

RCRA Final Permit Required  
Quarterly Progress Report  
Period November 1, 2000 - January 31, 2001

Naval Station Roosevelt Roads  
RCRA/HSWA Permit No. PR2170027203  
Ceiba, Puerto Rico



Prepared For  
**Department of the Navy**  
Atlantic Division  
Naval Facilities Engineering Command  
Norfolk, Virginia

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**LIST OF ATTACHMENTS**

- 1 Tow Way Fuel Farm - Quarterly Summary Progress Report No. 16  
(November 1, 2000 - January 31, 2001), Naval Station Roosevelt Roads
- 2 Summary and History of SWMUs/AOCs associated with Operable Unit  
1, 6, and 7, Naval Station Roosevelt Roads

## INTRODUCTION

This quarterly report is comprised of the following separate sections:

1. Work Completed - A description of activities conducted, pursuant to the provisions of the Corrective Action portion of the Final Permit, during the reporting period.
2. Summary of Findings - A brief summary of corrective action related findings developed during the reporting period.
3. Summary of Changes - A brief summary of any changes made in the corrective action program.
4. Community Relations Summary - A brief summary of any contacts made with the local community or interested groups during the reporting period.
5. Problems Encountered/Response Taken - A brief summary of problems or conditions that caused a response to be made in the corrective action program.
6. Personnel Changes - Personnel changes made during the period.
7. Planned Work - A list of tasks planned for the next period.

Each section includes a separate list of contents and separate attachments as necessary and appropriate.

**SECTION 1**  
**WORK COMPLETED**

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Work was performed on a number of tasks related to the corrective action portion of Roosevelt Road's RCRA operating permit. Tasks which were commenced, worked on, or completed this period, November 1, 2000 - January 31, 2001 include:

- ! Work continued on the updating of Roosevelt Roads RCRA Corrective Action Program website.
- ! The Corrective Measures Study for Operable Unit (OU) 2 continued.
- ! On November 3, 2000 the Navy provided responses to EPA comments dated September 15, 2000 on the Draft Remedial Design Package and the Revised Final II Corrective Measures Study (CMS) Final Report for SWMUs 13 and 46/AOC C.
- ! Submitted Final Corrective Measures Implementation (CMI) Work Plan for SWMUs 13 and 46/AOC C on November 3, 2000.
- ! A JIG monthly conference call was held on November 8, 2000 at 2:00 PM EST.
- ! On November 8, 2000 the Navy provided responses to the EPA comments dated October 10, 2000 on the risk based clean up goals associated with the CMS Task I Report for Tow Way Fuel Farm (TWFF) (SWMU 7/8).
- ! On November 13, 2000 the Navy provided responses to EPA comments of September 15, 2000 dealing with the Draft CMS Work Plan for SWMU 9.
- ! Submitted the Draft Final CMS Work Plan for SWMU 9 on November 15, 2000.
- ! Submitted the final minutes from the JIG monthly conference call held on November 8, 2000, on November 20, 2000.
- ! Submitted the Draft Interim Decision Document for SWMU 14 on November 22, 2000.

- ! Submitted the Roosevelt Roads RCRA Final Permit Required Quarterly Progress Report for the period August 1, 2000 - October 31, 2000 on November 30, 2000.
- ! Submitted the Draft Final CMS Final Report for SWMU 6/AOC B on November 30, 2000.
- ! Received EPA comments dated December 5, 2000 on December 11, 2000 from EPA Region II, in regards to the Basis of Design CMI Work Plan for SWMUs 13 and 46/AOC C transmitted on November 3, 2000 by Baker Environmental, Inc. (Baker). The EPA also provided comments on the CMI Design Package for SWMU 31/32 dated August 14, 2000 and the Draft Final CMS Work Plan for SWMU 9 dated November 15, 2000, both of which were transmitted by Baker.
- ! A field investigation was conducted at SWMUs 3, 9, 53, and 54 December 11, 2000 through December 21, 2000.
- ! A TWFF CMS meeting was conducted at EPA Region II Offices in New York City on December 19, 2000.
- ! Submitted the Final CMS Work Plan for SWMU 9 on January 15, 2001.
- ! Submitted the final meeting minutes from the TWFF CMS meeting conducted at EPA Region II Offices in New York City on December 19, 2000, on January 19, 2001.
- ! Submitted the Final CMI Work Plan Design Package for SWMU 31/32 on January 25, 2001.
- ! Submitted the 100% Final CMI Work Plan Design Package for SWMUs 13 and 46/AOC C on January 25, 2001.
- ! On January 26, 2001 the Navy provided responses to the EPA comments dated December 5, 2000 regarding the Basis of Design CMI Work Plan for SWMUs 13

and 46/AOC C, as well as the CMI Work Plan Design Package for SWMU 31/32.

- ! Submitted the Draft Work Plan for Additional Data Collection for the TWFF on January 31, 2001.
  
- ! Submitted the Revised Section 3.0 of the Task I CMS for the TWFF on January 31, 2001.

Each of these items is discussed in detail in the numbered sections which follow.

1. Corrective Action Activities Status

Table 1-1 (provided at the end of this section) provides a brief update of Corrective Action activities for each SWMU or AOC. This table was first used as part of a presentation made at the October 1997 JIG meeting. The group decided that the table would be a valuable addition to the quarterly report. The table has been updated and included in this report as a result of the JIG decision.

2. Reporting Activities

The Navy provided response to EPA's comments pertaining to the Draft Remedial Design Package and the Revised Final II CMS Final Report for SWMUs 13 and 46/AOC C. The Navy provided response to EPA's comments pertaining to the risk based clean up goals associated with the CMS Task I Report for the TWFF (SWMU 7/8). The Navy also provided response to EPA's comments pertaining to the Draft CMS Work Plan for SWMU 9, as well as the CMI Work Plan for SWMUs 13 and 46/AOC C and the CMI Design Package for SWMU 31/32.

3. Tow Way Fuel Farm

There were efforts undertaken at the Tow Way Fuel Farm in two general areas. Each of these areas is discussed below.

### Free Product Recovery Program

The free product recovery system continued to be off-line this quarter. The measurement reports for this period are provided in the quarterly Tow Way Fuel Farm report.

The sixteenth quarterly ICM progress report for the Tow Way Fuel Farm free product recovery system is provided as Attachment 1 to this RCRA quarterly report. This report contains a table listing all product and groundwater levels and groundwater elevation and product thickness contours. This change in reporting was agreed to by all members of the JIG during the August 2000 meeting.

### Corrective Measures Study

The initial CMS Task I report for the Tow Way Fuel Farm was submitted November 30, 1998. EPA comments were received March 15, 1999 (March 8 letter). Based on the comments, an addendum report was provided April 21, 1999 which significantly revised the clean up levels. Comments on the revised Section 3.0 (the clean-up goal development section) were transmitted in an EPA letter of June 30, 1999. The clean-up goals were revised and the Revised Draft CMS Task I Report for the TWFF was submitted January 21, 2000. Comments on the Revised Draft CMS Task I Report for the TWFF were issued on May 4, 2000. A response to these comments was submitted on June 29, 2000. Comments on the Navy's response to EPA's comments dealing with the CMS Task I Report for the TWFF were issued October 10, 2000. A response to these comments was submitted on November 8, 2000. A meeting to discuss the TWFF CMS was conducted at the EPA Region II Offices in New York City on December 19, 2000. The final meeting minutes from the TWFF CMS meeting were submitted on January 19, 2001. On January 31, 2001, the Navy submitted the Revised Section 3.0 of the Task I CMS Report. Also submitted on January 31, 2001, was the Draft Work Plan for Additional Data Collection at the TWFF. This report is in response to the December 19, 2000 meeting held at the EPA Region II Offices in New York City.

#### 4. Joint Interest Group

A JIG meeting was not conducted during this quarter.

5. Site Management Plan (SMP)/Website Development

Work continued on updating the Roosevelt Roads RCRA Corrective Action Program website. This internet available resource contains program reports, schedules, and other project information. The website is password protected to limit access to the JIG members. The website is currently up and running, and is continuing to be updated.

6. Corrective Measure Studies (other than the Tow Way Fuel Farm)

Comments on the streamlined CMS for SWMU 13 and SWMU 46/AOC C were received in an EPA letter dated July 27, 1999. Response to these comments along with the Final CMS Report was submitted on September 30, 1999. Comments on the Draft Final CMS Final Report for SWMU 13 and SWMU 46/AOC C were received in an EPA letter dated December 10, 1999. A response to EPA comments was submitted January 13, 2000. The Revised Final CMS Final Report for SWMU 13 and SWMU 46/AOC C was submitted on January 26, 2000. Comments on this report were received in an EPA letter dated March 15, 2000. Response to these comments were submitted in a Navy letter on May 30, 2000. The Draft CMI Work Plan Design Package for SWMUs 13 and 46/AOC C were submitted on July 10, 2000. The Revised Final II CMS Final Report for SWMU 13 and SWMU 46/AOC C was submitted on August 4, 2000. Comments on this report and the Draft CMI Work Plan Design Package, were received in an EPA letter dated September 15, 2000. The CMS stage of the investigation has now been approved. A response to EPA comments as well as the Final CMI Work Plan Design Package were submitted on November 3, 2000 for SWMUs 13 and 46/AOC C. Comments on this report were received in an EPA letter dated December 5, 2000. The 100% Final CMI Work Plan Design Package for SWMUs 13 and 46/AOC C was submitted on January 25, 2001. Response to the December 5, 2000 EPA comment letter was submitted on January 26, 2001.

Draft CMS Work Plans for SWMUs 1 and 2 and SWMU 45 were submitted on April 1, 1999. Comments on the work plans were received in an EPA letter dated August 11, 1999. The Final CMS Work Plans for SWMUs 1 and 2, and SWMU 45 were submitted on October 29, 1999. Comments on these work plans were received in an EPA letter dated January 20, 2000. A conference call discussing these comments was conducted on February 10, 2000. Response to these comments were submitted in a Navy letter on February 23, 2000. The Revised Final CMS Work Plans for SWMUs

1 and 2, and SWMU 45 were submitted on March 10, 2000. Comments on the work plans were received in an EPA letter dated May 4, 2000. Response to these comments were submitted in a Navy letter on July 13, 2000. The Revised Final II CMS Work Plans for SWMUs 1 and 2, and SWMU 45 were submitted on July 14, 2000. Comments on this report were received in an EPA letter dated September 15, 2000. Response to these comments were submitted in a Navy letter on October 19, 2000.

A Draft CMS Work Plan for SWMU 6/AOC B was submitted on January 7, 2000 in response to the EPA comment letter dated November 5, 1999. The Draft CMS Work Plan for SWMU 6/AOC B was approved in an EPA letter dated March 15, 2000. Response to these comments were submitted in a Navy letter on May 30, 2000. The Draft CMS Final Report for SWMU 6/AOC B was submitted on May 30, 2000. Comments on the report were received in an EPA letter dated July 5, 2000. Response to these comments were submitted in a Navy letter on August 22, 2000. The Draft Final CMS Final Report for SWMU 6/AOC B was submitted on November 30, 2000.

A Draft CMS Work Plan for SWMU 9 was submitted on July 14, 2000 in response to the EPA comment letter dated May 4, 2000. Comments on this work plan were received in an EPA letter dated September 15, 2000. A conference call was conducted on September 27, 2000 to discuss the EPA and BAH comments (dated September 15, 2000) on the Draft CMS Work Plan for SWMU 9. A conference call was conducted on October 16, 2000 to discuss the Navy draft responses to EPA comments (dated 9/15/00) submitted October 10, 2000. On October 20, 2000 the Navy provided the EPA a listing of chemicals to be evaluated for SWMU 9 as discussed during the October 16, 2000 conference call. On October 24, 2000 the EPA commented on the site related chemicals for SWMU 9. On October 27, 2000 the Navy provided responses to the EPA comments dated October 24, 2000 on the site related chemicals for SWMU 9. On October 31, 2000 the EPA commented on the Navy responses dated October 27, 2000 on the site related chemicals for SWMU 9. On November 13, 2000 the Navy provided responses to EPA comment letter dated September 15, 2000 on the Draft CMS Work Plan for SWMU 9. The Navy submitted the Draft Final CMS Work Plan for SWMU 9 on November 15, 2000. Comments on this report were received in an EPA letter dated December 5, 2000. The Final CMS Work Plan for SWMU 9 was submitted on January 15, 2001.

A Draft CMS Final Report for SWMU 31/32 was submitted on January 28, 2000. Comments on the report were received in an EPA letter dated March 15, 2000. Response to these comments were

submitted in a Navy letter on May 30, 2000. The Final CMS Final Report for SWMU 31/32 was submitted on April 17, 2000. Comments and approval of the report were received in an EPA letter dated May 4, 2000. A Draft CMI Work Plan Design Package for SWMU 31/32 was submitted on August 14, 2000. Comments on this report were received in an EPA letter dated December 5, 2000. The Final CMI Work Plan Design Package for SWMU 31/32 was submitted on January 25, 2001. Response to the December 5, 2000 EPA comment letter was submitted on January 26, 2001.

7. Investigations

A field investigation was conducted in December 2000, which incorporated the collection of environmental samples from SWMU 53 (Malaria Control Building) and SWMU 54 (Former NEX Repair/Maintenance Shop) in accordance with the EPA approved Draft Sampling and Analysis Plan for SWMUs 53 and 54 dated August 4, 2000. Environmental samples were also collected at SWMU 9 (Tanks 212-217) in accordance with the Final CMS Work Plan for SWMU 9 dated January 15, 2001, and a monitoring well installation program was conducted at SWMU 3 (Base Landfill).

8. OU 1/6/7 Summary

A summary and history of all the SWMUs/AOCs associated with OU 1, 6, and 7 was prepared based on EPA's request during an October 10, 2000 conference call. The EPA requested the Navy to perform this action based on the number of comments and response to comments submitted for this report. The EPA believed that a comprehensive document providing a history and summary of each SWMU/AOC to the present day would be beneficial to all parties involved. This document is provided as Attachment 2 to this RCRA Quarterly Report.

**TABLE 1-1**

**ROOSEVELT ROADS CORRECTIVE ACTION PROGRAM  
SWMU/AOC STATUS  
FEBRUARY 28, 2001**

SWMU or Area of Concern	RFI Type	Status
#1 Former Cremator Disposal Site	Full <sup>(1)</sup>	Investigations complete. Report submitted 3/20/98. Comments received. Revision of the RFI report was submitted 4/1/99. CMS outline submitted 4/1/99. Final CMS Work Plan submitted 10/29/99. Comments received. Response to comments submitted 2/23/00. Revised Final CMS Work Plan submitted 3/10/00. Comments received. Response to comments submitted 7/13/00. Revised Final II CMS Work Plan submitted 7/14/00. Comments received. Response to comments submitted 10/19/00.
#2 Langley Drive Disposal Site	Full	Investigations complete. Report submitted 3/20/98. Comments received. Revision of the RFI report was submitted 4/1/99. CMS outline submitted 4/1/99. Final CMS Work Plan submitted 10/29/99. Comments received. Response to comments submitted 2/23/00. Revised Final CMS Work Plan submitted 3/10/00. Comments received. Response to comments submitted 7/13/00. Revised Final II CMS Work Plan submitted 7/14/00. Comments received. Response to comments submitted 10/19/00.
#3 Base Landfill	Full	Investigations need to be done. Schedule to be negotiated based on Navy funding. Two wells installed and sampled to meet solid waste requirements. Analytical work and validation complete. Geophysics portion of SWMU 3 RFI was completed in June 1999. Work Plan being developed. Additional well installation performed in December 2000.
#6 Building 145	First Phase <sup>(2)</sup>	RFI complete - Report of additional investigations submitted 5/6/98. Comments received 9/15/98 and revised risk assessment submitted 11/24/98. Comments received 11/9/99. Draft CMS Work Plan submitted January 7, 2000. Comments received 3/15/00 and work plan approved. Responses and Draft CMS Final Report submitted 5/30/00. Comments received. Response to comments submitted 8/22/00. Draft Final CMS Final Report submitted 11/30/00.
#7 Tow Way Fuel Farm	Full	RFI complete. Revised draft report submitted and approved; additional investigations required as part of CMS work plan; CMS underway. CMS field investigations performed April 1998. CleanOX® pilot study performed January 1999. ICM was postponed, but associated monitoring continued. Draft TCE Investigation Report submitted 12/10/99. Comments received on the Draft TCE Investigation Report. Addressed comments on the Draft CMS Task I Report. Revised Draft CMS Task I Report submitted January 21, 2000. Final TCE Investigation Report submitted 2/15/00. PF pilot study underway. Comments received in regards to the Revised Draft CMS Task I Report. Response to comments submitted 6/29/00. Comments received 10/10/00 in regards to the Navy's response to EPA comment letter 6/29/00. Draft Pilot Test to Evaluate Enhancement of Product Recovery Report for TWFF SWMU 7/8 submitted 10/31/00. Response to EPA comments dated 10/10/00 submitted 11/8/00. Draft Work Plan for Additional Data Collection and Revised Section 3.0 of the Task I CMS submitted 1/31/01.
#8 Tow Way Fuel Farm - Disposal Pits	Full	Now combined with SWMU 7.

**TABLE 1-1 (Continued)**

**ROOSEVELT ROADS CORRECTIVE ACTION PROGRAM  
SWMU/AOC STATUS  
FEBRUARY 28, 2001**

SWMU or Area of Concern	RFI Type	Status
#9 Tank 212-217 Sludge Burial Pits	Full	Additional investigations performed. RFI report submitted 3/6/98. Comments received. Work plan for an additional field effort submitted and approved. Investigations performed in June 1999. Revised Draft RFI Report submitted March 10, 2000. EPA approved the RFI 5/4/00. Response to comments submitted 7/13/00. Draft CMS Work Plan submitted 7/14/00. Comments received. Response to comments submitted 11/13/00. Draft Final CMS Work Plan submitted 11/15/00. Field investigations performed in December 2000. Comments received 12/11/00. Final CMS Work Plan submitted 1/15/01.
#10 Substation 2/Building 90	First Phase	Groundwater sampling performed. Report submitted 5/6/98. No comments. No further action anticipated. March 7, 2000 EPA requested CMS to be included in Part B permit renewal application for no further action.
#11 Old Power Plant/Building 38	Full	RFI complete; investigations for tunnel soils performed. Report submitted 3/20/98. ICM for PCB-contaminated soil complete. Bldg. interior additional characterization depends on result of EPA review of data and recharacterization work plan submitted 3/31/98.
#12 Fire Training Pit Oil/Water Separator	First Phase	RFI complete. No further action to be proposed in Part B permit renewal application.
#13 Old Pest Control Shop/Building 258	First Phase	Additional characterization performed. Report submitted 5/6/98. CMS outline submitted 12/98. Streamlined CMS submitted 4/1/99. Comments received in 7/27/99 letter. Responses and Final CMS submitted 10/8/99. Comments received and addressed. Revised Final CMS submitted 1/26/00. Revised Final CMS approved 3/15/00. Response to comments submitted 5/30/00. Draft CMI Work Plan Design Package submitted 7/10/00. Revised Final II CMS Final Report submitted 8/4/00. Comments received on the Revised Final II CMS Final Report, as well as the Draft CMI Work Plan Design Package. Response to comments and Final CMI Work Plan Design Package submitted on 11/3/00. Comments received 12/11/00. 100% Final CMI Work Plan Design Package submitted 1/25/01. Response to comments received 12/11/00 were submitted 1/26/01.
#14 Fire Training Pit Area	First Phase	RFI complete. Human Health Risk Assessment Report was submitted 2/4/00. Comments received. Response to comments submitted 8/22/00. Draft Interim Decision Document submitted 11/22/00.
#19 Building 121 - Discarded Pesticide Storage Area	Contingent	RCRA closure approved by EPA - no further action.
#23 Oil Spill Separator Tanks	First Phase	RFI complete. No comments. No further action proposed in Part B permit renewal application.
#24 Oil Spill Oil/Water Separator & Adjoining Pad	First Phase	RFI complete. No comments. No further action proposed in Part B permit renewal application.
#25 DRMO Storage Yard	First Phase	Further action deferred to permitted unit site closure.
#26 Building 544 Area	First Phase	RFI complete. No further action to be proposed in Part B permit renewal application.

**TABLE 1-1 (Continued)**

**ROOSEVELT ROADS CORRECTIVE ACTION PROGRAM  
SWMU/AOC STATUS  
FEBRUARY 28, 2001**

SWMU or Area of Concern	RFI Type	Status
#30 Former Incinerator	First Phase	RFI complete. Based on EPA comments, additional characterization was required. A work plan for this was submitted and approved. Investigatory work performed in June 1999. Draft Phase II RFI Report submitted 12/10/99. EPA comments and approves RFI 1/20/00. Responses and Final Phase II RFI Report submitted 2/15/00.
#31 Waste Oil Collection Area/Building 31 and 2022	First Phase	Additional investigation performed. Report submitted 5/6/98. EPA comments indicate the need for a CMS. CMS outline submitted 12/98. CMS was started; however, additional investigatory work was required. Work plan was submitted in June 1999 and was approved by EPA. Field investigations were performed in June 1999. Draft CMS Final Report submitted 1/28/00. Comments received Final CMS Final Report submitted 4/17/00. Comments received. Response to comments submitted 5/30/00. Draft CMI Work Plan submitted 8/14/00. Comments received 12/11/00. Final CMI Work Plan Design Package submitted 1/25/01. Response to comments received 12/11/00 were submitted 1/26/01.
#32 PWD Storage Yard/Battery Collection Area	First Phase	[See SWMU 31]
#37 Waste Oil Storage Area/Building 200	First Phase	RFI complete. No further action was recommended by the Navy in the RCRA permit renewal application.
#39 Building 3158/Former Battery Drain Area	First Phase	RFI complete. No comments. No further action was recommended by the Navy in the RCRA permit renewal application.
#45 PCB Spill Area/Old Power Plant	Full	Additional investigation (on tunnel soils) performed. Report submitted 3/20/98. ICM which included cleaning and backfilling of USTs and filling the tunnels with concrete is complete. CMS for Puerca Bay sediments is planned. CMS Outline submitted 4/1/99. Final CMS Work Plan submitted 10/29/99. Comments received. Response to comments submitted 2/23/00. Revised Final CMS Work Plan submitted 3/10/00. Comments received. Response to comments submitted 7/13/00. Revised Final II CMS Work Plan submitted 7/14/00. Comments received. Response to comments submitted 10/19/00.
#46 Pole Storage Yard Covered Pad	First Phase	Additional investigation performed. Report submitted 5/6/98. Combined with AOC C for CMS. CMS outline submitted 12/98. Streamlined CMS submitted 5/99. Comments were received in 7/27/99 EPA letter. Responses and Final CMS submitted 10/8/99. Comments received and addressed. Revised Final CMS submitted 1/26/00. CMS approved 3/15/00. Response to comments submitted 5/30/00. Draft CMI Work Plan Design Package submitted 7/10/00. Revised Final II CMS Final Report submitted 8/4/00. Comments received on the Revised Final II CMS Final Report, as well as the Draft CMI Work Plan Design Package. Response to comments and Final CMI Work Plan Design Package submitted on 11/3/00. Comments received 12/11/00. 100% Final CMI Work Plan Design Package submitted 1/25/01. Response to comments received 12/11/00 were submitted 1/26/01.
#51 New AIMD Storage Pad/Building 379	First Phase	RFI complete. No comments. no further action was recommended by the Navy in the RCRA permit renewal application.
#53 Malaria Control Building/Building 64	First Phase	Sampling and Analysis Plan submitted 8/4/00. Work Plan approved. Field investigations performed in December 2000.

**TABLE 1-1 (Continued)**

**ROOSEVELT ROADS CORRECTIVE ACTION PROGRAM  
SWMU/AOC STATUS  
FEBRUARY 28, 2001**

SWMU or Area of Concern	RFI Type	Status
#54 Former NEX Repair/Maintenance Shop/Building 1914	First Phase	Sampling and Analysis Plan submitted 8/4/00. Work Plan approved. Field investigations performed in December 2000.
AOC B/Building 25	Full	RFI complete. Additional investigations performed. Report submitted 5/6/98. Comments received 9/15/98. Responses and revised risk assessment submitted 11/24/98. Comment received 11/9/99. Draft CMS Work Plan submitted 1/7/00. Comments received 3/15/00. Responses and Draft CMS Final Report submitted 5/30/00. Comments received. Response to comments submitted 8/22/00. Draft Final CMS Final Report submitted 11/30/00.
AOC C/Transformer Storage Pad	First Phase	Additional investigations performed to recharacterize site after inadvertent soil removal activity. Report submitted 5/6/98. Comments received. CMS to be performed. CMS outline submitted 12/98. Streamlined CMS submitted 5/99. Comments were received in 7/27/99 EPA letter. Responses and Final CMS submitted 10/8/99. Comments received and addressed. Revised Final CMS submitted 1/26/00. CMS approved 3/15/00. Response to comments submitted 5/30/00. Draft CMI Work Plan Design Package submitted 7/10/00. Revised Final II CMS Final Report submitted 8/4/00. Comments received on the Revised Final II CMS Final Report, as well as the Draft CMI Work Plan Design Package. Response to comments and Final CMI Work Plan Design Package submitted on 11/3/00. Comments received 12/11/00. 100% Final CMI Work Plan Design Package submitted 1/25/01. Response to comments received 12/11/00 were submitted 1/26/01.
AOC D/Ensenada Honda Sediments	First Phase	Additional investigations (consisting of one sediment sample) performed. Report submitted 5/6/98. Comments received. Responses submitted 12/1/98. EPA approved responses. AOC D proposed for no further action in the RCRA Part B permit renewal application.

Notes:

- (1) Full RFIs are conducted where releases were established during previous investigations. The purpose of the full RFI is to determine the nature, rate, direction, and extent of hazardous waste or hazardous constituents.
- (2) The purpose of the first phase RFI is to confirm any releases from these SWMUs and/or AOCs.

**SECTION 2**  
**SUMMARY OF FINDINGS**

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The following reports were submitted during this period:

- ! Final CMI Work Plan for SWMUs 13 and 46/AOC C, Naval Station Roosevelt Roads, PR (November 3, 2000).
  
- ! Draft Final CMS Work Plan for SWMU 9, Naval Station Roosevelt Roads, PR (November 15, 2000).
  
- ! Draft Interim Decision Document for SWMU 14, Naval Station Roosevelt Roads, PR (November 22, 2000).
  
- ! RCRA Final Permit Required Quarterly Progress Report for the period August 1, 2000 - October 31, 2000 (November 30, 2000).
  
- ! Draft Final CMS Final Report for SWMU 6/AOC B, Naval Station Roosevelt Roads, PR (November 30, 2000).
  
- ! Final CMS Work Plan for SWMU 9, Naval Station Roosevelt Roads, PR (January 15, 2001).
  
- ! Final CMI Work Plan Design Package for SWMU 31/32, Naval Station Roosevelt Roads, PR (January 25, 2001).
  
- ! 100% Final CMI Work Plan Design Package for SWMUs 13 and 46/AOC C, Naval Station Roosevelt Roads, PR (January 25, 2001).
  
- ! Draft Work Plan for Additional Data Collection for the TWFF, Naval Station Roosevelt Roads, PR (January 31, 2001).
  
- ! Revised Section 3.0 of the Task I CMS for the TWFF, Naval Station Roosevelt Roads, PR (January 31, 2001).

**SECTION 3**  
**SUMMARY OF CHANGES**

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No significant changes were made to the Corrective Action Program at Roosevelt Roads during this reporting period.

**SECTION 4**  
**COMMUNITY RELATIONS SUMMARY**

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No formal community relations activities were undertaken during this period by the Navy.

**SECTION 5**  
**PROBLEMS ENCOUNTERED/RESPONSE TAKEN**

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There were no significant problems encountered and no responses taken during this period related to the corrective action program.

**SECTION 6**  
**PERSONNEL CHANGES**

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There was one significant change related to program personnel during this period. Captain John R. Warnecke became the new Commanding Officer at NSRR effective October 12, 2000.

**SECTION 7**  
**PLANNED WORK**

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The following work items associated with the RCRA Corrective Action Program at NSRR are planned for the upcoming reporting period:

- ! Revisions to reports and response to comment letters as needs dictate.
- ! Maintain schedule currentness through ongoing revision.
- ! Continue analysis of engineering alternatives for the TWFF as part of the CMS effort.
- ! Continue updating the program website.
- ! Launch a public website for NSRR.
- ! Continue updating the NSRR GIS system.
- ! Conduct monthly conference calls.
- ! Execute contractual items for future work.
- ! Next JIG meeting is tentatively scheduled for either April or May 2001, with the exact date to be determined later.
- ! Submittal of the Draft Sampling and Analysis Report for SWMUs 53 and 54.
- ! Initiate the field work at the TWFF pending EPA approval of the Additional Data Collection Work Plan for the TWFF.
- ! Reactivate phase separated hydrocarbon recovery utilizing the interim corrective measures system at TWFF.
- ! Continue developing the hydrogeologic site model depicting movement of free product plume at TWFF for support of remedy selection in CMS Final Report.

**ATTACHMENT 1**  
**TOW WAY FUEL FARM - QUARTERLY SUMMARY**  
**PROGRESS REPORT NO. 16 ( November 1, 2000 - January 31, 2001)**  
**NAVAL STATION ROOSEVELT ROADS**

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**TABLE 1**

**MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	Ground Elevation	WELL RISER	Reference Point	01/28/97		02/25/97		04/21/97		05/22/97		06/17/97	
	ft NGVD + 100 ft	HEIGHT IN FT	Elevation	Product	Water								
UGW-1	114.81	1.76	116.57	12.55	14.91	12.9	15.3	12.5	14.9	13.66	16.22	13.73	16.35
UGW-2	160.53	1.58	162.11	54.73	54.73	54.73	54.73	54.74	54.74	56	56.18	56.15	56.42
UGW-3	123.24	1.97	125.21	19.61	25.71	19.8	25.76	19.63	25.79	20.94	20.94	21.37	21.37
UGW-4	119.24	1.42	120.66	14.69	26	14.71	26.02	14.7	26.02	16	25.82	16.18	25.89
UGW-5	114.54	2.01	116.55	10.48	12.83	8.2	8.5	12.41	12.82	13.82	14.17	13.88	14.25
UGW-6	109.75	1.75	111.50			8.11	8.24	10.23	10.23	10.4	10.4	10.47	10.47
UGW-7	108.38	1.66	110.04	7.65	7.65	7.55	7.55	8.33	8.33	8.7	8.7	8.78	8.78
UGW-8	108.59	1.65	110.24	7.56	7.56	7.54	7.54	9.04	9.04	9.14	9.14	9.26	9.26
UGW-9	109.69	-0.24	109.45	7.65	7.65	7.64	7.64	9.7	9.7				
UGW-10	109.13	1.60	110.73	9.35	9.35	9.34	9.34	9.75	9.75			10.09	10.09
UGW-11	108.03	1.61	109.64	8.85	8.85	8.86	8.86	9.1	9.1			9.18	9.18
UGW-12	112.67	1.55	114.22	9.61	18.8	9.6	18.6	10.36	18.95	10.8	19.29	11	19.37
UGW-13	112.11	1.47	113.58	10.23	17.9	10.23	17.8	10.3	18	11.64	17.8	11.62	18.2
UGW-14	118.18	1.41	119.59	15.9	15.9	15.88	15.88	15.85	15.85	16.9	16.9	17.04	17.04
UGW-15	110.83	1.69	112.52	11.73	11.73	11.7	11.7	11.92	11.92	11.45	14.37	11.58	13.99
UGW-16	112.25	1.58	113.83	12.38	12.38	12.37	12.37	12.62	12.62	12.93	12.93	12.96	12.96
UGW-17	110.93	1.69	112.62	9.94	14.74	9.92	14.74	10	14.7	11	15.05	11.16	15.34
UGW-18	113.02	1.53	114.55	12.77	12.77	12.5	12.5	12.7	12.7	13.38	13.38	13.44	13.44
UGW-19	111.02	1.45	112.47	10.25	14	10.19	13.93	10.32	14.02			12.12	12.12
UGW-20	109.73	2.41	112.14	11.61	11.61	11.57	11.57	11.82	11.82	11.96	11.96	11.97	11.97
UGW-20R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UGW-21	111.15	2.26	113.41	11.74	13.89	11.69	13.83	12.28	14.28	12.53	14.27	12.59	14.37
UGW-22	113.10	-2.80	110.30	5.34	5.34	5.6	5.6	6.64	6.64	6.68	6.68	7.91	7.91
UGW-23	166.97	2.41	169.38	64.57	64.57	64.5	64.5	64.6	64.6	65.79	65.79	66.03	66.03
UGW-24	176.96	2.04	179.00	74.95	74.95	74.95	74.95	74.97	74.97	75.25	75.25	75.67	75.67
UGW-25	151.65	2.52	154.17	49.38	50.96	49.38	50.49	49.4	50.96	50.58	52.4	50.92	52.9
UGW-26	111.09	-0.30	110.79	8.3	8.3	8.27	8.27	8.73	8.73				
PW-1	113.78	1.60	115.38	9.1	9.1	9	9	9.07	9.07	12.44	12.56	12.55	12.69
PW-2	113.46	2.23	115.69	11.24	12.1	11.3	12	11.2	12.08	12.21	13.42	12.46	13.83
PW-3	115.14	2.19	117.33	13.28	16.95	13.33	17.55	13.3	17	13.79	19.75	13.81	20.2
PW-4	113.51	2.14	115.65	11.84	13.58	11.84	13.58	11.87	13.62	12.8	15.18	12.76	15.74
PW-5	114.90	2.52	117.42	13.03	18.13	12.96	18.75	13.01	18.1	13.57	20.6	13.63	20.88
PW-6	115.48	2.21	117.69	12.28	23	12.33	23.26	12.3	22.97	13.44	23.45	13.53	23.45
MW-1	113.69	2.25	115.94	11.2	11.2	11	11	11.18	11.18	11.25	11.25	11.3	11.3

**TABLE 1**

**MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	Ground Elevation	WELL RISER	Reference Point	01/28/97		02/25/97		04/21/97		05/22/97		06/17/97	
	ft NGVD + 100 ft	HEIGHT IN FT	Elevation	Product	Water								
MW-2	113.56	2.00	115.56	10.85	10.85	10.5	10.5	10.9	10.9	11.96	12.13	12.65	12.94
MW-3	115.21	2.01	117.22	13.46	15.73	13.6	16.1	13.5	15.75	14.34	17.5	14.37	17.68
MW-4	114.35	2.21	116.56	9.8	12.1	10.9	13.2	9.85	12.17	11.55	13.68	12.72	15.12
RW-1	121.25	-0.70	120.55	15.22	23.32	16.65	19.63	16.36	22.35	16.53	23.94	16.72	24.15
RW-2	118.85	-0.84	118.01	12.03	12.93	14.3	14.75	14.8	15.19	12.58	14.01	15.27	15.36
RW-3	(see UGW-22)			5.34	5.34	5.6	5.6	6.64	6.64	6.68	6.68	7.91	7.91
RW-4	111.96	-0.87	111.09	8.6	9.17	8.8	8.8	9.94	10.7	8.97	12.07	9.65	9.75
RW-5	111.87	-1.52	110.35	8.29	8.55	8.7	9.25	8.87	11.1	8.47	14.11	9.4	10.55
RW-6	111.45	-1.63	109.82	8.09	8.26	8.5	8.67	8.9	9.1	9.22	9.44	9.23	9.44
RW-7	111.22	-2.63	108.59	6.6	9.12	7.35	7.72	7.46	10.13	7.62	10.24	8.07	8.76
RW-8	111.50	-1.61	109.89	8.49	8.8	8.8	9.05	9.22	9.24	9.41	9.64	9.35	10.18
GW-01	108.94	2.58	111.52										
GW-02	112.06	1.88	113.94										
GW-03	111.39	2.01	113.40										
GW-04	111.00	2.06	113.06										
GW-05	108.75	(clogged)		Debris in well		Debris in well		Debris in well		Debris in well		Debris in well	
GW-06	108.90	2.05	110.95										
470-MW1	130.13	3.01	133.14										
470-MW3	120.63	2.52	123.15										
7MW-01A	125.78	2.63	128.41										
7MW-02A	145.59	2.91	148.50										
7MW-03	176.98	2.33	179.31										
7MW-04	180.62	1.94	182.56										
7MW-05	112.14	1.99	114.13										
7MW-06	108.45	-0.20	108.25										
7MW-07	113.32	2.03	115.35										
7MW-08	111.58	-0.25	111.33										
7MW-09	159.16	2.18	161.34										
Trench MW			109.82										

**TABLE 1**

**MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	06/30/97		07/30/97		09/03/97		09/26/97		10/30/97		11/25/97	
	Product	Water										
UGW-1	13.65	16.24	13.25	15.8	13.31	16.24	13.44	16.13	10.35	13.06	11.45	14.22
UGW-2	56.32	56.63	56.14	56.41	56.18	56.8	56.7	57.05	54.9	55.02	54.35	54.35
UGW-3	21.5	21.5	21.8	26.83	21.57	26.87	22	27.05	19.9	23.95	18.84	23.85
UGW-4	16.2	25.92	16.2	25.61	15.43	25.53	16.14	25.52	11.83	21.58	13.63	23.29
UGW-5	13.91	14.27	13.59	13.78	12.8	13.8	13.17	13.41	10.64	10.69	11.67	11.77
UGW-6	10.38	10.38	10.09	10.09	10	10	10.15	10.15	9	9	9.53	9.53
UGW-7	8.73	8.73	8.52	8.52	8.29	8.29	8.45	8.45	7	7	7.6	7.6
UGW-8	9.25	9.25	9.15	9.15	8.98	8.98	8.96	8.96	7.75	7.75	8.23	8.23
UGW-9	NA	NA			8.18	8.18	8.15	8.15	6.8	6.8	7.51	7.51
UGW-10	9.98	9.98	9.74	9.74	9.74	9.74	9.75	9.75	9.27	9.27	9.71	9.71
UGW-11	9.1	9.1	8.91	8.91	8.85	8.85	8.9	8.9	8.61	8.61	8.83	8.83
UGW-12	10.88	19.23	10.84	19.06	10.49	19.1	10.55	18.5	7.8	18.18	9	18.25
UGW-13	11.58	17.92	11	18.4	10.54	18.5	10.55	16.91	9.19	19.31	10.41	17.71
UGW-14	17.05	17.05	16.94	16.94	16.97	16.97	16.95	16.95	12.96	12.96	14.61	14.61
UGW-15	11.43	13.97	11.87	11.87	14.74	14.74	11.85	11.85	10.69	10.69	11.25	11.25
UGW-16	12.9	12.9	12.72	12.72	12.65	12.65	12.62	12.62	11.84	11.84	11.28	11.28
UGW-17	11.02	15.05	10.54	15.24	10.53	15.53	10.35	14.84	8.94	15.45	9.51	16.3
UGW-18	13.43	13.43	13.25	13.25	13.18	13.18	13.13	13.13	11.93	11.93	12.54	12.54
UGW-19	12.1	12.1	11.15	13.57	8.75	13.7	11.06	13.73	10.1	10.43	10.7	12.63
UGW-20	11.92	11.92	11.56	11.56	14.6	14.6	11.6	11.6	10.78	10.78	11.33	11.33
UGW-20R	NA	NA										
UGW-21	12.46	14.39	12.16	14.2	11.3	14.4	12.21	14.38	11.4	13.52	11.87	13.95
UGW-22	7.14	7.14	6.56	6.56	5.58	5.59			4.8	4.8	4.62	4.62
UGW-23	66.1	66.1	66.04	66.04	66.11	66.11	66.2	66.2	59.45	59.45	62.4	62.4
UGW-24	75.82	75.82	76.1	76.1	75.82	75.82	76.31	76.31	74.97	74.97	74.35	74.35
UGW-25	51.1	53.12	51.25	53.19	51.2	54.1	51.45	53.62	49.24	51.06	49.2	50.97
UGW-26	9.14	9.14	8.92	8.92	8.88	8.88	8.85	8.85	7.28	7.28	7.98	7.98
PW-1	12.58	12.65	12.6	12.67	9.9	10.25	12.55	12.62	9.29	10.06	9.39	9.5
PW-2	12.37	13.7	12.08	13.17	11.82	13.3	10.36	11.38	9.64	10.27	9.3	9.9
PW-3	13.83	20.4	13.46	20.44	13.27	21.25	13.41	21.03	10.15	18.9	11.25	20.37
PW-4	12.71	15.35	12.47	15.14	12.31	15.79	12.4	15.52	9.57	12.93	10.63	14
PW-5	13.58	20.93	13.34	20.74	12.17	20.12	13.32	21.1	10.18	18.35	11.35	19.75
PW-6	13.61	23.39	13.33	23.16	13.29	23.4	13.39	23.18	9.67	22.85	11.95	23.81
MW-1	10.72	10.72	10.24	10.24	11.82	12.92	9.84	9.84	8.47	8.47	8.75	8.75

**TABLE 1**

**MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	06/30/97		07/30/97		09/03/97		09/26/97		10/30/97		11/25/97	
	Product	Water										
MW-2	12.12	12.42	11.79	11.82	11.41	12.01	12.4	13.21	9.3	9.3	8.75	8.75
MW-3	14.33	17.69	14.2	17.89	13.8	18.1	13.92	18.13	10.98	15.2	12.04	16.53
MW-4	11.84	14.26	11.49	13.43	11.01	13.41	9.24	11.71	6.6	9.92	7.82	10.78
RW-1	16.75	24.13	16.7	23.88	16.42	24.2	16.63	24.18	13.37	14.2	14.72	17.6
RW-2	14.255	14.72	13	13	12.94	12.94			10.85	10.85		
RW-3	7.14	7.14	6.56	6.56	5.58	5.59			4.8	4.8	4.62	4.62
RW-4	9.42	9.95	9.3	9.31	9.19	9.4			7.7	7.7	8.1	8.1
RW-5	8.69	13.11	9.1	9.22	9.15	10.1			7.78	7.98	8.43	8.5
RW-6	9.19	9.42	8.82	8.82	8.2	9.29	7.7	7.7	7.56	7.56	8.28	8.28
RW-7	7.7	9.69	7.69	7.69	7.4	9.5	7.51	8.45	6.56	6.82	7.2	7.2
RW-8	8.93	11.42	9.06	9.19	9.2	11.45	9.06	9.25	8.32	8.36	8.7	8.7
GW-01					12.31	12.31	11.97	11.97	9.83	9.83	9.99	9.99
GW-02	11.92	11.92	11.8	11.8	11.7	11.7	11.68	11.68	9.51	9.51	10.32	10.32
GW-03	11.59	11.59	11.58	11.58	11.32	11.32	11.27	11.27	9.51	9.51	10.23	10.23
GW-04	9.42	9.72	9.07	9.13	8.73	9.28	9.42	9.71	8.14	8.44	8.27	8.45
GW-05	Debris in well											
GW-06	9.87	9.87	9.79	9.79	9.61	9.61	9.69	9.69	8.86	8.86	9.27	9.27
470-MW1												
470-MW3												
7MW-01A					26.35	26.35	26.33	26.33	24.11	24.11	24.95	24.95
7MW-02A	45.45	45.45	45.4	45.4	45.5	45.5	45.45	45.45	38.05	38.05	41.65	41.65
7MW-03	74.07	74.07	74.25	74.25	74.56	74.56	74.42	74.42	70.66	70.66	71.4	71.4
7MW-04	79.82	79.82	80.05	80.05	80.03	80.03	80.29	80.29	78.5	78.5	78.12	78.12
7MW-05									13.73	13.73		
7MW-06									7.1	7.1	7.53	7.53
7MW-07									13.73	13.73	14.06	14.06
7MW-08									9.97	9.97	10.47	10.47
7MW-09									52	52	54.82	54.82
Trench MW												

TABLE 1

MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO

Well Number	12/23/97		01/26/98		02/25/98		03/24/98		04/29/98		06/03/98		07/07/98	
	Product	Water	Product	Water	Product	Water								
UGW-1	10.97	13.69	11.45	14.25	12.00	14.80	12.80	15.59	12.56	15.31	12.83	15.60	12.97	15.75
UGW-2	53.44	53.45	53.61	53.61	53.93	53.93	54.45	54.49	55.32	55.48	55.70	56.12	56.10	56.62
UGW-3	19.3	23.6	19.25	23.30	19.47	23.44	19.95	23.90	20.48	22.52	20.51	22.53	20.33	22.33
UGW-4	13.01	22.6	13.66	23.89	14.39	24.60	15.04	25.25	17.25	17.30	17.32	17.33	17.43	17.46
UGW-5	11.52	11.74	12.00	12.20	12.59	12.80	13.09	13.15	13.17	13.17	13.24	13.40	13.53	13.74
UGW-6	9.38	9.38	9.50	9.50	9.74	9.74	9.98	9.98	9.98	9.98	9.96	9.96	9.96	9.96
UGW-7	7.39	7.39	7.37	7.37	7.81	7.81	8.23	8.23	8.11	8.11	8.17	8.17	8.16	8.16
UGW-8	8.13	8.13	8.10	8.10	8.34	8.34	8.71	8.71	8.65	8.65	8.68	8.68	8.68	8.68
UGW-9	7.4	7.4	7.50	7.50	7.72	7.72	8.05	8.05	8.11	8.11	8.15	8.15	8.23	8.23
UGW-10	9.63	9.63	9.54	9.54	9.74	9.74	10.01	10.01	8.99	8.99	9.84	9.84	9.84	9.84
UGW-11	8.74	8.74	8.75	8.75	8.85	8.85	9.03	9.03			8.94	8.94	8.97	8.97
UGW-12	8.68	17.86	9.17	18.03	9.71	18.18	10.21	18.40	10.28	18.40	10.43	18.17	10.58	18.33
UGW-13	10.06	17.49	10.37	17.85	10.88	12.75	11.25	17.70	10.98	17.92	11.03	13.29	11.53	18.28
UGW-14	13.98	13.98	14.70	14.70	15.40	15.40	15.43	15.43	16.30	16.30	16.48	16.48	16.49	16.49
UGW-15	11.22	11.22	11.29	11.29	11.48	11.48	11.70	11.70	11.76	11.76	11.72	11.72	11.75	11.75
UGW-16	12.13	12.13	12.27	12.27	12.43	12.43	12.67	12.67	12.65	12.65	12.16	12.16	12.72	12.72
UGW-17	9.11	16.42	9.40	17.10	9.78	17.30	10.33	16.33	10.93	13.01	10.98	13.26	11.03	13.56
UGW-18	12.4	12.4	12.55	12.55	12.82	12.82	13.07	13.07	13.09	13.09	13.11	13.11	13.15	13.15
UGW-19	10.23	11.31	10.83	12.47	11.00	13.12	11.20	13.45	11.09	12.72	11.10	13.57	11.21	13.53
UGW-20	11.27	11.27	11.29	11.29	11.46	11.46	11.67	11.67	11.72	11.72	Well destroyed		Well destroyed	
UGW-20R	NA	NA	NA	NA	NA	NA								
UGW-21	11.5	13.7	11.76	14.78	11.95	14.32	11.97	14.36	12.09	14.30	12.04	14.30	12.12	14.26
UGW-22	4.16	4.16	5.95	5.95	6.45	6.45	6.95	6.95	7.80	7.80	7.13	7.13	7.40	7.40
UGW-23	61.1	61.1	62.55	62.55	63.62	63.62	64.48	64.48	65.08	65.08	65.30	65.30	65.50	65.50
UGW-24	73.78	73.78	73.60	73.60	73.65	73.65	74.00	74.00	74.12	74.14	74.20	74.20	74.19	74.19
UGW-25	48.68	50.3	48.63	50.14	48.86	50.42	49.25	50.91	49.48	51.52	49.49	51.23	49.30	51.05
UGW-26	7.8	7.8	8.00	8.00	8.30	8.30	8.65	8.65	8.78	8.78	8.78	8.78	8.83	8.83
PW-1	9.86	10.65	9.41	9.52	9.37	9.53	9.35	9.54	10.41	10.41	10.72	10.72	11.20	11.20
PW-2	9.64	10.36	10.77	11.50	11.30	12.05	11.76	12.56	11.84	12.70	12.00	12.87	12.17	13.14
PW-3	10.69	20.45	11.20	21.15	11.73	21.53	12.32	22.09	12.42	22.27	12.48	22.33	12.58	22.42
PW-4	10.12	13.59	10.64	14.19	11.14	14.76	11.65	15.31	11.75	15.52	11.88	15.61	11.86	15.75
PW-5	10.75	19.6	11.25	20.22	11.80	20.75	12.42	21.27	12.60	21.48	12.66	21.58	12.78	21.70
PW-6	10.5	23.7	11.16	23.60	11.83	23.50	12.50	23.42	12.70	23.38	12.78	23.35	12.93	22.32
MW-1	8.75	8.75	19.71	19.71	9.63	9.63	10.34	10.34	11.70	12.56	11.88	12.00	12.03	13.17

**TABLE 1**

**MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	12/23/97		01/26/98		02/25/98		03/24/98		04/29/98		06/03/98		07/07/98	
	Product	Water												
MW-2	9.13	9.13	10.50	10.50	11.00	11.00	11.53	11.53	11.45	11.52	11.70	11.78	11.98	12.10
MW-3	11.53	16.16	12.00	17.03	12.45	17.87	13.05	18.40	13.05	18.91	13.14	19.15	13.21	19.41
MW-4	5.62	8.86	7.52	10.44	8.48	10.93	11.17	13.14	10.52	11.03	10.61	11.14	11.16	11.88
RW-1	14.4	15.42	14.97	18.10	15.51	20.14	15.78	21.67	15.84	22.32	15.88	22.45	16.08	23.24
RW-2			12.30	12.30	13.05	13.05	13.80	13.90	13.71	13.93	13.60	13.60	14.32	14.69
RW-3	4.16	4.16	5.95	5.95	6.45	6.45	6.95	6.95	7.80	7.80	7.13	7.13	7.40	7.40
RW-4	7.58	7.58	8.09	8.09	8.50	8.50	8.30	8.30	8.90	8.90	7.70	7.70	9.03	9.05
RW-5	8.03	8.14	8.40	8.60	8.80	9.18	8.68	11.23	8.40	10.82	8.41	10.81	8.57	10.98
RW-6	7.9	7.9	8.23	8.23	8.52	8.52	8.85	8.85	9.56	9.56	8.91	8.91	8.90	8.90
RW-7	6.65	6.65	7.10	7.12	7.50	7.50	7.65	7.65	7.38	7.41	7.52	7.52	7.71	7.71
RW-8	8.34	8.34	8.70	8.70	8.90	9.02	8.91	10.98	8.24	11.65	8.40	11.77	9.32	12.86
GW-01											10.1	10.11	10.10	10.12
GW-02	10	10							11.24	11.24	11.25	11.25	11.37	11.37
GW-03	9.98	9.98							11.09	11.09	11.08	11.08	11.21	11.21
GW-04	8.4	8.68							8.94	8.94	8.8	8.82	9.19	9.21
GW-05	Debris in well													
GW-06	9.17	9.17							9.69	9.69	9.65	9.65	9.72	9.72
470-MW1									29.89	29.98	29.81	29.92	30.90	31.13
470-MW3									20.64	20.64	20.66	20.66	20.73	20.73
7MW-01A	20.31	20.31			25.36	25.36	25.76	25.76	25.90	25.90	27.92	27.92	25.99	25.99
7MW-02A	40.37	40.37			42.95	42.95	43.87	43.87	44.39	44.39	44.61	44.61	44.14	44.14
7MW-03									72.99	72.99	73.44	73.44	73.82	73.82
7MW-04											78.26	78.26	78.18	78.18
7MW-05											12.4	12.4	12.53	12.53
7MW-06	7.48	7.48			7.57	7.57	7.77	7.77			7.71	7.71	7.75	7.75
7MW-07	13.73	13.73			14.23	14.23			14.06	14.06				
7MW-08	10.15	10.15			10.75	10.75	10.69	10.69			10.92	10.92	10.88	10.88
7MW-09	53.63	53.63					56.75	56.75	57.32	57.32	57.79	57.79	57.67	57.67
Trench MW														

TABLE 1

**MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	08/12/98		11/16/98		12/09/98		01/25/99		02/23/99		03/29/99	
	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water
UGW-1	13.80	14.41	8.75	10.15	7.50	8.89	9.65	11.35	11.43	13.11	12.13	13.87
UGW-2	56.48	57.10	51.85	51.85	49.88	49.88	49.28	49.28	50.17	50.17	51.27	51.28
UGW-3	20.9	21.47	18.25	18.80	16.84	17.40			blocked			
UGW-4	17.8	17.82	12.66	12.67	10.22	10.23	11.95	11.95	15.47	15.47	16.32	16.32
UGW-5	14.00	14.34	10.20	10.45	9.21	9.45	11.40	11.70	12.25	12.45	12.80	12.99
UGW-6	10.10	10.10	6.90	6.90	8.60	8.60	9.25	9.25	9.76	9.76	9.99	9.99
UGW-7	8.37	8.40	6.20	6.20	6.35	6.35	8.70	8.70	7.10	7.10	8.98	8.98
UGW-8	9.75	9.76	6.90	6.90	6.80	6.80	7.46	7.46	8.05	8.05	8.42	8.43
UGW-9	8.30	8.32	6.40	6.40	5.85	5.85	7.10	7.11	0.00	0.00	7.97	7.98
UGW-10	10.00	10.00	9.00	9.00	9.87	9.87	9.65	9.65	9.02	9.02	10.06	10.07
UGW-11	9.00	9.00	8.65	8.65	8.55	8.55	8.82	8.82	9.97	9.97	9.14	9.15
UGW-12	10.92	18.50	7.20	16.90	5.60	16.85	8.24	16.90	9.40	17.41	9.94	17.60
UGW-13	11.46	18.25	8.25	19.20	7.40	19.70	9.70	18.50	10.64	18.06	10.80	17.85
UGW-14	16.85	16.86	11.95	11.95	9.58	9.59	11.17	11.17	14.85	14.85	15.44	15.44
UGW-15	11.82	11.84	8.10	8.10	10.34	10.34	11.12	11.12	11.47	11.47	11.75	11.75
UGW-16	11.25	11.25	10.45	10.45	11.23	11.23	12.00	12.00	12.42	12.42	12.56	12.57
UGW-17	11.46	12.85	8.25	12.10	7.38	14.20	9.11	18.80	9.92	16.08	10.20	15.40
UGW-18	13.33	13.33	11.60	11.60	10.96	10.96	12.08	12.08	12.62	12.62	12.92	12.92
UGW-19	11.45	13.65	8.45	9.81	8.60	9.97	10.15	11.32	11.00	12.25	11.00	11.50
UGW-20	Well destroyed		Well destroyed		Well destroyed		Replaced w/ UGW-20R					
UGW-20R	NA	NA	NA	NA	NA	NA	NA	NA	8.52	8.52	8.69	8.70
UGW-21	12.27	14.30	10.10	13.00	10.07	12.70	11.38	14.28	12.11	14.25	11.94	14.31
UGW-22	8.17	8.17	3.30	3.30	2.21	2.21	4.40	4.40	6.15	6.15	6.88	6.88
UGW-23	65.90	65.90	57.25	57.25	51.76	51.76	59.51	59.51	61.90	61.90	63.25	63.26
UGW-24	74.56	74.56	72.30	72.30	71.05	71.05	70.35	70.35	70.94	70.94	71.24	71.24
UGW-25	49.58	51.40	6.70	6.70	6.35	6.35			blocked			
UGW-26	9.00	9.00					7.75	7.75	8.10	8.10	8.53	8.53
PW-1	12.35	13.50			7.46	7.46			9.52	9.52	10.12	10.12
PW-2	12.42	13.50	8.40	9.70	7.46	9.05	9.50	11.15	10.74	12.45	10.30	12.96
PW-3	13.50	21.21	8.82	18.35	7.30	17.18	11.50	12.35	12.65	13.55	13.40	14.30
PW-4	10.33	10.51	flooded		4.27	4.27	overflow		pump		clogged	
PW-5	13.55	20.25	9.23	16.60	7.83	15.20	11.28	12.40	12.63	13.92	13.35	14.64
PW-6	12.10	13.23	9.75	9.75	9.83	9.83	9.20	9.30	pump		11.16	11.21
MW-1	11.75	11.76	8.00	8.00	7.16	8.45	9.60	11.05	10.51	10.85	10.10	12.40

**TABLE 1**

**MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	08/12/98		11/16/98		12/09/98		01/25/99		02/23/99		03/29/99	
	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water
MW-2	12.25	12.42	8.30	8.30	7.68	7.68	9.50	9.50	10.66	10.66	11.11	11.11
MW-3							11.60	12.35			9.75	10.47
MW-4	12.35	12.90	4.00	5.20	4.44	5.68	4.40	5.70	8.25	9.15	8.83	9.49
RW-1			12.00	12.05	8.74	8.74			blocked		blocked	
RW-2	14.82	15.25	1.00	1.00	1.15	1.15	7.20	7.20	12.01	12.01	13.54	13.54
RW-3	8.17	8.17	3.30	3.30	2.21	2.21	4.40	4.40	6.15	6.15	6.68	6.68
RW-4	8.62	8.62	4.95	4.95	2.35	2.35	5.10	5.10	7.77	7.77	7.95	7.95
RW-5	8.60	13.20	6.60	6.65	5.06	5.07	7.90	8.00	8.80	9.10	9.00	9.38
RW-6	9.08	9.10	3.55	3.97	2.33	2.35	6.85	6.85	8.75	8.75	8.69	8.69
RW-7	7.63	9.00	5.00	5.40	3.30	3.45	6.30	6.65	7.10	7.20	6.95	7.03
RW-8			7.20	7.30	6.40	6.40	8.25	8.27	8.90	8.90	9.15	9.23
GW-01									not found			
GW-02	11.67	11.67	8.88	8.88	7.99	7.99	9.60	9.60	10.33	10.33	10.85	10.85
GW-03	11.47	11.47			8.17	8.18	9.65	9.65	10.50	10.50	10.76	10.77
GW-04	9.15	9.37	8.12	8.20	7.53	7.59	8.87	8.87	7.99	8.05	8.33	8.39
GW-05	Debris in well		Debris in well		Debris in well							
GW-06			8.60	8.60	8.34	8.34	8.98	8.98	9.36	9.36	9.59	9.60
470-MW1	30.90	31.13			24.84	25.04	27.62	27.81	28.59	28.89		
470-MW3	20.73	20.73			17.20	17.20	18.92	18.92	19.70	19.70	20.20	20.20
7MW-01A	26.27	26.30	23.45	23.45	22.40	22.40					24.49	24.49
7MW-02A	45.21	45.21	37.10	37.10	31.99	31.99			41.47	41.47	42.80	42.80
7MW-03	74.25	74.25	68.05	68.05	65.47	65.47	66.51	66.51	67.87	67.87	69.18	69.18
7MW-04	78.48	78.48	75.95	75.95	74.76	74.76	74.87	74.87	74.98	74.98	75.87	75.87
7MW-05	12.75	12.75			9.87	9.87	11.21	11.21	11.80	11.80	12.15	12.16
7MW-06	7.75	7.75	6.90	6.90	6.72	6.72	7.43	7.43	7.70	7.70	7.84	7.85
7MW-07			12.85	12.85					14.29	14.29	14.25	14.25
7MW-08									10.80	10.80	10.90	10.90
7MW-09			50.61	50.61	46.37	46.37	52.35	52.35	54.53	54.53	55.75	55.75
Trench MW												

TABLE 1

**MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	04/27/99		05/21/99		06/29/99		07/29/99		08/30/99		09/29/99		10/27/99	
	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water
UGW-1	12.39	14.12	12.49	14.20	12.66	14.43	12.65	14.45	13.28	13.29	9.55	9.60	4.80	5.10
UGW-2	52.18	52.19	53.66	53.66	54.30	54.30	55.00	55.20	55.44	55.95	54.20	54.85	52.85	52.85
UGW-3			20.54	20.54			19.50	25.40	20.51	21.15	19.20	19.92	19.03	19.60
UGW-4	16.60	16.61	14.10	14.10	17.05	17.05	17.13	17.13	17.30	17.30	14.00	14.00	12.90	12.90
UGW-5	12.88	13.08	12.47	12.55	12.68	12.74	12.77	12.95	11.11	11.11			10.20	10.35
UGW-6	10.10	10.10	10.07	10.07	10.05	10.05	8.86	8.86	9.15	9.15	8.15	8.15	8.70	8.70
UGW-7	8.30	8.30	8.44	8.44	8.30	8.30	7.94	7.94	7.00	7.00	6.85	6.85	6.17	6.17
UGW-8	8.48	8.49	8.65	8.65	8.45	8.45	8.15	8.15	7.30	7.30	6.92	6.92	8.50	8.50
UGW-9	8.06	8.06	8.15	8.15	7.98	7.98	8.00	8.00	7.32	7.32	6.60	6.60	5.00	5.00
UGW-10	10.11	10.11	10.00	10.00	9.92	9.92	7.94	7.94	8.94	8.94	6.68	6.68	8.25	8.25
UGW-11	9.16	9.16	9.07	9.07	9.06	9.06	8.95	8.95	8.57	8.57	7.15	7.15	8.70	8.70
UGW-12	10.10	17.88	10.09	17.90	10.81	16.67	10.98	16.96	11.62	12.36	8.00	16.85	7.55	17.30
UGW-13	10.97	17.92	9.92	20.19	10.90	17.10	10.87	17.87	10.30	10.35	8.00	19.38	8.45	8.95
UGW-14	15.73	15.73	16.05	16.05	16.16	16.16	16.20	16.20	9.46	9.46	14.45	14.45	12.18	12.18
UGW-15	11.81	11.81	11.86	11.86	11.75	11.75	11.70	11.70	11.23	11.23	9.90	9.90	10.82	10.82
UGW-16	12.65	12.65	12.58	12.58	12.64	12.64	12.50	12.50	11.68	11.68	10.15	10.15	11.60	11.60
UGW-17	10.33	15.50	9.46	16.81	10.01	18.92	9.87	17.10	9.27	9.27	8.55	11.05	8.77	11.85
UGW-18	12.99	12.99	12.98	12.98	13.01	13.01	12.90	12.90	damaged		10.24	10.24	11.60	11.60
UGW-19	10.85	11.34	10.87	11.76	10.82	12.02	11.10	12.55	9.80	9.80	8.00	8.20	9.40	9.72
UGW-20	Replaced w/ UGW-20R													
UGW-20R	8.78	8.78	8.63	8.63	8.62	8.62	8.23	8.23	7.90	7.90	8.05	8.05	10.30	10.30
UGW-21	12.07	14.30	11.60	14.27	9.51	17.20	11.91	14.28	10.15	10.55	10.02	11.30	10.80	12.16
UGW-22	7.10	7.11	7.56	7.56	5.43	5.43	5.94	5.94	1.34	1.34			3.45	3.45
UGW-23	62.24	62.24	64.64	64.64	64.77	64.77	65.02	65.02	64.98	64.98	58.30	58.30	57.65	57.65
UGW-24	72.41	72.41	73.39	73.39	73.76	73.76	74.10	74.10	74.38	74.38	73.15	73.15	72.14	72.15
UGW-25					49.00	50.35	49.23	50.75	49.25	50.70	48.90	50.40	46.85	48.05
UGW-26	8.53	8.53	10.05	10.05	8.65	8.65	8.45	8.45	8.05	8.05	8.10	8.10	6.25	6.25
PW-1	10.35	10.35	8.98	8.98	9.56	9.56	9.66	9.66	6.70	6.70	6.65	6.65	7.70	7.70
PW-2	11.94	11.94	11.20	12.82	11.51	13.30	11.60	13.42	10.62	10.65	8.54	9.25	8.60	9.35
PW-3	7.10	7.11	13.67	16.02	14.00	14.16	13.92	14.12	13.27	13.29	10.45	10.55	6.70	6.80
PW-4	clogged		clogged		clogged		clogged		damaged		damaged		damaged	
PW-5	13.83	14.13	14.15	14.43	13.95	14.25	13.92	14.25	13.45	13.50	10.36	10.45	10.22	10.30
PW-6	11.45	11.51	11.28	11.48	11.60	11.76	11.55	11.70	11.05	11.15	8.20	8.80	7.70	8.50
MW-1	11.31	12.67	10.90	12.30	11.15	12.55	11.19	12.55	10.77	10.81	8.55	8.85	8.45	9.02

TABLE 1

MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO

Well Number	04/27/99		05/21/99		06/29/99		07/29/99		08/30/99		09/29/99		10/27/99	
	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water
MW-2	11.94	11.94	10.90	10.90	11.27	11.28	11.45	11.45	7.54	7.64	6.45	6.45	8.10	8.10
MW-3	10.08	10.85	10.35	10.97	10.04	10.58	10.10	10.70	9.80	9.80	7.30	7.32	10.13	10.16
MW-4	10.24	10.97	10.64	11.33	10.70	11.30	9.87	10.35	6.47	6.47	4.50	4.70	9.15	9.23
RW-1	blocked		blocked		blocked		16.15	19.35	15.90	18.33			12.20	12.43
RW-2	13.50	13.54	13.87	13.93	12.40	12.40	13.40	13.40	4.50	4.50			5.95	5.95
RW-3	7.10	7.11	7.56	7.56	5.43	5.43	5.94	5.94	1.34	1.34			3.45	3.45
RW-4	Well purged		8.97	9.25	8.66	8.68	8.63	8.64	0.10	0.19			5.93	5.93
RW-5	8.96	9.30	9.30	9.65	8.50	8.76	8.90	9.14	7.43	7.66			6.40	6.58
RW-6	8.62	8.63	8.75	8.75	7.94	7.94	8.45	8.45	2.37	2.37			2.65	2.65
RW-7	7.40	7.55	7.62	7.67	6.96	6.96	7.00	7.00	4.00	4.00			5.07	5.07
RW-8	9.06	9.21	9.25	9.75	8.70	8.91	8.96	9.35	6.80	7.20			7.32	7.53
GW-01														
GW-02	10.99	10.99	11.15	11.15	11.11	11.11	11.10	11.10	10.50	10.50	8.85	8.85	9.65	9.65
GW-03	10.89	10.90	10.92	10.92	11.00	11.00	10.90	10.90	10.30	10.30	8.42	8.42	9.61	9.61
GW-04			10.04	10.08	9.93	10.00	9.77	9.77	11.10	11.10	8.60	8.60	7.38	7.38
GW-05									damaged		clogged		clogged	
GW-06			8.60	8.60	9.62	9.62	8.46	8.46	9.00	9.00	7.45	7.45	8.45	8.45
470-MW1	29.57	29.85			29.85	30.07	29.86	30.04	27.52	27.71	26.86	27.06	27.65	28.06
470-MW3	20.34	20.34			20.51	20.51	20.70	20.70	19.91	19.91	18.30	18.30	19.77	19.77
7MW-01A	29.59	29.60	25.75	25.75	25.71	25.71	25.75	25.75	27.11	27.11	24.78	24.78	24.35	24.35
7MW-02A	43.28	43.29	44.05	44.05	44.17	44.17	44.36	44.36	44.23	44.23	39.60	39.60	37.14	37.14
7MW-03	70.06	70.06	71.53	71.53	73.20	73.20	72.75	72.75	73.20	73.20	70.45	70.45	68.54	68.54
7MW-04	76.46	76.47	72.41	72.41	73.96	73.96	78.00	78.00	78.70	78.70	77.00	77.00	75.98	75.98
7MW-05	12.26	12.26	12.36	12.36	12.27	12.27	12.26	12.26	11.21	11.21	8.65	8.65	12.11	12.11
7MW-06	7.90	7.90	7.76	7.77	7.77	7.77	7.70	7.70	7.27	7.27	6.35	6.35	7.54	7.54
7MW-07	14.40	14.40	14.14	14.14	14.36	14.36	14.22	14.22	12.60	12.60	12.73	12.73	13.14	13.14
7MW-08	10.85	10.85	10.65	10.65	10.90	10.90	10.82	10.82	6.62	6.62	8.65	8.65	9.15	9.15
7MW-09	56.21	56.21	56.93	56.93	57.05	57.05	57.23	57.23	64.10	64.10	57.60	57.60	50.70	50.70
Trench MW														

TABLE 1

MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO

Well Number	12/01/99		12/23/99		01/28/00		03/18/00		06/28/00		07/28/00		08/31/00	
	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water
UGW-1	6.10	6.20	10.00	10.10	10.18	10.30	13.25	14.10	11.84	15.15	12.58	15.82	10.66	12.55
UGW-2	not gauged		46.38	46.38	46.50	46.50	49.32	49.32	53.65	53.69	54.45	54.45	55.10	55.10
UGW-3	14.70	15.35	13.50	13.50	15.70	15.71	17.90	17.90	17.15	17.15	20.51	20.51	21.20	21.20
UGW-4	8.02	8.02	13.05	13.05	13.17	13.17	15.95	15.95	16.84	16.84	17.37	17.37	17.85	17.85
UGW-5	6.45	6.65	10.70	10.95	10.75	11.00	12.60	12.65	12.75	12.75	13.35	13.35	11.50	11.50
UGW-6	7.95	7.95	9.25	9.25	9.38	9.38	9.85	9.85	9.87	9.87	10.17	10.17	10.82	10.82
UGW-7	6.00	6.00	7.20	7.20	7.26	7.26	8.70	8.70	8.18	8.18	8.57	8.57	8.75	8.75
UGW-8	4.90	4.90	6.75	6.75	6.95	6.95	8.25	8.25	8.30	8.30	8.65	8.65	9.07	9.07
UGW-9	4.56	4.56	6.80	6.80	7.02	7.02	8.00	8.00	8.00	8.00	8.34	8.34	9.10	9.10
UGW-10	7.85	7.85	9.45	9.45	9.60	9.60	10.20	10.20	9.90	9.90	10.04	10.04	10.15	10.15
UGW-11	8.16	8.16	8.94	8.95	9.00	9.00	9.70	9.70	9.12	9.12	9.15	9.15	8.96	8.96
UGW-12	4.15	15.10	7.45	15.85	7.56	15.90	9.95	17.10	10.05	17.70	10.60	18.05	9.65	17.65
UGW-13	4.52	13.40	8.50	17.20	8.55	17.30	10.70	17.00	10.45	17.55	11.35	17.35	9.22	18.85
UGW-14	7.60	7.60	12.10	12.10	12.30	12.30	15.22	15.22	16.91	16.91	16.45	16.45	15.33	15.33
UGW-15	9.50	9.50	9.10	9.10	9.30	9.30	11.75	11.75	11.72	11.72	11.90	11.90	11.50	11.50
UGW-16	10.05	10.05	11.66	11.66	11.75	11.75	12.55	12.55	12.55	12.55	12.75	12.75	11.55	11.55
UGW-17	5.30	14.30	8.45	12.10	8.65	12.40	10.25	13.15	10.00	14.47	10.72	14.60	9.05	13.60
UGW-18	damaged		11.65	11.65	11.72	11.72	12.80	12.80	12.98	12.98	13.16	13.16	11.45	11.45
UGW-19	4.20	4.55	9.35	9.65	9.45	9.80	10.77	11.50	10.90	11.35	11.40	12.40	9.85	10.35
UGW-20	Replaced w/ UGW-20R													
UGW-20R	6.35	6.35	8.00	8.00	8.12	8.12	8.75	8.75	8.92	8.92	9.70	9.70	10.42	10.42
UGW-21	6.15	7.40	7.40	11.55	7.53	11.72	11.90	13.20	11.91	13.11	12.35	14.20	10.95	12.55
UGW-22	overflow		5.20	5.20	5.23	5.23					7.45	7.45	2.60	2.60
UGW-23	48.20	48.20	58.10	58.10	58.40	58.40	62.75	62.75	64.50	64.50	65.10	65.10	64.85	64.85
UGW-24	68.90	68.90	68.36	68.37	68.58	68.59	70.75	70.75	73.34	73.34	73.80	73.80	73.55	73.55
UGW-25	47.60	49.20	44.00	45.10	44.23	45.33	46.55	47.75	48.55	49.85	49.17	50.55	49.00	50.25
UGW-26	5.70	5.70	6.80	6.80	6.95	6.95	8.90	8.90	8.60	8.60	9.44	9.44	9.15	9.15
PW-1	5.20	5.80	9.10	9.10	9.25	9.25	10.25	10.25	9.45	9.45	10.40	10.40	9.70	9.70
PW-2	5.22	6.40	9.42	10.42	9.65	10.70	11.50	12.40	11.56	11.56	12.17	12.17	11.90	11.90
PW-3	6.10	6.10	10.55	10.59	10.62	10.67			13.45	13.54	not gauged		not gauged	
PW-4	damaged		damaged		damaged		damaged		10.45	11.50	damaged		damaged	
PW-5	7.10	7.15	10.60	10.65	10.70	10.77	14.60	14.60	12.78	13.42	13.65	14.35	13.22	13.75
PW-6	3.50	3.50	8.40	8.40	8.55	8.55	6.50	19.50	not gauged		11.00	11.89	11.15	11.80
MW-1	3.80	3.80	9.17	9.71	9.30	9.85	11.05	11.65	11.05	11.60	11.60	12.70	10.44	10.70

**TABLE 1**

**MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	12/01/99		12/23/99		01/28/00		03/18/00		06/28/00		07/28/00		08/31/00	
	Product	Water												
MW-2	4.95	4.95	9.50	9.50	9.60	9.60	11.25	11.25	11.35	11.35	11.93	11.93	10.60	10.60
MW-3	1.30	1.30	6.90	6.95	6.95	7.00	10.40	10.80	9.40	9.55	14.40	14.48	13.55	13.60
MW-4	3.35	3.60	10.40	10.42	10.55	10.60	11.92	12.62	damaged		7.46	8.10	7.55	8.10
RW-1	5.10	5.25	0.00	0.00	12.50	12.75	16.40	16.70	16.50	17.20	17.17	18.62	17.70	19.00
RW-2	overflow		9.55	9.55	9.60	9.60			13.05	13.05	14.22	14.22	14.10	14.10
RW-3	overflow		5.20	5.20	5.23	5.23					7.45	7.45	2.60	2.60
RW-4	overflow		6.75	6.76	6.82	6.83	8.60	8.60	8.74	8.74	9.05	9.06	2.45	2.45
RW-5	overflow		6.85	6.90	6.87	6.91	7.60	7.70	8.80	12.70	8.32	12.90	6.60	9.45
RW-6	overflow		6.53	6.53	6.55	6.55	8.15	8.15	8.27	8.27	8.80	8.80	6.95	6.95
RW-7	overflow		5.50	5.50	5.70	5.70	6.80	6.80	7.10	7.10	7.70	7.70	6.10	6.10
RW-8	overflow		7.00	7.05	7.15	7.20	8.50	8.70	8.50	8.53	9.10	9.25	7.74	7.79
GW-01	not gauged													
GW-02	6.60	6.60	9.10	9.10	9.22	9.22	10.75	10.75	11.02	11.02	11.45	11.45	11.86	11.86
GW-03	7.00	7.00	9.20	9.20	9.25	9.25	10.75	10.75	10.97	10.97	11.25	11.25	11.58	11.58
GW-04	7.10	7.10	8.46	8.46	8.55	8.55	9.10	9.10	9.80	9.80	9.93	9.93	9.70	9.70
GW-05	not gauged													
GW-06	7.95	7.95	8.48	8.48	8.55	8.55	8.50	8.50	8.60	8.60	8.95	8.95	9.10	9.10
470-MW1	21.80	22.10	24.30	25.32	24.60	25.65	28.85	29.20	29.55	29.87	30.00	30.45	29.45	29.77
470-MW3	15.30	15.30	16.31	16.31	16.45	16.45	20.10	20.10	20.52	20.52	20.80	20.80	21.30	21.30
7MW-01A	20.40	20.40	23.63	23.63	23.70	23.70	25.75	25.75	25.65	25.65	27.10	27.10	26.85	26.85
7MW-02A	40.70	40.70					42.31	42.31	43.88	43.88	44.50	44.50	44.20	44.20
7MW-03	73.30	73.30					67.50	67.50	71.42	71.42	72.95	72.95	72.70	72.70
7MW-04	not gauged		72.36	72.63	72.45	72.45	74.90	74.90	77.40	77.40	77.75	77.75	77.25	77.25
7MW-05	8.51	8.51							12.37	12.37	12.72	12.72	12.48	12.48
7MW-06	7.65	7.65	7.55	7.55	7.67	7.67	7.85	7.85	7.80	7.80	9.62	9.62	9.45	9.45
7MW-07	7.15	7.15	13.05	13.05	13.14	13.14	14.10	14.10	14.11	14.11	14.40	14.40	14.50	14.50
7MW-08	6.42	6.42	8.90	8.90	8.98	8.98	8.75	8.75	10.20	10.20	11.05	11.05	10.85	10.85
7MW-09	43.80	43.80	51.03	51.03	51.20	51.20	55.30	55.30	56.77	56.77	57.35	57.35	57.00	57.00
Trench MW											0.00	0.00	0.00	0.00

**TABLE 1**

**MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	09/29/00		10/31/00		11/29/00		12/28/00		01/31/01	
	Product	Water	Product	Water	Product	Water	Product	Water	Product	Water
UGW-1	11.10	13.20	10.70	12.90	12.00	14.30	12.30	14.70	13.05	15.40
UGW-2	55.51	55.51	55.86	55.86	56.30	56.30	56.30	56.30	56.50	56.50
UGW-3	20.40	20.40	20.30	20.30	20.55	20.55	20.95	21.00	21.10	21.20
UGW-4	17.00	17.00	17.10	17.10	19.10	19.10	16.30	16.35	17.40	17.40
UGW-5	12.90	13.00	8.45	8.45	12.60	12.60	13.25	13.45	13.30	13.30
UGW-6	9.60	9.60	9.75	9.75	10.90	10.90	9.75	9.75	9.85	9.85
UGW-7	7.62	7.62	7.95	7.95	9.10	9.10	7.75	7.75	8.10	8.10
UGW-8	8.00	8.00	6.95	6.95	9.25	9.25	8.05	8.05	8.35	8.35
UGW-9	7.70	7.70	6.90	6.90	8.75	8.75	7.85	7.85	6.05	6.05
UGW-10	9.75	9.75	8.80	8.80	9.65	9.65	9.00	9.00	10.00	10.00
UGW-11	8.85	8.85	7.68	7.68	9.00	9.00	9.80	9.80	9.05	9.05
UGW-12	10.20	17.55	9.90	17.25	10.15	17.55	10.50	17.80	10.35	17.35
UGW-13	10.65	17.65	9.90	16.80	10.60	17.90	11.00	18.00	11.05	17.35
UGW-14	16.10	16.10	16.10	16.10	15.65	15.65	16.40	16.40	16.55	16.55
UGW-15	11.20	11.20	10.35	10.35	11.90	11.90	11.72	11.72	11.85	11.85
UGW-16	12.35	12.35	11.15	11.15	11.90	11.90	12.55	12.55	11.70	11.70
UGW-17	10.15	14.35	9.25	13.55	10.20	14.60	10.60	14.70	10.70	13.90
UGW-18	12.75	12.75	10.68	10.68	11.70	11.70	12.95	12.95	11.41	11.41
UGW-19	10.25	10.75	7.90	8.30	11.00	12.00	10.25	11.45	11.10	12.20
UGW-20	Replaced w/ UGW-20R									
UGW-20R	9.45	9.45	7.20	7.20	10.25	10.25	10.40	10.40	11.95	11.95
UGW-21	11.60	13.30	8.30	9.75	11.95	13.95	12.20	14.25	11.90	14.30
UGW-22	2.20	2.20	3.50	3.50	6.90	6.90	7.00	7.00	4.90	4.90
UGW-23	65.10	65.10	65.16	65.16	65.35	65.35	65.40	65.40	65.70	65.70
UGW-24	74.20	74.20	74.35	74.35	73.50	73.50	74.10	74.10	74.60	74.60
UGW-25	49.00	49.00	49.15	50.40	49.20	50.50	49.50	49.50	49.87	51.40
UGW-26	9.40	9.40	9.10	9.10	9.20	9.20	8.45	8.45	8.40	8.40
PW-1	9.15	9.15	12.20	12.20	11.65	11.65	9.90	9.90	11.30	11.30
PW-2	10.95	11.10	10.40	10.60	11.60	11.85	11.90	12.30	11.30	11.50
PW-3	13.50	13.50	8.00	8.00	10.20	10.20	9.80	10.15	10.30	10.70
PW-4	damaged		damaged		damaged		damaged		damaged	
PW-5	13.00	13.65	12.70	13.40	12.65	13.40	13.30	14.12	12.75	13.55
PW-6	12.15	12.85	10.90	11.80	11.60	12.40	12.30	13.10	12.80	13.55
MW-1	11.10	11.65	10.75	11.10	10.90	11.60	11.25	11.90	11.70	12.25

**TABLE 1**

**MONITORING WELL MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION, ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	09/29/00		10/31/00		11/29/00		12/28/00		01/31/01	
	Product	Water								
MW-2	10.50	10.50	9.70	9.70	10.95	10.95	11.65	11.65	10.85	10.85
MW-3	9.30	9.30	12.40	12.55	13.15	13.40	13.62	13.87	15.15	15.40
MW-4	13.00	13.00	6.20	7.04	9.45	10.30	11.20	12.20	12.25	13.40
RW-1	16.50	16.50	17.35	17.35	17.90	17.91	17.60	19.20	16.75	20.10
RW-2	9.00	9.00	7.75	7.75	9.20	9.20	13.65	13.65	14.45	14.45
RW-3	2.20	2.20	3.50	3.50	6.90	6.90	7.00	7.00	4.90	4.90
RW-4	2.25	2.25	6.10	6.10	8.20	8.20	8.50	8.50	6.80	6.80
RW-5	8.10	10.90	6.90	6.90	7.70	7.70	8.50	11.40	8.45	11.20
RW-6	7.60	7.60	2.65	2.65	7.97	7.97	8.70	8.70	8.30	8.30
RW-7	5.90	5.90	3.00	3.00	7.55	7.55	7.50	7.50	6.90	6.90
RW-8	8.20	8.35	4.90	5.00	8.70	8.80	9.00	9.15	8.95	9.10
GW-01	not gauged									
GW-02	10.95	10.95	10.85	10.85	12.05	12.05	11.20	11.20	11.40	11.40
GW-03	10.70	10.70	10.60	10.60	11.60	11.60	11.00	11.00	10.90	10.90
GW-04	9.20	9.20	9.07	9.07	9.95	9.95	9.80	9.80	10.00	10.00
GW-05	not gauged									
GW-06	9.25	9.25	9.10	9.10	9.40	9.40	9.40	9.40	9.45	9.45
470-MW1	29.70	29.70	29.65	29.95	29.65	30.00	29.85	29.85	30.10	30.10
470-MW3	20.40	20.40	20.30	20.30	21.75	21.75	20.62	20.62	20.80	20.80
7MW-01A	29.70	29.70	25.55	25.55	26.90	26.90	25.85	25.85	26.00	26.00
7MW-02A	44.40	44.40	44.20	44.20	44.30	44.30	44.70	44.70	45.00	45.00
7MW-03	73.22	73.22	73.10	73.10	72.65	72.65	73.90	73.90	74.15	74.15
7MW-04	74.00	74.00	74.06	74.06	77.55	77.55	78.30	78.30	78.70	78.70
7MW-05	12.40	12.40	57.30	57.30	12.60	12.60	12.65	12.65	12.85	12.85
7MW-06	9.30	9.30	8.55	8.55	9.45	9.45	7.70	7.70	7.75	7.75
7MW-07	13.65	13.65	12.20	12.20	14.30	14.30	14.30	14.30	13.95	13.95
7MW-08	10.00	10.00	7.60	7.60	10.80	10.80	10.30	10.30	10.75	10.75
7MW-09	56.25	56.25	73.50	73.50	57.30	57.30	57.55	57.55	56.85	56.85
Trench MW	8.02	8.03	2.20	2.20	7.50	7.50	8.15	8.15	8.75	8.75

**TABLE 2**

**PRODUCT THICKNESS MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	1/28/97	2/25/97	4/21/97	5/22/97	6/17/97	6/30/97	7/30/97	9/3/97	9/26/97
UGW-1	2.36	2.40	2.40	2.56	2.62	2.59	2.55	2.93	2.69
UGW-2	0.00	0.00	0.00	0.18	0.27	0.31	0.27	0.62	0.35
UGW-3	6.10	5.96	6.16	0.00	0.00	0.00	5.03	5.30	5.05
UGW-4	11.31	11.31	11.32	9.82	9.71	9.72	9.41	10.10	9.38
UGW-5	2.35	0.30	0.41	0.35	0.37	0.36	0.19	1.00	0.24
UGW-6		0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-9	0.00	0.00	0.00					0.00	0.00
UGW-10	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
UGW-11	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
UGW-12	9.19	9.00	8.59	8.49	8.37	8.35	8.22	8.61	7.95
UGW-13	7.67	7.57	7.70	6.16	6.58	6.34	7.40	7.96	6.36
UGW-14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-15	0.00	0.00	0.00	2.92	2.41	2.54	0.00	0.00	0.00
UGW-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-17	4.80	4.82	4.70	4.05	4.18	4.03	4.70	5.00	4.49
UGW-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-19	3.75	3.74	3.70		0.00	0.00	2.42	4.95	2.67
UGW-20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-20R	NA	NA	NA						
UGW-21	2.15	2.14	2.00	1.74	1.78	1.93	2.04	3.10	2.17
UGW-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
UGW-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-25	1.58	1.11	1.56	1.82	1.98	2.02	1.94	2.90	2.17
UGW-26	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
PW-1	0.00	0.00	0.00	0.12	0.14	0.07	0.07	0.35	0.07
PW-2	0.86	0.70	0.88	1.21	1.37	1.33	1.09	1.48	1.02
PW-3	3.67	4.22	3.70	5.96	6.39	6.57	6.98	7.98	7.62
PW-4	1.74	1.74	1.75	2.38	2.98	2.64	2.67	3.48	3.12
PW-5	5.10	5.79	5.09	7.03	7.25	7.35	7.40	7.95	7.78
PW-6	10.72	10.93	10.67	10.01	9.92	9.78	9.83	10.11	9.79
MW-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.00
MW-2	0.00	0.00	0.00	0.17	0.29	0.30	0.03	0.60	0.81
MW-3	2.27	2.50	2.25	3.16	3.31	3.36	3.69	4.30	4.21
MW-4	2.30	2.30	2.32	2.13	2.40	2.42	1.94	2.40	2.47
RW-1	8.10	2.98	5.99	7.41	7.43	7.38	7.18	7.78	7.55
RW-2	0.90	0.45	0.39	1.43	0.09	0.47	0.00	0.00	
RW-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
RW-4	0.57	0.00	0.76	3.10	0.10	0.53	0.01	0.21	
RW-5	0.26	0.55	2.23	5.64	1.15	4.42	0.12	0.95	
RW-6	0.17	0.17	0.20	0.22	0.21	0.23	0.00	1.09	0.00

**TABLE 2**

**PRODUCT THICKNESS MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	1/28/97	2/25/97	4/21/97	5/22/97	6/17/97	6/30/97	7/30/97	9/3/97	9/26/97
RW-7	2.52	0.37	2.67	2.62	0.69	1.99	0.00	2.10	0.94
RW-8	0.31	0.25	0.02	0.23	0.83	2.49	0.13	2.25	0.19
NW-1	0.00	0.00				0.00		0.00	
NW-2	0.00	0.00				0.00		0.00	
470-MW-1						0.30	0.20	1.10	0.29
470-MW-2									0.00
470-MW-3							0.00	0.00	0.00
1995-MW-4									
1995-MW-5						0.00	0.00	0.00	0.00
1995MW-9						0.00	0.00	0.00	0.00
GW-01								0.00	0.00
GW-02						0.00	0.00	0.00	0.00
GW-03						0.00	0.00	0.00	0.00
GW-04						0.30	0.06	0.55	0.29
GW-05									0.00
GW-06						0.00	0.00	0.00	0.00
470-MW1									
470-MW3									
7MW-01A								0.00	0.00
7MW-02A						0.00	0.00	0.00	0.00
7MW-03						0.00	0.00	0.00	0.00
7MW-04						0.00	0.00	0.00	0.00
7MW-05									
7MW-06									
7MW-07									
7MW-08									
7MW-09									
Trench MW									

**TABLE 2**

**PRODUCT THICKNESS MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	10/30/97	11/25/97	12/23/97	1/26/98	2/25/98	3/24/98	4/29/98	6/3/98	7/7/98
UGW-1	2.71	2.77	2.72	2.80	2.80	2.79	2.75	2.77	2.78
UGW-2	0.12	0.00	0.01	0.00	0.00	0.04	0.16	0.42	0.52
UGW-3	4.05	5.01	4.30	4.05	3.97	3.95	2.04	2.02	2.00
UGW-4	9.75	9.66	9.59	10.23	10.21	10.21	0.05	0.01	0.03
UGW-5	0.05	0.10	0.22	0.20	0.21	0.06	0.00	0.16	0.21
UGW-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-11	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
UGW-12	10.38	9.25	9.18	8.86	8.47	8.19	8.12	7.74	7.75
UGW-13	10.12	7.30	7.43	7.48	1.87	6.45	6.94	2.26	6.75
UGW-14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-17	6.51	6.79	7.31	7.70	7.52	6.00	2.08	2.28	2.53
UGW-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-19	0.33	1.93	1.08	1.64	2.12	2.25	1.63	2.47	2.32
UGW-20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	destroyed	destroyed
UGW-20R	NA	NA	NA	NA	NA	NA	NA	NA	NA
UGW-21	2.12	2.08	2.20	3.02	2.37	2.39	2.21	2.26	2.14
UGW-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-24	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
UGW-25	1.82	1.77	1.62	1.51	1.56	1.66	2.04	1.74	1.75
UGW-26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PW-1	0.77	0.11	0.79	0.11	0.16	0.19	0.00	0.00	0.00
PW-2	0.63	0.60	0.72	0.73	0.75	0.80	0.86	0.87	0.97
PW-3	8.75	9.12	9.76	9.95	9.80	9.77	9.85	9.85	9.84
PW-4	3.36	3.37	3.47	3.55	3.62	3.66	3.77	3.73	3.89
PW-5	8.17	8.40	8.85	8.97	8.95	8.85	8.88	8.92	8.92
PW-6	13.18	11.86	13.20	12.44	11.67	10.92	10.68	10.57	9.39
MW-1	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.12	1.14
MW-2	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.08	0.12
MW-3	4.22	4.49	4.63	5.03	5.42	5.35	5.86	6.01	6.20
MW-4	3.32	2.96	3.24	2.92	2.45	1.97	0.51	0.53	0.72
RW-1	0.83	2.88	1.02	3.13	4.63	5.89	6.48	6.57	7.16
RW-2	0.00	0.00		0.00	0.00	0.10	0.22	0.00	0.37
RW-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RW-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
RW-5	0.20	0.07	0.11	0.20	0.38	2.55	2.42	2.40	2.41
RW-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**TABLE 2**

**PRODUCT THICKNESS MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	10/30/97	11/25/97	12/23/97	1/26/98	2/25/98	3/24/98	4/29/98	6/3/98	7/7/98
RW-7	0.26	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
RW-8	0.04	0.00	0.00	0.02	0.12	2.07	3.41	3.37	3.54
NW-1	0.00							0.00	0.00
NW-2	0.00							0.00	0.00
470-MW-1	0.08	0.29	0.28					0.00	0.00
470-MW-2	0.00	0.00						0.00	0.00
470-MW-3	0.00	0.00	0.00					0.00	0.00
1995-MW-4	0.00							0.00	0.00
1995-MW-5	0.00	0.00	0.00					0.00	0.00
1995MW-9	0.00	0.00	0.00					0.00	0.00
GW-01	0.00	0.00						0.01	0.02
GW-02	0.00	0.00	0.00				0.00	0.00	0.00
GW-03	0.00	0.00	0.00				0.00	0.00	0.00
GW-04	0.30	0.18	0.28				0.00	0.02	0.02
GW-05	0.00								
GW-06	0.00	0.00	0.00				0.00	0.00	0.00
470-MW1							0.09	0.11	0.23
470-MW3							0.00	0.00	0.00
7MW-01A	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
7MW-02A	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
7MW-03	0.00	0.00					0.00	0.00	0.00
7MW-04	0.00	0.00					0.00	0.00	0.00
7MW-05	0.00							0.00	0.00
7MW-06	0.00	0.00	0.00		0.00	0.00		0.00	0.00
7MW-07	0.00	0.00	0.00		0.00				
7MW-08	0.00	0.00	0.00		0.00	0.00		0.00	0.00
7MW-09	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Trench MW									

**TABLE 2**

**PRODUCT THICKNESS MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	8/12/98	11/16/98	12/9/98	1/25/99	2/23/99	3/29/99	4/27/99	5/21/99	6/29/99	7/29/99		
UGW-1	0.61	1.40	1.39	1.70	1.68	1.74	1.73	1.71	1.77	1.80		
UGW-2	0.62	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.20		
UGW-3	0.57	0.55	0.56	0.00		0.00	0.00	0.00	0.00	5.90		
UGW-4	0.02	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00		
UGW-5	0.34	0.25	0.24	0.30	0.20	0.19	0.20	0.08	0.06	0.18		
UGW-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
UGW-7	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
UGW-8	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00		
UGW-9	0.02	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00		
UGW-10	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00		
UGW-11	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00		
UGW-12	7.58	9.70	11.25	8.66	8.01	7.66	7.78	7.81	5.86	5.98		
UGW-13	6.79	10.95	12.30	8.80	7.42	7.05	6.95	10.27	6.20	7.00		
UGW-14	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
UGW-15	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
UGW-16	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00		
UGW-17	1.39	3.85	6.82	9.69	6.16	5.20	5.17	7.35	8.91	7.23		
UGW-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
UGW-19	2.20	1.36	1.37	1.17	1.25	0.50	0.49	0.89	1.20	1.45		
UGW-20	destroyed	destroyed	destroyed	Monitoring Well Replaced with UGW-20R								
UGW-20R	NA	NA	NA	NA	0.00	0.01	0.00	0.00	0.00	0.00		
UGW-21	2.03	2.90	2.63	2.90	2.14	2.37	2.23	2.67	7.69	2.37		
UGW-22	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00		
UGW-23	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00		
UGW-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
UGW-25	1.82	0.00	0.00	0.00		0.00	0.00	0.00	1.35	1.52		
UGW-26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PW-1	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PW-2	1.08	1.30	1.59	1.65	1.71	2.66	0.00	1.62	1.79	1.82		
PW-3	7.71	9.53	9.88	0.85	0.90	0.90	0.01	2.35	0.16	0.20		
PW-4	0.18		0.00									
PW-5	6.70	7.37	7.37	1.12	1.29	1.29	0.30	0.28	0.30	0.33		
PW-6	1.13	0.00	0.00	0.10		0.05	0.06	0.20	0.16	0.15		
MW-1	0.01	0.00	1.29	1.45	0.34	2.30	1.36	1.40	1.40	1.36		
MW-2	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00		
MW-3	0.00	0.00	0.00	0.75	0.00	0.72	0.77	0.62	0.54	0.60		
MW-4	0.55	1.20	1.24	1.30	0.90	0.66	0.73	0.69	0.60	0.48		
RW-1	0.00	0.05	0.00	0.00						3.20		
RW-2	0.43	0.00	0.00	0.00	0.00	0.00	0.04	0.06	0.00	0.00		
RW-3	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00		
RW-4	0.00	0.00	0.00	0.00	0.00	0.00		0.28	0.02	0.01		
RW-5	4.60	0.05	0.01	0.10	0.30	0.38	0.34	0.35	0.26	0.24		
RW-6	0.02	0.42	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00		

**TABLE 2**

**PRODUCT THICKNESS MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	8/12/98	11/16/98	12/9/98	1/25/99	2/23/99	3/29/99	4/27/99	5/21/99	6/29/99	7/29/99
RW-7	1.37	0.40	0.15	0.35	0.10	0.08	0.15	0.05	0.00	0.00
RW-8	0.00	0.10	0.00	0.02	0.00	0.08	0.15	0.50	0.21	0.39
NW-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NW-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
470-MW-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
470-MW-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
470-MW-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1995-MW-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1995-MW-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1995MW-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GW-01	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
GW-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GW-03	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00
GW-04	0.22	0.08	0.06	0.00	0.06	0.06	0.00	0.04	0.07	0.00
GW-05										0.00
GW-06	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
470-MW1	0.23	0.00	0.20	0.19	0.30	0.00	0.28	0.00	0.22	0.18
470-MW3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7MW-01A	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
7MW-02A	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
7MW-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7MW-04	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
7MW-05	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
7MW-06	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00
7MW-07				0.00	0.00	0.00	0.00	0.00	0.00	0.00
7MW-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7MW-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trench MW										

**TABLE 2**  
**PRODUCT THICKNESS MEASUREMENTS**  
**TOW WAY FUEL FARM**  
**NAVAL STATION ROOSEVELT ROADS**  
**CEIBA, PUERTO RICO**

Well Number	8/30/99	9/29/99	10/27/99	12/1/99	12/23/99	1/28/00	3/18/00	6/28/00	7/28/00
UGW-1	0.01	0.05	0.30	0.10	0.10	0.12	0.85	3.31	3.24
UGW-2	0.51	0.65	0.00		0.00	0.00	0.00	0.04	0.00
UGW-3	0.64	0.72	0.57	0.65	0.00	0.01	0.00	0.00	0.00
UGW-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-5	0.00		0.15	0.20	0.25	0.25	0.05	0.00	0.00
UGW-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-11	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
UGW-12	0.74	8.85	9.75	10.95	8.40	8.34	7.15	7.65	7.45
UGW-13	0.05	11.38	0.50	8.88	8.70	8.75	6.30	7.10	6.00
UGW-14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-17	0.00	2.50	3.08	9.00	3.65	3.75	2.90	4.47	3.88
UGW-18			0.00		0.00	0.00	0.00	0.00	0.00
UGW-19	0.00	0.20	0.32	0.35	0.30	0.35	0.73	0.45	1.00
UGW-20	Monitoring Well Replaced with UGW-20R								
UGW-20R	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-21	0.40	1.28	1.36	1.25	4.15	4.19	1.30	1.20	1.85
UGW-22	0.00		0.00		0.00	0.00			0.00
UGW-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UGW-24	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00
UGW-25	1.45	1.50	1.20	1.60	1.10	1.10	1.20	1.30	1.38
UGW-26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PW-1	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00
PW-2	0.03	0.71	0.75	1.18	1.00	1.05	0.90	0.00	0.00
PW-3	0.02	0.10	0.10	0.00	0.04	0.05		0.09	
PW-4	damaged	damaged	damaged	damaged	damaged	damaged	damaged	1.05	damaged
PW-5	0.05	0.09	0.08	0.05	0.05	0.07	0.00	0.64	0.70
PW-6	0.10	0.60	0.80	0.00	0.00	0.00	13.00		0.89
MW-1	0.04	0.30	0.57	0.00	0.54	0.55	0.60	0.55	1.10
MW-2	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-3	0.00	0.02	0.03	0.00	0.05	0.05	0.40	0.15	0.08
MW-4	0.00	0.20	0.08	0.25	0.02	0.05	0.70		0.64
RW-1	2.43		0.23	0.15	0.00	0.25	0.30	0.70	1.45
RW-2	0.00		0.00		0.00	0.00		0.00	0.00
RW-3	0.00		0.00		0.00	0.00			0.00
RW-4	0.09		0.00		0.01	0.01	0.00	0.00	0.01
RW-5	0.23		0.18		0.05	0.04	0.10	3.90	4.58
RW-6	0.00		0.00		0.00	0.00	0.00	0.00	0.00

**TABLE 2**

**PRODUCT THICKNESS MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	8/30/99	9/29/99	10/27/99	12/1/99	12/23/99	1/28/00	3/18/00	6/28/00	7/28/00
RW-7	0.00		0.00		0.00	0.00	0.00	0.00	0.00
RW-8	0.40		0.21		0.05	0.05	0.20	0.03	0.15
NW-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NW-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
470-MW-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
470-MW-2	0.00	0.00	0.00				0.00	0.00	0.00
470-MW-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1995-MW-4	0.00	0.00	0.00				0.00	0.00	0.00
1995-MW-5	0.00	0.00	0.00				0.00	0.00	0.00
1995MW-9	0.00	0.00	0.00				0.00	0.00	0.00
GW-01	not gauged								
GW-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GW-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GW-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GW-05				not gauged					
GW-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
470-MW1	0.19	0.20	0.41	0.30	1.02	1.05	0.35	0.32	0.45
470-MW3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7MW-01A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7MW-02A	0.00	0.00	0.00	0.00			0.00	0.00	0.00
7MW-03	0.00	0.00	0.00	0.00			0.00	0.00	0.00
7MW-04	0.00	0.00	0.00		0.27	0.00	0.00	0.00	0.00
7MW-05	0.00	0.00	0.00	0.00				0.00	0.00
7MW-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7MW-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7MW-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7MW-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trench MW									0.00

**TABLE 2**

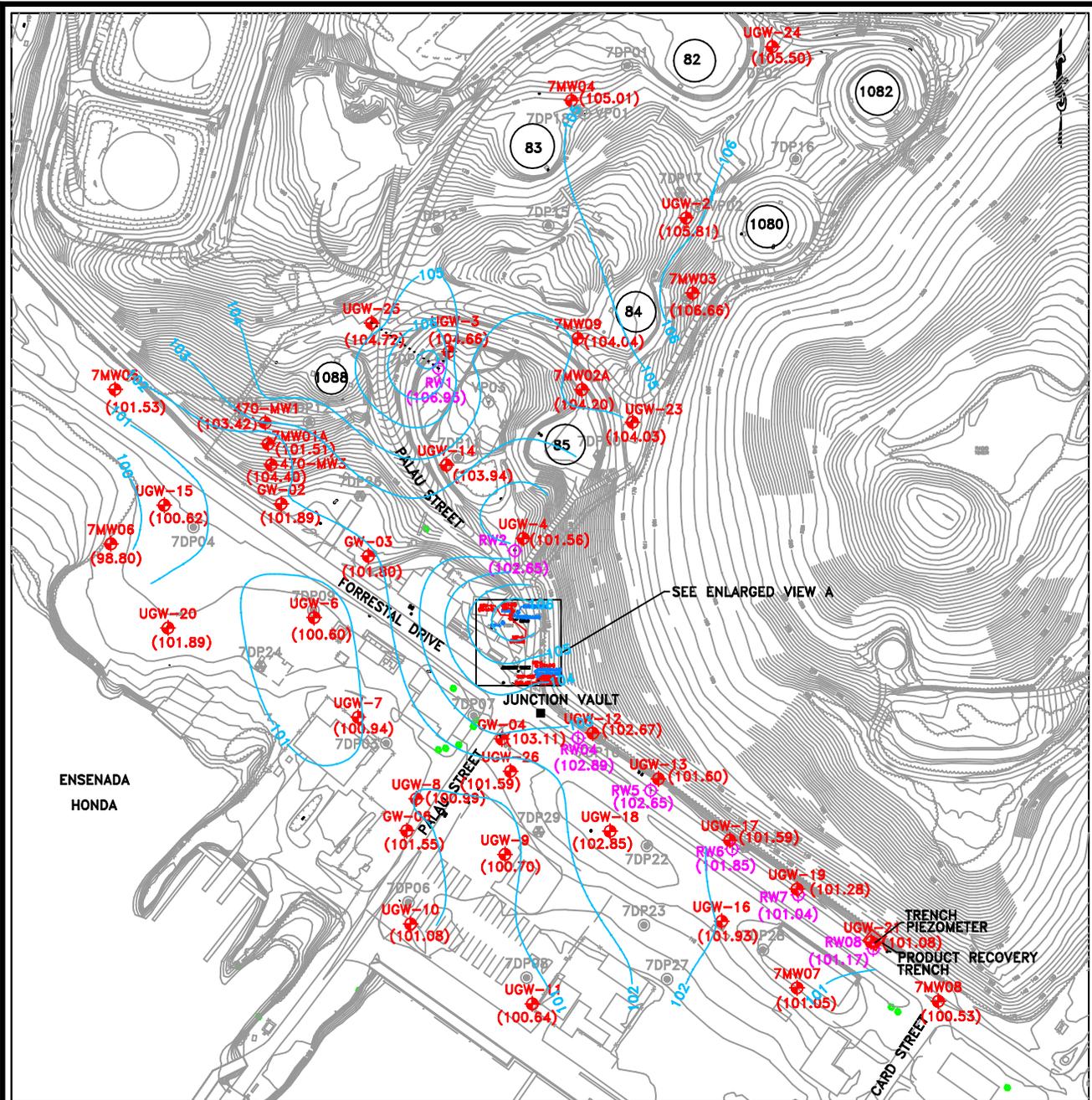
**PRODUCT THICKNESS MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	8/31/00	9/29/00	10/31/00	11/29/00	12/28/00	1/31/01
UGW-1	1.89	2.10	2.20	2.30	2.40	2.35
UGW-2	0.00	0.00	0.00	0.00	0.00	0.00
UGW-3	0.00	0.00	0.00	0.00	0.05	0.10
UGW-4	0.00	0.00	0.00	0.00	0.05	0.00
UGW-5	0.00	0.10	0.00	0.00	0.20	0.00
UGW-6	0.00	0.00	0.00	0.00	0.00	0.00
UGW-7	0.00	0.00	0.00	0.00	0.00	0.00
UGW-8	0.00	0.00	0.00	0.00	0.00	0.00
UGW-9	0.00	0.00	0.00	0.00	0.00	0.00
UGW-10	0.00	0.00	0.00	0.00	0.00	0.00
UGW-11	0.00	0.00	0.00	0.00	0.00	0.00
UGW-12	8.00	7.35	7.35	7.40	7.30	7.00
UGW-13	9.63	7.00	6.90	7.30	7.00	6.30
UGW-14	0.00	0.00	0.00	0.00	0.00	0.00
UGW-15	0.00	0.00	0.00	0.00	0.00	0.00
UGW-16	0.00	0.00	0.00	0.00	0.00	0.00
UGW-17	4.55	4.20	4.30	4.40	4.10	3.20
UGW-18	0.00	0.00	0.00	0.00	0.00	0.00
UGW-19	0.50	0.50	0.40	1.00	1.20	1.10
UGW-20	Replaced with UGW-20R					
UGW-20R	0.00	0.00	0.00	0.00	0.00	0.00
UGW-21	1.60	1.70	1.45	2.00	2.05	2.40
UGW-22	0.00	0.00	0.00	0.00	0.00	0.00
UGW-23	0.00	0.00	0.00	0.00	0.00	0.00
UGW-24	0.00	0.00	0.00	0.00	0.00	0.00
UGW-25	1.25	0.00	1.25	1.30	0.00	1.53
UGW-26	0.00	0.00	0.00	0.00	0.00	0.00
PW-1	0.00	0.00	0.00	0.00	0.00	0.00
PW-2	0.00	0.15	0.20	0.25	0.40	0.20
PW-3		0.00	0.00	0.00	0.35	0.40
PW-4	damaged	damaged	damaged	damaged	damaged	damaged
PW-5	0.53	0.65	0.70	0.75	0.82	0.80
PW-6	0.65	0.70	0.90	0.80	0.80	0.75
MW-1	0.26	0.55	0.35	0.70	0.65	0.55
MW-2	0.00	0.00	0.00	0.00	0.00	0.00
MW-3	0.05	0.00	0.15	0.25	0.25	0.25
MW-4	0.55	0.00	0.84	0.85	1.00	1.15
RW-1	1.30	0.00	0.00	0.01	1.60	3.35
RW-2	0.00	0.00	0.00	0.00	0.00	0.00
RW-3	0.00	0.00	0.00	0.00	0.00	0.00
RW-4	0.00	0.00	0.00	0.00	0.00	0.00
RW-5	2.85	2.80	0.00	0.00	2.90	2.75
RW-6	0.00	0.00	0.00	0.00	0.00	0.00

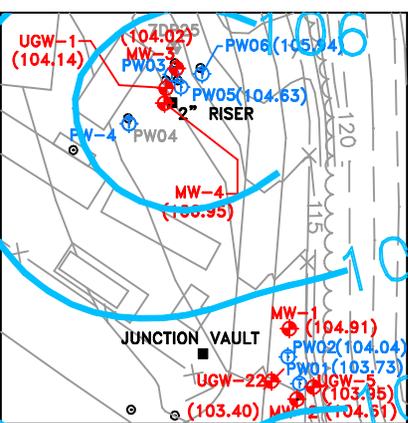
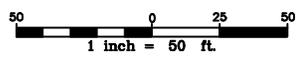
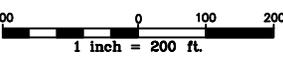
**TABLE 2**

**PRODUCT THICKNESS MEASUREMENTS  
TOW WAY FUEL FARM  
NAVAL STATION ROOSEVELT ROADS  
CEIBA, PUERTO RICO**

Well Number	8/31/00	9/29/00	10/31/00	11/29/00	12/28/00	1/31/01
RW-7	0.00	0.00	0.00	0.00	0.00	0.00
RW-8	0.05	0.15	0.10	0.10	0.15	0.15
NW-1	0.00	0.00	0.00	0.00	0.00	0.00
NW-2	0.00	0.00	0.00	0.00	0.00	0.00
470-MW-1	0.00	0.00	0.00	0.00	0.00	0.00
470-MW-2	0.00	0.00	0.00	0.00	0.00	0.00
470-MW-3	0.00	0.00	0.00	0.00	0.00	0.00
1995-MW-4	0.00	0.00	0.00	0.00	0.00	0.00
1995-MW-5	0.00	0.00	0.00	0.00	0.00	0.00
1995MW-9	0.00	0.00	0.00	0.00	0.00	0.00
GW-01	not gauged					
GW-02	0.00	0.00	0.00	0.00	0.00	0.00
GW-03	0.00	0.00	0.00	0.00	0.00	0.00
GW-04	0.00	0.00	0.00	0.00	0.00	0.00
GW-05	not gauged					
GW-06	0.00	0.00	0.00	0.00	0.00	0.00
470-MW1	0.32	0.00	0.30	0.35	0.00	0.00
470-MW3	0.00	0.00	0.00	0.00	0.00	0.00
7MW-01A	0.00	0.00	0.00	0.00	0.00	0.00
7MW-02A	0.00	0.00	0.00	0.00	0.00	0.00
7MW-03	0.00	0.00	0.00	0.00	0.00	0.00
7MW-04	0.00	0.00	0.00	0.00	0.00	0.00
7MW-05	0.00	0.00	0.00	0.00	0.00	0.00
7MW-06	0.00	0.00	0.00	0.00	0.00	0.00
7MW-07	0.00	0.00	0.00	0.00	0.00	0.00
7MW-08	0.00	0.00	0.00	0.00	0.00	0.00
7MW-09	0.00	0.00	0.00	0.00	0.00	0.00
Trench MW	0.00	0.01	0.00	0.00	0.00	0.00



ENSENADA  
HONDA



VIEW A

NOTE:  
DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY  
U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.



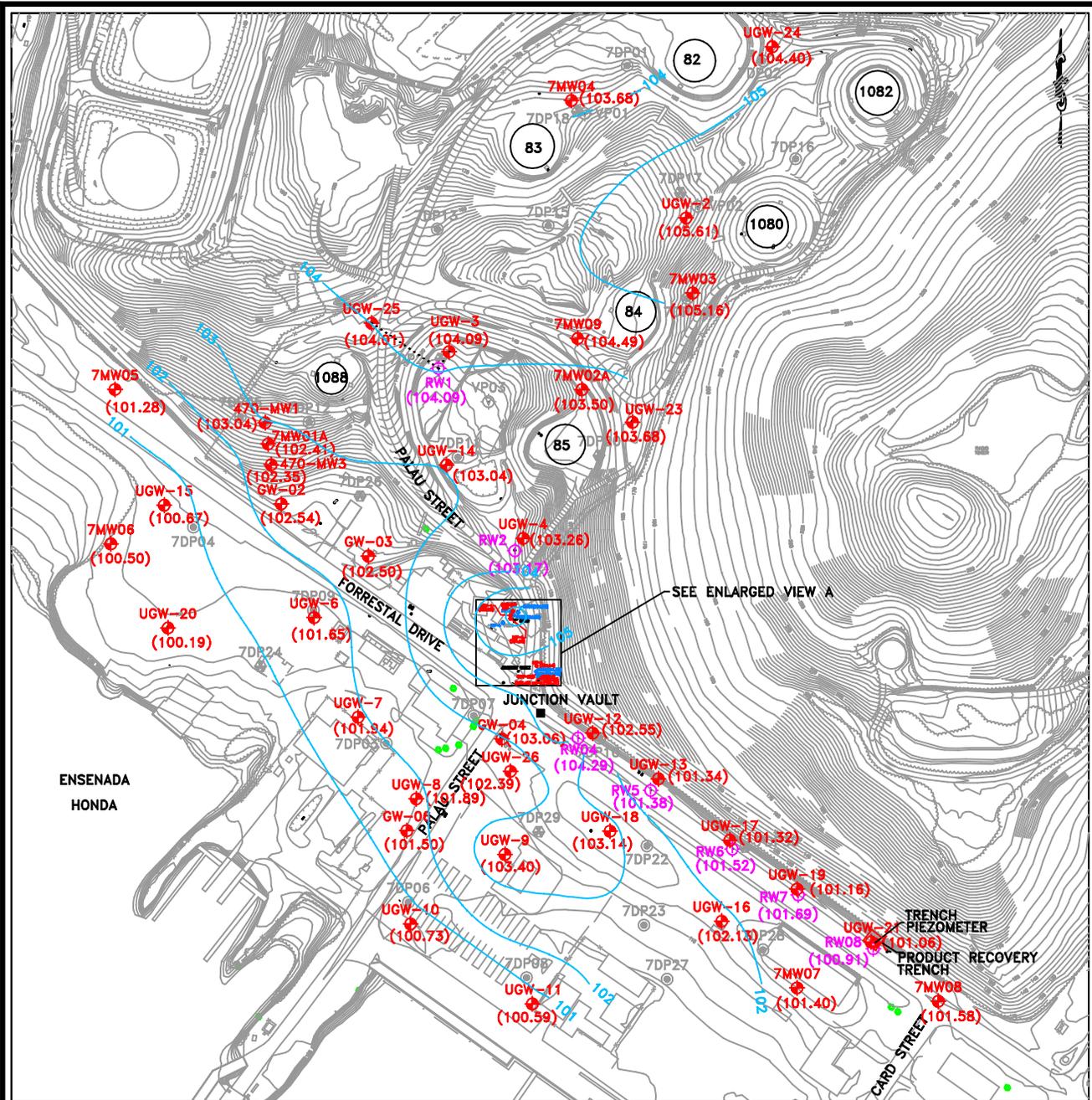
**LEGEND**

- ◆ - MONITORING WELL LOCATION
- ⊙ - VERTICAL PERMEABILITY SAMPLE LOCATION
- ⊙ - SOIL BORING LOCATION
- ⊙ - SOIL BORING AND SOIL GAS SAMPLE LOCATION
- ⊙ - TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ⊙ - ICHOR PRODUCT RECOVERY WELL LOCATION
- (101.29) - CORRECTED GROUNDWATER ELEVATION (FT.)
- 101 — ELEVATION (FT.)

SOURCE: LANDTV, FEB. 1992/1997

**FIGURE 1**  
**CORRECTED GROUNDWATER SURFACE**  
**CONTOUR MAP (NOVEMBER, 2000)**  
**TOW WAY FUEL FARM**  
**NAVAL STATION ROOSEVELT ROADS**  
**PUERTO RICO**

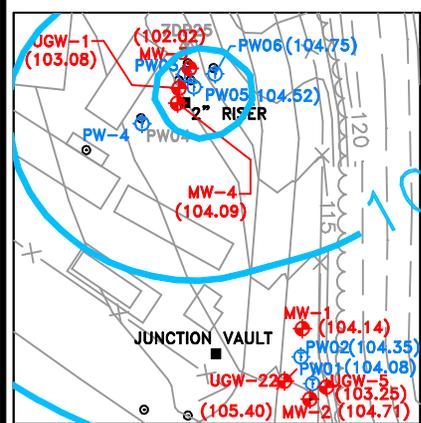




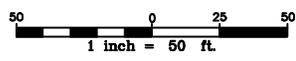
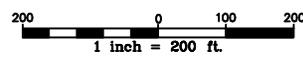
ENSENADA  
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SEE ENLARGED VIEW A

TRENCH  
PIEZOMETER  
PRODUCT RECOVERY  
TRENCH



VIEW A



NOTE:  
DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY  
U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

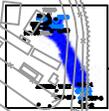
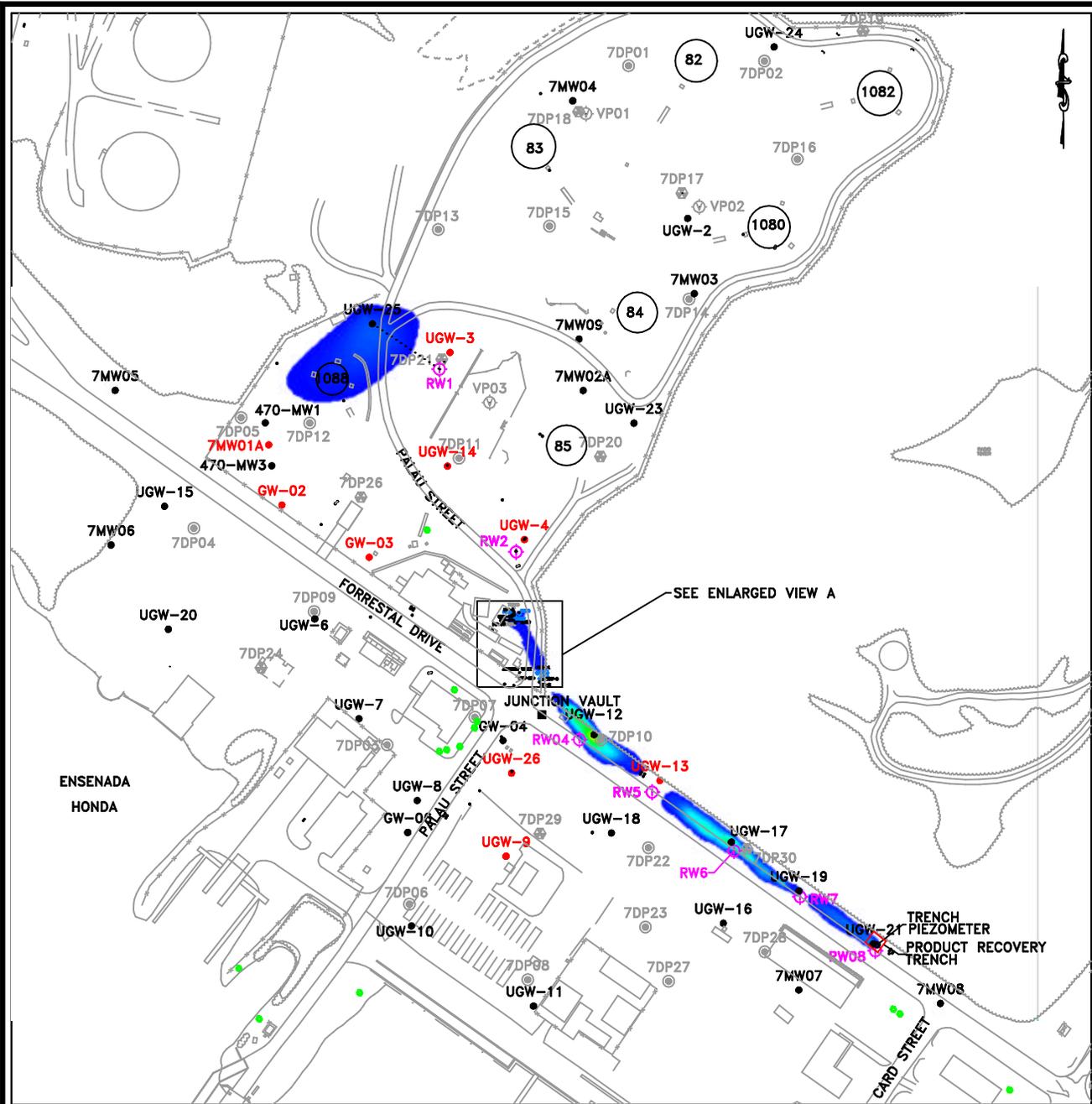


LEGEND

- ◆ - MONITORING WELL LOCATION
- ⊙ - VERTICAL PERMEABILITY SAMPLE LOCATION
- ⊙ - SOIL BORING LOCATION
- ⊙ - SOIL BORING AND SOIL GAS SAMPLE LOCATION
- ⊙ - TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ⊙ - ICHOR PRODUCT RECOVERY WELL LOCATION
- (101.29) - CORRECTED GROUNDWATER ELEVATION (FT.)
- 101 — ELEVATION (FT.)

SOURCE: LANDTV, FEB. 1992/1997

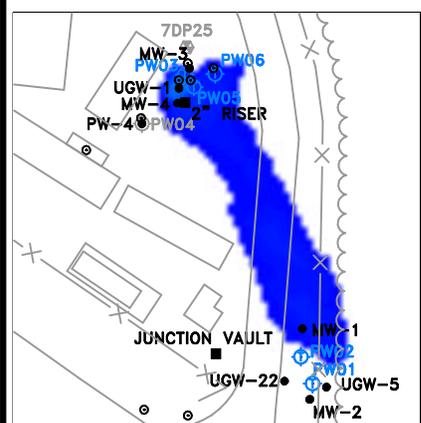
FIGURE 3  
CORRECTED GROUNDWATER SURFACE  
CONTOUR MAP (JANUARY, 2001)  
TOW WAY FUEL FARM  
NAVAL STATION ROOSEVELT ROADS  
PUERTO RICO



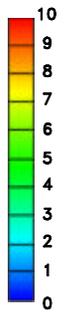
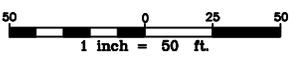
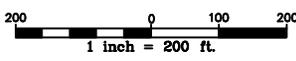
SEE ENLARGED VIEW A

ENSENADA HONDA

TRENCH PIEZOMETER  
PRODUCT RECOVERY TRENCH



VIEW A



NOTE:  
DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.



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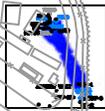
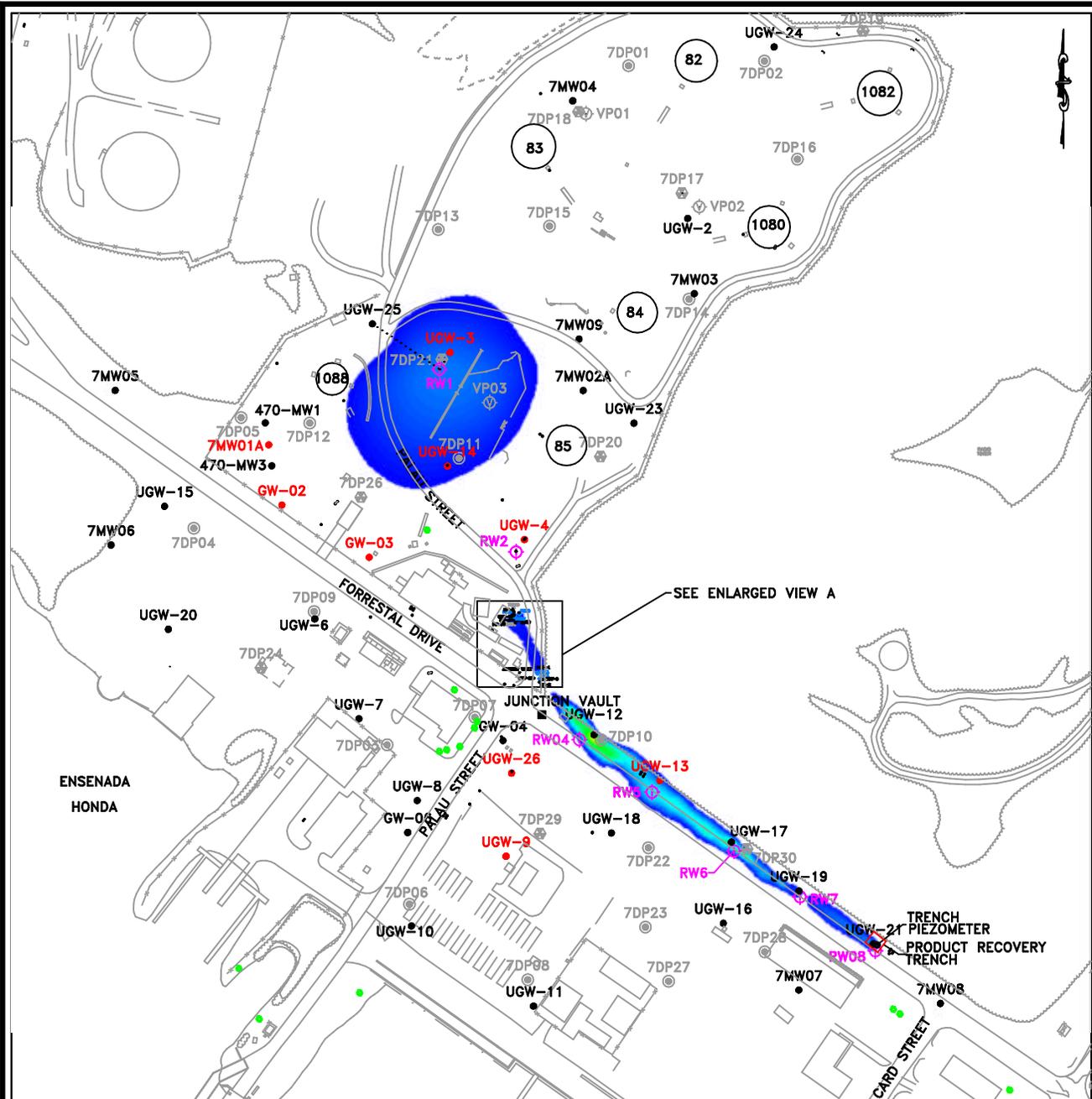
**LEGEND**

- - MONITORING WELL LOCATION
- ⊕ - VERTICAL PERMEABILITY SAMPLE LOCATION
- ⊙ - SOIL BORING LOCATION
- ⊙ - SOIL BORING AND SOIL GAS SAMPLE LOCATION
- ⊕ - TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ⊕ - ICHOR PRODUCT RECOVERY WELL LOCATION
- - PRODUCT THICKNESS DATA NOT INCLUDED BECAUSE SCREEN IS CONSISTENTLY AND COMPLETELY BELOW THE WATER TABLE

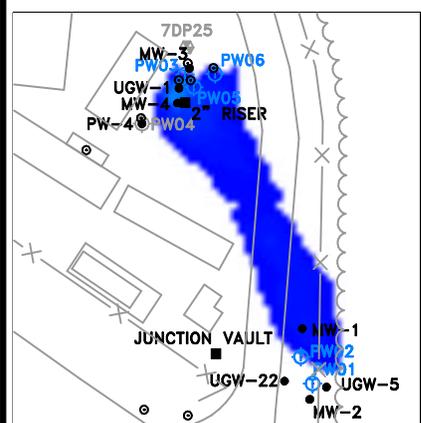
**FIGURE 4**  
**FREE PRODUCT THICKNESS AND**  
**EXTENT MAP (NOVEMBER, 2000)**  
**TOW WAY FUEL FARM**

NAVAL STATION ROOSEVELT ROADS  
PUERTO RICO

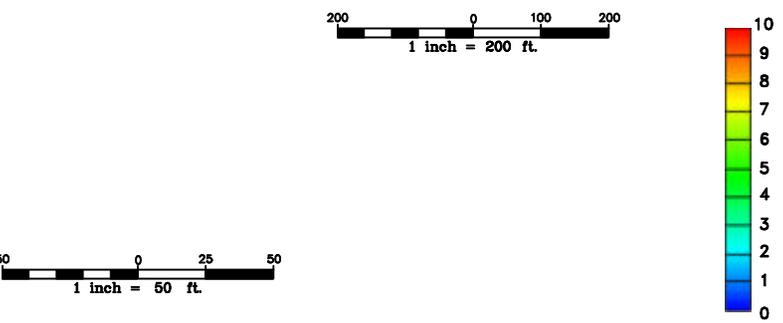
SOURCE: LANDTV, FEB. 1992/1997



SEE ENLARGED VIEW A



VIEW A



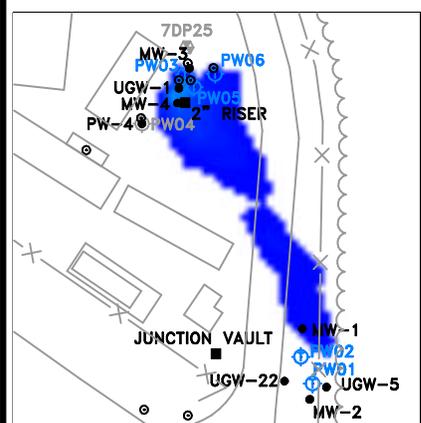
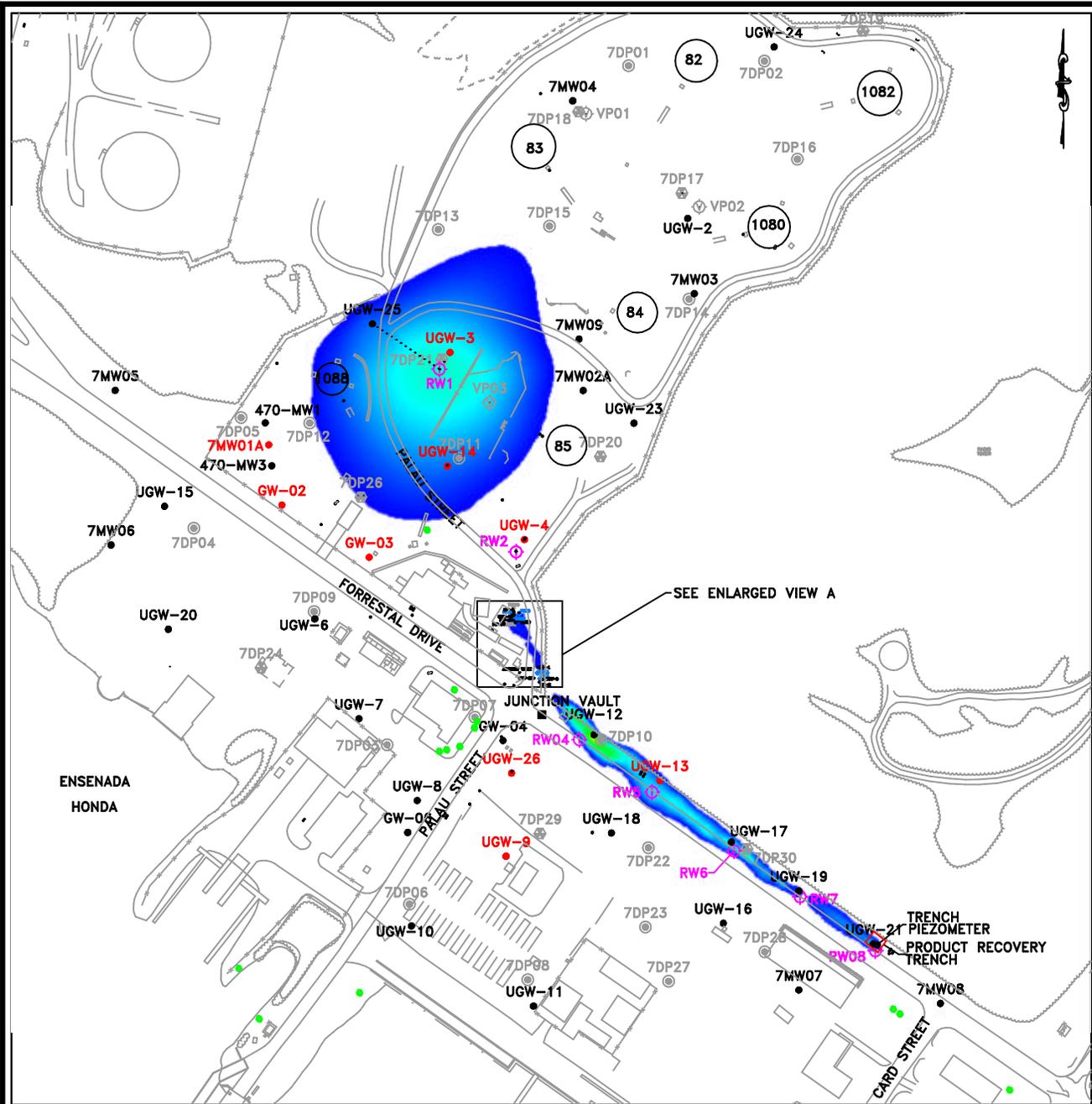
NOTE:  
 DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY  
 U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.



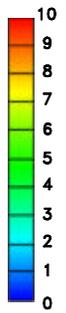
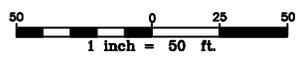
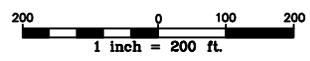
- LEGEND**
- - MONITORING WELL LOCATION
  - ⊕ - VERTICAL PERMEABILITY SAMPLE LOCATION
  - ⊙ - SOIL BORING LOCATION
  - ⊙ - SOIL BORING AND SOIL GAS SAMPLE LOCATION
  - ⊕ - TERRAVAC PRODUCT RECOVERY WELL LOCATION
  - ⊕ - ICHOR PRODUCT RECOVERY WELL LOCATION
  - ⊕ - PRODUCT THICKNESS DATA NOT INCLUDED BECAUSE SCREEN IS CONSISTENTLY AND COMPLETELY BELOW THE WATER TABLE

**FIGURE 5**  
**FREE PRODUCT THICKNESS AND**  
**EXTENT MAP (DECEMBER, 2000)**  
**TOW WAY FUEL FARM**

NAVAL STATION ROOSEVELT ROADS  
 PUERTO RICO



VIEW A



NOTE: DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.



- LEGEND**
- - MONITORING WELL LOCATION
  - ⊕ - VERTICAL PERMEABILITY SAMPLE LOCATION
  - ⊙ - SOIL BORING LOCATION
  - ⊙ - SOIL BORING AND SOIL GAS SAMPLE LOCATION
  - ⊕ - TERRAVAC PRODUCT RECOVERY WELL LOCATION
  - ⊕ - ICHOR PRODUCT RECOVERY WELL LOCATION
  - - PRODUCT THICKNESS DATA NOT INCLUDED BECAUSE SCREEN IS CONSISTENTLY AND COMPLETELY BELOW THE WATER TABLE

**FIGURE 6**  
**FREE PRODUCT THICKNESS AND**  
**EXTENT MAP (JANUARY, 2001)**  
**TOW WAY FUEL FARM**

NAVAL STATION ROOSEVELT ROADS  
 PUERTO RICO

**ATTACHMENT 2**  
**SUMMARY AND HISTORY OF SWMUs/AOCs ASSOCIATED**  
**WITH OPERABLE UNIT 1, 6, AND 7**  
**NAVAL STATION ROOSEVELT ROADS**

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## **SUMMARY AND HISTORY OF SWMUs/AOCs AT OPERABLE UNIT 1, 6, AND 7**

This summary report and accompanying table was requested by the United States Environmental Protection Agency (USEPA) to give the status of each Solid Waste Management Unit (SWMU), as well as Areas of Concern (AOC) within Operable Unit (OU) 1, 6, and 7. This report is composed of individual sections describing the status/history of each SWMU/AOC, as well as Table 1 to aid in the status/summary process of the SWMUs/AOCs within OU 1, 6, and 7.

Results from the investigations mentioned below identified areas where releases to the environment were possible, establishing a need for an RFI. Some of the SWMUs and AOCs in OU 1, 6, and 7 were first addressed in the initial assessment study performed at Naval Station Roosevelt Roads (NSRR) by the Naval Energy and Environmental Support Activity (NEESA) in September 1984. In 1986, a confirmation study was performed to determine possible dispersion and migration of specific chemicals at NSRR. During 1988, a Phase II Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) was performed at the NSRR facility. In 1992, a Remedial Investigation/Feasibility Study (RI/FS) was conducted at Site 15 (SWMU 10). The Navy performed a Supplemental Investigation Report in 1993 under the Installation Restoration (IR) Program Activities. In 1994, the EPA submitted to NSRR, the Final RCRA/HSWA Part B Permit. In this Part B Permit, the EPA requested a first-phase RFI be performed for the SWMUs within OU 1, 6, and 7. In 1995, a Final RCRA Facility Investigation (RFI) Work Plan for NSRR was submitted by the Navy.

### **SWMU 6/AOC B**

A Phase I RFI field investigation was performed in March of 1996 at this SWMU and area of concern. The results from this investigation at SWMU 6/AOC B were reported in the Draft RFI Report submitted by the Navy in July 1996. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA did not approve the recommendation given in this report, instead they requested that additional samples be collected, as well as further characterization be performed in the risk assessment. The Navy responded to these comments in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and questions on SWMU 6/AOC B that the EPA expressed on the Draft RFI Report. On April 25, 1997, the EPA submitted a response to the Navy's Draft RFI Addendum. The EPA had additional comments and questions dealing with

SWMU 6/AOC B in this document. On June 12, 1997, the Navy submitted a response to EPA comment letter dated April 25, 1997. On August 7, 1997, the EPA submitted additional comments on the Draft RFI Report Addendum for OU 1, 6, and 7. The Navy submitted a Draft RFI Report Revised Addendum for OU 1, 6, and 7 on August 29, 1997 to respond to the EPA's comment letter dated August 7, 1997. This Revised Addendum not only contained Navy responses to EPA comments, but also work plans for additional work at SWMU 6/AOC B. In September of 1997, a field investigation was conducted in which a new monitoring well was installed and sampled. On May 6, 1998, the Navy submitted a Draft RFI Report for Additional Investigations at OU 1, 6, and 7. This report presented additional information and data that was obtained at SWMU 6/AOC B at the request of the EPA in their November 8, 1996 comment letter. The EPA commented on this report on September 15, 1998, stating that the risk assessment must be revised to address their specific comments. The Navy responded to the EPA's comment letter on November 24, 1998, including the Revised Risk Assessment for SWMU 6/AOC B. On November 5, 1999, the EPA commented on the Navy's revised risk assessment stating that the EPA cannot approve a No Further Action Recommendation (NFAR) for this SWMU. The EPA requested the Navy to submit a Corrective Measures Study (CMS) Work Plan or CMS Report since unacceptable risks were indicated. The EPA also stated that since the revised risk assessment was submitted, the RFI phase is now complete for the SWMU 6/AOC B area. The area of SWMU 6/AOC B is in the CMS stage at this time.

### **SWMU 10**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results from this investigation at SWMU 10 were reported in the Draft RFI Report submitted by the Navy in July 1996. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA did not approve the recommendation given in this report, commenting that the groundwater investigation was inadequate. Instead, they requested the Navy to install three new wells and take groundwater samples from these wells. The Navy responded to these comments in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and questions on SWMU 10 that the EPA expressed on the draft RFI report. On February 28, 1997, the Navy submitted Final RFI Work Plans Addendum 2, which incorporated additional work at SWMU 10. On April 25, 1997, the EPA submitted a response to the Navy's Draft RFI Report Addendum and Final RFI Work Plans Addendum 2 submittals. The EPA had additional comments and questions dealing with SWMU 10 in this document. On June 12, 1997, the Navy submitted both the

response to EPA comment letter dated April 25, 1997, as well as the Final RFI Work Plans Addendum 2 Revised, to address EPA comments on the upcoming fieldwork. On July 15, 1997, the EPA submitted a response to the navy's Final RFI Work Plan Addendum 2 Work Plan as submitted. In September of 1997, a field investigation was conducted in which three groundwater samples were collected. On May 6, 1998, the Navy submitted a Draft RFI Report for Additional Investigations at OU 1, 6, and 7. This report presented additional information and data that was obtained at SWMU 10 at the request of the EPA in their November 8, 1996 comment letter. The EPA did not concur or refute the recommendation given by the Navy in the Draft RFI Report for Additional Investigations at OU 1, 6, and 7. Therefore, a No Further Action Recommendation (NFAR) has been prepared for SWMU 10, and was included as part of the renewal application for the RCRA Part B Permit.

### **SWMU 12**

A Phase I RFI field investigation was performed in September 1995 and March of 1996 at this SWMU. The results from this investigation at SWMU 12 were reported in the Draft RFI Report submitted by the Navy in July 1996. This report contained the recommendation from the Navy that no further action is needed at this site. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA recommended that the Navy address page-specific comments that were included in the EPA comment letter by A.T. Kearney, Inc. The Navy responded to these comments in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and questions on SWMU 12 that the EPA expressed on the Draft RFI Report. Since the EPA did not present comments on the Navy's information and data from SWMU 12, this same information and data was included in the Draft RFI Report Revised Addendum (August 29, 1997). The EPA has not approved or disapproved the recommendation of No Further Action in the July 1996 Draft RFI or subsequent documents with respect to SWMU 12. Therefore, a NFAR has been prepared for SWMU 12, and was included as part of the renewal application for the RCRA Part B Permit.

### **SWMU 13**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results from this investigation at SWMU 13 were reported in the Draft RFI Report submitted by the Navy in July 1996. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA concurred with the SWMU 13

recommendation the Navy presented in this report. This recommendation consisted of additional investigations be implemented at this SWMU. The Navy responded to these comments in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and questions on SWMU 13 that the EPA expressed on the draft RFI report. On February 28, 1997, the Navy submitted Final RFI Work Plans Addendum 2, which incorporated additional work at SWMU 13. On April 25, 1997, the EPA submitted a response to the Navy's Draft RFI Report Addendum and the Final RFI Work Plans Addendum 2 submittals. The EPA had additional comments and questions dealing with SWMU 13 in this document. On June 12, 1997, the Navy submitted the Final RFI Work Plans Addendum 2 Revised, to address EPA comments on the upcoming fieldwork. On July 15, 1997, the EPA submitted a response to the Navy's Final RFI Work Plan Addendum 2 revised submittal. The EPA approved the revised Addendum 2 Work Plan as submitted. In September of 1997, a field investigation was conducted in which surface soil, sediment, and groundwater were collected. On May 6, 1998, the Navy submitted a Draft RFI Report for Additional Investigations at OU 1, 6, and 7. This report presented additional information and data that was obtained at SWMU 13 at the request of the EPA in their November 8, 1996 comment letter. The EPA commented on this report on September 15, 1998, stating that they approved the Navy's recommendation that a CMS be performed for the ditch sediments associated with SWMU 13 and the combined SWMU 46/AOC C area. Their comments constituted the notification that a CMS was required at this SWMU, and that CMS work plans would need to be submitted to the EPA within 60 days. The Navy responded to the EPA's comment letter on November 24, 1998, including the CMS outline for SWMU 13. A CMS Final Report was approved by the EPA and this SWMU is currently in the CMI stage.

#### **SWMU 14**

A Phase I RFI field investigation was performed in March 1996 at this SWMU. The results from this investigation at SWMU 14 were reported in the Draft RFI Report submitted by the Navy in July 1996. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA recommended that the Navy address page-specific comments that were included in the EPA comment letter by A.T. Kearney, Inc. The Navy responded to these comments in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and questions on SWMU 14 that the EPA expressed on the Draft RFI Report. Since the EPA did not have any comments regarding SWMU 14, the same information and data were included in the Draft RFI Report

Revised Addendum. However, during internal review the Navy became aware of inadvertent omissions with regard to the analytical data for SWMU 14 in the Draft RFI Report submitted by the Navy in July 1996. The Navy notified the EPA in a letter on January 28, 2000 of the omissions and requested the EPA to review the Human Health Risk Assessment (HHRA) and the recommendation for no further action that was submitted February 4, 2000. The EPA commented on this report on July 5, 2000, stating that they did not fully approve the HHRA and the recommendation that no further action is required for this SWMU. The Navy responded to the EPA's comment letter on August 22, 2000, recommending not to continue with the RFI until the operations at the Fire Training Pit cease. This is plausible since the site in its current condition is not posing a risk to current receptors. A conference call was conducted on October 10, 2000, agreeing to postpone the RFI and develop an Interim Decision Document. This was agreed upon by the EPA and Naval Facilities Engineering Command, Atlantic Division (LANTDIV). The Draft Interim Decision Document for SWMU 14 was submitted to the EPA on November 22, 2000. This Interim Decision Document contains the interim decision of this SWMU at the present time. The document also discusses the history of SWMU 14 through the RFI stage, along with the corresponding risk assessments. The site does not place potential receptors in a compromising situation, as indicated by the HHRA not identifying risks to the current commercial/utility worker in excess of the EPA acceptable range of  $10^{(-4)}$  to  $10^{(-6)}$ . The concrete aprons are acting currently as engineering controls, preventing access to the subsurface soil. Upon completion of the SWMU's lifecycle, the Navy will then continue with the appropriate RFI process.

### **SWMU 23**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results from this investigation at SWMU 23 were reported in the Draft RFI Report submitted by the Navy in July 1996. The EPA did not concur or refute the recommendation of No Further Action along with a recommendation that some type of splash guard be installed on the southeast side of the containment pad area to prevent minor releases of petroleum products. Therefore, a NFAR has been prepared for SWMU 23, and was included as part of the renewal application for the RCRA Part B Permit.

#### **SWMU 24**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results from this investigation at SWMU 24 were reported in the Draft RFI Report submitted by the Navy in July 1996. The EPA did not concur or refute the recommendation of No Further Action given by the Navy in the abovementioned report. Therefore, a NFAR has been prepared for SWMU 24, and was included as part of the renewal application for the RCRA Part B Permit.

#### **SWMU 25**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results from this investigation at SWMU 25 were reported in the Draft RFI Report submitted by the Navy in July 1996. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA did mention that the calculations performed in the risk assessment for on-site workers found no excessive risk. They also mentioned that no HHRA was performed for possible future residential exposure. However, the EPA stated that due to the association of SWMU 25 with the base's two permitted Hazardous Waste Container Storage Areas (HWCSAs), if necessary in the future, clean-up of this SWMU to residential requirements could be tied to closure of the two HWCSAs. The Navy responded to these comments in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and questions on SWMU 25 that the EPA expressed on the Draft RFI Report. Due to the EPA not presenting comments on the Navy's information and data from SWMU 25, this same information and data were included in the Draft RFI Report Revised Addendum. Further action at the Defense Reutilization and Marketing Office (DRMO) yard has been deferred until the permitted unit is closed.

#### **SWMU 26**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results from this investigation at SWMU 26 were reported in the Draft RFI Report submitted by the Navy in July 1996. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA did not approve the recommendation given in the 1996 Draft RFI Report, instead they requested that a full RFI be performed to fully characterize surface and subsurface soils at this site. A full HHRA would then have to be performed upon completion of the site characterization. The Navy responded to these comments

in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and questions on SWMU 26 that the EPA expressed on the Draft RFI Report. On February 28, 1997, the Navy submitted Final RFI Work Plans Addendum 2, which incorporated additional work at SWMU 26. On April 25, 1997, the EPA submitted a response to the Navy's Draft RFI Report Addendum and Final RFI Work Plans Addendum 2 submittals. The EPA had additional comments and questions dealing with SWMU 26 in this document. On June 12, 1997, the Navy submitted the Final RFI Work Plans Addendum 2 Revised, to address EPA comments on the upcoming fieldwork. On July 15, 1997, the EPA submitted a response to the Navy's Final RFI Work Plans Addendum 2 Revised submittal. The EPA approved the Final RFI Work Plan Addendum 2 Revised as submitted. In September of 1997, a field investigation was conducted in which surface soil, sediment, and groundwater were collected. On May 6, 1998, the Navy submitted a Draft RFI Report for Additional Investigations at OU 1, 6, and 7. This report presented additional information and data that was obtained at SWMU 26 at the request of the EPA in their November 8, 1996 comment letter. The EPA commented on this report on September 15, 1998, stating that the risk assessment must be revised to address their specific comments. The Navy responded to the EPA's comment letter on November 24, 1998, stating that a final disposition of the comments contained herein regarding background will be deferred until such time as the OU 3/5 situation is resolved. On February 12, 1999, the EPA commented on the Navy's response to their comment letter, stating that this topic will be revisited once the OU 3/5 RFI report has been reviewed and commented upon. On May 3, 1999, the Navy submitted a response to the EPA's comment, which included as part of the response, a revised risk assessment for SWMU 26. The EPA commented on the revised risk assessment for SWMU 26 in October 1999. After reviewing this risk assessment, the EPA approved the NFAR for this SWMU, and stated the RFI is now complete. Therefore, a NFAR has been prepared for SWMU 26, and was included as part of the renewal application for the RCRA Part B Permit.

### **SWMU 30**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results from this investigation at SWMU 30 were reported in the Draft RFI Report submitted by the Navy in July 1996. The EPA did not approve the conclusions and recommendation given in the July Draft RFI Report for OUs 1, 6 and 7 of no further action for SWMU 30. The EPA's original comments in the November 8, 1996 letter did not address the conclusions and recommendations for this SWMU by an inadvertent omission. The EPA does not concur with the Navy's

determination that the contamination at SWMU 30 as presently characterized poses no unacceptable threat to human health and the environment, as was presented in the November 14, 1997 comment letter. They stated that the human health and/or the environmental risk evaluations did not consider all contamination known at the site, nor has the site been sufficiently characterized for certain detected contaminants to make such determinations. A program of additional samples would be required to further characterize this SWMU. The Navy submitted on December 24, 1997, a response to the November 14, 1997 EPA comment letter addressing EPA's questions and concerns, as well as included the Work Plan for Additional Site Characterization for SWMU 30. On February 11, 1998, the EPA approved the Navy's responses to their comment letter dated November 14, 1997. The EPA also approved the Work plan for additional characterization at SWMU 30 transmitted with the Navy's letter of December 24, 1997. The Navy submitted on May 6, 1998, a response to the EPA comment letter which addressed additional comments and concerns the EPA mentioned in their previous letter. In June of 1999, a RFI field investigation was conducted in which surface and subsurface soil samples were collected. On December 10, 1999, the Navy submitted a Draft RFI Report for SWMU 30. On January 20, 2000, the EPA submitted a response to this report stating that they are prepared to give approval of the NFAR presented in the Draft RFI Report for SWMU 30. This approval is contingent upon groundwater underlying or downgradient of the SWMU not being used in the future as a drinking water source. They also stated that the approval is tentative, pending completion of public comment of this decision. The EPA also mentioned that based on this contingent approval of the NFAR status for SWMU 30, the RFI is now completed. On February 15, 2000, the Navy submitted the response to EPA's comments of January 20, 2000, as well as the Final Phase II RFI Report for SWMU 30. Currently, a NFAR has been prepared for SWMU 30, and was included as part of the renewal application for the RCRA Part B Permit.

### **SWMUs 31 and 32**

A Phase I RFI field investigation was performed in October 1995 at these SWMUs. The results from this investigation at SWMUs 31 and 32 were reported in the Draft RFI Report submitted by the Navy in July 1996. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA did not approve the recommendation given in the 1996 Draft RFI Report, instead they requested that the risk assessment for these two SWMUs be revised to incorporate future residential usage as well as the further evaluation of dioxin concentrations. The Navy responded to these comments in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and

questions on SWMU 31 and 32 that the EPA expressed on the draft RFI report. After the risk assessment was revised using the updated dioxin numbers, the Navy recommended additional surface soil samples be collected for dioxin. On February 29, 1997, the Navy submitted Final RFI Work Plans Addendum 2, which incorporated additional work as SWMU 31 and 32. On April 25, 1997, the EPA submitted a response to the Navy's Draft RFI Addendum and Final RFI Work Plans Addendum 2 submittals. However, the EPA did not provide any additional comments on SWMUs 31 and 32 for either document, except to say that dioxins were included as Chemical of Potential Concern (COPC) for SWMU 31 as requested. On June 12, 1997, the Navy submitted the Final RFI Work Plans Addendum 2 Revised. A Phase II field investigation was performed in September 1997 in which additional surface soil samples were collected. On May 6, 1998, the Navy submitted a Draft RFI Report for Additional Investigations at OU 1, 6, and 7. This report presented additional information and data that was obtained at SWMUs 31 and 32 at the recommendation of the Navy in their January 1997 report addendum. The EPA commented on this report on September 15, 1998, stating that they cannot approve the NFAR for SWMUs 31 and 32 due to unacceptable potential human health risks indicated for current on-site workers. Their letter was EPA's notification that a CMS is required for the dioxin contaminated soils associated with SWMUs 31 and 32. A corresponding CMS work plan would need to be submitted by the Navy within 60 days. The Navy responded to the EPA's comment letter on November 24, 1998, including the CMS outline for SWMUs 31 and 32. The areas comprising SWMUs 31 and 32 have proceeded through the CMS stage, and are now in the CMI stage.

### **SWMU 37**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results of this investigation at SWMU 37 were reported in the Draft RFI Report submitted by the Navy in July 1996. This report recommended in the Draft RFI that further site characterization at this SWMU was not necessary based on the low level of constituents detected. It was also recommended that containment dikes should be placed on the pavement in the area southeast of the covered storage area. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA recommended that the Navy address page-specific comments that were included in the EPA comment letter by A.T. Kearney, Inc. The Navy responded to these comments in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and questions on SWMU 37 that the EPA expressed on the draft RFI report. The EPA did not provide any comments on SWMU 37 after the Draft RFI Report Addendum. Therefore, a NFAR has been

prepared for SWMU 37, and was included as part of the renewal application for the RCRA Part B Permit.

### **SWMU 39**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results of this investigation at SWMU 39 were reported in the Draft RFI Report submitted by the Navy in July 1996. The EPA did not concur or refute the recommendation that no further site characterization or corrective measure evaluation efforts are required at this unit given by the Navy in the abovementioned report. Therefore, a NFAR has been prepared for SWMU 39, and was included as part of the renewal application for the RCRA Part B Permit.

### **SWMU 46**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results from this investigation at SWMU 46 were reported in the Draft RFI Report submitted by the Navy in July 1996. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA did not approve the recommendation that no unacceptable risk is posed by the site since the site is not amenable to development as a residential area. Instead, they requested that a full RFI be performed along with a full HHRA at this SWMU. The Navy responded to these comments in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and questions on SWMU 46 that the EPA expressed on the Draft RFI Report. On February 28, 1997, the Navy submitted Final RFI Work Plans Addendum 2, which incorporated additional work at SWMU 46. On April 25, 1997, the EPA submitted a response to the Navy's Draft RFI Addendum and Final RFI Work Plans Addendum 2 submittals. The EPA recommended the Navy include soil sample collection immediately north, east, and west of the area formerly designated "Contaminated Soil Area". On June 12, 1997, the Navy submitted the response to EPA comment letter dated April 25, 1997, as well as the Final RFI Work Plans Addendum 2 Revised, to address EPA comments on the upcoming fieldwork. On July 15, 1997, the EPA submitted a response to the Navy's Final RFI Work Plans Addendum 2 Revised submittal. The EPA approved the Final RFI Work Plans Addendum 2 Revised as submitted. Due to the EPA not presenting comments on the Draft RFI Addendum for OU 1, 6, and 7 for SWMU 46, this same information and data were included in the Draft RFI Report Revised Addendum submitted August 29, 1997. In September of 1997, eighteen surface soil and thirteen subsurface soil samples were collected for

the second phase of the investigations. On May 6, 1998, the Navy submitted a Draft RFI Report for Additional Investigations at OU 1, 6, and 7. This report presented additional information and data that was obtained at SWMU 46 at the request of the EPA in their November 8, 1996 comment letter. The EPA commented on this report on September 15, 1998, stating that they approved the Navy's recommendation that a CMS be performed for the ditch sediments associated with SWMU 13 and the combined SWMU 46/AOC C area. Their comments constituted the notification that a CMS was required at this SWMU, and that CMS work plans would need to be submitted to the EPA within 60 days. The Navy responded to the EPA's comment letter on November 24, 1998, including the CMS outline for SWMU 46. The area designated as SWMU 46 has proceeded through the CMS stage, and is now in the CMI stage.

### **SWMU 51**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results from this investigation at SWMU 51 were reported in the Draft RFI Report submitted by the Navy in July 1996. The EPA did not concur or refute the recommendation of no further site characterization or corrective measures given by the Navy in the Draft RFI report. Therefore, a NFAR has been prepared for SWMU 51, and was included as part of the renewal application for the RCRA Part B Permit.

### **AOC C**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results from this investigation at AOC C were reported in the Draft RFI Report submitted by the Navy in July 1996. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA did not approve the recommendation given in the 1996 Draft RFI Report, instead they requested that a full RFI be performed at this AOC. The Navy responded to these comments in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and questions on AOC C that the EPA expressed on the draft RFI report. On February 28, 1997, the Navy submitted Final RFI Work Plans Addendum 2, which incorporated additional work at AOC C. On April 25, 1997, the EPA submitted a response to the Navy's Draft RFI Addendum and Final RFI Work Plans Addendum 2 submittals. The EPA recommended the Navy update Figure 2-4, as well as analyze all sediment samples for total organic carbon (toc). On June 12, 1997, the Navy submitted the response to EPA comment letter dated April 25, 1997, as well as the Final RFI Work Plans

Addendum 2 Revised to address EPA comments on the upcoming fieldwork. On July 15, 1997, the EPA submitted a response to the Navy's Final RFI Work Plans Addendum 2 Revised submittal. The EPA approved the Final RFI Work Plans Addendum 2 Revised as submitted. Due to the EPA not presenting comments on the Draft RFI Addendum for OU 1, 6, and 7 for AOC C, this same information and data were included in the Draft RFI Report Revised Addendum submitted August 29, 1997. Additional investigations were required by the EPA so a Phase II RFI field investigation was performed in September of 1997, in which 26 surface soil and 14 subsurface soil samples were collected. On May 6, 1998, the Navy submitted a Draft RFI Report for Additional Investigations at OU 1, 6, and 7. The EPA commented on this report on September 15, 1998, stating that they approved the Navy's recommendation that a CMS be performed for the ditch sediments associated with SWMU 13 and the combined SWMU 46/AOC C area. Their comments constituted the notification that a CMS was required at this AOC, and that CMS work plans would need to be submitted to the EPA within 60 days. The Navy responded to the EPA's comment letter on November 24, 1998, including the CMS outline for AOC C. Currently, the area of AOC C has proceeded through the CMS stage, and is now in the CMI stage.

#### **AOC D**

A Phase I RFI field investigation was performed in October 1995 at this SWMU. The results from this investigation at AOC D were reported in the Draft RFI Report submitted by the Navy in July 1996. On November 8, 1996, the EPA commented on the information and data presented in the Draft 1996 RFI Report. The EPA approved the recommendations given in the 1996 Draft RFI Report for AOC D, that additional investigations be performed in the AOC D area. The Navy responded to these comments in a Draft RFI Report Addendum for OU 1, 6, and 7 on January 20, 1997. The purpose of this document was to respond to comments and questions on AOC D that the EPA expressed on the Draft RFI Report. On April 25, 1997, the EPA submitted a response to the Navy's Draft RFI Report Addendum. The EPA stated that the Navy neglected to include in the RFI Report Addendum, the work plan for additional investigations at AOC D. Therefore, the Navy's response to comments does not adequately address their comment. On June 12, 1997, the Navy submitted responses to EPA comment letter dated April 25, 1997. The Navy requested that additional sediment sampling be delayed until the completion of the OU 3/5 RFI Report. The Navy stated that they intend to follow this course of action unless there are objections. The EPA did not comment on the Navy's June 12, 1997 response to their comment letter dated April 25, 1997. A Phase II field investigation was performed in which 2 sediment

samples were collected in September, 1997. On May 6, 1998, the Navy submitted a Draft RFI Report for Additional Investigations at OU 1, 6, and 7. This report presented additional information and data that was obtained at AOC D at the request of the EPA in their November 8, 1996 comment letter. The EPA commented on this report on September 15, 1998, stating that they did not accept the Navy's NFAR for this AOC. They stated that the Navy must revise the risk assessment, as well as summarize the risks presented in the report to verify information in the conclusion section. The Navy responded to the EPA's comment letter on November 24, 1998, including as part of their response to the comment letter, a revised risk assessment for AOC D. The Navy also made mention that they recommend removing sediment samples from SWMU 2 and SWMU 11/45 from the data set for AOC D. The EPA approved this recommendation in the February 12, 1999 letter, provided that the sediments that adjoin SWMU 2 are addressed as part of the CMS for that SWMU, and the contaminated sediments adjoining the old power plant cooling water tunnel in Puerca bay are addressed as part of the SWMU 45 CMS. The EPA commented on the revised risk assessment for AOC D on February 12, 1999. After reviewing this risk assessment, the EPA approved the determination that there are no unacceptable human health risks from AOC D. This determination was based on the removal of SWMU 2 and SWMU 11/45 sediment samples from AOC D. On May 3, 1999, the Navy responded to EPA's comment letter stating that the EPA agreed with the removal of SWMU 2 and SWMU 11/45 sediments from AOC D. Currently, a NFAR has been prepared for AOC D, and was included as part of the renewal application for the RCRA Part B Permit.

TABLE 1

STATUS OF OU 1, 6 AND 7 RFI SWMUs/AOCs  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Operable Unit	SWMU/AOC	Field Investigation (9/95)	Field Investigation (10/95)	Field Investigation (3/96)	Draft RFI Report for OU 1, 6, 7 (7/96)	EPA Comments <sup>(1)</sup> (11/8/96)	EPA requested Action (11/8/96)	Draft RFI Report Addendum for OU 1, 6, 7 <sup>(2)</sup> (1/20/97)	Final RFI Work Plans Addendum 2 <sup>(2)</sup> (2/28/97)	EPA Comments (4/25/97)	Navy Response to Comments <sup>(4)</sup> (6/12/97)
1	6			X	X	X	Further investigation required	X		X <sup>(3)</sup>	X
	10		X		X	X	Further investigation required	X	X	X <sup>(3, 3a)</sup>	X
	12	X	X	X	X	X	Revise 1996 RFI to address specific comments	X			
	13		X		X	X	Further investigation required	X	X	X <sup>(3, 3a)</sup>	X
	14			X	X	X	Revise 1996 RFI to address specific comments	X			
	23		X		X		EPA did not concur or refute recommendation				
	24		X		X		EPA did not concur or refute recommendation				
	25		X		X	X	Further action at the DRMO yard has been deferred until permitted unit is closed	X			
	26		X		X	X	Further investigation required	X	X	X <sup>(3, 3a)</sup>	
	30		X		X	X	No action requested				
	31		X		X	X	Revise Risk Assessment	X	X	X <sup>(3, 3a)</sup>	
	32		X		X	X	Revise Risk Assessment	X	X		
	37		X		X	X	Revise 1996 RFI to address specific comments	X			
	39		X		X	X	EPA did not concur or refute recommendation				
	46		X		X	X	Further investigation required	X	X	X <sup>(3, 3a)</sup>	X
51		X		X	X	EPA did not concur or refute recommendation					
AOC C		X		X	X	Further investigation required	X	X			X
6	AOC B		X		X	X	Further investigation required	X		X <sup>(3)</sup>	X
7	AOC D		X		X	X	Further investigation required	X		X <sup>(3)</sup>	X

Note: <sup>(1)</sup> - EPA comments on the July 1996 Draft RFI Report for OU 1, 6, and 7.  
<sup>(2)</sup> - Navy response to EPA Comment Letter dated 11/8/96.  
<sup>(3)</sup> - EPA comments on the Draft RFI Report Addendum for OU 1, 6, and 7.  
<sup>(3a)</sup> - EPA comments on the Final RFI Work Plans Addendum 2.  
<sup>(4)</sup> - Navy response to EPA Comment Letter dated 4/25/97.  
<sup>(5)</sup> - EPA comments on the Final RFI Work Plans Addendum 2 Revised.  
<sup>(6)</sup> - Navy response to the informal EPA Comment Letter dated 8/7/97.  
<sup>(7)</sup> - Navy response to EPA Comment Letter dated 11/14/97.  
<sup>(8)</sup> - EPA comments on the Navy's response of 12/24/97 to EPA's 11/14/97 Comment Letter on OU 1, 6, and 7 RFI Report.  
<sup>(9)</sup> - Navy response to EPA Comment Letter dated 2/11/98.  
<sup>(10)</sup> - EPA comments on the Draft RFI Report for Additional Investigations at OU 1, 6, and 7.  
<sup>(11)</sup> - Navy response to EPA Comment Letter dated 9/15/98.  
<sup>(12)</sup> - EPA comments on the Navy's 11/24/98 response to EPA's 9/15/98 comment letter.  
<sup>(13)</sup> - Navy response to EPA Comment Letter dated 2/12/99.

<sup>(14)</sup> - EPA comments on the Navy's 5/3/98 response containing the Revised Risk Assessment for SWMU 26.  
<sup>(15)</sup> - EPA comments on the Navy's 11/24/98 response containing the Revised Risk Assessment for SWMU 6/AOC B.  
<sup>(16)</sup> - Navy response to EPA Comment Letter dated 11/14/97.  
<sup>(17)</sup> - EPA comments on the Draft RFI Report for SWMU 30.  
<sup>(18)</sup> - Navy response to an internal review performed on the Draft RFI Report for OU 1, 6, and 7. An omission was identified in regard to the analysis of SWMU 14.  
<sup>(19)</sup> - Navy response to EPA Comment Letter dated 1/20/00.  
<sup>(20)</sup> - EPA comments on the Draft Human Health Risk Assessment for SWMU 14.  
<sup>(21)</sup> - Navy response to EPA Comment Letter dated 7/5/00.  
<sup>(22)</sup> - Per EPA Comment Letter dated 11/5/99.  
<sup>(23)</sup> - Per EPA Comment Letter dated 10/99.  
<sup>(24)</sup> - Contingent on groundwater underlying or downgradient of the SWMU not being used in the future as a drinking water source, per EPA Comment Letter dated 1/20/00.  
<sup>(25)</sup> - Agreed to during conference call held on 10/10/00.

TABLE 1

STATUS OF OU 1, 6 AND 7 RFI SWMUs/AOCs  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Operable Unit	SWMU/AOC	Final RFI Work Plans Addendum 2 Revised <sup>(4)</sup> (6/12/97)	EPA Comments <sup>(5)</sup> (7/15/97)	EPA Comments <sup>(3)</sup> (8/7/97)	Draft RFI Report Revised Addendum for OU 1, 6, 7 <sup>(6)</sup> (8/29/97)	Field Investigation <sup>(9/97)</sup>	EPA Comments <sup>(11/14/97)</sup>	Navy Response to Comments <sup>(7)</sup> (12/24/97)	EPA Comments <sup>(8)</sup> (2/11/98)	Navy Response to Comments <sup>(9)</sup> (5/6/98)	Draft RFI for Additional Investigations at OU 1, 6, 7 (5/6/98)	EPA Comments <sup>(10)</sup> (9/15/98)
1	6			X	X	X					X	X
	10	X	X			X					X	
	12				X							
	13	X	X			X					X	X
	14											
	23											
	24											
	25											
	26	X	X			X					X	X
	30						X <sup>(1)</sup>	X	X	X		
	31	X	X			X					X	X
	32	X	X			X					X	X
	37											
	39											
46	X	X				X				X	X	
51												
AOC C	X	X				X				X	X	
6	AOC B			X	X	X					X	X
7	AOC D					X					X	X

Note: <sup>(1)</sup> - EPA comments on the July 1996 Draft RFI Report for OU 1, 6, and 7.  
<sup>(2)</sup> - Navy response to EPA Comment Letter dated 11/8/96.  
<sup>(3)</sup> - EPA comments on the Draft RFI Report Addendum for OU 1, 6, and 7.  
<sup>(3a)</sup> - EPA comments on the Final RFI Work Plans Addendum 2.  
<sup>(4)</sup> - Navy response to EPA Comment Letter dated 4/25/97.  
<sup>(5)</sup> - EPA comments on the Final RFI Work Plans Addendum 2 Revised.  
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<sup>(8)</sup> - EPA comments on the Navy's response of 12/24/97 to EPA's 11/14/97 Comment Letter on OU 1, 6, and 7 RFI Report.  
<sup>(9)</sup> - Navy response to EPA Comment Letter dated 2/11/98.  
<sup>(10)</sup> - EPA comments on the Draft RFI Report for Additional Investigations at OU 1, 6, and 7.  
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<sup>(14)</sup> - EPA comments on the Navy's 5/3/98 response containing the Revised Risk Assessment for SWMU 26.  
<sup>(15)</sup> - EPA comments on the Navy's 11/24/98 response containing the Revised Risk Assessment for SWMU 6/AOC B.  
<sup>(16)</sup> - Navy response to EPA Comment Letter dated 11/14/97.  
<sup>(17)</sup> - EPA comments on the Draft RFI Report for SWMU 30.  
<sup>(18)</sup> - Navy response to an internal review performed on the Draft RFI Report for OU 1, 6, and 7. An omission was identified in regard to the analysis of SWMU 14.  
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<sup>(21)</sup> - Navy response to EPA Comment Letter dated 7/5/00.  
<sup>(22)</sup> - Per EPA Comment Letter dated 11/5/99.  
<sup>(23)</sup> - Per EPA Comment Letter dated 10/99.  
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**STATUS OF OU 1, 6 AND 7 RFI SWMUs/AOCs  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

Operable Unit	SWMU/AOC	EPA Requested Action (9/15/98)	Navy Response to Comments <sup>(11)</sup> (11/24/98)	EPA Comments <sup>(12)</sup> (2/12/99)	Navy Response to Comments <sup>(13)</sup> (5/3/99)	Field Investigation (6/99)	EPA Comments <sup>(14)</sup> (10/99)	EPA Comments <sup>(15)</sup> (11/5/99)	Draft RFI Report for SWMU 30 <sup>(16)</sup> (12/10/99)
1	6	Revise Risk Assessment	X					X	
	10	EPA did not concur or refute recommendation							
	12								
	13	Submit CMS Work Plans	X						
	14								
	23								
	24								
	25								
	26	Revise Risk Assessment	X	X	X		X		
	30					X			X
	31	Submit CMS Work Plans	X						
	32	Submit CMS Work Plans	X						
	37								
	39								
	46	Submit CMS Work Plans	X						
	51								
	AOC C	Submit CMS Work Plans	X						
6	AOC B	Revise Risk Assessment	X					X	
7	AOC D	Revise Risk Assessment	X	X	X				

- Note:
- <sup>(1)</sup> - EPA comments on the July 1996 Draft RFI Report for OU 1, 6, and 7.
  - <sup>(2)</sup> - Navy response to EPA Comment Letter dated 11/8/96.
  - <sup>(3)</sup> - EPA comments on the Draft RFI Report Addendum for OU 1, 6, and 7.
  - <sup>(3a)</sup> - EPA comments on the Final RFI Work Plans Addendum 2.
  - <sup>(4)</sup> - Navy response to EPA Comment Letter dated 4/25/97.
  - <sup>(5)</sup> - EPA comments on the Final RFI Work Plans Addendum 2 Revised.
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NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Operable Unit	SWMU/AOC	EPA Comments <sup>(17)</sup> (1/20/00)	Navy Response to Internal Review <sup>(18)</sup> (1/28/00)	Human Health Risk Assessment (2/4/00)	Navy Response to Comments <sup>(19)</sup> (2/15/00)	Final Phase II RFI for SWMU 30 <sup>(19)</sup> (2/15/00)	EPA Comments <sup>(20)</sup> (7/5/00)	Navy Response to Comments <sup>(21)</sup> (8/22/00)	EPA Approval of No Further Action	RFI Complete	Interim Decision Document <sup>(25)</sup>	CMS	CMI	NFA's in Permit Renewal Application	
1	6									X <sup>(22)</sup>		X			
	10													X	
	12													X	
	13											X	X		
	14		X	X			X	X			X				
	23													X	
	24													X	
	25														
	26								X <sup>(23)</sup>	X <sup>(23)</sup>					X
	30	X				X	X		X <sup>(24)</sup>	X <sup>(24)</sup>					X
	31											X	X		
	32											X	X		
	37													X	
	39													X	
	46											X	X		
51														X	
	AOC C											X	X		
6	AOC B									X <sup>(22)</sup>		X			
7	AOC D													X	

Note:

<sup>(1)</sup> - EPA comments on the July 1996 Draft RFI Report for OU 1, 6, and 7.

<sup>(2)</sup> - Navy response to EPA Comment Letter dated 11/8/96.

<sup>(3)</sup> - EPA comments on the Draft RFI Report Addendum for OU 1, 6, and 7.

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