

FINAL
FOURTH PERIODIC REVIEW REPORT

FORT STEWART
GEORGIA

Prepared for:



United States Army Environmental Command
Fort Sam Houston, Texas



United States Army Garrison – Fort Stewart – Hunter Army Airfield
Bryan, Liberty, Long, Evans, and Tattnall Counties, Georgia

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FOURTH PERIODIC REVIEW REPORT

FORT STEWART GEORGIA

Approved By:

RUTLAND.TRESSA
.M.1232152504

Digitally signed by
RUTLAND.TRESSA.M.1232152504
Date: 2020.10.21 10:27:31 -04'00'

Signature

Date

for

Thomas C. Fry
Chief, Environmental Division
Directorate of Public Works

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FOURTH PERIODIC REVIEW REPORT

FORT STEWART GEORGIA

Prepared By:



**United States Army Corps of Engineers
Savannah District
100 W. Oglethorpe Avenue
Savannah, Georgia 31401**



**Dawson Solutions, LLC
4100 Market Street, Suite 117
Huntsville, Alabama 35808**

Prepared Under Contract Number: W912HN18D1007, Task Order W912HN19F1022

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EXECUTIVE SUMMARY

This is the Fourth Periodic Review for Fort Stewart located in Bryan, Liberty, Long, Evans, and Tattnall Counties, Georgia. Fort Stewart is not on the National Priorities List. This Periodic Review was conducted in accordance with United States (U.S.) Department of the Army (Army) Regulation 200-1 Environmental Quality, Environmental Protection and Enforcement and Department of Defense (DoD) Manual 4715.20, Defense Environmental Restoration Program Management (Army, 2007; DoD, 2012). Fort Stewart operates under a Georgia Environmental Protection Division (GAEPD) Hazardous Waste Facility Permit issued on August 15, 2017 (GAEPD, 2017). This review includes nine Installation Restoration Program Sites listed in the table below.

Fort Stewart began operating on September 10, 1940 as an anti-aircraft and deployment center to prepare artillery troops for overseas deployment during World War II. Fort Stewart was originally named Camp Savannah and then was changed to Camp Stewart on November 18, 1940 and to Fort Stewart on March 21, 1956 (USACE, 1999a). Currently, Fort Stewart is the largest Army post in the Eastern United States and home of the 3rd Infantry Division.

The purpose of this Periodic Review is to assess the protectiveness and performance of the selected remedies to determine if they are and will continue to be protective of human health and the environment. The following summarizes the selected remedies and protectiveness statements for the nine Fort Stewart sites evaluated for this Fourth Periodic Review.

Fort Stewart Periodic Review Site Crosswalk

SWMU ID	HQAES ID	SITE NAME	AEDB-R ID
SWMU 1	13305.1001	Post South Central Landfill	FST-001
SWMU 2	13305.1002	Camp Oliver Landfill	FST-002
SWMU 3	13305.1003	TAC-X Closed Landfill	FST-003
SWMU 8	13305.1005	Inactive EOD Area #1	FST-008
SWMU 9*	13305.1006	Inactive EOD Area #2	FST-009
SWMU 10	13305.1007	Inactive EOD Area #3	FST-010
SWMU 11	13305.1008	Inactive EOD Area #4	FST-011

SWMU ID	HQAES ID	SITE NAME	AEDB-R ID
SWMU 13	13305.1010	Fire Training Area at WAAF	FST-013
SWMU 26	13305.1072	724 th Inactive Tank Purging Station	FST-026
SWMU 39	13305.1095	Building 1160/DSMF	FST-039

* SWMU 9 was not evaluated in this Periodic Review due to being located on an active range.

AEDB-R ID - Army Environmental Database - Restoration Identification

DSMF - Direct Support Maintenance Facility

EOD - Explosive and Ordnance Disposal

FST - Fort Stewart

HQAES ID - Headquarters Army Environmental System Identification

SWMU ID - Solid Waste Management Unit Identification

TAC-X - Tactical Air Command

WAAF - Wright Army Airfield

SWMU 1 (HQAES 13305.1001)

The 1999 Corrective Action Plan, 2000 Decision Document, and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for Solid Waste Management Unit (SWMU) 1 (USACE, 1999 and 2000d; GAEPD, 2017):

Institutional Controls (ICs): [Base Master Plan (BMP)], deed recordation, zoning controls, maintenance of existing physical barriers, well abandonment, installation of post-mounted warning signs, and Implementation of [Operations and Maintenance (O&M)] Plan.

The corrective actions at SWMU 1 are protective of human health and the environment.

The ICs are effective in minimizing or eliminating human exposure to the buried waste within the boundaries at SWMU 1. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.

SWMU 2 (HQAES 13305.1002)

The Corrective Action Plan and the Decision Document for SWMU 2 describe the primary goal and purpose for implementing corrective actions are limited to the protection of human health and safety. To achieve this goal, the following remedial response objectives were established (USACE, 2000a and 2001a):

ICs: BMP, deed recordation, zoning controls, well abandonment, post-mounted warning signs, and Implementation of O&M Plan.

The corrective actions at SWMU 2 are protective of human health and the environment.

The ICs are effective in minimizing or eliminating human exposure to the buried waste within the boundaries at SWMU 2. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.

SWMU 3 (HQAES 13305.1003)

The 2000 Corrective Action Plan, 2001 Decision Document and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 3 (USACE, 2000b and 2001b; GAEPD, 2017):

ICs: BMP, deed recordation, zoning controls, well abandonment, installation post-mounted warning signs, and implementation of O&M plan.

The corrective actions at SWMU 3 are protective of human health and the environment.

The ICs are effective in minimizing or eliminating human exposure to the buried waste within the boundaries at SWMU 3. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.

SWMU 8 (HQAES 13305.1005)

The 2001 Corrective Action Plan and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 8 (USACE, 2001c; GAEPD, 2017):

ICs: BMP, deed recordation, zoning controls, fence barrier, maintenance of existing physical barriers, fence-mounted warning signs, and implementation of O&M Plan.

The corrective actions at SWMU 8 are protective of human health and the environment.

The ICs are effective in minimizing or eliminating human exposure to buried ordnance and/or contaminated media within the SWMU 8 boundary. Additional measures to restrict site access, implemented by the Installation in the form of LUCs, are also functioning as intended and documented in Annual Progress Reports.

SWMU 9 (HQAES 13305.1006)

SWMU 9 is located within an active munitions range. Completion of corrective actions at SWMU 9 have been delayed until the surrounding range is closed, in accordance with the Military Munitions Rule. For this reason, SWMU 9 was not evaluated as part of this periodic review.

SWMU 10 (HQAES 13305.1007)

The 2001 Corrective Action Plan and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 10 (USACE, 2001d; GAEPD, 2017):

Enforcement of the BMP, deed recordation, zoning controls, maintenance of existing physical barriers, fence barrier and fence-mounted warning signs around the smaller area of SWMU 10 only, and implementation of O&M Plan.

The corrective actions at SWMU 10 are protective of human health and the environment.

The ICs are effective in minimizing or eliminating human exposure to buried ordnance and/or contaminated media within the SWMU 10 boundary. Additional measures to restrict site access, implemented by the Installation in the form of LUCs, are also functioning as intended and documented in Annual Progress Reports.

SWMU 11 (HQAES 13305.1008)

The 2001 Corrective Action Plan and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 11 (USACE, 2001c):

ICs: BMP, deed recordation, zoning controls, fence barrier, maintenance of existing physical barriers, fence-mounted warning signs, and implementation of O&M Plan.

The corrective actions at SWMU 11 are protective of human health and the environment.

The ICs are effective in minimizing or eliminating human exposure to buried ordnance and/or contaminated media within the SWMU 11 boundary. Additional measures to restrict site access, implemented by the Installation in the form of LUCs, are also functioning as intended and documented in Annual Progress Reports.

SWMU 13 (HQAES 13305.1010)

The 1996 Corrective Action Plan and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 13 (USACE, 1996; GAEPD, 2017):

The selected corrective action for treatment of the groundwater is MNA [monitored natural attenuation]. In addition, implementation of ICs (i.e., LUCs) are required for the duration of the MNA alternative to establish activities that are permitted until site remedial levels have been achieved (USACE, 2006).

The corrective action at SWMU 13 is protective of human health and the environment.

The corrective action, MNA with LUCs, are functioning as intended. LUCs continue to effectively restrict access to shallow groundwater beneath SWMU 13. The annual site inspection reported no issues or deficiencies with LUCs in place.

SWMU 26 (HQAES 13305.1072)

The 2000 Corrective Action Plan and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 26 (USACE, 2000c; GAEPD 2017):

The selected corrective action involved in-situ enhance bioremediation using the patented PHOSter® II technology (USACE, 2006c).

A Corrective Action Plan Addendum was prepared in 2010 to address the poor performance of the PHOSter® II enhanced bioremediation system resulting in the recommendation of additional corrective actions to meet established RLs. Soil excavation and installation of a biosparge system were specified to address the source area and groundwater contamination, respectively, in combination with semi-annual groundwater monitoring and reporting (Arcadis, 2010).

The corrective actions for SWMU 26 are protective of human health and the environment.

Active remediation from soil excavation, PHOSter® II enhanced bioremediation system, and the biosparging system were successful to reduce contaminant levels. The most recent groundwater monitoring data indicate that there are no contaminant exceedances of RLs in groundwater, indicating the remedy has been successful in reducing contaminant levels.

SWMU 39 (HQAES 13305.1095)

The 2007 Interim Remedial Action (IRA) and the revised 2018 Corrective Action Implementation plan selected following corrective actions for SWMU 39 (USACE, 2007; Arcadis 2018c):

LUCs, Impermeable Cap Maintenance, LNAPL Recovery, MNA, and Enhanced Reductive Dechlorination (ERD; Arcadis, 2018c).

A 2019 Construction Completion Report has been prepared. The Hazardous Waste Facility Permit has not yet been modified to include SWMU 39 (GAEPD, 2017).

The corrective action at SWMU 39 is expected to be protective of human health and the environment upon completion. In the interim, corrective actions completed to date, including LUCs and an impermeable cap, have adequately addressed all exposure pathways that could result in unacceptable risk at SWMU 39.

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Periodic Review Summary Form

SITE IDENTIFICATION

Installation Name: Fort Stewart

EPA Region: 4

State: GA

City/County: Bryan, Liberty, Long, Evans,
and Tattnall Counties

SITE STATUS

RCRA Permit or Order: Yes

Permit Requires PR/FYR: No

Other State Authority:

Not applicable

Number of Sites:

9

Lead Regulatory Agency

Georgia Environmental Protection Division

REVIEW STATUS

Major Command: U.S. Army Installation Management Command (IMCOM)

Installation Environmental Chief: Thomas C. Fry

Lead Author name: U.S. Army Corps of Engineers (USACE)

Lead Author affiliation: USACE and USACE's contractor Dawson Solutions, LLC

Review period (*when review team conducted its tasks*):

December 5, 2019 - (Signature date of the Final Periodic Review Report)

Date of site inspection: February 3 - 5, 2020

Type of review: Periodic Review-Army Policy

Review number: 4

Initial baseline action date: September 30, 2000

Initial baseline action: Signature of Decision Document for SWMU 1

Current review due date: September 30, 2020

Next review due date: September 30, 2025

(First review is typically five years after from baseline date. Next review is typically five years from last review due date. Permit required reviews may have different requirements.)

Periodic Review Summary Form (continued)

Protectiveness Issues/Recommendations	
Site(s) without Issues/Recommendations Identified in the Periodic Review:	
SWMU 1 (HQAES 13305.1001), SWMU 2 (HQAES 13305.1002), SWMU 3 (HQAES 13305.1003), SWMU 8 (HQAES 13305.1005), SWMU 10 (HQAES 13305.1006), SWMU 11 (HQAES 13305.1008), SWMU 13 (HQAES 13305.1010), SWMU 26 (HQAES 13305.1072), and SWMU 39 (HQAES 13305.1095)	
Protectiveness Statement(s)	
Site: SWMU 1 (HQAES 13305.1001)	Protectiveness Determination: Protective
Protectiveness Statement: The corrective actions at SWMU 1 are protective of human health and the environment. The institutional controls are effective in minimizing or eliminating human exposure to the buried waste within the boundaries at SWMU 1. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.	
Site: SWMU 2 (HQAES 13305.1002)	Protectiveness Determination: Protective
Protectiveness Statement: The corrective actions at SWMU 2 are protective of human health and the environment. The institutional controls are effective in minimizing or eliminating human exposure to the buried waste within the boundaries at SWMU 2. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.	
Site: SWMU 3 (HQAES 13305.1003)	Protectiveness Determination: Protective
Protectiveness Statement: The corrective actions at SWMU 3 are protective of human health and the environment. The institutional controls are effective in minimizing or eliminating human exposure to the buried waste within the boundaries at SWMU 3. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.	

Periodic Review Summary Form (continued)

Protectiveness Statement(s)	
Site: SWMU 8 (HQAES 13305.1005)	Protectiveness Determination: Protective
Protectiveness Statement: The corrective actions at SWMU 8 is protective of human health and the environment. <i>The institutional controls are effective in minimizing or eliminating human exposure to buried ordnance and/or contaminated media within the boundaries at SWMU 8. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.</i>	
Site: SWMU 10 (HQAES 13305.1006)	Protectiveness Determination: Protective
Protectiveness Statement: The corrective actions at SWMU 10 are protective of human health and the environment. <i>The institutional controls are effective in minimizing or eliminating human exposure to buried ordnance and/or contaminated media within the boundary's at SWMU 10. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.</i>	
Site: SWMU 11 (HQAES 13305.1008)	Protectiveness Determination: Protective
Protectiveness Statement: The corrective actions at SWMU 11 are protective of human health and the environment. <i>The institutional controls are effective in minimizing or eliminating human exposure to buried ordnance and/or contaminated media within the boundary's at SWMU 11. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.</i>	

Periodic Review Summary Form (continued)

Protectiveness Statement(s)	
Site: SWMU 13 (HQAES 13305.1010)	Protectiveness Determination: Protective
Protectiveness Statement: The corrective action at SWMU 13 is protective of human health and the environment. <i>The corrective action, MNA with LUCs, is functioning as intended. LUCs continue to effectively restrict access to shallow groundwater beneath SWMU 13. The annual site inspection reported no issues or deficiencies with LUCs in place.</i>	
Site: SWMU 26 (HQAES 13305.1072)	Protectiveness Determination: Protective
Protectiveness Statement: The corrective action at SWMU 26 is protective of human health and the environment. <i>Active remediation from soil excavation, PHOSter® II enhanced bioremediation system, and the biosparging system were successful to reduce contaminant levels. The most recent groundwater monitoring data indicate that there are no contaminant exceedances of RLs in groundwater, indicating the remedy has been successful in reducing contaminant levels.</i>	
Site: SWMU 39 (HQAES 13305.1095)	Protectiveness Determination: Will be Protective
Protectiveness Statement: The corrective action at SWMU 39 is expected to be protective of human health and the environment upon completion. <i>In the interim, corrective actions completed to date, including LUCs and an impermeable cap, have adequately addressed all exposure pathways that could result in unacceptable risk at SWMU 39.</i>	

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ACRONYMS AND ABBREVIATIONS

amsl	Above Mean Sea Level
Army	U.S. Department of the Army
bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
BMP	Base Master Plan
COC	Contaminant of Concern
DAWSON	Dawson Solutions, LLC
DCE	cis-1,2-dichloroethene
DoD	Department of Defense
DPW	Directorate of Public Works
EOD	Explosives and Ordnance Disposal
ERD	Enhanced Reductive Dechlorination
EVO	Emulsified Vegetable Oil
ERA	Ecological Risk Assessment
GAEPD	Georgia Environmental Protection Division
IC	Institutional Control
IRA	Interim Remedial Action
LNAPL	Light Non-Aqueous Phase Liquid
LUC	Land Use Control
MCL	Maximum Contaminant Level
MEC	Munitions and Explosives of Concern
MNA	Monitored Natural Attenuation
MTBE	methyl tert-butyl ether
NFA	No Further Action
OB/OD	Open Burning/ Open Detonation
O&M	Operation and Maintenance
OSWER	Office of Solid Waste and Emergency Response
PAH	Polycyclic Aromatic Hydrocarbon
PCE	Tetrachloroethene
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RL	Remedial Levels
SWMU	Solid Waste Management Unit
TAC-X	Tactical Air Command
TCE	Trichloroethene
TOC	Total Organic Carbon
U.S.	United States
USACE	U.S. Army Corps of Engineers

ACRONYMS AND ABBREVIATIONS

USAEC	U.S. Army Environmental Command
USC	U.S. Code
UST	Underground Storage Tank
UU/UE	Unlimited Use and Unrestricted Exposure
UXO	Unexploded Ordnance
VC	Vinyl Chloride
VOC	Volatile Organic Compound
WAAF	Wright Army Airfield
µg/L	Micrograms per Liter

1.0 INTRODUCTION

This is the Fourth Periodic Review for Fort Stewart, Georgia. This Periodic Review was conducted in accordance with United States (U.S.) Army (Army) Regulation 200-1 Environmental Quality, Environmental Protection and Enforcement and *Department of Defense (DoD) Manual 4715.20, Defense Environmental Restoration Program Management* (Army, 2007; DoD, 2012). Fort Stewart is not on the National Priorities List. Fort Stewart operates under a Georgia Environmental Protection Division (GAEPD) Hazardous Waste Facility Permit issued on August 15, 2017. This review includes the nine Installation Restoration Program sites listed in **Table 1**.

Table 1 - Fort Stewart Periodic Review Sites Crosswalk

SWMU ID	HQAES ID	SITE NAME	AEDB-R ID
SWMU 1	13305.1001	Post South Central Landfill	FST-001
SWMU 2	13305.1002	Camp Oliver Landfill	FST-002
SWMU 3	13305.1003	TAC-X Closed Landfill	FST-003
SWMU 8	13305.1005	Inactive EOD Area #1	FST-008
SWMU 9*	13305.1006	Inactive EOD Area #2	FST-009
SWMU 10	13305.1007	Inactive EOD Area #3	FST-010
SWMU 11	13305.1008	Inactive EOD Area #4	FST-011
SWMU 13	13305.1010	Fire Training Area at WAAF	FST-013
SWMU 26	13305.1072	724 th Inactive Tank Purging Station	FST-026
SWMU 39	13305.1095	Building 1160/DSMF	FST-039

* SWMU 9 was not evaluated in this Periodic Review due to being located on an active range.

AEDB-R ID - Army Environmental Database - Restoration Identification

DSMF - Direct Support Maintenance Facility

EOD - Explosive and Ordnance Disposal

FST - Fort Stewart

HQAES ID - Headquarters Army Environmental System Identification

SWMU ID - Solid Waste Management Unit Identification

TAC-X - Tactical Air Command

WAAF - Wright Army Airfield

SWMU 9 is located within an active munitions range. Completion of corrective actions at SWMU 9 have been delayed until the surrounding range is closed, in accordance with the Military Munitions Rule. For this reason, SWMU 9 was not evaluated as part of this periodic review.

A table of Underground Storage Tank (UST) Sites at Fort Stewart is presented in **Appendix A**. This table is organized by the UST Site number and encompasses those sites in the design phase, active remediation phase, and those sites that have received “No Further Action (NFA).” The UST sites are not subject to this Fourth Periodic Review with the exception of UST 61, which is included in SWMU 39.

1.1 PURPOSE

The purpose of the Periodic Review is to determine whether a site remains protective of human health and the environment. Periodic Reviews also identify issues discovered during the review, if any, and provide recommendations to address them. This Fourth Periodic Review has been prepared because hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE). This report is for internal Army use only and has not been prepared for community or regulatory review.

1.2 AUTHORITY

The U.S. Army Corps of Engineers (USACE), Savannah District, with assistance from DAWSON Solutions, LLC (DAWSON), conducted this Fourth Periodic Review on behalf of the U.S. Army Environmental Command (USAEC) and Fort Stewart pursuant to Army Regulation 200-1 and in accordance with *Department of Defense (DoD) Manual 4715.20, Defense Environmental Restoration Program Management* (Army, 2007; DoD, 2012).

The Army, as the lead agency for Fort Stewart, is responsible for this Fourth Periodic Review, covering the SWMUs identified in **Table 1** above. GAEPD is the lead regulatory agency and addresses environmental concerns at Fort Stewart under the Resource Conservation and Recovery Act (RCRA) 42 U.S. Code (USC) §6901 et seq. GAEPD oversees Fort Stewart’s Hazardous Waste Facility Permit issued on August 15, 2017.

2.0 BACKGROUND

Fort Stewart began operations on September 10, 1940 as an anti-aircraft and deployment center to prepare artillery troops for overseas deployment during World War II. Fort Stewart was originally named Camp Savannah and then was changed to Camp Stewart on November 18, 1940, to honor Revolutionary War Brigadier General Daniel Stewart. Soon after World War II ended, on September 30, 1945, Camp Stewart became inactive and then became a training facility for the Georgia National Guard (USACE, 1999a).

On August 9, 1950, in response to the Korean Conflict, Camp Stewart began operating under Army control as a training facility for the Third Army Anti-Aircraft Artillery Training Center. In 1953, armor and tank training missions were added to the mission of Camp Stewart. Camp Stewart was renamed to Fort Stewart on March 21, 1956 and became a permanent Army installation as primarily an armor and artillery firing center.

In 1966, during the Vietnam War, a portion of the Army's Aviation School transferred to Fort Stewart to train pilots. These pilots were trained to utilize fixed-wing aircrafts and helicopters. During 1967 and 1973, Fort Stewart's primary mission was to train Army Aviators and maintain active duty readiness for Reserve and National Guard personnel. In 1973, Fort Stewart's aviation training was decommissioned, and it became a training and maneuver center for tanks, field artillery, helicopter gunnery, and provided small arms training for Army and National Guard units.

Currently, Fort Stewart is the largest Army installation east of the Mississippi River and is home of the 3rd Infantry Division.

2.1 PHYSICAL CHARACTERISTICS

Fort Stewart is located approximately 40 miles southwest of Savannah, Georgia and borders the north of Hinesville, Georgia. The City of Pembroke is located north of Fort Stewart. The City of Richmond Hill is located east of Fort Stewart. Situated south of Interstate 16 and west of Interstate 95, Fort Stewart boundaries are roughly defined by the intersection of Interstate 16 and Interstate 95 (I-95) and the cities of Richmond Hill, Hinesville, Glennville, Claxton, and Pembroke. Fort Stewart encompasses approximately 280,000 acres of land and spans five counties (Bryan, Liberty, Long, Evans, and Tattnall) (**Figure 1**) (USACE, 1999).

2.2 TOPOGRAPHY

Fort Stewart is characterized by low-lying topography due to its location within the Southern Atlantic Lower Coastal Plain in southeastern Georgia. The region is characterized by coastal terraces, a result of Pleistocene sea level fluctuations, which decrease in elevation from the northwest to southeast. Fort Stewart is situated across four terraces, the Wicornico, Penholoway, Talbot, and Pamlico. The terraces are cut by surface water drainages resulting in variable surface elevations but are primarily flat forested land ranging from 6 to 100 feet above mean sea level (amsl). The northwestern

region of the installation represents the greatest topographic relief of approximately 190 feet amsl (USACE, 1992, 1999).

2.3 GEOLOGY

Fort Stewart lies in the Southern Atlantic Lower Coastal Plain physiographic region. Underlying geologic units range from Quaternary to Cretaceous in age and dip eastward toward the coast from the fall line. The crystalline basement layer is encountered at approximately 4,254 feet below ground surface (bgs). Due to the eastward dip, the western portion of the plain is underlain by older Cretaceous clastics (i.e., sands, silts, and clays) approximately 1,970 feet thick. The underlying sediments progress from Cretaceous clastics to Tertiary carbonates towards the coast. The Tertiary sediments are approximately 2,170 feet thick and primarily limestones. The Tertiary unit is capped by a 245 feet thick layer of phosphatic clay belonging to the Hawthorn Group (Miocene). The uppermost Quaternary unit consists of approximately 55 feet of interbedded sands and clays (USACE, 1999).

The Fort Stewart well installation logs (reaching a maximum of 410 feet bgs) describes the geology as 110 feet of Tertiary limestone overlain by 245 feet of Hawthorn Group phosphatic clays and the uppermost 55 feet of Quaternary sands and clays.

2.4 HYDROGEOLOGY

Fort Stewart groundwater is comprised of two major water-bearing zones, the surficial aquifer and the Principal Artesian aquifer. The Principal Artesian aquifer, regionally referred to as the Floridan Aquifer, is the continuous regional aquifer. The average depth to top of the aquifer is 450 feet bgs at Fort Stewart. The Floridan Aquifer occurs within approximately 200 to 260 feet thick layer of Eocene/Oligocene limestones and Miocene sands and clays. The Floridan Aquifer supplies the primary source of drinking water at Fort Stewart (USACE, 1992, 1999).

The Hawthorn Group's phosphatic clays unit act as the confining layer separating the Floridan Aquifer and the upper surficial aquifer. The surficial aquifer is discontinuous and highly variable. The aquifer can be 35 to 150 feet thick and occurs at depths of 2 to 140 feet bgs at Fort Stewart. The majority of the surficial aquifer exists within upper units of undifferentiated, well-sorted Holocene sands. The base sediments are Miocene to Pleistocene deposits of sands, clays, and silts. Tidal influences in the aquifer are minimal and restricted to eastern wetlands of Fort Stewart. The surficial aquifer is primarily used for surface irrigation rather than drinking water (USACE, 1992; 1999).

2.5 SURFACE WATER

The Fort Stewart watershed drains into the two principal surficial water bodies, the Canoochee and Ogeechee Rivers. The Canoochee River and Canoochee Creek are the primary drainages for Fort Stewart; however, the installation contains numerous creeks and tributaries. The Canoochee River converges with the Ogeechee River in the northwestern portion of the installation, west of highway I-95. From the confluence, the

Ogeechee River meanders southeast into a coastal delta before draining into the Atlantic Ocean (USACE, 1999).

2.6 LAND AND RESOURCE USE

On June 1940, Congress authorized the purchase of 5,000 acres of land to build an anti-aircraft artillery training center on the coastal region of Georgia. Additional acreage was added for firing and live impact ranges for the anti-aircraft artillery training center. Currently, the installation encompasses 280,000 acres of land and spans five counties.

On the eastern border of Fort Stewart lies the Ogeechee River, which is an area of significant importance due to its conservation value. The northern area is rich in timber production. The western boundary of the installation remains primarily agricultural.

The transmissivity of the Floridan aquifer in the Savannah area ranges from about 28,000 square feet/day to 33,000 square feet/day. Groundwater from this aquifer is primarily used for drinking water. Thirteen groundwater production wells are used for potable water supply on Fort Stewart and one additional production well is used for fire protection (USACE, 1999).

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3.0 PERIODIC REVIEW PROCESS

3.1 ADMINISTRATIVE COMPONENTS

The Army initiated the Fourth Periodic Review for Fort Stewart on December 5, 2019, with a kick-off meeting with USACE Savannah District, USAEC, Fort Stewart, and DAWSON personnel to discuss the sites and any items of interest pertaining to the protectiveness of the remedies currently in place. The Fort Stewart Periodic Review Team was led by Sara Keisler with USACE Savannah District and included DAWSON personnel with expertise in remediation, regulatory compliance, geology, hydrogeology, geochemistry, and risk assessment. The kick-off call established a review schedule that included:

- Document and Data Review,
- Site Inspection,
- Interviews, and
- Periodic Review Report development and review.

3.2 DOCUMENT AND DATA REVIEW

The Fourth Periodic Review includes a review of relevant site documents, including but not limited to permits, decision/remedy selection documents, design and implementation reports, investigations, annual reports and related monitoring data, and regulatory documents. **Section 15.0, References**, contains the list of the documents reviewed for this Fourth Periodic Review.

3.3 SITE INSPECTION

The site inspection for this Fourth Periodic Review occurred on February 3 and 4, 2020. In attendance were Algeana Stevenson and Dale Kiefer, Fort Stewart; Sara Keisler, USACE; and the DAWSON Periodic Review team.

Site inspections are conducted to provide information about a SWMU's status and to visually confirm and document the conditions of the remedy, SWMU, and the surrounding area (EPA, 2001). **Appendix B** presents the site inspection checklists. The site inspection photograph logs are presented in **Appendix C**. Applicable site inspection information for each site is presented in each respective section.

3.4 INTERVIEWS

During the Fourth Periodic Review, the site inspection team conducted interviews to document any perceived issues or successes with the implemented remedy to date at each of the Fort Stewart sites. Scott Bostian, a Senior Engineer at Arcadis (Operation and Maintenance [O&M] Contractor), was unavailable during the site inspection for an in-person interview and was interviewed via telephone on March 9, 2020. Algeana Stevenson, Fort Stewart Remediation Section Leader/Chemical Engineer Department of

Public Works Prevention & Compliance Branch, requested to complete an interview questionnaire form, which she provided responses to via email on April 7, 2020.

A summary of relevant issues from interviews will be provided in the applicable SWMU evaluation sections of this report. Interview summaries are presented in **Appendix D**.

4.0 SWMU 1

4.1 SITE CHRONOLOGY

Information on site chronology for Solid Waste Management Unit (SWMU) 1 is presented below in **Table 2**.

Table 2 - SWMU 1 Chronology

Event	Date (Year)
Landfill Operations	Circa 1942 - pre-1966
Phase I RCRA Facility Investigation (RFI)	1993
Phase II RFI	1999
Corrective Action Plan	1999
Corrective Action Plan approved by GAEPD	2000
Warning signs installed	2000
Monitoring wells abandoned	2001 - 2002
First Periodic Review	2005
Second Periodic Review	2011
Third Periodic Review	2016
Corrective Action Plan Progress Reports	2000 - 2019*

RCRA = Resource Conservation and Recovery Act

RFI = RCRA Facility Investigation

GAEPD = Georgia Environmental Protection Division

*Date captures the Corrective Action Plan Progress Reports received up through this Fourth Periodic Review.

4.2 PHYSICAL CHARACTERISTICS

SWMU 1 is located 3/4 miles northwest of the main cantonment area of Fort Stewart and comprises approximately 200 acres (**Figure 2**). SWMU 1 comprises the old, inactive portion of the landfill and the active, permitted landfill (Arcadis, 2019a). The old, inactive portion of the landfill is east of the active, permitted landfill and extends to Georgia State Route 144/119. It is estimated to encompass approximately 80 acres (USACE, 1999).

The active, permitted landfill accepts both sanitary waste under Permit No. 089- 010D(SL), issued by the state of Georgia in 1982, and non-putrescible material (e.g., building and demolition waste) under Permit No. 9-020D(L), issued by the state of Georgia in 1988 (Arcadis, 2019a). The active, permitted landfill portion of SWMU 1 is not subject to this Fourth Periodic Review.

For the purpose of this Fourth Periodic Review, SWMU 1 will refer only to the old, inactive portion of the landfill that is subject to the SWMU 1 Corrective Action Plan.

4.3 HISTORY OF CONTAMINATION

SWMU 1 received waste generated at Fort Stewart during its operation from circa-1942 to pre-1966. The exact period of operations is unknown and is approximated based on aerial photographs. Disposal methods at the landfill ranged from burn pits to trench-and-fill. Previous operations at SWMU 1 involved excavating a large pit, stockpiling the excavated soil, disposal and compaction of solid wastes, and covering stockpiled excavated soil. Additionally, intermittent burning occurred in the large pits in order to reduce the volume of the disposed waste prior to the landfill cover placement. According to previous operators, the waste materials included sludge from the sewage treatment plant, scrap metal, demolition/construction debris, sanitary/municipal wastes, and drummed waste from the tear gas training facility (USACE, 1999).

4.4 INITIAL RESPONSE

It is estimated the landfill operations ceased prior to 1966. After landfill operations ended at SWMU 1, the disposal area was covered with local soil that had been removed during excavation of the pits and surrounding area (USACE, 1999).

4.5 BASIS FOR TAKING ACTION

A Corrective Action Plan was required for SWMU 1 because buried waste will remain in place. Implementation of a corrective action is necessary to control intrusive activities at SWMU 1, to potentially protect humans from encountering the buried waste, and to prevent the use of groundwater as a drinking water source (USACE, 1999).

4.6 CORRECTIVE ACTION

4.6.1 CORRECTIVE ACTION OBJECTIVES

The Corrective Action Plan and the Decision Document for SWMU 1 describe the primary goal and purpose for implementing the corrective action is limited to the protection of human health and safety. To achieve this goal, the following “remedial response objectives” were established (USACE, 1999 and 2000d):

- *to prohibit ingestion of shallow groundwater from the subject site; and*
- *to prohibit disturbance of surface and subsurface soil in order to minimize contact with soil and buried waste.*
- *to identify procedures to evaluate the subsurface characteristics prior to any construction within the boundary of the old, inactive portion of the landfill.*

4.6.2 CORRECTIVE ACTION

The 1999 Corrective Action, 2000 Decision Document, and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 1 (USACE, 1999 and 2000d; GAEPD, 2017):

ICs: *[Base Master Plan (BMP)], deed recordation, zoning controls, maintenance of existing physical barriers, well abandonment, installation of post-mounted warning signs, and Implementation of [Operations and Maintenance (O&M)] Plan.*

If property is transferred out of government ownership, future deed recordation requirements will be implemented as outlined in Appendix B of the Corrective Action Plan (USACE, 2000a). The Fort Stewart Directorate of Public Works (DPW) maintains a list of all Corrective Action Plan-required LUCs (including the BMP and deed recordation requirements) (Arcadis, 2019a).

4.6.3 CORRECTIVE ACTION IMPLEMENTATION

From 2001 to 2002, eight groundwater monitoring wells were abandoned at SWMU 1 (Arcadis, 2015a).

The selected corrective action involves a multi-layered approach of ICs comprising of LUCs.

4.6.3.1 Land Use Controls

LUCs for SWMU 1 include ICs implemented through the BMP, deed recordation (when required), zoning controls, and the placement of signs restricting access (USACE, 1999).

The BMP expressly prohibits the disturbance of subsurface soil at SWMU 1, installation of groundwater wells at SWMU 1, military training exercises that disturb subsurface soils, hunting, recreational activities, and construction within the property boundaries. The BMP does permit timber harvesting, the performance of wildlife studies, and maintenance of deer feedlots. Although the BMP indicates military training is not prohibited, it is understood that the intent of the LUCs is to prevent exposure to the buried waste (i.e., subsurface soil). Military maneuvers are allowed at SWMU 1 if subsurface soils are not disturbed (USACE, 1999).

Installation of 54 warning signs around the perimeter of SWMU 1 occurred in September and October 2000 (USACE, 1999).

4.6.4 OPERATIONS AND MAINTENANCE

The O&M Plan describes the procedures to ensure that signs and barriers remain in good condition. Annual inspections are performed and documented in the Corrective Action Plan Progress Reports. The inspections observe the condition of warning signs, signposts, and barriers for evidence of damage or deterioration. Necessary repairs or replacements are performed to ensure the signs, signposts, and barriers remain in good condition.

Routine inspection and maintenance at SWMU 1 include:

- Annual Inspections

- Maintenance, if necessary
- Annual Reporting

Annual inspections have occurred at SWMU 1 since the 2000 installation of the 54 warning signs. The Corrective Action Plan Progress Reports for SWMU 1 document the annual inspections conducted. The overall inspections from 2015 to 2019 indicate that the posted signage is present and in good condition at SWMU 1 (SES, 2015a; 2016a; Arcadis, 2017a; 2019a).

4.7 PROGRESS SINCE THE THIRD PERIODIC REVIEW

The protectiveness statement presented in the Third Periodic Review Report (USACE, 2016) for SWMU 1 is:

“The remedy at SWMU 1 is protective of human health and the environment.”

There were no issues or recommendations identified for SWMU 1 in the Third Periodic Review Report.

4.8 DATA REVIEW

The corrective actions at SWMU 1 are LUCs only; therefore, there were no data to review for this Fourth Periodic Review.

4.9 PERIODIC REVIEW SITE INSPECTION

The Fourth Periodic Review site inspection of SWMU 1 occurred on February 3 and 4, 2020. In attendance were Algeana Stevenson and Dale Kiefer, Fort Stewart; Sara Keisler, USACE; and Breanna Stout and Charlene Torres, DAWSON.

The purposes of the site inspection were to observe SWMU 1, confirm the conditions of the remedy, and ensure the remedy is protective of human health and the environment. Photographs were taken of SWMU 1 and included current conditions and post mounted warning signs.

The site inspection team confirmed that the signs were visible, well-labeled, and maintained. The team saw no evidence that the soils had been disturbed or excavated. The team also observed no vandalism or trespassing had occurred as well as no changes in land use have occurred.

The Site Inspection Checklists are presented in **Appendix B**. The Site Inspection Photograph Log is presented in **Appendix C**.

4.10 TECHNICAL ASSESSMENT

4.10.1 QUESTION A - IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENT?

Yes, based on the Periodic Review site inspection and conditions reported in annual inspection reports, the corrective actions are effective and functioning as intended.

ICs such as deed recordation (when required), zoning controls, post-mounted warning signs, implemented O&M Plan, and the overall enforcement of the land use controls are effective in preventing human exposure and contact with the buried waste remaining in place. Additionally, the groundwater well abandonment and groundwater use restrictions prevent use of groundwater as drinking water or for irrigational purposes. The O&M activities have been effective in replacing deteriorating signage around boundaries to further restrict human contact.

4.10.2 QUESTION B - ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS AND REMEDIAL ACTION OBJECTIVES USED AT THE TIME OF THE REMEDIAL ACTION SELECTION STILL VALID?

Yes, the exposure assumptions and corrective action objectives are still valid for SWMU 1.

There have been no changes to physical conditions. The land use at SWMU 1 remains restricted as intended by the SWMU 1 Corrective Action Plan. The ICs for SWMU 1 are achieving the corrective action objectives to restrict human activities to prevent the ingestion of the shallow groundwater and prevent human exposure and contact with the buried waste remaining in place. Conditions at SWMU 1 have not changed in a way that may present a potential vapor intrusion risk. There continue to be no potential receptors to raise the possibility of a complete vapor intrusion pathway.

4.10.3 QUESTION C - HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

There is no other information that calls into question the protectiveness of the corrective action. No ecological risks have been identified. There have been no impacts from natural disaster events or weather-related events that have affected the protectiveness of the corrective action.

4.10.4 TECHNICAL ASSESSMENT SUMMARY

LUCs effectively restrict access to shallow groundwater and prevent the disturbance of subsurface soil. The restrictions achieve the corrective action objectives of preventing the ingestion of the shallow groundwater and human exposure to the remaining buried waste onsite.

4.11 ISSUES

No issues were identified during this Periodic Review that prevent the corrective action from being protective now or in the future.

4.12 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

No recommendations or follow-up actions are required since there are no issues identified during this Periodic Review that affect current or future protectiveness of the corrective actions.

4.13 PROTECTIVENESS STATEMENT

The corrective actions at SWMU 1 are protective of human health and the environment.

The ICs are effective in minimizing or eliminating human exposure to the buried waste within the boundaries at SWMU 1. Additional measures to restrict site access, implemented by the installation in the form of LUCs, are also functioning as intended and documented in Annual Progress Reports.

5.0 SWMU 2

5.1 SITE CHRONOLOGY

Information on site chronology for SWMU 2 is presented below in Table 3.

Table 3 - SWMU 2 Chronology

Event	Date (Year)
Landfill Operations	1960s - 1984
Phase I RFI	1993
Phase II RFI	1999
Corrective Action Plan	2000
Corrective Action Plan approved by GAEPD	2001
Warning signs installed and monitoring wells abandoned	2001
First Periodic Review	2005
Second Periodic Review	2011
Third Periodic Review	2016
Corrective Action Plan Progress Reports	2001 - 2019*

RCRA = Resource Conservation and Recovery Act

RFI = RCRA Facility Investigation

GAEPD = Georgia Environmental Protection Division

*Date captures the Corrective Action Plan Progress Reports received up through this Fourth Periodic Review.

5.2 PHYSICAL CHARACTERISTICS

SWMU 2 is located approximately 17 miles northwest of the Fort Stewart Garrison area along Fort Stewart Road 129 (**Figure 3**). SWMU 2 is just north of the bivouac area, on the northern side of a small hill, and is approximately 8.8 acres in size. The landfill is reported to be approximately 15 feet wide by 300 feet long by 5 to 6 feet deep. Grass, small trees, and bushes currently cover the area (USACE, 2000a).

5.3 HISTORY OF CONTAMINATION

From the 1960s to 1979, the area was used to dispose of refuse from troop training activities and nearby residents by open-pit burning. During the operation of the landfill, both open-pit burning and trench disposal methods were used. Some of the wastes that were disposed of were grass clippings, tree branches, root stumps, and chunks of asphalt and concrete. The landfill was officially closed in 1970; however, the trench method of solid waste disposal reportedly continued. General refuse from ground maintenance activities and construction debris were placed in the landfill from 1979 to 1984. Records searched by Environmental Science and Engineering showed no evidence of the disposal of toxic or hazardous wastes (USACE, 2000a).

During a site reconnaissance in November 1995, small soil piles, roofing tin, and wooden construction-type debris were observed and spent small weapons cartridges were noted in the ditch along SWMU 2's southwestern and southeastern boundaries (USACE, 2000a).

5.4 INITIAL RESPONSE

The landfill ceased operations in 1984 (USACE, 2000a). No initial response activities occurred at SWMU 2.

5.5 BASIS FOR TAKING ACTION

The Phase II RFI Report assigned a "NFA" status was assigned to SWMU 2; however, the Phase II RFI recommended that ICs be implemented to protect human health as buried waste will remain in place (USACE, 2000a).

5.6 CORRECTIVE ACTION

5.6.1 CORRECTIVE ACTION OBJECTIVES

The Corrective Action Plan and the Decision Document for SWMU 2 describe the primary goal and purpose for implementing corrective actions are limited to the protection of human health and safety. To achieve this goal, the following remedial response objectives were established (USACE, 2000a and 2001a):

- *to prohibit ingestion of shallow groundwater from the subject site; and*
- *to prohibit disturbance of surface and subsurface soil in order to minimize contact with soil and buried waste.*

5.6.2 CORRECTIVE ACTIONS

The 2000 Corrective Action Plan, 2001 Decision Document, and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 2 (USACE, 2000a, 2001a; GAEPD, 2017):

ICs: *BMP, Deed Recordation, Zoning Controls, Well Abandonment, Post-mounted Warning Signs, and Implementation of O&M Plan.*

If property is transferred out of government ownership, future deed recordation requirements will be implemented as outlined in Appendix B of the Corrective Action Plan (USACE, 2000a). The Fort Stewart DPW maintains a list of all Corrective Action Plan-required LUCs (including the BMP and deed recordation requirements) (Arcadis, 2019a).

5.6.3 CORRECTIVE ACTION IMPLEMENTATION

In 2001, six groundwater monitoring wells were abandoned at SWMU 2 (Arcadis, 2015a).

The selected corrective action involves a multi-layered approach of ICs comprising of LUCs.

5.6.3.1 Land Use Controls

LUCs for SWMU 2 include deed recordation (when required), controls implemented through the BMP, zoning controls, and placement of signs restricting access (USACE, 2000a).

The BMP expressly prohibits the disturbance of subsurface soil at SWMU 2, installation of groundwater wells at SWMU 2, military training exercises that disturb subsurface soils, hunting, recreational activities, and construction within the property boundaries. The BMP does permit timber harvesting, the performance of wildlife studies, and maintenance of deer feedlots. Although the BMP indicates military training is not prohibited, it is understood that the intent of the LUCs is to prevent exposure to the buried waste (i.e., subsurface soil). Military maneuvers are allowed at SWMU 2 if subsurface soils are not disturbed (USACE, 2000a).

In July 2001, Earth Tech Inc. (Earth Tech) installed fourteen warning signs at approximately 200 foot intervals surround the perimeter of SWMU 2 (USACE, 2000a).

5.6.4 OPERATIONS AND MAINTENANCE

The O&M plan for SWMU 2 describes the procedures to ensure that signs and barriers remain in good condition. Annual inspections are performed and documented in the Corrective Action Plan Progress Reports. The inspections observe the condition of warning signs, signposts, and barriers for evidence of damage or deterioration. Necessary repairs or replacements are performed to ensure the signs, signposts, and barriers remain in good condition (USACE, 2000a).

Routine inspection and maintenance at SWMU 2 include:

- Annual Inspections
- Maintenance, if necessary
- Annual Reporting

Annual inspections have occurred at SWMU 2 since the installation of the fourteen warning signs in 2001. The overall inspections from 2015 - 2019 indicate that the posted signage is present and in good condition at SWMU 2 (SES, 2015a; 2016a; Arcadis, 2017a; 2019a).

5.7 PROGRESS SINCE THE THIRD PERIODIC REVIEW

The following is the protectiveness statement presented in the 2016 Periodic Review Report for SWMU 2 (USACE, 2016).

“The remedy at SWMU 2 is protective of human health and the environment.”

There were no issues or recommendations identified for SWMU 2 in the Third Periodic Review Report.

5.8 DATA REVIEW

The corrective action at SWMU 2 are LUCs only; therefore, there were no data to review.

5.9 PERIODIC REVIEW SITE INSPECTION

The Fourth Periodic Review site inspection of SWMU 2 occurred on February 3 and 4, 2020. In attendance were Algeana Stevenson and Dale Kiefer, Fort Stewart; Sara Keisler, USACE; and Breanna Stout and Charlene Torres, DAWSON.

The purposes of the site inspection were to observe SWMU 2, confirm the conditions of the remedy, and ensure the remedy is protective of human health and the environment. Photographs were taken of SWMU 2 and included current conditions and post mounted warning signs.

The site inspection team confirmed that the signs were visible, well-labeled, and maintained. The team saw no evidence that the soils had been disturbed or excavated. The team also observed no vandalism or trespassing had occurred as well as no changes in land use have occurred.

The Site Inspection Checklists are presented in **Appendix B**. The Site Inspection Photograph Log is presented in **Appendix C**

5.10 TECHNICAL ASSESSMENT

5.10.1 QUESTION A - IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENT?

Yes, based on the Periodic Review site inspection and conditions reported in annual inspection reports, the selected corrective actions are effective and functioning as intended.

ICs include deed recordation (when required), zoning controls, maintenance of existing physical barriers, post-mounted warning signs as outlined by the O&M plan, and overall enforcement of the BMP have been effective in preventing human exposure and preventing physical contact with the buried waste in place within SWMU 2 boundaries. Additionally, well abandonment and groundwater use restrictions prevent any use of groundwater for drinking water or for irrigational uses. The O&M Plan includes a requirement for annual inspections, which ensure the timely replacement of missing or deteriorating signage around SWMU 2 boundaries.

5.10.2 QUESTION B - ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS AND REMEDIAL ACTION OBJECTIVES USED AT THE TIME OF THE REMEDIAL ACTION SELECTION STILL VALID?

Yes, the exposure assumptions and corrective action objectives are still valid for SWMU 2.

There have been no changes to physical conditions. The land use at SWMU 2 remains restricted as intended by the SWMU 2 Corrective Action Plan. The ICs for SWMU 2 are achieving the corrective action objectives to restrict human activities to prevent ingestion of the shallow groundwater and prevent human exposure and contact with the buried waste remaining in place. Conditions at SWMU 2 have not changed in a way that may present a potential vapor intrusion risk. There continue to be no potential receptors to raise the possibility of a complete vapor intrusion pathway.

5.10.3 QUESTION C - HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

There is no other information that calls into question the protectiveness of the corrective action. No ecological risks have been identified. There have been no impacts from natural disaster events or weather-related events that have affected the protectiveness of the corrective action.

5.10.4 TECHNICAL ASSESSMENT SUMMARY

LUCs effectively restrict access to shallow groundwater and prevent the disturbance of subsurface soil. The restrictions achieve the corrective action objectives of preventing the ingestion of the shallow groundwater and human exposure to the remaining buried waste onsite.

5.11 ISSUES

No issues were identified during this Periodic Review that prevent the corrective action from being protective now or in the future.

5.12 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

No recommendations or follow-up actions are required since there are no issues identified during this Periodic Review that affect current or future protectiveness of the corrective actions.

5.13 PROTECTIVENESS STATEMENT

The corrective actions at SWMU 2 are protective of human health and the environment.

The ICs for SWMU 2 are functioning as intended. LUCs for SWMU 2 are effective in restricting human activities to prevent ingestion of the shallow groundwater and prevent human exposure and contact with the buried waste remaining in place.

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6.0 SWMU 3

6.1 SITE CHRONOLOGY

Information on site chronology for SWMU 3 is presented below in Table 4.

Table 4 - SWMU 3 Chronology

Event	Date (Year)
Landfill Operations	1960s - 1982
Phase I RFI	1993
Phase II RFI	2000
Corrective Action Plan	2000
Corrective Action Plan approved by GAEPD	2001
Warning signs installed and monitoring wells abandoned	2001
First Periodic Review	2005
Second Periodic Review	2011
Third Periodic Review	2016
Corrective Action Plan Progress Reports	2001 - 2019*

RCRA = Resource Conservation and Recovery Act

GAEPD = Georgia Environmental Protection Division

*Date captures the Corrective Action Plan Progress Reports received up through this Fourth Periodic Review.

6.2 PHYSICAL CHARACTERISTICS

SWMU 3 is approximately 3.5 miles southwest of Pembroke, Georgia (**Figure 4**). SWMU 3 is less than one mile southeast of Dean Field and the Noncommissioned Officer's Academy. SWMU 3 encompasses approximately 6.3 acres and is comprised of two-trench-like depressions. The dimensions of the disposal trenches are 20 feet wide by 400 feet long and estimated to be 5 - 6 feet in depth (USACE, 2000b).

SWMU 3 is flat and slopes gently toward the south. Pine trees, brush, and grass cover most of SWMU 3. The southern portion of SWMU 3 is marshy, with surface water present (USACE, 2000b).

6.3 HISTORY OF CONTAMINATION

SWMU 3 is a former Tactical Air Command (TAC-X) landfill located at the north end of Fort Stewart near Dean Field and operated from the 1960s to 1982. From the 1960s to 1979 waste disposal included: residential waste, food cans, brush, plastic, and cardboard boxes. Waste disposal from 1979 - 1982 included: grass clippings, tree branches, root stumps, and chunks of asphalt and concrete. A site reconnaissance team observed household type debris (e.g., plastic spoons and bags) within the overburden pile on the western side of the disposal trench in November 1993. This team also reported aged

refuse present at the bottom of the disposal trench. A site reconnaissance performed in September 1996 found no evidence of any ongoing landfill operations (USACE, 2000b).

6.4 INITIAL RESPONSE

The landfill ceased operations in 1982 (USACE, 2000b). No initial response activities occurred at SWMU 3.

6.5 BASIS FOR TAKING ACTION

The Phase II RFI concluded that “NFA” was needed to address arsenic in surface soil and benzo[*b*]fluoranthene in surface water. The revised Final Phase II RFI report recommended that ICs be implemented at SWMU 3 (Arcadis, 2019a).

6.6 CORRECTIVE ACTIONS

6.6.1 CORRECTIVE ACTION OBJECTIVES

The Corrective Action Plan and the Decision Document for SWMU 3 describe the primary goal and purpose for implementing corrective actions are limited to the protection of human health and safety. To achieve this goal, the following remedial response objectives were established (USACE, 2000b and 2001b):

- *to prohibit ingestion of shallow groundwater from the subject site; and*
- *to prohibit disturbance of surface and subsurface soil in order to minimize contact with soil and buried waste.*

6.6.2 CORRECTIVE ACTIONS

The 2000 Corrective Action, 2001 Decision Document and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 3 (USACE, 2000b and 2001b; GAEPD, 2017):

ICs: *BMP, deed recordation, zoning controls, well abandonment, installation post-mounted warning signs, and implementation of O&M plan.*

If property is transferred out of government ownership, future deed recordation requirements will be implemented as outlined in Appendix B of the Corrective Action Plan (USACE, 2000b). The Fort Stewart DPW maintains a list of all Corrective Action Plan-required LUCs (including the BMP and deed recordation requirements) (Arcadis, 2019a).

6.6.3 CORRECTIVE ACTION IMPLEMENTATION

In 2001, eight groundwater monitoring wells were abandoned at SWMU 3 (Arcadis, 2015a).

The selected corrective action involves a multi-layered approach of ICs comprising of LUCs.

6.6.3.1 Land Use Controls

LUCs for SWMU 3 include deed recordation (when required), controls implemented through the BMP, zoning controls, and placement of signs restricting access (USACE, 2000b).

The BMP expressly prohibits the disturbance of subsurface soil at SWMU 3, installation of groundwater wells at SWMU 3, military training exercises that may disturb subsurface soil, hunting, recreational activities, and construction within the property boundaries. The BMP does permit timber harvesting, performance of wildlife studies, maintenance of deer feedlots, and outdoor classroom-style military training if subsurface soils are not disturbed (USACE, 2000b).

In July 2011, Earth Tech installed ten warning signs at approximately 200-foot intervals around the perimeter of SWMU 3 (USACE, 2000b).

6.6.4 OPERATIONS AND MAINTENANCE

The O&M plan for SWMU 3, which was included as Appendix A of the Corrective Action Plan, was implemented starting in July 2001 (USACE, 2000b). The O&M Plan describes the procedures to ensure that signs and barriers remain in good condition. Annual inspections are performed and documented in the Corrective Action Plan Progress Reports. The inspections observe the condition of warning signs, signposts, and barriers for evidence of damage or deterioration. Necessary repairs or replacements are performed to ensure the signs, signposts, and barriers remain in good condition.

Routine inspection and maintenance component at SWMU 3 include:

- Annual Inspections
- Maintenance, if necessary
- Annual Reporting

Annual inspections have occurred at SWMU 3 site since the installation of the ten warning signs in 2001. The overall inspections from 2015 to 2019 indicate that the posted signage is present and in good condition at SWMU 3 (SES, 2015a; 2016a; Arcadis, 2017a; 2019a).

6.7 PROGRESS SINCE THE THIRD PERIODIC REVIEW

The following is the protectiveness statement presented in the 2016 Periodic Review Report for SWMU 3 (USACE, 2016):

“The remedy at SWMU 3 is protective of human health and the environment.”

There were no issues or recommendations identified for SWMU 3 in the Third Periodic Review Report.

6.8 DATA REVIEW

The corrective actions at SWMU 3 are LUCs only, therefore there were no data to review for this section.

6.9 PERIODIC REVIEW SITE INSPECTION

The Fourth Periodic Review site inspection of SWMU 3 occurred on February 3 and 4, 2020. In attendance were Algeana Stevenson and Dale Kiefer, Fort Stewart; Sara Keisler, USACE; and Breanna Stout and Charlene Torres, DAWSON.

The purposes of the site inspection were to observe SWMU 3, confirm the conditions of the remedy, and ensure the remedy is protective of human health and the environment. Photographs were taken of SWMU 3 and included current conditions and post mounted warning signs.

The site inspection team confirmed that the signs were visible, well-labeled, and maintained. The team saw no evidence that the soils had been disturbed or excavated. The team also observed no vandalism or trespassing had occurred as well as no changes in land use have occurred.

The Site Inspection Checklists are presented in **Appendix B**. The Site Inspection Photograph Log is presented in **Appendix C**.

6.10 TECHNICAL ASSESSMENT

6.10.1 QUESTION A - IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENT?

Yes, based on the Periodic Review site inspection and conditions reported in annual inspection reports, the selected corrective actions are effective and functioning as intended.

ICs such as deed recordation (when required), zoning controls, maintenance of existing physical barriers, post-mounted warning signs, and overall enforcement of the BMP land controls are effective in providing protection, preventing human exposure, and preventing physical contact with the buried waste in place within SWMU 3 boundaries. Additionally, well abandonment and groundwater use restrictions prevent any use of groundwater as drinking water or for irrigational uses. The O&M Plan includes a requirement for annual inspections, which ensure the timely replacement of missing or deteriorating signage around SWMU 3 boundaries.

6.10.2 QUESTION B - ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS AND REMEDIAL ACTION OBJECTIVES USED AT THE TIME OF THE REMEDIAL ACTION SELECTION STILL VALID?

Yes, the exposure assumptions and corrective action objectives are still valid for SWMU 3.

There have been no changes to physical conditions. The land use at SWMU 3 remains restricted as intended by the SWMU 3 Corrective Action Plan. The ICs for SWMU 3 are achieving the corrective action objectives to restrict human activities to prevent ingestion of the shallow groundwater and prevent human exposure and contact with the buried waste remaining in place. Conditions at SWMU 3 have not changed in a way that may present a potential vapor intrusion risk. There continue to be no potential receptors to raise the possibility of a complete vapor intrusion pathway.

6.10.3 QUESTION C - HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

There is no other information that calls into question the protectiveness of the corrective action. No ecological risks have been identified. There have been no impacts from natural disaster events or weather-related events that have affected the protectiveness of the corrective action.

6.10.4 TECHNICAL ASSESSMENT SUMMARY

The LUCs effectively restrict access to groundwater and prevent the disturbance of subsurface soil. The restrictions achieve the corrective action objectives of preventing the ingestion of the shallow groundwater and human exposure to the remaining buried waste onsite.

6.11 ISSUES

No issues were identified during this Periodic Review that prevent the corrective action from being protective now or in the future.

6.12 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

No recommendations or follow-up actions are required since there are no issues identified during this Periodic Review that affect current or future protectiveness of the corrective action.

6.13 PROTECTIVENESS STATEMENT

The corrective actions at SWMU 3 are protective of human health and the environment.

The ICs for SWMU 3 are functioning as intended. LUCs for SWMU 3 are effective in restricting human activities to prevent ingestion of shallow groundwater and prevent human exposure and contact with the buried waste remaining in place.

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7.0 SWMU 8

7.1 SITE CHRONOLOGY

Information on site chronology for SWMU 8 is presented below in Table 5.

Table 5 - SWMU 8 Chronology

Event	Date (Year)
Explosives and Ordnance Disposal Operations	1983 - 1987
RCRA Facility Assessment (RFA)	1990
Corrective Action Plan	2001
Corrective Action Plan approved by GAEPD	2001
Fencing and warning signs installed	2002
First Periodic Review	2005
Second Periodic Review	2011
Third Periodic Review	2016
Corrective Action Plan Progress Reports	2002 - 2019*

RCRA = Resource Conservation and Recovery Act

RFA = RCRA Facility Assessment

GAEPD = Georgia Environmental Protection Division

*Date captures the Corrective Action Plan Progress Reports received up through this Fourth Periodic Review.

7.2 PHYSICAL CHARACTERISTICS

SWMU 8 is approximately 9 miles northeast of the cantonment area. SWMU 8 resides between Fort Stewart Roads 53 and 57 and is 1 mile south of Georgia Highway 144 (**Figure 5**). SWMU 8 is approximately 1.8 acres and is mostly clear of trees and vegetation. An unpaved road accesses this site off Tank Trail 53. The access road divides SWMU 8 into two sections: East (0.99 acre) and West (0.84 acre). Three blast craters and one open burning trench are within SWMU 8's boundaries. There are no potential surface water bodies at SWMU 8 (USACE, 2001c).

7.3 HISTORY OF CONTAMINATION

Between 1983 - 1987, SWMU 8 was used for open burning and open detonation (OB/OD) of excess or unused small arms rounds, artillery and mortar rounds, pyrotechnics, bulk explosives, rocket propellant, and hand grenades. These materials were generated when larger packages of small arms or explosives were opened, but not consumed within the original military activities. For safety and security reasons, they were not restocked but instead destroyed by burning or detonation. In 1990, an RFA was performed for SWMU 8. Observations made during this assessment and subsequent site visits indicated that craters contained no solid waste other than bits of shrapnel and other cartridge fragments. No ashes or charred ground were observed from explosions or burning activities (USACE, 2001c).

7.4 INITIAL RESPONSE

The open burning/open detonation (OB/OD) area ceased operations in 1987. No initial response activities occurred at SWMU 8.

7.5 BASIS FOR TAKING ACTION

The RFA recommended “NFA” for SWMU 8 (USACE, 2001c). GAEPD agreed with the “NFA” investigation in July 1999; however, GAEPD required the preparation of a Corrective Action Plan “*to control intrusive activities at these sites, to be protective of the health and safety of humans potentially coming in contact with contaminants... and to prevent the use of groundwater as a drinking water source*” (USACE, 2001c).

7.6 CORRECTIVE ACTIONS

7.6.1 CORRECTIVE ACTION OBJECTIVES

The Corrective Action Plan describes the primary goal and purpose to implement the corrective actions to protect human health and the environment. To achieve this goal, the following corrective action objectives were established (USACE, 2001c):

Prohibit the disturbance of subsurface soil to prevent contact with buried ordnance and/or contaminated media.

7.6.2 CORRECTIVE ACTION

The 2001 Corrective Action Plan and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 8 (USACE, 2001c; GAEPD, 2017):

ICs: BMP, deed recordation, zoning controls, fence barrier, maintenance of existing physical barriers, fence-mounted warning signs, and implementation of O&M Plan.

If property is transferred out of government ownership, future deed recordation requirements will be implemented as outlined in Appendix B of the Corrective Action Plan (USACE, 2000c). The Fort Stewart DPW maintains a list of all Corrective Action Plan-required LUCs (including the BMP and deed recordation requirements) (Arcadis, 2019b).

7.6.3 CORRECTIVE ACTION IMPLEMENTATION

The selected corrective action involves a multi-layered approach of ICs comprising of LUCs. Physical barriers were installed in May and April of 2002, by Earth Tech. Approximately 1,815 linear feet of fencing topped with triple strand barbed wire, two 20-foot gates, and eight warning signs were installed.

7.6.3.1 Land Use Controls

LUCs for SWMU 8 include controls implemented through the BMP, deed recordation (when required), zoning controls, fence barrier, maintenance of existing physical barriers, and fence-mounted warning signs (USACE, 2001c).

The BMP expressly prohibits the disturbance of subsurface soil at SWMU 8, installation of groundwater wells at SWMU 8, military training exercises that may disturb subsurface soil, hunting, recreational activities, and construction within the property boundaries. The BMP does permit timber harvesting, performance of wildlife studies, maintenance of deer feed lots, and outdoor classroom-style military training if subsurface soils are not disturbed (USACE, 2001c).

7.6.4 OPERATIONS AND MAINTENANCE

The O&M plan, which was included in Appendix A of the Corrective Action Plan, has been implemented since May 2002 (Arcadis, 2019b). The O&M Plan describes the procedures to ensure that signs and barriers remain in good condition. Annual inspections are performed and documented in the Corrective Action Plan Progress Reports. The inspections observe the condition of warning signs, signposts, and barriers for evidence of damage or deterioration. Necessary repairs or replacements are performed to ensure the signs, signposts, and barriers remain in good condition.

Routine inspection and maintenance component at SWMU 8 include:

- Annual Inspections
- Maintenance, if necessary
- Annual Reporting

Annual inspections have occurred at SWMU 8 since the installation of the fencing and eight warning signs in 2002. The overall inspections from 2015 - 2019 indicate that the posted signage is present and in good condition at SWMU 8 (SES, 2015b; 2016b; Arcadis, 2017b; 2019b).

7.7 PROGRESS SINCE THE THIRD PERIODIC REVIEW

The following is the protectiveness statement presented in the 2016 Periodic Review Report (USACE, 2016) for SWMU 8:

“The remedy at SWMU 8 is protective of human health and the environment.”

There were no issues or recommendations identified for SWMU 8 in the Third Periodic Review Report.

7.8 DATA REVIEW

The corrective action at SWMU 8 are LUCs only; therefore, there were no data to review for this section.

7.9 PERIODIC REVIEW SITE INSPECTION

The Fourth Periodic Review site inspection of SWMU 8 occurred on February 3 and 4, 2020. In attendance were Algeana Stevenson and Dale Kiefer, Fort Stewart; Sara Keisler, USACE; and Breanna Stout and Charlene Torres, DAWSON.

The purposes of the site inspection were to observe SWMU 8, confirm the conditions of the remedy, and ensure the remedy is protective of human health and the environment. Photographs were taken of SWMU 8 and included current conditions and post mounted warning signs.

The site inspection team confirmed that the signs were visible, well-labeled, and maintained. The team saw no evidence that the soils had been disturbed or excavated. The team also observed no vandalism or trespassing had occurred as well as no changes in land use have occurred.

The Site Inspection Checklists are presented in **Appendix B**. The Site Inspection Photograph Log is presented in **Appendix C**.

7.10 TECHNICAL ASSESSMENT

7.10.1 QUESTION A - IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENT?

Yes, based on the Periodic Review site inspection and conditions reported in annual inspection reports, the corrective actions are effective and functioning as intended.

ICs such as deed recordation (when required), zoning controls, fencing, maintenance of existing physical barriers, fence-mounted warning signs, and overall enforcement of the BMP land controls is effective in providing protection, preventing human exposure, and preventing physical contact. The O&M Plan includes a requirement for annual inspections, which ensure the timely replacement of missing or deteriorating signage around SWMU 8 boundaries.

7.10.2 QUESTION B - ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS AND REMEDIAL ACTION OBJECTIVES USED AT THE TIME OF THE REMEDIAL ACTION SELECTION STILL VALID?

Yes, the exposure assumptions and corrective action objectives are still valid for SWMU 8.

There have been no changes to physical conditions. The land use at SWMU 8 remains restricted as intended by the SWMU 8 Corrective Action Plan. The ICs for SWMU 8 are

achieving the corrective action objectives to minimize or restrict human exposure to contaminated media within the boundaries of SWMU 8. Conditions at SWMU 8 have not changed in a way that may present a potential vapor intrusion risk. There continue to be no potential receptors to raise the possibility of a complete vapor intrusion pathway.

7.10.3 QUESTION C - HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

There is no other information that calls into question the protectiveness of the corrective action. No ecological risks have been identified. There have been no impacts from natural disaster events or weather-related events that have affected the protectiveness of the corrective action.

7.10.4 TECHNICAL ASSESSMENT SUMMARY

LUCs effectively restrict access to groundwater and prevent the disturbance of subsurface soil. The restrictions achieve the corrective action objectives of preventing human exposure with buried ordnance and/or contaminated media.

7.11 ISSUES

No issues were identified during this Periodic Review that prevent the corrective action from being protective now or in the future.

7.12 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Based on the analyses and inspection performed as part of the Periodic Review process, there are no recommendation for SWMU 8.

7.13 PROTECTIVENESS STATEMENT

The corrective actions at SWMU 8 are protective of human health and the environment.

The ICs are effective in minimizing or eliminating human exposure to buried ordnance and/or contaminated media within the boundary of SWMU 8. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.

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8.0 SWMU 10

8.1 SITE CHRONOLOGY

Information on site chronology for SWMU 10 is presented below in Table 6.

Table 6 - SWMU 10 Chronology

Event	Date (Year)
Detonation of Unexploded Ordnances Operations	1975 - 1980
Phase I RFI	1996
Phase II RFI	2000
Corrective Action Plan	2001
Corrective Action Plan approved by GAEPD	2001
Fencing and Warning Signs Installed	2004
First Periodic Review	2005
Second Periodic Review	2011
Third Periodic Review	2016
Corrective Action Plan Progress Reports	2004 - 2019*

RCRA = Resource Conservation and Recovery Act

GAEPD = Georgia Environmental Protection Division

*Date captures the Corrective Action Plan Progress Reports received up through this Fourth Periodic Review.

8.2 PHYSICAL CHARACTERISTICS

SWMU 10 is located four miles north of the Fort Stewart Garrison area and one mile east of Georgia Highway 119. This site is approximately 1,500 feet from Taylors Creek. An additional area was identified after the Phase II RFI and encompasses approximately 1,400 feet southwest of the original SWMU 10 area. The area is approximately (0.27 acre) and consists of a burial trench. The area is segregated from the surrounding property by an interior barbed wire fence and an external chain link fence (**Figure 6**) (USACE, 2001d).

8.3 HISTORY OF CONTAMINATION

SWMU 10 operated from 1975 to 1980 and was used for the open detonation of unexploded ordnances (UXO). The wastes deposited at this site included: excess military explosive materials, small arms rounds, artillery and mortar rounds, illumination projectiles, pyrotechnics, bulk explosives, rocket propellants, explosive residues, and smoke grenades. Originally, SWMU 10 consisted of two concentric areas (**Figure 6**): a 1.48-acre area bounded by a chain link fence and the 0.27-acre area bounded by a barbed wire fence. Upon further investigations, the SWMU 10 boundary was amended to only include the smaller area bounded by the barbed wire fence (USACE, 2001d).

8.4 INITIAL RESPONSE

SWMU 10 ceased operations in 1980. No initial response activities occurred at SWMU 10.

8.5 BASIS FOR TAKING ACTION

The results of the ordnance and explosives survey at SWMU 10 indicated no UXO were present within the larger area of SWMU 10; however, approximately 4 pounds of steel fragmentations were found and were removed. Ordnance and explosives related items were found on the surface of the smaller area. Fort Stewart EOD personnel indicated that the pit in the smaller area of SWMU 10 was used for dumping spent ammunition rounds. The smaller area contained ordinances and explosives related items at the surface and unidentifiable metallic debris in the near surface soils (Arcadis, 2019b).

8.6 CORRECTIVE ACTIONS

8.6.1 CORRECTIVE ACTION OBJECTIVES

The Corrective Action Plan was approved by the GAEPD in 2001 and described the primary goal and purpose for implementing corrective actions to protect human health and safety. The Corrective Action Plan established the following corrective action objective to achieve this goal (USACE, 2001d):

Prohibit the disturbance of subsurface soil to prevent contact with buried ordnance and/or contaminated media.

8.6.2 CORRECTIVE ACTION

The 2001 Corrective Action Plan and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 10 (USACE, 2001d; GAEPD, 2017):

Enforcement of the BMP, deed recordation, zoning controls, maintenance of existing physical barriers, fence barrier and fence-mounted warning signs around the smaller area of SWMU 10 only, and implementation of O&M Plan.

If property is transferred out of government ownership, future deed recordation requirements will be implemented as outlined in Appendix B of the Corrective Action Plan (USACE, 2001d). The Fort Stewart DPW maintains a list of all Corrective Action Plan-required LUCs (including the BMP and deed recordation requirements) (Arcadis, 2019b).

8.6.3 CORRECTIVE ACTION IMPLEMENTATION

The selected corrective action involves a multi-layered approach of ICs comprising of LUCs.

In 2002, Earth Tech installed four warning signs, fencing with barbed wire, and access gates around the perimeter of SWMU 10.

8.6.3.1 Land Use Controls

LUCs for SWMU 10 include: deed recordation (when required), enforcement of the BMP, zoning controls, maintenance of existing physical barriers, fence barrier, and fence-mounted warning signs around the smaller area of SWMU 10 (USACE, 2001d).

The BMP expressly prohibits disturbance of subsurface soil at SWMU 10, installation of groundwater wells, military training exercises within the smaller area of SWMU 10, hunting, recreational activities, and construction within the full boundaries of SWMU 10. The BMP does permit performance of wildlife studies, maintenance of deer feedlots, and military training in the larger area of SWMU 10 (USACE, 2001d).

8.6.4 OPERATIONS AND MAINTENANCE

The O&M plan for SWMU 10, which was included as Appendix A of the Corrective Action Plan, was implemented starting in May 2002 (Arcadis, 2019b). The O&M Plan describes the procedures to ensure that signs and barriers remain in good condition. Annual inspections are performed and documented in the Corrective Action Plan Progress Reports. The inspections observe the condition of warning signs, signposts, and barriers for evidence of damage or deterioration. Necessary repairs or replacements are performed to ensure the signs, signposts and barriers remain in good condition.

Routine inspection and maintenance component at SWMU 10 include:

- Annual Inspections
- Maintenance, if necessary
- Annual Reporting

Annual inspections have occurred at SWMU 10 assessing the four warning signs, fencing, barbed wire, and access gates in 2002. The overall inspections from 2015 - 2019 indicate that the posted signage is present and in good condition at SWMU 10 (SES, 2015b; 2016b; Arcadis, 2017b; 2019b).

In a letter dated October 20, 2011, GAEPD approved the removal of LUCs (annual inspections, fencing, signage, etc.) at SWMU 10 on the condition that the fenced portion of SWMU 10 be cleared of potential surface and subsurface Munitions and Explosives of Concern (MEC) using ground-penetrating radar, electromagnetic induction, or similar technology. Fort Stewart is seeking subcontractors to perform the MEC clearance at SWMU 10. GAEPD will be notified of the scheduled MEC clearance prior to it being performed. LUCs and annual inspections will continue at SWMU 10 until MEC clearance has been performed and GAEPD has approved the final report (Arcadis, 2019b).

8.7 PROGRESS SINCE THE THIRD PERIODIC REVIEW

The following is the protectiveness statement presented in the 2016 Periodic Review Report (USACE, 2016) for SWMU 10:

“The remedy at SWMU 10 is protective of human health and the environment.”

There were no issues or recommendations identified for SWMU 10 in the Third Periodic Review Report.

8.8 DATA REVIEW

The corrective actions at SWMU 10 are LUCs only; therefore, there were no data to review for this section.

8.9 PERIODIC REVIEW SITE INSPECTION

The Fourth Periodic Review site inspection of SWMU 10 occurred on February 3 and 4, 2020. In attendance were Algeana Stevenson and Dale Kiefer, Fort Stewart; Sara Keisler, USACE; and Breanna Stout and Charlene Torres, DAWSON.

The purposes of the site inspection were to observe SWMU 10, confirm the conditions of the remedy, and ensure the remedy is protective of human health and the environment. Photographs were taken of SWMU 10 and included current conditions and post mounted warning signs.

The site inspection team confirmed that the signs were visible, well-labeled, maintained, and the fencing was adequately locked from an exterior inspection due to restricting fencing. The team saw no evidence that the soils had been disturbed or excavated. The team also observed no vandalism or trespassing had occurred as well as no changes in land use have occurred.

The Site Inspection Checklists are presented in **Appendix B**. The Site Inspection Photograph Log is presented in **Appendix C**.

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8.10 TECHNICAL ASSESSMENT

8.10.1 QUESTION A - IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENT?

Yes, based on the Periodic Review site inspection and conditions reported in annual inspection reports, the corrective actions are effective and functioning as intended.

Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports. The LUCs include fencing and signage that were noted as being visible and well-maintained at the time of the site inspection.

8.10.2 QUESTION B - ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS AND REMEDIAL ACTION OBJECTIVES USED AT THE TIME OF THE REMEDIAL ACTION SELECTION STILL VALID?

Yes, the exposure assumptions and corrective action objectives are still valid for SWMU 10.

There have been no changes to physical conditions. The land use at SWMU 10 remains restricted as intended by the SWMU 10 Corrective Action Plan. The ICs for SWMU 10 are achieving the corrective action objectives to minimize or restrict human exposure to buried ordnance and/or contaminated media within the boundaries of SWMU 10. Conditions at SWMU 10 have not changed in a way that may present a potential vapor intrusion risk. There continue to be no potential receptors to raise the possibility of a complete vapor intrusion pathway.

8.10.3 QUESTION C - HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

There is no other information that calls into question the protectiveness of the corrective action. No ecological risks have been identified. There have been no impacts from natural disaster events or weather-related events that have affected the protectiveness of the corrective action.

8.10.4 TECHNICAL ASSESSMENT SUMMARY

LUCs effectively restrict access to groundwater and prevent the disturbance of subsurface soil. The restrictions achieve the corrective action objectives of preventing human exposure with buried ordnance and/or contaminated media.

8.11 ISSUES

No issues were identified during this Periodic Review that prevent the corrective action from being protective now or in the future.

8.12 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Based on the analyses and inspection performed as part of the Periodic Review process, there are no recommendation for SWMU 10.

8.13 PROTECTIVENESS STATEMENT

The corrective actions at SWMU 10 are protective of human health and the environment.

The ICs are effective in minimizing or eliminating human exposure to buried ordnance and/or contaminated media within the boundary of SWMU 10. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.

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9.0 SWMU 11

9.1 SITE CHRONOLOGY

Information on site chronology for SWMU 11 is presented below in Table 7.

Table 7 - SWMU 11 Chronology

Event	Date (Year)
Detonation of Unexploded Ordnances Operations	1953 - 1975
Phase I RFI	1996
Phase II RFI	2000
Corrective Action Plan	2001
Corrective Action Plan approved by GAEPD	2001
Fencing and warning signs installed	2002
First Periodic Review	2005
Second Periodic Review	2011
Third Periodic Review	2016
Corrective Action Plan Progress Reports	2002 - 2019*

RCRA = Resource Conservation and Recovery Act

GAEPD = Georgia Environmental Protection Division

*Date captures the Corrective Action Plan Progress Reports received up through this Fourth Periodic Review.

9.2 PHYSICAL CHARACTERISTICS

SWMU 11 is located three miles northeast of the Fort Stewart Garrison and encompasses approximately 1.8 acres with no surface water features. There are numerous blast craters spread out over approximately one acre at SWMU 11. SWMU 11 is about two miles south of Georgia Highway 144 and one-mile northeast of Wright Army Airfield. SWMU 11 is located adjacent to a cleared field that closely resembles a feed plot. SWMU 11 is difficult to distinguish from the surrounding forest because of the overgrowth of trees and bushes (USACE, 2001c) (**Figure 7**).

9.3 HISTORY OF CONTAMINATION

SWMU 11 operated between 1953 - 1975 and was used for the open detonation of UXO. Wastes deposited included excess powder bags, small arms rounds, artillery and mortar rounds, illuminating projectiles, bulk explosives, explosive residues, rocket propellant, and grenades. In November 1993, a site reconnaissance observed used ammunition near the trenches and blast craters. In September 1996, another site reconnaissance found evidence of previous EOD activities and concluded that no recent activities had occurred at SWMU 11 (USACE, 2001c).

9.4 INITIAL RESPONSE

SWMU 11 ceased operations in 1975. No initial response activities occurred at SWMU 11.

9.5 BASIS OF TAKING ACTION

During the 1996 Phase I RFI, data collected indicated that arsenic, barium, silver, chromium, and lead were present and exceeded reference background levels. Background levels were determined by using the EPA Region IV methodology, where the background was calculated as two times the mean background concentration (USACE, 2001c). Based on these results, GAEPD required a Phase II RFI to be conducted by Fort Stewart DPW. Despite levels above the background concentration, the concentrations of these metals were within the range for naturally occurring concentrations established by the United States Geological Survey for the Eastern United States (USACE, 2001c).

GAEPD required a Corrective Action Plan “*to control intrusive activities at the site, to be protective of the health and safety of humans potentially coming in contact with contaminants... and to prevent the use of groundwater as a drinking water source*” (USACE, 2001c ; Arcadis, 2019b).

9.6 CORRECTIVE ACTIONS

9.6.1 CORRECTIVE ACTION OBJECTIVES

The Corrective Action Plan describes the primary goal and purpose for implementing corrective actions, which is limited to the protection of human health and safety. To achieve this goal, the following remedial response objective was established (USACE, 2001c):

Prohibit the disturbance of subsurface soil to prevent contact with buried ordnance and/or contaminated media.

9.6.2 CORRECTIVE ACTION

The 2001 Corrective Action Plan and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 11 (USACE, 2001c):

ICs: BMP, deed recordation, zoning controls, fence barrier, maintenance of existing physical barriers, fence-mounted warning signs, and implementation of O&M Plan.

If property is transferred out of government ownership, future deed recordation requirements will be implemented as outlined in Appendix B of the Corrective Action Plan (USACE, 2001c). The Fort Stewart DPW maintains a list of all Corrective Action Plan-required LUCs (including the BMP and deed recordation requirements) (Arcadis, 2019b).

9.6.3 CORRECTIVE ACTION IMPLEMENTATION

The selected corrective action involves a multi-layered approach of ICs comprising of LUCs.

9.6.3.1 Land Use Controls

LUCs for SWMU 11 include BMP, deed recordation (when required), zoning controls, fence barrier, maintenance of existing physical barriers, and fence-mounted warning signs (USACE, 2001c).

The BMP expressly prohibits the disturbance of subsurface soil at SWMU 11, installation of groundwater wells at SWMU 11, military training exercises that may disturb subsurface soil, hunting, recreational activities, and construction within the property boundaries. The BMP does permit timber harvesting, performance of wildlife studies, maintenance of deer feedlots, and outdoor classroom-style military training if subsurface soils are not disturbed (USACE, 2001c).

In June and May of 2002, five warning signs, fencing, and access gates were installed by Earth Tech. The warning signs were attached to the fence barrier at approximately 200-foot intervals (Arcadis, 2019b).

9.6.4 OPERATIONS AND MAINTENANCE

The O&M plan, which was included as Appendix A of the Corrective Action Plan, has been implemented since June 2002 (Arcadis, 2019b). The O&M Plan describes the procedures to ensure that signs and barriers remain in good condition. Annual inspections are performed and documented in the Corrective Action Plan Progress Reports. The inspections observe the condition of warning signs, signposts, and barriers for evidence of damage or deterioration. Necessary repairs or replacements are performed to ensure the signs, signposts and barriers remain in good condition.

Routine inspection and maintenance component at SWMU 11 include:

- Annual Inspections
- Maintenance, if necessary
- Annual Reporting

Annual inspections have occurred at SWMU 11 assessing the four warning signs, fencing, and access gates in 2002. Overall, annual inspections indicate that the posted signage is present and prevent human activities at SWMU 11.

9.7 PROGRESS SINCE THE THIRD PERIODIC REVIEW

The following is the protectiveness statement present in the 2016 Periodic Review Report (USACE, 2016) for SWMU 11:

“The remedy at SWMU 11 is protective of human health and the environment.”

There were no issues or recommendations identified for SWMU 11 in the Third Periodic Review Report.

9.8 DATA REVIEW

The corrective actions at SWMU 11 are LUCs only; therefore, there were no data to review for this section.

9.9 PERIODIC REVIEW SITE INSPECTION

The Fourth Periodic Review site inspection of SWMU 11 occurred on February 3 and 4, 2020. In attendance were Algeana Stevenson and Dale Kiefer, Fort Stewart; Sara Keisler, USACE; and Breanna Stout and Charlene Torres, DAWSON.

The purposes of the site inspection were to observe SWMU 11, confirm the conditions of the remedy, and ensure the remedy is protective of human health and the environment. Photographs were taken of SWMU 11 and included current conditions and post mounted warning signs.

The site inspection team confirmed that the signs were visible, well-labeled, maintained, and the fencing was adequately locked from an exterior inspection due to restricting fencing. The team saw no evidence of disturbed soils at SWMU 11. The team also observed no vandalism or trespassing had occurred as well as no changes in land use have occurred. At the time of the site inspection the team noted there was a prescribed burning event taking place near SWMU 11.

The Site Inspection Checklists are presented in **Appendix B**. The Site Inspection Photograph Log is presented in **Appendix C**.

9.10 TECHNICAL ASSESSMENT

9.10.1 QUESTION A - IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENT?

Yes, based on the Periodic Review site inspection and conditions reported in annual inspection reports, the corrective action are effective and functioning as intended.

Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports. The LUCs include fencing and signage that were noted as being visible and well-maintained at the time of the site inspection.

9.10.2 QUESTION B - ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS AND REMEDIAL ACTION OBJECTIVES USED AT THE TIME OF THE REMEDIAL ACTION SELECTION STILL VALID?

Yes, the exposure assumptions corrective action objectives are still valid for SWMU 11.

There have been no changes to physical conditions. The land use at SWMU 11 remains restricted as intended by the SWMU 11 Corrective Action Plan. The ICs for SWMU 11 are effective in achieving the corrective action objectives to minimize or restrict human exposure to buried ordnance and/or contaminated media within the boundaries of SWMU 11.

9.10.3 QUESTION C - HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

There is no other information that calls into question the protectiveness of the corrective action. No ecological risks have been identified. There have been no impacts from natural disaster events or weather-related events that have affected the protectiveness of the corrective measure.

9.10.4 TECHNICAL ASSESSMENT SUMMARY

LUCs effectively restrict access to groundwater and prevent the disturbance of subsurface soil. The restrictions achieve the corrective action objectives of preventing human exposure to the remaining buried ordnance and contaminated media on site.

9.11 ISSUES

No issues were identified during this Periodic Review that prevent the corrective action from being protective now or in the future.

9.12 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Based on the analyses and inspection performed as part of the Periodic Review process, there are no recommendation for SWMU 11.

9.13 PROTECTIVENESS STATEMENT

The corrective actions at SWMU 11 are protective of human health and the environment.

The ICs are effective in minimizing or eliminating human exposure to buried ordnance and/or contaminated media within the boundary of SWMU 11. Additional measures to restrict site access, implemented by the installation in form of LUCs, are also functioning as intended and documented in Annual Progress Reports.

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10.0 SWMU 13

10.1 SITE CHRONOLOGY

Information on site chronology for SWMU 13 is presented below in Table 8.

Table 8 - SWMU 13 Chronology

Event	Date (Year)
Fire Training Area Operations	1982 - 1992
Decision Document - Interim Remedial Action	1996
Interim Remedial Action - equipment and soil removal	1997
Interim Measures Report	1998
RFI	1999
Groundwater sampling event	2000
Additional groundwater monitoring wells installed	2001
Corrective Action Plan	2002
Interim Remedial Action - soil excavation	2002
GAEPD Approval of Revised Final Corrective Action Plan	2006
Supplemental Investigation/Interim Remedial Action	2006 - 2008
Annual Groundwater Monitoring	2003 - Present*

RCRA = Resource Conservation and Recovery Act

RFI = RCRA Facility Investigation

GAEPD = Georgia Environmental Protection Division

*Date captures the Corrective Action Plan Progress Reports received up through this Fourth Periodic Review.

10.2 PHYSICAL CHARACTERISTICS

SWMU 13 is located on the northwest portion of Wright Army Airfield (WAAF) within the south-central portion of Fort Stewart in Liberty County. It is approximately 1.5 miles from Hinesville and 41 miles southwest of Savannah, Georgia. The former fire training area was located at the south entrance of Fort Stewart, near U.S. Highway 82. SWMU 13 encompassed a 5,000-square foot soil-covered concrete training pad and a mock aircraft (**Figure 8**) (USACE, 1996). Fuel for the training fires was supplied via underground piping from an aboveground fuel storage tank located approximately 50 feet northeast of the training pad (USACE, 1998).

10.3 HISTORY OF CONTAMINATION

SWMU 13 operated between 1982 - 1992 as the airfield's training area. In 1995, an investigation led by USACE found soils were contaminated with petroleum hydrocarbons, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and heavy metals (Cape, 1998).

Fire training exercises occurred approximately eight times per year with 300 to 500 gallons of waste oil, solvents, and waste fuels (Avgas and Jet Propellant 4) used during each event (USACE, 1996). During the fire training exercises, fuel was pumped onto the surfaces of the simulated aircraft and ignited; firefighting trainees extinguished the fire with water or foam. The training fluids were contained by berms surrounding the concrete pad and sump. From there, the fluids drained through an oil/water separator into the western drainage swale. Some of the fuel and water occasionally ran over the concrete berms onto the adjacent soil, and some may have been splashed over the berms by the fire hoses (Cape, 1998). The concrete pad was cracked in several locations and overflow during training occurred on the south side of the fire training area (USACE, 1996).

10.4 INITIAL RESPONSE

In 1997, an interim removal action was performed to dismantle and dispose of the fire training area, which included the aboveground storage tank, the mock aircraft with foundations and piping, the concrete fire training pad, the concrete oil/water separator sump and appurtenances, and soil that exceeded the preliminary cleanup targets. The cover soil was removed from the concrete training pad (prior to the removal of the pad). Soil was removed below the following locations: the former aboveground storage tank and related piping area, the former concrete fire training pad area, and the former western drainage swale area. Three groundwater monitoring wells were abandoned. Confirmation samples collected from excavated areas revealed isolated occurrences of petroleum-related PAH contamination and widespread arsenic concentrations greater than the cleanup target. Following the removal of approximately 2,450 tons of contaminated soil, the excavated area was backfilled with clean soil, graded, and seeded (Cape, 1998).

Another removal action was performed from December 2001 through February 2002 that included removal of an 8-inch concrete pad measuring approximately 20 by 8 feet, additional soil excavation (337 tons), and removal of a groundwater monitoring well (Earth Tech, 2002).

The monitored natural attenuation (MNA) corrective action was implemented by Fort Stewart in 2003, prior to GAEPD approval of the corrective action plan, to ensure the protectiveness of human health in anticipation of GAEPD concurrence. The MNA corrective action included annual groundwater monitoring of contaminant of concern (COC) concentrations to ensure that progress is being made toward the attainment of groundwater RLs. Land and groundwater use restrictions were included as components to the selected corrective action of MNA (USACE, 2006).

10.5 BASIS FOR TAKING ACTION

Due to the presence of benzene, ethylbenzene, and naphthalene in groundwater at concentrations above RLs (5 µg, 700 µg, and, 149 µg, respectively), corrective action is warranted at SWMU 13 (USACE, 2006).

10.6 CORRECTIVE ACTIONS

10.6.1 CORRECTIVE ACTION OBJECTIVES

The corrective action objectives for SWMU 13 are to reduce the present concentrations of benzene, ethylbenzene, and naphthalene in groundwater to below the RLs presented in the 2006 Corrective Action Plan. These RLs are based on EPA Maximum Contaminant Levels (MCLs) or risk-based concentrations (RBCs) and include (USACE, 2006):

- Benzene - 5 µg/L (MCL)
- Ethylbenzene - 700 µg/L (MCL)
- Naphthalene - 149 µg/L (RBC for a hazard quotient of 0.5)

10.6.2 CORRECTIVE ACTION

The 1996 Corrective Action Plan and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 13 (USACE, 1996; GAEPD, 2017):

The selected corrective action for treatment of the groundwater is MNA. In addition, implementation of ICs (i.e., LUCs) are required for the duration of the MNA alternative to establish activities that are permitted until site remedial levels have been achieved (USACE, 2006).

10.6.3 CORRECTIVE ACTION IMPLEMENTATION

GAEPD issued comments on the CAP in February 2004. The GAEPD concurred with the MNA recommendation presented in the CAP with the exception of the exclusion of chromium as a contaminant migration COC.¹ In order to respond to this comment, additional soil sampling activities were conducted in July 2005 to determine the extent of remaining COCs in soil that may have been influencing groundwater concentrations (Arcadis, 2009). The results of the soil sampling were presented in the Revised Final CAP that was submitted to the GAEPD in February 2006 and approved in correspondence dated February 27, 2006.

As a result of the supplemental investigation, another remedial action was performed at SWMU 13 in 2008 including abandonment of one groundwater monitoring well (MW-18), excavation of contaminated soil (20 by 20 feet to a depth of 11 to 12 feet bgs) in the area of SB-15 and the placement of Oxygen Release Compound (ORC®) in the excavation, installation of three groundwater monitoring wells (MW-18R, MW-20 and MW-21), and

¹ Additional soil sampling was completed in July 2015 to respond to this GAEPD comment. Results of the additional soil sampling activities showed that chromium had limited potential for migration to groundwater, and thus was not carried forward as a human health COC (ARCADIS, 2019c).

injection of Advanced Formula Oxygen Release Compound® (ORC Advanced®) into nine injection points (SpecPro, 2008).

Two sentinel wells (MW-22 and MW-23) were installed downgradient and side gradient of monitoring well MW-18 in October 2009 per GAEPD request. These wells were sampled, and they indicated benzene was not delineated to non-detect values in the downgradient direction (east). To complete delineation, monitoring well MW-24 was installed approximately 100 feet east of MW-22 in April 2010. A groundwater sample from monitoring well MW-24 collected in May 2010 confirmed the absence of benzene and completed delineation of benzene in groundwater to the east (Arcadis, 2018a). **Figure 8a** shows the groundwater potentiometric surface map.

Several monitoring wells have been removed from the annual groundwater sampling program, including MW-3, MW-4, MW-10, MW-15, and MW-19 in 2015; MW-21 in 2016; and MW-13, MW-16, MW-20, MW-23, and MW-24 in 2018. These monitoring wells were removed from the sampling plan per GAEPD guidance as benzene remains below RLs in these wells (GAEPD, 2015, 2016b, and 2018a). Ethylbenzene, naphthalene, and 2-methylnaphthalene were removed from the required laboratory analyses in 2016 because they were no longer reported above RLs (Arcadis, 2019c). MNA geochemical indicators (i.e., sulfate, sulfide, nitrate/nitrite, total iron, methane, and carbon dioxide) were also removed from the sampling program in 2016.

10.6.3.1 Land Use Controls

LUCs have been implemented and enforced by Fort Stewart DPW as part of the corrective action. The land-use restrictions prohibit the following within SWMU 13 (USACE, 2006):

- *Use of groundwater beneath the subject property except for the installation of groundwater monitoring wells and/or potentially wells required for remediation of the groundwater (i.e., extraction or injection wells);*
- *Hunting and recreational activities; and*
- *All construction within the property boundaries except for those activities associated with maintenance of the facility, soil and/or groundwater sampling, implementation of the selected alternative, or potential abandonment and/or demolition of the facility.*

These land-use restrictions are enforced at SWMU 13 until groundwater RLs are achieved and is formally closed under RCRA.

10.6.4 OPERATIONS AND MAINTENANCE

Routine inspection and maintenance components at SWMU 13 include:

- Annual Inspections
- Maintenance, if necessary
- Annual Reporting

Annual inspections have occurred at SWMU 13 since 2008 and continue to date, with the most recent inspection in May 2019.

10.7 PROGRESS SINCE THE THIRD PERIODIC REVIEW

This is the first Periodic Review for SWMU 13.

10.8 DATA REVIEW

Because this is the first periodic review for SWMU 13, this Fourth Periodic Review Report evaluated groundwater monitoring data from December 2008 to May 2019.² **Appendix F** presents annual groundwater monitoring results.

Benzene was below the RL of 5 µg/L in groundwater at MW-18R in 2014, 2015, 2016, 2017, and 2019. The benzene concentration in MW-18R in 2018 (98 µg/L) was anomalous and significantly above the historical range (0.88 µg/L to 13 µg/L). Likewise, the benzene concentration in MW-22 was marginally elevated compared with 2017 results, though not as dramatically higher as the result reported for MW-18R (Arcadis, 2019c). A closer inspection of these two apparent anomalous results reveal that laboratory procedures may have been problematic and groundwater levels were elevated in 2018 relative to 2017, both of which may have impacted data accuracy and attenuation trends.³ Recent stabilization parameters measured during monitoring well purging indicate that conditions are no longer favorable for aerobic degradation; however, 2019 benzene concentrations in groundwater from MW-18R and MW-22 were below the RL and have declined, with the exception of 2018 results.

Statistical evaluation of all data (2008 - 2019) using the Mann-Kendall method⁴ for trend analysis indicates no trend for MW-18R (63.6% confidence factor) and stable benzene concentrations for MW-22 (83.2% confidence factor) (**Appendix F**). The Mann-Kendall findings do not indicate an increasing or decreasing trend of benzene at either monitoring well.

² Historical groundwater monitoring data since the 2008 ORC injections are included in Corrective Action Plan Progress Reports.

³ A review of the 2018 laboratory report and data validation revealed analytical irregularities. A trip blank was received by the laboratory as is standard practice for shipping VOCs; benzene was not detected in the trip blank, but the detection/quantitation limits were elevated because the sample was inexplicably diluted by 10. A comparison of the benzene concentrations from the primary analytical sample from MW-22 (23 µg/L J) and its duplicate (47 µg/L J), both estimated, results in a relative percent difference of 68.6 percent; acceptable QC limits for aqueous field duplicates generally range from 35 to 50 percent.

⁴ The Mann-Kendall test is a nonparametric test for zero slope of the first order regression of time-ordered concentration data versus time. The procedure does not require knowing the statistical distribution of the data and can be used with data sets that include irregular sampling intervals and missing data (Aziz et al., 2003).

Other COCs initially identified at SWMU 13, including ethylbenzene, naphthalene, and 2-methylnaphthalene, were removed from laboratory analyses in 2016 (Arcadis, 2019c). GAEPD also approved the removal of analyses for geochemical indicators used in the evaluation of MNA from the monitoring program in 2016.

10.9 PERIODIC REVIEW SITE INSPECTION AND INTERVIEWS

The Fourth Periodic Review site inspection of SWMU 13 occurred on February 3 and 4, 2020. In attendance were Algeana Stevenson and Dale Kiefer, Fort Stewart; Sara Keisler, USACE; and Breanna Stout and Charlene Torres, DAWSON.

The purposes of the site inspection were to observe SWMU 13, confirm the conditions of the corrective actions, and ensure the corrective action is protective of human health and the environment. Photographs were taken of SWMU 13 and included current conditions and post-mounted warning signs.

The team confirmed groundwater monitoring wells were adequately labeled and maintained. The team also observed no vandalism or trespassing had occurred, and that there have been no changes in land use.

When asked about the continuous O&M presence, Mr. Bostian stated that SWMU 13 was excavated, followed by MNA, and does not require a continuous O&M presence. Mr. Bostian noted that annual groundwater sampling takes place at SWMU 13 and stated that optimization efforts are ongoing to reduce sampling frequency.

The Site Inspection Checklists are presented in **Appendix B**. The Site Inspection Photograph Log is presented in **Appendix C**.

10.10 TECHNICAL ASSESSMENT

10.10.1 QUESTION A - IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENT?

Yes, based on the Periodic Review site inspection, data review, and the conditions reported in annual inspection reports, the corrective action is functioning as intended by the 1996 Decision Document and the 2002 Corrective Action Plan.

MNA is functioning as intended and semiannual groundwater sampling is in place to monitor the progress. LUCs are currently in place and prevent the use of groundwater beneath the subject property, except for the installation of groundwater monitoring wells and/or wells required for remediation of the groundwater, if required. The primary potential exposure pathway is ingestion of contaminated groundwater. There are no drinking water wells near SWMU 13, and contamination is not migrating off site.

10.10.2 QUESTION B - ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS AND REMEDIAL ACTION OBJECTIVES USED AT THE TIME OF THE REMEDIAL ACTION SELECTION STILL VALID?

Yes, the exposure assumptions, toxicity data, cleanup levels and corrective action objectives are still valid. There have been no changes in exposure pathways or land use, no new contaminants or contaminant sources identified, and no changes to toxicity or other contaminant characteristics. Toxicity factors for naphthalene have not changed in a way that could affect the protectiveness of the remedy.

There have been no changes to physical conditions. The ICs for SWMU 13 are effective in achieving the corrective action objectives to minimize or restrict human exposure to contaminated groundwater sources. Therefore, the corrective actions have and will continue to achieve the RLs. Conditions at SWMU 13 have not changed in a way that may present a potential vapor intrusion risk. There continue to be no potential receptors to raise the possibility of a complete vapor intrusion pathway.

10.10.3 QUESTION C - HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

There is no other information that calls into question the protectiveness of the corrective action. No ecological risks have been identified. There have been no impacts from natural disaster events or weather-related events that have affected the protectiveness of the corrective action.

10.10.4 TECHNICAL ASSESSMENT SUMMARY

The corrective action, MNA with LUCs, is functioning as intended. LUCs continue to effectively to restrict access to groundwater beneath SWMU 13. Groundwater monitoring reports and annual site inspections reported no issues or deficiencies with LUCs in place.

10.11 ISSUES

No issues were identified during this Periodic Review that prevent the corrective action from being protective now or in the future.

10.12 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

No recommendations or follow-up actions are required since there are no issues identified during this Periodic Review that affect current or future protectiveness of the corrective action.

10.13 PROTECTIVENESS STATEMENT

The corrective action at SWMU 13 is protective of human health and the environment.

The corrective action, MNA with LUCs, are functioning as intended. LUCs continue to effectively restrict access to shallow groundwater beneath SWMU 13. The annual site inspection reported no issues or deficiencies with LUCs in place.

11.0 SWMU 26

11.1 SITE CHRONOLOGY

Information on site chronology for SWMU 26 is presented below in Table 9.

Table 9 - SWMU 26 Chronology

Event	Date (Year)
Tanker Purging Station Operations	1982 - 1996
Tanker Purging Station Closure and Soil Removal	1996
Phase I RFI	1993 - 1996
Phase II RFI	1997 - 1998
Corrective Action Plan	2000
PHOSter® II enhanced bioremediation system operations	2000 - 2002
Final Interim Removal Action Report	2001
Corrective Action Plan Addendum and Soil Excavation	2010
GAEPD approved the Corrective Action Plan Addendum	2010
Biosparge System Operation	2010 - 2016
Semi-annual Groundwater Monitoring	2011 - Present*
Corrective Action Plan Progress Reports	2002 - 2019*

RCRA = Resource Conservation and Recovery Act

*Date captures the Corrective Action Plan Progress Reports received up through this Fourth Periodic Review.

11.2 PHYSICAL CHARACTERISTICS

SWMU 26 is in the southern portion of Fort Stewart, within the western cantonment area on the 1800 block of McFarland Avenue, at the western end of the fuel truck parking area. SWMU 26 occupied an area approximately 30 by 50 feet surrounded by forested area to the north and west and a military parking area to the south. Former facilities included an underground waste oil tank and oil/water separator; an aboveground storage tank that received water after the oil/water phase separation; and an underground/surface accessible pump and pumping controls that pumped water into the aboveground storage tank. A polyvinyl chloride pipe for directing water overflow extended from the concrete manhole containing the water pump to a nearby ditch/swale (USACE, 2000c) (**Figure 9**).

11.3 HISTORY OF CONTAMINATION

SWMU 26 was used from 1982 - 1996 to clean tanker trailers that contained diesel fuel, jet propulsion fuel, and motor gasoline (USACE, 2000c).

11.4 INITIAL RESPONSE

SWMU 26 was dismantled in 1996, and a portion of the underground facilities were removed. Approximately 525 cubic yards of impacted soil were excavated and replaced with clean backfill. Excavations extended to the water table (3 to 10 feet bgs) (USACE, 2000c).

11.5 BASIS FOR TAKING ACTION

The results of the Phase II RFI analyses indicated that soils, groundwater, surface water, and sediment at SWMU 26 contained elevated levels of organics and metals. The contaminants were fuel-related chemicals and organic solvents, VOCs, PAHs, and/or metals. The preliminary risk evaluation noted that metals found at SWMU 26 (arsenic, barium, and chromium) did not pose a threat to human health or the environment. The Phase II RFI established the RLs for soil and groundwater COCs at SWMU 26 and recommended preparation of a Corrective Action Plan (USACE, 2000c).

11.6 CORRECTIVE ACTIONS

11.6.1 CORRECTIVE ACTION OBJECTIVES

The Corrective Action Plan selected the following corrective action objectives for SWMU 26 (USACE, 2000c):

- *to reduce concentrations of Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), acetone, and naphthalene in vadose zone soils to RLs to prevent further release of these hazardous constituents at levels which negatively impact groundwater and*
- *to remediate groundwater to remedial levels for these same hazardous constituents.*

RLs were established for toluene (1,000 µg/L), ethylbenzene (700 µg/L), xylenes (10,000 µg/L), naphthalene (6.1 µg/L), and methyl tert-butyl ether (MTBE) (59 µg/L) (Arcadis, 2019d; GAEPD, 2016a).

11.6.2 CORRECTIVE ACTION

The 2000 Corrective Action Plan and the Hazardous Waste Facility Permit No. HW-045(S)-4 selected the following corrective actions for SWMU 26 (USACE, 2000c; GAEPD 2017):

The selected corrective action involved in-situ enhanced bioremediation using the patented PHOSter® II technology (USACE, 2006c).

A Corrective Action Plan Addendum was prepared in 2010 to address the poor performance of the PHOSter® II enhanced bioremediation system resulting in the recommendation of additional corrective actions to meet established RLs. Soil excavation and installation of a biosparge system were specified to address the source area and

groundwater contamination, respectively, in combination with semi-annual groundwater monitoring and reporting (Arcadis, 2010).

11.6.3 CORRECTIVE ACTION IMPLEMENTATION

11.6.3.1 PHOSter® II Enhanced Bioremediation System

The PHOSter® II enhanced bioremediation system began operation in February 2000 with periodic groundwater monitoring to assess performance. Despite the PHOSter® injections, the lateral area of the groundwater plume continued to increase. Groundwater sample results indicated that the source area still existed and had not been addressed when the tanker purging station was removed and impacted soil excavated (Arcadis, 2010). Consequently, a second soil excavation was performed in 2001 that involved removal of a concrete pad and soil excavation of a 90-foot by 70-foot area to 7 - 9 feet bgs (2,284 tons). The area was backfilled with 1,862 cubic yards of soil and 637 tons of gravel. Approximately 400 square yards of the excavated area was covered with asphalt and the remainder of the area was overseeded (Earth Tech, Inc., 2001). The PHOSter® injections were discontinued in January 2002. Although the groundwater concentrations were decreasing, there was concern that impacts to the clay layer at the bottom of the excavation continued to be a groundwater contamination source. Additional soil investigations were conducted to evaluate the impacts. A soil excavation and implementation of a biosparge system were recommended in the Corrective Action Plan Addendum (Arcadis, 2010).

11.6.3.2 Soil Excavation

As recommended in the Corrective Action Plan Addendum for SWMU 26 additional corrective actions were conducted to meet established RLs for soil and groundwater at SWMU 26. An excavation was performed in December 2010 and January 2011, unearthing several large concrete structures at depths of 6 to 12 feet bgs. Approximately 6,092 tons of impacted soils were removed and disposed of off-site. Confirmation samples from the base of the excavation contained BTEX above RLs; therefore, calcium peroxide granules were placed at the bottom of the excavation to promote oxidation and enhance natural bioremediation (Arcadis, 2015).

11.6.3.3 Biosparge System

As a result of the Corrective Action Plan Addendum, a biosparge system was installed and began operation in June 2011 to expedite the natural attenuation of benzene impacts in deep (i.e., 21.7 to 41.0 feet bgs) groundwater. The biosparge system operated continuously until the system was turned off on May 30, 2016 with concurrence of GAEPD. The effectiveness of the implemented corrective actions is evaluated through semi-annual groundwater monitoring (Arcadis, 2019d).

11.6.3.4 Groundwater Monitoring

Routine semi-annual groundwater monitoring has been performed since remedy implementation; the most recent groundwater samples were collected in May 2019. Data

indicate continued decreases in COC concentrations with benzene, MTBE, and naphthalene reported below RLs (Arcadis, 2019d). The evaluation of the data for this review is provided in the data review section below.

Several monitoring wells were removed from sampling in 2018 with concurrence from GAEPD, including MW-06R, MW-07, MW-09, MW-10, MW-15R, MW-16, MW-20, MW-21, MW-24R, MW-31, MW-32, MW-33, MW-35, MW-37, MW-40, MW-41, MW-45, MW-46, MW-47, MW-49, MW-58, MW-59, and MW-60 (Arcadis, 2019d). The samples from these wells had not shown an increase in COCs and were removed from the sampling plan (GAEPD, 2018b).

11.6.4 OPERATIONS AND MAINTENANCE

Routine inspection and maintenance components at SWMU 26 include:

- Biosparge system
- Groundwater monitoring
- Annual reporting

Semi-annual groundwater monitoring has occurred at SWMU 26 since implementation of the corrective action. The biosparge system ceased operation in 2016, having been successful in reducing COC concentrations; however, it remains on site should contamination levels rebound. Groundwater monitoring ensures that contamination continues to naturally attenuate.

11.7 PROGRESS SINCE THE THIRD PERIODIC REVIEW

This is the first Periodic Review for SWMU 26.

11.8 DATA REVIEW

Semi-annual groundwater monitoring has taken place from 2011 through 2019; data are contained in Appendix F. Each of SWMU 26 RL standards are to adhere to the USEPA MCL - National Primary Drinking Water Regulations (EPA, 2013). The COCs that have historically been detected above their respective RLs are listed below:

- **Benzene:** The RL for benzene is 5 µg/L. Historically, benzene contaminant levels ranged from 6.5 µg/L - 380 µg/L; since the 2011 baseline sampling event the detections are trending downward. The most recent 2019 groundwater monitoring data show that benzene levels are below 5 µg/L and as part of the Corrective Action Plan semi-annual monitoring will continue (Arcadis, 2019d). The historical data can be found in **Appendix F**.
- **MTBE:** Historically, MTBE contaminant levels ranged from 61 µg/L - 780 µg/L; since the 2001 baseline sampling event the detections are trending downward. The 2019 groundwater monitoring data show that MTBE was not detected above the RLs (Arcadis, 2019d). The historical data can be found in **Appendix F**.

Groundwater sampling for toluene, ethylbenzene, xylenes, and naphthalene has also occurred since 2011. The maximum detected levels for each of the following COCs respectively are 130 µg/L, 60 µg/L, 18 µg/L, and 3.4 µg/L. Toluene, ethylbenzene, xylenes, and naphthalene groundwater analytical results have remained below RLs through the most recent 2019 sampling data report. For the first time, all groundwater COC concentrations were below RLs in May 2019 (Arcadis, 2019d). Current and historical data can be found for these COCs in **Appendix F**.

11.9 PERIODIC REVIEW SITE INSPECTION AND INTERVIEWS

The Periodic Review site inspection for SWMU 26 occurred on February 3 and 4, 2020. In attendance were Algeana Stevenson and Dale Kiefer from Fort Stewart, Sara Keisler from USACE, and Breanna Stout and Charlene Torres from DAWSON.

The purpose of the site inspection was to observe SWMU 26, confirm the conditions of the remedy, and ensure the remedy is protective of human health and the environment. Photographs were taken of SWMU 26 and included current conditions.

The site inspection team confirmed that the signs and monitoring wells were visible, well-labeled, and maintained. The team also confirmed that no vandalism or trespassing had occurred.

Mr. Bostian noted that the biosparge system in place required frequent O&M until 3 years ago when it was taken off-line due to cost efficiency. Mr. Bostian also noted that semi-annual groundwater sampling will be performed for SWMU 26.

The Site Inspection Checklists are presented in **Appendix B**. The Site Inspection Photograph Log is presented in **Appendix C**.

11.10 TECHNICAL ASSESSMENT

11.10.1 QUESTION A - IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENT?

Yes, based on the data review and the site inspection, the corrective action is functioning as intended by the 2000 Corrective Action Plan and 2010 Corrective Action Plan Addendum.

Active remediation has been completed and semi-annual groundwater monitoring and annual inspections continue to provide identification of potential changes in COC levels, ensuring the remedy remains protective of human health and the environment.

11.10.2 QUESTION B - ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS AND REMEDIAL ACTION OBJECTIVES USED AT THE TIME OF THE REMEDIAL ACTION SELECTION STILL VALID?

Yes, the exposure assumptions and corrective actions used at the time of the corrective action selection are still valid. There have been no changes to land use on or near SWMU 26, and there are no newly identified or changed human health or ecological routes of exposure. MTBE was added in 2016 as a COC with an RL of 59 µg/L (GAEPD, 2016a). The RL goals for benzene and naphthalene, 5 µg/L and 6.1 µg/L, respectively, remain valid. The corrective action is progressing as expected with the reduction of concentrations of BTEX, acetone, and naphthalene in vadose zone soils to RLs to prevent further release of these hazardous constituents at levels which negatively impact groundwater. In addition, COC concentrations were below groundwater RLs during the last semi-annual groundwater monitoring event. Conditions at SWMU 26 have not changed in a way that may present a potential vapor intrusion risk. There continue to be no potential receptors to raise the possibility of a complete vapor intrusion pathway.

11.10.3 QUESTION C - HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

There is no other information that calls into question the protectiveness of the corrective action. No ecological risks have been identified. There have been no impacts from natural disaster events or weather-related events that have affected the protectiveness of the corrective action.

11.10.4 TECHNICAL ASSESSMENT SUMMARY

According to the data reviewed, the site inspection, and the interviews, the corrective action is functioning as intended. There have been no changes in the physical conditions at SWMU 26. The corrective action is progressing as expected with the reduction of concentrations of BTEX, acetone, and naphthalene in vadose zone soils to RLs to prevent further release of these hazardous constituents at levels which negatively impact groundwater. In addition, COC concentrations were below groundwater RLs during the last semi-annual groundwater monitoring event.

11.11 ISSUES

No issues were identified during this Periodic Review that prevent the corrective action from being protective now or in the future.

11.12 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Based on the analyses and inspection performed as part of the Periodic Review process, there are no recommendations or follow-up actions for SWMU 26.

11.13 PROTECTIVENESS STATEMENT

The corrective actions for SWMU 26 are protective of human health and the environment.

Active remediation from soil excavation, PHOSter® II enhanced bioremediation system, and the biosparging system were successful to reduce contaminant levels. The most recent groundwater monitoring data indicate that there are no contaminant exceedances of RLs in groundwater, indicating the remedy has been successful in reducing contaminant levels.

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12.0 SWMU 39

12.1 SITE CHRONOLOGY

Information on site chronology for SWMU 39 is presented below in Table 10.

Table 10 - SWMU 39 Chronology

Event	Date (Year)
UST 61 (500-gallon used oil) removed	1995
USTs 59 and 60 and two associated heating oil tanks west of Building 1160 filled with grout and closed in place	1997
USTs and Heating Oil Tank Investigations	2001
RFI	2002
RFI	2004
Interim Remedial Action - extraction of LNAPL	2004
Interim Remedial Action - soil excavation and ORC® application	2007
TCE Groundwater Investigation	2008
RCRA Facilities Investigation	2014
Corrective Action Plan	2016
Sampling of monitoring wells to update concentration data from 2011	2017
Sampling of monitoring wells to confirm concentrations from the 2017 sampling report	2018
Revised Corrective Action Plan	2018
Corrective Action Implementation Plan	2018
Remedial Action- Emulsified Vegetable Oil Injections	2019
SWMU 39 Construction Completion Report	2019
Semi-annual Groundwater Monitoring	2019

RCRA = Resource Conservation and Recovery Act

RFI = RCRA Facility Investigation

LNAPL= Light Non-Aqueous Phase Liquid

SWMU= Solid Waste Management

TCE= Trichloroethene

UST = Underground Storage Tank

12.2 PHYSICAL CHARACTERISTICS

SWMU 39 is an approximately 10-acre fenced facility with controlled access. Areas to the south and west are undeveloped land with grass, shrub vegetation, and pine trees. Rail lines and a drainage ditch run along the south and southwest portions of the boundary fence. Physical barriers that exist at SWMU 39 are a drainage canal, fencing, railroad tracks, utilities, and buildings. Wetlands and tributaries of Mill Creek are located near the

Direct Support Maintenance Facility (DSMF) of SWMU 39 and the steep topography in proximity to Mill Creek (**Figure 10**) (Arcadis, 2014).

12.3 HISTORY OF CONTAMINATION

SWMU 39, the former DSMF or Building 1160, was used as a vehicle wash/service rack. USTs 59 and 60, and their associated heating oil tanks, were west of Building 1160, at the tracked vehicle maintenance platforms (Buildings 1161 and 1163). The heating oil tanks provided fuel oil to a high-pressure washer at the platform. USTs 59 and 60 were 4,000-gallon concrete tanks used as non-regulated flow vaults connected to an oil water separator at the Mechanized 60 maintenance platforms (USACE, 2014).

In 2007 an Interim Remedial Action (IRA) near Building 1161 occurred to remove light non-aqueous phase liquid (LNAPL) and impacted soil. In April 2008, LNAPL was detected again in another monitor well near Building 1161. In addition to LNAPL, historical groundwater investigations identified a low-level diffuse VOC plume, consisting primarily of tetrachloroethene (PCE) and trichloroethene (TCE) concentrations in the low parts per billion range (USACE, 2014).

12.4 INITIAL RESPONSE

The USTs and associated heating oil tanks were filled with grout and closed in place in 1997. UST 61, a 500-gallon used oil storage tank, was located immediately southeast of the tracked vehicle maintenance platform (Building 1161); the tank was excavated and removed from SWMU 39 in 1995 (Arcadis, 2014). In 2001, GAEPD requested investigation of the soil and groundwater to determine whether a release had occurred. LNAPL believed to be waste oil was identified near Building 1161 and the former location of UST 61, at which point SWMU 39 was listed as SWMU 39. In association with an RFI, LNAPL recovery using multi-phase extraction and isolation of the flow-through vaults was conducted in 2004. A second IRA was performed in 2007 which involved excavation of soil to 8 feet bgs (i.e., groundwater table) and the application of Oxygen Release Compound® (ORC) to the excavation floor and sidewalls (USACE, 2007). In 2008, Direct Push Technology investigation continued to identify elevated levels of TCE and PCE in groundwater (Arcadis, 2018b).

12.5 BASIS FOR TAKING ACTION

Investigations identified surface and subsurface soil contamination, LNAPL in groundwater, and constituents exceeding MCL in groundwater. Low-level PAHs were detected in surface and subsurface soil near two monitoring wells where the LNAPL was detected. Arsenic, PCE, TCE, *cis*-DCE, and benzene detected in select groundwater monitoring wells exceeded their associated MCLs. Background levels of arsenic observed at SWMU 26 (3.5 µg/L) indicate that arsenic levels are elevated at SWMU 39 (Arcadis, 2014).

12.6 CORRECTIVE ACTIONS

12.6.1 CORRECTIVE ACTION OBJECTIVES

The corrective action objectives are to prevent possible future exposures by preventing groundwater consumption and reducing COCs in groundwater to levels that are below MCLs. The corrective action objectives include (Arcadis, 2018b):

- *Protection of human health and the environment.*
- *Attainment of media-specific cleanup standards.*
- *Control of source releases to reduce or eliminate, to the extent practicable, further releases that may pose a threat to human health and the environment.*
- *Compliance with applicable standards for the management of wastes.*

The following remedial levels were established for PCE (5 µg/L), TCE (5 µg/L), DCE (70 µg/L), Vinyl Chloride (VC) (2 µg/L), benzene (5µg/L), and arsenic (10 µg/L) (Arcadis, 2018b).

12.6.2 CORRECTIVE ACTION

The 2007 IRA and the revised 2018 Corrective Action Implementation plan selected the following corrective actions for SWMU 39 (USACE, 2007; Arcadis 2018c):

LUCs, Impermeable Cap Maintenance, LNAPL Recovery, MNA, and Enhanced Reductive Dechlorination (Arcadis, 2018c).

A 2019 Construction Completion Report has been prepared. The Hazardous Waste Facility Permit has not yet been modified to include SWMU 39 (GAEPD, 2017).

12.6.2.1 Land Use Controls

LUCs are included as a corrective action component at SWMU 39, because residual impacts remain in place in the soil and groundwater. For the purpose of these LUCs, SWMU 39 includes the DSMF fenced area and groundwater impacts identified to the south and east of the fenced area. In addition, Fort Stewart is an active military facility with active and passive security measures currently in place that include gates controlled by Fort Stewart personnel, fencing, and natural obstructions such as forest and wetlands. Signs were also installed at SWMU 39. The signs are inspected annually, and documentation is included in subsequent performance reports. Projects or activities that may alter real property or Federal lands must be coordinated with the DPW for appropriate Installation evaluation (Arcadis, 2018c).

Groundwater use restrictions mandate the use of an alternate water supply, which is already in place and utilized at Fort Stewart.

12.6.2.1.1 Impermeable Cap Maintenance

The soil where the low-level PAHs were detected is currently capped by 12 inches of concrete, thereby preventing direct exposure to the soil or leaching to groundwater. PAHs were not detected in the groundwater (Arcadis, 2018c).

12.6.2.2 Light Non-Aqueous Phase Liquid Recovery

LNAPL was observed in an area surrounding G4MW001 and G4MW002. To effectively recover LNAPL located in and around G4MW001 and G4MW002, the remedial alternative includes the installation of absorbent socks in the wells. The Baseline Groundwater Monitoring Event in 2017 reported 0.20 and 0.87 feet of LNAPL in G4MW002 and G4MW001, respectively. Change out of the absorbent socks is required until free product is no longer accumulating in the wells (Arcadis, 2018c).

12.6.2.3 Monitored Natural Attenuation

A groundwater monitoring program evaluates the progress of remediation, to ensure that conditions remain favorable for continued natural attenuation, and to determine when the corrective action objectives have been achieved. Historical data indicate that *cis*-DCE, from the natural attenuation/dechlorination of TCE and PCE, is present throughout the plume, indicating that reductive dechlorination of PCE and TCE is occurring at SWMU 39. MNA will document that reductive dechlorination continues to occur, thereby reducing the extent and concentration of PCE and TCE in groundwater (Arcadis, 2018c).

12.6.2.4 Enhanced Reductive Dechlorination

To address TCE/PCE contamination in groundwater, ERD using emulsified vegetable oil (EVO) was selected to reduce the toxicity and volume of contamination. Due to the low solubility and dissolution rate of EVO, injection events will likely be needed every 18 to 24 months. The injection frequency is based on the utilization rate of the carbon as measured by performance monitoring. Total organic carbon (TOC) within the active treatment area is maintained at 20 mg/L or greater; additional injections are planned when TOC concentrations fall below 20 mg/L (Arcadis, 2018c).

12.6.3 CORRECTIVE ACTION IMPLEMENTATION

12.6.3.1 Land Use Controls

LUCs prohibit groundwater consumption and installation of water wells in the surficial aquifer within or downgradient of SWMU 39. Restrictions will remain in place until corrective action objectives are achieved. Four signs are located at the entrances and exits of SWMU 39 and are inspected annually (Arcadis, 2018c).

12.6.3.2 Impermeable Cap Maintenance

The soil where low-level PAHs have been detected is currently capped by 12 inches of concrete, preventing direct exposure to the soil and mitigating the potential to leach to

groundwater. Inspections are scheduled to be completed semi-annually to confirm SWMU 39 conditions and area use have not changed as part of the LUCs (e.g., concrete is intact). Logs of inspection visits are compiled and provided as part of an annual report (Arcadis, 2018c). There have been no documented inspections or maintenance to the impermeable cap, to date, as the first annual monitoring report was not available for this fourth periodic review.

12.6.3.3 Light Non-Aqueous Phase Liquid Recovery

Information regarding the LNAPL recovery was not available for this fourth periodic review. Installation of absorbent socks in monitoring wells G4MW001 and G4MW002 will be documented in the first annual monitoring report. However, absorbent socks were found to be too large for the monitoring wells and were replaced with small diameter bailers (Appendix D). The small diameter bailers are more efficient when recovering LNAPL when the thickness is minimal (Appendix D). No additional actions are anticipated, as current contaminant concentrations in groundwater surrounding G4MW001 and G4MW002 are below the MCLs for constituents related to the LNAPL. Additional groundwater monitoring for this area is to be completed as part of the overall site groundwater monitoring program (Arcadis, 2018c).

12.6.3.4 Monitored Natural Attenuation

According to the monitoring plan, the groundwater monitoring program for natural attenuation includes a fall semi-annual monitoring event of 22 wells and a spring semi-annual monitoring event of 35 wells for VOCs. However, the first round of MNA sampling occurred in 2019 and data was not available for review as part of this Periodic Review. During each event, groundwater from six wells are analyzed for total and dissolved arsenic. Prior to each monitoring event, the monitoring wells are gauged for depth to water (Arcadis, 2018c).

Groundwater monitoring will track the progress of remediation to ensure that conditions remain favorable for continued natural attenuation, and to determine when the corrective action objectives have been achieved. The long-term monitoring well network incorporates existing monitoring wells plus three monitoring wells installed as part of the active remedy. Groundwater monitoring will be implemented for the duration of the remediation period. The plume exists in an industrial area of SWMU 39, far from the downgradient base property line, and has shown no evidence of migrating downgradient (Arcadis 2018c).

12.6.3.5 Enhanced Reductive Dechlorination

ERD via injection of EVO serves as a long-term electron donor source and is comprised of soybean oil, emulsifiers, and water. The presence of PCE and TCE degradation products indicates that naturally occurring biological degradation is ongoing at SWMU 39. EVO was injected into permanent wells F39IW01 through F39IW06. Groundwater monitoring conducted prior to, during, and following completion of injection activities was performed using dose response (within the injection area) and transport (outside of the

injection area) monitoring locations. A temporary above-ground injection system was constructed to deliver the EVO solution to the injection wells. Based on the known site groundwater velocity of approximately 22 feet per year, the anticipated duration between EVO injection events is at least two years (Arcadis, 2018c).

In January 2019, the newly installed and implemented ERD injection well network consisted of six new injection wells (F39IW01, F39IW02, F39IW03, F39IW04, F39IW05, and F39IW06) and two new dose response wells (G4MW059 and G4MW060). Injection well F39IW01 was installed upgradient of existing monitoring wells G4MW041 and G4MW051 and these wells were added to the performance monitoring network as downgradient dose response monitoring wells and were included in the baseline and post injection monitoring events (Arcadis, 2019e).

The initial treatment took place from January through March 2019, using a combination of pressurized and gravity feed injections. The range of EVO injection rates was relatively low and varied with lithology across SWMU 39. The injection performance indicates that the target injection radius of influence was not achieved in some areas. However, ERD effectiveness is monitored and injection strategy is evaluated throughout the corrective action implementation and operation (Arcadis, 2019e).

12.6.4 OPERATIONS AND MAINTENANCE

Routine inspection and maintenance components at SWMU 39 include:

- LUC inspections
- Impermeable cap maintenance
- LNAPL recovery
- Groundwater monitoring (MNA evaluation)
- ERD

Because the corrective action was implemented in 2019, Corrective Action Plan Progress Reports have not yet been finalized for evaluation in this Fourth Periodic Review Report.

12.7 PROGRESS SINCE THE THIRD PERIODIC REVIEW

This is the first Periodic Review for SWMU 39.

12.8 DATA REVIEW

The corrective action has been recently implemented and additional data is needed to evaluate corrective action progress. As such, there are no LNAPL recovery, annual sampling data, and no ERD sampling data to review at the time of this fourth periodic review.

12.9 PERIODIC REVIEW SITE INSPECTION AND INTERVIEWS

The Periodic Review site inspection of SWMU 39 occurred on February 3 and 4, 2020. In attendance were Algeana Stevenson and Dale Kiefer, Fort Stewart; Sara Keisler, USACE; and Breanna Stout and Charlene Torres, DAWSON.

The purpose of the site inspection was to observe SWMU 39, confirm the conditions of the remedy, and ensure the remedy is protective of human health and the environment. The site inspection team confirmed that warning signs and monitoring wells were visible, labeled, and maintained; there was no vandalism or evidence of trespassing; and there had been no changes in land use. Photographs were taken of SWMU 39 to document current conditions.

Mr. Bostian noted that SWMU 39 received an EVO injection in early 2019 and will switch from more frequent post-injection monitoring to semi-annual monitoring after the first year. Mr. Bostian also noted that SWMU 39 would require an evaluation after data are published to assess the EVO injection strategy in anticipation of the next EVO injection event. Mr. Bostian recommended to continue the groundwater optimization and monitoring.

The Site Inspection Checklists are presented in **Appendix B**. The Site Inspection Photograph Log is presented in **Appendix C**.

12.10 TECHNICAL ASSESSMENT

12.10.1 QUESTION A - IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENT?

Yes, based on the site inspection, the corrective action is functioning as intended by the 2016 Corrective Action Plan and 2018 Revised Corrective Action Plan.

LUCs prohibit groundwater consumption and the installation of potable water wells and prevent direct contact with contaminated soil with a concrete cap. LNAPL recovery is being performed using small diameter bailers. EVO injections are being performed to ERD addressing groundwater contamination (PCE and TCE). Groundwater monitoring is being conducted to assess the progress of remediation, ensure that conditions remain favorable for continued natural attenuation, and determine when corrective action objectives have been achieved.

12.10.2 QUESTION B - ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS AND REMEDIAL ACTION OBJECTIVES USED AT THE TIME OF THE REMEDIAL ACTION SELECTION STILL VALID?

Yes, the exposure assumptions, toxicity data, cleanup levels, and corrective action objectives used at the time of remedy selection remain valid. The primary potential exposure pathway is ingestion of contaminated groundwater.

There have been no changes to physical conditions. LUCs are effective in achieving the corrective action objectives to minimize or restrict human exposure to contaminated groundwater and soil sources. Therefore, the corrective actions have and will continue to achieve the RLs. Conditions at SWMU 39 have not changed in a way that may present a potential vapor intrusion risk, based on evaluation of the 2014 vapor intrusion screening, there are no vapor intrusion concerns or pathways at SWMU 39 at this time.

12.10.3 QUESTION C - HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

There is no other information that calls into question the protectiveness of the corrective action. No ecological risks have been identified. There have been no impacts from natural disaster events or weather-related events that have affected the protectiveness of the corrective action.

12.10.4 TECHNICAL ASSESSMENT SUMMARY

According to the data reviewed, the site inspection, and the interviews, the corrective action is functioning as intended. There have been no changes in the physical conditions of SWMU 39 that affect the protectiveness of the corrective action. The Applicable or Relevant and Appropriate Requirements (i.e., MCLs) have not changed since implementation of the remedy and, although not yet achieved, remain as corrective action goals for the active remediation implemented for groundwater at SWMU 39. In the meantime, LUCs prevent direct contact with media that present risk to current or future receptors. There is no other information that calls into question the protectiveness of the corrective action.

12.11 ISSUES

No issues were identified during this Periodic Review that prevent the corrective action from being protective now or in the future.

12.12 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

No recommendations or follow-up actions are required since there are no issues identified during this Periodic Review that affect current or future protectiveness of the corrective actions.

12.13 PROTECTIVENESS STATEMENT

The corrective action at SWMU 39 is expected to be protective of human health and the environment upon completion. In the interim, corrective actions completed to date, including LUCs and an impermeable cap, have adequately addressed all exposure pathways that could result in unacceptable risk at SWMU 39.

13.0 NEXT REVIEW

The next Periodic Review will be due within five years of the due date of this Fourth Periodic Review.

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- USACE, 2000a. Corrective Action Plan for the Camp Oliver Landfill (Solid Waste Management Unit 2) at Fort Stewart, Georgia. December 2000. Prepared by SAIC.

USACE, 2000b. Corrective Action Plan for the TAC-X Landfill (Solid Waste Management Unit 3) at Fort Stewart, Georgia. December 2000. Prepared by SAIC.

USACE, 2000c. Corrective Action Plan for the Former 724th Tanker Purging Station (SWMU 26), Fort Stewart, Georgia. January 2000. Prepared by SAIC.

USACE, 2000d. Decision Document for Final Remedial Action at [SWMU 1], Fort Stewart and Hunter Army Airfield, Georgia.

USACE, 2001a. Decision Document for Final Remedial Action at [SWMU 2], Fort Stewart and Hunter Army Airfield, Georgia.

USACE, 2001b. Decision Document for the Final Remedial Action at the TAC-X Landfill SWMU 3, Fort Stewart, Georgia.

USACE, 2001c. Inactive EOD Area Located Approximately Nine Miles Northeast of Garrison Area (SWMU 8); Inactive EOD Area in Red Cloud Range, Hotel Area (SWMU 9); and Inactive EOD Area Located Approximately Three Miles Northwest of Garrison Area (SWMU 11) at Fort Stewart, Georgia. May 2001. Prepared by SAIC.

USACE, 2001d. Corrective Action Plan for the Inactive EOD Area North of Garrison Area (SWMU 10) at Fort Stewart, Georgia. July 2001. Prepared by SAIC.

USACE, 2006. Corrective Action Plan for the Former Fire Training Area at Wright Army Airfield (Solid Waste Management Unit 13) at Fort Stewart, Georgia. January 2006. Prepared by SAIC.

USACE, 2007. Final Report for Interim Remedial Action at Solid Waste Management Unit 39 Underground Storage Tanks 59 and 60, Fort Stewart, Georgia. Prepared by STEP.

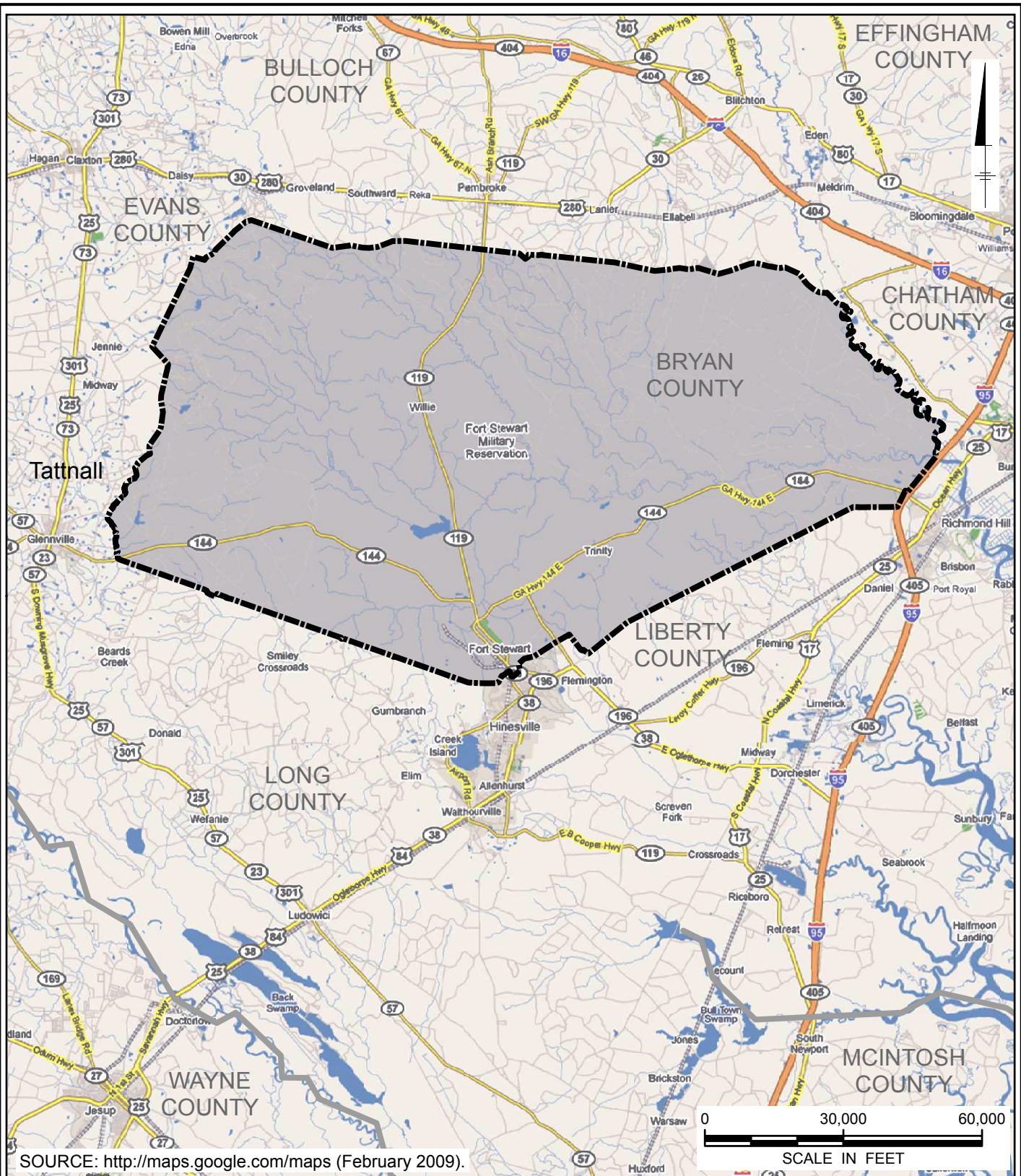
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FIGURES

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FORT STEWART MILITARY RESERVATION, GEORGIA

Boundary of Fort Stewart



FIGURE 1

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Figure 2: Sign Locations SWMU 1 (Post South Central Landfill)

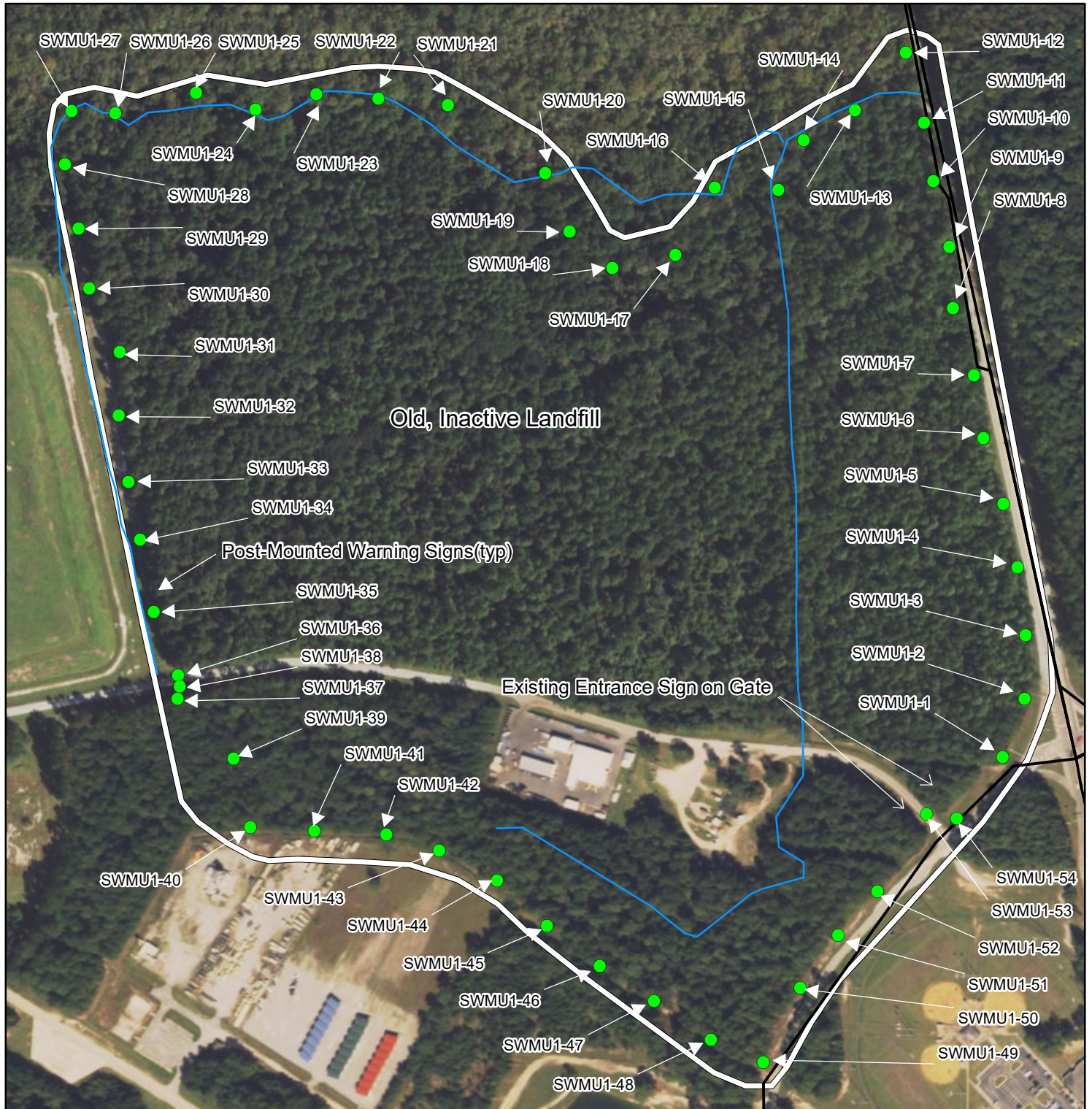


Figure 2

Sign Locations
SWMU 1
(Post South Central Landfill)

Legend

- SWMU 1 Sign
- Roads
- Stream/River
- == SWMU 1 Boundary



0 235 470 ft

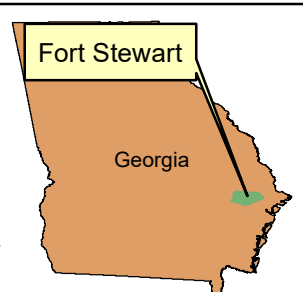
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CS: State Plane - Georgia East

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Figure 3: Sign Locations SWMU 2 (Camp Oliver Landfill)



Figure 3

Sign Locations
SWMU 2
(Camp Oliver Landfill)

Legend

- SWMU-2 Sign
- SWMU 2 Boundary
- Fence



0 87.5 175 ft

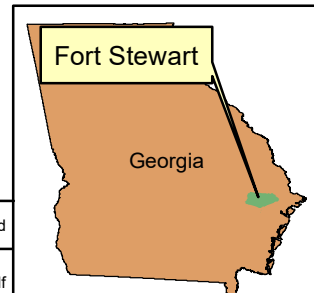
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Figure 4: Sign Locations SWMU 3 (TAC-X Landfill)



Figure 4

Sign Locations
SWMU 3
(TAC-X Landfill)

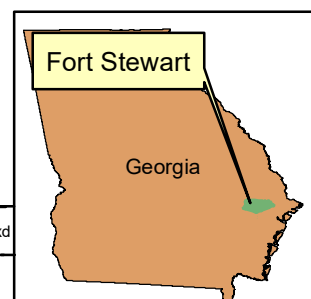
Legend

- SWMU 3 Sign
- SWMU 3 Boundary



0 105 210 ft

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Figure 5: Sign Location SWMU 8 (Inactive EOD Area 9 Miles Northeast of Garrison Area)

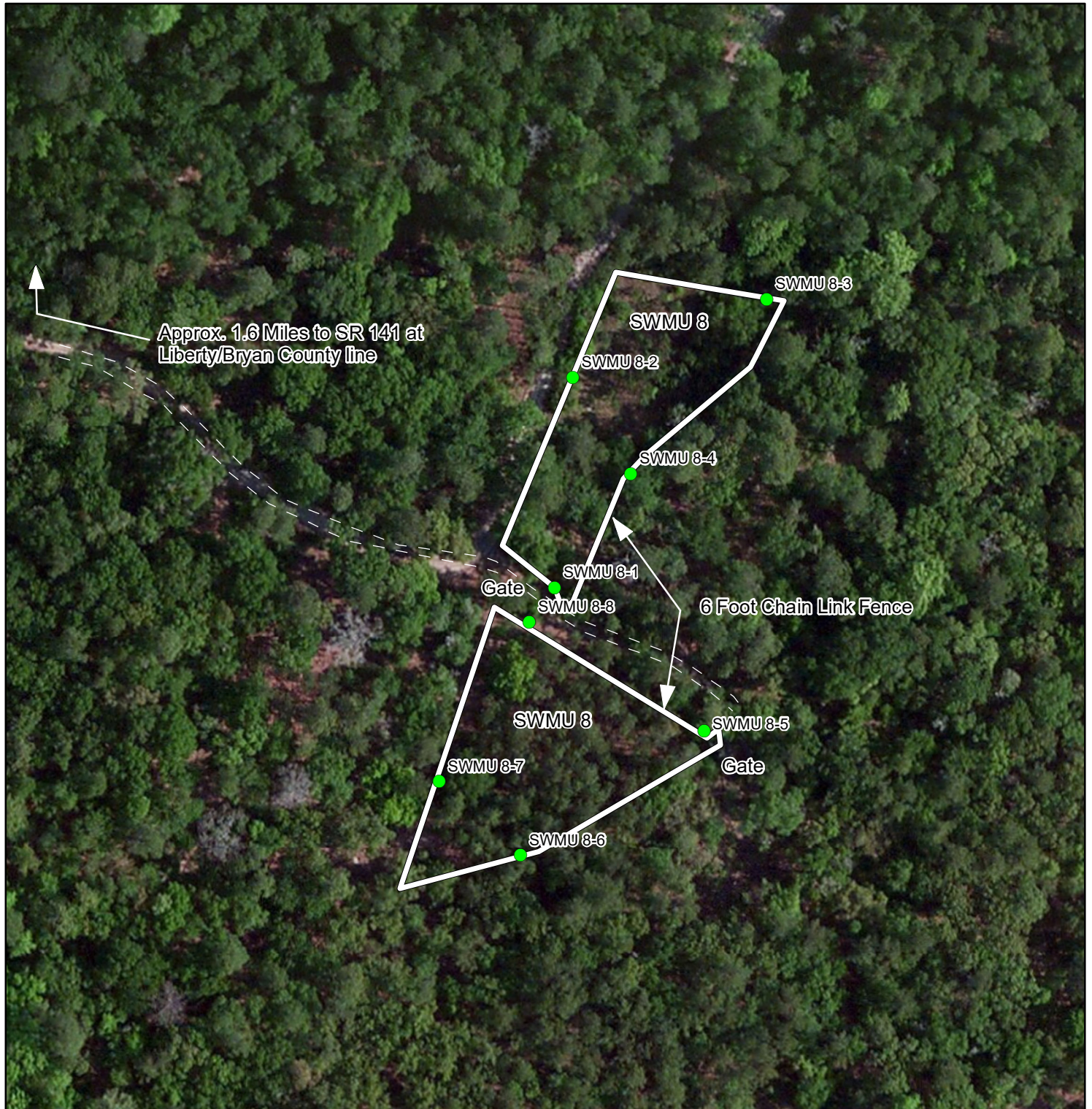


Figure 5
Sign Location Map
SWMU 8
(Inactive EOD Area
9 Miles Northeast of
Garrison Area)

Legend

- SWMU 8 Sign
- SWMU 8 Boundary



0 70 140 ft

Drawn By: **TS** Date: 12/12/2018

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CS: **State Plane - Georgia East**

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Figure 6: Sign Location SWMU 10 (Inactive EOD Area 4 Miles North of Garrison Area)

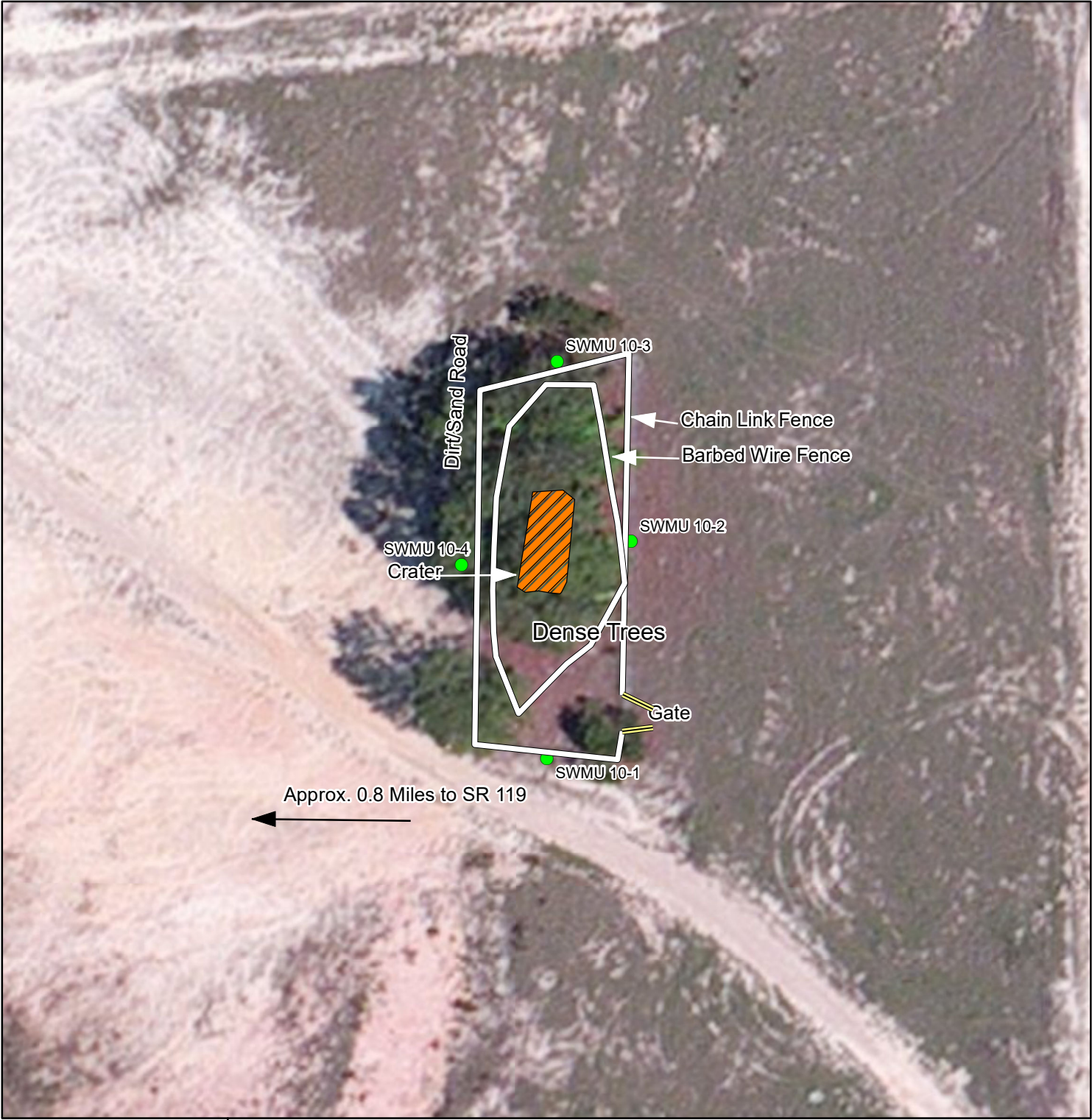
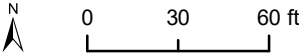


Figure 6
Sign Location
SWMU 10
(Inactive EOD Area
4 Miles North of
Garrison Area)

Legend

- SWMU 10 Sign
- SWMU 10 Boundary
- ▨ Crater



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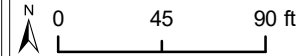


Figure 7: Sign Location SWMU 11 (Inactive EOD Area 3 Miles Northeast of Garrison Area)



Figure 7
Sgn Location
SWMU 11
(Inactive EOD Area
4 Miles North of
Garrison Area)

- Legend**
- SWMU 11 Sign
 - ▬ SWMU 11 Boundary
 - ▬▬ Fence



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Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LEGEND

- | | | | |
|---|---|--|--------------------------|
|  | Sampled Well |  | 1997 IRA Excavation Area |
|  | Well Not Sampled |  | 2001 IRA Excavation Area |
|  | Former Monitor Well (Abandoned, Destroyed or Removed) |  | 2008 IRA Excavation Area |

NOTES:

- 1) MW-1 and MW-6 were destroyed by heavy equipment backing over them.
- 2) MW-12 was removed, MW-14 and MW-17 were damaged during the 2001/2002 Interim Remedial Action (IRA).
- 3) MW-2, MW-5 MW-7 and MW-9 were abandoned in 2001/2002.
- 4) MW-18 was abandoned as part of the IRA in 2008.

AERIAL SOURCE: ESRI Online Imagery (October 2013).
PROJECTION: NAD83 State Plane Georgia East Feet

REFERENCES:

- 1) Corrective Action Plan Progress Report for the calendar year 2007, for the former Fire Training Area at Wright Army Airfield - Solid Waste Management Unit 13 (SAIC 2008).
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FORT STEWART MILITARY RESERVATION, GEORGIA
SWMU 13 – FIRE TRAINING AREA AT WAAF

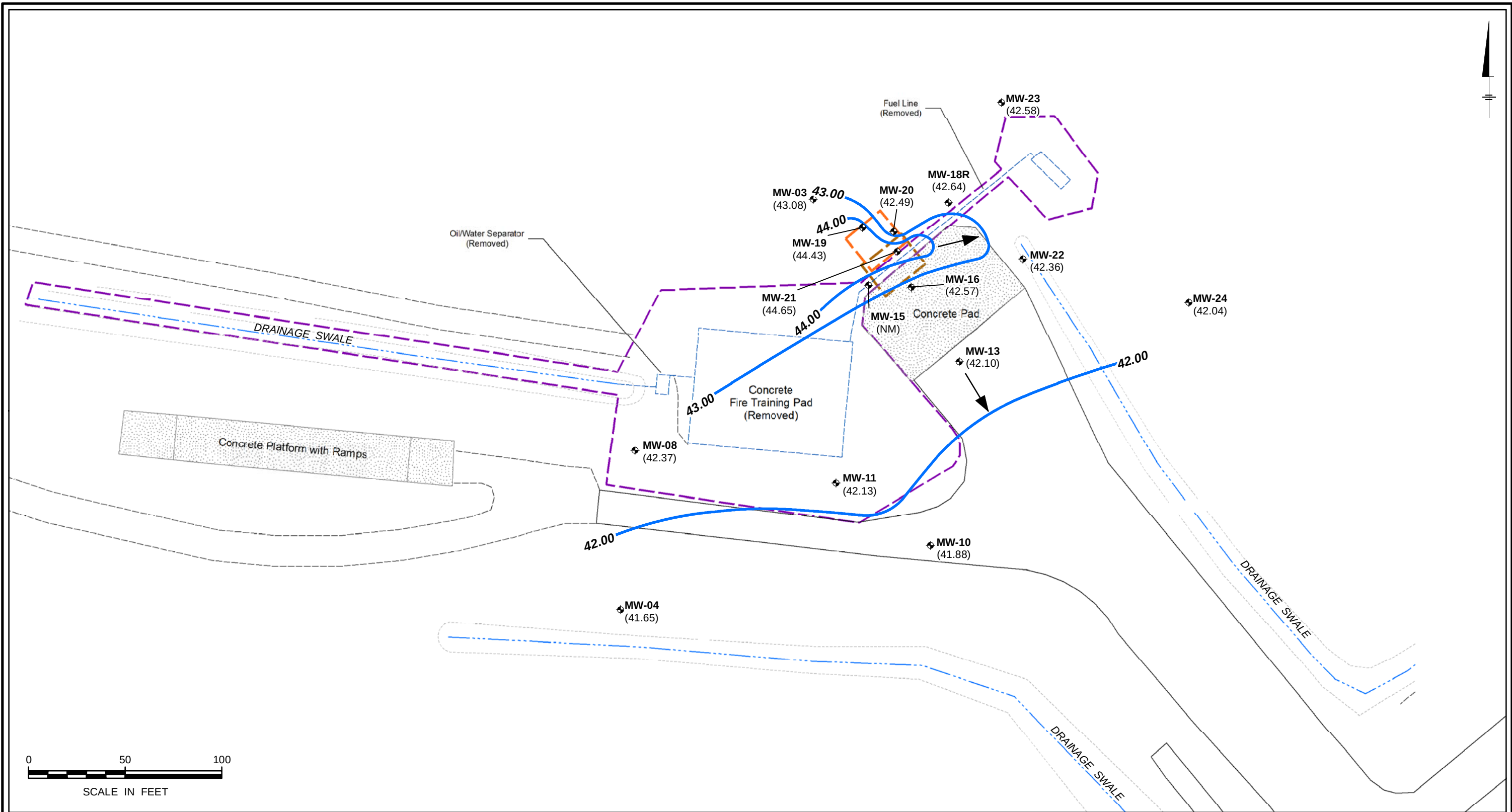
Site Map



FIGURE
8

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PROJECTION: NAD83 State Plane Georgia East Feet

LEGEND

- Monitor Well (shallow)
- 1997 IRA Excavation Area
- 2001 IRA Excavation Area
- 2008 IRA Excavation Area
- Groundwater Contour (ft amsl)
- Direction of Groundwater Flow
- (41.65) Groundwater Elevations (ft amsl)
Measured June 15, 2018
- (NM) Not Measured

FORT STEWART MILITARY RESERVATION, GEORGIA
SWMU 13 - FIRE TRAINING AREA AT WAAF
CY 2018 CAP PROGRESS REPORT

Groundwater Potentiometric Surface Map
(June 2018)

PIKA
ARCADIS
a joint venture

FIGURE

8a

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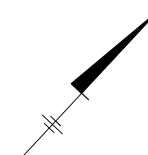
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PROJECTION: NAD83 State Plane Georgia East Feet
AERIAL SOURCE: U.S. ARMY (2011).

LEGEND

- | | | | |
|------------------------|---------------------------------|-----------------------------------|-----------------------------------|
| Monitor Well (shallow) | Biosparge Injection Well (deep) | 2" Underground Electrical Conduit | Excavation Area (2001) |
| Monitor Well (deep) | 724th Tanker Purge Station Area | 1" Biosparge System Piping | Excavation Area (2010) |
| | | 3" Biosparge System Piping | Excavation Area -12' depth (2010) |
| | | Excavation Area (1996) | |



FORT STEWART MILITARY RESERVATION, GEORGIA
SWMU 26 – FORMER 724TH TANKER PURGE STATION

Site Map



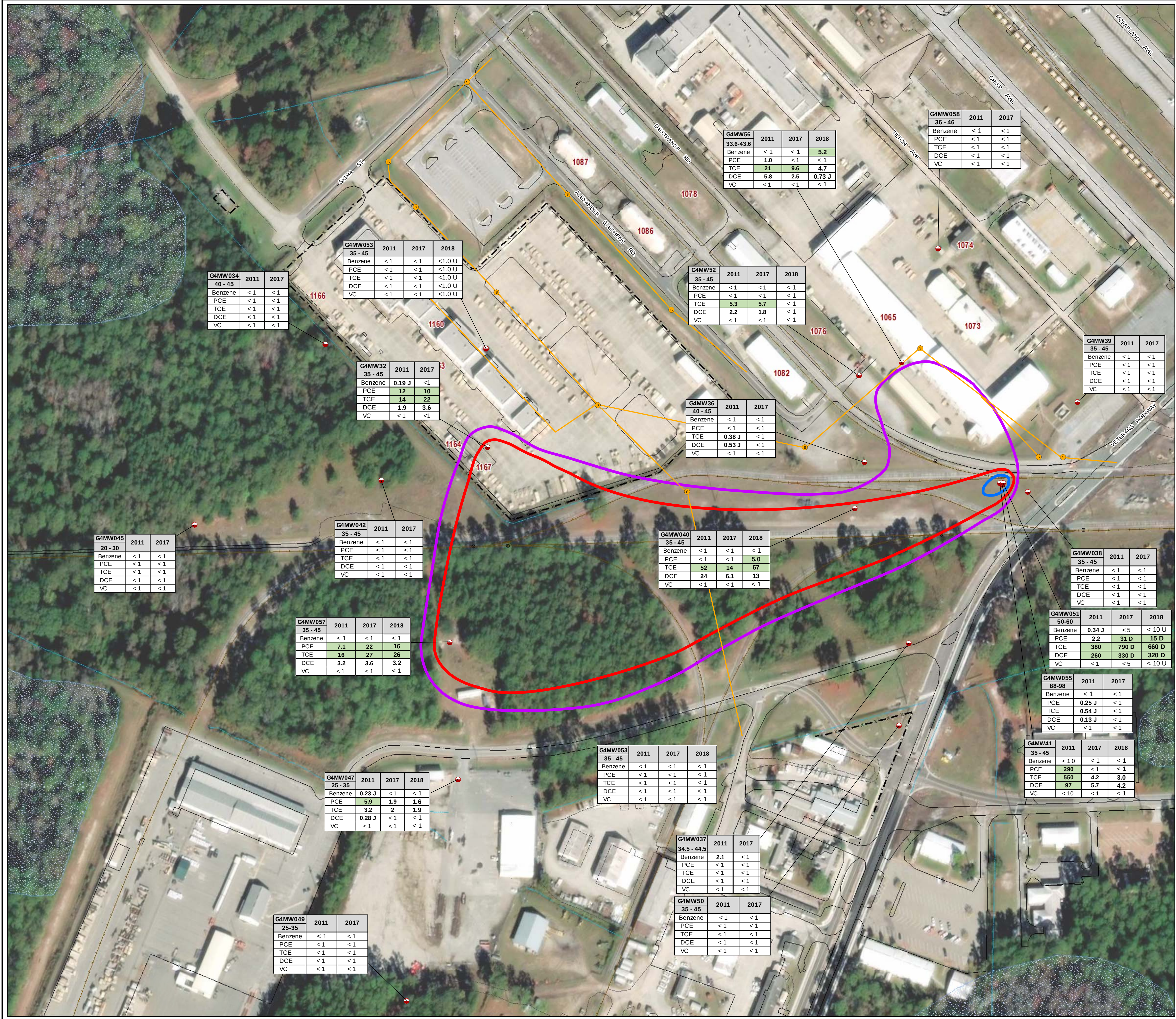
FIGURE
9

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FIGURE
10

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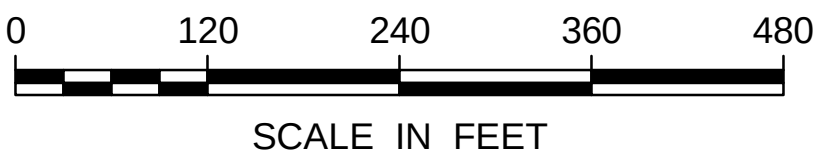


LEGEND

- x-x- Fencing
- Rail Spur
- Surface Water Drainage
- National Wetlands
- Sanitary Sewer Line
- Manhole
- Monitor Well (deep)
- Approximate Extent of cis-1,2-DCE Regulatory Exceedance - 2017
- Approximate Extent of PCE Regulatory Exceedance - 2017
- Approximate Extent of TCE Regulatory Exceedance - 2017
- 1065 Building Number

NOTES:
1) All units reported in micrograms per liter (µg/L).
2) All constituents screened to U.S. EPA Maximum Contaminant Level (MCL) as of June 2018.
3) D - The reported value is from a dilution.
4) J - Constituent value was estimated.
5) VOC - Volatile Organic Compounds

Chemical Name	MCL
Benzene	5 µg/L
Tetrachloroethene (PCE)	5 µg/L
Trichloroethene (TCE)	5 µg/L
cis-1,2-Dichloroethene (DCE)	70 µg/L
Vinyl chloride (VC)	2 µg/L



AERIAL SOURCE: ESRI Online Imagery (October 2013).
PROJECTION: NAD83 State Plane Georgia East Feet

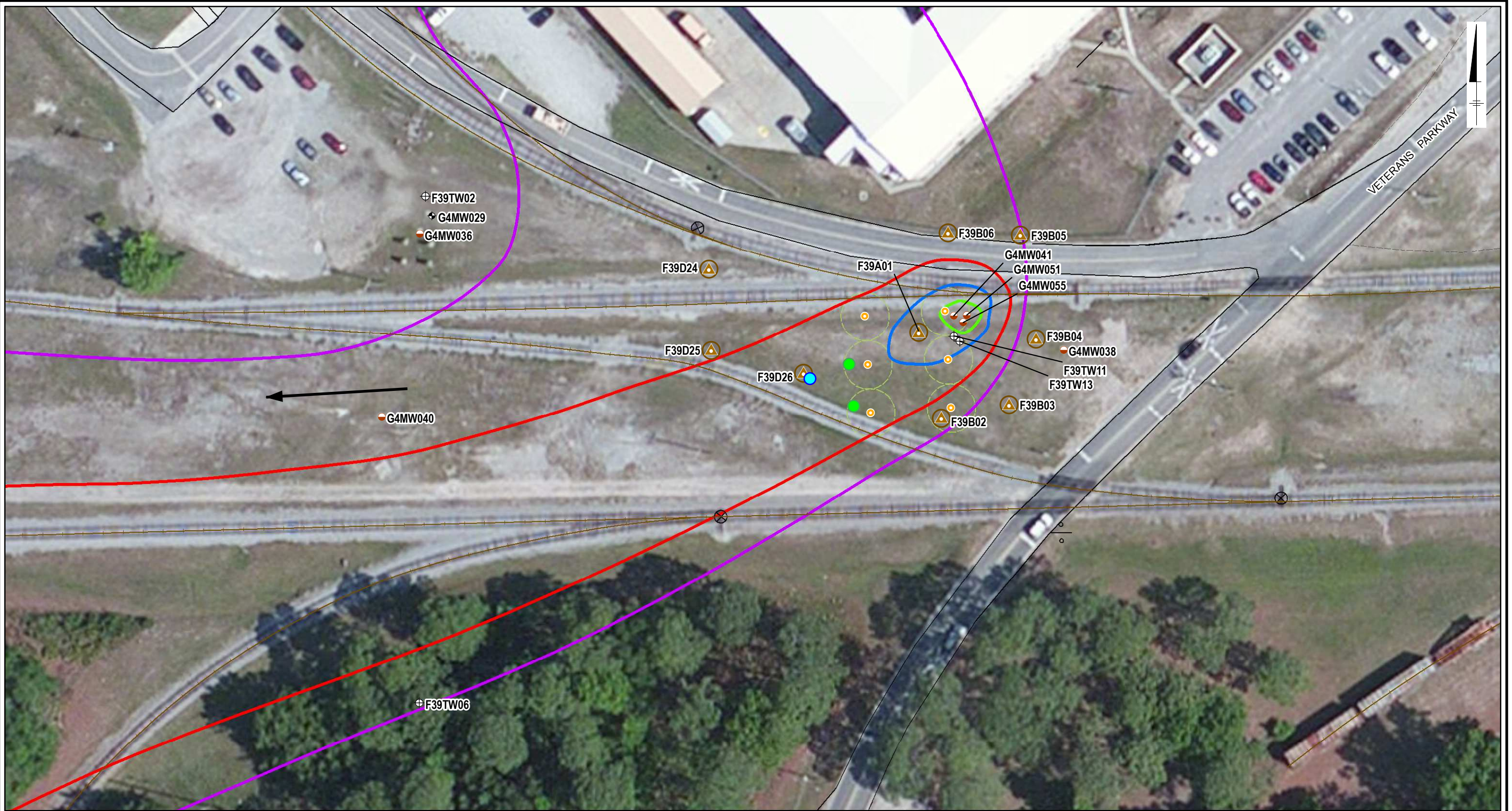
FORT STEWART MILITARY RESERVATION, GEORGIA
SWMU 39 – DIRECT SUPPORT MAINTENANCE FACILITY
CORRECTIVE ACTION PLAN

Deep Zone
Groundwater VOC Sampling Results (2011, 2017, and 2018)



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AERIAL SOURCE: ESRI Online Imagery (October 2013).
PROJECTION: NAD83 State Plane Georgia East Feet

LEGEND

- | | | |
|----------------------------|--|---|
| ◆ Monitor Well (shallow) | ▲ MIP Sounding Location (October 2010) | — Approximate Extent of Chloroform Regulatory Exceedance |
| ● Monitor Well (deep) | ○ Proposed Injection Well | — Approximate Extent of cis-1,2-DCE Regulatory Exceedance |
| ⊕ Monitor Well (temporary) | □ Radius of Influence (15 ft) | — Approximate Extent of PCE Regulatory Exceedance |
| ● Dose Response Well | ● Transport Monitoring Well | — Approximate Extent of TCE Regulatory Exceedance |
| | | ➔ Approximate Direction of Groundwater Flow |

0 60 120
SCALE IN FEET

FORT STEWART MILITARY RESERVATION, GEORGIA
SWMU 39 – DIRECT SUPPORT MAINTENANCE FACILITY
CORRECTIVE ACTION PLAN

Deep ERD Injection System

PIKA
ARCADIS
A JOINT VENTURE

FIGURE
10b

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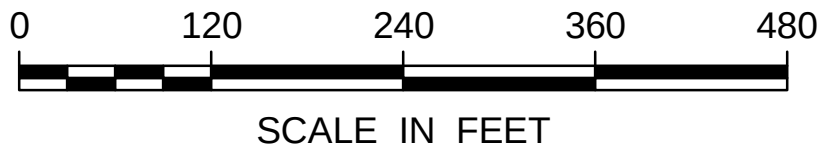
LEGEND

- x-x- Fencing
- Rail Spur
- Surface Water Drainage
- National Wetlands
- Sanitary Sewer Line
- Manhole
- ◆ Monitor Well (shallow)
- Approximate Extent of TCE Regulatory Exceedance - 2017
- 1065 Building Number

NOTES:

- 1) All units reported in micrograms per liter (µg/L).
- 2) All constituents screened to U.S. EPA Maximum Contaminant Level (MCL) as of June 2018.
- 3) D - The reported value is from a dilution.
- 4) J - Constituent value was estimated.
- 5) VOC - Volatile Organic Compounds

Chemical Name	MCL
Benzene	5 µg/L
Tetrachloroethene (PCE)	5 µg/L
Trichloroethene (TCE)	5 µg/L
cis-1,2-Dichloroethene (DCE)	70 µg/L
Vinyl chloride (VC)	2 µg/L



AERIAL SOURCE: ESRI Online Imagery (October 2015).
PROJECTION: NAD83 State Plane Georgia East Feet

FORT STEWART MILITARY RESERVATION, GEORGIA
**SWMU 39 – DIRECT SUPPORT MAINTENANCE FACILITY
CORRECTIVE ACTION PLAN**

**Shallow Zone
Groundwater VOC Sampling Results (2011, 2017, and 2018)**



FIGURE

10c

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APPENDIX A

UNDERGROUND STORAGE TANK TABLE

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Chronology of Events for Fort Stewart Non-UU/UE UST Sites

UST #	ID	Status	CAP A/B ^a	UST Status; Piping Status	No Further Action (NFA) Date	Last Sampling Date	Groundwater Remaining Concentration ^b				Soil Remaining Concentration*
							Benzene	Toluene	Ethylbenzene	Xylene	Benzene
N/A (Building 419)	CCHOTs-419	Active Remediation: 4,000 gal oil UST. On-going <i>in situ</i> treatment.	CAP Part-B	In place	Active	To be determined ^c					
1	9-089064*1	NFA; 1,000 gal fiberglass used oil UST removed 7/95	CAP Part-A	Removed; Removed	5/25/2001	6/23/2000	6.3 µg/L	N/A	N/A	N/A	N/A
5	9-089066*1	NFA; 6,000 gas steel UST removed 8/96	CAP Part-A	Removed; Removed	USTs 5-6, 2/19/2002; USTs 5J1-5J2, 8/26/2009	2/1/2000	125 µg/L	N/A	N/A	N/A	4 J mg/kg
6	9-089066*1	NFA; 25,000 diesel steel UST; Removed 8/96	CAP Part-A	Removed; Removed	USTs 5-6, 2/19/2002; USTs 5J1-5J2, 8/26/2009	2/1/2000	125 µg/L	N/A	N/A	N/A	4 J mg/kg
11	9-089068*1	NFA; 12,000 gas steel UST Removed 2/95	CAP Part-B	Removed; Removed	5/30/2005	10/31/2000	200 µg/L	N/A	N/A	N/A	N/A
12	9-089068*1	NFA; 12,000 diesel steel UST Removed 6/95	CAP Part-B	Removed; Removed	5/30/2005	10/31/2000	200 µg/L	N/A	N/A	N/A	N/A
15	9-089012*1	NFA; 6,000 gas fiberglass UST Removed 6/95; CAP-B Implementation	CAP Part-B	Removed; Removed	2/20/2004	1/10/2001	57.9 µg/L	N/A	N/A	N/A	N/A
16	9-089012*1	NFA; 6,000 fiberglass diesel UST; Removed 6/95; CAP- B Implementation	CAP Part-B	Removed; Removed	2/20/2004	1/10/2001	57.9 µg/L	N/A	N/A	N/A	N/A
18	9-089011*3	NFA; 2,000 fiberglass used oil USTs Removed 2/95	CAP Part-A	Removed; Removed	12/21/1998	5/11/1998	19 µg/L	N/A	N/A	N/A	N/A
20	9-089011*3	NFA; 2,000 fiberglass used oil USTs Removed 6/95	CAP Part-A	Removed; Removed	12/21/1998	5/11/1998	9.8J µg/L	N/A	N/A	N/A	N/A
29	9-089088*1	NFA; 1,000 gal fiberglass used oil UST closed in-place 9/95	CAP Part-B	Removed; Removed	9/28/2001	Jun-00	248 µg/L	N/A	N/A	N/A	N/A
30	9-089114	NFA; 20,000 gal diesel fiberglass UST Removed 10/95 2nd Annual Monitoring Only Report submitted	—	Removed; Removed	3/31/2006	1/27/2000	442 µg/L	N/A	N/A	N/A	N/A
31	9-089114	NFA; 12,000 gal gas fiberglass UST Removed 10/95 2nd Annual Monitoring Only Report submitted	—	Removed; Removed	3/31/2006	1/27/2000	442 µg/L	N/A	N/A	N/A	N/A

Chronology of Events for Fort Stewart Non-UU/UE UST Sites

UST #	ID	Status	CAP A/B ^a	UST Status; Piping Status	No Further Action (NFA) Date	Last Sampling Date	Groundwater Remaining Concentration ^b				Soil Remaining Concentration*
							Benzene	Toluene	Ethylbenzene	Xylene	Benzene
32	9-089114	NFA; 20,000 diesel fiberglass UST Removed 10/95 2nd Annual Monitoring Only Report submitted	—	Removed; Removed	3/31/2006	1/27/2000	442 µg/L	N/A	N/A	N/A	N/A
33	9-089028*1	NFA; 20,000 gal fiberglass diesel USTs Removed 1/95 2nd Annual Monitoring Only Report Implementation	CAP Part-B	Removed; Removed	3/31/2006	1/27/2000	442 µg/L	N/A	N/A	N/A	N/A
34	9-089028*1	NFA; 20,000 gal fiberglass diesel USTs Removed 1/95 2nd Annual Monitoring Only Report Implementation	CAP Part-B	Removed; Removed	3/31/2006	1/27/2000	442 µg/L	N/A	N/A	N/A	N/A
35	9-089028*1	NFA; 12,000 gal fiberglass UST; Removed 1/95 2nd Annual Monitoring Only Report Implementation	CAP Part-B	Removed; Removed	3/31/2006	1/27/2000	442 µg/L	N/A	N/A	N/A	N/A
36	9-089016*1	NFA; 25,000 gal diesel steel UST & 6k gal gas steel UST Removed 9/95	CAP Part-B	Removed; Removed	4/5/2001	1/13/2000	27 µg/L	N/A	N/A	N/A	0.0105 mg/kg
37	9-089016*1	NFA; 25,000 gal diesel steel UST & 6k gal gas steel UST Removed 9/95	CAP Part-B	Removed; in-place	4/5/2001	13-01-00	27 µg/L	N/A	N/A	N/A	0.0105 mg/kg
38	9-089109	NFA; 1,000 gal steel used oil UST Removed 8/96	CAP Part-A	Removed; Removed	9/28/2001	6/25/2000	40.5 µg/L	N/A	N/A	N/A	N/A
48	9-089054*1	NFA; 5,000 gal gas fiberglass UST Removed 3/95	CAP Part-B	Removed; Removed	8/21/2000	9/22/1999	16.8 µg/L	N/A	N/A	N/A	N/A
49	9-089054*1	NFA; 5,000 gal diesel fiberglass UST Removed 3/95	CAP Part-B	Removed; Removed	8/21/2000	9/22/1999	16.8 µg/L	N/A	N/A	N/A	N/A
61	9-089104*1	NFA; 500 gal fiberglass used oil UST Removed 8/95	CAP Part-B	Removed; Removed	1/5/2009	1/9/2001	13 µg/L	N/A	N/A	N/A	N/A
67	9-089021*1	NFA; 1,000 gal used oil UST Removed 6/95	CAP Part-A	Removed; Removed	5/13/1999	11/18/1997	11.8 µg/L	N/A	N/A	N/A	N/A
70	9-089019*1	NFA; 1,000 gal steel used oil UST Removed 6/95	CAP Part-B	Removed; Removed	7/12/1999	3/10/1999	200 µg/L	N/A	N/A	N/A	2.6 mg/kg
71	9-089022*1	NFA; 1,000 gal steel used oil UST Removed 7/96	CAP Part-A	Removed; Removed	8/10/2001	2/22/1999	41.5 µg/L	N/A	N/A	N/A	N/A
72	9-089024*1	NFA; two 12,000 gal fiberglass gas USTs Removed 8/95 (Late 1940s site of former gas station that had a 5,000 gasoline tank- Earth Tech investigation Mar 2010)	CAP Part-A	Removed; Removed	6/11/1999	11/12/1997	500 µg/L	N/A	N/A	N/A	N/A

Chronology of Events for Fort Stewart Non-UU/UE UST Sites

UST #	ID	Status	CAP A/B ^a	UST Status; Piping Status	No Further Action (NFA) Date	Last Sampling Date	Groundwater Remaining Concentration ^b				Soil Remaining Concentration*
							Benzene	Toluene	Ethylbenzene	Xylene	Benzene
73	9-089024*1	NFA; two 12,000 gal fiberglass diesel USTs Removed 8/95(Late 1940s site of former gas station that had a 5,000 gasoline tank- Earth Tech investigation Mar 2010)	CAP Part-A	Removed; Removed	6/11/1999	11/12/1997	500 µg/L	N/A	N/A	N/A	N/A
75	9-089003	NFA; 1,000 gal fiberglass used oil UST Removed 6/95	CAP Part-A	Removed; Removed	7/23/1997	12/13/1996	6.1 µg/L	N/A	N/A	N/A	N/A
80	9-089089	NFA; 6,000 gal gas UST Removed 2/95	CAP Part-A	Removed; Removed	6/1/1999				N/A	N/A	N/A
81	9-089089	NFA; 25,000 gal diesel fiberglass USTs Removed 2/95	CAP Part-A	Removed; Removed	6/1/1999	11/13/1997	132 µg/L	N/A	N/A	N/A	N/A
82	9-089029*1	NFA; 1,000 gal fiberglass used oil UST Removed 2/95; 2nd Annual Monitoring Only Report submitted	CAP Part-B	Removed; Removed	6/4/2008	6/22/2000	329 µg/L	N/A	N/A	N/A	0.942 J mg/kg
89	9-089074	NFA; 1,000 gal fiberglass used oil UST Removed 7/95; Completion Report submitted	CAP Part-B	Removed; Removed	11/21/2005	6/22/2000	9.2 µg/L	N/A	N/A	N/A	N/A
90	9-089075*1	NFA; 15,000 gal diesel UST Removed 2/95	CAP Part-B	Removed; Removed	8/21/2000	1/26/2000	41.1 µg/L	N/A	N/A	N/A	N/A
91	9-089075*1	NFA; 15,000 gal gas fiberglass UST Removed 2/95	CAP Part-B	Removed; Removed	8/21/2000	1/26/2000	41.1 µg/L	N/A	N/A	N/A	N/A
92	9-089111*1	NFA; 1,000 gal fiberglass used oil UST Removed 7/95	CAP Part-A	Removed; Removed	11/20/2001	13-11-97	101 µg/L	N/A	N/A	N/A	N/A
93	9-089112*1	NFA; 2,500 gal fiberglass used oil UST Removed 7/96	CAP Part-A	Removed; Removed	3/16/2001	1/19/2000	N/A	N/A	N/A	N/A	0.009 mg/kg
94A	9-089078	NFA; 1,000 gal fiberglass used oil UST Removed 1/95; 2nd Annual Monitoring Only Report submitted	CAP Part-B	Removed; Removed	9/21/2006	1/10/2001	46.7 J µg/L	N/A	N/A	N/A	N/A
95	9-089077*1	NFA; 6,000 gal gas fiberglass UST Removed 4/95	CAP Part-B	Removed; Removed	11/13/1997	132 µg/L	N/A	N/A	N/A	N/A	N/A
96	9-089077*1	NFA; 15,000 gal diesel fiberglass UST Removed 4/95	CAP Part-B	Removed; Removed	4/13/2001	1/27/2000	47.5 µg/L	N/A	N/A	N/A	N/A
97	9-089077*1	NFA; 15,000 gal diesel fiberglass UST Removed 4/95	CAP Part-B	Removed; Removed	4/13/2001	1/27/2000	47.5 µg/L	N/A	N/A	N/A	N/A

Chronology of Events for Fort Stewart Non-UU/UE UST Sites

UST #	ID	Status	CAP A/B ^a	UST Status; Piping Status	No Further Action (NFA) Date	Last Sampling Date	Groundwater Remaining Concentration ^b				Soil Remaining Concentration*
							Benzene	Toluene	Ethylbenzene	Xylene	Benzene
100	9-089115	NFA; 1,000 gal fiberglass used oil UST Removed 6/95	CAP Part-A	Removed; Removed	11/16/1998	12/16/2000	6.9 µg/L	N/A	N/A	N/A	0.13 mg/kg
100B	9-089081	NFA ; 1,000 gal fiberglass used oil UST Removed 8/96; 1st Annual Monitoring Only Report submitted	CAP Part-B	Removed; Removed	8/20/2001	1/9/2001	22.1 µg/L	N/A	N/A	N/A	N/A
111	9-089085*1	NFA; 250 gal steel diesel UST Removed 8/96	CAP Part-A	Removed; Removed	7/12/1999	11/15/1998	17.8 µg/L	N/A	N/A	N/A	N/A
122	9-089083*1	NFA; 150 gal steel gasoline UST Removed 6/96	CAP Part-A	Removed; Removed	1/27/2004	6/27/2000	258 µg/L	N/A	N/A	N/A	N/A
123	9-089092*1	NFA; 1000 gal steel gasoline UST Removed 4/94	CAP Part-A	Removed; Removed	9/12/2001	9/20/1998	41.8 µg/L	N/A	N/A	N/A	N/A
200	9-089043*1	NFA; 12,000 gal diesel UST Removed 3/95	CAP Part-A	Removed; in-place	4/20/2001	3/28/1995	100 µg/L	N/A	N/A	N/A	N/A
201	9-089043*1	NFA; 12,000 gal diesel UST Removed 3/95	CAP Part-A	Removed; in-place	4/20/2001	3/28/1995	100 µg/L	N/A	N/A	N/A	N/A
205	9-089040*1	NFA; 5,000 gal fiberglass gas UST Removed 4/95	CAP Part-A	Removed; Removed	6/1/1999	11/18/1997	N/A	N/A	N/A	N/A	0.011 mg/kg
206	9-089040*1	NFA; 12,000 gal fiberglass diesel UST Removed 4/95	CAP Part-A	Removed ;in place	6/1/1999	11/18/1997	N/A	N/A	N/A	N/A	0.011 mg/kg
208	9-089036*1	NFA; Active remediation 12,000 gal fiberglass diesel/gas; USTs Removed 4/95; Monitoring Wells closed	CAP Part-B	Removed; Removed	2/20/2008	1/27/2000	8.0 µg/L	N/A	N/A	N/A	N/A
209	9-089036*1	NFA; Active remediation; 12,000 & 6,000 gal fiberglass diesel/gas USTs Removed 4/95; Monitoring Wells closed	CAP Part-B	Removed; Removed	2/20/2008	1/27/2000	8.0 µg/L	N/A	N/A	N/A	N/A
211	9-089182*1	NFA; Transfer of Regulator Oversight to Hazardous Waste; Monitoring Wells closed under SWMU 35	CAP Part-B	Removed; Removed	4/11/2011	10/4/2010	78 µg/L	N/A	N/A	N/A	N/A
212	9-089182*1	NFA; Transfer of Regulator Oversight to Hazardous Waste; Monitoring Wells closed under SWMU 35	CAP Part-B	Removed; Removed	4/11/2011	10/4/2010	78 µg/L	N/A	N/A	N/A	N/A
222	9-089059*1	NFA; 4,000 gal fiberglass gas UST Removed 4/95	—	Removed; Removed	5/17/1999	12/13/1996	1580 µg/L	6,100 µg/L	1,480 µg/L	10,900 µg/L	0.0615 mg/kg
223	9-089059*1	NFA; 25,000 gal fiberglass diesel UST Removed 6/95	—	Removed; Removed	5/17/1999	12/13/1996	1580 µg/L	6,100 µg/L	1,480 µg/L	10,900 µg/L	0.0615 mg/kg
225	9-089090	NFA; 1,000 gal fiberglass used oil UST Removed 6/96	CAP Part-A	Removed; Removed	8/6/2003	11/18/1998	49.6 µg/L	N/A	N/A	N/A	N/A
232	9-089061*1	NFA; 1,000 gal used oil fiberglass UST 5/95	CAP Part-A	Removed; Removed	7/30/1999	2/22/1999	13.9 µg/L	N/A	N/A	N/A	N/A

Chronology of Events for Fort Stewart Non-UU/UE UST Sites

UST #	ID	Status	CAP A/B ^a	UST Status; Piping Status	No Further Action (NFA) Date	Last Sampling Date	Groundwater Remaining Concentration ^b				Soil Remaining Concentration*
							Benzene	Toluene	Ethylbenzene	Xylene	Benzene
233	9-089061*1	NFA; 1,000 gal antifreeze fiberglass UST 5/95	CAP Part-A	Removed; Removed	7/30/1999	2/22/1999	13.9 µg/L	N/A	N/A	N/A	N/A
234	9-089117*1	NFA; 15,000, 25,000 gal gas & diesel fiberglass USTs Removed 5/95	CAP Part-A	Removed; Removed	5/13/1999	11/12/1997	250 µg/L	N/A	N/A	N/A	N/A
235	9-089117*1	NFA; 15,000, 25,000 gal gas & diesel fiberglass USTs Removed 5/95	CAP Part-A	Removed; Removed	5/13/1999	12-11-97	250 µg/L	N/A	N/A	N/A	N/A
236	9-089062*1	NFA; 2,500 gal fiberglass used oil UST Removed 1/95	CAP Part-A	Removed; Removed	3/15/2001	6/25/2000	342 µg/L	N/A	N/A	N/A	N/A
242	9-089041*3	NFA; 1,000 gal fiberglass used oil USTs Removed 6/96	—	Removed; Removed	1/25/2000	9/20/1998	12.1 µg/L	N/A	N/A	N/A	N/A
244	9-089041*3	NFA; 1,000 gal fiberglass used oil USTs Removed 6/96	CAP Part-A	Removed; Removed	1/25/2000	9/20/1998	12.1 µg/L	N/A	N/A	N/A	N/A
248	9-054006*1	NFA; 25,000 gal diesel steel UST Removed 3/93	CAP Part-A	Removed; Removed	1/25/2000	11/12/1998	12J µg/L	N/A	N/A	N/A	N/A
249	9-054006*1	NFA; 25,000 gal gas steel UST Removed 3/93	CAP Part-A	Removed; Removed	1/25/2000	11/12/1998	12J µg/L	N/A	N/A	N/A	N/A
255	9-089087	NFA; 12,500 gal gas steel UST Removed 3/93	CAP Part-B	Removed; Removed	9/11/2007	6/27/2000	53.7 µg/L	N/A	N/A	N/A	N/A
256	9-089087	NFA; 12,500 gal gas steel UST Removed 3/93	CAP Part-B	Removed; in-place	9/11/2007	6/27/2000	53.7 µg/L	N/A	N/A	N/A	N/A
257	9-089118	NFA; CAP-B Implementation;10,000 gal gas steel UST Removed 3/93; MWs closed	CAP Part-B	Removed; in-place	5/20/2015	10/30/1999	N/A	N/A	N/A	N/A	0.146 mg/kg
258	9-089118	NFA; CAP-B Implementation;10,000 gal gas steel UST Removed 3/93; MWs closed	CAP Part-B	Removed; in-place	5/20/2015	10/30/1999	N/A	N/A	N/A	N/A	0.146 mg/kg
259	9-089118	NFA; CAP-B Implementation;10,000 gal gas steel UST Removed 3/93; MWs closed	CAP Part-B	Removed; in-place	5/20/2015	10/30/1999	N/A	N/A	N/A	N/A	0.146 mg/kg
260	9-089118	NFA; CAP-B Implementation;10,000 gal gas steel UST Removed 3/93; MWs closed	CAP Part-B	Removed; Removed	5/20/2015	10/30/1999	N/A	N/A	N/A	N/A	0.146 mg/kg
261	9-089118*2	NFA; CAP-B Implementation; 500 gal used oil steel UST Removed 6/96; MWs closed	CAP Part-B	Removed; Removed	5/20/2015	5/10/1998	N/A	N/A	N/A	N/A	0.146 mg/kg

Chronology of Events for Fort Stewart Non-UU/UE UST Sites

UST #	ID	Status	CAP A/B ^a	UST Status; Piping Status	No Further Action (NFA) Date	Last Sampling Date	Groundwater Remaining Concentration ^b				Soil Remaining Concentration*
							Benzene	Toluene	Ethylbenzene	Xylene	Benzene
262	0-890037	NFA; 10,000 gal gas fiberglass UST Removed 10/01	CAP Part-B	Removed; Removed	8/20/2008	4/13/2008	58 µg/L	N/A	N/A	N/A	N/A
263	0-890037	NFA; 10,000 gal gas fiberglass UST Removed 10/01	CAP Part-B	Existing; replacement	8/20/2008	4/13/2008	58 µg/L	N/A	N/A	N/A	N/A
276	9-089156	NFA; New Release Feb 2009 during renovation; 10,000 gal gas fiberglass UST; CAP-B to be submitted; piping CIP ^c ; tanks renovated.	CAP Part-B	Existing; replacement	12/31/2014	2/3/2001	54.9 µg/L	N/A	N/A	N/A	N/A
277	9-089156	NFA; New Release Feb 2009 during renovation; 12,000 gal gas fiberglass USTs; CAP-B to be submitted; piping CIP; tanks renovated.	CAP Part-B	Existing; replacement	12/31/2014	2/3/2001	54.9 µg/L	N/A	N/A	N/A	N/A
278	9-089156	NFA; New Release Feb 2009 during renovation; 10,000 gal gas fiberglass UST; CAP-B to be submitted; piping CIP; tanks renovated.	CAP Part-B	Existing; replacement	12/31/2014	2/3/2001	54.9 µg/L	N/A	N/A	N/A	N/A
279	9-089156	NFA; New Release Feb 2009 during renovation; 10,000 gal gas fiberglass UST; CAP-B to be submitted; piping CIP; tanks renovated.	CAP Part-B	Closed in-place; Closed in-place	12/31/2014	2/3/2001	54.9 µg/L	N/A	N/A	N/A	N/A
282	9-089169*1	NFA; 2,000 gal off-spec JP- 8 steel UST CIP 12/98	N/A	Closed in-place; Closed in-place	7/12/1999	2/10/1998	190 µg/L	N/A	N/A	N/A	N/A

a Corrective Action Plan (CAP); Part-A or Part-B

b The regulatory action level is the concentration required to meet requirements for unlimited use and unrestricted exposure (UU/UE). The concentration required to request NFA is often higher. For reference the regulatory action levels for benzene in groundwater is 5.0 µg/L; for toluene in groundwater, 700 µg/L, for ethylbenzene in groundwater, 1,000 µg/L, and for xylene in groundwater, 10,000 µg/L. The regulatory action level for benzene in soil is 0.008 mg/kg.

c Free product is currently being treated on the site. After treatment sampling will begin and the Final Sampling Date is the final date when the contaminant concentration is below the ACL in accordance with Georgia USTMP Regulations.

d Closed in Place (CIP)

J - value is estimated

APPENDIX B

SITE INSPECTION FORMS

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SWMU 1
SITE INSPECTION FORM

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I. SITE INFORMATION													
Site name: SWMU 1, South Central Landfill	Date of inspection: February 3, 2020												
Location and Region: Fort Stewart, Georgia	EPA ID: GA9210020872												
Agency, office, or company leading the five-year review: Dawson Solutions, LLC	Weather/temperature: Clear, 70°F												
Remedy Includes: (Check all that apply) <table border="0"> <tr> <td>☐ Landfill cover/containment</td> <td>☐ Monitored natural attenuation</td> </tr> <tr> <td>☒ Access controls</td> <td>☐ Groundwater containment</td> </tr> <tr> <td>☒ Institutional controls</td> <td>☐ Vertical barrier walls</td> </tr> <tr> <td>☐ Groundwater pump and treatment</td> <td></td> </tr> <tr> <td>☐ Surface water collection and treatment</td> <td></td> </tr> <tr> <td>☐ Other _____</td> <td></td> </tr> </table>		☐ Landfill cover/containment	☐ Monitored natural attenuation	☒ Access controls	☐ Groundwater containment	☒ Institutional controls	☐ Vertical barrier walls	☐ Groundwater pump and treatment		☐ Surface water collection and treatment		☐ Other _____	
☐ Landfill cover/containment	☐ Monitored natural attenuation												
☒ Access controls	☐ Groundwater containment												
☒ Institutional controls	☐ Vertical barrier walls												
☐ Groundwater pump and treatment													
☐ Surface water collection and treatment													
☐ Other _____													
Attachments: ☒ Inspection team roster attached ☐ Site map attached													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <u>Scott Bostian</u> <u>Senior Engineer</u> Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☒ Report attached <u>Interview questions were requested to be answered via email.</u>													
2. O&M staff _____ Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☐ Report attached _____ _____													

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Fort Stewart

Contact Algeana Stevenson RCRA Section Supervisor February 3, 2020 (912)767-7922

Name

Title

Date

Phone no.

Problems; suggestions; ☒ Report attached Interview questions were requested to be answered via email.

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name _____

Title

Date _____

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name _____

Title

Date _____

Phone no.

Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

[illegible]

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents ☒ O&M manual ☐ As-built drawings ☒ Maintenance logs Remarks <u>O&M manual found on the installation website.</u>	☒ Readily available ☐ Readily available ☒ Readily available	☐ Up to date ☐ Up to date ☒ Up to date ☐ N/A ☒ N/A ☐ N/A
2.	Site-Specific Health and Safety Plan ☐ Contingency/Emergency Response Plan Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
3.	O&M and OSHA Training Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
4.	Permits and Service Agreements ☐ Air discharge permit ☐ Effluent discharge ☐ Waste disposal, POTW ☐ Other permits _____ Remarks _____	☐ Readily available ☐ Readily available ☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☐ Up to date ☐ Up to date ☒ N/A ☒ N/A ☒ N/A ☒ N/A
5.	Gas Generation Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
6.	Settlement Monument Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
7.	Groundwater Monitoring Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
8.	Leachate Extraction Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
9.	Discharge Compliance Records ☐ Air ☐ Water (effluent) Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
10.	Daily Access/Security Logs Remarks _____	☐ Readily available	☐ Up to date ☒ N/A

IV. O&M COSTS

1. **O&M Organization**

☐ State in-house

☐ Contractor for State

☐ PRP in-house

☐ Contractor for PRP

☒ Federal Facility in-house

☒ Contractor for Federal Facility

☐ Other _____

2. **O&M Cost Records**

☐ Readily available ☐ Up to date

☐ Funding mechanism/agreement in place

Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From _____ To _____ ☐ Breakdown attached
Date Date Total cost

From _____ To _____ ☐ Breakdown attached
Date Date Total cost

From _____ To _____ ☐ Breakdown attached
Date Date Total cost

From _____ To _____ ☐ Breakdown attached
Date Date Total cost

From _____ To _____ ☐ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

The inspection team did not identify any unanticipated or unusually high O&M costs during this review period.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured ☒ N/A

Remarks _____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A

Remarks The inspection team noted the installed signs were visible, labeled, and well-maintained.

C. Institutional Controls (ICs)**1. Implementation and enforcement**

Site conditions imply ICs not properly implemented

☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced

☐ Yes ☒ No ☐ N/AType of monitoring (*e.g.*, self-reporting, drive by) Site Inspection ReportFrequency AnnualResponsible party/agency Pika-Arcadis JVContact Scott Bostian, PESenior Engineer281-340-5525

Name

Title

Date

Phone no.

Reporting is up-to-date

☒ Yes ☐ No ☐ N/A

Reports are verified by the lead agency

☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met

☒ Yes ☐ No ☐ N/A

Violations have been reported

☐ Yes ☐ No ☒ N/AOther problems or suggestions: ☐ Report attached

2. Adequacy☒ ICs are adequate☐ ICs are inadequate☐ N/ARemarks

D. General**1. Vandalism/trespassing**☐ Location shown on site map☒ No vandalism evidentRemarks

2. Land use changes on site☒ N/ARemarks

3. Land use changes off site☒ N/ARemarks

VI. GENERAL SITE CONDITIONS**A. Roads**☒ Applicable☐ N/A**1. Roads damaged**☐ Location shown on site map☒ Roads adequate☐ N/ARemarks

B. Other Site ConditionsRemarks

VII. LANDFILL COVERS ☐ Applicable ☒ N/A	
VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A	
IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A	
X. OTHER REMEDIES	
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
XI. OVERALL OBSERVATIONS	
A. Implementation of the Remedy	Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <u>The selected remedy at SWMU 1 includes ICs to limit public exposure to contaminants. The site inspection team confirmed that SWMU 1 is properly labeled to prevent ingestion of groundwater and limit soil disturbance on site. Based on the site inspection, the selected remedy is effective and functioning as designed.</u>
B. Adequacy of O&M	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. <u>The site inspection team did not identify any issues or observations related to the implementation and scope of O&M procedures.</u>
C. Early Indicators of Potential Remedy Problems	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. <u>There were no issues or observations to suggest that the protectiveness of the remedy may be compromised in the future.</u>
D. Opportunities for Optimization	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>The site inspection team did not identify any opportunities for optimization of the remedy.</u>
Site Inspection Team Roster	

Algeana Stevenson	Fort Stewart
Dale Kiefer	Fort Stewart
Sara Keisler	USACE, Savannah District
Breanna Stout	DAWSON
Charlene Torres	DAWSON

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SWMU 2

SITE INSPECTION FORMS

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I. SITE INFORMATION	
Site name: SWMU 2, Camp Oliver Landfill	Date of inspection: February 3, 2020
Location and Region: Fort Stewart, Georgia	EPA ID: GA9210020872
Agency, office, or company leading the five-year review: Dawson Solutions, LLC	Weather/temperature: Clear, 70°F
Remedy Includes: (Check all that apply) ☐ Landfill cover/containment ☐ Monitored natural attenuation ☒ Access controls ☐ Groundwater containment ☒ Institutional controls ☐ Vertical barrier walls ☐ Groundwater pump and treatment ☐ Surface water collection and treatment ☐ Other _____	
Attachments: ☒ Inspection team roster attached ☐ Site map attached	
II. INTERVIEWS (Check all that apply)	
1. O&M site manager <u>Scott Bostian</u> <u>Senior Engineer</u> Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☒ Report attached <u>Interview questions were requested to be answered via email.</u>	
2. O&M staff _____ Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☐ Report attached _____	

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Fort Stewart

Contact Algeana Stevenson RCRA Section Supervisor February 3, 2020 (912)767-7922

Name

Title

Date

Phone no.

Problems; suggestions; ☒ Report attached Interview questions were requested to be answered via email.

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

[illegible]

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents ☒ O&M manual ☐ As-built drawings ☒ Maintenance logs Remarks <u>O&M manual found on the installation website.</u>	☒ Readily available ☐ Readily available ☒ Readily available	☐ Up to date ☐ Up to date ☒ Up to date ☐ N/A ☒ N/A ☐ N/A
2.	Site-Specific Health and Safety Plan ☐ Contingency/Emergency Response Plan Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
3.	O&M and OSHA Training Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
4.	Permits and Service Agreements ☐ Air discharge permit ☐ Effluent discharge ☐ Waste disposal, POTW ☐ Other permits _____ Remarks _____	☐ Readily available ☐ Readily available ☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☐ Up to date ☐ Up to date ☒ N/A ☒ N/A ☒ N/A ☒ N/A
5.	Gas Generation Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
6.	Settlement Monument Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
7.	Groundwater Monitoring Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
8.	Leachate Extraction Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
9.	Discharge Compliance Records ☐ Air ☐ Water (effluent) Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
10.	Daily Access/Security Logs Remarks _____	☐ Readily available	☐ Up to date ☒ N/A

IV. O&M COSTS

1. **O&M Organization**

- ☐ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house ☒ Contractor for Federal Facility
☐ Other _____

2. **O&M Cost Records**

- ☐ Readily available ☐ Up to date
☐ Funding mechanism/agreement in place
Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

The inspection team did not identify any unanticipated or unusually high O&M costs during this review period.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured ☒ N/A
Remarks _____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A
Remarks The inspection team noted the installed signs were visible, labeled, and well-maintained.

C. Institutional Controls (ICs)

1.	Implementation and enforcement Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A Type of monitoring (<i>e.g.</i> , self-reporting, drive by) <u>Site Inspection Report</u> Frequency <u>Annual</u> Responsible party/agency <u>Pika-Arcadis JV</u> Contact <u>Scott Bostian, PE</u> <u>Senior Engineer</u> <u>281-340-5525</u> Name Title Date Phone no. Reporting is up-to-date ☒ Yes ☐ No ☐ N/A Reports are verified by the lead agency ☒ Yes ☐ No ☐ N/A Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A Violations have been reported ☐ Yes ☐ No ☒ N/A Other problems or suggestions: ☐ Report attached
2.	Adequacy ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A Remarks
D. General	
1.	Vandalism/trespassing ☐ Location shown on site map ☒ No vandalism evident Remarks
2.	Land use changes on site ☒ N/A Remarks
3.	Land use changes off site ☒ N/A Remarks
VI. GENERAL SITE CONDITIONS	
A. Roads ☒ Applicable ☐ N/A	
1.	Roads damaged ☐ Location shown on site map ☒ Roads adequate ☐ N/A Remarks
B. Other Site Conditions	
Remarks	

VII. LANDFILL COVERS ☐ Applicable ☒ N/A	
VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A	
IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A	
X. OTHER REMEDIES	
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
XI. OVERALL OBSERVATIONS	
A. Implementation of the Remedy	Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <u>The selected remedy at SWMU 2 includes ICs to limit public exposure to contaminants. The site inspection team confirmed that SWMU 2 is properly labeled to prevent ingestion of groundwater and limit soil disturbance on site. Based on the site inspection, the selected remedy is effective and functioning as designed.</u>
B. Adequacy of O&M	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. <u>The site inspection team did not identify any issues or observations related to the implementation and scope of O&M procedures.</u>
C. Early Indicators of Potential Remedy Problems	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. <u>There were no issues or observations to suggest that the protectiveness of the remedy may be compromised in the future.</u>
D. Opportunities for Optimization	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>The site inspection team did not identify any opportunities for optimization of the remedy.</u>
Site Inspection Team Roster	

Algeana Stevenson	Fort Stewart
Dale Kiefer	Fort Stewart
Sara Keisler	USACE, Savannah District
Breanna Stout	DAWSON
Charlene Torres	DAWSON

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SWMU 3

SITE INSPECTION FORMS

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I. SITE INFORMATION	
Site name: SWMU 3, TAC-X Landfill	Date of inspection: February 3, 2020
Location and Region: Fort Stewart, Georgia	EPA ID: GA9210020872
Agency, office, or company leading the five-year review: Dawson Solutions, LLC	Weather/temperature: Clear, 70°F
Remedy Includes: (Check all that apply) ☐ Landfill cover/containment ☒ Access controls ☒ Institutional controls ☐ Groundwater pump and treatment ☐ Surface water collection and treatment ☐ Other _____ ☐ Monitored natural attenuation ☐ Groundwater containment ☐ Vertical barrier walls	
Attachments: ☒ Inspection team roster attached ☐ Site map attached	
II. INTERVIEWS (Check all that apply)	
1. O&M site manager <u>Scott Bostian</u> <u>Senior Engineer</u> Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☒ Report attached <u>Interview questions were requested to be answered via email.</u>	
2. O&M staff _____ Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☐ Report attached _____ _____	

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Fort Stewart

Contact Algeana Stevenson RCRA Section Supervisor February 3, 2020 (912)767-7922

Name

Title

Date

Phone no.

Problems; suggestions; ☒ Report attached Interview questions were requested to be answered via email.

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

[illegible]

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents ☒ O&M manual ☐ As-built drawings ☒ Maintenance logs Remarks <u>O&M manual found on the installation website.</u>	☒ Readily available ☐ Readily available ☒ Readily available	☐ Up to date ☐ Up to date ☒ Up to date ☐ N/A ☒ N/A ☐ N/A
2.	Site-Specific Health and Safety Plan ☐ Contingency/Emergency Response Plan Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
3.	O&M and OSHA Training Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
4.	Permits and Service Agreements ☐ Air discharge permit ☐ Effluent discharge ☐ Waste disposal, POTW ☐ Other permits _____ Remarks _____	☐ Readily available ☐ Readily available ☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☐ Up to date ☐ Up to date ☒ N/A ☒ N/A ☒ N/A ☒ N/A
5.	Gas Generation Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
6.	Settlement Monument Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
7.	Groundwater Monitoring Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
8.	Leachate Extraction Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
9.	Discharge Compliance Records ☐ Air ☐ Water (effluent) Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
10.	Daily Access/Security Logs Remarks _____	☐ Readily available	☐ Up to date ☒ N/A

IV. O&M COSTS

1. **O&M Organization**

- ☐ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house ☒ Contractor for Federal Facility
☐ Other _____

2. **O&M Cost Records**

- ☐ Readily available ☐ Up to date
☐ Funding mechanism/agreement in place
Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

The inspection team did not identify any unanticipated or unusually high O&M costs during this review period.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured ☒ N/A
Remarks _____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A
Remarks The inspection team noted the installed signs were visible, labeled, and well-maintained.

C. Institutional Controls (ICs)**1. Implementation and enforcement**

Site conditions imply ICs not properly implemented

☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced

☐ Yes ☒ No ☐ N/AType of monitoring (*e.g.*, self-reporting, drive by) Site Inspection ReportFrequency AnnualResponsible party/agency Pika-Arcadis JVContact Scott Bostian, PE Senior Engineer 281-340-5525

Name

Title

Date

Phone no.

Reporting is up-to-date

☒ Yes ☐ No ☐ N/A

Reports are verified by the lead agency

☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met

☒ Yes ☐ No ☐ N/A

Violations have been reported

☐ Yes ☐ No ☒ N/AOther problems or suggestions: ☐ Report attached

2. Adequacy☒ ICs are adequate☐ ICs are inadequate☐ N/ARemarks

D. General**1. Vandalism/trespassing**☐ Location shown on site map☒ No vandalism evidentRemarks

2. Land use changes on site☒ N/ARemarks

3. Land use changes off site☒ N/ARemarks

VI. GENERAL SITE CONDITIONS**A. Roads**☒ Applicable☐ N/A**1. Roads damaged**☐ Location shown on site map☒ Roads adequate☐ N/ARemarks

B. Other Site ConditionsRemarks

VII. LANDFILL COVERS ☐ Applicable ☒ N/A	
VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A	
IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A	
X. OTHER REMEDIES	
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
XI. OVERALL OBSERVATIONS	
A.	Implementation of the Remedy
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <u>The selected remedy at SWMU 3 includes ICs to limit public exposure to contaminants. The site inspection team confirmed that SWMU 3 is properly labeled to prevent ingestion of groundwater and limit soil disturbance on site. Based on the site inspection, the selected remedy is effective and functioning as designed.</u>	
B.	Adequacy of O&M
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. <u>The site inspection team did not identify any issues or observations related to the implementation and scope of O&M procedures.</u>	
C.	Early Indicators of Potential Remedy Problems
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. <u>There were no issues or observations to suggest that the protectiveness of the remedy may be compromised in the future.</u>	
D.	Opportunities for Optimization
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>The site inspection team did not identify any opportunities for optimization of the remedy.</u>	
Site Inspection Team Roster	

Algeana Stevenson	Fort Stewart
Dale Kiefer	Fort Stewart
Sara Keisler	USACE, Savannah District
Breanna Stout	DAWSON
Charlene Torres	DAWSON

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SWMU 8

SITE INSPECTION FORMS

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I. SITE INFORMATION													
Site name: SWMU 8, Inactive Former Explosive and Ordnance Disposal (EOD) Area #1)	Date of inspection: February 3, 2020												
Location and Region: Fort Stewart, Georgia	EPA ID: GA9210020872												
Agency, office, or company leading the five-year review: Dawson Solutions, LLC	Weather/temperature: Clear, 70°F												
Remedy Includes: (Check all that apply) <table border="0"> <tr> <td>☐ Landfill cover/containment</td> <td>☐ Monitored natural attenuation</td> </tr> <tr> <td>☒ Access controls</td> <td>☐ Groundwater containment</td> </tr> <tr> <td>☒ Institutional controls</td> <td>☐ Vertical barrier walls</td> </tr> <tr> <td colspan="2">☐ Groundwater pump and treatment</td> </tr> <tr> <td colspan="2">☐ Surface water collection and treatment</td> </tr> <tr> <td colspan="2">☐ Other _____</td> </tr> </table>		☐ Landfill cover/containment	☐ Monitored natural attenuation	☒ Access controls	☐ Groundwater containment	☒ Institutional controls	☐ Vertical barrier walls	☐ Groundwater pump and treatment		☐ Surface water collection and treatment		☐ Other _____	
☐ Landfill cover/containment	☐ Monitored natural attenuation												
☒ Access controls	☐ Groundwater containment												
☒ Institutional controls	☐ Vertical barrier walls												
☐ Groundwater pump and treatment													
☐ Surface water collection and treatment													
☐ Other _____													
Attachments: ☒ Inspection team roster attached ☐ Site map attached													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <u>Scott Bostian</u> <u>Senior Engineer</u> Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☒ Report attached <u>Interview questions were requested to be answered via email.</u>													
2. O&M staff _____ Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☐ Report attached _____ _____													

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Fort Stewart

Contact Algeana Stevenson RCRA Section Supervisor February 3, 2020 (912)767-7922

Name

Title

Date

Phone no.

Problems; suggestions; ☒ Report attached Interview questions were requested to be answered via email.

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

[illegible]

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents ☒ O&M manual ☐ As-built drawings ☒ Maintenance logs Remarks <u>O&M manual found on the installation website.</u>	☒ Readily available ☐ Readily available ☒ Readily available	☐ Up to date ☐ Up to date ☒ Up to date ☐ N/A ☒ N/A ☐ N/A
2.	Site-Specific Health and Safety Plan ☐ Contingency/Emergency Response Plan Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
3.	O&M and OSHA Training Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
4.	Permits and Service Agreements ☐ Air discharge permit ☐ Effluent discharge ☐ Waste disposal, POTW ☐ Other permits _____ Remarks _____	☐ Readily available ☐ Readily available ☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☐ Up to date ☐ Up to date ☒ N/A ☒ N/A ☒ N/A ☒ N/A
5.	Gas Generation Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
6.	Settlement Monument Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
7.	Groundwater Monitoring Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
8.	Leachate Extraction Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
9.	Discharge Compliance Records ☐ Air ☐ Water (effluent) Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
10.	Daily Access/Security Logs Remarks _____	☐ Readily available	☐ Up to date ☒ N/A

IV. O&M COSTS

1. **O&M Organization**

- ☐ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house ☒ Contractor for Federal Facility
☐ Other _____

2. **O&M Cost Records**

- ☐ Readily available ☐ Up to date
☐ Funding mechanism/agreement in place
Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

The inspection team did not identify any unanticipated or unusually high O&M costs during this review period.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☒ Gates secured ☐ N/A
Remarks _____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A
Remarks The inspection team noted the installed signs were visible, labeled, and well-maintained.

C. Institutional Controls (ICs)			
1.	Implementation and enforcement Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A Type of monitoring (<i>e.g.</i> , self-reporting, drive by) <u>Site Inspection Report</u> Frequency <u>Annual</u> Responsible party/agency <u>Pika-Arcadis JV</u> Contact <u>Scott Bostian, PE</u> <u>Senior Engineer</u> <u>281-340-5525</u> Name Title Date Phone no. Reporting is up-to-date ☒ Yes ☐ No ☐ N/A Reports are verified by the lead agency ☒ Yes ☐ No ☐ N/A Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A Violations have been reported ☐ Yes ☐ No ☒ N/A Other problems or suggestions: ☐ Report attached 		
2.	Adequacy ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A Remarks _____ 		
D. General			
1.	Vandalism/trespassing ☐ Location shown on site map ☒ No vandalism evident Remarks _____ 		
2.	Land use changes on site ☒ N/A Remarks _____ 		
3.	Land use changes off site ☒ N/A Remarks _____ 		
VI. GENERAL SITE CONDITIONS			
A. Roads ☒ Applicable ☐ N/A			
1.	Roads damaged ☐ Location shown on site map ☒ Roads adequate ☐ N/A Remarks _____ 		
B. Other Site Conditions			
Remarks _____			

VII. LANDFILL COVERS ☐ Applicable ☒ N/A	
VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A	
IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A	
X. OTHER REMEDIES	
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
XI. OVERALL OBSERVATIONS	
A. Implementation of the Remedy	Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <u>The selected remedy at SWMU 8 includes ICs to limit public exposure to contaminants and exploded ordnance debris. The site inspection team confirmed that SWMU 8 is properly labeled to prevent ingestion of groundwater and limit soil disturbance on site. The area was confirmed to be restricted by fencing, limiting public exposure to the area. Based on the site inspection, the selected remedy is effective and functioning as designed.</u>
B. Adequacy of O&M	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. <u>The site inspection team did not identify any issues or observations related to the implementation and scope of O&M procedures.</u>
C. Early Indicators of Potential Remedy Problems	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. <u>There were no issues or observations to suggest that the protectiveness of the remedy may be compromised in the future.</u>
D. Opportunities for Optimization	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>The site inspection team did not identify any opportunities for optimization of the remedy.</u>

Site Inspection Team Roster	
Algeana Stevenson	Fort Stewart
Dale Kiefer	Fort Stewart
Breanna Stout	DAWSON
Charlene Torres	DAWSON

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SWMU 10

SITE INSPECTION FORMS

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I. SITE INFORMATION													
Site name: SWMU 10 Inactive EOD Area #3	Date of inspection: February 3, 2020												
Location and Region: Fort Stewart, Georgia	EPA ID: GA9210020872												
Agency, office, or company leading the five-year review: Dawson Solutions, LLC	Weather/temperature: Clear, 70°F												
Remedy Includes: (Check all that apply) <table border="0"> <tr> <td>☐ Landfill cover/containment</td> <td>☐ Monitored natural attenuation</td> </tr> <tr> <td>☒ Access controls</td> <td>☐ Groundwater containment</td> </tr> <tr> <td>☒ Institutional controls</td> <td>☐ Vertical barrier walls</td> </tr> <tr> <td>☐ Groundwater pump and treatment</td> <td></td> </tr> <tr> <td>☐ Surface water collection and treatment</td> <td></td> </tr> <tr> <td>☐ Other _____</td> <td></td> </tr> </table>		☐ Landfill cover/containment	☐ Monitored natural attenuation	☒ Access controls	☐ Groundwater containment	☒ Institutional controls	☐ Vertical barrier walls	☐ Groundwater pump and treatment		☐ Surface water collection and treatment		☐ Other _____	
☐ Landfill cover/containment	☐ Monitored natural attenuation												
☒ Access controls	☐ Groundwater containment												
☒ Institutional controls	☐ Vertical barrier walls												
☐ Groundwater pump and treatment													
☐ Surface water collection and treatment													
☐ Other _____													
Attachments: ☒ Inspection team roster attached ☐ Site map attached													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <u>Scott Bostian</u> <u>Senior Engineer</u> Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☒ Report attached <u>Interview questions were requested to be answered via email.</u>													
2. O&M staff _____ Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☐ Report attached _____ _____ _____													

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Fort Stewart

Contact Algeana Stevenson RCRA Section Supervisor February 3, 2020 (912)767-7922

Phone no.

Problems; suggestions; ☒ Report attached Interview questions were requested to be answered via email.

Agency _____

Contact _____

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Phone no.

Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

[illegible]

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents ☒ O&M manual ☐ As-built drawings ☒ Maintenance logs Remarks <u>O&M manual found on the installation website.</u>	☒ Readily available ☐ Readily available ☒ Readily available	☐ Up to date ☐ Up to date ☒ Up to date ☐ N/A ☒ N/A ☐ N/A
2.	Site-Specific Health and Safety Plan ☐ Contingency/Emergency Response Plan Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
3.	O&M and OSHA Training Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
4.	Permits and Service Agreements ☐ Air discharge permit ☐ Effluent discharge ☐ Waste disposal, POTW ☐ Other permits _____ Remarks _____	☐ Readily available ☐ Readily available ☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☐ Up to date ☐ Up to date ☒ N/A ☒ N/A ☒ N/A ☒ N/A
5.	Gas Generation Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
6.	Settlement Monument Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
7.	Groundwater Monitoring Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
8.	Leachate Extraction Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
9.	Discharge Compliance Records ☐ Air ☐ Water (effluent) Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
10.	Daily Access/Security Logs Remarks _____	☐ Readily available	☐ Up to date ☒ N/A

IV. O&M COSTS

1. **O&M Organization**

- ☐ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house ☒ Contractor for Federal Facility
☐ Other _____

2. **O&M Cost Records**

- ☐ Readily available ☐ Up to date
☐ Funding mechanism/agreement in place
Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

The inspection team did not identify any unanticipated or unusually high O&M costs during this review period.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☒ Gates secured ☐ N/A
Remarks _____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A
Remarks The inspection team noted the installed signs were visible, labeled, and well-maintained.

C. Institutional Controls (ICs)**1. Implementation and enforcement**

Site conditions imply ICs not properly implemented

☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced

☐ Yes ☒ No ☐ N/AType of monitoring (*e.g.*, self-reporting, drive by) Site Inspection ReportFrequency AnnualResponsible party/agency Pika-Arcadis JVContact Scott Bostian, PESenior Engineer281-340-5525

Name

Title

Date

Phone no.

Reporting is up-to-date

☒ Yes ☐ No ☐ N/A

Reports are verified by the lead agency

☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met

☒ Yes ☐ No ☐ N/A

Violations have been reported

☐ Yes ☐ No ☒ N/AOther problems or suggestions: ☐ Report attached

2. Adequacy☒ ICs are adequate☐ ICs are inadequate☐ N/A

Remarks

D. General**1. Vandalism/trespassing**☐ Location shown on site map ☒ No vandalism evident

Remarks

2. Land use changes on site☒ N/A

Remarks

3. Land use changes off site☒ N/A

Remarks

VI. GENERAL SITE CONDITIONS**A. Roads**☒ Applicable ☐ N/A**1. Roads damaged**☐ Location shown on site map☒ Roads adequate☐ N/ARemarks The team noted an all-terrain vehicle was required to observe SWMU 10.**B. Other Site Conditions**

Remarks

VII. LANDFILL COVERS ☐ Applicable ☒ N/A	
VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A	
IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A	
X. OTHER REMEDIES	
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
XI. OVERALL OBSERVATIONS	
A.	Implementation of the Remedy
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <u>The selected remedy at SWMU 10 includes ICs to limit public exposure to contaminants and exploded ordnance debris. The site inspection team confirmed that SWMU 10 is properly labeled to prevent ingestion of groundwater and limit soil disturbance on site. The area was confirmed to be restricted by fencing, limiting public exposure to the area. Based on the site inspection, the selected remedy is effective and functioning as designed.</u>	
B.	Adequacy of O&M
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. <u>The site inspection team did not identify any issues or observations related to the implementation and scope of O&M procedures.</u>	
C.	Early Indicators of Potential Remedy Problems
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. <u>There were no issues or observations to suggest that the protectiveness of the remedy may be compromised in the future.</u>	
D.	Opportunities for Optimization
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>The site inspection team did not identify any opportunities for optimization of the remedy.</u>	

Site Inspection Team Roster	
Algeana Stevenson	Fort Stewart
Dale Kiefer	Fort Stewart
Breanna Stout	DAWSON
Charlene Torres	DAWSON

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SWMU 11

SITE INSPECTION FORMS

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I. SITE INFORMATION													
Site name: SWMU 11, Inactive EOD Area #4	Date of inspection: February 3, 2020												
Location and Region: Fort Stewart, Georgia	EPA ID: GA9210020872												
Agency, office, or company leading the five-year review: Dawson Solutions, LLC	Weather/temperature: Clear, 70°F												
Remedy Includes: (Check all that apply) <table border="0"> <tr> <td>☐ Landfill cover/containment</td> <td>☐ Monitored natural attenuation</td> </tr> <tr> <td>☒ Access controls</td> <td>☐ Groundwater containment</td> </tr> <tr> <td>☒ Institutional controls</td> <td>☐ Vertical barrier walls</td> </tr> <tr> <td>☐ Groundwater pump and treatment</td> <td></td> </tr> <tr> <td>☐ Surface water collection and treatment</td> <td></td> </tr> <tr> <td>☐ Other _____</td> <td></td> </tr> </table>		☐ Landfill cover/containment	☐ Monitored natural attenuation	☒ Access controls	☐ Groundwater containment	☒ Institutional controls	☐ Vertical barrier walls	☐ Groundwater pump and treatment		☐ Surface water collection and treatment		☐ Other _____	
☐ Landfill cover/containment	☐ Monitored natural attenuation												
☒ Access controls	☐ Groundwater containment												
☒ Institutional controls	☐ Vertical barrier walls												
☐ Groundwater pump and treatment													
☐ Surface water collection and treatment													
☐ Other _____													
Attachments: ☒ Inspection team roster attached ☐ Site map attached													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <u>Scott Bostian</u> <u>Senior Engineer</u> Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☒ Report attached <u>Interview questions were requested to be answered via email.</u>													
2. O&M staff _____ Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☐ Report attached _____ _____													

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents ☒ O&M manual ☐ As-built drawings ☒ Maintenance logs Remarks <u>O&M manual found on the installation website.</u>	☒ Readily available ☐ Readily available ☒ Readily available	☐ Up to date ☐ Up to date ☒ Up to date ☐ N/A ☒ N/A ☐ N/A
2.	Site-Specific Health and Safety Plan ☐ Contingency/Emergency Response Plan Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
3.	O&M and OSHA Training Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
4.	Permits and Service Agreements ☐ Air discharge permit ☐ Effluent discharge ☐ Waste disposal, POTW ☐ Other permits _____ Remarks _____	☐ Readily available ☐ Readily available ☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☐ Up to date ☐ Up to date ☒ N/A ☒ N/A ☒ N/A ☒ N/A
5.	Gas Generation Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
6.	Settlement Monument Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
7.	Groundwater Monitoring Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
8.	Leachate Extraction Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
9.	Discharge Compliance Records ☐ Air ☐ Water (effluent) Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
10.	Daily Access/Security Logs Remarks _____	☐ Readily available	☐ Up to date ☒ N/A

IV. O&M COSTS

1. **O&M Organization**

- ☐ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house ☒ Contractor for Federal Facility
☐ Other _____

2. **O&M Cost Records**

- ☐ Readily available ☐ Up to date
☐ Funding mechanism/agreement in place
Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From _____ Date	To _____ Date	_____ Total cost	☐ Breakdown attached
From _____ Date	To _____ Date	_____ Total cost	☐ Breakdown attached
From _____ Date	To _____ Date	_____ Total cost	☐ Breakdown attached
From _____ Date	To _____ Date	_____ Total cost	☐ Breakdown attached
From _____ Date	To _____ Date	_____ Total cost	☐ Breakdown attached

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

The inspection team did not identify any unanticipated or unusually high O&M costs during this review period.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☒ Gates secured ☐ N/A

Remarks _____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A

Remarks The inspection team noted the installed signs were visible, labeled, and well-maintained.

C. Institutional Controls (ICs)**1. Implementation and enforcement**

Site conditions imply ICs not properly implemented

☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced

☐ Yes ☒ No ☐ N/AType of monitoring (*e.g.*, self-reporting, drive by) Site Inspection ReportFrequency AnnualResponsible party/agency Pika-Arcadis JVContact Scott Bostian, PESenior Engineer281-340-5525

Name

Title

Date

Phone no.

Reporting is up-to-date

☒ Yes ☐ No ☐ N/A

Reports are verified by the lead agency

☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met

☒ Yes ☐ No ☐ N/A

Violations have been reported

☐ Yes ☐ No ☒ N/AOther problems or suggestions: ☐ Report attached

2. Adequacy☒ ICs are adequate☐ ICs are inadequate☐ N/A

Remarks _____

D. General**1. Vandalism/trespassing**☐ Location shown on site map ☒ No vandalism evident

Remarks _____

2. Land use changes on site☒ N/A

Remarks _____

3. Land use changes off site☒ N/A

Remarks _____

VI. GENERAL SITE CONDITIONS**A. Roads**☒ Applicable ☐ N/A**1. Roads damaged**☐ Location shown on site map☒ Roads adequate☐ N/A

Remarks _____

B. Other Site Conditions

Remarks _____

VII. LANDFILL COVERS ☐ Applicable ☒ N/A	
VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A	
IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A	
X. OTHER REMEDIES	
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
XI. OVERALL OBSERVATIONS	
A. Implementation of the Remedy	Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <u>The selected remedy at SWMU 11 includes ICs to limit public exposure to contaminants and exploded ordnance debris. The site inspection team confirmed that SWMU 11 is properly labeled to prevent ingestion of groundwater and limit soil disturbance on site. The area was confirmed to be restricted by fencing, limiting public exposure to the area. Based on the site inspection, the selected remedy is effective and functioning as designed.</u>
B. Adequacy of O&M	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. <u>The site inspection team did not identify any issues or observations related to the implementation and scope of O&M procedures.</u>
C. Early Indicators of Potential Remedy Problems	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. <u>There were no issues or observations to suggest that the protectiveness of the remedy may be compromised in the future.</u>
D. Opportunities for Optimization	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>The site inspection team did not identify any opportunities for optimization of the remedy.</u>

Site Inspection Team Roster	
Algeana Stevenson	Fort Stewart
Dale Kiefer	Fort Stewart
Breanna Stout	DAWSON
Charlene Torres	DAWSON

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SWMU 13

SITE INSPECTION FORMS

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I. SITE INFORMATION													
Site name: SWMU 13, Fire Training Area at WAAF	Date of inspection: February 3, 2020												
Location and Region: Fort Stewart, Georgia	EPA ID: GA9210020872												
Agency, office, or company leading the five-year review: Dawson Solutions, LLC	Weather/temperature: Clear, 70°F												
Remedy Includes: (Check all that apply) <table border="0"> <tr> <td>☐ Landfill cover/containment</td> <td>☒ Monitored natural attenuation</td> </tr> <tr> <td>☒ Access controls</td> <td>☐ Groundwater containment</td> </tr> <tr> <td>☒ Institutional controls</td> <td>☐ Vertical barrier walls</td> </tr> <tr> <td colspan="2">☐ Groundwater pump and treatment</td> </tr> <tr> <td colspan="2">☐ Surface water collection and treatment</td> </tr> <tr> <td colspan="2">☐ Other _____</td> </tr> </table>		☐ Landfill cover/containment	☒ Monitored natural attenuation	☒ Access controls	☐ Groundwater containment	☒ Institutional controls	☐ Vertical barrier walls	☐ Groundwater pump and treatment		☐ Surface water collection and treatment		☐ Other _____	
☐ Landfill cover/containment	☒ Monitored natural attenuation												
☒ Access controls	☐ Groundwater containment												
☒ Institutional controls	☐ Vertical barrier walls												
☐ Groundwater pump and treatment													
☐ Surface water collection and treatment													
☐ Other _____													
Attachments: ☒ Inspection team roster attached ☐ Site map attached													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <u>Scott Bostian</u> <u>Senior Engineer</u> Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☒ Report attached <u>Interview questions were requested to be answered via email.</u>													
2. O&M staff _____ Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☐ Report attached _____ _____													

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Fort Stewart

Contact Algeana Stevenson RCRA Section Supervisor February 3, 2020 (912)767-7922

Name

Title

Date

Phone no.

Problems; suggestions; ☒ Report attached Interview questions were requested to be answered via email.

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name

Title

Date _____

Phone no.

Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

[illegible]

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents ☒ O&M manual ☐ As-built drawings ☒ Maintenance logs Remarks <u>O&M manual found on the installation website.</u>	☒ Readily available ☐ Readily available ☒ Readily available	☐ Up to date ☐ Up to date ☒ Up to date ☐ N/A ☒ N/A ☐ N/A
2.	Site-Specific Health and Safety Plan ☐ Contingency/Emergency Response Plan Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
3.	O&M and OSHA Training Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
4.	Permits and Service Agreements ☐ Air discharge permit ☐ Effluent discharge ☐ Waste disposal, POTW ☐ Other permits _____ Remarks _____	☐ Readily available ☐ Readily available ☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☐ Up to date ☐ Up to date ☒ N/A ☒ N/A ☒ N/A ☒ N/A
5.	Gas Generation Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
6.	Settlement Monument Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
7.	Groundwater Monitoring Records Remarks _____	☒ Readily available	☒ Up to date ☐ N/A
8.	Leachate Extraction Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
9.	Discharge Compliance Records ☐ Air ☐ Water (effluent) Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
10.	Daily Access/Security Logs Remarks _____	☐ Readily available	☐ Up to date ☒ N/A

IV. O&M COSTS

1. **O&M Organization**

- ☐ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house ☒ Contractor for Federal Facility
☐ Other _____

2. **O&M Cost Records**

- ☐ Readily available ☐ Up to date
☐ Funding mechanism/agreement in place
Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

The inspection team did not identify any unanticipated or unusually high O&M costs during this review period.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☒ Gates secured ☐ N/A
Remarks _____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☒ N/A
Remarks _____

C. Institutional Controls (ICs)**1. Implementation and enforcement**

Site conditions imply ICs not properly implemented

☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced

☐ Yes ☒ No ☐ N/AType of monitoring (*e.g.*, self-reporting, drive by) Site Inspection ReportFrequency AnnualResponsible party/agency Pika-Arcadis JVContact Scott Bostian, PESenior Engineer281-340-5525

Name

Title

Date

Phone no.

Reporting is up-to-date

☒ Yes ☐ No ☐ N/A

Reports are verified by the lead agency

☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met

☒ Yes ☐ No ☐ N/A

Violations have been reported

☐ Yes ☐ No ☒ N/AOther problems or suggestions: ☐ Report attached

2. Adequacy☒ ICs are adequate☐ ICs are inadequate☐ N/A

Remarks _____

D. General**1. Vandalism/trespassing**☐ Location shown on site map ☒ No vandalism evident

Remarks _____

2. Land use changes on site☒ N/A

Remarks _____

3. Land use changes off site☒ N/A

Remarks _____

VI. GENERAL SITE CONDITIONS**A. Roads**☐ Applicable ☒ N/A**1. Roads damaged**☐ Location shown on site map☐ Roads adequate☒ N/A

Remarks _____

B. Other Site Conditions

Remarks _____

VII. LANDFILL COVERS ☐ Applicable ☒ N/A	
VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A	
IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A	
X. OTHER REMEDIES	
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
XI. OVERALL OBSERVATIONS	
A.	Implementation of the Remedy
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <u>The selected remedy at SWMU 13 includes MNA and ICs. The site inspection team confirmed that SWMU 13 was restricted by fencing, limiting public exposure to the area. Groundwater monitoring data suggests the contaminant plume has been contained and the MNA continues to perform as intended. Based on the site inspection, the selected remedy is effective and functioning as designed.</u>	
B.	Adequacy of O&M
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. <u>The site inspection team did not identify any issues or observations related to the implementation and scope of O&M procedures.</u>	
C.	Early Indicators of Potential Remedy Problems
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. <u>There were no issues or observations to suggest that the protectiveness of the remedy may be compromised in the future.</u>	
D.	Opportunities for Optimization
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>The site inspection team did not identify any opportunities for optimization of the remedy.</u>	

Site Inspection Team Roster	
Algeana Stevenson	Fort Stewart
Dale Kiefer	Fort Stewart
Breanna Stout	DAWSON
Charlene Torres	DAWSON

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SWMU 26

SITE INSPECTION FORMS

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I. SITE INFORMATION													
Site name: SWMU 26, 724 th Inactive Tanker Purging Station	Date of inspection: February 3, 2020												
Location and Region: Fort Stewart, Georgia	EPA ID: GA9210020872												
Agency, office, or company leading the periodic review: Dawson Solutions, LLC	Weather/temperature: Clear, 70°F												
Remedy Includes: (Check all that apply) <table border="0"> <tr> <td>☐ Landfill cover/containment</td> <td>☒ Monitored natural attenuation</td> </tr> <tr> <td>☐ Access controls</td> <td>☐ Groundwater containment</td> </tr> <tr> <td>☐ Institutional controls</td> <td>☐ Vertical barrier walls</td> </tr> <tr> <td>☐ Groundwater pump and treatment</td> <td></td> </tr> <tr> <td>☐ Surface water collection and treatment</td> <td></td> </tr> <tr> <td>☒ Other <u>Biosparge system</u></td> <td></td> </tr> </table>		☐ Landfill cover/containment	☒ Monitored natural attenuation	☐ Access controls	☐ Groundwater containment	☐ Institutional controls	☐ Vertical barrier walls	☐ Groundwater pump and treatment		☐ Surface water collection and treatment		☒ Other <u>Biosparge system</u>	
☐ Landfill cover/containment	☒ Monitored natural attenuation												
☐ Access controls	☐ Groundwater containment												
☐ Institutional controls	☐ Vertical barrier walls												
☐ Groundwater pump and treatment													
☐ Surface water collection and treatment													
☒ Other <u>Biosparge system</u>													
Attachments: ☒ Inspection team roster attached ☐ Site map attached													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <u>Scott Bostian, PE</u> <u>Senior Engineer</u> Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☐ Report attached <u>Interview questions were requested to be answered via email.</u>													
2. O&M staff _____ Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☐ Report attached _____ _____ _____													

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Fort Stewart

Contact Algeana Stevenson RCRA Section Supervisor February 3, 2020 912-767-7922

Name

Title

Date

Phone no.

Problems; suggestions; ☒ Report attached Interview questions were requested to be answered via email.

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____

Name

Title

Date

Phone no.

Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

[illegible]

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents ☒ O&M manual ☒ As-built drawings ☒ Maintenance logs Remarks <u>O&M manual found on the installation website.</u>	☒ Readily available ☒ Readily available ☒ Readily available	☐ Up to date ☐ Up to date ☒ Up to date ☐ N/A ☐ N/A ☐ N/A
2.	Site-Specific Health and Safety Plan ☐ Contingency/Emergency Response Plan Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
3.	O&M and OSHA Training Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
4.	Permits and Service Agreements ☐ Air discharge permit ☐ Effluent discharge ☐ Waste disposal, POTW ☐ Other permits _____ Remarks _____	☐ Readily available ☐ Readily available ☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☐ Up to date ☐ Up to date ☒ N/A ☒ N/A ☒ N/A ☒ N/A
5.	Gas Generation Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
6.	Settlement Monument Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
7.	Groundwater Monitoring Records Remarks _____	☒ Readily available	☒ Up to date ☐ N/A
8.	Leachate Extraction Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
9.	Discharge Compliance Records ☐ Air ☐ Water (effluent) Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
10.	Daily Access/Security Logs Remarks _____	☐ Readily available	☐ Up to date ☒ N/A

IV. O&M COSTS

1. **O&M Organization**

- ☐ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house ☒ Contractor for Federal Facility
☐ Other _____

2. **O&M Cost Records**

- ☐ Readily available ☐ Up to date
☐ Funding mechanism/agreement in place
Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From _____	To _____	_____	☐ Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	☐ Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	☐ Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	☐ Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	☐ Breakdown attached
Date	Date	Total cost	

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

The inspection team did not identify any unanticipated or unusually high O&M costs during this review period.

V. ACCESS AND INSTITUTIONAL CONTROLS ☐ Applicable ☒ N/A

VI. GENERAL SITE CONDITIONS

A. Roads ☒ Applicable ☐ N/A

1. **Roads damaged** ☐ Location shown on site map ☒ Roads adequate ☐ N/A

Remarks _____

B. Other Site Conditions

Remarks _____

VII. LANDFILL COVERS ☐ Applicable ☒ N/A		
VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A		
IX. GROUNDWATER/SURFACE WATER REMEDIES ☒ Applicable ☐ N/A		
A. Groundwater Extraction Wells, Pumps, and Pipelines		☐ Applicable ☒ N/A
B. Surface Water Collection Structures, Pumps, and Pipelines		☐ Applicable ☒ N/A
C. Treatment System ☒ Applicable ☐ N/A		
1.	Treatment Train (Check components that apply) ☐ Metals removal ☐ Oil/water separation ☒ Bioremediation ☐ Air stripping ☐ Carbon adsorbers ☐ Filters _____ ☐ Additive (<i>e.g.</i> , chelation agent, flocculent) _____ ☐ Others _____ ☐ Good condition ☐ Needs Maintenance ☐ Sampling ports properly marked and functional ☐ Sampling/maintenance log displayed and up to date ☐ Equipment properly identified ☐ Quantity of groundwater treated annually _____ ☐ Quantity of surface water treated annually _____ Remarks _____ _____	
2.	Electrical Enclosures and Panels (properly rated and functional) ☒ N/A ☐ Good condition ☐ Needs Maintenance Remarks _____ _____	
3.	Tanks, Vaults, Storage Vessels ☒ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance Remarks _____ _____	
4.	Discharge Structure and Appurtenances ☒ N/A ☐ Good condition ☐ Needs Maintenance Remarks _____ _____	
5.	Treatment Building(s) ☐ N/A ☒ Good condition (esp. roof and doorways) ☐ Needs repair ☐ Chemicals and equipment properly stored Remarks _____ _____	

6.	Monitoring Wells (pump and treatment remedy) ☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☒ Good condition ☐ All required wells located ☐ Needs Maintenance ☐ N/A Remarks _____ _____
D. Monitoring Data	
1.	Monitoring Data ☒ Is routinely submitted on time ☒ Is of acceptable quality
2.	Monitoring data suggests: ☒ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining
D. Monitored Natural Attenuation	
1.	Monitoring Wells (natural attenuation remedy) ☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☒ Good condition ☐ All required wells located ☐ Needs Maintenance ☐ N/A Remarks _____ _____
X. OTHER REMEDIES	
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	

XI. OVERALL OBSERVATIONS	
A.	Implementation of the Remedy
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <u>The selected remedy at SWMU 26 includes MNA and biosparging. Groundwater monitoring data suggests the contaminant plume has been contained and the remedy continues to perform as intended. Based on the site inspection, the selected remedy is effective and functioning as designed.</u>	
B.	Adequacy of O&M
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. <u>The site inspection team did not identify any issues or observations related to the implementation and scope of O&M procedures.</u>	
C.	Early Indicators of Potential Remedy Problems
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. <u>There were no issues or observations to suggest that the protectiveness of the remedy may be compromised in the future.</u>	
D.	Opportunities for Optimization
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>The site inspection team did not identify any opportunities for optimization of the remedy.</u>	
Site Inspection Team Roster	
Algeana Stevenson	Fort Stewart
Dale Kiefer	Fort Stewart
Breanna Stout	DAWSON
Charlene Torres	DAWSON

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SWMU 39

SITE INSPECTION FORMS

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I. SITE INFORMATION													
Site name: SWMU 39, UST 60/Building 1160	Date of inspection: February 3, 2020												
Location and Region: Fort Stewart, Georgia	EPA ID: GA9210020872												
Agency, office, or company leading the periodic review: Dawson Solutions, LLC	Weather/temperature: Clear, 70°F												
Remedy Includes: (Check all that apply) <table border="0"> <tr> <td>☐ Landfill cover/containment</td> <td>☒ Monitored natural attenuation</td> </tr> <tr> <td>☒ Access controls</td> <td>☐ Groundwater containment</td> </tr> <tr> <td>☒ Institutional controls</td> <td>☐ Vertical barrier walls</td> </tr> <tr> <td>☐ Groundwater pump and treatment</td> <td></td> </tr> <tr> <td>☐ Surface water collection and treatment</td> <td></td> </tr> <tr> <td>☒ Other <u>Enhanced Reductive Dechlorination (ERD)</u></td> <td></td> </tr> </table>		☐ Landfill cover/containment	☒ Monitored natural attenuation	☒ Access controls	☐ Groundwater containment	☒ Institutional controls	☐ Vertical barrier walls	☐ Groundwater pump and treatment		☐ Surface water collection and treatment		☒ Other <u>Enhanced Reductive Dechlorination (ERD)</u>	
☐ Landfill cover/containment	☒ Monitored natural attenuation												
☒ Access controls	☐ Groundwater containment												
☒ Institutional controls	☐ Vertical barrier walls												
☐ Groundwater pump and treatment													
☐ Surface water collection and treatment													
☒ Other <u>Enhanced Reductive Dechlorination (ERD)</u>													
Attachments: ☒ Inspection team roster attached ☐ Site map attached													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <u>Scott Bostian, PE</u> <u>Senior Engineer</u> Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☒ Report attached <u>Interview questions were requested to be answered via email.</u>													
2. O&M staff _____ Name Title Date Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____ Problems, suggestions; ☐ Report attached _____ _____ _____													

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents ☒ O&M manual ☒ As-built drawings ☒ Maintenance logs Remarks <u>O&M manual found on the installation website.</u>	☒ Readily available ☒ Readily available ☒ Readily available	☐ Up to date ☐ Up to date ☒ Up to date ☐ N/A ☐ N/A ☐ N/A
2.	Site-Specific Health and Safety Plan ☐ Contingency/Emergency Response Plan Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
3.	O&M and OSHA Training Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
4.	Permits and Service Agreements ☐ Air discharge permit ☐ Effluent discharge ☐ Waste disposal, POTW ☐ Other permits _____ Remarks _____	☐ Readily available ☐ Readily available ☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☐ Up to date ☐ Up to date ☒ N/A ☒ N/A ☒ N/A ☒ N/A
5.	Gas Generation Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
6.	Settlement Monument Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
7.	Groundwater Monitoring Records Remarks _____	☒ Readily available	☒ Up to date ☐ N/A
8.	Leachate Extraction Records Remarks _____	☐ Readily available	☐ Up to date ☒ N/A
9.	Discharge Compliance Records ☐ Air ☐ Water (effluent) Remarks _____	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date ☒ N/A ☒ N/A
10.	Daily Access/Security Logs Remarks _____	☐ Readily available	☐ Up to date ☒ N/A

IV. O&M COSTS

1. **O&M Organization**

- ☐ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house ☒ Contractor for Federal Facility
☐ Other _____

2. **O&M Cost Records**

- ☐ Readily available ☐ Up to date
☐ Funding mechanism/agreement in place
Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	
From _____ Date	To _____ Date	_____	☐ Breakdown attached
		Total cost	

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

The inspection team did not identify any unanticipated or unusually high O&M costs during this review period.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured ☒ N/A

Remarks: _____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☒ N/A

Remarks: _____

C. Institutional Controls (ICs)**1. Implementation and enforcement**

Site conditions imply ICs not properly implemented

☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced

☐ Yes ☒ No ☐ N/AType of monitoring (*e.g.*, self-reporting, drive by): Site visitFrequency: Semi-annualResponsible party/agency: Pika-Arcadis JVContact: Scott Bostian, PE Senior Engineer

Name

Title

Date

Phone no.

Reporting is up-to-date

☒ Yes ☐ No ☐ N/A

Reports are verified by the lead agency

☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met

☒ Yes ☐ No ☐ N/A

Violations have been reported

☐ Yes ☒ No ☐ N/AOther problems or suggestions: ☐ Report attached

2. Adequacy☒ ICs are adequate☐ ICs are inadequate☐ N/ARemarks:

D. General**1. Vandalism/trespassing** ☐ Location shown on site map ☒ No vandalism evidentRemarks:

2. Land use changes on site ☒ N/ARemarks:

3. Land use changes off site ☒ N/ARemarks:

1.	Treatment Train (Check components that apply) ☐ Metals removal ☐ Oil/water separation ☒ Bioremediation ☐ Air stripping ☐ Carbon adsorbers ☐ Filters _____ ☐ Additive (<i>e.g.</i> , chelation agent, flocculent) _____ ☒ Others <u>Sorbent Socks</u> ☐ Good condition ☐ Needs Maintenance ☐ Sampling ports properly marked and functional ☐ Sampling/maintenance log displayed and up to date ☐ Equipment properly identified ☐ Quantity of groundwater treated annually _____ ☐ Quantity of surface water treated annually _____ Remarks _____ _____
2.	Electrical Enclosures and Panels (properly rated and functional) ☒ N/A ☐ Good condition ☐ Needs Maintenance Remarks _____ _____
3.	Tanks, Vaults, Storage Vessels ☒ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance Remarks _____ _____
4.	Discharge Structure and Appurtenances ☒ N/A ☐ Good condition ☐ Needs Maintenance Remarks _____ _____
5.	Treatment Building(s) ☒ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair ☐ Chemicals and equipment properly stored Remarks _____ _____
6.	Monitoring Wells (pump and treatment remedy) ☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☒ Good condition ☐ All required wells located ☐ Needs Maintenance ☐ N/A Remarks _____ _____
D. Monitoring Data	
1.	Monitoring Data ☒ Is routinely submitted on time ☒ Is of acceptable quality
2.	Monitoring data suggests: ☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

D. Monitored Natural Attenuation	
1. Monitoring Wells (natural attenuation remedy)	
☒ Properly secured/locked	☒ Functioning ☒ Routinely sampled ☒ Good condition
☐ All required wells located	☐ Needs Maintenance ☐ N/A
Remarks _____	
X. OTHER REMEDIES	
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
XI. OVERALL OBSERVATIONS	
A. Implementation of the Remedy	
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).	
<u>The selected remedy at SWMU 39 includes MNA, Light Non-Aqueous Phase Liquid (LNAPL) recovery via absorbent socks, periodic assessments to ensure the concrete cap is maintained, ERD via mass injection of a carbon substrate, and LUCs. Groundwater monitoring data suggests further monitoring to evaluate the effectiveness of the remedy is required. Based on the site inspection, LUCs are effective and functioning as intended.</u>	
B. Adequacy of O&M	
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.	
<u>The site inspection team did not identify any issues or observations related to the implementation and scope of O&M procedures.</u>	
C. Early Indicators of Potential Remedy Problems	
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.	
<u>There were no issues or observations to suggest that the protectiveness of the remedy may be compromised in the future.</u>	
D. Opportunities for Optimization	
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.	
<u>The site inspection team did not identify any opportunities for optimization of the remedy.</u>	

Site Inspection Team Roster	
Algeana Stevenson	Fort Stewart
Dale Kiefer	Fort Stewart
Breanna Stout	DAWSON
Charlene Torres	DAWSON

APPENDIX C

SITE INSPECTION PHOTOGRAPH LOG

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Photograph 1 Location: Fort Stewart Date: February 3, 2020 Description: Land Use Controls, Signage at SWMU 1.	
Photograph 2 Location: Fort Stewart Date: February 3, 2020 Description: Current Site Conditions, Looking North at SWMU 2.	

Photograph 3 Location: Fort Stewart Date: February 3, 2020 Description: Land Use Controls, Signage at SWMU 2.	
Photograph 4 Location: Fort Stewart Date: February 3, 2020 Description: Land Use Controls, Signage at SWMU 3.	

Photograph 5 Location: Fort Stewart Date: February 3, 2020 Description: Current Site Conditions, Looking East at SWMU 8.	
Photograph 6 Location: Fort Stewart Date: February 3, 2020 Description: Land Use Controls, Signage at SWMU 8.	

Photograph 7 Location: Fort Stewart Date: February 3, 2020 Description: Land Use Controls, Signage at SWMU 10.	
Photograph 8 Location: Fort Stewart Date: February 3, 2020 Description: Land Use Controls, Fencing at SWMU 10.	

Photograph 9 Location: Fort Stewart Date: February 3, 2020 Description: Current Site Conditions, Looking West at SWMU 10.	
Photograph 10 Location: Fort Stewart Date: February 3, 2020 Description: Land Use Controls, Signage at SWMU 11.	

Photograph 11 Location: Fort Stewart Date: February 3, 2020 Description: Land Use Controls, Fencing at SWMU 11.	
Photograph 12 Location: Fort Stewart Date: February 3, 2020 Description: Current Site Conditions, Looking East at SWMU 13.	

Photograph 13 Location: Fort Stewart Date: February 3, 2020 Description: Land Use Controls, Fencing and Secured Gate at SWMU 13.	
Photograph 14 Location: Fort Stewart Date: February 3, 2020 Description: Biosparge System, SWMU 26.	

Photograph 15 Location: Fort Stewart Date: February 3, 2020 Description: Groundwater Monitoring Well, MW-3, SWMU 26.	
Photograph 16 Location: Fort Stewart Date: February 3, 2020 Description: Groundwater Monitoring Well, MW-28, SWMU 26.	

Photograph 17 Location: Fort Stewart Date: February 3, 2020 Description: Groundwater Monitoring Well, MW-29, SWMU 26.	
Photograph 18 Location: Fort Stewart Date: February 3, 2020 Description: Current Site Conditions, Looking West at SWMU 39.	

Photograph 19	
Location: Fort Stewart	
Date: February 3, 2020	
Description: Groundwater Monitoring Well, IW-03, SWMU 39.	

APPENDIX D

INTERVIEWS

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INTERVIEW RECORD

Site Name:

Subject: Five-Year Review

Date:

Type: ☐ Telephone

☒ Visit

☐ Other

☐ Incoming

☐ Outgoing

Location of Visit:

Contact Made By:

Name:

Title:

Organization: Dawson Solutions, LLC

Individual Contacted:

Name: Algeana Stevenson

Title: Supervisor, Chemical Eng.

Organization: Fort Stewart DPW Prevention & Compliance Branch

Telephone No: (912)767-7922 or (912)210-2950

Fax No:

E-Mail Address: algeana.l.stevenson.civ@mail.mil

Street Address: 1550 Veterans Parkway

City:

State:

Zip:

Fort Stewart

GA

Summary of Conversation: O&M Staff Questions

1. What is your overall impression of the project? (general sentiment)

Overall projects are progressing as anticipated.

2. Is the remedy functioning as expected? How well is the remedy performing?

Yes

3. What does the monitoring data show? Are there any trends that show contaminant levels are decreasing?

Groundwater monitoring is generally showing a trend of decrease for contaminant levels.

4. Is there a continuous on-site O&M presence? If so, please describe staff and activities. If there is not a continuous on-site presence, describe staff and frequency of site inspections and activities.

Currently all O&M projects are under remediation contracts that perform all regulatory approved O&M activities.

5. Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.

No

6. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last five years? If so, please give details.

No

7. Have there been opportunities to optimize O&M, or sampling efforts? Please describe changes and resultant or desired cost savings or improved efficiency.

No

8. Do you have any comments, suggestions, or recommendations regarding the project?

Not at this time.

INTERVIEW RECORD

Site Name: Fort Stewart and Hunter Army Airfield

Date: March 9, 2020

Subject: Periodic Review

Type: ☒ Telephone ☐ Visit ☐ Other ☐ Incoming ☐ Outgoing

Location of Visit: N/A

Contact Made By:

Name: Breanna Stout

Title: Project Specialist

Organization: Dawson Solutions, LLC

Individual Contacted:

Name: Curtis Scott Bostian

Title: Senior Engineer

Organization: Arcadis

Telephone No: 919-415-2291

E-Mail Address: curtis.bostian@arcadis.com

Street Address: 5420 Wade Park Boulevard, Suite 350

City: Raleigh

State: North Carolina

Zip: 27607

Summary of Conversation:

O&M Staff Questions

1. What is your overall impression of the project? (general sentiment)

Mr. Bostian stated the sites at both Fort Stewart (FST) and Hunter Army Airfield (HAA) are making progress. He noted the Arcadis contract with HAA ended before the implementation of remedies at the larger sites; however, Arcadis managed HAA-013 during the application of the injection remedy. Arcadis completed investigative documents for HAA-001, HAA-015, and HAA-017, Mr. Bostian relayed the next contractor is responsible for implementation.

2. Is the remedy functioning as expected? How well is the remedy performing?

Mr. Bostian informed DAWSON that HAA-013, which has two sites, Release One and Release Two, is making progress. He stated Release One received calcium peroxide injections and monitored natural attenuation (MNA) parameters show decreasing contaminants. Mr. Bostian reported only one or two wells are keeping the site open. Release Two, receiving sodium persulfate injections, is not progressing as quickly as Release One according to Mr. Bostian. He believes reduction occurs more slowly at Release Two because the contaminant mass is more significant than initially anticipated. He specified the injections are taking place as scheduled, and there have been no issues at either site.

3. What does the monitoring data show? Are there any trends that show contaminant levels are decreasing?

Mr. Bostian replied HAA-013 shows decreasing contaminant concentrations across most of the Release One site. He noted at the Release Two site, monitoring data in one injection area suggests COCs are falling, but the majority of the data shows the contaminant plume is stable. He stated monitoring data at other FST sites suggest contaminant levels are decreasing.

4. Is there a continuous on-site O&M presence? If so, please describe the staff and activities. If there is not continuous on-site presence, describe staff and frequency of site inspections and activities.

Mr. Bostian reported there is not a continuous O&M presence at any HAA site, as the three largest remedies are not yet in the implementation phase. For FST, Mr. Bostian stated FST-013 was excavated, followed by MNA, and does not require continuous O&M presence. Mr. Bostian noted the Biosparge system in place at FST-026 required constant O&M presence until three years ago when it was taken off-line. FST-039 received an injection in early 2019; there have not been any other injections at the site since. Mr. Bostian stated quarterly sampling would take place at HAA-001, HAA-015, and HAA-017 after remedy implementation. He detailed HAA-013, and FST-026 receive semi-annual sampling, FST-013 annual sampling, and FST-039 will switch from more frequent post-injection monitoring to semi-annual monitoring.

5. Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.

Mr. Bostian responded that O&M requirements were reduced significantly at FST-026 after monitoring data reported the contaminant plume as stable and decreasing. This led to a shutdown of the Biosparge system to study rebounding effects. Mr. Bostian noted levels are stable in surface water at HAA-013.

6. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last five years? If so, please give details.

Mr. Bostian stated there had not been unexpected O&M difficulties or costs at HAA or FST within the last five years.

7. Have there been opportunities to optimize O&M or sampling efforts? Please describe changes and resultant/desired cost savings or improved efficiency.

Mr. Bostian noted shutting down the FST-026 Biosparge System facilitated site optimization from a cost standpoint. He also mentioned efforts to reduce sampling frequency at FST-013 and FST-026 optimized O&M. Mr. Bostian noted reduced sampling frequency at FST-039 after the first year of post-injection monitoring. He also noted sampling frequency was reduced HAA-013 at the Release One site.

8. Do you have any comments, suggestions, or recommendations regarding the project?

Mr. Bostian reiterated HAA is changing O&M contractors. He noted MNA at Release One is advancing but Release Two could benefit from optimization and evaluation of additional source mass. He thinks the injection remedy works fine, as Arcadis was able to reach the target volumes and field of influence required, but he noted rebounding occurs quickly. Mr. Bostian stated the contaminant mass might be more significant than projected. According to monitoring data, FST-013 is progressing to acceptable levels. Mr. Bostian noted decreasing contaminant concentrations demonstrate conditions are favorable for MNA at FST-026. He stated FST-039 would require an evaluation after data is published to assess the injection strategy in anticipation of the next injection. Mr. Bostian's only recommendation was to continue groundwater optimization and monitoring.

APPENDIX E

HAZARDOUS WASTE PERMIT

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GEORGIA

DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

EPD Director's Office

2 Martin Luther King, Jr. Drive
Suite 1456, East Tower
Atlanta, Georgia 30334
404-656-4713

AUG 15 2017

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Colonel Townley R. Hedrick
Garrison Commander
HQ, USAG, Fort Stewart
ATTN: IMSH-ZA
954 William H. Wilson Avenue
Fort Stewart, Georgia 31314-5029

Re: Hazardous Waste Facility
Permit No. HW-045(S)-4
EPA ID. GA9210020872

Dear Colonel Hedrick:

Enclosed please find Hazardous Waste Facility Permit No. HW-045(S)-4. The permit contains specific operating and monitoring requirements, which must be met.

The public comment period for the draft renewal permit ended August 7, 2017. Since no comments were received during the comment period, Hazardous Waste Facility Permit HW-045(S)-4 is final and effective upon issuance.

If you have any questions, please contact Amy Potter at 404/657-8604.

Sincerely,

Richard E. Dunn
Director

RED:ap
Attachment
File: Fort Stewart (Y)

PERMIT NO. HW-045(S)-4

ISSUANCE DATE: AUG 15 2017



GEORGIA

DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

HAZARDOUS WASTE FACILITY PERMIT

In accordance with the provisions of the Georgia Hazardous Waste Management Act and the Rules, Chapter 391-3-11, (as amended through June 22, 2016), adopted pursuant to that Act,

Fort Stewart

I.D. No. GA9210020872

is issued a Permit for the following:

1. Storage of 67,980 gallons of hazardous waste in the Hazardous Waste Storage Facility (Building 1157), and
2. Investigation and corrective action (if necessary) of Solid Waste Management Units and Areas of Concern at the Facility

at the following location: 1550 Veterans Parkway, Bldg 1137; Fort Stewart, Georgia 31314-4927.

This Permit is conditioned upon compliance with all provisions of the Georgia Hazardous Waste Management Act, the Rules, Chapter 391-3-11 (as amended through June 22, 2016), adopted pursuant to that Act, and any other condition of this Permit.

This Permit is subject to revocation, suspension, modification or amendment by the Director for cause including evidence of noncompliance with any of the above; or for any misrepresentation made in the application(s) received February 13, 2017 and amended through June 20, 2017, supporting data entered therein or attached thereto, or any subsequent submittals or supporting data; or for failure to disclose fully all relevant facts; or when the facility poses a threat to the environment or the health of humans.

This Permit is further subject to and conditioned upon the terms, conditions, limitations, standards, or schedules contained in or specified on the attached 32 pages, which pages are a part of this Permit. This Permit expires ten years from the Issuance Date above.



Richard E. Dunn, Director
Environmental Protection Division

SECTION I. GENERAL PERMIT CONDITIONS

I.A. Scope and Effect of Permit

1. The Permittee is allowed to store Hazardous Waste in accordance with the conditions of this Permit. The Permittee is also required to investigate Releases of Hazardous Constituents from Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs), and perform Corrective Action to remediate Releases in accordance with the conditions of this permit. Any Hazardous Waste Treatment, storage or disposal not specifically authorized in this Permit is prohibited, unless such Treatment, storage, or disposal is specifically authorized by the Director. The Permittee must comply with the Georgia Hazardous Waste Management Act and the Georgia Rules for Hazardous Waste Management, Chapter 391-3-11, which include certain portions of the Federal Hazardous Waste Regulations (found at 40 CFR Parts 260-266, 268, 270, 273, 279, and 124). Where a citation to the Federal Regulations is made in this Permit, it refers to the specific regulations adopted by the Environmental Protection Division (EPD) of the Georgia Department of Natural Resources.
2. The issuance of this Permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.
3. Compliance with this Permit does not constitute a defense to any action brought by the Director under §12-8-75, "Powers of director in situations involving imminent and substantial endangerment to the environment or to public health," of the Georgia Hazardous Waste Management Act, as amended.
4. Nothing in this Permit shall be construed to preclude the institution of any legal action under Section 3008 of the Federal Resource Conservation and Recovery Act (RCRA) or under the Georgia Hazardous Waste Management Act, O.C.G.A. §§12-8-81 through 12-8-82, as amended.
5. This Permit may be modified, revoked and reissued, or terminated for cause as specified in Rule 391-3-11-.11(7) and 40 CFR 270.41, 270.42, and 270.43. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability of any permit condition.
6. The provisions of this Permit are severable, and if any provision of this Permit or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this Permit shall not be affected thereby.

I.B. Management Requirements

1. Unless otherwise specifically authorized by the Director, the Permittee may not treat, store, or dispose of Hazardous Waste on any portion of the Facility, not specifically authorized by this Permit, until the Permittee has submitted to the Director by certified mail or hand delivery an application for a permit modification to do so and the Director has modified the Permit for that activity. Any Corrective Action activity performed that is not specifically authorized by this permit is done at risk, and may constitute violations of this permit or other environmental laws or regulations, and/or may result in the need for additional actions through this permit, including, but not limited to soil boring and well installation, sampling and analysis, and additional or different Corrective Actions.
2. The Permittee shall maintain at the Facility until closure is completed and certified by an registered professional engineer, the following documents and amendments, and revisions and modifications to these documents:
 - a. Complete copy of this Permit and Permit Application received February 2017, as amended through June 20, 2017, including all Amendments, Revisions, and Modifications;
 - b. Waste Analysis Plan;
 - c. Personnel training documents and records;
 - d. Inspection schedule and log;
 - e. Contingency plan;
 - f. Closure Plan;
 - g. Operating record as required by 40 CFR 264.73; and
 - h. Corrective Action Plan(s).
3. All amendments, revisions and modifications to any plan required by this Permit shall be submitted to the Director for approval and permit modification as necessary.
4. The Director may require the Permittee to establish and maintain an information repository at any time, based on factors set forth in 40 CFR 124.33(b). The information repository will be governed by the provisions in 40 CFR 124.33(c) through (f).
5. The Permittee may not commence treatment, storage, or disposal of any Hazardous Waste on any new or modified portion of the Facility, except as provided in 40 CFR 270.42, until the Permittee has submitted to the Director by certified mail or hand delivery a letter signed by the Permittee and a registered

professional engineer stating the facility has been constructed or modified in compliance with the permit where appropriate.

I.C. Monitoring and Reporting

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - a. For waste, the method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from 40 CFR Part 261 Appendix I.
 - b. For environmental media, the method used to obtain a representative sample of the environmental media (e.g., soil, groundwater, sediment, surface water, and air) must be the appropriate method from the most recent edition of *US EPA Region 4 Field Branches Quality System and Technical Procedures* or, if it is superseded, its EPA successors, unless a specific alternate procedure is approved by the Director.
 - c. All laboratory analytical methods must be the appropriate method from the most recent editions of *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW 846*, or *Standard Methods for the Examination of Water and Wastewater*; (or an equivalent method as specified in the Waste Analysis Plan).
2. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records, copies of all reports, records, and certifications required by this Permit and records of all data used to complete the application for this Permit including the certification required by 40 CFR 264.73(b)(9) for a period of at least three (3) years from the date of the sample, measurement, report or record. These periods are automatically extended during the course of any unresolved enforcement action regarding this Facility and also may be extended at any time at the Director's discretion.
3. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used, the method of sample preservation, and quality assurance methods including method blanks;
 - f. Chain of custody record; and

- g. The results of such analyses and measurements.
4. Twenty-Four Hour Reporting. The Permittee shall report to the Director or his representative orally within twenty-four (24) hours from the time the Permittee becomes aware of any circumstances resulting from the operations or conditions at the Facility, which may endanger human health or the environment, or any unauthorized Release, or discharge of Hazardous Waste, Hazardous Waste Constituents, Hazardous Constituents from the operation of the Facility, and/or a fire or explosion (including periods of noncompliance), including but not limited to:
- a. Release of any Hazardous Waste, Hazardous Waste Constituent, or Hazardous Constituent that may cause an endangerment to public or private drinking water supplies; and
 - b. Release or discharge of Hazardous Waste, Hazardous Waste Constituents, or Hazardous Constituents, or a fire or explosion which could threaten human health or the environment outside of the Facility.

The description of the occurrence shall include:

- i. Name, address and telephone number of the owner or operator;
 - ii. Name, address and telephone number of the Facility;
 - iii. Date, time and type of incident;
 - iv. Name and quantity of materials involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazards to the environment and human health inside and outside the Facility, where this is applicable; and
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
5. Within fifteen (15) days of becoming aware of any reportable incident as in Permit Condition I.C.4 above, the Permittee shall submit a written report of the incident covering the following:
- a. Description of occurrence as in Permit Condition I.C.4 above;
 - b. Cause of occurrence;
 - c. Period of occurrence, including exact dates and times;

- d. Actions taken in response to the occurrence;
 - e. Time that the occurrence is expected to continue (if not already corrected);
 - f. Additional measures planned to correct the occurrence (if not already corrected), and a schedule of those actions; and
 - g. Steps taken or planned to reduce, eliminate, and prevent recurrence, with a schedule of any planned actions.
6. Other Non-Compliance. The Permittee shall report instances of non-compliance, other than those described in Permit Condition I.C.4, semi-annually on July 15 (covering January 1 - June 30) and January 15 (covering July 1 - December 31). The report shall cover the information requested in Permit Condition I.C.4 for each incident.
7. Compliance Schedule. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than fifteen (15) days following each schedule date.
8. Manifest Discrepancy Report. If a significant discrepancy in a manifest [as defined in 40 CFR 264.72(b)], is discovered, the Permittee must attempt to reconcile the discrepancy. If not resolved within fifteen (15) days, the Permittee must submit a letter report, including a copy of the manifest, to the Director in accordance with 40 CFR 264.72.
9. Unmanifested Waste Report. This report must be submitted to the Director within fifteen (15) days of receipt of unmanifested waste, in accordance with 40 CFR 264.76.
10. Biennial Report. A biennial report must be submitted covering the Facility's activities during odd number calendar years, in accordance with 40 CFR 264.75.
11. Monitoring Reports. Monitoring results shall be reported at intervals specified elsewhere in this Permit.
12. Signatory Requirements. All applications, reports or other information submitted to the Director shall be signed and certified according to the requirements in 40 CFR 270.11.

I.D. Responsibilities

1. Right of Entry. The Permittee shall allow the Director of EPD, the Regional Administrator of EPA, and/or their authorized representatives, agents, or employees, upon the presentation of credentials and other documents as may be required by law to:

- a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
 - d. Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by the Georgia Hazardous Waste Management Act, any substances or parameters at any location.
2. Transfer of Permits. This Permit may be transferred to a new owner or operator only after notice to the Director, and if it is modified or revoked and reissued pursuant to 40 CFR 270.40(b) or 270.41(b)(2) to identify the new Permittee and incorporate such other requirements as may be necessary pursuant to the Georgia Rules for Hazardous Waste Management or the Georgia Hazardous Waste Management Act. Before transferring ownership or operation of the Facility during its operating life, the Permittee shall notify the new owner or operator in writing of the permitting requirements and the requirements in 40 CFR Parts 264, 268 and 270.
3. Duty to Comply. The Permittee shall comply with all conditions of this Permit (which incorporates applicable sections of the Facility's permit application), except to the extent and for the duration such non-compliance is authorized by an emergency permit. Any noncompliance with this Permit constitutes a violation of the Georgia Hazardous Waste Management Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.
4. Duty to Reapply. If the Permittee wishes to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittee must submit a complete application for a new permit at least one hundred eighty (180) days before this Permit expires. If the Facility has not met the investigative and remedial requirements for Releases, pursuant to 40 CFR 264.101 and this Permit; and has not met the Remedial Goals for three (3) consecutive years, the Permittee must, within one hundred eighty (180) days before the expiration date of this permit, submit a complete application for renewal of the Permit.
5. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit.

6. Duty to Mitigate. The Permittee shall take all reasonable steps to minimize Releases to the environment, and shall carry out all reasonable measures to minimize any adverse impact on human health or the environment resulting from non-compliance with this Permit.
7. Duty to Provide Information. The Permittee shall furnish to the Director, within a reasonable time, any relevant information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this Permit.
8. Anticipated Non-Compliance. The Permittee shall give advance notice to the Director of any planned changes in the permitted Facility, permitted activities, or other activities (for example, a change in the process generating the Hazardous Waste), which may result in non-compliance with Permit requirements. Reporting anticipated non-compliance does not preclude enforcement actions.
9. Reporting Planned Changes. The Permittee shall give notice to the Director as soon as possible prior to any planned changes associated with the permitted Facility, including but not limited to the following (note that reporting planned changes does not eliminate the need to execute a permit modification in compliance with 40 CFR Part 270 Subpart D):
 - a. Physical alterations;
 - b. Additions to the permitted Facility;
 - c. Changes in the process generating the Hazardous Waste that may affect permitted waste management or other permitted activities; and
 - d. Changes in any investigative or Corrective Action activities (including voluntary remedial actions), which may impact any Solid Waste Management Units, Areas of Concern, and/or other regulated units.
10. Proper Operation and Maintenance. The Permittee shall at all times properly operate and maintain all facilities and related appurtenances, which are installed and/or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of a back-up or auxiliary facility or similar systems only when necessary to achieve compliance with the conditions of this Permit.
11. Other Information. When the Permittee becomes aware that the Permittee failed to submit any relevant facts in the Permit Application or a Corrective Action plan, or

submitted incorrect information in a permit application, Corrective Action plan, or in any report to the Director, the Permittee shall promptly submit such facts or information.

I.E. Definitions

For purposes of this Permit, terms used herein shall have the same meaning as those in 40 CFR Parts 124, 260 through 268, 270 and 279, unless this Permit specifically provides otherwise; where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

1. Area of Concern (AOC) for purposes of this Permit includes any area having a probable Release of a Hazardous Waste, Hazardous Constituent, and/or Hazardous Waste Constituent, which is not from a Solid Waste Management Unit and is determined by the Director to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Georgia Hazardous Waste Management Act §12-8-60, et. seq. and 40 CFR 270.32 (b)(2) in order to ensure adequate protection of human health and the environment.
2. Background for the purposes of this Permit is the naturally occurring concentration of a constituent in soils in the immediate vicinity of the Facility in areas not affected by the Facility. For other environmental media, Background is the concentration of a constituent upgradient, upstream, or upwind of the Facility as is applicable for the environmental media.
3. Contamination for the purposes of this Permit refers to the presence of any Hazardous Waste, Hazardous Waste Constituent or Hazardous Constituent in a concentration which exceeds the Background concentration.
4. Corrective Action for prior or continuing Releases, as defined in I.E.16 below, from any SWMU or AOC (as defined in this section) at the Facility (regardless of the time at which the Release occurred), for the purposes of this Permit shall be any measure necessary to protect human health and the environment, as required under 40 CFR 264.100 and/or 264.101, and as required under the Georgia Hazardous Waste Management Act §12-8-60, et. seq. Corrective action may address Releases to air, soils, surface water, sediment, and/or groundwater, both on the Facility and Releases originating on the Facility that extend beyond the Facility boundary.
5. Director shall mean the Director of the Georgia Environmental Protection Division or his/her delegated representative.
6. EPD shall mean the Georgia Environmental Protection Division.

7. Extent of Contamination for the purposes of this Permit is defined as the horizontal and vertical area in which the concentrations of Hazardous Waste, Hazardous Waste Constituents or Hazardous Constituents in the environmental media are above EPA method detection limits (provided that the method detection limit is below the appropriate screening level), or Background concentrations, whichever is appropriate as determined by the Director.
8. Facility for purposes of this Permit includes all contiguous land and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of Hazardous Waste. A Facility may consist of several Treatment, storage, or disposal operational units (e.g., one or more Landfills, surface impoundments, or combination of them). For the purposes of implementing Corrective Action under 40 CFR 264.101, a Facility includes all contiguous property under control of the owner or operator seeking a permit under the Georgia Hazardous Waste Management Act.
9. Hazardous Constituents for the purposes of this Permit are those substances listed in 40 CFR Part 261 Appendix VIII and 40 CFR 264 Appendix IX, "Groundwater Monitoring List."
10. Hazardous Waste Constituent for the purposes of this Permit means a constituent that caused the USEPA Administrator to list the Hazardous Waste in 40 CFR 261, Subpart D, or a constituent listed in Table 1 of 40 CFR 261.24.
11. Hazardous Waste for the purposes of this Permit means a Hazardous Waste as defined in 40 CFR 261.3, and newly defined Hazardous Waste newly defined by USEPA or EPD subsequent to the issuance of this permit.
12. Interim Measures for purposes of this Permit are actions necessary to minimize or prevent the further migration of Contamination or limit actual or potential human and environmental exposure to Contamination while long-term Corrective Action remedies are evaluated and, if necessary, implemented.
13. Land Disposal Facility for purposes of this Permit is a Facility that uses a surface impoundment, Landfill, land treatment or waste pile unit to manage or dispose of Hazardous Waste pursuant to §12-8-66 of the Georgia Hazardous Waste Management Act, as amended, and §3004 of RCRA, as amended.
14. Landfill for the purposes of this Permit includes any disposal Facility or part of a Facility where Hazardous Waste is placed in or on the land which is not a pile, a land treatment facility, surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, or a cave.
15. Qualified Groundwater Scientist for the purposes of this Permit means a scientist or engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields, as demonstrated by a current State of

Georgia registration and completion of accredited university courses, that enable that individual to make sound professional judgements regarding groundwater monitoring and contaminant fate and transport.

16. Release for the purposes of this Permit includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any Hazardous Waste, Hazardous Waste Constituents or Hazardous Constituents.
17. Remediation Waste for the purposes of this Permit includes all solid and Hazardous Wastes, and all media (including groundwater, surface water, soils, and sediments) and debris, which contain listed hazardous wastes or which themselves exhibit a hazardous waste characteristic, that are managed for the purposes of implementing corrective action requirements under 40 CFR 264.101 and Section 12-8-71(b) of the Georgia Hazardous Waste Management Act. For a given facility, remediation wastes may originate only from within the facility boundary, but may include waste managed in implementing corrective action required under 40 CFR 264.101(c) for releases beyond the facility boundary.
18. Solid Waste Management Unit (SWMU) for the purposes of this Permit includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank (including storage, Treatment, and accumulation tanks), container storage unit, wastewater treatment unit, including all conveyances and appurtenances used in waste management or storm water handling, elementary neutralization unit, transfer station, or recycling unit or any other unit from which Hazardous Waste, Hazardous Waste Constituents or Hazardous Constituents might migrate, irrespective of whether the units were intended for the management of solid and/or Hazardous Waste. SWMUs include areas that have been contaminated by routine and systemic Releases of Hazardous Waste, Hazardous Waste Constituents or Hazardous Constituents.
19. Treatment for the purpose of this Permit refers to any method, technique, or process, including neutralization, designed to change the physical, chemical or biological character or composition of any Hazardous Waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage or reduced in volume.

I.F. Conditions Related to Compliance with General Facility Standards (40 CFR 264 Subparts B, C, D, E, G, H)

1. The Permittee must follow the procedures and plans described in detail in the Permit Application received February 2017, as amended through June 20, 2017, which are hereby incorporated by reference and include at least the following:
 - a. Waste Analysis Plan - Section C;

- b. Inspection Schedule - Section F;
 - c. Contingency Plan - Section G;
 - d. Training Program - Section H; and
 - e. Closure Plan - Section I.
2. The following activities must be carried out as prescribed in 40 CFR 264 Subparts B, C, D, and E; and in accordance with the appropriate Sections of the Permit Renewal Application Parts A and B, received February 2017, as revised through June 20, 2017:
- a. Required Notices - 264.12(a) and (b);
 - b. Security – 264.14(b) and (c);
 - c. Repairs and Inspection Log – 264.15(c) and (d);
 - d. Annual Review of Training – 264.16(c);
 - e. General Requirements for Ignitable, Reactive and Incompatible Wastes - 264.17;
 - f. Design and Operation – 264.31;
 - g. Testing and Maintenance of Equipment – 264.33;
 - h. Access to Communications or Alarm Systems – 264.34;
 - i. Maintain Aisle Space – 264.35;
 - j. Arrangements with Local Authorities – 264.37;
 - k. Amendment of Contingency Plan – 264.54;
 - l. Operating Record - 264.73 and Disposition of Records – 264.74;
 - m. Reports - 264.75 and 264.77; and
 - n. Manifest System – 264.70 through 264.77.
3. The following activities must be carried out as prescribed in 40 CFR 264 Subparts G and H, and Section I of the Permit Application received February 2017, as revised through June 20, 2017.
- a. Closure Performance Standard - 264.111 and 264.112;
 - b. Closure in Accordance with Approved Plan - 264.113;

- c. Amendment of Closure Plan and Notification of Closure - 264.112(c) and (d);
- d. Disposal or Decontamination of Equipment - 264.114; and
- e. Certification of Closure - 264.115.

I.G. Special Conditions Applicable to Entire Facility

1. Waste Minimization. The Permittee shall be required to certify no less often than annually that the Permittee has a program in place to reduce the volume and toxicity of Hazardous Waste that is generated on-site to the degree determined by the Permittee to be economically practicable, and the proposed method of Treatment, storage, or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment in accordance with 40 CFR 264.73(b)(9).
2. Land Disposal Restrictions. The Permittee shall comply with all provisions of 40 CFR Part 268 "Land Disposal Restrictions" for all wastes to which they are applicable.
3. Contingency Plan. The Permittee must submit any revisions of the contingency plan, pursuant to 40 CFR 270.42(a)(1), to those government agencies and local authorities listed in Section G of the Permit Application received February 2017, as revised through June 20, 2017, within twenty (20) days of those changes. For changes requiring Director's approval prior to implementation, pursuant to 40 CFR 264.42, the Permittee must submit any revisions of the contingency plan to the above entities within twenty (20) days of approval of the revision(s) by the Director.
4. Closure. Within sixty (60) days of completion of any partial closure of the permitted container storage and/or Treatment areas, tank storage and/or Treatment areas, or miscellaneous units, and within sixty (60) days of the completion of final closure, the owner or operator must submit to the Director, by registered mail, a certification that the Hazardous Waste management unit has been closed in accordance with the specifications in the approved closure plan. The certification must be signed by an independent, registered professional engineer. Documentation supporting the independent, registered professional engineer's certification must additionally be furnished to the Director at that time.

SECTION II. STORAGE IN CONTAINERS

II.A. General:

The conditions in this section apply only to the Hazardous Waste Storage Facility (Building 1157) as described in Section D and its appendices and as depicted in Figures D-1, D-2 and D-3 of the Permit Application received February 2017, as revised through June 20, 2017.

II.B. Conditions Related Solely To Storage In Containers

1. Storage of hazardous waste in containers for more than 90 days is expressly limited to the Hazardous Waste Storage Facility (Building 1157). The layout of containers stored in these areas shall be limited to those areas indicated in Figure D-3 of the Permit Application received February 2017, as revised through June 20, 2017.
2. The Permittee is authorized to store only the following Hazardous Waste in containers in Hazardous Waste Storage Facility (Building 1157) not to exceed, at any one time, the maximum capacity of 67,980 gallons:

Area Name	Maximum Storage Capacity (gallons)	EPA Hazardous Waste Codes
Hazardous Waste Storage Facility Building 1157	67,980	D001-D011, D013, D018, D019, D022, D026, D028-D030, D032, D033, D035, D038-D040, D043 U002, U008, U010, U020, U031, U034-U037, U041, U044, U048, U058, U075, U080, U103, U112, U122, U129, U130, U132, U134, U140, U150, U151, U154, U159, U161, U188, U200, U201, U210, U220, U228, U239, U240, U248 P001, P012, P030, P042, P075, P098, P106, P204 F001, F002, F003, F005

3. The Permittee shall operate, and maintain the Hazardous Waste Storage Facility (Building 1157) in accordance with the detailed design plans and specifications contained in Section D of the Permit Application received February 2017, as revised through June 20, 2017, and references made herein.
4. If a container holding Hazardous Waste is not in good condition, or if it begins to leak, the Permittee shall transfer the Hazardous Waste from such container to a container that is in good condition.
5. Containers must be managed according to 40 CFR 264.173.
6. Spilled or leaked wastes and accumulated precipitation must be managed per 40 CFR 264.175(b)(5).

7. When stacking containers, the Permittee must place the containers stably on pallets that are in good condition, and stack the containers no more than two (2) vertical layers.
 - a. In Large Module A and B storage areas, containers will be stored as depicted in Figure D-2 of the Permit Application received February 2017, as revised through June 20, 2017.
 - b. In the Large Closet storage areas, a maximum of three (3) 55 gallon drums will be placed per pallet.
 - c. In the Small Closet storage areas, a maximum container size of 30 gallons shall be used with no more than three (3) 30 gallons containers per pallet.
8. Incompatible wastes and materials must be managed according to 40 CFR 264.177. The Permittee is prohibited from storing incompatible wastes within the same storage area without separating the incompatible wastes by means of a dike, berm, wall or other device.
9. All Hazardous Waste containers in storage must be clearly marked with the words, "Hazardous Waste," the EPA Hazardous Waste Number found in 40 CFR Part 261, waste description, and the date upon which the storage of Hazardous Waste at the Facility began.
10. The Permittee shall maintain the containment system in accordance with 40 CFR 264.175.
11. Storage of Hazardous Waste in areas not specifically identified in this Permit herein is strictly prohibited.
12. The Permittee shall comply with the applicable requirements of 40 CFR 264 Subpart CC for all containers of waste, which are greater in size than 26.4 gallons, and which have a volatile organic concentration of greater than or equal to 500 ppm by weight.

SECTION III. INVESTIGATION AND CORRECTIVE ACTION FOR RELEASES FROM SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN

III.A. Applicability

The Conditions of this Section apply to all SWMUs and AOCs listed in Appendix A, and any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means subsequent to the issuance of this Permit. The determination of the need for the implementation of Corrective Action is required by 40 CFR 264.101(a) and Section 12-8-66 of the Georgia Hazardous Waste Management Act for Releases from all SWMUs and AOCs contained within the Facility property boundaries and, as required by 40 CFR 264.101(c) and

Section 12-8-66 of the Georgia Hazardous Waste Management Act, for Releases extending beyond the Facility property boundaries.

III.B. Notification and Assessment Requirements for Newly Identified SWMUs and AOCs

1. The Permittee shall notify the Director in writing, within fifteen (15) calendar days of discovery, of any additional SWMUs and/or AOCs discovered during the course of groundwater monitoring, on-going field investigations, environmental audits, or any other means. This shall include, but not is limited to, newly discovered Releases at previously identified SWMUs or AOCs. Notification shall include, at a minimum, the location of the SWMU and/or AOC and all available information pertaining to the nature of the Release (e.g., media affected, Hazardous Constituents Released, magnitude of Release, etc.). The Permit shall be modified in accordance with 40 CFR 270 to incorporate the newly discovered SWMUs or AOCs.
2. The Permittee shall prepare a SWMU Assessment Report (SAR) for each additional SWMU or AOC discovered subsequent to issuance of this Permit which is known or suspected to have Releases to the environment. The SAR shall be submitted to the Director within sixty (60) days of discovery of a new SWMU or AOC. The report must also include, at a minimum, the following information for each SWMU or AOC:
 - a. Type of unit(s);
 - b. Location of each unit in a topographic map of appropriate scale, as required by 40 CFR 270.14(b)(19);
 - c. General dimensions, capacities and structural description of the unit(s) (supply any available plans/drawings);
 - d. Function of the unit(s);
 - e. Dates that the unit(s) was operated;
 - f. Description of the wastes that have been managed at/in the unit(s) to the extent available. Include any available data on Hazardous Constituents in the wastes; and
 - g. Description of any known Releases or spills (to include groundwater data, soil analyses, sediment, air, and/or surface water data). If the report is being prepared as a result of a newly discovered Release at a previously identified SWMU or AOC, the data may be limited to that pertaining to the newly discovered Release, as long as a brief summary of the investigative and remedial actions taken in response to previous Releases at the SWMU and/or AOC is provided, along with the current status in relation to those Releases.

3. Based on the contents of the SAR, the Director shall determine the need for further investigations at the SWMUs and/or AOCs covered in the report. If the Director determines that such investigations are needed, the Permittee shall be notified to prepare a Confirmatory Sampling Work Plan, as outlined in Permit Section III.C., or a RCRA Facility Investigation (RFI) Work Plan, as outlined in Permit Section III.D., for such investigations.

III.C. Confirmatory Sampling (CS)

1. The Permittee shall prepare and submit to the Director, within forty-five (45) days of notification by the Director, a Confirmatory Sampling (CS) Work Plan to determine if a Release from SWMUs or AOCs identified in Permit Condition III.B.3 has occurred. The CS Work Plan shall include schedules of implementation and completion of specific actions necessary to determine whether or not a Release has occurred.
2. The CS Work Plan must be approved by the Director, in writing, prior to implementation.
3. Upon approval of the CS Work Plan, the Permittee shall implement confirmatory sampling in accordance with the approved CS Work Plan.
4. The Permittee shall prepare and submit to the Director a CS Report, in accordance with the schedule in the approved CS Work Plan, which includes all data (including raw data), a summary and analysis of the data, and a recommendation for further investigation or No Further Action based upon contents of the CS Report.
5. Based on the results of the CS Report, the Director shall determine the need for further investigations at the SWMUs or AOCs covered in the CS Report. If the Director determines that such investigations are needed, the Permittee shall be required to prepare a RCRA Facility Investigation Work Plan for such investigations as outlined in Permit Condition III.D.1. The Director will notify the Permittee of any No Further Action decisions.

III.D. RCRA Facility Investigation (RFI)

1. The Permittee shall complete and submit to the Director with ninety (90) days of notification by the Director, an RFI Work Plan for those units identified under Permit Conditions III.B.3 and III.C.5.
2. The RFI Work Plan required by Permit Condition III.D.1 shall include, but is not limited to the following:
 - a. A schedule for implementation and report submittal;

- b. A description of the specific actions necessary to determine the nature and Extent of Contamination (including Releases that extend beyond the Facility's property boundary);
 - c. Potential migration pathways for Releases (e.g., indoor air, air, land, surface water, and groundwater). [The Permittee must provide sufficient justification that migration through a potential pathway is not likely if it is not included in the plan. Such omissions are subject to the approval of the Director.];
 - d. Actual or potential receptors; and
 - e. Applicable background concentrations.
3. When drafting the work plans and conducting the investigations, the Permittee must follow the procedures below, unless otherwise noted:
- a. In determining background concentrations for the Facility, the Permittee shall follow the background determination methods set forth below for the media specified (note, additional actions are required, if warranted, based on site specific conditions, as determined by the Director):
 - i. Approved Background for Soils: For inorganics, soil background concentrations from the document "Revised Phase II RCRA Facility Investigation for Sixteen (16) Solid Waste Management Units (SWMUs) Volumes I, II, and III at Fort Stewart, Georgia; SAIC, April 2000.
 - ii. For Determining Background Concentrations in Sediments: Part A of the EPA document "Determination of Background Concentrations of Inorganics in Soils and Sediments at Hazardous Waste Sites," December 1995, Document #EPA/540/5-96/500.
 - iii. For Determining Background Concentrations in Groundwater for all constituents other than those specified in Permit Condition II.D.3.b.i above: Obtain representative samples from wells upgradient of the Facility and/or unit that is being investigated (as is appropriate). Since groundwater quality can vary at different depths and aquifers, the Permittee shall install background groundwater monitoring wells at various depths and within different aquifers, as is applicable to the subsurface at the Facility.
 - iv. For Determining Background Concentrations in Surface Water: Obtain samples upstream of the Facility and/or upstream of potential source(s), including contaminated groundwater from a SWMU and/or AOC discharging to the water body, as is appropriate. Detection Limits for analytical results shall be below

the appropriate screening levels for the environmental media being analyzed.

- b. Risk assessments shall be conducted in accordance with the EPD *Guidance for Selecting Media Remediation Levels at RCRA Solid Waste Management Units*, as amended, or its successor and amendments.
4. Upon approval by the Director of the RFI Work Plan(s) required by Permit Section III.D.1, the Permittee shall conduct the RFI(s) in accordance with the schedule contained therein.
5. RFI Reports
- a. The Permittee shall complete and submit the RFI Report(s) in accordance with the schedule contained in the RFI Work Plan required by Permit Condition III.D.1. The RFI Report(s) shall address all Releases, including those that extend beyond the Facility property boundary, unless the Permittee demonstrates to the Director's satisfaction that, despite the Permittee's best efforts, the Permittee was unable to obtain permission to undertake actions on off-site properties required by the work plan(s). The report(s) shall provide, but are not limited to the following:
 - i. A summary of all activities undertaken during the RFI(s) to implement the approved work plan.
 - ii. A clear and complete description of the nature and Extent of Contamination identified during the RFI(s) including sources, migration pathways, actual or potential receptors, and applicable background concentrations.
 - iii. Potentiometric maps, isopleth maps (using standard units of measure for the corresponding media), figures, diagrams, cross-sections, conceptual site models, etc., to illustrate the findings in a clear concise manner.
 - b. If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittee may be required to provide the Director with quarterly RFI Progress Reports (90 day intervals) beginning ninety (90) calendar days from the initiation of the RFI(s), as specified in the approved RFI Work Plan(s). The progress report(s) shall, at a minimum, contain the following information:
 - i. A description of the portion of the RFI completed;
 - ii. Summaries of findings;
 - iii. Summaries of any deviations from the approved RFI Work Plan during the reporting period;

- iv. Summaries of all contacts with local community public interest groups or State government regarding RFI investigations;
 - v. Summaries of any problems or potential problems encountered during the reporting period;
 - iv. Actions taken to rectify problems;
 - v. Changes in relevant personnel; and
 - vi. Projected work for the next reporting period.
- c. The Director shall review the RFI report(s) required by Permit Condition III.D.5, and notify the Permittee in writing of the need for further investigation and/or the need for Corrective Action as required under 40 CFR 264.101 and Section 12-8-71(b) of the Georgia Hazardous Waste Management Act, or of a finding of no further action required at that time. If further investigation is required, the Permittee shall submit subsequent RFI Work Plans, in compliance with the requirements set forth in Section III.D.1 above, on the schedule specified by the Director. The Permittee shall also comply with III.D.2, 3, 4 and 5 above, with respect to the subsequent investigations.

III.E. Interim Measures (IM)

1. Requirement for Interim Measures. The Permittee shall conduct Interim Measures (IM) for any SWMU and/or AOC, either upon notification by the Director that IM are necessary or if the Permittee decides to implement IM at a SWMU and/or AOC in order to stabilize a Release.
2. IM Work Plan
 - a. If the Permittee is notified by the Director that IM are necessary, an IM Work Plan shall be submitted to the Director within thirty (30) days of such notification. If the Permittee chooses to conduct IM prior to notification by the Director, the Permittee shall submit a work plan to the Director for that activity. IM may be conducted concurrently with investigations required under the terms of this Permit.
 - b. An IM Work Plan submitted pursuant to Permit Condition III.E.2.a above shall be consistent with and, if required by the Director, integrated into any long-term Corrective Action at the Facility. The IM Work Plan shall include: the IM objectives, procedures for implementation (including any designs, plans, or specifications), schedules for implementation, completion, and the submittal of progress reports.
 - c. The IM Work Plan must be approved by the Director, in writing, prior to implementation.

3. IM Implementation

- a. Upon approval, the Permittee shall implement the IM in accordance with the schedule contained in the approved IM Work Plan.
- b. The Permittee shall give notice to the Director, for approval, at least fifteen (15) days prior to any planned changes, reductions or additions to the IM Work Plan.
- c. If Corrective Action required by 40 CFR 264.101 and/or Permit Section II.F is achieved through IM, the Permittee shall apply for a permit modification pursuant to 40 CFR 270.42(c) to incorporate the IM into the Permit as the final Corrective Action.

4. IM Reports

- a. Within forty-five (45) days of completion of IM, the Permittee shall complete and submit to the Director an IM Report. The report shall provide, but is not limited to, the following information:
 - i. A description of IM implemented;
 - ii. A summary of all data or other information obtained during implementation of IM;
 - iii. A summary of the effectiveness of the IM in achieving the objective of containing, removing and/or treating contamination resulting from a Release from a SWMU and/or AOC in order to protect human health and the environment;
 - vii. A summary of all problems encountered during the IM implementation, and the solutions to those problems; and
 - viii. Copies of all relevant laboratory/monitoring data.
- b. If the time required for completion of IM is greater than one year, the Permittee shall provide the Director with progress reports at intervals specified in the approved IM Work Plan. The progress reports shall contain the following information at a minimum:
 - i. A description of the portion of the IM completed;
 - ii. Summaries of any deviations from the IM Work Plan during the reporting period;
 - iii. Summaries of any problems or potential problems encountered during the reporting period and the solutions to those problems;

- iv. Projected work for the next reporting period; and
- v. Copies of laboratory/monitoring data.

III.F. Corrective Action Plan (CAP)

1. Upon a determination by the Director that Corrective Action is needed for a SWMU and/or AOC, the Permittee shall submit a CAP in accordance with a schedule to be determined by the Director. The CAP must include the following:
 - a. A detailed design and description of the Corrective Actions to be taken at each SWMU and/or AOC that will remediate the Release;
 - b. A schedule of implementation and completion; and
 - c. A detailed description of the environmental monitoring system and a sampling and analysis plan for monitoring, analyzing and evaluating contaminant trends, the effectiveness of the Corrective Action(s), and changes in the Extent of Contamination due to the migration of the mobile media such as groundwater, surface water and sediment.
 - i. The description of the monitoring system shall include the locations of sampling points (groundwater monitoring wells and soil, surface water and sediment sampling locations) depicted on maps and cross-sections, overlain with the area(s) of Contamination to demonstrate that the monitoring system is sufficient to detect the migration of mobile environmental media and evaluate the effectiveness of the Corrective Action.
 - ii. At a minimum, the sampling and analysis plan shall include, but is not limited to, the following information:
 1. Project data quality objectives;
 2. Sampling rationale;
 3. Field methods and procedures;
 4. Sampling and disposal of residual materials;
 5. Sampling documentation;
 6. Quality control;
 7. Parameters and analytical methods; and
 8. Field health and safety procedures.

- d. Remedial Goals. The Permittee may remediate the Contamination to background concentrations or approved risk-based concentrations. For Hazardous Constituents in the groundwater with a Maximum Contaminant Level (MCL), the Remedial Goal (RG) is the MCL. Therefore, risk-based concentrations may only be derived for those constituents without a MCL. If the RGs are derived from a site-specific risk assessment, the risk assessment shall be conducted in accordance with the *GA Guidance for Selecting Media Remediation Levels at RCRA Solid Waste Management Units*, as amended, or its successor and amendments.
 - e. A detailed inspection plan (for malfunction, deterioration, operator error, and other problems), with a schedule that sets forth what will be inspected (listing, individually, all aspects of the remedial system, associated monitoring structures, etc.), specifying what will be evaluated at each structure (including, but not limited to listing 'potential' problems to be looked for during the inspection), and the inspection form to be completed that provides a place to record the above information, along with the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.
 - f. A contingent CAP, if the chosen corrective action includes monitored natural attenuation, or an innovative technology.
2. Any unauthorized Corrective Action which exacerbates or spreads contaminant Releases shall be considered a violation of this Permit.

III.G. Approved Corrective Actions

The conditions of Section III.G apply to Corrective Action for Releases of Hazardous Waste, Hazardous Waste Constituents and Hazardous Constituents in environmental media (air, soils, sediment, surface water and groundwater) at SWMUs and AOCs at the Facility. The approved Corrective Action Plans listed below (hereinafter referred to as "approved CAPs") are hereby incorporated into this Permit.

SWMU-AOC # / FST NUMBER	SWMU-AOC DESCRIPTION	APPROVED CORRECTIVE ACTION PLAN
SWMU 1 / FST-001	Post South Central Landfill	Corrective Action Plan for the Post South Central Landfill Solid Waste Management Unit (SWMU) 1 at Fort Stewart, GA; SAIC, November 1999

SWMU-AOC # / FST NUMBER	SWMU-AOC DESCRIPTION	APPROVED CORRECTIVE ACTION PLAN
SWMU 2 / FST-002	Camp Oliver Landfill	Corrective Action Plan for the Camp Oliver Landfill Solid Waste Management Unit (SWMU) 2 at Fort Stewart, GA; Earth Tech, March 2001
SWMU 3 / FST-003	TAC-X Landfill	Corrective Action Plan for the TAC-X Landfill Solid Waste Management Unit (SWMU) 3 at Fort Stewart, GA; SAIC, March 2001
SWMU 8 / FST-008	Inactive EOD Area Located Approximately Nine (9) Miles Northeast of Garrison Area	Corrective Action Plan for the Inactive EOD Area located approximately nine (9) miles Northeast of Garrison Area, Inactive EOD Area in Red Cloud Range (Hotel Area), and Inactive EOD Area located approximately three (3) miles Northeast of Garrison Area [Solid Waste Management Units (SWMUs) 8, 9, & 11, respectively] at Fort Stewart, GA; SAIC, May 2001
SWMU 9 / FST-009	Inactive EOD Area in Red Cloud Range, Hotel Area	
SWMU 11 / FST-011	Inactive EOD Area Located Approximately Three (3) Miles Northeast of Garrison Area	
SWMU 10 / FST-010	Inactive EOD Area North of Garrison Area	Corrective Action Plan for the Inactive EOD Area North of the Garrison Area Solid Waste Management Unit (SWMU) 10 at Fort Stewart, GA; SAIC, July 2001
SWMU 13 / FST-013	Fire Training Area at Wright Army Airfield	Corrective Action Plan for the Former Fire Training (FTA) at Wright Army Airfield, Solid Management Unit (SWMU) 13 at Fort Stewart, GA; SAIC, September 2002
SMWU 26 / FST-026	Former 724 th Tanker Purging Station	Corrective Action Plan for the Former 724th Tanker Purging Station, Solid Waste Management Unit (SWMU) 26, at Fort Stewart, GA; SAIC, July 1999

SWMU-AOC # / FST NUMBER	SWMU-AOC DESCRIPTION	APPROVED CORRECTIVE ACTION PLAN
SWMU 35 / FST-035	Wright Army Airfield Bulk Storage Fuel System	Corrective Action Oversight conducted by GA EPD Underground Storage Tank Management Program

1. Upon approval of a Corrective Action Plan (CAP) required in Permit Condition III.F.1, the Permittee will implement the selected remedy in accordance with the approved CAP and the schedule of implementation contained in the CAP.
2. The Permittee shall conduct, for the duration of the Compliance Period, Corrective Action for Releases of hazardous waste, hazardous waste constituents and Hazardous Constituents at all SWMUs and AOCs, which require Corrective Action as indicated in Section III.G of this Permit, in accordance with Section 12-8-66 of the Georgia Hazardous Waste Management Act, as amended, 40 CFR 264.101, and the approved CAPs.
3. The Permittee shall inspect and maintain all corrective action systems as described in the approved CAPs. Inspections of systems shall be performed at the frequency specified in the approved CAPs as long as the Corrective Action is implemented. All inspections shall be documented and shall include descriptions of any problems found and the remedial actions taken to correct the problems.
4. The Permittee shall maintain all elements of the approved CAPs and shall adhere to the schedules therein.
5. The Permittee shall ensure effective operation of all corrective action systems. If a system or any component thereof is shut down or has become non-operational for more than seventy-two (72) hours, the shutdown or non-operation must be reported to the Director within twenty-four (24) hours of the shut down or non-operation, or the next workday, and confirmed in writing within fifteen (15) days.
6. All corrective action systems must be operated in such a manner as to mitigate any further Release of any hazardous waste, hazardous waste constituent, or Hazardous Constituent to the environment.
7. The Permittee shall expand the corrective action system(s) as necessary to treat all contaminated environmental media above their respective remedial goals described in the CAP(s). Any plan for changes in corrective action system(s) shall be submitted to the Director thirty (30) days prior to commencement of said changes.
8. The Permittee is not relieved of responsibility to clean up a release that has migrated beyond the Facility's property boundary where off-site access is denied.

9. The Permittee shall make a hazardous waste determination on and dispose of, in accordance with 40 CFR 262.11, all Remediation Waste generated as a result of the operation of all corrective action systems.
10. Groundwater Monitoring
 - a. For the duration of the Compliance Period as defined in Permit Condition III.G.11, the Permittee shall implement a sampling and analysis plan for monitoring, analyzing and evaluating contaminant trends, the effectiveness of the Corrective Action(s), and changes in the Extent of Contamination in accordance with the approved CAPs.
 - b. The Permittee shall maintain, well-marked and in good working order, all groundwater monitoring wells that are required to be maintained and/or monitored in accordance with the approved CAPs, which includes, but is not limited to, the following:
 - i. A measuring point shall be clearly marked on the inner protective casing;
 - ii. Wells shall be locked to prevent unauthorized entry; and
 - iii. The concrete surface seal and well apron shall be maintained with no cracks and gaps and with no erosion under the pad.
 - c. The Permittee shall conduct annual inspections of all wells to determine if the wells are maintained as required by Permit Condition II.G.10.b. All inspections shall be documented and shall include descriptions of any problems found and the remedial actions taken to correct problems. All problems shall be corrected with sixty (60) days of discovery or a longer timeframe approved by EPD.
 - d. The Permittee may petition the Director, and if approved, may cease sampling any monitoring well, with the exception of sentinel wells (clean wells that indicate the boundaries of the plume), if sampling results from that well indicate the concentrations of Hazardous Constituents in that well have not exceeded remedial goals specified in the corresponding approved CAPs.
 - e. If requested by the Director, the Permittee shall install replacement wells for any damaged wells, and/or additional wells as necessary to maintain horizontal and vertical delineation of groundwater Contamination or to assess the effectiveness of Corrective Action. Any plan for the design, location and installation of any replacement or additional monitoring wells shall be submitted to the Director at least thirty (30) days prior to installation. The plan, at a minimum, shall include:

- i. Well construction techniques including casing depths and proposed total depths of well(s);
 - ii. Well development method(s);
 - iii. A complete evaluation of well construction materials;
 - iv. A schedule of implementation for construction; and
 - v. Provisions for determining the lithologic character and hydraulic conductivity for the applicable aquifer unit(s) at the location of the new well(s).
- f. All monitoring wells shall be installed in a manner that maintains the integrity of the well bore. All well installation activities shall follow the most current version of EPA's *SESD Field Branches Quality System and Technical Procedures*, or, if it is superseded, its EPA successors, unless a specific alternate procedure is approved by the Director.
- g. If the Permittee believes that a sample result from a well is anomalous, the Permittee may resample the well. The Permittee must submit to the Director written notification of his or her plan to resample the well within thirty (30) days of the discovery of an anomalous result. The written notification shall include an explanation for the belief that the sampling results were anomalous and the date upon which the resampling will take place. Anomalous sampling results shall not be counted as a sampling event.
- h. The closure of any groundwater monitoring well shall be conducted in accordance with the Georgia Water Well Standards Act, O.C.G.A. Section 12-5-134, et seq.

11. Compliance Period

If the Remedial Goals in the approved CAPs are met during the Compliance Period, the Permittee may cease Corrective Action, but must continue to monitor the Facility's groundwater quality pursuant to the approved CAPs until the Remedial Goals have not been exceeded for three (3) consecutive years from the date the Remedial Goals were achieved. If the Remedial Goals are exceeded for two consecutive monitoring events during the Compliance Period, the Permittee shall either resume operation of the Corrective Action system(s), as described in the approved CAPs, or submit a new CAP to address the exceedance within thirty (30) days of the exceedance. The Permittee must obtain EPD approval to discontinue Corrective Action and monitoring pursuant to this Section.

12. Effectiveness of Corrective Action

The Permittee shall document the effectiveness of the Corrective Action required in this Section and as described in the CAPs and shall submit this information in an annual progress report each year during the Compliance Period. The report shall include, but is not limited to, the following:

- a. Tabulation of all data collected during the reporting period;
- b. Graphical representation of all data collected during the corrective action program, including the following:
 - i. Maps of sample locations, with isoconcentration lines for each individual constituent showing the Extent of Contamination to detection limits;
 - ii. Trend graphs for each Hazardous Constituent;
 - iii. Laboratory data sheets from all sampling conducted pursuant to Permit Condition III.G.10 and the approved CAPs; and
 - iv. Groundwater elevation tables and potentiometric representations depicting groundwater flow direction.
- c. An evaluation of the data and the corrective action program in accordance with the approved CAPs, including the following:
 - i. Removal or destruction rates of the contaminants;
 - ii. Whether the corrective action system is addressing all Contamination;
 - iii. Progress towards remedial goals, including an estimate of when Corrective Action will be completed using the data collected thus far;
 - iv. A discussion of any changes in environmental conditions (i.e., geochemical, hydrogeologic, microbial, or other changes);
 - v. The detection of any toxic or mobile transformation products, the effectiveness of land use controls, whether the plume is expanding or is stable; and
 - vi. Any recommendations and/or conclusion.
- d. Reports and discussions of anomalies, problems, and anticipated problems with the data, and any deviations or modifications to the approved CAPs.

III.H. Reporting, Recordkeeping and Response

1. The Permittee shall have all reports, which involve installation of groundwater monitoring wells or systems and/or interpretation of data gathered from those wells or systems, prepared and certified by a Qualified Groundwater Scientist.
2. The Permittee shall ensure that all plans, reports, notifications, and other submissions to the Director required in this Permit are signed and certified in accordance with 40 CFR 270.11.
3. All work plans and reports shall be submitted to the Director in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the Director based on the Permittee's demonstration that sufficient justification for the extension exists. The extension request (a) must be submitted to the Director in writing; (b) must be made in a timely manner; and (c) must specify an alternate submittal due date.
4. The Permittee shall enter all monitoring, testing and analytical data obtained pursuant to the conditions of this Section in the operating record, as required by 40 CFR 264.73(b)(6).
5. All raw data, such as laboratory reports, drilling logs, bench-scale or pilot-scale data, and any other supporting information gathered and generated during activities undertaken pursuant to this Section shall be maintained at the Facility during the term of this Permit, including any reissued permits.
6. Two (2) copies of all reports and work plans required by Section III of the Permit must be provided to the Director by the Permittee. The Permittee shall provide up to two (2) additional copies of each report or work plan at the request of the Director.
7. All plans and schedules required by the conditions of Section III are, upon approval by the Director, incorporated into this Section by reference and become an enforceable part of this Permit. Any non-compliance with such approved plans and schedules shall be termed non-compliance with this Permit.
8. Failure to submit the information required in this Permit, or falsification of any submitted information, is grounds for termination of this Permit.
9. All work plans and schedules shall be subject to approval by the Director prior to implementation. Upon approval, the Permittee shall implement all work plans and schedules as written, or as specified by the Director.
10. In the event of the Director's disapproval (in whole or in part) of any document required by this Section, the Director shall specify any deficiencies in writing. In the event of disagreement, the Permittee shall revise all submittals as specified by the Director.

III.I. Permit Modification

1. If the Director or the Permittee at any time determines that the Corrective Action program no longer satisfies the requirements of 40 CFR 264.101 or this Section for Releases of hazardous waste, hazardous waste constituents, or Hazardous Constituents, the Permittee must submit an amended or new CAP and a request for a permit modification, within ninety (90) days of such determination to make any appropriate changes in the program.
2. If the Director determines that further actions beyond those provided in this Section or changes to that which is stated herein are warranted, the Permittee shall submit a modification to the Permit according to the modification procedures in 40 CFR 270.42.
3. Upon determination by the Director that Corrective Action is complete per an approved CAP and that No Further Action is required at a SWMU(s) and/or AOC(s), the Director shall initiate a permit modification pursuant to 40 CFR 270.41. Such a modification shall serve to incorporate the No Further Action determination into this Permit.

**APPENDIX A:
FORT STEWART HAZARDOUS WASTE FACILITY PERMIT NUMBER HW-45(S)-4
SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN**

SWMU-AOC NUMBER	FST NUMBER	SWMU-AOC DESCRIPTION	STATUS
ACTIVE SITES UNDER IRP PROGRAM			
1	FST-001	Post South Central Landfill	CAP
2	FST-002	Camp Oliver Landfill	CAP
3	FST-003	TAC-X Landfill	CAP
8	FST-008	Inactive EOD Area Located Approximately Nine (9) Miles Northeast of Garrison Area	CAP
9	FST-009	Inactive EOD Area in Red Cloud Range, Hotel Area	CAP
10	FST-010	Inactive EOD Area North of Garrison Area	CAP
11	FST-011	Inactive EOD Area Located Approximately Three (3) Miles Northeast of Garrison Area	CAP
13	FST-013	Fire Training Area at Wright Army Airfield	CAP
24B	FST-024	Old Radiator Shop/Paint Booth	RFI
26	FST-026	Former 724 th Tanker Purging Station	CAP
35	FST-035	Wright Army Airfield Bulk Storage Fuel System	CAP (Deferred to USTMP)
39	FST-039	DSMF (Building 1160)	RFI
ACTIVE MMRP SITES UNDER IRP PROGRAM			
AOC 2	FTSW-002-R-01	Anti-Aircraft Range 90MM-2MRS	RFI
AOC 6	FSTW-006-R-01	Small Arms Range Berm Area	RFI
AOC 9A	FSTW-009-R-01	Anti-Aircraft Range 4A	RFI
AOC 9B	FSTW-009-R-02	Anti-Aircraft Range 4B	RFI
AOC 10	FSTW-010-R-01	Anti-Tank Range 90-MM-2	RFI
AOC 11	FST-011-R-01	Grenade Launcher Range	RFI
SWMU-AOC SITES REQUIRING NO FURTHER ACTION AT THIS TIME			
4A	FST-004	Burn Pit A	NFA
4B	FST-004	Burn Pit B	NFA
4C	FST-004	Burn Pit C	NFA
4D	FST-004	Burn Pit D	NFA
4E	FST-004	Burn Pit E	NFA
4F	FST-004	Burn Pit F	NFA
4G	FST-004	Burn Pit G	NFA
5	FST-005	Hospital Pathological Incinerator	NFA
6	FST-006	Classified Document Incinerator	NFA
7	FST-007	Veterinary Incinerator	NFA
12A	FST-012	Active EOD Containing Open Detonation Unit and Open	NFA

SWMU-AOC NUMBER	FST NUMBER	SWMU-AOC DESCRIPTION	STATUS
		Burn Unit	
12B	FST-012	Open Detonation (OD) Unit	NFA
12C	FST-012	Open Burn (OB) Unit	NFA
14	FST-014	Old Fire Training Area	NFA
15	FST-015	Hospital Silvery Recovery Unit	NFA
16	FST-016	PCB Transformer Shed	NFA
17	FST-017	DRMO Hazardous Waste Storage Area	NFA
18	FST-018	Industrial Wastewater Treatment Plant	NFA
19	FST-019	Old Sludge Drying Beds	NFA
20	FST-020	Sewage Drying Beds	NFA
21	FST-021	Central Energy Plant	NFA
22	FST-022	DPW Waste Oil Tanks	NFA
23	FST-023	Wright Army Airfield Water POL Point	NFA
24A	FST-024A	Radiator Repair Shop	NFA
25	FST-025 – FST-025A3	Eighty Six (86) Used Oil And Petroleum Underground Storage Tanks	NFA
27A	FST-027A	3 RD Squadron 7 TH Calvary Motor Pool and Four (4) associated Oil/Water Separators	NFA
27B	FST-027B	1 ST BN, 3D ADA Motor Pool and associated Oil/Water Separator	NFA
27C	FST-027C	92D ECB (H) Motor Pool and associated Oil/Water Separator	NFA
27D	FST-027D	26 th SPT BN Motor Pool and associated Oil/Water Separator	NFA
27E	FST-027E	703D SPT BN (Main) Motor Pool and associated Two (2) Oil/Water Separators	NFA
27F	FST-027F	3D Inf. Engineer Brigade Motor Pool and associated two (2) Oil/Water Separators	NFA (Deferred to USTMP)
27G	FST-027G	DISCOM Motor Pool and associated Oil/Water Separator	NFA
27H	FST-027H	DOL Maintenance Motor Pool and associated Two (2) Oil/Water Separators	NFA
27I	FST-027I	NGTC Block 9900, 10300 Motor Pool and associated Two (2) Oil/Water Separators	NFA
27J	FST-027J	GANG MATES Motor Pool and associated Two (2) Oil/Water Separators	NFA
27K	FST-027K	3 rd BN, 69 th Armor Motor Pool Wash Rack and Oil/Water Separators	NFA
27L	FST-027L	NGTC Block 10200 Wash Rack and Oil/Water Separator	NFA
27M	FST-027M	NGTC 10100 Wash Rack and Oil/Water Separator	NFA
27N	FST-027N	NGTC 9800 Wash Rack and Oil/Water Separator	NFA
27O	FST-027O	NGTC 9700 Wash Rack and Oil/Water Separator	NFA

SWMU-AOC NUMBER	FST NUMBER	SWMU-AOC DESCRIPTION	STATUS
27P	FST-027P	NGTC 9500 Wash Rack and Oil/Water Separator	NFA
27Q	FST-027Q	NGTC 9400 Wash Rack and Oil/Water Separator	NFA
27R	FST-027R	396 Transportation Company Wash Rack and Oil/Water Separator	NFA
27S	FST-027S	Two (2) 103D MI BN Wash Racks and associated Two (2) Oil/Water Separators	NFA
27T	FST-027T	293 MP Company Wash Rack and Oil/Water Separator	NFA
27U	FST-027U	Two (2) Wright Army Airfield Wash Racks and Oil/Water Separator	NFA
27V	FST-027V	Auto Craft Center Oil/Water Separator	NFA
28	FST-028	724 th Battery Shop	NFA
29	FST-029	Evans Army Heliport POL Storage Facility	NFA
30	FST-030	Recirculating Wash Impoundment "Birdbath"	NFA
31	FST-031	DEH Asphalt Tanks	NFA
32	FST-032	Supply Diesel Tank	NFA
33	FST-033	DPW Pesticide Warehouse	NFA
34	FST-034	DEH Equipment Wash Rack	NFA
37	FST-037	NGTC Equalization Basin	NFA
38	FST-038	Waste Pile at Officer's Club	NFA
AOC 8	FSTW-008-R-01	Hero Trench Area MRS	NFA

Notes:

SWMU – Solid Waste Management Unit

AOC – Area of Concern

IRP – Installation Restoration Plan

CAP – Corrective Action Plan

RFI – RCRA Facility Investigation

MMRP – Military Munitions Response Program

NFA – No Further Action

Comments:

AOC 1- Anti-Aircraft Range 1, AOC 3 - Anti-Tank Range 90MM, AOC 4 - Hand Grenade Course, AOC 5 - Small Arms Range 1 and AOC 7 - Small Arms Range 3 were removed from the list of SWMU/AOCs since the 2007 permit. These AOCs are located within the operational range footprint, and therefore cannot be investigated until the range is closed.

SWMU 36 – Hazardous Waste Storage Facility (Building 1157) was removed the list of SWMU/AOCs. This SWMU is the current hazardous waste storage facility regulated under Section II of this Permit.

APPENDIX F

DATA

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Historical Groundwater Analytical Results
December 2008 - May 2019
SWMU 13 Former Fire Training Area
Fort Stewart, Georgia

Location ID	Sample Date	RL	Benzene
MW-03	12/18/2008	5	< 1 U
MW-03	12/3/2009	5	< 0.5 U
MW-03	12/15/2010	5	< 0.5 U
MW-03	9/18/2012	5	< 1 U
MW-03	3/8/2013	5	< 1 U
MW-03	4/22/2014	5	< 0.5 U
MW-03	4/18/2016	5	<1 U
MW-04	12/18/2008	5	< 1 U
MW-04	12/18/2008	5	< 1 U
MW-04	12/3/2009	5	< 0.5 U
MW-04	12/15/2010	5	< 0.5 U
MW-04	12/5/2011	5	< 1 U
MW-04	9/19/2012	5	< 1 U
MW-04	3/12/2013	5	< 1 U
MW-04	4/22/2014	5	< 0.5 U
MW-04	4/18/2016	5	<1 U
MW-10	12/18/2008	5	< 1 U
MW-10	12/3/2009	5	< 0.5 U
MW-10	12/15/2010	5	0.78
MW-10	12/5/2011	5	< 1 U
MW-10	9/19/2012	5	< 1 U
MW-10	3/12/2013	5	< 1 U
MW-10	4/22/2014	5	< 0.5 U
MW-10	4/18/2016	5	<1 U
MW-11	12/3/2009	5	0.18 J
MW-11	12/3/2009	5	0.18 J
MW-13	5/26/2010	5	0.34 J
MW-13	12/15/2010	5	0.67
MW-13	12/6/2011	5	0.18 J
MW-13	9/18/2012	5	< 1 U
MW-13	3/12/2013	5	< 1 U
MW-13	4/22/2014	5	< 0.5 U
MW-13	5/12/2015	5	<1 U
MW-13	4/18/2016	5	<1 U
MW-13	6/6/2017	5	<1 UJ
MW-15	12/18/2008	5	< 12 UD
MW-15	12/3/2009	5	0.36 J
MW-15	12/16/2010	5	< 0.5 U
MW-15	12/6/2011	5	0.37 J
MW-15	9/18/2012	5	< 10 U
MW-15	3/7/2013	5	0.27 J
MW-15	4/22/2014	5	< 2.5 U
MW-15	4/19/2016	5	<1 U
Notes on Last Page			

Historical Groundwater Analytical Results
December 2008 - May 2019
SWMU 13 Former Fire Training Area
Fort Stewart, Georgia

Location ID	Sample Date	RL	Benzene
MW-16	12/18/2008	5	< 25 UD
MW-16	12/3/2009	5	< 2.5 U
MW-16	12/3/2009	5	< 2.5 U
MW-16	4/21/2011	5	0.35
MW-16	9/18/2012	5	< 10 U
MW-16	3/8/2013	5	0.46 J
MW-16	4/22/2014	5	< 0.5 U
MW-16	5/12/2015	5	<1 U
MW-16	4/19/2016	5	<1 U
MW-16	6/6/2017	5	<1 UJ
MW-18R	12/19/2008	5	5.8 D
MW-18R	12/3/2009	5	11
MW-18R	12/16/2010	5	1.9
MW-18R	12/6/2011	5	0.88 J
MW-18R	9/19/2012	5	13
MW-18R	3/8/2013	5	7.3
MW-18R	4/22/2014	5	3.7
MW-18R	5/12/2015	5	2.8
MW-18R	4/19/2016	5	2.1
MW-18R	6/6/2017	5	1.7 J
MW-18R	6/15/2018	5	98
MW-18R	5/13/2019	5	1.0
MW-19	12/18/2008	5	< 1 U
MW-19 (DUP)	12/18/2008	5	< 1 U
MW-19	12/19/2008	5	< 1 U
MW-19	12/3/2009	5	< 0.5 U
MW-19	4/21/2011	5	< 1 U
MW-19	9/18/2012	5	< 1 U
MW-19	3/8/2013	5	< 1 U
MW-19	4/18/2016	5	<1 U
MW-20	12/3/2009	5	< 0.5 U
MW-20	12/16/2010	5	0.1 J
MW-20	12/6/2011	5	< 1 U
MW-20 (Dup)	12/6/2011	5	< 1 U
MW-20	9/18/2012	5	< 1 U
MW-20	3/7/2013	5	< 1 U
MW-20	4/22/2014	5	< 0.5 U
MW-20	5/11/2015	5	<1 U
MW-20	4/18/2016	5	<1 U
MW-20	6/6/2017	5	<1 UJ
MW-21	12/3/2009	5	< 0.5 U
MW-21	12/16/2010	5	< 0.5 U
MW-21	12/5/2011	5	< 1 U
MW-21	9/18/2012	5	< 1 U
MW-21	3/8/2013	5	< 1 U
MW-21	4/22/2014	5	< 0.5 U
MW-21	5/11/2015	5	<1 U
Notes on Last Page			

Historical Groundwater Analytical Results
December 2008 - May 2019
SWMU 13 Former Fire Training Area
Fort Stewart, Georgia

Location ID	Sample Date	RL	Benzene
MW-22	12/3/2009	5	10
MW-22	12/15/2010	5	34
MW-22	12/6/2011	5	42
MW-22	9/19/2012	5	70
MW-22	3/7/2013	5	64
MW-22	4/22/2014	5	15
MW-22 (DUP)	4/22/2014	5	12
MW-22	5/12/2015	5	44
MW-22 (DUP)	5/12/2015	5	41
MW-22	4/18/2016	5	18
MW-22 (DUP)	4/18/2016	5	17
MW-22	6/6/2017	5	10 J
MW-22 (DUP)	6/6/2017	5	9.9 J
MW-22	6/15/2018	5	23 J
MW-22 (DUP)	6/15/2018	5	47 J
MW-22	5/13/2019	5	2.4
MW-23	12/3/2009	5	< 0.5 U
MW-23	12/15/2010	5	< 0.5 U
MW-23	12/5/2011	5	< 1 U
MW-23	9/19/2012	5	< 1 U
MW-23	3/7/2013	5	< 1 U
MW-23	4/22/2014	5	< 0.5 U
MW-23	5/11/2015	5	<1 U
MW-23	4/18/2016	5	<1 U
MW-23	6/6/2017	5	<1 UJ
MW-24	5/26/2010	5	< 0.5 U
MW-24	4/21/2011	5	< 1 U
MW-24	9/19/2012	5	< 1 U
MW-24	3/7/2013	5	< 1 U
MW-24	4/22/2014	5	< 0.5 U
MW-24	5/12/2015	5	<1 U
MW-24	4/18/2016	5	<1 U
MW-24	6/6/2017	5	<1 UJ

Notes:

Result exceeds the Site-specific Remedial Level (RL)

Samples analyzed by USEPA Method 8260 (µg/L)

BOLD indicates a detection above the laboratory detection limit

D - Sample was diluted in order to complete analysis

J - Result is estimated

U - Result was not detected above the reporting limit

UJ - Result is considered not detected but estimated due to QC deficiencies.

µg/L - micrograms per liter

GSI MANN-KENDALL TOOLKIT for Constituent Trend Analysis

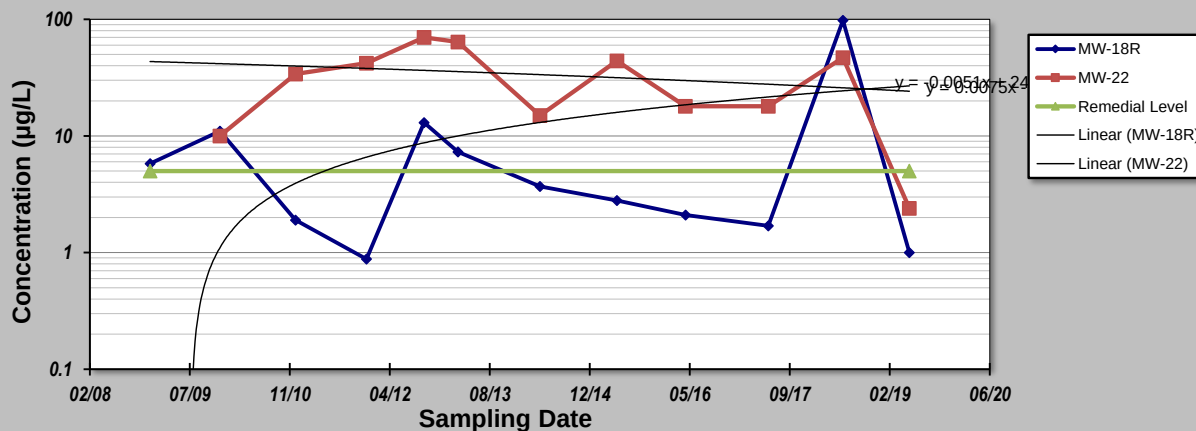
Evaluation Date: **3-Jul-20**
 Facility Name: **Fort Stewart**
 Conducted By: **USACE - Savannah (DAWSON)**

Job ID: **Fourth Periodic Review Report**
 Constituent: **Benzene**
 Concentration Units: **µg/L**

Sampling Point ID: **MW-18R** **MW-22** **Remedial Level**

Sampling Event	Sampling Date	BENZENE CONCENTRATION (µg/L)					
1	19-Dec-08	5.8		5			
2	3-Dec-09	11	10				
3	16-Dec-10	1.9	34				
4	6-Dec-11	0.88	42				
5	19-Sep-12	13	70				
6	8-Mar-13	7.3	64				
7	22-Apr-14	3.7	15				
8	12-May-15	2.8	44				
9	18-Apr-16		18				
10	19-Apr-16	2.1					
11	6-Jun-17	1.7	18				
12	15-Jun-18	98	47				
13	13-May-19	1	2.4	5			
14							
15							
16							
17							
18							
19							
20							

Coefficient of Variation:	2.27	0.62	0.00				
Mann-Kendall Statistic (S):	-5	-12	0				
Confidence Factor:	63.6%	83.2%					
Concentration Trend:	No Trend	Stable					



Notes:

- At least four independent sampling events per well are required for calculating the trend. Methodology is valid for 4 to 40 samples.
- Confidence in Trend = Confidence (in percent) that constituent concentration is increasing ($S > 0$) or decreasing ($S < 0$): $> 95\%$ = Increasing or Decreasing; $\geq 90\%$ = Probably Increasing or Probably Decreasing; $< 90\%$ and $S > 0$ = No Trend; $< 90\%$, $S \leq 0$, and $COV \geq 1$ = No Trend; $< 90\%$ and $COV < 1$ = Stable.
- Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, Ground Water, 41(3):355-367, 2003.
- Linear refers to the simple linear regression trendline and equation

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Groundwater Analytical Data - April 2011 through May 2019
SWMU 26, Former 724th Tanker Purging Area
Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-01	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA
MW-06R	4/12/2011	2.9	0.17 J	2	5.2	NA	NA
	10/18/2011	2.5	< 1 U	7.8	9.4	20	NA
	4/18/2012	0.66	< 0.5 U	1.8	1.6	4.6	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.18 J	NA
	10/15/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 UJ	< 0.5 U
	9/10/2014	1	< 0.5 U	< 0.5 U	< 0.5 U	1.7	2.7
	5/13/2015	0.43 J	<1.0 U	<1.0 U	< 0.50 U	0.74 J	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	4/20/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
	10/31/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	0.27 J
MW-07	4/12/2011	0.1 J	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	NA
	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.46 J	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.95	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.31 J	NA
	10/15/2013	< 0.5 U	7.7	< 0.5 U	< 0.5 U	1.6	< 0.5 U
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	2.2 J	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	1.6	< 0.5 U
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	2.8 J	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	0.82 J	< 5.0 U
	4/20/2016	<0.80 U	<0.80 U	<0.80 U	<0.80 U	<0.80 U	<0.80 U
	10/25/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	<4.0 U	<4.0 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	0.43 J	<0.40 UJ
	10/31/2017	<2.0 U	<4.0 U	<2.0 U	<6.0 U	2.0 J	<2.0 U
MW-09	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA
	10/23/2012	< 0.5 U	0.24 J	< 0.5 U	< 0.5 U	1.4	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA
	10/15/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	1	< 0.5 U
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	4/20/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
	10/31/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
MW-10	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.6 J	<0.40 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	6.0 J	<0.40 UJ
	10/31/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	21	<0.40 U
MW-11	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA

Groundwater Analytical Data - April 2011 through May 2019
SWMU 26, Former 724th Tanker Purging Area
Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-15R	4/12/2011	< 5 U	< 5 U	< 5 U	< 5 U	NA	NA
	10/18/2011	< 10 U	< 10 U	< 10 U	< 10 U	29	NA
	4/18/2012	0.22 J	< 0.5 U	< 0.5 U	< 0.5 U	2.6	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.88	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.71	NA
	10/15/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 UJ	< 0.5 U
	9/10/2014	0.12 J	< 0.5 U	< 0.5 U	< 0.5 U	0.8	2.2
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	3.4 J	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	4/19/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
	10/24/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	6/7/2017	0.22 J	<0.80 UJ	<0.40 UJ	<1.2 UJ	1.7 J	0.26 J
	10/31/2017	0.22 J	<0.80 U	<0.40 U	<1.2 U	2.4	0.33 J
MW-16	4/13/2011	< 0.5 U	< 0.5 U	< 0.5 U	0.17 J	NA	NA
	10/18/2011	< 1 U	< 1 U	< 1 U	< 1 U	22	NA
	4/19/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	18	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	5.2	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	8.3	NA
	10/15/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	1.4	< 0.5 U
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	2 J	< 0.5 U
	9/9/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	8.2	< 0.5 U
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	1.9 J	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	5.8 J	< 5.0 U
	4/20/2016	<0.80 U	<0.80 U	<0.80 U	<0.80 U	3.1	<0.80 U
	10/24/2016	< 4.0 U	< 8.0 U	< 4.0 U	< 12 U	4.3 JD	< 4.0 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	3.4 J	<0.40 UJ
	11/2/2017	2.0 U	4.0 U	2.0 U	6.0 U	3.6 J	2.0 U
MW-17	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	48	NA
	10/24/2012	< 0.5	7.1	< 0.5	< 0.5	< 0.5	NA
MW-19	4/13/2011	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	< 1 U	< 1 U	< 1 U	< 1 U	61	NA
	10/23/2012	<5.0 U	<5.0 U	<5.0 U	<5.0 U	39	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	14	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	6.2	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.99	< 0.5 U
	9/11/2014	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	1.4 J	< 5.0 U
	11/5/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	7.5 J	< 5.0 U
	4/22/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	1.3	<0.40 U
	10/26/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	<4.0 U	<4.0 U
	6/9/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	1.3 J	<0.40 UJ
	11/2/2017	<2.0 U	<4.0 U	<2.0 U	<6.0 U	<2.0 U	<2.0 U
	6/13/2018	<0.4 U	<0.8 U	<0.4 U	<1.2 U	3.2	<0.4 U
	10/23/2018	<0.4 U	<0.8 U	<0.4 U	<1.2 U	0.98 J	<0.4 U
	10/23/2018 (Dup)	<0.4 U	<0.8 U	<0.4 U	<1.2 U	2.1	<0.4 U
	5/14/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.0 J	<0.40 U

Groundwater Analytical Data - April 2011 through May 2019
SWMU 26, Former 724th Tanker Purging Area
Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-20	4/13/2011	< 0.5 U	< 0.5 U	< 0.5 U	0.31 J	NA	NA
	10/18/2011	< 1 U	< 1 U	< 1 U	< 1 U	3.2	NA
	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	2.4	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	2.0	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.24 J	NA
	10/15/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.28 J	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.15 J	< 0.5 U
	9/11/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.9	< 0.5 U
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	4/20/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
	10/26/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	<4.0 U	<4.0 U
	6/9/2017	<0.40 UJ	2.9	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
	11/1/2017	<2.0 U	3.6 J	<2.0 U	<6.0 U	<2.0 U	<2.0 U
MW-21	4/13/2011	< 0.5 U	< 0.5 U	< 0.5 U	0.24 J	NA	NA
	10/19/2011	< 1 U	< 1 U	< 1 U	< 1 U	45	NA
	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	19	NA
	10/23/2012	< 0.5 U	2.1	< 0.5 U	< 0.5 U	17	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	21	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	43	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	12	< 5.0 U
	4/22/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	17	<0.40 U
	10/26/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	<4.0 U	<4.0 U
	6/8/2017	<0.40 UJ	32	<0.40 UJ	<1.2 UJ	0.23 J	<0.40 UJ
	11/3/2017	<2.0 U	130	<2.0 U	<6.0 U	<2.0 U	<2.0 U
MW-22	4/13/2011	< 0.5 U	11	< 0.5 U	< 0.5 U	NA	NA
	10/19/2011	< 1 U	80	< 1 U	< 1 U	4.3	NA
	4/17/2012	0.15 J	< 0.5 U	< 0.5 U	< 0.5 U	76	NA
	10/23/2012	< 0.5 U	0.24 J	< 0.5 U	< 0.5 U	1.4	NA
MW-23	4/13/2011	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/19/2011	< 1 U	< 1 U	< 1 U	< 1 U	4.7	NA
	4/17/2012	6.6	< 0.5 U	< 0.5 U	< 0.5 U	2.8	NA
	10/23/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	27	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	22	NA
	10/15/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	5.6	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	3.6	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	5	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	3.4 J	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	1.8 J	< 5.0 U
	4/22/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	1.7	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	0.51 J	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	2.0 J	<0.40 UJ
	11/3/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	2.4	<0.40 U
	6/12/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	0.53 J	<0.40 U
	10/23/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.5 J	<0.40 U
	5/14/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	0.90 J	<0.40 U

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Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-24R	4/12/2011	< 0.5 U	0.24 J	< 0.5 U	< 0.5 U	NA	NA
	10/19/2011	< 1 U	< 1 U	< 1 U	< 1 U	10	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	4.3	NA
	4/3/2013	0.18 J	< 0.5 U	< 0.5 U	< 0.5 U	5.3	NA
	10/15/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	1.6	< 0.5 U
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.86 J	< 0.5 U
	9/9/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	1.2	2.2
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	0.38 J	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	4/20/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
	10/24/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	<4.0 U	<4.0 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
	11/2/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
MW-25R	4/12/2011	3.7	0.32 J	14	18	NA	NA
	10/19/2011	3.3	< 1 U	25	0.42 J	59	NA
	4/19/2012	5.2	< 0.5 U	11	1.7	28	NA
	10/24/2012	< 0.5 U	< 0.5 U	60	1.1	9.1	NA
	4/3/2013	0.5	< 0.5 U	2.6	< 0.5 U	5.2	NA
	10/15/2013	0.32 J	1.6	< 0.5 U	< 0.5 U	0.8	1.1
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.55 J	< 0.5 U
	9/9/2014	0.62	< 0.5 U	0.81	< 0.5 U	4.5	3.4
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	2.3 J	< 5.0 U
	4/20/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	0.98 J	<0.40 U
	10/24/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	<4.0 U	<4.0 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
	11/2/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
	6/12/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	10/24/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	5/14/2019	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
MW-26	4/13/2011	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/19/2011	< 1 U	< 1 U	< 1 U	< 1 U	6.3	NA
	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	9.4	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA
MW-28R	4/12/2011	0.7	1.2	3.1	15	NA	NA
	10/18/2011	4.9	0.56 J	1.3	9.3	81	NA
	4/18/2012	0.27 J	< 0.5 U	< 0.5 U	< 0.5 U	30	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	3.8	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.37	NA
	10/15/2013	0.19 J	0.25 J	< 0.5 U	< 0.5 U	1.5	0.25 J
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 UJ	< 0.5 U
	9/10/2014	0.14 J	< 0.5 U	< 0.5 U	< 0.5 U	0.33 J	2.3
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	4/19/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
	10/31/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	6/12/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	10/23/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	5/14/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U

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Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-29	4/18/2012	< 0.5 U	11	< 0.5 U	< 0.5 U	< 0.5 U	NA
MW-30	10/24/2012	< 0.5 U	2.9	< 0.5 U	< 0.5 U	2.9	NA
MW-31	4/13/2011	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	< 1 U	< 1 U	< 1 U	< 1 U	24	NA
	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	44	NA
	10/23/2012	< 0.50 U	8.0	< 0.50 U	< 0.50 U	15	NA
	4/3/2013	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	1.9	NA
	10/16/2013	< 0.50 U	0.34 J	< 0.50 U	< 0.50 U	6.5	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	13	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	9.9 J	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	12	< 5.0 U
	4/22/2016	<0.40 U	<0.40 U	<0.40 U	<0.40	18	<0.40
	10/26/2016	<0.40 U	<0.80 U	<0.40 U	<1.2	4.1	<0.40
	6/9/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	9.4 J	<0.40 UJ
	11/1/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	7.0	<0.40 U
MW-32	4/12/2011	< 0.5 U	0.62	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	0.21 J	< 1 U	< 1 U	< 1 U	19	NA
	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	33	NA
	10/23/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	22	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	17	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	9.9	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	5.2	< 0.5 U
	5/15/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	0.36 J	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	6.0 J	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	3.4	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	2.6	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	4.9 J	<0.40 UJ
	11/2/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.0 J	<0.40 U
MW-33	4/13/2011	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/19/2011	< 1 U	< 1 U	< 1 U	< 1 U	43	NA
	10/23/2012	< 0.5 U	17	< 0.5 U	< 0.5 U	31	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	31	NA
	10/16/2013	< 0.5 U	0.67	< 0.5 U	< 0.5 U	46	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	10	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	31	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	15	< 5.0 U
	11/5/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	22	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	1.2	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	30	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	11 J	<0.40 UJ
	11/1/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	12	<0.40 U
MW-34	4/17/2012	0.25 J	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA
MW-35	4/13/2011	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	< 1 U	< 1 U	< 1 U	< 1 U	0.78 J	NA
	4/19/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	1	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.17 J	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.83	NA
	10/15/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	1	< 0.5 U
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.14 J	< 0.5 U
	9/9/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.2 J	< 0.5 U
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	0.96 J	< 5.0 U

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Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-35 (cont'd)	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	0.74 J	< 5.0 U
	4/20/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	0.86 J	<1.7 UB
	10/24/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	<4.0 U	<4.0 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
	11/2/2017	<2.0 U	<4.0 U	<2.0 U	<6.0 U	<2.0 U	<2.0 U
MW-36R	4/12/2011	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	< 1 U	< 1 U	< 1 U	< 1 U	20	NA
	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	11	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	5.3	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	11	NA
	10/18/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	11	< 0.5 U
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	3.5	0.20 UB
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	10	< 0.5 U
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	73	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	71	< 5.0 U
	4/20/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	13	<0.40 U
	10/25/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	19 JD	<4.0 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	27 J	<0.40 UJ
	10/31/2017	<2.0 U	<4.0 U	<2.0 U	<6.0 U	45	<2.0 U
	6/12/2018	< 0.40 U	< 0.80 U	< 0.40 U	<1.2 U	33	< 0.40 U
	10/23/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	39	< 0.40 U
	5/14/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	14	< 0.40 U
MW-37	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	50	NA
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	3.3	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	0.32 J	<0.40 UJ
	11/1/2017	<2.0 U	<4.0 U	<2.0 U	<6.0 U	<2.0 U	<2.0 U
MW-38	4/13/2011 (Dup)	360	< 5 U	3.5 J	< 5 U	NA	NA
	4/13/2011	380	< 5 U	3.6 J	< 5 U	NA	NA
	10/19/2011 (Dup)	360	< 5 U	2.1 J	< 5 U	630	NA
	10/19/2011	370	< 10 U	< 10 U	< 10 U	610	NA
	1/31/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	87	NA
	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	7.4 J	NA
	4/18/2012 (Dup)	0.31 J	< 0.5 U	< 0.5 U	< 0.5 U	35 J	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	8.7	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	4.8	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	4.9	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	8.3	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	3.5	< 0.5 U
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	13	<5.0
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	5.8 J	<5.0
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	3.6	<0.40 U
	10/26/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.1 J	<0.40 U
	6/9/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	2.5 J	<0.40 UJ
	11/1/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	4.0	<0.40 U
	6/12/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	3.2	<0.40 U
	10/23/2018	<4.0 U	<8.0 U	<4.0 U	<12 U	<4.0 U	<4.0 U
	5/15/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U

Groundwater Analytical Data - April 2011 through May 2019
SWMU 26, Former 724th Tanker Purging Area
Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-39	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	64	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	57	NA
	4/2/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	52	NA
	10/17/2013	0.38 J	< 0.5 U	< 0.5 U	< 0.5 U	100	< 0.5 U
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	110 J	< 0.5 U
	9/11/2014	0.46 J	< 0.5 U	< 0.5 U	< 0.5 U	140	< 0.5 U
	5/15/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	43	< 5.0 U
	11/4/2015	0.72 J	<1.0 U	<1.0 U	< 0.50 U	140	< 5.0 U
	4/21/2016	<1.0 U	<1.0 U	<1.0 U	<1.0 U	140	<1.0 U
	10/24/2016	<0.80 U	<1.6 U	<0.80 U	<2.4 U	120 D	<0.80 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	14 J	<0.40 UJ
	11/3/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	24	<0.40 U
	6/12/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	38	<0.40 U
	10/24/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	9.4	<0.40 U
	5/14/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	2.3	<0.40 U
MW-40	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	8.2	NA
	4/2/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	21	NA
	10/17/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	1.8	< 0.5 U
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	1.4 J	< 0.5 U
	9/11/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	4.8	< 0.5 U
	5/15/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	6.8 J	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	1.9 J	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
	10/24/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	28	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	0.56 J	<0.40 UJ
MW-41	5/4/2011	< 0.5	< 0.5	< 0.5	< 0.5	NA	NA
	10/19/2011	< 1 U	< 1 U	< 1 U	< 1 U	18	NA
	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	47	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.47 J	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	6.8	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.50	< 0.5 U
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	4/22/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	0.85 J	<0.40 U
	10/26/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	<4.0 U	<4.0 U
	6/9/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
	11/1/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
MW-42	4/12/2011	0.2 J	0.61	2.2	2.7	NA	NA
	10/18/2011	< 5 U	< 5 U	< 5 U	< 5 U	170	NA
	1/31/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	110	NA
	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	53	NA
	10/23/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	77	NA
	4/2/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	46	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	120	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	100	< 0.5 U
	9/9/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	94	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	180	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	47	< 5.0 U
	4/20/2016	<0.44 U	<0.44 U	<0.44 U	<0.44 U	57	<1.1 UB

Groundwater Analytical Data - April 2011 through May 2019
SWMU 26, Former 724th Tanker Purging Area
Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-42 (cont'd)	10/25/2016	<2.0 U	<4.0 U	<2.0 U	<6.0 U	180 D	<2.0 U
	6/8/2017	<2.0 UJ	<4.0 UJ	<2.0 UJ	<6.0 UJ	110 J	<2.0 UJ
	11/2/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	58	<0.40 U
	6/12/2018	<0.80 U	<0.80 U	<1.60 U	<2.4 U	72	<0.80 U
	10/23/2018	<0.80 U	<1.6 U	<0.80 U	<2.4 U	75 D	<0.80 U
	5/14/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	38	<0.40 U
MW-43	4/13/2011	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/19/2011	< 1 U	< 1 U	< 1 U	< 1 U	110	NA
	1/31/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	160	NA
	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	150 J	NA
	10/23/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	130	NA
	4/2/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	59	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	110	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	65	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	66	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	18	< 5.0 U
	11/5/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	74	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	58	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	49	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	0.59 J	<0.40 UJ
	11/1/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	30	<0.40 U
	6/12/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	27	<0.40 U
	10/23/2018	<0.80 U	<1.6 U	<0.80 U	<2.4 U	60	<0.80 U
	5/15/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	57	<0.40 U
MW-44	10/25/2016	< 0.80 U	<1.6 U	< 0.80 U	< 2.4 U	96 D	< 0.80 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	71 J	<0.40 UJ
	11/1/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	62	<0.40 U
	6/12/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	43	<0.40 U
	10/24/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	69	<0.40 U
	5/15/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	38	<0.40 U
MW-45	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	12	NA
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	5.2	<0.40 U
	6/9/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	2.0 J	<0.40 UJ
	11/1/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.9 J	<0.40 U
MW-46	4/18/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	6.7	NA
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.5 J	<0.40 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	2.5 J	<0.40 UJ
	10/31/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	7.4 J	<0.40 UJ
MW-47	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA
	4/2/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.89	NA
	4/22/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	3.4	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	11	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	11 J	<0.40 UJ
	11/3/2017	<2.0 U	<4.0 U	<2.0 U	<6.0 U	<2.0 U	<2.0 U
MW-48	4/17/2012	1.6	< 0.5 U	0.48 J	< 0.5 U	46	NA
	10/23/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA
	4/22/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U

Table 3-3
Groundwater Analytical Data - April 2011 through May 2019
SWMU 26, Former 724th Tanker Purging Area
Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-49	4/12/2011	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	< 1 U	< 1 U	< 1 U	< 1 U	7.6	NA
	10/23/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	1.3	NA
	4/2/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.43 J	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	3.6	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.71	< 0.5 U
	9/9/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	3.1	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	0.39 J	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	3.6	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	1.0 J	<0.40 UJ
	11/2/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
MW-50	4/12/2011	6.5	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	3.8	< 1 U	< 1 U	< 1 U	23	NA
	4/17/2012	9.7	< 0.5 U	< 0.5 U	< 0.5 U	40	NA
	10/23/2012	12	< 0.5 U	< 0.5 U	< 0.5 U	70	NA
	4/2/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	67	NA
	10/16/2013	0.13 J	< 0.5 U	< 0.5 U	< 0.5 U	14	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	78	< 0.5 U
	9/9/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	50	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	39	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	33	< 5.0 U
	4/20/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	1.2	<0.40 U
	10/25/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	12 JD	<4.0 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	0.65 J	<0.40 UJ
	11/2/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	5.1 J	<0.40 UJ
	6/12/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	9.4	<0.40 U
MW-51	10/23/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	5/15/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	2.6	<0.40 U
	4/12/2011	1.5	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	1.1	< 1 U	0.55 J	0.33 J	43	NA
	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	150	NA
	10/23/2012	< 0.5 U	4.0	< 0.5 U	< 0.5 U	15	NA
	4/2/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	61	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	5.7	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	5.2	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	120	3.1
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	21	< 5.0 U
	11/5/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	7.3 J	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	4.4	<0.40 U
	10/24/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	14	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	5.3 J	<0.40 UJ
	11/2/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	14 J	<0.40 UJ
	6/12/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	6.8	<0.40 U
	10/24/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	7.8	<0.40 U
	5/15/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.1 J	<0.40 U

Groundwater Analytical Data - April 2011 through May 2019
SWMU 26, Former 724th Tanker Purging Area
Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-52	4/12/2011	1.3	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	37	< 1 U	< 1 U	< 1 U	200	NA
	1/31/2012	0.61	< 0.5 U	< 0.5 U	< 0.5 U	160	NA
	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	120	NA
	10/23/2012	0.38 J	< 0.5 U	< 0.5 U	< 0.5 U	120	NA
	4/2/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	43	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	35	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	11	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	11	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	3.9 J	< 5.0 U
	11/5/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	3.3 J	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	3.9	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	3.5	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	0.98 J	<0.40 UJ
	11/2/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	2.5 J	<0.40 UJ
	6/12/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.3 J	<0.40 U
	10/24/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.1 J	<0.40 UJ
	5/14/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.1 J	<0.40 U
MW-53	4/12/2011	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/19/2011	< 1 U	< 1 U	< 1 U	< 1 U	3.6	NA
	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	3.8	NA
	10/23/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	2.7	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	15	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	44	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	87	< 0.5 U
	9/9/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	110	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	0.75 J	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	21	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	0.54 J	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<0.40 U	14	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	0.48 J	<0.40 UJ
	11/2/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	7.3 J	<0.40 UJ
	6/13/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	0.52 J	<0.40 U
	6/13/2018 (Dup)	<0.40 U	<0.80 U	<0.40 U	<1.2 U	0.34 J	<0.40 U
	10/23/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	12	<0.40 U
	5/15/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	0.27 J	<0.40 U
MW-54	4/13/2011	97	0.38 J	< 1 U	< 1 U	NA	NA
	4/13/2011 (Dup)	86	< 2.5 U	< 2.5 U	< 2.5 U	NA	NA
	10/18/2011	360	< 2 U	0.96 J	< 2 U	750	NA
	10/18/2011 (Dup)	350	< 10 U	< 10 U	< 10 U	760	NA
	1/31/2012	350	0.20 J	0.97	0.20 J	760	NA
	4/18/2012	0.12 J	< 0.5 U	< 0.5 U	< 0.5 U	430	NA
	10/23/2012	80	< 2.5 U	< 2.5 U	< 2.5 U	780	NA
	10/23/2012 (Dup)	89	< 0.5 U	< 0.5 U	< 0.5 U	770	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	200	NA
	4/3/2013 (Dup)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	210	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	110	< 0.5 U
	10/16/2013 (Dup)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	110	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	28	< 0.5 U
	4/24/14 (Dup)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	26 J	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	63	< 0.5 U
	9/10/2014 (Dup)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	63	< 0.5 U

Groundwater Analytical Data - April 2011 through May 2019
SWMU 26, Former 724th Tanker Purging Area
Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-54 (cont'd)	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	7.6 J	< 5.0 U
	5/14/2015 (Dup)	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	8.2 J	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	8.9	<0.40 U
	10/26/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	7.5 JD	<4.0 U
	10/26/2016 Dup	<4.0 U	<8.0 U	<4.0 U	<12 U	6.9 JD	<4.0 U
	6/9/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	6.4 J	<0.40 UJ
	6/9/2017 (Dup)	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	6.5 J	<0.40 UJ
	11/2/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	5.0	<0.40 U
	11/2/2017 (Dup)	<0.40 U	<0.80 U	<0.40 U	<1.2 U	4.9	<0.40 U
	6/13/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	0.32 J	<0.40 U
	10/23/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	2.2	<0.40 U
	5/15/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.9 J	<0.40 U
	5/15/2019 (Dup)	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.8 J	<0.40 U
MW-55	4/13/2011	52	< 2.5 U	< 2.5 U	< 2.5 U	NA	NA
	10/18/2011	180	< 5 U	< 5 U	< 5 U	610	NA
	1/31/2012	270	< 0.5 U	< 0.5 U	< 0.5 U	630	NA
	4/18/2012	200	< 0.5 U	< 0.5 U	< 0.5 U	700	NA
	4/18/2012 (Dup)	200	< 0.5 U	< 0.5 U	< 0.5 U	700	NA
	10/24/2012	140	13	2.9 J	17	510	NA
	10/24/2012 (Dup)	130	< 0.5 U	< 5.0 U	< 5.0 U	470	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 5.0 U	< 5.0 U	200	NA
	4/3/2013 (Dup)	< 0.5 U	< 0.5 U	< 5.0 U	< 5.0 U	180	NA
	10/15/2013	10	< 0.5 U	< 5.0 U	< 5.0 U	240 J	< 0.5 U
	10/15/2013 (Dup)	13	< 0.5 U	< 5.0 U	< 5.0 U	240	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	22	< 0.5 U
	4/24/14 (Dup)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	17 J	< 0.5 U
	9/11/2014	16	< 0.5 U	< 0.5 U	< 0.5 U	190	< 0.5 U
	9/11/2014 (Dup)	15	< 0.5 U	< 0.5 U	< 0.5 U	180	< 0.5 U
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	17	< 5.0 U
	5/13/2015 (Dup)	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	17	< 5.0 U
	11/5/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	75 J	< 5.0 U
	11/5/2015 (Dup)	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	73	< 5.0 U
	4/20/2016	0.35 J	<0.40 U	<0.40 U	<0.40 U	45	<0.40 U
	4/20/2016 (Dup)	0.33 J	<0.40 U	<0.40 U	<0.40 U	53	<0.40 U
	10/25/2016	<2.0 U	<4.0 U	<2.0 U	<6.0 U	68 D	<2.0 U
	10/25/2016 (Dup)	<0.40 U	<0.80 U	<0.40 U	<1.2 U	68	<0.40 U
	6/9/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	14 J	<0.40 UJ
	6/9/2017 (Dup)	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	13 J	<0.40 UJ
	11/1/2017	<0.40 U	<0.80 U	<0.40 U	1.2 U	1.4 J	<0.40 U
	11/1/2017 (Dup)	<0.40 U	<0.80 U	<0.40 U	<1.2 U	0.96 J	<0.40 U
	6/12/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	0.96 J	<0.40 U
	10/23/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	1.8 J	<0.40 U
	5/15/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	0.54 J	<0.40 U

Groundwater Analytical Data - April 2011 through May 2019
SWMU 26, Former 724th Tanker Purging Area
Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-56	4/13/2011	0.62	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/19/2011	0.51 J	< 1 U	< 1 U	< 1 U	130	NA
	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	38	NA
	10/23/2012	0.13 J	< 0.5 U	< 0.5 U	< 0.5 U	52	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	24	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	22	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	6.8	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	16	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	11	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	12	< 5.0 U
	4/22/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	2.0	<0.40 U
	10/26/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	7.1 JD	<4.0 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	1.5 J	<0.40 UJ
	11/3/2017	<0.80 U	1.6 U	<0.80 U	2.4 U	20	<0.80 U
	6/12/2018	<0.40 U	0.8 U	<0.40 U	<1.2 U	0.54 J	<0.40 U
	10/23/2018	<0.40 U	<0.8 U	<0.40 U	<1.2 U	0.57 J	<0.40 U
	5/14/2019	<0.40 U	<0.8 U	<0.40 U	<1.2 U	1.7 J	<0.40 U
MW-57	4/13/2011	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	< 1 U	< 1 U	< 1 U	< 1 U	1	NA
	1/31/2012	0.25 J	< 0.5 U	< 0.5 U	< 0.5 U	110	NA
	4/18/2012	0.19 J	< 0.5 U	< 0.5 U	< 0.5 U	68	NA
	10/23/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	10	NA
	4/2/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	72	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	100	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	130	< 0.5 U
	9/10/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	83	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	89	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	60	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	6/9/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	0.41 J	<0.40 UJ
	11/1/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	17	<0.40 U
	6/13/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	28	<0.40 U
	10/23/2018	<0.40 U	<0.80 U	<0.40 U	<1.2 U	17	<0.40 U
	5/15/2019	<0.40 U	<0.80 U	<0.40 U	<1.2 U	10	<0.40 U
MW-58	4/12/2011	2.2	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA
	10/18/2011	1.9	< 1 U	< 1 U	< 1 U	9.8	NA
	4/17/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	13	NA
	10/23/2012	2.0	< 0.5 U	< 0.5 U	< 0.5 U	12	NA
	4/2/2013	1.4	< 0.5 U	< 0.5 U	< 0.5 U	11	NA
	10/16/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	7.9	< 0.5 U
	4/24/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	12	< 0.5 U
	9/9/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	13	< 0.5 U
	5/14/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	8.5 J	< 5.0 U
	11/4/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	8.9 J	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	3.5	<0.40 U
	10/25/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	7.4	<0.40 U
	6/8/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	0.30 J	<0.40 UJ
	11/3/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	9.1 J	<0.40 UJ

Groundwater Analytical Data - April 2011 through May 2019
SWMU 26, Former 724th Tanker Purging Area
Fort Stewart, Georgia

	VOCs - USEPA Method SW8260 (µg/L)						
	Chemical Name	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE*	Naphthalene*
	MCL/SSRG	5	1000	700	10000	59**	6.1**
Location ID	Sample Date						
MW-59	4/12/2011	< 0.5 U	< 0.5 U	< 0.5 U	0.31 J	NA	NA
	10/19/2011	< 1 U	< 1 U	< 1 U	< 1 U	15	NA
	4/19/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	9.7	NA
	10/24/2012	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	6.4	NA
	4/3/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	4	NA
	10/15/2013	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	1.1	< 0.5 U
	4/23/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.16 J	< 0.5 U
	9/9/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	4.3	2.2
	5/13/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	11/3/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	2.8 J	< 5.0 U
	4/20/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
	10/24/2016	<4.0 U	<8.0 U	<4.0 U	<12 U	<4.0 U	<4.0 U
	6/7/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
	11/2/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
MW-60	5/16/2014	< 0.5 U	0.43 J	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
	9/11/2014	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
	5/15/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	11/5/2015	<1.0 U	<1.0 U	<1.0 U	< 0.50 U	< 0.50 U	< 5.0 U
	4/21/2016	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
	10/24/2016	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U
	6/9/2017	<0.40 UJ	<0.80 UJ	<0.40 UJ	<1.2 UJ	<0.40 UJ	<0.40 UJ
	11/3/2017	<0.40 U	<0.80 U	<0.40 U	<1.2 U	<0.40 U	<0.40 U

Notes:

 - Indicates the sample result exceeds the MCL or Site Specific Remediation Goal

* - All data highlights updated to reflect screening criteria change from data exceeding the Tap Water RSL (MTBE - 14 µg/L, Naphthalene - 0.17 µg/L) to data exceeding Site-Specific Remediation Goals for MTBE and Naphthalene.

** - Site-Specific Remediation Goal (GAEPD, February 5, 2016)

µg/L - micrograms per liter

BOLD - indicate the analyte was detected

D - Sample diluted for analysis.

DUP - Duplicate sample

J - The sample result is estimated

MCL - USEPA Maximum Contaminant Level - National Primary Drinking Water Regulations

MTBE - Methyl tert-butyl ether

NA - Not Analyzed

SSRG - Site-Specific Remediation Goal

U - Result was not detected above the reporting limit

UB - Compound/analyte detected in blank or associated blank, qualified as a non-detect at listed value

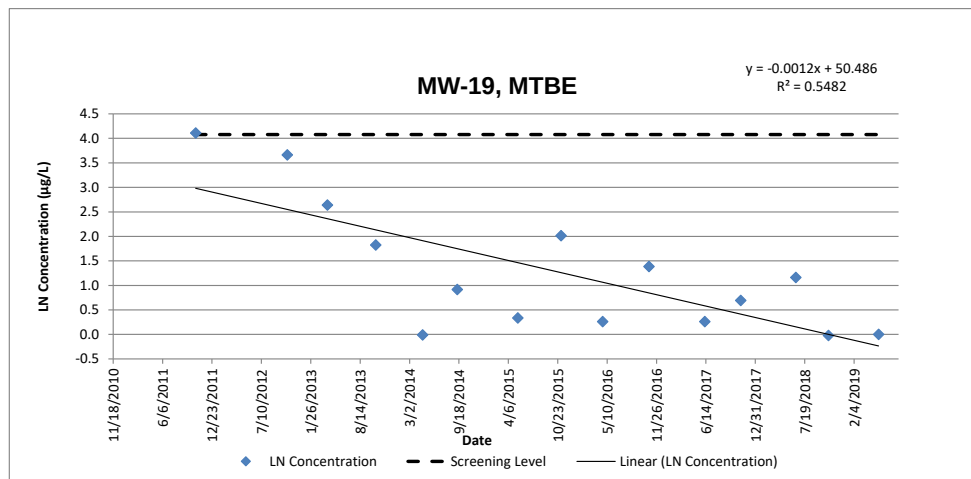
UJ - Result is considered not detected but estimated due to QC deficiencies

VOCs - Volatile Organic Compounds

Sample Information
Sample Location
Constituent

MW-19
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/18/2011	61	4.11
10/23/2012	39	3.66
4/3/2013	14	2.64
10/16/2013	6.2	1.82
4/24/2014	0.99	-0.01
9/11/2014	2.5	0.92
5/14/2015	1.40	0.34
11/5/2015	7.50	2.01
4/22/2016	1.3	0.26
10/26/2016	4.0	1.39
6/9/2017	1.30	0.26
11/2/2017	2.0	0.69
6/13/2018	3.2	1.16
10/23/2018	0.98	-0.02
5/14/2019	1.00	0.00



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

ND taken at reporting limit/reported value
Qualified data converted to reported value

Data quality

Total # of data points used in regression	15
# of nondetects	3
% of data as detects	80

Results

Coefficient of Determination (R^2) =	0.5527	
p-Value =	1.49E-03	
Attenuation Rate in Groundwater (K) =	0.0012	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0005	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	5.96E+02	days

Date Screening Level Reached

Screening Level	59
LN Screening Level	4.1
Intercept	50.486
Slope	-0.0012
Date to Screening Level	3/19/2009

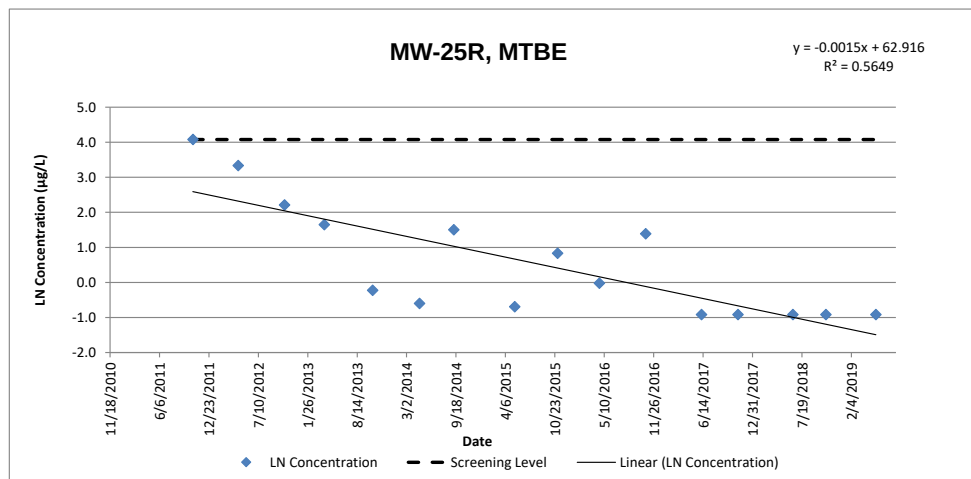
Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-25R
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/19/2011	59	4.08
4/19/2012	28	3.33
10/24/2012	9.1	2.21
4/3/2013	5.2	1.65
10/15/2013	0.8	-0.22
4/23/2014	0.55	-0.60
9/9/2014	4.5	1.50
5/13/2015	0.50	-0.69
11/3/2015	2.30	0.83
4/20/2016	0.98	-0.02
10/24/2016	4.00	1.39
6/7/2017	0.40	-0.92
11/2/2017	0.40	-0.92
6/12/2018	0.40	-0.92
10/24/2018	0.40	-0.92
5/14/2019	0.40	-0.92



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

	ND taken at reporting limit/reported value
	Qualified data converted to reported value

Data quality	
Total # of data points used in regression	16
# of nondetects	7
% of data as detects	56

Less than 75% data above reporting limits.

Results		
Coefficient of Determination (R^2) =	0.5649	
p-Value =	2.40E-04	
Attenuation Rate in Groundwater (K) =	0.0015	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0008	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	4.69E+02	days

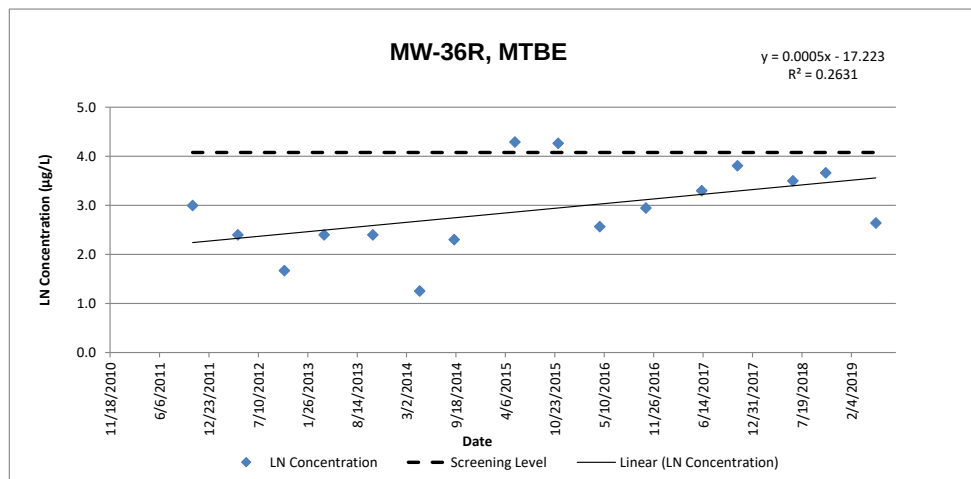
Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	62.916
Slope	-0.0015
Date to Screening Level	1/15/2009

Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent
MW-36R
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/18/2011	20	3.00
4/18/2012	11	2.40
10/23/2012	5.3	1.67
4/2/2013	11	2.40
10/16/2013	11	2.40
4/24/2014	3.5	1.25
9/10/2014	10	2.30
5/14/2015	73	4.29
11/5/2015	71	4.26
4/21/2016	13	2.56
10/25/2016	19	2.94
6/8/2017	27	3.30
10/31/2017	45	3.81
6/12/2018	33	3.50
10/23/2018	39	3.66
5/14/2019	14	2.64


Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

ND taken at reporting limit/reported value
Qualified data converted to reported value

Data quality	
Total # of data points used in regression	16
# of nondetects	0
% of data as detects	100

Results		
Coefficient of Determination (R^2) =	0.2357	
p-Value =	5.66E-02	
Attenuation Rate in Groundwater (K) =	-0.0005	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	-0.0010	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	NA	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	-17.223
Slope	0.0005
Date to Screening Level	NA

Abbreviations and Notes

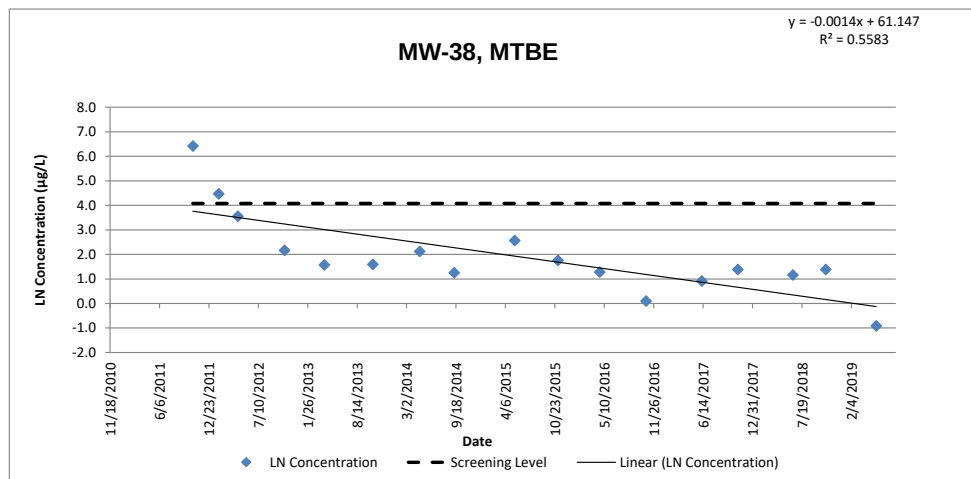
ug/l = micrograms per liter

LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-38
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/19/2011	610	6.41
1/31/2012	87	4.47
4/18/2012	35	3.56
10/24/2012	8.7	2.16
4/3/2013	4.8	1.57
10/16/2013	4.9	1.59
4/24/2014	8.3	2.12
9/10/2014	3.5	1.25
5/13/2015	13	2.56
11/4/2015	5.8	1.76
4/21/2016	3.6	1.28
10/26/2016	1.1	0.10
6/9/2017	2.5	0.92
11/1/2017	4.0	1.39
6/12/2018	3.2	1.16
10/23/2018	4.0	1.39
5/15/2019	0.4	-0.92



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

ND taken at reporting limit/reported value
Qualified data converted to reported value

Data quality	
Total # of data points used in regression	17
# of nondetects	2
% of data as detects	88

Results		
Coefficient of Determination (R^2) =	0.5857	
p-Value =	3.43E-04	
Attenuation Rate in Groundwater (K) =	0.0014	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0008	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	4.93E+02	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	61.147
Slope	-0.0014
Date to Screening Level	3/6/2011

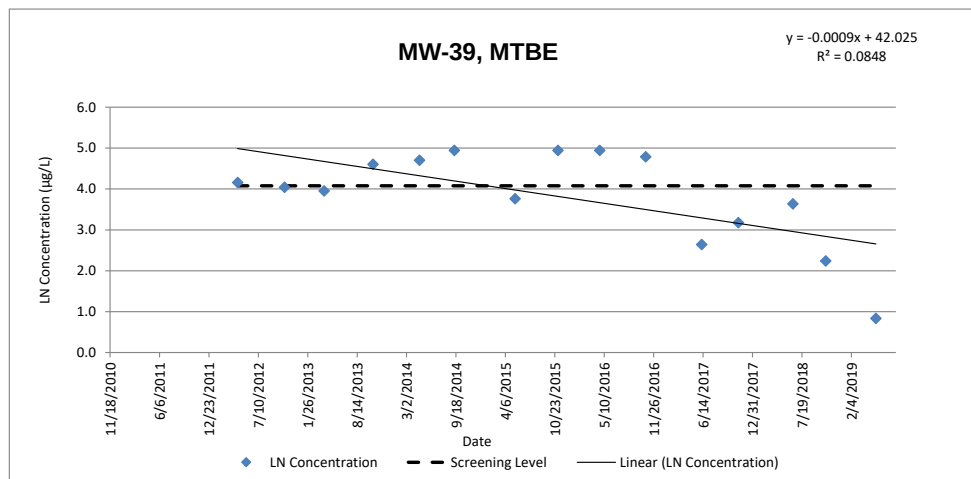
Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-39
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
4/17/2012	64	4.16
10/24/2012	57	4.04
4/2/2013	52	3.95
10/17/2013	100	4.61
4/23/2014	110	4.70
9/11/2014	140	4.94
5/15/2015	43	3.76
11/4/2015	140	4.94
4/21/2016	140	4.94
10/24/2016	120	4.79
6/8/2017	14	2.64
11/3/2017	24	3.18
6/12/2018	38	3.64
10/23/2018	9.4	2.24
5/14/2019	2.3	0.83



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

ND taken at reporting limit/reported value
Qualified data converted to reported value

Data quality	
Total # of data points used in regression	15
# of nondetects	0
% of data as detects	100

Results		
Coefficient of Determination (R^2) =	0.4021	
p-Value =	1.11E-02	
Attenuation Rate in Groundwater (K) =	0.0009	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0002	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	7.67E+02	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	42.025
Slope	-0.0009
Date to Screening Level	1/21/2015

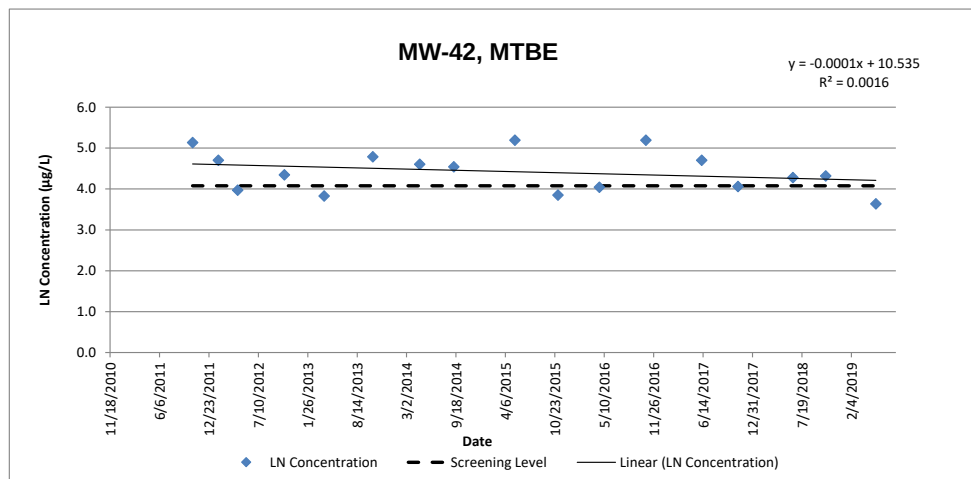
Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-42
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/18/2011	170	5.14
1/30/2012	110	4.70
4/17/2012	53	3.97
10/23/2012	77	4.34
4/2/2013	46	3.83
10/16/2013	120	4.79
4/24/2014	100	4.61
9/9/2014	94	4.54
5/14/2015	180	5.19
11/4/2015	47	3.85
4/20/2016	57	4.04
10/25/2016	180.00	5.19
6/8/2017	110.00	4.70
11/2/2017	58	4.06
6/12/2018	72	4.28
10/23/2018	75	4.32
5/14/2019	38	3.64



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

ND taken at reporting limit/reported value
Qualified data converted to reported value

Data quality	
Total # of data points used in regression	17
# of nondetects	0
% of data as detects	100

Results		
Coefficient of Determination (R^2) =	0.0722	
p-Value =	2.97E-01	
Attenuation Rate in Groundwater (K) =	0.0001	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	-0.0001	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	NA	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	10.535
Slope	-0.0001
Date to Screening Level	NA

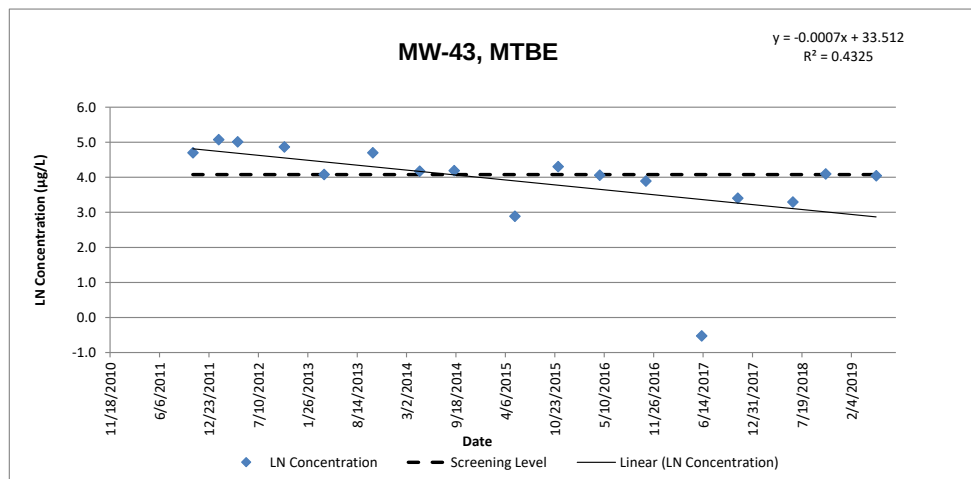
Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-43
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/19/2011	110	4.70
1/31/2012	160	5.08
4/17/2012	150	5.01
10/23/2012	130	4.87
4/2/2013	59	4.08
10/16/2013	110	4.70
4/24/2014	65	4.17
9/10/2014	66	4.19
5/14/2015	18	2.89
11/5/2015	74	4.30
4/21/2016	58	4.06
10/25/2016	49	3.89
6/8/2017	0.59	-0.53
11/1/2017	30	3.40
6/12/2018	27	3.30
10/23/2018	60	4.09
5/15/2019	57	4.04



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

ND taken at reporting limit/reported value
Qualified data converted to reported value

Data quality	
Total # of data points used in regression	17
# of nondetects	0
% of data as detects	100

Results		
Coefficient of Determination (R^2) =	0.2460	
p-Value =	4.29E-02	
Attenuation Rate in Groundwater (K) =	0.0007	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0000	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	9.86E+02	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	33.512
Slope	-0.0007
Date to Screening Level	8/31/2014

Abbreviations and Notes

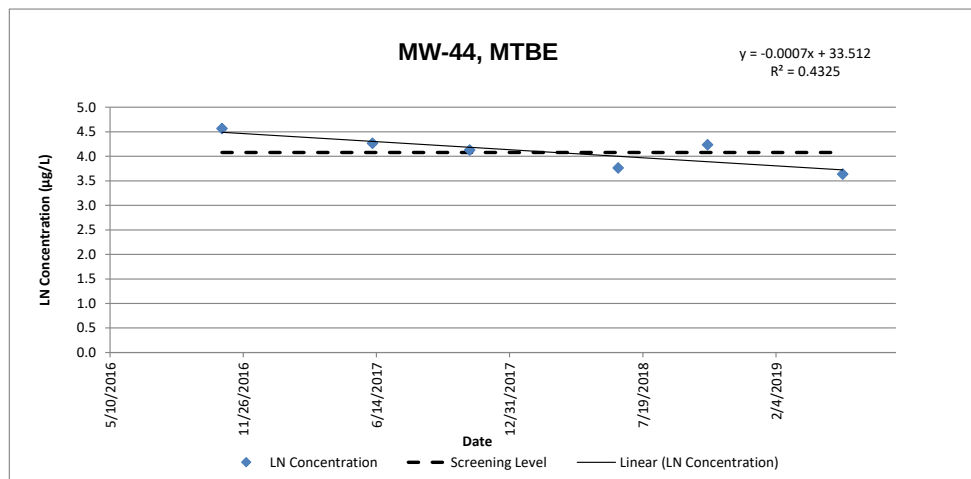
ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information

Sample Location
Constituent

MW-44
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/25/2016	96	4.56
6/8/2017	71	4.26
11/1/2017	62	4.13
6/12/2018	43	3.76
10/24/2018	69	4.23
5/15/2019	38	3.64



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

ND taken at reporting limit/reported value
Qualified data converted to reported value

Data quality	
Total # of data points used in regression	6
# of nondetects	0
% of data as detects	100

Results		
Coefficient of Determination (R^2) =	0.6720	
p-Value =	4.58E-02	
Attenuation Rate in Groundwater (K) =	0.0008	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0000	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	8.43E+02	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	39.568
Slope	-0.0008
Date to Screening Level	3/9/2018

Abbreviations and Notes

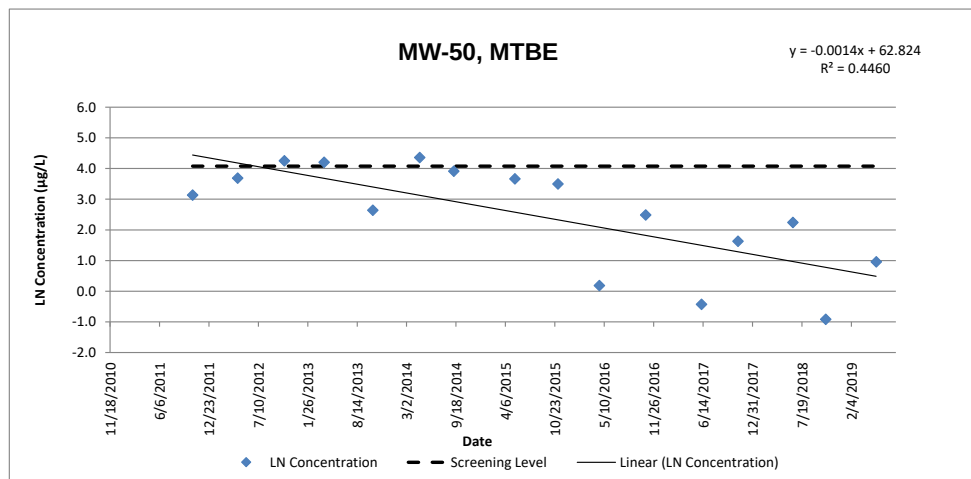
ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information

Sample Location
Constituent

MW-50
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/18/2011	23	3.14
4/17/2012	40	3.69
10/23/2012	70	4.25
4/2/2013	67	4.20
10/16/2013	14	2.64
4/24/2014	78	4.36
9/9/2014	50	3.91
5/14/2015	39	3.66
11/4/2015	33	3.50
4/20/2016	1.2	0.18
10/24/2016	12	2.48
6/7/2017	0.65	-0.43
11/2/2017	5.10	1.63
6/12/2018	9.40	2.24
10/23/2018	0.40	-0.92
5/15/2019	2.6	0.96


Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

ND taken at reporting limit/reported value
Qualified data converted to reported value

Data quality

Total # of data points used in regression	16
# of nondetects	1
% of data as detects	94

Results

Coefficient of Determination (R^2) =	0.5372	
p-Value =	1.24E-03	
Attenuation Rate in Groundwater (K) =	0.0014	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0007	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	4.85E+02	days

Date Screening Level Reached

Screening Level	59
LN Screening Level	4.1
Intercept	62.824
Slope	-0.0014
Date to Screening Level	6/28/2012

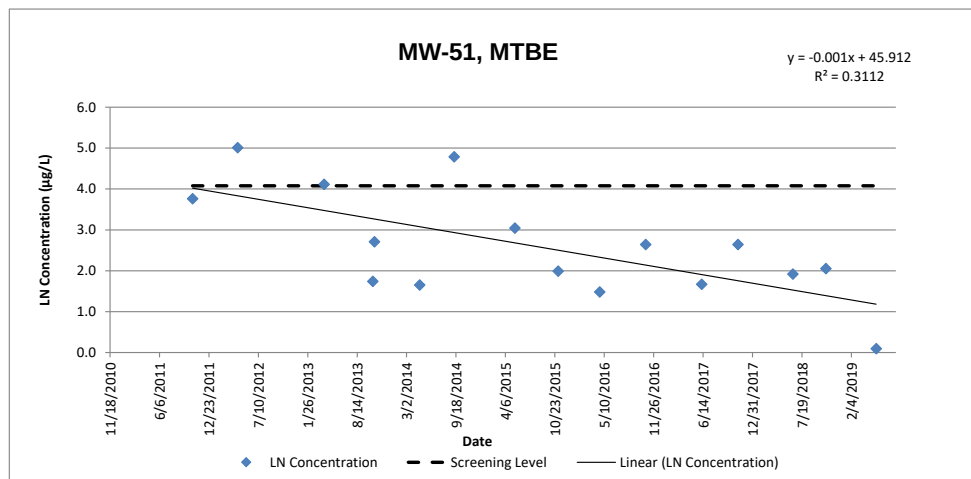
Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-51
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/18/2011	43	3.76
4/17/2012	150	5.01
10/23/2013	15	2.71
4/2/2013	61	4.11
10/16/2013	5.7	1.74
4/24/2014	5.2	1.65
9/10/2014	120	4.79
5/14/2015	21	3.04
11/5/2015	7.3	1.99
4/21/2016	4.4	1.48
10/24/2016	14	2.64
6/8/2017	5.3	1.67
11/2/2017	14.0	2.64
6/12/2018	6.8	1.92
10/24/2018	7.8	2.05
5/15/2019	1.1	0.10



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

	ND taken at reporting limit/reported value
	Qualified data converted to reported value

Data quality	
Total # of data points used in regression	16
# of nondetects	0
% of data as detects	100

Results		
Coefficient of Determination (R^2) =	0.4547	
p-Value =	4.17E-03	
Attenuation Rate in Groundwater (K) =	0.0010	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0004	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	6.75E+02	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	45.912
Slope	-0.0010
Date to Screening Level	8/22/2011

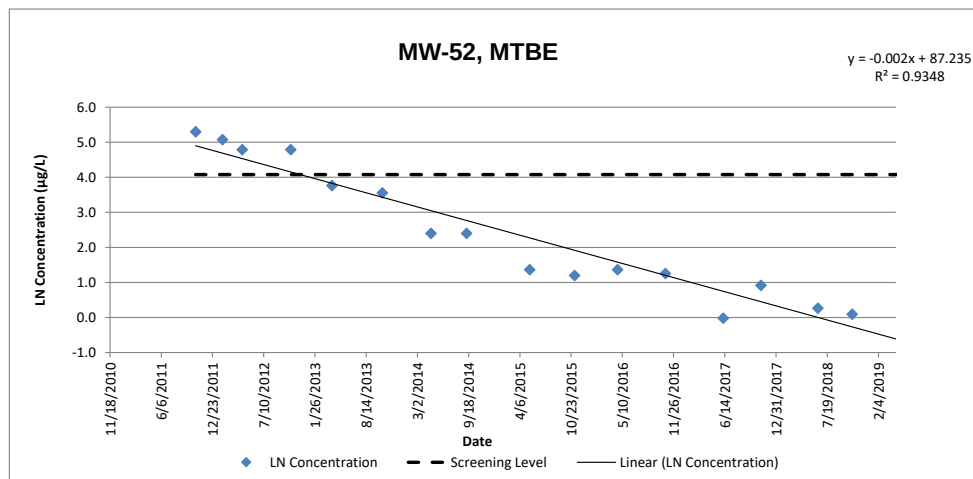
Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-52
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/18/2011	200	5.30
1/31/2012	160	5.08
4/17/2012	120	4.79
10/23/2012	120	4.79
4/2/2013	43	3.76
10/16/2013	35	3.56
4/24/2014	11	2.40
9/10/2014	11	2.40
5/14/2015	3.9	1.36
11/5/2015	3.3	1.19
4/21/2016	3.9	1.36
10/25/2016	3.5	1.25
6/8/2017	0.98	-0.02
11/2/2017	2.50	0.92
6/12/2018	1.30	0.26
10/24/2018	1.10	0.10
5/14/2019	1.10	0.10



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

ND taken at reporting limit/reported value
Qualified data converted to reported value

Data quality	
Total # of data points used in regression	17
# of nondetects	0
% of data as detects	100

Results		
Coefficient of Determination (R^2) =	0.9250	
p-Value =	7.69E-10	
Attenuation Rate in Groundwater (K) =	0.0020	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0017	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	3.44E+02	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	87.235
Slope	-0.0020
Date to Screening Level	11/29/2012

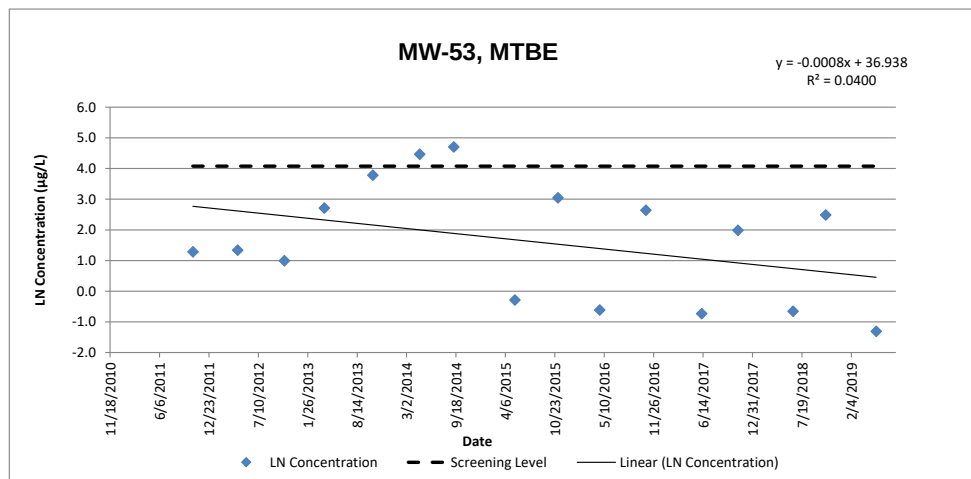
Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-53
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/19/2011	3.6	1.28
4/17/2012	3.8	1.34
10/23/2012	2.7	0.99
4/3/2013	15	2.71
10/16/2013	44	3.78
4/24/2014	87	4.47
9/9/2014	110	4.70
5/14/2015	0.75	-0.29
11/4/2015	21	3.04
4/21/2016	0.54	-0.62
10/25/2016	14	2.64
6/8/2017	0.48	-0.73
11/2/2017	7.30	1.99
6/13/2018	0.52	-0.65
10/23/2018	12.00	2.48
5/15/2019	0.27	-1.31



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

ND taken at reporting limit/reported value
Qualified data converted to reported value

Data quality	
Total # of data points used in regression	16
# of nondetects	0
% of data as detects	100

Results		
Coefficient of Determination (R^2) =	0.1461	
p-Value =	1.44E-01	
Attenuation Rate in Groundwater (K) =	0.0008	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	-0.0003	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	NA	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	36.938
Slope	-0.0008
Date to Screening Level	NA

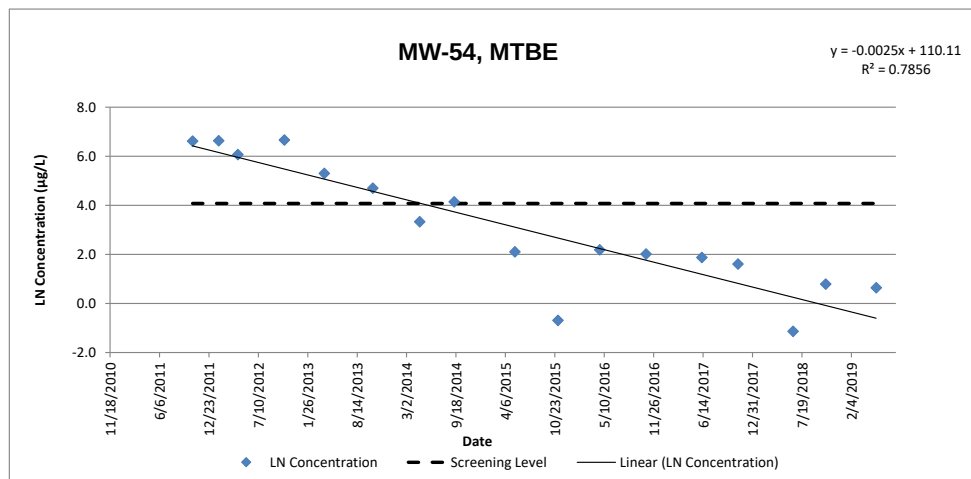
Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-54
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/18/2011	750	6.62
1/31/2012	760	6.63
4/18/2012	430	6.06
10/23/2012	780	6.66
4/3/2013	200	5.30
10/16/2013	110	4.70
4/24/2014	28	3.33
9/10/2014	63	4.14
5/14/2015	8.2	2.10
11/4/2015	0.50	-0.69
4/21/2016	8.9	2.19
10/26/2016	7.5	2.01
6/9/2017	6.5	1.87
11/2/2017	5.0	1.61
6/13/2018	0.3	-1.14
10/23/2018	2.2	0.79
5/15/2019	1.9	0.64



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

ND taken at reporting limit/reported value
Qualified data converted to reported value

Data quality	
Total # of data points used in regression	17
# of nondetects	1
% of data as detects	94

Results		
Coefficient of Determination (R^2) =	0.8083	
p-Value =	9.27E-07	
Attenuation Rate in Groundwater (K) =	0.0025	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0019	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	2.73E+02	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	110.112
Slope	-0.0025
Date to Screening Level	4/28/2014

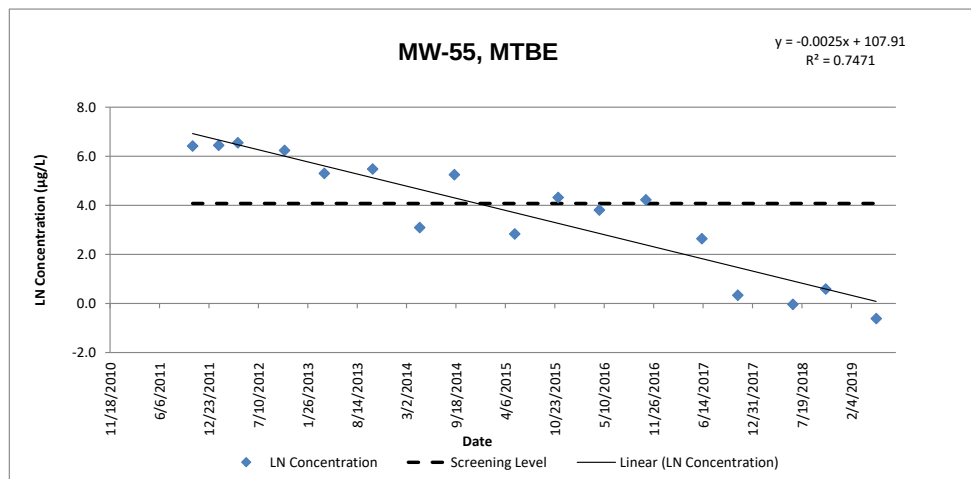
Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-55
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/18/2011	610	6.41
1/31/2012	630	6.45
4/18/2012	700	6.55
10/24/2012	510	6.23
4/3/2013	200	5.30
10/15/2013	240	5.48
4/24/2014	22	3.09
9/11/2014	190	5.25
5/13/2015	17	2.83
11/5/2015	75	4.32
4/20/2016	45	3.81
10/25/2016	68	4.22
6/9/2017	14	2.64
11/1/2017	1.4	0.34
6/12/2018	1.0	-0.04
10/23/2018	1.8	0.59
5/15/2019	0.5	-0.62



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

	ND taken at reporting limit/reported value
	Qualified data converted to reported value

Data quality	
Total # of data points used in regression	17
# of nondetects	0
% of data as detects	100

Results		
Coefficient of Determination (R^2) =	0.8578	
p-Value =	9.60E-08	
Attenuation Rate in Groundwater (K) =	0.0025	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0019	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	2.80E+02	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	107.911
Slope	-0.0025
Date to Screening Level	12/12/2014

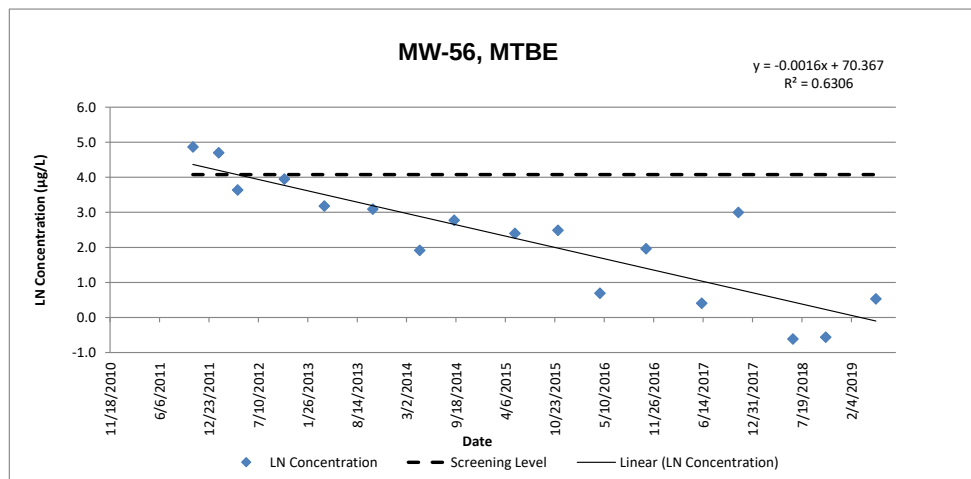
Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-56
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
10/19/2011	130	4.87
1/31/2012	110	4.70
4/17/2012	38	3.64
10/23/2012	52	3.95
4/3/2013	24	3.18
10/16/2013	22	3.09
4/24/2014	6.8	1.92
9/10/2014	16	2.77
5/14/2015	11	2.40
11/4/2015	12	2.48
4/22/2016	2	0.69
10/26/2016	7.1	1.96
6/8/2017	1.5	0.41
11/3/2017	20.0	3.00
6/12/2018	0.5	-0.62
10/23/2018	0.57	-0.56
5/14/2019	1.70	0.53



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 ug/L. Prior to 2/2016 the RL was Tap Water MCL (14 ug/L)

	ND taken at reporting limit/reported value
	Qualified data converted to reported value

Data quality	
Total # of data points used in regression	17
# of nondetects	0
% of data as detects	100

Results		
Coefficient of Determination (R^2) =	0.7621	
p-Value =	4.80E-06	
Attenuation Rate in Groundwater (K) =	0.0016	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0011	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	4.29E+02	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	70.367
Slope	-0.0016
Date to Screening Level	4/15/2012

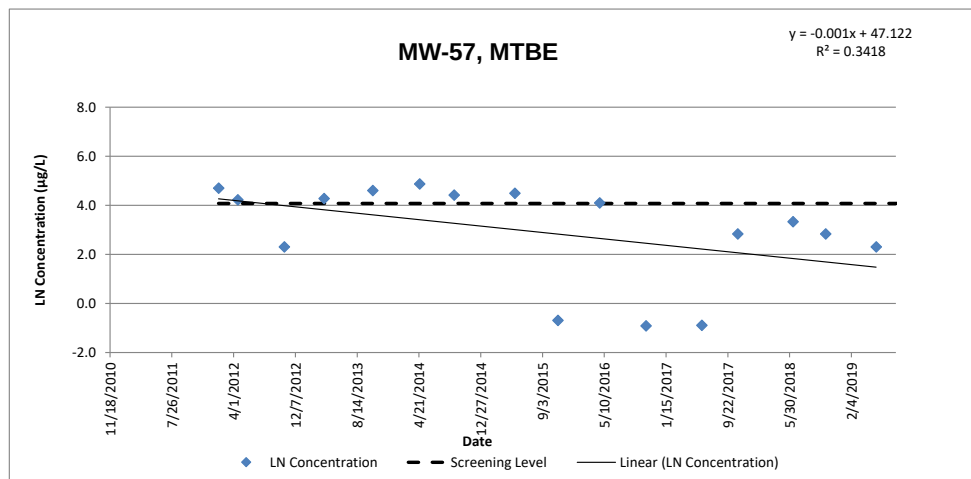
Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location
Constituent

MW-57
MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
1/31/2012	110	4.70
4/18/2012	68	4.22
10/23/2012	10	2.30
4/2/2013	72	4.28
10/16/2013	100	4.61
4/24/2014	130	4.87
9/10/2014	83	4.42
5/14/2015	89	4.49
11/4/2015	0.50	-0.69
4/21/2016	60	4.09
10/26/2016	0.40	-0.92
6/9/2017	0.41	-0.89
11/1/2017	17.00	2.83
6/13/2018	28.00	3.33
10/23/2018	17.00	2.83
5/15/2019	10.00	2.30



Notes:

During February 2016, the GAEPD approved the Site-specific remediation goal for MTBE 59 µg/L. Prior to 2/2016 the RL was Tap Water MCL (14 µg/L)

	ND taken at reporting limit/reported value
	Qualified data converted to reported value

Data quality	
Total # of data points used in regression	16
# of nondetects	2
% of data as detects	88

Results		
Coefficient of Determination (R^2) =	0.1993	
p-Value =	8.30E-02	
Attenuation Rate in Groundwater (K) =	0.0010	days ⁻¹
Attenuation Rate in Groundwater at 90% confidence (K) =	-0.0002	days ⁻¹
Chemical Half Life in Groundwater ($t_{1/2}$) =	6.62E+02	days

Date Screening Level Reached	
Screening Level	59
LN Screening Level	4.1
Intercept	47.122
Slope	-0.0010
Date to Screening Level	7/28/2012

Abbreviations and Notes

ug/l = micrograms per liter
LN = Natural Logarithm