Final

Remedial Design / Work Plan for the Architect of the Capitol (AOC) Soil Lead Hot Spot Site, Fort George G. Meade, MD

Addendum Three to: Uniform Federal Policy Quality Assurance Project Plan

Fort Meade CERCLA
Fort George G. Meade, Maryland

September 2016

Contract Number: W912DR-12-D-0014
Delivery Order: 0003

Prepared for:

US Army Corps of Engineers ®
Baltimore District

10 South Howard Street
Baltimore, MD 21201

Prepared by:

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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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29 September 2016

Environmental Division

Mr. Robert Stroud
NPL/BRAC/Federal Facilities Branch
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Mr. Stroud:

Enclosed please find replacement cover pages and/or replacement CD(s) for the *Final Remedial Design/Work Plan for the Architect of the Capitol Site, Addendum Three to: Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP), Fort George G. Meade, Maryland* (Plan). This Plan is an addendum to the UFP-QAPP, which was submitted under separate cover; however, this Plan can be viewed as a stand-alone document. Since there were no comments on the Revised Draft Final Plan, it became the Final Plan per guidelines presented in the Federal Facility Agreement. Please replace the cover pages and/or CD with those provided.

Copies of the Plan have been furnished to Elisabeth Green (Maryland Department of the Environment), Sherry Deskins (Architect of the Capitol), Timothy Peck (Baltimore District, Army Corps of Engineers), Fran Coulters (U.S. Army Environmental Command), and the Fort George G. Meade Restoration Advisory Board.

If you have any questions, please feel free to contact Denise Tegtmeyer at (301) 677-9559 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 DESIGN/WORK PLAN FOR THE ARCHITECT OF THE CAPITOL (AOC) SOIL LEAD HOT SPOT SITE, FORT GEORGE G. MEADE, MD

ADDENDUM THREE TO:

UNIFORM FEDERAL POLICY QUALITY ASSURANCE PROJECT PLAN FORT MEADE CERCLA FORT GEORGE G. MEADE, MARYLAND

Prepared for

U.S. Army Corps of Engineers
Baltimore District
10 South Howard Street
Baltimore, MD 21201

September 2016

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12420 Milestone Center Drive, Suite 150
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Contract No. W912DR-12-D-0014, Delivery Order 0003
AECOM Project No. 60444826

Executive Summary

This document describes the procedures to be followed to remediate lead contaminated soil at a specified area on the Architect of the Capitol (AOC) parcel at Fort George G. Meade (FGGM), Maryland. The required AOC remediation is described in the AOC Record of Decision (ROD) dated September 2014 (ARCADIS, 2014a). The ROD requires excavation and offsite disposal of two small subsurface soil hot spots where soil lead concentrations are elevated.

FGGM-74 is located on the southern corridor of FGGM and is presently owned by the AOC. Multiple phases of environmental investigations and sampling have been conducted at FGGM-74 dating back to the late 1980s. The AOC Soil Lead Hot Spot was identified during an investigation of a portion of FGGM-74 and delineated during remedial investigations. The extent of the AOC Soil Lead Hot Spot remediation area is approximately 400 square feet (1/100 of an acre). The AOC Soil Lead Hot Spot study area is 60 feet by 68 feet (1/10 of an acre) in size.

The ROD reiterates the Propose Plan recommendation and states that the selected remedy is "Hot Spot Soil Excavation with Offsite Disposal". The ROD further states that this remedy will remove contaminated soil in the hot spot areas resulting in no unacceptable risk under future residential and non-residential land use scenarios upon completion of the excavation. Groundwater beneath the hot spot soil area of FGGM-74 has been investigated as part of Operable Unit 4 (OU-4) and is part of an ongoing remediation. The ROD indicated that after excavation and disposal of the lead contaminated soil, FGGM-74 soil will be suitable for unrestricted use/unrestricted exposure. Groundwater use for the AOC parcel is addressed separately under OU-4.

Prior to mobilization, an excavation permit will be submitted to DPW and AOC right-of-entry authorization will be obtained. Pre-characterization samples will be collected using direct push technology. During excavation, clean soil (overburden) will be staged and contaminated soil will be directly loaded onto trucks for transportation and offsite disposal. Following excavation of the two soil lead hot spots, confirmation soil samples will be collected from the bottom and sidewalls of the excavations, as required by the ROD. All samples will be analyzed for total lead. The two lead hot spot area excavations will not be back-filled until the confirmation samples analytical results are received and the interpretation of the results indicates that the remedial objective has been attained as specified in the ROD.

After the confirmation samples data interpretation is complete and it has been confirmed that no additional excavation of the soil lead hot spots is necessary, the stockpiled overburden soil will be backfilled into the excavation. Additional soil from the FGGM Soil Stockpile will be used as necessary prior to placing clean topsoil in the excavation. Prior to use as backfill, the FGGM Soil Stockpile soil will be sampled (one composite sample) and analyzed per MDE's "Facts About… VCP-Clean Imported Fill Material," including analysis for these parameters specified in Table 1 of the fact sheet: VOCs, SVOCs, TPH, PCBs, metals, and asbestos. The chemistry results will be evaluated per MDE's Cleanup Standards for Soil and Groundwater (June 2008) before using the soil as backfill. After placement of the soil cover, the area will be seeded with an approved tall fescue seed mix. AECOM will maintain the seed mix and cover until 80% growth has been established. Representatives of AOC and FGGM DPW will be updated every two weeks of the progress. Representatives of AOC and FGGM DPW will be invited to inspect the site prior to demobilization.

In accordance with Department of Defense (DOD)/EPA joint guidance on site closeouts, after completing the soil/sediment remediation, a Remedial Action Completion Report will be

prepared to demonstrate that the soil remedy has been completed and that the remedial action objectives have been met. Recipients of the report will include EPA, MDE, AOC, USACE, and AEC.

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Appendix G Response to Comments and Acceptance Letter on the Draft Remedial Design/Work Plan For The Architect Of The Capitol (AOC) Soil Lead Hot Spot, Fort George G. Meade, MD

AECOM	AECOM Technical Solutions, Incorporated
AOC	Architect of the Capitol
Army	Department of the Army
bgs	below ground surface
BTEX	Benzene, toluene, ethylbenzene, xylene
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CLIN	Contract Line Item
COC	Chemical of Concern
COMAR	Code of Maryland Regulations
DES	Directorate of Emergency Services
DO	Delivery Order
DOD	Department of Defense
DPT	Direct Push Technology
DPW	Directorate of Public Works
E&SC	Erosion and Sediment Control
ED	Environmental Division
EPA	U. S. Environmental Protection Agency
EPC	Exposure Point Concentration
FGGM	Fort George G. Meade
FS	Feasibility Study
FFS	Focused Feasibility Study
Ft	Feet
Ft^2	Square Feet
HAZWOPER	Hazardous Waste Operations and Emergency Response
HHRA	Human Health Risk Assessment
kg	kilogram
LPA	Lower Patuxent Aquifer
LUCs	Land Use Controls
MDE	Maryland Department of the Environment
mg	milligram
OU	Operable Unit
PCBs	Polychlorinated Biphenyls
PP	Proposed Plan

PRG	Preliminary Remedial Goal
QAPP	Quality Assurance Project Plan
RACR	Remedial Action Completion Report
RAOs	Remedial Action Objectives
RI	Remedial Investigation
ROD	Record of Decision
ROE	Right of Entry
SL	Soil Alternative
SVOCs	Semi-Volatile Organic Chemicals
SW	Surface Water
TCLP	Toxicity Characteristic Leaching Procedure
TOX	Total Organic Halides
TPH	Total Petroleum Hydrocarbons
UFP	Uniform Federal Policy
USEPA	U.S. Environmental Protection Agency
USACE	U.S. Army Corps of Engineers
VOCs	Volatile Organic Chemicals

Site Name/Project Name: Fort George G. Meade / Fort Meade CERCLA
Site Location/Number: Fort George G. Meade, MD / NPL Site No. MD9210020567
Contract Work Assignment Number: USACE Contract No. W912DR-12-D-0014; Order No. 0003

Relevant Plans and Reports from Previous Investigations: Relevant plans and reports from previous investigations include the RI/FS, PP, and ROD for the AOC soil lead hot spot.

Signature/Date: _____
Robert Stroud/USEPA

Signature/Date:_____
Tim Peck/USACE

Signature/Date:_____
George Knight/FGGM DPW

1.0 INTRODUCTION

This planning document describes the procedures to be followed to remediate lead contaminated soil at FGGM-74 the Architect of the Capitol (AOC) Parcel at Fort George G. Meade (FGGM), Maryland (**Figure 1-1**). The required AOC remediation is described in the AOC Record of Decision (ROD) dated September 2014 (ARCADIS, 2014a). The ROD requires excavation and offsite disposal of two adjacent small subsurface soil hot spots, located within the AOC, where soil lead concentrations are elevated. This remediation area is referred to as 'AOC Soil Lead Hot Spot'.

This document is addendum three to the *Revised Internal Draft, Uniform Federal Policy (UFP) Quality Assurance Project Plan (QAPP), Fort Meade CERCLA, Fort George G. Meade, Maryland* (AECOM, 2016b) submitted under separate cover. Field work will be conducted in accordance with the *Accident Prevention Plan, Fort Meade CERCLA, Fort George G. Meade, Maryland* (AECOM, 2016a). The following worksheets are incorporated into this document in the following sections:

- QAPP Worksheets #1 & #2, Title and Approval Page – Prior to Section 1.0
- QAPP Worksheet #10, Conceptual Site Model – Section 2.0
- QAPP Worksheet #11, Project/Data Quality Objectives – Section 3.3.4
- QAPP Worksheets #14 & #16, Project Tasks & Schedule – Section 5.0
- QAPP Worksheet #17, Sampling Design and Rationale – Section 3.3.3
- QAPP Worksheet #18, Sampling Locations and Methods – Sections 3.3.3.1 and 3.3.3.2

The referenced pages of the following worksheets are relevant to the work proposed in this document:

- QAPP Worksheet #12, Measurement Performance Criteria – pages 2, 4, 7, 8, 12, and 17.
- QAPP Worksheet #15, Project Action Limits and Laboratory-Specific Detection/Quantitation Limits – pages5-8, 13-16, 23, 28, 30, and 31.
- QAPP Worksheets #19 & #30, Sample Containers, Preservation, and Hold Times – pages 1 and 2.
- QAPP Worksheet #23, Analytical SOPs – pages 2 and 3.
- QAPP Worksheet #24, Analytical Instrument Calibration – page 1.
- QAPP Worksheet #25, Analytical Instrument and Equipment Maintenance, Testing, and Inspection – page 1.
- QAPP Worksheet #28, Analytical Quality Control and Corrective Action – pages 1-8, 12-15, and 35-38.

The following worksheets are referenced in whole:

- QAPP Worksheets #3 & #5, Project Organization and QAPP Distribution
- QAPP Worksheets #4, #7 & #8, Personnel Qualifications and Sign-off Sheet
- QAPP Worksheet #6, Communication Pathways
- QAPP Worksheet #9, Project Planning Session Summary
- QAPP Worksheet #13, Secondary Data Uses and Limitations
- QAPP Worksheet #20, Field QC Summary

- QAPP Worksheet #21, Field SOPs
- QAPP Worksheet #22, Field Equipment Calibration, Maintenance, Testing, and Inspection
- QAPP Worksheets #26 & #27, Sample Handling, Custody, and Disposal
- QAPP Worksheet #29, Project Documents and Records
- QAPP Worksheets #31, 32 & #33, Assessments and Corrective Action
- QAPP Worksheet #34, Data Verification and Validation Inputs
- QAPP Worksheet #35, Data Verification Procedures
- QAPP Worksheet #36, Data Validation Procedures
- QAPP Worksheet #37, Data Usability Assessment

1.1 Authority

This work is being performed under U.S. Army Corps of Engineers (USACE) Baltimore District contract number W912DR-12-D-0014, Delivery Order (DO) 0003, contract line item (CLIN) 0003.

1.2 Addendum Three Organization

This addendum consists of five sections as outlined below:

- Introduction (Section One)
- Site Description (Section Two)
- Design Element (Section Three)
- Project Management (Section Four)
- Project Schedule (Section Five)
- References (Section Six)

All figures are presented together, following Section Six.

2.0 SITE DESCRIPTION

This section describes the AOC Soil Lead Hot Spot and the associated remedial action. This section also presents the project's conceptual site model (CSM) that will be used to assist in the development of data quality objectives (DQOs).

2.1 Location

FGGM-74 is located on the southern corridor of FGGM and is bounded by Rock Avenue to the north, Route 32 to the south, Pepper Road to the east, and Remount Road to the west (**Figure 2-1**). FGGM-74 was used historically for a variety of purposes, including: warehouses and storage for the Former Defense Reutilization and Marketing Office, Transportation Motor Pool Facility, electrical substation, tractor trailer storage, and additional warehouse storage buildings.

FGGM-74 is presently owned by the AOC and is used to accommodate long-term storage and service needs of the Library of Congress and other Legislative Branch agencies. The AOC parcel covers 93-acres. The area consists of undeveloped land, warehouse, and archive facilities, roads and vehicle parking areas and underground storage tanks associated with an existing motor pool managed by the United States Army (Army) which is located on the extreme western portion of FGGM-74.

Multiple phases of environmental investigations and sampling have been conducted at FGGM-74 dating back to the late 1980s. The previously collected data are summarized in the Final Remedial Investigation (RI) for the AOC (ARCADIS U.S. Inc. [ARCADIS], 2013a) and the Focused Feasibility Study (FFS) (ARCADIS, 2014b). Historical investigations include tank removals and remediation (1988-2000), a soil vapor study (1990), Phase 1 environmental site assessment (early 1990s), and multiple rounds of remedial investigation sampling (2000-2011).

2.2 Background

The AOC Soil Lead Hot Spot is located within a currently undeveloped portion of the AOC property (FGGM 74) (**Figure 2-1**). The AOC Soil Lead Hot Spot was identified during the Remedial Investigation of FGGM-74 and delineated during a supplemental RI. There is no known past activity or source to explain this localized hot spot of lead contamination. The extent of the AOC Soil Lead Hot Spot remediation area is approximately 400 square feet (1/100 of an acre). The AOC Soil Lead Hot Spot study area is 60 feet by 68 feet (1/10 of an acre) in size.
Remedial Investigation Results

Constituents tested in soil at the AOC during the 2000/2001 and 2004/2005 soil RIs included various volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, pesticides, and polychlorinated biphenyls (PCBs). With the exception of lead, no chemicals were detected in soil at concentrations posing an unacceptable risk under the residential or industrial land use scenarios. During the 2004/2005 RI event a soil sample from direct push technology (DPT) monitoring well DPT/GW-29 had a lead concentration 3,350 mg/kg, revealing the presence of a soil lead 'hot spot'.

A follow-on investigation during the 2010/2011 timeframe was conducted to vertically and laterally delineate this soil lead hot spot. Results of the *Final Supplemental RI-Subsurface Lead Delineation and Revised Human Health Risk Assessment, FGGM 74, Architect of the Capitol,*

Fort George G. Meade, Maryland (ARCADIS, 2013) indicate that lead is the only risk-driving constituent of concern (COC) in soil. The extent of the lead contamination was investigated by collecting approximately 140 soil samples from approximately 30 direct push soil borings installed during two sampling rounds, in a 10 ft x 10 ft square grid fashion over an area of about 2,500 ft^2 (10-foot space between the grid-centered borings).

Figure 2-2 illustrates the direct push soil boring locations installed during the 2010/2011 follow-on investigation. The borings were installed in two rounds. The green dots in **Figure 2-2** represent the Round 1 borings (soil sample depths of 1, 4, 7 and 10 ft below ground surface [bgs]) and the brown dots represent the Round 2 borings (soil sample depths of 1, 4, 7, 10, and 14 ft bgs). The second round borings were installed to determine the limit of the elevated soil lead concentrations revealed by the soil samples from the Round 1 borings. Three of the Round 2 borings (32, 33, and 34) were co-located with three of the Round 1 borings to facilitate collecting deeper subsurface soil samples during Round 2. **Figure 2-3** shows the identification numbers for the Round 1 and 2 borings and the approximate location of DPT/GW-29. **Appendix A** presents the surveyed location coordinates for all of the borings.

A baseline human health risk assessment (HHRA) was conducted during the follow-on investigation to assess the significance of the soil lead concentrations measured in the soil samples from the Round 1 and 2 borings. The assessment concluded that lead concentrations at two hot spot areas at depths of 7 and 10 ft bgs present an unacceptable risk to potential future receptors such as commercial workers or hypothetical residents under a hypothetical regrading or excavation scenario. The follow-on investigation concluded that the soil lead contamination at 7 and 10 ft bgs warranted further evaluation in a FFS to assess appropriate remedial alternatives.

The high lead exposure point concentrations responsible for the unacceptable risk at 7 ft bgs were attributed to the high soil lead concentrations measured in samples AOCGP01 and AOCGP06 (6,800 and 5,200 mg/kg, respectively). This zone of contamination is identified as Hot Spot No. 1 in **Figure 2-4**. This UFP-QAPP Addendum considers these concentrations representative of the depth *interval* 5.5 to 8.5 ft, where 5.5 ft is the depth to the midpoint between 7 ft and the overlying clean sample depth of 4 ft, and 8.5 is the depth to the midpoint between 7 ft and the underlying clean sample depth of 10 ft.

The high lead exposure point concentrations responsible for the unacceptable risk at 10 ft bgs was attributed to the high soil lead concentrations measured in samples AOCGP09 and AOCGP10 (3,300 and 5,600 J milligrams per kilogram [mg/kg], respectively). This zone of contamination is identified as Hot Spot No. 2 in **Figure 2-4**. This remedial design/work plan considers these concentrations representative of the depth *interval* 8.5 to 12 ft, where 8.5 ft is the depth to the midpoint between 10 ft and the overlying clean sample depth of 7 ft, and 12 ft is the depth to the midpoint between 10 ft and the underlying clean sample depth of 14 ft.

Appendix B presents a series of eight figures from the Supplemental RI (ARCADIS, 2013). The first five figures plot the soil lead analytical results for all of the Round 1 and 2 borings and for all of the five depths (ft, bgs.) from which the soil samples were collected: 1, 4, 7, 10, and 14; thus illustrating the variation in soil lead concentrations across the AOC Soil Lead Hot Spot. The sixth figure illustrates the two different exposure areas (60x68 ft and 37x42 ft) evaluated during the HHRA. The seventh figure illustrates the location of soil Hot Spot No. 1 at the 7 ft bgs depth. The eighth figure illustrates the location of soil Hot Spot No. 2 at the 10 ft bgs depth.

2.3 Focused Feasibility Study Results

The FFS (ARCADIS, 2014b) evaluated the following alternatives to remediate the soil lead hot spots:

- Soil Alternative 1 (SL-1) – No Action, as required under Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) to provide a baseline against which other alternatives can be measured
- Alternative SL-2 – Land Use Controls (LUCs)
- Alternative SL-3 – Lead Hot Spot Soil Excavation with Off-site Disposal

The FFS did not recommend a preferred alternative. This recommendation was deferred to the Proposed Plan (PP).

2.4 Proposed Plan

Based on the best balance between the different selection criteria for treatment of soil, the PP (ARCADIS, 2014c) recommended the following preferred soil remedial action alternative: Alternative SL-3 − Soil Excavation with Off-Site Disposal. The PP noted:

- Because Alternative SL-3 proposes removing contaminated soil above the industrial preliminary remedial goal (PRG)*, the site wide exposure point concentration (EPC) would be reduced to or below the residential PRG resulting in no unacceptable risk under future land use scenarios (including residential) upon completion of the excavation, and
- Alternative SL-3 provides the best protection to human health by permanently removing COCs (lead) in soil.

*Note that the ROD proposes removing contaminated soil above the residential PRG.

2.5 Record of Decision

The ROD (Arcadis, 2014a) reiterates the PP recommendation and states that the selected remedy is “Hot Spot Soil Excavation with Offsite Disposal”. The ROD further states that this remedy will remove contaminated soil in the hot spot areas resulting in no unacceptable risk under future residential and non-residential land use scenarios upon completion of the excavation. Groundwater beneath the hot spot soil area of FGGM-74 has been investigated as part of Operable Unit 4 (OU-4) and is part of an ongoing remediation. OU-4 is currently being treated through a Removal Action (started in 2013) while groundwater contamination migrating from the source areas currently is being captured and treated in an on-post system and re-injected into the aquifer. The areal extent of the groundwater contamination, which extends beneath FGGM-74, is being addressed comprehensively as part of OU-4. The ROD indicated that after excavation and disposal of the lead contaminated soil, FGGM-74 soil will be suitable for unrestricted use/unrestricted exposure (UU/UE). Groundwater use is addressed separately under OU-4.

3.0 DESIGN ELEMENTS

The design elements discussed below are organized into these five categories:

- Pre-mobilization
- Mobilization
- Construction
- Demobilization
- Remedial Action Reporting

3.1 Pre-mobilization

Pre-mobilization activities include securing approvals of this remedial design/work plan document, securing the excavation permit and AOC right-of-entry authorization, executing subcontracts, confirmation of certifications and licenses, and notifications to the U.S. Environmental Protection Agency (USEPA), Maryland Department of the Environment (MDE), AOC, USACE and FGGM.

3.1.1 Approvals

All of the individuals identified on the approval page of this remedial design/work plan will have signed the approval page prior to mobilization.

3.1.2 Excavation Permit

An FGGM excavation permit will be secured prior to mobilization. No other permits are required, as discussed elsewhere in Section 3.0. To secure the excavation permit the following permit application forms will be completed and presented to the FGGM Directorate of Public Works (DPW) who will issue the permit:

- Form #FGGM-DPW-1001 (effective July 1, 2011*): Fort Meade Excavation/Paving Permit, REQUEST*
- Form #FGGM-DPW-1002 (effective July 1, 2011*): Fort Meade Excavation/Paving Permit, APPLICANT REQUIREMENTS*

Appendix C presents completed form #FGGM-DPW-1001 and partially completed form #FGGM-DPW-1002. Regarding Form #FGGM-DPW-1002, the following actions are necessary before the form is completed in its entirety:

- Mark the direct push proposed sample locations
- Have SoftDig Underground Services, Inc. (SoftDig) confirm the absence of Government-owned utilities at the proposed locations of the direct push samples.
- Mark the excavation area and the approved haul truck ingress/egress route in the field.
- Have SoftDig Underground Services, Inc. (SoftDig) confirm the absence of Government-owned utilities within the excavation area. Based on SoftDig's interpretation of FGGM utility drawings already in SoftDig's possession, if communications utilities are

suspected SoftDig will coordinate with GSTEK Inc. (Garrison Network Enterprise Center) to locate and mark such utilities in the field.

- Contact Miss Utilities and receive confirmation from them that no utilities are present within the excavation area, and renew the assigned Miss Utility ticket number as necessary (every 10 days).

After the forms are completed in their entirety the following actions will occur:

- Signed forms #FGGM-DPW-1001 and #FGGM-DPW-1002 will be submitted to DPW
- DPW will issue the Excavation Permit
- The Excavation Permit will be made available at the project site
- DPW will be notified prior to backfilling the excavation and conducting grounds restoration
- The Excavation Permit will be returned to DPW after completion of the project.

3.1.3 Subcontracts

Subcontracts will be in place with the following subcontractors prior to mobilization:

- Underground Services (SoftDig): to assist with utilities clearance.
- Capitol Environmental Services, Inc.: to provide transportation of excavated contaminated soil to a permitted facility and to provide coordination support concerning the waste soil chemical characterization required by the disposal facility. Assuming the excavated soil will fail Toxicity Characteristic Leaching Procedure (TCLP) testing for lead, the soil will be classified as hazardous and manifests will be created. AECOM will coordinate with DPW-ED in advance of the soil transport for disposal to obtain an authorized DPW-ED employee signature on the manifest.
- Eurofins Lancaster Laboratory: To provide chemical analysis of confirmation and waste soil samples.

3.1.4 Certifications and Licenses

Copies of all current certifications for all field team members (AECOM and subcontractor employees) will be placed in the project files prior to mobilization. These include Hazardous Waste Operations and Emergency Response (HAZWOPER) 40-hour, HAZWOPER 8-hour refresher, first aid, and cardiopulmonary resuscitation.

Capitol Environmental Services will provide to AECOM the hazardous waste transportation licenses for their vehicles and drivers and evidence of a valid permit for the waste disposal facility.

3.1.5 Vehicle Inspections

All vehicles to be brought to the project site will be inspected to assure that valid registration papers are with the vehicles, that the vehicles meet required safety standards and that they are clean so that offsite contamination is not brought to the site.

3.1.6 Notifications

The following individuals will be notified by email of the intent to mobilize. The first notification will be two weeks prior to mobilization and the second notification will be 24 hours prior to mobilization:

- Bob Stroud (USEPA)
- Liz Green (MDE)
- George Knight (FGGM DPW)
- Tim Peck (USACE)
- Sherry Deskins (AOC)

3.1.7 Right of Entry

Prior to mobilization for the direct push sampling and for the soil excavation a right of entry (ROE) agreement between the Department of Army (Army) and the AOC will be fully executed. **Appendix D** presents the draft ROE for AOC and Army consideration/approval.

3.2 Mobilization

Mobilization activities are:

- Mark the work zone and excavation areas
- Mark the clean and contaminated soil staging areas
- Setup the soil erosion & sediment control (E&SC) devices

At the site AECOM will use our pickup trucks for office and support space and will provide a porta-john (toilet) and potable drinking water for the construction staff to use. If additional office space becomes necessary we will utilize the existing AECOM project trailer at ½ Street. Our Site Supervisor will communicate with on-site personnel using cell phones or two-way radios.

3.2.1 Work Zone/Area and Excavation Areas

Figure 3-1 illustrates the work zone /area. Individuals and vehicles not supporting this project will not be permitted within the work zone/area. This area will be marked using orange safety fencing.

Figure 3-1 also illustrates the locations of Hot Spot Nos. 1 and 2 which are to be excavated. The precise location of these excavation areas will be marked in the field by staking the locations corresponding to the boring coordinates presented in **Table 3-1**, and then marking the excavation boundaries based on the excavation dimensions presented in **Table 3-1**. An experienced surveyor will locate the borings based on the coordinates provided in **Table 3-1**. The boundaries thus marked will be approximately half the distance between the borings that produced the contaminated soil samples (listed in **Table 3-1**) and the closest surrounding borings with acceptable soil lead concentrations.

3.2.2 Clean and Contaminated Soil Staging Areas

Figure 3-1 illustrates the clean soil (overburden) and contaminated soil staging areas. The top 2-feet of topsoil will be staged separately to be reused as topsoil for growing grass. These soil types will be separately staged within the staging areas and clearly marked in the field to avoid mixing overburden soil with contaminated soil. The locations illustrated in **Figure 3-1** may be adjusted during mobilization to accommodate site conditions; however, the staged soil will remain within the work zone and within the area surrounded by the silt fence (Section 3.2.3.3).

Table 3-1: Excavation boundaries, Dimensions and Volumes

Hot Spot ID	Boring	Coordinates	Depth (ft) to Excavation Boundaries			Excavation Dimensions & Volume			
			Top	Middle	Bottom	Width	Length	Bank Volume	Overburden Volume
No. 1	AOC-GP-01	N: 518016.3 E: 1387091.1	5.5	7 (a)	8.5	10 ft	20 ft	22 yds^3	41 yds^3
	AOC-GP-06	N: 518004.2 E: 1387100.0							
No. 2	AOC-GP-09	N: 518015.9 E: 1387112.5	8.5	10 (b)	12	10 ft	20 ft	26 yds^3	63 yds^3
	AOC-GP-10	N: 518004.3 E: 1387113.5							

(a) Corresponds to the depth from which a contaminated soil sample was collected from DPT borings AOC-GP-01 & 06.
(b) Corresponds to the depth from which a contaminated soil sample was collected from DPT borings AOC-GP-09 and 10.

3.2.3 Soil Erosion and Sediment Control

This subsection deals with the management of soil placed on the ground surface. Section 3.3 discusses control of the subsurface environment.

Code of Maryland Regulations (COMAR) 26.17.01.05(A) states that any grading activity requires an approved E&SC plan which, in turn, is necessary to receive a grading and building permit. The planned soil excavation at the AOC Soil Lead Hot Spot meets the COMAR definition of "grading activity" and the volume of soil to be excavated exceeds the 100 cubic yard threshold, which would normally activate the requirement for a grading and building permit and associated E&SC plan. However, the planned soil excavation is a CERCLA remedial action, which is exempted by law from the requirement to obtain federal, state, or local permits. Therefore, the substantive requirements of COMAR 26.17.01.11 and by reference: "*2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control*", will be met. However, this remedial design/work plan does not require seeking or acquiring a grading and building permit. Because greater than 100 cubic yards are being disturbed, a permit equivalency MDE Plan will be completed. In addition, an E&SC Plan will be prepared (see Section 3.2.3.2).

3.2.3.1 Grading and Stabilization

Contaminated soil removed from the excavation will be made stable by covering it with plastic sheeting at the completion of each work day, thus minimizing exposure to it and stabilizing it from erosion. Uncontaminated over burden will be stabilized in the same fashion if precipitation occurs or is reasonably anticipated to occur during the short duration (< two weeks) of the project. The grade surrounding the excavation will not be changed.

3.2.3.2 Water Conveyance

If precipitation is anticipated during the project such that sheet flow water could enter the excavation, then clean overburden soil will be used to construct a small (several inches high) soil berm to direct water around and away from the excavation. This will be detailed in the site specific E&SC plan.

3.2.3.3 Erosion Control

Consistent with the relatively flat topography of the AOC Soil Lead Hot Spot, the small excavation area, and the very short duration of the project, erosion controls will be limited to silt fencing placed around the down-gradient and side-gradient portions of the excavation area and the excavated soil stockpiles. **Figure 3-1** illustrates the silt fence location. The constructed location of the silt fence may differ somewhat from the **Figure 3-1** location so long as the fence effectively prevents sediment erosion and runoff from the excavation/stockpile area in the manner intended by silt fences.

Site personnel will inspect E&SC control measures on a regular basis during construction activities and repair them immediately if damage is observed. This will continue until a final vegetated surface has been established at the disturbed areas.

3.2.3.4 Dewatering

No requirement for dewatering is anticipated; however, the bottom of the excavation for the deepest hot spot (Hot Spot No. 2) may approach the elevation of the shallow water table. As reported in the final RI/Feasibility Study (FS) for the Operable Unit 4 (OU-4)/Lower Patapsco Aquifer (LPA) Study Area (ARCADIS, 2013) a groundwater sample was collected from temporary well DPT/GW-29 shown in **Figure 2-3**. The screened interval was 10 to 15 feet bgs, confirming shallow groundwater at the site. The planned excavation bottom (bgs) for Hot Spot No. 2 is 12 feet (**Table 3-1**). To minimize complications associated with potential accumulation of groundwater within the excavation prior to collection of the confirmation soil samples (see the discussion in Section 3.3.3); the confirmation soil samples will be collected immediately upon reaching the planned excavation depth of 12 feet bgs. The same sampling procedures apply if groundwater is encountered at less than 12 feet bgs; a note will be included on the chain-of-custody that the soil may be saturated with water.

3.3 Construction

Construction activities include:

- Clean overburden excavation and staging
- Contaminated soil excavation and staging
- Confirmation sampling
- Open excavation security
- Waste soil characterization
- Waste Soil Transportation
- Backfilling
- Site reclamation

3.3.1 Clean Overburden Excavation and Staging

Per Table 3-1, clean overburden at Hot Spot Nos. 1 and 2 occurs from the ground surface to depths of 5.5 feet and 8.5 feet, respectively. This overburden will be excavated using tracked hydraulic excavators, or equivalent. The upper two-feet of topsoil at each location will be segregated for reuse as topsoil. Depending on the stability of the overburden soil observed during excavation, the side walls of the excavation will be sloped as necessary by removing additional overburden to minimize uncontrolled overburden slumping into the excavation.

Excavated overburden soil will be placed on poly sheeting laid on the ground within the overburden soil staging area. The upper two-feet of topsoil at each location will be placed on separate poly sheeting. Additional poly sheeting will be placed over both piles of staged soil to protect them from precipitation. The protective poly sheeting will be secured over the staged soil using cinder blocks, sand bags or comparable objects, in a manner to ensure that the sheeting remains in place during worst-case wind conditions reasonably anticipated during the project. The edges of the poly sheeting atop the soil will extend beyond all edges of the poly sheeting underlying the soil so that precipitation does not collect upon the underlying poly sheeting.

While uncovered, the soil piles will be sprayed with a light mist of water for dust control.

3.3.2 Contaminated Soil Excavation and Staging

After completion of overburden soil excavation, the underlying contaminated soil will be excavated and direct loaded onto dump trucks for transportation offsite and disposal. **Table 3-1** describes the dimensions of the volume occupied by the contaminated soil to be excavated.

If during excavation any unusual odor, soil condition, or waste/buried debris of any kind is encountered which is suggestive of contamination above and beyond the known soil lead contamination, the DPW Environmental Division (ED) (301-677-9648 or 301-677-9188), USACE (401-962-3416), and AOC (202-226-6272) will be notified and work will stop until a contingency/evaluation plan is generated.

If during excavation suspected ammunition/ordnance items are discovered (none are currently anticipated) work will be stopped and the following entities will be notified: Directorate of Emergency Services at 301-677-6622 (Fire/Police Services Central Number); Fort Meade Installation Safety Office at 301-677-2396; and the DPW ED at 301-677-9648 or 301-677-9188 and work will stop until a contingency/evaluation plan is generated.

3.3.3 Confirmation Sampling Design and Rationale

Following excavation of the two soil lead hot spots, confirmation soil samples will be collected from the bottom and sidewalls of the excavations, as required by the ROD (ARCADIS, 2014a). The samples will be collected as described below in Sections 3.3.3.1 and 3.3.3.2.

The ROD does not specify how many confirmation samples must be collected; however, the sampling density during the RI corresponded to two soil samples for each of the two hot spots; therefore, confirmation sampling described below is based on producing two confirmation soil samples for each of the two hot spots. For each of the two hot spots, one composite confirmation sample will be collected from the excavation side walls and another confirmation sample will be collected from the excavation bottom. All samples will be shipped to Eurofins Lancaster

Laboratories Environmental, LLC (2425 New Holland Pike Lancaster, PA 17601; attention Kathy Klinefelter; 717-556-7256) for analysis of total Lead by USEPA Method SW-846 6010C.

3.3.3.1 Hot Spot No. 1 Sampling Locations and Methods

The bottom and side wall sampling procedures are individually discussed below.

Bottom Sampling Procedures – A single composite bottom sample will be shipped to the laboratory for analysis, after it is collected by the following procedures. The excavator bucket will be cleaned by removing all visible soil, rinsing it with deionized water and wiping it with clean towels. The excavator bucket will then be used to separately collect four small grab soil samples. The collection locations for the grab samples will be as follows: the excavation matching the rectangular shaped hot spot will be divided into four quadrants and a grab sample will be collected from the center of each of the four quadrants.

For the 1st grab sample the excavator bucket will collect about ½ cubic foot of soil. The soil will be brought to the surface by raising the excavator bucket. Using a clean disposal plastic spatula, one composite sample will be collected. The composite sample will be composed of soil collected from 30 random locations within the excavator bucket. The 30 randomly collected samples will be placed into a disposable steel or aluminum mixing pan labeled "Hot Spot 1 Bottom Sample". Each of the 30 samples will be comprised of approximately one heaping tablespoon of soil. This procedure will be repeated for the other three excavation bottom grab samples. The excavator bucket does not need to be cleaned between grab samples and the same spoon can be used to collect all composites, without cleaning the spoon between samples. After the last grab sample has been collected there should be 4 x 30 = 120 heaping tablespoons of soil in the mixing pan. All soil in the mixing pan will be thoroughly blended/mixed until it is visually homogenous (mixing duration of about two minutes). Homogenized soil from the mixing pan will then be transferred into the laboratory container (100 gram glass jar) in sufficient volume to fill the jar, which will then be shipped to the laboratory for analysis. Any soil remaining in the mixing pan will be added to the contaminated soil stockpile.

Side Wall Sampling Procedures – A single composite side wall sample will be shipped to the laboratory for analysis. This sample will be a composite of four grab soil samples represented by one grab sample from each of the four hot spot excavation side walls. The single composite sample will be collected in accordance with the following procedures. The excavator bucket will be cleaned by removing all visible soil, rinsing it with deionized water and wiping it with clean towels. The excavator bucket will then be used to separately collect four small grab soil samples, one from each of the excavation side walls. The location along each side wall where the grab sample will be collected is the point corresponding to 7 ft bgs (contamination depth) and the horizontal midpoint of the side wall. The two longest excavation sidewalls are 20 feet long and have midpoints of 10 feet from the end of the wall. The two shortest excavation sidewalls are 10 feet long and have midpoints of 5 feet from the end of the wall. The four grab samples will undergo compositing, homogenizing, and transfer into the laboratory sample container as previously described for the bottom sampling procedures.

3.3.3.2 Hot Spot No. 2 Sampling Locations and Methods

The bottom and side wall sampling procedures are individually discussed below.

Bottom Sampling Procedures – The sampling procedures are the same as previously described in Section 3.3.3.1 for Hot Spot 1.

Side Wall Sampling Procedures – The sampling procedures are the same as previously described in Section 3.3.3.1 for Hot Spot 1, with the following exception: The location along each side wall where the grab sample will be collected is the point corresponding to 10 ft bgs (contamination depth) and the horizontal midpoint of the side wall.

3.3.4 Confirmation Samples Data Interpretation and Data Quality Objectives

The two lead hot spot area excavations will not be back-filled until the confirmation samples analytical results are received and the interpretation of the results indicates that the remedial objective has been attained as specified in the ROD. A laboratory turn-around time of 48 hours is planned for the analytical results. The ROD states: "Following excavation of the two lead hot spot areas, confirmation soil samples will be collected from the bottom and sidewalls of the excavation. Soil samples will be analyzed for lead and used to recalculate the EPC prior to backfilling the excavation to determine if the residential PRG (418 mg/kg) was attained."

As discussed in the HHRA presented in the supplemental RI, the PRG corresponds to the maximum EPC that does not drive an unacceptable risk. The maximum EPC that does not drive an unacceptable risk is a soil lead concentration of 418 mg/kg.

3.3.4.1 Hot Spot No. 1

During the HHRA the EPC was calculated as the arithmetic mean of all of the soil lead concentration results available for a particular sampled depth. For example, Figure 3 in **Appendix B** presents all of the soil lead results for the soil samples collected from the depth of 7 ft bgs. The arithmetic mean soil lead concentration calculated using the results for all of these samples is 427.4 mg/kg. This concentration drove an unacceptable risk for the 7 ft depth.

After Hot Spot No. 1 is excavated the soil represented by the contaminated samples AOCGP01 (6,800 mg/kg lead) and AOCGP06 (5,200 mg/kg) will be gone. During confirmation samples data interpretation the 7 ft bgs arithmetic mean soil lead concentration will be recalculated after removing the results for samples AOCGP01 and AOCGP06 from the data set and replacing these two results with the two new results corresponding to the excavation bottom composite sample and sidewall composite sample. Consideration of the soil lead results in Figure 3 in **Appendix B** and the equation for calculating an arithmetic mean reveals that if the sum of the soil lead concentrations to be measured in the bottom and side wall composite samples for the Hot Spot No. 1 excavation is less than 11,709 mg/kg, the remedial goal will have been met and backfilling of the Hot Spot No. 1 excavation with clean soil can proceed. If the bottom and side wall composite samples for the Hot Spot No. 1 excavation are greater than 11,710 mg/kg, additional soil will be excavated. The excavation will extend an additional foot in depth if the bottom sample is causing the exceedance or an additional foot laterally if the side wall sample is causing the exceedance. This value (11,709 mg/kg) is derived from Equation 1, below:

Equation 1: $(a + b)/N = EPC$

Where:
EPC = Acceptable soil lead exposure point concentration (418 mg/kg)
N = Number of samples at 7 ft bgs (31)
a = Sum of the soil lead results at 7 ft bgs, excluding the results for samples AOCGP01 and AOCGP06 (this sum is 1,249 mg/kg)
b = Sum of the two future confirmation sample results (mg/kg)

3.3.4.2 Hot Spot No. 2

The discussion presented in Section 3.3.4.1 for Hot Spot No. 1 applies to Hot Spot No. 2, with two exceptions:

- After Hot Spot No. 2 is excavated the soil represented by the contaminated samples AOCGP09 (3,300 mg/kg lead) and AOCGP10 (5,600 J mg/kg) will be gone and the sum of all other results, excluding the results for these two samples, is 4,292 mg/kg.
- Consideration of the soil lead results in Figure 4 in **Appendix B** and the equation for calculating an arithmetic mean reveals that if the sum of the soil lead concentrations to be measured in the bottom and side wall composite samples for the Hot Spot No. 2 excavation are less than 8,666 mg/kg, the remedial goal will have been met and backfilling of the Hot Spot No. 2 excavation with clean soil can proceed. As indicated in Section 3.3.4.1, additional soil will be excavated if the cleanup goal is not met.

3.3.5 Open Excavation Security

The excavation area will be left open while awaiting confirmation sampling results. It will be secured with orange snow fencing around the perimeter to protect the work area after hours.

3.3.6 Waste Soil Characterization

Prior to excavation, a direct push rig will be mobilized to the site to collect pre-excavation characterization samples to determine if the soil is hazardous or nonhazardous. Three direct push samples will be advanced to the depth of affected soil at each of the two hot spots and soil samples will be collected of the depth range that has been affected (**Figure 3-2)**. These six soil samples will be composited into one sample that will be submitted for laboratory analysis. The laboratory analysis will consist of the parameters required to prove the soil is nonhazardous. Those parameters are:

- Total metals (EPA SW-846 6010)
- Benzene, toluene, ethylbenzene, xylene (BTEX) (EPA SW-846 8260)
- Total Organic Halides (TOX) (EPA SW-846 9020)
- Total Petroleum Hydrocarbons (TPH) (8015)
- TCLP Metals (EPA SW-846 Methods 1311/6010C/7470)
- PCBs (EPA SW-846 Method 8082A)

An additional volume of soil will be collected and stored at the laboratory in the event that the soil analytical results do not meet the criteria for nonhazardous. At that time, the following additional analysis, which the disposal facility requires for characterization, will be completed:

- TCLP VOCs (EPA SW-846 Methods 1311/8260B)
- TCLP SVOCs (EPA SW-846 Methods 1311/8270D)
- pH (EPA SW-846 Method 9045C)

3.3.7 Waste Soil Transportation

After Stericycle Environmental Solutions has completed their review of the waste characterization composite soil sample analytical results and confirms that their Hatfield, PA

facility is permitted to accept this soil, the soil will be loaded into a 48 or 52-foot long, lined and covered dump tractor trailers and transported to this facility. If the Hatfield, PA facility cannot accept the soil, an alternate facility will be located. AECOM will coordinate with FGGM-ED to obtain signatures on the waste manifests prior to the soil being shipped offsite. Copies of the signed manifest will be forwarded to AOC and included in the Remedial Action Completion Report (RACR). The soil will be transported off of the FGGM property along the following route, illustrated in **Figure 3-3**:

- West along Rock Avenue to Zimborski Avenue
- North along Zimborski Avenue to Dutt Road
- West along Dutt Road to Obrien Road
- North along Obrien Road to Mapes Road
- West along Mapes Road, thru the FGGM entrance gate, and onto State Route 32.

3.3.8 Backfilling

Results of confirmation sampling will be provided to FGGM, USACE-Baltimore, and AOC along with the data interpretation described in Section 3.3.4. Due to the time constraints on the open excavation, FGGM, USACE-Baltimore, and AOC will be given 24 hours to review this data. After the confirmation samples data interpretation described in Section 3.3.4 is complete and it has been confirmed that no additional excavation of the soil lead hot spots is necessary, the stockpiled overburden soil will be backfilled into the excavation. All backfill soil will be placed in 1-foot lifts and compacted using the excavator bucket. After backfilling all of the stockpiled soil is complete additional backfill soil will be necessary to achieve a final level grade. The additional soil backfill will be acquired from the clean soil stockpile located at the FGGM Soil Stockpile. Prior to use as backfill, the FGGM Soil Stockpile soil will be sampled (one composite sample) and analyzed per MDE's "Facts About… VCP-Clean Imported Fill Material," (Appendix E) including analysis for these parameters specified in Table 1 of the fact sheet: VOCs, SVOCs, TPH, PCBs, metals, and asbestos. Since only 48 cubic yards of the FGGM Soil Stockpile soil is needed for backfill, the composite sample will consist of 30 individual grab samples to be collected from the upper two feet of the FGGM Soil Stockpile soil designated for use. The chemistry results will be evaluated per MDE's Cleanup Standards for Soil and Groundwater (June 2008) (Appendix F) before using the soil as backfill. The additional backfill soil from the soil stockpile will be acquired in a manner compliant with the soil stockpile sediment and erosion control permit and after coordination with 3rd parities engaged in on-going soil management activities at the soil stockpile. Topsoil from the excavation will be saved on a separate sheet of poly to be reused. The upper 2-feet of soil will be saved and be reused as topsoil for seed growth. The planned truck route between the AOC Soil Lead Hot Spot and Cell 3 is illustrated in **Figure 3-3.**

3.3.9 Site Reclamation

Upon completion of the soil cover, the area will be mulched and seeded with an MDE approved mixture that includes tall fescue. The seed mixture is dependent upon the time of year and MDE approval will be obtained prior to planting the seed. AECOM will maintain the seed mix and cover until 80% growth has been established. Representatives of AOC and FGGM DPW will be

invited to inspect the site throughout the reclamation process and suggest changes that are within the scope of the project.

3.4 Demobilization

Demobilization will include removal of all materials mobilized to the site, including fencing and plastic poly sheeting. All recyclable material and non-contaminated trash will either be taken off post for disposal/recycling or placed in recycle bins located in the lot of Building 2250 (Recycling Center) or the dumpster at the ED building.

3.5 Remedial Action Reporting

In accordance with Department of Defense (DOD)/EPA joint guidance on site closeouts, after completing the soil remediation a Remedial Action Completion Report (RACR) will be prepared to demonstrate that the soil remedy has been completed and that the remedial action objectives (RAOs) have been met. Photographs will be taken at different stages of the project to document progress. The photographs will be included in the RACR. The RACR will document achievement of the remedial objectives (EPC ≤ PRG) in accordance with the confirmation sampling procedures previously described. The DOD/EPA joint RACR guidance identifies the following criteria, which the RACR will document:

- All construction activities are complete
- RAOs or cleanup goals stated in the ROD have been achieved
- A final inspection or equivalent has been conducted
- The site is protective of human health and the environment

The RACR will be submitted to EPA for review and concurrence and an EPA approval letter will be obtained.

4.0 PROJECT MANAGEMENT

Figure 4-1 presents the organization chart for this project. Jerry Kashatus (AECOM, Germantown, MD) is the project manager. Jerry is responsible for overall project performance including all communications between AECOM and FGGM, USACE-Baltimore, and the AOC. FGGM, USACE-Baltimore, and AOC will be notified of any unexpected findings (see Section 3.3.2) and will be provided results of confirmation sampling prior to backfilling (see Section 3.8).

Assisting Jerry Kashatus with task management is Bill Eaton (AECOM, Germantown, MD), responsible for planning details and coordination among the various other individual supporting the project. Don Mayer is the site manager, responsible for all AOC field activities. Susan Schult is with Capitol Environmental Services, a subcontractor to AECOM, and will report to Don Mayer while providing contaminated soil transportation and disposal services. Naoum Tavantis (AECOM, Annapolis Junction) is the project chemical data validator who will also be responsible for coordinating with the analytical laboratory. Kathy Klinefelter (Eurofins Lancaster Laboratory) is responsible for managing the analysis of all of the project soil samples.

5.0 PROJECT TASKS AND SCHEDULE

Figure 5-1 presents the QAPP Addendum schedule. Currently the schedule allows for 30 and 60 day standard review periods for various versions of the project deliverables. If the actual reviews require less time due to the focused nature of the project, the schedule will be revised in the future accordingly.

6.0 REFERENCES

AECOM, 2016a. *Accident Prevention Plan, Fort Meade CERCLA, Fort George G. Meade, Maryland*, February 12, 2016.

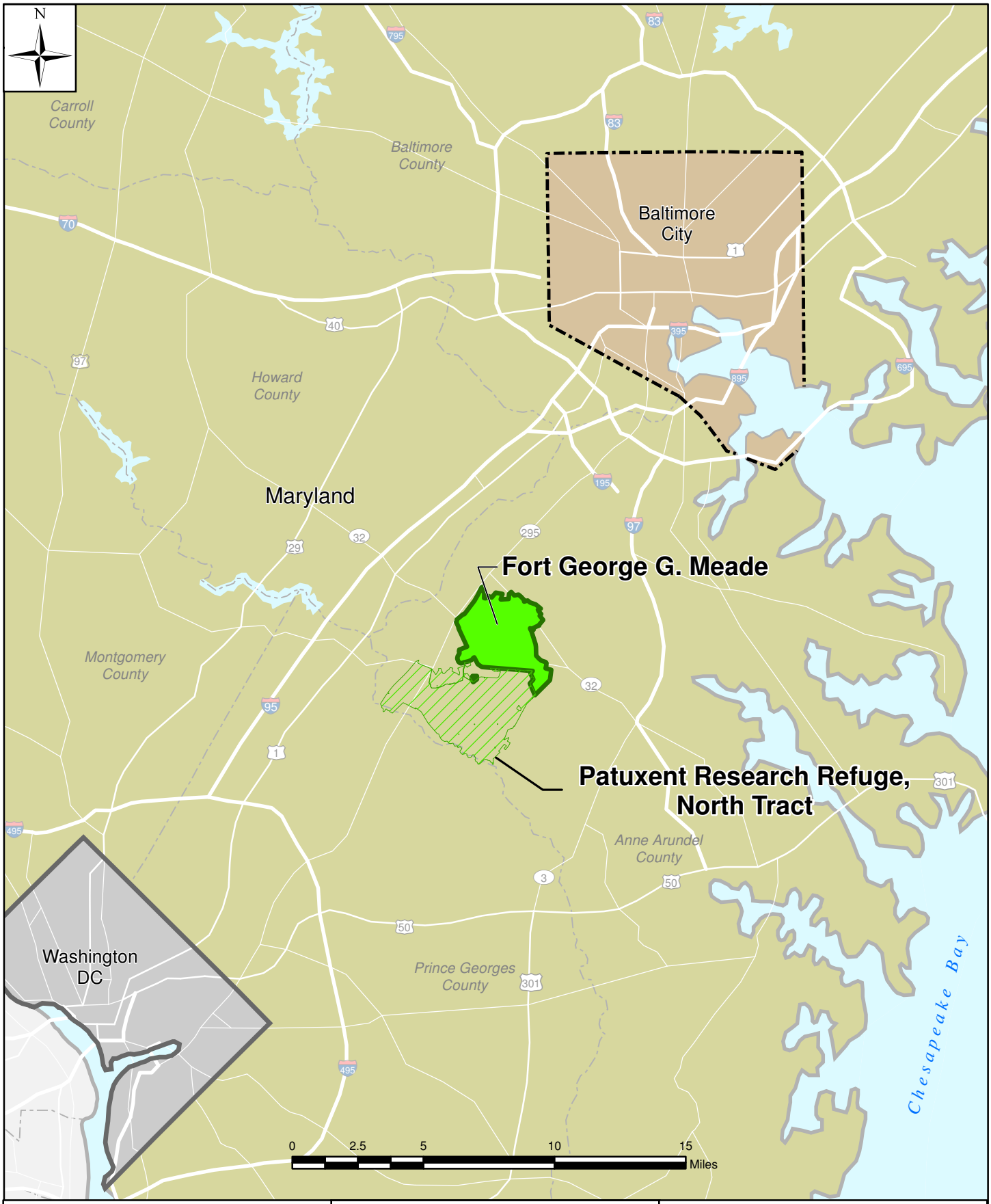
AECOM, 2016b. *Revised Internal Draft, Uniform Federal Policy (UFP) Quality Assurance Project Plan (QAPP), Fort Meade CERCLA, Fort George G. Meade, Maryland,* February 24, 2016.

ARCADIS, 2013. *Final Supplemental RI-Subsurface Lead Delineation and Revised Human Health Risk Assessment, FGGM 74, Architect of the Capitol, Fort George G. Meade, Maryland*. April 2013.

ARCADIS, 2014a. *Final Record of Decision FGGM-74, Architect of the Capitol, Fort George G Meade, Maryland*. September 2014.

ARCADIS, 2014b. *Final Focused Feasibility Study, Revision 1, FGGM-74, Architect of the Capitol, Fort George G Meade, Maryland*. July 2014.

ARCADIS, 2014c. *Final Proposed Plan, FGGM-74, Architect of the Capitol, Fort George G Meade, Maryland*. July 2014.



CLIENT: USACE, Baltimore District

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

FILE: G:\Projects\Fort_Meade\CERCLA\MXD\
_Figure1-1_Location_NewRoads_20160321 .mxd
DATE: 11/9/2015 rev 3/21/2016
GIS: AER
CHK: JK

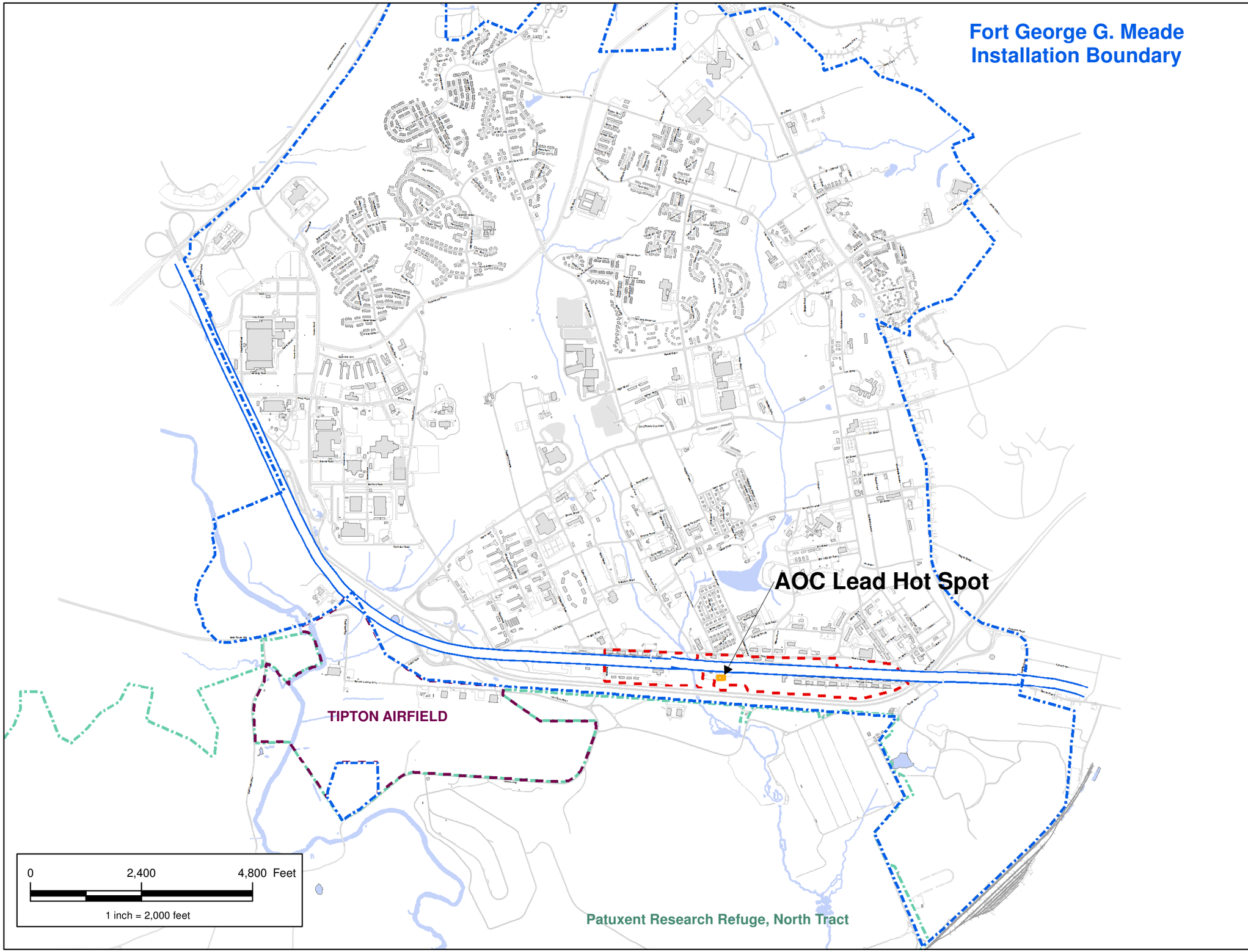
Figure 1-1

Regional Location Map
Fort George G. Meade

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Fort George G. Meade Installation Boundary



N

Legend

- Architect of the Capitol (AOC) Soil Lead Hot Spot
- Installation Boundary
- Architect of the Capitol Property
- Old Railroad Property
- Patuxent Research Refuge
- Airfield
- Road

CLIENT:	LOCATION:
USACE, Baltimore District	Fort George G. Meade, MD

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CERCLA_Architect_of_Capitol_Site .mxd
DATE: 11/2/2015 rev 3/21/2016
GIS: AER
CHK: JK

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 2-1

Location of AOC
Soil Lead Hot Spot

CLIENT: USACE, Baltimore District
REPORT: AOC Work Plan

NOTES:
Outline of Fort George G. Meade based on 2015 survey.
Imagery: ESRI ArcGIS Online and data partners, 2015.

FILE: G:\Projects\Fort_Meade\CERCLA\MXD\
FGGM74_ArchitectoftheCapitol_Lead_DirectPushBorings .mxd
DATE: 12/21/2015 rev 3/21/2016
GIS: AER
CHK: BE

Figure 2-2

Direct Push Soil Boring Locations at AOC Soil Lead Hot Spot Fort George G. Meade

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Legend

- Work Area
- Soil Boring Location - Phase I
- Soil Boring Location - Phase II
- Soil Boring Location - Phase I / Phase II
- DPT Soil and Groundwater Sampling Location (DPT/GW) (2004/2005) (approximate - exact location unknown)

N

0 10 Feet

CLIENT: USACE, Baltimore District
REPORT: AOC Work Plan

NOTES:
Outline of Work Area is approximate.
Data from Arcadis, Figure 2-8, December 2012.

FILE: G:\Projects\Fort_Meade\CERCLA\MXD\FGGM74_ArchitectoftheCapitol_DirectPushBoringIDs .mxd
DATE: 12/21/2015 rev 3/21/2016
GIS: AER
CHK: BE

Figure 2-3

Direct Push Boring IDs at AOC Soil Lead Hot Spot 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, 2013.			
REVISED	5/31/2016	GIS BY	AER	12/1/2015
SCALE	1:240	CHK BY	JK	5/31/2016

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N

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 2-4

AOC Soil Lead Hot Spots
Fort George G. Meade

CLIENT: USACE, Baltimore District
REPORT: AOC Work Plan

NOTES:
Outline of Fort George G. Meade based on 2015 survey.
Imagery: ESRI ArcGIS Online and data partners, 2015.

FILE: G:\Projects\Fort_Meade\CERCLA\MXD\FGGM74_ArchitectoftheCapitol_WorkArea .mxd
DATE: 12/21/2015 rev 9/6/2016
GIS: AER
CHK: BE

Figure 3-1

Exclusion Zone, Silt Fencing and Soil Staging Areas at AOC Soil Lead Hot Spot Fort George G. Meade

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

CLIENT	USACE, Baltimore District			
NOTES	Outlines of sites are arbitrary. Aerial Source: NAIP, February 2014.			
REVISED	9/6/2016	GIS BY	AER	8/22/2016
SCALE	1:240	CHK BY	JK	9/6/2016

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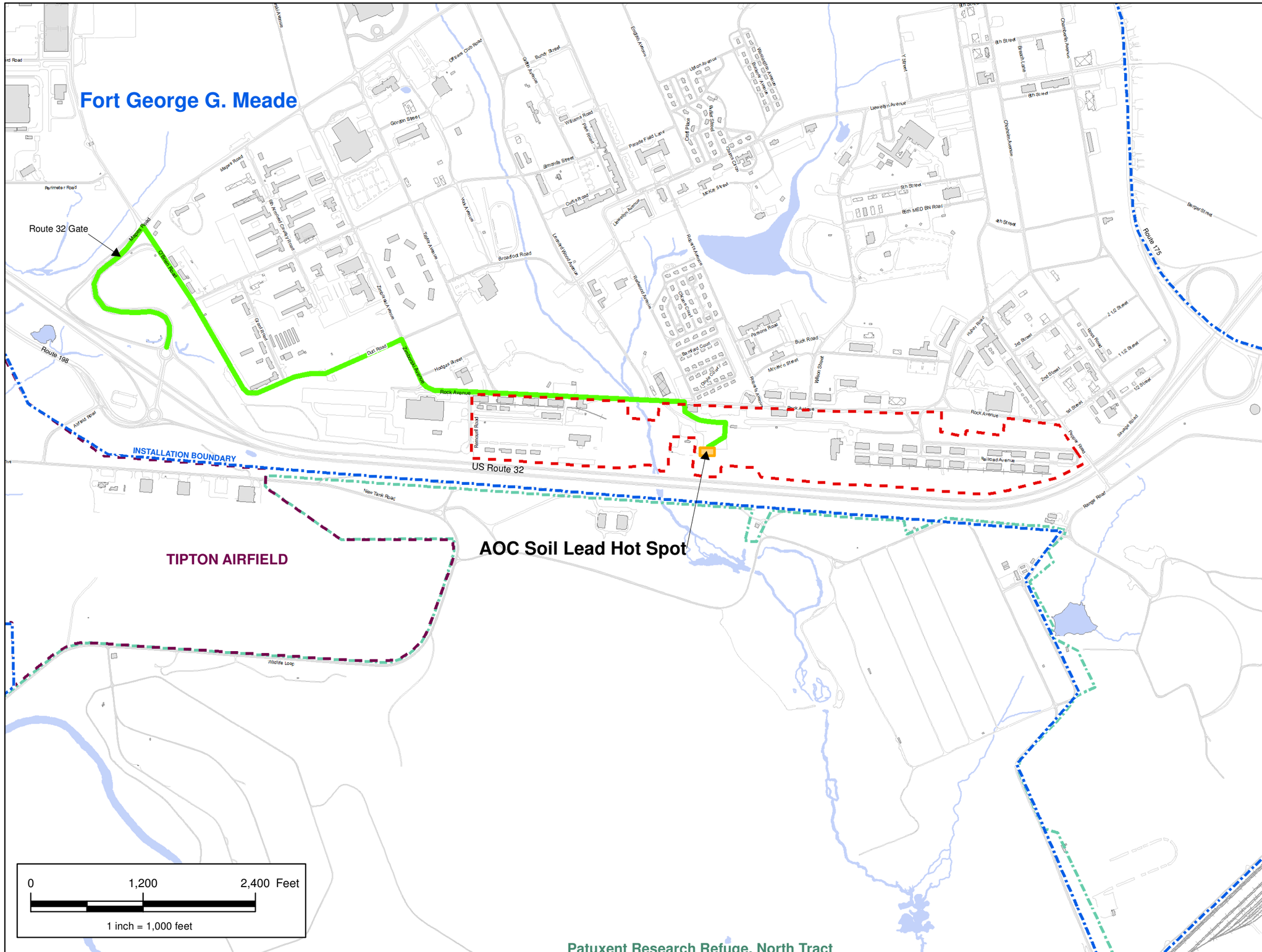
N

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 3-2

Direct Push Pre-Characterization Sample Locations
AOC Soil Lead Hot Spots
Fort George G. Meade



Legend

- Soil Transportation Route between AOC Soil Lead Hot Spot and Off Post
- Architect of the Capitol (AOC) Soil Lead Hot Spot
- Installation Boundary
- Architect of the Capitol Property
- Patuxent Research Refuge
- Airfield
- Road

CLIENT:	LOCATION:
USACE, Baltimore District	Fort George G. Meade, MD

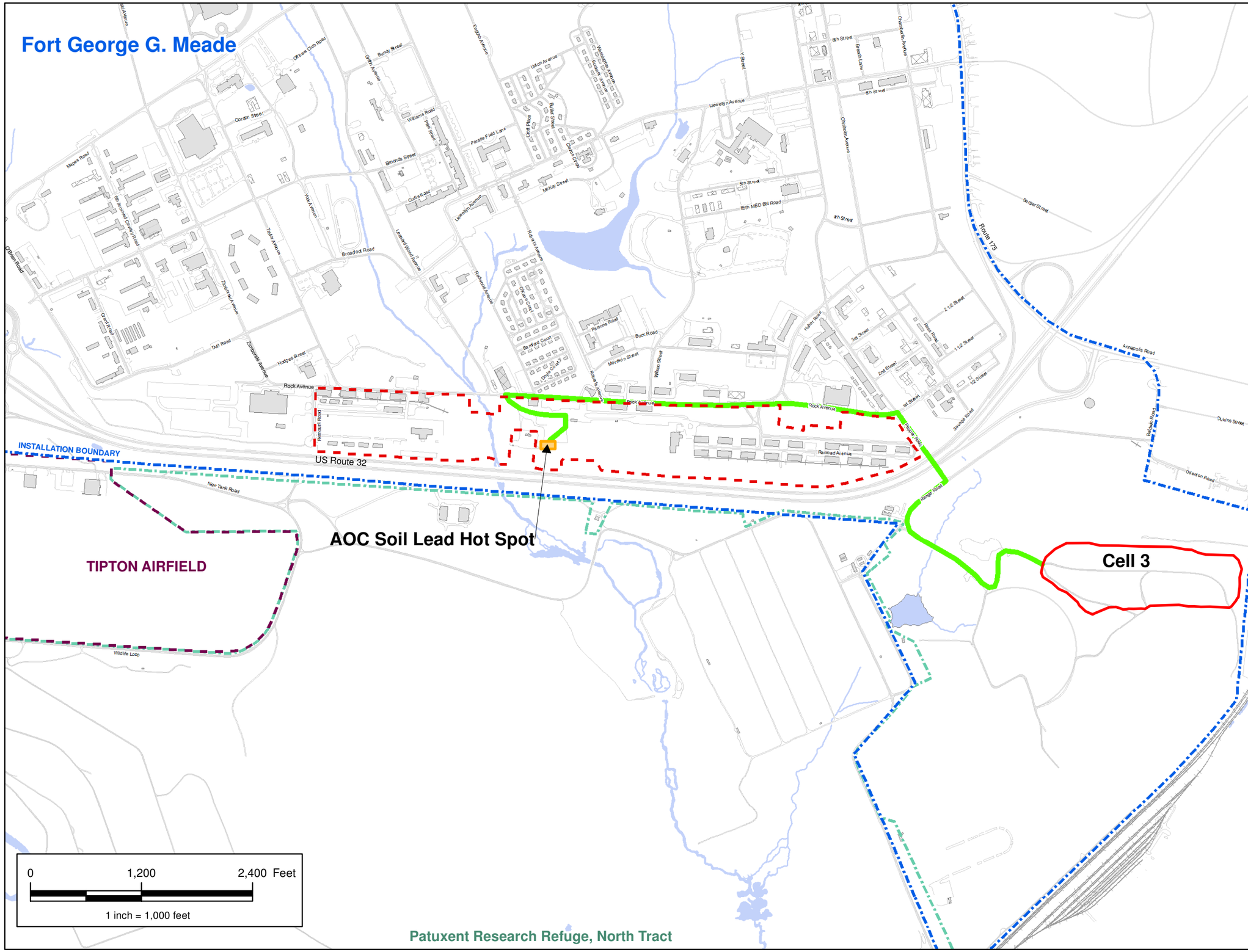
G:\Projects\Fort_Meade\PA_SI_New\Projects\CERCLA\
CERCLA_Architect_of_Capitol_TruckRoute2 .mxd
DATE: 11/2/2015 rev 3/21/2016
GIS: AER
CHK: JK

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 3-3

Soil Transportation Route between AOC Soil Lead Hot Spot and Off Post



N

Legend

- Architect of the Capitol (AOC) Soil Lead Hot Spot
- Soil Transportation Route from the FGGM Soil Stockpile to the AOC Soil Lead Hot Spot
- Cell 3
- Installation Boundary
- Architect of the Capitol Property
- Patuxent Research Refuge
- Airfield
- Road

CLIENT:	LOCATION:
USACE, Baltimore District	Fort George G. Meade, MD

G:\Projects\Fort_Meade\PA_SI_New\Projects\CERCLA\
CERCLA_Architect_of_Capitol_RouteToCell3 .mxd
DATE: 11/2/2015 rev 3/21/2016
GIS: AER
CHK: JK

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 3-4

Soil Transportation Route from the FGGM Soil Stockpile to AOC Soil Lead Hot Spot

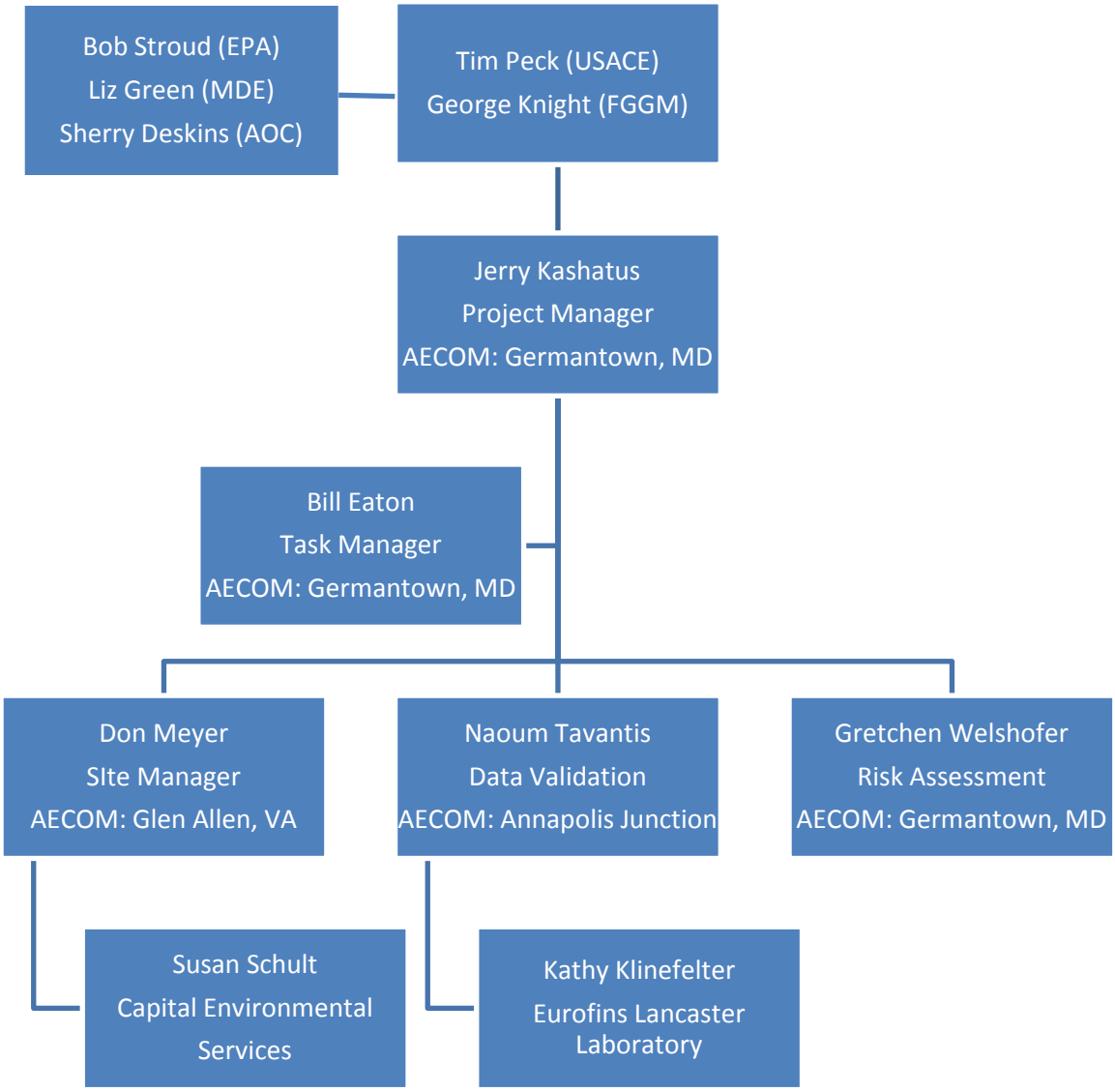


Figure 4-1
Organization Chart

Figure 5-1: Project Schedule

Task Name	Duration (Days)	Start	Finish
CLIN003 - RIP/RC for soil at FGGM-74 AOC	551	12/31/15	07/04/17
Remedial Action Work Plan (RAWP)	297	12/31/15	10/23/16
Submit Internal Draft RAWP and RD Report	0	12/31/15	12/31/15
Army Review	61	12/31/15	03/01/16
Prepare RTCs	7	03/04/16	03/11/16
Army Review/Approve RTCs	5	03/11/16	03/16/16
Submit Draft RAWP and RD Report	0	03/22/16	03/22/16
Regulatory Agency and AOC Review	75	03/23/16	06/06/16
Prepare RTCs	16	06/06/16	06/22/16
Regulatory Agency and AOC Review/Approve RTCs	14	06/22/16	07/06/16
Submit Draft Final RAWP and RD Report	0	07/16/16	07/16/16
Regulatory Agency and AOC Review	30	07/17/16	08/16/16
Prepare RTCs	5	08/16/16	08/21/16
Regulatory Agency and AOC Review/Approve RTCs	5	08/21/16	08/26/16
Submit Revised Draft Final RAWP and RD Report	0	09/08/16	09/08/16
Regulatory Agency and AOC Review	28	09/09/16	10/07/16
Prepare RTCs	5	10/07/16	10/12/16
Regulatory Agency and AOC Review/Approve RTCs	5	10/12/16	10/17/16
Submit Final RAWP and RD Report	0	10/17/16	10/17/16
Approval/Concurrence of Final RAWP and RD Report	5	10/18/16	10/23/16
Erosion and Sediment Control (E&SC) Plan	0	07/15/16	07/15/16
AOC Review	5	07/15/16	07/20/16
Prepare RTCs	2	07/20/16	07/22/16
MDE Review	10	08/22/16	09/01/16
Prepare RTCs	12	09/01/16	09/13/16
MDE Approval	30	09/13/16	10/13/16
Remedial Action Field Work	87	11/17/16	02/12/17
Mobilization	14	11/17/16	12/01/16
Excavation / Sampling	5	12/02/16	12/07/16
Laboratory Analysis / Data Validation	13	12/08/16	12/21/16
FGGM, USACE, and AOC review of chemical data	1	12/21/16	12/22/16
Soil Loading / Backfilling / Site Reclamation	4	12/23/16	12/27/16
Field Work Completion Inspection / Memo	14	12/28/16	01/11/17
Army Acceptance of Fieldwork Completion Memo	31	01/12/17	02/12/17
RACR	163	01/22/17	07/04/17
Submit Internal Draft RACR	0	01/22/17	01/22/17
Army Review	30	01/23/17	02/22/17
Prepare RTCs	5	02/22/17	02/27/17
Army Review/Approve RTCs	5	02/27/17	03/04/17
Submit Draft RACR	0	03/04/17	03/04/17
Regulatory Agency and AOC Review	60	03/05/17	05/04/17
Prepare RTCs	5	05/04/17	05/09/17
Regulatory Agency and AOC Review/Approve RTCs	5	05/09/17	05/14/17

Figure 5-1: Project Schedule

Task Name	Duration (Days)	Start	Finish
Submit Draft Final RACR	0	05/19/17	05/19/17
Regulatory Agency and AOC Review	30	05/20/17	06/19/17
Prepare RTCs	5	06/19/17	06/24/17
Regulatory Agency and AOC Review/Approve RTCs	5	06/24/17	06/29/17
Submit Final RACR	0	06/29/17	06/29/17
Approval/Concurrence of Final RAWP and RD Report	5	06/29/17	07/04/17

APPENDIX A

Direct Push Boring Location Coordinates

APPENDIX B

Plotted Soil Lead Concentration Results

LEGEND:

- SOIL BORING LOCATION - ROUND 1
- SOIL BORING LOCATION - ROUND 2
- DETECTION ABOVE CRITERIA
- ARCHITECT OF THE CAPITOL (AOC) BOUNDARY (APPROXIMATE)
- DPT SOIL SAMPLING LOCATION (2000/2001) (APPROXIMATE)
- DPT SOIL & GROUNDWATER SAMPLING LOCATION (DPT/GW) (2004/2005) (APPROXIMATE - EXACT LOCATION UNKNOWN)

0 10 20 Feet
GRAPHIC SCALE

NOTES:

1. THE COMPARISON CRITERIA USED DURING THE LEAD INVESTIGATION WAS 400 MG/KG (RESIDENTIAL VALUE)
2. LABORATORY ANALYSIS FOR LEAD CONDUCTED USING EPA METHOD 6010C
3. LEAD RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (MG/KG)
4. J = ESTIMATED CONCENTRATION
5. U = NON-DETECT
6. AOCGP01 - SAMPLE LOCATION IDENTIFICATION
7. 1.7 J - DETECTION CONCENTRATION

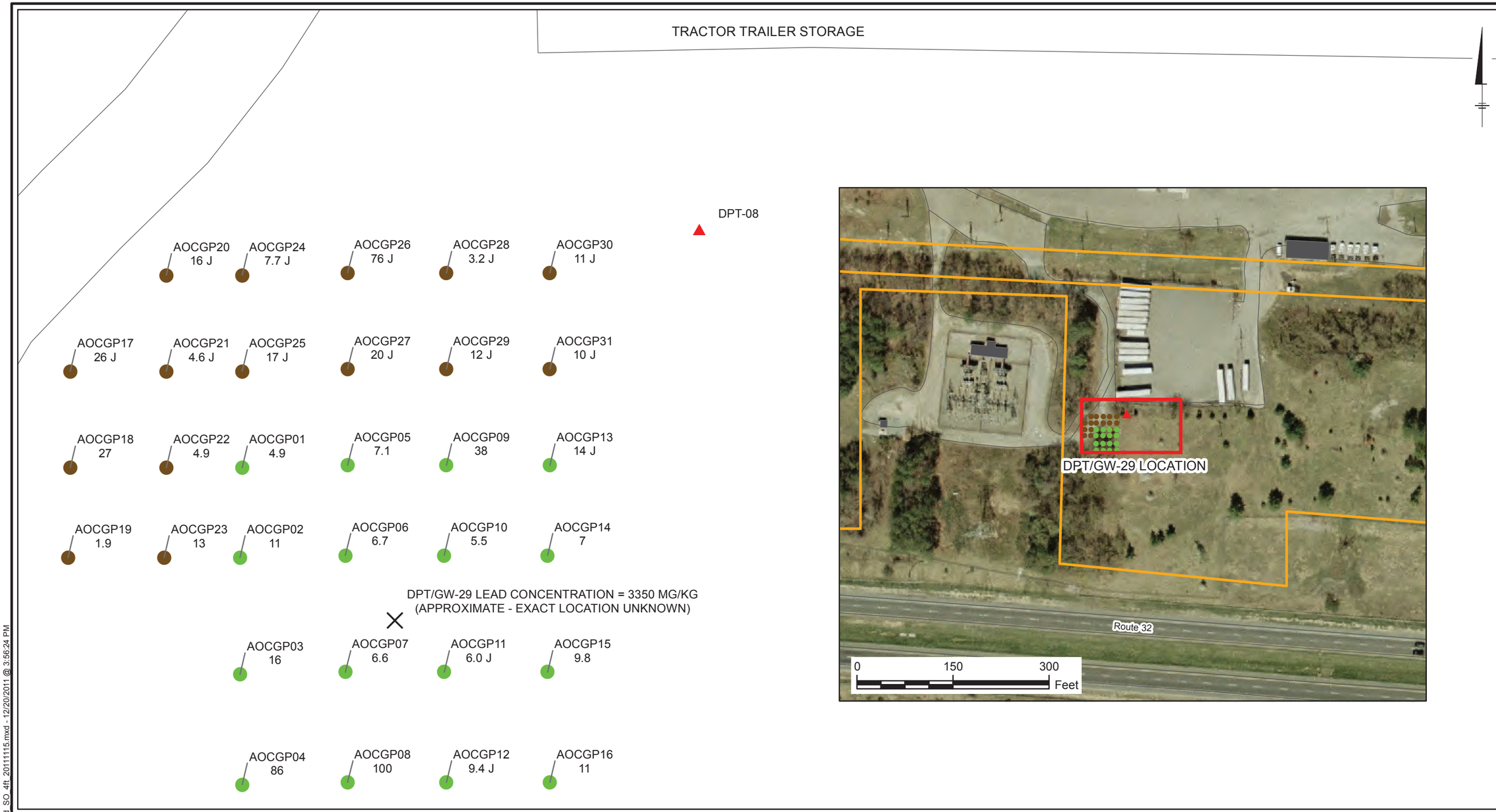
FGGM74 - ARCHITECT OF THE CAPITOL
FORT MEADE, MARYLAND

LEAD RESULTS IN SOIL
1 FT BELOW GROUND SURFACE

ARCADIS

FIGURE
1

CITY: MPLS DIV/GROUP: 40 DB: MG LD: BE PM: TL
FT. MEADE (GP09MEAD.C000)
G:\GIS\Projects\Fort_Meade\ArcMap\AOC\Lead_SO_1ft_20111115.mxd - 12/20/2011 @ 3:51:50 PM



LEGEND:

- SOIL BORING LOCATION - ROUND 1
- SOIL BORING LOCATION - ROUND 2
- DETECTION ABOVE CRITERIA
- ARCHITECT OF THE CAPITOL (AOC) BOUNDARY (APPROXIMATE)
- DPT SOIL SAMPLING LOCATION (2000/2001) (APPROXIMATE)
- DPT SOIL & GROUNDWATER SAMPLING LOCATION (DPT/GW) (2004/2005) (APPROXIMATE - EXACT LOCATION UNKNOWN)

0 10 20 Feet
GRAPHIC SCALE

NOTES:

1. THE COMPARISON CRITERIA USED DURING THE LEAD INVESTIGATION WAS 400 MG/KG (RESIDENTIAL VALUE)
2. LABORATORY ANALYSIS FOR LEAD CONDUCTED USING EPA METHOD 6010C
3. LEAD RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (MG/KG)
4. J = ESTIMATED CONCENTRATION
5. U = NON-DETECT
6. AOCGP01 - SAMPLE LOCATION IDENTIFICATION
7. 1.7 J - DETECTION CONCENTRATION

FGGM74 - ARCHITECT OF THE CAPITOL
FORT MEADE, MARYLAND

LEAD RESULTS IN SOIL
4 FT BELOW GROUND SURFACE

ARCADIS

FIGURE
2

CITY: MPLS DIV/GROUP: 40 DB: MG LD: BE PM: TL
FT. MEADE (GP09MEAD.C000)
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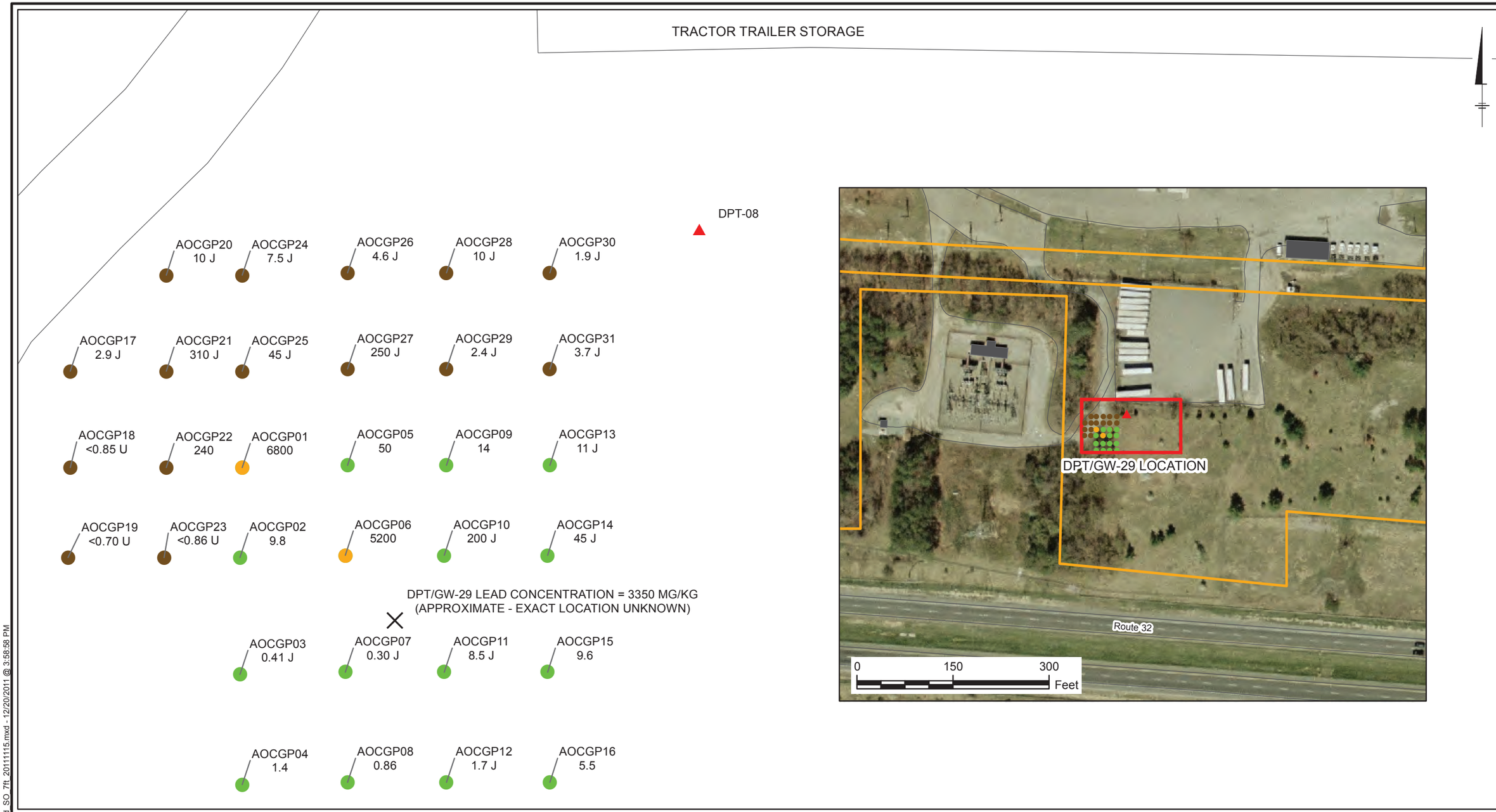

LEGEND:

- SOIL BORING LOCATION - ROUND 1
- SOIL BORING LOCATION - ROUND 2
- DETECTION ABOVE CRITERIA
- ARCHITECT OF THE CAPITOL (AOC) BOUNDARY (APPROXIMATE)
- DPT SOIL SAMPLING LOCATION (2000/2001) (APPROXIMATE)
- DPT SOIL & GROUNDWATER SAMPLING LOCATION (DPT/GW) (2004/2005) (APPROXIMATE - EXACT LOCATION UNKNOWN)

0 10 20 Feet
GRAPHIC SCALE

NOTES:

1. THE COMPARISON CRITERIA USED DURING THE LEAD INVESTIGATION WAS 400 MG/KG (RESIDENTIAL VALUE)
2. LABORATORY ANALYSIS FOR LEAD CONDUCTED USING EPA METHOD 6010C
3. LEAD RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (MG/KG)
4. J = ESTIMATED CONCENTRATION
5. U = NON-DETECT
6. AOCGP01 - SAMPLE LOCATION IDENTIFICATION
7. 1.7 J - DETECTION CONCENTRATION

FGGM74 - ARCHITECT OF THE CAPITOL
FORT MEADE, MARYLAND

LEAD RESULTS IN SOIL
7 FT BELOW GROUND SURFACE

ARCADIS

FIGURE
3

CITY: MPLS DIV/GROUP: 40 DB: MG LD: BE PM: TL
FT. MEADE (GP09MEAD.C000)
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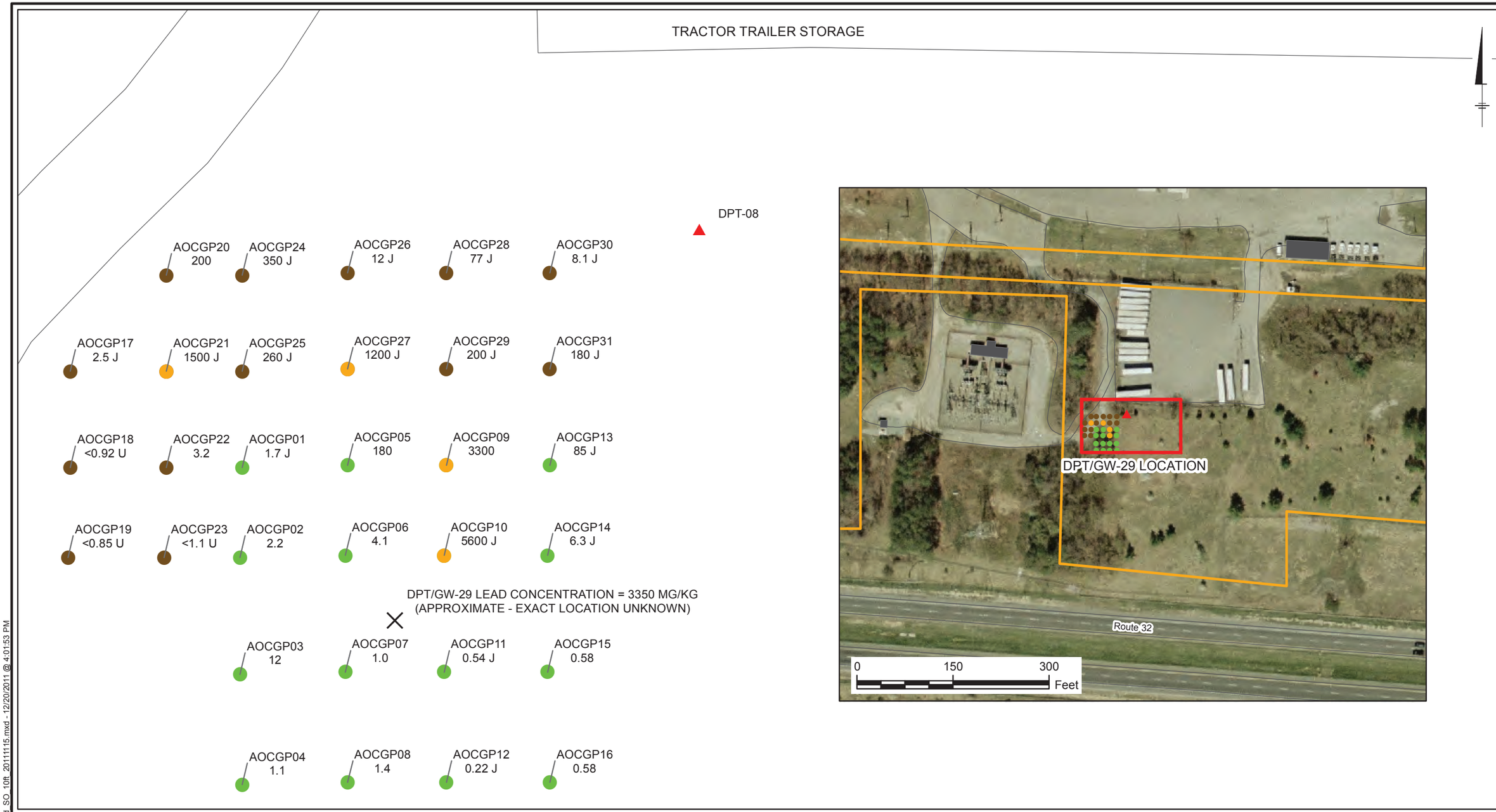

LEGEND:

- SOIL BORING LOCATION - ROUND 1
- SOIL BORING LOCATION - ROUND 2
- DETECTION ABOVE CRITERIA
- ARCHITECT OF THE CAPITOL (AOC) BOUNDARY (APPROXIMATE)
- DPT SOIL SAMPLING LOCATION (2000/2001) (APPROXIMATE)
- DPT SOIL & GROUNDWATER SAMPLING LOCATION (DPT/GW) (2004/2005) (APPROXIMATE - EXACT LOCATION UNKNOWN)

0 10 20 Feet
GRAPHIC SCALE

NOTES:

1. THE COMPARISON CRITERIA USED DURING THE LEAD INVESTIGATION WAS 400 MG/KG (RESIDENTIAL VALUE)
2. LABORATORY ANALYSIS FOR LEAD CONDUCTED USING EPA METHOD 6010C
3. LEAD RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (MG/KG)
4. J = ESTIMATED CONCENTRATION
5. U = NON-DETECT
6. AOCGP01 - SAMPLE LOCATION IDENTIFICATION
7. 1.7 J - DETECTION CONCENTRATION

FGGM74 - ARCHITECT OF THE CAPITOL
FORT MEADE, MARYLAND

LEAD RESULTS IN SOIL
10 FT BELOW GROUND SURFACE

ARCADIS

FIGURE
4

CITY: MPLS DIV/GROUP: 40 DB: MG LD: BE PM: TL
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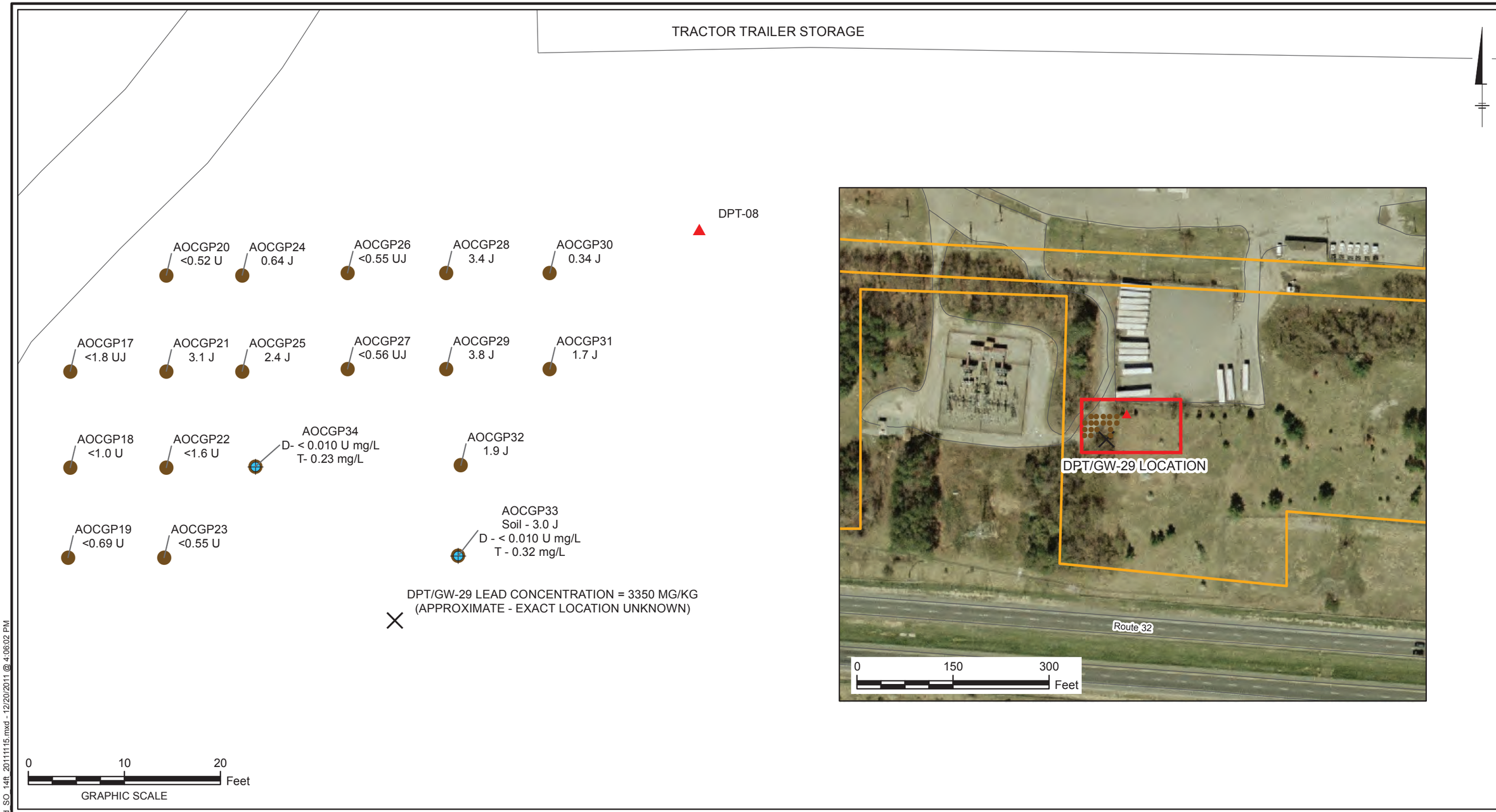

LEGEND:

- SOIL BORING LOCATION - ROUND 1
- SOIL BORING LOCATION - ROUND 2
- DETECTION ABOVE CRITERIA
- ARCHITECT OF THE CAPITOL (AOC) BOUNDARY (APPROXIMATE)
- GROUNDWATER SAMPLE COLLECTED AT 11-15 FT BGS
- DPT SOIL SAMPLING LOCATION (2000/2001) (APPROXIMATE) (DPT/GW) (2004/2005) (APPROXIMATE - EXACT LOCATION UNKNOWN)
- DPT SOIL & GROUNDWATER SAMPLING LOCATION

NOTES:

1. THE COMPARISON CRITERIA USED DURING THE LEAD INVESTIGATION WAS 400 MG/KG (RESIDENTIAL VALUE)
2. NO SOIL SAMPLES WERE COLLECTED AT 14 FT BGS DURING ROUND 1
3. GROUNDWATER SAMPLES WERE ANALYZED FOR TOTAL AND DISSOLVED LEAD VIA EPA METHOD 6010C
4. LABORATORY ANALYSIS FOR LEAD CONDUCTED USING EPA METHOD 6010C
5. LEAD RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (MG/KG)
6. J = ESTIMATED CONCENTRATION
7. U = NON-DETECT
8. AOCGP01 - SAMPLE LOCATION IDENTIFICATION
9. 1.7 J - DETECTION CONCENTRATION

FGGM74 - ARCHITECT OF THE CAPITOL
FORT MEADE, MARYLAND

LEAD RESULTS IN SOIL AND GROUNDWATER 14 FT BELOW GROUND SURFACE

ARCADIS

FIGURE
5

CITY: MPLS DIV/GROUP: 40 DB: MG LD: BE PM: TL
FT. MEADE (GP09MEAD.C000)
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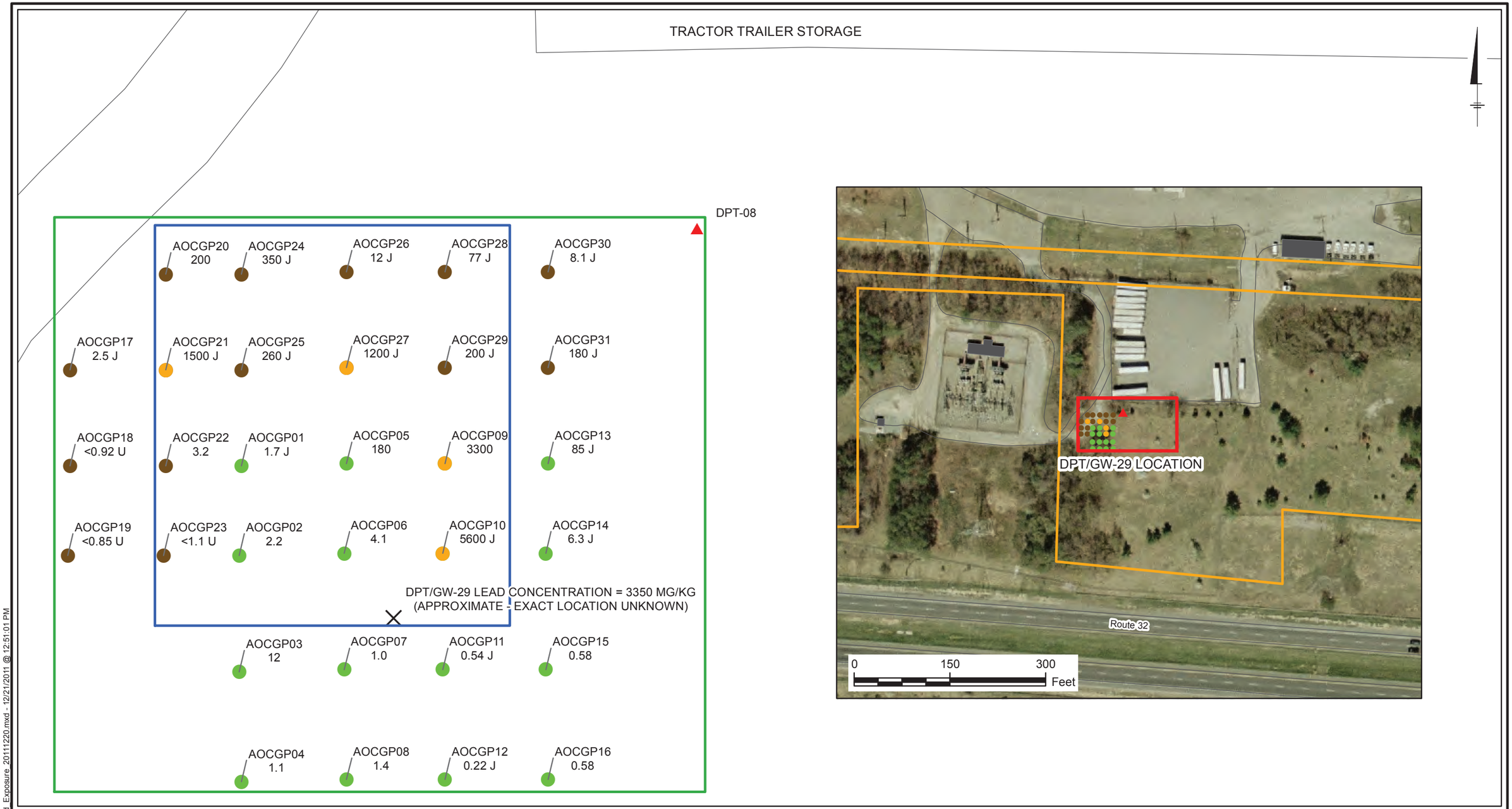

LEGEND:

- SOIL BORING LOCATION - ROUND 1
- SOIL BORING LOCATION - ROUND 2
- DETECTION ABOVE CRITERIA
- DPT SOIL SAMPLING LOCATION (2000/2001) (APPROXIMATE)
- DPT SOIL & GROUNDWATER SAMPLING LOCATION (DPT/GW) (2004/2005) (APPROXIMATE - EXACT LOCATION UNKNOWN)
- ARCHITECT OF THE CAPITOL (AOC) BOUNDARY (APPROXIMATE)
- 60 X 68 FT EXPOSURE AREA
- 37 X 42 FT EXPOSURE AREA

0 10 20 Feet
GRAPHIC SCALE

NOTES:

1. THE COMPARISON CRITERIA USED DURING THE LEAD INVESTIGATION WAS 400 MG/KG (RESIDENTIAL VALUE)
2. LABORATORY ANALYSIS FOR LEAD CONDUCTED USING EPA METHOD 6010C
3. LEAD RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (MG/KG)
4. J = ESTIMATED CONCENTRATION
5. U = NON-DETECT
6. AOCGP01 - SAMPLE LOCATION IDENTIFICATION
7. 1.7 J - DETECTION CONCENTRATION

FGGM74 - ARCHITECT OF THE CAPITOL
FORT MEADE, MARYLAND

LEAD EXPOSURE AREAS

ARCADIS

FIGURE
6

CITY: MPLS DIV/GROUP: 40 DB: MG LD: BE PM: TL
FT. MEADE (GP09MEAD.C000)
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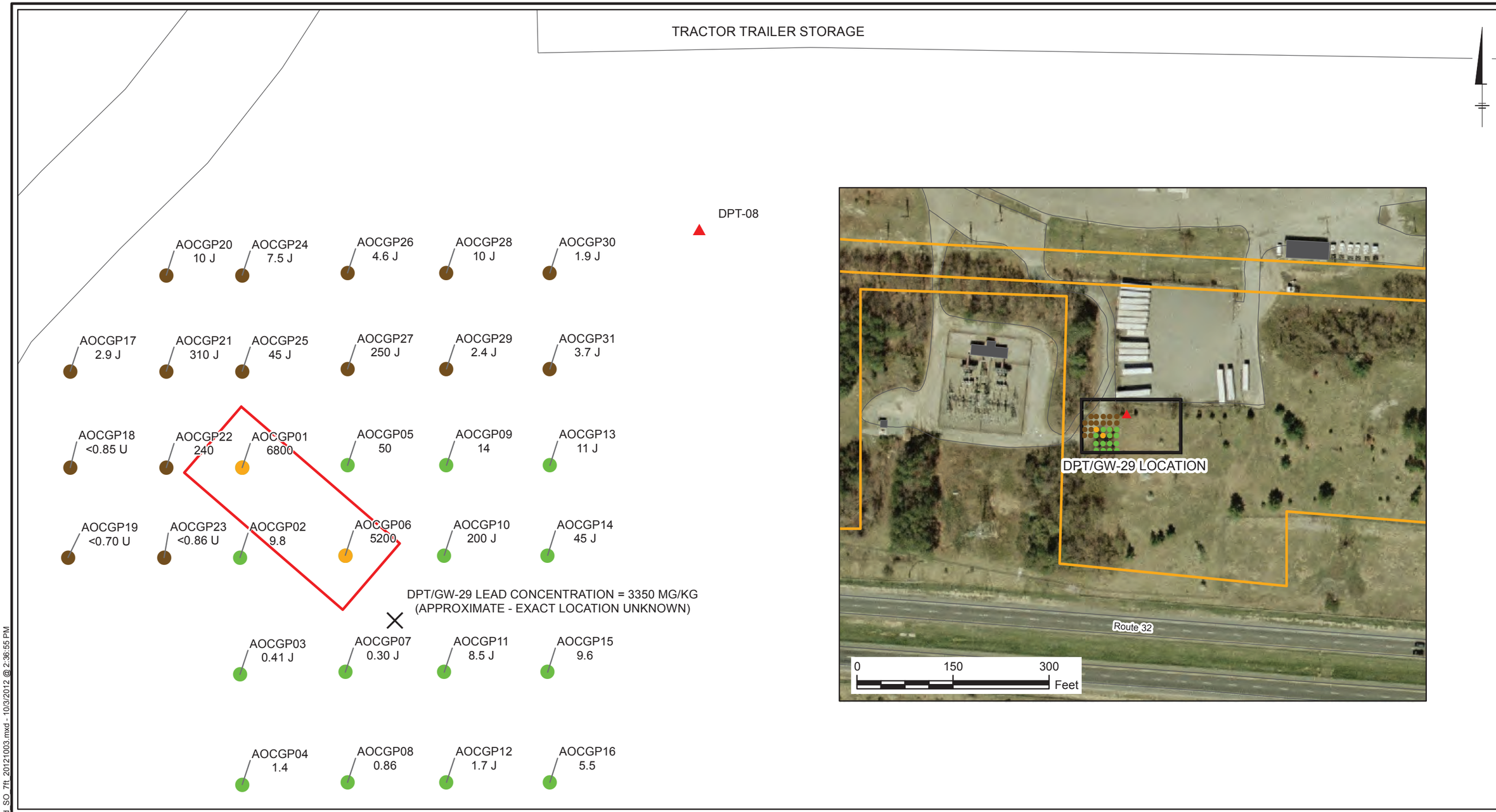


LEGEND:

- SOIL BORING LOCATION - ROUND 1
- SOIL BORING LOCATION - ROUND 2
- DETECTION ABOVE CRITERIA
- ARCHITECT OF THE CAPITOL (AOC) BOUNDARY (APPROXIMATE)
- INDICATES HOT SPOT FOR LEAD REPRESENTING THE GREATEST POTENTIAL RISK TO A POTENTIALLY EXPOSED POPULATION
- DPT SOIL SAMPLING LOCATION (2000/2001) (APPROXIMATE)
- DPT SOIL & GROUNDWATER SAMPLING LOCATION (DPT/GW) (2004/2005) (APPROXIMATE - EXACT LOCATION UNKNOWN)

0 10 20 Feet
GRAPHIC SCALE

NOTES:

1. THE COMPARISON CRITERIA USED DURING THE LEAD INVESTIGATION WAS 400 MG/KG (RESIDENTIAL VALUE)
2. LABORATORY ANALYSIS FOR LEAD CONDUCTED USING EPA METHOD 6010C
3. LEAD RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (MG/KG)
4. J = ESTIMATED CONCENTRATION
5. U = NON-DETECT
6. AOCGP01 - SAMPLE LOCATION IDENTIFICATION
7. 1.7 J - DETECTION CONCENTRATION

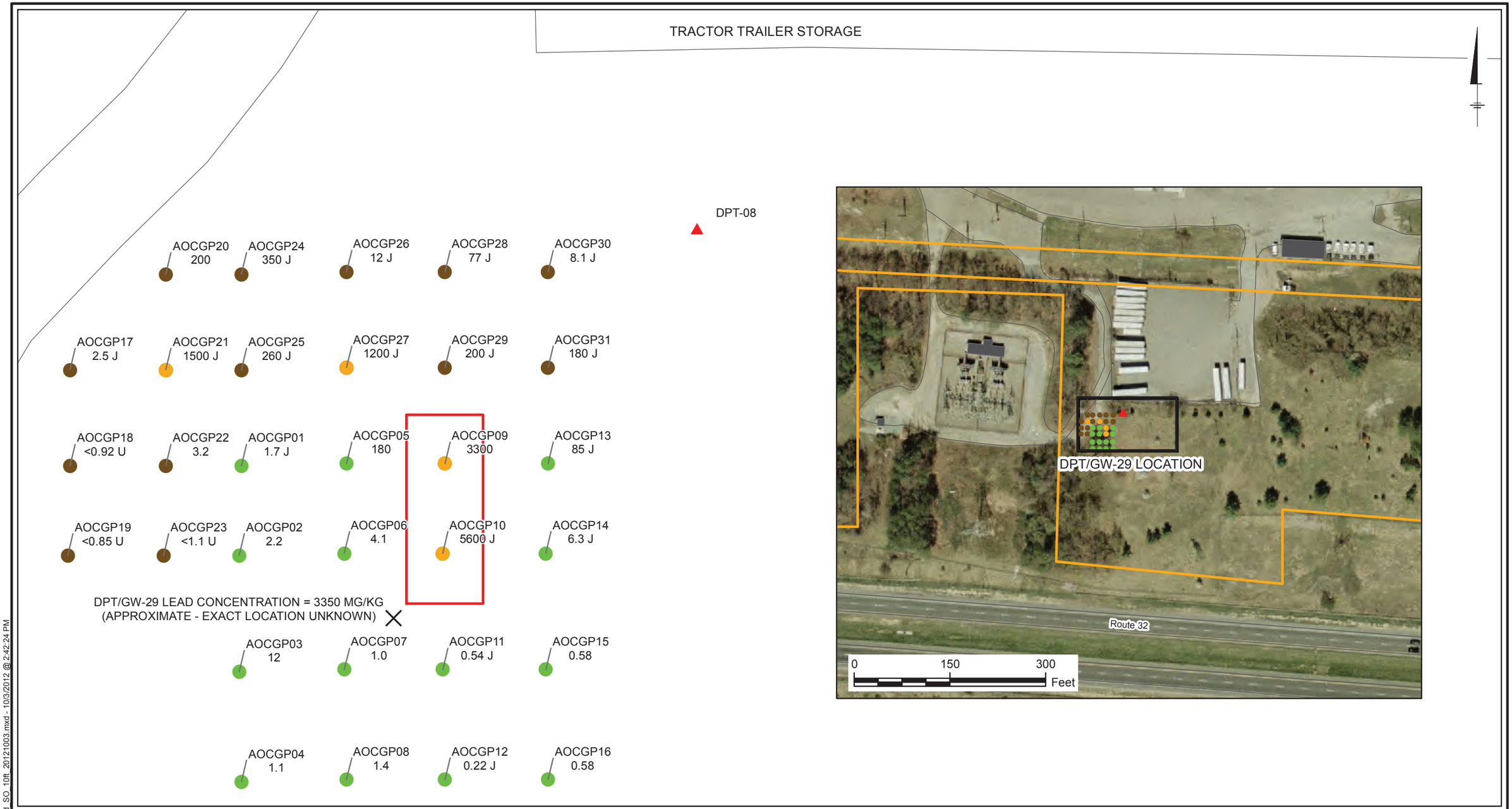
FGGM74 - ARCHITECT OF THE CAPITOL
FORT MEADE, MARYLAND

LEAD HOTSPOT REMOVAL AREA AT 7 FEET BELOW GROUND SURFACE

ARCADIS

FIGURE
7

CITY: MPLS DIV/GROUP: 40 DB: MG LD: BE PM: TL
FT. MEADE (GP09MEAD.C000)
G:\GIS\Projects\Fort_Meade\ArcMap\AOC\Lead_SO_7ft_20121003.mxd - 10/3/2012 @ 2:36:55 PM



LEGEND:

- SOIL BORING LOCATION - ROUND 1
- SOIL BORING LOCATION - ROUND 2
- DETECTION ABOVE CRITERIA
- ARCHITECT OF THE CAPITOL (AOC) BOUNDARY (APPROXIMATE)
- INDICATES HOT SPOT FOR LEAD REPRESENTING THE GREATEST POTENTIAL RISK TO A POTENTIALLY EXPOSED POPULATION
- DPT SOIL SAMPLING LOCATION (2000/2001) (APPROXIMATE)
- DPT SOIL & GROUNDWATER SAMPLING LOCATION (DPT/GW) (2004/2005) (APPROXIMATE - EXACT LOCATION UNKNOWN)

0 10 20 Feet
GRAPHIC SCALE

NOTES:

1. THE COMPARISON CRITERIA USED DURING THE LEAD INVESTIGATION WAS 400 MG/KG (RESIDENTIAL VALUE)
2. LABORATORY ANALYSIS FOR LEAD CONDUCTED USING EPA METHOD 6010C
3. LEAD RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (MG/KG)
4. J = ESTIMATED CONCENTRATION
5. U = NON-DETECT
6. AOCGP01 - SAMPLE LOCATION IDENTIFICATION
7. 1.7 J - DETECTION CONCENTRATION

FGGM74 - ARCHITECT OF THE CAPITOL
FORT MEADE, MARYLAND

LEAD HOTSPOT REMOVAL AREA AT 10 FEET BELOW GROUND SURFACE

ARCADIS

FIGURE
8

CITY: MPLS DIV/GROUP: 40 DB: MG LD: BE PM: TL
FT. MEADE (GP09MEAD.C000)
G:\GIS\Projects\Fort_Meade\ArcMap\AOC\Lead_SO_10ft_20121003.mxd - 10/3/2012 @ 2:42:24 PM

Appendix C

Excavation Permit Application Forms

Appendix D

Draft Right of Entry Agreement

Appendix E

Maryland Department of the Environment Facts About… VCP-Clean Imported Fill Material

Appendix F

State of Maryland Department of the Environment Cleanup Standards for Soil and Groundwater

Appendix G

Response to Comments and Acceptance Letter on the Draft Remedial Design/Work Plan For The Architect Of The Capitol (AOC) Soil Lead Hot Spot, Fort George G. Meade, MD

Response to Comments on the Draft Remedial Design I Work> Plan for the Architect of the Capitol (AOC) Soll Lead Hot Spot Fort George G. Meade, MD						
Commen t No.	Section/ Title	Page Number	Comment	Response	AOC Response Comment	Response to Backcheck
Comments submitted by: Architect of the Capitol (AOC) dated 12 May 2016						
1	General	-N-A -	There Is a typo on the document cover. The title should read Architect of the Capitol (not Capital).	The cover has been corrected.	No further comment	
2	General	NA	Overall, the remedial design plan describes reasonable steps and precautions to adequately address the AOC lead hot spots In accordance with the Record of Decision (ROD). The plan Includes provisions for AOC pre-authorization, mobilization notification, and right-of-entry. Safety and material handling provisions are also highlighted (e.g., pre. checking for underground utilities, demarcating the work zone, vehicle safety, material transport).The approaches for pinpointing the hot spots and confirmation sampling are also reasonable, and seems to offer general assurances that calculated exposure point concentrations (as called for as part of the ROD) will be representative. However, a few clarifications would be helpful. See page-/section-specific comments below.	Comments are addressed below.	See page-/section-specifIc comments below	
3	Executive 5ummafy	III	The executive summary reads: "The ROD indicated that after excavation and disposal of the lead contaminated soil, the AOC Parcel will be Unrestricted Use/Unrestricted Exposure." Please clarify that this applies to AOC parcel soil only, not groundwater. See also Comment 10	The sentence was revised to state, the ROD indicated that after excavation and disposal of the lead contaminated soil, FGGM-74 soil will be suitable for Unrestricted Use/Unrestricted Exposure.	No further comment	
4	Executive Summary	Ii I	The executive summary notes that "additional soil from the FGGM Soil Stockpile will be used as necessary prior to placing clean topsoil in the excavation." Please describe what testing has been done on the FGGM Soil Stockpile to ensure it is clean. See also Comment 21.	The paragraph is updated to include the following: "Prior to use as backfill, the FGGM Soil Stockpile soil will be sampled (one composite sample) and analyzed per MDE's "Facts About… VCP-Clean Imported Fill Material," including analysis for these parameters specified in Table 1 of the fact sheet: VOCs, SVOCs, TPH, PCBs, metals, and asbestos. The chemistry results will be evaluated per MDE's Cleanup Standards for Soil and Groundwater (June 2008) before using the soil as backfill."	No further comment (see Comment 21)	
5	Executive Summary	iii	The executive summary notes that "AECOM will maintain the seed mix and cover until 80% growth has been established." Please confirm that AOC will be notified of progress. See also Comment 24.	Language has been added that AOC will be notified when FGGM DPW is notified of progress.	No further comment	
6	Executive Summary	iii	The executive summary notes that "In accordance with Department of Defense (DOD)/EPA joint guidance on site closeouts, after completing the soil sediment remediation, a Remedial Action Completion Report will be prepared to demonstrate that the soil remedy has been completed and that the remedial action objectives have been mat." Please specify the recipients of the report and confirm that AOC will be Included.	A sentence has been added that list the recipients of the report, including AOC.	No further comment	

Response to Comments on the Draft Remedial Design I Work> Plan for the Architect of the Capitol (AOC) Soll Lead Hot Spot Fort George G. Meade, MD						
Comment No.	Section/ Title	Page Number	Comment	Response	AOC Response Comment	Response to Backcheck
7	2.2 -Background	2·2	This section indicates that the baseline human health risk assessment (HHRA) concluded that exposure to lead in subsurface soil at 7 and 10 ft bgs poses an "unacceptable risk to potential future receptors such as commercial workers or future residential workers regrading or conducting other activities that may cause the worker to excavate to 7 and 10 ft bgs. Please note that this should read: *...such as commercial workers and residents (not residential workers) under a hypothetical regrading or excavation scenario* ."	The suggested change has been made.	No further comment	
8	2.2 - Background	2·2	The text describes Hot Spot 1 as representing the depth interval 5.5 to 8.5 ft. where 5.5 is the depth to the midpoint between 7 ft and the overlying clean sample depth of 4 ft. and 8.5 is the depth to the midpoint between 7 ft and the underlying clean sample depth of 10 ft. Figure 2-4, which is cross referenced, incorrectly shows Hot Spot 1 at a depth of 5.5 to 6.5 ft. Please correct.	The figure has been corrected.	No further comment	
9	2.4 -Proposed Plan	2-3	This document pulls language directly from the Proposed Plan indicating that "Because Alternative SL-3 proposes removing contaminated soil above the industrial preliminary remedial goal (PRG), the site wide exposure point concentration (EPC) would be reduced to or below the residential PRG resulting in nonacceptable risk under future land use scenarios (including residential upon completion of the excavation." It should be noted that per ongoing conversation among the Army, EPA, and AOC that the <u>industrial</u> PRG does not come into play and this language may be a relic from an earlier draft. Please remove.	Section 2.4 of the document summarizes statements in the PP. The document correctly quotes the following text from the PP: "The PP noted: *Because Alternative SL-3 proposes removing contaminated soil above the <u>industrial</u> preliminary remedial goal (PRG), the site wide exposure point concentration (EPC) would be reduced to or below the residential PRG resulting in no unacceptable risk under future land use scenarios (including residential) upon completion of the excavation* ..." A note was added indicating the ROD changed this to <u>residential</u> PRG.	No further comment, other than to coorect the typo in the added text note changing PRGs to PRG (singular), and to add an asterick at the point where the Indusutal PRG is referenced to correspond with the asterisk preceeding the added text note.	The typo has been corrected and the asterisk has been added.
10	2.5 - Record of Decision	2-3	This section communicates the fact that FGGM-74 groundwater issues have been rolled into the OU-4 investigation, and then goes on to note that "after excavation and disposal of the lead contaminated soil, the AOC Parcel will be unrestricted use/unrestricted exposure (UU/UE). Please specify that the UU/UE applies to soil only. See also Comment 3.	The suggested change has been made, see response to comment 3.	No further comment	
11	3.1.7 - Right of Entry & Appendix D	3-3	This section references Appendix D, which provides a draft right-of-entry form that AOC will sign to grant the Army and its contractors access to the site for this remedial effort. Section "b" notes that this right-of-entry is granted pursuant to: Architect of the Capitol Right of Entry Request, prepared by AECOM Technical Services, Inc., dated TBD, 2015." Please clarify. Should "TBD, 2015" be TBD, 2016? Should Section "b" removed? Please add Section "g" with the following wording: The AOC will be added as a named insured under the contractor's policy for this activity. Please add Section "h" with the following wording: The Army shall obtain any and all permits necessary for its work on the subject premises and provide the owner with a copy of said permits.	Section b was deleted. The other changes were made as requested. AOC will be added as a named insured under the contractor's policy for this activity. The Army will provide AOC with a copy of any and all permits.	No further comment	

Response to Comments on the Draft Remedial Design I Work> Plan for the Architect of the Capitol (AOC) Soll Lead Hot Spot Fort George G. Meade, MD						
Comment No.	Section/ Title	Page Number	Comment	Response	AOC Response Comment	Response to Backcheck
12	3.2.3 1- Grading and Stabilization	3-4	This section does not address how excavation areas will be shored or secured. It may be helpful to cross reference Section 3.3.1 (Clean Overburden Excavation and Staging) where brief mention Is made of the intent to slope the sidewalls of the excavation "if necessary" to minimize uncontrolled overburden slumping Into the excavation. The plan describes how the work areas will be marked (orange safety fencing), but not the excavation area that will be left open when awaiting confirmation sampling results. Please specify measures to protect the work area after hours.	Subsection 3.2.3.1 is under the Soil Erosion and Sediment Control section which deals with the management of soil placed on the ground surface. A sentence was added to the beginning of subsection 3.2.3 indicating these facts. A new Section (3.3.5) was added that discusses open excavation security.	No further comment	
13	3.2.3.2 -Water Conveyance	3-4	This section indicates that a separate site-specific erosion & sediment control (E&SC) plan will be developed. Will the E&SC plan be available for stakeholder review?	Yes, see Figure 5-1 Schedule. Stakeholders will have 5 days to review and comment on the plan.	Figure 5-1 indicates a 10-day period for agency and AOC review of the E&SC plan. Please clarify. Also, should "MDA approval" be 'MDE approval"?	The schedule was updated and MDA was changed to MDE.
14	3.2.3.4 - Dewatering	3-5	The plan indicates that to minimize complications associated with potential accumulation of groundwater within the excavation prior to collection of the confirmation soil samples (see the discussion in Section 3.3.3), the confirmation soil samples will be collected immediately upon reaching the planned excavation depth of 12 feat bgs." Please indicate the anticipated plan should groundwater be encountered at less than 12 feet bgs.	We do not anticipate encountering groundwater at less than 12 ft bgs, except during certain times of the year, and r4egardless of the depth to groundwater, we plan to sample the soil immediately upon reaching the planned depth rather than waiting and leaving the hole open and allowing water to accumulate.	No further comment	
15	3.3.1-Clean Overburden Excavation and Staging	3-5	This section describes the use of secured poly sheeting on the stockpile to protect the staged soil from precipitation and wind. The plan does not, however, explicitly address dust control measures. Please specify AECOM's plan for dust control.	The plan for dust control is to spray the soil with water. This information was added to Sections 3.3.1 and 3.3.2.	No further comment	
16	3.3.2 - Contaminated Sol Excavation and Staging	3-6	The plan appropriately highlights that AECOM will watch for any unusual odor, soil condition, or waste/buried debris of any kind encountered during the excavation that may be suggestive of contamination above and beyond the known soil lead contamination. If encountered, the plan indicates that the DPW Environmental Division (ED) will be notified. Similarly, contacts are listed for immediate notification in the unlikely event that buried ordnance Is observed. Please include AOC in the notification loop. In addition, no specific actions are described in this plan other then alerting designated contacts. Will work stop until a contingency/evaluation plan is generated? Please clarify.	AOC has been included in the notification loop and the AOC phone number has been added to this Section.	No further comment	
17	3.3.3 - Confirmation Sampling Design and Rationale	3-6 and I-7	The proposed confirmation sampling plan is generally reasonable in that sampling from each of the side walls and the excavation bottom is planned. However, the plan proposes only two composite samples in total from each excavation. This could conceivably dilute the results. "Biased" sampling from each sidewall and the excavation bottom would be more prudent (5 samples per excavation). However, visible signs of contamination will likely be absent which makes biased selection more difficult.	The composite nature of the planned soil samples enables a better estimate of the mean lead concentration which is the preferred estimate for risk assessment purposes. Discrete soil samples poorly estimate exposure point concentrations for potential future receptors.	No further comment	

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Comment No.	Section/ Title	Page Number	Comment	Response	AOC Response Comment	Response to Backcheck
18	3.3.4 - Confirmation Samples Data Interpretation and Data Quality Objectives	3-8 and 3-9	Please note that including the DPT/GW-29 (3,350 mg/kg) in the calculation of the EPC baseline for Hot Spot 1 and Hot Spot 2 would be a more conservative approach. While we recognize that the location of this "hit" is reasonably anticipated to be removed during the excavation of the hot spots, please explain why this data point was not included in the pre-remediation calculation.	The AOC work plan is designed to address the requirements of the ROD. The ROD requires excavation of soil associated with only the two soil hots spots. Including DPT/GW-29 (3,350 mg/kg) in the calculation of the EPC baseline will not have any bearing on the post-excavation calculations since the approximate location of DPT/GW-29 will be excavated and the 3,350 mg/kg will not be used in the post-excavation EPC calculation.	No further comment	
19	3.3.4.2 -Hot Spot No.2	3-9	This section notes that the sum of the soil lead concentrations to be measured in the bottom and side wall composite samples for the Hot Spot No.2 excavation need to be less than 8,666 mg/kg to meet the remediation goal. Based on our calculations, the sum needs to be less than 8,266 mg/kg. Please confirm.	Worksheet "7FT BGS mean" shows the derivation of 8,666 mg/kg, which is correct.	No further comment. Thank you for sharing the work sheet.	
20	3.3.6 -Waste Soil Transportation	3-9	AECOM will coordinate with FGGM-ED to obtain signatures on the waste manifests prior to the sol being shipped offsite. Please provide AOC with a copy of the signed manifest.	A copy will be forwarded to AOC and the text is updated to state this.	No further comment	
21	3.3.7 -Backfilling	3-10	This section notes that additional soil backfill will be acquired from the "clean soil stockpile" located at the FGGM Soil Stockpile. Please indicate what testing has been conducted on the FGGM Soil Stockpile to ensure it is clean. See also Comment 4.	See response to comment 4 above.	It would be helpful to include a little more detail about the planned composite sampling (e.g., number and depth of samples), analysis and reporting procedures and/or include MDE'S "Facts About...VCP Clean imported Fill' as an attachment to the RD work plan (hftp://www.mde.slale.ml.us/asselean%20tmp on.ed%2Fil%20Material(l).pdl} Also, text was added to the Backfilling section (now 3.3.8) indicating that "due to the time constraints on the open excavation, FGGM, USACE-Baltimore, and AOC will be given 24 hours to review this (confirmation) dala. "Please add this review to the schedule (Figure 5-1).	The following text was added to Section 3.3.8: "Since only 48 cubic yards of the FGGM Soil Stockpile soil is needed for backfill, the composite sample will consist of of 30 individual grab samples to be collected from the upper two feet of the FGGM Soil Stockpile soil designated for use." The proposed chemical analysis is already included in this Section. The Maryland Department of the Environment Facts About… VCP-Clean Imported Fill Material has been included as Appendix E. The State of Maryland Department of the Environment Cleanup Standards for Soil and Groundwater has been included as Appendix F. The AOC review time was added to the schedule.
22	3.3 8 -Site Reclamation	3-10	The end of this section reads: "Representatives of AOC and FGGM DPW wilt be invited to inspect the site prior to demobilization. Changes to the backfill and seed that are within the scope of the project will be made if needed." Please clarify the meaning of the last sentence. What changes to backfill might be made at this point in the process?	Clarification has been added.	No further comment	

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Comment No.	Section/ Title	Page Number	Comment	Response	AOC Response Comment	Response to Backcheck
23	3.4 - Demobilization	3-10	The plan Indicates that "all recyclable material and non-contaminated trash will be placed in appropriate bins or dumpster's on-post." Please indicate where post this trash will be disposed.	Post trash is handled by a separate contractor. This section was changed to indicate all trash and recyclables will either be taken off post for disposal/recycling or placed in recycle bins located in the lot of Building 2250 (Recycling Center) or the dumpster at the ED building.	No further comment	
24	4 0 - Project Management	4-1	The plan lays out the project organization. The section notes that the Project Manager will be responsible for all communications with stakeholders, including AOC. Please specify the communication plan with AOC throughout the implementation of the remedial design plan. For example, will AOC be notified of any unexpected findings (see also Comments 5 and 16) or provided results of confirmation sampling prior to backfilling?	The requested information has been added.	No further comment	
25	Figure 2-4	NA	See Comment 8.	Figure 2-4 has been corrected as noted above.	No further comment	
Comments submitted by: Maryland Department of the Environment Land Restoration Program Federal Facilities Installation Restoration Program dated 25 April 2016						
1	Page vii		The Maryland Department of the Environment (MDE) is neither the lead regulator at this site nor is a signatory to the Federal Facilities Agreement, and, as such, does not typically sign signature approval pages. Please remove the MDE project manager from this page.	MDE was removed from the signature approval page.		
2	Page 3-4, § 3.2.3, Final Sentence ("Because greater than ...")		The text mentions that a permit equivalency MDE Plan will be completed since the area disturbed is greater than 100 cubic yards. However, there is no mention of approval of an Erosion and Sediment Control plan in the schedule listed in 5-1. Please be aware that this approval process can take significant time, sometimes as much as several months, unless the Army's contractor decides to use an expeditor. Please plan accordingly.	The Erosion and Sediment Control plan has been added to the schedule in Figure 5-1		
3	Page 3-6 and 3-7		This section of the text describes a rather cumbersome method for collecting confirmation samples. It is not clear why this method would be used, rather than collecting a true Multi-Increment Sample for both the bottom confirmation and the side wall. This would entail collecting approximately 30 individual samples, compositing them, and then doing 1 lab analysis for each the bottom and side wall. Please consider whether this would be a more rigorous method for confirmation sampling after excavation has been completed.	For safety reasons, personnel are not entering the test pit and it would be difficult to collect 30 or 60 equal sized and equally spaced samples using a backhoe bucket. The planned approach is a hybrid of discrete sampling and is more in line with risk calculations than biased sampling.		
Comments submitted by: U.S. Environmental Protection Agency dated 6 June 2016.						
1			Just wondering if there was any consideration given to multi-incremental confirmation sampling methods.	Please see response above.		

Response to Comments received from Maryland Department of the Environment on 11 August 2016

A few follow-up questions came up today with regards to the staging of the contaminated soil.

Comment 1: Has TCLP analysis been done on any of the contaminated soil? If so, what was the TCLP lead concentration?

Response: TCLP analysis has not been done on any of the contaminated soil. The plan presented was to collect TCLP metals and other analysis after the soil is excavated and temporarily stockpiled. The TCLP analysis is required by the disposal facility and the plan was for the soil to remain securely stockpiled and covered on the AOC property until the lab results are received and the disposal facility reviews the chemical data. We won't know if it is hazardous until after we get the lab results.

Comment 2: And what is the total volume of contaminated soil that is expected to be stored on sheeting prior to disposal? Am I reading Table 3-1 correctly, that it is expected to be ~48 cubic yards?

Response: The total volume of contaminated soil that is expected to be disposed is ~48 cubic yards. That number may increase slightly if over excavation is required because of elevated levels of residual lead.

Comment 3: What has prompted this question is whether the lead concentrations are high enough that you are effectively storing hazardous waste on site. If TCLP lead concentration exceeds 5 mg/L, then you should not store on site, but instead transport to a hazardous waste landfill immediately following excavation.

Response: Since the soil MAY be hazardous, we have decided to pre-characterize the soil by direct push sampling prior to excavation. We will advance direct push probes to the depth of affected soil at the 2 hot spot locations (this depth varies per hot spot location) and collect 3 soil samples from each hot spot location. We will sample the entire vertical length of affected soil. We will composite the soil into one sample that will be analyzed for the parameters the landfill needs to prove it is nonhazardous. If the results come back and the soil exceeds the landfills parameters for nonhazardous, we will have already collected additional soil that the lab was storing and they will run the tests the landfill needs to characterize the hazardous soil. Either way, once the excavation starts, we will know if the soil is hazardous or not. We will than direct load (with temporary stockpiling as we fill the dump trucks). These changes require a Work Plan revision.