



Former Nansemond Ordnance Depot, VA

U.S. ARMY CORPS OF ENGINEERS
FACT SHEET as of February 1, 2015

BUILDING STRONG®

AUTHORIZATION: Defense Environmental Restoration Program

TYPE OF PROJECT: Formerly Used Defense Site (FUDS)

PROJECT PHASE: Various stages of CERCLA Military Munitions Response Program (MMRP)/Hazardous Toxic Radioactive Waste (HTRW) Investigation

CONGRESSIONAL INTEREST: Senators **Kaine** and **Warner (VA)** and Representative **Forbers (VA-04)**



BACKGROUND: Former Nansemond Ordnance Depot (FNOD) is located in Suffolk, Virginia and consists of approximately 975 acres. It is bordered by the Nansemond River to the west, the James River to the north and Streeter Creek to the east. FNOD was constructed between November 1917 and December 1918 to support the Port of Embarkation at Newport News, Virginia and was originally known as Pig Point Ordnance Depot. By 1918, the original depot included 28 Standard Ammunition Magazines, 25 High Explosive Magazines, 13 Smokeless Powder Magazines, 8 Primer and Fuse Magazines, 1 large warehouse, 16 barracks, 2 Officer's Quarters, a hospital, a garage, a fire house, a machine shop, an electric storage battery charging station and support buildings. Other structures included a pier, jetties, guard towers, mess halls, carpenter shops, a water tower, a renovation and salvage plant, railroad tracks and roads. The depot functioned as a storage and distribution center and performed reconditioning of munitions. Captured enemy munitions were also processed at this location. The depot remained active between World Wars I and II. In 1929, the name of the Depot was officially changed to Nansemond Ordnance Depot. During World War II, FNOD was instrumental in supporting operations at the Hampton Roads Port of Embarkation. This support included the temporary storage and transshipment of various types of ammunition overseas. Toward the end of the war, the mission of FNOD was changed to that of an intermediate and distribution depot and included the reconditioning of ammunition. FNOD also received captured enemy munitions for processing and shipment to U.S. military facilities for technical examination. Numerous historical documents state that tens of thousands of tons of many types of conventional ordnance and chemical warfare munitions were stored and shipped from FNOD. In 1950, the depot was transferred to the Department of the Navy and named the Marine Corps Supply Forwarding Annex. In 1960, the depot was declared excess.

USEPA Region III issued a Final Hazard Ranking System (HRS) package for FNOD in January 1999 (USEPA Region III, 1999). This package was a culmination of multiple investigations conducted at FNOD and resulted in the identification of seven source areas (SAs). The final HRS site score for FNOD was 70.01. A score of 28.5 or higher qualifies a site for placement on the National Priorities List (NPL).

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To ensure that hazardous substances at the FNOD NPL site are appropriately addressed, EPA express the desire to move forward by putting an appropriate agreement in place that defines roles and responsibilities, establishes schedules and provides a framework for a mutually beneficial relationship to continue to advance cleanup of the site. The USACE is currently involved with ongoing negotiations with EPA regarding the Inter-Agency Agreement (IAG) or Federal Facility Agreement (FFA).

STATUS:

Project 1: HTRW – OU-5 TNT Source Area (SA-1)

The TNT Source Area (SA) was identified in 1987 when evidence of munitions debris was observed. Subsequent investigations conducted revealed a slab of crystalline TNT weighing several tons. Multiple removal and remedial activities, as well as several rounds of soil and groundwater sampling, have been conducted in the TNT SA. The Draft Final RI Report for the TNT SA was submitted to USEPA and VDEQ on 3 December 2012 for review and comment.

Current Status: A Feasibility Study (FS), Proposed Plan (PP) and Record of Decision (ROD) is being conducted at the Site with a completion date of March 2019. Once a ROD is finalized, a Remedial Design (RD) and Remedial Action (RA) will be initiated.

Project 2: MMRP – MMRP Removal Action

Six 170millimeter (mm) German artillery shells, two 55 gallon drums of suspected HC smokepots, small arms cartridges, 8-inch projectiles, cannon balls, a British 6-inch shrapnel round, boosters, MK II hand grenades, 75mm projectile fuses and 40mm anti-aircraft rounds were observed on the property. A number of removal actions have been conducted to address these discoveries.

Current Status: Removal actions have been completed and no further action is anticipated for this project. Project 02 will proceed to Project Closeout (PCO).

Project 3: HTRW – Sitewide Groundwater Model

This project began as a means to address the HTRW areas of concern (AOCs) at FNOD. As these areas were broken out individually, the remaining work was re-directed to completing a site-wide ground water model. The data required for the GW Model, CSM and report has been collected.

Current Status: Any further data requirements will be accomplished within other HTRW projects. Therefore, no further action is anticipated for this project.

Project 4: HTRW – OU-7 Impregnation Kit Area

The Impregnite Kit Area was a disposal area for impregnite kits. The kits contained XXCC3 and an inert, viscous liquid used to neutralize chemical agent. Historical groundwater data from the Impregnite Kit Area and results of the FNOD site-wide groundwater study indicate there do not appear to be any past or potential future groundwater impacts related to the Impregnite Kit Area. A Final ROD, including a Responsiveness Summary, was issued in October 2014.

Current Status: The ROD proposed a no further action for groundwater at the Impregnite Kit Area. The final step will be to initiation the delisting of the Impregnite Kit Area from the NPL.

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Project 5: HTRW –OU-3 Horseshoe Shape Pond

Horseshoe Pond (HSP) is a suspected dumping area of DoD solid waste. Laboratory glassware, bottles, film, and other debris have been observed near the pond. AOC-22, Arsenic Investigation Area, is located between the Horseshoe Pond and GE. A localized area of metals and polycyclic aromatic hydrocarbons (PAHs) in soil is present at the Horseshoe Pond and AOC-22 area. Elevated arsenic concentrations have been detected in the groundwater at both Horseshoe Pond and AOC-22.

The Draft HSP ROD, including a Responsiveness Summary, was submitted to the stakeholders on 26 August 2015 for review and comment. The Final AOC-22 ROD, including a Responsiveness Summary, was issued in October 2014.

Current Status: No further action is recommended for AOC-22. HSP ROD is expected to be finalized in February 2015. A RD will be completed in December 2015. A RA will follow.

Project 6: HTRW – Main Burning Ground

Black, tar-like substances, scrap metal, various munitions items, residues from burning small arms and metals, and burn trenches that contained munitions items and debris were present at the Main Burning Ground and Steamout Pond (SA-5). Several sampling events and removal actions have been conducted at SA-5. A Final RI Report will be completed in October 2015.

Current Status: A Feasibility Study, Proposed Plan and Record of Decision is being conducted at the Site with a completion date of November 2018. Once a ROD is finalized, a RD and RA will be initiated.

Project 8: COMM/REL – RAB Support

Activities conducted under this project include attendance at Restoration Advisory Board (RAB) meetings and dissemination of information regarding ongoing projects to the public and the RAB.

Project 9: HTRW – James River Beach

The JRB was used for the disposal of various scrap metal and construction debris and to possibly to burn munitions. Removal actions have been completed. A hardened shoreline revetment was installed in 2005. A Final RI Report was completed in June 2011. The FS Report was completed in January 2016.

Current Status: A Proposed Plan and Record of Decision will be completed for the JRB in September 2014.

Project 10: HTRW – Track K & Pesticide Drum Area

Project 10 addresses Track K Dump (SA-6) and the Pesticide Drum Area (O-7). Tires, empty paint cans; appliances, household waste and construction debris were observed in the Track K Dump. In 1998, two unsealed, unmarked 55-gallons drums, one empty and one containing an unknown liquid, were found in the Pesticide Drum Area. The debris and drums were removed.

Current Status: A No Further Action ROD for the Track K Dump was signed in May 2007. A No Further Action Decision Document for the Pesticide Drum Area was signed in June 2008.

Project 11: HTRW – Offshore & Lake Areas

Project 11 addresses the Offshore Area (AOC-3a), Nearshore Area (AOC-3b), TCC Lake (AOC-5), and Track G Magazine Line (AOC-10).

Current Status: Investigations at AOC-3a, AOC-3b, AOC-5, and AOC-10 are complete and no further actions are anticipated for these AOCs.

Project 12: HTRW – Group B AOCs

The Track H and I Magazine Line (AOC-11) include Bldgs. I-1, H-413, D-403, D-404, and E-408. Bldg. I-1 was an Ammunition Magazine, and Bldgs. H-413, D-403, D-404, and E-409 were Smokeless Powder Magazines. A Lumber Treatment Plant (Bldg. 559) was constructed near Bldg. E-408 in AOC-11 in 1953. The Lumber Treatment Plant contained steel dip tanks, a 9,500 gallon chemical storage tank (Bldg. 559-A), and a heating plant (Bldg. 559-B). The treatment process utilized at the Lumber Treatment Plant appears to have been pentachlorophenol (PCP) treatment. RI Report was finalized for AOC-11 in June 2013.

Current Status: A FS to address the potential human health and ecological risks associated with metals and PAHs in soil at AOC-11 will be completed in December 2015. A Proposed Plan and Record of Decision will be completed for AOC-11 in May 2018.

Project 13: HTRW – Group C AOCs

Project 13 addresses the Former Steam Heating Plant (AOC-16) and Suspected Underground Storage Tank and Tunnel (AOC-18). AOC-16 contained three abandoned underground storage tanks (USTs). Each tank had a 25,000-gallon capacity and the tanks, in addition to the piping and related equipment, contained free product. During December 1994, the USTs and appurtenances were removed, along with 100 cubic yards of contaminated soil. A consensus statement documenting No Further Action at AOC-16 was signed in December 2005. A Suspected Underground Storage Tank and Tunnel (AOC-18) were thought to exist parallel to the former Track Q line of magazines. A suspected tunnel was identified during a 1999 geophysical survey. The structure was investigated in April 2000. A finding of No Further Action was issued on 23 February 2004.

Current Status: No further action is anticipated for AOC-16 and AOC-18.

Project 14: HTRW – Track A & B Open Storage Areas

Project 14 consists of Streeter Creek and Lakeview Drive Ground Scars (AOC-2), Track A Magazine Line (AOC-8), and Track A & B Burning Ground (AOC-9). A review of historical aerial photography identified several features in the vicinity of AOC-2. No MEC/MD has been observed in the AOC. The MMRP SI found no constituent concentrations above human health or ecological screening values. AOC-8 was comprised of eight explosive magazines that were oriented east/west in a line. Historical aerial photographs showed potential evidence of ground scarring, mounded materials, and a possible pit. In 1997, a geophysical survey was conducted and no MEC-related items were found. AOC-9 consisted of explosive magazines oriented east/west in two lines. In 1954, two large ground scars were

present between Tracks A and B. In 1956, a ground scar was visible east of B-214. By 1958, debris was located between the two magazine lines. The MMRP SI concluded that No Action was required for MEC or MC. The Final Preliminary Assessment indicated that no HTRW investigation is warranted at AOC-2, AOC-8, and AOC-9.

Current Status: No further action is anticipated for AOC-2, AOC-8, and AOC-9.

Project 15: HTRW – Nansemond River Beachfront

Project 15 consisted of the NRB (AOC-1). Asbestos siding, trash, steel rods, slag, and ammunition rounds were observed the NRB (AOC-1) in 1997 and 1999. Bulk TNT was discovered at the NRB (AOC-1) during trenching operations in 2006 and a removal action was conducted. Shoreline protection was emplaced in 2009 in order to protect a heavily eroding area that was damaged during the removal action.

Current Status: An RI Report will be completed in March 2017 to address any residual munitions constituents (MC) that may be present in soil and sediment at the NRB (AOC-1). A FS, PP, and ROD may be conducted at the NRB (AOC-1) following completion of the RI.

Project 16: MMRP – Shoreline MEC Areas

The Shoreline MEC Areas MRS, consist of a washout area at the NRB (AOC-1), the North Athletic Field Shoreline, and the Former Building L-12 Area as well as other areas identified by a recent geophysical survey of the shoreline. MEC were exposed at a washout area at the NRB (AOC-1) and North Athletic Field shoreline by Hurricane Ida in 2009. The exposed munitions at the NRB washout area included 71 No 101 British PD fuzes, 28 M51 series PD fuzes (TBar), 94 grenade fuzes, seven 40mm empty projectiles with self-destruct element (unfuzed), one booster cup, two burster tubes, nine 20mm projectiles (unfuzed), two primers, three fuze adapter boosters, and eight unknown fuze components. The North Athletic Field (O-4) MEC consisted of six WWII era MK II hand grenades and five 40mm projectiles, which were removed and destroyed by the Navy EOD. Several Civil War-era cannon balls were unearthed at the NRB (AOC-1) during a sanitary sewer installation project in April 2010. MEC and bulk explosives may be present in the Former Building L-12 area due to the shell renovation activities that were conducted there. Although the HTRW issues associated with Former Buildings L-11 and L-12, as well as the Abandoned Water Treatment Plant have been addressed, potential MMRP issues remain. An intrusive investigation was conducted in February and March 2014.

Current Status: A Remedial Investigation (RI) of the geophysical anomalies will be conducted to determine the extent of MEC in the subsurface along the FNOD shoreline. The RI Report is scheduled for completion in January 2017.

Project 17: HTRW – Legacy SI Sites

Project 17 addresses GE Pond Culvert (AOC-4), Marine Corps Power Generation Plant (AOC-6), Track J Magazine Line (AOC-12), Track K Explosive Magazine Line (AOC-14), Track K Landfill (AOC-15), and Abandoned Water Treatment Plant (AOC-20). The SI Report for AOC-4 indicated some metals and pesticides concentrations in surface water and sediment were above risk-based screening values. The SI Report for AOC-6 indicated certain metals, PAHs and pesticide concentrations in soil and groundwater were above risk-based screening values. The SI Reports for AOC-12 and AOC-20 indicated some detections of pesticides and metals were above ecological risk-based screening values.

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The SI Report for AOC-14 and AOC-15 indicated metals, PAHs and pesticide concentrations in soil and groundwater were above risk-based screening values. The SI Report prepared for AOC-20 indicated some pesticides and metals were detected in soil above ecological risk-based screening values.

Current Status: A RI Work Plan will be completed for these AOCs. Completion of the Work Plan is currently scheduled for November 2015. RI Report will be completed in February 2017. A FS, ROD, RD and RA may be required, following completion of the RI.

Project 18: HTRW – Cantonment Area

Project 18 addresses buildings in the former Cantonment Area and Athletic Field South (O-3) identified during development of the Preliminary Assessment where HTRW may have been used and subsequently released to the environment. Operations conducted at these buildings included POL non-tank operations (oil storage, heating operations, fuel pump houses), coal storage, transformer stations, waste treatment in septic tanks, incineration, and miscellaneous shop operations (including vehicle and locomotive maintenance).

Current Status: A contract was awarded in September 2014 to perform a SI at Project 18. Completion of the Work Plan is currently scheduled for January 2015. A SI Report will be completed by May 2017.

Project 19: HTRW – Renovation Plant

The renovation plant operations ranged from replacement of a suspended fuze with a newer model to complete disassembly of the ammunition item, including removal of the explosive charge. A small steaming out unit was established 150 feet northwest of the Boiler Plant (Q-29) for use in steaming out ammunition items as part of the renovation plant operations. Ammunition renovation operations included melt-down, steaming, sandblasting, and painting. Coal storage was noted to have occurred in the vicinity of Q-29. A potential exists for MC, metals, PAHs, and solvents to remain at the Renovation Plant (AOC-23) from these operations. A Final SI Report was completed in October 2014 (Weston, 2014). Based on the recommendations in the SI Report and the Draft PA, a Remedial investigation is anticipated for AOC-23.

Current Status: A RI Work Plan will be prepared at AOC-23. Completion of the Work Plan is currently scheduled for January 2015. A RI Report will be completed by May 2017. A FS, ROD, Remedial Design and Remedial Action may be required, following completion of the RI.

Project 20: HTRW – Other HTRW Sites

Project 20 addresses PCB Transformer Removal (AOC-17). Project 20 will also address any locations of pole-mounted transformers known to have been the site of leaking transformers (collectively identified as AOC-17). To date, no transformer locations have been identified.

Current Status: the potential presence of FNOD-era pole-mounted PCB transformers will continue to be evaluated. If pole-mounted PCB transformers are discovered on the property, the USACE will have the appropriate transformers removed and properly disposed. A Final Report for AOC-17 will be prepared, once the USACE has collected sufficient evidence to determine that no PCB transformers exist on the property.

Project 21: CON/HTRW – Fuel Storage Tanks

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Project 21 addresses underground storage tanks (USTs) may still be present at the Site. The potential fuel-related environmental hazards that could exist as a result of operations associated with the diesel fuel, fuel oil, and gasoline tanks include paraffins, isoparaffins, naphthenes, olefins, and aromatics (BTEX). Lead and other compounds have been blended with gasoline, primarily to boost octane levels, since the early 1920s. These compounds included tetraethyl lead, ethylene dibromide, ethylene dichloride, manganese tricarbonyl methylcyclopentadienyl (MMT), tetramethyl lead, tetramethylethyl lead, dimethyldiethyl lead, methyltriethyl lead, and methyltertbutyl ether.

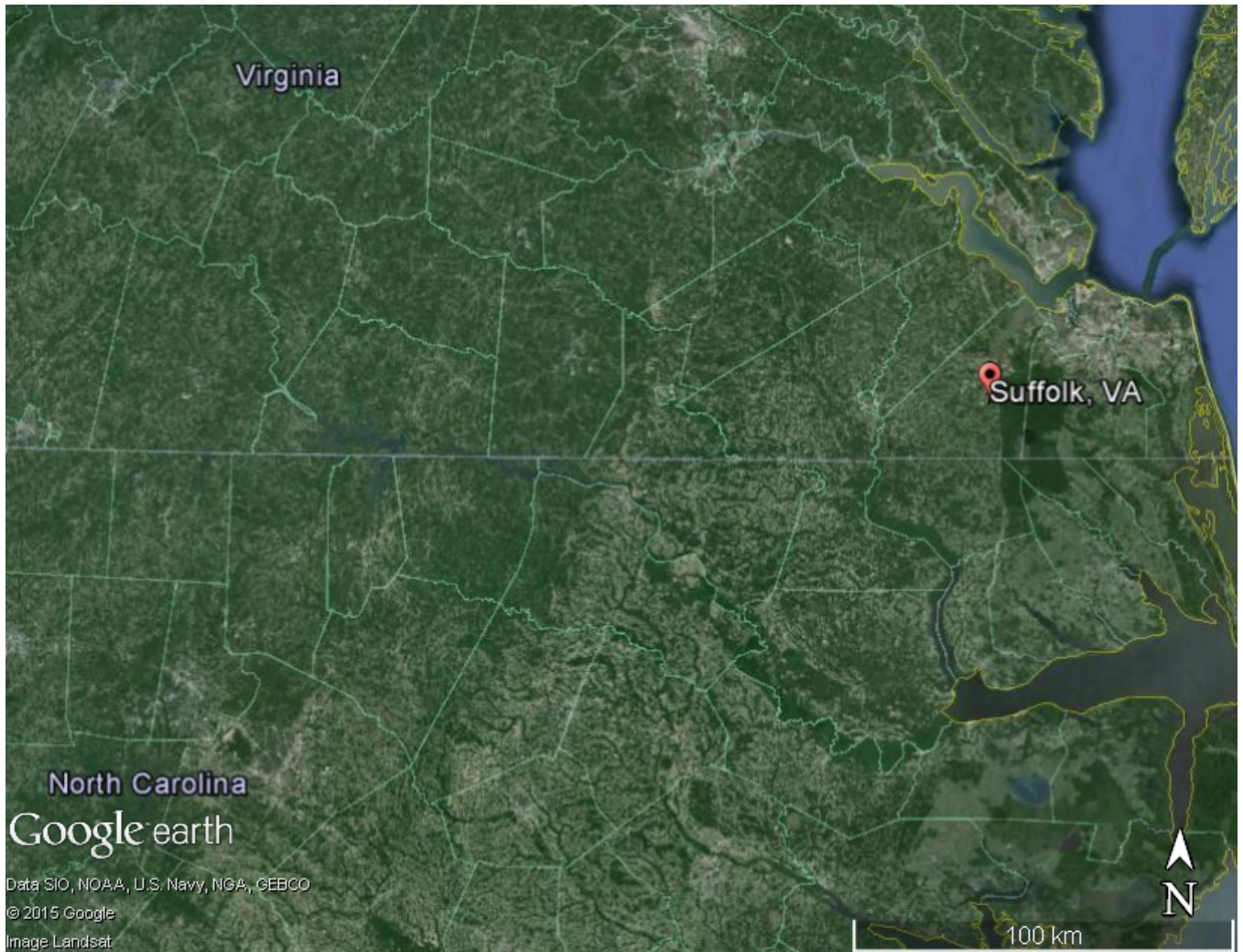
Current Status: A contract was awarded in September 2014 to perform a Site Characterization Report (SCR) to determine if the suspected USTs are still present. A Work Plan will be prepared to determine if the suspected USTs are still present. Completion of the Work Plan is currently scheduled for November 2015. A SCR will be completed by January 2017.

Project 22: HTRW – J-Lake

Previous investigations identified two pipes jutting into the lake in the area where the elevated PAHs were detected. A fuel oil tank (Bldg. 529-A) was located to the northeast of Bldg. 528. Former Bldgs. 528, 528-A, 528B, and 529-A may have been interconnected via steam lines or other piping. These former buildings may be a source of the PAHs in J-Lake via the observed pipelines. A Final ESI Report, including screening level human health and ecological risk assessments was completed in June 2012 (SAIC, 2012). Potential ecological risks were identified due to PAH detections in sediment. USACE determined that additional investigation is warranted due to PAH detections in J-Lake sediment. A Final RI Work Plan was prepared in April 2014 to address remaining data gaps as part of the Focused Supplemental Site Investigation of J-Lake. A field investigation was performed in May 2014.

Current Status: Additional field investigations will be performed in March 2015 to address data gaps. Completion of the Supplemental Investigation Report is currently scheduled for May 2016.

For more information regarding the Former Nansmond Ordnance Depot FUDS project, please contact Sher Zaman, CENAB-EN-H, (410) 962-3134, e-mail sher.zaman@usace.army.mil.



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