

N60201.AR.002830
NS MAYPORT
5090.3a

REMEDIAL ACTION ALTERNATIVES WAIVER REQUEST FOR SOLID WASTE
MANAGEMENT UNITS 2, 3, 4, 5 AND 22 (SWMU 2, 3, 4, 5 AND 22) NS MAYPORT FL
1/1/2010
TETRA TECH

RAA Waiver Request

Naval Station Mayport SWMUs 2, 3, 4, 5, and 22

Tetra Tech, Inc. is finalizing a CMS for five sites: SWMUs 2, 3, 4, 5 and 22. Each of these sites is likely eligible for an RAA waiver in accordance with the NAVFAC RAA Guidance. Information for each site is provided below. Related site maps showing soil and groundwater COC sampling results are also provided. Applicable documents used to complete the CMS are referenced at the end of this discussion.

GENERAL:

SWMUs 2, 3, 4, and 5 are former landfill sites located in the southwestern portion of Naval Station (NAVSTA) Mayport that operated from 1960 to 1985. SWMU 22 is a facility that was used for abrasive blasting and is located approximately 400 feet northeast of SWMU 2 (SWMU Location Map, Figure 1). Each of these sites are included in the Land Use Control (LUC) restrictions imposed to prevent residential or residential-like use of the SWMUs.

The RCRA Facility Investigation (RFI) was completed for these sites in 1996. An Interim Measure (IM) soil removal was completed at SWMU 2-PCB in 1996, and an IM was completed at SWMU 5 in 2002. Additional soil sampling was conducted at the SWMUs in 2010. The groundwater investigation for SWMUs 2, 3, 4, 5 and 22 were grouped together because of their common geographic location, common drainage to Sherman Creek watershed, similarity of past waste disposal activities, and the potential for similar or related corrective actions. Analytical results from all sampling events were compiled and compared with the Florida soil criteria target levels (SCTLs) and groundwater criteria target levels (GCTLs) promulgated in Chapter 62-777 Florida Administrative Code (F.A.C.), as well as the NAVSTA Mayport background criteria.

Each of the landfills was used at different times over 25 years. Historically, trenches at each of the landfill sites intersected the shallow water table, and wastes were placed below the groundwater level. Materials were burned on a daily basis; the date when this activity was suspended is not documented. Similar type wastes were disposed at each landfill and reportedly included waste oil, transmission fluid, hydraulic fluid, transformer oil, mercury waste from shipboard and onshore activities, paint waste, asbestos, solvents, plating solutions, pesticide cans, batteries, bilge water, magnaflux dye, penetrants, photo-processing waste, sanitary garbage, and construction rubble. There is no documentation on the cover material for the landfills. Based on the history of the area, however, it is likely that the trenches were excavated into dredge material (down to the historical marsh level) and that dredge material from the Mayport Turning Basin was used to cover the landfills. Another impact which affected the soils and groundwater at the Landfill Area SWMUs was the deposition of dredge slurry from the bottom of the Mayport Turning Basin in the Eastern and Western Dredge Material Holding Areas (SWMU 50). These large areas cover approximately 1/4 and 1/3 of a square mile, respectively. The western area was receiving dredge slurry

during the RFI when environmental media were being sampled at the Landfill Area SWMUs. The eastern area covers most of SWMU 3. SWMU 50 was originally identified in the RFA based on the elevated concentrations of metals found in the sediments. It was anticipated that metal contamination from the sediments excavated from the Mayport Turning Basin could impact soil and groundwater at the adjacent SWMUs.

SPECIFIC SWMUs:

SWMU 2:

SWMU 2 (Landfill B) was operated from 1960 to 1964 and from 1979 to 1980 as a surface disposal site. Surface soil, subsurface soil, and groundwater samples were compared with SCTLs, GCTLs, and NAVSTA Mayport background criteria. The soil sample results for two samples (MPT-02-SS_BS01 and MPT-02-SS_BS03) exceeded leachability SCTLs for both antimony and 3 & 4 methylphenol in the SWMU 2 landfill area (see Figure 2-2). The same two samples exceeded the residential SCTL for lead at 6 to 7 feet bls. SWMU 2 is currently used for inert weapon storage, is covered with asphalt, fenced and has controlled access.

SWMU 2-PCB was discovered during the investigation for SWMU 2, and is located north of SWMU 2. Electrical transformer oil had been released in the area, and PCB contamination was the only COC. The IM conducted at SWMU 2-PCB in 1996 removed the contamination to residential standards. The confirmatory sample results were compared with SCTLs, and one sample result taken at the time of the IM exceeds the 0.5 mg/kg SCTL for PCB. Access to the site is restricted with fencing and signs.

The direct exposure COCs at SWMU 2-PCB area is in the surface soil, and is within a fenced area. The sample locations in SWMU 2-PCB that had analytical results exceeding SCTLs were evaluated for excavation in the alternatives. The total volume of contaminated soil in SWMU 2-PCB is approximately 2,626 cubic yards based on the areal extent of the nearest laboratory-confirmed samples of less than 0.5 mg/kg PCB to a depth of 2 feet. Fencing and Land Use Controls (LUCs) are already in place at SWMU 2-PCB, therefore excavation was not recommended. Sample results in the surface soil did not exceed SCTLs at SWMU 2. The direct exposure COCs at SWMU 2 are in the subsurface soil, and the sample results that exceeded residential and leachability SCTLs are at 7 feet bls. The recommended alternative recommends maintaining the fence around SWMU 2-PCB and LUCs for both SWMU 2 and SWMU 2-PCB, and is considered the most effective risk management alternative.

SWMU 3:

SWMU 3 (Landfill D) was operated from 1963 to 1965 as a surface pit disposal site. The pits were approximately 40 feet long, 40 feet wide, and 8 feet bls. The excavated pits intersected the water table,

and wastes were placed below the water level in the surficial aquifer. The area represented as SWMU 3 was identified as approximately 4 acres based on the review of historical aerial photographs. Currently, SWMU 3 consists of a wooded area and a portion of the northeastern Confined Disposal Facility (CDF). Two CDFs were constructed in the early 1970s to receive the sediment and material dredged from the Mayport Turning Basin. The CDF constructed over a portion of SWMU 3 has sloped sides that exceed 20 feet in height. The two CDFs were identified as SWMU 50 in the RFA (Kearney, 1989), but SWMU 50 was excluded from the RCRA process per 40 CFR 261.4 in the RCRA permit issued to NAVSTA Mayport in 2005.

Antimony was detected in one surface sample (MPT 03 SS-BS01) exceeding the leachability SCTL, but not in the corresponding subsurface soil sample (03BS00108). Three subsurface samples exceeded leachability and residential SCTLs for arsenic, chromium, and benzo(a)pyrene (MPT-03-BS05, MPT-03-BS06, and MPT-03-BS08) at 24 feet bls, as shown in Figure 3-2.

No direct exposure COCs were identified in the surface soil at SWMU 3. The depth of the direct exposure COCs in the subsurface soil are at or below the groundwater, at the reported depth of the waste. SWMU 3 is densely vegetated. Excavation of the landfill waste is not considered to be cost-effective. The recommended alternative is LUC, and is considered the most effective risk management alternative.

SWMU 4:

SWMU 4 (Landfill E) was operated as a trench-and-fill landfill from 1963 to 1966 and, subsequently, as an area landfill from 1974 to 1980. The trenches were constructed with a dragline and were approximately 15 feet wide, 750 feet long, and 8 feet deep. The trenches intersected the water table, and materials were dumped into standing water at the bottom of the trenches. The landfill consists of two contiguous areas separated by a storm drainage ditch and occupies a total of approximately 11 acres. A connecting storm drainage ditch runs along the northeastern edge of the landfill area and flows to Sherman Creek.

Sample results were compared with the SCTLs and are shown in Figure 4-2. No surface soil sample results exceeded SCTLs. Antimony exceeded leachability SCTL in one subsurface soil sample taken outside the landfill boundary during the installation of monitoring well MPT-02-MW16S, but was not detected in the groundwater. Subsurface soil sample results for benzo(a)pyrene and bis(2-ethylhexyl)phthalate exceeded residential and methylene chloride exceeded leachability SCTLs at MPT 04-SS_BS04. Subsurface soil sample results for barium exceeded residential SCTL at MPT 04 SS_BS03, results for antimony exceeded leachability SCTL at MPT 04 SS_BS07, results for copper exceeded residential SCTL at MPT-04-SS_BS05, and results for naphthalene exceeded leachability SCTL at MPT-04-SS_BS09.

No direct exposure COCs were identified in the surface soil at SWMU 4. The depth of the direct exposure COCs in the subsurface soil are at 5 to 10 feet bls, at the reported depth of the waste. Excavation of the landfill waste is not considered a cost-effective remedy. The recommended alternative is LUC, and is considered the most effective risk management alternative.

SWMU 5:

SWMU 5 (Landfill F) was operated from 1965 to 1985 as a trench-and-fill and surface disposal site. The trenches were greater than 100 feet long, approximately 15 feet wide, and 8 feet bls. The trenches excavated at the landfill site intersected the water table, and wastes were placed below the water table. SWMU 5 is approximately 24 acres based on the review of historical aerial photographs. Measurements of the current boundary depict the site as closer to 40 acres. Currently, SWMU 5 consists primarily of a Prairie hammock and has an area that is used for storage (vehicles, trailers, boats, etc.) by active duty and retired Navy personnel. Both the Navy and United States Coast Guard have electronic installations at this site.

Approximately 9.88 tons of soil were removed in 2000. The sample results for arsenic exceeded the pre-2005 industrial SCTLs of 3.7 mg/kg.

Sample results were compared with the SCTLs and are shown in Figure 5-2. One sample location adjacent to the landfill had surface soil sample results that exceeded the residential SCTL for benzo(a)pyrene, but is not a COC due to location. Soil sample results exceeding residential SCTLs inside the landfill boundary include benzo(a)pyrene and equivalents in surface soil, and arsenic, barium, benzo(a)pyrene (and equivalents), lead, nickel and vanadium in subsurface soils. Subsurface soil samples were collected at 4 to 10 feet bls.

The corrective measure for soil at the SWMU 5 landfill area will prevent exposure to the buried waste and subsurface soil, reportedly covered with approximately 3 feet of soil in the original SWMU 5 landfill area. Excavation of the landfill waste is not considered a cost-effective remedy. The recommended alternative is maintaining soil cover and LUC, and is considered the most effective risk management alternative.

GROUNDWATER:

Groundwater sample results in the Landfill Area SWMUs were compared to the FDEP GCTLs for groundwater used as a drinking water source (unrestricted use), and are shown in Figure 7-4. The groundwater COCs are manganese, iron, sodium, chloride, ammonia, and sulfate. Sodium and chloride are identified as naturally occurring due to the close proximity to the Atlantic Ocean and sea water affects in this area and the deposition of dredge spoils in the landfills. Metals and SVOCs were detected above GCTLs; however, the detections are located within or on the landfill SWMU borders.

The recommended groundwater corrective alternative is LUCs and monitoring to address the limited groundwater contamination at SWMUs 2, 3, 4, 5, and 22. LUCs require current and future land use to remain industrial, and no domestic use of groundwater is to be allowed. An elaborate treatment system was not justified because most of the COC concentrations were less than human health based screening values, the impact to ecological receptors was minimal, and the associated cost was not justified. The recommended alternative is monitoring and LUCs, and is considered the most effective risk management alternative.

SWMU 22:

SWMU 22 contains a prefabricated sheet metal building on a concrete pad located within a fenced area. An abrasive media was used from 1985 until 1992 for cleaning ground support equipment and vehicles. During a visual site inspection conducted in 1989, the blasting residue was observed to have been placed in approximately 100 55-gallon drums. Facility personnel reported that the residue exceeded criteria for the extraction procedure toxicity test and was to be disposed as hazardous waste.

No COCs were identified in the CMS, therefore No Action is the recommendation. The site is included in this RAA Waiver Request only for information purposes.

Based on RAA waiver provisions described in the NAVFAC RAA Guidance, we do not believe an RAA is required for each of these sites due to the minimal contamination, the existing LUC in the vicinity, the agreement of the IR Partnering Team to implement LUCs and groundwater LTM for these sites, and the ineffectiveness of any treatment strategy.

REFERENCES

ABB-ES, 1995. *Resource Conservation and Recovery Act (RCRA) Corrective Action Program General Information Report, U.S. Naval Station, Mayport, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina. July.

ABB-ES, 1996a. *RCRA Facility Investigation (RFI) for Group I SWMUs for Naval Station Mayport, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina. March.

ABB-ES, 1996b. *Completion of Interim Measure at SWMU 2 PCB Area, RCRA Corrective Action Program, U.S. Naval Station Mayport, Florida*. July.

Bechtel Environmental, Inc., 1995. *Interim Remediation Work Plan for SWMU 2 PCB Area, U.S. Naval Station Mayport, Florida*. Prepared for Department of the Navy, Southern Division, Naval Facilities Engineering Command. June.

CH2M HILL Constructors, Inc., 2002. *Source Removal Report Excavation of Arsenic-Contaminated Soil at Solid Waste Management Unit 5, Naval Station Mayport, Mayport, Florida*. Submitted to U.S. Naval Facilities Engineering Command Southern Division. January.

Kearney, A. T., 1989. *RCRA Facility Assessment of the Naval Station Mayport, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina.

Tetra Tech, 2000. Memorandum from A. T. Jenkins, Tetra Tech, Inc., Oak Ridge, to T. Hansen, Tetra Tech, Inc., Tallahassee. Subject: Recalculation of Media Background Screening Values, NAVSTA Mayport, Florida.

Tetra Tech, 2008. *Arsenic Background Study Report, Naval Station Mayport, Mayport, Florida*. Prepared for Naval Facilities Engineering Command, Southeast, Jacksonville, Florida. September.

Tetra Tech, 2010. *Soil Sampling Report for Solid Waste Management Units 2, 3, 4, 5, and 22, Naval Station Mayport, Jacksonville, Florida*. Prepared for Naval Facilities Engineering Command, Southeast, Jacksonville, Florida. May.