



TECHNICAL MEMORANDUM

Date: October 6, 2004
To: Indian Head Installation Restoration Team
From: George J. Latulippe, P.E., Tetra Tech NUS, Inc.
Subject: Decision Document
Site 33 – Scrap Metal Pit
Naval District Washington, Indian Head
Indian Head, Maryland

1.0 INTRODUCTION

This technical memorandum is a Decision Document (DD) addressing Installation Restoration (IR) Program Site 33, Scrap Metal Pit, at Naval District Washington, Indian Head (NDW-IH), Stump Neck Annex, in Indian Head, Maryland. The DD describes the history of Site 33, summarizes key findings from a review of available documents from the period 1983 to 2003, and recommends a site management decision based on the document review findings.

This DD was prepared by Tetra Tech NUS, Inc. under the Comprehensive Long-Term Environmental Action Navy (CLEAN), Contract Number N62472-03-D-0057, Contract Task Order Number 0005.

Site 33 was identified in Appendix A of the Federal Facilities Agreement (FFA) (EPA and DoN, 2000) for NDW-IH as a Site Screening Area (SSA) with suspected contamination requiring investigation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Program. Utilizing existing site information, this DD was prepared in accordance with Section 9.3D(3) of the FFA for Site Screening Areas (SSAs) which have been determined to not warrant a Remedial Investigation (RI) or status as an Accelerated Operable Unit (AOU) (FFA Section 2.1.A).

2.0 SITE DESCRIPTION AND OPERATIONAL HISTORY

Site 33 is located within the Stump Neck Annex, about 100 feet southeast of Buildings 2116 and 2136. The site is an outdoor, unlined earthen area that measures approximately 10 feet wide by 10 feet deep by 30 feet long, and reportedly contained scrap metal. The area is covered with grass and brier and is sparsely populated with trees. The scrap metal was said to consist of parts of mines, torpedoes, and other inert ordnance items. The location is approximate and no other details were available at the time of the 1983 Initial Assessment Study (IAS) (Hart).

3.0 INVESTIGATION HISTORY

An IAS was completed in 1983 to determine if potential contamination existed at Site 33. A site screening field investigation was completed in 2002 (TtNUS, 2003) to determine the nature and extent of any potential onsite contamination.

4.0 DOCUMENT REVIEW

The following documents were reviewed as part of the preparation of this DD for Site 33:

- Hart (Hart, Fred C. Associates, Inc.), 1983. Initial Assessment Study ((IAS) of Naval Ordnance Station, Indian Head, Maryland. May 1983.
- TtNUS (Tetra Tech NUS, Inc.), 2003. Site Screening Process Report for Site 32 – Suspected Tool Burial, Site 33 – Scrap Metal Pit, Site 34 – Tool Burial, Site 36 – Closed Landfill, Site 37 – Causeway, Site 51 – Building 101 Dry Well, and Site 52 – Building 102 Dry Well, Indian Head Division, Naval Surface Warfare Center, Indian Head, Maryland. King of Prussia, Pennsylvania. March 2003.

4.1 IAS Study

As part of the IAS, a site reconnaissance was conducted in June 1982 for the purpose of identifying potential contamination sites. Site 33 was evaluated as a potential waste

disposal operation. The IAS provided a description of the site, but made no recommendation regarding the performance of a confirmation study for Site 33 under the Navy Assessment and Control of Installation Pollutants (NACIP) Program, the precursor to the Navy Installation Restoration Program.

4.2 Site Screening Process Report

The final site screening process (SSP) report was issued in March 2003. During the site screening investigation, groundwater samples and subsurface soil samples were collected and analyzed for Target Analyte List (TAL) metals and explosives. The field investigation also included a geophysical survey. Test pits were excavated at the locations of anomalies identified during the geophysical survey.

Seven analytes (aluminum, arsenic, chromium, iron, manganese, thallium, and vanadium) were detected in soil samples at concentrations that exceeded human health screening concentrations. Of those analytes, only arsenic exceeded background concentrations and was retained as a soil contaminant of potential concern (COPC). Six analytes (aluminum, arsenic, chromium, iron, manganese, and vanadium) were detected in groundwater at concentrations that exceeded human health screening concentrations. Of those analytes, chromium and vanadium exceeded background concentrations and arsenic had no background concentration. All three analytes were retained as groundwater COPCs. Preliminary human health and ecological risk evaluations were performed on all COPCs.

The preliminary human health risk evaluation showed that the subsurface soil concentrations were within the carcinogenic and non-carcinogenic risk guidelines acceptable to the EPA, but that the arsenic concentration in groundwater resulted in a carcinogenic human health risk of 2.6×10^{-4} (exceeding the EPA's target risk range of 1.0×10^{-6} to 1.0×10^{-4}), a non-carcinogenic hazard quotient (HQ) of 1.9 (exceeding the EPA's HQ threshold of 1), and an exceedance of the MCL (10 $\mu\text{g/L}$). The report noted

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that the unacceptable human health risk resulted from the elevated arsenic concentration in a single highly turbid groundwater sample found to have elevated metals concentrations. Reevaluating the human health risk by removing the turbid sample's analytical results from the data set and substituting the analytical results for the filtered groundwater sample from the same well location indicated a carcinogenic risk less than the EPA's target range, a hazard quotient (HQ) much less than 1.0, and a groundwater arsenic concentration less than the arsenic MCL. On that basis, the SSA Report recommended collecting a less turbid sample from a new monitoring well installed near the well that produced the original turbid sample.

The preliminary ecological risk evaluation showed that the groundwater concentrations did not pose unacceptable risks to ecological receptors. Because the site was a disposal pit, contamination, if present, was not anticipated to be at the surface. No surface soil samples were collected, and terrestrial ecological receptors were not quantitatively evaluated. For the same reason, surface soils were also not considered in connection with human health risk.

During an April 28, 2004, meeting discussion regarding Site 33 and the results of the SSA Report, IHIRT members agreed that the highly turbid groundwater sample was not representative of contaminant levels present in groundwater, but that the less contaminated filtered sample is. Correspondingly, it was agreed that the human health risks calculated using the filtered sample analytical results are more representative of the actual human risks posed by the site. Subsequently, it was additionally determined that the State of Maryland does not view the Scrap Metal Pit as a disposal area requiring landfill closure in accordance with state regulations.

5.0 SUMMARY OF KEY FINDINGS

The following key DD findings are based on a review of the above described information.

- Utilizing analytical data viewed as being most representative of actual groundwater contaminant concentrations, human health risks at Site 33 are within EPA guidelines for acceptable risks.
- The Site 33 SSP report determined that adverse health effects are not anticipated for receptors exposed to subsurface soil.
- An ecological risk evaluation showed that the groundwater concentrations did not pose unacceptable risks to ecological receptors.
- The State of Maryland has indicated that the state's landfill closure regulations do not apply to the Scrap Metal Pit.

6.0 RECOMMENDATIONS

Because human health carcinogenic and non-carcinogenic risks and ecological risks were within the guidelines deemed acceptable by the EPA, and because the State of Maryland landfill closure regulations do not apply, this DD recommends that no further action be pursued for Site 33.

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REFERENCES

EPA and DoN (USEPA Region 3 and US Department of the Navy), 2000. Federal Facility Agreement. U.S. Department of the Navy, Naval Surface Warfare Center, Indian Head Division, Indian Head, Maryland. Docket Number: III-FCA-CERC-018. September 2000.

Hart (Hart, Fred C. Associates, Inc.), 1983. Initial Assessment Study of Naval Ordnance Station, Indian Head, Maryland. May 1983

TtNUS (Tetra Tech NUS, Inc.), 2003. Site Screening Process Report for Site 32 – Suspected Tool Burial, Site 33 – Scrap Metal Pit, Site 34 – Tool Burial, Site 36 – Closed Landfill, Site 37 – Causeway, Site 51 – Building 101 Dry Well, and Site 52 – Building 102 Dry Well, Indian Head Division, Naval Surface Warfare Center, Indian Head, Maryland. King of Prussia, Pennsylvania. March 2003

