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U S NAVY RESPONSE TO SOUTH CAROLINA DEPARTMENT OF HEALTH AND  
ENVIRONMENTAL CONTROL COMMENTS TO RFI REPORT ADDENDUM/CORRECTIVE  
MEASURES STUDY WORK PLAN AREA OF CONCERN 633 ZONE G WITH TRANSMITTAL  
CNC CHARLESTON SC  
8/7/2003  
CH2M HILL

POC 633 Zone 9  
RTC on RFI RA/ CMS WP.

# CH2MHILL TRANSMITTAL

**To:** Mr. David Scaturo  
South Carolina Department of Health and  
Environmental Control  
Bureau of Land and Waste Management  
2600 Bull Street  
Columbia, SC 29201

**From:** Dean Williamson/CH2M-Jones

**Date:** August 7, 2003

**Re:** CH2M-Jones' Responses to Comments by SCDHEC regarding the *RFI Report Addendum/CMS Work Plan, AOC 633, Zone G, Revision 0* – Originally Submitted on May 30, 2003

**We Are Sending You:**

<b>X Attached</b>	Under separate cover via	
Shop Drawings	Documents	Tracings
Prints	Specifications	Catalogs
Copy of letter	Other:	

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Quantity	Description
4	Responses to Comments by SCDHEC regarding the the <i>RFI Report Addendum/CMS Work Plan, AOC 633, Zone G, Revision 0</i> – Originally Submitted on May 30, 2003

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If material received is not as listed, please notify us at once

**Copy To:**

Dann Spariosu/USEPA, w/att  
Rob Harrell/Navy, w/att  
Gary Foster/CH2M HILL, w/att

Response To Engineering Comments  
AOC 633 RFIRA/CMSWP  
Prepared by Jerry Stamps  
Charleston Naval Complex (CNC)  
May 30, 2003

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1. General

The Department understands that industrial reuse LUCs are to be applied to this site as well as restrictions against the installation of wells and the use of shallow groundwater. No response to this comment is necessary.

**Comment 1 Response:**

**Comment noted.**

2. Sections 2.3 and 5.3

Six sediment samples were collected from the ditch that presumably served for stormwater runoff from AOCs 633, 634, and 706. This ditch apparently leads to an intermittent pond, which is located in Area of Ecological Concern (AEC) IV-1. It is reported that various VOCs, SVOCs, PCBs, and metals exceeded their corresponding Sediment Screening Value (SSV). It is stated that the ecological risk associated with this area will be addressed in the Zone J RFI at a later date. However, since there does not appear to be a direct link between this isolated inland habitat and the surface water bodies associated with Zone J, addressing the ecological risk for this area in the Zone J RFI does not appear to be appropriate. Therefore, additional investigation, as deemed necessary, and the ecological risk assessment must be conducted in association with either AOC 633, 634, or 706.

**Comment 2 Response:**

**The potential ecological impacts for the 6 samples noted above to AEC IV-1, Subzone G-1, will be evaluated. A separate submittal for this evaluation will be provided.**

3. Section 3.3, Page 3-3, Lines 11 and 12

The average PCB concentration remaining in the soil should be presented in this section to demonstrate that the leaching potential for PCBs no longer exists.

**Comment 3 Response:**

**The average PCB concentration in soil will be provided as requested above.**

Response To Hydrogeology Comments  
AOC 633 RFIRA/CMSWP  
Prepared by Jo Cherie Overcash  
Charleston Naval Complex (CNC)  
May 30, 2003

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CH2M Jones and the Navy appreciate the conditional approval of the RFIRA/CMSWP for AOC 633. A few responses to the reviewer's comments are provided below.

1. We agree to conduct appropriate investigations into the nature of the petroleum hydrocarbons detected in groundwater at G633GW004 under RCRA Subtitle I through SCDHEC's UST Program.
2. The reviewer noted the following regarding monitor well locations at the site:

Figure 4-2 Potentiometric Surface (without GW001), October 2002

According to the groundwater flow direction, there are no monitoring wells located downgradient of the source area. Monitoring well G633GW001 was installed in the area where LNAPL seeped into the soil excavations (designated source area) while monitoring wells G633GW002 and G633GW003 are sidegradient wells that have not been adversely impacted. Therefore, the Navy must install a minimum of two shallow groundwater monitoring wells near Building 1177 to provide immediate and long term monitoring for AOC 633.

We agree that an additional well should be installed near Building 177 downgradient of the location at which LNAPL is found at AOC 633. The need for two wells is not apparent to CH2M Jones. We propose that an initial downgradient well be first installed at a location acceptable to SCDHEC and, pending the results of groundwater analysis from that well, the need for an additional well would then be determined.

A key reason why one well appears adequate at this time is that the slow groundwater flow rate at the site suggests that significant downgradient migration of contamination is unlikely. Assuming an average hydraulic conductivity of  $10E-04$  and a hydraulic gradient of approximately 0.0067 ft/ft (from Figure 4-2), and assuming an effective porosity of approximately 0.25, a seepage velocity of slightly less than 3 ft/yr is calculated. Given the significant retardation of contaminants such as PCBs and diesel compounds, the contaminant migration rate in groundwater at this site is probably on the order of less than one ft/year.

An initial proposed location of this well will be provided in the CMS report for AOC 633.

3. The reviewer noted the following, with regard to proposed Media Cleanup Standards:

## 8.2 Remedial Goal Options and Proposed Media Cleanup Standards

The Navy has proposed an inappropriate media cleanup standard (MCS) for LNAPL. While the thickness of the LNAPL on the watertable may be used to determine when to actively remove the LNAPL, thickness of the contaminants cannot be used as a cleanup standard. Each constituent in the LNAPL must meet MCLs or RBC values, whichever is appropriate. On Table 4-9 entitled LNAPL Analytical Results from G633GW001, the Navy identified Aroclor-1260, bis (2-ethylhexyl) phthalate, diesel components, 1,3-dichlorobenzene, and 1,4-dichlorobenzene in the one sample of LNAPL collected during January 2003. In the CMS Report, the Navy must further identify the diesel components and propose acceptable cleanup standard. Even though the individual constituents do not exceed their respective MCLs/RBCs at this time, the Division considers LNAPL a constituent of concern in that its continued presence poses a potential threat to groundwater quality.

As noted above, SCDHEC considers LNAPL a COC. CH2M Jones agrees and for this reason we provided the proposed LNAPL MCS (less than or equal to 0.01 ft measured in the monitoring wells). We suggest that this MCS for LNAPL be retained as it provides a practical end point for active LNAPL recovery methods.

In addition, we agree that MCSs for applicable diesel analytes also be included as COCs and proposed MCSs for these will be provided in the CMS. Because many diesel constituents are not considered toxic and do not have MCLs or RBCs established, we propose that the list of individual diesel constituents to be identified as COCs be those for which the SCDHEC UST program provides target cleanup levels and that those target cleanup levels be used as the proposed MCSs.