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STATEMENT OF BASIS/ PROPOSED FINAL SOIL REMEDY DECISION SOLID WASTE  
MANAGEMENT UNIT 46 NAVAL ACTIVITY PUERTO RICO  
10/26/2010  
AGVIQ/CH2M HILL

STATEMENT OF BASIS/ PROPOSED FINAL REMEDY DECISION	REGION 2 ID# PR2170027203						
<b>NAVAL ACTIVITY PUERTO RICO (former Naval Station Roosevelt Roads)</b> <b>Ceiba, Puerto Rico</b> <b>(October 26, 2010)</b>							
<p><b>Facility/unit Type:</b> SWMU 46/AOC C – Pole Storage Yard Covered Pad and the Transformer Storage Pad</p> <p><b>Contaminants:</b> PAHs (Benzo(a)pyrene, Dibenzo (a,h) anthracene) and PCBs</p> <p><b>Media:</b> Surface soil</p> <p><b>Proposed Final Remedy:</b> Excavation and off-site disposal of 113.04 tons of contaminated soil from a depth of approximately six-inches from five areas designated MU01, MU02, MU03, MU04 and MU05.</p>							
<p><b>FACILITY DESCRIPTION</b></p> <p>On October 20, 1994, a Final Resource Conservation and Recovery Act (RCRA) Part B permit was issued by the USEPA Region 2 to Naval Station Roosevelt Roads (NSRR). This permit contained requirements for RCRA Facility Investigation (RFI) activities at specified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs), including SWMU 46/AOC C.</p> <p>SWMU 46 and AOC C are located adjacent to each other behind Buildings 2326 and 2042 along Valley Forge Road. SWMU 46 consists of two concrete pads, (approx. 25x40 and 28x60 feet). The pads are covered by a roof, the sides are open, and the area containing the pads is surrounded by a chain-link fence. The concrete pads are surrounded by grassy areas. Both pads were used as "under 90-day" hazardous waste storage/accumulating facilities for base operations. Before this, various materials of an electrical nature were stored on the pads.</p> <p>AOC C is south and adjacent to SWMU 46. AOC C consists of three raised concrete pads with curbing. The two northern pads are divided into two sections by a concrete curb (approx. 34x15 and 52x32 feet). The southern pad is one continuous pad measuring (approx. 20x53 feet) During the RFI, the three pads contained numerous transformers. Staining was observed on all three pads. The eastern third of the middle pad was covered with tar. The area surrounding the pads was overgrown with tall grass and shrubs.</p> <p>A Phase I RFI was conducted at SWMU 46/AOC C in 1996 and additional investigations were performed in 1998. Several carcinogenic polynuclear aromatic hydrocarbons (cPAH) were detected above residential risk-based concentrations (RBC) in surface soil samples at SWMU 46/AOC C. Benzo(a)pyrene exceeded the industrial RBC in three samples (2 from SWMU 46 and one from AOC C). One surface soil sample from SWMU 46 exceeded the industrial RBC for dibenzo(a,h)anthracene. Polychlorinated biphenyl (PCBs) exceeded residential RBCs in 19 samples at both SWMU 46 and AOC C, and exceeded the industrial RBCs in 7 samples at both SWMU 46 and AOC C. Inorganic parameters (primarily arsenic and beryllium) exceeded residential and/or industrial RBC screening criteria. Inorganic parameters were later</p>	<p>eliminated from further consideration during the risk evaluation process because these elements did not produce unacceptable carcinogenic risks or noncarcinogenic hazard quotients or hazard indices.</p> <p><b>EXPOSURE PATHWAYS</b></p> <p>Based on data from the Phase I RFI and subsequent supplemental data, risk screening of soil data from SWMU 46/AOC C resulted in unacceptable carcinogenic risks for on-site commercial workers and future military residents. Exposure pathways considered included dermal contact, incidental ingestion and inhalation of dust.</p> <p>Pathways for human receptors were eliminated by removal of surface soils above the approved remedial goals.</p> <p><b>SELECTED REMEDY</b></p> <p>The remedial goals for SWMU 46 were based on the current property use, the continued industrial use of the Naval Activity Puerto Rico (NAPR) property, and the most likely future potential human and ecological receptors. These values were selected to protect commercial/industrial workers from contaminants in surface soil. The following table summarizes the remedial goals for SWMU 46/AOC C.</p> <table border="1" data-bbox="786 1192 1425 1281"> <thead> <tr> <th>Compound</th> <th>Remedial Goal</th> </tr> </thead> <tbody> <tr> <td>PCB-1260</td> <td>25 mg/kg</td> </tr> <tr> <td>Total cPAHs</td> <td>10 mg/kg</td> </tr> </tbody> </table> <p>Note: Total cPAHs include: benzo(a)anthracene, benzo(a)pyrene, benzo(b)floranthene, benzo(k)floranthene, chrysene, indeno(1,2,3-cd)pyrene and dibenzo(a,h) anthracene.</p> <p>Soils were excavated to achieve the remedial goals. Institutional controls (land use restrictions) will be established to prevent future residential property use.</p> <p><b>INNOVATIVE TECHNOLOGIES CONSIDERED</b></p> <p>Excavation and off-site disposal of contaminated soil was a presumptive remedy for this SWMU. Excavation and off-site disposal is proven and commonly used at remediation and general construction sites. It is reliable, effective and easily implemented. Clean-up goals could be achieved using this method and it could provide an immediate benefit to the environment. Therefore, no innovative technologies were considered.</p>	Compound	Remedial Goal	PCB-1260	25 mg/kg	Total cPAHs	10 mg/kg
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PCB-1260	25 mg/kg						
Total cPAHs	10 mg/kg						

### **CORRECTIVE ACTION COMPLETED**

Heavy equipment was mobilized on April 10, 2006. It was obtained from local suppliers. Site preparation included verification of utility locations with on-site Navy personnel, installing erosion controls, clearing and grubbing, constructing lay-down and staging areas, establishing access routes for equipment and transport vehicles, and delineating work areas. The excavation was completed with appropriately sized heavy equipment, primarily a backhoe and included the removal of 113.04 tons of surface soils from a depth of approximately six-inches from five areas designated MU01, MU02, MU03, MU04 and MU05.

Three samples from the floor of each area in SWMU 46/AOC C were collected in accordance with the sampling plan. PCB-1260 and total cPAH concentrations were below remedial goals in all 15 samples, indicating that over-excavation was not required. The placement of fill in the excavated area was completed in January 2009.

### **PUBLIC PARTICIPATION**

Public review and comment on the completed remedy for SWMU 46/AOC C will be implemented as required by the USEPA. A public notice of the public comment period will be published in both Spanish and English in select Puerto Rico newspapers.

### **NEXT STEPS**

Following completion of public review and comment on the completed remedy, the USEPA will advise NAPR of any required modifications based on the public comments, or its acceptability. Following USEPA's input concerning the implemented remedy, NAPR will amend the remedy (if required).

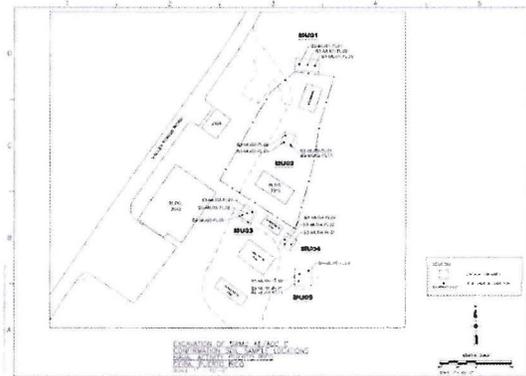
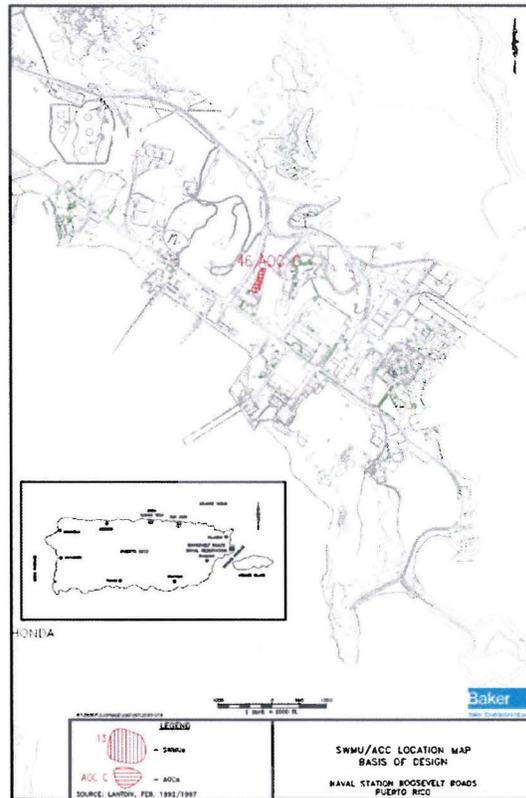
Corrective Action Complete (CAC) with controls is recommended for this SWMU. The controls will consist of a deed restriction prohibiting residential development at this site.

### **KEY DOCUMENTS**

Revised Final II CMS Final Report SWMU 13 and SWMU 46/AOC C, August 4, 2000.

100% Basis of Design Corrective Measures Implementation Work Plan for SWMUs 13 and 46/AOC C, January 25, 2001.

Final Project Closeout Report – Remedial Action for Soil Remediation at Various Sites (SWMU's 9, 13, 46, and 53) and AOC C, August 6, 2010.



### **KEY WORDS**

SWMU 46, AOC C, transformer, Surface Soil, Soil, PAHs, benzo(a)pyrene, dibenzo (a,h) anthracene, PCBs, excavation, off-site disposal, NAPR, NSRR, CAC, corrective action complete

### **FURTHER INFORMATION**

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