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LETTER OF TRANSMITTAL AND U S NAVY RESPONSES TO SOUTH FLORIDA WATER  
MANAGEMENT DISTRICT COMMENTS ON CORRECTIVE MEASURES STUDY REPORTS  
FOR SOLID WASTE MANAGEMENT UNITS 1 AND 2 NAS KEY WEST FL

6/19/1998

BROWN AND ROOT ENVIRONMENTAL



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AIK-98-0288

June 19, 1998

Project Number HK 7046

Via U.S. Mail

Mr. Jorge Caspary  
Division of Waste Management  
Technical Review/Federal Facilities  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

Reference: CLEAN Contract No. N62467-94-D-0888  
Contract Task Order 0007

Subject: Responses to Richard Alleman's Comments on the SWMU 1 and 2 CMS Reports

Dear Mr. Caspary:

At the request of Mr. Dudley Patrick, Naval Facilities Engineering Command, Southern Division, Brown & Root Environmental is pleased to transmit the enclosed responses to Richard Alleman's comments on the SWMU 1 and 2 CMS Reports Rev. 0.

Please call me at (803) 649-7963, ext. 345 should you have any questions regarding the enclosed responses.

Sincerely,

C. M. Bryan  
Task Order Manager

Enclosure

c: Ms. D. Evans-Ripley, SOUTH DIV (w/o encl.)  
Ms. M. Berry, EPA  
Mr. D. Patrick, SOUTH DIV  
Mr. R. Demes, NAS Key West

Mr. P. Williams, NAS Key West  
Mr. R. Hoekstra, Bechtel Environmental, Inc.  
Mr. M. Perry, B&RE Technical Coordinator  
Files: ~~7046~~-3.2  
7046

*Brown & Root Environmental corporate identity changing to Tetra Tech NUS, Inc. following contract novation*

Date: Thu, 12 Mar 1998 15:35:23 EDT  
From: Richard Alleman <rick.alleman@sfwmd.gov>  
Subject: Review of Key West Naval Air Station Reports -Forwarded  
To: CASPARY\_J <CASPARY\_J@dep.state.fl.us>  
Message-id: <s507f280.025@sfwmd.gov>  
MIME-version: 1.0  
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Q A Record

Date: 02/19/1998 09:28 am (Thursday)  
From: Richard Alleman  
To: wetnet.FAB.rhaag  
CC: jmulis, mmiller, wetnet.REG.rpeeksto, wetnet.REG.ecronym  
Subject: Review of Key West Naval Air Station Reports

I have reviewed the Corrective Measures Study Reports for Solid Waste Management Unit 1 and Solid Waste Management Unit 2 of the Key West Naval Air Station. I offer the following observations and concerns.

The final corrective measure recommended for each of these contaminated sites is to maintain the sites as restricted areas and continue monitoring groundwater. This seems like a reasonable recommendation if there was a high degree of confidence in the reliability of the water quality data.

I am not convinced at this time that the monitoring program is properly designed and therefore, the data, both existing and future, are suspect. My primary concern is that the monitoring wells are too deep. The wells are roughly fourteen feet deep and screened at the bottom. Data are incomplete in the SWMU-2 report, but data contained in the SWMU-1 report indicate that salinity in the monitoring wells ranged up to 3 ppt. This suggests that the wells have penetrated the saltwater intrusion zone. Contaminants would normally be associated with the freshwater lens above the saltwater. Therefore the concentrations of contaminants

may be diluted by the cleaner saltwater, thus giving a false reading on the magnitude of the problem.

No data are given in the reports about antecedent weather conditions. Slugs of contaminants may be migrating after certain rainfall events. Given the very low frequency of monitoring, these events could be totally missed thereby underestimating the actual loading into adjacent surface waters.

I am also troubled by problems documented by the contractor when monitoring. From the incomplete records included in one of the reports, I noted that the contractor experienced equipment failures on 3 of the 4 days of monitoring.

I recommend that future monitoring be conducted from shallower wells and that storm event related monitoring be conducted over a range of rainfall volumes.

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RFC-822-headers:

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(PMDF V5.0-8 #7204) id <01IUKEYXIV80003ZKZ@EPIC66.DEP.STATE.FL.US> for CASPARY\_J@dep.state.fl.us; Thu, 12 Mar 1998 14:30:15 -0400 (EDT)

Received: from mailhost.sfwmd.gov (mailhost [141.232.150.2]) by tahiti.sfwmd.gov (8.8.7/8.8.7) with ESMTTP id OAA06359 for <CASPARY\_J@DEP.STATE.FL.US>; Thu, 12 Mar 1998 14:33:45 -0500 (EST)

Received: from gwms1.sfwmd.gov (gwms1 [141.232.150.23]) by mailhost.sfwmd.gov (8.8.5/8.8.5) with SMTP id OAA05246 for <CASPARY\_J@DEP.STATE.FL.US>; Thu, 12 Mar 1998 14:35:02 -0500 (EST)

Received: from sfwmd.gov by gwms1.sfwmd.gov (4.1/SMI-4.1) id AA29035; Thu,

12 Mar 1998 14:34:40 -0500 (EST)

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12 Mar 1998 14:34:40 -0500

X-Mailer: Novell GroupWise 4.1

**RESPONSE TO RICHARD ALLEMAN COMMENTS ON THE  
CORRECTIVE MEASURES STUDY REPORT (REVISION 2) FOR SWMU 1 AND SWMU 2**

The groundwater data evaluated for the SWMU 1 and 2 CMS Reports were generated over a period of 10 years during a series of four studies at each of the sites. The data sets have been evaluated for data quality and compiled as part of the Supplemental RFI/RI Report for the NAS Key West High-Priority Sites (July 1997). In addition, more groundwater data were collected at SWMU 1 to further evaluate data results from past sampling events with regard to metals and possible impacts at the site's boundary to the south to prepare the CMS Report. Finally, FDEP and EPA concurred with this approach and the methods used to manipulate the data. Based on the effort put forth to prepare the RFI and CMS Reports, the Navy is not aware of any data gaps with respect to groundwater data for SWMUs 1 and 2.

With respect to the groundwater well installation, all wells have been installed according to FDEP standards by having a 10 foot screen that intersects the surficial aquifer. A single well (KMW-06) at SWMU 1 was installed to a depth of 18 feet according to records. However, contaminant levels have continued to decrease over the years groundwater sampling at this well. In addition, the number of wells and their locations have increased over the 10 years of studies at the sites to cover ever-widening areas around the sites. More wells in more places provide a representation of the contaminant levels. The trends of contamination are discussed in Sections 4.1 and 4.2 of the Supplemental RFI/RI Report for the NAS Key West High-Priority Sites (July 1997).

Based on discussions among the representatives to the NAS Key West Partnering Team, a concern about the salt water intrusion zone has never been an issue in the on Boca Chica Key. This is based in part on the fact that groundwater is considered nonpotable by FDEP based on its Class G-III designation. In addition, Monroe County recognizes only the Florida Keys Aqueduct as the only potable water source in the Keys. Further, a 1990 USGS publication prepared in cooperation with the Florida Water Management District indicated that the freshwater lens in the surficial aquifer on Key West does not meet Florida drinking water standards.

As for the possibility of false groundwater data readings as a result of the wells penetrating the "salt water intrusion zone," the data collected to date has been documented to represent the contaminant conditions of the surficial aquifer on Boca Chica. The Navy is not aware of any specific documentation of the "salt water intrusion zone" on Boca Chica Key. Further, research into the salt water intrusion zone condition on Boca Chica was not performed because of the nonpotable nature of the surficial aquifer.

Errors in field equipment happen on occasion. The errors referred to in the SWMU 1 CMS Report were associated with a turbidity reading and the readings from a Flame Ionization Detector (FID). These errors are unfortunate but do occur from time to time; however, the significance of the turbidity error is minor because it is only one piece of information on the infield conditions of the groundwater sample. In addition, the purging method (i.e., low-flow peristaltic pump) and volume purged are both conservatively based to adequately develop the well for groundwater sampling. The groundwater sampling results included in the Corrective Measures Study Report were taken and analyzed for organics and metals only. The data were used to reconfirm the lack of organic and metals contaminants at the site. The FID readings of groundwater samples are primarily health and safety based. Volatile Organic Compounds (VOCs) were ruled out as contaminant at this site during the previous sampling events.

Lastly, groundwater monitoring will be performed in conjunction with surface water, sediment, and biota monitoring if the limited action is selected as the preferred remedial alternative at SWMU 1. The multi-media monitoring effort selected for SWMU 1 was determined to be the most cost effective and practical method to determine if the environment will be impacted by the past operation of the site.