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PROGRESS REPORTS FOR 1997 CNC CHARLESTON SC
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PROGRESS REPORTS
1997

SCAN
RFI Progress Reports
1995-1999
(Administrative Record)

PROGRESS REPORTS
1997

**NAVBASE CHARLESTON
RFI STATUS REPORT
PERIOD: SUMMARY OF
01 January 1997 To 31 January 1997**

I. INTRODUCTION

The following status report has been prepared to satisfy condition II.E.3.a of the Part B Permit Renewal dated 5 December 1994 for Naval Base Charleston (NAVBASE). The requirements of this condition are in effect since the total elapsed time to complete the RCRA Facility Investigation (RFI) is projected to be greater than 180 calendar days from the approval date of the *Final Comprehensive RFI Work Plan* as indicated in the Corrective Action Management Plan (CAMP).

In lieu of submitting quarterly reports, NAVBASE is voluntarily submitting monthly reports to provide an update on the progress of the RFI to members of the NAVBASE BRAC Cleanup Team (BCT) in a more timely manner. The content of the monthly reports includes information intended to satisfy condition II.E.3.a of the Part B Permit. Consequently, this report only addresses activities which occurred during the month of January 1997.

II. PORTION OF THE RFI COMPLETED

- The *Draft Comprehensive Corrective Measures Study Work Plan* was submitted to the Project Team on 31 January 97 for review and comment.
- In Zone A the RFI at SWMU 39 was tentatively completed with the installation of six additional monitoring wells and collection of sediment/surface water samples from the marsh area southwest of the site. Soil sampling was completed at SWMU 2.
- The regulatory agencies approved the Zone B RFI report on 8 January 97. Final distribution of the document was completed 31 January 97.
- An additional 54 monitoring wells were installed in Zone G at the fuel farm. The new wells were sampled and field work tentatively considered complete.
- The 60% progress meeting for Zone K was held in conjunction with the January Project Team meeting.
- Distribution of the *Final Zone J and L RFI Work Plans* was completed.
- The schedule of the groundwater monitoring activities is included as Attachment A.

III. SUMMARIES OF FINDINGS

The latest summary of findings for the NAVBASE RFI were presented during the January Project Team meeting as the Zone K 60% progress report. The information provided to the team members during that presentation has not been duplicated here but is available upon request.

IV. DEVIATIONS FROM APPROVED WORK PLANS THIS REPORTING PERIOD

There were no known deviations from the approved RFI Work Plans for this reporting period.

V. SUMMARY OF CONTACTS WITH LOCAL COMMUNITY PUBLIC INTEREST GROUPS OR STATE GOVERNMENT

As indicated in the January 1995 Quarterly Status Report, the Navy has established a Restoration Advisory Board (RAB) to involve the public in the decisions regarding the investigation and remediation of contaminated sites at Naval Base Charleston. The meetings are held monthly and are open to the public. The minutes of the January 1996 meeting are provided as Attachment B.

VI. SUMMARY OF PROBLEMS OR POTENTIAL PROBLEMS AND ACTION TAKEN TO RECTIFY PROBLEMS

There were no problems or potential problems identified during this reporting period.

VII. KEY PROJECT PERSONNEL

The status report for March 1996 reflected numerous changes in key Navy personnel for the NAVBASE Charleston RFI resulting from the closure of Charleston Naval Shipyard. No additional changes occurred during the current reporting period.

VIII. PROJECTED WORK FOR THE NEXT REPORTING PERIOD

Document Preparation and Data Evaluation:

- The CMS scoping meetings for Zones B and H are scheduled to be held in conjunction with the February Project Team meeting.
- The presubmittal review of the *Draft Zone D RFI Report* is scheduled for the February Project Team meeting.
- The 90% progress meeting for Zone K will be held in conjunction with the February project team meeting.
- The 90% progress meetings for Zones F and G are scheduled in conjunction with the February Project Team meeting.
- Minor revisions to the *Final Zone H RFI Report* to satisfy SCDHEC data presentation concerns are anticipated.

Field Activities:

- Sampling of the six new wells at SWMU 39 will be performed the week of 10 February 97.
- RFI field work will begin in Zones J and L upon award of funding.
- The installation of temporary wells on Clouter Island is expected.
- Groundwater monitoring will continue in accordance with the schedule submitted as Attachment A.

IX. COPIES OF DAILY REPORTS, INSPECTION REPORTS, LABORATORY DATA

Daily activities are recorded in accordance with the Data Management Plan included as Section 14 of the Final Comprehensive Sampling and Analysis Plan. Photocopies of these daily records have not been included with this status report; however, this information is available for review upon request.

Per agreement with SCDHEC and EPA, hard copies of the analytical data are not being submitted. A copy of the data is maintained at the EnSafe/Allen & Hoshall office in Charleston and is available for review.

GROUNDWATER MONITORING PROJECT

This project samples groundwater wells segregated in nine (11) zones throughout the Naval Base Complex to analyze for hazardous materials that have leached into the water table. E/A&H is contracted by the Navy to establish the monitoring plan and to monitor all wells quarterly for a total of four quarters. E/A&H typically will accomplish the initial sampling cycle (1st quarter) in each zone and the detachment will perform the remaining follow-up sampling cycles. Currently the detachment has been funded and authorized to complete sampling Zones A,B,C,E,H and I. Funding and authorization for Zones D,F,G,K and L is expected to be awarded to the detachment.

<u>ZONE</u>	<u>SCHED START</u>	<u>SCHED COMP</u>	<u>ESD/[ASD]</u>	<u>ECD/[ACD]</u>	<u>% COMP</u>	<u># WELLS</u>
A (QTR. II)	03/04/96	06/04/96	[04/22/96]	[04/29/96]	100%	26
(QTR. III)	06/04/96	09/04/96	[06/19/96]	[06/26/96]	100%	
(QTR IV)	09/04/96	12/04/96	[10/04/96]	[10/18/96]	100%	
A - ADDENDUM 1						
(QTR I)			[10/10/96]	[10/16/96]	100%	11
(QTR II)	01/17/97	04/16/97	02/18/97	02/20/96	0%	
(QTR III)	04/17/97	07/16/97	04/21/97	04/23/97	0%	
(QTR IV)	07/17/97	10/16/97	07/21/97	07/23/97	0%	
B (QTR. II)	03/04/96	06/04/96	[04/22/96]	[05/02/96]	100%	6
(QTR. III)	06/04/96	09/04/96	[06/19/96]	[06/26/96]	100%	
(QTR IV)	09/04/96	12/04/96	[10/04/96]	[10/18/96]	100%	
C (QTR. III)	03/04/96	06/04/96	[05/06/96]	[05/15/96]	100%	30
(QTR. IV)	06/04/96	09/04/96	[06/07/96]	[06/17/96]	100%	
E (QTR. II)	06/19/96	09/19/96	[07/01/96]	[08/19/96]	100%	175
(QTR. III)	09/19/96	12/19/96	[10/28/96]	[12/17/96]	100%	
(QTR IV)	12/19/96	03/19/97	[01/07/97]	03/06/97	43%	
E - ADDENDUM 1 (Awaiting E/A&H completion of QTR. I & work authorization from NAVFAC)						
(QTR II)						
(QTR III)						
(QTR IV)						
H (QTR IV)	07/10/95	10/10/95	[03/08/96]	[04/17/96]	100%	97
I (QTR. III)	03/04/96	06/04/96	[05/15/96]	[06/05/96]	100%	55
(QTR. IV)	06/04/96	09/04/96	[08/19/96]	[09/13/96]	100%	
K (QTR II)	(Awaiting work authorization from NAVFAC)					8
(QTR III)						
(QTR IV)						

ESD = Estimated Start Date
 ECD = Estimated Completion Date

[ASD]= Actual Start Date
 [ACD]= Actual Completion Date

NAVAL BASE CHARLESTON
RESTORATION ADVISORY BOARD (RAB)
Minutes of 14 January 1997

1. Introduction of the RAB Members and Guests

Ms. Wannetta Mallette introduced herself as the newly elected Community Co-Chair for 1997. She thanked her fellow members for electing her and said she's looking forward to an exciting year for the RAB as the corrective action process moves from the investigative stage into the corrective measures stage. Ms. Mallette noted that there were many new faces in the audience, and asked both the members and guests to introduce themselves. She reminded everyone that the RAB is an oversight group working with the Navy and environmental regulators on the environmental cleanup of the base and that the RAB community members represent the general public.

2. RAB Members Attending

Mr. Oliver Addison
Mr. Ray Anderson
Mr. Steve Best
Mr. Doyle Brittain
Mr. James Conner
Mr. Bobby Dearhart
Mr. Daryle Fontenot
Mr. Tom Fressilli
Mr. Wilburn Gilliard

Ms. Gussie Greene
Mr. Donald Harbert
Mr. Ralph Laney
Ms. Wannetta Mallette
Mr. Arthur Pinckney
Mr. Odell Price
Ms. Ann Ragan
LDCR Paul Rose
Ms. Priscilla Wendt

3. Guests Attending

Mr. Tony Hunt
Mr. Brian Stockmaster
Mr. Gabriel Magwood
Mr. Jay Bassett
Mr. Paul M. Bergstrand
Mr. Rob Dunlap
Ms. June Mirecki
Mr. J.B. Lawrence
Mr. Jack Amey
Mr. John Sulkowski
Ms. Donna Kopeski
Ms. June M. Brittain
Ms. Bertha L. Singleton
Mr. Joseph Johnson
Ms. Myrtle Barnett
Ms. Rosa Lee Benekin
Ms. Pamela Williams

NAVFAC, SouthDiv
NAVFAC, SouthDiv
NAVFAC, SouthDiv
EPA Region 4
SCDHEC
SCDNR
College of Charleston
CEERD
Shipyard Detachment
E.T.C., Inc.
Galileo
Concerned Citizen
Community Member
Community Member
Community Member
Community Member

Mr. Leroy Carr	Chicora/Cherokee
Mr. Anthony Joyner	Chicora/Cherokee
Mr. Ken Ayoub	Chicora/Cherokee
Ms. Edith Askins	N. Charleston Weed and Seed
Ms. Diane Cutler	EnSafe/Allen&Hoshall
Mr. Dave Backus	EnSafe/Allen&Hoshall
Mr. Larry Bowers	EnSafe/Allen&Hoshall
Ms. Sandy Reagan	EnSafe/Allen&Hoshall
Mr. Ron Severson	EnSafe/Allen&Hoshall

4. Administrative Remarks and Comments on Minutes

Ms. Mallette asked for administrative remarks or comments on the minutes from the last meeting. No comments were made.

5. Subcommittee Reports

The Community Relations Subcommittee was scheduled to meet prior to the RAB meeting. Only Daryle Fontenot and Diane Cutler, the E/A&H resource person were in attendance. Since none of the community members attended, there are no new issues to report. The next meeting is scheduled for February 11, 1997 at 3:30 at Building NH-51 at the Naval Base. The Community Relations Subcommittee consists of 5 members including Mr. Fontenot.

6. Reuse Update

Nobody from the Redevelopment Authority was present to provide an update.

7. Environmental Cleanup Progress Report

Chicora Tank Farm Update

Mr. Fontenot reported that the Navy is currently awaiting feedback from the Redevelopment Authority and the City of North Charleston regarding who will be the user of the Chicora Tank Farm property. The RAB sent a letter to the Mayor stating that they were in favor of the partial demolition of the tanks. At the last meeting, a detailed presentation was given regarding the environmental investigations that have taken place at the Chicora Tank Farm. Anyone interested in obtaining a copy of that material should contact Mr. Fontenot. A discussion of those materials can also be found in last month's meeting minutes. Mr. Bobby Dearhart asked when the decision regarding the user of the tank farm will be made. Mr. Fontenot replied that it is up to the RDA and the City to meet and decide upon. Ms. Mallette added that she had hoped that the Chicora issue would be on the City Council's health and safety agenda for tonight, but it is not, so she does not know when it will be discussed and resolved. Mr. Fontenot also added that the Shipyard Detachment will be responsible for conducting the closure of the tanks.

Status of Environmental Programs

Mr. Fontenot provided an update on project status. Currently there are three Environmental Baseline Survey to Lease (EBSL)/Finding of Suitability to Lease (FOSL) documents at Southern Division that are awaiting Commanding Officer signature. These documents, once signed, release the property for the Redevelopment Authority to lease. One of these documents includes

231 facilities. Once all three of the EBSLs/FOSLs are signed next week, there will be approximately 700 facilities available for reuse by the RDA.

The Naval Annex is currently awaiting a reuse plan from the RDA before the environmental assessment can be completed.

To date, the Navy has removed approximately 70 underground storage tanks at the shipyard and has about 12 more to go.

Building 32 asbestos remediation is in progress, and the Detachment is handling that work as well.

Mr. Fontenot introduced Mr. Tony Hunt with Southern Division to present the RCRA Corrective Action update. For the benefit of the first-time guests in the audience, Mr. Fontenot explained that the Resource Conservation and Recovery Act (RCRA) is the environmental law that regulates the cleanup of hazardous waste sites on the Naval Base property. Mr. Hunt began by explaining that the RCRA Facility Investigation (RFI) step of the RCRA Corrective Action process requires collecting water and soil samples on base to determine the extent of contamination.

For those tracking funding, Zone J (water bodies) will be awarded later this month, and the Zone L proposal is still being evaluated.

In December, the Navy held its 90% progress meeting for Zone D which is the area near the credit union. An agreement was reached that the field work in Zone D was complete and that preparation of the RFI report can begin. Progress meetings for Zones K, F, and G were held. Zone K is the non-contiguous areas, and Zones F and G are approximately in the middle of the base. A scoping meeting was held for the Comprehensive Corrective Measures Work Plan. Also, the Zones J and L Work Plans were approved by South Carolina Department of Health and Environmental Control (SCDHEC) on December 13th.

Mr. Hunt provided an update on Solid Waste Management Unit (SWMU) 39. SWMUs are the sites that are being investigated at the Naval Base. A SWMU can be an area where wastes were at one time stored, and are suspected or show evidence of a release. SWMU 39 is an area that stored Petroleum, Oils, and Lubricants (POLs) in the DRMO area near the Virginia Avenue gate. Mr. Hunt showed a map of the area and explained that water samples were collected to determine if there were any releases. The Navy found some chlorinated solvents that they looked at further, and some petroleum products. Then, in order to see if the material was moving off-base, screening samples were collected outside the Navy base property using a cone penetrometer. The Navy did not find any chlorinated solvents in the neighborhood.

However, they did find some TCE in a well on Crawford Street, but after comparing the findings to what was found on base and groundwater flow direction, the Navy does not think the TCE in the Crawford Street well is coming from the Navy Base. Since then, the Navy installed two more wells to further investigate if the TCE was coming from the Base. Those wells were installed last week and the Navy hopes to have results available by the next RAB meeting.

In addition, Hess (the adjacent property owner) is working with SCDHEC to investigate if the petroleum contamination found originated from the Hess facility.

The Zone B RFI report has been approved. The Navy hopes to resolve comments on the Zone H RFI report in January. Zone H is the first Zone scheduled for the Corrective Measures Study. Also in January, the Navy expects to submit the Draft Comprehensive Corrective Measures Study (CMS) Work Plan to the Project Team for review. The Navy will be moving into the Corrective Measures process very soon and will be looking for community input.

Mr. Jim Conner asked how deep the wells are. Mr. Hunt answered that the Hess Well is about 45 feet deep and the wells that were just installed last week are 55 feet deep. Shallow wells have also been installed.

A guest from the audience asked what type of substance was maintained in the Hess tanks. Mr. Hunt replied that the tanks contain a fuel that is chemically similar to diesel. The same guest continued by asking what the purpose was for the wells. Mr. Hunt stated that the Navy's wells were installed to detect if contamination was moving offsite (from the base) or on-site (onto the base), and as it turned out, it looks as if it is moving onsite.

Mr. Arthur Pinckney asked for clarification on Mr. Hunt's earlier statement that the contamination found off base was not from the Navy. Mr. Hunt reiterated that TCE was found in an offsite well, yet the Navy had TCE and degradation compounds. Also, based on the shallow groundwater flow direction which flows from north to south, if a release occurred on the Navy property, the contamination flow would head toward Noisette Creek. Based on the information that the Navy has, they do not see a connection between the release at SWMU 39 and the TCE found in the well on Crawford Street. The next step is to collect data from the two newest well locations and write a letter to SCDHEC suggesting that there may be another potential source of contamination that is not on the Navy base.

Ms. Mallette asked if Hess is also installing wells. Mr. Hunt replied that Hess is conducting investigations and working closely with SCDHEC.

Mr. Pinckney asked that if Hess did find a leak, would they have to involve the community. Mr. Fontenot stated that right now all their testing is taking place on their own property.

Corrective Measures Study

Mr. Fontenot introduced Mr. Larry Bowers with EnSafe/Allen&Hoshall as the speaker for the Corrective Measures Study (CMS) presentation. The presentation is considered a training session for the community members so they understand the CMS process. This is the point in the environmental investigation where the RAB and community members will provide their input to the Navy regarding cleanup decisions.

Mr. Bowers began by stating that the goal of his presentation is to present an overview of the CMS process. At the end of the presentation will be a short exercise lead by Ms. Ann Ragan from SCDHEC that will request input from the RAB and community.

Mr. Bowers began his presentation by reviewing the four main steps of the RCRA Corrective Action Process:

Step 1 RCRA Facility Assessment (RFA) -Historical study looking at buildings and property and determining past use. Non-invasive study (no sampling or digging - it is primarily research).

Step 2 RCRA Facility Assessment (RFI) -This is the step that has been underway for a couple of years and is still ongoing today. Sampling and analysis takes place to define the extent of contamination on the property.

Step 3 Corrective Measures Study (CMS)-The step the Navy is just getting into which evaluates the different cleanup alternatives.

Step 4 Corrective Measures Implementation (CMI) - The actual remedial design and cleanup.

The CMS is a study that is used to determine and rank potential remedial alternatives at a site. The CMS is **not** intended to select or choose the final cleanup (remember, it is only supposed to **rank** the different alternatives). The CMS does not suggest that cleanup is required for each site. For example, one of the remedial alternatives might be “no further action.” Also, the CMS is not the actual cleanup step. Cleanup takes place during the CMI.

There are three main components of a CMS:

1. - Identify potential remedial alternatives
2. - Screen potential remedial alternatives
3. - Evaluate or rank potential remedial alternatives

Identifying potential remedial alternatives is like brainstorming. It takes professional experience to know what kind of contaminants are out there and what works to clean them up. The next step is screening the potential remedial alternatives. Screening actually eliminates some of the options. For example, options can be eliminated because of the characteristics of a site or the waste at a site, or because a certain technology isn't reliable.

The third step is to rank the potential remedial alternatives. To do this, certain criteria must be evaluated. There are nine criteria, four are considered “primary” and must be met. The five remaining criteria are called “secondary.”

Mr. Bowers showed an example of a table used to evaluate the different options. He explained that alternatives will be ranked by site, or group of sites. The Navy and environmental regulators will be asking the community for their input on the importance of the evaluation criteria so it can be factored into this process and used to rank the best cleanup option(s). Using this table is a way to put objective measurements into the process.

After the alternatives are ranked, a public comment period will be provided and a public meeting will be held to discuss the alternatives.

In preparation for Ms. Ragan's exercise, Mr. Bowers provided an explanation of each of the criteria:

Primary Criteria - must be met

Protect Human Health and the Environment - Cleanup may not be necessary to meet this criteria. For example, if contaminated drinking water was the problem at a particular site, providing residents with fresh drinking water from another source may be a viable solution.

Attain Cleanup Standards - State and/or federal regulations or risk factors require that contaminants be cleaned up to a level that is considered acceptable.

Control Source of Release - Remove or control the source of contamination.

Comply With Applicable Standards - The technology that is selected must meet applicable standards.

Secondary Criteria

Long-term Reliability and Effectiveness - Some treatment systems run for many years. Their long-term reliability and effectiveness must be considered.

Reduction in Toxicity, Mobility, and Volume - Although it seems like you would always want to meet this criteria, it is not always the best choice. For example, in the case of unexploded ordnance (UXO), it may be more risky to search, unearth, and decommission the UXO than to let it stay where it is.

Short-term Effectiveness - Most of the time, short-term effectiveness comes into play in a highly populated area where contamination may cause a high risk among residents or workers. It would be used to quickly reduce risk.

Implementability - How easy is it to implement the specific technology?

Cost - Considerations may include how much it will cost, and how much is in the budget for cleanup.

Ms. Priscilla Wendt asked if implementability includes technical feasibility? Mr. Bowers replied that if an alternative was not technically feasible, it would be screened out in the screening process.

Ms. Ragan lead an exercise to collect RAB and community member input. She hung up nine pieces of poster paper at the back of the room, each with one of the nine evaluation criteria written on it. Then she handed out seven star stickers to each RAB and community member. Each member was instructed that they should use each star as one vote to choose the criteria most important to them. All seven stars could be placed on one criteria, or one on each of seven, or any combination in between. Ms. Ragan said that after everybody has had the opportunity to stick their stars on the nine criteria posters, she will take the posters back to her office, tally up the results, and be ready to discuss them at the next RAB meeting in February.

After the exercise, a quick review revealed that the big winner among the nine criteria was protecting human health and the environment.

Follow-up Questions for North Charleston Council members regarding Chicora

Ms. Mallette asked Mr. Ray Anderson if he had any updates from the North Charleston City Council meeting regarding the Chicora Tank Farm issue. Mr. Anderson said that the Mayor had received the letter from the RAB stating their choice in closure options. Right now the City is looking at other park and recreational areas and considering those in their decisions about the Chicora property. No decisions have been made yet.

Mr. Fontenot added for clarification that the RAB supports partial demolition as the closure method for the tanks.

Mr. Jim Conner asked what will be done with the pipelines under the Chicora tank farm. Mr. Fontenot answered that they will be drained, cleaned, and grouted from both ends (meaning that they will be filled with an inert solid).

Ms. Greene asked if partial demolition is the final decision. Mr. Fontenot verified that it is not, because a decision can't be made about closure until a decision is made about reuse.

A question was asked that although Chicora Tank farm was recommended for no further action, it is located in Zone G, which will go through a Corrective Measures Study, so will Chicora be required to undergo a CMS? Mr. Fontenot replied that Chicora Tank Farm was not part of the RCRA Corrective Action process so it will not undergo the CMS. Ms. Ragan added that Chicora was investigated under a different regulatory program.

Ms. Greene asked members of the audience who live in close proximity to the Tank Farm to share their concerns about it. One gentleman was concerned about oil and gas contamination. Mr. Fontenot explained that environmental investigations were completed and **no contamination was found** that would require cleanup. SCDHEC supports that finding.

One guest asked what is in the tanks. Mr. Fontenot responded that all the tanks are empty with the exception of one that has some used oil in it. None of the tanks are in use. Another guest was concerned that the pipes have corroded over time and leaked oil. Again, Mr. Fontenot emphasized that environmental investigation have been completed and that **no contamination was found** that would require any cleanup.

One woman reported that she smells a strong odor of gas when she walks by the Tank Farm. Neither DHEC or the Navy knew where the odor was coming from.

Another guest asked who performed the environmental investigation at the Tank Farm. Mr. Fontenot answered that the study was completed in 1994 by an environmental contractor that was hired by the Navy. The investigation was required by and overseen by DHEC. After the study was completed, the Navy went through a year of quarterly monitoring to see if there were any releases to groundwater or soil. A copy of the report that details all the finding can be reviewed at the Dorchester Road branch of the Charleston Regional Library. Also, Mr. Fontenot has copies of the presentation that was given on the Chicora Tank Farm environmental investigation at the December RAB, and minutes from that meeting also discuss the issues that were addressed.

Mr. Pinckney asked if it would be possible to bring someone in to talk to the RAB and the community about environmental justice issues. Mr. Fontenot replied that he will talk to his Public Affairs Officer at Southern Division to see if they can arrange for it.

Another guest asked what will the demolished tanks be filled with, what will happen if the fill material settles and creates holes in the ground, and who will be responsible for it if it happens.

Mr. Fontenot answered that the tanks will be abandoned by caving the tanks in on themselves and then adding surrounding soil and a clay or man-made cap that will reduce permeability and keep water from seeping through it. The site will be graded to make sure it drains adequately.

A woman from the audience asked if there were any other similar cases to this. Mr. Fontenot said that he knows of solid waste landfills being capped and turned into recreational facilities (Mt. Trashmore in Virginia) but can't think of any other Navy sites.

Mr. Fontenot reiterated that environmental issues have been investigated and no contamination was found in either soil or water that would require any cleanup. The current issue at Chicora is the closure of the tanks - how to close them so the property can be reused.

8. Introduction of the New EPA Representative

Mr. Doyle Brittain introduced Mr. Jay Bassett who will be replacing Mr. Brittain as the EPA representative of the Charleston RAB. This will be Mr. Brittain's last meeting and he shared that he has enjoyed working with the RAB. He said he feels that a lot of progress has been made at Naval Base Charleston and in fact next month, one of the agenda items will include a discussion of the progress that has been made over the last few years. Mr. Bassett is very experienced in this process and will not require a training period. However, Mr. Brittain suggested that the RAB help Mr. Bassett by informing him about their specific concerns. Mr. Brittain thanked the RAB and added that he has enjoyed the opportunity of working with them.

On behalf of the entire RAB, Ms. Mallette welcomed Mr. Bassett and thanked Mr. Brittain for all his support and service which was met with a round of applause.

Ms. Ragan stated that DHEC is having a plaque made for Mr. Brittain because he has vested so much personally and professionally in this project. On behalf of DHEC and South Carolina Ms. Ragan thanked Mr. Brittain and wished him well.

9. Remaining Questions and Comments

One gentleman in the audience asked how he could be informed of upcoming meetings. Mr. Fontenot asked him and anyone else who is interested to provide their name and address at the back table and they will be added to the mailing list.

Ms. Mallette asked for a show of hands from RAB members if they felt the current location is a good place for upcoming meetings.

10. Adjournment

Ms. Mallette thanked the community members for coming out to the meeting, and said that it was one of the largest turnouts for community members in a long time.

Summary of Action Item

- Ms. Ragan will evaluate the results of the CMS exercise and report back to the RAB at the February meeting.
- Mr. Fontenot will look into having a speaker on Environmental Justice.

Attachments to Minutes

- (1) Tuesday January 14, 1996 RAB Meeting Agenda
- (2) RFI Progress Report for December 1996
- (3) Presentation - "Overview of the Corrective Measures Study"

Minutes recorded by: Diane Cutler, EnSafe/Allen&Hoshall

Minutes approved by: _____

Daryle Fontenot
Navy Co-Chair

Wannetta Mallette
Community Co-Chair

Tuesday, January 14, 1997

Charleston Naval Complex

RESTORATION ADVISORY BOARD MEETING AGENDA

6:00 P.M. Location: *Live Oak Community Center*
2012 Success Street, North Charleston, SC

6:00 P.M. RAB MEETING

- A. Introduction of the RAB Members and Guests
- B. Administrative Remarks, comments on the minutes of the last meeting
- C. Subcommittee Reports
- D. Reuse Update
- E. Environmental Cleanup Progress Report - Cleanup Team
 - Chicora Tank Farm Update
 - Status of the Environmental Programs
 - Corrective Measures Study Presentation
- F. Introduction of the New EPA Representative
- G. Remaining Questions and Comments from RAB Members and Visitors
- H. Agenda for next meeting.

RAB Members, Project Team, and interested citizens informally talk about what's going on after the meeting from 7:00 p.m. to 8:00 p.m.

Please mark your calendar. Our next meeting is **Tuesday, February 11, 1997**. Time and location to be determined.

**Naval Base Charleston
RCRA Facility Investigation (RFI)
PROGRESS REPORT FOR DECEMBER 1996**

INVESTIGATIVE ZONES

- A. Warehousing and scrap metal yard
- B. Golf course and residential
- C. Office space and warehouse (NH-45, Navbase HQ)
- D. Parking lot, warehouses
- E. Shipyard
- F. Recreational areas and public works shops
- G. Fuel farm and transfer facility
- H. Southern end of the base excluding waterfront
- I. Southern end of the base including waterfront and dredge material area
- J. Waterbodies
- K. Non-contiguous areas
- L. Sewer systems and railroad system

FUNDING

- ◆ Funding status
Zone J field work will be awarded this month, Zone L field work proposal is being evaluated.

PROGRESS FOR DECEMBER

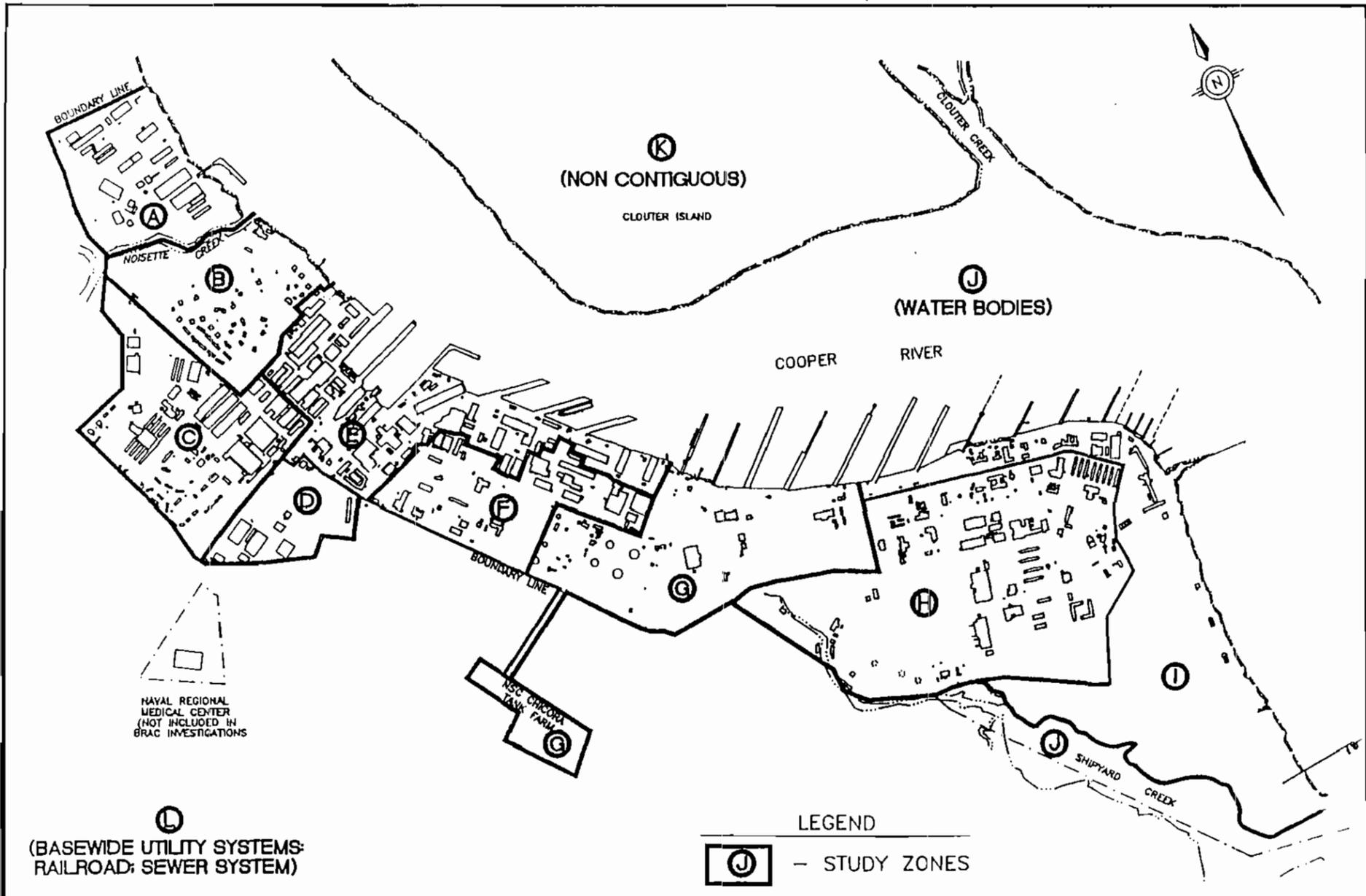
- ◆ 90% progress meeting for Zone D was held. Agreement reached that field work in Zone D was complete to support preparation of the Zone D RFI Report.
- ◆ Progress meetings for Zones K, F and G were held. Additional sample locations were identified for some sites in Zones F and G and field work continues.
- ◆ A scoping meeting was held for the Comprehensive Corrective Measures Work Plan.
- ◆ Zones J and L Work Plans were approved by SCDHEC on 13 December.

PROJECTED ACTIVITY FOR JANUARY

- ◆ Zone B RFI report approval.
- ◆ Resolve comments on Zone H RFI report.
- ◆ Submit Draft Comprehensive CMS Work Plan to the Project Team for review.

Naval Base Charleston
Project Status
1/14/97

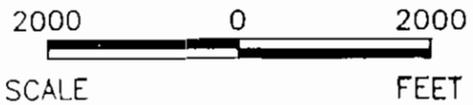
PROGRAM	PROJECT DESCRIPTION	ACTION REQUIRED	ECD
BRAC - Property Lease/Transfer	EBSL/FOSL for 231 facilities	Awaiting SOUTH DIV CO signature	1/17/97
	EBSL/FOSL for NS Annex (19 fac.)	Awaiting SOUTH DIV CO signature	1/25/97
	EBST Clouter Island (Transfer to COE, 2 fac.)	Awaiting SOUTH DIV CO signature	1/25/97
NEPA	Environmental Assessment of Naval Annex	Waiting on reuse plan from RDA before completing the EA	
RCRA Compliance			
	Part B permit application	CSO submit Part B application	1/20/97
RCRA Corrective Action			
	Zone A RFI report	In SCDHEC review, Document approval meeting scheduled next	2/11/97
	Zone A field work	Radiological survey complete at DRMO, SWMU 1 & 2 sampling to begin 2/24/97, SWMU 39 wells installed	1/24/97
	Zone B RFI report	Document conditionally approved with actions to be taken or clarified during CMS	1/2/97
	Zone C RFI report	In SCDHEC review	1/24/97
	Zone D field work	Field work complete, Presubmittal review of RFI report scheduled next	2/11/97
	Zone F & G field work	In progress, next progress meeting (90%) is 2/11/97	2/11/97
	Zone E RFI field work	In progress, remaining field work to complete 2/24/97	2/24/97
	Zone H RFI report	SCDHEC disapproved	
	Zone I RFI report	In SCDHEC review	3/27/97
	Zone J RFI WP	RFI Work Plan approved 12/13/96, Award 1/24/97	2/7/97
	Zone J RFI field work	Field work to start 2/7/97	2/7/97
	Zone K Field Work	In progress, 60% progress scheduled for 1/14/97	1/14/97
	Zone L RFI WP	RFI Work Plan approved 12/13/96, Field work to begin 1/31/97	1/31/97
	Miscellaneous issues		
	Groundwater Model	Draft report distributed for review 11/15/96, review by EPA, SCDHEC, Navy by 2/14/97	2/14/97
	Transfer of IR sites to UST program	Navy to submit letter requesting transfer of sites (AOC 656, 659, 667, SWMU 13, 138)	
	RAD survey of DRMO	EPA and SCDHEC review complete, EPA letter issued	
	Support services		
	IDW Management	Background organics memo submitted for comment, to be discussed 1/14/97	1/14/97
	Groundwater Monitoring	Zone E 4th quarter in progress, Zone H, C, I, B complete, Zone A Add 1 to begin 1/22/97	1/22/97
Underground Storage Tank			
	Tank Management Plan	Responses to SCDHEC comments submitted	
	Petroleum Remediation Plan	Det preparing plan of action (approval pending Tank Management Plan approval)	
	Bioremediation demonstration project	Facility being prepared	
	Removals	FY 96 - 54 tanks authorized for removal, as of 1/14/97 two more tanks remaining FY 97 - 12 tanks authorized for removal, as of 1/14/97 twenty eight have been removed	
	Chicora Tank Farm	Technical issues resolved, awaiting further guidance	
Asbestos	Building 32 remediation	In progress	6/30/97



L
 (BASEWIDE UTILITY SYSTEMS:
 RAILROAD; SEWER SYSTEM)

LEGEND

J - STUDY ZONES



SOURCES: SOUTHON, n.d. ESE, 1981.



NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

FIGURE 1-2
 BASE WIDE
 ZONE BOUNDARIES

DWG DATE: 01/13/95 DWG NAME: 09ZONE1

NAVAL BASE CHARLESTON RCRA FACILITY INVESTIGATION PROGRESS UPDATE

ZONES	CURRENT PHASE	COMPLETION PERCENTAGE	PLANNED COMPLETION DATE OF CURRENT PHASE	NEXT PHASE	RFI COMPLETION DATE	RFI COMPLETION PERCENTAGE	NOTES
	A	Report Review	80	2/28/97	CMS Work Plan	2/28/97	
B	Report Review	100	12/20/96	CMS Work Plan	12/20/96	100	RFI was completed on 12/16/96.
C	Report Review	75	3/31/97	CMS Work Plan	3/31/97	85	
D	Field Work	100	12/15/96	RFI Report Prep	6/13/97	50	
E	Field Work	95	2/24/97	RFI Report Prep	8/21/97	50	
F	Field Work	60	3/15/97	RFI Report Prep	9/12/97	30	
G	Field Work	60	3/15/97	RFI Report Prep	9/12/97	30	
H	Report Review	90	1/31/97	CMS Work Plan	1/31/97	95	
I	Report Review	50	4/23/97	CMS Work Plan	4/23/97	80	
J	Field Work	0	9/16/97	RFI Report Prep	2/25/98	10	
K	Field Work	30	3/16/97	RFI Report Prep	9/12/97	15	
L	Field Work	0	8/2/97	RFI Report Prep	1/28/98	10	
All Zones					2/25/98	62	

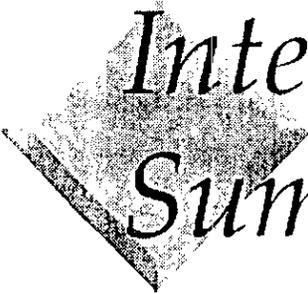
LEGEND

Phase	Description
RFI	RCRA Facility Investigation
CMS	Corrective Measures Study
Work Plan Preparation	Work Plan being prepared by Navy Contractor
Work Plan Review	Regulators (DHEC & EPA) reviewing work plan
Field Work	Navy contractor performing field work as outlined in the Work Plan
RFI Report Preparation	Navy contractor preparing the RFI Report
Report Review	Regulators (DHEC & EPA) reviewing report
CMS Work Plan	CMS Work Plan being prepared by Navy Contractor



Interim Measure Status Summary

SITE	DESCRIPTION	STATUS
AOC 690	Perimeter road. Remediate site of solid waste along perimeter road	Completed
SWMU 54	Abrasive blast grit area. Remediate site of spent blast grit.	field work complete, writing report
SWMU 44	Coal yard. Remediate site of coal.	field work complete, writing report
AOC 653	Auto Hobby Shop. Remove hydraulic vaults and remediate soils of petroleum.	95% Disposing of soils, closing up site
SWMU 159	Former storage area. Removal of soils contaminated with petroleum.	95% Disposing of soils, closing up site



Interim Measure Status Summary

SITE	DESCRIPTION	STATUS
AOC 626	Viaduct gate fuel line past rupture area	30% In field removing pipe and installing collection system
SWMU 8	Oil Sludge Pits	20% In field starting to uncover pit areas



OTHER ENVIRONMENTAL ACTIONS

SITE

DESCRIPTION

STATUS

SWMU 83

Foundry, Bldg. 9. Completion of process closure cleanup.

Completed most field work, awaiting some sample results

SWMU 25

Old plating shop annex, Bldg. 44.
Demolition and removal to the annex portion of this building.

Started demolition of building earlier this month.

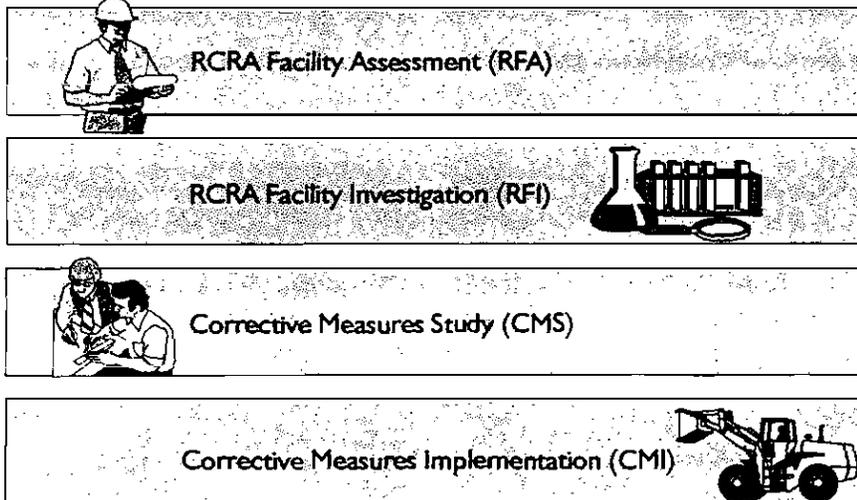
**Charleston Naval Base
Environmental Investigation and Cleanup**

**Overview of the
Corrective Measures
Study**

Presented by:
Lawrence K. Bowers, PE
EnSafe /Allen & Hoshali

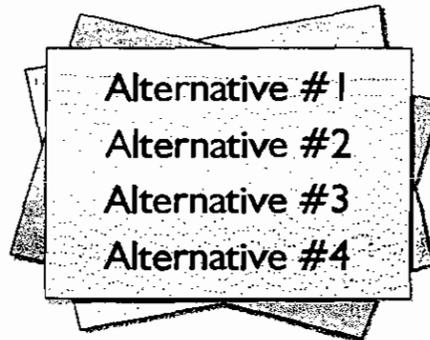
The Big Picture

Review of the RCRA Corrective Action Process



What is a Corrective Measures Study?

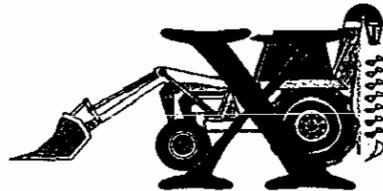
A study that is used to determine and rank potential remedial alternatives at a site.



CMS Overview - January 14, 1997

What is NOT a CMS?

- The CMS is not intended to select or choose the final cleanup. (Only makes recommendations.)
- The CMS does not suggest that cleanup is required for each site.
- The CMS is not the "cleanup" step.



CMS Overview - January 14, 1997

Three Main Components of a CMS

1. **IDENTIFY** Potential Remedial Alternatives

2. **SCREEN** Potential Remedial Alternatives

3. **EVALUATE** Potential Remedial Alternatives
(or **RANK**)

CMS Overview - January 14, 1997

Step One of the CMS Process

IDENTIFY Potential Remedial Alternatives

1

- Type of contaminant/type of media
- Professional experience
- Familiarity with similar sites/conditions
- Literature research
- Vendor consultation

CMS Overview - January 14, 1997

Step Two of the CMS Process

SCREEN Potential Remedial Alternatives

2

- Site characteristics
- Waste characteristics
- Technology limitations

CMS Overview - January 14, 1997

Step Three of the CMS Process

EVALUATE (or RANK) Potential Remedial Alternatives

3

- **Primary Criteria**
 - Protect human health and the environment
 - Attain cleanup standards
 - Control source of release
 - Comply with applicable standards
- **Secondary Criteria**
 - Long-term reliability and effectiveness
 - Reduction in toxicity, mobility, and volume
 - Short-term effectiveness
 - Implementability
 - Cost

CMS Overview - January 14, 1997

Evaluation of Remedial Alternatives

Site/Group X		Alternative #1			Alternative #2			Alternative #3		
Criteria	Weighting Factor	Description	Meets Criteria	Weighted Criteria Value	Description	Meets Criteria	Weighted Criteria Value	Description	Meets Criteria	Weighted Criteria Value
1	Community input considered									
2										
3										
4										
5										
6										
7										
8										
9										
Total				#			#			#

CMS Overview - January 14, 1997

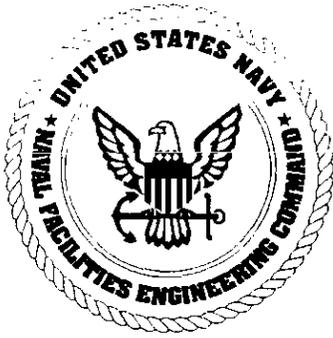
Public Comment Period

After the CMS evaluation process is complete, the cleanup alternatives (including the *recommended* alternative) will be announced to the public.



- A public comment period will be provided.
- A public meeting to discuss the alternatives will be held.

CMS Overview - January 14, 1997



NAVY NEWS RELEASE

Public Affairs Office
Naval Facilities Engineering Command, Southern Division
P.O. Box 190010
North Charleston, SC 29419

RAB Reports on Environmental Progress and Base Reuse

For Publication by Tuesday, February 11

For more information, contact:

Jim Beltz (803) 820-5771

North Charleston – The Naval Base Charleston Restoration Advisory Board will hold their next meeting on Tuesday, February 11, 1997 from 6 to 7 p.m. at the Live Oak Community Center, 2012 Success Street, in North Charleston. Agenda topics will include a progress report on environmental activities and a base reuse update presented by the Charleston Naval Complex Redevelopment Authority. Navy staff and environmental specialists will be available after the meeting for informal discussion and to answer questions. The meeting is open to the public and all are encouraged to attend.

The RAB is a group of community members, Navy representatives, and federal, state, and local organizations and agencies that gather monthly to discuss the progress of environmental cleanup and property reuse at Naval Base Charleston. Meetings are held on the second Tuesday of every month in alternating locations to accommodate the local communities most significantly affected by the base closure.

For more information on the upcoming meeting, call Jim Beltz at the Public Affairs Office at Naval Facilities Engineering Command, Southern Division, (803) 820-5771.

###

For More Info

Call Jim Beltz at the
Office at Naval Facilities
Engineering Command, Southern
Division: (803) 820-5771.

Please come and join us at the next meeting
of the
**Naval Base Charleston
Restoration Advisory Board**

Date Tuesday, February 11, 1997
Time Meeting: 6 - 7 p.m.
Location....Live Oak Community Center
2012 Success St., N. Charleston

(Informal question & answer session immediately following the meeting)

The RAB is a forum where community members meet with representatives from the Navy, State and Federal environmental agencies, and other groups to discuss the environmental programs underway at Naval Base Charleston. All meetings are open to the public and everyone is encouraged to attend.

February's agenda will include a base reuse update and a presentation on the progress of environmental activities.

For More Information

Call Jim Beltz at the Public Affairs
Office at Naval Facilities
Engineering Command, Southern
Division: (803) 820-5771.

Please come and join us at the next meeting
of the
**Naval Base Charleston
Restoration Advisory Board**

Date Tuesday, February 11, 1997
Time Meeting: 6 - 7 p.m.
Location....Live Oak Community Center
2012 Success St., N. Charleston

(Informal question & answer session immediately following the meeting)

The RAB is a forum where community members meet with representatives from the Navy, State and Federal environmental agencies, and other groups to discuss the environmental programs underway at Naval Base Charleston. All meetings are open to the public and everyone is encouraged to attend.

February's agenda will include a base reuse update and a presentation on the progress of environmental activities.



DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O. BOX 190010
2155 EAGLE DRIVE
NORTH CHARLESTON, S.C. 29419-9010

5090/11
Code 1877
17 March 1997

Mr. G. Randall Thompson
Director, Division of Hazardous and Infectious Waste Management
Bureau of Solid and Hazardous Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subj: SUBMITTAL OF THE MONTHLY RCRA FACILITY INVESTIGATION
PROGRESS REPORT

Dear Mr. Thompson,

The purpose of this letter is to submit the Monthly RCRA Facility Investigation (RFI) Progress Report for Naval Base Charleston. This report is submitted voluntarily to provide an update on the progress of the RFI to members of the NAVBASE Project Team which includes representatives of the Environmental Protection Agency and the South Carolina Department of Health and Environmental Control.

Enclosure (1) is the Monthly Report which contains the activity for the month of February, 1997. If you have any questions, please contact Billy Drawdy or me at (803) 743-9985 (Ext. 29) and (803) 820-5525 respectively.

Sincerely,

A handwritten signature in cursive script that reads "Matthew A. Hunt".

MATTHEW A. HUNT
Environmental Engineer
Installation Restoration III
By direction

Encl:

(1) Quarterly RFI Progress Report - February 1997

Copy to (w/encl):

SCDHEC (Tapia, Bergstrand)

USEPA (1) (Bassett)

SOUTHNAVFACENGCOM (Hunt)

CSO Naval Base Charleston (Drawdy, Fontenot)

**NAVBASE CHARLESTON
RFI STATUS REPORT
PERIOD: SUMMARY OF
01 February 1997 To 28 February 1997**

I. INTRODUCTION

The following status report has been prepared to satisfy condition II.E.3.a of the Part B Permit Renewal dated 5 December 1994 for Naval Base Charleston (NAVBASE). The requirements of this condition are in effect since the total elapsed time to complete the RCRA Facility Investigation (RFI) is projected to be greater than 180 calendar days from the approval date of the *Final Comprehensive RFI Work Plan* as indicated in the Corrective Action Management Plan (CAMP).

In lieu of submitting quarterly reports, NAVBASE is voluntarily submitting monthly reports to provide an update on the progress of the RFI to members of the NAVBASE BRAC Cleanup Team (BCT) in a more timely manner. The content of the monthly reports includes information intended to satisfy condition II.E.3.a of the Part B Permit. Consequently, this report only addresses activities which occurred during the month of January 1997.

II. PORTION OF THE RFI COMPLETED

- Data was received from the six new wells installed in and around Zone A as part of the SWMU 39 RFI. The data indicates the upgradient and offsite boundaries of the chlorinated solvent groundwater contamination has been defined. No additional monitoring wells are proposed and the RFI considered complete at this site.
- The presubmittal review of the *Draft Zone D RFI Report* was completed during the February Project Team meeting. The document was submitted on 26 February 1997 to the regulatory agencies for formal review and comment.
- RFI field work in Zone E was completed.
- The 90% progress meetings for Zones F, G, and K were held in conjunction with the February Project Team meeting.
- Additional direct push sampling was completed at the annex portion of Zone K as a result of chlorinated solvents being detected in groundwater. Groundwater samples were collected at depths of 12, 26, and 34 feet below ground surface. Concentrations of DCE and TCE were detected at levels several orders of magnitude greater than the Safe Drinking Water Act maximum contaminant levels. The extent of contamination has not yet been defined and the source has not been located.

III. SUMMARIES OF FINDINGS

Attachment A contains a summary of the Zone K findings described above and also outlines the objectives of continuing the investigation to delineate the extent of groundwater contamination.

IV. DEVIATIONS FROM APPROVED WORK PLANS THIS REPORTING PERIOD

There were no known deviations from the approved RFI Work Plans for this reporting period.

V. SUMMARY OF CONTACTS WITH LOCAL COMMUNITY PUBLIC INTEREST GROUPS OR STATE GOVERNMENT

As indicated in the January 1995 Quarterly Status Report, the Navy has established a Restoration Advisory Board (RAB) to involve the public in the decisions regarding the investigation and remediation of contaminated sites at Naval Base Charleston. The meetings are held monthly and are open to the public. The minutes of the February 1997 meeting are provided as Attachment B.

VI. SUMMARY OF PROBLEMS OR POTENTIAL PROBLEMS AND ACTION TAKEN TO RECTIFY PROBLEMS

There were no problems or potential problems identified during this reporting period.

VII. KEY PROJECT PERSONNEL

The status report for March 1996 reflected numerous changes in key Navy personnel for the NAVBASE Charleston RFI resulting from the closure of Charleston Naval Shipyard. The following is an additional change.

Caretaker Site Office
Billy Drawdy

VIII. PROJECTED WORK FOR THE NEXT REPORTING PERIOD

Document Preparation and Data Evaluation:

- Revised inorganic background concentrations will be proposed for all of the zones.
- Comments from the regulatory agencies on the *Draft Zone A RFI Report* will be incorporated into the document and the final version submitted.
- Preparation of the Zone E RFI report will continue.
- Minor revisions to the *Final Zone H RFI Report* to satisfy SCDHEC data presentation concerns are anticipated.

Field Activities:

- Additional groundwater sampling at the Naval Annex in Zone K will be needed to delineate the extent of solvent contamination.
- RFI field work will begin in Zones J and L upon award of funding.
- The installation of temporary wells on Clouter Island is expected.
- Quarterly groundwater monitoring will continue in all zones where less than four quarters of sampling has been completed.

IX. COPIES OF DAILY REPORTS, INSPECTION REPORTS, LABORATORY DATA

Daily activities are recorded in accordance with the Data Management Plan included as Section 14 of the Final Comprehensive Sampling and Analysis Plan. Photocopies of these daily records have not been included with this status report; however, this information is available for review upon request.

Per agreement with SCDHEC and EPA, hard copies of the analytical data are not being submitted. A copy of the data is maintained at the EnSafe/Allen & Hoshall office in Charleston and is available for review.

Geoprobe Investigation Objectives

1) Geology

Locations 40 and 48 will be sampled continuously with Geoprobe sampler. This data along with the data from Location 35 will be used to construct a stratigraphic profile. Locations 50 and 45 will be probed down to a depth at which the top of the Ashley can be identified by relative resistance. Locations 52 and 54 of the second extent series will also be pushed to the top of the Ashley to provide data to be used to define the attitude of the top of the Ashley. The attitude of the Ashley Formation will play a large role in migration direction if a DNAPL is present at the contact between the Ashley Formation and the overlying sand.

2) Source Area Definition

The source is suspected of being in the vicinity of Location 35 which is the location with the highest concentrations of dissolved phase contaminants in the shallow interval. Borings 37-44 are positioned to provide information primarily for source area definition. Borings 56 and 57 are positioned to provide data close to the former septic tank which is a possible source of the TCE.

3) Extent Definition

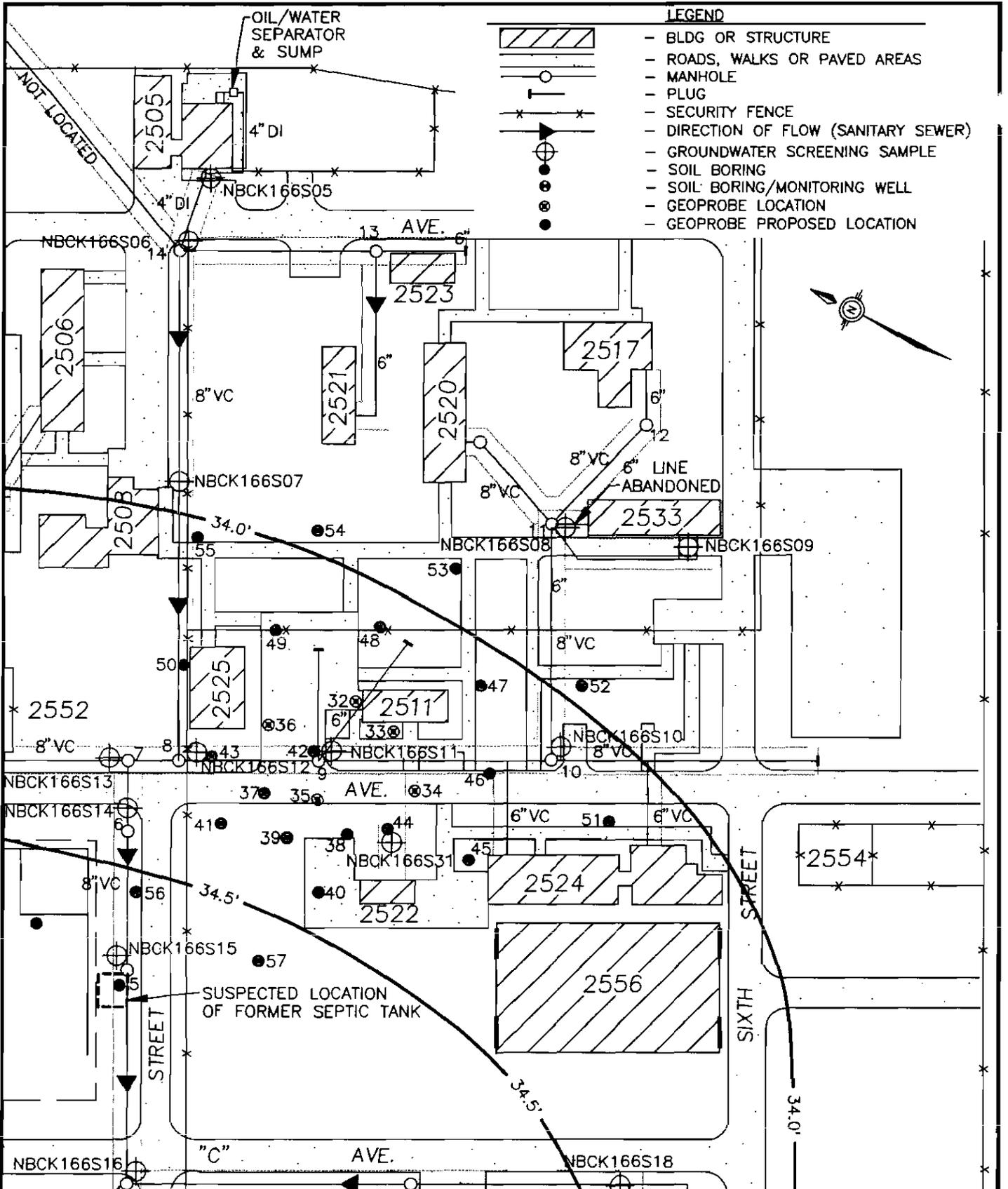
Given the direction of groundwater flow and the location of the highest dissolved phase contamination relative to the suspected source area, the northeast/southeast quadrant is targeted for additional sample locations. Locations 45-50 will be the first series of locations designed to define the extent. Locations 51-55 are the second series designed to define the extent.

4) Sampling Plan

Groundwater samples will be collected at three intervals at each location: 12-14' bgs, 23-25' bgs, and 34-36' bgs; or other intervals to be determined if variable stratigraphy is encountered. Samples will be analyzed in the field for TCE, 1,2-DCE, and vinyl chloride. Twentyfive percent of the samples will also be sent to an offsite lab for confirmatory analysis.

LEGEND

-  - BLDG OR STRUCTURE
-  - ROADS, WALKS OR PAVED AREAS
-  - MANHOLE
-  - PLUG
-  - SECURITY FENCE
-  - DIRECTION OF FLOW (SANITARY SEWER)
-  - GROUNDWATER SCREENING SAMPLE
-  - SOIL BORING
-  - SOIL BORING/MONITORING WELL
-  - GEOPROBE LOCATION
-  - GEOPROBE PROPOSED LOCATION



ZONE K
 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

PROPOSED TCE PLUME
 GEOPROBE SAMPLE LOCATIONS



DEPARTMENT OF THE NAVY

SOUTHERN DIVISION

NAVAL FACILITIES ENGINEERING COMMAND

P.O. BOX 190010

2155 EAGLE DRIVE

NORTH CHARLESTON, S.C. 29419-9010

5090/11
Code 1877
22 April 1997

Mr. G. Randall Thompson
Director, Division of Hazardous and Infectious Waste Management
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subj: SUBMITTAL OF THE QUARTERLY RCRA FACILITY INVESTIGATION
PROGRESS REPORT

Dear Mr. Thompson,

The purpose of this letter is to submit the Quarterly RCRA Facility Investigation (RFI) Progress Report for Naval Base Charleston. This report is submitted in order to comply with condition II.C.5 of the RCRA Part B permit issued to the Naval Base Complex by the Environmental Protection Agency and the South Carolina Department of Health and Environmental Control.

Enclosure (1) is the Quarterly Report which contains the activity for the month of March, 1997. Monthly reports have been submitted previously for the months of January and February which complete the quarter. If you have any questions, please contact Billy Drawdy or Matthew A. Hunt at (803) 743-9985 (Ext. 29) and (803) 820-5525 respectively.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Rose".

PAUL ROSE
LCDR, CEC, U.S.Navy
Caretaker Site Officer
By direction

Encl:
(1) Quarterly RFI Progress Report - March 1997
Copy to (w/encl):
SCDHEC (Bergstrand)
USEPA (1) (Bassett)
SOUTHNAVFACENGCOM (Hunt)
CSO Naval Base Charleston (Drawdy, Fontenot)

**NAVBASE CHARLESTON
RFI STATUS REPORT
PERIOD: SUMMARY OF
01 March 1997 To 31 March 1997**

I. INTRODUCTION

The following status report has been prepared to satisfy condition II.E.3.a of the Part B Permit Renewal dated 5 December 1994 for Naval Base Charleston (NAVBASE). The requirements of this condition are in effect since the total elapsed time to complete the RCRA Facility Investigation (RFI) is projected to be greater than 180 calendar days from the approval date of the *Final Comprehensive RFI Work Plan* as indicated in the Corrective Action Management Plan (CAMP).

In lieu of submitting quarterly reports, NAVBASE is voluntarily submitting monthly reports to provide an update on the progress of the RFI to members of the NAVBASE BRAC Cleanup Team (BCT) in a more timely manner. The content of the monthly reports includes information intended to satisfy condition II.E.3.a of the Part B Permit. Consequently, this report only addresses activities which occurred during the month of March 1997.

II. PORTION OF THE RFI COMPLETED

- At the March project team meeting, the regulatory agencies agreed that risk posed by AOC 507 was within acceptable limits; therefore, no further action is required in Zone B.
- The project team technical subcommittee met March 25, 1997 to resolve issues regarding calculation of background values for both soil and groundwater. The outcome of the meeting was a background data set that was approved by consensus by the subcommittee members. Additionally a draft response to SCDHEC's latest comments on the RFI was prepared as was a site specific summary of recommendations for the RFI.
- The RFI for Zone J was funded. Statements of work were prepared to procure subcontract services and sent out to potential vendors.
- An additional phase of direct push sampling was completed in SWMU 166 at the annex. The sampling further delineated the extent of the chlorinated solvent plume but it still failed to find the extremities.
- The RFI for Zone L was funded. Statements of work were prepared to procure subcontract services and sent out to potential vendors.

III. SUMMARIES OF FINDINGS

Attachment A contains a summary of the Zone K findings described above.

IV. DEVIATIONS FROM APPROVED WORK PLANS THIS REPORTING PERIOD

There were no known deviations from the approved RFI Work Plans for this reporting period.

V. SUMMARY OF CONTACTS WITH LOCAL COMMUNITY PUBLIC INTEREST GROUPS OR STATE GOVERNMENT

As indicated in the January 1995 Quarterly Status Report, the Navy has established a Restoration Advisory Board (RAB) to involve the public in the decisions regarding the investigation and remediation of contaminated sites at Naval Base Charleston. The meetings are held monthly and are open to the public. The minutes of the March 1997 meeting are provided as Attachment B.

VI. SUMMARY OF PROBLEMS OR POTENTIAL PROBLEMS AND ACTION TAKEN TO RECTIFY PROBLEMS

There were no problems or potential problems identified during this reporting period.

VII. KEY PROJECT PERSONNEL

There were no changes in key personnel this reporting period.

VIII. PROJECTED WORK FOR THE NEXT REPORTING PERIOD

Document Preparation and Data Evaluation:

- Revised inorganic background concentrations will be proposed for zones D, F, and G. Background concentrations will be developed for zone E as well.
- Recommendations for the Zone C, D, and I corrective measures studies and alternative background concentrations (if needed) will be submitted to the project team for review and comment.

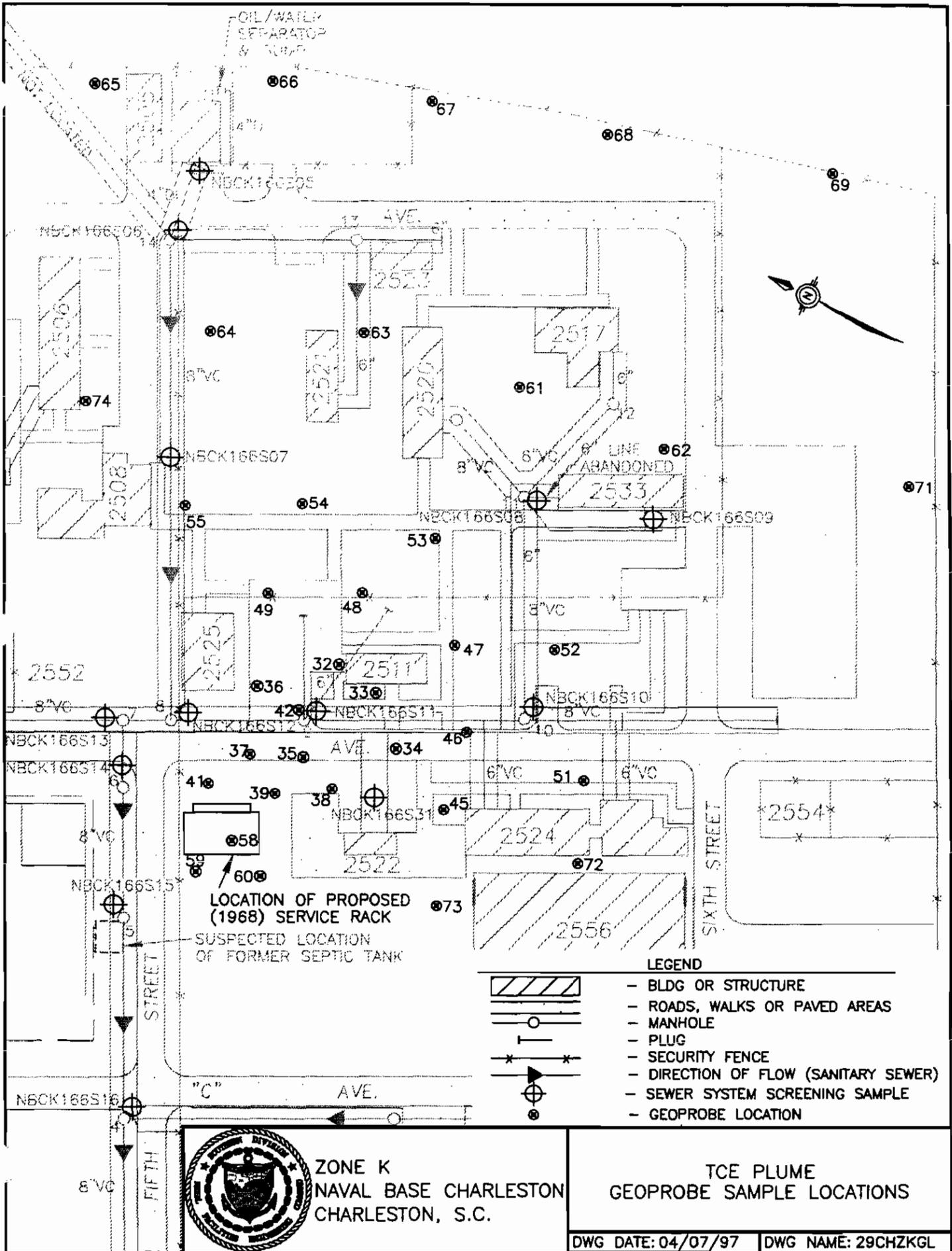
Field Activities:

- The installation of permanent monitoring wells at SWMU 166 at the Naval Annex is planned.
- RFI field work will begin in Zones J and L.
- The installation of temporary wells on Clouter Island is expected.
- Quarterly groundwater monitoring will continue in all zones where less than four quarters of sampling has been completed.

IX. COPIES OF DAILY REPORTS, INSPECTION REPORTS, LABORATORY DATA

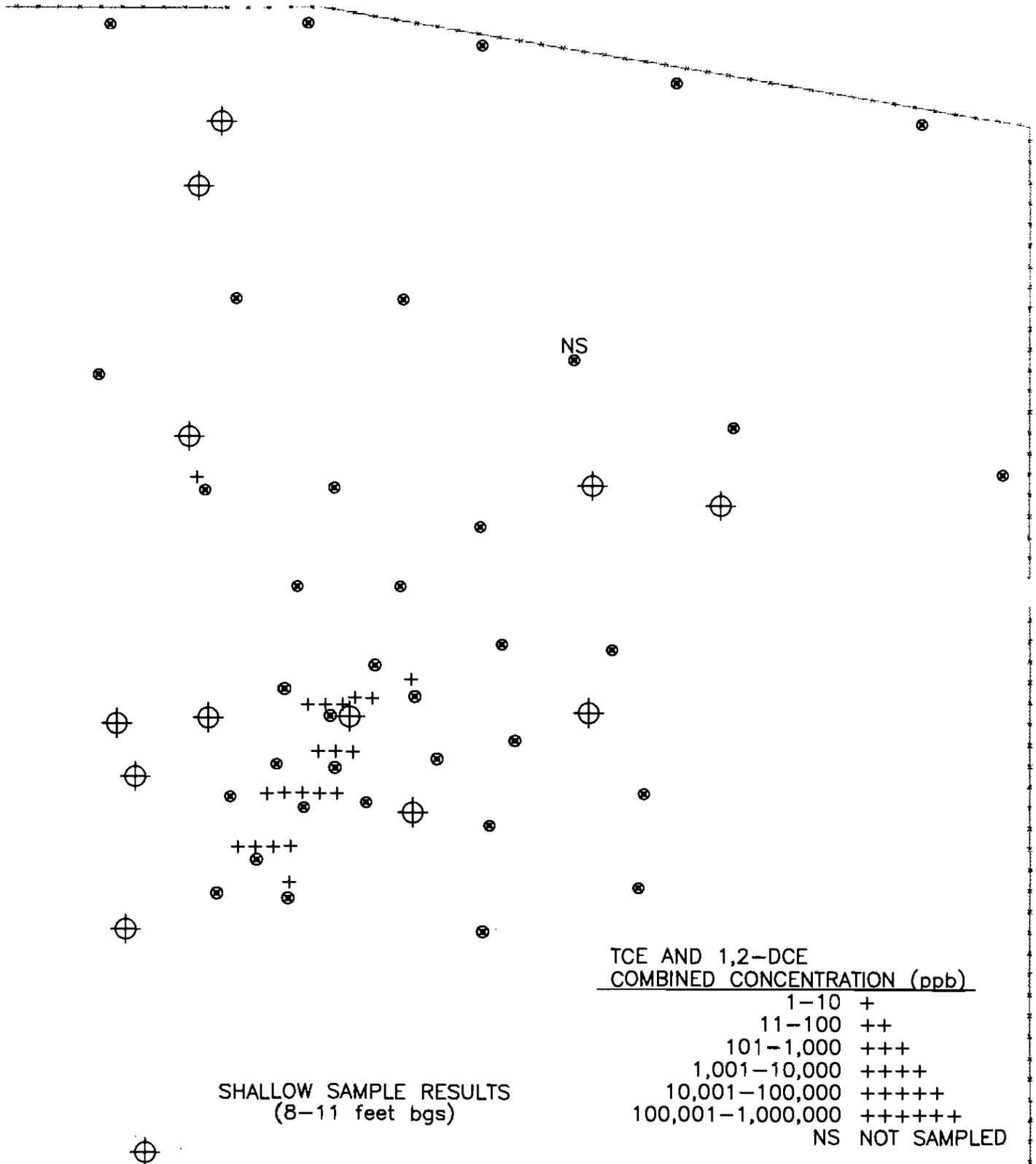
Daily activities are recorded in accordance with the Data Management Plan included as Section 14 of the Final Comprehensive Sampling and Analysis Plan. Photocopies of these daily records have not been included with this status report; however, this information is available for review upon request.

Per agreement with SCDHEC and EPA, hard copies of the analytical data are not being submitted. A copy of the data is maintained at the EnSafe/Allen & Hoshall office in Charleston and is available for review.



ZONE K
 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

TCE PLUME
 GEOPROBE SAMPLE LOCATIONS

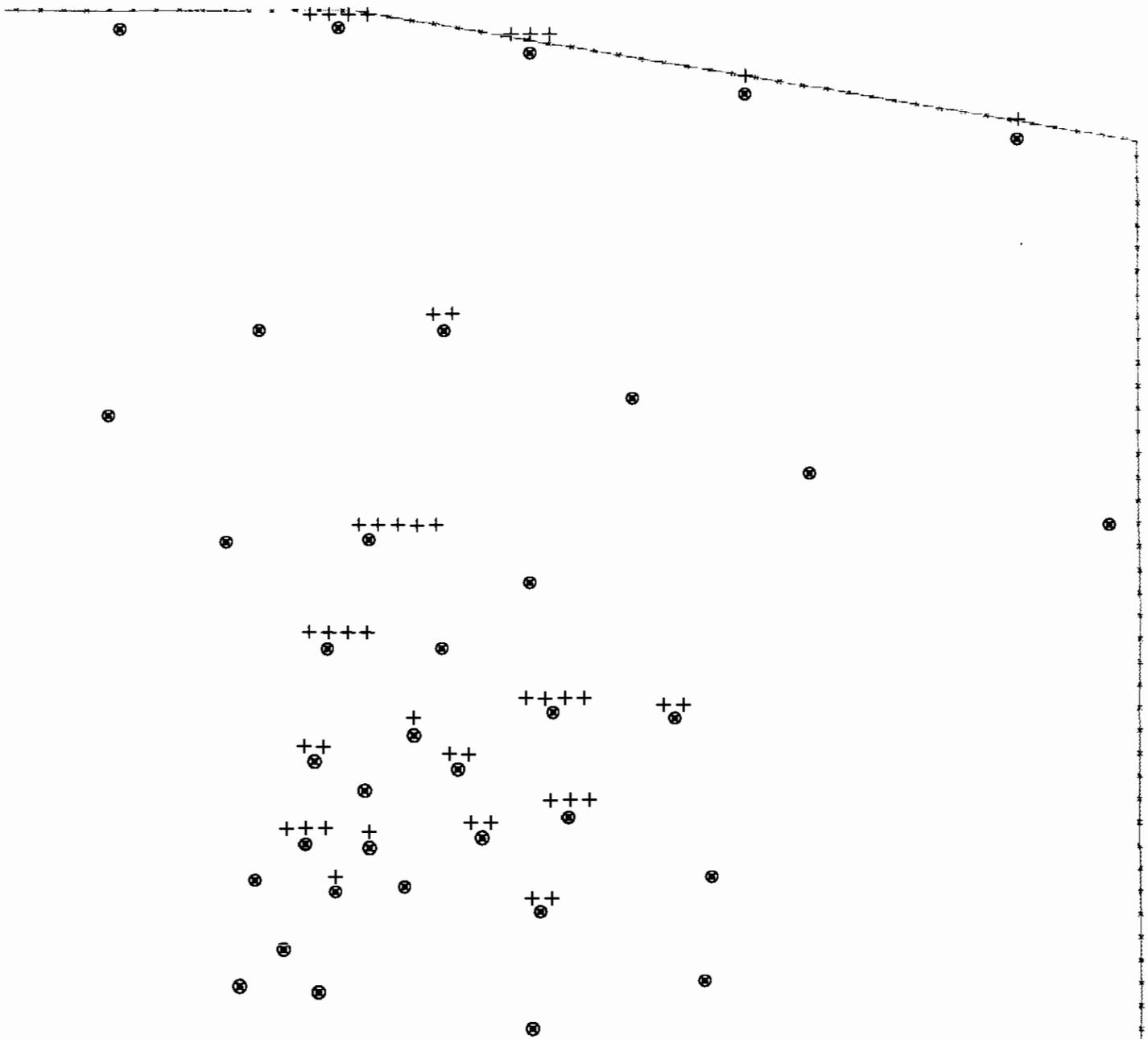


NS

SHALLOW SAMPLE RESULTS
(8-11 feet bgs)

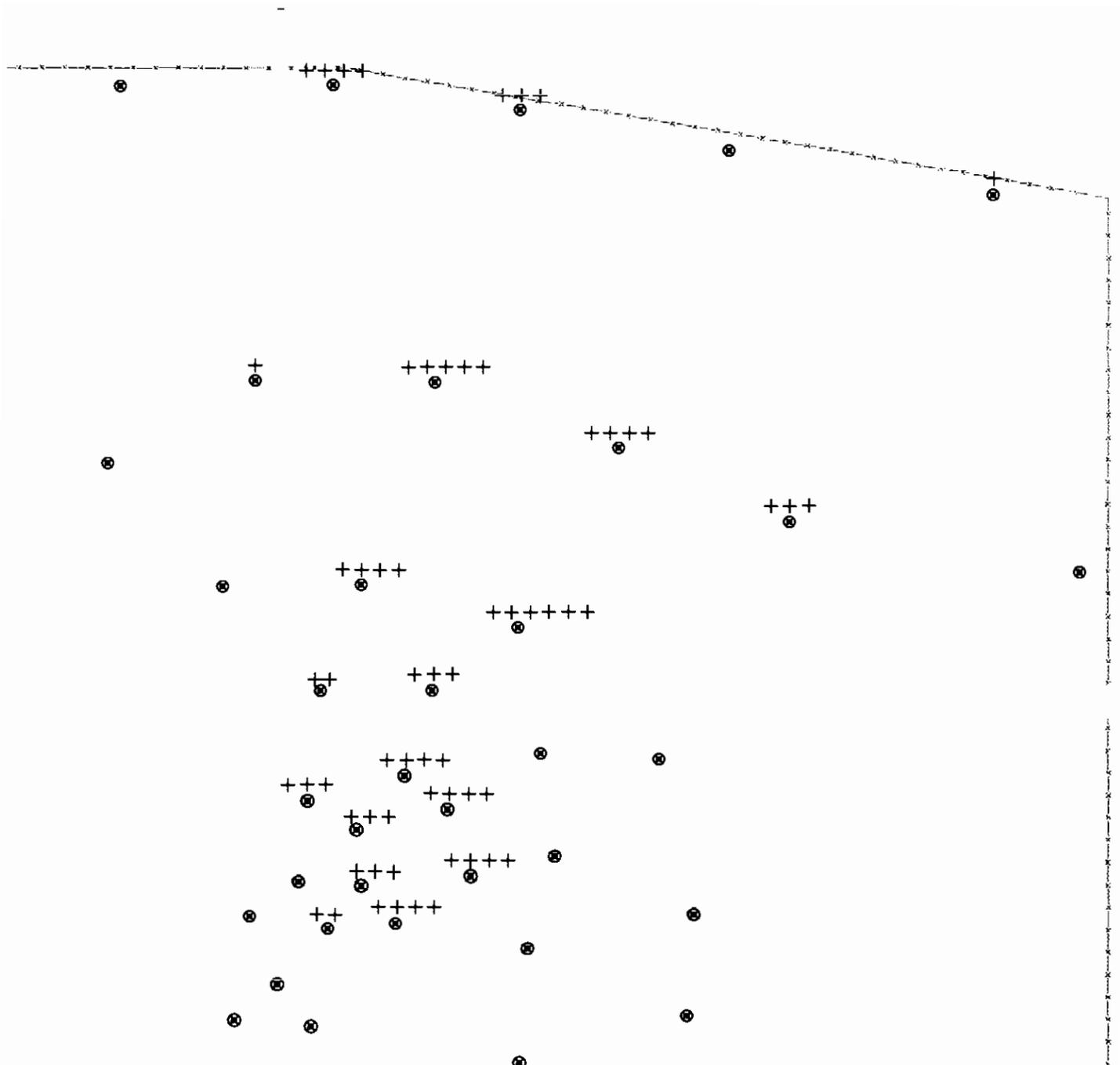
TCE AND 1,2-DCE
COMBINED CONCENTRATION (ppb)

1-10	+
11-100	++
101-1,000	+++
1,001-10,000	++++
10,001-100,000	+++++
100,001-1,000,000	++++++
NS	NOT SAMPLED



INTERMEDIATE SAMPLE RESULTS
(22-26 feet bgs)

TCE AND 1,2-DCE COMBINED CONCENTRATION (ppb)	
1-10	+
11-100	++
101-1,000	+++
1,001-10,000	++++
10,001-100,000	+++++
100,001-1,000,000	++++++



DEEP SAMPLE RESULTS
(33-36 feet bgs)

TCE AND 1,2-DCE COMBINED CONCENTRATION (ppb)	
1-10	+
11-100	++
101-1,000	+++
1,001-10,000	++++
10,001-100,000	+++++
100,001-1,000,000	++++++

SAMPLE ID	FIELD ANALYSIS (Combined TCE and DCE $\mu\text{g/L}$)	CONFIRMATORY LABORATORY ANALYSIS (Combined TCE and DCE $\mu\text{g/L}$)
166GP04234	305	1,970
166GP04535	ND	1J
166GP04824	ND	3J
166GP04926	9,433	1,426
166GP05210	ND	2J
166GP03911	14,957	3,100
166GP05811	1,378	163
166GP05924	ND	ND
166GP03836	? 1,296	? ND
166GP05324	ND	ND
166GP05333	137,765	15,170
166GP05424	86,468	1,673
166GP05433	4,709	3,773
166GP06133	1,582	969
166GP06234	310	216
166GP06333	43,583	2,037
166GP05124	ND	5J

COMBINED TCE AND DCE ANALYTICAL RESULTS FOR GROUNDWATER SCREENING SAMPLES ($\mu\text{g/L}$)			
	Shallow	Intermediate	Deep
166GP032*	ND	4	1,570
166GP033*	1	39	1,691
166GP034*	ND	15	1,910
166GP035*	640	8	790
166GP036*	ND	29	196
166GP037	ND	391	ND
166GP038	ND	ND	1,296
166GP039	14,957	10	40
166GP041	ND	ND	ND
166GP042	598	ND	305
166GP045	ND	22	ND
166GP046	ND	167	ND
166GP047	ND	6,149	ND
166GP048	ND	ND	779
166GP049	ND	9,433	99
166GP051	ND	ND	ND
166GP052	ND	36	ND
166GP053	ND	ND	137,765

* - Data for these samples are from laboratory analysis. All other data are from onsite analysis.

COMBINED TCE AND DCE ANALYTICAL RESULTS FOR GROUNDWATER SCREENING SAMPLES ($\mu\text{g/L}$) - Continued			
	Shallow	Intermediate	Deep
166GP054	ND	86,468	4,709
166GP055	6	ND	ND
166GP058	1,378	ND	ND
166GP059	ND	ND	ND
166GP060	8	ND	ND
166GP061	NS	ND	1,582
166GP062	ND	ND	310
166GP063	ND	20	43,583
166GP064	ND	ND	4
166GP065	ND	ND	ND
166GP066	ND	1,300	2,492
166GP067	ND	242	130
166GP068	ND	2	ND
166GP069	ND	1	10
166GP071	ND	ND	ND
166GP072	ND	ND	ND
166GP073	ND	ND	ND
166GP074	ND	ND	ND

NAVAL BASE CHARLESTON
RESTORATION ADVISORY BOARD (RAB)
Minutes of 11 March 1997

LIVE OAK COMMUNITY CENTER, 2012 SUCCESS ST., N. CHARLESTON

1. Introduction of the RAB Members and Guests

Ms. Wannetta Mallette, Community Co-chair, opened the meeting at 6:00 p.m. and asked that both RAB members and guests introduce themselves.

2. RAB Members Attending

Mr. Oliver Addison	Ms. Wannetta Mallette
Mr. Jay Bassett	Mr. Lou Mintz
Mr. James Conner	Mr. Odell Price
Mr. Daryle Fontenot	Mr. Arthur Pinckney
Mr. Tom Fressilli	Ms. Ann Ragan
Mr. Wilburn Gilliard	LDCR Paul Rose
Mr. Donald Harbert	Ms. Priscilla Wendt
Ms. Jeri Johnson	

3. Guests Attending

Mr. Tony Hunt	NAVFAC, SouthDiv
Mr. Brian Stockmaster	NAVFAC, SouthDiv
Mr. Gabriel Magwood	NAVFAC, SouthDiv
Mr. Paul M. Bergstrand	SCDHEC
Mr. Johnny Tapia	SCDHEC
Ms. June Mirecki	College of Charleston
Mr. J. Michael Reubish	CEERD
Mr. Frank Smith	SCFCU
Ms. Myrtle Barnett	Community Member
Mr. Leroy Carr	Chicora-Cherokee
Ms. Susan Dunn	Grassroots Coalition
Ms. Rosemary Moore	Community Member
Robert and Isabelle Fennessy	Community Members
Ms. Genny Fender	Shalom
Mr. Dave Backus	EnSafe/Allen&Hoshall
Ms. Diane Cutler	EnSafe/Allen&Hoshall
Mr. Todd Haverkost	EnSafe/Allen&Hoshall
Ms. Sandy Reagan	EnSafe/Allen&Hoshall

4. Administrative Remarks and Comments on Minutes

Ms. Mallette asked for administrative remarks or comments on the minutes from the last meeting. No remarks or comments were made.

5. Subcommittee Reports

Shipyards Detachment Subcommittee

Mr. Arthur Pinckney said there were no activities to report this month but that there will hopefully be something to report next month. The Detachment is a group of former shipyard workers that is helping with the environmental cleanup at the Naval Base.

Finance Subcommittee

Mr. Lou Mintz reported that the Finance Subcommittee started out as an oversight committee, but couldn't get enough information.

Community Relations Subcommittee

The Community Relations Subcommittee met prior to the RAB meeting. The subcommittee worked on a fact sheet about the RCRA Facility Investigation (RFI) results for Zones A, B, C, and I which is similar to the one produced for Zone H. Comments were made on the draft and after comments are received from the Project Team, the final can be produced - hopefully by April.

Another topic that was discussed (topic G on the RAB Meeting Agenda) was doing something for Earth Day. Earth Day is April 22. What the subcommittee wants to do is emphasize what the Navy is doing at the Base as far as cleanup is concerned. As a result, the subcommittee will produce a flyer that emphasizes Earth Day and lets people know that the Navy has people that can come and speak to them about the RAB and the environmental cleanup. The flyer will also offer the opportunity to take tours of some of the sites on base. The flyer will be sent to RAB members, Chamber of Commerce, Sierra Club, and area schools. Diane Cutler, a Community Relations Specialist with EnSafe/Allen&Hoshall, is working with the subcommittee and spearheading the effort.

Upcoming topics include creating a Web site for the RAB and additional fact sheets.

The Community Relations Subcommittee will be meeting again next month on April 8 from 3:30 - 4:30 at the Caretaker Site Office on base.

6. Reuse Update

Ms. Mallette announced that the Redevelopment Authority's (RDA) reuse update will be presented at every other meeting in order to be able to accommodate the entire agenda within the allotted hour. So, unless there is any late-breaking news, the reuse update will be presented next month. Ms. Jeri Johnson reported that there is no late breaking news.

Mr. Pinckney asked if the RDA is still operating with a full board? Ms. Johnson said yes, there are seven members. Three of the seven had two year terms and those terms will expire at the end of April. The governor is currently working on replacement candidates, but Ms. Johnson has not heard who they are. The three that are leaving are Dr. Bell, Virgil Johnson, and Allen Metz.

7. Environmental Cleanup Progress Report

Project Status

Underground Storage Tank Program: The Detachment is doing all the Navy's tank removals and to date has removed over 90 tanks.

Asbestos: Building 32 remediation is in progress.

Chicora Tank Farm: The Navy is currently waiting on a reuse response from the City of North Charleston and is in the process of getting additional information to the city and the RDA concerning the tank farm demolition.

Ms. Mallette asked what additional information the Navy is preparing for the city. Mr. Fontenot responded that the RDA asked the Navy to provide a written plan on how they will approach the demolition, and to provide verification that South Carolina Department of Environmental Control (DHEC) has bought off and approved the Navy's method of demolition. The Public Safety Committee has approved the partial demolition of the tanks and the plan is needed to present to the full council so they can determine if the City Council will accept the property for a public conveyance.

Mr. Mintz asked if partial demolition will bring all the tanks down to ground level. Mr. Fontenot answered yes, as level as it can get considering drainage. Mr. Mintz asked if it will be able to be used as a marching field. Mr. Fontenot again replied yes, but that it will need some additional work.

Mr. Mintz made a reference to "pollution" under the ground. Mr. Fontenot reminded Mr. Mintz that the issue here is demolition of the tanks. As far as contamination of soil and groundwater, environmental investigations have been completed and a report has been submitted and approved by DHEC which states that no further action is necessary at Chicora Tank Farm. There is not a contamination problem at the tank farm for soil and water - the Navy is only concerned with how to demolish the tanks.

Mr. Mintz agreed with Mr. Fontenot's statement about no contamination in soil or groundwater, but continued that he is concerned with potential contamination of the tanks themselves. Mr. Fontenot responded that when the demolition process begins, potential contamination of the tanks will be addressed and appropriate measures will be taken. Mr. Mintz speculated the tanks are polluted. Mr. Fontenot reported that he does not have an indication about the state of the tanks, and will not know until the demolition process begins.

Mr. Mintz questioned if the City of North Charleston or the Board of Education will have "problems" with the site. Mr. Fontenot responded that the Navy does not see where there will be a problem with contamination by partially demolishing the tanks on site.

Mr. Mintz wanted it in the record that he thinks the tanks are polluted and hazardous.

Mr. Pinckney asked about the Reuse Plan for the tanks. Mr. Fontenot clarified that the Navy is waiting on a Reuse *Response* to determine if someone is willing to reuse the property with partial demolition of the tanks. That's why additional information is being provided - so they can tell the Navy if they are willing to accept a public benefit conveyance with partial demolition of the tanks. Mr. Pinckney continued by asking if the Navy has received any official word from North Charleston. No official word has been received yet.

Ms. Johnson reported that the RDA has officially stated that they would like the Navy to put the verbal proposal they presented in December (to partially demolish the tanks) in writing, and also include DHEC's commitment that the demolition is an approved procedure. The RDA will take that written response to the City of North Charleston and allow them to present it to the full council. The Public Safety Committee has approved the concept, but needs a full council approval. Once the document is received, that should be all that is necessary for the city to make a final vote on whether or not they will be willing to accept the proposal.

Mr. Mintz referenced a newspaper article that stated that Mayor Keith Summey did not want the property for a playground because they did not have the money to support it, so they in turn offered it to the Board of Education. The Board of Education did not want the property either.

Mr. Pinckney wanted to revisit the RAB's initial discussion about demolition options. His recollection was that the RAB members wanted the tanks totally removed, but they only compromised for partial demolition because the Navy said they wouldn't pay for total demolition. Ms. Ragan added that she recalls the RAB agreed to and was supportive of partial demolition due in part to the cost of total removal. Mr. Mintz agreed with Ms. Ragan's recollection. Mr. Odell Price said he remembers the Navy bringing up the cost, but did not recall them saying that they would not perform total demolition. He said the RAB reached consensus that they wanted partial demolition because the cost for total removal was prohibitive. Mr. Oliver Addison remembered that they reached consensus after they were told that total removal would not be done.

Someone else added that leaving the tanks in place was also one of the DHEC-approved options. Mr. Tom Fressilli added that the reason the Navy is waiting to hear if there is a user before demolishing the tanks according to the RAB's preference is because if there is no user, there is no reason for the Navy to spend the additional money and time.

Mr. Jim Conner asked how the Mayor of North Charleston can give away the tank farm which he doesn't even own. Ms. Johnson answered that he can't give it away, but what he can do is request a no cost public benefit transfer from the Navy to the City which is essentially a gift. Mr. Conner continued that he does not believe the Navy should relinquish the land, because if any future cleanup is required, the entity that "owns" the land will be responsible for cleaning it up. **Again, Mr. Fontenot stated that the concern at Chicora Tank Farm is demolition of the tanks, not cleanup. There is no cleanup involved. Environmental investigations have already been conducted and it has been determined that no action is required regarding cleanup of soil or groundwater.** Mr. Conner asked if oil is still in the tanks and if that will be cleaned up. Mr. Fontenot replied that any oil remaining in the tanks will be cleaned up during the demolition

process - that this is standard operating procedure. The Navy will use standard industry practices when demolishing the tanks.

Mr. Conner continued by asking about the smell of oil that residents reported near the tank farm. Mr. Fontenot said that every indication of the odor points to a tank trucking firm located across the street from the Chicora Tank Farm.

Mr. Pinckney asked if the transfer of the tank farm will also include all the pipes and the entire system. Mr. Fontenot specified that the transfer will only include the fenced-in 23 acres, but the closure will address the tanks, the pipes, and the entire tank system.

RCRA Corrective Action

Mr. Tony Hunt provide the RCRA update. Funding for Zone J, which is the water bodies (Cooper River, Noisette Creek, Shipyard Creek) has been awarded so EnSafe/Alien & Hoshall will begin field work in that Zone later this month. Zone L field work is expected to be awarded this week.

Progress for February: The Zone D RFI report was submitted to the state. The 90% progress meeting for Zones F, G, and K was held in February. Sampling results were reviewed, and determinations were made whether additional samples needed to be taken. As a result, additional screening and sampling is ongoing. The field work in Zone E, which is the Shipyard, is complete so report generation will now begin.

Solid Waste Management Unit (SWMU) 39: SWMU 39 is in the northern area of the base. Sampling results from the wells that were installed off-base have been submitted. As a review, two wells were installed off-base near O'Heare Avenue to investigate chlorinated solvents that might be migrating off-base. Nothing was found in the deep well, but acetone was found in the shallow well at low concentrations. Acetone wasn't one of the volatile organic compounds (VOCs) the Navy was looking for, and the acetone may have been a laboratory contaminant or from a landfill.

Two other wells that were installed were right at the Virginia Avenue gate, again, one shallow and one deep. In those wells the Navy was looking for VOCs and semi-volatile organic compounds (SVOCs) which are often components of fuel products, and metals. At these well, there were no chlorinated compounds found, but they did find some of the dissolved fuel type components like methylated naphthalene and benzene. That information supports the geological studies about groundwater flow and the direction of contaminant migration.

One other well that was installed was 13 which was a shallow well. That location already had an intermediate and deep well. At this well, they found tetrachloroethene (PCE), trichloroethene, and some of the other degradation products. The next step is to carry this site into the corrective measures study and determine which is the best alternative for treating contamination that is in the ground.

As the Navy has said all along, they don't feel there is a connection between what was released at SWMU 39 and what is in the Crawford Street private well. Migration of contamination from the facility is not supported.

Ms. Mallette asked if Hess has completed their investigation and shared any information with the Navy. Although Hess has not shared any information yet, they are conducting an investigation and have done some soil removal and installed some wells. The Navy did do a combined water level measurement with them so Hess could get some information on groundwater flow direction and hydraulic gradient. As soon as Hess submits their report to DHEC they will also share it with the Navy. As a review, free product was found in the well in the corner of the Naval Base property and tests showed that petroleum type product was determined to be migrating onto the base from the north.

Mr. Mintz asked for clarification on Mr. Hunt's statement on laboratory acetone contamination - was it from the laboratory on base or an off-site laboratory. Mr. Hunt said the samples were sent out to be tested.

A guest asked if off-base residential wells were tested. Mr. Hunt explained that there were two wells on Crawford Street that were tested. One of those wells is the one that had TCE (but no degradation products). The guest also asked if a sample of the free product was ever tested to identify its type and source. Hess tested the sample and "fingerprinted" it, and after that they began their activities at the site. The Navy is concerned about the groundwater contamination that is migrating on-site, and will do their own fingerprinting test as well.

Ms. Ragan stated that Hess is required to provide a report on their findings to DHEC. DHEC will decide what needs to be done after they receive and review the report. Mr. Fontenot added that Hess has been very cooperative.

Ms. June Mirecki asked if the Navy found any MTBE hits. Mr. Hunt answered no.

Interim Measures

Mr. Brian Stockmaster provided an update of the Interim Measures. Those activities are summarized below:

SWMU 8 (Oil Sludge Pits) - 50% complete overall, 100% of pit area 1 uncovered. Found sludges and construction debris. In Area 2, sludges were found, excavation continues.

AOC 503 (Unexploded Ordnance) - Completed search on 10 acre area, excavation turned up pieces of scrap metal. Report on search and findings being drafted.

AOC 574 (Petroleum Contaminated Area at Bldg. 9) - Excavation complete, ready to backfill site.

SWMU 83 (Foundry Bldg. 9, completion of process closure cleanup) - 95% complete, waiting on PCB sample results.

SWMU 25 (Old plating shop annex, Bldg. 44) Demolition and removal to the annex portion of the building 60% complete, horizontal and vertical portions of building down.

SWMU 5 and AOCs 621 and 605 (Battery Electrolyte Treatment Area) - Just started this week, flushed pipe and removed, will be removing lead contaminated soils soon.

SWMU 38 (Misc. Storage, North of Bldg. 1605) - Start next week.

SWMU 42 (Former Asphalt Plant Area) - Just started this week, removal of lead contaminated soils.

SWMU 14 (Chemical Disposal Area) - Looking to start excavation on 3/19/97.

AOC 707 (Bldg. 1795 fuel oil spill) - Excavated area waiting on confirmation sample results.

AOC 708 (NS-668/669 oil spill) - waiting on confirmation sample results.

SWMU 7 (Public Works Storage Yard - Old Corral) - 20% complete, removed old shed and concrete broken up at site, will be excavating contaminated soils next.

Mr. Mintz asked what the Navy does with petroleum-contaminated soils. Mr. Stockmaster said it depends on the levels. If they're found suitable, they hope to bioremediate them. However, if other constituents are found in the soil, such as metals, bioremediation would not make sense because metals won't be affected by bioremediation. In some instances, the soil is brought some place and used for laying asphalt and making roads. The Navy tries to find the most suitable disposal or reuse for the soil.

Mr. Conner asked if mercury contamination was found while testing at the Foundry. Mr. Stockmaster said he does not know if the actual investigation turned up mercury, but investigation is not the intent of the Interim Measure process. However, he can say there are some PCB and oil spill areas in there, lead dust, and PCB oils that were inside of machinery that were taken care of. Mr. Hunt said that he does not recall mercury in that area, but does remember cadmium and chromium.

Someone asked for the clarification of what was demolished at SWMU 25. The Bldg. 44 annex portion is what was demolished. The concrete pad has not been pulled up yet, but it will be.

8. Information on Environmental Justice Presentation for RAB

Mr. Fontenot reported that he is currently working on finding a local speaker to come to the RAB and give a briefing on Environmental Justice. Hopefully, someone will be able to come in to speak at the April meeting.

9. Remaining Questions and Comments

Ms. Mallette asked if there were any further questions or comments from RAB members or guests.

Agenda for the next meeting will include a report from the Community Relations Subcommittee and a Reuse Update from Jeri Johnson.

RAB meetings will be held at the same location (Live Oak Community Center) unless otherwise announced.

10. Adjournment

<p style="text-align: center;"><u>Summary of Action Item</u></p> <ul style="list-style-type: none">• Mr. Fontenot will coordinate getting a speaker on environmental justice issues.

Attachments to Minutes

- (1) Tuesday March 11, 1997 RAB Meeting Agenda**
- (2) RCRA Facility Investigation (RFI) Progress Report for March 1997**
- (3) Naval Base Charleston RFI Progress Update**

Minutes recorded by: Diane Cutler, EnSafe/Allen&Hoshall

Minutes approved by: _____

**Daryle Fontenot
Navy Co-Chair**

**Wannetta Mallette
Community Co-Chair**

Tuesday, March 11, 1997

Charleston Naval Complex

RESTORATION ADVISORY BOARD MEETING AGENDA

6:00 P.M. Location: *Live Oak Community Center*
2012 Success Street, North Charleston, SC

6:00 P.M. RAB MEETING

- A. Introduction of the RAB Members and Guests
- B. Administrative Remarks, comments on the minutes of the last meeting
- C. Subcommittee Reports
- D. Reuse Update
- E. Environmental Cleanup Progress Report - Cleanup Team
 - Status of the Environmental Programs
- F. Information on Environmental Justice Presentation for RAB
- G. Earth Day Tour of Base
- H. Remaining Questions and Comments from RAB Members and Visitors
- I. Agenda for next meeting.

RAB Members, Project Team, and interested citizens informally talk about what's going on after the meeting from 7:00 p.m. to 8:00 p.m.

Please mark your calendar. Our next meeting is **Tuesday, April 8, 1997**. Time and location to be determined.

**Naval Base Charleston
RCRA Facility Investigation (RFI)
PROGRESS REPORT FOR MARCH 1997**

INVESTIGATIVE ZONES

- A. Warehousing and scrap metal yard
- B. Golf course and residential
- C. Office space and warehouse (NH-45, Navbase HQ)
- D. Parking lot, warehouses
- E. Shipyard
- F. Recreational areas and public works shops
- G. Fuel farm and transfer facility
- H. Southern end of the base excluding waterfront
- I. Southern end of the base including waterfront and dredge material area
- J. Waterbodies
- K. Non-contiguous areas
- L. Sewer systems and railroad system

FUNDING

- ◆ Funding status
Zone J field work is awarded. Zone L field work is expected to be awarded this week.

PROGRESS FOR FEBRUARY

- ◆ The Zone D RFI Report was submitted February 19, 1997.
- ◆ 90% progress meetings for Zones F, G and K were held during the February Project Team meeting. As a result there is additional screening work proposed for sites in all three zones.
- ◆ Field work has completed in Zone E.
- ◆ SWMU 39 groundwater sample results received.

PROJECTED ACTIVITY FOR MARCH

- ◆ Begin field work in Zones J and L.
- ◆ Continue to resolve comments on background issues.

North Charleston
 Project Status
 3/11/97

PROGRAM	PROJECT DESCRIPTION	ACTION REQUIRED	ECD
BRAC - Property Lease/Transfer	None		
NEPA	Environmental Assessment of Naval Annex	Waiting on reuse plan from RDA before completing the EA	
RCRA Compliance	Part B permit application	CSO submit Part B application	
RCRA Corrective Action	Zone A RFI report	In SCDHEC review, Report comments to be discussed 3/12/97	3/12/97
	Zone A field work	SWMU 1 & 2 soil and groundwater sampling complete, additional data from wells at SWMU 39 received	3/11/97
	Zone B RFI report	Final Report submitted 1/31/97	complete
	Zone B CMS Work Plan	AOC 507 scoped 3/11/97, no further action required. Background issues within Zone B still being resolved.	3/12/97
	Zone C RFI report	In SCDHEC review, comments to be discussed 5/13/97	5/13/97
	Zone D field work	Draft report submitted 2/19/97, in EPA and SCDHEC review	5/30/97
	Zone F & G field work	Field work completed for all sites except AOC 607 and SWMU 175	
	Zone E field work	Field work complete	
	Zone H RFI report	Report changes submitted, in SCDHEC review	3/24/97
	Zone I RFI report	In SCDHEC review, comments to be discussed 5/13/97	5/13/97
	Zone J RFI field work	Awarded, field work to begin in March	
	Zone K Field Work	Field work complete at Clouter Island, additional DPT sampling occurring at Naval Annex	
	Zone L RFI field work	Negotiated awaiting award	3/28/97
	Miscellaneous issues		
	Groundwater Model	Lower flow zone is being added to model, calibration with data from new wells is next step	4/29/97
	Transfer of IR sites to UST program	Letter submitted requesting transfer of sites (AOC 659, 667, SWMU 13, 138)	complete
	Support services		
	Groundwater Monitoring	Zone E 4th ECD 3/6/97, Zone A Add 1 to begin 2/18/97, Zone E Add I and Zone K awarded	Ongoing
Underground Storage Tank	Tank Management Plan	Complete	
	Petroleum Remediation Plan	Det preparing plan of action	
	Bioremediation demonstration project	In operation	
	Removals	FY 97 - 45 tanks authorized for removal, thirty eight have been removed	
	Chicora Tank Farm	Waiting on reuse response, additional information being prepared for the RDA and City of North Charleston	
Asbestos	Building 32 remediation	In progress	6/30/97

Interim Measure / Process Closure Status Summary

SITE	DESCRIPTION	STATUS
SWMU 8	Oil Sludge Pits	50% complete overall, 100% of pit area 1 uncovered. Found sludges and construction debris. In Area 2 we have found sludges and are continuing excavation.
AOC 503	Unexploded Ordnance (UXO) in marsh	Completed search on 10 acre area, excavation turn up pieces of scrape metal. Drafting report of search and findings.
AOC 574	Petroleum contaminated area bldg. 9	Excavation complete, ready to backfill site
SWMU 83	Foundry Bldg. 9, Completion of process closure cleanup	95% complete, waiting on PCB sample results.
SWMU 25	Old plating shop annex, Bldg. 44, Demolition and removal to the annex portion of this building	60% complete, horizontal and vertical portions of building down.
SWMU 5 AOC 621 AOC 605	Battery Electrolyte Treatment Area	Just started this week, flushed pipe and removed, will be removing lead contaminated soils soon.
SWMU 38	Misc. Storage, N. of Bldg. 1605	start next week
SWMU 42	Former Asphalt Plant Area	Just started this week, removal of lead contaminated soils
SWMU 14	Chemical Disposal area	Looking to start excavation on 3/19/97
AOC 707	Bldg. 1795 fuel oil spill	Excavated area waiting on confirmation sample results
AOC 708	NS-668/669 oil spill	Waiting on confirmation sample results
SWMU 7	Public Works Storage Yard (Old Corral)	20%, removed old shed and concrete broken up at site, will be excavating contaminated soils next.

Acronym List

EBSL - Environmental Baseline Survey for Lease
FOSL - Finding of Suitability for Lease
BEC - BRAC Environmental Coordinator
NS - Naval Station
COE - Army Corps of Engineers
EBST - Environmental Baseline Survey for Transfer
MC - Marine Corps
fac. - facility
EA - Environmental Assessment
RCRA - Resource, Conservation and Recovery Act
SCDHEC - South Carolina Department of Health and Environmental Control
LCDR - Lieutenant Commander
OIC - Officer in Charge
RFI - RCRA Facility Investigation
WP - Work Plan
EPA - Environmental Protection Agency
RTC - Response to Comments
RFA - RCRA Facility Assessment
SWMU - Solid Waste Management Unit
IM - Interim Measures
AOC - Area of Concern
IR - Installation Restoration
UST - Underground Storage Tank
DRMO - Defense Reutilization and Marketing Office
IDW - Investigative Derived Waste
USGS - United States Geological Survey
CSO - Caretaker Site Office
PEP - Project Execution Package
GRAM - General Radioactive Material
Det. - Shipyard Detachment
SOW - Statement of Work
ASB - Asbestos
ECD - Estimated Completion Date

NAVAL BASE CHARLESTON RCRA FACILITY INVESTIGATION PROGRESS UPDATE

ZONES	CURRENT	CURRENT	PLANNED		OVERALL	OVERALL	NOTES
	RFI	PHASE	COMPLETION	DATE OF	RFI	RFI	
	RFI	COMPLETION	CURRENT RFI	NEXT	COMPLETION	COMPLETION	
	PHASE	PERCENTAGE	PHASE	PHASE	DATE	PERCENTAGE	
A	Report Review	98	3/19/97	CMS Work Plan	3/19/97	95	
B	Report Review	100	12/20/96	CMS Work Plan	1/8/97	100	CMS in progress
C	Report Review	80	3/21/97	CMS Work Plan	3/21/97	90	
D	Report Review	0	6/6/97	CMS Work Plan	6/6/97	75	
E	RFI Report Prep	10	5/24/97	RFI Report Prep	8/19/97	55	
F	Field Work	95	3/15/97	RFI Report Prep	9/16/97	48	
G	Field Work	95	3/15/97	RFI Report Prep	9/26/97	48	
H	Report Review	95	3/24/97	CMS Work Plan	3/24/97	95	
I	Report Review	50	4/16/97	CMS Work Plan	4/16/97	80	
J	Field Work	0	10/16/97	RFI Report Prep	4/21/98	10	
K	Field Work	90	3/15/97	RFI Report Prep	9/30/97	45	
L	Field Work	0	8/2/97	RFI Report Prep	1/21/98	10	
All Zones					4/21/98	63	

LEGEND

Phase	Description
RFI	RCRA Facility Investigation
CMS	Corrective Measures Study
Work Plan Preparation	Work Plan being prepared by Navy Contractor
Work Plan Review	Regulators (DHEC & EPA) reviewing work plan
Field Work	Navy contractor performing field work as outlined in the Work Plan
RFI Report Preparation	Navy contractor preparing the RFI Report
Report Review	Regulators (DHEC & EPA) reviewing report
CMS Work Plan	CMS Work Plan being prepared by Navy Contractor

Prepared 12/19/96
Revised 3/11/97

Time: 3:30 p.m. - 4:30 p.m.

Attendees: Daryle Fontenot, Louis Mintz, Ralph Laney, Wannetta Mallette, Arthur Pinckney, Diane Cutler

DISCUSSION ITEMS

Human Health Fact Sheet Mr. Fontenot asked Mr. Pinckney what his specific questions were regarding human health issues as they relate to the Naval Base in order to determine if producing a fact sheet on the subject was necessary. Mr. Pinckney stated that his questions were: 1) How do epidemiological studies relate to human health? 2) If former shipyard workers have an issue with their health that they think relates to their past work on base, who do they need to contact? Mr. Laney and Mr. Fontenot provided the following answers: 1) Toxicological studies are done on fish and other species to help determine what levels of contaminants would be safe for human consumption. The values derived from these tests are used in the risk assessments performed at Naval Base Charleston to determine risk levels to future residents and site workers. The risk assessment and associated RCRA cleanup addresses future human health. 2) The RCRA program does not address past health concerns. Any health concerns that are thought to be a result of former service at the shipyard should be directed to the Department of Labor.

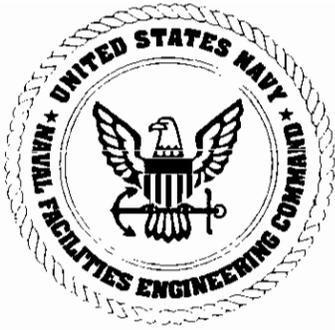
Zones A, B, C, and I RFI Results Fact Sheet Ms. Cutler provided a draft version of the RFI Zones A, B, C, and I Fact Sheet. Mr. Fontenot suggested minor edits. Mr. Fontenot will pass the fact sheet through the Project Team for final approval. Once final approval is given, Ms. Cutler will make minor edits, import the appropriate map, and have the fact sheet printed and distributed by the April 8 meeting (if possible).

Earth Day Mr. Fontenot asked for input regarding the idea of an Earth Day tour. Mr. Mintz said he thought it was a good idea but in order to be newsworthy or well attended, that local political leaders or celebrities should be brought in and a banner should be created. Ms. Cutler relayed the efforts that would be involved including getting a commitment from the local celebrity, writing press releases and initiating extensive advertising, making a banner, creating the material needed for the tour (handouts, scripts), coordinating tour logistics such as a bus, tour guides, etc. Although it can be done within the timeframe, the question is, does the subcommittee think it is worth all the effort?

Ms. Cutler offered an alternative suggestion; that a flyer be distributed which announces the opportunities for education and involvement in the process. It would announce the RAB meetings, Speakers Bureau, and availability of tours. The flyer would be distributed to schools through the School Board, Chamber of Commerce, Sierra Club, RAB members, and libraries. Mr. Fontenot will pass it by Jim Beltz at the Public Affairs Office since his name will be the point of contact.

NEXT MEETING

Subcommittee Meeting The next Subcommittee meeting will be held on April 8, 1997 at 3:30 p.m. Mr. Fontenot will not be in town for the May subcommittee or RAB meeting -- a decision whether the May subcommittee meeting will be held will be discussed in April.



NAVY NEWS RELEASE

Public Affairs Office
Naval Facilities Engineering Command, Southern Division
P.O. Box 190010
North Charleston, SC 29419

RAB Reports on Environmental Progress and Base Reuse

For Publication by Tuesday, April 8, 1997

For more information, contact:

Jim Beltz (803) 820-5771

North Charleston – The Naval Base Charleston Restoration Advisory Board will hold their next meeting on Tuesday, April 8, 1997 from 6 to 7 p.m. at the Live Oak Community Center, 2012 Success Street, in North Charleston. Agenda topics will include a progress report on environmental activities and a base reuse update presented by the Charleston Naval Complex Redevelopment Authority. Navy staff and environmental specialists will be available after the meeting for informal discussion and to answer questions. The meeting is open to the public and all are encouraged to attend.

The RAB is a group of community members, Navy representatives, and federal, state, and local organizations and agencies that gather monthly to discuss environmental cleanup progress and property reuse at Naval Base Charleston. Meetings are held on the second Tuesday of every month at 6:00 p.m.

For more information on the upcoming meeting, call Jim Beltz at the Public Affairs Office at Naval Facilities Engineering Command, Southern Division, (803) 820-5771.

###

April 8, 1997

Naval Base Charleston

RAB Meeting

Restoration Advisory Board

DateTuesday, April 8, 1997

Time6 - 7 p.m.

Location...Live Oak Community Center
2012 Success Street
North Charleston

The RAB is a forum where community members meet with representatives from the Navy, State and Federal environmental agencies, and other groups to discuss the environmental programs underway at Naval Base Charleston. **All meetings are open to the public and everyone is encouraged to attend.**

For More Information



Call Jim Beltz at the Public Affairs Office
at Naval Facilities Engineering Command,
Southern Division: (803) 820-5771.

April 8, 1997

Naval Base Charleston

RAB Meeting

Restoration Advisory Board

DateTuesday, April 8, 1997

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Location...Live Oak Community Center
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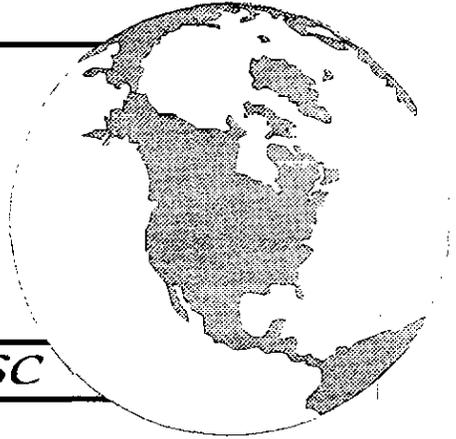
For More Information



Call Jim Beltz at the Public Affairs Office
at Naval Facilities Engineering Command,
Southern Division: (803) 820-5771.

Earth Day

April 22, 1997



Naval Base Charleston ~ Charleston, SC

What are your plans for Earth Day this year? You remember the slogan, "think globally, act locally," -- well how about getting involved with the environmental restoration of Naval Base Charleston?

Naval Base Charleston has an active, ongoing environmental restoration program. A Restoration Advisory Board (RAB) consisting of community members, Navy representatives, and state, federal and local organizations and agencies meets monthly to discuss the progress and future activities associated with the cleanup of the base. These meetings are held on the second Tuesday of each month at 6:00 p.m., and public attendance is encouraged. The next meeting will be held at the Live Oak Community Center at 2012 Success Street in North Charleston. Please come, and bring a friend or neighbor.

The RAB also has speakers available to business, education, and community groups in the Charleston area. If you are a member of, or know a group that needs an informative speaker for a meeting or special presentation, please call the Public Affairs Office at the number provided below.

Another activity that the Navy offers is environmental tours of the Naval Base. These tours are geared to introduce and inform community and academic groups about the ongoing environmental investigations and cleanup at the base. If you are interested in scheduling a tour, contact the Public Affairs Office.



For more information on how you can get involved, call Jim Beltz at the Public Affairs Office at Naval Facilities Engineering Command, Southern Division, (803) 820-5771.



DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O. BOX 190010
2155 EAGLE DRIVE
NORTH CHARLESTON, S.C. 29419-9010

5090/11
Code 1877
12 May 1997

Mr. G. Randall Thompson
Director, Division of Hazardous and Infectious Waste Management
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subj: SUBMITTAL OF THE MONTHLY RCRA FACILITY INVESTIGATION
PROGRESS REPORT

Dear Mr. Thompson:

The purpose of this letter is to submit the Monthly RCRA Facility Investigation (RFI) Progress Report for Naval Base Charleston. This report is submitted voluntarily to provide an update on the progress of the RFI to members of the NAVBASE Project Team which includes representatives of the Environmental Protection Agency and the South Carolina Department of Health and Environmental Control.

Enclosure (1) is the Monthly Report which contains the activity for the month of April, 1997. If you have any questions, please contact Billy Drawdy or me at (803) 743-9985 (Ext. 29) and (803) 820-5525 respectively.

Sincerely,

A handwritten signature in black ink that reads "Matthew A. Hunt".

MATTHEW A. HUNT
Environmental Engineer
Installation Restoration III

Encl: (1) Monthly RFI Progress Report - April 1997

Copy to (w/encl):
SCDHEC (Tapia, Bergstrand)
USEPA (1) (Bassett)
SOUTHNAVFACENGCOM (Hunt)
CSO Naval Base Charleston (Drawdy, Fontenot)

ENVIRO

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**NAVBASE CHARLESTON
RFI STATUS REPORT
PERIOD: SUMMARY OF
01 April 1997 To 30 April 1997**

I. INTRODUCTION

The following status report has been prepared to satisfy condition II.E.3.a of the Part B Permit Renewal dated 5 December 1994 for Naval Base Charleston (NAVBASE). The requirements of this condition are in effect since the total elapsed time to complete the RCRA Facility Investigation (RFI) is projected to be greater than 180 calendar days from the approval date of the *Final Comprehensive RFI Work Plan* as indicated in the Corrective Action Management Plan (CAMP).

In lieu of submitting quarterly reports, NAVBASE is voluntarily submitting monthly reports to provide an update on the progress of the RFI to members of the NAVBASE BRAC Cleanup Team (BCT) in a more timely manner. The content of the monthly reports includes information intended to satisfy condition II.E.3.a of the Part B Permit. Consequently, this report only addresses activities which occurred during the month of April 1997.

II. PORTION OF THE RFI COMPLETED

- Revisions to the Zone A RFI report per the SCDHEC comments continued. With the exception of thallium in groundwater, background values for Zone A were agreed upon by members of the project team.
- Compilation of data for the Zone E RFI report continued. Background concentrations for soil were agreed upon at the project team subcommittee meeting held in Columbia on 25 April 1997.
- Additional wells were installed at AOC 607, the former dry cleaning operation. A proposal to transfer the fuel distribution system to the UST program was discussed at the 25 April project team subcommittee meeting. SCDHEC committed to review the information supporting the proposal and provide an answer by the end of May 1997.
- Writing of the RFI report for Zones F and G continued but at a much slower than anticipated pace pending resolution of values to be used for background.
- The project team technical subcommittee met 24-25 April 1997 and discussed site specific conclusions and recommendations for the RFI/CMS. Background for Zone H was resolved. Responses to SCDHECs comments on the RFI were revised per the meeting referenced above; however, these responses have yet to be forwarded to the regulatory agencies.
- Major subcontracts for the RFI in Zones J and L were awarded. A "kick-off" meeting for the Zone L work was held with the subcontractors.

- Coordination with the Department of Transportation to conduct DPT sampling along the west bound shoulder of I-26 was initiated. Also the statement of work for rotasonic drilling was sent to potential vendors.

III. SUMMARIES OF FINDINGS

There were no new findings to report this period.

IV. DEVIATIONS FROM APPROVED WORK PLANS THIS REPORTING PERIOD

There were no known deviations from the approved RFI Work Plans for this reporting period.

V. SUMMARY OF CONTACTS WITH LOCAL COMMUNITY PUBLIC INTEREST GROUPS OR STATE GOVERNMENT

As indicated in the January 1995 Quarterly Status Report, the Navy has established a Restoration Advisory Board (RAB) to involve the public in the decisions regarding the investigation and remediation of contaminated sites at Naval Base Charleston. The meetings are held monthly and are open to the public. The minutes of the April 1997 meeting are provided as Attachment A.

VI. SUMMARY OF PROBLEMS OR POTENTIAL PROBLEMS AND ACTION TAKEN TO RECTIFY PROBLEMS

There were no problems or potential problems identified during this reporting period.

VII. KEY PROJECT PERSONNEL

There were no changes in key personnel this reporting period.

VIII. PROJECTED WORK FOR THE NEXT REPORTING PERIOD

Document Preparation and Data Evaluation:

- A meeting to discuss SCDHEC comments on the Zone A RFI report is scheduled for the next project team meeting. Preparation of the RFI addendum for SWMUs 1, 2, and 39 will continue.

- Calculation of inorganic background concentrations for Zones C, D, F, G, and I will continue.
- Recommendations for Zones C, D, and I corrective measures studies will be submitted to the project team for review and comment.
- Background for groundwater in Zone E is expected to be resolved. The portion of the baseline risk assessment that assesses risk due to surface soil exposure will begin.
- Preparation of the RFI reports for Zones F and G will continue to the extent possible pending resolution of background.
- SCDHEC comments on the Zone H RFI report will be discussed further at the next project team meeting.

Field Activities:

- The field work in Zone K will continue primarily with well sampling at Clouter Island, DPT sampling along the shoulder of I-26, and the installation of permanent monitoring wells at SWMU 166.
- RFI field work will begin in Zones J and L.
- Quarterly groundwater monitoring will continue in all zones where less than four quarters of sampling has been completed.
- The newly installed wells at AOC 607 will be sampled.

IX. COPIES OF DAILY REPORTS, INSPECTION REPORTS, LABORATORY DATA

Daily activities are recorded in accordance with the Data Management Plan included as Section 14 of the Final Comprehensive Sampling and Analysis Plan. Photocopies of these daily records have not been included with this status report; however, this information is available for review upon request.

Per agreement with SCDHEC and EPA, hard copies of the analytical data are not being submitted. A copy of the data is maintained at the EnSafe/Allen & Hoshall office in Charleston and is available for review.

ATTACHMENT A

Time: 3:30 p.m. - 4:30 p.m.

Attendees: Daryle Fontenot, Louis Mintz, Wannetta Mallette, Arthur Pinckney, Diane Cutler

DISCUSSION ITEMS

Earth Day Flyer Mr. Fontenot announced that the Earth Day flyer was sent out a couple of weeks ago. Mr. Mintz said he liked it and was hopeful that it would rally some interest.

Zones A, B, C, and I RFI Results Fact Sheet Mr. Fontenot said that Fact Sheet #8 was mailed on April 8. Copies will also be available at the RAB meeting.

Status of Sampling Mr. Mintz inquired if sampling in Zone J has started yet. Mr. Fontenot replied that sampling has not begun but the Work Plan has been submitted. Mr. Fontenot offered to let Mr. Mintz borrow his copy if interested. Mr. Fontenot added that the Zone D RFI report has been submitted but only includes grid-based sampling. The next reports to be submitted will be E, F, G, and K.

RAB Web Page In response to Ms. Mallette's discovery of the Kelly Air Force Base RAB web page, Ms. Cutler did some investigating to find out what it would take to set one up for the Naval Base Charleston RAB. Ms. Cutler reported that creating a simple web page would not require a very large effort. The biggest issue is to determine what server would be used. The group discussed what information they would like and decided upon: purpose of the RAB, RAB member names/affiliations, address of information repository, fact sheets, RAB meeting minutes dating back to January 1997, information on the speakers bureau and community relations plan, a counter (if possible) to keep track of how many people visit the page, and Jim Beltz' phone/address/e-mail to contact for more information. Ms. Cutler will begin efforts on establishing a web page and report back to the subcommittee at the next meeting.

New Fact Sheets Two suggestions for fact sheets included Finding of Suitability to Transfer (FOST) and Chicora Tank Farm. The subcommittee decided that the next one should be Chicora Tank Farm. Ms. Cutler will create a draft for review at the May subcommittee meeting.

NEXT MEETING

Subcommittee Meeting The next Subcommittee meeting will be held on May 13, 1997 at 3:30 p.m. Mr. Fontenot may not be available for the subcommittee meeting but will make sure Mr. Magwood can attend in his absence to help support review of the Chicora fact sheet.

NAVAL BASE CHARLESTON
RESTORATION ADVISORY BOARD (RAB)
Minutes of 8 April 1997

LIVE OAK COMMUNITY CENTER, 2012 SUCCESS ST., N. CHARLESTON

1. Introduction of the RAB Members and Guests

Mr. Daryle Fontenot, Navy Co-chair opened the meeting at 6:00 p.m. and welcomed everyone. RAB member and audience introductions were made.

2. RAB Members Attending

Mr. Jay Bassett	Mr. Ralph Laney
Mr. James Conner	Ms. Wannetta Mallette
Mr. Bobby Dearhart	Mr. Lou Mintz
Mr. Daryle Fontenot	Mr. Arthur Pinckney
Mr. Tom Fressilli	Mr. Odell Price
Ms. Gussie Greene	Ms. Ann Ragan
Ms. Jeri Johnison	Mr. Bob Veronee

3. Guests Attending

Mr. Tony Hunt	NAVFAC, SouthDiv
Mr. Jim Beltz	NAVFAC, SouthDiv
Mr. Gabriel Magwood	NAVFAC, SouthDiv
Mr. Paul M. Bergstrand	SCDHEC
Ms. June Mirecki	College of Charleston
Mr. J. Michael Reubish	CEERD
Mr. Kevin Tunstall	Shipyard Detachment
Ms. Myrtle Barnett	Community Member
Mr. and Mrs. Ayoub	Chicora/Cherokee Neighborhood Council
Mr. Leroy Car	Chicora/Cherokee
Ms. Diane Cutler	EnSafe/Allen&Hoshall
Mr. Dave Backus	EnSafe/Allen&Hoshall
Mr. Larry Bowers	EnSafe/Allen&Hoshall
Ms. Sandy Reagan	EnSafe/Allen&Hoshall

4. Administrative Remarks and Comments on Minutes

Mr. Fontenot asked for administrative remarks or comments on the minutes from the last meeting. Ms. Mallette wanted the minutes to reflect that it was the Navy's idea, not her idea, that the Redevelopment Authority (RDA) provide their update every other month rather than monthly (page 2). Corrections will be made in the final minutes.

5. Subcommittee Reports

The only subcommittee that met or had news to report was the Community Relations Subcommittee.

The Community Relations Subcommittee met prior to the RAB meeting. Members of this committee include Mr. Louis Mintz, Ms. Wannetta Mallette, Mr. Arthur Pinckney, Ms. Fouche'na Sheppard, Mr. Daryle Fontenot, and Ms. Diane Cutler as the resource support person. Fact Sheet # 8 - Environmental Results of Zones A, B, C and I - was sent out on April 8 and copies are provided on the back table. An Earth Day flyer offering base tours and speakers was distributed a couple of weeks ago. Mr. Jim Beltz, Public Affairs Officer for Southern Division announced that he received a call from the City of North Charleston requesting a speaker. Mr. Fontenot reported that the subcommittee will also begin work on creating a web page for the RAB. Information on the web page will include the purpose of the RAB, membership, meeting minutes, fact sheets, address of the information repository, and availability of the speakers bureau and community relations plan. A fact sheet on the Chicora Tank farm is also being worked on. The next subcommittee meeting will be held on May 13th at 3:30 at the Caretaker Site Office - Building NH-51. At this meeting a draft of the Chicora Tank Farm fact sheet and progress on the web page will be discussed.

6. Reuse Update

Ms. Jeri Johnson provided the reuse update. She began with a brief update of Chicora tank farm. The RDA had requested the Navy to describe in writing what the proposal was for the demolition options and to indicate in that letter that DHEC was in agreement with the partial demolition option. The RDA took the Navy's proposal to Mayor Summey and told him if he was still interested in the tank farm, to let them know so they can work with him on a public benefit conveyance. If the City is not interested in the property the RDA will work with the school district on a public benefit conveyance for public education. At this time, the RDA is waiting for a response from Mayor Summey.

The RDA has had three meetings since the last update. In the February 25th meeting there were two actions taken:

- The RDA agreed to the execution of a management agreement between Babcock and Wilcox and CMMC. Babcock and Wilcox went out of business last year and have now entered into an agreement with CMMC to operate their facility for them which includes the equipment and shop in Building 31.
- RDA authorized the execution of a lease with Neal Brothers for NSC 45 which is the industrial warehouse directly behind building 400 at the gate. Neal Brothers is a British firm that packages and ships high tech equipment. They needed an industrial space and NSC 45 suited their purpose so the RDA executed a license in anticipation of a lease.

In the March 27th meeting the RDA approved continuation of the cooperative caretaker agreement between the Navy and the RDA for an additional year. The first year ends on the first of April and the continuation for another year will cost approximately \$2.8 million. The RDA also approved entering into a licensing agreement with Braswell Services for Pier Alpha. This is a license in anticipation of a lease. Braswell desperately needed a pier and since the only pier that was left was

Pier Alpha they have decided to take that as well as a part of the former DRMO area and Building 224 which is a large warehouse. That area is now under license to Braswell and will be leased if they can work out an agreement with the Navy to anchor some type of floating dry dock on the waterfront at the DRMO area.

On April 8, action items included:

- RDA agreed to the assumption of adding water and sewer to the caretaker cooperative agreement. The first year the Navy operated and maintained the water and sewer system through a direct contract with CPW and the sewer district. In July, the RDA will enter into their own O&M contract with those entities to operate and maintain the systems until April 1998. At that time, the RDA will evaluate where they are in the conveyance and possibly enter into another year depending on the situation.
- The RDA also agreed to lease to CMMC two family housing quarters - quarters M - which is the large panama home that faces the Cooper river, and 701.
- Authorize transfer of the floating dry-dock - "The Endurance" - that had been leased to CMMC. Braswell indicated a need for the floating dry-dock and CMMC said they don't really need it so the RDA is going to take it off of one lease and put in the other. That action was approved.

Ms. Johnson also reported on the McKinney Act. The RDA has entered into five leases with McKinney Act task force groups - Low Country Aid Services, Florence Crittenden, The Mental Health Association, Carolina Youth Development Center, and the Special Needs and Disability Board. The Mental Health Association will be leasing the Navy lodge.

Mr. Reubish asked what CMMC will be using the residential housing unit for. Ms. Johnson answered that under the foreign military ship sales program CMMC will train the crews. These crews will be housed in the residential unit. Mr. Reubish asked if any of the housing is considered historic? The panama houses are historic structures.

Ms. Gussie Greene asked if the Navy's letter regarding Chicora tank farm was sent to the City of North Charleston. Mr. Fontenot explained that the letter was not sent to the City, that it was sent to the Redevelopment Authority as requested. The RDA in turn presented the letter to the City. Ms. Greene also asked what ever became of the Animal Shelter's request for a lease at the base? Ms. Johnson reported that they never pursued it.

Mr. Lou Mintz asked about the "Free Trade Zone." Ms. Johnson said the RDA is working on it. The Ports Authority is going to prepare the application.

Ms. Mallette asked about the College of Charleston's youth development center. Ms. Johnson said that the RDA received a draft lease from them. Ms. Mirecki asked about the square footage of the subject building. Ms. Johnson estimated that it is approximately 15,000 square feet.

Mr. Dearhart said he had heard a rumor that the old exchange gas station was going to be demolished. Ms. Johnson said that SE&G is occupying it and she has not heard of a request for demolition.

Mr. Pinckney asked if anything has come about with Navy shipbuilding. Ms. Johnson said the RDA is still pursuing it but that it's a long way down the road. Mr. Pinckney asked for clarification on the water and sewer issue. Ms. Johnson clarified that the water and sewer is still owned by the Navy but they have not had the capabilities to maintain them since they lost their work force. As a result they entered into contracts with the sewer district and CPW to keep those systems operating. Now the RDA will take it over for the Navy.

Mr. Bobby Dearhart asked when Braswell will move the dry-dock to Pier Alpha because heavy duty dredging is planned for that area. Ms. Johnson said that Braswell will be responsible for getting the appropriate permits and permission to get the dry-dock in place. It may be that they can't do what they originally intended, in which case, the deal would be off.

Mr. Conner asked what the chances are for leasing McDonalds. Ms. Johnson said that she is not aware of anyone who has approached the RDA regarding that issue. She is under the impression that McDonalds owns the structure but that the equipment has been removed. Mr. Conner indicated that he knows individuals who may be interested in leasing the structure if it is available. Ms. Johnson said to refer any interested parties to Robert Ryan who is the leasing manager.

7. Environmental Cleanup Progress Report

Project Status

Mr. Fontenot pointed out that the RCRA Facility Investigation (RFI) activities are all complete for Zone B and no further remedial action is required. Zone B is the golf course and residential housing area. Mr. Conner asked if anybody has expressed interest in the golf course because it would be good for local high schools to use for practice and competitions. Ms. Johnson replied that no one has requested leasing the golf course yet. She added that the RDA is waiting on Fluor Daniels to complete the business and redevelopment plan to tell them what the best use of that land is. That report will point the RDA in the direction of the best way to market and develop that area. At this time they're not talking about leasing it to high schools.

NEPA: Regarding the Naval Annex, the Navy is still waiting on the reuse plan from the RDA before the Environmental Assessment can be completed.

Underground Storage Tank: A bioremediation demonstration project is in operation. The detachment is responsible for that project. To date, the detachment has removed approximately 92 underground storage tanks. Action on Chicora Tank Farm is pending input from the City of North Charleston.

Asbestos: Building 32 asbestos remediation is in progress.

RCRA Facility Investigation Progress Report

Mr. Fontenot introduced Mr. Tony Hunt with Southern Division to present the RCRA Facility Investigation (RFI) update.

Regarding funding, all field work is awarded now. What that means is that field work through the Corrective Measures Study is funded.

Progress for March: All issues with the Zone B RFI Report have been resolved. One issue was the method of determining background which has since been resolved. At Solid Waste Management Unit (SWMU) 39 the Navy was concerned with chlorinated solvents possibly migrating off site and petroleum constituents migrating on site. Mr. Hunt reported that the Navy feels they have a pretty good handle as far as characterization of chlorinated solvents and are waiting on the results of the investigation conducted by Hess.

Projected Activity for April: Field work in Zones J and L will begin. Zone J is the water bodies and L is the sewer systems and railroad. The Navy is continuing to discuss background issues for each individual zone. To better explain "background" Mr. Hunt explained that the Navy takes samples from areas that are not affected by the sites on base. The data from these samples are used to determine the concentration of a chemical or contaminant in "non-affected" or natural soils. Then, that data is compared to what is found at the site to determine how much of a chemical is there naturally compared to what may have been contributed by a release.

Regarding the petroleum contamination, Mr. Reubish asked if the Navy has had a sample "fingerprinted." Mr. Hunt replied that the Navy has not taken a sample yet but said that the Naval Research Lab is going to be doing that research; they are experts in that area and will probably come down and sample in June. Mr. Reubish asked why they will be waiting until June. Mr. Hunt answered that's when the lab was able to schedule it.

Mr. Conner asked if samples will be taken in a number of areas. Mr. Hunt answered that there were probably three or four wells where petroleum contamination was detected, one of which had free product. The one with free product is probably the best one to sample to get a good fingerprint on. The others will have degradation products - which would be a little more difficult and provide a more controversial analysis. However, Mr. Hunt expects that they will take samples from all of the affected wells.

Mr. Reubish asked Ms. Ragan if DHEC has heard anything from Hess yet. Ms. Ragan answered that Hess has not submitted their report yet.

Mr. Fontenot asked if any of the RAB members were interested in being provided with a presentation on the method of tank closure. One member responded affirmatively. Mr. Fontenot said he will try to have something pulled together for the next meeting.

8. Environmental Justice Presentation

Mr. Fontenot announced that with the help of Dr. Mirecki, they have found a speaker for the environmental justice presentation, but they have been unable to schedule him for this month. He will be put on the May agenda and will hopefully be able to speak then.

9. Remaining Questions and Comments

Mr. Pinckney reminded Mr. Fontenot about the list of questions he submitted. Mr. Fontenot responded that he has a copy of the two sets of questions that were drafted by the Grassroots Coalition and has been working on writing up answers to those questions. He will try to have those by the next meeting and include it on the agenda.

Ms. Gussie Greene asked what "high risk" means as used in the Navy's letter to the RDA regarding partial demolition of the tanks. Mr. Fontenot responded that high risk is associated with the method of closing the tank. It will take more work to accomplish partial demolition than other methods of closure. There are more unknowns in partial demolition than just filling the tanks with sand, therefore you run the risk of not being able to accomplish it technically, or running out of funds to complete the closure in that manner. That's why a test case is being run - to make sure it can be accomplished technically within the allotted budget.

Ms. Mallette asked who owns the property where the Naval Fleet Reserve is located. Mr. Fressilli answered that it is privately owned property. Ms. Mallette added that it is abandoned and becoming an eyesore to the community and was curious if there was any reuse potential.

10. Adjournment

Meeting was adjourned at 6:40 p.m.

Summary of Action Items

- Mr. Fontenot, with the help of Ms. Mirecki, will try again to schedule the environmental justice speaker.
- Mr. Fontenot will coordinate a presentation on methods of tank closure for the next meeting.
- Mr. Fontenot will try to have answers to the Grassroots Coalition's questions at the next meeting.

Attachments to Minutes

- (1) Tuesday April 8, 1997 RAB Meeting Agenda
- (2) Charleston Naval Complex Tenant Summary - 4/8/97
- (3) RFI Progress Report for April 1997
- (4) RCRA Facility Investigation Progress Update - 4/8/97

Minutes recorded by: Diane Cutler, EnSafe/Allen&Hoshall

Minutes approved by: _____

Daryle Fontenot
Navy Co-Chair

Wannetta Mallette
Community Co-Chair

Tuesday, April 8, 1997

Charleston Naval Complex

RESTORATION ADVISORY BOARD MEETING AGENDA

6:00 P.M. Location: *Live Oak Community Center*
2012 Success Street, North Charleston, SC

6:00 P.M. RAB MEETING

- A. Introduction of the RAB Members and Guests
- B. Administrative Remarks, comments on the minutes of the last meeting
- C. Subcommittee Reports
- D. Reuse Update
- E. Environmental Cleanup Progress Report - Cleanup Team
 - Status of the Environmental Programs
- F. Environmental Justice Presentation
- G. Remaining Questions and Comments from RAB Members and Visitors
- H. Agenda for next meeting.

RAB Members, Project Team, and interested citizens informally talk about what's going on after the meeting from 7:00 p.m. to 8:00 p.m.

Please mark your calendar. Our next meeting is **Tuesday, May 13, 1997, 6:00 p.m.** at the Live Oak Community Center, 2012 Success Street, North Charleston, SC.

CURRENT FACILITIES/EMPLOYMENT

ULTIMATE FACILITIES/EMPLOYMENT

DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES	EX-BASE WORKERS
-----------	-------	-----------	-----------	------------------	-----------	-----------------

DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES
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CURRENT TENANTS/SUB-TENANTS

ALLIED TECHNOLOGY	0	0	0	1	8,553	21	0
BABCOCK & WILCOX	0	0	0	2	175,992	1	1
TBD ELECTRICAL CONTRACTORS	0	0	0	0	0	4	4
CAROLINA YOUTH DEVELOPMENT CENTER	0	0	0	2	5,642	0	0
CHARLESTON COUNTY PRC	0	2	0	2	6,087	4	0
CHARLESTON COUNTY SCHOOL DISTRICT	0	0	2	1	41,196	43	0
CHARLESTON GRIP & ELECTRIC	0	0	0	1	12,480	12	0
CHARLESTON MARINE CONTAINERS, INC.	0	0	1	6	326,598	4	2
CHARLESTON MARINE MANUF. CORP	3	8	17	60	1,191,130	536	124
APPLIED TECHNOLOGY SERVICES	0	0	0	0	0	5	4
BECKLEY ENGINEERING	0	0	0	0	0	1	0
CHATHAM STEEL CORPORATION	0	0	0	0	0	4	1
CHOPLIN PREDICTIVE MAINTENANCE	0	0	0	0	0	1	1
CMMC MACHINE, INC.	0	0	0	0	0	6	6
EXCEL APPARATUS SERVICES, INC.	0	0	0	0	0	35	2
NATIVE SOILS, INC.	0	0	0	0	0	6	0
SHIPTECH	0	0	0	0	0	15	6
STATE BOARD FOR TECH & COMP ED	0	0	0	0	0	7	3
TIDEWATER TEMPORARY SERVICES	0	0	0	0	0	25	4
CHARLESTON SHIPBUILDERS, INC.	2	3	2	28	388,515	45	10
CAROLINA MARINE HANDLING	0	0	0	0	0	44	16
EARTH SCIENCES	0	0	0	0	0	1	1
RICHARDS MARINE SERVICES	0	0	0	0	0	5	0
COMMISSIONERS OF PUBLIC WORKS	0	0	0	6	104,999	0	0
COMPOSITE PRODUCTS COMPANY, INC.	0	0	0	1	17,172	2	0
DEPT OF HEALTH & ENV. CONTROL (B/400)	0	0	0	1	32,364	54	0
DISABILITIES BOARD OF CHARLESTON CO.	0	0	0	3	8,125	0	0
FLORENCE CRITTENTON	0	0	0	4	8,299	0	0
FOX ASSOCIATES	0	0	0	1	4,040	8	0
LOWCOUNTRY AIDS SERVICES	0	0	0	2	5,642	0	0
M. ROSENBLATT	0	0	0	1	2,880	25	2
RDA STAFF/CARETAKER CONTRACTORS	0	0	0	2	42,471	16	5
SOUTH CAROLINA ELECTRIC & GAS	0	0	0	6	30,830	25	0
SC FEDERAL CREDIT UNION	0	0	0	2	16,180	12	0
U.S. POSTAL SERVICE (SHARE B/400)	0	0	0	0	17,782	180	0
SUBTOTAL	5	13	22	132	2,446,977	1,147	192

0	0	0	1	8,553	100
0	0	0	3	208,930	225
0	0	0	0	0	13
0	0	0	2	5,642	1
0	3	6	7	12,670	6
0	0	2	1	41,196	43
0	0	0	1	12,480	25
0	0	1	6	326,598	330
3	8	25	79	1,346,910	2,404
0	0	0	0	0	15
0	0	0	0	0	1
0	0	0	0	0	15
0	0	0	0	0	16
0	0	0	0	0	40
0	0	0	0	0	50
0	0	0	0	0	6
0	0	0	0	0	15
0	0	0	0	0	7
0	0	0	0	0	25
2	6	22	62	549,777	2,000
0	0	0	0	0	100
0	0	0	0	0	25
0	0	0	0	0	5
0	0	0	6	104,999	200
0	0	1	6	22,092	50
0	0	0	1	32,364	104
0	0	0	3	8,125	24
0	0	0	4	8,299	1
0	0	0	1	4,040	15
0	0	0	2	5,642	0
0	0	0	1	2,880	25
0	0	0	1	8,205	16
0	0	0	0	0	0
0	0	0	2	16,180	12
0	0	0	0	17,782	400
5	17	57	189	2,743,364	6,314

**Naval Base Charleston
RCRA Facility Investigation (RFI)
PROGRESS REPORT FOR APRIL 1997**

INVESTIGATIVE ZONES

- A. Warehousing and scrap metal yard
- B. Golf course and residential
- C. Office space and warehouse (NH-45, Navbase HQ)
- D. Parking lot, warehouses
- E. Shipyard
- F. Recreational areas and public works shops
- G. Fuel farm and transfer facility
- H. Southern end of the base excluding waterfront
- I. Southern end of the base including waterfront and dredge material area
- J. Waterbodies
- K. Non-contiguous areas
- L. Sewer systems and railroad system

FUNDING

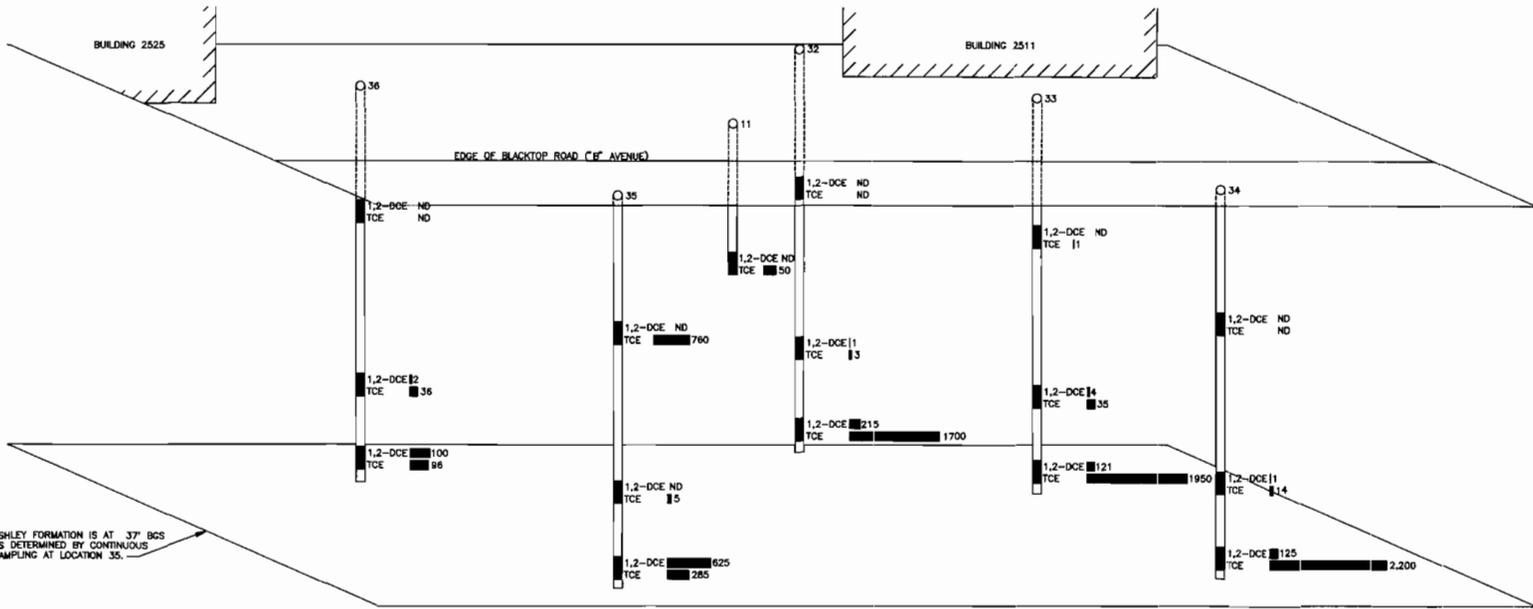
- ◆ Funding status
All field work is awarded. Zone J & L field work is expected to begin this month.

PROGRESS FOR MARCH

- ◆ All issues with Zone B RFI Report have been resolved. No Further Action is required under RCRA.
- ◆ SWMU 39 report is waiting on results of Hess investigation.

PROJECTED ACTIVITY FOR APRIL

- ◆ Begin field work in Zones J and L.
- ◆ Continue to resolve comments on background issues.



- NOTES
1. GROUNDWATER IS AT 8' BGS ACROSS NAVAL ANNEX.
 2. LOCATIONS OF WELLS ON THIS CROSS SECTION ARE APPROXIMATE.
 3. GROUNDWATER FLOW DIRECTION IS TOWARD THE EAST WHICH IS FROM THE AREA OF 35 TOWARD 32 AND 33 ON THIS CROSS SECTION.



ZONE K
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

DISTRIBUTION OF TCE AND 1,2-DCE IN
SHALLOW (12-14' BGS), INTERMEDIATE (24-26' BGS)
AND DEEP (34-36' BGS) GROUNDWATER

DWG DATE: 03/11/97 DWG NAME: 29CHZKCK

**NAVBASE CHARLESTON
RFI STATUS REPORT
PERIOD: SUMMARY OF
01 May 1997 To 31 May 1997**

I. INTRODUCTION

The following status report has been prepared to satisfy condition II.E.3.a of the Part B Permit Renewal dated 5 December 1994 for Naval Base Charleston (NAVBASE). The requirements of this condition are in effect since the total elapsed time to complete the RCRA Facility Investigation (RFI) is projected to be greater than 180 calendar days from the approval date of the *Final Comprehensive RFI Work Plan* as indicated in the Corrective Action Management Plan (CAMP).

In lieu of submitting quarterly reports, NAVBASE is voluntarily submitting monthly reports to provide an update on the progress of the RFI to members of the NAVBASE BRAC Cleanup Team (BCT) in a more timely manner. The content of the monthly reports includes information intended to satisfy condition II.E.3.a of the Part B Permit. Consequently, this report only addresses activities which occurred during the month of May 1997.

II. PORTION OF THE RFI COMPLETED

- DPT sampling along the west bound shoulder of I-26 was completed as part of the SWMU 166 investigation in Zone K. Also, 18 permanent monitoring wells were installed as part of the SWMU 166 investigation. Results of these sampling events are included in Attachment A.
- The initial phase of well installation in Zone L has been completed. Also, to date 287 of the approximately 600 groundwater samples proposed have been collected using DPT.

III. SUMMARIES OF FINDINGS

As referenced above, the findings at SWMU 166 are provided as Attachment A.

IV. DEVIATIONS FROM APPROVED WORK PLANS THIS REPORTING PERIOD

There were no known deviations from the approved RFI Work Plans for this reporting period.

V. SUMMARY OF CONTACTS WITH LOCAL COMMUNITY PUBLIC INTEREST GROUPS OR STATE GOVERNMENT

As indicated in the January 1995 Quarterly Status Report, the Navy has established a Restoration Advisory Board (RAB) to involve the public in the decisions regarding the investigation and remediation of contaminated sites at Naval Base Charleston. The meetings are held monthly and are open to the public. The minutes of the May 1997 meeting are provided as Attachment B.

VI. SUMMARY OF PROBLEMS OR POTENTIAL PROBLEMS AND ACTION TAKEN TO RECTIFY PROBLEMS

There were no problems or potential problems identified during this reporting period.

VII. KEY PROJECT PERSONNEL

There were no changes in key personnel this reporting period.

VIII. PROJECTED WORK FOR THE NEXT REPORTING PERIOD

Document Preparation and Data Evaluation:

- The RFI report for SWMUs 1, 2, and 39 is anticipated to be completed in time for inclusion into the revised Zone A RFI Report.
- Preparation of the Zone E RFI Report will proceed since background for this particular zone has been resolved.
- Calculation of inorganic background concentrations for Zones F, G, and I will continue.
- Preparation of the RFI reports for Zones F and G will continue to the extent possible pending resolution of background.
- The Zone H RFI report is scheduled to be submitted to the regulatory agencies by 24 June 1997.

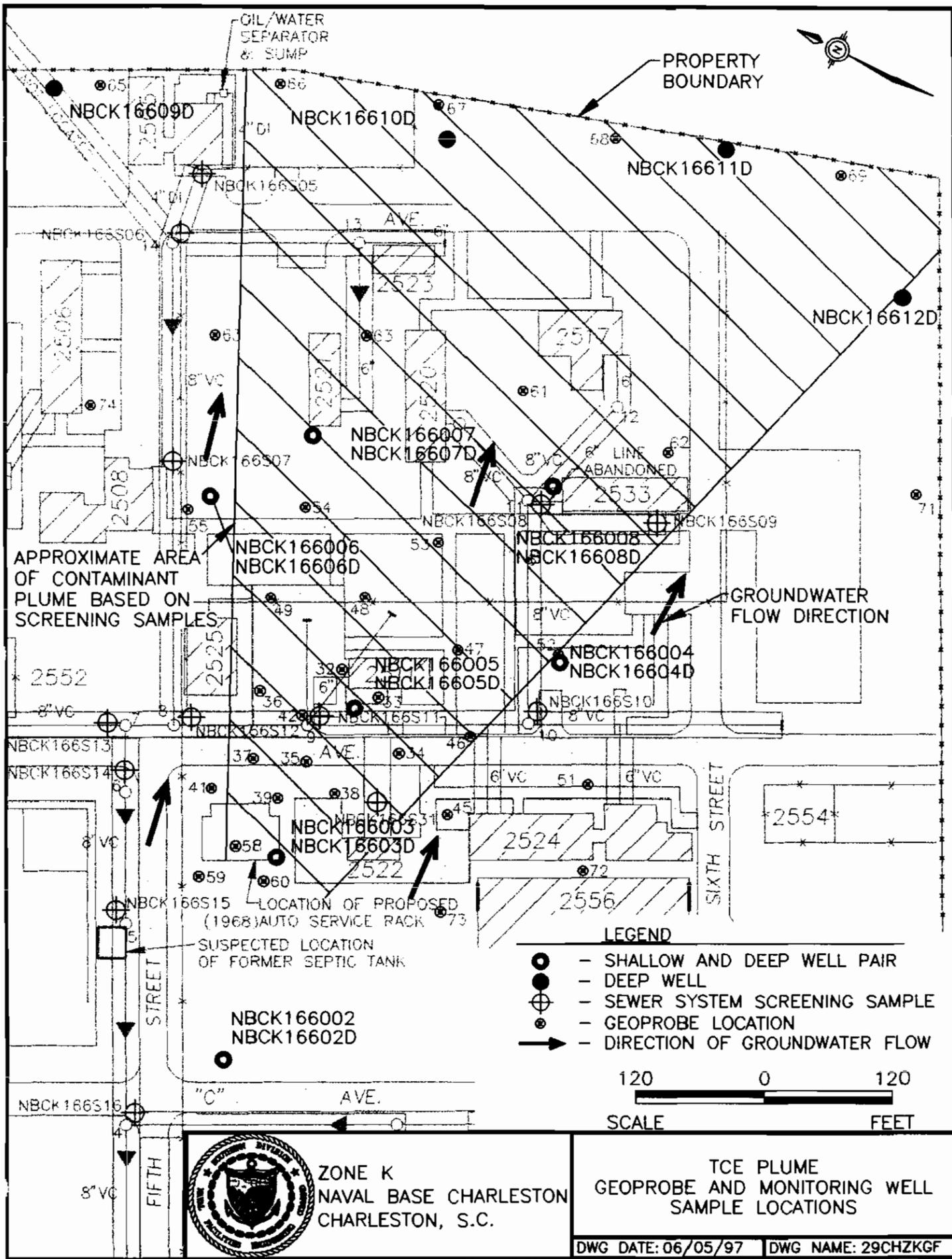
Field Activities:

- Groundwater sampling with DPT is proposed at SWMU 42 and AOC 506 in Zone A.
- Soil and/or groundwater sampling is scheduled to be performed at AOC 655, AOC 659, AOC 661, and AOC 667/SWMU 138 to complete the RFI in Zone H.
- Additional work will be required at SWMU 166 in Zone K to complete the RFI. At the present time the exact scope of work has yet to be agreed upon by members of the project team.
- RFI field work will continue in Zones J and L.
- Quarterly groundwater monitoring will continue in all zones where less than four quarters of sampling has been completed.

IX. COPIES OF DAILY REPORTS, INSPECTION REPORTS, LABORATORY DATA

Daily activities are recorded in accordance with the Data Management Plan included as Section 14 of the Final Comprehensive Sampling and Analysis Plan. Photocopies of these daily records have not been included with this status report; however, this information is available for review upon request.

Per agreement with SCDHEC and EPA, hard copies of the analytical data are not being submitted. A copy of the data is maintained at the EnSafe/Allen & Hoshall office in Charleston and is available for review.

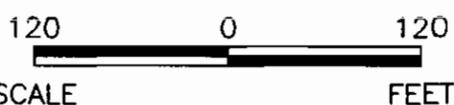


APPROXIMATE AREA OF CONTAMINANT PLUME BASED ON SCREENING SAMPLES

GROUNDWATER FLOW DIRECTION

LOCATION OF PROPOSED (1968) AUTO SERVICE RACK
 SUSPECTED LOCATION OF FORMER SEPTIC TANK

- LEGEND**
- — SHALLOW AND DEEP WELL PAIR
 - — DEEP WELL
 - ⊕ — SEWER SYSTEM SCREENING SAMPLE
 - ⊙ — GEOPROBE LOCATION
 - ➔ — DIRECTION OF GROUNDWATER FLOW



ZONE K
 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

TCE PLUME
 GEOPROBE AND MONITORING WELL
 SAMPLE LOCATIONS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

WENSAFEE/ALLEN & HOSHALL
909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29485.01
QAQC# : N970528A
INST. BATCH: 192558
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29485.01
SAMPLE : 166GW0021A
LOCATION: CHARLESTON, SC

SAMPLED : 05/23/97 09:50
SUBMITTED: 05/24/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/28/97 19:02
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/l

<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>	<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	8	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	96%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	97%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
 B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
 U = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
 NA = NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
 EPA = EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
 D = SURROGATES DILUTED OUT
 J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW - EPA METHODOLOGY, "8260-G", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENSAFE/ALLEN & HOSHALL
5909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29485.02
QAQC# : N970528A
INST. BATCH: 192558
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29485.02
SAMPLE : 166GW02D1A
LOCATION: CHARLESTON, SC

SAMPLED : 05/23/97 08:55
SUBMITTED: 05/24/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/28/97 19:27
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/l

<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>	<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	3
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	8	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	94%			

ND - NOT DETECTED ABOVE QUANTIFICATION LIMIT
B - ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I - UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA - NOT APPLICABLE
Methodology: SW = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J - ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENSAFEE/ALLEN & HOSHALL
909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29485.03
QAQC# : N970528A
INST. BATCH: 192558
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29485.03
SAMPLE : 166GW0031A
LOCATION: CHARLESTON, SC

SAMPLED : 05/23/97 10:10
SUBMITTED: 05/24/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/28/97 19:51
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/l

PARAMETER	QUANT.		PARAMETER	QUANT.	
	LIMIT	RESULTS		LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	4 J
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	3 J	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	97%	BROMOFLUOROBENZENE	(86-115)	97%
1,2-DICHLOROETHANE-D4	(76-114)	96%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE

Methodology: SM - STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENSAFE/ALLEN & HOSHALL
5909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29485.04
QAQC# : N970528A
INST. BATCH: 192558
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29485.04
SAMPLE : 166GW03D1A
LOCATION: CHARLESTON, SC

SAMPLED : 05/23/97 09:20
SUBMITTED: 05/24/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/28/97 20:15
DILUTION : 1
%MOISTURE : 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/l

<u>PARAMETER</u>	<u>QUANT.</u> <u>LIMIT</u>	<u>RESULTS</u>	<u>PARAMETER</u>	<u>QUANT.</u> <u>LIMIT</u>	<u>RESULTS</u>
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	5
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	13	2-HEXANONE	10	ND
CHLOROFORM	5	1 J	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	97%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	96%			

ND - NOT DETECTED ABOVE QUANTITATION LIMIT

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE

NA = NOT APPLICABLE

Methodology: SM - STANDARD METHODS, 16th EDITION, 1985

EPA = #EPA600/4-79-020, MARCH 1985

v = SURROGATE RECOVERY OUTSIDE OF QC LIMITS

D = SURROGATES DILUTED OUT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITAT

SM = EPA METHODOLOGY, "688846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENSAF/ALLEN & HOSHALL
909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29467.09
QAQC# : U970527A
INST. BATCH: 192386
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29467.09
SAMPLE : 166GW0041A
LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 15:00
SUBMITTED: 05/23/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/27/97 21:53
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/L

<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>	<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	92%	BROMOFLUOROBENZENE	(86-115)	97%
1,2-DICHLOROETHANE-D4	(76-114)	90%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
U = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
N/A = NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "8260C", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2958

ENSAFE/ALLEN & HOSHALL
5909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29467.08
QAQC# : U970527A
INST. BATCH: 192386
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29467.08
SAMPLE : 166GW04D1A
LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 14:15
SUBMITTED: 05/23/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/27/97 21:29
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	60
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	10	2-HEXANONE	10	ND
CHLOROFORM	5	1 J	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	94%	BROMOFLUOROBENZENE	(86-115)	97%
1,2-DICHLOROETHANE-D4	(76-114)	91%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE

NA = NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985

EPA = 822-P-600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS

D = SURROGATES DILUTED OUT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTIFICATION

SW = EPA METHODOLOGY, "822-P-600", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

WENSAF/ALLEN & HOSHALL
 909 SHELBY OAKS DRIVE
 SUITE 201
 MEMPHIS, TN 38134

REPORT: 29467.14
 QAQC# : U970527A
 INST. BATCH: 192386
 REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
 LAB# : 29467.14
 SAMPLE : 166GW0051A
 LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 15:00
 SUBMITTED: 05/23/97

MATRIX : WATER
 METHOD : SW 8260A

ANALYZED : 05/27/97 23:50
 DILUTION : 1
 %MOISTURE: 0.00
 LEVEL : LOW

VOA BY GC/MS NONSTANDARD
 RESULTS REPORTED IN ug/L

PARAMETER	QUANT.		PARAMETER	QUANT.	
	LIMIT	RESULTS		LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	120
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	2 J	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	93%	BROMOFLUOROBENZENE	(86-115)	96%
1,2-DICHLOROETHANE-D4	(76-114)	87%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
 - ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
 = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
 - NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
 D = SURROGATES DILUTED OUT
 J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
 EPA = #EPA600/4-79-020, MARCH 1985

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENSAFE/ALLEN & HOSHALL
5909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29467.13
QAQC# : U970527A
INST. BATCH: 192386
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29467.13
SAMPLE : 166GW05D1A
LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 14:07
SUBMITTED: 05/23/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/27/97 23:27
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/L

<u>PARAMETER</u>	<u>QUANT.</u> <u>LIMIT</u>	<u>RESULTS</u>	<u>PARAMETER</u>	<u>QUANT.</u> <u>LIMIT</u>	<u>RESULTS</u>
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	91%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	91%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE

NA = NOT APPLICABLE

Methodology: SW = STANDARD METHODS, 16th EDITION, 1985

EPA = 826A-600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS

D = SURROGATES DILUTED OUT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITAT

SW = EPA METHODOLOGY, "826W46", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 N. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENSAGE/ALLEN & HOSHALL
 909 SHELBY OAKS DRIVE
 SUITE 201
 MEMPHIS, TN 38134

REPORT: 29467.11
 QAQC# : U970527A
 INST. BATCH: 192386
 REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
 LAB# : 29467.11
 SAMPLE : 166GW0061A
 LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 11:37
 SUBMITTED: 05/23/97

MATRIX : WATER
 METHOD : SW 8260A

ANALYZED : 05/27/97 22:40
 DILUTION : 1
 %MOISTURE: 0.00
 LEVEL : LOW

VOA BY GC/MS NONSTANDARD
 RESULTS REPORTED IN ug/L

PARAMETER	QUANT.		PARAMETER	QUANT.	
	LIMIT	RESULTS		LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	2 J	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	94%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	89%			

ND = NOT DETECTED ABOVE QUANTIFICATION LIMIT
 * = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
 † = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
 N/A = NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
 D = SURROGATES DILUTED OUT
 J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
 EPA = EPA600/4-79-020, MARCH 1985

SW = EPA METHODOLOGY, "SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENSAPE/ALLEN & HOSHALL
5909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29467.10
QAQC# : U970527A
INST. BATCH: 192386
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29467.10
SAMPLE : 166GW06D1A
LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 11:00
SUBMITTED: 05/23/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/27/97 22:16
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/L

<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>	<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	4
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	92%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	92%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = 826A00/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SM = EPA METHODOLOGY, "826A00", THIRD EDITION, NOVEMBER 1985

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

WENSAPE/ALLEN & HOSHALL
6909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29467.04
QAQC# : U970527A
INST. BATCH: 192386
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29467.04
SAMPLE : 166GW0071A
LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 10:35
SUBMITTED: 05/23/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/27/97 19:55
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/L

PARAMETER	QUANT.		PARAMETER	QUANT.	
	LIMIT	RESULTS		LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	2 J
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	24	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	3 J	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	94%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	90%			

ND = NOT DETECTED ABOVE QUANTIFICATION LIMIT
 - ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
 = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
 NA = NOT APPLICABLE

Methodology: SM - STANDARD METHODS, 16th EDITION, 1985
 EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
 D = SURROGATES DILUTED OUT
 J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
 NA = NOT APPLICABLE
 Methodology: EM - STANDARD METHODS, 16th EDITION, 1985
 EPA = #EPA600/4-79-020, MARCH 1995

CONTINUE FROM PREVIOUS PAGE
 J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
 SW = EPA METHODOLOGY, #SW846, THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENSAFE/ALLEN & HOSHALL
 5909 SHELBY OAKS DRIVE
 SUITE 201
 MEMPHIS, TN 38134

REPORT: 29467.03
 QA/QC# : U970528A
 INST. BATCH: 192466
 REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
 LAB# : 29467.03
 SAMPLE : 166GW07D1A
 LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 10:00
 SUBMITTED: 05/23/97

MATRIX : WATER
 METHOD : SW 8260A

ANALYZED : 05/28/97 11:05
 DILUTION : 10
 %MOISTURE: 0.00
 LEVEL : LOW

MS Dilution Run
 VOA BY GC/MS NONSTANDARD
 RESULTS REPORTED IN ug/L

<u>PARAMETER</u>	<u>QUANT.</u> <u>LIMIT</u>	<u>RESULTS</u>	<u>PARAMETER</u>	<u>QUANT.</u> <u>LIMIT</u>	<u>RESULTS</u>
CHLOROMETHANE	100	ND	1,2-DICHLOROPROPANE	50	ND
BROMOMETHANE	100	ND	TRANS-1,3-DICHLOROPROPENE	50	ND
VINYL CHLORIDE	100	ND	TRICHLOROETHENE	50	1000 D
CHLOROETHANE	100	ND	DIBROMOCHLOROMETHANE	50	ND
METHYLENE CHLORIDE	50	ND	1,1,2-TRICHLOROETHANE	50	ND
ACETONE	100	140 D	BENZENE	50	ND
CARBON DISULFIDE	50	ND	CIS-1,3-DICHLOROPROPENE	50	ND
1,1-DICHLOROETHENE	50	ND	2-CHLOROETHYL VINYL ETHER	100	ND
1,1-DICHLOROETHANE	50	ND	BROMOFORM	50	ND
1,2-DICHLOROETHENE (TOTAL)	50	12 JD	2-HEXANONE	100	ND
CHLOROFORM	50	ND	4-METHYL-2-PENTANONE	100	ND
1,2-DICHLOROETHANE	50	ND	TETRACHLOROETHENE	50	ND
2-BUTANONE	100	ND	TOLUENE	50	ND
1,1,1-TRICHLOROETHANE	50	ND	CHLOROBENZENE	50	ND
CARBON TETRACHLORIDE	50	ND	ETHYLBENZENE	50	ND
VINYL ACETATE	100	ND	STYRENE	50	ND
BROMODICHLOROMETHANE	50	ND	KYLENE (TOTAL)	50	ND
1,1,2,2-TETRACHLOROETHANE	50	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	96%
1,2-DICHLOROETHANE-D4	(76-114)	96%			

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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WENSAPE/ALLEN & HOSHALL
 1909 SHELBY OAKS DRIVE
 SUITE 201
 MEMPHIS, TN 38134

REPORT: 29467.02
 QAQC# : U970527A
 INST. BATCH: 192386
 REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
 LAB# : 29467.02
 SAMPLE : 166GW0081A
 LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 09:15
 SUBMITTED: 05/23/97

MATRIX : WATER
 METHOD : SW 8260A

ANALYZED : 05/27/97 19:08
 DILUTION : 1
 %MOISTURE: 0.00
 LEVEL : LOW

VOA BY GC/MS NONSTANDARD
 RESULTS REPORTED IN ug/L

<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>	<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	9	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	KYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	94%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	94%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
 B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
 I = INABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
 N/A = NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
 D = SURROGATES DILUTED OUT
 J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
 EPA = 82PA600/4-79-020, MARCH 1985

SW = EPA METHODOLOGY, "82SW46", THIRD EDITION, NOVEMBER 1986

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5909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29467.01
QAQC# : U970527A
INST. BATCH: 192386
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29467.01
SAMPLE : 166GW08D1A
LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 08:50
SUBMITTED: 05/23/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/27/97 17:58
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/L

PARAMETER	QUANT.		PARAMETER	QUANT.	
	LIMIT	RESULTS		LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	38
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	2 J	2-HEXANONE	10	ND
CHLOROFORM	5	16	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	1 J	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	96%	BROMOFLUOROBENZENE	(86-115)	97%
1,2-DICHLOROETHANE-D4	(76-114)	93%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
METHODS BY STANDARD METHODS 14th EDITION, 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
SW = EPA METHODOLOGY, "SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENSAFEE/ALLEN & HOSHALL
909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29467.12
QAQC# : U970527A
INST. BATCH: 192386
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29467.12
SAMPLE : 166GW09D1A
LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 13:07
SUBMITTED: 05/23/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/27/97 23:03
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/L

PARAMETER	QUANT.		PARAMETER	QUANT.	
	LIMIT	RESULTS		LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROBUTYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	3 J	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	94%	BROMOFLUOROBENZENE	(86-115)	97%
1,2-DICHLOROETHANE-D4	(76-114)	87%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

U = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE

NA = NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985

EPA = EPA800/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS

D = SURROGATES DILUTED OUT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "SW846", THIRD EDITION, NOVEMBER 1986

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ENSAFE/ALLEN & HOSHALL
5909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29467.05
QAQC# : U970528A
INST. BATCH: 192466
REPORTED : 05/30/97

PROJECT : ZONE K PO4 RBL 19
LAB# : 29467.05
SAMPLE : 166GW10D1A
LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 11:13
SUBMITTED: 05/23/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/28/97 11:32
DILUTION : 25
%MOISTURE: 0.00
LEVEL : LOW

MS Dilution Run
VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/L

PARAMETER	QUANT.		PARAMETER	QUANT.	
	LIMIT	RESULTS		LIMIT	RESULTS
CHLOROMETHANE	250	ND	1,2-DICHLOROPROPANE	120	ND
BROMOMETHANE	250	ND	TRANS-1,3-DICHLOROPROPENE	120	ND
VINYL CHLORIDE	250	ND	TRICHLOROETHENE	120	2200 D
CHLOROETHANE	250	ND	DIBROMOCHLOROMETHANE	120	ND
METHYLENE CHLORIDE	120	ND	1,1,2-TRICHLOROETHANE	120	ND
ACETONE	250	ND	BENZENE	120	ND
CARBON DISULFIDE	120	ND	CIS-1,3-DICHLOROPROPENE	120	ND
1,1-DICHLOROETHENE	120	ND	2-CHLOROETHYL VINYL ETHER	250	ND
1,1-DICHLOROETHANE	120	ND	BROMOFORM	120	ND
1,2-DICHLOROETHENE (TOTAL)	120	90 JD	2-HEXANONE	250	ND
CHLOROFORM	120	ND	4-METHYL-2-PENTANONE	250	ND
1,2-DICHLOROETHANE	120	ND	TETRACHLOROETHENE	120	ND
2-BUTANONE	250	ND	TOLUENE	120	ND
1,1,1-TRICHLOROETHANE	120	ND	CHLOROBENZENE	120	ND
CARBON TETRACHLORIDE	120	ND	ETHYLBENZENE	120	ND
VINYL ACETATE	250	ND	STYRENE	120	ND
BROMODICHLOROMETHANE	120	ND	XYLENE (TOTAL)	120	ND
1,1,2,2-TETRACHLOROETHANE	120	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	96%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
SW = EPA METHODOLOGY, "89/846", THIRD EDITION, NOVEMBER 1986

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1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

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 5909 SHELBY OAKS DRIVE
 SUITE 201
 MEMPHIS, TN 38134

REPORT: 29467.06
 QAQC# : U970527A
 INST. BATCH: 192386
 REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
 LAB# : 29467.06
 SAMPLE : 166GW11D1A
 LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 12:00
 SUBMITTED: 05/23/97

MATRIX : WATER
 METHOD : SW 8260A

ANALYZED : 05/27/97 20:42
 DILUTION : 1
 %MOISTURE: 0.00
 LEVEL : LOW

VOA BY GC/MS NONSTANDARD RESULTS REPORTED IN ug/L

PARAMETER	QUANT.		PARAMETER	QUANT.	
	LIMIT	RESULTS		LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	89
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	24	2-HEXANONE	10	ND
CHLOROFORM	5	7	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	1 J
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	96%	BROMOFLUOROBENZENE	(86-115)	97%
1,2-DICHLOROETHANE-D4	(76-114)	94%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
 B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
 * = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
 NA = NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
 D = SURROGATES DILUTED OUT
 J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
 EPA = #EPA600/4-79-020, MARCH 1985

SW = EPA METHODOLOGY, "#826146", THIRD EDITION, NOVEMBER 1986

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ENSAFE/ALLEN & HOSHALL
5909 SHELBY OAKS DRIVE
SUITE 201
MEMPHIS, TN 38134

REPORT: 29467.07
QAQC# : U970527A
INST. BATCH: 192386
REPORTED : 05/30/97

PROJECT : ZONE K PO4 REL 19
LAB# : 29467.07
SAMPLE : 166GW12D1A
LOCATION: CHARLESTON, SC

SAMPLED : 05/22/97 12:45
SUBMITTED: 05/23/97

MATRIX : WATER
METHOD : SW 8260A

ANALYZED : 05/27/97 21:05
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

VOA BY GC/MS NONSTANDARD
RESULTS REPORTED IN ug/L

<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>	<u>PARAMETER</u>	<u>QUANT. LIMIT</u>	<u>RESULTS</u>
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	31
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	14	2-HEXANONE	10	ND
CHLOROFORM	5	10	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	94%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	91%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

I = INABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE

NA = NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985

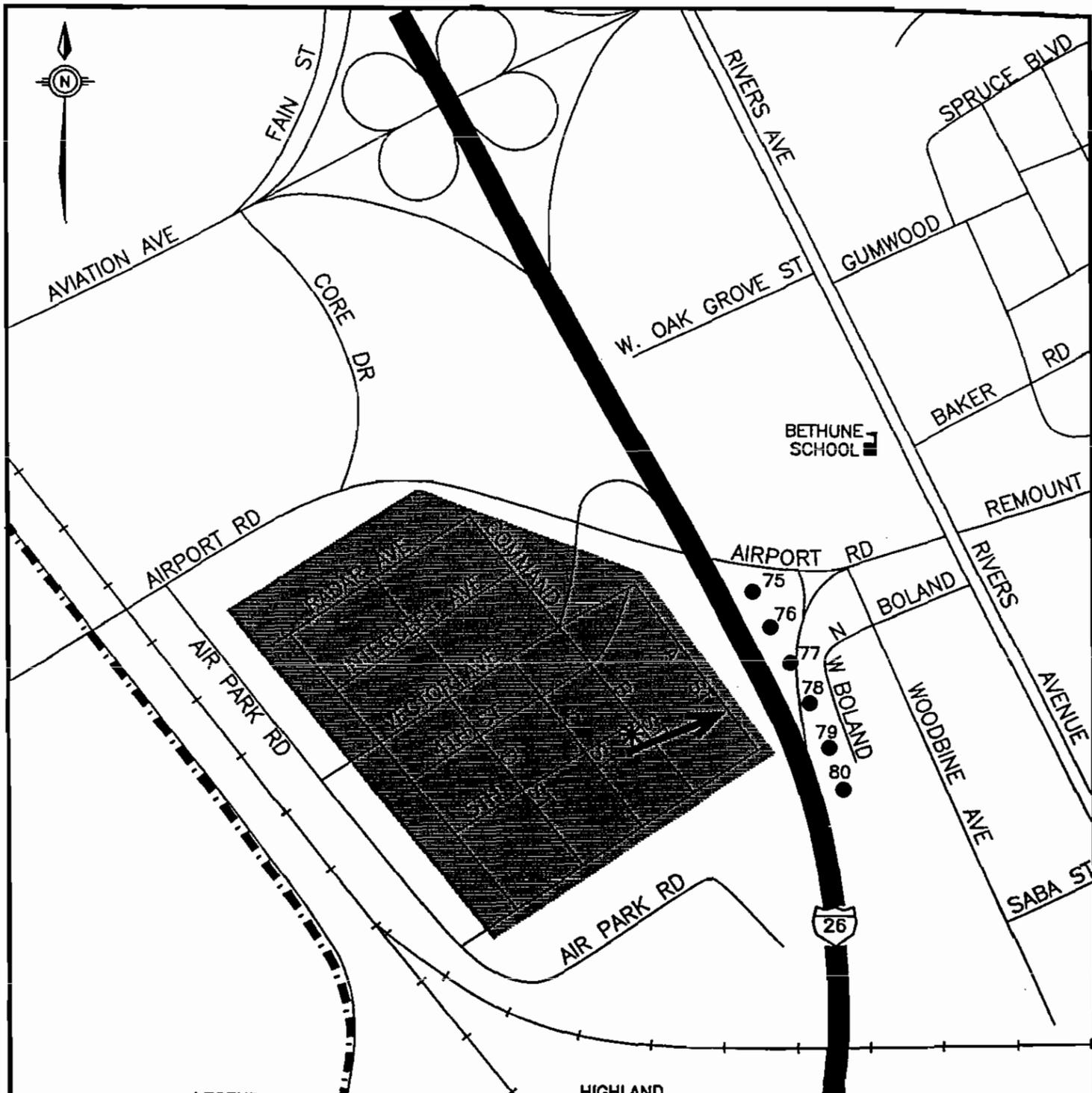
BPA = #BPA600/4-79-010, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS

D = SURROGATES DILUTED OUT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

EW = BPA METHODOLOGY, "45W845", THIRD EDITION, NOVEMBER 1986



LEGEND

- - PROPOSED GEOPROBE SAMPLE LOCATION (APPROXIMATE)
- ➔ - GROUNDWATER FLOW DIRECTION AND APPARENT DIRECTION OF TCE MIGRATION
- ▬ - NAVAL ANNEX PROPERTY
- - - AIRPORT BOUNDARY
- * - SOURCE AREA

0
SCALE 1 MILE

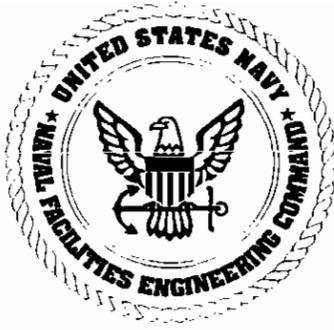


ZONE K
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

NAVAL ANNEX AND VICINITY
AND GEOPROBE SAMPLE LOCATIONS

DWG DATE: 05/09/97 DWG NAME: 29ZKNVX1

Off-Site Interstate 26 Groundwater Screening Sample Data					
Sample Location	Sample Depth (feet)	Volatile Organic Compound (ppb)			
		PCE	TCE	DCE	Vinyl Chloride
Shallow Samples					
75	11	ND	ND	ND	ND
76	12	ND	ND	ND	ND
77	12	ND	49	47	ND
78	12	ND	ND	ND	ND
79	12	ND	ND	ND	ND
80	11	ND	ND	ND	ND
Intermediate Samples					
75	19	25	52	28	ND
76	20	49	49	28	ND
77	20	46	18	10	ND
78	20	ND	ND	ND	ND
79	20	100	100	7	ND
80	20	95	4	ND	ND
Deep Samples					
75	24	ND	ND	ND	ND
76	25	ND	ND	ND	ND
77	25	ND	ND	ND	ND
78	30	ND	ND	ND	ND
79	32	ND	ND	ND	ND
80	32	ND	ND	ND	ND



NAVY NEWS RELEASE

Public Affairs Office
Naval Facilities Engineering Command, Southern Division
P.O. Box 190010
North Charleston, SC 29419

RAB Reports on Environmental Progress at Naval Base

For Publication by Tuesday, June 10, 1997

For more information, contact:

Jim Beltz (803) 820-5771

North Charleston – The Naval Base Charleston Restoration Advisory Board will hold their next meeting on Tuesday, June 10, 1997 from 6 to 7 p.m. at the Live Oak Community Center, 2012 Success Street, in North Charleston. Agenda topics will include a progress report on environmental activities and an update from the Naval Complex Redevelopment Authority. Navy staff and environmental specialists will be available after the meeting for informal discussion and to answer questions. The meeting is open to the public and everyone is encouraged to attend.

The RAB is a group of community members, Navy representatives, and federal, state, and local organizations and agencies that convene to discuss environmental cleanup progress and property reuse at Naval Base Charleston.

The RAB meeting schedule has recently changed. Starting June 1997, meetings will be held on a bi-monthly basis. Meetings will be held at 6:00 p.m. on the second Tuesday of the scheduled month.

For more information on the upcoming meeting, call Jim Beltz at the Public Affairs Office at Naval Facilities Engineering Command, Southern Division, (803) 820-5771.

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June 10, 1997

Naval Base Charleston

RAB Meeting

Restoration Advisory Board

DateTuesday, June 10, 1997

Time6 - 7 p.m.

Location...Live Oak Community Center
2012 Success Street
North Charleston

The RAB is a forum where community members meet with representatives from the Navy, State and Federal environmental agencies, and other groups to discuss the environmental programs underway at Naval Base Charleston. **All meetings are open to the public and everyone is encouraged to attend.**

For More Information



Call Jim Batz at the Public Affairs Office
at Naval Facilities Engineering Command,
Southeast Division (803) 326-5771

June 10, 1997

Naval Base Charleston

RAB Meeting

Restoration Advisory Board

DateTuesday, June 10, 1997

Time6 - 7 p.m.

Location...Live Oak Community Center
2012 Success Street
North Charleston

The RAB is a forum where community members meet with representatives from the Navy, State and Federal environmental agencies, and other groups to discuss the environmental programs underway at Naval Base Charleston. **All meetings are open to the public and everyone is encouraged to attend.**

For More Information



Call Jim Batz at the Public Affairs Office
at Naval Facilities Engineering Command,
Southeast Division (803) 326-5771

Community Relations Subcommittee Meeting

May 13, 1997

Time: 3:30 p.m. - 4:30 p.m.

Attendees: Fouche'na Sheppard, Diane Cutler, Gabriel Magwood

Mr. Fontenot was at a training session and was unable to attend the meeting. Mr. Gabriel Magwood attended in Mr. Fontenot's place, specifically to respond to questions/discussions related to the Chicora Tank Farm Fact Sheet.

DISCUSSION ITEMS

Chicora Tank Farm Fact Sheet Ms. Foche'na Sheppard reviewed the draft fact sheet and had no changes.

Miscellaneous Discussion Since this was the first subcommittee meeting Ms. Sheppard had attended, Ms. Cutler explained the purpose of the group - 1) to suggest ways to keep the community informed of the ongoing environmental activities at the Naval Base, and 2) to work toward implementing those recommendations. Some subcommittee efforts have included producing various fact sheets, establishing a speakers bureau, creating and distributing an Earth Day flyer and meeting announcement flyers.

Ms. Sheppard suggested another way to get the word out about RAB meetings would be to work with local church leaders. She also recommended making contact with local reporters and setting up booths in conjunction with other local events like the Chamber of Commerce Business Expo.

NEXT MEETING

Subcommittee Meeting The next Subcommittee meeting will be held on June 10, 1997 at 3:30 p.m. in building NH-51 in the Caretaker Site Office conference room.

NAVAL BASE CHARLESTON
RESTORATION ADVISORY BOARD (RAB)
Minutes of 13 May 1997

LIVE OAK COMMUNITY CENTER, 2012 SUCCESS ST., N. CHARLESTON

1. Introduction of the RAB Members and Guests

Ms. Wannetta Mallette, Community Co-Chair, brought the meeting to order at 6:00 p.m. and commenced with introductions. Mr. Daryle Fontenot, Navy Co-Chair, pointed out that the room was arranged differently and he would like to get feedback from members and the audience at the end of the meeting if it is a preferable set-up.

2. RAB Members Attending

Mr. Jay Bassett	Mr. Ralph Laney
Mr. James Conner	Ms. Wannetta Mallette
Mr. Bobby Dearhart	Mr. Lou Mintz
Mr. Daryle Fontenot	Mr. Arthur Pinckney
Mr. Tom Fressilli	Mr. Johnny Tapia for Ms. Ann Ragan
Mr. Wilburn Gilliard	Ms. Priscilla Wendt
Ms. Gussie Greene	Mr. Bob Veronee
Mr. Don Harbert	
Ms. Jeri Johnson	

3. Guests Attending

Mr. Tony Hunt	NAVFAC, SouthDiv
Mr. Brian Stockmaster	NAVFAC, SouthDiv
Mr. Gabriel Magwood	NAVFAC, SouthDiv
Mr. Paul M. Bergstrand	SCDHEC
Mr. J. Michael Reubish	CEERD
Mr. Kevin Tunstall	Shipyard Detachment
Ms. Myrtle Barnett	Community Member
Mr. Leroy Carr	Chicora/Cherokee
Mr. Joseph M. Land, Sr.	Galileo Quality Institute
Ms. Phyllis L. Breland	BCTO
Ms. Susan K. Dunn	Grassroots Coalition
Mr. George A. Freeman	East Cooper NAACP
Mr. Mel Goodwin	Harmony Project
Ms. Adelaide Leocha	Community Member
Mr. Jay Patel	Chicora/Cherokee
Mr. Benjamin Washington	Liberty Hill
Ms. Diane Cutler	EnSafe/Allen&Hoshall
Mr. Dave Backus	EnSafe/Allen&Hoshall
Mr. Larry Bowers	EnSafe/Allen&Hoshall
Mr. Britton Dotson	EnSafe/Allen&Hoshall

4. Administrative Remarks and Comments on Minutes

Ms. Mallette asked for comments on minutes from last meeting and for any other administrative remarks. None were offered.

5. Subcommittee Reports

Ms. Diane Cutler, Community Relations Specialist with EnSafe/Allen & Hoshall provided a brief report on the Community Relations Subcommittee. Ms. Foche'na Sheppard, Mr. Gabriel Magwood, and Ms. Cutler were in attendance at the meeting and discussed the draft fact sheet on Chicora Tank Farm. The next step is to get input from the members who were unable to attend the subcommittee meeting, and then get final approval from the Project Team. Hopefully, the fact sheet can be distributed by the June RAB meeting, or shortly thereafter.

6. Environmental Cleanup Progress Report

Status of Environmental Programs

Mr. Tony Hunt provided the progress report. He announced that a handout is available that discusses the different environmental programs (BRAC, NEPA, UST, RCRA Corrective Action Program and Asbestos) and that everyone can review it at their leisure.

Mr. Hunt presented some new information on the Naval Annex. He began by showing a location map of the Annex which can be accessed by taking Remount Road toward the airport off of I-26. Some of the typical activities conducted at the Annex included radar maintenance and vehicle maintenance. The Navy was sampling the sewer systems and one of the sampling points picked up TCE which is a chlorinated solvent - the same type of contaminant that was found at Solid Waste Management Unit (SWMU) 39. That finding triggered more sampling at the Annex.

Mr. Hunt displayed a map of a groundwater plume of TCE contamination. The Navy has been able to determine that the plume came from an area that was designated on Annex maps as an auto service rack. Soil samples were collected in that area and it was verified that it was the source. Further sampling was done out toward I-26 and at the facility fence line. Analyses found that the contaminants are in a dissolved phase down in the deeper zone. As a result of these findings, the Navy decided to go off-site and do further sampling.

Sampling was conducted along the median of I-26, and the Navy is in the process of evaluating those results.

Mr. Lou Mintz asked what will be done if contamination is found under I-26. Mr. Hunt replied that the Navy has not discussed that yet, but there are a number of things that can be done depending on the findings, such as pump and treat, or leave in place if it is attenuating (breaking down). The Navy will have to take a look at the factors before they decide on what to do.

A guest asked why all this is being done, because the property is just going to be used for putting up buildings, not used for something like gardens. Mr. Hunt concurred that it was a good point, and that groundwater in that area is not used as a drinking water source. However, it is regulated as a drinking water source, so if a contaminant exceeds the maximum contaminant level, then it has to be addressed. The question was asked, where does the money come from to pay for the

investigations. Mr. Hunt replied that it is Base Realignment and Closure (BRAC) money which ultimately comes from taxpayers.

A guest asked if the Navy expects to have someone occupy the Annex property. Ms. Jeri Johnson replied that the Annex itself would convey to the Redevelopment Authority (RDA), and they in turn are considering it for industrial and commercial development. The guest pressed the issue that if industrial development is going to be pursued, why does all this investigation and cleanup have to happen. Mr. Paul Bergstrand from the South Carolina Department of Health and Environmental Control stated that the premise of the maximum contaminant level regulations is that it is the right of the citizens of the state to put in a well on their property and get safe drinking water. To this end, there are a number of different methods to get there such as pump and treat or letting the contaminant naturally attenuate (break down). Right now, however, the Navy is trying to find out the extent of what is out there.

The question was asked, what was the property previously used for. Mr. Hunt answered that the marines had a vehicle maintenance area, and there was a radar annex where they maintained radar systems. Mr. Conner asked if the housing is affected. Mr Hunt answered that the housing is part of the Annex, but is not affected by this issue.

Tank Closure Presentation

Mr. Bergstrand introduced himself as a hydrogeologist that works for the state of South Carolina. If there are any questions about his presentation, his number is (803) 896-4016.

The Chicora tank farm issue has been coming up regularly since Mr. Bergstrand began attending meetings in April 1996, so what he will do is briefly go over the regulations that address tank closure issues and try to tie it into what is going on at the Chicora tank farm.

The first question is, how do you close down a regulated tank? What are the rules and regulations that you have to follow? Tank closure is covered under the Underground Storage Tank (UST) Control Regulations which is a South Carolina law passed in March 1990 and is very similar to the federal underground storage tank control regulations with only some minor differences. On the very first page of the regulations, exclusions are listed which include wastewater process tanks, hydraulic lift tanks, tanks under 110 gallons, and field constructed tanks, which include the Chicora tanks. Although the Chicora tanks are excluded from the regulations, the Navy has made a policy decision to follow the tank closure regulations.

The requirements for closing underground storage tanks is basically comprised of three elements: empty and clean the tanks and piping; remove the tanks from the ground, or fill the tanks with a clean, inert solid like sand; and assess the site. Every underground storage tank system is unique so the state has come up with a set of guidelines called the UST Assessment Guidelines that cover how to close a tank. The guidelines require you to a) sample where you are most likely to find contamination, b) send the samples to a SC certified laboratory, and c) report the findings to DHEC's UST program where they will review the results.

The next issue is where do you sample for contamination? Soil samples from an excavation or an in-place closure should be taken at the ends of the tank and along the piping. If there is groundwater around the tanks, groundwater samples must be taken to look for petroleum floating on the water. Once the samples are collected, they must be sent to a certified laboratory, then the report must be submitted to the state.

The possible outcomes of an assessment may include:

- *No contamination* which would result in a no further action ruling.
- *Heavy contamination* which would require immediate action to remove any free product and clean up the contamination.
- *Some contamination*. This is a more difficult scenario and may result in different closure methods including no further action, incremental monitoring, or conducting further assessments to try to determine the extent of the contamination.

How does all of this fit in with the Chicora tank farm? On May 17, 1994 the UST program issued a no further action decision based on the environmental assessment report that was submitted to DHEC. That report included soil and water samples from 1986, a fuel tracer survey and a soil-gas survey done in March 1990, soil borings and groundwater taken in June 1990, and four quarters of groundwater samples from all the wells on the property done in 1993. A report of findings was generated in April 1994. A copy of that document is available in the Information Repository. The environmental assessment resulted in a no further action in May 1994 - there was no contamination that required remediation.

As for the tanks themselves, the Navy is planning on closing out the tanks following the regulations by emptying the tank residue, steam-cleaning all the tanks, then flushing and filling the piping with a clean inert solid. Following those steps, the preferred method of closure is the partial demolition of the tanks where the tops and part of the side walls are knocked in and the tanks are filled with an inert material.

Mr. Bergstrand continued by trying to address some RAB member concerns from previous meetings:

Concern: *Oil is in the tank and it is embedded in the concrete*. Yes, that is true. However, the tanks will be cleaned and the residue will be removed. The tanks and piping will be closed and filled with an inert solid.

Concern: *Breaking up the concrete will mobilize the oil that is embedded in the tanks*. The top and sides of the tank will be knocked into the bottom half of the tank then filled in place with the inert solid. Then the ground surface will be graded to prevent water from ponding.

Concern: *Assessment samples were not taken under the tanks*. Groundwater is very shallow at the tank farm. Four rounds of water samples were taken. One sample had a hit of benzene at the maximum contaminant level, the other three quarters didn't turn up anything. Mr. Bergstrand added that the sample locations would have detected petroleum products if they were released.

Concern: *The new property owner will have to pay for future cleanup.* The Navy retains the responsibility for doing the cleanup if any contamination relating to their operations is found.

Questions/Answers: Mr. Tom Fressilli asked why was the assessment done in 1990? Mr. Gabriel Magwood answered that the assessment was done because petroleum staining was found in the pump room and a determination needed to be made if it spread to the soil or groundwater.

Mr. Arthur Pinckney asked since the Chicora tanks are not covered under the UST standards, is there another standard that the tanks are covered under, and if so, what is that standard? Mr. Bergstrand answered that it would be the Pollution Control Act which would be a standard of last resort. The Navy made a policy decision to follow the UST regulations and they are complying with those. Mr. Pinckney continued by asking if the Pollution Control Act is a more strict guideline. Mr. Bergstrand stated that he was unsure how they compare but said that the UST regulations are better suited to petroleum issues.

Mr. Fontenot added that Navy procedures are being following for the closure of the tank farm. The reason for the assessment was that there was a potential for a release to the soil or water, and whenever that happens, the UST regulations kick-in, requiring an assessment.

Mr. Pinckney asked if the Navy procedures are circumventing the Pollution Control Act regulations? Mr. Fontenot answered no. Mr. Pinckney also asked that since breaking the tanks could potentially release the embedded petroleum product, and since the tanks will be left in the ground, wouldn't any future owner who tried to remove the tanks take the chance of releasing the material? Mr. Bergstrand stated that if a new owner wanted to remove the tanks, they would have to remove everything and dispose of the remains according to regulation. A guest from the audience asked if the Navy would be responsible for such a removal. Mr. Fontenot clarified that after the Navy closes the tanks, controls will be put in place that limit what the property can be used for. If the future property owner wants to undertake removal, that is a voluntary action and it must be done at the owner's expense. However, if during normal use, the property owner finds contamination that the Navy missed, the Navy will be responsible for addressing that. But if the owner intentionally disturbs what was appropriately closed, it will be the owner's responsibility.

A guest from the audience expressed her opinion that the investigations have been going on for a long time. Cleanup was accomplished in 1990, yet nothing has been done with the property. It seems that new things are being raked up to investigate. Mr. Fontenot clarified that the investigation of the tank farm has been over since 1994. What the Navy is trying to now is to properly close the previously used tanks. They are not investigating any more - they are simply working on the process to close the tanks. In response to the question "why is this being done," Mr. Bergstrand stated that congress requires it.

The guest continued by stating that the Navy is doing a good job and they're doing what they're supposed to. But then the community wants to be sure the Navy is doing what they're supposed to, and sends people in to check up on them which costs more money. Mr. Pinckney interjected that he is on the national RAB committee and that he does not trust the military, that he is a stakeholder, a citizen trying to make sure the job is done right.

A discussion ensued among multiple parties regarding the status of the tanks now and what condition they need to be in for future use. RAB members provided a review of the events that have taken place regarding Chicora in order to bring the new guest up to speed on the issue of the tank farm. Ms. Mallette informed the guest that minutes from all the meetings are available for public review in the Information Repository at the Dorchester Road Regional Library. Ms. Mallette also added that many of the questions and issues the guest has raised have been visited in previous meetings and that someone will be happy to personally answer all of her questions at the close of the meeting.

Ms. Phyllis Breland with DOE tried to provide a clarification for the RAB regarding petroleum products. She said because petroleum products are so prevalent in our society, they are regulated under the RCRA's UST program rather than being considered a hazardous waste and controlled under other regulations. The problem with the tanks is not the contamination within those tanks because the contamination is minimal, and state regulations require that they be cleaned out so they're protective of human health and the environment. The problem with the tanks is how they will be closed so the property can be used. She also added that no state law can be less stringent than the federal laws.

Ms. Gussie Greene pointed out that the Chicora issue is very important to the local community. She also inquired what was going on out there because shrubs were being planted inside the fence. Mr. Fontenot stated that he did not know anything about it.

Ms. Susan Dunn stated that the role of the community is not to ensure that the Navy follows regulations. In this case, their role is to make sure the Chicora property is put to good use. The piece that is missing is the community's interest in the property. Neither the RDA, the City of North Charleston or the School Board has shown any interest in the property. Therefore it is up to the community to show some initiative to find a good use for the property. Mr. Fontenot reminded Ms. Dunn that the RAB's responsibility is to address environmental issues. Reuse issues fall under the jurisdiction of the Redevelopment Authority.

7. Environmental Justice Presentation

Dr. Mel Goodwin provided a presentation on environmental justice. He began by stating that the notion of environmental justice was developed early in the 1990s when people began to put together several sources of data such as census data, community right-to-know act, and toxic release inventory information. What was discovered was that the facilities that were required to register under the Toxic Release Inventory, because they were using substantial quantities of potentially dangerous chemicals, were disproportionately located near minority communities or low-income communities. At first, it was called environmental racism, then changed to environmental equity, and today's term is environmental justice.

Environmental justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people should bear a greater share of the negative environmental effects from industrial,

municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

In 1994, President Clinton issued an executive order stating that each federal agency shall make achieving environmental justice a part of its mission by essentially identifying disproportionately high impacts on minority groups that stem from various activities.

Dr. Goodwin then talked about a place in the local area that a lot of folks feel is a candidate for environmental justice issues. That place is the neck area between the City of Charleston and North Charleston.

The earliest use of the neck area in the 1700 and 1800s was for agriculture. The next usage in the mid 1800s was for cemeteries. Then in the 1860s, the first phosphate fertilizer plant began operation in the area and over the next 20 years over a dozen plants were developed on the Ashley and Cooper rivers because there was good ocean access and a lot of available land. Other industry began to come into that area in the 1900s. In the early 1900s a wood treatment facility was established - now known as the Coppers site.

Because these industries were labor intensive, there was a need to create little villages, and that is what happened in the neck area. Dr. Goodwin displayed an early 1900s map that showed the location of the fertilizer plants and lumber mills. He also pointed out that the area was not clear like it is today, it was heavily wooded. Although there was a lot of industry by the early and mid 1900s, most of it was along the shoreline.

In the 1890s the consolidated railroad had a trolley line that ran from the city limits on Mount Pleasant Street up to an amusement park called Chicora Park. On Sundays, people would take the trolley up to the park and travel through the forested area of the neck. The reason Dr. Goodwin provided that background was because he often hears the comment that industry was there first, and the communities developed with full knowledge of what they were getting into. Although that statement is true, he added that the buffer zones were much different back then, and no-one was really thinking about environmental contamination or health impacts in the early 1900s.

To look at what's happening in that area now, demographic data shows a little under 5000 people, mostly black, mostly families. Median income is around \$10,000. Dr. Goodwin presented another map which depicted current-day land use including residential, industrial, and commercial areas. The map showed small areas of residential housing among (and sometimes surrounded by) large area of industrial and commercial development.

Dr. Goodwin moved on to the area of "perception." In 1976, the City of Charleston annexed most of the neck area primarily to develop an industrial tax base. In 1978, the city prepared and released their land use and housing plan. Some of the comments from the plan were:

- This is the only area in the city to consistently suffer from poor air quality. Even after restricting the amount of discharges, the air is not good.
- ...one of the most blighted areas in the city.
- Residents are predominately black and elderly.

- Residential land uses exist immediately adjacent to large industrial and commercial establishments in the neck area with few buffer zones to mitigate any adverse impacts on the neighborhoods. Residents are most concerned with this situation and wish to determine ways to co-exist with nearby businesses.

Dr. Goodwin continued by noting that these villages were no closer to industry than the downtown residential neighborhoods were to the lumber mills on the peninsula. So, locating that closely was not an unreasonable thing for people to do, but the situation changed. The buffers disappeared, industry expanded, and the nature of industry changed.

The land use and housing plan continued by stating "the neck, as the location of most of the City's industrial tax base must be considered as a major industrial area." And "the area's infrastructure (streets, drainage facilities, etc.) are in need of repair and will be very expensive to bring up to standards. Thus it would be very difficult to rehabilitate these neighborhoods. In the future, gradual transition to the partial industrial use will better serve the needs of all segments of the neighborhoods. This will make it possible to combine several lots for larger business establishments allowing improved design and traffic control. It will also enable present residents to sell their property for a higher price."

So, the 1978 plan encouraged the gradual voluntary transition of the residential areas of Silver Hill, Four Mile Hiburion Heights, and Magnolia for commercial or industrial uses within 20 years through zoning changes. The neck area is zoned primarily for heavy industrial activities. There is some general business zoning, and a little bit of white commercial zoning. The only areas that are zoned for residential activities are the portions of Silver Hill that are actually occupied, and Rosemont. Four Mile Hiburion is zoned entirely for general business and industry.

Dr. Goodwin asked if this was a conscious determination to create environmental racism or to ignore environmental justice? Probably not. In Dr. Goodwin's opinion, most of these issues are not deliberate, they emerge from a number of other factors. But, 20 years after the proposal was made, the folks in those areas are still black, still old, and still there. So whether it's deliberate or circumstantial, it is an environmental justice issue.

Dr. Goodwin then shared a story about another kind of environmental justice. The story is about a bank in the Netherlands who wanted to change their image from a stave Dutch bank to a world leader. They commissioned a new corporate headquarters where they oriented the buildings so they took advantage of natural light, took advantage of passive solar technology, collected rain water on the roofs brought it down through handrails into atria where they had organic gardens and grew organic vegetables that they served in the cafeteria. They commissioned original art work, every employee had a natural wood desk, all windows opened, every employee was within 23 feet of a window, and the hallways wound through the work areas to make interesting areas for people to walk. They spent \$4 million over normal construction to do all those extras. However, they saved \$ 2.4 million in energy costs per year, making up for those costs in less than two years. The big surprise was not the energy cost savings, but the fact that the people showed up for work more, they didn't get sick as often. They showed a 15% rise in productivity. This was done in

1983. Not many buildings like that are built today. And, not many buildings are built in low income communities today, even as part of affordable housing, new construction, or rehabilitation.

Dr. Goodwin asked, what would happen if the productivity in schools, homes, and businesses could be increased by 15%? Things might look very different. So why isn't it being done? He provided two reasons for why buildings are not built that way, which are the same two reasons that there are environmental issues out there. 1) Ignorance - people don't know that there's an issue. 2) Habit - people get used to doing things the way they've always done them.

A final example is the Coppers site where the primary cleanup strategies are removal and capping. The capping material is proposed to be crushed limestone with a view toward future industrial use or container services. When corporate campuses are built on sites like this, they provide amenities for the community. That area could be changed around, and then it wouldn't be necessary to move Silver Hill. That activity could be compatible with many types of modern industry if people thought that way. So, in terms of discussions of reuse and cleanup goals, people need to break out of the mold. Dr. Goodwin said he realized that the RAB deals with environmental issues and the RDA deals with reuse, but it's just that kind of compartmentalization that keeps society making the same choices. Maybe the RAB can't do anything formally, but they can engage the environmental justice issue. Perhaps the RAB can move this whole thing forward a little more.

Mr. Pinckney asked if environmental justice encompasses the revitalization of an area in addition to the health aspects. Dr. Goodwin responded that yes, it is more than just about health, it is about economic reuse and social impact as well.

Dr. Goodwin added that the Navy is getting there, but there are a lot of processes that are set up with conventional models within the Navy's Base Closure program and the EPA's Superfund program.

A guest asked if Dr. Goodwin has spoken with any city council or county council members about environmental justice. Dr. Goodwin replied that they are now in the final stages of developing a series of land use plans for the 19 neighborhoods in the Enterprise community. When those land use plans are finished, they will have a lot to say about environmental justice. They will also have a lot to say about responsibility. It is not only the government's responsibility to do something, it is just as much the responsibility of neighborhoods and residents to engage in these issues themselves.

Mr. Pinckney asked if Dr. Goodwin would consider the Chicora area an environmental justice issue. He replied, probably, but based on what he heard at the meeting, he thinks it's probably less of a concern now than when the tanks were in operation. The point, however, is not why was it done, but rather what will/can be done about it now. Dr. Goodwin agrees with Ms. Dunn's point that a vision needs to be formulated, then the community can work toward what they want. And that in turn makes it easier to determine what kind of cleanup is necessary.

8. RAB Meeting Frequency Discussion

Ms. Mallette shared the suggestion from a RAB member that meetings be switched to bi-monthly or quarterly. She asked for comments or discussion about the issue. Mr. Fontenot added that he was the one who made the suggestion. He added that Charleston was the only RAB within the Southern Division area that meets monthly. Also, the last meeting would have only been about 15 minutes long had it not been for a reuse discussion. Mr. Fontenot said he thought the RAB would best be served if meetings were less frequent, then environmental issues could fill the agenda. In addition, bi-monthly meetings might encourage better attendance since meetings would be held only 6 times a year rather than 12.

RAB members debated the issue which was then taken to a vote. The majority of members voted to switch to bimonthly meetings. The next meeting will be held in June, followed by August.

9. Remaining Questions and Comments

Mr. Pinckney said he read an article in the newspaper about a company that did some testing and filed some false information with EPA. He asked if that involved the investigations at the Naval Base? The answer was no, that issue occurred at the Naval Weapons Station.

Mr. Conner said that some people he knows don't think the odor of gas in the Chicora area is coming from the trucking depot as stated in a previous meeting. Mr. Conner stated that he feels the people deserve an explanation that makes sense.

10. Adjournment

Meeting was adjourned at 7:30 p.m.

Summary of Action Items

- Meeting frequency will be changed to bi-monthly starting in June, 1997.

Attachments to Minutes

- (1) Tuesday May 13, 1997 RAB Meeting Agenda
- (2) RCRA Facility Investigation Progress Update - 5/2/97
- (3) Presentation - How To Close Down a Regulated Tank? - Paul Bergstrand

Minutes recorded by: Diane Cutler, EnSafe/Allen&Hoshall

Minutes approved by: _____

Daryle Fontenot
Navy Co-Chair

Wannetta Mallette
Community Co-Chair

**NAVBASE Charleston
Potential IM/Expedited CMS Sites**

SWMU 2 - Lead Contamination Area

- SWMU 2 consists of salvage bin No. 3 and the adjacent paved ground surface in the Zone A DRMO area. The area was used to store recovered lead from lead-acid submarine batteries from the mid-1960s until 1984. Electrodes and associated internal metallic components were removed from the battery jars in the battery electrolyte treatment area, SWMU 5 in Zone E. Recovered materials were then placed on a railcar and transferred to the DRMO area for storage and eventual sale to a salvage contractor.
- Lead was detected in 64 of 65 surface soil samples collected at the site since 1993. Concentrations range from 1.0 - 89,000 ppm with a mean concentration of 1,660 ppm. The lead background concentration for the surface interval in Zone A is 140 ppm. Lead was detected in 54 of 57 subsurface samples collected during the same time frame. Concentrations range from 1.4 - 1,120 ppm with a mean concentration of 35.6 ppm. Background for the lower interval is 22 ppm.
- Lead was detected in groundwater above the USEPA TTAL of 15 $\mu\text{g/L}$ at monitoring well CNSY-002-05. This well was located within perimeter of the lead storage bin. The maximum concentration reported was 639 $\mu\text{g/L}$ however, turbidity levels were high. Later samples collected after the well was redeveloped yielded a maximum concentration of 18.9 $\mu\text{g/L}$. The well in question was later damaged by site operations and had to be properly abandoned.
- Contributors to hazard and risk at the site consist solely of inorganics. The primary contributors were arsenic and beryllium. Hazard and risk for lead were not calculated due to a lack of available risk information but 12 surface samples contained concentrations which exceeded both background and the USEPA residential cleanup level of 400 ppm.

Potential Remedial Alternatives:

Soil (inorganics)

- a) institutional controls (deed restriction, etc)
- b) engineering controls (berms to control overland water flow, etc)
- c) hot-spot excavation and disposal/treatment off-site
- d) capping

- e) solidification/stabilization (in-situ)
- f) vitrification (in-situ)
- g) physical separation/acid leaching (ex-situ)

Groundwater (inorganics)

- a) institutional controls (deed restrictions, etc)
- b) containment via barrier wall and hydraulic controls
- c) reactive wall
- d) GW extraction and treatment (metal precipitation, adsorption, filtration, etc)

SWMU 39 - Former POL Drum Storage Area, Building 1604

- SWMU 39 in Zone A is the site of a former storage area for petroleum, oil, and lubricant (POL) drums north of Building 1604. This asphalt-paved area is near the northern boundary of NAVBASE. The Hess Oil tank farm is adjacent to this boundary.
- A total of 21 COCs that contributed to a residential (child) hazard quotient of 14 and a residential ILCR of 8E-04 were identified in groundwater. Primary contributors to risk were benzene, chlorinated solvents, and arsenic. LNAPL suspected of migrating onsite from a non-Navy source was detected in one monitoring well.
- A total of 7 COCs that contributed to a residential risk of 4E-05 were identified in soil. Primary contributors to risk were arsenic and benzo(a)pyrene equivalents.
- A multi-layer aquifer system exists across most of the site. Groundwater contamination has been detected in the shallow and intermediate levels. Groundwater contamination is migrating off Navy property.

Potential Remedial Alternatives:

Soil (inorganics)

- a) institutional controls (deed restriction, etc)
- b) engineering controls (berms to control overland water flow, etc)
- c) hot-spot excavation and disposal/treatment off-site
- d) capping
- e) solidification/stabilization (in-situ)
- f) vitrification (in-situ)
- g) physical separation/acid leaching (ex-situ)

Groundwater (inorganics and VOCs)

- a) institutional controls (deed restrictions, etc)
- b) natural attenuation
- c) enhanced biological remediation (in-situ)
- d) containment via barrier wall and hydraulic controls
- e) reactive wall
- f) Groundwater extraction and treatment (metal precipitation, adsorption, filtration, oxidation/reduction, UV/ozone oxidation and UV reduction, air stripping, etc)

Zone E

SWMU 65 and AOCs 544, 546 – Former Lead Storage, Pickling Plant, Galvanizing/ Pickling Shop.

- SWMU consists of a lead storage area. Lead blankets and shielding materials were stored on pallets and shelves inside and in a paved yard south of Building 221.
- AOC 544 is a former pickling plant at Building 221. From 1940 to 1970, the pickling plant consisted of an open-air facility with only the pickling tanks covered by a roof. In 1970, a single-story structure was built to house the pickling operations. The pickling process used a series of chemical baths and water rinses.
- AOC 546 consisted of a galvanizing/pickling shop that operated within Building 1025 from the early 1920s until 1967. Building 1025 was at the current location of Building 3 until 1942, when it was relocated to southwest of Building 74.
- Vinyl chloride and trichloroethene exceeded RBCs and MCLs in deep groundwater (NBCE06504D), with 1,2-dichloroethene exceeding its RBC as well. Trichloroethene also exceeded RBCs and MCLs in shallow groundwater (NBCE065003), with 1,2-dichloroethene exceeding its RBC. These exceedances were consistent throughout all quarterly sampling events.
- Antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, and vanadium all exceeded RBCs and background in shallow groundwater. Lead exceeded RBCs, background, and the MCL consistently throughout all quarterly sampling events in concentrations up to 1,690 $\mu\text{g/L}$. Arsenic also exceeded RBCs and background in deep groundwater.

Potential Remedial Alternatives:

Groundwater (inorganics and VOCs)

- a) institutional controls (deed restrictions, etc)
- b) natural attenuation
- c) enhanced biological remediation (in-situ)
- d) containment via barrier wall and hydraulic controls

- e) reactive wall
- f) Groundwater extraction and treatment (metal precipitation, adsorption, filtration, oxidation/reduction, UV/ozone oxidation and UV reduction, air stripping, etc)

SWMU 70 and AOCs 548, 549 — Former Dip Tank Area, Hydraulic Elevator, Scrap Yard.

- SWMU 70 consists of a former dip tank at the northwest corner of Building 5. The dip tank was used to treat wood with a fire retardant. The tank was removed in 1981 when the shop began receiving pre-treated lumber.
- AOC 548 consists of an electric hydraulic elevator in Building 5. The elevator is in shaft that is paved on the bottom with approximately 8 inches of concrete. Containment is provided by a container that captures hydraulic fluid leaks and returns it to the main reservoir.
- AOC 549 was a scrap yard north of Building 5. The scrap yard was operated in the 1920s and 1930s.
- A groundwater divide, probably a result of a former creek channel that was filled, exists beneath the sites. As a consequence, groundwater contamination was detected in wells to the southwest, south, east, and northeast of the site in addition to the site itself.
- Benzene, chlorobenzene, 1,2-dichloroethene, vinyl chloride, and trichloroethene exceeded RBCs and MCLs in shallow groundwater consistently throughout all quarterly groundwater sampling events. Trichloroethene was detected in concentrations up to 70 $\mu\text{g/L}$ in shallow groundwater. Chloroform, 1,2-dichloroethene, tetrachloroethene, and trichloroethene exceeded RBCs in deep groundwater, with trichloroethene concentrations up to 30 $\mu\text{g/L}$. These were consistent throughout all quarterly sampling events as well.
- Similar constituents were detected in groundwater in all wells located at SWMU 25 which is adjacent to the sites referenced above. PCE, TCE, and DCE were detected at concentrations ranging from 1 - 18 $\mu\text{g/L}$. Grid well 28D which is west of Hobson contained 54 $\mu\text{g/L}$ of DCE. Grid well 26D which is northeast of Building 5 contained PCE and TCE at concentrations of 5 $\mu\text{g/L}$ and 4 $\mu\text{g/L}$ respectively.
- Antimony, cadmium, chromium, and thallium all exceeded RBCs and background in shallow groundwater, with chromium exceeding RBCs, background, and MCLs consistently throughout all quarterly sampling events with concentrations up to 7,350 $\mu\text{g/L}$. Antimony, chromium, and thallium exceeded RBCs and background consistently in deep groundwater, with chromium concentrations up to 52,500 $\mu\text{g/L}$.

Potential Remedial Alternatives:

Groundwater (inorganics and VOCs)

- a) institutional controls (deed restrictions, etc)
- b) natural attenuation
- c) containment via barrier wall and hydraulic controls
- d) reactive wall
- e) Groundwater extraction and treatment (metal precipitation, adsorption, filtration, oxidation/reduction, UV/ozone oxidation and UV reduction, air stripping, etc)

Zones F and G

SWMU 8 and AOC 637 - Oil Sludge Pits and Dump Area, Vicinity of Former Building 161

- At the pit area, oil sludge was disposed of in three unlined pits from 1944 to 1977. Two pits were filled before 1955. The remaining pit was filled in 1977. Previous investigations at SWMU 8 detected free-floating oil, particularly in the southwestern portion of the area overlying one of the pits. The thickness of the free-floating oil ranged from 2 to 4 inches over the unit and decreased rapidly with distance.
- AOC 637, approximately 400 feet south of Building 161, was used as a burning dump from the late 1940s to the early 1950s.
- Currently undergoing an interim measure to remove sludge material and free product. To date 10,000 gallons of product has been recovered. Upon completion of the scope of the current IM, it is anticipated that some free product will remain along with a significant amount of dissolved phase contamination in the shallow aquifer.
- AOC 637 is hydrogeologically down gradient of SWMU 8 and appears to be impacted from the migration of the dissolved phase contamination referenced above. A total of 15 SVOCs were detected in groundwater through the first two quarters of sampling. Only one of these compounds, 1,4 dichlorobenzene, has an MCL but the reported concentration of 2 $\mu\text{g/L}$ did not exceed the MCL. It did however exceed the tap water RBC. BTEX was reported in both wells at the site and the maximum reported concentration of 55 $\mu\text{g/L}$ does exceed the MCL. This contamination appears to be migrating toward the headwaters of Shipyard Creek.

Potential Remedial Alternatives:

Soil (POLs) and GW (POLs, SVOCs)

- a) institutional controls (deed restrictions, etc)
- b) excavation of source material and off-site disposal or on-site biological treatment
- c) natural attenuation
- d) enhanced in-situ bioremediation
- e) containment of residuals by capping

- f) barrier walls and hydraulic control
- g) GW extraction and treatment
- h) horizontal well collection system

AOC 607 - Dry Cleaning, Building 1189

- The former dry-cleaning facility in Building 1189 operated from 1942 to 1986 and also supported the local seamen's housing area. Since 1986, the facility has been used as a laundry with two industrial washers and dryers. The building also contains office space most recently used for miscellaneous storage.
- PCE, TCE, DCE, and vinyl chloride have been detected at concentrations above MCLs in the shallow and intermediate portions of the surficial aquifer. Concentrations of PCE were detected as high as 45,000 $\mu\text{g/L}$ in well NBCF-607-006. Lesser concentrations of these contaminants have been detected in the deep portion of the surficial aquifer.
- VOC contaminated groundwater is infiltrating the sanitary sewer line. The infiltration is creating a depression in the piezometric surface which appears to have slowed the lateral migration of contamination. The lateral migration that has occurred appears to be along the sewer line which may be creating a preferential pathway.

Potential Remedial Alternatives:

Soil (VOCs) and GW (VOCs)

- a) Soil and GW - institutional controls (deed restrictions, etc)
- b) GW - natural attenuation
- c) GW - containment via barrier wall and hydraulic controls
- d) Soil - hot-spot excavation and disposal/treatment off-site
- e) Soil and GW - enhanced in-situ bioremediation

AOC 617 - Galvanizing Plant, Former Building 1176

- This site in the former Building 1176 was a galvanizing plant that operated from the early 1940s until approximately 1985. It was demolished and Building 69, a shipping and supply center, was constructed in the general area. A 3,000-gallon UST was an onsite chemical storage area.
- Metals concentrations, particularly nickel and zinc, are significantly elevated in well NBCF-617-002. Zinc was reported at 145,000 $\mu\text{g/L}$ (tap water RBC = 11,000 $\mu\text{g/L}$) and nickel was reported at 604 $\mu\text{g/L}$ (MCL = 100 $\mu\text{g/L}$). While iron is typically excluded from the risk assessment as an essential nutrient, a reported concentration of 314,000 $\mu\text{g/L}$ appears to be excessively high. A thallium concentration of 21 $\mu\text{g/L}$ also exceeds the respective MCL of 2 $\mu\text{g/L}$.

Potential Remedial Alternatives:

Groundwater (inorganics)

- a) institutional controls (deed restrictions, etc)
- b) containment via barrier wall and hydraulic controls
- c) reactive wall
- d) GW extraction and treatment (metal precipitation, adsorption, filtration, etc)

Zone H

SWMU 9 - Closed Landfill (Includes SWMUs 19, 20, and 121, and AOCs 649, 650, 651, and 654)

- Solid waste landfill used the 1930s until 1973. The landfill was an area fill and many wastes were burned to reduce volume. Wastes were deposited directly into a tidal marsh. There are seven additional sites which are situated within the boundary of the landfill were investigated concurrently.
- The data for this site is presented in extensive detail in the RFI report and will be discussed in detail in the CMS work plan.

Potential Remedial Alternatives:

Soil (VOCs, SVOCs, pesticides, PCBs, inorganics)

- a) institutional controls (deed restrictions, etc)
- b) capping
- c) hot-spot excavation and disposal/treatment off-site

Runoff/Storm water (VOCs, SVOCs, Pesticides, PCBs, inorganics)

- a) natural wetlands
- b) berms

Groundwater (VOCs, SVOCs, Inorganics)

- a) containment via barrier wall and hydraulic controls
- b) GW extraction and treatment

SWMU 17 - Oil Spill Area

- Site of a release in 1987 of approximately 14,000 gallons of #5 Fuel Oil beneath Building FMB 61 due to a ruptured underground fuel pipe
- The only analytical data from this site that has not been previously presented was the analysis of the DNAPL found in NBCH-017-002 during the 3rd quarter of sampling. Results were as follows: Arochlor 1260 - 290,000 ppm; 1,3 dichlorobenzene - 13,000 ppm; 1,4 dichlorobenzene - 23,000; 1,2,4 trichlorobenzene -160,000 ppm; gasoline range organics -5,100 µg/L; cyanide - 1,100,000 µg/L.

Potential Remedial Alternatives:

Soil (PCBs, POLs)

- a) institutional controls (deed restrictions, etc)
- b) hot-spot excavation and off-site disposal/treatment
- c) natural attenuation
- d) enhanced bioremediation (bioventing)
- e) in-situ solidification/stabilization
- f) capping

Groundwater (SVOCs)

- a) natural attenuation
- b) containment via barrier wall and hydraulic controls
- c) GW extraction and treatment

Zone K

SWMU 166 - Sewer System and Former Septic Tank System, Naval Annex

- SWMU 166 consists of the sanitary sewer system serving the Naval Annex, excluding the housing area. It is comprised of approximately 5,300 linear feet of gravity sewer lines. Most lines are constructed of vitrified clay, although some are constructed of ductile iron, cast iron, PVC, or polypropylene. A former septic tank and drainfield were also identified during research of the sewer system.
- Chlorinated solvents have been detected in soil at concentrations up to 59 ppm. Subsurface concentrations were detected as high as 3.9 ppm with the concentrations of with individual constituents exceeding their respective SSLs.
- Chlorinated solvent contamination has been detected at the property boundary at a concentration of 3,940 $\mu\text{g/L}$.
- Offsite groundwater contamination has been confirmed and appears to be co-mingling with groundwater contamination from off site sources.

Potential Remedial Alternatives:

Soil (VOCs) and GW (VOCs)

- a) Soil and GW - institutional controls (deed restrictions, etc)
- b) GW - containment via barrier wall and hydraulic controls
- c) Soil - hot-spot excavation and disposal/treatment off-site
- d) GW - reactive walls



DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O. BOX 190010
2155 EAGLE DRIVE
NORTH CHARLESTON, S.C. 29419-9010

5090/11
Code 1877
28 July 1997

Mr. John Litton, P.E.
Director, Division of Hazardous and Infectious Waste Management
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subj: SUBMITTAL OF THE QUARTERLY RCRA FACILITY INVESTIGATION
PROGRESS REPORT

Dear Mr. Thompson,

The purpose of this letter is to submit the Quarterly RCRA Facility Investigation (RFI) Progress Report for Naval Base Charleston. This report is submitted in order to comply with condition II.C.5 of the RCRA Part B permit issued to the Naval Base Complex by the Environmental Protection Agency and the South Carolina Department of Health and Environmental Control.

Enclosure (1) is the Quarterly Report which contains the activity for the month of June, 1997. Monthly reports have been submitted previously for the months of April and May which complete the quarter. If you have any questions, please contact Billy Drawdy or Matthew A. Hunt at (803) 743-9985 (Ext. 29) and (803) 820-5525 respectively.

Sincerely,

PAUL ROSE
LCDR, CEC, U.S.Navy
Caretaker Site Officer
By direction

Encl:

(1) Quarterly RFI Progress Report - June 1997

Copy to (w/encl):

SCDHEC (Paul Bergstrand, Johnny Tapia)

USEPA (1) (Jay Bassett)

SOUTHNAVFACENGCOM (Matthew Hunt)

CSO Naval Base Charleston (Billy Drawdy, Daryle Fontenot)

**NAVBASE CHARLESTON
RFI STATUS REPORT
PERIOD: SUMMARY OF
01 June 1997 To 30 June 1997**

I. INTRODUCTION

The following status report has been prepared to satisfy condition II.E.3.a of the Part B Permit Renewal dated 5 December 1994 for Naval Base Charleston (NAVBASE). The requirements of this condition are in effect since the total elapsed time to complete the RCRA Facility Investigation (RFI) is projected to be greater than 180 calendar days from the approval date of the *Final Comprehensive RFI Work Plan* as indicated in the Corrective Action Management Plan (CAMP).

In lieu of submitting quarterly reports, NAVBASE is voluntarily submitting monthly reports to provide an update on the progress of the RFI to members of the NAVBASE BRAC Cleanup Team (BCT) in a more timely manner. The content of the monthly reports includes information intended to satisfy condition II.E.3.a of the Part B Permit. Consequently, this report only addresses activities which occurred during the month of June 1997.

II. PORTION OF THE RFI COMPLETED

- The Final Comprehensive CMS Work Plan was prepared and ready for shipment to the project team.
- In an effort to resolve *Draft Zone A RFI Report* for SWMU 42 and AOC 506 groundwater concerns, the project team agreed that direct push groundwater sampling should be performed. The sampling was completed on June 24, 1997 and the samples submitted for analysis.
- SCDHEC comments regarding the *Draft Zone C RFI Report* were received via e-mail on June 2, 1997. Additional sampling was requested and the Navy submitted a sampling proposal to the project team on June 27, 1997.
- SCDHEC comments regarding the *Draft Zone D RFI Report* were received via e-mail on June 18, 1997. The project team agreed that a direct push groundwater sample should be collected at the location of soil boring GDDSB006 to evaluate the potential for migration of volatile constituents detected in soil to groundwater. Groundwater samples were collected at depths of 15 and 25 feet below ground surface and analyzed for volatile organics. All constituents were reported as non-detect. The data and a site map are included as Attachment A.
- Proposed background concentrations were developed for Zones F and I. These will be submitted at the July project team meeting for review and future discussion.

- Revisions to the Final Zone H RFI Report and a response to comments were submitted to the regulatory agencies on June 26, 1997 for approval.
- It is anticipated that by July 3, 1997, all first phase sediment and surface water samples proposed in Noisette Creek and the Cooper River as part of the Zone J investigation will have been collected.
- To date, as part of the Zone L investigation, all soil and groundwater direct push samples proposed in the work plan have been collected with the exception those in Zone E. This represents 235 groundwater samples and 140 soil samples. A combined total of 286 proposed samples remain to be collected in the Zone E portion. Field work is anticipated to last another 5-6 weeks to complete the initial phase.

III. SUMMARIES OF FINDINGS

As referenced above, the findings from the grid location 06 in Zone D are provided as Attachment A.

A number of soil cores from Zone E were submitted for metals analysis in an effort to determine if the natural sediment deposits are the source of the trace metal thallium which has been detected in numerous groundwater samples across the base. The results were essentially all non-detect which still leaves the question of what the possible source is unanswered. The results are included as Attachment B.

IV. DEVIATIONS FROM APPROVED WORK PLANS THIS REPORTING PERIOD

There were no known deviations from the approved RFI Work Plans for this reporting period.

V. SUMMARY OF CONTACTS WITH LOCAL COMMUNITY PUBLIC INTEREST GROUPS OR STATE GOVERNMENT

As indicated in the January 1995 Quarterly Status Report, the Navy has established a Restoration Advisory Board (RAB) to involve the public in the decisions regarding the investigation and remediation of contaminated sites at Naval Base Charleston. The meetings are held monthly and are open to the public. The minutes of the June 1997 meeting are provided as Attachment C.

VI. SUMMARY OF PROBLEMS OR POTENTIAL PROBLEMS AND ACTION TAKEN TO RECTIFY PROBLEMS

There were no problems or potential problems identified during this reporting period.

VII. KEY PROJECT PERSONNEL

There were no changes in key personnel this reporting period.

VIII. PROJECTED WORK FOR THE NEXT REPORTING PERIOD

Document Preparation and Data Evaluation:

- Data from the direct push groundwater samples collected at SWMU 42 and AOC 506 is expected. This data along with the risk assessment portion of the report for SWMUs 1, 2, and 39 is anticipated to be completed.
- The Zone C RFI report response to comments are scheduled to be submitted to the project team.
- The *Final Zone D RFI Report* is scheduled to be submitted to the regulatory agencies for approval.
- Preparation of the RFI reports for Zones E, F, G, and K will continue.
- Calculation of inorganic background concentrations for Zones G and K will continue.
- The scoping effort for the Zone H CMS is scheduled for the July project team meeting.
- The *Final Comprehensive CMS Work Plan* will be submitted to the regulatory agencies for approval.

Field Activities:

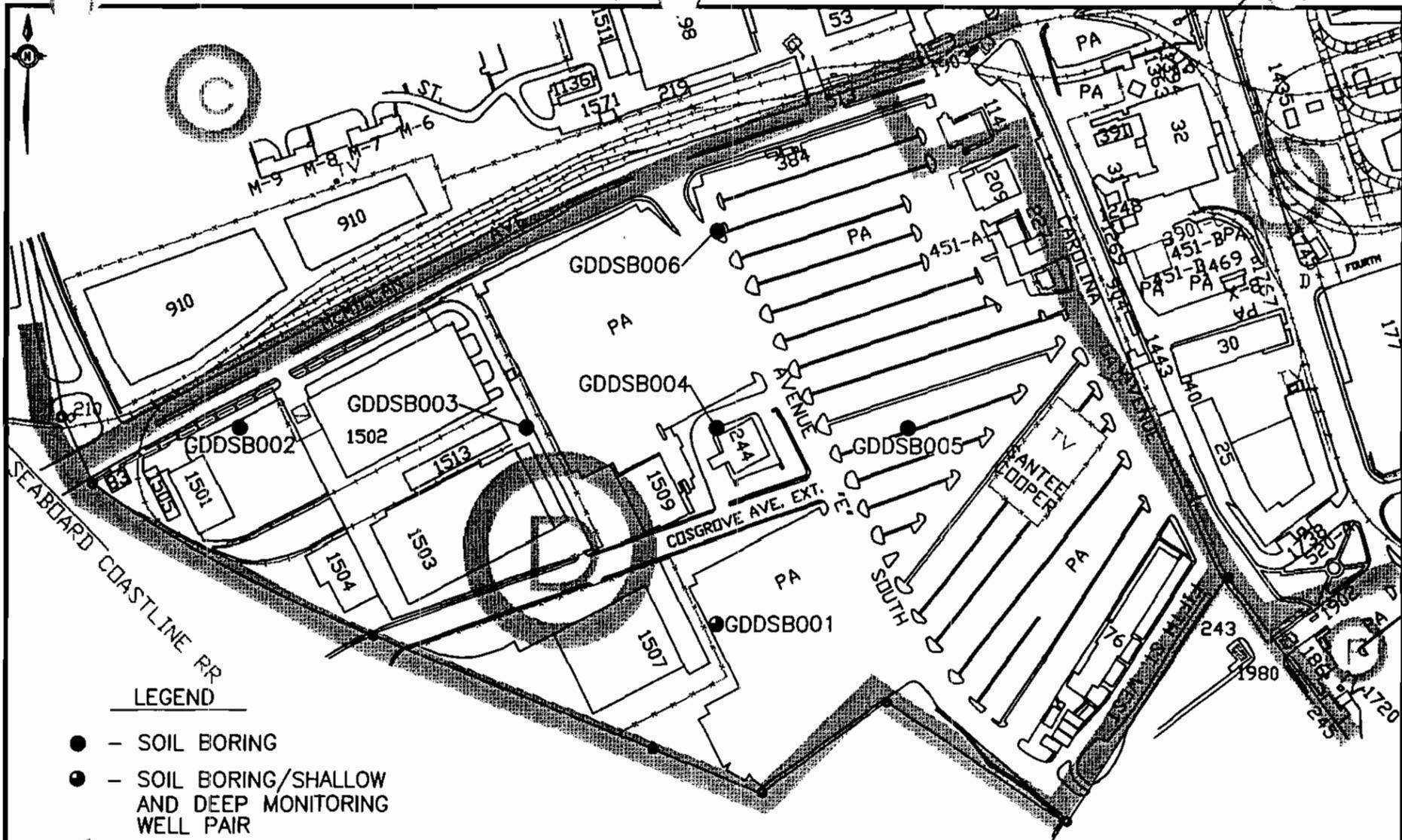
- Soil and/or groundwater sampling is scheduled to be performed at SWMU 44, AOC 508/511, and AOC 512 to complete the RFI in Zone C.
- Additional work will be required at SWMU 166 in Zone K to complete the RFI.

- RFI field work will continue in Zones J and L.
- Quarterly groundwater monitoring will continue in all zones where less than four quarters of sampling has been completed. Attachment D provides a copy of the current schedule.

IX. COPIES OF DAILY REPORTS, INSPECTION REPORTS, LABORATORY DATA

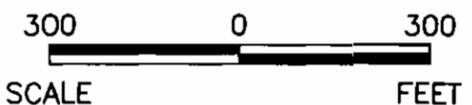
Daily activities are recorded in accordance with the Data Management Plan included as Section 14 of the Final Comprehensive Sampling and Analysis Plan. Photocopies of these daily records have not been included with this status report; however, this information is available for review upon request.

Per agreement with SCDHEC and EPA, hard copies of the analytical data are not being submitted. A copy of the data is maintained at the EnSafe/Allen & Hoshall office in Charleston and is available for review.



LEGEND

- - SOIL BORING
- - SOIL BORING/SHALLOW AND DEEP MONITORING WELL PAIR
- - - ZONE BOUNDARY



ZONE D
RCRA FACILITY
INVESTIGATION REPORT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 3-1
GRID-BASED SOIL SAMPLE LOCATIONS
ZONE D

DWG DATE: 02/13/97 | DWG NAME: 29CHZD61

Samples Collected: 6/25/97
 Samples Received: 6/25/97
 Samples Analyzed: 6/25/97
 Samples Reported: 6/26/97
 Project Identification: Charleston, SC
 Target Job Code: EAH001
 Purchase Order: TO 2912-08410

Collected by: Target Environmental Services
 Received by: Jack Vorsteg
 Analyzed by: Jack Vorsteg
 Reported by: Jack Vorsteg
 Report Revision: Preliminary Data
 Method Deviations: None
 Sampling Method: Direct Push

Client: Ensafe/Allen & Hoshall
 Client Address: Shelby Oaks Plaza
 5909 Shelby Oaks Dr., Suite 201
 Memphis, TN 38134
 Client Contact: Jack Mayfield
 Client Phone: 803-884-0029
 Client Fax: 803-856-0107

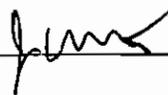
USEPA Method 8260A Water Sample Analysis Results in ug/L

Compound	Detection		
	Limit (ug/L)	GDDGP001-15 (ug/L)	GDDGP001-25 (ug/L)
Chloromethane	5	ND	ND
Vinyl Chloride	5	ND	ND
Bromomethane	5	ND	ND
Chloroethane	5	ND	ND
Acetone	5	ND	ND
1,1-Dichloroethene	5	ND	ND
Methylene Chloride	5	ND	ND
Carbon Disulfide	5	ND	ND
trans-1,2-Dichloroethene	5	ND	ND
Vinyl Acetate	5	ND	ND
1,1-Dichloroethane	5	ND	ND
2-Butanone (MEK)	5	ND	ND
cis-1,2-Dichloroethene	5	ND	ND
Chloroform	5	ND	ND
1,1,1-Trichloroethane	5	ND	ND
Carbon Tetrachloride	5	ND	ND
1,2-Dichloroethane	5	ND	ND
Benzene	5	ND	ND
Trichloroethene (TCE)	5	ND	ND
1,2-Dichloropropane	5	ND	ND
Bromodichloromethane	5	ND	ND
2-Chloroethyl Vinyl Ether	5	ND	ND
Methyl Isobutyl Ketone (MIBK)	5	ND	ND
cis-1,3-Dichloropropene	5	ND	ND
Toluene	5	ND	ND
trans-1,3-Dichloropropene	5	ND	ND
2-Hexanone	5	ND	ND
1,1,2-Trichloroethane	5	ND	ND
Tetrachloroethene (PCE)	5	ND	ND
Dibromochloromethane	5	ND	ND
Chlorobenzene	5	ND	ND
Ethylbenzene	5	ND	ND
Xylenes(Total)	10	ND	ND
Styrene	5	ND	ND
Bromoform	5	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND
Surrogate Recoveries		% Rec.	% Rec.
Dibromofluoromethane		106	102
1,2-Dichloroethane-d ₄		113	99.9
Toluene-d ₈		97.4	98.1
Bromofluorobenzene		99.7	101

Dilution

1

Analyst Signature:



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Date: 06 JUN 97
To: Todd Haverkost
From: Peter Bayley
Re: Zone E Well Boring Soil Samples 2905-08420

The following lithologic samples were submitted yesterday for chemical analysis:

Location	Depth (ft)	Description (Correlated from boring log and sample visual)
NBCE\GDE19D	54	Clay: dark grey; soft; and Sand: grey; fine to coarse, with shell fragments. (Sample for analysis is predominantly Sand fraction). (Screened Interval).
NBCA\03909I	5	Clay and Peat: dark brown to black. (Above the Screened Interval).
NBCE\GDE2D1	24	Silt: olive brown; sandy, with some phosphatic sand, some clay. (Screened Interval).
NBCE\GDE20D	55	Sand: It grey; medium to coarse grained, with fine to coarse shell fragments; trace silt, some clay. (Screened Interval).
NBCE\GDE29D	15	Clay: brown; silty; effervesces in HCL. (Just above Screened Interval).
NBCE\GDE08D	19	Clay: dark grey-brown; some silt; occasional grass, peaty. (Sample depth is above the screened interval but unit is intersected by well intake).
NBCE\GDE28D	11	Sand: orange with some buff increasing with depth; very fine to fine grained, some silt. (Above Screened Interval).
NBCE\GDE26D	28	Shell Hash: dark grey grading to grey and white; with Sand matrix - dark grey; very fine to fine, silty. (Screened Interval).
NBCE\53801D	40	Ashley Formation: Silt: olive brown; clayey, trace very fine sand. (Below Screened Interval).

Samples were selected in order to provide a representation of major lithologies at the site. Depths and descriptions need to be finalized as there appear to be a couple of discrepancies between log descriptions and sample interval contents/depths. Depths for the sample ID's were rounded so they will not correlate exactly, but a couple of them go beyond that. Included the Holocene peat sample from A as an organic-rich non-Zone E sediment since there was a metals high at NBCA\GDA003, and it was completed in an organic-rich environment. I will be at the field office Monday to verify conflicts regarding sample depths and descriptions.



NAVY CLEAN
ENSAFE/ALLEN & HOSHALL
(901) 383-9115

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

CTO-TASK: 2905-08420

COC #: _____

BPA/SO: 60.4 REL 13 SWL

CLIENT ZONE E PROJECT MANAGER CHARLIE VERNON
 ADDRESS NAVAL BASE CHARLESTON TELEPHONE NO. 803/884-0629
 PROJECT NAME/NUMBER 2905-08420 FAX NO. 803/856-0107
 SAMPLERS: (SIGNATURE) [Signature]

NO. OF CONTAINERS	METALS	ANALYSIS REQUIRED				REMARKS
		1	2	3	4	
1	✓					
1	✓					
1	✓					
1	✓					
1	✓					
1	✓					
1	✓					
1	✓					
1	✓					

FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	METALS
					TEMP.	CHEMICAL		
NBCE/GDES W 19254	05 JUN 97	1400	SOIL	4oz GLASS	4°C	NONE	1	✓
NBCE/GDES W 19254								
NBCE/GDES W 19254	"	1405	"	"	"	"	1	✓
NBCE/GDES W 20224	"	1410	"	"	"	"	1	✓
NBCE/GDES W 20255	"	1415	"	"	"	"	1	✓
NBCE/GDES W 20215	"	1420	"	"	"	"	1	✓
NBCE/GDES W 20219	"	1425	"	"	"	"	1	✓
NBCE/GDES W 20211	"	1430	"	"	"	"	1	✓
NBCE/GDES W 20228	"	1435	"	"	"	"	1	✓
NBCE/GDES W 20240	"	1440	"	"	"	"	1	✓

RELINQUISHED BY: SIGNATURE <u>[Signature]</u> PRINTED <u>PETER W. BOYLEY</u> COMPANY <u>E/A&H</u> REASON <u>SHIP TO LAB</u>	DATE <u>05 JUN 97</u> TIME <u>1600</u>	RECEIVED BY: SIGNATURE _____ PRINTED _____ COMPANY _____ REASON _____	DATE _____ TIME _____	RELINQUISHED BY: SIGNATURE _____ PRINTED _____ COMPANY _____ REASON _____	DATE _____ TIME _____	RECEIVED BY: SIGNATURE _____ PRINTED _____ COMPANY _____ REASON _____	DATE _____ TIME _____
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METHOD OF SHIPMENT: FED EX
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 SPECIAL INSTRUCTION: PRIORITY OVERNIGHT
 COMMENTS: DOO3
 AFTER ANALYSIS, SAMPLES ARE TO BE:
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 STORED OVER 90 DAYS
 RETURNED TO CUSTOMER

FedEx USA AirbillTracking
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4849151834

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Sender's Copy

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 Sender's Name PETER BAYLEY Phone (901) 386-9344
 Dept./Floor/Suite/Room _____
 Company ENSAFE/ALLEN & HOSHALL
 Address 5909 SHELBY OAKS DR STE 201
 City MEMPHIS State TN Zip 38134

2 Your Internal Billing Reference Information
 (Optional) (First 24 characters will appear on invoice) 2905-08420

3 To (please print)
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6 Special Handling
 Does this shipment contain dangerous goods? Yes (As per attached Shipper's Declaration) Yes (Shipper's Declaration not required)
 Dry Ice (Dry Ice, 9, UN 1845 III, kg. 904) CA Cargo Aircraft Only
 (Dangerous Goods Shipper's Declaration not required)

7 Payment
 Bill to: Sender (Account no. in section 1 will be billed) Recipient Third Party Credit Card Cash/Check
 (Enter FedEx account no. or Credit Card no. below)

FedEx Account No. 1-886-4484-8
 Credit Card No. _____ Exp. Date _____

Total Packages	Total Weight	Total Declared Value*	Total Charges
<u>1</u>	<u>33</u>	<u>\$.00</u>	<u>\$</u>

*When declaring a value higher than \$100 per shipment, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

8 Release Signature Sign to authorize delivery without obtaining signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

272

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NAVAL BASE CHARLESTON
RESTORATION ADVISORY BOARD (RAB)
Minutes of 10 June 1997

LIVE OAK COMMUNITY CENTER, 2012 SUCCESS ST., N. CHARLESTON

1. Introduction of the RAB Members and Guests

Mr. Daryle Fontenot, Navy Co-Chair, brought the meeting to order at 6:00 p.m. and thanked everyone for coming out. RAB member and audience introductions were made.

2. RAB Members Attending

Mr. Steve Best	Ms. Wannetta Mallette-Pratt
Mr. Bobby Dearhart	Mr. Lou Mintz
Mr. Daryle Fontenot	Mr. Arthur Pinckney
Mr. Wilburn Gilliard	Mr. Odell Price
Ms. Gussie Greene	Ms. Ann Ragan
Ms. Jeri Johnson	LCDR Paul Rose
Mr. Ralph Laney	

3. Guests Attending

Mr. Tony Hunt	NAVFAC, SouthDiv
Mr. Brian Stockmaster	NAVFAC, SouthDiv
Mr. Gabriel Magwood	NAVFAC, SouthDiv
Mr. Jim Beltz	NAVFAC, SouthDiv
Mr. Henry Shepard	NAVFAC, SouthDiv
Mr. Paul M. Bergstrand	SCDHEC
Mr. Johnny Tapia	SCDHEC
Mr. J. Michael Reubish	CEERD
Mr. Kevin Tunstall	Shipyard Detachment
Ms. Myrtle Barnett	Community Member
Mr. Leroy Carr	Chicora/Cherokee
Ms. Henrietta Collier	Chicora/Cherokee
Fannystein' Greene	Chicora/Cherokee
Ms. June Mirecki	College of Charleston
Mr. Joseph M. Land, Sr.	Galileo Quality Institute
Ms. Susan K. Dunn	Grassroots Coalition
Mr. Eartley Washington	
Mr. Joseph Johnson	
V.P. Simmons	
Mr. Mac McNeil	Bechtel
Ms. Diane Cutler	EnSafe/Allen&Hoshall
Mr. Larry Bowers	EnSafe/Allen&Hoshall

4. Administrative Remarks and Comments on Minutes

Mr. Fontenot asked for comments on minutes from last meeting and for any other administrative remarks. None were offered.

5. Subcommittee Reports

Mr. Fontenot reported on the Community Relations Subcommittee that met prior to the RAB meeting. In attendance with Mr. Fontenot was Mr. Arthur Pinckney, Ms. Wannetta Mallette, and Mr. Lou Mintz. Additional changes were made to the Chicora Tank Farm Fact Sheet which will be finalized shortly and should be distributed to the mailing list in July. Another topic of discussion was the Charleston RAB webpage. SouthDiv will be supporting the RAB by maintaining the webpage and providing the server. Information will include what is a RAB; history on the Charleston RAB; list of members; meeting minutes; fact sheets; and information on the speakers bureau, community relations plan, information repository, and who to contact for more information. Eventually a meeting schedule will be added. Although other RABs around the country have webpages, this will be the first RAB covered by Southern Division, and once established, others will be modeled after it. The next subcommittee meeting will be on August 12, 1997.

Mr. Pinckney informed the RAB that the Shipyard Detachment Subcommittee had scheduled a meeting but it was canceled due to the weather. He has some material that he will share at the August meeting regarding what the Detachment has been doing.

6. Reuse Update

Ms. Jeri Johnson reported that there have been three meetings of the Redevelopment Authority (RDA) since the last time she presented material to the RAB.

May 1: The childcare center was leased to the College of Charleston to run a model child development center out of the childcare center. They anticipate about 112 children and are going to encourage tenants to use the center. The RDA also executed a license with the City of North Charleston for the City's birthday celebration on June 13. Building 641 was leased to a Canadian environmental management group called Groupe Sani Mobile, Inc.

May 20: Agreed to lease to the City of North Charleston a small building and three finger piers for a joint law enforcement organization. RDA also leased a series of three of the large warehouses in the west end to Neal Brothers who packages/ships high tech equipment. Agreed to lease two buildings at the north end in the former DRMO area to Carolina Marine Handling.

June 10: Agreed to execute a construction contract to upfit the remaining floor in Building 400. Part of the lease with DHEC's Environmental Quality Control Trident office was that the RDA would upfit the space. The construction contract was approved and the low bidder was Installation Services of Goose Creek for roughly \$440,000. Construction should be complete in the middle of September. The authority also approved a \$580,000 utility study by Davis & Floyd which is funded half by the authority and half by the Dept. of Defense Office of Economic Adjustment. The utilities study will hopefully permit the eventual transfer of the water and sewer system. Part of the scope of the study is to do a base-wide stormwater management plan which has been

mandated by DHEC before the authority can undertake any upgrades or repairs to the base drainage system. Finally, the Authority approved a reuse plan for the Naval Annex which is a Wilbur Smith contract. That plan envisions the annex parcel being developed for light industrial purposes. Now that the reuse plan is approved, the Navy can complete an environmental assessment and subsequent disposal of that property to the RDA.

Ms. Gussie Green added that there will be shuttle buses to the City of North Charleston birthday celebration on the 13th, and that 25% of the attendance will go to DSS recipients. Ms. Mallette provided additional event details.

Mr. Bobby Dearhart inquired about the shipping containers being stored on the base - he said he would hate to see one end of the base turning into a container storage area. Ms. Johnson said the RDA has been lax on making the tenants keep their containers within their leased areas, but needs to ensure that it happens.

Mr. Reubish inquired about subleases. Ms. Johnson reported that there have been a number of subleases, so many in fact, that she hasn't been mentioning them. On the sublease report (attached) the secondary subleases are the items that are indented. Mr. Reubish asked if there were any controls to keep tenants, who enter into subleases below market price, from making a lot of money on sub-subleases. Ms. Johnson stated that she hopes the tenants can make money on their subleases, but they are not permitted to enter into any agreements without the RDA's and Navy's approval. She said there are no windfalls to any of the tenants because the RDA reviews all the agreements and leases so that they are not making undue profit.

7. Environmental Cleanup Progress Report

Status of Environmental Programs

Mr. Tony Hunt provided the progress report. For the sake of those who have never been to a RAB meeting before, he explained that the base is divided into zones as depicted on the map provided, and within each zone are Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs). The progress for each specific zone can be found in the handout entitled Naval Base Charleston RCRA Facility Investigation Progress Update.

Regarding funding, all of the awards have been made through the Corrective Measures Study. In May, the state completed their review of Zone C and submitted their comments to the Navy. Discussions to resolve outstanding issues with Zone H continued. One of the outstanding issues was determining what the contaminants of concern were at each site. Part of that includes comparing the value, say, for an inorganic to the risk-based-concentration, or background. If there is not a background level, then the comparison can not be made. The reason background is determined is because the soil contains minerals which have elements, and when sampling is done, those elements are detected. The Navy has to be able to differentiate between what is in the soil and what is a contaminant based on a release. Determining background is something that has to be done in every zone. In May, discussions regarding background were completed for Zones A, C and portions of E.

In June, the Navy will continue field work in Zones J (water bodies), K (SWMU 166), and L (where direct push technology (DPT) is being done on sewer systems and utilities). Also in June the Navy will continue discussions on background issues and document review.

Solid Waste Management Unit (SWMU 66): SWMU 66 is an area in the Naval Station South Annex. To review, the Navy found a release of chlorinated solvents in that area. Groundwater sampling suggested that it was migrating toward the interstate. Geoprobe samples were taken to see if the chlorinated solvents had migrated under the highway. Mr. Hunt presented a map of sampling locations and the results at each location at three different depths; shallow, intermediate, and deep. Only one area at the shallow sampling depth had chlorinated solvents, and none was found at the deep level. Most of it was in the intermediate zone.

In onsite samples, the Navy found Trichlorethylene (TCE) and its degradation products. What was found in the offsite samples was tetrachlorethylene (PCE) and its degradation products. The Navy was expecting to see TCE and DCE (dichloroethylene) if it was from the release at SWMU 66 - not PCE. So what the Navy thinks they're seeing is migration from the SWMU 66 release co-mingled with a release from another source across the highway. This scenario makes it much more difficult to differentiate the extent of the Navy's contamination.

To further clarify, Mr. Hunt explained the PCE degrades into TCE which degrades into DCE which breaks down further into vinyl chloride and eventually into carbon dioxide. Generally you don't see this sequence in the opposite direction in the environment. The next step is to get a better understanding of the groundwater velocity and flow direction. This will be done through slug tests. A literature source will also be necessary to try to determine where the PCE might have come from. The Navy may also use groundwater modeling to help them locate the best possible location for installing monitoring wells on the other side of the highway.

Mr. Mintz asked if the heavy rains from a week ago will affected the groundwater monitoring. Mr. Hunt replied that the rainwater infiltration may affect the results of the upper aquifer, but not necessarily the intermediate area where the solvents were found. Someone asked how deep is the Cooper marl in that area, to which Mr. Hunt responded 35 to 45 feet.

Mr. Pinckney asked how the solvents will affect the drinking water in that area. Mr. Hunt stated that if a well was installed in the area of contamination, that it would not be advisable to drink the water. The Navy looked for wells but did not find any in the area. A production well was discovered through DHEC records, but it is south of the affected area which doesn't pose a concern. There would be a concern if someone had a well installed for irrigation purposes but were instead using it for drinking water.

Ms. Mallette asked if the Navy has heard anything about the Hess report regarding SWMU 39. Mr. Fontenot said that he's expecting it in the mail anytime now.

Chicora Tank Farm

In past meetings it was brought to the attention of the Navy that an odor of gasoline or oil has been reported in the vicinity of the tank farm. Last week Mr. Hunt and a representative from

EnSafe/Allen&Hoshall went out to the tank farm and sampled around the tank vents with a meter that detects volatile organic compounds. In two tanks, volatiles were detected outside the vents, and in one in particular (tank O) there was a distinct odor. Tank O was used to house used oil, and currently there is more than just residue left in the tank. Ms. Green, Mr. Johnson, and Ms. Mallette went to the site on June 3rd. What the Navy proposes is to put a charcoal filter on the vent of tank O to alleviate the odors until the tanks can be cleaned and properly closed.

Another issue that came out in the community relations subcommittee meeting is the fact that it seems to be taking forever to get a response regarding reuse of the Chicora tank farm. Mr. Fontenot asked if the RAB is interested in establishing a deadline in which a reuse decision should be made on Chicora. The subcommittee recommended using the date of August 1, 1997 as a deadline to receive a response on whether the interested entities are intending to use the tank farm. If no one is interested in using it, then the Navy can continue to move toward closure without undue waiting. This issue has been out since February or March, 1997. Mr. Fontenot was informed that the North Charleston City Council approved option #3 (partial demolition of the tanks) but did not say they wanted the property. If the RAB agrees on a deadline, Mr. Fontenot will bring the information to SouthDiv to inform them that the RAB wants to move ahead with this issue.

Mr. Carr stated that at the neighborhood meeting last week, every member said that they wanted the property used for a recreation park and informed the Mayor of their wishes. Mr. Fontenot commended them for taking steps on their own.

Mr. Fontenot asked if there were any RAB members against setting a deadline. Nobody was against it. Ms. Mallette recommended that a RAB representative address the issue at the next City Council meeting on June 26th. Mr. Mintz volunteered.

Ms. Ragan asked if the property would be provided as a public benefit conveyance. Ms. Johnson replied that if it were to be used as a park or for education it could be obtained for no cost. Ms. Ragan continued by asking if the city didn't want to use the property, could a neighborhood association or entity of local or state government use it? Ms. Johnson stated that a local government could but there are a number of strings attached and it could only be used for certain uses under the public benefit conveyance.

Mr. Pinckney asked that even though the odor will be eliminated from tank O through the carbon filter, are there any other fumes that may need to be addressed? Mr. Fontenot said that he will check into it with the air specialists at SouthDiv, but his understanding is that the amount of fumes resulting from petroleum tanks does not exceed any air standards or require further action.

Mr. Reubish asked that if nobody wants to use the land, what will the plan be? Mr. Fontenot answered that they will revert to Option 1 - fill the tanks with sand and leave them as is.

8. Questions and Answers to Grass Roots Coalition Concerns

Mr. Fontenot handed out copies of questions from the Grass Roots Coalition that were originated in 1994. Mr. Fontenot recently updated those responses. Those with arrows next them have updated responses. Mr. Fontenot asked that everybody review the questions/answers at their leisure and if there are additional questions, or if anyone doesn't understand the answers, to come back with those questions at the next RAB.

Bobby Dearhart inquired about questions #3 regarding the Environmental Impact Statement (EIS). His understanding is that there is a new reuse plan that is being looked at; has a decision been made that the new reuse plan is not going to affect the EIS, or is there going to have to be a revision to the EIS. Mr. Fontenot clarified that what is being looked at is how to implement the reuse plan, not actually a new plan. Ms. Johnson added that it's probably about two months away from completion but it does not envision major revisions. This plan will be a major element in deciding how much the RDA will pay for the property.

9. Remaining Questions and Comments

Mr. Fontenot asked if the RAB members are supplying information to the community, or getting input from the groups they support. Are the RAB members making the effort to share information with the community they represent? A few members said that they are. Mr. Fontenot asked if there is anything that can be done to help the members, especially the community representatives, get the word out. He re-emphasized the purpose of the RAB members is to act as liaison between their specific constituency and the Board. He asked that everybody solicit their groups and bring information back to the RAB.

Mr. Fontenot asked if the RAB is happy with the current meeting location. A discussion ensued, and the final decision was that meetings would continue to be held at the 2012 Success Street location.

A community member asked what will happen to the housing on base along Saint John Avenue. Ms. Johnson stated that almost all of the little brick houses have been leased to various social service agencies. For the historic houses, they are still awaiting the recommendation of the Fluor Daniels study about how to use those, but it will not be used for residential purposes.

A discussion ensued about the need for more information on what the RDA is doing. Mr. Fontenot suggested that Ms. Johnson can bring that back to the RDA and see what the board says about it.

Ms. Mallette asked where the RAB's EPA representative was today. Mr. Fontenot replied that he is on military duty for two weeks. She pointed out that Doyle Brittain never missed a meeting and requested that if Mr. Bassett was going to be absent again, that he send a replacement. Mr. Fontenot said he will share the RABs concern with Mr. Bassett.

Mr. Mintz asked what happened to the RAB newsletter that used to be produced? Ms. Johnson said that it was an RDA newsletter which was a product of the first RDA. The newsletter was discontinued when the first RDA was disbanded.

Mr. Pinckney offered the suggestion that the RAB community members write a letter to Doyle Brittain's supervisor about how well he worked with the RAB. Clarification was requested regarding the purpose of the letter, was it simply to express appreciation, or was it to ask for him back? Mr. Pinckney also noted that they have nothing bad to say about Jay Bassett, but that they just want to express their appreciation about how well Doyle worked with them. Mr. Pinckney and Mr. Fontenot will meet to draft the letter.

Mr. Fontenot said that Don Harbert and Bob Veronee called earlier to say they would not be able to attend today's RAB meeting.

There will NOT be a meeting in July. The next meeting will be August 12, 1997 at 6:00 p.m at the same location - Live Oak Community Center at 2012 Success Street.

10. Adjournment

Meeting was adjourned at 7:10 p.m.

Summary of Action Items

- Mr. Mintz volunteered to address North Charleston City Council regarding the RAB's recommendation to impose a deadline on expressing interest in the Chicora tank farm property.
- Mr. Pinckney and Mr. Fontenot will draft a letter of appreciation regarding Doyle Brittain's work on the RAB.

Attachments to Minutes

- (1) Tuesday June 10, 1997 RAB Meeting Agenda
- (2) Charleston Naval Complex - Tenant Summary
- (3) RCRA Facility Investigation Progress Update - 6/10/97
- (4) RCRA Facility Investigation Progress Report for June 1997

Minutes recorded by: Diane Cutler, EnSafe/Allen&Hoshall

Minutes approved by: _____

Daryle Fontenot
Navy Co-Chair

Wannetta Mallette
Community Co-Chair

Tuesday, June 10, 1997

Charleston Naval Complex

RESTORATION ADVISORY BOARD MEETING AGENDA

6:00 P.M. Location: *Live Oak Community Center*
2012 Success Street, North Charleston, SC

6:00 P.M. RAB MEETING

- A. Introduction of the RAB Members and Guests
- B. Administrative Remarks, comments on the minutes of the last meeting
- C. Subcommittee Reports
- D. Reuse Update - CNCRA
- E. Environmental Cleanup Progress Report - Cleanup Team
 - Status of the Environmental Programs
- F. Questions and Answers to Grass Roots Coalition Concerns
- G. Remaining Questions and Comments from RAB Members and Visitors
- H. Agenda for next meeting.

RAB Members, Project Team, and interested citizens informally talk about what's going on after the meeting from 7:00 p.m. to 8:00 p.m.

Please mark your calendar. Our next meeting is **Tuesday, August 12, 1997, 6:00 p.m.** at the Live Oak Community Center, 2012 Success Street, North Charleston, SC. No RAB meeting in July. RAB meetings will be every other month after the June RAB meeting.

----- CURRENT FACILITIES/EMPLOYMENT -----

----- ULTIMATE FACILITIES/EMPLOYMENT -----

DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES	EX-BASE WORKERS
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DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES
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CURRENT TENANTS/SUB-TENANTS

ALLIED TECHNOLOGY GROUP, INC.	0	0	0	1	8,553	21	0
BABCOCK & WILCOX	0	0	0	2	175,992	1	1
TBD ELECTRICAL CONTRACTORS	0	0	0	0	0	4	4
CAROLINA YOUTH DEVELOPMENT CENTER	0	0	0	2	5,642	0	0
CHARLESTON COUNTY PRC	0	2	0	2	6,087	4	0
CHARLESTON COUNTY SCHOOL DISTRICT	0	0	2	1	41,196	43	0
CHARLESTON GRIP & ELECTRIC, INC.	0	0	0	1	12,480	12	0
CHARLESTON MARINE CONTAINERS, INC.	0	0	1	6	326,598	4	2
CHARLESTON MARINE MANUF. CORP	3	8	18	60	1,191,130	536	124
ACUTUS GLADWIN	0	0	0	0	0	0	0
APPLIED TECHNOLOGY SERVICES	0	0	0	0	0	5	4
BECKLEY ENGINEERING	0	0	0	0	0	1	0
CHATHAM STEEL CORPORATION	0	0	0	0	0	4	1
CHOPLIN PREDICTIVE MAINTENANCE	0	0	0	0	0	1	1
CMMC MACHINE, INC.	0	0	0	0	0	6	6
COOPER RIVER MACHINE	0	0	0	0	0	162	24
EXCEL APPARATUS SERVICES, INC.	0	0	0	0	0	35	2
G & G PALLET, CRATE & BOX	0	0	0	0	0	2	1
NATIVE SOILS, INC.	0	0	0	0	0	6	0
NDI ENGINEERING	0	0	0	0	0	12	6
SHIPTECH	0	0	0	0	0	15	6
STATE BOARD FOR TECH & COMP ED	0	0	0	0	0	7	3
WHITE STACK TOWING	0	0	0	0	0	40	10
CHARLESTON NAVAL COMPLEX RDA	0	0	0	2	42,471	10	1
DAVIS & FLOYD/HARZA	0	0	0	0	0	6	4
CHARLESTON SHIPBUILDERS, INC.	2	3	2	28	388,515	67	11
BATTERY CREEK STEVEDORING, LLC	0	0	0	0	0	0	0
CAROLINA MARINE HANDLING	0	0	0	0	0	44	16
EARTH SCIENCES	0	0	0	0	0	1	1
JW ALUMINUM COMPANY	0	0	0	0	0	0	0
RICHARDS MARINE SERVICES CORP.	0	0	0	0	0	5	0
TRANS-HOLD, INC.	0	0	0	0	0	0	0
COMMISSIONERS OF PUBLIC WORKS	0	0	0	6	104,999	0	0

0	0	0	1	8,553	100
0	0	0	3	208,930	225
0	0	0	0	0	13
0	0	0	2	5,642	1
0	3	6	7	12,670	6
0	0	2	1	41,196	43
0	0	0	1	12,480	25
0	0	1	6	326,598	330
3	8	24	85	1,474,938	2,404
0	0	0	0	0	TBD
0	0	0	0	0	15
0	0	0	0	0	1
0	0	0	0	0	15
0	0	0	0	0	16
0	0	0	0	0	40
0	0	0	0	0	162
0	0	0	0	0	50
0	0	0	0	0	4
0	0	0	0	0	6
0	0	0	0	0	12
0	0	0	0	0	15
0	0	0	0	0	7
0	0	0	0	0	140
0	0	0	1	8,205	10
0	0	0	0	0	0
2	6	22	61	548,577	2,000
0	0	0	0	0	10
0	0	0	0	0	100
0	0	0	0	0	25
0	0	0	0	0	0
0	0	0	0	0	5
0	0	0	0	0	25
0	0	0	6	104,999	200

----- CURRENT FACILITIES/EMPLOYMENT -----

	DRY DOCKS	PIERS	NON-BLDGS	BUILD-INGS	BUILDING SQ. FT.	EMPLOY-EES	EX-BASE WORKERS
COMPOSITE PRODUCTS COMPANY, INC.	0	0	0	1	17,172	2	0
DEPT OF HEALTH & ENV. CONTROL (B/400)	0	0	0	1	32,364	54	0
DISABILITIES BOARD OF CHARLESTON CO.	0	0	0	3	8,125	0	0
FLORENCE CRITTENTON	0	0	0	4	8,299	0	0
FOX ASSOCIATES, INC.	0	0	0	1	4,040	8	0
LOWCOUNTRY AIDS SERVICES	0	0	0	2	5,642	0	0
M. ROSENBLATT & SON, INC.	0	0	0	1	2,880	25	2
SOUTH CAROLINA ELECTRIC & GAS	0	0	0	6	30,830	25	0
SC FEDERAL CREDIT UNION	0	0	0	2	16,180	12	0
U.S. POSTAL SERVICE (SHARE B/400)	0	0	0	0	17,782	180	0
SUBTOTAL	5	13	23	132	2,446,977	1,360	230

----- ULTIMATE FACILITIES/EMPLOYMENT -----

	DRY DOCKS	PIERS	NON-BLDGS	BUILD-INGS	BUILDING SQ. FT.	EMPLOY-EES
	0	0	1	6	22,092	50
	0	0	0	1	32,364	104
	0	0	0	3	8,125	24
	0	0	0	4	8,299	1
	0	0	0	1	4,040	15
	0	0	0	2	5,642	0
	0	0	0	1	2,880	25
	0	0	0	0	0	0
	0	0	0	2	16,180	12
	0	0	0	0	17,782	400
SUBTOTAL	5	17	56	194	2,870,192	6,636

UNDER NEGOTIATION

	DRY DOCKS	PIERS	NON-BLDGS	BUILD-INGS	BUILDING SQ. FT.	EMPLOY-EES	EX-BASE WORKERS
BRASWELL SERVICES GROUP *	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CAROLINA MARINE HANDLING	N/A	N/A	N/A	N/A	N/A	N/A	N/A
COLLEGE OF CHARLESTON *	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DEPARTMENT OF VETERANS AFFAIRS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GROUPE SANI MOBILE, INC.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HOTLINE	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LOWCOUNTRY FOOD BANK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MENTAL HEALTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NEAL BROTHERS *	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NORTH CHARLESTON *	N/A	N/A	N/A	N/A	N/A	N/A	N/A
100 BLACK MEN OF CHARLESTON, INC. *	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SOUTH CAROLINA ARMY NATIONAL GUARD *	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SPRINGS TAILORING & DRY CLEANING *	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WILSON & GREEN CUSTOM BUILDERS *	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SUBTOTAL	0	0	0	0	0	0	0

	DRY DOCKS	PIERS	NON-BLDGS	BUILD-INGS	BUILDING SQ. FT.	EMPLOY-EES
	0	1	3	5	111,113	244
	0	0	0	2	61,164	TBD
	0	0	0	1	14,117	20
	0	0	0	4	11,945	13
	0	0	0	1	8,000	40
	0	0	0	1	4,128	6
	0	0	0	1	36,764	5
	0	0	0	2	29,107	35
	0	0	0	7	195,567	21
	0	3	12	30	183,759	34
	0	0	0	2	4,057	0
	0	0	0	4	24,645	7
	0	0	0	1	1,089	7
	0	0	0	1	3,390	10
SUBTOTAL	0	4	15	62	688,845	442

* Note: These prospective tenants currently occupy facilities through Navy Licenses

----- CURRENT FACILITIES/EMPLOYMENT -----

DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES	EX-BASE WORKERS
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----- ULTIMATE FACILITIES/EMPLOYMENT -----

DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES
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FEDERAL ACTIVITIES/TENANTS

BORDER PATROL	0	0	8	18	467,436	68	5
RAMCOR (BOSS CONTRACTOR)	0	0	0	0	0	156	25
CARETAKER SITE OFFICE	0	0	0	15	123,814	16	6
DEFENSE FINANCE & ACCOUNTING	0	0	3	6	246,666	638	287
DEFENSE INFO PROCESSING CENTER	0	0	0	0	0	7	7
DEFENSE PRINTING SERVICE	0	0	0	1	26,520	37	37
ENVIRONMENTAL DETACHMENT	0	0	0	11	259,279	172	172
MAGNETIC SILENCING FACILITY (PIER Y)	0	1	4	4	6,396	5	5
MARINE RESERVE (NAVSTA ANNEX)	0	0	0	6	25,056	54	54
NATIONAL CIVILIAN COMMUNITY CORPS	0	0	6	14	141,489	22	0
NATIONAL OCEANIC & ATMOSPHERIC ADMIN	0	1	0	5	47,340	20	3
U.S. NAVY INSHORE BOAT UNIT 27	0	0	0	0	0	3	0
NISE EAST	0	0	2	18	362,761	250	200
STATE DEPARTMENT	0	0	2	5	197,750	76	15
U.S. COAST GUARD	0	1	3	6	76,034	361	0
SUBTOTAL	0	3	28	109	1,980,541	1,885	816

	0	0	8	18	467,436	68
	0	0	0	0	0	156
	0	0	0	0	0	0
	0	0	3	5	232,518	750
	0	0	0	0	0	7
	0	0	0	1	26,520	37
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	6	25,056	54
	0	0	6	14	141,489	22
	0	2	1	6	47,852	28
	0	0	0	0	0	6
	0	0	2	18	362,761	250
	0	0	2	5	197,750	400
	0	1	3	6	76,034	361
SUBTOTAL	0	3	25	79	1,577,416	2,139

OVERALL SUMMARY

CURRENT TENANTS/SUB-TENANTS	5	13	23	132	2,446,977	1,360	230
UNDER NEGOTIATION	0	0	0	0	0	0	0
FEDERAL ACTIVITIES/TENANTS	0	3	28	109	1,980,541	1,885	816
GRAND TOTAL	5	16	51	241	4,427,518	3,245	1,046

	5	17	56	194	2,870,192	6,636
	0	4	15	62	688,845	442
	0	3	25	79	1,577,416	2,139
GRAND TOTAL	5	24	96	335	5,136,453	9,217

NAVAL BASE CHARLESTON RCRA FACILITY INVESTIGATION PROGRESS UPDATE

ZONES	CURRENT	PLANNED			OVERALL	OVERALL	
	RFI	COMPLETION	DATE OF	NEXT	RFI	RFI	
	PHASE	PERCENTAGE	PHASE	PHASE	DATE	PERCENTAGE	NOTES
A	Report Review	98	6/10/97	CMS Work Plan	6/10/97	95	
B	COMPLETE			COMPLETE	1/8/97	100	No CMS or CMI required in Zone
C	Report Review	80	6/18/97	CMS Work Plan	6/18/97	90	
D	Report Review	50	7/15/97	CMS Work Plan	7/15/97	85	
E	RFI Report Prep	50	9/5/97	Report Review	12/19/97	63	
F	RFI Report Prep	95	8/15/97	Report Review	11/18/97	63	
G	RFI Report Prep	75	6/15/97	Report Review	9/26/97	69	
H	Report Review	95	6/24/97	CMS Work Plan	6/24/97	95	
I	Report Review	50	6/18/97	CMS Work Plan	6/18/97	80	
J	Field Work	15	10/28/97	RFI Report Prep	4/21/98	16	
K	RFI Report Prep	50	6/16/97	Report Review	9/30/97	63	
L	Field Work	15	11/24/97	RFI Report Prep	10/20/98	16	
All Zones					10/20/98	70	

LEGEND	
Phase	Description
RFI	RCRA Facility Investigation
CMS	Corrective Measures Study
Work Plan Preparation	Work Plan being prepared by Navy Contractor
Work Plan Review	Regulators (DHEC, DEPA) reviewing Work Plan
Field Work	Navy contractor performing field work as outlined in the Work Plan
RFI Report Preparation	Navy contractor preparing the RFI Report
Report Review	Regulators (DHEC, DEPA) reviewing report
CMS Work Plan	CMS Work Plan being prepared by Navy Contractor

Revised 6/10/97 chsrifu.xls

**Naval Base Charleston
RCRA Facility Investigation (RFI)
PROGRESS REPORT FOR JUNE 1997**

INVESTIGATIVE ZONES

- A. Warehousing and scrap metal yard
- B. Golf course and residential
- C. Office space and warehouse (NH-45, Navbase HQ)
- D. Parking lot, warehouses
- E. Shipyard
- F. Recreational areas and public works shops
- G. Fuel farm and transfer facility
- H. Southern end of the base excluding waterfront
- I. Southern end of the base including waterfront and dredge material area
- J. Waterbodies
- K. Non-contiguous areas
- L. Sewer systems and railroad system

FUNDING

- ◆ Funding status
Awards have been made for all zones through the Corrective Measures Study.

PROGRESS FOR MAY

- ◆ Completed background discussions for Zones A, C and portions of E.
- ◆ State completed review of Zone C, comments received.
- ◆ Continued discussions to resolve outstanding issues with Zone H.

PROJECTED ACTIVITY FOR JUNE

- ◆ Continue field work in Zones J, K (SWMU 166) and L.
- ◆ Continue to discuss background issues.
- ◆ Continue document review and comment resolution

Naval Charleston
Project Status
6/10/97

PROGRA	PROJECT DESCRIPTION	ACTION REQUIRED	ECD
BRAC - Property Lease/Transfer	None		
NEPA	Environmental Assessment of Naval Annex	Environmental Assessment to complete after receipt of Reuse plan. Reuse plan anticipated 6/30/97	
RCRA Compliance	Part B permit application	Part B application submitted, SCDHEC reviewing	6/30/97
RCRA Corrective Action	Zone A RFI report	Comments received, Scoping meeting scheduled 6/11/97	6/9/97
	Zone A field work	Additional field work in progress, supplements to Zone A report being prepared	6/30/97
	Zone C RFI report	Comments by received 6/2/97, responses being prepared, Document approval meeting scheduled for 7/7/97	7/7/97
	Zone D RFI report	Background discussed 5/12/97, Document approval meeting scheduled for 7/7/97	7/7/97
	Zone E RFI field work	Field work complete 2/24/97, all background issues resolved, document approval meeting scheduled for 9/5/97	9/5/97
	Zone F RFI report	Field work complete 5/5/97, background discussion scheduled for 6/25/97	
	Zone G RFI report	Field work complete, background discussion scheduled for 6/25/97	
	Zone H RFI report	Comments resolved, sites categorized (NFA, CMS, etc.) Outstanding issues to be discussed 6/11/97	6/25/97
	Zone I RFI report	In SCDHEC review	
	Zone J RFI field work	Field work in progress, 30% progress meeting scheduled 7/8/97	7/8/97
	Zone K Field Work	Field work in progress on SWMU 166	6/30/97
	Zone L RFI field work	Field work in progress, 30 % progress meeting scheduled for 7/8/97	7/8/97
	DPT	Field work to complete 7/31/97 (525 points)	7/31/97
	Dye Tracer	Field work to begin 6/27/97	6/27/97
	Permanent Wells	Initial field work complete (12 wells)	6/19/97
	Soil Sampling	Field work to complete 6/19/97 (Detachment work)	6/19/97
	Miscellaneous issues		
	Groundwater Model	Additional information on drains and aquifer elevations being added	6/30/97
	Support services		
	Groundwater Monitoring	Zone K permanent wells sampled 5/30/97	
Underground Storage Tank	Bioremediation demonstration project	In operation	
	Removals	FY 96 - 54 tanks authorized for removal, all but two tanks removed	
		FY 97 - 43 tanks authorized for removal, thirty one have been removed	
	Chicora Tank Farm	Waiting on funding authorization and decision of the City of North Charleston	
Asbestos	Building 32 remediation	In progress	6/30/97

Time: 3:30 p.m. - 4:30 p.m.

Attendees: Daryle Fontenot, Lou Mintz, Wannetta Mallette-Pratt, Arthur Pinckney, Diane Cutler

DISCUSSION ITEMS

Meeting Location Mr. Fontenot informed the subcommittee that a RAB member had expressed some concern about the safety and quality of the current RAB meeting location, the Live Oak Community Center, and that it would be addressed at the RAB meeting.

Chicora Tank Farm Fact Sheet The fact sheet was reviewed by subcommittee members and a few minor changes were made.

Mr. Pinckney reported that he received a copy of the Pollution Control Act from Paul Bergstrand at SCDHEC as a follow-up to his tank removal presentation. Mr. Pinckney expressed a concern that there may be provisions for tank emissions monitoring or permits, and if so, these should be addressed in the fact sheet. Mr. Fontenot responded that he did not think those items applied to the Chicora tanks, but that he will verify with the regulators. If applicable, they will be added to the fact sheet.

Mr. Mintz recommended that the RAB set a deadline for various entities to express their interest in using the property. If they don't decide to accept the public benefit conveyance by the set time, then the Navy will proceed with closing the tanks using Option 1. Mr. Fontenot said he will share this recommendation at the RAB meeting.

Environmental Justice Article Diane Cutler passed out an article on environmental justice that she found in the April 28, 1997 edition of The Scientist.

WebPage Diane provided an update on the progress of the Charleston WebPage. She reported meeting with Jim Beltz (PAO) and Mark Turnbull (WebMaster) at SouthDiv before the subcommittee meeting.

SouthDiv will provide the server for the WebPage and will include information on RABs in general, eventually adding other SouthDiv RABs to the page. Following the general information will be Charleston specific material including: an introduction to the Charleston RAB; list of members with phone number and e-mail address of the co-chairs; meeting minutes from January 1997; fact sheets; and a brief paragraph on the information repository, speakers bureau, community relations plan, and who to contact for more information. Eventually a counter will be installed. It is anticipated that the WebPage will be operational sometime in July.

NEXT MEETING

Subcommittee Meeting The next Subcommittee meeting will be held on August 12, 1997 at 3:30 p.m. in building NH-51 in the Caretaker Site Office conference room. Meetings will tentatively be scheduled on a bi-monthly basis to correspond with the new RAB meeting schedule. If more frequent meetings are necessary, special meetings will be arranged and members contacted.

August 12, 1997

Naval Base Charleston

RAB Meeting

Restoration Advisory Board

DateTuesday, August 12, 1997

Time6 p.m.

Location...Live Oak Community Center
2012 Success Street
North Charleston

The RAB is a forum where community members meet with representatives from the Navy, State and Federal environmental agencies, and other groups to discuss the environmental programs underway at Naval Base Charleston. **All meetings are open to the public and everyone is encouraged to attend.**

For More Information



Call Jim Beltz at the Public Affairs Office
at Naval Facilities Engineering Command,
Southern Division (803) 320-5771

August 12, 1997

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at Naval Facilities Engineering Command,
Southern Division (803) 320-5771

GROUNDWATER MONITORING PROJECT

This project samples groundwater wells segregated in eleven (11) zones throughout the Naval Base Complex to analyze for hazardous materials that have leached into the water table. Ensafe is contracted by the Navy to establish the monitoring plan and to monitor all wells quarterly for a total of four quarters. Ensafe typically will accomplish the initial sampling cycle (1st quarter) in each zone and the detachment will perform the remaining follow-up sampling cycles. Currently the detachment has been funded and authorized to complete sampling Zones A,B,C,E,H and I. Funding and authorization for Zones D,F,G,K and L is expected to be awarded to the detachment.

<u>ZONE</u>	<u>SCHED START</u>	<u>SCHED COMP</u>	<u>ESD/[ASD]</u>	<u>ECD/[ACD]</u>	<u>% COMP</u>	<u># WELLS</u>
A (QTR. II)	03/04/96	06/04/96	[04/22/96]	[04/29/96]	100%	26
(QTR. III)	06/04/96	09/04/96	[06/19/96]	[06/26/96]	100%	
(QTR IV)	09/04/96	12/04/96	[10/04/96]	[10/18/96]	100%	
A - ADDENDUM I						
(QTR I)			[10/10/96]	[10/16/96]	100%	11
(QTR II)	01/17/97	04/16/97	[03/10/97]	[03/12/97]	100%	11
(QTR III)	04/17/97	07/16/97	07/07/97	07/09/97	0%	14
(QTR IV)	07/17/97	10/16/97	10/14/97	10/22/97	0%	14
A - ADDENDUM II						
(QTR I)				[02/07/97]	100%	6
(QTR II)	03/03/97	06/02/97	[03/20/97]	[03/21/97]	100%	6
(QTR III)	06/03/97	09/02/97	07/10/97	07/11/97	0%	7
(QTR IV)	09/03/97	12/02/97	10/23/97	10/27/97	0%	7
B (QTR. II)	03/04/96	06/04/96	[04/22/96]	[05/02/96]	100%	6
(QTR. III)	06/04/96	09/04/96	[06/19/96]	[06/26/96]	100%	
(QTR IV)	09/04/96	12/04/96	[10/04/96]	[10/18/96]	100%	
C (QTR. III)	03/04/96	06/04/96	[05/06/96]	[05/15/96]	100%	30
(QTR. IV)	06/04/96	09/04/96	[06/07/96]	[06/17/96]	100%	
D, F & G						
(QTR. II)			[04/22/97]	[06/18/97]	100%	134
(QTR. III)	06/19/97	09/18/97	07/28/97	09/18/97	0%	
(QTR IV)	09/19/97	12/18/97	10/28/97	12/18/97	0%	
E (QTR. II)	06/19/96	09/19/96	[07/01/96]	[08/19/96]	100%	175
(QTR. III)	09/19/96	12/19/96	[10/28/96]	[12/17/96]	100%	171
(QTR IV)	12/19/96	03/19/97	[01/07/97]	[02/27/97]	100%	171
E - ADDENDUM I						
(QTR I)				[11/01/96]		14
(QTR II)	02/08/97	05/09/97	[03/03/97]	[03/06/97]	100%	
(QTR III)	05/10/97	08/08/97	[06/23/97]	[06/27/97]	100%	

<u>ZONE</u>	<u>SCHED START</u>	<u>SCHED COMP</u>	<u>ESD/[ASD]</u>	<u>ECD/[ACD]</u>	<u>% COMP</u>	<u># WELLS</u>
(QTR IV)	08/09/97	11/07/97	09/22/97	09/26/97	0%	
H (QTR IV)	07/10/95	10/10/95	[03/08/96]	[04/17/96]	100%	97
I (QTR. III)	03/04/96	06/04/96	[05/15/96]	[06/05/96]	100%	55
(QTR. IV)	06/04/96	09/04/96	[08/19/96]	[09/13/96]	100%	
K (QTR I)				[01/06/97]		
(QTR II)	01/07/97	04/06/97	[04/16/97]	[04/18/97]	100%	8
(QTR III)	04/07/97	07/06/97	07/14/97	07/16/97	0%	
(QTR IV)	07/07/97	10/06/97	09/29/97	10/02/97	0%	
K - ADDENDUM I (Awaiting Funding from NAVFAC)						
SPECIAL ROUND			[05/22/97]	[05/23/97]	100%	8
(QTR I)			07/17/97	07/23/97	0%	18
(QTR II)	07/24/97	10/23/97	10/06/97	10/10/97	0%	
(QTR III)	10/24/97	01/23/98	01/12/98	01/16/98	0%	
(QTR IV)	01/24/98	04/23/98	03/02/98	03/06/98	0%	
L (QTR II)	(SOW received)					
(QTR III)						
(QTR IV)						

ESD = Estimated Start Date [ASD]= Actual Start Date
ECD = Estimated Completion Date [ACD]= Actual Completion Date

Durations for each Zone in working days

Zones A&B	8 days	[4 samplers]
Zone A		
Addendum I	3 days	[4 samplers]
Addendum II	2 days	[4 samplers]
Zone C	8 days	[4 samplers]
Zone D,F&G	33 days	[4 samplers] (NS-661 accomplished during D,F&G)
Zone E	41 days	[QII = 7/1 - 8/23 6 samplers/day ; QIII & IV = 4 samplers/day]
Zone E		
Addendum I	4 days	[4 samplers]
Zone H	26 days	[4 samplers]
Zone I	15 days	[4 samplers]
Zone K	2 days	[4 samplers]
Addendum I	9 days	[2 samplers]
Zone L		[]



DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O. BOX 190010
2155 EAGLE DRIVE
NORTH CHARLESTON, S.C. 29419-9010

5090/11
Code 1877
14 August 1997

Mr. John Litton, P.E.
Director, Division of Hazardous and Infectious Waste Management
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subj: SUBMITTAL OF THE MONTHLY RCRA FACILITY INVESTIGATION
PROGRESS REPORT

Dear Mr. Litton:

The purpose of this letter is to submit the Monthly RCRA Facility Investigation (RFI) Progress Report for Naval Base Charleston. This report is submitted voluntarily to provide an update on the progress of the RFI to members of the NAVBASE Project Team which includes representatives of the Environmental Protection Agency and the South Carolina Department of Health and Environmental Control.

Enclosure (1) is the Monthly Report which contains the activity for the month of July, 1997. If you have any questions, please contact Billy Drawdy or me at (803) 743-9985 (Ext. 29) and (803) 820-5525 respectively.

Sincerely,

A handwritten signature in cursive script that reads "Matthew A. Hunt".

MATTHEW A. HUNT
Environmental Engineer
Installation Restoration III

Encl: (1) Monthly RFI Progress Report - July 1997

Copy to (w/encl):
SCDHEC (Tapia, Bergstrand)
USEPA (1) (Bassett)
SOUTHNAVFACENGCOM (Hunt)
CSO Naval Base Charleston (Drawdy, Fontenot)

**NAVBASE CHARLESTON
RFI STATUS REPORT
PERIOD: SUMMARY OF
01 July 1997 To 31 July 1997**

I. INTRODUCTION

The following status report has been prepared to satisfy condition II.E.3.a of the Part B Permit Renewal dated 5 December 1994 for Naval Base Charleston (NAVBASE). The requirements of this condition are in effect since the total elapsed time to complete the RCRA Facility Investigation (RFI) is projected to be greater than 180 calendar days from the approval date of the *Final Comprehensive RFI Work Plan* as indicated in the Corrective Action Management Plan (CAMP).

In lieu of submitting quarterly reports, NAVBASE is voluntarily submitting monthly reports to provide an update on the progress of the RFI to members of the NAVBASE BRAC Cleanup Team (BCT) in a more timely manner. The content of the monthly reports includes information intended to satisfy condition II.E.3.a of the Part B Permit. Consequently, this report only addresses activities which occurred during the month of July 1997.

II. PORTION OF THE RFI COMPLETED

- The Final Comprehensive CMS Work Plan was shipped to the project team on July 2, 1997.
- Sample data was received for SWMU 42, AOC 506, AOC 659, AOC 661, AOC 665, and AOC 667/SWMU 138 which was part of the RFI comment resolution for Zones A and H. The data has been compiled and will be submitted to the project team for discussion at the August 1997 meeting.
- A response to the SCDHEC comments regarding the *Draft Zone C RFI Report* were prepared. Additional sampling was agreed upon at SWMU 44, AOC 508/511, and AOC 512 as a partial resolution to the comments. Soil sampling was completed at SWMU 44 however, the analytical data has not yet been received. The remainder of the sampling effort will be completed in early August 1997.
- The *Final Zone D RFI Report* was distributed to the project team on July 21, 1997 for approval.
- The scoping meeting for the Zone H CMS was held in conjunction with the July 1997 project team meeting. Preparation of the draft work plan is underway.
- All first phase sediment and surface water samples proposed as part of the Zone J investigation were collected with the exception of 17 surface water samples in the water body channel which were proposed for deletion in a memo from the Navy to the project

team. Team concurrence with the locations proposed for deletion has not yet been received.

- The scope of soil and groundwater sampling identified in the Zone L RFI work plan was approximately 95% complete at the end of this reporting period.

III. SUMMARIES OF FINDINGS

Attachment A is a preliminary list of "hits" for the Zone J analytical data received to date.

IV. DEVIATIONS FROM APPROVED WORK PLANS THIS REPORTING PERIOD

There were no known deviations from the approved RFI Work Plans for this reporting period.

V. SUMMARY OF CONTACTS WITH LOCAL COMMUNITY PUBLIC INTEREST GROUPS OR STATE GOVERNMENT

As of June 1997 the Restoration Advisory Board (RAB) agreed to meet on a bi-monthly basis therefore, a meeting was not held in July 1997.

VI. SUMMARY OF PROBLEMS OR POTENTIAL PROBLEMS AND ACTION TAKEN TO RECTIFY PROBLEMS

There were no problems or potential problems identified during this reporting period.

VII. KEY PROJECT PERSONNEL

There were no changes in key personnel this reporting period.

VIII. PROJECTED WORK FOR THE NEXT REPORTING PERIOD

Document Preparation and Data Evaluation:

- The site specific discussion (Section 10) of the Zone A RFI report for SWMUs 1, 2, and 39 will be provided to the project team by August 15, 1997 for review and comment. In

interim will these sites are being reviewed, the report will be updated to reflect all changes required per the comments provided by the regulatory agencies.

- Data from the additional sampling at SWMU 44, AOC 508/511, and AOC 512 should be received during the next period. The RFI report will be revised to incorporate this data along with making the necessary changes per the regulatory comments.
- Preparation of the RFI reports for Zones E, F, G, and K will continue.
- Proposed of inorganic background concentrations for Zones G and K will be submitted to the project team by August 25, 1997 for review and comment.
- The *Draft Zone H CMS Work Plan* is scheduled to be submitted to the project team by August 15, 1997 for review and comment.

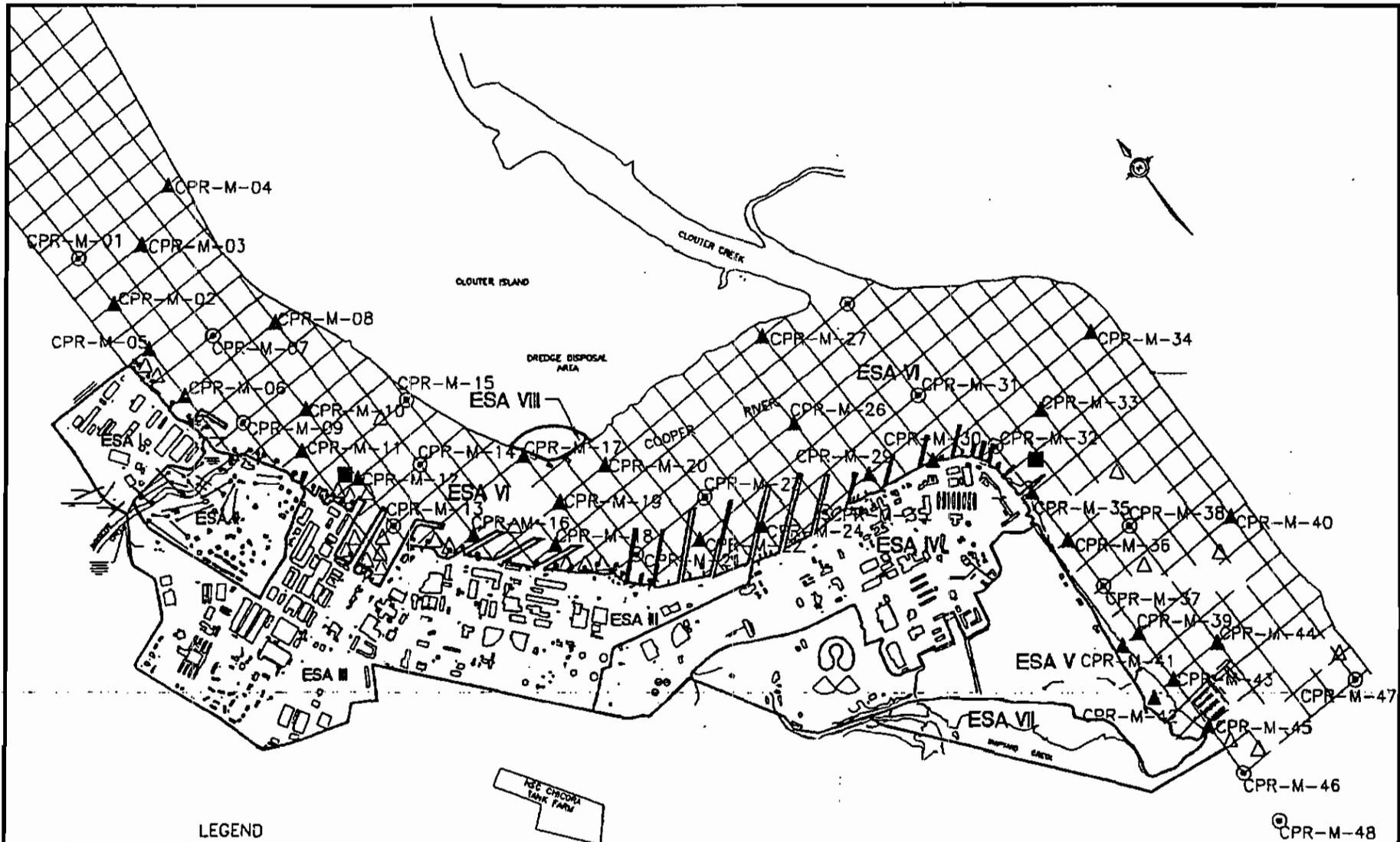
Field Activities:

- Soil and/or groundwater sampling will continue at SWMU 44, AOC 508/511, and AOC 512 to complete the RFI in Zone C.
- Additional work will be required at SWMU 166 in Zone K to complete the RFI.
- RFI field work will continue in Zones J and L.
- Quarterly groundwater monitoring will continue in all zones where less than four quarters of sampling has been completed.

IX. COPIES OF DAILY REPORTS, INSPECTION REPORTS, LABORATORY DATA

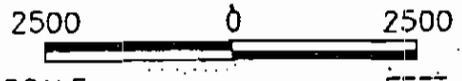
Daily activities are recorded in accordance with the Data Management Plan included as Section 14 of the Final Comprehensive Sampling and Analysis Plan. Photocopies of these daily records have not been included with this status report; however, this information is available for review upon request.

Per agreement with SCDHEC and EPA, hard copies of the analytical data are not being submitted. A copy of the data is maintained at the EnSafe/Allen & Hoshall office in Charleston and is available for review.



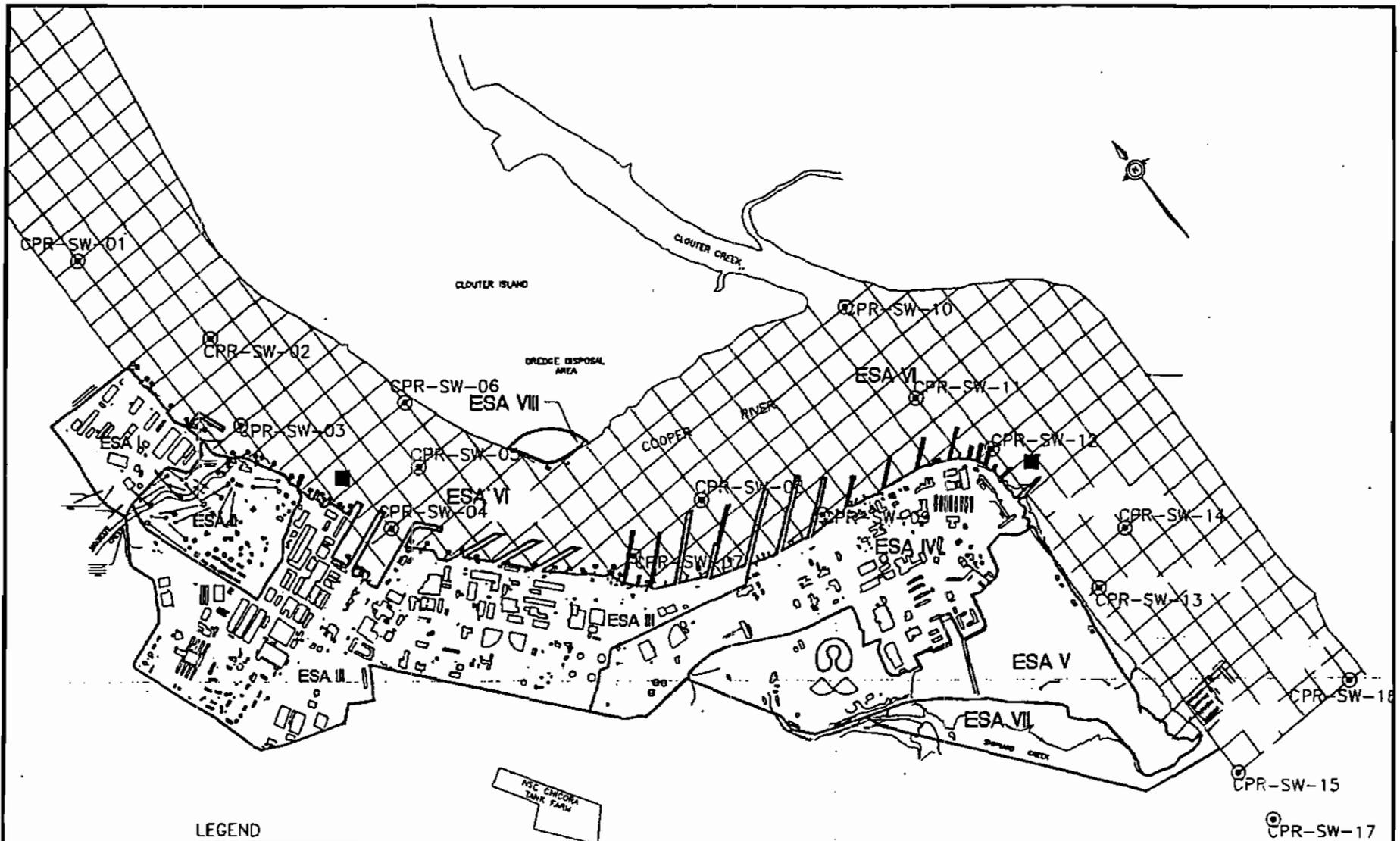
LEGEND

- — ESA BOUNDARY
- △ — PREVIOUS SED SAMPLE
- ▲ — PROPOSED SED SAMPLE
- ⊙ — PROPOSED SED/SW SAMPLE
- — EMAP SAMPLE



ZONE J
RFI WORKPLAN
NAVAL BASE CHARLESTON

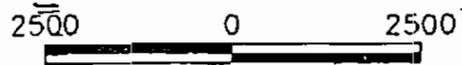
FIGURE 4-11
COOPER RIVER
(ESA VI)



LEGEND

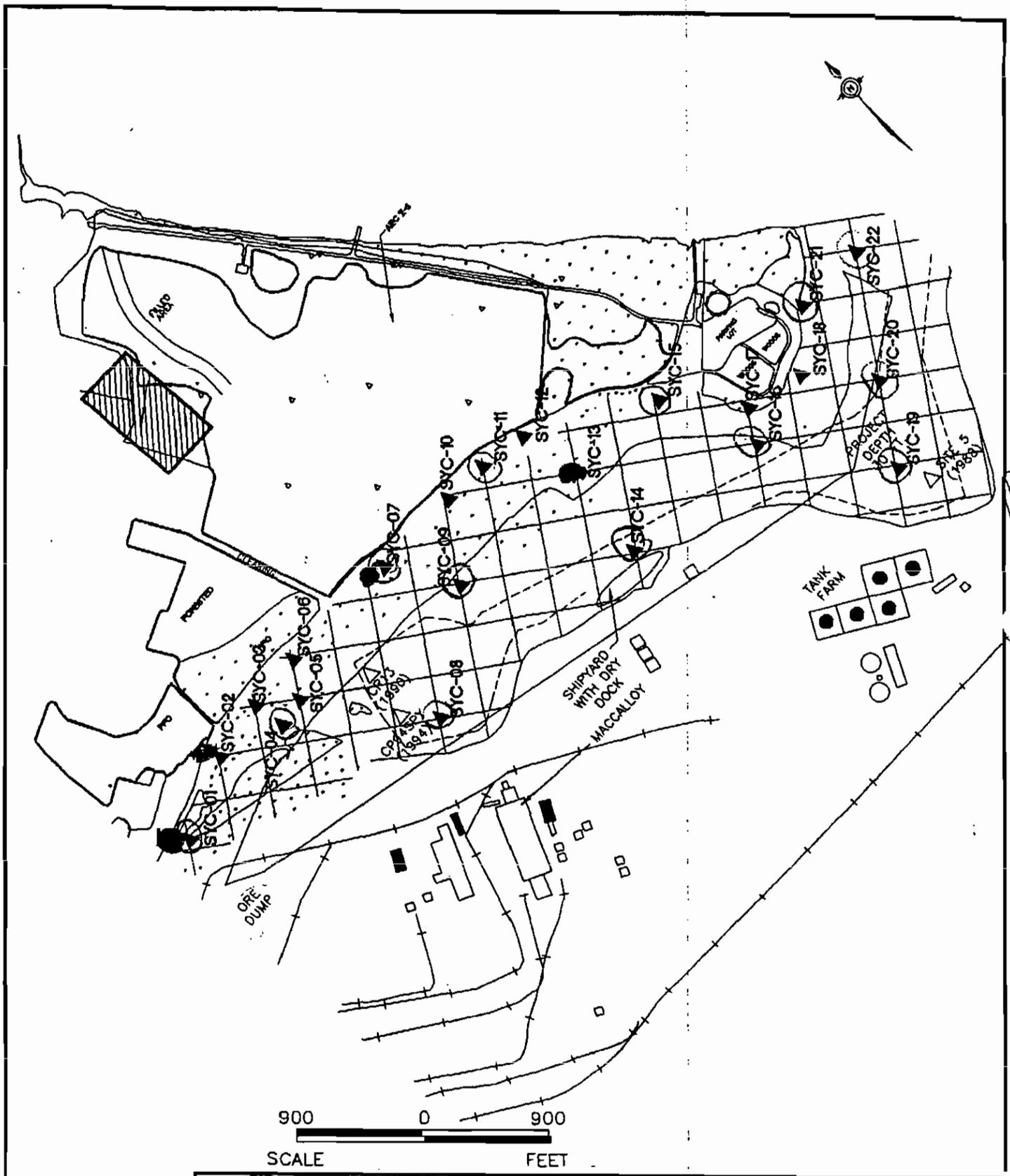
— ESA BOUNDARY

- — PROPOSED SED/SW SAMPLE
- — EMAP SAMPLE




ZONE J
RFI WORKPLAN
NAVAL BASE CHARLESTON

FIGURE 4-11
COOPER RIVER
(ESA VII)




ZONE J
RFI WORKPLAN
 NAVAL BASE CHARLESTON

FIGURE 4-12
SHIPYARD CREEK
AND SURROUNDINGS

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
2-Butanone (MEK)	CPRM003501	06/09/1997	3.0000	J
2-Butanone (MEK)	CPRM000201	06/09/1997	5.0000	J
2-Butanone (MEK)	CPRM002701	06/17/1997	6.0000	J
2-Butanone (MEK)	CPRM001701	06/19/1997	7.0000	J
2-Butanone (MEK)	CPRM003701	06/09/1997	9.0000	J
2-Butanone (MEK)	CPRM001501	06/16/1997	10.0000	J
2-Butanone (MEK)	CPRM003901	06/04/1997	10.0000	J
2-Butanone (MEK)	CPRM000501	06/03/1997	13.0000	J
2-Butanone (MEK)	CPRM004501	06/04/1997	20.0000	
2-Butanone (MEK)	CPRM003601	06/04/1997	21.0000	J
2-Butanone (MEK)	CPRM000901	06/09/1997	27.0000	J
2-Butanone (MEK)	CPRM004101	06/27/1997	40.0000	
2-Butanone (MEK)	CPRN000901	06/09/1997	40.0000	
2-Butanone (MEK)	CPRM001101	06/04/1997	46.0000	
2-Butanone (MEK)	CPRM000601	06/03/1997	50.0000	
2-Butanone (MEK)	CPRM001301	06/09/1997	53.0000	
2-Butanone (MEK)	CPRN001101	06/04/1997	56.0000	
2-Butanone (MEK)	CPRM001601	06/03/1997	58.0000	
2-Butanone (MEK)	CPRM002201	06/09/1997	58.0000	
2-Butanone (MEK)	CPRM002501	06/09/1997	58.0000	
2-Butanone (MEK)	CPRM000101	06/09/1997	61.0000	
2-Butanone (MEK)	CPRM003001	06/04/1997	70.0000	
2-Butanone (MEK)	CPRM002101	06/09/1997	76.0000	
2-Butanone (MEK)	CPRM001801	06/03/1997	82.0000	
2-Butanone (MEK)	CPRM002901	06/03/1997	85.0000	
2-Butanone (MEK)	CPRM002401	06/05/1997	100.0000	
2-Butanone (MEK)	CPRM003201	06/05/1997	130.0000	
Acenaphthene	CPRM003001	06/04/1997	300.0000	J
Acenaphthene	CPRM002101	06/09/1997	730.0000	J
Acetone	CPRM000801	06/16/1997	11.0000	BJ
Acetone	CPRM002801	06/17/1997	13.0000	BJ
Acetone	CPRM002001	06/16/1997	14.0000	BJ

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Acetone	CPRM000701	06/23/1997	20.0000	B
Acetone	CPRM004301	06/09/1997	23.0000	
Acetone	CPRM003401	06/19/1997	24.0000	B
Acetone	CPRM003101	06/25/1997	26.0000	B
Acetone	CPRM001901	06/24/1997	28.0000	B
Acetone	CPRM001001	06/24/1997	29.0000	B
Acetone	CPRM001401	06/24/1997	31.0000	B
Acetone	CPRM000401	06/16/1997	39.0000	B
Acetone	CPRM004801	06/09/1997	39.0000	
Acetone	CPRM004001	06/17/1997	47.0000	B
Acetone	CPRM004601	06/09/1997	54.0000	
Acetone	CPRM003301	06/20/1997	55.0000	B
Acetone	CPRM001701	06/19/1997	68.0000	B
Acetone	CPRM000501	06/03/1997	77.0000	
Acetone	CPRM004701	06/17/1997	77.0000	B
Acetone	CPRM003501	06/09/1997	87.0000	
Acetone	CPRM003801	06/20/1997	90.0000	B
Acetone	CPRM003901	06/04/1997	120.0000	
Acetone	CPRM002701	06/17/1997	130.0000	B
Acetone	CPRM003601	06/04/1997	160.0000	
Acetone	CPRM003701	06/09/1997	160.0000	
Acetone	CPRM001501	06/16/1997	190.0000	B
Acetone	CPRM004501	06/04/1997	240.0000	
Acetone	CPRM002601	06/25/1997	250.0000	BE
Acetone	CPRM000201	06/09/1997	260.0000	B
Acetone	CPRM000901	06/09/1997	260.0000	B
Acetone	CPRM001601	06/03/1997	320.0000	
Acetone	CPRN003101	06/25/1997	320.0000	B
Acetone	CPRM001101	06/04/1997	330.0000	E
Acetone	CPRM002301	06/25/1997	390.0000	BE
Acetone	CPRM002401	06/05/1997	400.0000	E
Acetone	CPRM001801	06/03/1997	430.0000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Acetone	CPRM003001	06/04/1997	450.0000	
Acetone	CPRN001101	06/04/1997	510.0000	E
Acetone	CPRM002901	06/03/1997	610.0000	
Acetone	CPRM000601	06/03/1997	670.0000	E
Acetone	CPRN000901	06/09/1997	680.0000	B
Acetone	CPRM003201	06/05/1997	710.0000	E
Acetone	CPRM004101	06/27/1997	870.0000	BE
Acetone	CPRM002501	06/09/1997	1300.0000	BE
Acetone	CPRM000101	06/09/1997	1500.0000	BE
Acetone	CPRM002201	06/09/1997	2100.0000	BE
Acetone	CPRM002101	06/09/1997	3400.0000	BE
Acetone	CPRM001301	06/09/1997	4300.0000	BE
Aluminum (Al)	CPRM002301	06/25/1997	1420.0000	
Aluminum (Al)	CPRM001001	06/24/1997	1680.0000	
Aluminum (Al)	CPRM002601	06/25/1997	1700.0000	
Aluminum (Al)	CPRM002801	06/17/1997	1700.0000	E*
Aluminum (Al)	CPRM001901	06/24/1997	1750.0000	
Aluminum (Al)	CPRM000701	06/23/1997	1830.0000	
Aluminum (Al)	CPRM004701	06/17/1997	2580.0000	E*
Aluminum (Al)	CPRM003301	06/20/1997	2980.0000	
Aluminum (Al)	CPRM000801	06/16/1997	3020.0000	E*
Aluminum (Al)	CPRM002001	06/16/1997	3660.0000	E*
Aluminum (Al)	CPRM003501	06/10/1997	3750.0000	
Aluminum (Al)	CPRM003101	06/25/1997	3870.0000	
Aluminum (Al)	CPRM004601	06/10/1997	4210.0000	
Aluminum (Al)	CPRM003401	06/19/1997	5090.0000	E*
Aluminum (Al)	CPRM000201	06/09/1997	5310.0000	
Aluminum (Al)	CPRM004501	06/04/1997	8260.0000	
Aluminum (Al)	CPRM000401	06/16/1997	8270.0000	E*
Aluminum (Al)	CPRM003801	06/20/1997	9360.0000	
Aluminum (Al)	CPRM001401	06/24/1997	9990.0000	
Aluminum (Al)	CPRN003101	06/25/1997	10400.0000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Aluminum (Al)	CPRM001201	06/04/1997	10500.0000	
Aluminum (Al)	CPRM004101	06/27/1997	10600.0000	
Aluminum (Al)	CPRM003701	06/10/1997	13100.0000	
Aluminum (Al)	CPRM002101	06/09/1997	13400.0000	
Aluminum (Al)	CPRM001101	06/04/1997	14600.0000	
Aluminum (Al)	CPRM001501	06/16/1997	14600.0000	E*
Aluminum (Al)	CPRN001101	06/04/1997	14700.0000	
Aluminum (Al)	CPRM004201	06/27/1997	15100.0000	
Aluminum (Al)	CPRM000901	06/09/1997	15500.0000	
Aluminum (Al)	CPRM002701	06/17/1997	15600.0000	E*
Aluminum (Al)	CPRM003901	06/04/1997	17500.0000	
Aluminum (Al)	CPRM004801	06/10/1997	17500.0000	
Aluminum (Al)	CPRM000601	06/03/1997	18400.0000	
Aluminum (Al)	CPRM000501	06/03/1997	19200.0000	
Aluminum (Al)	CPRM003201	06/05/1997	19600.0000	
Aluminum (Al)	CPRM004301	06/10/1997	20500.0000	
Aluminum (Al)	CPRN000901	06/09/1997	21400.0000	
Aluminum (Al)	CPRM001601	06/03/1997	23000.0000	
Aluminum (Al)	CPRM002401	06/05/1997	23900.0000	
Aluminum (Al)	CPRM004001	06/17/1997	24600.0000	E*
Aluminum (Al)	CPRM001301	06/09/1997	25900.0000	
Aluminum (Al)	CPRM003601	06/04/1997	26500.0000	
Aluminum (Al)	CPRM002201	06/09/1997	27300.0000	
Aluminum (Al)	CPRM001701	06/19/1997	28800.0000	E*
Aluminum (Al)	CPRM003001	06/04/1997	28900.0000	
Aluminum (Al)	CPRM002501	06/09/1997	29600.0000	
Aluminum (Al)	CPRM001801	06/03/1997	30100.0000	
Aluminum (Al)	CPRM002901	06/03/1997	32000.0000	
Aluminum (Al)	CPRM000101	06/09/1997	35000.0000	
Anthracene	CPRM001401	06/24/1997	86.0000	J
Anthracene	CPRM003801	06/20/1997	120.0000	J
Anthracene	CPRM003001	06/04/1997	190.0000	J

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Anthracene	CPRM002501	06/09/1997	210.0000	J
Anthracene	CPRM002901	06/03/1997	220.0000	J
Anthracene	CPRM002201	06/09/1997	230.0000	J
Anthracene	CPRN000901	06/09/1997	840.0000	J
Anthracene	CPRM002101	06/09/1997	880.0000	J
Antimony (Sb)	CPRM002001	06/16/1997	0.5300	BN
Arsenic (As)	CPRM002601	06/25/1997	1.4000	B
Arsenic (As)	CPRM002801	06/17/1997	2.0000	B
Arsenic (As)	CPRM000801	06/16/1997	2.4000	B
Arsenic (As)	CPRM001001	06/24/1997	2.4000	B
Arsenic (As)	CPRM004701	06/17/1997	2.4000	B
Arsenic (As)	CPRM000701	06/23/1997	2.7000	
Arsenic (As)	CPRM003401	06/19/1997	3.1000	
Arsenic (As)	CPRM004601	06/10/1997	3.8000	
Arsenic (As)	CPRM003501	06/10/1997	4.1000	
Arsenic (As)	CPRM002001	06/16/1997	4.8000	
Arsenic (As)	CPRM003301	06/20/1997	5.0000	
Arsenic (As)	CPRM002301	06/25/1997	5.2000	
Arsenic (As)	CPRM001201	06/04/1997	5.3000	
Arsenic (As)	CPRM003101	06/25/1997	5.5000	
Arsenic (As)	CPRM000201	06/09/1997	6.7000	
Arsenic (As)	CPRM003801	06/20/1997	7.0000	
Arsenic (As)	CPRM004101	06/27/1997	7.2000	
Arsenic (As)	CPRM004801	06/10/1997	7.8000	
Arsenic (As)	CPRN003101	06/25/1997	8.0000	
Arsenic (As)	CPRM001401	06/24/1997	8.7000	
Arsenic (As)	CPRM004501	06/04/1997	8.9000	
Arsenic (As)	CPRM000401	06/16/1997	9.0000	
Arsenic (As)	CPRM004001	06/17/1997	9.0000	
Arsenic (As)	CPRM001901	06/24/1997	9.1000	
Arsenic (As)	CPRM004301	06/10/1997	9.7000	
Arsenic (As)	CPRM000501	06/03/1997	10.0000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Arsenic (As)	CPRM002701	06/17/1997	10.1000	
Arsenic (As)	CPRM001501	06/16/1997	10.7000	
Arsenic (As)	CPRM003901	06/04/1997	10.9000	
Arsenic (As)	CPRN001101	06/04/1997	12.1000	
Arsenic (As)	CPRM003701	06/10/1997	12.8000	
Arsenic (As)	CPRM004201	06/27/1997	13.9000	
Arsenic (As)	CPRM001101	06/04/1997	14.3000	
Arsenic (As)	CPRM003601	06/04/1997	15.8000	
Arsenic (As)	CPRN000901	06/09/1997	15.9000	
Arsenic (As)	CPRM000901	06/09/1997	16.5000	
Arsenic (As)	CPRM001701	06/19/1997	16.6000	
Arsenic (As)	CPRM003201	06/05/1997	17.4000	
Arsenic (As)	CPRM003001	06/04/1997	17.9000	
Arsenic (As)	CPRM001301	06/09/1997	18.2000	
Arsenic (As)	CPRM002101	06/09/1997	19.1000	
Arsenic (As)	CPRM000601	06/03/1997	19.4000	
Arsenic (As)	CPRM002201	06/09/1997	20.1000	
Arsenic (As)	CPRM000101	06/09/1997	21.3000	
Arsenic (As)	CPRM001601	06/03/1997	21.5000	
Arsenic (As)	CPRM001801	06/03/1997	21.6000	
Arsenic (As)	CPRM002901	06/03/1997	21.7000	
Arsenic (As)	CPRM002501	06/09/1997	21.9000	
Arsenic (As)	CPRM002401	06/05/1997	22.2000	
Barium (Ba)	CPRM002301	06/25/1997	4.1000	B
Barium (Ba)	CPRM002801	06/17/1997	4.3000	BE
Barium (Ba)	CPRM000701	06/23/1997	4.6000	B
Barium (Ba)	CPRM001001	06/24/1997	5.3000	B
Barium (Ba)	CPRM004701	06/17/1997	5.3000	BE
Barium (Ba)	CPRM003301	06/20/1997	5.5000	B
Barium (Ba)	CPRM003101	06/25/1997	5.6000	B
Barium (Ba)	CPRM000801	06/16/1997	6.0000	BE
Barium (Ba)	CPRM002001	06/16/1997	8.3000	BE

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Barium (Ba)	CPRM003401	06/19/1997	9.1000	BE
Barium (Ba)	CPRM000201	06/09/1997	9.6000	B
Barium (Ba)	CPRM003501	06/10/1997	9.7000	B
Barium (Ba)	CPRM004601	06/10/1997	11.0000	B
Barium (Ba)	CPRM000401	06/16/1997	12.1000	BE
Barium (Ba)	CPRM001901	06/24/1997	12.2000	B
Barium (Ba)	CPRN003101	06/25/1997	12.3000	B
Barium (Ba)	CPRM002601	06/25/1997	12.9000	B
Barium (Ba)	CPRM004101	06/27/1997	13.2000	B
Barium (Ba)	CPRM004501	06/04/1997	14.3000	B
Barium (Ba)	CPRM001201	06/04/1997	14.4000	B
Barium (Ba)	CPRM003801	06/20/1997	14.5000	B
Barium (Ba)	CPRM001401	06/24/1997	14.7000	B
Barium (Ba)	CPRM002701	06/17/1997	18.8000	BE
Barium (Ba)	CPRM004201	06/27/1997	19.9000	B
Barium (Ba)	CPRN001101	06/04/1997	20.6000	B
Barium (Ba)	CPRM001101	06/04/1997	21.2000	B
Barium (Ba)	CPRM002101	06/09/1997	21.7000	B
Barium (Ba)	CPRM003701	06/10/1997	21.9000	B
Barium (Ba)	CPRM000501	06/03/1997	22.0000	B
Barium (Ba)	CPRM000901	06/09/1997	22.2000	B
Barium (Ba)	CPRM004801	06/10/1997	23.7000	B
Barium (Ba)	CPRM003901	06/04/1997	24.7000	B
Barium (Ba)	CPRM004001	06/17/1997	24.7000	BE
Barium (Ba)	CPRM000601	06/03/1997	24.9000	B
Barium (Ba)	CPRM004301	06/10/1997	25.0000	B
Barium (Ba)	CPRM003201	06/05/1997	25.3000	B
Barium (Ba)	CPRN000901	06/09/1997	26.9000	B
Barium (Ba)	CPRM003601	06/04/1997	30.1000	B
Barium (Ba)	CPRM001701	06/19/1997	30.3000	BE
Barium (Ba)	CPRM001601	06/03/1997	30.6000	B
Barium (Ba)	CPRM002401	06/05/1997	30.6000	B

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Barium (Ba)	CPRM001301	06/09/1997	33.2000	B
Barium (Ba)	CPRM002201	06/09/1997	33.4000	B
Barium (Ba)	CPRM003001	06/04/1997	33.7000	B
Barium (Ba)	CPRM002501	06/09/1997	34.6000	B
Barium (Ba)	CPRM001801	06/03/1997	35.6000	B
Barium (Ba)	CPRM002901	06/03/1997	35.6000	B
Barium (Ba)	CPRM001501	06/16/1997	37.1000	BE
Barium (Ba)	CPRM000101	06/09/1997	42.1000	B
Benzo(a)anthracene	CPRM001401	06/24/1997	120.0000	J
Benzo(a)anthracene	CPRM002901	06/03/1997	140.0000	J
Benzo(a)anthracene	CPRM003801	06/20/1997	150.0000	J
Benzo(a)anthracene	CPRM001301	06/09/1997	160.0000	J
Benzo(a)anthracene	CPRM002201	06/09/1997	170.0000	J
Benzo(a)anthracene	CPRM003201	06/05/1997	180.0000	J
Benzo(a)anthracene	CPRM000901	06/09/1997	210.0000	J
Benzo(a)anthracene	CPRM002001	06/16/1997	220.0000	J
Benzo(a)anthracene	CPRM002101	06/09/1997	840.0000	J
Benzo(a)anthracene	CPRM003001	06/04/1997	1100.0000	J
Benzo(a)pyrene	CPRM004701	06/17/1997	53.0000	J
Benzo(a)pyrene	CPRM000901	06/09/1997	140.0000	J
Benzo(a)pyrene	CPRM002001	06/16/1997	220.0000	J
Benzo(a)pyrene	CPRM003001	06/04/1997	350.0000	J
Benzo(a)pyrene	CPRM002101	06/09/1997	420.0000	J
Benzo(b)fluoranthene	CPRM004701	06/17/1997	83.0000	J
Benzo(b)fluoranthene	CPRM000901	06/09/1997	170.0000	J
Benzo(b)fluoranthene	CPRM002001	06/16/1997	270.0000	J
Benzo(b)fluoranthene	CPRM002101	06/09/1997	450.0000	J
Benzo(b)fluoranthene	CPRM003001	06/04/1997	560.0000	J
Benzo(k)fluoranthene	CPRM002001	06/16/1997	210.0000	J
Benzo(k)fluoranthene	CPRM003001	06/04/1997	210.0000	J
Benzo(k)fluoranthene	CPRM002101	06/09/1997	530.0000	J
Beryllium (Be)	CPRM003401	06/19/1997	0.0500	B

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Beryllium (Be)	CPRM004701	06/17/1997	0.0800	B
Beryllium (Be)	CPRM000801	06/16/1997	0.0900	B
Beryllium (Be)	CPRM002001	06/16/1997	0.1100	B
Beryllium (Be)	CPRM001001	06/24/1997	0.1800	B
Beryllium (Be)	CPRM000701	06/23/1997	0.1900	B
Beryllium (Be)	CPRM002301	06/25/1997	0.2500	B
Beryllium (Be)	CPRM002601	06/25/1997	0.2500	B
Beryllium (Be)	CPRM003301	06/20/1997	0.3100	B
Beryllium (Be)	CPRM003101	06/25/1997	0.3200	B
Beryllium (Be)	CPRM003501	06/10/1997	0.3200	B
Beryllium (Be)	CPRM004601	06/10/1997	0.4100	B
Beryllium (Be)	CPRM004101	06/27/1997	0.4500	B
Beryllium (Be)	CPRN003101	06/25/1997	0.4500	B
Beryllium (Be)	CPRM003801	06/20/1997	0.4600	B
Beryllium (Be)	CPRM004501	06/04/1997	0.4800	B
Beryllium (Be)	CPRM001401	06/24/1997	0.4900	B
Beryllium (Be)	CPRM000401	06/16/1997	0.5100	B
Beryllium (Be)	CPRM001201	06/04/1997	0.5100	B
Beryllium (Be)	CPRM000201	06/09/1997	0.5600	B
Beryllium (Be)	CPRM004801	06/10/1997	0.5600	B
Beryllium (Be)	CPRM002701	06/17/1997	0.5700	B
Beryllium (Be)	CPRN001101	06/04/1997	0.6000	B
Beryllium (Be)	CPRM001101	06/04/1997	0.6200	B
Beryllium (Be)	CPRM003901	06/04/1997	0.6600	B
Beryllium (Be)	CPRM000501	06/03/1997	0.6900	B
Beryllium (Be)	CPRM001501	06/16/1997	0.6900	B
Beryllium (Be)	CPRM001901	06/24/1997	0.8100	B
Beryllium (Be)	CPRM003201	06/05/1997	0.8400	B
Beryllium (Be)	CPRM002401	06/05/1997	0.8500	B
Beryllium (Be)	CPRM004201	06/27/1997	0.8500	B
Beryllium (Be)	CPRM000601	06/03/1997	0.8700	B
Beryllium (Be)	CPRM004301	06/10/1997	0.8700	B

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Beryllium (Be)	CPRM003701	06/10/1997	0.9200	B
Beryllium (Be)	CPRM003601	06/04/1997	0.9500	B
Beryllium (Be)	CPRM001601	06/03/1997	0.9900	B
Beryllium (Be)	CPRM001801	06/03/1997	1.0000	B
Beryllium (Be)	CPRM000901	06/09/1997	1.1000	B
Beryllium (Be)	CPRM001701	06/19/1997	1.1000	B
Beryllium (Be)	CPRM002901	06/03/1997	1.1000	B
Beryllium (Be)	CPRM003001	06/04/1997	1.1000	B
Beryllium (Be)	CPRM002101	06/09/1997	1.2000	B
Beryllium (Be)	CPRM004001	06/17/1997	1.2000	B
Beryllium (Be)	CPRN000901	06/09/1997	1.2000	B
Beryllium (Be)	CPRM002201	06/09/1997	1.3000	B
Beryllium (Be)	CPRM001301	06/09/1997	1.4000	B
Beryllium (Be)	CPRM002501	06/09/1997	1.4000	B
Beryllium (Be)	CPRM000101	06/09/1997	1.5000	B
Cadmium (Cd)	CPRM002801	06/17/1997	0.0900	B
Cadmium (Cd)	CPRM002301	06/25/1997	0.1100	B
Cadmium (Cd)	CPRM001401	06/24/1997	0.1300	B
Cadmium (Cd)	CPRM004701	06/17/1997	0.1600	B
Cadmium (Cd)	CPRM002001	06/16/1997	0.2000	B
Cadmium (Cd)	CPRM003501	06/10/1997	0.2000	B
Cadmium (Cd)	CPRM000801	06/16/1997	0.2100	B
Cadmium (Cd)	CPRM003401	06/19/1997	0.2100	B
Cadmium (Cd)	CPRM000201	06/09/1997	0.2400	B
Cadmium (Cd)	CPRM004101	06/27/1997	0.2400	B
Cadmium (Cd)	CPRM001201	06/04/1997	0.2600	B
Cadmium (Cd)	CPRM004601	06/10/1997	0.2600	B
Cadmium (Cd)	CPRM002601	06/25/1997	0.2700	B
Cadmium (Cd)	CPRM000101	06/09/1997	0.2800	B
Cadmium (Cd)	CPRM001901	06/24/1997	0.2900	B
Cadmium (Cd)	CPRM003801	06/20/1997	0.3000	B
Cadmium (Cd)	CPRM003101	06/25/1997	0.3100	B

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Cadmium (Cd)	CPRM000901	06/09/1997	0.3400	B
Cadmium (Cd)	CPRM000501	06/03/1997	0.3700	B
Cadmium (Cd)	CPRM000401	06/16/1997	0.3800	B
Cadmium (Cd)	CPRM004201	06/27/1997	0.3900	B
Cadmium (Cd)	CPRM003301	06/20/1997	0.4000	B
Cadmium (Cd)	CPRM004301	06/10/1997	0.4200	B
Cadmium (Cd)	CPRM000901	06/09/1997	0.4200	B
Cadmium (Cd)	CPRM001101	06/04/1997	0.4500	B
Cadmium (Cd)	CPRM003101	06/25/1997	0.4500	B
Cadmium (Cd)	CPRM002201	06/09/1997	0.4700	B
Cadmium (Cd)	CPRM004501	06/04/1997	0.5100	B
Cadmium (Cd)	CPRM000601	06/03/1997	0.5500	B
Cadmium (Cd)	CPRM002701	06/17/1997	0.5700	B
Cadmium (Cd)	CPRM003701	06/10/1997	0.5700	B
Cadmium (Cd)	CPRM001101	06/04/1997	0.5900	B
Cadmium (Cd)	CPRM001501	06/16/1997	0.6100	B
Cadmium (Cd)	CPRM003201	06/05/1997	0.6200	B
Cadmium (Cd)	CPRM002901	06/03/1997	0.6500	B
Cadmium (Cd)	CPRM002401	06/05/1997	0.6600	B
Cadmium (Cd)	CPRM003001	06/04/1997	0.6900	B
Cadmium (Cd)	CPRM003601	06/04/1997	0.7000	B
Cadmium (Cd)	CPRM001801	06/03/1997	0.7400	B
Cadmium (Cd)	CPRM004001	06/17/1997	0.7600	B
Cadmium (Cd)	CPRM002101	06/09/1997	0.7900	B
Cadmium (Cd)	CPRM003901	06/04/1997	0.8400	B
Cadmium (Cd)	CPRM001301	06/09/1997	0.9300	B
Cadmium (Cd)	CPRM001601	06/03/1997	1.1000	B
Cadmium (Cd)	CPRM001701	06/19/1997	1.4000	B
Calcium (Ca)	CPRM004801	06/10/1997	814.0000	B
Calcium (Ca)	CPRM004001	06/17/1997	2740.0000	E*
Calcium (Ca)	CPRM000701	06/23/1997	5200.0000	
Calcium (Ca)	CPRM001701	06/19/1997	5350.0000	E*

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Calcium (Ca)	CPRM001001	06/24/1997	5960.0000	
Calcium (Ca)	CPRM000801	06/16/1997	8600.0000	E*
Calcium (Ca)	CPRM002801	06/17/1997	11300.0000	E*
Calcium (Ca)	CPRM002601	06/25/1997	12400.0000	
Calcium (Ca)	CPRM003401	06/19/1997	14200.0000	E*
Calcium (Ca)	CPRM004201	06/27/1997	14900.0000	
Calcium (Ca)	CPRM001401	06/24/1997	15100.0000	
Calcium (Ca)	CPRM001201	06/04/1997	16300.0000	
Calcium (Ca)	CPRM002301	06/25/1997	16800.0000	
Calcium (Ca)	CPRM002701	06/17/1997	17700.0000	E*
Calcium (Ca)	CPRM001501	06/16/1997	17900.0000	E*
Calcium (Ca)	CPRM004601	06/10/1997	21700.0000	
Calcium (Ca)	CPRM002101	06/09/1997	23200.0000	
Calcium (Ca)	CPRM002501	06/09/1997	23200.0000	
Calcium (Ca)	CPRM002201	06/09/1997	23300.0000	
Calcium (Ca)	CPRM004101	06/27/1997	24400.0000	
Calcium (Ca)	CPRM002401	06/05/1997	25400.0000	
Calcium (Ca)	CPRM003601	06/04/1997	25700.0000	
Calcium (Ca)	CPRM001801	06/03/1997	26600.0000	
Calcium (Ca)	CPRM001601	06/03/1997	27900.0000	
Calcium (Ca)	CPRM001901	06/24/1997	28200.0000	
Calcium (Ca)	CPRM003001	06/04/1997	28300.0000	
Calcium (Ca)	CPRM002901	06/03/1997	29600.0000	
Calcium (Ca)	CPRM000601	06/03/1997	29800.0000	
Calcium (Ca)	CPRM003501	06/10/1997	31100.0000	
Calcium (Ca)	CPRM002001	06/16/1997	33000.0000	E*
Calcium (Ca)	CPRM001301	06/09/1997	35400.0000	
Calcium (Ca)	CPRM003201	06/05/1997	36100.0000	
Calcium (Ca)	CPRM004301	06/10/1997	43400.0000	
Calcium (Ca)	CPRM004701	06/17/1997	45100.0000	E*
Calcium (Ca)	CPRM000101	06/09/1997	47500.0000	
Calcium (Ca)	CPRN000901	06/09/1997	53300.0000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Calcium (Ca)	CPRM000901	06/09/1997	61600.0000	
Calcium (Ca)	CPRN001101	06/04/1997	62100.0000	
Calcium (Ca)	CPRM001101	06/04/1997	67600.0000	
Calcium (Ca)	CPRM000401	06/16/1997	67700.0000	E*
Calcium (Ca)	CPRM000501	06/03/1997	73100.0000	
Calcium (Ca)	CPRM004501	06/04/1997	74600.0000	
Calcium (Ca)	CPRM003701	06/10/1997	80300.0000	
Calcium (Ca)	CPRM003801	06/20/1997	96900.0000	
Calcium (Ca)	CPRM003901	06/04/1997	113000.0000	
Calcium (Ca)	CPRM000201	06/09/1997	130000.0000	
Calcium (Ca)	CPRN003101	06/25/1997	151000.0000	
Calcium (Ca)	CPRM003301	06/20/1997	220000.0000	
Calcium (Ca)	CPRM003101	06/25/1997	221000.0000	
Carbon disulfide	CPRM000201	06/09/1997	3.0000	J
Carbon disulfide	CPRM000801	06/16/1997	3.0000	J
Carbon disulfide	CPRM003901	06/04/1997	4.0000	J
Carbon disulfide	CPRM000401	06/16/1997	5.0000	J
Carbon disulfide	CPRM003501	06/09/1997	5.0000	J
Carbon disulfide	CPRM003801	06/20/1997	5.0000	J
Carbon disulfide	CPRM004101	06/27/1997	5.0000	J
Carbon disulfide	CPRM004801	06/09/1997	6.0000	J
Carbon disulfide	CPRM001701	06/19/1997	7.0000	J
Carbon disulfide	CPRM000601	06/03/1997	8.0000	J
Carbon disulfide	CPRM000101	06/09/1997	9.0000	J
Carbon disulfide	CPRM002101	06/09/1997	9.0000	J
Carbon disulfide	CPRM002201	06/09/1997	9.0000	J
Carbon disulfide	CPRM001601	06/03/1997	10.0000	J
Carbon disulfide	CPRM002501	06/09/1997	10.0000	J
Carbon disulfide	CPRM002901	06/03/1997	10.0000	J
Carbon disulfide	CPRM003701	06/09/1997	10.0000	
Carbon disulfide	CPRM000901	06/09/1997	11.0000	J
Carbon disulfide	CPRM001801	06/03/1997	12.0000	J

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Carbon disulfide	CPRN000901	06/09/1997	13.0000	J
Carbon disulfide	CPRM001501	06/16/1997	18.0000	
Carbon disulfide	CPRM003201	06/05/1997	21.0000	J
Carbon disulfide	CPRM002701	06/17/1997	22.0000	
Carbon disulfide	CPRM003601	06/04/1997	23.0000	
Carbon disulfide	CPRM004001	06/17/1997	24.0000	
Cation Exchange Capacity	CPRM001901	06/24/1997	2.3000	
Cation Exchange Capacity	CPRM001001	06/24/1997	6.0000	
Cation Exchange Capacity	CPRM002601	06/25/1997	6.7000	
Cation Exchange Capacity	CPRM003501	06/10/1997	6.7000	
Cation Exchange Capacity	CPRM004601	06/10/1997	10.0000	
Cation Exchange Capacity	CPRM002801	06/17/1997	10.9000	
Cation Exchange Capacity	CPRM000801	06/16/1997	11.0000	
Cation Exchange Capacity	CPRM000201	06/09/1997	11.1000	
Cation Exchange Capacity	CPRM002001	06/16/1997	11.2000	
Cation Exchange Capacity	CPRM004701	06/17/1997	11.8000	
Cation Exchange Capacity	CPRM000701	06/23/1997	12.0000	
Cation Exchange Capacity	CPRM004501	06/04/1997	12.5000	
Cation Exchange Capacity	CPRM003401	06/19/1997	14.1000	
Cation Exchange Capacity	CPRM002301	06/25/1997	18.3000	
Cation Exchange Capacity	CPRM001201	06/04/1997	19.0000	
Cation Exchange Capacity	CPRM003701	06/10/1997	19.6000	
Cation Exchange Capacity	CPRM003801	06/20/1997	21.4000	
Cation Exchange Capacity	CPRM003901	06/04/1997	22.6000	
Cation Exchange Capacity	CPRM004801	06/10/1997	23.8000	
Cation Exchange Capacity	CPRM004101	06/27/1997	26.1000	
Cation Exchange Capacity	CPRM003101	06/25/1997	32.1000	
Cation Exchange Capacity	CPRM000401	06/16/1997	32.7000	
Cation Exchange Capacity	CPRM004301	06/10/1997	34.3000	
Cation Exchange Capacity	CPRM001801	06/03/1997	35.4000	
Cation Exchange Capacity	CPRM003301	06/20/1997	37.6000	
Cation Exchange Capacity	CPRM000501	06/03/1997	41.6000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Cation Exchange Capacity	CPRN003101	06/25/1997	43.0000	
Cation Exchange Capacity	CPRM002901	06/03/1997	45.1000	
Cation Exchange Capacity	CPRM001101	06/04/1997	46.3000	
Cation Exchange Capacity	CPRM001401	06/24/1997	48.3000	
Cation Exchange Capacity	CPRN001101	06/04/1997	50.6000	
Cation Exchange Capacity	CPRM001501	06/16/1997	51.6000	
Cation Exchange Capacity	CPRM000901	06/09/1997	51.9000	
Cation Exchange Capacity	CPRM003201	06/05/1997	53.7000	
Cation Exchange Capacity	CPRM002701	06/17/1997	55.5000	
Cation Exchange Capacity	CPRM003601	06/04/1997	55.6000	
Cation Exchange Capacity	CPRM002201	06/09/1997	56.8000	
Cation Exchange Capacity	CPRM000101	06/09/1997	58.7000	
Cation Exchange Capacity	CPRM000601	06/03/1997	59.6000	
Cation Exchange Capacity	CPRM003001	06/04/1997	61.3000	
Cation Exchange Capacity	CPRN000901	06/09/1997	61.7000	
Cation Exchange Capacity	CPRM002401	06/05/1997	62.7000	
Cation Exchange Capacity	CPRM004201	06/27/1997	63.0000	
Cation Exchange Capacity	CPRM002101	06/09/1997	65.3000	
Cation Exchange Capacity	CPRM004001	06/17/1997	65.8000	
Cation Exchange Capacity	CPRM002501	06/09/1997	68.7000	
Cation Exchange Capacity	CPRM001301	06/09/1997	69.9000	
Cation Exchange Capacity	CPRM001601	06/03/1997	80.1000	
Cation Exchange Capacity	CPRM001701	06/19/1997	92.1000	
Chromium (Cr)	CPRM002801	06/17/1997	4.4000	E*
Chromium (Cr)	CPRM001001	06/24/1997	4.7000	E
Chromium (Cr)	CPRM000701	06/23/1997	5.1000	E
Chromium (Cr)	CPRM002301	06/25/1997	5.1000	E
Chromium (Cr)	CPRM002601	06/25/1997	6.0000	E
Chromium (Cr)	CPRM000801	06/16/1997	6.9000	E*
Chromium (Cr)	CPRM004701	06/17/1997	8.4000	E*
Chromium (Cr)	CPRM002001	06/16/1997	8.8000	E*
Chromium (Cr)	CPRM003401	06/19/1997	10.4000	E*

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Chromium (Cr)	CPRM004601	06/10/1997	12.5000	
Chromium (Cr)	CPRM001901	06/24/1997	13.7000	E
Chromium (Cr)	CPRM003501	06/10/1997	14.5000	
Chromium (Cr)	CPRM001401	06/24/1997	19.0000	E
Chromium (Cr)	CPRM000401	06/16/1997	22.2000	E*
Chromium (Cr)	CPRM001201	06/04/1997	23.5000	
Chromium (Cr)	CPRM004101	06/27/1997	25.0000	E
Chromium (Cr)	CPRM003801	06/20/1997	25.3000	E
Chromium (Cr)	CPRM001501	06/16/1997	28.0000	E*
Chromium (Cr)	CPRM004801	06/10/1997	28.6000	
Chromium (Cr)	CPRM000201	06/09/1997	28.8000	
Chromium (Cr)	CPRM002701	06/17/1997	30.0000	E*
Chromium (Cr)	CPRM003101	06/25/1997	32.5000	E
Chromium (Cr)	CPRN001101	06/04/1997	32.8000	
Chromium (Cr)	CPRM004501	06/04/1997	33.6000	
Chromium (Cr)	CPRM004301	06/10/1997	35.0000	
Chromium (Cr)	CPRM003301	06/20/1997	35.5000	E
Chromium (Cr)	CPRM001101	06/04/1997	35.6000	
Chromium (Cr)	CPRM002101	06/09/1997	36.2000	
Chromium (Cr)	CPRN003101	06/25/1997	36.8000	E
Chromium (Cr)	CPRM004201	06/27/1997	36.9000	E
Chromium (Cr)	CPRM000501	06/03/1997	37.2000	
Chromium (Cr)	CPRM000901	06/09/1997	39.3000	
Chromium (Cr)	CPRM003701	06/10/1997	40.6000	
Chromium (Cr)	CPRM000601	06/03/1997	41.1000	
Chromium (Cr)	CPRM003201	06/05/1997	44.8000	
Chromium (Cr)	CPRM003901	06/04/1997	47.0000	
Chromium (Cr)	CPRN000901	06/09/1997	47.2000	
Chromium (Cr)	CPRM003601	06/04/1997	47.9000	
Chromium (Cr)	CPRM004001	06/17/1997	49.1000	E*
Chromium (Cr)	CPRM002401	06/05/1997	50.2000	
Chromium (Cr)	CPRM001701	06/19/1997	51.2000	E*

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Chromium (Cr)	CPRM001301	06/09/1997	51.5000	
Chromium (Cr)	CPRM002201	06/09/1997	52.2000	
Chromium (Cr)	CPRM003001	06/04/1997	53.1000	
Chromium (Cr)	CPRM001601	06/03/1997	53.5000	
Chromium (Cr)	CPRM002501	06/09/1997	53.8000	
Chromium (Cr)	CPRM001801	06/03/1997	55.4000	
Chromium (Cr)	CPRM002901	06/03/1997	55.6000	
Chromium (Cr)	CPRM000101	06/09/1997	60.9000	
Chrysene	CPRN001101	06/04/1997	99.0000	J
Chrysene	CPRM001401	06/24/1997	110.0000	J
Chrysene	CPRM003801	06/20/1997	140.0000	J
Chrysene	CPRM002901	06/03/1997	150.0000	J
Chrysene	CPRN000901	06/09/1997	160.0000	J
Chrysene	CPRM003201	06/05/1997	190.0000	J
Chrysene	CPRM001301	06/09/1997	200.0000	J
Chrysene	CPRM002201	06/09/1997	200.0000	J
Chrysene	CPRM000901	06/09/1997	210.0000	J
Chrysene	CPRM002501	06/09/1997	270.0000	J
Chrysene	CPRM002001	06/16/1997	310.0000	J
Chrysene	CPRM003001	06/04/1997	720.0000	J
Chrysene	CPRM002101	06/09/1997	800.0000	J
Cobalt (Co)	CPRM004701	06/17/1997	0.4800	B
Cobalt (Co)	CPRM002801	06/17/1997	0.5500	B
Cobalt (Co)	CPRM000201	06/09/1997	0.6700	B
Cobalt (Co)	CPRM002601	06/25/1997	0.7600	B
Cobalt (Co)	CPRM003501	06/10/1997	0.7700	B
Cobalt (Co)	CPRM004601	06/10/1997	0.8500	B
Cobalt (Co)	CPRM003401	06/19/1997	0.8700	B
Cobalt (Co)	CPRM002001	06/16/1997	0.9100	B
Cobalt (Co)	CPRM001901	06/24/1997	1.1000	B
Cobalt (Co)	CPRM001001	06/24/1997	1.2000	B
Cobalt (Co)	CPRM002301	06/25/1997	1.2000	B

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Cobalt (Co)	CPRN003101	06/25/1997	1.2000	B
Cobalt (Co)	CPRM000801	06/16/1997	1.3000	B
Cobalt (Co)	CPRM004501	06/04/1997	1.4000	B
Cobalt (Co)	CPRM000701	06/23/1997	1.7000	B
Cobalt (Co)	CPRM003701	06/10/1997	1.7000	B
Cobalt (Co)	CPRM004801	06/10/1997	1.7000	B
Cobalt (Co)	CPRM003801	06/20/1997	1.9000	B
Cobalt (Co)	CPRM003901	06/04/1997	2.2000	B
Cobalt (Co)	CPRM004101	06/27/1997	2.2000	B
Cobalt (Co)	CPRM001201	06/04/1997	2.6000	B
Cobalt (Co)	CPRM004301	06/10/1997	2.8000	B
Cobalt (Co)	CPRM001401	06/24/1997	3.1000	B
Cobalt (Co)	CPRM000401	06/16/1997	3.6000	B
Cobalt (Co)	CPRM004201	06/27/1997	3.8000	B
Cobalt (Co)	CPRM000501	06/03/1997	4.1000	B
Cobalt (Co)	CPRN001101	06/04/1997	4.1000	B
Cobalt (Co)	CPRM001501	06/16/1997	4.3000	B
Cobalt (Co)	CPRM002701	06/17/1997	4.3000	B
Cobalt (Co)	CPRM001101	06/04/1997	4.6000	B
Cobalt (Co)	CPRM000901	06/09/1997	5.0000	B
Cobalt (Co)	CPRM002101	06/09/1997	5.1000	B
Cobalt (Co)	CPRM003601	06/04/1997	5.1000	B
Cobalt (Co)	CPRN000901	06/09/1997	5.5000	B
Cobalt (Co)	CPRM001701	06/19/1997	6.5000	B
Cobalt (Co)	CPRM000601	06/03/1997	6.6000	B
Cobalt (Co)	CPRM004001	06/17/1997	6.6000	B
Cobalt (Co)	CPRM002401	06/05/1997	6.8000	B
Cobalt (Co)	CPRM002201	06/09/1997	7.4000	B
Cobalt (Co)	CPRM002501	06/09/1997	7.6000	B
Cobalt (Co)	CPRM001801	06/03/1997	7.7000	B
Cobalt (Co)	CPRM002901	06/03/1997	7.7000	B
Cobalt (Co)	CPRM003201	06/05/1997	7.9000	B

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Cobalt (Co)	CPRM001301	06/09/1997	8.0000	B
Cobalt (Co)	CPRM001601	06/03/1997	8.0000	B
Cobalt (Co)	CPRM003001	06/04/1997	8.6000	B
Cobalt (Co)	CPRM000101	06/09/1997	8.7000	B
Copper (Cu)	CPRM001001	06/24/1997	1.4000	B
Copper (Cu)	CPRM004801	06/10/1997	1.5000	B
Copper (Cu)	CPRM000701	06/23/1997	1.9000	B
Copper (Cu)	CPRM002801	06/17/1997	2.3000	B*
Copper (Cu)	CPRM004701	06/17/1997	3.0000	B*
Copper (Cu)	CPRM003401	06/19/1997	3.2000	B*
Copper (Cu)	CPRM004601	06/10/1997	3.6000	B
Copper (Cu)	CPRM000801	06/16/1997	3.7000	B*
Copper (Cu)	CPRM003501	06/10/1997	3.8000	B
Copper (Cu)	CPRM001901	06/24/1997	4.0000	B
Copper (Cu)	CPRM001201	06/04/1997	4.2000	B
Copper (Cu)	CPRM004501	06/04/1997	6.9000	
Copper (Cu)	CPRM004001	06/17/1997	7.1000	B*
Copper (Cu)	CPRM003101	06/25/1997	7.5000	B
Copper (Cu)	CPRM002301	06/25/1997	7.6000	
Copper (Cu)	CPRM000201	06/09/1997	7.8000	
Copper (Cu)	CPRM003301	06/20/1997	8.2000	
Copper (Cu)	CPRM001701	06/19/1997	8.5000	B*
Copper (Cu)	CPRM001401	06/24/1997	8.7000	B
Copper (Cu)	CPRM003801	06/20/1997	9.0000	
Copper (Cu)	CPRM003701	06/10/1997	10.3000	
Copper (Cu)	CPRN003101	06/25/1997	11.1000	
Copper (Cu)	CPRM003901	06/04/1997	11.4000	
Copper (Cu)	CPRM004301	06/10/1997	11.6000	
Copper (Cu)	CPRM000401	06/16/1997	12.1000	*
Copper (Cu)	CPRM002701	06/17/1997	13.0000	*
Copper (Cu)	CPRN001101	06/04/1997	15.8000	
Copper (Cu)	CPRM000501	06/03/1997	16.7000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Copper (Cu)	CPRM004201	06/27/1997	17.5000	
Copper (Cu)	CPRM004101	06/27/1997	17.7000	
Copper (Cu)	CPRM001101	06/04/1997	19.0000	
Copper (Cu)	CPRM000601	06/03/1997	19.4000	
Copper (Cu)	CPRM002501	06/09/1997	20.9000	B
Copper (Cu)	CPRM002101	06/09/1997	21.0000	B
Copper (Cu)	CPRM002901	06/03/1997	21.2000	
Copper (Cu)	CPRM003001	06/04/1997	22.1000	
Copper (Cu)	CPRM002201	06/09/1997	22.2000	
Copper (Cu)	CPRN000901	06/09/1997	22.3000	
Copper (Cu)	CPRM000901	06/09/1997	22.6000	
Copper (Cu)	CPRM001501	06/16/1997	23.2000	*
Copper (Cu)	CPRM003201	06/05/1997	23.6000	
Copper (Cu)	CPRM000101	06/09/1997	23.7000	
Copper (Cu)	CPRM002401	06/05/1997	25.6000	
Copper (Cu)	CPRM001301	06/09/1997	26.1000	
Copper (Cu)	CPRM001801	06/03/1997	26.1000	
Copper (Cu)	CPRM003601	06/04/1997	28.4000	
Copper (Cu)	CPRM002601	06/25/1997	30.7000	
Copper (Cu)	CPRM001601	06/03/1997	32.4000	
Copper (Cu)	CPRM002001	06/16/1997	330.0000	*
Di-n-butylphthalate	CPRM003501	06/09/1997	98.0000	J
Dibenzofuran	CPRM002101	06/09/1997	390.0000	J
Diethylphthalate	CPRM001901	06/24/1997	110.0000	J
Diethylphthalate	CPRM000701	06/23/1997	120.0000	J
Diethylphthalate	CPRM001401	06/24/1997	150.0000	J
Diethylphthalate	CPRM003301	06/20/1997	280.0000	J
Diethylphthalate	CPRM004101	06/27/1997	770.0000	
Diethylphthalate	CPRM004201	06/27/1997	800.0000	
Diethylphthalate	CPRM002601	06/25/1997	860.0000	B
Diethylphthalate	CPRM001501	06/16/1997	1200.0000	
Diethylphthalate	CPRM002301	06/25/1997	1500.0000	B

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Diethylphthalate	CPRM003101	06/25/1997	2000.0000	B
Diethylphthalate	CPRN003101	06/25/1997	2200.0000	B
Fluoranthene	CPRM003501	06/09/1997	54.0000	J
Fluoranthene	CPRM004101	06/27/1997	93.0000	J
Fluoranthene	CPRM000101	06/09/1997	140.0000	J
Fluoranthene	CPRM001101	06/04/1997	140.0000	J
Fluoranthene	CPRN001101	06/04/1997	150.0000	J
Fluoranthene	CPRM002901	06/03/1997	220.0000	J
Fluoranthene	CPRN000901	06/09/1997	220.0000	J
Fluoranthene	CPRM000901	06/09/1997	290.0000	J
Fluoranthene	CPRM001401	06/24/1997	290.0000	J
Fluoranthene	CPRM002001	06/16/1997	320.0000	J
Fluoranthene	CPRM001301	06/09/1997	330.0000	J
Fluoranthene	CPRM002401	06/05/1997	340.0000	J
Fluoranthene	CPRM002501	06/09/1997	440.0000	J
Fluoranthene	CPRM002201	06/09/1997	460.0000	J
Fluoranthene	CPRM003801	06/20/1997	610.0000	
Fluoranthene	CPRM002101	06/09/1997	2600.0000	
Fluoranthene	CPRM003001	06/04/1997	2600.0000	
Fluorene	CPRM002101	06/09/1997	680.0000	J
Indeno(1,2,3-cd)pyrene	CPRM002001	06/16/1997	100.0000	J
Iron (Fe)	CPRM002601	06/25/1997	1560.0000	
Iron (Fe)	CPRM002801	06/17/1997	2810.0000	E*
Iron (Fe)	CPRM001001	06/24/1997	3020.0000	
Iron (Fe)	CPRM003301	06/20/1997	3100.0000	
Iron (Fe)	CPRM004701	06/17/1997	3430.0000	E*
Iron (Fe)	CPRM003501	06/10/1997	3630.0000	
Iron (Fe)	CPRM000701	06/23/1997	3910.0000	
Iron (Fe)	CPRM000801	06/16/1997	4130.0000	E*
Iron (Fe)	CPRM002001	06/16/1997	4310.0000	E*
Iron (Fe)	CPRM004601	06/10/1997	4510.0000	
Iron (Fe)	CPRM003401	06/19/1997	4850.0000	E*

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Iron (Fe)	CPRM000201	06/09/1997	4990.0000	
Iron (Fe)	CPRM003101	06/25/1997	5100.0000	
Iron (Fe)	CPRM004501	06/04/1997	6850.0000	
Iron (Fe)	CPRM002301	06/25/1997	8090.0000	
Iron (Fe)	CPRM004101	06/27/1997	8340.0000	
Iron (Fe)	CPRN003101	06/25/1997	9040.0000	
Iron (Fe)	CPRM003801	06/20/1997	9290.0000	
Iron (Fe)	CPRM000401	06/16/1997	10100.0000	E*
Iron (Fe)	CPRM003701	06/10/1997	10200.0000	
Iron (Fe)	CPRM001901	06/24/1997	10300.0000	
Iron (Fe)	CPRM001201	06/04/1997	10700.0000	
Iron (Fe)	CPRM001401	06/24/1997	12000.0000	
Iron (Fe)	CPRM003901	06/04/1997	13900.0000	
Iron (Fe)	CPRM004301	06/10/1997	14600.0000	
Iron (Fe)	CPRM000501	06/03/1997	15800.0000	
Iron (Fe)	CPRM002701	06/17/1997	16900.0000	E*
Iron (Fe)	CPRM001501	06/16/1997	17400.0000	E*
Iron (Fe)	CPRN001101	06/04/1997	18000.0000	
Iron (Fe)	CPRM004801	06/10/1997	18400.0000	
Iron (Fe)	CPRM001101	06/04/1997	19400.0000	
Iron (Fe)	CPRM000901	06/09/1997	20900.0000	
Iron (Fe)	CPRN000901	06/09/1997	22100.0000	
Iron (Fe)	CPRM002101	06/09/1997	23700.0000	
Iron (Fe)	CPRM004201	06/27/1997	25500.0000	
Iron (Fe)	CPRM000601	06/03/1997	25600.0000	
Iron (Fe)	CPRM004001	06/17/1997	26600.0000	E*
Iron (Fe)	CPRM003601	06/04/1997	26700.0000	
Iron (Fe)	CPRM003201	06/05/1997	27400.0000	
Iron (Fe)	CPRM001301	06/09/1997	28100.0000	
Iron (Fe)	CPRM002201	06/09/1997	29600.0000	
Iron (Fe)	CPRM002501	06/09/1997	29900.0000	
Iron (Fe)	CPRM001701	06/19/1997	30000.0000	E*

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Iron (Fe)	CPRM003001	06/04/1997	30500.0000	
Iron (Fe)	CPRM001601	06/03/1997	31000.0000	
Iron (Fe)	CPRM002901	06/03/1997	31100.0000	
Iron (Fe)	CPRM002401	06/05/1997	31200.0000	
Iron (Fe)	CPRM000101	06/09/1997	31500.0000	
Iron (Fe)	CPRM001801	06/03/1997	31800.0000	
Lead (Pb)	CPRM003301	06/20/1997	0.7500	B
Lead (Pb)	CPRM003101	06/25/1997	0.9100	B
Lead (Pb)	CPRM001001	06/24/1997	2.7000	
Lead (Pb)	CPRM004701	06/17/1997	2.7000	*
Lead (Pb)	CPRM002301	06/25/1997	2.9000	
Lead (Pb)	CPRM002801	06/17/1997	3.2000	*
Lead (Pb)	CPRM000701	06/23/1997	3.4000	
Lead (Pb)	CPRM003501	06/10/1997	3.4000	
Lead (Pb)	CPRM000201	06/09/1997	3.7000	
Lead (Pb)	CPRM000801	06/16/1997	4.4000	*
Lead (Pb)	CPRM004601	06/10/1997	5.0000	
Lead (Pb)	CPRM002601	06/25/1997	5.1000	
Lead (Pb)	CPRM001901	06/24/1997	5.6000	
Lead (Pb)	CPRM004501	06/04/1997	5.6000	
Lead (Pb)	CPRM003401	06/19/1997	6.9000	*
Lead (Pb)	CPRM003801	06/20/1997	7.0000	
Lead (Pb)	CPRM001201	06/04/1997	7.4000	
Lead (Pb)	CPRM000401	06/16/1997	8.9000	*
Lead (Pb)	CPRM004101	06/27/1997	8.9000	
Lead (Pb)	CPRM003701	06/10/1997	9.3000	
Lead (Pb)	CPRM004801	06/10/1997	10.0000	
Lead (Pb)	CPRM002701	06/17/1997	10.6000	*
Lead (Pb)	CPRM003901	06/04/1997	10.9000	
Lead (Pb)	CPRM000501	06/03/1997	11.4000	
Lead (Pb)	CPRM001401	06/24/1997	11.5000	
Lead (Pb)	CPRM004301	06/10/1997	14.2000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Lead (Pb)	CPRN003101	06/25/1997	14.8000	
Lead (Pb)	CPRM004001	06/17/1997	15.2000	*
Lead (Pb)	CPRN001101	06/04/1997	15.6000	
Lead (Pb)	CPRM001101	06/04/1997	15.8000	
Lead (Pb)	CPRM001501	06/16/1997	17.0000	*
Lead (Pb)	CPRM000901	06/09/1997	18.1000	
Lead (Pb)	CPRN000901	06/09/1997	20.4000	
Lead (Pb)	CPRM000601	06/03/1997	20.9000	
Lead (Pb)	CPRM001701	06/19/1997	21.0000	*
Lead (Pb)	CPRM003201	06/05/1997	22.8000	
Lead (Pb)	CPRM002901	06/03/1997	23.1000	
Lead (Pb)	CPRM000101	06/09/1997	23.5000	
Lead (Pb)	CPRM004201	06/27/1997	23.9000	
Lead (Pb)	CPRM002001	06/16/1997	24.6000	*
Lead (Pb)	CPRM003601	06/04/1997	24.6000	
Lead (Pb)	CPRM002401	06/05/1997	24.7000	
Lead (Pb)	CPRM002501	06/09/1997	25.2000	
Lead (Pb)	CPRM001801	06/03/1997	25.7000	
Lead (Pb)	CPRM003001	06/04/1997	26.3000	
Lead (Pb)	CPRM002101	06/09/1997	27.8000	
Lead (Pb)	CPRM002201	06/09/1997	27.9000	
Lead (Pb)	CPRM001601	06/03/1997	28.8000	
Lead (Pb)	CPRM001301	06/09/1997	32.3000	
Magnesium (Mg)	CPRM002601	06/25/1997	537.0000	B
Magnesium (Mg)	CPRM001001	06/24/1997	680.0000	B
Magnesium (Mg)	CPRM001901	06/24/1997	733.0000	B
Magnesium (Mg)	CPRM002801	06/17/1997	776.0000	BE
Magnesium (Mg)	CPRM000701	06/23/1997	907.0000	B
Magnesium (Mg)	CPRM002001	06/16/1997	1100.0000	BE
Magnesium (Mg)	CPRM000801	06/16/1997	1120.0000	BE
Magnesium (Mg)	CPRM002301	06/25/1997	1230.0000	
Magnesium (Mg)	CPRM004701	06/17/1997	1380.0000	E

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Magnesium (Mg)	CPRM004601	06/10/1997	1700.0000	
Magnesium (Mg)	CPRM003401	06/19/1997	1740.0000	E
Magnesium (Mg)	CPRM003501	06/10/1997	1810.0000	
Magnesium (Mg)	CPRM004101	06/27/1997	2060.0000	
Magnesium (Mg)	CPRM004801	06/10/1997	2600.0000	
Magnesium (Mg)	CPRM004501	06/04/1997	2800.0000	
Magnesium (Mg)	CPRM000201	06/09/1997	3000.0000	
Magnesium (Mg)	CPRM001201	06/04/1997	3010.0000	
Magnesium (Mg)	CPRM000401	06/16/1997	3360.0000	E
Magnesium (Mg)	CPRM001401	06/24/1997	3630.0000	
Magnesium (Mg)	CPRM003801	06/20/1997	3840.0000	
Magnesium (Mg)	CPRM001501	06/16/1997	3870.0000	E
Magnesium (Mg)	CPRM003701	06/10/1997	4120.0000	
Magnesium (Mg)	CPRM004301	06/10/1997	4270.0000	
Magnesium (Mg)	CPRM002701	06/17/1997	4560.0000	E
Magnesium (Mg)	CPRM003101	06/25/1997	4720.0000	
Magnesium (Mg)	CPRM003301	06/20/1997	4910.0000	
Magnesium (Mg)	CPRN003101	06/25/1997	5110.0000	
Magnesium (Mg)	CPRM000501	06/03/1997	5730.0000	
Magnesium (Mg)	CPRM004201	06/27/1997	5810.0000	
Magnesium (Mg)	CPRM003901	06/04/1997	6230.0000	
Magnesium (Mg)	CPRN001101	06/04/1997	6940.0000	
Magnesium (Mg)	CPRM004001	06/17/1997	7000.0000	E
Magnesium (Mg)	CPRM001101	06/04/1997	7290.0000	
Magnesium (Mg)	CPRM000901	06/09/1997	7370.0000	
Magnesium (Mg)	CPRM003601	06/04/1997	7560.0000	
Magnesium (Mg)	CPRN000901	06/09/1997	7730.0000	
Magnesium (Mg)	CPRM001701	06/19/1997	7840.0000	E
Magnesium (Mg)	CPRM000601	06/03/1997	8440.0000	
Magnesium (Mg)	CPRM002101	06/09/1997	8530.0000	
Magnesium (Mg)	CPRM001301	06/09/1997	9310.0000	
Magnesium (Mg)	CPRM002201	06/09/1997	9670.0000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Magnesium (Mg)	CPRM002501	06/09/1997	9810.0000	
Magnesium (Mg)	CPRM003001	06/04/1997	9930.0000	
Magnesium (Mg)	CPRM003201	06/05/1997	9930.0000	
Magnesium (Mg)	CPRM001601	06/03/1997	9960.0000	
Magnesium (Mg)	CPRM000101	06/09/1997	10100.0000	
Magnesium (Mg)	CPRM002901	06/03/1997	10100.0000	
Magnesium (Mg)	CPRM001801	06/03/1997	10300.0000	
Magnesium (Mg)	CPRM002401	06/05/1997	10500.0000	
Manganese (Mn)	CPRM002801	06/17/1997	23.2000	E*
Manganese (Mn)	CPRM002601	06/25/1997	31.7000	
Manganese (Mn)	CPRM003501	06/10/1997	41.8000	
Manganese (Mn)	CPRM004701	06/17/1997	48.3000	E*
Manganese (Mn)	CPRM003401	06/19/1997	49.3000	E*
Manganese (Mn)	CPRM004601	06/10/1997	50.3000	
Manganese (Mn)	CPRM004801	06/10/1997	51.8000	
Manganese (Mn)	CPRM000801	06/16/1997	60.0000	E*
Manganese (Mn)	CPRM001001	06/24/1997	63.9000	
Manganese (Mn)	CPRM000701	06/23/1997	64.9000	
Manganese (Mn)	CPRM002001	06/16/1997	77.7000	E*
Manganese (Mn)	CPRM004101	06/27/1997	88.3000	
Manganese (Mn)	CPRM004501	06/04/1997	97.3000	
Manganese (Mn)	CPRM000201	06/09/1997	112.0000	
Manganese (Mn)	CPRM002301	06/25/1997	115.0000	
Manganese (Mn)	CPRM000401	06/16/1997	123.0000	E*
Manganese (Mn)	CPRM003301	06/20/1997	128.0000	
Manganese (Mn)	CPRM004201	06/27/1997	135.0000	
Manganese (Mn)	CPRM001201	06/04/1997	136.0000	
Manganese (Mn)	CPRM001901	06/24/1997	137.0000	
Manganese (Mn)	CPRM003801	06/20/1997	144.0000	
Manganese (Mn)	CPRM001501	06/16/1997	157.0000	E*
Manganese (Mn)	CPRM003701	06/10/1997	157.0000	
Manganese (Mn)	CPRM001401	06/24/1997	174.0000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Manganese (Mn)	CPRM003101	06/25/1997	187.0000	
Manganese (Mn)	CPRM003901	06/04/1997	191.0000	
Manganese (Mn)	CPRN003101	06/25/1997	206.0000	
Manganese (Mn)	CPRM004301	06/10/1997	207.0000	
Manganese (Mn)	CPRM002701	06/17/1997	216.0000	E*
Manganese (Mn)	CPRM000501	06/03/1997	223.0000	
Manganese (Mn)	CPRM004001	06/17/1997	279.0000	E*
Manganese (Mn)	CPRM001701	06/19/1997	329.0000	E*
Manganese (Mn)	CPRN001101	06/04/1997	356.0000	
Manganese (Mn)	CPRM001101	06/04/1997	372.0000	
Manganese (Mn)	CPRM003601	06/04/1997	383.0000	
Manganese (Mn)	CPRM003201	06/05/1997	460.0000	
Manganese (Mn)	CPRM000901	06/09/1997	471.0000	
Manganese (Mn)	CPRN000901	06/09/1997	519.0000	
Manganese (Mn)	CPRM000601	06/03/1997	554.0000	
Manganese (Mn)	CPRM003001	06/04/1997	590.0000	
Manganese (Mn)	CPRM002101	06/09/1997	607.0000	
Manganese (Mn)	CPRM002901	06/03/1997	649.0000	
Manganese (Mn)	CPRM000101	06/09/1997	654.0000	
Manganese (Mn)	CPRM002501	06/09/1997	663.0000	
Manganese (Mn)	CPRM002201	06/09/1997	666.0000	
Manganese (Mn)	CPRM001301	06/09/1997	716.0000	
Manganese (Mn)	CPRM001801	06/03/1997	721.0000	
Manganese (Mn)	CPRM001601	06/03/1997	728.0000	
Manganese (Mn)	CPRM002401	06/05/1997	789.0000	
Mercury (Hg)	CPRM004201	06/27/1997	0.0900	
Mercury (Hg)	CPRM002001	06/16/1997	0.1200	
Nickel (Ni)	CPRM001001	06/24/1997	0.9400	B
Nickel (Ni)	CPRM000701	06/23/1997	1.1000	B
Nickel (Ni)	CPRM002601	06/25/1997	1.2000	B
Nickel (Ni)	CPRM002801	06/17/1997	1.4000	B
Nickel (Ni)	CPRM000801	06/16/1997	1.9000	B

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Nickel (Ni)	CPRM002301	06/25/1997	2.3000	B
Nickel (Ni)	CPRM004701	06/17/1997	2.4000	B
Nickel (Ni)	CPRM002001	06/16/1997	2.5000	B
Nickel (Ni)	CPRM003401	06/19/1997	2.6000	B
Nickel (Ni)	CPRM004601	06/10/1997	3.7000	B
Nickel (Ni)	CPRM001901	06/24/1997	3.8000	B
Nickel (Ni)	CPRM003501	06/10/1997	4.4000	B
Nickel (Ni)	CPRM004801	06/10/1997	4.6000	B
Nickel (Ni)	CPRM001401	06/24/1997	5.2000	B
Nickel (Ni)	CPRM001201	06/04/1997	5.8000	B
Nickel (Ni)	CPRM004101	06/27/1997	6.9000	B
Nickel (Ni)	CPRM003801	06/20/1997	7.2000	B
Nickel (Ni)	CPRM002701	06/17/1997	7.4000	B
Nickel (Ni)	CPRM001501	06/16/1997	7.9000	B
Nickel (Ni)	CPRM000201	06/09/1997	9.1000	B
Nickel (Ni)	CPRN001101	06/04/1997	9.3000	B
Nickel (Ni)	CPRM001101	06/04/1997	9.6000	B
Nickel (Ni)	CPRM002101	06/09/1997	9.7000	B
Nickel (Ni)	CPRM000401	06/16/1997	9.8000	B
Nickel (Ni)	CPRM000501	06/03/1997	11.1000	B
Nickel (Ni)	CPRM003101	06/25/1997	11.2000	B
Nickel (Ni)	CPRM000601	06/03/1997	11.3000	B
Nickel (Ni)	CPRM004201	06/27/1997	11.4000	B
Nickel (Ni)	CPRM000901	06/09/1997	11.6000	B
Nickel (Ni)	CPRM003301	06/20/1997	11.8000	B
Nickel (Ni)	CPRM003701	06/10/1997	12.5000	B
Nickel (Ni)	CPRM004301	06/10/1997	12.8000	B
Nickel (Ni)	CPRM004001	06/17/1997	13.1000	B
Nickel (Ni)	CPRM004501	06/04/1997	13.1000	
Nickel (Ni)	CPRM003201	06/05/1997	13.4000	B
Nickel (Ni)	CPRM003601	06/04/1997	13.5000	B
Nickel (Ni)	CPRM001701	06/19/1997	14.1000	B

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Nickel (Ni)	CPRM003101	06/25/1997	14.1000	
Nickel (Ni)	CPRM002401	06/05/1997	14.9000	B
Nickel (Ni)	CPRM000901	06/09/1997	14.9000	B
Nickel (Ni)	CPRM002201	06/09/1997	15.2000	B
Nickel (Ni)	CPRM003001	06/04/1997	15.2000	B
Nickel (Ni)	CPRM003901	06/04/1997	15.3000	B
Nickel (Ni)	CPRM001301	06/09/1997	15.5000	B
Nickel (Ni)	CPRM001601	06/03/1997	15.6000	B
Nickel (Ni)	CPRM001801	06/03/1997	15.6000	B
Nickel (Ni)	CPRM002901	06/03/1997	15.8000	B
Nickel (Ni)	CPRM002501	06/09/1997	16.2000	B
Nickel (Ni)	CPRM000101	06/09/1997	18.7000	B
Phenanthrene	CPRM003001	06/04/1997	580.0000	J
Phenanthrene	CPRM002101	06/09/1997	1900.0000	
Potassium (K)	CPRM002601	06/25/1997	228.0000	BE
Potassium (K)	CPRM001001	06/24/1997	273.0000	BE
Potassium (K)	CPRM002801	06/17/1997	290.0000	B
Potassium (K)	CPRM001901	06/24/1997	294.0000	BE
Potassium (K)	CPRM000701	06/23/1997	349.0000	BE
Potassium (K)	CPRM002301	06/25/1997	388.0000	BE
Potassium (K)	CPRM000801	06/16/1997	413.0000	B
Potassium (K)	CPRM002001	06/16/1997	442.0000	B
Potassium (K)	CPRM004701	06/17/1997	472.0000	B
Potassium (K)	CPRM003501	06/10/1997	581.0000	BE
Potassium (K)	CPRM004601	06/10/1997	674.0000	BE
Potassium (K)	CPRM003401	06/19/1997	723.0000	B
Potassium (K)	CPRM000201	06/09/1997	740.0000	BE
Potassium (K)	CPRM004101	06/27/1997	1080.0000	BE
Potassium (K)	CPRM004501	06/04/1997	1090.0000	B
Potassium (K)	CPRM000401	06/16/1997	1100.0000	B
Potassium (K)	CPRM003101	06/25/1997	1210.0000	BE
Potassium (K)	CPRM003701	06/10/1997	1270.0000	BE

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Potassium (K)	CPRM003301	06/20/1997	1380.0000	BE
Potassium (K)	CPRM003801	06/20/1997	1440.0000	BE
Potassium (K)	CPRM004301	06/10/1997	1600.0000	BE
Potassium (K)	CPRM001501	06/16/1997	1610.0000	B
Potassium (K)	CPRM001401	06/24/1997	1620.0000	BE
Potassium (K)	CPRM001201	06/04/1997	1670.0000	
Potassium (K)	CPRN003101	06/25/1997	1850.0000	E
Potassium (K)	CPRM002701	06/17/1997	1990.0000	B
Potassium (K)	CPRM003901	06/04/1997	2010.0000	B
Potassium (K)	CPRM004801	06/10/1997	2030.0000	E
Potassium (K)	CPRM000501	06/03/1997	2160.0000	
Potassium (K)	CPRN001101	06/04/1997	2270.0000	B
Potassium (K)	CPRM000901	06/09/1997	2390.0000	BE
Potassium (K)	CPRM001101	06/04/1997	2420.0000	B
Potassium (K)	CPRM004201	06/27/1997	2760.0000	E
Potassium (K)	CPRN000901	06/09/1997	2790.0000	BE
Potassium (K)	CPRM003601	06/04/1997	3140.0000	
Potassium (K)	CPRM000601	06/03/1997	3170.0000	B
Potassium (K)	CPRM002101	06/09/1997	3170.0000	BE
Potassium (K)	CPRM001301	06/09/1997	3390.0000	BE
Potassium (K)	CPRM002201	06/09/1997	3440.0000	BE
Potassium (K)	CPRM003201	06/05/1997	3490.0000	B
Potassium (K)	CPRM002401	06/05/1997	3680.0000	B
Potassium (K)	CPRM001601	06/03/1997	3770.0000	B
Potassium (K)	CPRM002501	06/09/1997	3770.0000	BE
Potassium (K)	CPRM000101	06/09/1997	3820.0000	BE
Potassium (K)	CPRM002901	06/03/1997	3950.0000	
Potassium (K)	CPRM001801	06/03/1997	4010.0000	B
Potassium (K)	CPRM003001	06/04/1997	4050.0000	
Potassium (K)	CPRM001701	06/19/1997	4100.0000	
Potassium (K)	CPRM004001	06/17/1997	4690.0000	
Pyrene	CPRM001501	06/16/1997	84.0000	J

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Pyrene	CPRM001101	06/04/1997	120.0000	J
Pyrene	CPRM001401	06/24/1997	140.0000	J
Pyrene	CPRN001101	06/04/1997	140.0000	J
Pyrene	CPRM003201	06/05/1997	150.0000	J
Pyrene	CPRM002001	06/16/1997	160.0000	J
Pyrene	CPRM002901	06/03/1997	170.0000	J
Pyrene	CPRN000901	06/09/1997	200.0000	J
Pyrene	CPRM002201	06/09/1997	250.0000	J
Pyrene	CPRM002401	06/05/1997	290.0000	J
Pyrene	CPRM000901	06/09/1997	320.0000	J
Pyrene	CPRM003801	06/20/1997	320.0000	J
Pyrene	CPRM002501	06/09/1997	330.0000	J
Pyrene	CPRM001301	06/09/1997	370.0000	J
Pyrene	CPRM004101	06/27/1997	650.0000	J
Pyrene	CPRM002101	06/09/1997	1900.0000	
Pyrene	CPRM003001	06/04/1997	2100.0000	
REDOX	CPRM003401	06/19/1997	84.0000	U
REDOX	CPRM003801	06/20/1997	143.0000	
REDOX	CPRM003301	06/20/1997	157.0000	
REDOX	CPRM004601	06/09/1997	208.0000	
REDOX	CPRM004801	06/09/1997	215.0000	
REDOX	CPRM004001	06/17/1997	217.0000	U
REDOX	CPRM004101	06/27/1997	230.0000	
REDOX	CPRM000201	06/09/1997	233.0000	
REDOX	CPRM003701	06/09/1997	235.0000	
REDOX	CPRM004201	06/27/1997	238.0000	
REDOX	CPRM000901	06/09/1997	240.0000	
REDOX	CPRM002101	06/09/1997	241.0000	
REDOX	CPRM002501	06/09/1997	243.0000	
REDOX	CPRM002701	06/17/1997	247.0000	U
REDOX	CPRM001901	06/24/1997	249.0000	
REDOX	CPRM004301	06/09/1997	251.0000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
REDOX	CPRM002201	06/09/1997	253.0000	
REDOX	CPRM003501	06/09/1997	253.0000	
REDOX	CPRN000901	06/09/1997	256.0000	
REDOX	CPRM001701	06/19/1997	259.0000	U
REDOX	CPRM001301	06/09/1997	268.0000	
REDOX	CPRM000101	06/09/1997	274.0000	
REDOX	CPRM000701	06/23/1997	277.0000	
REDOX	CPRM001401	06/24/1997	281.0000	
REDOX	CPRM001001	06/24/1997	284.0000	
REDOX	CPRM003101	06/25/1997	286.0000	
REDOX	CPRM001501	06/16/1997	288.0000	U
REDOX	CPRN003101	06/25/1997	288.0000	
REDOX	CPRM004701	06/17/1997	292.0000	U
REDOX	CPRM002601	06/25/1997	300.0000	
REDOX	CPRM002301	06/25/1997	304.0000	
REDOX	CPRM002801	06/17/1997	319.0000	U
REDOX	CPRM002001	06/16/1997	369.0000	U
REDOX	CPRM000801	06/16/1997	423.0000	U
REDOX	CPRE001301	06/09/1997	434.0000	
REDOX	CPRF001301	06/09/1997	440.0000	
REDOX	CPRM000401	06/16/1997	473.0000	U
Selenium (Se)	CPRM000201	06/09/1997	1.1000	B
Selenium (Se)	CPRM004501	06/04/1997	1.6000	
Selenium (Se)	CPRM003601	06/04/1997	2.2000	B
Silver (Ag)	CPRM002301	06/25/1997	0.1900	B
Silver (Ag)	CPRM002601	06/25/1997	0.8500	B
Sodium (Na)	CPRM002601	06/25/1997	1640.0000	E
Sodium (Na)	CPRM001001	06/24/1997	1730.0000	E
Sodium (Na)	CPRM002801	06/17/1997	1890.0000	E
Sodium (Na)	CPRM001901	06/24/1997	1900.0000	E
Sodium (Na)	CPRM002301	06/25/1997	2170.0000	E
Sodium (Na)	CPRM000701	06/23/1997	2260.0000	E

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Sodium (Na)	CPRM000801	06/16/1997	2640.0000	E
Sodium (Na)	CPRM002001	06/16/1997	3610.0000	E
Sodium (Na)	CPRM003401	06/19/1997	3640.0000	E
Sodium (Na)	CPRM004601	06/10/1997	3920.0000	E
Sodium (Na)	CPRM003501	06/10/1997	4080.0000	E
Sodium (Na)	CPRM004701	06/17/1997	4370.0000	E
Sodium (Na)	CPRM004801	06/10/1997	4540.0000	E
Sodium (Na)	CPRM000401	06/16/1997	5010.0000	E
Sodium (Na)	CPRM001201	06/04/1997	5110.0000	E
Sodium (Na)	CPRM001501	06/16/1997	5720.0000	E
Sodium (Na)	CPRM004101	06/27/1997	5790.0000	E
Sodium (Na)	CPRM004501	06/04/1997	6110.0000	E
Sodium (Na)	CPRM000201	06/09/1997	6310.0000	E
Sodium (Na)	CPRM003801	06/20/1997	6600.0000	E
Sodium (Na)	CPRM003101	06/25/1997	7110.0000	E
Sodium (Na)	CPRM002701	06/17/1997	7850.0000	E
Sodium (Na)	CPRM003701	06/10/1997	8400.0000	E
Sodium (Na)	CPRM003301	06/20/1997	8470.0000	E
Sodium (Na)	CPRN003101	06/25/1997	8480.0000	E
Sodium (Na)	CPRM004301	06/10/1997	8990.0000	E
Sodium (Na)	CPRM001401	06/24/1997	9840.0000	E
Sodium (Na)	CPRM000501	06/03/1997	11400.0000	E
Sodium (Na)	CPRM003901	06/04/1997	11700.0000	E
Sodium (Na)	CPRM004001	06/17/1997	11700.0000	E
Sodium (Na)	CPRM001701	06/19/1997	11900.0000	E
Sodium (Na)	CPRM004201	06/27/1997	12300.0000	E
Sodium (Na)	CPRM001101	06/04/1997	15900.0000	E
Sodium (Na)	CPRN001101	06/04/1997	15900.0000	E
Sodium (Na)	CPRM003601	06/04/1997	17300.0000	E
Sodium (Na)	CPRM000601	06/03/1997	18500.0000	E
Sodium (Na)	CPRM000901	06/09/1997	18700.0000	E
Sodium (Na)	CPRN000901	06/09/1997	20100.0000	E

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Sodium (Na)	CPRM001301	06/09/1997	21200.0000	E
Sodium (Na)	CPRM002901	06/03/1997	22400.0000	E
Sodium (Na)	CPRM000101	06/09/1997	23000.0000	E
Sodium (Na)	CPRM001601	06/03/1997	23000.0000	E
Sodium (Na)	CPRM003001	06/04/1997	23400.0000	E
Sodium (Na)	CPRM003201	06/05/1997	24000.0000	E
Sodium (Na)	CPRM002101	06/09/1997	24300.0000	E
Sodium (Na)	CPRM001801	06/03/1997	24500.0000	E
Sodium (Na)	CPRM002201	06/09/1997	25300.0000	E
Sodium (Na)	CPRM002501	06/09/1997	26200.0000	E
Sodium (Na)	CPRM002401	06/05/1997	26900.0000	E
Thallium (Tl)	CPRM002601	06/25/1997	0.8500	B
Thallium (Tl)	CPRM003101	06/25/1997	1.2000	B
Thallium (Tl)	CPRN003101	06/25/1997	1.4000	B
Thallium (Tl)	CPRM004501	06/04/1997	1.5000	B
Thallium (Tl)	CPRM003301	06/20/1997	2.0000	B
Tin (Sn)	CPRM003401	06/19/1997	9.8000	B
Tin (Sn)	CPRM004701	06/17/1997	12.7000	B
Tin (Sn)	CPRM000801	06/16/1997	13.0000	B
Tin (Sn)	CPRM004601	06/10/1997	13.5000	B
Tin (Sn)	CPRM004801	06/10/1997	15.1000	B
Tin (Sn)	CPRM002801	06/17/1997	15.9000	B
Tin (Sn)	CPRM004301	06/10/1997	17.1000	B
Tin (Sn)	CPRM000401	06/16/1997	19.8000	B
Tin (Sn)	CPRM001501	06/16/1997	20.3000	B
Tin (Sn)	CPRM002701	06/17/1997	21.0000	B
Tin (Sn)	CPRM000901	06/09/1997	24.8000	B
Tin (Sn)	CPRM001701	06/19/1997	30.0000	B
Total Organic Carbon-(TOC)	CPRM001901	06/24/1997	0.1700	
Total Organic Carbon (TOC)	CPRM002601	06/25/1997	0.2000	
Total Organic Carbon (TOC)	CPRM001001	06/24/1997	0.2700	
Total Organic Carbon (TOC)	CPRM002001	06/16/1997	0.5200	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Total Organic Carbon (TOC)	CPRM004701	06/17/1997	0.5700	
Total Organic Carbon (TOC)	CPRM000701	06/23/1997	0.6200	
Total Organic Carbon (TOC)	CPRM002801	06/17/1997	0.6400	
Total Organic Carbon (TOC)	CPRM004501	06/04/1997	0.6500	
Total Organic Carbon (TOC)	CPRM003501	06/10/1997	0.6800	
Total Organic Carbon (TOC)	CPRM002301	06/25/1997	0.7000	
Total Organic Carbon (TOC)	CPRM003101	06/25/1997	0.7000	
Total Organic Carbon (TOC)	CPRM004601	06/10/1997	0.7600	
Total Organic Carbon (TOC)	CPRM004801	06/10/1997	0.7700	
Total Organic Carbon (TOC)	CPRM000801	06/16/1997	0.9000	
Total Organic Carbon (TOC)	CPRM003401	06/19/1997	0.9500	
Total Organic Carbon (TOC)	CPRM003801	06/20/1997	1.0000	
Total Organic Carbon (TOC)	CPRN003101	06/25/1997	1.0000	
Total Organic Carbon (TOC)	CPRM001201	06/04/1997	1.1000	
Total Organic Carbon (TOC)	CPRM003301	06/20/1997	1.3000	
Total Organic Carbon (TOC)	CPRM004101	06/27/1997	1.3000	
Total Organic Carbon (TOC)	CPRM004301	06/10/1997	1.3000	
Total Organic Carbon (TOC)	CPRM000201	06/09/1997	1.4000	
Total Organic Carbon (TOC)	CPRM003701	06/10/1997	1.7000	
Total Organic Carbon (TOC)	CPRM003901	06/04/1997	1.7000	
Total Organic Carbon (TOC)	CPRM002401	06/05/1997	2.0000	
Total Organic Carbon (TOC)	CPRM001501	06/16/1997	2.2000	
Total Organic Carbon (TOC)	CPRM000401	06/16/1997	2.3000	
Total Organic Carbon (TOC)	CPRM002701	06/17/1997	2.7000	
Total Organic Carbon (TOC)	CPRM001101	06/04/1997	3.0000	
Total Organic Carbon (TOC)	CPRM004001	06/17/1997	3.0000	
Total Organic Carbon (TOC)	CPRM000501	06/03/1997	3.1000	
Total Organic Carbon (TOC)	CPRM003601	06/04/1997	3.5000	
Total Organic Carbon (TOC)	CPRM004201	06/27/1997	4.0000	
Total Organic Carbon (TOC)	CPRM000101	06/09/1997	4.6000	
Total Organic Carbon (TOC)	CPRM001301	06/09/1997	4.6000	
Total Organic Carbon (TOC)	CPRM002901	06/03/1997	4.6000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Total Organic Carbon (TOC)	CPRM000601	06/03/1997	4.7000	
Total Organic Carbon (TOC)	CPRM000901	06/09/1997	4.7000	
Total Organic Carbon (TOC)	CPRM001701	06/19/1997	4.7000	
Total Organic Carbon (TOC)	CPRM003201	06/05/1997	4.7000	
Total Organic Carbon (TOC)	CPRN000901	06/09/1997	4.8000	
Total Organic Carbon (TOC)	CPRM001601	06/03/1997	4.9000	
Total Organic Carbon (TOC)	CPRM001801	06/03/1997	4.9000	
Total Organic Carbon (TOC)	CPRM002201	06/09/1997	5.1000	
Total Organic Carbon (TOC)	CPRM002101	06/09/1997	5.2000	
Total Organic Carbon (TOC)	CPRM003001	06/04/1997	5.2000	
Total Organic Carbon (TOC)	CPRM002501	06/09/1997	5.3000	
Total Organic Carbon (TOC)	CPRM001401	06/24/1997	6.5000	
Total Organic Carbon (TOC)	CPRN001101	06/04/1997	8.0000	
Tributyltin	CPRN000901	06/09/1997	52.0000	
Vanadium (V)	CPRM002601	06/25/1997	4.4000	B
Vanadium (V)	CPRM001001	06/24/1997	5.1000	B
Vanadium (V)	CPRM002801	06/17/1997	5.2000	BE
Vanadium (V)	CPRM004701	06/17/1997	6.9000	BE
Vanadium (V)	CPRM000701	06/23/1997	7.0000	B
Vanadium (V)	CPRM002001	06/16/1997	7.6000	BE
Vanadium (V)	CPRM000801	06/16/1997	7.7000	BE
Vanadium (V)	CPRM003501	06/10/1997	8.8000	B
Vanadium (V)	CPRM002301	06/25/1997	9.0000	B
Vanadium (V)	CPRM003401	06/19/1997	10.6000	BE
Vanadium (V)	CPRM004601	06/10/1997	11.6000	B
Vanadium (V)	CPRM001901	06/24/1997	13.6000	
Vanadium (V)	CPRM000201	06/09/1997	17.2000	
Vanadium (V)	CPRM004501	06/04/1997	18.3000	
Vanadium (V)	CPRM003101	06/25/1997	19.3000	
Vanadium (V)	CPRM000401	06/16/1997	20.4000	E
Vanadium (V)	CPRM001201	06/04/1997	20.6000	
Vanadium (V)	CPRM003301	06/20/1997	21.7000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Vanadium (V)	CPRM003801	06/20/1997	22.0000	
Vanadium (V)	CPRM004101	06/27/1997	22.6000	
Vanadium (V)	CPRM001401	06/24/1997	27.0000	
Vanadium (V)	CPRM003701	06/10/1997	27.2000	
Vanadium (V)	CPRN003101	06/25/1997	29.1000	
Vanadium (V)	CPRM002701	06/17/1997	31.6000	E
Vanadium (V)	CPRM001501	06/16/1997	32.5000	E
Vanadium (V)	CPRM004301	06/10/1997	35.9000	
Vanadium (V)	CPRM003901	06/04/1997	36.0000	
Vanadium (V)	CPRM000501	06/03/1997	38.8000	
Vanadium (V)	CPRN001101	06/04/1997	39.4000	
Vanadium (V)	CPRM004801	06/10/1997	39.7000	
Vanadium (V)	CPRM004001	06/17/1997	40.6000	E
Vanadium (V)	CPRM001101	06/04/1997	43.8000	
Vanadium (V)	CPRM000901	06/09/1997	45.3000	
Vanadium (V)	CPRN000901	06/09/1997	52.2000	
Vanadium (V)	CPRM004201	06/27/1997	53.6000	
Vanadium (V)	CPRM002101	06/09/1997	55.0000	
Vanadium (V)	CPRM001701	06/19/1997	57.3000	E
Vanadium (V)	CPRM003601	06/04/1997	58.8000	
Vanadium (V)	CPRM003201	06/05/1997	60.6000	
Vanadium (V)	CPRM000601	06/03/1997	61.5000	
Vanadium (V)	CPRM001301	06/09/1997	62.1000	
Vanadium (V)	CPRM003001	06/04/1997	70.3000	
Vanadium (V)	CPRM001601	06/03/1997	70.5000	
Vanadium (V)	CPRM001801	06/03/1997	73.0000	
Vanadium (V)	CPRM002201	06/09/1997	73.1000	
Vanadium (V)	CPRM002401	06/05/1997	73.5000	
Vanadium (V)	CPRM002501	06/09/1997	74.2000	
Vanadium (V)	CPRM002901	06/03/1997	78.3000	
Vanadium (V)	CPRM000101	06/09/1997	82.4000	
Zinc (Zn)	CPRM002601	06/25/1997	6.1000	E

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Zinc (Zn)	CPRM001001	06/24/1997	10.8000	E
Zinc (Zn)	CPRM002801	06/17/1997	11.9000	E*
Zinc (Zn)	CPRM000701	06/23/1997	13.1000	E
Zinc (Zn)	CPRM004701	06/17/1997	16.0000	E*
Zinc (Zn)	CPRM002301	06/25/1997	17.0000	E
Zinc (Zn)	CPRM003401	06/19/1997	18.4000	E*
Zinc (Zn)	CPRM003501	06/10/1997	19.1000	
Zinc (Zn)	CPRM000801	06/16/1997	21.9000	E*
Zinc (Zn)	CPRM001901	06/24/1997	21.9000	E
Zinc (Zn)	CPRM004801	06/10/1997	27.4000	
Zinc (Zn)	CPRM003101	06/25/1997	29.6000	E
Zinc (Zn)	CPRM000201	06/09/1997	30.4000	
Zinc (Zn)	CPRM001201	06/04/1997	31.6000	
Zinc (Zn)	CPRM004601	06/10/1997	32.0000	
Zinc (Zn)	CPRM003301	06/20/1997	33.4000	E
Zinc (Zn)	CPRM004501	06/04/1997	35.7000	
Zinc (Zn)	CPRM001401	06/24/1997	36.0000	E
Zinc (Zn)	CPRM003801	06/20/1997	36.2000	E
Zinc (Zn)	CPRM002001	06/16/1997	40.1000	E*
Zinc (Zn)	CPRN003101	06/25/1997	43.3000	E
Zinc (Zn)	CPRM002701	06/17/1997	49.2000	E*
Zinc (Zn)	CPRM004301	06/10/1997	50.3000	
Zinc (Zn)	CPRM003701	06/10/1997	50.8000	
Zinc (Zn)	CPRM004101	06/27/1997	52.1000	E
Zinc (Zn)	CPRM001501	06/16/1997	54.1000	E*
Zinc (Zn)	CPRM000401	06/16/1997	55.9000	E*
Zinc (Zn)	CPRM004001	06/17/1997	57.7000	E*
Zinc (Zn)	CPRM000501	06/03/1997	59.3000	
Zinc (Zn)	CPRM003901	06/04/1997	60.2000	
Zinc (Zn)	CPRM001701	06/19/1997	63.0000	E*
Zinc (Zn)	CPRM001101	06/04/1997	68.8000	
Zinc (Zn)	CPRN001101	06/04/1997	69.9000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Zinc (Zn)	CPRM000601	06/03/1997	82.3000	
Zinc (Zn)	CPRM000901	06/09/1997	87.9000	
Zinc (Zn)	CPRM004201	06/27/1997	91.4000	E
Zinc (Zn)	CPRM003601	06/04/1997	92.2000	
Zinc (Zn)	CPRM002501	06/09/1997	92.5000	
Zinc (Zn)	CPRM000101	06/09/1997	95.9000	
Zinc (Zn)	CPRM002101	06/09/1997	96.5000	
Zinc (Zn)	CPRM002201	06/09/1997	97.9000	
Zinc (Zn)	CPRM003001	06/04/1997	99.5000	
Zinc (Zn)	CPRM003201	06/05/1997	102.0000	
Zinc (Zn)	CPRM002901	06/03/1997	104.0000	
Zinc (Zn)	CPRM001801	06/03/1997	106.0000	
Zinc (Zn)	CPRM001601	06/03/1997	116.0000	
Zinc (Zn)	CPRM001301	06/09/1997	130.0000	
Zinc (Zn)	CPRM002401	06/05/1997	146.0000	
Zinc (Zn)	CPRN000901	06/09/1997	167.0000	
bis(2-Ethylhexyl)phthalate (BEHP)	CPRM003801	06/20/1997	55.0000	J
bis(2-Ethylhexyl)phthalate (BEHP)	CPRM004001	06/17/1997	87.0000	J
bis(2-Ethylhexyl)phthalate (BEHP)	CPRM000901	06/09/1997	140.0000	J
bis(2-Ethylhexyl)phthalate (BEHP)	CPRM000101	06/09/1997	150.0000	J
bis(2-Ethylhexyl)phthalate (BEHP)	CPRM000201	06/09/1997	1100.0000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
2,4-Dimethylphenol	NOIM000201	06/26/1997	1200.0000	
2-Butanone (MEK)	NOIM000401	06/09/1997	5.0000	J
2-Butanone (MEK)	NOIM000501	06/09/1997	5.0000	J
2-Butanone (MEK)	NOIM000101	06/26/1997	9.0000	J
2-Butanone (MEK)	NOIM000801	06/26/1997	13.0000	J
2-Butanone (MEK)	NOIM000901	06/26/1997	19.0000	J
2-Methylnaphthalene	NOIM000201	06/26/1997	1000.0000	
2-Methylphenol (o-Cresol)	NOIM000201	06/26/1997	4300.0000	
Acetone	NOIM000601	06/09/1997	18.0000	
Acetone	NOIM000701	06/26/1997	33.0000	B
Acetone	NOIM000201		48.0000	B
Acetone	NOIM000301	06/09/1997	55.0000	
Acetone	NOIM000401	06/09/1997	56.0000	
Acetone	NOIM000501	06/09/1997	56.0000	B
Acetone	NOIM000101	06/26/1997	91.0000	B
Acetone	NOIM000801	06/26/1997	130.0000	B
Acetone	NOIM000901	06/26/1997	190.0000	B
Acetone	NOIM001001	06/27/1997	350.0000	BE
Aluminum (Al)	NOIM000601	06/11/1997	1550.0000	
Aluminum (Al)	NOIM000301	06/11/1997	1870.0000	
Aluminum (Al)	NOIM001001	06/27/1997	3510.0000	
Aluminum (Al)	NOIM000401	06/11/1997	7830.0000	
Aluminum (Al)	NOIM000701	06/26/1997	8450.0000	
Aluminum (Al)	NOIM000101	06/26/1997	9760.0000	
Aluminum (Al)	NOIM000901	06/26/1997	12800.0000	
Aluminum (Al)	NOIM000501	06/11/1997	20600.0000	
Aluminum (Al)	NOIM000801	06/26/1997	24300.0000	
Aluminum (Al)	NOIM000201	06/26/1997	28900.0000	
Anthracene	NOIM000401	06/09/1997	610.0000	
Antimony (Sb)	NOIM000401	06/11/1997	1.1000	BN
Aroclor-1260	NOIM000301	06/11/1997	123.0000	
Arsenic (As)	NOIM000601	06/11/1997	1.8000	B
Arsenic (As)	NOIM000301	06/11/1997	4.5000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Arsenic (As)	NOIM001001	06/27/1997	5.3000	
Arsenic (As)	NOIM000901	06/26/1997	7.5000	B
Arsenic (As)	NOIM000401	06/11/1997	10.7000	
Arsenic (As)	NOIM000501	06/11/1997	14.5000	
Arsenic (As)	NOIM000101	06/26/1997	14.6000	
Arsenic (As)	NOIM000701	06/26/1997	14.7000	
Arsenic (As)	NOIM000201	06/26/1997	19.9000	
Arsenic (As)	NOIM000801	06/26/1997	19.9000	
Barium (Ba)	NOIM000601	06/11/1997	3.2000	B
Barium (Ba)	NOIM001001	06/27/1997	5.1000	B
Barium (Ba)	NOIM000301	06/11/1997	7.9000	B
Barium (Ba)	NOIM000701	06/26/1997	14.4000	B
Barium (Ba)	NOIM000901	06/26/1997	18.6000	B
Barium (Ba)	NOIM000501	06/11/1997	23.7000	B
Barium (Ba)	NOIM000101	06/26/1997	24.5000	B
Barium (Ba)	NOIM000801	06/26/1997	27.9000	B
Barium (Ba)	NOIM000201	06/26/1997	32.7000	B
Barium (Ba)	NOIM000401	06/11/1997	44.4000	B
Benzo(a)anthracene	NOIM000301	06/09/1997	61.0000	J
Benzo(a)anthracene	NOIM000601	06/09/1997	100.0000	J
Benzo(a)anthracene	NOIM000501	06/09/1997	170.0000	J
Benzo(a)anthracene	NOIM000401	06/09/1997	1000.0000	
Benzo(a)pyrene	NOIM000301	06/09/1997	65.0000	J
Benzo(a)pyrene	NOIM000601	06/09/1997	65.0000	J
Benzo(a)pyrene	NOIM000501	06/09/1997	230.0000	J
Benzo(a)pyrene	NOIM000401	06/09/1997	990.0000	
Benzo(b)fluoranthene	NOIM000601	06/09/1997	96.0000	J
Benzo(b)fluoranthene	NOIM000301	06/09/1997	110.0000	J
Benzo(b)fluoranthene	NOIM000501	06/09/1997	250.0000	J
Benzo(b)fluoranthene	NOIM000401	06/09/1997	1200.0000	
Benzo(g,h,i)perylene	NOIM000401	06/09/1997	210.0000	J
Benzo(k)fluoranthene	NOIM000501	06/09/1997	190.0000	J
Benzo(k)fluoranthene	NOIM000401	06/09/1997	760.0000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Beryllium (Be)	NOIM000601	06/11/1997	0.0700	B
Beryllium (Be)	NOIM000301	06/11/1997	0.1600	B
Beryllium (Be)	NOIM001001	06/27/1997	0.1800	B
Beryllium (Be)	NOIM000901	06/26/1997	0.2600	B
Beryllium (Be)	NOIM000701	06/26/1997	0.6900	B
Beryllium (Be)	NOIM000501	06/11/1997	0.8400	B
Beryllium (Be)	NOIM000101	06/26/1997	0.9400	B
Beryllium (Be)	NOIM000801	06/26/1997	1.1000	B
Beryllium (Be)	NOIM000201	06/26/1997	1.3000	B
Beryllium (Be)	NOIM000401	06/11/1997	1.9000	
Cadmium (Cd)	NOIM000601	06/11/1997	0.0600	B
Cadmium (Cd)	NOIM001001	06/27/1997	0.1000	B
Cadmium (Cd)	NOIM000301	06/11/1997	0.1300	B
Cadmium (Cd)	NOIM000701	06/26/1997	0.2600	B
Cadmium (Cd)	NOIM000101	06/26/1997	0.2900	B
Cadmium (Cd)	NOIM000901	06/26/1997	0.3600	B
Cadmium (Cd)	NOIM000801	06/26/1997	0.4000	B
Cadmium (Cd)	NOIM000401	06/11/1997	0.4500	B
Cadmium (Cd)	NOIM000501	06/11/1997	0.5100	B
Cadmium (Cd)	NOIM000201	06/26/1997	0.8200	B
Calcium (Ca)	NOIM000601	06/11/1997	2340.0000	
Calcium (Ca)	NOIM000201	06/26/1997	2890.0000	
Calcium (Ca)	NOIM000801	06/26/1997	3060.0000	B
Calcium (Ca)	NOIM000101	06/26/1997	3240.0000	
Calcium (Ca)	NOIM000301	06/11/1997	3750.0000	
Calcium (Ca)	NOIM000901	06/26/1997	4040.0000	B
Calcium (Ca)	NOIM000501	06/11/1997	12300.0000	
Calcium (Ca)	NOIM000701	06/26/1997	13400.0000	
Calcium (Ca)	NOIM001001	06/27/1997	19900.0000	
Calcium (Ca)	NOIM000401	06/11/1997	51200.0000	
Carbon disulfide	NOIM000401	06/09/1997	10.0000	
Carbon disulfide	NOIM000501	06/09/1997	13.0000	
Carbon disulfide	NOIM000201		24.0000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Carbon disulfide	NOIM000701	06/26/1997	27.0000	
Carbon disulfide	NOIM000101	06/26/1997	28.0000	
Carbon disulfide	NOIM000801	06/26/1997	31.0000	
Carbon disulfide	NOIM000901	06/26/1997	52.0000	
Cation Exchange Capacity	NOIM000601	06/11/1997	3.5000	
Cation Exchange Capacity	NOIM000301	06/11/1997	9.2000	
Cation Exchange Capacity	NOIM000401	06/11/1997	24.3000	
Cation Exchange Capacity	NOIM001001	06/27/1997	30.1000	
Cation Exchange Capacity	NOIM000701	06/26/1997	54.0000	
Cation Exchange Capacity	NOIM000501	06/11/1997	77.3000	
Cation Exchange Capacity	NOIM000101	06/26/1997	79.1000	
Cation Exchange Capacity	NOIM000801	06/26/1997	108.0000	
Cation Exchange Capacity	NOIM000201	06/26/1997	109.0000	
Cation Exchange Capacity	NOIM000901	06/26/1997	160.0000	
Chromium (Cr)	NOIM000601	06/11/1997	4.1000	
Chromium (Cr)	NOIM000301	06/11/1997	7.0000	
Chromium (Cr)	NOIM001001	06/27/1997	9.2000	E
Chromium (Cr)	NOIM000701	06/26/1997	21.0000	E
Chromium (Cr)	NOIM000901	06/26/1997	22.8000	E
Chromium (Cr)	NOIM000401	06/11/1997	25.3000	
Chromium (Cr)	NOIM000101	06/26/1997	26.3000	E
Chromium (Cr)	NOIM000501	06/11/1997	32.3000	
Chromium (Cr)	NOIM000801	06/26/1997	47.4000	E
Chromium (Cr)	NOIM000201	06/26/1997	54.9000	E
Chrysene	NOIM000301	06/09/1997	70.0000	J
Chrysene	NOIM000601	06/09/1997	72.0000	J
Chrysene	NOIM000501	06/09/1997	190.0000	J
Chrysene	NOIM000401	06/09/1997	1500.0000	
Cobalt (Co)	NOIM000601	06/11/1997	0.6900	B
Cobalt (Co)	NOIM001001	06/27/1997	1.2000	B
Cobalt (Co)	NOIM000301	06/11/1997	1.3000	B
Cobalt (Co)	NOIM000901	06/26/1997	2.2000	B
Cobalt (Co)	NOIM000101	06/26/1997	4.2000	B

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Cobalt (Co)	NOIM000701	06/26/1997	4.3000	B
Cobalt (Co)	NOIM000501	06/11/1997	5.3000	B
Cobalt (Co)	NOIM000801	06/26/1997	5.8000	B
Cobalt (Co)	NOIM000201	06/26/1997	7.5000	B
Cobalt (Co)	NOIM000401	06/11/1997	10.6000	B
Copper (Cu)	NOIM000601	06/11/1997	4.1000	B
Copper (Cu)	NOIM001001	06/27/1997	7.5000	
Copper (Cu)	NOIM000101	06/26/1997	14.7000	
Copper (Cu)	NOIM000301	06/11/1997	15.6000	
Copper (Cu)	NOIM000701	06/26/1997	16.3000	
Copper (Cu)	NOIM000501	06/11/1997	23.2000	
Copper (Cu)	NOIM000801	06/26/1997	27.9000	
Copper (Cu)	NOIM000901	06/26/1997	31.0000	
Copper (Cu)	NOIM000201	06/26/1997	36.3000	
Copper (Cu)	NOIM000401	06/11/1997	127.0000	
Dibenz(a,h)anthracene	NOIM000401	06/09/1997	150.0000	J
Diethylphthalate	NOIM001001	06/27/1997	500.0000	
Diethylphthalate	NOIM000201	06/26/1997	960.0000	
Diethylphthalate	NOIM000101	06/26/1997	1400.0000	
Fluoranthene	NOIM001001	06/27/1997	100.0000	J
Fluoranthene	NOIM000301	06/09/1997	120.0000	J
Fluoranthene	NOIM000601	06/09/1997	180.0000	J
Fluoranthene	NOIM000501	06/09/1997	750.0000	J
Fluoranthene	NOIM000401	06/09/1997	1500.0000	
Indeno(1,2,3-cd)pyrene	NOIM000401	06/09/1997	270.0000	J
Iron (Fe)	NOIM000601	06/11/1997	1810.0000	
Iron (Fe)	NOIM000301	06/11/1997	3940.0000	
Iron (Fe)	NOIM001001	06/27/1997	6620.0000	
Iron (Fe)	NOIM000901	06/26/1997	14600.0000	
Iron (Fe)	NOIM000401	06/11/1997	19200.0000	
Iron (Fe)	NOIM000701	06/26/1997	19600.0000	
Iron (Fe)	NOIM000101	06/26/1997	22800.0000	
Iron (Fe)	NOIM000501	06/11/1997	22800.0000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Iron (Fe)	NOIM000201	06/26/1997	30400.0000	
Iron (Fe)	NOIM000801	06/26/1997	31700.0000	
Lead (Pb)	NOIM000601	06/11/1997	6.8000	
Lead (Pb)	NOIM001001	06/27/1997	9.4000	
Lead (Pb)	NOIM000301	06/11/1997	16.3000	
Lead (Pb)	NOIM000101	06/26/1997	18.5000	
Lead (Pb)	NOIM000701	06/26/1997	21.5000	
Lead (Pb)	NOIM000501	06/11/1997	32.3000	
Lead (Pb)	NOIM000201	06/26/1997	39.9000	
Lead (Pb)	NOIM000801	06/26/1997	59.1000	
Lead (Pb)	NOIM000901	06/26/1997	62.6000	
Lead (Pb)	NOIM000401	06/11/1997	126.0000	
Magnesium (Mg)	NOIM000601	06/11/1997	538.0000	B
Magnesium (Mg)	NOIM000301	06/11/1997	1110.0000	B
Magnesium (Mg)	NOIM001001	06/27/1997	1410.0000	B
Magnesium (Mg)	NOIM000401	06/11/1997	2400.0000	
Magnesium (Mg)	NOIM000701	06/26/1997	3780.0000	
Magnesium (Mg)	NOIM000501	06/11/1997	4520.0000	
Magnesium (Mg)	NOIM000101	06/26/1997	5330.0000	
Magnesium (Mg)	NOIM000801	06/26/1997	6160.0000	
Magnesium (Mg)	NOIM000201	06/26/1997	6220.0000	
Magnesium (Mg)	NOIM000901	06/26/1997	6400.0000	
Manganese (Mn)	NOIM000601	06/11/1997	11.3000	
Manganese (Mn)	NOIM000301	06/11/1997	18.5000	
Manganese (Mn)	NOIM001001	06/27/1997	32.4000	
Manganese (Mn)	NOIM000901	06/26/1997	113.0000	
Manganese (Mn)	NOIM000401	06/11/1997	140.0000	
Manganese (Mn)	NOIM000701	06/26/1997	167.0000	
Manganese (Mn)	NOIM000201	06/26/1997	181.0000	
Manganese (Mn)	NOIM000801	06/26/1997	194.0000	
Manganese (Mn)	NOIM000101	06/26/1997	202.0000	
Manganese (Mn)	NOIM000501	06/11/1997	233.0000	
Mercury (Hg)	NOIM000701	06/26/1997	0.1300	

NAVAL BASE CHARLESTON
RESTORATION ADVISORY BOARD (RAB)
Minutes of 11 February 1997

LIVE OAK COMMUNITY CENTER, 2012 SUCCESS ST., N. CHARLESTON

1. Introduction of the RAB Members and Guests

Mr. Daryle Fontenot, Navy Co-chair opened the meeting at 6:00 p.m. and welcomed everyone. He pointed out that this is the second month in a row that the meeting is being held in the Success Street location. Last month, community attendance was very good and he hopes that it will continue that way.

2. RAB Members Attending

Mr. Oliver Addison
Mr. Jay Bassett
Mr. Steve Best
Mr. James Conner
Mr. Bobby Dearhart
Mr. Daryle Fontenot
Mr. Tom Fressilli
Mr. Wilburn Gilliard

Ms. Gussie Greene
Mr. Donald Harbert
Ms. Jeri Johnson
Ms. Wannetta Mallette
Mr. Lou Mintz
Mr. Arthur Pinckney
Ms. Ann Ragan
LDCR Paul Rose

3. Guests Attending

Mr. Tony Hunt	NAVFAC, SouthDiv
Mr. Brian Stockmaster	NAVFAC, SouthDiv
Mr. Gabriel Magwood	NAVFAC, SouthDiv
Ms. Thuane Fielding	NAVFAC, SouthDiv
Mr. Paul M. Bergstrand	SCDHEC
Mr. Johnny Tapia	SCDHEC
Ms. June Mirecki	College of Charleston
Mr. J.B. Lawrence	CEERD
Mr. J. Michael Reubish	CEERD
Ms. Myrtle Barnett	Community Member
Mr. Leroy Carr	Chicora/Cherokee
Ms. Susan B. Richards	League of Women Voters
Mr. Jim Campbell	Grassroots Coalition
Ms. Susan Dunn	Grassroots Coalition
Mr. Fairfield P. Day	Naval Weapons Station RAB
Ms. Mary Ward	Community Member
Mr. Moe Byras	Community Member
Ms. Diane Cutler	EnSafe/Allen&Hoshall
Mr. Todd Haverkost	EnSafe/Allen&Hoshall
Mr. Larry Bowers	EnSafe/Allen&Hoshall
Mr. Peter McPheters	EnSafe/Allen&Hoshall
Dr. Jim Speakman	EnSafe/Allen&Hoshall

4. Administrative Remarks and Comments on Minutes

Mr. Fontenot asked for administrative remarks or comments on the minutes from the last meeting. Mr. Bobby Dearhart responded that on page seven of the January minutes he would like to see it clarified that only options one and three are being considered by the Navy for the Chicora Tank Farm cleanup. Corrections will be made in the final minutes.

5. Subcommittee Reports

The only subcommittee that met or had news to report was the Community Relations Subcommittee.

The Community Relations Subcommittee met prior to the RAB meeting. Future fact sheets were discussed. One topic may include answering questions about OSHA and the RCRA process - specific questions still need to be collected. Another fact sheet will include the presentation of results for Zones A, B, C, and I in a manner similar to that used for Zone H in Fact Sheet #6. A third fact sheet under consideration is one on property transfer.

The issue of attendance was also discussed in the subcommittee meeting. Mr. Fontenot urged each member to distribute the meeting flyers they receive in the mail to neighbors, friends and colleagues. He suggested that the RAB should be more proactive in getting the word out rather than depending on the media. Ms. Wannetta Mallette stated that for the last two months the flyers weren't getting to her until two or three days before the meeting. She added that she would like to get the flyers three weeks prior to the meeting if possible. Mr. Don Harbert added that it would be ideal if they could be distributed at the prior month's meeting. Mr. Fontenot explained that the minutes take about two weeks to compile and distribute, and that he includes the flyers with the minutes to consolidate mailings. Also, the RAB often doesn't know where the next meeting will be held a month in advance. Mr. Oliver Addison added that he would like to get the flyer at least one week in advance.

Mr. Lou Mintz asked why individual introductions weren't made. Mr. Fontenot replied that he was not aware of first time guests in the audience, but asked that if there were any, for them to stand up and introduce themselves. First time guests included Fairfield Day - newly elected Co-chair of the Naval Weapons Station RAB; Susan Richards - League of Women Voters; and Jim Campbell with the Charleston Branch NAACP and Grassroots Coalition.

Another issue discussed in the Community Relations Subcommittee was the possibility of doing something for Earth Day. Mr. Fontenot wanted to get feedback from the RAB as a whole to see if they think this is a good idea. Ms. Mallette asked the date of Earth Day. Mr. Fontenot didn't know the exact date but that it is in April. Mr. Fontenot suggested that offering a tour could be a possibility. Mr. Fontenot said that he would need to do some coordinating and could use some help if anything was going to be planned. Mr. Harbert said that he didn't know whether or not it was a good idea or what constituency to contact to determine if there is any interest. Mr. Addison said there was nothing wrong with offering the tour and advertising it, but was unsure how many people would actually come out. Ms. Mallette suggested that the tour could serve in lieu of the April meeting. It could be held in the evening since most people probably wouldn't

take the day off to tour. Mr. Fontenot said he would continue to look into it and report back at the next meeting.

The Community Relations Subcommittee will be meeting again next month on March 11 from 3:30 - 4:30 at the Caretaker Site Office on the base. Mr. Dearhart asked if the other subcommittees are still active. Mr. Fontenot said that he did not know the status of the other subcommittees; that they are responsible for meeting and reporting back to the RAB when they have something to share.

6. Reuse Update

Ms. Jeri Johnson provided the reuse update. The RDA has had two regular meetings since the last update. At the January meeting, Fluor Daniels Consulting provided a presentation to the RDA. Fluor Daniels is the Firm that the RDA selected to do the business plan in support of an economic development conveyance for the base. The plan is underway and it is expected to be six to eight months before the plan is completed.

The RDA has also been notified that they have a \$243,000 grant from the DOD Office of Economic Adjustment (OEA) to further study the condition of the infrastructure on base. They had previously funded a very cursory assessment and have come back and identified additional funds provided the RDA come up with an equal match. RDA has been trying to come up with a match through rental revenues for about 10 months, and finally have enough leases signed where they have a 100% match which gives the RDA \$486,000 to do additional studies on water, sewer, and storm water systems. Since Fluor Daniels is in the process of appraising the base -- and infrastructure is such a big component of the cost of operating the base -- the RDA would fold the study funds into the business plan. The RDA originally selected Davis and Floyd to actually perform the infrastructure studies. So now, Davis and Floyd will be a subcontractor to Fluor Daniel. It will probably be about an eight month effort to produce the plan. The idea of folding the study into the plan was approved at the January meeting.

The RDA also approved awarding to Davis and Floyd the design of an EDA grant that they received last year. The grant is a \$1.8 million dollar grant to upgrade water and sewer systems in the shipyard industrial area.

At the meeting in February, the RDA consented to a secondary sub-lease. The RDA leases from the Navy and then subleases to their tenants. In turn, if the tenants sublease to tenants, this is called a secondary sublease which requires the RDA's and Navy's approval. The RDA consented to a secondary sublease between Charleston Shipbuilders - which has a major portion of the waterfront, where they convert excess Navy ships into powerplants - and Charleston Marine Handling. Charleston Marine Handling is in the business of shipping chickens and other things to Russia out of building 193 which is the cold storage facility on base. So now the RDA has a tenant in the cold storage building. They will also be able to use pier Zulu for their cargo comings and goings.

Mr. Mintz asked if Charleston Marine Handling was already in operation. Ms. Johnson answered yes, that they were previously operating under license which is temporary. The RDA has

numerous licenses until the FOSL process can be complete, and are now in the process of converting those licenses into leases. The RDA also approved an amendment to the Charleston Marine Manufacturing Corporation (which is the other large waterfront tenant) to lease a part of the former SIMA complex which is the Ship Intermediate Maintenance Area at the south end of the base. The Coast Guard has taken over half of the area, but now the other half will be leased to Dick Gregory and CMMC for use in their foreign military sales contract where they bring in foreign ships and train the crews. Part of that lease is also for Piers S, T, and U, the last three short piers. They are also leasing building 686 which is part of a submarine training facility, and building 1141 - the security building at the gate- although they have been using it under a license for a long time. CMMC also had a license approved to lease two family housing units near where the COMNAVBASE used to be, near the hospital. In March, one of those units will be released to a group called the One Hundred Black Men of Charleston which is part of a national organization, One Hundred Black Men of America. They do counseling for young men and needed a headquarters.

Finally, the RDA has requested authority to contract a firm in Columbia for environmental assistance advice to help them out on environmental issues on an as-needed basis.

Ms. Johnson also pointed out that she provided a Tenant Summary which includes a listing of how many shipyard workers are employed, as requested in a previous RAB meeting. The RDA has added a column entitled Ex-base Workers that is their best estimate of how many ex-base workers have been employed by the various tenants on base. It's just a best guess because there are no requirements that the tenants maintain that information. Mr. Arthur Pinckney asked for clarification on the total number - that number is 1,004.

Mr. Pinckney also asked if the 100% matching on the previously discussed grant is standard procedure. Ms. Johnson responded that it is - in almost every case, the "loaded match" may be 50% or up to 100%. For the OEA grant, an equal amount in local matching was required. In the case of the EDA grant, they gave 100% of money and didn't require a match - which is virtually unheard of. The reason for that, however, was because last summer when the RDA applied, they had no money to match with. This summer, the RDA will apply for another EDA grant, and will probably be required to match some portion because now they do have some revenue. Mr. Pinckney asked if the RDA owns any property yet. Ms. Johnson's response was that they do not own anything yet.

LCDR Paul Rose added for clarification that the grants the RDA is pursuing is for redevelopment efforts, not for cleanup. Cleanup is still the Navy's responsibility. Mr. Pinckney continued that he was unclear why the RDA is paying for infrastructure improvements on the Navy's property. LCDR Rose replied that the RDA is positioning themselves to bring in more clients to redevelop the base.

Ms. Susan Dunn asked what the deal is with the McKinney Act leases. Ms. Johnson replied that the RDA is waiting for them to sign. It's a long process. The McKinney Act folks seem to be on track and happy with what they're getting.

A guest asked if the RDA had collected the State tax money that was discussed in previous RDA updates. The bill called the Enterprise Zone Act was passed which entitles the RDA to almost all of the State tax generated by federal employees on the base, starting January 1997. The way the law works, however, is that the RDA has to apply for those dollars after the first quarter of the tax year. The revenue coming from the tax helped the RDA assure OEA that they have the ability to match their funds.

Ms. June Mirecki asked about the property the College of Charleston is leasing. The College of Charleston has indicated an interest in the child care center and a lease is being negotiated. The building is located directly behind where the RDA is currently located, which is the former Navy Hospital.

Mr. Pinckney asked about the Chicora Tank Farm. Ms. Johnson stated that it is on the Agenda of the N. Charleston subcommittee on Public Safety which is meeting tonight. Ms. Gussie Greene relayed that Mr. Ray Anderson, Assistant to the Mayor said that the City of North Charleston will be meeting with the School Board. Mr. Fontenot said he heard that the City of North Charleston does not want the property. Ms. Johnson said that the RDA has not heard that.

A guest from the audience asked that for secondary subleases, does the RDA have any input on what is charged. Ms. Johnson answered yes. The money can either come through the major tenant as part of what they pay the RDA, or could go directly to the RDA. Right now it's being handled on a case-by-case basis. Either way, the RDA gets their cut of the revenue. The guest followed up by referencing a newspaper article that said DHEC was paying \$198,000 for one floor of a building, and CMMC was paying less than that for the CIA area. Ms. Johnson verified that the information was correct, that DHEC is paying close to market rate for their facility, and CMMC's rate was structured so they don't pay any rent for the first year, a minimum amount the second year, and on the third year they begin by paying a percentage of their gross revenue. In light of these differences, the RDA is structuring their secondary subleases so that the revenue comes directly to the RDA, and not to the prime tenant. The bottom line is that the RDA maintains a system so that the tenants can't make money off of the sublease.

Mr. Fontenot stated that in order to have time for the environmental issues, if there are any more questions regarding reuse issues to talk to Ms. Johnson after the meeting.

7. Environmental Cleanup Progress Report

Project Status

Mr. Fontenot provided the update on BRAC property lease and transfer, NEPA, underground storage tanks, and asbestos projects. Two property leases and one transfer have been completed. The transfers include 231 facilities at the naval base and 19 facilities at the annex. Findings of Suitability to Lease (FOSLs) have been signed and those buildings are now available for reuse. Also, the transfer of Clouter Island to the Corps of Engineers has been completed. It was a federal to federal transfer.

Under NEPA, the Navy is waiting for the reuse plan from the Redevelopment Authority that is currently under way. The reuse plan should be complete in about a month or so. It will be used

to complete the environmental assessment of the Naval Annex property which was not included in the original environmental impact statement of the Naval Base.

Underground Storage Tanks: To date, there have been over 80 tanks that have been removed from the base by the Detachment.

Asbestos: The major asbestos project is building 32 remediation which is in progress and is also being conducted by the Detachment.

RCRA Facility Investigation Progress Report

Mr. Fontenot introduced Mr. Tony Hunt with Southern Division to present the RCRA Facility Investigation (RFI) update.

Funding: Mr. Hunt said that hopefully next month he'll be able to announce that all funding issues are resolved. Zone J field work will be awarded this month, and Zone L field work should be negotiated on Thursday.

In January, the Navy submitted the Draft Comprehensive CMS Work Plan. The CMS is the Corrective Measures Study that was discussed at the last RAB meeting. The Work Plan will cover some of the methods that will be used for the tests that will be run, and how to evaluate the factors that Larry Bowers discussed in his talk last month.

The RFI at SWMU 39 was tentatively completed with the installation of six additional monitoring wells and collection of sediment and surface water samples from the marsh area southwest of the site. Mr. Hunt said that the data he had hoped would be available by this meeting is still being analyzed. Within the same area at the northern end of the base, at SWMU 2, soil sampling was completed.

The Zone B RFI report was approved by SCDHEC on January 8, 1997. Zone B is the area where the golf course is, as well as most of the housing.

The 60% progress meeting was held for Zone K, the non-contiguous area of the base.

Activities projected for February include scoping Zones B and H for the Corrective Measures Study, conducting the pre-submittal review of the Zone D RFI Report, and holding the 90% progress meetings for Zones F, G, and K.

Mr. Hunt provided an update on two sites in Zone F and one site in Zone G and showed a map to illustrate the location of the sites. The first site is Area of Concern (AOC) 607, (building 1189), which was used as a dry-cleaner for the Navy for a number of years. It was closed in the late 70's or early 80's so it hasn't been used in some time. The Navy was not sure of any releases from this building, but this type of facility typically has problems, so the Navy decided to investigate. Sampling was done in the "footprint" of the building and around some of the edges. Constituents that are found in the dry-cleaning process were detected. One such constituent is tetrachloroethene which was found in shallow groundwater. As a result, the Navy expanded their

sampling out a little further into both the soil and shallow groundwater to determine the extent of the contamination. The groundwater in the area is in layers. There are confining units that separate the upper aquifer from the lower aquifer, so wells had to be installed at varying depths. It was determined that at this site, there is contaminated groundwater, but it is localized. It doesn't appear to be migrating anywhere given the flow direction. It is not posing any problems to an off-base site, and is restricted to the naval base.

Mr. Pinckney asked for clarification about the water contamination. Mr. Hunt clarified that contamination is in the shallow groundwater on the Navy base, but it is not migrating off-base. It is fairly well restricted to the area around the building.

Mr. Mintz asked if Mr. Hunt was saying that the groundwater doesn't move. Mr. Hunt replied that was not what he was saying, and emphasized that they have not found any indication of groundwater contamination beyond the wells. Mr. Fontenot added that groundwater on the navy property moves very slowly, something like inches in a year. In seventeen years, that might come out to seventeen inches. The conditions of the soil are not conducive to the groundwater flowing fast. There is flat topography, and a low hydraulic gradient, and it is not unusual to see something immobile. Ms. Mirecki from the College of Charleston added that the chemical tetrachloroethene "sticks" onto sediments, so even though the groundwater may be moving, it sticks with the soil instead of moving with the water.

Mr. Pinckney asked how do you get the chemical out of the water and soil. Mr. Hunt replied that that is the next step - studying the best alternatives. Right now the Navy is in the investigative stages. After that, remedial alternatives will be evaluated. Mr Pinckney asked if the RDA is able to lease that parcel. Mr. Fontenot replied that the condition of that parcel is not holding up any leases.

The next site is SWMU 36 - the old battery shop. There were several large tanks inside that historically stored sulfuric acid and battery electrolytes. There was a high probability of lead contamination. The Navy was aware of one release that occurred. The interior of the building had a lot of cracks, and its condition was deteriorated. Borings were set through the floor and the results found high levels of lead in borings number 1 and 4. The Navy is planning on installing a well and borings to determine the extent of migration.

The last site is SWMU 11 which is the old caustic pond. Approximately 20 - 30 years ago there was a gas plant that was located in the vicinity that generated acetylene. A by-product of acetylene is calcium hydroxide. All that is remaining at that site now are two grass fields and a parking lot. The calcium hydroxide solute was discharged into the ponds and allowed it to settle and dehydrate. As a result, the sediment accumulated, and was presumably, eventually just covered over. Calcium hydroxide itself is not hazardous, but when mixed with water it creates a high pH that can be damaging to ecosystems. The intent of the Navy's sampling efforts was to see where the sediment was, if it still exists, and to look at the water quality in that area. Elevated pH was found in a few samples including a sediment sample in a drainage area which is a concern because it may be a pathway to the wetlands.

Interim Measures

Mr. Brian Stockmaster provided an update on the status of Interim Measures. Field work has been completed, and the final report has been published for SWMU 54 - the abrasive blast grit area, and SWMU 44 - the coal yard. Field work has been completed, and the report is being finalized for AOC 653, the auto hobby shop. Final Interim Measures reports are available for review in the Dorchester Road Branch of the Charleston County Library.

Another Interim Measure that has been completed is SWMU 59 which was a former storage area near the commissary. Field work has been completed and the report is being drafted.

At AOC 626, the viaduct gate fuel-line, when they dug up the pipe they found that some of the pipe still had oil in it, so it was a likely source of some of the oil the Navy had discovered in that area. They removed the pipe and put in a collection system. One had previously been there, but they improved upon it. The Navy will be monitoring it to see if they are getting any fuel, but Mr. Stockmaster said he feels confident that they have removed the source when they removed the pipe.

They have also just recently started SWMU 8 which is the oil sludge pits and are in the process of digging them up and have found deposits of oil sludge and debris.

AOC 503 is just being finished up. It is the site where two unexploded ordnance (UXO) were dropped. A ten acre area has been searched and eight targets were found where the Navy investigated. The bombs were not found in any of those eight areas.

AOC 574 is an above-ground storage tank with petroleum contamination under it. The tank has been removed and the Navy has completed about 75% of the remediation of the impacted soil.

At the Foundry, Building 9 (SWMU 83) work has been completed and at SWMU 25, the old plating shop annex, they are demolishing the annex portion of the building.

RCRA Facility Investigation Progress Update

Mr. Fontenot pointed out that a RCRA Facility Investigation progress update was provided as one of the handouts. It provides an update on the percentage of the investigation that is complete for each zone. It also tells what phase of the Corrective Measures process each zone is in.

Corrective Measures Study Exercise Report

Ms. Ann Ragan reviewed the criteria that the RAB members and guests ranked at the last meeting regarding the importance of corrective measures criteria. The results are tabulated in the following table.

CMS CRITERIA RANKING - RESULTS FROM 1/14/97 RAB MEETING		
Criteria	Number of Votes	% of Votes
Protect Human Health and the Environment	57	31
Attain Cleanup Standards	25	14
Long-term Reliability and Effectiveness	20	11
Cost	20	11
Control Source of Release	18	10
Implementability	17	9
Comply With All Applicable Standards	12	7
Reduction of Toxicity, Mobility, and Volume	9	5
Short-term Effectiveness	4	2
Total	182	100

8. Remaining Questions and Comments

Mr. Fontenot reported that Mr. Bob Veronee called in earlier to say that he was home sick and would not be able to attend the RAB meeting, and that Mr. Laney had another commitment. Mr. Fontenot asked that if RAB members will be absent, to please call him so he can pass that information to the rest of the members.

Mr. Pinckney asked when the two sets of questions he had previously submitted would be answered. Mr. Dearhart has a copy of those questions and said he will make copies and provide them to Mr. Fontenot.

The question of how many facilities there are on base was raised. There are approximately a little over 900 facilities on base. The 700 facilities for which FOSLs have been signed comprise about 95% of the useable buildings on base.

Ms. Mirecki pointed out that one of the action items from last month's meeting was to look into getting someone to talk about environmental justice issues. Mr. Fontenot replied that he has contacted the Public Affairs Officer who is working on arranging something. Ms. Mirecki offered two speakers. Mr. Fontenot said he appreciated the recommendation, but at this time are trying to get someone within the Navy, but will get the information from Ms. Mirecki after the meeting.

Ms. Susan Dunn stated that the newspaper has been giving press to the possibility for a new use plan for the very southern tip of the base. The original plan showed that as being a park. Ms. Johnson responded that the reuse of the southern end of the base is as it was approved by the

Record of Decision last year which is for industrial use and marine industry, and that hasn't changed.

Mr. Fontenot polled the group to see if they want to continue meeting at this location. Ms. Johnson responded that it is a good location, but offered a large, comfortable conference room at the RDA on base that is also available. Ms. Mallette posed the question to the community members present. The consensus was that they continue having meetings off-base at the Success Street location.

Mr. Fontenot also announced that one of the RAB members, Ms. Wannetta Mallette just received her Masters degree from Rutgers University and that congratulations are in order. The RAB members and guests shared in their congratulations with a round of applause.

9. Adjournment

Meeting was adjourned at 7:10 p.m.

Summary of Action Item

- Mr. Fontenot will look into the feasibility of Earth Day tours on base.
- Mr. Dearhart will provide Mr. Fontenot with the two sets of Mr. Pinckney's questions so they can be addressed.

Attachments to Minutes

- (1) Tuesday January 14, 1996 RAB Meeting Agenda
- (2) Charleston Naval Complex Tenant Summary - 2/10/97
- (3) RFI Progress Report for December 1996
- (4) RCRA Facility Investigation Progress Update

Minutes recorded by: Diane Cutler, EnSafe/Allen&Hoshall

Minutes approved by: _____

Daryle Fontenot
Navy Co-Chair

Wannetta Mallette
Community Co-Chair

Tuesday, February 11, 1997

Charleston Naval Complex

RESTORATION ADVISORY BOARD MEETING AGENDA

6:00 P.M. Location: *Live Oak Community Center*
2012 Success Street, North Charleston, SC

6:00 P.M. RAB MEETING

- A. Introduction of the RAB Members and Guests
- B. Administrative Remarks, comments on the minutes of the last meeting
- C. Subcommittee Reports
- D. Reuse Update
- E. Environmental Cleanup Progress Report - Cleanup Team
 - Status of the Environmental Programs
 - Corrective Measures Study Exercise Report - Ann Ragan
- F. Remaining Questions and Comments from RAB Members and Visitors
- G. Agenda for next meeting.

RAB Members, Project Team, and interested citizens informally talk about what's going on after the meeting from 7:00 p.m. to 8:00 p.m.

Please mark your calendar. Our next meeting is **Tuesday, March 11, 1997**. Time and location to be determined.

----- CURRENT FACILITIES/EMPLOYMENT -----

----- ULTIMATE FACILITIES/EMPLOYMENT -----

DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES	EX-BASE WORKERS
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DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES	EX-BASE WORKERS
-----------	-------	-----------	-----------	------------------	-----------	-----------------

CURRENT TENANTS/SUB-TENANTS

ALLIED TECHNOLOGY	0	0	0	1	8,553	21	0
BABCOCK & WILCOX	0	0	0	2	175,992	1	1
TBD ELECTRICAL CONTRACTORS	0	0	0	0	0	4	4
CHARLESTON COUNTY PRC	0	2	0	2	6,087	4	0
CHARLESTON COUNTY SCHOOL DISTRICT	0	0	2	1	41,196	43	0
CHARLESTON GRIP & ELECTRIC	0	0	0	1	12,480	12	0
CHARLESTON MARINE CONTAINERS, INC.	0	0	1	6	326,598	4	2
CHARLESTON MARINE MANUF. CORP	3	5	17	50	1,067,602	536	124
APPLIED TECHNOLOGY SERVICES	0	0	0	0	0	5	4
BECKLEY ENGINEERING	0	0	0	0	0	1	0
CHOPLIN PREDICTIVE MAINTENANCE	0	0	0	0	0	1	1
EXCEL APPARATUS SERVICES, INC.	0	0	0	0	0	35	2
NATIVE SOILS, INC.	0	0	0	0	0	6	0
SHIPTECH	0	0	0	0	0	15	6
STATE BOARD FOR TECH & COMP ED	0	0	0	0	0	7	3
TIDEWATER TEMPORARY SERVICES	0	0	0	0	0	25	4
CHARLESTON SHIPBUILDERS, INC.	2	3	2	28	388,515	45	10
CAROLINA MARINE HANDLING	0	0	0	0	0	44	16
EARTH SCIENCES	0	0	0	0	0	1	1
RICHARDS MARINE SERVICES	0	0	0	0	0	5	0
COMPOSITE PRODUCTS COMPANY, INC.	0	0	0	1	17,172	2	0
DEPT OF HEALTH & ENV. CONTROL (B/400)	0	0	0	1	32,364	54	0
FOX ASSOCIATES	0	0	0	1	4,040	8	0
M. ROSENBLATT	0	0	0	1	2,880	25	2
RDA STAFF/CARETAKER CONTRACTORS	0	0	0	2	42,471	16	5
SOUTH CAROLINA ELECTRIC & GAS	0	0	0	6	30,830	25	0
SC FEDERAL CREDIT UNION	0	0	0	2	16,180	12	0
U.S. POSTAL SERVICE (SHARE B/400)	0	0	0	0	17,782	180	0
SUBTOTAL	5	10	22	105	2,190,742	1,137	185

0	0	0	1	8,553	100
0	0	0	3	208,930	225
0	0	0	0	0	13
0	3	6	7	12,670	6
0	0	2	1	41,196	43
0	0	0	1	12,480	25
0	0	1	6	326,598	330
3	5	23	69	1,193,886	2,404
0	0	0	0	0	15
0	0	0	0	0	1
0	0	0	0	0	16
0	0	0	0	0	50
0	0	0	0	0	6
0	0	0	0	0	15
0	0	0	0	0	7
0	0	0	0	0	25
2	6	22	62	549,777	2,000
0	0	0	0	0	100
0	0	0	0	0	25
0	0	0	0	0	5
0	0	0	4	20,052	50
0	0	0	1	32,364	104
0	0	0	1	4,040	15
0	0	0	1	2,880	25
0	0	0	1	8,205	16
0	0	0	0	0	0
0	0	0	2	16,180	12
0	0	0	0	17,782	400
5	14	54	160	2,455,593	6,033

CURRENT FACILITIES/EMPLOYMENT

ULTIMATE FACILITIES/EMPLOYMENT

UNDER NEGOTIATION

BRASWELL SERVICES GROUP
 COLLEGE OF CHARLESTON
 COMMISSIONER OF PUBLIC WORKS
 MCKINNEY ACT TASK FORCE (9 AGENCIES)
 NORTH CHARLESTON
 SOUTH CAROLINA NATIONAL GUARD
 SPRINGS TAILORING & DRY CLEANING
 WILSON & GREEN CUSTOM BUILDERS

DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES	EX-BASE WORKERS
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
SUBTOTAL	0	0	0	0	0	0

DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES
0	1	3	5	111,113	244
0	0	0	1	14,117	20
0	0	0	6	104,999	200
0	0	2	25	206,533	200
0	1	12	30	183,759	34
0	0	0	4	24,645	7
0	0	0	1	1,089	7
0	0	0	1	3,390	10
SUBTOTAL	0	2	17	649,645	722

FEDERAL ACTIVITIES/TENANTS

BORDER PATROL
 RAMCOR (BOSS CONTRACTOR)
 CARETAKER SITE OFFICE
 DEFENSE FINANCE & ACCOUNTING
 DEFENSE INFO PROCESSING CENTER
 DEFENSE PRINTING
 ENVIRONMENTAL DETACHMENT
 MAGNETIC SILENCING FACILITY (PIER Y)
 MARINE RESERVE (NAVSTA ANNEX)
 NATIONAL CIVILIAN COMMUNITY CORPS
 NATIONAL OCEANIC & ATMOSPHERIC ADMIN
 U.S. NAVY INSHORE BOAT UNIT 27
 NAVAL WEAPONS STATION
 NISE EAST
 STATE DEPARTMENT
 U.S. COAST GUARD

0	0	8	17	419,321	68	5
0	0	0	0	0	156	25
0	0	0	15	123,814	16	6
0	0	3	6	246,666	638	287
0	0	0	0	0	6	6
0	0	0	1	26,520	37	37
0	0	0	12	284,855	172	172
0	1	4	4	6,396	5	5
0	0	0	6	25,056	54	54
0	0	6	14	141,489	22	0
0	1	0	5	47,340	20	3
0	0	0	0	0	3	0
0	0	0	2	39,929	4	4
0	0	2	18	362,761	250	200
0	0	2	5	197,750	76	15
0	1	3	6	76,034	410	0
SUBTOTAL	0	3	28	1,997,931	1,937	819

0	0	8	17	419,321	68
0	0	0	0	0	156
0	0	0	0	0	0
0	0	3	5	232,518	750
0	0	0	0	0	6
0	0	0	1	26,520	37
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	6	25,056	54
0	0	6	14	141,489	22
0	2	1	6	47,852	28
0	0	0	0	0	6
0	0	0	0	0	0
0	0	2	18	362,761	250
0	0	2	5	197,750	400
0	1	3	6	76,034	410
SUBTOTAL	0	3	25	1,529,301	2,187

GRAND TOTAL

5 13 50 216 4,188,673 3,074 1,004

5 19 96 311 4,634,539 8,942

**Naval Base Charleston
RCRA Facility Investigation (RFI)
PROGRESS REPORT FOR FEBRUARY 1997**

INVESTIGATIVE ZONES

- A. Warehousing and scrap metal yard
- B. Golf course and residential
- C. Office space and warehouse (NH-45, Navbase HQ)
- D. Parking lot, warehouses
- E. Shipyard
- F. Recreational areas and public works shops
- G. Fuel farm and transfer facility
- H. Southern end of the base excluding waterfront
- I. Southern end of the base including waterfront and dredge material area
- J. Waterbodies
- K. Non-contiguous areas
- L. Sewer systems and railroad system

FUNDING

- ◆ Funding status
 - Zone J field work will be awarded this month, Zone L field work proposal is to be negotiated this week.

PROGRESS FOR JANUARY

- ◆ The Draft Comprehensive CMS Work Plan was submitted to the Project Team on 31 January for review and comment.
- ◆ The RFI at SWMU 39 was tentatively completed with the installation of six additional monitoring wells and collection of sediment/surface water samples from the marsh area southwest of the site. Soil sampling was completed at SWMU 2
- ◆ Zone B RFI report was approved by SCDHEC on 8 January.
- ◆ Zone K 60% progress meeting was held.

PROJECTED ACTIVITY FOR FEBRUARY

- ◆ Scope Zone B and Zone H for CMS.
- ◆ Conduct Presubmittal review of Zone D RFI Report.
- ◆ Hold 90% progress meetings for Zones F, G and K.

Nava: Charleston
Project Status
2/11/97

PROGRAM	PROJECT DESCRIPTION	ACTION REQUIRED	ECD
BRAC - Property Lease/Transfer			
	EBSL/FOSL for 231 facilities	complete	complete
	EBSL/FOSL for NS Annex (19 fac.)	complete	complete
	EBST Clouter Island (Transfer to COE, 2 fac.)	complete	complete
NEPA			
	Environmental Assessment of Naval Annex	Waiting on reuse plan from RDA before completing the EA	
RCRA Compliance			
	Part B permit application	CSO submit Part B application	3/6/97
RCRA Corrective Action			
	Zone A RFI report	In SCDHEC review, Document approval meeting scheduled next	3/11/97
	Zone A field work	SWMU 1 & 2 sampled, SWMU 39 wells sampled, results expected 2/28/97	2/28/97
	Zone B RFI report	Final Report submitted 1/31/97	complete
	Zone B CMS Work Plan	CMS scoping has begun, further discussions 2/25/97	3/12/97
	Zone C RFI report	In SCDHEC review	
	Zone D field work	Presubmittal review of RFI report 2/11/97	2/12/97
	Zone F & G field work	90% progress meeting on 2/12/97	2/12/97
	Zone E RFI field work	In progress, remaining field work to complete 2/24/97	2/24/97
	Zone H RFI report	Report changes submitted, in SCDHEC review	2/12/97
	Zone I RFI report	In SCDHEC review	
	Zone J RFI field work	Awaiting final proposal from Ensafe to award	2/14/97
	Zone K Field Work	90% progress meeting 2/11/97	2/11/97
	Zone L RFI field work	RFI Work Plan approved 12/13/96, Contract negotiations 2/13/97	2/13/97
	Miscellaneous issues		
	Groundwater Model	Draft report distributed for review 11/15/96, Review will complete 2/14/97	3/6/97
	Transfer of IR sites to UST program	Navy to submit letter requesting transfer of sites (AOC 659, 667, SWMU 13, 138)	
	Support services		
	IDW Management	Background organics memo submitted for comment, to be discussed 2/11/97	complete
	Groundwater Monitoring	Zone E 4th ECD 3/6/97, Zone A Add 1 to begin 2/18/97, Zone E Add I and Zone K awaiting award	
Underground Storage Tank			
	Tank Management Plan	Responses to SCDHEC comments submitted	
	Petroleum Remediation Plan	Det preparing plan of action (approval pending Tank Management Plan approval)	
	Bioremediation demonstration project	Facility prepared, plan submitted to SDIV	
	Removals	FY 96 - 54 tanks authorized for removal, all but two tanks removed FY 97 - 40 tanks authorized for removal, thirty one have been removed	
	Chicora Tank Farm	Waiting on reuse information	
Asbestos			
	Building 32 remediation	In progress	6/30/97



Interim Measure Status Summary

SITE	DESCRIPTION	STATUS
SWMU 54	Abrasive blast grit area. Remediate site of spent blast grit.	field work complete report published
SWMU 44	Coal yard. Remediate site of coal.	field work complete report published
AOC 653	Auto Hobby Shop. Remove hydraulic vaults and remediate soils of petroleum.	field work complete, disposing of soils, drafting report
SWMU 159	Former storage area. Removal of soils contaminated with petroleum.	field work complete, drafting report
AOC 626	Viaduct gate fuel line past rupture area	field work complete, drafting report , monitor collection system



Interim Measure Status Summary

SITE	DESCRIPTION	STATUS
SWMU 8	Oil Sludge Pits	Thirty percent complete, uncovering pit area 1, finding debris and sludges
AOC 503	Unexploded Ordnance (UXO) in marsh	Completed ten acre search, did not find any UXO
AOC 574	Petroleum contaminated area bldg. 9	Seventy five percent complete with excavation of contaminated soils



OTHER ENVIRONMENTAL ACTIONS

SITE

DESCRIPTION

STATUS

SWMU 83

Foundry, Bldg. 9. Completion of process closure cleanup.

Completed field work, awaiting some sample results

SWMU 25

Old plating shop annex, Bldg. 44.
Demolition and removal to the annex portion of this building.

Demolition of building earlier this month.

NAVAL BASE CHARLESTON

RCRA FACILITY INVESTIGATION PROGRESS UPDATE

ZONES	CURRENT PHASE	CURRENT RFI COMPLETION PERCENTAGE	PLANNED DATE OF COMPLETION	NEXT PHASE	OVERALL	OVERALL	NOTES
					RFI COMPLETION DATE	RFI COMPLETION PERCENTAGE	
A	Report Review	95	3/18/97	CMS Work Plan	3/18/97	95	
B	Report Review	100	12/20/96	CMS Work Plan	1/8/97	100	RFI was completed on 01/08/97.
C	Report Review	80	3/21/97	CMS Work Plan	3/21/97	90	
D	RFI Report Prep	60	3/15/97	Report Review	6/6/97	65	
E	Field Work	99	2/24/97	RFI Report Prep	8/19/97	50	
F	Field Work	90	3/15/97	RFI Report Prep	9/16/97	45	
G	Field Work	90	3/15/97	RFI Report Prep	9/26/97	45	
H	Report Review	95	3/24/97	CMS Work Plan	3/24/97	95	
I	Report Review	50	4/16/97	CMS Work Plan	4/16/97	80	
J	Field Work	0	10/16/97	RFI Report Prep	4/21/98	10	
K	Field Work	90	3/16/97	RFI Report Prep	9/30/97	45	
L	Field Work	0	8/2/97	RFI Report Prep	1/21/98	10	
All Zones					4/21/98	60	

LEGEND	
PHASE	Description
RFI	RCRA Facility Investigation
CMS	Corrective Measures Study
Work Plan Preparation	Work Plan being prepared by Navy contractor
Work Plan Review	Regulators (DHEC & EPA) reviewing work plan
Field Work	Navy contractor performing field work as outlined in the Work Plan
RFI Report Preparation	Navy contractor preparing the RFI Report
Report Review	Regulators (DHEC & EPA) reviewing report
CMS Work Plan	CMS Work Plan being prepared by Navy contractor

Prepared 12/19/96
Revised 2/11/97

Time: 3:30 p.m. - 4:30 p.m.

Attendees: Daryle Fontenot, Louis Mintz, Ralph Laney, Diane Cutler

DISCUSSION ITEMS

RAB Attendance Lou Mintz brought up the subject that he is still disappointed with community turnout at the RAB meetings. Daryle Fontenot reiterated the importance of having the RAB members distribute their flyers and get the word out to their constituency, neighbors, or groups they represent. Diane Cutler added that Mr. Jack McCray at the Post & Courier said that they have been placing the announcement in the Zone Roundup Section every month.

Mr. Mintz suggested other activities to solicit interest in the Navy's cleanup activities on base. He suggested doing something for Earthday, like manning a booth somewhere or providing tours. Diane added that although these are good ideas, in order for them to work, RAB members have to plan these activities and take an active role in making them happen. Mr. Mintz also said he knows of a reporter with a media outlet in North Charleston who is always looking for a human interest story. Again, Diane urged him to contact that person.

Speakers Bureau The Subcommittee revisited the topic of a Speakers Bureau. Diane handed out a package of support material which included an outline, an evaluation, and a flyer that can be distributed. The next step is to secure a solid commitment from RAB members willing to speak when there is a request. Once a commitment is made, flyers can be distributed, and advertisements can be placed.

Fact Sheets

OSHA vs. RCRA

Daryle suggested a Fact Sheet on OSHA (Occupational Safety & Health Administration) vs. RCRA in response to Mr. Arthur Pinckney's and others' questions about human health issues. Mr. Ralph Laney provided insight into OSHA regulations and how they have been implemented at the Shipyard over the years. After discussions, those present decided instead of introducing new regulations and jargon associated with OSHA, to develop a fact sheet that addresses specific questions about human health. Because addressing past health issues is not an element of the RCRA process, some of the questions that are asked may not be answered through this fact sheet. However, in those cases, the answer will reflect where to go or who to contact for more information. The first step in compiling this fact sheet is to discuss with Arthur what issues regarding human health he is most concerned with. From there, a list of questions can be drafted and answers can be worked on.

Investigative Results for Zones A, B, C, and I

Another fact sheet that the subcommittee discussed was the results of investigations for Zones where RFI reports were complete. The format can be the same as Fact Sheet #6 which presented results for Zone H. Those present decided it would be better to combine the results in one fact sheet where possible rather than producing a single fact sheet for each (since basically most of the information would be the same). For the next meeting Diane will pull together the results for Zones A, B, C, and I and come up with a proposal on how to present these using the previously established format.

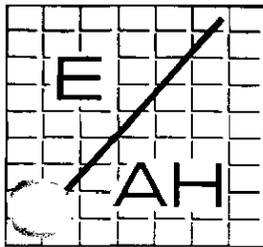
Other Fact Sheets

Other fact sheets that were suggested, but not discussed at length include property transfer, the new RAB, and RAB Goals.

NEXT MEETING

Subcommittee Meeting The next Subcommittee meeting will be held on March 11, 1997 at 3:30 p.m.

August 1997 is
included with
September 1997



EnSafe / Allen & Hoshall

a joint venture for professional services

**Program
Management
Office**

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Irving, TX 75038
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21 September 1997

VIA HAND DELIVERY

Commanding Officer
Attn: Matthew A. Hunt, Code 1877
Southern Division, Naval Facilities Engineering Command
2155 Eagle Drive
Charleston, SC 29411-0068

Re: NAVBASE Charleston RFI, Contract Number: N62467-89-D-0318,
CTO-0029
Quarterly Status Report

Dear Mr. Hunt:

Please find enclosed 1 copy of the quarterly status report for September 1997 prepared by E/A&H for the NAVBASE Charleston project team. E/A&H has distributed copies of the report per the attached distribution list.

If you have any questions please do hesitate to give me a call.

Sincerely,
EnSafe/Allen & Hoshall
A Joint Venture in Professional Services

By: Todd Haverkost
Task Order Manager

Attachment

cc: CTO-029 Project File, 2900-04610

NAVBASE Quarterly Status Report Distribution List

Mr. John Litton, P.E. **(1 copy via overnight delivery)**
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Bureau of Land and Waste Management
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1899 North Hobson Avenue
North Charleston, SC 29405-2106

**NAVBASE CHARLESTON
RFI STATUS REPORT
PERIOD: SUMMARY OF
01 August 1997 To 30 September 1997**

I. INTRODUCTION

The following status report has been prepared to satisfy condition II.E.3.a of the Part B Permit Renewal dated 5 December 1994 for Naval Base Charleston (NAVBASE). The requirements of this condition are in effect since the total elapsed time to complete the RCRA Facility Investigation (RFI) is projected to be greater than 180 calendar days from the approval date of the *Final Comprehensive RFI Work Plan* as indicated in the Corrective Action Management Plan (CAMP).

In lieu of submitting quarterly reports, NAVBASE is voluntarily submitting monthly reports to provide an update on the progress of the RFI to members of the NAVBASE BRAC Cleanup Team (BCT) in a more timely manner. The content of the monthly reports includes information intended to satisfy condition II.E.3.a of the Part B Permit. However, a monthly report was not submitted for August 1997; therefore, this report addresses activities which occurred during the months of August and September 1997.

II. PORTION OF THE RFI COMPLETED

Task 2901 - Zone A

As a result of SCDHEC comments on the *Draft Zone A RFI Report*, additional groundwater samples were collected at SWMU 42 and AOC 506 and screened for volatiles. The results were presented at the August 1997 project team meeting and the team tentatively agreed no further investigation was required at either site with respect to groundwater. The site specific risk assessments for SWMUs 1, 2, and 39 which were not submitted as part of the draft RFI report were submitted August 19, 1997 to the project team for review. Contaminant specific isoconcentration maps were later submitted on September 30, 1997 for SWMUs 2 and 39 to facilitate review of the document.

Task 2902 - Zone B

All tasks for Zone B are 100 percent complete and no further action is required.

Task 2903 - Zone C

In response to SCDHEC comments on the *Draft Zone C RFI Report*, temporary wells were installed at AOCs 508, 511, and 512; soil confirmation samples were collected at SWMU 44; and an additional round of groundwater samples were collected and analyzed for an expanded list of parameters for SWMU 44 and AOC 700. The data was submitted to the project team at the September 1997 and a tentative agreement was reached that no further investigation was required at the sites.

Task 2904 - Zone D

All tasks for Zone D are 100 percent complete and no further action is required.

Task 2905 - Zone E

An initial presubmittal review of the *Draft Zone E RFI Report* was performed during the September 1997 project team meeting. Team members were provided risk/hazard maps and tables of contaminants of concern for 20 site groupings.

Task 2906 - Zone F

Consensus agreement on the background concentrations for Zone F was obtained during the month of September 1997. Preparation of the RFI report continued.

Effluent samples were collected from the sanitary sewer line in the vicinity of the former dry cleaning operation, AOC 607. Sample results confirmed contaminated groundwater is infiltrating the system and the piping trench appears to have created a preferential flow path for groundwater contaminants.

Task 2907 - Zone G

Preparation of the draft RFI report continued to the extent possible in the absence of agreed upon background concentrations.

Task 2908 - Zone H

The RFI report for Zone H was approved as final by SCDHEC and EPA. An addendum to the report will be required to address pending concerns AOC 659, AOC 661, AOC 665, and AOC 667/SWMU 138. Data to support resolution of comments for these sites was presented to the project team at the August 1997 team meeting. A consensus agreement was reached that no further investigation is required at these sites. Subsequently, an addendum to the Zone H RFI report was prepared for submittal by the first week in October 1997.

The draft CMS Work Plan was distributed to the project team for review at the August 25, 1997 meeting. Preliminary comments were provided by SCDHEC and EPA in September 1997. Revisions are currently underway to address to the comments.

Task 2909 - Zone I

No significant activity occurred on Zone I this period other than background concentrations for deep groundwater were finalized. The RFI report remains in review by SCDHEC.

Task 2910 - Zone J

The 60% progress meeting was held in conjunction with the September 1997 project team meeting. Preliminary findings were discussed and consensus was reached on additional surface water sample locations in Shipyard and Noisette Creeks.

Task 2911 - Zone K

Sampling for the ongoing SWMU 166 investigation was performed to address groundwater contamination across I-26 from the annex and infiltration of contaminated groundwater into the storm sewer system along the interstate.

Task 2912 - Zone L

The 60% progress meeting was held in conjunction with the September 1997 project team meeting. A data summary was presented; however, maps depicting sampling locations were not since surveying of the data points has yet to be completed so base maps can be revised. Data for the railroad portion of Zone L was not available at the time of the meeting so a summary is enclosed as Attachment A.

Quarterly Groundwater Monitoring

Attachment B is an updated schedule for the quarterly groundwater monitoring required for all monitoring wells installed for the NAVBASE RFI. The monitoring effort is generally complete with the exception of Zones F, G, L, and supplemental wells installed in various zones needed to fill data gaps after completion of the primary phase of RFI field work.

III. SUMMARIES OF FINDINGS

As mentioned above, Attachment A contains preliminary results for the railroad portion of Zone L. Draft figures showing hand augered soil boring locations is also enclosed. The data associated with these location is denoted by an "SB" in the sample ID. Samples containing an "SP" in the ID were collected with the DPT rig and are not shown on the figures. On the figures, sample ID suffixes following the boring number contain an alphanumeric digit corresponding to the zone (A through H) from which the sample was collected since Zone L entities traverse other zones. The final numeric digit corresponds to the sample interval.

IV. DEVIATIONS FROM APPROVED WORK PLANS THIS REPORTING PERIOD

There were no known deviations from the approved RFI Work Plans for this reporting period.

V. SUMMARY OF CONTACTS WITH LOCAL COMMUNITY PUBLIC INTEREST GROUPS OR STATE GOVERNMENT

As of June 1997 the Restoration Advisory Board (RAB) agreed to meet on a bi-monthly basis. Minutes from the August 1997 meeting are enclosed as Attachment C.

VI. SUMMARY OF PROBLEMS OR POTENTIAL PROBLEMS AND ACTION TAKEN TO RECTIFY PROBLEMS

There were no problems or potential problems identified during this reporting period.

VII. KEY PROJECT PERSONNEL

Jay Bassett, USEPA Region IV, is being replaced by Dann Spariosu, USEPA Region IV.

VIII. PROJECTED WORK FOR THE NEXT REPORTING PERIOD

Document Preparation and Data Evaluation:

- It is anticipated that the Zone A RFI will be finalized during the next reporting period.
- The Final Zone C RFI Report will be submitted for approval.
- Preparation of the RFI reports for Zones E, F, G, and K will continue.
- Proposed of inorganic background concentrations for Zones G and K will be discussed at the October team meeting.
- The *Draft Zone H CMS Work Plan* will be resubmitted by the end of October 1997.
- A technical memo describing findings to date will be submitted for Zone J. Phase II work will be dependent upon development of a strategy for determining background. Development of the background strategy is being completed by TetraTech under contract to USEPA.
- A conceptual plan for expediting interim measures at 6 sites will be submitted to the team for review and comment.

Field Activities:

- Additional work will be required at SWMU 166 in Zone K to complete the RFI.
- It is anticipated that the dye trace and second phase soil/groundwater sampling will begin in Zone L.

- Quarterly groundwater monitoring will continue in all zones where less than four quarters of sampling has been completed.

IX. COPIES OF DAILY REPORTS, INSPECTION REPORTS, LABORATORY DATA

Daily activities are recorded in accordance with the Data Management Plan included as Section 14 of the Final Comprehensive Sampling and Analysis Plan. Photocopies of these daily records have not been included with this status report; however, this information is available for review upon request.

Per agreement with SCDHEC and EPA, hard copies of the analytical data are not being submitted. A copy of the data is maintained at the EnSafe/Allen & Hoshall office in Charleston and is available for review.

X. CORRECTIVE ACTION MANAGEMENT PLAN (CAMP)

This section of the Quarterly report provides revisions to the CAMP which have been discussed with and agreed to by the Department and EPA personnel. Appendix D provides a complete copy of the latest CAMP revision which has been submitted to the Department as Appendix F-15 of the RCRA Part B permit renewal. As discussed previously with the Department and EPA personnel, the CAMP will continue to be reviewed on a periodic basis to ensure it accurately reflects the regulatory dates as agreed to be the Project Team. If revisions to the CAMP are necessary, these revisions will be submitted to the Department as part of the Quarterly RFI report.

Chemicals Detected in Zone L, Sub-zone A Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ= .1)
<i>Volatile Organic Compounds (ug/kg)</i>				
Acetone	504SB006	ND	8.00	780000.00
	504SB007	ND	14.00	
	504SB008	ND	20.00	
	504SB010	7.00	ND	
Chloromethane	504SB010	7.00	ND	49000.00
<i>Semi-volatile Compounds (ug/kg)</i>				
2-Methylnaphthalene	504SB006	54.00	ND	NA
4-Methylphenol (p-Cresol)	504SB006	72.00	ND	390000.00
Acenaphthene	504SB006	86.00	ND	470000.00
Acenaphthylene	504SB002	44.00	ND	310000.00
	504SB006	1900.00	ND	
	504SB007	40.00	ND	
	504SB009	70.00	ND	
	504SB011	47.00	ND	
	504SB005	47.00	ND	
	504SB006	1600.00	ND	
Anthracene	504SB007	49.50	ND	23000000.00
	504SB009	50.00	ND	
	504SB011	49.00	ND	
	504SB002	100.00	ND	
	504SB005	230.00	ND	
Benzo(a)anthracene	504SB006	1700.00	ND	880.00
	504SB007	100.00	ND	
	504SB009	280.00	ND	
	504SB010	54.00	ND	
	504SB011	140.00	ND	
	504SB012	63.00	ND	
	504SB002	110.00	ND	
	504SB005	180.00	ND	
Benzo(a)pyrene	504SB006	1900.00	ND	88.00
	504SB007	125.00	49.00	
	504SB009	380.00	ND	
	504SB010	84.00	ND	
	504SB011	190.00	ND	
	504SB012	93.00	ND	
	504SB002	160.00	ND	
	504SB005	140.00	ND	
Benzo(b)fluoranthene	504SB006	1200.00	ND	880.00
	504SB007	165.00	45.00	
	504SB009	560.00	ND	
	504SB010	170.00	ND	
	504SB011	290.00	ND	
	504SB012	150.00	ND	
	504SB002	100.00	77.00	
	504SB005	110.00	ND	
Benzo(g,h,i)perylene	504SB006	2700.00	ND	310000.00
	504SB007	107.50	52.00	
	504SB009	300.00	ND	

Chemicals Detected in Zone L, Sub-zone A Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ=.1)
	504SB010	66.00	ND	
	504SB011	160.00	ND	
	504SB012	81.00	ND	
Benzo(k)fluoranthene	504SB002	ND	42.00	8800.00
	504SB005	220.00	ND	
	504SB006	1800.00	ND	
	504SB007	140.00	ND	
	504SB009	500.00	ND	
	504SB011	200.00	ND	
	504SB012	140.00	ND	
Butylbenzylphthalate	504SB006	ND	56.00	1600000.00
	504SB011	75.00	ND	
	504SB012	64.00	ND	
Chrysene	504SB002	120.00	ND	88000.00
	504SB005	250.00	ND	
	504SB006	1600.00	ND	
	504SB007	140.00	49.00	
	504SB008	ND	42.00	
	504SB009	410.00	ND	
	504SB010	77.00	ND	
	504SB011	200.00	ND	
	504SB012	89.00	ND	
Dibenz(a,h)anthracene	504SB005	69.00	ND	88000.00
	504SB006	870.00	ND	
	504SB007	46.00	ND	
	504SB009	120.00	ND	
	504SB011	47.00	ND	
Dibenzofuran	504SB006	42.00	ND	31000.00
Fluoranthene	504SB002	190.00	ND	3100000.00
	504SB005	300.00	ND	
	504SB006	2200.00	ND	
	504SB007	150.00	38.00	
	504SB009	320.00	ND	
	504SB010	96.00	ND	
	504SB011	220.00	ND	
	504SB012	96.00	ND	
Fluorene	504SB006	120.00	ND	310000.00
Indeno(1,2,3-cd)pyrene	504SB002	78.00	41.00	880.00
	504SB005	100.00	ND	
	504SB006	1400.00	ND	
	504SB007	94.50	ND	
	504SB009	290.00	ND	
	504SB010	68.00	ND	
	504SB011	150.00	ND	
	504SB012	75.00	ND	
Naphthalene	504SB006	71.00	ND	310000.00
Phenanthrene	504SB002	120.00	ND	310000.00
	504SB005	170.00	ND	
	504SB006	1200.00	ND	

Chemicals Detected in Zone L, Sub-zone A Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ=.1)	
Phenol	504SB006	55.00	ND	4700000.00	
Pyrene	504SB002	190.00	41.00	230000.00	
	504SB005	330.00	ND		
	504SB006	2400.00	ND		
	504SB007	195.00	47.00		
	504SB008	ND	52.00		
	504SB009	450.00	ND		
	504SB010	89.00	ND		
	504SB011	220.00	ND		
	504SB012	89.00	ND		
	bis(2-Ethylhexyl)phthalate (BEHP)	504SB002	ND	110.00	4600.00
		504SB006	71.00	ND	

Chlorinated Pesticides (ug/kg)

4,4'-DDD	504SB011	8.00	ND	2700.00	
4,4'-DDE	504SB001	3.30	ND	19000.00	
	504SB002	ND	49.00		
	504SB006	8.90	ND		
	504SB009	15.00	4.10		
	504SB012	11.00	ND		
4,4'-DDT	504SB001	6.30	ND	1900.00	
	504SB002	ND	180.00		
	504SB005	13.00	ND		
	504SB006	ND	6.20		
	504SB007	5.20	9.50		
	504SB009	7.90	ND		
	504SB010	19.00	ND		
	504SB011	20.00	ND		
	504SB012	8.60	ND		
	Dieldrin	504SB010	6.40	ND	40.00
		504SB011	9.00	ND	
	Endosulfan II	504SB002	ND	8.40	47000.00
Endrin aldehyde	504SB002	ND	7.60	2300.00	
	504SB005	6.70	ND		
	504SB006	33.00	ND		
	504SB010	ND	6.10		
Heptachlor	504SB006	4.10	ND	140.00	
Heptachlor epoxide	504SB002	ND	18.00	70.00	
	504SB011	7.90	ND		
gamma-Chlordane	504SB005	2.90	ND	490.00	

Inorganic Compounds (mg/kg)

Aluminum (Al)	504SB001	4120.00	1010.00	7800.00
	504SB002	6140.00	3340.00	
	504SB005	8030.00	3750.00	
	504SB006	7510.00	1590.00	
	504SB007	3795.00	3150.00	
	504SB008	5140.00	9070.00	
	504SB009	4780.00	2560.00	

Chemicals Detected in Zone L, Sub-zone A Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ=.1)
	504SB010	6170.00	3770.00	
	504SB011	8740.00	3230.00	
	504SB012	5670.00	2800.00	
Antimony (Sb)	504SB002	1.10	0.53	3.10
	504SB005	0.39	ND	
	504SB006	2.10	ND	
	504SB007	0.74	4.40	
Arsenic (As)	504SB001	2.10	0.87	0.43
	504SB002	7.80	5.10	
	504SB005	16.40	3.10	
	504SB006	10.90	0.69	
	504SB007	5.70	1.90	
	504SB008	4.60	16.50	
	504SB009	5.30	ND	
	504SB010	3.80	ND	
	504SB011	5.00	ND	
	504SB012	3.50	ND	
Barium (Ba)	504SB001	13.40	5.20	550.00
	504SB002	60.30	30.80	
	504SB005	41.60	25.60	
	504SB006	55.70	6.60	
	504SB007	15.65	49.40	
	504SB008	13.20	15.30	
	504SB009	14.10	ND	
	504SB010	15.50	ND	
	504SB011	17.80	ND	
	504SB012	16.20	6.20	
Beryllium (Be)	504SB001	0.25	0.12	0.15
	504SB002	0.33	0.24	
	504SB005	0.37	0.22	
	504SB006	0.38	0.12	
	504SB007	0.18	0.18	
	504SB008	0.14	0.26	
	504SB009	0.11	0.06	
	504SB010	0.14	0.07	
	504SB011	0.14	0.06	
	504SB012	0.14	0.05	
Cadmium (Cd)	504SB002	0.21	0.43	3.90
	504SB005	ND	0.16	
	504SB006	0.08	ND	
	504SB007	0.08	0.15	
	504SB009	0.30	ND	
	504SB010	0.26	0.08	
	504SB011	0.20	ND	
	504SB012	0.44	ND	
Calcium (Ca)	504SB001	224.00	143.00	NA
	504SB002	861.00	446.00	
	504SB005	1000.00	373.00	
	504SB006	1560.00	288.00	

Chemicals Detected in Zone L, Sub-zone A Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ=.1)	
Chromium (Cr)	504SB007	286.00	2700.00		
	504SB008	282.00	770.00		
	504SB010	5580.00	ND		
	504SB012	8140.00	ND		
	504SB001	3.40	1.60	39.00	
	504SB002	7.90	3.60		
	504SB005	10.50	3.60		
	504SB006	10.50	2.20		
	504SB007	5.45	4.80		
	504SB008	9.00	24.20		
	504SB009	11.20	4.90		
	504SB010	13.50	5.10		
Cobalt (Co)	504SB011	25.70	4.80		
	504SB012	16.30	3.30		
	504SB002	1.20	1.10	470.00	
	504SB005	1.90	ND		
	504SB006	1.40	ND		
Copper (Cu)	504SB007	0.97	ND		
	504SB008	ND	1.00		
	504SB001	1.30	0.73	310.00	
	504SB002	11.70	16.60		
	504SB005	13.30	2.90		
	504SB006	12.10	0.97		
	504SB007	8.25	10.40		
	504SB008	2.70	2.30		
Iron (Fe)	504SB010	37.90	ND		
	504SB012	19.70	ND		
	504SB001	2800.00	1140.00	2300.00	
	504SB002	7490.00	4470.00		
	504SB005	9110.00	2200.00		
	504SB006	8730.00	1330.00		
	504SB007	4750.00	3370.00		
	504SB008	4230.00	23100.00		
	504SB009	5460.00	ND		
	504SB010	6430.00	ND		
	504SB011	9710.00	ND		
	504SB012	6460.00	ND		
Lead (Pb)	504SB001	3.30	1.20	400.00	
	504SB002	232.00	79.00		
	504SB005	134.00	18.10		
	504SB006	120.00	3.40		
	504SB007	12.70	135.00		
	504SB008	8.70	9.80		
	504SB009	72.90	ND		
	504SB010	78.00	ND		
	504SB011	45.40	ND		
	504SB012	87.70	ND		
	Magnesium (Mg)	504SB001	189.00	83.30	NA
		504SB002	339.00	170.00	

Chemicals Detected in Zone L, Sub-zone A Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ=.1)
Manganese (Mn)	504SB005	421.00	201.00	
	504SB006	417.00	111.00	
	504SB007	130.00	203.00	
	504SB008	152.00	616.00	
	504SB001	16.10	8.20	180.00
	504SB002	51.20	44.80	
	504SB005	36.20	18.80	
	504SB006	49.30	11.10	
	504SB007	20.15	15.10	
	504SB008	11.80	26.00	
Mercury (Hg)	504SB011	26.70	ND	
	504SB012	24.70	ND	
	504SB002	0.06	ND	2.30
	504SB005	0.05	ND	
	504SB006	0.09	ND	
Nickel (Ni)	504SB007	ND	0.08	
	504SB001	1.90	0.69	160.00
	504SB002	4.00	2.80	
	504SB005	6.80	3.50	
	504SB006	5.40	0.89	
	504SB007	3.65	1.80	
	504SB008	2.90	2.70	
	504SB009	3.10	0.77	
	504SB010	3.40	0.81	
	504SB011	3.50	0.43	
Potassium (K)	504SB012	4.60	0.70	
	504SB002	221.00	ND	NA
	504SB005	319.00	ND	
	504SB006	282.00	ND	
	504SB008	147.00	1000.00	
	504SB009	145.00	66.80	
	504SB010	200.00	47.40	
	504SB011	205.00	36.80	
Sodium (Na)	504SB012	181.00	44.50	
	504SB001	118.00	171.00	NA
	504SB002	194.00	166.00	
	504SB005	218.00	200.00	
	504SB006	192.00	165.00	
	504SB007	166.00	179.00	
Thallium (Tl)	504SB008	184.00	201.00	
	504SB005	1.30	ND	0.29
	504SB008	ND	1.50	
Tin (Sn)	504SB001	1.10	0.97	4700.00
	504SB002	4.10	2.50	
	504SB005	3.60	1.40	
	504SB006	8.50	1.20	
	504SB007	1.60	12.30	
Vanadium (V)	504SB008	2.50	1.60	
	504SB001	4.70	2.40	55.00

Chemicals Detected in Zone L, Sub-zone A Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ=.1)
	504SB002	12.30	4.70	
	504SB005	17.30	4.20	
	504SB006	17.90	2.80	
	504SB007	7.95	5.60	
	504SB008	8.70	33.40	
	504SB009	14.20	2.80	
	504SB010	16.20	4.10	
	504SB011	20.00	ND	
	504SB012	16.00	4.70	
Zinc (Zn)	504SB001	6.00	2.40	2300.00
	504SB002	147.00	209.00	
	504SB005	52.10	96.70	
	504SB006	77.90	8.90	
	504SB007	24.80	136.00	
	504SB008	22.00	16.10	
	504SB009	62.10	ND	
	504SB010	64.40	ND	
	504SB011	88.30	ND	
	504SB012	80.40	ND	

Notes:

ND: Not Detected

NS: No Sample Taken/Sample Not Analyzed

NA: Not Applicable

For compounds detected in both the primary and duplicate sample, the concentration for both detections are averaged and listed as one detection.

For compounds that were detected in only one of the primary and duplicate sample, the value of the detection was used.

Chemicals Detected in Zone L, Subzone A, Soil Samples
AOC 504

Name	Location	Concentration (THQ=.1)	RBC
<i>Inorganic Compounds (mg/kg)</i>			
Aluminum (Al)	504SP001A	7230.00	7800.00
	504SP002A	9520.00	
	504SP003A	9160.00	
	504SP004A	6700.00	
	504SP005A	6270.00	
	504SP006A	13100.00	
	504SP007A	5470.00	
	504SP008A	5570.00	
	504SP009A	5000.00	
	504SP010A	4410.00	
	504SP011A	5050.00	
	504SP012A	5190.00	
	504SP013A	11100.00	
	504SP014A	5360.00	
	504SP015A	8930.00	
Antimony (Sb)	504SP002A	13.50	3.10
	504SP003A	1.93	
	504SP004A	1.93	
	504SP005A	3.77	
	504SP012A	2.26	
Arsenic (As)	504SP001A	3.73	3.10
	504SP002A	7.51	
	504SP003A	6.51	
	504SP004A	4.21	
	504SP005A	14.60	
	504SP006A	2.26	
	504SP007A	4.48	
	504SP008A	7.13	
	504SP009A	4.08	
	504SP011A	1.75	
	504SP012A	6.19	
	504SP013A	4.43	
	504SP014A	3.27	
	504SP015A	4.18	
	Barium (Ba)	504SP001A	14.00
504SP002A		140.00	
504SP003A		25.80	
504SP004A		23.40	
504SP005A		49.70	
504SP006A		29.30	
504SP007A		19.70	
504SP008A		14.70	
504SP009A		15.70	
504SP010A		9.51	
504SP011A		16.70	
504SP012A		15.70	
504SP013A		19.50	
504SP014A		16.50	

Chemicals Detected in Zone L, Subzone A, Soil Samples
AOC 504

Name	Location	Concentration	RBC (THQ=.1)
Beryllium (Be)	504SP015A	25.00	
	504SP002A	0.26	0.15
	504SP005A	0.28	
	504SP009A	0.24	
	504SP014A	0.28	
Cadmium (Cd)	504SP015A	0.31	
	504SP001A	741.00	3.90
	504SP002A	16800.00	
	504SP003A	733.00	
	504SP003A	1.81	NA
Calcium (Ca)	504SP004A	3700.00	
	504SP005A	9870.00	
	504SP006A	677.00	
	504SP007A	8080.00	
	504SP008A	2060.00	
	504SP009A	151000.00	
	504SP009A	0.36	
	504SP010A	3020.00	
	504SP011A	4610.00	
	504SP012A	0.49	
	504SP012A	14900.00	
	504SP013A	1170.00	
	504SP014A	29400.00	
	504SP015A	41300.00	
	Chromium (Cr)	504SP001A	8.98
504SP002A		10.90	
504SP003A		11.90	
504SP004A		8.19	
504SP005A		19.70	
504SP006A		10.40	
504SP007A		8.95	
504SP008A		7.93	
504SP009A		7.70	
504SP010A		5.80	
504SP011A		7.01	
504SP012A		13.30	
504SP013A		10.10	
504SP014A		12.30	
504SP015A		18.60	
Cobalt (Co)	504SP001A	0.63	470.00
	504SP002A	2.11	
	504SP003A	0.80	
	504SP004A	1.13	
	504SP005A	3.64	
	504SP006A	1.54	
	504SP007A	1.41	
	504SP008A	0.65	
	504SP009A	2.26	
504SP012A	1.43		

Chemicals Detected in Zone L, Subzone A, Soil Samples
AOC 504

Name	Location	Concentration	RBC (THQ=.1)
	504SP013A	0.66	
	504SP014A	0.98	
	504SP015A	0.95	
Copper (Cu)	504SP001A	3.62	310.00
	504SP002A	60.30	
	504SP003A	5.91	
	504SP004A	17.00	
	504SP005A	60.30	
	504SP006A	2.61	
	504SP007A	17.60	
	504SP008A	3.17	
	504SP009A	5.89	
	504SP010A	1.51	
	504SP011A	4.20	
	504SP012A	65.50	
	504SP013A	2.95	
	504SP014A	4.91	
	504SP015A	7.02	
Iron (Fe)	504SP001A	8470.00	2300.00
	504SP002A	14400.00	
	504SP003A	7560.00	
	504SP004A	7100.00	
	504SP005A	19200.00	
	504SP006A	6560.00	
	504SP007A	6160.00	
	504SP008A	4860.00	
	504SP009A	6320.00	
	504SP010A	2280.00	
	504SP011A	3400.00	
	504SP012A	5730.00	
	504SP013A	7360.00	
	504SP014A	4800.00	
	504SP015A	7120.00	
Lead (Pb)	504SP001A	7.58	400.00
	504SP002A	175.00	
	504SP003A	24.10	
	504SP004A	16.20	
	504SP005A	81.60	
	504SP006A	7.48	
	504SP007A	31.30	
	504SP008A	6.23	
	504SP009A	7.13	
	504SP010A	6.38	
	504SP011A	20.60	
	504SP012A	48.10	
	504SP013A	6.93	
	504SP014A	12.00	
	504SP015A	24.20	
Magnesium (Mg)	504SP001A	252.00	NA

Chemicals Detected in Zone L, Subzone A, Soil Samples
AOC 504

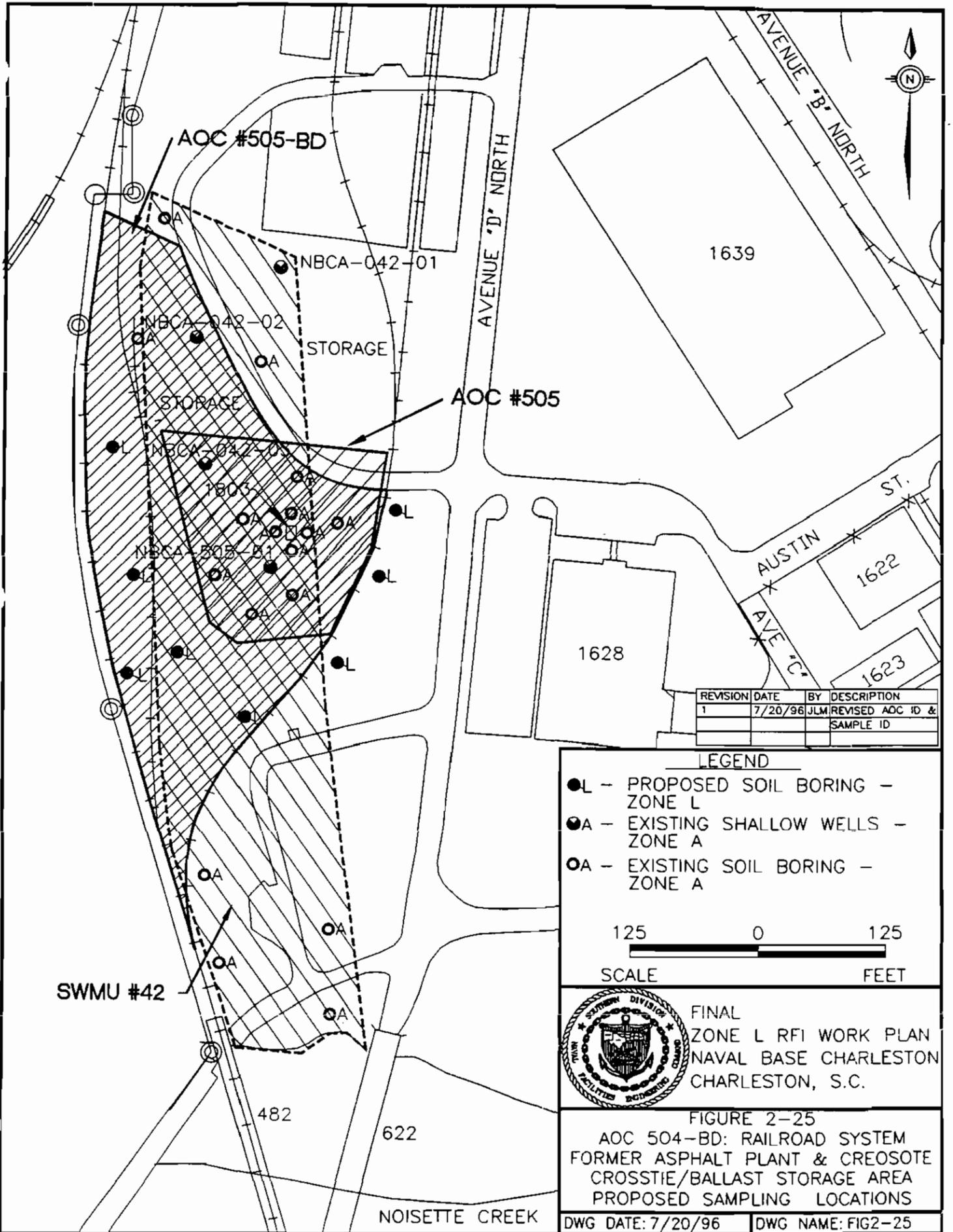
Name	Location	Concentration	RBC (THQ=.1)
	504SP002A	3530.00	
	504SP003A	340.00	
	504SP004A	330.00	
	504SP005A	623.00	
	504SP006A	610.00	
	504SP007A	410.00	
	504SP008A	353.00	
	504SP009A	2540.00	
	504SP010A	153.00	
	504SP011A	357.00	
	504SP012A	490.00	
	504SP013A	227.00	
	504SP015A	2080.00	
Manganese (Mn)	504SP001A	13.10	180.00
	504SP002A	299.00	
	504SP003A	16.90	
	504SP004A	19.10	
	504SP005A	84.70	
	504SP006A	20.80	
	504SP007A	28.10	
	504SP008A	16.30	
	504SP009A	105.00	
	504SP010A	8.70	
	504SP011A	21.10	
	504SP012A	70.40	
	504SP013A	8.30	
	504SP014A	30.40	
	504SP015A	26.70	
Mercury (Hg)	504SP004A	0.11	2.30
	504SP005A	0.13	
	504SP007A	0.07	
	504SP010A	0.05	
	504SP011A	0.05	
	504SP012A	0.56	
	504SP015A	1.35	
Nickel (Ni)	504SP001A	1.63	160.00
	504SP002A	8.92	
	504SP003A	3.74	
	504SP004A	4.44	
	504SP005A	12.90	
	504SP006A	3.32	
	504SP007A	3.45	
	504SP008A	1.81	
	504SP009A	8.15	
	504SP010A	1.06	
	504SP011A	2.92	
	504SP012A	6.43	
	504SP013A	2.50	
	504SP014A	5.73	

Chemicals Detected in Zone L, Subzone A, Soil Samples
AOC 504

Name	Location	Concentration	RBC (THQ=.1)
	504SP015A	7.56	
Potassium (K)	504SP001A	187.00	NA
	504SP002A	1560.00	
	504SP003A	277.00	
	504SP004A	238.00	
	504SP005A	330.00	
	504SP006A	488.00	
	504SP007A	196.00	
	504SP008A	278.00	
	504SP009A	442.00	
	504SP010A	94.30	
	504SP011A	158.00	
	504SP012A	284.00	
	504SP013A	241.00	
	504SP014A	338.00	
	504SP015A	511.00	
Selenium (Se)	504SP002A	0.92	39.00
	504SP005A	1.38	
	504SP006A	0.69	
	504SP011A	0.79	
	504SP014A	0.66	
	504SP015A	0.89	
Sodium (Na)	504SP001A	189.00	NA
	504SP002A	845.00	
	504SP003A	198.00	
	504SP004A	208.00	
	504SP005A	246.00	
	504SP006A	173.00	
	504SP007A	288.00	
	504SP008A	186.00	
	504SP009A	277.00	
	504SP010A	195.00	
	504SP011A	189.00	
	504SP012A	174.00	
	504SP013A	161.00	
	504SP014A	325.00	
	504SP015A	1160.00	
Tin (Sn)	504SP002A	43.50	4700.00
	504SP005A	5.40	
	504SP012A	3.57	
Vanadium (V)	504SP001A	18.00	55.00
	504SP002A	16.30	
	504SP003A	23.40	
	504SP004A	14.80	
	504SP005A	19.10	
	504SP006A	14.80	
	504SP007A	12.60	
	504SP008A	12.60	
	504SP009A	10.90	

Chemicals Detected in Zone L, Subzone A, Soil Samples
AOC 504

Name	Location	Concentration	RBC (THQ=.1)
	504SP010A	5.10	
	504SP011A	8.64	
	504SP012A	10.80	
	504SP013A	21.80	
	504SP014A	10.30	
	504SP015A	17.30	
Zinc (Zn)	504SP001A	16.60	2300.00
	504SP002A	91.20	
	504SP003A	456.00	
	504SP004A	46.20	
	504SP005A	78.40	
	504SP006A	40.00	
	504SP007A	41.30	
	504SP008A	8.83	
	504SP009A	19.00	
	504SP010A	7.54	
	504SP011A	22.70	
	504SP012A	263.00	
	504SP013A	5.45	
	504SP014A	19.40	
	504SP015A	29.70	



REVISION	DATE	BY	DESCRIPTION
1	7/20/96	JLM	REVISED AOC ID & SAMPLE ID

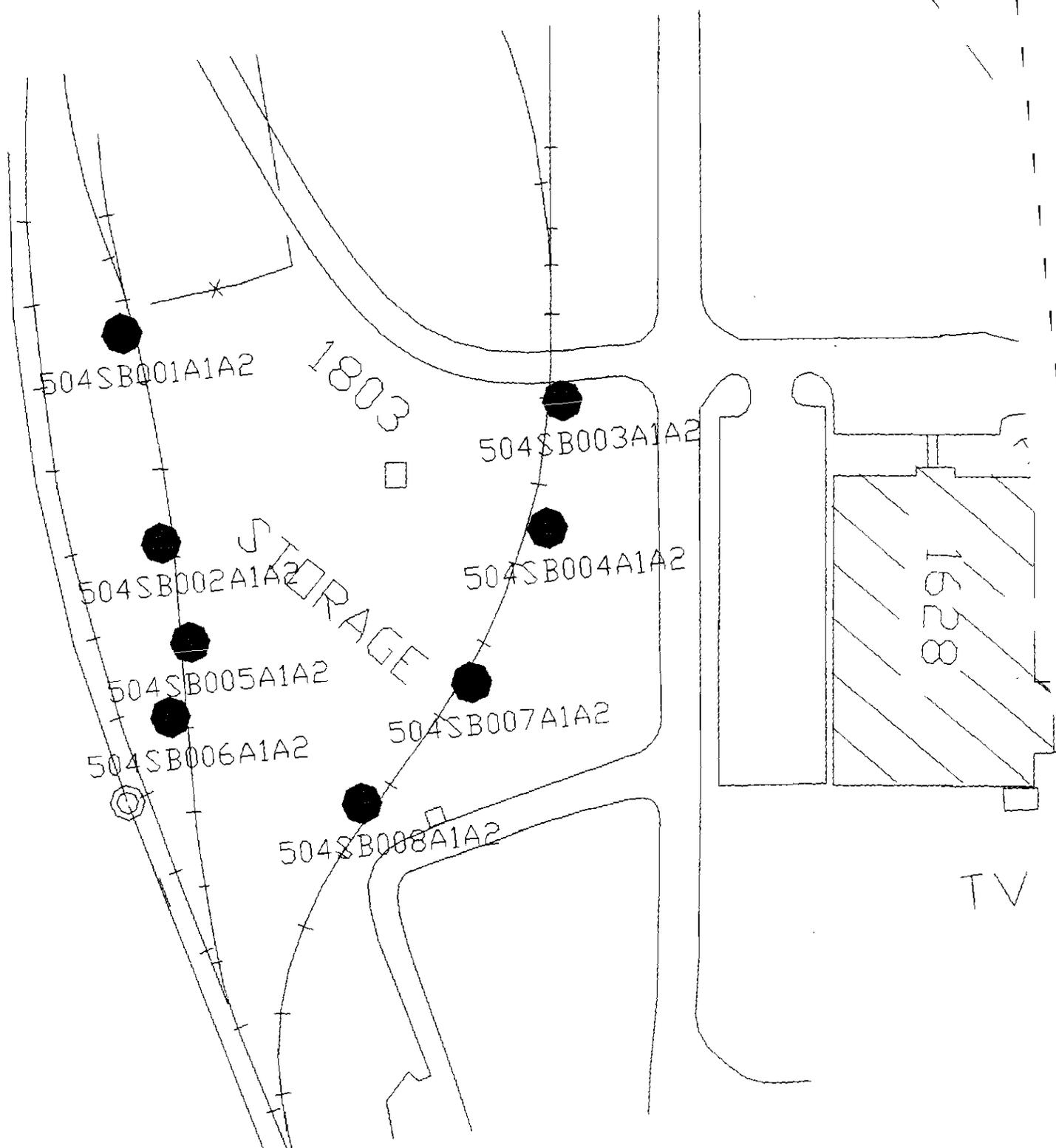
LEGEND

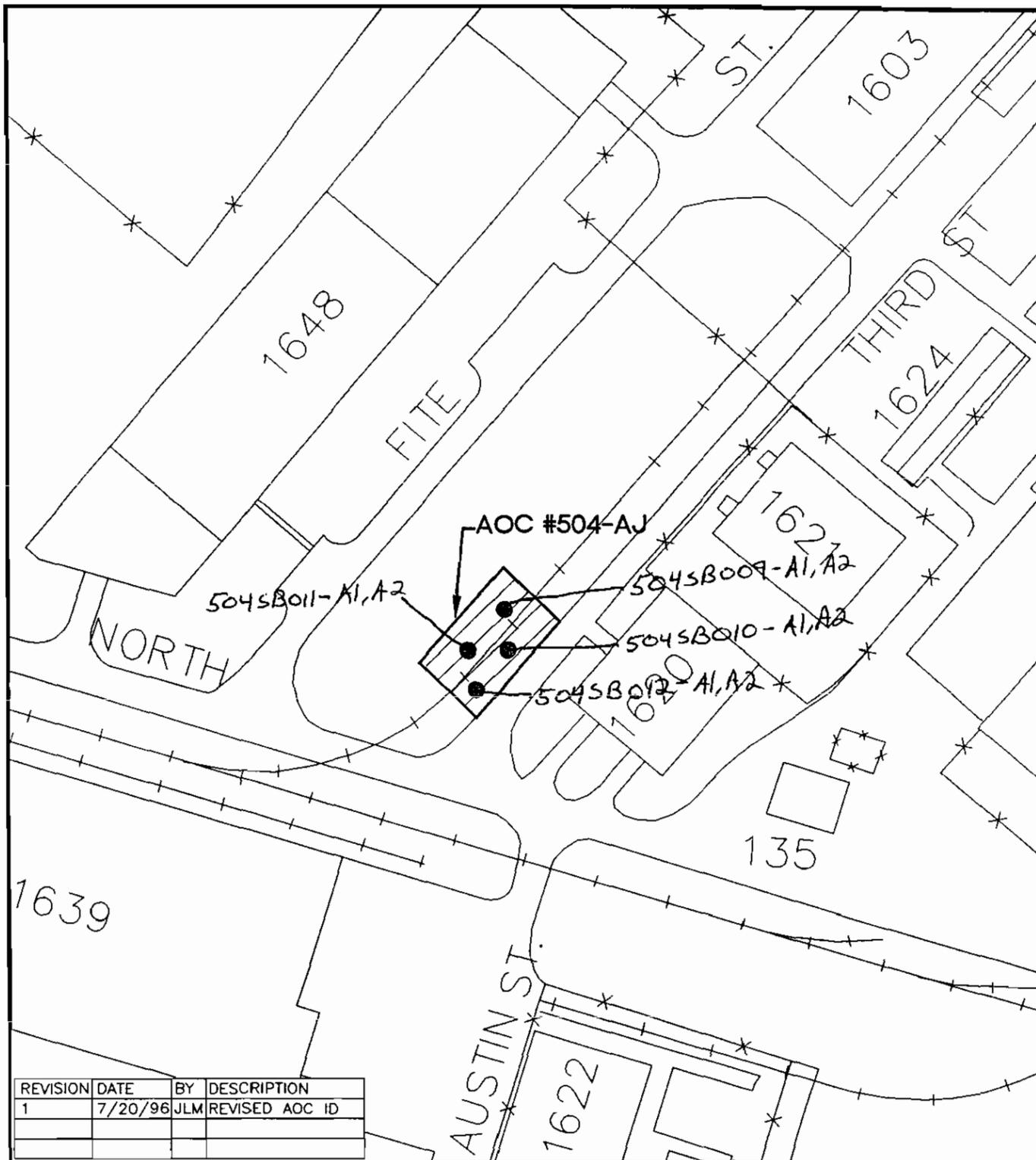
- L - PROPOSED SOIL BORING - ZONE L
- A - EXISTING SHALLOW WELLS - ZONE A
- A - EXISTING SOIL BORING - ZONE A



FINAL
ZONE L RFI WORK PLAN
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 2-25
AOC 504-BD: RAILROAD SYSTEM
FORMER ASPHALT PLANT & CREOSOTE
CROSSTIE/BALLAST STORAGE AREA
PROPOSED SAMPLING LOCATIONS

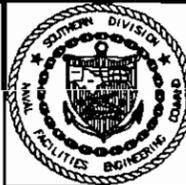
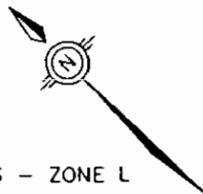




REVISION	DATE	BY	DESCRIPTION
1	7/20/96	JLM	REVISED AOC ID

LEGEND

- - PROPOSED SOIL BORINGS - ZONE L
- ▲ - PROPOSED SHALLOW MONITORING WELLS - ZONE L



FINAL
 ZONE L RFI WORK PLAN
 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

FIGURE 2-20
 AOC 504-AJ: RAILROAD SYSTEM
 RAIL SPUR TO BUILDING 1603
 PROPOSED SAMPLE LOCATIONS



DWG DATE: 7/20/96 | DWG NAME: FIG2-20

Zone A

Chemicals Detected in Zone L, Sub-zone B Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ=.1)
<i>Volatile Organic Compounds (ug/kg)</i>				
Acetone	504SB004	ND	10.00	780000.00
<i>Semi-volatile Compounds (ug/kg)</i>				
2-Methylnaphthalene	504SB003	46.00	ND	NA
Acenaphthylene	504SB003	78.00	ND	310000.00
	504SB005	130.00	ND	
	504SB006	510.00	ND	
Anthracene	504SB003	120.00	ND	23000000.00
	504SB004	74.00	ND	
	504SB005	180.00	ND	
	504SB006	370.00	ND	
Benzo(a)anthracene	504SB003	1200.00	ND	880.00
	504SB004	38.00	ND	
	504SB005	530.00	ND	
	504SB006	2300.00	110.00	
	504SB008	48.00	ND	
Benzo(a)pyrene	504SB003	2300.00	ND	88.00
	504SB004	61.00	ND	
	504SB005	660.00	ND	
	504SB006	3300.00	130.00	
	504SB008	42.00	ND	
Benzo(b)fluoranthene	504SB002	45.00	ND	880.00
	504SB003	2600.00	ND	
	504SB004	86.00	ND	
	504SB005	780.00	ND	
	504SB006	3800.00	150.00	
	504SB008	120.00	ND	
Benzo(g,h,i)perylene	504SB003	1400.00	ND	310000.00
	504SB004	42.00	ND	
	504SB005	400.00	ND	
	504SB006	1900.00	60.00	
Benzo(k)fluoranthene	504SB003	1400.00	ND	8800.00
	504SB004	67.00	ND	
	504SB005	710.00	ND	
	504SB006	3100.00	140.00	
Butylbenzylphthalate	504SB008	41.00	ND	1600000.00
	504SB006	ND	44.00	
Chrysene	504SB003	1600.00	ND	88000.00
	504SB004	49.00	ND	
	504SB005	830.00	ND	
	504SB006	2800.00	110.00	
	504SB008	90.00	ND	
Dibenz(a,h)anthracene	504SB003	660.00	ND	88000.00
	504SB005	160.00	ND	
	504SB006	880.00	ND	
Di-n-butylphthalate	504SB003	ND	61.00	7800000.00
Fluoranthene	504SB003	1000.00	ND	3100000.00
	504SB004	39.00	ND	

Chemicals Detected in Zone L, Sub-zone B Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ=.1)
	504SB005	1400.00	84.00	
	504SB006	2400.00	95.00	
	504SB008	50.00	ND	
Indeno(1,2,3-cd)pyrene	504SB003	1200.00	ND	880.00
	504SB004	38.00	ND	
	504SB005	360.00	ND	
	504SB006	1800.00	54.00	
Naphthalene	504SB006	61.00	ND	310000.00
Phenanthrene	504SB003	370.00	ND	310000.00
	504SB005	570.00	ND	
	504SB006	420.00	ND	
	504SB008	55.00	ND	
Pyrene	504SB003	1000.00	ND	230000.00
	504SB004	41.00	ND	
	504SB005	1000.00	57.00	
	504SB006	3300.00	110.00	
	504SB008	52.00	ND	
<i>Chlorinated Pesticides (ug/kg)</i>				
4,4'-DDE	504SB002	11.00	ND	19000.00
4,4'-DDT	504SB002	8.30	ND	1900.00
	504SB006	410.00	ND	
	504SB008	63.00	ND	
Endosulfan sulfate	504SB006	10.00	ND	47000.00
Endrin	504SB006	170.00	ND	2300.00
	504SB008	28.00	ND	
Endrin aldehyde	504SB006	94.00	3.20	2300.00
	504SB008	18.00	ND	
Endrin ketone	504SB003	6.10	ND	2300.00
	504SB006	19.00	ND	
Heptachlor epoxide	504SB006	4.00	ND	70.00
	504SB008	1.90	ND	
alpha-Chlordane	504SB006	89.00	ND	490.00
	504SB008	16.00	ND	
<i>Polychlorinated biphenyls (ug/kg)</i>				
Aroclor-1254	504SB006	2100.00	ND	160.00
	504SB008	460.00	ND	
<i>Inorganic Compounds (mg/kg)</i>				
Cyanide (CN)	504SB006	0.22	0.16	73.00
	504SB007	0.14	0.61	
	504SB008	0.12	2.10	
Aluminum (Al)	504SB002	3810.00	ND	7800.00
	504SB003	3900.00	8580.00	
	504SB004	1380.00	319.00	
	504SB005	7170.00	6085.00	
	504SB006	6710.00	2070.00	
	504SB007	926.00	342.00	

Chemicals Detected in Zone L, Sub-zone B Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ=.1)
Antimony (Sb)	504SB008	3610.00	5140.00	
	504SB002	1.20	ND	3.10
	504SB003	3.00	0.74	
Arsenic (As)	504SB005	1.40	0.63	
	504SB002	30.30	ND	0.43
	504SB003	98.20	2.70	
	504SB004	23.70	1.70	
	504SB005	56.40	9.20	
	504SB006	65.20	22.20	
	504SB007	27.30	ND	
Barium (Ba)	504SB008	51.40	11.00	
	504SB002	16.50	ND	550.00
	504SB003	98.90	37.10	
	504SB004	11.90	2.90	
	504SB005	55.60	12.75	
	504SB006	30.40	10.50	
	504SB007	4.70	2.90	
	504SB008	21.30	13.30	
Beryllium (Be)	504SB002	0.55	ND	0.15
	504SB003	0.66	0.23	
	504SB004	0.21	0.09	
	504SB005	0.61	0.60	
	504SB006	0.49	ND	
	504SB008	ND	0.54	
Cadmium (Cd)	504SB002	0.48	ND	3.90
	504SB003	0.45	ND	
	504SB004	0.13	ND	
	504SB005	0.29	0.74	
	504SB006	0.22	ND	
	504SB008	ND	0.51	
Calcium (Ca)	504SB002	161000.00	ND	NA
	504SB003	73800.00	1160.00	
	504SB004	27100.00	1680.00	
	504SB005	80500.00	239500.00	
	504SB006	23200.00	4750.00	
	504SB007	12100.00	2540.00	
	504SB008	1680.00	256000.00	
	504SB002	34.70	ND	39.00
Chromium (Cr)	504SB003	17.70	9.80	
	504SB004	7.20	1.20	
	504SB005	19.10	62.30	
	504SB006	15.20	6.30	
	504SB007	3.60	1.60	
	504SB008	4.50	58.40	
	504SB002	1.20	ND	470.00
	504SB003	3.10	1.30	
Cobalt (Co)	504SB005	2.80	1.05	
	504SB006	2.80	ND	
	504SB002	7.90	ND	310.00
	504SB002	7.90	ND	310.00

Chemicals Detected in Zone L, Sub-zone B Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ=.1)
Iron (Fe)	504SB003	38.00	1.40	
	504SB004	7.00	2.40	
	504SB005	33.00	12.90	
	504SB006	49.90	5.20	
	504SB007	1.40	0.71	
	504SB008	6.60	17.10	
	504SB002	4370.00	ND	2300.00
	504SB003	9900.00	8980.00	
Lead (Pb)	504SB004	2020.00	467.00	
	504SB005	10500.00	5735.00	
	504SB006	9100.00	6410.00	
	504SB007	1330.00	421.00	
	504SB008	3380.00	6030.00	
	504SB002	10.60	ND	400.00
	504SB003	377.00	7.00	
	504SB004	84.70	5.50	
Magnesium (Mg)	504SB005	107.00	3.05	
	504SB006	87.40	10.40	
	504SB007	2.10	ND	
	504SB008	10.10	22.60	
	504SB002	3040.00	ND	NA
	504SB003	1620.00	416.00	
	504SB004	619.00	69.00	
	504SB005	1970.00	19500.00	
Manganese (Mn)	504SB006	1150.00	311.00	
	504SB007	283.00	ND	
	504SB008	209.00	7260.00	
	504SB002	68.00	ND	180.00
	504SB003	71.90	30.20	
	504SB004	26.10	3.80	
	504SB005	138.00	78.60	
	504SB006	102.00	46.00	
Mercury (Hg)	504SB007	12.90	3.70	
	504SB008	28.60	87.70	
	504SB002	0.06	ND	2.30
	504SB003	2.70	0.07	
	504SB004	1.20	ND	
	504SB005	1.30	ND	
Nickel (Ni)	504SB006	0.13	ND	
	504SB002	11.50	ND	160.00
	504SB003	12.10	2.90	
	504SB004	4.00	0.46	
	504SB005	9.60	28.85	
	504SB006	10.40	2.30	
Potassium (K)	504SB007	1.50	ND	
	504SB008	2.20	30.70	
	504SB002	617.00	ND	NA
	504SB003	430.00	241.00	
	504SB004	189.00	ND	

Chemicals Detected in Zone L, Sub-zone B Soil Borings
AOC 504

Name	Location	Surface Conc.	Subsurface Conc.	RBC (THQ=.1)
	504SB005	660.00	1415.00	
	504SB006	423.00	154.00	
	504SB007	78.40	30.50	
	504SB008	113.00	1200.00	
Selenium (Se)	504SB005	ND	3.80	39.00
	504SB006	0.64	ND	
	504SB007	ND	0.34	
	504SB008	ND	1.50	
Sodium (Na)	504SB002	1110.00	ND	NA
	504SB003	513.00	225.00	
	504SB004	349.00	168.00	
	504SB005	894.00	1315.00	
	504SB008	ND	1380.00	
Thallium (Tl)	504SB006	0.86	ND	0.29
Tin (Sn)	504SB002	0.81	ND	4700.00
	504SB003	5.50	1.20	
	504SB004	1.60	0.70	
	504SB005	8.80	1.15	
	504SB006	3.80	1.50	
	504SB007	1.20	0.94	
	504SB008	1.00	1.90	
Vanadium (V)	504SB002	19.20	ND	55.00
	504SB003	15.00	16.90	
	504SB004	5.70	0.81	
	504SB005	19.60	35.90	
	504SB006	16.10	9.40	
	504SB007	2.70	0.94	
	504SB008	6.20	33.10	
Zinc (Zn)	504SB002	33.20	ND	2300.00
	504SB003	203.00	7.60	
	504SB004	44.00	6.00	
	504SB005	140.00	58.85	
	504SB006	134.00	29.00	
	504SB008	ND	57.10	

Notes:

ND: Not Detected

NS: No Sample Taken/Sample Not Analyzed

NA: Not Applicable

For compounds detected in both the primary and duplicate sample, the concentration for both detections are averaged and listed as one detection.

For compounds that were detected in only one of the primary and duplicate sample, the value of the detection was used.

Chemicals Detected in Zone L, Subzone B, Soil Samples
AOC 504

Name	Location	Concentration	RBC (THQ=.1)
<i>Inorganic Compounds (mg/kg)</i>			
Aluminum (Al)	504SP001B	3910.00	7800.00
	504SP002B	3140.00	
	504SP003B	2440.00	
	504SP004B	4630.00	
	504SP005B	5540.00	
	504SP006B	1530.00	
	504SP007B	3750.00	
	504SP008B	13900.00	
	504SP009B	9400.00	
	504SP010B	10200.00	
	504SP011B	4380.00	
	504SP012B	2790.00	
	504SP013B	2960.00	
	504SP014B	4680.00	
Antimony (Sb)	504SP010B	1.95	3.10
Arsenic (As)	504SP001B	4.57	3.10
	504SP002B	2.10	
	504SP003B	3.46	
	504SP004B	7.78	
	504SP005B	3.80	
	504SP007B	1.67	
	504SP008B	95.50	
	504SP009B	85.90	
	504SP010B	84.90	
	504SP011B	24.50	
	504SP012B	31.70	
	504SP013B	88.80	
	504SP014B	12.80	
	Barium (Ba)	504SP001B	15.40
504SP002B		16.80	
504SP003B		9.59	
504SP004B		361.00	
504SP005B		24.80	
504SP006B		8.69	
504SP007B		13.80	
504SP008B		31.80	
504SP009B		26.90	
504SP010B		37.30	
504SP011B		20.10	
504SP012B		11.20	
504SP013B		25.90	
504SP014B		23.70	
Beryllium (Be)	504SP003B	0.27	0.15
	504SP004B	0.40	
	504SP005B	0.31	
	504SP007B	0.25	
	504SP008B	0.71	
504SP009B	0.62		

Chemicals Detected in Zone L, Subzone B, Soil Samples
AOC 504

Name	Location	Concentration	RBC (THQ=.1)
Calcium (Ca)	504SP010B	0.70	
	504SP011B	0.41	
	504SP012B	0.34	
	504SP013B	0.50	
	504SP014B	0.34	
	504SP001B	958.00	NA
	504SP002B	2170.00	
	504SP003B	4170.00	
	504SP004B	3950.00	
	504SP005B	1110.00	
	504SP006B	388.00	
	504SP007B	20300.00	
	504SP008B	45700.00	
	504SP009B	42000.00	
Chromium (Cr)	504SP010B	31300.00	
	504SP011B	5550.00	
	504SP012B	3700.00	
	504SP013B	1870.00	
	504SP014B	2470.00	
	504SP001B	5.48	39.00
	504SP002B	6.31	
	504SP003B	6.35	
	504SP004B	11.20	
	504SP005B	8.78	
	504SP006B	3.45	
	504SP007B	8.10	
	504SP008B	30.80	
	504SP009B	26.60	
Cobalt (Co)	504SP010B	36.10	
	504SP011B	12.80	
	504SP012B	7.50	
	504SP013B	4.64	
	504SP014B	13.50	
	504SP003B	0.86	470.00
	504SP004B	2.36	
	504SP005B	1.44	
	504SP008B	3.22	
	504SP009B	2.61	
	504SP010B	2.68	
	504SP011B	1.94	
	504SP012B	1.20	
	504SP013B	1.36	
Copper (Cu)	504SP014B	1.82	
	504SP001B	3.77	310.00
	504SP002B	12.10	
	504SP003B	5.46	
	504SP004B	146.00	
	504SP005B	9.57	
504SP006B	3.17		

Chemicals Detected in Zone L, Subzone B, Soil Samples
AOC 504

Name	Location	Concentration	RBC (THQ=.1)
	504SP007B	3.10	
	504SP008B	13.20	
	504SP009B	33.20	
	504SP010B	106.00	
	504SP011B	21.80	
	504SP012B	5.11	
	504SP013B	23.30	
	504SP014B	19.50	
Iron (Fe)	504SP001B	3200.00	2300.00
	504SP002B	3750.00	
	504SP003B	3390.00	
	504SP004B	26100.00	
	504SP005B	9000.00	
	504SP006B	1970.00	
	504SP007B	2760.00	
	504SP008B	11300.00	
	504SP009B	8730.00	
	504SP010B	11600.00	
	504SP011B	5970.00	
	504SP012B	3730.00	
	504SP013B	5250.00	
	504SP014B	20300.00	
Lead (Pb)	504SP001B	8.91	400.00
	504SP002B	39.80	
	504SP003B	14.80	
	504SP004B	1740.00	
	504SP005B	32.00	
	504SP006B	35.30	
	504SP007B	8.34	
	504SP008B	46.30	
	504SP009B	50.20	
	504SP010B	87.80	
	504SP011B	66.60	
	504SP012B	8.70	
	504SP013B	52.60	
	504SP014B	36.30	
Magnesium (Mg)	504SP001B	238.00	NA
	504SP002B	304.00	
	504SP003B	400.00	
	504SP004B	646.00	
	504SP005B	581.00	
	504SP006B	182.00	
	504SP007B	1190.00	
	504SP008B	2840.00	
	504SP009B	2800.00	
	504SP010B	1840.00	
	504SP011B	632.00	
	504SP012B	376.00	
	504SP013B	268.00	

Chemicals Detected in Zone L, Subzone B, Soil Samples
AOC 504

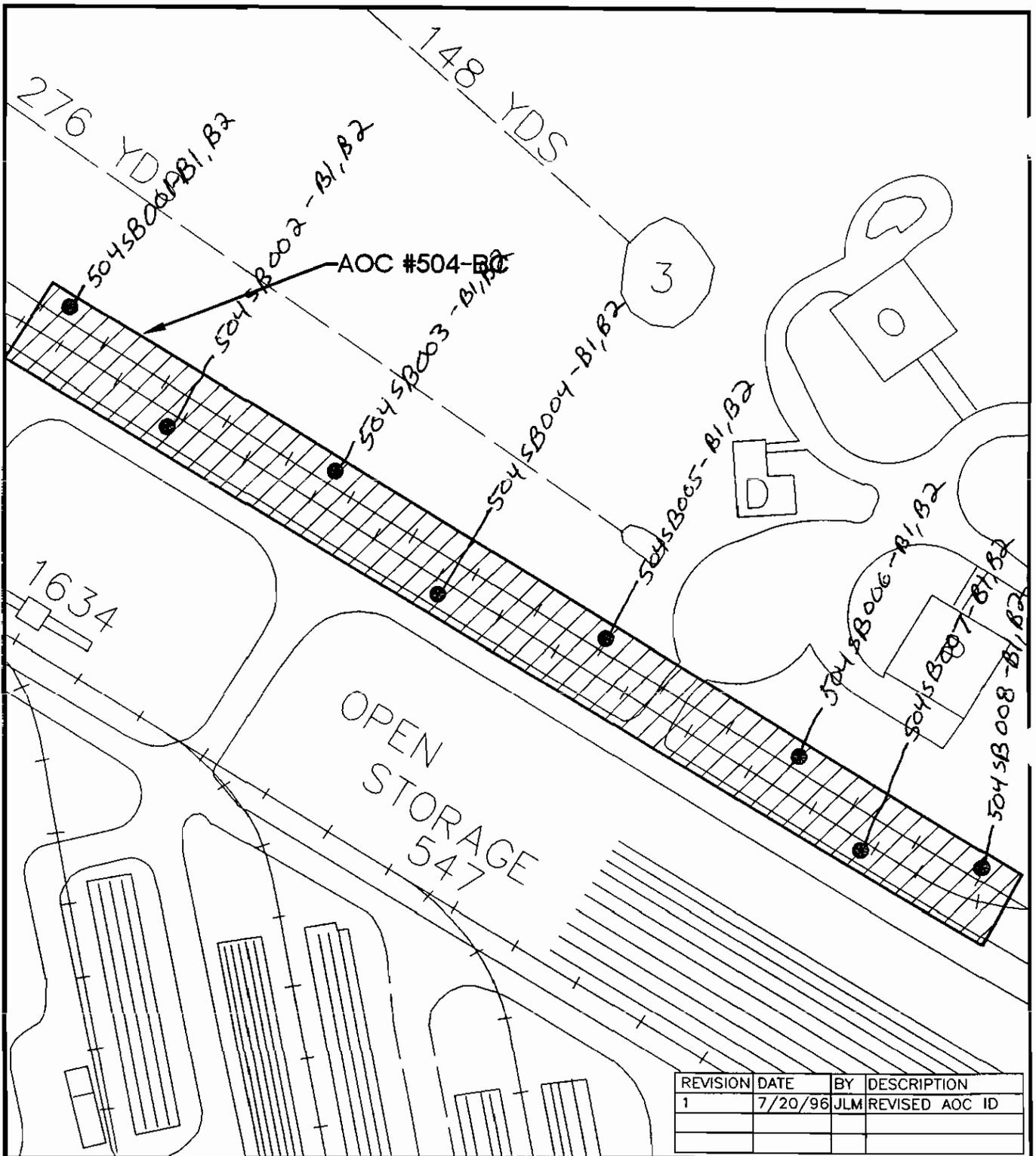
Name	Location	Concentration	RBC (THQ=.1)
Manganese (Mn)	504SP014B	429.00	
	504SP001B	31.50	180.00
	504SP002B	27.40	
	504SP003B	46.30	
	504SP004B	139.00	
	504SP005B	148.00	
	504SP006B	26.50	
	504SP007B	36.20	
	504SP008B	120.00	
	504SP009B	196.00	
	504SP010B	141.00	
	504SP011B	62.60	
	504SP012B	36.30	
	504SP013B	47.30	
Mercury (Hg)	504SP014B	130.00	
	504SP001B	0.09	2.30
	504SP002B	0.08	
	504SP003B	0.07	
	504SP004B	0.09	
	504SP005B	0.09	
	504SP006B	0.17	
	504SP007B	0.04	
	504SP008B	0.08	
	504SP009B	0.15	
	504SP010B	0.26	
	504SP011B	0.10	
	504SP012B	0.06	
	504SP013B	0.12	
Nickel (Ni)	504SP014B	0.16	
	504SP001B	1.71	160.00
	504SP002B	2.45	
	504SP003B	2.01	
	504SP004B	5.90	
	504SP005B	3.67	
	504SP006B	1.02	
	504SP007B	4.53	
	504SP008B	12.60	
	504SP009B	10.40	
	504SP010B	11.80	
	504SP011B	5.71	
	504SP012B	2.39	
	504SP013B	4.86	
Potassium (K)	504SP014B	9.65	
	504SP001B	114.00	NA
	504SP002B	139.00	
	504SP003B	269.00	
	504SP004B	499.00	
	504SP005B	316.00	
	504SP006B	114.00	

Chemicals Detected in Zone L, Subzone B, Soil Samples
AOC 504

Name	Location	Concentration	RBC (THQ=.1)
	504SP007B	175.00	
	504SP008B	922.00	
	504SP009B	739.00	
	504SP010B	695.00	
	504SP011B	309.00	
	504SP012B	237.00	
	504SP013B	244.00	
	504SP014B	198.00	
Selenium (Se)	504SP004B	1.18	39.00
	504SP008B	1.02	
	504SP009B	0.90	
	504SP010B	1.16	
	504SP011B	0.64	
	504SP013B	0.65	
	504SP014B	0.59	
Sodium (Na)	504SP001B	199.00	NA
	504SP002B	231.00	
	504SP003B	251.00	
	504SP004B	266.00	
	504SP005B	280.00	
	504SP006B	259.00	
	504SP007B	308.00	
	504SP008B	1060.00	
	504SP009B	936.00	
	504SP010B	902.00	
	504SP011B	314.00	
	504SP012B	261.00	
	504SP013B	301.00	
	504SP014B	242.00	
Thallium (Tl)	504SP004B	2.36	NA
	504SP014B	1.59	
Tin (Sn)	504SP004B	15.30	4700.00
	504SP010B	41.70	
Vanadium (V)	504SP001B	6.97	55.00
	504SP002B	8.64	
	504SP003B	7.92	
	504SP004B	12.50	
	504SP005B	13.40	
	504SP006B	4.83	
	504SP007B	7.87	
	504SP008B	27.90	
	504SP009B	20.80	
	504SP010B	21.70	
	504SP011B	10.70	
	504SP012B	7.61	
	504SP013B	7.58	
	504SP014B	9.99	
Zinc (Zn)	504SP001B	15.50	2300.00
	504SP002B	29.70	

Chemicals Detected In Zone L, Subzone B, Soil Samples
AOC 504

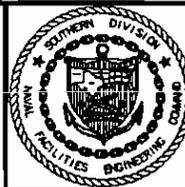
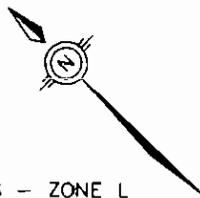
<u>Name</u>	<u>Location</u>	<u>Concentration</u>	<u>RBC</u> <u>(THQ=.1)</u>
	504SP003B	37.80	
	504SP004B	610.00	
	504SP005B	49.80	
	504SP006B	20.10	
	504SP007B	15.70	
	504SP008B	63.70	
	504SP009B	81.60	
	504SP010B	133.00	
	504SP011B	106.00	
	504SP012B	16.70	
	504SP013B	56.30	
	504SP014B	220.00	



REVISION	DATE	BY	DESCRIPTION
1	7/20/96	JLM	REVISED AOC ID

LEGEND

- - PROPOSED SOIL BORINGS - ZONE L
- ▲ - PROPOSED SHALLOW MONITORING WELLS - ZONE L



FINAL
 ZONE L RFI WORK PLAN
 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

FIGURE 2-24
 AOC 504-BC: RFI RAILROAD SYSTEM
 COAL/CONTAINER CAR STORAGE AREA
 PROPOSED SAMPLE LOCATIONS



DWG DATE: 7/20/96 | DWG NAME: FIG2-24

Zone B

Chemicals Detected in Zone L, Subzone C, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
<i>Volatile Organic Compounds(ug/kg)</i>				
2-Butanone (MEK)	504SB006C1	44.00	NS	4700000.00
Acetone	504SB017C2	ND	16.00	780000.00
<i>Semi-volatile Compounds (ug/kg)</i>				
2-Methylnaphthalene	504SB001C1	250.00	ND	160000.00
Acenaphthylene	504SB017C1	85.00	ND	470000.00
Benzo(a)anthracene	504SB001C1	46.00	ND	880.00
	504SB015C1	75.00	NS	
	504SB017C1	150.00	ND	
	504SB018C1	48.00	NS	
	504SB001C1	39.00	ND	88.00
Benzo(a)pyrene	504SB003C2	ND	54.00	
	504SB008C1	57.00	NS	
	504SB012C1	46.00	NS	
	504SB015C1	70.00	NS	
	504SB017C1	340.00	ND	
	504SB018C1	130.00	NS	
	504SB001C1	39.00	ND	880.00
	504SB003C1	52.00	82.00	
Benzo(b)fluoranthene	504SB008C1	97.00	NS	
	504SB012C1	56.00	NS	
	504SB013C1	58.00	NS	
	504SB015C1	78.00	NS	
	504SB017C1	530.00	ND	
	504SB018C1	190.00	NS	
	504SB017C1	260.00	ND	310000.00
	504SB018C1	120.00	NS	
Benzo(k)fluoranthene	504SB002C2	ND	59.00	8800.00
	504SB003C1	50.00	64.00	
	504SB008C1	65.00	NS	
	504SB015C1	84.00	NS	
	504SB017C1	430.00	ND	
	504SB018C1	210.00	NS	
	504SB002C1	48.00	ND	3100000.00
	504SB003C1	41.00	ND	
Butylbenzylphthalate	504SB008C1	55.00	NS	1600000.00
	504SB010C2	ND	73.00	
	504SB011C1	50.00	NS	
	504SB012C1	52.00	NS	
	504SB013C1	160.00	NS	
	504SB001C1	64.00	ND	88000.00
	504SB003C1	48.00	67.00	
	504SB005C1	60.00	NS	
Chrysene	504SB008C1	87.00	NS	
	504SB012C1	47.00	NS	
	504SB013C1	65.00	NS	
	504SB015C1	99.00	NS	
	504SB017C1	280.00	ND	

Chemicals Detected in Zone L, Subzone C, Soil Borings
AOC 504

Name	Location	Surface Subsurface		RBC
				(THQ=.1)
	504SB018C1	120.00	NS	
Dibenz(a,h)anthracene	504SB017C1	100.00	ND	88000.00
Dibenzofuran	504SB001C1	84.00	ND	31000.00
Fluoranthene	504SB001C1	51.00	88.00	3100000.00
	504SB002C2	ND	100.00	
	504SB003C1	46.00	92.00	
	504SB005C1	64.00	NS	
	504SB008C1	110.00	NS	
	504SB010C2	ND	62.00	
	504SB012C1	70.00	NS	
	504SB013C1	100.00	NS	
	504SB017C1	210.00	ND	
Indeno(1,2,3-cd)pyrene	504SB017C1	250.00	ND	880.00
	504SB018C1	110.00	NS	
Naphthalene	504SB001C1	130.00	ND	310000.00
Phenanthrene	504SB001C1	270.00	ND	310000.00
	504SB002C1	46.00	ND	
	504SB003C1	46.00	ND	
	504SB015C1	72.00	NS	
Pyrene	504SB001C1	59.00	150.00	230000.00
	504SB002C2	ND	120.00	
	504SB003C1	43.00	100.00	
	504SB005C1	58.00	NS	
	504SB008C1	82.00	NS	
	504SB012C1	53.00	NS	
	504SB013C1	85.00	NS	
	504SB015C1	170.00	NS	
	504SB017C1	210.00	ND	
bis(2-Ethylhexyl)phthalate (BEHP)	504SB017C1	14.00	ND	4600.00
	504SB018C1	21.00	NS	
<i>Chlorinated Pesticides (ug/kg)</i>				
4,4'-DDD	504SB009C1	4.40	NS	2700.00
4,4'-DDE	504SB002C1	8.30	ND	19000.00
	504SB008C1	5.40	NS	
	504SB009C1	3.20	NS	
	504SB011C1	10.00	NS	
	504SB012C1	7.60	NS	
	504SB014C1	9.50	NS	
	504SB017C1	14.00	ND	
4,4'-DDT	504SB001C1	28.00	ND	1900.00
	504SB002C1	9.80	ND	
	504SB003C1	9.00	ND	
	504SB011C1	12.00	NS	
	504SB012C1	3.70	NS	
	504SB017C1	8.60	ND	
Dieldrin	504SB001C1	6.90	ND	40.00
Endrin	504SB001C1	21.00	ND	2300.00
Endrin aldehyde	504SB001C1	5.00	6.00	2300.00

Chemicals Detected in Zone L, Subzone C, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
	504SB004C2		6.00	
	504SB006C1	7.05	NS	
	504SB009C1	3.30	NS	
	504SB014C1	3.40	NS	
	504SB015C1	3.50	NS	
	504SB016C1	4.00	NS	
	504SB017C2		3.40	
	504SB018C1	5.30	NS	
gamma-Chlordane	504SB001C1	4.00	ND	490.00
<i>Polychlorinated biphenyls (ug/kg)</i>				
Aroclor-1260	504SB001C1	170.00	ND	83.00
<i>Inorganic Compounds (mg/kg)</i>				
Cyanide (CN)	504SB004C1	0.13	0.39	73.00
	504SB005C1	0.13	NS	
	504SB006C1	0.24	NS	
	504SB007C1	0.36	NS	
	504SB008C1	0.97	NS	
	504SB010C1	0.20	0.20	
	504SB011C1	0.18	NS	
	504SB012C1	0.12	NS	
	504SB013C1	0.23	NS	
Aluminum (Al)	504SB001C1	3040.00	25300.00	7800.00
	504SB002C1	8920.00	15100.00	
	504SB003C1	3340.00	17100.00	
	504SB004C1	1420.00	31400.00	
	504SB005C1	17900.00	NS	
	504SB006C1	16450.00	NS	
	504SB007C1	26100.00	NS	
	504SB008C1	27900.00	NS	
	504SB009C1	10700.00	NS	
	504SB010C1	7810.00	1510.00	
	504SB011C1	5370.00	NS	
	504SB012C1	9770.00	NS	
	504SB013C1	29700.00	NS	
	504SB014C1	1120.00	NS	
	504SB015C1	6080.00	NS	
	504SB016C1	420.00	NS	
	504SB017C1	2720.00	848.50	
	504SB018C1	1620.00	NS	
Antimony (Sb)	504SB001C1	0.32	ND	3.10
	504SB002C2	ND	0.53	
	504SB014C1	0.49	NS	
	504SB017C1	0.66	ND	
Arsenic (As)	504SB001C1	2.50	20.70	3.10
	504SB002C1	12.90	10.80	
	504SB003C1	2.10	15.80	

Chemicals Detected in Zone L, Subzone C, Soil Borings
AOC 504

Name	Location	Surface Subsurface		RBC (THQ=.1)
		Surface	Subsurface	
	504SB004C1	1.40	27.20	
	504SB005C1	12.30	NS	
	504SB006C1	11.35	NS	
	504SB007C1	23.30	NS	
	504SB008C1	47.90	NS	
	504SB009C1	7.70	NS	
	504SB010C1	3.10	1.20	
	504SB011C1	3.80	NS	
	504SB012C1	6.20	NS	
	504SB013C1	24.00	NS	
	504SB014C1	6.80	NS	
	504SB015C1	3.60	NS	
	504SB016C1	1.50	NS	
	504SB017C1	11.60	1.88	
	504SB018C1	2.60	NS	
Barium (Ba)	504SB001C1	10.30	41.70	550.00
	504SB002C1	20.60	25.20	
	504SB003C1	7.10	30.10	
	504SB004C1	7.30	43.20	
	504SB005C1	41.60	NS	
	504SB006C1	32.55	NS	
	504SB007C1	44.60	NS	
	504SB008C1	61.60	NS	
	504SB009C1	35.70	NS	
	504SB010C1	37.20	9.70	
	504SB011C1	24.10	NS	
	504SB012C1	25.90	NS	
	504SB013C1	54.10	NS	
	504SB014C1	3.90	NS	
	504SB015C1	12.00	NS	
	504SB016C1	3.10	NS	
	504SB017C1	17.40	4.60	
	504SB018C1	6.20	NS	
Beryllium (Be)	504SB001C1	0.25	1.50	0.15
	504SB002C1	0.34	1.00	
	504SB003C1	0.21	1.10	
	504SB004C2	ND	1.60	
	504SB005C1	1.10	NS	
	504SB006C1	0.78	NS	
	504SB007C1	1.50	NS	
	504SB008C1	1.50	NS	
	504SB009C1	0.48	NS	
	504SB010C1	0.41	ND	
	504SB011C1	0.41	NS	
	504SB013C1	1.50	NS	
	504SB014C1	0.11	NS	
	504SB015C1	0.20	NS	
	504SB016C1	0.15	NS	
	504SB017C1	0.32	0.17	

Chemicals Detected in Zone L, Subzone C, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
Cadmium (Cd)	504SB018C1	0.21	NS	3.90
	504SB001C1	0.11	ND	
	504SB002C1	0.09	ND	
Calcium (Ca)	504SB017C1	0.15	ND	NA
	504SB001C1	81400.00	15100.00	
	504SB002C1	1800.00	8800.00	
	504SB003C1	222.00	12300.00	
	504SB004C1	8020.00	3810.00	
	504SB005C1	12000.00	NS	
	504SB006C1	2855.00	NS	
	504SB007C1	6160.00	NS	
	504SB008C1	6710.00	NS	
	504SB009C1	767.00	NS	
	504SB010C1	956.00	5260.00	
	504SB011C1	465.00	NS	
	504SB012C1	899.00	NS	
	504SB013C1	5900.00	NS	
	504SB014C1	155.00	NS	
	504SB015C1	7760.00	NS	
	504SB016C1	17200.00	NS	
	Chromium (Cr)	504SB017C1	15100.00	
504SB018C1		4140.00	NS	
504SB001C1		5.40	46.50	
504SB002C1		10.70	27.20	
504SB003C1		3.20	30.30	
504SB004C1		4.90	50.80	
504SB005C1		37.70	NS	
504SB006C1		23.65	NS	
504SB007C1		47.30	NS	
504SB008C1		47.30	NS	
504SB009C1		15.60	NS	
504SB010C1		10.40	6.00	
504SB011C1		7.40	NS	
504SB012C1		13.40	NS	
504SB013C1		47.40	NS	
504SB014C1		4.80	NS	
504SB015C1		10.50	NS	
504SB016C1		2.00	NS	
504SB017C1		10.10	3.10	
504SB018C1		4.20	NS	
Cobalt (Co)		504SB001C1	1.80	7.50
	504SB002C1	2.00	4.50	
	504SB003C1	1.60	5.00	
	504SB004C2	ND	8.50	
	504SB005C1	6.00	NS	
	504SB006C1	4.80	NS	
	504SB007C1	7.70	NS	
	504SB008C1	8.70	NS	
	504SB009C1	1.50	NS	

Chemicals Detected in Zone L, Subzone C, Soil Borings
AOC 504

Name	Location	Surface Subsurface		RBC
				(THQ=.1)
	504SB013C1	8.70	NS	
	504SB014C1	0.33	NS	
	504SB015C1	0.78	NS	
	504SB016C1	0.27	NS	
	504SB017C1	1.40	0.47	
	504SB018C1	0.82	NS	
Copper (Cu)	504SB001C1	2.60	29.00	310.00
	504SB002C1	6.20	20.00	
	504SB003C1	4.20	21.20	
	504SB004C1	1.70	37.40	
	504SB005C1	21.10	NS	
	504SB006C1	26.60	NS	
	504SB007C1	31.00	NS	
	504SB008C1	35.40	NS	
	504SB009C1	3.10	NS	
	504SB010C1	5.40	1.30	
	504SB011C1	2.60	NS	
	504SB012C1	1.90	NS	
	504SB013C1	34.60	NS	
	504SB014C1	3.00	NS	
	504SB015C1	5.30	NS	
	504SB016C1	0.96	NS	
	504SB017C1	13.60	1.77	
	504SB018C1	2.20	NS	
Iron (Fe)	504SB001C1	3740.00	32000.00	2300.00
	504SB002C1	11000.00	21800.00	
	504SB003C1	2790.00	20300.00	
	504SB004C1	1670.00	39800.00	
	504SB005C1	25000.00	NS	
	504SB006C1	19450.00	NS	
	504SB007C1	33900.00	NS	
	504SB008C1	34500.00	NS	
	504SB009C1	22200.00	NS	
	504SB010C1	8260.00	2010.00	
	504SB011C1	6840.00	NS	
	504SB012C1	10300.00	NS	
	504SB013C1	30100.00	NS	
	504SB014C1	37000.00	NS	
	504SB015C1	6840.00	NS	
	504SB016C1	1130.00	NS	
	504SB017C1	5830.00	1700.00	
	504SB018C1	3050.00	NS	
Lead (Pb)	504SB001C1	4.20	39.60	400.00
	504SB002C1	9.10	32.20	
	504SB003C1	4.40	34.70	
	504SB004C1	3.20	54.60	
	504SB005C1	29.20	NS	
	504SB006C1	72.95	NS	
	504SB007C1	41.70	NS	

Chemicals Detected in Zone L, Subzone C, Soil Borings
AOC 504

Name	Location	Surface Subsurface		RBC
				(THQ=.1)
	504SB008C1	53.40	NS	
	504SB009C1	13.00	NS	
	504SB010C1	30.00	3.60	
	504SB011C1	9.80	NS	
	504SB012C1	11.80	NS	
	504SB013C1	48.70	NS	
	504SB014C1	4.60	NS	
	504SB015C1	9.20	NS	
	504SB016C1	2.10	NS	
	504SB017C1	18.40	3.80	
	504SB018C1	5.50	NS	
Magnesium (Mg)	504SB001C1	797.00	5710.00	NA
	504SB002C1	453.00	3610.00	
	504SB003C1	152.00	2690.00	
	504SB004C1	290.00	5690.00	
	504SB005C1	3720.00	NS	
	504SB006C1	2180.00	NS	
	504SB007C1	4510.00	NS	
	504SB008C1	3870.00	NS	
	504SB009C1	622.00	NS	
	504SB010C1	495.00	380.00	
	504SB011C1	387.00	NS	
	504SB012C1	781.00	NS	
	504SB013C1	4300.00	NS	
	504SB014C1	76.00	NS	
	504SB015C1	447.00	NS	
	504SB016C1	181.00	NS	
	504SB017C1	515.00	247.00	
	504SB018C1	303.00	NS	
Manganese (Mn)	504SB001C1	32.20	510.00	180.00
	504SB002C1	91.80	454.00	
	504SB003C1	94.50	229.00	
	504SB004C1	20.50	481.00	
	504SB005C1	271.00	NS	
	504SB006C1	351.50	NS	
	504SB007C1	417.00	NS	
	504SB008C1	550.00	NS	
	504SB009C1	38.40	NS	
	504SB010C1	31.60	42.20	
	504SB011C1	20.70	NS	
	504SB012C1	30.90	NS	
	504SB013C1	284.00	NS	
	504SB014C1	6.60	NS	
	504SB015C1	33.10	NS	
	504SB016C1	11.60	NS	
	504SB017C1	61.60	18.15	
	504SB018C1	40.40	NS	
Mercury (Hg)	504SB001C2	ND	0.20	2.30
	504SB002C1	0.17	0.21	

Chemicals Detected in Zone L, Subzone C, Soil Borings
AOC 504

Name	Location	Surface Subsurface		RBC
				(THQ=.1)
	504SB003C2	ND	0.29	
	504SB004C2	ND	0.35	
	504SB005C1	0.11	NS	
	504SB006C1	0.16	NS	
	504SB007C1	0.19	NS	
	504SB008C1	0.31	NS	
	504SB009C1	0.10	NS	
	504SB012C1	0.11	NS	
	504SB013C1	0.48	NS	
	504SB014C1	0.16	NS	
	504SB015C1	0.07	NS	
	504SB017C1	0.06	0.04	
Nickel (Ni)	504SB001C1	2.50	14.40	160.00
	504SB002C1	5.70	8.70	
	504SB003C1	2.50	10.80	
	504SB004C1	1.20	15.70	
	504SB005C1	13.20	NS	
	504SB006C1	11.60	NS	
	504SB007C1	16.00	NS	
	504SB008C1	20.30	NS	
	504SB009C1	2.80	NS	
	504SB010C2	ND	1.00	
	504SB011C1	1.80	NS	
	504SB012C1	2.30	NS	
	504SB013C1	16.40	NS	
	504SB014C1	1.30	NS	
	504SB015C1	2.70	NS	
	504SB016C1	0.61	NS	
	504SB017C1	4.30	1.03	
	504SB018C1	1.50	NS	
Potassium (K)	504SB001C1	218.00	2930.00	NA
	504SB002C1	325.00	1840.00	
	504SB003C2	ND	1520.00	
	504SB004C1	152.00	3420.00	
	504SB005C1	2070.00	NS	
	504SB006C1	1450.00	NS	
	504SB007C1	2460.00	NS	
	504SB008C1	2110.00	NS	
	504SB009C1	316.00	NS	
	504SB010C1	303.00	204.00	
	504SB011C1	251.00	NS	
	504SB012C1	467.00	NS	
	504SB013C1	2460.00	NS	
	504SB015C1	311.00	NS	
	504SB017C1	291.00	155.00	
	504SB018C1	190.00	NS	
Selenium (Se)	504SB001C2	ND	1.20	39.00
	504SB002C1	0.92	0.70	
	504SB003C2	ND	0.90	

Chemicals Detected in Zone L, Subzone C, Soil Borings
AOC 504

Name	Location	RBC		(THQ=.1)
		Surface	Subsurface	
	504SB004C2	ND	1.40	
	504SB005C1	0.95	NS	
	504SB006C1	0.89	NS	
	504SB007C1	1.10	NS	
	504SB008C1	0.72	NS	
	504SB009C1	1.10	NS	
	504SB010C1	0.55	ND	
	504SB011C1	0.60	NS	
	504SB012C1	0.62	NS	
	504SB013C1	1.10	NS	
	504SB014C1	0.99	NS	
	504SB015C1	0.45	NS	
Sodium (Na)	504SB001C1	812.00	2940.00	NA
	504SB002C1	234.00	750.00	
	504SB003C1	160.00	413.00	
	504SB004C2	885.00	NS	
	504SB009C1	299.00	NS	
	504SB013C1	797.00	NS	
	504SB014C1	205.00	NS	
	504SB015C1	278.00	NS	
	504SB016C1	333.00	NS	
	504SB017C1	349.00	318.50	
	504SB018C1	249.00	NS	
Thallium (Tl)	504SB002C2	ND	0.86	0.29
	504SB003C2	ND	1.20	
	504SB004C2	ND	2.10	
	504SB005C1	1.80	NS	
	504SB006C1	0.71	NS	
	504SB007C1	1.70	NS	
	504SB008C1	3.30	NS	
	504SB009C1	0.93	NS	
	504SB010C1	0.92	ND	
	504SB011C1	0.82	NS	
	504SB012C1	1.20	NS	
	504SB013C1	2.90	NS	
	504SB014C1	1.40	NS	
Tin (Sn)	504SB001C1	0.93	3.20	4700.00
	504SB002C1	1.40	2.10	
	504SB003C1	1.10	2.80	
	504SB004C1	1.60	3.90	
	504SB005C1	2.70	NS	
	504SB006C1	2.70	NS	
	504SB007C1	3.20	NS	
	504SB008C1	3.40	NS	
	504SB009C1	1.10	NS	
	504SB010C1	1.70	1.20	
	504SB011C1	1.40	NS	
	504SB012C1	1.30	NS	
	504SB013C1	3.60	NS	

Chemicals Detected in Zone L, Subzone C, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
Vanadium (V)	504SB014C1	1.30	NS	55.00
	504SB015C1	0.81	NS	
	504SB016C1	0.78	NS	
	504SB017C1	2.50	0.83	
	504SB018C1	1.00	NS	
	504SB001C1	6.90	67.80	
	504SB002C1	18.80	44.90	
	504SB003C1	5.00	48.00	
	504SB004C1	4.00	96.40	
	504SB005C1	50.40	NS	
	504SB006C1	40.70	NS	
	504SB007C1	73.20	NS	
	504SB008C1	72.20	NS	
	504SB009C1	23.60	NS	
	504SB010C1	14.40	4.50	
	504SB011C1	11.20	NS	
	504SB012C1	18.10	NS	
	504SB013C1	73.30	NS	
	504SB014C1	3.90	NS	
	Zinc (Zn)	504SB015C1	15.90	
504SB016C1		1.50	NS	
504SB017C1		8.00	2.55	
504SB018C1		4.80	NS	
504SB001C1		11.40	106.00	
504SB002C1		30.20	85.80	
504SB003C1		10.40	191.00	
504SB004C2		ND	133.00	
504SB005C1		78.70	NS	
504SB006C1		143.50	NS	
504SB007C1		109.00	NS	
504SB008C1		127.00	NS	
504SB009C1		15.00	NS	
504SB010C1		28.00	ND	
504SB013C1		126.00	NS	
504SB014C1		7.80	NS	
504SB015C1		17.60	NS	
504SB016C1		3.90	NS	
504SB017C1	35.40	6.90		
504SB018C1	14.60	NS		

Notes:

ND: Not Detected

NS: No Sample Taken/Sample Not Analyzed

NA: Not applicable

For compounds detected in both the primary and duplicate sample, the concentration for both detections are averaged and listed as one detection.

For compounds that were detected in only one of the primary or duplicate sample, the value of the detection was used.

Chemicals Detected in Zone L, Subzone C, Soil Samples
AOC 504

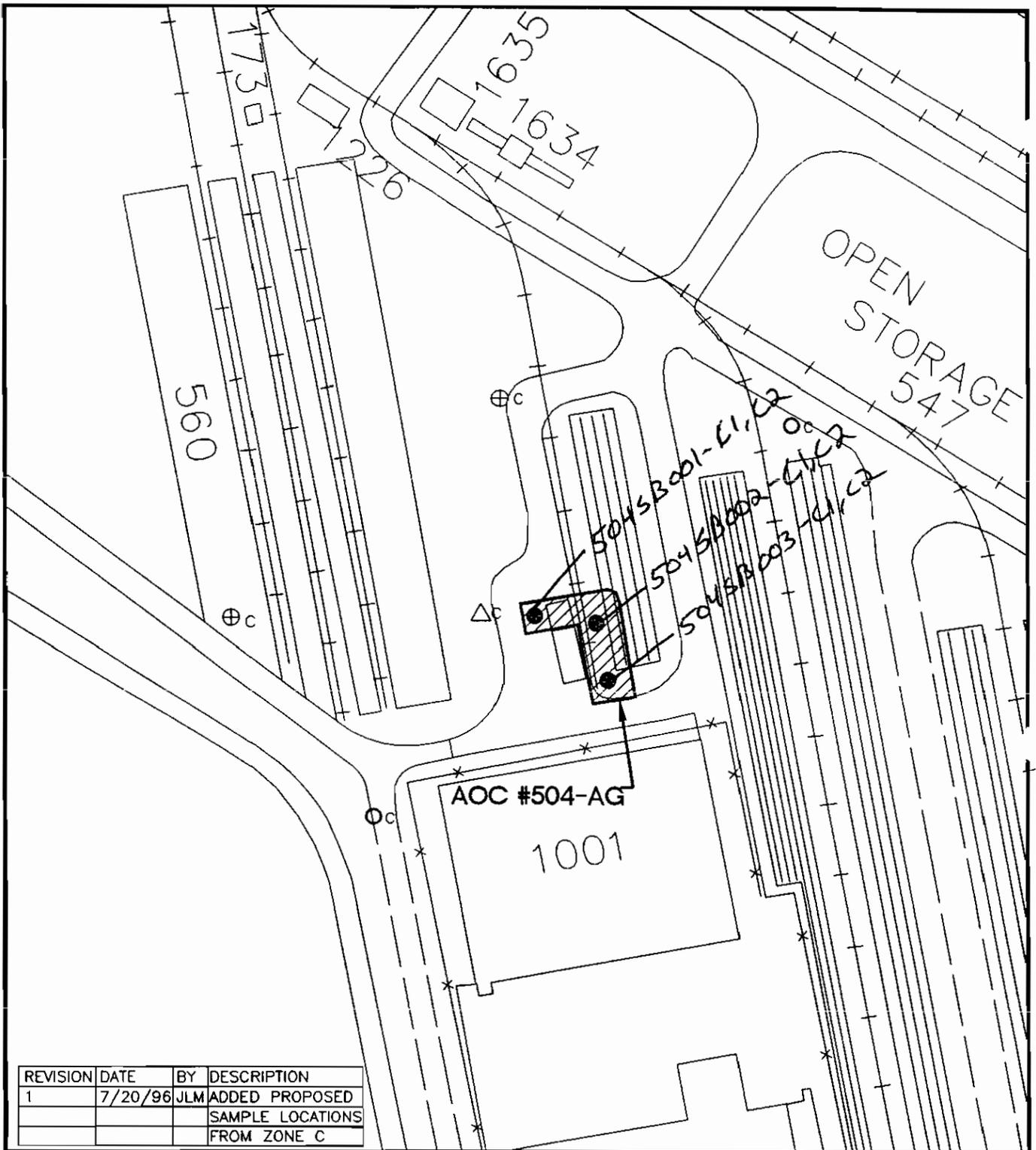
Name	Location	Concentration	RBC (THQ=.1)
<i>Volatile Organic Compounds (ug/kg)</i>			
2-Butanone (MEK)	504SP004C	46.50	4700000.00
Acetone	504SP004C	239.00	780000.00
<i>Inorganic Compounds (mg/kg)</i>			
Aluminum (Al)	504SP002C	3940.00	7800.00
	504SP003C	1150.00	
	504SP004C	12800.00	
	504SP006C	9330.00	
	504SP005C	5940.00	
	504SP001C	4080.00	
Antimony (Sb)	504SP001C	27.00	3.10
Arsenic (As)	504SP003C	4.53	3.10
	504SP001C	17.90	
	504SP002C	42.70	
	504SP004C	11.10	
	504SP006C	4.63	
	504SP005C	13.90	
Barium (Ba)	504SP005C	26.60	550.00
	504SP003C	23.40	
	504SP006C	25.60	
	504SP002C	46.00	
	504SP001C	66.00	
	504SP004C	27.00	
Beryllium (Be)	504SP002C	0.46	0.15
	504SP006C	0.65	
	504SP001C	0.34	
	504SP003C	0.25	
	504SP005C	0.54	
	504SP004C	0.66	
Cadmium (Cd)	504SP006C	0.70	3.90
	504SP005C	0.44	
Calcium (Ca)	504SP006C	104000.00	NA
	504SP001C	88600.00	
	504SP004C	69300.00	
	504SP003C	7350.00	
	504SP005C	148000.00	
	504SP002C	18300.00	
Chromium (Cr)	504SP006C	39.70	39.00
	504SP005C	37.10	
	504SP003C	4.17	
	504SP001C	22.00	
	504SP004C	20.30	
	504SP002C	24.20	
Cobalt (Co)	504SP006C	1.66	470.00
	504SP005C	1.46	
	504SP003C	1.91	
	504SP004C	3.66	
	504SP002C	2.99	

Chemicals Detected in Zone L, Subzone C, Soil Samples
AOC 504

Name	Location	Concentration	RBC (THQ=.1)
Copper (Cu)	504SP001C	2.58	
	504SP005C	16.80	310.00
	504SP001C	28.60	
	504SP004C	14.90	
	504SP002C	21.40	
	504SP003C	8.34	
Iron (Fe)	504SP006C	8.43	
	504SP005C	8940.00	2300.00
	504SP004C	15200.00	
	504SP003C	4100.00	
	504SP001C	8320.00	
	504SP006C	6530.00	
Lead (Pb)	504SP002C	15800.00	
	504SP006C	7.84	400.00
	504SP002C	83.00	
	504SP003C	12.90	
	504SP005C	71.60	
	504SP004C	25.40	
Magnesium (Mg)	504SP001C	180.00	
	504SP004C	2630.00	NA
	504SP002C	698.00	
	504SP001C	1240.00	
	504SP003C	164.00	
	504SP005C	3690.00	
Manganese (Mn)	504SP006C	5420.00	
	504SP006C	66.40	180.00
	504SP005C	96.40	
	504SP001C	98.60	
	504SP004C	338.00	
	504SP003C	17.60	
Mercury (Hg)	504SP002C	91.00	
	504SP005C	0.05	2.30
	504SP002C	0.08	
Nickel (Ni)	504SP004C	0.13	
	504SP003C	4.53	160.00
	504SP005C	17.20	
	504SP004C	8.45	
	504SP002C	11.80	
	504SP006C	14.70	
Potassium (K)	504SP001C	11.50	
	504SP004C	1300.00	NA
	504SP002C	378.00	
	504SP003C	96.90	
	504SP005C	943.00	
	504SP006C	1120.00	
Selenium (Se)	504SP001C	396.00	
	504SP006C	1.66	39.00
	504SP002C	0.90	
	504SP005C	1.86	

Chemicals Detected in Zone L, Subzone C, Soil Samples
AOC 504

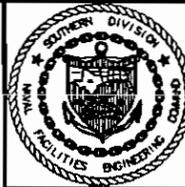
Name	Location	Concentration	RBC (THQ=.1)
	504SP004C	0.99	
Sodium (Na)	504SP006C	1080.00	NA
	504SP005C	793.00	
	504SP001C	277.00	
	504SP004C	396.00	
	504SP003C	237.00	
	504SP002C	409.00	
Tin (Sn)	504SP003C	3.81	4700.00
	504SP001C	28.60	
Vanadium (V)	504SP004C	36.90	55.00
	504SP005C	22.40	
	504SP001C	10.80	
	504SP003C	4.53	
	504SP002C	13.50	
	504SP006C	25.60	
Zinc (Zn)	504SP005C	123.00	2300.00
	504SP003C	56.00	
	504SP006C	56.20	
	504SP001C	106.00	
	504SP002C	209.00	
	504SP004C	58.30	



REVISION	DATE	BY	DESCRIPTION
1	7/20/96	JLM	ADDED PROPOSED SAMPLE LOCATIONS FROM ZONE C

LEGEND

- - PROPOSED SOIL BORINGS - ZONE L
- Δc - EXISTING SEDIMENT SAMPLE - ZONE C
- c - EXISTING SOIL BORINGS - ZONE C
- ⊕c - EXISTING SHALLOW WELLS - ZONE C



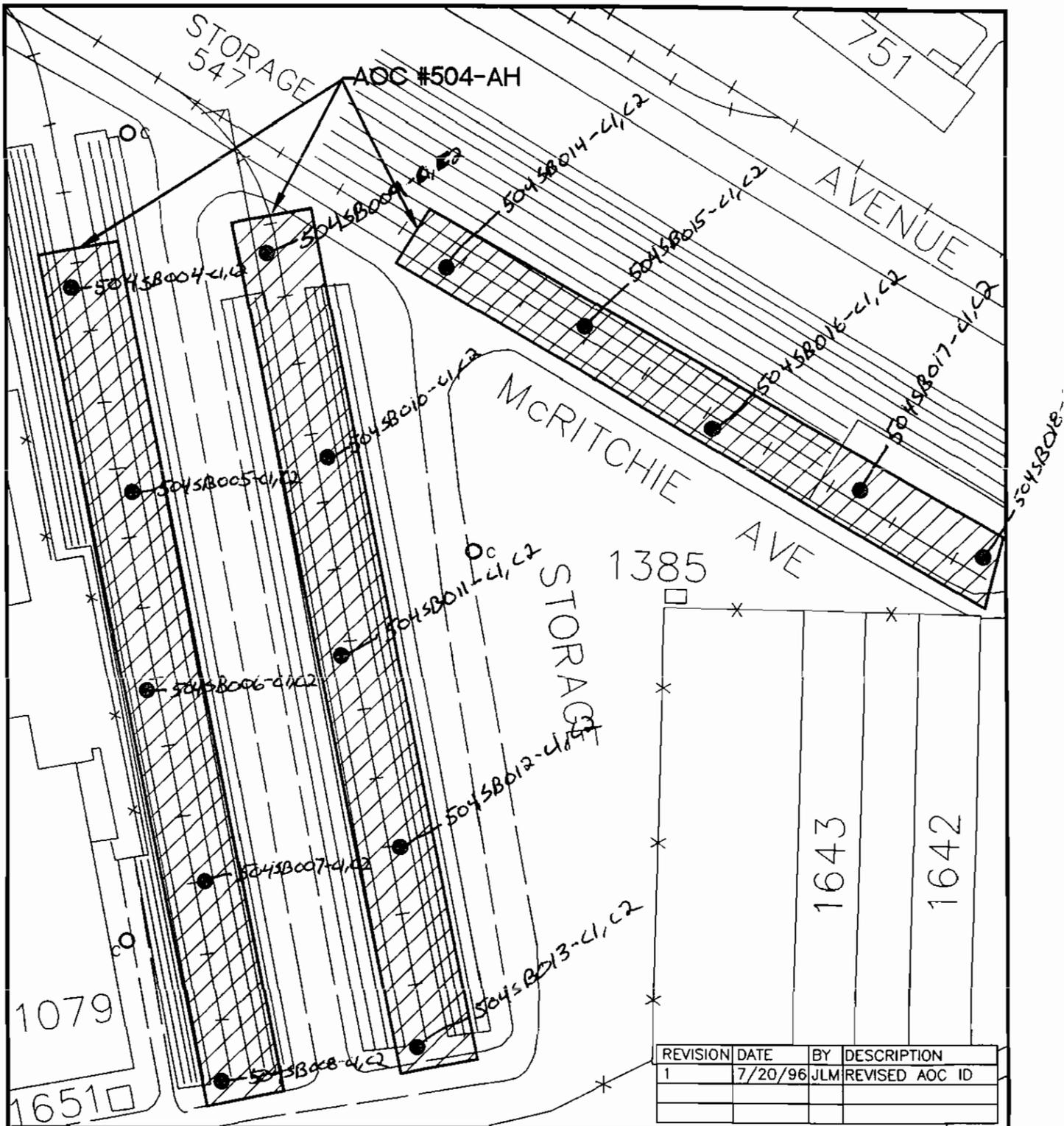
FINAL
 ZONE L RFI WORK PLAN
 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

FIGURE 2-18
 AOC 504-AG: RAILROAD SYSTEM
 CYLINDER/POL STORAGE SHED
 LOADING/UNLOADING RAMP
 PROPOSED SAMPLE LOCATIONS



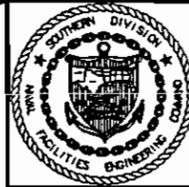
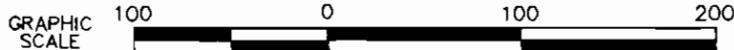
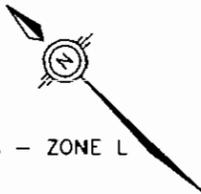
DWG DATE: 7/20/96 | DWG NAME: FIG2-18

Zone C



LEGEND

- - PROPOSED SOIL BORINGS - ZONE L
- ⊙ - PROPOSED SHALLOW MONITORING WELLS - ZONE L
- C - EXISTING SOIL BORINGS - ZONE C



FINAL
 ZONE L RFI WORK PLAN
 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

FIGURE 2-19
 AOC 504-AH: RAILROAD SYSTEM
 CONTAINER CAR STORAGE AREA
 PROPOSED SAMPLE LOCATIONS

DWG DATE: 7/20/96 | DWG NAME: FIG2-19

Zone L

Chemicals Detected in Zone L, Subzone E, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
<i>Volatile Organic Compounds(ug/kg)</i>				
2-Butanone (MEK)	504SB001E	7.00	NS	4700000.00
	504SB002E	20.00	14.00	
	504SB003E	17.00	ND	
Carbon disulfide	504SB001E	2.00	NS	780000.00
	504SB003E	2.00	ND	
Xylene (Total)	504CB001E	2.00	NS	16000000.00
<i>Semi-volatile Compounds (ug/kg)</i>				
Acenaphthene	504SB001E	155.00	NS	310000.00
	504SB003E	43.00	ND	
	504SB008E	140.00	ND	
	504SB009E	72.00	ND	
Anthracene	504SB001E	230.00	NS	23000000.00
	504SB002E	51.00	57.00	
	504SB003E	68.00	ND	
	504SB008E	175.00	ND	
Benzo(a)anthracene	504SB001E	660.00	NS	880.00
	504SB002E	120.00	210.00	
	504SB003E	170.00	70.00	
	504SB006E	82.00	ND	
Benzo(a)pyrene	504SB008E	88.00	54.00	88.00
	504SB009E	480.00	ND	
	504SB001E	615.00	NS	
	504SB002E	120.00	220.00	
Benzo(b)fluoranthene	504SB003E	180.00	ND	880.00
	504SB006E	91.00	ND	
	504SB007E	61.00	ND	
	504SB008E	330.00	66.00	
Benzo(g,h,i)perylene	504SB009E	530.00	ND	310000.00
	504SB001E	460.00	NS	
	504SB002E	100.00	150.00	
	504SB003E	130.00	66.00	
Benzo(k)fluoranthene	504SB006E	96.00	ND	8800.00
	504SB007E	62.00	ND	
	504SB008E	475.00	89.00	
	504SB009E	660.00	ND	
Benzo(k)fluoranthene	504SB001E	320.00	NS	8800.00
	504SB002E	86.00	310.00	
	504SB003E	190.00	ND	
	504CB006E	62.00	ND	
Benzo(k)fluoranthene	504SB008E	345.00	ND	8800.00
	504SB009E	230.00	ND	
	504SB001E	620.00	NS	
	504SB002E	120.00	110.00	
Benzo(k)fluoranthene	504SB003E	190.00	51.00	8800.00
	504SB004E	41.00	ND	
	504SB006E	95.00	ND	

Chemicals Detected in Zone L, Subzone E, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
	504SB007E	58.00	ND	
	504SB008E	335.00	61.00	
	504SB009E	490.00	ND	
Benzyl alcohol	504SB001E	120.00	NS	NA
Butylbenzylphthalate	504SB001E	88.00	NS	1600000.00
	504SB002E	100.00	140.00	
	504SB003E	80.00	130.00	
	504SB004E	64.00	ND	
	504SB006E	125.00	233.00	
	504SB007E	410.00	ND	
	504CB008E	2200.00	ND	
	504SB009E	49.00	ND	
Chrysene	504SB001E	645.00	NS	88000.00
	504SB002E	140.00	330.00	
	504SB003E	240.00	130.00	
	504CB006E	110.00	ND	
	504SB007E	51.00	ND	
	504SB008E	119.50	62.00	
	504SB009E	680.00	ND	
Di-n-butylphthalate	504SB006E	58.00	ND	7800000.00
Dibenz(a,h)anthracene	504SB001E	130.00	NS	88000.00
	504SB008E	115.00	ND	
	504SB009E	100.00	ND	
Dibenzofuran	504SB001E	49.00	NS	31000.00
Fluoranthene	504SB001E	1500.00	NS	3100000.00
	504SB002E	230.00	260.00	
	504SB003E	240.00	120.00	
	504SB004E	43.00	ND	
	504SB005E	59.00	ND	
	504SB006E	143.00	ND	
	504SB008E	99.50	130.00	
	504SB009E	1700.00	73.00	
Fluorene	504SB001E	82.00	NS	310000.00
Indeno(1,2,3-cd)pyrene	504SB001E	315.00	NS	880.00
	504SB002E	72.00	140.00	
	504SB003E	160.00	ND	
	504SB006E	51.00	ND	
	504SB008E	240.00	ND	
	504SB009E	220.00	ND	
Phenanthrene	504SB001E	835.00	NS	310000.00
	504SB002E	140.00	160.00	
	504SB003E	260.00	100.00	
	504SB006E	96.00	ND	
	504SB008E	64.00	53.00	
	504SB009E	220.00	ND	
Pyrene	504SB001E	1350.00	NS	230000.00
	504SB002E	320.00	1200.00	
	504SB003E	390.00	310.00	
	504SB005E	44.00	ND	

Chemicals Detected in Zone L, Subzone E, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ= .1)
	504SB006E	96.50	ND	
	504SB008E	83.50	100.00	
	504SB009E	1300.00	68.00	
bis(2-Ethylhexyl)phthalate (BEHP)	504SB006E	ND	460.00	4600.00
	504SB007E	120.00	ND	
<i>Chlorinated Pesticides (ug/kg)</i>				
4,4'-DDD	504SB001E	26.50	ND	2700.00
	504SB002E	6.20	97.00	
	504SB003E	11.00	25.00	
	504SB005E	22.00	ND	
4,4'-DDE	504SB001E	19.50	NS	19000.00
	504SB002E	3.10	110.00	
	504SB003E	ND	5.10	
	504SB005E	10.00	ND	
4,4'-DDT	504SB001E	23.00	NS	1900.00
	504SB002E	ND	38.00	
	504SB003E	ND	3.60	
Dieldrin	504SB001E	5.10	NS	40.00
	504SB003E	ND	5.40	
Endrin	504SB003E	ND	3.90	2300.00
Endrin aldehyde	504SB001E	14.00	NS	2300.00
	504SB008E	3.40	3.70	
	504SB009E	5.90	ND	
Heptachlor	504CB001E	1.80	NS	140.00
	504SB003E	2.10	ND	
Heptachlor epoxide	504SB003E	ND	9.40	70.00
alpha-Chlordane	504SB001E	2.20	NS	490.00
	504SB002E	2.30	18.00	
	504SB005E	8.60	ND	
gamma-BHC (Lindane)	504SB003E	ND	7.20	350.00
gamma-Chlordane	504SB001E	7.75	NS	490.00
	504SB002E	12.00	150.00	
	504SB004E	2.00	ND	
	504SB005E	7.90	ND	
	504SB008E	2.20	ND	
<i>Polychlorinated biphenyls (ug/kg)</i>				
Aroclor-1260	504SB001E	218.50	NS	83.00
<i>Inorganic Compounds (mg/kg)</i>				
Cyanide (CN)	504SB001E	0.02	NS	73.00
	504SB002E	0.12	0.14	
	504SB003E	0.24	0.18	
	504SB004E	0.20	0.14	
	504SB005E	0.16	0.17	
	504SB006E	0.11	ND	
	504SB007E	0.41	0.25	
	504SB008E	ND	1.30	

Chemicals Detected in Zone L, Subzone E, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
Aluminum (Al)	504SB001E	6305.00	NS	7800.00
	504SB002E	5230.00	13800.00	
	504SB003E	4380.00	10800.00	
	504SB004E	9980.00	10800.00	
	504SB005E	14050.00	20700.00	
	504SB006E	6850.00	3960.00	
	504SB007E	11000.00	9760.00	
	504SB008E	5515.00	3900.00	
	504SB009E	6660.00	7080.00	
Antimony (Sb)	504SB002E	4.90	ND	3.10
	504SB008E	0.70	0.39	
	504SB009E	0.44	ND	
Arsenic (As)	504SB001E	4.60	NS	0.43
	504SB002E	43.50	14.00	
	504SB003E	17.30	17.60	
	504SB004E	15.20	6.30	
	504SB005E	14.90	20.95	
	504SB006E	5.70	5.80	
	504SB007E	12.60	10.10	
	504SB008E	3.70	4.90	
	504SB009E	19.10	15.20	
Barium (Ba)	504SB001E	15.50	NS	550.00
	504SB002E	46.30	26.30	
	504SB003E	21.00	27.50	
	504SB004E	23.20	13.80	
	504SB005E	34.30	31.40	
	504SB006E	18.65	17.70	
	504SB007E	16.90	17.50	
	504SB008E	21.90	9.80	
	504SB009E	19.10	15.20	
Beryllium (Be)	504SB002E	ND	0.92	0.15
	504SB005E	ND	1.09	
	504SB008E	0.27	0.50	
	504SB009E	0.26	0.56	
Cadmium (Cd)	504SB001E	0.31	NS	3.90
	504SB002E	0.33	0.27	
	504SB003E	0.55	0.53	
	504SB004E	0.33	0.08	
	504SB005E	0.43	0.37	
	504SB006E	0.17	0.36	
	504SB007E	0.36	0.39	
	504SB008E	0.12	0.58	
	504SB009E	0.11	ND	
Calcium (Ca)	504SB001E	3120.00	NS	NA
	504SB002E	7370.00	10600.00	
	504SB003E	83800.00	21200.00	
	504SB004E	29100.00	2780.00	
	504SB005E	6875.00	10200.00	
	504SB006E	9840.00	53100.00	
	504SB007E	25800.00	93300.00	

Chemicals Detected in Zone L, Subzone E, Soil Borings
AOC 504

Name	Location	RBC		(THQ=.1)
		Surface	Subsurface	
Chromium (Cr)	504SB008E	33150.00	202000.00	39.00
	504SB009E	7450.00	34900.00	
	504SB001E	24.40	NS	
	504SB002E	22.00	28.20	
	504SB003E	18.20	37.00	
	504SB004E	37.50	22.50	
	504SB005E	44.90	34.95	
	504SB006E	28.55	28.30	
	504SB007E	28.30	28.50	
Cobalt (Co)	504SB008E	22.60	32.70	470.00
	504SB009E	41.20	16.20	
	504SB001E	3.50	NS	
	504SB002E	8.80	5.70	
	504SB003E	3.90	4.60	
	504SB004E	5.30	1.30	
	504SB005E	6.55	5.80	
	504SB006E	6.55	1.00	
	504SB007E	1.70	3.00	
Copper (Cu)	504SB008E	0.77	1.10	310.00
	504SB009E	0.65	2.60	
	504SB001E	11.80	NS	
	504SB002E	88.90	27.70	
	504SB003E	35.40	45.90	
	504SB004E	14.30	ND	
	504SB005E	38.00	23.30	
	504SB006E	8.50	6.20	
	504SB007E	10.30	8.20	
Iron (Fe)	504SB008E	7.70	8.60	2300.00
	504SB009E	6.40	7.70	
	504SB001E	11475.00	NS	
	504SB002E	10700.00	21000.00	
	504SB003E	8540.00	17400.00	
	504SB004E	15000.00	18500.00	
	504SB005E	21200.00	23900.00	
	504SB006E	3610.00	4090.00	
	504SB007E	22300.00	11700.00	
Lead (Pb)	504SB008E	4185.00	5720.00	400.00
	504SB009E	3760.00	11900.00	
	504SB001E	30.65	NS	
	504SB002E	83.00	64.30	
	504SB003E	96.80	61.80	
	504SB004E	36.10	9.30	
	504SB005E	84.50	45.25	
	504SB006E	14.65	13.70	
	504SB007E	65.60	18.60	
Magnesium (Mg)	504SB008E	18.40	9.30	NA
	504SB009E	16.80	7.40	
	504SB001E	382.50	NS	
	504SB002E	895.00	2820.00	

Chemicals Detected in Zone L, Subzone E, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
Manganese (Mn)	504SB003E	1550.00	2210.00	
	504SB004E	1970.00	1240.00	
	504SB005E	2250.00	3525.00	
	504SB006E	678.50	3950.00	
	504SB007E	1350.00	3250.00	
	504SB008E	772.50	15100.00	
	504SB009E	520.00	2660.00	
	504SB001E	78.95	NS	180.00
	504SB002E	158.00	346.00	
	504SB003E	108.00	214.00	
	504SB004E	120.00	31.60	
	504SB005E	174.00	267.00	
	504SB006E	30.10	109.00	
	504SB007E	113.00	139.00	
	504SB008E	29.05	241.00	
Mercury (Hg)	504SB009E	41.70	231.00	
	504SB001E	0.01	NS	2.30
	504SB002E	0.26	0.26	
	504SB003E	0.16	0.84	
	504SB004E	0.05	ND	
	504SB005E	5.10	0.36	
	504SB006E	ND	0.08	
	504SB008E	0.10	ND	
	504SB001E	5.05	NS	160.00
	504SB002E	16.20	9.50	
Nickel (Ni)	504SB003E	9.70	13.20	
	504SB004E	7.00	3.10	
	504SB005E	13.25	12.00	
	504SB006E	3.75	6.80	
	504SB007E	6.60	11.60	
	504SB008E	4.15	12.30	
	504SB009E	3.00	6.30	
	504SB001E	328.50	NS	NA
	504SB002E	492.00	1520.00	
	504SB003E	552.00	1250.00	
Potassium (K)	504SB004E	936.00	762.00	
	504SB005E	1290.00	2015.00	
	504SB006E	233.50	544.00	
	504SB007E	531.00	1300.00	
	504SB008E	264.50	813.00	
	504SB009E	222.00	865.00	
	504SB001E	0.37	NS	39.00
	504SB002E	0.57	0.78	
	504SB003E	0.27	0.46	
	504SB004E	0.39	1.00	
Selenium (Se)	504SB005E	0.54	0.88	
	504SB006E	ND	0.83	
	504SB007E	0.69	0.85	
	504SB008E	0.43	1.40	

Chemicals Detected in Zone L, Subzone E, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
Sodium (Na)	504SB009E	0.33	0.58	NA
	504SB001E	201.50	NS	
	504SB002E	296.00	536.00	
	504SB003E	514.00	1020.00	
	504SB004E	402.00	512.00	
	504SB005E	998.00	1795.00	
	504SB006E	276.50	1130.00	
	504SB007E	451.00	778.00	
	504SB008E	321.50	1220.00	
Tin (Sn)	504SB009E	293.00	808.00	0.29
	504SB001E	1.75	NS	
	504SB002E	10.10	2.50	
	504SB003E	4.40	4.70	
	504SB004E	2.10	1.30	
	504SB005E	2.60	2.35	
	504SB006E	1.35	1.20	
	504SB007E	1.50	1.20	
	504SB008E	1.55	1.20	
Vanadium (V)	504SB009E	1.50	1.10	55.00
	504SB001E	18.15	NS	
	504SB002E	17.70	45.40	
	504SB003E	12.20	33.10	
	504SB004E	29.80	37.10	
	504SB005E	46.80	52.80	
	504SB006E	7.15	12.50	
	504SB007E	28.80	25.60	
	504SB008E	9.15	19.80	
Zinc (Zn)	504SB009E	6.90	18.50	2300.00
	504SB001E	77.05	NS	
	504SB002E	231.00	107.00	
	504SB003E	196.00	179.00	
	504SB004E	78.10	19.00	
	504SB005E	198.00	100.20	
	504SB006E	21.15	24.60	
	504SB007E	58.70	36.00	
	504SB008E	24.00	37.20	
504SB009E	27.60	31.80		

Notes:

ND: Not Detected

NS: No Sample Taken/Sample Not Analyzed

NA: Not applicable

For compounds detected in both the primary and duplicate sample, the concentration for both detections are averaged and listed as one detection.

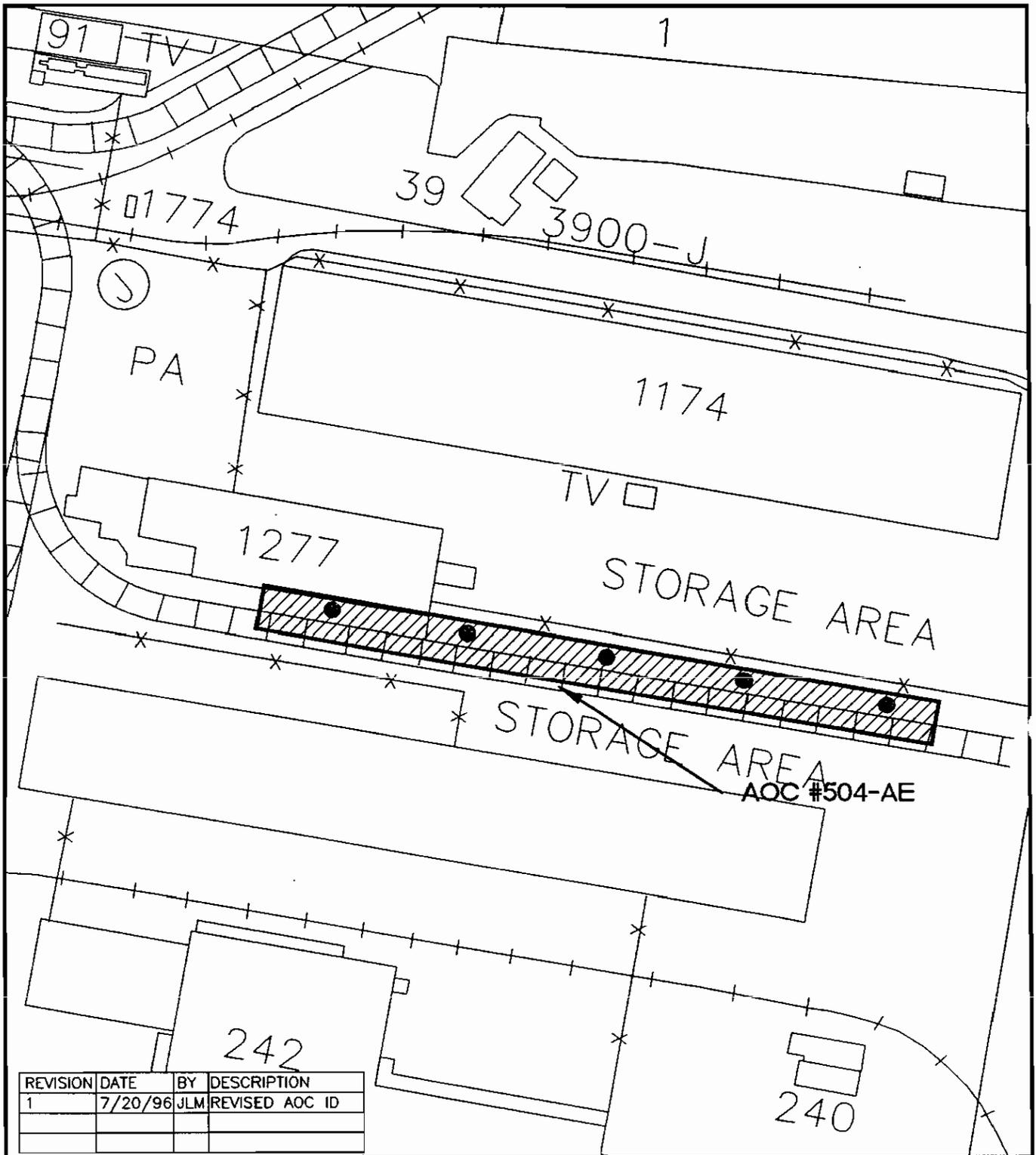
For compounds that were detected in only one of the primary or duplicate sample, the value of the detection was used.

Chemicals Detected in Zone L, Subzone E, Soil Samples
AOC 504

Name	Location	Concentration	RBC (THQ= .1)
<i>Inorganic Compounds (mg/kg)</i>			
Aluminum (Al)	504SP001E	8280.00	7800.00
	504SP002E	9320.00	
	504SP003E	9590.00	
	504SP01AE	8190.00	
	504SP02AE	7350.00	
Arsenic (As)	504SP001E	4.56	3.10
	504SP002E	7.91	
	504SP003E	7.06	
	504SP01AE	7.25	
	504SP02AE	11.80	
Barium (Ba)	504SP001E	29.50	550.00
	504SP002E	35.20	
	504SP003E	23.40	
	504SP01AE	74.80	
	504SP02AE	36.50	
Beryllium (Be)	504SP001E	0.46	0.15
	504SP002E	0.59	
	504SP003E	0.66	
	504SP01AE	0.46	
	504SP02AE	0.54	
Cadmium (Cd)	504SP01AE	0.54	3.90
Calcium (Ca)	504SP001E	1140.00	NA
	504SP002E	2400.00	
	504SP003E	46300.00	
	504SP01AE	23400.00	
	504SP02AE	7180.00	
Chromium (Cr)	504SP001E	10.40	39.00
	504SP002E	12.80	
	504SP003E	25.80	
	504SP01AE	17.30	
	504SP02AE	25.40	
Cobalt (Co)	504SP001E	1.37	470.00
	504SP002E	2.37	
	504SP003E	3.53	
	504SP01AE	2.05	
	504SP02AE	4.23	
Copper (Cu)	504SP001E	18.30	310.00
	504SP002E	21.80	
	504SP003E	28.70	
	504SP01AE	47.30	
	504SP02AE	60.90	
Iron (Fe)	504SP001E	6210.00	2300.00
	504SP002E	9640.00	
	504SP003E	13300.00	
	504SP01AE	10800.00	
	504SP02AE	12000.00	
Lead (Pb)	504SP001E	26.80	400.00
	504SP002E	63.60	

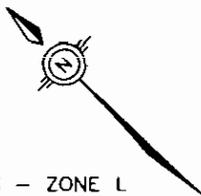
Chemicals Detected in Zone L, Subzone E, Soil Samples
AOC 504

Name	Location	Concentration	RBC (THQ=.1)
	504SP003E	62.40	
	504SP01AE	338.00	
	504SP02AE	126.00	
Magnesium (Mg)	504SP001E	621.00	NA
	504SP002E	848.00	
	504SP003E	5110.00	
	504SP01AE	1630.00	
	504SP02AE	1060.00	
Manganese (Mn)	504SP001E	90.50	180.00
	504SP002E	169.00	
	504SP003E	188.00	
	504SP01AE	89.20	
	504SP02AE	167.00	
Mercury (Hg)	504SP001E	0.16	2.30
	504SP002E	0.19	
	504SP003E	0.90	
	504SP02AE	1.05	
Nickel (Ni)	504SP001E	4.33	160.00
	504SP002E	5.20	
	504SP003E	11.00	
	504SP01AE	8.45	
	504SP02AE	18.30	
Potassium (K)	504SP001E	399.00	NA
	504SP002E	492.00	
	504SP003E	1130.00	
	504SP01AE	804.00	
	504SP02AE	604.00	
Selenium (Se)	504SP003E	0.71	39.00
	504SP01AE	1.04	
	504SP02AE	0.82	
Sodium (Na)	504SP001E	221.00	NA
	504SP002E	247.00	
	504SP003E	575.00	
	504SP01AE	645.00	
	504SP02AE	312.00	
Thallium (Tl)	504SP02AE	1.37	NA
Tin (Sn)	504SP01AE	8.82	4700.00
	504SP02AE	7.97	
Vanadium (V)	504SP001E	13.10	55.00
	504SP002E	21.40	
	504SP003E	30.10	
	504SP01AE	20.60	
	504SP02AE	22.40	
Zinc (Zn)	504SP001E	36.90	2300.00
	504SP002E	69.00	
	504SP003E	122.00	
	504SP01AE	345.00	
	504SP02AE	224.00	



LEGEND

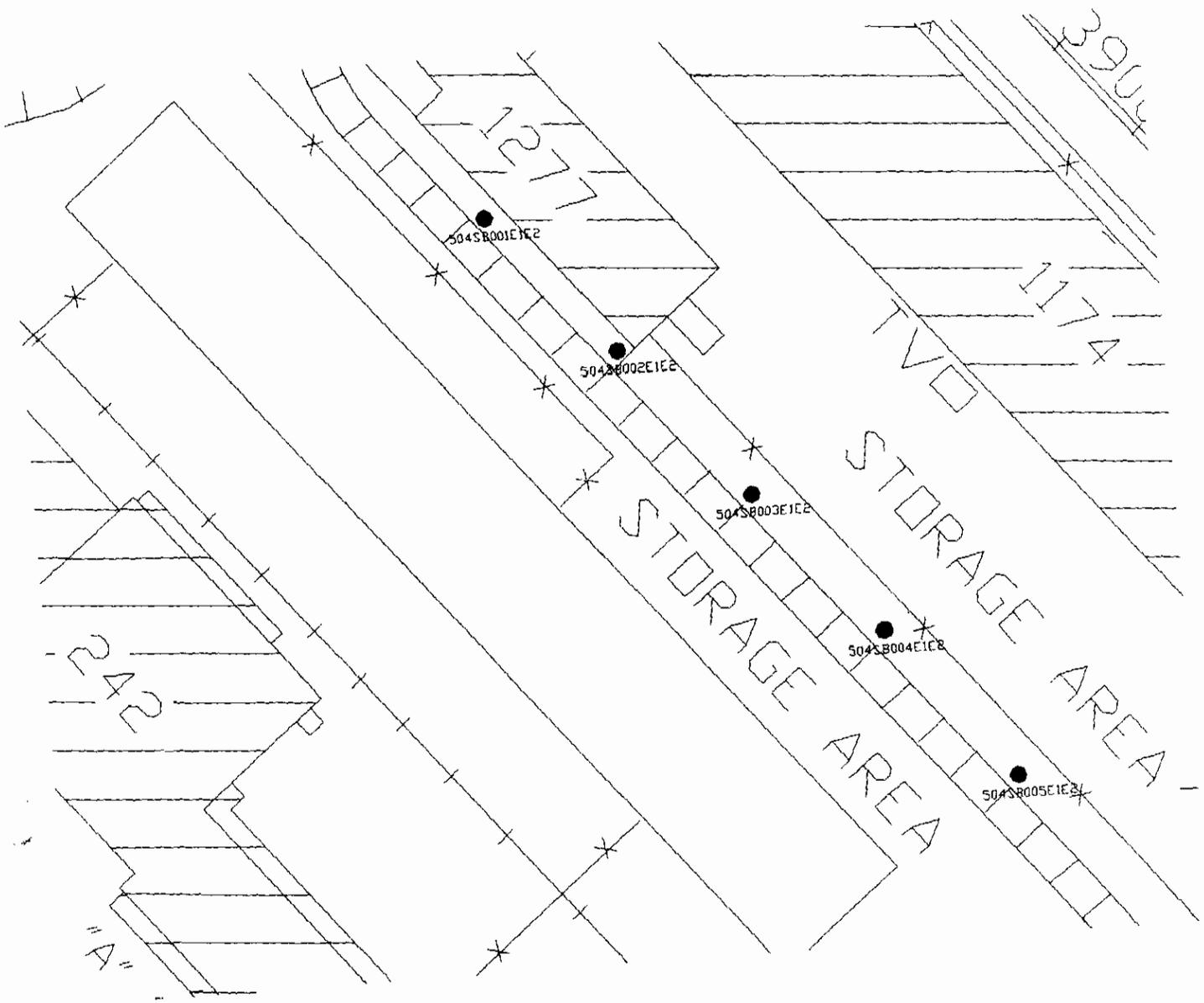
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- ⊙ - PROPOSED SHALLOW MONITORING WELLS - ZONE L

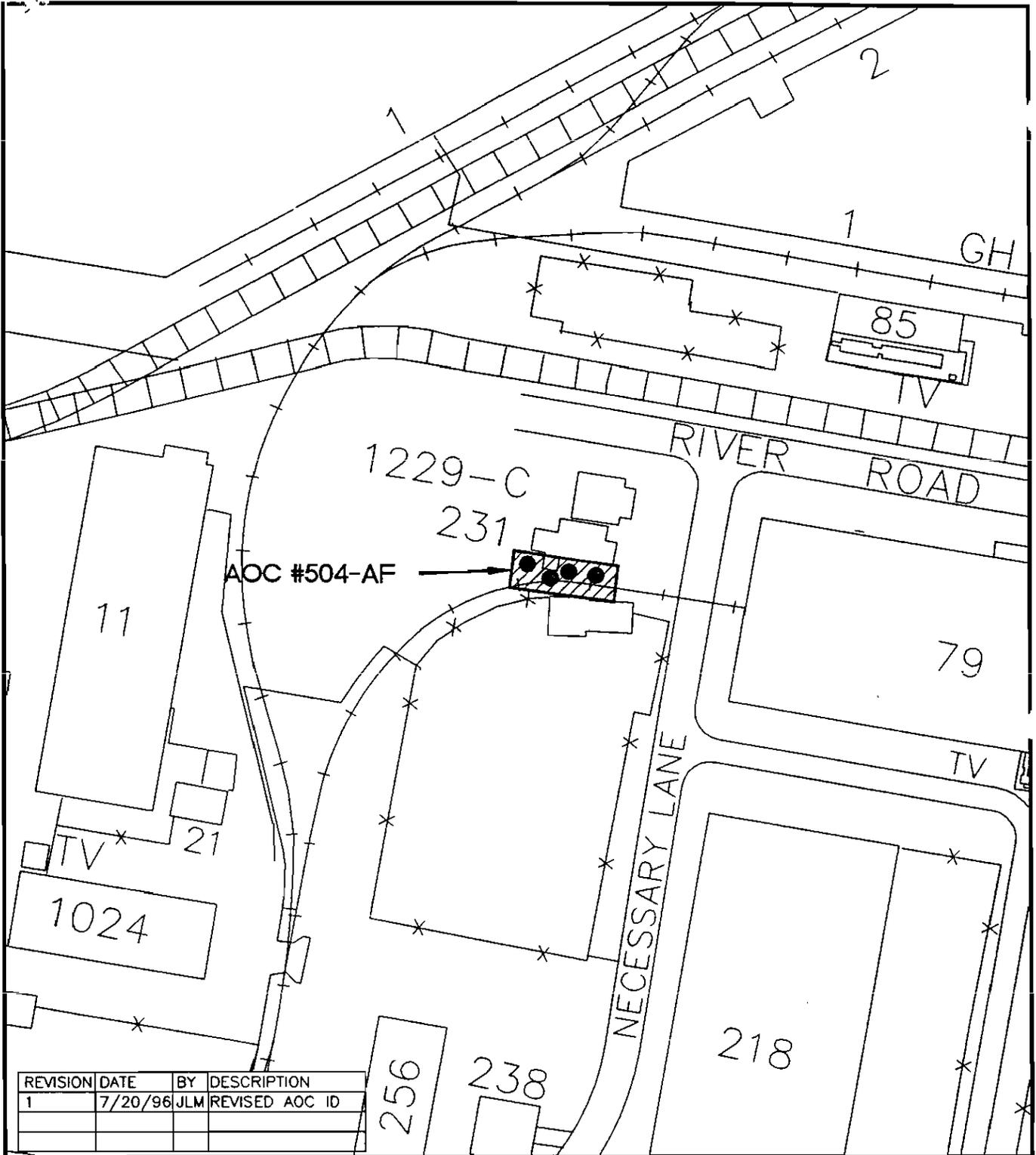


FINAL
 ZONE L RFI WORK PLAN
 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

FIGURE 2-16
 AOC 504-AE: RAILROAD SYSTEM
 FORMER TRAIN CAR MAINTENANCE AREA
 PROPOSED SAMPLE LOCATIONS

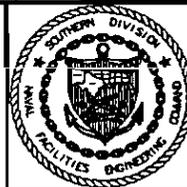
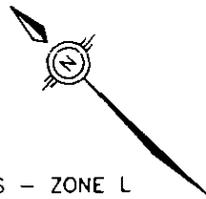






LEGEND

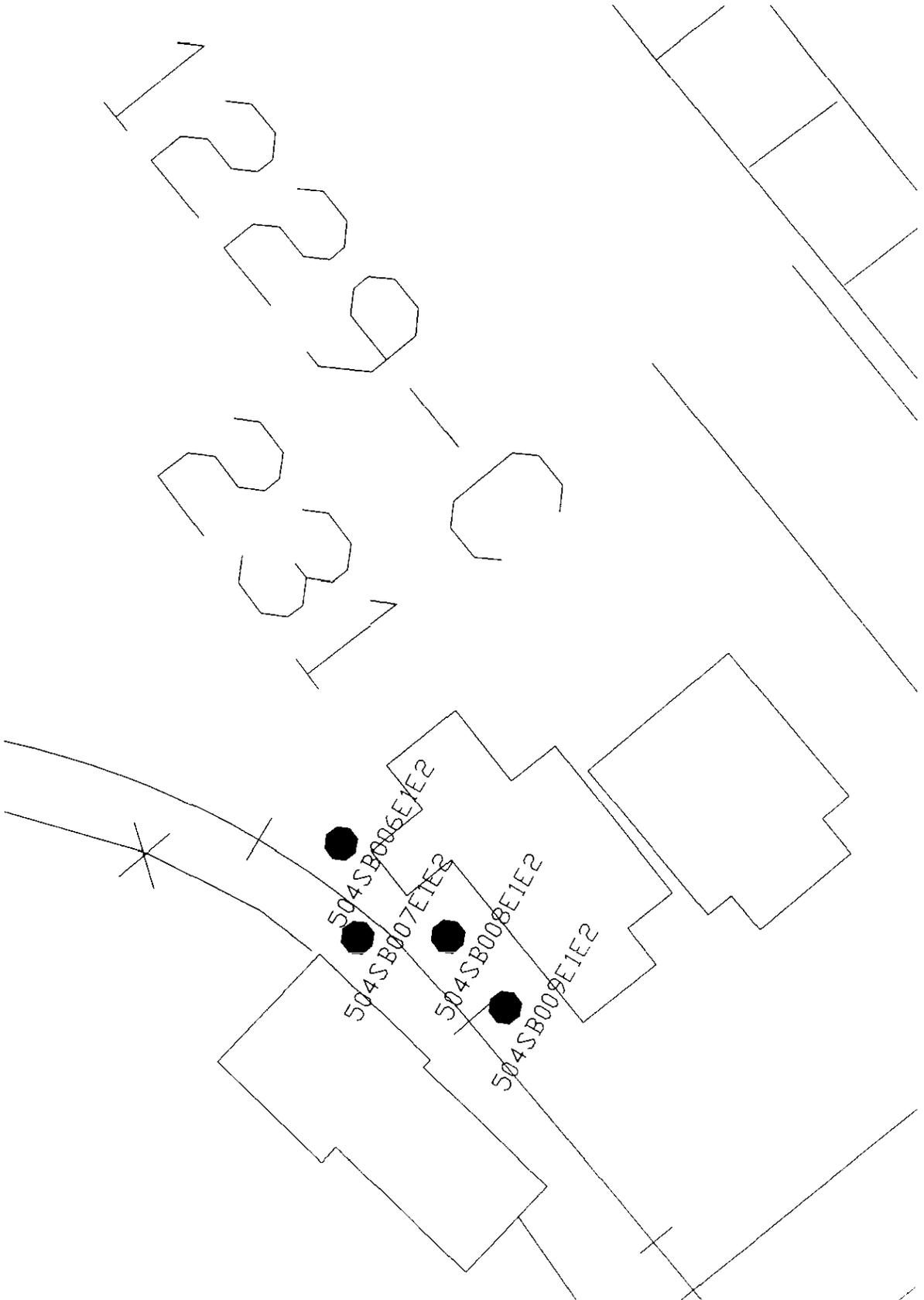
- - PROPOSED SOIL BORINGS - ZONE L
- ⊙ - PROPOSED SHALLOW MONITORING WELLS - ZONE L



FINAL
ZONE L RFI WORK PLAN
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 2-17
AOC 504-AF: RAILROAD SYSTEM
CANTEEN #3 - BUILDING 231
PROPOSED SAMPLE LOCATIONS





Chemicals Detected in Zone L, Subzone F, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
<i>Volatile Organic Compounds(ug/kg)</i>				
2-Butanone (MEK)	504SB003F	130.00	NS	4700000.00
4-Methyl-2-Pentanone (MIBK)	504SB005F	10.00	ND	NA
Acetone	504SB003F	460.00	NS	780000.00
Ethylbenzene	504SB001F	2.00	NS	780000.00
Toluene	504SB003F	2.00	NS	1600000.00
	504SB006F	ND	2.00	
Xylene (Total)	504SB001F	7.00	NS	16000000.00
<i>Semi-volatile Compounds (ug/kg)</i>				
2-Methylnaphthalene	504SB001F	3000.00	NS	160000.00
	504SB003F	2200.00	NS	
Acenaphthene	504SB001F	550.00	NS	310000.00
	504SB003F	360.00	NS	
	504SB007F	55.00	ND	
	504SB010F	72.00	51.00	
Anthracene	504SB001F	400.00	NS	23000000.00
	504SB003F	220.00	NS	
	504SB007F	70.00	ND	
	504SB009F	86.00	ND	
	504SB010F	77.00	ND	
Benzo(a)anthracene	504SB001F	460.00	NS	880.00
	504SB002F	94.00	NS	
	504SB003F	550.00	NS	
	504SB004F	200.00	NS	
	504SB005F	210.00	89.00	
	504SB006F	48.00	ND	
	504SB007F	210.00	ND	
	504SB008F	370.00	100.00	
	504SB009F	210.00	52.00	
	504SB010F	180.00	160.00	
	504SB011F	300.00	ND	
Benzo(a)pyrene	504SB001F	300.00	NS	88.00
	504SB002F	98.00	NS	
	504SB003F	500.00	NS	
	504SB004F	310.00	NS	
	504SB005F	340.00	110.00	
	504SB006F	64.00	58.00	
	504SB007F	360.00	ND	
	504SB008F	450.00	120.00	
	504SB009F	240.00	60.00	
	504SB010F	400.00	250.00	
	504SB011F	380.00	ND	
Benzo(b)fluoranthene	504SB002F	250.00	NS	880.00
	504SB003F	520.00	NS	
	504SB004F	540.00	NS	
	504SB005F	480.00	190.00	
	504SB006F	78.00	74.00	
	504SB007F	540.00	ND	

Chemicals Detected in Zone L, Subzone F, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)	
Benzo(g,h,i)perylene	504SB008F	590.00	150.00		
	504SB009F	240.00	63.00		
	504SB010F	590.00	570.00		
	504SB011F	450.00	65.00		
	504SB001F	360.00	NS	310000.00	
	504SB002F	96.00	NS		
	504SB003F	450.00	NS		
	504SB004F	330.00	NS		
	504SB005F	410.00	130.00		
	504SB006F	48.00	ND		
	504SB007F	250.00	ND		
	504SB008F	200.00	68.00		
	504SB009F	140.00	ND		
	504SB010F	280.00	180.00		
Benzo(k)fluoranthene	504SB011F	220.00	ND		
	504SB003F	470.00	NS	8800.00	
	504SB004F	410.00	NS		
	504SB005F	420.00	200.00		
	504SB006F	65.00	64.00		
	504SB007F	420.00	ND		
	504SB008F	470.00	170.00		
	504SB009F	250.00	80.00		
	504SB010F	610.00	ND		
	504SB011F	350.00	ND		
Butylbenzylphthalate	504SB004F	690.00	NS	1600000.00	
Chrysene	504SB001F	910.00	NS	88000.00	
	504SB002F	130.00	NS		
	504SB003F	760.00	NS		
	504SB004F	300.00	NS		
	504SB005F	260.00	140.00		
	504SB006F	70.00	52.00		
	504SB007F	300.00	ND		
	504SB008F	390.00	110.00		
	504SB009F	230.00	68.00		
	504SB010F	310.00	220.00		
	504SB011F	290.00	ND		
	Dibenz(a,h)anthracene	504SB004F	120.00	NS	88000.00
		504SB005F	150.00	ND	
		504SB007F	88.00	ND	
504SB008F		77.00	ND		
504SB009F		61.00	ND		
504SB010F		160.00	81.00		
504SB011F		130.00	ND		
504SB001F		560.00	NS	3100000.00	
Fluoranthene	504SB002F	110.00	NS		
	504SB003F	540.00	NS		
	504SB004F	250.00	NS		
	504SB005F	200.00	100.00		
	504SB006F	73.00	ND		

Chemicals Detected in Zone L, Subzone F, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
	504SB007F	320.00	ND	
	504SB008F	120.00	75.00	
	504SB009F	440.00	70.00	
	504SB010F	220.00	230.00	
	504SB011F	250.00	ND	
Fluorene	504SB001F	1000.00	NS	310000.00
	504SB003F	550.00	NS	
Indeno(1,2,3-cd)pyrene	504SB001F	110.00	NS	880.00
	504SB002F	100.00	NS	
	504SB003F	240.00	NS	
	504SB004F	310.00	NS	
	504SB005F	370.00	120.00	
	504SB006F	43.00	ND	
	504SB007F	240.00	ND	
	504SB008F	200.00	61.00	
	504SB009F	130.00	ND	
	504SB010F	280.00	160.00	
	504SB011F	210.00	ND	
Naphthalene	504SB001F	150.00	NS	310000.00
	504SB003F	180.00	NS	
Phenanthrene	504SB001F	2400.00	NS	310000.00
	504SB003F	1400.00	NS	
	504SB004F	130.00	NS	
	504SB005F	95.00	ND	
	504SB007F	92.00	ND	
	504SB009F	260.00	ND	
	504SB010F	74.00	60.00	
	504SB011F	74.00	ND	
Phenol	504SB002F	210.00	NS	4700000.00
	504SB001F	2400.00	NS	
	504SB002F	120.00	NS	
	504SB003F	1100.00	NS	
	504SB004F	220.00	NS	
	504SB005F	200.00	100.00	
	504SB006F	75.00	46.00	
	504SB007F	260.00	ND	
	504SB008F	180.00	77.00	
	504SB009F	340.00	84.00	
	504SB010F	320.00	280.00	
	504SB011F	240.00	ND	
bis(2-Ethylhexyl)phthalate (BEHP)	504SB006F	49.00	ND	4600.00
	504SB009F	49.00	ND	
	504SB010F	87.00	71.00	
	504SB011F	420.00	72.00	
<i>Chlorinated Pesticides (ug/kg)</i>				
4,4'-DDD	504SB001F	58.00	NS	2700.00
	504SB003F	6.10	NS	
	504SB005F	5.80	4.50	

Chemicals Detected in Zone L, Subzone F, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
4,4'-DDE	504SB006F	4.50	5.60	
	504SB007F	9.90	ND	
	504SB001F	4.10	NS	19000.00
	504SB002F	6.10	NS	
	504SB004F	5.40	NS	
	504SB005F	8.10	4.70	
	504SB006F	34.00	24.75	
	504SB007F	16.00	ND	
	504SB008F	4.80	ND	
	504SB009F	27.00	27.00	
	504SB010F	17.00	5.50	
4,4'-DDT	504SB011F	11.00	ND	
	504SB002F	11.00	NS	1900.00
	504SB004F	4.00	NS	
	504SB006F	25.00	18.75	
	504SB007F	12.00	ND	
	504SB009F	40.00	18.00	
	504SB010F	11.00	5.20	
	504SB011F	6.80	ND	
Endrin	504SB001F	3.00	NS	2300.00
	504SB002F	6.10	NS	
	504SB007F	3.40	ND	
Endrin aldehyde	504SB001F	5.20	NS	2300.00
Heptachlor epoxide	504SB006F	1.70	4.20	70.00
	504SB007F	1.90	ND	
	504SB009F	6.10	3.40	
Methoxychlor	504SB004F	33.00	NS	390000.00
	504SB007F	39.00	ND	
gamma-Chlordane	504SB001F	2.10	NS	490.00
	504SB002F	3.50	NS	
	504SB004F	2.00	NS	
	504SB005F	6.70	ND	
	504SB006F	ND	3.20	
	504SB009F	3.20	2.30	
<i>Inorganic Compounds (mg/kg)</i>				
Aluminum (Al)	504SB001F	1900.00	NS	7800.00
	504SB002F	5740.00	NS	
	504SB003F	9080.00	NS	
	504SB004F	18400.00	NS	
	504SB005F	21400.00	15900.00	
	504SB006F	5770.00	23200.00	
	504SB007F	15700.00	34400.00	
	504SB008F	12000.00	31900.00	
	504SB009F	14400.00	18100.00	
	504SB010F	2470.00	33200.00	
	504SB011F	26700.00	32100.00	
Antimony (Sb)	504SB001F	1.90	NS	3.10
	504SB002F	1.50	NS	

Chemicals Detected in Zone L, Subzone F, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
	504SB003F	1.40	NS	
	504SB004F	2.60	NS	
	504SB005F	1.20	1.10	
	504SB006F	1.80	1.25	
	504SB007F	2.60	2.40	
	504SB008F	1.40	1.50	
	504SB009F	0.86	1.30	
	504SB010F	ND	1.60	
	504SB011F	4.30	1.90	
Arsenic (As)	504SB001F	3.40	NS	0.43
	504SB002F	86.70	NS	
	504SB003F	7.40	NS	
	504SB004F	40.40	NS	
	504SB005F	21.30	12.80	
	504SB006F	137.00	26.90	
	504SB007F	23.20	20.50	
	504SB008F	27.00	28.60	
	504SB009F	24.60	23.10	
	504SB010F	65.00	34.10	
	504SB011F	27.80	26.30	
Barium (Ba)	504SB001F	46.40	NS	550.00
	504SB002F	34.10	NS	
	504SB003F	29.70	NS	
	504SB004F	69.80	NS	
	504SB005F	44.80	38.70	
	504SB006F	17.50	40.85	
	504SB007F	47.70	58.80	
	504SB008F	33.30	44.80	
	504SB009F	79.90	34.50	
	504SB010F	7.20	44.30	
	504SB011F	49.30	43.40	
Beryllium (Be)	504SB002F	0.45	NS	0.15
	504SB004F	0.99	NS	
	504SB005F	1.10	0.95	
	504SB006F	ND	1.20	
	504SB007F	0.84	1.60	
	504SB008F	0.71	1.70	
	504SB009F	0.82	0.90	
	504SB010F	ND	1.50	
	504SB011F	1.30	1.50	
Cadmium (Cd)	504SB001F	0.68	NS	3.90
	504SB003F	0.18	NS	
	504SB004F	0.57	NS	
	504SB005F	0.18	0.08	
	504SB006F	0.12	0.14	
	504SB007F	0.49	0.23	
	504SB008F	0.14	0.19	
	504SB009F	0.14	0.12	
	504SB010F	ND	0.15	

Chemicals Detected in Zone L, Subzone F, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
Calcium (Ca)	504SB011F	0.31	0.09	NA
	504SB001F	3460.00	NS	
	504SB002F	3950.00	NS	
	504SB003F	3730.00	NS	
	504SB004F	5820.00	NS	
	504SB005F	10200.00	16800.00	
	504SB006F	1560.00	5440.00	
	504SB007F	6340.00	7130.00	
	504SB008F	3620.00	6960.00	
	504SB009F	3800.00	4930.00	
	504SB010F	670.00	6530.00	
Chromium (Cr)	504SB011F	18300.00	6380.00	39.00
	504SB001F	11.60	NS	
	504SB002F	19.90	NS	
	504SB003F	22.60	NS	
	504SB004F	31.30	NS	
	504SB005F	30.70	25.70	
	504SB006F	11.80	34.60	
	504SB007F	42.90	51.60	
	504SB008F	28.50	49.20	
	504SB009F	22.60	30.00	
	504SB010F	4.80	48.30	
Cobalt (Co)	504SB011F	44.50	47.50	470.00
	504SB001F	1.80	NS	
	504SB002F	2.60	NS	
	504SB003F	3.00	NS	
	504SB004F	5.90	NS	
	504SB005F	5.90	5.50	
	504SB006F	ND	6.95	
	504SB007F	5.00	9.40	
	504SB008F	4.00	9.80	
	504SB009F	5.00	4.80	
	504SB010F	ND	8.90	
Copper (Cu)	504SB011F	7.60	9.00	310.00
	504SB001F	29.50	NS	
	504SB002F	47.90	NS	
	504SB003F	23.60	NS	
	504SB004F	51.80	NS	
	504SB005F	49.20	22.10	
	504SB006F	25.40	27.05	
	504SB007F	441.00	67.40	
	504SB008F	21.30	37.40	
	504SB009F	23.30	22.90	
	504SB010F	6.60	35.90	
Iron (Fe)	504SB011F	34.60	36.10	2300.00
	504SB001F	6130.00	NS	
	504SB002F	10200.00	NS	
	504SB003F	12500.00	NS	
	504SB004F	26400.00	NS	

Chemicals Detected in Zone L, Subzone F, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
	504SB005F	25100.00	23000.00	
	504SB006F	5700.00	32400.00	
	504SB007F	23500.00	40700.00	
	504SB008F	16100.00	43500.00	
	504SB009F	15400.00	21700.00	
	504SB010F	1420.00	37500.00	
	504SB011F	33700.00	39800.00	
Lead (Pb)	504SB001F	159.00	NS	400.00
	504SB002F	65.90	NS	
	504SB003F	66.80	NS	
	504SB004F	1670.00	NS	
	504SB005F	56.50	47.20	
	504SB006F	33.90	50.15	
	504SB007F	117.00	82.70	
	504SB008F	62.20	61.20	
	504SB009F	45.30	110.00	
	504SB010F	12.70	61.40	
	504SB011F	104.00	61.60	
Magnesium (Mg)	504SB001F	253.00	NS	NA
	504SB002F	847.00	NS	
	504SB003F	1260.00	NS	
	504SB004F	2440.00	NS	
	504SB005F	2710.00	2320.00	
	504SB006F	477.00	3125.00	
	504SB007F	2050.00	4340.00	
	504SB008F	1640.00	4650.00	
	504SB009F	1590.00	2230.00	
	504SB010F	69.20	4040.00	
	504SB011F	4530.00	4190.00	
Manganese (Mn)	504SB001F	80.30	NS	180.00
	504SB002F	128.00	NS	
	504SB003F	106.00	NS	
	504SB004F	612.00	NS	
	504SB005F	345.00	669.00	
	504SB006F	46.30	515.00	
	504SB007F	336.00	543.00	
	504SB008F	436.00	798.00	
	504SB009F	213.00	273.00	
	504SB010F	6.90	529.00	
	504SB011F	395.00	647.00	
Mercury (Hg)	504SB003F	0.25	NS	2.30
	504SB004F	0.51	NS	
	504SB005F	0.31	0.27	
	504SB006F	0.24	0.38	
	504SB007F	0.74	0.67	
	504SB008F	0.21	0.41	
	504SB009F	ND	0.26	
	504SB010F	ND	0.36	
	504SB011F	0.40	0.53	

Chemicals Detected in Zone L, Subzone F, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
Nickel (Ni)	504SB001F	9.90	NS	160.00
	504SB002F	8.80	NS	
	504SB003F	9.10	NS	
	504SB004F	13.80	NS	
	504SB005F	11.20	8.70	
	504SB006F	3.70	12.20	
	504SB007F	13.50	18.40	
	504SB008F	9.20	16.90	
	504SB009F	9.30	9.90	
	504SB010F	1.80	18.20	
	504SB011F	16.10	16.60	
Potassium (K)	504SB001F	132.00	NS	NA
	504SB002F	388.00	NS	
	504SB003F	718.00	NS	
	504SB004F	1190.00	NS	
	504SB005F	1310.00	1090.00	
	504SB006F	267.00	1410.00	
	504SB007F	1080.00	2150.00	
	504SB008F	863.00	2190.00	
	504SB009F	1100.00	1030.00	
	504SB010F	ND	1970.00	
	504SB011F	1980.00	2170.00	
Sodium (Na)	504SB001F	175.00	NS	NA
	504SB002F	235.00	NS	
	504SB003F	258.00	NS	
	504SB004F	323.00	NS	
	504SB005F	1020.00	1290.00	
	504SB006F	189.00	317.00	
	504SB007F	338.00	538.00	
	504SB008F	229.00	ND	
	504SB010F	ND	394.00	
	504SB011F	411.00	ND	
	Thallium (Tl)	504SB002F	0.96	
504SB003F		1.00	NS	
504SB004F		2.30	NS	
504SB005F		1.40	1.80	
504SB006F		ND	2.15	
504SB007F		1.30	3.10	
504SB008F		1.10	3.60	
504SB009F		1.10	1.10	
504SB010F		ND	3.10	
504SB011F		1.90	2.60	
Tin (Sn)		504SB001F	2.60	NS
Vanadium (V)	504SB001F	17.30	NS	55.00
	504SB002F	20.80	NS	
	504SB003F	27.90	NS	
	504SB004F	49.20	NS	
	504SB005F	53.90	44.30	
	504SB006F	14.60	60.05	

Chemicals Detected in Zone L, Subzone F, Soil Borings
AOC 504

Name	Location	Surface	Subsurface	RBC (THQ=.1)
Zinc (Zn)	504SB007F	42.40	80.30	
	504SB008F	32.80	91.60	
	504SB009F	35.60	44.80	
	504SB010F	3.80	83.70	
	504SB011F	64.80	78.40	
	504SB001F	232.00	NS	2300.00
	504SB002F	191.00	NS	
	504SB003F	99.30	NS	
	504SB004F	223.00	NS	
	504SB005F	97.30	83.40	
	504SB006F	53.80	114.50	
	504SB007F	191.00	160.00	
	504SB008F	81.90	148.00	
	504SB009F	145.00	89.60	
	504SB010F	20.60	127.00	
504SB011F	147.00	138.00		

Notes:

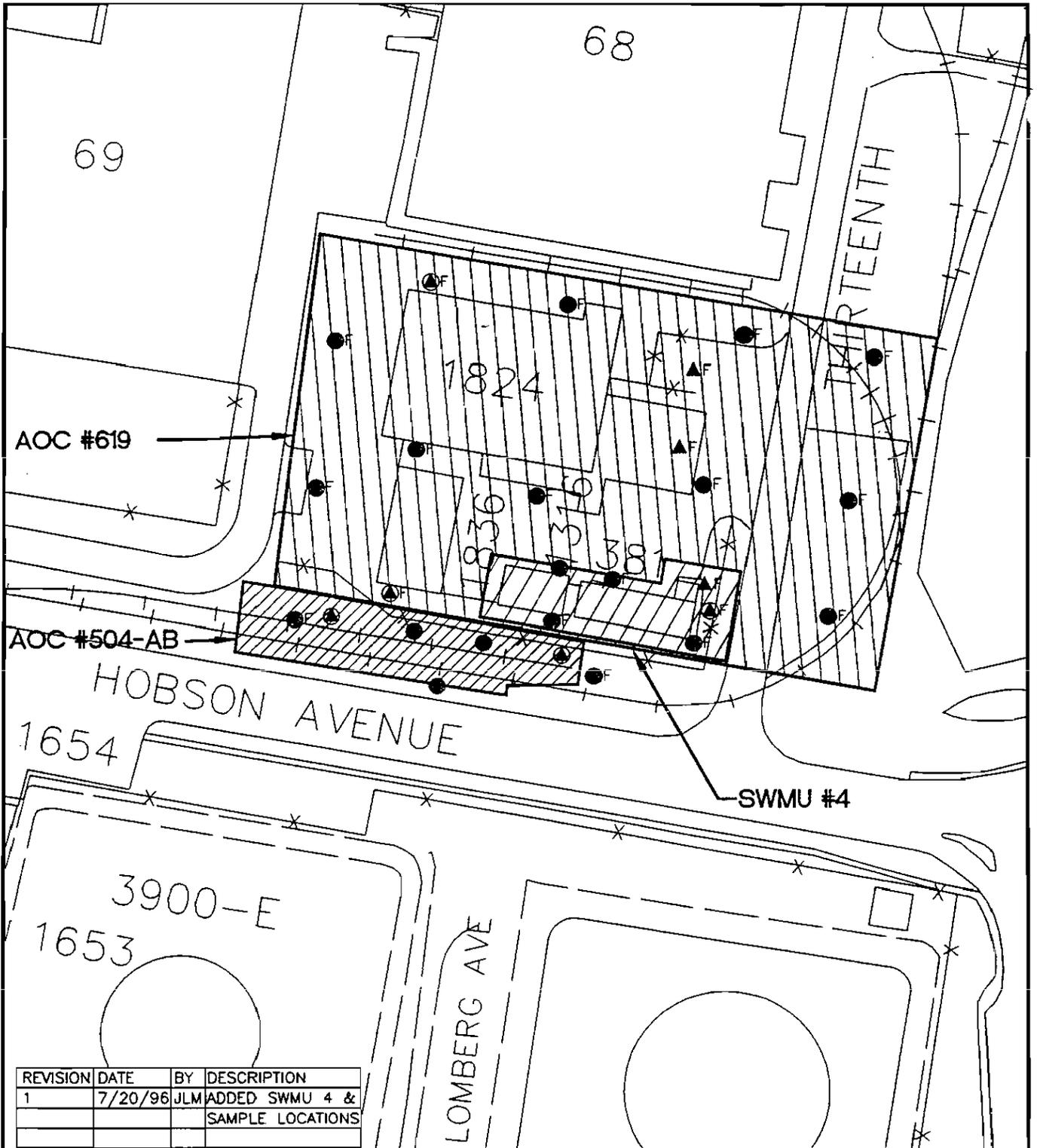
ND: Not Detected

NS: No Sample Taken/Sample Not Analyzed

NA: Not applicable

For compounds detected in both the primary and duplicate sample, the concentration for both detections are averaged and listed as one detection.

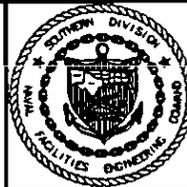
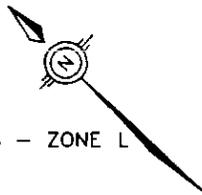
For compounds that were detected in only one of the primary or duplicate sample, the value of the detection was used.



REVISION	DATE	BY	DESCRIPTION
1	7/20/96	JLM	ADDED SWMU 4 & SAMPLE LOCATIONS

LEGEND

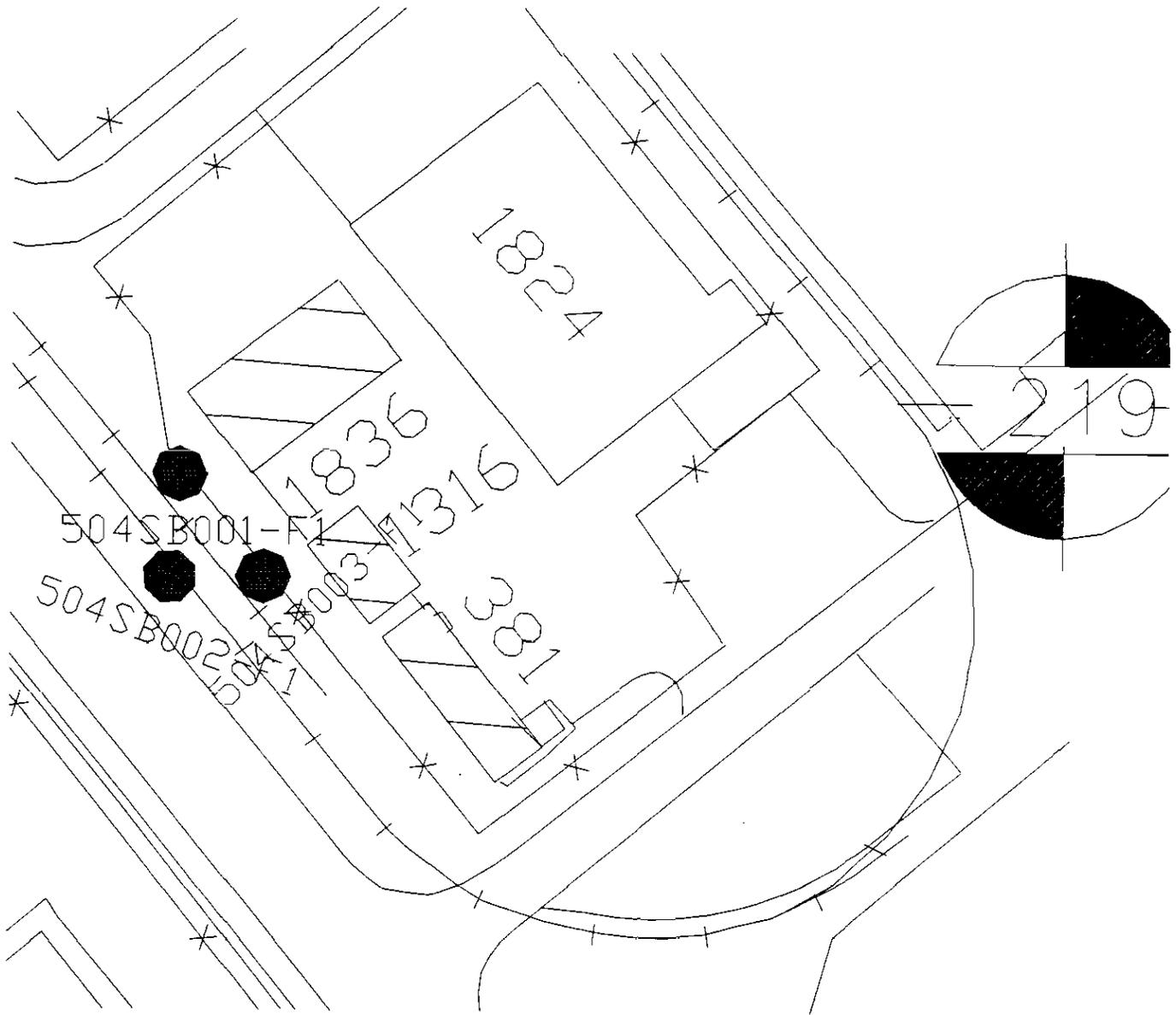
- - PROPOSED SOIL BORINGS - ZONE L
- ⊙ - PROPOSED SHALLOW MONITORING WELLS - ZONE L
- F - PROPOSED SOIL BORINGS - ZONE F
- ⊙F - PROPOSED SHALLOW MONITORING WELLS - ZONE F
- ▲F - PROPOSED SEDIMENT SAMPLE - ZONE F

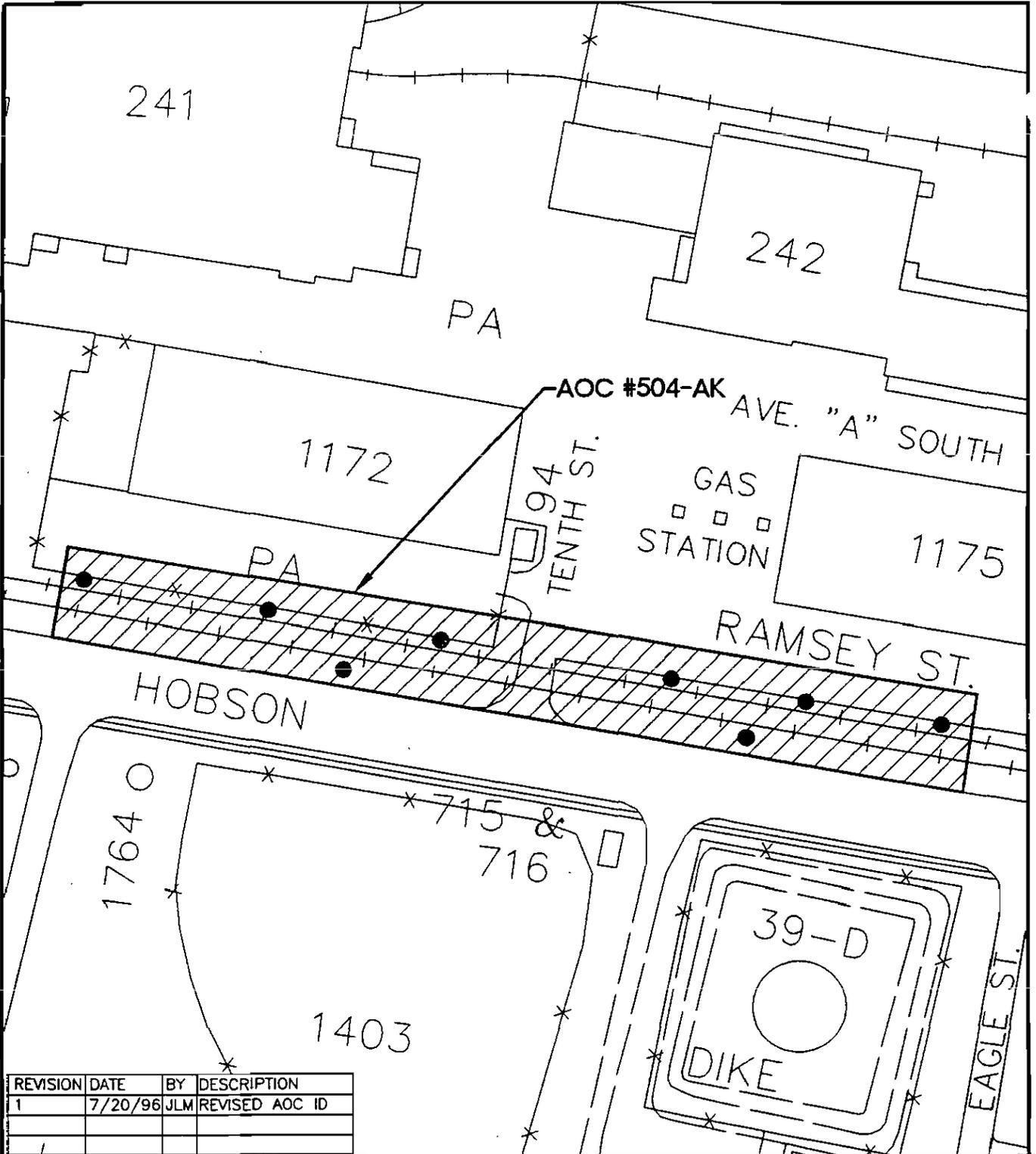


FINAL
 ZONE L RFI WORK PLAN
 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

FIGURE 2-13
 AOC 504-AB: RAILROAD SYSTEM
 FORMER FUEL OFF-LOADING SYSTEM
 RAILROAD SYSTEM



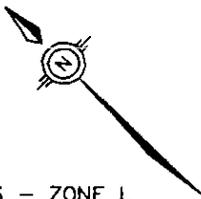




REVISION	DATE	BY	DESCRIPTION
1	7/20/96	JLM	REVISED AOC ID

LEGEND

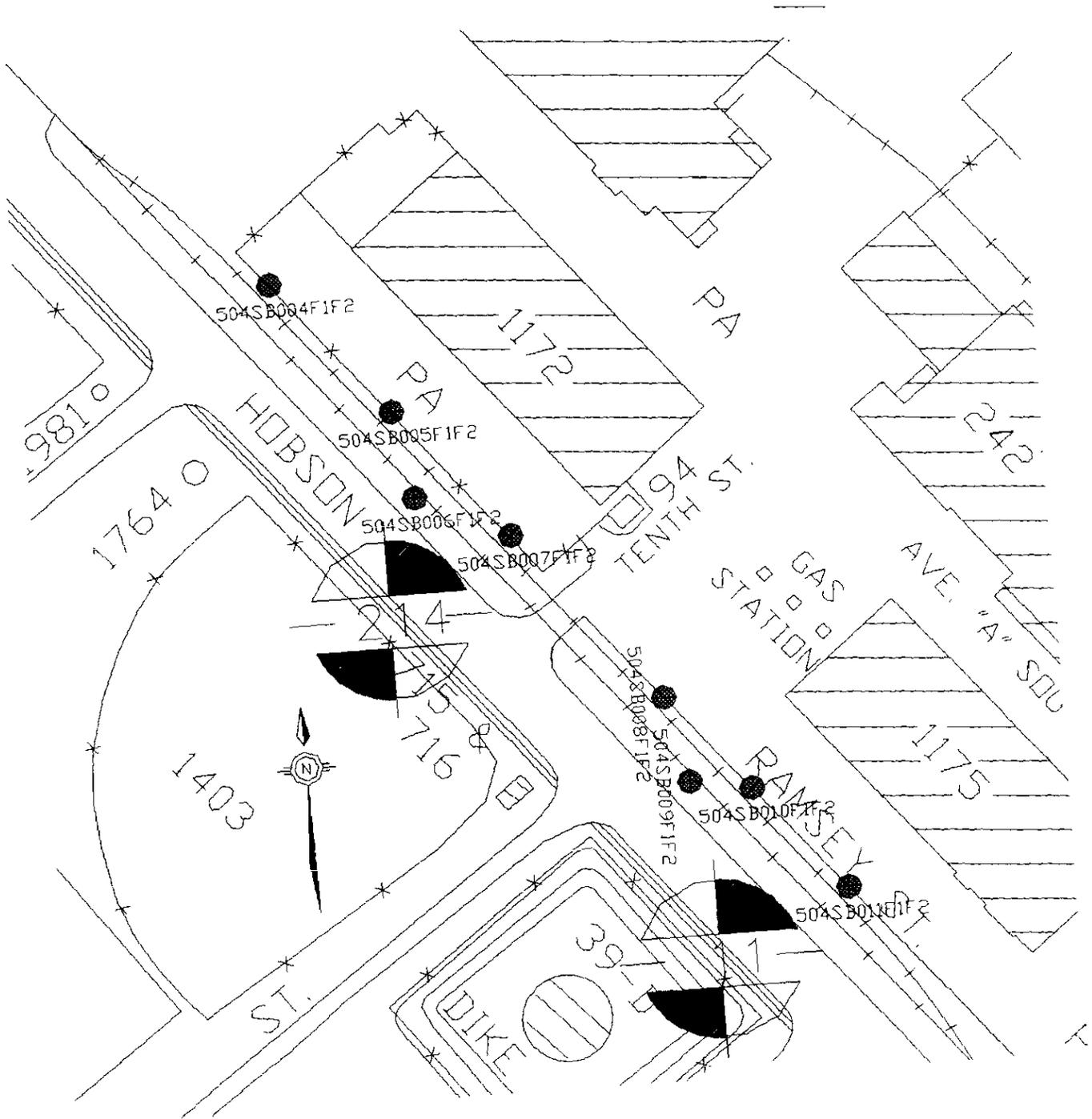
- - PROPOSED SOIL BORINGS - ZONE L
- ▲ - PROPOSED SHALLOW MONITORING WELLS - ZONE L



FINAL
 ZONE L RFI WORK PLAN
 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

FIGURE 2-21
 AOC 504-AK: RAILROAD SYSTEM
 STORAGE AREA FOR CONTAINER CARS
 PROPOSED SAMPLE LOCATIONS





GROUNDWATER MONITORING PROJECT

This project samples groundwater wells segregated in eleven (11) zones throughout the Naval Base Complex to analyze for hazardous materials that have leached into the water table. Ensafe is contracted by the Navy to establish the monitoring plan and to monitor all wells quarterly for a total of four quarters. Ensafe typically will accomplish the initial sampling cycle (1st quarter) in each zone and the detachment will perform the remaining follow-up sampling cycles. Currently the detachment has been funded and authorized to complete sampling Zones A,B,C,D,E,F,G,H,I and K. Funding and authorization for Zone L is expected to be awarded to the detachment.

<u>ZONE</u>	<u>SCHED START</u>	<u>SCHED COMP</u>	<u>ESD/[ASD]</u>	<u>ECD/[ACD]</u>	<u>% COMP</u>	<u># WELLS</u>
A	FY96					
(QTR. II)	03/04/96	06/04/96	[04/22/96]	[04/29/96]	100%	26
(QTR. III)	06/04/96	09/04/96	[06/19/96]	[06/26/96]	100%	
(QTR IV)	09/04/96	12/04/96	[10/04/96]	[10/18/96]	100%	
A - ADDENDUM 1	FY97					
(QTR I)			[10/10/96]	[10/16/96]	100%	11
(QTR II)	01/17/97	04/16/97	[03/10/97]	[03/12/97]	100%	11
(QTR III A5)	04/17/97	07/16/97	[07/07/97]	[07/31/97]	100%	16
(QTR IV)	07/17/97	10/16/97	10/07/97	10/15/97	0%	16
A - ADDENDUM 1I	FY97					
(QTR I)				[02/07/97]	100%	6
(QTR II)	03/03/97	06/02/97	[03/20/97]	[03/21/97]	100%	6
(QTR III A5)	06/03/97	09/02/97	[07/07/97]	[07/17/97]	100%	7
(QTR IV)	09/03/97	12/02/97	10/07/97	10/15/97	0%	7
B	FY96					
(QTR. II)	03/04/96	06/04/96	[04/22/96]	[05/02/96]	100%	6
(QTR. III)	06/04/96	09/04/96	[06/19/96]	[06/26/96]	100%	
(QTR IV)	09/04/96	12/04/96	[10/04/96]	[10/18/96]	100%	
C	FY96					
(QTR. III)	03/04/96	06/04/96	[05/06/96]	[05/15/96]	100%	30
(QTR. IV)	06/04/96	09/04/96	[06/07/96]	[06/17/96]	100%	
D, F & G	FY97 - (NOTE: 11 QIII WELLS REQ'D RESAMPLING DUE TO UPS STRIKE)134					
(QTR. II)			[04/22/97]	[06/18/97]	100%	134
(QTR. III)	06/19/97	09/18/97	[08/11/97]	[09/18/97]	100%	87
(QTR IV)	09/19/97	12/18/97	10/30/97	12/18/97	0%	76
D, F & G - ADDENDUM 1	FY97					10
(QTR. II)			[08/11/97]	[09/18/97]	100%	
(QTR. III)	09/19/97	12/18/97	10/30/97	12/18/97	0%	
(QTR IV)	12/19/97	03/18/98	01/28/98	01/30/98	0%	
E	FY96					
(QTR. II)	06/19/96	09/19/96	[07/01/96]	[08/19/96]	100%	175
(QTR. III)	09/19/96	12/19/96	[10/28/96]	[12/17/96]	100%	171
(QTR IV)	12/19/96	03/19/97	[01/07/97]	[02/27/97]	100%	171

BENCHMARK = 21 (21.5) WELLS PER WEEK WITH 4 SAMPLERS
= 4.2 WELLS PER DAY WITH 4 SAMPLERS

10/9/97 12:56 PM

<u>ZONE</u>	<u>SCHED START</u>	<u>SCHED COMP</u>	<u>ESD/[ASD]</u>	<u>ECD/[ACD]</u>	<u>% COMP</u>	<u># WELLS</u>
E - ADDENDUM 1	FY97					14
(QTR I)				[11/01/96]		
(QTR II)	02/08/97	05/09/97	[03/03/97]	[03/06/97]	100%	
(QTR III)	05/10/97	08/08/97	[06/23/97]	[06/27/97]	100%	
(QTR IV)	08/09/97	11/07/97	10/16/97	10/24/97	0%	
H	FY96					
(QTR IV)	07/10/95	10/10/95	[03/08/96]	[04/17/96]	100%	97
I	FY96					
(QTR. III)	03/04/96	06/04/96	[05/15/96]	[06/05/96]	100%	55
(QTR. IV)	06/04/96	09/04/96	[08/19/96]	[09/13/96]	100%	
K	FY97					
(QTR I)				[01/06/97]		
(QTR II)	01/07/97	04/06/97	[04/16/97]	[04/18/97]	100%	8
(QTR III)	04/07/97	07/06/97	[07/23/97]	[07/30/97]	100%	
(QTR IV)	07/07/97	10/06/97	09/29/97	10/06/97	0%	
K - ADDENDUM 1	FY97					
SPECIAL ROUND			[05/22/97]	[05/23/97]	100%	8
(QTR I)			[07/23/97]	[07/30/97]	100%	18
(QTR II)	07/31/97	10/30/97	09/29/97	10/06/97	0%	
(QTR III)	10/31/97	01/31/98	01/12/98	01/16/98	0%	
(QTR IV)	01/31/98	04/30/98	03/02/98	03/06/98	0%	
L						
(QTR II)	(SOW received - Scope not identified)					
(QTR III)						
(QTR IV)						

ESD = Estimated Start Date [ASD]= Actual Start Date
ECD = Estimated Completion Date [ACD]= Actual Completion Date

Durations for each Zone in working days

Zones A&B	8 days	[4 samplers]
Zone A		
Addendum I	3 days	[4 samplers]
Addendum II	2 days	[4 samplers]
Zone C	8 days	[4 samplers]
Zone D,F&G	33 days	[4 samplers] (NS-661 accomplished during D,F&G)
Zone E	41 days	[QII = 7/1 - 8/23 6 samplers/day ; QIII & IV = 4 samplers/day]
Zone E		
Addendum I	4 days	[4 samplers]
Zone H	26 days	[4 samplers]
Zone I	15 days	[4 samplers]
Zone K	2 days	[4 samplers]
Addendum I	9 days	[2 samplers]
Zone L		[]

BENCHMARK = 21 (21.5) WELLS PER WEEK WITH 4 SAMPLERs
= 4.2 WELLS PER DAY WITH 4 SAMPLERs

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NAVAL BASE CHARLESTON
RESTORATION ADVISORY BOARD (RAB)
Minutes of 12 August 1997

LIVE OAK COMMUNITY CENTER, 2012 SUCCESS ST., N. CHARLESTON

1. Introduction of the RAB Members and Guests

Ms. Wannetta Mallette-Pratt, Community Co-Chair, brought the meeting to order at 6:08 p.m. and thanked everyone for coming out. RAB member and audience introductions were made. Mr. Fontenot added that Mr. Jay Bassett's wife recently had a baby and as a result, Mr. Bassett, EPA representative, is unable to attend the meeting.

2. RAB Members Attending

Mr. Oliver Addison	Mr. Lou Mintz
Mr. Bobby Dearhart	Mr. Arthur Pinckney
Mr. Daryle Fontenot	Ms. Ann Ragan
Ms. Gussie Greene	LCDR Paul Rose
Mr. Don Harbert	Ms. Fouche'na Sheppard
Ms. Jeri Johnson	Mr. Bob Veronee
Mr. Ralph Laney	Ms. Priscilla Wendt
Ms. Wannetta Mallette-Pratt	

3. Guests Attending

Mr. Tony Hunt	NAVFAC, SouthDiv
Mr. Henry Shepard	NAVFAC, SouthDiv - CSO
Mr. Reece Batten	NAVFAC, SouthDiv
Mr. Paul M. Bergstrand	SCDHEC
Mr. Johnny Tapia	SCDHEC
Mr. J. Michael Reubish	CEERD
Mr. Nawayanan Krishna	MUSC
Mr. Kevin Tunstall	Shipyard Detachment
Ms. Myrtle Barnett	Community Member
Mr. Leroy Carr	Chicora/Cherokee
Mr. James Washington	Community Member
Mr. Joe Byas	Dorchester Terrace Civic
V.P. Rummond	
Mr. Joseph Johnson	
Ms. Yvette Jones	Community Member
Mr. Anthony Joyner	Chicora/Cherokee
Ms. Diane Cutler	EnSafe Inc.
Mr. Dave Backus	EnSafe Inc.
Mr. Todd Haverkost	EnSafe Inc.

4. Administrative Remarks and Comments on Minutes

Ms. Mallette asked for comments on minutes from last meeting and for any other administrative remarks. None were offered.

5. Subcommittee Reports

Community Relations Subcommittee

Mr. Fontenot reported that the Community Relations Subcommittee met prior to the RAB meeting. The committee received an update on the RAB WebPage. All the information has been imported and the WebPage should be on-line within a week. The WebPage address will be provided with the 8/12 meeting minutes for all those with internet connections. The Chicora Tank Farm Fact Sheet was distributed in July. Also, on August 2, the RAB participated in the EnviroFair which had exhibits dealing with the Charleston Area Community Based Environmental Protection Project. The RAB provided a poster station with handouts including Fact Sheets #1 and #2, the Environmental Progress Report, and meeting announcements for the August meeting. Mr. Lou Mintz staffed the booth along with Mr. Fontenot, and Mr. Arthur Pinckney also visited. The EnviroFair provided an opportunity for the RAB to spread the word about their efforts with the environmental investigations at the Naval Base. The next subcommittee meeting will be held on October 14, 1997 and the agenda will include reviewing a general fact sheet on the Corrective Measures Study process.

Environmental Detachment Subcommittee

Mr. Pinckney reported that he has collected some information, but has not had the opportunity to meet with the Detachment yet. Although he did not provide details, Mr. Pinckney stated that the information and brochures he received are uplifting, and that he was not aware that the Detachment was doing as much as they are. Mr. Bobby Dearhart added that anyone who wants to visit the Detachment and pick up information is welcome to stop by Building 30 at the Shipyard. Mr. Pinckney added that he was glad the Navy took the initiative to allow the Detachment to take on work at the shipyard and would like to see them have opportunities for more work on the Charleston project or even at other facilities.

6. Environmental Cleanup Progress Report

Status of Environmental Programs

Mr. Tony Hunt, Environmental Engineer with Southern Division introduced himself and explained that his job is managing the environmental investigation at the Shipyard and also at the Naval Station Annex. One of the sites that will be discussed later in his presentation is located at the Annex.

Mr. Hunt provided the Progress Report on the RCRA Facility Investigation (RFI). Regarding progress for June and July, the Navy continued "background" discussions for all Zones except G and K. Background is essentially the metals that are in the soil. Establishing background is an important step in defining the contaminants of concern at a particular site. The Navy has resolved

the outstanding issues and submitted the Final Zone D RFI report. There weren't any real problems except for one area near Building 30 which has a groundwater problem that will be looked at with Zone E. Zone B has been approved, and Zone D is very nearly approved. Discussions were continued on how to resolve the outstanding issues with Zone H.

Projected activity for August and September includes continuing field work in Zones J, K and L. Zone J is the water bodies. The Navy is starting to get data back from their initial sampling effort and is going to have a 30% progress meeting with the Project Team next month. Some of the results may be available for discussion at the October meeting. Zone L will also have a 30% progress meeting next month.

Solid Waste Management Unit (SWMU) 166

The Naval Station Annex is located on the airport side of the intersection of Remount Road and I-26. The Radar Station command has left, but the air force still uses some of the area for housing, and the rest of the area was used for a mobile radar annex and repair facility. The marines also used to be located there.

The Navy is investigating the Annex property in a similar fashion as with the Navy Base. They are trying to determine if there were any past releases before releasing the property for transfer. While investigating the sewer system, the Navy discovered chlorinated solvents and are currently trying to find the extent of those solvents. Mr. Hunt displayed a map that showed the extent of groundwater contamination. The groundwater essentially distributed the chlorinated solvent in a fan shape moving toward I-26. Next, the Navy wanted to look at the area off-base to see if the contamination had migrated beyond the facility boundary.

Samples were collected and chlorinated solvents were found on the other side of I-26. The odd thing was that different compounds were also found that didn't match what was migrating off the Annex property. To help explain where these other compounds may have originated, the Navy did a search on other establishments in the area. This search found that a dry cleaner had been located at almost the exact location where the different compounds were sampled. This information helped the Navy explain where some of those different compounds originated and it will help further in the delineation of the site. The off-base sampling has not yet occurred. The Navy is still awaiting approval from the State Highway Department, but hopes to get to the sampling within the next couple of weeks.

RFI Progress Report (continued)

Other activities projected for August and September include identifying sites to begin corrective action. To date, the detachment has been working on a lot of interim measures which were for the most part soil excavations and removals. The Navy has not yet gotten to complicated remedial actions, but will begin those shortly, including groundwater contaminated sites and looking at alternatives to remediating some of those problems. The bottom line is that the Navy is going to

try to enter into some of the more complicated cleanups and bring them to the RAB and get the RAB's opinion on whether or not those are good ideas.

One of the sites that will be looked at is SWMU 166. The Navy is interested in removing contaminated soil and implementing some type of contaminant containment, (either in-situ (in-place) or ex-situ), to prevent further contaminant migration at SWMUs 166, 39, 607 and 9.

Other upcoming activities include resolving all background issues, reviewing the CMS Work Plan, and continuing document review and comment resolution.

Regarding SWMU 166, Mr. Ralph Laney asked how the Navy will determine what contamination is their's and what is somebody else's. Mr. Hunt replied that the answer is a difficult one. The Navy can try to identify the extent of the compounds that belong to the Navy, but from there it becomes more of a legal issue dealing with property owners that may be considered potentially responsible parties. From there, both the Navy and the previous property owners would be responsible for cleanup.

A guest from the audience asked where sampling was conducted. Mr. Hunt answered that sampling was conducted at North, South, and West Boland Streets, Woodbine Avenue, and a couple of other areas, and could potentially go as far as Rivers Avenue. This area is the Gas Light Square area.

Chicora Tank Farm Update

Mr. Fontenot provided updated information on Chicora tank farm. The Navy has completed installing the filter on Tank O which is an activated charcoal filter. Hopefully that will help to eliminate the odors that the community has been reporting. The Navy would like to hear any feedback from the community whether or not the filter is working.

As far as funding for demolition is concerned for demolition, the Navy is still waiting for that issue to be resolved. There is finally some interest in the property, and it looks like it will be combined reuse with the City of North Charleston and the Charleston County School Board.

Mr. Pinckney asked if the tanks should have been monitored in past years for air pollution. Mr. Fontenot replied that he spoke with people in the air program, and there are no records of monitoring being kept. He also said he will go back to them to find out if there are any regulations for air monitoring on petroleum tanks. Ms. Ann Ragan, with DHEC, stated that tank regulations didn't come into effect until 1984. Mr. Bob Veronee added that there is no requirement for monitoring the type of tanks at the Chicora tank farm. Mr. Pinckney stated that he felt there is a problem with those tanks not requiring monitoring. Mr. Fontenot said that he will go back to the regulations to see what exactly is required and to see if in fact there are any

potential health effects due to vapor emissions from the type of fuel that was stored at the tank farm.

Mr. Kevin Tunstall, asked if there is any potential conflict with pulling the tanks now that the school year is ready to begin. Mr. Fontenot said that is a valid concern and will have to work out the details once funding is approved.

7. Reuse Update

Ms. Jeri Johnson reported that there have been three meetings of the Redevelopment Authority (RDA) since the last RAB meeting.

July 1: The authority approved three leases; one to Summerville Personnel and Security Services which is an employment company that will be leasing building 227 which is a very small office building just outside the McMillan gate and behind the existing security office that CMMC is leasing. The authority also approved a lease with Carolina Marine Handling for Buildings 1605, 1604, and 1607. Those are warehouses that were formally used by the DRMO (the defense surplus agency). The third lease was to Trans-Hold who will be leasing Building 69 which is close to the two small dry-docks.

July 22: The authority approved leasing Building 226 to CMMC Machine. Building 226 is a metal building that is adjacent to the former machine shop in the industrial area of the shipyard. They also approved leasing Buildings 5 and 678 to CMMC. Building 5 is one of the original shipyard industrial buildings and was originally a woodworking building. Building 678 is a fairly new, small, brick administration building at the very south end of the base near the small piers.

August 12: The authority approved a 4 month license of Building NH-45 which is part of the old Navy Hospital complex to a motion picture production company. They also approved a license of the tennis courts near the old Bachelor Officer Quarters to the Magnet school and they approved an amendment to the CMMC lease for Building 657 which is the former enlisted club. It will be used as a dining hall in support of the CMMC former military sales program.

Ms. Johnson reported as far as Chicora is concerned, the authority is waiting for a written expression of interest from the school district and understands that there probably won't be any action taken until the end of August.

Mr. Pinckney asked what is the DRMO. Ms. Johnson stated that DRMO stands for Defense Reutilization and Marketing Office which existed to accept excess Navy property and sell it to other agencies and the public. Mr. Pinckney also asked about the status of the McDonalds on base. Ms. Johnson reported that no one has expressed any interest in the McDonalds.

Ms. Mallette asked Mr. Fontenot to provide for the RAB a time-frame for demolition of the Chicora tanks. Mr. Fontenot said that he doesn't know the time-frame, but he knows that the cost estimates for the demolition are in-house waiting on funding. Once funding is approved, a work plan will be required, but should probably take only about 30 or 60 days before actually starting work, once funding is approved.

Mr. Bobby Dearhart, with the Shipyard Detachment added that he doesn't know the timeframe to complete demolition because it hasn't been decided if one tank will be demolished at a time, or if they'll be done in series due to funding and work schedule issues.

Mr. Fontenot clarified that the Shipyard Detachment, will be doing the Chicora demolition. Mr. Kevin Tunstall is the engineering director of the Detachment and assistant director of the Detachment under Mr. Dearhart.

8. Remaining Questions and Comments

Ms. Mallette asked if there were any other questions or if anyone had issues that they would like to see placed on the next meeting agenda. Nobody had questions or provided topics.

The next meeting will be held on Tuesday October 14, 1997 at 6:00 p.m at the Live Oak Community Center at 2012 Success Street in North Charleston.

10. Adjournment

Meeting was adjourned at 6:50 p.m.

Summary of Action Items

- Mr. Fontenot will inquire about air monitoring regulations for the Chicora tanks and find out about health effects of air emissions from the petroleum products that were stored in the tanks.

Attachments to Minutes

- (1) Tuesday August 12, 1997 RAB Meeting Agenda
- (3) RCRA Facility Investigation Progress Update - 8/11/97
- (3) RCRA Facility Investigation Progress Report for August 1997
- (4) Charleston Naval Complex - Tenant Summary, 8/11/97

Minutes recorded by: Diane Cutler, EnSafe Inc.

Minutes approved by: _____

Daryle Fontenot
Navy Co-Chair

Wannetta Mallette
Community Co-Chair

Tuesday, August 12, 1997

Charleston Naval Complex

RESTORATION ADVISORY BOARD MEETING AGENDA

6:00 P.M. Location: *Live Oak Community Center*
2012 Success Street, North Charleston, SC

6:00 P.M. RAB MEETING

- A. Introduction of the RAB Members and Guests
- B. Administrative Remarks, comments on the minutes of the last meeting
- C. Subcommittee Reports
- D. Reuse Update - CNCRA
- E. Environmental Cleanup Progress Report - Cleanup Team
 - Status of the Environmental Programs
- F. Remaining Questions and Comments from RAB Members and Visitors
- G. Agenda for next meeting.

RAB Members, Project Team, and interested citizens informally talk about what's going on after the meeting from 7:00 p.m. to 8:00 p.m.

Please mark your calendar. Our next meeting is **Tuesday, October 14, 1997, 6:00 p.m.** at the Live Oak Community Center, 2012 Success Street, North Charleston, SC. No RAB meeting in September. RAB meetings will be every other month until further notice.

NAVAL BASE CHARLESTON RCRA FACILITY INVESTIGATION PROGRESS UPDATE

ZONES	CURRENT	CURRENT	PLANNED		OVERALL	OVERALL	NOTES
	RFI	PHASE	COMPLETION	DATE OF	RFI	RFI	
	COMPLETION	CURRENT RFI	NEXT	COMPLETION	COMPLETION		
	PHASE	PERCENTAGE	PHASE	DATE	PERCENTAGE		
A	RFI Report Revs	85	8/15/97	Revd Rpt Review	9/9/97	90	
B	COMPLETE			COMPLETE	1/8/97	100	No CMS or CMI required in Zone.
C	RFI Report Revs	95	8/29/97	Revd Rpt Review	10/14/97	98	
D	COMPLETE	100		COMPLETE	7/15/97	100	No CMS or CMI required in Zone.
E	RFI Report Prep	75	10/9/97	Report Review	2/10/98	70	
F	RFI Report Prep	85	11/6/97	Report Review	2/10/98	72	
G	RFI Report Prep	75	12/15/97	Report Review	4/14/98	69	
H	Revd Rpt Review	98	9/9/97	CMS Work Plan	9/9/97	99	
I	Report Review	75	8/21/97	CMS Work Plan	10/14/97	85	
J	Field Work	50	10/28/97	RFI Report Prep	5/12/98	30	
K	RFI Report Prep	50	12/9/97	Report Review	4/14/98	63	
L	Field Work	50	11/24/97	RFI Report Prep	6/12/98	30	
All Zones					6/12/98	75	

LEGEND	
Phase	Description
RFI	RCRA Facility Investigation
CMS	Corrective Measures Study
Work Plan Preparation [5%]	Work Plan being prepared by Navy Contractor
Work Plan Review [5%]	Regulators (DHEC & EPA) reviewing Work Plan
Field Work [40%]	Navy contractor performing field work as outlined in the Work Plan
RFI Report Preparation [25%]	Navy contractor preparing the RFI Report
Report Review [25%]	Regulators (DHEC & EPA) reviewing report
CMS Work Plan	CMS Work Plan being prepared by Navy Contractor
Revs	Revision
Revd	Revised

Revised 8/11/97
chsrfipu.xls

----- CURRENT FACILITIES/EMPLOYMENT -----

----- ULTIMATE FACILITIES/EMPLOYMENT -----

DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES	EX-BASE WORKERS
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DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES
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CURRENT TENANTS/SUB-TENANTS

ALLIED TECHNOLOGY GROUP, INC.
 BABCOCK & WILCOX
 TBD ELECTRICAL CONTRACTORS
 CAROLINA YOUTH DEVELOPMENT CENTER
 CHARLESTON COUNTY PRC
 CHARLESTON COUNTY SCHOOL DISTRICT
 CHARLESTON GRIP & ELECTRIC, INC.
 CHARLESTON MARINE CONTAINERS, INC.
 CHARLESTON MARINE MANUF. CORP
 APPLIED TECHNOLOGY SERVICES
 BECKLEY ENGINEERING
 CHATHAM STEEL CORPORATION
 CHOPLIN PREDICTIVE MAINTENANCE
 CMMC MACHINE, INC.
 COOPER RIVER MACHINE
 DETYENS SHIPYARDS
 EXCEL APPARATUS SERVICES, INC.
 G & G PALLET, CRATE & BOX
 METAL TRADES
 NATIVE SOILS, INC.
 NDI ENGINEERING
 SHIPTECH
 STATE BOARD FOR TECH & COMP ED
 WHITE STACK TOWING & TRANSPORTATION
 CHARLESTON NAVAL COMPLEX RDA
 DAVIS & FLOYD/HARZA
 CHARLESTON SHIPBUILDERS, INC.
 BATTERY CREEK STEVEDORING, LLC
 CAROLINA MARINE HANDLING
 EARTH SCIENCES
 JW ALUMINUM COMPANY
 RICHARDS MARINE SERVICES CORP.
 TRANS-HOLD, INC.
 COMMISSIONERS OF PUBLIC WORKS

0	0	0	1	8,553	21	0
0	0	0	2	175,992	0	0
0	0	0	0	0	4	4
0	0	0	2	5,642	0	0
0	2	0	2	6,087	4	0
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0	0	0	1	12,480	12	0
0	0	1	6	326,598	4	2
3	8	18	60	1,191,130	3	0
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0	0	0	0	0	4	1
0	0	0	0	0	1	1
0	0	0	0	0	6	6
0	0	0	0	0	162	24
0	0	0	0	0	400	92
0	0	0	0	0	35	2
0	0	0	0	0	2	1
0	0	0	0	0	135	31
0	0	0	0	0	6	0
0	0	0	0	0	12	6
0	0	0	0	0	15	6
0	0	0	0	0	7	3
0	0	0	0	0	40	10
0	0	0	2	42,471	10	1
0	0	0	0	0	6	4
2	3	2	28	388,515	67	11
0	0	0	0	0	0	0
0	0	0	0	0	44	16
0	0	0	0	0	1	1
0	0	0	0	0	0	0
0	0	0	0	0	5	0
0	0	0	0	0	0	0
0	0	0	6	104,999	0	0

0	0	0	1	8,553	100
0	0	0	3	208,930	225
0	0	0	0	0	13
0	0	0	2	5,642	1
0	3	6	7	12,670	6
0	0	2	1	41,196	43
0	0	0	1	12,480	25
0	0	1	6	326,598	330
3	8	28	97	1,602,165	3
0	0	0	0	0	15
0	0	0	0	0	1
0	0	0	0	0	15
0	0	0	0	0	16
0	0	0	0	0	40
0	0	0	0	0	162
0	0	0	0	0	1,600
0	0	0	0	0	50
0	0	0	0	0	20
0	0	0	0	0	800
0	0	0	0	0	6
0	0	0	0	0	12
0	0	0	0	0	15
0	0	0	0	0	7
0	0	0	0	0	140
0	0	0	1	8,205	10
0	0	0	0	0	0
2	6	22	61	548,577	2,000
0	0	0	0	0	10
0	0	0	0	0	100
0	0	0	0	0	25
0	0	0	0	0	0
0	0	0	0	0	5
0	0	0	0	0	25
0	0	0	6	104,999	200

CHARLESTON NAVAL COMPLEX

TENANT SUMMARY

DATA AS OF 8/11/97

	CURRENT FACILITIES/EMPLOYMENT							ULTIMATE FACILITIES/EMPLOYMENT					
	DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES	EX-BASE WORKERS	DRY DOCKS	PIERS	NON-BLDGS	BUILDINGS	BUILDING SQ. FT.	EMPLOYEES
COMPOSITE PRODUCTS COMPANY, INC.	0	0	0	1	17,172	2	0	0	0	1	6	22,092	50
DEPT OF HEALTH & ENV. CONTROL (B/400)	0	0	0	1	32,364	54	0	0	0	0	1	32,364	104
DISABILITIES BOARD OF CHARLESTON CO.	0	0	0	3	8,125	0	0	0	0	0	3	8,125	24
FLORENCE CRITTENTON	0	0	0	4	8,299	0	0	0	0	0	4	8,299	1
FOX ASSOCIATES, INC.	0	0	0	1	4,040	8	0	0	0	0	1	4,040	15
LOWCOUNTRY AIDS SERVICES	0	0	0	2	5,642	0	0	0	0	0	2	5,642	0
LOWCOUNTRY FOOD BANK	0	0	0	1	36,764	0	0	0	0	0	1	36,764	5
M. ROSENBLATT & SON, INC.	0	0	0	1	2,880	25	2	0	0	0	1	2,880	25
MENTAL HEALTH ASSOC OF THE LOWCOUNTRY	0	0	1	2	29,107	0	0	0	0	1	2	29,107	35
100 BLACK MEN OF CHARLESTON, INC.	0	0	0	2	4,057	0	0	0	0	0	3	4,321	0
SOUTH CAROLINA ELECTRIC & GAS	0	0	0	6	30,830	25	0	0	0	0	0	0	0
SC FEDERAL CREDIT UNION	0	0	0	2	16,180	12	0	0	0	0	2	16,180	12
U.S. POSTAL SERVICE (SHARE B/400)	0	0	0	0	17,782	180	0	0	0	0	0	17,782	400
SUBTOTAL	5	13	24	137	2,516,905	1,361	228	5	17	61	212	3,067,611	6,891

UNDER NEGOTIATION

BRASWELL SERVICES GROUP *	N/A	0	1	3	5	111,113	244						
CAROLINA MARINE HANDLING	N/A	0	0	0	3	72,448	TBD						
COLLEGE OF CHARLESTON *	N/A	0	0	0	1	14,117	20						
DEPARTMENT OF VETERANS AFFAIRS	N/A	0	0	0	4	11,945	13						
DRESSED FOR SUCCESS	N/A	0	0	0	1	1,656	TBD						
GROUPE SANI MOBILE, INC. *	N/A	0	0	0	1	8,000	40						
HOTLINE	N/A	0	0	0	1	4,128	6						
NEAL BROTHERS *	N/A	0	0	0	7	195,567	21						
NORTH CHARLESTON *	N/A	0	3	12	30	183,759	34						
SOUTH CAROLINA ARMY NATIONAL GUARD *	N/A	0	0	0	4	24,645	7						
SPRINGS TAILORING & DRY CLEANING *	N/A	0	0	0	1	1,089	7						
SUMMERVILLE PERSONNEL & SEC SERV, INC.	N/A	0	0	0	1	864	TBD						
TRANS-HOLD, INC.	N/A	0	0	0	0	0	TBD						
WILSON & GREEN CUSTOM BUILDERS *	N/A	0	0	0	1	3,390	10						
SUBTOTAL	0	4	15	60	632,721	402							

* Note: These prospective tenants currently occupy facilities through Navy Licenses

----- CURRENT FACILITIES/EMPLOYMENT -----

----- ULTIMATE FACILITIES/EMPLOYMENT -----

DRY DOCKS	PIERS	NON-BLDGS	BUILD-INGS	BUILDING SQ. FT.	EMPLOY-EES	EX-BASE WORKERS
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DRY DOCKS	PIERS	NON-BLDGS	BUILD-INGS	BUILDING SQ. FT.	EMPLOY-EES	EX-BASE WORKERS
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FEDERAL ACTIVITIES/TENANTS

BORDER PATROL	0	0	9	19	467,916	68	5
RAMCOR (BOSS CONTRACTOR)	0	0	0	0	0	156	25
CARETAKER SITE OFFICE	0	0	0	15	123,814	16	6
DEFENSE FINANCE & ACCOUNTING	0	0	3	6	246,666	638	287
DEFENSE INFO PROCESSING CENTER	0	0	0	0	0	7	7
DEFENSE PRINTING SERVICE	0	0	0	1	26,520	37	37
ENVIRONMENTAL DETACHMENT	0	0	0	10	190,774	172	172
MAGNETIC SILENCING FACILITY (PIER Y)	0	1	4	4	6,396	5	5
MARINE RESERVE (NAVSTA ANNEX)	0	0	0	6	25,056	54	54
NATIONAL CIVILIAN COMMUNITY CORPS	0	0	2	6	91,960	22	0
NATIONAL OCEANIC & ATMOSPHERIC ADMIN	0	1	0	5	47,340	20	3
U.S. NAVY INSHORE BOAT UNIT 27	0	0	0	0	0	3	0
NISE EAST	0	0	2	18	362,761	250	200
STATE DEPARTMENT	0	0	2	5	197,750	76	15
U.S. COAST GUARD	0	1	3	6	76,034	361	0
SUBTOTAL	0	3	25	101	1,862,987	1,885	816

BORDER PATROL	0	0	9	19	467,916	68	5
RAMCOR (BOSS CONTRACTOR)	0	0	0	0	0	156	25
CARETAKER SITE OFFICE	0	0	0	0	0	0	0
DEFENSE FINANCE & ACCOUNTING	0	0	3	5	232,518	750	287
DEFENSE INFO PROCESSING CENTER	0	0	0	0	0	7	7
DEFENSE PRINTING SERVICE	0	0	0	1	26,520	37	37
ENVIRONMENTAL DETACHMENT	0	0	0	0	0	0	0
MAGNETIC SILENCING FACILITY (PIER Y)	0	0	0	0	0	0	0
MARINE RESERVE (NAVSTA ANNEX)	0	0	0	6	25,056	54	54
NATIONAL CIVILIAN COMMUNITY CORPS	0	0	2	6	91,960	22	0
NATIONAL OCEANIC & ATMOSPHERIC ADMIN	0	1	0	5	47,340	28	3
U.S. NAVY INSHORE BOAT UNIT 27	0	0	0	0	0	6	0
NISE EAST	0	0	2	18	362,761	250	200
STATE DEPARTMENT	0	0	2	5	197,750	400	15
U.S. COAST GUARD	0	1	3	6	76,034	361	0
SUBTOTAL	0	2	21	71	1,527,855	2,139	

OVERALL SUMMARY

CURRENT TENANTS/SUB-TENANTS	5	13	24	137	2,516,905	1,361	228
UNDER NEGOTIATION	0	0	0	0	0	0	0
FEDERAL ACTIVITIES/TENANTS	0	3	25	101	1,862,987	1,885	816
GRAND TOTAL	5	16	49	238	4,379,892	3,246	1,044

CURRENT TENANTS/SUB-TENANTS	5	17	61	212	3,067,611	6,691	
UNDER NEGOTIATION	0	4	15	60	632,721	402	
FEDERAL ACTIVITIES/TENANTS	0	2	21	71	1,527,855	2,139	
GRAND TOTAL	5	23	97	343	5,228,187	9,232	

**Naval Base Charleston
RCRA Facility Investigation (RFI)
PROGRESS REPORT FOR AUGUST 1997**

INVESTIGATIVE ZONES

- A. Warehousing and scrap metal yard
- B. Golf course and residential
- C. Office space and warehouse (NH-45, Navbase HQ)
- D. Parking lot, warehouses
- E. Shipyard
- F. Recreational areas and public works shops
- G. Fuel farm and transfer facility
- H. Southern end of the base excluding waterfront
- I. Southern end of the base including waterfront and dredge material area
- J. Waterbodies
- K. Non-contiguous areas
- L. Sewer systems and railroad system

PROGRESS FOR JUNE AND JULY

- ◆ Continued background discussions for all Zones except G & K.
- ◆ Resolved outstanding issues and submitted Final Zone D RFI report.
- ◆ Continued discussions to resolve outstanding issues with Zone H.

PROJECTED ACTIVITY FOR AUGUST/SEPTEMBER

- ◆ Continue field work in Zones J, K (SWMU 166) and L.
- ◆ Identify sites to begin corrective action (groundwater).
- ◆ Resolve all background issues.
- ◆ Review Zone H CMS Work Plan.
- ◆ Continue document review and comment resolution.

Time: 3:30 p.m. - 4:30 p.m.

Attendees: Daryle Fontenot, Wannetta Mallette-Pratt, Arthur Pinckney, Diane Cutler

DISCUSSION ITEMS

Chicora Tank Farm Fact Sheet Daryle reported that the Chicora Tank Farm Fact Sheet was distributed in July. Arthur inquired if air emissions testing was required for the Chicora tanks. Mr. Fontenot said he had spoken to people in the air division and was told that monitoring did not take place. Arthur added that he thought it was a problem if monitoring was not required. Daryle said he would look into the issue further.

WebPage Diane provided an update on the progress of the Charleston WebPage. She reported that Mark Turnbull said that everything was uploaded with the exception of the fact sheets which are taking a little longer than anticipated. The WebPage should be on-line within the week. Diane recommended that a note be sent along with the RAB meeting minutes to announce the address for those with internet access.

EnviroFair Daryle said that the RAB was represented at the EnviroFair on Saturday August 2, 1997. Exhibits supported the Charleston Area Community Based Environmental Protection Project. Lou and Daryle staffed the booth and Mr. Pinckney attended the event and visited the RAB booth. The RAB displayed the poster station that is set up at each RAB meeting and provided Fact Sheets #1 and #2, the Environmental Progress Report, and meeting announcements for the August meeting. One person signed up to be added to the RAB mailing list. Ann Ragan staffed the DHEC booth. Attendance at the entire event was modest, but it provided the RAB an opportunity to spread their message.

Other Fact Sheets Daryle asked for suggestions for other fact sheets. Diane recommended a Corrective Measures Study (CMS) Process fact sheet since EnSafe had already prepared one for Naval Support Activity Memphis and should require minimal effort to tailor it to Charleston. Diane will provide copies at the October meeting.

Appreciation Letter Arthur inquired if any progress had been made on the appreciation letter that he suggested be written about Doyle Brittain and sent to Doyle's boss. No progress had been made. Daryle offered to help but recommended that it should be drafted by community members since that is who it is coming from.

NEXT MEETING

Subcommittee Meeting The next Subcommittee meeting will be held on October 14, 1997 at 3:30 p.m. in building NH-51 in the Caretaker Site Office conference room. Meetings will tentatively be scheduled on a bi-monthly basis to correspond with the new RAB meeting schedule. If more frequent meetings are necessary, special meetings will be arranged and members contacted.

Naval Charleston
Project Status
4/8/97

PROGRAM	PROJECT DESCRIPTION	ACTION REQUIRED	ECD
BRAC - Property Lease/Transfer	None		
NEPA	Environmental Assessment of Naval Annex	Waiting on reuse plan from RDA before completing the EA	
RCRA Compliance	Part B permit application	CSO submit Part B application	4/11/97
RCRA Corrective Action	Zone A RFI report	In SCDHEC review, Report comments to be discussed 5/12/97	5/12/97
	Zone A field work	Background issues discussed 4/7/97, additional soil and groundwater samples required at two locations	5/12/97
	Zone B RFI report	Draft SWMU 39 letter prepared, Project Team review 4/8/97	4/8/97
	Zone B CMS Work Plan	Background Issues resolved 3/25/97, Letter submitted 4/8/97 documenting resolution	complete
	Zone C RFI report	As a result of 3/25/97 meeting, No Further Action required in Zone B, No CMS Work Plan is required.	complete
	Zone D field work	In SCDHEC review, comments to be discussed 5/13/97	6/11/97
	Zone E field work	Draft report submitted 2/19/97, in EPA and SCDHEC review	5/30/97
	Zone F & G field work	Field work completed for all sites except AOC 607 and SWMU 175, remaining field work to be discussed no later	4/25/97
	Zone H RFI report	Field work complete, background issue to be discussed NLT 5/12/97	5/12/97
	Zone I RFI report	Comments to be discussed 4/9/97	4/9/97
	Zone J RFI field work	In SCDHEC review, comments to be discussed 5/13/97	5/13/97
	Zone K Field Work	Subcontracts are being assembled, field work to begin later this month	4/30/97
	Zone L RFI field work	Additional DPT sampling complete at Naval Annex, offsite sampling required	4/18/97
	Miscellaneous issues	Funding in place for both Ensafe and Detachment, field work to begin in April	4/30/97
	Groundwater Model		
	Transfer of IR sites to UST program	Lower flow zone is being added to model, calibration with data from new wells is next step	4/29/97
	Support services	AOC 659, 667, 138 being discussed, SWMU 13 approved for transfer	4/9/97
	Groundwater Monitoring	All remaining GW monitoring w/exception of Zone L awarded	Ongoing
Underground Storage Tank	Bioremediation demonstration project	In operation	Ongoing
	Removals	FY 97 - 45 tanks authorized for removal, forty have been removed, 92 total have been removed by the Detachment.	
	Chicora Tank Farm	Letter submitted to the RDA explaining the options for tank closures	
Asbestos	Building 32 remediation	In progress	6/30/97

NAVAL BASE CHARLESTON

RCRA FACILITY INVESTIGATION PROGRESS UPDATE

ZONES	CURRENT	PLANNED			OVERALL	OVERALL	
	RFI	COMPLETION			RFI	RFI	
	PHASE	DATE OF			RFI	RFI	
	COMPLETION	CURRENT RFI	NEXT	COMPLETION	COMPLETION		
PHASE	PERCENTAGE	PHASE	PHASE	DATE	PERCENTAGE	NOTES	
A	Report Review	98	5/15/97	CMS Work Plan	5/15/97	95	
B	Report Review	100	2/20/96	COMPLETE	7/8/97	100	No CMS or Cleanup required in Zone.
C	Report Review	80	6/20/97	CMS Work Plan	6/20/97	90	
D	Report Review	5	6/6/97	CMS Work Plan	6/6/97	75	
E	RFI Report Prep	50	5/24/97	Report Review	8/19/97	65	
F	Field Work	95	5/2/97	RFI Report Prep	9/16/97	48	
G	RFI Report Prep	10	6/15/97	Report Review	9/26/97	50	
H	Report Review	95	4/15/97	CMS Work Plan	4/15/97	95	
I	Report Review	50	6/20/97	CMS Work Plan	6/20/97	80	
J	Field Work	5	9/9/97	RFI Report Prep	4/21/98	11	
K	RFI Report Prep	5	6/16/97	Report Review	9/30/97	50	
L	Field Work	5	10/10/97	RFI Report Prep	4/21/98	11	
All Zones					4/21/98	64	

LEGEND	
Phase	Description
RFI	RCRA Facility Investigation
CMS	Corrective Measures Study
Work Plan Preparation	Work Plan being prepared by Navy Contractor
Work Plan Review	Regulators (DHEC & EPA) reviewing work plan
Field Work	Navy contractor performing field work as outlined in the Work Plan
RFI Report Preparation	Navy contractor preparing the RFI Report
Report Review	Regulators (DHEC & EPA) reviewing report
CMS Work Plan	CMS Work Plan being prepared by Navy Contractor

Prepared 12/19/96
Revised 4/08/97

**The Naval Base Charleston Restoration Advisory Board
web page is now on-line.**



http://www.navy.mil/homepages/navfac_southdiv/
go to SOUTHDIV Organization Chart
go to Environmental - there is a link to Restoration Advisory Boards

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go to SOUTHDIV Organization Chart
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October 14, 1997

Naval Base Charleston

RAB Meeting

Restoration Advisory Board

DateTuesday, October 14, 1997

Time6 p.m.

Location...Live Oak Community Center
2012 Success Street
North Charleston

The RAB is a forum where community members meet with representatives from the Navy, State and Federal environmental agencies, and other groups to discuss the environmental programs underway at Naval Base Charleston. **All meetings are open to the public and everyone is encouraged to attend.**

For More Information



Call Jim Belz at the Public Affairs Office
at Naval Facilities Engineering Command,
Southern Division (803) 820-5771

October 14, 1997

Naval Base Charleston

RAB Meeting

Restoration Advisory Board

DateTuesday, October 14, 1997

Time6 p.m.

Location...Live Oak Community Center
2012 Success Street
North Charleston

The RAB is a forum where community members meet with representatives from the Navy, State and Federal environmental agencies, and other groups to discuss the environmental programs underway at Naval Base Charleston. **All meetings are open to the public and everyone is encouraged to attend.**

For More Information



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Schedule Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994												1995												1996												1997												98																	
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
RFA and Comprehensive Work Plan						Focus Field Investigation and Technical Memo.																																																																	
28JAN94	31JUL95	28JAN94	31JUL95	541	100	Regulatory Review																																																																	
31JUL95	27NOV95	31JUL95	27NOV95	117	100	Final Technical Memo																																																																	
28NOV95	8JAN96	27NOV95	8JAN96	40	100	Report Approval by EPA and SCDHEC																																																																	
9JAN96	14FEB96	8JAN96		20	0	RFA Volume I																																																																	
28JAN94	18FEB94	28JAN94	18FEB94	22	100	Regulatory Review																																																																	
21SEP94	8JAN95	21SEP94	8JAN95	106	100	RFI Volume I Final																																																																	
11JAN95	9FEB95	11JAN95	9FEB95	30	100	Comprehensive RFI WP																																																																	
18FEB94	18MAY94	18FEB94	18MAY94	90	100	Regulatory Review/Work Plan Approval																																																																	
30JUL94	28AUG94	30JUL94	28AUG94	30	100	Comprehensive RFI WP Rev 01																																																																	
1DEC94	10MAY95	1DEC94	10MAY95	30	100	Regulatory Review																																																																	
10MAY95	21SEP95	10MAY95	21SEP95	132	100	Comments Received Final Revision																																																																	
21SEP95	1DEC95	21SEP95	1DEC95	70	100	Revision 01 Review and Approval																																																																	
1DEC95	11DEC95	1DEC95	11DEC95	10	100	Notification of Additional Sites																																																																	
2MAR94	16MAR94	2MAR94	16MAR94	15	100	RFA Volume II																																																																	
16MAR94	13JUN94	16MAR94	13JUN94	89	100	Regulatory Review																																																																	
21SEP94	8JAN95	21SEP94	8JAN95	106	100	RFA Volume II Final																																																																	
11JAN95	9FEB95	11JAN95	9FEB95	30	100	Notification of Additional Sites																																																																	
24MAY94	8JUN94	24MAY94	8JUN94	15	100	RFA Volume III																																																																	
8JUN94	7SEP94	8JUN94	7SEP94	90	100	Regulatory Review																																																																	
21SEP94	8JAN95	21SEP94	8JAN95	106	100	RFA Volume III Final																																																																	
11JAN95	9FEB95	11JAN95	9FEB95	30	100	Notification of Additional Sites																																																																	
22JUN94	6JUL94	22JUN94	6JUL94	14	100																																																																		

Plot Date 10OCT97
 Data Date 19SEP97
 Project Start 1JAN94
 Project Finish 15DEC98

Activity Bar: Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity

2910
 Sheet 1 of 15
 Naval Base Charleston
 Corrective Action Management Plan

NAVY CLEAN H62467-89-D-0318			
Date	Revision	Checked	Approved

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	CRIG DUR	PCT	1994												1995												1996												1997												1998											
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
RFA and Comprehensive Work Plan																																																																	
RFA & Comprehensive Work Plan																																																																	
6JUL94	4OCT94	6JUL94	4OCT94	90	100	RFA Volume IV <u> </u>																																																											
4OCT94	2NOV94	4OCT94	2NOV94	30	100	RFA Volume IV Extension <u> </u>																																																											
7NOV94	8JAN95	7NOV94	8JAN95	59	100	Regulatory Review <u> </u>																																																											
11JAN95	9FEB95	11JAN95	9FEB95	30	100	RFA Volume IV Final <u> </u>																																																											
11OCT94	26OCT94	11OCT94	26OCT94	16	100	Notification of Additional Sites <u> </u>																																																											
26OCT94	24JAN95	26OCT94	24JAN95	87	100	RFA Volume V <u> </u>																																																											
25JAN95	10MAR95	25JAN95	10MAR95	45	100	RFA Volume V Extension <u> </u>																																																											
10MAR95	10APR95	10MAR95	10APR95	32	100	Regulatory Review <u> </u>																																																											
10APR95	10MAY95	10APR95	10MAY95	31	100	RFA Volume V Final <u> </u>																																																											
12JUL95	28JUL95	12JUL95	28JUL95	31	100	Notification of Additional Site <u> </u>																																																											
28JUL95	28SEP95	28JUL95	28SEP95	62	100	RFA Volume V Addendum 1 <u> </u>																																																											
28SEP95	30OCT95	28SEP95	30OCT95	33	100	Regulatory Review <u> </u>																																																											
30OCT95	30NOV95	30OCT95	30NOV95	30	100	RFA Volume V Addendum 1 Final <u> </u>																																																											
1APR96	15APR96	1APR96	15APR96	31	100	Notification of Additional Site <u> </u>																																																											
16APR96	26APR96	16APR96	26APR96	62	100	RFA Volume V Addendum 2 <u> </u>																																																											
27APR96	27MAY96	27APR96	17JUN96	33	100	Regulatory Review <u> </u>																																																											
17JUN96	17JUL96	17JUN96	21OCT96	30	100	RFA Volume V Addendum 2 Final <u> </u>																																																											
1APR96	15APR96	1APR96	15APR96	31	100	Notification of Additional Site <u> </u>																																																											
16APR96	16JUL96	16APR96	28MAY96	62	100	RFA Volume V Addendum 3 <u> </u>																																																											
29MAY96	29JUN96	29MAY96	17JUN96	33	100	Regulatory Review <u> </u>																																																											
17JUN96	17JUL96	17JUN96	21OCT96	30	100	RFA Volume V Addendum 3 Final <u> </u>																																																											
1FEB94	4DEC94	1FEB94	4DEC94	302	100	Permit Renewal <u> </u>																																																											

Plot Date 1DOCT97
 Data Date 19SEP97
 Project Start 1JAN94
 Project Finish 15DEC98

Activity Bar Early Dates
 Critical Activity
 Progress Bar
 Milestone Flag Activity

2910
 Sheet 2 of 15
 Naval Base Charleston
 Correctiv Action Management Plan

NAVY CLEAN N62467-89-D-0318			
Date	Revision	Checked	Approved

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	CRIG DUR	PCT	1994												1995												1996												1997												1998											
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Zone Code A RFI Work Plan/Investigation																																																																	
13FEB95	4MAY95	13FEB95	4MAY95	81	100	<div style="margin-left: 100px;"> <u>Draft Zone A RFI Work Plan</u> Regulatory Review Comments Received/Final Work Plan Work Plan Approval by DHEC and EPA <u>Field Investigation</u> </div>																																																											
4MAY95	21JUN95	4MAY95	21JUN95	48	100																																																												
21JUN95	21JUL95	21JUN95	21JUL95	30	100																																																												
	10AUG95		10AUG95	0	100																																																												
11AUG95	29APR96	11AUG95	2JUL96	409	100																																																												
RFI Report																																																																	
12JUN96	9SEP96	12JUN96	16SEP96	89	100	<div style="margin-left: 150px;"> <u>Draft Zone A RFI Report</u> EPA/SCDHEC Regulatory Review Comments Received/Additional Field Work SCDHEC Review Comments Received/Document Approval Final RFI Report Dist. CMS Begins SWMU 1 and 2 Field Investigation <u>SWMU 1 and 2 Report Addendum</u> Regulatory Review Comments Received/Document Approved Addendum Distributed </div>																																																											
9SEP96	6DEC96	17SEP96	12MAR97	79	100																																																												
12MAR97	6AUG97	12MAR97	6AUG97	64	100																																																												
7AUG97	6OCT97	7AUG97		60	60																																																												
14OCT97	14NOV97			32	0																																																												
15NOV97	29NOV97			9	0																																																												
30NOV97	30NOV97			0	0																																																												
7APR97	21MAY97	7APR97	21MAY97	45	100																																																												
22MAY97	26SEP97	22MAY97	26SEP97	90	100																																																												
27SEP97	14OCT97			18	0																																																												
15OCT97	14NOV97			31	0																																																												
14NOV97	29NOV97			14	0																																																												

Plot Date	10OCT97		2910
Data Date	19SEP97		
Project Start	1JAN94		
Project Finish	15DEC98		

Naval Base Charleston
Corrective Action Management Plan

sheet 4 of 15		NAVY CLEAN N62467-89-D-0318			
Date	Revision	Checked	Approved		

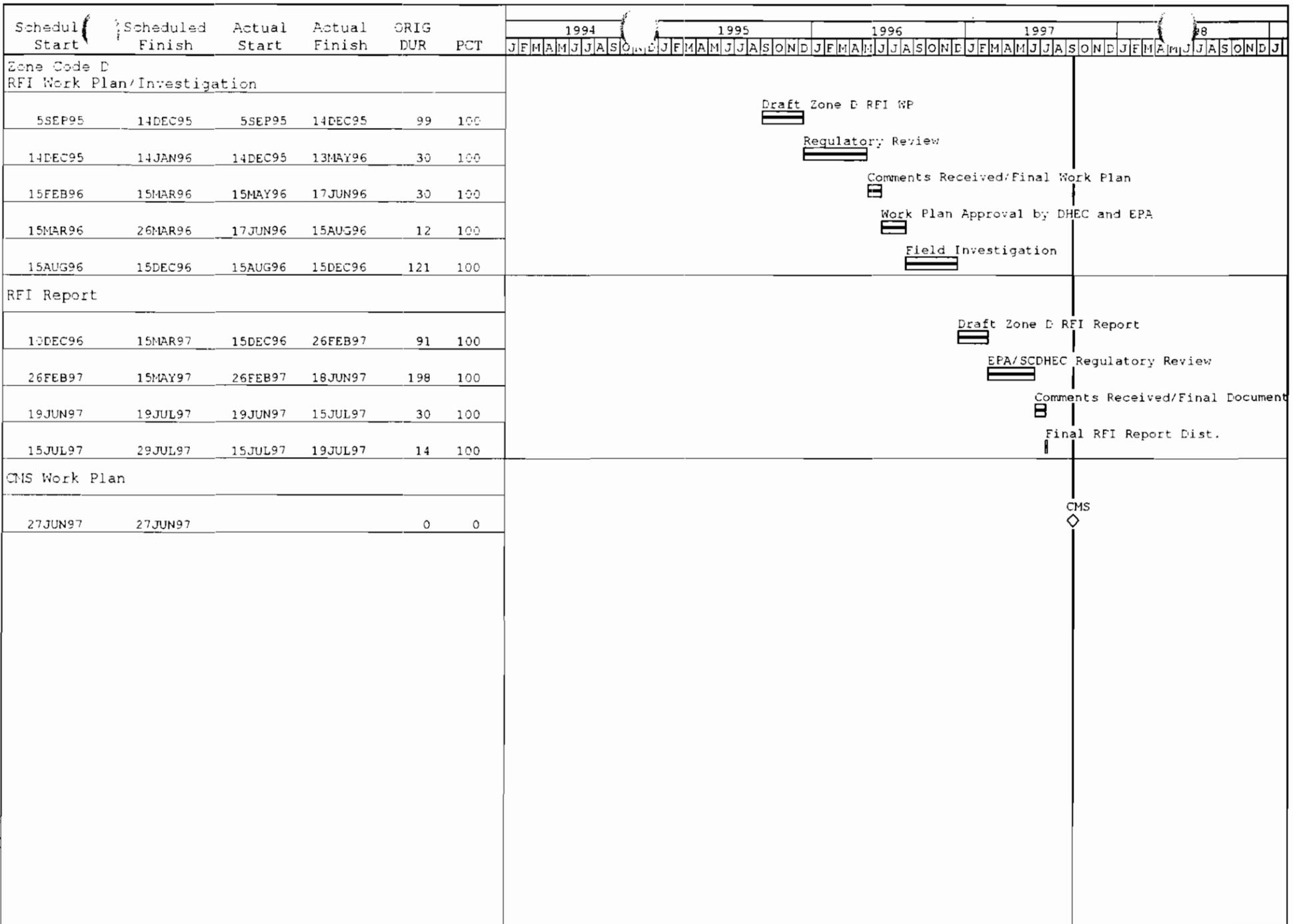
Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994												1995												1996												1997												1998											
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Zone Code C RFI Work Plan/Investigation						<p><u>Draft Zone C RFI Work Plan</u></p> <p><u>Regulatory Review</u></p> <p>Comments Received/Final Work Plan</p> <p>Conditional Work Plan Approval by DHEC and EPA</p> <p><u>Field Investigation</u></p>																																																											
8SEP94	21NOV94	8SEP94	21NOV94	75	100																																																												
21NOV94	21DEC94	21NOV94	30JAN95	67	100																																																												
30JAN95	28FEB95	30JAN95	28FEB95	30	100																																																												
		30JAN95	30JAN95	1	100																																																												
30JAN95	28SEP95	30JAN95	25SEP95	236	100																																																												
RFI Report						<p><u>Draft Zone C RFI Report</u></p> <p><u>EPA/SCDHEC Regulatory Review</u></p> <p>Comments Received/Additional Field Work</p> <p><u>Final RFI Report Distributed</u></p>																																																											
13JUL95	18DEC95	25SEP95	26JAN96	120	100																																																												
26JAN96	28FEB97	26JAN96	30MAY97	469	100																																																												
31MAY97	9SEP97	31MAY97	9SEP97	30	100																																																												
10SEP97	14NOV97	10SEP97		66	35																																																												
CMS Work Plan						<p>CMS Begins</p>																																																											
15NOV97	15NOV97			0	0																																																												

Plot Date 10OCT97
 Data Date 19SEP97
 Project Start 1JAN94
 Project Finish 15DEC98

Activity Bar Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity

NAVY CLEAN 162467-89-D-0318

Date	Revision	Checked	Approved



Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994												1995												1996												1997												1998																																																																							
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D																																																												
Zone Code E RFI Work Plan/Investigation																																																																																																																													
11NOV94	14FEB95	11NOV94	14FEB95	92	100	Draft Zone E RFI Work Plan																																																																																																																							
14FEB95	15MAR95	14FEB95	1MAY95	30	100	Regulatory Review																																																																																																																							
1MAY95	31MAY95	1MAY95	2JUN95	30	100	Comments Received/Final Work Plan																																																																																																																							
			9AUG95	0	100	Zone E Work Plan Approval by DHEC and EPA																																																																																																																							
9AUG95	24FEB97	9AUG95	11JUN97	555	100	Field Investigation																																																																																																																							
RFI Report																																																																																																																													
11JUN97	7NOV97	11JUN97		148	60																																																													Draft Zone E RFI Report																																																											
8NOV97	7MAR98			116	0																																																													EPA/SCDHEC Regulatory Review																																																											
8MAR98	12MAY98			67	0																																																													Comments Received/Document Approved																																																											
13MAY98	12JUN98			30	0																																																													Final RFI Report Dist																																																											
CMS Work Plan																																																																																																																													
13JUN98	13JUN98			0	0																																																													CMS Begins																																																											

Plot Date 10OCT97
 Data Date 19SEP97
 Project Start 1JAN94
 Project Finish 15DEC98



NAVY CLEAN N62467-89-D-0318			
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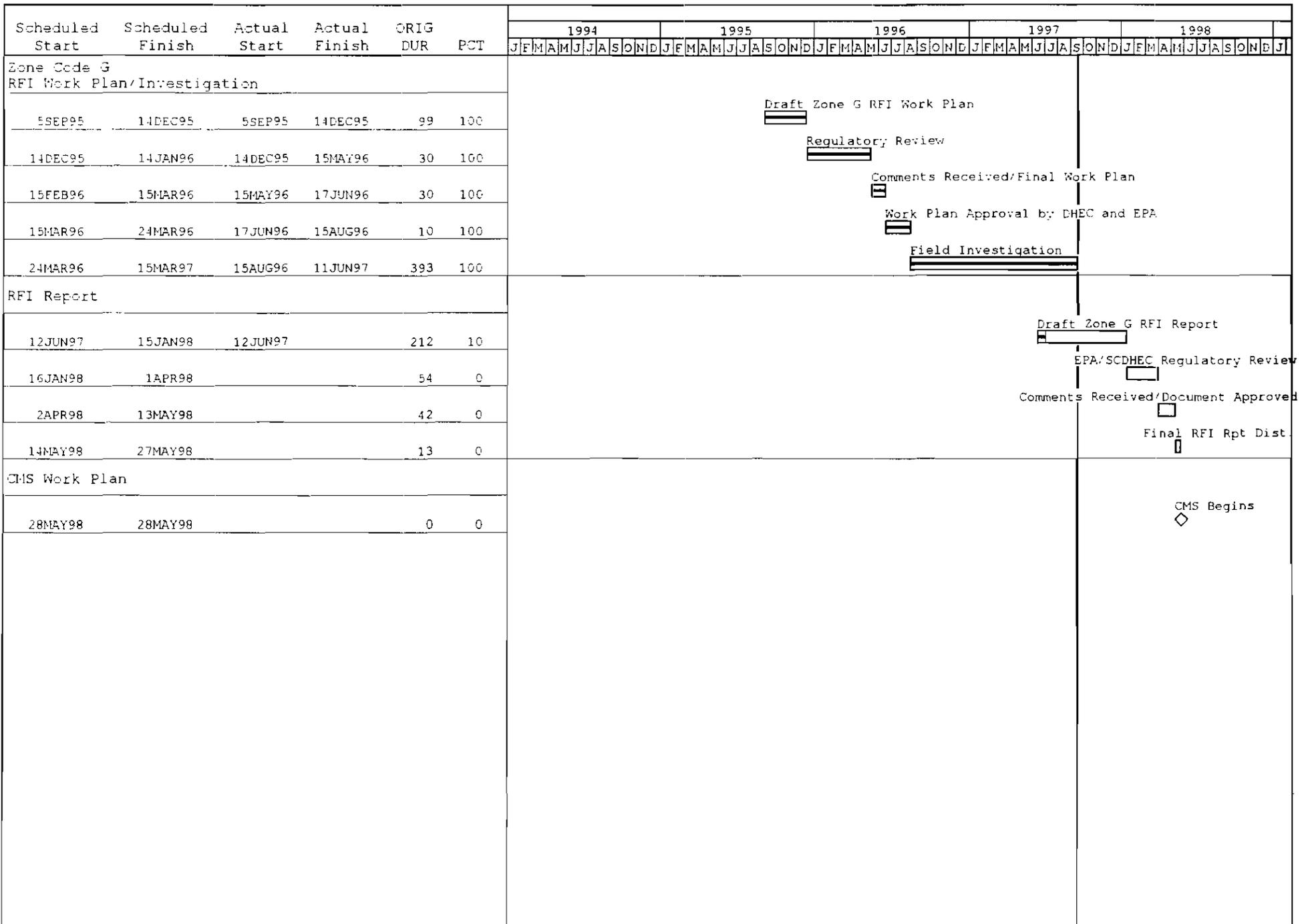
Schedule Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994												1995												1996												1997												1998																																																																							
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D																																																												
Zone Code F RFI Work Plan/Investigation																																																																		<p>Draft Zone F RFI Work Plan</p> <p>Regulatory Review</p> <p>Comments Received/Final Work Plan</p> <p>Work Plan Approval by DHEC and EPA</p> <p>Field Investigation</p>																																																											
5SEP95	14DEC95	5SEP95	14DEC95	99	100																																																																																																																								
14DEC95	14JAN96	14DEC95	13MAY96	30	100																																																																																																																								
15FEB96	15MAR96	15MAY96	17JUN96	30	100																																																																																																																								
15MAR96	24MAR96	17JUN96	15AUG96	10	100																																																																																																																								
24MAR96	15MAR97	15AUG96	15MAY97	211	100																																																																																																																								
RFI Report																																																																		<p>Draft Zone F RFI Report</p> <p>EPA/SCDHEC Regulatory Review</p> <p>Comments Received/Document Approved</p> <p>Final RFI Report Dist</p>																																																											
15MAY97	15DEC97	12SEP97		93	5																																																																																																																								
16DEC97	15FEB98			60	0																																																																																																																								
16FEB98	15APR98			59	0																																																																																																																								
16APR98	1MAY98			17	0																																																																																																																								
CMS Work Plan																																																																		<p>CMS Begins</p>																																																											
2MAY98	2MAY98			0	0																																																																																																																								

Plot Date 10OCT97
 Data Date 19SEP97
 Project Start 1JAN94
 Project Finish 15DEC98

Activity Bar/Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity

NAVY CLEAN H62467-89-D-0318

Date	Revision	Checked	Approved



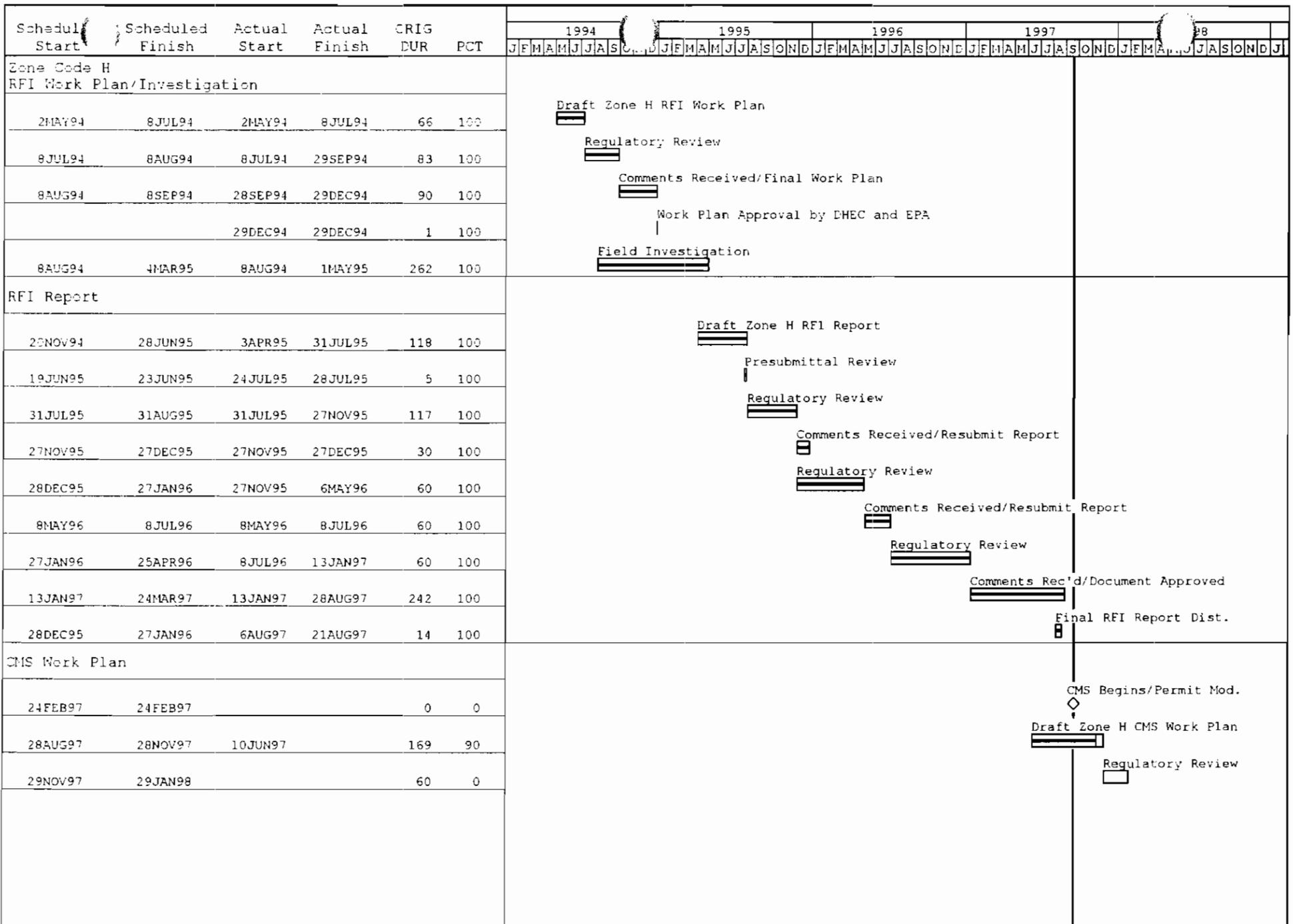
Plot Date 10OCT97
 Data Date 19SEP97
 Project Start 1JAN94
 Project Finish 15DEC98

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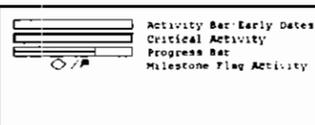
Activity Bar Early Dates
 Critical Activity
 Progress Bar
 Milestone Flag Activity

HAVY CLEAN N62467-89-D-0318

Date	Revision	Checked	Approved



Plot Date 10OCT97
 Data Date 19SEP97
 Project Start 1JAN94
 Project Finish 15DEC98



NAVY CLEAN H62467-89-D-0318			
Date	Revision	Checked	Approved

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994												1995												1996												1997												1998											
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Zone Code I RFI Work Plan/Investigation																																																																	
11AUG94	16NOV94	11AUG94	16NOV94	97	100	<p><u>Draft Zone I RFI Work Plan</u></p> <p><u>Regulatory Review</u></p> <p>Comments Received/Final Work Plan</p> <p>Work Plan Approval by DHEC and EPA</p> <p><u>Field Investigation</u></p>																																																											
16NOV94	16DEC94	16NOV94	30JAN95	72	100																																																												
16DEC94	16JAN95	30JAN95	28FEB95	30	100																																																												
		28FEB95	27MAR95	0	100																																																												
30JAN95	25SEP95	30JAN95	25SEP95	236	100																																																												
RFI Report																																																																	
13JUL95	11DEC95	13JUL95	26JAN96	174	100	<p><u>Draft Zone I RFI Report</u></p> <p><u>Regulatory Review</u></p> <p>Comments Received/Document Approved</p> <p>Final RFI Report Dist.</p>																																																											
26JAN96	24FEB96	26JAN96		618	90																																																												
14OCT97	14DEC97			60	0																																																												
15DEC97	15JAN98			30	0																																																												
CMS Work Plan																																																																	
16JAN98	16JAN98			0	0	<p>CMS Begins</p>																																																											

Plot Date 10OCT97
 Data Date 19SEP97
 Project Start 1JAN94
 Project Finish 15DEC98

Activity Bar/Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity

(c) Primavera w, Inc.

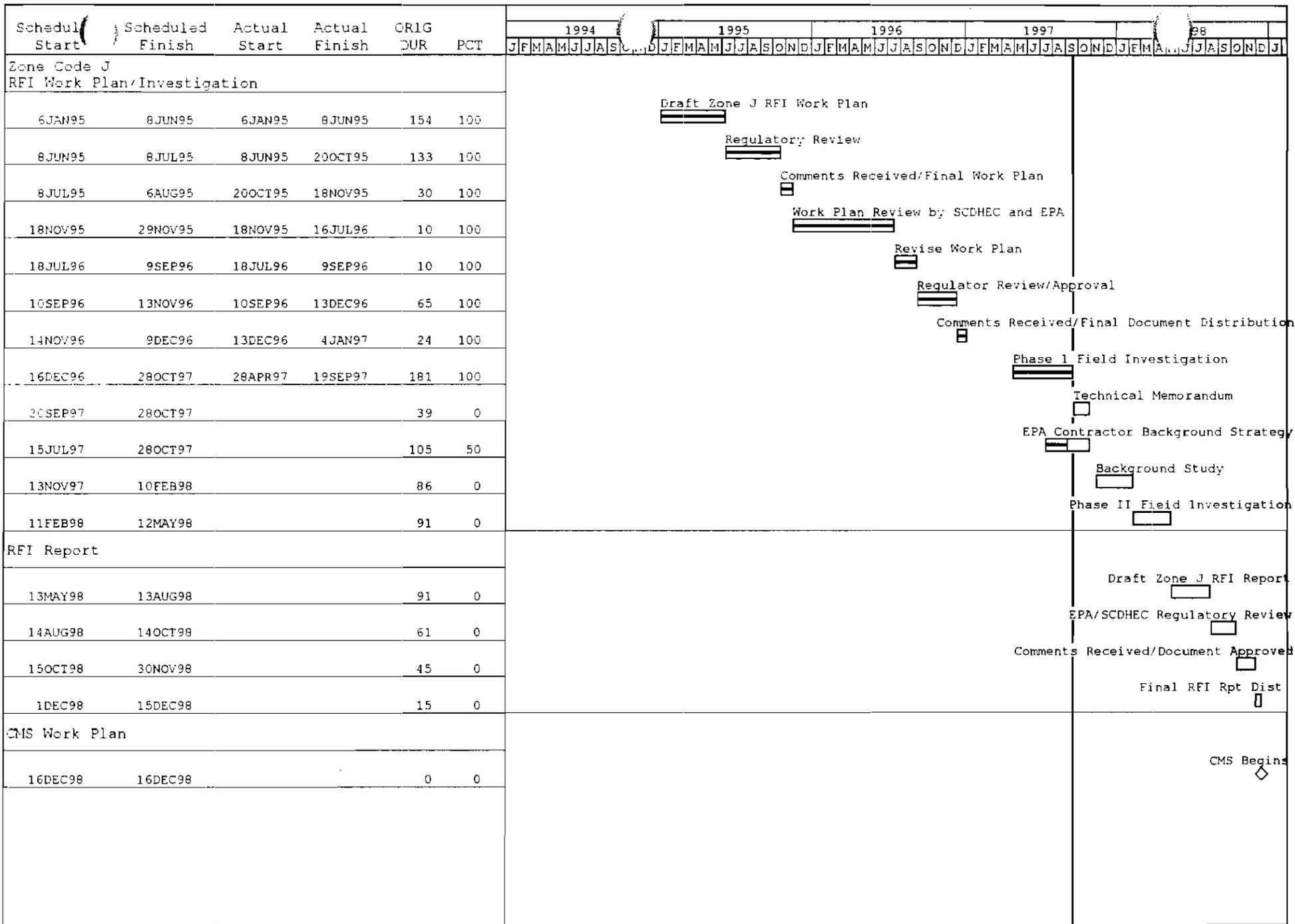
2910

sheet 12 of 15

Naval Base Charleston
 Corrective Action Management Plan

NAVY CLEAN H62467-89-D-0318

Date	Revision	Checked	Approved



Plot Date 10OCT97
 Data Date 19SEP97
 Project Start 1JAN94
 Project Finish 15DEC98

Activity Bar/Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity

2910

Naval Base Charleston
 Corrective Action Management Plan

Sheet 13 of 15

NAVY CLEAN N62467-89-D-0318			
Date	Revision	Checked	Approved

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	CRIG DUR	PCT	1994												1995												1996												1997												1998											
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Zone Code K RFI Work Plan/Investigation																																																																	
8JAN96	1APR96	8JAN96	1APR96	264	100	<p style="text-align: center;">Draft Zone K RFI Work Plan </p>																																																											
2APR96	25JUL96	2APR96	25JUL96	30	100	<p style="text-align: center;">Regulatory Review </p>																																																											
29JUL96	16SEP96	29JUL96	16SEP96	30	100	<p style="text-align: center;">Comments Received/Final Work Plan </p>																																																											
17SEP96	15OCT96	17SEP96	15OCT96	29	100	<p style="text-align: center;">Work Plan Approval by DHEC and EPA </p>																																																											
16OCT96	16MAR97	16OCT96	11JUN97	327	100	<p style="text-align: center;">Field Investigation </p>																																																											
RFI Report																																																																	
12JUN97	9DEC97	12JUN97		177	60	<p style="text-align: center;">Draft Zone K RFI Report </p>																																																											
10DEC97	9FEB98			60	0	<p style="text-align: center;">EPA/SCDHEC Review </p>																																																											
10FEB98	14APR98			64	0	<p style="text-align: center;">Comments Received/Document Approval </p>																																																											
15APR98	28APR98			14	0	<p style="text-align: center;">Final RFI Report Dist </p>																																																											
CMS Work Plan																																																																	
29APR98	29APR98			0	0	<p style="text-align: center;">CMS Begins </p>																																																											
SWMU 166 Field Investigation																																																																	
16OCT96	26NOV97	16OCT96		280	90	<p style="text-align: center;">SWMU 166 Field Investigation </p>																																																											
29AUG97	30DEC97	29AUG97		90	20	<p style="text-align: center;">Draft SWMU 166 RFI Report </p>																																																											
31DEC97	25MAR98			60	0	<p style="text-align: center;">EPA/SCDHEC Review </p>																																																											
26MAR98	6MAY98			30	0	<p style="text-align: center;">Comments Received/Document Approved </p>																																																											
7MAY98	27MAY98			14	0	<p style="text-align: center;">Final Report Distribution </p>																																																											

Plot Date	10OCT97		2910
Data Date	19SEP97		
Project Start	13AUG94		
Project Finish	15DEC98		
IC Primavera		, Inc.	

NAVY CLEAN H62467-89-D-0318			
Date	Revision	Checked	Approved

Schedule Start	Scheduled Finish	Actual Start	Actual Finish	CRIG DUR	PCT	1994												1995												1996												1997												1998																							
						J			F			M			A			M			J			J			A			S			O			N			D			J			F			M			A			M			J			J			A			S			O			N			D		
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31										
Zone Code L RFI Work Plan/Investigation																																																																													
6JAN95	26MAY95	6JAN95	26MAY95	141	100	<p>Draft Zone L RFI Work Plan</p> <p>Regulatory Review</p> <p>Comments Received/Final Work Plan</p> <p>Work Plan Review by SCDHEC and EPA</p> <p>Comments Rec'd/Document Approved</p> <p>Field Investigation</p>																																																																							
26MAY95	18AUG95	26MAY95	18AUG95	83	100																																																																								
18AUG95	18SEP95	18AUG95	18OCT95	61	100																																																																								
18SEP95	27SEP95	18OCT95	22NOV96	10	100																																																																								
23NOV96	13DEC96	23NOV96	13DEC96	20	100																																																																								
2JAN97	24NOV97	28APR97		208	75																																																																								
RFI Report																																																																													
25NOV97	24FEB98			88	0	<p>Draft Zone L RFI Report</p> <p>EPA/SCDHEC Regulatory Review</p> <p>Comments Received/Document Approved</p> <p>Final RFI Report Distributed</p>																																																																							
25FEB98	24APR98			59	0																																																																								
25APR98	12JUN98			48	0																																																																								
13JUN98	26JUN98			14	0																																																																								
CMS Work Plan																																																																													
27JUN98	27JUN98			0	0	<p>CMS Begins</p>																																																																							
				1	0																																																																								

Plot Date 10OCT97
 Data Date 19SEP97
 Project Start 1JAN94
 Project Finish 15DEC98

Activity Bar/Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity

2910

Sheet 15 of 15

Naval Base Charleston
 Corrective Action Management Plan

NAVY CLEAN N62467-89-D-0318

Date	Revision	Checked	Approved

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Mercury (Hg)	NOIM000601	06/11/1997	0.1400	
Mercury (Hg)	NOIM000401	06/11/1997	0.1600	
Mercury (Hg)	NOIM000501	06/11/1997	0.2400	
Mercury (Hg)	NOIM000801	06/26/1997	0.2800	
Mercury (Hg)	NOIM000201	06/26/1997	1.2000	
Naphthalene	NOIM000201	06/26/1997	630.0000	J
Nickel (Ni)	NOIM000601	06/11/1997	1.4000	B
Nickel (Ni)	NOIM001001	06/27/1997	4.7000	B
Nickel (Ni)	NOIM000701	06/26/1997	6.1000	B
Nickel (Ni)	NOIM000301	06/11/1997	6.3000	B
Nickel (Ni)	NOIM000901	06/26/1997	6.4000	B
Nickel (Ni)	NOIM000101	06/26/1997	7.7000	B
Nickel (Ni)	NOIM000501	06/11/1997	10.8000	B
Nickel (Ni)	NOIM000801	06/26/1997	12.5000	B
Nickel (Ni)	NOIM000201	06/26/1997	16.4000	B
Nickel (Ni)	NOIM000401	06/11/1997	20.5000	
Phenanthrene	NOIM000401	06/09/1997	83.0000	J
Phenanthrene	NOIM000601	06/09/1997	110.0000	J
Phenanthrene	NOIM000201	06/26/1997	160.0000	J
Potassium (K)	NOIM000601	06/11/1997	268.0000	BE
Potassium (K)	NOIM000301	06/11/1997	301.0000	BE
Potassium (K)	NOIM001001	06/27/1997	539.0000	BE
Potassium (K)	NOIM000401	06/11/1997	1050.0000	BE
Potassium (K)	NOIM000701	06/26/1997	2080.0000	E
Potassium (K)	NOIM000501	06/11/1997	2380.0000	E
Potassium (K)	NOIM000901	06/26/1997	2450.0000	BE
Potassium (K)	NOIM000101	06/26/1997	2640.0000	E
Potassium (K)	NOIM000801	06/26/1997	3070.0000	BE
Potassium (K)	NOIM000201	06/26/1997	3290.0000	E
Pyrene	NOIM001001	06/27/1997	65.0000	J
Pyrene	NOIM000201	06/26/1997	100.0000	J
Pyrene	NOIM000601	06/09/1997	150.0000	J
Pyrene	NOIM000301	06/09/1997	170.0000	J

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Pyrene	NOIM000501	06/09/1997	660.0000	J
Pyrene	NOIM000401	06/09/1997	950.0000	
REDOX	NOIM001001	06/27/1997	221.0000	
REDOX	NOIM000701	06/26/1997	233.0000	
REDOX	NOIM000901	06/26/1997	233.0000	
REDOX	NOIM000501	06/09/1997	236.0000	
REDOX	NOIM000801	06/26/1997	238.0000	
REDOX	NOIM000101	06/26/1997	240.0000	
REDOX	NOIM000201	06/26/1997	243.0000	
REDOX	NOIM000401	06/09/1997	249.0000	
REDOX	NOIM000601	06/09/1997	283.0000	
REDOX	NOIM000301	06/09/1997	298.0000	
Sodium (Na)	NOIM000301	06/11/1997	1060.0000	BE
Sodium (Na)	NOIM000601	06/11/1997	1560.0000	E
Sodium (Na)	NOIM001001	06/27/1997	2910.0000	E
Sodium (Na)	NOIM000401	06/11/1997	4420.0000	E
Sodium (Na)	NOIM000701	06/26/1997	6110.0000	E
Sodium (Na)	NOIM000501	06/11/1997	7730.0000	E
Sodium (Na)	NOIM000101	06/26/1997	8580.0000	E
Sodium (Na)	NOIM000201	06/26/1997	8610.0000	E
Sodium (Na)	NOIM000801	06/26/1997	15700.0000	E
Sodium (Na)	NOIM000901	06/26/1997	26300.0000	E
Tin (Sn)	NOIM000601	06/11/1997	11.7000	B
Tin (Sn)	NOIM000301	06/11/1997	12.3000	B
Tin (Sn)	NOIM000501	06/11/1997	19.7000	B
Tin (Sn)	NOIM000401	06/11/1997	48.1000	
Total Organic Carbon (TOC)	NOIM000601	06/11/1997	0.5700	
Total Organic Carbon (TOC)	NOIM000301	06/11/1997	1.0000	
Total Organic Carbon (TOC)	NOIM000401	06/11/1997	2.1000	
Total Organic Carbon (TOC)	NOIM001001	06/27/1997	2.6000	
Total Organic Carbon (TOC)	NOIM000701	06/26/1997	3.5000	
Total Organic Carbon (TOC)	NOIM000201	06/26/1997	4.6000	
Total Organic Carbon (TOC)	NOIM000501	06/11/1997	8.6000	

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Total Organic Carbon (TOC)	NOIM000101	06/26/1997	10.4000	
Total Organic Carbon (TOC)	NOIM000801	06/26/1997	12.2000	
Total Organic Carbon (TOC)	NOIM000901	06/26/1997	19.6000	
Vanadium (V)	NOIM000601	06/11/1997	3.7000	B
Vanadium (V)	NOIM000301	06/11/1997	7.2000	B
Vanadium (V)	NOIM001001	06/27/1997	10.5000	B
Vanadium (V)	NOIM000401	06/11/1997	22.2000	
Vanadium (V)	NOIM000701	06/26/1997	28.1000	
Vanadium (V)	NOIM000101	06/26/1997	34.1000	
Vanadium (V)	NOIM000901	06/26/1997	38.2000	B
Vanadium (V)	NOIM000501	06/11/1997	44.9000	
Vanadium (V)	NOIM000201	06/26/1997	76.0000	
Vanadium (V)	NOIM000801	06/26/1997	81.2000	
Zinc (Zn)	NOIM000601	06/11/1997	26.8000	
Zinc (Zn)	NOIM001001	06/27/1997	36.4000	E
Zinc (Zn)	NOIM000301	06/11/1997	41.1000	
Zinc (Zn)	NOIM000701	06/26/1997	61.9000	E
Zinc (Zn)	NOIM000501	06/11/1997	106.0000	
Zinc (Zn)	NOIM000101	06/26/1997	117.0000	E
Zinc (Zn)	NOIM000801	06/26/1997	124.0000	E
Zinc (Zn)	NOIM000201	06/26/1997	151.0000	E
Zinc (Zn)	NOIM000901	06/26/1997	156.0000	E
Zinc (Zn)	NOIM000401	06/11/1997	718.0000	
bis(2-Ethylhexyl)phthalate (BEHP)	NOIM000201	06/26/1997	170.0000	BJ
bis(2-Ethylhexyl)phthalate (BEHP)	NOIM000301	06/09/1997	1800.0000	

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
1234678-HpCDD	SYCN002101	06/17/1997	19.8000	B
1234678-HpCDD	SYCM002201	06/19/1997	40.9000	B
1234678-HpCDD	SYCM002101	06/17/1997	44.9000	B
1234678-HpCDD	SYCM002001	06/17/1997	49.3000	B
1234678-HpCDD	SYCM000901	06/18/1997	56.5000	
1234678-HpCDD	SYCM001901	06/19/1997	67.3000	B
1234678-HpCDD	SYCN001601	06/19/1997	73.2000	B
1234678-HpCDD	SYCM000801	06/18/1997	91.2000	
1234678-HpCDD	SYCM001601	06/19/1997	131.0000	B
1234678-HpCDD	SYCM001401	06/18/1997	267.0000	
1234678-HpCDF	SYCM000901	06/18/1997	0.7890	XB
1234678-HpCDF	SYCM002201	06/19/1997	2.8100	X
1234678-HpCDF	SYCM002001	06/17/1997	3.1500	B
1234678-HpCDF	SYCM002101	06/17/1997	3.8200	B
1234678-HpCDF	SYCM001901	06/19/1997	3.9300	B
1234678-HpCDF	SYCN002101	06/17/1997	4.4100	B
1234678-HpCDF	SYCN001601	06/19/1997	4.5300	B
1234678-HpCDF	SYCM000801	06/18/1997	5.3400	B
1234678-HpCDF	SYCM001601	06/19/1997	8.3300	B
1234678-HpCDF	SYCM001401	06/18/1997	11.1000	XB
123478-HxCDF	SYCM002101	06/17/1997	0.7680	I
123478-HxCDF	SYCM001401	06/18/1997	1.7900	X
123478-HxCDF	SYCM001901	06/19/1997	3.3300	I
1234789-HpCDF	SYCM002101	06/17/1997	0.4910	X
123678-HxCDD	SYCN002101	06/17/1997	0.5710	X
123678-HxCDD	SYCM000901	06/18/1997	1.4700	
123678-HxCDD	SYCM002001	06/17/1997	1.5000	
123678-HxCDD	SYCM001901	06/19/1997	1.9500	X
123678-HxCDD	SYCM001401	06/18/1997	3.3900	
123678-HxCDD	SYCM001601	06/19/1997	3.4900	X
123678-HxCDF	SYCM002101	06/17/1997	0.5290	X
123789-HxCDD	SYCN002101	06/17/1997	0.9170	

PARAM	SAMPLE ID	SAMP DATE	RESULT	QUAL
123789-HxCDD	SYCM002101	06/17/1997	1.7400	X
123789-HxCDD	SYCM002201	06/19/1997	2.2400	
123789-HxCDD	SYCM000801	06/18/1997	3.1300	
123789-HxCDD	SYCN001601	06/19/1997	3.6200	
123789-HxCDD	SYCM000901	06/18/1997	3.7000	
123789-HxCDD	SYCM001901	06/19/1997	3.9900	X
123789-HxCDD	SYCM001601	06/19/1997	6.7100	
123789-HxCDD	SYCM001401	06/18/1997	8.7500	
2-Butanone (MEK)	SYCM002101	06/17/1997	4.0000	J
2-Butanone (MEK)	SYCM000901	06/18/1997	8.0000	J
2-Butanone (MEK)	SYCN002101	06/17/1997	11.0000	J
2-Butanone (MEK)	SYCM000801	06/18/1997	13.0000	J
2-Butanone (MEK)	SYCM002201	06/19/1997	21.0000	J
2-Butanone (MEK)	SYCM001601	06/19/1997	24.0000	J
2-Butanone (MEK)	SYCN001601	06/19/1997	36.0000	J
2-Butanone (MEK)	SYCM001901	06/19/1997	47.0000	
2-Butanone (MEK)	SYCM002001	06/17/1997	96.0000	
Acetone	SYCM002101	06/17/1997	51.0000	B
Acetone	SYCM001401	06/18/1997	60.0000	B
Acetone	SYCM000801	06/18/1997	80.0000	B
Acetone	SYCM000901	06/18/1997	110.0000	B
Acetone	SYCN002101	06/17/1997	110.0000	B
Acetone	SYCM001601	06/19/1997	240.0000	B
Acetone	SYCM002201	06/19/1997	270.0000	B
Acetone	SYCN001601	06/19/1997	300.0000	B
Acetone	SYCM001901	06/19/1997	420.0000	B
Acetone	SYCM002001	06/17/1997	920.0000	BE
Aluminum (Al)	SYCM000901	06/18/1997	10800.0000	E*
Aluminum (Al)	SYCM002201	06/19/1997	16300.0000	E*
Aluminum (Al)	SYCM000801	06/18/1997	20200.0000	E*
Aluminum (Al)	SYCM001601	06/19/1997	21400.0000	E*
Aluminum (Al)	SYCM002101	06/17/1997	21900.0000	E*

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
Aluminum (Al)	SYCN002101	06/17/1997	22500.0000	E*
Aluminum (Al)	SYCN001601	06/19/1997	23400.0000	E*
Aluminum (Al)	SYCM001901	06/19/1997	25100.0000	E*
Aluminum (Al)	SYCM001401	06/18/1997	33800.0000	E*
Aluminum (Al)	SYCM002001	06/17/1997	34300.0000	E*
Antimony (Sb)	SYCM000901	06/18/1997	0.6600	BN
Arsenic (As)	SYCM002101	06/17/1997	11.4000	
Arsenic (As)	SYCN002101	06/17/1997	12.0000	
Arsenic (As)	SYCM002201	06/19/1997	13.8000	
Arsenic (As)	SYCM000901	06/18/1997	13.9000	
Arsenic (As)	SYCM001401	06/18/1997	18.8000	
Arsenic (As)	SYCN001601	06/19/1997	19.0000	
Arsenic (As)	SYCM001601	06/19/1997	21.0000	
Arsenic (As)	SYCM002001	06/17/1997	21.3000	
Arsenic (As)	SYCM000801	06/18/1997	21.6000	
Arsenic (As)	SYCM001901	06/19/1997	21.7000	
Barium (Ba)	SYCM000901	06/18/1997	18.3000	BE
Barium (Ba)	SYCM002201	06/19/1997	21.3000	BE
Barium (Ba)	SYCM000801	06/18/1997	27.5000	BE
Barium (Ba)	SYCM002101	06/17/1997	27.9000	BE
Barium (Ba)	SYCN001601	06/19/1997	27.9000	BE
Barium (Ba)	SYCM001601	06/19/1997	29.3000	BE
Barium (Ba)	SYCM001901	06/19/1997	31.4000	BE
Barium (Ba)	SYCN002101	06/17/1997	32.6000	BE
Barium (Ba)	SYCM002001	06/17/1997	36.8000	BE
Barium (Ba)	SYCM001401	06/18/1997	37.4000	BE
Benzo(a)anthracene	SYCM002101	06/17/1997	60.0000	J
Benzo(a)anthracene	SYCM000901	06/18/1997	100.0000	J
Benzo(a)anthracene	SYCN002101	06/17/1997	190.0000	J
Benzo(a)pyrene	SYCM000901	06/18/1997	110.0000	J
Benzo(a)pyrene	SYCN002101	06/17/1997	220.0000	J
Benzo(b)fluoranthene	SYCM002101	06/17/1997	84.0000	J

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
Benzo(b)fluoranthene	SYCM000901	06/18/1997	140.0000	J
Benzo(b)fluoranthene	SYCN002101	06/17/1997	250.0000	J
Benzo(k)fluoranthene	SYCN002101	06/17/1997	130.0000	J
Beryllium (Be)	SYCM000901	06/18/1997	0.4300	B
Beryllium (Be)	SYCM000801	06/18/1997	0.7200	B
Beryllium (Be)	SYCM002101	06/17/1997	0.7300	B
Beryllium (Be)	SYCM002001	06/17/1997	0.7600	B
Beryllium (Be)	SYCM002201	06/19/1997	0.7800	B
Beryllium (Be)	SYCN002101	06/17/1997	0.7800	B
Beryllium (Be)	SYCM001401	06/18/1997	0.8200	B
Beryllium (Be)	SYCN001601	06/19/1997	0.8200	B
Beryllium (Be)	SYCM001601	06/19/1997	0.8400	B
Beryllium (Be)	SYCM001901	06/19/1997	0.9300	B
Cadmium (Cd)	SYCM002201	06/19/1997	0.7200	B
Cadmium (Cd)	SYCM000901	06/18/1997	0.7600	B
Cadmium (Cd)	SYCM002101	06/17/1997	0.7800	B
Cadmium (Cd)	SYCN002101	06/17/1997	0.8100	B
Cadmium (Cd)	SYCM000801	06/18/1997	0.8400	B
Cadmium (Cd)	SYCM001901	06/19/1997	0.8400	B
Cadmium (Cd)	SYCM001401	06/18/1997	0.8700	B
Cadmium (Cd)	SYCN001601	06/19/1997	0.9000	B
Cadmium (Cd)	SYCM001601	06/19/1997	0.9400	B
Cadmium (Cd)	SYCM002001	06/17/1997	1.1000	B
Calcium (Ca)	SYCM000901	06/18/1997	19100.0000	E*
Calcium (Ca)	SYCN001601	06/19/1997	21500.0000	E*
Calcium (Ca)	SYCM001601	06/19/1997	24300.0000	E*
Calcium (Ca)	SYCM001901	06/19/1997	24300.0000	E*
Calcium (Ca)	SYCM002001	06/17/1997	25900.0000	E*
Calcium (Ca)	SYCM000801	06/18/1997	26500.0000	E*
Calcium (Ca)	SYCM001401	06/18/1997	28200.0000	E*
Calcium (Ca)	SYCM002201	06/19/1997	43100.0000	E*
Calcium (Ca)	SYCM002101	06/17/1997	85400.0000	E*

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
Calcium (Ca)	SYCN002101	06/17/1997	100000.0000	E*
Carbon disulfide	SYCM002101	06/17/1997	6.0000	J
Carbon disulfide	SYCM002201	06/19/1997	8.0000	J
Carbon disulfide	SYCM001601	06/19/1997	10.0000	J
Carbon disulfide	SYCM001901	06/19/1997	11.0000	J
Carbon disulfide	SYCN002101	06/17/1997	11.0000	
Carbon disulfide	SYCM000801	06/18/1997	12.0000	J
Carbon disulfide	SYCM000901	06/18/1997	14.0000	
Carbon disulfide	SYCM002001	06/17/1997	26.0000	
Cation Exchange Capacity	SYCN002101	06/17/1997	26.6000	
Cation Exchange Capacity	SYCM002101	06/17/1997	33.8000	
Cation Exchange Capacity	SYCM000901	06/18/1997	66.8000	
Cation Exchange Capacity	SYCM002201	06/19/1997	83.7000	
Cation Exchange Capacity	SYCN001601	06/19/1997	92.6000	
Cation Exchange Capacity	SYCM001901	06/19/1997	120.0000	
Cation Exchange Capacity	SYCM001601	06/19/1997	135.0000	
Cation Exchange Capacity	SYCM002001	06/17/1997	135.0000	
Cation Exchange Capacity	SYCM001401	06/18/1997	149.0000	
Cation Exchange Capacity	SYCM000801	06/18/1997	154.0000	
Chromium (Cr)	SYCM002201	06/19/1997	37.0000	E*
Chromium (Cr)	SYCM002101	06/17/1997	39.8000	E*
Chromium (Cr)	SYCN002101	06/17/1997	44.3000	E*
Chromium (Cr)	SYCN001601	06/19/1997	47.2000	E*
Chromium (Cr)	SYCM001601	06/19/1997	48.2000	E*
Chromium (Cr)	SYCM001901	06/19/1997	52.4000	E*
Chromium (Cr)	SYCM002001	06/17/1997	55.4000	E*
Chromium (Cr)	SYCM001401	06/18/1997	57.7000	E*
Chromium (Cr)	SYCM000901	06/18/1997	60.5000	E*
Chromium (Cr)	SYCM000801	06/18/1997	63.2000	E*
Chrysene	SYCM002101	06/17/1997	76.0000	J
Chrysene	SYCM000901	06/18/1997	120.0000	J
Chrysene	SYCN002101	06/17/1997	180.0000	J

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
Cobalt (Co)	SYCN002101	06/17/1997	3.0000	B
Cobalt (Co)	SYCM002101	06/17/1997	3.1000	B
Cobalt (Co)	SYCM000901	06/18/1997	3.9000	B
Cobalt (Co)	SYCM002201	06/19/1997	5.1000	B
Cobalt (Co)	SYCM001601	06/19/1997	5.7000	B
Cobalt (Co)	SYCN001601	06/19/1997	5.9000	B
Cobalt (Co)	SYCM000801	06/18/1997	6.3000	B
Cobalt (Co)	SYCM001901	06/19/1997	6.7000	B
Cobalt (Co)	SYCM001401	06/18/1997	7.3000	B
Cobalt (Co)	SYCM002001	06/17/1997	7.6000	B
Copper (Cu)	SYCM002101	06/17/1997	15.1000	*
Copper (Cu)	SYCN002101	06/17/1997	15.9000	*
Copper (Cu)	SYCM002201	06/19/1997	16.1000	B*
Copper (Cu)	SYCN001601	06/19/1997	19.0000	*
Copper (Cu)	SYCM000801	06/18/1997	20.8000	B*
Copper (Cu)	SYCM002001	06/17/1997	20.9000	B*
Copper (Cu)	SYCM001901	06/19/1997	21.3000	B*
Copper (Cu)	SYCM001601	06/19/1997	21.7000	B*
Copper (Cu)	SYCM001401	06/18/1997	24.4000	*
Copper (Cu)	SYCM000901	06/18/1997	41.9000	*
Di-n-butylphthalate	SYCM000901	06/18/1997	81.0000	J
Di-n-butylphthalate	SYCM000801	06/18/1997	200.0000	J
Diethylphthalate	SYCM002201	06/19/1997	320.0000	J
Diethylphthalate	SYCN001601	06/19/1997	580.0000	J
Diethylphthalate	SYCM001601	06/19/1997	720.0000	J
Diethylphthalate	SYCM001401	06/18/1997	1400.0000	J
Fluoranthene	SYCM002201	06/19/1997	130.0000	J
Fluoranthene	SYCN001601	06/19/1997	150.0000	J
Fluoranthene	SYCM002001	06/17/1997	180.0000	J
Fluoranthene	SYCM000901	06/18/1997	190.0000	J
Fluoranthene	SYCM001901	06/19/1997	190.0000	J
Fluoranthene	SYCM000801	06/18/1997	210.0000	J

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
Fluoranthene	SYCM002101	06/17/1997	210.0000	J
Fluoranthene	SYCM001601	06/19/1997	230.0000	J
Fluoranthene	SYCN002101	06/17/1997	240.0000	J
Indeno(1,2,3-cd)pyrene	SYCN002101	06/17/1997	100.0000	J
Iron (Fe)	SYCM002101	06/17/1997	14600.0000	E*
Iron (Fe)	SYCN002101	06/17/1997	14700.0000	E*
Iron (Fe)	SYCM000901	06/18/1997	16100.0000	E*
Iron (Fe)	SYCM002201	06/19/1997	21600.0000	E*
Iron (Fe)	SYCN001601	06/19/1997	26200.0000	E*
Iron (Fe)	SYCM001601	06/19/1997	28700.0000	E*
Iron (Fe)	SYCM000801	06/18/1997	29500.0000	E*
Iron (Fe)	SYCM001901	06/19/1997	30300.0000	E*
Iron (Fe)	SYCM002001	06/17/1997	31800.0000	E*
Iron (Fe)	SYCM001401	06/18/1997	32100.0000	E*
Lead (Pb)	SYCM002101	06/17/1997	15.4000	*
Lead (Pb)	SYCN002101	06/17/1997	16.5000	*
Lead (Pb)	SYCM002201	06/19/1997	19.7000	*
Lead (Pb)	SYCN001601	06/19/1997	24.5000	*
Lead (Pb)	SYCM002001	06/17/1997	25.4000	*
Lead (Pb)	SYCM001401	06/18/1997	27.0000	*
Lead (Pb)	SYCM001601	06/19/1997	27.4000	*
Lead (Pb)	SYCM000801	06/18/1997	27.7000	*
Lead (Pb)	SYCM000901	06/18/1997	28.1000	*
Lead (Pb)	SYCM001901	06/19/1997	28.6000	*
Magnesium (Mg)	SYCM000901	06/18/1997	4560.0000	E
Magnesium (Mg)	SYCN002101	06/17/1997	5710.0000	E
Magnesium (Mg)	SYCM002101	06/17/1997	5920.0000	E
Magnesium (Mg)	SYCM002201	06/19/1997	8490.0000	E
Magnesium (Mg)	SYCN001601	06/19/1997	9650.0000	E
Magnesium (Mg)	SYCM001601	06/19/1997	10500.0000	E
Magnesium (Mg)	SYCM001901	06/19/1997	10900.0000	E
Magnesium (Mg)	SYCM000801	06/18/1997	11000.0000	E

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
Magnesium (Mg)	SYCM001401	06/18/1997	11100.0000	E
Magnesium (Mg)	SYCM002001	06/17/1997	11100.0000	E
Manganese (Mn)	SYCM000901	06/18/1997	118.0000	E*
Manganese (Mn)	SYCN002101	06/17/1997	155.0000	E*
Manganese (Mn)	SYCM002101	06/17/1997	176.0000	E*
Manganese (Mn)	SYCM002201	06/19/1997	434.0000	E*
Manganese (Mn)	SYCM001401	06/18/1997	532.0000	E*
Manganese (Mn)	SYCM000801	06/18/1997	626.0000	E*
Manganese (Mn)	SYCN001601	06/19/1997	672.0000	E*
Manganese (Mn)	SYCM002001	06/17/1997	696.0000	E*
Manganese (Mn)	SYCM001601	06/19/1997	753.0000	E*
Manganese (Mn)	SYCM001901	06/19/1997	763.0000	E*
Nickel (Ni)	SYCM000901	06/18/1997	10.2000	B
Nickel (Ni)	SYCM002201	06/19/1997	10.8000	B
Nickel (Ni)	SYCM002101	06/17/1997	12.9000	B
Nickel (Ni)	SYCN001601	06/19/1997	12.9000	B
Nickel (Ni)	SYCM001601	06/19/1997	13.2000	B
Nickel (Ni)	SYCM000801	06/18/1997	13.7000	B
Nickel (Ni)	SYCN002101	06/17/1997	14.1000	
Nickel (Ni)	SYCM001901	06/19/1997	14.4000	B
Nickel (Ni)	SYCM002001	06/17/1997	16.2000	B
Nickel (Ni)	SYCM001401	06/18/1997	17.0000	B
OCDD	SYCN002101	06/17/1997	226.0000	B
OCDD	SYCM002101	06/17/1997	410.0000	B
OCDD	SYCM002201	06/19/1997	444.0000	B
OCDD	SYCM002001	06/17/1997	613.0000	B
OCDD	SYCN001601	06/19/1997	685.0000	B
OCDD	SYCM001901	06/19/1997	734.0000	B
OCDD	SYCM000901	06/18/1997	893.0000	B
OCDD	SYCM000801	06/18/1997	995.0000	B
OCDD	SYCM001601	06/19/1997	1350.0000	B
OCDD	SYCM001401	06/18/1997	2540.0000	B

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
OCDF	SYCM000901	06/18/1997	2.0300	B
OCDF	SYCM002201	06/19/1997	10.3000	B
OCDF	SYCM002001	06/17/1997	10.7000	B
OCDF	SYCM001901	06/19/1997	12.1000	B
OCDF	SYCM002101	06/17/1997	12.9000	B
OCDF	SYCN001601	06/19/1997	13.9000	B
OCDF	SYCN002101	06/17/1997	14.0000	B
OCDF	SYCM000801	06/18/1997	15.9000	B
OCDF	SYCM001601	06/19/1997	25.1000	B
OCDF	SYCM001401	06/18/1997	55.3000	B
Phenanthrene	SYCM000901	06/18/1997	74.0000	J
Phenanthrene	SYCM002101	06/17/1997	110.0000	J
Potassium (K)	SYCM000901	06/18/1997	1590.0000	
Potassium (K)	SYCM002101	06/17/1997	1820.0000	
Potassium (K)	SYCN002101	06/17/1997	1840.0000	
Potassium (K)	SYCM002201	06/19/1997	3270.0000	
Potassium (K)	SYCN001601	06/19/1997	3510.0000	
Potassium (K)	SYCM001601	06/19/1997	3780.0000	B
Potassium (K)	SYCM001901	06/19/1997	4110.0000	B
Potassium (K)	SYCM002001	06/17/1997	4240.0000	B
Potassium (K)	SYCM000801	06/18/1997	4300.0000	B
Potassium (K)	SYCM001401	06/18/1997	4390.0000	
Pyrene	SYCM001601	06/19/1997	170.0000	J
Pyrene	SYCM000901	06/18/1997	180.0000	J
Pyrene	SYCM002101	06/17/1997	180.0000	J
Pyrene	SYCN002101	06/17/1997	280.0000	J
REDOX	SYCM001601	06/19/1997	86.0000	U
REDOX	SYCN001601	06/19/1997	88.0000	U
REDOX	SYCM001901	06/19/1997	112.0000	U
REDOX	SYCM002201	06/19/1997	132.0000	U
REDOX	SYCN002101	06/17/1997	205.0000	U
REDOX	SYCM000801	06/18/1997	245.0000	U

PARAM	SAMPLE ID	SAMPL. DATE	RESULT	QUAL
REDOX	SYCM001401	06/18/1997	268.0000	U
REDOX	SYCM002001	06/17/1997	270.0000	U
REDOX	SYCM002001	06/17/1997	273.0000	U
REDOX	SYCM000901	06/18/1997	299.0000	U
Sodium (Na)	SYCM000901	06/18/1997	7460.0000	E
Sodium (Na)	SYCN002101	06/17/1997	7660.0000	E
Sodium (Na)	SYCM002101	06/17/1997	8510.0000	E
Sodium (Na)	SYCM002201	06/19/1997	21900.0000	E
Sodium (Na)	SYCN001601	06/19/1997	26400.0000	E
Sodium (Na)	SYCM001601	06/19/1997	28200.0000	E
Sodium (Na)	SYCM002001	06/17/1997	28900.0000	E
Sodium (Na)	SYCM001401	06/18/1997	29200.0000	E
Sodium (Na)	SYCM001901	06/19/1997	29400.0000	E
Sodium (Na)	SYCM000801	06/18/1997	30900.0000	E
Thallium (Tl)	SYCM002101	06/17/1997	1.7000	B
Tin (Sn)	SYCN002101	06/17/1997	14.5000	B
Tin (Sn)	SYCM000901	06/18/1997	18.7000	B
Tin (Sn)	SYCN001601	06/19/1997	27.6000	B
Tin (Sn)	SYCM001401	06/18/1997	28.2000	B
Tin (Sn)	SYCM002201	06/19/1997	38.7000	B
Tin (Sn)	SYCM000801	06/18/1997	41.2000	B
Tin (Sn)	SYCM001601	06/19/1997	43.7000	B
Tin (Sn)	SYCM001901	06/19/1997	47.7000	B
Total Hepta-Dioxins	SYCN002101	06/17/1997	80.9000	
Total Hepta-Dioxins	SYCM002201	06/19/1997	176.0000	
Total Hepta-Dioxins	SYCM002001	06/17/1997	193.0000	
Total Hepta-Dioxins	SYCM002101	06/17/1997	193.0000	
Total Hepta-Dioxins	SYCM000901	06/18/1997	245.0000	
Total Hepta-Dioxins	SYCM001901	06/19/1997	313.0000	
Total Hepta-Dioxins	SYCN001601	06/19/1997	408.0000	
Total Hepta-Dioxins	SYCM000801	06/18/1997	435.0000	
Total Hepta-Dioxins	SYCM001601	06/19/1997	672.0000	

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
Total Hepta-Dioxins	SYCM001401	06/18/1997	1990.0000	
Total Hepta-Furans	SYCM000901	06/18/1997	1.0900	
Total Hepta-Furans	SYCM002101	06/17/1997	3.8200	
Total Hepta-Furans	SYCM001901	06/19/1997	4.2000	
Total Hepta-Furans	SYCN002101	06/17/1997	4.4100	
Total Hepta-Furans	SYCN001601	06/19/1997	4.8300	
Total Hepta-Furans	SYCM000801	06/18/1997	5.7000	
Total Hepta-Furans	SYCM001601	06/19/1997	8.9000	
Total Hepta-Furans	SYCM002001	06/17/1997	9.3400	
Total Hexa-Dioxins	SYCN002101	06/17/1997	26.3000	
Total Hexa-Dioxins	SYCM002101	06/17/1997	49.0000	
Total Hexa-Dioxins	SYCM002201	06/19/1997	50.4000	
Total Hexa-Dioxins	SYCM002001	06/17/1997	51.3000	
Total Hexa-Dioxins	SYCN001601	06/19/1997	64.7000	
Total Hexa-Dioxins	SYCM001901	06/19/1997	74.2000	
Total Hexa-Dioxins	SYCM000801	06/18/1997	97.3000	
Total Hexa-Dioxins	SYCM000901	06/18/1997	126.0000	
Total Hexa-Dioxins	SYCM001601	06/19/1997	149.0000	
Total Hexa-Dioxins	SYCM001401	06/18/1997	201.0000	
Total Hexa-Furans	SYCM002001	06/17/1997	1.2700	
Total Hexa-Furans	SYCM002101	06/17/1997	1.6100	
Total Hexa-Furans	SYCN002101	06/17/1997	1.7500	
Total Hexa-Furans	SYCM000801	06/18/1997	1.8200	
Total Hexa-Furans	SYCM002201	06/19/1997	2.6300	
Total Hexa-Furans	SYCN001601	06/19/1997	6.0100	
Total Hexa-Furans	SYCM001601	06/19/1997	6.8000	
Total Hexa-Furans	SYCM001401	06/18/1997	13.4000	
Total Organic Carbon (TOC)	SYCN002101	06/17/1997	1.1000	
Total Organic Carbon (TOC)	SYCM002101	06/17/1997	1.8000	
Total Organic Carbon (TOC)	SYCM000901	06/18/1997	2.7000	
Total Organic Carbon (TOC)	SYCM002201	06/19/1997	3.5000	
Total Organic Carbon (TOC)	SYCM001401	06/18/1997	4.6000	

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
Total Organic Carbon (TOC)	SYCM001601	06/19/1997	4.6000	
Total Organic Carbon (TOC)	SYCM000801	06/18/1997	4.7000	
Total Organic Carbon (TOC)	SYCM001901	06/19/1997	4.7000	
Total Organic Carbon (TOC)	SYCN001601	06/19/1997	4.7000	
Total Organic Carbon (TOC)	SYCM002001	06/17/1997	5.3000	
Total Penta-Dioxins	SYCN001601	06/19/1997	1.6100	
Total Penta-Dioxins	SYCN002101	06/17/1997	2.3300	
Total Penta-Dioxins	SYCM002201	06/19/1997	3.7800	
Total Penta-Dioxins	SYCM002001	06/17/1997	4.1700	
Total Penta-Dioxins	SYCM002101	06/17/1997	4.5800	
Total Penta-Dioxins	SYCM001401	06/18/1997	5.6200	
Total Penta-Dioxins	SYCM001901	06/19/1997	7.4200	
Total Penta-Dioxins	SYCM000801	06/18/1997	8.6000	
Total Penta-Dioxins	SYCM001601	06/19/1997	9.8700	
Total Penta-Dioxins	SYCM000901	06/18/1997	15.6000	
Total Penta-Furans	SYCM002101	06/17/1997	2.7200	
Total Tetra-Dioxins	SYCN002101	06/17/1997	2.4400	
Total Tetra-Dioxins	SYCM002201	06/19/1997	2.7600	
Total Tetra-Dioxins	SYCN001601	06/19/1997	2.8700	
Total Tetra-Dioxins	SYCM002001	06/17/1997	3.1600	
Total Tetra-Dioxins	SYCM002101	06/17/1997	3.2400	
Total Tetra-Dioxins	SYCM001901	06/19/1997	3.3700	
Total Tetra-Dioxins	SYCM000801	06/18/1997	4.7200	
Total Tetra-Dioxins	SYCM001401	06/18/1997	5.5600	
Total Tetra-Dioxins	SYCM001601	06/19/1997	5.9100	
Total Tetra-Dioxins	SYCM000901	06/18/1997	7.3200	
Vanadium (V)	SYCM000901	06/18/1997	30.6000	E
Vanadium (V)	SYCM002101	06/17/1997	35.2000	E
Vanadium (V)	SYCN002101	06/17/1997	36.4000	E
Vanadium (V)	SYCM002201	06/19/1997	48.0000	E
Vanadium (V)	SYCN001601	06/19/1997	59.4000	E
Vanadium (V)	SYCM001601	06/19/1997	64.8000	E

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
Vanadium (V)	SYCM001901	06/19/1997	70.0000	E
Vanadium (V)	SYCM000801	06/18/1997	72.4000	E
Vanadium (V)	SYCM002001	06/17/1997	75.4000	E
Vanadium (V)	SYCM001401	06/18/1997	83.9000	E
Zinc (Zn)	SYCM002101	06/17/1997	56.3000	E*
Zinc (Zn)	SYCN002101	06/17/1997	60.3000	E*
Zinc (Zn)	SYCM002201	06/19/1997	69.2000	E*
Zinc (Zn)	SYCN001601	06/19/1997	83.6000	E*
Zinc (Zn)	SYCM001601	06/19/1997	91.9000	E*
Zinc (Zn)	SYCM000901	06/18/1997	94.9000	E*
Zinc (Zn)	SYCM002001	06/17/1997	96.8000	E*
Zinc (Zn)	SYCM000801	06/18/1997	99.3000	E*
Zinc (Zn)	SYCM001401	06/18/1997	102.0000	E*
Zinc (Zn)	SYCM001901	06/19/1997	103.0000	E*
bis(2-Ethylhexyl)phthalate (BEHP)	SYCN001601	06/19/1997	370.0000	J
bis(2-Ethylhexyl)phthalate (BEHP)	SYCM002201	06/19/1997	390.0000	J

PARAM	SAMPLE ID	SAMPLE DATE	RESULT	QUAL
Acetone	CPRW003201	06/10/1997	2.0000	BJ
Acetone	CPRW003202		3.0000	BJ
Acetone	CPRW003203	06/10/1997	3.0000	BJ
Aluminum (Al)	CPRW003201	06/10/1997	381.0000	B
Aluminum (Al)	CPRW003202		581.0000	B
Aluminum (Al)	CPRW003203	06/10/1997	1060.0000	B
Barium (Ba)	CPRW003202		3.2000	B
Barium (Ba)	CPRW003201	06/10/1997	13.8000	B
Barium (Ba)	CPRW003203	06/10/1997	19.4000	B
Calcium (Ca)	CPRW003202		39800.0000	B
Calcium (Ca)	CPRW003201	06/10/1997	142000.0000	
Calcium (Ca)	CPRW003203	06/10/1997	274000.0000	B
Chemical Oxygen Demand	CPRW003202		65.0000	
Chemical Oxygen Demand	CPRW003203	06/10/1997	78.0000	
Chemical Oxygen Demand	CPRW003201	06/10/1997	121.0000	
Chloride	CPRW003201	06/10/1997	6410.0000	
Chloride	CPRW003202		8410.0000	
Chloride	CPRW003203	06/10/1997	11700.0000	
KJELDAHL NITROGEN, TOTAL S	CPRW003202		0.3300	
KJELDAHL NITROGEN, TOTAL S	CPRW003201	06/10/1997	0.4100	
KJELDAHL NITROGEN, TOTAL S	CPRW003203	06/10/1997	0.5200	
Magnesium (Mg)	CPRW003202		123000.0000	
Magnesium (Mg)	CPRW003201	06/10/1997	442000.0000	
Magnesium (Mg)	CPRW003203	06/10/1997	854000.0000	
Potassium (K)	CPRW003201	06/10/1997	132000.0000	
Potassium (K)	CPRW003202		163000.0000	
Potassium (K)	CPRW003203	06/10/1997	234000.0000	
Sodium (Na)	CPRW003201	06/10/1997	3140000.0000	E
Sodium (Na)	CPRW003202		3840000.0000	E
Sodium (Na)	CPRW003203	06/10/1997	5330000.0000	E
Total Alkalinity	CPRW003201	06/10/1997	59.5000	
Total Alkalinity	CPRW003202		65.5000	

PARAM	SAMPLE ID	SAMPL DATE	RESULT	QUAL
Total Alkalinity	CPRW003203	06/10/1997	84.5000	
Total Suspended Solids (TSS)	CPRW003203	06/10/1997	32.0000	
Total phosphorus	CPRW003201	06/10/1997	0.1000	
Total phosphorus	CPRW003202		0.1000	
Total phosphorus	CPRW003203	06/10/1997	0.1000	
Zinc (Zn)	CPRW003202		24.7000	B
Zinc (Zn)	CPRW003201	06/10/1997	151.0000	B
Zinc (Zn)	CPRW003203	06/10/1997	182.0000	B
pH	CPRW003201	06/10/1997	7.3400	
pH	CPRW003202		7.4400	
pH	CPRW003203	06/10/1997	7.5300	

October - December
1997



DEPARTMENT OF THE NAVY

SOUTHERN DIVISION

NAVAL FACILITIES ENGINEERING COMMAND

P.O. BOX 190010

2155 EAGLE DRIVE

NORTH CHARLESTON, S.C. 29419-9010

5090/11
Code 1877
27 January 1998

Mr. John Litton, P.E.
Director, Division of Hazardous and Infectious Waste Management
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subj: SUBMITTAL OF THE QUARTERLY RCRA FACILITY INVESTIGATION
PROGRESS REPORT

Dear Mr. Litton,

The purpose of this letter is to submit the Quarterly RCRA Facility Investigation (RFI) Progress Report for Naval Base Charleston. This report is submitted in order to comply with condition II.C.5 of the RCRA Part B permit issued to the Naval Base Complex by the Environmental Protection Agency and the South Carolina Department of Health and Environmental Control.

Enclosure (1) is the Quarterly Report which contains the activity for the months of October through December, 1997. If you have any questions, please contact Billy Drawdy or myself at (803) 743-9985 (Ext. 29) and (803) 820-5525 respectively.

Sincerely,

A handwritten signature in cursive script that reads "Matthew A. Hunt".

MATTHEW A. HUNT
Environmental Engineer
Installation Restoration III

Enclosure: (1) Quarterly RFI Progress Report - October through December 1997

Copy to (w/encl):

SCDHEC (Paul Bergstrand, Johnny Tapia)

USEPA (1) (Jay Bassett, Dann Spariosu)

CSO Naval Base Charleston (Billy Drawdy, Daryle Fontenot)

**NAVBASE CHARLESTON
RFI STATUS REPORT
PERIOD: SUMMARY OF
01 October 1997 To 31 December 1997**

I. INTRODUCTION

The following quarterly status report has been prepared to satisfy condition II.E.3.a of the Part B Permit Renewal dated 5 December 1994 for Naval Base Charleston (NAVBASE). The requirements of this condition are in effect since the total elapsed time to complete the RCRA Facility Investigation (RFI) is projected to be greater than 180 calendar days from the approval date of the *Final Comprehensive RFI Work Plan* as indicated in the Corrective Action Management Plan (CAMP).

II. PORTION OF THE RFI COMPLETED

Task 2901 - Zone A

As indicated in the previous status report, the site specific risk assessment for SWMUs 1, 2, and 39 were submitted in August in the form of a memo for review. SCDHEC provided comments on the memo via e-mail on November 5, 1997. The original intent was, that upon receipt of comments, an addendum RFI report would be submitted for those 3 sites which had been segregated from the remaining sites in Zone A because of the extended field effort required for site characterization. The timing of revising the *Draft Zone A RFI Report* and the memo now provides an opportunity to integrate the documents and provide a *Final Zone A RFI Report* that addresses the zone in it's entirety. The final report was nearly complete at the end of the reporting period with the exception of one last SCDHEC concern regarding the SWMU 39 groundwater risk assessment which should be resolved soon.

Task 2902 - Zone B

All tasks for Zone B are 100 percent complete and no further action is required.

Task 2903 - Zone C

Tentative identification of sites to be included in the Zone C CMS was completed at the October project team meeting as documented in the meeting minutes. During the discussions the team agreed that there was a need to collect groundwater screening samples at AOC 522 to address the leaching potential of methylene chloride detected in soil. A temporary well permit has been issued by DHEC and the samples will be collected in January 1998.

The RFI report was finalized and submitted to the regulatory agencies on November 14, 1997 for approval. Subsequent to submittal of the report, preparation of the draft CMS work plan was initiated. The work plan is being prepared using the format established in the latest version of the Zone H CMS work plan.

Task 2904 - Zone D

All tasks for Zone D are 100 percent complete and no further action is required.

Task 2905 - Zone E

The second portion of a two part pre-submittal review of the RFI report was presented to the project team at the September meeting. E/A&H provided team members with text and figures summarizing the outcome of a fixed point risk assessment. E/A&H also prepared isoconcentration maps for use as a comparison between risk based and concentration based data presentation. The risk based mapping initiative started by E/A&H almost two years ago is a creative, proactive way to provide a common denominator so that the true significance of analytical data can be measured with respect to whether cleanup is required. It is a departure from traditional concentration mapping which has been demonstrated to be ineffective when dealing with the ubiquitous presence of a large number of innocuous contaminants at a site.

The RFI report was finalized and submitted to the regulatory agencies on November 7, 1997 for review and comment.

Task 2906 - Zone F

The draft RFI report was completed and submitted to the Navy on December 31, 1997.

Task 2907 - Zone G

Background concentrations for soil and groundwater were approved at the October 1997 project team meeting which allowed a due date for the draft RFI report date to be set as January 15, 1998. Discussions regarding the proposal to regulate the fuel distribution system under the SCDHEC petroleum program were ongoing during the current period. Resolution to the matter is expected in January 1998. In the meanwhile, the project team decided to proceed with submittal of the RFI report without a discussion of the fuel distribution system pending a determination of which regulatory program will govern future actions at the site.

Task 2908 - Zone H

Comments pertaining to the Zone H RFI report addendum were received from SCDHEC on November 24, 1997. The recommendations for 3 of the 4 sites were accepted and SCDHEC requested additional field work at the fourth site. Outstanding concerns regarding SMWU 138/AOC 667 were discussed at the December team meeting. Additional data from the Zone L investigation was presented and DHEC requested an opportunity to go look at the sites before rendering a final opinion regarding the status of the site.

In November 1997, additional soil samples were collected in the vicinity of grid locations 07 and 38 which have been identified as "other impacted areas" due to the presence of PCBs in soil. The data from the supplemental sampling event has been received from the laboratory and confirms that elevated concentrations of PCBs are present over a relatively large area. The results will be discussed in greater detail at the January project team meeting.

Preliminary comments pertaining to the *Draft Zone H CMS Work Plan* were provided by SCDHEC and EPA in September 1997. The document was revised accordingly and resubmitted on December 4, 1997 for formal review and comment.

Task 2909 - Zone I

DHEC comments pertaining to the draft Zone I RFI report were discussed at the December team meeting. Particular emphasis was placed on determining the need for additional field work. From the meeting EnSafe had an action item to review the data for each site, identify data gaps if any, and prepare a counter proposal. The proposal was delivered to members of the project team technical subcommittee via e-mail on December 30, 1997.

Task 2910 - Zone J

A technical memo summarizing first round data was submitted to the team on December 15, 1997. At present, the data has only been compared to EPA screening levels in an effort to preliminarily assess the significance of the results. Efforts to determine a suitable method for determining background concentrations for the Zone J investigation continued with the preparation of a background strategy by the EPA contractor TetraTech. Zone J background is on the project team agenda for January 1998.

Task 2911 - Zone K

Background values for soil and groundwater were approved at the October 1997 project team meeting and a due date for the RFI set at December 19, 1997. The *Draft Zone K RFI Report* was submitted to the regulatory agencies on December 17, 1997.

The investigation of SWMU 166 continued. Sampling confirmed that contaminated groundwater is infiltrating the storm drain system along I-26. A dye trace was performed to confirm where discharge from the drain system into an open ditch is occurring. Analysis of effluent samples at the discharge point did not detect any volatile organic compounds. The confirmation that groundwater is infiltrating the storm drain system raised questions regarding how the system may be locally influencing groundwater flow and the impact this may have on contaminant transport from both the on and offsite sources. The project team agreed on the installation of piezometers along I-26 to provide additional data to further characterize the groundwater flow patterns. The piezometer installation was initiated on December 15, 1997.

Task 2912 - Zone I

An additional phase of groundwater sampling was initiated December 17, 1997. A total of 46 locations were proposed for this second phase. The DET completed the dye trace study and will be presenting the results in January. EnSafe completed marking all sample locations which have yet to be surveyed by the DET.

III. SUMMARIES OF FINDINGS

The latest findings to date are generally summarized above and have been previously discussed in greater detail at the monthly project team meetings where handouts including data have been distributed.

IV. DEVIATIONS FROM APPROVED WORK PLANS THIS REPORTING PERIOD

There were no known deviations from the approved RFI Work Plans for this reporting period.

V. SUMMARY OF CONTACTS WITH LOCAL COMMUNITY PUBLIC INTEREST GROUPS OR STATE GOVERNMENT

As of June 1997 the Restoration Advisory Board (RAB) agreed to meet on a bi-monthly basis. Minutes from the October and December 1997 meetings are enclosed as Attachment A.

VI. SUMMARY OF PROBLEMS OR POTENTIAL PROBLEMS AND ACTION TAKEN TO RECTIFY PROBLEMS

There were no problems or potential problems identified during this reporting period.

VII. KEY PROJECT PERSONNEL

There were no changes in key personnel this period.

VIII. PROJECTED WORK FOR THE NEXT REPORTING PERIOD

Document Preparation and Data Evaluation:

- The Final Zone A RFI Report is scheduled to be submitted in February 1998.
- The draft CMS work plans for Zones A and C will be submitted.
- The draft RFI reports for Zones F and G will be submitted in January 1998.
- If comments are received by the end of January 1998 as anticipated, the *Final Zone H CMS Work Plan* will be resubmitted prior to the end of the next reporting period.
- The subcommittee formed to develop the background strategy for Zone J will continue their efforts.
- Preparation of the draft Zone L RFI report will continue.

Field Activities:

- Groundwater samples will be collected from the new piezometers at SWMU 166 in Zone K which should complete the RFI field effort.
- Groundwater samples will be collected from additional screening points in Zone L.
- Quarterly groundwater monitoring will continue in all zones where less than four quarters of sampling has been completed. Also, groundwater samples will be collected from a number of sites to evaluate whether or not natural attenuation is occurring.
- A base wide groundwater level measuring event is scheduled for January 1998. The event will be coordinated with USGS and the College of Charleston as part of a data gathering effort for the Charleston peninsula.
- Additional sampling to complete the Zone I RFI is anticipated.

IX. COPIES OF DAILY REPORTS, INSPECTION REPORTS, LABORATORY DATA

Daily activities are recorded in accordance with the Data Management Plan included as Section 14 of the Final Comprehensive Sampling and Analysis Plan. Photocopies of these daily records have not been included with this status report; however, this information is available for review upon request.

Per agreement with SCDHEC and EPA, hard copies of the analytical data are not being submitted. A copy of the data is maintained at the EnSafe office in Charleston and is available for review.

X. CORRECTIVE ACTION MANAGEMENT PLAN (CAMP)

As agreed upon by the project team, the CAMP will be updated and submitted quarterly as part of the *Quarterly RFI Status Report*. The baseline schedule presented in the CAMP was revised in October 1997 and submitted as Appendix F-15 of the RCRA Part B permit renewal submitted to SCDHEC. The current submittal (Attachment B) dated January 15, 1998 is labeled Revision 01 and it reflects updates based on progress made during the last quarter. The "baseline" schedule is represented by the dates identified as scheduled start and finish dates. These dates did not change from the previous version of the CAMP since they are intended to be used as a means to measure progress (or lack thereof) since October 10, 1997 when the format of the CAMP was changed. Regulatory dates are determined by the "actual" start dates and specified durations to complete the tasks. The regulatory dates may or may not correspond to the scheduled dates depending on whether tasks performed since October 10, 1997 were completed on time.

NAVAL BASE CHARLESTON
RESTORATION ADVISORY BOARD (RAB)
Minutes of 14 October 1997

LIVE OAK COMMUNITY CENTER, 2012 SUCCESS ST., N. CHARLESTON

1. Introduction of the RAB Members and Guests

Mr. Daryle Fontenot, Navy Co-Chair, brought the meeting to order. He announced that Bobby Dearhart and Bob Veronee called to inform the RAB that they are unable to attend tonight's meeting. He then introduced Ms. Vernell Simon who is sitting in for Wannetta Mallette-Pratt, Community Co-Chair. He also introduced Mr. Dann Spariosu, the new EPA representative replacing Mr. Jay Bassett. Member and guest introductions were made. Mr. Fontenot asked that any RAB member that will not be able to attend a meeting, please call to inform him in advance.

2. RAB Members Attending

Mr. Daryle Fontenot	Mr. Lou Mintz
Mr. Tom Fressilli	Mr. Arthur Pinckney
Mr. Wilburn Gilliard	Mr. Odell Price
Mr. Don Harbert	Ms. Ann Ragan
Ms. Jeri Johnson	LCDR Paul Rose
Ms. Vernell Simon for Ms.Mallette-Pratt	Mr. Dann Spariosu

3. Guests Attending

Mr. Tony Hunt	NAVFAC, SouthDiv
Mr. Henry Shepard	NAVFAC, SouthDiv - CSO
Mr. Gabriel Magwood	NAVFAC, SouthDiv
Mr. Paul M. Bergstrand	SCDHEC
Mr. Johnny Tapia	SCDHEC
Mr. J. Michael Reubish	CEERD
Ms. Evelyn McCullough	Community member
E. Washington	Community member
Mr. Oliver K. Berry	Community member
Ms. Michelle Loy	Community member
Mr. Benjamin Washington	Liberty Hill
Ms. Sandy Milliken	Community member
V.P. Simmon	Union Heights
Ms. Myrtle Barnett	Community member
Mr. Joe Byas	Dorchester Terrace,
Ms. Elizabeth A. Turner	U.S. Department of State
Glenn Hill	U.S. Department of State
Mr. Joseph M. Land Sr.	Galileo Quality Institute

Mr. Oscar McNeil	Bechtel
Mr. Keith Johns	EnSafe Inc.
Mr. Larry Bowers	EnSafe Inc.
Dr. Jim Speakman	EnSafe Inc.
Ms. Sandy Reagan	EnSafe Inc.

4. Administrative Remarks and Comments on Minutes

Mr. Fontenot asked for comments on minutes from the last meeting and for any other administrative remarks. None were offered, so the minutes will be accepted as they are.

5. Subcommittee Reports

Community Relations Subcommittee

Mr. Fontenot reported on the Community Relations Subcommittee. The subcommittee met prior to the RAB meeting with Mr. Fontenot, Lou Mintz, Fouche'na Sheppard, and Keith Johns (EnSafe - community relations support) in attendance. A fact sheet on the Corrective Measures Study process was reviewed. The fact sheet will be distributed before the December meeting; probably sometime in November. The next subcommittee meeting will be at 3:30 in the Caretaker Site Office conference room on December 9.

6. Environmental Cleanup Progress Report

Status of Environmental Programs

Mr. Fontenot gave a brief update on the Underground Storage Tank Program. To date, the Navy has removed approximately 101 tanks. They have also started the assessment phase where sites are reviewed to determine how much more needs to be cleaned up. Mr. Fontenot turned the meeting over to Tony Hunt to provide the progress report on the RCRA Facility Investigation.

Mr. Tony Hunt, with Southern Division, gave the update for August and September. The first item was submittal of the Site Specific Risk Assessments for 3 Solid Waste Management Units (SWMUs). That submittal completes the information that was needed for Zone A, the DRMO area. That report has been submitted and the Navy expects to enter into discussions regarding the Corrective Measures Study in the near future.

The Navy also conducted a pre-submittal review of Zone E; the Shipyard. Half of the site groupings were completed, the other half will be completed later in the week. Zone E is a big zone, and good progress was made last month.

The Zone H RFI report was approved in August and efforts have now moved into the CMS phase for this Zone. The Navy also submitted the RCRA Part B Permit renewal. It is what's known as the Hazardous and Solid Waste Amendments section. Mr. Hunt brought his personal copy for anyone who would like to look at it after the meeting. A public notice of this permit renewal will be announced in the newspapers, and individuals who live around the base will be notified.

Essentially, the renewal says that the Navy is conducting corrective action at specific sites. It also references the Information Repository as a location for more information.

Last time, Mr. Hunt talked about sites where the Navy intended to begin corrective action, specifically SWMUs 166, 39, and 607. Those are sites where there is groundwater contaminated with chlorinated solvents. Discussions are still ongoing, so Mr. Hunt will provide an update on those sites at a later date.

The project team has come to agreement on interim measures for SWMU 2 and two other sites. Mr. Hunt showed an overhead of SWMU 2 and explained that the issues were lead dust or lead oxides that were released and are predominately in the surface soil. The interim measure will remove or stabilize the lead contaminated soil so it doesn't migrate further to storm sewers, inlets, or the Cooper River. Mr. Mintz asked how it would be corrected. Mr. Hunt answered that inorganics such as lead don't tend to migrate very far, and if they are in the upper foot of soil, excavating the soil and filling it back in is a good option. The soil could also be mixed in with cement to immobilize and remove it. The final decision will depend on the final volume of contaminated soil.

The overhead displayed lines that depicted lead concentrations. Certain areas had lead levels above 450 parts per million (ppm), which is a residential action level. If the areas with lead concentrations over 450 ppm were remediated, they would be acceptable for residential use. Mr. Mintz asked about the groundwater. Mr. Hunt responded that with the interim measure, the Navy will only address the soil. The primary concern is dust from the lead. The water in the area had lead at levels just slightly above the maximum contaminant level (MCL) and will be addressed in the Corrective Measures Study.

Mr. Mintz asked if any of the "off-site" companies are going to help with the cleanup. Mr. Hunt responded that the company associated with the petroleum contamination at SWMU 39 is currently engaged in discussions with the State, and will probably assist with the cleanup at that site. Mr. Mintz asked if the Navy would clean up contamination that moved from the Navy onto someone else's property and Mr. Hunt answered yes.

Mr. Arthur Pinckney asked how much land is associated with the lead contaminated site. Mr. Hunt said the area is about 200 by 300 feet, probably about 3/4 of an acre total and about a foot deep.

Moving on, SWMU 8 is an oil sludge pit that the Navy used in the 1940s and 1950s to deposit waste oil, allowing it to dewater. The pit was then covered up. It appears that many of the dissolved organics have migrated out of the pits and are moving toward Shipyard Creek. Excavation was conducted in area 1 and is in the process in area 2 in order to remove as much of

the free product as possible. For an interim measure, the Navy intends to install pea gravel in a recovery system.

The third interim measure that the Navy is working on is at FBM 61. At this location there was a release of petroleum products back in the mid 1970s. There are some sumps there that are filled with light non-aqueous phase liquid (LNAPL). The Navy is in the process of collecting some of the LNAPL as part of the remediation. Mr. Pinckney again asked about the size of the area. Mr. Hunt said that it was probably about the size of the annex adjacent to the sump. Mr. Mintz asked if the Navy will be lining the sumps with anything. Mr. Hunt responded that they will use the sumps that are already installed. There are two 55-gallon drums that are welded on top of each other, and inserted down into the groundwater down to an impermeable marsh clay. They act ideally as a very large well casing and a good deal of free product can be collected with a bailer or a skimmer. These were put in place in response to the spill when it happened in the 1970s.

Mr. Mintz asked if the Navy has been able to use the groundwater flow survey that was conducted by the USGS. Mr. Hunt responded that the groundwater model will be a key tool in the Navy's Corrective Measures Study in determining areas of collection and well placement for groundwater treatment.

Mr. Mintz also asked when public input will be requested on the CMS for Zone H. Mr. Hunt stated that the work plan is in review. The actual study must be conducted and recommendations established before the public will be able to comment on those recommendations. The study should be complete by sometime next summer.

An audience member asked for clarification on the residential use of the lead-contaminated property near Virginia Avenue. Mr. Hunt explained that if a site is only remediated to industrial standards, its use is restricted to industrial-type activities. However, if remediated to residential standards, it eliminates restrictions on the type of use the property can have and gives the RDA the most options in leasing the property once the cleanup is complete.

Mr. Mintz requested an update on the Annex. Mr. Hunt reported that the Navy found chlorinated solvents in the sewer lines intermittently to Gas Light Square. It is questionable whether all of the solvents are from Navy operations because there are dry-cleaners in the area, and tetrachloethylene was found in the area and it was not a component of the solvents that the Navy used. So there is evidence that there is another release, possibly two in that vicinity. The hits were frequent enough to suspect a plume, but they were probably a result of releases from the sewer system. The Navy is doing additional work to get a better idea of the groundwater flow in that area.

Mr. Mintz asked if DHEC will require the Navy to clean up the sewers. Mr. Hunt stated that DHEC is looking into the possibility of another party being involved. Ms. Ann Ragan, with DHEC, added that there is a new program that is similar to underground storage tanks for dry-

cleaners. Operational dry-cleaners invest into a fund to remediate old dry-cleaning sites. Those sites will be ranked with the worst ones being addressed first. Mr. Mintz asked if dry-cleaners dumped chemicals down their drains. Ms. Ragan responded that they shouldn't have, but dry-cleaning facilities were operational before environmental guidelines were established, so you just don't know.

Chicora Tank Farm Update

Mr. Fontenot brought up the issue of Chicora Tank Farm. The Navy had installed a filter on the vent of one of the tanks, and he wanted to know if this has met the community's request to eliminate the odor. Mr. Fontenot asked for comments from representatives who live in the Chicora neighborhood. Nobody responded. Mr. Fontenot asked that members and guests solicit input from residents of that area to see if the effort was successful.

The Navy is continuing to proceed with the partial demolition of the Chicora tanks. They are currently waiting on funding and on the formal request from the City of North Charleston regarding the public benefit conveyance. Mr. Fressilli added that he spoke with the Superintendent of Operations for the school district who said the full board did vote on September 22 and expressed interest in acreage at Chicora. The Superintendent said he had authority of the school board to begin negotiations with the Navy. Mr. Fressilli provide information to assist the Superintendent in producing a letter and which explained responsibilities. Mr. Fressilli further requested that the letter written by the school board be sent to both the RDA and the City of North Charleston.

Mr. Mintz asked how serious the school board was about the property. Mr. Fressilli answered that the school board's only conditions were that option 3 - partial demolition - was successful and issues on liability are adequately addressed.

Mr. Fontenot reiterated that once the money is received, the Navy will begin by testing the partial demolition of one tank to make sure it is feasible. That will hopefully begin in the near future, and the detachment will be performing the work.

A representative from the Union Heights Neighborhood Council was concerned about the public benefit conveyance process. She said Union Heights representatives had a petition signed and were informed that they could have the property which they would make into a recreation area. However, shortly thereafter, she read an article in the paper that the property will be given to the school board. Mr. Fontenot explained that the City of North Charleston did not wish to take the entire Chicora Tank Farm. Since the school board also wanted some of the property, both parties would share in the public benefit conveyance. The City will be using their section for a park and the school board will be using theirs for the military magnet school.

Mr. Pinckney asked if he should be concerned about the emissions of the Chicora tanks. Mr. Fontenot explained that due to the content of the tanks and the nature of the fuel, there is no requirement to monitor the air from those tanks for those types of fuels. Mr. Fontenot's understanding is that the amount of emissions from the fuel in tanks like the Chicora tanks would not exceed a certain threshold.

7. Reuse Update

Ms. Jeri Johnson reported that there have been two meetings of the Redevelopment Authority (RDA) since the last update.

September 2: This meeting was the last one with Virgil Johnston as one of the North Charleston appointees. He has been replaced by Mr. Eugene Ott who is a local businessman. Actions at that meeting include increasing the budget for the foreign trade zone application. The RDA is still trying to designate the base as a foreign trade zone. However, that process is going to cost over \$25,000, so the RDA had to increase what they were going to pay and the Navy Office of Economic Adjustment has agreed to pay \$10,000 toward the application. The Authority also approved lease to SCE&G of approximately half of the former Sea Bee compound at the south end of the base. SCE&G is now leasing the electrical distribution system in anticipation of a purchase in two years and they needed a place for a lay down area and to make repairs. They have already started upgrading the system so they will be occupying about half of the compound - mostly metal huts - down at the south end of the base.

The authority also approved an amendment to the lease of Charleston Shipbuilders to occupy four family housing quarters on the base for use by Brazilian crew members for the power barge that CSI has contracted to build for Brazil. They also amended a license with Minor League Productions for use of the former band room where the environmental team used to meet, and one of the warehouses on the base for a 3-month period while they're filming the movie Major League III.

September 23: The Authority welcomed a new member, Jim Miner, who replaced Dr. Thadeus Bell. Mr. Miner is a former Shipyard worker. Both Dr. Bell and Mr. Johnston were two-year appointees. Half of the appointees had two year terms, the other half had four. The authority also approved award of a sewer cleaning contract to Infrastructure Rehabilitation Services out of Pompano Beach which is about a \$60,000 contract to clean and videotape the sanitary sewers in the shipyard area. That is part of the first EDA grant for utility systems improvements. The Authority was also notified that their second utility systems improvements grant for the base was approved by EDA. Each of those grants is \$2 million and the first grant is for the shipyard area and the second grant is for the northern area of the base. Both are for water and sewer system repair and replacement. The Authority also approved extension of its contract for legal council with Young, Clement, Rivers & Tisdale to June 30, 1998. They approved a license with the magnet school to hold two track meets in October at the former golf course. They also approved

a license with the Army Corps of Engineers for building 1127 which is a storage facility almost directly across Hobson Avenue from the former engineering management building.

The next meeting of the RDA will be Tuesday October 21, 1997 at 12:30. Ms. Johnson added that she has an updated tenant summary that lists all of the current tenants and sub-tenants and their number of employees.

Mr. Mintz asked who benefits from the free trade zone designation. Ms. Johnson answered that any current or future tenant that imports parts will benefit. It is an incentive to attract industry to the base.

Mr. Pinckney asked about the appointment process for the RDA representatives. Ms. Johnson replied that she does not know how individuals were selected. She added that there are three members from North Charleston and one each from Dorchester, Berkely, and Charleston Counties and the Authority lets those entities conduct their own method of selection. However, the Governor makes the final choice.

A community member expressed his concern about the fire hazard uncut grass is causing around the Eternal Father of the Sea Chapel. He has brought this to the attention of the City of North Charleston but with no results. He would like to see the grass mowed so it no longer poses a fire hazard to the wooden chapel. LCDR Paul Rose responded that he and Ms. Johnson will see to it that it is taken care of.

Another community member commented on the potholes in the streets near the magnet school and weeds growing around Sterret Hall in the parking lot which doesn't look very nice. Ms. Johnson responded that that area has been licensed to North Charleston. Part of the requirements for the license requires that North Charleston maintain the property. This is not the first time the Authority has heard complaints from the community about the level of maintenance, and both the Navy and RDA have been unhappy with the level of maintenance. Complaints about this issue should be brought to the attention of the City of North Charleston.

8. Remaining Questions and Comments

Mr. Fontenot addressed the issue of the community center hours being extended to 6 p.m.. He asked Ms. Myrtle Barnett, Director of the center, if this will create a conflict with the next meeting. Ms. Barnett said that the center can close early on the day of the meeting to accommodate the RAB.

Mr. Fontenot added that for anyone with internet access, the Charleston RAB is on the World Wide Web. The address is: http://www.navy.mil/homepages/navfac_southdiv/. Go to **SouthDiv Organization Chart**, then go to **Environmental** - there is a link to RABs.

Mr. Pinckney mentioned that the questions he submitted to Mr. Fontenot a few months ago were not all answered. Mr. Fontenot replied that he only provided answers to those of which the original answer had changed. He asked that Mr. Pinckney talk to him if he would like more information, or clarification about any of the answers.

The next meeting will be held on Tuesday December 9, 1997 at 6:00 p.m at the Live Oak Community Center at 2012 Success Street in North Charleston.

10. Adjournment

Summary of Action Items

- RAB and community members will solicit input on success of filter on Chicora tanks.
- LCDR Paul Rose will work with Jeri Johnson to have the grass mowed around the chapel.

Attachments to Minutes

- (1) Tuesday October 14, 1997 RAB Meeting Agenda
- (3) RCRA Facility Investigation Progress Update - 10/14/97
- (3) RCRA Facility Investigation Progress Report
- (4) Charleston Naval Complex - Tenant Summary, 10/14/97

Minutes recorded by: Diane Cutler, EnSafe Inc.

Minutes approved by: _____

Daryle Fontenot
Navy Co-Chair

Wannetta Mallette
Community Co-Chair

Community Relations Subcommittee Meeting

October 14, 1997

Time: 3:30 p.m. - 4:30 p.m.

Attendees: Daryle Fontenot, Louis Mintz, Fouche'na Sheppard, Keith Johns

DISCUSSION ITEMS

Corrective Measures Study (CMS) Fact Sheet

The subcommittee reviewed the Corrective Measures Study Fact Sheet that was originally prepared for the Naval Support Activity, Memphis. A few edits to the existing fact sheet were made. Diane Cutler will make the changes and provide a draft to Daryle to pass by the Project Team for final approval.

NEXT MEETING

Subcommittee Meeting The next Subcommittee meeting will be held on December 9, 1997 at 3:30 p.m. in building NH-51 in the Caretaker Site Office conference room.

December 9, 1997

Naval Base Charleston

RAB Meeting

Restoration Advisory Board

Date Tuesday, December 9, 1997

Time 6 p.m.

Location... Live Oak Community Center
2012 Success Street
North Charleston

The RAB is a forum where community members meet with representatives from the Navy, State and Federal environmental agencies, and other groups to discuss the environmental programs underway at Naval Base Charleston. **All meetings are open to the public and everyone is encouraged to attend.**

For More Information



Call Jim Beltz at the Public Affairs Office
at Naval Facilities Engineering Command,
Southern Division: (803) 820-5771.

December 9, 1997

Naval Base Charleston

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NAVAL BASE CHARLESTON
RESTORATION ADVISORY BOARD (RAB)
Minutes of 9 December 1997

LIVE OAK COMMUNITY CENTER, 2012 SUCCESS ST., N. CHARLESTON

1. Introduction of the RAB Members and Guests

Mr. Daryle Fontenot, Navy Co-chair, brought the meeting to order at 6:00 p.m. He began by welcoming everyone to the last RAB meeting of the year and extended special appreciation for those who could attend during this busy season. Mr. Fontenot reported that Wannetta Mallette, Community Co-chair is on maternity leave. Member and audience introductions were made.

2. RAB Members Attending

Mr. Oliver Addison	Mr. Don Harbert
Mr. Bobby Dearhart	Mr. Odell Price
Mr. Daryle Fontenot	LCDR Paul Rose
Ms. Gussie Greene	Mr. Dann Spariosu
Mr. Ralph Laney	

3. Guests Attending

Mr. Tony Hunt	NAVFAC, SouthDiv
Mr. Henry Shepard	NAVFAC, SouthDiv - CSO
Ms. Joan Hartley	SCDHEC
Mr. Paul M. Bergstrand	SCDHEC
Ms. Pam Bergstrand	SCDHEC
Mr. Johnny Tapia	SCDHEC
Mr. J. Michael Reubish	CEERD
Ms. Myrtle Barnett	Community member
Mr. Joe Johnson	Community member
Mr. Joseph M. Land Sr.	Galileo Quality Institute
Mr. Joseph Horry Jr.	Detachment
Ms. June Mirecki	College of Charleston
Mr. Larry Bowers	EnSafe Inc.
Ms. Diane Cutler	EnSafe Inc.

4. Administrative Remarks and Comments on Minutes

Mr. Fontenot asked for comments on minutes from the last meeting and for any other administrative remarks. Mr. Bobby Dearhart asked when the public notice and hearing for the permit can be expected. Mr. Johnny Tapia responded that the permit is still in review.

Mr. Ralph Laney asked when the current permit expires. Mr. Tony Hunt responded that the Navy has been operating under the expired permit under the direction of South Carolina Department of

Health and Environmental Control (DHEC) since July 1995. Ms. Joan Hartley of DHEC stated that if a new application is submitted prior to the expiration date of the permit, the existing permit remains effective until the new one is approved.

5. Subcommittee Reports

Community Relations Subcommittee

Mr. Fontenot reported on the Community Relations Subcommittee. The subcommittee met prior to the RAB meeting with Mr. Fontenot, and Diane Cutler, the community relations resource person, in attendance. The next subcommittee meeting will be on February 10, 1998. Any RAB members with ideas about what activities the Community Relations Subcommittee should address or consider in 1998 should either plan on coming to the 2/10/98 meeting or provide comments/ideas/suggestions to Mr. Fontenot prior to the meeting. The meeting will be held on base in building NH-51 in the Caretaker Site Office conference room at 3:30. At the February meeting, the committee will try to decide the activities and schedule of community relations events for 1998.

Approximately mid-year the RAB switched to bi-monthly meetings, so there have been nine meetings in 1997. Next year only six meetings are planned.

6. Environmental Cleanup Progress Report

Status of Environmental Programs

Mr. Fontenot gave a brief update on the Underground Storage Tank (UST) program. To date, over 100 of the 160 tanks that need to be addressed have been pulled out of the ground. The Navy is still in the midst of doing UST assessments for sites that were identified after the closure that needed further investigation and possible cleanup. That work is being conducted by the detachment.

Also, a survey has nearly been completed regarding asbestos and lead-based paint. Hopefully in the first part of the year the actual abatement can begin. Mr. Dearhart clarified that the assessment is on hold right now because the detachment is in the process of having to submit a rehabilitation certification. Until that gets approved, the state has sent a letter saying that they will not review any more of the assessment report or the plans. The paperwork for the rehabilitation certification should go out on December 10, 1997. Someone inquired if the state will continue to review closure reports. Mr. Dearhart said the state didn't mention it - closure reports don't really tie into rehabilitation.

Chicora Tank Farm

Mr. Fontenot asked the community members if they are still smelling petroleum odors from the tank farm. Several months ago the Navy put a filter on tank O which is the one that has used oil in it. In October, nobody provided a response to the question about the odors. One gentleman from the audience said that while walking in that area he smelled a very offensive odor and that

there were feces on the sidewalk. Mr. Fontenot clarified that he was specifically asking about petroleum odors. The gentleman added that he thought the odor might be petroleum. Mr. Fontenot thanked him for his input.

On Monday the 15th, the Navy is hoping to start activities in preparation for the cleaning of five of the six Chicora tanks, which is the first step in the actual demolition. Hopefully, beginning the 5th or 6th of January, the actual cleaning operation of five of those tanks will commence. The detachment will be doing some of the preliminary work. The actual cleaning of the tanks will be conducted by an Air National Guard unit out of North Dakota that is being hired through the Defense Logistics Agency Defense Fuel Supply Center. The Navy is working with the detachment to try to get all the prep work done. Once the cleaning is complete, they can proceed with the next step - demolition of the tanks, which will include cleaning of the sixth tank as well as cleaning and abandoning the pipeline.

During the cleanup operation there is the possibility that petroleum odors may be released. Mr. Fontenot just wanted to inform everyone that once they start seeing activity at the tank farm, that means cleanup is beginning.

Mr. Fontenot turned the meeting over to Mr. Tony Hunt to provide the progress report on the RCRA Facility Investigation.

RCRA Facility Investigation (RFI) Update

Mr. Hunt, with Southern Division, gave the update for October and November. Under progress for October and November, there are several items where the Navy has received comments on reports and addendums. Mr. Hunt thanked the representatives from DHEC because they put in extraordinary effort over the last two months to provide the comments on those reports. In addition, the Zone E RFI report was submitted and was a very large report consisting of 15 volumes and weighing more than 90 pounds. The Zone E review will be quite extensive.

Field activity is still ongoing in Zone J which is the water bodies. The first phase is complete, and those sample results will be distributed to reviewers in the middle of December in the form of a technical memorandum. Discussions on the second phase of sampling is scheduled for the middle of January 1998. Regarding Zone L (sanitary sewers, storm sewers, and railroad systems) the initial round of sampling is complete. Two areas in particular were identified - one being a chlorinated solvent plume and the other, also chlorinated solvents, over by the dry-cleaner, which is an area that the Navy had already identified. Part of that investigation included dye tracer studies. What was being looked for was cross-connects between the sanitary sewer and the storm sewers because before 1972 the base discharged all its effluent to the Cooper River. That has supposedly been corrected and all sanitary wastes and industrial wastes are routed to the North Charleston sewer district. As a result of the dye tracer studies, the Navy has identified several cross-connects - four to date - and they will take action to plug those, or correct them.

Projected activity for December and January includes two more RFI reports (Zones K and F) that will be submitted. After those are submitted, there will only be two remaining zones that have not had RFI reports submitted, so the Navy is very nearly finished with that phase of the investigation.

The draft Zone H CMS Work Plan was discussed very briefly at the last RAB meeting and Mr. Ralph Laney was the only one who expressed any interest in reviewing it. Mr. Hunt asked if any other RAB members were interested in reviewing a copy. For any community members/audience members who are interested in looking at that document, a copy is available in the Dorchester Road Branch of the Charleston County Library.

Mr. Laney asked for clarification of the October meeting minutes regarding completion of the Zone H CMS by next summer. Mr. Hunt clarified that the study should be complete by sometime next summer. Mr. Laney recapped that the study will follow the Work Plan which was recently completed. Mr. Hunt said that was correct.

Mr. Mike Reubish asked to be updated on the status of the north end of the yard where the petroleum product near the Hess tanks was found. Mr. Hunt identified that area as Solid Waste Management Unit (SWMU) 39. The release that had been found in that area was a possible release from the Hess site. Hess has since verified that and has begun soil remediation in the area and has installed monitoring wells. Mr. Reubish recalled that split samples were taken to fingerprint the type of product found in the samples. Results were supposed to have been provided to Ann Ragan of DHEC and she was going to discuss them at a RAB meeting. Mr. Reubish asked if it is safe to assume that it was, in fact, Hess's fuel that was found. Mr. Hunt said that he believes that Hess acknowledged that the product was theirs because the subsequent action included installing wells and excavating soils. Hess even gained permission from the Navy to install a Hess well on Navy property so they could define the extent of the contamination.

Mr. Paul Bergstrand of DHEC added that he had the opportunity to look at some of the information regarding the Hess terminal, and they have apparently linked leaks to their loading rack. Mr. Hunt said that he intended to update the RAB on this issue once the Navy received the results of Hess's offsite work. Once that information becomes available, it will be presented to the RAB.

Mr. Reubish asked if anybody has touched base with the administration of the magnet school regarding the upcoming cleanup and demolition of the Chicora tanks. Mr. Fontenot responded that he has plans to address that issue with the administration on Thursday or Friday (December 11 or 12) and that he appreciated the question.

Funding

Mr. Fontenot was part of a group that went to Washington D.C. at the end of November and

briefed the Deputy Assistant Secretary of the Navy concerning the disposal strategy of Naval Base Charleston. The top 10 Naval facilities, according to cost for disposal, were selected and asked to brief the Secretary on what was going on and how they could help in speeding along the process. Charleston was one of the top 10 facilities based on the cost estimate to complete the process. Charleston was probably about seventh or eighth on the list with the majority of the other selected bases being on the west coast around the San Francisco area. Charleston's estimate is about \$100 million total costs, some of the other bases were \$300 to \$500 million.

The Charleston representatives put together information dealing with disposal of property, how the Redevelopment Authority was going to receive the property, and what was happening with environmental. The basic message that Charleston brought to Washington was that if things happen as they are currently scheduled, then the RDA should be ready to receive the property at the same time the property is environmentally ready to transfer. According to plans, the transfer of property could begin in early 1999. However, that will depend on the RDA submitting their economic development conveyance package application at the beginning of 1998. The process takes about a year to be approved, but once it's approved, the RDA should be ready to accept property. Regarding environmental requirements, if the Navy stays on track, they should be able to meet the early 1999 time frame. Washington wanted to know how they could help, and the Charleston representatives' response was that they can encourage the RDA to complete and submit their economic development conveyance package. The next thing they told Washington, regarding environmental funding, was "please don't touch our money". One of the staffers from the Navy wanted to know why they shouldn't take money away from Charleston and give it to another facility that doesn't have money but that already has a reuse mechanism in place and is ready to accept property. The answer to that question was that Charleston is making a lot of progress and it shouldn't be stopped. The other answer was "Do you know Strom Thurmond?" So, clearly, it is an extremely political issue.

If you look at the Navy's budget for BRAC for fiscal year 1999, there is a shortfall. There is more need than there is money - so someone will take a cut. Therefore, the RDA needs to work on their economic development conveyance package application, and the Navy needs to stay on track with the environmental work. Calendar year 1998 is extremely important environmentally as far as the disposal of Charleston Naval Base is concerned. There are a lot of activities planned, and the Cleanup Team is charged with making them happen so they can stay on track as far as getting rid of the property. The Navy's goal is to try to transfer the property to the community as soon as possible. The other part of that is to make sure nothing is overlooked on the environmental side, which shouldn't happen because the Navy has a good group working on the environmental part. The two big funding years for Charleston are this year and next year, however, there's always the possibility that the money could be cut.

Mr. Dearhart asked if the RDA was going to ask for the whole base in the economic development conveyance because at one time they said there is not a requirement for them to take the whole

base and if they didn't have a need for it or a use for it then they weren't going to ask for it. Mr. Fontenot answered that he didn't know if the RDA has excluded any parcels in their current business plan. LCDR Paul Rose answered that at one point there was some question whether they were going to divide up the base, however, their recent studies seem to show that they will probably take everything. However, there were questions about Chicora, the Annex, and one other area of the base. Chicora will be a public benefit conveyance with part of it going to the School Board, part going to the City of North Charleston, and possibly a third parcel going to the magnet school.

Mr. Dearhart asked if there is any possibility of transferring property prior to cleanup. Mr. Fontenot responded that at this time the RDA does not want property transferred prior to cleanup (which is called 334 deferral transfer). As things progress, however, it may become an option, but for now, the RDA just wants property after cleanup has been completed, just like it's stated in the regulations.

Mr. Dann Spariosu with EPA added that it can take years to clean up groundwater. However, it is not considered transferring dirty property if the groundwater remedy is installed, all the construction has been done, and it can be shown that the remedy is working by reducing contamination. At that stage the cleanup is considered to be operating successfully and Mr. Spariosu said he presumed that the RDA wouldn't have any problem with accepting the property in that situation. Mr. Fontenot agreed.

Someone asked what the criteria was for selecting the top 10 facilities. Mr. Fontenot answered that the criteria was the total cost to dispose of the property including environmental and caretaker costs. The Charleston team also brought up the detachment as a good news story. The entire brief was received very well by the Secretary.

Mr. Dearhart addressed the fact that when talking about Charleston there are politics involved. He asked if there is a concern that some of the budget will be cut in Charleston, and if there is a concern, is there something that the RAB or the community can do to stir up the politics to make sure the cut doesn't happen. Mr. Fontenot said that would be a good option if/when Charleston starts experiencing cuts. Mr. Laney asked how/when the RAB would know that cuts are pending. Mr. Fontenot responded that he will keep the RAB informed. He also added that the best way to avoid a cut is to commit the funds as early as possible in the fiscal year. If the funding is committed, it is very difficult for the government to take it back because that would mean de-obligating projects.

Mr. Reubish asked if the cleanup is being done as quickly as it should, or needs to be done. Mr. Fontenot said that the question is a difficult one to answer, however, the Navy is using the best information they have to schedule work and commit as many funds as they can. For example, just recently, the Navy discovered cross-connect problems with the sewer systems. As a result, new

activities not previously planned for have to be scheduled and funded. The Navy puts together its plans and obligates as quickly as they can, using the most up to date information they have. In short, the Navy is putting great effort into making sure that all the money assigned to Charleston gets spent at Charleston.

Mr. Laney asked if Charleston received what they expected for the current fiscal year, or if there was a shortfall. Mr. Fontenot answered that the budgeted amount was what they were expecting, the issue now is actually receiving the money.

7. Remaining Questions and Comments

Mr. Fontenot pointed out that there is an aerial photograph of part of the base on the bulletin board over the sign-in table that members and guests may be interested in viewing. He said for those who remember what the coal yard used to look like before it was cleaned up, the photograph should be interesting because all the piles of coal are gone. Eventually, the whole base will be captured through aerial photography and Mr. Fontenot will bring those photos in when completed. He also added that the photograph shows a good view of Chicora tank farm.

No other questions or comments were brought up by members or guests.

Mr. Fontenot wished everyone a blessed holiday and said he will be looking forward to seeing everyone again on February 10.

The next meeting will be held on Tuesday February 10, 1998 at 6:00 p.m at the Live Oak Community Center at 2012 Success Street in North Charleston.

8. Adjournment

Summary of Action Items

- Any RAB member with suggestions for community relations activities for 1998 is invited to attend the Community Relations Subcommittee meeting on 2/10/98 at 3:30 in the Caretaker Site Office conference room in Building NH-51, or may submit comments/input to Mr. Fontenot before 2/10/98.

Attachments to Minutes

- (1) Tuesday, December 9, 1997 RAB Meeting Agenda
- (2) RCRA Facility Investigation Progress Update - 12/9/97
- (3) RCRA Facility Investigation Progress Report for December 1997

Minutes recorded by: Diane Cutler, EnSafe Inc.

Minutes approved by:

Daryle Fontenot
Navy Co-Chair

Wannetta Mallette
Community Co-Chair

Tuesday, December 9, 1997

Charleston Naval Complex

RESTORATION ADVISORY BOARD MEETING AGENDA

6:00PM Location: *Live Oak Community Center*
2012 Success Street, North Charleston, SC

6:00PM RAB MEETING

- A. Introduction of the RAB Members and Guest
- B. Administrative remarks, comments on the minutes of the last meeting
- C. Subcommittee Reports
- D. Environmental Cleanup Progress Report [Cleanup Team]
 - Status of Environmental Programs
- E. Reuse Update [CNCRA]
- F. Remaining Questions and Comments from RAB Members and Visitors
- G. Agenda for next meeting (February 10, 1998)

RAB Members, Project Team, and interested citizens informally talk about what's going on after the meeting from 7:00 PM to 8:00PM.

Please mark your calendar. Our next meeting is **Tuesday, February 10, 1998, 6:00 PM at the Live Oak Community Center, 2012 Success Street, North Charleston, SC.** No RAB meeting in January. RAB meetings will be every other month until further notice.

NAVAL BASE CHARLESTON

RCRA FACILITY INVESTIGATION PROGRESS UPDATE

	CURRENT	PLANNED			OVERALL	OVERALL	
	RFI	COMPLETION			RFI	RFI	
	CURRENT	PHASE	DATE OF				
	RFI	COMPLETION	CURRENT RFI	NEXT	COMPLETION	COMPLETION	
ZONES	PHASE	PERCENTAGE	PHASE	PHASE	DATE	PERCENTAGE	NOTES
A	RFI Report Revs	75	2/27/98	Revd Rpt Review	4/24/98	95	
B	COMPLETE			COMPLETE	1/18/97	100	No CMS or GMI required in Zone
C	Revd Rpt Review	0	1/30/98	CMS	1/30/98	98	
D	COMPLETE			COMPLETE	8/18/97	100	No CMS or GMI required in Zone
E	Report Review	0	2/10/98	CMS	2/10/98	75	
F	RFI Report Prep	95	12/19/97	Report Review	2/10/98	74	
G	RFI Report Prep	80	1/16/97	Report Review	4/14/98	70	
H	COMPLETE			CMS	8/28/97	100	Proceeding with CMS for the Zone
I	RFI Report Revs	20	3/27/98	Revd Rpt Review	5/29/98	90	
J	Field Work	50	5/12/98	RFI Report Prep	12/15/98	30	
K	RFI Report Prep	99	12/12/97	Report Review	4/14/98	75	
L	Field Work	90	11/24/97	RFI Report Prep	6/12/98	40	
All Zones					12/15/98	79	

LEGEND

Phase	Description
RFI	RCRA Facility Investigation
CMS	Corrective Measures Study
Work Plan Preparation [5%]	Work Plan being prepared by Navy Contractor
Work Plan Review [5%]	Regulators (DHEC & EPA) reviewing Work Plan
Field Work [40%]	Navy contractor performing field work as outlined in the Work Plan
RFI Report Preparation [25%]	Navy contractor preparing the RFI Report
Report Review [25%]	Regulators (DHEC & EPA) reviewing report
CMS Work Plan	CMS Work Plan being prepared by Navy Contractor
Revs	Revision
Revd	Revised

Revised 12/9/97
chsrfigu.xls

Naval Base Charleston
RCRA Facility Investigation (RFI)
PROGRESS REPORT FOR DECEMBER 1997

INVESTIGATIVE ZONES

- A. Warehousing and scrap metal yard
- B. Golf course and residential
- C. Office space and warehouse (NH-45, Navbase HQ)
- D. Parking lot, warehouses
- E. Shipyard
- F. Recreational areas and public works shops
- G. Fuel farm and transfer facility
- H. Southern end of the base excluding waterfront
- I. Southern end of the base including waterfront and dredge material area
- J. Waterbodies
- K. Non-contiguous areas
- L. Sewer systems and railroad system

PROGRESS FOR OCTOBER/NOVEMBER

- ◆ Received comments on Zone C RFI Report, prepared responses and resubmitted.
- ◆ Received comments on Zone I RFI Report.
- ◆ Received comments on Zone H RFI Report Addendum.
- ◆ Received comments on SWMU 1, 2 and 39 Addendum.
- ◆ Submitted Zone E RFI Report (15 Volumes)

CURRENT FIELD ACTIVITY

- ◆ Zone J - First phase complete, results to be distributed in the form of a technical memorandum 12/15/97. Discussion on second phase sampling scheduled for 1/12/98.
- ◆ Zone L - Initial round of sampling complete. Two areas in particular were identified as a concern. Several cross connects have been identified as a result of the dye tracer studies.

PROJECTED ACTIVITY FOR DECEMBER/JANUARY

- ◆ Submit Draft Zone F RFI Report.
- ◆ Submit Draft Zone K RFI Report.
- ◆ Submit Draft Zone H CMS Work Plan.

Time: 3:30 p.m. - 4:00 p.m.

Attendees: Daryle Fontenot, Diane Cutler

DISCUSSION ITEMS

Plan of Action for 1998 Daryle and Diane discussed the direction and effectiveness of the Community Relations Subcommittee. Attendance at meetings is often poor. Perhaps the goals of the subcommittee need to be clarified, or re-evaluated. In order to re-evaluate interest and determine a plan of action for the upcoming year, the first subcommittee meeting of 1998 will be billed as a planning session where ideas and activities are presented, discussed, and hopefully decided upon for action. Any RAB member wishing to attend this meeting is welcome. Anyone who has suggestions but can not make it to the meeting can provide input and ideas to Daryle prior to the meeting.

(Editors Note: Daryle announced at the 12/9/97 RAB meeting that the February Community Relations Subcommittee meeting will be open to any RAB member interested in attending and providing input regarding the direction of community relations for 1998.)

NEXT MEETING

Subcommittee Meeting The next Subcommittee meeting will be held on February 10, 1998 at 3:30 p.m. in building NH-51 in the Caretaker Site Office conference room.

*** Come ready to discuss ideas for promoting community relations regarding the Restoration Advisory Board activities.

February 10, 1998

Naval Base Charleston

RAB Meeting

Restoration Advisory Board

DateTuesday, February 10, 1998

Time6 p.m.

Location...Live Oak Community Center
2012 Success Street
North Charleston

The RAB is a forum where community members meet with representatives from the Navy, State and Federal environmental agencies, and other groups to discuss the environmental programs underway at Naval Base Charleston. **All meetings are open to the public and everyone is encouraged to attend.**

For More Information



Call Jim Beltz at the Public Affairs Office
at Naval Facilities Engineering Command,
Southeast Division (803) 326-5771.

February 10, 1998

Naval Base Charleston

RAB Meeting

Restoration Advisory Board

DateTuesday, February 10, 1998

Time6 p.m.

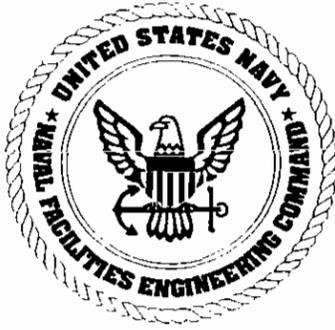
Location...Live Oak Community Center
2012 Success Street
North Charleston

The RAB is a forum where community members meet with representatives from the Navy, State and Federal environmental agencies, and other groups to discuss the environmental programs underway at Naval Base Charleston. **All meetings are open to the public and everyone is encouraged to attend.**

For More Information



Call Jim Beltz at the Public Affairs Office
at Naval Facilities Engineering Command,
Southeast Division (803) 326-5771.



NAVY NEWS RELEASE

Public Affairs Office
Naval Facilities Engineering Command, Southern Division
P.O. Box 190010
North Charleston, SC 29419

RAB Reports on Environmental Progress at Naval Base

For Publication by Tuesday, February 10, 1998

For more information, contact:

Jim Beltz (803) 820-5771

North Charleston – The Naval Base Charleston Restoration Advisory Board will hold their next meeting on Tuesday, February 10, 1998 at 6:00 p.m. at the Live Oak Community Center, 2012 Success Street, in North Charleston. Agenda topics will include a progress report on environmental activities and an update from the Naval Complex Redevelopment Authority. Navy staff and environmental specialists will be available after the meeting for informal discussion and to answer questions. The meeting is open to the public and everyone is encouraged to attend.

The RAB is a group of community members, Navy representatives, and federal, state, and local organizations and agencies that convene to discuss environmental cleanup progress and property reuse at Naval Base Charleston.

Meetings are held on the second Tuesday of every other month at 6:00 p.m.

For more information on the upcoming meeting, call Jim Beltz at the Public Affairs Office at Naval Facilities Engineering Command, Southern Division, (803) 820-5771.

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Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994			1995				1996				1997				1998											
						J	F	M	J	J	A	S	O	N	D	J	F	M	J	J	A	S	O	N	D	J	F	M	J	J	A	S
RFA and Comprehensive Work Plan						<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Regulatory Review</div> <div style="margin-left: 700px;">Draft Comprehensive RFI Report</div> <div style="margin-left: 800px;">Regulatory Review</div> <div style="margin-left: 700px;">Final Comprehensive RFI Report</div>																										
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7MAR98	7JUN98			156	3																											
8JUN98	8AUG98			59	0																											
9AUG98	9SEP98			31	0																											

Plot Date 15JAN98
 Data Date 19DEC97
 Project Start 1JAN94
 Project Finish 15DEC98

Activity Bar/Early Dates
 Critical Activity
 Program Bar
 Milestone/Flag Activity

2910

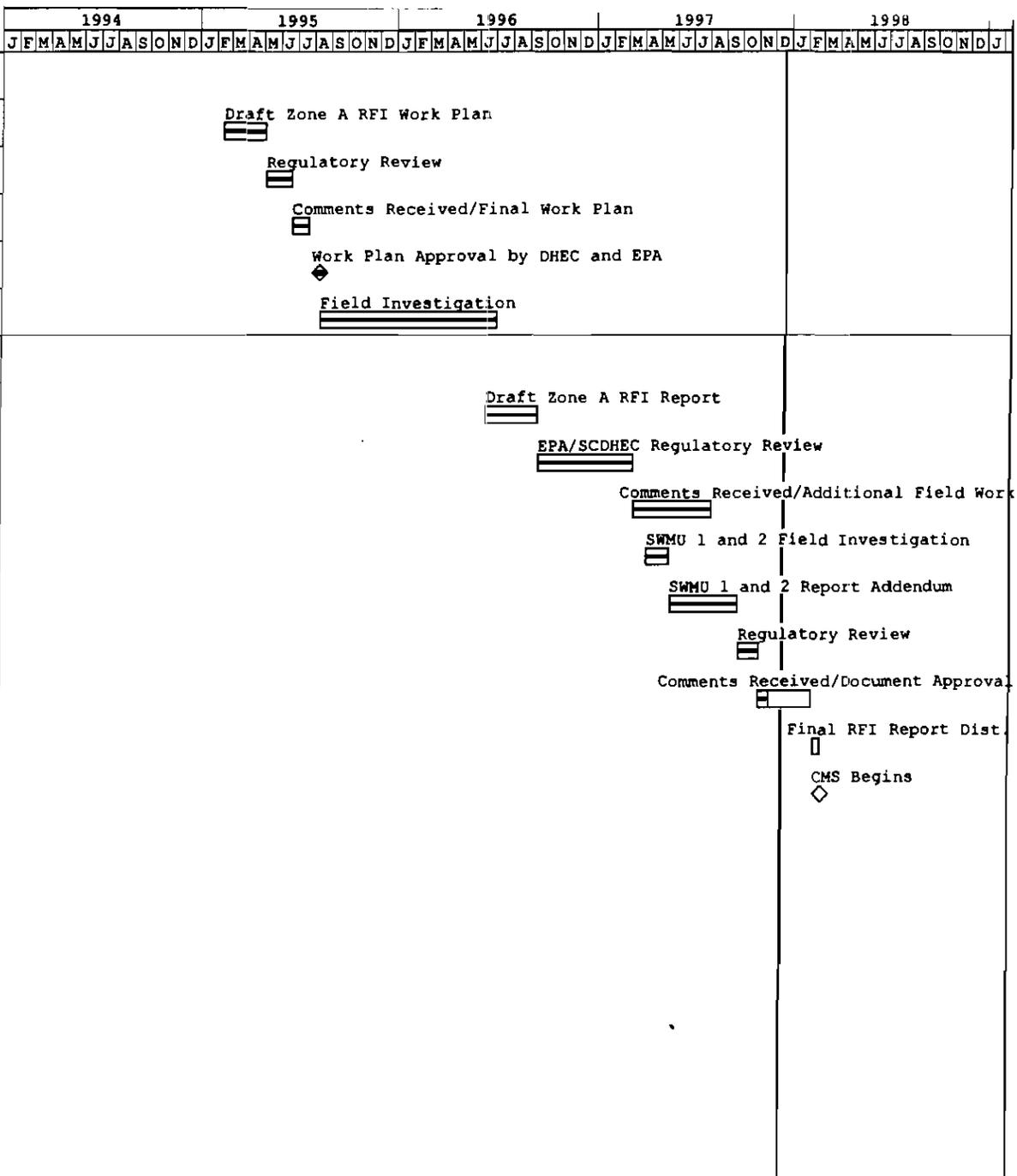
Naval Base Charleston
 Corrective Action Management Plan

Sheet 3 of 15

NAVY CLEAN W62467-89-D-0318

Date	Revision	Checked	Approved
18 Oct 97	Rev 0	BYN	MMH
11 Aug 98	Rev 1	BYN	MMH

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT
Zone Code A RFI Work Plan/Investigation					
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4MAY95	21JUN95	4MAY95	21JUN95	48	100
21JUN95	21JUL95	21JUN95	21JUL95	30	100
	10AUG95		10AUG95	0	100
11AUG95	29APR96	11AUG95	2JUL96	409	100
RFI Report					
12JUN96	9SEP96	12JUN96	16SEP96	89	100
9SEP96	6DEC96	17SEP96	12MAR97	79	100
12MAR97	6AUG97	12MAR97	6AUG97	64	100
7APR97	21MAY97	7APR97	21MAY97	45	100
22MAY97	26SEP97	22MAY97	26SEP97	90	100
27SEP97	14OCT97	27SEP97	5NOV97	18	100
7AUG97	14NOV97	5NOV97		97	20
15NOV97	29NOV97			11	0
30NOV97	30NOV97			0	0



Plot Date 15JAN98
 Data Date 19DEC97
 Project Start 1JAN94
 Project Finish 15DEC99

Activity Bar/Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity

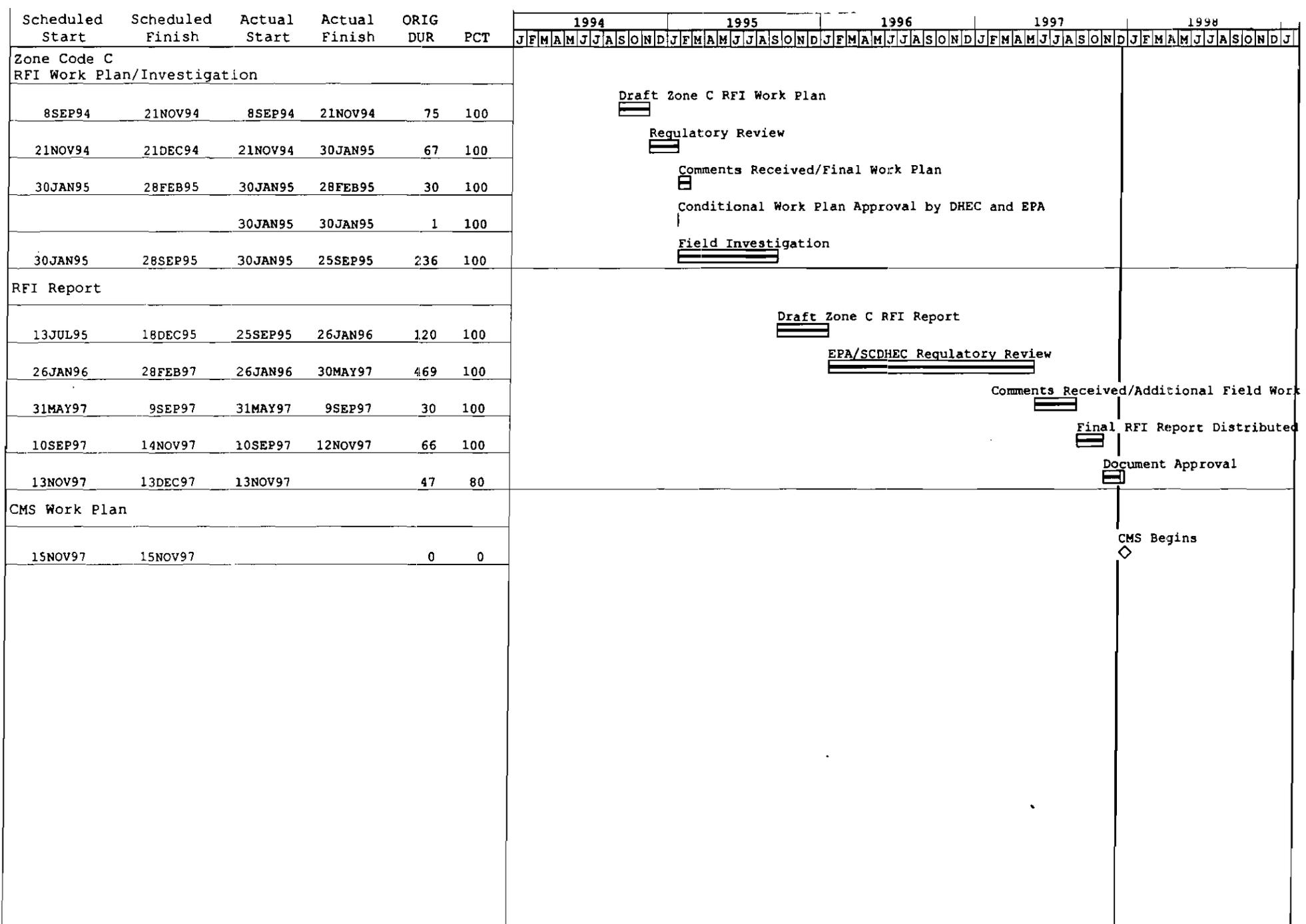
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Sheet 4 of 15

Naval Base Charleston
 Corrective Action Management Plan

NAVY CLEAN W62667-89-D-0310

Date	Revision	Checked	Approved
10 Nov 97	Rev 0	CFR	ROU
17 Nov 97	Rev 1	CFR	ROU



Plot Date 15JAN98
 Data Date 19DEC97
 Project Start 1JAN94
 Project Finish 15DEC98



2910

Sheet 6 of 15

Naval Base Charleston
 Corrective Action Management Plan

NAVY CLEAN 62467-89-D-0310			
Date	Revision	Checked	Approved
18 Oct 97	Rev 0	GTR	MAK
18 Jan 98	Rev 1	GTR	MAK

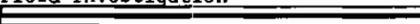
Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994				1995				1996				1997				1998													
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Zone Code L																																			
RFI Work Plan/Investigation																																			
5SEP95	14DEC95	5SEP95	14DEC95	99	100	<div style="text-align: center;"> <u>Draft Zone D RFI WP</u> <u>Regulatory Review</u> Comments Received/Final Work Plan <u>Work Plan Approval by DHEC and EPA</u> <u>Field Investigation</u> </div>																													
14DEC95	14JAN96	14DEC95	13MAY96	30	100																														
15FEB96	15MAR96	15MAY96	17JUN96	30	100																														
15MAR96	26MAR96	17JUN96	15AUG96	12	100																														
15AUG96	15DEC96	15AUG96	15DEC96	121	100																														
RFI Report																																			
10DEC96	15MAR97	15DEC96	26FEB97	91	100	<div style="text-align: center;"> <u>Draft Zone D RFI Report</u> <u>EPA/SCDHEC Regulatory Review</u> Comments Received/Final Document Final RFI Report Dist. </div>																													
26FEB97	15MAY97	26FEB97	18JUN97	198	100																														
19JUN97	19JUL97	19JUN97	15JUL97	30	100																														
15JUL97	29JUL97	15JUL97	19JUL97	14	100																														

Plot Date 15JAN98
Data Date 19DEC97
Project Start 1JAN94
Project Finish 15DEC96

	Activity Bar/Early Dates
	Critical Activity
	Progress Bar
	Milestone/Flag Activity

Date	Revision	Checked	Approved
19 Dec 97	Rev 0	CTE	MMH
15 Dec 97	Rev 1	GTH	MMH

(c) Primavera Systems, Inc.

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994					1995					1996					1997					1998																																	
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Zone Code E RFI Work Plan/Investigation						<p style="text-align: center;">Draft Zone E RFI Work Plan </p> <p style="text-align: center;">Regulatory Review </p> <p style="text-align: center;">Comments Received/Final Work Plan </p> <p style="text-align: center;">Zone E Work Plan Approval by DHEC and EPA </p> <p style="text-align: center;">Field Investigation </p>																																																					
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14FEB95	15MAR95	14FEB95	1MAY95	30	100																																																						
1MAY95	31MAY95	1MAY95	2JUN95	30	100																																																						
			9AUG95	0	100																																																						
9AUG95	24FEB97	9AUG95	11JUN97	555	100																																																						
RFI Report						<p style="text-align: right;">Draft Zone E RFI Report </p> <p style="text-align: right;">EPA/SCDHEC Regulatory Review </p> <p style="text-align: right;">Comments Received/Document Approved </p> <p style="text-align: right;">Final RFI Report Dist </p>																																																					
11JUN97	7NOV97	11JUN97	12NOV97	148	100																																																						
8NOV97	7MAR98	13NOV97		111	0																																																						
8MAR98	12MAY98			67	0																																																						
13MAY98	12JUN98			30	0																																																						
CMS Work Plan						<p style="text-align: right;">CMS Begins </p>																																																					
13JUN98	13JUN98			0	0																																																						

Plot Date 15JAN98
 Data Date 19DEC97
 Project Start 1JAN94
 Project Finish 15DEC98

Activity Bar/Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity



NAVY CLEAN M62467-89-D-0310

Date	Revision	Checked	Approved
15 Dec 97	Rev 0	GTH	JKH
15 Dec 97	Rev 1	GTH	JKH

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994			1995				1996				1997				1998															
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J
Zone Code F RFI Work Plan/Investigation																																				
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14DEC95	14JAN96	14DEC95	13MAY96	30	100																															
15FEB96	15MAR96	15MAY96	17JUN96	30	100																															
15MAR96	24MAR96	17JUN96	15AUG96	10	100																															
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RFI Report																																				
15MAY97	15DEC97	12SEP97	14JAN98	96	100	<div style="text-align: center;"> <u>Draft Zone F RFI Report</u> EPA/SCDHEC Regulatory Review Comments Received/Document Approved Final RFI Report Dist. </div>																														
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16APR98	1MAY98			17	0																															
CMS Work Plan																																				
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Plot Date 15JAN98
Data Date 19DEC97
Project Start 1JAN94
Project Finish 15DEC98

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

2910

Sheet 9 of 15

NAVY CLEAN 662467-49-D-0310

Naval Base Charleston
Corrective Action Management Plan

Date	Revision	Checked	Approved
10 Oct 97	Rev 0	GTR	ROB
13 Feb 98	Rev 1	GTR	ROB

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994			1995				1996				1997				1998																													
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
Zone Code h RFI Work Plan/Investigation																																																		
2MAY94	8JUL94	2MAY94	8JUL94	66	100	<u>Draft Zone H RFI Work Plan</u>																																												
8JUL94	8AUG94	8JUL94	29SEP94	83	100	<u>Regulatory Review</u>																																												
8AUG94	8SEP94	28SEP94	29DEC94	90	100	<u>Comments Received/Final Work Plan</u>																																												
		29DEC94	29DEC94	1	100	<u>Work Plan Approval by DHEC and EPA</u>																																												
8AUG94	4MAR95	8AUG94	1MAY95	262	100	<u>Field Investigation</u>																																												
RFI Report																																																		
20NOV94	28JUN95	3APR95	31JUL95	118	100	<u>Draft Zone H RFI Report</u>																																												
19JUN95	23JUN95	24JUL95	28JUL95	5	100	<u>Presubmittal Review</u>																																												
31JUL95	31AUG95	31JUL95	27NOV95	117	100	<u>Regulatory Review</u>																																												
27NOV95	27DEC95	27NOV95	27DEC95	30	100	<u>Comments Received/Resubmit Report</u>																																												
28DEC95	27JAN96	27NOV95	6MAY96	60	100	<u>Regulatory Review</u>																																												
8MAY96	8JUL96	8MAY96	8JUL96	60	100	<u>Comments Received/Resubmit Report</u>																																												
27JAN96	25APR96	8JUL96	13JAN97	60	100	<u>Regulatory Review</u>																																												
13JAN97	24MAR97	13JAN97	28AUG97	242	100	<u>Comments Rec'd/Document Approved</u>																																												
28DEC95	27JAN96	6AUG97	21AUG97	14	100	<u>Final RFI Report Dist.</u>																																												
CMS Work Plan																																																		
24FEB97	24FEB97			0	0	<u>CMS Begins/Permit Mod.</u>																																												
28AUG97	28NOV97	10JUN97	4DEC97	169	100	<u>Draft Zone H CMS Work Plan</u>																																												
29NOV97	29JAN98	5DEC97		54	10	<u>Regulatory Review</u>																																												

Plot Date 15JAN98
 Data Date 19DEC97
 Project Start 1JAN94
 Project Finish 15DEC98

Activity Bar/Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity

2910

Sheet 11 of 15

NAVY CLEAN #62467-89-D-0318

Naval Base Charleston
 Corrective Action Management Plan

Date	Revision	Checked	Approved
18 Dec 97	Rev 0	GTR	ROH
18 Dec 98	Rev 1	GTR	ROH

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994					1995					1996					1997					1998																																	
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Zone Code I RFI Work Plan/Investigation																																																											
11AUG94	16NOV94	11AUG94	16NOV94	97	100	<u>Draft Zone I RFI Work Plan</u>																																																					
16NOV94	16DEC94	16NOV94	30JAN95	72	100	<u>Regulatory Review</u>																																																					
16DEC94	16JAN95	30JAN95	28FEB95	30	100	Comments Received/Final Work Plan																																																					
		28FEB95	27MAR95	0	100	Work Plan Approval by DHEC and EPA																																																					
30JAN95	25SEP95	30JAN95	25SEP95	236	100	<u>Field Investigation</u>																																																					
RFI Report																																																											
13JUL95	11DEC95	13JUL95	26JAN96	174	100	<u>Draft Zone I RFI Report</u>																																																					
26JAN96	24FEB96	26JAN96	7NOV97	618	100	<u>Regulatory Review</u>																																																					
14OCT97	14DEC97	8NOV97		39	10	Comments Received/Document Approved																																																					
15DEC97	15JAN98			26	0	Final RFI Report Dist.																																																					
CMS Work Plan																																																											
16JAN98	16JAN98			0	0	CMS Begins																																																					

Plot Date 15JAN98
Data Date 19DEC97
Project Start 1JAN94
Project Finish 15DEC98

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

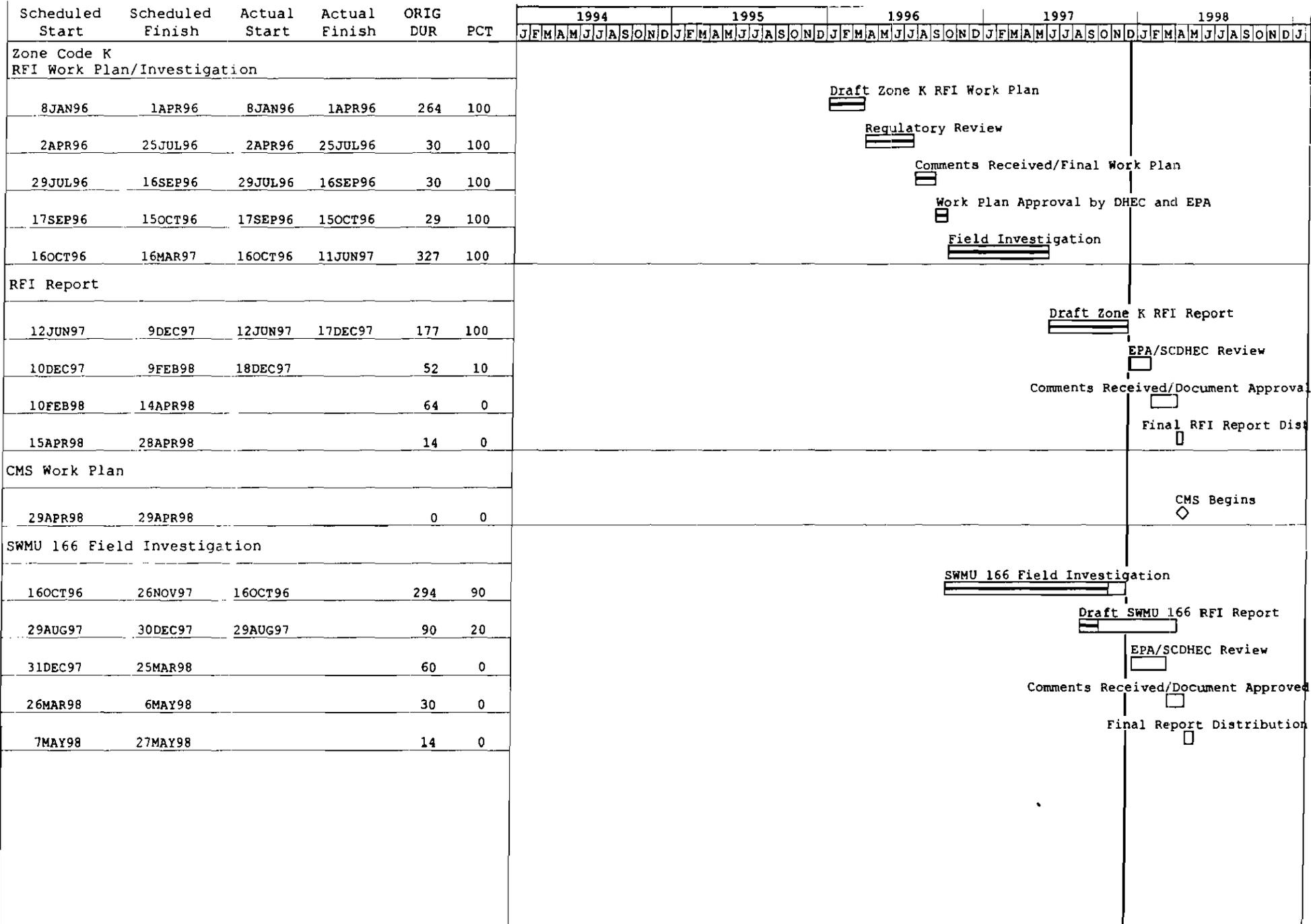
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Sheet 12 of 15

Naval Base Charleston
Corrective Action Management Plan

NAVY CLEAR 862467-89-D-0318

Date	Revision	Checked	Approved
10 Oct 97	Rev 0	GTH	RAK
18 Jan 98	Rev 1	GTH	RAK



Plot Date 15JAN98
 Date Date 19DEC97
 Project Start 1JAN94
 Project Finish 15DEC98

Activity Bar/Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity

2910

Sheet 14 of 15

NAVY CLEAN #62467-19-D-0318

Naval Base Charleston
 Corrective Action Management Plan

Date	Revision	Checked	Approved
18 Oct 97	Rev 0	GTN	MMN
13 Jan 98	Rev 1	GTN	MMN

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994												1995												1996												1997											
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RFI Report						<p style="text-align: center;">Draft Zone L RFI Report</p> <p style="text-align: center;">EPA/SCDHEC Regulatory Review</p> <p style="text-align: center;">Comments Received/Document Approved</p> <p style="text-align: center;">Final RFI Report Distributed</p>																																															
25NOV97	24FEB98			66	0																																																
25FEB98	24APR98			59	0																																																
25APR98	12JUN98			48	0																																																
13JUN98	26JUN98			14	0																																																
CMS Work Plan						<p style="text-align: center;">CMS Begins</p>																																															
27JUN98	27JUN98			0	0																																																
				1	0																																																

Plot Date	15JAN98		2910
Date Date	19DEC97		
Project Start	1JAN94		
Project Finish	15DEC98		

Naval Base Charleston
Corrective Action Management Plan

NAVY CLEAR #62467-89-D-0318			
Date	Revision	Checked	Approved
10 Oct 97	Rev 0	CTR	MAN
15 Jan 98	Rev 1	CTR	MAN