface soil sample detections were compared to background levels (where applicable) and their RSLs based on a target cancer risk of $1x10^{-6}$ and a target non-cancer Hazard Quotient (HQ) of 0.1. A summary of that comparison follows:

- No VOCs, pesticides, or PCBs were detected above their RSLs
- Only two SVOCs (benzo(a)pyrene and benzo(b)fluoranthene) were detected above their RSLs
- Only six metals (arsenic, copper, iron, manganese, mercury, and thallium) were detected in subsurface soil samples at concentrations that exceeded background (where applicable) and their RSLs.
- The dioxin 2,3,7,8-TCDD equivalency was detected above its RSL.
- Based on the SI subsurface soil samples, the cumulative cancer risk estimate was below the site-specific threshold of 5x10-5, and the cumulative non-cancer hazard estimate was above the site-specific threshold of 0.5 (URS, 2012). The non-cancer risk was driven by 2,3,7,8-TCDD, iron, copper, and arsenic. The MDE TPH cleanup standards were also exceeded. Further action was recommended for subsurface soil at IAL4.

1.6 RI/FS Report Organization

Following this Introduction, this RI/FS consists of nine sections organized in general accordance with USEPA's RI/FS guidance (USEPA, 1988b):

- Section 2: Physical Characteristics of the Study Area – Provides a narrative description of the environmental setting and a preliminary conceptual site model (CSM).
- Section 3: Study Area Investigation – Details the field activities completed at IAL4 including preliminary activities, RI field activities, and investigation derived waste (IDW) handling.
- Section 4: Nature and Extent of Contamination
- Section 5: Contaminant Fate and Transport
- Section 6: Baseline HHRA – Details the HHRA including data evaluation/identification of constituents of potential concern (COPCs), exposure assessment, toxicity assessment, risk characterization, and uncertainty analysis.
- Section 7: Screening Level Ecological Risk Assessment (SLERA).
- Section 8: FS
- Section 9: References – Details documents referenced throughout the report.

All figures and most tables are grouped together and are presented after Section 10. Some smaller tables are imbedded within the text.

Twelve appendices follow the body of the report:

- Appendices A, B, and C contain laboratory analytical sheets of compounds analyzed during earlier studies of IAL4 (EA, 1992; USACHPPM, 2008; and URS, 2015); these are included on CD only.
- Appendix D contains the Photo Log from the PA/SI conducted in 2012 (URS, 2015).
- Appendix E contains the Excavation Permit for RI Activities at IAL4.
- Appendix F contains the completed field forms from soil gas sampling, monitoring well installation and sampling, and the photo and test pit/trench log from the RI
- Appendix G contains the usability report
- Appendix H contains the data validation and laboratory analytical reports from the RI
- Appendix I contains the baseline human health risk assessment
- Appendix J contains the screening level ecological risk assessment
- Appendix K contains the costs and detailed assumptions associated with the implementation of remedial alternatives

2.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

This section provides a further description of IAL4.

2.1 Demography and Land Use

The following information describing the demography and land use of the IAL4 environs (Anne Arundel County) is from the United States Census Bureau (USCB, 2016) and Anne Arundel County (2016).

2.1.1 Demography

The USCB 2016 population estimate for Anne Arundel County was 568,346 or about nine percent of Maryland's entire population. Given that the county encompasses approximately 416 square miles, this represents a population density of approximately 1,370 people per square mile (USCB, 2016).

Approximately 75 percent of the county's population identified as white, 17 percent identified as black, while the remainder identified with one of five other racial categories. The USCB estimated that in 2016, approximately 74 percent of the county population owned homes, representing about 223,000 housing units with a median value of about $334,000 (USCB, 2016).

2.1.2 Land Use

IAL4 is currently undeveloped and wooded. The Fort Meade Future Development Plan (FGGM, 2018), retains this area as undeveloped, and the 2013 Real Property Master Plan (ATKINS, 2013) classifies the current and future use as industrial.

2.2 Meteorology/Climate

The climate at IAL4 is temperate, influenced by the Chesapeake Bay and the Atlantic Ocean to the east and the Appalachian Mountains to the west. The winter weather in the area is influenced primarily by cold, dry, continental-polar winds from the west and northwest, and less frequent maritime-tropical winds from the south and southwest that bring warm, often humid air to the region. During the summer, the dominance of these two air masses is reversed and warm, humid weather dominates.

Local weather data are compiled by the National Oceanic and Atmospheric Administration's (NOAA) Climatic Data Center for the Baltimore-Washington International Airport weather station. Annual precipitation averages approximately 42 inches per year, varying from 0 to 6.3 inches per month. The annual mean daily temperature for the IAL4 area is 56.8 degrees Fahrenheit (°F), with a daily annual maximum of 66°F and a minimum of 46°F. Annual temperature extremes vary from -7°F to 106°F (NOAA, 2017).

2.3 Ecology/Biome

IAL4 mostly consists of wooded areas and drainage swales. Based on observations during the RI

field work, the vegetation at IAL4 has not been cut in recent times, as some trees are up to 30 inches in diameter. IAL4 is outside the 100-year floodplain (FEMA, 2012). Areas adjacent to IAL4 are mapped as wetlands (FGGM, 2016b). Section 2.6 discusses wetlands in more detail.

2.4 Topography and Soils

IAL4 lies within the Coastal Plain physiographic province, which is characterized by broad, low, rolling uplands and low-gradient streams. **Figure 1-7** is a topographic map of IAL4 illustrating that ground surface elevations vary from about 133 to 145 ft above mean sea level. The ground surface slopes away from IAL4 in all directions.

Figure 2-1 illustrates the IAL4 soil types, as mapped by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) (USDA NRCS, 2018). The soil types consist of Patapsco-Evesboro-Fort Mott complex, 0 to 5 percent slopes (PeB); Udorthents, loamy, 0 to 5 percent slopes (UoB); and Evesboro and Galestown soils, 5 to 10 percent slopes (EVC). **Table 2-2** provides more detailed soil descriptions including setting, properties and qualities, and typical vertical profile.

2.5 Surface Water

No surface water bodies were observed in the immediate vicinity of IAL4; however, a perennial stream was delineated along the northwestern edge of IAL4 in 2009 as part of a wetlands investigation. The Little Patuxent River is located about 2,000 ft west of IAL4. There appears to be an ephemeral drainage along the northern and eastern boundary of IAL4 (see Section 1.4), which corresponds to a potential wetlands location.

2.6 Wetlands

The *Base Closure Parcel Site Inspection Study* (United States Army Corps of Engineers Toxic and Hazardous Materials Agency [USATHAMA], 1992) indicated there is a small wet woods area on the northern side of IAL4, just east of the dirt road that bisects IAL4. This wet area appears to form in a depression bounded on the south by IAL4 and on the north and west by the elevated dirt road. It receives water from surface runoff from the surrounding area during precipitation events and remains dry for most of the year.

The *Base Closure Parcel Site Inspection Study* (USATHAMA, 1992) indicated there is a small wetland area on the southwest side of IAL4, west of the dirt road that runs through IAL4. This wetland is associated with the trenched swale, which appears to have been modified or created during construction of Route 32. This trenched swale is associated with the stormwater management of Route 32 and drains to an intermittent stream channel that was dry at the time of the 1992 field investigation (USATHAMA, 1992). This swale and the small wet woods portion east of the onsite road both receive runoff from IAL4 and the surrounding area.

IAL4 was investigated for wetlands from 2009 to 2011 (FGGM, 2016a, b). IAL4 is elevated above its surroundings and this has created a gulley at the base of IAL4 that wraps around most of the landfill's perimeter. Wetlands have been delineated within the gulley and bottomland around the base of the landfill and these wetlands are identified on **Figure 2-2**. Palustrine forested wetlands were delineated around the northern and eastern edges of the landfill. A

palustrine emergent/scrub-shrub wetland was delineated along the southeast edge and a palustrine emergent wetland was delineated along the southwest edge of IAL4. A perennial stream was delineated along the northwestern edge of IAL4.

2.7 Regional Geology

IAL4 is located just within the western boundary of the Coastal Plain physiographic province. The Coastal Plain geology is characterized by a wedge of unconsolidated Cretaceous and Quaternary alluvial sediments (unconsolidated sands, silts, and clays) that dip and thicken toward the Atlantic Ocean. These deposits have a total thickness of about 700 ft at IAL4 (USACE, 1999). Underlying the Coastal Plain deposits is Precambrian crystalline bedrock composed predominately of gabbro, gneiss, and schist. The formations comprising the Coastal Plain deposits proximal to IAL4 are listed and generally described in **Table 2-3** (USACE, 1999).

2.8 Site Geology and Hydrogeology

IAL4 is located in the outcrop area of the Lower Patapsco Formation (USACE, 1999). Subsurface geologic information was obtained from the soil borings data from the *Base Closure Parcel Site Inspection Study* (USATHAMA, 1992) and from this RI. The Lower Patapsco Formation in this area consists of sand and some lenses of clay and silt material. Based on the soil boring data obtained from the MW-41 well cluster (monitoring wells MW-41S and MW-41D) which reached 84 ft bgs (**Figure 1-8**), the Lower Patapsco Formation at IAL4 consists of approximately 80 ft of sand, with occasional layers of clay or gravel (USATHAMA, 1992). As part of the *Base Closure Parcel Site Inspection Study* (USATHAMA, 1992), a geologic cross section of IAL4 was developed from the soil boring data and is presented in **Figure 2-3**. Updated cross sections based on the RI data are presented in Section 4.1.

Depth to groundwater at IAL4 during drilling and installation of the wells varies from 10 ft below ground surface (bgs) immediately north of the landfill to 26 ft bgs northeast of the landfill (**Table 2-4**). Groundwater elevation during drilling varied from 120.5 ft in the southeast portion of the landfill to 130.06 ft in the north-central portion of the landfill (**Table 2-4**).

Based on two most recent rounds of groundwater gauging data obtained in May 2017 and August 2017 (**Table 2-4**), groundwater elevation at IAL4 varies from a high of 128.18 ft North American Vertical Datum of 1988 (NAVD 88) at monitoring well MW-44 located north of the old railroad tracks north of IAL4, to 120.73 ft NAVD 88 at MW-41D located in the southeast portion of IAL4. Based on the May 2017 groundwater gauging, groundwater flow in the western portion of IAL4 appears to be to the south-southwest, with the eastern portion having more of a southerly flow direction (**Figure 2-4**).

The *Base Closure Parcel Site Inspection Study* (USATHAMA, 1992) compared water level depths in the shallow and deep monitoring well cluster (MW-41S and MW-41D, respectively) at IAL4 and concluded that the water level elevations in the two wells are roughly similar, with the water level elevation in the shallow well approximately 0.5 ft higher than the water level elevation in the deep well. This indicates hydraulic communication between the shallow and deep monitoring wells screened in the water table aquifer and that there is a limited downward vertical gradient at this site. This is why the shallow and deep groundwater results are not

segregated in Section 4.0. Hydraulic conductivity values calculated from the data obtained in 1990 and 1991 for two of the monitoring wells at IAL4 are 7.7E-03 feet per minute (ft/min) in MW-41D and 2.0E-02 ft/min in MW-42.

3.0 REMEDIAL INVESTIGATION FIELD PROGRAM

The IAL4 RI field effort was conducted between 4 April 2016 and 21 September 2017 in accordance with the scope of work presented in the *RI Work Plan* (AECOM, 2017) except for deviations noted in Section 3.7. All RI sample locations are shown on **Figure 3-1,** and a summary of all sampling and investigation activity at IAL4 is provided in **Table 3-1**. Field activities included the following:

- Installation and sampling of eight temporary soil gas monitoring points to depths ranging from 2.5 to 5 ft bgs;
- Excavation of 10 trenches and four test pits across IAL4 to visually document the nature and extent of buried waste;
- Collection of seven surface soil samples (and one duplicate) and seven subsurface soil samples to characterize the nature and extent of surface and subsurface soil impacts at IAL4;
- Installation and development of three new monitoring wells to expand the existing monitoring network;
- Collection of two rounds of groundwater samples from eight monitoring wells to characterize the nature and extent of groundwater impacts at IAL4; and
- Collection of eight sediment samples (and one duplicate) to characterize potential impacts posed by runoff from IAL4 and to determine if there are unacceptable risks posed to ecological receptors at IAL4.

Prior to the start of intrusive activities, an FGGM Excavation/Pavement Permit was issued by the FGGM Directorate of Public Works (DPW). A third-party utility locating service cleared intrusive sampling locations for utilities using electromagnetic instruments. The Excavation Permit is provided in **Appendix E**.

Completed field forms are presented in **Appendix F1 through F3**. A photo log and test pit/trench logs from the RI field work are presented in **Appendix F4**. A summary of each field component of the RI is summarized in the following subsections.

3.1 Soil Gas Sampling and Analysis

Soil gas samples were collected from six onsite locations and two offsite locations (eight total) prior to trenching and test pitting activities to evaluate methane concentrations across IAL4. At two locations (SG-02 and SG-03), groundwater was encountered between 4 and 5 ft bgs. The procedure laid out in the *RI Work Plan* (AECOM, 2017) was to collect soil gas samples at 5 ft bgs. Approval was obtained to collect samples SG-02A and SG-03A at 3 ft bgs.

To facilitate sample collection, a stainless-steel screened vapor probe was manually driven approximately 5 ft bgs into a 0.5-inch-diameter borehole prepared using an electric rotary hammer and drive extensions. Soil gas sampling log sheets are provided in **Appendix F1**.

The soil gas sampling points were allowed to equilibrate for approximately 24 hours before sampling. In addition, sampling did not proceed within 5 days of a significant rain event (0.5 inches of rain or more). A helium leak test was performed on each soil gas port prior to and after

sampling. Prior to sample collection, the sample tubing was purged using a hand operated vacuum pump. Samples were collected in batch certified 1-liter Summa canisters equipped with flow control regulators. The regulators were set for an approximately 10-minute sampling duration (100 milliliters per minute). All samples were sent to Test America Laboratory in West Sacramento, California, and analyzed for methane.

3.2 Soil Sampling and Analysis

Table 3-2 summarizes each trench or test pit location, the rationale for the trench or test pit, and the chemical analysis performed on the soil samples at that location. All IAL4 soil samples were collected from locations of test pits and trenches. Six exploratory test pits (IAL4-1TP to IAL4-6TP) were excavated during the PA/SI of IAL4 (URS, 2015; refer to **Figure 1-8**). To enhance the 2012 characterization of IAL4 and to visually document the nature and extent of solid waste at IAL4, 10 trenches (IAL4-7TR, IAL4-7TRA, IAL4-8TR to IAL4-12TR, IAL4-17TR to IAL4-19TR) were excavated across the remaining portions of IAL4, while four test pits (IAL4-13TP to IAL4-16TP) were excavated to investigate surface dumping areas north and east of IAL4. The locations of the trenches and test pits are presented on **Figure 3-1**.

Each trench and test pit was excavated through the waste, if present, to native soils. If no waste was encountered, the excavation depth was at least 5 ft. The trenches were approximately 2 ft wide by 10 to 100 ft long and between 5 and 14 ft deep, depending on the depth to the bottom of the solid waste. The test pits were approximately 2 ft wide by 6 to 8 ft long and at least 4 ft deep, depending on if solid waste was encountered. If solid waste was encountered, the test pit was extended to the bottom of the solid waste. The trenches first determined the bottom of the solid waste within the landfill boundary and then the trenches were extended 10 ft beyond the boundary to confirm the absence of waste beyond the boundary and to determine the edge of the landfill. A global positioning system receiver was used in the field to obtain coordinates of the trenches and test pits.

Seven subsurface soil samples (from locations IAL4-7TR to IAL4-12TR and IAL4-14TP) and one duplicate were collected from beneath the solid waste in six trenches and one test pit to assess potential contaminants leaching into the subsurface soil. Test pit IAL4-14TP was sampled because slag was found from 2-4 ft bgs at that location. Seven surface soil samples (IAL4-7TR to IAL4-13TP) and one duplicate were collected to assess potential human health and ecological exposure to any surface soil contaminants. The surface soil samples were collected at seven of the trench locations, prior to the trench excavations, on the landfill side of the trenches. All soil samples were analyzed for VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and hexavalent chromium [Cr(VI)]. Ash was encountered at location IAL4-13TP and the analysis also included dioxins. At locations IAL4-7TR, IAL4-10TR, and IAL4-12TR, petroleum products were encountered, and the analysis also included PCBs. All samples were submitted to Eurofins Lancaster Laboratories Environmental, LLC in Lancaster, Pennsylvania, an Environmental Laboratory Accreditation Program accredited laboratory for chemical analysis.

All excavated material was temporarily staged on polyvinyl sheeting placed adjacent to the trench. The field geologist screened the excavated material visually and with a PID. Soil samples were collected from the native soil beneath any solid waste to determine if constituents from the solid waste had leached into the soil. During installation of each trench and test pit, the field geologist documented changing soil conditions, subsurface lithology, depth and nature of solid

waste (if identified), and PID readings on test pit logs (**Appendix F4**). Several photographs were taken to document conditions at each trench and test pit. The photographs are provided in **Appendix F4**.

Following completion of each trench and test pit, the excavated material was utilized as backfill, and the trench or test pit was restored to grade. Grass seed and straw were placed on the backfilled soil.

3.3 Groundwater Sampling and Analysis

The locations of all the monitoring wells are displayed on **Figure 3-1**. Five monitoring wells were installed at IAL4 prior to the RI; four shallow (ILF4-COE-3, ILF4-MW-39, ILF4-MW-40, and ILF4-MW-41S) and one deep (ILF4-MW-41D). Three additional shallow wells (IAL4-MW-42, IAL4-MW-43, and IAL4-MW-44) were installed during the RI. **Table 2-4** presents the depth of screen for each well. The bottom of the screened interval in the shallow wells range from 19 to 39 ft bgs and are screened in the upper aquifer; the bottom of the screened interval in the deep well is 84 ft bgs and is also screened in the upper aquifer. Wells COE-3 and MW-39 are screened with their top of screens slightly below the measured water table. For COE-3, the water table during drilling of the well was measured at 26 ft bgs but the top of the screen was placed at 29 ft bgs. For MW-39, the water table during drilling of the well was measured at 19 ft bgs but the top of the screen was placed at 20 ft bgs. Well MW-41D was purposely screened at depth, just above an underlying clay layer. Normally, wells are screened to intersect the water table, especially when light non-aqueous phase liquid may have been released at a site. The water table fluctuates throughout the year; the water table may be below the top of these screens during times of the year with less precipitation. For the August 9, 2017 gauging event (**Table 2-4**), groundwater was above the top of the screened interval for monitoring wells COE-3, MW-39, MW-40, and MW-41D.

These eight groundwater monitoring well locations were selected for sampling during the RI due to appropriate screening protocol and locations adjacent to the inferred IAL4 waste boundary. This represents the area with the most significant impacts from subsurface waste and provides an ideal location for documenting the migration of chemical compounds from IAL4.

The installation of three additional shallow monitoring wells was undertaken as part of the RI to fully delineate the site's groundwater impacts; to evaluate if groundwater contamination is migrating off-post; and to establish upgradient groundwater conditions. The new monitoring wells located in the southwest and south-central portions of IAL4 (IAL4-MW-43 and IAL4-MW-42, respectively) supplement existing wells IAL4-MW-41S and IAL4-MW-41D in monitoring groundwater quality downgradient of IAL4. The monitoring well located north of the central portion of IAL4 (IAL4-MW-44) supplements existing upgradient wells ILF4-MW-39 and ILF4-COE-3. The groundwater monitoring wells were installed after the trenches were completed. All monitoring wells were installed by a Maryland licensed driller.

Hollow-stem auger drilling methods were employed to install the 2-inch (inside) diameter monitoring wells. Data obtained during trenching (e.g., depth of fill and/or native soil interface, depth to solid waste, depth to water) factored into the decision on the appropriate depth to screen the monitoring wells. RI monitoring well boring logs are provided in **Appendix F2**.

The monitoring wells were installed using a 2-inch (inside) diameter flush-joint Schedule 40 polyvinyl chloride (PVC) casing with a minimum 15-ft flush-joint Schedule 40 PVC 0.010-inch machine slotted well screen. The screen was set so that 10 ft of screen is below the water table and 5 ft of screen is above the water table. A silica sand filter pack (size #0) was installed from the base of each RI well to a maximum of 2 ft above the top of the screen. A bentonite chip seal was then installed and allowed to hydrate sufficiently to mitigate the potential for downhole grout contamination. RI monitoring well construction diagrams are provided in **Appendix F2**. The wells were completed with a stainless-steel stick-up mount with locking lid. Stick-up bollards were also installed as an additional protective measure.

At least 24 hours after well construction, the newly installed monitoring wells were developed by pumping and/or surging to remove fines or mud from the filter pack and borehole and to establish a hydraulic connection between the formation and the well screen. Since the five existing wells were last sampled in 2008, they were redeveloped. Field parameters including pH, temperature, turbidity, dissolved oxygen (DO), oxidation reduction potential (ORP), and specific conductivity were monitored periodically (i.e., every five minutes or as necessary) during development.

Additionally, following installation, the ground surface elevation, top of casing elevation, and northing and easting coordinates were surveyed for the newly installed monitoring wells.

After a minimum of seven days following installation and development of the new monitoring wells, a groundwater sampling event was conducted for each of the eight wells at IAL4. Prior to conducting groundwater sampling activities, depth to groundwater and total sounded depth were measured at each monitoring well and the well was purged until field parameters (pH, temperature, turbidity, DO, ORP, and specific conductivity) stabilized. Monitoring well purge logs are provided in **AppendixF3**. **Table 3-1** summarizes the chemical analysis for each round of sampling. Groundwater sampling was conducted utilizing low-flow (minimal drawdown) sampling methodology. To allow for greater stabilization of the groundwater and any potential effects due to weather or seasonality, a second round of groundwater sampling was conducted approximately three months after the initial sampling.

3.4 Sediment Sampling and Analysis

During the RI, eight sediment samples (IAL4-SED2 to IAL4-SED9) and one duplicate sediment sample were collected from the drainage swales to support completion of an HHRA and SLERA. The sample locations are depicted on **Figure 3-1** and summarized in **Table 3-1**. The rationale for selecting sediment sampling locations was to collect data from key aquatic habitats within the surface water drainage network, including up-stream and down-stream sections of the drainage swales. Beginning at the farthest downstream location on each swale and proceeding upstream, a sediment grab sample was collected from 0 to 0.5 ft below the drainage swale bed using a disposable trowel or equivalent instrument.

Four of the sediment samples (IAL4-SED2, IAL4-SED4, IAL4-SED6, and IAL4-SED9) were analyzed for simultaneously extracted metals/acid volatile sulfide (SEM/AVS) and total organic carbon (TOC) to allow assessment of the bioavailability of metals to benthic organisms. Two of the samples were collected from downstream sections of the drainage swales (IAL4-SED9 and IAL4-SED4), one was collected upstream (IAL4-SED2), and one was collected from the point nearest the landfill (IAL4-SED6).

3.5 Usability Report

The data usability assessment is a discussion of whether the data meet the data quality objectives as they relate to the decisions to be made regarding the environmental investigation of the site, and therefore whether the data are suitable for making that decision. The Usability Report is provided in **Appendix G**. The usability analysis concluded that all anomalies were considered minor and the associated field sample results were qualified as "estimate." Two VOCs and 11 SVOCs were rejected due to MS percent recovery anomalies. Several compounds have project action limits (RSLs) lower than analytical method limits (limit of quantification). This may cause the risk results to be underestimated. The QAPP (AECOM, 2016) also identified these compounds with RSLs lower than limits of quantification. The QAPP (AECOM, 2016) selected the most conservative analytical methods available to analyze for constituents in soil and groundwater. A cumulative screen results for the soil and groundwater constituents with RSLs lower than their respective method limit was conducted, and the soil constituents are not likely to contribute to a site's cumulative cancer risk results; however, it is unknown if the non-cancer hazard results for thallium are under- or overestimated. The groundwater constituents are not anticipated to greatly contribute to a site's cumulative risk results, assuming in the improbable event that the shallow groundwater is used for potable purposes. The level of uncertainty is reduced for these constituents since the potable use of groundwater exposure pathways are incomplete.

3.6 IDW

IDW was minimal because of the design and implementation of the sample regime. All solid IDW (i.e., soil and waste materials) generated during trenching was utilized as backfill material, as appropriate, eliminating the need for offsite transportation and disposal. Soil cuttings generated during monitoring well installation were free of waste materials and were spread on the ground surface following PID screening. Liquid IDW generated during well development and groundwater sampling was containerized and analyzed prior to its final disposition. In accordance with USEPA's *Management of Investigation-Derived Waste during Site Inspections* (USEPA, 1991a), if the groundwater is non- Resource Conservation and Recovery Act (RCRA) hazardous, it was discharged to the ground surface near the well from which it was obtained. Waste characterization samples were compared to the MDE Groundwater Standards for Type I and II Aquifers (MDE, 2008) and USEPA RSLs. All liquid IDW was transported off-post by Potomac Environmental, a licensed waste hauler. Disposable equipment (i.e., polyvinyl sheeting, trowels, plastic bags, and acetate liners) and personal protective equipment (i.e., nitrile gloves) were transported offsite for disposal at a permitted and approved landfill. Deviations from the Work Plan

The following deviations from the Work Plan occurred during the RI field work:

- Monitoring wells IAL4-MW-43 and IAL4-MW-44 were moved after utility clearance to avoid utilities identified near the original location.
- The landfill was not encountered when excavation began at trench IAL4-7TR. The original trench location was renamed IAL4-7TRA, and a new trench (IAL4-7TR) was excavated to the southeast of the original location, where the landfill was identified.

- During field activities, buried debris was exposed in the dirt track roadway to the northeast of IAL4 due to erosion after a rain event. Two additional test pits were excavated to the northeast and to the east of IAL4 to confirm that the landfill did not extend across the roadway.

4.0 NATURE AND EXTENT OF CONTAMINATION

This section summarizes the nature and extent of contamination at IAL4. This section presents the results of the RI data collection at IAL4 and applicable sampling that was completed prior to the RI. Data validation was conducted on the RI chemical data. Data validation and laboratory analytical reports are presented in **Appendix H**.

4.1 Buried Waste and Landfill Boundary

A 2017 revised landfill boundary was delineated for IAL4 using several lines of evidence, including the RI test pits/trenching activities, historical aerial imagery, and LIDAR. The 2017 revised IAL4 landfill boundary is depicted on **Figure 4-1,** and all subsequent figures in this report. The areal extent of the revised landfill encompasses approximately 2.4 acres. The revised landfill boundary splits IAL4 into sections east and west of the northwest-southeast trending roadway. Overall, three sides of the revised landfill boundary matched closely with the boundary as depicted in historical aerial imagery and LIDAR data. No solid waste was identified in trench IAL4-17TR, which indicates that the unmaintained road that cuts through the landfill area is not part of the landfill. This assumption is also supported by historic aerial photography. The unmaintained road was present in the 1963 aerial photograph (**Figure 1-4**), which is during the time when IAL4 was an active landfill, which was from the 1950s to the 1970s. Additionally, a southern boundary for the landfill could not positively be established, as indicated by the dashed portion of the revised landfill boundary in **Figure 4-1**. Trench IAL4-10TR encountered solid waste for the entire length of the trench until termination 8 ft north of the fence line for Route 32, indicating that the landfill boundary is south of IAL4-10TR. Excavation of IAL4-10TR was stopped when road base material for Route 32 was encountered, as the field crew did not want to undermine the highway. The extent of solid waste has not been fully delineated to the south due to the presence of Route 32 located south of IAL4. In order to maintain the integrity of Route 32, the test pits did not extend under Route 32 or the slope that extends from Route 32 to IAL4. Therefore, IAL4 potentially extends underneath a portion of Route 32. Based on the 1963 historic aerial photograph (**Figure 1-4**); IAL4 could potentially extend to the southern lane of Route 32. There is precedent within MD (MDE, 2018) for leaving waste under existing roadways and allowing the road surface/shoulder to serve as the "cap." However, waste adjacent to Route 32 that is not covered by the road does not fall under this precedent.

The depth and thickness of the solid waste was identified in seven trenches, three test pits, and one monitoring well. The approximate depth to the top of the solid waste ranges from 0 to 5.5 ft bgs, with an average depth of 2.7 ft. Cross sections were developed using boring logs and test pit data collected during the RI to visually display the extent of the pockets of buried waste encountered across IAL4. The locations of the cross sections are displayed on **Figure 4-2**. The profile of buried waste at IAL4 is presented in cross sections A-A’ and B-B’ on **Figure 4-3.** The thickness of the solid waste generally increases to the east and south, with the greatest thickness of 19 ft observed in the boring for monitoring well IAL4-MW42 (**Figure 4-3**). The estimated total volume of solid waste is 29,200 cubic yards. As shown on the cross sections, the extent of buried waste terminates at depths above the static water table at the locations used to prepare the cross sections.

Solid waste was similar in all seven of the trenches where solid waste was identified and consisted primarily of a mixture of household trash and construction debris/rubble, with some

automotive debris. In IAL4-18TR on the north side of the landfill (**Figure 4-1**), slag was identified overlying the solid waste on the landfill periphery in the vicinity of IAL4-18TR. Detailed descriptions of the materials identified in each trench are found in the photo logs (**Appendices D and F4**).

During the RI investigation, four test pits (IAL4-13TP to 16TP) were completed at IAL4 outside of the previously defined landfill boundary where mounds of potentially surficial solid waste have been observed during previous investigations. No subsurface trash was found in any of the four test pits; no trash was found below the depth of the original ground surface before the mounds were emplaced. Slag was identified in two of the four test pits. Slag was identified in the top 1.5 ft at test pit IAL4-13TP and in the top 4 ft of test pit IAL4-14TP (**Figure 4-1**). The maximum slag thickness was 4 ft in test pit IAL4-14TP. No slag was found beneath the original ground surface at any of the test pits.

All excavated materials were inspected visually and with a PID for signs of contamination. Elevated PID readings were detected in trench IAL4-10TR, located within the revised landfill boundary, with a maximum detection of 25.4 ppm at 11 ft bgs. No elevated PID readings were detected in any other trench or test pit. Stained soils were identified in IAL4-7TR, IAL4-10TR, IAL4-13TP, and IAL4-14TP (**Figure 4-1**).

A Freedom of Information Act request for Route 32 soil borings from the Maryland State Highway Administration (SHA) was submitted in an effort to refine the landfill boundaries. SHA provided data on 11 January 2018. Based on the boring logs provided, SHA did not encounter trash in their borings. The depth of the SHA borings ranged from 3 ft to 6 ft bgs. The borings were drilled within the proposed eastbound and westbound lanes of Route 32 (**Figure 4-4**). The distance from the northern edge of the westbound lane to the fence line where the RI trenches terminated is approximately 30 ft. It is estimated that the southern edge of the landfill is within that 30-ft zone. No further investigation of the SHA Route 32 construction is needed.

4.2 Extent of Contamination

Analytical results for surface soil, subsurface soil, groundwater, and sediment are provided in **Tables 4-1** through **4-4**, respectively. Data validation and laboratory analytical reports are presented in **Appendix H**. The chemical-specific screening criteria selected to qualitatively discuss the nature and extent of contamination at IAL4 is summarized below.

Soil:

- USEPA Regional Screening Levels (RSLs) for Residential Soil, derived based on target cancer risk limit of one in one million (1E-06) or HQ of 1 (USEPA 2018).
- FGGM Metal Background Levels (Malcolm Pirnie 2001).
- MDE Generic Numeric Residential Cleanup Standard (MDE 2008) for TPH-DRO and TPH-GRO.
- Ecological-Soil Screening Levels (Eco-SSLs) (USEPA 2005a-2005d, 2006a, 2006c, 2007a-2007d, 2008).

Groundwater:

- USEPA RSLs for Tapwater, derived based on target cancer risk limit of one in one million (1E-06) or HQ of 1 (USEPA 2018).
- National Primary Drinking Water Regulations – Maximum Contaminant Levels (MCLs) (USEPA 2017c).

Sediment:

- USEPA Region 3 Biological Technical Assistance Group Freshwater Sediment Screening Benchmarks (USEPA, 2006b) (BTAG).
- USEPA Region 4 Sediment Screening Values for Hazardous Waste Sites (USEPA, 2015b) (Benchmarks).

Soil Gas:

- Lower Explosive Limit (LEL) for Methane.

4.2.1 Surface Soil

Seven surface soil samples (IAL4-7TR to IAL4-13TR) and one duplicate were collected during the RI, no surface soil samples were collected prior to the RI. The surface soil samples were collected at seven of the trench locations, prior to the trench excavations, on the landfill side of the trenches. All surface soil samples were analyzed for VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI). Four samples (IAL4-7TR-0’-0.5’, IAL4-10TR-0’-0.5’, IAL4-12TR-0’-0.5’, and IAL4-13TP-1.5’-2’) were also analyzed for PCBs and one sample (IAL4-13TP-1.5’-2’) was also analyzed for dioxins. Surface soil analytical results are summarized in Table 4-1a though 4-1c. Exceedances of the USEPA RSLs for Residential Soil, FGGM Metal Background Levels, MDE Generic Numeric Residential Cleanup Standards for TPH-DRO and TPH-GRO, or Eco-SSLs are summarized below:

VOCs - No VOCs were detected in surface soil at concentrations exceeding their respective USEPA Residential Soil RSL or Eco-SSL. Eleven VOCs were detected above laboratory reporting limits in one or more surface soil samples collected at IAL4.

SVOCs - Benzo(a)pyrene was the only SVOC detected in surface soil at a concentration that exceeded its USEPA Residential Soil cancer RSL of 0.115 milligrams per kilogram (mg/kg). It did not exceed its residential noncancer RSL. Benzo(a)pyrene concentrations above the Residential Soil RSL were observed in soil samples IAL4-7TR-0’-0.5’ (0.31 mg/kg) and IAL4-11TR-0'-0.5'-DUP (0.21 mg/kg). Fluoranthene and pyrene exceeded their respective Eco-SSL. Twenty-four SVOCs were detected above laboratory reporting limits in one or more surface soil samples collected at IAL4.

Metals – Arsenic, and hexavalent chromium are the only metals detected in surface soil at concentrations exceeding their USEPA Residential Soil cancer RSLs of 0.68 mg/kg and 0.3 mg/kg, respectively. Neither metal exceeded its residential noncancer RSL. Arsenic concentrations above the Residential Soil RSL were observed in soil samples IAL4-7TR-0'-0.5' (7.96 mg/kg), IAL4-8TR-0'-0.5' (8.1 mg/kg), IAL4-10TR-0'-0.5' (6.63 mg/kg), IAL4-11TR-0'-0.5' (6.57 mg/kg), IAL4-12TR-0'-0.5' (4.22 mg/kg), IAL4-9TR-0'-0.5' (4.85 mg/kg), and IAL4-11TR-0'-0.5'-DUP (5.72 mg/kg). Hexavalent chromium concentrations above the Residential

Soil RSL were observed in soil samples IAL4-7TR-0'-0.5' (1.7 mg/kg), IAL4-8TR-0'-0.5' (0.48 mg/kg), IAL4-10TR-0'-0.5' (0.47 mg/kg), IAL4-11TR-0'-0.5' (0.52 mg/kg), IAL4-12TR-0'-0.5' (0.61 mg/kg), IAL4-9TR-0'-0.5' (0.44 mg/kg), and IAL4-11TR-0'-0.5'-DUP (0.46 mg/kg). The minimum detected arsenic concentration in surface soil was 4.22 mg/kg at IAL4-12TR, and the maximum detected arsenic concentration in surface soil was 8.1 mg/kg at IAL4-8TR. The arsenic background concentration (95% Upper Prediction Limit) for surface soil is 5.48 mg/kg. The minimum detected hexavalent chromium concentration in surface soil was 0.44 mg/kg at IAL4-9TR, and the maximum detected hexavalent chromium concentration in surface soil was 1.7 mg/kg at IAL4-7TR. A background concentration was not derived for hexavalent chromium; however, the total chromium background concentration (95% Upper Prediction Limit) for surface soil is 32.43 mg/kg. Antimony, copper, lead, nickel, vanadium, and zinc exceeded their respective Eco-SSLs in at least one sample. All 24 metals were detected above laboratory reporting limits in one or more surface soil samples collected at IAL4. **PCBs and Dioxins** - No PCBs (aroclors) or dioxins were detected in surface soil at concentrations exceeding their respective USEPA Residential Soil RSL. Aroclor-1260 was detected above laboratory reporting limits. Total HxCDD was the only dioxin detected in surface soil at concentrations exceeding its USEPA Residential Soil RSL.

TPH - TPH-DRO was detected above the MDE Generic Numeric Cleanup Standard of 230 mg/kg in one sample, IAL4-11TR-0'-0.5' (620 mg/kg) and its duplicate IAL4-11TR-0'-0.5'-DUP (300 mg/kg). TPH-GRO was not detected at concentrations above the MDE Generic Numeric Cleanup Standard.

4.2.2 Subsurface Soil

Seven subsurface soil samples (IAL4-7TR—IAL4-12 and IAL4-13TR) were collected during the RI, two subsurface soil samples were collected prior to the RI, during the SI. The RI subsurface soil samples were collected at seven of the trench locations, during the trenching process. The SI subsurface soil samples were collected at two of the trench locations, during the trenching process. All subsurface soil samples were analyzed for VOCs, SVOCs, TPH-DRO, TPH-GRO, and metals. The RI soil samples were also analyzed for Cr(VI). Both SI samples and three of the RI samples were also analyzed for PCBs. Both SI samples and one RI sample was also analyzed for dioxins. Both SI samples were also analyzed for pesticides and herbicides. Subsurface soil RI analytical results are summarized in Tables 4-2a though 4-2c. Exceedances of the USEPA RSLs for Residential Soil, FGGM Metal Background Levels, MDE Generic Numeric Residential Cleanup Standards for TPH-DRO and TPH-GRO, or Eco-SSLs are summarized below:

VOCs - No VOCs were detected in subsurface soil at concentrations exceeding their respective USEPA Residential Soil RSL or Eco-SSL. Eight VOCs were detected above laboratory reporting limits in one or more subsurface soil samples collected at IAL4.

SVOCs - Benzo(a)pyrene was the only SVOC detected in subsurface soil at a concentration that exceeded its USEPA Residential Soil cancer RSL of 0.115 mg/kg. It did not exceed its residential noncancer RSL. Benzo(a)pyrene concentrations above the Residential Soil RSL was observed in soil sample IAL4-6TP-8-10 (0.13 mg/kg) collected 24 April 2013. No subsurface soil SVOCs exceeded their respective Eco-SSL. Twenty SVOCs were detected above laboratory reporting limits in one or more subsurface soil samples collected at IAL4. The most commonly detected SVOCs were PAHs, which were detected at low-level concentrations across IAL4 and in four of the seven samples submitted for analysis.

Metals – Arsenic and hexavalent chromium are the only metals detected in subsurface soil at concentrations exceeding their USEPA Residential Soil cancer RSLs of 0.68 mg/kg and 0.3 mg/kg, respectively. Neither metal exceeded its residential noncancer RSL. Arsenic concentrations above the Residential Soil RSL were observed in soil samples IAL4-7TR-6.1'-6.6' (0.975 mg/kg), IAL4-8TR-13.5'-14' (1.22 mg/kg), IAL4-9TR-7'-7.5' (8.49 mg/kg), IAL4-10TR-10.5'-11' (1.51 mg/kg), IAL4-11TR-5.5'-6' (5.11 mg/kg), IAL4-12TR-6.5'-7' (2.3 mg/kg), and IAL4-14TP-2'-3' (5.58 mg/kg). The maximum detected arsenic concentration in subsurface soil was 8.49 mg/kg at IAL4-9TR-7'-7.5'. The arsenic background concentration (95% Upper Prediction Limit) for subsurface soil is 2.3 mg/kg. Hexavalent chromium concentrations above the Residential Soil RSL were observed in soil samples IAL4-8TR-13.5'-14' (0.6 mg/kg), IAL4-10TR-10.5'-11' (0.41 mg/kg), IAL4-11TR-5.5'-6' (0.88 mg/kg), IAL4-12TR-6.5'-7' (1.8 mg/kg), and IAL4-14TP-2'-3' (0.86 mg/kg). The maximum detection of hexavalent chromium was 1.8 mg/kg in IAL4-12TR-6.5'-7'. A background concentration was not derived for hexavalent chromium; however, the total chromium background concentration (95% Upper Prediction Limit) for subsurface soil is 27.01 mg/kg. Antimony, copper, lead, nickel, vanadium, and zinc exceeded their respective Eco-SSLs in at least one sample. All 24 metals were detected above laboratory reporting limits in one or more subsurface soil samples collected at IAL4 except for selenium.

PCBs and Dioxins - PCB-1248 was the only PCBs (aroclors) or dioxin detected in subsurface soil at a concentration that exceeded its USEPA Residential Soil cancer RSL of 0.23 mg/kg. It did not exceed its residential noncancer RSL. PCB-1248 was observed in soil sample IAL4-6TP-8-10 (0.24 mg/kg) collected 24 April 2013. PCB-1248 and PCB-1260 were the only PCBs detected above laboratory reporting limits. 1234678-HpCDD, OCDD and Total HpCDD were the only dioxins detected in subsurface soil at concentrations above laboratory reporting limits.

Pesticides - No pesticides were detected in subsurface soil at concentrations exceeding their respective USEPA Residential Soil RSL. Nine pesticides were detected above laboratory reporting limits in one or more subsurface soil samples collected at IAL4.

Herbicides - No herbicides were detected above laboratory reporting limits in subsurface soil samples collected at IAL4.

TPH - TPH-DRO was detected above the MDE Generic Numeric Cleanup Standard of 230 mg/kg in one sample, IAL4-10TR-10.5'-11' (520 mg/kg). TPH-GRO was not detected at concentrations above the MDE Generic Numeric Cleanup Standard.

4.2.3 Groundwater

Three groundwater sampling events were conducted as part of the RI field effort on May 24-May 25, August 8-9, and September 21, 2017. The groundwater samples from 1991 or 2008 are not used in this assessment. A total of eight monitoring wells were sampled twice with three duplicate samples to characterize IAL4 groundwater in the UPA and assess human health and ecological risk. Groundwater samples were analyzed for VOCs, SVOCs, metals, Cr(VI), PCBs, and dioxins. Comprehensive analytical data tables are presented in Table 4-3. Exceedances of screening criteria and detections are summarized below:

VOCs - Four VOCs (1,4-dichlorobenzene, benzene, chloroform, and naphthalene) were detected in groundwater at IAL4 with concentrations exceeding their respective USEPA tapwater cancer and/or non-cancer RSLs. 1,4 Dichlorobenzene concentrations above the tapwater cancer RSL

(0.48 µg/L) was observed in groundwater sample IAL4-MW-42GW collected on 23 May 2017 at a concentration of 4 µg/L. Benzene concentrations above the tapwater cancer RSL (0.46 µg/L) was observed in groundwater sample IAL4-MW-42GW collected on 23 May 2017 at a concentration of 1 µg/L. Chloroform concentrations above the tapwater cancer RSL (0.22 µg/L) was observed in groundwater samples ILF4-MW-41D-GW (0.7 µg/L) collected on 24 May 2017, IAL4-MW-41D (0.8 µg/L) collected on 9 August 2017, and IAL4-MW-41D-DUP (0.9 µg/L) collected on 9 August 2017. Naphthalene concentrations above the tapwater cancer RSL (0.17 µg/L) was observed in groundwater sample IAL4-MW-42GW collected on 23 May 2017 at a concentration of 4.0 µg/L. A total of twelve VOCs were detected above laboratory reporting limits in one or more groundwater samples collected at IAL4.

SVOCs - Two SVOCs (1,4-dichlorobenzene and naphthalene) were detected in groundwater at IAL4 with concentrations exceeding their respective USEPA tapwater cancer and/or non-cancer RSLs. These compounds are analyzed under both VOCs and SVOCs and this paragraph presents the SVOC detections of these compounds. 1,4 Dichlorobenzene concentrations above the tapwater cancer RSL (0.48 µg/L) was observed in groundwater sample IAL4-MW-42GW collected on 21 September 2017 at a concentration of 3 µg/L. Naphthalene concentrations above the tapwater cancer RSL (0.17 µg/L) was observed in groundwater sample IAL4-MW-42GW at 2.0 µg/L collected 23 May 2017, IAL4-MW-42 (0.2 µg/L) collected 21 September 2018, and IAL4-MW-41-DUP (0.2 µg/L) collected on 9 August 2017., and IAL4-MW-44 (0.4 µg/L) collected on 10 August 2017. A total of eight SVOCs were detected above laboratory reporting limits in one or more groundwater samples collected at IAL4.

Metals - Arsenic, cobalt, iron, and hexavalent chromium are the only metals detected in groundwater at concentrations exceeding their USEPA tapwater RSLs. Concentrations of arsenic, cobalt, and iron in groundwater are presented in **Figures 4-5** through **4-7**, respectively. Hexavalent chromium was only detected above its RSL in two of the upgradient wells; therefore, it was not presented on a figure, 22 total and 20 dissolved metals were detected above laboratory reporting limits in one or more groundwater samples collected at IAL4.

Total arsenic was detected above the USEPA tapwater cancer RSL (0.052 µg/L) in groundwater samples: ILF4-MW-40GW (1.6 µg/L), ILF4-MW-40 (0.8 µg/L), ILF4-MW-41D-GW (1.2 µg/L), IAL4-MW-41D (1.4 µg/L), IAL4-41D-DUP (1.7 µg/L), IAL4-MW-42GW (1.6 µg/L), IAL4-MW-43GW (4.3 µg/L), IAL4-MW-43(15.5 µg/L), and IAL4-MW-43-DUP (16.1 µg/L). Total arsenic was detected above laboratory reporting limits only in these nine groundwater samples during the RI at IAL4.

Dissolved arsenic was detected above the USEPA tapwater cancer RSL (0.052 µg/L) in groundwater samples: ILF4-MW-41D-GW (1.3 µg/L), IAL4-MW-41D (1.6 µg/L), IAL4-41D-DUP (1.8 µg/L), IAL4-MW-42GW (1.1 µg/L), IAL4-MW-43GW (3.9 µg/L), IAL4-MW-43(14.5 µg/L), and IAL4-MW-43-DUP (14.9 µg/L). Dissolved arsenic was detected above laboratory reporting limits only in these seven groundwater samples during the RI at IAL4.

Total cobalt was detected above the USEPA tapwater non-cancer RSL (6.0 µg/L) in groundwater samples: ILF4-MW-41D-GW (11.1 µg/L), IAL4-MW-41D (10.1 µg/L), and IAL4-41D-DUP (10.8 µg/L). Total cobalt was detected above laboratory reporting limits in sixteen groundwater samples during the RI at IAL4.

Dissolved cobalt was detected above the USEPA tapwater non-cancer RSL (6.0 µg/L) in groundwater samples: ILF4-MW-41D-GW (10.6 µg/L), IAL4-MW-41D (10.5 µg/L), IAL4-41D-

DUP (10.1 µg/L). Dissolved cobalt was detected above laboratory reporting limits in fifteen groundwater samples during the RI at IAL4.

Total iron was detected above the USEPA tapwater non-cancer RSL (14,000 µg/L) in groundwater samples: ILF4-MW-42GW (72,900 µg/L), IAL4-MW-42 (24,400 µg/L), IAL4-MW-43GW (24,500 µg/L), IAL4-MW-43- (71,700 µg/L), and IAL4-MW-43-DUP (70,200 µg/L). Total iron was detected above laboratory reporting limits in twelve groundwater samples during the RI at IAL4.

Dissolved iron was detected above the USEPA tapwater non-cancer RSL (14,000 µg/L) in groundwater samples: ILF4-MW-42GW (69,500 µg/L), IAL4-MW-42 (23,100 µg/L), IAL4-MW-43GW (22,600 µg/L), IAL4-MW-43- (67,800 µg/L), and IAL4-MW-43-DUP (68,600 µg/L). Dissolved iron was detected above laboratory reporting limits in six groundwater samples during the RI at IAL4.

Hexavalent chromium was observed above the USEPA tapwater cancer RSL (0.035 µg/L) in groundwater samples: ILF4-MW-40 (0.072 µg/L), ILF4-COE-3GW (0.19 µg/L), and IAL4-COE-3 (0.068 µg/L). Hexavalent chromium was detected above laboratory reporting limits in four groundwater samples during the RI at IAL4.

PCBs – Only one PCB (PCB-1260) was detected in groundwater at concentrations exceeding the respective USEPA tapwater cancer RSL of 0.0078 µg/L. PCB-1260 was detected with a concentration of 0.76 µg/L in groundwater sample IAL4-MW-42GW. PCBs were detected above laboratory reporting limits in eight groundwater samples during the RI at IAL4.

Dioxins – Only one dioxin (2,3,7,8-TCDD TEQ Mixture) was detected in groundwater at concentrations exceeding the respective USEPA tapwater cancer RSL of 0.12 µg/L. 2,3,7,8-TCDD TEQ Mixture was detected with a concentration of 0.76 µg/L in groundwater sample IAL4-MW-41S. Dioxins were detected above laboratory reporting limits in eight groundwater samples during the RI at IAL4.

In addition, petroleum odors were identified in MW42 and MW43 during purging of these wells prior to sampling (see Appendix F3 for the purge logs).

4.2.4 Sediment

Eight sediment samples (IAL4-SED2 to IAL4-SED9) and one duplicate sample were collected from the drainage swales in May 2017 during the RI (AECOM, 2019) to support completion of an HHRA and SLERA. The HHRA also used sediment data from 1991 and 2008. During the RI (AECOM, 2019), sediment samples were collected from 0 to 0.5 ft below the drainage swale and analyzed for VOCs, SVOCs, metals, PCBs, Dioxins, and TOC. Sediment analytical results are summarized in **Table 4-4**. Exceedances of the May 2017 sediment samples above the USEPA BTAG or Benchmarks are summarized below:

VOCs - Acetone, isopropylbenzene, and p-isopropyltoluene are the only VOCs detected in sediment at concentrations exceeding their screening values. Acetone concentrations above the Benchmark (0.04 mg/kg) was observed in sediment samples IAL4-SED5 (0.044 mg/kg), IAL4-SED8 (0.042 mg/kg), IAL4-SED6 (0.5 mg/kg), IAL4-SED7 (0.28 mg/kg), IAL4-SED3 (0.31 mg/kg). Isopropylbenzene concentrations above the BTAG (0.086 mg/kg) was observed in sediment sample IAL4-SED2 (0.15 mg/kg) and IAL4-SED9 (0.13 mg/kg). P-isopropyltoluene concentrations above the Benchmark (0.179 mg/kg) was observed in sediment sample IAL4-

SED2 (0.75 mg/kg). Eight VOCs were detected above laboratory reporting limits at one or more sediment sampling locations at IAL4.

SVOCs - 2-Methylnaphthalene , anthracene, benzo(a)anthracene, benzo(a) pyrene, benzo(b) fluoranthene, benzoic acid, chrysene, indeno(1,2,3,-cd) pyrene, naphthalene, phenanthrene, and pyrene are the only SVOCs detected in sediment at concentrations exceeding their screening values. 2-Methylnaphthalene concentrations above the BTAG (0.0202 mg/kg) were observed in sediment samples IAL4-SED6 (1.1 mg/kg), IAL4-SED9 (0.15 mg/kg), and IAL4-SED7 (0.21 mg/kg). Anthracene concentrations above the BTAG (0.0572 mg/kg) was observed in sediment sample IAL4-SED6 (0.065 mg/kg). Benzo(a)anthracene concentrations above the BTAG (0.108 mg/kg) was observed in sediment sample IAL4-SED6 (0.15 mg/kg). Benzo(a)pyrene concentrations equal to the BTAG (0.15 mg/kg) was observed in sediment sample IAL4-SED6 (0.15 mg/kg). Benzo(b)fluoranthene concentrations above the BTAG (0.0272 mg/kg) was observed in sediment samples IAL4-SED7 (0.12 mg/kg), IAL4-SED3 (0.11 mg/kg), IAL4-SED6 (0.32 mg/kg), IAL4-SED5 (0.035 mg/kg), IAL4-SED4-DUP (0.043 mg/kg), and IAL4-SED9 (0.048 mg/kg). Benzoic acid concentrations above the BTAG (0.65 mg/kg) were observed in sediment samples IAL4-SED3 (8.5 mg/kg) and IAL4-SED7 (1.7 mg/kg). Chrysene concentrations above the BTAG (0.166 mg/kg) was observed in sediment sample IAL4-SED6 (0.3 mg/kg). Indeno(1,2,3,-cd) pyrene concentrations above the BTAG (0.017 mg/kg) was observed in sediment samples IAL4-SED3 (0.04 mg/kg), IAL4-SED5 (0.025 mg/kg), IAL4-SED6 (0.12 mg/kg), and IAL4-SED7 (0.062 mg/kg). Naphthalene concentrations above the BTAG (0.176 mg/kg) was observed in sediment sample IAL4-SED6 (0.73 mg/kg). Phenanthrene concentrations above the BTAG (0.204 mg/kg) was observed in sediment sample IAL4-SED6 (0.54 mg/kg). Pyrene concentrations above the BTAG (0.195 mg/kg) was observed in sediment sample IAL4-SED6 (0.25 mg/kg). Seventeen SVOCs were detected above laboratory reporting limits in one or more sediment samples collected at IAL4.

Metals - Arsenic, barium, cadmium, copper, iron, lead, mercury, and zinc are the only metals detected in sediment at concentrations exceeding their screening values. Arsenic concentrations above the BTAG (9.8 mg/kg) were observed in sediment samples IAL4-SED6 (12.9 mg/kg) and IAL4-SED4 (9.87 mg/kg). Barium concentrations above the Benchmark (20.0 mg/kg) was observed in sediment samples IAL4-SED5 (55.2 mg/kg), IAL4-SED4-DUP (63.5 mg/kg), IAL4-SED3 (40 mg/kg), IAL4-SED7 (34.8 mg/kg), IAL4-SED4 (60.3 mg/kg), and IAL4-SED6 (74.8 mg/kg). Cadmium concentrations above the BTAG (0.99 mg/kg) were observed in sediment samples IAL4-SED4-DUP (1.89 mg/kg) and IAL4-SED6 (3.77 mg/kg). Copper concentrations above the BTAG (31.6 mg/kg) were observed in sediment samples IAL4-SED6 (36.2 mg/kg) and IAL4-SED4-DUP (41.0 mg/kg). Iron concentrations above the BTAG (20,000 mg/kg) was observed in sediment sample IAL4-SED4 (23,600 mg/kg). Lead concentrations above the BTAG (35.8 mg/kg) was observed in sediment sample IAL4-SED6 (61.4 mg/kg). Mercury concentrations above the BTAG (0.18 mg/kg) was observed in sediment sample IAL4-SED6 (0.185 mg/kg). Zinc concentrations above the BTAG (121 mg/kg) were observed in sediment samples IAL4-SED6 (158 mg/kg) and IAL4-SED4-DUP (272 mg/kg). Twenty-three metals were detected above laboratory reporting limits in one or more surface soil samples collected at IAL4.

PCBs - PCBs Total was detected in sediment samples at concentrations exceeding its BTAG (0.0598 mg/kg). PCBs Total concentrations above the BTAG were observed in sediment samples IAL4-SED4 (0.112 mg/kg), IAL4-SED5 (0.089 mg/kg), and IAL4-SED6 (0.096 mg/kg).

Aroclor-1260 and aroclor-1254 were detected above laboratory reporting limits at one or more sediment sampling locations at IAL4.

Dioxins - Only 2,3,7,8-TCDD-TEQ was detected in sediment samples at concentrations exceeding its BTAG (0.00000085 mg/kg). 2,3,7,8-TCDD-TEQ concentrations above the BTAG was observed in sediment samples IAL4-SED6 (0.00000376 mg/kg), IAL4-SED7 (0.00000192 mg/kg), IAL4-SED3 (0.00000132 mg/kg), and IAL4-SED4-DUP (0.000000909 mg/kg). 26 dioxins or furans were detected above laboratory reporting limits at one or more sediment sampling locations at IAL4.

4.2.5 Soil Gas

Eight soil gas samples were collected at IAL4, and one sample (SG-01) reported a concentration of 21 percent methane (**Table 4-5**). **Figure 4-8** presents the methane concentrations and the soil gas sampling points. The regulatory standard concerning the collection and monitoring of landfill gas for explosive gases (i.e., methane gas) at solid waste landfills in Maryland is established in the COMAR Title 26, Subtitle 4, Chapter 7, Part 03B(9) – COMAR 26.04.07.03B(9):

> *A facility may not be designed or operated in such a manner that the concentration of explosive gases generated by the facility exceeds 25 percent of the lower explosive limits for the gases in facility structures, excluding gas control or recovery system components, and the lower explosive limit for the gases at the property boundary*.

Since there are no structures at IAL4, the applicable portion of the standard is whether methane concentrations exceed 5 percent by volume at the property boundary. The southern boundary of IAL4 is beneath the Route 32 berm, and the FGGM property boundary is south of Route 32 (**Figure 4-8**). Since the FGGM property boundary is south of Route 32 and there were no soil gas samples collected south of Route 32 it is unknown if methane concentrations exceed the standard at the property boundary.

The location of SG-01 is within approximately 75 ft of test pit IAL4-1TP, which the PA/SI (URS, 2015) noted as having high PID readings and petroleum hydrocarbon contamination. In addition, petroleum odors were identified in MW42 and MW43, which are located east of SG-01, on the eastern side of the unmaintained road that divides IAL4. The source of methane at SG-01 is unknown but appears to be localized based on the other soil gas measurements and PID readings from borings throughout the landfill.

All soil gas samples were analyzed by flame ionization detector (FID), which is identified as CH4-FID by the laboratory (**Table 4-5**). CH4-FID is for low level analyses. After this initial screening, the laboratory determined that the high level detector was needed for soil gas sample SG-01. The high level detector is the thermal conductivity detector (TCD), which is identified as CH4-TCD by the laboratory. Soil gas sample SG-01 was the only sample analyzed by CH4-TCD.

Soil gas sample SG-01 is also the only sample with a detection of helium (0.21 percent; **Table 4-5**), which indicates there was not an airtight seal around this sample point, and the actual methane level could be higher since it may have been diluted with atmospheric air. The field instrument which can detect helium down to 25 ppm (0.0025 percent), did not detect helium.

5.0 CONTAMINANT FATE AND TRANSPORT

A risk-based screening evaluation was conducted in the HHRA (Section 6.0) to identify compounds of potential concern (COPCs) in the environmental media at IAL4. The selection of COPCs is a step-wise process that evaluates appropriate analytical data to identify those analytes that have the potential to pose risk or hazard to human receptors, thereby focusing efforts on analytes most likely to be associated with excess human health risks. Generally, analytes with maximum detected concentrations greater than the screening levels were selected as COPCs. The COPCs for IAL4 are summarized in the table below and Table 2-2/Section 2.4 of **Appendix I**.

Table 5-1: COPCs per Exposure Medium

Exposure Medium	COPCs
Surface Soil	SVOCs (Benzo(a)pyrene) Metals (Arsenic, Cobalt, Hexavalent Chromium, Iron, Nickel, Thallium)
Subsurface Soil	SVOCs (Benzo(a)pyrene) Metals (Aluminum, Arsenic, Cobalt, Copper, Hexavalent Chromium, Iron, Manganese, Mercury, Thallium) Pesticides (4,4'-DDD) PCBs (PCB-1248, PCB-1260) Dioxins (2378-TCDD TEQ Mixture)
Shallow Groundwater	VOCs (Benzene, Chlorobenzene) SVOCs (2-Methylnaphthalene; 1,4-Dichlorobenzene, Naphthalene) Total (T) and Dissolved (D) Metals [Aluminum (T), Antimony (D/T), Arsenic (D/T), Cadmium (D), Cobalt (D/T), Hexavalent Chromium (T), Iron (D/T), Manganese (D/T), Vanadium (T)] PCBs (PCB-1260) Dioxins (2378-TCDD TEQ Mixture)
Deep Groundwater	VOCs (Chloroform) SVOCs (Naphthalene) Total (T) and Dissolved (D) Metals [Arsenic (D/T), Cobalt (D/T), Manganese (D/T), Thallium (T)]
Groundwater to Indoor Air	PCBs (PCB-1260)
Sediment	SVOCs (Benzo(a)pyrene, Benzo(b)fluoranthene) Metals (Aluminum, Arsenic, Cobalt, Hexavalent Chromium Iron, Manganese, Thallium, Vanadium) Pesticides (4,4'-DDD) PCBs (PCB-1260) Dioxins (2378-TCDD TEQ Mixture)

This section discusses the physical and chemical processes that affect contaminant migration in matrices at the site. Section 4.0 and **Tables 4-5** through **4-7** identified the following contaminants and media of concern: metals in groundwater and VOCs, SVOCs, metals, dioxins/furans, and PCBs in surface soil and sediment.

Contaminant presence at IAL4 is a result of buried waste dispersed across the site from the 1950s to 1970. Buried waste has introduced contaminants into the environment through its

ongoing degradation. Contaminant migration at IAL4 primarily is the product of ground surface releases associated with surficial debris as well as soil and groundwater infiltration associated with refuse burial. A secondary route of migration is stormwater runoff, which can cause erosion of impacted soil at the surface and subsequent sediment transportation into the adjacent wetland areas. Once the contaminants reach the groundwater, they are transported by local shallow groundwater flow beneath IAL4. Based on the May 2017 groundwater gauging, groundwater flow in the western portion of IAL4 appears to be to the south-southwest, with the eastern portion having more of a southerly flow direction (**Figure 2-4**). Local shallow groundwater flow beneath IAL4 is in the Upper Patapsco Aquifer (UPA). On-post groundwater from the UPA is not used as a potable source of drinking water.

From the perspective of groundwater contamination, the most significant contaminant characteristic is solubility. The solubility of a solute is defined as the mass of the solute that will dissolve in a unit volume of solution under specified conditions. The solubility of arsenic, cobalt, and iron in groundwater is affected by the pH and DO content of groundwater. Based on the groundwater sampling, only monitoring wells IAL4-MW-43 and IAL4-MW-41D are affected by these compounds. The pH of the purge water prior to sampling was 3.92 (ILF4-MW-41D on 8/9/2017) and 5.7 (IAL4-MW43 on 9/21/2017) in these two wells (**Appendix F3**). The pH of the other IAL4 wells ranged from 5.17 to 6.08. The DO of the purge water prior to sampling was 0.53 (ILF4-MW-41D on 8/9/2017) and 0.65 (IAL4-MW43 on 9/21/2017) in these two wells (**Appendix F3**). The DO of the other IAL4 wells ranged from 1.19 to 7.25. The low pH and DO of groundwater in these two wells increase the solubility of these metals and, therefore, the concentrations detected in these wells.

Contaminants in surface soil can reach sediment through soil erosion. Erosion of chemicals from soil is a process of migration involving the transportation of soil particles by the movement of water. Typically, the greater the amount of precipitation, the greater the chance for chemicals to erode. Dig permit requirements currently employed at FGGM prevent unauthorized intrusive activities that may allow human exposure to buried waste and impacted soil. Sediment in the drainage swales is not affected by groundwater since the water table is more than 5 ft lower in elevation than the drainage swales; therefore, it is unlikely that groundwater would discharge to the drainage swales.

Volatilization of vapors (methane) from subsurface soil to outdoor air is possible if the soil is disturbed during excavation, which would allow the vapors to escape the subsurface. This is likely to happen under only one of the alternatives identified in Section 8.4; the alternative that involves excavation.

6.0 BASELINE HHRA

The HHRA (**Appendix I**) evaluates the potential impact of site-related COPCs in soil, groundwater, and sediment to human receptors for current and/or future land use scenarios. The HHRA quantifies potential human health exposure to the COPCs resulting from past activities at IAL4 and provides information to stakeholders so effective risk management decisions may be made where needed to protect human health.

6.1 Regulatory Framework and Scope

The HHRA follows USEPA Risk Assessment Guidance for Superfund (RAGS) and subsequent RAGS guidance in accordance with CERCLA (USEPA, 1989, 1991b, 2001, 2004, and 2009b).

6.2 Data Evaluation

The HHRA addresses the following exposure media: surface soil, subsurface soil, groundwater (including both total and dissolved metals results), and sediment. Soil gas samples were collected for methane at locations within and outside the IAL4 study area. Although not included in the risk calculations, methane is qualitatively addressed in the HHRA since it is a potential explosion hazard onsite and offsite and thus poses a threat to human health.

6.3 Identification of COPCs

For all media, the greater of the maximum detected concentration (MDC) and laboratory Detection Limit was identified as its screening concentration and compared to their respective screening levels. Screening levels used in the HHRA for exposure media and exposure points included:

- Surface and subsurface soil (direct and indirect contact) – USEPA Residential Soil RSLs protective of a target cancer risk (TR) of 1E-06 and target hazard quotient (THQ) of 0.1 (USEPA, 2017a)
- Groundwater (direct contact) – USEPA tap water RSLs protective of a TR of 1E-06 and THQ of 0.1 (USEPA, 2017a)
- Groundwater (indoor air exposure medium) – Vapor Intrusion Screening Levels (VISLs) developed using USEPA's VISL Calculator (USEPA, 2017b) updated with November 2017 RSL toxicity information
- Sediment (direct contact) – USEPA Residential Soil RSLs protective of a TR of 1E-06 and THQ of 0.1 (USEPA, 2017a)

Table 6-1 identifies the COPCs selected for each exposure medium at IAL4.

Table 2-2: HHRA COPCs Selected per Exposure Medium

Exposure Medium	Table Referenced	Chemical Group(s) Present	COPCs(1,2)
Surface Soil	Appendix I, Table 2.1	Metals; SVOCs	Arsenic, Cobalt, Hexavalent Chromium, Iron, Nickel, Thallium; Benzo(a)pyrene
Subsurface Soil	Appendix I, Table 2.2	Dioxins; Metals; PCBs; Pesticides; SVOCs	2378-TCDD TEQ Mixture; Aluminum, Arsenic, Cobalt, Copper, Hexavalent Chromium, Iron, Manganese, Mercury, Thallium; PCB-1248, PCB-1260; 4,4'-DDD; Benzo(a)pyrene
Groundwater (Site)	Appendix I, Table 2.3	Dioxins; Metals (Total and Dissolved); PCBs; SVOCs; VOCs	2378-TCDD TEQ Mixture; *Aluminum (T)*, *Antimony (D/T)*, Arsenic (D/T), Cadmium (D/T), Cobalt (D/T), *Hexavalent Chromium (T)*, Iron (D/T), Manganese (D/T), Thallium (T), *Vanadium (T)*; PCB-1260; 2-Methylnaphthalene; 1,4-Dichlorobenzene, Benzene, Chlorobenzene, Chloroform, Naphthalene
Groundwater (Background)	Appendix I, Table 2.4	*Dioxins*; Metals (Total and Dissolved); *PCBs;* SVOCs; *VOCs*	*2378-TCDD TEQ Mixture*; Aluminum (T), Antimony (D/T), *Arsenic* (*D*), Arsenic (T), *Cadmium (D/T)*, Cobalt (D/T), Hexavalent Chromium (T), *Iron (D)*, Iron (T), Manganese (D/T), *Thallium (T)*, Vanadium (T); *PCB-1260; 2-Methylnaphthalene*, Naphthalene(3); *1,4-Dichlorobenzene, Benzene, Chlorobenzene, Chloroform*
Groundwater to Indoor Air (Site)	Appendix I, Table 2.5	PCBs	PCB-1260
Groundwater to Indoor Air (Background)	Appendix I, Table 2.6	*PCBs*	*PCB-1260*
Sediment	Appendix I, Table 2.7	Dioxins; Metals; PCBs; Pesticides; SVOCs	2378-TCDD TEQ Mixture; Aluminum, Arsenic, Cobalt, Hexavalent Chromium, Iron, Manganese, Thallium, Vanadium; PCB-1260; 4,4'-DDD; Benzo(a)pyrene, Benzo(b)fluoranthene

(1) Some metals were identified as COPCs in both dissolved and total phases. For example, "(D/T)" denotes that both dissolved and total phases were identified as COPCs. (2) Groundwater COPCs in *italics* were initially screened into the DL evaluation but were included as COPCs to keep the Site-specific and background COPCs consistent. (3) Naphthalene retained as a SVOC in background dataset due to higher screening concentration (retained as VOC in Site-specific dataset for same reason).

6.4 Exposure Assessment

The IAL4 CSM is used as the basis for the exposure assessment. This CSM identifies the primary sources/release mechanisms, exposure medium and routes, and the human receptors potentially impacted. The site is not fenced except for the boundary along Route 32. However, access is limited because it is located within FGGM, thus requiring on-post access. Exposure is likely to be infrequent because the former landfill is located in a heavily vegetated, undeveloped area that is not near any residences or schools.

Maryland landfill regulations will ensure that IAL4 remains undeveloped and ineligible for future residential use. The hypothetical resident is evaluated to address unlimited use and unrestricted exposure, and the results are provided for informational purposes only.

On-post groundwater from the Lower Patapsco Aquifer is not currently used as a potable source of drinking water. Drainage swales at IAL4 are not used for recreational purposes; the swales contain water only after heavy rains, so exposure to surface water is infrequent.

Offsite exposure to site-related COPCs has been determined to be an incomplete pathway. Due to the heavy vegetation present onsite, soil will not be blown offsite, and this exposure pathway is considered incomplete. Streams located onsite have intermittent flow, so the transport of surface water and sediment is considered insignificant. As mentioned previously, groundwater migrates south from IAL4 beneath Route 32 but remaining on FGGM property. The potable use of groundwater on FGGM property is restricted. However, in accordance with the NCP, there is an expectation that aquifers will be restored to their beneficial uses. The nearest off-post property is Tipton Airfield (non-residential) and is about 400 to 500 ft south of IAL4.The area between IAL4 and Tipton Airfield includes two sets of locked fences intersected by heavy vegetation and Route 32 (a heavily travelled, state highway). Volatilization of methane from exposed landfill areas to offsite receptors is an incomplete pathway. Any portions of the landfill that extend under Route 32 have up to 8 ft of fill between the landfill and road surface.

6.5 Toxicity Assessment

Risk assessments vary for different chemicals depending on whether noncarcinogenic or carcinogenic responses are used to assess potential risks. Some COPCs may result in both noncarcinogenic and carcinogenic effects. Toxicity assessment involves determining whether exposures to a constituent can increase the incidence of a specific adverse effect (e.g., cancer, kidney damage) in humans, characterizing the nature and strength of evidence of causation and, if sufficient data are available, quantifying the relationship between the dose of the constituent and the incidence of adverse health effects in the exposed population. Toxicity assessments provide the basis for evaluating what is acceptable exposure and what level of exposure may adversely affect human health.

6.6 Risk Characterization

Risk characterization integrates the information developed in the exposure and toxicity assessments into an evaluation of the potential risks associated with exposure to COPCs. This evaluation summarizes the nature and magnitude of the potential adverse health effects under a specific set of conditions that pertains to IAL4.

6.7 Uncertainty Assessment

The uncertainties associated with each step of the HHRA have been qualitatively assessed by reviewing key assumptions, their inherent uncertainty and variability, and the impact of this uncertainty and variability on the estimates of risk. The assumptions made for this risk assessment were conservative, so that an overestimation of the actual risks posed by site conditions is more likely.

6.8 HHRA Conclusions

The HHRA concluded that

- There is no unacceptable risk from surface soil, subsurface soil, sediment, or groundwater to present day human health.
- There is no unacceptable risk from surface soil, subsurface soil, or sediment to future hypothetical human health.
- There is no unacceptable risk from VOCs, SVOCs, PCBs, or dioxins, in groundwater to future hypothetical human health.
    - The risk to future hypothetical human health is unacceptable for metals in groundwater under the following scenarios: The future hypothetical onsite resident (lifetime) receptor exceeded carcinogenic target risk levels for groundwater (potable use) due to arsenic.
    - The future hypothetical onsite resident (child and adult) receptor exceeded non-carcinogenic target risk levels for groundwater (potable use) due to cobalt and iron.
    - In accordance with the NCP, there is an expectation that aquifers will be restored to their beneficial uses.
- Methane was detected in the subsurface at SG-01 in exceedance of the COMAR regulations of 5 percent. Methane was only detected when the ground surface of IAL4 was penetrated. If future intrusive work is to be conducted at IAL4, precautions should be taken to account for potential exposure to unsafe levels of methane.

Arsenic, cobalt, and iron are the only risk drivers in groundwater. The monitoring wells with elevated detections of arsenic, cobalt, and iron also had lower levels of pH and/or DO, which increases the solubility of these metals. DO readings obtained before sampling the eight IAL4 monitoring wells ranged from 0.53 to 7.25, and pH readings ranged from 3.92 to 6.08. The highest concentration of arsenic was reported in monitoring well MW-43, which had close to the lowest DO readings at 0.65 (**Table 6-2**). The highest concentrations of cobalt were reported in monitoring well MW-41, which included the lowest pH (3.92 and 4.09) and DO (0.53 and 1.8) readings (**Table 6-2**). The highest concentrations of iron were reported in monitoring wells MW-42 and MW-43, which had close to the lowest DO (0.65 and 1.89) readings (**Table 6-2**).

7.0 SLERA/BERA

A SLERA (**Appendix J**) was conducted using soil and sediment sampling results collected in May 2017 at IAL4 to assess the potential for adverse effects to ecological receptors. Conservative ecological screening values and exposure assumptions were used to screen soil and sediment data. The SLERA identified COPCs in soil and sediment at IAL4 during Step 2 of the United States Environmental Protection Agency's (USEPA's) Ecological Risk Assessment Guidance for Superfund (ERAGS).

Both direct comparison and food-chain modeling were used to estimate risk from exposure to COCs in soil and sediment at IAL4. For the screening level assessment, the MDC of each COC was used for estimating exposures. Highly conservative exposure parameters (i.e., minimum body weight, maximum food ingestion rate, and 100 percent dietary composition of the most contaminated food item) were used in the food-chain modeling to estimate exposures for birds and mammals.

IAL4 provides limited habitat for insects, birds, and mammals. IAL4 does not contain any threatened or endangered receptor species or areas of sensitive or unique habitat. The following assessment endpoints were evaluated for the screening level assessment:

- Assessment Endpoint No. 1: Terrestrial and/or Benthic Invertebrate Communities
- Assessment Endpoint No. 2: Small Insectivorous Mammals – represented by the short-tailed shrew
- Assessment Endpoint No. 3: Insectivorous Birds – represented by the American robin
- Assessment Endpoint No. 4: Omnivorous Mammals – represented by the red fox
- Assessment Endpoint No. 5: Carnivorous Birds – represented by the red-tailed hawk

At the screening level, soil sample results indicate that levels of antimony, cadmium, chromium, copper, lead, mercury, nickel, vanadium, zinc, high molecular weight polycyclic aromatic hydrocarbons, benzoic acid, bis(2-ethylhexyl) phthalate, and 2,3,7,8-TCDD- TEQ in IAL4 surface soil may result in potential adverse effects to at least one assessment endpoint evaluated. Results are summarized as follows:

- Terrestrial invertebrates had four chemicals with HQs greater than 1 (maximum HQ of 500 for benzoic acid).
- Insectivorous mammals had five chemicals with HQs greater than 1 (maximum HQ of 7.8 for antimony).
- Omnivorous mammals had one chemical with a HQ equal to 1 (maximum HQ of 1 for antimony).
- Insectivorous birds had nine chemicals with HQs greater than 1 (maximum HQ of 17.6 for lead).
- Carnivorous birds had no chemicals with HQs greater than 1.

At the screening level, sediment sample results indicate levels of acetone, anthracene, arsenic, barium, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzoic acid, cadmium, chromium, chrysene, copper, indeno(1,2,3,-cd)pyrene, iron, isopropylbenzene, isopropyltoluene,

lead, 2-methylnaphthalene, mercury, naphthalene, PCB-1254, PCB-1260, phenanthrene, pyrene, selenium, zinc, and 2,3,7,8-TCDD-TEQ may result in potential adverse effects to at least one assessment endpoint evaluated. Results are summarized as follows:

- Benthic invertebrates had 22 chemicals with HQs greater than 1 (maximum HQ of 54.5 for 2-methylnaphthalene). SEM/AVS/TOC evaluation for sediment indicated that metals in sediment are not bioavailable and are not resulting in adverse effects to ecological receptors.
- Insectivorous mammals had five chemicals with HQs greater than 1 (maximum HQ of 39.7 for TCDD TEQ).
- Omnivorous mammals had one chemical with a HQ greater than 1 (maximum HQ of 8.1 for TCDD TEQ).
- Insectivorous birds had 10 chemicals with HQs greater than 1 (maximum HQ of 128 for TCDD TEQ).
- Carnivorous birds had no chemicals with HQs greater than 1.

Figure 7-1 presents total concentrations of BERA sediment compounds.

The results of this SLERA indicate that the potential exists for adverse effects to ecological receptors at the site and that refinements should be made to further reduce uncertainty. The list of COCs was refined consistent with the initial stage of a Baseline Ecological Risk Assessment (BERA) Step 3 to reduce uncertainty in the SLERA conclusions and to refine the recommendations presented in the report by applying more realistic exposure assumptions (USEPA, 1997). During BERA Step 3, refinements (i.e. average body weight and food ingestion, representative dietary composition, use of 95% upper confidence limits as exposure point concentrations, and comparison to low-observed effects levels [LOAEL]) were made to reduce uncertainty in both the direct contact evaluation and food-chain modeling.

Based the results of the BERA Step 3 refinements, only the benthic invertebrate and small insectivorous mammal assessment endpoints had concentrations of COCs above BERA Step 3 refined benchmarks (sediment exposure only). Results are summarized as follows:

- Benthic invertebrates had three chemicals (p-isopropyltoluene [SED2=750 ug/Kg], benzoic acid [SED3=8500 ug/Kg, and 2378-TCDD-TEQ) with LOAEL HQs greater than 1 (ranging from 1.3 to 3.3).
- Insectivorous mammals had one chemical (2378-TCDD-TEQ) with a LOAEL HQ greater than 1 (LOAEL HQ of 1.6).

Using a weight-of-evidence approach, the BERA Step 3 COCs in sediment mentioned above (p-isopropyltoluene, benzoic acid, and 2378-TCDD-TEQ) were determined to have low potential to exert adverse population-level effects. Based on this information, potential ecological risks at IAL4 are low, and no further action to evaluate or address potential ecological impacts is recommended.

It should be noted that the HHRA concluded that there is no unacceptable risk from surface soil, subsurface soil, or sediment to present day or future hypothetical human health.

8.0 FS

The purpose of this FS is to identify, develop, and evaluate remedial alternatives that afford protection of human health and the environment for the current and reasonably anticipated future land use at IAL4.

Methane was identified as a primary risk driver in soil gas at IAL4 and the following chemicals were identified as primary risk drivers in groundwater for hypothetical future residents who use groundwater as potable water at IAL4: arsenic, cobalt, and iron. The BERA concluded that potential ecological risks at IAL4 are low, and no further action to evaluate or address potential ecological impacts is recommended.

Buried waste is present at IAL4 and may pose a physical hazard if exposed at the ground surface, precluding unrestricted land use. Therefore, the recommended remedial action must also control exposure to the buried waste and abide by MDE COMAR requirements for similar landfills.

8.1 ARARs

Remedial alternatives are evaluated in part based on compliance with air quality, water quality, waste management, and other standards that may be potential ARARs. Section 121(d) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act requires that remedial actions comply with requirements or standards developed pursuant to federal and state environmental laws. In general, remedial actions must comply with ARARs for the contaminants or conditions that exist at a site. However, CERCLA does allow for the selection of remedial actions that do not meet ARARs under select circumstances. Primary sources of information concerning ARARs are USEPA's *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (USEPA, 1988b) and *CERCLA Compliance with Other Laws Manuals* (USEPA, 1988a).

This section describes the regulatory standards and guidance that may be applied to a remedial action employed at the site in accordance with 40 CFR 300.400(g). These regulatory standards and guidance are divided into three categories: chemical-specific, action-specific, and location-specific requirements.

8.1.1 Definition of ARARs

According to USEPA's National Contingency Plan (the NCP 40 CFR Part 300.430), a requirement may be either "applicable" or "relevant and appropriate" to a remedial action, but not both. The terms are defined below:

- Applicable requirements are standards, criteria, or limitations promulgated under federal/state environmental or facility siting laws that specifically address a hazardous substance, remedial action, location, or other circumstance at a CERCLA site. The remedial action or circumstance at the site must satisfy all the jurisdictional prerequisites of the requirement.
- Relevant and appropriate requirements address problems or situations sufficiently similar to those at a CERCLA site, although the requirements do not meet the conditions for applicability. The degree to which a requirement is relevant and appropriate can be

assessed by comparing the hazardous substances involved, the physical circumstances, or the remedial action characteristics to those addressed in the requirement.

8.1.2 Types of ARARs

USEPA provides guidance illustrating three categories of ARARs that address a pollutant, action, location, or other circumstance at a site. The three types of ARARs, promulgated under federal or state law, are discussed below:

- **Chemical-specific requirements** set health- or risk-based concentration limits or ranges for specific substances in various environmental media (e.g., MCLs for public drinking water). If a given chemical has more than one such requirement, the more stringent ARAR should be met. Because relatively few chemicals are covered by such pre-established requirements, USEPA's ARAR guidance stipulates that it may be necessary to turn frequently to chemical-specific advisory levels, such as carcinogenic potency factors or reference doses, to establish cleanup levels. Chemical-specific standards are also used to indicate an acceptable level of discharge, to determine treatment and disposal requirements for a particular remedial activity, and to assess the effectiveness of a response action. **Table 8-1** presents the potential chemical-specific ARARs and to-be-considered guidance identified for remedial action at IAL4.
- Performance, design, or other **action-specific requirements** set controls or restrictions on the design, implementation, and performance of specific action related to the management of hazardous substances (e.g., Clean Water Act [CWA] pretreatment standards for discharges to publicly owned treatment works, or RCRA standards for the design and operation of hazardous waste management facilities). These standards specify performance levels, actions, technologies, and specific levels for discharge of residual chemicals. They also provide a basis for assessing the feasibility and effectiveness of the remedial alternatives. These requirements are not chemical- specific, but rather are specific to given remedial actions. However, they may specify acceptable methods meeting technology-based performance standards. The potential action-specific standards identified for remedial action at IAL4 are presented in **Table 8-2**.
- **Location-specific requirements** set restrictions on activities depending on characteristics of the site or its immediate environs (e.g., federal and state siting laws; ordinances pertaining to development in a 100-year floodplain; proximity to wetlands or man-made features such as landfills, disposal areas, and/or local historic buildings). The potential location-specific standards identified for remedial action at IAL4 are presented in **Table 8-3**.

8.1.3 To Be Considered (TBC) Criteria

In addition to the three types of ARARs, TBC criteria may also be evaluated. TBC criteria are proposed standards, advisories, and guidance developed by federal and state environmental and health programs that are intended to provide useful information and recommendations but are not legally binding. TBC criteria should be used only when they are scientifically defensible and in the absence of a specific ARAR. **Tables 8-1** and **8-3** includes some chemical-specific and location-specific TBCs.

8.1.4 Compliance Waivers from ARARs

Compliance with an ARAR may be waived under certain conditions, provided that human health and the environment are protected. Pursuant to 40 CFR Part 300.430(f)(3), a remedial action that does not attain a level of control at least equivalent to an ARAR still can be selected if certain conditions exist at the site. CERCLA Section 121 provides the criteria for waivers of compliance from ARARs under which a remedial action can still be selected if:

- It is only part of a total remedial action that will otherwise attain the level or standard of control when completed.
- Compliance with the ARAR will result in greater risk to human health or the environment.
- Compliance with the ARAR is impracticable from an engineering perspective.
- The remedial action will attain a standard of performance equivalent to that required by the ARAR through the use of another method or approach.
- The ARAR in question is a state standard, and the state has not consistently applied (or demonstrated the intention to consistently apply) the requirement in similar circumstances at other sites.

8.2 Development of RAOs

RAOs for IAL4 are based on the existing data for IAL4 and the conceptual site model. RAOs are designed to protect human health and the environment. The development of RAOs is the first step in the formulation and development of remedial alternatives. RAOs specify the contaminant(s) and media of concern, potential exposure pathways, and remediation goals [40 CFR 300.430(e)(2)(i)].

The RAOs for IAL4 are:

- To prevent human contact with buried and surficial waste that may pose a physical hazard;
- To meet ARARs and be protective of the hypothetical future child resident ingestion of shallow groundwater containing concentrations of arsenic, cobalt, and iron above their respective target risk levels; and
- To eliminate exposure to concentrations of methane in soil gas that may cause an explosive risk and to prevent human inhalation of methane in soil gas at the property boundary above the COMAR 26.04.07.03B(9) guidelines of 5 percent by volume.

8.3 Identification and Screening of General Response Actions

General response actions are the steps that can be taken to achieve the health-based RAOs protective of human health and the environment; they are actions that control exposure to site contaminants. General response actions for IAL4 are:

- No action
- Land use controls (LUCs)

- LTM of soil gas
- LTM of groundwater
- Remediation of soil gas
- Remediation of metals in groundwater
- Installation of 2-ft soil cover
- Routine site inspections
- Installation of an impermeable soil/geosynthetic cover in accordance with COMAR 26.04.07.21
- Excavation, transport, and offsite disposal of waste and backfill with clean fill

The “no action” response does not satisfy the RAOs but must be used as the baseline for comparison for the other response actions and alternatives. No action will be carried forward to the development of remedial action alternatives.

LUCs consist of institutional controls and engineering controls. LUCs involve the application of administrative actions and controls that reduce or eliminate receptor exposure to contaminated soil gas and groundwater. Generally, they are more easily implemented for human receptors, contrasted with environmental receptors. It is unknown if methane in soil gas is migrating off FGGM, however, LUCs would effectively reduce/eliminate the inadvertent contact of this media by human receptors. However, in accordance with the NCP, there is an expectation that aquifers will be restored to their beneficial uses. Therefore, LUCs will be carried forward to the development of remedial action alternatives.

LTM of soil gas and groundwater would alert FGGM personnel if soil gas or groundwater are migrating off the installation boundary. LTM of soil gas and groundwater can be used to verify that conditions are not changing and confirm that neither methane in soil gas nor metals in groundwater are migrating off FGGM. Therefore, LTM of soil gas and groundwater will be carried forward to the development of remedial action alternatives.

Removal of petroleum-impacted soil that is causing the elevated methane in soil gas readings would eliminate this source of soil gas contamination. Although it is unknown if methane in soil gas is migrating off FGGM, hot spot removal of the petroleum contaminated soil that is the cause of the elevated methane would reduce or eliminate the generation of methane. Hot spot removal of the petroleum contaminated soil causing elevated methane will be carried forward to the development of remedial action alternatives.

Remediation of metals in groundwater would reduce/eliminate the contaminants in this pathway. Remediation usually takes many years and would require LTM of groundwater. Although the primary risk driving metals in groundwater are not migrating off FGGM, remediation of groundwater would reduce and eventually eliminate the metals in groundwater. However, the groundwater detection(s) do not depict a discernable plume. Regarding the lack of a plume, for each metal, the maximum concentration is reported in different monitoring wells and the range of concentration is two to three orders of magnitude. Also, the maximum concentration of each metal was detected in different wells; the maximum concentration of arsenic was detected in monitoring well MW-43, the maximum concentration of cobalt was detected in monitoring well MW-41D, and the maximum concentration of iron was detected in monitoring well MW-42. Also, since metals in groundwater are not migrating off FGGM, remediation of groundwater will not be carried forward to the development of remedial action alternatives.

Installing a 2-ft soil cover eliminates receptor contact with affected soil gas and reduces infiltration to groundwater, thus reducing exposure to soil gas contaminants and leaching of contaminants to groundwater. This option also prevents direct contact with buried waste and eliminates the pathway for exposure to contaminated soil. Typically, it also involves a future commitment to inspect and maintain the cover. The installation of a 2-ft soil cover would not comply with COMAR 26.04.07.21 unless the soil cover is as effective as a low-permeability geotextile membrane.. A 2-ft soil cover would be adequate for groundwater because metals in groundwater has not migrated off FGGM; however, it would not be adequate for soil gas until it is determined that methane in soil gas is also not migrating off FGGM. The installation of a geosynthetic cover in accordance with COMAR 26.04.07.21 would provide all the same protections and would comply with ARARs. Both the installation of a 2-foot soil cover and a COMAR 26.04.07.21 compliant cover will be carried forward to the development of remedial action alternatives.

Removal involves movement of trash and affected soil from the location where exposure could occur to some other area where exposure cannot occur or is minimized. Excavation and offsite disposal involve removing the trash from IAL4. However, it may not be possible to remove all trash; trash underneath the slope for Route 32 may need to stay in place so as not to compromise the integrity of the roadway. Depending on the preferred alternative, an interim investigation to determine the extent of trash under the slope may be warranted. Action would be taken on the Route 32 slope if trash is confirmed to be under the slope. Any trash left behind under the slope leading up to Route 32 will need to be capped in accordance with COMAR 26.04.07.21. Since trash will remain in place, long-term inspection and maintenance of the cap would be required. Excavation and offsite disposal would allow a wider range of uses for the site and unlimited use and unrestricted exposure (UU/UE) for the majority of IAL4 but not UU/UE for the portion of the slope to Route 32 if trash will remain there. If lane closure and shoring are used to support Route 32 while all the trash beneath Route 32 is removed, then the site can be approved for UU/UE.

8.4 Development of Remedial Action Alternatives

The primary purpose of this RI/FS is to develop appropriate remedial alternatives [40 CFR 300.430(e)(9)]. The remedial alternatives have been developed from general response actions retained in the screening process summarized above. This section includes descriptions of the alternatives that have been developed for IAL4, while Section 8.5 provides the criteria for the evaluation of remedial alternatives. Section 8.6 includes a comparative analysis designed to expose the strengths and weaknesses of the alternatives, providing a detailed basis for identifying the most appropriate candidates for implementation. The retained technologies identified in Section 8.3 are assembled into the following four IAL4 Remedial Alternatives (**Table 8-4**):

- Alternative 1 — No Action
- Alternative 2 —LUCs and LTM of Soil Gas and Groundwater
- Alternative 3 — 2-Ft Soil Cover, LUCs, Routine Site Inspections, and LTM of Soil Gas and Groundwater
- Alternative 4 — Installation of an Impermeable Soil/Geosynthetic Cover in accordance with COMAR 26.04.07.21, LUCs, delineation of soil gas, LTMgt of the Cover, and LTM of Soil Gas and Groundwater

- Alternative 5 – Excavation and offsite disposal of trash, backfill with clean fill, and installation of an impermeable cap over trash remaining under the slope to Route 32, LUCs, LTMgt of the Cover, and LTM of Groundwater

8.4.1 Alternative 1

Under Alternative 1, no corrective action would be undertaken. This alternative would not adequately control the chemical or physical hazards posed by buried waste at IAL4, nor will it have a mechanism to prohibit groundwater use at IAL4. However, the no action alternative must be evaluated [per 40 CFR 300.430(e)(6)] to establish a baseline of comparison regarding future performance and risk for the remaining alternatives, even though this alternative is not a viable option itself.

8.4.2 Alternative 2

Alternative 2 components include the implementation of LUCs and LTM of soil gas and groundwater to achieve RAOs.

Component 1 - LUCs

LUCs consist of institutional controls and engineering controls. There are existing LUCs on FGGM that would be supplemented for IAL4. Existing LUCs consist of perimeter fencing along the installation controlling entry to the installation and an Excavation Permit Process administered by FGGM Directorate of Public Works that would limit excavations at IAL4. LUCs that would be implemented at IAL4 consist of engineering controls (e.g., perimeter fencing around IAL4 and signage) controlling site access and institutional controls describing restrictions to site use and activities (e.g., no digging) to prevent exposure of buried waste at IAL4. The institutional controls would include restrictions preventing residential development, uncontrolled excavations through the Excavation Permit Process administered by FGGM DPW, and the prohibition of the use of shallow groundwater beneath IAL4, and for a set distance downgradient of IAL4, as a potable source. The specific types of LUCs planned for implementation at IAL4 would be detailed in the Remedial Design.

Component 2 - LTM of Soil Gas and Groundwater

Soil gas samples would be analyzed for methane. Since there are no permanent soil gas monitoring points at IAL4, they would need to be installed as part of this alternative.

LTM of soil gas and groundwater at IAL4 would be a necessary component of Alternative 2, since waste would be left in place. LTM of soil gas and groundwater would consist of periodic sampling of soil gas and groundwater to assess changes in concentration of these chemicals or detect if migration off FGGM occurs.

Groundwater monitoring would consist of semi-annual sample collection to ensure that waste is not contributing to groundwater contamination and to assess water quality. Semi-annual soil gas and groundwater monitoring would comply with the MDE Solid Waste Program requirements for groundwater monitoring, COMAR 26.04.07.22, and 40 CFR 258, Subpart E. These actions also would comply with the substantive requirements of applicable or relevant and appropriate state regulations, which are also action-specific ARARs. The monitoring of soil gas and groundwater at IAL4 could be administered under a Detection and Assessment Monitoring Program. Groundwater samples at IAL4 would be analyzed for total metals.

8.4.3 Alternative 3

Alternative 3 components include the installation of a 2-ft soil cover, routine site inspections, LUCs, and LTM of soil gas and groundwater to achieve RAOs.

Component 1 - Landfill Cover and Routine Site Inspections

The landfill cover requirements are defined by COMAR 26.04.07.21 Sanitary Landfill – Closure. According to the regulation, the closure cover shall be designed to minimize infiltration into the landfill and shall be developed through an engineering analysis of IAL4. The closure cover may be constructed of natural materials found either on IAL4 or imported from an offsite location.

The 2-ft soil cover involves covering the landfill with at least 2 ft of clean soil capable of supporting grass vegetation. Prior to installation of the cover, the area would be cleared and grubbed. The cover would require LTMgt and maintenance, which would include occasional mowing and removal of trees and shrubs that could disrupt the cover.

The cover would be inspected and maintained. Repairs would be undertaken as necessary. Alternative 3 would also include annual surficial waste removal, should waste be exposed at the ground surface due to erosional processes and weathering of the ground surface. The planned cover should be an effective measure to contain and prevent human exposure to buried waste. This alternative would include annual inspections to document signs of erosion, subsidence, settling, and buried waste exposed at the ground surface.

Alternative 3 varies from the cover design criteria promulgated under COMAR 26.04.07.21 and would not be acceptable to MDE unless the soil cover is as effective as a low-permeability geotextile membrane.

Component 2 - Institutional Controls and LUCs

Similar to Alternative 2, Alternative 3 would employ LUCs. Current LUCs (institutional controls and engineering controls) would be supplemented with new site-specific controls (e.g., signage).

Component 3 - LTM of Soil Gas and Groundwater

Similar to Alternative 2, Alternative 3 would employ LTM of soil gas and groundwater. Methane concentrations at all but one IAL4 sample location are below applicable standards. The soil cover would include passive venting features to manage the potential for landfill gas accumulation in the capped area.

8.4.4 Alternative 4

Alternative 4 consists of the installation of an impermeable soil/geosynthetic cover system and a vegetated surface layer that would be installed across IAL4. The impermeable soil/geosynthetic cover would be constructed in accordance with COMAR 26.04.07.21. Annual cover inspections would be conducted including routine maintenance of the cover system. Additional components of this alternative include LUCs and LTM of soil gas and groundwater consistent with the description for Alternative 2.

Component 1 - Impermeable soil/geosynthetic Cover, further delineation of soil gas, and Routine Site Inspections

Under this Alternative, a COMAR compliant cover would be installed across IAL4. The impermeable soil/geosynthetic cover would consist of an imported fill grading layer, a low

permeability barrier layer, a granular or synthetic drainage layer, and an earthen soil layer, which will include a vegetated surface cover. Prior to installation of the impermeable soil/geosynthetic cover, the area would be cleared and grubbed. Clean fill would be placed and graded over portions of IAL4, such as the surface slopes, to maintain a minimum gradient of 4 percent. The low permeability cover would be installed above the grading layer and would consist of 1 ft of clay or other natural fine-grained material having an in-place permeability less than or equal to $1x10^{-5}$ centimeters/second (cm/sec) or a geosynthetic liner (e.g., polyethylene liner) having a minimum permeability of $1x10^{-10}$ cm/sec.

The low permeability cover would include passive venting features to manage the potential for landfill gas accumulation. A drainage layer with a minimum thickness of 6 inches would be placed immediately above the low permeability cover and would consist of clean sand or other natural coarse-grained material with an in-place permeability greater than $1x10^{-3}$ cm/sec. An equivalent synthetic drainage material could be utilized in place of the granular drainage layer.

Finally, an earthen soil cover would be placed over the drainage layer and would have a minimum thickness of 2 ft. The final earthen cover would be graded to a minimum slope of 4 percent to facilitate surface drainage from IAL4 and would contain sufficient organic material to sustain vegetative growth. Surface water runoff generated from the cover installation would be managed in a manner that prevents erosion and minimizes impacts to existing site tributaries. Management features may include vegetated swales and retention areas which would provide erosion control, water quality control, and stormwater runoff rate control.

Additional soil gas samples will be collected around sample point SG-01 in order to delineate the extent of exceedance of the soil gas regulatory standard.

The cover would be inspected and maintained. This alternative would include annual inspections to document signs of erosion, subsidence, settling, and buried waste exposed at the ground surface.

The cover would require LTMgt and maintenance, which would include occasional mowing and removal of trees and shrubs that could disrupt the cover.

Component 2 - LUCs

Similar to Alternatives 2 and 3, Alternative 4 would employ LUCs. Current LUCs (institutional controls and engineering controls) would be supplemented with new site-specific controls (e.g., signage).

Component 3 - LTM of Soil Gas and Groundwater

Similar to Alternatives 2 and 3, Alternative 4 would employ LTM of soil gas and groundwater. Methane concentrations at all but one IAL4 sample location are below applicable standards. The low permeability cover installed would include passive venting features to manage the potential for landfill gas accumulation in the capped area.

8.4.5 Alternative 5

Alternative 5 consists of the removal of trash and affected soil from IAL4 to permitted facilities. After removal of the trash and affected soil, the area will be backfilled with clean fill and the surface will be vegetated. Any trash remaining under the slope to Route 32 will be capped in accordance with COMAR 26.04.07.21. LTMgt and LUC would be required since trash will

remain. Additional components of this alternative include LTM of groundwater consistent with the description for Alternatives 2 and 3.

Component 1 – Excavation and Offsite Disposal of Trash

Under this Alternative, all accessible trash and construction debris would be excavated and transported offsite for disposal.

Component 2 – Impermeable soil/geosynthetic Cover and Routine Site Inspections

Similar to Alternative 4, Alternative 5 would install a COMAR compliant cover, but only over those portions of the slope to Route 32 where trash has been confirmed in the subsurface. The cover would consist of a low permeability barrier layer, a granular or synthetic drainage layer, and an earthen soil layer, which will include a vegetated surface cover. The cover would not need an imported fill grading layer because the slope to Route 32 is currently graded and maintained by SHA.

Component 3 - LUCs

Similar to Alternatives 2, 3 and 4, Alternative 5 would employ LUCs for the trash that remains under the slope of Route 32. Current LUCs (institutional controls and engineering controls) would be supplemented with new site-specific controls (e.g., signage).

Component 4 - LTM of Groundwater

Similar to Alternatives 2, 3, and 4, Alternative 5 would employ LTM of groundwater but not soil gas. Trash will be excavated at and surrounding the one IAL4 sample location where methane concentrations exceeded the applicable standards. The low permeability cover installed over the slope of Route 32 would however, include passive venting features to manage the potential for landfill gas accumulation in the capped area.

8.5 Criteria for Evaluating Remedial Alternatives

This section presents the evaluation criteria specified in 40 CFR 300.430(e)(9) that will be used in detailed comparative analyses of the remedial alternatives developed in the previous section.

Section 300.430(e)(9) of the NCP lists nine criteria against which each remedial alternative must be assessed. These include two threshold criteria, five preliminary balancing criteria, and two modifying criteria. The acceptability or performance of each alternative against the criteria is evaluated individually so that relative strengths and weaknesses may be identified.

The two threshold criteria that must be met by each alternative are:

- Overall protection of human health and the environment; and
- Compliance with ARARs

Assessments against the threshold criteria relate directly to statutory findings that must ultimately be made in the Decision Document. Threshold criteria are the requirements that each alternative must meet in order to be eligible for selection.

The next five criteria represent the primary criteria upon which the detailed analysis is based:

- Long-term effectiveness and permanence;

- Reduction of toxicity, mobility, or volume of waste;
- Short-term effectiveness;
- Implementability; and
- Cost

The two modifying criteria are state and community acceptance and are fully evaluated following comments on the Proposed Plan. State and community acceptance are addressed in the Decision Document. These modifying criteria are not addressed in this FS.

8.5.1 Overall Protection of Human Health and the Environment

This criterion addresses whether the alternative can adequately protect human health and the environment over time. Protection of human health and the environment is met if each human health exposure pathway identified in the risk assessment as potentially resulting in adverse effects is eliminated, reduced to an acceptable level, or controlled through treatment or engineering and LUCs. Restrictions placed on the use of IAL4 after remediation is also considered under this criterion. Overall protection of human health and the environment draws on the assessments of other evaluation criteria, especially long-term effectiveness and permanence, short-term effectiveness, and compliance with ARARs.

8.5.2 Compliance with ARARs

This criterion addresses whether the alternative complies with site-specific federal and state ARARs, or whether a waiver is justified. The potential site-specific ARARs that will be used to evaluate alternatives were presented in Section 8.1.

8.5.3 Long-Term Effectiveness and Permanence

The long-term reliability and effectiveness criterion address the degree, extent, and manner in which the alternative continues to protect human health and the environment in terms of residual risk remaining at IAL4 after the RAOs have been met. This criterion considers the residuals following completion of the response actions, expected duration of the response action, and the adequacy and reliability of controls required to ensure protectiveness of the response action. This criterion addresses the potential need to replace technical components of the alternative, such as a cap, and the potential exposure pathways and risks posed should the remedial action need replacement.

8.5.4 Reduction of Toxicity, Mobility, or Volume of Waste through Treatment

This criterion relates to the extent to which the remedial alternatives employ treatment to reduce the toxicity, mobility, or volume of contaminants present at the Site, including how treatment is used to address the principal threats posed by the Site. Factors for this criterion include the degree of expected reduction in toxicity, mobility, or volume of the waste, permanence of the treatment employed, the amount of hazardous materials disposed off-site or destroyed/removed, the type and quantity of residuals remaining, and the degree to which treatment reduces the inherent hazards posed by the principal threats.

8.5.5 Short-Term Effectiveness

Short-term effectiveness addresses the effects of the alternative during construction and implementation until the RAOs would be met. This criterion considers the protection of the community and workers, including the air quality effects and hazards from excavation, transportation, and onsite treatment. In addition, the expected length of time for completion of the remedial action is considered.

8.5.6 Implementability

The technical and administrative feasibility of implementing each alternative and the availability of services and materials are addressed by this criterion. Technical feasibility includes technical difficulties and unknowns associated with the construction and operation of the alternative technologies, the reliability of the technologies employed, the ease of undertaking additional remedial actions, and the ability to monitor the effectiveness of the remedy. Administrative feasibility considers the degree of coordination required by the regulatory agencies. This criterion also considers the availability of services and materials; the availability of necessary equipment, specialists, and provisions to ensure any necessary additional resources; the availability of prospective technologies; successful implementation of the remedial action at similar sites; and research to realistically predict field implementability.

8.5.7 Cost

This criterion addresses the capital costs, the O&M costs, and the present-worth analysis (money needed today in over to finance future obligations) of costs anticipated for implementation of the response action. Capital costs are divided into direct costs for construction and indirect costs for non-construction and overhead. Direct capital costs include construction, equipment, relocation, disposal, and land and site development costs. Indirect capital costs include engineering expenses, legal fees, license or permit costs, start-up costs, and contingency allowances. O&M costs consist of costs associated with post-construction activities necessary to properly operate, maintain, and monitor a given response action.

A detailed present-worth cost is developed for each alternative. The opinions of probable cost presented in this FS were developed in accordance with USEPA guidance (USEPA, 2000), engineering experience with comparable sites, and previous project costs. The opinions of probable cost presented in this report were prepared with an anticipated accuracy range of -30 percent to +50 percent.

Cost as a criterion may also be used to screen alternatives where each alternative is found to equally meet or exceed the RAOs. The cost analyses are developed by applying the criteria detailed in the following sections.

Direct Capital Costs

Direct capital costs are comprised of the following components:

- Construction costs - Costs for materials, labor, and equipment necessary to implement the alternative;

- Equipment costs - Cost of the equipment and/or services necessary to implement the response action; these are permanent equipment costs that continue for the duration of the operational period;
- Land and site development costs - Costs associated with site or building preparation;
- Building and service costs - Costs for process and non-process buildings, utility connections, and purchased services; and
- Disposal costs - Costs for the offsite disposal of waste generated during any supplemental investigations, remediation, and monitoring activities.

Indirect Capital Costs

Indirect capital costs are comprised of the following components:

- Engineering expenses - Costs for project administration, design, drafting, and construction supervision;
- Legal fees and license or permit costs - Administrative, legal, and technical support costs to obtain licenses and permits for installation and operation of the response action;
- Start-up and shakedown costs - Costs incurred during start-up of permanent systems;
- Contingency allowances - Funds allocated and budgeted to cover unforeseen circumstances or scope modifications; and
- Shutdown costs - Costs necessary for the termination of operations after the acceptance of the response action.

O&M Costs

O&M costs are comprised of the following components:

- Operating labor costs - Wages, salaries, overhead, fringe benefits, and profit associated with the labor force required to implement post-construction operations;
- Maintenance materials and labor costs - Costs for labor, equipment, materials, parts, and other resources required for routine maintenance of facilities and equipment;
- Auxiliary materials and energy - Cost of items such as expendable chemicals and electricity for treatment plant operations, water, sewer service, and fuel;
- Purchased services - Sampling costs, laboratory fees, and professional fees for monitoring purposes;
- Disposal and treatment costs - Costs for the treatment and disposal of waste generated during onsite treatment processes;
- Administrative costs - Costs associated with administration of the response action operations, including financing, accounting, and general overhead and management;
- Insurance, taxes, and licensing costs - Costs such as liability and sudden accident insurance, licensing fees, or permit renewal and reporting costs;
- Maintenance reserve and contingency funds - Costs for the anticipated replacement or rebuilding of equipment or unanticipated O&M costs; and

- Other costs - Items not otherwise assignable to the above categories.

8.6 Detailed Analysis of Alternatives

This section includes individual and comparative analyses of the alternatives proposed for IAL4 with respect to the seven evaluation criteria described in Section 8.5. The comparative analysis of remedial alternatives at IAL4 is summarized qualitatively in **Table 8-4** and quantitatively in a scoring matrix provided in **Table 8-5**. These analyses are performed to aid in the selection of a preferred remedial alternative for IAL4 that best satisfies the criteria identified in 40 CFR 300.430(e)(9) and the specific RAOs and ARARs for IAL4.

8.6.1 Individual Analysis of Alternatives

The individual analysis of alternatives consists of an evaluation and assessment of the proposed alternatives with respect to the seven criteria described in Section 8.5.

8.6.1.1 Alternative 1 – No Action

According to the NCP, the level of protectiveness achieved must be compared to the required expenditure of time and materials as an integral portion of the response action selection process. Alternative 1 is intended to serve as a comparative baseline of the risk reduction effectiveness of other potential alternatives. Under this alternative, no remedial actions would be performed, and no efforts would be made to address the potential for direct contact with landfill wastes by current and future receptors at IAL4.

- **Overall Protection of Human Health and the Environment**: Alternative 1 would not provide for soil gas or groundwater remediation and/or reduce, mitigate, or otherwise prevent direct contact with landfill wastes by current and future receptors. Thus, Alternative 1 is not protective and does not meet this criterion.
- **Compliance with ARARs**: ARARs are not met by the No Action alternative.
- **Long-Term Effectiveness and Permanence**: Under Alternative 1, no actions are implemented, and no controls are put in place for monitoring soil gas, groundwater, and potential groundwater impacts from the waste left in place. Hazards to receptors associated with direct contact of wastes remain at current levels. Thus, Alternative 1 does not meet the long-term effectiveness and permanence criterion.
- **Reduction of Toxicity, Mobility, or Volume of Waste through Treatment**: Alternative 1 would not employ any treatment that would reduce the toxicity, mobility, or volume of soil gas and groundwater contamination or cover or remove buried waste. As a result, this alternative does not satisfy the statutory preference for employing treatment as a principal element.
- **Short-Term Effectiveness**: Implementation of Alternative 1 would not pose any additional risks to the community, the workers, or the environment because no active remedial measures are conducted. Therefore, Alternative 1 meets the short-term effectiveness criterion.
- **Implementability**: Alternative 1 poses no implementability concerns because no actions would be undertaken. Therefore, Alternative 1 meets the implementability criterion.

- **Cost**: There are no present-worth costs and capital costs for Alternative 1 because no actions would be undertaken. Therefore, Alternative 1 meets the cost criterion.

8.6.1.2 Alternative 2 - LUCs and LTM

Alternative 2 incorporates LUCs and LTM of soil gas and groundwater. Under this alternative, no remedial actions would be performed, and no efforts would be made to address the potential for direct contact with landfill wastes by current and future receptors at IAL4.

- **Overall Protection of Human Health and the Environment**: Alternative 2 provides for the restriction of use of groundwater and provides for monitoring of the potential chemical hazard posed by the buried waste. The implementation of site-wide LUCs to prohibit site activities would prevent the uncontrolled exposure to buried waste and contaminated groundwater but would not prohibit wildlife exposure to soil or sediment at IAL4 and it would not restore the aquifer to beneficial use. Thus, Alternative 2 does not meet the overall protection of human health and the environment criterion.
- **Compliance with ARARs**: Alternative 2 would meet the chemical-specific and location-specific ARARs but not the action-specific ARARs, specifically COMAR 26.04.07.21, since the landfill will not be closed under this alternative.
- **Long-Term Effectiveness and Permanence**: Alternative 2 would provide LUC measures to prevent exposure to buried waste and contaminated groundwater and controls for monitoring soil gas and groundwater; however, it would not restore the aquifer to beneficial use. Thus, Alternative 2 does not meet the long-term effectiveness and permanence criterion.
- **Reduction of Toxicity, Mobility, or Volume of Waste through Treatment**: This alternative would not employ any treatment that would reduce the toxicity, mobility, or volume of soil gas and groundwater contamination or cover or remove buried waste. As a result, this alternative does not satisfy the statutory preference for employing treatment as a principal element.
- **Short-Term Effectiveness**: Implementation of this alternative would not pose any additional risks to the community, the workers, or the environment because no active remedial measures are conducted. Therefore, this alternative meets the short-term effectiveness criterion.
- **Implementability**: This alternative would be readily implementable, as this alternative would not require any major construction activities. However, this alternative would require deed restrictions for LUCs and logistical coordination with FGGM, Tipton Airfield, and Department of the Interior during LTM activities. Therefore, this alternative meets the implementability criterion.
- **Cost**: The estimated present-worth cost to implement Alternative 2 would be $1.1M. The costs and detailed assumptions associated with the implementation of Alternative 2 are presented in **Appendix L**.

8.6.1.3 Alternative 3 – 2-Foot Soil Cover

Alternative 3 incorporates a 2-ft soil cover, routine site inspections, implementation of LUCs, and LTM of soil gas and groundwater to achieve the RAOs.

- **Overall Protection of Human Health and the Environment**: Installation of a 2-ft soil cover over IAL4 would prevent direct contact with the buried waste. Routine site inspections and repairs would ensure the continued effectiveness of the soil cover. The implementation of site-wide LUCs to prohibit site activities would prevent the uncontrolled exposure to buried waste. The habitat provided by the forested portions of IAL4 would be removed and revegetated with landscaped grass, but no trees or shrubbery would be planted. Sediment in adjoining wetlands would not be disturbed and any impact to ecological receptors from the sediment would not change. Installing a 2-ft soil cover would reduce the infiltration of rainwater to IAL4, thereby reducing the leaching and concentration of arsenic, cobalt, and iron from the landfill to groundwater and long-term monitoring would see a reduction of these compounds, thus, over time, restoring groundwater to beneficial use. Groundwater should be monitored, and the chemical results compared to MCLs and the risk identified in the HHRA. Alternative 3 does not meet the overall protection of human health and the environment criterion.
- **Compliance with ARARs**: Alternative 3 would meet the chemical-specific and location-specific ARARs, but not the action-specific ARARs, specifically COMAR 26.04.07.21, unless the soil cover is as effective as a low-permeability geotextile membrane. By installing a 2-foot soil cover, air emissions would be reduced or eliminated, thus complying with the air chemical ARAR; exposure to trash and affected soil would be reduced or eliminated, thus complying with the soil chemical ARAR; leaching of chemicals to groundwater would be reduced or eliminated, thus complying with the groundwater chemical ARAR; and runoff flow through affected soil or trash would be eliminated, which eliminates the accumulation of affected sediment, thus complying with the sediment chemical ARAR. Several action-specific ARARs would be triggered under this alternative (refer to Table 8-2). The 2-foot cover installation would disturb, at a minimum, the area within the delineated landfill boundary (2.4 acres or 104,544 square feet), thus, Maryland’s erosion and sediment control ARARs would be triggered, as greater than 5,000 square feet would be disturbed. These ARARs would be met through implementation of erosion and sediment controls, as warranted, and specified in COMAR 26.17.11. Dust control measures would also be employed during installation of the cover, in accordance with the requirements outlined in COMAR 26.11.06.03(D). Lastly, LTM would be conducted as a component of landfill post-closure monitoring requirements, as mandated by MDE's Solid Waste Program (COMAR 26.04.07.22B and C). Analytical data would be compared against USEPA MCLs.
- **Long-Term Effectiveness and Permanence**: The 2-ft soil cover would prevent direct contact with the waste. Routine site inspections would be conducted to ensure that the cover system is functioning as designed. Alternative 3 includes LUC measures to prevent exposure to contaminated groundwater and controls for monitoring soil gas and groundwater. Therefore, Alternative 3 does meet the long-term effectiveness and permanence criterion.
- **Reduction of Toxicity, Mobility, or Volume of Waste through Treatment**: Installation of a 2-ft soil cover would reduce the mobility of buried waste by limiting exposure to external physical processes. Furthermore, Alternative 3 would involve annual surficial waste removal, should waste be exposed at the ground surface due to erosional processes and weathering of the ground surface. This would provide minimal reduction of the

volume of buried waste at IAL4. As a result, this alternative does not satisfy the statutory preference for employing treatment as a principal element.

- **Short-Term Effectiveness**: Alternative 3 would pose moderate short-term risks to the community and construction workers during the installation of the cover due to increased traffic during construction. Since clean soil will be brought on to IAL4 and placed over the landfill, buried waste items will not be exposed during general grading of IAL4 prior to cover placement. Therefore, Alternative 3 meets the short-term effectiveness criterion.
- **Implementability**: Alternative 3 would utilize standard construction equipment and methods for the installation of the permeable soil cover on the landfill surface. However, construction of the cover would require logistical coordination with FGGM. This alternative would also require logistical coordination with FGGM for LUCs and during routine inspections, repairs, or LTMgt activities. FGGM personnel currently coordinate similar activities at FGGM; therefore, alternative 3 meets the implementability criterion.
- **Cost**: The estimated present-worth cost to implement Alternative 3 would be $2.5M. The costs and detailed assumptions associated with the implementation of Alternative 3 are presented in **Appendix L**.

8.6.1.4 Alternative 4 – Impermeable Soil/Geosynthetic Cover

Alternative 4 would include installation of an impermeable soil/geosynthetic cover across the entire extent of IAL4. The cover would encompass approximately 2.4 acres. Annual inspections and routine maintenance of the cover system would be conducted to ensure continued effectiveness. Implementation of LUCs and LTM of soil gas and groundwater would also be conducted.

- **Overall Protection of Human Health and the Environment**: Installation of an impermeable soil/geosynthetic cover over IAL4 would prevent direct contact to buried waste and would prevent surface water infiltration through the buried waste. The impermeable cover will eliminate rainwater infiltration through the landfill to groundwater which will eliminate the leaching of arsenic, cobalt, and iron from the landfill and over time, restore the aquifer. The implementation of LUCs to restrict land use and to prohibit site activities would prevent the uncontrolled exposure to buried waste. The habitat provided by the forested portions of IAL4 would be removed and revegetated with landscaped grass, but no trees or shrubbery would be planted. Alternative 4 does meet the overall protection of human health and the environment criterion.
- **Compliance with ARARs**: Alternative 4 would meet the chemical-specific, action-specific, and location-specific ARARs, specifically COMAR 26.04.07.21. By installing an impermeable soil/geosynthetic cover, air emissions would be reduced or eliminated, thus complying with the air chemical ARAR; exposure to trash and affected soil would be reduced or eliminated, thus complying with the soil chemical ARAR; leaching of chemicals to groundwater would be reduced or eliminated, thus complying with the groundwater chemical ARAR; and runoff flow through affected soil or trash would be eliminated, which eliminates the accumulation of affected sediment, thus complying with the sediment chemical ARAR. Several action-specific ARARs would be triggered under this alternative (refer to Table 8-2). The cap design requirements specified in COMAR

26.04.07.21 would be met by Alternative 4. Cap installation would disturb, at a minimum, the area within the delineated landfill boundary (2.4 acres or 104,544 square feet), thus, Maryland's erosion and sediment control ARARs would be triggered, as greater than 5,000 square feet would be disturbed. These ARARs would be met through implementation of erosion and sediment controls, as warranted, and specified in COMAR 26.17.11. Dust control measures would also be employed during installation of the cap, in accordance with the requirements outlined in COMAR 26.11.06.03(D). Lastly, LTM would be conducted as a component of landfill post-closure monitoring requirements, as mandated by MDE's Solid Waste Program (COMAR 26.04.07.22B and C). Analytical data would be compared against USEPA MCLs.

- **Long-Term Effectiveness and Permanence**: Installation of an impermeable soil/ geosynthetic cover would be an effective barrier to prevent the exposure of buried waste to human receptors, eliminating the hazard posed by this material. However, the success of the long-term effectiveness of this alternative would be predicated on the implementation of LUCs and maintenance. The continued long-term maintenance of the impermeable soil/geosynthetic cover and implementation of LUCs would ensure that IAL4 use remains unchanged, thereby assuring the continued effectiveness of the remedy. Soil gas and groundwater LTM would ensure that the buried waste impact to the shallow aquifer does not migrate off the installation. Alternative 4 does meet the long-term effectiveness and permanence criterion
- **Reduction of Toxicity, Mobility, or Volume of Waste through Treatment**: Installation of an impermeable soil/geosynthetic cover would reduce the mobility of buried waste by limiting exposure to external physical processes. This would provide minimal reduction of the volume of buried waste at IAL4. As a result, alternative 4 does not meet the reduction of toxicity, mobility, or volume of waste through treatment criterion.
- **Short-Term Effectiveness**: Alternative 4 would pose moderate short-term risks to the community and construction workers during the installation of the cover due to increased traffic during construction. Since an impermeable soil/geosynthetic cover will be brought on to IAL4 and placed over the landfill, buried waste items will not be exposed during general grading of IAL4 prior to cover placement. Therefore, Alternative 4 meets the short-term effectiveness criterion.
- **Implementability**: Alternative 4 would utilize standard construction equipment and methods for the installation of the impermeable soil/geosynthetic cover on the landfill surface. Construction of the cover would also require logistical coordination with FGGM. This alternative would also require logistical coordination with FGGM during routine inspections or LTMgt activities. FGGM personnel currently coordinate similar activities at FGGM; therefore, Alternative 4 meets the implementability criterion.
- **Cost**: The estimated present-worth cost to implement Alternative 4 is $3.3M. The costs and detailed assumptions associated with the implementation of Alternative 4 are presented in **Appendix L**.

8.6.1.5 Alternative 5 – Excavation to Residential Preliminary Remediation Goals (PRGs) Removal and Offsite Disposal

Alternative 5 would include the excavation, transport, and offsite disposal of trash and affected soil until soil remaining in place is below the Residential Preliminary Remediation Goals (PRGs) and backfill with clean fill. Any trash left in place under the slope to Route 32 will be capped in accordance with COMAR 26.04.07.21. For costing, it was assumed an additional 0.5 acres extends underneath Route 32. Annual inspections and routine maintenance of the cover system would be conducted to ensure continued effectiveness. Implementation of LUCs and LTM of groundwater would also be conducted.

- **Overall Protection of Human Health and the Environment**: Removal of the trash and affected soil would eliminate direct contact to buried waste and would eliminate surface water infiltration through the buried waste. Removing the source through excavation will eliminate the source of arsenic, cobalt, and iron and over time the aquifer will be restored. Installation of an impermeable soil/geosynthetic cover over the area of trash remaining underneath Route 32 would prevent direct contact to buried waste and would prevent surface water infiltration through the buried waste. Since clean soil would replace the majority of the trash, this alternative would be protective of human inside the fence line of the site. The habitat provided by the forested portions of IAL4 would be removed and revegetated with landscaped grass, trees or shrub. The implementation of LUCs to restrict land use and to prohibit site activities would prevent uncontrolled exposure to the buried waste that remains. Alternative 5 does meet the overall protection of human health and the environment criterion.
- **Compliance with ARARs**: Alternative 5 would meet the chemical-specific, action-specific, and location-specific ARARs.
- **Long-Term Effectiveness and Permanence**: Removal of the trash and affected soil would eliminate the hazard posed by this material. Installation of an impermeable soil/geosynthetic cover over the area of trash remaining underneath the Route 32 slope would be an effective barrier to prevent the exposure of buried waste to human receptors, eliminating the hazard posed by this material. However, the success of the long-term effectiveness of this alternative would be predicated on the implementation of LUCs and maintenance. The continued LTMgt of the impermeable soil/geosynthetic cover and implementation of LUCs would ensure that IAL4 use remains unchanged, thereby assuring the continued effectiveness of the remedy. Groundwater LTM would detect buried waste impact to the shallow aquifer. Alternative 5 does meet the long-term effectiveness and permanence criterion.
- **Reduction of Toxicity, Mobility, or Volume of Waste through Treatment**: Removal of the trash and affected soil would eliminate the mobility of buried waste at the site by removing it from the site. This would provide the maximum reduction of the volume of buried waste at IAL4. However, the waste would be transported to and deposited at a permitted landfill and the toxicity and volume will be managed but will not be reduced. Installation of an impermeable soil/geosynthetic cover would reduce the mobility of buried waste remaining underneath the Route 32 slope by limiting exposure to external physical processes. As a result, alternative 5 does not meet the reduction of toxicity,

mobility, or volume of waste through treatment criterion overall but does reduce toxicity, mobility, and volume of waste at the site.

- **Short-Term Effectiveness**: Alternative 5 would pose moderate short-term risks to the community and construction workers during the excavation and removal of the trash and affected soil due to increased traffic during construction. Since the trash will be dug up and removed, buried waste items will be exposed during these activities. Installation of an impermeable soil/geosynthetic cover over the area of trash remaining underneath the Route 32 slope would pose moderate short-term risks to the community and construction workers during the installation of the cover due to work being performed on the shoulder of the highway and the need for traffic control and the closing of the shoulder and/or a lane during construction. Overall, Alternative 5 does meet the short-term effectiveness criterion.
- **Implementability**: Alternative 5 would utilize standard construction equipment and methods for the excavation and removal of trash and affected soil and the installation of the impermeable soil/geosynthetic cover over the area of trash remaining underneath the Route 32 slope. Excavation, transportation, and construction of the cover would also require logistical coordination with FGGM. This alternative would also require logistical coordination with FGGM and SHA during routine inspections or LTMgt activities. FGGM personnel currently coordinate similar activities at FGGM; therefore, Alternative 5 meets the implementability criterion.
- **Cost**: The estimated present-worth cost to implement Alternative 5 is $6.7M. The costs and detailed assumptions associated with the implementation of Alternative 5 are presented in Appendix L.

8.6.2 Comparative Analysis of Alternatives

The comparative analysis of alternatives includes an evaluation of the expected performance of each alternative relative to the other alternatives with respect to the seven criteria described in Section 8.5. The objective of this analysis is to identify the respective advantages and disadvantages of the alternatives.

In order to compare the alternatives quantitatively, general ratings of poor, adequate, good, and excellent were assigned to the alternatives for each of the evaluation criteria, based on a subjective appraisal of the degree to which the alternatives met the criteria. An overall rating for each alternative was developed based on the individual criteria ratings, and is presented in **Table 8-5**.

8.6.2.1 Overall Protection of Human Health and the Environment

All remedial alternatives, except for Alternatives 1 and 2, are protective of human health and the environment in the short-term and the long-term. Alternatives 3 and 4 would ensure the continued management of buried waste at IAL4 via placement of a soil cover or an impermeable soil/geosynthetic cover, respectively. Alternative 4 would ensure buried waste is not leaching contaminants to groundwater and surface water. This can be confirmed through routine LTM. LUCs would restrict groundwater use, thereby addressing the potential for offsite migration of contaminated groundwater. However, in accordance with the NCP, there is an expectation that aquifers will be restored to their beneficial uses. Alternative 5 would remove all the trash except

for what cannot be excavated under Route 32 thereby eliminating exposure to landfill material inside the FGGM fence line.

8.6.2.2 Compliance with ARARs

Alternative 1 fails to comply with the ARARs. Alternatives 2 and 3 would require approval of a variance request for the cover design requirements specified in COMAR 26.04.07.21, which is an ARAR, unless the soil cover can prove to be as effective as a low-permeability geotextile membrane. Alternative 4 would include a cover system that is constructed in accordance with Maryland's cover design criteria promulgated under COMAR 26.04.07.21. Alternative 5 would remove the trash, which would not require a variance request.

8.6.2.3 Long-Term Effectiveness and Permanence

Under Alternatives 1 and 2, there would be no long-term mechanism in place to control hazards associated with potential exposure to buried waste at IAL4. Therefore, these alternatives are not effective in the long-term. Alternatives 3 and 4 are effective in the long-term because there are components of each alternative that eliminate hazards associated with buried waste that remains in place at IAL4. However, in accordance with the NCP, there is an expectation that aquifers will be restored to their beneficial uses. Since alternative 5 is the removal of trash and affected soil, it is the most effective in the long term.

8.6.2.4 Reduction of Toxicity, Mobility, or Volume of Waste through Treatment

Alternatives 1 and 2 would not reduce the toxicity, mobility, or volume of impacted groundwater or soil gas at IAL4. Alternatives 3 and 4 would reduce the mobility of impacted soil gas and groundwater through the installation of a cover. Under Alternatives1 through 4, buried waste would be left in place and not include active treatment to reduce the toxicity, mobility, or volume of buried waste or impacted media at the Site; however, under Alternatives 3 and 4, covering the trash would reduce the infiltration of precipitation, thus reducing the quantity of affected water to the water table and reducing the mobility of affected groundwater. Alternative 5 would reduce the toxicity, mobility, or volume of buried waste or impacted media by removing all accessible trash and affected soil.

8.6.2.5 Short-Term Effectiveness

Alternative 1 would have poor short-term effectiveness as it would not provide a mechanism to monitor and control buried waste hazards at IAL4. Alternatives 1 and 2 would not pose additional risks to the community, the workers, or the environment since they involve no heavily intrusive remedial activities. Alternatives 3 and 4 would introduce marginal short-term risks to the community and construction workers due to the construction of the soil covers. Alternatives 3 and 4 would require proper personal protective equipment selection, clothing, and engineering controls during implementation to address site risks during construction activities. Alternative 5 would introduce short-term risks to the community and construction workers due to the excavation of the trash and affected soil.

8.6.2.6 Implementability

Alternative 1 would be the most implementable because no action is required. However, Alternative 1 would not be a viable remedial alternative. The most readily implementable viable alternative would be Alternative 2. Alternatives 3 and 4 would be less implementable because each would require substantial coordination efforts to ensure a successful design and

construction phase. Alternative 5 would be the least implementable because of the substantial coordination efforts between FGGM, the excavation and transportation companies, and the receiving facility.

8.6.2.7 Cost

Alternative 1 would not have any present-worth or capital costs since no actions would be undertaken. However, Alternative 1 would not be a viable remedial alternative. Based on the present-worth estimates of the opinion of probable costs for the remedial alternatives, Alternative 4 would be the costliest, followed by Alternative 3. Alternative 2 would be the most cost effective but would require MDE to grant a variance for leaving the landfill uncovered. Alternative 5 would be the most expensive.

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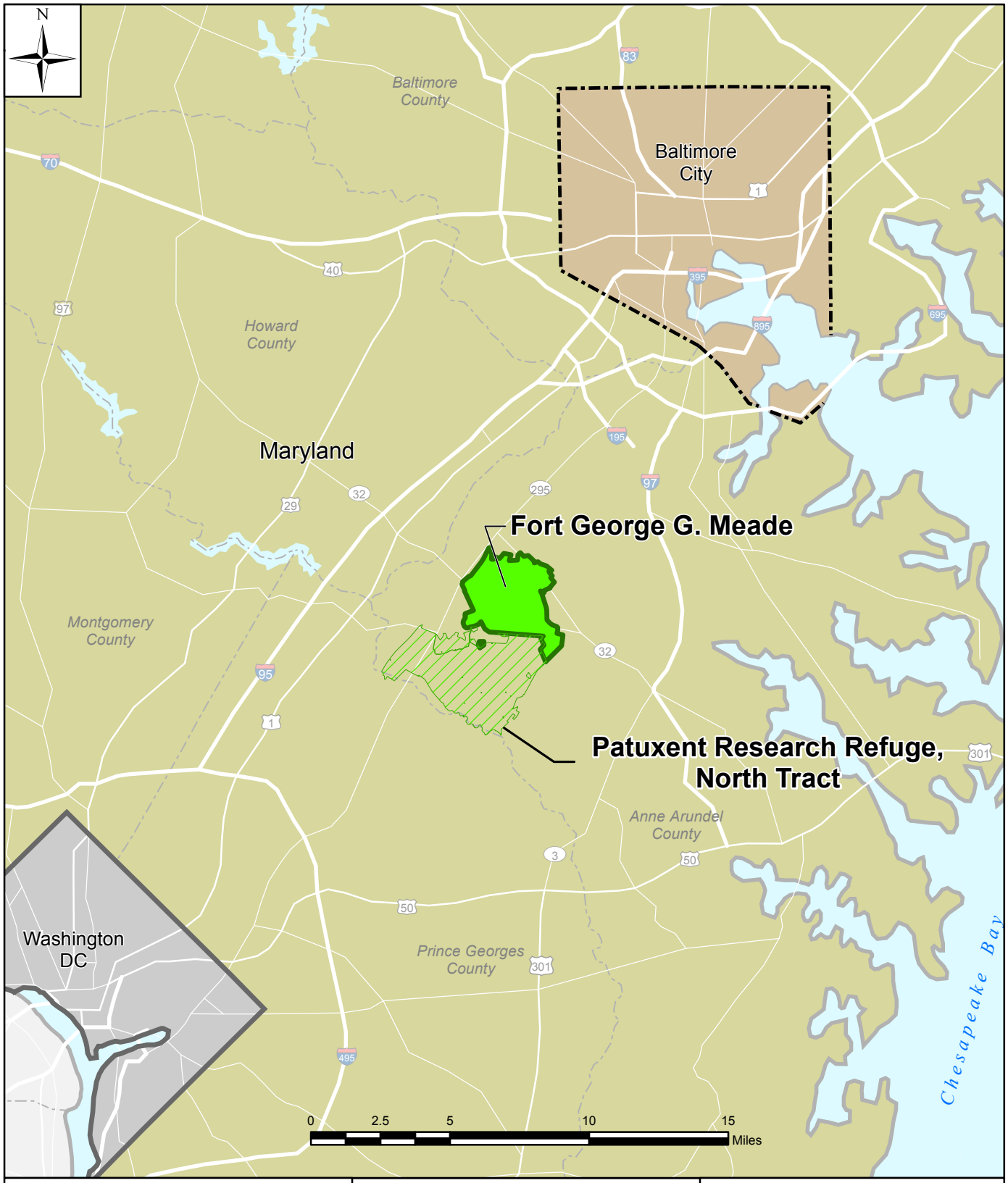
Figures



CLIENT USACE, Baltimore District

NOTES
Outlines of sites are arbitrary.
Map Source: ESRI ArcGIS Online and data partners, 2011.

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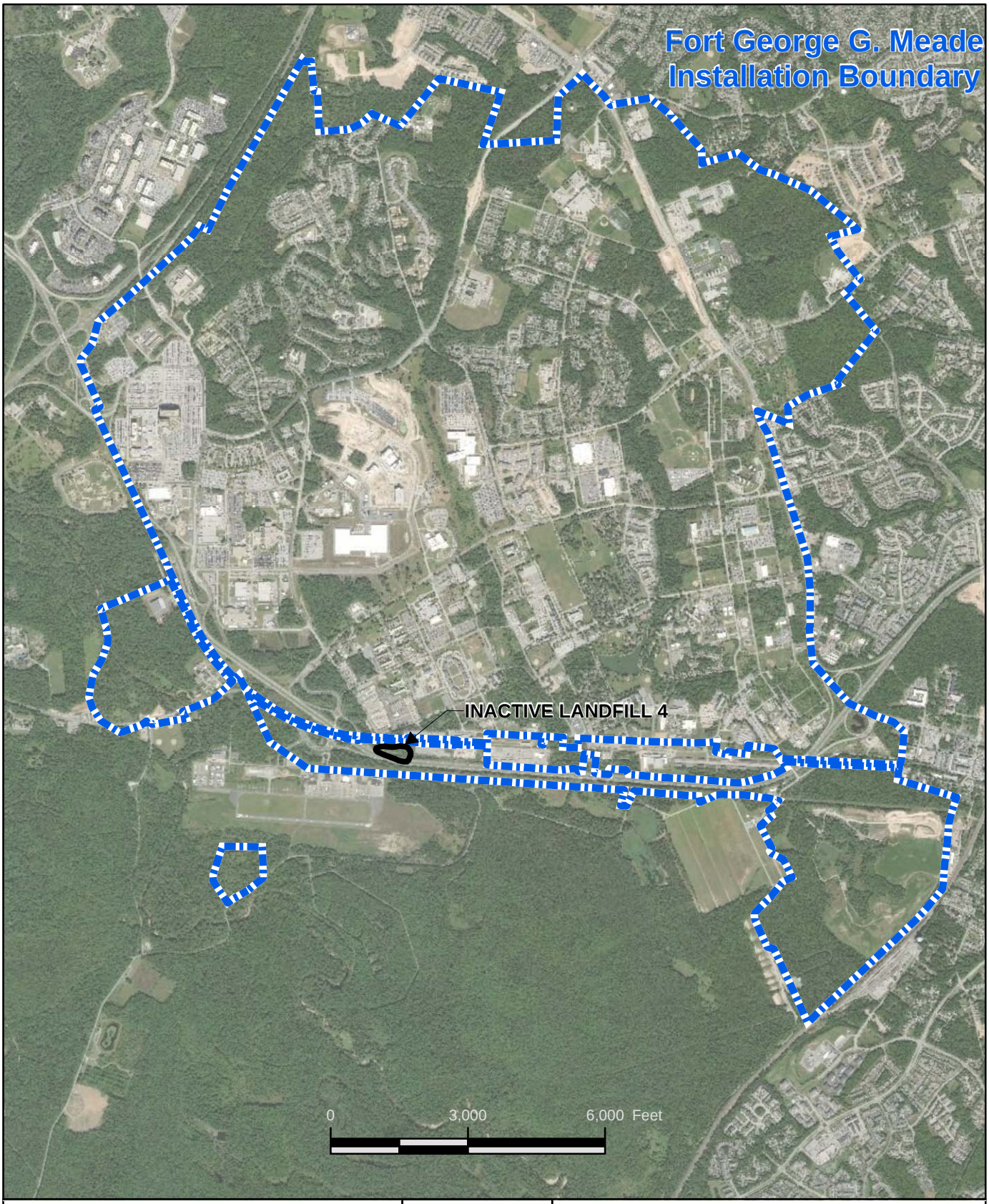
GIS: AER
CHK: JK

Figure 1-1
Regional Location Map
Fort George G. Meade

AECOM

12420 Milestone Center Drive
Germantown, MD 20876



CLIENT	USACE, Baltimore District			
NOTES	Outlines of sites are arbitrary. Aerial Source: ESRI ArcGIS Online and data partners, 2015.			
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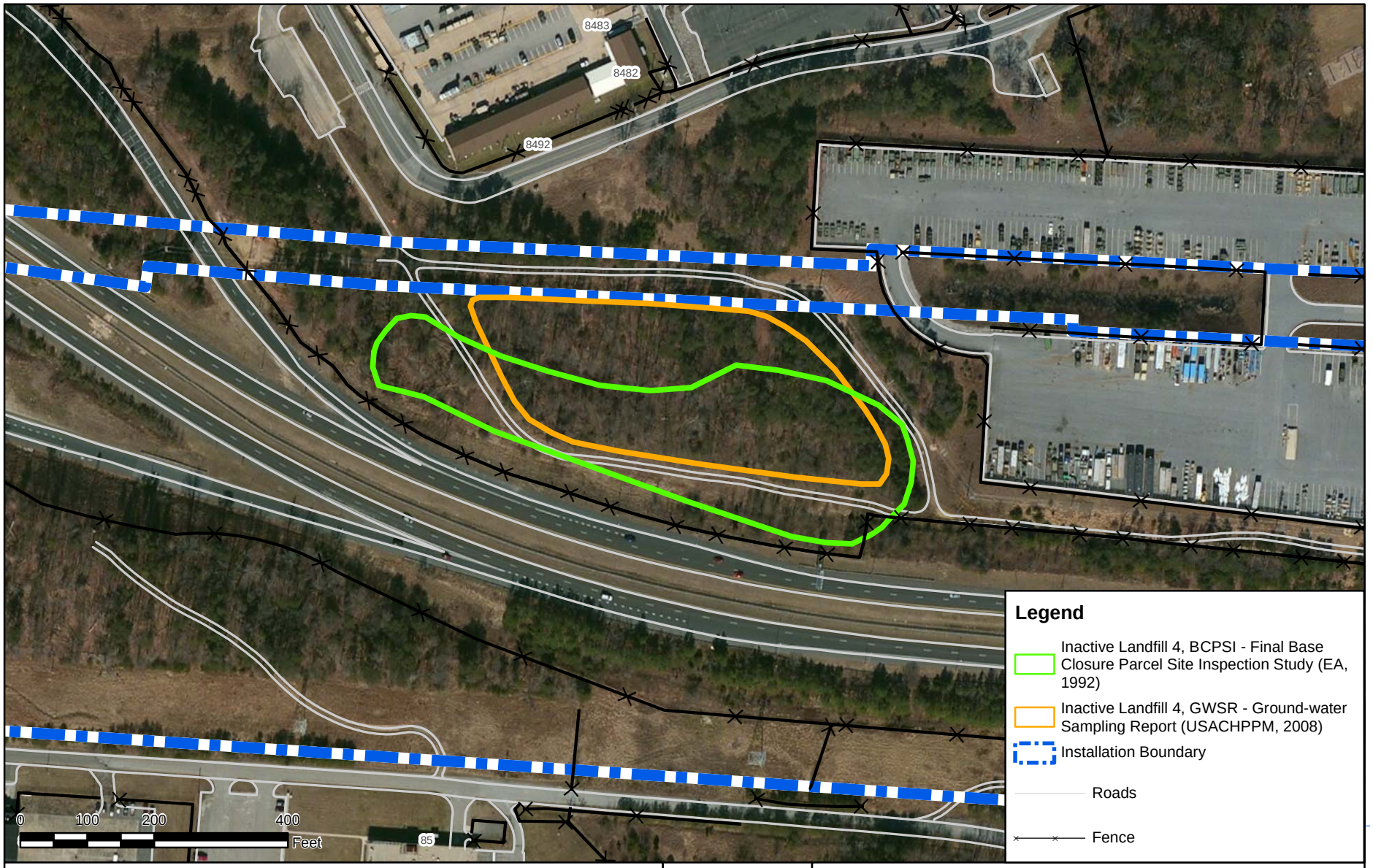
Location of Inactive Landfill Number 4 (FGGM 95), on Fort George G. Meade, Maryland

AECOM

12420 Milestone Center Drive
Germantown, MD 20876
301-820-3000

Figure 1-2



CLIENT	USACE, Baltimore District			
NOTES	Outlines of sites are arbitrary. Aerial Source: ESRI ArcGIS Online and data partners, 2015.			
REVISED	11/28/2016	GIS BY	AER	8/3/2016
SCALE	1:2,521	CHK BY	JK	11/28/2016
G:\Projects\Fort_Meade\PA_SI_New\Projects\InactiveLandfill4_Outlines.mxd		PM	JK	11/28/2016

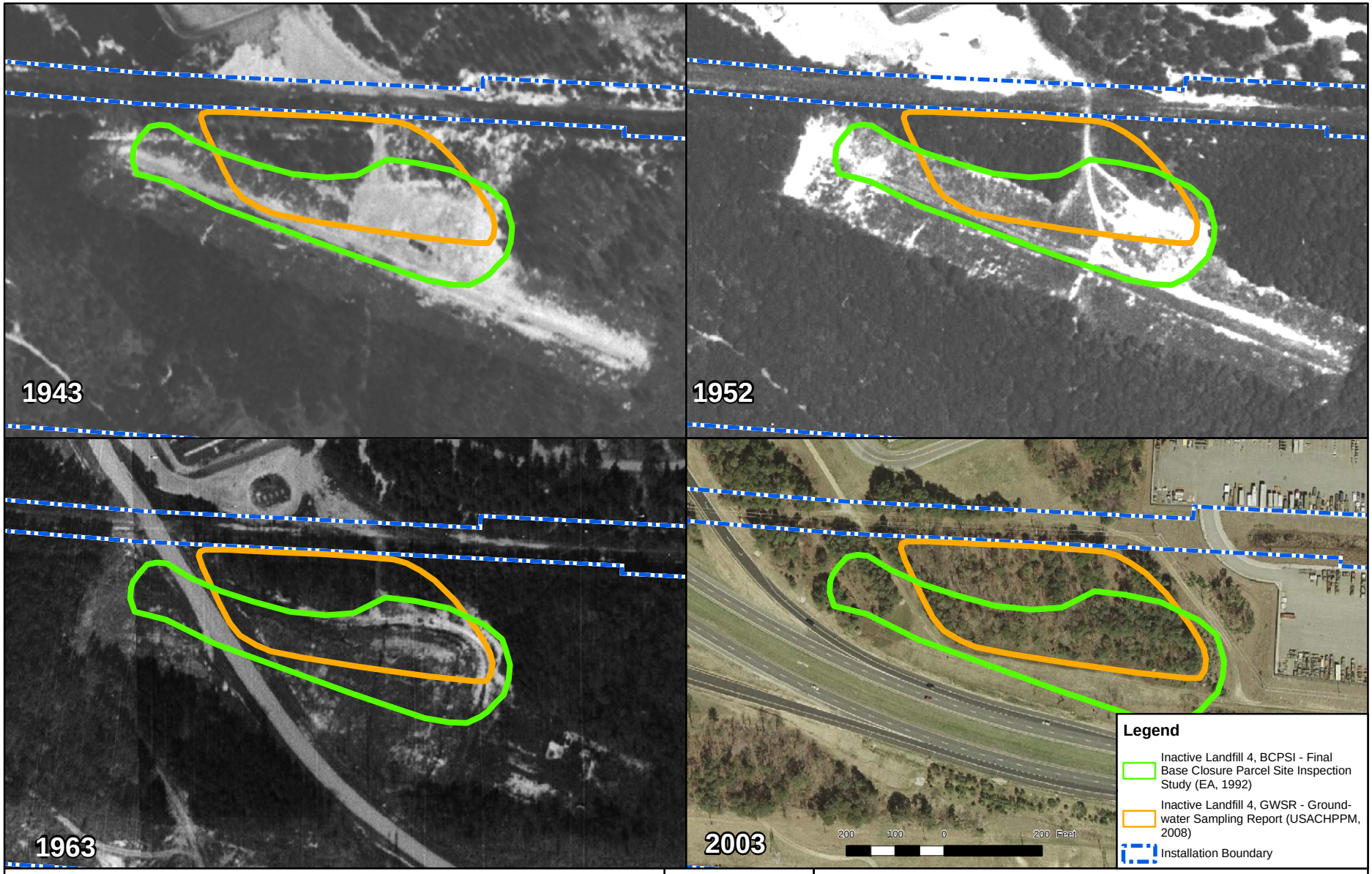
N

TITLE Outlines of Inactive Landfill Number 4 (FGGM 95), on Fort George G. Meade, Maryland

AECOM

12420 Milestone Center Drive
Germantown, MD 20876
301-820-3000

Figure 1-3



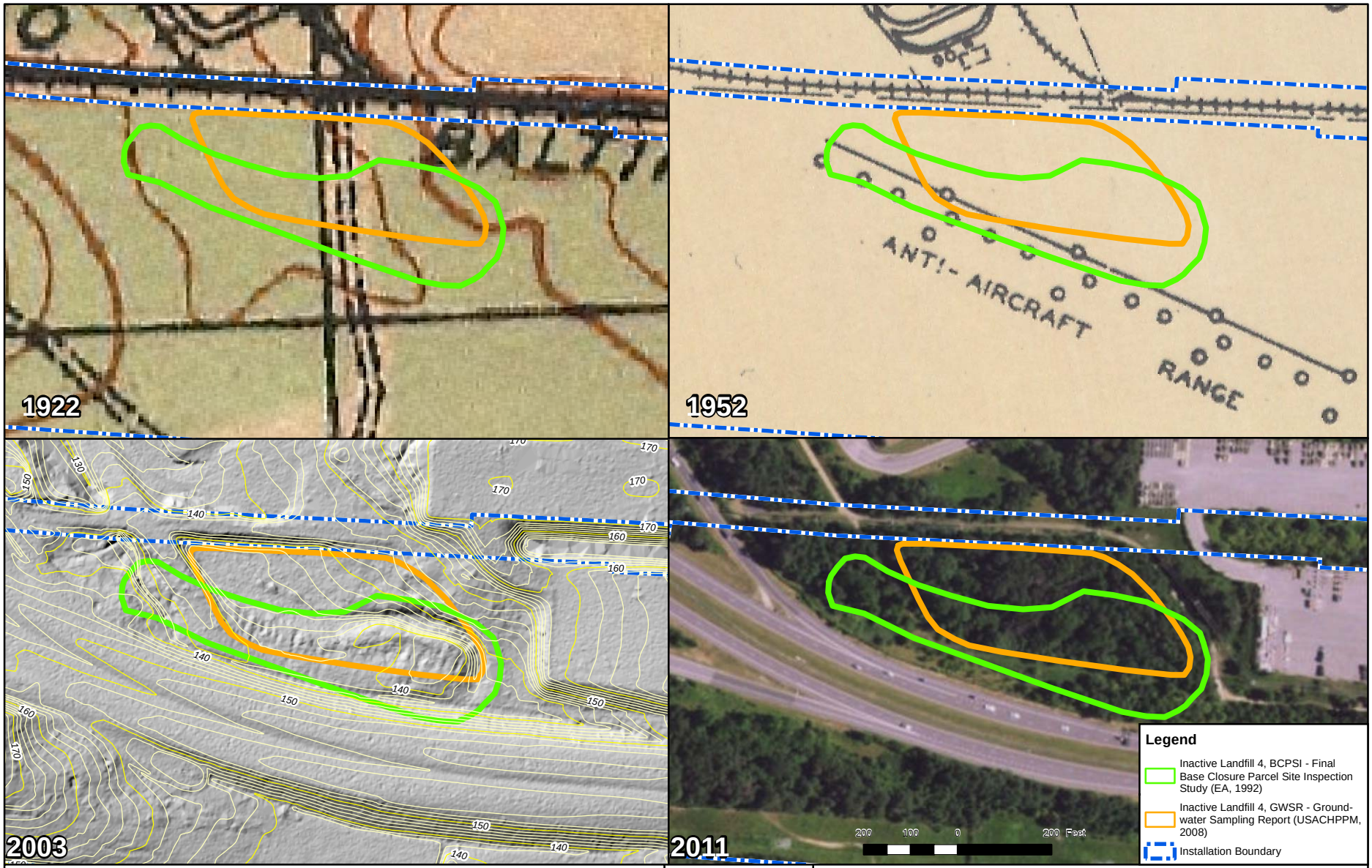
CLIENT	USACE, Baltimore District			
NOTES	BCPSI - Final Base Closure Parcel Site Inspection Study (EA, 1992) GWSR - Ground-water Sampling Report (USACHPPM, 2008)			
REVISED	11/28/2016	GIS BY	AER	8/3/2016
SCALE	1:3,600	CHK BY	JK	11/28/2016
G:\Projects\Fort_Meade\PA_SI_New\Projects\InactiveLandfill4_HistAerials_landscape.mxd		PM	JK	11/28/2016

N

TITLE Series of Historic Aerial Photographs of Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive Germantown, MD 20876 301-820-3000

Figure 1-4



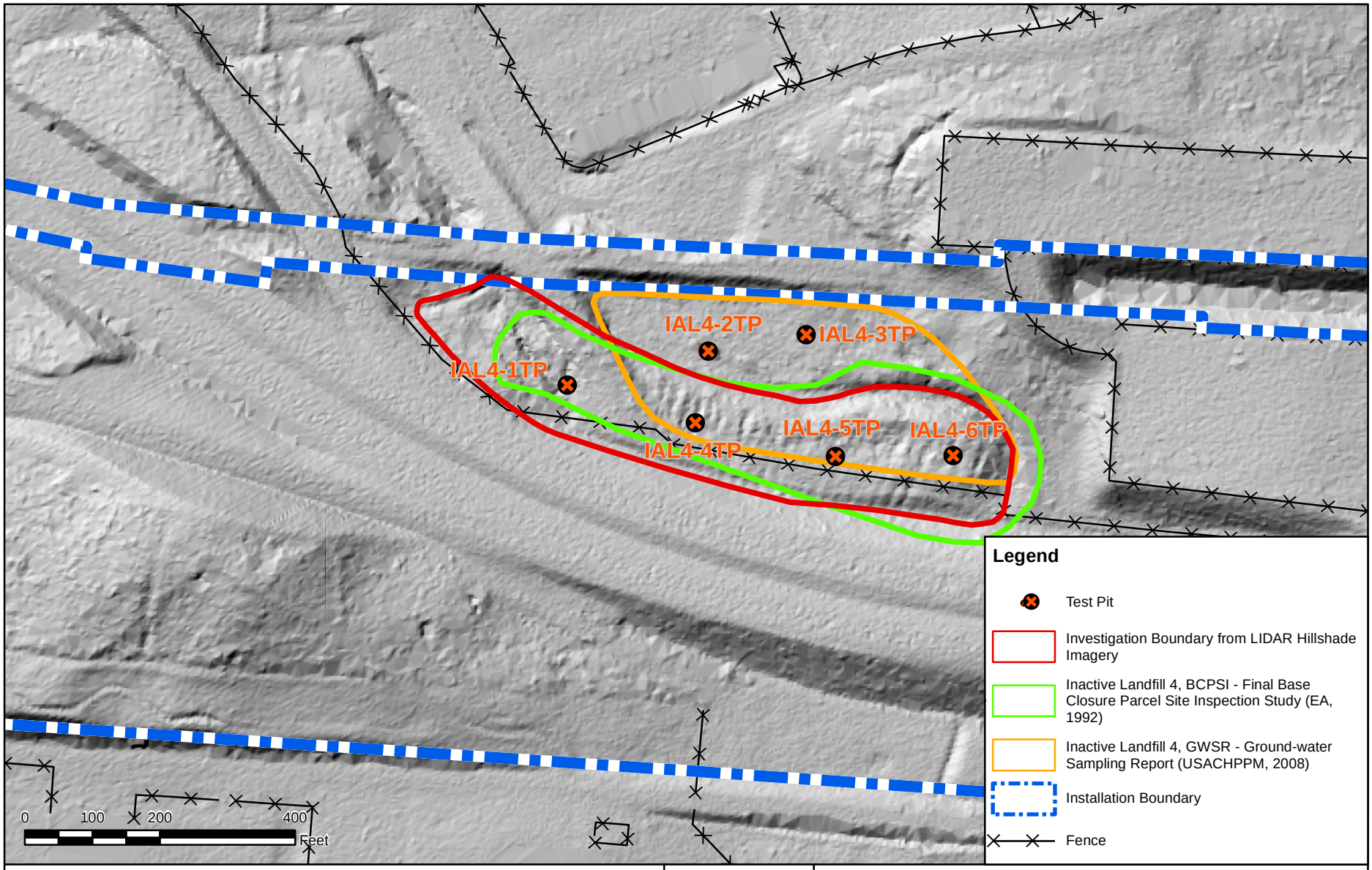
CLIENT	USACE, Baltimore District			
NOTES	BCPSI - Final Base Closure Parcel Site Inspection Study (EA, 1992) GWSR - Ground-water Sampling Report (USACHPPM, 2008)			
REVISED	11/28/2016	GIS BY	AER	8/3/2016
SCALE	1:3,600	CHK BY	JK	11/28/2016
G:\Projects\Fort_Meade\PA_SI_New\Projects\InactiveLandfill4_HistMaps.mxd		PM	JK	11/28/2016

N

TITLE Series of Historic Maps and an Aerial Photograph of Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

AECOM
12420 Milestone Center Drive
Germantown, MD 20876
301-820-3000

Figure 1-5



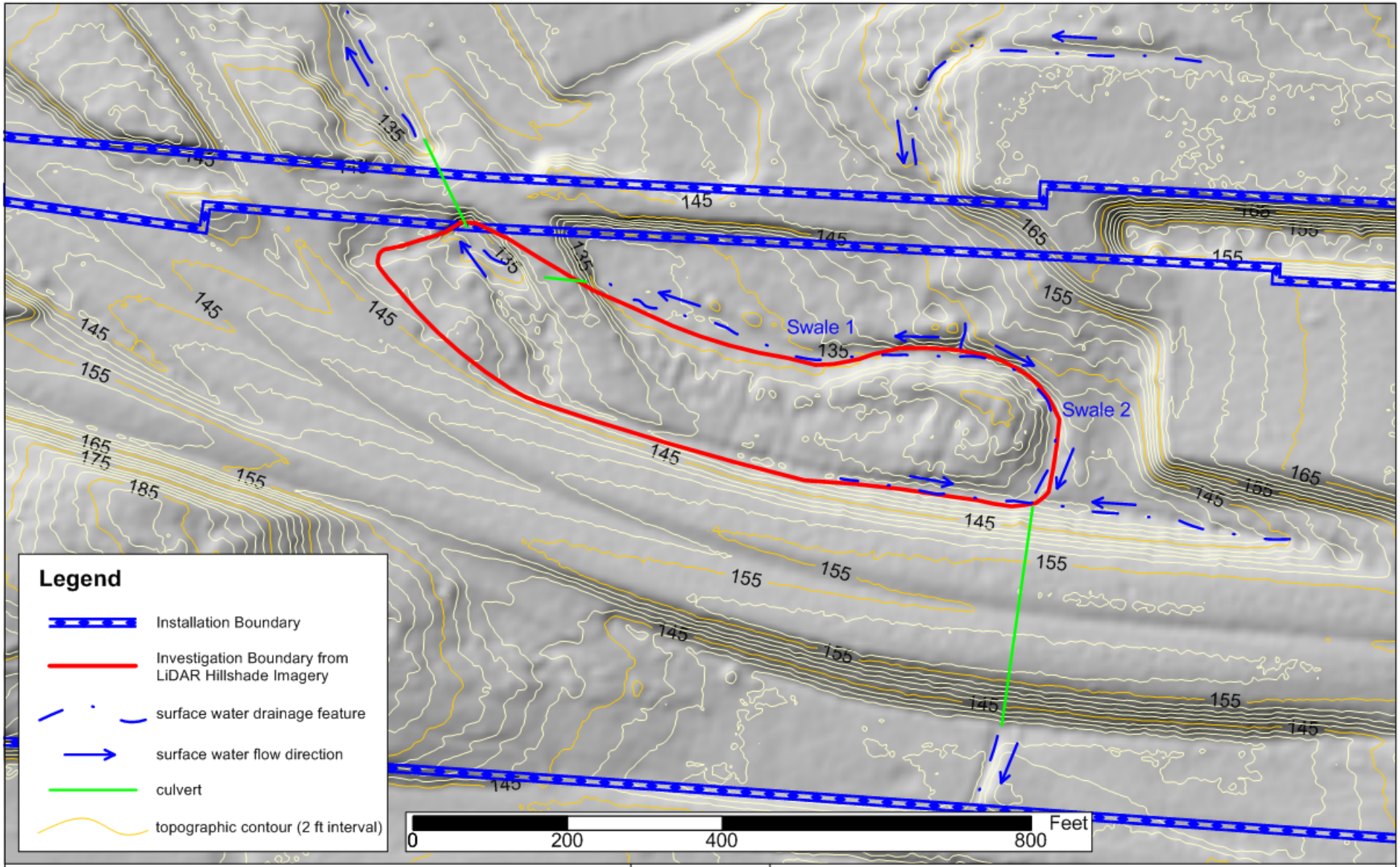
CLIENT	USACE, Baltimore District			
NOTES	Outlines of sites are arbitrary. Hillshade relief from MD iMAP 2011 LiDAR survey DEM			
REVISION NO	0	GIS BY	SK	11/28/2016
SCALE	1:2,500	CHK BY	__	11/28/2016
G:\Projects\Fort_Meade\PA_SI_New\Projects\InactiveLandfill4_NewBoundary.mxd		PM	__	11/28/2016

N

TITLE Lidar Hillshade Image of Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure 1-6



CLIENT	USACE, Baltimore District			
NOTES	Hillshade relief and topographic contours from MD iMAP 2011 LiDAR survey DEM			
REVISION NO	2	FIG BY	DC	10/04/2016
SCALE	1" = 180'	CHK BY	JK	10/04/2016
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\IAL4 Topo.srf		PM	JK	10/04/2016

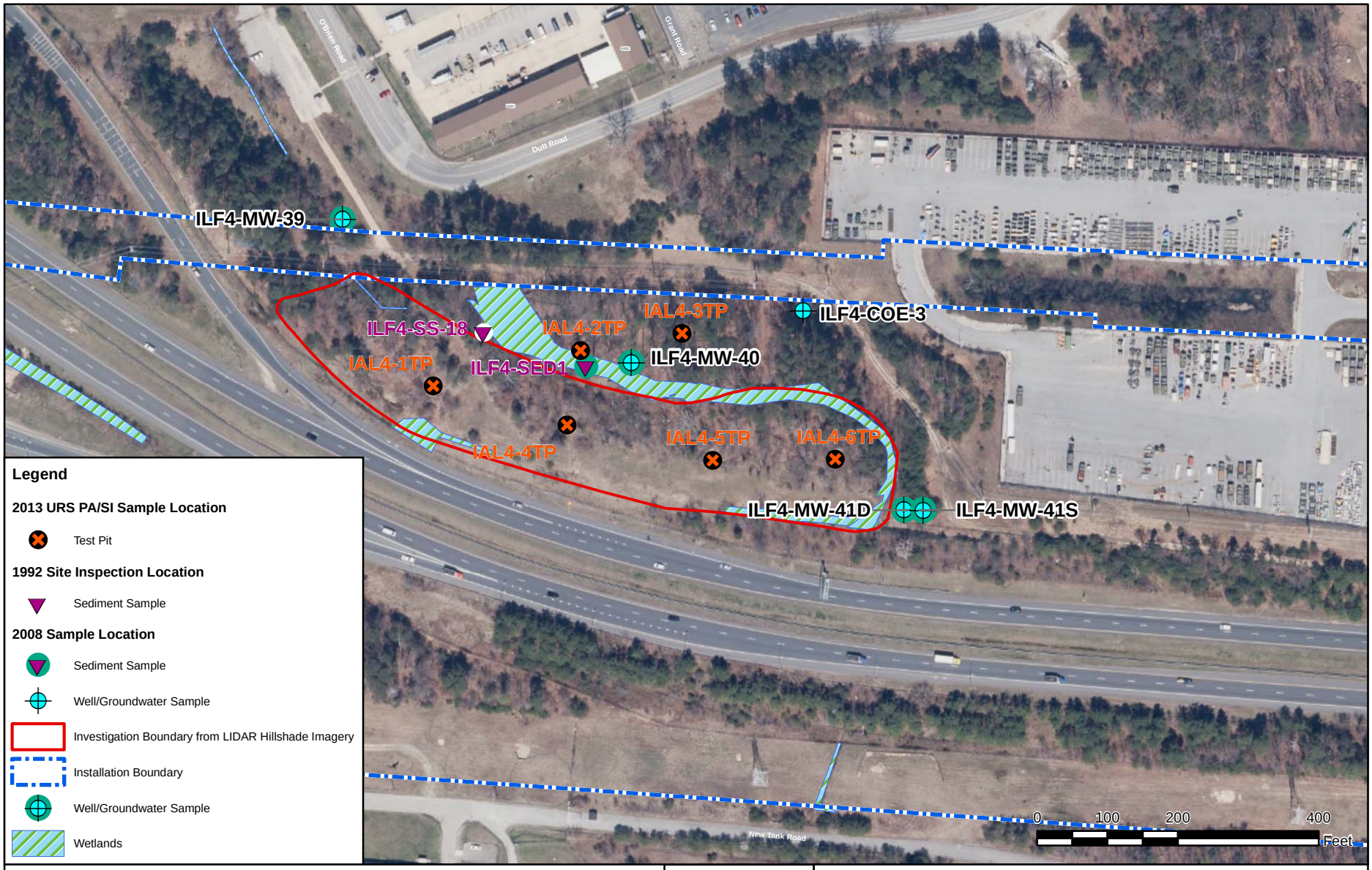
N

TITLE

Elevation Topographic Contour of Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure 1-7



CLIENT	USACE, Baltimore District			
NOTES	Outlines of sites are arbitrary. Aerial Source: MD iMAP, DoIT			
REVISED	3/15/2018	GIS BY	MS	3/15/2018
SCALE	1:2,400	CHK BY	JK	3/15/2018
G:\Projects\Fort_Meade\PA_SI_New\Projects\InactiveLandfill4_PreviousSamp.mxd		PM	JK	3/15/2018

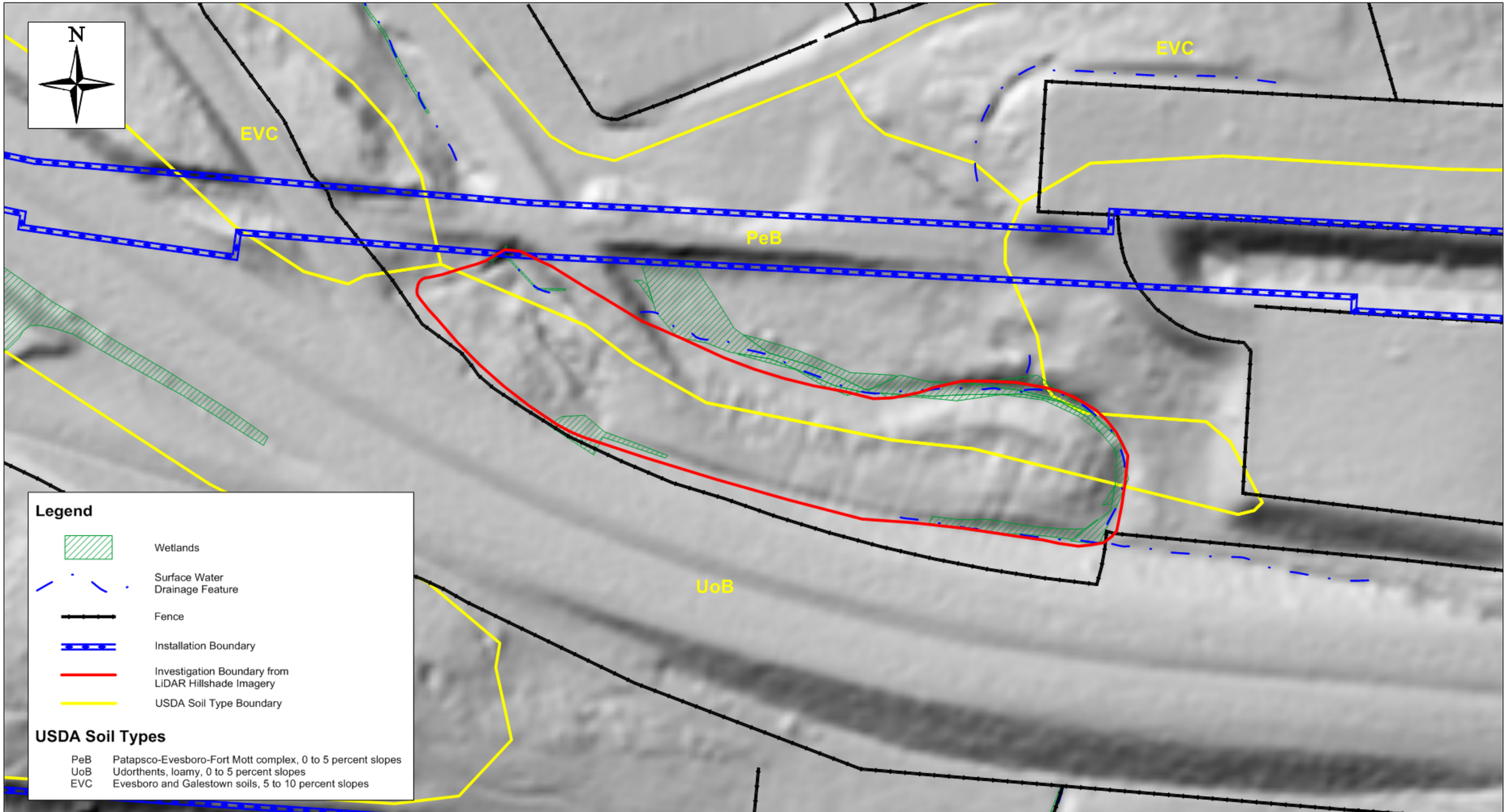
N

TITLE Previous Sample Locations at Inactive Landfill Number 4 (FGGM 950, Fort George G. Meade, Maryland

AECOM

12420 Milestone Center Drive
Germantown, MD 20876
301-820-3000

Figure 1-8



CLIENT	USACE, Baltimore District			
NOTES	USDA (U.S. Department of Agriculture) Web Soil Survey https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx accessed 25 January 2018.			
REVISION NO	1	FIG BY	DC	8/17/2018
SCALE	1" = 180'	CHK BY	JK	8/17/2018
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\ IAL4 Soils Map.srf		PM	JK	8/17/2018

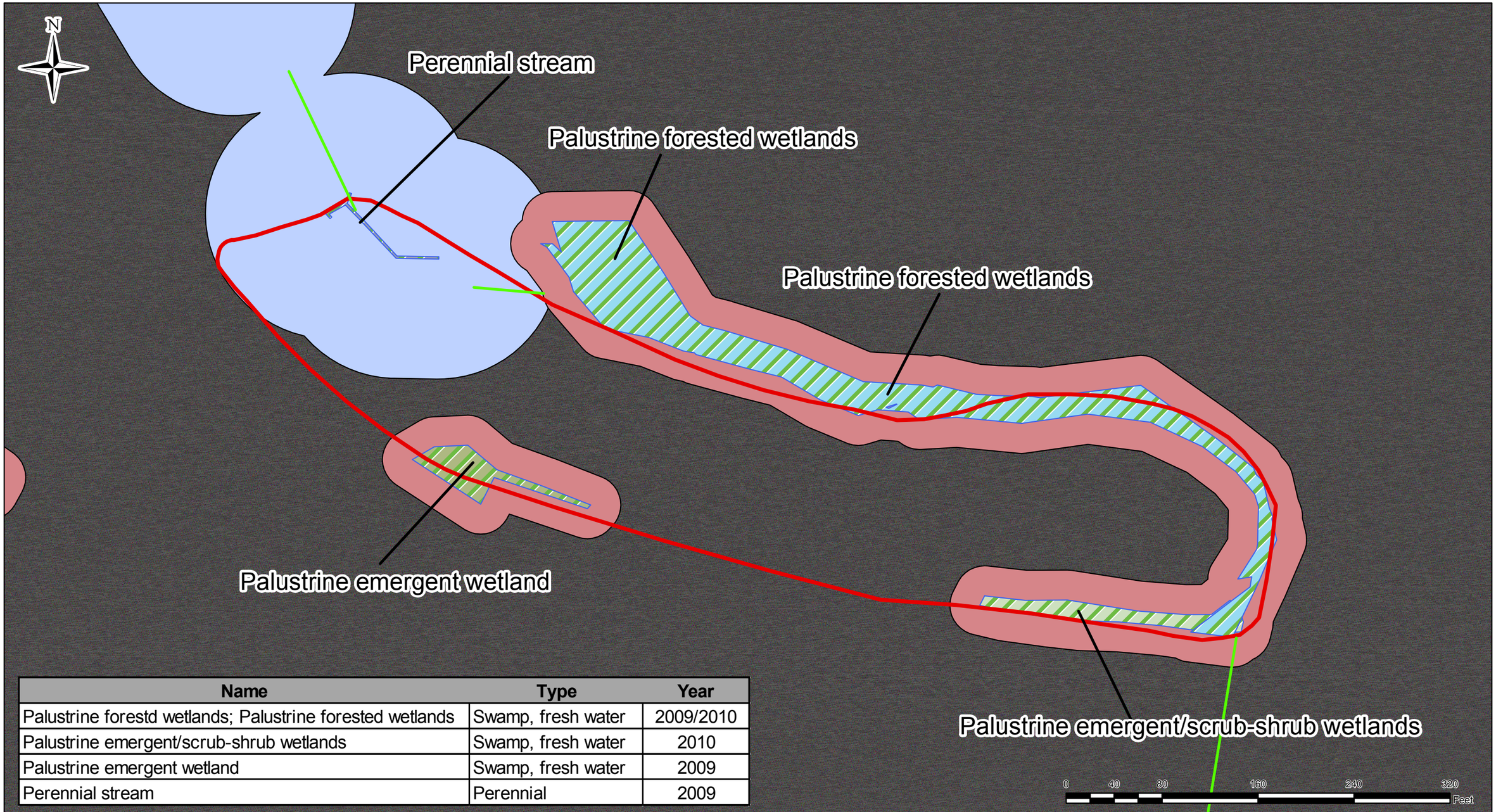
0 100 200 400 Feet

TITLE

Soil Types at Inactive Lanfill Number 4 (FGGM 95)
Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive
Germantown, MD 20876

Figure 2-1



Name	Type	Year
Palustrine forestd wetlands; Palustrine forested wetlands	Swamp, fresh water	2009/2010
Palustrine emergent/scrub-shrub wetlands	Swamp, fresh water	2010
Palustrine emergent wetland	Swamp, fresh water	2009
Perennial stream	Perennial	2009

CLIENT	USACE, Baltimore District			
NOTES	Outlines of sites are arbitrary.			
REVISION NO	0	GIS BY	MS	8/20/2018
SCALE	1:960	CHK BY	JK	8/20/2018
		PM	JK	8/20/2018

Investigation Boundary from LIDAR Hillshade Imagery
Perennial stream
Palustrine forested wetlands; Palustrine forested wetlands
Palustrine emergent/scrub-shrub wetlands
Palustrine emergent wetland
100 ft buffer
25 ft Buffer
Culvert

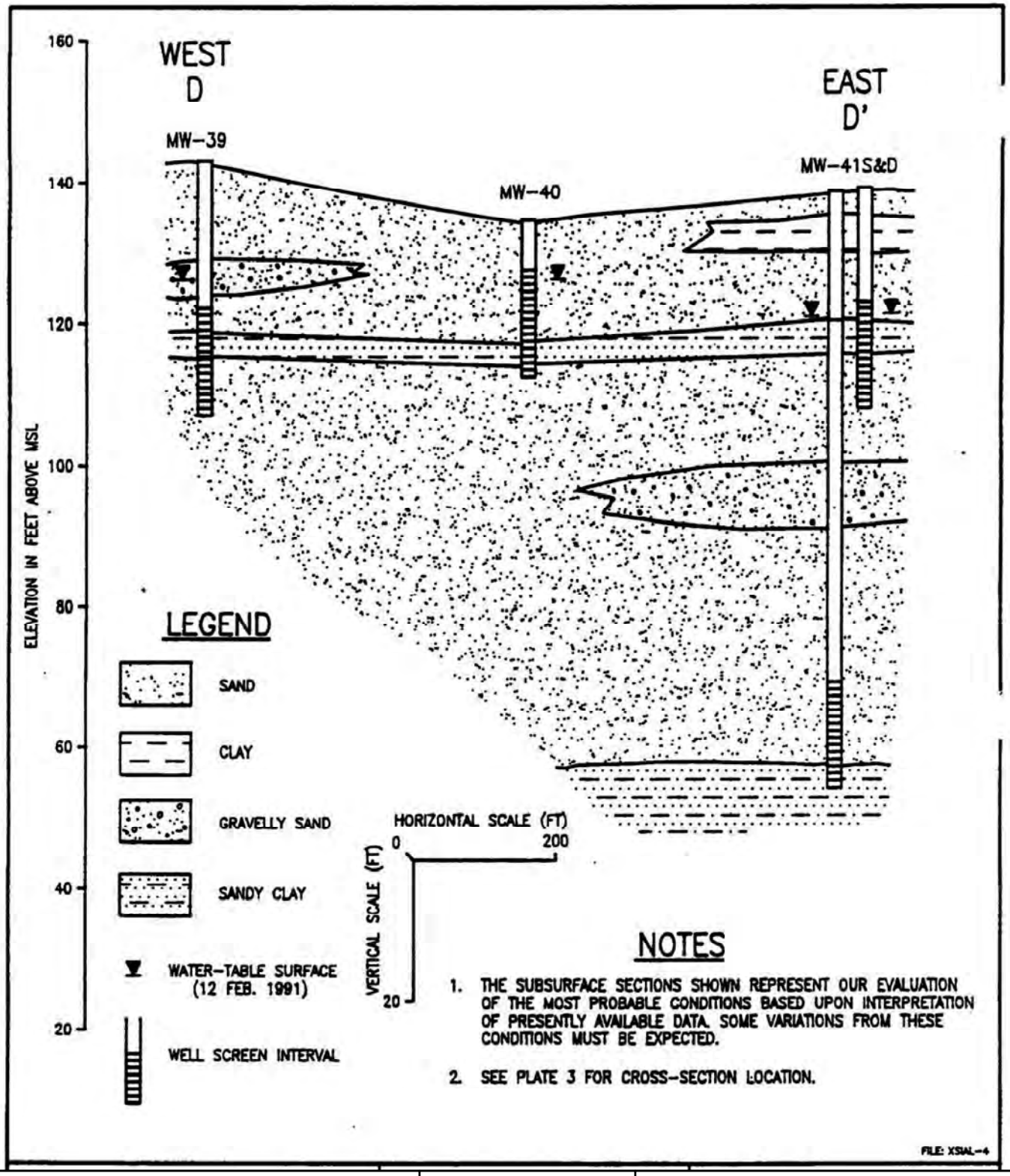
TITLE

Inactive Landfill 4 Wetlands

12420 Milestone Center Drive
Germantown, MD 20876

Figure 2-2

Q:\Projects\ENV\GEARS\GEO\MAES 2012 Unrestricted\Fort Meade\E. Data Management\GIS\MXDs\IAL4\Fig_2-9_InactiveLandfill4_Wetland_Types.mxd



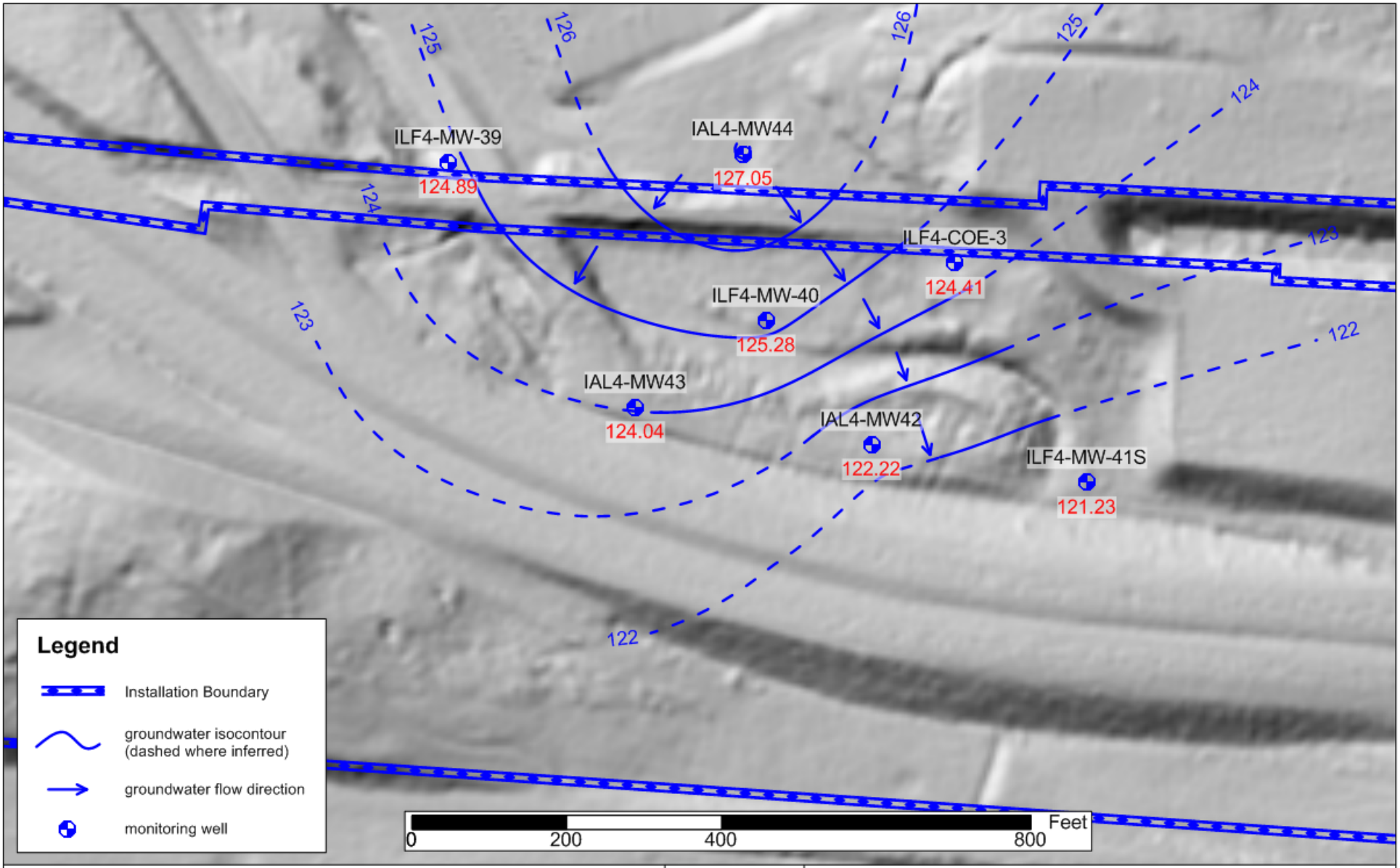
CLIENT	US Army				
PROJ	Fort Meade, Inactive Landfill 4				
EA (EA Engineering, Science, and Technology), 1992. *Final Fort George G. Meade Base Closure Parcel Site Inspection Study,* by EA Engineering, Science, and Technology, Inc., October 1992.					
DES BY	MS	10/12/2016	CHK BY	JK	10/12/2016

AECOM

Geologic Cross Section of Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Figure 2-3

Q:\Projects\ENV\GEARS\GEO\MAES 2012 Unrestricted\Fort Meade\E. Data Management\GIS\MXDs\Fig_2-7.mxd



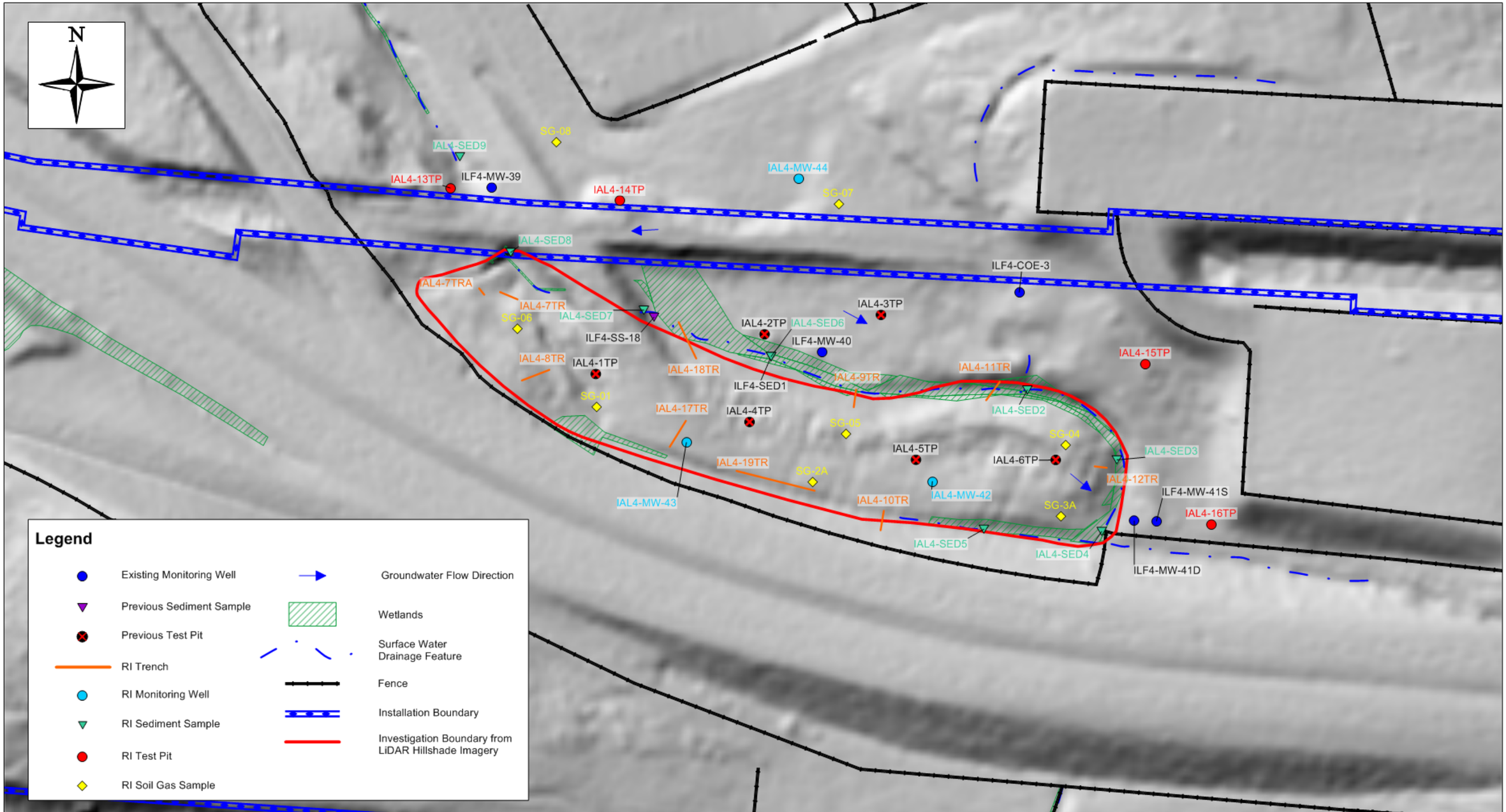
CLIENT	USACE, Baltimore District			
NOTES	Hillshade relief and topographic contours from MD iMAP 2011 LiDAR survey DEM			
REVISION NO	1	FIG BY	DC	02/22/2018
SCALE	1" = 180'	CHK BY	JK	02/22/2018
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\ IAL4 GW Contour-2017-05.srf		PM	JK	02/22/2018

N

TITLE Isocontour Map of Water Table Elevation in May 2017 at Inactive Landfill Number 4 (FGGM 95) Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure 2-4



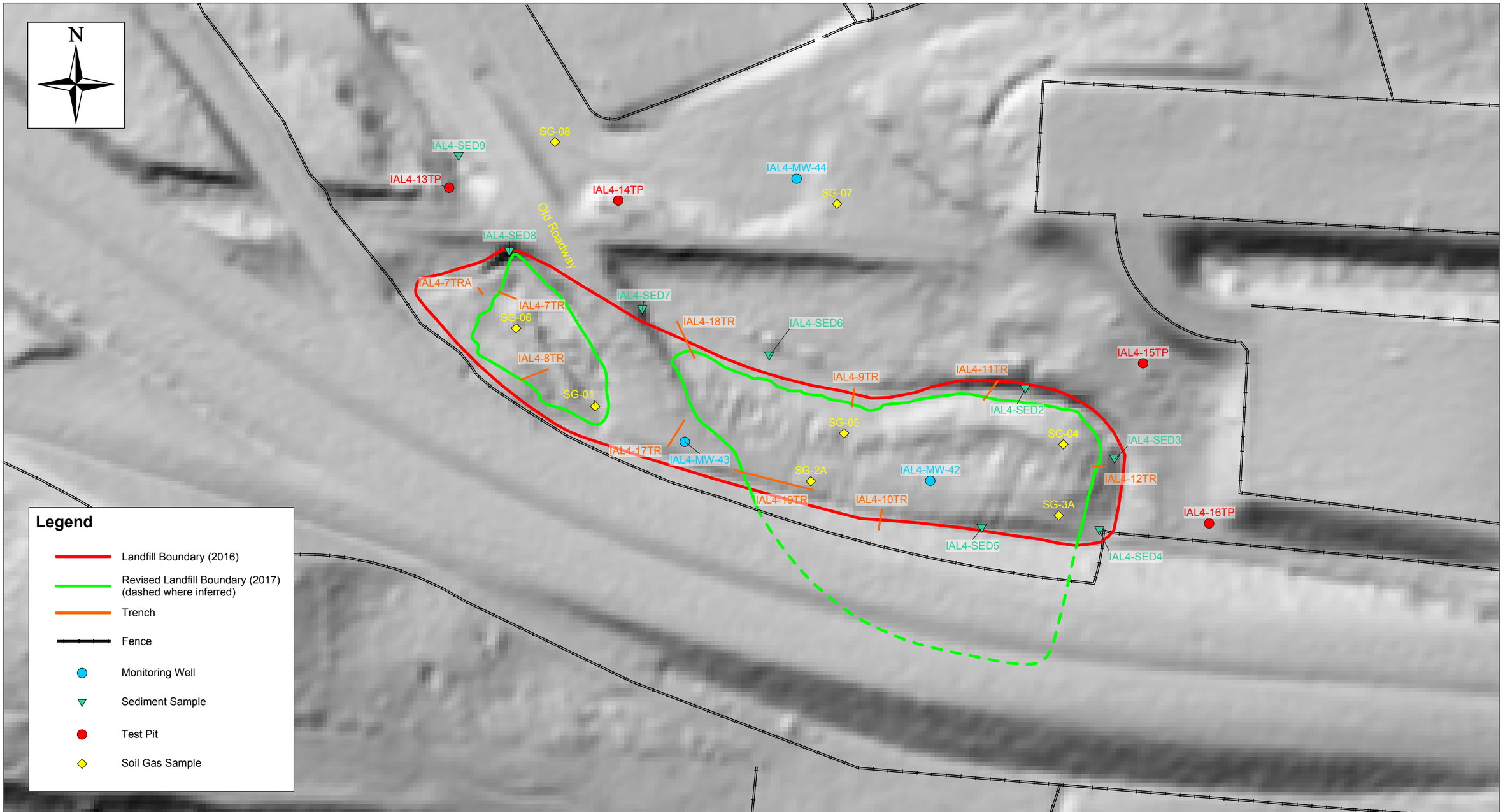
CLIENT	USACE, Baltimore District			
NOTES	Hillshade relief and topographic contours from MD iMAP 2011 LiDAR survey DEM			
REVISION NO	5	FIG BY	DC	1/25/2018
SCALE	1" = 180'	CHK BY	JK	1/25/2018
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\IAL4 Proposed Samples.srf		PM	JK	1/25/2018

0 100 200 400 Feet

TITLE
Sample Locations, Remedial Investigation and Previous Sampling at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure 3-1



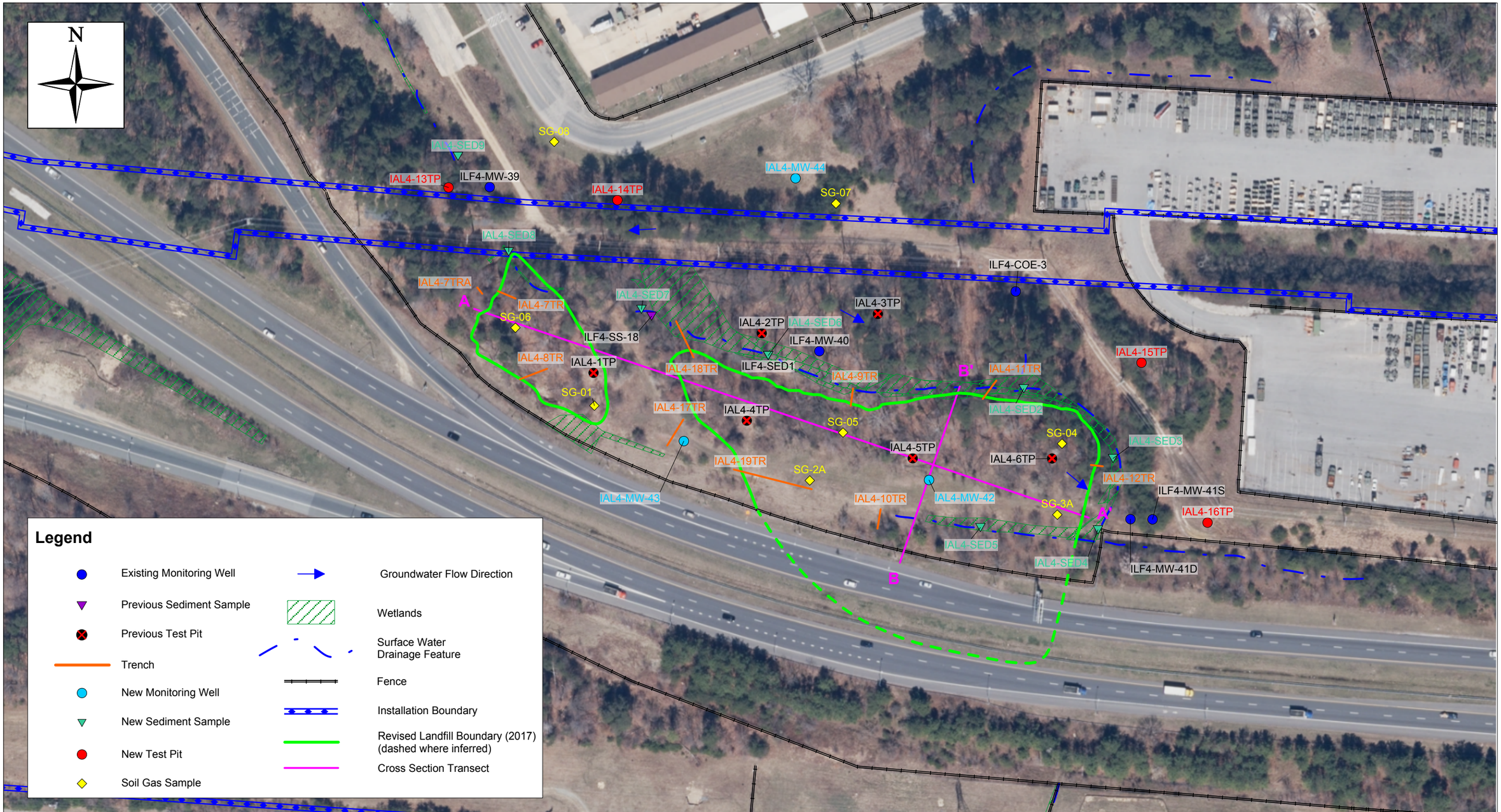
CLIENT	USACE, Baltimore District			
NOTES	Basemap: Hillshade relief from MD iMAP 2011 LiDAR survey			
REVISION NO	2	FIG BY	DC	2/4/2019
SCALE	1" = 180'	CHK BY		
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\ IAL4 Boundary 10-2017.srf		PM		

0 100 200 400 Feet

TITLE Outline of Inactive Landfill Number 4
Based on Historical Data and the Remedial Investigation
Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive
Germantown, MD 20876

Figure 4-1



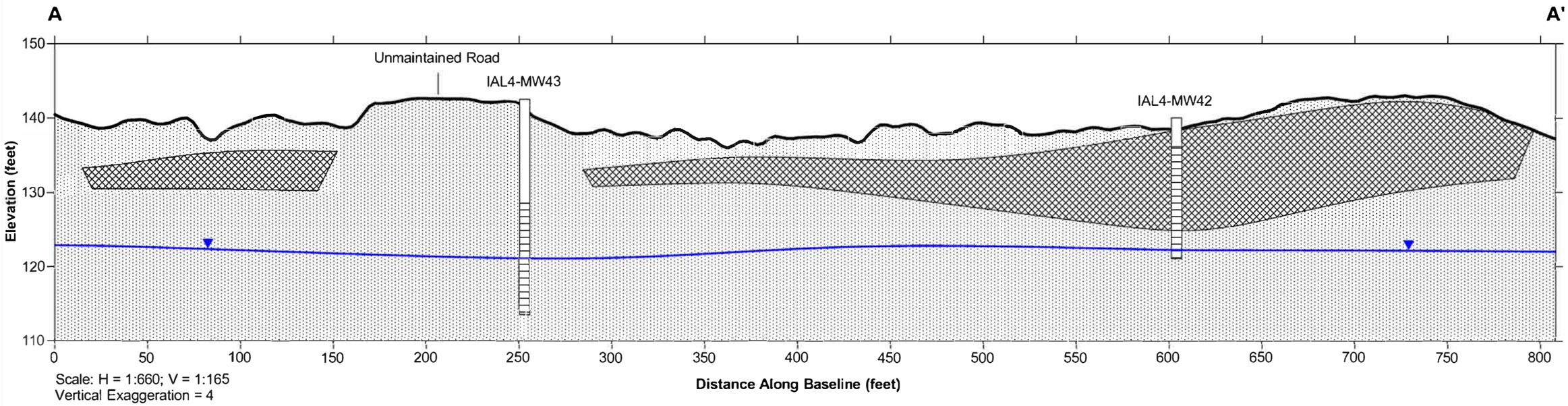
CLIENT	USACE, Baltimore District			
NOTES	Basemap: Hillshade relief from MD iMAP 2011 LiDAR survey			
REVISION NO	7	FIG BY	DC	1/25/2018
SCALE	1" = 180'	CHK BY	JK	1/25/2018
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\ IAL4 Base Map.srf		PM	JK	1/25/2018

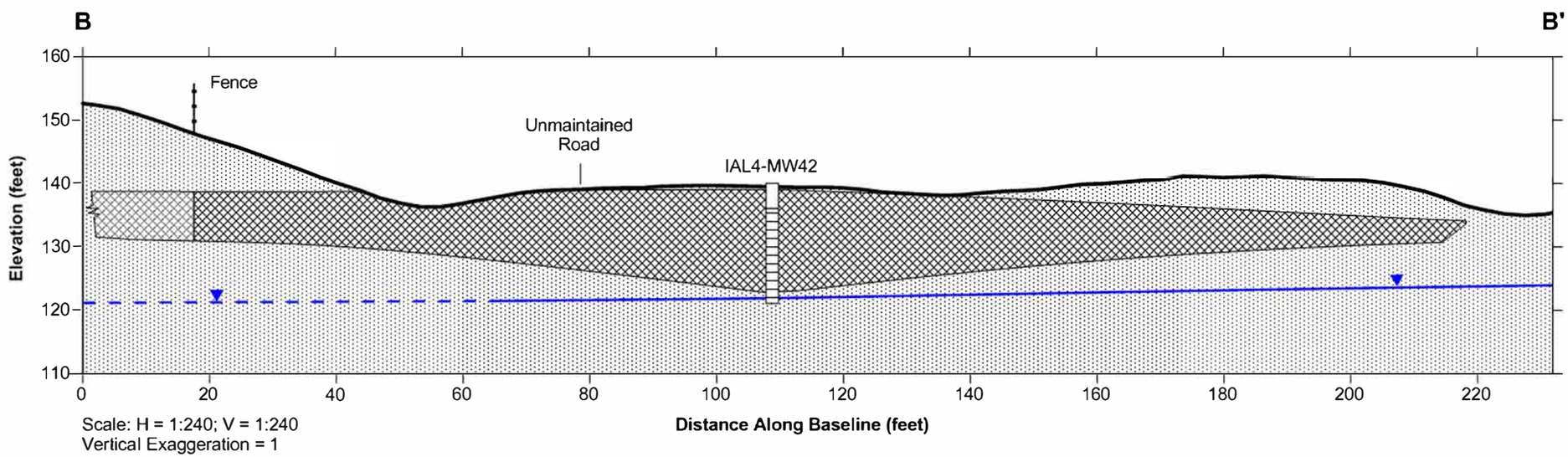
0 100 200 400 Feet

TITLE
Locations of Cross Sections at Inactive Lanfill Number 4 (FGGM 95)
Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure 4-2





CLIENT	USACE, Baltimore District		
LOCATION	Fort George G. Meade, Maryland		
REVISION NO	0	FIG BY	DC	1/24/2018
		CHK BY	JK	1/24/2018
J:\Ft Meade\Data Management\Surfer\Cross Sections\IAL4 Cross Sections.srf		PM	JK	1/24/2018

Legend

- Monitoring Well
- Well Screen
- Landfill Material
- Landfill Material (Inferred)
- Overburden
- Groundwater (July, 2017)

TITLE
Cross Sections A-A' and B-B' at Inactive Landfill Number 4 (FGGM 95)
Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure 4-3

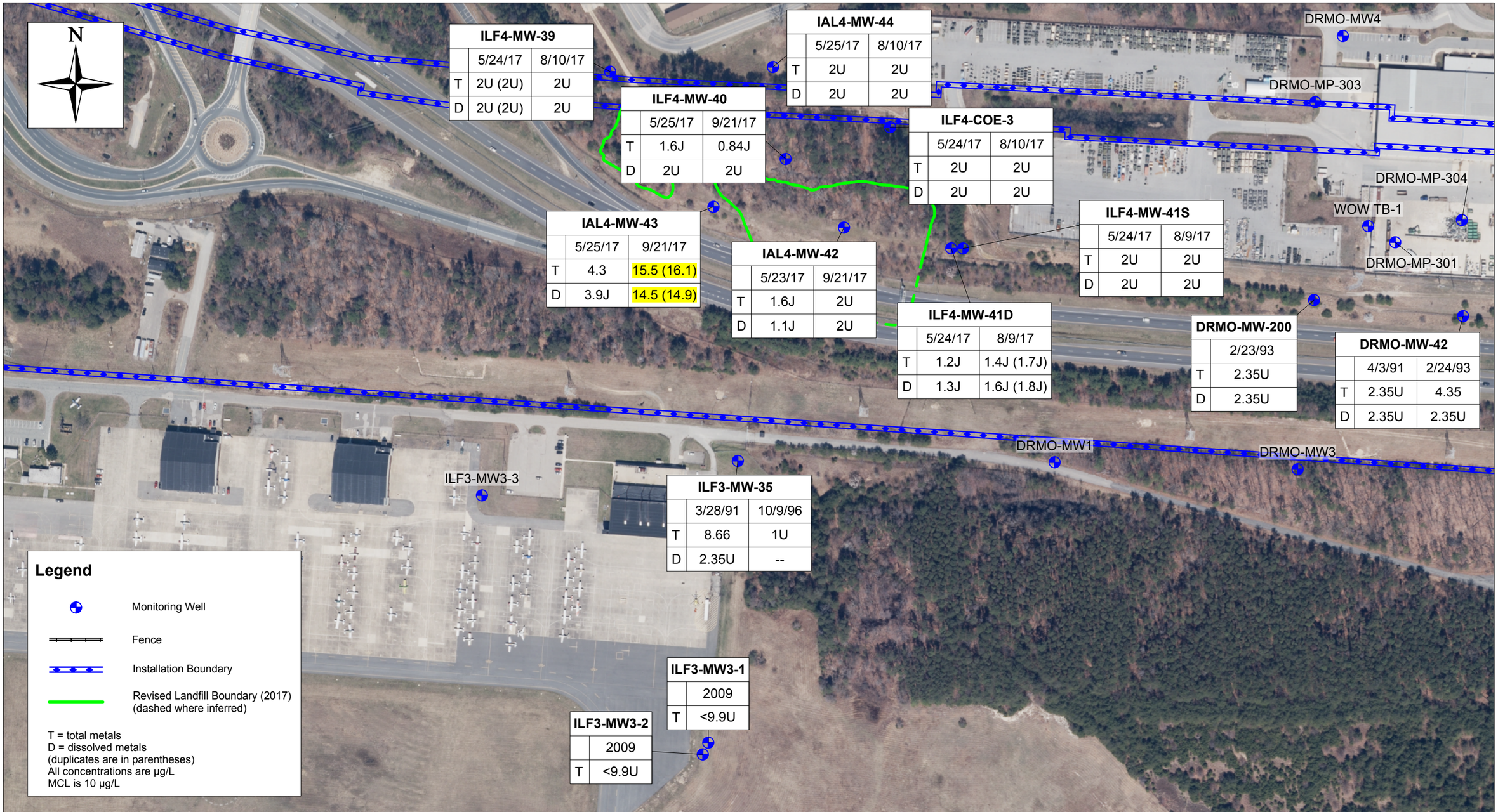
CLIENT	USACE, Baltimore District			
NOTES	Basemap: Hillshade relief from MD iMAP 2011 LiDAR survey			
REVISION NO	0	FIG BY	DC	5/10/2019
SCALE	1" = 180'	CHK BY		
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\ Figure 4-4_MD State Highway Borings.srf		PM		

0 100 200 400 Feet

TITLE Locations of Maryland State Highway Administration Borings on Route 32 Near Inactive Landfill 4 Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure 4-4



CLIENT	USACE, Baltimore District		
NOTES			
REVISION NO 6	FIG BY	DC	2/6/2018
SCALE 1" = 225'	CHK BY	JK	9/24/2018
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\Concentration Figures\IAL4 GW Arsenic_rev1.srf	PM	JK	9/24/2018

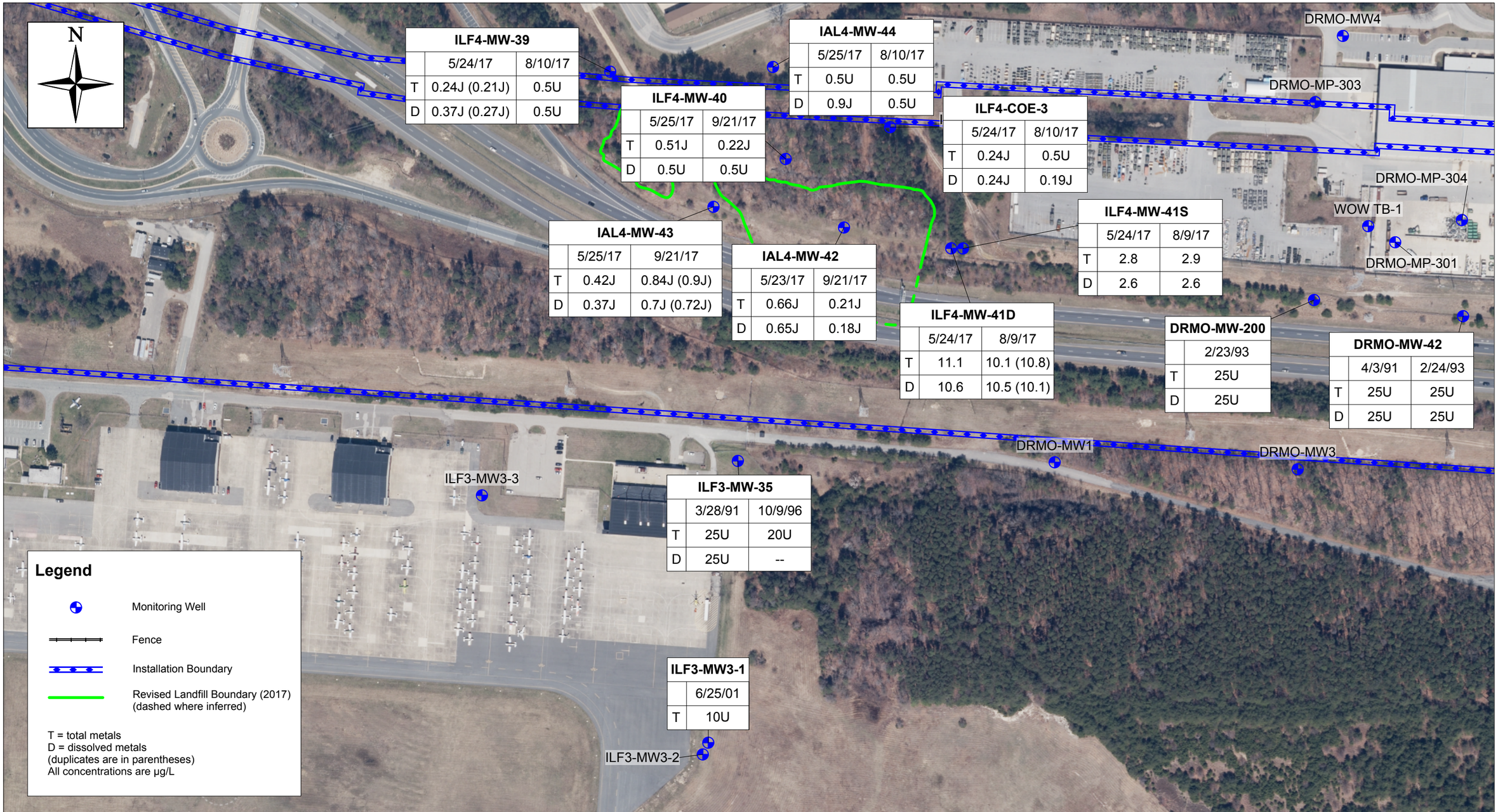
0 225 450 900 Feet

TITLE

Concentrations of Arsenic in Groundwater at
Inactive Lanfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive
Germantown, MD 20876

Figure 4-5



CLIENT	USACE, Baltimore District			
NOTES				
REVISION NO	6	FIG BY	DC	2/6/2018
SCALE	1" = 225'	CHK BY	JK	9/24/2018
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\Concentration Figures\IAL4 GW Cobalt_rev1.srf		PM	JK	9/24/2018

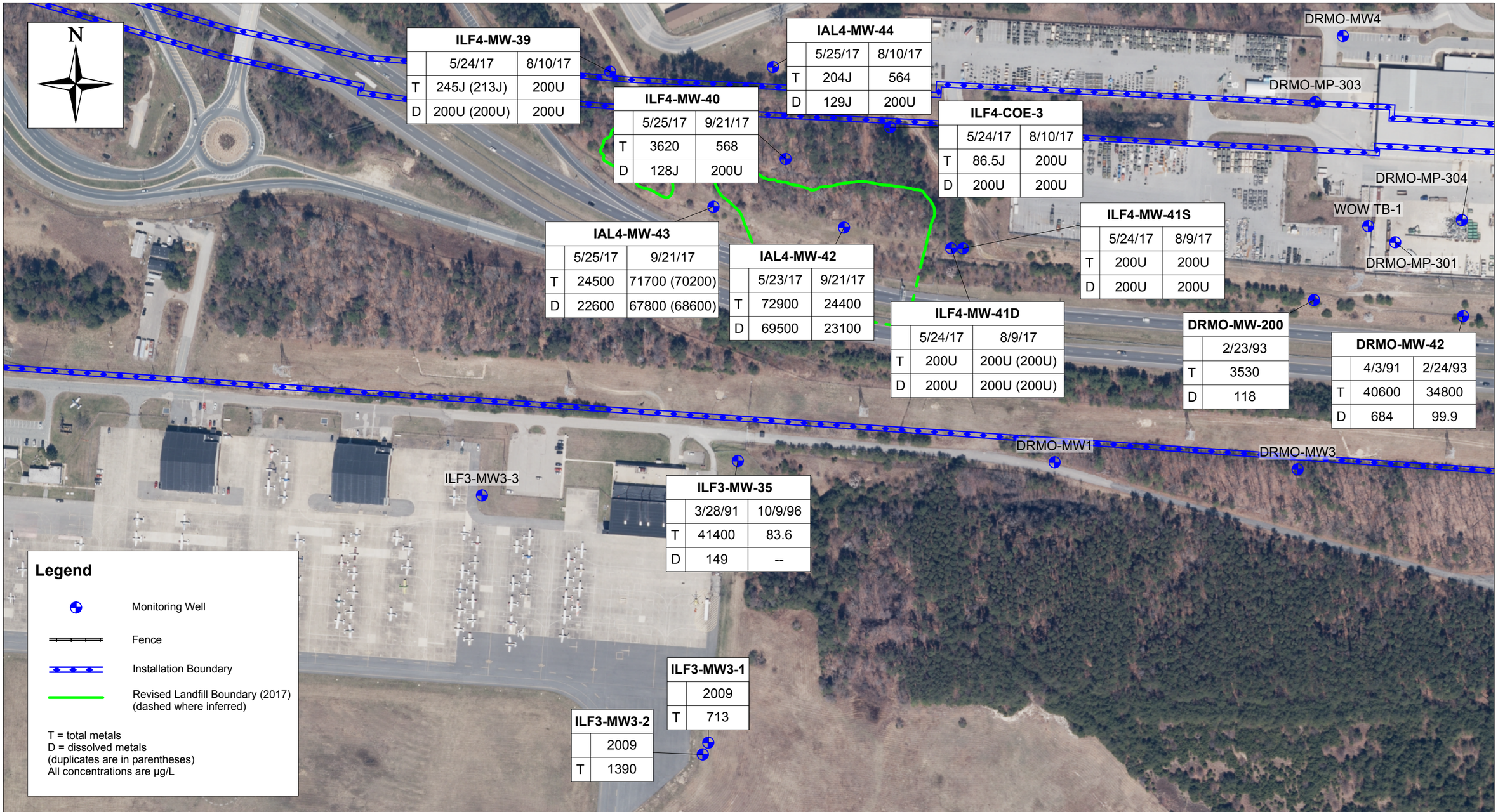
0 225 450 900 Feet

TITLE

Concentrations of Cobalt in Groundwater at
Inactive Lanfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive
Germantown, MD 20876

Figure 4-6



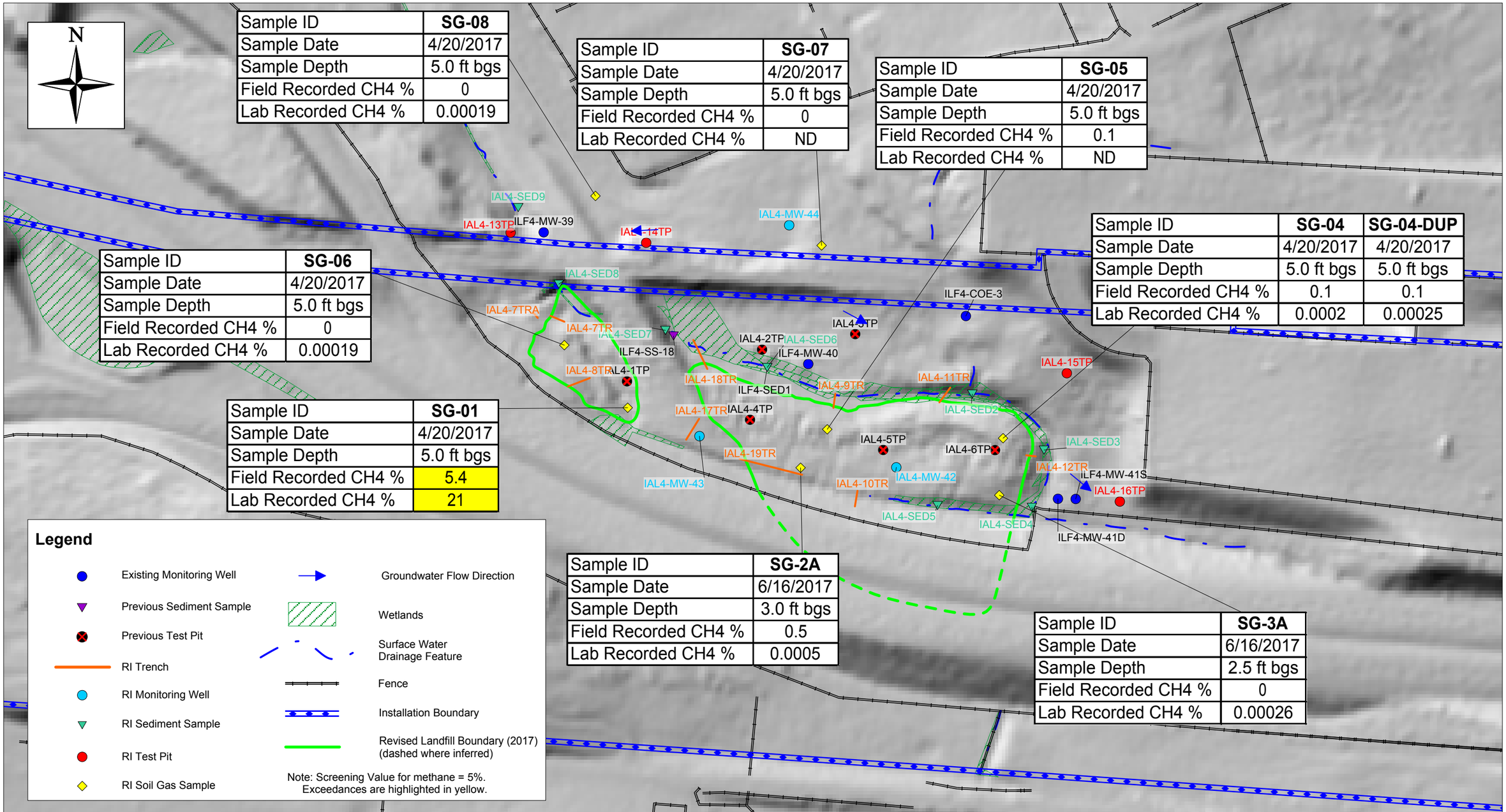
CLIENT	USACE, Baltimore District		
NOTES			
REVISION NO 6	FIG BY	DC	2/6/2018
SCALE 1" = 225'	CHK BY	JK	9/24/2018
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\Concentration Figures\IAL4 GW Iron_rev1.srf	PM	JK	9/24/2018

TITLE

Concentrations of Iron in Groundwater at
Inactive Lanfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive
Germantown, MD 20876

Figure 4-7



Sample ID	SG-08
Sample Date	4/20/2017
Sample Depth	5.0 ft bgs
Field Recorded CH4 %	0
Lab Recorded CH4 %	0.00019

Sample ID	SG-07
Sample Date	4/20/2017
Sample Depth	5.0 ft bgs
Field Recorded CH4 %	0
Lab Recorded CH4 %	ND

Sample ID	SG-05
Sample Date	4/20/2017
Sample Depth	5.0 ft bgs
Field Recorded CH4 %	0.1
Lab Recorded CH4 %	ND

Sample ID	SG-04	SG-04-DUP
Sample Date	4/20/2017	4/20/2017
Sample Depth	5.0 ft bgs	5.0 ft bgs
Field Recorded CH4 %	0.1	0.1
Lab Recorded CH4 %	0.0002	0.00025

Sample ID	SG-06
Sample Date	4/20/2017
Sample Depth	5.0 ft bgs
Field Recorded CH4 %	0
Lab Recorded CH4 %	0.00019

Sample ID	SG-01
Sample Date	4/20/2017
Sample Depth	5.0 ft bgs
Field Recorded CH4 %	5.4
Lab Recorded CH4 %	21

Sample ID	SG-2A
Sample Date	6/16/2017
Sample Depth	3.0 ft bgs
Field Recorded CH4 %	0.5
Lab Recorded CH4 %	0.0005

Sample ID	SG-3A
Sample Date	6/16/2017
Sample Depth	2.5 ft bgs
Field Recorded CH4 %	0
Lab Recorded CH4 %	0.00026

CLIENT	USACE, Baltimore District			
NOTES	Hillshade relief and topographic contours from MD iMAP 2011 LiDAR survey DEM			
REVISION NO	9	FIG BY	DC	1/25/2018
SCALE	1" = 150'	CHK BY	JK	1/25/2018
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\IAL4 Methane Concentrations.srf		PM	JK	1/25/2018

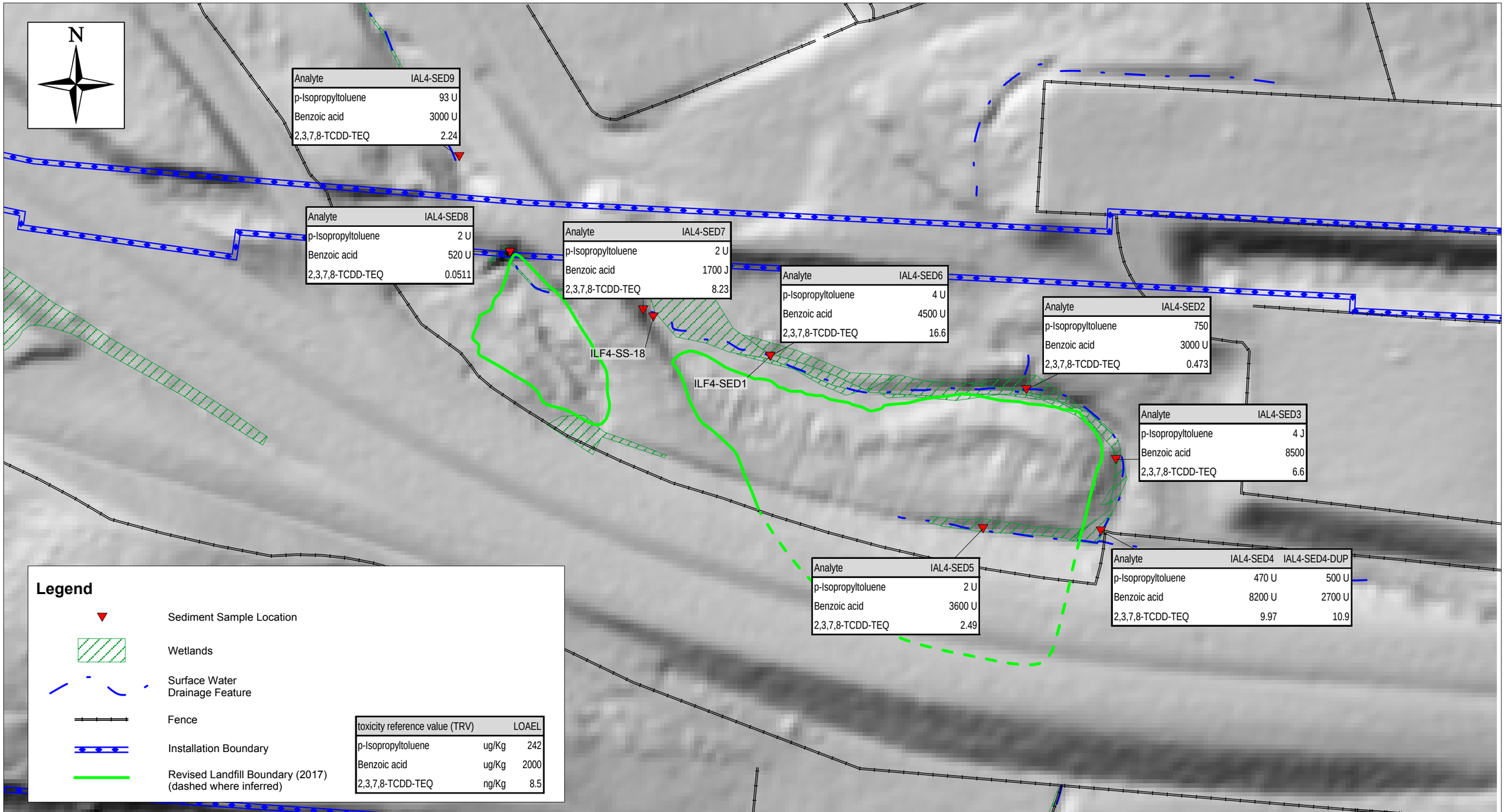
0 150 300 600 Feet

TITLE

Methane Concentrations at Soil Gas Sampling Points at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure 4-8



CLIENT	USACE, Baltimore District			
NOTES	Hillshade relief and topographic contours from MD iMAP 2011 LiDAR survey DEM			
REVISION NO	1	FIG BY	DC	8/15/2019
SCALE	1" = 180'	CHK BY	JK	8/15/2019
J:\Ft Meade\Data Management\Surfer\Plots\IAL4\ Figure 7-1_SLERA Sediment Samples_rev1.srf		PM	JK	8/15/2019

0 100 200 400 Feet

TITLE

Total Concentrations of BERA Sediment Compounds at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure 7-1

Tables

Table 1-1: Sediment Detections from Samples Collected in 1991 and 2008 at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Sample ID	Maximum Detection in Sediment (mg/kg)	EPA Region 3 Freshwater Sediment Benchmarks (mg/kg)	SS-18		SED1		SED1A	
Sample Date			7/21/91		6/18/08		6/18/08	
Source Data			Base Closure Parcel SI Study, EA, 1992		USACHPPM GW Monitoring Rpt, 2008		USACHPPM GW Monitoring Rpt, 2008	
Matrix			Sediment		Sediment		Sediment	
Analyte			Result (mg/kg)	Flag	Result (mg/kg)	Flag	Result (mg/kg)	Flag
VOC (mg/kg)								
Acetone	0.050				0.044		0.05	
Toluene	0.490		0.490					
SVOC (mg/kg)			0.000					
Naphthalene	0.568	0.176	0.000		0.494	J	0.568	J
2-methylnaphthalene	1.510	0.020	1.510		0.73		0.866	
Benzo(a)anthracene	0.850	0.108	0.850					
Benzo(b)fluoranthene	1.330		1.330					
Chrysene	1.190	0.166	1.190					
Fluoranthene	2.320	0.423	2.320					
Pentachlorophenol	0.409	0.504	0.000		0.409	J		
Phenanthrene	2.700	0.204	2.700		0.337	J	0.413	J
Pyrene	1.680	0.195	1.680					
Pesticides (mg/kg)			0.000					
4,4'-DDD	1.970		1.970				0.0183	
4,4'-DDE	0.140		0.140		0.0283		0.0264	
4,4'-DDT	0.150		0.150					
Aroclor 1260	0.510		0.510					
Dieldrin	0.015	0.002	0.015					
Endosulfan I	0.011		0.011					
Endosulfan II	0.003		0.003					
Isodrin	0.013		0.013					
Lindane	0.006		0.006					
Metals (mg/kg)								
Aluminum	31200		31200					
Arsenic	14.3	9.8	14.3		7.3		6.3	
Barium	160		160		44		41	
Cadmium	1.7	0.99			1.6		1.7	
Calcium	3890		3890					
Chromium	16	43.4			16		14	
Iron	60000	20000	60000					
Lead	170	35.8	170		42		38	
Magnesium	3550		3550					
Manganese	372	460	372					
Mercury	0.51	0.18	0.51		0.13		0.167	
Nickel	28.3	22.7	28.3					
Potassium	5180		5180					
Selenium	1.73	2	1.73					
Silver	1.07	1	1.07					
Sodium	226		226					
Vanadium	123		123					
Zinc	276	121	276					
Cyanide	0.78		0.78					

Notes: J – estimated value.
Results highlighted yellow exceeded the EPA Region 3 Freshwater Sediment Benchmarks
Blank cells = no results were provided in the referenced report for that compound

Table 1-2: Groundwater Detections from Samples Collected in 1991 and 2008 at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Sample ID	Maximum Detection in Groundwater (ug/L)	Carcinogenic RSL TR = 1.0 x 10^{-6} (ug/L)	Non-Carcinogenic RSL HI = 1.0 (ug/L)	COE-3		MW-39				MW-40				MW-41D			
Sample Date				4/2/91		4/2/91		6/18/08		4/2/91		6/18/08		4/2/91		6/18/08	
Source Data				Base Closure Parcel SI Study, EA, 1992		Base Closure Parcel SI Study, EA, 1992		USACHPPM GW Monitoring Rpt, 2008		Base Closure Parcel SI Study, EA, 1992		USACHPPM GW Monitoring Rpt, 2008		Base Closure Parcel SI Study, EA, 1992		USACHPPM GW Monitoring Rpt, 2008	
Matrix				Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater	
Analyte				Result (ug/L)	Flag	Result (ug/L)	Flag	Result (ug/L)	Flag	Result (ug/L)	Flag	Result (ug/L)	Flag	Result (ug/L)	Flag	Result (ug/L)	Flag
SVOC (µg/L)																	
bis(2-ethylhexyl)phthalate	45.5	5.6	400											45.5			
Pesticides (µg/L)																	
Dieldrin	0.045	0.0018	0.38							0.045							
Heptachlor	0.004	0.0014	1.3			0.004											
Isodrin	0.008					0.003				0.008							
Total Metals (µg/L)																	
Aluminum	70100		20000	70100		1890				3790				178			
Barium	290		3800	290		56		49.6		48.8		11.3		56		82.8	
Calcium	26700			6710		26700				8900				23800			
Chromium	189	0.035	44	189				5.05								6.56	
Copper	217		800	217													
Iron	120000		14000	120000		2780				4640				174			
Lead	28.1		15	28.1		14.9		4.81		5.32							
Magnesium	9770			5890		9770				2960				4850			
Manganese	213		430	213		167				41.1				93.9			
Potassium	15900			8950		7130				3800				15900			
Sodium	39700			1890		1350				14000				39700			
Vanadium	293		86	293													
Zinc	291		6000	291										75.3			
Dissolved Metals (µg/L)																	
Aluminum	258		20000	161						258							
Barium	67.1		3800	67.1		39.3				29.9				53.8			
Calcium	27800			5670		27800				8740				20800			
Iron	688		14000			688				289							
Magnesium	9980			3310		9980				2710				4260			
Manganese	127		430	80.9		127				30.7				38.1			
Potassium	17500					6500				4070				17500			
Sodium	42100			1700		13500				14400				42100			
Zinc	181		6000	181													

Results in red exceeded the EPA Region 3 Carcinogenic RSL (TR = 1.0 x 10-6)
Bold results exceed the EPA Region 3 Non-Carcinogenic RSL (HI = 1.0)
Blank cells = no results were provided in the referenced report for that compound

Table 1-2: Groundwater Detections from Samples Collected in 1991 and 2008 at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Sample ID	MW-41S				MW-41SD	
Sample Date	4/2/91		6/18/08		6/18/08	
Source Data	Base Closure Parcel SI Study, EA, 1992		USACHPPM GW Monitoring Rpt, 2008		USACHPPM GW Monitoring Rpt, 2008	
Matrix	Groundwater		Groundwater		Groundwater	
Analyte	Result (ug/L)	Flag	Result (ug/L)	Flag	Result (ug/L)	Flag
SVOC (µg/L)						
bis(2-ethylhexyl)phthalate						
Pesticides (µg/L)						
Dieldrin						
Heptachlor						
Isodrin						
Total Metals (µg/L)						
Aluminum	1090					
Barium	66.5		43.3		41.8	
Calcium	9570					
Chromium						
Copper						
Iron	2150					
Lead						
Magnesium	4270					
Manganese	112					
Potassium	1850					
Sodium	7140					
Vanadium						
Zinc	119					
Dissolved Metals (µg/L)						
Aluminum						
Barium	58.7					
Calcium	9470					
Iron						
Magnesium	4290					
Manganese	113					
Potassium	1450					
Sodium	7520					
Zinc	131					

Results in red exceeded the EPA Region 3 Carcinogenic RSL (TR = 1.0 x 10-6)
Bold results exceed the EPA Region 3 Non-Carcinogenic RSL (HI = 1.0)
Blank cells = no results were provided in the referenced report for that compound

Table 1-3: Subsurface Soil Detections from Samples Collected in 2013 at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Sample ID	Maximum Detected Concentration in Subsurface Soil (mg/kg)	Carcinogenic RSL TR = 1.0 x 10^{-6} (mg/kg)	Non-Carcinogenic RSL HI = 1.0 (mg/kg)	Background UPL (mg/kg)	IAL4-1TP-7-8		IAL4-6TP-8-10	
Sample Date					4/24/2013		4/24/2013	
Source Document					URS PA/SI 2013		URS PA/SI 2013	
Matrix					Subsurface Soil		Subsurface Soil	
Analyte					Result (mg/kg)	Flag	Result (mg/kg)	Flag
VOC (mg/kg)								
1,2,4-Trimethylbenzene	0.01		300		0.01		0.0031	B
1,2-Dichlorobenzene	0.014		1800		0.014			
1,3,5-Trimethylbenzene	0.0033		270		0.0033		0.001	J
1,3-Dichlorobenzene	0.0003		190		0.0003	J		
1,4-Dichlorobenzene	0.0047	2.6	3400		0.0047		0.00021	J
2-Butanone (MEK)	0.047		27000		0.047		0.0042	J
2-Hexanone	0.011		200		0.011	J		
4-Isopropyltoluene	0.0051				0.0051		0.00023	J
4-Methyl-2-pentanone (MIBK)	0.0096		33000		0.0096	J		
Acetone	0.36		61000		0.36		0.034	
Benzene	0.0011	1.2	82		0.001	J	0.0011	J
Carbon Disulfide	0.043		770		0.043		0.0007	J
Chlorobenzene	0.0012		280		0.0012	J	0.00025	J
cis-1,2-Dichloroethene	0.002		160		0.002	J		
Cyclohexane	0.00054		6500		0.00054	J	0.0003	J
Ethylbenzene	0.0014	5.8	3400		0.0014	J		
Isopropylbenzene	0.0038		1900		0.0038		0.002	
Methyl Acetate	0.0047		78000		0.0047	J	0.0038	J
Methylcyclohexane	0.00052		700		0.0003	J	0.00052	J
Naphthalene	0.027	3.8	130		0.027		0.00066	J
n-Butylbenzene	0.012		3900		0.012		0.0014	BJ
n-Propylbenzene	0.0044		3800		0.0044		0.0018	
sec-Butylbenzene	0.012		7800		0.012		0.0018	J
tert-Butylbenzene	0.0069		7800		0.0069		0.0021	J
Tetrachloroethene	0.00052	24	81		0.00052	J		
Toluene	0.0031		4900		0.0031	J	0.0013	J
Trichloroethene	0.00082	0.94	4.1		0.00082	J		
Trichlorofluoromethane	0.00023		79				0.00023	J
Vinyl Chloride	0.00089	0.059	70		0.00089	J		
Xylene, Meta + Para	0.0054		59		0.0054		0.0016	J
Xylene, Ortho	0.0032		650		0.0032		0.00098	J
SVOC (mg/kg)								
1,1'-Biphenyl	0.22	87	47		0.22	J		
2-Methylnaphthalene	1.7		240		1.7			
3+4-Methylphenol	0.13		310		0.13	J		
Acenaphthene	0.17		3600		0.17	J		
Acenaphthylene	0.18				0.18	J		
Acetophenone	0.082		7800		0.082	J		
Anthracene	0.12		18000		0.12	J		
Benzo(a)anthracene	0.12	1.1			0.12	J	0.12	J
Benzo(a)pyrene	0.13	0.11	18		0.053	J	0.13	J
Benzo(b)fluoranthene	0.19	1.1			0.082	J	0.19	J
Benzo(g,h,i)perylene	0.096		170		0.043	J	0.096	J
Benzo(k)fluoranthene	0.12	11					0.12	J
bis(2-Ethylhexyl) Phthalate	2.1	39	1300		2.1	B	1.7	B
Chrysene	0.14	110			0.13	J	0.14	J
Dibenzofuran	0.24		73		0.24	J		
Diethyl Phthalate	0.096		51000		0.096	J		
Fluoranthene	0.077		2400		0.077	J		
Fluorene	0.39		2400		0.39	J		
Indeno(1,2,3-cd)pyrene	0.12	1.1					0.12	J
Naphthalene	0.66	3.8	130		0.66			
Phenanthrene	0.37		1700		0.37	J	0.1	J
Pyrene	0.17		1800		0.17	J	0.1	J

Table 1-3: Subsurface Soil Detections from Samples Collected in 2013 at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Sample ID	Maximum Detected Concentration in Subsurface Soil (mg/kg)	Carcinogenic RSL TR = 1.0 x 10^{-6} (mg/kg)	Non-Carcinogenic RSL HI = 1.0 (mg/kg)	Background UPL (mg/kg)	IAL4-1TP-7-8		IAL4-6TP-8-10	
Sample Date					4/24/2013		4/24/2013	
Source Document					URS PA/SI 2013		URS PA/SI 2013	
Matrix					Subsurface Soil		Subsurface Soil	
Analyte					Result (mg/kg)	Flag	Result (mg/kg)	Flag
PCB (mg/kg)								
PCB-1248	0.24	0.23			0.069	J	0.24	J
PCB-1260	0.22	0.24					0.22	J
Pesticides (mg/kg)								
4,4'-DDD	0.22	1.9					0.22	
4,4'-DDE	0.028	23					0.028	
4,4'-DDT	0.023	37	3.6				0.023	
alpha-BHC	0.0063	0.086	510				0.0063	J
alpha-Chlordane	0.08	1.6	3.5				0.08	
Beta-BHC	0.0031	0.3					0.0031	J
Dieldrin	0.011	0.034	3.2				0.011	J
Endrin Ketone	0.0041		1.8				0.0041	J
gamma-BHC (Lindane)	0.0012	0.57	21				0.0012	J
gamma-Chlordane	0.076	1.6	3.5				0.076	
Heptachlor	0.0033	0.13	39				0.0033	J
Methoxychlor	0.0045		320				0.0045	J
Metals (mg/kg)								
Aluminum	5400		77000	4957	5400		3200	
Antimony	1.9		31		1.9		1.6	
Arsenic	17	0.68	35	2.269	17		8.5	
Barium	92		15000	28.25	71		92	
Beryllium	0.3	1600	160	0.961	0.3		0.17	
Cadmium	3.9	2100	71		1.1		3.9	
Calcium	2400				1500		2400	
Chromium	21	0.3	230	27.01	21		15	
Cobalt	12	420	23	19.18	12		2.3	
Copper	1500		3100	42.22	84		1500	
Iron	43000		55000	17539	43000		23000	
Lead	360		400	5.626	360		150	
Magnesium	230				230		190	
Manganese	200		1800	180.7	200		62	
Mercury	3.2		11	0.0211	3.2		1.2	
Molybdenum	5.4		3900		5.4		1.6	
Nickel	51	15000	1500	6.88	51		6.9	
Potassium	240				220		240	
Selenium	1.7		390		0.77		1.7	
Silver	2.2		390		2.2		0.48	
Sodium	200				200		46	J
Thallium	0.18		0.78		0.18		0.16	
Vanadium	17		390	37.46	12		17	
Zinc	700		23000	20.33	700		140	
Misc. (mg/kg)								
TPH-DRO	1400				1400		330	
TPH-GRO	17				17			
Dioxins (mg/kg)								
TEQ WHO2005 ND=0	4.24E-05				4.24E-05		7.80E-06	

For risk-based screening values only, results in red text exceeded the carcinogenic RSL, results in bold exceeded the non-carcinogenic RSL, and results highlighted yellow exceeded the background level for that analyte.

Table 1-4: Dioxin-Like Compounds and the Derivation of 2,3,7,8-TCDD Toxicity Equivalence Mixtures Detections from Samples Collected in 2013 at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

	SUBSURFACE SOIL	Dioxin/Furan TEF		IAL4-6TP-8-10 URS PA/SI 2013 4/24/2013				Adj Result (1)	Adj Result (2)	IAL4-1TP-7-8 URS PA/SI 2013 4/24/2013				Adj Result (1)	Adj Result (2)
CAS#	Parameter	(unitless)	Units	Result	LQ	VF	RC	pg/g	mg/kg	Result	LQ	VF	RC	pg/g	mg/kg
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1	pg/g	8.33				0.833	8.3E-07	39.9				3.99	4.0E-06
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1	pg/g	4.97	J			0.497	5.0E-07	5.94	J			0.594	5.9E-07
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.01	pg/g	281				2.81	2.8E-06	2120				21.2	2.1E-05
3268-87-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	0.0003	pg/g	6560				1.968	2.0E-06	33200				9.96	1.0E-05
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	0.1	pg/g	5.29				0.529	5.3E-07	0.869	J			0.0869	8.7E-08
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	0.1	pg/g	4.4	JK	N	n	0.44	4.4E-07	7.9				0.79	7.9E-07
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	0.1	pg/g	ND	U			ND	ND	2.5	J			0.25	2.5E-07
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	0.1	pg/g	ND	U			ND	ND	4.29	J			0.429	4.3E-07
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01	pg/g	62.2				0.622	6.2E-07	445				4.45	4.5E-06
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01	pg/g	3.72	JK	N	n	0.0372	3.7E-08	17.6				0.176	1.8E-07
39001-02-0	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	0.0003	pg/g	206				0.0618	6.2E-08	1590				0.477	4.8E-07
								2,3,7,8-TCDD TEQ Mixture (per Sample) =	7.8E-06					2,3,7,8-TCDD TEQ Mixture (per Sample) =	4.2E-05

Notes:

ND = Non-detect; TEF = Toxicity Equivalence Factor;

TEQ = Toxicity Equivalence

(1) The adjusted result (pg/g) is derived by mulitplying the detected result (pg/g) by the dioxin/furan TEF (unitless).

(2) The adjusted result (mg/kg) is derived by mulitplying the adjusted result (pg/g) by a conversion factor (CF) of 0.000001.

[10^{-9} pg to 1 mg: 1 g to 10^{-3} kg = CF of 10^{-6}]

Laboratory Qualifier (LQ)

J: value is estimated

U: analyte was not detected

JK Analyte present. Reported value may not be accurate or precise and the EMPC value was reported

Reason Code (RC)

n EMPC value reported

Data Validation Flag (VF)

N Tentative Identification. Consider present.

Table 2-1: Census Data for Fort Meade and Anne Arundel County, Maryland

	Maryland	Anne Arundel County, Maryland	Fort Meade, Maryland	UNITED STATES
Population estimates, July 1, 2016, (V2016)	6,016,447	568,346	X	323,127,513
PEOPLE				
Population				
Population estimates, July 1, 2016, (V2016)	6,016,447	568,346	X	323,127,513
Population estimates base, April 1, 2010, (V2016)	5,773,786	537,650	X	308,758,105
Population, percent change - April 1, 2010 (estimates base) to July 1, 2016, (V2016)	4.20%	5.70%	X	4.70%
Population, Census, April 1, 2010	5,773,552	537,656	9,327	308,745,538
Age and Sex				
Persons under 5 years, percent, July 1, 2016, (V2016)	6.10%	6.20%	X	6.20%
Persons under 5 years, percent, April 1, 2010	6.30%	6.40%	14.50%	6.50%
Persons under 18 years, percent, July 1, 2016, (V2016)	22.40%	22.40%	X	22.80%
Persons under 18 years, percent, April 1, 2010	23.40%	23.30%	37.90%	24.00%
Persons 65 years and over, percent, July 1, 2016, (V2016)	14.60%	14.10%	X	15.20%
Persons 65 years and over, percent, April 1, 2010	12.30%	11.80%	0.50%	13.00%
Female persons, percent, July 1, 2016, (V2016)	51.60%	50.50%	X	50.80%
Female persons, percent, April 1, 2010	51.60%	50.60%	47.60%	50.80%
Race and Hispanic Origin				
White alone, percent, July 1, 2016, (V2016)(a)	59.30%	75.20%	X	76.90%
Black or African American alone, percent, July 1, 2016, (V2016)(a)	30.70%	17.20%	X	13.30%
American Indian and Alaska Native alone, percent, July 1, 2016, (V2016)(a)	0.60%	0.40%	X	1.30%
Asian alone, percent, July 1, 2016, (V2016)(a)	6.60%	4.00%	X	5.70%
Native Hawaiian and Other Pacific Islander alone, percent, July 1, 2016, (V2016)(a)	0.10%	0.10%	X	0.20%
Two or More Races, percent, July 1, 2016, (V2016)	2.80%	3.00%	X	2.60%
Hispanic or Latino, percent, July 1, 2016, (V2016)(b)	9.80%	7.50%	X	17.80%
White alone, not Hispanic or Latino, percent, July 1, 2016, (V2016)	51.50%	69.10%	X	61.30%

Table 2-1: Census Data for Fort Meade and Anne Arundel County, Maryland

	Maryland	Anne Arundel County, Maryland	Fort Meade, Maryland	UNITED STATES
Population Characteristics				
Veterans, 2011-2015	403,900	52,670	1,568	20,108,332
Foreign born persons, percent, 2011-2015	14.50%	8.10%	6.70%	13.20%
Housing				
Housing units, July 1, 2016, (V2016)	2,447,127	223,290	X	135,697,926
Housing units, April 1, 2010	2,378,814	212,562	2,731	131,704,730
Owner-occupied housing unit rate, 2011-2015	66.80%	74.00%	1.60%	63.90%
Median value of owner-occupied housing units, 2011-2015	$286,900	$334,100	$222,500	$178,600
Median selected monthly owner costs -with a mortgage, 2011-2015	$1,951	$2,051	X	$1,492
Median selected monthly owner costs -without a mortgage, 2011-2015	$582	$578	X	$458
Median gross rent, 2011-2015	$1,230	$1,497	$2,004	$928
Building permits, 2016	17,044	2,394	X	1,206,642
Families & Living Arrangements				
Households, 2011-2015	2,166,389	203,336	2,674	116,926,305
Persons per household, 2011-2015	2.67	2.66	3.37	2.64
Living in same house 1 year ago, percent of persons age 1 year+, 2011-2015	86.60%	87.10%	60.10%	85.10%
Language other than English spoken at home, percent of persons age 5 years+, 2011-2015	17.20%	10.50%	16.00%	21.00%
Education				
High school graduate or higher, percent of persons age 25 years+, 2011-2015	89.40%	91.60%	96.30%	86.70%
Bachelor's degree or higher, percent of persons age 25 years+, 2011-2015	37.90%	38.30%	31.10%	29.80%
Health				
With a disability, under age 65 years, percent, 2011-2015	7.10%	6.60%	5.00%	8.60%
Persons without health insurance, under age 65 years, percent	7.00%	5.70%	2.80%	10.10%

Table 2-1: Census Data for Fort Meade and Anne Arundel County, Maryland

	Maryland	Anne Arundel County, Maryland	Fort Meade, Maryland	UNITED STATES
Economy				
In civilian labor force, total, percent of population age 16 years+, 2011-2015	67.90%	68.20%	39.10%	63.30%
In civilian labor force, female, percent of population age 16 years+, 2011-2015	64.10%	65.00%	44.90%	58.50%
Total accommodation and food services sales, 2012 ($1,000)(c)	12,516,782	1,564,002	12,578	708,138,598
Total health care and social assistance receipts/revenue, 2012 ($1,000)(c)	40,821,901	2,975,254	11,559	2,040,441,203
Total manufacturers shipments, 2012 ($1,000)(c)	39,532,989	4,456,881	0	5,696,729,632
Total merchant wholesaler sales, 2012 ($1,000)(c)	60,734,191	7,606,510	D	5,208,023,478
Total retail sales, 2012 ($1,000)(c)	76,379,707	8,758,765	46,762	4,219,821,871
Total retail sales per capita, 2012(c)	$12,980	$15,911	NA	$13,443
Transportation				
Mean travel time to work (minutes), workers age 16 years+, 2011-2015	32.3	29.7	17.2	25.9
Income & Poverty				
Median household income (in 2015 dollars), 2011-2015	$74,551	$89,860	$64,518	$53,889
Per capita income in past 12 months (in 2015 dollars), 2011-2015	$36,897	$41,706	$22,326	$28,930
Persons in poverty, percent	9.70%	6.00%	6.30%	12.70%
BUSINESSES				
Businesses				
Total employer establishments, 2015	1372041	13,970	X	7,663,938
Total employment, 2015	22398171	229,708	X	124,085,947
Total annual payroll, 2015 ($1,000)	1184968581	12,650,650	X	6,253,488,252
Total employment, percent change, 2014-2015	1.0%1	3.10%	X	2.50%
Total nonemployer establishments, 2015	475,518	41,227	X	24,331,403
All firms, 2012	531,953	46,997	296	27,626,360
Men-owned firms, 2012	276,630	25,348	138	14,844,597
Women-owned firms, 2012	209,119	17,089	119	9,878,397
Minority-owned firms, 2012	203,394	9,994	110	7,952,386
Nonminority-owned firms, 2012	314,902	35,336	147	18,987,918
Veteran-owned firms, 2012	50,976	5,547	71	2,521,682
Nonveteran-owned firms, 2012	462,232	39,219	184	24,070,685

Table 2-1: Census Data for Fort Meade and Anne Arundel County, Maryland

GEOGRAPHY	Maryland	Anne Arundel County, Maryland	Fort Meade, Maryland	UNITED STATES
Geography				
Population per square mile, 2010	594.8	1,295.90	1,152.10	87.4
Land area in square miles, 2010	9,707.24	414.9	8.1	3,531,905.43
FIPS Code	24	24003	2429400	0

Value Notes

1 Includes data not distributed by county.

This geographic level of poverty and health estimates is not comparable to other geographic levels of these estimates

Some estimates presented here come from sample data, and thus have sampling errors that may render some apparent differences between geographies statistically indistinguishable. Click the Quick Info icon to the left of each row in TABLE view to learn about sampling error.

The vintage year (e.g., V2016) refers to the final year of the series (2010 thru 2016). *Different vintage years of estimates are not comparable.*

Fact Notes

(a) Includes persons reporting only one race

(b) Hispanics may be of any race, so also are included in applicable race categories

(c) Economic Census - Puerto Rico data are not comparable to U.S. Economic Census data

Value Flags

-Either no or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest or upper interval of an open ended distribution.

D Suppressed to avoid disclosure of confidential information

NA Not available

X Not applicable

QuickFacts data are derived from: Population Estimates, American Community Survey, Census of Population and Housing, Current Population Survey, Small Area Health Insurance Estimates, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits.

Table 2-2: Description of Soil Types at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Soil / Complex Name	Description	Patapsco (35%)	Evesboro (20%)
PeB—Patapsco-Evesboro-Fort Mott complex, 0 to 5 percent slopes	Setting	Landform: Interfluves, broad interstream divides Landform position (two-dimensional): Summit Down-slope shape: Linear Across-slope shape: Linear Parent material: Sandy eolian deposits over loamy fluviomarine deposits	Landform: Interfluves, broad interstream divides Landform position (two-dimensional): Summit Down-slope shape: Linear Across-slope shape: Linear Parent material: Sandy eolian deposits and/or fluviomarine deposits
	Typical Profile	Ap - 0 to 10 inches: sand E - 10 to 61 inches: sand Bt - 61 to 74 inches: sandy loam BC - 74 to 80 inches: loamy sand	A - 0 to 2 inches: loamy sand E - 2 to 22 inches: loamy sand BE - 22 to 39 inches: loamy sand E and Bt - 39 to 80 inches: loamy sand
	Properties and Qualities	Slope: 0 to 5 percent Depth to restrictive feature: About 49 inches to abrupt textural change Natural drainage class: Somewhat excessively drained Runoff class: Very low Capacity of the most limiting layer to transmit water (Ksat):Moderately high to high (0.20 to 5.95 in/hr) Depth to water table: About 40 to 72 inches Frequency of flooding: None Frequency of ponding: None Available water storage in profile: Very low (about 2.6 inches)	Slope: 0 to 5 percent Depth to restrictive feature: More than 80 inches Natural drainage class: Excessively drained Runoff class: Negligible Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr) Depth to water table: More than 80 inches Frequency of flooding: None Frequency of ponding: None Available water storage in profile: Low (about 4.8 inches)
	Interpretive groups	Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3s Hydrologic Soil Group: A Hydric soil rating: No	Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3s Hydrologic Soil Group: A Hydric soil rating: No

Table 2-2: Description of Soil Types at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Soil / Complex Name	Description	Fort Mott (20%)
PeB—Patapsco-Evesboro-Fort Mott complex, 0 to 5 percent slopes	Setting	Landform: Interfluves, broad interstream divides Landform position (two-dimensional): Summit Down-slope shape: Linear Across-slope shape: Linear Parent material: Sandy eolian deposits over loamy fluviomarine deposits
	Typical Profile	Ap - 0 to 12 inches: loamy sand BE - 12 to 21 inches: loamy sand Bt - 21 to 33 inches: sandy loam BC - 33 to 70 inches: sand C - 70 to 80 inches: loamy sand
	Properties and Qualities	Slope: 2 to 5 percent Depth to restrictive feature: More than 80 inches Natural drainage class: Well drained Runoff class: Negligible Capacity of the most limiting layer to transmit water (Ksat):Moderately high to high (0.20 to 5.95 in/hr) Depth to water table: More than 80 inches Frequency of flooding: None Frequency of ponding: None Available water storage in profile: Low (about 4.8 inches)
	Interpretive groups	Land capability classification (irrigated): 2s Land capability classification (nonirrigated): 3s Hydrologic Soil Group: A Hydric soil rating: No

Table 2-3: Formations and Aquifers in the Vicinity of Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Formation	Unit	Description
Quaternary Alluvium	Recent Alluvial and River Terrace Deposits	Mixed sand, gravel, silt and clay
Potomac Group	Upper Patapsco Aquifer	Sand and Gravel
	Middle Patapsco Confining Unit	Silt and Clay
	Lower Patapsco Aquifer	Sand and Gravel
	Arundel Clay Confining Unit	Silt and Clay
	Patuxent Aquifer	Sand, Gravel and Clay

Source: USACE, 1999. Basic Data Report, Site-Wide Groundwater Study, Fort George G Meade, Anne Arundel County, Maryland. Prepared by Engineering Division, U.S. Army Engineer District, Baltimore, August 1999.

Table 2-4: Monitoring Well Depth, Screen, and Water Elevation at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Monitoring Well ID	Date Drilled or Installed	Total Depth Drilled	Depth of Screened Interval	Depth of Groundwater During Drilling	Ground Surface Elevation	Groundwater Elevation During Drilling	Elevation of Top of Screen
COE-3	October 1987	39 ft bgs	29-39 ft bgs	26 ft bgs	149	123	120
MW-39	June 1990	35 ft bgs	20-35 ft bgs	19 ft bgs	141.9	122.9	121.9
MW-40	June 1990	22 ft bgs	7-22 ft bgs	10.5 ft bgs	134.6	124.1	127.6
MW-41S	June 1990	30 ft bgs	15-30 ft bgs	18 ft bgs	138.9	120.9	123.9
MW-41D	June 1990	84 ft bgs	69-84 ft bgs	18 ft bgs	138.5	120.5	69.5
MW-42	May 2017	25 ft bgs	4-19 ft bgs	10 ft bgs	140.06	130.06	136.06
MW-43	May 2017	30 ft bgs	14-29 ft bgs	19 ft bgs	142.53	123.53	128.53
MW-44	May 2017	25 ft bgs	10-25 ft bgs	16.7 ft bgs	142.91	126.21	132.91

Monitoring Well ID	Northing[1]	Easting[1]	Top of Casing Elevation[2]	Groundwater Elevation 5 June 2008	Groundwater Elevation 5 May 2017	Groundwater Elevation 9 August 2017	Groundwater above or below top of screen on 9 August 2018
COE-3	518476.263	1382760.221	152.00	128.24	124.41	125.42	Above
MW-39	518606.165	1382105.324	144.38	128.59	124.89	126.64	Above
MW-40	518401.839	1382515.737	137.24	129.46	125.28	128.07	Above
MW-41S	518192.396	1382930.586	141.54	123.17	121.23	122.37	Below
MW-41D	518192.635	1382903.076	140.91	123.17	120.73	121.74	Above
MW-42	518241.436	1382652.285	143.32	NA	122.22	124.13	Below
MW-43	518289.865	1382346.984	145.37	NA	124.04	125.44	Below
MW-44	518617.130	1382486.116	145.77	NA	127.05	128.18	Below

[1] Coordinates are North American Datum 1983 Maryland State Plane, ft

[2] Elevations are North American Vertical Datum 1988, ft

Table 2-5: Hydraulic Conductivity Values Calculated from 1990 and 1991 Data at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Monitoring Well	ft/min
MW-41D	7.7×10^{-3}
MW-42	2.0×10^{-2}

Source: USATHAMA, 1992

Table 3-1: Summary of Environmental Sampling or Investigation at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Name	Date	Chemical Analysis
Soil Gas Samples		
SG-01	4/20/2017	Methane (CH4-TCD) and Helium
SG-02	4/20/2017	No analysis, shallow groundwater encountered
SG-02A	6/16/2017	Methane (CH4-FID) and Helium
SG-03	4/20/2017	No analysis, shallow groundwater encountered
SG-03A	6/16/2017	Methane (CH4-FID) and Helium
SG-04	4/20/2017	Methane (CH4-FID) and Helium
SG-04-DUP	4/20/2017	Methane (CH4-FID) and Helium
SG-05	4/20/2017	Methane (CH4-FID) and Helium
SG-06	4/20/2017	Methane (CH4-FID) and Helium
SG-07	4/20/2017	Methane (CH4-FID) and Helium
SG-08	4/20/2017	Methane (CH4-FID) and Helium
Surface Soil		
IAL4-10TR-0'-05'	5/1/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI)
IAL4-11TR-0'-05'	5/2/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI)
IAL4-11TR-0'-05'-DUP	5/2/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI)
IAL4-12TR-0'-05'	5/2/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI)
IAL4-13TP-15'-2'	5/1/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI)
IAL4-7TR-0'-05'	5/1/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI)
IAL4-8TR-0'-05'	5/1/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI)
IAL4-9TR-0'-05'	5/2/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI)
Subsurface Soil		
IAL4-1-7-8	4/24/2013	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, PCBs, and Dioxins
IAL4-2	4/24/2013	No analysis, assess landfill composition only
IAL4-3	4/24/2013	No analysis, assess landfill composition only
IAL4-4	4/24/2013	No analysis, assess landfill composition only
IAL4-5	4/24/2013	No analysis, assess landfill composition only
IAL4-6-8-10	4/24/2013	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, PCBs, herbicides, pesticides, and Dioxins
IAL4-7TR-61'-66'	5/1/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, Cr(VI), and PCBs
IAL4-7TRA	5/1/2017	No analysis, assess landfill boundary only
IAL4-8TR-135'-14'	5/1/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI)
IAL4-9TR-7'-75'	5/2/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI)

Table 3-1: Summary of Environmental Sampling or Investigation at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Name	Date	Chemical Analysis
IAL4-10TR-105'-11'	5/1/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, Cr(VI), and PCBs
IAL4-11TR-55'-6'	5/2/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI)
IAL4-12TR-65'-7'	5/2/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, Cr(VI), and PCBs
IAL4-13TP	5/1/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, Cr(VI), and dioxins Only surface soil was analyzed
IAL4-14TP-2'-3'	5/1/2017	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI) Only subsurface soil was analyzed
IAL4-15TP	5/1/2017	No analysis, assess landfill boundary only
IAL4-16TP	5/1/2017	No analysis, assess landfill boundary only
IAL4-17TR	5/2/2017	No analysis, assess landfill boundary only
IAL4-18TR	5/2/2017	No analysis, assess landfill boundary only
IAL4-19TR	5/2/2017	No analysis, assess landfill boundary only
Groundwater		
COE-3	4/2/1991	VOCs, SVOCs, pesticides, 23 total metals
ILF4-COE-3GW	5/24/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), and PCBs
IAL4-COE-3	8/10/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), PCBs, and dioxin
MW-39	4/2/1991	VOCs, SVOCs, pesticides, 23 total metals
MW-39	6/18/2008	VOCs, SVOCs, pesticides, PCBs, select total metals
IAL4-MW-39GW	5/24/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), PCBs, and dioxin
IAL4-MW-39GW-DUP	5/24/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), PCBs, and dioxin
IAL4-MW-39	8/10/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), PCBs, and dioxin
MW-40	4/2/1991	VOCs, SVOCs, pesticides, 23 total metals
MW-40	6/18/2008	VOCs, SVOCs, pesticides, PCBs, select total metals
ILF4-MW-40GW	5/25/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), and PCBs
ILF4-MW-40	9/21/2017	VOCs, SVOCs, TAL metals (total and dissolved), and Cr(VI)
MW-41S	4/2/1991	VOCs, SVOCs, pesticides, 23 total metals
MW-41S	6/18/2008	VOCs, SVOCs, pesticides, PCBs, select total metals
MW-41SD	6/18/2008	VOCs, SVOCs, pesticides, PCBs, select total metals
ILF4-MW-41S-GW	5/24/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), and PCBs
IAL4-MW-41S	8/9/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), PCBs, and dioxin
MW-41D	4/2/1991	VOCs, SVOCs, pesticides, 23 total metals
MW-41D	6/18/2008	VOCs, SVOCs, pesticides, PCBs, select total metals
ILF4-MW-41D-GW	5/24/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), and PCBs
IAL4-MW-41D	8/9/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), PCBs, and dioxin

Table 3-1: Summary of Environmental Sampling or Investigation at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Name	Date	Chemical Analysis
IAL4-MW-41D-DUP	8/9/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), PCBs, and dioxin
IAL4-MW-42GW	5/23/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), and PCBs
IAL4-MW-42	9/21/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), and PCBs
IAL4-MW-43GW	5/25/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), PCBs, and dioxin
IAL4-MW-43	9/21/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), PCBs, and dioxin
IAL4-MW-43-DUP	9/21/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), PCBs, and dioxin
IAL4-MW-44GW	5/25/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), and PCBs
IAL4-MW-44	8/10/2017	VOCs, SVOCs, TAL metals (total and dissolved), Cr(VI), PCBs, and dioxin
Sediment		
SS-18	7/21/1991	VOCs, SVOCs, pesticides, 23 total metals
SED1	6/18/2008	VOCs, SVOCs, pesticides, PCBs, select total metals
SED1A	6/18/2008	VOCs, SVOCs, pesticides, PCBs, select total metals
IAL4-SED2	4/27/2017	VOCs, SVOCs, TAL metals, Cr(VI), PCBs, dioxin, SEM/AVS, and TOC
IAL4-SED3	4/27/2017	VOCs, SVOCs, TAL metals, Cr(VI), PCBs, and dioxin
IAL4-SED4	4/27/2017	VOCs, SVOCs, TAL metals, Cr(VI), PCBs, dioxin, SEM/AVS, and TOC
IAL4-SED4-DUP	4/27/2017	VOCs, SVOCs, TAL metals, Cr(VI), PCBs, dioxin, SEM/AVS, and TOC
IAL4-SED5	4/27/2017	VOCs, SVOCs, TAL metals, Cr(VI), PCBs, and dioxin
IAL4-SED6	4/27/2017	VOCs, SVOCs, TAL metals, Cr(VI), PCBs, dioxin, SEM/AVS, and TOC
IAL4-SED7	4/27/2017	VOCs, SVOCs, TAL metals, Cr(VI), PCBs, and dioxin
IAL4-SED8	4/27/2017	VOCs, SVOCs, TAL metals, Cr(VI), PCBs, and dioxin
IAL4-SED9	4/27/2017	VOCs, SVOCs, TAL metals, Cr(VI), PCBs, dioxin, SEM/AVS, and TOC

Table 3-2: Trench and Test Pit Location and Rationale at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Trench or Test Pit Number	Location	Rationale	Chemical Analysis
IAL4-7TR	Northwestern Border	To define the northwestern border of IAL4 west of the dirt road.	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, Cr(VI), and PCBs.
IAL4-7TRA	Northwestern Border	To define the northwestern border of IAL4 west of the dirt road.	No analysis, assess landfill boundary only.
IAL4-8TR	Southwestern Border	To define the southwestern border of IAL4 west of the dirt road and north of Route 32.	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI).
IAL4-9TR	North-Central Border	To define the northern border of IAL4 east of the dirt road.	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI).
IAL4-10TR	Southern Border	To define the southern border of IAL4 east of the dirt road and north of Route 32.	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, Cr(VI), and PCBs.
IAL4-11TR	Northeastern Border	To define the northeastern border of IAL4 east of the dirt road	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI).
IAL4-12TR	Eastern Border	To define the eastern border of IAL4 east of the dirt road	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, Cr(VI), and PCBs.
IAL4-13TP	Northwest of Landfill	Test pit to investigate surface debris found in this area.	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, Cr(VI), and dioxins. Only surface soil was analyzed.
IAL4-14TP	Northwest of Landfill	Test pit to investigate surface debris found in this area.	VOCs, SVOCs, TPH-DRO, TPH-GRO, metals, and Cr(VI). Only subsurface soil was analyzed.
IAL4-15TP	Northeastern Border	Test pit to investigate the northeastern border of IAL4 northeast of monitoring wells MW-41S and MW-41D.	No analysis, assess landfill boundary only.
IAL4-16TP	Eastern Border	Test pit to investigate the eastern border of IAL4 east of monitoring wells MW-41S and MW-41D.	No analysis, assess landfill boundary only.
IAL4-17TR	Southwest Border	To define the southern boundary of IAL4 where the dirt road crosses IAL4.	No analysis, assess landfill boundary only.
IAL4-18TR	Northwest Border	To define the northern boundary of IAL4 where the dirt road crosses IAL4.	No analysis, assess landfill boundary only.
IAL4-19TR	South central Border	To define the southern boundary of IAL4.	No analysis, assess landfill boundary only.

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-0'-0.5'							IAL4-8TR-0'-0.5'							IAL4-9TR-0'-0.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975996							8975998							8976000						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
VOCs																							
630-20-6	1,1,1,2-Tetrachloroethane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
71-55-6	1,1,1-Trichloroethane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/Kg	9	5	9	24	U			6	3	6	15	U			7	3	7	17	U		
79-00-5	1,1,2-Trichloroethane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
75-34-3	1,1-Dichloroethane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
75-35-4	1,1-Dichloroethene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
563-58-6	1,1-Dichloropropene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
87-61-6	1,2,3-Trichlorobenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
96-18-4	1,2,3-Trichloropropane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
95-63-6	1,2,4-Trimethylbenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/Kg	9	5	9	12	U			6	3	6	7	U			7	3	7	9	U		
106-93-4	1,2-Dibromoethane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
107-06-2	1,2-Dichloroethane	ug/Kg	5	2	5	12	U			3	1	3	7	U			2	2	3	9	J		
540-59-0	1,2-Dichloroethene (Total)	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
78-87-5	1,2-Dichloropropane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
108-67-8	1,3,5-Trimethylbenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
142-28-9	1,3-Dichloropropane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
123-91-1	1,4-Dioxane	ug/Kg	470	160	470	590	U			300	100	300	370	U			340	120	340	430	U		
594-20-7	2,2-Dichloropropane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
78-93-3	2-Butanone	ug/Kg	19	9	19	24	U			15	6	12	15		J	c	8	7	14	17	J	J	c
95-49-8	2-Chlorotoluene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
591-78-6	2-Hexanone	ug/Kg	19	7	19	24	U			12	4	12	15	U			14	5	14	17	U		
106-43-4	4-Chlorotoluene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-0'-0.5'							IAL4-8TR-0'-0.5'							IAL4-9TR-0'-0.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975996							8975998							8976000						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/Kg	19	7	19	24	U			12	4	12	15	U			14	5	14	17	U		
67-64-1	Acetone	ug/Kg	120	16	38	47				200	10	24	30				130	12	27	34			
71-43-2	Benzene	ug/Kg	3	1	5	12	J			3	0.7	3	7	U			1	0.9	3	9	J		
108-86-1	Bromobenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
74-97-5	Bromochloromethane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
75-27-4	Bromodichloromethane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
75-25-2	Bromoform	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
74-83-9	Bromomethane	ug/Kg	9	5	9	12	U			6	3	6	7	U			7	3	7	9	U		
75-15-0	Carbon Disulfide	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
56-23-5	Carbon tetrachloride	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
108-90-7	Chlorobenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
124-48-1	Chlorodibromomethane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
75-00-3	Chloroethane	ug/Kg	9	5	9	12	U			6	3	6	7	U			7	3	7	9	U		
67-66-3	Chloroform	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
74-87-3	Chloromethane	ug/Kg	9	5	9	12	U			6	3	6	7	U			7	3	7	9	U		
156-59-2	cis-1,2-Dichloroethene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
10061-01-5	cis-1,3-Dichloropropene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
110-82-7	Cyclohexane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
74-95-3	Dibromomethane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
75-71-8	Dichlorodifluoromethane	ug/Kg	9	5	9	12	U			6	3	6	7	U			7	3	7	9	U		
64-17-5	Ethanol	ug/Kg	590	240	590	1200	U			370	150	370	740	U			430	170	430	860	U		
100-41-4	Ethylbenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
87-68-3	Hexachlorobutadiene	ug/Kg	9	5	9	12	U			6	3	6	7	U			7	3	7	9	U		
98-82-8	Isopropylbenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
179601-23-1	m,p-Xylene	ug/Kg	2	2	5	12	J			3	1	3	7	U			3	2	3	9	U		
79-20-9	Methyl acetate	ug/Kg	9	5	9	12	U			6	3	6	7	U			7	3	7	9	J		
1634-04-4	Methyl tert-butyl Ether	ug/Kg	5	1	5	12	U			3	0.7	3	7	U			3	0.9	3	9	U		
108-87-2	Methylcyclohexane	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
75-09-2	Methylene chloride	ug/Kg	9	5	9	12	U			6	3	6	7	U			7	3	7	9	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-0'-0.5'							IAL4-8TR-0'-0.5'							IAL4-9TR-0'-0.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975996							8975998							8976000						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
91-20-3	Naphthalene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
104-51-8	n-Butylbenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
103-65-1	n-Propylbenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
95-47-6	o-Xylene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
99-87-6	p-Isopropyltoluene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
135-98-8	sec-Butylbenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
100-42-5	Styrene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
75-65-0	t-Butanol	ug/Kg	94	47	94	240	U			59	30	59	150	U			69	34	69	170	U		
98-06-6	tert-Butylbenzene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
127-18-4	Tetrachloroethene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
108-88-3	Toluene	ug/Kg	3	2	5	12	J			3	1	3	7	U			3	2	3	9	U		
156-60-5	trans-1,2-Dichloroethene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
10061-02-6	trans-1,3-Dichloropropene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
79-01-6	Trichloroethene	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
75-69-4	Trichlorofluoromethane	ug/Kg	9	5	9	12	U			6	3	6	7	U			7	3	7	9	U		
75-01-4	Vinyl chloride	ug/Kg	5	2	5	12	U			3	1	3	7	U			3	2	3	9	U		
1330-20-7	Xylene (total)	ug/Kg	2	2	5	12	J			3	1	3	7	U			3	2	3	9	U		
SVOCs																							
92-52-4	1,1'-Biphenyl	ug/Kg	32	18	37	37	J			38	19	38	38	U			28	19	37	37	J		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
122-66-7	1,2-Diphenylhydrazine	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	69	18	37	37				38	19	38	38	U			37	19	37	37	U		
123-91-1	1,4-Dioxane	ug/Kg	370	110	370	370	U			380	110	380	380	U			370	110	370	370	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/Kg	150	73	150	180	U			150	76	150	190	U			150	75	150	190	U		
95-95-4	2,4,5-Trichlorophenol	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-0'-0.5'							IAL4-8TR-0'-0.5'							IAL4-9TR-0'-0.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975996							8975998							8976000						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
88-06-2	2,4,6-Trichlorophenol	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
120-83-2	2,4-Dichlorophenol	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
105-67-9	2,4-Dimethylphenol	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
51-28-5	2,4-Dinitrophenol	ug/Kg	1100	330	1100	1100	U			1100	340	1100	1100	U			1100	340	1100	1100	U		
121-14-2	2,4-Dinitrotoluene	ug/Kg	150	73	150	180	U			150	76	150	190	U			150	75	150	190	U		
87-65-0	2,6-Dichlorophenol	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
606-20-2	2,6-Dinitrotoluene	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
91-58-7	2-Chloronaphthalene	ug/Kg	15	7	15	36	U			15	8	15	38	U			15	7	15	37	U		
95-57-8	2-Chlorophenol	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
91-57-6	2-Methylnaphthalene	ug/Kg	200	4	7	19				16	4	8	19	J			230	4	7	19			
95-48-7	2-Methylphenol	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
88-74-4	2-Nitroaniline	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
88-75-5	2-Nitrophenol	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
91-94-1	3,3'-Dicholorobenzidine	ug/Kg	370	110	370	370	U	R	m	380	110	380	380	U	R	m	370	110	370	370	U	R	m
106-44-5	3+4-Methylphenol	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
99-09-2	3-Nitroaniline	ug/Kg	150	73	150	180	U			150	76	150	190	U			150	75	150	190	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/Kg	550	180	550	550	U			570	190	570	570	U			560	190	560	560	U		
101-55-3	4-Bromophenyl-phenylether	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
59-50-7	4-Chloro-3-methylphenol	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
106-47-8	4-Chloroaniline	ug/Kg	73	37	73	73	U	R	m	76	38	76	76	U	R	m	75	37	75	75	U	R	m
7005-72-3	4-Chlorophenyl-phenyl ether	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
100-01-6	4-Nitroaniline	ug/Kg	150	73	150	180	U	R	m	150	76	150	190	U	R	m	150	75	150	190	U	R	m
100-02-7	4-Nitrophenol	ug/Kg	550	180	550	550	U			570	190	570	570	U			560	190	560	560	U		
83-32-9	Acenaphthene	ug/Kg	92	4	7	19				8	4	8	19	U			7	4	7	19	U		
208-96-8	Acenaphthylene	ug/Kg	7	4	7	19	U			8	4	8	19	U			7	4	7	19	J		
98-86-2	Acetophenone	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
120-12-7	Anthracene	ug/Kg	140	4	7	19				8	4	8	19	U			10	4	7	19	J		
1912-24-9	Atrazine	ug/Kg	150	37	150	180	U			150	38	150	190	U			150	37	150	190	U		
100-52-7	Benzaldehyde	ug/Kg	150	73	150	180	U			150	76	150	190	U			150	75	150	190	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-0'-0.5'							IAL4-8TR-0'-0.5'							IAL4-9TR-0'-0.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975996							8975998							8976000						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
92-87-5	Benzidine	ug/Kg	550	270	550	550	U	R	m	570	290	570	570	U	R	m	560	280	560	560	U	R	m
50-32-8	Benzo(a) pyrene	ug/Kg	310	4	7	19				9	4	8	19	J			24	4	7	19			
56-55-3	Benzo(a)anthracene	ug/Kg	360	4	7	19				10	4	8	19	J			22	4	7	19			
205-99-2	Benzo(b) fluoranthene	ug/Kg	440	4	7	19				17	4	8	19	J			47	4	7	19			
191-24-2	Benzo(g,h,i) perylene	ug/Kg	190	4	7	19				10	4	8	19	J			28	4	7	19			
207-08-9	Benzo(k) fluoranthene	ug/Kg	190	4	7	19				8	4	8	19	J			15	4	7	19	J		
65-85-0	Benzoic acid	ug/Kg	330	180	550	550	J			230	190	570	570	J			200	190	560	560	J		
100-51-6	Benzyl alcohol	ug/Kg	550	180	550	550	U			570	190	570	570	U			560	190	560	560	U		
111-91-1	Bis(2-chloroethoxy) methane	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
111-44-4	Bis(2-chloroethyl) ether	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
39638-32-9	Bis(2-chloroisopropyl) ether	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
117-81-7	Bis(2-ethylhexyl) phthalate	ug/Kg	150	73	150	190	U			150	76	150	190	U			150	75	150	190	U		
85-68-7	Butylbenzylphthalate	ug/Kg	150	73	150	180	U			150	76	150	190	U			150	75	150	190	U		
105-60-2	Caprolactam	ug/Kg	150	37	150	180	U			150	38	150	190	U			150	37	150	190	U		
86-74-8	Carbazole	ug/Kg	75	18	37	37				38	19	38	38	U			37	19	37	37	U		
218-01-9	Chrysene	ug/Kg	390	4	7	19				15	4	8	19	J			45	4	7	19			
53-70-3	Dibenzo(a,h) anthracene	ug/Kg	45	4	7	19				5	4	8	19	J			9	4	7	19	J		
132-64-9	Dibenzofuran	ug/Kg	78	18	37	37				38	19	38	38	U			37	19	37	37	J		
84-66-2	Diethylphthalate	ug/Kg	150	73	150	180	U			150	76	150	190	U			150	75	150	190	U		
131-11-3	Dimethylphthalate	ug/Kg	150	73	150	180	U			150	76	150	190	U			150	75	150	190	U		
84-74-2	Di-n-butylphthalate	ug/Kg	150	73	150	180	U			150	76	150	190	U			150	75	150	190	U		
117-84-0	Di-n-octylphthalate	ug/Kg	150	73	150	180	U			150	76	150	190	U			150	75	150	190	U		
88-85-7	Dinoseb	ug/Kg	550	180	550	550	U			570	190	570	570	U			560	190	560	560	U		
206-44-0	Fluoranthene	ug/Kg	730	4	7	19				15	4	8	19	J			33	4	7	19			
86-73-7	Fluorene	ug/Kg	61	4	7	19				8	4	8	19	U			5	4	7	19	J		
118-74-1	Hexachlorobenzene	ug/Kg	7	4	7	19	U			8	4	8	19	U			7	4	7	19	U		
87-68-3	Hexachlorobutadiene	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
77-47-4	Hexachlorocyclopentadiene	ug/Kg	550	180	550	550	U	R	m	570	190	570	570	U	R	m	560	190	560	560	U	R	m
67-72-1	Hexachloroethane	ug/Kg	150	37	150	180	U			150	38	150	190	U			150	37	150	190	U		

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			IAL4-7TR-0'-0.5'							IAL4-8TR-0'-0.5'							IAL4-9TR-0'-0.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975996							8975998							8976000						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
193-39-5	Indeno(1,2,3,-cd) pyrene	ug/Kg	170	4	7	19				9	4	8	19	J			18	4	7	19	J		
78-59-1	Isophorone	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
91-20-3	Naphthalene	ug/Kg	260	4	7	19				12	4	8	19	J			140	4	7	19			
98-95-3	Nitrobenzene	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
62-75-9	N-Nitrosodimethylamine	ug/Kg	150	73	150	180	U			150	76	150	190	U			150	75	150	190	U		
621-64-7	N-Nitroso-di-n propylamine	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
86-30-6	N-Nitrosodiphenylamine	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
930-55-2	N-Nitrosopyrrolidine	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
87-86-5	Pentachlorophenol	ug/Kg	150	37	150	190	U			150	38	150	190	U			150	37	150	190	U		
85-01-8	Phenanthrene	ug/Kg	670	4	7	19				14	4	8	19	J			80	4	7	19			
108-95-2	Phenol	ug/Kg	37	18	37	37	U			38	19	38	38	U			37	19	37	37	U		
129-00-0	Pyrene	ug/Kg	660	4	7	19				14	4	8	19	J			38	4	7	19			
Metals																							
7429-90-5	Aluminum	mg/Kg	5010	9.37	21.6	43.2				5620	9.58	22.1	44.2				4250	9.39	21.6	43.3			
7440-36-0	Antimony	mg/Kg	2.15	0.106	0.216	0.432				0.589	0.108	0.221	0.442				0.713	0.106	0.216	0.433			
7440-38-2	Arsenic	mg/Kg	7.96	0.159	0.432	0.864				8.1	0.163	0.442	0.883				4.85	0.16	0.433	0.865			
7440-39-3	Barium	mg/Kg	45.9	0.0356	0.135	1.08				26.1	0.0364	0.138	1.1				28.5	0.0357	0.135	1.08			
7440-41-7	Beryllium	mg/Kg	0.31	0.0724	0.27	1.08	J			0.502	0.074	0.276	1.1	J			0.148	0.0725	0.27	1.08	J		
7440-43-9	Cadmium	mg/Kg	0.359	0.0529	0.135	1.08	J			0.258	0.0541	0.138	1.1	J			0.133	0.053	0.135	1.08	J		
7440-70-2	Calcium	mg/Kg	615	6.11	21.6	43.2				771	6.25	22.1	44.2				623	6.12	21.6	43.3			
7440-47-3	Chromium	mg/Kg	24.2	0.151	0.405	3.24		B	o	26	0.155	0.414	3.31		B	o	8.16	0.151	0.406	3.24		B	o
7440-48-4	Cobalt	mg/Kg	3.71	0.0434	0.108	0.216				5.71	0.0444	0.11	0.221				1.89	0.0435	0.108	0.216			
7440-50-8	Copper	mg/Kg	73.4	0.248	0.54	2.16				9.41	0.254	0.552	2.21				11.4	0.249	0.541	2.16			
7439-89-6	Iron	mg/Kg	23100	4.45	10.8	43.2				20000	4.55	11	44.2				6190	4.46	10.8	43.3			
7439-92-1	Lead	mg/Kg	130	0.594	1.62	3.24		B	o	20	0.607	1.66	3.31		B	o	24.1	0.595	1.62	3.24		B	o
7439-95-4	Magnesium	mg/Kg	621	2.05	5.4	21.6				1390	2.1	5.52	22.1				294	2.06	5.41	21.6			
7439-96-5	Manganese	mg/Kg	96.1	0.0896	0.27	1.08				103	0.0916	0.276	1.1				46.9	0.0898	0.27	1.08			
7439-97-6	Mercury	mg/Kg	0.739	0.0109	0.0182	0.109				0.0488	0.0113	0.0188	0.113	J			0.236	0.0111	0.0184	0.111			

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-0'-0.5'							IAL4-8TR-0'-0.5'							IAL4-9TR-0'-0.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975996							8975998							8976000						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-02-0	Nickel	mg/Kg	189	0.324	0.54	2.16				5.85	0.331	0.552	2.21				3.25	0.324	0.541	2.16			
7440-09-7	Potassium	mg/Kg	911	25.8	54	108				2150	26.4	55.2	110				380	25.9	54.1	108			
7782-49-2	Selenium	mg/Kg	2.16	0.972	2.16	4.32	U			2.21	0.994	2.21	4.42	U			2.16	0.973	2.16	4.33	U		
7440-22-4	Silver	mg/Kg	0.832	0.162	0.54	1.08	J			0.214	0.166	0.552	1.1	J			0.541	0.162	0.541	1.08	U		
7440-23-5	Sodium	mg/Kg	30.5	25.8	54	216	J			55.2	26.4	55.2	221	U			54.1	25.9	54.1	216	U		
7440-28-0	Thallium	mg/Kg	0.129	0.0313	0.054	0.216	J			0.148	0.032	0.0552	0.221	J			0.133	0.0314	0.0541	0.216	J		
7440-62-2	Vanadium	mg/Kg	18.9	0.151	0.54	1.08				26.1	0.155	0.552	1.1				19.5	0.151	0.541	1.08			
7440-66-6	Zinc	mg/Kg	99.4	0.734	1.08	4.32				33.1	0.751	1.1	4.42				23	0.735	1.08	4.33			
18540-29-9	Hexavalent Chromium	mg/Kg	1.7	0.16	0.45	0.45				0.48	0.17	0.48	0.48	U			0.44	0.15	0.44	0.44	U		
TPH																							
PHCGC6C10	TPH-GRO soil C6-C10	ug/Kg	3700	2400	4800	12000	J			700	400	700	1800	U			27000	14000	27000	68000	U		
PHCDC10C2	DRO C10-C28 8015C/D (Microwv)	ug/Kg	120000	4400	8800	13000				42000	4500	9100	14000				87000	4400	8900	13000			

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-0'-0.5'							IAL4-11TR-0'-0.5'							IAL4-11TR-0'-0.5'-DUP						
			5/1/2017							5/2/2017							5/2/2017						
			8976002							8976004							8976015						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
VOCs																							
630-20-6	1,1,1,2-Tetrachloroethane	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	i	4	2	4	9	U	UJ	i
71-55-6	1,1,1-Trichloroethane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/Kg	7	4	7	18	U			6	3	6	15	U			8	4	8	19	U		
79-00-5	1,1,2-Trichloroethane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
75-34-3	1,1-Dichloroethane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
75-35-4	1,1-Dichloroethene	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
563-58-6	1,1-Dichloropropene	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
87-61-6	1,2,3-Trichlorobenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	m	4	2	4	9	U	UJ	i
96-18-4	1,2,3-Trichloropropane	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	i	4	2	4	9	U	UJ	i
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	m	4	2	4	9	U	UJ	i
95-63-6	1,2,4-Trimethylbenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U	UJ	i
96-12-8	1,2-Dibromo-3-chloropropane	ug/Kg	7	4	7	9	U			6	3	6	7	U	UJ	i	8	4	8	9	U	UJ	i
106-93-4	1,2-Dibromoethane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	m	4	2	4	9	U	UJ	i
107-06-2	1,2-Dichloroethane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
540-59-0	1,2-Dichloroethene (Total)	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
78-87-5	1,2-Dichloropropane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
108-67-8	1,3,5-Trimethylbenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U	UJ	i
541-73-1	1,3-Dichlorobenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U	UJ	i
142-28-9	1,3-Dichloropropane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U	UJ	i
123-91-1	1,4-Dioxane	ug/Kg	360	130	360	460	U			290	100	290	370	U			380	130	380	470	U		
594-20-7	2,2-Dichloropropane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
78-93-3	2-Butanone	ug/Kg	15	7	15	18	J	J	c	24	6	12	15		J	c	14	8	15	19	J	J	c
95-49-8	2-Chlorotoluene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U	UJ	i
591-78-6	2-Hexanone	ug/Kg	15	5	15	18	U			12	4	12	15	U			15	6	15	19	U		
106-43-4	4-Chlorotoluene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U	UJ	i

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-0'-0.5'							IAL4-11TR-0'-0.5'							IAL4-11TR-0'-0.5'-DUP						
			5/1/2017							5/2/2017							5/2/2017						
			8976002							8976004							8976015						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/Kg	15	5	15	18	U			12	4	12	15	U			15	6	15	19	U		
67-64-1	Acetone	ug/Kg	220	13	29	36				690	10	24	29		J	f	330	13	30	38		J	f
71-43-2	Benzene	ug/Kg	4	0.9	4	9	U			3	0.7	3	7	U	UJ	s	4	0.9	4	9	U		
108-86-1	Bromobenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U	UJ	i
74-97-5	Bromochloromethane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
75-27-4	Bromodichloromethane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
75-25-2	Bromoform	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
74-83-9	Bromomethane	ug/Kg	7	4	7	9	U			6	3	6	7	U			8	4	8	9	U		
75-15-0	Carbon Disulfide	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
56-23-5	Carbon tetrachloride	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
108-90-7	Chlorobenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U		
124-48-1	Chlorodibromomethane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
75-00-3	Chloroethane	ug/Kg	7	4	7	9	U			6	3	6	7	U			8	4	8	9	U		
67-66-3	Chloroform	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
74-87-3	Chloromethane	ug/Kg	7	4	7	9	U			6	3	6	7	U			8	4	8	9	U		
156-59-2	cis-1,2-Dichloroethene	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
10061-01-5	cis-1,3-Dichloropropene	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
110-82-7	Cyclohexane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
74-95-3	Dibromomethane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
75-71-8	Dichlorodifluoromethane	ug/Kg	7	4	7	9	U			6	3	6	7	U			8	4	8	9	U		
64-17-5	Ethanol	ug/Kg	460	180	460	910	U			370	150	370	730	U			240	190	470	950	J		
100-41-4	Ethylbenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U		
87-68-3	Hexachlorobutadiene	ug/Kg	7	4	7	9	U			6	3	6	7	U	UJ	m	8	4	8	9	U	UJ	i
98-82-8	Isopropylbenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	5	2	4	9	J		
179601-23-1	m,p-Xylene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U		
79-20-9	Methyl acetate	ug/Kg	5	4	7	9	J			11	3	6	7		J	m	5	4	8	9	J		
1634-04-4	Methyl tert-butyl Ether	ug/Kg	4	0.9	4	9	U			3	0.7	3	7	U			4	0.9	4	9	U		
108-87-2	Methylcyclohexane	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
75-09-2	Methylene chloride	ug/Kg	7	4	7	9	U			6	3	6	7	U			8	4	8	9	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-0'-0.5'							IAL4-11TR-0'-0.5'							IAL4-11TR-0'-0.5'-DUP						
			5/1/2017							5/2/2017							5/2/2017						
			8976002							8976004							8976015						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
91-20-3	Naphthalene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	m	4	2	4	9	U	UJ	i
104-51-8	n-Butylbenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	m	4	2	4	9	U	UJ	i
103-65-1	n-Propylbenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U	UJ	i
95-47-6	o-Xylene	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
99-87-6	p-Isopropyltoluene	ug/Kg	4	2	4	9	U			7	1	3	7	J	J	m	17	2	4	9		J	i
135-98-8	sec-Butylbenzene	ug/Kg	2	2	4	9	J			3	1	3	7	U	UJ	s	4	2	4	9	U	UJ	i
100-42-5	Styrene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	m	4	2	4	9	U		
75-65-0	t-Butanol	ug/Kg	73	36	73	180	U			59	29	59	150	U			38	38	76	190	J		
98-06-6	tert-Butylbenzene	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U	UJ	i
127-18-4	Tetrachloroethene	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
108-88-3	Toluene	ug/Kg	4	2	4	9	U			4	1	3	7	J	J	m	5	2	4	9	J		
156-60-5	trans-1,2-Dichloroethene	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
10061-02-6	trans-1,3-Dichloropropene	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
79-01-6	Trichloroethene	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
75-69-4	Trichlorofluoromethane	ug/Kg	7	4	7	9	U			6	3	6	7	U			8	4	8	9	U		
75-01-4	Vinyl chloride	ug/Kg	4	2	4	9	U			3	1	3	7	U			4	2	4	9	U		
1330-20-7	Xylene (total)	ug/Kg	4	2	4	9	U			3	1	3	7	U	UJ	s	4	2	4	9	U		
SVOCs																							
92-52-4	1,1'-Biphenyl	ug/Kg	25	20	40	40	J			41	21	41	41	U	UJ	m	200	99	200	200	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
122-66-7	1,2-Diphenylhydrazine	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	s	200	99	200	200	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	s	200	99	200	200	U		
123-91-1	1,4-Dioxane	ug/Kg	400	120	400	400	U			410	120	410	410	U	UJ	m	2000	590	2000	2000	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/Kg	160	79	160	200	U			160	82	160	210	U	UJ	m	790	390	790	990	U		
95-95-4	2,4,5-Trichlorophenol	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-0'-0.5'							IAL4-11TR-0'-0.5'							IAL4-11TR-0'-0.5'-DUP						
			5/1/2017							5/2/2017							5/2/2017						
			8976002							8976004							8976015						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
88-06-2	2,4,6-Trichlorophenol	ug/Kg	40	20	40	40	U			41	21	41	41	U			200	99	200	200	U		
120-83-2	2,4-Dichlorophenol	ug/Kg	40	20	40	40	U			41	21	41	41	U			200	99	200	200	U		
105-67-9	2,4-Dimethylphenol	ug/Kg	40	20	40	40	U			41	21	41	41	U			200	99	200	200	U		
51-28-5	2,4-Dinitrophenol	ug/Kg	1200	360	1200	1200	U			1200	370	1200	1200	U			5900	1800	5900	5900	U	R	m
121-14-2	2,4-Dinitrotoluene	ug/Kg	160	79	160	200	U			160	82	160	210	U	UJ	m	790	390	790	990	U		
87-65-0	2,6-Dichlorophenol	ug/Kg	40	20	40	40	U			41	21	41	41	U			200	99	200	200	U	R	m
606-20-2	2,6-Dinitrotoluene	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
91-58-7	2-Chloronaphthalene	ug/Kg	16	8	16	39	U			16	8	16	41	U	UJ	m	79	39	79	200	U		
95-57-8	2-Chlorophenol	ug/Kg	40	20	40	40	U			41	21	41	41	U			200	99	200	200	U		
91-57-6	2-Methylnaphthalene	ug/Kg	210	4	8	20				120	4	8	21		J	m	220	20	39	100			
95-48-7	2-Methylphenol	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
88-74-4	2-Nitroaniline	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
88-75-5	2-Nitrophenol	ug/Kg	40	20	40	40	U			41	21	41	41	U			200	99	200	200	U		
91-94-1	3,3'-Dicholorobenzidine	ug/Kg	400	120	400	400	U	R	m	410	120	410	410	U	R	m	2000	590	2000	2000	U	R	m
106-44-5	3+4-Methylphenol	ug/Kg	40	20	40	40	U			22	21	41	41	J			200	99	200	200	U		
99-09-2	3-Nitroaniline	ug/Kg	160	79	160	200	U			160	82	160	210	U	UJ	s	790	390	790	990	U	R	m
534-52-1	4,6-Dinitro-2-methylphenol	ug/Kg	600	200	600	600	U			620	210	620	620	U			3000	990	3000	3000	U	R	m
101-55-3	4-Bromophenyl-phenylether	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
59-50-7	4-Chloro-3-methylphenol	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
106-47-8	4-Chloroaniline	ug/Kg	79	40	79	79	U	R	m	82	41	82	82	U	R	m	390	200	390	390	U	R	m
7005-72-3	4-Chlorophenyl-phenyl ether	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
100-01-6	4-Nitroaniline	ug/Kg	160	79	160	200	U	R	m	160	82	160	210	U	R	m	790	390	790	990	U	R	m
100-02-7	4-Nitrophenol	ug/Kg	600	200	600	600	U			620	210	620	620	U			3000	990	3000	3000	U		
83-32-9	Acenaphthene	ug/Kg	7	4	8	20	J			8	4	8	21	U	UJ	m	27	20	39	100	J		
208-96-8	Acenaphthylene	ug/Kg	8	4	8	20	J			18	4	8	21	J	J	s	80	20	39	100	J		
98-86-2	Acetophenone	ug/Kg	40	20	40	40	U			53	21	41	41		J	s	200	99	200	200	U		
120-12-7	Anthracene	ug/Kg	18	4	8	20	J			20	4	8	21	J	J	m	62	20	39	100	J		
1912-24-9	Atrazine	ug/Kg	160	40	160	200	U			160	41	160	210	U	UJ	m	790	200	790	990	U		
100-52-7	Benzaldehyde	ug/Kg	160	79	160	200	U			210	82	160	210				790	390	790	990	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-0'-0.5'							IAL4-11TR-0'-0.5'							IAL4-11TR-0'-0.5'-DUP						
			5/1/2017							5/2/2017							5/2/2017						
			8976002							8976004							8976015						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
92-87-5	Benzidine	ug/Kg	600	300	600	600	U	R	m	620	310	620	620	U	R	m	3000	1500	3000	3000	U	R	m
50-32-8	Benzo(a) pyrene	ug/Kg	62	4	8	20				48	4	8	21		J	m	210	20	39	100			
56-55-3	Benzo(a)anthracene	ug/Kg	77	4	8	20				56	4	8	21		J	m	230	20	39	100			
205-99-2	Benzo(b) fluoranthene	ug/Kg	130	4	8	20				120	4	8	21		J	m	310	20	39	100			
191-24-2	Benzo(g,h,i) perylene	ug/Kg	57	4	8	20				44	4	8	21		J	m	180	20	39	100			
207-08-9	Benzo(k) fluoranthene	ug/Kg	50	4	8	20				32	4	8	21		J	m	160	20	39	100			
65-85-0	Benzoic acid	ug/Kg	600	200	600	600	U			4600	210	620	620				5000	990	3000	3000			
100-51-6	Benzyl alcohol	ug/Kg	600	200	600	600	U			620	210	620	620	U			3000	990	3000	3000	U		
111-91-1	Bis(2-chloroethoxy) methane	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	s	200	99	200	200	U		
111-44-4	Bis(2-chloroethyl) ether	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	s	200	99	200	200	U		
39638-32-9	Bis(2-chloroisopropyl) ether	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	s	200	99	200	200	U		
117-81-7	Bis(2-ethylhexyl) phthalate	ug/Kg	590	79	160	200				160	82	160	210	U	UJ	m	790	390	790	1000	U		
85-68-7	Butylbenzylphthalate	ug/Kg	160	79	160	200	U			160	82	160	210	U	UJ	m	790	390	790	990	U		
105-60-2	Caprolactam	ug/Kg	160	40	160	200	U			160	41	160	210	U	UJ	m	790	200	790	990	U		
86-74-8	Carbazole	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
218-01-9	Chrysene	ug/Kg	100	4	8	20				100	4	8	21		J	m	320	20	39	100		J	f
53-70-3	Dibenzo(a,h) anthracene	ug/Kg	22	4	8	20				16	4	8	21	J	J	m	49	20	39	100	J		
132-64-9	Dibenzofuran	ug/Kg	36	20	40	40	J			34	21	41	41	J	J	m	200	99	200	200	U		
84-66-2	Diethylphthalate	ug/Kg	160	79	160	200	U			160	82	160	210	U	UJ	s	790	390	790	990	U		
131-11-3	Dimethylphthalate	ug/Kg	160	79	160	200	U			160	82	160	210	U	UJ	s	790	390	790	990	U		
84-74-2	Di-n-butylphthalate	ug/Kg	160	79	160	200	U			160	82	160	210	U	UJ	m	790	390	790	990	U		
117-84-0	Di-n-octylphthalate	ug/Kg	160	79	160	200	U			160	82	160	210	U	UJ	m	790	390	790	990	U		
88-85-7	Dinoseb	ug/Kg	600	200	600	600	U			620	210	620	620	U			3000	990	3000	3000	U	R	m
206-44-0	Fluoranthene	ug/Kg	90	4	8	20				85	4	8	21		J	m	300	20	39	100		J	f
86-73-7	Fluorene	ug/Kg	16	4	8	20	J			8	4	8	21	U	UJ	m	30	20	39	100	J		
118-74-1	Hexachlorobenzene	ug/Kg	8	4	8	20	U			8	4	8	21	U	UJ	m	39	20	39	100	U		
87-68-3	Hexachlorobutadiene	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
77-47-4	Hexachlorocyclopentadiene	ug/Kg	600	200	600	600	U	R	m	620	210	620	620	U	R	m	3000	990	3000	3000	U	R	m
67-72-1	Hexachloroethane	ug/Kg	160	40	160	200	U			160	41	160	210	U	UJ	m	790	200	790	990	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-0'-0.5'							IAL4-11TR-0'-0.5'							IAL4-11TR-0'-0.5'-DUP						
			5/1/2017							5/2/2017							5/2/2017						
			8976002							8976004							8976015						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
193-39-5	Indeno(1,2,3,-cd) pyrene	ug/Kg	53	4	8	20				38	4	8	21		J	m	140	20	39	100			
78-59-1	Isophorone	ug/Kg	40	20	40	40	U			41	21	41	41	U			200	99	200	200	U		
91-20-3	Naphthalene	ug/Kg	130	4	8	20				92	4	8	21		J	m	170	20	39	100			
98-95-3	Nitrobenzene	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	s	200	99	200	200	U		
62-75-9	N-Nitrosodimethylamine	ug/Kg	160	79	160	200	U			160	82	160	210	U	UJ	s	790	390	790	990	U		
621-64-7	N-Nitroso-di-n propylamine	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	s	200	99	200	200	U		
86-30-6	N-Nitrosodiphenylamine	ug/Kg	40	20	40	40	U			41	21	41	41	U	UJ	m	200	99	200	200	U		
930-55-2	N-Nitrosopyrrolidine	ug/Kg	40	20	40	40	U			41	21	41	41	U			200	99	200	200	U	R	m
87-86-5	Pentachlorophenol	ug/Kg	160	40	160	200	U			160	41	160	210	U			790	200	790	1000	U		
85-01-8	Phenanthrene	ug/Kg	120	4	8	20				88	4	8	21		J	m	250	20	39	100			
108-95-2	Phenol	ug/Kg	40	20	40	40	U			41	21	41	41	U			200	99	200	200	U		
129-00-0	Pyrene	ug/Kg	86	4	8	20				93	4	8	21		J	m	340	20	39	100		J	f
Metals																							
7429-90-5	Aluminum	mg/Kg	3900	9.43	21.7	43.4				4360	8.98	20.7	41.4				4120	9.57	22	44.1		B	o
7440-36-0	Antimony	mg/Kg	0.894	0.107	0.217	0.434				1.83	0.102	0.207	0.414				1.19	0.108	0.22	0.441			
7440-38-2	Arsenic	mg/Kg	6.63	0.16	0.434	0.869				6.57	0.153	0.414	0.827		J+	m	5.72	0.163	0.441	0.882			
7440-39-3	Barium	mg/Kg	54.1	0.0358	0.136	1.09				37.2	0.0341	0.129	1.03				38.5	0.0364	0.138	1.1			
7440-41-7	Beryllium	mg/Kg	0.206	0.0728	0.272	1.09	J			0.194	0.0693	0.259	1.03	J			0.223	0.0739	0.276	1.1	J		
7440-43-9	Cadmium	mg/Kg	0.3	0.0532	0.136	1.09	J			0.238	0.0507	0.129	1.03	J			0.236	0.054	0.138	1.1	J		
7440-70-2	Calcium	mg/Kg	1060	6.15	21.7	43.4				1290	5.85	20.7	41.4		J+	m	1200	6.24	22	44.1			
7440-47-3	Chromium	mg/Kg	9.75	0.152	0.407	3.26		B	o	10.1	0.145	0.388	3.1		B	o	10.5	0.154	0.413	3.31		B	o
7440-48-4	Cobalt	mg/Kg	3.43	0.0437	0.109	0.217				3.39	0.0416	0.103	0.207				2.64	0.0443	0.11	0.22			
7440-50-8	Copper	mg/Kg	13.9	0.25	0.543	2.17				11.3	0.238	0.517	2.07				12.6	0.254	0.551	2.2			
7439-89-6	Iron	mg/Kg	12000	4.47	10.9	43.4				8540	4.26	10.3	41.4		J	b	9300	4.54	11	44.1		J	b
7439-92-1	Lead	mg/Kg	44.4	0.597	1.63	3.26		B	o	40.9	0.569	1.55	3.1		B	o	45.2	0.606	1.65	3.31		B	o
7439-95-4	Magnesium	mg/Kg	358	2.06	5.43	21.7				356	1.97	5.17	20.7		J+	m	363	2.09	5.51	22			
7439-96-5	Manganese	mg/Kg	44.7	0.0901	0.272	1.09				58.8	0.0859	0.259	1.03		J+	m	57.3	0.0915	0.276	1.1		J	b
7439-97-6	Mercury	mg/Kg	0.0854	0.0116	0.0193	0.116	J			0.0674	0.0125	0.0209	0.125	J			0.0602	0.0119	0.0198	0.119	J		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-0'-0.5'							IAL4-11TR-0'-0.5'							IAL4-11TR-0'-0.5'-DUP						
			5/1/2017							5/2/2017							5/2/2017						
			8976002							8976004							8976015						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-02-0	Nickel	mg/Kg	5.66	0.326	0.543	2.17				6.03	0.31	0.517	2.07				6.35	0.331	0.551	2.2			
7440-09-7	Potassium	mg/Kg	402	26	54.3	109				448	24.7	51.7	103		J+	m	412	26.3	55.1	110			
7782-49-2	Selenium	mg/Kg	2.17	0.978	2.17	4.34	U			2.07	0.931	2.07	4.14	U			2.2	0.992	2.2	4.41	U		
7440-22-4	Silver	mg/Kg	0.543	0.163	0.543	1.09	U			0.179	0.155	0.517	1.03	J			0.293	0.165	0.551	1.1	J		
7440-23-5	Sodium	mg/Kg	40	26	54.3	217	J			33.4	24.7	51.7	207	J			35.2	26.3	55.1	220	J		
7440-28-0	Thallium	mg/Kg	0.141	0.0315	0.0543	0.217	J			0.177	0.03	0.0517	0.207	J	J+	m	0.102	0.032	0.0551	0.22	J		
7440-62-2	Vanadium	mg/Kg	16.8	0.152	0.543	1.09				19.2	0.145	0.517	1.03				25.5	0.154	0.551	1.1			
7440-66-6	Zinc	mg/Kg	33	0.739	1.09	4.34				33.4	0.703	1.03	4.14		J+	m	33.1	0.75	1.1	4.41			
18540-29-9	Hexavalent Chromium	mg/Kg	0.47	0.17	0.47	0.47	U			0.52	0.18	0.52	0.52	U			0.46	0.16	0.46	0.46	U		
TPH																							
PHCGC6C1(	TPH-GRO soil C6-C10	ug/Kg	4000	3700	7500	19000	J			13000	6600	13000	33000	U			6300	6200	12000	31000	J		
PHCDC10C2	DRO C10-C28 8015C/D (Microwv)	ug/Kg	140000	4700	9400	14000				620000	25000	49000	74000		J-	m	300000	24000	47000	71000		J+	m

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-12TR-0'-0.5'							IAL4-13TP-1.5'-2'						
			5/2/2017							5/1/2017						
			8976012							8976013						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
VOCs																
630-20-6	1,1,1,2-Tetrachloroethane	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
71-55-6	1,1,1-Trichloroethane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/Kg	5	3	5	13	U			4	2	4	9	U		
79-00-5	1,1,2-Trichloroethane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
75-34-3	1,1-Dichloroethane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
75-35-4	1,1-Dichloroethene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
563-58-6	1,1-Dichloropropene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
87-61-6	1,2,3-Trichlorobenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
96-18-4	1,2,3-Trichloropropane	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
95-63-6	1,2,4-Trimethylbenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/Kg	5	2	5	6	U	UJ	i	4	2	4	5	U		
106-93-4	1,2-Dibromoethane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
107-06-2	1,2-Dichloroethane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
540-59-0	1,2-Dichloroethene (Total)	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
78-87-5	1,2-Dichloropropane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
108-67-8	1,3,5-Trimethylbenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
142-28-9	1,3-Dichloropropane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
123-91-1	1,4-Dioxane	ug/Kg	260	91	260	320	U			180	64	180	230	U		
594-20-7	2,2-Dichloropropane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
78-93-3	2-Butanone	ug/Kg	23	5	10	13				7	4	7	9	U		
95-49-8	2-Chlorotoluene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
591-78-6	2-Hexanone	ug/Kg	10	4	10	13	U			7	3	7	9	U		
106-43-4	4-Chlorotoluene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-12TR-0'-0.5'							IAL4-13TP-1.5'-2'						
			5/2/2017							5/1/2017						
			8976012							8976013						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/Kg	10	4	10	13	U			7	3	7	9	U		
67-64-1	Acetone	ug/Kg	460	9	21	26				40	6	15	18			
71-43-2	Benzene	ug/Kg	3	0.6	3	6	U			2	0.5	2	5	U		
108-86-1	Bromobenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
74-97-5	Bromochloromethane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
75-27-4	Bromodichloromethane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
75-25-2	Bromoform	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
74-83-9	Bromomethane	ug/Kg	5	3	5	6	U			4	2	4	5	U		
75-15-0	Carbon Disulfide	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
56-23-5	Carbon tetrachloride	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
108-90-7	Chlorobenzene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
124-48-1	Chlorodibromomethane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
75-00-3	Chloroethane	ug/Kg	5	3	5	6	U			4	2	4	5	U		
67-66-3	Chloroform	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
74-87-3	Chloromethane	ug/Kg	5	3	5	6	U			4	2	4	5	U		
156-59-2	cis-1,2-Dichloroethene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
10061-01-5	cis-1,3-Dichloropropene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
110-82-7	Cyclohexane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
74-95-3	Dibromomethane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
75-71-8	Dichlorodifluoromethane	ug/Kg	5	3	5	6	U			4	2	4	5	U		
64-17-5	Ethanol	ug/Kg	320	130	320	650	U			230	91	230	450	U		
100-41-4	Ethylbenzene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
87-68-3	Hexachlorobutadiene	ug/Kg	5	2	5	6	U	UJ	i	4	2	4	5	U		
98-82-8	Isopropylbenzene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
179601-23-1	m,p-Xylene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
79-20-9	Methyl acetate	ug/Kg	6	3	5	6	J			4	2	4	5	U		
1634-04-4	Methyl tert-butyl Ether	ug/Kg	3	0.6	3	6	U			2	0.5	2	5	U		
108-87-2	Methylcyclohexane	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
75-09-2	Methylene chloride	ug/Kg	5	3	5	6	U			4	2	4	5	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-12TR-0'-0.5'							IAL4-13TP-1.5'-2'						
			5/2/2017							5/1/2017						
			8976012							8976013						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
91-20-3	Naphthalene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
104-51-8	n-Butylbenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
103-65-1	n-Propylbenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
95-47-6	o-Xylene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
99-87-6	p-Isopropyltoluene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
135-98-8	sec-Butylbenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
100-42-5	Styrene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
75-65-0	t-Butanol	ug/Kg	52	26	52	130	U			36	18	36	91	U		
98-06-6	tert-Butylbenzene	ug/Kg	2	1	2	6	U	UJ	i	2	0.9	2	5	U		
127-18-4	Tetrachloroethene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
108-88-3	Toluene	ug/Kg	2	1	3	6	J			2	0.9	2	5	U		
156-60-5	trans-1,2-Dichloroethene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
10061-02-6	trans-1,3-Dichloropropene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
79-01-6	Trichloroethene	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
75-69-4	Trichlorofluoromethane	ug/Kg	5	3	5	6	U			4	2	4	5	U		
75-01-4	Vinyl chloride	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
1330-20-7	Xylene (total)	ug/Kg	3	1	3	6	U			2	0.9	2	5	U		
SVOCs																
92-52-4	1,1'-Biphenyl	ug/Kg	39	19	39	39	U			35	17	35	35	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/Kg	39	19	39	39	U			35	17	35	35	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	39	19	39	39	U			35	17	35	35	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	39	19	39	39	U			35	17	35	35	U		
122-66-7	1,2-Diphenylhydrazine	ug/Kg	39	19	39	39	U			35	17	35	35	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	39	19	39	39	U			35	17	35	35	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	39	19	39	39	U			35	17	35	35	U		
123-91-1	1,4-Dioxane	ug/Kg	390	120	390	390	U			350	100	350	350	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/Kg	160	78	160	190	U			140	70	140	170	U		
95-95-4	2,4,5-Trichlorophenol	ug/Kg	39	19	39	39	U			35	17	35	35	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-12TR-0'-0.5'							IAL4-13TP-1.5'-2'						
			5/2/2017							5/1/2017						
			8976012							8976013						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
88-06-2	2,4,6-Trichlorophenol	ug/Kg	39	19	39	39	U			35	17	35	35	U		
120-83-2	2,4-Dichlorophenol	ug/Kg	39	19	39	39	U			35	17	35	35	U		
105-67-9	2,4-Dimethylphenol	ug/Kg	39	19	39	39	U			35	17	35	35	U		
51-28-5	2,4-Dinitrophenol	ug/Kg	1200	350	1200	1200	U			1000	310	1000	1000	U		
121-14-2	2,4-Dinitrotoluene	ug/Kg	160	78	160	190	U			140	70	140	170	U		
87-65-0	2,6-Dichlorophenol	ug/Kg	39	19	39	39	U			35	17	35	35	U		
606-20-2	2,6-Dinitrotoluene	ug/Kg	39	19	39	39	U			35	17	35	35	U		
91-58-7	2-Chloronaphthalene	ug/Kg	16	8	16	38	U			14	7	14	34	U		
95-57-8	2-Chlorophenol	ug/Kg	39	19	39	39	U			35	17	35	35	U		
91-57-6	2-Methylnaphthalene	ug/Kg	77	4	8	20				9	3	7	18	J		
95-48-7	2-Methylphenol	ug/Kg	39	19	39	39	U			35	17	35	35	U		
88-74-4	2-Nitroaniline	ug/Kg	39	19	39	39	U			35	17	35	35	U		
88-75-5	2-Nitrophenol	ug/Kg	39	19	39	39	U			35	17	35	35	U		
91-94-1	3,3'-Dicholorobenzidine	ug/Kg	390	120	390	390	U	R	m	350	100	350	350	U	R	m
106-44-5	3+4-Methylphenol	ug/Kg	39	19	39	39	U			35	17	35	35	U		
99-09-2	3-Nitroaniline	ug/Kg	160	78	160	190	U			140	70	140	170	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/Kg	580	190	580	580	U			520	170	520	520	U		
101-55-3	4-Bromophenyl-phenylether	ug/Kg	39	19	39	39	U			35	17	35	35	U		
59-50-7	4-Chloro-3-methylphenol	ug/Kg	39	19	39	39	U			35	17	35	35	U		
106-47-8	4-Chloroaniline	ug/Kg	78	39	78	78	U	R	m	70	35	70	70	U	R	m
7005-72-3	4-Chlorophenyl-phenyl ether	ug/Kg	39	19	39	39	U			35	17	35	35	U		
100-01-6	4-Nitroaniline	ug/Kg	160	78	160	190	U	R	m	140	70	140	170	U	R	m
100-02-7	4-Nitrophenol	ug/Kg	580	190	580	580	U			520	170	520	520	U		
83-32-9	Acenaphthene	ug/Kg	8	4	8	20	U			7	3	7	18	U		
208-96-8	Acenaphthylene	ug/Kg	4	4	8	20	J			19	3	7	18			
98-86-2	Acetophenone	ug/Kg	35	19	39	39	J			35	17	35	35	U		
120-12-7	Anthracene	ug/Kg	7	4	8	20	J			9	3	7	18	J		
1912-24-9	Atrazine	ug/Kg	160	39	160	190	U			140	35	140	170	U		
100-52-7	Benzaldehyde	ug/Kg	190	78	160	190	J			140	70	140	170	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-12TR-0'-0.5'							IAL4-13TP-1.5'-2'						
			5/2/2017							5/1/2017						
			8976012							8976013						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
92-87-5	Benzidine	ug/Kg	580	290	580	580	U	R	m	520	260	520	520	U	R	m
50-32-8	Benzo(a) pyrene	ug/Kg	22	4	8	20				16	3	7	18	J		
56-55-3	Benzo(a)anthracene	ug/Kg	26	4	8	20				16	3	7	18	J		
205-99-2	Benzo(b) fluoranthene	ug/Kg	47	4	8	20				24	3	7	18			
191-24-2	Benzo(g,h,i) perylene	ug/Kg	21	4	8	20				12	3	7	18	J		
207-08-9	Benzo(k) fluoranthene	ug/Kg	16	4	8	20	J			7	3	7	18	J		
65-85-0	Benzoic acid	ug/Kg	320	190	580	580	J			520	170	520	520	U		
100-51-6	Benzyl alcohol	ug/Kg	580	190	580	580	U			520	170	520	520	U		
111-91-1	Bis(2-chloroethoxy) methane	ug/Kg	39	19	39	39	U			35	17	35	35	U		
111-44-4	Bis(2-chloroethyl) ether	ug/Kg	39	19	39	39	U			35	17	35	35	U		
39638-32-9	Bis(2-chloroisopropyl) ether	ug/Kg	39	19	39	39	U			35	17	35	35	U		
117-81-7	Bis(2-ethylhexyl) phthalate	ug/Kg	160	78	160	200	U			140	70	140	180	U		
85-68-7	Butylbenzylphthalate	ug/Kg	160	78	160	190	U			140	70	140	170	U		
105-60-2	Caprolactam	ug/Kg	160	39	160	190	U			140	35	140	170	U		
86-74-8	Carbazole	ug/Kg	39	19	39	39	U			35	17	35	35	U		
218-01-9	Chrysene	ug/Kg	47	4	8	20				24	3	7	18			
53-70-3	Dibenzo(a,h) anthracene	ug/Kg	8	4	8	20	J			4	3	7	18	J		
132-64-9	Dibenzofuran	ug/Kg	20	19	39	39	J			35	17	35	35	U		
84-66-2	Diethylphthalate	ug/Kg	160	78	160	190	U			140	70	140	170	U		
131-11-3	Dimethylphthalate	ug/Kg	160	78	160	190	U			140	70	140	170	U		
84-74-2	Di-n-butylphthalate	ug/Kg	160	78	160	190	U			140	70	140	170	U		
117-84-0	Di-n-octylphthalate	ug/Kg	160	78	160	190	U			140	70	140	170	U		
88-85-7	Dinoseb	ug/Kg	580	190	580	580	U			520	170	520	520	U		
206-44-0	Fluoranthene	ug/Kg	42	4	8	20				12	3	7	18	J		
86-73-7	Fluorene	ug/Kg	8	4	8	20	U			7	3	7	18	U		
118-74-1	Hexachlorobenzene	ug/Kg	8	4	8	20	U			7	3	7	18	U		
87-68-3	Hexachlorobutadiene	ug/Kg	39	19	39	39	U			35	17	35	35	U		
77-47-4	Hexachlorocyclopentadiene	ug/Kg	580	190	580	580	U	R	m	520	170	520	520	U	R	m
67-72-1	Hexachloroethane	ug/Kg	160	39	160	190	U			140	35	140	170	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-12TR-0'-0.5'							IAL4-13TP-1.5'-2'						
			5/2/2017							5/1/2017						
			8976012							8976013						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
193-39-5	Indeno(1,2,3,-cd) pyrene	ug/Kg	16	4	8	20	J			10	3	7	18	J		
78-59-1	Isophorone	ug/Kg	39	19	39	39	U			35	17	35	35	U		
91-20-3	Naphthalene	ug/Kg	59	4	8	20				7	3	7	18	J		
98-95-3	Nitrobenzene	ug/Kg	39	19	39	39	U			35	17	35	35	U		
62-75-9	N-Nitrosodimethylamine	ug/Kg	160	78	160	190	U			140	70	140	170	U		
621-64-7	N-Nitroso-di-n propylamine	ug/Kg	39	19	39	39	U			35	17	35	35	U		
86-30-6	N-Nitrosodiphenylamine	ug/Kg	39	19	39	39	U			35	17	35	35	U		
930-55-2	N-Nitrosopyrrolidine	ug/Kg	39	19	39	39	U			35	17	35	35	U		
87-86-5	Pentachlorophenol	ug/Kg	160	39	160	200	U			140	35	140	180	U		
85-01-8	Phenanthrene	ug/Kg	61	4	8	20				12	3	7	18	J		
108-95-2	Phenol	ug/Kg	39	19	39	39	U			35	17	35	35	U		
129-00-0	Pyrene	ug/Kg	39	4	8	20				21	3	7	18			
Metals																
7429-90-5	Aluminum	mg/Kg	5200	8.46	19.5	39				3050	7.73	17.8	35.6			
7440-36-0	Antimony	mg/Kg	0.649	0.0957	0.195	0.39				0.207	0.0874	0.178	0.356	J		
7440-38-2	Arsenic	mg/Kg	4.22	0.144	0.39	0.78				4.12	0.131	0.356	0.712			
7440-39-3	Barium	mg/Kg	38.4	0.0322	0.122	0.975				14.3	0.0294	0.111	0.89			
7440-41-7	Beryllium	mg/Kg	0.191	0.0653	0.244	0.975	J			0.0926	0.0596	0.223	0.89	J		
7440-43-9	Cadmium	mg/Kg	0.315	0.0478	0.122	0.975	J			0.057	0.0436	0.111	0.89	J		
7440-70-2	Calcium	mg/Kg	1150	5.52	19.5	39				44	5.04	17.8	35.6			
7440-47-3	Chromium	mg/Kg	11.1	0.136	0.365	2.92		B	o	7.32	0.125	0.334	2.67		B	o
7440-48-4	Cobalt	mg/Kg	1.53	0.0392	0.0975	0.195				0.553	0.0358	0.089	0.178			
7440-50-8	Copper	mg/Kg	16.4	0.224	0.487	1.95				17.9	0.205	0.445	1.78			
7439-89-6	Iron	mg/Kg	7750	4.02	9.75	39				15100	3.67	8.9	35.6			
7439-92-1	Lead	mg/Kg	37	0.536	1.46	2.92		B	o	8.99	0.49	1.34	2.67		B	o
7439-95-4	Magnesium	mg/Kg	343	1.85	4.87	19.5				170	1.69	4.45	17.8			
7439-96-5	Manganese	mg/Kg	89.2	0.0809	0.244	0.975				14.7	0.0739	0.223	0.89			
7439-97-6	Mercury	mg/Kg	0.0775	0.0115	0.0192	0.115	J			0.0167	0.01	0.0167	0.1	U		

Table 4-1a: 2017 Surface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-12TR-0'-0.5'							IAL4-13TP-1.5'-2'						
			5/2/2017							5/1/2017						
			8976012							8976013						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-02-0	Nickel	mg/Kg	4.98	0.292	0.487	1.95				0.952	0.267	0.445	1.78	J		
7440-09-7	Potassium	mg/Kg	702	23.3	48.7	97.5				223	21.3	44.5	89			
7782-49-2	Selenium	mg/Kg	1.95	0.877	1.95	3.9	U			1.78	0.801	1.78	3.56	U		
7440-22-4	Silver	mg/Kg	0.487	0.146	0.487	0.975	U			0.158	0.134	0.445	0.89	J		
7440-23-5	Sodium	mg/Kg	30.2	23.3	48.7	195	J			44.5	21.3	44.5	178	U		
7440-28-0	Thallium	mg/Kg	0.147	0.0283	0.0487	0.195	J			0.0777	0.0258	0.0445	0.178	J		
7440-62-2	Vanadium	mg/Kg	18.6	0.136	0.487	0.975				9.29	0.125	0.445	0.89			
7440-66-6	Zinc	mg/Kg	50	0.663	0.975	3.9				5.15	0.605	0.89	3.56			
18540-29-9	Hexavalent Chromium	mg/Kg	0.61	0.16	0.46	0.46				0.81	0.15	0.43	0.43			
TPH																
PHCGC6C10	TPH-GRO soil C6-C10	ug/Kg	3400	2300	4500	11000	J			500	200	400	1000	J		
PHCDC10C2	DRO C10-C28 8015C/D (Microwv)	ug/Kg	150000	4600	9300	14000				8400	4200	8400	13000	U		

Table 4-1b: 2017 Surface Soil Analytical Results for PCBs at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-0'-0.5'							IAL4-10TR-0'-0.5'							IAL4-13TP-1.5'-2'						
			5/1/2017							5/1/2017							5/1/2017						
			8975996							8976002							8976013						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
12674-11-2	PCB-1016	ug/Kg	11	4	11	19	U			12	4.3	12	20	U			10	3.8	10	18	U		
11104-28-2	PCB-1221	ug/Kg	11	5.1	11	19	U			12	5.5	12	20	U			10	4.8	10	18	U		
11141-16-5	PCB-1232	ug/Kg	18	8.8	18	19	U			19	9.5	19	20	U			17	8.4	17	18	U		
53469-21-9	PCB-1242	ug/Kg	11	3.6	11	19	U			12	3.9	12	20	U			10	3.5	10	18	U		
12672-29-6	PCB-1248	ug/Kg	11	3.6	11	19	U			12	3.9	12	20	U			10	3.5	10	18	U		
11097-69-1	PCB-1254	ug/Kg	11	3.6	11	19	U			12	3.9	12	20	U			10	3.5	10	18	U		
11096-82-5	PCB-1260	ug/Kg	55	5.4	11	19				170	5.8	12	20		J-	m	10	5.1	10	18	U		
37324-23-5	PCB-1262	ug/Kg	11	3.6	11	19	U			12	3.9	12	20	U			10	3.5	10	18	U		
11100-14-4	PCB-1268	ug/Kg	11	3.6	11	19	U			12	3.9	12	20	U			10	3.5	10	18	U		

Table 4-1c: 2017 Surface Soil Analytical Results for Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-13TP-1.5'-2'						
			5/1/2017						
			8976013						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC
35822-46-9	1234678-HpCDD	ng/Kg	5.5	0.516	1.03	5.16			
67562-39-4	1234678-HpCDF	ng/Kg	1.03	0.31	1.03	5.16	U		
55673-89-7	1234789-HpCDF	ng/Kg	1.03	0.413	1.03	5.16	U		
39227-28-6	123478-HxCDD	ng/Kg	1.03	0.31	1.03	5.16	U		
70648-26-9	123478-HxCDF	ng/Kg	1.03	0.31	1.03	5.16	U		
57653-85-7	123678-HxCDD	ng/Kg	1.03	0.413	1.03	5.16	U		
57117-44-9	123678-HxCDF	ng/Kg	1.03	0.31	1.03	5.16	U		
19408-74-3	123789-HxCDD	ng/Kg	1.03	0.31	1.03	5.16	U		
72918-21-9	123789-HxCDF	ng/Kg	1.03	0.516	1.03	5.16	U		
40321-76-4	12378-PeCDD	ng/Kg	1.03	0.413	1.03	5.16	U		
57117-41-6	12378-PeCDF	ng/Kg	1.03	0.413	1.03	5.16	U		
60851-34-5	234678-HxCDF	ng/Kg	1.03	0.31	1.03	5.16	U		
57117-31-4	23478-PeCDF	ng/Kg	1.03	0.31	1.03	5.16	U		
1746-01-6	2378-TCDD	ng/Kg	0.207	0.103	0.207	1.03	U		
51207-31-9	2378-TCDF	ng/Kg	0.207	0.103	0.207	1.03	U		
3268-87-9	OCDD	ng/Kg	734	1.03	2.07	10.3			
39001-02-0	OCDF	ng/Kg	2.07	0.516	2.07	10.3	U		
TEQWHO05-0.0	TEQ WHO 2005 - EDLx0.0	ng/Kg	0.275						
TEQWHO05-0.5	TEQ WHO 2005 - EDLx0.5	ng/Kg	0.719						
37871-00-4	Total HpCDD	ng/Kg	12.3	0.516	1.03	5.16			
38998-75-3	Total HpCDF	ng/Kg	1.03	0.413	1.03	5.16	U		
34465-46-8	Total HxCDD	ng/Kg	0.462	0.413	1.03	5.16	J		
55684-94-1	Total HxCDF	ng/Kg	1.03	0.516	1.03	5.16	U		
36088-22-9	Total PeCDD	ng/Kg	1.03	0.413	1.03	5.16	U		
30402-15-4	Total PeCDF	ng/Kg	1.03	0.413	1.03	5.16	U		
41903-57-5	Total TCDD	ng/Kg	0.207	0.103	0.207	1.03	U		
55722-27-5	Total TCDF	ng/Kg	0.136	0.103	0.207	1.03	J		

Acronyms and Abreviations

The following apply to the Chemical Data Tables

Laboratory Flag Qualifiers and Definitions

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value ≥ the Method Detection Limit (MDL) or Detection Limit (DL) and < the Limit of Quantitation (LOQ) or Reporting Limit (RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
u	Analyte was not detected at the value indicated
v	Concentration difference between the primary and confirmation column >100%. The RL is raised due to this disparity and evident interference.
w	The dissolved oxygen (DO) uptake for the unseeded blank is greater than 0.2 mg/L (milligrams per liter)
z	Laboratory Defined - see analysis report

Data Qualifying Codes

Two types of data qualifying codes or flags are applied in the course of the data review. The data validation flags indicate data that are not usable for decision making, more than normally biased and/or variable, or not representative of field conditions. These codes and their definitions are presented below in the hierarchy stipulated in the United States Environmental Protection Agency (EPA) *Contract Laboratory Program National Functional Guidelines for Organic Data Review* (August 2014) and the *EPA Region III Modifications to National Functional Guidelines for Organic Data Review* (September 1994) for blank qualifications only.

Data Validation Flags

Flag	Interpretation
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
B	The analyte was analyzed for, but not detected at a level greater than or equal to the level of the adjusted DL for sample and method.
J+	Reported value may not be accurate or precise, but the result may be biased high.
J-	Reported value may not be accurate or precise, but the result may be biased low.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (because either the quality of the data generated failed to meet certain quality control (QC) criteria, or the concentration of the analyte was below the Limit of Detection [LOD]).
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

Acronyms and Abreviations

The other type of code used by the data validator is a "Reason Code." The reason code indicates the type of QC failure that led to the application of the data validation flag.

Reason Codes

GC/MS Organics		GC and high performance liquid chromatography (HPLC) Organics		Inorganics and Conventionals	
Code	Interpretation	Code	Interpretation	Code	Interpretation
a	Incorrect or incomplete analytical sequence	a	Incorrect or incomplete analytical sequence	a	Incorrect or incomplete analytical sequence
b	Bubble found in vial >6millimeters	b	Instrument performance failure	b	Laboratory duplicate imprecision
c	Calibration failure; poor or unstable response	c	Calibration failure; poor or unstable response	c	Calibration failure
d	matrix spike/matrix spike duplicate (MS/MSD) imprecision	d	MS/MSD imprecision	d	MS/MSD imprecision
e	laboratory control spike duplicate (LCSD) imprecision	e	LCSD imprecision	e	LCSD imprecision
f	Field duplicate imprecision	f	Field duplicate imprecision	f	Field duplicate imprecision
g	Tuning failure or poor mass spec performance	g	Dual column confirmation imprecision	g	Duel isotope imprecision
h	Holding time violation	h	Holding time violation	h	Holding time violation
i	Internal standard failure	i	Internal standard failure	k	Cooler receipt temperature exceeds limits
k	Cooler receipt temperature exceeds limits	k	Cooler receipt temperature exceeds limits	l	LCSD recovery failure
l	LCS recovery failure	l	LCS recovery failure	m	MS/MSD recovery failure
m	MS/MSD recovery failure	m	MS/MSD recovery failure	n	interference check standard (ICS) failure
n	Improper sample preservation	p	Poor chromatography	o	Calibration blank contamination
p	Poor chromatography	q	Concentration exceeded the linear range	q	Concentration exceeded the linear range
q	Concentration exceeded the linear range	r	Linearity failure in initial calibration	r	Linearity failure in calibration or method of standard addition (MSA)
r	Linearity failure in initial calibration	s	Surrogate failure	s	Serial dilution failure
s	Surrogate failure	t	Blender blank contamination	t	Carboy Lot detection
t	Tentatively Identified Compound (TIC)	u	No confirmation column	u	Biological Oxygen Demand (BOD) minimum depletion did not exceed 2 mg/L
w	Identification criteria failure	w	Retention time failure	v	Post-digestion spike failure
x	Field blank contamination	x	Field blank contamination	w	Contract Required Detection Limit (CRDL) Standard Failure
y	Trip blank contamination	z	Method blank contamination	x	Field blank contamination
z	Method blank contamination			z	Preparation/Method blank contamination

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-6.1'-6.6'							IAL4-8TR-13.5'-14'							IAL4-9TR-7'-7.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975995							8975997							8975999						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
VOCs																							
630-20-6	1,1,1,2-Tetrachloroethane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
71-55-6	1,1,1-Trichloroethane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/Kg	7	3	7	16	U			11	5	11	27	U			6	3	6	14	U		
79-00-5	1,1,2-Trichloroethane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
75-34-3	1,1-Dichloroethane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
75-35-4	1,1-Dichloroethene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
563-58-6	1,1-Dichloropropene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
87-61-6	1,2,3-Trichlorobenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
96-18-4	1,2,3-Trichloropropane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
95-63-6	1,2,4-Trimethylbenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/Kg	7	3	7	8	U			11	5	11	13	U			6	3	6	7	U		
106-93-4	1,2-Dibromoethane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
107-06-2	1,2-Dichloroethane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
540-59-0	1,2-Dichloroethene (Total)	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
78-87-5	1,2-Dichloropropane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
108-67-8	1,3,5-Trimethylbenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
142-28-9	1,3-Dichloropropane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
123-91-1	1,4-Dioxane	ug/Kg	330	110	330	410	U			530	190	530	670	U			290	100	290	360	U		
594-20-7	2,2-Dichloropropane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
78-93-3	2-Butanone	ug/Kg	13	7	13	16	U			21	11	21	27	U			11	6	11	14	U		
95-49-8	2-Chlorotoluene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
591-78-6	2-Hexanone	ug/Kg	13	5	13	16	U			21	8	21	27	U			11	4	11	14	U		
106-43-4	4-Chlorotoluene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-6.1'-6.6'							IAL4-8TR-13.5'-14'							IAL4-9TR-7'-7.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975995							8975997							8975999						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/Kg	13	5	13	16	U			21	8	21	27	U			11	4	11	14	U		
67-64-1	Acetone	ug/Kg	13	11	26	33	J			23	19	43	53	J			62	10	23	29			
71-43-2	Benzene	ug/Kg	3	0.8	3	8	U			5	1	5	13	U			3	0.7	3	7	U		
108-86-1	Bromobenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
74-97-5	Bromochloromethane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
75-27-4	Bromodichloromethane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
75-25-2	Bromoform	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
74-83-9	Bromomethane	ug/Kg	7	3	7	8	U			11	5	11	13	U			6	3	6	7	U		
75-15-0	Carbon Disulfide	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
56-23-5	Carbon tetrachloride	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
108-90-7	Chlorobenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
124-48-1	Chlorodibromomethane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
75-00-3	Chloroethane	ug/Kg	7	3	7	8	U			11	5	11	13	U			6	3	6	7	U		
67-66-3	Chloroform	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
74-87-3	Chloromethane	ug/Kg	7	3	7	8	U			11	5	11	13	U			6	3	6	7	U		
156-59-2	cis-1,2-Dichloroethene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
10061-01-5	cis-1,3-Dichloropropene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
110-82-7	Cyclohexane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
74-95-3	Dibromomethane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
75-71-8	Dichlorodifluoromethane	ug/Kg	7	3	7	8	U			11	5	11	13	U			6	3	6	7	U		
64-17-5	Ethanol	ug/Kg	410	160	410	810	U			670	270	670	1300	U			360	140	360	720	U		
100-41-4	Ethylbenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
87-68-3	Hexachlorobutadiene	ug/Kg	7	3	7	8	U			11	5	11	13	U			6	3	6	7	U		
98-82-8	Isopropylbenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
179601-23-1	m,p-Xylene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
79-20-9	Methyl acetate	ug/Kg	7	3	7	8	U			11	5	11	13	U			6	3	6	7	U		
1634-04-4	Methyl tert-butyl Ether	ug/Kg	3	0.8	3	8	U			5	1	5	13	U			3	0.7	3	7	U		
108-87-2	Methylcyclohexane	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
75-09-2	Methylene chloride	ug/Kg	7	3	7	8	U			11	5	11	13	U			6	3	6	7	U		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-6.1'-6.6'							IAL4-8TR-13.5'-14'							IAL4-9TR-7'-7.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975995							8975997							8975999						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
91-20-3	Naphthalene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
104-51-8	n-Butylbenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
103-65-1	n-Propylbenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
95-47-6	o-Xylene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
99-87-6	p-Isopropyltoluene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
135-98-8	sec-Butylbenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
100-42-5	Styrene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
75-65-0	t-Butanol	ug/Kg	65	33	65	160	U			110	53	110	270	U			57	29	57	140	U		
98-06-6	tert-Butylbenzene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
127-18-4	Tetrachloroethene	ug/Kg	3	2	3	8	U			5	3	5	13	U			2	1	3	7	J		
108-88-3	Toluene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
156-60-5	trans-1,2-Dichloroethene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
10061-02-6	trans-1,3-Dichloropropene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
79-01-6	Trichloroethene	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
75-69-4	Trichlorofluoromethane	ug/Kg	7	3	7	8	U			11	5	11	13	U			6	3	6	7	U		
75-01-4	Vinyl chloride	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
1330-20-7	Xylene (total)	ug/Kg	3	2	3	8	U			5	3	5	13	U			3	1	3	7	U		
SVOCs																							
92-52-4	1,1'-Biphenyl	ug/Kg	35	17	35	35	U			37	19	37	37	U			23	19	38	38	J		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
122-66-7	1,2-Diphenylhydrazine	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
123-91-1	1,4-Dioxane	ug/Kg	350	100	350	350	U			370	110	370	370	U			380	110	380	380	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/Kg	140	69	140	170	U			150	74	150	190	U			150	76	150	190	U		
95-95-4	2,4,5-Trichlorophenol	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
88-06-2	2,4,6-Trichlorophenol	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-6.1'-6.6'							IAL4-8TR-13.5'-14'							IAL4-9TR-7'-7.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975995							8975997							8975999						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
120-83-2	2,4-Dichlorophenol	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
105-67-9	2,4-Dimethylphenol	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
51-28-5	2,4-Dinitrophenol	ug/Kg	1000	310	1000	1000	U			1100	330	1100	1100	U			1100	340	1100	1100	U		
121-14-2	2,4-Dinitrotoluene	ug/Kg	140	69	140	170	U			150	74	150	190	U			150	76	150	190	U		
87-65-0	2,6-Dichlorophenol	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
606-20-2	2,6-Dinitrotoluene	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
91-58-7	2-Chloronaphthalene	ug/Kg	14	7	14	34	U			15	7	15	37	U			15	8	15	37	U		
95-57-8	2-Chlorophenol	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
91-57-6	2-Methylnaphthalene	ug/Kg	7	3	7	18	U			20	4	7	19				220	4	8	19			
95-48-7	2-Methylphenol	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
88-74-4	2-Nitroaniline	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
88-75-5	2-Nitrophenol	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
91-94-1	3,3'-Dicholorobenzidine	ug/Kg	350	100	350	350	U	R	m	370	110	370	370	U	R	m	380	110	380	380	U	R	m
106-44-5	3+4-Methylphenol	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
99-09-2	3-Nitroaniline	ug/Kg	140	69	140	170	U			150	74	150	190	U			150	76	150	190	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/Kg	520	170	520	520	U			560	190	560	560	U			570	190	570	570	U		
101-55-3	4-Bromophenyl-phenylether	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
59-50-7	4-Chloro-3-methylphenol	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
106-47-8	4-Chloroaniline	ug/Kg	69	35	69	69	U	R	m	74	37	74	74	U	R	m	76	38	76	76	U	R	m
7005-72-3	4-Chlorophenyl-phenyl ether	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
100-01-6	4-Nitroaniline	ug/Kg	140	69	140	170	U	R	m	150	74	150	190	U	R	m	150	76	150	190	U	R	m
100-02-7	4-Nitrophenol	ug/Kg	520	170	520	520	U			560	190	560	560	U			570	190	570	570	U		
83-32-9	Acenaphthene	ug/Kg	7	3	7	18	U			7	4	7	19	U			8	4	8	19	U		
208-96-8	Acenaphthylene	ug/Kg	7	3	7	18	U			6	4	7	19	J			8	4	8	19	U		
98-86-2	Acetophenone	ug/Kg	35	17	35	35	U			37	19	37	37	U			25	19	38	38	J		
120-12-7	Anthracene	ug/Kg	7	3	7	18	U			7	4	7	19	J			8	4	8	19	J		
1912-24-9	Atrazine	ug/Kg	140	35	140	170	U			150	37	150	190	U			150	38	150	190	U		
100-52-7	Benzaldehyde	ug/Kg	140	69	140	170	U			150	74	150	190	U			150	76	150	190	U		
92-87-5	Benzidine	ug/Kg	520	260	520	520	U	R	m	560	280	560	560	U	R	m	570	280	570	570	U	R	m

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-6.1'-6.6'							IAL4-8TR-13.5'-14'							IAL4-9TR-7'-7.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975995							8975997							8975999						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
50-32-8	Benzo(a) pyrene	ug/Kg	7	3	7	18	U			10	4	7	19	J			11	4	8	19	J		
56-55-3	Benzo(a)anthracene	ug/Kg	7	3	7	18	U			10	4	7	19	J			13	4	8	19	J		
205-99-2	Benzo(b) fluoranthene	ug/Kg	7	3	7	18	U			18	4	7	19	J			19	4	8	19	J		
191-24-2	Benzo(g,h,i) perylene	ug/Kg	7	3	7	18	U			17	4	7	19	J			18	4	8	19	J		
207-08-9	Benzo(k) fluoranthene	ug/Kg	7	3	7	18	U			5	4	7	19	J			9	4	8	19	J		
65-85-0	Benzoic acid	ug/Kg	520	170	520	520	U			560	190	560	560	U			570	190	570	570	U		
100-51-6	Benzyl alcohol	ug/Kg	520	170	520	520	U			560	190	560	560	U			570	190	570	570	U		
111-91-1	Bis(2-chloroethoxy) methane	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
111-44-4	Bis(2-chloroethyl) ether	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
39638-32-9	Bis(2-chloroisopropyl) ether	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
117-81-7	Bis(2-ethylhexyl) phthalate	ug/Kg	140	69	140	180	U			110	74	150	190	J			89	76	150	190	J		
85-68-7	Butylbenzylphthalate	ug/Kg	140	69	140	170	U			150	74	150	190	U			150	76	150	190	U		
105-60-2	Caprolactam	ug/Kg	140	35	140	170	U			150	37	150	190	U			150	38	150	190	U		
86-74-8	Carbazole	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
218-01-9	Chrysene	ug/Kg	7	3	7	18	U			16	4	7	19	J			25	4	8	19			
53-70-3	Dibenzo(a,h) anthracene	ug/Kg	7	3	7	18	U			4	4	7	19	J			5	4	8	19	J		
132-64-9	Dibenzofuran	ug/Kg	35	17	35	35	U			37	19	37	37	U			21	19	38	38	J		
84-66-2	Diethylphthalate	ug/Kg	140	69	140	170	U			150	74	150	190	U			150	76	150	190	U		
131-11-3	Dimethylphthalate	ug/Kg	140	69	140	170	U			150	74	150	190	U			150	76	150	190	U		
84-74-2	Di-n-butylphthalate	ug/Kg	140	69	140	170	U			150	74	150	190	U			150	76	150	190	U		
117-84-0	Di-n-octylphthalate	ug/Kg	140	69	140	170	U			150	74	150	190	U			150	76	150	190	U		
88-85-7	Dinoseb	ug/Kg	520	170	520	520	U			560	190	560	560	U			570	190	570	570	U		
206-44-0	Fluoranthene	ug/Kg	7	3	7	18	U			14	4	7	19	J			14	4	8	19	J		
86-73-7	Fluorene	ug/Kg	7	3	7	18	U			5	4	7	19	J			4	4	8	19	J		
118-74-1	Hexachlorobenzene	ug/Kg	7	3	7	18	U			7	4	7	19	U			8	4	8	19	U		
87-68-3	Hexachlorobutadiene	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
77-47-4	Hexachlorocyclopentadiene	ug/Kg	520	170	520	520	U	R	m	560	190	560	560	U	R	m	570	190	570	570	U	R	m
67-72-1	Hexachloroethane	ug/Kg	140	35	140	170	U			150	37	150	190	U			150	38	150	190	U		
193-39-5	Indeno(1,2,3,-cd) pyrene	ug/Kg	7	3	7	18	U			11	4	7	19	J			9	4	8	19	J		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-6.1'-6.6'							IAL4-8TR-13.5'-14'							IAL4-9TR-7'-7.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975995							8975997							8975999						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
78-59-1	Isophorone	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
91-20-3	Naphthalene	ug/Kg	7	3	7	18	U			48	4	7	19				97	4	8	19			
98-95-3	Nitrobenzene	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
62-75-9	N-Nitrosodimethylamine	ug/Kg	140	69	140	170	U			150	74	150	190	U			150	76	150	190	U		
621-64-7	N-Nitroso-di-n propylamine	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
86-30-6	N-Nitrosodiphenylamine	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
930-55-2	N-Nitrosopyrrolidine	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
87-86-5	Pentachlorophenol	ug/Kg	140	35	140	180	U			150	37	150	190	U			150	38	150	190	U		
85-01-8	Phenanthrene	ug/Kg	7	3	7	18	U			27	4	7	19				58	4	8	19			
108-95-2	Phenol	ug/Kg	35	17	35	35	U			37	19	37	37	U			38	19	38	38	U		
129-00-0	Pyrene	ug/Kg	7	3	7	18	U			17	4	7	19	J			21	4	8	19			
Metals																							
7429-90-5	Aluminum	mg/Kg	1640	8.08	18.6	37.2				816	8.58	19.8	39.6				6610	8.95	20.6	41.2			
7440-36-0	Antimony	mg/Kg	0.186	0.0914	0.186	0.372	U			1.18	0.0971	0.198	0.396				0.645	0.101	0.206	0.412			
7440-38-2	Arsenic	mg/Kg	0.975	0.137	0.372	0.744				1.22	0.146	0.396	0.791				8.49	0.152	0.412	0.825			
7440-39-3	Barium	mg/Kg	9.69	0.0307	0.116	0.931				13.4	0.0326	0.124	0.989				46	0.034	0.129	1.03			
7440-41-7	Beryllium	mg/Kg	0.233	0.0623	0.233	0.931	U			0.247	0.0662	0.247	0.989	U			0.215	0.0691	0.258	1.03	J		
7440-43-9	Cadmium	mg/Kg	0.116	0.0456	0.116	0.931	U			0.117	0.0485	0.124	0.989	J			0.216	0.0505	0.129	1.03	J		
7440-70-2	Calcium	mg/Kg	54.9	5.27	18.6	37.2				136	5.6	19.8	39.6				433	5.83	20.6	41.2			
7440-47-3	Chromium	mg/Kg	2.54	0.13	0.349	2.79	J	B	o	2.66	0.138	0.371	2.97	J	B	o	23	0.144	0.387	3.09		B	o
7440-48-4	Cobalt	mg/Kg	0.337	0.0374	0.0931	0.186				0.681	0.0397	0.0989	0.198				2.52	0.0414	0.103	0.206			
7440-50-8	Copper	mg/Kg	2	0.214	0.465	1.86				3.81	0.227	0.494	1.98				21.6	0.237	0.515	2.06			
7439-89-6	Iron	mg/Kg	1750	3.83	9.31	37.2				4760	4.07	9.89	39.6				13400	4.25	10.3	41.2			
7439-92-1	Lead	mg/Kg	1.92	0.512	1.4	2.79	J	B	o	19.6	0.544	1.48	2.97		B	o	28.6	0.567	1.55	3.09		B	o
7439-95-4	Magnesium	mg/Kg	123	1.77	4.65	18.6				49.2	1.88	4.94	19.8				323	1.96	5.15	20.6			
7439-96-5	Manganese	mg/Kg	12.8	0.0772	0.233	0.931				29.3	0.0821	0.247	0.989				48	0.0856	0.258	1.03			
7439-97-6	Mercury	mg/Kg	0.0172	0.0103	0.0172	0.103	U			0.028	0.0112	0.0186	0.112	J			0.294	0.0106	0.0176	0.106			
7440-02-0	Nickel	mg/Kg	0.63	0.279	0.465	1.86	J			1.27	0.297	0.494	1.98	J			3.38	0.309	0.515	2.06			

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-6.1'-6.6'							IAL4-8TR-13.5'-14'							IAL4-9TR-7'-7.5'						
			5/1/2017							5/1/2017							5/2/2017						
			8975995							8975997							8975999						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-09-7	Potassium	mg/Kg	124	22.2	46.5	93.1				114	23.6	49.4	98.9				520	24.6	51.5	103			
7782-49-2	Selenium	mg/Kg	1.86	0.837	1.86	3.72	U			1.98	0.89	1.98	3.96	U			2.06	0.928	2.06	4.12	U		
7440-22-4	Silver	mg/Kg	0.465	0.14	0.465	0.931	U			0.494	0.148	0.494	0.989	U			1.67	0.155	0.515	1.03			
7440-23-5	Sodium	mg/Kg	46.5	22.2	46.5	186	U			49.4	23.6	49.4	198	U			35	24.6	51.5	206	J		
7440-28-0	Thallium	mg/Kg	0.0341	0.027	0.0465	0.186	J			0.0494	0.0287	0.0494	0.198	U			0.143	0.0299	0.0515	0.206	J		
7440-62-2	Vanadium	mg/Kg	4.46	0.13	0.465	0.931				2.32	0.138	0.494	0.989				19	0.144	0.515	1.03			
7440-66-6	Zinc	mg/Kg	3.95	0.633	0.931	3.72				109	0.672	0.989	3.96				37.6	0.701	1.03	4.12			
18540-29-9	Hexavalent Chromium	mg/Kg	0.4	0.14	0.4	0.4	U			0.6	0.15	0.44	0.44				0.46	0.16	0.46	0.46	U		
TPH																							
PHCGC6C10	TPH-GRO soil C6-C10	ug/Kg	400	200	400	1100	U			5700	2000	3900	9800	J			500	300	700	1700	J		
PHCDC10C2	DRO C10-C28 8015C/D (Microwv)	ug/Kg	8300	4100	8300	12000	U			38000	4400	8900	13000				130000	4500	9000	14000			

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-10.5'-11'							IAL4-11TR-5.5'-6'							IAL4-12TR-6.5'-7'						
			5/1/2017							5/2/2017							5/2/2017						
			8976001							8976003							8976011						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
VOCs																							
630-20-6	1,1,1,2-Tetrachloroethane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
71-55-6	1,1,1-Trichloroethane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/Kg	96	48	96	240	U	UJ	c	2	1	2	5	U			5	3	5	13	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/Kg	190	96	190	480	U			4	2	4	10	U			11	5	11	26	U		
79-00-5	1,1,2-Trichloroethane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
75-34-3	1,1-Dichloroethane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
75-35-4	1,1-Dichloroethene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
563-58-6	1,1-Dichloropropene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
87-61-6	1,2,3-Trichlorobenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
96-18-4	1,2,3-Trichloropropane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
95-63-6	1,2,4-Trimethylbenzene	ug/Kg	130	48	96	240	J			2	1	2	5	U			5	3	5	13	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/Kg	190	96	190	240	U			4	2	4	5	U			11	5	11	13	U		
106-93-4	1,2-Dibromoethane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
107-06-2	1,2-Dichloroethane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
540-59-0	1,2-Dichloroethene (Total)	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
78-87-5	1,2-Dichloropropane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
108-67-8	1,3,5-Trimethylbenzene	ug/Kg	49	48	96	240	J			2	1	2	5	U			5	3	5	13	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
142-28-9	1,3-Dichloropropane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
123-91-1	1,4-Dioxane	ug/Kg	9600	3400	9600	12000	U	UJ	c	200	69	200	250	U			530	190	530	660	U		
594-20-7	2,2-Dichloropropane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
78-93-3	2-Butanone	ug/Kg	390	190	390	480	U			8	4	8	10	U			21	11	21	26	U		
95-49-8	2-Chlorotoluene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
591-78-6	2-Hexanone	ug/Kg	390	140	390	480	U			8	3	8	10	U			21	8	21	26	U		
106-43-4	4-Chlorotoluene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-10.5'-11'							IAL4-11TR-5.5'-6'							IAL4-12TR-6.5'-7'						
			5/1/2017							5/2/2017							5/2/2017						
			8976001							8976003							8976011						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/Kg	390	140	390	480	U			8	3	8	10	U			21	8	21	26	U		
67-64-1	Acetone	ug/Kg	770	340	770	960	U			27	7	16	20				52	19	42	53	J		
71-43-2	Benzene	ug/Kg	96	24	96	240	U			2	0.5	2	5	U			2	1	5	13	J		
108-86-1	Bromobenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
74-97-5	Bromochloromethane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
75-27-4	Bromodichloromethane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
75-25-2	Bromoform	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
74-83-9	Bromomethane	ug/Kg	190	96	190	240	U			4	2	4	5	U			11	5	11	13	U		
75-15-0	Carbon Disulfide	ug/Kg	96	48	96	240	U			2	1	2	5	U			3	3	5	13	J	J	c
56-23-5	Carbon tetrachloride	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
108-90-7	Chlorobenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
124-48-1	Chlorodibromomethane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
75-00-3	Chloroethane	ug/Kg	190	96	190	240	U			4	2	4	5	U			11	5	11	13	U		
67-66-3	Chloroform	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
74-87-3	Chloromethane	ug/Kg	190	96	190	240	U			4	2	4	5	U			11	5	11	13	U		
156-59-2	cis-1,2-Dichloroethene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
10061-01-5	cis-1,3-Dichloropropene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
110-82-7	Cyclohexane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
74-95-3	Dibromomethane	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
75-71-8	Dichlorodifluoromethane	ug/Kg	190	96	190	240	U			4	2	4	5	U			11	5	11	13	U		
64-17-5	Ethanol	ug/Kg	12000	4800	12000	24000	U			250	98	250	490	U			660	260	660	1300	U		
100-41-4	Ethylbenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
87-68-3	Hexachlorobutadiene	ug/Kg	190	96	190	240	U			4	2	4	5	U			11	5	11	13	U		
98-82-8	Isopropylbenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
179601-23-1	m,p-Xylene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
79-20-9	Methyl acetate	ug/Kg	190	96	190	240	U			4	2	4	5	U			11	5	11	13	U		
1634-04-4	Methyl tert-butyl Ether	ug/Kg	96	24	96	240	U			2	0.5	2	5	U			5	1	5	13	U		
108-87-2	Methylcyclohexane	ug/Kg	85	48	96	240	J			2	1	2	5	U			5	3	5	13	U		
75-09-2	Methylene chloride	ug/Kg	190	96	190	240	U			4	2	4	5	U			11	5	11	13	U		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-10.5'-11'							IAL4-11TR-5.5'-6'							IAL4-12TR-6.5'-7'						
			5/1/2017							5/2/2017							5/2/2017						
			8976001							8976003							8976011						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
91-20-3	Naphthalene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
104-51-8	n-Butylbenzene	ug/Kg	56	48	96	240	J			2	1	2	5	U			5	3	5	13	U		
103-65-1	n-Propylbenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
95-47-6	o-Xylene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
99-87-6	p-Isopropyltoluene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
135-98-8	sec-Butylbenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
100-42-5	Styrene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
75-65-0	t-Butanol	ug/Kg	1900	960	1900	4800	U			39	20	39	98	U			110	53	110	260	U		
98-06-6	tert-Butylbenzene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
127-18-4	Tetrachloroethene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
108-88-3	Toluene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
156-60-5	trans-1,2-Dichloroethene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
10061-02-6	trans-1,3-Dichloropropene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
79-01-6	Trichloroethene	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
75-69-4	Trichlorofluoromethane	ug/Kg	190	96	190	240	U			4	2	4	5	U			11	5	11	13	U		
75-01-4	Vinyl chloride	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
1330-20-7	Xylene (total)	ug/Kg	96	48	96	240	U			2	1	2	5	U			5	3	5	13	U		
SVOCs																							
92-52-4	1,1'-Biphenyl	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
122-66-7	1,2-Diphenylhydrazine	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
123-91-1	1,4-Dioxane	ug/Kg	370	110	370	370	U			350	110	350	350	U			370	110	370	370	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/Kg	150	73	150	180	U			140	71	140	180	U			150	74	150	180	U		
95-95-4	2,4,5-Trichlorophenol	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
88-06-2	2,4,6-Trichlorophenol	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-10.5'-11'							IAL4-11TR-5.5'-6'							IAL4-12TR-6.5'-7'						
			5/1/2017							5/2/2017							5/2/2017						
			8976001							8976003							8976011						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
120-83-2	2,4-Dichlorophenol	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
105-67-9	2,4-Dimethylphenol	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
51-28-5	2,4-Dinitrophenol	ug/Kg	1100	330	1100	1100	U			1100	320	1100	1100	U			1100	330	1100	1100	U		
121-14-2	2,4-Dinitrotoluene	ug/Kg	150	73	150	180	U			140	71	140	180	U			150	74	150	180	U		
87-65-0	2,6-Dichlorophenol	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
606-20-2	2,6-Dinitrotoluene	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
91-58-7	2-Chloronaphthalene	ug/Kg	15	7	15	36	U			14	7	14	35	U			15	7	15	37	U		
95-57-8	2-Chlorophenol	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
91-57-6	2-Methylnaphthalene	ug/Kg	7	4	7	19	J			7	4	7	18	U			7	4	7	19	U		
95-48-7	2-Methylphenol	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
88-74-4	2-Nitroaniline	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
88-75-5	2-Nitrophenol	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
91-94-1	3,3'-Dicholorobenzidine	ug/Kg	370	110	370	370	U	R	m	350	110	350	350	U	R	m	370	110	370	370	U	R	m
106-44-5	3+4-Methylphenol	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
99-09-2	3-Nitroaniline	ug/Kg	150	73	150	180	U			140	71	140	180	U			150	74	150	180	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/Kg	550	180	550	550	U			530	180	530	530	U			550	180	550	550	U		
101-55-3	4-Bromophenyl-phenylether	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
59-50-7	4-Chloro-3-methylphenol	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
106-47-8	4-Chloroaniline	ug/Kg	73	37	73	73	U	R	m	71	35	71	71	U	R	m	74	37	74	74	U	R	m
7005-72-3	4-Chlorophenyl-phenyl ether	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
100-01-6	4-Nitroaniline	ug/Kg	150	73	150	180	U	R	m	140	71	140	180	U	R	m	150	74	150	180	U	R	m
100-02-7	4-Nitrophenol	ug/Kg	550	180	550	550	U			530	180	530	530	U			550	180	550	550	U		
83-32-9	Acenaphthene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
208-96-8	Acenaphthylene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
98-86-2	Acetophenone	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
120-12-7	Anthracene	ug/Kg	7	4	7	19	J			7	4	7	18	U			7	4	7	19	U		
1912-24-9	Atrazine	ug/Kg	150	37	150	180	U			140	35	140	180	U			150	37	150	180	U		
100-52-7	Benzaldehyde	ug/Kg	150	73	150	180	U			140	71	140	180	U			150	74	150	180	U		
92-87-5	Benzidine	ug/Kg	550	270	550	550	U	R	m	530	270	530	530	U	R	m	550	280	550	550	U	R	m

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-10.5'-11'							IAL4-11TR-5.5'-6'							IAL4-12TR-6.5'-7'						
			5/1/2017							5/2/2017							5/2/2017						
			8976001							8976003							8976011						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
50-32-8	Benzo(a) pyrene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
56-55-3	Benzo(a)anthracene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
205-99-2	Benzo(b) fluoranthene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
191-24-2	Benzo(g,h,i) perylene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
207-08-9	Benzo(k) fluoranthene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
65-85-0	Benzoic acid	ug/Kg	550	180	550	550	U			530	180	530	530	U			550	180	550	550	U		
100-51-6	Benzyl alcohol	ug/Kg	550	180	550	550	U			530	180	530	530	U			550	180	550	550	U		
111-91-1	Bis(2-chloroethoxy) methane	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
111-44-4	Bis(2-chloroethyl) ether	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
39638-32-9	Bis(2-chloroisopropyl) ether	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
117-81-7	Bis(2-ethylhexyl) phthalate	ug/Kg	160	73	150	190	J			140	71	140	180	U			150	74	150	190	U		
85-68-7	Butylbenzylphthalate	ug/Kg	150	73	150	180	U			140	71	140	180	U			150	74	150	180	U		
105-60-2	Caprolactam	ug/Kg	150	37	150	180	U			140	35	140	180	U			150	37	150	180	U		
86-74-8	Carbazole	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
218-01-9	Chrysene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
53-70-3	Dibenzo(a,h) anthracene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
132-64-9	Dibenzofuran	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
84-66-2	Diethylphthalate	ug/Kg	150	73	150	180	U			140	71	140	180	U			150	74	150	180	U		
131-11-3	Dimethylphthalate	ug/Kg	150	73	150	180	U			140	71	140	180	U			150	74	150	180	U		
84-74-2	Di-n-butylphthalate	ug/Kg	150	73	150	180	U			140	71	140	180	U			150	74	150	180	U		
117-84-0	Di-n-octylphthalate	ug/Kg	150	73	150	180	U			140	71	140	180	U			150	74	150	180	U		
88-85-7	Dinoseb	ug/Kg	550	180	550	550	U			530	180	530	530	U			550	180	550	550	U		
206-44-0	Fluoranthene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
86-73-7	Fluorene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
118-74-1	Hexachlorobenzene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		
87-68-3	Hexachlorobutadiene	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
77-47-4	Hexachlorocyclopentadiene	ug/Kg	550	180	550	550	U	R	m	530	180	530	530	U	R	m	550	180	550	550	U	R	m
67-72-1	Hexachloroethane	ug/Kg	150	37	150	180	U			140	35	140	180	U			150	37	150	180	U		
193-39-5	Indeno(1,2,3,-cd) pyrene	ug/Kg	7	4	7	19	U			7	4	7	18	U			7	4	7	19	U		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-10TR-10.5'-11'							IAL4-11TR-5.5'-6'							IAL4-12TR-6.5'-7'						
			5/1/2017							5/2/2017							5/2/2017						
			8976001							8976003							8976011						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
78-59-1	Isophorone	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
91-20-3	Naphthalene	ug/Kg	5	4	7	19	J			7	4	7	18	U			7	4	7	19	U		
98-95-3	Nitrobenzene	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
62-75-9	N-Nitrosodimethylamine	ug/Kg	150	73	150	180	U			140	71	140	180	U			150	74	150	180	U		
621-64-7	N-Nitroso-di-n propylamine	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
86-30-6	N-Nitrosodiphenylamine	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
930-55-2	N-Nitrosopyrrolidine	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
87-86-5	Pentachlorophenol	ug/Kg	150	37	150	190	U			140	35	140	180	U			150	37	150	190	U		
85-01-8	Phenanthrene	ug/Kg	15	4	7	19	J			7	4	7	18	U			7	4	7	19	U		
108-95-2	Phenol	ug/Kg	37	18	37	37	U			35	18	35	35	U			37	18	37	37	U		
129-00-0	Pyrene	ug/Kg	8	4	7	19	J			7	4	7	18	U			7	4	7	19	U		
Metals																							
7429-90-5	Aluminum	mg/Kg	2380	6.52	15	30				8420	8.49	19.6	39.1				6570	6.97	16.1	32.1			
7440-36-0	Antimony	mg/Kg	0.157	0.0737	0.15	0.3	J			0.182	0.096	0.196	0.391	J			0.861	0.0788	0.161	0.321			
7440-38-2	Arsenic	mg/Kg	1.51	0.111	0.3	0.601				5.11	0.144	0.391	0.782				2.3	0.119	0.321	0.642			
7440-39-3	Barium	mg/Kg	11.2	0.0248	0.0938	0.751				23.9	0.0323	0.122	0.978				34.4	0.0265	0.1	0.803			
7440-41-7	Beryllium	mg/Kg	0.0556	0.0503	0.188	0.751	J			0.231	0.0655	0.245	0.978	J			0.186	0.0538	0.201	0.803	J		
7440-43-9	Cadmium	mg/Kg	0.0518	0.0368	0.0938	0.751	J			0.0489	0.0479	0.122	0.978	J			0.0642	0.0393	0.1	0.803	J		
7440-70-2	Calcium	mg/Kg	705	4.25	15	30				44.6	5.54	19.6	39.1				147	4.54	16.1	32.1			
7440-47-3	Chromium	mg/Kg	4.55	0.105	0.282	2.25		B	o	11.2	0.137	0.367	2.93		B	o	16.9	0.112	0.301	2.41		B	o
7440-48-4	Cobalt	mg/Kg	1.7	0.0302	0.0751	0.15				1.69	0.0393	0.0978	0.196				0.697	0.0323	0.0803	0.161			
7440-50-8	Copper	mg/Kg	2.22	0.173	0.375	1.5				4.58	0.225	0.489	1.96				7.69	0.185	0.401	1.61			
7439-89-6	Iron	mg/Kg	6350	3.09	7.51	30				7310	4.03	9.78	39.1				7870	3.31	8.03	32.1			
7439-92-1	Lead	mg/Kg	4.23	0.413	1.13	2.25		B	o	5.98	0.538	1.47	2.93		B	o	29.9	0.442	1.2	2.41		B	o
7439-95-4	Magnesium	mg/Kg	80.8	1.43	3.75	15				480	1.86	4.89	19.6				189	1.53	4.01	16.1			
7439-96-5	Manganese	mg/Kg	48.6	0.0623	0.188	0.751				17.3	0.0812	0.245	0.978				23.6	0.0666	0.201	0.803			
7439-97-6	Mercury	mg/Kg	0.0185	0.0111	0.0185	0.111	U			0.0167	0.01	0.0167	0.0999	U			0.0172	0.0103	0.0172	0.103	U		
7440-02-0	Nickel	mg/Kg	0.592	0.225	0.375	1.5	J			3.45	0.293	0.489	1.96				1.95	0.241	0.401	1.61			

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			IAL4-10TR-10.5'-11'							IAL4-11TR-5.5'-6'							IAL4-12TR-6.5'-7'						
			5/1/2017							5/2/2017							5/2/2017						
			8976001							8976003							8976011						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-09-7	Potassium	mg/Kg	324	17.9	37.5	75.1				537	23.4	48.9	97.8				1360	19.2	40.1	80.3			
7782-49-2	Selenium	mg/Kg	1.5	0.676	1.5	3	U			1.96	0.88	1.96	3.91	U			1.61	0.723	1.61	3.21	U		
7440-22-4	Silver	mg/Kg	0.375	0.113	0.375	0.751	U			0.489	0.147	0.489	0.978	U			0.401	0.12	0.401	0.803	U		
7440-23-5	Sodium	mg/Kg	30.7	17.9	37.5	150	J			48.9	23.4	48.9	196	U			27.6	19.2	40.1	161	J		
7440-28-0	Thallium	mg/Kg	0.0473	0.0218	0.0375	0.15	J			0.129	0.0284	0.0489	0.196	J			0.172	0.0233	0.0401	0.161			
7440-62-2	Vanadium	mg/Kg	7.12	0.105	0.375	0.751				23.7	0.137	0.489	0.978				30.5	0.112	0.401	0.803			
7440-66-6	Zinc	mg/Kg	2.64	0.511	0.751	3	J			15.3	0.665	0.978	3.91				30.1	0.546	0.803	3.21			
18540-29-9	Hexavalent Chromium	mg/Kg	0.41	0.15	0.44	0.44	J			0.88	0.15	0.44	0.44				1.8	0.16	0.45	0.45			
TPH																							
PHCGC6C1(	TPH-GRO soil C6-C10	ug/Kg	9400	1900	3800	9600	J			400	200	400	1000	U			800	400	800	2100	U		
PHCDC10C2	DRO C10-C28 8015C/D (Microwv)	ug/Kg	520000	4400	8900	13000				8500	4200	8500	13000	U			8900	4400	8900	13000	U		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-14TP-2'-3'						
			5/1/2017						
			8976014						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC
VOCs									
630-20-6	1,1,1,2-Tetrachloroethane	ug/Kg	2	0.9	2	4	U		
71-55-6	1,1,1-Trichloroethane	ug/Kg	2	0.9	2	4	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/Kg	2	0.9	2	4	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/Kg	4	2	4	9	U		
79-00-5	1,1,2-Trichloroethane	ug/Kg	2	0.9	2	4	U		
75-34-3	1,1-Dichloroethane	ug/Kg	2	0.9	2	4	U		
75-35-4	1,1-Dichloroethene	ug/Kg	2	0.9	2	4	U		
563-58-6	1,1-Dichloropropene	ug/Kg	2	0.9	2	4	U		
87-61-6	1,2,3-Trichlorobenzene	ug/Kg	2	0.9	2	4	U		
96-18-4	1,2,3-Trichloropropane	ug/Kg	2	0.9	2	4	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	2	0.9	2	4	U		
95-63-6	1,2,4-Trimethylbenzene	ug/Kg	2	0.9	2	4	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/Kg	4	2	4	4	U		
106-93-4	1,2-Dibromoethane	ug/Kg	2	0.9	2	4	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	2	0.9	2	4	U		
107-06-2	1,2-Dichloroethane	ug/Kg	2	0.9	2	4	U		
540-59-0	1,2-Dichloroethene (Total)	ug/Kg	2	0.9	2	4	U		
78-87-5	1,2-Dichloropropane	ug/Kg	2	0.9	2	4	U		
108-67-8	1,3,5-Trimethylbenzene	ug/Kg	2	0.9	2	4	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	2	0.9	2	4	U		
142-28-9	1,3-Dichloropropane	ug/Kg	2	0.9	2	4	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	2	0.9	2	4	U		
123-91-1	1,4-Dioxane	ug/Kg	180	63	180	220	U		
594-20-7	2,2-Dichloropropane	ug/Kg	2	0.9	2	4	U		
78-93-3	2-Butanone	ug/Kg	7	4	7	9	U		
95-49-8	2-Chlorotoluene	ug/Kg	2	0.9	2	4	U		
591-78-6	2-Hexanone	ug/Kg	7	3	7	9	U		
106-43-4	4-Chlorotoluene	ug/Kg	2	0.9	2	4	U		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-14TP-2'-3'						
			5/1/2017						
			8976014						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/Kg	7	3	7	9	U		
67-64-1	Acetone	ug/Kg	7	6	14	18	J		
71-43-2	Benzene	ug/Kg	2	0.4	2	4	U		
108-86-1	Bromobenzene	ug/Kg	2	0.9	2	4	U		
74-97-5	Bromochloromethane	ug/Kg	2	0.9	2	4	U		
75-27-4	Bromodichloromethane	ug/Kg	2	0.9	2	4	U		
75-25-2	Bromoform	ug/Kg	2	0.9	2	4	U		
74-83-9	Bromomethane	ug/Kg	4	2	4	4	U		
75-15-0	Carbon Disulfide	ug/Kg	2	0.9	2	4	U		
56-23-5	Carbon tetrachloride	ug/Kg	2	0.9	2	4	U		
108-90-7	Chlorobenzene	ug/Kg	2	0.9	2	4	U		
124-48-1	Chlorodibromomethane	ug/Kg	2	0.9	2	4	U		
75-00-3	Chloroethane	ug/Kg	4	2	4	4	U		
67-66-3	Chloroform	ug/Kg	2	0.9	2	4	U		
74-87-3	Chloromethane	ug/Kg	4	2	4	4	U		
156-59-2	cis-1,2-Dichloroethene	ug/Kg	2	0.9	2	4	U		
10061-01-5	cis-1,3-Dichloropropene	ug/Kg	2	0.9	2	4	U		
110-82-7	Cyclohexane	ug/Kg	2	0.9	2	4	U		
74-95-3	Dibromomethane	ug/Kg	2	0.9	2	4	U		
75-71-8	Dichlorodifluoromethane	ug/Kg	4	2	4	4	U		
64-17-5	Ethanol	ug/Kg	220	90	220	450	U		
100-41-4	Ethylbenzene	ug/Kg	2	0.9	2	4	U		
87-68-3	Hexachlorobutadiene	ug/Kg	4	2	4	4	U		
98-82-8	Isopropylbenzene	ug/Kg	2	0.9	2	4	U		
179601-23-1	m,p-Xylene	ug/Kg	2	0.9	2	4	U		
79-20-9	Methyl acetate	ug/Kg	4	2	4	4	U		
1634-04-4	Methyl tert-butyl Ether	ug/Kg	2	0.4	2	4	U		
108-87-2	Methylcyclohexane	ug/Kg	2	0.9	2	4	U		
75-09-2	Methylene chloride	ug/Kg	4	2	4	4	U		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-14TP-2'-3'						
			5/1/2017						
			8976014						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC
91-20-3	Naphthalene	ug/Kg	2	0.9	2	4	U		
104-51-8	n-Butylbenzene	ug/Kg	2	0.9	2	4	U		
103-65-1	n-Propylbenzene	ug/Kg	2	0.9	2	4	U		
95-47-6	o-Xylene	ug/Kg	2	0.9	2	4	U		
99-87-6	p-Isopropyltoluene	ug/Kg	2	0.9	2	4	U		
135-98-8	sec-Butylbenzene	ug/Kg	2	0.9	2	4	U		
100-42-5	Styrene	ug/Kg	2	0.9	2	4	U		
75-65-0	t-Butanol	ug/Kg	36	18	36	90	U		
98-06-6	tert-Butylbenzene	ug/Kg	2	0.9	2	4	U		
127-18-4	Tetrachloroethene	ug/Kg	2	0.9	2	4	U		
108-88-3	Toluene	ug/Kg	2	0.9	2	4	U		
156-60-5	trans-1,2-Dichloroethene	ug/Kg	2	0.9	2	4	U		
10061-02-6	trans-1,3-Dichloropropene	ug/Kg	2	0.9	2	4	U		
79-01-6	Trichloroethene	ug/Kg	2	0.9	2	4	U		
75-69-4	Trichlorofluoromethane	ug/Kg	4	2	4	4	U		
75-01-4	Vinyl chloride	ug/Kg	2	0.9	2	4	U		
1330-20-7	Xylene (total)	ug/Kg	2	0.9	2	4	U		
SVOCs									
92-52-4	1,1'-Biphenyl	ug/Kg	35	17	35	35	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/Kg	35	17	35	35	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	35	17	35	35	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	35	17	35	35	U		
122-66-7	1,2-Diphenylhydrazine	ug/Kg	35	17	35	35	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	35	17	35	35	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	35	17	35	35	U		
123-91-1	1,4-Dioxane	ug/Kg	350	100	350	350	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/Kg	140	70	140	170	U		
95-95-4	2,4,5-Trichlorophenol	ug/Kg	35	17	35	35	U		
88-06-2	2,4,6-Trichlorophenol	ug/Kg	35	17	35	35	U		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-14TP-2'-3'						
			5/1/2017						
			8976014						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC
120-83-2	2,4-Dichlorophenol	ug/Kg	35	17	35	35	U		
105-67-9	2,4-Dimethylphenol	ug/Kg	35	17	35	35	U		
51-28-5	2,4-Dinitrophenol	ug/Kg	1000	310	1000	1000	U	R	m
121-14-2	2,4-Dinitrotoluene	ug/Kg	140	70	140	170	U		
87-65-0	2,6-Dichlorophenol	ug/Kg	35	17	35	35	U	R	m
606-20-2	2,6-Dinitrotoluene	ug/Kg	35	17	35	35	U		
91-58-7	2-Chloronaphthalene	ug/Kg	14	7	14	35	U		
95-57-8	2-Chlorophenol	ug/Kg	35	17	35	35	U		
91-57-6	2-Methylnaphthalene	ug/Kg	7	3	7	18	U		
95-48-7	2-Methylphenol	ug/Kg	35	17	35	35	U		
88-74-4	2-Nitroaniline	ug/Kg	35	17	35	35	U		
88-75-5	2-Nitrophenol	ug/Kg	35	17	35	35	U		
91-94-1	3,3'-Dicholorobenzidine	ug/Kg	350	100	350	350	U	R	m
106-44-5	3+4-Methylphenol	ug/Kg	35	17	35	35	U		
99-09-2	3-Nitroaniline	ug/Kg	140	70	140	170	U	R	m
534-52-1	4,6-Dinitro-2-methylphenol	ug/Kg	520	170	520	520	U	R	m
101-55-3	4-Bromophenyl-phenylether	ug/Kg	35	17	35	35	U		
59-50-7	4-Chloro-3-methylphenol	ug/Kg	35	17	35	35	U		
106-47-8	4-Chloroaniline	ug/Kg	70	35	70	70	U	R	m
7005-72-3	4-Chlorophenyl-phenyl ether	ug/Kg	35	17	35	35	U		
100-01-6	4-Nitroaniline	ug/Kg	140	70	140	170	U	R	m
100-02-7	4-Nitrophenol	ug/Kg	520	170	520	520	U		
83-32-9	Acenaphthene	ug/Kg	7	3	7	18	U		
208-96-8	Acenaphthylene	ug/Kg	4	3	7	18	J		
98-86-2	Acetophenone	ug/Kg	35	17	35	35	U		
120-12-7	Anthracene	ug/Kg	7	3	7	18	U		
1912-24-9	Atrazine	ug/Kg	140	35	140	170	U		
100-52-7	Benzaldehyde	ug/Kg	140	70	140	170	U		
92-87-5	Benzidine	ug/Kg	520	260	520	520	U	R	m

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-14TP-2'-3'						
			5/1/2017						
			8976014						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC
50-32-8	Benzo(a) pyrene	ug/Kg	6	3	7	18	J		
56-55-3	Benzo(a)anthracene	ug/Kg	7	3	7	18	J		
205-99-2	Benzo(b) fluoranthene	ug/Kg	7	3	7	18	J		
191-24-2	Benzo(g,h,i) perylene	ug/Kg	7	3	7	18	J		
207-08-9	Benzo(k) fluoranthene	ug/Kg	7	3	7	18	U		
65-85-0	Benzoic acid	ug/Kg	520	170	520	520	U		
100-51-6	Benzyl alcohol	ug/Kg	520	170	520	520	U		
111-91-1	Bis(2-chloroethoxy) methane	ug/Kg	35	17	35	35	U		
111-44-4	Bis(2-chloroethyl) ether	ug/Kg	35	17	35	35	U		
39638-32-9	Bis(2-chloroisopropyl) ether	ug/Kg	35	17	35	35	U		
117-81-7	Bis(2-ethylhexyl) phthalate	ug/Kg	140	70	140	180	U		
85-68-7	Butylbenzylphthalate	ug/Kg	140	70	140	170	U		
105-60-2	Caprolactam	ug/Kg	140	35	140	170	U		
86-74-8	Carbazole	ug/Kg	35	17	35	35	U		
218-01-9	Chrysene	ug/Kg	9	3	7	18	J		
53-70-3	Dibenzo(a,h) anthracene	ug/Kg	7	3	7	18	U		
132-64-9	Dibenzofuran	ug/Kg	35	17	35	35	U		
84-66-2	Diethylphthalate	ug/Kg	140	70	140	170	U		
131-11-3	Dimethylphthalate	ug/Kg	140	70	140	170	U		
84-74-2	Di-n-butylphthalate	ug/Kg	140	70	140	170	U		
117-84-0	Di-n-octylphthalate	ug/Kg	140	70	140	170	U		
88-85-7	Dinoseb	ug/Kg	520	170	520	520	U	R	m
206-44-0	Fluoranthene	ug/Kg	4	3	7	18	J		
86-73-7	Fluorene	ug/Kg	7	3	7	18	U		
118-74-1	Hexachlorobenzene	ug/Kg	7	3	7	18	U		
87-68-3	Hexachlorobutadiene	ug/Kg	35	17	35	35	U		
77-47-4	Hexachlorocyclopentadiene	ug/Kg	520	170	520	520	U	R	m
67-72-1	Hexachloroethane	ug/Kg	140	35	140	170	U		
193-39-5	Indeno(1,2,3,-cd) pyrene	ug/Kg	5	3	7	18	J		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-14TP-2'-3'						
			5/1/2017						
			8976014						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC
78-59-1	Isophorone	ug/Kg	35	17	35	35	U		
91-20-3	Naphthalene	ug/Kg	7	3	7	18	U		
98-95-3	Nitrobenzene	ug/Kg	35	17	35	35	U		
62-75-9	N-Nitrosodimethylamine	ug/Kg	140	70	140	170	U		
621-64-7	N-Nitroso-di-n propylamine	ug/Kg	35	17	35	35	U		
86-30-6	N-Nitrosodiphenylamine	ug/Kg	35	17	35	35	U		
930-55-2	N-Nitrosopyrrolidine	ug/Kg	35	17	35	35	U	R	m
87-86-5	Pentachlorophenol	ug/Kg	140	35	140	180	U		
85-01-8	Phenanthrene	ug/Kg	7	3	7	18	U		
108-95-2	Phenol	ug/Kg	35	17	35	35	U		
129-00-0	Pyrene	ug/Kg	9	3	7	18	J		
Metals									
7429-90-5	Aluminum	mg/Kg	3030	8.27	19.1	38.1		B	o
7440-36-0	Antimony	mg/Kg	0.222	0.0936	0.191	0.381	J		
7440-38-2	Arsenic	mg/Kg	5.58	0.141	0.381	0.763			
7440-39-3	Barium	mg/Kg	12.1	0.0315	0.119	0.953			
7440-41-7	Beryllium	mg/Kg	0.0801	0.0639	0.238	0.953	J		
7440-43-9	Cadmium	mg/Kg	0.0648	0.0467	0.119	0.953	J		
7440-70-2	Calcium	mg/Kg	30.2	5.4	19.1	38.1	J		
7440-47-3	Chromium	mg/Kg	10.5	0.133	0.358	2.86		B	o
7440-48-4	Cobalt	mg/Kg	0.417	0.0383	0.0953	0.191			
7440-50-8	Copper	mg/Kg	12.9	0.219	0.477	1.91			
7439-89-6	Iron	mg/Kg	7340	3.93	9.53	38.1			
7439-92-1	Lead	mg/Kg	4.76	0.524	1.43	2.86		B	o
7439-95-4	Magnesium	mg/Kg	117	1.81	4.77	19.1			
7439-96-5	Manganese	mg/Kg	6.66	0.0791	0.238	0.953			
7439-97-6	Mercury	mg/Kg	0.0168	0.0101	0.0168	0.101	U		
7440-02-0	Nickel	mg/Kg	0.555	0.286	0.477	1.91	J		

Table 4-2a: 2017 Subsurface Soil Analytical Results for VOCs, SVOCs, Metals, Cr(VI), TPH-DRO, and TPH-GRO at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-14TP-2'-3'						
			5/1/2017						
			8976014						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC
7440-09-7	Potassium	mg/Kg	369	22.8	47.7	95.3			
7782-49-2	Selenium	mg/Kg	1.91	0.858	1.91	3.81	U		
7440-22-4	Silver	mg/Kg	0.477	0.143	0.477	0.953	U		
7440-23-5	Sodium	mg/Kg	47.7	22.8	47.7	191	U		
7440-28-0	Thallium	mg/Kg	0.0754	0.0276	0.0477	0.191	J		
7440-62-2	Vanadium	mg/Kg	11.9	0.133	0.477	0.953			
7440-66-6	Zinc	mg/Kg	2.87	0.648	0.953	3.81	J		
18540-29-9	Hexavalent Chromium	mg/Kg	0.86	0.15	0.44	0.44			
TPH									
PHCGC6C10	TPH-GRO soil C6-C10	ug/Kg	3600	1800	3600	9000	U		
PHCDC10C2	DRO C10-C28 8015C/D (Microwv)	ug/Kg	8400	4200	8400	13000	U		

Table 4-2b: 2017 Subsurface Soil Analytical Results for PCBs at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-7TR-6.1'-6.6'							IAL4-10TR-10.5'-11'							IAL4-14TP-2'-3'						
			5/1/2017							5/1/2017							5/1/2017						
			8975995							8976001							8976014						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
12674-11-2	PCB-1016	ug/Kg	10	3.8	10	18	U			11	4	11	19	U			11	3.8	11	18	U		
11104-28-2	PCB-1221	ug/Kg	10	4.8	10	18	U			11	5.1	11	19	U			11	4.9	11	18	U		
11141-16-5	PCB-1232	ug/Kg	17	8.4	17	18	U			18	8.8	18	19	U			17	8.5	17	18	U		
53469-21-9	PCB-1242	ug/Kg	10	3.4	10	18	U			11	3.6	11	19	U			11	3.5	11	18	U		
12672-29-6	PCB-1248	ug/Kg	10	3.4	10	18	U			11	3.6	11	19	U			11	3.5	11	18	U		
11097-69-1	PCB-1254	ug/Kg	10	3.4	10	18	U			11	3.6	11	19	U			11	3.5	11	18	U		
11096-82-5	PCB-1260	ug/Kg	10	5.1	10	18	U			6.3	5.4	11	19	J			11	5.2	11	18	U		
37324-23-5	PCB-1262	ug/Kg	10	3.4	10	18	U			11	3.6	11	19	U			11	3.5	11	18	U		
11100-14-4	PCB-1268	ug/Kg	10	3.4	10	18	U			11	3.6	11	19	U			11	3.5	11	18	U		

Table 4-2c: 2017 Subsurface Soil Analytical Results for Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-14TP-2'-3'						
			5/1/2017						
			8976014						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC
35822-46-9	1234678-HpCDD	ng/Kg	16.7	0.525	1.05	5.25			
67562-39-4	1234678-HpCDF	ng/Kg	1.05	0.315	1.05	5.25	U		
55673-89-7	1234789-HpCDF	ng/Kg	1.05	0.42	1.05	5.25	U		
39227-28-6	123478-HxCDD	ng/Kg	1.05	0.315	1.05	5.25	U		
70648-26-9	123478-HxCDF	ng/Kg	1.05	0.315	1.05	5.25	U		
57653-85-7	123678-HxCDD	ng/Kg	1.05	0.42	1.05	5.25	U		
57117-44-9	123678-HxCDF	ng/Kg	1.05	0.315	1.05	5.25	U		
19408-74-3	123789-HxCDD	ng/Kg	1.05	0.315	1.05	5.25	U		
72918-21-9	123789-HxCDF	ng/Kg	1.05	0.525	1.05	5.25	U		
40321-76-4	12378-PeCDD	ng/Kg	1.05	0.42	1.05	5.25	U		
57117-41-6	12378-PeCDF	ng/Kg	1.05	0.42	1.05	5.25	U		
60851-34-5	234678-HxCDF	ng/Kg	1.05	0.315	1.05	5.25	U		
57117-31-4	23478-PeCDF	ng/Kg	1.05	0.315	1.05	5.25	U		
1746-01-6	2378-TCDD	ng/Kg	0.21	0.105	0.21	1.05	U		
51207-31-9	2378-TCDF	ng/Kg	0.21	0.105	0.21	1.05	U		
3268-87-9	OCDD	ng/Kg	4350	1.05	2.1	10.5	E	J	q
39001-02-0	OCDF	ng/Kg	2.1	0.525	2.1	10.5	U		
TEQWHO05-0.0	TEQ WHO 2005 - EDLx0.0	ng/Kg	1.47						
TEQWHO05-0.5	TEQ WHO 2005 - EDLx0.5	ng/Kg	1.92						
37871-00-4	Total HpCDD	ng/Kg	42.4	0.525	1.05	5.25	Q		
38998-75-3	Total HpCDF	ng/Kg	1.05	0.42	1.05	5.25	U		
34465-46-8	Total HxCDD	ng/Kg	1.05	0.42	1.05	5.25	U		
55684-94-1	Total HxCDF	ng/Kg	1.05	0.525	1.05	5.25	U		
36088-22-9	Total PeCDD	ng/Kg	1.05	0.42	1.05	5.25	U		
30402-15-4	Total PeCDF	ng/Kg	1.05	0.42	1.05	5.25	U		
41903-57-5	Total TCDD	ng/Kg	0.21	0.105	0.21	1.05	U		
55722-27-5	Total TCDF	ng/Kg	0.21	0.105	0.21	1.05	U		

Acronyms and Abreviations

The following apply to the Chemical Data Tables

Laboratory Flag Qualifiers and Definitions

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value ≥ the Method Detection Limit (MDL) or Detection Limit (DL) and < the Limit of Quantitation (LOQ) or Reporting Limit (RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
u	Analyte was not detected at the value indicated
v	Concentration difference between the primary and confirmation column >100%. The RL is raised due to this disparity and evident interference.
w	The dissolved oxygen (DO) uptake for the unseeded blank is greater than 0.2 mg/L (milligrams per liter)
z	Laboratory Defined - see analysis report

Data Qualifying Codes

Two types of data qualifying codes or flags are applied in the course of the data review. The data validation flags indicate data that are not usable for decision making, more than normally biased and/or variable, or not representative of field conditions. These codes and their definitions are presented below in the hierarchy stipulated in the United States Environmental Protection Agency (EPA) *Contract Laboratory Program National Functional Guidelines for Organic Data Review* (August 2014) and the *EPA Region III Modifications to National Functional Guidelines for Organic Data Review* (September 1994) for blank qualifications only.

Data Validation Flags

Flag	Interpretation
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
B	The analyte was analyzed for, but not detected at a level greater than or equal to the level of the adjusted DL for sample and method.
J+	Reported value may not be accurate or precise, but the result may be biased high.
J-	Reported value may not be accurate or precise, but the result may be biased low.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (because either the quality of the data generated failed to meet certain quality control (QC) criteria, or the concentration of the analyte was below the Limit of Detection [LOD]).
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

Acronyms and Abreviations

The other type of code used by the data validator is a "Reason Code." The reason code indicates the type of QC failure that led to the application of the data validation flag.

Reason Codes

GC/MS Organics		GC and high performance liquid chromatography (HPLC) Organics		Inorganics and Conventionals	
Code	Interpretation	Code	Interpretation	Code	Interpretation
a	Incorrect or incomplete analytical sequence	a	Incorrect or incomplete analytical sequence	a	Incorrect or incomplete analytical sequence
b	Bubble found in vial >6millimeters	b	Instrument performance failure	b	Laboratory duplicate imprecision
c	Calibration failure; poor or unstable response	c	Calibration failure; poor or unstable response	c	Calibration failure
d	matrix spike/matrix spike duplicate (MS/MSD) imprecision	d	MS/MSD imprecision	d	MS/MSD imprecision
e	laboratory control spike duplicate (LCSD) imprecision	e	LCSD imprecision	e	LCSD imprecision
f	Field duplicate imprecision	f	Field duplicate imprecision	f	Field duplicate imprecision
g	Tuning failure or poor mass spec performance	g	Dual column confirmation imprecision	g	Duel isotope imprecision
h	Holding time violation	h	Holding time violation	h	Holding time violation
i	Internal standard failure	i	Internal standard failure	k	Cooler receipt temperature exceeds limits
k	Cooler receipt temperature exceeds limits	k	Cooler receipt temperature exceeds limits	l	LCSD recovery failure
l	LCS recovery failure	l	LCS recovery failure	m	MS/MSD recovery failure
m	MS/MSD recovery failure	m	MS/MSD recovery failure	n	interference check standard (ICS) failure
n	Improper sample preservation	p	Poor chromatography	o	Calibration blank contamination
p	Poor chromatography	q	Concentration exceeded the linear range	q	Concentration exceeded the linear range
q	Concentration exceeded the linear range	r	Linearity failure in initial calibration	r	Linearity failure in calibration or method of standard addition (MSA)
r	Linearity failure in initial calibration	s	Surrogate failure	s	Serial dilution failure
s	Surrogate failure	t	Blender blank contamination	t	Carboy Lot detection
t	Tentatively Identified Compound (TIC)	u	No confirmation column	u	Biological Oxygen Demand (BOD) minimum depletion did not exceed 2 mg/L
w	Identification criteria failure	w	Retention time failure	v	Post-digestion spike failure
x	Field blank contamination	x	Field blank contamination	w	Contract Required Detection Limit (CRDL) Standard Failure
y	Trip blank contamination	z	Method blank contamination	x	Field blank contamination
z	Method blank contamination			z	Preparation/Method blank contamination

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-39GW							IAL4-MW-39GW-DUP							IAL4-MW-39						
				5/24/2017							5/24/2017							8/10/2017						
				9017576							9017584							9150957						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
VOCs																								
630-20-6	1,1,1,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
71-55-6	1,1,1-Trichloroethane	ug/L	200	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L		4	2	4	10	U			4	2	4	10	U			NA						
79-00-5	1,1,2-Trichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-34-3	1,1-Dichloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-35-4	1,1-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
563-58-6	1,1-Dichloropropene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
87-61-6	1,2,3-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
96-18-4	1,2,3-Trichloropropane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
95-63-6	1,2,4-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/L	0.2	4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
106-93-4	1,2-Dibromoethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L	600	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
107-06-2	1,2-Dichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
540-59-0	1,2-Dichloroethene (Total)	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-87-5	1,2-Dichloropropane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-67-8	1,3,5-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
541-73-1	1,3-Dichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
142-28-9	1,3-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L	75	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
123-91-1	1,4-Dioxane	ug/L		200	70	200	250	U			200	70	200	250	U			200	70	200	250	U		
594-20-7	2,2-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-93-3	2-Butanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
95-49-8	2-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
591-78-6	2-Hexanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
106-43-4	4-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-39GW							IAL4-MW-39GW-DUP							IAL4-MW-39						
				5/24/2017							5/24/2017							8/10/2017						
				9017576							9017584							9150957						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
67-64-1	Acetone	ug/L		20	6	20	20	U			20	6	20	20	U			20	6	20	20	U		
71-43-2	Benzene	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-86-1	Bromobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
74-97-5	Bromochloromethane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-27-4	Bromodichloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-25-2	Bromoform	ug/L		1	0.5	1	4	U			1	0.5	1	4	U			1	0.5	1	4	U		
74-83-9	Bromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-15-0	Carbon Disulfide	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
56-23-5	Carbon Tetrachloride	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-90-7	Chlorobenzene	ug/L	100	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-00-3	Chloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
67-66-3	Chloroform	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
74-87-3	Chloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-59-2	cis-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-01-5	cis-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
110-82-7	Cyclohexane	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
124-48-1	Dibromochloromethane	ug/L	60	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
74-95-3	Dibromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-71-8	Dichlorodifluoromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
64-17-5	Ethanol	ug/L		200	50	200	250	U			200	50	200	250	U			200	50	200	250	U		
100-41-4	Ethylbenzene	ug/L	700	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	Freon 113	ug/L		NA							NA							4	2	4	10	U		
87-68-3	Hexachlorobutadiene	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
98-82-8	Isopropylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
179601-23-1	m+p-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-20-9	Methyl Acetate	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
1634-04-4	Methyl Tertiary Butyl Ether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-87-2	Methylcyclohexane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-39GW							IAL4-MW-39GW-DUP							IAL4-MW-39						
				5/24/2017							5/24/2017							8/10/2017						
				9017576							9017584							9150957						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
75-09-2	Methylene Chloride	ug/L		4	2	4	4	U			4	2	4	4	U			4	2	4	4	U		
91-20-3	Naphthalene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
104-51-8	n-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
103-65-1	n-Propylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
95-47-6	o-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
99-87-6	p-Isopropyltoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
135-98-8	sec-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
100-42-5	Styrene	ug/L	100	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-65-0	t-Butyl alcohol	ug/L		20	5	20	20	U			20	5	20	20	U			20	5	20	20	U		
98-06-6	tert-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
127-18-4	Tetrachloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-88-3	Toluene	ug/L	1000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-60-5	trans-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-02-6	trans-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-01-6	Trichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-69-4	Trichlorofluoromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-01-4	Vinyl Chloride	ug/L	2	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
1330-20-7	Xylene (Total)	ug/L	10000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
Semivolatiles																								
92-52-4	1,1'-Biphenyl	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L	70	1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
122-66-7	1,2-Diphenylhydrazine	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
541-73-1	1,3-Dichlorobenzene	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
123-91-1	1,4-Dioxane	ug/L		5	1	5	6	U			4	1	4	6	U			4	1	4	5	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
95-95-4	2,4,5-Trichlorophenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-39GW							IAL4-MW-39GW-DUP							IAL4-MW-39						
				5/24/2017							5/24/2017							8/10/2017						
				9017576							9017584							9150957						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
88-06-2	2,4,6-Trichlorophenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
120-83-2	2,4-Dichlorophenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
105-67-9	2,4-Dimethylphenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
51-28-5	2,4-Dinitrophenol	ug/L		34	11	34	34	U			34	11	34	34	U			31	10	31	31	U	UJ	c
121-14-2	2,4-Dinitrotoluene	ug/L		5	1	5	6	U			4	1	4	6	U			4	1	4	5	U		
87-65-0	2,6-Dichlorophenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
606-20-2	2,6-Dinitrotoluene	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
91-58-7	2-Chloronaphthalene	ug/L		1	0.5	1	1	U			1	0.4	1	1	U			1	0.4	1	1	U		
95-57-8	2-Chlorophenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
91-57-6	2-Methylnaphthalene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
95-48-7	2-Methylphenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
88-74-4	2-Nitroaniline	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
88-75-5	2-Nitrophenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
91-94-1	3,3'-Dichlorobenzidine	ug/L		5	2	5	6	U			4	2	4	6	U			4	2	4	5	U		
99-09-2	3-Nitroaniline	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/L		17	6	17	17	U			17	6	17	17	U			16	5	16	16	U		
101-55-3	4-Bromophenyl-phenylether	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
59-50-7	4-Chloro-3-methylphenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
106-47-8	4-Chloroaniline	ug/L		5	2	5	5	U			4	2	4	4	U			4	2	4	4	U		
7005-72-3	4-Chlorophenyl-phenylether	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
106-44-5	4-Methylphenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
100-01-6	4-Nitroaniline	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
100-02-7	4-Nitrophenol	ug/L		34	11	34	34	U			34	11	34	34	U			31	10	31	31	U		
83-32-9	Acenaphthene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
208-96-8	Acenaphthylene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
98-86-2	Acetophenone	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
120-12-7	Anthracene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
1912-24-9	Atrazine	ug/L	3	5	2	5	6	U			4	2	4	6	U			4	2	4	5	U		
100-52-7	Benzaldehyde	ug/L		5	1	5	6	U			4	1	4	6	U			4	1	4	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-39GW							IAL4-MW-39GW-DUP							IAL4-MW-39						
				5/24/2017							5/24/2017							8/10/2017						
				9017576							9017584							9150957						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
92-87-5	Benzidine	ug/L		60	20	60	60	U			61	20	61	61	U			63	21	63	63	U		
56-55-3	Benzo(a)anthracene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
50-32-8	Benzo(a)pyrene	ug/L	0.2	0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
205-99-2	Benzo(b)fluoranthene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
191-24-2	Benzo(g,h,i)perylene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
207-08-9	Benzo(k)fluoranthene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
65-85-0	Benzoic acid	ug/L		17	7	17	17	U	UJ	c	17	7	17	17	U	UJ	c	16	6	16	16	U		
100-51-6	Benzyl alcohol	ug/L		23	11	23	34	U			22	11	22	34	U			21	10	21	31	U		
111-91-1	bis(2-Chloroethoxy)methane	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
111-44-4	bis(2-Chloroethyl)ether	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
39638-32-9	bis(2-Chloroisopropyl)ether	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
117-81-7	bis(2-Ethylhexyl)phthalate	ug/L		5	2	5	6	U			4	2	4	6	U			4	2	4	5	U		
85-68-7	Butylbenzylphthalate	ug/L		5	2	5	6	U			4	2	4	6	U			4	2	4	5	U		
105-60-2	Caprolactam	ug/L		17	6	17	17	U			17	6	17	17	U			16	5	16	16	U		
86-74-8	Carbazole	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
218-01-9	Chrysene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
53-70-3	Dibenz(a,h)anthracene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
132-64-9	Dibenzofuran	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
84-66-2	Diethylphthalate	ug/L		5	2	5	6	U			4	2	4	6	U			4	2	4	5	U		
131-11-3	Dimethylphthalate	ug/L		5	2	5	6	U			4	2	4	6	U			4	2	4	5	U		
84-74-2	Di-n-butylphthalate	ug/L		5	2	5	6	U			4	2	4	6	U			4	2	4	5	U		
117-84-0	Di-n-octylphthalate	ug/L		5	2	5	6	U			4	2	4	6	U			4	2	4	5	U		
88-85-7	Dinoseb	ug/L	7	5	2	5	6	U			4	2	4	6	U			4	2	4	5	U		
206-44-0	Fluoranthene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
86-73-7	Fluorene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
118-74-1	Hexachlorobenzene	ug/L	1	0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
87-68-3	Hexachlorobutadiene	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
77-47-4	Hexachlorocyclopentadiene	ug/L	50	17	6	17	17	U			17	6	17	17	U			17	6	17	17	U	UJ	h
67-72-1	Hexachloroethane	ug/L		5	1	5	6	U			4	1	4	6	U			4	1	4	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-39GW							IAL4-MW-39GW-DUP							IAL4-MW-39						
				5/24/2017							5/24/2017							8/10/2017						
				9017576							9017584							9150957						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
193-39-5	Indeno(1,2,3-cd)pyrene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
78-59-1	Isophorone	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
91-20-3	Naphthalene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.1	0.1	0.2	0.5	J		
98-95-3	Nitrobenzene	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
62-75-9	N-Nitrosodimethylamine	ug/L		5	2	5	6	U			4	2	4	6	U			4	2	4	5	U		
621-64-7	N-Nitroso-di-n-propylamine	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
86-30-6	N-Nitrosodiphenylamine	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
930-55-2	N-Nitrosopyrrolidine	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
87-86-5	Pentachlorophenol	ug/L	1	5	1	5	6	U			4	1	4	6	U			4	1	4	5	U		
85-01-8	Phenanthrene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
108-95-2	Phenol	ug/L		1	0.6	1	1	U			1	0.6	1	1	U			1	0.5	1	1	U		
129-00-0	Pyrene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U		
Total Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	0.208	0.0868	0.2	0.4	J			0.245	0.0868	0.2	0.4	J			0.2	0.0894	0.2	0.4	U		
7440-36-0	Antimony	mg/L	0.006	0.001	0.00048	0.001	0.002	U			0.001	0.00048	0.001	0.002	U			0.001	0.00045	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.002	0.00068	0.002	0.004	U			0.002	0.00068	0.002	0.004	U			0.002	0.00072	0.002	0.004	U		
7440-39-3	Barium	mg/L	2	0.0398	0.0011	0.0025	0.01				0.0394	0.0011	0.0025	0.01				0.0384	0.00085	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00025	0.00011	0.00025	0.001	U			0.00025	0.00011	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.0005	0.00019	0.0005	0.001	U			0.0005	0.00019	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		16.6	0.0382	0.2	0.4				16.6	0.0382	0.2	0.4				17.2	0.06	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0038	0.0018	0.0038	0.03	U			0.0038	0.0018	0.0038	0.03	U			0.0075	0.0033	0.0075	0.03	U		
7440-48-4	Cobalt	mg/L		0.00024	0.0002	0.0005	0.001	J			0.00021	0.0002	0.0005	0.001	J			0.0005	0.00016	0.0005	0.001	U		
7440-50-8	Copper	mg/L	1	0.01	0.0041	0.01	0.02	U			0.01	0.0041	0.01	0.02	U			0.01	0.004	0.01	0.02	U		
7439-89-6	Iron	mg/L	0.3	0.245	0.0747	0.2	0.4	J			0.213	0.0747	0.2	0.4	J			0.2	0.0805	0.2	0.4	U		
7439-92-1	Lead	mg/L	0.015	0.0003	0.00009	0.00025	0.002	J			0.00028	0.00009	0.00025	0.002	J			0.00016	0.00011	0.00025	0.002	J		
7439-95-4	Magnesium	mg/L		5.11	0.019	0.05	0.2				5.08	0.019	0.05	0.2				5.01	0.0374	0.1	0.2			
7439-96-5	Manganese	mg/L	0.05	0.0053	0.0018	0.005	0.01	J			0.0053	0.0018	0.005	0.01	J			0.003	0.0016	0.005	0.01	J		
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.005	0.0028	0.005	0.02	U			0.005	0.0028	0.005	0.02	U			0.01	0.004	0.01	0.02	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-39GW							IAL4-MW-39GW-DUP							IAL4-MW-39						
				5/24/2017							5/24/2017							8/10/2017						
				9017576							9017584							9150957						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-09-7	Potassium	mg/L		2.45	0.16	0.5	1				2.37	0.16	0.5	1				2.31	0.179	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.0011	0.00044	0.001	0.004	J			0.0011	0.00044	0.001	0.004	J			0.0011	0.0005	0.001	0.004	J		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00012	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U		
7440-23-5	Sodium	mg/L		17.8	0.173	0.5	2				17.6	0.173	0.5	2				16.4	0.321	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00016	0.00025	0.001	U			0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.00043	0.0002	0.0005	0.001	J			0.0004	0.0002	0.0005	0.001	J			0.0005	0.00021	0.0005	0.001	U		
7440-66-6	Zinc	mg/L	5	0.01	0.0054	0.01	0.04	U			0.01	0.0054	0.01	0.04	U			0.01	0.0065	0.01	0.04	U		
Hexavalent Chromium																								
18540-29-9	Hexavalent Chromium	ug/L		0.05	0.015	0.05	0.05	U			0.05	0.015	0.05	0.05	U			0.05	0.015	0.05	0.05	U		
Dissolved Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	0.2	0.0868	0.2	0.4	U			0.2	0.0868	0.2	0.4	U			0.2	0.0894	0.2	0.4	U		
7440-36-0	Antimony	mg/L	0.006	0.001	0.00048	0.001	0.002	U			0.001	0.00048	0.001	0.002	U			0.001	0.00045	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.002	0.00068	0.002	0.004	U			0.002	0.00068	0.002	0.004	U			0.002	0.00072	0.002	0.004	U		
7440-39-3	Barium	mg/L	2	0.0382	0.0011	0.0025	0.01				0.0369	0.0011	0.0025	0.01				0.0381	0.00085	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00025	0.00011	0.00025	0.001	U			0.00025	0.00011	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.0005	0.00019	0.0005	0.001	U			0.0005	0.00019	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		16.3	0.0382	0.2	0.4				16	0.0382	0.2	0.4				17.1	0.06	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0038	0.0018	0.0038	0.03	U			0.0038	0.0018	0.0038	0.03	U			0.0075	0.0033	0.0075	0.03	U		
7440-48-4	Cobalt	mg/L		0.00037	0.0002	0.0005	0.001	J			0.00027	0.0002	0.0005	0.001	J			0.0005	0.00016	0.0005	0.001	U		
7440-50-8	Copper	mg/L	1	0.01	0.0041	0.01	0.02	U			0.01	0.0041	0.01	0.02	U			0.0046	0.004	0.01	0.02	J	B	o
7439-89-6	Iron	mg/L	0.3	0.2	0.0747	0.2	0.4	U			0.2	0.0747	0.2	0.4	U			0.2	0.0805	0.2	0.4	U		
7439-92-1	Lead	mg/L	0.015	0.000094	0.00009	0.00025	0.002	J			0.00025	0.00009	0.00025	0.002	U			0.00025	0.00011	0.00025	0.002	U		
7439-95-4	Magnesium	mg/L		4.98	0.019	0.05	0.2				4.91	0.019	0.05	0.2				4.91	0.0374	0.1	0.2			
7439-96-5	Manganese	mg/L	0.05	0.007	0.0018	0.005	0.01	J			0.0065	0.0018	0.005	0.01	J			0.003	0.0016	0.005	0.01	J		
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.005	0.0028	0.005	0.02	U			0.005	0.0028	0.005	0.02	U			0.01	0.004	0.01	0.02	U		
7440-09-7	Potassium	mg/L		2.39	0.16	0.5	1				2.42	0.16	0.5	1				2.36	0.179	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.00092	0.00044	0.001	0.004	J			0.0011	0.00044	0.001	0.004	J			0.001	0.0005	0.001	0.004	J		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00012	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-39GW							IAL4-MW-39GW-DUP							IAL4-MW-39						
				5/24/2017							5/24/2017							8/10/2017						
				9017576							9017584							9150957						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-23-5	Sodium	mg/L		17.6	0.173	0.5	2				17.1	0.173	0.5	2				16.3	0.321	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00016	0.00025	0.001	U			0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.00022	0.0002	0.0005	0.001	J			0.0005	0.0002	0.0005	0.001	U			0.0005	0.00021	0.0005	0.001	U		
7440-66-6	Zinc	mg/L	5	0.01	0.0054	0.01	0.04	U			0.01	0.0054	0.01	0.04	U			0.01	0.0065	0.01	0.04	U		
PCBs																								
12674-11-2	PCB-1016	ug/L	0.0005	0.24	0.081	0.24	0.4	U			0.25	0.082	0.25	0.41	U			0.28	0.092	0.28	0.46	U D1		
11104-28-2	PCB-1221	ug/L	0.0005	0.24	0.081	0.24	0.4	U			0.25	0.082	0.25	0.41	U			0.28	0.092	0.28	0.46	U D1		
11141-16-5	PCB-1232	ug/L	0.0005	0.32	0.16	0.32	0.4	U			0.33	0.16	0.33	0.41	U			0.37	0.18	0.37	0.46	U D1		
53469-21-9	PCB-1242	ug/L	0.0005	0.24	0.081	0.24	0.4	U			0.25	0.082	0.25	0.41	U			0.28	0.092	0.28	0.46	U D1		
12672-29-6	PCB-1248	ug/L	0.0005	0.24	0.081	0.24	0.4	U			0.25	0.082	0.25	0.41	U			0.28	0.092	0.28	0.46	U D1		
11097-69-1	PCB-1254	ug/L	0.0005	0.24	0.081	0.24	0.4	U			0.25	0.082	0.25	0.41	U			0.28	0.092	0.28	0.46	U D1		
11096-82-5	PCB-1260	ug/L	0.0005	0.24	0.12	0.24	0.4	U			0.25	0.12	0.25	0.41	U			0.28	0.14	0.28	0.46	U D1		
37324-23-5	PCB-1262	ug/L	0.0005	0.32	0.16	0.32	0.4	U			0.33	0.16	0.33	0.41	U			0.37	0.18	0.37	0.46	U D1		
11100-14-4	PCB-1268	ug/L	0.0005	0.26	0.13	0.26	0.4	U			0.26	0.13	0.26	0.41	U			0.29	0.15	0.29	0.46	U D1		
Dioxin																								
35822-46-9	1234678-HpCDD	pg/L		11	6	11	11	U			11	7	11	11	U			10	6	10	10	U		
67562-39-4	1234678-HpCDF	pg/L		11	4	11	11	U			11	4	11	11	U			10	4	10	10	U		
55673-89-7	1234789-HpCDF	pg/L		11	3	11	11	U			11	3	11	11	U			10	3	10	10	U		
39227-28-6	123478-HxCDD	pg/L		11	4	11	11	U			11	4	11	11	U			10	4	10	10	U		
70648-26-9	123478-HxCDF	pg/L		11	3	11	11	U			11	3	11	11	U			10	3	10	10	U		
57653-85-7	123678-HxCDD	pg/L		11	3	11	11	U			11	3	11	11	U			10	3	10	10	U		
57117-44-9	123678-HxCDF	pg/L		11	3	11	11	U			11	3	11	11	U			10	3	10	10	U		
19408-74-3	123789-HxCDD	pg/L		11	4	11	11	U			11	4	11	11	U			10	4	10	10	U		
72918-21-9	123789-HxCDF	pg/L		11	4	11	11	U			11	4	11	11	U			10	4	10	10	U		
40321-76-4	12378-PeCDD	pg/L		11	3	11	11	U			11	3	11	11	U			10	3	10	10	U		
57117-41-6	12378-PeCDF	pg/L		11	3	11	11	U			11	3	11	11	U			10	3	10	10	U		
60851-34-5	234678-HxCDF	pg/L		11	3	11	11	U			11	3	11	11	U			10	3	10	10	U		
57117-31-4	23478-PeCDF	pg/L		11	3	11	11	U			11	3	11	11	U			10	3	10	10	U		
1746-01-6	2378-TCDD	pg/L	30	2	1	2	2	U			2	1	2	2	U			2	1	2	2	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-39GW							IAL4-MW-39GW-DUP							IAL4-MW-39						
				5/24/2017							5/24/2017							8/10/2017						
				9017576							9017584							9150957						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
51207-31-9	2378-TCDF	pg/L		2	1	2	2	U			2	1	2	2	U			2	1	2	2	U		
3268-87-9	OCDD	pg/L		14	11	21	21	J			21	11	22	22	J			21	10	21	21	U		
39001-02-0	OCDF	pg/L		21	6	21	21	U			22	7	22	22	U			21	6	21	21	U		
TEQWHO05-0	TEQ WHO 2005 - EDLx0.0	pg/L		0.004							0.006							0				U		
TEQWHO05-0	TEQ WHO 2005 - EDLx0.5	pg/L		4							4							4					B	x
37871-00-4	Total HpCDD	pg/L		11	4	11	11	U			11	4	11	11	U			10	4	10	10	U		
38998-75-3	Total HpCDF	pg/L		11	4	11	11	U			4	4	11	11	J			10	4	10	10	U		
34465-46-8	Total HxCDD	pg/L		11	4	11	11	U			5	4	11	11	J			10	4	10	10	U		
55684-94-1	Total HxCDF	pg/L		11	4	11	11	U			11	4	11	11				10	4	10	10	U		
36088-22-9	Total PeCDD	pg/L		11	3	11	11	U			11	3	11	11	U			10	3	10	10	U		
30402-15-4	Total PeCDF	pg/L		11	3	11	11	U			3	3	11	11	J			10	3	10	10	U		
41903-57-5	Total TCDD	pg/L		2	1	2	2	U			2	1	2	2	U			2	1	2	2	U		
55722-27-5	Total TCDF	pg/L		2	1	2	2	U			2	1	2	2	U			2	1	2	2	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	ILF4-MW-40GW							ILF4-MW-40							ILF4-MW-41S-GW						
				5/25/2017							9/21/2017							5/24/2017						
				9017594							9221925							9017586						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
VOCs																								
630-20-6	1,1,1,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
71-55-6	1,1,1-Trichloroethane	ug/L	200	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L		4	2	4	10	U			NA							4	2	4	10	U		
79-00-5	1,1,2-Trichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-34-3	1,1-Dichloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-35-4	1,1-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
563-58-6	1,1-Dichloropropene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
87-61-6	1,2,3-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
96-18-4	1,2,3-Trichloropropane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
95-63-6	1,2,4-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/L	0.2	4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
106-93-4	1,2-Dibromoethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L	600	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
107-06-2	1,2-Dichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
540-59-0	1,2-Dichloroethene (Total)	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-87-5	1,2-Dichloropropane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-67-8	1,3,5-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
541-73-1	1,3-Dichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
142-28-9	1,3-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L	75	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
123-91-1	1,4-Dioxane	ug/L		200	70	200	250	U			200	70	200	250	U			200	70	200	250	U		
594-20-7	2,2-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-93-3	2-Butanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
95-49-8	2-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
591-78-6	2-Hexanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
106-43-4	4-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	ILF4-MW-40GW							ILF4-MW-40							ILF4-MW-41S-GW						
				5/25/2017							9/21/2017							5/24/2017						
				9017594							9221925							9017586						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
67-64-1	Acetone	ug/L		20	6	20	20	U			20	6	20	20	U			20	6	20	20	U		
71-43-2	Benzene	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-86-1	Bromobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
74-97-5	Bromochloromethane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-27-4	Bromodichloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-25-2	Bromoform	ug/L		1	0.5	1	4	U			1	0.5	1	4	U			1	0.5	1	4	U		
74-83-9	Bromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-15-0	Carbon Disulfide	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
56-23-5	Carbon Tetrachloride	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-90-7	Chlorobenzene	ug/L	100	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-00-3	Chloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
67-66-3	Chloroform	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
74-87-3	Chloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-59-2	cis-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-01-5	cis-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
110-82-7	Cyclohexane	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
124-48-1	Dibromochloromethane	ug/L	60	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
74-95-3	Dibromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-71-8	Dichlorodifluoromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
64-17-5	Ethanol	ug/L		200	50	200	250	U			200	50	200	250	U			200	50	200	250	U		
100-41-4	Ethylbenzene	ug/L	700	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	Freon 113	ug/L		NA							4	2	4	10	U			NA						
87-68-3	Hexachlorobutadiene	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
98-82-8	Isopropylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
179601-23-1	m+p-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-20-9	Methyl Acetate	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
1634-04-4	Methyl Tertiary Butyl Ether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-87-2	Methylcyclohexane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	ILF4-MW-40GW							ILF4-MW-40							ILF4-MW-41S-GW						
				5/25/2017							9/21/2017							5/24/2017						
				9017594							9221925							9017586						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
75-09-2	Methylene Chloride	ug/L		4	2	4	4	U			1	0.5	1	1	U			4	2	4	4	U		
91-20-3	Naphthalene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
104-51-8	n-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
103-65-1	n-Propylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
95-47-6	o-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
99-87-6	p-Isopropyltoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
135-98-8	sec-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
100-42-5	Styrene	ug/L	100	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-65-0	t-Butyl alcohol	ug/L		20	5	20	20	U			20	5	20	20	U			20	5	20	20	U		
98-06-6	tert-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
127-18-4	Tetrachloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-88-3	Toluene	ug/L	1000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-60-5	trans-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-02-6	trans-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-01-6	Trichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-69-4	Trichlorofluoromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-01-4	Vinyl Chloride	ug/L	2	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
1330-20-7	Xylene (Total)	ug/L	10000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
Semivolatiles																								
92-52-4	1,1'-Biphenyl	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L	70	1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
122-66-7	1,2-Diphenylhydrazine	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
541-73-1	1,3-Dichlorobenzene	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
123-91-1	1,4-Dioxane	ug/L		4	1	4	5	U			4	1	4	6	U			5	1	5	6	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
95-95-4	2,4,5-Trichlorophenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	ILF4-MW-40GW							ILF4-MW-40							ILF4-MW-41S-GW						
				5/25/2017							9/21/2017							5/24/2017						
				9017594							9221925							9017586						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
88-06-2	2,4,6-Trichlorophenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
120-83-2	2,4-Dichlorophenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
105-67-9	2,4-Dimethylphenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
51-28-5	2,4-Dinitrophenol	ug/L		32	11	32	32	U			33	11	33	33	U			35	12	35	35	U		
121-14-2	2,4-Dinitrotoluene	ug/L		4	1	4	5	U			4	1	4	6	U			5	1	5	6	U		
87-65-0	2,6-Dichlorophenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
606-20-2	2,6-Dinitrotoluene	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
91-58-7	2-Chloronaphthalene	ug/L		1	0.4	1	1	U			1	0.4	1	1	U			1	0.5	1	1	U		
95-57-8	2-Chlorophenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
91-57-6	2-Methylnaphthalene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
95-48-7	2-Methylphenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
88-74-4	2-Nitroaniline	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
88-75-5	2-Nitrophenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
91-94-1	3,3'-Dichlorobenzidine	ug/L		4	2	4	5	U			4	2	4	6	U			5	2	5	6	U		
99-09-2	3-Nitroaniline	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/L		16	5	16	16	U			17	6	17	17	U			18	6	18	18	U		
101-55-3	4-Bromophenyl-phenylether	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
59-50-7	4-Chloro-3-methylphenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
106-47-8	4-Chloroaniline	ug/L		4	2	4	4	U			4	2	4	4	U			5	2	5	5	U		
7005-72-3	4-Chlorophenyl-phenylether	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
106-44-5	4-Methylphenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
100-01-6	4-Nitroaniline	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
100-02-7	4-Nitrophenol	ug/L		32	11	32	32	U			33	11	33	33	U			35	12	35	35	U		
83-32-9	Acenaphthene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
208-96-8	Acenaphthylene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
98-86-2	Acetophenone	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
120-12-7	Anthracene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
1912-24-9	Atrazine	ug/L	3	4	2	4	5	U			4	2	4	6	U			5	2	5	6	U		
100-52-7	Benzaldehyde	ug/L		4	1	4	5	U			4	1	4	6	U			5	1	5	6	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	ILF4-MW-40GW							ILF4-MW-40							ILF4-MW-41S-GW						
				5/25/2017							9/21/2017							5/24/2017						
				9017594							9221925							9017586						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
92-87-5	Benzidine	ug/L		65	22	65	65	U	UJ	I	67	22	67	67	U			66	22	66	66	U		
56-55-3	Benzo(a)anthracene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
50-32-8	Benzo(a)pyrene	ug/L	0.2	0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
205-99-2	Benzo(b)fluoranthene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
191-24-2	Benzo(g,h,i)perylene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
207-08-9	Benzo(k)fluoranthene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
65-85-0	Benzoic acid	ug/L		16	6	16	16	U			17	7	17	17	U			18	7	18	18	U	UJ	c
100-51-6	Benzyl alcohol	ug/L		22	11	22	32	U			22	11	22	33	U			23	12	23	35	U		
111-91-1	bis(2-Chloroethoxy)methane	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
111-44-4	bis(2-Chloroethyl)ether	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
39638-32-9	bis(2-Chloroisopropyl)ether	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
117-81-7	bis(2-Ethylhexyl)phthalate	ug/L		4	2	4	5	U			4	2	4	6	U			5	2	5	6	U		
85-68-7	Butylbenzylphthalate	ug/L		4	2	4	5	U			4	2	4	6	U			5	2	5	6	U		
105-60-2	Caprolactam	ug/L		16	5	16	16	U			17	6	17	17	U			18	6	18	18	U		
86-74-8	Carbazole	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
218-01-9	Chrysene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
53-70-3	Dibenz(a,h)anthracene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
132-64-9	Dibenzofuran	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
84-66-2	Diethylphthalate	ug/L		4	2	4	5	U			4	2	4	6	U			5	2	5	6	U		
131-11-3	Dimethylphthalate	ug/L		4	2	4	5	U			4	2	4	6	U			5	2	5	6	U		
84-74-2	Di-n-butylphthalate	ug/L		4	2	4	5	U			4	2	4	6	U			5	2	5	6	U		
117-84-0	Di-n-octylphthalate	ug/L		4	2	4	5	U			4	2	4	6	U			5	2	5	6	U		
88-85-7	Dinoseb	ug/L	7	4	2	4	5	U			4	2	4	6	U			5	2	5	6	U		
206-44-0	Fluoranthene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
86-73-7	Fluorene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
118-74-1	Hexachlorobenzene	ug/L	1	0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
87-68-3	Hexachlorobutadiene	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
77-47-4	Hexachlorocyclopentadiene	ug/L	50	16	5	16	16	U			17	6	17	17	U			18	6	18	18	U		
67-72-1	Hexachloroethane	ug/L		4	1	4	5	U			4	1	4	6	U			5	1	5	6	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	ILF4-MW-40GW							ILF4-MW-40							ILF4-MW-41S-GW						
				5/25/2017							9/21/2017							5/24/2017						
				9017594							9221925							9017586						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
193-39-5	Indeno(1,2,3-cd)pyrene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
78-59-1	Isophorone	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
91-20-3	Naphthalene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
98-95-3	Nitrobenzene	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
62-75-9	N-Nitrosodimethylamine	ug/L		4	2	4	5	U			4	2	4	6	U			5	2	5	6	U		
621-64-7	N-Nitroso-di-n-propylamine	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
86-30-6	N-Nitrosodiphenylamine	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
930-55-2	N-Nitrosopyrrolidine	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
87-86-5	Pentachlorophenol	ug/L	1	4	1	4	5	U			4	1	4	6	U			5	1	5	6	U		
85-01-8	Phenanthrene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
108-95-2	Phenol	ug/L		1	0.5	1	1	U			1	0.6	1	1	U			1	0.6	1	1	U		
129-00-0	Pyrene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.6	U		
Total Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	4.7	0.0868	0.2	0.4				0.435	0.0894	0.2	0.4		J+	m	0.2	0.0868	0.2	0.4	U		
7440-36-0	Antimony	mg/L	0.006	0.00065	0.00048	0.001	0.002	J			0.00089	0.00045	0.001	0.002	J			0.001	0.00048	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.0016	0.00068	0.002	0.004	J			0.00084	0.00072	0.002	0.004	J	J-	m	0.002	0.00068	0.002	0.004	U		
7440-39-3	Barium	mg/L	2	0.0221	0.0011	0.0025	0.01				0.0096	0.00085	0.0025	0.01	J			0.0463	0.0011	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00025	0.00011	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U			0.00025	0.00011	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.0005	0.00019	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U			0.0005	0.00019	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		7.2	0.0382	0.2	0.4				13.8	0.06	0.2	0.4				4.01	0.0382	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.007	0.0018	0.0038	0.03	J			0.0075	0.0033	0.0075	0.03	U			0.0038	0.0018	0.0038	0.03	U		
7440-48-4	Cobalt	mg/L		0.00051	0.0002	0.0005	0.001	J			0.00022	0.00016	0.0005	0.001	J			0.0028	0.0002	0.0005	0.001			
7440-50-8	Copper	mg/L	1	0.0052	0.0041	0.01	0.02	J			0.01	0.004	0.01	0.02	U			0.01	0.0041	0.01	0.02	U		
7439-89-6	Iron	mg/L	0.3	3.62	0.0747	0.2	0.4				0.568	0.0805	0.2	0.4				0.2	0.0747	0.2	0.4	U		
7439-92-1	Lead	mg/L	0.015	0.0035	0.00009	0.00025	0.002				0.00045	0.00011	0.00025	0.002	J			0.00025	0.00009	0.00025	0.002	U		
7439-95-4	Magnesium	mg/L		1.34	0.019	0.05	0.2				1.47	0.0374	0.1	0.2				2.45	0.019	0.05	0.2			
7439-96-5	Manganese	mg/L	0.05	0.0119	0.0018	0.005	0.01				0.0162	0.0016	0.005	0.01				0.0426	0.0018	0.005	0.01			
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.005	0.0028	0.005	0.02	U			0.01	0.004	0.01	0.02	U			0.0041	0.0028	0.005	0.02	J		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	ILF4-MW-40GW							ILF4-MW-40							ILF4-MW-41S-GW						
				5/25/2017							9/21/2017							5/24/2017						
				9017594							9221925							9017586						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-09-7	Potassium	mg/L		1.37	0.16	0.5	1				0.902	0.179	0.5	1	J			1.47	0.16	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.001	0.00044	0.001	0.004	U			0.001	0.0005	0.001	0.004	U			0.001	0.00044	0.001	0.004	U		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		
7440-23-5	Sodium	mg/L		12.4	0.173	0.5	2				3.48	0.321	0.5	2				6.36	0.173	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00016	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.0121	0.0002	0.0005	0.001				0.0024	0.00021	0.0005	0.001		B	x	0.00023	0.0002	0.0005	0.001	J		
7440-66-6	Zinc	mg/L	5	0.0102	0.0054	0.01	0.04	J			0.01	0.0065	0.01	0.04	U			0.0374	0.0054	0.01	0.04	J		
Hexavalent Chromium																								
18540-29-9	Hexavalent Chromium	ug/L		0.05	0.015	0.05	0.05	U			0.072	0.015	0.05	0.05		J+	m	0.05	0.015	0.05	0.05	U		
Dissolved Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	0.102	0.0868	0.2	0.4	J	B	o	0.2	0.0894	0.2	0.4	U			0.2	0.0868	0.2	0.4	U		
7440-36-0	Antimony	mg/L	0.006	0.001	0.00048	0.001	0.002	U			0.00065	0.00045	0.001	0.002	J	J	c	0.001	0.00048	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.002	0.00068	0.002	0.004	U			0.002	0.00072	0.002	0.004	U			0.002	0.00068	0.002	0.004	U		
7440-39-3	Barium	mg/L	2	0.0072	0.0011	0.0025	0.01	J			0.008	0.00085	0.0025	0.01	J			0.0437	0.0011	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00025	0.00011	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U			0.00025	0.00011	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.0005	0.00019	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U			0.0005	0.00019	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		6.58	0.0382	0.2	0.4				13.9	0.06	0.2	0.4				3.87	0.0382	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0038	0.0018	0.0038	0.03	U			0.0075	0.0033	0.0075	0.03	U			0.0038	0.0018	0.0038	0.03	U		
7440-48-4	Cobalt	mg/L		0.0005	0.0002	0.0005	0.001	U			0.0005	0.00016	0.0005	0.001	U			0.0026	0.0002	0.0005	0.001			
7440-50-8	Copper	mg/L	1	0.0042	0.0041	0.01	0.02	J			0.01	0.004	0.01	0.02	U			0.01	0.0041	0.01	0.02	U		
7439-89-6	Iron	mg/L	0.3	0.128	0.0747	0.2	0.4	J			0.2	0.0805	0.2	0.4	U			0.2	0.0747	0.2	0.4	U		
7439-92-1	Lead	mg/L	0.015	0.00015	0.00009	0.00025	0.002	J			0.00025	0.00011	0.00025	0.002	U			0.00025	0.00009	0.00025	0.002	U		
7439-95-4	Magnesium	mg/L		1.03	0.019	0.05	0.2				1.47	0.0374	0.1	0.2				2.36	0.019	0.05	0.2			
7439-96-5	Manganese	mg/L	0.05	0.005	0.0018	0.005	0.01	U			0.0025	0.0016	0.005	0.01	J			0.0402	0.0018	0.005	0.01			
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.005	0.0028	0.005	0.02	U			0.01	0.004	0.01	0.02	U			0.0028	0.0028	0.005	0.02	J		
7440-09-7	Potassium	mg/L		0.922	0.16	0.5	1	J			0.709	0.179	0.5	1	J			1.4	0.16	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.001	0.00044	0.001	0.004	U			0.001	0.0005	0.001	0.004	U			0.001	0.00044	0.001	0.004	U		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	ILF4-MW-40GW							ILF4-MW-40							ILF4-MW-41S-GW						
				5/25/2017							9/21/2017							5/24/2017						
				9017594							9221925							9017586						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-23-5	Sodium	mg/L		12.1	0.173	0.5	2				3.38	0.321	0.5	2				6.34	0.173	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00016	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.00088	0.0002	0.0005	0.001	J			0.00067	0.00021	0.0005	0.001	J	B	x	0.0005	0.0002	0.0005	0.001	U		
7440-66-6	Zinc	mg/L	5	0.01	0.0054	0.01	0.04	U			0.01	0.0065	0.01	0.04	U			0.0377	0.0054	0.01	0.04	J		
PCBs																								
12674-11-2	PCB-1016	ug/L	0.0005	0.26	0.086	0.26	0.43	U			NA							0.28	0.093	0.28	0.47	U		
11104-28-2	PCB-1221	ug/L	0.0005	0.26	0.086	0.26	0.43	U			NA							0.28	0.093	0.28	0.47	U		
11141-16-5	PCB-1232	ug/L	0.0005	0.34	0.17	0.34	0.43	U			NA							0.37	0.19	0.37	0.47	U		
53469-21-9	PCB-1242	ug/L	0.0005	0.26	0.086	0.26	0.43	U			NA							0.28	0.093	0.28	0.47	U		
12672-29-6	PCB-1248	ug/L	0.0005	0.26	0.086	0.26	0.43	U			NA							0.28	0.093	0.28	0.47	U		
11097-69-1	PCB-1254	ug/L	0.0005	0.26	0.086	0.26	0.43	U			NA							0.28	0.093	0.28	0.47	U		
11096-82-5	PCB-1260	ug/L	0.0005	0.26	0.13	0.26	0.43	U			NA							0.28	0.14	0.28	0.47	U		
37324-23-5	PCB-1262	ug/L	0.0005	0.34	0.17	0.34	0.43	U			NA							0.37	0.19	0.37	0.47	U		
11100-14-4	PCB-1268	ug/L	0.0005	0.27	0.14	0.27	0.43	U			NA							0.3	0.15	0.3	0.47	U		
Dioxin																								
35822-46-9	1234678-HpCDD	pg/L		NA							NA							NA						
67562-39-4	1234678-HpCDF	pg/L		NA							NA							NA						
55673-89-7	1234789-HpCDF	pg/L		NA							NA							NA						
39227-28-6	123478-HxCDD	pg/L		NA							NA							NA						
70648-26-9	123478-HxCDF	pg/L		NA							NA							NA						
57653-85-7	123678-HxCDD	pg/L		NA							NA							NA						
57117-44-9	123678-HxCDF	pg/L		NA							NA							NA						
19408-74-3	123789-HxCDD	pg/L		NA							NA							NA						
72918-21-9	123789-HxCDF	pg/L		NA							NA							NA						
40321-76-4	12378-PeCDD	pg/L		NA							NA							NA						
57117-41-6	12378-PeCDF	pg/L		NA							NA							NA						
60851-34-5	234678-HxCDF	pg/L		NA							NA							NA						
57117-31-4	23478-PeCDF	pg/L		NA							NA							NA						
1746-01-6	2378-TCDD	pg/L	30	NA							NA							NA						

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	ILF4-MW-40GW							ILF4-MW-40							ILF4-MW-41S-GW						
				5/25/2017							9/21/2017							5/24/2017						
				9017594							9221925							9017586						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
51207-31-9	2378-TCDF	pg/L		NA							NA							NA						
3268-87-9	OCDD	pg/L		NA							NA							NA						
39001-02-0	OCDF	pg/L		NA							NA							NA						
TEQWHO05-0	TEQ WHO 2005 - EDLx0.0	pg/L		NA							NA							NA						
TEQWHO05-0	TEQ WHO 2005 - EDLx0.5	pg/L		NA							NA							NA						
37871-00-4	Total HpCDD	pg/L		NA							NA							NA						
38998-75-3	Total HpCDF	pg/L		NA							NA							NA						
34465-46-8	Total HxCDD	pg/L		NA							NA							NA						
55684-94-1	Total HxCDF	pg/L		NA							NA							NA						
36088-22-9	Total PeCDD	pg/L		NA							NA							NA						
30402-15-4	Total PeCDF	pg/L		NA							NA							NA						
41903-57-5	Total TCDD	pg/L		NA							NA							NA						
55722-27-5	Total TCDF	pg/L		NA							NA							NA						

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41S							ILF4-MW-41D-GW							IAL4-MW-41D						
				8/9/2017							5/24/2017							8/9/2017						
				9150941							9017588							9150943						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
VOCs																								
630-20-6	1,1,1,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
71-55-6	1,1,1-Trichloroethane	ug/L	200	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L		NA							4	2	4	10	U			NA						
79-00-5	1,1,2-Trichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-34-3	1,1-Dichloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-35-4	1,1-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
563-58-6	1,1-Dichloropropene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
87-61-6	1,2,3-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
96-18-4	1,2,3-Trichloropropane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
95-63-6	1,2,4-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/L	0.2	4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
106-93-4	1,2-Dibromoethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L	600	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
107-06-2	1,2-Dichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
540-59-0	1,2-Dichloroethene (Total)	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-87-5	1,2-Dichloropropane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-67-8	1,3,5-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
541-73-1	1,3-Dichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
142-28-9	1,3-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L	75	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
123-91-1	1,4-Dioxane	ug/L		200	70	200	250	U			200	70	200	250	U			200	70	200	250	U		
594-20-7	2,2-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-93-3	2-Butanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
95-49-8	2-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
591-78-6	2-Hexanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
106-43-4	4-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41S							ILF4-MW-41D-GW							IAL4-MW-41D						
				8/9/2017							5/24/2017							8/9/2017						
				9150941							9017588							9150943						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
67-64-1	Acetone	ug/L		20	6	20	20	U			20	6	20	20	U			20	6	20	20	U		
71-43-2	Benzene	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-86-1	Bromobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
74-97-5	Bromochloromethane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-27-4	Bromodichloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-25-2	Bromoform	ug/L		1	0.5	1	4	U			1	0.5	1	4	U			1	0.5	1	4	U		
74-83-9	Bromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-15-0	Carbon Disulfide	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
56-23-5	Carbon Tetrachloride	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-90-7	Chlorobenzene	ug/L	100	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-00-3	Chloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
67-66-3	Chloroform	ug/L		1	0.5	1	1	U			0.7	0.5	1	1	J			0.8	0.5	1	1	J		
74-87-3	Chloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-59-2	cis-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-01-5	cis-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
110-82-7	Cyclohexane	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
124-48-1	Dibromochloromethane	ug/L	60	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
74-95-3	Dibromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-71-8	Dichlorodifluoromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
64-17-5	Ethanol	ug/L		200	50	200	250	U			200	50	200	250	U			200	50	200	250	U		
100-41-4	Ethylbenzene	ug/L	700	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	Freon 113	ug/L		4	2	4	10	U			NA							4	2	4	10	U		
87-68-3	Hexachlorobutadiene	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
98-82-8	Isopropylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
179601-23-1	m+p-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-20-9	Methyl Acetate	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
1634-04-4	Methyl Tertiary Butyl Ether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-87-2	Methylcyclohexane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41S							ILF4-MW-41D-GW							IAL4-MW-41D						
				8/9/2017							5/24/2017							8/9/2017						
				9150941							9017588							9150943						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
75-09-2	Methylene Chloride	ug/L		4	2	4	4	U			4	2	4	4	U			4	2	4	4	U		
91-20-3	Naphthalene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
104-51-8	n-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
103-65-1	n-Propylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
95-47-6	o-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
99-87-6	p-Isopropyltoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
135-98-8	sec-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
100-42-5	Styrene	ug/L	100	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-65-0	t-Butyl alcohol	ug/L		20	5	20	20	U			20	5	20	20	U			20	5	20	20	U		
98-06-6	tert-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
127-18-4	Tetrachloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-88-3	Toluene	ug/L	1000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-60-5	trans-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-02-6	trans-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-01-6	Trichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-69-4	Trichlorofluoromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-01-4	Vinyl Chloride	ug/L	2	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
1330-20-7	Xylene (Total)	ug/L	10000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
Semivolatiles																								
92-52-4	1,1'-Biphenyl	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L	70	1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
122-66-7	1,2-Diphenylhydrazine	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
541-73-1	1,3-Dichlorobenzene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
123-91-1	1,4-Dioxane	ug/L		5	1	5	6	U			4	1	4	5	U			4	1	4	5	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-95-4	2,4,5-Trichlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41S							ILF4-MW-41D-GW							IAL4-MW-41D						
				8/9/2017							5/24/2017							8/9/2017						
				9150941							9017588							9150943						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
88-06-2	2,4,6-Trichlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
120-83-2	2,4-Dichlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
105-67-9	2,4-Dimethylphenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
51-28-5	2,4-Dinitrophenol	ug/L		34	11	34	34	U	UJ	c	30	10	30	30	U			30	10	30	30	U	UJ	c
121-14-2	2,4-Dinitrotoluene	ug/L		5	1	5	6	U			4	1	4	5	U			4	1	4	5	U		
87-65-0	2,6-Dichlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
606-20-2	2,6-Dinitrotoluene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-58-7	2-Chloronaphthalene	ug/L		1	0.5	1	1	U			1	0.4	1	1	U			1	0.4	1	1	U		
95-57-8	2-Chlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-57-6	2-Methylnaphthalene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
95-48-7	2-Methylphenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
88-74-4	2-Nitroaniline	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
88-75-5	2-Nitrophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-94-1	3,3'-Dichlorobenzidine	ug/L		5	2	5	6	U			4	2	4	5	U			4	2	4	5	U		
99-09-2	3-Nitroaniline	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/L		17	6	17	17	U			15	5	15	15	U			15	5	15	15	U		
101-55-3	4-Bromophenyl-phenylether	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
59-50-7	4-Chloro-3-methylphenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-47-8	4-Chloroaniline	ug/L		5	2	5	5	U			4	2	4	4	U			4	2	4	4	U		
7005-72-3	4-Chlorophenyl-phenylether	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-44-5	4-Methylphenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
100-01-6	4-Nitroaniline	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
100-02-7	4-Nitrophenol	ug/L		34	11	34	34	U			30	10	30	30	U			30	10	30	30	U		
83-32-9	Acenaphthene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
208-96-8	Acenaphthylene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
98-86-2	Acetophenone	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
120-12-7	Anthracene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
1912-24-9	Atrazine	ug/L	3	5	2	5	6	U			4	2	4	5	U			4	2	4	5	U		
100-52-7	Benzaldehyde	ug/L		5	1	5	6	U			4	1	4	5	U			4	1	4	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41S							ILF4-MW-41D-GW							IAL4-MW-41D						
				8/9/2017							5/24/2017							8/9/2017						
				9150941							9017588							9150943						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
92-87-5	Benzidine	ug/L		68	23	68	68	U			61	20	61	61	U	UJ	I	60	20	60	60	U		
56-55-3	Benzo(a)anthracene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
50-32-8	Benzo(a)pyrene	ug/L	0.2	0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
205-99-2	Benzo(b)fluoranthene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
191-24-2	Benzo(g,h,i)perylene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
207-08-9	Benzo(k)fluoranthene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
65-85-0	Benzoic acid	ug/L		17	7	17	17	U			15	6	15	15	U			15	6	15	15	U		
100-51-6	Benzyl alcohol	ug/L		23	11	23	34	U			20	10	20	30	U			20	10	20	30	U		
111-91-1	bis(2-Chloroethoxy)methane	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
111-44-4	bis(2-Chloroethyl)ether	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
39638-32-9	bis(2-Chloroisopropyl)ether	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
117-81-7	bis(2-Ethylhexyl)phthalate	ug/L		5	2	5	6	U			4	2	4	5	U			4	2	4	5	U		
85-68-7	Butylbenzylphthalate	ug/L		5	2	5	6	U			4	2	4	5	U			4	2	4	5	U		
105-60-2	Caprolactam	ug/L		17	6	17	17	U			15	5	15	15	U			15	5	15	15	U		
86-74-8	Carbazole	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
218-01-9	Chrysene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
53-70-3	Dibenz(a,h)anthracene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
132-64-9	Dibenzofuran	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
84-66-2	Diethylphthalate	ug/L		5	2	5	6	U			4	2	4	5	U			4	2	4	5	U		
131-11-3	Dimethylphthalate	ug/L		5	2	5	6	U			4	2	4	5	U			4	2	4	5	U		
84-74-2	Di-n-butylphthalate	ug/L		5	2	5	6	U			4	2	4	5	U			4	2	4	5	U		
117-84-0	Di-n-octylphthalate	ug/L		5	2	5	6	U			4	2	4	5	U			4	2	4	5	U		
88-85-7	Dinoseb	ug/L	7	5	2	5	6	U			4	2	4	5	U			4	2	4	5	U		
206-44-0	Fluoranthene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
86-73-7	Fluorene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
118-74-1	Hexachlorobenzene	ug/L	1	0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
87-68-3	Hexachlorobutadiene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
77-47-4	Hexachlorocyclopentadiene	ug/L	50	16	5	16	16	U	UJ	h	15	5	15	15	U			17	6	17	17	U	UJ	h
67-72-1	Hexachloroethane	ug/L		5	1	5	6	U			4	1	4	5	U			4	1	4	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41S							ILF4-MW-41D-GW							IAL4-MW-41D						
				8/9/2017							5/24/2017							8/9/2017						
				9150941							9017588							9150943						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
193-39-5	Indeno(1,2,3-cd)pyrene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
78-59-1	Isophorone	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-20-3	Naphthalene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.1	0.1	0.2	0.5	J		
98-95-3	Nitrobenzene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
62-75-9	N-Nitrosodimethylamine	ug/L		5	2	5	6	U			4	2	4	5	U			4	2	4	5	U		
621-64-7	N-Nitroso-di-n-propylamine	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
86-30-6	N-Nitrosodiphenylamine	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
930-55-2	N-Nitrosopyrrolidine	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
87-86-5	Pentachlorophenol	ug/L	1	5	1	5	6	U			4	1	4	5	U			4	1	4	5	U		
85-01-8	Phenanthrene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
108-95-2	Phenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
129-00-0	Pyrene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
Total Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	0.2	0.0894	0.2	0.4	U			1.61	0.0868	0.2	0.4				1.85	0.0894	0.2	0.4		J+	m
7440-36-0	Antimony	mg/L	0.006	0.001	0.00045	0.001	0.002	U			0.001	0.00048	0.001	0.002	U			0.001	0.00045	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.002	0.00072	0.002	0.004	U			0.0012	0.00068	0.002	0.004	J			0.0014	0.00072	0.002	0.004	J		
7440-39-3	Barium	mg/L	2	0.0495	0.00085	0.0025	0.01				0.047	0.0011	0.0025	0.01				0.0402	0.00085	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.000085	0.000071	0.00025	0.001	J			0.00059	0.00011	0.00025	0.001	J			0.00064	0.000071	0.00025	0.001	J		
7440-43-9	Cadmium	mg/L	0.005	0.0005	0.00015	0.0005	0.001	U			0.00034	0.00019	0.0005	0.001	J			0.00029	0.00015	0.0005	0.001	J		
7440-70-2	Calcium	mg/L		4.15	0.06	0.2	0.4				22.8	0.0382	0.2	0.4				21.4	0.06	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0075	0.0033	0.0075	0.03	U			0.0038	0.0018	0.0038	0.03	U			0.0075	0.0033	0.0075	0.03	U		
7440-48-4	Cobalt	mg/L		0.0029	0.00016	0.0005	0.001				0.0111	0.0002	0.0005	0.001				0.0101	0.00016	0.0005	0.001			
7440-50-8	Copper	mg/L	1	0.0052	0.004	0.01	0.02	J	B	o	0.01	0.0041	0.01	0.02	J			0.0142	0.004	0.01	0.02	J	B	o
7439-89-6	Iron	mg/L	0.3	0.2	0.0805	0.2	0.4	U			0.2	0.0747	0.2	0.4	U			0.2	0.0805	0.2	0.4	U		
7439-92-1	Lead	mg/L	0.015	0.00025	0.00011	0.00025	0.002	U			0.0035	0.00009	0.00025	0.002				0.0042	0.00011	0.00025	0.002			
7439-95-4	Magnesium	mg/L		2.55	0.0374	0.1	0.2				8.4	0.019	0.05	0.2				7.72	0.0374	0.1	0.2			
7439-96-5	Manganese	mg/L	0.05	0.0403	0.0016	0.005	0.01				0.188	0.0018	0.005	0.01				0.18	0.0016	0.005	0.01			
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.01	0.004	0.01	0.02	U			0.0127	0.0028	0.005	0.02	J			0.0134	0.004	0.01	0.02	J		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41S							ILF4-MW-41D-GW							IAL4-MW-41D						
				8/9/2017							5/24/2017							8/9/2017						
				9150941							9017588							9150943						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-09-7	Potassium	mg/L		1.54	0.179	0.5	1				5.57	0.16	0.5	1				5.35	0.179	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.001	0.0005	0.001	0.004	U			0.00058	0.00044	0.001	0.004	J			0.00056	0.0005	0.001	0.004	J		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00015	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U		
7440-23-5	Sodium	mg/L		8.69	0.321	0.5	2				73	0.173	0.5	2				72.4	0.321	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00012	0.00025	0.001	U			0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.0005	0.00021	0.0005	0.001	U			0.00029	0.0002	0.0005	0.001	J			0.0005	0.00021	0.0005	0.001	U		
7440-66-6	Zinc	mg/L	5	0.036	0.0065	0.01	0.04	J			0.032	0.0054	0.01	0.04	J			0.0304	0.0065	0.01	0.04	J		
Hexavalent Chromium																								
18540-29-9	Hexavalent Chromium	ug/L		0.05	0.015	0.05	0.05	U			0.05	0.015	0.05	0.05	U			0.05	0.015	0.05	0.05	U		
Dissolved Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	0.2	0.0894	0.2	0.4	U			1.42	0.0868	0.2	0.4				1.86	0.0894	0.2	0.4			
7440-36-0	Antimony	mg/L	0.006	0.001	0.00045	0.001	0.002	U			0.001	0.00048	0.001	0.002	U			0.001	0.00045	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.002	0.00072	0.002	0.004	U			0.0013	0.00068	0.002	0.004	J			0.0016	0.00072	0.002	0.004	J		
7440-39-3	Barium	mg/L	2	0.0484	0.00085	0.0025	0.01				0.0442	0.0011	0.0025	0.01				0.0375	0.00085	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00025	0.000071	0.00025	0.001	U			0.00055	0.00011	0.00025	0.001	J			0.00062	0.000071	0.00025	0.001	J		
7440-43-9	Cadmium	mg/L	0.005	0.00018	0.00015	0.0005	0.001	J			0.0004	0.00019	0.0005	0.001	J			0.00035	0.00015	0.0005	0.001	J		
7440-70-2	Calcium	mg/L		4.1	0.06	0.2	0.4				22	0.0382	0.2	0.4				21.5	0.06	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0075	0.0033	0.0075	0.03	U			0.0038	0.0018	0.0038	0.03	U			0.0075	0.0033	0.0075	0.03	U		
7440-48-4	Cobalt	mg/L		0.0026	0.00016	0.0005	0.001				0.0106	0.0002	0.0005	0.001				0.0105	0.00016	0.0005	0.001			
7440-50-8	Copper	mg/L	1	0.01	0.004	0.01	0.02	U			0.0102	0.0041	0.01	0.02	J			0.0114	0.004	0.01	0.02	J	B	o
7439-89-6	Iron	mg/L	0.3	0.2	0.0805	0.2	0.4	U			0.2	0.0747	0.2	0.4	U			0.2	0.0805	0.2	0.4	U		
7439-92-1	Lead	mg/L	0.015	0.00025	0.00011	0.00025	0.002	U			0.0032	0.00009	0.00025	0.002				0.0042	0.00011	0.00025	0.002			
7439-95-4	Magnesium	mg/L		2.46	0.0374	0.1	0.2				8.13	0.019	0.05	0.2				7.75	0.0374	0.1	0.2			
7439-96-5	Manganese	mg/L	0.05	0.0425	0.0016	0.005	0.01				0.172	0.0018	0.005	0.01				0.178	0.0016	0.005	0.01			
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.01	0.004	0.01	0.02	U			0.0128	0.0028	0.005	0.02	J			0.0139	0.004	0.01	0.02	J		
7440-09-7	Potassium	mg/L		1.48	0.179	0.5	1				5.29	0.16	0.5	1				5.43	0.179	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.001	0.0005	0.001	0.004	U			0.00068	0.00044	0.001	0.004	J			0.00052	0.0005	0.001	0.004	J		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00015	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41S							ILF4-MW-41D-GW							IAL4-MW-41D						
				8/9/2017							5/24/2017							8/9/2017						
				9150941							9017588							9150943						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-23-5	Sodium	mg/L		8.48	0.321	0.5	2				70.8	0.173	0.5	2				71.8	0.321	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00012	0.00025	0.001	U			0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.0005	0.00021	0.0005	0.001	U			0.00021	0.0002	0.0005	0.001	J			0.0005	0.00021	0.0005	0.001	U		
7440-66-6	Zinc	mg/L	5	0.039	0.0065	0.01	0.04	J			0.032	0.0054	0.01	0.04	J			0.0312	0.0065	0.01	0.04	J		
PCBs																								
12674-11-2	PCB-1016	ug/L	0.0005	0.25	0.085	0.25	0.42	U D1			0.25	0.083	0.25	0.41	U			0.26	0.087	0.26	0.43	U D1		
11104-28-2	PCB-1221	ug/L	0.0005	0.25	0.085	0.25	0.42	U D1			0.25	0.083	0.25	0.41	U			0.26	0.087	0.26	0.43	U D1		
11141-16-5	PCB-1232	ug/L	0.0005	0.34	0.17	0.34	0.42	U D1			0.33	0.17	0.33	0.41	U			0.35	0.17	0.35	0.43	U D1		
53469-21-9	PCB-1242	ug/L	0.0005	0.25	0.085	0.25	0.42	U D1			0.25	0.083	0.25	0.41	U			0.26	0.087	0.26	0.43	U D1		
12672-29-6	PCB-1248	ug/L	0.0005	0.25	0.085	0.25	0.42	U D1			0.25	0.083	0.25	0.41	U			0.26	0.087	0.26	0.43	U D1		
11097-69-1	PCB-1254	ug/L	0.0005	0.25	0.085	0.25	0.42	U D1			0.25	0.083	0.25	0.41	U			0.26	0.087	0.26	0.43	U D1		
11096-82-5	PCB-1260	ug/L	0.0005	0.25	0.13	0.25	0.42	U D1			0.25	0.12	0.25	0.41	U			0.26	0.13	0.26	0.43	U D1		
37324-23-5	PCB-1262	ug/L	0.0005	0.34	0.17	0.34	0.42	U D1			0.33	0.17	0.33	0.41	U			0.35	0.17	0.35	0.43	U D1		
11100-14-4	PCB-1268	ug/L	0.0005	0.27	0.14	0.27	0.42	U D1			0.26	0.13	0.26	0.41	U			0.28	0.14	0.28	0.43	U D1		
Dioxin																								
35822-46-9	1234678-HpCDD	pg/L		10	6	10	10	U			NA							10	6	10	10	U		
67562-39-4	1234678-HpCDF	pg/L		10	4	10	10	U			NA							10	4	10	10	U		
55673-89-7	1234789-HpCDF	pg/L		10	3	10	10	U			NA							10	3	10	10	U		
39227-28-6	123478-HxCDD	pg/L		10	4	10	10	U			NA							10	4	10	10	U		
70648-26-9	123478-HxCDF	pg/L		10	3	10	10	U			NA							10	3	10	10	U		
57653-85-7	123678-HxCDD	pg/L		10	3	10	10	U			NA							10	3	10	10	U		
57117-44-9	123678-HxCDF	pg/L		10	3	10	10	U			NA							10	3	10	10	U		
19408-74-3	123789-HxCDD	pg/L		10	4	10	10	U			NA							10	4	10	10	U		
72918-21-9	123789-HxCDF	pg/L		10	4	10	10	U			NA							10	4	10	10	U		
40321-76-4	12378-PeCDD	pg/L		10	3	10	10	U			NA							10	3	10	10	U		
57117-41-6	12378-PeCDF	pg/L		10	3	10	10	U			NA							10	3	10	10	U		
60851-34-5	234678-HxCDF	pg/L		10	3	10	10	U			NA							10	3	10	10	U		
57117-31-4	23478-PeCDF	pg/L		10	3	10	10	U			NA							10	3	10	10	U		
1746-01-6	2378-TCDD	pg/L	30	1	1	2	2	J			NA							2	1	2	2	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41S							ILF4-MW-41D-GW							IAL4-MW-41D						
				8/9/2017							5/24/2017							8/9/2017						
				9150941							9017588							9150943						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
51207-31-9	2378-TCDF	pg/L		2	1	2	2	U			NA							2	1	2	2	U		
3268-87-9	OCDD	pg/L		12	10	20	20	J			NA							21	10	21	21	U		
39001-02-0	OCDF	pg/L		20	6	20	20	U			NA							21	6	21	21	U	UJ	m
TEQWHO05-0	TEQ WHO 2005 - EDLx0.0	pg/L		1							NA							0				U		
TEQWHO05-0	TEQ WHO 2005 - EDLx0.5	pg/L		4					B	x	NA							4					B	x
37871-00-4	Total HpCDD	pg/L		10	4	10	10	U			NA							10	4	10	10	U		
38998-75-3	Total HpCDF	pg/L		10	4	10	10	U			NA							10	4	10	10	U		
34465-46-8	Total HxCDD	pg/L		10	4	10	10	U			NA							10	4	10	10	U		
55684-94-1	Total HxCDF	pg/L		10	4	10	10	U			NA							10	4	10	10	U		
36088-22-9	Total PeCDD	pg/L		10	3	10	10	U			NA							10	3	10	10	U		
30402-15-4	Total PeCDF	pg/L		10	3	10	10	U			NA							10	3	10	10	U		
41903-57-5	Total TCDD	pg/L		7	1	2	2	Q	B	x	NA							2	1	2	2	U		
55722-27-5	Total TCDF	pg/L		2	1	2	2	U			NA							2	1	2	2	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41D-DUP							IAL4-MW-42GW							IAL4-MW-42						
				8/9/2017							5/23/2017							9/21/2017						
				9150951							9017572							9221913						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
VOCs																								
630-20-6	1,1,1,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
71-55-6	1,1,1-Trichloroethane	ug/L	200	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L		NA							4	2	4	10	U			NA						
79-00-5	1,1,2-Trichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-34-3	1,1-Dichloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-35-4	1,1-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
563-58-6	1,1-Dichloropropene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
87-61-6	1,2,3-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
96-18-4	1,2,3-Trichloropropane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
95-63-6	1,2,4-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	J			2	1	2	5	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/L	0.2	4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
106-93-4	1,2-Dibromoethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L	600	2	1	2	5	U			2	1	2	5	J			2	1	2	5	U		
107-06-2	1,2-Dichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
540-59-0	1,2-Dichloroethene (Total)	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-87-5	1,2-Dichloropropane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-67-8	1,3,5-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
541-73-1	1,3-Dichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
142-28-9	1,3-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L	75	2	1	2	5	U			4	1	2	5	J			2	1	2	5	U		
123-91-1	1,4-Dioxane	ug/L		200	70	200	250	U			200	70	200	250	U			200	70	200	250	U		
594-20-7	2,2-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-93-3	2-Butanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
95-49-8	2-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
591-78-6	2-Hexanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
106-43-4	4-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41D-DUP							IAL4-MW-42GW							IAL4-MW-42						
				8/9/2017							5/23/2017							9/21/2017						
				9150951							9017572							9221913						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
67-64-1	Acetone	ug/L		20	6	20	20	U			20	6	20	20	U			20	6	20	20	U		
71-43-2	Benzene	ug/L	5	1	0.5	1	1	U			1	0.5	1	1				1	0.5	1	1	U		
108-86-1	Bromobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
74-97-5	Bromochloromethane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-27-4	Bromodichloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-25-2	Bromoform	ug/L		1	0.5	1	4	U			1	0.5	1	4	U			1	0.5	1	4	U		
74-83-9	Bromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-15-0	Carbon Disulfide	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
56-23-5	Carbon Tetrachloride	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-90-7	Chlorobenzene	ug/L	100	1	0.5	1	1	U			10	0.5	1	1				2	0.5	1	1			
75-00-3	Chloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
67-66-3	Chloroform	ug/L		0.9	0.5	1	1	J			1	0.5	1	1	U			1	0.5	1	1	U		
74-87-3	Chloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-59-2	cis-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-01-5	cis-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
110-82-7	Cyclohexane	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
124-48-1	Dibromochloromethane	ug/L	60	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
74-95-3	Dibromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-71-8	Dichlorodifluoromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
64-17-5	Ethanol	ug/L		200	50	200	250	U			200	50	200	250	U			200	50	200	250	U		
100-41-4	Ethylbenzene	ug/L	700	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	Freon 113	ug/L		4	2	4	10	U			NA							4	2	4	10	U		
87-68-3	Hexachlorobutadiene	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
98-82-8	Isopropylbenzene	ug/L		2	1	2	5	U			3	1	2	5	J			2	1	2	5	U		
179601-23-1	m+p-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-20-9	Methyl Acetate	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
1634-04-4	Methyl Tertiary Butyl Ether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-87-2	Methylcyclohexane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41D-DUP							IAL4-MW-42GW							IAL4-MW-42						
				8/9/2017							5/23/2017							9/21/2017						
				9150951							9017572							9221913						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
75-09-2	Methylene Chloride	ug/L		4	2	4	4	U			4	2	4	4	U			1	0.5	1	1	U		
91-20-3	Naphthalene	ug/L		2	1	2	5	U			4	1	2	5	J			2	1	2	5	U		
104-51-8	n-Butylbenzene	ug/L		2	1	2	5	U			3	1	2	5	J			2	1	2	5	U		
103-65-1	n-Propylbenzene	ug/L		2	1	2	5	U			5	1	2	5				2	1	2	5	U		
95-47-6	o-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
99-87-6	p-Isopropyltoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
135-98-8	sec-Butylbenzene	ug/L		2	1	2	5	U			3	1	2	5	J			2	1	2	5	U		
100-42-5	Styrene	ug/L	100	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-65-0	t-Butyl alcohol	ug/L		20	5	20	20	U			20	5	20	20	U			20	5	20	20	U		
98-06-6	tert-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
127-18-4	Tetrachloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-88-3	Toluene	ug/L	1000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-60-5	trans-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-02-6	trans-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-01-6	Trichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-69-4	Trichlorofluoromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-01-4	Vinyl Chloride	ug/L	2	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
1330-20-7	Xylene (Total)	ug/L	10000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
Semivolatiles																								
92-52-4	1,1'-Biphenyl	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L	70	1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L		1	0.6	1	1	U			0.9	0.5	1	1	J			1	0.5	1	1	U		
122-66-7	1,2-Diphenylhydrazine	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
541-73-1	1,3-Dichlorobenzene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L		1	0.6	1	1	U			3	0.5	1	1				1	0.5	1	1	U		
123-91-1	1,4-Dioxane	ug/L		4	1	4	6	U			4	1	4	5	U			4	1	4	5	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-95-4	2,4,5-Trichlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41D-DUP							IAL4-MW-42GW							IAL4-MW-42						
				8/9/2017							5/23/2017							9/21/2017						
				9150951							9017572							9221913						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
88-06-2	2,4,6-Trichlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
120-83-2	2,4-Dichlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
105-67-9	2,4-Dimethylphenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
51-28-5	2,4-Dinitrophenol	ug/L		33	11	33	33	U	UJ	c	30	10	30	30	U			31	10	31	31	U		
121-14-2	2,4-Dinitrotoluene	ug/L		4	1	4	6	U			4	1	4	5	U			4	1	4	5	U		
87-65-0	2,6-Dichlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
606-20-2	2,6-Dinitrotoluene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-58-7	2-Chloronaphthalene	ug/L		1	0.4	1	1	U			1	0.4	1	1	U			1	0.4	1	1	U		
95-57-8	2-Chlorophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-57-6	2-Methylnaphthalene	ug/L		0.2	0.1	0.2	0.6	U			7	0.1	0.2	0.5				0.9	0.1	0.2	0.5			
95-48-7	2-Methylphenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
88-74-4	2-Nitroaniline	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
88-75-5	2-Nitrophenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-94-1	3,3'-Dichlorobenzidine	ug/L		4	2	4	6	U			4	2	4	5	U			4	2	4	5	U		
99-09-2	3-Nitroaniline	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/L		17	6	17	17	U			15	5	15	15	U			15	5	15	15	U		
101-55-3	4-Bromophenyl-phenylether	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
59-50-7	4-Chloro-3-methylphenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-47-8	4-Chloroaniline	ug/L		4	2	4	4	U			4	2	4	4	U			4	2	4	4	U		
7005-72-3	4-Chlorophenyl-phenylether	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-44-5	4-Methylphenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
100-01-6	4-Nitroaniline	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
100-02-7	4-Nitrophenol	ug/L		33	11	33	33	U			30	10	30	30	U			31	10	31	31	U		
83-32-9	Acenaphthene	ug/L		0.2	0.1	0.2	0.6	U			0.6	0.1	0.2	0.5				0.2	0.1	0.2	0.5	U		
208-96-8	Acenaphthylene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
98-86-2	Acetophenone	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
120-12-7	Anthracene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
1912-24-9	Atrazine	ug/L	3	4	2	4	6	U			4	2	4	5	U			4	2	4	5	U		
100-52-7	Benzaldehyde	ug/L		4	1	4	6	U			4	1	4	5	U			4	1	4	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41D-DUP							IAL4-MW-42GW							IAL4-MW-42						
				8/9/2017							5/23/2017							9/21/2017						
				9150951							9017572							9221913						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
92-87-5	Benzidine	ug/L		67	22	67	67	U			64	21	64	64	U			62	21	62	62	U		
56-55-3	Benzo(a)anthracene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
50-32-8	Benzo(a)pyrene	ug/L	0.2	0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
205-99-2	Benzo(b)fluoranthene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
191-24-2	Benzo(g,h,i)perylene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
207-08-9	Benzo(k)fluoranthene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
65-85-0	Benzoic acid	ug/L		17	7	17	17	U			15	6	15	15	U	UJ	c	15	6	15	15	U		
100-51-6	Benzyl alcohol	ug/L		22	11	22	33	U			20	10	20	30	U			21	10	21	31	U		
111-91-1	bis(2-Chloroethoxy)methane	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
111-44-4	bis(2-Chloroethyl)ether	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
39638-32-9	bis(2-Chloroisopropyl)ether	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
117-81-7	bis(2-Ethylhexyl)phthalate	ug/L		4	2	4	6	U			4	2	4	5	U			4	2	4	5	U		
85-68-7	Butylbenzylphthalate	ug/L		4	2	4	6	U			4	2	4	5	U			4	2	4	5	U		
105-60-2	Caprolactam	ug/L		17	6	17	17	U			15	5	15	15	U			15	5	15	15	U		
86-74-8	Carbazole	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
218-01-9	Chrysene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
53-70-3	Dibenz(a,h)anthracene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
132-64-9	Dibenzofuran	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
84-66-2	Diethylphthalate	ug/L		4	2	4	6	U			4	2	4	5	U			4	2	4	5	U		
131-11-3	Dimethylphthalate	ug/L		4	2	4	6	U			4	2	4	5	U			4	2	4	5	U		
84-74-2	Di-n-butylphthalate	ug/L		4	2	4	6	U			4	2	4	5	U			4	2	4	5	U		
117-84-0	Di-n-octylphthalate	ug/L		4	2	4	6	U			4	2	4	5	U			4	2	4	5	U		
88-85-7	Dinoseb	ug/L	7	4	2	4	6	U			4	2	4	5	U			4	2	4	5	U		
206-44-0	Fluoranthene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
86-73-7	Fluorene	ug/L		0.2	0.1	0.2	0.6	U			0.3	0.1	0.2	0.5	J			0.2	0.1	0.2	0.5	U		
118-74-1	Hexachlorobenzene	ug/L	1	0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
87-68-3	Hexachlorobutadiene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
77-47-4	Hexachlorocyclopentadiene	ug/L	50	16	5	16	16	U	UJ	h	15	5	15	15	U			15	5	15	15	U		
67-72-1	Hexachloroethane	ug/L		4	1	4	6	U			4	1	4	5	U			4	1	4	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41D-DUP							IAL4-MW-42GW							IAL4-MW-42						
				8/9/2017							5/23/2017							9/21/2017						
				9150951							9017572							9221913						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
193-39-5	Indeno(1,2,3-cd)pyrene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
78-59-1	Isophorone	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-20-3	Naphthalene	ug/L		0.2	0.1	0.2	0.6	J			2	0.1	0.2	0.5				0.2	0.1	0.2	0.5	J		
98-95-3	Nitrobenzene	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
62-75-9	N-Nitrosodimethylamine	ug/L		4	2	4	6	U			4	2	4	5	U			4	2	4	5	U		
621-64-7	N-Nitroso-di-n-propylamine	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
86-30-6	N-Nitrosodiphenylamine	ug/L		1	0.6	1	1	U			1	0.5	1	1				1	0.5	1	1	U		
930-55-2	N-Nitrosopyrrolidine	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
87-86-5	Pentachlorophenol	ug/L	1	4	1	4	6	U			4	1	4	5	U			4	1	4	5	U		
85-01-8	Phenanthrene	ug/L		0.2	0.1	0.2	0.6	U			0.3	0.1	0.2	0.5	J			0.2	0.1	0.2	0.5	U		
108-95-2	Phenol	ug/L		1	0.6	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
129-00-0	Pyrene	ug/L		0.2	0.1	0.2	0.6	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
Total Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	1.94	0.0894	0.2	0.4		J+	m	0.202	0.0868	0.2	0.4	J			0.2	0.0894	0.2	0.4	U		
7440-36-0	Antimony	mg/L	0.006	0.001	0.00045	0.001	0.002	U			0.001	0.00048	0.001	0.002	U			0.001	0.00045	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.0017	0.00072	0.002	0.004	J			0.0016	0.00068	0.002	0.004	J			0.002	0.00072	0.002	0.004	U	UJ	m
7440-39-3	Barium	mg/L	2	0.04	0.00085	0.0025	0.01				0.141	0.0011	0.0025	0.01				0.0544	0.00085	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00063	0.000071	0.00025	0.001	J			0.00025	0.00011	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.00038	0.00015	0.0005	0.001	J			0.0005	0.00019	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		21.8	0.06	0.2	0.4				35	0.0382	0.2	0.4				19.6	0.06	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0075	0.0033	0.0075	0.03	U			0.0034	0.0018	0.0038	0.03	J			0.0075	0.0033	0.0075	0.03	U		
7440-48-4	Cobalt	mg/L		0.0108	0.00016	0.0005	0.001				0.00066	0.0002	0.0005	0.001	J			0.00021	0.00016	0.0005	0.001	J		
7440-50-8	Copper	mg/L	1	0.0159	0.004	0.01	0.02	J	B	o	0.01	0.0041	0.01	0.02	U			0.01	0.004	0.01	0.02	U		
7439-89-6	Iron	mg/L	0.3	0.2	0.0805	0.2	0.4	U			72.9	0.0747	0.2	0.4				24.4	0.0805	0.2	0.4			
7439-92-1	Lead	mg/L	0.015	0.0043	0.00011	0.00025	0.002				0.0018	0.00009	0.00025	0.002	J			0.00035	0.00011	0.00025	0.002	J		
7439-95-4	Magnesium	mg/L		7.86	0.0374	0.1	0.2				5.02	0.019	0.05	0.2				2.26	0.0374	0.1	0.2			
7439-96-5	Manganese	mg/L	0.05	0.186	0.0016	0.005	0.01				0.349	0.0018	0.005	0.01				0.212	0.0016	0.005	0.01			
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.0137	0.004	0.01	0.02	J			0.005	0.0028	0.005	0.02	U			0.01	0.004	0.01	0.02	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41D-DUP							IAL4-MW-42GW							IAL4-MW-42						
				8/9/2017							5/23/2017							9/21/2017						
				9150951							9017572							9221913						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-09-7	Potassium	mg/L		5.53	0.179	0.5	1				2.92	0.16	0.5	1				1.64	0.179	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.00051	0.0005	0.001	0.004	J			0.001	0.00044	0.001	0.004	U			0.001	0.0005	0.001	0.004	U		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00015	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U		
7440-23-5	Sodium	mg/L		73.5	0.321	0.5	2				24.4	0.173	0.5	2				11.5	0.321	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00013	0.00012	0.00025	0.001	J			0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.0005	0.00021	0.0005	0.001	U			0.0017	0.0002	0.0005	0.001				0.001	0.00021	0.0005	0.001		B	x
7440-66-6	Zinc	mg/L	5	0.0305	0.0065	0.01	0.04	J			0.01	0.0054	0.01	0.04	U			0.01	0.0065	0.01	0.04	U		
Hexavalent Chromium																								
18540-29-9	Hexavalent Chromium	ug/L		0.05	0.015	0.05	0.05	U			0.05	0.015	0.05	0.05	U			0.05	0.015	0.05	0.05	U		
Dissolved Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	1.87	0.0894	0.2	0.4				0.2	0.0868	0.2	0.4	U			0.2	0.0894	0.2	0.4	U		
7440-36-0	Antimony	mg/L	0.006	0.001	0.00045	0.001	0.002	U			0.001	0.00048	0.001	0.002	U			0.001	0.00045	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.0018	0.00072	0.002	0.004	J			0.0011	0.00068	0.002	0.004	J			0.002	0.00072	0.002	0.004	U		
7440-39-3	Barium	mg/L	2	0.037	0.00085	0.0025	0.01				0.132	0.0011	0.0025	0.01				0.052	0.00085	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00064	0.000071	0.00025	0.001	J			0.00025	0.00011	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.00036	0.00015	0.0005	0.001	J			0.0005	0.00019	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		21.3	0.06	0.2	0.4				33.3	0.0382	0.2	0.4				18.7	0.06	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0075	0.0033	0.0075	0.03	U			0.0026	0.0018	0.0038	0.03	J			0.0075	0.0033	0.0075	0.03	U		
7440-48-4	Cobalt	mg/L		0.0101	0.00016	0.0005	0.001				0.00065	0.0002	0.0005	0.001	J			0.00018	0.00016	0.0005	0.001	J		
7440-50-8	Copper	mg/L	1	0.0117	0.004	0.01	0.02	J	B	o	0.01	0.0041	0.01	0.02	U			0.01	0.004	0.01	0.02	U		
7439-89-6	Iron	mg/L	0.3	0.2	0.0805	0.2	0.4	U			69.5	0.0747	0.2	0.4				23.1	0.0805	0.2	0.4			
7439-92-1	Lead	mg/L	0.015	0.0044	0.00011	0.00025	0.002				0.00025	0.00009	0.00025	0.002	U			0.00025	0.00011	0.00025	0.002	U		
7439-95-4	Magnesium	mg/L		7.67	0.0374	0.1	0.2				4.78	0.019	0.05	0.2				2.15	0.0374	0.1	0.2			
7439-96-5	Manganese	mg/L	0.05	0.176	0.0016	0.005	0.01				0.336	0.0018	0.005	0.01				0.199	0.0016	0.005	0.01			
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.0125	0.004	0.01	0.02	J			0.005	0.0028	0.005	0.02	U			0.01	0.004	0.01	0.02	U		
7440-09-7	Potassium	mg/L		5.41	0.179	0.5	1				2.71	0.16	0.5	1				1.34	0.179	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.00056	0.0005	0.001	0.004	J			0.001	0.00044	0.001	0.004	U			0.001	0.0005	0.001	0.004	U		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00015	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41D-DUP							IAL4-MW-42GW							IAL4-MW-42						
				8/9/2017							5/23/2017							9/21/2017						
				9150951							9017572							9221913						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-23-5	Sodium	mg/L		70.9	0.321	0.5	2				23.5	0.173	0.5	2				10.5	0.321	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00012	0.00025	0.001	U			0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.0005	0.00021	0.0005	0.001	U			0.00098	0.0002	0.0005	0.001	J			0.0011	0.00021	0.0005	0.001		B	x
7440-66-6	Zinc	mg/L	5	0.0312	0.0065	0.01	0.04	J			0.01	0.0054	0.01	0.04	U			0.01	0.0065	0.01	0.04	U		
PCBs																								
12674-11-2	PCB-1016	ug/L	0.0005	0.26	0.087	0.26	0.43	U D1			0.24	0.081	0.24	0.41	U			0.24	0.082	0.24	0.41	U D1		
11104-28-2	PCB-1221	ug/L	0.0005	0.26	0.087	0.26	0.43	U D1			0.24	0.081	0.24	0.41	U			0.24	0.082	0.24	0.41	U D1		
11141-16-5	PCB-1232	ug/L	0.0005	0.35	0.17	0.35	0.43	U D1			0.33	0.16	0.33	0.41	U			0.33	0.16	0.33	0.41	U D1		
53469-21-9	PCB-1242	ug/L	0.0005	0.26	0.087	0.26	0.43	U D1			0.24	0.081	0.24	0.41	U			0.24	0.082	0.24	0.41	U D1		
12672-29-6	PCB-1248	ug/L	0.0005	0.26	0.087	0.26	0.43	U D1			0.24	0.081	0.24	0.41	U			0.24	0.082	0.24	0.41	U D1		
11097-69-1	PCB-1254	ug/L	0.0005	0.26	0.087	0.26	0.43	U D1			0.24	0.081	0.24	0.41	U			0.24	0.082	0.24	0.41	U D1		
11096-82-5	PCB-1260	ug/L	0.0005	0.26	0.13	0.26	0.43	U D1			0.76	0.12	0.24	0.41				0.24	0.12	0.24	0.41	U D1		
37324-23-5	PCB-1262	ug/L	0.0005	0.35	0.17	0.35	0.43	U D1			0.33	0.16	0.33	0.41	U			0.33	0.16	0.33	0.41	U D1		
11100-14-4	PCB-1268	ug/L	0.0005	0.28	0.14	0.28	0.43	U D1			0.26	0.13	0.26	0.41	U			0.26	0.13	0.26	0.41	U D1		
Dioxin																								
35822-46-9	1234678-HpCDD	pg/L		NA							NA							NA						
67562-39-4	1234678-HpCDF	pg/L		NA							NA							NA						
55673-89-7	1234789-HpCDF	pg/L		NA							NA							NA						
39227-28-6	123478-HxCDD	pg/L		NA							NA							NA						
70648-26-9	123478-HxCDF	pg/L		NA							NA							NA						
57653-85-7	123678-HxCDD	pg/L		NA							NA							NA						
57117-44-9	123678-HxCDF	pg/L		NA							NA							NA						
19408-74-3	123789-HxCDD	pg/L		NA							NA							NA						
72918-21-9	123789-HxCDF	pg/L		NA							NA							NA						
40321-76-4	12378-PeCDD	pg/L		NA							NA							NA						
57117-41-6	12378-PeCDF	pg/L		NA							NA							NA						
60851-34-5	234678-HxCDF	pg/L		NA							NA							NA						
57117-31-4	23478-PeCDF	pg/L		NA							NA							NA						
1746-01-6	2378-TCDD	pg/L	30	NA							NA							NA						

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-41D-DUP							IAL4-MW-42GW							IAL4-MW-42						
				8/9/2017							5/23/2017							9/21/2017						
				9150951							9017572							9221913						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
51207-31-9	2378-TCDF	pg/L		NA							NA							NA						
3268-87-9	OCDD	pg/L		NA							NA							NA						
39001-02-0	OCDF	pg/L		NA							NA							NA						
TEQWHO05-0	TEQ WHO 2005 - EDLx0.0	pg/L		NA							NA							NA						
TEQWHO05-0	TEQ WHO 2005 - EDLx0.5	pg/L		NA							NA							NA						
37871-00-4	Total HpCDD	pg/L		NA							NA							NA						
38998-75-3	Total HpCDF	pg/L		NA							NA							NA						
34465-46-8	Total HxCDD	pg/L		NA							NA							NA						
55684-94-1	Total HxCDF	pg/L		NA							NA							NA						
36088-22-9	Total PeCDD	pg/L		NA							NA							NA						
30402-15-4	Total PeCDF	pg/L		NA							NA							NA						
41903-57-5	Total TCDD	pg/L		NA							NA							NA						
55722-27-5	Total TCDF	pg/L		NA							NA							NA						

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-43GW							IAL4-MW-43							IAL4-MW-43-DUP						
				5/25/2017							9/21/2017							9/21/2017						
				9017598							9221915							9221923						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
VOCs																								
630-20-6	1,1,1,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
71-55-6	1,1,1-Trichloroethane	ug/L	200	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L		4	2	4	10	U			NA							NA						
79-00-5	1,1,2-Trichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-34-3	1,1-Dichloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-35-4	1,1-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
563-58-6	1,1-Dichloropropene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
87-61-6	1,2,3-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
96-18-4	1,2,3-Trichloropropane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
95-63-6	1,2,4-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/L	0.2	4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
106-93-4	1,2-Dibromoethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L	600	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
107-06-2	1,2-Dichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
540-59-0	1,2-Dichloroethene (Total)	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-87-5	1,2-Dichloropropane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-67-8	1,3,5-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
541-73-1	1,3-Dichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
142-28-9	1,3-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L	75	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
123-91-1	1,4-Dioxane	ug/L		200	70	200	250	U			200	70	200	250	U			200	70	200	250	U		
594-20-7	2,2-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-93-3	2-Butanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
95-49-8	2-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
591-78-6	2-Hexanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
106-43-4	4-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-43GW							IAL4-MW-43							IAL4-MW-43-DUP						
				5/25/2017							9/21/2017							9/21/2017						
				9017598							9221915							9221923						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
67-64-1	Acetone	ug/L		20	6	20	20	U			20	6	20	20	U			20	6	20	20	U		
71-43-2	Benzene	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-86-1	Bromobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
74-97-5	Bromochloromethane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-27-4	Bromodichloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-25-2	Bromoform	ug/L		1	0.5	1	4	U			1	0.5	1	4	U			1	0.5	1	4	U		
74-83-9	Bromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-15-0	Carbon Disulfide	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
56-23-5	Carbon Tetrachloride	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-90-7	Chlorobenzene	ug/L	100	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-00-3	Chloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
67-66-3	Chloroform	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
74-87-3	Chloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-59-2	cis-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-01-5	cis-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
110-82-7	Cyclohexane	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
124-48-1	Dibromochloromethane	ug/L	60	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
74-95-3	Dibromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-71-8	Dichlorodifluoromethane	ug/L		1	0.5	1	1	U			0.7	0.5	1	1	J			1	0.5	1	1	U		
64-17-5	Ethanol	ug/L		200	50	200	250	U			200	50	200	250	U			200	50	200	250	U		
100-41-4	Ethylbenzene	ug/L	700	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	Freon 113	ug/L		NA							4	2	4	10	U			4	2	4	10	U		
87-68-3	Hexachlorobutadiene	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
98-82-8	Isopropylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
179601-23-1	m+p-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-20-9	Methyl Acetate	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
1634-04-4	Methyl Tertiary Butyl Ether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-87-2	Methylcyclohexane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-43GW							IAL4-MW-43							IAL4-MW-43-DUP						
				5/25/2017							9/21/2017							9/21/2017						
				9017598							9221915							9221923						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
75-09-2	Methylene Chloride	ug/L		4	2	4	4	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-20-3	Naphthalene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
104-51-8	n-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
103-65-1	n-Propylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
95-47-6	o-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
99-87-6	p-Isopropyltoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
135-98-8	sec-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
100-42-5	Styrene	ug/L	100	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-65-0	t-Butyl alcohol	ug/L		20	5	20	20	U			20	5	20	20	U			20	5	20	20	U		
98-06-6	tert-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
127-18-4	Tetrachloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-88-3	Toluene	ug/L	1000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-60-5	trans-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-02-6	trans-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-01-6	Trichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-69-4	Trichlorofluoromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-01-4	Vinyl Chloride	ug/L	2	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
1330-20-7	Xylene (Total)	ug/L	10000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
Semivolatiles																								
92-52-4	1,1'-Biphenyl	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L	70	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
122-66-7	1,2-Diphenylhydrazine	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
541-73-1	1,3-Dichlorobenzene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
123-91-1	1,4-Dioxane	ug/L		4	1	4	5	U			4	1	4	5	U			4	1	4	5	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-95-4	2,4,5-Trichlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-43GW							IAL4-MW-43							IAL4-MW-43-DUP						
				5/25/2017							9/21/2017							9/21/2017						
				9017598							9221915							9221923						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
88-06-2	2,4,6-Trichlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
120-83-2	2,4-Dichlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
105-67-9	2,4-Dimethylphenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
51-28-5	2,4-Dinitrophenol	ug/L		30	10	30	30	U			30	10	30	30	U			32	11	32	32	U		
121-14-2	2,4-Dinitrotoluene	ug/L		4	1	4	5	U			4	1	4	5	U			4	1	4	5	U		
87-65-0	2,6-Dichlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
606-20-2	2,6-Dinitrotoluene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-58-7	2-Chloronaphthalene	ug/L		1	0.4	1	1	U			1	0.4	1	1	U			1	0.4	1	1	U		
95-57-8	2-Chlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-57-6	2-Methylnaphthalene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
95-48-7	2-Methylphenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
88-74-4	2-Nitroaniline	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
88-75-5	2-Nitrophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-94-1	3,3'-Dichlorobenzidine	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
99-09-2	3-Nitroaniline	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/L		15	5	15	15	U			15	5	15	15	U			16	5	16	16	U		
101-55-3	4-Bromophenyl-phenylether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
59-50-7	4-Chloro-3-methylphenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-47-8	4-Chloroaniline	ug/L		4	2	4	4	U			4	2	4	4	U			4	2	4	4	U		
7005-72-3	4-Chlorophenyl-phenylether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-44-5	4-Methylphenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
100-01-6	4-Nitroaniline	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
100-02-7	4-Nitrophenol	ug/L		30	10	30	30	U			30	10	30	30	U			32	11	32	32	U		
83-32-9	Acenaphthene	ug/L		0.2	0.1	0.2	0.5	J			2	0.1	0.2	0.5				1	0.1	0.2	0.5			
208-96-8	Acenaphthylene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
98-86-2	Acetophenone	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
120-12-7	Anthracene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
1912-24-9	Atrazine	ug/L	3	4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
100-52-7	Benzaldehyde	ug/L		4	1	4	5	U			4	1	4	5	U			4	1	4	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-43GW							IAL4-MW-43							IAL4-MW-43-DUP						
				5/25/2017							9/21/2017							9/21/2017						
				9017598							9221915							9221923						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
92-87-5	Benzidine	ug/L		61	20	61	61	U	UJ	I	61	20	61	61	U			64	21	64	64	U		
56-55-3	Benzo(a)anthracene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
50-32-8	Benzo(a)pyrene	ug/L	0.2	0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
205-99-2	Benzo(b)fluoranthene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
191-24-2	Benzo(g,h,i)perylene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
207-08-9	Benzo(k)fluoranthene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
65-85-0	Benzoic acid	ug/L		15	6	15	15	U			15	6	15	15	U			16	6	16	16	U		
100-51-6	Benzyl alcohol	ug/L		20	10	20	30	U			20	10	20	30	U			21	11	21	32	U		
111-91-1	bis(2-Chloroethoxy)methane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
111-44-4	bis(2-Chloroethyl)ether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
39638-32-9	bis(2-Chloroisopropyl)ether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
117-81-7	bis(2-Ethylhexyl)phthalate	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
85-68-7	Butylbenzylphthalate	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
105-60-2	Caprolactam	ug/L		15	5	15	15	U			15	5	15	15	U			16	5	16	16	U		
86-74-8	Carbazole	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
218-01-9	Chrysene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
53-70-3	Dibenz(a,h)anthracene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
132-64-9	Dibenzofuran	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
84-66-2	Diethylphthalate	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
131-11-3	Dimethylphthalate	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
84-74-2	Di-n-butylphthalate	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
117-84-0	Di-n-octylphthalate	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
88-85-7	Dinoseb	ug/L	7	4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
206-44-0	Fluoranthene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
86-73-7	Fluorene	ug/L		0.2	0.1	0.2	0.5	U			0.7	0.1	0.2	0.5				0.6	0.1	0.2	0.5			
118-74-1	Hexachlorobenzene	ug/L	1	0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
87-68-3	Hexachlorobutadiene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
77-47-4	Hexachlorocyclopentadiene	ug/L	50	15	5	15	15	U			15	5	15	15	U			16	5	16	16	U		
67-72-1	Hexachloroethane	ug/L		4	1	4	5	U			4	1	4	5	U			4	1	4	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-43GW							IAL4-MW-43							IAL4-MW-43-DUP						
				5/25/2017							9/21/2017							9/21/2017						
				9017598							9221915							9221923						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
193-39-5	Indeno(1,2,3-cd)pyrene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
78-59-1	Isophorone	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
91-20-3	Naphthalene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
98-95-3	Nitrobenzene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
62-75-9	N-Nitrosodimethylamine	ug/L		4	2	4	5	U			4	2	4	5	U	UJ	m	4	2	4	5	U		
621-64-7	N-Nitroso-di-n-propylamine	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
86-30-6	N-Nitrosodiphenylamine	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
930-55-2	N-Nitrosopyrrolidine	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
87-86-5	Pentachlorophenol	ug/L	1	4	1	4	5	U			4	1	4	5	U			4	1	4	5	U		
85-01-8	Phenanthrene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
108-95-2	Phenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
129-00-0	Pyrene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U		
Total Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	0.96	0.0868	0.2	0.4				0.542	0.0894	0.2	0.4		J+	m	0.528	0.0894	0.2	0.4		J+	m
7440-36-0	Antimony	mg/L	0.006	0.001	0.00048	0.001	0.002	U			0.001	0.00045	0.001	0.002	U			0.001	0.00045	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.0043	0.00068	0.002	0.004				0.0155	0.00072	0.002	0.004		J-	m	0.0161	0.00072	0.002	0.004		J-	m
7440-39-3	Barium	mg/L	2	0.0404	0.0011	0.0025	0.01				0.0522	0.00085	0.0025	0.01				0.0511	0.00085	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00025	0.00011	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.0005	0.00019	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		15.1	0.0382	0.2	0.4				23.5	0.06	0.2	0.4				23	0.06	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0036	0.0018	0.0038	0.03	J			0.0075	0.0033	0.0075	0.03	U			0.0075	0.0033	0.0075	0.03	U		
7440-48-4	Cobalt	mg/L		0.00042	0.0002	0.0005	0.001	J			0.00084	0.00016	0.0005	0.001	J			0.0009	0.00016	0.0005	0.001	J		
7440-50-8	Copper	mg/L	1	0.01	0.0041	0.01	0.02	U			0.01	0.004	0.01	0.02	U			0.01	0.004	0.01	0.02	U		
7439-89-6	Iron	mg/L	0.3	24.5	0.0747	0.2	0.4				71.7	0.0805	0.2	0.4				70.2	0.0805	0.2	0.4			
7439-92-1	Lead	mg/L	0.015	0.00062	0.00009	0.00025	0.002	J			0.00056	0.00011	0.00025	0.002	J			0.00045	0.00011	0.00025	0.002	J		
7439-95-4	Magnesium	mg/L		2.67	0.019	0.05	0.2				4.35	0.0374	0.1	0.2				4.25	0.0374	0.1	0.2			
7439-96-5	Manganese	mg/L	0.05	0.257	0.0018	0.005	0.01				0.155	0.0016	0.005	0.01				0.151	0.0016	0.005	0.01			
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.005	0.0028	0.005	0.02	U			0.01	0.004	0.01	0.02	U			0.01	0.004	0.01	0.02	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-43GW							IAL4-MW-43							IAL4-MW-43-DUP						
				5/25/2017							9/21/2017							9/21/2017						
				9017598							9221915							9221923						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-09-7	Potassium	mg/L		2.14	0.16	0.5	1				3.43	0.179	0.5	1				3.39	0.179	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.001	0.00044	0.001	0.004	U			0.001	0.0005	0.001	0.004	U			0.001	0.0005	0.001	0.004	U		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U		
7440-23-5	Sodium	mg/L		20.9	0.173	0.5	2				69.6	0.321	0.5	2				68.4	0.321	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.0033	0.0002	0.0005	0.001				0.0044	0.00021	0.0005	0.001				0.0042	0.00021	0.0005	0.001			
7440-66-6	Zinc	mg/L	5	0.006	0.0054	0.01	0.04	J			0.01	0.0065	0.01	0.04	U			0.01	0.0065	0.01	0.04	U		
Hexavalent Chromium																								
18540-29-9	Hexavalent Chromium	ug/L		0.05	0.015	0.05	0.05	U			0.05	0.015	0.05	0.05	U			0.05	0.015	0.05	0.05	U		
Dissolved Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	0.2	0.0868	0.2	0.4	U			0.2	0.0894	0.2	0.4	U			0.2	0.0894	0.2	0.4	U		
7440-36-0	Antimony	mg/L	0.006	0.001	0.00048	0.001	0.002	U			0.001	0.00045	0.001	0.002	U			0.001	0.00045	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.0039	0.00068	0.002	0.004	J			0.0145	0.00072	0.002	0.004				0.0149	0.00072	0.002	0.004			
7440-39-3	Barium	mg/L	2	0.0355	0.0011	0.0025	0.01				0.049	0.00085	0.0025	0.01				0.0495	0.00085	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00025	0.00011	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.0005	0.00019	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		14.6	0.0382	0.2	0.4				22.6	0.06	0.2	0.4				22.7	0.06	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0038	0.0018	0.0038	0.03	U			0.0075	0.0033	0.0075	0.03	U			0.0075	0.0033	0.0075	0.03	U		
7440-48-4	Cobalt	mg/L		0.00037	0.0002	0.0005	0.001	J			0.0007	0.00016	0.0005	0.001	J			0.00072	0.00016	0.0005	0.001	J		
7440-50-8	Copper	mg/L	1	0.01	0.0041	0.01	0.02	U			0.01	0.004	0.01	0.02	U			0.01	0.004	0.01	0.02	U		
7439-89-6	Iron	mg/L	0.3	22.6	0.0747	0.2	0.4				67.8	0.0805	0.2	0.4				68.6	0.0805	0.2	0.4			
7439-92-1	Lead	mg/L	0.015	0.00025	0.00009	0.00025	0.002	U			0.00025	0.00011	0.00025	0.002	U			0.00025	0.00011	0.00025	0.002	U		
7439-95-4	Magnesium	mg/L		2.54	0.019	0.05	0.2				4.19	0.0374	0.1	0.2				4.26	0.0374	0.1	0.2			
7439-96-5	Manganese	mg/L	0.05	0.25	0.0018	0.005	0.01				0.148	0.0016	0.005	0.01				0.151	0.0016	0.005	0.01			
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.005	0.0028	0.005	0.02	U			0.01	0.004	0.01	0.02	U			0.01	0.004	0.01	0.02	U		
7440-09-7	Potassium	mg/L		2.01	0.16	0.5	1				3.46	0.179	0.5	1				3.32	0.179	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.001	0.00044	0.001	0.004	U			0.001	0.0005	0.001	0.004	U			0.001	0.0005	0.001	0.004	U		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-43GW							IAL4-MW-43							IAL4-MW-43-DUP						
				5/25/2017							9/21/2017							9/21/2017						
				9017598							9221915							9221923						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-23-5	Sodium	mg/L		20.3	0.173	0.5	2				66	0.321	0.5	2				66.3	0.321	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.00044	0.0002	0.0005	0.001	J			0.0017	0.00021	0.0005	0.001		B	x	0.0018	0.00021	0.0005	0.001		B	x
7440-66-6	Zinc	mg/L	5	0.0059	0.0054	0.01	0.04	J			0.01	0.0065	0.01	0.04	U			0.01	0.0065	0.01	0.04	U		
PCBs																								
12674-11-2	PCB-1016	ug/L	0.0005	0.25	0.085	0.25	0.42	U			0.25	0.082	0.25	0.41	U D1			0.27	0.091	0.27	0.45	U D1		
11104-28-2	PCB-1221	ug/L	0.0005	0.25	0.085	0.25	0.42	U			0.25	0.082	0.25	0.41	U D1			0.27	0.091	0.27	0.45	U D1		
11141-16-5	PCB-1232	ug/L	0.0005	0.34	0.17	0.34	0.42	U			0.33	0.16	0.33	0.41	U D1			0.36	0.18	0.36	0.45	U D1		
53469-21-9	PCB-1242	ug/L	0.0005	0.25	0.085	0.25	0.42	U			0.25	0.082	0.25	0.41	U D1			0.27	0.091	0.27	0.45	U D1		
12672-29-6	PCB-1248	ug/L	0.0005	0.25	0.085	0.25	0.42	U			0.25	0.082	0.25	0.41	U D1			0.27	0.091	0.27	0.45	U D1		
11097-69-1	PCB-1254	ug/L	0.0005	0.25	0.085	0.25	0.42	U			0.25	0.082	0.25	0.41	U D1			0.27	0.091	0.27	0.45	U D1		
11096-82-5	PCB-1260	ug/L	0.0005	0.25	0.13	0.25	0.42	U			0.25	0.12	0.25	0.41	U D1			0.27	0.14	0.27	0.45	U D1		
37324-23-5	PCB-1262	ug/L	0.0005	0.34	0.17	0.34	0.42	U			0.33	0.16	0.33	0.41	U D1			0.36	0.18	0.36	0.45	U D1		
11100-14-4	PCB-1268	ug/L	0.0005	0.27	0.14	0.27	0.42	U			0.26	0.13	0.26	0.41	U D1			0.29	0.15	0.29	0.45	U D1		
Dioxin																								
35822-46-9	1234678-HpCDD	pg/L		11	7	11	11	U			10	6	10	10	U			9	6	9	9	U		
67562-39-4	1234678-HpCDF	pg/L		11	4	11	11	U			10	4	10	10	U			9	4	9	9	U		
55673-89-7	1234789-HpCDF	pg/L		11	3	11	11	U			10	3	10	10	U			9	3	9	9	U		
39227-28-6	123478-HxCDD	pg/L		11	4	11	11	U			10	4	10	10	U			9	4	9	9	U		
70648-26-9	123478-HxCDF	pg/L		11	3	11	11	U			10	3	10	10	U			9	3	9	9	U		
57653-85-7	123678-HxCDD	pg/L		11	3	11	11	U			10	3	10	10	U			9	3	9	9	U		
57117-44-9	123678-HxCDF	pg/L		11	3	11	11	U			10	3	10	10	U			9	3	9	9	U		
19408-74-3	123789-HxCDD	pg/L		11	4	11	11	U			10	4	10	10	U			9	4	9	9	U		
72918-21-9	123789-HxCDF	pg/L		11	4	11	11	U			10	4	10	10	U			9	4	9	9	U		
40321-76-4	12378-PeCDD	pg/L		11	3	11	11	U			10	3	10	10	U			9	3	9	9	U		
57117-41-6	12378-PeCDF	pg/L		11	3	11	11	U			10	3	10	10	U			9	3	9	9	U		
60851-34-5	234678-HxCDF	pg/L		11	3	11	11	U			10	3	10	10	U			9	3	9	9	U		
57117-31-4	23478-PeCDF	pg/L		11	3	11	11	U			10	3	10	10	U			9	3	9	9	U		
1746-01-6	2378-TCDD	pg/L	30	2	1	2	2	U			2	1	2	2	U			2	0.9	2	2	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-43GW							IAL4-MW-43							IAL4-MW-43-DUP						
				5/25/2017							9/21/2017							9/21/2017						
				9017598							9221915							9221923						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
51207-31-9	2378-TCDF	pg/L		2	1	2	2	U			2	1	2	2	U			2	0.9	2	2	U		
3268-87-9	OCDD	pg/L		34	11	22	22				27	10	21	21				43	9	19	19			
39001-02-0	OCDF	pg/L		22	7	22	22	U			21	6	21	21	U			19	6	19	19	U		
TEQWHO05-0	TEQ WHO 2005 - EDLx0.0	pg/L		0.01							0.008							0.01						
TEQWHO05-0	TEQ WHO 2005 - EDLx0.5	pg/L		4							4							4						
37871-00-4	Total HpCDD	pg/L		11	4	11	11	U			10	4	10	10	U			9	4	9	9	U		
38998-75-3	Total HpCDF	pg/L		11	4	11	11	U			10	4	10	10	U			9	4	9	9	U		
34465-46-8	Total HxCDD	pg/L		11	4	11	11	U			10	4	10	10	U			9	4	9	9	U		
55684-94-1	Total HxCDF	pg/L		11	4	11	11	U			10	4	10	10	U			9	4	9	9	U		
36088-22-9	Total PeCDD	pg/L		11	3	11	11	U			10	3	10	10	U			9	3	9	9	U		
30402-15-4	Total PeCDF	pg/L		11	3	11	11	U			10	3	10	10	U			9	3	9	9	U		
41903-57-5	Total TCDD	pg/L		2	1	2	2	U			2	1	2	2	U			2	0.9	2	2	U		
55722-27-5	Total TCDF	pg/L		2	1	2	2	U			2	1	2	2	U			2	0.9	2	2	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-44GW							IAL4-MW-44							ILF4-COE-3GW						
				5/25/2017							8/10/2017							5/24/2017						
				9017596							9150961							9017590						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
VOCs																								
630-20-6	1,1,1,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
71-55-6	1,1,1-Trichloroethane	ug/L	200	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L		4	2	4	10	U			NA							4	2	4	10	U		
79-00-5	1,1,2-Trichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-34-3	1,1-Dichloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-35-4	1,1-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
563-58-6	1,1-Dichloropropene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
87-61-6	1,2,3-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
96-18-4	1,2,3-Trichloropropane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
95-63-6	1,2,4-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/L	0.2	4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
106-93-4	1,2-Dibromoethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L	600	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
107-06-2	1,2-Dichloroethane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
540-59-0	1,2-Dichloroethene (Total)	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-87-5	1,2-Dichloropropane	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-67-8	1,3,5-Trimethylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
541-73-1	1,3-Dichlorobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
142-28-9	1,3-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L	75	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
123-91-1	1,4-Dioxane	ug/L		200	70	200	250	U			200	70	200	250	U			200	70	200	250	U		
594-20-7	2,2-Dichloropropane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
78-93-3	2-Butanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
95-49-8	2-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
591-78-6	2-Hexanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
106-43-4	4-Chlorotoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-44GW							IAL4-MW-44							ILF4-COE-3GW						
				5/25/2017							8/10/2017							5/24/2017						
				9017596							9150961							9017590						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/L		8	3	8	10	U			8	3	8	10	U			8	3	8	10	U		
67-64-1	Acetone	ug/L		20	6	20	20	U			20	6	20	20	U			20	6	20	20	U		
71-43-2	Benzene	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-86-1	Bromobenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
74-97-5	Bromochloromethane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-27-4	Bromodichloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-25-2	Bromoform	ug/L		1	0.5	1	4	U			1	0.5	1	4	U			1	0.5	1	4	U		
74-83-9	Bromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-15-0	Carbon Disulfide	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
56-23-5	Carbon Tetrachloride	ug/L	5	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-90-7	Chlorobenzene	ug/L	100	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-00-3	Chloroethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
67-66-3	Chloroform	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
74-87-3	Chloromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-59-2	cis-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-01-5	cis-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
110-82-7	Cyclohexane	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
124-48-1	Dibromochloromethane	ug/L	60	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
74-95-3	Dibromomethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-71-8	Dichlorodifluoromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
64-17-5	Ethanol	ug/L		200	50	200	250	U			200	50	200	250	U			200	50	200	250	U		
100-41-4	Ethylbenzene	ug/L	700	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
76-13-1	Freon 113	ug/L		NA							4	2	4	10	U			NA						
87-68-3	Hexachlorobutadiene	ug/L		4	2	4	5	U			4	2	4	5	U			4	2	4	5	U		
98-82-8	Isopropylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
179601-23-1	m+p-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-20-9	Methyl Acetate	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
1634-04-4	Methyl Tertiary Butyl Ether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-87-2	Methylcyclohexane	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-44GW							IAL4-MW-44							ILF4-COE-3GW						
				5/25/2017							8/10/2017							5/24/2017						
				9017596							9150961							9017590						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
75-09-2	Methylene Chloride	ug/L		4	2	4	4	U			4	2	4	4	U			4	2	4	4	U		
91-20-3	Naphthalene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
104-51-8	n-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
103-65-1	n-Propylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
95-47-6	o-Xylene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
99-87-6	p-Isopropyltoluene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
135-98-8	sec-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
100-42-5	Styrene	ug/L	100	2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
75-65-0	t-Butyl alcohol	ug/L		20	5	20	20	U			20	5	20	20	U			20	5	20	20	U		
98-06-6	tert-Butylbenzene	ug/L		2	1	2	5	U			2	1	2	5	U			2	1	2	5	U		
127-18-4	Tetrachloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
108-88-3	Toluene	ug/L	1000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
156-60-5	trans-1,2-Dichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
10061-02-6	trans-1,3-Dichloropropene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
79-01-6	Trichloroethene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-69-4	Trichlorofluoromethane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
75-01-4	Vinyl Chloride	ug/L	2	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
1330-20-7	Xylene (Total)	ug/L	10000	1	0.5	1	1	U			1	0.5	1	1	U			1	0.5	1	1	U		
Semivolatiles																								
92-52-4	1,1'-Biphenyl	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L	70	1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
122-66-7	1,2-Diphenylhydrazine	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
541-73-1	1,3-Dichlorobenzene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
123-91-1	1,4-Dioxane	ug/L		4	1	4	5	U			4	1	4	5	U			5	1	5	6	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
95-95-4	2,4,5-Trichlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-44GW							IAL4-MW-44							ILF4-COE-3GW						
				5/25/2017							8/10/2017							5/24/2017						
				9017596							9150961							9017590						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
88-06-2	2,4,6-Trichlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
120-83-2	2,4-Dichlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
105-67-9	2,4-Dimethylphenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
51-28-5	2,4-Dinitrophenol	ug/L		30	10	30	30	U			31	10	31	31	U	UJ	c	36	12	36	36	U		
121-14-2	2,4-Dinitrotoluene	ug/L		4	1	4	5	U			4	1	4	5	U			5	1	5	6	U		
87-65-0	2,6-Dichlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
606-20-2	2,6-Dinitrotoluene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
91-58-7	2-Chloronaphthalene	ug/L		1	0.4	1	1	U			1	0.4	1	1	U			1	0.5	1	1	U		
95-57-8	2-Chlorophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
91-57-6	2-Methylnaphthalene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	J			0.2	0.1	0.2	0.6	U		
95-48-7	2-Methylphenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
88-74-4	2-Nitroaniline	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
88-75-5	2-Nitrophenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
91-94-1	3,3'-Dichlorobenzidine	ug/L		4	2	4	5	U			4	2	4	5	U			5	2	5	6	U		
99-09-2	3-Nitroaniline	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/L		15	5	15	15	U			16	5	16	16	U			18	6	18	18	U		
101-55-3	4-Bromophenyl-phenylether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
59-50-7	4-Chloro-3-methylphenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
106-47-8	4-Chloroaniline	ug/L		4	2	4	4	U			4	2	4	4	U			5	2	5	5	U		
7005-72-3	4-Chlorophenyl-phenylether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
106-44-5	4-Methylphenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
100-01-6	4-Nitroaniline	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
100-02-7	4-Nitrophenol	ug/L		30	10	30	30	U			31	10	31	31	U			36	12	36	36	U		
83-32-9	Acenaphthene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
208-96-8	Acenaphthylene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
98-86-2	Acetophenone	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
120-12-7	Anthracene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
1912-24-9	Atrazine	ug/L	3	4	2	4	5	U			4	2	4	5	U			5	2	5	6	U		
100-52-7	Benzaldehyde	ug/L		4	1	4	5	U			4	1	4	5	U			5	1	5	6	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-44GW							IAL4-MW-44							ILF4-COE-3GW						
				5/25/2017							8/10/2017							5/24/2017						
				9017596							9150961							9017590						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
92-87-5	Benzidine	ug/L		61	20	61	61	U	UJ	I	62	21	62	63	U			69	23	69	69	U		
56-55-3	Benzo(a)anthracene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
50-32-8	Benzo(a)pyrene	ug/L	0.2	0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
205-99-2	Benzo(b)fluoranthene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
191-24-2	Benzo(g,h,i)perylene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
207-08-9	Benzo(k)fluoranthene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
65-85-0	Benzoic acid	ug/L		15	6	15	15	U			16	6	16	16	U			18	7	18	18	U	UJ	c
100-51-6	Benzyl alcohol	ug/L		20	10	20	30	U			21	10	21	31	U			24	12	24	36	U		
111-91-1	bis(2-Chloroethoxy)methane	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
111-44-4	bis(2-Chloroethyl)ether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
39638-32-9	bis(2-Chloroisopropyl)ether	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
117-81-7	bis(2-Ethylhexyl)phthalate	ug/L		4	2	4	5	U			4	2	4	5	U			5	2	5	6	U		
85-68-7	Butylbenzylphthalate	ug/L		4	2	4	5	U			4	2	4	5	U			5	2	5	6	U		
105-60-2	Caprolactam	ug/L		15	5	15	15	U			16	5	16	16	U			18	6	18	18	U		
86-74-8	Carbazole	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
218-01-9	Chrysene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
53-70-3	Dibenz(a,h)anthracene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
132-64-9	Dibenzofuran	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
84-66-2	Diethylphthalate	ug/L		4	2	4	5	U			4	2	4	5	U			5	2	5	6	U		
131-11-3	Dimethylphthalate	ug/L		4	2	4	5	U			4	2	4	5	U			5	2	5	6	U		
84-74-2	Di-n-butylphthalate	ug/L		4	2	4	5	U			4	2	4	5	U			5	2	5	6	U		
117-84-0	Di-n-octylphthalate	ug/L		4	2	4	5	U			4	2	4	5	U			5	2	5	6	U		
88-85-7	Dinoseb	ug/L	7	4	2	4	5	U			4	2	4	5	U			5	2	5	6	U		
206-44-0	Fluoranthene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
86-73-7	Fluorene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
118-74-1	Hexachlorobenzene	ug/L	1	0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
87-68-3	Hexachlorobutadiene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
77-47-4	Hexachlorocyclopentadiene	ug/L	50	15	5	15	15	U			17	6	17	17	U	UJ	h	18	6	18	18	U		
67-72-1	Hexachloroethane	ug/L		4	1	4	5	U			4	1	4	5	U			5	1	5	6	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-44GW							IAL4-MW-44							ILF4-COE-3GW						
				5/25/2017							8/10/2017							5/24/2017						
				9017596							9150961							9017590						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
193-39-5	Indeno(1,2,3-cd)pyrene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
78-59-1	Isophorone	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
91-20-3	Naphthalene	ug/L		0.1	0.1	0.2	0.5	J			0.4	0.1	0.2	0.5	J			0.2	0.1	0.2	0.6	U		
98-95-3	Nitrobenzene	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
62-75-9	N-Nitrosodimethylamine	ug/L		4	2	4	5	U			4	2	4	5	U			5	2	5	6	U		
621-64-7	N-Nitroso-di-n-propylamine	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
86-30-6	N-Nitrosodiphenylamine	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
930-55-2	N-Nitrosopyrrolidine	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
87-86-5	Pentachlorophenol	ug/L	1	4	1	4	5	U			4	1	4	5	U			5	1	5	6	U		
85-01-8	Phenanthrene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
108-95-2	Phenol	ug/L		1	0.5	1	1	U			1	0.5	1	1	U			1	0.6	1	1	U		
129-00-0	Pyrene	ug/L		0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.5	U			0.2	0.1	0.2	0.6	U		
Total Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	0.116	0.0868	0.2	0.4	J			0.965	0.0894	0.2	0.4		J+	m	0.2	0.0868	0.2	0.4	U		
7440-36-0	Antimony	mg/L	0.006	0.001	0.00048	0.001	0.002	U			0.001	0.00045	0.001	0.002	U			0.001	0.00048	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.002	0.00068	0.002	0.004	U			0.002	0.00072	0.002	0.004	U			0.002	0.00068	0.002	0.004	U		
7440-39-3	Barium	mg/L	2	0.0462	0.0011	0.0025	0.01				0.0341	0.00085	0.0025	0.01				0.0535	0.0011	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00025	0.00011	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U			0.00025	0.00011	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.0005	0.00019	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U			0.0005	0.00019	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		45.6	0.0382	0.2	0.4				41.2	0.06	0.2	0.4				10.3	0.0382	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0038	0.0018	0.0038	0.03	U			0.0075	0.0033	0.0075	0.03	U			0.0038	0.0018	0.0038	0.03	U		
7440-48-4	Cobalt	mg/L		0.00096	0.0002	0.0005	0.001	J			0.0005	0.00016	0.0005	0.001	U			0.00024	0.0002	0.0005	0.001	J		
7440-50-8	Copper	mg/L	1	0.01	0.0041	0.01	0.02	U			0.01	0.004	0.01	0.02	U			0.01	0.0041	0.01	0.02	U		
7439-89-6	Iron	mg/L	0.3	0.204	0.0747	0.2	0.4	J			0.564	0.0805	0.2	0.4				0.0865	0.0747	0.2	0.4	J		
7439-92-1	Lead	mg/L	0.015	0.00016	0.00009	0.00025	0.002	J			0.00045	0.00011	0.00025	0.002	J			0.00025	0.00009	0.00025	0.002	U		
7439-95-4	Magnesium	mg/L		5.6	0.019	0.05	0.2				4.66	0.0374	0.1	0.2				2.4	0.019	0.05	0.2			
7439-96-5	Manganese	mg/L	0.05	0.101	0.0018	0.005	0.01				0.0056	0.0016	0.005	0.01	J			0.0062	0.0018	0.005	0.01	J		
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.005	0.0028	0.005	0.02	U			0.01	0.004	0.01	0.02	U			0.005	0.0028	0.005	0.02	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-44GW							IAL4-MW-44							ILF4-COE-3GW						
				5/25/2017							8/10/2017							5/24/2017						
				9017596							9150961							9017590						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-09-7	Potassium	mg/L		1.92	0.16	0.5	1				1.7	0.179	0.5	1				1.22	0.16	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.001	0.00044	0.001	0.004	U			0.001	0.0005	0.001	0.004	U			0.001	0.00044	0.001	0.004	U		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		
7440-23-5	Sodium	mg/L		36.5	0.173	0.5	2				13.2	0.321	0.5	2				2.17	0.173	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00016	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.00035	0.0002	0.0005	0.001	J			0.0015	0.00021	0.0005	0.001				0.0004	0.0002	0.0005	0.001	J		
7440-66-6	Zinc	mg/L	5	0.01	0.0054	0.01	0.04	U			0.01	0.0065	0.01	0.04	U			0.0605	0.0054	0.01	0.04			
Hexavalent Chromium																								
18540-29-9	Hexavalent Chromium	ug/L		0.05	0.015	0.05	0.05	U			0.033	0.015	0.05	0.05	J	J	d	0.19	0.015	0.05	0.05			
Dissolved Metals																								
7429-90-5	Aluminum	mg/L	0.05-0.2	0.2	0.0868	0.2	0.4	U			0.2	0.0894	0.2	0.4	U			0.2	0.0868	0.2	0.4	U		
7440-36-0	Antimony	mg/L	0.006	0.001	0.00048	0.001	0.002	U			0.001	0.00045	0.001	0.002	U			0.001	0.00048	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.002	0.00068	0.002	0.004	U			0.002	0.00072	0.002	0.004	U			0.002	0.00068	0.002	0.004	U		
7440-39-3	Barium	mg/L	2	0.0431	0.0011	0.0025	0.01				0.0292	0.00085	0.0025	0.01				0.0499	0.0011	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00025	0.00011	0.00025	0.001	U			0.00025	0.000071	0.00025	0.001	U			0.00025	0.00011	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.0005	0.00019	0.0005	0.001	U			0.0005	0.00015	0.0005	0.001	U			0.0005	0.00019	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		44	0.0382	0.2	0.4				40.1	0.06	0.2	0.4				10.4	0.0382	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0038	0.0018	0.0038	0.03	U			0.0075	0.0033	0.0075	0.03	U			0.0038	0.0018	0.0038	0.03	U		
7440-48-4	Cobalt	mg/L		0.0009	0.0002	0.0005	0.001	J			0.0005	0.00016	0.0005	0.001	U			0.00024	0.0002	0.0005	0.001	J		
7440-50-8	Copper	mg/L	1	0.01	0.0041	0.01	0.02	U			0.0064	0.004	0.01	0.02	J	B	o	0.01	0.0041	0.01	0.02	U		
7439-89-6	Iron	mg/L	0.3	0.129	0.0747	0.2	0.4	J			0.2	0.0805	0.2	0.4	U			0.2	0.0747	0.2	0.4	U		
7439-92-1	Lead	mg/L	0.015	0.00015	0.00009	0.00025	0.002	J			0.00021	0.00011	0.00025	0.002	J			0.00025	0.00009	0.00025	0.002	U		
7439-95-4	Magnesium	mg/L		5.39	0.019	0.05	0.2				4.51	0.0374	0.1	0.2				2.2	0.019	0.05	0.2			
7439-96-5	Manganese	mg/L	0.05	0.0958	0.0018	0.005	0.01				0.0032	0.0016	0.005	0.01	J			0.0054	0.0018	0.005	0.01	J		
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U			0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.005	0.0028	0.005	0.02	U			0.01	0.004	0.01	0.02	U			0.005	0.0028	0.005	0.02	U		
7440-09-7	Potassium	mg/L		1.83	0.16	0.5	1				1.6	0.179	0.5	1				1.14	0.16	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.001	0.00044	0.001	0.004	U			0.001	0.0005	0.001	0.004	U			0.001	0.00044	0.001	0.004	U		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00012	0.00025	0.001	U			0.00025	0.00015	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-44GW							IAL4-MW-44							ILF4-COE-3GW						
				5/25/2017							8/10/2017							5/24/2017						
				9017596							9150961							9017590						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-23-5	Sodium	mg/L		35	0.173	0.5	2				13.4	0.321	0.5	2				2.19	0.173	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00016	0.00025	0.001	U			0.00025	0.00012	0.00025	0.001	U			0.00025	0.00016	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.0005	0.0002	0.0005	0.001	U			0.0005	0.00021	0.0005	0.001	U			0.0005	0.0002	0.0005	0.001	U		
7440-66-6	Zinc	mg/L	5	0.01	0.0054	0.01	0.04	U			0.01	0.0065	0.01	0.04	U			0.0544	0.0054	0.01	0.04			
PCBs																								
12674-11-2	PCB-1016	ug/L	0.0005	0.24	0.08	0.24	0.4	U			0.26	0.087	0.26	0.43	U D1			0.29	0.096	0.29	0.48	U		
11104-28-2	PCB-1221	ug/L	0.0005	0.24	0.08	0.24	0.4	U			0.26	0.087	0.26	0.43	U D1			0.29	0.096	0.29	0.48	U		
11141-16-5	PCB-1232	ug/L	0.0005	0.32	0.16	0.32	0.4	U			0.35	0.17	0.35	0.43	U D1			0.38	0.19	0.38	0.48	U		
53469-21-9	PCB-1242	ug/L	0.0005	0.24	0.08	0.24	0.4	U			0.26	0.087	0.26	0.43	U D1			0.29	0.096	0.29	0.48	U		
12672-29-6	PCB-1248	ug/L	0.0005	0.24	0.08	0.24	0.4	U			0.26	0.087	0.26	0.43	U D1			0.29	0.096	0.29	0.48	U		
11097-69-1	PCB-1254	ug/L	0.0005	0.24	0.08	0.24	0.4	U			0.26	0.087	0.26	0.43	U D1			0.29	0.096	0.29	0.48	U		
11096-82-5	PCB-1260	ug/L	0.0005	0.24	0.12	0.24	0.4	U			0.26	0.13	0.26	0.43	U D1			0.29	0.14	0.29	0.48	U		
37324-23-5	PCB-1262	ug/L	0.0005	0.32	0.16	0.32	0.4	U			0.35	0.17	0.35	0.43	U D1			0.38	0.19	0.38	0.48	U		
11100-14-4	PCB-1268	ug/L	0.0005	0.26	0.13	0.26	0.4	U			0.28	0.14	0.28	0.43	U D1			0.31	0.15	0.31	0.48	U		
Dioxin																								
35822-46-9	1234678-HpCDD	pg/L		NA							9	6	9	9	U			NA						
67562-39-4	1234678-HpCDF	pg/L		NA							9	4	9	9	U			NA						
55673-89-7	1234789-HpCDF	pg/L		NA							9	3	9	9	U			NA						
39227-28-6	123478-HxCDD	pg/L		NA							9	4	9	9	U			NA						
70648-26-9	123478-HxCDF	pg/L		NA							9	3	9	9	U			NA						
57653-85-7	123678-HxCDD	pg/L		NA							9	3	9	9	U			NA						
57117-44-9	123678-HxCDF	pg/L		NA							9	3	9	9	U			NA						
19408-74-3	123789-HxCDD	pg/L		NA							9	4	9	9	U			NA						
72918-21-9	123789-HxCDF	pg/L		NA							9	4	9	9	U			NA						
40321-76-4	12378-PeCDD	pg/L		NA							9	3	9	9	U			NA						
57117-41-6	12378-PeCDF	pg/L		NA							9	3	9	9	U			NA						
60851-34-5	234678-HxCDF	pg/L		NA							9	3	9	9	U			NA						
57117-31-4	23478-PeCDF	pg/L		NA							9	3	9	9	U			NA						
1746-01-6	2378-TCDD	pg/L	30	NA							2	0.9	2	2	U			NA						

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-MW-44GW							IAL4-MW-44							ILF4-COE-3GW						
				5/25/2017							8/10/2017							5/24/2017						
				9017596							9150961							9017590						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
51207-31-9	2378-TCDF	pg/L		NA							2	0.9	2	2	U			NA						
3268-87-9	OCDD	pg/L		NA							33	9	19	19				NA						
39001-02-0	OCDF	pg/L		NA							19	6	19	19	U			NA						
TEQWHO05-0	TEQ WHO 2005 - EDLx0.0	pg/L		NA							0.01							NA						
TEQWHO05-0	TEQ WHO 2005 - EDLx0.5	pg/L		NA							4					B	x	NA						
37871-00-4	Total HpCDD	pg/L		NA							9	4	9	9	U			NA						
38998-75-3	Total HpCDF	pg/L		NA							9	4	9	9	U			NA						
34465-46-8	Total HxCDD	pg/L		NA							9	4	9	9	U			NA						
55684-94-1	Total HxCDF	pg/L		NA							9	4	9	9	U			NA						
36088-22-9	Total PeCDD	pg/L		NA							9	3	9	9	U			NA						
30402-15-4	Total PeCDF	pg/L		NA							9	3	9	9	U			NA						
41903-57-5	Total TCDD	pg/L		NA							2	0.9	2	2	U			NA						
55722-27-5	Total TCDF	pg/L		NA							2	0.9	2	2	U			NA						

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-COE-3						
				8/10/2017						
				9150959						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC
VOCs										
630-20-6	1,1,1,2-Tetrachloroethane	ug/L		1	0.5	1	1	U		
71-55-6	1,1,1-Trichloroethane	ug/L	200	1	0.5	1	1	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		1	0.5	1	1	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L		NA						
79-00-5	1,1,2-Trichloroethane	ug/L	5	1	0.5	1	1	U		
75-34-3	1,1-Dichloroethane	ug/L		1	0.5	1	1	U		
75-35-4	1,1-Dichloroethene	ug/L		1	0.5	1	1	U		
563-58-6	1,1-Dichloropropene	ug/L		2	1	2	5	U		
87-61-6	1,2,3-Trichlorobenzene	ug/L		2	1	2	5	U		
96-18-4	1,2,3-Trichloropropane	ug/L		2	1	2	5	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L		2	1	2	5	U		
95-63-6	1,2,4-Trimethylbenzene	ug/L		2	1	2	5	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/L	0.2	4	2	4	5	U		
106-93-4	1,2-Dibromoethane	ug/L		1	0.5	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L	600	2	1	2	5	U		
107-06-2	1,2-Dichloroethane	ug/L	5	1	0.5	1	1	U		
540-59-0	1,2-Dichloroethene (Total)	ug/L		1	0.5	1	1	U		
78-87-5	1,2-Dichloropropane	ug/L	5	1	0.5	1	1	U		
108-67-8	1,3,5-Trimethylbenzene	ug/L		2	1	2	5	U		
541-73-1	1,3-Dichlorobenzene	ug/L		2	1	2	5	U		
142-28-9	1,3-Dichloropropane	ug/L		1	0.5	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L	75	2	1	2	5	U		
123-91-1	1,4-Dioxane	ug/L		200	70	200	250	U		
594-20-7	2,2-Dichloropropane	ug/L		1	0.5	1	1	U		
78-93-3	2-Butanone	ug/L		8	3	8	10	U		
95-49-8	2-Chlorotoluene	ug/L		2	1	2	5	U		
591-78-6	2-Hexanone	ug/L		8	3	8	10	U		
106-43-4	4-Chlorotoluene	ug/L		2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-COE-3						
				8/10/2017						
				9150959						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/L		8	3	8	10	U		
67-64-1	Acetone	ug/L		20	6	20	20	U		
71-43-2	Benzene	ug/L	5	1	0.5	1	1	U		
108-86-1	Bromobenzene	ug/L		2	1	2	5	U		
74-97-5	Bromochloromethane	ug/L		2	1	2	5	U		
75-27-4	Bromodichloromethane	ug/L		1	0.5	1	1	U		
75-25-2	Bromoform	ug/L		1	0.5	1	4	U		
74-83-9	Bromomethane	ug/L		1	0.5	1	1	U		
75-15-0	Carbon Disulfide	ug/L		2	1	2	5	U		
56-23-5	Carbon Tetrachloride	ug/L	5	1	0.5	1	1	U		
108-90-7	Chlorobenzene	ug/L	100	1	0.5	1	1	U		
75-00-3	Chloroethane	ug/L		1	0.5	1	1	U		
67-66-3	Chloroform	ug/L		1	0.5	1	1	U		
74-87-3	Chloromethane	ug/L		1	0.5	1	1	U		
156-59-2	cis-1,2-Dichloroethene	ug/L		1	0.5	1	1	U		
10061-01-5	cis-1,3-Dichloropropene	ug/L		1	0.5	1	1	U		
110-82-7	Cyclohexane	ug/L		4	2	4	5	U		
124-48-1	Dibromochloromethane	ug/L	60	1	0.5	1	1	U		
74-95-3	Dibromomethane	ug/L		1	0.5	1	1	U		
75-71-8	Dichlorodifluoromethane	ug/L		1	0.5	1	1	U		
64-17-5	Ethanol	ug/L		200	50	200	250	U		
100-41-4	Ethylbenzene	ug/L	700	1	0.5	1	1	U		
76-13-1	Freon 113	ug/L		4	2	4	10	U		
87-68-3	Hexachlorobutadiene	ug/L		4	2	4	5	U		
98-82-8	Isopropylbenzene	ug/L		2	1	2	5	U		
179601-23-1	m+p-Xylene	ug/L		1	0.5	1	1	U		
79-20-9	Methyl Acetate	ug/L		2	1	2	5	U		
1634-04-4	Methyl Tertiary Butyl Ether	ug/L		1	0.5	1	1	U		
108-87-2	Methylcyclohexane	ug/L		2	1	2	5	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-COE-3						
				8/10/2017						
				9150959						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC
75-09-2	Methylene Chloride	ug/L		4	2	4	4	U		
91-20-3	Naphthalene	ug/L		2	1	2	5	U		
104-51-8	n-Butylbenzene	ug/L		2	1	2	5	U		
103-65-1	n-Propylbenzene	ug/L		2	1	2	5	U		
95-47-6	o-Xylene	ug/L		1	0.5	1	1	U		
99-87-6	p-Isopropyltoluene	ug/L		2	1	2	5	U		
135-98-8	sec-Butylbenzene	ug/L		2	1	2	5	U		
100-42-5	Styrene	ug/L	100	2	1	2	5	U		
75-65-0	t-Butyl alcohol	ug/L		20	5	20	20	U		
98-06-6	tert-Butylbenzene	ug/L		2	1	2	5	U		
127-18-4	Tetrachloroethene	ug/L		1	0.5	1	1	U		
108-88-3	Toluene	ug/L	1000	1	0.5	1	1	U		
156-60-5	trans-1,2-Dichloroethene	ug/L		1	0.5	1	1	U		
10061-02-6	trans-1,3-Dichloropropene	ug/L		1	0.5	1	1	U		
79-01-6	Trichloroethene	ug/L		1	0.5	1	1	U		
75-69-4	Trichlorofluoromethane	ug/L		1	0.5	1	1	U		
75-01-4	Vinyl Chloride	ug/L	2	1	0.5	1	1	U		
1330-20-7	Xylene (Total)	ug/L	10000	1	0.5	1	1	U		
Semivolatiles										
92-52-4	1,1'-Biphenyl	ug/L		1	0.6	1	1	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/L		1	0.6	1	1	U		
120-82-1	1,2,4-Trichlorobenzene	ug/L	70	1	0.6	1	1	U		
95-50-1	1,2-Dichlorobenzene	ug/L		1	0.6	1	1	U		
122-66-7	1,2-Diphenylhydrazine	ug/L		1	0.6	1	1	U		
541-73-1	1,3-Dichlorobenzene	ug/L		1	0.6	1	1	U		
106-46-7	1,4-Dichlorobenzene	ug/L		1	0.6	1	1	U		
123-91-1	1,4-Dioxane	ug/L		4	1	4	6	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/L		1	0.6	1	1	U		
95-95-4	2,4,5-Trichlorophenol	ug/L		1	0.6	1	1	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-COE-3						
				8/10/2017						
				9150959						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC
88-06-2	2,4,6-Trichlorophenol	ug/L		1	0.6	1	1	U		
120-83-2	2,4-Dichlorophenol	ug/L		1	0.6	1	1	U		
105-67-9	2,4-Dimethylphenol	ug/L		1	0.6	1	1	U		
51-28-5	2,4-Dinitrophenol	ug/L		33	11	33	33	U	UJ	c
121-14-2	2,4-Dinitrotoluene	ug/L		4	1	4	6	U		
87-65-0	2,6-Dichlorophenol	ug/L		1	0.6	1	1	U		
606-20-2	2,6-Dinitrotoluene	ug/L		1	0.6	1	1	U		
91-58-7	2-Chloronaphthalene	ug/L		1	0.4	1	1	U		
95-57-8	2-Chlorophenol	ug/L		1	0.6	1	1	U		
91-57-6	2-Methylnaphthalene	ug/L		0.2	0.1	0.2	0.6	U		
95-48-7	2-Methylphenol	ug/L		1	0.6	1	1	U		
88-74-4	2-Nitroaniline	ug/L		1	0.6	1	1	U		
88-75-5	2-Nitrophenol	ug/L		1	0.6	1	1	U		
91-94-1	3,3'-Dichlorobenzidine	ug/L		4	2	4	6	U		
99-09-2	3-Nitroaniline	ug/L		1	0.6	1	1	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/L		17	6	17	17	U		
101-55-3	4-Bromophenyl-phenylether	ug/L		1	0.6	1	1	U		
59-50-7	4-Chloro-3-methylphenol	ug/L		1	0.6	1	1	U		
106-47-8	4-Chloroaniline	ug/L		4	2	4	4	U		
7005-72-3	4-Chlorophenyl-phenylether	ug/L		1	0.6	1	1	U		
106-44-5	4-Methylphenol	ug/L		1	0.6	1	1	U		
100-01-6	4-Nitroaniline	ug/L		1	0.6	1	1	U		
100-02-7	4-Nitrophenol	ug/L		33	11	33	33	U		
83-32-9	Acenaphthene	ug/L		0.2	0.1	0.2	0.6	U		
208-96-8	Acenaphthylene	ug/L		0.2	0.1	0.2	0.6	U		
98-86-2	Acetophenone	ug/L		1	0.6	1	1	U		
120-12-7	Anthracene	ug/L		0.2	0.1	0.2	0.6	U		
1912-24-9	Atrazine	ug/L	3	4	2	4	6	U		
100-52-7	Benzaldehyde	ug/L		4	1	4	6	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-COE-3						
				8/10/2017						
				9150959						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC
92-87-5	Benzidine	ug/L		66	22	66	66	U		
56-55-3	Benzo(a)anthracene	ug/L		0.2	0.1	0.2	0.6	U		
50-32-8	Benzo(a)pyrene	ug/L	0.2	0.2	0.1	0.2	0.6	U		
205-99-2	Benzo(b)fluoranthene	ug/L		0.2	0.1	0.2	0.6	U		
191-24-2	Benzo(g,h,i)perylene	ug/L		0.2	0.1	0.2	0.6	U		
207-08-9	Benzo(k)fluoranthene	ug/L		0.2	0.1	0.2	0.6	U		
65-85-0	Benzoic acid	ug/L		17	7	17	17	U		
100-51-6	Benzyl alcohol	ug/L		22	11	22	33	U		
111-91-1	bis(2-Chloroethoxy)methane	ug/L		1	0.6	1	1	U		
111-44-4	bis(2-Chloroethyl)ether	ug/L		1	0.6	1	1	U		
39638-32-9	bis(2-Chloroisopropyl)ether	ug/L		1	0.6	1	1	U		
117-81-7	bis(2-Ethylhexyl)phthalate	ug/L		4	2	4	6	U		
85-68-7	Butylbenzylphthalate	ug/L		4	2	4	6	U		
105-60-2	Caprolactam	ug/L		17	6	17	17	U		
86-74-8	Carbazole	ug/L		1	0.6	1	1	U		
218-01-9	Chrysene	ug/L		0.2	0.1	0.2	0.6	U		
53-70-3	Dibenz(a,h)anthracene	ug/L		0.2	0.1	0.2	0.6	U		
132-64-9	Dibenzofuran	ug/L		1	0.6	1	1	U		
84-66-2	Diethylphthalate	ug/L		4	2	4	6	U		
131-11-3	Dimethylphthalate	ug/L		4	2	4	6	U		
84-74-2	Di-n-butylphthalate	ug/L		4	2	4	6	U		
117-84-0	Di-n-octylphthalate	ug/L		4	2	4	6	U		
88-85-7	Dinoseb	ug/L	7	4	2	4	6	U		
206-44-0	Fluoranthene	ug/L		0.2	0.1	0.2	0.6	U		
86-73-7	Fluorene	ug/L		0.2	0.1	0.2	0.6	U		
118-74-1	Hexachlorobenzene	ug/L	1	0.2	0.1	0.2	0.6	U		
87-68-3	Hexachlorobutadiene	ug/L		1	0.6	1	1	U		
77-47-4	Hexachlorocyclopentadiene	ug/L	50	17	6	17	17	U	UJ	h
67-72-1	Hexachloroethane	ug/L		4	1	4	6	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-COE-3						
				8/10/2017						
				9150959						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC
193-39-5	Indeno(1,2,3-cd)pyrene	ug/L		0.2	0.1	0.2	0.6	U		
78-59-1	Isophorone	ug/L		1	0.6	1	1	U		
91-20-3	Naphthalene	ug/L		0.2	0.1	0.2	0.6	U		
98-95-3	Nitrobenzene	ug/L		1	0.6	1	1	U		
62-75-9	N-Nitrosodimethylamine	ug/L		4	2	4	6	U		
621-64-7	N-Nitroso-di-n-propylamine	ug/L		1	0.6	1	1	U		
86-30-6	N-Nitrosodiphenylamine	ug/L		1	0.6	1	1	U		
930-55-2	N-Nitrosopyrrolidine	ug/L		1	0.6	1	1	U		
87-86-5	Pentachlorophenol	ug/L	1	4	1	4	6	U		
85-01-8	Phenanthrene	ug/L		0.2	0.1	0.2	0.6	U		
108-95-2	Phenol	ug/L		1	0.6	1	1	U		
129-00-0	Pyrene	ug/L		0.2	0.1	0.2	0.6	U		
Total Metals										
7429-90-5	Aluminum	mg/L	0.05-0.2	0.2	0.0894	0.2	0.4	U		
7440-36-0	Antimony	mg/L	0.006	0.001	0.00045	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.002	0.00072	0.002	0.004	U		
7440-39-3	Barium	mg/L	2	0.0464	0.00085	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00025	0.000071	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.0005	0.00015	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		10.1	0.06	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0075	0.0033	0.0075	0.03	U		
7440-48-4	Cobalt	mg/L		0.0005	0.00016	0.0005	0.001	U		
7440-50-8	Copper	mg/L	1	0.01	0.004	0.01	0.02	U		
7439-89-6	Iron	mg/L	0.3	0.2	0.0805	0.2	0.4	U		
7439-92-1	Lead	mg/L	0.015	0.00025	0.00011	0.00025	0.002	U		
7439-95-4	Magnesium	mg/L		2.06	0.0374	0.1	0.2			
7439-96-5	Manganese	mg/L	0.05	0.0047	0.0016	0.005	0.01	J		
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.01	0.004	0.01	0.02	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-COE-3						
				8/10/2017						
				9150959						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC
7440-09-7	Potassium	mg/L		0.997	0.179	0.5	1	J		
7782-49-2	Selenium	mg/L	0.05	0.001	0.0005	0.001	0.004	U		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00015	0.00025	0.001	U		
7440-23-5	Sodium	mg/L		2.19	0.321	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00012	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.0005	0.00021	0.0005	0.001	U		
7440-66-6	Zinc	mg/L	5	0.044	0.0065	0.01	0.04			
Hexavalent Chromium										
18540-29-9	Hexavalent Chromium	ug/L		0.068	0.015	0.05	0.05		J	d
Dissolved Metals										
7429-90-5	Aluminum	mg/L	0.05-0.2	0.2	0.0894	0.2	0.4	U		
7440-36-0	Antimony	mg/L	0.006	0.001	0.00045	0.001	0.002	U		
7440-38-2	Arsenic	mg/L	0.01	0.002	0.00072	0.002	0.004	U		
7440-39-3	Barium	mg/L	2	0.0461	0.00085	0.0025	0.01			
7440-41-7	Beryllium	mg/L	0.004	0.00025	0.000071	0.00025	0.001	U		
7440-43-9	Cadmium	mg/L	0.005	0.0005	0.00015	0.0005	0.001	U		
7440-70-2	Calcium	mg/L		10.5	0.06	0.2	0.4			
7440-47-3	Chromium	mg/L	0.1	0.0075	0.0033	0.0075	0.03	U		
7440-48-4	Cobalt	mg/L		0.00019	0.00016	0.0005	0.001	J		
7440-50-8	Copper	mg/L	1	0.0062	0.004	0.01	0.02	J	B	o
7439-89-6	Iron	mg/L	0.3	0.2	0.0805	0.2	0.4	U		
7439-92-1	Lead	mg/L	0.015	0.00025	0.00011	0.00025	0.002	U		
7439-95-4	Magnesium	mg/L		2	0.0374	0.1	0.2			
7439-96-5	Manganese	mg/L	0.05	0.0044	0.0016	0.005	0.01	J		
7439-97-6	Mercury	mg/L	2	0.0001	0.00005	0.0001	0.0002	U		
7440-02-0	Nickel	mg/L		0.01	0.004	0.01	0.02	U		
7440-09-7	Potassium	mg/L		1.13	0.179	0.5	1			
7782-49-2	Selenium	mg/L	0.05	0.001	0.0005	0.001	0.004	U		
7440-22-4	Silver	mg/L	0.1	0.00025	0.00015	0.00025	0.001	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-COE-3						
				8/10/2017						
				9150959						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC
7440-23-5	Sodium	mg/L		2.16	0.321	0.5	2			
7440-28-0	Thallium	mg/L	0.002	0.00025	0.00012	0.00025	0.001	U		
7440-62-2	Vanadium	mg/L		0.0005	0.00021	0.0005	0.001	U		
7440-66-6	Zinc	mg/L	5	0.0416	0.0065	0.01	0.04			
PCBs										
12674-11-2	PCB-1016	ug/L	0.0005	0.28	0.092	0.28	0.46	U D1		
11104-28-2	PCB-1221	ug/L	0.0005	0.28	0.092	0.28	0.46	U D1		
11141-16-5	PCB-1232	ug/L	0.0005	0.37	0.18	0.37	0.46	U D1		
53469-21-9	PCB-1242	ug/L	0.0005	0.28	0.092	0.28	0.46	U D1		
12672-29-6	PCB-1248	ug/L	0.0005	0.28	0.092	0.28	0.46	U D1		
11097-69-1	PCB-1254	ug/L	0.0005	0.28	0.092	0.28	0.46	U D1		
11096-82-5	PCB-1260	ug/L	0.0005	0.28	0.14	0.28	0.46	U D1		
37324-23-5	PCB-1262	ug/L	0.0005	0.37	0.18	0.37	0.46	U D1		
11100-14-4	PCB-1268	ug/L	0.0005	0.29	0.15	0.29	0.46	U D1		
Dioxin										
35822-46-9	1234678-HpCDD	pg/L		10	6	10	10	U		
67562-39-4	1234678-HpCDF	pg/L		10	4	10	10	U		
55673-89-7	1234789-HpCDF	pg/L		10	3	10	10	U		
39227-28-6	123478-HxCDD	pg/L		10	4	10	10	U		
70648-26-9	123478-HxCDF	pg/L		10	3	10	10	U		
57653-85-7	123678-HxCDD	pg/L		10	3	10	10	U		
57117-44-9	123678-HxCDF	pg/L		10	3	10	10	U		
19408-74-3	123789-HxCDD	pg/L		10	4	10	10	U		
72918-21-9	123789-HxCDF	pg/L		10	4	10	10	U		
40321-76-4	12378-PeCDD	pg/L		10	3	10	10	U		
57117-41-6	12378-PeCDF	pg/L		10	3	10	10	U		
60851-34-5	234678-HxCDF	pg/L		10	3	10	10	U		
57117-31-4	23478-PeCDF	pg/L		10	3	10	10	U		
1746-01-6	2378-TCDD	pg/L	30	2	1	2	2	U		

Table 4-3: 2017 Groundwater Analytical Results for VOCs, SVOCs, Metals (Total and Dissolved), Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			USEPA MCLs	IAL4-COE-3						
				8/10/2017						
				9150959						
CAS#	Analyte	Units		Result	DL	LOD	LOQ	LF	DV	RC
51207-31-9	2378-TCDF	pg/L		2	1	2	2	U		
3268-87-9	OCDD	pg/L		21	10	21	21	U		
39001-02-0	OCDF	pg/L		21	6	21	21	U		
TEQWHO05-0	TEQ WHO 2005 - EDLx0.0	pg/L		0				U		
TEQWHO05-0	TEQ WHO 2005 - EDLx0.5	pg/L		4					B	x
37871-00-4	Total HpCDD	pg/L		10	4	10	10	U		
38998-75-3	Total HpCDF	pg/L		10	4	10	10	U		
34465-46-8	Total HxCDD	pg/L		10	4	10	10	U		
55684-94-1	Total HxCDF	pg/L		10	4	10	10	U		
36088-22-9	Total PeCDD	pg/L		10	3	10	10	U		
30402-15-4	Total PeCDF	pg/L		10	3	10	10	U		
41903-57-5	Total TCDD	pg/L		1	1	2	2	JQ	B	x
55722-27-5	Total TCDF	pg/L		2	1	2	2	U		

Acronyms and Abreviations

The following apply to the Chemical Data Tables

Laboratory Flag Qualifiers and Definitions

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value ≥ the Method Detection Limit (MDL) or Detection Limit (DL) and < the Limit of Quantitation (LOQ) or Reporting Limit (RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
u	Analyte was not detected at the value indicated
v	Concentration difference between the primary and confirmation column >100%. The RL is raised due to this disparity and evident interference.
w	The dissolved oxygen (DO) uptake for the unseeded blank is greater than 0.2 mg/L (milligrams per liter)
z	Laboratory Defined - see analysis report

Data Qualifying Codes

Two types of data qualifying codes or flags are applied in the course of the data review. The data validation flags indicate data that are not usable for decision making, more than normally biased and/or variable, or not representative of field conditions. These codes and their definitions are presented below in the hierarchy stipulated in the United States Environmental Protection Agency (EPA) *Contract Laboratory Program National Functional Guidelines for Organic Data Review* (August 2014) and the *EPA Region III Modifications to National Functional Guidelines for Organic Data Review* (September 1994) for blank qualifications only.

Data Validation Flags

Flag	Interpretation
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
B	The analyte was analyzed for, but not detected at a level greater than or equal to the level of the adjusted DL for sample and method.
J+	Reported value may not be accurate or precise, but the result may be biased high.
J-	Reported value may not be accurate or precise, but the result may be biased low.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (because either the quality of the data generated failed to meet certain quality control (QC) criteria, or the concentration of the analyte was below the Limit of Detection [LOD]).
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

Acronyms and Abreviations

The other type of code used by the data validator is a "Reason Code." The reason code indicates the type of QC failure that led to the application of the data validation flag.

Reason Codes

GC/MS Organics		GC and high performance liquid chromatography (HPLC) Organics		Inorganics and Conventionals	
Code	Interpretation	Code	Interpretation	Code	Interpretation
a	Incorrect or incomplete analytical sequence	a	Incorrect or incomplete analytical sequence	a	Incorrect or incomplete analytical sequence
b	Bubble found in vial >6millimeters	b	Instrument performance failure	b	Laboratory duplicate imprecision
c	Calibration failure; poor or unstable response	c	Calibration failure; poor or unstable response	c	Calibration failure
d	matrix spike/matrix spike duplicate (MS/MSD) imprecision	d	MS/MSD imprecision	d	MS/MSD imprecision
e	laboratory control spike duplicate (LCSD) imprecision	e	LCSD imprecision	e	LCSD imprecision
f	Field duplicate imprecision	f	Field duplicate imprecision	f	Field duplicate imprecision
g	Tuning failure or poor mass spec performance	g	Dual column confirmation imprecision	g	Duel isotope imprecision
h	Holding time violation	h	Holding time violation	h	Holding time violation
i	Internal standard failure	i	Internal standard failure	k	Cooler receipt temperature exceeds limits
k	Cooler receipt temperature exceeds limits	k	Cooler receipt temperature exceeds limits	l	LCSD recovery failure
l	LCS recovery failure	l	LCS recovery failure	m	MS/MSD recovery failure
m	MS/MSD recovery failure	m	MS/MSD recovery failure	n	interference check standard (ICS) failure
n	Improper sample preservation	p	Poor chromatography	o	Calibration blank contamination
p	Poor chromatography	q	Concentration exceeded the linear range	q	Concentration exceeded the linear range
q	Concentration exceeded the linear range	r	Linearity failure in initial calibration	r	Linearity failure in calibration or method of standard addition (MSA)
r	Linearity failure in initial calibration	s	Surrogate failure	s	Serial dilution failure
s	Surrogate failure	t	Blender blank contamination	t	Carboy Lot detection
t	Tentatively Identified Compound (TIC)	u	No confirmation column	u	Biological Oxygen Demand (BOD) minimum depletion did not exceed 2 mg/L
w	Identification criteria failure	w	Retention time failure	v	Post-digestion spike failure
x	Field blank contamination	x	Field blank contamination	w	Contract Required Detection Limit (CRDL) Standard Failure
y	Trip blank contamination	z	Method blank contamination	x	Field blank contamination
z	Method blank contamination			z	Preparation/Method blank contamination

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED2							IAL4-SED3							IAL4-SED4						
			4/27/2017							4/27/2017							4/27/2017						
			8966357							8966356							8966349						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
Volatile Organic Compounds																							
630-20-6	1,1,1,2-Tetrachloroethane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
71-55-6	1,1,1-Trichloroethane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
79-34-5	1,1,2,2-Tetrachloroethane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/Kg	210	100	210	510	U			7	4	7	18	U			940	470	940	2400	U	UJ	m
79-00-5	1,1,2-Trichloroethane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
75-34-3	1,1-Dichloroethane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
75-35-4	1,1-Dichloroethene	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
563-58-6	1,1-Dichloropropene	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
87-61-6	1,2,3-Trichlorobenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
96-18-4	1,2,3-Trichloropropane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
95-63-6	1,2,4-Trimethylbenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
96-12-8	1,2-Dibromo-3-chloropropane	ug/Kg	210	100	210	260	U			7	4	7	9	U			940	470	940	1200	U	UJ	m
106-93-4	1,2-Dibromoethane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
95-50-1	1,2-Dichlorobenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
107-06-2	1,2-Dichloroethane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
540-59-0	1,2-Dichloroethene (Total)	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
78-87-5	1,2-Dichloropropane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
108-67-8	1,3,5-Trimethylbenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
541-73-1	1,3-Dichlorobenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
142-28-9	1,3-Dichloropropane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
106-46-7	1,4-Dichlorobenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
123-91-1	1,4-Dioxane	ug/Kg	10000	3600	10000	13000	U	UJ	c	360	120	360	440	U			47000	17000	47000	59000	U		
594-20-7	2,2-Dichloropropane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
78-93-3	2-Butanone	ug/Kg	410	210	410	510	U			16	7	14	18	J			1900	940	1900	2400	U		
95-49-8	2-Chlorotoluene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
591-78-6	2-Hexanone	ug/Kg	410	150	410	510	U			14	5	14	18	U			1900	710	1900	2400	U		
106-43-4	4-Chlorotoluene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED2							IAL4-SED3							IAL4-SED4						
			4/27/2017							4/27/2017							4/27/2017						
			8966357							8966356							8966349						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/Kg	410	150	410	510	U			14	5	14	18	U			1900	710	1900	2400	U	UJ	m
67-64-1	Acetone	ug/Kg	820	360	820	1000	U			310	12	28	36				3800	1700	3800	4700	U		
71-43-2	Benzene	ug/Kg	100	26	100	260	U			4	0.9	4	9	U	UJ	s	470	120	470	1200	U	UJ	m
108-86-1	Bromobenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
74-97-5	Bromochloromethane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
75-27-4	Bromodichloromethane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
75-25-2	Bromoform	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
74-83-9	Bromomethane	ug/Kg	210	100	210	260	U	UJ	c	7	4	7	9	U			940	470	940	1200	U	UJ	m
75-15-0	Carbon Disulfide	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
56-23-5	Carbon tetrachloride	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
108-90-7	Chlorobenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
124-48-1	Chlorodibromomethane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
75-00-3	Chloroethane	ug/Kg	210	100	210	260	U			7	4	7	9	U			940	470	940	1200	U	UJ	m
67-66-3	Chloroform	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
74-87-3	Chloromethane	ug/Kg	210	100	210	260	U			7	4	7	9	U			940	470	940	1200	U	UJ	m
156-59-2	cis-1,2-Dichloroethene	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
10061-01-5	cis-1,3-Dichloropropene	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
110-82-7	Cyclohexane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
74-95-3	Dibromomethane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
75-71-8	Dichlorodifluoromethane	ug/Kg	210	100	210	260	U			7	4	7	9	U			940	470	940	1200	U	R	m
64-17-5	Ethanol	ug/Kg	13000	5100	13000	26000	U			450	180	440	890	J			59000	24000	59000	120000	U		
100-41-4	Ethylbenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
87-68-3	Hexachlorobutadiene	ug/Kg	210	100	210	260	U			7	4	7	9	U			940	470	940	1200	U	UJ	m
98-82-8	Isopropylbenzene	ug/Kg	150	51	100	260	J			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
179601-23-1	m,p-Xylene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
79-20-9	Methyl acetate	ug/Kg	390	100	210	260				5	4	7	9	J			11000	470	940	1200		J	m
1634-04-4	Methyl tert-butyl Ether	ug/Kg	100	26	100	260	U			4	0.9	4	9	U			470	120	470	1200	U	UJ	m
108-87-2	Methylcyclohexane	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	R	m
75-09-2	Methylene chloride	ug/Kg	210	100	210	260	U			7	4	7	9	U			940	470	940	1200	U	UJ	m
91-20-3	Naphthalene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED2							IAL4-SED3							IAL4-SED4						
			4/27/2017							4/27/2017							4/27/2017						
			8966357							8966356							8966349						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
104-51-8	n-Butylbenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
103-65-1	n-Propylbenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
95-47-6	o-Xylene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
99-87-6	p-Isopropyltoluene	ug/Kg	750	51	100	260				4	2	4	9	J			470	240	470	1200	U	UJ	m
135-98-8	sec-Butylbenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
100-42-5	Styrene	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
75-65-0	t-Butanol	ug/Kg	2100	1000	2100	5100	U			71	36	71	180	U			9400	4700	9400	24000	U	UJ	m
98-06-6	tert-Butylbenzene	ug/Kg	100	51	100	260	U			4	2	4	9	U	UJ	s	470	240	470	1200	U	UJ	m
127-18-4	Tetrachloroethene	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
108-88-3	Toluene	ug/Kg	100	51	100	260	U			36	2	4	9		J	s	470	240	470	1200	U	UJ	m
156-60-5	trans-1,2-Dichloroethene	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
10061-02-6	trans-1,3-Dichloropropene	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
79-01-6	Trichloroethene	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
75-69-4	Trichlorofluoromethane	ug/Kg	210	100	210	260	U			7	4	7	9	U			940	470	940	1200	U	UJ	m
75-01-4	Vinyl chloride	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
1330-20-7	Xylene (total)	ug/Kg	100	51	100	260	U			4	2	4	9	U			470	240	470	1200	U	UJ	m
Semivolatile Organic Compounds																							
92-52-4	1,1'-Biphenyl	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
122-66-7	1,2-Diphenylhydrazine	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
123-91-1	1,4-Dioxane	ug/Kg	2000	590	2000	2000	U			3500	1000	3500	3500	U			5400	1600	5400	5400	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/Kg	790	400	790	990	U			1400	700	1400	1700	U			2200	1100	2200	2700	U		
95-95-4	2,4,5-Trichlorophenol	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
88-06-2	2,4,6-Trichlorophenol	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
120-83-2	2,4-Dichlorophenol	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED2							IAL4-SED3							IAL4-SED4						
			4/27/2017							4/27/2017							4/27/2017						
			8966357							8966356							8966349						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
105-67-9	2,4-Dimethylphenol	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
51-28-5	2,4-Dinitrophenol	ug/Kg	5900	1800	5900	5900	U			10000	3100	10000	10000	U			16000	4900	16000	16000	U	R	m
121-14-2	2,4-Dinitrotoluene	ug/Kg	790	400	790	990	U			1400	700	1400	1700	U			2200	1100	2200	2700	U		
87-65-0	2,6-Dichlorophenol	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
606-20-2	2,6-Dinitrotoluene	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
91-58-7	2-Chloronaphthalene	ug/Kg	79	40	79	200	U			140	70	140	350	U			220	110	220	540	U		
95-57-8	2-Chlorophenol	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
91-57-6	2-Methylnaphthalene	ug/Kg	40	20	40	100	U			70	35	70	180	U			110	54	110	280	U		
95-48-7	2-Methylphenol	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
88-74-4	2-Nitroaniline	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
88-75-5	2-Nitrophenol	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
91-94-1	3,3'-Dicholorobenzidine	ug/Kg	2000	590	2000	2000	U			3500	1000	3500	3500	U			5400	1600	5400	5400	U	R	m
106-44-5	3+4-Methylphenol	ug/Kg	200	99	200	200	U			290	170	350	350	J			540	270	540	540	U		
99-09-2	3-Nitroaniline	ug/Kg	790	400	790	990	U			1400	700	1400	1700	U			2200	1100	2200	2700	U	UJ	m
534-52-1	4,6-Dinitro-2-methylphenol	ug/Kg	3000	990	3000	3000	U			5200	1700	5200	5200	U			8200	2700	8200	8200	U	R	m
101-55-3	4-Bromophenyl-phenylether	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
59-50-7	4-Chloro-3-methylphenol	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
106-47-8	4-Chloroaniline	ug/Kg	400	200	400	400	U			700	350	700	700	U			1100	540	1100	1100	U		
7005-72-3	4-Chlorophenyl-phenyl ether	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
100-01-6	4-Nitroaniline	ug/Kg	790	400	790	990	U			1400	700	1400	1700	U			2200	1100	2200	2700	U		
100-02-7	4-Nitrophenol	ug/Kg	3000	990	3000	3000	U			5200	1700	5200	5200	U			8200	2700	8200	8200	U		
83-32-9	Acenaphthene	ug/Kg	40	20	40	100	U			70	35	70	180	U			110	54	110	280	U		
208-96-8	Acenaphthylene	ug/Kg	40	20	40	100	U			70	35	70	180	U			110	54	110	280	U		
98-86-2	Acetophenone	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
120-12-7	Anthracene	ug/Kg	40	20	40	100	U			43	35	70	180	J			110	54	110	280	U		
1912-24-9	Atrazine	ug/Kg	790	200	790	990	U			1400	350	1400	1700	U			2200	540	2200	2700	U		
100-52-7	Benzaldehyde	ug/Kg	790	400	790	990	U			1400	700	1400	1700	U			2200	1100	2200	2700	U		
92-87-5	Benzidine	ug/Kg	3000	1500	3000	3000	U			5200	2600	5200	5200	U			8200	4100	8200	8200	U	R	m
50-32-8	Benzo(a) pyrene	ug/Kg	40	20	40	100	U			66	35	70	180	J			110	54	110	280	U		
56-55-3	Benzo(a)anthracene	ug/Kg	40	20	40	100	U			53	35	70	180	J			110	54	110	280	U		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED2							IAL4-SED3							IAL4-SED4						
			4/27/2017							4/27/2017							4/27/2017						
			8966357							8966356							8966349						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
205-99-2	Benzo(b) fluoranthene	ug/Kg	40	20	40	100	U			110	35	70	180	J			110	54	110	280	U		
191-24-2	Benzo(g,h,i) perylene	ug/Kg	40	20	40	100	U			57	35	70	180	J			110	54	110	280	U		
207-08-9	Benzo(k) fluoranthene	ug/Kg	40	20	40	100	U			70	35	70	180	U			110	54	110	280	U		
65-85-0	Benzoic acid	ug/Kg	3000	990	3000	3000	U			8500	1700	5200	5200				8200	2700	8200	8200	U		
100-51-6	Benzyl alcohol	ug/Kg	3000	990	3000	3000	U			5200	1700	5200	5200	U			8200	2700	8200	8200	U		
111-91-1	Bis(2-chloroethoxy) methane	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
111-44-4	Bis(2-chloroethyl) ether	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
39638-32-9	Bis(2-chloroisopropyl) ether	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
117-81-7	Bis(2-ethylhexyl) phthalate	ug/Kg	790	400	790	1000	U			1400	700	1400	1800	U			2200	1100	2200	2800	U		
85-68-7	Butylbenzylphthalate	ug/Kg	790	400	790	990	U			1400	700	1400	1700	U			2200	1100	2200	2700	U		
105-60-2	Caprolactam	ug/Kg	790	200	790	990	U			1400	350	1400	1700	U			2200	540	2200	2700	U	UJ	m
86-74-8	Carbazole	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
218-01-9	Chrysene	ug/Kg	40	20	40	100	U			85	35	70	180	J			110	54	110	280	U		
53-70-3	Dibenzo(a,h) anthracene	ug/Kg	40	20	40	100	U			70	35	70	180	U			110	54	110	280	U		
132-64-9	Dibenzofuran	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
84-66-2	Diethylphthalate	ug/Kg	790	400	790	990	U			1400	700	1400	1700	U			2200	1100	2200	2700	U		
131-11-3	Dimethylphthalate	ug/Kg	790	400	790	990	U			1400	700	1400	1700	U			2200	1100	2200	2700	U		
84-74-2	Di-n-butylphthalate	ug/Kg	790	400	790	990	U			1400	700	1400	1700	U			2200	1100	2200	2700	U		
117-84-0	Di-n-octylphthalate	ug/Kg	790	400	790	990	U			1400	700	1400	1700	U			2200	1100	2200	2700	U		
88-85-7	Dinoseb	ug/Kg	3000	990	3000	3000	U			5200	1700	5200	5200	U			8200	2700	8200	8200	U		
206-44-0	Fluoranthene	ug/Kg	40	20	40	100	U			94	35	70	180	J			110	54	110	280	U		
86-73-7	Fluorene	ug/Kg	40	20	40	100	U			70	35	70	180	U			110	54	110	280	U		
118-74-1	Hexachlorobenzene	ug/Kg	40	20	40	100	U			70	35	70	180	U			110	54	110	280	U		
87-68-3	Hexachlorobutadiene	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
77-47-4	Hexachlorocyclopentadiene	ug/Kg	3000	990	3000	3000	U			5200	1700	5200	5200	U			8200	2700	8200	8200	U	R	m
67-72-1	Hexachloroethane	ug/Kg	790	200	790	990	U			1400	350	1400	1700	U			2200	540	2200	2700	U	UJ	m
193-39-5	Indeno(1,2,3,-cd) pyrene	ug/Kg	40	20	40	100	U			40	35	70	180	J			110	54	110	280	U		
78-59-1	Isophorone	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
91-20-3	Naphthalene	ug/Kg	40	20	40	100	U			70	35	70	180	U			110	54	110	280	U		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED2							IAL4-SED3							IAL4-SED4						
			4/27/2017							4/27/2017							4/27/2017						
			8966357							8966356							8966349						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
98-95-3	Nitrobenzene	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
62-75-9	N-Nitrosodimethylamine	ug/Kg	790	400	790	990	U			1400	700	1400	1700	U			2200	1100	2200	2700	U		
621-64-7	N-Nitroso-di-n propylamine	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
86-30-6	N-Nitrosodiphenylamine	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
930-55-2	N-Nitrosopyrrolidine	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
87-86-5	Pentachlorophenol	ug/Kg	790	200	790	1000	U			1400	350	1400	1800	U			2200	540	2200	2800	U		
85-01-8	Phenanthrene	ug/Kg	40	20	40	100	U			44	35	70	180	J			110	54	110	280	U		
108-95-2	Phenol	ug/Kg	200	99	200	200	U			350	170	350	350	U			540	270	540	540	U		
129-00-0	Pyrene	ug/Kg	40	20	40	100	U			120	35	70	180	J			110	54	110	280	U		
Metals																							
7429-90-5	Aluminum	mg/Kg	1800	8	18.4	36.9				6300	17.2	39.5	79				12200	19.2	44.3	88.6		J	b
7440-36-0	Antimony	mg/Kg	0.0926	0.0905	0.184	0.369	J			0.377	0.194	0.395	0.79	J			0.598	0.218	0.443	0.886	J	J-	m
7440-38-2	Arsenic	mg/Kg	1.97	0.136	0.369	0.738				3.12	0.292	0.79	1.58				9.87	0.327	0.886	1.77		J+	m
7440-39-3	Barium	mg/Kg	9.04	0.0304	0.115	0.922				40	0.0652	0.247	1.98				60.3	0.0731	0.277	2.21		J+	m
7440-41-7	Beryllium	mg/Kg	0.0655	0.0618	0.23	0.922	J			0.209	0.132	0.494	1.98	J			0.412	0.148	0.554	2.21	J	J	d
7440-43-9	Cadmium	mg/Kg	0.0461	0.0452	0.115	0.922	J			0.302	0.0968	0.247	1.98	J			0.328	0.109	0.277	2.21	J		
7440-70-2	Calcium	mg/Kg	78.9	5.22	18.4	36.9				2070	11.2	39.5	79				1980	12.5	44.3	88.6		J+	m
7440-47-3	Chromium	mg/Kg	4.64	0.129	0.346	2.77				12.1	0.277	0.741	5.93				22.6	0.31	0.831	6.64		J+	m
7440-48-4	Cobalt	mg/Kg	0.456	0.0371	0.0922	0.184				1.56	0.0794	0.198	0.395				2.68	0.089	0.221	0.443		J	d
7440-50-8	Copper	mg/Kg	4.04	0.212	0.461	1.84				14.6	0.454	0.988	3.95				21.1	0.509	1.11	4.43		J+	m
7439-89-6	Iron	mg/Kg	2770	3.8	9.22	36.9				6790	8.14	19.8	79				23600	9.13	22.1	88.6		J	b
7439-92-1	Lead	mg/Kg	2.53	0.507	1.38	2.77	J			17	1.09	2.96	5.93				27.9	1.22	3.32	6.64		J-	m
7439-95-4	Magnesium	mg/Kg	119	1.75	4.61	18.4				674	3.75	9.88	39.5				1370	4.21	11.1	44.3		J-	m
7439-96-5	Manganese	mg/Kg	21.2	0.0765	0.23	0.922				60.1	0.164	0.494	1.98				43.3	0.184	0.554	2.21		J+	m
7439-97-6	Mercury	mg/Kg	0.0189	0.0113	0.0189	0.113	U			0.093	0.0211	0.0352	0.211	J			0.0745	0.0309	0.0516	0.309	J	J+	m
7440-02-0	Nickel	mg/Kg	0.886	0.277	0.461	1.84	J			4.42	0.593	0.988	3.95				9.38	0.664	1.11	4.43		J	d
7440-09-7	Potassium	mg/Kg	165	22	46.1	92.2				701	47.2	98.8	198				1020	52.9	111	221		J+	m
7782-49-2	Selenium	mg/Kg	1.84	0.83	1.84	3.69	U			3.95	1.78	3.95	7.9	U			4.43	1.99	4.43	8.86	U		
7440-22-4	Silver	mg/Kg	0.425	0.128	0.425	0.851	U			0.789	0.237	0.789	1.58	U			1.25	0.375	1.25	2.5	U		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED2							IAL4-SED3							IAL4-SED4						
			4/27/2017							4/27/2017							4/27/2017						
			8966357							8966356							8966349						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-23-5	Sodium	mg/Kg	46.1	22	46.1	184	U			129	47.2	98.8	395	J			364	52.9	111	443	J	J	d
7440-28-0	Thallium	mg/Kg	0.0315	0.0267	0.0461	0.184	J			0.113	0.0573	0.0988	0.395	J			0.178	0.0642	0.111	0.443	J		
7440-62-2	Vanadium	mg/Kg	7.86	0.129	0.461	0.922				19.4	0.277	0.988	1.98				40.1	0.31	1.11	2.21		J+	m
7440-66-6	Zinc	mg/Kg	5.3	0.627	0.922	3.69				49.7	1.34	1.98	7.9				76.3	1.51	2.21	8.86		J+	m
18540-29-9	Hexvalent Chromium	mg/Kg	0.65	0.17	0.49	0.49				0.84	0.29	0.84	0.84	U			1.3	0.45	1.3	1.3	U		
PCBs																							
12674-11-2	PCB-1016	ug/Kg	12	4.3	12	20	U			21	7.5	21	35	U			33	12	33	55	U		
11104-28-2	PCB-1221	ug/Kg	12	5.5	12	20	U			21	9.6	21	35	U			33	15	33	55	U		
11141-16-5	PCB-1232	ug/Kg	19	9.6	19	20	U			33	17	33	35	U			52	26	52	55	U		
53469-21-9	PCB-1242	ug/Kg	12	4	12	20	U			21	6.9	21	35	U			33	11	33	55	U		
12672-29-6	PCB-1248	ug/Kg	12	4	12	20	U			21	6.9	21	35	U			33	11	33	55	U		
11097-69-1	PCB-1254	ug/Kg	12	4	12	20	U			21	6.9	21	35	U			57	11	33	55			
37324-23-5	PCB-1262	ug/Kg	12	4	12	20	U			21	6.9	21	35	U			33	11	33	55	U		
11100-14-4	PCB-1268	ug/Kg	12	4	12	20	U			21	6.9	21	35	U			33	11	33	55	U		
11096-82-5	PCB-1260	ug/Kg	12	5.9	12	20	U			21	10	21	35	U			55	16	33	55	J		
Dioxins																							
35822-46-9	1234678-HpCDD	ng/Kg	12.8	0.577	1.15	5.77				131	1.06	2.11	10.6				211	1.62	3.24	16.2			
67562-39-4	1234678-HpCDF	ng/Kg	6.34	0.346	1.15	5.77				64.2	0.634	2.11	10.6				116	0.972	3.24	16.2			
55673-89-7	1234789-HpCDF	ng/Kg	1.15	0.462	1.15	5.77	U			3.91	0.845	2.11	10.6	J			7.24	1.3	3.24	16.2	J		
39227-28-6	123478-HxCDD	ng/Kg	1.15	0.346	1.15	5.77	U			2.25	0.634	2.11	10.6	J			3.2	0.972	3.24	16.2	J		
70648-26-9	123478-HxCDF	ng/Kg	1.15	0.346	1.15	5.77	U			3.2	0.634	2.11	10.6	J			4.4	0.972	3.24	16.2	J		
57653-85-7	123678-HxCDD	ng/Kg	0.474	0.462	1.15	5.77	J			4.53	0.845	2.11	10.6	J			6.62	1.3	3.24	16.2	J		
57117-44-9	123678-HxCDF	ng/Kg	0.533	0.346	1.15	5.77	J			5.04	0.634	2.11	10.6	J			7.66	0.972	3.24	16.2	J		
19408-74-3	123789-HxCDD	ng/Kg	0.434	0.346	1.15	5.77	J			4.49	0.634	2.11	10.6	J			7.05	0.972	3.24	16.2	J		
72918-21-9	123789-HxCDF	ng/Kg	1.15	0.577	1.15	5.77	U			1.18	1.06	2.11	10.6	J			3.24	1.62	3.24	16.2	U		
40321-76-4	12378-PeCDD	ng/Kg	1.15	0.462	1.15	5.77	U			1.42	0.845	2.11	10.6	JQ			1.36	1.3	3.24	16.2	JQ		
57117-41-6	12378-PeCDF	ng/Kg	1.15	0.462	1.15	5.77	U			2.85	0.845	2.11	10.6	J			5.19	1.3	3.24	16.2	JQ		
60851-34-5	234678-HxCDF	ng/Kg	0.482	0.346	1.15	5.77	J			5.06	0.634	2.11	10.6	J			7.44	0.972	3.24	16.2	J		
57117-31-4	23478-PeCDF	ng/Kg	1.15	0.346	1.15	5.77	U			1.83	0.634	2.11	10.6	J			1.88	0.972	3.24	16.2	J		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED2							IAL4-SED3							IAL4-SED4						
			4/27/2017							4/27/2017							4/27/2017						
			8966357							8966356							8966349						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
1746-01-6	2378-TCDD	ng/Kg	0.231	0.115	0.231	1.15	U			1.32	0.211	0.422	2.11	JQ			0.834	0.324	0.648	3.24	J		
51207-31-9	2378-TCDF	ng/Kg	0.231	0.115	0.231	1.15	U			0.905	0.211	0.422	2.11	J			0.989	0.324	0.648	3.24	J		
3268-87-9	OCDD	ng/Kg	283	1.15	2.31	11.5				4290	2.11	4.22	21.1				4810	3.24	6.48	32.4			
39001-02-0	OCDF	ng/Kg	12.7	0.577	2.31	11.5				98.9	1.06	4.22	21.1				183	1.62	6.48	32.4			
37871-00-4	Total HpCDD	ng/Kg	25.5	0.577	1.15	5.77				267	1.06	2.11	10.6				397	1.62	3.24	16.2			
38998-75-3	Total HpCDF	ng/Kg	13.3	0.462	1.15	5.77				134	0.845	2.11	10.6	Q			212	1.3	3.24	16.2	Q		
34465-46-8	Total HxCDD	ng/Kg	4.5	0.462	1.15	5.77	J			44.3	0.845	2.11	10.6	Q			61.4	1.3	3.24	16.2			
55684-94-1	Total HxCDF	ng/Kg	7.64	0.577	1.15	5.77				78.6	1.06	2.11	10.6	Q			125	1.62	3.24	16.2			
36088-22-9	Total PeCDD	ng/Kg	0.463	0.462	1.15	5.77	JQ			7.01	0.845	2.11	10.6	JQ			6.86	1.3	3.24	16.2	JQ		
30402-15-4	Total PeCDF	ng/Kg	4.23	0.462	1.15	5.77	JQ			57.9	0.845	2.11	10.6	Q			56.8	1.3	3.24	16.2	Q		
41903-57-5	Total TCDD	ng/Kg	0.166	0.115	0.231	1.15	J			3.31	0.211	0.422	2.11	Q			2.29	0.324	0.648	3.24	JQ		
55722-27-5	Total TCDF	ng/Kg	2.88	0.115	0.231	1.15	Q			22.7	0.211	0.422	2.11	Q			29.5	0.324	0.648	3.24	Q		
TEQWHO05-0.0	TEQ WHO 2005 - EDLx0.0	ng/Kg	0.473							6.6							9.97						
TEQWHO05-0.5	TEQ WHO 2005 - EDLx0.5	ng/Kg	0.892							7.13							10.7						
TOC																							
CTOC	TOC Solids/Sludges Combustion	mg/Kg	3640	240	721	721				NA							57500	1090	3280	3280		J	b
SEM/AVS																							
7440-43-9	Cadmium	µmol/g	0.00059	0.000128	0.000328	0.00262	J	B	z	NA							0.00634	0.00028	0.000713	0.00571		B	o
7440-50-8	Copper	µmol/g	0.0287	0.00107	0.00232	0.00927				NA							0.24	0.00232	0.00505	0.0202		J-	m
7439-92-1	Lead	µmol/g	0.00659	0.000782	0.00213	0.00427				NA							0.0397	0.0017	0.00465	0.00929		J+	m
7439-97-6	Mercury	µmol/g	1.5E-05	0.0000088	0.000015	0.0000882	U			NA							3.2E-05	0.000019	0.000032	0.000192	U	UJ	m
7440-02-0	Nickel	µmol/g	0.0992	0.0015	0.00251	0.01		J-	m	NA							0.521	0.00328	0.00546	0.0218		J-	m
7440-66-6	Zinc	µmol/g	0.0393	0.00306	0.00451	0.018				NA							0.904	0.00667	0.00981	0.0392		J+	m
1313-84-4	Acid Volatile Sulfide	µmol/g	2.4	0.76	2.4	2.4	U			NA							5.2	1.6	5.2	5.2	U		
SEM/AVS *			0.22946							NA							1.06942						

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED4-DUP							IAL4-SED5							IAL4-SED6						
			4/27/2017							4/27/2017							4/27/2017						
			8966359							8966348							8966347						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
Volatile Organic Compounds																							
630-20-6	1,1,1,2-Tetrachloroethane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
71-55-6	1,1,1-Trichloroethane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/Kg	990	500	990	2500	U			4	2	4	10	U			7	4	7	18	U		
79-00-5	1,1,2-Trichloroethane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
75-34-3	1,1-Dichloroethane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
75-35-4	1,1-Dichloroethene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
563-58-6	1,1-Dichloropropene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
87-61-6	1,2,3-Trichlorobenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
96-18-4	1,2,3-Trichloropropane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
95-63-6	1,2,4-Trimethylbenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
96-12-8	1,2-Dibromo-3-chloropropane	ug/Kg	990	500	990	1200	U			4	2	4	5	U			7	4	7	9	U		
106-93-4	1,2-Dibromoethane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
107-06-2	1,2-Dichloroethane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
540-59-0	1,2-Dichloroethene (Total)	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
78-87-5	1,2-Dichloropropane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
108-67-8	1,3,5-Trimethylbenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
541-73-1	1,3-Dichlorobenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
142-28-9	1,3-Dichloropropane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
123-91-1	1,4-Dioxane	ug/Kg	50000	17000	50000	62000	U	UJ	c	200	71	200	250	U			360	120	360	440	U		
594-20-7	2,2-Dichloropropane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
78-93-3	2-Butanone	ug/Kg	2000	990	2000	2500	U			8	4	8	10	U			23	7	14	18			
95-49-8	2-Chlorotoluene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
591-78-6	2-Hexanone	ug/Kg	2000	740	2000	2500	U			8	3	8	10	U			14	5	14	18	U		
106-43-4	4-Chlorotoluene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED4-DUP							IAL4-SED5							IAL4-SED6						
			4/27/2017							4/27/2017							4/27/2017						
			8966359							8966348							8966347						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/Kg	2000	740	2000	2500	U			8	3	8	10	U			14	5	14	18	U		
67-64-1	Acetone	ug/Kg	4000	1700	4000	5000	U			44	7	16	20				500	12	28	36			
71-43-2	Benzene	ug/Kg	500	120	500	1200	U			2	0.5	2	5	U			0.9	0.9	4	9	J	J	s
108-86-1	Bromobenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
74-97-5	Bromochloromethane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
75-27-4	Bromodichloromethane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
75-25-2	Bromoform	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
74-83-9	Bromomethane	ug/Kg	990	500	990	1200	U	UJ	c	4	2	4	5	U			7	4	7	9	U		
75-15-0	Carbon Disulfide	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
56-23-5	Carbon tetrachloride	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
108-90-7	Chlorobenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
124-48-1	Chlorodibromomethane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
75-00-3	Chloroethane	ug/Kg	990	500	990	1200	U			4	2	4	5	U			7	4	7	9	U		
67-66-3	Chloroform	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
74-87-3	Chloromethane	ug/Kg	990	500	990	1200	U			4	2	4	5	U			7	4	7	9	U		
156-59-2	cis-1,2-Dichloroethene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
10061-01-5	cis-1,3-Dichloropropene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
110-82-7	Cyclohexane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
74-95-3	Dibromomethane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
75-71-8	Dichlorodifluoromethane	ug/Kg	990	500	990	1200	U			4	2	4	5	U			7	4	7	9	U		
64-17-5	Ethanol	ug/Kg	62000	25000	62000	120000	U			250	100	250	510	U			320	180	440	890	J		
100-41-4	Ethylbenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
87-68-3	Hexachlorobutadiene	ug/Kg	990	500	990	1200	U			4	2	4	5	U			7	4	7	9	U		
98-82-8	Isopropylbenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
179601-23-1	m,p-Xylene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
79-20-9	Methyl acetate	ug/Kg	7500	500	990	1200				4	2	4	5	U			12	4	7	9			
1634-04-4	Methyl tert-butyl Ether	ug/Kg	500	120	500	1200	U			2	0.5	2	5	U			4	0.9	4	9	U		
108-87-2	Methylcyclohexane	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
75-09-2	Methylene chloride	ug/Kg	990	500	990	1200	U			4	2	4	5	U			7	4	7	9	U		
91-20-3	Naphthalene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED4-DUP							IAL4-SED5							IAL4-SED6						
			4/27/2017							4/27/2017							4/27/2017						
			8966359							8966348							8966347						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
104-51-8	n-Butylbenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
103-65-1	n-Propylbenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
95-47-6	o-Xylene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
99-87-6	p-Isopropyltoluene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
135-98-8	sec-Butylbenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
100-42-5	Styrene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
75-65-0	t-Butanol	ug/Kg	9900	5000	9900	25000	U			41	20	41	100	U			71	36	71	180	U		
98-06-6	tert-Butylbenzene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U	UJ	s
127-18-4	Tetrachloroethene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
108-88-3	Toluene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			6	2	4	9	J	J	s
156-60-5	trans-1,2-Dichloroethene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
10061-02-6	trans-1,3-Dichloropropene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
79-01-6	Trichloroethene	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
75-69-4	Trichlorofluoromethane	ug/Kg	990	500	990	1200	U			4	2	4	5	U			7	4	7	9	U		
75-01-4	Vinyl chloride	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
1330-20-7	Xylene (total)	ug/Kg	500	250	500	1200	U			2	1	2	5	U			4	2	4	9	U		
Semivolatile Organic Compounds																							
92-52-4	1,1'-Biphenyl	ug/Kg	180	91	180	180	U			240	120	240	240	U			160	150	300	300	J		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
122-66-7	1,2-Diphenylhydrazine	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
123-91-1	1,4-Dioxane	ug/Kg	1800	550	1800	1800	U			2400	710	2400	2400	U			3000	910	3000	3000	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/Kg	730	360	730	910	U			950	480	950	1200	U			1200	600	1200	1500	U		
95-95-4	2,4,5-Trichlorophenol	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
88-06-2	2,4,6-Trichlorophenol	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
120-83-2	2,4-Dichlorophenol	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED4-DUP							IAL4-SED5							IAL4-SED6						
			4/27/2017							4/27/2017							4/27/2017						
			8966359							8966348							8966347						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
105-67-9	2,4-Dimethylphenol	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
51-28-5	2,4-Dinitrophenol	ug/Kg	5500	1600	5500	5500	U	R	m	7100	2100	7100	7100	U			9100	2700	9100	9100	U		
121-14-2	2,4-Dinitrotoluene	ug/Kg	730	360	730	910	U			950	480	950	1200	U			1200	600	1200	1500	U		
87-65-0	2,6-Dichlorophenol	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
606-20-2	2,6-Dinitrotoluene	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
91-58-7	2-Chloronaphthalene	ug/Kg	73	37	73	180	U			95	48	95	240	U			120	60	120	300	U		
95-57-8	2-Chlorophenol	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
91-57-6	2-Methylnaphthalene	ug/Kg	36	18	36	93	U			48	24	48	120	U			1100	30	60	150			
95-48-7	2-Methylphenol	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
88-74-4	2-Nitroaniline	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
88-75-5	2-Nitrophenol	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
91-94-1	3,3'-Dicholorobenzidine	ug/Kg	1800	550	1800	1800	U	R	m	2400	710	2400	2400	U			3000	910	3000	3000	U		
106-44-5	3+4-Methylphenol	ug/Kg	180	91	180	180	U			240	120	240	240	U			160	150	300	300	J		
99-09-2	3-Nitroaniline	ug/Kg	730	360	730	910	U	UJ	m	950	480	950	1200	U			1200	600	1200	1500	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/Kg	2700	910	2700	2700	U	R	m	3600	1200	3600	3600	U			4500	1500	4500	4500	U		
101-55-3	4-Bromophenyl-phenylether	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
59-50-7	4-Chloro-3-methylphenol	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
106-47-8	4-Chloroaniline	ug/Kg	360	180	360	360	U			480	240	480	480	U			600	300	600	600	U		
7005-72-3	4-Chlorophenyl-phenyl ether	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
100-01-6	4-Nitroaniline	ug/Kg	730	360	730	910	U			950	480	950	1200	U			1200	600	1200	1500	U		
100-02-7	4-Nitrophenol	ug/Kg	2700	910	2700	2700	U			3600	1200	3600	3600	U			4500	1500	4500	4500	U		
83-32-9	Acenaphthene	ug/Kg	36	18	36	93	U			48	24	48	120	U			60	30	60	150	U		
208-96-8	Acenaphthylene	ug/Kg	36	18	36	93	U			48	24	48	120	U			60	30	60	150	U		
98-86-2	Acetophenone	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
120-12-7	Anthracene	ug/Kg	36	18	36	93	U			48	24	48	120	U			65	30	60	150	J		
1912-24-9	Atrazine	ug/Kg	730	180	730	910	U			950	240	950	1200	U			1200	300	1200	1500	U		
100-52-7	Benzaldehyde	ug/Kg	730	360	730	910	U			950	480	950	1200	U			1200	600	1200	1500	U		
92-87-5	Benzidine	ug/Kg	2700	1400	2700	2700	U	R	m	3600	1800	3600	3600	U			4500	2300	4500	4500	U		
50-32-8	Benzo(a) pyrene	ug/Kg	36	18	36	93	J			48	24	48	120	U			150	30	60	150	J		
56-55-3	Benzo(a)anthracene	ug/Kg	36	18	36	93	U			48	24	48	120	U			150	30	60	150	J		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED4-DUP							IAL4-SED5							IAL4-SED6						
			4/27/2017							4/27/2017							4/27/2017						
			8966359							8966348							8966347						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
205-99-2	Benzo(b) fluoranthene	ug/Kg	43	18	36	93	J			35	24	48	120	J			320	30	60	150			
191-24-2	Benzo(g,h,i) perylene	ug/Kg	37	18	36	93	J			48	24	48	120	U			130	30	60	150	J		
207-08-9	Benzo(k) fluoranthene	ug/Kg	36	18	36	93	U			48	24	48	120	U			74	30	60	150	J		
65-85-0	Benzoic acid	ug/Kg	2700	910	2700	2700	U			3600	1200	3600	3600	U			4500	1500	4500	4500	U		
100-51-6	Benzyl alcohol	ug/Kg	2700	910	2700	2700	U			3600	1200	3600	3600	U			4500	1500	4500	4500	U		
111-91-1	Bis(2-chloroethoxy) methane	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
111-44-4	Bis(2-chloroethyl) ether	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
39638-32-9	Bis(2-chloroisopropyl) ether	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
117-81-7	Bis(2-ethylhexyl) phthalate	ug/Kg	730	360	730	930	U			950	480	950	1200	U			1200	600	1200	1500	U		
85-68-7	Butylbenzylphthalate	ug/Kg	730	360	730	910	U			950	480	950	1200	U			1200	600	1200	1500	U		
105-60-2	Caprolactam	ug/Kg	730	180	730	910	U	UJ	m	950	240	950	1200	U			1200	300	1200	1500	U		
86-74-8	Carbazole	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
218-01-9	Chrysene	ug/Kg	44	18	36	93	J			48	24	48	120	U			300	30	60	150			
53-70-3	Dibenzo(a,h) anthracene	ug/Kg	36	18	36	93	U			48	24	48	120	U			60	30	60	150	U		
132-64-9	Dibenzofuran	ug/Kg	180	91	180	180	U			240	120	240	240	U			250	150	300	300	J		
84-66-2	Diethylphthalate	ug/Kg	730	360	730	910	U			950	480	950	1200	U			1200	600	1200	1500	U		
131-11-3	Dimethylphthalate	ug/Kg	730	360	730	910	U			950	480	950	1200	U			1200	600	1200	1500	U		
84-74-2	Di-n-butylphthalate	ug/Kg	730	360	730	910	U			950	480	950	1200	U			1200	600	1200	1500	U		
117-84-0	Di-n-octylphthalate	ug/Kg	730	360	730	910	U			950	480	950	1200	U			1200	600	1200	1500	U		
88-85-7	Dinoseb	ug/Kg	2700	910	2700	2700	U			3600	1200	3600	3600	U			4500	1500	4500	4500	U		
206-44-0	Fluoranthene	ug/Kg	26	18	36	93	J			26	24	48	120	J			280	30	60	150			
86-73-7	Fluorene	ug/Kg	36	18	36	93	U			48	24	48	120	U			60	30	60	150	U		
118-74-1	Hexachlorobenzene	ug/Kg	36	18	36	93	U			48	24	48	120	U			60	30	60	150	U		
87-68-3	Hexachlorobutadiene	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
77-47-4	Hexachlorocyclopentadiene	ug/Kg	2700	910	2700	2700	U	R	m	3600	1200	3600	3600	U			4500	1500	4500	4500	U		
67-72-1	Hexachloroethane	ug/Kg	730	180	730	910	U	UJ	m	950	240	950	1200	U			1200	300	1200	1500	U		
193-39-5	Indeno(1,2,3,-cd) pyrene	ug/Kg	36	18	36	93	U			25	24	48	120	J			120	30	60	150	J		
78-59-1	Isophorone	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
91-20-3	Naphthalene	ug/Kg	36	18	36	93	U			31	24	48	120	J			730	30	60	150			

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED4-DUP							IAL4-SED5							IAL4-SED6						
			4/27/2017							4/27/2017							4/27/2017						
			8966359							8966348							8966347						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
98-95-3	Nitrobenzene	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
62-75-9	N-Nitrosodimethylamine	ug/Kg	730	360	730	910	U			950	480	950	1200	U			1200	600	1200	1500	U		
621-64-7	N-Nitroso-di-n propylamine	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
86-30-6	N-Nitrosodiphenylamine	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
930-55-2	N-Nitrosopyrrolidine	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
87-86-5	Pentachlorophenol	ug/Kg	730	180	730	930	U			950	240	950	1200	U			1200	300	1200	1500	U		
85-01-8	Phenanthrene	ug/Kg	36	18	36	93	U			48	24	48	120	U			540	30	60	150			
108-95-2	Phenol	ug/Kg	180	91	180	180	U			240	120	240	240	U			300	150	300	300	U		
129-00-0	Pyrene	ug/Kg	24	18	36	93	J			28	24	48	120	J			250	30	60	150			
Metals																							
7429-90-5	Aluminum	mg/Kg	13700	45.7	105	210		J		8800	9.47	21.8	43.7				9330	13.4	30.8	61.5			
7440-36-0	Antimony	mg/Kg	0.952	0.517	1.05	2.1	J			0.665	0.107	0.218	0.437				1.29	0.151	0.308	0.615			
7440-38-2	Arsenic	mg/Kg	8.91	0.777	2.1	4.21		J		9.03	0.161	0.437	0.873				12.9	0.227	0.615	1.23			
7440-39-3	Barium	mg/Kg	63.5	0.174	0.658	5.26		J		55.2	0.036	0.136	1.09				74.8	0.0508	0.192	1.54			
7440-41-7	Beryllium	mg/Kg	0.5	0.353	1.32	5.26	J			0.561	0.0731	0.273	1.09	J			0.464	0.103	0.385	1.54	J		
7440-43-9	Cadmium	mg/Kg	1.89	0.258	0.658	5.26	J			0.41	0.0535	0.136	1.09	J			3.77	0.0754	0.192	1.54			
7440-70-2	Calcium	mg/Kg	5580	29.8	105	210		J		1490	6.18	21.8	43.7				5100	8.71	30.8	61.5			
7440-47-3	Chromium	mg/Kg	25.9	0.737	1.97	15.8		J		25.2	0.153	0.409	3.27				22.6	0.215	0.577	4.61			
7440-48-4	Cobalt	mg/Kg	4.45	0.212	0.526	1.05		J		7.67	0.0439	0.109	0.218				5.67	0.0618	0.154	0.308			
7440-50-8	Copper	mg/Kg	41	1.21	2.63	10.5		J		25.9	0.251	0.546	2.18				36.2	0.354	0.769	3.08			
7439-89-6	Iron	mg/Kg	16500	21.7	52.6	210		J		15300	4.5	10.9	43.7				19000	6.34	15.4	61.5			
7439-92-1	Lead	mg/Kg	24.8	2.89	7.89	15.8		J		22.4	0.6	1.64	3.27				61.4	0.846	2.31	4.61			
7439-95-4	Magnesium	mg/Kg	1760	10	26.3	105		J		889	2.07	5.46	21.8				922	2.92	7.69	30.8			
7439-96-5	Manganese	mg/Kg	49.1	0.437	1.32	5.26		J		159	0.0906	0.273	1.09				311	0.128	0.385	1.54			
7439-97-6	Mercury	mg/Kg	0.0775	0.0535	0.0891	0.535	J			0.103	0.0138	0.023	0.138	J			0.185	0.0181	0.0302	0.181			
7440-02-0	Nickel	mg/Kg	13.6	1.58	2.63	10.5				10.3	0.327	0.546	2.18				12.5	0.461	0.769	3.08			
7440-09-7	Potassium	mg/Kg	1260	126	263	526		J		1170	26.1	54.6	109				761	36.8	76.9	154			
7782-49-2	Selenium	mg/Kg	10.5	4.74	10.5	21	U			2.18	0.982	2.18	4.37	U			1.99	1.38	3.08	6.15	J		
7440-22-4	Silver	mg/Kg	2.09	0.628	2.09	4.19	U			0.642	0.193	0.642	1.28	U			0.635	0.19	0.635	1.27	U		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED4-DUP							IAL4-SED5							IAL4-SED6						
			4/27/2017							4/27/2017							4/27/2017						
			8966359							8966348							8966347						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-23-5	Sodium	mg/Kg	796	126	263	1050	J			147	26.1	54.6	218	J			68.6	36.8	76.9	308	J		
7440-28-0	Thallium	mg/Kg	0.169	0.153	0.263	1.05	J			0.172	0.0316	0.0546	0.218	J			0.169	0.0446	0.0769	0.308	J		
7440-62-2	Vanadium	mg/Kg	41.3	0.737	2.63	5.26		J		38.9	0.153	0.546	1.09				49.8	0.215	0.769	1.54			
7440-66-6	Zinc	mg/Kg	272	3.58	5.26	21		J		62	0.742	1.09	4.37				158	1.05	1.54	6.15			
18540-29-9	Hexvalent Chromium	mg/Kg	2.2	0.76	2.2	2.2	U			1.8	0.2	0.58	0.58				0.75	0.26	0.75	0.75	U		
PCBs																							
12674-11-2	PCB-1016	ug/Kg	55	20	55	93	U			14	5.2	14	25	U			18	6.5	18	31	U		
11104-28-2	PCB-1221	ug/Kg	55	25	55	93	U			14	6.7	14	25	U			18	8.3	18	31	U		
11141-16-5	PCB-1232	ug/Kg	88	44	88	93	U			23	12	23	25	U			29	14	29	31	U		
53469-21-9	PCB-1242	ug/Kg	55	18	55	93	U			14	4.8	14	25	U			18	6	18	31	U		
12672-29-6	PCB-1248	ug/Kg	55	18	55	93	U			14	4.8	14	25	U			18	6	18	31	U		
11097-69-1	PCB-1254	ug/Kg	37	18	55	93	J			14	4.8	14	25	U			18	6	18	31	U		
37324-23-5	PCB-1262	ug/Kg	55	18	55	93	U			14	4.8	14	25	U			18	6	18	31	U		
11100-14-4	PCB-1268	ug/Kg	55	18	55	93	U			14	4.8	14	25	U			18	6	18	31	U		
11096-82-5	PCB-1260	ug/Kg	55	27	55	93	U			89	7.1	14	25				96	8.9	18	31			
Dioxins																							
35822-46-9	1234678-HpCDD	ng/Kg	238	2.65	5.3	26.5				65.1	0.696	1.39	6.96				218	0.878	1.76	8.78			
67562-39-4	1234678-HpCDF	ng/Kg	143	1.59	5.3	26.5				26.5	0.418	1.39	6.96				86.7	0.527	1.76	8.78			
55673-89-7	1234789-HpCDF	ng/Kg	7.71	2.12	5.3	26.5	J			1.79	0.557	1.39	6.96	J			5.28	0.702	1.76	8.78	J		
39227-28-6	123478-HxCDD	ng/Kg	3.99	1.59	5.3	26.5	J			0.784	0.418	1.39	6.96	J			3.92	0.527	1.76	8.78	J		
70648-26-9	123478-HxCDF	ng/Kg	5.36	1.59	5.3	26.5	J			1.07	0.418	1.39	6.96	JQ			5.86	0.527	1.76	8.78	J		
57653-85-7	123678-HxCDD	ng/Kg	7.72	2.12	5.3	26.5	J			1.72	0.557	1.39	6.96	J			8.64	0.702	1.76	8.78	J		
57117-44-9	123678-HxCDF	ng/Kg	10	1.59	5.3	26.5	J			2.19	0.418	1.39	6.96	J			9.85	0.527	1.76	8.78			
19408-74-3	123789-HxCDD	ng/Kg	7.79	1.59	5.3	26.5	J			1.48	0.418	1.39	6.96	J			7.18	0.527	1.76	8.78	J		
72918-21-9	123789-HxCDF	ng/Kg	5.3	2.65	5.3	26.5	U			1.39	0.696	1.39	6.96	U			1.73	0.878	1.76	8.78	J		
40321-76-4	12378-PeCDD	ng/Kg	5.3	2.12	5.3	26.5	U			1.39	0.557	1.39	6.96	U			2.19	0.702	1.76	8.78	J		
57117-41-6	12378-PeCDF	ng/Kg	3.16	2.12	5.3	26.5	J			1.64	0.557	1.39	6.96	J			5.97	0.702	1.76	8.78	J		
60851-34-5	234678-HxCDF	ng/Kg	9.62	1.59	5.3	26.5	J			2.96	0.418	1.39	6.96	J			11.2	0.527	1.76	8.78			
57117-31-4	23478-PeCDF	ng/Kg	5.3	1.59	5.3	26.5	U			1.39	0.418	1.39	6.96	U			3.22	0.527	1.76	8.78	JQ		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED4-DUP							IAL4-SED5							IAL4-SED6						
			4/27/2017							4/27/2017							4/27/2017						
			8966359							8966348							8966347						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
1746-01-6	2378-TCDD	ng/Kg	0.909	0.53	1.06	5.3	J			0.236	0.139	0.279	1.39	JQ			3.76	0.176	0.351	1.76			
51207-31-9	2378-TCDF	ng/Kg	1.16	0.53	1.06	5.3	J			0.193	0.139	0.279	1.39	JQ			3.64	0.176	0.351	1.76	C		
3268-87-9	OCDD	ng/Kg	4530	5.3	10.6	53				1900	1.39	2.79	13.9				7070	1.76	3.51	17.6	E	J	q
39001-02-0	OCDF	ng/Kg	222	2.65	10.6	53				67.1	0.696	2.79	13.9				147	0.878	3.51	17.6			
37871-00-4	Total HpCDD	ng/Kg	450	2.65	5.3	26.5				146	0.696	1.39	6.96				442	0.878	1.76	8.78			
38998-75-3	Total HpCDF	ng/Kg	288	2.12	5.3	26.5	Q			72.9	0.557	1.39	6.96				204	0.702	1.76	8.78	Q		
34465-46-8	Total HxCDD	ng/Kg	71.7	2.12	5.3	26.5				16.3	0.557	1.39	6.96	Q			79.3	0.702	1.76	8.78			
55684-94-1	Total HxCDF	ng/Kg	163	2.65	5.3	26.5	Q			48.3	0.696	1.39	6.96	Q			173	0.878	1.76	8.78			
36088-22-9	Total PeCDD	ng/Kg	3.71	2.12	5.3	26.5	JQ			1.71	0.557	1.39	6.96	JQ			28.3	0.702	1.76	8.78	Q		
30402-15-4	Total PeCDF	ng/Kg	58.4	2.12	5.3	26.5	Q			31.2	0.557	1.39	6.96				160	0.702	1.76	8.78	Q		
41903-57-5	Total TCDD	ng/Kg	1.49	0.53	1.06	5.3	JQ			4.65	0.139	0.279	1.39	Q			18.6	0.176	0.351	1.76	Q		
55722-27-5	Total TCDF	ng/Kg	36.3	0.53	1.06	5.3	Q			25.1	0.139	0.279	1.39	Q			144	0.176	0.351	1.76	Q		
TEQWHO05-0.0	TEQ WHO 2005 - EDLx0.0	ng/Kg	10.9							2.49							16.6						
TEQWHO05-0.5	TEQ WHO 2005 - EDLx0.5	ng/Kg	12.3							2.96							16.7						
TOC																							
CTOC	TOC Solids/Sludges Combustion	mg/Kg	92300	1810	5420	5420		J	b	NA							101000	1920	5770	5770			
SEM/AVS																							
7440-43-9	Cadmium	µmol/g	0.00732	0.000244	0.000623	0.00498		B	o	NA							0.0261	0.000177	0.000452	0.00362		B	o
7440-50-8	Copper	µmol/g	0.242	0.00203	0.00441	0.0176				NA							0.309	0.00147	0.0032	0.0128			
7439-92-1	Lead	µmol/g	0.0409	0.00149	0.00406	0.00811				NA							0.188	0.00108	0.00295	0.00589			
7439-97-6	Mercury	µmol/g	2.8E-05	0.000017	0.000028	0.000168	U			NA							0.000024	0.000012	0.00002	0.000122	J		
7440-02-0	Nickel	µmol/g	0.311	0.00286	0.00477	0.0191		J-	m	NA							0.0736	0.00208	0.00346	0.0139		J-	m
7440-66-6	Zinc	µmol/g	1.16	0.00582	0.00856	0.0343				NA							1.08	0.00423	0.00622	0.0249			
1313-84-4	Acid Volatile Sulfide	µmol/g	4.5	1.4	4.5	4.5	U			NA							3.3	1	3.3	3.3	U		
SEM/AVS *			1.25803							NA							1.676724						

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED7							IAL4-SED8							IAL4-SED9						
			4/27/2017							4/27/2017							4/27/2017						
			8966346							8966345							8966344						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
Volatile Organic Compounds																							
630-20-6	1,1,1,2-Tetrachloroethane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
71-55-6	1,1,1-Trichloroethane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
79-34-5	1,1,2,2-Tetrachloroethane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/Kg	4	2	4	11	U			4	2	4	10	U			190	93	190	460	U		
79-00-5	1,1,2-Trichloroethane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
75-34-3	1,1-Dichloroethane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
75-35-4	1,1-Dichloroethene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
563-58-6	1,1-Dichloropropene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
87-61-6	1,2,3-Trichlorobenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
96-18-4	1,2,3-Trichloropropane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
95-63-6	1,2,4-Trimethylbenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
96-12-8	1,2-Dibromo-3-chloropropane	ug/Kg	4	2	4	6	U			4	2	4	5	U			190	93	190	230	U		
106-93-4	1,2-Dibromoethane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
107-06-2	1,2-Dichloroethane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
540-59-0	1,2-Dichloroethene (Total)	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
78-87-5	1,2-Dichloropropane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
108-67-8	1,3,5-Trimethylbenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
142-28-9	1,3-Dichloropropane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
123-91-1	1,4-Dioxane	ug/Kg	220	77	220	280	U			210	73	210	260	U			9300	3200	9300	12000	U		
594-20-7	2,2-Dichloropropane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
78-93-3	2-Butanone	ug/Kg	18	4	9	11				8	4	8	10	U			370	190	370	460	U		
95-49-8	2-Chlorotoluene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
591-78-6	2-Hexanone	ug/Kg	9	3	9	11	U			8	3	8	10	U			370	140	370	460	U		
106-43-4	4-Chlorotoluene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED7							IAL4-SED8							IAL4-SED9						
			4/27/2017							4/27/2017							4/27/2017						
			8966346							8966345							8966344						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
108-10-1	4-Methyl-2-pentanone	ug/Kg	9	3	9	11	U			8	3	8	10	U			370	140	370	460	U		
67-64-1	Acetone	ug/Kg	280	8	18	22				42	7	17	21				740	320	740	930	U		
71-43-2	Benzene	ug/Kg	2	0.6	2	6	U			2	0.5	2	5	U			93	23	93	230	U		
108-86-1	Bromobenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
74-97-5	Bromochloromethane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
75-27-4	Bromodichloromethane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
75-25-2	Bromoform	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
74-83-9	Bromomethane	ug/Kg	4	2	4	6	U			4	2	4	5	U			190	93	190	230	U	UJ	c
75-15-0	Carbon Disulfide	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
56-23-5	Carbon tetrachloride	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
108-90-7	Chlorobenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
124-48-1	Chlorodibromomethane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
75-00-3	Chloroethane	ug/Kg	4	2	4	6	U			4	2	4	5	U			190	93	190	230	U	UJ	c
67-66-3	Chloroform	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
74-87-3	Chloromethane	ug/Kg	4	2	4	6	U			4	2	4	5	U			190	93	190	230	U		
156-59-2	cis-1,2-Dichloroethene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
10061-01-5	cis-1,3-Dichloropropene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
110-82-7	Cyclohexane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
74-95-3	Dibromomethane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
75-71-8	Dichlorodifluoromethane	ug/Kg	4	2	4	6	U	UJ	c	4	2	4	5	U			190	93	190	230	U		
64-17-5	Ethanol	ug/Kg	290	110	280	550	J			260	100	260	520	U			12000	4600	12000	23000	U		
100-41-4	Ethylbenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
87-68-3	Hexachlorobutadiene	ug/Kg	4	2	4	6	U			4	2	4	5	U			190	93	190	230	U		
98-82-8	Isopropylbenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			130	46	93	230	J		
179601-23-1	m,p-Xylene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
79-20-9	Methyl acetate	ug/Kg	4	2	4	6	J			4	2	4	5	U			500	93	190	230		J	m
1634-04-4	Methyl tert-butyl Ether	ug/Kg	2	0.6	2	6	U			2	0.5	2	5	U			93	23	93	230	U		
108-87-2	Methylcyclohexane	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
75-09-2	Methylene chloride	ug/Kg	4	2	4	6	U			4	2	4	5	U			190	93	190	230	U		
91-20-3	Naphthalene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED7							IAL4-SED8							IAL4-SED9						
			4/27/2017							4/27/2017							4/27/2017						
			8966346							8966345							8966344						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
104-51-8	n-Butylbenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
103-65-1	n-Propylbenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
95-47-6	o-Xylene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
99-87-6	p-Isopropyltoluene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
135-98-8	sec-Butylbenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
100-42-5	Styrene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
75-65-0	t-Butanol	ug/Kg	44	22	44	110	U			42	21	42	100	U			1900	930	1900	4600	U		
98-06-6	tert-Butylbenzene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
127-18-4	Tetrachloroethene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
108-88-3	Toluene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
156-60-5	trans-1,2-Dichloroethene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
10061-02-6	trans-1,3-Dichloropropene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
79-01-6	Trichloroethene	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
75-69-4	Trichlorofluoromethane	ug/Kg	4	2	4	6	U			4	2	4	5	U			190	93	190	230	U		
75-01-4	Vinyl chloride	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
1330-20-7	Xylene (total)	ug/Kg	2	1	2	6	U			2	1	2	5	U			93	46	93	230	U		
Semivolatile Organic Compounds																							
92-52-4	1,1'-Biphenyl	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
120-82-1	1,2,4-Trichlorobenzene	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
95-50-1	1,2-Dichlorobenzene	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
122-66-7	1,2-Diphenylhydrazine	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
541-73-1	1,3-Dichlorobenzene	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
106-46-7	1,4-Dichlorobenzene	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
123-91-1	1,4-Dioxane	ug/Kg	2400	710	2400	2400	U			350	100	350	350	U			2000	600	2000	2000	U		
58-90-2	2,3,4,6-Tetrachlorophenol	ug/Kg	950	480	950	1200	U			140	69	140	170	U			800	400	800	1000	U		
95-95-4	2,4,5-Trichlorophenol	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
88-06-2	2,4,6-Trichlorophenol	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
120-83-2	2,4-Dichlorophenol	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED7							IAL4-SED8							IAL4-SED9						
			4/27/2017							4/27/2017							4/27/2017						
			8966346							8966345							8966344						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
105-67-9	2,4-Dimethylphenol	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
51-28-5	2,4-Dinitrophenol	ug/Kg	7100	2100	7100	7100	U			1000	310	1000	1000	U			6000	1800	6000	6000	U		
121-14-2	2,4-Dinitrotoluene	ug/Kg	950	480	950	1200	U			140	69	140	170	U			800	400	800	1000	U		
87-65-0	2,6-Dichlorophenol	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
606-20-2	2,6-Dinitrotoluene	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
91-58-7	2-Chloronaphthalene	ug/Kg	95	48	95	240	U			14	7	14	34	U			80	40	80	200	U		
95-57-8	2-Chlorophenol	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
91-57-6	2-Methylnaphthalene	ug/Kg	210	24	48	120				7	3	7	18	U			150	20	40	100			
95-48-7	2-Methylphenol	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
88-74-4	2-Nitroaniline	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
88-75-5	2-Nitrophenol	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
91-94-1	3,3'-Dicholorobenzidine	ug/Kg	2400	710	2400	2400	U			350	100	350	350	U			2000	600	2000	2000	U		
106-44-5	3+4-Methylphenol	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
99-09-2	3-Nitroaniline	ug/Kg	950	480	950	1200	U			140	69	140	170	U			800	400	800	1000	U		
534-52-1	4,6-Dinitro-2-methylphenol	ug/Kg	3600	1200	3600	3600	U			520	170	520	520	U			3000	1000	3000	3000	U		
101-55-3	4-Bromophenyl-phenylether	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
59-50-7	4-Chloro-3-methylphenol	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
106-47-8	4-Chloroaniline	ug/Kg	480	240	480	480	U			69	35	69	69	U			400	200	400	400	U		
7005-72-3	4-Chlorophenyl-phenyl ether	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
100-01-6	4-Nitroaniline	ug/Kg	950	480	950	1200	U			140	69	140	170	U			800	400	800	1000	U		
100-02-7	4-Nitrophenol	ug/Kg	3600	1200	3600	3600	U			520	170	520	520	U			3000	1000	3000	3000	U		
83-32-9	Acenaphthene	ug/Kg	48	24	48	120	U			7	3	7	18	U			40	20	40	100	U		
208-96-8	Acenaphthylene	ug/Kg	48	24	48	120	U			7	3	7	18	U			40	20	40	100	U		
98-86-2	Acetophenone	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
120-12-7	Anthracene	ug/Kg	48	24	48	120	U			7	3	7	18	U			40	20	40	100	U		
1912-24-9	Atrazine	ug/Kg	950	240	950	1200	U			140	35	140	170	U			800	200	800	1000	U		
100-52-7	Benzaldehyde	ug/Kg	950	480	950	1200	U			140	69	140	170	U			800	400	800	1000	U		
92-87-5	Benzidine	ug/Kg	3600	1800	3600	3600	U			520	260	520	520	U			3000	1500	3000	3000	U		
50-32-8	Benzo(a) pyrene	ug/Kg	74	24	48	120	J			7	3	7	18	U			40	20	40	100	U		
56-55-3	Benzo(a)anthracene	ug/Kg	65	24	48	120	J			7	3	7	18	U			30	20	40	100	J		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED7							IAL4-SED8							IAL4-SED9						
			4/27/2017							4/27/2017							4/27/2017						
			8966346							8966345							8966344						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
205-99-2	Benzo(b) fluoranthene	ug/Kg	120	24	48	120	J			7	3	7	18	U			48	20	40	100	J		
191-24-2	Benzo(g,h,i) perylene	ug/Kg	56	24	48	120	J			7	3	7	18	U			31	20	40	100	J		
207-08-9	Benzo(k) fluoranthene	ug/Kg	48	24	48	120	U			7	3	7	18	U			40	20	40	100	U		
65-85-0	Benzoic acid	ug/Kg	1700	1200	3600	3600	J			520	170	520	520	U			3000	1000	3000	3000	U		
100-51-6	Benzyl alcohol	ug/Kg	3600	1200	3600	3600	U			520	170	520	520	U			3000	1000	3000	3000	U		
111-91-1	Bis(2-chloroethoxy) methane	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
111-44-4	Bis(2-chloroethyl) ether	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
39638-32-9	Bis(2-chloroisopropyl) ether	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
117-81-7	Bis(2-ethylhexyl) phthalate	ug/Kg	950	480	950	1200	U			140	69	140	180	U			800	400	800	1000	U		
85-68-7	Butylbenzylphthalate	ug/Kg	950	480	950	1200	U			140	69	140	170	U			800	400	800	1000	U		
105-60-2	Caprolactam	ug/Kg	950	240	950	1200	U			140	35	140	170	U			800	200	800	1000	U		
86-74-8	Carbazole	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
218-01-9	Chrysene	ug/Kg	120	24	48	120	J			7	3	7	18	U			54	20	40	100	J		
53-70-3	Dibenzo(a,h) anthracene	ug/Kg	48	24	48	120	U			7	3	7	18	U			40	20	40	100	U		
132-64-9	Dibenzofuran	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
84-66-2	Diethylphthalate	ug/Kg	950	480	950	1200	U			140	69	140	170	U			800	400	800	1000	U		
131-11-3	Dimethylphthalate	ug/Kg	950	480	950	1200	U			140	69	140	170	U			800	400	800	1000	U		
84-74-2	Di-n-butylphthalate	ug/Kg	950	480	950	1200	U			140	69	140	170	U			800	400	800	1000	U		
117-84-0	Di-n-octylphthalate	ug/Kg	950	480	950	1200	U			140	69	140	170	U			800	400	800	1000	U		
88-85-7	Dinoseb	ug/Kg	3600	1200	3600	3600	U			520	170	520	520	U			3000	1000	3000	3000	U		
206-44-0	Fluoranthene	ug/Kg	140	24	48	120				7	3	7	18	U			49	20	40	100	J		
86-73-7	Fluorene	ug/Kg	48	24	48	120	U			7	3	7	18	U			40	20	40	100	U		
118-74-1	Hexachlorobenzene	ug/Kg	48	24	48	120	U			7	3	7	18	U			40	20	40	100	U		
87-68-3	Hexachlorobutadiene	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
77-47-4	Hexachlorocyclopentadiene	ug/Kg	3600	1200	3600	3600	U			520	170	520	520	U			3000	1000	3000	3000	U		
67-72-1	Hexachloroethane	ug/Kg	950	240	950	1200	U			140	35	140	170	U			800	200	800	1000	U		
193-39-5	Indeno(1,2,3,-cd) pyrene	ug/Kg	62	24	48	120	J			7	3	7	18	U			40	20	40	100	U		
78-59-1	Isophorone	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
91-20-3	Naphthalene	ug/Kg	170	24	48	120				7	3	7	18	U			130	20	40	100			

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED7							IAL4-SED8							IAL4-SED9						
			4/27/2017							4/27/2017							4/27/2017						
			8966346							8966345							8966344						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
98-95-3	Nitrobenzene	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
62-75-9	N-Nitrosodimethylamine	ug/Kg	950	480	950	1200	U			140	69	140	170	U			800	400	800	1000	U		
621-64-7	N-Nitroso-di-n propylamine	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
86-30-6	N-Nitrosodiphenylamine	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
930-55-2	N-Nitrosopyrrolidine	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
87-86-5	Pentachlorophenol	ug/Kg	950	240	950	1200	U			140	35	140	180	U			800	200	800	1000	U		
85-01-8	Phenanthrene	ug/Kg	140	24	48	120				7	3	7	18	U			78	20	40	100	J		
108-95-2	Phenol	ug/Kg	240	120	240	240	U			35	17	35	35	U			200	100	200	200	U		
129-00-0	Pyrene	ug/Kg	120	24	48	120				7	3	7	18	U			45	20	40	100	J		
Metals																							
7429-90-5	Aluminum	mg/Kg	6350	8.43	19.4	38.9				856	8.81	20.3	40.6				3050	10.1	23.3	46.7			
7440-36-0	Antimony	mg/Kg	0.435	0.0954	0.194	0.389				0.203	0.0996	0.203	0.406	U			0.294	0.115	0.233	0.467	J		
7440-38-2	Arsenic	mg/Kg	5.71	0.143	0.389	0.777				0.849	0.15	0.406	0.812				4.45	0.172	0.467	0.934			
7440-39-3	Barium	mg/Kg	34.8	0.0321	0.121	0.971				4.48	0.0335	0.127	1.01				19.7	0.0385	0.146	1.17			
7440-41-7	Beryllium	mg/Kg	0.26	0.0651	0.243	0.971	J			0.254	0.068	0.254	1.01	U			0.134	0.0782	0.292	1.17	J		
7440-43-9	Cadmium	mg/Kg	0.433	0.0476	0.121	0.971	J			0.127	0.0497	0.127	1.01	U			0.167	0.0572	0.146	1.17	J		
7440-70-2	Calcium	mg/Kg	880	5.5	19.4	38.9				39.4	5.74	20.3	40.6	J			1080	6.6	23.3	46.7			
7440-47-3	Chromium	mg/Kg	15	0.136	0.364	2.91				2.39	0.142	0.38	3.04	J			9.53	0.163	0.438	3.5			
7440-48-4	Cobalt	mg/Kg	2.46	0.039	0.0971	0.194				0.238	0.0408	0.101	0.203				0.99	0.0469	0.117	0.233			
7440-50-8	Copper	mg/Kg	13.7	0.223	0.486	1.94				3.02	0.233	0.507	2.03				11.3	0.268	0.583	2.33			
7439-89-6	Iron	mg/Kg	11000	4	9.71	38.9				2020	4.18	10.1	40.6				7600	4.81	11.7	46.7			
7439-92-1	Lead	mg/Kg	27.6	0.534	1.46	2.91				1.57	0.558	1.52	3.04	J			10	0.642	1.75	3.5			
7439-95-4	Magnesium	mg/Kg	599	1.85	4.86	19.4				45.1	1.93	5.07	20.3				297	2.22	5.83	23.3			
7439-96-5	Manganese	mg/Kg	101	0.0806	0.243	0.971				28.3	0.0842	0.254	1.01				79.6	0.0969	0.292	1.17			
7439-97-6	Mercury	mg/Kg	0.159	0.0142	0.0237	0.142				0.0161	0.0096	0.0161	0.0965	U			0.0233	0.0117	0.0196	0.117	J		
7440-02-0	Nickel	mg/Kg	4.17	0.291	0.486	1.94				0.507	0.304	0.507	2.03	U			1.57	0.35	0.583	2.33	J		
7440-09-7	Potassium	mg/Kg	700	23.2	48.6	97.1				83.2	24.2	50.7	101	J			299	27.9	58.3	117			
7782-49-2	Selenium	mg/Kg	1.94	0.874	1.94	3.89	U			2.03	0.913	2.03	4.06	U			2.33	1.05	2.33	4.67	U		
7440-22-4	Silver	mg/Kg	0.521	0.156	0.521	1.04	U			0.387	0.116	0.387	0.774	U			0.547	0.164	0.547	1.09	U		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED7							IAL4-SED8							IAL4-SED9						
			4/27/2017							4/27/2017							4/27/2017						
			8966346							8966345							8966344						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
7440-23-5	Sodium	mg/Kg	42.9	23.2	48.6	194	J			50.7	24.2	50.7	203	U			44.7	27.9	58.3	233	J		
7440-28-0	Thallium	mg/Kg	0.113	0.0282	0.0486	0.194	J			0.0507	0.0294	0.0507	0.203	U			0.0583	0.0338	0.0583	0.233	U		
7440-62-2	Vanadium	mg/Kg	26.2	0.136	0.486	0.971				3.41	0.142	0.507	1.01				16.4	0.163	0.583	1.17			
7440-66-6	Zinc	mg/Kg	49.8	0.66	0.971	3.89				2.75	0.69	1.01	4.06	J			34.1	0.794	1.17	4.67			
18540-29-9	Hexvalent Chromium	mg/Kg	0.85	0.2	0.58	0.58				0.42	0.15	0.42	0.42	U			1.2	0.17	0.48	0.48			
PCBs																							
12674-11-2	PCB-1016	ug/Kg	14	5.2	14	24	U			10	3.8	10	18	U			12	4.3	12	20	U		
11104-28-2	PCB-1221	ug/Kg	14	6.6	14	24	U			10	4.8	10	18	U			12	5.5	12	20	U		
11141-16-5	PCB-1232	ug/Kg	23	12	23	24	U			17	8.4	17	18	U			19	9.6	19	20	U		
53469-21-9	PCB-1242	ug/Kg	14	4.7	14	24	U			10	3.4	10	18	U			12	4	12	20	U		
12672-29-6	PCB-1248	ug/Kg	14	4.7	14	24	U			10	3.4	10	18	U			12	4	12	20	U		
11097-69-1	PCB-1254	ug/Kg	14	4.7	14	24	U			10	3.4	10	18	U			12	4	12	20	U		
37324-23-5	PCB-1262	ug/Kg	14	4.7	14	24	U			10	3.4	10	18	U			12	4	12	20	U		
11100-14-4	PCB-1268	ug/Kg	14	4.7	14	24	U			10	3.4	10	18	U			12	4	12	20	U		
11096-82-5	PCB-1260	ug/Kg	59	7	14	24				10	5.1	10	18	U			9.4	5.9	12	20	J		
Dioxins																							
35822-46-9	1234678-HpCDD	ng/Kg	126	0.711	1.42	7.11				1.86	0.501	1	5.01	J			42.1	0.589	1.18	5.89			
67562-39-4	1234678-HpCDF	ng/Kg	41	0.426	1.42	7.11				0.332	0.301	1	5.01	JQ			14.1	0.353	1.18	5.89			
55673-89-7	1234789-HpCDF	ng/Kg	2.39	0.569	1.42	7.11	J			1	0.401	1	5.01	U			0.785	0.471	1.18	5.89	J		
39227-28-6	123478-HxCDD	ng/Kg	1.67	0.426	1.42	7.11	J			1	0.301	1	5.01	U			0.581	0.353	1.18	5.89	JQ		
70648-26-9	123478-HxCDF	ng/Kg	2.35	0.426	1.42	7.11	J			1	0.301	1	5.01	U			0.615	0.353	1.18	5.89	JQ		
57653-85-7	123678-HxCDD	ng/Kg	4.23	0.569	1.42	7.11	J			1	0.401	1	5.01	U			1.34	0.471	1.18	5.89	J		
57117-44-9	123678-HxCDF	ng/Kg	4.25	0.426	1.42	7.11	J			1	0.301	1	5.01	U			0.826	0.353	1.18	5.89	J		
19408-74-3	123789-HxCDD	ng/Kg	2.84	0.426	1.42	7.11	J			1	0.301	1	5.01	U			0.948	0.353	1.18	5.89	J		
72918-21-9	123789-HxCDF	ng/Kg	0.768	0.711	1.42	7.11	J			1	0.501	1	5.01	U			1.18	0.589	1.18	5.89	U		
40321-76-4	12378-PeCDD	ng/Kg	0.792	0.569	1.42	7.11	JQ			1	0.401	1	5.01	U			1.18	0.471	1.18	5.89	U		
57117-41-6	12378-PeCDF	ng/Kg	3.62	0.569	1.42	7.11	J			1	0.401	1	5.01	U			0.477	0.471	1.18	5.89	J		
60851-34-5	234678-HxCDF	ng/Kg	4	0.426	1.42	7.11	J			1	0.301	1	5.01	U			0.874	0.353	1.18	5.89	J		
57117-31-4	23478-PeCDF	ng/Kg	2.91	0.426	1.42	7.11	J			1	0.301	1	5.01	U			0.561	0.353	1.18	5.89	J		

Table 4-4: 2017 Sediment Analytical Results for VOCs, SVOCs, Metals, Cr(VI), PCBs, and Dioxins/Furans at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

			IAL4-SED7							IAL4-SED8							IAL4-SED9						
			4/27/2017							4/27/2017							4/27/2017						
			8966346							8966345							8966344						
CAS#	Analyte	Units	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC	Result	DL	LOD	LOQ	LF	DV	RC
1746-01-6	2378-TCDD	ng/Kg	1.92	0.142	0.284	1.42				0.2	0.1	0.2	1	U			0.779	0.118	0.236	1.18	J		
51207-31-9	2378-TCDF	ng/Kg	1.78	0.142	0.284	1.42	C			0.2	0.1	0.2	1	U			0.322	0.118	0.236	1.18	JQ		
3268-87-9	OCDD	ng/Kg	4710	1.42	2.84	14.2				108	1	2	10				1010	1.18	2.36	11.8			
39001-02-0	OCDF	ng/Kg	105	0.711	2.84	14.2				0.632	0.501	2	10	J			33.2	0.589	2.36	11.8			
37871-00-4	Total HpCDD	ng/Kg	277	0.711	1.42	7.11				4.06	0.501	1	5.01	J			104	0.589	1.18	5.89			
38998-75-3	Total HpCDF	ng/Kg	115	0.569	1.42	7.11	Q			0.434	0.401	1	5.01	JQ			36.9	0.471	1.18	5.89			
34465-46-8	Total HxCDD	ng/Kg	37.4	0.569	1.42	7.11				1	0.401	1	5.01	U			14.3	0.471	1.18	5.89	Q		
55684-94-1	Total HxCDF	ng/Kg	71	0.711	1.42	7.11				1	0.501	1	5.01	U			16.3	0.589	1.18	5.89	Q		
36088-22-9	Total PeCDD	ng/Kg	11.4	0.569	1.42	7.11	Q			1	0.401	1	5.01	U			2.47	0.471	1.18	5.89	J		
30402-15-4	Total PeCDF	ng/Kg	59.6	0.569	1.42	7.11	Q			1	0.401	1	5.01	U			8.64	0.471	1.18	5.89	Q		
41903-57-5	Total TCDD	ng/Kg	8.52	0.142	0.284	1.42	Q			0.2	0.1	0.2	1	U			1.82	0.118	0.236	1.18	Q		
55722-27-5	Total TCDF	ng/Kg	65.6	0.142	0.284	1.42	Q			0.329	0.1	0.2	1	JQ			6.84	0.118	0.236	1.18	Q		
TEQWHO05-0.0	TEQ WHO 2005 - EDLx0.0	ng/Kg	8.23							0.0511							2.24						
TEQWHO05-0.5	TEQ WHO 2005 - EDLx0.5	ng/Kg	8.51							0.481							2.55						
TOC																							
CTOC	TOC Solids/Sludges Combustion	mg/Kg	NA							NA							12600	738	2210	2210			
SEM/AVS																							
7440-43-9	Cadmium	µmol/g	NA							NA							0.00139	0.00013	0.000331	0.00264	J	B	o
7440-50-8	Copper	µmol/g	NA							NA							0.114	0.00108	0.00234	0.00935			
7439-92-1	Lead	µmol/g	NA							NA							0.0378	0.000789	0.00215	0.00431			
7439-97-6	Mercury	µmol/g	NA							NA							0.000012	0.0000089	0.000015	0.000089	J		
7440-02-0	Nickel	µmol/g	NA							NA							0.265	0.00152	0.00253	0.0101		J-	m
7440-66-6	Zinc	µmol/g	NA							NA							0.303	0.00309	0.00455	0.0182			
1313-84-4	Acid Volatile Sulfide	µmol/g	NA							NA							2.5	0.77	2.5	2.5	U		
SEM/AVS *			NA							NA							0.936625974						

Acronyms and Abreviations

The following apply to the Chemical Data Tables

Laboratory Flag Qualifiers and Definitions

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value ≥ the Method Detection Limit (MDL) or Detection Limit (DL) and < the Limit of Quantitation (LOQ) or Reporting Limit (RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
u	Analyte was not detected at the value indicated
v	Concentration difference between the primary and confirmation column >100%. The RL is raised due to this disparity and evident interference.
w	The dissolved oxygen (DO) uptake for the unseeded blank is greater than 0.2 mg/L (milligrams per liter)
z	Laboratory Defined - see analysis report

Data Qualifying Codes

Two types of data qualifying codes or flags are applied in the course of the data review. The data validation flags indicate data that are not usable for decision making, more than normally biased and/or variable, or not representative of field conditions. These codes and their definitions are presented below in the hierarchy stipulated in the United States Environmental Protection Agency (EPA) *Contract Laboratory Program National Functional Guidelines for Organic Data Review* (August 2014) and the *EPA Region III Modifications to National Functional Guidelines for Organic Data Review* (September 1994) for blank qualifications only.

Data Validation Flags

Flag	Interpretation
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
B	The analyte was analyzed for, but not detected at a level greater than or equal to the level of the adjusted DL for sample and method.
J+	Reported value may not be accurate or precise, but the result may be biased high.
J-	Reported value may not be accurate or precise, but the result may be biased low.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (because either the quality of the data generated failed to meet certain quality control (QC) criteria, or the concentration of the analyte was below the Limit of Detection [LOD]).
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

Acronyms and Abreviations

The other type of code used by the data validator is a "Reason Code." The reason code indicates the type of QC failure that led to the application of the data validation flag.

Reason Codes

GC/MS Organics		GC and high performance liquid chromatography (HPLC) Organics		Inorganics and Conventionals	
Code	Interpretation	Code	Interpretation	Code	Interpretation
a	Incorrect or incomplete analytical sequence	a	Incorrect or incomplete analytical sequence	a	Incorrect or incomplete analytical sequence
b	Bubble found in vial >6millimeters	b	Instrument performance failure	b	Laboratory duplicate imprecision
c	Calibration failure; poor or unstable response	c	Calibration failure; poor or unstable response	c	Calibration failure
d	matrix spike/matrix spike duplicate (MS/MSD) imprecision	d	MS/MSD imprecision	d	MS/MSD imprecision
e	laboratory control spike duplicate (LCSD) imprecision	e	LCSD imprecision	e	LCSD imprecision
f	Field duplicate imprecision	f	Field duplicate imprecision	f	Field duplicate imprecision
g	Tuning failure or poor mass spec performance	g	Dual column confirmation imprecision	g	Duel isotope imprecision
h	Holding time violation	h	Holding time violation	h	Holding time violation
i	Internal standard failure	i	Internal standard failure	k	Cooler receipt temperature exceeds limits
k	Cooler receipt temperature exceeds limits	k	Cooler receipt temperature exceeds limits	l	LCSD recovery failure
l	LCS recovery failure	l	LCS recovery failure	m	MS/MSD recovery failure
m	MS/MSD recovery failure	m	MS/MSD recovery failure	n	interference check standard (ICS) failure
n	Improper sample preservation	p	Poor chromatography	o	Calibration blank contamination
p	Poor chromatography	q	Concentration exceeded the linear range	q	Concentration exceeded the linear range
q	Concentration exceeded the linear range	r	Linearity failure in initial calibration	r	Linearity failure in calibration or method of standard addition (MSA)
r	Linearity failure in initial calibration	s	Surrogate failure	s	Serial dilution failure
s	Surrogate failure	t	Blender blank contamination	t	Carboy Lot detection
t	Tentatively Identified Compound (TIC)	u	No confirmation column	u	Biological Oxygen Demand (BOD) minimum depletion did not exceed 2 mg/L
w	Identification criteria failure	w	Retention time failure	v	Post-digestion spike failure
x	Field blank contamination	x	Field blank contamination	w	Contract Required Detection Limit (CRDL) Standard Failure
y	Trip blank contamination	z	Method blank contamination	x	Field blank contamination
z	Method blank contamination			z	Preparation/Method blank contamination

Table 4-5: 2017 Soil Gas Sampling Results at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Sample ID	Maximum Detected Concentra-tion in Soil gas	Explosion Safety Hazard (%)	SG-01	SG-02A	SG-03A	SG-04	SG-04-DUP	SG-05
Sample Date			4/20/2017	6/16/2017	6/16/2017	4/20/2017	4/20/2017	4/20/2017
Sample Depth			5.0 ft bgs	3.0 ft bgs	2.5 ft bgs	5.0 ft bgs	5.0 ft bgs	5.0 ft bgs
Source Document			320-27610	320-27610	320-27610	320-27610	320-27610	320-27610
Matrix			Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Field Recorded CH4 %			5.4	0.5	0	0.1	0.1	0.1
Analyte			Result (% v/v)	Result (% v/v)	Result (% v/v)	Result (% v/v)	Result (% v/v)	Result (% v/v)
Methane (CH4-FID)	0.0005	5 to 15%	NA	0.0005	0.00026	0.0002	0.00025	ND
Methane (CH4-TCD)	21	5 to 15%	21	NA	NA	NA	NA	NA
Helium	0.21	NA	0.21	ND	ND	ND	ND	ND

Sample ID	SG-06	SG-07	SG-08
Sample Date	4/20/2017	4/20/2017	4/20/2017
Source Document	320-27610	320-27610	320-27610
Sample Depth	5.0 ft bgs	5.0 ft bgs	5.0 ft bgs
Matrix	Soil Gas	Soil Gas	Soil Gas
Field Recorded CH4 %	0	0	0
Analyte	Result (% v/v)	Result (% v/v)	Result (% v/v)
Methane (CH4-FID)	0.00019	ND	0.00019
Methane (CH4-TCD)	NA	NA	NA
Helium	ND	ND	ND

Notes:
CH4 - methane
FID = Flame ionization detector
TCD = Thermal conductivity detector
DUP = duplicate
%v/v = percent methane per volume of air

ft bgs = feet below ground surface
NA = not applicable
ND = none detected

Table 6-2 Summary of Arsenic, Cobalt and Iron Concentrations in Groundwater and Their Water Quality Parameters at Time of Sampling

		Total		Dissolved				Water Quality Readings				
		Arsenic	Cobalt	Iron	Arsenic	Cobalt	Iron	Temperature	pH	Conductivity	DO	REDOX
Well ID	Date	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L					
IAL4-MW-42	5/23/2017	1.6	0.66	72900	1.1	0.65	69500	13.98	5.94	0.579	1.89	-46
IAL4-COE-3	5/24/2017	2	0.24	86.5	2	0.24	200	13.4	5.2	0.09	5.1	165.2
IAL4-MW-39	5/24/2017	2	0.24	245	2	0.37	200	12.69	5.17	0.23	2.61	187.5
IAL4-MW-39-DUP	5/24/2017	2	0.21	213	2	0.27	200	12.69	5.17	0.23	2.61	187.5
IAL4-MW-41D	5/24/2017	1.2	11.1	200	1.3	10.6	200	13.54	4.09	0.641	1.8	250.2
IAL4-MW-41S	5/24/2017	2	2.8	200	2	2.6	200	13.18	4.56	0.094	3.86	188.7
IAL4-MW-40	5/25/2017	1.6	0.51	3620	2	0.5	128	16.4	5.75	0.107	5.27	99.5
IAL4-MW-43	5/25/2017	4.3	0.42	24500	3.9	0.37	22600	14.3	5.92	0.286	2.4	14.4
IAL4-MW-44	5/25/2017	2	0.96	204	2	0.9	129	14.38	6.08	0.456	1.54	55.6
IAL4-MW-41D	8/9/2017	1.4	10.1	200	1.6	10.5	200	14.35	3.92	0.632	0.53	252.9
IAL4-MW-41D-DUP	8/9/2017	1.7	10.8	200	1.8	10.1	200	14.35	3.92	0.632	0.53	252.9
IAL4-MW-41S	8/9/2017	2	2.9	200	2	2.6	200	13.86	4.34	0.104	6.76	191
IAL4-COE-3	8/10/2017	2	0.5	200	2	0.19	200	13.84	5.19	0.09	7.25	159.9
IAL4-MW-39	8/10/2017	2	0.5	200	2	0.5	200	14.57	5.55	0.225	3.08	163.9
IAL4-MW-44	8/10/2017	2	0.5	564	2	0.5	200	16.35	5.87	0.31	3.81	109.5
IAL4-MW-40	9/21/2017	0.84	0.22	568	2	0.5	200	18.27	5.71	0.101	1.67	151.7
IAL4-MW-42	9/21/2017	2	0.21	24400	2	0.18	23100	15.95	5.62	0.269	1.19	-39.6
IAL4-MW-43	9/21/2017	15.5	0.84	71700	14.5	0.7	67800	16.93	5.7	0.76	0.65	-44.2
IAL4-MW-43-DUP	9/21/2017	16.1	0.9	70200	14.9	0.72	68600	16.93	5.7	0.76	0.65	-44.2

Notes:

ug/L = micrograms per liter

DO = dissolved oxygen

REDOX = reduction–oxidation reaction

= highest arsenic concentration and corresponding water quality reading

= highest cobalt concentration and corresponding water quality reading

= highest iron concentration and corresponding water quality reading

Table 8-1: Chemical-Specific ARARs and TBC Guidance at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Media	Authority	Regulation	Synopsis	Status
Air	Federal Regulatory Requirement	Clean Air Act – National Emission Standards for Hazardous Air Pollutants (NESHAPS) 42 U.S.C. §§ 7401-7671q -- - 40 CFR 49-97	The Clean Air Act (CAA) regulates emissions into the air and controls stationary and mobile sources of emissions. Any air emission from disturbance of soil, handling of materials, treatment processes, or from other pollutant management activities must meet the standards of the aforementioned regulation.	ARAR
Soil	State Regulatory Requirement	Disposal of Controlled Hazardous Substances COMAR 26.13.01-05	This regulation provides for the prevention, abatement, and control of contamination by addressing the generation and disposal of hazardous substances, and it authorizes the regulation of storage, treatment, transportation, and disposal of hazardous materials, controlled hazardous substances, and low level nuclear waste.	ARAR
	Local Criteria, Advisories, and Guidance	Soil Background Concentrations	The Final Soil Background Concentration Report (Malcolm Pirnie 2001) presents background concentrations of metals for surface and subsurface soils within IAL4.	TBC
	Federal Criteria, Advisories, and Guidance	USEPA Regional Screening Levels, Industrial Soil Supporting Table	The values from the Regional Screening Level Tables (USEPA 2017) are suggested threshold concentrations for soil chemical contaminants that have been developed based on a combination of regional PRGs (Preliminary Remediation Goals) and similar regional risk-based screening levels to provide guidance for residential soil quality. Available at: http://www.epa.gov/region09/superfund/prg/	ARAR
Groundwater	Federal Regulatory Requirement	Safe Drinking Water Act (SDWA) National Primary Drinking Water Regulations 40 CFR 141.61(a)(5) and (15), 40 CFR 141.61(c)(7), (11), (12) and (13)	This regulation sets Maximum Contamination Levels (MCLs), which are maximum allowable concentrations of specified contaminants, as enforceable standards for surface or groundwater to be used in the drinking water supply.	ARAR
	Federal Criteria, Advisories, and Guidance	USEPA Maximum Contaminant Level Goals (MCLGs)	These values are threshold concentrations for chemical contaminants in drinking water below which there are no known or expected risks to health. MCLGs allow for a margin of safety and provide non-enforceable public health goals.	ARAR
Sediment	Federal Criteria, Advisories, and Guidance	USEPA Regional Screening Levels, Industrial Soil Supporting Table	The values from the Regional Screening Level Tables (USEPA 2017) are suggested threshold concentrations for soil chemical contaminants that have been developed based on a combination of regional PRGs (Preliminary Remediation Goals) and similar regional risk-based screening levels to provide guidance for residential soil quality. Available at: http://www.epa.gov/region09/superfund/prg/	TBC

Notes:

ARAR- Applicable or Relevant and Appropriate Requirement
CFR - Code of Federal Regulations
COMAR - Code of Maryland Regulations
MDE - Maryland Department of the Environment
TBC - To Be Considered
U.S.C. - United States Code
USACE - United States Army Corps of Engineers
USEPA - United States Environmental Protection Agency

Table 8-2: Action-Specific ARARs and TBC Guidance at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Activity	Authority	Regulation	Synopsis	Status
Containment	Federal Regulatory Requirement	RCRA Identification and Listing of Hazardous Waste 40 CFR 261	This regulation provides guidance for classifying wastes as hazardous under RCRA.	ARAR
		RCRA Land Disposal Restrictions 40 CFR 268	This regulation establishes restrictions for the burial of wastes and hazardous materials. Listed and characteristic hazardous wastes are required to meet Best Demonstrated Available Technology (BDAT) treatment standards.	ARAR
	State Regulatory Requirement	Erosion and Sediment Control COMAR 26.17.01.07 and 26.17.01.11	This regulation is applicable when excavation, backfilling, and regrading of soil are contemplated. It establishes procedures to prevent erosion through run-off and discharge of sediment in water bodies. Construction projects that disturb in excess of 5,000 square feet or more than 100 cubic yards of earth must prepare an erosion and sediment control (E&SC) plan and retain a copy of the E&SC plan at the construction site. Further, construction projects that disturb greater than 1.0 acre, but less than 150 acres, must meet the substantive requirements of the General Permit for Stormwater Associated with Construction Activities. These requirements include special conditions (e.g., notification and response procedures for spills above reportable quantities), effluent limitations, the prevention of the discharge of significant amounts of sediments, monitoring, recording, and reporting. Finally, these regulations provide the standards and specifications for the design and implementation of E&SC and stormwater management.	ARAR
	State Regulatory Requirement	Closure Requirements for Sanitary Landfills COMAR 26.04.07.21	This regulation specifies the closure requirements of sanitary landfills and promulgates specific engineering design criteria for the construction of a low permeability cap.	ARAR
	State Regulatory Requirement	COMAR 26.04.07.26	Allows for variance from the capping requirements for sanitary landfills.	ARAR
	State Regulatory Requirement	Post Closure Requirements for Sanitary Landfills COMAR 26.04.07.22	This regulation includes the post-closure requirements for sanitary landfills. Monitoring and maintenance are required for a period of time no less than 5 years. Monitoring includes semi-annual inspections to be conducted twice per year. The Maryland Department of the Environment considers the post closure requirements to include a groundwater monitoring detection program for parameters listed on Tables I and II as referenced from 40 CFR 258.54	ARAR
General Remediation Activities	Federal Regulatory Requirement	National Primary and Secondary Ambient Air Quality Standards (40 CFR 50.6, 50.7, and 50.13)	Appropriate engineering controls are required to reduce particulate emissions associated with earth disturbing construction activities	ARAR
	State Regulatory Requirement	Control of Noise Pollution COMAR 26.02.03.01 through 26.02.03.03	This regulation applies to activities that produce regular or continuous sound that exceeds or may exceed established limits. It restricts noise to a level that protects the health, general welfare, and property of the people of the state. It also establishes an Environmental Noise Advisory Council and authorizes standards for ambient noise levels and equipment noise performance levels to be promulgated by the Department of Environment.	ARAR

Notes:

ARAR- Applicable or Relevant and Appropriate Requirement
COMAR - Code of Maryland Regulations mg/L - milligram per liter
RCRA - Resource Conservation and Recovery Act
U.S.C. - United States Code
CFR - Code of Federal Regulations
OSHA - Occupational Safety and Health Administration
TBC - To Be Considered

Table 8-3: Location-Specific ARARs and TBC Guidance at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Activity	Authority	Regulation	Synopsis	Status
Wetlands	Federal Regulatory Requirement	Executive Order 11990 - Wetlands	Federal agencies are required to preserve and enhance natural and beneficial values of wetlands and to minimize the destruction, loss, and degradation of wetlands.	TBC
		40 CFR Part 6, Appendix A	Contains the EPA policy for carrying out the provisions of Executive Order 11990	TBC
	State Regulatory Requirement	Non-tidal Wetlands Act & Program	Protects Maryland wetlands and waterways from loss and degradation through the regulation of the draining, dredging and filling of tidal and non-tidal wetlands, non-tidal wetland buffer and waterways.	TBC

Notes:
TBC - To Be Considered

Table 8-4: Qualitative Comparative Analysis of Remedial Alternatives at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Evaluation Criteria		Alternative 1 No Action	Alternative 2 LUCs and LTM of Groundwater and Soil Gas	Alternative 3 Installation of a Two-Foot Soil Cover, LUCs, Long-Term Maintenance of the Cover, and LTM of Groundwater and Soil Gas	Alternative 4 Installation of an Impermeable Soil/ Geosynthetic Cover, Further delineation of soil gas, LUCs, Long-Term Maintenance of the Cover, and LTM of Groundwater and Soil Gas	Alternative 5 Excavation and offsite disposal of trash, backfill excavation with clean soil, installation of an impermeable cap over trash remaining under the slope to Route 32, LUCs and LTM of the Cap
Threshold Criteria						
(1)	Overall protection of human health and the environment	• Provides no control of exposure to buried waste and impacted media at IAL4 and no reduction in risk to human health or the environment. • Does not meet the criteria for overall protection of human health or the environment.	• Not protective of human health and the environment; would not prohibit wildlife exposure to soil or sediment at IAL4 and would not restore the aquifer to beneficial use. • LUCs will prohibit uncontrolled excavation at the Site, the use of groundwater, or the development of the Site. • Maintains the integrity of habitat provided by the Site.	• Protective of human health but not the environment; would not prohibit wildlife exposure to sediment at IAL4. • Installing a two-foot soil cover would preclude exposure to waste beneath the landfill surface. LUCs will prohibit uncontrolled excavation at the Site, the use of groundwater, or the development of the Site. • Does not maintain integrity of habitat provided by the Site.	• Protective of human health and the environment. • Placement of an impermeable cap would preclude exposure to waste beneath the landfill surface and provide some additional protection to human and ecological receptors when compared to the two-foot soil cover as it would provide a thicker cover over the Site. • LUCs will prohibit uncontrolled excavation at the Site, the use of groundwater, or the development of the Site. • Does not pose an unacceptable risk to ecological receptors and the environment. • Does not maintain integrity of habitat provided by the Site.	• Protective of human health and the environment. • Excavation and offsite disposal would eliminate exposure to waste on FGGM. Placement of an impermeable cap would preclude exposure to waste beneath the slope to Route 32. • LUCs will prohibit uncontrolled excavation at the Site, the use of groundwater, or the development of the Site. • Does not pose an unacceptable risk to ecological receptors and the environment. • Does not maintain integrity of habitat provided by the Site.
(2)	Compliance with ARARs	• ARARs are not identified according to guidance from the USEPA Office of Solid Waste and Emergency Response (OSWER) Directive 9234.2.01/FS-4 ARARs Questions and Answers (USEPA 2004).	• Will not comply with the action specific ARAR associated with COMAR 26.04.07.21.	• Will not comply with the action specific ARAR associated with COMAR 26.04.07.21.	• Will comply with ARARs.	• Will comply with ARARs.
Balancing Criteria						
(3)	Long-term effectiveness and permanence	• Does not provide any controls for monitoring any reduction of concentrations over time, reduction of exposure, or long-term management measures. • All current and potential future risks would remain the same under this alternative.	• LTM tracks concentrations of constituents in groundwater and soil gas to ensure buried waste impact to these media does not migrate off the property boundary; however, it would not restore the aquifer to beneficial use. • LUCs implemented to restrict uncontrolled digging, prohibit groundwater use, and restrict future development of the Site.	• Monitoring and maintenance of the two-foot soil cover would assure the continued effectiveness of this remedy. • Installing a 2-ft soil cover would reduce the infiltration of rainwater to IAL4, thereby reducing the source of arsenic, cobalt, and iron from the landfill to groundwater and restore groundwater to beneficial use. • LTM tracks concentrations of constituents in groundwater and soil gas to ensure buried waste impact to these media does not migrate off the property boundary. • Annual inspection identifies whether buried waste has become exposed at the ground surface and eliminates the risk posed to human and ecological receptors. • LUCs implemented to restrict uncontrolled digging, prohibit groundwater use, and restrict future development of the Site.	• The impermeable cover will eliminate rainwater infiltration through the landfill to groundwater which will eliminate the leaching of arsenic, cobalt, and iron from the landfill and over time, restore the aquifer. • Monitoring and maintenance of the cap would assure the continued effectiveness of this remedy. • LTM tracks concentrations of constituents in groundwater and soil gas to ensure buried waste impact to these media does not migrate off the property boundary. • Annual inspection identifies whether buried waste has become exposed at the ground surface and eliminates the risk posed to human and ecological receptors. • LUCs implemented to restrict uncontrolled digging, prohibit groundwater use, and restrict future development of the Site.	• Removing the source through excavation will eliminate the source of arsenic, cobalt, and iron and over time the aquifer will be restored. • Monitoring and maintenance of the cap would assure the continued effectiveness of this remedy. • LTM tracks concentrations of constituents in groundwater to ensure buried waste impact to these media does not migrate off the property boundary. • Annual inspection identifies whether buried waste has become exposed at the ground surface and eliminates the risk posed to human and ecological receptors. • LUCs implemented to restrict uncontrolled digging, prohibit groundwater use, and restrict future development of the Site.

Table 8-4: Qualitative Comparative Analysis of Remedial Alternatives at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Evaluation Criteria		Alternative 1 No Action	Alternative 2 LUCs and LTM of Groundwater and Soil Gas	Alternative 3 Installation of a Two-Foot Soil Cover, LUCs, Long-Term Maintenance of the Cover, and LTM of Groundwater and Soil Gas	Alternative 4 Installation of an Impermeable Soil/ Geosynthetic Cover, Further delineation of soil gas, LUCs, Long-Term Maintenance of the Cover, and LTM of Groundwater and Soil Gas	Alternative 5 Excavation and offsite disposal of trash, backfill excavation with clean soil, installation of an impermeable cap over trash remaining under the slope to Route 32, LUCs and LTM of the Cap
(4)	Reduction of mobility, toxicity, or volume of waste through treatment	• Does not employ any treatment that would reduce the toxicity, mobility, or volume of impacted groundwater, soil gas, or buried waste. • Does not meet this criterion.	• No treatment will be employed to reduce the toxicity or volume of buried waste. • Will not reduce the mobility of buried waste due to external physical processes such as erosion and weathering. • Will not reduce the toxicity or volume of impacted groundwater. • Will not reduce the toxicity 0r volume of impacted soil gas.	• No treatment will be employed to reduce the toxicity or volume of buried waste. • Installation of a soil cover will reduce the mobility of buried waste by limiting exposure to external physical processes such as erosion and weathering. • Installation of a soil cover will reduce the toxicity and volume of impacted groundwater by reducing the infiltration of rainwater to the water table. • Installation of a soil cover will reduce the toxicity and volume of impacted soil gas by increasing the distance from the gas forming compounds to the ground surface.	• No treatment will be employed to reduce the toxicity or volume of buried waste. • Installation of a cap will reduce the mobility of buried waste by limiting exposure to external physical processes such as erosion and weathering. • Installation of a cap will reduce the toxicity and volume of impacted groundwater by reducing the infiltration of rainwater to the water table. • Installation of a cap will reduce the toxicity and volume of impacted soil gas by increasing the distance from the gas forming compounds to the ground surface.	• No treatment will be employed to reduce the toxicity or volume of buried waste. • Installation of a cap will reduce the mobility of waste remaining by limiting exposure to external physical processes such as erosion and weathering. • Installation of a cap will reduce the toxicity and volume of impacted groundwater by reducing the infiltration of rainwater to the water table.
(5)	Short-term effectiveness	• Does not pose any additional risks to the community, the workers, or the environment since there are no remedial activities associated with this alternative.	• Poses no short term risks to the community or construction workers. • The habitat provided by the Site to ecological receptors would not be affected.	• Poses moderate short term risks to the community and construction workers during the installation of the cover due to increased traffic during construction and dust generation during removal of existing vegetation. No intrusive activities will be conducted that may expose uncharacterized waste to the community, workers, or ecological receptors. • The habitat provided by the Site to ecological receptors would be razed. • Requires a moderate amount of time and coordination of labor, materials, and resources for completion.	• Poses moderate short term risks to the community and construction workers during the installation of the cover due to increased traffic during construction and dust generation during removal of existing vegetation. No intrusive activities will be conducted that may expose uncharacterized waste to the community, workers, or ecological receptors. • The habitat provided by the Site to ecological receptors would be razed. • Requires a moderate amount of time and coordination of labor, materials, and resources for completion.	• Poses moderate short term risks to the community and construction workers during the installation of the cover due to increased traffic during construction and dust generation during removal of existing vegetation. No intrusive activities will be conducted that may expose uncharacterized waste to the community, workers, or ecological receptors. • The habitat provided by the Site to ecological receptors would be razed. • Requires a moderate amount of time and coordination of labor, materials, and resources for completion.
(6)	Implementability	• There are no implementability concerns posed by this option.	• Implementation would require coordination with the Army to enforce the LUCs.	• Logistical coordination with Post roadways would be required during transport of soil to be used for cover. • Implementation would require extensive stormwater and erosion controls.	• Logistical coordination with Post roadways would be required during transport of soil to be used for cover. • Implementation would require extensive stormwater and erosion controls.	• Logistical coordination with Post roadways would be required during transport of soil to be used for cover. • Implementation would require extensive stormwater and erosion controls.
(7)	Cost	• There are no present worth costs or capital costs.	• The project present worth cost to implement this alternative is $1.1M.	• The project present worth cost to implement this alternative is $2.5M.	• The project present worth cost to implement this alternative is $3.3M.	• The project present worth cost to implement this alternative is $6.7M.

Notes: ARARs - Applicable or Relevant and Appropriate Requirements COCs - Chemicals of Concern HHRA - Human Health Risk Assessment LTM - Long-term Monitoring
LUCs - Land Use Controls RGs - Remediation Goals In accordance with the NCP, there is an expectation that aquifers will be restored to their beneficial uses.

Table 8-5: Quantitative Comparative Analysis of Remedial Alternatives

Evaluation Criteria		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
		No Action	LUCs and LTM of Groundwater and Soil Gas	Installation of a Two-Foot Soil Cover, LUCs, Long-Term Maintenance of the Cover, and LTM of Groundwater and Soil Gas	Installation of an Impermeable Soil/ Geosynthetic Cover, LUCs, Long-Term Maintenance of the Cover, and LTM of Groundwater and Soil Gas	Excavation, offsite disposal, installation of an impermeable cap over trash remaining under the slope to Route 32, LUCs and LTM of the Cap
Threshold Criteria						
(1)	Overall protection of human health and the environment	NO	YES	YES	YES	YES
(2)	Compliance with ARARs	NO	NO	NO	YES	YES
Balancing Criteria						
(3)	Long-term effectiveness and permanence	1	1	2	3	5
(4)	Reduction of mobility, toxicity, or volume of waste through treatment	1	1	2	2	4
(5)	Short-term effectiveness	5	5	3	3	2
(6)	Implementability	5	5	2	2	3
(7)	Cost	5	4	2	2	1
Modifying Criteria						
(8)	State acceptance	NS	NS	NS	NS	NS
(9)	Community acceptance	NS	NS	NS	NS	NS
Total Balancing Criteria Score		17	16	11	12	15

Notes: Criteria scored on a scale of 1 through 5, with 5 being the highest.
LTM - Long Term Monitoring.
NS - Not Scored
ARARs - Applicable or Relevant and Appropriate Requirements
LUC - Land Use Control
In accordance with the NCP, there is an expectation that aquifers will be restored to their beneficial uses.

Appendix A

Laboratory Analytical Sheets of Compounds Analyzed during 1991 Final Base Closure Parcel Site Inspection Study (EA, 1992)

(Included on CD only)

Appendix B

Laboratory Analytical Sheets of Compounds Analyzed during 2008 Groundwater Sampling Report (USACHPPM, 2008)

(Included on CD only)

Appendix C

Laboratory Analytical Sheets of Compounds Analyzed during the 2012 Preliminary Assessment / Site Investigation of FGGM (URS, 2015)

(Included on CD only)

Appendix D

Photo Log from 2012 Preliminary Assessment / Site Investigation

Appendix E

Excavation Permit for Remedial Investigation Activities at Inactive Landfill Number 4 (FGGM 95), Fort George G. Meade, Maryland

Appendix F

Field Logs and Sheets

Appendix F1

Soil Gas Sampling Field Log Sheets

Appendix F2

Monitoring Well Boring Logs and Well Construction Diagrams

Appendix F3

Monitoring Well Purge Logs

Appendix F4

Photo Log and Test Pit and Trench Logs from 2017 Remedial Investigation

Appendix G

Usability Report

Appendix H

Data Validation and Laboratory Analytical Reports

(Included on CD only)

Appendix I

Baseline Human Health Risk Assessment

Appendix I
HHRA RAGS Part D Tables and Attachments

Appendix J

Screening Level Ecological Risk Assessment

Attachment A
Threatened and Endangered Species Assessment

Attachment B
Screening Level Ecological Risk Assessment
Calculation Tables

Attachment C
ProUCL 5.1 Output

Appendix K

Costs and Detailed Assumptions Associated with the Implementation of Remedial Alternatives

Appendix L

Response to Comments on the Draft Final RI/FS