Fort Eustis

Fort Eustis, Virginia
Superfund Program Site Fact Sheet

Type of Facility: Army Federal Facility

Funding: Department of Defense
Defense State Memorandum of Agreement

Lead Agency: Army

Site Description and History

The U.S. Army Transportation Center, Fort Eustis, is an 8,300-acre facility in southeastern Virginia, within the City of Newport News. Fort Eustis is the Transportation Corps Training Center, providing training in rail, marine, and amphibian operations and other modes of transportation. Fort Eustis began operations in 1918 as a training camp and became a permanent installation in 1923. Approximately 17,500 military personnel and civilians work, live, or train at Fort Eustis.

The installation has 26 Installation Restoration Program (IRP) sites. Ten of these sites are closed and considered No Further Action sites. There are 16 active IRP sites; most are in the Remedial Investigation/Feasibility Study (RI/FS) stage. The sites include landfills, a pesticide and transformer storage area, a fire fighting training area, underground storage tanks (USTs), a pesticide storage building, and several surface water bodies:

Site 1 - Officers Club Landfill #1: The Officers Club Landfill #1 is in the northern section of Fort Eustis, along the Warwick River. This landfill was reported to receive miscellaneous refuse and construction debris between 1937 and 1953. The landfill is currently maintained as a recreational area.

A semi-annual sampling program is performed on four monitoring wells at this site. In recent data, beryllium and iron were detected above Maximum Contaminated Levels (MCLs). Future IRP tasks will include continued semi-annual groundwater monitoring to determine the impact of the landfill on the quality of groundwater in the uppermost aquifer underlying the landfill. The final report for the 1997 monitoring event was completed in April 1998. Long-term monitoring is no longer being conducted.

Site 2 - Landfill #15: Inactive Landfill #15 started receiving waste in 1972 and is divided into two adjacent fill areas. The western area ceased operation in 1980. The eastern area

ceased operation in 1988. The landfill was used for solid waste disposal, including domestic trash, garbage, sewage, sludge, grease, grit, and incinerator ash.

Quarterly sampling of the landfill showed groundwater quality has been affected based on increased levels of chloride, total dissolved solids, and sodium in wells down gradient of the landfill. The landfill, which was permitted, has since undergone closure under the Virginia Solid Waste Management Regulations. As part of the closure, approximately 23 acres were capped. Long-term monitoring of groundwater and surface water will continue to be a requirement of the closure.

In September 1995, Fort Eustis installed three gas monitoring wells, and, in October 1995, submitted a methane gas remediation plan to the Virginia Department of Environmental Quality (VDEQ) for review and approval.

The Pre-Design Investigation Report was completed in February 1997 and the contract for installation of a methane collection system has been awarded. Methane gasses are still being detected above the Lower Explosive Limit (LEL). In April 1997, four groundwater and two surface water samples were collected. No Volatile Organic Compounds (VOCs), Semi Volatile Organic Compounds (SVOCs), pesticides, Polychlorinated Biphenyls (PCBs), or explosives were detected. Barium was detected below the Maximum Contaminant Level (MCL). Barium and lead were detected in the surface water.

In September 1999, the 2-foot topsoil cap slid across the top of the drainage layer of the cap along one slope of the landfill. Heavy rain from Hurricane Floyd caused the soil to become very saturated. The synthetic liner was not damaged. The cap was repaired by December 1999. Long-term monitoring of the landfill is expected to continue until the year 2024.

Site 4 - Landfill #7: Landfill #7 operated from 1951 to 1972. The landfill received trash, construction debris, and miscellaneous refuse including paints, oils, pesticide and herbicide containers, and pathological wastes. Quarterly monitoring showed groundwater quality down gradient of Landfill #7 is being affected. Several metals detected exceeded the Virginia Groundwater protection standards.

The landfill has been closed and capped in the same manner as Landfill #15. Long-term monitoring will continue to assess the impact of the landfill on groundwater.

In April 1997, four groundwater and two surface water samples were collected at each of the two landfill sections. Lead was the only constituent detected above its MCL. In September 1995, Fort Eustis installed four new methane gas monitoring wells and a remediation plan is being designed. Methane gas has been detected at the landfill boundary. A Pre-Design Report has been completed and a contract for installation of a methane collection system has been awarded. Three gas extraction wells and a soil vapor extraction system were installed. Methane gas monitors with alarms were installed in the five nearby warehouses.

Site 5 - Open Burning Incinerator: This site was used to burn paper and cardboard waste at Fort Eustis. The ash was drummed and hauled off site by a contractor. The site is no longer used for this purpose. A Preliminary Assessment was conducted that resulted in a determination of no further action at this site.

Site 8 - Sewage Treatment Plant: The sewage treatment plant at Fort Eustis has an average daily flow capacity of 1.5 million gallons per day. Wastewater effluent, which is characterized as domestic flow, is discharged to the James River. Solids generated in the treatment process consist of skimmed grease and sludge. A Preliminary Assessment was conducted resulting in a determination for no further action at this site.

Site 9 - Building 801 Central Heat Plant: The Central Heating fuel spill area has four 25,000-gallon underground oil tanks, which store fuel for a steam generation plant. One of the tanks previously stored waste oil generated from daily plant operations. Past information shows that petroleum was released to the soil by overfilling. An estimated 6,000 to 8,000 gallons of No. 4 fuel oil were spilled in 1984. In 1990 and 1994 additional spills occurred.

Investigations of soil, sediment, surface water, and groundwater revealed the presence of fuel-related compounds and polychlorinated biphenyls (PCBs). PCBs are present in significant concentrations in the sediment of Bailey Creek, receiving drainage from the Site 9 area. Some ecological receptors in Bailey Creek have been affected, also causing negative impact to the food chain. The final Remedial Investigation (RI) report has been completed and a plan is being prepared for the removal of the higher concentration PCB contaminated sediments from the inlet area to Bailey's Creek from site A.

This site is considered no further action. All other activities are under the Bailey Creek site.

Site 10 - Range Impact Area: The Range Impact Area is approximately 1,750 acres and is in the low-lying area of Fort Eustis, containing many creeks and marshes. A Preliminary Assessment was conducted which resulted in a determination for no further action at this site.

Sites 11, 12, 13, and 14 - Dredge Spoils Area: There are four dredge spoils developed during dredging activities in the James River. In December 1975, ketone was spilled into the James River upstream of Fort Eustis. A Preliminary Assessment/Site Inspection (PA/SI) was conducted at the four disposal areas in 1990 to decide if the spoils were contaminated with pesticides and determine if levels would warrant further investigation. No further actions are currently planned for this site.

Site 11A - Waste Oil Storage Tanks: The waste oil storage tanks were two 15,000-gallon capacity aboveground storage tanks, not used since 1981. Initially, it was estimated the tanks contained approximately 1,500 gallons of water mixed with 1,1,1-trichloroethane, trichloroethylene, tetrachloroethylene, methylene chloride, ethylene, and

glycol. An interim removal action was conducted in March 1994, including the disposal of 29,598 gallons of waste oil, removal of the two aboveground tanks, and the removal and treatment of 150 cubic yards of contaminated soil.

Site 11B - Fire Fighting Training Area: A fire fighting training area was built in 1968 consisting of a smokehouse, aboveground burn tank, a burn pit, a fuel feed system, and a water conveyance and treatment system, including an oil/water separator. Monthly, approximately 40 to 50 gallons of JP-4 jet fuel was poured into an unlined pit and ignited. Fire fighting training has not been conducted at this site since 1993. A recently completed remedial investigation at this site evaluated surface water, groundwater, and soil contamination and its impact on adjacent ecosystems. Contaminants of concern include metals, petroleum, oil, lubricants, and solvents. In August 1997, EPA submitted comments on a draft RI. The site is still under investigation.

Site 11C - Oil/Sludge Holding Pond: In 1979, approximately 5,000 gallons of No. 2 fuel oil was accidentally pumped into a sanitary sewer clean-out connection. The fuel was collected at the sanitary sewage treatment plant by skimming from the clarifier and diverting to a sludge drying bed. A mixture of oil, digested sludge, and fuel residues were present in the sludge. The sludge was disposed in a holding pond and covered with eight to ten feet of earth. In August 1997, EPA submitted comments on a draft RI.

Soil and groundwater investigations at this site detected metals and fuel hydrocarbon heavy fraction in the soil and benzene in the groundwater. More recently, soil and groundwater sampling have confirmed the presence of metals, volatile organic compounds (VOCs), ethylbenzene, and xylene.

Site 16 - Brown's Lake: Brown's Lake is a manmade lake that discharges to a small stream and wetland area that eventually drains to the Warwick River. The lake receives runoff and wastewater from the locomotive maintenance area. Sediment samples from upstream, downstream, and the bottom of Brown's Lake show elevated levels of pesticides, PCBs, and metals. A soil cap was placed on top of the contaminated sediments and the lake was refilled. Monitoring of the lake cap and sediments will continue. A draft Feasibility Study was completed in November 2002.

Site 17 - Bailey Creek: In August 1997, EPA submitted a comment on the draft RI. Due to the level of contamination in Bailey Creek and the nature of the contaminants, Bailey Creek is being addressed as a site separate from the Site 9, Central Heat Plant. A pre-feasibility study meeting was scheduled for February 1996 to discuss options for remediating Bailey Creek. Levels of PCBs in sediment and fish tissue in Bailey Creek exceed action levels. To monitor these levels and establish a trend, PCBs in the sediment and water in Bailey Creek were sampled in November 1995, May 1996, November 1996, April 1997, and October 1997. They were also sampled in April 1998. A feasibility study for Bailey Creek was reviewed by VDEQ and EPA in June 1997 and August 1997, respectively. EPA submitted comments on a draft RI in August 1997.

An interim removal Action started in December 1999. It involved excavating over 6,000 cubic yards of PCB contaminated sediments, approximately 3,000 cubic yards of which were TOSCA regulated. In order to limit the damage to the wetland area, sediments with concentrations below 5 ppm PCBs were left in place. Backfilling and replanting of the wetland area was completed by the end of Spring 2000. Wetlands restoration monitoring is currently in place. Sampling of the sediments and clams along Bailey Creek will take place to provide data for the ecological risk assessment. That is currently in progress.

Site 17B - Lead Area: EPA submitted comments on a draft RI in August 1997. In investigating the PCB levels in Bailey Creek and other contaminants attributable to Landfill #15, it was determined certain segments of Bailey Creek were contaminated with lead. The sediment lead contamination was due to the skeet range next to Bailey Creek. A remedial investigation was conducted at this site confirming potential human health and ecological impacts. The RI Report is final. In March 1998, VDEQ submitted comments on the spring 1997 Sediment and Surface Water Monitoring. Samples of the surface soils / sediments were collected at grid points over the entire skeet range impact area. Samples were sifted and the number of lead shot pellets per square foot area was counted. This work was performed during the summer of 2000. A final report is being prepared.

Site 18 - Milstead Island Creek Area: The Milstead Island Creek Ditch Canal is a manmade waterway between the James and Warwick Rivers. As part of the 1989 Remedial Investigation at Landfill #7, samples were collected from the canal, the Warwick River, and where Milstead Island Creek enters the James River. These samples contained several metals. A 1990 study detected pesticides, PCBs, VOCs, Base-Neutral and Acid Extractable Organics (BNAs), and metals. A 1994 study of this area has confirmed the presence of these contaminants. The RI Report is final.

Site 20 - Old Pesticide Storage Building: The old pesticide storage building has two contaminated areas. Past activities include storage, handling, and mixing of herbicides and pesticides. PCBs, pesticides, and metals were identified in the 1990 PA/SI. In June 1995, VDEQ received a confirmatory study report.

Felker Army Airfield Tank Farm: The tank farm supports the aviation fueling activities for Felker Airfield. A 1992 Preliminary Assessment Screening was initiated to characterize soil and groundwater contamination. Based on the results, an interim remedial action was conducted in March 1994. Approximately 3,800 cubic yards of petroleum-contaminated soil was removed. The fueling system and piping were replaced. A site characterization report has been submitted to VDEQ. Several non-petroleum contaminants were detected and comments have been provided. Additional groundwater sampling at the site is planned.

DOL Storage Yard, Building 1607: This site was previously used to store pesticides and herbicides for the Entomology Shop in the late 1970s and early 1980s. The Directorate of Logistics is presently using it for storing building materials and supplies for the installation. In 1993, soil sampling showed the presence of PCBs. The draft RI

Work Plan for this site includes the following: delineating the nature and extent of contamination; evaluating potential migration; assessing the risk to human health and the environment; and making recommendations for future study. In November 1995, groundwater, soil, sediment, and surface water samples were collected at this site. Data are currently being evaluated. In October 1997, VDEQ reviewed a draft RI. A draft feasibility study is currently in progress.

Lake Eustis: Samples collected from Lake Eustis as a control for a Remedial Investigation showed the presence of PCBs. Due to the concentrations, the Agency for Toxic Substances and Disease Registry recommended additional sampling be conducted. The Army conducted sampling and the results confirmed elevated PCB concentrations. In June 1995, a fishing restriction was placed on the lake. The draft Remedial Work Plan for Lake Eustis recommended an extensive sampling of sediment, water and fish tissue to characterize and delineate the contamination in Lake Eustis. A draft RI was scheduled for submittal to VDEQ in spring 1998. EPA and VDEQ have submitted comments on the draft RI.

Building 2005 Petroleum/Oil/Lubricant (POL) UST: The POL UST site is next to Building 2005 in the fire fighting training area. Since the entire fire fighting training area is under investigation, no further action is planned for this IRP site.

Site 21 - Helicopter Maintenance Area: The helicopter maintenance area consists of several buildings used to train personnel in turbine engine maintenance. A JP-4 fueling system used in test runs of the repaired engines is at this facility. A 12,000-gallon UST is at the north end of Building 3307. The underground piping system from the tank has experienced a series of leaks. The entire system was replaced in 1988. A site characterization study was completed in 1993 to assess soil and groundwater contamination. The study determined the presence of light non-aqueous phase liquids and dissolved phase liquids in the unconfined aquifer. Currently, a Corrective Action Plan has been approved by the VDEQ and is being implemented. A free product recovery system has been installed and began operating in early 1996. Wells are being monitored monthly. Free product recovery reports are submitted quarterly.

Third Port UST Removal Site: This is a UST site near the Fort Eustis port facility. It consists of a concrete wash pad and a UST that acted as an oil/water separator. The tank was removed in March 1994 with 12 cubic yards of contaminated soil. Site screening samples were collected in October 1994. Four surface and three subsurface soil samples were collected in the vicinity of the former UST and wash pad. The samples were analyzed for VOCs, SVOCs, pesticides/PCBs, and metals. Vanadium was detected above Region III risk screening levels. Site is still under investigation.

AAFES Service Station Building 1380: A Site Characterization Report (SCR) has been completed, which describes the geology, hydrology and extent of contamination, assesses the risks, and evaluates remedial alternatives. The May 1995 SCR recommended bailing a free product from the wells. VDEQ requested a six-month bailing and monitoring period followed by soil and groundwater sampling. A free product is being recovered