

Long-Term Stewardship Assessment Report

US Army Fort A.P. Hill

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Fort A.P. Hill, Virginia 22427

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Introduction: Long-term stewardship (LTS) refers to the activities necessary to ensure that engineering controls (ECs) are maintained and that institutional controls (ICs) continue to be enforced. The purpose of the EPA Region 3 LTS program is to periodically assess the efficacy of the implemented remedies (i.e., ECs and ICs) and to update the community on the status of the RCRA Corrective Action facilities. The assessment is conducted in twofold, which consists of a record review and a field inspection, to ensure that the remedies are implemented and maintained in accordance to the final decision.

Site Background: Fort A.P. Hill (FAPH) was established in June 1941 to provide a training area for infantry and artillery troops during WWII. Since 1941, the 76,000 acre Facility is used year-round for military training of active and reserve troops of the Army, Navy, Marines, Air Force and other government agencies. Recreational users have access to limited areas of the Facility.

EPA notified FAPH of its requirements to implement corrective action (CA) in December 1999, after EPA identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) at FAPH in the Facility Inspection Report (May 1999). FAPH entered into a Facility Lead Agreement with EPA in January 2000, to address the identified units. Prior to the FLA, FAPH had conducted Facility environmental/remedial investigations and actions under Army or VDEQ oversight.

After FAPH completed Site investigations under the Facility Lead Agreement, EPA issued the Final Remedy for all SWMUs and AOCs in November 2010, which included no further action for units previously identified by EPA except for the following units:

Unit No.	Name	Remedy
AOC 2	Wilcox Waste Water Treatment Plant (WWTP) (owned by American Water, Inc.)	MNA GW Monitoring under VDEQ Permit # VA0032034
AOC 3	Longstreet Lagoons (part of Wilcox WWTP), Lined lagoons used for Boy Scout Jamborees in the past.	No GW Monitoring is required under existing VDEQ Permit.
AOC 4	Cooke Camp WWTP and Spray Irrigation (owned by American Water, Inc.)	MNA GW Monitoring under VDEQ Permit # VPA00008
SWMU 16	Wilcox Sanitary Landfill (closed)	MNA GW Monitoring under VDEQ Solid Waste Permit # 332 and EC of LF cap and vegetated soil cover.

Unit No.	Name	Remedy
SWMU 11	Ammunition Supply Point Landfill	Engineered Controls (ECs): Vegetated soil covers on Landfills.
SWMU 12	Taylor's Corner Landfill 1	
SWMU 13	Taylor's Corner Landfill 2	
SWMU 14	Construction/Demolition/Debris Landfill	
SWMU 15	Sales Corner Landfill	
SWMU 17	Acors Corner Landfill	
SWMU 18	Dropzone Landfill 1	
SWMU 19	Dropzone Landfill 2	
SWMU 20	Pender Camp Landfill	

Current Site Status: FAPH is an all-purpose, year-round, active duty installation and regional training center with combined arms and live-fire exercises.

Long-term Stewardship Site Visit: On June 16, 2016, EPA conducted a long-term stewardship site visit with Facility representatives and its contractors to inspect some of the units and discuss and assess the status of the remedy implementation at the site. The attendees were:

Name	Organization	Email Address	Phone No.
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Kelly Hicks	URS / AECOM (FAPH contractor)	kelly.kicks@aecom.com	(804) 291-7903
Larry Syverson	VDEQ	larry.syverson@deq.virginia.gov	(804) 698-4271
Katie Watson	ERG (FAPH contractor)	katie.watson@envrg.com	(865) 232-8201
Mark Fisher	FAPH DPW - ENRD	mark.r.fisher21.ctr@mail.mil	(804) 633-8489
Sergio Sergi	FAPH DPW - ENRD	sergio.a.sergi.civ@mail.mil	(804) 633-8152
Terry Banks	FAPH DPW - ENRD	terry.l.banks14.civ@mail.mil	Not Available

Institutional Controls (ICs) Status:

Fort A.P. Hill Master Plan, Long Range Component: The following ICs, which apply to the 3 AOCs and 10 SWMUs listed above, were incorporated into the Master Plan:

1) Prohibition on the access and use of groundwater (GW) in the unconfined water table aquifer within areas hydrogeologically connected to AOCs and SWMUs for any other purpose other than environmental monitoring and testing.

FAPH's water supply wells are screened 300 to 500 feet below ground surface. The unconfined water table aquifer, which is hydrogeologically connected to AOCs and SWMUs, is found 14 to 25 feet below ground surface. Groundwater in this unconfined aquifer is not used for potable purposes.

2) Prohibition on the development and use of any AOC and SWMU areas for residential housing, elementary and secondary schools, child care facilities, and playgrounds.

EPA toured most of the AOCs and SWMUs at FAPH and found no development or residential structures. Landfills were clear of any buildings and the wastewater treatment facilities (AOC-2, AOC-4) continue to be used for operations. EPA did not visit AOC-3.

3) Prohibition on earth moving activities in landfill areas, SWMUs 11, 12; 13, 14, 15, 16, 17, 18, 19, and 20, to prevent contact with or exposure to waste materials remaining in place.

FAPH conducts annual landfill cover/cap inspections for the ten landfill (LF) SWMUs. The LF Inspection Reports were provided to EPA prior to and during EPA's visit. EPA reviewed the Reports and found no deficiencies. Inspection Reports were from 2000 to 2016 for SWMU-16 (Wilcox LF) and are conducted as part of VDEQ permit requirements. Inspection Reports for LFs-11 to 15, and -17 to -20 were from 2013 to 2016 and, although not required as part of EPA's Remedy, FAPH initiated annual cap inspections for these former LF in 2013.

EPA visited the following units: AOC-2, SWMU-12, -13, -14, -16 and -17. SWMUs-12 to -14, and -17 (former LFs) appeared to be flush with the ground in areas now heavily forested, and therefore were covered with trees and shrubs. There were signs posted on fences or trees around the former LFs, prohibiting access.

Engineering Controls (ECs) Status:

Wilcox Sanitary Landfill (closed) – SWMU 16: The former landfill (LF) is an 8 acre mound within a 25 acre site, formerly used for non-hazardous solid waste disposal from 1981–1992. Two of the LF's trenches are covered with a synthetic cap, while six trenches are covered with a soil cap. At the time of the site visit, grass covering the landfill was properly maintained and drainage swales were clear. There is a gate and lock at the entrance to SWMU 16 for security purposes. LF Methane monitoring is no longer required by VDEQ because methane has not been detected. The LF shows no deficiencies.

As part of VDEQ's Permit, GW monitoring wells located around the LF are monitored biannually with results submitted to VDEQ. Long term GW monitoring began in 2006, and results indicate that contaminants are naturally attenuating. In the latest 2015 sampling event, volatile organic compounds (VOCs) were detected just above cleanup standards in two downgradient wells, GW-7 & GW-8. EPA will review future reports to evaluate which wells have achieved EPA's clean-up goals.

Wastewater Treatment Plants (WWTPs): Wilcox (AOC-2) and Cooke Camp (AOC-4): Both WWTPs are owned and operated by American Water Inc. and have VPDES Permits. The selected remedy is MNA for AOC-2 (Wilcox Waste Water Treatment Plant) and AOC-4 (Cooke Camp Wastewater Treatment Plant and Spray Irrigation). In the latest GW monitoring reports for both AOCs, all metals meet EPA clean-up goals except EPA cannot determine if lead and cadmium have meet the goals. The laboratory method detection levels for the two metals are higher than EPA's clean-up standards (5.0 µg/L and 15 µg/L, respectively), therefore EPA is recommending additional monitoring (see Conclusions and Recommendations below).

Mapping: The EPA Facility website figure is accurate and includes FAPH's facility boundary, SWMUs and AOCs. A Google Earth interactive embedded map will be added to EPA's corrective action webpage for this Facility. For now, it can be found [here](#). This interactive map displays unit areas with associated ICs, ECs and restrictions.

Financial Assurance: Financial assurance is not required for Federal Facilities.

Conclusions and Recommendations: No EC/IC deficiencies were identified. EPA has determined that the remedy EC/ICs have been and are being implemented. EPA recommends that FAPH:

1. Continue annual LF cap integrity inspections at LFs 11 to 14, -15 to -20;
2. Monitor GW at AOC-2 and AOC-4 for lead and cadmium at lower detection levels for 2 to 3 rounds of sampling (at least 6 months apart) and submit the results to EPA. If results show the two metals meet EPA's clean-up goals (at or below Drinking Water Maximum Contaminant Levels (MCLs), EPA can eliminate AOC-2, AOC-3 and AOC-4 from the EC/IC restrictions because groundwater goals will be attained for these AOCs.
3. FAPH requested that GW monitoring wells installed around LFs 11-15, 17-20 could be properly abandoned since contaminants of concern were not identified in these wells. EPA agreed that they can be abandoned according to Virginia regulations.

Attachments:

Figure 1: Acors Corner Landfill

Picture 1: Acors Corner Landfill

Figure 2: Wilcox Landfill

Picture 2: Wilcox Landfill with sign

Picture 3: Wilcox Landfill – Vegetative Cap

Picture 4: Wilcox Landfill – Synthetic Cap

Picture 5: Wilcox Landfill – Drainage Swale

Picture 6: Wilcox Landfill – Passive Gas Vent

Figure 3: Wilcox WWTP

Picture 7: Wilcox WWTP

Picture 8: Wilcox WWTP – MW-4

Figure 4: Aerial Map of US Army Fort A.P. Hill

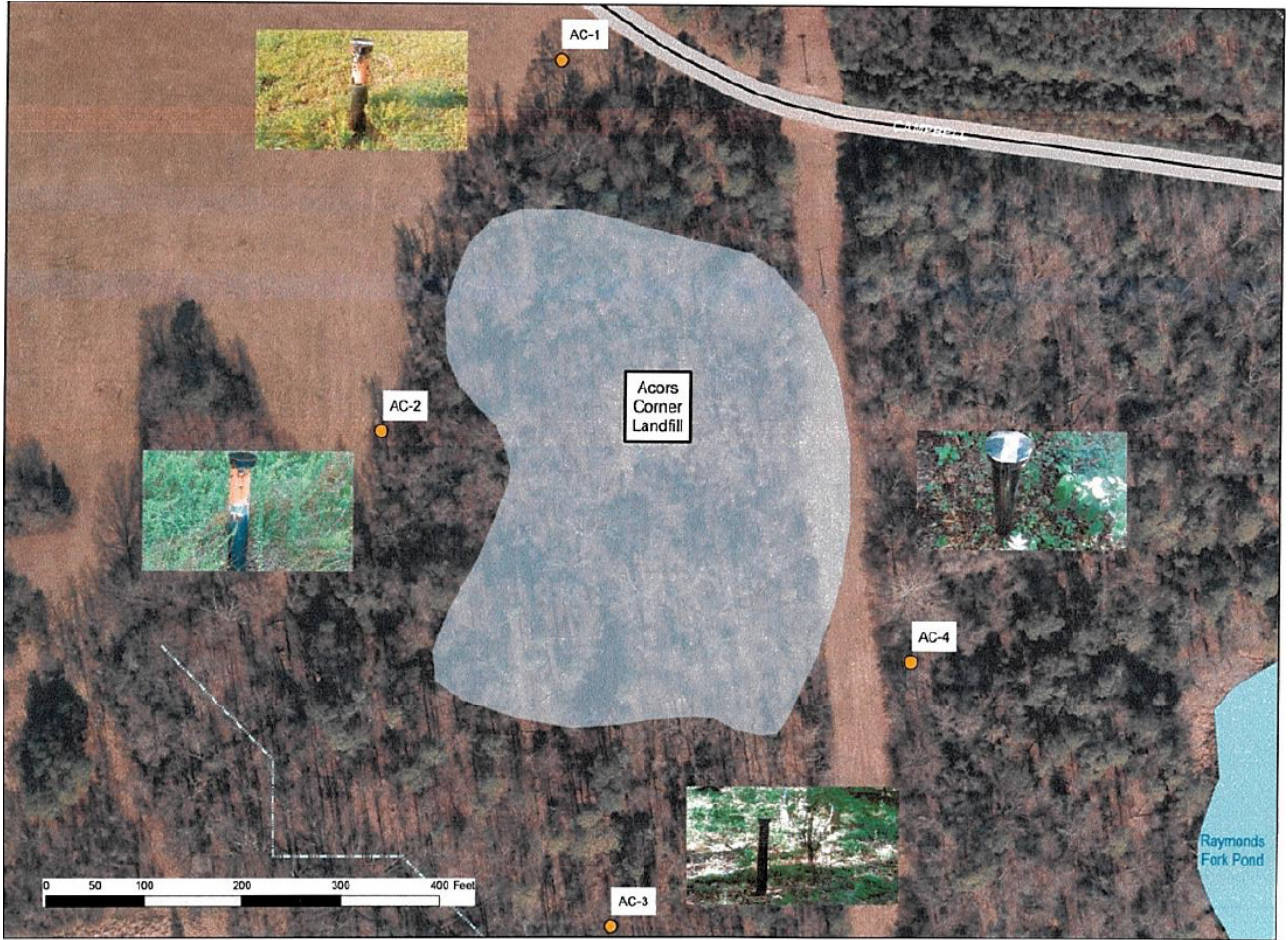


Figure 1: Acors Corner Landfill



Picture 1: Acors Corner Landfill



Figure 2: Wilcox Landfill



Picture 2: Wilcox Landfill with sign



Picture 3: Wilcox Landfill - Vegetative Cap



Picture 4: Wilcox Landfill - Synthetic Cap



Picture 5: Wilcox Landfill – Drainage Swale



Picture 6: Wilcox Landfill – Passive Gas Vent



Figure 3: Wilcox WWTP



Picture 7: Wilcox WWTP



Picture 8: Wilcox WWTP – MW-4

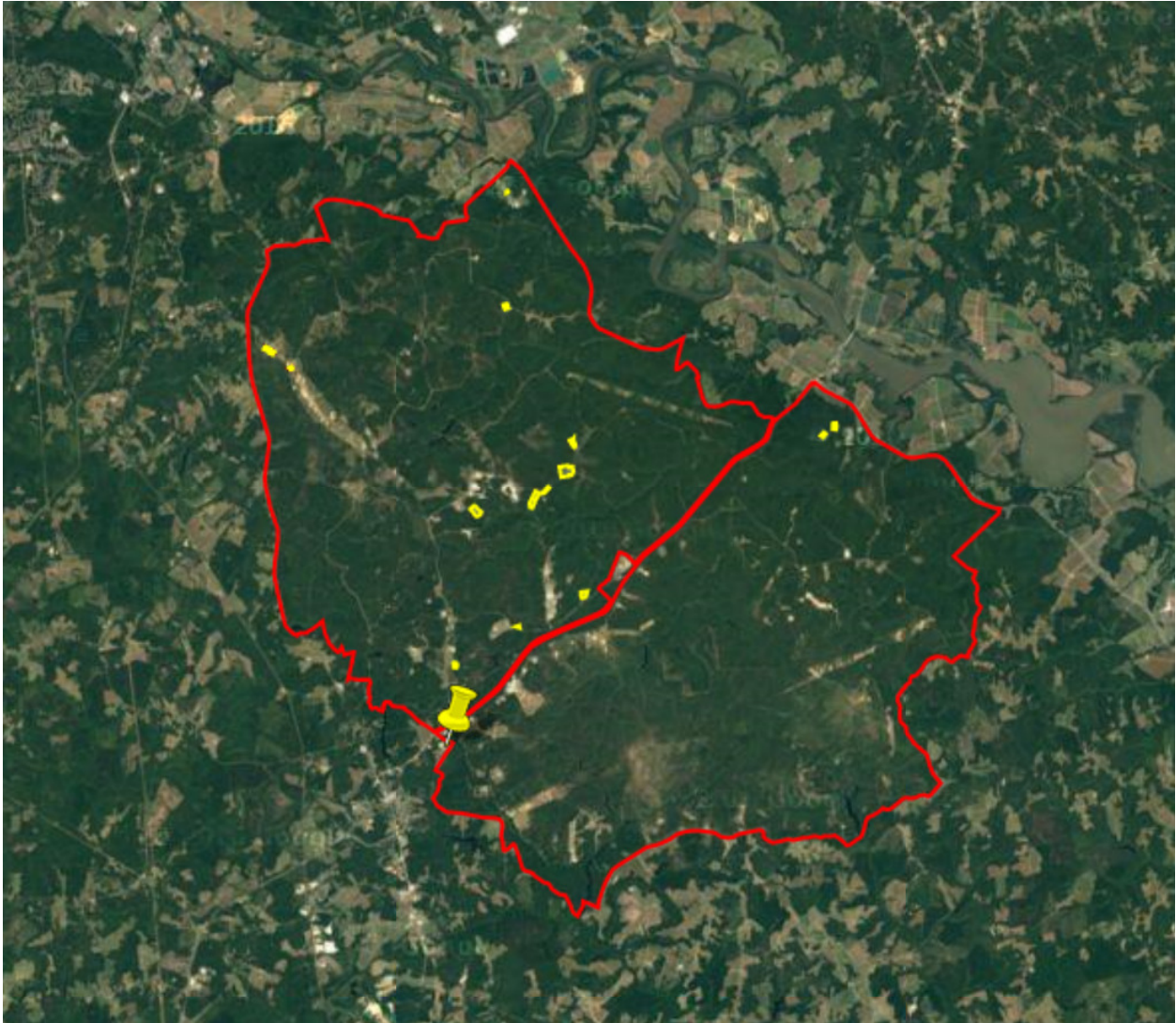


Figure 4: Aerial Map of US Army Fort A.P. Hill