F I N A L

Decision Document
Fort Custer Veterans Affairs Area Post Cemetery Dump
FUDS E05MI0006
Augusta, Michigan

Prepared for

U.S. Army Corps of Engineers
Louisville District
600 Dr. Martin Luther King Jr. Place
Louisville, Kentucky 40202-2232
Contract No. W912BV-15-D-0015 – Delivery Order CY01
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Executive Summary

The former Fort Custer Post Cemetery Dump Site (Site), which encompassed approximately 10.5 acres in Augusta, Kalamazoo County, Michigan, is part of the former Fort Custer, on property currently under the custody and control of the U.S. Department of Veterans Affairs (VA). U.S. Army environmental investigations and remediation at the former Fort Custer are authorized under the Defense Environmental Response Program (DERP), 10 U.S.C. §§ 2701, et seq., administered as part of the FUDS program under Department of Defense (DoD) Manual 4715.20 (DERP Management; 2018), and Engineering Regulation (ER) 200-3-1 (Formerly Used Defense Sites (FUDS) Program Policy; 2004), and are carried out in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. §§ 9601, et seq., as amended by the Superfund Amendments and Reauthorization Act (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The FUDS program was established under DERP and addresses releases or threatened releases attributable to DoD activities on FUDS properties. FUDS properties are properties that were owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of the Secretary of Defense that were transferred from DOD control prior to 17 October 1986. The Site was owned by the United States under the jurisdiction of the Secretary of the Department of Defense (DoD) during disposal activities. The dump was in use from approximately 1940 through the closure of the fort in 1968, but there are no available historical records providing information on the disposal history and contents at the dump area. The Site was transferred from DoD control prior to 17 October 1986 and meets the definition of a FUDS property. The U.S. Army has been designated as the Executive Agent on behalf of DoD for execution of environmental restoration requirements at eligible FUDS properties. The Secretary of the Army further delegated responsibility for FUDS program execution to the U.S. Army Corps of Engineers (USACE). The USACE Louisville District is responsible for the former Post Cemetery Dump Site and has determined that remedial action at the Site is warranted to protect human health and the environment.

The U.S. Environmental Protection Agency (EPA) established source containment as the presumptive remedy for municipal landfill sites regulated under CERCLA in its *Presumptive Remedy for CERCLA Municipal Landfill Sites* (EPA, 1993). In accordance with EPA's 1996 directive *Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills* (1996), EPA expects that the containment presumptive remedy will be applied to military landfills in situations where landfill contents meet the municipal-type waste definition and excavation of contents is not practicable. Section 300.430(a)(1)(iii)(B) of the NCP contains the expectation that engineering controls, such as containment, will be used for waste that poses a relatively low long-term threat where treatment is impracticable. The NCP identifies municipal landfills as a type of site where treatment of the waste is impracticable because of the size and heterogeneity of the contents. Use of the containment presumptive remedy obviates the need to characterize the nature and extent of contamination or the content of the landfill. However, characterization and evaluation of risks that could result if chemicals migrate from the landfill is still required for all potential exposure pathways outside the waste limits. The containment presumptive remedy is expected to ensure the consistent selection of remedial actions and reduce the cost and time required to clean up sites. Results of the previous investigations, in conjunction with application of the presumptive remedy approach, were used to develop a streamlined approach to characterizing surface water conditions in the wetlands area and potential groundwater impacts downgradient of the waste limits, evaluate potential ecological and human health risks, and provide sufficient data to evaluate remedial alternatives rather than characterizing the full nature and extent of all contamination in the landfill.

The size of the dump is approximately 95,315 cubic yards (depths up to 25 feet) and would not be considered practical for excavation in accordance with the EPA presumptive remedy guidance (EPA, 1996). Waste materials observed at the Site include municipal-type waste consistent with site-related activities including slag, glass, scrap metal, sand/gravel/rock, cinders, demolition debris, ash, porcelain dishware, wood/sticks and plant debris, un-combusted coal, radio tubes, cloth/clothing, plastic, paper, and other unidentified substances/items. Based on the size of the landfill, the presence of municipal and non-military wastes, distribution and nature of the wastes, site

conditions are similar to conditions encountered at CERCLA municipal landfills. EPA's 1996 presumptive remedy directive for military landfills stipulates that the containment presumptive remedy application to municipal landfills as described in its 1993 guidance is expected to be applied to military landfills in situations similar to those at the Site. Additionally, because the continued land use of the property as a National Cemetery is anticipated and the VA's preference is to keep the wetland and forested portion of the Site as a natural green space for the facility, the containment presumptive remedy application to municipal landfills is considered appropriate for the Site.

The RI, including the human health risk assessment (HHRA) indicated that there are no impacts to groundwater downgradient of the Site. Data indicate that groundwater contamination is confined to groundwater and leachate beneath the Site dump and has not migrated down gradient. The HHRA also identified no unacceptable risks in surface soil/waste, sediment/waste, and surface water for receptors assessed based on the presumptive remedy approach. No adverse ecological effects were identified in the Ecological Risk Assessment (ERA) with respect to biota in the upland forested area and the wetland area within the Site. Buried waste in surface soil/waste, subsurface soil/waste, and sediment/waste remains present at the Site.[1] Site-related chemicals of potential concern (COPCs) were detected in groundwater/leachate and subsurface soil/waste within the limits of the waste at concentrations greater than risk-based screening criteria. Potential risks associated with subsurface soil/waste, groundwater/leachate, and Asbestos Containing Material (ACM) within the footprint of the waste were not quantitatively evaluated per the presumptive remedy guidance. The site related COPCs present in the groundwater/leachate, although not completely characterized, present low-level threat for potential exposure scenarios and migration pathways within the landfill. Although the waste is currently considered contained under the presumptive remedy approach, further action is warranted for the Site to ensure the continued effectiveness of containment and protection of human health and the environment.

The preferred alternative identified in the Proposed Plan was Alternative 2 which as containment presumption remedy with existing soil cover, Land Use Controls (LUCs), with institutional and educational controls on federal land, and long-term monitoring (LTM). However, prior to the date of this Decision Document, the VA, as the federal land management agency responsible for the administration and management of the federal property where the site is located, placed an institutional control restricting ground disturbance and prohibiting groundwater well installation within the footprint of the landfill. The existence of this institutional control, while not considered part of the final selected remedy being adopted or implemented by this decision document, was considered, and relied upon in making the determination that the selected remedy is protective of human health and the environment. Therefore, because the institutional controls contemplated by the preferred alternative are currently in effect at the property, the selected alternative has been modified to: containment presumptive remedy with existing soil cover, LUCs in the form of educational controls and LTM.

Remedial action comprised of containment presumptive remedy with existing soil cover, LUCs with LTM has been selected to protect cemetery workers and visitors from direct contact, ingestion, and inhalation exposure to subsurface soil/waste and groundwater/leachate. The U.S. Army, in coordination with the Michigan Department of Environment, Great Lakes, and Energy (EGLE), developed the Site selected remedy (Alternative 2) and determined that it will be protective of human health and the environment, comply with applicable or relevant and appropriate requirements (ARARs), and best meet the nine evaluation criteria specified in Section 300.430(e)(9) of the NCP. The VA, as the federal land management agency responsible for the administration and management of the federal property where the site is located, concurs with the final remedy selected by USACE. Environmental remediation will be performed by the U.S. Army. Statutory review will be conducted every 5 years after initiation of the remedial action to ensure the remedy remains protective of human health and the environment.

[1] There are areas of surface soil, subsurface soil, and sediment and areas of intermingled surface waste, subsurface waste, and areas of waste in sediment.

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Acronyms and Abbreviations

ACM	asbestos-containing material
AMSL	above mean sea level
ARAR	applicable or relevant and appropriate requirement
AR	administrative record
BGS	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	*Code of Federal Regulations*
COC	chemical of concern
COPC	chemical of potential concern
DERP	Defense Environmental Response Program
DoD	Department of Defense
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EPA	U.S. Environmental Protection Agency
ERA	ecological risk assessment
FCNC	Fort Custer National Cemetery
FFS	Focused Feasibility Study
ft/ft	foot (feet) per foot
FUDS	Formerly Used Defense Sites
HHRA	human health risk assessment
LTM	Long Term Monitoring
LUC	land use control
LUCIP	land use control implementation plan
MOU	Memorandum of Understanding
MWH	Montgomery Watson Harza
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
O&M	operation and maintenance
Parsons	Parsons Engineering Science, Inc.
PE	Professional Environmental Engineers, Inc.
PPE	personal protective equipment
RAO	remedial action objective
RI	remedial investigation
SARA	Superfund Amendments and Reauthorization Act of 1986
SI	Site Investigation

Site	former Fort Custer Old Post Cemetery Dump
SVOC	semi-volatile organic compound
USACE	U.S. Army Corps of Engineers
USC	*United States Code*
USGS	U.S. Geological Survey
VA	U.S. Department of Veterans Affairs
VOC	volatile organic compound
WWII	World War II

SECTION 1

Declaration

1.1 Site Name and Location

The former Fort Custer Post Cemetery Dump (Site) is located within the Fort Custer National Cemetery (FCNC) in Augusta, Kalamazoo County, Michigan (Figure 1-1).

1.2 Statement of Basis and Purpose

This Decision Document declares that further action is warranted to protect human health and the environment from actual or threatened releases of hazardous substances, pollutants, or contaminants into the environment from the Site. The Site was owned by the United States under the jurisdiction of the Secretary of the Department of Defense (DoD). The Site was transferred from DoD control prior to 17 October 1986 and is a Formerly Used Defense Site (FUDS). As defined in Engineering Regulation 200-3-1, a FUDS is a facility or site (property) that was under the jurisdiction of the Secretary of Defense and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination by hazardous substances. By the Department of Defense Environmental Restoration Program (DERP) policy, the FUDS program is limited to those real properties that were transferred from DoD control prior to October 17, 1986. The property that includes the Site was acquired by the U.S. in 1917. The former Fort Custer installation was officially closed in 1968 and the parcel containing the project site was transferred from DoD to the Veterans Affairs Administration, now known as the U.S. Department of Veterans Affairs (VA), on June 2, 1980. Based on the property being owned by the United States under DoD jurisdiction and subsequently disposed prior to October 17, 1986, the Site is FUDS eligible.

The U.S. Army has been designated as the Executive Agent on behalf of DoD for execution of an environmental restoration program at FUDS eligible properties; this program is authorized under Defense Environmental Response Program (DERP) and implemented in accordance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

The U.S. Army Corps of Engineers (USACE) Louisville District is the lead agency for executing the FUDS program in Michigan for the DoD and works in coordination with the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

This Decision Document presents the selected remedy for the former Fort Custer Post Cemetery Dump Site, located in Augusta, Kalamazoo County, Michigan, which was chosen in accordance with CERCLA, as amended by SARA, and the NCP. This decision is based on the Administrative Record (AR) for the Site located at https://www.lrl.usace.army.mil/fortcuster/ and the public Information Repository (IR) located at the McKay-Dole Library in Augusta, Michigan. Information not specifically summarized in this Decision Document or its references, but contained in the AR, has been considered and is relevant to the selection of the remedy at the Site. The Michigan Department of Environment, Great Lakes, and Energy (EGLE), and VA concur with the selected remedy.

1.3 Assessment of the Site

In September 1993, the EPA adopted the *Presumptive Remedy for CERCLA Municipal Landfill Sites* which established source containment as the presumptive remedy for municipal landfill sites regulated under the CERCLA in accordance with CFR Title 40 §300.430(a)(1)(iii)(B) for waste that poses low long-term threat or where treatment is impracticable. EPA's 1996 presumptive remedy directive *Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills* states that the containment presumptive remedy will be applied to military landfills in situations where landfill contents meet the municipal-type waste definition and excavation of contents is not practicable. Use of the containment presumptive remedy for municipal landfills obviates the need

to characterize the nature and extent of contamination or the contents of the landfill. However, characterization and evaluation of risks that could result if chemicals migrate from the landfill is still required for all potential exposure pathways outside the waste limits. The RI, in conjunction with application of the containment presumptive remedy approach, identified potential risks associated with subsurface soil/waste, groundwater/leachate, and asbestos-containing material (ACM), all within the footprint of the waste. The response action selected in this Decision Document is necessary to protect public health or welfare or the environment from potential risks of actual or threatened releases of hazardous substances or pollutants or contaminants at the Site.

1.4 Description of the Former Post Cemetery Dump Site Selected Remedy

The established remedial action objective (RAO) for the Site is:

- Protect human receptors from direct contact, ingestion, and inhalation exposure to subsurface soil/waste, groundwater/leachate, and surface water within the footprint of the waste by preventing exposure pathways.

To achieve the RAO, the remedy defined as Alternative 2 in the Focused Feasibility Study (FFS) (CH2M, 2020a) and identified as the preferred alternative in the Proposed Plan (CH2M, 2020b) for addressing potential risks associated with subsurface soil/waste, groundwater/leachate underneath the waste, surface water, and ACM involved the following:

- Implementation of LUCs to restrict access to waste that remains in place and potential waste degradation products.
    - Institutional Controls: (i) prohibiting or restricting ground disturbance; (ii) prohibiting the installation of irrigation and municipal wells within the limits of the waste; (iii) prohibiting the relocation of excavated soil/waste from within the footprint of the waste to anywhere else on the FCNC property.
    - Educational controls, including installation of warning signs to visitors and training materials for VA employees; and
- Long-term monitoring (LTM) which includes the following:
    - Conduct groundwater monitoring, with provisions for decreased or suspended monitoring, as appropriate, to assess potential migration of groundwater/leachate beyond the monitoring points established in the RI.
    - Conduct surface water monitoring from the pond within the limits of waste, with provisions for decreased or suspended monitoring, as appropriate, to assess potential migration of groundwater/leachate to surface water of the pond within the waste limits.

Prior to the date of this Decision Document, the VA adopted many of the LUCs identified in the preferred alternative. On March 2, 2021, the VA provided written confirmation that its amended facility Master Plan (Attachment A) was adopted, including the following administrative LUCs:

- For the area within the waste footprint which VA intends to remain undisturbed (defined as Subarea 1), access is restricted to VA personnel and contractors only, and all ground disturbances, including groundwater well installation, is prohibited.
- For the area within the waste footprint in which VA may need to perform certain ground disturbance activities, such as road or utility line repairs or installation (defined as Subarea 2):

- VA will prohibit groundwater well installation or the relocation of any excavated soil/waste from within the footprint of the waste to anywhere else on the FCNC property; and
- USACE will notify VA of the COPCs which may be encountered and provide training materials, best practices and recommendations regarding personal protective equipment (PPE) for personnel and contractors engaged in surface disturbance activities In the event the VA engages in ground disturbance activities and hazardous substances and ACM are encountered, it shall be the responsibility of the VA to protect workers, properly handle, and dispose of all such materials in accordance with all applicable Federal, State, and local laws, statutes, and regulations.

The modified LUCs in the selected alternative adopted by this Decision Document will require an administrative interagency agreement between USACE and the VA to implement the remaining provisions of the LUCs. A Memorandum of Understanding (MOU) between USACE and VA was signed (Attachment A). This alternative also included education controls (signage and training) which are adopted as part of this selected remedy. The specific elements of these educational controls (for example design and placement of signage) will be identified through a Land Use Control Implementation Plan (LUCIP) following this Decision Document. USACE will procure and install signage and prepare and provide training materials (education controls).

VA has already implemented the administrative LUCs through the amended facility Master Plan. The institutional controls adopted by VA are considered supplemental to, although not a component of, the selected remedy, and will be reviewed by USACE during the Five-Year Reviews. VA will manage, monitor, and enforce the institutional controls. The proposed LUC boundary is shown in Figure 1-2, and the VA's amended facility Master Plan (Attachment A).

1.5 Statutory Determinations

Although the Site is currently contained, due to the low-level threat from the buried municipal-type waste, remedial action is warranted. Alternative 2, as amended as set forth in Section 2.15 of this Decision Document, is selected as the remedy because it offers the best overall value in terms of cost-effectively addressing potential risks to human health and ecological receptors. The selected remedy for the Site satisfies the NCP 40 CFR 300.430(e)(9) criteria and the statutory requirements of CERCLA §121(b) and EPA's presumptive remedy guidance. The selected remedy (Alternate 2) is cost-effective, uses permanent solutions, and there are no applicable or relevant and appropriate requirements (ARARs). The remedy does not employ treatment because the presumptive remedy for landfills is containment; therefore, it does not satisfy the statutory preference for treatment as a principal element of the remedy. In accordance with Presumptive Remedy guidance, treatment at the Site is impracticable because of the large volume and heterogeneous mixture of the waste. Furthermore, any groundwater/leachate impacts are limited to the waste extents and have not migrated downgradient, therefore treatment is not required to protect potential downgradient receptors.

In accordance with Section 121 of CERCLA, as amended, statutory review will be conducted every 5 years after initiation of the remedial action to ensure the remedy remains protective of human health and the environment.

1.6 Decision Document Certification Checklist

The following information is included in this Decision Document, Part 2: Decision Summary.

- Site characteristics and COCs (Section 2.6)
- Baseline risk represented by the COCs (Section 2.8)
- RAO established for COCs and the basis for these objectives (Section 2.9)
- Current and reasonably anticipated future land use assumptions used in the baseline risk assessment (Section 2.7)

- Potential land and groundwater use that will be available at the site as a result of the selected remedy (Section 2.7)
- Estimated capital, annual operation and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (Section 2.10)
- Key factor(s) that led to selecting the remedy (Section 2.14)

Additional information can be found in the AR file for the Site.

1.7 Authorizing Signatures

The Site was owned by the United States and under the jurisdiction of the Secretary of the DoD from 1917 to 1968. The Site was used by DoD as a dump site during this period, was transferred from DoD control prior to 17 October 1986; therefore, the Site meets the eligibility criteria for a FUDS.

This Decision Document presents the selected remedy defined as Alternative 2, as amended due to VA's adoption of certain elements of the LUC after the Proposed Plan and prior to this Decision Document, in the FFS (CH2M, 2020a) and identified as the preferred alternative in the Proposed Plan (CH2M, 2020b) for the Site, located in Augusta, Kalamazoo County, Michigan. The USACE is the lead agency for response action execution on behalf of the DoD under the DERP and has developed this Decision Document in coordination with EGLE and VA and consistent with CERCLA, as amended by SARA, and the NCP. The VA and EGLE letter of concurrence can be found in Attachment B.

The public was given an opportunity to review the selected remedy detailed in the proposed plan. The statutory review time ended 16 August 2020. One public comment was received and addressed during the public meeting. Two public comments were received outside of the public meeting and are addressed in this Decision Document. This Decision Document will be incorporated into the larger AR file for the Site, which is available for public review at https://www.lrl.usace.army.mil/fortcuster/ and at the McKay-Dole District Library located at 105 South Webster Street, Augusta, Michigan 49012. Likewise, it is available at the USACE, Louisville District, 600 Dr. Martin Luther King Jr. Place, Louisville, Kentucky.

This document, verifying that further action is necessary for the Site, is approved by the undersigned, pursuant to memorandum CEMP-CED, August 10, 2019, Subject: Re-delegation of Assignment of Mission Execution Functions Associated with Department of Defense Lead Agent Responsibilities for the FUDS Program.

Approved:

DURRETT.STEPHEN.G.1230591454 Digitally signed by DURRETT.STEPHEN.G.1230591454 Date: 2021.11.29 12:05:16 -05'00'

STEPHEN G. DURRETT
Regional Programs Director

Date

SECTION 2

Decision Summary

2.1 Name, Location, and Description

This Decision Document presents the selected remedy for the Site located in Augusta, Michigan. The Site is part of former Fort Custer and is located within the FCNC, approximately 6 miles west of Battle Creek and 20 miles east of Kalamazoo. The Site is approximately 1.5 miles east of Augusta, 1 mile west of the Kalamazoo/ Calhoun County line, less than 1 mile southeast of the Kalamazoo River, and approximately 0.5 mile north of Eagle Lake (Figure 1-1).

The U.S. Army established Fort Custer as a military reservation/training base in 1917. There are no available historical records providing information on the disposal history and contents at the dump area. A 2009 Preliminary Assessment (PA) report by Montgomery Watson Harza (MWH) states that the dump resulted from past DoD use, as evidenced by aerial photographs taken between 1938 and 1974, which show disturbance in this area and the wetland footprint decreasing in size due to presumed dumping activities. According to retired fire/security department personnel (Mr. William Weidlech; MWH, 2009) who worked at the fort from 1951 to 1965, the post used the wetland basin/ravine as a dump to dispose of refuse at the fort, including barrels and garbage from the mess halls. There is no evidence to suggest disposal of munitions at the Site.

As described in the Site Investigation (SI) report by Professional Environmental Engineers, Inc. (PE), two incinerators existed at the fort, as identified on 1950 Sanitary Sewer and Water Utility Maps (PE, 2016). Much of the material observed in the dump (slag, cinders, and melted glass/bottles) during clearing, trenching, drilling, and miscellaneous reconnaissance activities for the 1997 SI indicate that a large portion of the wastes were incinerated prior to disposal (Parsons Engineering Science, Inc. [Parsons], 1997). No munitions or munition components or debris have been observed at the Site.

Based on the information reviewed, the Site appears to have first been used as a dump in the early to mid-1940s, likely shortly after the camp was re-instated on a full-time basis to train troops for World War II (WWII). The use of this area as a dump continued throughout the rest of the 1940s, 1950s, and most of the 1960s (through 1967). However, the fort was permanently shut down in June 1968, and by 1974 the Site was overgrown and abandoned without any signs of significant dumping activities. Observations from field activities at the Site indicate that smaller/isolated, more recent dumping activities on top of the post cemetery dump (paper trash, tire, and plastic bottles) have occurred by unknown parties after 1968 but appear to be minor and do not involve CERCLA hazardous substances.

2.2 FUDS Program Summary

The Site was located on real property that was formerly owned by the U.S. government and under the jurisdiction of the DoD. Fort Custer was established by the U.S. Army as a military reservation/training base in 1917, near Battle Creek, Michigan. It consisted of 8,299.19 acres comprising 130 parcels of land, mainly small farms leased to the government by the local chamber of commerce as part of the military mobilization for World War I. In 1923, the U.S. Army transferred 675 acres of the camp to the Battle Creek VA; construction of the Battle Creek Veterans Hospital on this transferred property was completed in 1924. During WWII, the fort grew to 14,412.43 acres and in 1953 was declared inactive where it was used for Army and Marine training, leased for livestock grazing, as a Semi-Automatic Ground Environment Air Force Station, and was also used by the Michigan Department of Mental Health. The former Fort Custer installation was officially closed in 1968 and the parcel (554.73 acres) containing the project site was transferred from DoD to the VA on June 2, 1980 after the VA announced that Fort Custer had been chosen as the site for a National Cemetery. The VA currently has custody and control of the property for use as the FCNC.

The Fort Custer VA property (which includes the Site) was designated as DERP FUDS Property No. E05MI0006 in 1991; the former dump area is referred to as Area G (or Area of Interest G) within this FUDS property. A revised DERP FUDS Inventory Project Report was approved by the Department of Army, U.S. Army Engineer Division, Great Lakes and Ohio River, USACE authorizing the Hazardous, Toxic, and Radioactive Waste project Post Cemetery Dump E05MI000603.

USACE, with support from the VA and EGLE, has executed environmental site investigations for the property as execution agent for DoD as specified in the DERP and authorized by Title 10 of the U.S. Code Section 2701 et. seq. (10 U.S. Code (USC) 2701 et. seq.). The law authorizes the DoD to take remedial action at eligible FUDS properties. (10 USC 2710 (c)(1)(B)).

2.3 History and Enforcement Activities

There are no current or outstanding federal or state enforcement actions, lawsuits, or other pending actions related to contamination at the Site.

The Site was investigated for environmental impacts beginning in 1994. Information regarding site investigations is available in the following documents and summarized in Table 2-1:

- *Archives Search Report Findings, Fort Custer and Fort Custer Recreation Area, August, Michigan, Project Nos. E05MI00060 and E05MI001300* (USACE, 1994)
- *Site Investigation Report, Former Fort Custer Military Reservation, Augusta, Michigan* (Parsons, 1997)
- *Final Preliminary Assessment, Fort Custer, Augusta and Battle Creek Michigan, Property Nos. E05MI0006 and E05MI0013,* (USACE, 2016)
- *Final Site Inspection Report, Former Fort Custer Military Reservation, Former Cemetery Landfill, Battle Creek, Michigan* (CH2M, 2009)
- *Final Site Inspection Report, Fort Custer National Cemetery – Former Post Dump, Kalamazoo County, Michigan* (PE, 2016)
- *Final Remedial Investigation Report, Fort Custer National Cemetery – Former Post Dump, Kalamazoo County, Michigan* (CH2M, 2019)

2.3.1 Former Post Cemetery Dump Site Investigation Activities

Between 1994 and 2018, four field-related environmental investigations were performed at the Site, as presented in Table 2-1. These included three site investigations completed in 1997, 2010, and 2012, and an RI completed from 2016 to 2018. During these investigations, surface soil/waste, subsurface soil/waste, groundwater/leachate, surface water, and sediment/waste samples were collected at the Site. Groundwater samples also were collected from monitoring wells downgradient of the Site to assess potential migration beyond the limits of the waste. Investigation samples were analyzed for parameters that included volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls, dioxins/furans, and metals. These investigations also evaluated the potential presence of munitions and explosives of concern and provided visual characterization of the waste. Vertical and horizontal extent of the waste was defined as approximately 1,200 feet long (north to south) and 300 feet (north) to 640 feet (south) wide. ACM was identified at the Site in surface soil/waste, indicating the potential for additional ACM in the subsurface soil/waste.

Based on the size of the landfill, the presence of municipal and non-military wastes, distribution, and nature of the wastes, the containment presumptive remedy for municipal landfills was determined to be appropriate for the Site. Additional characterization of the landfill contents was not required; however, contamination beyond the limits of the landfill source was required to be characterized. Therefore, the Remedial Investigation (RI) employed a site-specific approach to site characterization downgradient of the waste rather than characterizing the nature and extent of all contamination in the landfill. The RI focused on characterizing surface water conditions in the

wetlands area and potential groundwater impacts downgradient of the waste limits. Field work for the RI was conducted from July 2016 through April 2018. Results of previous investigations were presented with the results of the RI fieldwork in the RI report (CH2M, 2019), which also includes human health and ecological risk assessment findings. A Focused Feasibility Study (FFS) was recommended in the RI (CH2M, 2019) to address the waste that remains in place at the Site. The RI also recommended that the FFS consider the presence of asbestos and owner preferences for natural green space within the facility and the anticipated continued land use as a National Cemetery in perpetuity.

2.4 Community Participation

The community relations activities conducted for the former Post Cemetery Dump Site are described below:

- An AR was prepared in December 2019 and has been maintained by USACE at the Louisville District office and at the Dole-McKay Library in Augusta, Michigan.
- The Proposed Plan was placed in the former Post Cemetery Dump Site AR on July 14, 2020.
- Public comments on the Proposed Plan were solicited through a notice placed in the Battle Creek Enquirer on June 15, 2020. A virtual public meeting was held on July 29, 2020. The Responsiveness Summary of this Decision Document notes that comments were received through the public meeting. One public comment was received during the public meeting and two public comments were received outside the public meeting.

2.5 Scope and Role of Remedial Action

USACE serves as DoD's executing agent for cleanup of FUDS properties nationwide. The USACE Louisville District is responsible for the environmental restoration program at the Site. In accordance with the environmental restoration process as prescribed by CERCLA, the USACE Louisville District has determined that remedial action is warranted at the Site. This determination is supported by the findings of the *Final Remedial Investigation Report, Fort Custer National Cemetery – Former Post Dump, Kalamazoo County, Michigan* (CH2M, 2019). Once these actions are taken, no additional areas of concern will exist at the Site.

The selected remedy presented in this Decision Document applies to the real property used for the former Post Cemetery Dump Site.

2.6 Site Characteristics

This section summarizes site characteristics regarding site geology, hydrogeology, nature, extent, fate, and transport of contamination that may pose risk to human health or the environment at the Site, as identified during previous investigations and the RI (CH2M, 2019).

2.6.1 Topography

The Site is located within the City of Augusta, which lies in the Central Plains province of the Interior Plains physiographic region. Augusta is located within the dissected till plains region of the Central Lowlands Physiographic Province. The region is further categorized into sections. The Site is located within the Eastern Till section. The Site is located within an area characterized as containing ground moraines, morainic ridges, swamps, and small lakes. Local topographical changes are the result of unequal accumulation of glacial deposits or resulted from erosion of weaker portions of the characteristically non-homogenous glacier deposition (USGS, 1974).

The Site is located within a closed topographical basin within the FCNC that is several hundred feet wide (east to west) and approximately 1,300 feet long (north to south). Elevations across the Site generally range from approximately 795 feet above mean sea level (amsl) (interior of the basin) to 830 feet amsl (ridges surrounding the basin).

2.6.2 Surface Water Characteristics

The only surface water at the site is present in the topographic low spot in the northern portion of the dump. Since the Site is essentially a topographic "bowl," all drainage is toward the interior of the basin and the lower elevation wetland. There is no outlet for water in the wetland. The shallow wetland is approximately 600 feet long by 100 to 300 feet wide but fluctuates seasonally. The surface water elevation and lateral extent of the wetland fluctuates in response to snowmelt and precipitation events.

There was no surface water present at the Site during the September 2017 monitoring event and there were no seeps observed during this event. The soft bottom elevation was surveyed at 796.70 feet and the hard-bottom elevation was surveyed at 793.64 feet on September 26, 2017, by a licensed surveyor.

Most of the gravesites at the cemetery are located on the outside of the circular Fort Custer Drive in isolated sections surrounded by wooded acreage. Two crypt fields (4 and 5) are located on the inside of Fort Custer Drive (near the southwest portion of the dump). A drainage system associated with the crypt fields exists southwest of the Site and drains via pipes into the closed topographic basin. The effect of drainage through the pipes on surface water and groundwater quality and quantity is unknown as flow was not exhibited during the RI to collect a crypt drainage sample.

2.6.3 Soil Characteristics

The surface material at the Site consists of soil, clay, silt, and well-established vegetation. The subsurface at the Site is composed primarily of glacial sands with varying amounts of silt and gravel. Within the closed basin, peat, and clay deposits consistent with a wetland are present overlying the glacial sands. Waste and fill material are present within much of the closed basin overlying the peat deposits; the extent and nature of these waste materials are discussed in more detail in the RI report (CH2M, 2019). Within the slopes of the basin, tan sands were generally the native material encountered in the higher elevation test pits while gray sand and gravels were the native materials encountered in the lower elevation test pits. Within the floor of the basin, a dark brown to black peat (4 to 11.5 feet thick) underlain by brown to gray, poorly sorted, fine- to medium-grained sand was encountered below most of the waste and fill material. The peat is prevalent in the current wetland area and its presence below the waste material to the south is most likely indicative of the approximate existing topographic elevations prior to disposal of waste in this area. No peat was observed below the waste/fill material in the southwest portion of the dump where the waste materials were the thickest or where the borings were drilled high on the southwestern slope. A light gray clayey silt to brown clayey sand (1 to 2 feet thick) was encountered in two borings between the peat or waste/fill material and the underlying sand. The peat layer is thicker in the eastern portion of the basin (up to 10 feet) than in the western portion. There are no apparent clay layers below the peat within the western section of the dump.

2.6.4 Groundwater Characteristics

Groundwater is present within the glacial outwash deposits and fill material at the Site. During the installation of soil borings, test pits, and groundwater monitoring wells for the SI, saturated conditions were encountered from approximately 0.5 to 9 feet below ground surface (bgs) in the test pits, 4 to 31 feet bgs (approximately 787 to 803 feet amsl) in the soil borings, and from 11 to 31 feet bgs (approximately 794.47 to 808.93 feet amsl) in the nine monitoring wells. Within the limits of the waste materials, saturated conditions were observed between 1 and 13 feet bgs, typically at an elevation of 787 to 788 feet amsl (PE, 2016). Shallow groundwater elevations at the site ranged between 793.98 and 809.87 feet amsl. Typically, the water table was lower during the winter months (November through March) when average precipitation was less than 2 inches per month and higher during the spring/summer months (May, June, and July) when average precipitation was greater than 3 inches per month. The water table increased in elevation during the May 2017 and April 2018 sampling events, most likely in response to recharge of the water table by infiltration of snowmelt and heavy spring rains. This observation is consistent with water level fluctuations observed during previous investigations and precipitation measurements recorded for the Site.

Hydraulic conductivity of the aquifer materials ranges between 9.84×10^{-4} to 1.15×10^{-1} centimeters per second (PE, 2016). These values are typical for sands and gravels.

Two years of quarterly water levels collected from nine existing groundwater monitoring wells indicate that the vertical gradient ranged from -0.001 to 0.001 foot per foot (ft/ft) between the downgradient well pairs FCMW-4S and FCMW-4I in 14 of 16 measurement events, from -0.002 to 0 ft/ft between wells FCMW-4S and FCMW-5I in 14 of 16 measurement events and ranged from 0 to 0.002 ft/ft between FCMW-6S and FCMW-6I in 15 of 16 measurement events. This indicates that contaminant transport will primarily occur in the horizontal (lateral) direction.

Two years of quarterly water levels collected from nine existing groundwater monitoring wells indicate the horizontal groundwater gradient flows to the west-northwest toward the Kalamazoo River.

2.6.5 Groundwater-Surface Water Interactions

One of the objectives of the RI was to evaluate groundwater interactions with the wetland at the Site. For groundwater to discharge to surface water, the groundwater potentiometric surface needs to intersect the pond bottom and groundwater potentiometric heads need to be higher than the surface water potentiometric head. Groundwater potentiometric elevation at FCMW-1 is higher than the surface water potentiometric head; indicating that upgradient groundwater/leachate is discharging to the surface water. Therefore, there is hydraulic connection between the groundwater/leachate and surface water that would create a groundwater/surface water interface.

Groundwater potentiometric elevations at downgradient monitoring wells FCMW-4S, FCMW-4I, FCMW-5S, FCMW-5I, FCMW-6S, and FCMW-6I and side gradient monitoring wells FCMW-2 and FCMW-3, are consistently lower than the surface water potentiometric surface, indicating that surface water is discharging to groundwater downgradient of the wetland pond. This relationship is consistent with the observation that there is no surface water outlet for the wetland. Surface water in the wetland appears to discharge to groundwater. Hence, migration of surface water to downgradient groundwater is the only identified pathway for surface water. The wetland has no outlet and is underlain by sediments that are less permeable than the glacial outwash that constitutes the uppermost aquifer.

Geochemical and waste-release indicator parameters including bicarbonate and carbonate alkalinity, ammonia, calcium, sodium, magnesium, chloride, sulfate, nitrate, phosphorus, sulfide, total organic carbon, total dissolved solids, total suspended solids, chemical oxygen demand, and biochemical oxygen demand were used to assess groundwater-surface water interaction and are not considered site-related chemicals. Overall, when combined with precipitation data, these results indicate there can be variable influences on downgradient groundwater, with the wells nearest the wetland (FCMW-6I/6S) often showing influence from surface water (wetland) recharge and the more southern downgradient wells (FCMW-4S/4I) often showing similarities to upgradient groundwater. The May 2017 results indicate that snowmelt and precipitation recharge through the waste materials may be an important factor because this can result in downgradient groundwater characteristics that are different than upgradient groundwater and surface water characteristics. However, there are no site-related chemical contaminants detected in groundwater at the monitoring well network downgradient of the wetland and the waste, indicating that site-related chemical contaminants are contained within the waste limits and have not migrated downgradient.

2.6.6 Waste Characteristics

2.6.6.1 Description of Waste Materials

Waste materials observed in test pit excavations for the SI generally consisted of sand, cinders, ashes, slag, glass and china/porcelain pieces, metal debris, coal pieces, brick fragments, and wood debris (PE, 2016). Waste materials observed in the soil borings advanced during the SI generally consisted of sand, slag, ashes, wood and metal debris, coal pieces, glass/dishware pieces, and other unidentifiable materials. Specific waste materials

observed during the SI (in order of relative abundance) include slag, glass (primarily bottles, both melted and un-melted), scrap metal (empty and rusted boilers/tanks/ drums, mechanical pieces, rusted/empty cans, conduit and pipes/rods, strapping, chain-link fencing, trash-can lids, wire mesh, washing machine), sand/gravel/rock, cinders, demolition debris (concrete, bricks, tile, drywall, roofing materials, broken ceramic/clay pipe, corrugated panels, railroad ties), ash, porcelain dishware, wood/sticks and plant debris, un-combusted coal, radio tubes, cloth/clothing, plastic, paper, and other unidentified substances/items.

Material within the wetland consisted primarily of waste with two noticeable layers of sediment over it (PE, 2016). The first and uppermost layer is a fine-grained sediment, highly saturated and unconsolidated material that is fluid in nature and approximately 6 inches thick. The second layer is fill material with heavy root material that ranges in thickness from 6 inches to several feet.

2.6.6.2 Waste Thickness and Extent

A heterogeneous mixture of waste at the Site overlies native soils. The actual boundaries of the waste/fill materials, as confirmed from trenching and boring activities, indicate that the dump is approximately 1,200 feet in length (from north to south) and varies from about 300 feet wide in the northern portion to about 640 feet wide in the southern portion of the Site (Figure 1-2). The approximate area of the dump is 10.5 acres (455,390 square feet) with an estimated 95,315 cubic yards of waste material present. The thickness of the waste ranges up to 25 feet thick in the southern portion of the Site, thinning to the north. The lateral extent of waste is inferred in several locations, including in the southern portion of the Site where the waste underlies Fort Custer Road. Waste found beyond the inferred boundaries would be expected to have limited thickness. Therefore, the boundary of the waste is considered well defined.

The dump is thickest in the southwestern portion, where wastes up to 25 feet were recorded, and fans out (decreasing in thickness) to the north, east, and south from this thicker area. Waste/fill material was observed from 8 to 12 feet thick in the central portion of the dump area where the basin floor is relatively flat. Wastes within, and adjacent to, the wetland area were typically less than 5 feet thick. Historical aerial photographs of the Site from 1938 to 1967 show the presence of one or more roads leading to the south-southwestern portion of the dump with most of the disturbance in the southern portion of the basin. This information, combined with the field data, suggest that the dump was most likely filled from this southwestern area, with waste and fill material being spread throughout the basin toward the north, east, and south.

2.6.7 Land and Water Use

The Site is currently in the control and custody of the VA as part of the FCNC (constructed in the early to mid-1980s). The Site consists of approximately 10.5 acres of vacant forest and wetland that lie mostly within the circular Fort Custer Drive. The facility Master Plan for the FCNC is to have enough capacity to provide gravesites well into the 21st century (Figure 1-2). The intended use of the property in perpetuity is as a National Cemetery. The portion of the Site immediately north and south of Fort Custer Drive is currently grass covered and mowed (maintained) by the VA. The Site's topography (steep-sided basin) and the presence of a wetland make the wetland forest portion of the Site undesirable for development and the VA has stated a desire to keep the wooded dump area and wetland a natural green space for the facility. As such, the Site is considered nonresidential for both current and future uses.

Municipalities near the Site use the Augusta-Galesburg regional aquifer for potable water. The Town of Augusta uses two municipal wells to supply potable water to the community. Both wells are located within the city limits of Augusta, approximately 2 miles west and side gradient of the Site and are completed in the glacial outwash aquifer on the west side of the river. Given the groundwater flow direction and hydraulic conductivity, groundwater from the Site is not anticipated to reach the municipal wells.

There is no current use of the onsite groundwater at the Site other than for irrigation purposes. The VA installed four onsite wells, including three irrigation wells and an observation well (used to measure drawdown for Irrigation Well 1 during initial pumping tests). Each of these wells is installed in the glacial drift, consisting

primarily of sand and gravel. Irrigation Well 1 and the observation well were constructed in October 1996 and are located approximately 1,000 feet north of the Site in a side gradient direction; Irrigation Well 1 is an 8-inch-diameter structure screened from 91 to 109 feet bgs (approximately 719 to 737 feet amsl). Irrigation Well 2, constructed in July 2000 and located approximately 1,000 feet east/southeast of the Site in an up-gradient direction, is an 8-inch-diameter well screened from 47 to 62 feet bgs (approximately 780 to 795 feet amsl). Irrigation Well 3 is located in the northeast portion of the VA property, approximately 2,450 feet from the Site in a side gradient direction and was installed in 1988. It is a 5-inch-diameter well screened from 54 to 59 feet bgs. According to the VA, the wells are plumbed to the onsite sprinkler systems and to spigots located near onsite trash receptacles. Signage on the trash receptacles adjacent to the spigots read "Do Not Drink the Water." Potable water at the cemetery is obtained from the Augusta public water supply.

In addition to the irrigation wells described above, several private water wells are located 1,800 to 2,900 feet in a downgradient direction of the Site (PE, 2016). The well (39000000798) directly downgradient from the main portion of the Site (approximately 2,900 feet west/northwest) is a 4-inch-diameter well, screened from 77 to 81 feet bgs (approximately 719 to 723 feet amsl), and was constructed in September of 1987 (PE, 2016). This well was sampled as part of the 1997 Parsons Investigation; no metals (total and dissolved), VOCs, or SVOCs were detected above laboratory method detection limits and Parsons concluded that no environmental impact to this well has occurred from Fort Custer Military Reservation activities (Parsons, 1997).

2.7 Current and Potential Land and Resource Uses

The Site is currently under the custody and control of the VA and is currently overgrown and abandoned. The Site is part of the current FCNC and consists of approximately 10.5 acres of forest and wetland that lie mostly within the circular Fort Custer Drive. Gravesites at the cemetery are located outside of the dump area. The intended use of the property in perpetuity is as a National Cemetery. The intended use of the Site is as a natural green space. The current cemetery facility Master Plan does not include development of the wetland and forested portions of the Site. For the area within the waste footprint which VA intends to remain undisturbed (defined as Subarea 1), access is restricted to VA personnel and contractors only, and all ground disturbances, including groundwater well installation, is prohibited.

For the area within the waste footprint in which VA may need to perform certain ground disturbance activities, such as road or utility line repairs or installation (defined as Subarea 2), VA requires training and PPE for personnel and contractors engaged in surface disturbance activities and prohibits groundwater well installation or the relocation of any materials unearthed or produced during surface disturbance activities anywhere on FCNC property.

2.8 Summary of Former Post Cemetery Dump Site Risks

This subsection summarizes the results of the HHRA and the ERA. Risk assessments provide estimates of potential risks the Site may pose if no action were taken. The results summarized in the following were presented in previous investigations and the RI (CH2M, 2019)

2.8.1 Human Health Risk

An HHRA for the Site was conducted to evaluate potential risks associated with chemicals present in surface soil/waste or sediment/waste, surface water, and groundwater downgradient of the waste. Potential current and future risks that could result from exposure to surface soil/waste, sediment/waste, surface water, and groundwater downgradient of the Site were evaluated for potential receptor populations. Exposure scenarios evaluated in the risk assessment are based on conservative assumptions. The following receptors exposure scenarios were evaluated:

- Current/future visitor exposures to soil/waste (via direct contact and dust emission from surface soil/waste) and sediment/waste and surface water (via direct contact),

- Current/future maintenance worker exposures to surface soil/waste (via direct contact and dust emissions), sediment/waste, and surface water (via direct contact)
- Future maintenance worker exposures to groundwater from irrigation spigots (via direct contact) if irrigation wells are installed in areas of the Site where groundwater is impacted (within the groundwater/leachate) and who may inhale COPCs in groundwater that migrate to indoor air (if future buildings are constructed atop impacted groundwater/leachate) were evaluated

The baseline HHRA determined that both cancer and non-cancer risks for the media and pathways evaluated were in the NCP acceptable risk range, as defined in 40 CFR 300.430 (e)(2)(i)(A)(2). The results indicated that the detected chemical concentrations in surface soil/waste, sediment/waste, surface water, and groundwater would not pose unacceptable risks to site visitors or maintenance workers. Therefore, no unacceptable risks were identified for the Site for the receptors evaluated in the HHRA. These results of the HHRA and receptor exposure scenarios evaluated are consistent with the approach prescribed in the CERCLA landfill containment presumptive remedy (EPA, 1996).

The groundwater downgradient of the waste at the Site was also evaluated. No chemicals exceeding risk criteria (criteria was the chemical-specific MCLs or USEPA's tap water RSLs) were identified. Therefore, the waste can be considered contained under the presumptive remedy approach. Under the presumptive remedy guidance, complete characterization of the landfill contents is not necessary and only receptors that could use the Site are evaluated. However, the site-related COPCs (chemicals that exceeded Industrial USEPA's RSLs) in the subsurface soil/waste and groundwater/leachate within the limits of the waste, although not completely characterized, present a low-level threat for potential exposure scenarios and migration pathways within the landfill. Based on the results of the HHRA the waste can be considered contained under the presumptive remedy approach (EPA, 1996).

2.8.2 Ecological Risks

The ERA was completed through Step 3 of the 8-step ERA process (EPA, 1997). The screening component of this iterative approach eliminated groundwater from further ecological consideration. Detected concentrations of chemicals in groundwater were less than the ecological screening values; therefore, all groundwater analytes were eliminated during the screening-level evaluation. No adverse effects to downgradient aquatic receptors are likely from exposure to groundwater. No further ecological evaluation of groundwater is warranted.

The ERA concluded that no chemicals of ecological concern for biota communities and populations in the upland terrestrial area and the wetland area from concentrations in soil/waste, sediment/waste, and surface water are present. Therefore, no further ecological-based evaluation is required for soil/waste, sediment/waste, and surface water at the Site.

2.8.3 Non-quantified Risks Within Waste Limits

The site-related chemicals identified in subsurface soil/waste and groundwater/leachate, although not completely characterized, may present a low-level long-term threat for potential receptors that utilize the Site. The potential risks associated with subsurface soil/waste, groundwater/leachate, and ACM within the footprint of the waste were not quantitatively evaluated in the HHRA per the USEPA' s 1996 presumptive remedy guidance. Accordingly, additional response actions are required to support the containment remedy.

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2.9 Remedial Action Objective

RAOs are developed for protection of human health and/or for protection of ecological receptors. The risks used to develop RAOs can be associated with current or potential future exposures. RAOs should be as specific as

possible, but not so specific that the range of alternatives that can be developed is unduly limited. The Presumptive Remedy for CERCLA Municipal Landfill Sites (EPA, 1993) directive indicates that the primary RAOs at municipal landfill sites include:

Presumptive Remedy

1. Preventing direct contact with landfill contents
2. Minimizing infiltration and resulting contaminant leaching to ground water
3. Controlling surface water runoff and erosion
4. Collecting and treating contaminated ground water and leachate to contain the contaminant plume and prevent further migration from source area
5. Controlling and treating landfill gas

Non-Presumptive Remedy

1. Remediating ground water
2. Remediating contaminated surface water and sediments
3. Remediating contaminated wetland areas

Based on the RI (CH2M, 2019) results, USACE has determined that the surface water runoff and erosion has not adversely affected the wetland sediments or surface water, therefore Bullet 3 of the Presumptive Remedy is not required. The heavy vegetation at the Site and lack of observed rills/channels limit exposure to buried waste. Groundwater analytical results from permanent monitoring wells of the SI (PE, 2016) and RI (CH2M, 2019) demonstrate that groundwater/leachate impacts are contained to the limits of the waste. Groundwater analytical results in combination with the lack of seeps support that groundwater/leachate collection and treatment is not necessary for the Site (Bullet 4 of the Presumptive Remedy). Based on the age of the landfill and lack of COPCs in groundwater for the vapor intrusion pathway, landfill gas control and treatment (Bullet 5 of the Presumptive Remedy) is also not needed. Additionally, RAOs for the three Non-Presumptive Remedy bullets are not required because the RI (CH2M, 2019) demonstrated that these media do not pose unacceptable risk to human and ecological receptors. Therefore, the following RAO was developed for the Site:

- Protect human receptors from direct contact, ingestion, and inhalation exposure to subsurface soil/waste, groundwater/leachate, and surface water within the footprint of the waste by preventing exposure pathways.

2.10 Description of Alternatives

Based on findings of investigations and risk assessments that have been completed, further action is warranted at the Site. The following remedial alternatives were developed to address potential risks associated with subsurface soil/waste, groundwater/leachate, and ACM, all within the footprint of the waste, on the basis of potential receptor populations. Three remedial alternatives were developed for the Site: Alternative 1 – No Action; Alternative 2 – Containment Presumptive Remedy with Existing Soil Cover, LUCs and LTM; Alternative 3 – Containment Presumptive Remedy with Consolidation of Wastes, Construction of a Soil Cover, and LUCs with LTM. There are no site-specific risks identified for surface soil/waste and sediment/ waste within the limits of the waste. Subsurface soil/waste and groundwater/leachate risks were not quantified. Construction of a soil cover was carried through only as an option for increased effectiveness at the Site for consolidation activities. The major components of the remedial alternatives are defined below.

There are no unacceptable risks (no chemicals of concern) in the media evaluated for the receptors evaluated in the HHRA based on the presumptive remedy approach. The site related COPCs present in the subsurface soil/waste and groundwater/leachate within the limits of the waste, although not completely characterized, present a low-level threat for potential exposure scenarios and migration pathways within the landfill. A summary

of COPCs identified in the samples taken from subsurface soil/waste and groundwater/leachate (within the limits of the waste) at the Site is presented in Table 2-3.

ARARs are chemical-, location-, and action-specific to each proposed remedial alternative. Because Alternative 1 is "no action", there are no applicable cleanup standards, standards of control, or other substantive requirements that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at the Site, nor are there any cleanup standards, standards of control, and other substantive requirements which address problems or situations sufficiently similar to those encountered at the Site that are well suited (i.e., relevant and appropriate) to the this Site. No specific COCs have been identified because the presumptive remedy requires consideration of the entire waste area as a low-level threat, meaning there are no quantitative clean-up standards or other substantive requirements addressing any specific contaminant. Additionally, because the contaminates in the waste area are currently contained and the existing soil cover would not be disturbed, there are no applicable or relevant and appropriate standards of control or other substantive requirements addressing the location or any other circumstance found at the Site. Likewise, and for the same reasons, because Alternative 2 consists of monitoring the current containment accomplished under the existing soil cover, with LUCs, there are no chemical-specific, location-specific or action-specific ARARs or quantitative remedial goals associated with that Alternative. However, location and action specific ARARs are applicable for Alternative 3 because the remedial action requires disturbance of the waste area and physical construction of a new soil cover within a wetland (Table 2-2).

2.10.1 Alternative 1 – No Action

Alternative 1 is required under CERCLA to provide a baseline for comparing remedial alternatives. Under Alternative 1, no activities would be completed at the Site to change the current conditions, and no action would be taken to restrict potential human exposure. As a result, one would expect the human exposures would remain. There is no cost associated with Alternative 1.

2.10.2 Alternative 2- Containment Presumptive Remedy with Existing Soil Cover, LUCs and LTM

Alternative 2, as originally posed in the FFS and Proposed Plan, involved implementation of LUCs to restrict access to waste that remains in place and restricting ground disturbance activities, including a prohibition on the installation of irrigation and municipal wells within the limits of the waste. The VA amended its facility Master Plan (Attachment A) prior to execution of this Decision Document to adopt the administrative LUCs presented prior in section 1.4. The institutional controls adopted by VA are considered supplemental to, although not a component of, the selected remedy, and will be reviewed during the Five-Year Reviews.

This alternative also included education controls (signage and training materials) which are adopted as part of this selected remedy. Pursuant to the MOU between USACE and VA, the specific elements of these educational controls (for example design and placement of signage) will be identified through a LUCIP following this Decision Document. USACE will procure and install signage and prepare and provide training materials (education controls). The VA will be responsible for managing, monitoring, and enforcing the institutional controls.

LTM also is part of this alternative. The final monitoring program will be documented in the landfill long-term management plan and is expected to include groundwater monitoring and site inspection and provisions for decreased or suspended monitoring, as appropriate, to assess potential migration of groundwater/leachate and migration of surface water to groundwater beyond the monitoring points.

The estimated costs for Alternative 2 are:

- Capital Cost: $50,000
- O&M Present Value Cost: $482,000

- Total Present Value Cost: $785,000 (2.6% discount rate)

2.10.3 Alternative 3- Containment Presumptive Remedy with Consolidation of Wastes, Construction of a Soil Cover, and LUCs with LTM

Alternative 3 involves consolidating waste and then constructing a soil cover over 10.5 acres of the landfill. LUCs with LTM also is part of this alternative. Alternative 3 includes the following components:

- Clearing and grubbing of existing vegetation
- Consolidating waste within the area to be covered
- Constructing a soil cover consisting of at least 12-inch-thick native soil cover, overlain with 6 inches of topsoil to support vegetative cover
- Restoring consolidated areas
- Implementing long-term management measures to ensure the protectiveness of the cover
- Groundwater monitoring from the monitoring well network
- Implementing the LUCs

The final monitoring program would be documented in a landfill long-term management plan and would be expected to include groundwater monitoring and provisions for decreased or suspended monitoring, as applicable. The groundwater monitoring frequency and network are referenced for the basis of the cost estimate for the proposed alternatives. Tentatively, for cost estimating purposes, the groundwater monitoring network would be comprised of nine monitoring wells located both upgradient and downgradient of the Site. Some existing wells may be abandoned during construction of the soil cover, but they would be replaced with new wells.

LUCs also would restrict the future use of the Site, restrict the use of the groundwater/leachate beneath the waste, and prevent intrusive activities within the waste limits.

Periodic inspections of the landfill would also be required under this remedy. Inspections would be performed concurrent with groundwater sampling; quarterly in years 1, 2, and 3 followed by semi-annual sampling in years 4 and 5, then quinquennial sampling for years 6 through 30.

The estimated costs for Alternative 3 are:

- Capital Cost: $2,498,000
- O&M Present Value Cost: $343,000
- Total Present Value Cost: $3,136,000 (2.6% discount rate)

2.11 Summary of Comparison of Alternatives

USACE uses the nine CERCLA criteria to evaluate the Site remedial alternatives individually and comparatively to help select a preferred alternative. They are classified as threshold, balancing, and modifying criteria.

Threshold criteria are standards that an alternative must meet for it to be eligible for selection as a remedial action. Threshold criteria are:

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

Balancing criteria weigh the tradeoffs among alternatives. They represent the standards upon which the detailed evaluation and comparative analysis of alternatives are based. In general, a high rating on one balancing criterion can offset a low rating on another. Five of the nine criteria are balancing criteria:

- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume through treatment
- Short-term effectiveness
- Implementability
- Cost

Modifying criteria consider the concerns of state regulator and the local community's acceptance of a proposed remedial action. Modifying criteria are:

- State/support agency acceptance
- Community acceptance

Table 2-4 summarizes how well each alternative satisfies each evaluation criterion and indicates how it compares to the other alternatives under consideration. Additionally, Table 2-4 evaluates each alternative with respect to the criteria listed above for the Site. Support agency, VA, and community concerns have been adequately addressed (Section 3.0). Alternative 2 and 3 have similar rankings for all criteria except short-term effectiveness, cost, and community acceptance. Because of the differences, Alternative 2 is preferred over Alternative 3 based on cost and the VA's opposition to extensive vegetation and earth work.

The short-term risks associated with the vegetation clearing and installation of sign activities under Alternative 2 would be minimized by implementing appropriate health and safety procedures and other pollution prevention procedures. Short-term disruptions would be greater in Alternative 3 from the heavy equipment operations, such as increased traffic of construction trucks in and out of the Site, increased noise levels, destruction of natural resources, and dust generation from the heavy equipment during consolidation, regrading, and soil cover construction. These disruptions would be minimized through a proper planning for traffic routing and scheduling, soil erosion and sediment controls implementation, and periodic dust suppression. Additionally, the soil cover would require more maintenance and may be less stable than the existing vegetation cover until the cover is established. The VA also has expressed a preference for a remedy that minimizes disturbance to green space at the Site, therefore Alternative 3 has been determined to not have community acceptance.

Alternative 2 is the least-cost remedy that is effective in preventing exposure to waste material. Alternative 2 meets the RAO by relying upon the existing soil cover with well-established vegetation and the establishment of LUCs with LTM for the Site, which complies with the presumptive remedy guidance. Alternative 3 meets the RAO by consolidating waste, constructing a soil cover over upland areas, implementing land use controls, and LTM. Although Alternative 3 may offer greater reduction in potential exposure to buried waste within upland areas of the Site, the benefits are offset in that construction of a soil cover would have a higher sustainability footprint, would adversely affect wetland habitat and natural resources, is less acceptable to the community, and may mobilize chemicals that were originally immobile. Additionally, the cost of Alternative 3 at $3,136,000 is nearly four times the cost of Alternative 2 at $785,000.

2.12 Principal Threat Wastes

The NCP expects treatment to be used to address principal threat wastes to the extent practicable to reduce their toxicity, mobility, or volume. The term "principal threat wastes" refers to source materials that are highly toxic or highly mobile. No highly toxic or highly mobile contaminants were identified at the Site.

2.13 Selected Remedy

The selected remedy for the Site is Alternative 2 – Containment Presumptive Remedy with Existing Soil Cover, LUCs with LTM, as modified and documented in Sections 2.13.2 and 2.15 of this document. Figure 1-2 depicts the waste limit boundary that is based on test pit and soil boring locations surveyed by a professional land survey licensed in the State of Michigan in 2013.

2.13.1 Summary of the Rationale

Alternative 2 is expected to satisfy the following statutory requirements of CERCLA Section 121(b): be protective of human health and the environment; comply with ARARs; and be cost-effective. Alternative 1 would not meet the RAO and would not protect human health and the environment because no action would be taken to mitigate low-level long-term threats. Alternative 3 is not as cost-effective as Alternative 2 and would not comply with the VA's desire to minimize disturbance to green space. Alternative 2 is the least-cost remedy that is effective in preventing exposure to waste material. Alternative 2 meets the RAO by relying upon the existing soil cover with well-established vegetation and the establishment of LUCs with LTM for the Site, which complies with the presumptive remedy guidance.

2.13.2 Description of the Selected Remedy

Alternative 2, as set forth in the FFS and Proposed Plan, involved implementation of LUCs to restrict access to waste that remains in place and restricting ground disturbance activities, including a prohibition on the installation of irrigation and municipal wells within the limits of the waste. The VA amended its facility Master Plan (Attachment A) prior to execution of this Decision Document to adopt the administrative LUCs presented prior in section 1.4.

The institutional controls adopted by VA are considered supplemental to, although not a component of, the selected remedy, and will be reviewed during the Five-Year Reviews. VA will manage and monitor the institutional control. The remedial design document may contain additional details on the VA's implementation, monitoring, and maintenance of the institutional control as well as how the protectiveness of the remedy for human health and the environment will be assessed by USACE during the Five-Year Reviews.

This alternative also included education controls (signage and training materials) which are adopted as part of this selected remedy. Pursuant to the MOU between USACE and VA, the specific elements of these educational controls (for example design and placement of signage) will be identified through a LUCIP following this Decision Document. USACE will procure and install signage and prepare and provide training materials (education controls). The VA will be responsible for managing, monitoring, and enforcing the institutional controls.

This remedial alternative also includes long-term groundwater monitoring with provisions for decreased or suspended monitoring, as appropriate, to assess potential migration of groundwater/leachate and migration of surface water to groundwater beyond the monitoring points.

2.13.3 Performance Monitoring Strategy of the Selected Alternative

Based on the nature and extent of contamination and waste at the Site, the following performance goals are identified:

- Prevent direct contact, ingestion, and inhalation exposure to subsurface soil/waste, groundwater/leachate within the limits of the waste, and surface water by relying upon the existing soil cover with well-established vegetation and the establishment of LUCs with LTM for the Site.
- Monitor to ensure COPCs in groundwater/leachate within the limits of the waste are not migrating to groundwater beyond the monitoring wells in accordance with the prepared LTM plan.

2.13.4 Summary of the Estimated Remedy Costs

The cost of the selected remedy was estimated as part of the FFS (CH2M, 2020a). The estimate is based on the best available information regarding the anticipated scope of the selected remedy over the next 30-year period. The estimated present value cost of the selected remedy was $785,000. The estimated cost is an order-of-magnitude engineering cost and thus expected to be within +50 and -30 percent of the actual project cost. A detailed cost estimate is provided in Table 2-5.

2.13.5 Expected Outcome of the Selected Remedy

The expected outcome of the selected Alternative 2 remedy includes:

- Control of contact with subsurface soil/waste and groundwater leachate within the limits of the waste and application of groundwater use and soil/waste relocation restrictions.

2.14 Statutory Determinations

Based on the findings of investigations and risk assessments that have been completed, further action is warranted by the U.S. Army at the Site. Hazardous substances, pollutants or contaminants identified at the site present risk to visitors and maintenance personnel. The statutory determinations of the selected remedy are outlined below.

2.14.1 Protection of Human Health and the Environment

The Site selected remedy is protective of human health and the environment and satisfies the statutory requirement of CERCLA §121(b). The selected remedy will adequately protect human health and environment through implementation of both LUCs and a LTM plan. The VA amended its facility Master Plan (Attachment A) prior to execution of this Decision Document to adopt the administrative LUCs presented prior in section 1.4. The existence of this institutional control, while not considered part of the final selected remedy being adopted or implemented by this decision document, was considered, and relied upon in making the determination that the selected remedy is protective of human health and the environment.
This alternative also included education controls (signage and training) which are adopted as part of this selected remedy. Pursuant to the MOU between USACE and VA, the specific elements of these educational controls (for example design and placement of signage) will be identified through a LUCIP following this Decision Document. USACE will procure and install signage and prepare and provide training materials (education controls). The VA will be responsible for managing, monitoring, and enforcing the institutional controls.

2.14.2 Compliance with Applicable or Relevant and Appropriate Requirements

For the reasons set forth in Section 2.10, the selected remedy has no ARARs.

2.14.3 Cost-Effectiveness

The selected remedy is cost-effective. The overall effectiveness of the selected remedy was determined to be proportional to its costs and to represent a reasonable value for the money to be spent.

2.14.4 Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

The Site selected remedy was chosen because the existing soil cover, which did not pose an unacceptable risk to human and ecological receptors, has well-established vegetation across the landfill, including the wetlands. The existing soil cover minimizes direct exposure to underlying subsurface soil/waste, and the waste is considered contained under the presumptive remedy approach. This permanent solution compares more favorably to another treatment solution such as consolidation and construction of a soil cover which could mobilize chemicals

that were originally immobile. Additionally, the 1996 EPA presumptive remedy directive prescribes the use of a containment remedy when excavation of the landfill contents is impractical, and the Site conditions satisfy the guidance for applying the containment presumptive remedy.

2.14.5 Preference for Treatment as a Principal Element

The remedy does not employ treatment because the presumptive remedy for landfills is containment; therefore, it does not satisfy the statutory preference for treatment as a principal element of the remedy. In accordance with Presumptive Remedy guidance, treatment at the Site is impracticable because of the large volume, heterogeneous mixture of the waste, and no historical information to identify the location of hazardous substance areas to be treated (EPA, 1996). Furthermore, any groundwater/leachate impacts are limited to the waste extents and have not migrated downgradient, therefore treatment is not required to protect potential downgradient receptors.

2.14.6 Five-Year Review Requirements

In accordance with Section 121 of CERCLA, as amended in 1986 by SARA, statutory reviews will be conducted every 5 years after initiating the Site remedial action to ensure the selected remedy remains protective of human health and the environment.

2.15 Document of Significant Changes from Preferred Alternative of Proposed Plan

Alternative 2, as described in the Proposed Plan, included LUCs consisting of institutional controls and educational controls. Prior to the date of this Decision Document, the VA adopted the institutional controls identified in the preferred alternative. The VA amended its facility Master Plan (Attachment A) prior to execution of this Decision Document to adopt the administrative LUCs

- For the area within the waste footprint which VA intends to remain undisturbed (defined as Subarea 1), access is restricted to VA personnel and contractors only, and all ground disturbances, including groundwater well installation, is prohibited.
- For the area within the waste footprint in which VA may need to perform certain ground disturbance activities, such as road or utility line repairs or installation (defined as Subarea 2), VA requires training and personal PPE for personnel and contractors engaged in surface disturbance activities and prohibits groundwater well installation or the relocation of any materials unearthed or produced during surface disturbance activities anywhere on FCNC property.

As such, the institutional controls identified in the Proposed Plan are no longer a component of the selected remedy adopted by this Decision Document. VA will manage and monitor the institutional control. The remedial design document may contain additional details on the VA's implementation, monitoring, and maintenance of the institutional control as well as how the protectiveness of the remedy for human health and the environment will be assessed by USACE during the Five-Year Reviews.

SECTION 3

Responsiveness Summary

The USACE placed a public notice in the Battle Creek Enquirer soliciting comments on the Proposed Plan for the Site. A public comment period (July 15 to August 16, 2020) was provided. One comment was received during the public meeting (July 29, 2020). During the meeting, comments and questions were expressed by the local community and verbal responses were provided by the representatives of USACE and its contractor. In general, the public asked questions related to potential impacts related to the dump to offsite, private wells. A transcript of the public meeting including a detailed discussion of the questions asked by the public and responses provided by USACE and its contractor is presented in Attachment C. The selected remedy was not revised based on comment received during the public meeting.

3.1 Public Comments and Execution Agent Responses

One public comment was received during the virtual public meeting on July 29, 2020. Two public comments were received by email during the public comment period from July 15, 2020 to August 16, 2020. Comments and responses received during the virtual public meeting are documented in the virtual public meeting transcript presented in Attachment C. The two comments received during the public comment period are provided and addressed as follows:

Comment 1.

We live on Fort Custer Drive in Augusta, Michigan. We live less than a mile from the contamination site at the National Cemetery. We are concerned that our well water could be contaminated. We are asking that our well and our neighbors well be tested by your agency. I understand that there are only 3 wells that would need testing. I will be waiting for your answer.

Comment 2.

I attended the Augusta meeting last night. I have one of the three wells that are in the flow between the dumping site and the river. I would appreciate it if you could test my well water to be sure nothing has leaked into it from the cemetery dumping site.

Response to Comments 1 and 2.

Six 2-inch diameter monitoring wells (FCMW-4S, FCMW-4I, FCMW-5S, FCMW-5I, FCMW-6S, and FCMW-6I; located in three nests with two wells in each nest) are located immediately downgradient of the waste. The shallow monitoring wells designated with an “S” were installed at depths between 37 and 40 feet bgs. Intermediate monitoring wells designated with an “I” were installed at depths between 55 and 69 feet bgs. One private well (39000000798) directly downgradient from the main portion of the Site is a 4-inch-diameter well, screened from 77 to 81 feet bgs.

Groundwater samples were collected over 16 seasonal events over a 4-year period from the nested downgradient well pairs during the SI and RI. Analytical results were screened against EPA maximum contaminant levels (MCLs) for drinking water. Groundwater analytical results demonstrate that the low-level concentrations of groundwater/leachate COPCs are contained to the limits of the waste and have not migrated downgradient. Additionally, private well (39000000798), located 2,900 feet downgradient of the Site, was sampled as part of the 1997 SI. No metals (total and dissolved), volatile organic compounds (VOCs), or semi-volatile organic compounds (SVOCs) were detected above laboratory method detection limits. Therefore, data indicate that no environmental impact to this well has occurred from former DoD activities at the Site (Parsons, 1997).

LTM also is part of the selected alternative. Five-Year Reviews will be performed to verify the protectiveness of the remedy. If LTM results indicate migration of COPCs from groundwater/leachate within the limits of the waste to downgradient groundwater, the remedy will be reevaluated to ensure protectiveness. No private wells will be sampled as part of the remedy. The selected alternatives do not include testing of private wells because the remedial investigations did not indicate migration of contaminants beyond the limits of the landfill.

3.2 Stakeholder Comments and Execution Agent Responses

The remedy selected by USACE received concurrence from the VA and EGLE and can be found in Attachment B. No other stakeholder comments were received regarding the selected remedial alternative decision at the Site.

3.3 Technical and Legal Issues

No technical or legal issues exist regarding the selected remedial alternative decision at the Site.

SECTION 4

References

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Tables

Table 2-1. Chronology of Investigations at the Site

Former Fort Custer VA Area, Post Cemetery Dump, Augusta, Kalamazoo County, Michigan

Archives Search Report (USACE, 1994)
U.S. Army Corps of Engineers (USACE) identified the Site as an area of interest in the 1994 Archive Search Report. An addendum was prepared in 2003 to address the possibility of munitions and explosives of concern.
1997 Site Investigation (Parsons, 1997)
Parsons Engineering Science, Inc. (Parsons) performed an SI at the Site. The investigation consisted of sampling 25 borings for soil and groundwater/leachate; one surface water and one sediment sample from the wetland were collected. Soil samples collected from the borings were field-screened for lead. Waste/soil, groundwater/leachate, surface water, and sediment samples were collected for laboratory analysis of metals, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). The investigation identified metals concentrations in waste/soil and groundwater/ leachate exceeding applicable Michigan Department of Environment, Great Lakes, and Energy (EGLE) Part 201 Residential and Nonresidential Cleanup Criteria Requirements for Response Activity (formerly known as Part 201 Cleanup Criteria). The EGLE Natural Resources and Environmental Protection Act, Act 451 of 1994, Part 201 Cleanup Criteria Rules were renumbered from 299.1 to 299.50 on December 31, 2013. No other analytes exceeded screening criteria for any of the samples analyzed. This investigation also included some limited visual characterization of the waste present at the Site including slag, cinder, and glass.
2009 Preliminary Assessment (MWH, 2009)
Montgomery Watson Harza (MWH) performed a PA at the Site. Investigation activities included reviewing historical information and documents, conducting interviews and reconnaissance activities, and evaluating exposure pathways. MWH concluded the potential for contamination from buried waste and past releases to have impacted the Site, which may warrant further investigation.
2010 Site Investigation (CH2M, 2009)
CH2M conducted a limited-scope SI to re-establish baseline conditions at the Site (CH2M, 2009). Five temporary wells within the limits of the waste were sampled and five surface water samples were collected from the wetland. The samples were analyzed for Michigan 10 metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc), boron, VOCs, polychlorinated biphenyls (PCBs), and polynuclear aromatic hydrocarbons (PAHs). Metals in surface water and groundwater/leachate were detected in exceedance of legacy Part 299 residential and non-residential screening criteria. No other analytes exceeded screening criteria for any sample analyzed.
2012 Site Investigation (PE, 2016)
Professional Environmental Engineers, Inc. (PE) conducted an expanded SI to document the vertical and horizontal extents of waste, characterize surface materials within the limits of waste, document contamination against target levels, and monitor groundwater at the Site. The media investigated included surface soil/waste, sediment/waste, and groundwater outside the limits of the waste. Soil/waste and sediment/waste samples were collected using an incremental sampling method (ISM) over two separate decision units. ISM samples were analyzed for SVOCs, metals, boron, dioxin/furans, and PCBs. Three ISM soil samples also were submitted for asbestos analysis. Nine permanent groundwater monitoring wells were installed during the investigation. Groundwater samples were collected over eight events and analyzed for VOCs, SVOCs, and metals plus boron (both total and dissolved). Suspected ACM was submitted for analysis of asbestos. The investigation indicated that the vertical and horizontal extents of the waste were greater than previously defined (about 1,200 feet long [north to south] and 300 feet [north] to 640 feet wide [south]). The waste also was found to contain ACM at the surface, with the potential for additional ACM in the subsurface. In addition, surface soil/waste and sediment/waste samples from the Site contained metals exceeding legacy Part 299 residential and non-residential drinking water protection, groundwater surface water interface protection, residential direct contact (2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD] exceeded non-residential direct contact criteria also), and/or residential soil particulate inhalation criteria. Chemicals exceeding one or more of the above listed criteria include arsenic, boron, chromium, lead, manganese, mercury, selenium, silver, zinc, 2,3,7,8-TCDD, and 2-methylnaphthalene. Groundwater/leachate samples collected at several downgradient wells (FCMW-4I and FCMW-6I) contained concentrations of cadmium and/or chromium that exceeded legacy Part 201 drinking water and generic groundwater-surface water interface criteria. Total chromium values were compared to hexavalent chromium criteria, which are more conservative (lower criteria) than criteria for total chromium or trivalent chromium. Exceedances of these Michigan 10 metals were not observed in any of the three background wells located up- or cross-gradient from the Site. Results of the investigation were presented in the 2012 SI report (PE, 2016).

Table 2-1. Chronology of Investigations at the Site

Former Fort Custer VA Area, Post Cemetery Dump, Augusta, Kalamazoo County, Michigan

2016 Remedial Investigation (CH2M, 2019)
Based on the size of the landfill, the presence of municipal and non-military wastes, distribution, and nature of the wastes, it was concluded that the presumptive remedy is appropriate for the Site, and that additional characterization of the landfill contents was not required. However, contamination beyond the limits of the landfill source needed to be characterized and potential risks evaluated. Therefore, the 2016 RI employed a site-specific approach to site characterization downgradient of the waste rather than characterizing the nature and extent of all contamination in the landfill. The RI focused on characterizing surface water conditions in the wetlands area and potential groundwater impacts downgradient of the waste limits. The human health risk assessment (HHRA) identified no Site-related chemicals of concern in in surface soil/waste, sediment/waste, surface water, and downgradient groundwater, and no ecological risk (that is, no chemicals of ecological concern) was identified with respect to biota in the upland forested area and the wetland area within the Site. Risks associated with subsurface soil/waste and groundwater/leachate within the waste were not quantitatively evaluated in accordance with the presumptive remedy approach.

Table 2-2. Federal Applicable or Relevant and Appropriate Requirements for Alternative 3

Former Fort Custer VA Area, Post Cemetery Dump, Augusta, Kalamazoo County, Michigan

Requirement	Requirement Synopsis
Location-Specific ARARs	
Federal	
Clean Water Act Section 404(b)(1) **40 CFR 230.10(a), (c), and (d) - Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, Restrictions on Discharge**	Except as provided under Section 404(b)(2) of the Clean Water Act, no discharge of dredged or fill material into an aquatic ecosystem is permitted if there is a practicable alternative that would have less adverse impact. Actions must be taken to avoid adverse impacts during dredge or fill activities in surface waters of the U.S., including wetlands under the U.S. Army Corps of Engineers (USACE) jurisdiction. Specifically, these regulations require that the discharge represent the least damaging, practicable alternative; that discharge of dredged material not result in significant degradation of the aquatic ecosystem; and that all practicable means be utilized to minimize adverse environmental impacts. This Act may be an ARAR if the remedies will result in dredge or fill activities in waters of the U.S.
Migratory Bird Treaty Act (16 U.S.C. 703(a))	The taking of any native species of wild bird is prohibited. The Act is an ARAR if migratory birds are present during the remedial actions.
Archeological Resources Protection Act (16 U.S.C. 470ee(a)	Establishes procedures to provide for preservation of scientific, historical, and archaeological data that might be destroyed through alteration of terrain as a result of a federal construction project or a federally licensed activity or program. If scientific, historical, or archaeological artifacts are discovered at the site, work in the area of the site affected by such discovery will be halted pending the completion of any data recovery and preservation activities required pursuant to the act and its implementing regulations. This Act is an ARAR during the remedial activities if scientific, historic, or archaeological artifacts are identified during implementation of a remedy.
Action-Specific ARARs	
Federal	
Standards Applicable to Generators of Hazardous Waste **40 CFR 262.11(a), (b), and (d)**	Requirement to determine if a solid waste is hazardous is applicable to solid waste, including environmental media, generated during the remedial action.
Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities **40 CFR 265, Subpart I Use and Management of Containers**	Management requirements for the temporary storage of hazardous waste in containers. These rules are ARARs for remedies that generate hazardous waste that will be stored onsite in container.
National Emissions Standards for Asbestos **40 CFR 61.145(c)(6)(i) and 40 CFR 150(a)(1)**	Measures for controlling asbestos emissions by adequate wetting and proper packaging and handling of asbestos-containing material to prevent asbestos fibers from becoming airborne during excavation, land disturbance, or waste handling activities.
Construction and Development Effluent Guidelines **40 CFR 450.21**	Requirements for implementing erosion and sediment control and other best management practices, and effluent limitations that are relevant and appropriate to remedies that involve disturbing 1 or more acres of land.

Table 2-3. Summary of Potential Chemicals of Concern Greater than Screening Criteria[1]

Former Fort Custer VA Area, Post Cemetery Dump, Augusta, Kalamazoo County, Michigan

Media	Potential Chemical of Concern Greater than Screening Criteria
Subsurface Soil/Waste	Arsenic
Groundwater/Leachate (Within the Limits of the Waste)	Benzo(b)fluoranthene and indeno(1,2,3-c,d)pyrene, arsenic, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, and zinc[2]

Notes:

1. Although ACM was not detected in the surface or subsurface soil/waste above applicable criteria in the areas sampled, pockets of friable or potentially friable ACM may still be present within the footprint of the Post Cemetery Dump; Therefore, ACM will be treated as a COPC.

2. The semivolatile organic compound analytes detected in groundwater/leachate samples all have very low solubilities and may be attributed to their adsorption to colloidal suspended solids.

Table 2-4. Comparative Analysis of Alternatives

Former Fort Custer VA Area, Post Cemetery Dump, Augusta, Kalamazoo County, Michigan

Criteria	Alternative 1: No Action	Alternative 2: Containment with Existing Soil Cover, Land Use Controls with Long-term Management	Alternative 3: Containment through Consolidation, Construction of a Soil Cover, and Land Use Controls with Long-term Management
Overall Protection of Human Health and the Environment	■	⊙	⊙
Compliance with Applicable or Relevant and Appropriate Requirements	⊙	⊙[1]	⊙[1]
Long-Term Effectiveness and Permanence	■	⊙	⊙
Reduction of Toxicity, Mobility or Volume Through Treatment	■	○	○
Short-Term Effectiveness	○	O	○
Implementability	⊙	⊙	⊙
Cost[2]	$0[(2)]	$784,603[(2)]	$3,136,218[(2)]
State/Support Agency Acceptance	○	⊙	⊙
Community Acceptance[3]	Not Acceptable	Acceptable	Not Acceptable
Ranking:			
⊙ Well satisfies criterion	O Moderately satisfies criterion	○ Poorly satisfies criterion	■ Does not meet criterion

[1] There are no chemical-specific, location-specific, or action-specific ARARs.

[2] Cost is the total present-worth value; cost accuracy ranges from -30% to +50%.

[3] The VA opposes disturbance of green space.

Table 2-5. Alternative 2 Detailed Cost Estimate

Former Fort Custer VA Area, Post Cemetery Dump, Augusta, Kalamazoo County, Michigan

Fort Custer Post Cemetery Dump — **COST ESTIMATE SUMMARY**

Site: Fort Custer Post Cemetery Dump
Location: Augusta, Kalamazoo County, Michigan
Base Year: 2019
Date: November 2019
Description: Alternative 2 Land Use Controls with Long-term Management

		QTY	UNIT	UNIT COST	TOTAL	NOTES
CAPITAL COSTS: DESCRIPTION						
Land Use Controls LUCIP		1	Each	$15,000	$15,000	$9,600 $9,600
Sampling Plan		1	Each	$4,800	$4,800	
HASP		1	Each			Perimeter = 3,110 LF, signs installed at 50 ft spacing = 63 signs 2 days to install x 2 people
Install Warning Signs				$95	$3,800	2 staff x 2 days
		40	Hour	$95	$1,520	$94 $376
		16	Hour	$55	$110	
Technician		4	Day	$41.25	$165	
Travel Roundtrip		2	Day	$100	$300	
Lodging		4	Day	$150	$300	
Meals		3	Day	$5,000	$5,000	light clearing to allow sign post installation
Travel Day Per Diem		2	Day	$75	$4,725	6' galv. U Channel Post + sign and hardware
Vehicle		1	LS		$45,696	
Misc Field Supplies		63	EA			
Clear Post Alignment						
Signs and Posts				$45,696		$4,570 EPA 2000, p. 5-13, <$100K
		10%				
Project Management					**$50,000**	
Total Capital Costs (rounded to $1,000)						
	SUBTOTAL					

OPERATIONS AND MAINTENANCE COSTS

DESCRIPTION		QTY	UNIT	UNIT COST	TOTAL	NOTES
Long Term Monitoring/Land Use Controls						
Quarterly Sampling						
Technician						
Travel Roundtrip						
Lodging						
Meals						Years 1, 2, & 3 - 12 events total. Assume landfill inspection concurrent with sampling events
Travel Day Per Diem		40	Hour	$95	$3,800	
Vehicle		32	Hour	$95	$3,040	$94 $376
Analytical - Groundwater		4	Day	$55	$0	
		0	Day	$41.25	$330	
Sampling Supplies		8	Day	$100	$800	
Shipping Samples		8	Day	$5,265		$21,060 MW's: VOCs, SVOCs, Michigan 10 Metals plus boron, (total and dissolved)
Annual LTM/LUC Report		4	LOT			
		4	Day	$100	$400	
		4	Each	$125	$500	
	SUBTOTAL	1	Each	$15,000	$15,000	
Semi-Annual Sampling	**TOTAL - YEARS**				$45,306	One Year
Technician		**3**	**EA**	**$45,306**	**$136,000**	
Travel Roundtrip						
Lodging						
Meals						Years 4 & 5 - 4 events total. Assume landfill inspection concurrent with sampling events
Travel Day Per Diem		20	Hour	$95	$1,900	
Vehicle		16	Hour	$95	$1,520	$94 $188
Analytical - Groundwater		2	Day	$55	$0	
		0	Day	$41.25	$165	
Sampling Supplies		4	Day	$100	$400	
Shipping Samples		4	Day	$5,265		$10,530 MW's: VOCs, SVOCs, Michigan 10 Metals plus boron, (total and dissolved)
Annual LTM/LUC Report		2	LOT			
		2	Day	$100	$200	
		2	Each	$125	$250	
	SUBTOTAL	1	Each	$15,000	$15,000	
Annual Sampling	**TOTAL - YEARS**				$30,153	One Year
Technician		**2**	**EA**	**$30,153**	**$60,000**	
Travel Roundtrip						
Lodging						
Meals						Years 6 to 30 - 5 events total. Assume landfill inspection concurrent with sampling events
Travel Day Per Diem		10	Hour	$95	$950	
Vehicle		8	Hour	$95	$760	
Analytical - Groundwater		1	Day	$94	$94	
		0	Day	$55	$0	
Sampling Supplies		2	Day	$41.25	$83	
Shipping Samples		2	Day	$100	$200	
Annual LTM/LUC Report		1	LOT	$5,265		$5,265 MW's: VOCs, SVOCs, Michigan 10 Metals plus boron, (total and dissolved)
		1	Day	$100	$100	
		1	Each	$125	$125	
		1	Each	$15,000	$15,000	
	SUBTOTAL				$22,577	One Year
	TOTAL - YEARS	**5**	**EA**	**$22,577**	**$113,000**	

Table 2-5. Alternative 2 Detailed Cost Estimate

Former Fort Custer VA Area, Post Cemetery Dump, Augusta, Kalamazoo County, Michigan

Land Use Controls - Inspection after Storm Events								Assumed 2 additional inspections per year on average after storm event
Technician				20	Hour	$95	$1,900	
Travel Roundtrip				16	Hour	$95	$1,520	
Lodging 2	Day	$94	$188 Meals	0	Day	$55	$0	
Travel Day Per Diem				4	Day	$41.25	$165	
Vehicle				4	Day	$100	$400	
		SUBTOTAL					$4,173	One Year
		TOTAL - YEARS		**30**	**EA**	**$4,173**	**$125,000**	
		TOTAL - 30 YEARS					**$434,000**	
Project Management				6%		$434,000	$26,040	EPA 2000, p. 5-13, $500K - $2MM
Contingency				5%		$434,000	$21,700	
Total Operating O&M Costs (rounded to $1,000)							**$482,000**	

PERIODIC COSTS - 5 YEAR REVIEW

DESCRIPTION		QTY	UNIT	UNIT COST	TOTAL	NOTES
5 Year Review Report		1	Each	$20,000	$20,000	
	SUBTOTAL				$20,000	One Year
	Total 5 Year Review	6	Year	$20,000	$120,000	
Project Management		8%		$120,000	$9,600	EPA 2000, p. 5-13, $100K - $500K
Total Periodic Costs (rounded to $1,000)					**$130,000**	

PRESENT VALUE ANALYSIS

Discount Rate = 2.6% Source: USEPA 2000, page 4-5. This rate represents a "real" discount rate approximating interest rates adjusted for inflation.

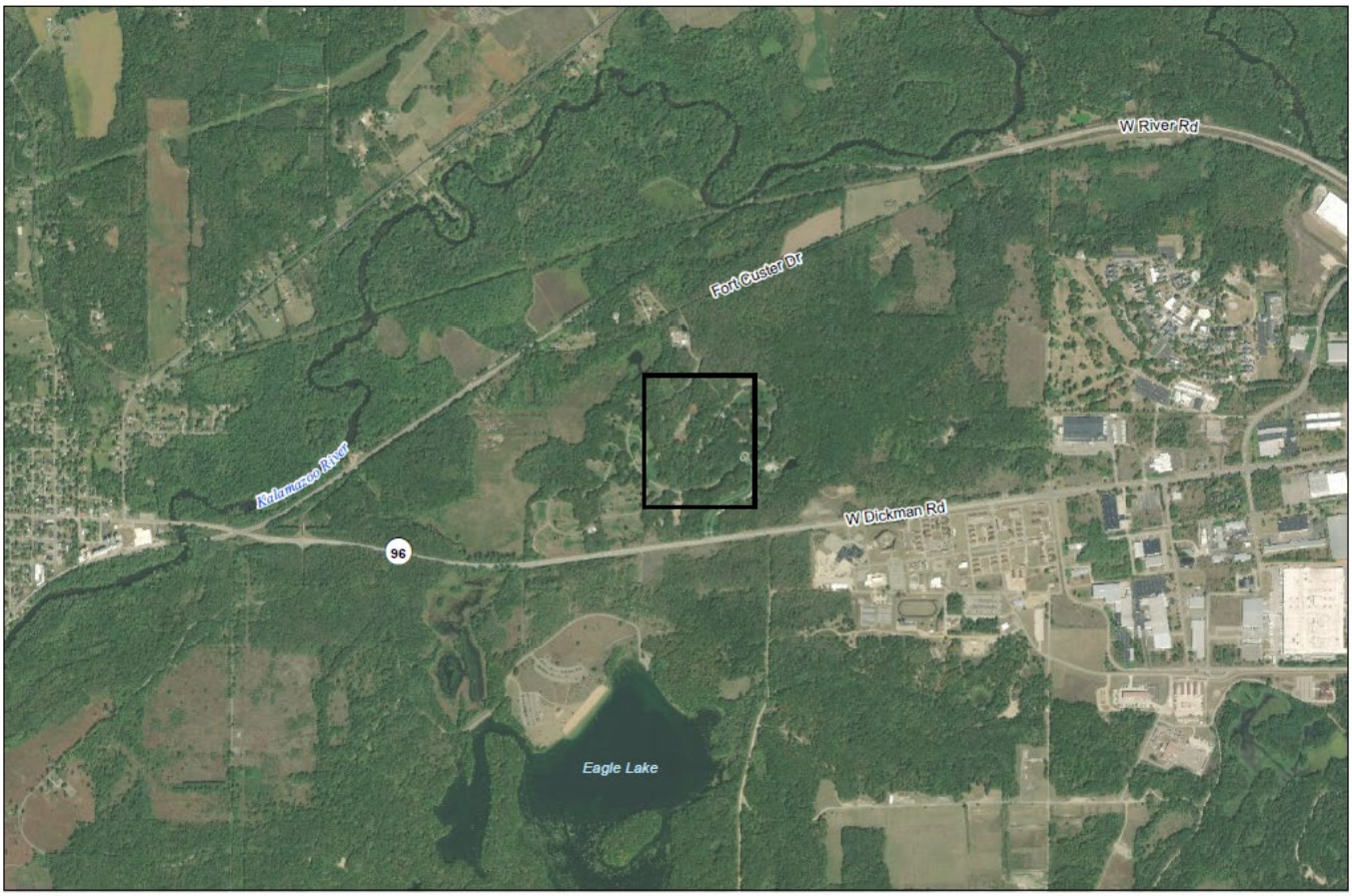
COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	PRESENT VALUE	
CAPITAL COST	0	$ 50,000	$ 50,000	1.00	$50,000	
				20.65	$118,925	
ANNUAL O&M COST	1 to 30		$ 5,758			Project Management & Periodic Landfill Inspections After Storm
PERIODIC COST	1		$ 45,306	0.97	$44,158	
PERIODIC COST	2		$ 45,306	0.95	$43,039	
PERIODIC COST	3		$ 30,153	0.93	$27,918	
PERIODIC COST	4		$ 30,153	0.90	$27,211	
PERIODIC COST	5		$ 51,820	0.88	$45,578	
PERIODIC COST	6		$ 22,577	0.86	$19,354	
PERIODIC COST	7		$ 22,577	0.84	$18,864	
PERIODIC COST	8		$ 22,577	0.81	$18,386	
PERIODIC COST	9		$ 22,577	0.79	$17,920	
PERIODIC COST	10		$ 44,243	0.77	$34,227	
PERIODIC COST	11		$ 22,577	0.75	$17,023	
PERIODIC COST	12		$ 22,577	0.73	$16,592	
PERIODIC COST	13		$ 22,577	0.72	$16,171	
PERIODIC COST	14		$ 22,577	0.70	$15,761	
PERIODIC COST	15		$ 44,243	0.68	$30,105	
PERIODIC COST	16		$ 22,577	0.66	$14,973	
PERIODIC COST	17		$ 22,577	0.65	$14,593	
PERIODIC COST	18		$ 22,577	0.63	$14,223	
PERIODIC COST	19		$ 22,577	0.61	$13,863	
PERIODIC COST	20		$ 44,243	0.60	$26,479	
PERIODIC COST	21		$ 22,577	0.58	$13,169	
PERIODIC COST	22		$ 22,577	0.57	$12,836	
PERIODIC COST	23		$ 22,577	0.55	$12,510	
PERIODIC COST	24		$ 22,577	0.54	$12,193	
PERIODIC COST	25		$ 44,243	0.53	$23,290	
PERIODIC COST	26		$ 22,577	0.51	$11,583	
PERIODIC COST	27		$ 22,577	0.50	$11,290	
PERIODIC COST	28		$ 22,577	0.49	$11,003	
PERIODIC COST	29		$ 22,577	0.48	$10,725	
PERIODIC COST	30		$ 44,243	0.46	$20,485	
					$784,446	
TOTAL PRESENT VALUE (rounded to $1,000)					**$785,000**	

Note:

For definitions, refer to the Acronyms and Abbreviations section in the FS. This cost estimate is budgetary in nature and as such is suitable for feasibility and budget planning only. This estimate is not an offer to contract for and/or to perform construction or construction management services.

Figures

Figure 1-1



Legend

Approximate Site Location

0 500 1,000 2,000

Feet

Figure 1-1
Site Location Map
Post Cemetery Dump
Fort Custer VA Area
Kalamazoo County, MI

Aerial Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (September 23, 2017).

R:\ENBG\00_Proj\UIUSACE\FI_Custer\MapFiles\2018\RI\Figure 1-1_Site Location Map.mxd AESPEJO 9/4/2018

ch2m

Figure 1-2

ID	Top of trench elevation (ft above msl)	Bottom of trench elevation (ft above msl)	Northing	Easting
TP 2	828.35	821.35	306515.33	12865992.67
TP 3	827.16	821.66	306596.48	12865939.63
TP 4	826.33	818.33	306667.29	12865902.51
TP 5	824.15	818.15	306803.99	12865884.38
TP 6	811.89	804.89	306894.29	12865947.21
TP 7	821.41	816.91	306996.18	12865926.33
TP 8	818.81	812.81	307091.63	12865969.01
TP 9	804.91	799.41	307165.65	12866042.33
TP 9a	802.66	796.16	307178.14	12866054.95
TP 10	801.56	795.56	307235.46	12866071.18
TP 11	805.07	799.07	307330.71	12866104.72
TP 12	803.80	794.80	307447.37	12866181.10
TP 17	797.80	791.80	307511.68	12866443.83
TP 18	801.61	795.61	307404.31	12866443.42
TP 19	802.12	796.12	307300.12	12866398.50
TP 20	801.33	796.33	307209.15	12866373.82
TP 21	803.11	797.11	307117.91	12866352.67
TP 22	801.93	796.93	307017.22	12866344.78
TP 23	802.14	796.14	306922.60	12866349.09
TP 24	803.44	796.44	306820.06	12866371.38
TP 25	810.68	803.68	306715.35	12866491.46
TP 26	805.43	800.93	306621.73	12866448.52
TP 27	799.55	795.55	306528.93	12866379.12
TP 28	800.28	796.28	306464.70	12866379.18
TP 29	808.01	803.76	306334.28	12866306.26
TP 30	807.12	802.12	306317.14	12866233.72
TP 31	806.66	799.66	306294.61	12866136.40
SB 1	806.31	796.31	306910.66	12865965.76
SB 11	814.27	809.27	306404.53	12866001.13
SB 12	826.40	821.40	306654.33	12865909.22

Legend

- Waste Limit Boundary Survey
- Crypt/ID
- Subarea 1
- Subarea 2
- Wetland Corridor

Notes:

1. Test Pit and Soil Boring Survey Reference: Smith Group JJR; June 2013; Michigan State Plane Coordinate System, South Zone (2113), North American Datum of 1983.
2. Coordinates shown along the Subarea 1 and Subarea 2 border are approximate.

Land Use Restrictions:

Subarea 1 - Restricted Access and Prohibited Ground Disturbance
(I) Access restricted to VA personnel and contractors only; and
(II) Prohibited ground disturbance and groundwater well installation.

Subarea 2 - Restricted Ground Disturbance.
(I) Training and PPE for personnel and contractors engaged in surface disturbance activities within Subarea 2.
(II) Prohibited [groundwater well installation or] relocation of any materials unearthed or produced during surface disturbance activities anywhere on Fort Custer National Cemetery property.

Figure 1-2
Fort Custer National Cemetery
Facility Master Plan
Post Cemetery Dump
Fort Custer VA Area
Kalamazoo County, MI

Attachment A
Amended Facility Master Plan, VA's written confirmation of adoption of the Amended Facility Master Plan, and MOU

ID	Top of trench elevation (ft above msl)	Bottom of trench elevation (ft above msl)	Northing	Easting
TP 2	828.35	821.35	306515.33	12865992.67
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TP 11	805.07	799.07	307330.71	12866104.72
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TP 19	802.12	796.12	307300.12	12866398.50
TP 20	801.33	796.33	307209.15	12866373.82
TP 21	803.11	797.11	307117.91	12866352.67
TP 22	801.93	796.93	307017.22	12866344.78
TP 23	802.14	796.14	306922.60	12866349.09
TP 24	803.44	796.44	306820.06	12866371.38
TP 25	810.68	803.68	306715.35	12866491.46
TP 26	805.43	800.93	306621.73	12866448.52
TP 27	799.55	795.55	306528.93	12866379.12
TP 28	800.28	796.28	306464.70	12866379.18
TP 29	808.01	803.76	306334.28	12866306.26
TP 30	807.12	802.12	306317.14	12866233.72
TP 31	806.66	799.66	306294.61	12866136.40
SB 1	806.31	796.31	306910.66	12865965.76
SB 11	814.27	809.27	306404.53	12866001.13
SB 12	826.40	821.40	306654.33	12865909.22

Legend

- Waste Limit Boundary Survey
- Crypt/ID
- Subarea 1
- Subarea 2
- Wetland Corridor

Notes:

1. Test Pit and Soil Boring Survey Reference: Smith Group JJR; June 2013; Michigan State Plane Coordinate System, South Zone (2113), North American Datum of 1983,
2. Coordinates shown along the Subarea 1 and Subarea 2 border are approximate.

Land Use Restrictions:

Subarea 1 - Restricted Access and Prohibited Ground Disturbance
(I) Access restricted to VA personnel and contractors only; and
(II) Prohibited ground disturbance and groundwater well installation.

Subarea 2 - Restricted Ground Disturbance.
(I) Training and PPE for personnel and contractors engaged in surface disturbance activities within Subarea 2.
(II) Prohibited [groundwater well installation or] relocation of any materials unearthed or p during surface disturbance activities anywhere on Fort Custer National Cemetery pro

Fort Custer National Cemetery
Amended Facility Master Plan
09/30/2020
Post Cemetery Dump
Fort Custer VA Area
Kalamazoo County, MI

DEPARTMENT OF VETERANS AFFAIRS
National Cemetery Administration
Cemetery Development & Improvement Service
575 North Pennsylvania Street, Suite 495
Indianapolis, IN 46204

March 2, 2021

Corey Knox
Project Manager
USACE Louisville District Environmental Support Section
Phone: (502) 315-2622
Cell: (502) 682-1173
Corey.S.Knox@usace.army.mil

Mr. Knox;

In accordance with your email request dated February 19, 2021 (reference Attachment B) NCA hereby confirms that the "Amended Facility Plan" (reference Attachment A) has been adopted at Ft Custer National Cemetery and will now be in effect. The Amended Facility Plan is on file at the Administrative Office of Ft Custer National Cemetery and within the official real estate files for Ft Custer National Cemetery located at the NCA Midwest District office.

Please feel free to contact me at Phone#317-409-1634 if any questions.

Sincerely,

Glenn Madderom

Glenn D. Madderom
Chief, Cemetery Development & Improvement Service

CC:
NCA Cemetery Director (Mr.Thomas Maynard)
NCA Midwest District Engineer (Ms. Maribel Alvarez-Cabrera)

Attachment A;

PDF
Amended Facility Plan.pdf

Attachment B; Reference Emails

From: Knox, Corey S CIV (USA) <Corey.S.Knox@usace.army.mil>
Sent: Tuesday, February 23, 2021 7:33 PM
To: Madderom, Glenn <Glenn.Madderom@va.gov>; Franklin, Rita (CFM) <Rita.Franklin@va.gov>; Alvarez-Cabrera, Maribel <Maribel.Alvarez-Cabrera@va.gov>
Cc: Mieczkowski, Kevin M CIV USARMY CELRL (US) <Kevin.M.Mieczkowski@usace.army.mil>; Richardson, Traylor E CIV USARMY CELRL (USA) <Traylor.E.Richardson@usace.army.mil>
Subject: [EXTERNAL] RE: Draft MOU & Decision Document Discussion regarding the Fort Custer VA Post Cemetery Dump Site Project, primary and secondary

Good evening Glenn,
The amended facility plan is attached. USACE will need a letter confirming that the VA/NCA has adopted the attached amended facility plan as the "official" plan for the facility.

Respectfully,

Corey Knox
Project Manager
USACE Louisville District Environmental Support Section
Phone: (502) 315-2622
Cell: (502) 682-1173
Corey.S.Knox@usace.army.mil
http://www.lrl.usace.army.mil/


From: Madderom, Glenn <Glenn.Madderom@va.gov>
Sent: Tuesday, February 23, 2021 4:31 PM
To: Knox, Corey S CIV (USA) <Corey.S.Knox@usace.army.mil>; Franklin, Rita (CFM) <Rita.Franklin@va.gov>; Alvarez-Cabrera, Maribel <Maribel.Alvarez-Cabrera@va.gov>
Cc: Mieczkowski, Kevin M CIV USARMY CELRL (US) <Kevin.M.Mieczkowski@usace.army.mil>; Richardson, Traylor E CIV USARMY CELRL (USA) <Traylor.E.Richardson@usace.army.mil>
Subject: [Non-DoD Source] RE: Draft MOU & Decision Document Discussion regarding the Fort Custer VA Post Cemetery Dump Site Project, primary and secondary

Can you clarify again what is this? "the amended facility plan"

Glenn Madderom
Chief, Cemetery Development & Improvement Service
National Cemetery Administration
575 N. Pennsylvania St. Room 495
Indianapolis, IN. 46204
Phone: 317-409-1634

From: Knox, Corey S CIV (USA) <Corey.S.Knox@usace.army.mil>
Sent: Tuesday, February 23, 2021 4:21 PM
To: Madderom, Glenn <Glenn.Madderom@va.gov>; Franklin, Rita (CFM) <Rita.Franklin@va.gov>; Alvarez-Cabrera, Maribel <Maribel.Alvarez-Cabrera@va.gov>
Cc: Mieczkowski, Kevin M CIV USARMY CELRL (US) <Kevin.M.Mieczkowski@usace.army.mil>; Richardson, Traylor E CIV USARMY CELRL (USA) <Traylor.E.Richardson@usace.army.mil>
Subject: [EXTERNAL] RE: Draft MOU & Decision Document Discussion regarding the Fort Custer VA Post Cemetery Dump Site Project, primary and secondary

Good afternoon,
Does anyone have any questions regarding the confirmation/concurrence letter? If not, does anyone have an idea on when we (USACE) may expect to receive the letter?

Respectfully,
Corey Knox
Project Manager
USACE Louisville District Environmental Support Section
Phone: (502) 315-2622
Cell: (502) 682-1173
Corey.S.Knox@usace.army.mil
http://www.lrl.usace.army.mil/

From: Knox, Corey S CIV (USA)
Sent: Friday, February 19, 2021 8:45 AM
To: Madderom, Glenn <Glenn.Madderom@va.gov>; Franklin, Rita (CFM) <Rita.Franklin@va.gov>; Alvarez-Cabrera, Maribel <Maribel.Alvarez-Cabrera@va.gov>
Cc: Mieczkowski, Kevin M CIV USARMY CELRL (US) <Kevin.M.Mieczkowski@usace.army.mil>; Richardson, Traylor E CIV USARMY CELRL (USA) <Traylor.E.Richardson@usace.army.mil>
Subject: RE: Draft MOU & Decision Document Discussion regarding the Fort Custer VA Post Cemetery Dump Site Project, primary and secondary

Good morning VA team,
I sent our meeting minutes from our discussion regarding the Draft MOU and the Decision Document on 10 February this morning. I want to clarify the request from USACE regarding the concurrence letter. USACE just needs a basic letter stating that the amended facility plan has been adopted and is now in effect. Also, the letter should state that the amended facility plan is on file at the project site and within the official real estate files at the Regional office. If you have any questions, please let us know.

Respectfully,
Corey Knox
Project Manager
USACE Louisville District Environmental Support Section
Phone: (502) 315-2622
Cell: (502) 682-1173

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE UNITED STATES ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
AND
THE UNITED STATES DEPARTMENT OF VETERANS AFFAIRS
NATIONAL CEMETERY ADMINISTRATION
REGARDING IMPLEMENTATION OF
LAND USE CONTROLS AT
THE FORT CUSTER NATIONAL CEMETERY

ARTICLE I – PURPOSE

This Memorandum of Understanding (MOU) between the U.S. Army Corps of Engineers, Louisville District (USACE) and the U.S. Department of Veterans Affairs, National Cemetery Administration (NCA) (collectively, the "Parties") establishes roles and responsibilities related to the decision by USACE, as execution agent for the Department of Defense (DOD) under the Formerly Used Defense Sites Program (FUDS), to utilize land use controls (LUCs) as a component of its remedy in order to eliminate or mitigate any potential risk associated with the containment of DoD waste at the former Fort Custer Military Reservation (FCMR) located approximately two miles east of the City of Augusta, Kalamazoo County, Michigan. Specifically, this MOU establishes provisions for the implementation of LUCs at a FUDS project site, located within the Fort Custer National Cemetery (FCNC), currently under the custody and control of NCA. This MOU shall remain in effect until USACE is no longer required to perform five year reviews under applicable law and regulation (42 USC §9621(c); 40 CFR Part 300.430(f)(4)(ii)).

ARTICLE II - BACKGROUND

a. Under the authority of the Defense Environmental Restoration Program (DERP, 10 USC §§2701, et seq.), and its policies and procedures relating to FUDS, including DOD Manual 4715.20, *DERP Management*, and Engineering Regulation (ER) 200-3-1, *FUDS Program Policy*, and in accordance with Executive Orders 12580 and 13016, Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA, 42 USC §§9601, et seq.), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP, 40 CFR Part 300), USACE previously identified and investigated, and is now seeking to perform environmental restoration activities related to release(s) or threatened release(s) of hazardous substances, or pollutants or contaminants, which were the result of DoD operations at the former FCMR.

b. The FCMR consists of approximately 15,000 acres that were formerly occupied by Camp Custer, a military training camp that was established in 1917 and subsequently expanded and designated as Fort Custer in 1940.

c. The portion of FCMR designated the Fort Custer Veterans Administration (VA) Area consists of 554.73 acres that were transferred from DoD control to the VA on June 2, 1980 currently under the custody and control of the NCA, and is wholly within of the boundaries of the FCNC.

d. The Post Cemetery Dump project (FUDS Property No. E05MI000603) was first identified as an area of interest by USACE in 1994 and consists of approximately 10.5 acres of forest and wetland that lie mostly within the circular Fort Custer Drive. Various site investigations have occurred at the project site since 1994. According to FCMR records, topographic and site maps, witness interviews, historical aerial photographs and site visits, the Post Cemetery Dump site was a wetland basin/ravine use for disposal of rubbish from approximately 1920 through the closure of Ft. Custer in 1968. Evidence of waste is documented and includes slag, glass (primarily bottles, both melted and unmelted), scrap metal (empty and rusted boilers/tanks/drums, mechanical pieces, rusted/empty cans, conduit and pipes/rods, strapping, chain-link fencing, trash-can lids, wire mesh, washing machine), sand/gravel/rock, cinders, demolition debris (concrete, bricks, tile, drywall, roofing materials, broken ceramic/clay pipe, corrugated panels, railroad ties), ash, porcelain dishware, wood/sticks and plant debris, un-combusted coal, radio tubes, cloth/clothing, plastic, paper, and other unidentified substances/items.

e. A risk assessment (RI) was conducted to assess potential impacts to groundwater downgradient of the project area, characterize potential risks to human and ecological receptors, and provide sufficient data to evaluate remedial alternatives. Although the contents of the waste within the Post Cemetery Dump site could not be completely characterized due to its heterogeneity, evidence demonstrated the waste and its constituents were contained within the footprint of the waste area limits. The results of the human health risk assessment indicate the detected chemical concentrations would not pose unacceptable risks to site visitors or maintenance workers exposed to surface soil/waste, sediment/waste, surface water, and downgradient groundwater. The ecological risk assessment likewise found no unacceptable risks to the environment.

f. In accordance with the U.S. Environmental Protection Agency's (EPA) directive Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills (1996), the presumptive remedy of source containment should be applied to military landfills in situations where landfill contents meet the municipal-type waste definition and excavation of contents is not practicable. As such, USACE developed remedial alternatives in accordance with the NCP and DERP Manual to protect human health and the environment.

g. In accordance with 5 CFR 300.430(5), USACE will issue a decision document (DD) reviewed by and coordinated with NCA, Michigan's Department of Environment, Great Lakes, and Energy (EGLE), and other stakeholders. Because the waste is currently contained based on the topography, geology and hydrology of the site, USACE's selected remedial alternative for the project site is LUCs with long-term management (LTM) to prevent future exposure to the waste or its constituents and ensure future containment of the waste left-in-place.

h. NCA is the Federal agency with custody and control over the FCNC, including the Post Cemetery Dump project site. Therefore, USACE has no authority to unilaterally implement certain types of LUCs associated with use (or non-use) of the site. As such, USACE has prepared and NCA has reviewed, accepted and adopted an amendment to NCA's current FCNC facility Master Plan defining and mapping the areas of: (i) limited surface access; (ii) restricted ground disturbance; and (iii) prohibited ground disturbance or groundwater well installation. A copy of the NCA's amended FCNC facility Master Plan is attached as Exhibit A.

ARTICLE III – ROLES AND RESPONSIBILITIES OF THE PARTIES

a. USACE shall develop, in coordination with NCA, a LUC Implementation Plan (LUCIP) which will detail:

(1) USACE procurement and installation of signage on FCNC restricting access to the footprint of the contained waste area limits, including:

(i) The design features of each sign (e.g., size, text, font, material, colors, posts, and other aesthetic considerations);

(ii) The number and location of each sign (e.g., intervals and positions for placement, height, number of replacement signs); and

(iii) Frequency or conditions warranting replacement signage.

(2) USACE preparation and delivery of educational and training materials for NCA employees and contractors operating in the proximity of the contained waste area limits, including recommended personal protective equipment and guidance for handling encountered waste.

b. USACE shall develop, in coordination with NCA, a Long-Term Management (LTM) Plan, which will detail:

(1) USACE obligations to maintain and repair the contained waste area in the event containment fails or is compromised due to natural degradation or other forces of nature;

(2) The scope and frequency of USACE inspections of the contained waste area, related signage and groundwater/surface water well networks;

(3) USACE groundwater and surface water well surveys, well development and abandonment, sampling frequency and parameters;

(4) LUC compliance monitoring; and

(5) LTM reports.

c. USACE shall perform five-year reviews of the property under CERCLA.

d. NCA shall:

(1) Enforce the access restrictions in the amended FCNC facility Master Plan as it would against any visitor or trespasser in an unauthorized area of the FCNC;

(2) Adhere to and enforce the ground disturbance and well installation restrictions in the amended FCNC facility Master Plan;

(3) Ensure all NCA employees and contractors operating within the vicinity of the project site review the training materials and wear appropriate personal protective equipment and

(4) Perform operation and maintenance activities at the FCNC, including the contained waste area, commensurate with its obligations as the Federal agency with custody and control of the FCNC property.

ARTICLE IV – INTERAGENCY COMMUNICATIONS

To provide for consistent and effective communication between the Parties, USACE and NCA each appoint the following respective points of contact to communicate in the implementation of this MOU. Each Party may change its point of contact upon reasonable notice to the other Party.

For USACE—

Primary: FUDS Program Manager
U.S. Army Corps of Engineers, Louisville District
600 Dr. Martin Luther King Jr. Place
Louisville, KY 40202-0059

Alternate: Office of Counsel
U.S. Army Corps of Engineers, Louisville District
600 Dr. Martin Luther King Jr. Place
Louisville, KY 40202-0059

For NCA—

Primary: Executive Director
VA National Cemetery Administration, Midwest District
575 N. Pennsylvania Street, Suite 495
Indianapolis, IN 46204

Alternate: Cemetery Director
Ft Custer National Cemetery
15501 Dickman Road
Augusta, MI 49012

ARTICLE V - DISPUTE RESOLUTION

The Parties agree that, in the event of a dispute between the parties, USACE and NCA shall use their best efforts to resolve that dispute in an informal fashion through cooperation and communication, or other forms of non-binding alternative dispute resolution. The Parties agree to resolve disputed matters as soon as practicable, at the lowest level possible.

ARTICLE VI - PERSONNEL

Each Party is responsible for all costs of its personnel, including pay and benefits, support, and travel. Each Party is responsible for supervision and management of its personnel.

ARTICLE VII - GENERAL PROVISIONS

FUNDS AND MANPOWER: This MOU does not document nor provide for the exchange of funds or manpower between the Parties nor does it make any commitment of funds or resources.

SEVERABILITY: Nothing in this MOU is intended to conflict with current law, regulation, or USACE policies. If a term of this MOU is inconsistent with such authority or policy, then that term shall be invalid, but the remaining terms and conditions of this MOU shall remain in full force and effect.

TERMINATION: This MOU may be terminated in writing at will by either Party.

TRANSFERAILITY: This MOU is not transferable except with the written consent of the Parties.

ENTIRE UNDERSTANDING: It is expressly understood and agreed that this MOU embodies the entire understanding between the Parties regarding the MOU's subject matter.

EFFECTIVE DATE: This MOU takes effect beginning on the day after the last Party signs.

Eric D. Crispino Digitally signed by Eric D. Crispino Date: 2021.04.13 20:08:59 -04'00'

_____

ERIC D. CRISPINO
COL, EN
Commanding
US Army Engineer District, Louisville

JOSHUA M DE LEON 113144 Digitally signed by JOSHUA M DE LEON 113144 Date: 2021.09.02 08:57:51 -04'00'

_____

JOSHUA DE LEON
Executive Director
Midwest District
National Cemetery Administration

Exhibit A

ID	Top of trench elevation (ft above msl)	Bottom of trench elevation (ft above msl)	Northing	Easting
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TP 4	826.33	818.33	306667.29	12865902.51
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TP 8	818.81	812.81	307091.63	12865969.01
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TP 17	797.80	791.80	307511.68	12866443.83
TP 18	801.61	795.61	307404.31	12866443.42
TP 19	802.12	796.12	307300.12	12866398.50
TP 20	801.33	796.33	307209.15	12866373.82
TP 21	803.11	797.11	307117.91	12866352.67
TP 22	801.93	796.93	307017.22	12866344.78
TP 23	802.14	796.14	306922.60	12866349.09
TP 24	803.44	796.44	306820.06	12866371.38
TP 25	810.68	803.68	306715.35	12866491.46
TP 26	805.43	800.93	306621.73	12866448.52
TP 27	799.55	795.55	306528.93	12866379.12
TP 28	800.28	796.28	306464.70	12866379.18
TP 29	808.01	803.76	306334.28	12866306.26
TP 30	807.12	802.12	306317.14	12866233.72
TP 31	806.66	799.66	306294.61	12866136.40
SB 1	806.31	796.31	306910.66	12865965.76
SB 11	814.27	809.27	306404.53	12866001.13
SB 12	826.40	821.40	306654.33	12865909.22

Legend

Waste Limit Boundary Survey

Crypt/ID

Subarea 1

Subarea 2

Wetland Corridor

Notes:

1. Test Pit and Soil Boring Survey Reference: Smith Group JJR; June 2013; Michigan State Plane Coordinate System, South Zone (2113), North American Datum of 1983.
2. Coordinates shown along the Subarea 1 and Subarea 2 border are approximate.

Land Use Restrictions:

Subarea 1 - Restricted Access and Prohibited Ground Disturbance
- (I) Access restricted to VA personnel and contractors only; and
- (II) Prohibited ground disturbance and groundwater well installation.

Subarea 2 - Restricted Ground Disturbance.
- (I) Training and PPE for personnel and contractors engaged in surface disturbance activities within Subarea 2.
- (II) Prohibited [groundwater well installation or] relocation of any materials unearthed or produced during surface disturbance activities anywhere on Fort Custer National Cemetery property.

Fort Custer National Cemetery
Amended Facility Master Plan
09/30/2020
Post Cemetery Dump
Fort Custer VA Area
Kalamazoo County, MI

Attachment B
Concurrence Letters

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

October 5, 2021

VIA E-MAIL AND U.S. MAIL

Mr. Ron Gruzesky, P.E.
FUDS Program Manager
Environmental Support Section
United States Army Corps of Engineers, Louisville District
600 Dr. Martin Luther King Jr. Place
Louisville, Kentucky 40202

Dear Mr. Gruzesky:

SUBJECT: Concurrence with the Decision Document (DD) for Fort Custer Veterans Affairs Area Post Cemetery Dump (Site); Formerly Used Defense Site (FUDS); Augusta, Kalamazoo County, Michigan

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) received the final DD for the Site on September 23, 2021. After review of the information presented in the DD and relevant supporting documentation, EGLE, on behalf of the State of Michigan, concurs with the remedy selected by the United States Army Corps of Engineers (USACE) in the DD.

Specifically, EGLE concurs with the final remedy selected by the USACE for the Site, which includes containment as a presumptive remedy, long-term monitoring (LTM) of the groundwater, and educational controls to protect human health and the environment from actual or threatened releases of hazardous substances, pollutants, or contaminants into the environment from the Site.

EGLE also understands the remedy originally proposed by the USACE included land use controls (LUCs) for the Site. However, prior to executing this DD, the United States Department of Veterans Affairs' National Cemetery Administration (NCA), as custodians of the Fort Custer National Cemetery, voluntarily agreed to implement the recommended LUCs at the Site.

Accordingly, the USACE considers the LUCs as supplemental to and not a component of the selected remedy and by the Memorandum of Understanding between the USACE and the NCA. The NCA will implement and manage the LUCs, and the USACE will implement and evaluate the effectiveness of the remedy and the LUCs through LTM of the groundwater, regular inspections, and five-year reviews. The remedy in the DD and together with the LUCs implemented by the NCA are expected to ensure protection of human health and the environment.

If you need further information or assistance, please contact Mr. Josh Mosher, Acting Director, Remediation and Redevelopment Division, at 517-897-7267; MosherJ1@Michigan.gov; or EGLE, P.O. Box 30426, Lansing, Michigan 48909-7926.

Sincerely,

Liesl Eichler Clark
Director
517-284-6700

cc: Mr. Aaron B. Keatley, Chief Deputy Director, EGLE
Mr. Josh Mosher, EGLE
Mr. David Kline, EGLE
Mr. John Bradley, EGLE
Mr. William Harmon, EGLE

Attachment C
Public Meeting Transcript

Proposed Plan Virtual Public Meeting
Former Fort Custer Post Cemetery Dump Site
Augusta, Kalamazoo County, Michigan
Virtual Meeting
January 29, 2020
6:00 p.m.

Transcript and the proceedings in the above-entitled matter, on the 29th of January, 2020, taken from the virtual teleconference meeting that began at 6:00 p.m., e.d.t., were recorded in the State of Michigan.

Appearances
U.S. Army Corps of Engineers, Louisville District
Corey Knox, Project Manager
Kevin Mieczkowski, Technical Manager
Traylor Richardson, Office of Counsel
Todd Hornback, Public Affairs Office

Jacobs – Contractor
Kimberly Amley, Project Manager
Julie Clark, Facilitator
David Mitchell, Senior Scientist

Stakeholders
Glenn Madderom / National Cemetery Association Chief, Cemetery Development & Improvement Service
Thomas Maynard, Fort Custer National Cemetery Director
Adam Bydash, Fort Custer National Cemetery Foreman
Jill Shattel / National Cemetery Association Environmental Protection Specialist

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MR. KNOX: Ladies and gentlemen, welcome to the Former Fort Custer Post Cemetery Dump Site at the Veterans Affairs Area Proposed Plan virtual public meeting. We appreciate your interest in the Veterans Affairs Area Post Cemetery Dump project and welcome each of you. Given the unique circumstances of COVID-19 outbreak along with our commitment to protecting public health, the in-person public meeting originally planned was scheduled as a virtual public meeting. USACE is conducting this virtual public meeting to avoid in-person contact while continuing to meet its obligation under federal law. This presentation will cover the same information as an in-person public meeting, however, the comment process will be different. Details on how to submit a comment and have your comment addressed will be covered later in this presentation. All project information can be found on the project website at the address provided in the public notice and in this presentation. My name is Corey Knox and I am the Project Manager for the USACE Louisville District. Now, I would like to introduce my team.

MR. MIECZKOWSKI: Good evening. I'm Kevin Mieczkowski and I am the Technical Manager for this project for the Louisville District.

MR. RICHARDSON: Hello, I'm Traylor Richardson and I provide Legal Counsel support for the Louisville District.

MR. HORNBACK: My name is Todd Hornback and I'm participating tonight from the Public Affairs Office specialist from the Louisville District for Shatara Riis.

MS. AMLEY: Good evening. I'm Kimberly Amley and I am with Jacobs Engineering Group. Jacobs is the selected contractor for USACE and have supported USACE with investigation and reporting activities at the Former Fort Custer Post Cemetery Dump Site.

MS. CLARK: Hello, I'm Julie Clark and I am with Jacobs. I will be the facilitator this evening.

MR. MITCHELL: Hello, I'm Dave Mitchell and I am with Jacobs. I am the senior technical scientist for Jacobs on this project.

MR. KNOX: The Michigan Department of Environment, Great Lakes and Energy is the lead regulator. The USACE coordinates project activities with EGLE and provides opportunities for review and comment on project documents. This project is located on property in the custody and control of the VA within Kalamazoo County. Thank you to the members of the public that are taking the time to participate this evening.

MS. AMLEY: Slide 3. During this virtual meeting, USACE will describe the project so those attending can determine how they will be affected. Phones will be muted during the presentation. However, the public is encouraged to submit written comments using the chat and 'raise your hand' option. A facilitator will acknowledge your comment and provide me with your question or comment at the end of the presentation. We will answer your chat questions once the presentation is complete. We also will answer verbal questions at the end of the meeting. We ask that you state and spell your name prior to asking your question. The meeting will end 30 minutes after public participation ends. This meeting is being recorded. Written comments will be received through August 16, 2020. Written comments can be submitted to Ms. Shatara Riis at the USACE Louisville District at 600 Dr. Martin Luther King Jr. Place, Louisville, Kentucky, 40202. If you experience internet or connection issues during the presentation, please call the toll-free meeting number at 1-888-557-8511 to listen via a phone or mobile device. The presentation is available on the project website at http://fortcusterpostcemeterydump.com. This virtual public meeting is being held in compliance with federal laws. A transcript of the public meeting will be part of the administrative record for the Veterans Affairs Area Former Post Cemetery Dump. In addition, the transcript, public comments, and a responsiveness summary will be included in the Decision Document. Following this meeting, USACE will proceed with the final Decision Document. Your statements and comments received will be given full consideration prior to selecting the final remedy. At this time, we welcome the public to introduce themselves. Please state and spell your name. Since there was no response, phones will now be muted.

MS. AMLEY: Slide 4. During the meeting this evening we will review background information including the regulatory framework for the formerly used defense sites; the purpose and objective of this virtual public meeting; a history of Fort Custer, including specific Department of Defense activities at Former Post Cemetery Dump Site. We will review remedial investigation activities and discuss the site risks for investigated media including soil/waste, sediment/waste, groundwater outside the limits of the waste, groundwater/leachate within the limits of the waste, and surface water. We will present the rationale for the preferred Land Use Control with Long-term Management alternative, or Alternative 2. We will review how the community can express their views on the preferred alternative. A question and comment period will immediately follow this presentation. The public is encouraged to submit both chat and verbal comments during the meeting. In addition, written public comments will be received (that is, post-marked) through August 16, 2020.

MS. AMLEY: Slide 5. As defined in Engineering Regulation 200-3-1, a Former Used Defense Site or FUDS is a facility or site (property) that was under the jurisdiction of the Secretary of Defense and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination by hazardous substances. By the Department of Defense Environmental Restoration Program or DERP policy, the FUDS program is limited to those real properties that were transferred from DoD control prior to October 17, 1986. FUDS properties can be located within the 50 States, District of Columbia, Territories, Commonwealths, and possessions of the United States. The property that includes the Former Fort Custer Post Cemetery Dump Site was acquired by the U.S. in 1917. The former Fort Custer installation was officially closed in 1968 and the parcel containing the project site was transferred from DoD to VA on June 2, 1980. Based on the Property being owned by the United States under DoD jurisdiction and subsequently disposed prior to October 17, 1986, the Former Fort Custer Post Cemetery Dump Site is FUDS eligible. USACE is the lead agency for implementing the FUDS program in Michigan

for the DoD and works in coordination with the Michigan Department of Environment, Great Lakes, and Energy or EGLE.

MS. AMLEY: Slide 6. All remedial response activities for FUDS projects are completed under the DERP and the FUDS program policy in accordance with the provisions outlined in CERCLA. CERCLA authorizes clean up responses when there is a release or threat of a hazardous substance to the environment and sets a framework for accomplishing those actions. The CERCLA process begins when an area of concern is identified during a preliminary assessment as an area that has the potential for a release or a release has occurred. A site investigation or SI is then performed to assess if a release of a hazardous substance occurred. The SI is followed by a remedial investigation or RI to define the nature and extent of contamination. If constituents of concern are present at concentrations that present risk to human health and the environment, a feasibility study is completed. Remedial alternatives are evaluated during a feasibility study. The preferred alternative is presented in the Proposed Plan. Following stakeholder concurrence and in consideration of public comments, an alternative is selected and presented in a Decision Document. This public meeting is being completed as part of the Proposed Plan phase of CERCLA.

MS. AMLEY: Slide 7. This virtual public meeting is being held by the USACE Louisville District to inform the public on the Former Fort Custer Post Cemetery Dump Site and provide the public an opportunity to express their views on the preferred alternative. This virtual public meeting is being held in compliance with federal law.

MS. AMLEY: Slide 8. The U.S. Army established Camp Custer as a military reservation/training post in 1917, near Battle Creek, Michigan. Full-time operation of the camp was discontinued at the end of WWI. Between WWI and WWII, the facility was used as a part-time training post during the summer months and weekends by the Reserve Officer Training Corps, Citizen's Military Training Camp, and by the Civilian Conservation Corps. On August 7, 1940, Camp Custer was officially renamed Fort Custer and operated through WWII and then declared inactive. In 1951, Fort Custer was activated for the Korean War and trained an additional 17,000 soldiers. In 1953, Fort Custer was again declared inactive. The former Fort Custer installation was officially closed in 1968 and the parcel containing the project site was transferred from DoD to VA on June 2, 1980.

MS. AMLEY: Slide 9. During the inactive status, portions of the fort were used by the Michigan Department of Mental Health, used for Army and Marine reserve training, leased locally for livestock grazing, and used as an Air Force Radar Station. The Army's use of Fort Custer officially ended on June 14, 1968. In October 1979, the VA announced that Fort Custer had been chosen as the site for a National Cemetery. The parcel was transferred to the VA in 1980. In April 1983, construction began at the National Cemetery. The VA currently has custody and control of the property for use as the Fort Custer National Cemetery. The intended use of the property in perpetuity is as a National Cemetery.

MS. AMLEY: Slide 10. The Site is located within the City of Augusta. The Site is part of former Fort Custer and is part of the current Fort Custer National Cemetery. The future use of the property is anticipated to remain a cemetery. The future use of the Site is anticipated to remain an undisturbed green area. Gravesites at the cemetery are located outside of the Site area. The Kalamazoo River is the main surface water feature in the area and is located one mile west/northwest of the Site. The Kalamazoo River ultimately discharges to Lake Michigan, approximately 50 miles west of the Site. Other significant surface water features in this area include Eagle Lake to the south and numerous wetlands. There are no other important ecological places, sensitive environments, or significant habitats in the study area other than the wetland.

MS. AMLEY: Slide 11. The Site consists of approximately 10.5 acres of forest and wetland that lie mostly within the circular Fort Custer Drive. There are no gravesites located within the limits of the Site. The Site is located within a closed topographical basin which is bordered by steep to gently sloped ridges between approximately 20 to 30 feet above the basin floor.

MS. AMLEY: Slide 12. Fort Custer used the wetland and basin to dispose of refuse, including barrels and garbage from the mess halls. The presence of ash, cinders, slag, and melted bottles observed during investigation activities indicate that a portion of the wastes were incinerated before disposal. The waste includes municipal-type waste. No records indicate munition disposal and no munitions have been encountered during field investigation activities.

MS. AMLEY: Slide 13. The Site identified by the burgundy line is approximately 1,200 feet long north to south and ranges from 300 to 640 feet east-to-west. The shallow wetland identified by the green line is approximately 600 feet long by 100 to 300 feet wide but fluctuates seasonally in response to snowmelt and precipitation events. The Army's use of Fort Custer officially ended on June 14, 1968, after which the Site was abandoned and overgrown with vegetation. The southern portion of the site extends under Fort Custer Drive. Areas adjacent to the road are grass-covered and are mowed and maintained by the VA.

MS. AMLEY: Slide 14. Four field-related environmental investigations have been performed at the Site. These included three SIs completed in 1997, 2009, and 2012, and an RI completed between 2016 to 2018. Media investigated include soil/waste, sediment/waste, groundwater/leachate within the limits of the waste, groundwater outside the limits of the waste, and surface water. In addition, an asbestos survey and sampling of suspected asbestos-containing material and soil was conducted. The asbestos survey was conducted on surface materials and those exposed during intrusive activities.

MS. AMLEY: Slide 15. Under the EPA's presumptive remedy guidance for landfills, characterization of landfill contents is not required, however contamination beyond the limits of the landfill source must be characterized and potential risks evaluated. Based on the size of the landfill, the presence of municipal and non-military wastes, and the distribution and nature of the wastes, the EPA's presumptive remedy was considered appropriate for the Site. Therefore, the 2016 RI focused on site characterization downgradient of the waste rather than characterizing the nature and extent of all contamination in the landfill. Specifically, the RI focused on characterizing surface water conditions in the wetlands area and potential groundwater impacts downgradient of the waste limits. The RI was conducted from July 2016 through April 2018 at the Site. Specific details of each investigation will be discussed in the next slides.

MS. AMLEY: Slide 16. 1997 and 2009 Site investigation sample locations are presented. In 1997, twenty-five soil probes/borings advanced. Samples were collected from surface soil/waste, subsurface soil/waste, groundwater/leachate, surface water, and sediment/waste. Samples were collected for laboratory analysis of metals, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). In 2009, additional groundwater/leachate and surface water samples were collected. Samples were collected for laboratory analysis of metals, VOCs, polychlorinated biphenyls (PCBs), and polynuclear aromatic hydrocarbons (PAHs).

MS. AMLEY: Slide 17. In 2012, a geophysical survey was used to identify and delineate waste materials. A total of 34 test pits/trenches and 13 soil borings were then advanced to confirm the lateral boundaries and waste thickness.

MS. AMLEY: Slide 18. Surface materials within the Site boundaries were collected using incremental sampling method or ISM techniques. ISM technique includes collecting samples in a pre-approved grid and then compositing or mixing the samples together. Two Decision Units exist at the Site: DU1 and DU2. DU1 is comprised of soil, soil/waste mixture, and exposed waste materials in the portion of the Site that is not below surface water. DU1 is approximately 9.3 acres. A total of 55 increment sample grids were sampled within DU1. ISM samples were analyzed for SVOCs, metals, dioxin/furans, and PCBs.

MS. AMLEY: Slide 19. DU2 is the portion of the Site below water in the wetland pond. DU2 is approximately 1.2 acres and consists of soil, clay, silt, and sediment/waste. A total of 57 increment sample grids were sampled within DU2. ISM samples were analyzed for SVOCs, metals, dioxin/furans, and PCBs.

MS. AMLEY: Slide 20. Nine monitoring wells were installed and sampled every 2-months or bimonthly for 8 events during the 2012 SI. The same nine wells were sampled quarterly for two years during the RI. Groundwater samples were collected for laboratory analysis of VOCs, SVOCs, and metals during the SI. The same parameters, as well as hexavalent chromium and geochemical and waste release indicator parameters were collected during the RI. Surface water samples were collected quarterly for one year during the RI for laboratory analysis of VOCs, SVOCs, metals, dioxin/furans, and geochemical and waste-release indicator parameters.

MS. AMLEY: Slide 21. The approximate area of the Site is 10.5 acres with approximately 95,000 cubic yards of waste material present. As depicted on the next slides, the waste is thickest in the southwestern portion, up to 25 feet thick, and thinnest, typically less than 5 feet thick, within and adjacent to the wetland area. Waste is present under Fort Custer Drive.

MS. AMLEY: Slide 22. Historical aerial photographs of the Site from 1938 to 1967 show the presence of roads leading to the south-southwestern portion of the Site, where waste is thickest. This information, combined with the field data, suggest that the Site was most likely filled from this southwestern area, with material being spread throughout the basin toward the north, east, and south. Cross-section line A to A prime is presented on this figure and comprise the cross-section on the following slide.

MS. AMLEY: Slide 23. This north to south cross-section illustrates that the waste is thickest in the southwestern portion, located on the right side of the figure. The waste decreases in thickness to the north, located on the left side of the figure. Five to ten feet of waste is present within the basin floor in the central portion of the Site. Wastes within and adjacent to the wetland area were typically less than 5 feet thick. The wetland is presented in blue. Underlying the waste is, a dark brown to black peat. The peat is prevalent in the wetland area and central portion of the Site but was not observed everywhere. The peat is underlain by glacial sand.

MS. AMLEY: Slide 24. The waste and fill material are underlain in most areas by peat and clay deposits consistent with a wetland. There was no peat observed below the waste and basin slope in the southwest portion or west of the Site at the downgradient monitoring wells. Glacial outwash sands are the predominant geologic materials under the peat and clay and present to 60 to 100 feet below ground surface. Sandstone and shale bedrock are encountered across the cemetery at depths between 59 to 115 feet below ground surface.

MS. AMLEY: Slide 25. Groundwater from the Site flows west and northwest toward the Kalamazoo River but is not anticipated to reach the municipal wells located on the west side of the river. Potable water at the cemetery is provided by the Augusta public water supply. The only use of groundwater at the cemetery is for irrigation purposes. As shown on the next slide, there are three irrigation wells and one observation well on cemetery property and three private water wells 1,800 to 2,900 feet downgradient of the Site.

MS. AMLEY: Slide 26. The blue arrows illustrate that groundwater from the Site flows west and northwest. The three irrigation and one observation well installed by the VA are located upgradient and side gradient of the Site. There are three private water wells located downgradient of the Site.

MS. AMLEY: Slide 27. Since the Site is essentially a topographic “bowl,” surface runoff drains into the basin wetland. There is no outlet for water flowing into the wetland. The RI found that surface water in the wetland is recharging or flowing into groundwater downgradient of the waste. However, upgradient groundwater is flowing to surface water. This relationship is consistent with the observation that the wetland has no outlet and is underlain by less permeable sediments.

MS. AMLEY: Slide 28. Cement board materials were the most prevalent ACM identified during the visual inspection. The majority of suspect ACM was noted in the central portion of the Site. Soil analytical results

indicate that soil/waste in contact with friable materials may contain asbestos. All visible friable asbestos was removed during sampling. Based on aerial photographs from 1938 to 1974, it is believed that these materials have been present on the surface since at least 1974. Given the materials have been present on the ground surface for at least 40 years and their condition, it is unlikely that these materials will become friable with additional exposure to the elements onsite. The friable materials could pose a physical hazard to individuals if they entered the Site and disturbed these materials. However, this hazard is minimal because these materials were encountered only during intrusive test pit activities and at limited surface locations during the visual inspections.

MS. AMLEY: Slide 29. The analytical data for soil and water samples were first evaluated to determine if the chemical concentrations represent natural background conditions by comparing to State of Michigan and regional generic background concentrations. If concentrations were greater than regional background, they were considered site-related chemicals. The analytical results were then compared to the following screening levels to identify COPCs which are defined as those chemicals with concentrations above the applicable screening levels. Soil/waste and sediment/waste analytical results were screened against EPA Regional Screening Levels or RSLs for industrial soil and State of Michigan Residential and Nonresidential Cleanup Criteria Requirements for Response Activity. Groundwater outside the waste limits and groundwater/leachate within the limits of the waste analytical results were screened against EPA RSLs for tap water and EPA Maximum Contaminant Levels for drinking water quality. Surface water results were screened against EPA RSLs for tap water, State of Michigan Groundwater-Surface Water Interface Criteria, and State of Michigan Surface Water Quality Values or Rule 57.

MS. AMLEY: Slide 30. The following chemicals were identified as COPCs or chemicals of potential concern. ACM, boron, cadmium, chromium, lead, mercury, and zinc in surface soil/waste. Arsenic in subsurface soil/waste. ACM, boron, selenium, zinc, and dioxins in sediment/waste. Metals including arsenic, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, and zinc, and the semivolatile organic compounds benzo[b]fluoranthene, and indeno[1,2,3-c,d]pyrene in groundwater/leachate.

MS. AMLEY: Slide 31. Although arsenic and cadmium were identified as COPCs in groundwater, the reported concentrations were less than the maximum concentration reported for Kalamazoo County groundwater. Therefore, arsenic and cadmium in groundwater outside the limits of the waste are attributed to background and not to migration of groundwater/leachate from within the limits of the waste. Benzo(g,h,i)perylene, 1,2,3,4,6,7,8-Heptachlorodibenzofuran, 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin, heptachlorinated dibenzofurans (total), heptachlorinated dibenzo-p-dioxins (total), octachlorodibenzo-p-dioxin, arsenic, barium, boron, cadmium, copper, lead, manganese, mercury, silver, and zinc were identified as COPCs in surface water. The detections of dioxins in the July 2016 surface water samples were attributed to suspension of sediment particles in the surface water sample and were not detected during subsequent sampling events. Because these chemicals were considered COPCs, they were reviewed in more detail in the human health and ecological risk assessments for surface soil/waste, sediment/waste, surface water, and groundwater downgradient of the waste. Because of the presumptive remedy approach, the risk assessments did not evaluate risks associated with the subsurface soil/waste and groundwater/leachate within the waste limits.

MS. AMLEY: Slide 32. Potential risks to human health were evaluated for the following exposure pathways: site visitors and maintenance workers exposure to surface soil/waste through dermal or skin contact and dust emissions; site visitors and maintenance workers exposure to sediment/waste through dermal contact; site visitors and maintenance workers exposure to surface water through dermal contact; and maintenance workers hypothetical future exposure to groundwater through dermal contact if irrigation wells are installed in impacted groundwater and inhalation of indoor air if a building is constructed on top of the impacted groundwater in the future

MS. AMLEY: Slide 33. The results indicated that the detected chemical concentrations in surface soil/waste, sediment/waste, surface water, and downgradient groundwater would not pose unacceptable risks to site visitors or maintenance workers. Therefore, no chemicals of concern were identified for the Site; therefore,

there are no chemicals of concern that would migrate from the Site. Consequently, the waste can be considered contained under the presumptive remedy approach. However, because complete characterization of the landfill is not necessary under the presumptive remedy guidance, the site-related COPCs present in the subsurface soil/waste and groundwater/leachate within the limits of the waste present a low-level threat.

MS. AMLEY: Slide 34. An Ecological Risk Assessment was conducted to evaluate potential risks to ecological receptors at the Site. Potential ecological receptors include aquatic and terrestrial plants, benthic invertebrates, soil invertebrates, and wildlife including but not limited to birds and raccoons.

MS. AMLEY: Slide 35. The results of the baseline ecological risk assessment indicate there are no chemicals of ecological concern in soil/waste, sediment/waste, and surface water. There would be no unacceptable risks to terrestrial wildlife that would be exposed to surface soil/waste in the upland area or the semiaquatic wildlife that would use the surface water and sediment/waste in the wetland. Because the detected chemical concentrations in downgradient groundwater were below the applicable ecological screening levels. There would be no unacceptable risks to downgradient aquatic receptors if Site groundwater is discharged offsite to surface water. No further ecological-based consideration is required for soil/waste, sediment/waste, and surface water at the Site.

MS. AMLEY: Slide 36. There are no unacceptable risks to human health and ecological receptors for surface soil/waste, sediment/waste, surface water, and groundwater downgradient of the waste. However, under the presumptive remedy approach employed, remedial action is warranted to address the low-level threat from buried waste, potential exposures from migration of COPCs in subsurface soil/waste and groundwater/leachate, and potential exposures to ACM. Remedial Action Objectives or RAOs are the specific goals that the proposed remedial action is designed to achieve. In accordance with EPA's presumptive remedy guidance, the site-specific RAO established for the Site is to: Protect human receptors from direct contact, ingestion, and inhalation exposure to subsurface soil/waste, groundwater/leachate within the limits of the waste, and surface water by preventing exposure pathways.

MS. AMLEY: Slide 37. To achieve the RAOs, three remedial alternatives were developed as part of the Focused Feasibility Study or FFS. As required by the NCP, the No Action alternative was retained as Alternative 1 to provide a baseline for comparison of other remedial approaches. Alternative 2 includes Land Use Controls with Long-term Management. Under Alternative 2, the existing soil cover is used to prevent exposure to subsurface soil and groundwater/leachate. Alternative 3 includes a combination of excavating wastes from the southernmost portion of the Site, consolidating onsite, constructing a vegetative soil cover over the consolidation area, and Land Use Controls with Long-term Management. The alternatives were evaluated using the criteria identified in the NCP. These include the threshold criteria of overall protection of human health and the environment and compliance with ARARs, and the 5 primary balancing criteria (long-term effectiveness and permanence, reduction of toxicity, mobility, or volume, short-term effectiveness, implementability, and cost). The two modifying criteria are state acceptance and community acceptance. EGLE has indicated acceptance of the preferred remedy; community acceptance is being evaluated as part of this Proposed Plan.

MS. AMLEY: Slide 38. Based on evaluation of NCP evaluation criteria, Alternative 2 was identified as the preferred remedy. Alternative 2 would consist of the following components: developing a LUC Implementation Plan and a Landfill Long-term Management Plan; limiting access to the Site and preventing/mitigating human interaction with landfill wastes through installation of education controls such as warning signs to visitors and training materials for employees; and prohibiting installation of irrigation and municipal wells within the landfill limit, and restricting ground disturbances to only those areas where future ground disturbances are anticipated such as for repair of current or future utilities.

MS. AMLEY: Slide 39. Alternative 2 also includes restricting relocation of wastes to other areas of the cemetery; conducting periodic inspections of the landfill and signage and performing maintenance and repairs as

necessary; and conducting long-term groundwater monitoring with provisions for decreased or suspended monitoring, as appropriate, to assess potential migration of groundwater/leachate and migration of surface water to groundwater beyond the monitoring points. Five-Year Reviews will be performed, regardless of the alternative selected, to verify the protectiveness of the remedy.

MS. AMLEY: Slide 40. Public participation is part of the remedy selection process. The Proposed Plan provides an evaluation of the alternatives considered, presents the recommended alternative, and explains how the public can participate in the decision-making process. The Proposed Plan and other relevant Site documents are available at the McKay-Dole Library in Augusta, Michigan and are available online at http://fortcusterpostcemeterydump.com/. USACE and EGLE are requesting input from the community on the proposed plan. The comment period extends from July 15 to August 16, 2020. The comment period provides an opportunity for public involvement in the decision-making process for the proposed action. The USACE and EGLE will consider all public comments before selecting the remedy. During the public comment period, the public is encouraged to review documents for the Former Fort Custer Post Cemetery Dump Site.

MS. AMLEY: Slide 41. If the public would like to comment in writing on the Proposed Plan, comments can be mailed to the address presented on the slide no later than August 16, 2020. They can also be emailed to the email address on the slide.

MS. AMLEY: Slide 42. Our facilitator, Julie Clark, will read written comments received during the presentation. Julie can you please read the comments?

MS. CLARK: Hi thanks, Kim. At this point in time, I have not received any comments via the chat feature.

MS. AMLEY: Okay, thank you. We now would like to open the meeting up to verbal questions and comments. Again, we ask that you state and spell your name for the record. Please ask your question. Are there any questions?

MR. MIECZKOWSKI. This is Kevin Mieczkowski for the record. Is Bill Harmon on the phone? Just so that everyone understands, Bill Harmon is with EGLE the lead regulator. He had a personal emergency tonight and could not join us. However, EGLE has reviewed all these documents and concur with the findings in these documents.

MS. AMLEY: Thank you, Kevin. Are there any more questions or comments? Okay, we will stay on until approximately 7:20 p.m. unless we receive additional questions or comments. There will be a little silence. Thank you.

MS. CLARK: Kim, this is Julie. I have received a comment. It says that I live at 15541 Fort Custer Drive and am one of the few wells in the path of the river. Am I safe to assume our well is considered safe?

MS. AMLEY: Hi, thank you for your comment. We have groundwater monitoring wells that are installed immediate downgradient from the waste. Those wells have not been impacted by the waste. And so, your well which is located somewhere between 1,800 feet to 2,900 feet downgradient of the waste also would not be impacted by the waste. We haven't seen anything migrating beyond the limits of the waste. So, it's (the waste) considered contained. Thank you for the comment.

MS. AMLEY: Again, if there are members of the public that do have questions but don't want to share your name, you are welcome to say that you are an anonymous or concerned citizen, that is fine too.

MS. AMLEY: We will stay for an additional 30 minutes unless we receive additional questions or comments.

MEETING SILENCE FOR 30 MINUTES.

MR. MIECZKOWKSI: Kim, this is Kevin. What time are we supposed to conclude the meeting?

MS. AMLEY: Our last public comment came in at 6:52 p.m., therefore, the meeting will end no sooner than 7:22.

MS. AMLEY: Is Corey still on the line?

MR. KNOX: Yes, I am here.

MS. AMLEY: Corey it's 7:22 p.m. Can you please conclude the meeting?

MR. KNOX: This concludes the virtual public meeting for the Former Fort Custer Post Cemetery Dump Site at the Veterans Affairs Proposed Plan. Thank you for attending.

PROCEEDINGS ADJOURNED AT 7:22 p.m.