

N61165.AR.003501
CNC CHARLESTON
5090.3a

RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION REPORT
ADDENDUM/IM COMPLETION REPORT/CORRECTIVE MEASURES STUDY WORK PLAN
SOLID WASTE MANAGEMENT UNIT 6 (SWMU 6) ZONE G CNC CHARLESTON SC
12/1/2003
CH2M HILL

RFI REPORT ADDENDUM

RFI Report Addendum/IM Completion Report/ CMS Work Plan. SWMU 6. Zone G



***Charleston Naval Complex
North Charleston, South Carolina***

SUBMITTED TO
***U.S. Navy Southern Division
Naval Facilities Engineering Command***

CH2M Jones

December 2003

Contract N62467-99-C-0960

CH2MHILL TRANSMITTAL

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

From: Dean Williamson/CH2M-Jones

Date: Dec. 4, 2003

Re: Revision 1 replacement pages for *RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Revision 0* – Originally Submitted on December 5, 2002

We Are Sending You:

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

Quantity	Description
2	Revision 1 replacement pages for <i>RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Revision 0</i> – Originally Submitted on December 5, 2002

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

Copy To:

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

**THE ATTACHED PAGES SHOULD BE INSERTED AS REPLACEMENTS IN THE
RFI REPORT ADDENDUM/ IM COMPLETION REPORT/CMS WORK PLAN, SWMU 6,
ZONE G, REVISION 0 SUBMITTAL:**

- REVISED COVER AND SPINE
 - REVISED INSIDE COVER
 - REVISION 1 CERTIFICATION PAGE
 - REVISED TABLE OF CONTENTS PGS. VI AND VII
 - REVISED PGS. 6-2 AND 6-3
 - NEW APPENDIX I CONTAINING CH2M-JONES RESPONSES TO SCDHEC COMMENTS
ON RFI REPORT ADDENDUM/ IM COMPLETION REPORT/CMS WORK PLAN,
SWMU 6, ZONE G, REVISION 0 (JUNE 2003; OCTOBER 2003)
-



CH2MHILL

CH2M HILL

3011 S.W. Williston Road

Gainesville, FL

32608-3928

Mailing address:

P.O. Box 147009

Gainesville, FL

32614-7009

Tel 352.335.7991

Fax 352.335.2959

December 5, 2002

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

Re: RFI Report Addendum/IM Completion Report/CMS Work Plan (Revision 0), –
SWMU 6, Zone G

Dear Mr. Scaturo:

Enclosed please find four copies of the RFI Report Addendum/IM Completion Report/CMS Work Plan (Revision 0) for SWMU 6 in Zone G of the Charleston Naval Complex (CNC). This report has been prepared pursuant to agreements by the CNC BRAC Cleanup Team for completing the RCRA Corrective Action process.

The principal author of this document is David Lane. Please contact him at 352/335-5877, extension 2320, if you have any questions or comments.

Sincerely,

CH2M HILL

Dean Williamson, P.E.

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

RFI REPORT ADDENDUM

RFI Report Addendum/IM Completion Report/ CMS Work Plan - SWMU 6, Zone G



***Charleston Naval Complex
North Charleston, South Carolina***

SUBMITTED TO
***U.S. Navy Southern Division
Naval Facilities Engineering Command***

PREPARED BY
CH2M-Jones

December 2003

*Revision 1
Contract N62467-99-C-0960
158814.ZG.EX.13*

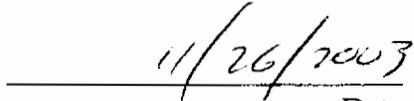
Certification Page for RFI Report Addendum/IM Completion Report/CMS Work Plan (Revision 1) – SWMU 6, Zone G

I, Dean Williamson, certify that this report has been prepared under my direct supervision. The data and information are, to the best of my knowledge, accurate and correct, and the report has been prepared in accordance with current standards of practice for engineering.

South Carolina
Permit No. 21428



Dean Williamson, P.E.



Date

1 Contents

2 Section	Page
3 Acronyms and Abbreviations	viii
4 1.0 Introduction	1-1
5 1.1 Background	1-1
6 1.2 Purpose of the RFIRA/IMCR/CMSWP.....	1-1
7 1.3 Site Background and Setting.....	1-2
8 1.4 Report Organization.....	1-3
9 Figure 1-1 Location of Combined SWMU 6 in Zone G	1-6
10 Figure 1-2 Aerial Photograph of Combined SWMU 6	1-7
11 2.0 Summary of RFI Conclusions for SWMU 6	2-1
12 2.1 Overview of Previous Investigations	2-1
13 2.2 RFI Sampling and Analysis.....	2-2
14 2.2.1 Surface Soil Results	2-3
15 2.2.2 Subsurface Soil Results	2-5
16 2.2.3 Groundwater Results	2-6
17 2.3 Human Health Risk Assessment.....	2-7
18 2.3.1 Surface Soil COCs.....	2-7
19 2.3.2 Subsurface Soil COCs	2-7
20 2.3.3 Groundwater COCs	2-8
21 Table 2-1 Site Investigation and Remediation History for SWMU 6.....	2-9
22 Figure 2-1 1993 and 1996 RFI Sampling Locations	2-10
23 3.0 Summary of UST/AST Removals and Interim Measures at SWMU 6	3-1
24 3.1 UST/AST Removals.....	3-1
25 3.2 1998 Interim Measure.....	3-1
26 3.3 2002 Interim Measure.....	3-2
27 Figure 3-1 1998 and 2002 Excavation Areas	3-3
28 4.0 Summary of Additional Investigations	4-1
29 4.1 Soil Investigation	4-1
30 4.1.1 January 2002 Sampling.....	4-1
31 4.1.2 May 2002 Sampling	4-2
32 4.1.3 June 2002 Sampling	4-2
33 4.1.4 Results and Screening of Additional Soil Investigations.....	4-3

1 Contents, Continued

2	4.2	Sediment Investigation	4-5
3	4.3	Groundwater Investigation	4-6
4	4.3.1	Organic Compounds in Groundwater.....	4-6
5	4.3.2	Inorganic Compounds in Groundwater.....	4-7
6	Table 4-1	Organic Compounds Detected in Surface Soil	4-9
7	Table 4-2	Inorganic Compounds Detected in Surface Soil.....	4-25
8	Table 4-3	Organic Compounds Detected in Subsurface Soil	4-26
9	Table 4-4	Inorganic Compounds Detected in Subsurface Soil	4-37
10	Table 4-5	Organic Compounds Detected in Sediment	4-38
11	Table 4-6	Organic Compounds Detected in Groundwater	4-39
12	Table 4-7	Inorganic Compounds Detected in Groundwater	4-41
13	Table 4-8	SSL Calculation for Aroclor-1260	4-44
14	Table 4-9	SWMU 6 Groundwater Field Data	4-45
15	Figure 4-1	RFI and Post-RFI Sample Locations	4-47
16	5.0	COPC/COC Refinement.....	5-1
17	5.1	Introduction.....	5-1
18	5.2	Soil COCs	5-2
19	5.2.1	Surface Soil.....	5-2
20	5.2.2	Subsurface Soil	5-8
21	5.2.3	Summary of Soil COCs	5-11
22	5.3	Groundwater COCs.....	5-11
23	Table 5-1	Detected Concentrations of COCs/COPCs in Surface Soil	5-17
24	Table 5-2	Detected Concentrations of COCs/COPCs in Subsurface Soil.....	5-31
25	Table 5-3	Residual COC/COPC Concentrations in Surface Soil	5-35
26	Table 5-4	Residual COC/COPC Concentrations in Subsurface Soil	5-50
27	Table 5-5	COC/COPC Concentrations in Groundwater	5-56
28	Table 5-6	SVOC Concentrations in Subsurface Soil (BEQ Values> Background) .	5-73
29	Table 5-7	Arsenic Concentrations in Soil Near Monitoring Well G006GW003.....	5-75
30	Table 5-8	Zone Reuse and Background Concentration Range for Thallium.....	5-76
31	Figure 5-1	Sample and Excavation Locations	5-77
32	Figure 5-2	PCB Concentrations in Surface Soil.....	5-78
33	Figure 5-3	BEQ Concentrations in Surface Soil	5-79

1 Contents, Continued

2	Figure 5-4	Alpha-, Beta-, and Gamma-BHC Concentrations in Surface Soil.....	5-77
3	Figure 5-5	Chlordane and Dieldrin Concentrations in Surface Soil.....	5-78
4	Figure 5-6	DDD, DDE, and DDT Concentrations in Surface Soil.....	5-79
5	Figure 5-7	TEQ Concentrations in Surface Soil.....	5-80
6	Figure 5-8	Antimony, Arsenic, and Thallium Concentrations in Surface Soil	5-81
7	Figure 5-9	BEQ Concentrations in Subsurface Soil.....	5-82
8	Figure 5-10	Alpha-, Beta-, and Gamma-BHC Concentrations in Subsurface Soil.....	5-83
9	Figure 5-11	Dieldrin Concentrations in Subsurface Soil.....	5-84
10	6.0	Summary of Information Related to Site Closeout Issues	6-1
11	6.1	RFI Status.....	6-1
12	6.2	Presence of Inorganics in Groundwater.....	6-1
13	6.3	Potential Linkage to Investigated Sanitary Sewers (SWMU 37).....	6-1
14	6.4	Potential Linkage to Investigated Storm Sewers (AOC 699).....	6-2
15	6.5	Potential Linkage to AOC 504, Investigated Railroad Lines.....	6-2
16	6.6	Potential Migration Pathways to Surface Water Bodies at the CNC	6-2
17	6.7	Potential Contamination in Oil/Water Separators (OWSs)	6-3
18	6.8	Land Use Controls (LUCs).....	6-3
19	7.0	Interim Measure Completion Report	7-1
20	7.1	Pre-excavation Sampling and Contaminant Delineation	7-1
21	7.2	Technical Approach of the Interim Measure.....	7-2
22	7.3	Excavation Activities.....	7-3
23	7.3.1	Southwest Excavation.....	7-3
24	7.3.2	Southeast Excavation	7-3
25	7.3.3	North Excavation.....	7-3
26	7.3.4	Waste Characterization Sampling.....	7-4
27	7.3.5	Site Restoration	7-4
28	8.0	Recommendations	8-1
29	9.0	CMS Work Plan for SWMU 6	9-1
30	9.1	Remedial Action Objectives.....	9-1
31	9.2	Remedial Goal Options and Proposed Media Cleanup Standards	9-1
32	9.3	Corrective Measure Technology Focused Evaluation.....	9-2
33	9.4	Focused CMS Approach.....	9-2

1 Contents, Continued

2 9.5 Approach to Evaluating Corrective Measure Alternatives 9-3

3 9.5.1 Protect Human Health and the Environment 9-3

4 9.5.2 Attain MCSs (RGOs) 9-3

5 9.5.3 Control the Source of Releases 9-4

6 9.5.4 Comply with Applicable Standards/Management of Wastes..... 9-4

7 9.5.5 Other Factors 9-4

8 9.6 Focused CMS Report..... 9-5

9 Table 9-1 Outline of Focused CMS Report for SWMU 6..... 9-6

10 **10.0 References 10-1**

11

12 **Appendices**

13 **A** Copy of the *Interim Measure Completion Report for SWMU 6, 7 & AOC 635, Charleston*

14 *Naval Complex, Charleston SC (DET, 1998)*

15 **B** Analytical Data Summaries for Samples Collected by CH2M-Jones in 2002

16 **C** Data Validation Report for Samples Collected by CH2M-Jones in 2002

17 **D** UCL₉₅ Calculations and Mean Residual Concentrations

18 **E** Copy of Table 10.12.7, *Analytes Detected in Surface and Subsurface Soils and Analytical*

19 *Results for Dioxins from the Zone G RFI Report, Revision 0 (EnSafe, 1998)*

20 **F** CH2M-Jones' responses to SCDHEC Comments Regarding Combined SWMU 6

21 **G** Copies of Waste Manifests from the 2002 IM at Combined SWMU 6

22 **H** Site Photos of Various Remediation Activities at Combined SWMU 6

23 **I** CH2M-Jones Responses to SCDHEC Comments on *RFI Report Addendum/ IM*

24 *Completion Report/CMS Work Plan, SWMU 6, Zone G, Revision 0 (June 2003; October*

25 *2003)*

1 Acronyms and Abbreviations

2	AOC	Area of concern
3	AST	Aboveground storage tank
4	BCT	BRAC Cleanup Team
5	BEQ	Benzo[a]pyrene equivalent
6	BHC	Benzenehexachloride
7	BRAC	Base Realignment and Closure Act
8	BRC	Background reference concentration
9	BTEX	Benzene, toluene, ethylbenzene, toluene
10	cPAH	Carcinogenic polycyclic aromatic hydrocarbon
11	CA	Corrective action
12	CMS	Corrective measures study
13	CNC	Charleston Naval Complex
14	COC	Chemical of concern
15	COPC	Chemical of potential concern
16	DAF	Dilution attenuation factor
17	DDD	Dichlorodiphenyldichloroethane
18	DDE	Dichlorodiphenyldichloroethene
19	DDT	Dichlorodiphenyltrichloroethane
20	DET	Navy Environmental Detachment
21	EnSafe	EnSafe Inc.
22	EPA	U.S. Environmental Protection Agency
23	EPC	Exposure point concentration
24	ESDSOPQAM	Environmental Services Division Standard Operating Procedures and
25		Quality Assurance Manual
26	ft bls	Feet below land surface
27	HI	Hazard index
28	HHRA	Human Health Risk Assessment
29	ILCR	Incremental lifetime cancer risk
30	IM	Interim measure
31	LUC	Land use control
32	$\mu\text{g}/\text{kg}$	Micrograms per kilogram
33	$\mu\text{g}/\text{L}$	Micrograms per liter

1 Acronyms and Abbreviations, Continued

2	mg/kg	Milligrams per kilogram
3	MCL	Maximum contaminant level
4	MCS	Media cleanup standard
5	ng/kg	Nanograms per kilogram
6	NAVBASE	Naval Base
7	NFA	No further action
8	NFI	No further investigation
9	NTU	Nephelometric turbidity units
10	OWS	Oil/water separator
11	PCB	Polychlorinated biphenyl
12	PID	Photoionization detector
13	RAO	Remedial action objective
14	RGO	Remedial goal option
15	RBC	Risk-based concentration
16	RCRA	Resource Conservation and Recovery Act
17	RFA	RCRA Facility Assessment
18	RFI	RCRA Facility Investigation
19	SAP	Sampling and Analysis Plan
20	SCDHEC	South Carolina Department of Health and Environmental Control
21	SSL	Soil screening level
22	SWMU	Solid waste management unit
23	SVOC	Semivolatile organic compound
24	TCDD	Tetrachlorodibenzo-p-dioxin
25	TCLP	Toxicity characteristic leaching procedure
26	TEQ	TCDD equivalent
27	UCL ₉₅	95-percent Upper Confidence Limit
28	UST	underground storage tank
29	VOC	volatile organic compound
30	yd ³	cubic yards

1 1.0 Introduction

2 In 1993, Naval Base (NAVBASE) Charleston was added to the list of bases scheduled for
3 closure as part of the Defense Base Realignment and Closure Act (BRAC), which regulates
4 closure and transition of property to the community. The Charleston Naval Complex (CNC)
5 was formed as a result of the dis-establishment of the Charleston Naval Shipyard and
6 NAVBASE on April 1, 1996.

7 Corrective Action (CA) activities are being conducted under the Resource Conservation and
8 Recovery Act (RCRA), with the South Carolina Department of Health and Environmental
9 Control (SCDHEC) as the lead agency for CA activities at the CNC. All RCRA CA activities
10 are performed in accordance with the Final Permit (Permit No. SC0 170 022 560).

11 1.1 Background

12 As part of the RCRA CA activities, a RCRA Facility Investigation (RFI) was conducted in
13 Zone G at the CNC (EnSafe Inc. [EnSafe], 1998). Solid Waste Management Unit (SWMU) 6,
14 SWMU 7, and Area of Concern (AOC) 635, located in the north-central portion of Zone G,
15 were combined into one investigation area due to their close proximity and their potential
16 for similar chemicals of potential concern (COPCs).

17 After the initial RFI, additional investigations and interim measure (IM) remedial activities
18 were conducted. The U.S. Navy Environmental Detachment (DET) performed an IM in 1998
19 that included excavation and disposal of contaminated material, primarily pesticide-
20 contaminated soil. Additional sampling and analysis was performed by CH2M-Jones on soil
21 at SWMU 6 to further delineate the extent of contamination, and to confirm additional
22 remediation requirements. These investigations identified several locations within SWMU 6
23 that were targeted for soil removal during an IM that was completed by CH2M-Jones in
24 June 2002. The post-RFI investigations and IM activities are described in detail in later
25 sections of this report.

26 1.2 Purpose of the RFI Report Addendum/IM Completion 27 Report/CMS Work Plan

28 This RFI Report Addendum/IM Completion Report/Corrective Measures Study (CMS)
29 Work Plan (RFIRA/IMCR/CMSWP) provides information regarding previous

1 investigations and IMs, as well as additional investigation activities and a soil removal IM
2 conducted by CH2M-Jones. The information presented in this document includes the results
3 of additional soil and sediment sampling after the *Zone G RFI Report, Revision 0* (EnSafe,
4 1998) was issued, and the results of two IMs and a groundwater sampling event.

5 Prior to changing the status of any site in the CNC RCRA CA permit, the BRAC Cleanup
6 Team (BCT) agreed that the following issues should be addressed:

- 7 • Status of the RFI
- 8 • Presence of metals (inorganics) in groundwater
- 9 • Potential linkage of SWMU/ AOC to SWMU 37 (investigated sanitary sewers)
- 10 • Potential linkage of SWMU/ AOC to AOC 699 (investigated stormwater sewers)
- 11 • Potential linkage of SWMU/ AOC to AOC 504 (investigated railroad lines)
- 12 • Potential migration pathways to surface water bodies (Zone J)
- 13 • Potential contamination associated with oil/water separators (OWSs)
- 14 • Relevance or need for land use controls (LUCs) at the site

15 Information regarding these issues is provided in this RFIRA/IMCR/CMSWP to expedite
16 evaluation of the site.

17 **1.3 Site Background and Setting**

18 SWMU 6, the Public Works Storage Yard (Old Corral), SWMU 7, the polychlorinated
19 biphenyl (PCB) Transformer Storage Yard, and AOC 635, the Paint and Oil Storehouse, are
20 located in Zone G (see Figure 1-1). SWMU 7 and AOC 635 are located within SWMU 6.
21 These sites are located within the triangle formed by Kilo Street, Pierside Street, and Hobson
22 Avenue. The locations of these SWMUs and AOC are shown on Figure 1-2. Each site is
23 described in the following paragraphs.

24 **SWMU 6 - Public Works Storage Yard**

25 SWMU 6 is an open, unpaved fenced area where containerized hazardous wastes from
26 vehicle maintenance, building maintenance, and pest control operations were stored prior to
27 shipment. The RCRA Facility Assessment (RFA) (EBASCO, August 1987) identified cleaning
28 solvents, waste oils, and paint wastes as potential contaminants at SWMU 6. Evidence of
29 spills were not identified in the RFA, but a soil sampling effort in 1987 indicated soils were
30 contaminated with metals.

1 **SWMU 7 - PCB Transformer Storage Yard**

2 SWMU 7 included Building 3902, the concrete slab outside the building, and the
3 surrounding area. SWMU 7 was used to store transformers and other electrical equipment
4 between 1970 and 1976. Visual evidence of past oil spills was reported in the RFA (EBASCO,
5 1987). Groundwater samples that were collected from monitoring wells WOC-1 and WOC-2
6 presented detections of arsenic, dichlorodiphenyltrichloroethane (DDT), BHC, and PCBs.
7 Transformers have not been stored at SWMU 7 since 1976.

8 **AOC 635 - Paint and Oil Storehouse**

9 AOC 635 consisted of Building 3902 and was used as a paint and oil storehouse. It was built
10 in 1942 and remained in operation until 1976 when it was removed from service. The
11 western parking lot was also a drum storage area. The parking area was originally
12 compacted dirt and gravel. According to the RFA (EnSafe/Allen & Hoshall, 1995) electrical
13 transformers and other electrical equipment, paint wastes, plating wastes, petroleum
14 products, solvents, corrosive materials, flammable material, poisons, oxidization agents, and
15 combustible materials were handled at AOC 635.

16 **Combined SWMU 6 Summary**

17 SWMUs 6, 7, and AOC 635 were combined into a single investigation in the RFI report
18 (EnSafe, 1998) due to the proximity of the sites and the potential for similar COPCs. For the
19 purposes of subsequent investigations, IMs, and closure, all three sites are combined and
20 will herein be referred to as SWMU 6.

21 SWMU 6 was recommended for an RFI under the current RCRA permit. Subsequent to the
22 RFI, activities at combined SWMU 6 included the removal of buildings, concrete slabs, and
23 parking lots. The SWMU 6 area is currently an open, unpaved field.

24 The area where SWMU 6 is located is zoned M-1, for marine industrial land use. Recently,
25 the site has been proposed as a location for a bulk material storage facility and is expected to
26 be used for industrial use for the foreseeable future.

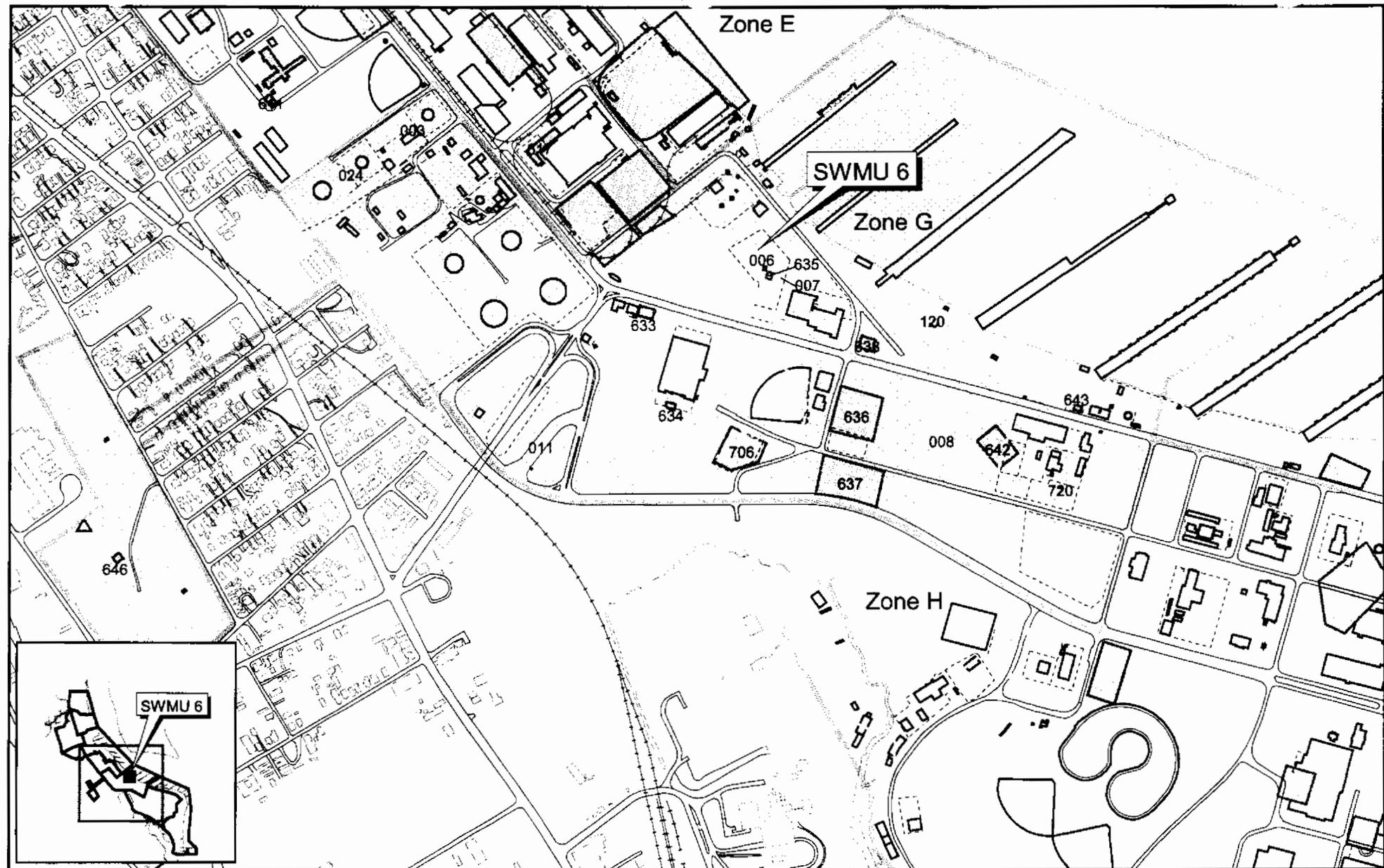
27 **1.4 Report Organization**

28 This RFIRA/IMCR/CMSWP consists of the following sections, including this introductory
29 section:

30 **1.0 Introduction** – Presents the purpose of the report and background information relating
31 to the RFIRA/IMCR/CMSWP.

- 1 **2.0 Summary of RFI Conclusions for SWMU 6**– Summarizes the conclusions from the RFI
2 and risk evaluations for SWMU 6 as presented in the *Zone G RFI Report, Revision 0* (EnSafe,
3 1998).
- 4 **3.0 Summary of UST/AST Removals and Interim Measures at SWMU 6**– Provides
5 information regarding the IMs conducted at the site during 1998 by the DET and in 2002 by
6 CH2M-Jones.
- 7 **4.0 Summary of Additional Investigations** – Presents the details and summarizes the
8 results of additional soil investigations conducted after completion of the RFI report, and
9 presents 2002 groundwater data.
- 10 **5.0 COPC/COC Refinement** – Provides further evaluation of COPCs based on the RFI and
11 additional data to assess them as chemicals of concern (COCs).
- 12 **6.0 Summary of Information Related to Site Closeout Issues** – Discusses the various site
13 closeout issues that the BCT agreed to evaluate prior to site closeout.
- 14 **7.0 Interim Measure Completion Report** - Presents the details and results of the soil
15 removal IM that was completed by CH2M-Jones during 2002.
- 16 **8.0 Recommendations** – Provides recommendations for proceeding with the RCRA
17 corrective action process.
- 18 **9.0 CMS Work Plan for SWMU 6** – Presents a focused CMS Work Plan for the Combined
19 SWMU 6 site.
- 20 **10.0 References** – Lists the references used in this document.
- 21 **Appendix A** contains a copy of the *Interim Measure Completion Report for SWMU 6, 7 & AOC*
22 *635, Charleston Naval Complex, Charleston SC* (DET, 1998).
- 23 **Appendix B** contains the analytical data summaries for the samples collected by CH2M-
24 Jones in 2002.
- 25 **Appendix C** contains the data validation report for the samples collected by CH2M-Jones in
26 2002.
- 27 **Appendix D** contains the UCL₉₅ calculations and mean residual concentrations for
28 constituents detected at the site.
- 29 **Appendix E** contains a copy of Table 10.12.7, *Analytes Detected in Surface and Subsurface Soils*
30 and analytical results for dioxins samples from the *Zone G RFI Report, Revision 0*.

- 1 **Appendix F** contains CH2M-Jones' responses to SCDHEC comments regarding the
- 2 Combined SWMU 6 area from the *Zone G RFI Report, Revision 0*.
- 3 **Appendix G** contains copies of the waste manifests from the 2002 IM completed by CH2M-
- 4 Jones at Combined SWMU 6.
- 5 **Appendix H** contains copies of site photos taken during various remediation activities at
- 6 SWMU 6.
- 7 All figures and tables appear at the end of their respective sections.



- Fence
- Railroads
- Roads
- Shoreline
- AOC Boundary
- SWMU Boundary
- Buildings
- Zone Boundary
- Zone G

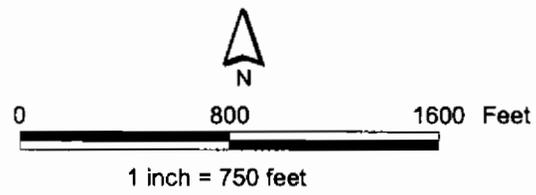


Figure 1-1
 SWMU 6, Zone G
 Charleston Naval Complex



-  SWMU / AOC
-  Buildings
-  Zone Boundary



0 80 160 Feet

1 inch = 100 feet

Figure 1-2
Aerial View
SWMU 6, Zone G
Charleston Naval Complex

2.0 Summary of RFI Conclusions for SWMU 6

2.1 Overview of Previous Investigations

A variety of investigations have been implemented at this site, beginning in 1981. A time-line graphic showing the known investigations and IMs implemented at this site is presented in Table 2-1. Much of the data collected prior to the Navy/EnSafe RFI cannot be retrieved. Of the data that can be retrieved, some is of limited usability because the survey coordinates for the data are not known, or the sample identification methodology cannot be reproduced.

The previous investigations at SWMU 6 occurred in the following chronological sequence:

- **1980s** - SWMU 7 was sampled in 1981 and 1982 to assess the presence of contaminants in soil and groundwater. This confirmation study (Geraghty & Miller, 1982) included two groundwater monitoring wells (WOC-1 and WOC-2) installed during 1982 and a soil sampling program carried out in two phases. The first phase, conducted in July 1981, consisted of collecting composite samples along lines running parallel to the sides of Building 3902 (this building has since been removed) and the attached concrete slab (also removed). The second sampling phase was conducted in February 1982 along lines parallel and up to 40 feet away from the previous samples to better define the horizontal distribution of PCBs in the soil. A soil sampling program was completed in March 1986 as part of the requirements for the closure of SWMU 6 (NSY Closure of Interim Status HW Facilities, August 1988). This information was obtained from the Interim RFA (EBASCO, 1987). EnSafe extended the closure investigation and collected samples at 36 grid locations across the site, as reported in the RFI Work Plan (Kemron, 1991). The DET and EnSafe identified 15 additional areas of suspected spills (SP-13 through SP-27), leaks, and stains for final closure. Three limited areas of elevated lead levels were identified.
- **1993** - In a preliminary phase before the RFI, 41 additional soil samples were collected in 1993 to assess the presence of PCB and pesticide contamination in soil at SWMU 6. Seven shallow monitoring wells were also installed and sampled in 1993. Though these data were reported in the *Zone G RFI Report, Revision 0* (EnSafe 1998), uncertainties in the sample nomenclature limit the usefulness of some of the data.

- 1 • **1996-1997** – Soil samples were collected in 1996 at six soil sampling locations for the RFI;
2 the results were presented and screened with the 1993 soil sample data in the RFI report.
3 The seven existing groundwater monitor wells were redeveloped and sampled in
4 November 1996; three additional groundwater sampling events were performed in May
5 1997, September 1997, and December 1997. The 1993 and first three quarterly results
6 were presented in the RFI report.
- 7 • **1998** – An IM was conducted by the DET which included the removal of contaminated
8 soil to depths of 2 to 4 feet below land surface (ft bls), and the demolition and removal of
9 the concrete slab (SWMU 7); all removed material was transported to offsite disposal
10 facilities. A copy of the IM completion report for this effort is included as Appendix A of
11 this report.
- 12 • **2002** – CH2M-Jones continued soil investigations primarily to delineate the extent of soil
13 with contaminant concentrations exceeding unrestricted (i.e., residential) land use
14 criteria, and to delineate hot spots of contaminated soil for removal. An IM was
15 conducted by CH2M-Jones to remove contaminated soil to depths of 1 to 3 ft bls. All
16 removed material was transported to offsite disposal facilities. A sampling of all seven
17 monitoring wells was also conducted to assess current groundwater quality. These
18 efforts are described in further detail in this report.

19 The above investigations and removals are summarized in this report, beginning with a
20 summary of the RFI activities and conclusions from the *Zone G RFI Report, Revision 0* in the
21 following subsections of Section 2.0. Section 3.0 provides a summary of the 1998 DET and
22 2002 CH2M-Jones IMs. Section 4.0 provides detailed summaries of the 2002 soil and
23 groundwater investigations conducted by CH2M-Jones. Finally, Section 7.0 provides the
24 completion report for the 2002 IM soil removal conducted by CH2M-Jones.

25 **2.2 RFI Sampling and Analysis (1993 and 1996-1997)**

26 Soil and groundwater were sampled prior to the RFI in 1993 and as part of the RFI in 1996 to
27 determine whether contamination resulted from chemical and other waste disposal
28 activities in the SWMU 6 area. Soil sample locations in 1993 were selected to spatially cover
29 the areas surrounding the documented site activities that were suspected to be impacted by
30 previous site use. At 41 locations, either surface, subsurface, or both samples were collected
31 and analyzed for volatile organic compounds (VOCs), semivolatile organic compounds
32 (SVOCs), pesticides/PCBs, and metals. Three different labeling systems were used to
33 identify these locations (e.g. S06-B01, B07-B03, S07-B05). The six 1996 samples were located

1 at former (1993) sampling locations and were labeled with three different identification
2 systems (e.g. 006SB001, 007SB001, 635SB001). These samples were also analyzed for VOCs,
3 SVOCs, pesticides/PCBs, and metals. The RFI report presented the results of these soil tests
4 and conclusions concerning contamination and risk, as summarized in Sections 2.1 and 2.2
5 of this RFIRA/IMCR/CMSWP. Based on the currently available information about survey
6 coordinates for these samples and the difficulty in understanding the sample identification
7 labeling, these data have only limited usefulness in the delineation of extent and
8 confirmation of removal addressed by CH2M-Jones in 2002. A further evaluation of COPCs
9 is provided in Section 5.0 of this report addendum.

10 Duplicate samples were collected and analyzed for Appendix IX parameters (a broader list
11 of VOCs, SVOCs, metals, pesticides/PCBs, plus herbicides and dioxins).

12 The seven shallow monitoring wells (approximately 15 ft bls) were sampled once in 1993
13 and during four consecutive quarters in 1996-1997. These wells were formerly designated
14 NBCG006001 through NBCG006007, and are currently named G006GW001 through
15 G006GW007. Analyses for all five sampling events included VOCs, SVOCs,
16 pesticides/PCBs, and metals. The nature and extent and fate discussions in the RFI report
17 were based on the first three quarters of groundwater data, but conclusions in the exposure
18 assessment of the RFI report were based on the first quarter groundwater data only. The
19 1993 data were presented in the RFI report for comparison only.

20 The RFI soil and groundwater sample locations were presented in the *Zone G RFI Work Plan*
21 (EnSafe, 1996) and were approved by SCDHEC after review of the sampling approach. The
22 sample locations are presented in Figure 2-1.

23 The surface soil and groundwater COCs identified in the following subsections are further
24 evaluated in Section 5.0 of this RFIRA/IMCR/CMSWP. Soil COCs were targeted for
25 removal during the IMs conducted by the DET and CH2M-Jones, as summarized in Section
26 3.0; a detailed account of the CH2M-Jones IM is described in Section 7.0 of this
27 RFIRA/IMCR/CMSWP.

28 **2.2.1 Surface Soil Results**

29 COPC screening criteria during the RFI for surface soil consisted of U.S. Environmental
30 Protection Agency (EPA) Region III (June 1996) residential risk-based concentrations (RBCs)
31 (hazard index [HI]=0.1 for non-carcinogens) for organics and inorganics, and Zone G
32 background reference concentrations (BRCs) for inorganics. Analytical results from surface
33 soil sampling were compared against these criteria with the following results.

- 1 • **VOCs:** Nine VOCs were detected in surface soil at SWMU 6. The nature of contamination
2 section (10.12.3) of the RFI report concluded that no VOCs were detected above their
3 respective RBCs (HI=0.1) in surface soil.
- 4 • **SVOCs:** Twenty-seven SVOCs were detected in surface soil at SWMU 6.
5 Benzo[a]anthracene, benzo[b]fluoranthene, benzo[a]pyrene, ideno[1,2,3-c,d]pyrene, and
6 dibenz(a,h)anthracene exceeded their respective RBCs. Because the SVOCs detected
7 above screening criteria were all carcinogenic polycyclic aromatic hydrocarbons
8 (cPAHs), benzo[a]pyrene equivalent (BEQ) concentrations were calculated. Calculated
9 BEQ concentrations were above the RBC in 15 of 43 (32 pre-RFI samples, three surface
10 duplicates [pre-RFI], six RFI samples, and two RFI duplicates) surface soil samples.
- 11 • **Pesticides:** Ten pesticides (4,4'-DDD, 4,4'-DDE, 4,4'-DDT, alpha-BHC, beta-BHC, delta-
12 BHC, gamma-BHC, alpha-chlordane, gamma-chlordane, and heptachlor) were detected
13 in surface soil at concentrations above their respective RBCs. A total of 43 surface soil
14 samples were collected and analyzed for pesticides at SWMU 6.
- 15 – DDE was detected in one sample above its RBC.
 - 16 – DDD was detected above its RBC in four surface soil samples.
 - 17 – DDT was detected above its RBC in seven surface soil samples.
 - 18 – Alpha-BHC was detected above its RBC in one sample.
 - 19 – Beta-BHC was detected in one sample exceeding its RBC.
 - 20 – Delta-BHC was detected in three samples at concentrations above its RBC.
 - 21 – Gamma-BHC was detected in one sample above its RBC.
 - 22 – Alpha-chlordane was detected above its RBC in a one sample.
 - 23 – Gamma-chlordane was detected in one sample above its RBC.
 - 24 – Heptachlor was detected in one sample above its RBC.
- 25 • **PCBs:** Aroclor-1254 and Aroclor-1260 were detected in surface soil above their
26 respective RBCs. Aroclor-1254 was detected in one sample above its residential RBC.
27 Aroclor-1260 was detected above its RBC in 13 samples.
- 28 • **Dioxins:** Two duplicate samples collected during the RFI were analyzed for the
29 Appendix IX suite, including dioxins. Dioxins were detected in both samples. Because
30 dioxin congeners were detected, TCDD equivalent (TEQ) concentrations were
31 calculated. The calculated TEQ concentration exceeded its residential action level of
32 1,000 nanograms per kilogram (ng/kg) in one sample (007SB00101 - 1,021 ng/kg). This

1 value also exceeds the dioxin RBC (4.3 ng/kg). The soil at this sample location was
2 subsequently excavated during the IM by the DET.

- 3 • **Metals:** Antimony, arsenic, chromium, iron, lead, manganese, thallium, and vanadium
4 exceeded their RBCs and/or BRCs in at least one surface soil sample.
 - 5 – Antimony was detected in one surface soil sample. The detected concentration of
6 antimony was above its RBC and BRC.
 - 7 – Arsenic was detected in five surface soil samples at concentrations above its RBC
8 and BRC.
 - 9 – Chromium was detected in two samples above its residential RBC (based on
10 hexavalent chromium) and BRC.
 - 11 – Iron was detected above its RBC in all 48 surface soil samples collected at SWMU 6.
12 A BRC was not established in the RFI for iron, therefore comparison to background
13 levels was not made.
 - 14 – Lead was detected in two samples above its screening level.
 - 15 – Manganese was detected in two samples above its RBC and BRC.
 - 16 – Thallium was detected in one surface soil sample collected at SWMU 6. The detected
17 concentration was above its RBC and BRC.
 - 18 – Vanadium was detected in one sample at a concentration that exceeded its RBC and
19 BRC.

20 Analytes that exceeded the COPC screening criteria were further evaluated in the risk
21 assessment to determine which were considered COCs at SWMU 6. The risk assessment
22 evaluated unrestricted (i.e., residential) and industrial (site worker) future land use
23 scenarios. COCs were identified as any chemical with a concentration exceeding an RBC
24 calculated at an Incremental Lifetime Cancer Risk (ILCR) of 10^{-6} or greater, or whose hazard
25 quotient exceeds 0.1. This evaluation resulted in antimony, Aroclor-1254, Aroclor-1260,
26 arsenic, BEQs, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dioxin, and thallium being identified as COCs
27 for surface soil based on an unrestricted land use scenario based RBCs. Of these, Aroclor-
28 1260, arsenic, BEQs, 4,4'-DDT, and dioxin, were identified as industrial land use COCs for
29 surface soil.

30 **2.2.2 Subsurface Soil Results**

31 COPC screening criteria for subsurface soil consisted of soil screening levels (SSLs) and, for
32 inorganics the Zone G BRCs. SSLs were based on a dilution attenuation factor (DAF) of 20.
33 Inorganic chemical concentrations were compared with the higher of the BRC or SSL values.
34 Analytical results from subsurface soil sampling were compared against these criteria with
35 the following results.

- 1 • **VOCs:** Seven VOCs were detected in subsurface soil at SWMU 6. The nature of
2 contamination section (10.12.3) concluded that no VOCs were detected above their
3 respective SSLs in subsurface soil.
- 4 • **SVOCs:** Twenty-one SVOCs were detected in SWMU 6 subsurface soil samples.
5 Benzo[a]anthracene and carbazole were detected in subsurface soil above their
6 respective SSLs (DAF=20). Benzo[a]anthracene was detected in 12 of 29 subsurface
7 samples (25 pre-RFI samples, two duplicate samples, two RFI samples). It exceeded its
8 SSL in one sample. Carbazole was detected in one sample above its SSL.
- 9 • **Pesticides:** Six pesticides were detected in subsurface soil at SWMU 6. One pesticide
10 (delta-BHC) was detected at concentrations that exceeded its SSL (DAF=20). Delta-BHC
11 was detected in two of 29 subsurface soil samples at concentrations that exceeded its
12 SSL.
- 13 • **PCBs:** One PCB, Aroclor-1260, was detected in three of 29 subsurface soil samples.
14 Subsurface concentrations of Aroclor-1260 were all below its SSL.
- 15 • **Metals:** Twenty metals were detected in SWMU 6 subsurface soil. Arsenic and mercury
16 exceeded their respective SSLs and BRCs in subsurface soil. Seven samples contained
17 arsenic at concentrations that exceeded its SSL and BRC. One sample contained mercury
18 at a concentration that exceeded its SSL and BRC.
- 19 Analytes that exceeded the screening criteria were further evaluated in the risk assessment
20 to determine which were considered COCs at SWMU 6. The human health risk assessment
21 (HHRA) section (10.12.6) of the RFI report identified no COCs in subsurface soil.

22 **2.2.3 Groundwater Results**

23 Analytical results from groundwater sampling were compared with the respective
24 maximum contaminant levels (MCLs) and, for inorganics, Zone G BRCs. Where MCLs were
25 absent for an analyte, the EPA Region III tap water RBC was used as a screening criterion.
26 Analytical results from groundwater sampling were compared against these criteria with
27 the following results.

- 28 • **VOCs/SVOCs:** The nature of contamination section (10.12.4) concluded that no VOCs
29 were detected in groundwater. One SVOC (pentachlorophenol) was detected in shallow
30 groundwater above its tap water RBC in one sample.
- 31 • **Pesticides/PCBs:** No pesticides or PCBs were detected in shallow groundwater at
32 SWMU 6.

- 1 • **Metals:** Arsenic, barium, beryllium, and iron exceeded their respective RBCs and BRCs.

2 The fate and transport section of the RFI report (10.12.5) reported that only one organic
3 compound (pentachlorophenol) was detected above its COPC screening criteria in
4 groundwater. By the third-quarter sampling event, pentachlorophenol was not detected,
5 and therefore, was not considered a COC.

6 Concentrations of arsenic, barium, beryllium, and iron exceeded their respective RBCs and
7 BRCs in groundwater samples in the first quarter. Thallium exceeded its RBC in the third
8 quarter sampling event.

9 Analytes that exceeded the COPC screening criteria were further evaluated in the risk
10 assessment to determine which of them was considered a COC at SWMU 6. The HHRA
11 section (10.12.6) evaluated COPCs to determine which compounds would be considered
12 COCs. COCs were identified for groundwater as any chemical with a concentration above
13 an RBC value at an ILCR of 10^{-6} or greater, or whose hazard quotient exceeds 0.1. Based on
14 the first quarter analytical results, this evaluation resulted in arsenic, beryllium, and
15 pentachlorophenol being identified as COCs for groundwater at SWMU 6, based on an
16 unrestricted land use scenario.

17 **2.3 Human Health Risk Assessment**

18 Section 10.12.6 of the RFI presents the HHRA conducted for SWMU 6. Approximately 42
19 surface soil samples, and data collected in 1993 from seven monitoring wells were used for
20 this risk assessment.

21 **2.3.1 Surface Soil COCs**

22 The HHRA identified the following COCs for surface soil at SWMU 6 based on 1993 and RFI
23 data:

- 24 • **Unrestricted (i.e., Residential) Land Use Scenario:** Antimony, Aroclor-1254, Aroclor-1260,
25 arsenic, BEQ, 4,4'-DDD, 4,4'-DDE 4,4'-DDT, dioxin, and thallium.
- 26 • **Industrial Land Use Scenario:** Aroclor-1260, arsenic, BEQs, dioxin, and 4,4'-DDT.

27 **2.3.2 Subsurface Soil COCs**

28 No COCs were identified in the HHRA for subsurface soil.

1 2.3.3 Groundwater COCs

2 The HHRA identified the following COCs for shallow groundwater at SWMU 6 based on
3 first quarter sampling only:

- 4 • **Unrestricted (i.e., Residential) Land Use Scenario**– Arsenic, barium, beryllium¹, and
5 pentachlorophenol.
- 6 • **Industrial Land Use Scenario** - Arsenic and beryllium.

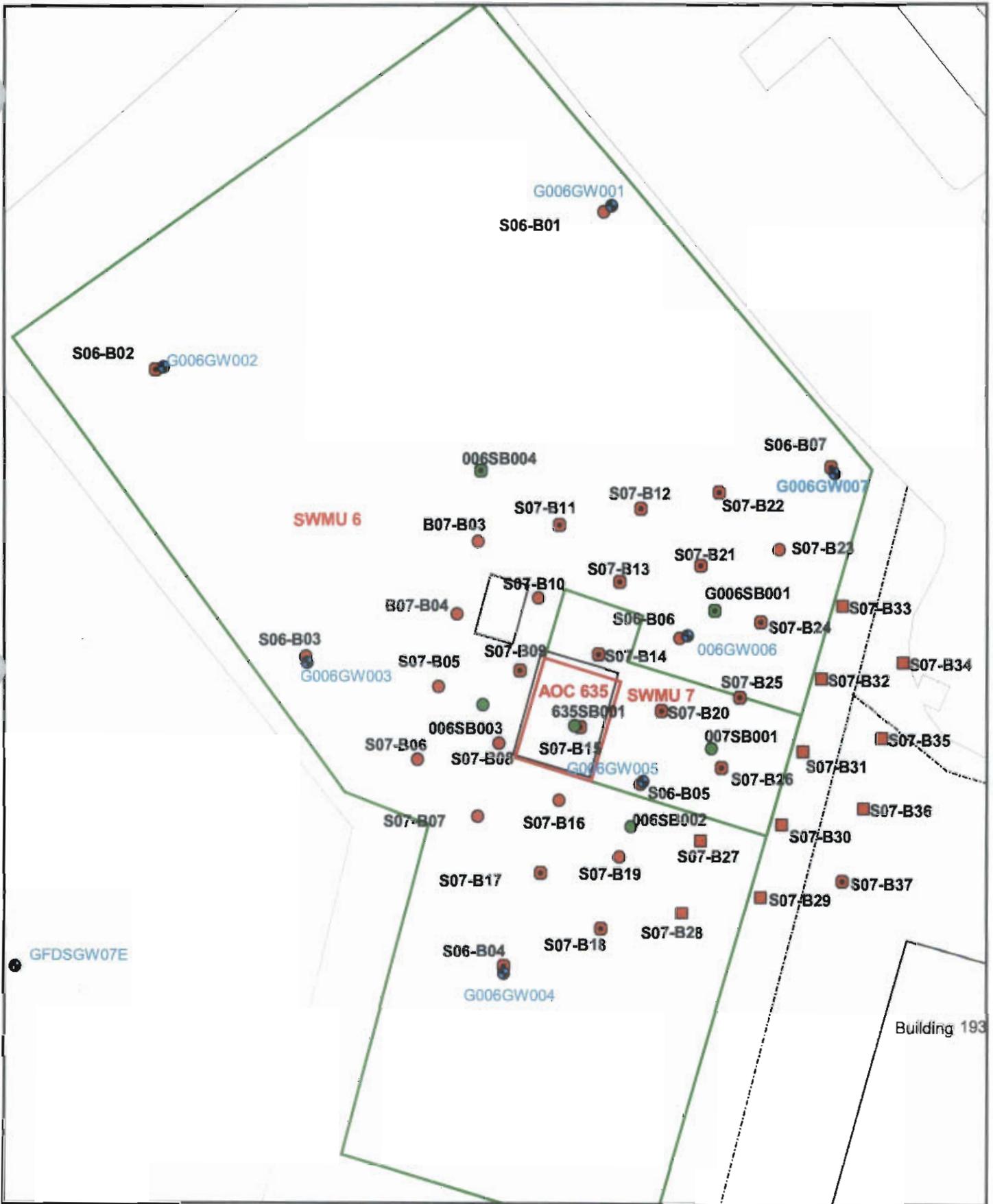
7 The RFI report recommended a CMS for soil and shallow groundwater at the site based on
8 potential risks posed by the COCs.

9 The COCs are further addressed in Sections 3.0, 4.0, and 5.0 as targets of IMs and
10 investigations, and, to the extent they remain on site after the IMs, to determine if they are
11 COCs based on current site conditions.

¹ On RFI report page 10-12-221, benzene is listed as a COC in shallow groundwater. However, benzene was not detected at this site. Presumably, beryllium, which was introduced as a COC on page 10.12.196, was intended to be listed instead of benzene. Thus, this is assumed to be a typographical error.

TABLE 2-1
 Site Investigation and Remediation History for SWMU 6
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Dates	Media Investigated	Sample Stations	Reporting Document	Phase
1981	Soil (composites)	A-D	Confirmation Study, Geraghty & Miller, 1982	Closure
1982	Soil (composites)	OC-1 through OC-12 (Composites)	[Reported in Interim RFA, Ebasco, 1987]	
1982	Groundwater	WOC-1, 2		
1986-1987	Soil		Interim RFA, Ebasco, 1987	RFA
Sep-Oct 93	Soil	41 borings with S06, S07, B07 prefixes	[Reported in Zone G RFI Report Feb 20, 98]	Pre-RFI
1995	None		Final RFA, Allen & Hoshall, 1995	RFA
Sep-Oct 96	Soil	006SB001-4 007SB001 635SB001	[Reported in Zone G RFI Report Feb 20, 98]	RFI
Apr 97-Mar 98	Soil	1-75	IMCR, DET, Jul 27, 98	IM
Jan 17, 02 Jan 22, 02	Soil	006SB005-15 006SB016		RFI
May 02	Soil	006SB017-29 006M0001		RFI, IM
May 02	Soil, Sediment	006SB017-29 006M0001		RFI, IM
May 02	Soil	006SB030-34		RFI, IM
Jun 11, 02	Soil	006SB035-48		RFI
	Soil	1 (TCLP)		IM
June 21, 02	Soil	006SB049-59		RFI, IM
July 31, 02	Groundwater	006GW001M5 through 007M5		RFI



- RFI Sample (1996)
 - Upper Interval
 - Upper and Lower Intervals
- Pre-RFI Samples (1993)
 - Lower Interval
 - Upper Interval
 - Upper and Lower Intervals
- Groundwater Well
- ~ Ditch
- Roads
- Pavement
- AOC Boundary
- SWMU Boundary
- Buildings

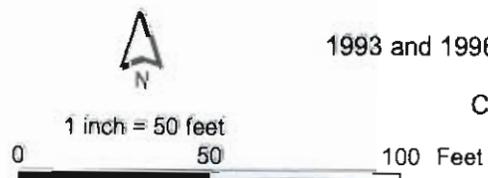


Figure 2-1
 1993 and 1996 RFI Sampling Locations
 SWMU 6, Zone G
 Charleston Naval Complex

3.0 Summary of UST/AST Removals and Interim Measures at SWMU 6

This section summarizes information available about the status of underground storage tanks (UST) and aboveground storage tanks (ASTs) at the site, and any IM activities at the site.

3.1 UST/AST Removals

Neither the RFA (EnSafe/Allen & Hoshall, 1995) nor the *Zone G RFI Report, Revision 0* (EnSafe, 1998) refer to the presence or possible presence of any USTs or ASTs at SWMU 6. According to the Navy (NAVFAC, 2001), there were no storage tanks associated with Building 3902. Therefore, further evaluation of this issue at combined SWMU 6 is not warranted.

3.2 1998 Interim Measure

After the RFI report and before the proposed CMS, the Navy performed an IM at SWMU 6 to remove equipment, structures, and contaminated soil with concentrations that exceeded EPA Region III residential RBCs. The DET conducted the IM in 1997 and 1998 (DET, 1998). The areas excavated are shown on Figure 3-1. The goal of the IM was the removal of lead-, PCB-, and pesticide-impacted soil at the site. The target media cleanup standards (MCSs) were based on the EPA Region III RBC values (1996) for pesticides and lead (400 milligrams per kilogram [mg/kg]). The target MCS for PCBs was the 1 mg/kg action level as specified in Title 40 Section 761.125 of the Code of Federal Regulations (40 CFR 761.125). The IM did not address the presence of BEQs at SWMU 6.

The initial scope of the DET's IM included the demolition and disposal of Building 3902, the removal and disposal of the PCB-contaminated concrete slab, the excavation and disposal of 28 cubic yards (yd³) of PCB-contaminated soil, the excavation and disposal of 18 yd³ of pesticide-contaminated soil, and the excavation and disposal of 90 yd³ of lead-contaminated soil.

As the IM progressed, it became apparent from the results of the confirmation samples that the extent of contaminated soil was greater than expected. As a result, the scope of the IM

1 was expanded. The final volume of excavated soil was estimated to be 900 yd³. An
2 additional 150 yd³ of contaminated concrete was removed.

3 Following the removal of the approximately 1,050 yd³ of contaminated soil and debris,
4 confirmation sample results indicated that pesticides and PCBs were still present at
5 concentrations above their respective target MCSs. However, the Project Team decided that
6 the intent of the IM had been met to the extent practicable and the excavation was
7 backfilled.

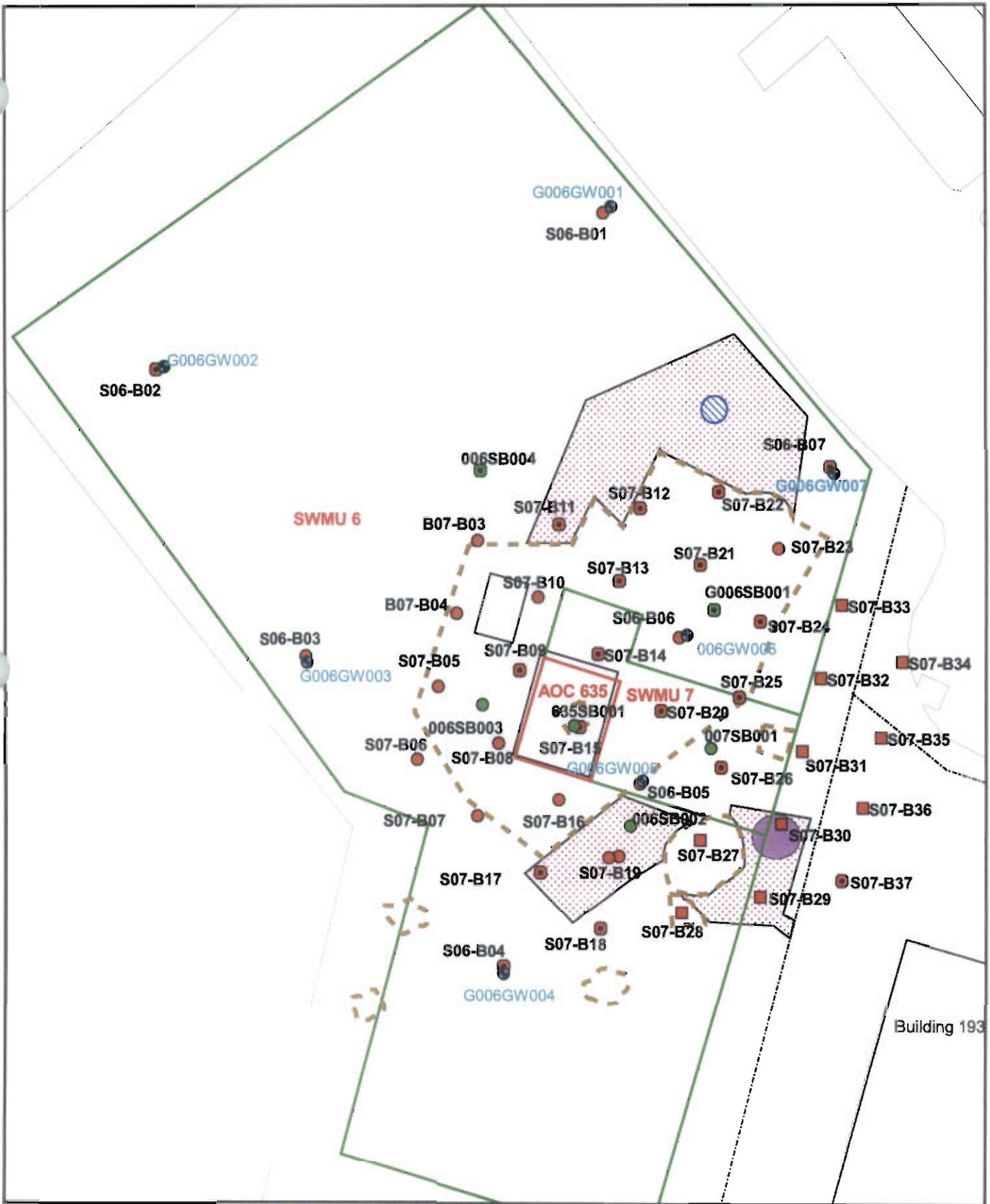
8 A copy of the *Interim Measure Completion Report for SWMU 6, 7 & AOC 635, Charleston Naval*
9 *Complex, Charleston SC* (DET, 1998) is included in Appendix A.

10 **3.3 2002 Interim Measure**

11 From January to July 2002, CH2M-Jones conducted pre-excavation delineation sampling
12 and excavation of contaminated soil from several areas of SWMU 6 in order to remove soil
13 with concentrations of COCs above the MCSs, as presented in the *Interim Measure Work Plan,*
14 *Soil Removal, SWMU 6, Zone G* prepared by CH2M-Jones (2002d). The areas excavated are
15 shown on Figure 3-1. The results of these investigations are presented in Section 4.0, and
16 details of the removal actions are presented in the IM Completion Report in Section 7.0. A
17 summary is provided below.

18 The 1998 IM did not completely remove soil contaminated above residential RBCs. CH2M-
19 Jones continued investigations to assess the feasibility of remediating surface soil to allow
20 unrestricted land use at SWMU 6. A sampling plan was developed in January 2002 to
21 complete RFI delineation activities and evaluate if the 1998 IM was adequate as a final
22 remedy. The results of this investigation were reviewed, MCSs were proposed, and
23 additional areas with PCB, pesticide, and BEQ surface soil concentrations requiring
24 remediation were identified (CH2M-Jones, 2002d).

25 CH2M-Jones performed additional investigations in May and June 2002, and refined the
26 proposed IM removal areas and completed soil removal in June 2002. At the conclusion of
27 the 2002 IM, an evaluation of the data was conducted to assess whether the COCs were
28 adequately removed and cleanup objectives achieved for surface soil to levels that would
29 allow industrial land use at this site (see Section 5.0). The results indicate that this objective
30 was achieved.



- Groundwater Well
- RFI Samples (1996)
- Upper Interval
- Upper and Lower Interval
- Pre-RFI Samples (1993)
- Lower Interval
- Upper Interval
- Upper and Lower Intervals
- 1998 IM Excavation Area (Depth Varies)
- Roads
- AOC Boundary
- Buildings
- 2002 IM Excavation (CH2M-Jones) (3 foot)
- 2002 IM Excavation (CH2M-Jones) (2 foot)
- 2002 IM Excavation (CH2M-Jones) (1 foot)
- Ditch
- SWMU Boundary

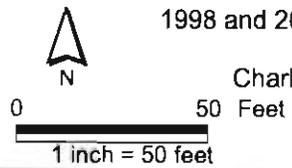


Figure 3-1
 1998 and 2002 Excavation Areas
 SWMU 6, Zone G
 Charleston Naval Complex

1 **4.0 Summary of Additional Investigations**

2 This section describes the investigations that were conducted at SWMU 6 subsequent to the
3 initial RFI. The soil and groundwater results conducted after the *Zone G RFI Report, Revision*
4 *0* (EnSafe, 1998) was issued are summarized and screened against applicable criteria.
5 Summaries of detected compounds are presented in Tables 4-1 (organics in surface soil), 4-2
6 (inorganics in surface soil), 4-3 (organics in subsurface soil), 4-4 (inorganics in subsurface
7 soil), 4-5 (organics in sediment), 4-6 (organics in groundwater), and 4-7 (inorganics in
8 groundwater). Appendix B contains the complete analytical data summary tables and
9 Appendix C contains the data validation summary for the 2002 samples collected.
10 Additionally some of the soil samples with contamination discussed in this section were
11 collected prior to implementation of the interim removal action by CH2M-Jones (see Figure
12 5-1 and Section 7.0), and thus do not represent current site conditions, as they are replaced
13 with clean soils. Residual site risks and soil concentrations are discussed in Section 5.0.

14 **4.1 Soil Investigation**

15 After the RFI investigations (1993 and 1996) and the DET's IM (1998), CH2M-Jones
16 continued soil investigations to complete the delineation of contaminants in surface and
17 subsurface soil, to confirm the results of the IM, and to confirm the vertical and horizontal
18 extent of contaminated soil proposed for removal. Sediment was collected from the ditch
19 adjacent to the east side of the site and analyzed to check if soil contaminants had migrated
20 to the ditch. These additional investigations were conducted over several phases as
21 summarized in the following subsections. A summary of compounds detected above
22 screening criteria in the additional investigations conducted after the RFI is presented in
23 Section 4.1.4.

24 **4.1.1 January 2002 Sampling**

25 Eleven surface and six subsurface soil samples were collected in January 2002 (stations
26 G006SB005 through G006SB015). Two locations were sampled on the north side of the 1998
27 IM excavation to assess PCB-contaminated soil, and nine locations were sampled on the
28 south side of the previous excavation to assess BEQ and pesticide contamination in soil. The
29 locations of these samples are presented in Figure 4-1.

1 **4.1.2 May 2002 Sampling**

2 Additional sampling and analyses were proposed in a *Phase II Sampling and Analysis Plan*,
3 *SWMU 6, Zone G* (CH2M-Jones, 2002c). Nine surface, four subsurface, and five intermediate
4 depth (1 to 2 ft bls) soil samples were collected in May 2002 (stations G006SB017 through
5 G006SB029). The intermediate (confirmation) samples were proposed to establish required
6 excavation depths in areas planned for soil removal. Other samples were taken in response
7 to SCDHEC comments about BEQs in the northwest corner of the site, additional
8 delineation of PCBs and pesticides, and to confirm that fill material used by DET IM (1998)
9 is uncontaminated. Also, one sediment sample was collected from the bottom of the ditch
10 (G006M0001) adjacent to the site on the east side.

11 RFI groundwater results indicated elevated levels of arsenic in groundwater at monitoring
12 well G006GW003. However, subsurface soils in this area were not sampled for arsenic.
13 Thus, two additional surface and seven additional subsurface samples (stations G006SB030
14 through G006SB034) were collected in May 2002 (CH2M-Jones, 2002e) to assess arsenic
15 concentrations in this area.

16 The locations of these samples are presented in Figure 4-1. Results from these Phase II
17 analyses indicated sediments in the ditch were not contaminated, there was no elevated
18 arsenic in the soil near monitoring well G006GW003, but that PCBs, BEQs, and DDT were
19 still above screening criteria and not completely delineated horizontally or vertically.

20 **4.1.3 June 2002 Sampling**

21 Additional sampling and analyses were proposed in the *IM Work Plan Addendum, SWMU 6,*
22 *Zone G* (CH2M-Jones, 2002f) to complete the delineation and confirmation to a higher level
23 of confidence prior to implementing the IM. Ten surface, three subsurface, and five
24 intermediate (1 to 2 ft bls) soil samples were collected in June 2002 (stations G006SB035
25 through G006SB040, G006SB042 through G006SB048) as proposed in the addendum. These
26 results indicated that BEQs and pesticides were delineated, but that PCBs on the north side
27 of the previous DET IM were not completely delineated. Thus, nine surface and one
28 intermediate depth (1 to 2 ft bls) soil samples were collected in late June 2002 (stations
29 G006SB049 through G006SB050, G006SB052 through G006SB059).

30 The locations of these samples are presented in Figure 4-1. The results from both sampling
31 events in June were reviewed prior to completion of the 2002 IM. The delineation of all
32 COCs at the site was completed, and the final adjustment of IM excavation areas was made.

1 **4.1.4 Results and Screening of Additional Soil Investigations**

2 The analytical results from additional soil samples were compared to applicable screening
3 criteria. For surface soil, the analytical results for organic compounds were compared to
4 EPA Region III residential RBCs (HI=0.1 for non-carcinogens) and generic SSLs (DAF=1 for
5 VOCs, DAF=10 for other compounds). Inorganic surface soil analytical results were
6 compared to RBCs (HI=0.1 for non-carcinogens), SSLs (DAF=10), and the Zone G range of
7 background concentrations. For subsurface soil, organic results were compared to SSLs
8 (DAF=1 for VOCs, DAF=10 for other compounds) and inorganic results were compared to
9 SSLs (DAF=10) and the Zone G subsurface soil range of background concentrations.
10 Calculated BEQ values were compared to the background concentrations presented in the
11 *Background Study Report: Technical Information for Development of Background BEQ Values*
12 (CH2M-Jones, 2001a) and subsequently adopted by the BCT.

13 To determine if soil concentrations of Aroclor-1260 are a potential leaching hazard, the
14 comparison of site data to an appropriate SSL for Aroclor-1260 was necessary. A generic SSL
15 was not available for Aroclor-1260. Therefore, CH2M-Jones calculated a site-specific SSL for
16 this constituent. The site-specific SSL calculation is consistent with EPA's *Soil Screening*
17 *Guidance: User's Guide* (EPA, 1996b) and the *Soil Screening Guidance: Technical Background*
18 *Document* (EPA, 1996a). Table 4-8 presents the SSL calculation and input parameters. The
19 SSL for Aroclor-1260 was determined to be 7.2 mg/kg for an unpaved scenario. The
20 analytical results for Aroclor-1260 were compared to the site-specific SSL.

21 **Organic Compounds in Surface Soil**

22 Two VOCs, toluene and chlorobenzene, were detected in surface soil samples collected
23 during the June 2002 sampling. The detected concentrations were below their respective
24 RBCs (HI=0.1) and SSLs (DAF=1). Therefore, no VOCs were identified as COPCs.

25 Eighteen SVOCs were detected in the SWMU 6 surface soil samples (see Table 4-1).

26 Benzo[a]anthracene was detected in two surface soil samples at concentrations that
27 exceeded its RBC, SSL, and Zone G background concentration. Benzo[b]fluoranthene was
28 detected in two samples at concentrations that exceeded its RBC and Zone G background
29 concentration. One sample also contained benzo[b]fluoranthene above its SSL.

30 Benzo[a]pyrene was detected above its RBC and background concentration in one sample.
31 Benzo[a]pyrene was not detected above its SSL in any surface soil sample. Indeno(1,2,3-
32 c,d)pyrene was detected above its background concentration, RBC, and SSL in one sample.
33 Because the detected SVOCs were cPAHs that are evaluated as BEQs, BEQ values were
34 calculated. The calculated BEQ value in one surface soil sample exceeded the surface soil

1 background value (1,304 micrograms per kilogram [$\mu\text{g}/\text{kg}$]) presented in the *Background*
2 *Study Report: Technical Information for Development of Background BEQ Values* (CH2M-Jones,
3 2001a) and subsequently adopted by the BCT. Based on this information, BEQs are
4 identified as COPCs in surface soil.

5 Seventeen pesticides were detected in surface soil samples from SWMU 6. DDT was
6 detected in two samples at concentrations that exceeded its RBC. The DDT concentrations
7 were all below the SSL for DDT in surface soil. DDD was detected at a concentration that
8 exceeded both its RBC and SSL in one sample. Alpha-BHC (hexachlorocyclohexane), beta-
9 BHC, and gamma-BHC were detected in several samples (see Table 4-1) at concentrations
10 that exceeded their respective SSLs, but were below their RBCs. Chlordane was detected at
11 concentrations that exceeded both its RBC and SSL in two samples. Dieldrin was detected in
12 three samples above its SSL. One sample also exceeded its RBC. Based on these data,
13 chlordane, dieldrin, DDD, and DDT are identified as COPCs based on human exposure.
14 Alpha-BHC, beta-BHC, gamma-BHC, chlordane, dieldrin, and DDD are identified as
15 COPCs for groundwater protection.

16 Three PCBs were detected in surface soil samples at SWMU 6. Only Aroclor-1260 was
17 detected at concentrations that exceeded screening criteria. Eight samples (see Table 4-1)
18 contained Aroclor-1260 at concentrations that exceeded its RBC. Of these, three samples
19 contained Aroclor-1260 above the site-specific SSL of 7.2 mg/kg. Based on the above
20 information, Aroclor-1260 is identified as a COPC for combined SWMU 6.

21 **Inorganic Compounds in Surface Soil**

22 Two surface soil samples were collected and analyzed for arsenic. The detected
23 concentrations of arsenic were below the Zone G background level. Therefore, no inorganic
24 COPCs were identified for surface soil.

25 **Organic Compounds in Subsurface Soil**

26 No VOCs were detected in the additional subsurface soil samples collected at combined
27 SWMU 6. Eighteen SVOCs were detected in the SWMU 6 subsurface soil samples.
28 Benzo[a]anthracene was detected in four samples at concentrations that exceeded its SSL.
29 Benzo[b]fluoranthene was detected in one sample above its SSL. Because the detected
30 SVOCs are cPAHs that are evaluated as BEQs, BEQ values were calculated. The calculated
31 BEQ values in two subsurface soil samples were above the subsurface soil background
32 value (1,400 $\mu\text{g}/\text{kg}$) presented in the the *Background Study Report: Technical Information for*

1 *Development of Background BEQ Values* (CH2M-Jones, 2001a) and subsequently adopted by
2 the BCT. Based on this information, BEQs are identified as COPCs in subsurface soil.

3 Twelve pesticides were detected in subsurface soil samples from SWMU 6. Four pesticides,
4 alpha-BHC, beta-BHC, gamma-BHC, and dieldrin were detected at concentrations that
5 exceeded their respective SSLs. Alpha-BHC was present above its SSL of 0.25 µg/kg in four
6 samples. Beta-BHC was present above its SSL of 1.5 ug/kg in three samples. Gamma-BHC
7 was present above its SSL of 4.5 µg/kg in two samples. Dieldrin was detected above its SSL
8 of 2 µg/kg in one sample. Based on these data alpha-BHC, beta-BHC, gamma-BHC, and
9 dieldrin are identified as subsurface soil COPCs for groundwater protection.

10 Aroclor-1260 was detected in one subsurface soil sample. The detected concentration was
11 below the site-specific SSL of 7.2 mg/kg for Aroclor-1260. Therefore, Aroclor-1260 is not
12 selected as a COPC for subsurface soil.

13 **Inorganic Compounds in Subsurface Soil**

14 Six additional subsurface soil samples were collected for arsenic analysis at SWMU 6. One
15 sample contained arsenic above its generic SSL of 14.5 mg/kg, but was within the Zone G
16 range of background concentrations. Therefore, arsenic was not identified as a COPC in soil.

17 **4.2 Sediment Investigation**

18 On May 8, 2002, a sediment sample was collected from the drainage ditch that runs along
19 the southeast side of the site. This sample was collected to determine if site COCs/COPCs
20 were potentially migrating offsite.

21 The drainage ditch, from which the sediment sample was collected, is part of the storm
22 water collection system and discharges into the underground storm sewer to the northeast
23 of the site. The outfall (43) for the storm sewer system for this area discharges to the Cooper
24 River, adjacent to Pier L. Because the drainage ditch does not always contain water, the
25 ditch is not capable of supporting aquatic life. Therefore the sample collected from the ditch
26 represents a potential surface runoff accumulation area for surrounding soil. The results for
27 this sample were compared against the EPA Region III residential RBCs. Table 4-5 presents
28 a summary of detected compounds and the screening criteria. Ecological screening criteria
29 are also presented for reference only as a conservative screening comparison protective of
30 offsite aquatic receptors.

1 Only PAHs and DDD were detected in the sediment sample. All results were below the EPA
2 Region III residential RBCs (HI=0.1), and below EPA Region IV ecological sediment
3 screening criteria. No chemicals were identified as COPCs for the sediment sample.

4 **4.3 Groundwater Investigation**

5 In July 2002, CH2M-Jones redeveloped all seven monitoring wells at the site. Well
6 development consisted of surging the well with a surge block followed by pumping 30 to 60
7 gallons until turbidity was measured to be at or below 10 nephelometric turbidity units
8 (NTUs).

9 Groundwater samples were collected at SWMU 6 in July 2002 and water levels were
10 measured from all seven monitoring wells (G006GW001 through G006GW007) at the site.
11 During collection of the groundwater samples pH, conductivity, temperature, and turbidity
12 were measured. These field data are presented in Table 4-9 for this sampling effort and all
13 four RFI sampling events. Review of the data in Table 4-9 shows that in spite of recent
14 redevelopment, turbidity levels during sampling were quite high. Suspended solids have
15 likely had a significant impact on the analytical results for these samples.

16 The samples collected in July 2002 were analyzed for metals, PCBs, pesticides, and SVOCs
17 during this sampling effort. Tables 4-6 and 4-7 present a summary of detected compounds
18 for organic and inorganic compounds respectively. The locations of SWMU 6 monitoring
19 wells and groundwater potentiometric contours are shown on Figure 4-1. This section
20 provides a summary of these results.

21 The analytical results from these groundwater samples were compared to MCLs (or RBCs if
22 MCLs were not available) and the Zone G range of background concentrations for shallow
23 groundwater.

24 **4.3.1 Organic Compounds in Groundwater**

25 **Pesticides**

26 Three pesticides, DDD, DDE, and DDT were detected in the additional SWMU 6
27 groundwater samples. DDD was detected in a single sample below its RBC (0.28
28 micrograms per liter [$\mu\text{g}/\text{L}$]).

29 DDE was detected in five of seven SWMU 6 samples. Four samples contained DDE at
30 concentrations that exceeded its RBC ($0.2 \mu\text{g}/\text{L}$). Detected concentrations of DDE ranged
31 from 0.048 J to $2.2 \mu\text{g}/\text{L}$.

1 DDT was also detected in five of seven SWMU 6 samples. It was detected in the same five
2 samples as DDE. Detected concentrations of DDT were all above its RBC (0.2 µg/L) and
3 ranged from 0.28 to 1.8 µg/L.

4 DDE and DDT are identified as COPCs for shallow groundwater based on these data. The
5 presence of these constituents is further discussed in Section 5.0.

6 **Semivolatile Organic Compounds**

7 Six SVOCs were detected in additional SWMU 6 groundwater samples. No SVOC was
8 detected above its RBC (MCLs are not available for the detected SVOCs). Therefore, no
9 SVOCs were identified as shallow groundwater COPCs.

10 **4.3.2 Inorganic Compounds in Groundwater**

11 Fourteen inorganic compounds were detected in additional groundwater samples at SWMU
12 6. Antimony was detected in two samples (006GW001M5, 8.42 µg/L and 006GW006M5,
13 9.16 µg/L). It exceeded its MCL (6 µg/L) and the Zone G range of background
14 concentrations in both samples in which it was detected.

15 Arsenic was detected in five of seven wells resampled at SWMU 6. One sample
16 (006GW003M5, 323 µg/L) contained arsenic at a concentration that exceeded its MCL (50
17 µg/L) and the Zone G range of background concentrations for arsenic.

18 Iron was detected in all seven samples from SWMU 6 monitoring wells. All seven detections
19 were above the RBC (1,100 µg/L, HI=0.1) for iron. One sample (006GW003M5, 77,500 µg/L)
20 contained iron at a concentration that also exceeded the Zone G range of background
21 concentrations for iron. Detected concentrations (see Table 4-6) ranged from 7,540 to 77,500
22 µg/L.

23 Manganese was also detected in all seven samples collected at SWMU 6. All seven
24 detections were above its RBC (73 µg/L, HI=0.1). None of the samples had reported
25 concentrations of manganese above the Zone G range of background concentrations.
26 Detected concentrations (see Table 4-6) ranged from 257 to 1,290 µg/L. The maximum
27 concentration of manganese detected in background samples (grid) was 7,980 µg/L. Because
28 detected concentrations of manganese were all within the range of Zone G background
29 concentrations, it is not considered a COPC.

30 Thallium was detected in four of seven samples from SWMU 6 monitoring wells. All four
31 detections were reported at concentrations that exceed the MCL (2 µg/L) for thallium (see

1 Table 4-6). Thallium was not detected in the 2 Zone G grid wells used for developing
2 background concentrations in Zone G.

3 Concentrations of calcium, magnesium, and potassium were found to exceed their range of
4 background concentration developed for Zone G. Background concentrations were not
5 established for sodium. These inorganic compounds were not reported in the site history,
6 are all essential nutrients and are not expected to be a threat to human health or the
7 environment unless present at extremely high concentrations. Therefore, these constituents
8 are not considered COPCs although some minor exceedances of Zone G background
9 concentrations were noted.

10 In summary, antimony, arsenic, iron, and thallium are identified as inorganic COPCs for
11 shallow groundwater based on these data. The presence of these constituents is further
12 discussed in Section 5.0.

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
Volatile Organic Compounds						
Toluene	006SB01101	7.2	=	1,600	600 (DAF=1)	NA
Chlorobenzene	006SB01101	23	=	160	70 (DAF=1)	NA
Semivolatile Organic Compounds						
1-Methylnaphthalene	006SB00701	2.5	J	160,000	NL	NA
				2-Methylnaphthalene		
	006SB00801	6.1	J			
	006SB00901	1.8	J			
	006SB01001	4	J			
	006SB01101	5	J			
	006SB01301	4.3	J			
2-Methylnaphthalene	006SB01401	2.4	J			
	006SB00801	8	=	160,000	NL	NA
	006SB00701	3	J			
	006SB00901	1.6	J			
	006SB01001	4.3	J			
	006SB01101	22	J			
	006SB01201	1.4	J			
	006SB01301	3.9	J			
	006SB01401	3.6	J			
006SB01501	1	J				
Acenaphthene	006SB00801	18	=	470,000	285,000	NA
	006SB04401	222	=			
	006SB00701	2.2	J			
	006SB00901	13	J			
	006SB01001	1.9	J			
	006SB01101	12	J			
	006SB01201	5	J			
	006SB01401	3.9	J			

TABLE 4-1

Organic Compounds Detected in Surface Soil – Additional Investigation

RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
Acenaphthene	006SB02401	14.8	J	470,000	285,000	NA
	006SB04601	14.9	J			
	006SB02101	119	J			
Acenaphthylene	006SB00701	11	=	470,000 Acenaphthene	285,000 Acenaphthene	NA
	006SB01001	26	=			
	006SB01201	8.4	=			
	006SB01401	23	=			
	006SB04401	72.3	=			
	006SB00801	5.8	J			
	006SB00901	5.5	J			
	006SB01101	180	J			
	006SB01301	12	J			
	006SB01501	4.2	J			
	006SB02001	5.1	J			
	006SB02401	70.9	J			
	006SB02101	85	J			
	Anthracene	006SB00701	14	=	2,300,000	6,000,000
006SB00801		31	=			
006SB01001		41	=			
006SB01201		15	=			
006SB01401		26	=			
006SB04401		346	=			
006SB00901		27	J			
006SB01101		170	J			
006SB01301		8	J			
006SB01501		2.5	J			
006SB02001		8.1	J			
006SB02401		236	J			

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration																																																																																					
Anthracene	006SB04601	43	J	2,300,000	6,000,000	NA																																																																																					
	006SB02101	307	J				Benzo[a]Anthracene ^c	006SB00701	72	=	870	1,000	616	006SB00801	110	=	006SB01001	60	=	006SB01201	58	=	006SB01401	100	=	006SB01501	13	=	006SB02401	740	=	006SB04401	599	=	006SB04601	213	=	006SB00901	200	J	006SB01101DL	1,300	J	006SB01301	33	J	006SB01801	20.2	J	006SB01901	11.6	J	006SB02001	49.3	J	006SB02101	1,540	J	Benzo[a]Pyrene ^c	006SB00701	60	=	87	4,000	598	006SB00801	120	=	006SB01001	170	=	006SB01201	84	=	006SB01401	120	=	006SB01501	18	=	006SB02401	570	=	006SB04401	530	=	006SB04601	307	=	006SB00901	210
Benzo[a]Anthracene ^c	006SB00701	72	=	870	1,000	616																																																																																					
	006SB00801	110	=																																																																																								
	006SB01001	60	=																																																																																								
	006SB01201	58	=																																																																																								
	006SB01401	100	=																																																																																								
	006SB01501	13	=																																																																																								
	006SB02401	740	=																																																																																								
	006SB04401	599	=																																																																																								
	006SB04601	213	=																																																																																								
	006SB00901	200	J																																																																																								
	006SB01101DL	1,300	J																																																																																								
	006SB01301	33	J																																																																																								
	006SB01801	20.2	J																																																																																								
	006SB01901	11.6	J																																																																																								
	006SB02001	49.3	J																																																																																								
006SB02101	1,540	J																																																																																									
Benzo[a]Pyrene ^c	006SB00701	60	=	87	4,000	598																																																																																					
	006SB00801	120	=																																																																																								
	006SB01001	170	=																																																																																								
	006SB01201	84	=																																																																																								
	006SB01401	120	=																																																																																								
	006SB01501	18	=																																																																																								
	006SB02401	570	=																																																																																								
	006SB04401	530	=																																																																																								
	006SB04601	307	=																																																																																								
	006SB00901	210	J																																																																																								
	006SB01101	460	J																																																																																								

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
Benzo[a]Pyrene ^c	006SB01301	52	J	87	4,000	598
	006SB01801	14.4	J			
	006SB01901	6.8	J			
	006SB02001	39	J			
	006SB02101	1,610	J			
Benzo[b]Fluoranthene ^c	006SB00701	130	=	870	2,500	608
	006SB00801	180	=			
	006SB01001	220	=			
	006SB01401	180	=			
	006SB02401	1,860	=			
	006SB00901	280	J			
	006SB01101	680	J			
	006SB01301	79	J			
	006SB01801	22.2	J			
	006SB01901	11	J			
	006SB02001	69.9	J			
	006SB02101	3,210	J			
	Benzo[g,h,i]Perylene	006SB00701	36			
006SB00801		71	=			
006SB01001		120	=			
006SB01201		77	=			
006SB01401		58	=			
006SB01501		12	=			
006SB02401		482	=			
006SB00901		160	J			
006SB01101		220	J			
006SB01301		28	J			
006SB01801		75	J			
006SB02001		92.1	J			

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
Benzo[g,h,i]Perylene	006SB04401	372	J	NL	NL	NA
	006SB04601	229	J			
	006SB02101	1,950	J			
Benzo[k]Fluoranthene ^c	006SB00701	90	=	8,700	24,500	596
	006SB00801	100	=			
	006SB01001	120	=			
	006SB01201	160	=			
	006SB01401	150	=			
	006SB01501	46	=			
	006SB02401	666	=			
	006SB00901	150	J			
	006SB01101	580	J			
	006SB01301	46	J			
	006SB01801	11.3	J			
	Chrysene ^c	006SB00701	150	=	87,000	80,000
006SB00801		140	=			
006SB01001		120	=			
006SB01201		85	=			
006SB01401		180	=			
006SB01501		18	=			
006SB02401		1,890	=			
006SB04401		594	=			
006SB04601		232	=			
006SB00901		220	J			
006SB01101		760	J			
006SB01301		55	J			
006SB01801		16.4	J			
006SB01901		9.1	J			
006SB02001		35	J			

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
Chrysene ^c	006SB02101	1,560	J	87,000	80,000	620
Dibenz(a,h)Anthracene ^c	006SB00701	16	=	87	1,000	525
	006SB00801	33	=			
	006SB01001	42	=			
	006SB01201	24	=			
	006SB01401	30	=			
	006SB00901	44	J			
	006SB01101	180	J			
	006SB01301	12	J			
Fluoranthene	006SB01501	6	J			
	006SB00701	200	=	310,000	2,150,000	NA
	006SB00801	250	=			
	006SB01001	120	=			
	006SB01201	140	=			
	006SB01401	310	=			
	006SB01501	13	=			
	006SB02401	2,800	=			
	006SB04401	1,580	=			
	006SB04601	330	=			
	006SB00901	400	J			
	006SB01101DL	1,600	J			
	006SB01301	57	J			
	006SB01801	28.3	J			
006SB01901	11.7	J				
006SB02001	43.4	J				
006SB02101	1,710	J				
Fluorene	006SB00801	18	=	310,000	280,000	NA
	006SB04401	186	=			
	006SB00701	1.7	J			

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
Fluorene	006SB00901	8.6	J	310,000	280,000	NA
	006SB01001	3	J			
	006SB01101	50	J			
	006SB01201	3.8	J			
	006SB01401	3.7	J			
	006SB02001	4	J			
	006SB02401	41	J			
	006SB04601	13.2	J			
	006SB02101	90.9	J			
Indeno(1,2,3-c,d)Pyrene ^c	006SB00701	38	=	870	700	525
	006SB00801	64	=			
	006SB01001	110	=			
	006SB01201	44	=			
	006SB01401	51	=			
	006SB01501	11	=			
	006SB02401	470	=			
	006SB04401	428	=			
	006SB04601	335	=			
	006SB00901	150	J			
	006SB01101	180	J			
	006SB01301	25	J			
	006SB01801	93.3	J			
	006SB02001	108	J			
	006SB02101	1,760	J			
Naphthalene	006SB00701	7.8	=	160,000	42,000	NA
	006SB00801	20	=			
	006SB04401	159	=			
	006SB00901	1.5	J			
	006SB01001	6.5	J			

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
Naphthalene	006SB01101	13	J	160,000	42,000	NA
	006SB01201	3	J			
	006SB01301	2.2	J			
	006SB01401	5	J			
	006SB01501	2.6	J			
	006SB02001	6.7	J			
	006SB02401	14.1	J			
	006SB02101	69.3	J			
Phenanthrene	006SB00701	25	=	NL	NL	NA
	006SB00801	170	=			
	006SB01001	34	=			
	006SB01201	47	=			
	006SB01401	54	=			
	006SB02401	385	=			
	006SB04401	1,400	=			
	006SB04601	144	=			
	006SB00901	160	J			
	006SB01101	390	J			
	006SB01301	19	J			
	006SB01501	2.3	J			
	006SB01801	14.6	J			
	006SB01901	6.9	J			
	006SB02001	26.4	J			
	006SB02101	897	J			
Pyrene	006SB00701	170	=	230,000	2,100,000	NA
	006SB00801	210	=			
	006SB01001	110	=			
	006SB01201	120	=			
	006SB01401	310	=			

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
Pyrene	006SB01501	15	=	230,000	2,100,000	NA
	006SB02401	2,220	=			
	006SB04401	949	=			
	006SB04601	237	=			
	006SB02101	4,190	=			
	006SB00901	320	J			
	006SB01101DL	1,400	J			
	006SB01301	52	J			
	006SB01701	165	J			
	006SB01801	179	J			
	006SB01901	164	J			
	006SB02001	212	J			
	BEQs ^c	006SB00701	101			
006SB00801		190	=			
006SB00901		319	=			
006SB01001		252	=			
006SB01101		733	=			
006SB01201		120	=			
006SB01301		78.2	=			
006SB01401		185	=			
006SB01501		27.3	=			
006SB01701		426	U			
006SB01801		210	=			
006SB01901		204	=			
006SB02001		252	=			
006SB02101		4,101	=			
006SB02401		1,073	=			
006SB02703		363	=			
006SB02803	920	=				

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
BEQs ^c	006SB02903	305	=	87	NA	1,304
	006SB04401	655	=			
	006SB04601	389	=			
	006SB04701	51.1	U			
Pesticides						
Aldrin ^c	006SB01901	0.46	J	38	250	NA
	006SB04401	0.51	J			
Alpha-BHC ^c	006SB00801	1.4	J	100	0.25	NA
	006SB00901	5	J			
	006SB01801	0.51	J			
	006SB01901	0.26	J			
	006SB04401	0.71	J			
	006SB02101	53.1	J			
Alpha-Chlordane ^c	006SB00901	44	=	1,800	5,000	NA
	006SB01501	4.5	=			
	006SB02101	1,080	=			
	006SB00701	7	J			
	006SB00801	26	J			
	006SB01001	4.4	J			
	006SB01101	3.5	J			
	006SB01201	24	J			
	006SB01301	0.74	J			
	006SB01401	200	J			
	006SB01701	0.5	J			
	006SB01801	0.76	J			
	006SB01901	1.3	J			
	006SB04401	5.8	J			
	006SB04601	58.3	J			
Beta-BHC ^c	006SB01101	1.6	=	350	1.5	NA

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
Beta-BHC ^c	006SB01901	1.7	=	350	1.5	NA
	006SB02101	176	=			
	006SB00901	26	J			
	006SB01801	1	J			
	006SB04401	2.2	J			
	006SB04601	12.4	J			
Chlordane ^c	006SB04401	61.2	=	1,800	5,000	NA
	006SB04601	474	=			
	006SB02101	5,460	=			
	006SB00801	270	J			
	006SB01401	2,400	J			
	006SB01901	9.6	J			
Delta-BHC	006SB01801	1.9	=	NL	NL	NA
	006SB01901	2.4	=			
	006SB02101	338	=			
	006SB00701	0.54	J			
	006SB00801	7.2	J			
	006SB00901	30	J			
	006SB01001	0.66	J			
	006SB01101	2.5	J			
	006SB01201	10	J			
	006SB01301	0.13	J			
	006SB01401	8	J			
	006SB04401	3.6	J			
	006SB04601	11.7	J			
Dieldrin ^c	006SB00701	9.7	=	40	2	300
	006SB00901	73	=			

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
Dieldrin ^c	006SB01201	4.6	J	40	2	300
	006SB01301	1.2	J			
	006SB01701	0.79	J			
Endosulfan II	006SB01301	0.4	J	47,000	9,000	NA
	006SB04601	7.4	J			
Endosulfan Sulfate	006SB01101	2.4	J	47,000	9,000	NA
Endrin Aldehyde	006SB01201	5.1	J	2,300	500	NA
Gamma-BHC (Lindane) ^c	006SB00801	13	=	490	4.5	NA
	006SB00901	43	=			
	006SB01201	24	=			
	006SB01801	3.1	=			
	006SB04401	5.2	=			
	006SB04601	19.3	=			
	006SB02101	246	=			
	006SB01001	0.97	J			
	006SB01101	3.4	J			
	006SB01901	1.3	J			
Gamma-Chlordane ^c	006SB00701	19	=	1,800	5,000	NA
	006SB01001	9.9	=			
	006SB01101	4.1	=			
	006SB01801	1.5	=			
	006SB01901	1.9	=			
	006SB02101	1,410	=			
	006SB00801	30	J			
	006SB00901	36	J			
	006SB01201	38	J			
	006SB01401	330	J			
006SB01501	3	J				

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
Gamma-Chlordane ^c	006SB01701	0.76	J	1,800	5,000	NA
	006SB04401	8.7	J			
	006SB04601	65.2	J			
Heptachlor ^c	006SB01401	52	J	140	11,500	NA
	006SB04401	1.9	J			
	006SB02101	63	J			
Heptachlor Epoxide ^c	006SB01101	1.7	=	70	350	NA
	006SB00701	2	J			
	006SB00801	14	J			
	006SB00901	27	J			
	006SB01001	3.4	J			
	006SB01201	7.4	J			
	006SB01301	0.24	J			
	006SB01401	33	J			
	006SB01501	0.78	J			
	006SB01901	0.3	J			
	006SB04601	4.6	J			
	p,p'-DDD ^c	006SB01701	3.2			
006SB01801		19	=			
006SB01901		12	=			
006SB02101RE		11,200	=			
006SB04401		67.3	=			
006SB00701		72	J			
006SB00801		170	J			
006SB00901		980	J			
006SB01001		20	J			
006SB01101		36	J			
006SB01201		510	J			
006SB01301		6.2	J			

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration				
p,p'-DDD ^c	006SB01401	720	J	2,700	8,000	NA				
	006SB01501	5.6	J							
	006SB02001	2.6	J							
	006SB04601	521	J							
	006SB04701	0.6	J							
p,p'-DDE ^c	006SB00701	71	=	1,900	27,000	NA				
	006SB00801	170	=							
	006SB00901	430	=							
	006SB01201	60	=							
	006SB01301	38	=							
	006SB01401	380	=							
	006SB01501	11	=							
	006SB01701	4.8	=							
	006SB01801	36	=							
	006SB01901	10.2	=							
	006SB02101	1,710	=							
	006SB01001	47	J							
	006SB01101	12	J							
	006SB04401	41.4	J							
	006SB04601	283	J							
	006SB04701	1	J							
	p,p'-DDT ^c	006SB00701	44				=	1,900	16,000	NA
		006SB01401DL	3,300				=			
006SB01801RE		110	=							
006SB01901		42.5	=							
006SB02101RE		8,310	=							
006SB00801		250	J							
006SB00901		1,000	J							
006SB01001	73	J								

TABLE 4-1
 Organic Compounds Detected in Surface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
p,p'-DDT ^c	006SB01101	65	J	1,900	16,000	NA
	006SB01201	180	J			
	006SB01301	18	J			
	006SB01501	21	J			
	006SB01701	14	J			
	006SB04401	97.8	J			
	006SB04601	605	J			
	006SB04701	2.4	J			
PCBs						
PCB-1248 (Aroclor-1248) ^c	006SB03501	14.9	J	320	205 _{Region III}	NA
PCB-1254 (Aroclor-1254) ^c	006SB01801	174	=	320	550 _{Region III}	NA
	006SB01901	8.1	=			
	006SB02301	56.5	=			
PCB-1260 (Aroclor-1260) ^c	006SB01701	26.8	=	320	7,200 _{site-specific}	NA
	006SB01801	270	=			
	006SB01901	10.8	=			
	006SB02201	21,600	=			
	006SB02301	265	=			
	006SB03901	18,000	=			
	006SB00501	95	J			
	006SB00601DL	13,000	J			
	006SB01001	260	J			
	006SB01201	200	J			
	006SB01501	49	J			
	006SB03501	199	J			
	006SB03601	6,620	J			
006SB03701	207	J				
006SB03801	6,270	J				

TABLE 4-1

Organic Compounds Detected in Surface Soil – Additional Investigation

RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	EPA Region III Residential RBC ^a (HI=0.1)	Soil to Groundwater SSL ^b (DAF=10)	Zone G Background Concentration
PCB-1260 (Aroclor-1260) ^c	006SB04001	1,900	J	320	7,200 <small>site-specific</small>	NA
	006SB04801	6,760	J			
	006SB04901	61	J			
	006SB05001	84	J			
	006SB05301	96	J			
	006SB05501	22	J			
	006SB05601	3,000	J			
	006SB05701	210	J			
	006SB05901	270	J			

All values are presented in units of micrograms per kilogram (µg/kg).

Concentrations in bold text and outlined within the table represent exceedances of the screening criteria.

^a U.S. EPA Region III risk-based concentrations (RBCs) with a hazard index (HI) =0.1 for non-carcinogens.

^b Soil screening levels (SSLs) based on a dilution factor (DAF)=1 for volatile organic compounds (VOCs), DAF=10 for other compounds.

^c Compound is listed as a carcinogen.

= Indicates that the analyte was detected at the concentration shown.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

NA Not applicable/not available

NL Not listed

RE Indicates that the sample was reanalyzed by the laboratory.

U Indicates that the analyte was analyzed for but not detected above the method detection limit.

TABLE 4-2

Inorganic Compounds Detected in Surface Soil – Additional Investigation

RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Parameter	Sample Location	Concentration (mg/kg)	Qualifier	EPA Region III RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
Arsenic ^c	006SB03001	7.5	=	0.43	14.5	3.1 - 25
	006SB03301	1.5	J			

All values are presented in units of milligrams per kilogram (mg/kg).

^a U.S. EPA Region III risk-based concentrations (RBCs) with a hazard index (HI) =0.1 for non-carcinogens.

^b Soil screening levels (SSLs) based on a dilution factor (DAF)=1 for volatile organic compounds (VOCs), DAF=10 for other compounds.

^c Compound is listed as a carcinogen.

= Indicates that the analyte was detected at the concentration shown.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

TABLE 4-3
 Organic Compounds Detected in Subsurface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Background Concentration
Semivolatile Organic Compounds					
1-Methylnaphthalene	006SB00702	6,900	=	NL	NA
	006SB01602	40	=		
	006SB01102	22	J		
	006SB01302	1.7	J		
2-Methylnaphthalene	006SB00702	10,000	=	NL	NA
	006SB01602	45	=		
	006SB01102	32	J		
	006SB01302	1.7	J		
	006SB01402	1.8	J		
Acenaphthene	006SB00702	12,000	=	285,000	NA
	006SB01602	190	=		
	006SB04502	46.4	=		
	006SB01102	91	J		
	006SB01402	3.4	J		
	006SB01902	11.7	J		
	006SB02803	17	J		
Acenaphthylene	006SB01402	9.9	=	NL	NA
	006SB01602	72	=		
	006SB04502	279	=		
	006SB01102	59	J		
	006SB01302	13	J		
	006SB02402	5.9	J		
	006SB02603	200	J		
	006SB02803	96.9	J		
	006SB02903	10.2	J		
	006SB04403	43.7	=		
Anthracene	006SB00702	7,700	=	6,000,000	NA
	006SB01402	33	=		

TABLE 4-3
 Organic Compounds Detected in Subsurface Soil – Additional Investigation
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Background Concentration
Anthracene	006SB01602	320	=	6,000,000	NA
	006SB04502	491	=		
	006SB01102	370	J		
	006SB01302	12	J		
	006SB01902	16.9	J		
	006SB02102	7.6	J		
	006SB02402	7.8	J		
	006SB02603	160	J		
	006SB02803	194	J		
	006SB02903	12	J		
	006SB04403	30.8	J		
Benzo[a]Anthracene	006SB00702	2,100	=	1,000	627
	006SB01402	52	=		
	006SB01602	1,200	=		
	006SB04502	2,160	=		
	006SB01102	1,300	J		
	006SB01302	42	J		
	006SB01902	78.8	J		
	006SB02002	30.8	J		
	006SB02102	61.5	J		
	006SB02402	38.9	J		
	006SB02603	760	J		
	006SB02703	9.3	J		
	006SB02803	749	=		
	006SB02903	76.4	J		
	Benzo[a]Pyrene	006SB01402	64		
006SB01602		990	=		
006SB04402		90.7	=		
006SB04502		1,510	=		
006SB00702		820	J		

TABLE 4-3
 Organic Compounds Detected in Subsurface Soil – Additional Investigation
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/kg)	Qualifier	SSL ^a (DAF=10)	Zone G Background Concentration
Benzo[a]Pyrene	006SB01102	800	J	4,000	623
	006SB01302	52	J		
	006SB01902	76.6	J		
	006SB02002	28.1	J		
	006SB02102	57.5	J		
	006SB02402	32.1	J		
	006SB02603	1,640	=		
	006SB02803	547	=		
	006SB02903	92.2	J		
	006SB04403	156	=		
	006SB04603	60.1	=		
	006SB04703	210	=		
Benzo[b]Fluoranthene	006SB01602	1,300	=	2,500	631
	006SB00702	790	J		
	006SB01102	1,100	J		
	006SB01302	78	J		
	006SB01902	151	J		
	006SB02002	43.1	J		
	006SB02102	81.7	J		
	006SB02402	57.4	J		
	006SB02603	5,270	=		
	006SB02703	10.4	J		
	006SB02803	888	=		
	006SB02903	155	J		
006SB04703	251	=			
Benzo[g,h,i]Perylene	006SB01402	41	=	NL	NA
	006SB01602	570	=		
	006SB01102	520	J		
	006SB01302	32	J		
	006SB01902	139	J		

TABLE 4-3
 Organic Compounds Detected in Subsurface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Background Concentration
Benzo[g,h,i]Perylene	006SB02002	122	J	NL	NA
	006SB02102	133	J		
	006SB02402	99.5	J		
	006SB02603	1,250	J		
	006SB02803	249	J		
	006SB02903	133	J		
	006SB04402	69.8	J		
	006SB04403	101	J		
	006SB04502	510	J		
	006SB04603	33.8	J		
	006SB04703	91.3	J		
Benzo[k]Fluoranthene	006SB01402	150	=	24,500	609
	006SB01602	820	=		
	006SB00702	850	J		
	006SB01102	790	J		
	006SB01302	50	J		
	006SB02903	51.8	J		
	006SB04703	118	=		
Chrysene	006SB00702	2,100	=	80,000	616
	006SB01402	78	=		
	006SB01602	1,200	=		
	006SB04402	100	=		
	006SB04502	1,570	=		
	006SB01102	1,000	J		
	006SB01302	57	J		
	006SB01902	84	J		
	006SB02002	16.4	J		
	006SB02102	46.4	J		
	006SB02402	32.6	J		
	006SB02603	1,790	=		

TABLE 4-3
 Organic Compounds Detected in Subsurface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Background Concentration
Chrysene	006SB02803	550	=	80,000	616
	006SB02903	91.8	J		
	006SB04403	126	=		
	006SB04603	57.4	=		
	006SB04703	224	=		
Dibenz(a,h)anthracene	006SB01402	18	=	1,000	586
	006SB01602	250	=		
	006SB01102	210	J		
	006SB01302	14	J		
Fluoranthene	006SB00702	13,000	=	2,150,000	NA
	006SB01402	180	=		
	006SB01602	2,500	=		
	006SB04402	137	=		
	006SB04502	2,880	=		
	006SB01102	2,300	J		
	006SB01302	69	J		
	006SB01902	119	J		
	006SB02002	20.9	J		
	006SB02102	68	J		
	006SB02402	53.5	J		
	006SB02603	493	J		
	006SB02703	5.3	J		
	006SB02803	797	=		
	006SB02903	91.3	J		
	006SB04403	170	=		
	006SB04603	46.6	J		
	006SB04703	278	=		
	Fluorene	006SB00702	12,000		
006SB01602		140	=		

TABLE 4-3
 Organic Compounds Detected in Subsurface Soil – Additional Investigation
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Background Concentration
Fluorene	006SB04502	197	=	280,000	NA
	006SB01102	130	J		
	006SB01302	2	J		
	006SB01402	4.5	J		
	006SB01902	10.8	J		
	006SB02402	6.9	J		
	006SB02803	95.5	J		
	006SB04402	7.8	J		
	006SB04403	18.3	J		
	006SB04703	8.5	J		
Indeno(1,2,3-c,d)Pyrene	006SB01402	35	=	7,000	592
	006SB01602	430	=		
	006SB04402	192	=		
	006SB04502	621	=		
	006SB01102	420	J		
	006SB01302	26	J		
	006SB01902	144	J		
	006SB02002	152	J		
	006SB02102	152	J		
	006SB02402	122	J		
	006SB02603	1,180	J		
	006SB02803	267	J		
	006SB02903	136	J		
	006SB04403	210	=		
	006SB04703	212	=		
	Naphthalene	006SB00702	22,000		
006SB01602		74	=		
006SB04502		79.1	=		
006SB01102		34	J		
006SB01302		2.1	J		

TABLE 4-3
 Organic Compounds Detected in Subsurface Soil – Additional Investigation
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Background Concentration
Naphthalene	006SB01402	3.5	J	42,000	NA
	006SB01902	6.5	J		
	006SB02102	6.5	J		
	006SB02402	8	J		
	006SB02803	44.1	J		
	006SB02903	5.6	J		
Phenanthrene	006SB00702	33,000	=	NL	NA
	006SB01402	58	=		
	006SB01602	1,300	=		
	006SB04402	63.6	=		
	006SB04502	889	=		
	006SB01102	970	J		
	006SB01302	18	J		
	006SB01902	78.3	J		
	006SB02102	30.5	J		
	006SB02402	28.5	J		
	006SB02603	46.5	J		
	006SB02703	4.4	J		
	006SB02803	593	=		
	006SB02903	37.1	J		
	006SB04403	75.5	=		
	006SB04703	60.2	=		
Pyrene	006SB00702	8,900	=	2,100,000	NA
	006SB01402	160	=		
	006SB01602	2,000	=		
	006SB04402	107	=		
	006SB04502	2,710	=		
	006SB01102	2,500	J		
	006SB01302	67	J		
	006SB01902	302	J		

TABLE 4-3
 Organic Compounds Detected in Subsurface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Background Concentration
Pyrene	006SB02002	279	J	2,100,000	NA
	006SB02102	299	J		
	006SB02402	259	J		
	006SB02603	3,060	=		
	006SB02703	159	J		
	006SB02803	972	=		
	006SB02903	262	J		
	006SB04403	158	=		
	006SB04603	41.1	J		
	006SB04703	222	=		
BEQs	006SB00702	2,220	=	NA	1,400
	006SB01102	1,301	=		
	006SB01302	81.2	=		
	006SB01402	92.7	=		
	006SB01902	305	=		
	006SB02002	348	=		
	006SB02102	347	=		
	006SB02402	284	=		
	006SB02603	3,050	=		
	006SB04402	137	=		
	006SB04403	201	=		
	006SB04502	1,815	=		
	006SB04603	96.2	=		
	006SB04703	280	=		
Pesticides					
Alpha-BHC	006SB00702	0.87	J	0.25	NA
	006SB01302	0.88	J		
	006SB04402	3.2	J		
	006SB04502	1.5	J		

TABLE 4-3
 Organic Compounds Detected in Subsurface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Background Concentration
Alpha-Chlordane	006SB01302	6.1	=	5,000 Chlordane	NA
	006SB01402	9.6	J		
	006SB02803	2.35	=		
	006SB04402	4.9	J		
	006SB04502	6.7	J		
Beta-BHC	006SB04402	7.4	=	1.5	NA
	006SB01302	2	J		
	006SB02803	0.172	J		
	006SB04502	3.7	J		
Chlordane	006SB02803	26.4	=	5,000	NA
	006SB04402	43.3	=		
	006SB04502	58	J		
Delta-BHC	006SB04402	18.7	=	NL	NA
	006SB01302	2.4	J		
	006SB01402	5.7	J		
	006SB02803	0.162	J		
	006SB04502	3.4	J		
Dieldrin	006SB01302	3	J	2	300
Gamma-BHC (Lindane)	006SB04402	21.1	=	4.5	NA
	006SB04502	10.7	=		
	006SB01302	2.2	J		
	006SB02803	0.189	J		
Gamma-Chlordane	006SB01402	30	=	5,000 Chlordane	NA
	006SB04402	7.3	J		
	006SB04502	10	J		
	006SB02803	3.18	=		
Heptachlor	006SB04402	6.2	J	11,500	NA

TABLE 4-3
 Organic Compounds Detected in Subsurface Soil – Additional Investigation
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Background Concentration
Heptachlor Epoxide	006SB01102	0.44	J	350	NA
	006SB01402	9.5	J		
p,p'-DDD	006SB04402	43.2	=	8,000	NA
	006SB00702	92	J		
	006SB01102	6.6	J		
	006SB01302	40	J		
	006SB01402	490	J		
	006SB04502	55.6	J		
p,p'-DDE	006SB01102	38	=	27,000	NA
	006SB01302	14	=		
	006SB01402	170	=		
	006SB00702	20	J		
	006SB04402	25.6	J		
	006SB04502	15.2	J		
p,p'-DDT	006SB01402DL	1,200	=	16,000	NA
	006SB04402	106	=		
	006SB00702	43	J		
	006SB01102	19	J		
	006SB01302	82	J		
	006SB04502	99	J		
PCBs					
PCB-1260 (Aroclor-1260)	006SB01402	900	J	7,200	NA
	006SB05802	2,000	=		
	006SB05803	2,000	J		

All values are presented in units of micrograms per kilogram ($\mu\text{g}/\text{kg}$).

Concentrations in bold text and outlined within the table represent exceedances of the screening criteria.

^a Soil screening levels (SSLs) based on a dilution factor (DAF)=1 for volatile organic compounds (VOCs), DAF=10 for other compounds.

Surrogate compounds are shown in subscript next to the RBC value.

- = Indicates that the analyte was detected at the concentration shown.
- J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

TABLE 4-3

Organic Compounds Detected in Subsurface Soil – Additional Investigation

RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Background Concentration
---------	-----------------	--	-----------	------------------------------	------------------------------------

NA Not applicable/not available

NL Not listed

U Indicates that the analyte was analyzed for but not detected above the method detection limit.

TABLE 4-4
 Inorganic Compounds Detected in Subsurface Soil – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (mg/kg)	Qualifier	SSL ^a (DAF=10)	Zone G Range of Background Concentrations
Arsenic	006SB03002	28.2	=	14.5	1.4 – 36
	006SB03102	7.85	=		
	006SB03202	5.65	=		
	006SB03302	5.06	=		
	006SB03402	10.9	=		
	006SB04302	3.06	=		

All values are presented in units of milligrams per kilogram (mg/kg).

^a Soil screening levels (SSLs) based on a dilution factor (DAF)=10.

- = Indicates that the analyte was detected at the concentration shown.
- J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

TABLE 4-5
 Organic Compounds Detected in Sediment – Additional Investigation
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	EPA Region III Residential RBC (HI=0.1)	EPA Region IV SSV ^a
Semivolatile Organic Compounds					
Benzo[a]Anthracene ^b	006MB00101	29.1	J	870	330
Phenanthrene		11.6	J	2,300,000 _{anthracene}	330
Fluoranthene		24.6	J	310,000	330
Chrysene ^b		16.1	J	87,000	330
Benzo[k]Fluoranthene ^b		20.2	J	8,700	NL
Benzo[a]Pyrene ^b		22.6	J	87	330
Pyrene		296	J	230,000	330
Benzo[b]Fluoranthene ^b		26.4	J	870	NL
Pesticides					
p,p'-DDD ^b	006MB00101	1.8	J	2,700	3.3

All values presented in units of micrograms per kilogram ($\mu\text{g}/\text{kg}$).

^a Sediment Screening Value (SSV) EPA, 1995).

^b Compound is listed as a carcinogen.

Surrogate compounds are shown in subscript next to the RBC value.

J Indicates an estimated value. One or more quality control (QC) parameters were outside the control limits or the value was detected below the laboratory's quantification limit.

NL Not listed.

TABLE 4-6
 Organic Compounds Detected in Groundwater – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/L)	Qualifier	MCL	EPA Region III Tap Water RBC ^a (HI=0.1)
Semivolatile Organic Compounds					
Acenaphthene	G006GW001	0.62	J	NA	37
	G006GW004	2.4	J		
	G006GW005	0.83	J		
Anthracene	G006GW005	0.63	J	NA	180
Dibenzofuran	G006GW004	0.46	J	NA	2.4
	G006GW005	0.5	J		
Di-n-butyl Phthalate	G006GW003	1.4	J	NA	370
	G006GW006	1.2	J		
Fluorene	G006GW005	1.4	J	NA	24
Phenanthrene	G006GW005	3	J	NA	180 _{anthracene}
Pesticides					
p,p'-DDD	G006GW005	0.095	=	NA	0.28
p,p'-DDE	G006GW002	0.048	J	NA	0.2
	G006GW003	0.25	=		
	G006GW004	2.2	=		
p,p'-DDE	G006GW006	0.26	=	NA	0.2
	G006GW007	0.72	=		
p,p'-DDT	G006GW002	0.28	=	NA	0.2
	G006GW003	1.5	=		
	G006GW004	1.8	=		
	G006GW006	0.43	=		
	G006GW007	1.2	=		

All values are presented in units of micrograms per liter (µg/L).

Concentrations in bold text and outlined within the table represent exceedances of the screening criterion.

^a U.S. EPA Region III risk-based concentrations (RBCs) with a hazard index (HI) =0.1 for non-carcinogens.

Surrogate Maximum contaminant levels (MCLs) and RBCs are identified with the surrogate compound in subscript adjacent to value.

= Indicates that the analyte was detected at the concentration shown.

TABLE 4-6
 Organic Compounds Detected in Groundwater – Additional Investigation
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/L)	Qualifier	MCL	EPA Region III Tap Water RBC ^a (HI=0.1)
J	Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.				
NA	Not applicable/not available				

TABLE 4-7
 Inorganic Compounds Detected in Groundwater – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/L)	Qualifier	Zone G Background Range of Concentrations			EPA Region III Tap Water RBC ^a (HI=0.1)
				Minimum	Maximum	MCL	
Metals							
Aluminum	G006GW001	156	J	136	1,770	NA	3,700
	G006GW005	596	J				
Antimony	G006GW001	8.42	J	3	6	6	NA
	G006GW006	9.16	J				
Arsenic	G006GW005	6.33	J	8	166	50	NA
	G006GW001	11	=				
	G006GW003	323	=				
	G006GW006	12.4	=				
Barium	G006GW007	15.8	=				
	G006GW001	27.9	J	14	937	2,000	NA
	G006GW002	69.2	J				
	G006GW005	33	J				
	G006GW006	41	J				
	G006GW007	26	J				
	G006GW003	634	=				
Calcium	G006GW004	494	=				
	G006GW001	140,000	=	85,600	294,000	NA	NA
	G006GW002	210,000	=				
	G006GW003	312,000	=				
	G006GW004	318,000	=				
	G006GW005	154,000	=				
	G006GW006	146,000	=				
Iron	G006GW007	164,000	=				
	G006GW001	7,540	=	2,000	35,700	NA	1,100
	G006GW002	20,000	=				
	G006GW003	77,500	=				

TABLE 4-7
 Inorganic Compounds Detected in Groundwater – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/L)	Qualifier	Zone G Background Range of Concentrations		MCL	EPA Region III Tap Water RBC ^a (HI=0.1)
				Minimum	Maximum		
Iron	G006GW004	25,400	=	2,000	35,700	NA	1,100
	G006GW005	13,100	=				
	G006GW006	13,500	=				
	G006GW007	7,670	=				
Magnesium	G006GW001	368,000	=	70,100	533,000	NA	NA
	G006GW002	846,000	=				
	G006GW003	206,000	=				
	G006GW004	346,000	=				
	G006GW005	556,000	=				
	G006GW006	579,000	=				
	G006GW007	318,000	=				
Manganese	G006GW001	591	=	149	7,980	NA	73
	G006GW002	716	=				
	G006GW003	1,290	=				
	G006GW004	745	=				
	G006GW005	437	=				
	G006GW006	257	=				
	G006GW007	994	=				
Nickel	G006GW005	92.3	=	1.2	20	NA	73
Potassium	G006GW001	143,000	=	15,400	180,000	NA	NA
	G006GW002	261,000	=				
	G006GW003	83,000	=				
	G006GW004	113,000	=				
	G006GW005	203,000	=				
	G006GW006	207,000	=				
	G006GW007	116,000	=				
Selenium	G006GW003	3.4	J	4	4	50	NA

TABLE 4-7
 Inorganic Compounds Detected in Groundwater – Additional Investigation
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Sample Location	Concentration (µg/L)	Qualifier	Zone G Background Range of Concentrations			EPA Region III Tap Water RBC ^a (HI=0.1)
				Minimum	Maximum	MCL	
Sodium	G006GW001	3,480,000	=	NA	NA	NA	NA
	G006GW002	7,340,000	=				
	G006GW003	2,110,000	=				
	G006GW004	3,170,000	=				
	G006GW005	5,090,000	=				
	G006GW006	5,440,000	=				
	G006GW007	2,630,000	=				
Thallium	G006GW001	7.53	J	NA	NA	2	NA
	G006GW003	5.24	J				
	G006GW004	6.12	J				
	G006GW006	6.79	J				
Vanadium	G006GW001	5.38	J	3	30	NA	26
	G006GW004	1.82	J				
	G006GW005	5.63	J				
	G006GW006	2.68	J				
	G006GW007	3.81	J				

All values are presented in units of micrograms per liter (µg/L).

Concentrations in bold text and outlined within the table represent exceedances of maximum contaminant levels (MCLs) (or RBCs where MCLs are not available) and the range of background concentrations.

^a U.S. EPA Region III risk-based concentrations (RBCs) with a hazard index (HI) =0.1 for non-carcinogens.

= Indicates that the analyte was detected at the concentration shown.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

NA Not applicable

Table 4-8
 SSL Calculation
 Charleston Naval Complex
 Zone G - SWMU 6

		Parameter	Aroclor-1260
Chemical Specific Input Parameters			
Cw	= Target groundwater concentration MCL (mg/L)		0.0005
H	= Henry's Law Constant, dimensionless		1.89E-01
ks	= Soil-water sorption coefficient (cm ³ water / g soil = L/kg) = Koc x foc where		1.11E+04
	koc = organic carbon-water sorption coefficient, (cm ³ (ml) water) / (g soluble organic carbon)		8.50E+05
	foc = Fraction of organic content, dimensionless	0.013	
Site Specific Input Parameters			
Sw	= Width of Source Parallel to Groundwater Flow Direction (impacted soil zone)	61.0 m	200 ft
da	= Aquifer Thickness	7.0 m	23 ft
d	= Groundwater Mixing Zone thickness (paved)	7.01 m	23.0 ft
	(unpaved)	7.01 m	23.0 ft
i	= Groundwater Gradient		1.1E-03 (unitless)
Ks	= Saturated Hydraulic Conductivity	333.7 m/yr	1095.0 ft/yr
θw	= Volumetric Water Content of Soil Pore Space	0.3 cm ³ vapor/cm ³ soil	0.3 in ³ vapor/in ³ soil
θv	= Volumetric Vapor Content of Soil Pore Space	0.15 cm ³ vapor/cm ³ soil	0.15 in ³ vapor/in ³ soil
ρs	= Soil Bulk Density	1.5 g/cm ³	93.64 lbm/ft ³
qi	= Water Infiltration Rate (paved)	0.0086 m/yr	0.0283 ft/yr
	(unpaved)	0.1372 m/yr	0.4500 ft/yr
	Partition Term, Cw/Csoil, (L/kg)	$\frac{C_{soil}}{C_w} \left(\frac{K_s + K_o H}{\rho_s} \right) \left(\frac{K_d + q_s}{\phi_s} \right)$	1.11E+04
	Dilution Term, dimensionless (paved)		5.94E+00
	(unpaved)		1.31E+00
	Csoil/Cw = Partition term * Dilution term (mg/kg / mg/L) = L/kg (paved)		6.56E+04
	(unpaved)		1.45E+04
Calculated Site Specific Target Level for Soil			
	C _{soil} calculated source soil concentration (SSL, mg/kg) Cw*(partition term)*(dilution term) (paved)		32.8
	(unpaved)		7.2

Cw is the MCL from EPA National Drinking Water Standards (March 2001) or US EPA Region III RBCs (October, 2000).
 H from Table 36 of the Soil Screening Guidance; Technical Background Document (EPA, 1996) or Table 3-2 of the Toxicological Profile for Polychlorinated Biphenyls (Aroclor-1260, U.S. Department of Health & Human Services, 1995) adjusted to the dimensionless form (x 41).
 ks = koc x foc.
 koc from Table 39 of the Soil Screening Guidance; Technical Background Document (EPA, 1996) or from the Superfund Chemical Data Matrix (Aroclor-1260).
 foc calculated as the mean foc from TOC measurements from Zone G.
 Sw is estimated as distance from west to east across SWMU 6 (200 ft).
 d is calculated as $M = (0.0112 L^2)^{0.5} + da(1 - e^{-L \cdot q_i / K_s \cdot da})$ or da, whichever is less.
 da is based on the groundwater elevation in the GIS (3 ft msl) - the top of Ashley elevation (-20 ft, GIS).
 i Calculated from data in the IM Report for Groundwater Monitoring Fiscal Year 2000 (1/900-0.0011, CH2MHill, 2001).
 Ks Based on CH2MHill's hydraulic conductivity theme in the GIS (3 ft/d).
 θw is the default value presented in the Soil Screening Guidance: User's Guide (EPA, 1996).
 θv is calculated as total porosity (0.45, assumed) - θw (0.3) = 0.15.
 ρs is the default value presented in the Soil Screening Guidance: User's Guide (EPA, 1996).
 qi is a derived value (5.4 in/yr) based on annual precipitation, evapo-transportation, and runoff coefficient values for the Charleston area.

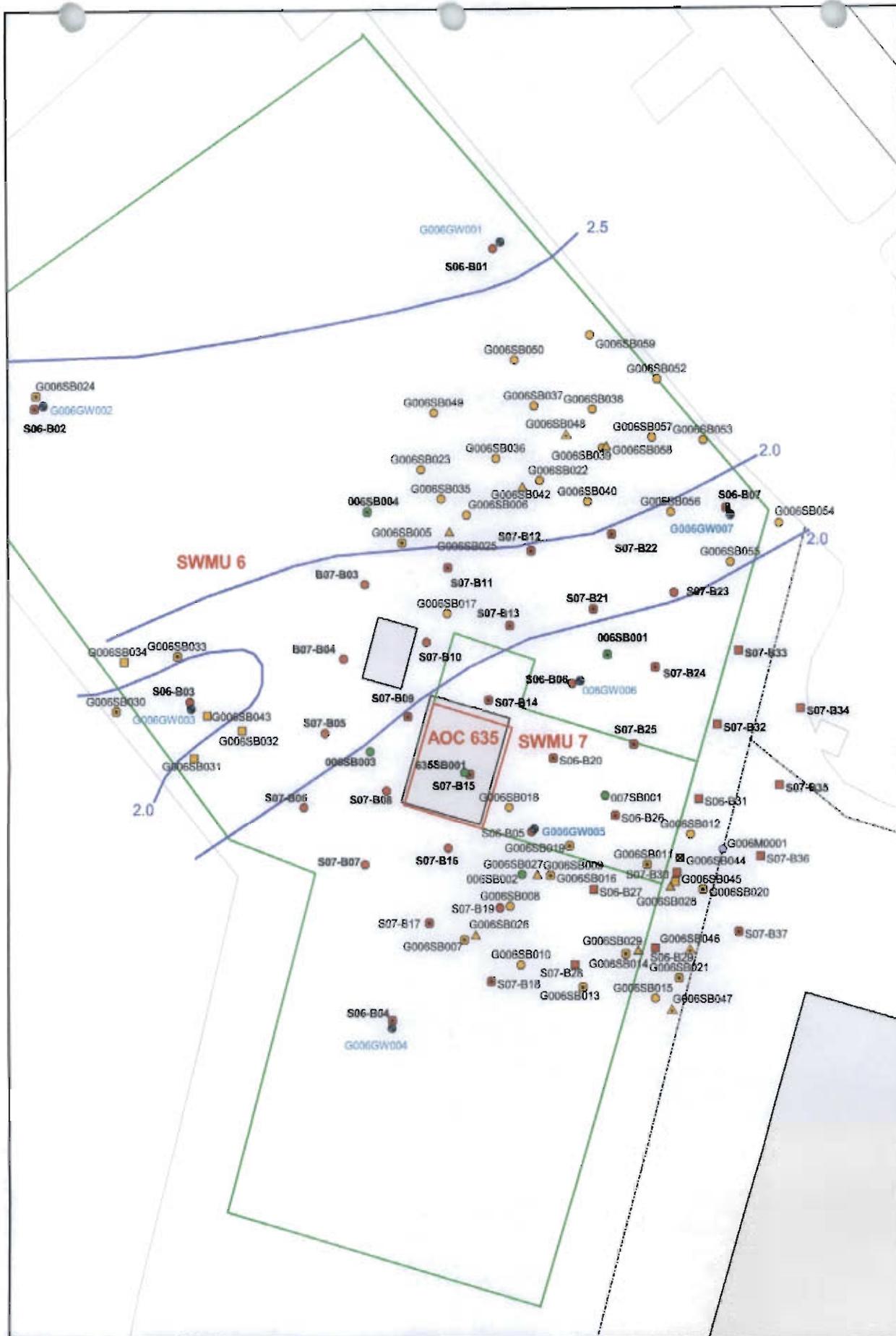
TABLE 4-9
 SWMU 6 Groundwater Field Data
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Station ID	Sample ID	Date	Time	Turbidity (NTU)	pH (SU)	Conductivity (μS/cm)	Temperature (°C)	Volume Purged (gal)
G006GW001	006GW00101	11/14/1996	10:37	10	6.8	9.72	21.2	6.2
	006GW00102	05/14/1997	10:25	1	6.52	3.66	20.8	10.125
	006GW00103	09/18/1997	10:53	0	5.87	0.789	25.1	6.75
	006GW00104	12/02/1997	14:15	0	6.63	5.8	20.9	6.75
	006GW001M5	07/31/2002	10:25	80.2	6.45	17.5	22.3	5.8
G006GW002	006GW00201	11/14/1996	11:17	9	7.39	28.8	22	9.5
	006GW00202	05/14/1997	11:52	10	6.9	31.3	19.5	6
	006GW00203	09/13/1997	14:30	20	6.84	36	22.9	10
	006GW00204	12/04/1997	9:14	8	6.89	36.1	21.1	8
	006GW002M5	07/31/2002	11:10	8	6.41	36.9	22.4	6.9
G006GW003	006GW00301	11/14/1996	15:00	46	6.71	8.37	20.7	10
	006GW00302	05/15/1997	9:18	4	6.55	9.06	21.1	6
	006GW00303	09/13/1997	8:29	1	6.41	12.3	26.1	3.75
	006GW00304	12/03/1997	10:27	0	6.69	5.29	16.9	5.25
	006GW003M5	07/31/2002	14:25	10	6.0	12.9	26.2	4.8
G006GW004	006GW00401	11/14/1996	11:06	4	6.77	22.6	20.5	4.5
	006GW00402	05/15/1997	10:45	1	6.38	9.64	20.3	6.75
	006GW00403	09/13/1997	10:56	10	6.48	13.8	24.7	11.25
	006GW00404	12/03/1997	11:40	0	6.54	21.2	21.7	6

TABLE 4-9
 SWMU 6 Groundwater Field Data
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Station ID	Sample ID	Date	Time	Turbidity (NTU)	pH (SU)	Conductivity (µS/cm)	Temperature (°C)	Volume Purged (gal)
G006GW004	006GW004M5	07/31/2002	14:50	100	6.6	17.6	22.9	5.7
G006GW005	006GW00501	11/14/1996	11:03	4.75	6.77	26.4	21.2	4.75
	006GW00502	05/15/1997	12:37	1	6.67	27.5	20.8	6
	006GW00503	09/13/1997	12:05	0	6.75	31.8	23.8	6
	006GW00504	12/03/1997	14:25	0	6.73	32.1	21.2	6
	006GW005M5	07/31/2002	13:10	142	6.61	25.0	22.7	5.45
G006GW006	006GW00601	11/14/1996	11:06	2	6.99	23.4	21.1	4.5
	006GW00602	05/16/1997	9:32	2	7.01	19.2	19.5	6
	006GW00603	09/18/1997	9:05	0	6.54	21	23.9	6
	006GW00604	12/04/1997	13:51	0	7.04	18.0	21.1	6
	006GW006M5	07/31/2002	14:10	151	6.72	26.6	23.2	5.2
G006GW007	006GW00701	11/14/1996	10:53	10	7.03	7.71	21.8	6
	006GW00702	05/16/1997	11:14	2	7.0	7.43	19.8	6
	006GW00703	09/18/1997	9:59	0	6.24	6.3	24.2	6
	006GW00704	12/04/1997	10:49	0	6.98	6.97	21.0	6
	006GW007M5	07/31/2002	11:25	111	6.65	15.7	22.8	5.5

NTU Nephelometric turbidity unit
 SU Standard units
 µS/cm Microseimens per centimeter
 °C Degrees Celsius
 gal Gallons



<ul style="list-style-type: none"> Potentiometric Surface Elevation, Feet above msl on July 31, 2002 Sediment Sample Groundwater Well Ditch Roads Pavement AOC Boundary SWMU Boundary Buildings 	<ul style="list-style-type: none"> Red = 1993 Sample Locations Upper Interval (0-1') Upper and Lower Intervals Lower Interval (3-5') Green = 1996 Sample Locations Upper Interval (0-1') Upper and Lower Intervals 	<ul style="list-style-type: none"> Upper Interval (0-1') Near Surface Interval (1-2') Lower Interval (3-5') Upper and Lower Intervals Upper and Near Surface Intervals Upper, Near Surface, and Lower Intervals 	<p>Figure 4-1 RFI and Post RFI Sample Locations SWMU 6, Zone G Charleston Naval Complex</p> <p>1 inch = 33.3333 feet</p> <p>0 30 60 Feet</p> <p></p>
---	--	---	---

5.0 COPC/COC Refinement

5.1 Introduction

This section discusses chemicals that were identified in the *Zone G RFI Report, Revision 0* (EnSafe, 1998) as COCs (see Section 2.0 of this report). This section also addresses COPCs identified in subsequent sampling and screening (see Section 4.0). Some of the initially identified COCs/COPCs are not considered final COCs based on the rationale presented in this section. This section describes the results of implementation of the IMs conducted by the DET and CH2M-Jones to remediate previously identified COCs, and discusses the evaluation of the data to verify that the post-remediation residual concentrations at the site are protective of human health and the environment.

In order to evaluate the effectiveness of the IMs conducted at the sites, it is necessary to review the pre-IM conditions. Tables 5-1 and 5-2 present the detected concentrations from previous sampling efforts conducted at the site, to the extent practical, for surface and subsurface soil, respectively. Figure 5-1 shows the sample locations and the boundaries of the individual IM excavations. Figures 5-2 to 5-11 show the locations of samples that were analyzed for COCs/COPCs, the locations where the COCs/COPCs were detected, the locations where COCs/COPCs were detected above screening criteria, and their relationship to the total excavation area (DET and CH2M-Jones).

In addition to the sample locations presented in this section, the DET collected 75 confirmation samples from their excavation to evaluate the effectiveness of their IM (see Appendix A). While the cleanup goals for PCBs and pesticides were not met at all sample locations, the confirmation samples with PCB and pesticide concentrations above the MCSs were limited to the southern portion of the main excavation and to the smaller excavation to the southeast of the main excavation area. Confirmation samples from the western side of the main excavation indicate that PCBs and pesticides were adequately remediated in this area. Subsequent delineation and remediation efforts focused on this area and the area north of the main excavation.

During the IMs, clean soil from outside of the site replaced the contaminated soil that was removed. A reassessment of soil contamination was then made, replacing the results of the removed samples with analytical results of the clean fill material. A few RFI sample

1 locations where no removal actions were conducted were resampled. The most recent
2 results for these locations are considered representative of current site conditions.
3 Tables 5-3 and 5-4 present the residual concentrations of COCs/COPCs representing surface
4 soil and subsurface soil, respectively, after completion of the IMs. Table 5-5 presents
5 COC/COPC detections in groundwater.

6 **5.2 Soil COCs**

7 **5.2.1 Surface Soil**

8 The *Zone G RFI Report, Revision 0* identified antimony, Aroclor-1254, Aroclor-1260, arsenic,
9 BEQ, DDD, DDE, DDT, dioxin, and thallium as surface soil COCs based on a residential
10 exposure scenario. The COCs identified for an industrial exposure scenario included
11 Aroclor-1260, arsenic, BEQs, dioxin, and DDT.

12 As discussed in Section 4.0, BEQs, alpha-BHC, beta-BHC, gamma-BHC, chlordane, dieldrin,
13 DDD, DDT, and Aroclor-1260 were identified as COPCs in surface soil based on the post-
14 RFI sampling. The COCs from the RFI report and COPCs identified in post-RFI sampling
15 and analysis are evaluated further below to determine if they are considered COCs.

16 In this further evaluation, residual (post-IM) concentrations of surface soil COCs/COPCs
17 are compared first to RBCs and the range of background concentrations (for inorganics and
18 BEQs). If individual sample results indicate that the chemical is present above the screening
19 criteria, a site exposure point concentration (e.g., 95-percent Upper Confidence Limit
20 [UCL₉₅]) is calculated and compared to screening criteria. Analytical results for samples that
21 were removed during the IMs conducted at the site were replaced with the analytical results
22 from the fill material for the UCL₉₅ calculation.

23 **Aroclor-1254**

24 Remedial actions were implemented to remove PCB-contaminated soils from SWMU 6 as
25 part of the DET's IM and by CH2M-Jones, as described in Sections 3.0 and 7.0. Figure 5-2
26 presents the locations where PCBs were detected above the residential RBC and the
27 combined IM excavation boundary. The goal of the IMs was to remove PCB-contaminated
28 soil at the site to the extent practical to be protective of human health and the environment.
29 The removal of PCB-impacted soil to below the residential RBC level of 0.32 mg/kg was
30 attempted, although the site is planned for future industrial use. One sample location (S06-
31 B05), where monitoring well G006GW005 is installed, reportedly contained Aroclor-1254 at

1 a concentration of 26 mg/kg. It is unclear if this area was remediated as part of the DET's
2 IM excavation.

3 Residual concentrations of Aroclor-1254 (see Table 5-3) are all below its residential RBC and
4 SSL except at a single location (S06-B05, 26 mg/kg). Aroclor-1254 also exceeded its
5 industrial RBC (2.9 mg/kg) at this location. The sample was collected in 1993 during the
6 installation of monitoring well G006GW005. It is not clear from the DET's 1998 IM
7 Completion Report whether this area was included in their IM excavation or if it is still
8 remaining at the site.

9 Residual concentrations were evaluated for Aroclor-1254 under two scenarios: 1) assuming
10 this high detect sample was removed, and, 2) assuming it remains in place. In order to
11 evaluate if the residual risks are within acceptable limits from presence of Aroclor-1254 at
12 SWMU 6, a UCL_{95} value for an exposure point concentration (EPC) was calculated.

13 During calculation of the UCL_{95} , some of the samples were noted to have very high
14 detection limit ('U') values, much higher than the typical detection limit, and the reporting
15 limit for PCBs. Some of these non-detect values were higher than the maximum detected
16 concentration. Following EPA guidance (EPA, 1989 and 1990), samples with detection limit
17 values higher than the maximum detected concentration reported in the data set were
18 eliminated from UCL_{95} estimations.

19 Seventy-five samples were analyzed for Aroclor-1254 at SWMU 6, with a total of three
20 detections, and eight samples identified with 'U'- flagged values greater than the maximum
21 residual concentration of 174 $\mu\text{g}/\text{kg}$ (this scenario assumes that the highest concentration
22 from 1993 of 26 mg/kg [at G006SB051] is no longer remaining at the site). Therefore, these
23 eight samples with elevated 'U' values were removed from the data set. Thus, the total
24 number of samples included in the UCL_{95} calculation were 66 with three detects, and 63
25 non-detects. The estimated UCL_{95} value was 38.5 $\mu\text{g}/\text{kg}$, as presented in Appendix D-1. The
26 calculated UCL_{95} value (Bootstrap method) is much lower than the residential RBC value of
27 320 $\mu\text{g}/\text{kg}$. Even the maximum detected concentration is lower than the RBC and SSL
28 values in this scenario. Results of the analysis for this scenario indicate that if the soil at
29 boring location G006SB051 was removed during the DET's IM, then Aroclor-1254 is not a
30 COC for unrestricted land use.

31 The second scenario assumed that surface soil at boring G006SB051 was not removed. None
32 of the non-detected values were dropped from the data set because the analytical results
33 were all below the maximum detected concentration. The data used in the UCL_{95} calculation

1 and the UCL₉₅ summary is included in Appendix D-2. The resulting UCL₉₅ value for all 75
2 samples and four detects is estimated to be 975.5 µg/kg, which is approximately three times
3 the residential RBC of 320 µg/kg. However, this value is well below the industrial RBC of
4 2,900 µg/kg.

5 Because SWMU 6 is planned for future industrial use, residual Aroclor-1254 concentrations
6 are within the acceptable limits for worker exposure without further action. Should this site
7 be considered for residential use in the future, a reevaluation of the presence of Aroclor-1254
8 will be necessary. Aroclor-1254 is not identified as a COC at SWMU 6 for industrial use of
9 the site. However, Aroclor-1254 is considered a COC under an unrestricted (i.e., residential)
10 land use scenario.

11 **Aroclor-1260**

12 Figure 5-2 presents the locations where PCBs were detected above the EPA Region III
13 residential RBC, and the combined IM excavation boundary. The goal of the IMs was to
14 remove PCB-contaminated soil at the site to the extent practical, in order to be protective of
15 human health and the environment. It was attempted to remove PCB-impacted soil to below
16 the residential RBC level of 0.32 mg/kg, although the site is planned for future industrial
17 land use.

18 The residual concentrations of Aroclor-1260 ranged between 0.0108 to 2.4 mg/kg, of which
19 four samples exceeded the residential RBC (0.32 mg/kg), and none exceeded the industrial
20 RBC of 2.9 mg/kg (see Table 5-3).

21 In order to evaluate the potential residual risks associated with exposures to Aroclor-1260 at
22 SWMU 6, a UCL₉₅ concentration was calculated. The data used in the UCL₉₅ calculation and
23 the UCL₉₅ summary is included in Appendix D-3. The calculated UCL₉₅ was 0.17 mg/kg,
24 which is below the residential (0.32 mg/kg) and industrial (2.9 mg/kg) RBC. These data
25 indicate that the residual concentrations of the PCB Aroclor-1260 does not present a human
26 exposure concern under unrestricted or industrial land use conditions. Therefore, Aroclor-
27 1260 is not identified as a COC for SWMU 6.

28 **BEQs**

29 BEQs were not targeted for removal during the IM conducted by the DET. The IM
30 conducted by CH2M-Jones was intended to remove BEQ-impacted soil above the sitewide
31 reference concentration adopted by the BCT (CH2M-Jones, 2001d). Figure 5-3 presents the
32 calculated BEQ concentrations and their relationship to the IM excavation boundaries.

1 Calculated BEQ concentrations in surface soil at SWMU 6 are all below the reference
2 concentration adopted by the BCT except in sample 007SB37101 (soil boring S07-B37, at 6.1
3 mg/kg; see Table 5-3). The location of this sample is across the ditch to the east and adjacent
4 to a paved area associated with Building 193.

5 Because this sample was collected across the drainage ditch, it is not considered to be
6 associated with SWMU 6. It is also possible that the sample contained a small amount of
7 pavement material, resulting in the elevated BEQ value. Thus the only residual exceedance
8 of BEQs is a sample that is outside the boundary of the SWMU and not representative of the
9 site. Based on these considerations, BEQs are not considered to be a COC at SWMU 6.

10 **Alpha-BHC**

11 Figure 5-4 presents the detected concentrations of alpha-BHC and its relationship to the IM
12 excavation boundaries.

13 The residual concentrations of alpha-BHC are all below the residential RBC of 100 $\mu\text{g}/\text{kg}$
14 (see Table 5-3). A total of 32 samples were analyzed for this chemical, and three surface soil
15 samples (006SB01801, 0.51 $\mu\text{g}/\text{kg}$; 006SB01901, 0.26 $\mu\text{g}/\text{kg}$; and 006SB04401, 0.71 $\mu\text{g}/\text{kg}$) had
16 reported concentrations above the SSL of 0.06 $\mu\text{g}/\text{kg}$ for alpha-BHC. The detection limits
17 ranged between 1.4 to 200 $\mu\text{g}/\text{kg}$, which were well above the maximum detected surface
18 soil concentration, and the target SSL when analyzed using the EPA-approved method.
19 Thus, any reported detection is expected to exceed the screening value.

20 Because residual concentrations of alpha-BHC are all below the residential RBC, alpha-BHC
21 is not considered a COC based on human exposure. However, because several locations had
22 reported concentrations of alpha-BHC above the SSL, further evaluation regarding potential
23 migration to shallow groundwater is warranted. This evaluation is presented in Section
24 5.2.2.

25 **Beta-BHC**

26 Figure 5-4 presents the detected concentrations of beta-BHC and its relationship to the IM
27 excavation boundaries.

28 The residual surface soil concentrations of beta-BHC are all below the EPA Region III
29 residential RBC (see Table 5-3). Two samples (006SB01901, 1.7 $\mu\text{g}/\text{kg}$ and 006SB04401, 2.2
30 $\mu\text{g}/\text{kg}$), both of which are at the boundary of excavated areas, had reported concentrations
31 slightly above the SSL of 1.5 $\mu\text{g}/\text{kg}$ for beta-BHC. Other historical higher concentration area
32 soils have been removed.

1 Because residual concentrations of beta-BHC are all below the residential RBC, beta-BHC is
2 not considered a COC based on human exposure. However, because two locations had
3 reported concentrations of beta-BHC above the SSL, further evaluation regarding potential
4 migration to shallow groundwater is warranted. This evaluation is presented in Section
5 5.2.2.

6 **Gamma-BHC (Lindane)**

7 Figure 5-4 presents the detected concentrations of gamma-BHC and its relationship to the
8 IM excavation boundaries.

9 The residual concentrations of gamma-BHC are all below the residential RBC (see Table 5-
10 3). Three samples (006SB01201, 24 $\mu\text{g}/\text{kg}$; 006SB04401, 5.2 $\mu\text{g}/\text{kg}$; and 006SB07101, 26
11 $\mu\text{g}/\text{kg}$) had reported concentrations above the SSL of 4.5 $\mu\text{g}/\text{kg}$ for gamma-BHC.

12 Because residual concentrations of gamma-BHC are all below the residential RBC, gamma-
13 BHC is not considered a COC based on human exposure. However, because two locations
14 had reported concentrations of gamma-BHC above the SSL, further evaluation regarding
15 potential migration to shallow groundwater is warranted. This evaluation is presented in
16 Section 5.2.2.

17 **Chlordane and Dieldrin**

18 Figure 5-5 presents the detected concentrations of chlordane and dieldrin, and their
19 relationship to the IM excavation boundaries.

20 The residual concentrations of chlordane at the site after the IM implementation are all
21 below the residential RBC and SSL (see Table 5-3). Therefore, chlordane is not identified as a
22 surface soil COC.

23 The residual concentrations of dieldrin are all below the residential RBC of 40 $\mu\text{g}/\text{kg}$ (see
24 Table 5-3). One sample (006SB01201, 4.6 $\mu\text{g}/\text{kg}$) had a reported concentration above the SSL
25 for dieldrin. Because residual concentrations of dieldrin are all below the residential RBC,
26 dieldrin is not considered a COC based on human exposure. However, because one location
27 had a reported concentrations of dieldrin above its SSL, further evaluation regarding
28 potential migration to shallow groundwater is warranted. This evaluation is presented in
29 Section 5.2.2.

30 **DDD, DDE, and DDT**

31 Figure 5-6 presents the detected concentrations of DDD, DDE, and DDT, and their
32 relationship to the IM excavation boundaries.

1 The residual concentrations of DDD and DDE are all below their respective residential RBC
2 and SSL (see Table 5-3). Therefore, DDD and DDE are not considered COCs in surface soil at
3 SWMU 6.

4 The residual concentrations of DDT are all below its SSL (see Table 5-3). Two samples
5 (006SB05101, 4.2 mg/kg and 006SB07101, 2.0 mg/kg), collected in 1993, were above the
6 residential RBC (1.9 mg/kg). Neither sample contained DDT at concentrations that
7 exceeded the industrial RBC (17 mg/kg).

8 In order to evaluate the potential residual risks associated with exposures to DDT at SWMU
9 6, a UCL₉₅ concentration was calculated. The data used in the UCL₉₅ calculation and the
10 UCL₉₅ summary are presented in Appendix D-4. The calculated UCL₉₅ was 0.24 mg/kg,
11 which is below the residential (1.9 mg/kg) and industrial (17 mg/kg) RBCs. These data
12 indicate that the residual concentrations of DDT do not present a human exposure concern
13 even under unrestricted land use conditions. Therefore, DDT is not considered a COC at
14 SWMU 6.

15 Appendix D-5 presents a summary of the UCL₉₅ calculations for all PCBs.

16 **Dioxins**

17 Dioxins were identified as a COC in the RFI report based on a single sample exceeding the
18 TEQ action level of 1,000 ng/kg. During the RFI, two samples were collected and analyzed
19 for dioxins at SWMU 6. Sample 006CB00201 (soil boring G006SB002) was reported in the
20 RFI report as having a calculated TEQ of 0.138 ng/kg; sample 007CB00101 (soil boring
21 G007SB001) was reported as having a calculated TEQ of 1,020 ng/kg (Table 10.12.7).

22 However, upon review of the RFI data summary tables, which is provided in Appendix D of
23 the *Zone G RFI Report, Revision 0*, it was discovered that sample 006CB00201 was reported as
24 containing the higher concentration of dioxins. Table 10.12.7 and the dioxin results from the
25 RFI report are included in Appendix E. Figure 5-7 illustrates the locations of the dioxin
26 detections and their relationship to the excavation boundaries.

27 CH2M-Jones evaluated the presence of dioxins in soil at the CNC (CH2M-Jones, 2002b). This
28 evaluation included recalculating TEQ values for every sample in which dioxins were
29 detected. The calculated TEQ values for samples 006CB00201 and 007CB00101 are 970
30 ng/kg and 0.347 ng/kg, respectively.

31 The soil where sample 006CB00201 was collected was removed during the 2002 IM
32 excavation. The remaining TEQ concentration (007CB00101, 0.347 ng/kg) is below the
33 residential RBC (4.3 ng/kg). Therefore, dioxins are not considered a COC at SWMU 6.

1 **Antimony, Arsenic, and Thallium**

2 Metals (except for lead) were not targeted for removal during the IM conducted by the DET.
3 The IM conducted by CH2M-Jones was intended to remove COCs/COPCs, including
4 metals, to concentrations consistent with background levels. Figure 5-8 presents the
5 concentrations of antimony, arsenic, and thallium, and their relationship to the IM
6 excavation boundaries.

7 The residual concentrations of antimony, arsenic, and thallium are all within the respective
8 Zone G range of background concentrations (see Table 5-3). Therefore, antimony, arsenic,
9 and thallium are not considered COCs at SWMU 6.

10 In summary, there are no COCs identified for site surface soil at SWMU 6 requiring further
11 action based on a scenario of industrial land use of the site. Aroclor-1254 is considered a
12 surface soil COC for future unrestricted land use. Therefore, SWMU 6 is considered suitable
13 for future industrial use of the site. No further investigation of surface soil is warranted.

14 **5.2.2 Subsurface Soil**

15 The *Zone G RFI Report, Revision 0* did not identify subsurface soil COCs at Combined SWMU
16 6. As discussed in Section 4.0 BEQs, alpha-BHC, beta-BHC, gamma-BHC, and dieldrin were
17 identified as COPCs based on exceedances of generic SSLs in subsurface soil. These COPCs
18 are evaluated further below to determine if they are considered COCs under current
19 screening criteria adopted by the BCT. This section also addresses surface soil
20 COCs/COPCs that exhibited exceedances of SSLs. Each compound is discussed below.

21 **BEQs**

22 The IM conducted by CH2M-Jones was intended to remove BEQ-impacted soil above the
23 background concentration adopted by the BCT. Figure 5-9 presents the calculated BEQ
24 concentrations in subsurface soil and its relationship to the IM excavation boundaries.
25 Because the IM excavations did not extend to 5 ft at any location, all sample locations were
26 assumed to be remaining following the IMs.

27 A review of the BEQ data (see Table 5-2) shows that five samples (006SB00702, 2,220 $\mu\text{g}/\text{kg}$;
28 006SB02602, 3,050 $\mu\text{g}/\text{kg}$; 006SB04502, 1,815 $\mu\text{g}/\text{kg}$; 006SB15202, 3,273 $\mu\text{g}/\text{kg}$; and
29 006SB27202, 1,421 $\mu\text{g}/\text{kg}$) exceed the subsurface soil background concentration for BEQs.
30 The data for the individual cPAHs for these samples were evaluated to determine if a
31 leaching potential exists. These data are presented in Table 5-6.

1 Two cPAHs (benzo[a]anthracene and benzo[b]fluoranthene) were detected at
2 concentrations that exceed their respective SSLs. Neither of these compounds were detected
3 in site groundwater, indicating that existing concentrations are adequately protective of
4 shallow groundwater.

5 Additionally, individual exceedances of SSLs do not necessarily pose a leaching hazard. A
6 better measure of a constituent's leaching potential is its mean concentration. Mean
7 concentrations were calculated for benzo[a]anthracene and benzo[b]fluoranthene and
8 compared to their respective SSLs. The data used in the mean calculation and the calculation
9 result are included in Appendices D-8 and D-9. The mean concentration for
10 benzo[a]anthracene was 463.7 $\mu\text{g}/\text{kg}$ and 459.2 $\mu\text{g}/\text{kg}$ for benzo[b]fluoranthene. These
11 values are below their respective SSLs (1,000 and 2,500 $\mu\text{g}/\text{kg}$ respectively), further
12 supporting that existing concentrations of these compounds do not represent a significant
13 leaching risk. Based on these considerations, BEQs are not considered COCs at SWMU 6.

14 **Alpha-BHC**

15 A total of 31 residual surface soil samples and 38 subsurface soil samples were analyzed for
16 this chemical. Three surface soil samples and nine subsurface soil samples had reported
17 concentrations above the SSL of 0.25 $\mu\text{g}/\text{kg}$ for alpha-BHC (see Tables 5-3 and 5-4). Figure 5-
18 10 illustrates the locations of the samples where alpha-BHC was a target analyte and the
19 locations where it was detected. Table 5-2 contains the detected concentrations.

20 Because the reporting limit for the samples in which alpha-BHC was not detected was
21 greater than the highest detected concentration, it was not possible to estimate the mean
22 alpha-BHC concentration to determine if it presents a leaching risk. However, it was
23 detected in only 12 of the 69 residual samples (surface and subsurface) and sitewide
24 averages are likely to be lower than the detected concentrations as only a few (<10%) of the
25 total samples had detections. Of the nine subsurface soil alpha-BHC detects, only one
26 sample had co-located surface soil detection as well, albeit at lower level than the subsurface
27 sample. Alpha-BHC was never detected in any of the monitoring wells sampled since 1993,
28 located distributed across the area of SWMU 6. The detected low level alpha-BHC could be
29 from historical facility maintenance applications or due to disposal at the site. However
30 residual concentrations in this extensively sampled and remediated area are very low. These
31 data indicate that alpha-BHC does not pose a threat to shallow groundwater. Therefore, it is
32 not identified as a subsurface soil COC at SWMU 6.

1 **Beta-BHC**

2 Residual concentrations of beta-BHC are all below the SSL, except at two surface and seven
3 subsurface sample locations (see Tables 5-3 and 5-4). Because the reporting limit for the
4 samples in which beta-BHC was not detected was generally greater than the SSL, it was not
5 possible to estimate the mean beta-BHC concentration to determine if it presents a leaching
6 risk. However, it was detected in only nine of the 69 residual soil samples; beta-BHC has not
7 been detected in site groundwater. These data indicate that beta-BHC does not pose a threat
8 to shallow groundwater. Therefore, it is not identified as a subsurface soil COC at SWMU 6.
9 Figure 5-10 illustrates the locations of the samples where beta-BHC was a target analyte and
10 the locations where it was detected. Table 5-2 contains the detected concentrations.

11 **Gamma-BHC**

12 Residual concentrations of gamma-BHC are all below the SSL, except at three surface and
13 three subsurface sample locations (see Tables 5-3 and 5-4). Figure 5-10 illustrates the
14 locations of the samples where gamma-BHC was a target analyte and the locations where it
15 was detected. Table 5-2 contains the detected concentrations.

16 The individual exceedances of the SSL do not necessarily represent a leaching risk. The
17 average concentrations are better indicators of a chemical's potential for leaching. Therefore,
18 the mean surface soil and subsurface soil concentrations of gamma-BHC were calculated.
19 The analytical data used in the mean calculation and the calculation result for gamma-BHC
20 are presented in Appendix D-10. The resulting average concentrations were estimated at
21 3.47 $\mu\text{g}/\text{kg}$ and 3.72 $\mu\text{g}/\text{kg}$ for surface and subsurface soil, respectively. These
22 concentrations are below the SSL of 4.5 $\mu\text{g}/\text{kg}$ for gamma-BHC. Gamma-BHC has also not
23 been detected in site groundwater. These data indicate that residual gamma-BHC does not
24 pose a threat to shallow groundwater. Therefore, gamma-BHC is not identified as a surface
25 soil COC at SWMU 6.

26 **Dieldrin**

27 The residual concentrations of dieldrin are all below the SSL, except at one surface soil and
28 four subsurface soil locations (see Tables 5-1 and 5-2). Figure 5-11 illustrates the locations of
29 the samples where dieldrin was a target analyte and the locations where it was detected.
30 Table 5-2 contains the detected concentrations.

31 The individual exceedances of the SSL do not necessarily represent a leaching risk. Average
32 concentrations are better indicators of a chemical's potential for leaching. Therefore, the
33 mean surface soil concentration of dieldrin was calculated. The analytical data for dieldrin

1 in surface soil are presented in Appendix D-7. Nine samples where dieldrin was not
2 detected had reporting limits greater than the maximum detected value, and therefore were
3 not included in the mean concentration calculation. The data used in the mean calculation
4 and the calculation result are included in Appendix D. The resulting surface soil average
5 concentration was 0.81 $\mu\text{g}/\text{kg}$. This concentration is below the SSL of 2 $\mu\text{g}/\text{kg}$ for dieldrin.

6 Because the reporting limits for the subsurface soil samples in which dieldrin was not
7 detected were greater than the SSL, it was not possible to estimate the mean subsurface
8 dieldrin concentration to determine if it presents a leaching risk. However, it was detected
9 in only four of the 37 residual subsurface samples. Dieldrin has not been detected in site
10 groundwater. These data indicate that dieldrin does not pose a threat to shallow
11 groundwater. Therefore, it is not identified as a subsurface soil COC at SWMU 6.

12 **5.2.3 Summary of Soil COCs**

13 Based on the above discussion, there are no COCs identified for the industrial land use
14 scenario at SWMU 6. Aroclor-1254 was the only compound identified as a soil COC under
15 the unrestricted (i.e., residential) land use scenario. Aroclor-1254 was detected at an elevated
16 concentration at one residual sample location, S06-B05, collected at monitoring well
17 G006SB005. It is unclear if the initial IM performed by the DET removed this elevated
18 concentration sample. The area represented by this sample is very small and is surrounded
19 by samples with no detections or at concentrations that fall well below the COPC screening
20 criteria.

21 **5.3 Groundwater COCs**

22 The *Zone G RFI Report, Revision 0* identified arsenic, barium, beryllium, and
23 pentachlorophenol as shallow groundwater COCs based on the unrestricted (i.e.,
24 residential) land use of the site. For industrial land use, arsenic and beryllium were
25 identified as COCs. As discussed in Section 4.0, DDE, DDT, antimony, arsenic, iron, nickel,
26 thallium were identified as COPCs in groundwater as a result of the post-RFI sampling
27 analysis. These COPCs are evaluated further below to determine if they are considered
28 COCs.

29 **DDE**

30 DDE was identified as a COPC based on the analytical results from the July 2002 samples. It
31 was detected in five of the seven samples collected in 2002. Four samples (006GW003M5,
32 0.25 $\mu\text{g}/\text{L}$; 006GW004M5, 2.2 $\mu\text{g}/\text{L}$; 006GW006M5, 0.26 $\mu\text{g}/\text{L}$; and 006GW007M5, 0.72 $\mu\text{g}/\text{L}$)

1 contained DDE at concentrations that exceed its RBC of 0.2 $\mu\text{g}/\text{L}$ (an MCL is not available
2 for DDE). It was not detected in any sample from the previous four sampling events in 1996-
3 1997.

4 DDE is virtually insoluble in water. The turbidity in these samples was measured during
5 sample collection. Turbidity ranged from 10 NTUs (006GW003M5) to 151 NTUs
6 (006GW006M5) in samples where DDE was detected above screening criteria. DDE
7 concentrations in these samples were generally higher in samples with higher turbidity.
8 Based on these data, suspended solids are considered the likely cause of the increased DDE
9 concentrations. However, there are insufficient data to determine conclusively that the
10 detected concentrations of DDE are the result of suspended solids. Therefore DDE is
11 identified as a groundwater COC at SWMU 6.

12 **DDT**

13 DDT was detected in the same wells as DDE, and in one additional well. It was identified as
14 a COPC based on the analytical results from the July 2002 samples. It was detected in five of
15 the seven samples collected in 2002. All five samples where DDT was detected
16 (006GW002M1, 0.28 $\mu\text{g}/\text{L}$; 006GW003M5, 1.5 $\mu\text{g}/\text{L}$; 006GW004M5, 1.8 $\mu\text{g}/\text{L}$; 006GW006M5,
17 0.43 $\mu\text{g}/\text{L}$; and 006GW007M5, 1.2 $\mu\text{g}/\text{L}$) contained DDT at concentrations that exceed its
18 RBC of 0.2 $\mu\text{g}/\text{L}$ (an MCL is not available for DDT). DDT was not detected in any sample
19 from the previous four sampling events in 1996-1997.

20 The turbidity in these samples was measured during sample collection. Turbidity ranged
21 from 8 NTUs (006GW002M5) to 151 NTUs (006GW006M5) in samples where DDT was
22 detected above screening criteria. DDT concentrations were generally higher in samples
23 with higher turbidity. Based on these data, suspended solids are considered the likely cause
24 of the increased DDT concentrations. However, there are insufficient data to determine
25 conclusively that the detected concentrations of DDT are the result of suspended solids.
26 Therefore, DDT is identified as a groundwater COC at SWMU 6.

27 **Pentachlorophenol**

28 Pentachlorophenol was identified as a COC in the RFI report based on a single detection
29 above its RBC. It was detected in a duplicate sample (006HW00401) collected in the first
30 round of RFI groundwater sampling. The detected concentration (2 J $\mu\text{g}/\text{L}$) was estimated
31 and near the detection limit, as indicated by the "J" qualifier. It was not detected in any of
32 the four subsequent sampling events, nor was it detected in any other monitoring well.

1 Based on these data, the single detection of pentachlorophenol was likely anomalous.
2 Therefore, pentachlorophenol is not considered a groundwater COC at SWMU 6.

3 **Antimony**

4 Antimony was identified as a COPC based on the analytical results from the July 2002
5 samples. It was detected in two of the seven samples collected in 2002. Both samples where
6 antimony was detected (006GW001M5, 8.42 $\mu\text{g}/\text{L}$ and 006GW006M5, 9.16 $\mu\text{g}/\text{L}$) contained
7 antimony at concentrations that exceed it MCL of 6 $\mu\text{g}/\text{L}$. It was not detected in any sample
8 from the previous four sampling events in 1996-1997.

9 The turbidity in these samples was measured during sample collection. Turbidity ranged
10 from 80.2 NTUs (006GW001M5) to 151 NTUs (006GW006M5). Based on these data, and the
11 fact that antimony was not detected in earlier sampling efforts, suspended solids are
12 considered the likely cause of the increased antimony concentrations. However, there are
13 insufficient data to determine conclusively that the detected concentrations of antimony are
14 the result of suspended solids. Therefore, antimony is identified as a groundwater COC at
15 SWMU 6.

16 **Arsenic**

17 Arsenic has been detected consistently above its MCL in monitoring well G006GW003. In
18 five rounds of sampling, none of the other six monitoring wells at the site have exhibited
19 arsenic concentrations above the MCL. The location of monitoring well G006GW003 is near
20 the western boundary of SWMU 6. Previous groundwater investigations conducted by
21 CH2M-Jones in 2001 have shown that groundwater flow in this area is generally to the east,
22 toward the Cooper River (CH2M-Jones, 2001b). Based on this information, the detected
23 concentrations of arsenic are either not site related or a source of arsenic is present in the
24 immediate vicinity of monitoring well G006GW003.

25 During execution of the 2002 IM, CH2M-Jones collected two surface and five subsurface soil
26 samples in the vicinity of monitoring well G006GW003 to augment the RFI data. A
27 subsurface sample was also collected adjacent to the monitoring well. During installation of
28 the monitoring well a surface sample was collected, however a subsurface sample was not
29 collected. These samples were collected to determine if a source of arsenic was present at the
30 site. The analytical results for these samples is summarized in Table 5-7. Figure 5-1 shows
31 the sample locations.

32 The analytical results for arsenic from the samples collected near monitoring well
33 G006GW003 showed only one of the nine results exceeded SSLs, and all were within the

1 Zone G range of background concentrations, indicating that a source of arsenic is not
2 present near monitoring well G006GW003.

3 Iron was reported at elevated concentrations (30,900 to 77,500 $\mu\text{g}/\text{L}$) in monitoring well
4 G006GW003. The lowest iron concentration corresponds to the same sampling event where
5 arsenic was detected at its lowest level. The arsenic and iron concentrations appear to be
6 naturally elevated due to the activity of iron-reducing bacteria. Because iron-reducing
7 bacteria contribute to increases in the concentrations of both iron and arsenic, it is probable
8 that iron-reducing bacteria are responsible for the elevated concentrations of iron and
9 arsenic. These data support the hypothesis that iron and arsenic concentrations at SWMU 6
10 are the result of microbial processes, and not site activities (CH2M-Jones, 2001c).

11 Based on the preceding discussion and the fact that an onsite source of arsenic has not been
12 identified, the existing concentrations of arsenic are considered to be the result of natural
13 processes. Therefore, arsenic is not considered a COC at SWMU 6.

14 **Barium**

15 Barium was identified as a COC in the RFI report based on exceedances of its tap water RBC
16 (260 $\mu\text{g}/\text{L}$). The current screening process adopted by the BCT specifies comparing detected
17 concentrations of potential contaminants to their MCLs whenever available. The MCL for
18 barium is 2,000 $\mu\text{g}/\text{L}$. No groundwater samples collected at the site contained barium above
19 its MCL. Therefore, barium is not considered a COC at SWMU 6.

20 **Beryllium**

21 Beryllium was identified as a COC in the RFI report based on exceedances of its RBC (0.016
22 $\mu\text{g}/\text{L}$). The current screening process adopted by the BCT specifies comparing detected
23 concentrations of potential contaminants to their MCLs whenever available. The MCL for
24 beryllium is 4 $\mu\text{g}/\text{L}$. No groundwater samples collected at the site contained beryllium
25 above its MCL. Therefore, beryllium is not considered a COC at SWMU 6.

26 **Iron**

27 Iron was identified as a COC based on exceedances of its RBC (HI=0.1, a MCL is not
28 available for iron) and its Zone G range of background concentrations. Iron is generally
29 considered an essential nutrient and is not considered toxic except at extremely high
30 concentrations. Additionally, the elevated iron concentrations are likely due to natural
31 geochemical and microbial processes as previously discussed. Based on these
32 considerations, iron is not considered a COC at SWMU 6.

1 **Nickel**

2 Nickel was identified as a COPC based on a single sample (006GW005M5, 92.3 $\mu\text{g}/\text{L}$)
3 containing nickel above its RBC (73 $\mu\text{g}/\text{L}$ for HI=0.1, a MCL is not available for nickel).
4 Turbidity was measured during the sampling event in which this sample was collected.
5 Turbidity in sample 006GW005M5 was 142 NTUs. The presence of suspended solids may
6 have caused the elevated nickel concentration in this sample. Nickel was not detected above
7 its range of background concentrations in any of the four previous sampling events, nor was
8 it detected above screening criteria in any samples from the other six monitoring wells at the
9 site.

10 The single detection of nickel marginally above screening criteria is considered to be the
11 likely result of suspended solids being present in the sample. However, there are
12 insufficient data to determine conclusively that the detected concentrations of nickel are the
13 result of suspended solids, therefore nickel is identified as a groundwater COC at SWMU 6.

14 **Thallium**

15 Thallium has been intermittently detected above its MCL in samples collected from six of
16 the seven site monitoring wells. It has not been detected in samples collected from
17 monitoring well G006GW007. The intermittent nature of the detections and the fact that a
18 thallium source has not been identified at SWMU 6 suggest that these occurrences are of
19 natural origin. However, background concentrations have not been established for thallium
20 in Zone G due to the small number of grid wells (two) located within Zone G.

21 To address this issue, thallium concentrations in adjacent zones were used to compare
22 thallium concentrations found at SWMU 6 to background levels.

23 Four other zones are adjacent to Zone G (Zones E, F, H, and I). Background levels of
24 thallium have been determined in these four zones. Table 5-8 presents the range of detected
25 thallium concentrations found in each zone. Overall, detected thallium concentrations from
26 grid wells within these zones ranges from 2 to 105 $\mu\text{g}/\text{L}$. The maximum detected thallium
27 concentration from SWMU 6 monitoring wells was 9.3 $\mu\text{g}/\text{L}$ (006GW00402).

28 These data further support the contention that detected concentrations of thallium at SWMU
29 6 are of natural origin. Therefore, thallium is not considered a COC at SWMU 6.

30 Based on the above discussions, DDE, DDT, antimony, and nickel have been identified as
31 groundwater COCs at SWMU 6.

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
Aroclor-1254 ^a	G006SB018	006SB01801		08-May-02	174	=	320	2,900	550 _{Reg III} ^b	NA
	G006SB019	006SB01901		08-May-02	8.1	=				
	G006SB023	006SB02301		09-May-02	56.5	=				
	S06-B05	006SB05101		22-Sep-93	26,000	=				
Aroclor-1260 ^a	G006SB001	006SB00101	Removed _{DET}	19-Sep-96	8,600	=	320	2,900	7,200 _{Site-specific}	NA
	G006SB003	006SB00301	Removed _{DET}	19-Sep-96	240	J				
	G006SB005	006SB00501		17-Jan-02	95	J				
	G006SB006	006SB00601DL	Removed _{Jones}	17-Jan-02	13,000	J				
	G006SB010	006SB01001		17-Jan-02	260	J				
	G006SB012	006SB01201		17-Jan-02	200	J				
	G006SB015	006SB01501		17-Jan-02	49	J				
	G006SB017	006SB01701		08-May-02	26.8	=				
	G006SB018	006SB01801		08-May-02	270	=				
	G006SB019	006SB01901		08-May-02	10.8	=				
	G006SB022	006SB02201	Removed _{Jones}	09-May-02	21,600	=				
	G006SB023	006SB02301		09-May-02	265	=				
	G006SB025	006SB02503	Removed _{Jones}	08-May-02	90.4	=				
	G006SB035	006SB03501		11-Jun-02	199	J				
	G006SB036	006SB03601	Removed _{Jones}	11-Jun-02	6,620	J				
	G006SB037	006SB03701		11-Jun-02	207	J				
	G006SB038	006SB03801	Removed _{Jones}	11-Jun-02	6,270	J				
	G006SB039	006SB03901	Removed _{Jones}	11-Jun-02	18,000	=				
	G006SB040	006SB04001	Removed _{Jones}	11-Jun-02	1,900	J				
	G006SB048	006SB04801	Removed _{Jones}	11-Jun-02	6,760	J				
	G006SB049	006SB04901		08-May-02	61	J				
	G006SB050	006SB05001		21-Jun-02	84	J				
	G006SB053	006SB05301		21-Jun-02	96	J				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
Aroclor-1260 ^a	G006SB055	006SB05501		21-Jun-02	22	J	320	2,900	7,200 _{Site-specific}	NA
	G006SB056	006SB05601	Removed _{Jones}	21-Jun-02	3,000	J				
	G006SB057	006SB05701	Removed _{Jones}	21-Jun-02	210	J				
	G006SB059	006SB05901		21-Jun-02	270	J				
	S06-B06	006SB06101		22-Sep-93	2,400	=				
	S06-B15	006SB15101	Removed _{DET}	27-Oct-93	970	P				
	S06-B20	006SB20101		27-Oct-93	420	=				
	S07-B03	007SB03101		09-Oct-93	550	J				
	S07-B05	007SB05101	Removed _{DET}	09-Oct-93	330	=				
	S07-B07	007SB07101		09-Oct-93	780	=				
	S07-B08	007SB08101	Removed _{DET}	09-Oct-93	1,400	=				
	S07-B09	007SB09101	Removed _{DET}	09-Oct-93	270	=				
	S07-B10	007SB10101	Removed _{DET}	09-Oct-93	290	D				
	S07-B11	007SB11101	Removed _{Jones}	09-Oct-93	1,500	D				
	S07-B12	007SB12101	Removed _{DET}	09-Oct-93	130	=				
	S07-B16	007SB16101	Removed _{DET}	11-Oct-93	5,800	=				
	S07-B17	007SB17101	Removed _{Jones}	11-Oct-93	100	=				
	S07-B19	007SB19101	Removed _{Jones}	11-Oct-93	1,100	=				
	S07-B21	007SB21101	Removed _{DET}	11-Oct-93	510,000	=				
	Alpha-BHC ^a	S07-B23	007SB23101	Removed _{DET}	11-Oct-93	230	J			
S07-B28		007SB28101	Removed _{DET}	13-Oct-93	160	=				
S07-B34		007SB34101		13-Oct-93	120	=				
S07-B36		007SB36101		13-Oct-93	110	=				
S07-B37		007SB37101		13-Oct-93	110	=				
G006SB001		006SB00101	Removed _{DET}	19-Sep-96	16	=	100	910	0.25	NA
G006SB008		006SB00801	Removed _{Jones}	17-Jan-02	1.4	J				
G006SB009		006SB00901	Removed _{Jones}	17-Jan-02	5	J				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
Alpha-BHC ^a	G006SB018	006SB01801		08-May-02	0.51	J	100	910	0.25	NA
	G006SB019	006SB01901		08-May-02	0.26	J				
	G006SB021	006SB02101	Removed _{Jones}	08-May-02	53.1	J				
	G006SB044	006SB04401		12-Jun-02	0.71	J				
	S07-B27	007SB27101	Removed _{DET}	11-Oct-93	39,000	D				
Beta-BHC ^a	G006SB001	006SB00101	Removed _{DET}	19-Sep-96	24	=	350	3,200	1.5	NA
	G006SB002	006SB00201	Removed _{Jones}	19-Sep-96	18	J				
	G006SB009	006SB00901	Removed _{Jones}	17-Jan-02	26	J				
	G006SB011	006SB01101	Removed _{Jones}	17-Jan-02	1.6	=				
	G006SB018	006SB01801		08-May-02	1	J				
	G006SB019	006SB01901		08-May-02	1.7	=				
	G006SB021	006SB02101	Removed _{Jones}	08-May-02	176	=				
	G006SB028	006SB02803	Removed _{Jones}	08-May-02	172	J				
	G006SB044	006SB04401		12-Jun-02	2.2	J				
	G006SB046	006SB04601	Removed _{Jones}	12-Jun-02	12.4	J				
	S07-B27	007SB27101	Removed _{DET}	11-Oct-93	3,800	D				
Gamma-BHC (Lindane) ^a	G006SB001	006SB00101	Removed _{DET}	19-Sep-96	110	=	490	4,400	4.5	NA
	G006SB002	006SB00201	Removed _{Jones}	19-Sep-96	65	J				
	G006SB008	006SB00801	Removed _{Jones}	17-Jan-02	13	=				
	G006SB009	006SB00901	Removed _{Jones}	17-Jan-02	43	=				
	G006SB010	006SB01001		17-Jan-02	0.97	J				
	G006SB011	006SB01101	Removed _{Jones}	17-Jan-02	3.4	J				
	G006SB012	006SB01201		17-Jan-02	24	=				
	G006SB018	006SB01801		08-May-02	3.1	=				
	G006SB019	006SB01901		08-May-02	1.3	J				
	G006SB021	006SB02101	Removed _{Jones}	08-May-02	246	=				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
Gamma-BHC (Lindane) ^a	G006SB028	006SB02803	Removed _{Jones}	08-May-02	189	J	490	4,400	4.5	NA
	G006SB044	006SB04401		12-Jun-02	5.2	=				
	G006SB046	006SB04601	Removed _{Jones}	12-Jun-02	19.3	=				
	S06-B07	006SB07101		22-Sep-93	26	=				
	S06-B25	006SB25101	Removed _{DET}	27-Oct-93	4.6	=				
	S07-B16	007SB16101	Removed _{DET}	11-Oct-93	28	=				
	S07-B23	007SB23101	Removed _{DET}	11-Oct-93	11	J				
	S07-B27	007SB27101	Removed _{DET}	11-Oct-93	76,000	D				
	S07-B29	007SB29101	Removed _{Jones}	13-Oct-93	57	J				
Chlordane ^a	G006SB008	006SB00801	Removed _{Jones}	17-Jan-02	270	J	1,800	16,000	5,000	NA
	G006SB014	006SB01401	Removed _{Jones}	17-Jan-02	2,400	J				
	G006SB019	006SB01901		08-May-02	9.6	J				
	G006SB021	006SB02101	Removed _{Jones}	08-May-02	5,460	=				
	G006SB028	006SB02803	Removed _{Jones}	08-May-02	26,400	=				
	G006SB044	006SB04401		12-Jun-02	61.2	=				
	G006SB046	006SB04601	Removed _{Jones}	12-Jun-02	474	=				
Dieldrin ^a	G006SB007	006SB00701	Removed _{Jones}	17-Jan-02	9.7	=	40	360	2	NA
	G006SB009	006SB00901	Removed _{Jones}	17-Jan-02	73	=				
	G006SB012	006SB01201		17-Jan-02	4.6	J				
	G006SB013	006SB01301		17-Jan-02	1.2	J				
	G006SB017	006SB01701		08-May-02	0.79	J				
p,p'-DDD ^a	G006MB001	006MB00101		08-May-02	1.8	J	2,700	24,000	8,000	NA
	G006SB001	006SB00101	Removed _{DET}	19-Sep-96	930	=				
	G006SB002	006SB00201	Removed _{Jones}	19-Sep-96	19,000	=				
	G006SB007	006SB00701	Removed _{Jones}	17-Jan-02	72	J				
	G006SB008	006SB00801	Removed _{Jones}	17-Jan-02	170	J				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
p,p'-DDD ^a	G006SB009	006SB00901	Removed _{Jones}	17-Jan-02	980	J	2,700	24,000	8,000	NA
	G006SB010	006SB01001		17-Jan-02	20	J				
	G006SB011	006SB01101	Removed _{Jones}	17-Jan-02	36	J				
	G006SB012	006SB01201		17-Jan-02	510	J				
	G006SB013	006SB01301		17-Jan-02	6.2	J				
	G006SB014	006SB01401	Removed _{Jones}	17-Jan-02	720	J				
	G006SB015	006SB01501		17-Jan-02	5.6	J				
	G006SB017	006SB01701		08-May-02	3.2	=				
	G006SB018	006SB01801		08-May-02	19	=				
	G006SB019	006SB01901		08-May-02	12	=				
	G006SB020	006SB02001		08-May-02	2.6	J				
	G006SB021	006SB02101RE	Removed _{Jones}	08-May-02	11,200	=				
	G006SB028	006SB02803	Removed _{Jones}	08-May-02	3,350	=				
	G006SB029	006SB02903	Removed _{Jones}	08-May-02	19.5	J				
	S06-B03	006SB03101		21-Sep-93	13	=				
	S06-B04	006SB04101		21-Sep-93	27	=				
	G006SB044	006SB04401		12-Jun-02	67.3	=				
	G006SB046	006SB04601	Removed _{Jones}	12-Jun-02	521	J				
	G006SB047	006SB04701		12-Jun-02	0.6	J				
	S06-B05	006SB05101		22-Sep-93	590	=				
	S06-B06	006SB06101		22-Sep-93	77	=				
	S06-B06	006SB06101LR		22-Sep-93	140	=				
	S06-B07	006SB07101		22-Sep-93	420	=				
	S06-B20	006SB20101		27-Oct-93	8.2	=				
	S06-B25	006SB25101	Removed _{DET}	27-Oct-93	14	J				
	S07-B03	007SB03101		09-Oct-93	5.6	=				
	S07-B04	007SB04101	Removed _{DET}	09-Oct-93	180	J				
	S07-B05	007SB05101	Removed _{DET}	09-Oct-93	4.2	J				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
p,p'-DDD ^a	S07-B07	007SB07101		09-Oct-93	120	=	2,700	24,000	8,000	NA
	S07-B08	007SB08101	Removed _{DET}	09-Oct-93	110	J				
	S07-B11	007SB11101	Removed _{Jones}	09-Oct-93	30	J				
	S07-B13	007SB13101	Removed _{DET}	09-Oct-93	78	J				
	S07-B16	007SB16101	Removed _{DET}	11-Oct-93	5,900	D				
	S07-B18	007SB18101		11-Oct-93	240	JD				
	S07-B19	007SB19101	Removed _{Jones}	11-Oct-93	247	JD				
	S07-B22	007SB22101	Removed _{DET}	11-Oct-93	61	J				
	S07-B23	007SB23101	Removed _{DET}	11-Oct-93	54	DJ				
	S07-B24	007SB24101	Removed _{DET}	11-Oct-93	100	J				
	S07-B27	007SB27101	Removed _{DET}	11-Oct-93	82,000	D				
	S07-B28	007SB28101	Removed _{DET}	13-Oct-93	30	JD				
	S07-B29	007SB29101	Removed _{Jones}	13-Oct-93	4,000	D				
	S07-B31	007SB31101		13-Oct-93	1,100	D				
	S07-B34	007SB34101		13-Oct-93	200	D				
	S07-B36	007SB36101		13-Oct-93	8.8	J				
	S07-B37	007SB37101		13-Oct-93	120	JD				
p,p'-DDE ^a	G006SB001	006SB00101	Removed _{DET}	19-Sep-96	1,600	=	1,900	17,000	27,000	NA
	G006SB002	006SB00201	Removed _{Jones}	19-Sep-96	4,000	=				
	G006SB003	006SB00301	Removed _{DET}	19-Sep-96	100	=				
	G006SB004	006SB00401		19-Sep-96	24	=				
	G006SB007	006SB00701	Removed _{Jones}	17-Jan-02	71	=				
	G006SB008	006SB00801	Removed _{Jones}	17-Jan-02	170	=				
	G006SB009	006SB00901	Removed _{Jones}	17-Jan-02	430	=				
	G006SB010	006SB01001		17-Jan-02	47	J				
	G006SB011	006SB01101	Removed _{Jones}	17-Jan-02	12	J				
	G006SB012	006SB01201		17-Jan-02	60	=				
	G006SB013	006SB01301		17-Jan-02	38	=				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	Residential	Industrial	SSL (DAF=10)	Zone G Range of Background Concentrations
							RBC (HI=0.1)	RBC (HI=0.1)		
p,p'-DDE ^a	G006SB014	006SB01401	Removed _{Jones}	17-Jan-02	380	=	1,900	17,000	27,000	NA
	G006SB015	006SB01501		17-Jan-02	11	=				
	G006SB017	006SB01701		08-May-02	4.8	=				
	G006SB018	006SB01801		08-May-02	36	=				
	G006SB019	006SB01901		08-May-02	10.2	=				
	G006SB021	006SB02101	Removed _{Jones}	08-May-02	1,710	=				
	G006SB028	006SB02803	Removed _{Jones}	08-May-02	2,960	=				
	S06-B03	006SB03101		21-Sep-93	53	=				
	S06-B04	006SB04101		21-Sep-93	99	=				
	G006SB044	006SB04401		12-Jun-02	41.4	J				
	G006SB046	006SB04601	Removed _{Jones}	12-Jun-02	283	J				
	G006SB047	006SB04701		12-Jun-02	1	J				
	S06-B05	006SB05101		22-Sep-93	1,000	=				
	S06-B06	006SB06101		22-Sep-93	110	=				
	S06-B06	006SB06101LR		22-Sep-93	170	=				
	S06-B07	006SB07101		22-Sep-93	430	=				
	S06-B20	006SB20101		27-Oct-93	9.9	=				
	S06-B25	006SB25101	Removed _{DET}	27-Oct-93	56	D				
	S07-B03	007SB03101		09-Oct-93	29	J				
	S07-B04	007SB04101	Removed _{DET}	09-Oct-93	430	D				
	S07-B05	007SB05101	Removed _{DET}	09-Oct-93	210	D				
	S07-B06	007SB06101		09-Oct-93	240	D				
	S07-B07	007SB07101		09-Oct-93	340	D				
	S07-B08	007SB08101	Removed _{DET}	09-Oct-93	530	D				
	S07-B10	007SB10101	Removed _{DET}	09-Oct-93	71	=				
	S07-B12	007SB12101	Removed _{DET}	09-Oct-93	6.3	=				
	S07-B13	007SB13101	Removed _{DET}	09-Oct-93	570	DJ				
	S07-B16	007SB16101	Removed _{DET}	11-Oct-93	1,400	D				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
p,p'-DDE ^a	S07-B17	007SB17101	Removed _{Jones}	11-Oct-93	16	J	1,900	17,000	27,000	NA
	S07-B18	007SB18101		11-Oct-93	120	D				
	S07-B19	007SB19101	Removed _{Jones}	11-Oct-93	580	JD				
	S07-B22	007SB22101	Removed _{DET}	11-Oct-93	130	=				
	S07-B23	007SB23101	Removed _{DET}	11-Oct-93	140	DJ				
	S07-B24	007SB24101	Removed _{DET}	11-Oct-93	1,800	DJ				
	S07-B28	007SB28101	Removed _{DET}	13-Oct-93	120	D				
	S07-B29	007SB29101	Removed _{Jones}	13-Oct-93	830	=				
	S07-B31	007SB31101		13-Oct-93	430	D				
	S07-B32	007SB32101		13-Oct-93	6.8	=				
	S07-B34	007SB34101		13-Oct-93	33	=				
	S07-B36	007SB36101		13-Oct-93	54	=				
	S07-B37	007SB37101		13-Oct-93	19	=				
	p,p'-DDT ^a	G006SB001	006SB00101	Removed _{DET}	19-Sep-96	2,200	=	1,900	17,000	17,000
G006SB002		006SB00201	Removed _{Jones}	19-Sep-96	4,300	=				
G006SB003		006SB00301	Removed _{DET}	19-Sep-96	60	J				
G006SB004		006SB00401		19-Sep-96	23	=				
G006SB007		006SB00701	Removed _{Jones}	17-Jan-02	44	=				
G006SB008		006SB00801	Removed _{Jones}	17-Jan-02	250	J				
G006SB009		006SB00901	Removed _{Jones}	17-Jan-02	1,000	J				
G006SB010		006SB01001		17-Jan-02	73	J				
G006SB011		006SB01101	Removed _{Jones}	17-Jan-02	65	J				
G006SB012		006SB01201		17-Jan-02	180	J				
G006SB013		006SB01301		17-Jan-02	18	J				
G006SB014		006SB01401DL	Removed _{Jones}	17-Jan-02	3,300	=				
G006SB015		006SB01501		17-Jan-02	21	J				
G006SB017		006SB01701		08-May-02	14	J				
G006SB018		006SB01801RE		08-May-02	110	=				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
p,p'-DDT ^a	G006SB019	006SB01901		08-May-02	42.5	=	1,900	17,000	17,000	NA
	G006SB021	006SB02101RE	Removed _{Jones}	08-May-02	8,310	=				
	G006SB028	006SB02803	Removed _{Jones}	08-May-02	26900	=				
	G006SB029	006SB02903	Removed _{Jones}	08-May-02	50.7	=				
	S06-B03	006SB03101		21-Sep-93	11	=				
	S06-B04	006SB04101		21-Sep-93	200	=				
	G006SB044	006SB04401		12-Jun-02	97.8	J				
	G006SB046	006SB04601	Removed _{Jones}	12-Jun-02	605	J				
	G006SB047	006SB04701		12-Jun-02	2.4	J				
	S06-B05	006SB05101		22-Sep-93	4,200	=				
	S06-B06	006SB06101		22-Sep-93	290	=				
	S06-B06	006SB06101LR		22-Sep-93	600	=				
	S06-B07	006SB07101		22-Sep-93	2,000	=				
	S06-B25	006SB25101	Removed _{DET}	27-Oct-93	40	J				
	S07-B03	007SB03101		09-Oct-93	20	JD				
	S07-B04	007SB04101	Removed _{DET}	09-Oct-93	160	J				
	S07-B05	007SB05101	Removed _{DET}	09-Oct-93	110	JD				
	S07-B06	007SB06101		09-Oct-93	120	JD				
	S07-B07	007SB07101		09-Oct-93	65	DJ				
	S07-B08	007SB08101	Removed _{DET}	09-Oct-93	480	JD				
	S07-B10	007SB10101	Removed _{DET}	09-Oct-93	24	JD				
	S07-B11	007SB11101	Removed _{Jones}	09-Oct-93	90	JD				
	S07-B12	007SB12101	Removed _{DET}	09-Oct-93	7.8	J				
	S07-B13	007SB13101	Removed _{DET}	09-Oct-93	460	D				
	S07-B16	007SB16101	Removed _{DET}	11-Oct-93	360	=				
	S07-B17	007SB17101	Removed _{Jones}	11-Oct-93	10	J				
	S07-B18	007SB18101		11-Oct-93	79	JD				
	S07-B19	007SB19101	Removed _{Jones}	11-Oct-93	326	JD				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
p,p'-DDT ^a	S07-B22	007SB22101	Removed _{DET}	11-Oct-93	100	J	1,900	17,000	17,000	NA
	S07-B23	007SB23101	Removed _{DET}	11-Oct-93	160	DJ				
	S07-B24	007SB24101	Removed _{DET}	11-Oct-93	3400	D				
	S07-B27	007SB27101	Removed _{DET}	11-Oct-93	100,000	D				
	S07-B28	007SB28101	Removed _{DET}	13-Oct-93	160	D				
	S07-B29	007SB29101	Removed _{Jones}	13-Oct-93	2,800	D				
	S07-B30	007SB30101	Removed _{Jones}	13-Oct-93	45	J				
	S07-B31	007SB31101		13-Oct-93	1,100	D				
	S07-B32	007SB32101		13-Oct-93	26	=				
	S07-B33	007SB33101		13-Oct-93	4.7	J				
	S07-B34	007SB34101		13-Oct-93	140	=				
	S07-B36	007SB36101		13-Oct-93	16	J				
	S07-B37	007SB37101		13-Oct-93	22	J				
	TEQ ^a	G006SB002	006CB00201	Removed _{Jones}	19-Sep-96	0.97	=	0.0043	0.038	
G007SB001		007CB00101		03-Oct-96	0.000347	=				
BEQs ^a	G006SB001	006SB00101	Removed _{DET}	19-Sep-96	1,785	=	87	780	4,000	1,304
	G006SB002	006SB00201	Removed _{Jones}	19-Sep-96	4,142	=				
	G006SB003	006SB00301	Removed _{DET}	19-Sep-96	336	=				
	G006SB004	006SB00401		19-Sep-96	285	=				
	G006SB007	006SB00701	Removed _{Jones}	17-Jan-02	101	=				
	G006SB008	006SB00801	Removed _{Jones}	17-Jan-02	190	=				
	G006SB009	006SB00901	Removed _{Jones}	17-Jan-02	319	=				
	G006SB010	006SB01001		17-Jan-02	252	=				
	G006SB011	006SB01101	Removed _{Jones}	17-Jan-02	733	=				
	G006SB012	006SB01201		17-Jan-02	120	=				
	G006SB013	006SB01301		17-Jan-02	78	=				
	G006SB014	006SB01401	Removed _{Jones}	17-Jan-02	185	=				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
BEQs ^a	G006SB015	006SB01501		17-Jan-02	27	=	87	780	4,000	1,304
	G006SB018	006SB01801		08-May-02	210	=				
	G006SB019	006SB01901		08-May-02	204	=				
	G006SB020	006SB02001		08-May-02	252	=				
	G006SB021	006SB02101	Removed _{Jones}	08-May-02	4,101	=				
	G006SB024	006SB02401		09-May-02	1,073	=				
	G006SB027	006SB02703	Removed _{Jones}	08-May-02	363	=				
	G006SB028	006SB02803	Removed _{Jones}	08-May-02	920	=				
	G006SB029	006SB02903	Removed _{Jones}	08-May-02	305	=				
	S06-B03	006SB03101		21-Sep-93	371	=				
	S06-B04	006SB04101		21-Sep-93	640	=				
	G006SB044	006SB04401		12-Jun-02	655	=				
	G006SB046	006SB04601	Removed _{Jones}	12-Jun-02	389	=				
	S06-B05	006SB05101		22-Sep-93	366	=				
	S06-B06	006SB06101		22-Sep-93	404	=				
	S06-B07	006SB07101		22-Sep-93	545	=				
	S06-B14	006SB14101		27-Oct-93	465	=				
	S06-B15	006SB15101	Removed _{DET}	27-Oct-93	1,874	=				
	S06-B20	006SB20101		27-Oct-93	535	=				
	S06-B25	006SB25101	Removed _{DET}	27-Oct-93	268	=				
	G007SB001	007SB00101		03-Oct-96	708	=				
	S07-B03	007SB03101		09-Oct-93	290	=				
	S07-B04	007SB04101	Removed _{DET}	09-Oct-93	422	=				
	S07-B05	007SB05101	Removed _{DET}	09-Oct-93	281	=				
	S07-B06	007SB06101		09-Oct-93	808	=				
	S07-B07	007SB07101		09-Oct-93	426	=				
	S07-B08	007SB08101	Removed _{DET}	09-Oct-93	641	=				
	S07-B09	007SB09101	Removed _{DET}	09-Oct-93	373	=				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
BEQs ^a	S07-B10	007SB10101	Removed _{DET}	09-Oct-93	486	=	87	780	4,000	1,304
	S07-B11	007SB11101	Removed _{Jones}	09-Oct-93	376	=				
	S07-B12	007SB12101	Removed _{DET}	09-Oct-93	298	=				
	S07-B13	007SB13101	Removed _{DET}	09-Oct-93	602	=				
	S07-B16	007SB16101	Removed _{DET}	11-Oct-93	3,083	=				
	S07-B17	007SB17101	Removed _{Jones}	11-Oct-93	460	=				
	S07-B18	007SB18101		11-Oct-93	429	=				
	S07-B19	007SB19101	Removed _{Jones}	11-Oct-93	1,616	=				
	S07-B21	007SB21101	Removed _{DET}	11-Oct-93	1,620	=				
	S07-B22	007SB22101	Removed _{DET}	11-Oct-93	466	=				
	S07-B23	007SB23101	Removed _{DET}	11-Oct-93	1,069	=				
	S07-B24	007SB24101	Removed _{DET}	11-Oct-93	580	=				
	S07-B27	007SB27101	Removed _{DET}	11-Oct-93	29,400	=				
	S07-B28	007SB28101	Removed _{DET}	13-Oct-93	4,270	=				
	S07-B29	007SB29101	Removed _{Jones}	13-Oct-93	899	=				
	S07-B30	007SB30101	Removed _{Jones}	13-Oct-93	14,323	=				
	S07-B31	007SB31101		13-Oct-93	485	=				
	S07-B34	007SB34101		13-Oct-93	891	=				
	S07-B35	007SB35101		18-Oct-93	615	=				
	S07-B36	007SB36101		13-Oct-93	479	=				
S07-B37	007SB37101		13-Oct-93	6,098	=					
Antimony	S06-B15	006SB15101	Removed _{DET}	27-Oct-93	7,500	J	3,100	82,000	2,500	790 - 5,700
Arsenic ^a	G006SB001	006SB00101	Removed _{DET}	19-Sep-96	9,500	=	430	3,800	145,000	3,100 - 25,000
	G006SB002	006SB00201	Removed _{Jones}	19-Sep-96	11,300	=				
	G006SB003	006SB00301	Removed _{DET}	19-Sep-96	4,100	=				
	G006SB004	006SB00401		19-Sep-96	17,300	=				
	G006SB030	006SB03001		09-May-02	7,510	=				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	Residential	Industrial	SSL (DAF=10)	Zone G Range of Background Concentrations
							RBC (HI=0.1)	RBC (HI=0.1)		
Arsenic ^a	S06-B03	006SB03101		21-Sep-93	8,000	=	430	3,800	145,00	3,100 - 25,000
	G006SB033	006SB03301		09-May-02	1,470	J				
	S06-B04	006SB04101		21-Sep-93	8,200	=				
	S06-B05	006SB05101		22-Sep-93	2,400	=				
	S06-B06	006SB06101		22-Sep-93	1,800	=				
	S06-B06	006SB06101LR		22-Sep-93	1,900	=				
	S06-B07	006SB07101		22-Sep-93	5,000	=				
	S06-B14	006SB14101		27-Oct-93	3,700	=				
	S06-B15	006SB15101	Removed _{DET}	27-Oct-93	4,800	=				
	S06-B20	006SB20101		27-Oct-93	3,700	=				
	S06-B25	006SB25101	Removed _{DET}	27-Oct-93	4,300	=				
	S06-B26	006SB26101		27-Oct-93	1,600	=				
	G007SB001	007SB00101		03-Oct-96	5,700	=				
	S07-B03	007SB03101		09-Oct-93	2,700	J				
	S07-B04	007SB04101	Removed _{DET}	09-Oct-93	9,600	J				
	S07-B05	007SB05101	Removed _{DET}	09-Oct-93	2,700	J				
	S07-B06	007SB06101		09-Oct-93	11,000	J				
	S07-B07	007SB07101		09-Oct-93	16,000	J				
	S07-B08	007SB08101	Removed _{DET}	09-Oct-93	7,400	J				
	S07-B09	007SB09101	Removed _{DET}	09-Oct-93	2,300	J				
	S07-B10	007SB10101	Removed _{DET}	09-Oct-93	38,000	J				
	S07-B11	007SB11101	Removed _{Jones}	09-Oct-93	4,700	J				
	S07-B12	007SB12101	Removed _{DET}	09-Oct-93	6,300	J				
	S07-B13	007SB13101	Removed _{DET}	09-Oct-93	24,000	J				
	S07-B16	007SB16101	Removed _{DET}	11-Oct-93	6,700	J				
	S07-B17	007SB17101	Removed _{Jones}	11-Oct-93	12,000	J				
	S07-B18	007SB18101		11-Oct-93	3,900	J				
	S07-B19	007SB19101	Removed _{Jones}	11-Oct-93	13,000	J				

TABLE 5-1
 Detected Concentrations of COCs/COPCs in Surface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC (HI=0.1)	Industrial RBC (HI=0.1)	SSL (DAF=10)	Zone G Range of Background Concentrations
Arsenic ^a	S07-B21	007SB21101	Removed _{DET}	11-Oct-93	6,700	J	430	3,800	145,00	3,100 - 25,000
	S07-B22	007SB22101	Removed _{DET}	11-Oct-93	17,000	J				
	S07-B23	007SB23101	Removed _{DET}	11-Oct-93	6,400	J				
	S07-B24	007SB24101	Removed _{DET}	11-Oct-93	3,900	J				
	S07-B27	007SB27101	Removed _{DET}	11-Oct-93	6,400	J				
	S07-B28	007SB28101	Removed _{DET}	13-Oct-93	14,000	=				
	S07-B29	007SB29101	Removed _{Jones}	13-Oct-93	7,300	=				
	S07-B31	007SB31101		13-Oct-93	1,400	=				
	S07-B34	007SB34101		13-Oct-93	9,500	=				
	S07-B35	007SB35101		18-Oct-93	24,000	J				
	S07-B36	007SB36101		13-Oct-93	2,100	=				
	S07-B37	007SB37101		13-Oct-93	5,800	=				
	G635SB001	635SB00101	Removed _{DET}	03-Oct-96	14,700	=				
Thallium	G007SB001	007SB00101		03-Oct-96	540	J	550	14,000	350	550 - 910
	G635SB001	635SB00101	Removed _{DET}	03-Oct-96	890	J				

The "Notes" column indicates whether or not the sample was removed during the interim measures conducted at the site.

^a The compound is listed as a carcinogen.

^b Indicates that the SSL is from the U.S. Environmental Protection Agency (EPA) Region III RBC Table (October 2000).

= Indicates that the analyte was detected at the concentration shown.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

TABLE 5-2
 Detected Concentrations of COCs/COPCs in Subsurface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	SSL ^a (DAF=10)	Zone G Range of Background Concentrations
Alpha-BHC	G006SB007	006SB00702		17-Jan-02	0.87	J	0.25	NA
	G006SB013	006SB01302		17-Jan-02	0.88	J		
	G006SB044	006SB04402		12-Jun-02	3.2	J		
	G006SB045	006SB04502		12-Jun-02	1.5	J		
	G006SB046	006SB04603		12-Jun-02	0.48	J		
	S06-B12	006SB12201	Removed _{DET}	26-Oct-93	3.6	=		
	S06-B21	006SB21201	Removed _{DET}	26-Oct-93	3.1	=		
	S06-B27	006SB27202		27-Oct-93	17	J		
	S06-B32	006SB32202		27-Oct-93	4	=		
	S06-B33	006SB33202		27-Oct-93	3.2	=		
	S07-B24	007SB24202		11-Oct-93	3.5	=		
Beta-BHC	G006SB013	006SB01302		17-Jan-02	2	J	1.5	NA
	G006SB044	006SB04402		12-Jun-02	7.4	=		
	G006SB045	006SB04502		12-Jun-02	3.7	J		
	G006SB046	006SB04603		12-Jun-02	0.84	J		
	S06-B12	006SB12201	Removed _{DET}	26-Oct-93	3.6	=		
	S06-B21	006SB21201	Removed _{DET}	26-Oct-93	3.1	=		
	S06-B27	006SB27202		27-Oct-93	26	J		
	S06-B32	006SB32202		27-Oct-93	4	=		
	S06-B33	006SB33202		27-Oct-93	3.2	=		
	S07-B24	007SB24202		11-Oct-93	3.5	=		
	Gamma-BHC (Lindane)	G006SB013	006SB01302		17-Jan-02	2.2		
G006SB044		006SB04402		12-Jun-02	21.1	=		

TABLE 5-2
 Detected Concentrations of COCs/COPCs in Subsurface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration (µg/kg)	Qualifier	SSL ^a (DAF=10)	Zone G Range of Background Concentrations
Gamma-BHC (Lindane)	G006SB044	006SB04403		12-Jun-02	12.7	J	4.5	NA
	G006SB045	006SB04502		12-Jun-02	10.7	=		
	G006SB046	006SB04603		12-Jun-02	1.8	J		
	S06-B12	006SB12201	Removed _{DET}	26-Oct-93	3.6	=		
	S06-B21	006SB21201	Removed _{DET}	26-Oct-93	3.1	=		
	S06-B27	006SB27202		27-Oct-93	24	J		
	S06-B32	006SB32202		27-Oct-93	4	=		
	S06-B33	006SB33202		27-Oct-93	3.2	=		
	S07-B24	007SB24202		11-Oct-93	3.5	=		
Dieldrin	G006SB013	006SB01302		17-Jan-02	3	J	2	NA
	S06-B12	006SB12201	Removed _{DET}	26-Oct-93	7	=		
	S06-B21	006SB21201	Removed _{DET}	26-Oct-93	6	=		
	S06-B32	006SB32202		27-Oct-93	7.8	=		
	S06-B33	006SB33202		27-Oct-93	6.2	=		
	S07-B24	007SB24202		11-Oct-93	6.7	=		
BEQs	G006SB001	006SB00102		19-Sep-96	554	=	NA	1,400
	G006SB004	006SB00402		19-Sep-96	707	=		
	G006SB007	006SB00702		17-Jan-02	2,220	=		
	G006SB011	006SB01102		17-Jan-02	1,301	=		
	G006SB013	006SB01302		17-Jan-02	81	=		
	G006SB014	006SB01402		17-Jan-02	93	=		
	G006SB019	006SB01902		08-May-02	305	=		
	G006SB020	006SB02002		08-May-02	348	=		

TABLE 5-2
 Detected Concentrations of COCs/COPCs in Subsurface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Range of Background Concentrations
BEQs	G006SB021	006SB02102		08-May-02	347	=	NA	1,400
	S06-B02	006SB02202		21-Sep-93	679	=		
	G006SB024	006SB02402		09-May-02	284	=		
	G006SB026	006SB02603		08-May-02	3,050	=		
	G006SB044	006SB04402		12-Jun-02	137	=		
	G006SB044	006SB04403		12-Jun-02	201	=		
	G006SB045	006SB04502		12-Jun-02	1,815	=		
	G006SB046	006SB04603		12-Jun-02	96	=		
	G006SB047	006SB04703		12-Jun-02	280	=		
	S06-B07	006SB07202		27-Oct-93	632	=		
	S06-B14	006SB14202		27-Oct-93	767	=		
	S06-B15	006SB15202		27-Oct-93	3,273	=		
	S06-B17	006SB17202		27-Oct-93	756	=		
	S06-B20	006SB20202		27-Oct-93	762	=		
	S06-B25	006SB25202		27-Oct-93	573	=		
	S06-B26	006SB26202		27-Oct-93	663	=		
	S06-B27	006SB27202		27-Oct-93	1,421	=		
	S06-B29	006SB29202		27-Oct-93	474	=		
	S06-B31	006SB31202		27-Oct-93	820	=		
	S07-B03	007SB03202		09-Oct-93	499	=		
	S07-B11	007SB11202		09-Oct-93	456	=		
	S07-B13	007SB13202		09-Oct-93	498	=		
	S07-B18	007SB18202		11-Oct-93	544	=		
S07-B22	007SB22202		11-Oct-93	504	=			

TABLE 5-2
 Detected Concentrations of COCs/COPCs in Subsurface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Notes	Date Collected	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a (DAF=10)	Zone G Range of Background Concentrations
BEQs	S07-B30	007SB30202		13-Oct-93	562	=	NA	1,400
	S07-B34	007SB34202		13-Oct-93	518	=		
	S07-B36	007SB36202		13-Oct-93	724	=		
	S07-B37	007SB37202		13-Oct-93	281	=		

The "Notes" column indicates whether or not the sample was removed during the interim measures conducted at the site.

^a The soil screening level (SSL) is based on a dilution attenuation factor (DAF) of 10.

= Indicates that the analyte was detected at the concentration shown.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

NA Not available/not applicable

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
PCB-1254 (Aroclor-1254) ^c	G006MB001	006MB00101	05/08/02	6.1	U	320	2,900	550 _{Reg III}	NA
	G006SB004	006SB00401	09/19/96	88	U				
	G006SB005	006SB00501	01/17/02	390	U				
	G006SB010	006SB01001	01/17/02	74	U				
	G006SB012	006SB01201	01/17/02	800	U				
	G006SB013	006SB01301	01/17/02	38	U				
	G006SB015	006SB01501	01/17/02	39	U				
	G006SB017	006SB01701	05/08/02	3.7	U				
	G006SB018	006SB01801	05/08/02	174	=				
	G006SB019	006SB01901	05/08/02	8.1	=				
	G006SB023	006SB02301	05/09/02	56.5	=				
	S06-B03	006SB03101	09/21/93	41	U				
	G006SB035	006SB03501	06/11/02	465	U				
	G006SB037	006SB03701	06/11/02	360	U				
	S06-B04	006SB04101	09/21/93	180	U				
	G006SB049	006SB04901	05/08/02	93	UJ				
	G006SB050	006SB05001	06/21/02	81	U				
	S06-B05	006SB05101	09/22/93	26,000	=				
	G006SB052	006SB05201	06/21/02	94	UJ				
	G006SB053	006SB05301	06/21/02	85	UJ				
	G006SB054	006SB05401	06/21/02	79	UJ				
	G006SB055	006SB05501	06/21/02	87	UJ				
	G006SB059	006SB05901	06/21/02	83	UJ				
	S06-B06	006SB06101	09/22/93	380	U				
	S06-B07	006SB07101	09/22/93	390	U				
	S06-B14	006SB14101	10/27/93	43	U				
	S06-B20	006SB20101	10/27/93	39	U				
	S06-B26	006SB26101	10/27/93	39	U				
	G007SB001	007SB00101	10/03/96	83	U				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
PCB-1254 (Aroclor-1254) ^c	S07-B03	007SB03101	10/09/93	40	U	320	2,900	550 _{Reg III}	NA
	S07-B06	007SB06101	10/09/93	43	U				
	S07-B07	007SB07101	10/09/93	41	U				
	S07-B18	007SB18101	10/11/93	36	U				
	S07-B31	007SB31101	10/13/93	190	U				
	S07-B32	007SB32101	10/13/93	39	U				
	S07-B33	007SB33101	10/13/93	39	U				
	S07-B34	007SB34101	10/13/93	73	U				
	S07-B35	007SB35101	10/18/93	75	U				
	S07-B36	007SB36101	10/13/93	38	U				
	S07-B37	007SB37101	10/13/93	37	U				
PCB-1260 (Aroclor-1260) ^c	G006MB001	006MB00101	05/08/02	6.1	U	320	2,900	7,200 _{Site-specific}	NA
	G006SB004	006SB00401	09/19/96	65	U				
	G006SB005	006SB00501	01/17/02	95	J				
	G006SB010	006SB01001	01/17/02	260	J				
	G006SB012	006SB01201	01/17/02	200	J				
	G006SB013	006SB01301	01/17/02	38	UU				
	G006SB015	006SB01501	01/17/02	49	J				
	G006SB017	006SB01701	05/08/02	26.8	=				
	G006SB018	006SB01801	05/08/02	270	=				
	G006SB019	006SB01901	05/08/02	10.8	=				
	G006SB023	006SB02301	05/09/02	265	=				
	S06-B03	006SB03101	09/21/93	41	U				
	G006SB035	006SB03501	06/11/02	199	J				
	G006SB037	006SB03701	06/11/02	207	J				
	S06-B04	006SB04101	09/21/93	180	U				
	G006SB049	006SB04901	05/08/02	61	J				
	G006SB050	006SB05001	06/21/02	84	J				
	S06-B05	006SB05101	09/22/93	3,800	U				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
PCB-1260 (Aroclor-1260) ^c	G006SB052	006SB05201	06/21/02	94	UJ	320	2,900	7,200 _{Site-specific}	NA
	G006SB053	006SB05301	06/21/02	96	J				
	G006SB054	006SB05401	06/21/02	79	UJ				
	G006SB055	006SB05501	06/21/02	22	J				
	G006SB059	006SB05901	06/21/02	270	J				
	S06-B06	006SB06101	09/22/93	2,400	=				
	S06-B07	006SB07101	09/22/93	390	U				
	S06-B14	006SB14101	10/27/93	240	U				
	S06-B20	006SB20101	10/27/93	420	=				
	S06-B26	006SB26101	10/27/93	39	U				
	G007SB001	007SB00101	10/03/96	83	U				
	S07-B03	007SB03101	10/09/93	550	J				
	S07-B06	007SB06101	10/09/93	43	U				
	S07-B07	007SB07101	10/09/93	780	=				
	S07-B18	007SB18101	10/11/93	36	U				
	S07-B31	007SB31101	10/13/93	190	U				
	S07-B32	007SB32101	10/13/93	39	U				
	S07-B33	007SB33101	10/13/93	39	U				
	S07-B34	007SB34101	10/13/93	120	=				
	S07-B35	007SB35101	10/18/93	75	U				
	S07-B36	007SB36101	10/13/93	110	=				
	S07-B37	007SB37101	10/13/93	110	=				
Alpha-BHC ^c	G006MB001	006MB00101	05/08/02	2.4	U	100	910	0.25	NA
	G006SB004	006SB00401	09/19/96	1.7	U				
	G006SB010	006SB01001	01/17/02	1.4	U				
	G006SB012	006SB01201	01/17/02	15	U				
	G006SB013	006SB01301	01/17/02	0.75	U				
	G006SB015	006SB01501	01/17/02	0.76	U				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
Alpha-BHC ^c	G006SB017	006SB01701	05/08/02	1.4	U	100	910	0.25	NA
	G006SB018	006SB01801	05/08/02	0.51	J				
	G006SB019	006SB01901	05/08/02	0.26	J				
	G006SB020	006SB02001	05/08/02	14.8	U				
	S06-B03	006SB03101	09/21/93	2.1	U				
	S06-B04	006SB04101	09/21/93	9.4	U				
	G006SB044	006SB04401	06/12/02	0.71	J				
	G006SB047	006SB04701	06/12/02	1.7	U				
	S06-B05	006SB05101	09/22/93	200	U				
	S06-B06	006SB06101	09/22/93	20	U				
	S06-B07	006SB07101	09/22/93	20	U				
	S06-B14	006SB14101	10/27/93	2.2	U				
	S06-B20	006SB20101	10/27/93	2	U				
	S06-B26	006SB26101	10/27/93	2	U				
	G007SB001	007SB00101	10/03/96	1.6	U				
	S07-B03	007SB03101	10/09/93	2.1	U				
	S07-B06	007SB06101	10/09/93	2.2	U				
	S07-B07	007SB07101	10/09/93	2.1	U				
	S07-B18	007SB18101	10/11/93	1.9	U				
	S07-B31	007SB31101	10/13/93	10	U				
	S07-B32	007SB32101	10/13/93	2	U				
	S07-B33	007SB33101	10/13/93	2	U				
	S07-B34	007SB34101	10/13/93	3.8	U				
S07-B35	007SB35101	10/18/93	3.9	U					
S07-B36	007SB36101	10/13/93	2	U					
S07-B37	007SB37101	10/13/93	1.9	U					
Beta-BHC ^c	G006MB001	006MB00101	05/08/02	2.4	U	350	3,200	1.5	NA
	G006SB004	006SB00401	09/19/96	1.7	U				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
Beta-BHC ^c	G006SB010	006SB01001	01/17/02	1.4	U	350	3,200	1.5	NA
	G006SB012	006SB01201	01/17/02	15	U				
	G006SB013	006SB01301	01/17/02	0.75	U				
	G006SB015	006SB01501	01/17/02	0.76	U				
	G006SB017	006SB01701	05/08/02	1.4	U				
	G006SB018	006SB01801	05/08/02	1	J				
	G006SB019	006SB01901	05/08/02	1.7	=				
	G006SB020	006SB02001	05/08/02	14.8	U				
	S06-B03	006SB03101	09/21/93	2.1	U				
	S06-B04	006SB04101	09/21/93	9.4	U				
	G006SB044	006SB04401	06/12/02	2.2	J				
	G006SB047	006SB04701	06/12/02	1.7	U				
	S06-B05	006SB05101	09/22/93	200	U				
	S06-B06	006SB06101	09/22/93	20	U				
	S06-B07	006SB07101	09/22/93	20	U				
	S06-B14	006SB14101	10/27/93	2.2	U				
	S06-B20	006SB20101	10/27/93	2	U				
	S06-B26	006SB26101	10/27/93	2	U				
	G007SB001	007SB00101	10/03/96	1.6	U				
	S07-B03	007SB03101	10/09/93	2.1	U				
	S07-B06	007SB06101	10/09/93	2.2	U				
	S07-B07	007SB07101	10/09/93	2.1	U				
	S07-B18	007SB18101	10/11/93	1.9	U				
	S07-B31	007SB31101	10/13/93	10	U				
	S07-B32	007SB32101	10/13/93	2	U				
	S07-B33	007SB33101	10/13/93	2	U				
	S07-B34	007SB34101	10/13/93	3.8	U				
	S07-B35	007SB35101	10/18/93	3.9	U				
	S07-B36	007SB36101	10/13/93	2	U				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
Beta-BHC ^c	S07-B37	007SB37101	10/13/93	1.9	U	350	3,200	1.5	NA
Gamma-BHC (Lindane) ^c	G006MB001	006MB00101	05/08/02	2.4	U	490	4,400	4.5	NA
	G006SB004	006SB00401	09/19/96	1.7	U				
	G006SB010	006SB01001	01/17/02	0.97	J				
	G006SB012	006SB01201	01/17/02	24	=				
	G006SB013	006SB01301	01/17/02	0.75	U				
	G006SB015	006SB01501	01/17/02	0.76	U				
	G006SB017	006SB01701	05/08/02	1.4	U				
	G006SB018	006SB01801	05/08/02	3.1	=				
	G006SB019	006SB01901	05/08/02	1.3	J				
	G006SB020	006SB02001	05/08/02	14.8	U				
	S06-B03	006SB03101	09/21/93	2.1	U				
	S06-B04	006SB04101	09/21/93	9.4	U				
	G006SB044	006SB04401	06/12/02	5.2	=				
	G006SB047	006SB04701	06/12/02	1.7	U				
	S06-B05	006SB05101	09/22/93	200	U				
	S06-B06	006SB06101	09/22/93	20	U				
	S06-B07	006SB07101	09/22/93	26	=				
	S06-B14	006SB14101	10/27/93	2.2	U				
	S06-B20	006SB20101	10/27/93	2	U				
	S06-B26	006SB26101	10/27/93	2	U				
	G007SB001	007SB00101	10/03/96	1.6	U				
	S07-B03	007SB03101	10/09/93	2.1	U				
	S07-B06	007SB06101	10/09/93	2.2	U				
S07-B07	007SB07101	10/09/93	2.1	U					
S07-B18	007SB18101	10/11/93	1.9	U					
S07-B31	007SB31101	10/13/93	10	U					
S07-B32	007SB32101	10/13/93	2	U					

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
Gamma-BHC (Lindane) ^c	S07-B33	007SB33101	10/13/93	2	U	490	4,400	4.5	NA
	S07-B34	007SB34101	10/13/93	3.8	U				
	S07-B35	007SB35101	10/18/93	3.9	U				
	S07-B36	007SB36101	10/13/93	2	U				
	S07-B37	007SB37101	10/13/93	1.9	U				
Chlordane ^c	G006MB001	006MB00101	05/08/02	23.7	U	1,800	16,000	5,000	NA
	G006SB010	006SB01001	01/17/02	14	UJ				
	G006SB012	006SB01201	01/17/02	150	UJ				
	G006SB013	006SB01301	01/17/02	7.5	UJ				
	G006SB015	006SB01501	01/17/02	7.6	UJ				
	G006SB017	006SB01701	05/08/02	14.5	U				
	G006SB018	006SB01801	05/08/02	14.3	U				
	G006SB019	006SB01901	05/08/02	9.6	J				
	G006SB020	006SB02001	05/08/02	148	U				
	G006SB044	006SB04401	06/12/02	61.2	=				
	G006SB047	006SB04701	06/12/02	17.2	U				
	Dieldrin ^c	G006MB001	006MB00101	05/08/02	4.6				
G006SB004		006SB00401	09/19/96	3.3	U				
G006SB010		006SB01001	01/17/02	2.8	U				
G006SB012		006SB01201	01/17/02	4.6	J				
G006SB013		006SB01301	01/17/02	1.2	J				
G006SB015		006SB01501	01/17/02	1.5	U				
G006SB017		006SB01701	05/08/02	0.79	J				
G006SB018		006SB01801	05/08/02	2.8	U				
G006SB019		006SB01901	05/08/02	2.7	U				
G006SB020		006SB02001	05/08/02	28.5	U				
S06-B03		006SB03101	09/21/93	4.1	U				
S06-B04		006SB04101	09/21/93	18	U				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
Dieldrin ^c	G006SB044	006SB04401	06/12/02	5.8	U	40	360	2	NA
	G006SB047	006SB04701	06/12/02	3.3	U				
	S06-B05	006SB05101	09/22/93	380	U				
	S06-B06	006SB06101	09/22/93	38	U				
	S06-B07	006SB07101	09/22/93	39	U				
	S06-B14	006SB14101	10/27/93	4.3	U				
	S06-B20	006SB20101	10/27/93	3.9	U				
	S06-B26	006SB26101	10/27/93	3.9	U				
	G007SB001	007SB00101	10/03/96	3.1	U				
	S07-B03	007SB03101	10/09/93	4	U				
	S07-B06	007SB06101	10/09/93	4.3	U				
	S07-B07	007SB07101	10/09/93	4.1	U				
	S07-B18	007SB18101	10/11/93	3.6	U				
	S07-B31	007SB31101	10/13/93	19	U				
	S07-B32	007SB32101	10/13/93	3.9	U				
	S07-B33	007SB33101	10/13/93	3.9	U				
	S07-B34	007SB34101	10/13/93	7.3	U				
	S07-B35	007SB35101	10/18/93	7.5	U				
	S07-B36	007SB36101	10/13/93	3.8	U				
	S07-B37	007SB37101	10/13/93	3.7	U				
p,p'-DDD ^c	G006MB001	006MB00101	05/08/02	1.8	J	2,700	24,000	8,000	NA
	G006SB004	006SB00401	09/19/96	3.3	U				
	G006SB010	006SB01001	01/17/02	20	J				
	G006SB012	006SB01201	01/17/02	510	J				
	G006SB013	006SB01301	01/17/02	6.2	J				
	G006SB015	006SB01501	01/17/02	5.6	J				
	G006SB017	006SB01701	05/08/02	3.2	=				
	G006SB018	006SB01801	05/08/02	19	=				
	G006SB019	006SB01901	05/08/02	12	=				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
p,p'-DDD ^c	G006SB020	006SB02001	05/08/02	2.6	J	2,700	24,000	8,000	NA
	S06-B03	006SB03101	09/21/93	13	=				
	S06-B04	006SB04101	09/21/93	27	=				
	G006SB044	006SB04401	06/12/02	67.3	=				
	G006SB047	006SB04701	06/12/02	0.6	J				
	S06-B05	006SB05101	09/22/93	590	=				
	S06-B06	006SB06101	09/22/93	77	=				
	S06-B06	006SB06101LR	09/22/93	140	=				
	S06-B07	006SB07101	09/22/93	420	=				
	S06-B14	006SB14101	10/27/93	4.3	U				
	S06-B20	006SB20101	10/27/93	8.2	=				
	S06-B26	006SB26101	10/27/93	3.9	U				
	G007SB001	007SB00101	10/03/96	3.1	U				
	S07-B03	007SB03101	10/09/93	5.6	=				
	S07-B06	007SB06101	10/09/93	4.3	U				
	S07-B07	007SB07101	10/09/93	120	=				
	S07-B18	007SB18101	10/11/93	240	JD				
	S07-B31	007SB31101	10/13/93	1,100	D				
	S07-B32	007SB32101	10/13/93	3.9	U				
	S07-B33	007SB33101	10/13/93	3.9	U				
S07-B34	007SB34101	10/13/93	200	D					
S07-B35	007SB35101	10/18/93	7.5	U					
S07-B36	007SB36101	10/13/93	8.8	J					
S07-B37	007SB37101	10/13/93	120	JD					
p,p'-DDE ^c	G006MB001	006MB00101	05/08/02	4.6	U	1,900	17,000	27,000	NA
	G006SB004	006SB00401	09/19/96	24	=				
	G006SB010	006SB01001	01/17/02	47	J				
	G006SB012	006SB01201	01/17/02	60	=				
	G006SB013	006SB01301	01/17/02	38	=				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
p,p'-DDE ^c	G006SB015	006SB01501	01/17/02	11	=	1,900	17,000	27,000	NA
	G006SB017	006SB01701	05/08/02	4.8	=				
	G006SB018	006SB01801	05/08/02	36	=				
	G006SB019	006SB01901	05/08/02	10.2	=				
	G006SB020	006SB02001	05/08/02	28.5	U				
	S06-B03	006SB03101	09/21/93	53	=				
	S06-B04	006SB04101	09/21/93	99	=				
	G006SB044	006SB04401	06/12/02	41.4	J				
	G006SB047	006SB04701	06/12/02	1	J				
	S06-B05	006SB05101	09/22/93	1,000	=				
	S06-B06	006SB06101	09/22/93	110	=				
	S06-B06	006SB06101LR	09/22/93	170	=				
	S06-B07	006SB07101	09/22/93	430	=				
	S06-B14	006SB14101	10/27/93	5	U				
	S06-B20	006SB20101	10/27/93	9.9	=				
	S06-B26	006SB26101	10/27/93	3.9	U				
	G007SB001	007SB00101	10/03/96	3.1	U				
	S07-B03	007SB03101	10/09/93	29	J				
	S07-B06	007SB06101	10/09/93	240	D				
	S07-B07	007SB07101	10/09/93	340	D				
	S07-B18	007SB18101	10/11/93	120	D				
	S07-B31	007SB31101	10/13/93	430	D				
	S07-B32	007SB32101	10/13/93	6.8	=				
	S07-B33	007SB33101	10/13/93	3.9	U				
	S07-B34	007SB34101	10/13/93	33	=				
	S07-B35	007SB35101	10/18/93	7.5	U				
	S07-B36	007SB36101	10/13/93	54	=				
	S07-B37	007SB37101	10/13/93	19	=				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
p,p'-DDT ^c	G006MB001	006MB00101	05/08/02	4.6	U	1,900	17,000	17,000	NA
	G006SB004	006SB00401	09/19/96	23	=				
	G006SB010	006SB01001	01/17/02	73	J				
	G006SB012	006SB01201	01/17/02	180	J				
	G006SB013	006SB01301	01/17/02	18	J				
	G006SB015	006SB01501	01/17/02	21	J				
	G006SB017	006SB01701	05/08/02	14	J				
	G006SB018	006SB01801RE	05/08/02	110	=				
	G006SB019	006SB01901	05/08/02	42.5	=				
	G006SB020	006SB02001	05/08/02	28.5	U				
	S06-B03	006SB03101	09/21/93	11	=				
	S06-B04	006SB04101	09/21/93	200	=				
	G006SB044	006SB04401	06/12/02	97.8	J				
	G006SB047	006SB04701	06/12/02	2.4	J				
	S06-B05	006SB05101	09/22/93	4,200	=				
	S06-B06	006SB06101	09/22/93	290	=				
	S06-B06	006SB06101LR	09/22/93	600	=				
	S06-B07	006SB07101	09/22/93	2,000	=				
	S06-B14	006SB14101	10/27/93	7.7	U				
	S06-B20	006SB20101	10/27/93	3.9	U				
	S06-B26	006SB26101	10/27/93	3.9	U				
	G007SB001	007SB00101	10/03/96	3.1	U				
	S07-B03	007SB03101	10/09/93	20	JD				
	S07-B06	007SB06101	10/09/93	120	JD				
	S07-B07	007SB07101	10/09/93	65	DJ				
	S07-B18	007SB18101	10/11/93	79	JD				
	S07-B31	007SB31101	10/13/93	1,100	D				
	S07-B32	007SB32101	10/13/93	26	=				
	S07-B33	007SB33101	10/13/93	4.7	J				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
p,p'-DDT ^c	S07-B34	007SB34101	10/13/93	140	=	1,900	17,000	17,000	NA
	S07-B35	007SB35101	10/18/93	7.5	U				
	S07-B36	007SB36101	10/13/93	16	J				
	S07-B37	007SB37101	10/13/93	22	J				
TEQ ^c	G007SB001	007CB00101	10/03/96	0.000347	=	0.0043	0.038	0.0043 _{Reg III}	NA
BEQs ^c	G006SB004	006SB00401	09/19/96	285.6	=	87	780	4,000	1,304
	G006SB010	006SB01001	01/17/02	252.3	=				
	G006SB012	006SB01201	01/17/02	120.3	=				
	G006SB013	006SB01301	01/17/02	78.2	=				
	G006SB015	006SB01501	01/17/02	27.3	=				
	G006SB017	006SB01701	05/08/02	426.4	U				
	G006SB018	006SB01801	05/08/02	209.6	=				
	G006SB019	006SB01901	05/08/02	204.4	=				
	G006SB020	006SB02001	05/08/02	251.6	=				
	G006SB024	006SB02401	05/09/02	1,073	=				
	S06-B03	006SB03101	09/21/93	371.3	=				
	S06-B04	006SB04101	09/21/93	639.5	=				
	G006SB044	006SB04401	06/12/02	654.8	=				
	G006SB047	006SB04701	06/12/02	51.1	U				
	S06-B05	006SB05101	09/22/93	365.7	=				
	S06-B06	006SB06101	09/22/93	403.9	=				
	S06-B07	006SB07101	09/22/93	545.2	=				
	S06-B14	006SB14101	10/27/93	465.2	=				
	S06-B20	006SB20101	10/27/93	534.7	=				
	S06-B26	006SB26101	10/27/93	439.1	U				
G007SB001	007SB00101	10/03/96	708.4	=					
S07-B03	007SB03101	10/09/93	290.3	=					
S07-B06	007SB06101	10/09/93	808	=					

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
BEQs ^c	S07-B07	007SB07101	10/09/93	426.2	=	87	780	4,000	1,304
	S07-B18	007SB18101	10/11/93	429.3	=				
	S07-B31	007SB31101	10/13/93	484.5	=				
	S07-B32	007SB32101	10/13/93	439.1	U				
	S07-B33	007SB33101	10/13/93	439.1	U				
	S07-B34	007SB34101	10/13/93	891.2	=				
	S07-B35	007SB35101	10/18/93	615.4	=				
	S07-B36	007SB36101	10/13/93	478.9	=				
	S07-B37	007SB37101	10/13/93	6,098.2	=				
Antimony	G006SB004	006SB00401	09/19/96	310	U	3,100	82,000	2,500	790 - 5,700
	S06-B03	006SB03101	09/21/93	6,300	U				
	S06-B04	006SB04101	09/21/93	5,600	U				
	S06-B05	006SB05101	09/22/93	5,700	U				
	S06-B06	006SB06101	09/22/93	5,800	U				
	S06-B06	006SB06101LR	09/22/93	5,700	U				
	S06-B07	006SB07101	09/22/93	6,000	U				
	S06-B14	006SB14101	10/27/93	6,600	UJ				
	S06-B20	006SB20101	10/27/93	5,900	UJ				
	S06-B26	006SB26101	10/27/93	5,900	UJ				
	G007SB001	007SB00101	10/03/96	370	U				
	S07-B03	007SB03101	10/09/93	6,100	UJ				
	S07-B06	007SB06101	10/09/93	6,600	UJ				
	S07-B07	007SB07101	10/09/93	6,200	UJ				
	S07-B18	007SB18101	10/11/93	5,500	UJ				
	S07-B31	007SB31101	10/13/93	5,900	UJ				
	S07-B32	007SB32101	10/13/93	5,900	UJ				
	S07-B33	007SB33101	10/13/93	5,900	UJ				
	S07-B34	007SB34101	10/13/93	10,000	UJ				
	S07-B35	007SB35101	10/18/93	11,000	UJ				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
Antimony	S07-B36	007SB36101	10/13/93	5,700	UJ	3,100	82,000	2,500	790 - 5,700
	S07-B37	007SB37101	10/13/93	5,600	UJ				
Arsenic ^c	G006SB004	006SB00401	09/19/96	17,300	=	430	3,800	14,500	3,100 - 25,000
	G006SB030	006SB03001	05/09/02	7,510	=				
	S06-B03	006SB03101	09/21/93	8,000	=				
	G006SB033	006SB03301	05/09/02	1,470	J				
	S06-B04	006SB04101	09/21/93	8,200	=				
	S06-B05	006SB05101	09/22/93	2,400	=				
	S06-B06	006SB06101	09/22/93	1,800	=				
	S06-B06	006SB06101LR	09/22/93	1,900	=				
	S06-B07	006SB07101	09/22/93	5,000	=				
	S06-B14	006SB14101	10/27/93	3,700	=				
	S06-B20	006SB20101	10/27/93	3,700	=				
	S06-B26	006SB26101	10/27/93	1,600	=				
	G007SB001	007SB00101	10/03/96	5,700	=				
	S07-B03	007SB03101	10/09/93	2,700	J				
	S07-B06	007SB06101	10/09/93	11,000	J				
	S07-B07	007SB07101	10/09/93	16,000	J				
	S07-B18	007SB18101	10/11/93	3,900	J				
	S07-B31	007SB31101	10/13/93	1,400	=				
	S07-B32	007SB32101	10/13/93	1,200	U				
	S07-B33	007SB33101	10/13/93	1,200	U				
	S07-B34	007SB34101	10/13/93	9,500	=				
S07-B35	007SB35101	10/18/93	24,000	J					
S07-B36	007SB36101	10/13/93	2,100	=					
S07-B37	007SB37101	10/13/93	5,800	=					
Thallium	G006SB004	006SB00401	09/19/96	350	U	550	14,000	350	550 - 910
	S06-B03	006SB03101	09/21/93	1,200	UJ				

TABLE 5-3
 Residual COC/COPC Concentrations in Surface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	Qualifier	Residential RBC ^a (HI=0.1)	Industrial RBC ^a (HI=0.1)	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
Thallium	S06-B04	006SB04101	09/21/93	1,100	UJ	550	14,000	350	550 - 910
	S06-B05	006SB05101	09/22/93	1,100	UJ				
	S06-B06	006SB06101	09/22/93	1,200	UJ				
	S06-B07	006SB07101	09/22/93	1,200	UJ				
	S06-B14	006SB14101	10/27/93	1,300	U				
	S06-B20	006SB20101	10/27/93	1,200	U				
	S06-B26	006SB26101	10/27/93	1,200	U				
	G007SB001	007SB00101	10/03/96	540	J				
	S07-B03	007SB03101	10/09/93	6,100	U				
	S07-B06	007SB06101	10/09/93	1,300	U				
	S07-B07	007SB07101	10/09/93	1,200	U				
	S07-B18	007SB18101	10/11/93	1,100	UJ				
	S07-B31	007SB31101	10/13/93	1,200	UJ				
	S07-B32	007SB32101	10/13/93	1,200	UJ				
	S07-B33	007SB33101	10/13/93	1,200	UJ				
	S07-B34	007SB34101	10/13/93	11,000	UJ				
	S07-B35	007SB35101	10/18/93	2,300	UJ				
	S07-B36	007SB36101	10/13/93	1,100	UJ				
	S07-B37	007SB37101	10/13/93	1,200	UJ				

^a RBCs are from the U.S. Environmental Protection Agency (EPA) Region III RBC Table (October, 2000). The RBCs are based on a hazard index (HI) of 0.1 for non-carcinogens.

^b The soil screening level (SSL) is based on a dilution attenuation factor (DAF) of 10.

^c The compound is listed as a carcinogen.

= Indicates that the analyte was detected at the concentration shown.

D Indicates that the diluted value was above the reporting limit.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

JD Indicates that the diluted value was below the reporting limit.

U Indicates that the analyte was analyzed for but not detected above the method detection limit.

TABLE 5-4
 Residual COC/COPC Concentrations in Subsurface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)		SSL ^a (DAF=10)	Zone G Range of Background Concentrations
Alpha-BHC	G006SB001	006SB00102	09/19/96	2.3	U	0.25	NA
	G006SB004	006SB00402	09/19/96	2.5	U		
	G006SB007	006SB00702	01/17/02	0.87	J		
	G006SB011	006SB01102	01/17/02	1.6	U		
	G006SB013	006SB01302	01/17/02	0.88	J		
	G006SB014	006SB01402	01/17/02	16	U		
	G006SB016	006SB01602	01/22/02	3.6	U		
	S06-B02	006SB02202	09/21/93	3.3	U		
	G006SB044	006SB04402	06/12/02	3.2	J		
	G006SB044	006SB04403	06/12/02	15.4	U		
	G006SB045	006SB04502	06/12/02	1.5	J		
	G006SB046	006SB04603	06/12/02	0.48	J		
	G006SB047	006SB04703	06/12/02	1.6	U		
	S06-B07	006SB07202	10/27/93	3.6	U		
	S06-B09	006SB09202	10/27/93	3.7	U		
	S06-B12	006SB12201	10/26/93	1.3	U		
	S06-B14	006SB14202	10/27/93	3.6	U		
	S06-B15	006SB15202	10/27/93	2.7	U		
	S06-B17	006SB17202	10/27/93	3.5	U		
	S06-B20	006SB20202	10/27/93	3.4	U		
	S06-B21	006SB21201	10/26/93	1.3	U		
	S06-B25	006SB25202	10/27/93	3.5	U		
	S06-B26	006SB26202	10/27/93	3.1	U		
	S06-B27	006SB27202	10/27/93	17	J		
	S06-B29	006SB29202	10/27/93	3	U		
	S06-B31	006SB31202	10/27/93	3.7	U		
	S06-B32	006SB32202	10/27/93	4	=		
	S06-B33	006SB33202	10/27/93	3.2	=		
	S07-B03	007SB03202	10/09/93	3	U		
	S07-B11	007SB11202	10/09/93	3.3	U		
	S07-B13	007SB13202	10/09/93	3.5	U		
	S07-B18	007SB18202	10/11/93	5.2	U		
	S07-B22	007SB22202	10/11/93	3.5	U		
	S07-B24	007SB24202	10/11/93	3.5	=		
	S07-B30	007SB30202	10/13/93	3.7	U		
	S07-B34	007SB34202	10/13/93	3	U		
	S07-B36	007SB36202	10/13/93	3.5	U		
	S07-B37	007SB37202	10/13/93	1.9	U		

TABLE 5-4
 Residual COC/COPC Concentrations in Subsurface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	SSL ^a (DAF=10)	Zone G Range of Background Concentrations
Beta-BHC	G006SB001	006SB00102	09/19/96	2.3	U	NA
	G006SB004	006SB00402	09/19/96	2.5	U	
	G006SB007	006SB00702	01/17/02	7.7	U	
	G006SB011	006SB01102	01/17/02	1.6	U	
	G006SB013	006SB01302	01/17/02	2	J	
	G006SB014	006SB01402	01/17/02	16	U	
	G006SB016	006SB01602	01/22/02	3.6	U	
	S06-B02	006SB02202	09/21/93	3.3	U	
	G006SB044	006SB04402	06/12/02	7.4	=	
	G006SB044	006SB04403	06/12/02	15.4	U	
	G006SB045	006SB04502	06/12/02	3.7	J	
	G006SB046	006SB04603	06/12/02	0.84	J	
	G006SB047	006SB04703	06/12/02	1.6	U	
	S06-B07	006SB07202	10/27/93	3.6	U	
	S06-B09	006SB09202	10/27/93	3.7	U	
	S06-B12	006SB12201	10/26/93	1.3	U	
	S06-B14	006SB14202	10/27/93	3.6	U	
	S06-B15	006SB15202	10/27/93	2.7	U	
	S06-B17	006SB17202	10/27/93	3.5	U	
	S06-B20	006SB20202	10/27/93	3.4	U	
	S06-B21	006SB21201	10/26/93	1.3	U	
	S06-B25	006SB25202	10/27/93	3.5	U	
	S06-B26	006SB26202	10/27/93	3.1	U	
	S06-B27	006SB27202	10/27/93	26	J	
	S06-B29	006SB29202	10/27/93	3	U	
	S06-B31	006SB31202	10/27/93	3.7	U	
	S06-B32	006SB32202	10/27/93	4	=	
	S06-B33	006SB33202	10/27/93	3.2	=	
	S07-B03	007SB03202	10/09/93	3	U	
	S07-B11	007SB11202	10/09/93	3.3	U	
	S07-B13	007SB13202	10/09/93	3.5	U	
	S07-B18	007SB18202	10/11/93	5.2	U	
	S07-B22	007SB22202	10/11/93	3.5	U	
	S07-B24	007SB24202	10/11/93	3.5	=	
	S07-B30	007SB30202	10/13/93	3.7	U	
	S07-B34	007SB34202	10/13/93	3	U	
	S07-B36	007SB36202	10/13/93	3.5	U	
	S07-B37	007SB37202	10/13/93	1.9	U	

TABLE 5-4
 Residual COC/COPC Concentrations in Subsurface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	SSL ^a (DAF=10)	Zone G Range of Background Concentrations
Gamma-BHC (Lindane)	G006SB001	006SB00102	09/19/96	2.3	U	NA
	G006SB004	006SB00402	09/19/96	2.5	U	
	G006SB007	006SB00702	01/17/02	7.7	U	
	G006SB011	006SB01102	01/17/02	1.6	U	
	G006SB013	006SB01302	01/17/02	2.2	J	
	G006SB014	006SB01402	01/17/02	16	U	
	G006SB016	006SB01602	01/22/02	3.6	U	
	S06-B02	006SB02202	09/21/93	3.3	U	
	G006SB044	006SB04402	06/12/02	21.1	=	
	G006SB044	006SB04403	06/12/02	12.7	J	
	G006SB045	006SB04502	06/12/02	10.7	=	
	G006SB046	006SB04603	06/12/02	1.8	J	
	G006SB047	006SB04703	06/12/02	1.6	U	
	S06-B07	006SB07202	10/27/93	3.6	U	
	S06-B09	006SB09202	10/27/93	3.7	U	
	S06-B12	006SB12201	10/26/93	1.3	U	
	S06-B14	006SB14202	10/27/93	3.6	U	
	S06-B15	006SB15202	10/27/93	2.7	U	
	S06-B17	006SB17202	10/27/93	3.5	U	
	S06-B20	006SB20202	10/27/93	3.4	U	
	S06-B21	006SB21201	10/26/93	1.3	U	
	S06-B25	006SB25202	10/27/93	3.5	U	
	S06-B26	006SB26202	10/27/93	3.1	U	
	S06-B27	006SB27202	10/27/93	24	J	
	S06-B29	006SB29202	10/27/93	3	U	
	S06-B31	006SB31202	10/27/93	3.7	U	
	S06-B32	006SB32202	10/27/93	4	=	
	S06-B33	006SB33202	10/27/93	3.2	=	
	S07-B03	007SB03202	10/09/93	3	U	
	S07-B11	007SB11202	10/09/93	3.3	U	
	S07-B13	007SB13202	10/09/93	3.5	U	
	S07-B18	007SB18202	10/11/93	5.2	U	
	S07-B22	007SB22202	10/11/93	3.5	U	
	S07-B24	007SB24202	10/11/93	3.5	=	
	S07-B30	007SB30202	10/13/93	3.7	U	
	S07-B34	007SB34202	10/13/93	3	U	
	S07-B36	007SB36202	10/13/93	3.5	U	
S07-B37	007SB37202	10/13/93	1.9	U		

TABLE 5-4
 Residual COC/COPC Concentrations in Subsurface Soil
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)		SSL ^a (DAF=10)	Zone G Range of Background Concentrations
Dieldrin	G006SB001	006SB00102	09/19/96	4.5	U	2	NA
	G006SB004	006SB00402	09/19/96	4.9	U		
	G006SB007	006SB00702	01/17/02	15	U		
	G006SB011	006SB01102	01/17/02	3.2	U		
	G006SB013	006SB01302	01/17/02	3	J		
	G006SB014	006SB01402	01/17/02	30	U		
	G006SB016	006SB01602	01/22/02	7	U		
	S06-B02	006SB02202	09/21/93	6.5	U		
	G006SB044	006SB04402	06/12/02	6.6	U		
	G006SB044	006SB04403	06/12/02	29.7	U		
	G006SB045	006SB04502	06/12/02	17.1	U		
	G006SB046	006SB04603	06/12/02	4.1	U		
	G006SB047	006SB04703	06/12/02	3.1	U		
	S06-B07	006SB07202	10/27/93	7	U		
	S06-B09	006SB09202	10/27/93	7.2	U		
	S06-B12	006SB12201	10/26/93	2.6	U		
	S06-B14	006SB14202	10/27/93	7	U		
	S06-B15	006SB15202	10/27/93	5.2	U		
	S06-B17	006SB17202	10/27/93	6.9	U		
	S06-B20	006SB20202	10/27/93	6.6	U		
	S06-B21	006SB21201	10/26/93	2.6	U		
	S06-B25	006SB25202	10/27/93	6.9	U		
	S06-B26	006SB26202	10/27/93	6	U		
	S06-B27	006SB27202	10/27/93	8	U		
	S06-B29	006SB29202	10/27/93	5.9	U		
	S06-B31	006SB31202	10/27/93	7.2	U		
	S06-B32	006SB32202	10/27/93	7.8	=		
	S06-B33	006SB33202	10/27/93	6.2	=		
	S07-B03	007SB03202	10/09/93	5.9	U		
	S07-B11	007SB11202	10/09/93	6.3	U		
	S07-B13	007SB13202	10/09/93	6.8	U		
	S07-B18	007SB18202	10/11/93	10	U		
	S07-B22	007SB22202	10/11/93	6.9	U		
	S07-B24	007SB24202	10/11/93	6.7	=		
	S07-B30	007SB30202	10/13/93	7.2	U		
	S07-B34	007SB34202	10/13/93	5.9	U		
	S07-B36	007SB36202	10/13/93	6.9	U		
S07-B37	007SB37202	10/13/93	3.8	U			

TABLE 5-4
 Residual COC/COPC Concentrations in Subsurface Soil
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	SSL ^a (DAF=10)	Zone G Range of Background Concentrations
BEQs	G006SB001	006SB00102	09/19/96	554.2	=	1400
	G006SB004	006SB00402	09/19/96	706.5	=	
	G006SB007	006SB00702	01/17/02	2,219.6	=	
	G006SB011	006SB01102	01/17/02	1,300.9	=	
	G006SB013	006SB01302	01/17/02	81.1	=	
	G006SB014	006SB01402	01/17/02	92.6	=	
	G006SB019	006SB01902	05/08/02	305.4	=	
	G006SB020	006SB02002	05/08/02	347.6	=	
	G006SB021	006SB02102	05/08/02	346.6	=	
	S06-B02	006SB02202	09/21/93	679	=	
	G006SB024	006SB02402	05/09/02	283.7	=	
	G006SB026	006SB02603	05/08/02	3,049.5	=	
	G006SB044	006SB04402	06/12/02	136.8	=	
	G006SB044	006SB04403	06/12/02	201	=	
	G006SB045	006SB04502	06/12/02	1,815	=	
	G006SB046	006SB04603	06/12/02	96.1	=	
	G006SB047	006SB04703	06/12/02	280.1	=	
	S06-B07	006SB07202	10/27/93	631.5	=	
	S06-B09	006SB09202	10/27/93	831.9	U	
	S06-B14	006SB14202	10/27/93	766.5	=	
	S06-B15	006SB15202	10/27/93	3,273.4	=	
	S06-B17	006SB17202	10/27/93	755.9	=	
	S06-B20	006SB20202	10/27/93	762.3	=	
	S06-B25	006SB25202	10/27/93	572.7	=	
	S06-B26	006SB26202	10/27/93	663.2	=	
	S06-B27	006SB27202	10/27/93	1,421.4	=	
	S06-B29	006SB29202	10/27/93	473.5	=	
	S06-B31	006SB31202	10/27/93	820.1	=	
	S07-B03	007SB03202	10/09/93	498.6	=	
	S07-B11	007SB11202	10/09/93	455.8	=	
	S07-B13	007SB13202	10/09/93	498.4	=	
	S07-B18	007SB18202	10/11/93	543.5	=	
	S07-B22	007SB22202	10/11/93	503.6	=	
	S07-B30	007SB30202	10/13/93	561.9	=	
	S07-B34	007SB34202	10/13/93	517.8	=	
	S07-B36	007SB36202	10/13/93	724.1	=	
	S07-B37	007SB37202	10/13/93	281.3	=	

^a The soil screening level (SSL) is based on a dilution attenuation factor (DAF) of 10.

TABLE 5-4

Residual COC/COPC Concentrations in Subsurface Soil

RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/kg)	SSL^a (DAF=10)	Zone G Range of Background Concentrations
----------------	-------------------	------------------	-----------------------	------------------------------	---------------------------------	--

- = Indicates that the analyte was detected at the concentration shown.
- J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.
- NA Not applicable/not available
- U Indicates that the analyte was analyzed for but not detected above the method detection limit.

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration ($\mu\text{g/L}$)	Qualifier	MCL ($\mu\text{g/L}$)	RBC (HI=0.1)	Zone G Range of Background Concentrations
Semivolatile Organic Compounds								
Pentachlorophenol	G006GW001	006GW00101	11/14/96	50	U	1	NA	NA
		006GW00102	05/14/97	50	U			
		006GW00103	09/18/97	50	U			
		006GW00104	12/02/97	50	U			
		006GW001M5	07/31/02	50	U			
	G006GW002	006GW00201	11/14/96	50	U			
		006GW00202	05/14/97	50	U			
		006GW00203	09/13/97	50	U			
		006GW00204	12/04/97	50	U			
		006GW002M5	07/31/02	50	U			
	G006GW003	006GW00301	11/14/96	50	U			
		006GW00302	05/15/97	50	U			
		006GW00303	09/13/97	50	U			
		006GW00304	12/03/97	53	U			
		006GW003M5	07/31/02	51	U			
	G006GW004	006GW00401	11/14/96	50	U			
		006HW00401	11/14/96	2	J			
		006GW00402	05/15/97	50	U			
		006GW00403	09/13/97	50	U			
		006GW00404	12/03/97	56	U			
G006GW005	006GW004M5	07/31/02	49	U				
	006GW00501	11/14/96	50	U				
		006GW00502	05/15/97	50	U			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations				
Pentachlorophenol	G006GW005	006GW00503	09/13/97	50	U	1	NA	NA				
		006GW00504	12/04/97	50	U							
		006GW005M5	07/31/02	48.5	U							
	G006GW006	006GW00601	11/14/96	50	U							
		006GW00602	05/16/97	50	U							
		006GW00603	09/18/97	50	U							
		006GW00604	12/04/97	50	U							
	G006GW007	006GW006M5	07/31/02	49	U							
		006GW00701	11/14/96	50	U							
		006GW00702	05/16/97	50	U							
		006GW00703	09/18/97	50	U							
		006GW00704	12/04/97	50	U							
			006GW007M5	07/31/02	50				U			
	Pesticides											
	p,p'-DDD	G006GW001	006GW00101	11/14/96	0.08				U	NA	0.28	NA
006GW00102			05/14/97	0.08	U							
006GW00103			09/18/97	0.08	U							
006GW00104			12/02/97	0.08	U							
006GW001M5			07/31/02	0.08	U							
G006GW002		006GW00201	11/14/96	0.08	U							
		006GW00202	05/14/97	0.08	U							
		006GW00203	09/13/97	0.08	UJ							
		006GW00204	12/04/97	0.08	UJ							
				006GW002M5	07/31/02	0.08	U					

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration ($\mu\text{g/L}$)	Qualifier	MCL ($\mu\text{g/L}$)	RBC (HI=0.1)	Zone G Range of Background Concentrations
p,p'-DDD	G006GW003	006GW00301	11/14/96	0.08	U	NA	0.28	NA
		006GW00302	05/15/97	0.08	U			
		006GW00303	09/13/97	0.08	UJ			
		006GW00304	12/03/97	0.08	U			
		006GW003M5	07/31/02	0.08	U			
	G006GW004	006GW00401	11/14/96	0.08	U			
		006GW00402	05/15/97	0.08	UJ			
		006GW00403	09/13/97	0.08	U			
		006GW00404	12/03/97	0.08	UJ			
		006GW004M5	07/31/02	0.4	U			
	G006GW005	006GW00501	11/14/96	0.08	UJ			
		006GW00502	05/15/97	0.1	=			
		006GW00503	09/13/97	0.08	UJ			
		006GW00504	12/04/97	0.08	UJ			
		006GW005M5	07/31/02	0.095	=			
	G006GW006	006GW00601	11/14/96	0.08	UJ			
		006GW00602	05/16/97	0.08	UJ			
		006GW00603	09/18/97	0.08	U			
		006GW00604	12/04/97	0.08	UJ			
		006GW006M5	07/31/02	0.08	U			
	G006GW007	006GW00701	11/14/96	0.08	U			
		006GW00702	05/16/97	0.08	UJ			
		006GW00703	09/18/97	0.08	U			
		006GW00704	12/04/97	0.08	UJ			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations
p,p'-DDE		006GW007M5	07/31/02	0.08	U	NA	0.2	NA
	G006GW001	006GW00101	11/14/96	0.08	U			
		006GW00102	05/14/97	0.08	U			
		006GW00103	09/18/97	0.08	U			
		006GW00104	12/02/97	0.08	U			
		006GW001M5	07/31/02	0.08	U			
	G006GW002	006GW00201	11/14/96	0.08	U			
		006GW00202	05/14/97	0.08	U			
		006GW00203	09/13/97	0.08	UJ			
		006GW00204	12/04/97	0.08	UJ			
		006GW002M5	07/31/02	0.048	J			
	G006GW003	006GW00301	11/14/96	0.08	U			
		006GW00302	05/15/97	0.08	U			
		006GW00303	09/13/97	0.08	UJ			
		006GW00304	12/03/97	0.08	U			
		006GW003M5	07/31/02	0.3	=			
	G006GW004	006GW00401	11/14/96	0.08	U			
		006GW00402	05/15/97	0.08	UJ			
		006GW00403	09/13/97	0.08	U			
		006GW00404	12/03/97	0.08	UJ			
		006GW004M5	07/31/02	2.2	=			
	G006GW005	006GW00501	11/14/96	0.08	UJ			
		006GW00502	05/15/97	0.08	U			
		006GW00503	09/13/97	0.08	UJ			
		006GW00504	12/04/97	0.08	UJ			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations	
p,p'-DDE		006GW005M5	07/31/02	0.08	U	NA	0.2	NA	
	G006GW006	006GW00601	11/14/96	0.08	UJ				
		006GW00602	05/16/97	0.08	UJ				
		006GW00603	09/18/97	0.08	U				
		006GW00604	12/04/97	0.08	UJ				
		006GW006M5	07/31/02	0.3	=				
	G006GW007	006GW00701	11/14/96	0.08	U				
		006GW00702	05/16/97	0.08	UJ				
		006GW00703	09/18/97	0.08	U				
		006GW00704	12/04/97	0.08	UJ				
		006GW007M5	07/31/02	0.7	=				
	p,p'-DDT	G006GW001	006GW00101	11/14/96	0.08	U	NA	0.2	NA
006GW00102			05/14/97	0.08	U				
006GW00103			09/18/97	0.08	U				
006GW00104			12/02/97	0.08	U				
006GW001M5			07/31/02	0.08	U				
G006GW002		006GW00201	11/14/96	0.08	U				
		006GW00202	05/14/97	0.08	U				
		006GW00203	09/13/97	0.08	UJ				
		006GW00204	12/04/97	0.08	UJ				
		006GW002M5	07/31/02	0.3	=				
G006GW003		006GW00301	11/14/96	0.08	U				
		006GW00302	05/15/97	0.08	U				
		006GW00303	09/13/97	0.08	UJ				

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations
p,p'-DDT		006GW00304	12/03/97	0.08	U	NA	0.2	NA
	G006GW003	006GW003M5	07/31/02	1.5	=			
	G006GW004	006GW00401	11/14/96	0.08	U			
		006GW00402	05/15/97	0.08	UJ			
		006GW00403	09/13/97	0.08	U			
		006GW00404	12/03/97	0.08	UJ			
		006GW004M5	07/31/02	1.8	=			
	G006GW005	006GW00501	11/14/96	0.08	UJ			
		006GW00502	05/15/97	0.08	U			
		006GW00503	09/13/97	0.08	UJ			
		006GW00504	12/04/97	0.08	UJ			
		006GW005M5	07/31/02	0.08	U			
	G006GW006	006GW00601	11/14/96	0.08	UJ			
		006GW00602	05/16/97	0.08	UJ			
		006GW00603	09/18/97	0.08	U			
		006GW00604	12/04/97	0.08	UJ			
		006GW006M5	07/31/02	0.4	=			
	G006GW007	006GW00701	11/14/96	0.08	U			
		006GW00702	05/16/97	0.08	UJ			
		006GW00703	09/18/97	0.08	U			
006GW00704		12/04/97	0.08	UJ				
006GW007M5		07/31/02	1.2	=				
Metals								
Antimony	G006GW001	006GW00101	11/14/96	2.1	U	6	NA	3 - 6

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations
Antimony		006GW00102	05/14/97	3.1	U	6	NA	3 - 6
	G006GW001	006GW00103	09/18/97	1.6	U			
		006GW00104	12/02/97	2.4	U			
		006GW001M5	07/31/02	8.4	J			
	G006GW002	006GW00201	11/14/96	2.1	U			
		006GW00202	05/14/97	4	U			
		006GW00203	09/13/97	1.7	U			
		006GW00204	12/04/97	1.6	U			
		006GW002M5	07/31/02	4.8	U			
	G006GW003	006GW00301	11/14/96	2.1	U			
		006GW00302	05/15/97	2.8	U			
		006GW00303	09/13/97	1.7	U			
		006GW00304	12/03/97	1.9	U			
		006GW003M5	07/31/02	4.8	U			
	G006GW004	006GW00401	11/14/96	2.1	U			
		006GW00402	05/15/97	4.3	U			
		006GW00403	09/13/97	3.1	U			
		006GW00404	12/03/97	1.6	U			
		006GW004M5	07/31/02	4.8	U			
	G006GW005	006GW00501	11/14/96	2.1	U			
		006GW00502	05/15/97	3.5	U			
		006GW00503	09/13/97	1.8	U			
		006GW00504	12/04/97	2.2	U			
		006GW005M5	07/31/02	4.8	U			
	G006GW006	006GW00601	11/14/96	4	U			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations
Antimony		006GW00602	05/16/97	3.7	U	6	NA	3 - 6
	G006GW006	006GW00603	09/18/97	2.3	U			
		006GW00604	12/04/97	1.6	U			
		006GW006M5	07/31/02	9.2	J			
	G006GW007	006GW00701	11/14/96	2.1	U			
		006GW00702	05/16/97	1.6	U			
		006GW00703	09/18/97	1.6	U			
		006GW00704	12/04/97	2.5	U			
		006GW007M5	07/31/02	4.8	U			
Arsenic	G006GW001	006GW00101	11/14/96	8.5	J	50	NA	8 - 166
		006GW00102	05/14/97	2.1	U			
		006GW00103	09/18/97	2.1	U			
		006GW00104	12/02/97	2.9	J			
		006GW001M5	07/31/02	11	=			
	G006GW002	006GW00201	11/14/96	6.1	J			
		006GW00202	05/14/97	2.1	U			
		006GW00203	09/13/97	3.4	J			
		006GW00204	12/04/97	5.8	J			
		006GW002M5	07/31/02	3.97	U			
	G006GW003	006GW00301	11/14/96	269	=			
		006GW00302	05/15/97	560	=			
		006GW00303	09/13/97	373	=			
		006GW00304	12/03/97	154	=			
		006GW003M5	07/31/02	323	=			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration ($\mu\text{g/L}$)	Qualifier	MCL ($\mu\text{g/L}$)	RBC (HI=0.1)	Zone G Range of Background Concentrations
Arsenic	G006GW004	006GW00401	11/14/96	28.9	=	50	NA	8 - 166
	G006GW004	006GW00402	05/15/97	6.2	J			
		006GW00403	09/13/97	13.9	=			
		006GW00404	12/03/97	6.9	J			
		006GW004M5	07/31/02	3.97	U			
	G006GW005	006GW00501	11/14/96	7.2	J			
		006GW00502	05/15/97	2.1	U			
		006GW00503	09/13/97	2.5	J			
		006GW00504	12/04/97	3.2	J			
		006GW005M5	07/31/02	6.3	J			
	G006GW006	006GW00601	11/14/96	10.1	=			
		006GW00602	05/16/97	4.9	J			
		006GW00603	09/18/97	5.5	J			
		006GW00604	12/04/97	17	=			
		006GW006M5	07/31/02	12.4	=			
	G006GW007	006GW00701	11/14/96	17.8	=			
		006GW00702	05/16/97	4.3	J			
		006GW00703	09/18/97	11.3	=			
		006GW00704	12/04/97	10.5	=			
		006GW007M5	07/31/02	15.8	=			
Barium	G006GW001	006GW00101	11/14/96	54	J	2,000	NA	14 - 937
		006GW00102	05/14/97	19.9	=			
		006GW00103	09/18/97	10.7	=			
		006GW00104	12/02/97	31.3	=			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration ($\mu\text{g/L}$)	Qualifier	MCL ($\mu\text{g/L}$)	RBC (HI=0.1)	Zone G Range of Background Concentrations
Barium		006GW001M5	07/31/02	27.9	J	2,000	NA	14 - 937
	G006GW002	006GW00201	11/14/96	38.4	J			
		006GW00202	05/14/97	39.5	=			
		006GW00203	09/13/97	46.1	J			
		006GW00204	12/04/97	41.3	=			
		006GW002M5	07/31/02	69.2	J			
	G006GW003	006GW00301	11/14/96	302	J			
		006GW00302	05/15/97	400	=			
		006GW00303	09/13/97	559	J			
		006GW00304	12/03/97	184	=			
		006GW003M5	07/31/02	634	=			
	G006GW004	006GW00401	11/14/96	245	J			
		006GW00402	05/15/97	270	=			
		006GW00403	09/13/97	302	J			
		006GW00404	12/03/97	287	=			
		006GW004M5	07/31/02	494	=			
	G006GW005	006GW00501	11/14/96	41	J			
		006GW00502	05/15/97	32.9	=			
		006GW00503	09/13/97	46.6	J			
		006GW00504	12/04/97	51.6	=			
		006GW005M5	07/31/02	33	J			
	G006GW006	006GW00601	11/14/96	51.7	J			
		006GW00602	05/16/97	18.9	=			
		006GW00603	09/18/97	22	=			
		006GW00604	12/04/97	37.1	=			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations
Barium		006GW006M5	07/31/02	41	J	2,000	NA	14 - 937
	G006GW007	006GW00701	11/14/96	15.7	J			
		006GW00702	05/16/97	11.3	=			
		006GW00703	09/18/97	16.8	=			
		006GW00704	12/04/97	14	=			
		006GW007M5	07/31/02	26	J			
Beryllium	G006GW001	006GW00101	11/14/96	1.4	J	NA	7.3	NA
		006GW00102	05/14/97	0.2	J			
		006GW00103	09/18/97	0.2	U			
		006GW00104	12/02/97	0.2	U			
		006GW001M5	07/31/02	0.185	U			
	G006GW002	006GW00201	11/14/96	1.2	J			
		006GW00202	05/14/97	0.48	J			
		006GW00203	09/13/97	0.76	J			
		006GW00204	12/04/97	0.41	J			
		006GW002M5	07/31/02	0.185	U			
	G006GW003	006GW00301	11/14/96	0.92	J			
		006GW00302	05/15/97	0.3	J			
		006GW00303	09/13/97	0.3	J			
		006GW00304	12/03/97	0.2	U			
		006GW003M5	07/31/02	0.185	U			
	G006GW004	006GW00401	11/14/96	0.69	J			
		006GW00402	05/15/97	0.29	J			
		006GW00403	09/13/97	0.24	J			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations	
Beryllium		006GW00404	12/03/97	0.2	U	NA	7.3	NA	
	G006GW004	006GW004M5	07/31/02	0.185	U				
	G006GW005	006GW00501	006GW00501	11/14/96	1.1	J			
			006GW00502	05/15/97	0.33	J			
			006GW00503	09/13/97	0.65	J			
			006GW00504	12/04/97	0.41	J			
			006GW005M5	07/31/02	0.185	U			
	G006GW006	006GW00601	006GW00601	11/14/96	1.4	J			
			006GW00602	05/16/97	0.26	J			
			006GW00603	09/18/97	0.29	U			
			006GW00604	12/04/97	0.29	J			
			006GW006M5	07/31/02	0.185	U			
	G006GW007	006GW00701	006GW00701	11/14/96	0.36	J			
			006GW00702	05/16/97	0.2	U			
			006GW00703	09/18/97	0.24	U			
			006GW00704	12/04/97	0.2	U			
			006GW007M5	07/31/02	0.185	U			
Iron	G006GW001	006GW00101	11/14/96	12,400	=	NA	1,100	2,000 - 35,700	
		006GW00102	05/14/97	3,420	=				
		006GW00103	09/18/97	660	=				
		006GW00104	12/02/97	2,150	=				
		006GW001M5	07/31/02	7,540	=				
	G006GW002	006GW00201	006GW00201	11/14/96	17,600	=			
			006GW00202	05/14/97	15,500	=			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations
Iron		006GW00203	09/13/97	14,500	J	NA	1,100	2,000 - 35,700
	G006GW002	006GW00204	12/04/97	14,900	=			
		006GW002M5	07/31/02	20,000	=			
	G006GW003	006GW00301	11/14/96	75,100	=			
		006GW00302	05/15/97	62,900	=			
		006GW00303	09/13/97	68,400	J			
		006GW00304	12/03/97	30,900	=			
		006GW003M5	07/31/02	77,500	=			
	G006GW004	006GW00401	11/14/96	66,200	=			
		006GW00402	05/15/97	52,900	=			
		006GW00403	09/13/97	36,500	J			
		006GW00404	12/03/97	44,800	=			
		006GW004M5	07/31/02	25,400	=			
	G006GW005	006GW00501	11/14/96	16,800	=			
		006GW00502	05/15/97	13,400	=			
		006GW00503	09/13/97	13,800	J			
		006GW00504	12/04/97	16,500	=			
		006GW005M5	07/31/02	13,100	=			
	G006GW006	006GW00601	11/14/96	17,300	=			
		006GW00602	05/16/97	5,330	=			
		006GW00603	09/18/97	5,180	=			
		006GW00604	12/04/97	11,200	=			
	G006GW006M5	006GW006M5	07/31/02	13,500	=			
		G006GW007	006GW00701	11/14/96	6,590	=		

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations
Iron	G006GW007	006GW00702	05/16/97	3,020	=	NA	1,100	2,000 - 35,700
		006GW00703	09/18/97	45,00	=			
		006GW00704	12/04/97	5,650	=			
		006GW007M5	07/31/02	7,670	=			
Nickel	G006GW001	006GW00101	11/14/96	4.5	U	NA	73	1.2 - 20
		006GW00102	05/14/97	0.7	U			
		006GW00103	09/18/97	1.3	J			
		006GW00104	12/02/97	5.8	U			
		006GW001M5	07/31/02	0.837	U			
	G006GW002	006GW00201	11/14/96	1.8	U			
		006GW00202	05/14/97	0.7	U			
		006GW00203	09/13/97	0.7	U			
		006GW00204	12/04/97	1.6	U			
		006GW002M5	07/31/02	8.37	U			
	G006GW003	006GW00301	11/14/96	1.3	U			
		006GW00302	05/15/97	0.7	U			
		006GW00303	09/13/97	0.7	U			
		006GW00304	12/03/97	1.2	U			
		006GW003M5	07/31/02	0.837	U			
	G006GW004	006GW00401	11/14/96	2.8	U			
		006GW00402	05/15/97	0.7	U			
		006GW00403	09/13/97	1.2	J			
		006GW00404	12/03/97	3	U			
		006GW004M5	07/31/02	0.837	U			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations
Nickel	G006GW005	006GW00501	11/14/96	3.9	U	NA	73	1.2 - 20
		006GW00502	05/15/97	2.4	J			
		006GW00503	09/13/97	2.8	J			
		006GW00504	12/04/97	3.7	U			
		006GW005M5	07/31/02	92.3	=			
	G006GW006	006GW00601	11/14/96	55.1	=			
		006GW00602	05/16/97	0.7	U			
		006GW00603	09/18/97	0.72	J			
		006GW00604	12/04/97	1.5	U			
		006GW006M5	07/31/02	0.837	U			
	G006GW007	006GW00701	11/14/96	2.9	U			
		006GW00702	05/16/97	1.4	J			
		006GW00703	09/18/97	0.7	U			
		006GW00704	12/04/97	1.9	J			
		006GW007M5	07/31/02	0.837	U			
Thallium	G006GW001	006GW00101	11/14/96	6.8	U	2	NA	2 - 105 a
		006GW00102	05/14/97	5	U			
		006GW00103	09/18/97	5	U			
		006GW00104	12/02/97	5	U			
		006GW001M5	07/31/02	7.53	J			
	G006GW002	006GW00201	11/14/96	2.8	U			
		006GW00202	05/14/97	6.7	J			
		006GW00203	09/13/97	5	U			
		006GW00204	12/04/97	5	U			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations
Thallium		006GW002M5	07/31/02	4.99	U	2	NA	2 - 105 ^a
	G006GW003	006GW00301	11/14/96	7.9	U			
		006GW00302	05/15/97	6.8	J			
		006GW00303	09/13/97	5	U			
		006GW00304	12/03/97	6.8	J			
		006GW003M5	07/31/02	5.2	J			
	G006GW004	006GW00401	11/14/96	5.3	U			
		006GW00402	05/15/97	9.3	J			
		006GW00403	09/13/97	5	U			
		006GW00404	12/03/97	7.1	J			
		006GW004M5	07/31/02	6.1	J			
	G006GW005	006GW00501	11/14/96	4.1	U			
		006GW00502	05/15/97	6.3	J			
		006GW00503	09/13/97	5	U			
		006GW00504	12/04/97	5	U			
		006GW005M5	07/31/02	4.9	U			
	G006GW006	006GW00601	11/14/96	2.7	U			
		006GW00602	05/16/97	5	U			
		006GW00603	09/18/97	5	U			
		006GW00604	12/04/97	5	U			
		006GW006M5	07/31/02	6.7	J			
	G006GW007	006GW00701	11/14/96	5.9	U			
		006GW00702	05/16/97	5	U			
		006GW00703	09/18/97	5	U			
		006GW00704	12/04/97	5	U			
		006GW007M5	07/31/02	4.9	U			

TABLE 5-5
 COC/COPC Concentrations in Groundwater
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration (µg/L)	Qualifier	MCL (µg/L)	RBC (HI=0.1)	Zone G Range of Background Concentrations
---------	------------	-----------	----------------	----------------------	-----------	------------	--------------	---

- ^a Background range for Zones E, F, G, H, and I.
 = Indicates that the analyte was detected at the concentration shown.
 J Indicates that the concentration shown is estimated.
 NA Not available/not applicable
 U Indicates that the analyte was analyzed for but not detected above the method detection limit.

TABLE 5-6
 SVOC Concentrations in Subsurface Soil for Samples With BEQ Values Above Background
 RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a DAF=10
Benzo[a]Anthracene	G006SB007	006SB00702	01/17/02	2,100	=	1,000
	G006SB026	006SB02603	05/08/02	760	J	
	G006SB045	006SB04502	06/12/02	2,160	=	
	S06-B15	006SB15202	10/27/93	2,700	=	
	S06-B27	006SB27202	10/27/93	640	J	
Benzo[a]Pyrene	G006SB007	006SB00702	01/17/02	820	J	4,000
	G006SB026	006SB02603	05/08/02	1,640	=	
	G006SB045	006SB04502	06/12/02	1,510	=	
	S06-B15	006SB15202	10/27/93	2,200	=	
	S06-B27	006SB27202	10/27/93	790	J	
Benzo[b]Fluoranthene	G006SB007	006SB00702	01/17/02	790	J	2,500
	G006SB026	006SB02603	05/08/02	5,270	=	
	G006SB045	006SB04502	06/12/02	45.7	U	
	S06-B15	006SB15202	10/27/93	2,800	=	
	S06-B27	006SB27202	10/27/93	1,100	=	
Benzo[k]Fluoranthene	G006SB007	006SB00702	01/17/02	850	J	24,500
	G006SB026	006SB02603	05/08/02	1,360	U	
	G006SB045	006SB04502	06/12/02	45.7	U	
	S06-B15	006SB15202	10/27/93	1,100	=	
	S06-B27	006SB27202	10/27/93	470	J	
Chrysene	G006SB007	006SB00702	01/17/02	2,100	=	80,000
	G006SB026	006SB02603	05/08/02	1,790	=	
	G006SB045	006SB04502	06/12/02	1,570	=	
	S06-B15	006SB15202	10/27/93	2,400	=	
	S06-B27	006SB27202	10/27/93	790	J	
Dibenz(a,h)Anthracene	G006SB007	006SB00702	01/17/02	2,000	U	1,000
	G006SB026	006SB02603	05/08/02	1,360	U	
	G006SB045	006SB04502	06/12/02	45.7	U	
	S06-B15	006SB15202	10/27/93	380	J	
	S06-B27	006SB27202	10/27/93	800	U	
Indeno(1,2,3-c,d)Pyrene	G006SB007	006SB00702	01/17/02	2,000	U	7,000
	G006SB026	006SB02603	05/08/02	1,180	J	
	G006SB045	006SB04502	06/12/02	621	=	
	S06-B15	006SB15202	10/27/93	1,300	=	
	S06-B27	006SB27202	10/27/93	520	J	

^a Soil screening level (SSL) is based on a dilution attenuation factor (DAF)=10.

TABLE 5-6
 SVOC Concentrations in Subsurface Soil for Samples With BEQ Values Above Background
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Analyte	Station ID	Sample ID	Date Collected	Concentration ($\mu\text{g}/\text{kg}$)	Qualifier	SSL ^a DAF=10)
---------	------------	-----------	----------------	---	-----------	--------------------------

- = Indicates that the analyte was detected at the concentration shown.
- J Indicates that the concentration shown is estimated.
- U Indicates that the analyte was analyzed for but not detected above the method detection limit.

TABLE 5-7

Arsenic Concentrations in Soil Near Monitoring Well G006GW003

RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Station ID	Sample ID	Concentration (mg/kg)	Qualifier	EPA Region III RBC ^a	SSL ^b (DAF=10)	Zone G Range of Background Concentrations
Surface Soil				0.43	14.5	3.1 - 25
S06-B03	006SB03101	8	=			
G006SB030	006SB03001	7.51	=			
G006SB033	006SB03301	1.47	J			
Subsurface Soil				NA	14.5	1.4 - 36
G006SB030	006SB03002	28.2	=			
G006SB031	006SB03102	7.85	=			
G006SB032	006SB03202	5.65	=			
G006SB033	006SB03302	5.06	=			
G006SB034	006SB03402	10.9	=			
G006SB043	006SB04302	3.06	=			

^a RBC is from the EPA Region III RBC Table (October 2000). Arsenic is listed as a carcinogenic compound.

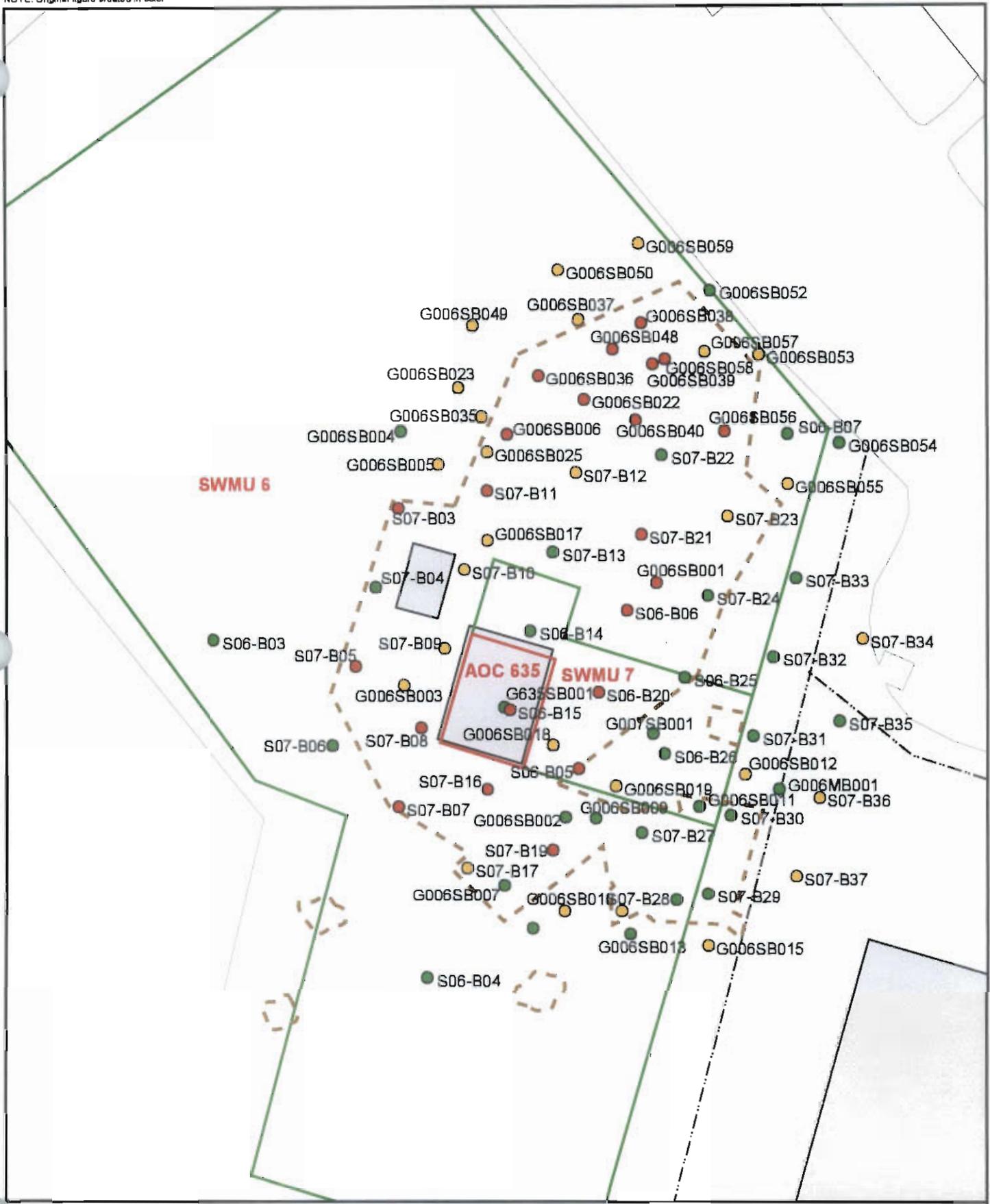
^b SSL is from the *EPA Soil Screening Guidance* (May 1996), adjusted to a dilution attenuation factor (DAF) of 10.

TABLE 5-8
 Zone Reuse (Zoning) and Background Concentration Range for Thallium
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Zone	Zoning	Number of Grid Wells	Frequency of Detection	Zone G Range of Background Concentrations (Tl, $\mu\text{g/L}$)
E	M-2	31	13 / 123	3 - 6
F	CRD, M-1	1	1 / 4	5 - 5
G	M-1	2	0 / 9	NA
H	M-1, B-2	11	8 / 48	2 - 105
I	M-1, B-2	19	9 / 83	3 - 8

B-2 General business district
 CRD Commercial redevelopment district
 M-1 Light industrial district
 M-2 Heavy industrial district

NOTE: Original figure created in color



- Sample Location Non-Detect
- Sample Location Detection Below SSL and RBC
- Sample Location Detection Above SSL or RBC
- - - Excavated Area (CH2M-Jones and DIET)
- ▲ Ditch
- ▬ Pavement
- ▬ Roads
- ▭ Buildings
- ▭ AOC Boundary
- ▭ SWMU Boundary



0 40 80 Feet

1 inch = 45.8333 feet

Figure 5-2.
PCB Concentrations
in Surface Soil
SWMU 6/AOC 635 Zone G
Charleston Naval Complex

NOTE: Original figure created in color

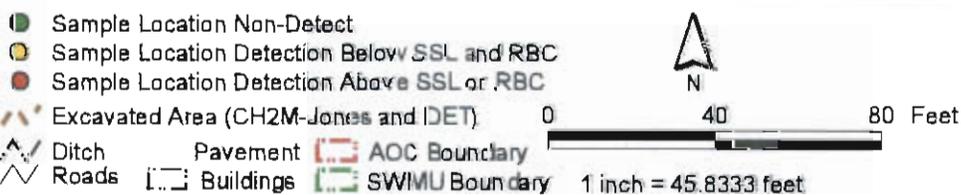
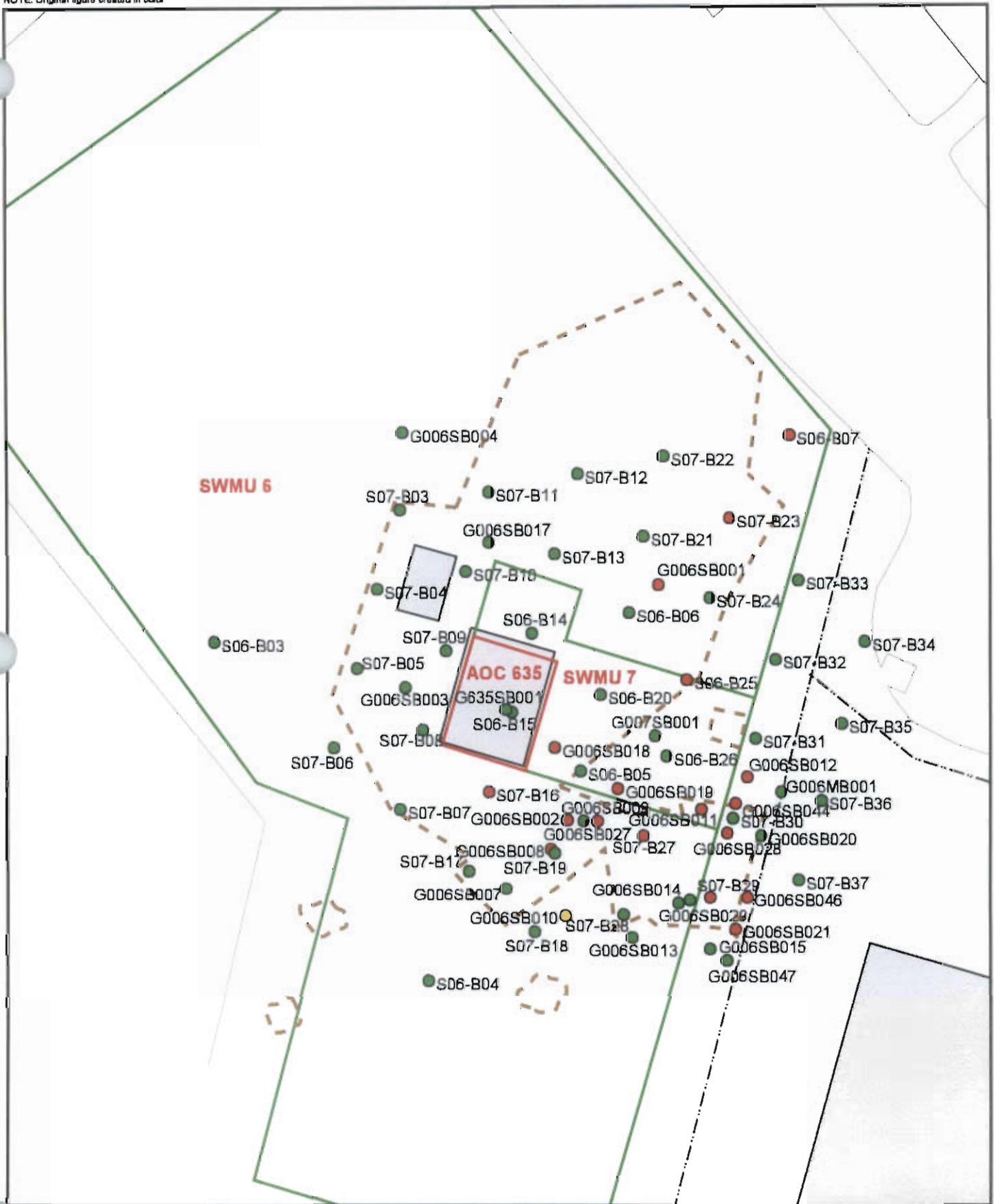
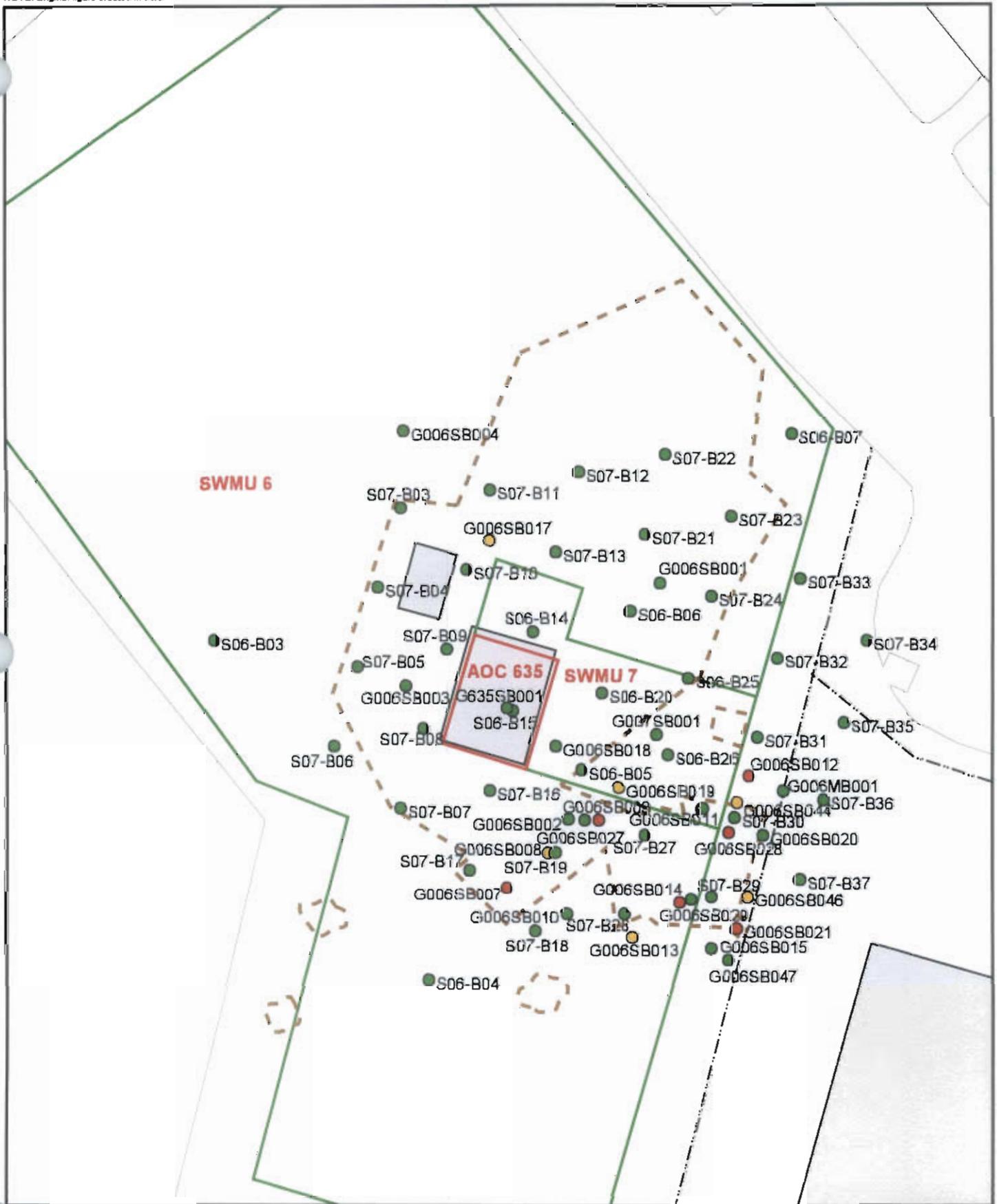


Figure 5-4
Alpha-, Beta-, and Gamma-BHC
Concentrations in Surface Soil
SWMU 6/AOC 635 Zone G
Charleston Naval Complex

NOTE: Original figure created in color

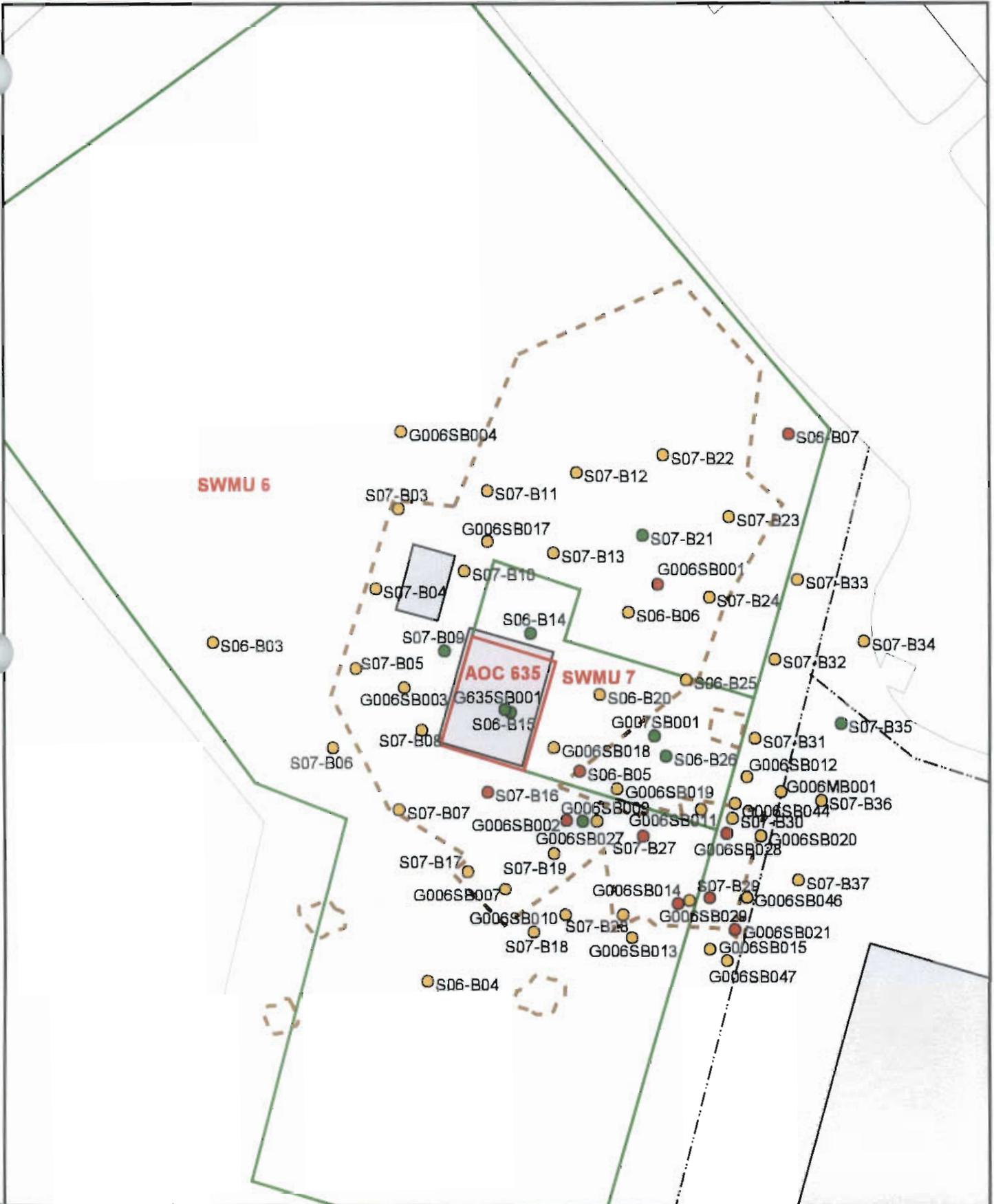


- Sample Location Non-Detect
- Sample Location Detection Below SSL and RBC
- Sample Location Detection Above SSL or RBC
- - - Excavated Area (CH2M-Jones and DET)
- - - Ditch
- Roads
- ▭ Pavement
- ▭ Buildings
- ▭ AOC Boundary
- ▭ SWMU Boundary



Figure 5-5
 Chlordane and Dieldrin
 Concentrations in Surface Soil
 SWMU 6/AOC 635 Zone 6
 Charleston Naval Complex

NOTE: Original figure created in color



- Sample Location Non-Detect
- Sample Location Detection Below SSL and RBC
- Sample Location Detection Above SSL or RBC

- - - Excavated Area (CH2M-Jones and DET)
- - - Ditch
- - - Roads
- - - Pavement
- - - Buildings
- - - AOC Boundary
- - - SWMU Boundary

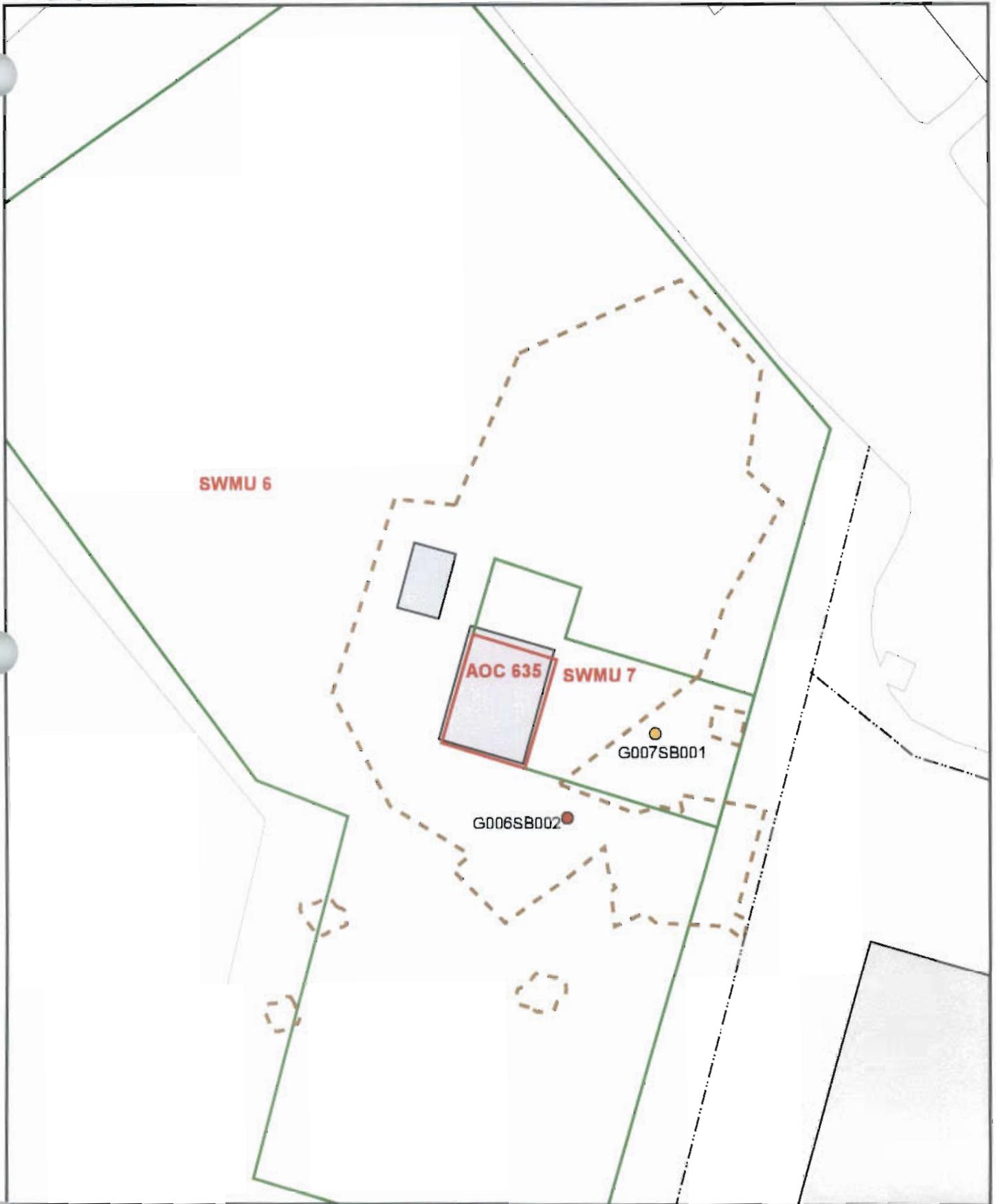


0 40 80 Feet

1 inch = 45.8333 feet

Figure 5-6
 DDD, DDE, and DDT
 Concentrations in Surface Soil
 SWMU 6/AOC 635 Zone G
 Charleston Naval Complex

NOTE: Original figure created in color

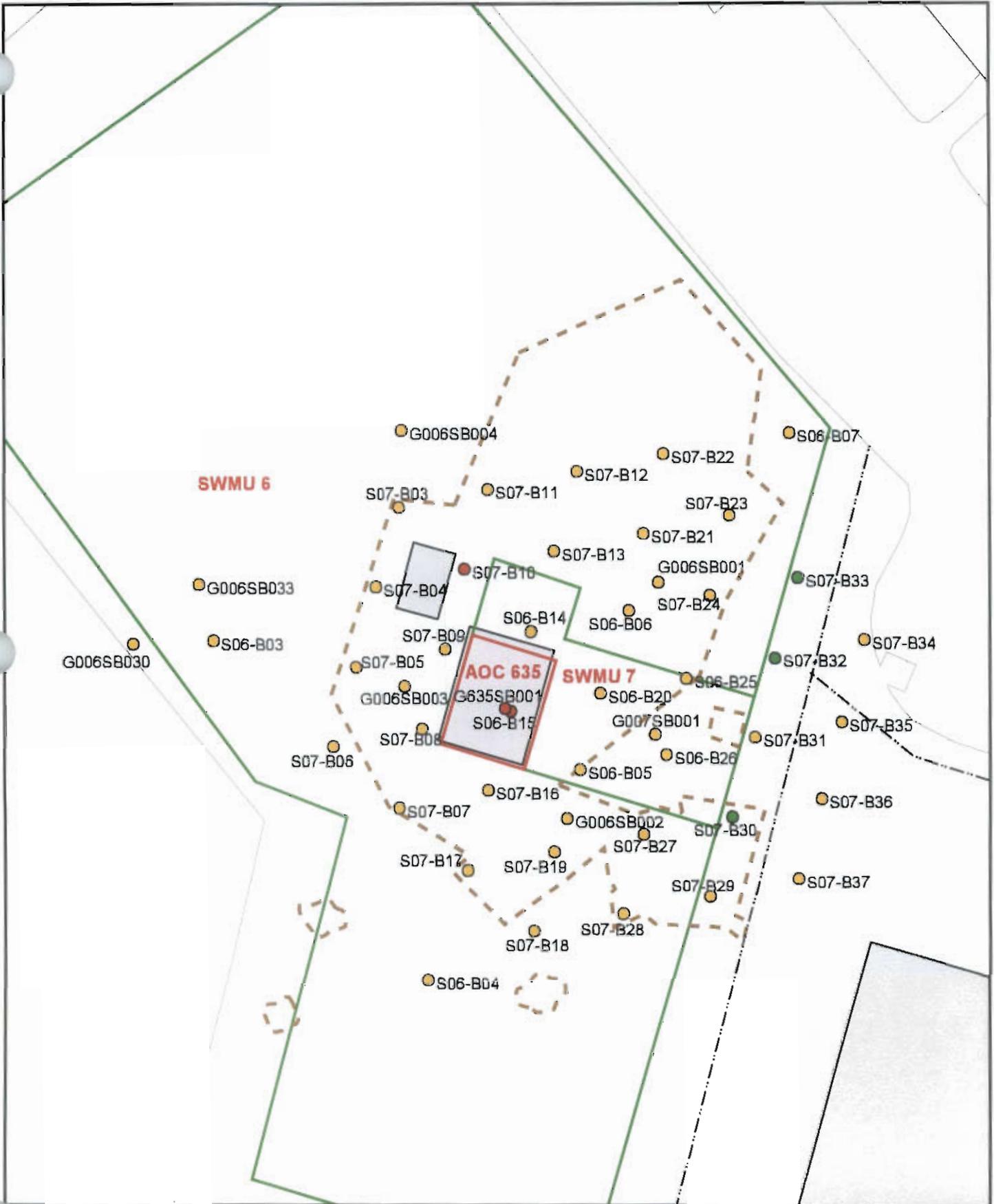


- Sample Location Non-Detect
- Sample Location Detection Below SSL and RBC
- Sample Location Detection Above SSL or RBC
- Excavated Area (CH2M-Jones and DET)
- ▲ Ditch
- ▲ Roads
- ▭ Pavement
- ▭ Buildings
- ▭ AOC Boundary
- ▭ SWMU Boundary

0 40 80 Feet

Figure 5-7
TEQ Concentrations
in Surface Soil
SWMU 6/AOC 635 Zone G
Charleston Naval Complex

NOTE: Original figure created in color



- Sample Location Non-Detect
- Sample Location Detection Below SSL and RBC
- Sample Location Detection Above SSL and RBC
- Excavated Area (CH2M-Jones and DET)
- Ditch
- Pavement
- Roads
- Buildings
- AOC Boundary
- SWMU Boundary



Figure 5-8
 Antimony, Arsenic, and Thallium
 Concentrations in Surface Soil
 SWMU 6/AOC 635 Zone G
 Charleston Naval Complex

NOTE: Original figure created in color

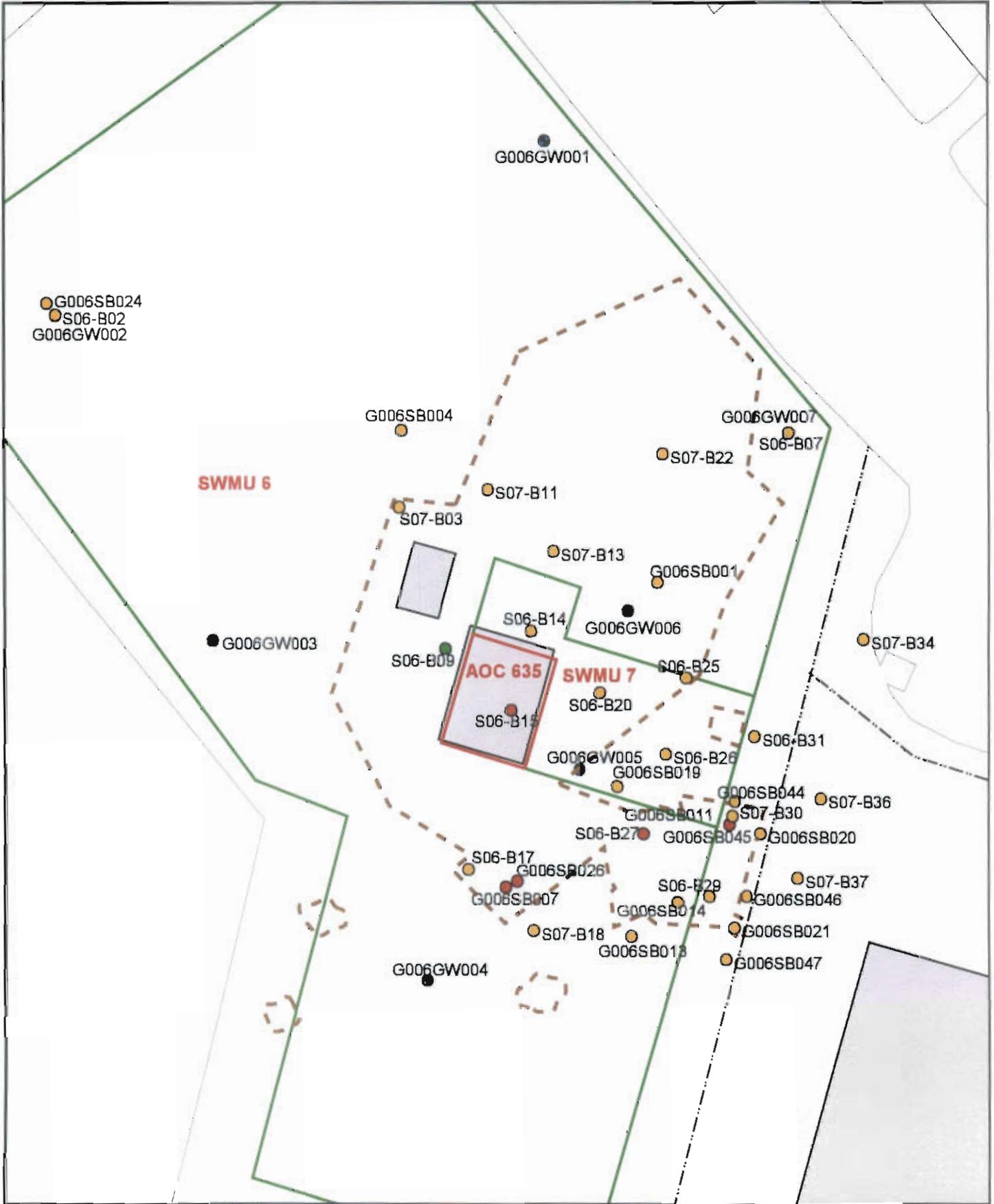


Figure 5-9
BEQ Concentrations
in Subsurface Soil
SWMU 6/AOC 635 Zone G
Charleston Naval Complex

● Sample Location Non-Detect
 ● Sample Location Detection Below Background Concentration
 ● Sample Location Detection Above Background Concentration
 ● Groundwater Well
 Excavated Area (CH2M-Jones and DET)
 Ditch
 Roads
 Pavement
 Buildings
 AOC Boundary
 SWMU Boundary
 1 inch = 45.8333 feet

0 40 80 Feet

CH2MHILL

NOTE: Original figure created in color

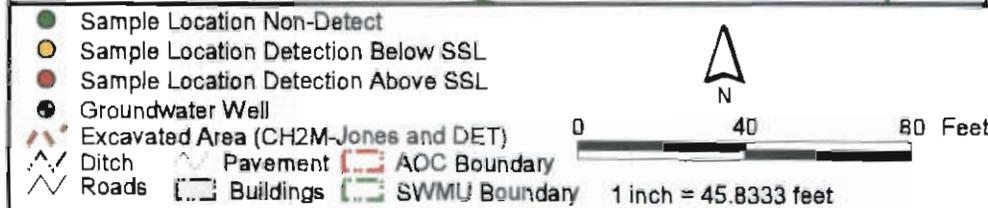
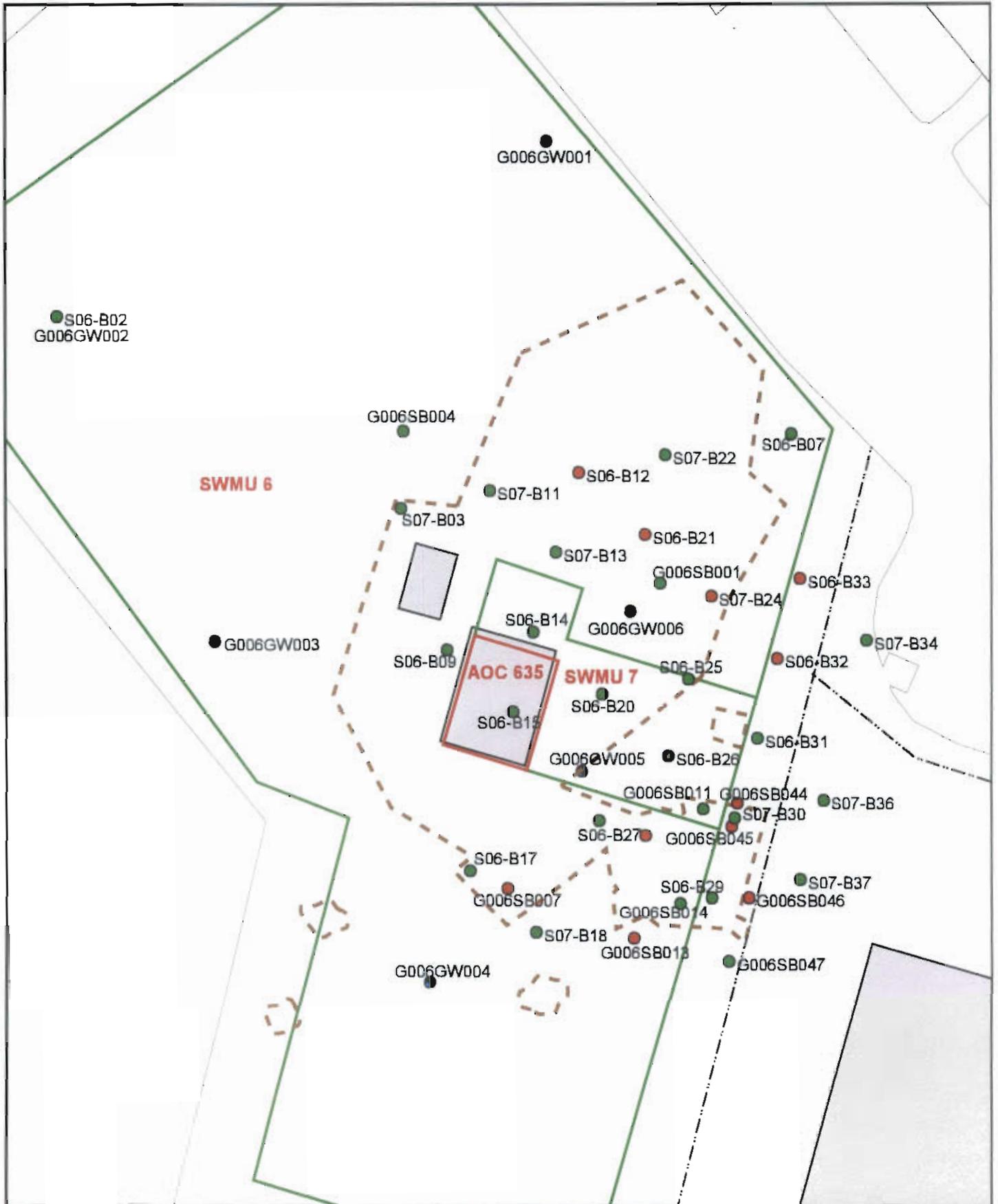
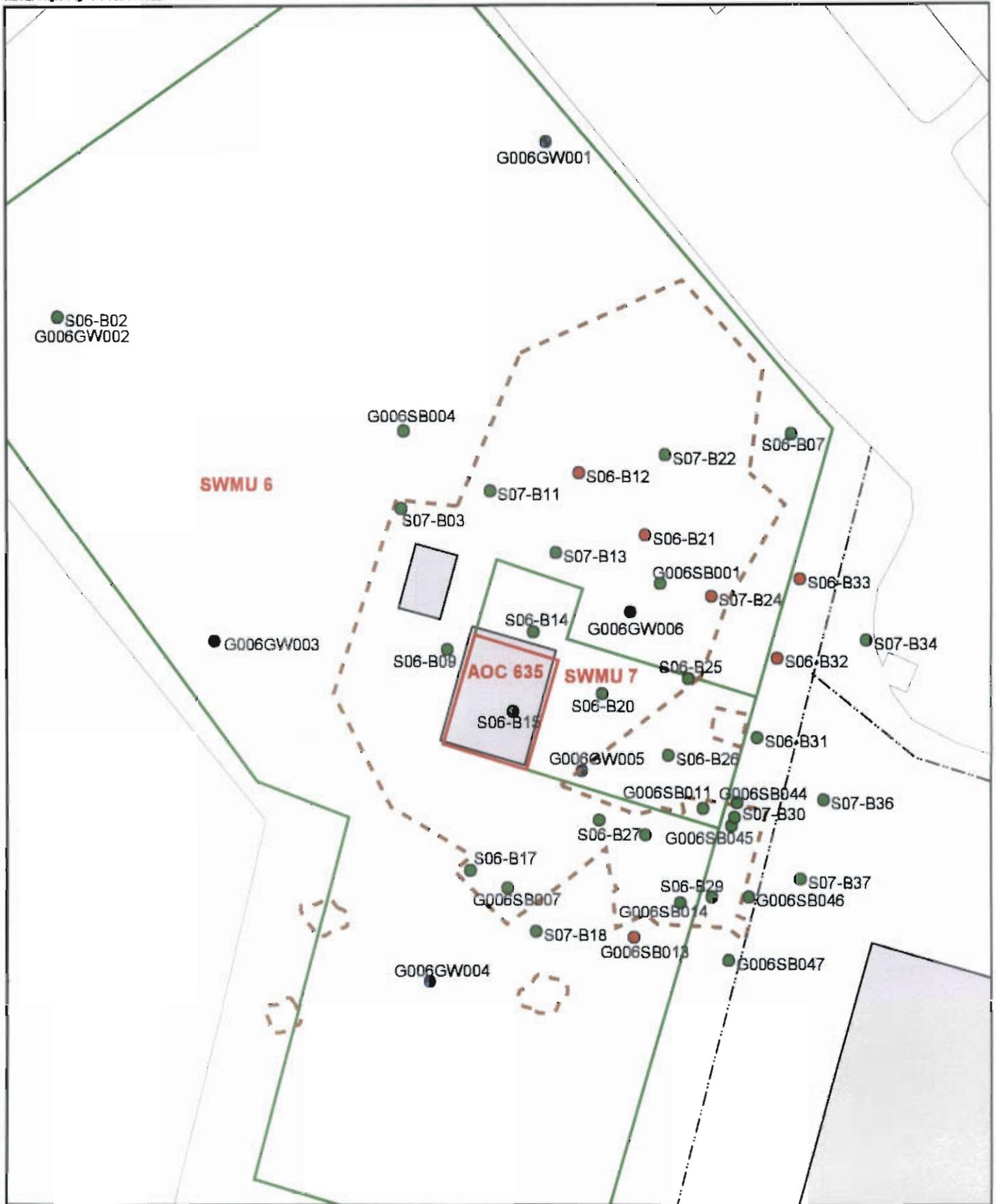


Figure 5-10
 Alpha-, Beta-, and Gamma-BHC
 Concentrations in Subsurface Soil
 SWMU 6/AOC 635 Zone G
 Charleston Naval Complex

NOTE: Original figure created in color



- Sample Location Non-Detect
- Sample Location Detection Below SSL
- Sample Location Detection Above SSL
- Groundwater Well
- - - Excavated Area (CH2M-Jones and DET)
- - - Ditch
- - - Roads
- ▭ Buildings
- ▭ Pavement
- - - AOC Boundary
- - - SWMU Boundary

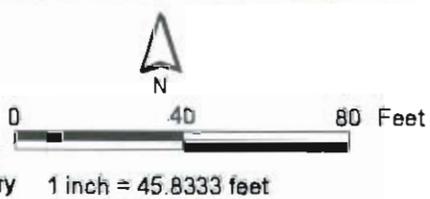


Figure 5-11
Dieldrin Concentrations
in Subsurface Soil
SWMU 6/AOC 635 Zone G
Charleston Naval Complex

6.0 Summary of Information Related to Site Closeout Issues

6.1 RFI Status

The *Zone G RFI Report, Revision 0* (EnSafe, 1998) addressed SWMUs 6 and 7 and AOC 635 as a single area. A CMS was recommended in the RFI report to address surface soil and shallow groundwater at the sites. The responses to SCDHEC comments on the RFI report, in regard to the Combined SWMU 6 site, are attached as Appendix F. With this report addendum, the RFI is considered to be complete. The remaining subsections address the issues that the BCT agreed to evaluate prior to site closeout.

6.2 Presence of Inorganics in Groundwater

For the purpose of site closeout documentation, the inorganics in groundwater issue refers to the occasional or intermittent detection of metals (primarily arsenic, thallium, and antimony) in groundwater at concentrations above the applicable MCL, preceded or followed by detections of these same metals below the MCL or below the practicable quantitation limit.

These constituents were discussed in Section 5.0. Antimony was identified as a groundwater COC for SWMU 6 and its presence will be evaluated in a CMS (Section 9.0). Therefore, additional discussion of inorganics in groundwater at this site is not warranted.

6.3 Potential Linkage to Investigated Sanitary Sewers at the CNC (SWMU 37)

There are no data suggesting that there are any connections or impacts to the investigated sanitary sewers from Combined SWMU 6. Therefore, further evaluation of this issue is not warranted.

1 **6.4 Potential Linkage to Investigated Storm Sewers at the CNC** 2 **(AOC 699)**

3 No direct connections from Combined SWMU 6 to the storm sewers are known to exist. No
4 COCs requiring further evaluation are present at the site after the IM completion. Based on
5 these findings, further evaluation of this issue is not warranted.

6 **6.5 Potential Linkage to AOC 504, Investigated Railroad Lines** 7 **at the CNC**

8 There are no railroad lines at Combined SWMU 6. Therefore, no linkage with the railroad
9 lines exists and no further evaluation of this issue is warranted.

10 **6.6 Potential Migration Pathways to Surface Water Bodies at** 11 **the CNC**

12 The nearest surface water body to Combined SWMU 6 is the Cooper River, which lies
13 approximately 200 feet northeast of the site. A drainage ditch along the southeast side of the
14 site receives stormwater runoff from SWMU 6 during large storm events. This drainage
15 ditch is part of the CNC storm water system and discharges into the underground storm
16 sewer adjacent to the site. The outfall for this part of the storm sewer is the Cooper River
17 adjacent to Pier L.

18 The excavation and removal of contaminated surface soil from the site, as described in this
19 report, has eliminated the source of contaminated soil that might migrate offsite via the
20 stormwater runoff pathway. However, because of the historical surface soil contamination
21 at SWMU 6, the potential for migration of contamination from the site to the Cooper River
22 via the stormwater pathway (particulate or sediment transport) existed prior to conducting
23 the various soil removal interim measures. In order to assess the degree to which runoff of
24 contaminated soil may have impacted the existing drainage ditch, a sediment sample
25 (G006M001) was collected from the drainage ditch as part of the investigation at SWMU 6.
26 The sediment sample location, shown in Figure 5-1, was located downstream of the location
27 where soil contamination was found closest to the ditch and thus this location would be
28 most likely contaminated if offsite contaminant migration via stormwater runoff was a
29 significant pathway. The sediment sample was analyzed for pesticides, PCBs, and PAHs,
30 since these were the key surface soil COPCs identified at SWMU 6.

1 The results of the sediment analysis were discussed in Section 4.0 of this RFI Report
2 Addendum/IM Completion Report/CMS Work Plan. Analytical results for detected
3 compounds in the sample were all below RBCs and SSVs, indicating that contamination of
4 the ditch has not occurred and that this migration pathway is not significant.

5 In addition, the Navy/EnSafe team collected a stormwater sample from the northern
6 (downstream) end of this ditch to assess the potential for contamination to migrate into the
7 Cooper River. Stormwater runoff from the southern and central portions of SWMU 6 enters
8 the ditch during significant rainfall events. The stormwater sample was analyzed for metals,
9 VOCs, SVOCS, pesticides, and PCBs. No organic chemicals were detected in the stormwater
10 sample and no detected inorganic chemicals exceeded the ecological COPC screening
11 criteria. These data further confirm that the surface water runoff pathway is not of concern
12 at this site.

13 **6.7 Potential Contamination in Oil/Water Separators (OWSs)**

14 There are no oil/water separators (OWSs) associated with Combined SWMU 6. In addition,
15 there is no reference to an OWS at the site in the *Oil/Water Separator Data* report, prepared by
16 the Department of the Navy (September 2000). Therefore, further evaluation of this issue is
17 not warranted.

18 **6.8 Land Use Controls (LUCs)**

19 SWMU 6 is planned for future industrial land use. The evaluation presented in this report
20 concludes that the site is suitable for this purpose. Therefore, SWMU 6 will have LUCs
21 applied as part of the corrective measures process. At a minimum, these LUCs are expected
22 to include restrictions against residential land use.

7.0 Interim Measure Completion Report

7.1 Pre-excavation Sampling and Contaminant Delineation

Extensive investigations have been performed at combined SWMU 6. Early soil and groundwater samples were collected in 1981-1982. Soil and groundwater were sampled again in 1993. During the RFI, in 1996 and 1997, additional soil and groundwater samples were collected at the site. Based on these data the DET performed an IM in 1998. The goal of the IM was to remove lead-, PCB-, and pesticide-impacted soil at the site. Approximately 900 yd³ of contaminated soil was removed. Confirmation sample analytical results indicated that PCBs and pesticides were still present above their respective residential RBCs, however the IM was terminated.

CH2M-Jones evaluated the data collected from the previous investigations and concluded that additional sampling was needed to complete the delineation of PCBs, BEQs, and pesticides at SWMU 6. In January 2002 CH2M-Jones submitted a Sampling and Analysis Plan (SAP) to address these data gaps. Eleven surface soil samples and six subsurface soil samples were proposed to complete the delineation at SWMU 6.

SCDHEC granted conditional approval of the SAP on February 7, 2002. Approval was conditioned on further evaluation of the presence of BEQs and collection of groundwater samples from all seven site monitoring wells.

Because the additional sampling did not fully delineated PCB- and pesticide-impacted soil, additional sampling was proposed by CH2M-Jones in the Phase II SAP (CH2M-Jones, 2002c). The Phase II SAP was also intended to confirm the soil BEQ results at monitoring well G006GW002 from the 1993 sampling effort (S06-B02). SCDHEC approved the Phase II SAP noting that earlier concerns regarding groundwater investigation had not been addressed in the document.

Concurrently CH2M-Jones developed an IM Work Plan (CH2M-Jones, 2002d) that proposed soil removal based primarily on data collected as part of the January 2002 SAP and earlier data. The data from the Phase II SAP sampling, which had not been conducted at the time the IM Work Plan was submitted, was expected to further refine the limits of the excavation. The IM Work Plan also specified that following the IM activities, additional groundwater investigation would be conducted. SCDHEC granted conditional approval of the IM Work

1 Plan on May 31, 2002. Approval was conditioned on delineating BEQs in the northwest area
2 of the site.

3 An addendum to the Phase II SAP was prepared by CH2M-Jones and submitted to
4 SCDHEC in April 2002 (CH2M-Jones, 2002e). It proposed collecting additional surface and
5 subsurface soil samples in the vicinity of monitoring well G006GW003. This monitoring well
6 has historically exhibited elevated levels of arsenic in groundwater. The proposed samples
7 were to be analyzed for arsenic. These samples were proposed to be collected to confirm the
8 presence or absence of a source of arsenic near monitoring well G006GW003. SCDHEC
9 granted conditional approval of the Phase II SAP Addendum on May 23, 2002. Approval
10 was conditioned on collecting a soil sample nearer to monitor well G006GW003 and
11 collecting subsurface samples "regardless of groundwater encountered."

12 In June 2002, CH2M-Jones submitted an IM Work Plan Addendum (CH2M-Jones 2002f).
13 The work plan addendum provided responses to SCDHEC's earlier comments, presented
14 the changes in the proposed excavation areas based on the recent data, and proposed
15 additional samples to complete the delineation, confirm excavation extents, and address
16 SCDHEC's comment regarding collecting a sample for arsenic analysis near monitoring well
17 G006GW003. One additional sampling event to finalize PCB delineation completed
18 investigations for the IM.

19 Data from all of these investigations were incorporated into the final IM at combined
20 SWMU 6. These data are presented in detail in Section 4.

21 **7.2 Technical Approach of the Interim Measure**

22 The 2002 IM at SWMU 6 was intended to address remaining PCB-, BEQ-, and pesticide-
23 impacted soil exceeding residential RBCs. The extent of soil removal was determined by the
24 concentrations detected in the pre-excavation delineation and confirmation samples.

25 Excavation limits were located to include soil criteria exceedances and intersect with
26 previous (1998) IM excavation limits. Vertical and horizontal limits of contamination were
27 determined by the pre-excavation delineation sampling. The IM Work Plan proposed that
28 the excavations would be backfilled with clean soil soon after excavation. This approach
29 was presented to SCDHEC and was approved after review of the IM Work Plan.

1 **7.3 Excavation Activities**

2 Limits of the excavation (corners) based on coordinates from the IM Work Plan were staked
3 in the field. Excavation began on June 26, 2002; excavated soil from one side of each
4 excavation area was stockpiled on the opposite side of the area within the limits of
5 excavation. On June 27, trucks began hauling excavated soil from the site to the disposal
6 landfill. As trucks returned to the site, they brought clean backfill material from the
7 designated borrow area. Some commercial gravel was also brought to the site and spread on
8 the surface in soft areas to facilitate truck traffic.

9 Air particulates were monitored with dust monitors, and readings varied from 0.0 mg/m³
10 (normal) to 0.002 mg/m³ (while loading trucks), with background measured at 0.001
11 mg/m³. A photoionization detector (PID) reading was taken in the BEQ-impacted area on
12 the afternoon of June 27, 2002 with a reading of 0.1 ppm. The data indicated that dust levels
13 were approximately the same during the IM as under ambient conditions.

14 **7.3.1 Southwest Excavation**

15 This excavation was 1 ft deep to remove soil with concentrations of PAHs (BEQs), pesticides
16 (DDD, DDE, DDT), and PCBs exceeding residential RBCs. The excavation overlapped the
17 previous 1998 excavation limits, which were identified by the reddish brown backfill
18 material used in the 1998 IM.

19 **7.3.2 Southeast Excavation**

20 This excavation was 1 ft deep over most of the area, with a 3-ft deep section at its north end.
21 The excavation overlapped the previous 1998 excavation limits. Primary contaminants in
22 these areas were PAHs (BEQs), pesticides (DDD, DDE, DDT), and chlordanes. This
23 excavation area included a narrow strip of soil on the bank of the ditch. The excavation
24 encountered some rubble and exceeded 1 ft in most areas to remove the rocks and pieces of
25 wood encountered.

26 **7.3.3 North Excavation**

27 This excavation was completed to a 1-ft depth as planned, and overlapped the previous
28 1998 excavation limits. Primary contaminants in this area were PCBs. During the excavation,
29 quick turnaround-time test results from recent confirmation sampling in this area became
30 available, and showed two RBC exceedances of the PCB Aroclor-1260: sample G006SB058 at
31 a depth of 1 to 2 ft bls, and sample G006SB056 from 0 to 1 ft bls. The excavation was
32 extended to a depth of 2 ft in the area around boring G006SB058 (approximately 10-ft

1 diameter circle), and extended laterally at the east end to include G006SB056 (see Figure 3-
2 1).

3 **7.3.4 Waste Characterization Sampling**

4 Delineation samples were used to characterize material that would be removed from the
5 site. Results from representative samples in areas to be excavated were submitted to the
6 waste facility for approval as follows:

- 7 • North Area: S07SB11, G006SB006, G006SB022
- 8 • Southwest Area: S07SB19, G006SB007, G006SB002, G006SB009
- 9 • Southeast Area: G006SB014, S07SB29, G006SB021, G006SB028, S07SB30, G006SB011

10 Two samples were collected from the southwest and two from the southeast area and
11 composited for a toxicity characteristic leaching procedure (TCLP) test (pesticides and
12 PCBs). All parameters were non-detect. Results for these samples are presented in Section
13 4.0 and are included in Appendix B.

14 Approximately 533 tons of soil were disposed of at the disposal facility as non-hazardous
15 waste. Special Waste Manifests are included in Appendix G.

16 Waste storage, handling, characterization and disposal were conducted in accordance with
17 the EPA guidance document, *Management of Remediation Waste Under RCRA (1998)*.

18 **7.3.5 Site Restoration**

19 The excavations were backfilled with clean soil soon after the contaminated soil was
20 removed, and graded to restore the site to original elevations. Grading was completed on
21 July 9, 2002. The restored areas were seeded with grass seed to facilitate growth of
22 vegetation and prevent soil erosion.

23 Appendix H includes copies of site photos taken during various remediation activities at
24 SWMU 6.

1 **8.0 Recommendations**

- 2 The information presented in this RFIRA/IMCR/CMSWP supports the conclusion that
3 further investigation is not warranted at SWMU 6. Therefore, CH2M-Jones recommends
4 that the status of the site be changed to no further investigation (NFI). RFI and post-RFI data
5 were screened and evaluated through a COPC/COC screening refinement process. Except
6 for PCBs, soil COCs and COPCs were adequately remediated during the IMs conducted at
7 SWMU 6 for residential land uses. PCBs in surface soil are identified as COCs for
8 unrestricted land use. Land use controls (LUCs) will need to be implemented to restrict the
9 use of this site to non-residential use. This is consistent with the planned future use of the
10 site. A CMS is recommended to address PCBs in surface soil.
- 11 The evaluation of groundwater contamination is complicated by the turbidity found during
12 groundwater sampling. Concentrations of a DDE, DDT, antimony, and nickel in a few wells
13 exceed drinking water MCLs. A CMS is recommended to address these COCs in
14 groundwater.
- 15 A CMS Work Plan for surface soil and shallow groundwater is presented in Section 9.0.

9.0 CMS Work Plan for SWMU 6

The purpose of this CMS Work Plan is to identify and evaluate potential remedial alternatives for preventing unacceptable exposure to PCBs in surface soil and to pesticides and metals in shallow groundwater at SWMU 6. A focused CMS will be performed to evaluate two principle actions for soil: (1) LUCs, and (2) hot spot removal with offsite disposal, and one principle action for shallow groundwater: long-term groundwater monitoring with LUCs. A CMS will be performed to evaluate both media.

9.1 Remedial Action Objectives

Remedial action objectives (RAOs) are medium-specific goals that the remedial actions will be designed to accomplish in order to protect human health and the environment by preventing or reducing exposures under current and future land use conditions. The RAOs identified for the surface soil at SWMU 6 are being chosen to prevent ingestion and direct/dermal contact with soil containing PCBs at unacceptable levels. The RAOs identified for shallow groundwater are to prevent ingestion and direct/dermal contact with groundwater having unacceptable carcinogenic risk and noncarcinogenic hazard, and to restore the shallow aquifer to beneficial use conditions.

9.2 Remedial Goal Options and Proposed Media Cleanup Standards

Typically after RAOs have been established and the risk assessment is complete, remedial goal options (RGOs) are developed for each RAO. The RGOs are based on assumptions about a particular land use scenario and include different residual risk levels for comparison. For example, to remediate surface soils to protect an onsite maintenance worker, RGOs might include remediating to anthropogenic background levels or to one of a variety of specific risk levels (such as 1E-06 or 1E-04). For each RGO, a specific media cleanup standard (MCS) is determined for specific chemicals. These MCSs are expressed in conventional concentration units, such as mg/kg or mg/L, for specific chemicals. Remediating the site to those specific MCSs would be suitable to demonstrate that the RAO has been achieved.

1 The exposure medium of concern for SWMU 6 is PCB-contaminated surface soil, and
2 shallow groundwater. Because SWMU 6 is located within a highly developed area of the
3 CNC and there are no surface water bodies in the immediate vicinity of the site, ecological
4 exposures were not considered necessary for evaluation.

5 Potential MCSs for achieving RGOs protective of potentially exposed human receptors (e.g.,
6 site workers involved in monitoring and maintenance) under the anticipated future land use
7 scenario (industrial) will be presented in the CMS. Remedial alternatives for achieving these
8 potential MCSs will be evaluated and described in the CMS.

9 Aroclor-1254 is the only COC identified for soil at SWMU 6. The recommended residential
10 RBC of 320 $\mu\text{g}/\text{kg}$ is recommended as the MCS for PCBs at SWMU 6.

11 The COCs identified for remediation in groundwater are DDE, DDT, antimony, and nickel.
12 MCSs for these chemicals shall be the EPA Drinking Water Standards (MCLs). The table
13 below presents these COCs and their respective MCLs. The MCLs are from EPA Drinking
14 Water Regulations (Summer 2000).

Chemical	EPA Drinking Water MCL ($\mu\text{g}/\text{L}$)	RBC
DDE		0.2
DDT		0.2
Antimony	6	
Nickel		73

15

16 **9.3 Corrective Measure Technology Focused Evaluation**

17 This focused CMS will evaluate the options for preventing direct contact by future site
18 workers or residents, including LUCs, spot removal or containment to MCS in soil, and
19 groundwater remediation to RBCs or MCLs. Technologies associated with LUCs will be
20 evaluated, including deed restrictions against residential use, and long-term monitoring and
21 maintenance. Technologies associated with soil include excavation, backfill, capping, and
22 offsite disposal. Technologies associated with groundwater include monitoring, potentially
23 including field filtration to eliminate turbidity.

24 **9.4 Focused CMS Approach**

25 This focused CMS will consist of the following three tasks. These tasks will be performed in
26 the order presented below:

- 1 1. The corrective measure alternatives described above will be screened using several
2 criteria and decision factors. Other corrective measure alternatives may also be
3 evaluated in the CMS.
- 4 2. A preferred corrective measure alternative will be selected for each medium.
- 5 3. The CMS and preferred corrective measure alternatives will be documented in the CMS
6 report.

7 **9.5 Approach to Evaluating Corrective Measure Alternatives**

8 According to the RCRA permit issued by SCDHEC (SCDHEC, 1998), the alternatives will be
9 evaluated using the following five standards:

- 10 1. Protect human health and the environment.
- 11 2. Attain MCSs (RGOs).
- 12 3. Control the source of releases to minimize future releases that may pose a threat to
13 human health and the environment.
- 14 4. Comply with applicable standards for the management of wastes generated by remedial
15 activities.
- 16 5. Other factors include (a) long-term reliability and effectiveness; (b) reduction in toxicity,
17 mobility, or volume of wastes; (c) short-term effectiveness; (d) implementability; and (e)
18 cost.

19 Each of the five criteria is defined in more detail below:

20 **9.5.1 Protect Human Health and the Environment**

21 The alternatives will be evaluated on the basis of their ability to protect human health and
22 the environment. The ability of an alternative to achieve this standard may or may not be
23 independent of its ability to achieve the other standards. For example, an alternative may be
24 protective of human health, but may not be able to attain the MCSs, if the MCSs are not
25 directly tied to protecting human health.

26 **9.5.2 Attain MCSs (RGOs)**

27 The alternatives will be evaluated on the basis of their ability to achieve the RGOs defined in
28 this CMS Work Plan. Another aspect of this is the time frame to achieve the RGOs.
29 Estimates of the time frame for the alternatives to achieve RGOs will be provided.

1 **9.5.3 Control the Source of Releases**

2 This deals with the control of releases of contamination from the source (the area in which
3 the contamination originated). For example, blast media may be considered a source under
4 the unrestricted land use exposure scenario, but be within RGOs under industrial land use.

5 **9.5.4 Comply with Applicable Standards for the Management of Wastes**

6 This deals with the management of wastes derived from implementing the alternatives, e.g.,
7 treatment or disposal of excavated material. The removal alternative will be designed to
8 comply with all standards for management of wastes. Consequently, this will not be
9 explicitly included in the detailed evaluation presented in the CMS.

10 **9.5.5 Other Factors**

11 Five other factors must be considered if an alternative is found to meet the four criteria
12 described above. These other factors are as follows:

13 a. Long-term reliability and effectiveness

14 These two alternatives will be evaluated on the basis of their reliability and the
15 potential impact should the alternative fail. In other words, a qualitative assessment
16 will be made as to the chance of the alternative's failing and the consequences of that
17 failure.

18 b. Reduction in the toxicity, mobility, or volume of wastes

19 Alternatives with technologies that reduce the toxicity, mobility, or volume of the
20 contamination will be generally favored over those that do not. Consequently, a
21 qualitative assessment of this factor will be performed for each alternative.

22 c. Short-term effectiveness

23 Alternatives will be evaluated on the basis of the risk they create during the
24 implementation of the remedy. Factors that may be considered include fire,
25 explosion, and exposure of workers to hazardous substances.

26 d. Implementability

27 The alternatives will be evaluated for their implementability by considering any
28 difficulties associated with conducting the alternatives (such as the construction
29 disturbances they may create), operation of the alternatives, and the availability of
30 equipment and resources to implement the technologies comprising the alternatives.

1 e. Cost

2 A net present value of each alternative will be developed. These cost estimates will
3 be used for the relative evaluation of the alternatives, not to bid or budget the work.
4 The estimates will be based on information available at the time of the CMS and on a
5 conceptual design of the alternative. They will be "order of magnitude" estimates
6 with a generally expected accuracy of -50 percent to +50 percent for the scope of
7 action described for each alternative. The estimates will be categorized into capital
8 costs and operations and maintenance costs for each alternative.

9 In addition to the criteria described above, the alternatives will be evaluated for the ability
10 to achieve all contractual obligations of CH2M-Jones and the Navy.

11 **9.6 Focused CMS Report**

12 The focused CMS Report will present the identification, development, and evaluation of
13 potential corrective measures for SWMU 6. A proposed outline of the report, as shown in
14 Table 9-1, provides an example of the report format and content organization.

TABLE 9-1
 Outline of Focused CMS Report for SWMU 6
RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Charleston Naval Complex

Section No.	Section Title
1.0	Introduction
1.1	Corrective Measures Study Purpose and Scope
1.2	Report Organization
1.3	Background Information
1.3.1	Facility Description
1.3.2	Site History and Background
1.3.2.1	Nature and Extent of Contamination
1.3.2.2	Summary of Risk Assessment
2.0	Remedial Goal Options
3.0	Detailed Analysis of Focused Alternatives
3.1	Approach
3.2	Evaluation Criteria
3.3	Description of Soil Alternatives ^a
3.3.1	Alternative 1: Land Use Controls
3.3.2	Alternative 2: Soil Removal and Disposal
3.4	Comparative Analysis of Soil Alternatives
3.5	Description of Groundwater Alternatives ^a
3.5.1	Alternative 1: Land Use Controls
3.5.2	Alternative 2: Groundwater Monitoring
3.4	Comparative Analysis of Groundwater Alternatives
4.0	Recommended Remedial Alternatives
5.0	References
Appendix A	Corrective Measure Alternative Cost Estimates ^b
	List of Tables
	List of Figures

^a Additional alternatives will be analyzed, if necessary.

^b Additional appendices will be added, if necessary.

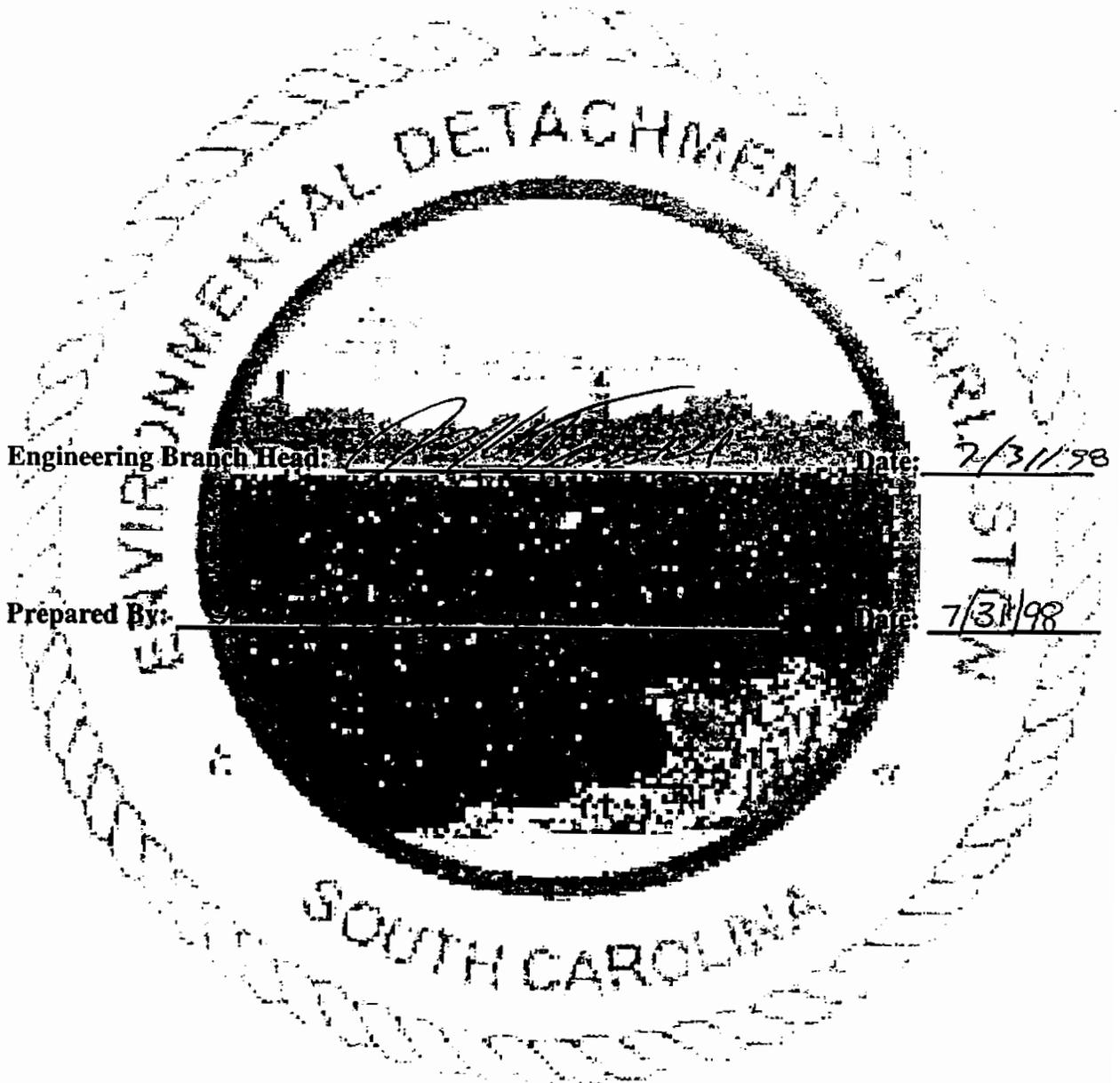
10.0 References

- 2 CH2M-Jones. *Background PAHs Study Report: Technical Information for Development of*
3 *background BEQ Values*. Charleston Naval Complex. Revision 0. February 2001a.
- 4 CH2M-Jones. *Interim Measures Report for Groundwater Monitoring Fiscal Year 2000*. Charleston
5 Naval Complex. Revision 0. February 2001b.
- 6 CH2M-Jones. *An Overview of Arsenic Geochemistry, TEA Processes in Groundwater Systems, and*
7 *Implications for the CNC Hydrogeologic Environment*. Technical Memorandum. August 2001c.
- 8 CH2M-Jones. *Project Team Notebook and Instructions: Charleston Naval Complex, Environmental*
9 *Restoration Project*. Revision 1A. December 2001d.
- 10 CH2M-Jones. *Sampling Plan, SWMUs 6/7 and AOC 635, Zone G, Charleston Naval Complex*.
11 Revision 0. January 2002a.
- 12 CH2M-Jones. *Proposed Approach for Addressing Dioxin (TEQ) in Soils at the CNC Sites*.
13 Technical Memorandum. March 6, 2002b.
- 14 CH2M-Jones. *Phase II Sampling and Analysis Plan, SWMU 6, Zone G, Charleston Naval*
15 *Complex*. Revision 0. April 2002c.
- 16 CH2M-Jones. *Interim Measure Work Plan, Soil Removal, SWMU 6, Zone G, Charleston Naval*
17 *Complex*. Revision 0. April 2002d.
- 18 CH2M-Jones. *Addendum to Phase II Sampling and Analysis Plan, SWMU 6, Zone G, Charleston*
19 *Naval Complex*. Revision 0. April 30, 2002e.
- 20 CH2M-Jones. *IM Work Plan Addendum, SWMU 6, Zone G, Charleston Naval Complex*.
21 Revision 0. June 2002f.
- 22 Ebasco Services, Inc., *Interim RCRA Facility Assessment of USN Charleston Naval Shipyard*,
23 August 1987.
- 24 EnSafe Inc./Allen & Hoshall. *Final RCRA Facility Assessment*. 1995.
- 25 EnSafe Inc. *Zone G RFI Work Plan, Revision 0, NAVBASE, Charleston*. 1996.
- 26 EnSafe Inc. *Zone G RFI Report, Revision 0, NAVBASE Charleston*. February 20, 1998.

- 1 Environmental Detachment Charleston (Navy Detachment [DET]). *Completion Report,*
- 2 *Interim/Stabilization Measure for SWMU 6, 7 & AOC 635, Charleston Naval Complex.* July 1998.
- 3 Geraghty & Miller, Inc. *Confirmation Study –Assessment of Potential Oil and Hazardous Waste*
- 4 *Contamination of Soil and Groundwater at the Charleston Naval Shipyard.* 1982.
- 5 Kemron Environmental Services, Inc. *Final RCRA Facility Investigation (RFI) Workplan,*
- 6 *Charleston Naval Base, Charleston, SC.* September 1991.
- 7 NAVFAC. *Petroleum Storage Tank Status at the Charleston Naval Complex.* Correspondence.
- 8 SOUTHNAVFACENCOM, U.S. Navy. August 8, 2001.
- 9 Southern Division, Naval Facilities Engineering Command (SOUTHDIV). *Oil Water*
- 10 *Separator Data, Charleston Naval Complex Charleston South Carolina.* September 2000.
- 11 U.S. Environmental Protection Agency (EPA). *EPA Soil Screening Guidance: Technical*
- 12 *Background Document (Table A-1), EPA/540/R-95/128.* May 1996a.
- 13 U.S. Environmental Protection Agency. *EPA Soil Screening Guidance: User's Guide.* EPA/Pub.
- 14 No. 9355.4-23. July 1996b.
- 15 U.S. Environmental Protection Agency (EPA) Region III, *Risk-Based Concentration Table,*
- 16 *October 2000.*

COMPLETION REPORT

Interim/Stabilization Measure for
SWMU 6, 7 & AOC 635
Charleston Naval Complex, Charleston, SC



REPORT GENERATED BY:
ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE
NORTH CHARLESTON, SC 29405



DEPARTMENT OF THE NAVY
SUPERVISOR OF SHIPBUILDING, CONVERSION AND REPAIR, USN
PORTSMOUTH, VIRGINIA, ENVIRONMENTAL DETACHMENT CHARLESTON
1838 NORTH HOBSON AVENUE, BUILDING 30
NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

IN REPLY REFER TO:

Ser: 659
JUL 27 1998

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

Dear Mr. Thompson:

The enclosed interim measure completion report for Solid Waste Management Units (SWMU) 6 and 7, and Area of Concern (AOC) 635 is submitted to fulfill the requirement of Permit Condition IV.D.6 for Permit Number SCO 170 022 560. If the Department of Health and Environmental Control should have any questions, please contact Reece Batten of Southern Division Naval Facilities Engineering Command (NAVFAC) at (803) 820-5578.

Sincerely,


E.R. Dearhart
Director

Encl:

(1) SWMU 6, 7 and AOC 635 Completion Report

Copy to:

SCDHEC (Mr. Tapia, Mr. Bergstrand)
USEPA (Mr. Spariosu)
CSO Naval Base Charleston (LCDR Rose)
NAVFAC (Mr. Batten)
EA&H (Ms. Maddux)



COMPLETION REPORT

INTERIM/STABILIZATION MEASURE FOR
SWMU 6, SWMU 7, AOC 635
NAVAL BASE CHARLESTON
CHARLESTON, SC



Prepared for:

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON SC



Prepared by:

Supervisor of Shipbuilding, Conversion and Repair,
USN, (SUPSHIP) Portsmouth Va.,
Environmental Detachment Charleston, S.C.
1899 North Hobson Ave.
North Charleston, SC 29405-2106

July 27, 1998

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
Table of Contents	ii
List of Appendices	iii
Acronyms, Abbreviations and Symbols	iv
1. Introduction.....	1-1
1.1 Installation Restoration Program	1-1
1.1.1 Naval Base Charleston Installation Restoration Program.....	1-1
1.2 Interim Measures	1-1
1.3 Solid Waste Management Unit	1-1
1.4 Solid Waste Management Unit Interim Measure.....	1-2
2. Interim Measure Execution.....	2-1
2.1 Actions Required by Interim Measure Work Plan.....	2-1
2.2 Observations Noted.....	2-1
2.2.1 Soil Conditions	2-1
2.3 Plan Modifications and Justification.....	2-1
2.3.1 PCB Excavations	2-2
2.3.2 Pesticide Excavation	2-2
2.3.3 PAH Identification and Excavation	2-3
3. Interim Measure Outcome	3-1
3.1 Site Conditions Following Completion of Work.....	3-1

TABLE OF CONTENTS (cont'd)

<u>Section</u>	<u>Page</u>
4. Sampling	4-1
4.1 Sampling Evolutions and Results	4-1
4.1.1 Field Sampling	4-1
4.1.2 Confirmation Sampling	4-1
5. Waste Generation	5-1
5.1 Hazardous/Potentially Hazardous Waste	5-1
5.2 Non-Hazardous Waste	5-1

Appendix A Site Maps

Appendix B Sample Documentation

Appendix C Photographs

Appendix D Ensafe 1998 Site Specific Risk Assessment Data

Appendix E Hazardous Waste Manifests

ACRONYMS, ABBREVIATIONS and SYMBOL

AOC	Area of Concern
BEQ	Benzo(a)pyrene Equivalents
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
CMS	Corrective Measures Study
CY	Cubic Yards
DERP	Defense Environmental Restoration Program
DET	Environmental Detachment Charleston
IA	Immunoassay
IM	Interim Measure
MTBE	Methyl Tetra Butyl Ether
PAH	Polyaromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
ppm	Parts Per Million
RBC	Risk Based Concentrations
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
SWMU	Solid Waste Management Unit
TPH	Total Petroleum Hydrocarbons

1. INTRODUCTION

1.1 INSTALLATION RESTORATION PROGRAM The purpose of the Department of the Navy Installation Restoration Program is to identify, assess, characterize and clean up or control contamination from past hazardous waste disposal operations and hazardous material spills at Navy and Marine Corps activities. The Defense Environmental Restoration Program (DERP) is codified in the Superfund Amendments and Reauthorization Act Section 211 (10 USC 2701). The IR Program is a component of DERP.

1.1.1 Naval Base Charleston IR Program At Naval Base Charleston, a Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) was prepared which divided the Naval Base into zones and identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) within each zone. The RFA evaluated each SWMU and AOC and determined which sites required further investigation. Based on the RFA, a RCRA Facility Investigation (RFI) work plan has been or is being prepared for each zone containing SWMUs and AOCs requiring further investigation. On completion of the RFI for each Zone, a RFI report will be prepared for that zone. The RFI reports will identify SWMUs and AOCs containing wastes requiring remediation. Eventually, Corrective Measures Studies (CMSs) will be prepared to determine the best means of remediating each site.

1.2 INTERIM MEASURES Interim Measures (IM) performed as part of the IR Program are intended to eliminate sources of environmental contamination or limit the spread of environmental contaminants prior to the completion of the RFI CMSs.

1.3 SWMU-6, SWMU-7, AND AOC-635 SWMU-6 is the Public Works Storage Yard and encompasses SWMU-7 and AOC-635 as shown on Figure 1 of Appendix A. The wastes stored at this site were generated from vehicle maintenance, building maintenance, pest control operations, and transformer storage. This site is located between Hobson Avenue and River Road South. SWMU-7 is the Polychlorinated Biphenyl (PCB) Transformer Storage Yard. It consisted of

a 100' x 50' concrete pad and the adjoining areas. Between 1970 and 1976, leaking and out of date transformers were stored on this facility. AOC-635 was Building 3902, a 30' x 40' corrugated metal structure with a bermed concrete floor that served as an oil and paint storehouse.

Past investigations have identified PCBs, pesticides, lead and benzo(a)pyrene equivalents (BEQs) as contaminants of concern at this site. The RFI sample points and the corresponding proposed excavation areas are shown on Figure 2 of Appendix A.

1.4 SWMU-6, SWMU-7, AND AOC-635 INTERIM MEASURE During the interval between the RFI and the completion of the CMS, it was decided by Southern Division Naval Facilities Engineering Command that an IM would be performed by Supervisor of Shipbuilding, Conversion and Repair, United States Navy, Portsmouth Va. Environmental Detachment Charleston (DET). The objective of this IM was to excavate and dispose of the PCB, lead, and pesticide contaminated soils; to remove and dispose of Bldg. 3902; and to remove and dispose of the PCB contaminated concrete pad. The excavation was to continue until a sampling program indicated with reasonable confidence that the concentrations of contaminants at the site were less than the residential limits specified by the United States Environmental Protection Agency Region III Risk Based Concentrations (RBCs), dated 23 September 1996 for pesticides and lead. The cleanup level for PCB contaminated soil was < 1 parts per million (ppm) which is the clean soil definition as specified by the Code of Federal Regulations 761.125. The cleanup goals for PCB and pesticides were not attained, however, the Project Team concluded at their 12 May 1998 meeting that the intent of the IM had been met and work should cease. This IM is consistent with the ultimate cleanup of the site and is not intended to circumvent the public participation process inherent within environmental cleanup under RCRA authority.

2. INTERIM MEASURE EXECUTION

2.1 ACTIONS REQUIRED BY INTERIM MEASURE WORK PLAN

- Demolition and disposal of Building 3902 as construction debris
- Removal and disposal of PCB contaminated concrete pad
- Excavation and disposal of 28 cubic yards (cy) of PCB contaminated soil
- Excavation and disposal of 18 cy of pesticide contaminated soil
- Excavation and disposal of 90 cy of lead contaminated soil

2.2 OBSERVATIONS NOTED

2.2.1 Soil Conditions The entire excavated area was covered with 12 to 18 inches of Run of Crusher (ROC). There appeared to be a 12 to 24 inch layer of fill material beneath the ROC. This fill material consisted of sandy clay with large areas of brick, concrete and asphalt. At depths varying from 2 to 4 feet below land surface, the soil was a dark organic smelling mixture of silt and sandy clay, which is more indicative of the natural soil expected to be found near a river.

2.3 PLAN MODIFICATIONS AND JUSTIFICATIONS The scope of the Work Plan was expanded due to continued detection of the contaminants of concern above their RBCs in the confirmation samples. The final excavations and sample locations are shown on Figures 3 and 4 of Appendix A. The RFI samples were taken below the ROC in accordance with an approved sampling procedure and did not indicate this extensive excavation was required. The contamination was primarily in the top two feet and was removed with the excavation. Specific deviations from the Work Plan are listed below.

2.3.1 PCB Excavations The PCB excavation began in April 1997. The proposed excavations consisted of 18 cy around Ensafe sample point 007SB021²⁰¹ and a 10 cy "L" shaped area on the south and west sides of the concrete pad as shown on Figure 2 of Appendix A. The excavations were 2 feet in depth. After excavation, immunoassay (IA) samples were taken in the sidewalls and bottom of the areas prior to confirmation samples. The results indicated further excavation was required. In an attempt to delineate the site and identify an end point for the IM, several rounds of IA samples were taken beyond the excavated areas. Quality Assurance samples were sent to a certified laboratory to confirm the accuracy of the IA test method. The DET determined additional excavation was required.

Approval was received from the Project Team to continue excavation. In November of 1997, an additional 495 cy of soil was excavated from the area. Twenty-six confirmation samples were taken. Six of these samples had PCB levels greater than the 1 ppm cleanup goal as stated in the Work Plan. The levels ranged from 1.75 to 2270 ppm. Of the six samples, four were taken in the bottom of the excavation at depth of 2 feet and two were taken in the sidewalls at a depth of 1 foot. The DET determined additional excavation was required.

These six areas were further excavated in March 1998 and 21 additional confirmation samples were taken. PCB levels of 4.6 and 2.9 ppm were detected at two sample locations. Combined with the previous confirmation sampling, a total of 41 confirmation samples that represent the excavation area were taken for PCB analysis. Of the 41 confirmation samples, there are only two that still have PCB levels greater than the cleanup goal. See Appendix B for laboratory analysis. Sample numbers 1 through 41 on Figure 3 of Appendix A represent the PCB confirmation sample locations. The Project Team agreed that no further action was required on this site, as described in section 3.1 of this report.

2.3.2 Pesticide Excavation The pesticide excavation began in April 1997. The proposed excavation is shown on Figure 2 of Appendix A around Ensafe sample point 007SB027. The

original excavation was approximately 10' x 10' by 1 foot in depth. All five of the confirmation samples taken at that time indicated further excavation was required.

In November 1997 an additional 15 cy of soil was excavated and eight confirmation samples were taken. Four of these samples had pesticide levels greater than the cleanup goals. The DET determined additional excavation was required.

In April 1998, an additional 20 cy of soil was excavated from the site and more confirmation samples were taken. To date, a total of 40 cy of pesticide soil have been excavated. A total of nine confirmation samples were taken that represent the excavated area. These results indicate four sample locations with pesticide levels greater than residential but less than industrial RBCs. See Appendix B for laboratory analysis. Sample numbers 47 through 55 on Figure 3 of Appendix A represent the pesticide confirmation sample locations. The Project Team agreed that no further action was required on this site, as described in section 3.1 of this report.

2.3.3 Petroleum Contaminated Soil Identification and Excavation After removal of the concrete pad, an area with a strong creosote or diesel fuel odor was identified. Investigative samples were taken and analyzed for total petroleum hydrocarbons (TPH), polynuclear aromatic hydrocarbons (PAHs), Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), naphthalene, methyl tetra butyl ether (MTBE), PCBs and pesticides. Non-hazardous petroleum constituents were the only contaminants to exceed cleanup goals. A total of 45 cy of non-hazardous petroleum contaminated soil was removed as of March 1998. See Appendix B for laboratory analysis. Sample number 75 on Figure 3 of Appendix A for sample locations.

The intent of this IM was to remove hot spots of PCB, pesticide and lead contamination, and although the 1995 RFI did identify extensive BEQs contamination at the site, it was not addressed for removal in the original IM. The Project Team agreed that no further action was required on this site, as described in section 3.1 of this report.

3. INTERIM MEASURE OUTCOME

3.1 SITE CONDITIONS FOLLOWING COMPLETION OF WORK Following completion of all site work on 5 June 1998, the DET had removed approximately 900 cy of contaminated soil and 150 cy of contaminated concrete. The site was backfilled and graded to surrounding area. Site photographs are included in Appendix C.

Ensafe calculated a site specific risk assessment in May 1998 using their previously collected data and the DET confirmation samples. This assessment determined the residential risk above background was $1.9E-05$ and the industrial risk above background was $3.9E-06$. The site specific risk assessment is presented in Appendix D.

The Project Team agreed at the 12 May 1998 meeting that the intent of the IM had been met; the PCB, pesticide and lead hotspots had been removed and all excavation should cease. The remaining PCB and pesticide sample locations with elevated levels, as well as the BEQ contamination, at the site would be addressed in the CMS.

4. SAMPLING

4.1 SAMPLING EVOLUTIONS AND RESULTS

4.1.1 Field Sampling Field sampling consisted of immunoassay testing and field gas chromatograph testing to determine extent of contamination. This data was used to estimate growth in the scope of work.

4.1.2 Confirmation Sampling. Upon completion of the excavation, grab samples were taken in the sidewalls and the bottom of the excavations to determine if the contaminants had been removed to the levels as described in paragraph 1.4 of this report. Laboratory results can be found in Appendix B.

5. WASTE GENERATION

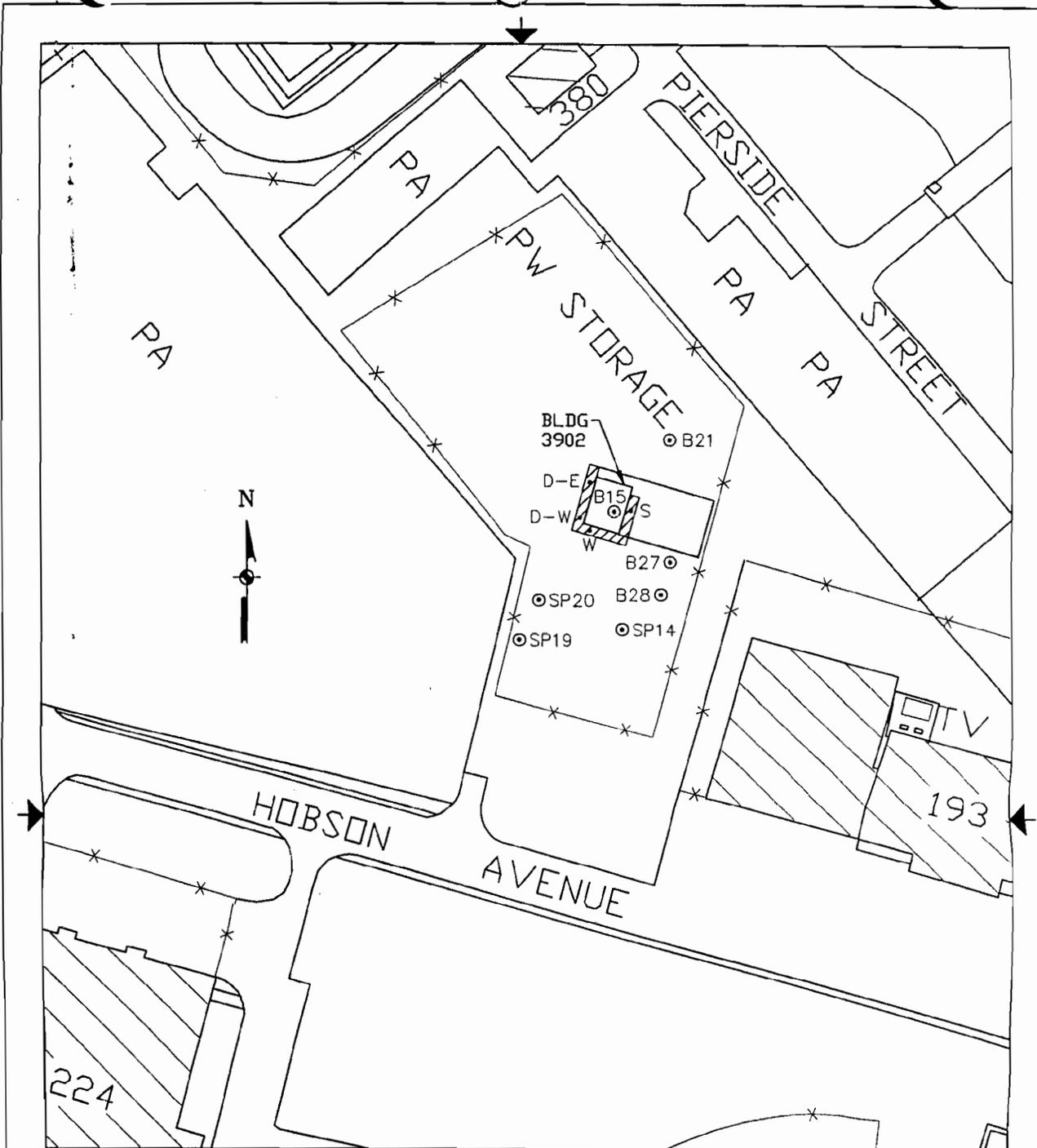
5.1 HAZARDOUS/POTENTIALLY HAZARDOUS WASTE

All PCB and pesticide contaminated soil and concrete was disposed of to a permitted Treatment, Storage and Disposal Facility. Waste Manifests are in Appendix E.

5.2 NON-HAZARDOUS WASTE.

All non-hazardous lead and petroleum contaminated soil was disposed to a Subtitle D landfill.

The sample location numbers shown on Figure 3 of Appendix A were assigned for easy identification and are also located in the upper right hand corner of the laboratory analysis sheets. Table 1 of Appendix B shows these numbers and their corresponding laboratory analysis number.



LEGEND

- RFI SOIL SAMPLE LOCATION
- PROPOSED EXCAVATION AREA
- ▨ PROPOSED EXCAVATION AREA

LEAD

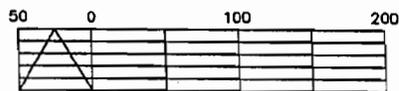
SP14	982	PPM
SP19	399	PPM
B15	1000	PPM
SP20	684	PPM
B28	590	PPM

PCB

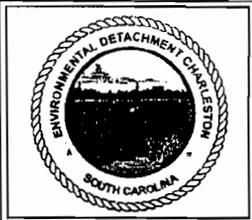
D-E	87	PPM
D-W	126	PPM
W	63	PPM
S	90	PPM
B21	510	PPM

PESTICIDE - B27

DDT	100	PPM
LINDANE	76	PPM
CHLORDANE	14	PPM



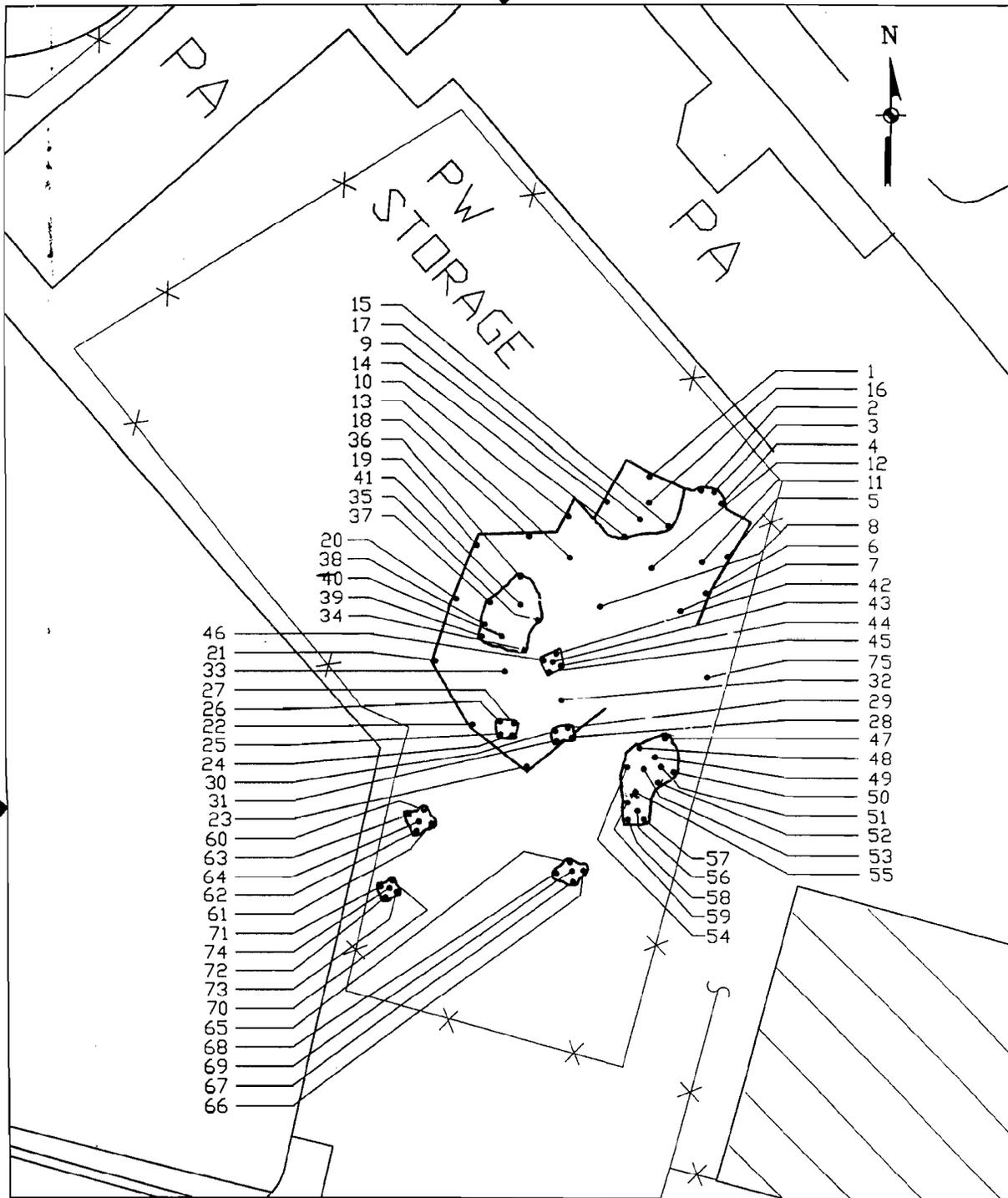
GRAPHIC SCALE (FEET)



ENVIRONMENTAL DETACHMENT CHARLESTON
 1899 NORTH HOBSON AVENUE - BUILDING 30
 NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

FIGURE 2
 SWMU 6, SWMU 7 AND AOC 635 COMPLETION REPORT
 SITE MAP WITH RFI SAMPLE LOCATIONS
 AND PROPOSED EXCAVATION AREAS

SIZE	DATE	PREPARED BY:	REV
	07-21-98	T. LEWIS	-
SCALE	-	SHEET	A-2

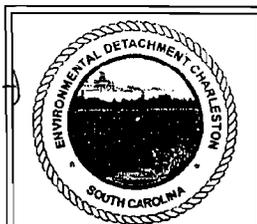


LEGEND

- CONFIRMATORY SAMPLES
- AREAS EXCAVATED TO 2 FEET DEEP
- AREAS EXCAVATED TO 4 FEET DEEP
- * FORMER CONCRETE SLAB



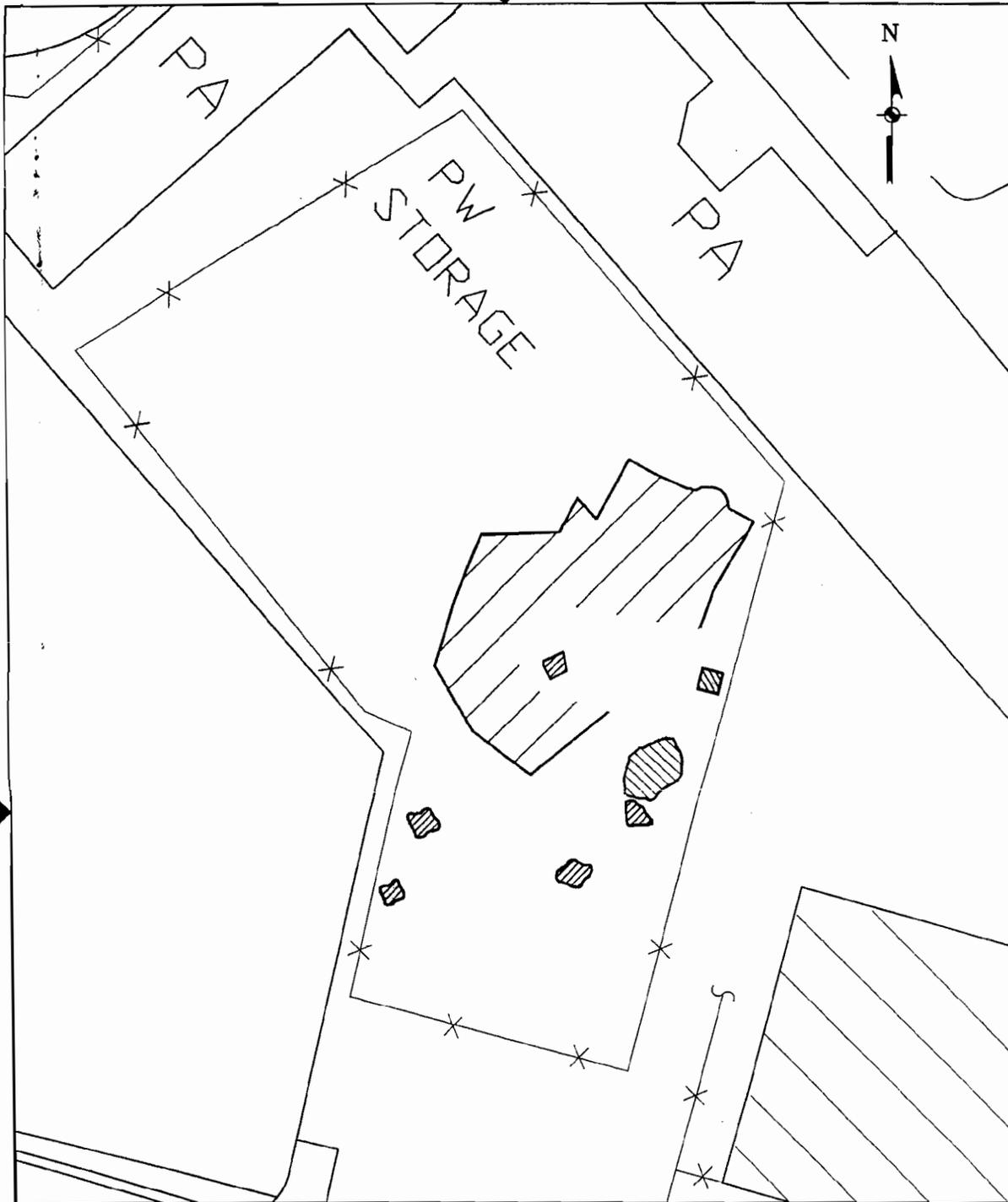
GRAPHIC SCALE (FEET)



ENVIRONMENTAL DETACHMENT CHARLESTON
 1899 NORTH HOBSON AVENUE - BUILDING 30
 NORTH CHARLESTON, SOUTH CAROLINA 29405-2108

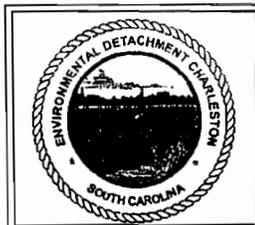
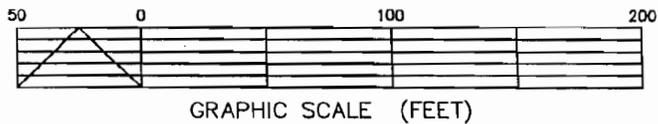
FIGURE 3
 SWMU 6, SWMU 7 AND AOC 635 COMPLETION REPORT
 SITE MAP WITH EXCAVATION BOUNDARIES
 AND CONFIRMATORY SAMPLE LOCATIONS

SIZE	DATE	PREPARED BY:	REV
	07-13-98	T. LEWIS	-
SCALE	SHEET		A-3



LEGEND

-  LEAD EXCAVATION AREA
-  PCB EXCAVATION AREA
-  PESTICIDE EXCAVATION AREA
-  PAH EXCAVATION AREA
-  FORMER CONCRETE SLAB



ENVIRONMENTAL DETACHMENT CHARLESTON
 1899 NORTH HOBSON AVENUE - BUILDING 30
 NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

FIGURE 4
 SWMU 6, SWMU 7 AND AOC 635 COMPLETION REPORT
 SITE MAP WITH LEAD, PCB AND
 PESTICIDE EXCAVATION AREAS

SIZE	DATE	PREPARED BY:	REV
	07-23-98	T. LEWIS	-
SCALE	-	SHEET	A-4

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006MB001		G006SB005		G006SB005		G006SB006		
SampleID	006MB00101 (0-1ft)		006SB00501 (0-1ft)		006SB00502 (3-5ft)		006SB00601 (0-1ft)		
DateCollected	5/8/2002		1/17/2002		1/17/2002		1/17/2002		
DateExtracted	5/15/2002		1/28/2002		1/28/2002		1/28/2002		
DateAnalyzed	5/22/2002		2/1/2002		1/31/2002		2/1/2002		
SDGNumber	60277		CNC63		CNC63		CNC63		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	6.1	UJ	190	U	800	U	180	U
PCB-1221 (Arochlor 1221)	ug/kg	6.1	U	190	U	800	U	180	U
PCB-1232 (Arochlor 1232)	ug/kg	6.1	U	190	U	800	U	180	U
PCB-1242 (Arochlor 1242)	ug/kg	6.1	U	190	U	800	U	180	U
PCB-1248 (Arochlor 1248)	ug/kg	6.1	U	190	U	800	U	180	U
PCB-1254 (Arochlor 1254)	ug/kg	6.1	U	390	U	1600	U	380	U
PCB-1260 (Arochlor 1260)	ug/kg	6.1	U	95	J	1600	UJ	18000	R

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB006		G006SB007		G006SB007		G006SB007		
SampleID	006SB00601DL (0-1ft)		006CB00701 (0-1ft)		006SB00701 (0-1ft)		006SB00702 (3-5ft)		
DateCollected	1/17/2002		1/17/2002		1/17/2002		1/17/2002		
DateExtracted	1/28/2002		1/28/2002		1/28/2002		1/28/2002		
DateAnalyzed	2/1/2002		1/29/2002		1/29/2002		1/30/2002		
SDGNumber	CNC63		CNC63		CNC63		CNC63		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	930	R	36	U	92	U	200	U
PCB-1221 (Arochlor 1221)	ug/kg	930	R	36	U	92	U	200	U
PCB-1232 (Arochlor 1232)	ug/kg	930	R	36	U	92	U	200	U
PCB-1242 (Arochlor 1242)	ug/kg	930	R	36	U	92	U	200	U
PCB-1248 (Arochlor 1248)	ug/kg	930	R	36	U	92	U	200	U
PCB-1254 (Arochlor 1254)	ug/kg	1900	R	74	U	190	U	400	U
PCB-1260 (Arochlor 1260)	ug/kg	13000	J	90	J	190	UJ	400	UJ

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB008		G006SB009		G006SB010		G006SB011		
SampleID	006SB00801 (0-1ft)		006SB00901 (0-1ft)		006SB01001 (0-1ft)		006SB01101 (0-1ft)		
DateCollected	1/17/2002		1/17/2002		1/17/2002		1/17/2002		
DateExtracted	1/28/2002		1/28/2002		1/28/2002		1/28/2002		
DateAnalyzed	1/30/2002		1/30/2002		1/30/2002		1/30/2002		
SDGNumber	CNC63		CNC63		CNC63		CNC63		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	190	U	770	U	37	U	40	U
PCB-1221 (Arochlor 1221)	ug/kg	190	U	770	U	37	U	40	U
PCB-1232 (Arochlor 1232)	ug/kg	190	U	770	U	37	U	40	U
PCB-1242 (Arochlor 1242)	ug/kg	190	U	770	U	37	U	40	U
PCB-1248 (Arochlor 1248)	ug/kg	190	U	770	U	37	U	40	U
PCB-1254 (Arochlor 1254)	ug/kg	390	U	1600	U	74	U	81	U
PCB-1260 (Arochlor 1260)	ug/kg	390	UJ	1600	UJ	260	J	81	UJ

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB011		G006SB012		G006SB013		G006SB013		
SampleID	006SB01102 (3-5ft)		006SB01201 (0-1ft)		006CB01302 (3-5ft)		006SB01301 (0-1ft)		
DateCollected	1/17/2002		1/17/2002		1/17/2002		1/17/2002		
DateExtracted	1/28/2002		1/28/2002		1/28/2002		1/28/2002		
DateAnalyzed	1/30/2002		1/30/2002		1/30/2002		1/30/2002		
SDGNumber	CNC63		CNC63		CNC63		CNC63		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	42	U	390	U	22	U	19	U
PCB-1221 (Arochlor 1221)	ug/kg	42	U	390	U	22	U	19	U
PCB-1232 (Arochlor 1232)	ug/kg	42	U	390	U	22	U	19	U
PCB-1242 (Arochlor 1242)	ug/kg	42	U	390	U	22	U	19	U
PCB-1248 (Arochlor 1248)	ug/kg	42	U	390	U	22	U	19	U
PCB-1254 (Arochlor 1254)	ug/kg	85	U	800	U	45	U	38	U
PCB-1260 (Arochlor 1260)	ug/kg	85	UJ	200	J	45	UJ	38	UJ

Analytic Data Summary

10/22/2002 4:07 PM

StationID	G006SB013		G006SB014		G006SB014		G006SB014		
SampleID	006SB01302 (3-5ft)		006SB01401 (0-1ft)		006SB01401DL (0-1ft)		006SB01402 (3-5ft)		
DateCollected	1/17/2002		1/17/2002		1/17/2002		1/17/2002		
DateExtracted	1/28/2002		1/28/2002		1/28/2002		1/28/2002		
DateAnalyzed	1/30/2002		1/30/2002		2/1/2002		1/30/2002		
SDGNumber	CNC63		CNC63		CNC63		CNC63		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	86	U	770	U	1900	R	400	U
PCB-1221 (Arochlor 1221)	ug/kg	86	U	770	U	1900	R	400	U
PCB-1232 (Arochlor 1232)	ug/kg	86	U	770	U	1900	R	400	U
PCB-1242 (Arochlor 1242)	ug/kg	86	U	770	U	1900	R	400	U
PCB-1248 (Arochlor 1248)	ug/kg	86	U	770	U	1900	R	400	U
PCB-1254 (Arochlor 1254)	ug/kg	170	U	1600	U	3900	R	820	U
PCB-1260 (Arochlor 1260)	ug/kg	170	UJ	1600	UJ	3900	R	900	J

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB014		G006SB015		G006SB016		G006SB017		
SampleID	006SB01402DL (3-5ft)		006SB01501 (0-1ft)		006SB01602 (3-5ft)		006SB01701 (0-1ft)		
DateCollected	1/17/2002		1/17/2002		1/22/2002		5/8/2002		
DateExtracted	1/28/2002		1/28/2002		1/28/2002		5/15/2002		
DateAnalyzed	2/1/2002		1/30/2002		1/29/2002		5/22/2002		
SDGNumber	CNC63		CNC63		CNC63		60277		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	800	R	19	U	93	U	3.7	U
PCB-1221 (Arochlor 1221)	ug/kg	800	R	19	U	93	U	3.7	U
PCB-1232 (Arochlor 1232)	ug/kg	800	R	19	U	93	U	3.7	U
PCB-1242 (Arochlor 1242)	ug/kg	800	R	19	U	93	U	3.7	U
PCB-1248 (Arochlor 1248)	ug/kg	800	R	19	U	93	U	3.7	U
PCB-1254 (Arochlor 1254)	ug/kg	1600	R	39	U	190	U	3.7	U
PCB-1260 (Arochlor 1260)	ug/kg	990	R	49	J	190	UJ	26.8	=

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB018		G006SB019		G006SB019		G006SB022		
SampleID	006SB01801 (0-1ft)		006CB01901 (0-1ft)		006SB01901 (0-1ft)		006SB02201 (0-1ft)		
DateCollected	5/8/2002		5/8/2002		5/8/2002		5/9/2002		
DateExtracted	5/15/2002		5/15/2002		5/15/2002		5/15/2002		
DateAnalyzed	5/22/2002		5/22/2002		5/22/2002		5/23/2002		
SDGNumber	60277		60277		60277		60277		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	36.7	U	3.6	U	3.6	U	2180	U
PCB-1221 (Arochlor 1221)	ug/kg	36.7	U	3.6	U	3.6	U	2180	U
PCB-1232 (Arochlor 1232)	ug/kg	36.7	U	3.6	U	3.6	U	2180	U
PCB-1242 (Arochlor 1242)	ug/kg	36.7	U	3.6	U	3.6	U	2180	U
PCB-1248 (Arochlor 1248)	ug/kg	36.7	U	3.6	U	3.6	U	2180	U
PCB-1254 (Arochlor 1254)	ug/kg	174	=	7.7	=	8.1	=	2180	U
PCB-1260 (Arochlor 1260)	ug/kg	270	=	6.7	=	10.8	=	21600	=

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB023		G006SB025		G006SB035		G006SB036		
SampleID	006SB02301 (0-1ft)		006SB02503 (0-1ft)		006SB03501 (0-1ft)		006SB03601 (0-1ft)		
DateCollected	5/9/2002		5/8/2002		6/11/2002		6/11/2002		
DateExtracted	5/15/2002		5/15/2002		6/14/2002		6/14/2002		
DateAnalyzed	5/23/2002		5/22/2002		6/17/2002		6/17/2002		
SDGNumber	60277		60277		61901		61901		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	21.3	U	17.9	U	229	U	3750	U
PCB-1221 (Arochlor 1221)	ug/kg	21.3	U	17.9	U	229	U	3750	U
PCB-1232 (Arochlor 1232)	ug/kg	21.3	U	17.9	U	229	U	3750	U
PCB-1242 (Arochlor 1242)	ug/kg	21.3	U	17.9	U	229	U	3750	U
PCB-1248 (Arochlor 1248)	ug/kg	21.3	U	17.9	U	14.9	J	3750	U
PCB-1254 (Arochlor 1254)	ug/kg	56.5	=	17.9	U	465	U	7610	U
PCB-1260 (Arochlor 1260)	ug/kg	265	=	90.4	=	199	J	6620	J

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB037		G006SB038		G006SB038		G006SB039		
SampleID	006SB03701 (0-1ft)		006CB03801 (0-1ft)		006SB03801 (0-1ft)		006SB03901 (0-1ft)		
DateCollected	6/11/2002		6/11/2002		6/11/2002		6/11/2002		
DateExtracted	6/14/2002		6/14/2002		6/14/2002		6/14/2002		
DateAnalyzed	6/17/2002		6/17/2002		6/17/2002		6/17/2002		
SDGNumber	61901		61901		61901		61901		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	177	U	3790	U	3730	U	7010	U
PCB-1221 (Arochlor 1221)	ug/kg	177	U	3790	U	3730	U	7010	U
PCB-1232 (Arochlor 1232)	ug/kg	177	U	3790	U	3730	U	7010	U
PCB-1242 (Arochlor 1242)	ug/kg	177	U	3790	U	3730	U	7010	U
PCB-1248 (Arochlor 1248)	ug/kg	177	U	3790	U	3730	U	7010	U
PCB-1254 (Arochlor 1254)	ug/kg	360	U	7700	U	7560	U	14200	U
PCB-1260 (Arochlor 1260)	ug/kg	207	J	6750	J	6270	J	18000	=

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB040		G006SB042		G006SB048		G006SB048		
SampleID	006SB04001 (0-1ft)		006SB04203 (2-5ft)		006SB04801 (0-1ft)		006SB04803 (2-5ft)		
DateCollected	6/11/2002		6/11/2002		6/11/2002		6/11/2002		
DateExtracted	6/14/2002		6/14/2002		6/14/2002		6/14/2002		
DateAnalyzed	6/17/2002		6/17/2002		6/17/2002		6/17/2002		
SDGNumber	61901		61901		61901		61901		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	2140	U	257	U	3610	U	710	U
PCB-1221 (Arochlor 1221)	ug/kg	2140	U	257	U	3610	U	710	U
PCB-1232 (Arochlor 1232)	ug/kg	2140	U	257	U	3610	U	710	U
PCB-1242 (Arochlor 1242)	ug/kg	2140	U	257	U	3610	U	710	U
PCB-1248 (Arochlor 1248)	ug/kg	2140	U	257	U	3610	U	710	U
PCB-1254 (Arochlor 1254)	ug/kg	4340	U	521	U	7330	U	1440	U
PCB-1260 (Arochlor 1260)	ug/kg	1900	J	49.6	J	6760	J	483	J

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB049		G006SB049		G006SB050		G006SB050		
SampleID	006SB04901 (0-1ft)		006SB04901RE (0-1ft)		006SB05001 (0-1ft)		006SB05001RE (0-1ft)		
DateCollected	5/8/2002		6/21/2002		6/21/2002		6/21/2002		
DateExtracted	6/24/2002		6/28/2002		6/24/2002		6/28/2002		
DateAnalyzed	6/25/2002		6/29/2002		6/25/2002		6/29/2002		
SDGNumber	CNC119		CNC119		CNC119		CNC119		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	46	UJ	46	R	40	U	40	R
PCB-1221 (Arochlor 1221)	ug/kg	46	UJ	46	R	40	U	40	R
PCB-1232 (Arochlor 1232)	ug/kg	46	UJ	46	R	40	U	40	R
PCB-1242 (Arochlor 1242)	ug/kg	46	UJ	46	R	40	U	40	R
PCB-1248 (Arochlor 1248)	ug/kg	46	UJ	46	R	40	U	40	R
PCB-1254 (Arochlor 1254)	ug/kg	93	UJ	93	R	81	U	81	R
PCB-1260 (Arochlor 1260)	ug/kg	61	J	190	R	84	J	120	R

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB052		G006SB052		G006SB052		G006SB052		
SampleID	006CB05201 (0-1ft)		006CB05201RE (0-1ft)		006SB05201 (0-1ft)		006SB05201RE (0-1ft)		
DateCollected	6/21/2002		6/21/2002		6/21/2002		6/21/2002		
DateExtracted	6/24/2002		6/28/2002		6/24/2002		6/28/2002		
DateAnalyzed	6/25/2002		6/29/2002		6/25/2002		6/29/2002		
SDGNumber	CNC119		CNC119		CNC119		CNC119		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	40	UJ	40	R	46	UJ	46	R
PCB-1221 (Arochlor 1221)	ug/kg	40	UJ	40	R	46	UJ	46	R
PCB-1232 (Arochlor 1232)	ug/kg	40	UJ	40	R	46	UJ	46	R
PCB-1242 (Arochlor 1242)	ug/kg	40	UJ	40	R	46	UJ	46	R
PCB-1248 (Arochlor 1248)	ug/kg	40	UJ	40	R	46	UJ	46	R
PCB-1254 (Arochlor 1254)	ug/kg	82	UJ	82	R	94	UJ	94	R
PCB-1260 (Arochlor 1260)	ug/kg	82	UJ	82	R	94	UJ	29	R

Analytic Data Summary

10/22/2002 4:07 PM

StationID	G006SB053		G006SB053		G006SB054		G006SB054		
SampleID	006SB05301 (0-1ft)		006SB05301RE (0-1ft)		006SB05401 (0-1ft)		006SB05401RE (0-1ft)		
DateCollected	6/21/2002		6/21/2002		6/21/2002		6/21/2002		
DateExtracted	6/24/2002		6/28/2002		6/24/2002		6/28/2002		
DateAnalyzed	6/25/2002		6/29/2002		6/25/2002		6/29/2002		
SDGNumber	CNC119		CNC119		CNC119		CNC119		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	42	UJ	42	R	39	UJ	39	R
PCB-1221 (Arochlor 1221)	ug/kg	42	UJ	42	R	39	UJ	39	R
PCB-1232 (Arochlor 1232)	ug/kg	42	UJ	42	R	39	UJ	39	R
PCB-1242 (Arochlor 1242)	ug/kg	42	UJ	42	R	39	UJ	39	R
PCB-1248 (Arochlor 1248)	ug/kg	42	UJ	42	R	39	UJ	39	R
PCB-1254 (Arochlor 1254)	ug/kg	85	UJ	85	R	79	UJ	79	R
PCB-1260 (Arochlor 1260)	ug/kg	96	J	220	R	79	UJ	79	R

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB055		G006SB055		G006SB056		G006SB056		
SampleID	006SB05501 (0-1ft)		006SB05501RE (0-1ft)		006SB05601 (0-1ft)		006SB05601RE (0-1ft)		
DateCollected	6/21/2002		6/21/2002		6/21/2002		6/21/2002		
DateExtracted	6/24/2002		6/28/2002		6/24/2002		6/28/2002		
DateAnalyzed	6/25/2002		6/29/2002		6/25/2002		6/29/2002		
SDGNumber	CNC119		CNC119		CNC119		CNC119		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	43	UJ	43	R	190	U	190	R
PCB-1221 (Arochlor 1221)	ug/kg	43	UJ	43	R	190	U	190	R
PCB-1232 (Arochlor 1232)	ug/kg	43	UJ	43	R	190	U	190	R
PCB-1242 (Arochlor 1242)	ug/kg	43	UJ	43	R	190	U	190	R
PCB-1248 (Arochlor 1248)	ug/kg	43	UJ	43	R	190	U	190	R
PCB-1254 (Arochlor 1254)	ug/kg	87	UJ	87	R	380	U	380	R
PCB-1260 (Arochlor 1260)	ug/kg	22	J	120	R	3000	J	3900	R

StationID	G006SB057		G006SB057		G006SB058		G006SB058		
SampleID	006SB05701 (0-1ft)		006SB05701RE (0-1ft)		006SB05803 (1-2ft)		006SB05803RE (1-2ft)		
DateCollected	6/21/2002		6/21/2002		6/21/2002		6/21/2002		
DateExtracted	6/24/2002		6/28/2002		6/24/2002		6/28/2002		
DateAnalyzed	6/25/2002		6/29/2002		6/25/2002		6/30/2002		
SDGNumber	CNC119		CNC119		CNC119		CNC119		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/kg	46	UJ	46	R	82	U	210	R
PCB-1221 (Arochlor 1221)	ug/kg	46	UJ	46	R	82	U	210	R
PCB-1232 (Arochlor 1232)	ug/kg	46	UJ	46	R	82	U	210	R
PCB-1242 (Arochlor 1242)	ug/kg	46	UJ	46	R	82	U	210	R
PCB-1248 (Arochlor 1248)	ug/kg	46	UJ	46	R	82	U	210	R
PCB-1254 (Arochlor 1254)	ug/kg	94	UJ	94	R	170	U	420	R
PCB-1260 (Arochlor 1260)	ug/kg	210	J	300	R	2000	J	2700	R

Analytical Data Summary

10/22/2002 4:07 PM

		G006SB059		G006SB059	
		006SB05901 (0-1ft)		006SB05901RE (0-1ft)	
		6/21/2002		6/21/2002	
		6/24/2002		6/28/2002	
		6/25/2002		6/29/2002	
		CNC119		CNC119	
Parameter	Units				
PCB-1016 (Arochlor 1016)	ug/kg	41	UJ	41	R
PCB-1221 (Arochlor 1221)	ug/kg	41	UJ	41	R
PCB-1232 (Arochlor 1232)	ug/kg	41	UJ	41	R
PCB-1242 (Arochlor 1242)	ug/kg	41	UJ	41	R
PCB-1248 (Arochlor 1248)	ug/kg	41	UJ	41	R
PCB-1254 (Arochlor 1254)	ug/kg	83	UJ	83	R
PCB-1260 (Arochlor 1260)	ug/kg	270	J	270	R

StationID	G006MB001		G006SB007		G006SB007		
SampleID	006MB00101 (0-1ft)		006CB00701 (0-1ft)		006SB00701 (0-1ft)		
DateCollected	5/8/2002		1/17/2002		1/17/2002		
DateExtracted	5/15/2002		1/28/2002		1/28/2002		
DateAnalyzed	5/22/2002		1/29/2002		1/29/2002		
SDGNumber	60277		CNC63		CNC63		
Parameter	Units						
Aldrin	ug/kg	2.4	U	1.4	U	3.6	U
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	2.4	U	1.4	U	3.6	U
Alpha-chlordane	ug/kg	2.4	U	4.5	J	7	J
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	2.4	U	1.4	U	3.6	U
Chlordane	ug/kg	23.7	U	14	UJ	36	UJ
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	2.4	U	0.36	J	0.54	J
Dieldrin	ug/kg	4.6	U	5.7	=	9.7	=
Endosulfan I	ug/kg	2.4	U	1.4	U	3.6	U
Endosulfan II	ug/kg	4.6	U	2.7	U	6.9	U
Endosulfan Sulfate	ug/kg	4.6	U	2.7	U	6.9	U
Endrin Aldehyde	ug/kg	4.6	U	2.7	U	6.9	U
Endrin Ketone	ug/kg	4.6	U	2.7	U	6.9	U
Endrin	ug/kg	4.6	U	2.7	U	6.9	U
Gamma BHC (Lindane)	ug/kg	2.4	U	1.4	U	3.6	U
Gamma-chlordane	ug/kg	2.4	U	12	=	19	=
Heptachlor Epoxide	ug/kg	2.4	U	1.4	J	2	J
Heptachlor	ug/kg	2.4	U	1.4	UJ	3.6	UJ
Methoxychlor	ug/kg	23.7	U	14	UJ	36	UJ
p,p'-DDD	ug/kg	1.8	J	64	J	72	J
p,p'-DDE	ug/kg	4.6	U	58	=	71	=
p,p'-DDT	ug/kg	4.6	U	58	J	44	=
Toxaphene	ug/kg	152	U	91	U	230	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB007		G006SB008		G006SB009		
SampleID	006SB00702 (3-5ft)		006SB00801 (0-1ft)		006SB00901 (0-1ft)		
DateCollected	1/17/2002		1/17/2002		1/17/2002		
DateExtracted	1/28/2002		1/28/2002		1/28/2002		
DateAnalyzed	1/30/2002		1/30/2002		1/30/2002		
SDGNumber	CNC63		CNC63		CNC63		
Parameter	Units						
Aldrin	ug/kg	7.7	U	7.6	U	30	U
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	0.87	J	1.4	J	5	J
Alpha-chlordane	ug/kg	7.7	U	26	J	44	=
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	7.7	U	7.6	U	26	J
Chlordane	ug/kg	77	UJ	270	J	300	UJ
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	7.7	U	7.2	J	30	J
Dieldrin	ug/kg	15	U	14	U	73	=
Endosulfan I	ug/kg	7.7	U	7.6	U	30	U
Endosulfan II	ug/kg	15	U	14	U	58	U
Endosulfan Sulfate	ug/kg	15	U	14	U	58	U
Endrin Aldehyde	ug/kg	15	U	14	U	58	U
Endrin Ketone	ug/kg	15	U	14	U	58	U
Endrin	ug/kg	15	U	14	U	58	U
Gamma BHC (Lindane)	ug/kg	7.7	U	13	=	43	=
Gamma-chlordane	ug/kg	7.7	U	30	J	36	J
Heptachlor Epoxide	ug/kg	7.7	U	14	J	27	J
Heptachlor	ug/kg	7.7	UJ	7.6	UJ	30	UJ
Methoxychlor	ug/kg	77	UJ	76	UJ	300	UJ
p,p'-DDD	ug/kg	92	J	170	J	980	J
p,p'-DDE	ug/kg	20	J	170	=	430	=
p,p'-DDT	ug/kg	43	J	250	J	1000	J
Toxaphene	ug/kg	490	U	480	U	1900	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB010		G006SB011		G006SB011		
SampleID	006SB01001 (0-1ft)		006SB01101 (0-1ft)		006SB01102 (3-5ft)		
DateCollected	1/17/2002		1/17/2002		1/17/2002		
DateExtracted	1/28/2002		1/28/2002		1/28/2002		
DateAnalyzed	1/30/2002		1/30/2002		1/30/2002		
SDGNumber	CNC63		CNC63		CNC63		
Parameter	Units						
Aldrin	ug/kg	1.4	U	1.6	U	1.6	U
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	1.4	U	1.6	U	1.6	U
Alpha-chlordane	ug/kg	4.4	J	3.5	J	1.6	U
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	1.4	U	1.6	=	1.6	U
Chlordane	ug/kg	14	UJ	16	UJ	16	UJ
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	0.66	J	2.5	J	1.6	U
Dieldrin	ug/kg	2.8	U	3	U	3.2	U
Endosulfan I	ug/kg	1.4	U	1.6	U	1.6	U
Endosulfan II	ug/kg	2.8	U	3	U	3.2	U
Endosulfan Sulfate	ug/kg	2.8	U	2.4	J	3.2	U
Endrin Aldehyde	ug/kg	2.8	U	3	U	3.2	U
Endrin Ketone	ug/kg	2.8	U	3	U	3.2	U
Endrin	ug/kg	2.8	U	3	U	3.2	U
Gamma BHC (Lindane)	ug/kg	0.97	J	3.4	J	1.6	U
Gamma-chlordane	ug/kg	9.9	=	4.1	=	1.6	U
Heptachlor Epoxide	ug/kg	3.4	J	1.7	=	0.44	J
Heptachlor	ug/kg	1.4	UJ	1.6	UJ	1.6	UJ
Methoxychlor	ug/kg	14	UJ	16	UJ	16	UJ
p,p'-DDD	ug/kg	20	J	36	J	6.6	J
p,p'-DDE	ug/kg	47	J	12	J	38	=
p,p'-DDT	ug/kg	73	J	65	J	19	J
Toxaphene	ug/kg	92	U	100	U	100	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB012		G006SB013		G006SB013		
SampleID	006SB01201 (0-1ft)		006CB01302 (3-5ft)		006SB01301 (0-1ft)		
DateCollected	1/17/2002		1/17/2002		1/17/2002		
DateExtracted	1/28/2002		1/28/2002		1/28/2002		
DateAnalyzed	1/30/2002		1/30/2002		1/30/2002		
SDGNumber	CNC63		CNC63		CNC63		
Parameter	Units						
Aldrin	ug/kg	15	U	0.87	U	0.75	U
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	15	U	0.87	U	0.75	U
Alpha-chlordane	ug/kg	24	J	0.87	U	0.74	J
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	15	U	0.87	U	0.75	U
Chlordane	ug/kg	150	UJ	8.7	UJ	7.5	UJ
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	10	J	0.87	U	0.13	J
Dieldrin	ug/kg	4.6	J	0.45	J	1.2	J
Endosulfan I	ug/kg	15	U	0.87	U	0.75	U
Endosulfan II	ug/kg	30	U	1.7	U	0.4	J
Endosulfan Sulfate	ug/kg	30	U	1.7	U	1.4	U
Endrin Aldehyde	ug/kg	5.1	J	1.7	U	1.4	U
Endrin Ketone	ug/kg	30	U	1.7	U	1.4	U
Endrin	ug/kg	30	U	1.7	U	1.4	U
Gamma BHC (Lindane)	ug/kg	24	=	0.87	U	0.75	U
Gamma-chlordane	ug/kg	38	J	0.87	U	0.75	U
Heptachlor Epoxide	ug/kg	7.4	J	0.87	U	0.24	J
Heptachlor	ug/kg	15	UJ	0.87	UJ	0.75	UJ
Methoxychlor	ug/kg	150	UJ	8.7	UJ	7.5	UJ
p,p'-DDD	ug/kg	510	J	3	J	6.2	J
p,p'-DDE	ug/kg	60	=	12	=	38	=
p,p'-DDT	ug/kg	180	J	7.1	J	18	J
Toxaphene	ug/kg	990	U	55	U	48	U

	StationID	G006SB013		G006SB014		G006SB014	
	SampleID	006SB01302 (3-5ft)		006SB01401 (0-1ft)		006SB01401DL (0-1ft)	
	DateCollected	1/17/2002		1/17/2002		1/17/2002	
	DateExtracted	1/28/2002		1/28/2002		1/28/2002	
	DateAnalyzed	1/30/2002		1/30/2002		2/1/2002	
	SDGNumber	CNC63		CNC63		CNC63	
Parameter	Units						
Aldrin	ug/kg	3.4	U	30	U	76	R
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	0.88	J	30	U	76	R
Alpha-chlordane	ug/kg	6.1	=	200	J	190	R
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	2	J	30	U	76	R
Chlordane	ug/kg	34	UJ	2400	J	1800	R
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	2.4	J	8	J	76	R
Dieldrin	ug/kg	3	J	58	U	70	R
Endosulfan I	ug/kg	3.4	U	30	U	76	R
Endosulfan II	ug/kg	6.5	U	58	U	140	R
Endosulfan Sulfate	ug/kg	6.5	U	58	U	140	R
Endrin Aldehyde	ug/kg	6.5	U	58	U	140	R
Endrin Ketone	ug/kg	6.5	U	58	U	140	R
Endrin	ug/kg	6.5	U	58	U	140	R
Gamma BHC (Lindane)	ug/kg	2.2	J	30	U	76	R
Gamma-chlordane	ug/kg	3.4	U	330	J	270	R
Heptachlor Epoxide	ug/kg	3.4	U	33	J	62	R
Heptachlor	ug/kg	3.4	UJ	52	J	63	R
Methoxychlor	ug/kg	34	UJ	300	UJ	760	R
p,p'-DDD	ug/kg	40	J	720	J	390	R
p,p'-DDE	ug/kg	14	=	380	=	360	R
p,p'-DDT	ug/kg	82	J	2900	R	3300	=
Toxaphene	ug/kg	220	U	1900	U	4800	R

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB014		G006SB014		G006SB015		
SampleID	006SB01402 (3-5ft)		006SB01402DL (3-5ft)		006SB01501 (0-1ft)		
DateCollected	1/17/2002		1/17/2002		1/17/2002		
DateExtracted	1/28/2002		1/28/2002		1/28/2002		
DateAnalyzed	1/30/2002		2/1/2002		1/30/2002		
SDGNumber	CNC63		CNC63		CNC63		
Parameter	Units						
Aldrin	ug/kg	16	U	32	R	0.76	U
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	16	U	32	R	0.76	U
Alpha-chlordane	ug/kg	9.6	J	15	R	4.5	=
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	16	U	32	R	0.76	U
Chlordane	ug/kg	160	UJ	320	R	7.6	UJ
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	5.7	J	5.5	R	0.76	U
Dieldrin	ug/kg	30	U	14	R	1.5	U
Endosulfan I	ug/kg	16	U	32	R	0.76	U
Endosulfan II	ug/kg	30	U	61	R	1.5	U
Endosulfan Sulfate	ug/kg	30	U	61	R	1.5	U
Endrin Aldehyde	ug/kg	30	U	61	R	1.5	U
Endrin Ketone	ug/kg	30	U	61	R	1.5	U
Endrin	ug/kg	30	U	61	R	1.5	U
Gamma BHC (Lindane)	ug/kg	16	U	32	R	0.76	U
Gamma-chlordane	ug/kg	30	=	16	R	3	J
Heptachlor Epoxide	ug/kg	9.5	J	11	R	0.78	J
Heptachlor	ug/kg	16	UJ	32	R	0.76	UJ
Methoxychlor	ug/kg	160	U	320	R	7.6	UJ
p,p'-DDD	ug/kg	490	J	300	R	5.6	J
p,p'-DDE	ug/kg	170	=	170	R	11	=
p,p'-DDT	ug/kg	930	R	1200	=	21	J
Toxaphene	ug/kg	1000	U	2000	R	49	U

StationID	G006SB016		G006SB017		G006SB018		
SampleID	006SB01602 (3-5ft)		006SB01701 (0-1ft)		006SB01801 (0-1ft)		
DateCollected	1/22/2002		5/8/2002		5/8/2002		
DateExtracted	1/28/2002		5/15/2002		5/15/2002		
DateAnalyzed	1/29/2002		5/22/2002		5/22/2002		
SDGNumber	CNC63		60277		60277		
Parameter	Units						
Aldrin	ug/kg	3.6	U	1.4	U	1.4	U
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	3.6	U	1.4	U	0.51	J
Alpha-chlordane	ug/kg	3.6	U	0.5	J	0.76	J
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	3.6	U	1.4	U	1	J
Chlordane	ug/kg	36	UJ	14.5	U	14.3	U
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	3.6	U	1.4	U	1.9	=
Dieldrin	ug/kg	7	U	0.79	J	2.8	U
Endosulfan I	ug/kg	3.6	U	1.4	U	1.4	U
Endosulfan II	ug/kg	7	U	2.8	U	2.8	U
Endosulfan Sulfate	ug/kg	7	U	2.8	U	2.8	U
Endrin Aldehyde	ug/kg	7	U	2.8	U	2.8	U
Endrin Ketone	ug/kg	7	U	2.8	U	2.8	U
Endrin	ug/kg	7	U	2.8	U	2.8	U
Gamma BHC (Lindane)	ug/kg	3.6	U	1.4	U	3.1	=
Gamma-chlordane	ug/kg	3.6	U	0.76	J	1.5	=
Heptachlor Epoxide	ug/kg	3.6	U	1.4	U	1.4	U
Heptachlor	ug/kg	3.6	UJ	1.4	U	1.4	U
Methoxychlor	ug/kg	36	UJ	14.5	U	14.3	U
p,p'-DDD	ug/kg	7	UJ	3.2	=	19	=
p,p'-DDE	ug/kg	7	U	4.8	=	36	=
p,p'-DDT	ug/kg	7	UJ	14	J	97.1	R
Toxaphene	ug/kg	230	U	92.6	U	91.1	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB018		G006SB019		G006SB019		
SampleID	006SB01801RE (0-1ft)		006CB01901 (0-1ft)		006SB01901 (0-1ft)		
DateCollected	5/8/2002		5/8/2002		5/8/2002		
DateExtracted	5/15/2002		5/15/2002		5/15/2002		
DateAnalyzed	5/23/2002		5/22/2002		5/22/2002		
SDGNumber	60277		60277		60277		
Parameter	Units						
Aldrin	ug/kg	2.8	R	1.4	U	0.46	J
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	2.8	R	0.18	J	0.26	J
Alpha-chlordane	ug/kg	2.8	R	1.5	=	1.3	J
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	2.8	R	1.2	J	1.7	=
Chlordane	ug/kg	28.5	R	13.2	J	9.6	J
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	2.8	R	1.3	J	2.4	=
Dieldrin	ug/kg	5.5	R	2.7	U	2.7	U
Endosulfan I	ug/kg	2.8	R	1.4	U	1.4	U
Endosulfan II	ug/kg	5.5	R	2.7	U	2.7	U
Endosulfan Sulfate	ug/kg	5.5	R	2.7	U	2.7	U
Endrin Aldehyde	ug/kg	5.5	R	2.7	U	2.7	U
Endrin Ketone	ug/kg	5.5	R	2.7	U	2.7	U
Endrin	ug/kg	5.5	R	2.7	U	2.7	U
Gamma BHC (Lindane)	ug/kg	2.8	R	0.92	J	1.3	J
Gamma-chlordane	ug/kg	2.8	R	2.1	=	1.9	=
Heptachlor Epoxide	ug/kg	2.8	R	1.4	U	0.3	J
Heptachlor	ug/kg	2.8	R	1.4	U	1.4	U
Methoxychlor	ug/kg	28.5	R	13.9	U	13.8	U
p,p'-DDD	ug/kg	5.5	R	10.2	=	12	=
p,p'-DDE	ug/kg	5.5	R	12.7	=	10.2	=
p,p'-DDT	ug/kg	110	=	36.3	=	42.5	=
Toxaphene	ug/kg	182	R	88.8	U	88.3	U

Analytical Data Summary

10/22/2002 4:07 PM

	StationID	G006SB020		G006SB021		G006SB021	
	SampleID	006SB02001 (0-1ft)		006SB02101 (0-1ft)		006SB02101RE (0-1ft)	
	DateCollected	5/8/2002		5/8/2002		5/8/2002	
	DateExtracted	5/15/2002		5/15/2002		5/15/2002	
	DateAnalyzed	5/22/2002		5/22/2002		5/23/2002	
	SDGNumber	60277		60277		60277	
Parameter	Units						
Aldrin	ug/kg	14.8	U	143	U	286	R
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	14.8	U	53.1	J	286	R
Alpha-chlordane	ug/kg	14.8	U	1080	=	286	R
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	14.8	U	176	=	286	R
Chlordane	ug/kg	148	U	5460	=	2860	R
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	14.8	U	338	=	286	R
Dieldrin	ug/kg	28.5	U	276	U	552	R
Endosulfan I	ug/kg	14.8	U	143	U	286	R
Endosulfan II	ug/kg	28.5	U	276	U	552	R
Endosulfan Sulfate	ug/kg	28.5	U	276	U	552	R
Endrin Aldehyde	ug/kg	28.5	U	276	U	552	R
Endrin Ketone	ug/kg	28.5	U	276	U	552	R
Endrin	ug/kg	28.5	U	276	U	552	R
Gamma BHC (Lindane)	ug/kg	14.8	U	246	=	286	R
Gamma-chlordane	ug/kg	14.8	U	1410	=	286	R
Heptachlor Epoxide	ug/kg	14.8	U	143	U	286	R
Heptachlor	ug/kg	14.8	U	63	J	286	R
Methoxychlor	ug/kg	148	U	1430	U	2860	R
p,p'-DDD	ug/kg	2.6	J	11000	R	11200	=
p,p'-DDE	ug/kg	28.5	U	1710	=	552	R
p,p'-DDT	ug/kg	28.5	U	8530	R	8310	=
Toxaphene	ug/kg	944	U	9140	U	18300	R

Analytical Data Summary

10/22/2002 4:07 PM

Parameter	Units	StationID	G006SB027	G006SB028	G006SB029
		SampleID	006SB02703 (0-1ft)	006SB02803 (0-1ft)	006SB02903 (0-1ft)
		DateCollected	5/8/2002	5/8/2002	5/8/2002
		DateExtracted	5/15/2002	5/15/2002	5/15/2002
		DateAnalyzed	5/22/2002	5/22/2002	5/22/2002
		SDGNumber	60277	60277	60277
Aldrin	ug/kg		1.3 U	565 U	13.7 U
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg		1.3 U	565 U	13.7 U
Alpha-chlordane	ug/kg		1.3 U	2350 =	13.7 U
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg		1.3 U	172 J	13.7 U
Chlordane	ug/kg		13.4 U	26400 =	137 U
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg		1.3 U	162 J	13.7 U
Dieldrin	ug/kg		2.6 U	1090 U	26.4 U
Endosulfan I	ug/kg		1.3 U	565 U	13.7 U
Endosulfan II	ug/kg		2.6 U	1090 U	26.4 U
Endosulfan Sulfate	ug/kg		2.6 U	1090 U	26.4 U
Endrin Aldehyde	ug/kg		2.6 U	1090 U	26.4 U
Endrin Ketone	ug/kg		2.6 U	1090 U	26.4 U
Endrin	ug/kg		2.6 U	1090 U	26.4 U
Gamma BHC (Lindane)	ug/kg		1.3 U	189 J	13.7 U
Gamma-chlordane	ug/kg		1.3 U	3180 =	13.7 U
Heptachlor Epoxide	ug/kg		1.3 U	565 U	13.7 U
Heptachlor	ug/kg		1.3 U	1480 =	13.7 U
Methoxychlor	ug/kg		13.4 U	5650 U	137 U
p,p'-DDD	ug/kg		2.6 U	3350 =	19.5 J
p,p'-DDE	ug/kg		2.6 U	2960 =	26.4 U
p,p'-DDT	ug/kg		2.6 U	26900 =	50.7 =
Toxaphene	ug/kg		85.6 U	36100 U	876 U

StationID	G006SB044		G006SB044		G006SB044		
SampleID	006SB04401 (0-1ft)		006SB04402 (3-5ft)		006SB04403 (2-5ft)		
DateCollected	6/12/2002		6/12/2002		6/12/2002		
DateExtracted	6/13/2002		6/13/2002		6/13/2002		
DateAnalyzed	6/22/2002		6/22/2002		6/22/2002		
SDGNumber	61956		61956		61956		
Parameter	Units						
Aldrin	ug/kg	0.51	J	3.4	UJ	15.4	UJ
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	0.71	J	3.2	J	15.4	U
Alpha-chlordane	ug/kg	5.8	J	4.9	J	13.1	J
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	2.2	J	7.4	=	15.4	U
Chlordane	ug/kg	61.2	=	43.3	=	179	=
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	3.6	J	18.7	=	15.4	U
Dieldrin	ug/kg	5.8	U	6.6	U	29.7	U
Endosulfan I	ug/kg	3	U	3.4	UJ	15.4	UJ
Endosulfan II	ug/kg	5.8	U	6.6	UJ	29.7	UJ
Endosulfan Sulfate	ug/kg	5.8	U	6.6	UJ	29.7	UJ
Endrin Aldehyde	ug/kg	5.8	U	6.6	UJ	29.7	UJ
Endrin Ketone	ug/kg	5.8	U	6.6	U	29.7	U
Endrin	ug/kg	5.8	U	6.6	U	29.7	U
Gamma BHC (Lindane)	ug/kg	5.2	=	21.1	=	12.7	J
Gamma-chlordane	ug/kg	8.7	J	7.3	J	25.7	J
Heptachlor Epoxide	ug/kg	3	U	3.4	UJ	15.4	UJ
Heptachlor	ug/kg	1.9	J	6.2	J	15.4	U
Methoxychlor	ug/kg	30.2	U	34.5	U	154	U
p,p'-DDD	ug/kg	67.3	=	43.2	=	168	=
p,p'-DDE	ug/kg	41.4	J	25.6	J	37	J
p,p'-DDT	ug/kg	97.8	J	106	=	352	J
Toxaphene	ug/kg	193	U	220	U	984	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB045		G006SB045		G006SB046		
SampleID	006CB04502 (3-5ft)		006SB04502 (3-5ft)		006SB04601 (0-1ft)		
DateCollected	6/12/2002		6/12/2002		6/12/2002		
DateExtracted	6/13/2002		6/13/2002		6/13/2002		
DateAnalyzed	6/22/2002		6/22/2002		6/22/2002		
SDGNumber	61956		61956		61956		
Parameter	Units						
Aldrin	ug/kg	9.8	UJ	8.9	UJ	19.1	UJ
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	5.4	J	1.5	J	19.1	U
Alpha-chlordane	ug/kg	24	J	6.7	J	58.3	J
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	10.4	=	3.7	J	12.4	J
Chlordane	ug/kg	205	=	58	J	474	=
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	12.1	=	3.4	J	11.7	J
Dieldrin	ug/kg	19	U	17.1	U	36.8	U
Endosulfan I	ug/kg	9.8	UJ	8.9	UJ	19.1	UJ
Endosulfan II	ug/kg	19	UJ	17.1	UJ	7.4	J
Endosulfan Sulfate	ug/kg	19	UJ	17.1	UJ	36.8	UJ
Endrin Aldehyde	ug/kg	19	UJ	17.1	UJ	36.8	UJ
Endrin Ketone	ug/kg	19	U	17.1	U	36.8	U
Endrin	ug/kg	19	U	17.1	U	36.8	U
Gamma BHC (Lindane)	ug/kg	40	=	10.7	=	19.3	=
Gamma-chlordane	ug/kg	24.4	J	10	J	65.2	J
Heptachlor Epoxide	ug/kg	9.8	UJ	8.9	UJ	4.6	J
Heptachlor	ug/kg	6.9	J	8.9	U	19.1	U
Methoxychlor	ug/kg	98.5	U	88.8	U	191	U
p,p'-DDD	ug/kg	148	J	55.6	J	521	J
p,p'-DDE	ug/kg	36.4	J	15.2	J	283	J
p,p'-DDT	ug/kg	317	J	99	J	605	J
Toxaphene	ug/kg	629	U	567	U	1220	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB046		G006SB047		G006SB047		
SampleID	006SB04603 (2-5ft)		006SB04701 (0-1ft)		006SB04703 (2-5ft)		
DateCollected	6/12/2002		6/12/2002		6/12/2002		
DateExtracted	6/13/2002		6/13/2002		6/13/2002		
DateAnalyzed	6/22/2002		6/22/2002		6/22/2002		
SDGNumber	61956		61956		61956		
Parameter	Units						
Aldrin	ug/kg	2.1	UJ	1.7	UJ	1.6	UJ
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/kg	0.48	J	1.7	U	1.6	U
Alpha-chlordane	ug/kg	5.3	J	1.7	UJ	1.6	UJ
Beta BHC (Beta Hexachlorocyclohexane)	ug/kg	0.84	J	1.7	U	1.6	U
Chlordane	ug/kg	47.8	=	17.2	U	15.9	U
Delta BHC (Delta Hexachlorocyclohexane)	ug/kg	1.2	J	1.7	U	1.6	U
Dieldrin	ug/kg	4.1	U	3.3	U	3.1	U
Endosulfan I	ug/kg	2.1	UJ	1.7	UJ	1.6	UJ
Endosulfan II	ug/kg	4.1	UJ	3.3	UJ	3.1	UJ
Endosulfan Sulfate	ug/kg	4.1	UJ	3.3	UJ	3.1	UJ
Endrin Aldehyde	ug/kg	4.1	UJ	3.3	UJ	3.1	UJ
Endrin Ketone	ug/kg	4.1	U	3.3	U	3.1	U
Endrin	ug/kg	4.1	U	3.3	U	3.1	U
Gamma BHC (Lindane)	ug/kg	1.8	J	1.7	U	1.6	U
Gamma-chlordane	ug/kg	7.5	J	1.7	UJ	1.6	UJ
Heptachlor Epoxide	ug/kg	2.1	UJ	1.7	UJ	1.6	UJ
Heptachlor	ug/kg	0.63	J	1.7	U	1.6	U
Methoxychlor	ug/kg	21.4	U	17.2	U	15.9	U
p,p'-DDD	ug/kg	50.4	J	0.6	J	1.2	J
p,p'-DDE	ug/kg	25.2	J	1	J	1.4	J
p,p'-DDT	ug/kg	60.7	UJ	2.4	J	2.2	J
Toxaphene	ug/kg	137	U	110	U	102	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006MB001		G006SB007		G006SB007		G006SB007		
SampleID	006MB00101 (0-1ft)		006CB00701 (0-1ft)		006SB00701 (0-1ft)		006SB00702 (3-5ft)		
DateCollected	5/8/2002		1/17/2002		1/17/2002		1/17/2002		
DateExtracted	5/14/2002		1/24/2002		1/24/2002		1/24/2002		
DateAnalyzed	5/19/2002		1/29/2002		1/29/2002		1/29/2002		
SDGNumber	60277		CNC63		CNC63		CNC63		
Parameter	Units								
1-Methyl naphthalene	ug/kg		2.4	J	2.5	J	6900	=	
Benzo(g,h,i)Perylene	ug/kg	605	U						
Naphthalene	ug/kg	605	U	12	=	7.8	=	22000	=
2-Methylnaphthalene	ug/kg		3.4	J	3	J	10000	=	
Acenaphthylene	ug/kg	605	U	9.4	=	11	=	2000	U
Acenaphthene	ug/kg	605	U	2.2	J	2.2	J	12000	=
Fluorene	ug/kg	605	U	1.7	J	1.7	J	12000	=
Phenanthrene	ug/kg	11.6	J	24	=	25	=	33000	=
Anthracene	ug/kg	605	U	13	=	14	=	7700	=
Fluoranthene	ug/kg	24.6	J	160	=	200	=	13000	=
Pyrene	ug/kg	296	J	150	=	170	=	8900	=
Benzo(a)Anthracene	ug/kg	29.1	J	68	=	72	=	2100	=
Chrysene	ug/kg	16.1	J	120	=	150	=	2100	=
Benzo(b)Fluoranthene	ug/kg	26.4	J	120	=	130	=	790	J
Benzo(k)Fluoranthene	ug/kg	20.2	J	70	=	90	=	850	J
Benzo(a)Pyrene	ug/kg	22.6	J	60	=	60	=	820	J
Indeno(1,2,3-c,d)pyrene	ug/kg	605	U	32	=	38	=	2000	U
Dibenz(a,h)anthracene	ug/kg	605	U	15	=	16	=	2000	U
Benzo(g,h,i)Perylene	ug/kg			33	=	36	=	2000	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB008		G006SB009		G006SB010		G006SB011		
SampleID	006SB00801 (0-1ft)		006SB00901 (0-1ft)		006SB01001 (0-1ft)		006SB01101 (0-1ft)		
DateCollected	1/17/2002		1/17/2002		1/17/2002		1/17/2002		
DateExtracted	1/24/2002		2/5/2002		1/24/2002		2/5/2002		
DateAnalyzed	1/29/2002		2/5/2002		1/29/2002		2/5/2002		
SDGNumber	CNC63		CNC63A		CNC63		CNC63A		
Parameter	Units								
1-Methyl naphthalene	ug/kg	6.1	J	1.8	J	4	J	5	J
Benzo(g,h,i)Perylene	ug/kg								
Naphthalene	ug/kg	20	=	1.5	J	6.5	J	13	J
2-Methylnaphthalene	ug/kg	8	=	1.6	J	4.3	J	22	J
Acenaphthylene	ug/kg	5.8	J	5.5	J	26	=	180	J
Acenaphthene	ug/kg	18	=	13	J	1.9	J	12	J
Fluorene	ug/kg	18	=	8.6	J	3	J	50	J
Phenanthrene	ug/kg	170	=	160	J	34	=	390	J
Anthracene	ug/kg	31	=	27	J	41	=	170	J
Fluoranthene	ug/kg	250	=	400	J	120	=	1200	R
Pyrene	ug/kg	210	=	320	J	110	=	990	R
Benzo(a)Anthracene	ug/kg	110	=	200	J	60	=	1000	R
Chrysene	ug/kg	140	=	220	J	120	=	760	J
Benzo(b)Fluoranthene	ug/kg	180	=	280	J	220	=	680	J
Benzo(k)Fluoranthene	ug/kg	100	=	150	J	120	=	580	J
Benzo(a)Pyrene	ug/kg	120	=	210	J	170	=	460	J
Indeno(1,2,3-c,d)pyrene	ug/kg	64	=	150	J	110	=	180	J
Dibenz(a,h)anthracene	ug/kg	33	=	44	J	42	=	180	J
Benzo(g,h,i)Perylene	ug/kg	71	=	160	J	120	=	220	J

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB011		G006SB011		G006SB012		G006SB013		
SampleID	006SB01101DL (0-1ft)		006SB01102 (3-5ft)		006SB01201 (0-1ft)		006CB01302 (3-5ft)		
DateCollected	1/17/2002		1/17/2002		1/17/2002		1/17/2002		
DateExtracted	2/5/2002		2/5/2002		1/24/2002		2/5/2002		
DateAnalyzed	2/6/2002		2/5/2002		1/29/2002		2/5/2002		
SDGNumber	CNC63A		CNC63A		CNC63		CNC63A		
Parameter	Units								
1-Methyl naphthalene	ug/kg	10	R	22	J	8	U	8.9	UJ
Benzo(g,h,i)Perylene	ug/kg								
Naphthalene	ug/kg	15	R	34	J	3	J	1.4	J
2-Methylnaphthalene	ug/kg	27	R	32	J	1.4	J	1.3	J
Acenaphthylene	ug/kg	170	R	59	J	8.4	=	8.8	J
Acenaphthene	ug/kg	13	R	91	J	5	J	8.9	UJ
Fluorene	ug/kg	56	R	130	J	3.8	J	1.6	J
Phenanthrene	ug/kg	460	R	970	J	47	=	7.6	J
Anthracene	ug/kg	200	R	370	J	15	=	5.5	J
Fluoranthene	ug/kg	1600	J	2300	J	140	=	34	J
Pyrene	ug/kg	1400	J	2500	J	120	=	35	J
Benzo(a)Anthracene	ug/kg	1300	J	1300	J	58	=	22	J
Chrysene	ug/kg	980	R	1000	J	85	=	30	J
Benzo(b)Fluoranthene	ug/kg	660	R	1100	J	8	U	35	J
Benzo(k)Fluoranthene	ug/kg	840	R	790	J	160	=	34	J
Benzo(a)Pyrene	ug/kg	920	R	800	J	84	=	33	J
Indeno(1,2,3-c,d)pyrene	ug/kg	370	R	420	J	44	=	18	J
Dibenz(a,h)anthracene	ug/kg	180	R	210	J	24	=	8.6	J
Benzo(g,h,i)Perylene	ug/kg	330	R	520	J	77	=	20	J

Analytical Data Summary

10/22/2 4:07 PM

StationID	G006SB013		G006SB013		G006SB014		G006SB014		
SampleID	006SB01301 (0-1ft)		006SB01302 (3-5ft)		006SB01401 (0-1ft)		006SB01402 (3-5ft)		
DateCollected	1/17/2002		1/17/2002		1/17/2002		1/17/2002		
DateExtracted	2/5/2002		2/5/2002		1/24/2002		1/24/2002		
DateAnalyzed	2/5/2002		2/5/2002		1/29/2002		1/29/2002		
SDGNumber	CNC63A		CNC63A		CNC63		CNC63		
Parameter	Units								
1-Methyl naphthalene	ug/kg	4.3	J	1.7	J	2.4	J	8.2	U
Benzo(g,h,i)Perylene	ug/kg								
Naphthalene	ug/kg	2.2	J	2.1	J	5	J	3.5	J
2-Methylnaphthalene	ug/kg	3.9	J	1.7	J	3.6	J	1.8	J
Acenaphthylene	ug/kg	12	J	13	J	23	=	9.9	=
Acenaphthene	ug/kg	7.7	UJ	8.7	UJ	3.9	J	3.4	J
Fluorene	ug/kg	7.7	UJ	2	J	3.7	J	4.5	J
Phenanthrene	ug/kg	19	J	18	J	54	=	58	=
Anthracene	ug/kg	8	J	12	J	26	=	33	=
Fluoranthene	ug/kg	57	J	69	J	310	=	180	=
Pyrene	ug/kg	52	J	67	J	310	=	160	=
Benzo(a)Anthracene	ug/kg	33	J	42	J	100	=	52	=
Chrysene	ug/kg	55	J	57	J	180	=	78	=
Benzo(b)Fluoranthene	ug/kg	79	J	78	J	180	=	8.2	U
Benzo(k)Fluoranthene	ug/kg	46	J	50	J	150	=	150	=
Benzo(a)Pyrene	ug/kg	52	J	52	J	120	=	64	=
Indeno(1,2,3-c,d)pyrene	ug/kg	25	J	26	J	51	=	35	=
Dibenz(a,h)anthracene	ug/kg	12	J	14	J	30	=	18	=
Benzo(g,h,i)Perylene	ug/kg	28	J	32	J	58	=	41	=

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB015		G006SB016		G006SB017		G006SB018		
SampleID	006SB01501 (0-1ft)		006SB01602 (3-5ft)		006SB01701 (0-1ft)		006SB01801 (0-1ft)		
DateCollected	1/17/2002		1/22/2002		5/8/2002		5/8/2002		
DateExtracted	1/24/2002		2/5/2002		5/14/2002		5/14/2002		
DateAnalyzed	1/29/2002		2/5/2002		5/19/2002		5/19/2002		
SDGNumber	CNC63		CNC63A		60277		60277		
Parameter	Units								
1-Methyl naphthalene	ug/kg	7.9	U	40	=				
Benzo(g,h,i)Perylene	ug/kg					369	U	75	J
Naphthalene	ug/kg	2.6	J	74	=	369	U	363	U
2-Methylnaphthalene	ug/kg	1	J	45	=				
Acenaphthylene	ug/kg	4.2	J	72	=	369	U	363	U
Acenaphthene	ug/kg	7.9	U	190	=	369	U	363	U
Fluorene	ug/kg	7.9	U	140	=	369	U	363	U
Phenanthrene	ug/kg	2.3	J	1300	=	369	U	14.6	J
Anthracene	ug/kg	2.5	J	320	=	369	U	363	U
Fluoranthene	ug/kg	13	=	2500	=	369	U	28.3	J
Pyrene	ug/kg	15	=	2000	=	165	J	179	J
Benzo(a)Anthracene	ug/kg	13	=	1200	=	369	U	20.2	J
Chrysene	ug/kg	18	=	1200	=	369	U	16.4	J
Benzo(b)Fluoranthene	ug/kg	7.9	U	1300	=	369	U	22.2	J
Benzo(k)Fluoranthene	ug/kg	46	=	820	=	369	U	11.3	J
Benzo(a)Pyrene	ug/kg	18	=	990	=	369	U	14.4	J
Indeno(1,2,3-c,d)pyrene	ug/kg	11	=	430	=	369	U	93.3	J
Dibenz(a,h)anthracene	ug/kg	6	J	250	=	369	U	363	U
Benzo(g,h,i)Perylene	ug/kg	12	=	570	=				

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB019		G006SB019		G006SB019		G006SB020		
SampleID	006CB01901 (0-1ft)		006SB01901 (0-1ft)		006SB01902 (3-5ft)		006SB02001 (0-1ft)		
DateCollected	5/8/2002		5/8/2002		5/8/2002		5/8/2002		
DateExtracted	5/14/2002		5/14/2002		5/14/2002		5/14/2002		
DateAnalyzed	5/19/2002		5/20/2002		5/19/2002		5/20/2002		
SDGNumber	60277		60277		60277		60277		
Parameter	Units								
1-Methyl naphthalene	ug/kg								
Benzo(g,h,i)Perylene	ug/kg	354	U	352	U	139	J	92.1	J
Naphthalene	ug/kg	354	U	352	U	6.5	J	6.7	J
2-Methylnaphthalene	ug/kg								
Acenaphthylene	ug/kg	354	U	352	U	379	U	5.1	J
Acenaphthene	ug/kg	354	U	352	U	11.7	J	376	U
Fluorene	ug/kg	354	U	352	U	10.8	J	4	J
Phenanthrene	ug/kg	354	U	6.9	J	78.3	J	26.4	J
Anthracene	ug/kg	354	U	352	U	16.9	J	8.1	J
Fluoranthene	ug/kg	4.5	J	11.7	J	119	J	43.4	J
Pyrene	ug/kg	159	J	164	J	302	J	212	J
Benzo(a)Anthracene	ug/kg	354	U	11.6	J	78.8	J	49.3	J
Chrysene	ug/kg	354	U	9.1	J	84	J	35	J
Benzo(b)Fluoranthene	ug/kg	3.9	J	11	J	151	J	69.9	J
Benzo(k)Fluoranthene	ug/kg	354	U	352	U	379	U	376	U
Benzo(a)Pyrene	ug/kg	354	U	6.8	J	76.6	J	39	J
Indeno(1,2,3-c,d)pyrene	ug/kg	354	U	352	U	144	J	108	J
Dibenz(a,h)anthracene	ug/kg	354	U	352	U	379	U	376	U
Benzo(g,h,i)Perylene	ug/kg								

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB020		G006SB021		G006SB021		G006SB024		
SampleID	006SB02002 (3-5ft)		006SB02101 (0-1ft)		006SB02102 (3-5ft)		006CB02402 (3-5ft)		
DateCollected	5/8/2002		5/8/2002		5/8/2002		5/9/2002		
DateExtracted	5/14/2002		5/14/2002		5/14/2002		5/14/2002		
DateAnalyzed	5/19/2002		5/20/2002		5/19/2002		5/20/2002		
SDGNumber	60277		60277		60277		60277		
Parameter	Units								
1-Methyl naphthalene	ug/kg								
Benzo(g,h,i)Perylene	ug/kg	122	J	1950	J	133	J	155	J
Naphthalene	ug/kg	588	U	69.3	J	6.5	J	17.6	J
2-Methylnaphthalene	ug/kg								
Acenaphthylene	ug/kg	588	U	85	J	514	U	24	J
Acenaphthene	ug/kg	588	U	119	J	514	U	21.2	J
Fluorene	ug/kg	588	U	90.9	J	514	U	36.1	J
Phenanthrene	ug/kg	588	U	897	J	30.5	J	154	J
Anthracene	ug/kg	588	U	307	J	7.6	J	42.8	J
Fluoranthene	ug/kg	20.9	J	1710	J	68	J	194	J
Pyrene	ug/kg	279	J	4190	=	299	J	474	=
Benzo(a)Anthracene	ug/kg	30.8	J	1540	J	61.5	J	134	J
Chrysene	ug/kg	16.4	J	1560	J	46.4	J	170	J
Benzo(b)Fluoranthene	ug/kg	43.1	J	3210	J	81.7	J	218	J
Benzo(k)Fluoranthene	ug/kg	588	U	3640	U	514	U	470	U
Benzo(a)Pyrene	ug/kg	28.1	J	1610	J	57.5	J	124	J
Indeno(1,2,3-c,d)pyrene	ug/kg	152	J	1760	J	152	J	166	J
Dibenz(a,h)anthracene	ug/kg	588	U	3640	U	514	U	470	U
Benzo(g,h,i)Perylene	ug/kg								

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB024	G006SB024	G006SB026	G006SB027					
SampleID	006SB02401 (0-1ft)	006SB02402 (3-5ft)	006SB02603 (3-5ft)	006SB02703 (0-1ft)					
DateCollected	5/9/2002	5/9/2002	5/8/2002	5/8/2002					
DateExtracted	5/14/2002	5/14/2002	5/14/2002	5/14/2002					
DateAnalyzed	5/19/2002	5/20/2002	5/20/2002	5/20/2002					
SDGNumber	60277	60277	60277	60277					
Parameter	Units								
1-Methyl naphthalene	ug/kg								
Benzo(g,h,i)Perylene	ug/kg	482	=	99.5	J	1250	J	342	U
Naphthalene	ug/kg	14.1	J	8	J	1360	U	342	U
2-Methylnaphthalene	ug/kg								
Acenaphthylene	ug/kg	70.9	J	5.9	J	200	J	342	U
Acenaphthene	ug/kg	14.8	J	455	U	1360	U	342	U
Fluorene	ug/kg	41	J	6.9	J	1360	U	342	U
Phenanthrene	ug/kg	385	=	28.5	J	46.5	J	4.4	J
Anthracene	ug/kg	236	J	7.8	J	160	J	342	U
Fluoranthene	ug/kg	2800	=	53.5	J	493	J	5.3	J
Pyrene	ug/kg	2220	=	259	J	3060	=	159	J
Benzo(a)Anthracene	ug/kg	740	=	38.9	J	760	J	9.3	J
Chrysene	ug/kg	1890	=	32.6	J	1790	=	342	U
Benzo(b)Fluoranthene	ug/kg	1860	=	57.4	J	5270	=	10.4	J
Benzo(k)Fluoranthene	ug/kg	666	=	455	U	1360	U	342	U
Benzo(a)Pyrene	ug/kg	570	=	32.1	J	1640	=	342	U
Indeno(1,2,3-c,d)pyrene	ug/kg	470	=	122	J	1180	J	342	U
Dibenz(a,h)anthracene	ug/kg	375	U	455	U	1360	U	342	U
Benzo(g,h,i)Perylene	ug/kg								

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB028		G006SB029		G006SB044		G006SB044		
SampleID	006SB02803 (0-1ft)		006SB02903 (0-1ft)		006SB04401 (0-1ft)		006SB04402 (3-5ft)		
DateCollected	5/8/2002		5/8/2002		6/12/2002		6/12/2002		
DateExtracted	5/14/2002		5/14/2002		6/13/2002		6/13/2002		
DateAnalyzed	5/20/2002		5/20/2002		6/17/2002		6/17/2002		
SDGNumber	60277		60277		61956		61956		
Parameter	Units								
1-Methyl naphthalene	ug/kg								
Benzo(g,h,i)Perylene	ug/kg	249	J	133	J	372	J	69.8	J
Naphthalene	ug/kg	44.1	J	5.6	J	159	=	44.3	U
2-Methylnaphthalene	ug/kg								
Acenaphthylene	ug/kg	96.9	J	10.2	J	72.3	=	44.3	U
Acenaphthene	ug/kg	17	J	350	U	222	=	44.3	U
Fluorene	ug/kg	95.5	J	350	U	186	=	7.8	J
Phenanthrene	ug/kg	593	=	37.1	J	1400	=	63.6	=
Anthracene	ug/kg	194	J	12	J	346	=	44.3	U
Fluoranthene	ug/kg	797	=	91.3	J	1580	=	137	=
Pyrene	ug/kg	972	=	262	J	949	=	107	=
Benzo(a)Anthracene	ug/kg	749	=	76.4	J	599	=	44.3	U
Chrysene	ug/kg	550	=	91.8	J	594	=	100	=
Benzo(b)Fluoranthene	ug/kg	888	=	155	J	38.8	U	44.3	U
Benzo(k)Fluoranthene	ug/kg	360	U	51.8	J	38.8	U	44.3	U
Benzo(a)Pyrene	ug/kg	547	=	92.2	J	530	=	90.7	=
Indeno(1,2,3-c,d)pyrene	ug/kg	267	J	136	J	428	=	192	=
Dibenz(a,h)anthracene	ug/kg	360	U	350	U	38.8	U	44.3	U
Benzo(g,h,i)Perylene	ug/kg								

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB044		G006SB045		G006SB045		G006SB046		
SampleID	006SB04403 (2-5ft)		006CB04502 (3-5ft)		006SB04502 (3-5ft)		006SB04601 (0-1ft)		
DateCollected	6/12/2002		6/12/2002		6/12/2002		6/12/2002		
DateExtracted	6/13/2002		6/13/2002		6/13/2002		6/13/2002		
DateAnalyzed	6/17/2002		6/17/2002		6/17/2002		6/17/2002		
SDGNumber	61956		61956		61956		61956		
Parameter	Units								
1-Methyl naphthalene	ug/kg								
Benzo(g,h,i)Perylene	ug/kg	101	J	1980	J	510	J	229	J
Naphthalene	ug/kg	39.6	U	375	=	79.1	=	49.1	U
2-Methylnaphthalene	ug/kg								
Acenaphthylene	ug/kg	43.7	=	1340	=	279	=	49.1	U
Acenaphthene	ug/kg	39.6	U	140	J	46.4	=	14.9	J
Fluorene	ug/kg	18.3	J	470	=	197	=	13.2	J
Phenanthrene	ug/kg	75.5	=	2190	=	889	=	144	=
Anthracene	ug/kg	30.8	J	1690	=	491	=	43	J
Fluoranthene	ug/kg	170	=	13100	=	2880	=	330	=
Pyrene	ug/kg	158	=	16700	=	2710	=	237	=
Benzo(a)Anthracene	ug/kg	39.6	U	11000	=	2160	=	213	=
Chrysene	ug/kg	126	=	8100	=	1570	=	232	=
Benzo(b)Fluoranthene	ug/kg	39.6	U	202	U	45.7	U	49.1	U
Benzo(k)Fluoranthene	ug/kg	39.6	U	202	U	45.7	U	49.1	U
Benzo(a)Pyrene	ug/kg	156	=	8120	=	1510	=	307	=
Indeno(1,2,3-c,d)pyrene	ug/kg	210	=	2740	=	621	=	335	=
Dibenz(a,h)anthracene	ug/kg	39.6	U	202	U	45.7	U	49.1	U
Benzo(g,h,i)Perylene	ug/kg								

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB046		G006SB047		G006SB047	
SampleID	006SB04603 (2-5ft)		006SB04701 (0-1ft)		006SB04703 (2-5ft)	
DateCollected	6/12/2002		6/12/2002		6/12/2002	
DateExtracted	6/13/2002		6/13/2002		6/13/2002	
DateAnalyzed	6/17/2002		6/17/2002		6/17/2002	
SDGNumber	61956		61956		61956	
Parameter	Units					
1-Methyl naphthalene	ug/kg					
Benzo(g,h,i)Perylene	ug/kg	33.8	J	44.2	U	91.3 J
Naphthalene	ug/kg	55	U	44.2	U	40.9 U
2-Methylnaphthalene	ug/kg					
Acenaphthylene	ug/kg	55	U	44.2	U	40.9 U
Acenaphthene	ug/kg	55	U	44.2	U	40.9 U
Fluorene	ug/kg	55	U	44.2	U	8.5 J
Phenanthrene	ug/kg	55	U	44.2	U	60.2 =
Anthracene	ug/kg	55	U	44.2	U	40.9 U
Fluoranthene	ug/kg	46.6	J	44.2	U	278 =
Pyrene	ug/kg	41.1	J	44.2	U	222 =
Benzo(a)Anthracene	ug/kg	55	U	44.2	U	40.9 U
Chrysene	ug/kg	57.4	=	44.2	U	224 =
Benzo(b)Fluoranthene	ug/kg	55	U	44.2	U	251 =
Benzo(k)Fluoranthene	ug/kg	55	U	44.2	U	118 =
Benzo(a)Pyrene	ug/kg	60.1	=	44.2	U	210 =
Indeno(1,2,3-c,d)pyrene	ug/kg	55	U	44.2	U	212 =
Dibenz(a,h)anthracene	ug/kg	55	U	44.2	U	40.9 U
Benzo(g,h,i)Perylene	ug/kg					

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB030	G006SB030	G006SB031	G006SB031
SampleID	006SB03001 (0-1ft)	006SB03002 (3-5ft)	006CB03102 (3-5ft)	006SB03102 (3-5ft)
DateCollected	5/9/2002	5/9/2002	5/9/2002	5/9/2002
DateExtracted	5/23/2002	5/23/2002	5/23/2002	5/23/2002
DateAnalyzed	5/24/2002	5/24/2002	5/24/2002	5/24/2002
SDGNumber	60278	60278	60278	60278
Parameter				
Units				
Arsenic	7.51 =	28.2 =	9.39 =	7.85 =

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006SB032	G006SB033	G006SB033	G006SB034
SampleID	006SB03202 (3-5ft)	006SB03301 (0-1ft)	006SB03302 (3-5ft)	006SB03402 (3-5ft)
DateCollected	5/9/2002	5/9/2002	5/9/2002	5/9/2002
DateExtracted	5/23/2002	5/23/2002	5/23/2002	5/23/2002
DateAnalyzed	5/24/2002	5/24/2002	5/24/2002	5/24/2002
SDGNumber	60278	60278	60278	60278
Parameter	Arsenic			
Units	mg/kg			
	5.65	=	1.47	J
			5.06	=
				10.9
				=

StationID	G006SB043		
SampleID	006SB04302 (3-5ft)		
DateCollected	6/11/2002		
DateExtracted	6/17/2002		
DateAnalyzed	6/19/2002		
SDGNumber	61901		
Parameter	Units		
Arsenic	mg/kg	3.06	=

Analytical Data Summary

10/22/2002 4:07 PM

StationID	FIELDQC	G006GW001	G006GW002	G006GW003			
SampleID	006EW004M1RE	006GW001M5	006GW002M5	006GW003M5			
DateCollected	1/18/2002	7/31/2002	7/31/2002	7/31/2002			
DateExtracted	2/4/2002	8/2/2002	8/2/2002	8/2/2002			
DateAnalyzed	2/8/2002	8/6/2002	8/6/2002	8/6/2002			
SDGNumber	CNC63	64538	64538	64538			
Parameter	Units						
PCB-1016 (Arochlor 1016)	ug/L	1	U	1	U	1	U
PCB-1221 (Arochlor 1221)	ug/L	1	U	1	U	1	U
PCB-1232 (Arochlor 1232)	ug/L	1	U	1	U	1	U
PCB-1242 (Arochlor 1242)	ug/L	1	U	1	U	1	U
PCB-1248 (Arochlor 1248)	ug/L	1	U	1	U	1	U
PCB-1254 (Arochlor 1254)	ug/l	2	U	2	U	2	U
PCB-1260 (Arochlor 1260)	ug/L	2	U	2	U	2	U

StationID	G006GW004		G006GW004		G006GW005		G006GW006		
SampleID	006GW004M1		006GW004M5		006GW005M5		006GW006M5		
DateCollected	1/18/2002		7/31/2002		7/31/2002		7/31/2002		
DateExtracted	1/22/2002		8/2/2002		8/2/2002		8/2/2002		
DateAnalyzed	1/29/2002		8/6/2002		8/6/2002		8/6/2002		
SDGNumber	CNC63		64538		64538		64538		
Parameter	Units								
PCB-1016 (Arochlor 1016)	ug/L	1	UJ	0.98	U	0.99	U	0.98	U
PCB-1221 (Arochlor 1221)	ug/L	1	UJ	0.98	U	0.99	U	0.98	U
PCB-1232 (Arochlor 1232)	ug/L	1	UJ	0.98	U	0.99	U	0.98	U
PCB-1242 (Arochlor 1242)	ug/L	1	UJ	0.98	U	0.99	U	0.98	U
PCB-1248 (Arochlor 1248)	ug/L	1	UJ	0.98	U	0.99	U	0.98	U
PCB-1254 (Arochlor 1254)	ug/l	2.1	UJ	2	U	2	U	2	U
PCB-1260 (Arochlor 1260)	ug/L	2.1	UJ	2	U	2	U	2	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006GW007
SampleID	006GW007M5
DateCollected	7/31/2002
DateExtracted	8/2/2002
DateAnalyzed	8/6/2002
SDGNumber	64538

Parameter	Units		
PCB-1016 (Arochlor 1016)	ug/L	1	U
PCB-1221 (Arochlor 1221)	ug/L	1	U
PCB-1232 (Arochlor 1232)	ug/L	1	U
PCB-1242 (Arochlor 1242)	ug/L	1	U
PCB-1248 (Arochlor 1248)	ug/L	1	U
PCB-1254 (Arochlor 1254)	ug/l	2	U
PCB-1260 (Arochlor 1260)	ug/L	2	U

Analytic Data Summary

10/22/2002 4:07 PM

	StationID	G006GW001	G006GW002	G006GW003
	SampleID	006GW001M5	006GW002M5	006GW003M5
	DateCollected	7/31/2002	7/31/2002	7/31/2002
	DateExtracted	8/5/2002	8/5/2002	8/5/2002
	DateAnalyzed	8/7/2002	8/7/2002	8/7/2002
	SDGNumber	64538	64538	64538
Parameter	Units			
Aldrin	ug/L	0.04	U	0.042 U
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/L	0.04	U	0.042 U
Alpha-chlordane	ug/L	0.04	U	0.042 U
Beta BHC (Beta Hexachlorocyclohexane)	ug/L	0.04	U	0.042 U
Chlordane	ug/L	0.4	U	0.42 U
Delta BHC (Delta Hexachlorocyclohexane)	ug/L	0.04	U	0.042 U
Dieldrin	ug/L	0.08	U	0.081 U
Endosulfan I	ug/L	0.04	U	0.042 U
Endosulfan II	ug/L	0.08	U	0.081 U
Endosulfan Sulfate	ug/L	0.08	U	0.081 U
Endrin Aldehyde	ug/L	0.08	U	0.081 U
Endrin Ketone	ug/L	0.08	U	0.081 U
Endrin	ug/L	0.08	U	0.081 U
Gamma BHC (Lindane)	ug/L	0.04	U	0.042 U
Gamma-chlordane	ug/L	0.04	U	0.042 U
Heptachlor Epoxide	ug/L	0.04	U	0.042 U
Heptachlor	ug/L	0.04	U	0.042 U
Methoxychlor	ug/L	0.38	U	0.4 U
p,p'-DDD	ug/L	0.08	U	0.081 U
p,p'-DDE	ug/L	0.08	U	0.048 J
p,p'-DDT	ug/L	0.08	U	0.28 =
Toxaphene	ug/L	2.5	U	2.6 U

Analytical Data Summary

10/22/2002 4:07 PM

	StationID	G006GW004	G006GW005	G006GW006			
	SampleID	006GW004M5	006GW005M5	006GW006M5			
	DateCollected	7/31/2002	7/31/2002	7/31/2002			
	DateExtracted	8/5/2002	8/5/2002	8/5/2002			
	DateAnalyzed	8/7/2002	8/7/2002	8/7/2002			
	SDGNumber	64538	64538	64538			
Parameter	Units						
Aldrin	ug/L	0.2	U	0.04	U	0.04	U
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/L	0.2	U	0.04	U	0.04	U
Alpha-chlordane	ug/L	0.2	U	0.04	U	0.04	U
Beta BHC (Beta Hexachlorocyclohexane)	ug/L	0.2	U	0.04	U	0.04	U
Chlordane	ug/L	2	U	0.4	U	0.4	U
Delta BHC (Delta Hexachlorocyclohexane)	ug/L	0.2	U	0.04	U	0.04	U
Dieidrin	ug/L	0.4	U	0.08	U	0.08	U
Endosulfan I	ug/L	0.2	U	0.04	U	0.04	U
Endosulfan II	ug/L	0.4	U	0.08	U	0.08	U
Endosulfan Sulfate	ug/L	0.4	U	0.08	U	0.08	U
Endrin Aldehyde	ug/L	0.4	U	0.08	U	0.08	U
Endrin Ketone	ug/L	0.4	U	0.08	U	0.08	U
Endrin	ug/L	0.4	U	0.08	U	0.08	U
Gamma BHC (Lindane)	ug/L	0.2	U	0.04	U	0.04	U
Gamma-chlordane	ug/L	0.2	U	0.04	U	0.04	U
Heptachlor Epoxide	ug/L	0.2	U	0.04	U	0.04	U
Heptachlor	ug/L	0.2	U	0.04	U	0.04	U
Methoxychlor	ug/L	1.9	U	0.38	U	0.38	U
p,p'-DDD	ug/L	0.4	U	0.095	=	0.08	U
p,p'-DDE	ug/L	2.2	=	0.08	U	0.26	=
p,p'-DDT	ug/L	1.8	=	0.08	U	0.43	=
Toxaphene	ug/L	12.5	U	2.5	U	2.5	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006GW007
SampleID	006GW007M5
DateCollected	7/31/2002
DateExtracted	8/5/2002
DateAnalyzed	8/7/2002
SDGNumber	64538

Parameter	Units		
Aldrin	ug/L	0.041	U
Alpha BHC (Alpha Hexachlorocyclohexane)	ug/L	0.041	U
Alpha-chlordane	ug/L	0.041	U
Beta BHC (Beta Hexachlorocyclohexane)	ug/L	0.041	U
Chlordane	ug/L	0.41	U
Delta BHC (Delta Hexachlorocyclohexane)	ug/L	0.041	U
Dieldrin	ug/L	0.082	U
Endosulfan I	ug/L	0.041	U
Endosulfan II	ug/L	0.082	U
Endosulfan Sulfate	ug/L	0.082	U
Endrin Aldehyde	ug/L	0.082	U
Endrin Ketone	ug/L	0.082	U
Endrin	ug/L	0.082	U
Gamma BHC (Lindane)	ug/L	0.041	U
Gamma-chlordane	ug/L	0.041	U
Heptachlor Epoxide	ug/L	0.041	U
Heptachlor	ug/L	0.041	U
Methoxychlor	ug/L	0.39	U
p,p'-DDD	ug/L	0.082	U
p,p'-DDE	ug/L	0.72	=
p,p'-DDT	ug/L	1.2	=
Toxaphene	ug/L	2.6	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006GW001		G006GW002		G006GW003	
SampleID	006GW001M5		006GW002M5		006GW003M5	
DateCollected	7/31/2002		7/31/2002		7/31/2002	
DateExtracted	8/3/2002		8/3/2002		8/3/2002	
DateAnalyzed	8/5/2002		8/5/2002		8/5/2002	
SDGNumber	64538		64538		64538	
Parameter	Units					
1-Methyl naphthalene	ug/l					
Phenol	ug/L	10	U	10	U	10.2
bis(2-Chloroethyl) ether (2-Chloroethyl Ether)	ug/L	10	U	10	U	10.2
2-Chlorophenol	ug/L	10	U	10	U	10.2
1,3-Dichlorobenzene	ug/L	10	U	10	U	10.2
1,4-Dichlorobenzene	ug/L	10	U	10	U	10.2
Benzyl alcohol	ug/L	10	U	10	U	10.2
1,2-Dichlorobenzene	ug/L	10	U	10	U	10.2
Bis(2-Chloroisopropyl)Ether	ug/L	10	U	10	U	10.2
2-Methylphenol (o-Cresol)	ug/L	10	U	10	U	10.2
N-Nitrosodi-n-propylamine	ug/L	10	U	10	U	10.2
3-Methylphenol/4-Methylphenol (mp-Cresol)	ug/L	10	U	10	U	10.2
Hexachloroethane	ug/L	10	U	10	U	10.2
Nitrobenzene	ug/L	10	U	10	U	10.2
Isophorone	ug/L	10	U	10	U	10.2
2-Nitrophenol	ug/L	10	U	10	U	10.2
2,4-Dimethylphenol	ug/L	10	UJ	10	UJ	10.2
bis(2-Chloroethoxy) Methane	ug/L	10	U	10	U	10.2
2,4-Dichlorophenol	ug/L	10	U	10	U	10.2
Benzoic acid	ug/L	50	U	50	U	51
1,2,4-Trichlorobenzene	ug/L	10	U	10	U	10.2
Naphthalene	ug/L	10	U	10	U	10.2
4-Chloroaniline	ug/L	10	U	10	U	10.2
Hexachlorobutadiene	ug/L	10	U	10	U	10.2
4-Chloro-3-methylphenol	ug/L	10	U	10	U	10.2
2-Methylnaphthalene	ug/L	10	U	10	U	10.2
Hexachlorocyclopentadiene	ug/L	10	U	10	U	10.2
2,4,6-Trichlorophenol	ug/L	10	U	10	U	10.2
2,4,5-Trichlorophenol	ug/L	50	U	50	U	51
2-Chloronaphthalene	ug/L	10	U	10	U	10.2

	StationID	G006GW004	G006GW004	G006GW005
	SampleID	006GW004M1	006GW004M5	006GW005M5
	DateCollected	1/18/2002	7/31/2002	7/31/2002
	DateExtracted	1/22/2002	8/3/2002	8/3/2002
	DateAnalyzed	1/28/2002	8/5/2002	8/5/2002
	SDGNumber	CNC63	64538	64538
Parameter	Units			
1-Methyl naphthalene	ug/l	0.2	U	
Phenol	ug/L		9.8	U
bis(2-Chloroethyl) ether (2-Chloroethyl Ether)	ug/L		9.8	U
2-Chlorophenol	ug/L		9.8	U
1,3-Dichlorobenzene	ug/L		9.8	U
1,4-Dichlorobenzene	ug/L		9.8	U
Benzyl alcohol	ug/L		9.8	U
1,2-Dichlorobenzene	ug/L		9.8	U
Bis(2-Chloroisopropyl)Ether	ug/L		9.8	U
2-Methylphenol (o-Cresol)	ug/L		9.8	U
N-Nitrosodi-n-propylamine	ug/L		9.8	U
3-Methylphenol/4-Methylphenol (mp-Cresol)	ug/L		9.8	U
Hexachloroethane	ug/L		9.8	U
Nitrobenzene	ug/L		9.8	U
Isophorone	ug/L		9.8	U
2-Nitrophenol	ug/L		9.8	U
2,4-Dimethylphenol	ug/L		9.8	U
bis(2-Chloroethoxy) Methane	ug/L		9.8	U
2,4-Dichlorophenol	ug/L		9.8	U
Benzoic acid	ug/L		49	U
1,2,4-Trichlorobenzene	ug/L		9.8	U
Naphthalene	ug/L	0.2	U	
4-Chloroaniline	ug/L		9.8	U
Hexachlorobutadiene	ug/L		9.8	U
4-Chloro-3-methylphenol	ug/L		9.8	U
2-Methylnaphthalene	ug/L	0.2	U	
Hexachlorocyclopentadiene	ug/L		9.8	U
2,4,6-Trichlorophenol	ug/L		9.8	U
2,4,5-Trichlorophenol	ug/L		49	U
2-Chloronaphthalene	ug/L		9.8	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006GW006	G006GW007
SampleID	006GW006M5	006GW007M5
DateCollected	7/31/2002	7/31/2002
DateExtracted	8/3/2002	8/3/2002
DateAnalyzed	8/5/2002	8/5/2002
SDGNumber	64538	64538

Parameter	Units				
1-Methyl naphthalene	ug/l				
Phenol	ug/L	9.8	U	10	U
bis(2-Chloroethyl) ether (2-Chloroethyl Ether)	ug/L	9.8	U	10	U
2-Chlorophenol	ug/L	9.8	U	10	U
1,3-Dichlorobenzene	ug/L	9.8	U	10	U
1,4-Dichlorobenzene	ug/L	9.8	U	10	U
Benzyl alcohol	ug/L	9.8	U	10	U
1,2-Dichlorobenzene	ug/L	9.8	U	10	U
Bis(2-Chloroisopropyl)Ether	ug/L	9.8	U	10	U
2-Methylphenol (o-Cresol)	ug/L	9.8	U	10	U
N-Nitrosodi-n-propylamine	ug/L	9.8	U	10	U
3-Methylphenol/4-Methylphenol (mp-Cresol)	ug/L	9.8	U	10	U
Hexachloroethane	ug/L	9.8	U	10	U
Nitrobenzene	ug/L	9.8	U	10	U
Isophorone	ug/L	9.8	U	10	U
2-Nitrophenol	ug/L	9.8	U	10	UJ
2,4-Dimethylphenol	ug/L	9.8	UJ	10	U
bis(2-Chloroethoxy) Methane	ug/L	9.8	U	10	U
2,4-Dichlorophenol	ug/L	9.8	U	10	U
Benzoic acid	ug/L	49	U	50	U
1,2,4-Trichlorobenzene	ug/L	9.8	U	10	U
Naphthalene	ug/L	9.8	U	10	U
4-Chloroaniline	ug/L	9.8	U	10	U
Hexachlorobutadiene	ug/L	9.8	U	10	U
4-Chloro-3-methylphenol	ug/L	9.8	U	10	U
2-Methylnaphthalene	ug/L	9.8	U	10	U
Hexachlorocyclopentadiene	ug/L	9.8	U	10	U
2,4,6-Trichlorophenol	ug/L	9.8	U	10	U
2,4,5-Trichlorophenol	ug/L	49	U	50	U
2-Chloronaphthalene	ug/L	9.8	U	10	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006GW001		G006GW002		G006GW003		
SampleID	006GW001M5		006GW002M5		006GW003M5		
DateCollected	7/31/2002		7/31/2002		7/31/2002		
DateExtracted	8/3/2002		8/3/2002		8/3/2002		
DateAnalyzed	8/5/2002		8/5/2002		8/5/2002		
SDGNumber	64538		64538		64538		
Parameter	Units						
2-Nitroaniline	ug/L	50	U	50	U	51	U
3-Nitroaniline	ug/L	50	U	50	U	51	U
Dimethyl Phthalate	ug/L	10	U	10	U	10.2	U
2,6-Dinitrotoluene	ug/L	10	U	10	U	10.2	U
Acenaphthylene	ug/L	10	U	10	U	10.2	U
Acenaphthene	ug/L	0.62	J	10	U	10.2	U
2,4-Dinitrophenol	ug/L	50	UJ	50	UJ	51	UJ
Dibenzofuran	ug/L	10	U	10	U	10.2	U
2,4-Dinitrotoluene	ug/L	10	U	10	U	10.2	U
Diethyl Phthalate	ug/L	10	U	10	U	10.2	U
4-Nitrophenol	ug/L	50	U	50	U	51	U
Fluorene	ug/L	10	U	10	U	10.2	U
4-Chlorophenyl Phenyl Ether	ug/L	10	U	10	U	10.2	U
4,6-Dinitro-2-methylphenol	ug/L	50	U	50	U	51	U
4-Nitroaniline	ug/L	50	U	50	U	51	U
Diphenylamine	ug/L	10	U	10	U	10.2	U
4-Bromophenyl Phenyl Ether	ug/L	10	U	10	U	10.2	U
Hexachlorobenzene	ug/L	10	U	10	U	10.2	U
Pentachlorophenol	ug/L	50	U	50	U	51	U
Phenanthrene	ug/L	10	U	10	U	10.2	U
Anthracene	ug/L	10	U	10	U	10.2	U
Di-n-butyl Phthalate	ug/L	10	U	10	U	1.4	J
Fluoranthene	ug/L	10	U	10	U	10.2	U
Pyrene	ug/l	10	U	10	U	10.2	U
Benzyl Butyl Phthalate	ug/L	10	U	10	U	10.2	U
Benzo(a)Anthracene	ug/L	10	U	10	U	10.2	U
3,3'-Dichlorobenzidine	ug/L	20	U	20	U	20.4	U
Chrysene	ug/l	10	U	10	U	10.2	U
bis(2-Ethylhexyl) Phthalate	ug/L	10	U	10	U	10.2	U
Di-n-octylphthalate	ug/L	10	U	10	U	10.2	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006GW004		G006GW004		G006GW005	
SampleID	006GW004M1		006GW004M5		006GW005M5	
DateCollected	1/18/2002		7/31/2002		7/31/2002	
DateExtracted	1/22/2002		8/3/2002		8/3/2002	
DateAnalyzed	1/28/2002		8/5/2002		8/5/2002	
SDGNumber	CNC63		64538		64538	
Parameter	Units					
2-Nitroaniline	ug/L		49	U	48.5	U
3-Nitroaniline	ug/L		49	U	48.5	U
Dimethyl Phthalate	ug/L		9.8	U	9.7	U
2,6-Dinitrotoluene	ug/L		9.8	U	9.7	U
Acenaphthylene	ug/L	0.2	U	9.8	U	9.7
Acenaphthene	ug/L	1.9	=	2.4	J	0.83
2,4-Dinitrophenol	ug/L		49	UJ	48.5	UJ
Dibenzofuran	ug/L		0.46	J	0.5	J
2,4-Dinitrotoluene	ug/L		9.8	U	9.7	U
Diethyl Phthalate	ug/L		9.8	U	9.7	U
4-Nitrophenol	ug/L		49	U	48.5	U
Fluorene	ug/L	0.2	U	9.8	U	1.4
4-Chlorophenyl Phenyl Ether	ug/L		9.8	U	9.7	U
4,6-Dinitro-2-methylphenol	ug/L		49	U	48.5	U
4-Nitroaniline	ug/L		49	U	48.5	U
Diphenylamine	ug/L		9.8	U	9.7	U
4-Bromophenyl Phenyl Ether	ug/L		9.8	U	9.7	U
Hexachlorobenzene	ug/L		9.8	U	9.7	U
Pentachlorophenol	ug/L		49	U	48.5	U
Phenanthrene	ug/L	0.2	U	9.8	U	3
Anthracene	ug/L	0.2	U	9.8	U	0.63
Di-n-butyl Phthalate	ug/L		9.8	U	9.7	U
Fluoranthene	ug/L	0.2	U	9.8	U	9.7
Pyrene	ug/l	0.2	U	9.8	U	9.7
Benzyl Butyl Phthalate	ug/L		9.8	U	9.7	U
Benzo(a)Anthracene	ug/L	0.2	U	9.8	U	9.7
3,3'-Dichlorobenzidine	ug/L		19.6	U	19.4	U
Chrysene	ug/l	0.2	U	9.8	U	9.7
bis(2-Ethylhexyl) Phthalate	ug/L		9.8	U	9.7	U
Di-n-octylphthalate	ug/L		9.8	U	9.7	U

Analytic Data Summary

10/22/2002 4:07 PM

	StationID	G006GW006	G006GW007
	SampleID	006GW006M5	006GW007M5
	DateCollected	7/31/2002	7/31/2002
	DateExtracted	8/3/2002	8/3/2002
	DateAnalyzed	8/5/2002	8/5/2002
	SDGNumber	64538	64538
Parameter	Units		
2-Nitroaniline	ug/L	49 U	50 U
3-Nitroaniline	ug/L	49 U	50 U
Dimethyl Phthalate	ug/L	9.8 U	10 U
2,6-Dinitrotoluene	ug/L	9.8 U	10 U
Acenaphthylene	ug/L	9.8 U	10 U
Acenaphthene	ug/L	9.8 U	10 U
2,4-Dinitrophenol	ug/L	49 UJ	50 UJ
Dibenzofuran	ug/L	9.8 U	10 U
2,4-Dinitrotoluene	ug/L	9.8 U	10 U
Diethyl Phthalate	ug/L	9.8 U	10 U
4-Nitrophenol	ug/L	49 U	50 U
Fluorene	ug/L	9.8 U	10 U
4-Chlorophenyl Phenyl Ether	ug/L	9.8 U	10 U
4,6-Dinitro-2-methylphenol	ug/L	49 U	50 U
4-Nitroaniline	ug/L	49 U	50 U
Diphenylamine	ug/L	9.8 U	10 U
4-Bromophenyl Phenyl Ether	ug/L	9.8 U	10 U
Hexachlorobenzene	ug/L	9.8 U	10 U
Pentachlorophenol	ug/L	49 U	50 U
Phenanthrene	ug/L	9.8 U	10 U
Anthracene	ug/L	9.8 U	10 U
Di-n-butyl Phthalate	ug/L	1.2 J	10 U
Fluoranthene	ug/L	9.8 U	10 U
Pyrene	ug/l	9.8 U	10 U
Benzyl Butyl Phthalate	ug/L	9.8 U	10 U
Benzo(a)Anthracene	ug/L	9.8 U	10 U
3,3'-Dichlorobenzidine	ug/L	19.6 U	20 U
Chrysene	ug/l	9.8 U	10 U
bis(2-Ethylhexyl) Phthalate	ug/L	9.8 U	10 U
Di-n-octylphthalate	ug/L	9.8 U	10 U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006GW001	G006GW002		G006GW003	
SampleID	006GW001M5	006GW002M5		006GW003M5	
DateCollected	7/31/2002	7/31/2002		7/31/2002	
DateExtracted	8/3/2002	8/3/2002		8/3/2002	
DateAnalyzed	8/5/2002	8/5/2002		8/5/2002	
SDGNumber	64538	64538		64538	
Parameter	Units				
Benzo(b)Fluoranthene	ug/L	10	U	10	U
Benzo(k)Fluoranthene	ug/L	10	U	10	U
Benzo(a)Pyrene	ug/L	1	U	1	U
Indeno(1,2,3-c,d)pyrene	ug/L	10	U	10	U
Dibenz(a,h)anthracene	ug/L	10	U	10	U
Benzo(g,h,i)Perylene	ug/L	10	U	10	U
Carbazole	ug/L	10	U	10	U

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006GW004	G006GW004	G006GW005				
SampleID	006GW004M1	006GW004M5	006GW005M5				
DateCollected	1/18/2002	7/31/2002	7/31/2002				
DateExtracted	1/22/2002	8/3/2002	8/3/2002				
DateAnalyzed	1/28/2002	8/5/2002	8/5/2002				
SDGNumber	CNC63	64538	64538				
Parameter	Units						
Benzo(b)Fluoranthene	ug/L	0.2	U	9.8	U	9.7	U
Benzo(k)Fluoranthene	ug/L	0.2	U	9.8	U	9.7	U
Benzo(a)Pyrene	ug/L	0.2	U	0.98	U	0.97	U
Indeno(1,2,3-c,d)pyrene	ug/L	0.2	U	9.8	U	9.7	U
Dibenz(a,h)anthracene	ug/L	0.2	U	9.8	U	9.7	U
Benzo(g,h,i)Perylene	ug/L	0.2	U	9.8	U	9.7	U
Carbazole	ug/L			9.8	U	9.7	U

Analytical Data Summary

10/22/2002 4:07 PM

		StationID	G006GW006		G006GW007		
		SampleID	006GW006M5		006GW007M5		
		DateCollected	7/31/2002		7/31/2002		
		DateExtracted	8/3/2002		8/3/2002		
		DateAnalyzed	8/5/2002		8/5/2002		
		SDGNumber	64538		64538		
Parameter	Units						
Benzo(b)Fluoranthene	ug/L	9.8	U	10	U		
Benzo(k)Fluoranthene	ug/L	9.8	U	10	U		
Benzo(a)Pyrene	ug/L	0.98	U	1	U		
Indeno(1,2,3-c,d)pyrene	ug/L	9.8	U	10	U		
Dibenz(a,h)anthracene	ug/L	9.8	U	10	U		
Benzo(g,h,i)Perylene	ug/L	9.8	U	10	U		
Carbazole	ug/L	9.8	U	10	U		

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006GW001		G006GW001		G006GW002		G006GW002		
SampleID	006GW001M5		006GW001M5		006GW002M5		006GW002M5		
DateCollected	7/31/2002		7/31/2002		7/31/2002		7/31/2002		
DateExtracted	8/1/2002		8/7/2002		8/1/2002		8/7/2002		
DateAnalyzed	8/13/2002		8/8/2002		8/13/2002		8/8/2002		
SDGNumber	64538		64538		64538		64538		
Parameter	Units								
Aluminum	ug/L	156	J			6.19	UJ		
Antimony	ug/L	8.42	J			4.79	U		
Arsenic	ug/L	11	=			3.97	U		
Barium	ug/L	27.9	J			69.2	J		
Beryllium	ug/L	0.185	U			0.185	U		
Cadmium	ug/L	0.53	U			0.21	U		
Calcium	ug/L	140000	=			210000	=		
Chromium, Total	ug/L	0.774	U			0.532	U		
Cobalt	ug/L	0.581	U			5.81	U		
Copper	ug/L	1.3	U			1.3	U		
Iron	ug/L	7540	=			20000	=		
Lead	ug/L	1.24	U			1.24	U		
Magnesium	ug/L	368000	=			846000	=		
Manganese	ug/L	591	=			716	=		
Nickel	ug/L	0.837	U			8.37	U		
Potassium	ug/L	143000	=			261000	=		
Selenium	ug/L	2.67	U			2.67	U		
Silver	ug/L	1.15	U			1.15	U		
Sodium	ug/L	3480000	=			7340000	=		
Thallium	ug/L	7.53	J			4.99	U		
Vanadium	ug/L	5.38	J			0.793	U		
Zinc	ug/L	12.6	U			12.6	U		
Mercury	ug/L			0.04	R			0.04	R

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006GW003	G006GW003	G006GW004	G006GW004	
SampleID	006GW003M5	006GW003M5	006GW004M5	006GW004M5	
DateCollected	7/31/2002	7/31/2002	7/31/2002	7/31/2002	
DateExtracted	8/1/2002	8/7/2002	8/1/2002	8/7/2002	
DateAnalyzed	8/13/2002	8/8/2002	8/13/2002	8/8/2002	
SDGNumber	64538	64538	64538	64538	
Parameter	Units				
Aluminum	ug/L	44.9	UJ	40.2	UJ
Antimony	ug/L	4.79	U	4.79	U
Arsenic	ug/L	323	=	3.97	U
Barium	ug/L	634	=	494	=
Beryllium	ug/L	0.185	U	0.185	U
Cadmium	ug/L	0.21	U	0.21	U
Calcium	ug/L	312000	=	318000	=
Chromium, Total	ug/L	0.532	U	0.57	U
Cobalt	ug/L	0.581	U	0.581	U
Copper	ug/L	1.3	U	1.3	U
Iron	ug/L	77500	=	25400	=
Lead	ug/L	1.24	U	1.89	U
Magnesium	ug/L	206000	=	346000	=
Manganese	ug/L	1290	=	745	=
Nickel	ug/L	0.837	U	0.837	U
Potassium	ug/L	83000	=	113000	=
Selenium	ug/L	3.4	J	2.67	U
Silver	ug/L	1.15	U	1.15	U
Sodium	ug/L	2110000	=	3170000	=
Thallium	ug/L	5.24	J	6.12	J
Vanadium	ug/L	0.793	U	1.82	J
Zinc	ug/L	1.26	U	12.6	U
Mercury	ug/L		0.04	R	
					0.04
					R

Analytic Data Summary

10/22/2002 4:07 PM

StationID	G006GW005	G006GW005	G006GW006	G006GW006	
SampleID	006GW005M5	006GW005M5	006GW006M5	006GW006M5	
DateCollected	7/31/2002	7/31/2002	7/31/2002	7/31/2002	
DateExtracted	8/1/2002	8/7/2002	8/1/2002	8/7/2002	
DateAnalyzed	8/13/2002	8/8/2002	8/13/2002	8/8/2002	
SDGNumber	64538	64538	64538	64538	
Parameter	Units				
Aluminum	ug/L	596	J	44.1	UJ
Antimony	ug/L	4.79	U	9.16	J
Arsenic	ug/L	6.33	J	12.4	=
Barium	ug/L	33	J	41	J
Beryllium	ug/L	0.185	U	0.185	U
Cadmium	ug/L	0.262	U	0.346	U
Calcium	ug/L	154000	=	146000	=
Chromium, Total	ug/L	0.532	U	0.877	U
Cobalt	ug/L	0.581	U	0.581	U
Copper	ug/L	1.3	U	1.3	U
Iron	ug/L	13100	=	13500	=
Lead	ug/L	1.24	U	1.24	U
Magnesium	ug/L	556000	=	579000	=
Manganese	ug/L	437	=	257	=
Nickel	ug/L	92.3	=	0.837	U
Potassium	ug/L	203000	=	207000	=
Selenium	ug/L	2.67	U	2.67	U
Silver	ug/L	1.15	U	1.15	U
Sodium	ug/L	5090000	=	5440000	=
Thallium	ug/L	4.99	U	6.79	J
Vanadium	ug/L	5.63	J	2.68	J
Zinc	ug/L	12.6	U	12.6	U
Mercury	ug/L			0.04	R
				0.04	R

Analytical Data Summary

10/22/2002 4:07 PM

StationID	G006GW007	G006GW007		
SampleID	006GW007M5	006GW007M5		
DateCollected	7/31/2002	7/31/2002		
DateExtracted	8/1/2002	8/7/2002		
DateAnalyzed	8/13/2002	8/8/2002		
SDGNumber	64538	64538		
Parameter	Units			
Aluminum	ug/L	30.1	UJ	
Antimony	ug/L	4.79	U	
Arsenic	ug/L	15.8	=	
Barium	ug/L	26	J	
Beryllium	ug/L	0.185	U	
Cadmium	ug/L	0.21	U	
Calcium	ug/L	164000	=	
Chromium, Total	ug/L	0.532	U	
Cobalt	ug/L	0.581	U	
Copper	ug/L	1.3	U	
Iron	ug/L	7670	=	
Lead	ug/L	1.64	U	
Magnesium	ug/L	318000	=	
Manganese	ug/L	994	=	
Nickel	ug/L	0.837	U	
Potassium	ug/L	116000	=	
Selenium	ug/L	2.67	U	
Silver	ug/L	1.15	U	
Sodium	ug/L	2630000	=	
Thallium	ug/L	4.99	U	
Vanadium	ug/L	3.81	J	
Zinc	ug/L	12.6	U	
Mercury	ug/L			0.04 R

Data Validation Summary - Charleston Naval Complex - Zone G, SWMU 6

TO: David Lane/CH2M HILL/GNA

FROM: Amy Juchem/CH2M HILL/GNA
Herb Kelly/CH2M HILL/GNA

DATE: October 1, 2002

The purpose of this memorandum is to present the results of the data validation process for the samples collected in Zone G, SWMU 6. The samples were collected between the dates of January 17 and July 31, 2002.

The specific samples and analytical fractions reviewed are summarized below in Table 1 and Table 2.

The Quality Control areas that were reviewed and the resulting findings are documented within each subsection that follows. This data was validated for compliance with the analytical method requirements. This process also included a review of the data to assess the accuracy, precision, and completeness based upon procedures described in the guidance documents such as the Environmental Protection Agency (EPA) *National Functional Guidelines for Inorganic Data Review (EPA 1994)* and *National Functional Guidelines for Organic Data Review (EPA 1999)*. Quality assurance/quality control (QA/QC) summary forms and data reports were reviewed.

Samples were submitted to General Engineering Laboratories, Inc., in Charleston, South Carolina, for the following analyses: SW-846 8270 Polyaromatic Hydrocarbons (PAH), SW-846 8081 Organochlorine Pesticides, SW-846 8082 Polychlorinated Biphenyls (PCB), and Metals following SW-846 6010/7000 Series methodology.

Samples were submitted to Severn Trent Services, STL Savannah Laboratories, Inc., in Savannah, Georgia, for the following analyses: SW-846 8270 Polyaromatic Hydrocarbons (PAH), SW-846 8081 Organochlorine Pesticides, and SW-846 8082 Polychlorinated Biphenyls (PCB).

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two-digit "sub-qualifier" flags. The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

- [=] Detected. The analyte was analyzed for and detected at the concentration shown.
- [J] Estimated. The analyte was present but the reported value may not be accurate or precise.
- [U] Undetected. The analyte was analyzed for but not detected above the method detection limit.
- [UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.
- [R] Rejected. The data is not useable.

Secondary Data Validation Qualifiers

<u>Code</u>	<u>Definition</u>
2S	Second Source
BL	Blank
BD	Blank Spike/Blank Spike Duplicate or (LCS/LCSD) Precision
BS	Blank Spike/LCS
CC	Continuing Calibration Verification
DL	Dilution
FD	Field Duplicate
HT	Holding Time
IB	In-Between (metals - B's → J's)
IC	Initial Calibration
IS	Internal Standard
LD	Lab Duplicate
LR	Concentration exceeded Linear Range
MD	MS/MSD or LCS/LCSD Precision
MS	Matrix Spike/Matrix Spike Duplicate
OT	Other (see DV worksheet)
PD	Pesticide Degradation
PS	Post Spike
RE	Re-extraction/Re-analysis
SD	Serial Dilution
SS	Spiked Surrogate
TD	Total vs Dissolved
TN	Tune

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

60277	G006MB001	006MB00101	60277001	SO	N		0	1	05/08/02	X	X	X		
60277	G006MB001	006MB00101MS	1200215334	SO	MS		0	1	05/08/02			X		
60277	G006MB001	006MB00101SD	1200215335	SO	SD		0	1	05/08/02			X		
60277	G006MB001	006MB00101MS	1200215457	SO	MS		0	1	05/08/02	X				
60277	G006MB001	006MB00101SD	1200215458	SO	SD		0	1	05/08/02	X				
60277	G006MB001	006MB00101MS	1200215484	SO	MS		0	1	05/08/02		X			
60277	G006MB001	006MB00101SD	1200215485	SO	SD		0	1	05/08/02		X			
60277	G006SB017	006SB01701	60277002	SO	N		0	1	05/08/02	X	X	X		
60277	G006SB018	006SB01801	60277003	SO	N		0	1	05/08/02	X	X	X		
60277	G006SB018	006SB01801RE	60277003	SO	LR	RE	0	1	05/08/02		X			
60277	G006SB019	006SB01901	60277004	SO	N		0	1	05/08/02	X	X	X		
60277	G006SB019	006CB01901	60277005	SO	FD		0	1	05/08/02	X	X	X		
60277	G006SB019	006SB01902	60277006	SO	N		3	5	05/08/02	X				
60277	G006SB020	006SB02002	60277007	SO	N		3	5	05/08/02	X				
60277	G006SB021	006SB02102	60277008	SO	N		3	5	05/08/02	X				
60277	G006SB024	006SB02401	60277009	SO	N		0	1	05/09/02	X				
60277	G006SB024	006SB02402	60277010	SO	N		3	5	05/09/02	X				
60277	G006SB024	006CB02402	60277011	SO	FD		3	5	05/09/02	X				
60277	G006SB026	006SB02603	60277012	SO	N		3	5	05/08/02	X				
60277	G006SB020	006SB02001	60277013	SO	N		0	1	05/08/02	X	X			

Agency	Agency	Agency	Agency	Agency	Agency	Agency	Agency	Agency	Agency	Agency	Agency	Agency	Agency	Agency
60277	G006SB021	006SB02101	60277014	SO	N		0	1	05/08/02	X	X			
60277	G006SB021	006SB02101RE	60277014	SO	LR	RE	0	1	05/08/02		X			
60277	G006SB027	006SB02703	60277015	SO	N		0	1	05/08/02	X	X			
60277	G006SB028	006SB02803	60277016	SO	N		0	1	05/08/02	X	X			
60277	G006SB029	006SB02903	60277017	SO	N		0	1	05/08/02	X	X			
60277	G006SB022	006SB02201	60277018	SO	N		0	1	05/09/02			X		
60277	G006SB023	006SB02301	60277019	SO	N		0	1	05/09/02			X		
60277	G006SB025	006SB02503	60277020	SO	N		0	1	05/08/02			X		
60277	LABQC	1200215332	1200215332	SQ	LB							X		
60277	LABQC	1200215333	1200215333	SQ	BS							X		
60277	LABQC	1200215455	1200215455	SQ	LB					X				
60277	LABQC	1200215456	1200215456	SQ	BS					X				
60277	LABQC	1200215475	1200215475	SQ	LB						X			
60277	LABQC	1200215480	1200215480	SQ	BS						X			
60278	G006SB033	006SB03301	60278001	SO	N		0	1	05/09/02				X	
60278	G006SB033	006SB03301MS	1200216891	SO	MS		0	1	05/09/02				X	
60278	G006SB033	006SB03301SD	1200216892	SO	SD		0	1	05/09/02				X	
60278	G006SB030	006SB03001	60278002	SO	N		0	1	05/09/02				X	
60278	G006SB030	006SB03002	60278003	SO	N		3	5	05/09/02				X	
60278	G006SB031	006SB03102	60278004	SO	N		3	5	05/09/02				X	
60278	G006SB031	006CB03102	60278005	SO	FD		3	5	05/09/02				X	
60278	G006SB032	006SB03202	60278006	SO	N		3	5	05/09/02				X	

60278	G006SB033	006SB03302	60278007	SO	N		3	5	05/09/02				X
60278	G006SB034	006SB03402	60278008	SO	N		3	5	05/09/02				X
60278	LABQC	1200216889	1200216889	SQ	LB								X
60278	LABQC	1200216893	1200216893	SQ	BS								X
60279	FIELDQC	006EB001M2	60279001	WQ	EB				05/08/02	X	X	X	
60279	FIELDQC	006EB001M2RE	60279001	WQ	LR	RE			05/08/02	X			
60279	FIELDQC	006EB017M2	60279002	WQ	EB				05/08/02	X	X	X	
60279	FIELDQC	006EB017M2RE	60279002	WQ	LR	RE			05/08/02	X			
60279	FIELDQC	006EB030M2	60279003	WQ	EB				05/09/02				X
60279	LABQC	1200215081	1200215081	WQ	LB					X			
60279	LABQC	1200215086	1200215086	WQ	BS					X			
60279	LABQC	1200215467	1200215467	WQ	LB						X		
60279	LABQC	1200215468	1200215468	WQ	BS						X		
60279	LABQC	1200215486	1200215486	WQ	LB							X	
60279	LABQC	1200215487	1200215487	WQ	BS							X	
60279	LABQC	1200215718	1200215718	WQ	LB								X
60279	LABQC	1200215722	1200215722	WQ	BS								X
60279	LABQC	1200220621	1200220621	WQ	LB					X			
60279	LABQC	1200220622	1200220622	WQ	BS					X			
60279	LABQC	1200220623	1200220623	WQ	BD					X			
61901	G006SB042	006SB04203	61901001	SO	N		2	5	06/11/02				X
61901	G006SB042	006SB04203MS	1200234501	SO	MS		2	5	06/11/02				X

61901	G006SB042	006SB04203SD	1200234502	SO	SD		2	5	06/11/02			X	
61901	G006SB035	006SB03501	61901002	SO	N		0	1	06/11/02			X	
61901	G006SB036	006SB03601	61901003	SO	N		0	1	06/11/02			X	
61901	G006SB037	006SB03701	61901004	SO	N		0	1	06/11/02			X	
61901	G006SB038	006SB03801	61901005	SO	N		0	1	06/11/02			X	
61901	G006SB038	006CB03801	61901006	SO	FD		0	1	06/11/02			X	
61901	G006SB039	006SB03901	61901007	SO	N		0	1	06/11/02			X	
61901	G006SB040	006SB04001	61901008	SO	N		0	1	06/11/02			X	
61901	G006SB048	006SB04801	61901009	SO	N		0	1	06/11/02			X	
61901	G006SB048	006SB04803	61901010	SO	N		2	5	06/11/02			X	
61901	G006SB043	006SB04302	61901011	SO	N		3	5	06/11/02				X
61901	LABQC	1200234499	1200234499	SQ	LB							X	
61901	LABQC	1200234500	1200234500	SQ	BS							X	
61901	LABQC	1200234646	1200234646	SQ	LB								X
61901	LABQC	1200234650	1200234650	SQ	BS								X
61956	G006SB044	006SB04401	61956001	SO	N		0	1	06/12/02	X	X		
61956	G006SB044	006SB04403	61956002	SO	N		2	5	06/12/02	X	X		
61956	G006SB044	006SB04402	61956003	SO	N		3	5	06/12/02	X	X		
61956	G006SB045	006SB04502	61956004	SO	N		3	5	06/12/02	X	X		
61956	G006SB045	006CB04502	61956005	SO	FD		3	5	06/12/02	X	X		
61956	G006SB046	006SB04601	61956006	SO	N		0	1	06/12/02	X	X		
61956	G006SB046	006SB04603	61956007	SO	N		2	5	06/12/02	X	X		

61956	G006SB047	006SB04701	61956008	SO	N		0	1	06/12/02	X	X			
61956	G006SB047	006SB04703	61956009	SO	N		2	5	06/12/02	X	X			
61956	G006SB047	006SB04703MS	1200234518	SO	MS		2	5	06/12/02	X				
61956	G006SB047	006SB04703SD	1200234519	SO	SD		2	5	06/12/02	X				
61956	G006SB047	006SB04703MS	1200234548	SO	MS		2	5	06/12/02		X			
61956	G006SB047	006SB04703SD	1200234549	SO	SD		2	5	06/12/02		X			
61956	LABQC	1200234516	1200234516	SQ	LB					X				
61956	LABQC	1200234517	1200234517	SQ	BS					X				
61956	LABQC	1200234546	1200234546	SQ	LB						X			
61956	LABQC	1200234547	1200234547	SQ	BS						X			
61957	FIELDQC	006EB035M3	61957001	WQ	EB				06/12/02	X	X	X	X	
61957	LABQC	1200233628	1200233628	WQ	LB							X		
61957	LABQC	1200233629	1200233629	WQ	BS							X		
61957	LABQC	1200233630	1200233630	WQ	BD							X		
61957	LABQC	1200234526	1200234526	WQ	LB					X				
61957	LABQC	1200234527	1200234527	WQ	BS					X				
61957	LABQC	1200234550	1200234550	WQ	LB						X			
61957	LABQC	1200234551	1200234551	WQ	BS						X			
61957	LABQC	1200234652	1200234652	WQ	LB								X	
61957	LABQC	1200234656	1200234656	WQ	BS								X	
64538	G006GW005	006GW005M5	64538001	WG	N				07/31/02	X	X	X	X	X
64538	G006GW005	006GW005M5MS	1200275040	WG	MS				07/31/02			X		

ROW ID	WATER BODY	WATER BODY	WATER BODY	WATER BODY	WATER BODY	WATER BODY	WATER BODY	WATER BODY	WATER BODY	WATER BODY	WATER BODY	WATER BODY	WATER BODY	WATER BODY	WATER BODY
64538	G006GW005	006GW005M5SD	1200275041	WG	SD				07/31/02			X			
64538	G006GW005	006GW005M5MS	1200275044	WG	MS				07/31/02	X					
64538	G006GW005	006GW005M5SD	1200275045	WG	SD				07/31/02	X					
64538	G006GW005	006GW005M5MS	1200275052	WG	MS				07/31/02		X				
64538	G006GW005	006GW005M5SD	1200275053	WG	SD				07/31/02		X				
64538	G006GW005	006GW005M5MS	1200275680	WG	MS				07/31/02				X		
64538	G006GW005	006GW005M5SD	1200275681	WG	SD				07/31/02				X		
64538	G006GW005	006GW005M5MS	1200278464	WG	MS				07/31/02						X
64538	G006GW005	006GW005M5SD	1200278465	WG	SD				07/31/02						X
64538	G006GW001	006GW001M5	64538002	WG	N				07/31/02	X	X	X	X	X	X
64538	G006GW002	006GW002M5	64538003	WG	N				07/31/02	X	X	X	X	X	X
64538	G006GW003	006GW003M5	64538004	WG	N				07/31/02	X	X	X	X	X	X
64538	G006GW004	006GW004M5	64538005	WG	N				07/31/02	X	X	X	X	X	X
64538	G006GW006	006GW006M5	64538006	WG	N				07/31/02	X	X	X	X	X	X
64538	G006GW007	006GW007M5	64538007	WG	N				07/31/02	X	X	X	X	X	X
64538	FIELDQC	006EW001M5	64538008	WQ	EB				07/31/02	X	X	X	X	X	X
64538	LABQC	1200275038	1200275038	WQ	LB							X			
64538	LABQC	1200275039	1200275039	WQ	BS							X			
64538	LABQC	1200275042	1200275042	WQ	LB					X					
64538	LABQC	1200275043	1200275043	WQ	BS					X					
64538	LABQC	1200275050	1200275050	WQ	LB						X				
64538	LABQC	1200275051	1200275051	WQ	BS						X				

64538	LABQC	1200275679	1200275679	WQ	LB								X	
64538	LABQC	1200275682	1200275682	WQ	BS								X	
64538	LABQC	1200278461	1200278461	WQ	LB									X
64538	LABQC	1200278466	1200278466	WQ	BS									X
CNC63	G006SB007	006SB00701	S240386*1	SO	N		0	1	01/17/02	X	X	X		
CNC63	G006SB007	006CB00701	S240386*2	SO	FD		0	1	01/17/02	X	X	X		
CNC63	G006SB007	006SB00702	S240386*3	SO	N		3	5	01/17/02	X	X	X		
CNC63	G006SB008	006SB00801	S240386*4	SO	N		0	1	01/17/02	X	X	X		
CNC63	G006SB010	006SB01001	S240386*5	SO	N		0	1	01/17/02	X	X	X		
CNC63	G006SB012	006SB01201	S240386*6	SO	N		0	1	01/17/02	X	X	X		
CNC63	G006SB014	006SB01401	S240386*7	SO	N		0	1	01/17/02	X	X	X		
CNC63	G006SB014	006SB01401DL	S240386*7*DL	SO	LR	DL	0	1	01/17/02		X	X		
CNC63	G006SB014	006SB01402	S240386*8	SO	N		3	5	01/17/02	X	X	X		
CNC63	G006SB014	006SB01402DL	S240386*8*DL	SO	LR	DL	3	5	01/17/02		X	X		
CNC63	G006SB015	006SB01501	S240386*9	SO	N		0	1	01/17/02	X	X	X		
CNC63	G006SB009	006SB00901	S240386*10	SO	N		0	1	01/17/02		X	X		
CNC63	G006SB011	006SB01101	S240386*11	SO	N		0	1	01/17/02		X	X		
CNC63	G006SB011	006SB01101MS	S240386*27	SO	MS		0	1	01/17/02		X	X		
CNC63	G006SB011	006SB01101SD	S240386*29	SO	SD		0	1	01/17/02		X	X		
CNC63	G006SB011	006SB01102	S240386*12	SO	N		3	5	01/17/02		X	X		
CNC63	G006SB013	006SB01301	S240386*13	SO	N		0	1	01/17/02		X	X		
CNC63	G006SB013	006SB01302	S240386*14	SO	N		3	5	01/17/02		X	X		

CNC63	G006SB013	006CB01302	S240386*15	SO	FD		3	5	01/17/02		X	X		
CNC63	G006SB005	006SB00501	S240386*16	SO	N		0	1	01/17/02			X		
CNC63	G006SB005	006SB00502	S240386*17	SO	N		3	5	01/17/02			X		
CNC63	G006SB006	006SB00601	S240386*18	SO	N		0	1	01/17/02			X		
CNC63	G006SB006	006SB00601DL	S240386*18*DL	SO	LR	DL	0	1	01/17/02			X		
CNC63	FIELDQC	006EB005M1	S240386*19	WQ	EB				01/17/02	X	X	X		
CNC63	G006GW004	006GW004M1	S240414*1	WG	N				01/18/02	X		X		
CNC63	FIELDQC	006EW004M1	S240414*2	WQ	EB				01/18/02	X		X		
CNC63	FIELDQC	006EW004M1RE	S240414*2*RE	WG	LR	RE			01/18/02			X		
CNC63	G006SB016	006SB01602	S240473*1	SO	N		3	5	01/22/02		X	X		
CNC63	FIELDQC	006EB016M1	S240473*2	WQ	EB				01/22/02		X	X		
CNC63	LABQC	4038620LB	S240386*20	SQ	LB					X	X	X		
CNC63	LABQC	4038621BS	S240386*21	SQ	BS					X	X	X		
CNC63	LABQC	4038634LB	S240386*34	WQ	LB					X	X	X		
CNC63	LABQC	4038635BS	S240386*35	WQ	BS					X	X	X		
CNC63	LABQC	404143LB	S240414*3	WQ	LB					X		X		
CNC63	LABQC	404144BS	S240414*4	WQ	BS					X		X		
CNC63	LABQC	4041410LB	S240414*10	WQ	LB							X		
CNC63	LABQC	4041411BS	S240414*11	WQ	BS							X		
CNC63A	G006SB009	006SB00901	S240386A*1	SO	N		0	1	01/17/02	X				
CNC63A	G006SB011	006SB01101	S240386A*2	SO	N		0	1	01/17/02	X				
CNC63A	G006SB011	006SB01101DL	S240386A*2*DL	SO	LR	DL	0	1	01/17/02	X				

CNC63A	G006SB011	006SB01101MS	S240386A*14	SO	MS		0	1	01/17/02	X				
CNC63A	G006SB011	006SB01101SD	S240386A*16	SO	SD		0	1	01/17/02	X				
CNC63A	G006SB011	006SB01102	S240386A*3	SO	N		3	5	01/17/02	X				
CNC63A	G006SB013	006SB01301	S240386A*4	SO	N		0	1	01/17/02	X				
CNC63A	G006SB013	006SB01302	S240386A*5	SO	N		3	5	01/17/02	X				
CNC63A	G006SB013	006CB01302	S240386A*6	SO	FD		3	5	01/17/02	X				
CNC63A	G006SB016	006SB01602	S240473A*1	SO	N		3	5	01/22/02	X				
CNC63A	FIELDQC	006EB016M1	S240473A*2	WQ	EB				01/22/02	X				
CNC63A	LABQC	40386A7LB	S240386A*7	SQ	LB					X				
CNC63A	LABQC	40386A8BS	S240386A*8	SQ	BS					X				
CNC119	G006SB049	006SB04901	S244399*1	SO	N		0	1	05/08/02				X	
CNC119	G006SB049	006SB04901RE	S244399*1*RE	SO	LR	RE	0	1	06/21/02				X	
CNC119	G006SB050	006SB05001	S244399*2	SO	N		0	1	06/21/02				X	
CNC119	G006SB050	006SB05001RE	S244399*2*RE	SO	LR	RE	0	1	06/21/02				X	
CNC119	G006SB059	006SB05901	S244399*3	SO	N		0	1	06/21/02				X	
CNC119	G006SB059	006SB05901RE	S244399*3*RE	SO	LR	RE	0	1	06/21/02				X	
CNC119	G006SB052	006SB05201	S244399*4	SO	N		0	1	06/21/02				X	
CNC119	G006SB052	006SB05201RE	S244399*4*RE	SO	LR	RE	0	1	06/21/02				X	
CNC119	G006SB052	006CB05201	S244399*5	SO	FD		0	1	06/21/02				X	
CNC119	G006SB052	006CB05201RE	S244399*5*RE	SO	FD	RE	0	1	06/21/02				X	
CNC119	G006SB053	006SB05301	S244399*6	SO	N		0	1	06/21/02				X	
CNC119	G006SB053	006SB05301RE	S244399*6*RE	SO	LR	RE	0	1	06/21/02				X	

Sample ID	Sample Name	Sample Description	Sample ID	Sample Type	Sample Status	Sample Date	Sample Count	Sample Count	Sample Date	Sample Status	Sample Status
CNC119	G006SB054	006SB05401	S244399*7	SO	N		0	1	06/21/02		X
CNC119	G006SB054	006SB05401RE	S244399*7*RE	SO	LR	RE	0	1	06/21/02		X
CNC119	G006SB055	006SB05501	S244399*8	SO	N		0	1	06/21/02		X
CNC119	G006SB055	006SB05501RE	S244399*8*RE	SO	LR	RE	0	1	06/21/02		X
CNC119	G006SB056	006SB05601	S244399*9	SO	N		0	1	06/21/02		X
CNC119	G006SB056	006SB05601RE	S244399*9*RE	SO	LR	RE	0	1	06/21/02		X
CNC119	G006SB057	006SB05701	S244399*10	SO	N		0	1	06/21/02		X
CNC119	G006SB057	006SB05701RE	S244399*10*RE	SO	LR	RE	0	1	06/21/02		X
CNC119	G006SB058	006SB05803	S244399*11	SO	N		1	2	06/21/02		X
CNC119	G006SB058	006SB05803RE	S244399*11*RE	SO	LR	RE	1	2	06/21/02		X
CNC119	G006SB058	006SB05803MS	S244399*20	SO	MS		1	2	06/21/02		X
CNC119	G006SB058	006SB05803SD	S244399*22	SO	SD		1	2	06/21/02		X
CNC119	G006SB058	006SB05803MSR	S244399*41	SO	MS		1	2	06/21/02		X
CNC119	G006SB058	006SB05803SDR	S244399*43	SO	SD		1	2	06/21/02		X
CNC119	FIELDQC	006EB049M4	S244399*12	WQ	EB				06/21/02		X
CNC119	LABQC	4439913LB	S244399*13	SQ	LB						X
CNC119	LABQC	4439914BS	S244399*14	SQ	BS						X
CNC119	LABQC	4439927LB	S244399*27	WQ	LB						X
CNC119	LABQC	4439928BS	S244399*28	WQ	BS						X
CNC119	LABQC	4439934LB	S244399*34	SQ	LB						X
CNC119	LABQC	4439935BS	S244399*35	SQ	BS						X

MATRIX CODE

WG – Groundwater
WQ – Water QC Samples
SO – Soil
SQ – Soil QC Samples

SAMPLE TYPE CODE

BS - Blank Spike
BD – Blank Spike Duplicate
EB - Equipment Blank
FD - Field Duplicate
N - Native Sample
LB - Laboratory Blank
LR – Laboratory Replicate
MS - Matrix Spike
SD - Matrix Spike duplicate

LR TYPE CODE

DL – Dilution
RE - Reanalysis

ANALYSIS CODE

PAHs – Polyaromatic Hydrocarbons
PCBs – Polychlorinated Biphenyls

Table 2 – TCLP Chemical Analytical Methods – Field and Quality Control Samples

QOC	Sample ID	Sample ID	Lab Sample ID	Matrix	Sample Type	Collection Date	Field Analyzed	Lab Analyzed
CNC116	G003SA001	003SA001M3	S244137A*1	SO	N	06/13/02	X	
CNC116	G003SA002	003SA002M3	S244137A*2	SO	N	06/13/02	X	
CNC116	G003SA003	003SA003M3	S244137A*3	SO	N	06/13/02	X	
CNC116	G006SA001	006SA001M3	S244146*1	SO	N	06/11/02	X	X
CNC116	LABQC	TCLP Extract	S2CNC116*1	WQ	LB		X	X
CNC116	LABQC	CNC1162BS	S2CNC116*2	WQ	BS		X	X
<p>MATRIX CODE SO – Soil WQ – Water QC Samples</p> <p>SAMPLE TYPE CODE BS - Blank Spike N - Native Sample LB - Laboratory Blank</p> <p>ANALYSIS CODE PCBs – Polychlorinated Biphenyls</p>								

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and its duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Pesticide Degradation** – Degradation checks on the gas chromatograph with electron capture detector system are performed to ensure minimal instrument breakdown of target compounds. These criteria are not sample specific.
- **Confirmation** – If GCMS methodology is not initially used for analysis, SW-846 method 8000 requires confirmation when the composition of samples is not well characterized. Therefore, even when the identification has been confirmed on a dissimilar column or

detector, the agreement of the quantitative results on both columns is evaluated. For Pesticide and PCB analyses covered in this report, confirmation was performed using a dissimilar analytical column. The laboratory analyzed samples with a gas chromatograph (GC) utilizing simultaneous primary and confirmation data acquisition. Per SW-86 method 8000, 40% RPD criteria was used as the acceptance limit.

- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Polyaromatic Hydrocarbons (PAH) Analyses

The QA/QC parameters for the PAH analyses for all of the samples were within acceptable control limits, except as noted below.

Holding Times

All holding times were met except as noted below.

- 006EB001M2 and 006EB017M2 in SDG 60279 were originally run within holding time. LCS surrogate recoveries were low and the samples were re-extracted outside of holding time. LCS surrogate recoveries associated with the re-extracted samples were still low. The original analysis was used for these samples.
- All samples in SDG CNC63A exceeded holding times by 5 days for soils and 7 days for waters. All positive results were qualified "J" and all non-detects were qualified "UJ".

Blanks

The PAH target parameters detected in blank samples are listed in [Table 3](#).

TABLE 3

Blank Contamination: PAHs

Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

64538	1200275042	1200275042	LB	4-Chloro-3-methylphenol	1.3	µg/L	6.5 µg/L
64538	1200275042	1200275042	LB	bis(2-Ethylhexyl)phthalate	3.4	µg/L	34.0 µg/L
64538	006EW001M5	64538008	EB	bis(2-Ethylhexyl)phthalate	3.6	µg/L	36.0 µg/L

If a target parameter determined to be a common contaminant was reported in a field sample, and the concentration was below the level determined to be due to blank contamination, the following actions were taken:

- If the concentration was above the reporting limit, the numeric result was unchanged, but it was flagged "U", as undetected.
- If the concentration was below the reporting limit, the numeric result was changed to the value of the reporting limit, and it was flagged "U", as undetected.

The results qualified due to blank contamination are listed in Attachment 1.

Recoveries - Surrogate, MS/MSD and LCS/LCSD

All Surrogate, Matrix Spike (MS), Matrix Spike Duplicate (MSD), Laboratory Control Sample (LCS), and Laboratory Control Sample Duplicate (LCSD) recoveries and Relative Percent Deviations (RPDs) were within acceptable quality control limits, except as noted in Table 4 below.

TABLE 4
 Surrogate, MS/MSD and LCS/LCSD Recoveries and RPDs Out of QC Limits: PAH
 Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

Sample ID	Surrogate	Compound	Recovery (%)	Reporting Limit (µg/Kg)	Sample ID	Notes
60279	1200215086 LCS	Pyrene	67*	68-117	60279001, 60279002	No flags applied (EBs)
60279	1200220622 LCS	Pyrene	62*	68-117	60279001RE, 60279002RE	No flags applied (EBs)
* - out of control limits						

Field Duplicate Samples

All Field Duplicate Samples were within acceptable quality control limits, except as noted in Table 5 below. No flags are applied due to Field Duplicate precision.

TABLE 5
 Field Duplicate RPDs Out of QC Limits: PAHs
 Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

Sample ID	Surrogate	Compound	RPD (%)	RPD (%)	RPD (%)	QC Limit
60277	006SB02402 / 006CB02402	Pyrene	259 µg /Kg	474 µg /Kg	58.6*	35
61956	006SB04502 / 006CB04502	Naphthalene	79.1 µg /Kg	375 µg /Kg	130*	35
		Acenaphthylene	279 µg /Kg	1340 µg /Kg	131*	35
		Fluorene	197 µg /Kg	470 µg /Kg	81.8*	35
		Phenanthrene	889 µg /Kg	2190 µg /Kg	84.5*	35
		Anthracene	491 µg /Kg	1690 µg /Kg	109.9*	35

TABLE 5
Field Duplicate RPDs Out of QC Limits: PAHs
Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

Site	Sample	Parameter	Initial Concentration (µg/Kg)	Field Duplicate Concentration (µg/Kg)	RPD (%)	QC Limit (%)
61956	006SB04502 / 006CB04502	Fluoranthene	2880 µg /Kg	13100 µg /Kg	127.9*	35
		Pyrene	2710 µg /Kg	16700 µg /Kg	144.1*	35
		Benzo(a)anthracene	2160 µg /Kg	11000 µg /Kg	134.3*	35
		Chrysene	1570 µg /Kg	8100 µg /Kg	135.0*	35
		Benzo(a)pyrene	1510 µg /Kg	8120 µg /Kg	137.2*	35
		Indeno(1,2,3-cd)pyrene	621 µg /Kg	2740 µg /Kg	126.0*	35
		Benzo(ghi)perylene	510 µg /Kg	1980 µg /Kg	118.0*	35
CNC63	006SB00701 / 006CB00701	Naphthalene	7.8 µg /Kg	12 µg /Kg	42.4*	35

* - out of control limits

Initial and Continuing Calibration Criteria

All initial calibration criteria and continuing calibration criteria were met, except as listed in Table 6.

TABLE 6
Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: PAH
Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

Sample ID	Parameter	Exception	Sample(s)
MSD4-ICAL-05/16/02, 1835	Indeno(1,2,3-cd)pyrene	R ² =0.986	60277001, 60207002
	Dibenzo(a,h)anthracene	R ² =0.985	
MSD8-CCAL-05/22/02, 1008	Pyrene	22.2% low	60277001RE, 60277002RE
MSD8-CCAL-06/17/02, 1400	Benzo(ghi)perylene	20.2% high	61956 – All
MSD5-ICAL-06/20/02, 1727	Indeno(1,2,3-cd)pyrene	R ² =0.986	61957001
	Dibenzo(a,h)anthracene	R ² =0.987	
MSD5-ICAL-07/12/02, 1420	2,4-Dimethylphenol	R ² =0.984	64538 - All
	2,4-Dinitrophenol	R ² =0.989	

TABLE 6

Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: PAH
 Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

TABLE 6			
MSD5-CCAL-08/05/02, 0938	2,4-Dinitrophenol	34.1% high	64538 - All
	2-Methyl-4,6-dinitrophenol	39.1% high	

Flags were applied to the compounds in the associated samples in the following manner:

- When the percent Relative Standard Deviation (%RSD) or correlation coefficient (R^2) was out in the initial calibration, all associated samples were qualified. Detected compounds were flagged "J" and non-detected compounds were flagged "UJ", as estimated.
- When the percent difference (%D) was high in the continuing calibration standards, detected compounds were flagged "J", as estimated. Non-detected compounds were not flagged.
- When the percent difference (%D) was low in the continuing calibration standards, detected compounds were flagged "J" and non-detected compounds were flagged "UJ", as estimated.

Organochlorine Pesticide Analyses

The QA/QC parameters for the Organochlorine Pesticide analyses for all of the samples were within acceptable control limits, except as noted below:

Blanks

The Pesticide target parameters detected in blank samples are listed in [Table 7](#).

TABLE 7

Blank Contamination: Pesticides
 Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

TABLE 7							
60277	1200215475	1200215475	LB	4,4'-DDD	0.25	µg/Kg	1.3 µg/Kg
64538	006EW001M5	64538008	EB	4,4'-DDT	0.020	µg/L	0.1 µg/L

If a target parameter determined to be a common contaminant was reported in a field sample, and the concentration was below the level determined to be due to blank contamination, the following actions were taken:

- If the concentration was above the reporting limit, the numeric result was unchanged, but it was flagged "U", as undetected.
- If the concentration was below the reporting limit, the numeric result was changed to the value of the reporting limit, and it was flagged "U", as undetected.

The results qualified due to blank contamination are listed in **Attachment 1**.

Recoveries - Surrogate, MS/MSD and LCS

All Surrogate, Matrix Spike (MS), Matrix Spike Duplicate (MSD), and Laboratory Control Sample (LCS) recoveries were within acceptable quality control limits, except as noted in **Table 8** below.

TABLE 8
 Surrogate, MS/MSD and LCS Recoveries and RPDs Out of QC Limits: Pesticides
 Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

Sample ID	Sample Type	Compound	Control Limits	Reported Value	RPD	RPD	Sample ID	Notes
CNC63	006SB01101 MS/MSD	Gamma-BHC	165* / 160*	46-127			006SB01101	Detects-J, non-detects-UJ
		Heptachlor epoxide	165* / 105	15-142				
		Alpha-Chlordane	325* / 80	45-140	65*	40		
		4,4'-DDE	350* / 200*	34-121	26*	25		
		Dieldrin	238* / 208*	31-134				
		4,4'-DDD	250* / 150*	42-139	59*	45		
		4,4'-DDT	750* / 75	23-134				
		Methoxychlor	800* / 500*	24-152	46*	40		
		Endrin ketone	375* / 425*	29-112				
CNC63	006EB005M1	Tetrachloro-m-xylene	48* / 48*	60-150			006EB005M1	No flags applied (EB)
		Decachlorobiphenyl	59* / 62	60-150				
CNC63	006GW004M1	Tetrachloro-m-xylene	43* / 43*	60-150			006GW004M1	Detects-J, non-detects-UJ
		Decachlorobiphenyl	21* / 24*	60-150				
CNC63	006EW004M1	Tetrachloro-m-xylene	48* / 52*	60-150			006EW004M1	No flags applied (EB)
		Decachlorobiphenyl	40* / 42*	60-150				

* - out of control limits

Field Duplicate Samples

All Field Duplicate Samples were within acceptable quality control limits, except as noted in **Table 9** below. No flags are applied due to Field Duplicate precision.

TABLE 9
Field Duplicate RPDs Out of QC Limits: Pesticides
Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

61956	006SB04502 / 006CB04502	Gamma-BHC	10.7 µg /Kg	40.0 µg /Kg	115.5*	35
		4,4'-DDD	55.6 µg /Kg	148.0 µg /Kg	90.7*	35
		4,4'-DDT	99.0 µg /Kg	317.0 µg /Kg	104.8*	35
		Chlordane (tech)	58.0 µg /Kg	205.0 µg /Kg	111.7*	35
		Alpha-Chlordane	6.7 µg /Kg	24.0 µg /Kg	112.7*	35
CNC63	006SB00701 / 006CB00701	Gamma-Chlordane	19.0 µg /Kg	12.0 µg /Kg	45.2*	35
		Alpha-Chlordane	7.0 µg /Kg	4.5 µg /Kg	43.5*	35
		Dieldrin	9.7 µg /Kg	5.7 µg /Kg	51.9*	35
CNC63	006SB01302 / 006CB01302	Alpha-Chlordane	6.1 µg /Kg	Non-detect	200*	35
		4,4'-DDT	82.0 µg /Kg	7.1 µg /Kg	168.1*	35
* - out of control limits						

Initial and Continuing Calibration Criteria

All initial calibration criteria and continuing calibration criteria were met, except as listed in [Table 10](#).

TABLE 10
Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: Pesticides
Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

ECD7A#2-CCAL-05/22/02, 1205	Toxaphene	39.5% high	60277 – #1-5, 13-17
ECD7A#1-CCAL-05/23/02, 1351	Endrin	18.0% high	60277 - #3DL, 14DL
	Methoxychlor	19.0% high	
	Endrin ketone	15.5% high	
ECD7A#2-CCAL-05/23/02, 1351	Alpha-BHC	18.0% high	60277 - #3DL, 14DL
	Delta-BHC	21.0% high	
	Endrin ketone	21.0% high	

TABLE 10

Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: Pesticides
Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

ECD7A#2-CCAL-05/23/02, 1413	Toxaphene	26.0% high	60277 - #3DL, 14DL
ECD7A#1-CCAL-05/23/02, 1628	Methoxychlor	18.0% high	60277 - #3DL, 14DL
ECD7A#2-CCAL-05/23/02, 1628	Delta-BHC	22.0% high	60277 - #3DL, 14DL
	Gamma-BHC	16.0% high	
	Methoxychlor	20.0% high	
	Endrin ketone	20.0% high	
ECD1A#1-CCAL-05/16/02, 1016	Chlordane	19.0% high	60279 - #1(EB), 2(EB)
ECD1A#1-CCAL-05/16/02, 1455	Endosulfan sulfate	17.0% low	60279 - #1(EB), 2(EB)
ECD1A#2-CCAL-05/16/02, 1455	4,4'-DDT	18.5% high	60279 - #1(EB), 2(EB)
ECD1A#1-CCAL-05/16/02, 1527	4,4'-DDT	18.0% high	60279 - #1(EB), 2(EB)
ECD5A#1-CCAL-06/22/02, 1249	Aldrin	16.3% low	61956 - #1-9
	Heptachlor epoxide	22.6% low	
	Endosulfan I	18.7% low	
	4,4'-DDE	19.0% low	
	Endosulfan II	22.5% low	
	Endosulfan sulfate	22.5% low	
	4,4'-DDT	16.5% low	
	Endrin aldehyde	15.5% low	
	Gamma-Chlordane	20.7% low	
	Alpha-Chlordane	22.2% low	
ECD5A#2-CCAL-06/22/02, 1249	Dieldrin	19.0% high	61956 - #1-9
	Endrin	55.0% high	
	4,4'-DDD	26.0% high	
	Methoxychlor	23.0% high	
	Endrin ketone	21.0% high	

TABLE 10

Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: Pesticides
 Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

ECD5A#2-CCAL-06/22/02, 1249	Endrin aldehyde	21.0% high	61956 – #1-9
ECD5A#1-CCAL-06/22/02, 1716	Aldrin	16.0% low	61956 – #1-9
	Heptachlor epoxide	18.0% low	
	Endosulfan I	16.7% low	
	4,4'-DDE	18.0% low	
	Endosulfan II	20.5% low	
	Endosulfan sulfate	17.5% low	
	4,4'-DDT	23.5% low	
	Gamma-Chlordane	18.5% low	
ECD5A#2-CCAL-06/22/02, 1716	Alpha-Chlordane	19.8% low	61956 – #1-9
	Delta-BHC	17.0% high	
	Dieldrin	26.5% high	
	Endrin	63.0% high	
	4,4'-DDD	48.5% high	
	Methoxychlor	28.0% high	
	Endrin ketone	29.0% high	
Endrin aldehyde	26.5% high		
ECD2A#1-CCAL-06/17/02, 1346	Beta-BHC	16.2% low	61957001 (EB)
	Delta-BHC	15.7% low	
ECD2A#1-CCAL-06/17/02, 1604	4,4'-DDT	25.5% high	61957001 (EB)
ECD2A#2-CCAL-06/17/02, 1604	Delta-BHC	17.0% high	61957001 (EB)
ECD3A#1-CCAL-08/06/02, 2157	Toxaphene	32.5% high	64538 - All
ECD3A#2-CCAL-08/06/02, 2157	Toxaphene	55.5% high	64538 - All
ECD3A#2-CCAL-08/07/02, 0050	Beta-BHC	18.8% low	64538 - #1-6
	Delta-BHC	15.7% low	

TABLE 10

Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: Pesticides
Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

ECD3A#2-CCAL-08/07/02, 0050	Gamma-BHC	16.3% low	64538 - #1-6
	Heptachlor epoxide	16.4% low	
	Endosulfan I	15.4% low	
	Dieldrin	17.5% low	
	Endrin	18.5% low	
	Endosulfan II	19.5% low	
	Endosulfan sulfate	18.0% low	
	Methoxychlor	15.1% low	
	Endrin ketone	23.5% low	
	Endrin aldehyde	18.5% low	
	Gamma-Chlordane	16.8% low	
	Alpha-Chlordane	15.9% low	
ECD3A#2-CCAL-08/07/02, 0247	Endrin	15.5% low	64538 - #1-8
	Endosulfan II	17.0% low	
ECD3A#2-CCAL-08/07/02, 0319	Endrin ketone	16.0% low	64538 - #7, 8
SGMECD1#1-CCAL- 01/29/02, 1013	Endosulfan II	22.5% low	S240414*1,2 S240386*19
	Methoxychlor	26.9% low	
SGMECD1#2-CCAL- 01/29/02, 1013	Endrin	44.2% high	S240414*1,2 S240386*19
	Endrin ketone	22.2% high	
SGMECD1#1-CCAL- 01/30/02, 0916	Chlordane	36.5% low	S240473*1, S240386*1-15
SGMECD2#2-CCAL- 01/30/02, 0821	Heptachlor	16.1% low	S240473*1, S240386*1-15
	4,4'-DDD	38.8% high	
	Endosulfan II	19.1% high	
	4,4'-DDT	55.5% low	
	Methoxychlor	42.9% low	
SGMECD2#2-CCAL- 01/30/02, 0916	Chlordane	38.0% low	S240473*1, S240386*1-15

TABLE 10

Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: Pesticides
 Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

SGMECD1#1-CCAL-01/31/02, 1322	4,4'-DDE	17.7% high	S240473*2, S240386*17
	Dieldrin	36.6% high	
	Endosulfan sulfate	19.4% low	
	Endrin ketone	17.4% low	
SGMECD1#1-CCAL-01/31/02, 1642	Chlordane	17.3% low	S240473*2, S240386*17
SGMECD2#2-CCAL-01/31/02, 1322	Aldrin	16.5% high	S240473*2, S240386*17
	Gamma-Chlordane	22.6% high	
	4,4'-DDE	26.3% high	
	Dieldrin	18.0% high	
SGMECD2#2-CCAL-01/31/02, 1642	Chlordane	22.1% low	S240473*2, S240386*17
SGMECD1#1-CCAL-02/01/02, 0049	Gamma-BHC	15.6% low	S240473*2, S240386*17
	Heptachlor	32.8% low	
	Delta-BHC	16.2% low	
	Endrin	23.2% low	
	4,4'-DDT	29.6% low	
	Methoxychlor	38.1% low	
	Endrin ketone	15.1% low	
SGMECD1#1-CCAL-02/01/02, 0239	Chlordane	44.3% low	S240473*2, S240386*17
SGMECD2#2-CCAL-02/01/02, 0049	Heptachlor	25.9% low	S240473*2, S240386*17
	4,4'-DDD	28.3% high	
	Endosulfan II	21.1% high	
	4,4'-DDT	56.6% low	
	Endosulfan sulfate	16.1% low	
	Methoxychlor	47.9% low	
SGMECD2#2-CCAL-02/01/02, 0239	Chlordane	15.4% low	S240473*2, S240386*17

TABLE 10

Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: Pesticides
Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

Sample ID	Compound	Percent Difference (%D)	Flags
SGMECD1#1-CCAL-02/01/02	Heptachlor	18.8% low	S240386*7DL, 8DL, 18DL, 16, 18
	Heptachlor epoxide	17.2% low	
	Gamma-Chlordane	15.3% low	
	Endosulfan II	15.8% low	
	Methoxychlor	21.9% high	
SGMECD1#1-CCAL-02/01/02, 2001	Chlordane	20.7% low	S240386*7DL, 8DL, 18DL, 16, 18
SGMECD2#2-CCAL-02/01/02, 1905	Endrin	33.3% high	S240386*7DL, 8DL, 18DL, 16, 18
	4,4'-DDT	19.8% high	
	Methoxychlor	16.3% high	
	Endrin ketone	34.6% high	
SGMECD1#1-CCAL-02/02/02, 0653	Methoxychlor	20.8% high	S240386*7DL, 8DL, 18DL, 16, 18
	Endrin ketone	17.5% high	
SGMECD2#2-CCAL-02/02/02, 0653	4,4'-DDD	15.4% high	S240386*7DL, 8DL, 18DL, 16, 18
	Endrin ketone	16.8% high	
SGMECD1#1-CCAL-01/30/02, 0821	Heptachlor	24.2% low	S240386*1-15, 17 S240473*1,2
	4,4'-DDD	30.5% high	
	4,4'-DDT	37.5% low	
	Methoxychlor	40.5% low	
SGMECD1#2-CCAL-06/19/02, 1217	Endrin aldehyde	17.5% high	CNC116 - All

Flags were applied to the compounds in the associated samples in the following manner:

- When the percent difference (%D) was low in the continuing calibration standards, detected compounds were flagged "J" and non-detected compounds were flagged "UJ", as estimated.
- When the percent difference (%D) was high in the continuing calibration standards, detected compounds were flagged "J", as estimated. Non-detected compounds were not flagged.

Second Column Confirmation

The second column confirmation percent difference (%D) for some detected parameters, exceeded the 40 %D criteria. Those results were flagged "J", as estimated. The laboratory reported the lower of the two concentrations. The individual samples and specific compounds that were flagged are listed in [Table 11](#) below.

TABLE 11
Second Column Confirmation out of Criteria: Pesticides
Charleston Naval Complex, Zone G, SWMU 6 Charleston, SC

60277	006SB01701	60277002	Dieldrin
60277	006SB01701	60277002	4,4'-DDT
60277	006SB01701	60277002	Alpha-Chlordane
60277	006SB01801	60277003	Beta-BHC
60277	006SB01801	60277003	Alpha-Chlordane
60277	006SB01901	60277004	Aldrin
60277	006SB01901	60277004	Heptachlor epoxide
60277	006SB01901	60277004	Alpha-Chlordane
60277	006SB01901	60277004	Chlordane (tech)
60277	006CB01901	60277005	Beta-BHC
60277	006SB02101	60277014	Heptachlor
60277	006SB02803	60277016	Beta-BHC
60277	006SB02803	60277016	Delta-BHC
61956	006SB04401	61956001	Beta-BHC
61956	006SB04401	61956001	Delta-BHC
61956	006SB04401	61956001	Aldrin
61956	006SB04401	61956001	Gamma-chlordane
61956	006SB04403	61956002	Gamma-BHC
61956	006SB04402	61956003	Heptachlor
61956	006SB04402	61956003	Gamma-Chlordane
61956	006SB04502	61956004	Delta-BHC
61956	006SB04502	61956004	4,4'-DDE
61956	006SB04502	61956004	4,4'-DDD
61956	006SB04502	61956004	Gamma-Chlordane
61956	006CB04502	61956005	Heptachlor

TABLE 11
 Second Column Confirmation out of Criteria: Pesticides
 Charleston Naval Complex, Zone G, SWMU 6 Charleston, SC

Site	Sample ID	Sample ID	Reference
61956	006CB04502	61956005	4,4'-DDE
61956	006CB04502	61956005	4,4'-DDD
61956	006CB04502	61956005	Gamma-Chlordane
61956	006SB04601	61956006	Heptachlor epoxide
61956	006SB04601	61956006	4,4'-DDD
61956	006SB04601	61956006	Gamma-Chlordane
61956	006SB04603	61956007	Beta-BHC
61956	006SB04603	61956007	4,4'-DDD
61956	006SB04603	61956007	Gamma-Chlordane
61956	006SB04701	61956008	4,4'-DDT
61956	006SB04703	61956009	4,4'-DDT
CNC63	006SB00701	S240386*1	Heptachlor epoxide
CNC63	006SB00701	S240386*1	Alpha-Chlordane
CNC63	006CB00701	S240386*2	Heptachlor epoxide
CNC63	006CB00701	S240386*2	Alpha-Chlordane
CNC63	006Sb00702	S240386*3	Alpha-BHC
CNC63	006Sb00702	S240386*3	4,4'-DDE
CNC63	006SB00801	S240386*4	Heptachlor epoxide
CNC63	006SB00801	S240386*4	Gamma-Chlordane
CNC63	006SB00801	S240386*4	Alpha-Chlordane
CNC63	006SB01001	S240386*5	Heptachlor epoxide
CNC63	006SB01001	S240386*5	Alpha-Chlordane
CNC63	006SB01001	S240386*5	4,4'-DDD
CNC63	006SB01201	S240386*6	Heptachlor epoxide
CNC63	006SB01201	S240386*6	Gamma-Chlordane
CNC63	006SB01201	S240386*6	Alpha-Chlordane
CNC63	006SB01201	S240386*6	Dieldrin
CNC63	006SB01201	S240386*6	Endrin aldehyde
CNC63	006SB01401	S240386*7	Gamma-BHC
CNC63	006SB01401	S240386*7	Heptachlor

TABLE 11
 Second Column Confirmation out of Criteria: Pesticides
 Charleston Naval Complex, Zone G, SWMU 6 Charleston, SC

CNC63	006SB01401	S240386*7	Delta-BHC
CNC63	006SB01401	S240386*7	Heptachlor epoxide
CNC63	006SB01401	S240386*7	Gamma-Chlordane
CNC63	006SB01401	S240386*7	Alpha-Chlordane
CNC63	006SB01401DL	S240386*7DL	Delta-BHC
CNC63	006SB01401DL	S240386*7DL	Alpha-Chlordane
CNC63	006SB01402	S240386*8	Heptachlor epoxide
CNC63	006SB01402	S240386*8	Alpha-Chlordane
CNC63	006SB01402DL	S240386*8DL	Gamma-BHC
CNC63	006SB01402DL	S240386*8DL	Heptachlor epoxide
CNC63	006SB01402DL	S240386*8DL	Gamma-Chlordane
CNC63	006SB01402DL	S240386*8DL	Dieldrin
CNC63	006SB01501	S240386*9	Gamma-BHC
CNC63	006SB01501	S240386*9	Heptachlor epoxide
CNC63	006SB01501	S240386*9	Gamma-Chlordane
CNC63	006SB01501	S240386*9	4,4'-DDT
CNC63	006SB00901	S240386*10	Heptachlor epoxide
CNC63	006SB00901	S240386*10	Gamma-Chlordane
CNC63	006SB01101	S240386*11	Delta-BHC
CNC63	006SB01101	S240386*11	Alpha-Chlordane
CNC63	006SB01101	S240386*11	4,4'-DDD
CNC63	006SB01102	S240386*12	Heptachlor epoxide
CNC63	006SB01102	S240386*12	4,4'-DDD
CNC63	006SB01301	S240386*13	Delta-BHC
CNC63	006SB01301	S240386*13	Heptachlor epoxide
CNC63	006SB01301	S240386*13	Dieldrin
CNC63	006SB01301	S240386*13	4,4'-DDD
CNC63	006SB01301	S240386*13	Endosulfan II
CNC63	006SB01302	S240386*14	Alpha-BHC
CNC63	006SB01302	S240386*14	Gamma-BHC

TABLE 11
Second Column Confirmation out of Criteria: Pesticides
Charleston Naval Complex, Zone G, SWMU 6 Charleston, SC

Site	Sample	Sample ID	Compound
CNC63	006SB01302	S240386*14	Delta-BHC
CNC63	006SB01302	S240386*14	Dieldrin
CNC63	006SB01302	S240386*14	4,4'-DDD
CNC63	006CB01302	S240386*15	Dieldrin
CNC63	006CB01302	S240386*15	4,4'-DDD

Polychlorinated Biphenyls (PCBs) Analyses

The QA/QC parameters for the Polychlorinated Biphenyls analyses for all of the samples were within acceptable control limits, except as noted below:

Recoveries - Surrogate, MS/MSD and LCS

All Surrogate, Matrix Spike (MS), Matrix Spike Duplicate (MSD), and Laboratory Control Sample (LCS) recoveries were within acceptable quality control limits, except as noted in Table 12 below.

TABLE 12
Surrogate, MS/MSD and LCS Recoveries Out of QC Limits: PCBs
Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

Sample ID	Sample	Compound	Recovery	QC Limit	QC Limit	Sample ID	Notes
60277	006MB00101 MS/MSD	Aroclor-1016	182* / 104	60-150	54* 50	006MB00101	Detects-J, non-detects-UJ
CNC63	006EB005M1	Tetrachloro-m-xylene	48* / 48*	60-150		006EB005M1	No flags applied (EB)
		Decachlorobiphenyl	59* / 62	60-150			
CNC63	006GW004M1	Tetrachloro-m-xylene	43* / 43*	60-150		006GW004M1	Detects-J, non-detects-UJ
		Decachlorobiphenyl	21* / 24*	60-150			
CNC63	006EW004M1	Tetrachloro-m-xylene	48* / 52*	60-150		006EW004M1	No flags applied (EB)
		Decachlorobiphenyl	40* / 42*	60-150			
CNC119	006SB04901	Tetrachloro-m-xylene	40* / 38*	60-150		006SB04901	Detects-J, non-detects-UJ
		Decachlorobiphenyl	48* / 42*	60-150			
CNC119	006SB05901	Tetrachloro-m-xylene	45* / 44*	60-150		006SB05901	Detects-J, non-detects-UJ
		Decachlorobiphenyl	55* / 55*	60-150			

TABLE 12
 Airborne, MS/MSD and LCS Recoveries Out of QC Limits: PCBs
 Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

CNC119	006SB05201	Tetrachloro-m-xylene	43* / 43*	60-150			006SB05201	Detects-J, non-detects-UJ
		Decachlorobiphenyl	52* / 43*	60-150				
CNC119	006CB05201	Tetrachloro-m-xylene	34* / 35*	60-150			006CB05201	Detects-J, non-detects-UJ
		Decachlorobiphenyl	41* / 37*	60-150				
CNC119	006SB05301	Tetrachloro-m-xylene	41* / 37*	60-150			006SB05301	Detects-J, non-detects-UJ
		Decachlorobiphenyl	46* / 45*	60-150				
CNC119	006SB05401	Tetrachloro-m-xylene	32* / 30*	60-150			006SB05401	Detects-J, non-detects-UJ
		Decachlorobiphenyl	40* / 36*	60-150				
CNC119	006SB05501	Tetrachloro-m-xylene	41* / 40*	60-150			006SB05501	Detects-J, non-detects-UJ
		Decachlorobiphenyl	45* / 45*	60-150				
CNC119	006SB05701	Tetrachloro-m-xylene	39* / 37*	60-150			006SB05701	Detects-J, non-detects-UJ
		Decachlorobiphenyl	48* / 56*	60-150				

* - out of control limits

Field Duplicate Samples

All Field Duplicate Samples were within acceptable quality control limits, except as noted in **Table 13** below. No flags are applied due to Field Duplicate precision.

TABLE 13
 Field Duplicate RPDs Out of QC Limits: PCBs
 Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

60277	006SB01901 / 006CB01901	Aroclor-1260	10.8 µg /Kg	6.7 µg /Kg	46.9*	35
CNC63	006SB00701 / 006CB00701	Aroclor-1260	Non-detect	90 µg /Kg	200*	35

* - out of control limits

Initial and Continuing Calibration Criteria

All initial calibration criteria and continuing calibration criteria were met, except as listed in Table 14.

TABLE 14

Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: PCBs
Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

Initial and Continuing Calibration Criteria	Continuing Calibration Criteria	Continuing Calibration Criteria	Continuing Calibration Criteria
SGMECD1#1-CCAL-01/29/02, 1040	Aroclor-1016	16.1% low	S240414*1,2
	Aroclor-1260	42.2% low	S240386*19
SGMECD2#2-CCAL-01/29/02, 1040	Aroclor-1260	15.5% low	S240414*1,2 S240386*19
SGMECD2#2-CCAL-01/29/02, 0848	Aroclor-1260	15.2% low	S240473*1, S240386*1-15
SGMECD1#1-CCAL-02/01/02, 0144	Aroclor-1260	15.9% low	S240473*2, S240386*17
SGMECD2#2-CCAL-02/01/02, 0144	Aroclor-1260	15.6% low	S240473*2, S240386*17
SGMECD1#1-CCAL-02/01/02, 1933	Aroclor-1260	17.7% low	S240386*7DL, 8DL, 18DL, 16, 18
SGMECD2#2-CCAL-02/01/02, 1933	Aroclor-1260	23.3% low	S240386*7DL, 8DL, 18DL, 16, 18
SGMECD1#1-CCAL-02/02/02, 0721	Aroclor-1260	16.7% low	S240386*7DL, 8DL, 18DL, 16, 18
SGMECD1#1,CCAL-01/29/02, 2034	Aroclor-1260	31.7% low	S240386*1-15, 19, S240473*1, S240414*1,2
SGMECD1#1-CCAL-01/30/02, 0821	Aroclor-1260	35.5% low	S240386*1-15, 17, S240473*1,2
SGMECD1#1-CCAL-06/19/02, 1217	Aroclor-1260	17.5% high	CNC116 – All
SGMECD1#1-CCAL-06/19/02, 1813	Aroclor-1260	18.1% high	CNC116 - All
SGKECD1#1-CCAL-06/21/02, 1204	Aroclor-1232	56.3% high	S244399*1-11
SGKECD1#1-CCAL-06/21/02, 1225	Aroclor-1242	31.8% high	S244399*1-11
SGKECD1#1-CCAL-06/21/02, 1246	Aroclor-1248	58.8% high	S244399*1-11

TABLE 14

Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: PCBs
 Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

SGKECD2#2-CCAL-06/21/02, 1204	Aroclor-1232	30.2% high	S244399*1-11
SGKECD2#2-CCAL-06/21/02, 1225	Aroclor-1242	38.9% high	S244399*1-11
SGKECD1#1-CCAL-06/25/02, 1020	Aroclor-1260	17.3% high	S244399*1-11
SGKECD1#1-CCAL-06/25/02, 1715	Aroclor-1260	15.7% high	S244399*1-11
SGKECD1#1-CCAL-06/25/02, 1758	Aroclor-1232	46.1% high	S244399*12
SGKECD1#1-CCAL-06/25/02, 1819	Aroclor-1242	34.2% high	S244399*12
SGKECD1#1-CCAL-06/25/02, 1845	Aroclor-1248	55.4% high	S244399*12
SGKECD1#1-CCAL-06/25/02, 1906	Aroclor-1254	17.3% high	S244399*12
SGKECD2#2-CCAL-06/25/02, 1758	Aroclor-1232	25.6% high	S244399*12
SGKECD2#2-CCAL-06/25/02, 1819	Aroclor-1242	37.5% high	S244399*12

Flags were applied to the compounds in the associated samples in the following manner:

- When the percent difference (%D) was low in the continuing calibration standards, detected compounds were flagged "J" and non-detected compounds were flagged "UJ", as estimated.
- When the percent difference (%D) was high in the continuing calibration standards, detected compounds were flagged "J", as estimated. Non-detected compounds were not flagged.

Second Column Confirmation

The second column confirmation percent difference (%D) for some detected parameters, exceeded the 40 %D criteria. Those results were flagged "J", as estimated. The laboratory reported the lower of the two concentrations. The individual samples and specific compounds that were flagged are listed below.

- Sample 006SB01201 (S240386*6) in SDG CNC63 did not meet criteria for Aroclor-1260.

Inorganic Parameters

Quality Control Review

The following list represents the QA/QC measures that are typically reviewed during the data quality evaluation procedure for inorganic parameters.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Sample preparation, initial calibration blanks/continuing calibration blanks, and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", in which target parameters have been added prior to digestion/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and its duplicate. This information can only be determined when target compounds are detected.
- **Pre/Post Digestion Spike (MS/MSD)** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **ICP Interference Check Sample** – This sample verifies the lab's interelement and background correction factors.
- **Initial Calibration Verification** – This parameter ensures that the instrument is capable of producing acceptable quantitative data for the target analyte list to be measured.
- **Continuing Calibration Verification** – This one-point, mid-range parameter establishes that the initial calibration is still valid by checking the performance of the instrument on a continual basis.
- **ICP Serial Dilution** – The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to the sample matrix.

Metals Analyses

The QA/QC parameters for the Metals analyses for all of the samples were within acceptable control limits, except as noted below.

Blanks

The metals target parameters detected in blank samples are listed in [Table 15](#).

TABLE 15

Blank Contamination: Metals

Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

64538	CCB		CCB	Aluminum	25.3	µg/L	126.5 µg/L
64538	CCB		CCB	Barium	0.232	µg/L	1.16 µg/L
64538	CCB		CCB	Cadmium	0.412	µg/L	2.06 µg/L
64538	CCB		CCB	Calcium	27.7	µg/L	138.5 µg/L
64538	CCB		CCB	Chromium	0.684	µg/L	3.42 µg/L
64538	CCB		CCB	Iron	15.5	µg/L	77.5 µg/L
64538	CCB		CCB	Lead	1.92	µg/L	9.6 µg/L
64538	CCB		CCB	Magnesium	23.6	µg/L	118 µg/L
64538	CCB		CCB	Sodium	160	µg/L	800 µg/L
64538	CCB		CCB	Zinc	1.99	µg/L	9.95 µg/L
64538	1200275679	1200275679	LB	Iron	3.65	µg/L	18.25 µg/L
64538	1200275679	1200275679	LB	Magnesium	6.79	µg/L	33.95 µg/L
64538	1200275679	1200275679	LB	Zinc	1.33	µg/L	6.65 µg/L
64538	006EW001M5	64538008	EB	Calcium	61.5	µg/L	307.5 µg/L
64538	006EW001M5	64538008	EB	Iron	7.640	µg/L	38.2 µg/L
64538	006EW001M5	64538008	EB	Magnesium	99.9	µg/L	499.5 µg/L
64538	006EW001M5	64538008	EB	Potassium	36.2	µg/L	181 µg/L
64538	006EW001M5	64538008	EB	Sodium	655	µg/L	3275 µg/L
64538	006EW001M5	64538008	EB	Zinc	1.450	µg/L	7.25 µg/L

If a target parameter determined to be a common contaminant was reported in a field sample, and the concentration was below the level determined to be due to blank contamination, the following actions were taken:

- If the concentration was above the reporting limit, the numeric result was unchanged, but it was flagged "U", as undetected.
- If the concentration was below the reporting limit, the numeric result was changed to the value of the reporting limit, and it was flagged "U", as undetected.

The results qualified due to blank contamination are listed in **Attachment 1**.

Recoveries - MS/MSD and LCS

All Matrix Spike (MS), Matrix Spike Duplicate (MSD), and Laboratory Control Sample (LCS) recoveries were within acceptable quality control limits, except as noted in **Table 16** below.

TABLE 16
MS/MSD, and LCS Recoveries and RPDs Out of QC Limits: Metals
Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

Sample ID	Sample Description	Parameter	Reporting Limit	Control Limit	Result	RPD	SDG	Qualification
64538	006GW005M5 MS/MSD	Mercury	6.3* / 4.8*	80-120	26.8*	20	64538 - All	Detects-J, non-detects-R
* - out of control limits								

ICP Serial Dilution

All Serial Dilution recoveries were within acceptable quality control limits, except as noted below.

- The serial dilution on sample 006GW005M5 in SDG 64538 had a 67.1 percent difference for Aluminum with a limit of 10 percent. All samples in SDG 64538 were associated with this serial dilution. All positive results were qualified "J" and all non-detects were qualified "UJ".

Rejected Data

The majority of rejected data were associated with re-runs and dilutions (you can only have a single valid result per parameter per sample). However, there were selected results qualified as "R", rejected, due to associated QC parameters out of criteria. The rejected data are summarized in **Table 17** below.

TABLE 17

Data Qualification Summary: Rejected Data
 Charleston Naval Complex, Zone G, SWMU 6, Charleston, SC

64538	006GW001M5	METAL	MERCURY	0.04	UN*	0.04	R	ug/L	MS
64538	006GW002M5	METAL	MERCURY	0.04	UN*	0.04	R	ug/L	MS
64538	006GW003M5	METAL	MERCURY	0.04	UN*	0.04	R	ug/L	MS
64538	006GW004M5	METAL	MERCURY	0.04	UN*	0.04	R	ug/L	MS
64538	006GW005M5	METAL	MERCURY	0.04	UN*	0.04	R	ug/L	MS
64538	006GW006M5	METAL	MERCURY	0.04	UN*	0.04	R	ug/L	MS
64538	006GW007M5	METAL	MERCURY	0.04	UN*	0.04	R	ug/L	MS

Conclusion

A review of the analytical data submitted regarding the investigation of Zone G, SWMU 6 at the Charleston Naval Complex, Charleston, South Carolina by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified.

As discussed above, there was a specific result that were rejected, in which the data cannot be used. With the exception of this result, the validation review demonstrated that the analytical systems were generally in control and the data can be used in the decision making process.

Attachment 1 - Changed Qualifiers and Results
Zone G, SWMU 6 - Data Validation

Lab ID	Sample ID	Element	QID	Sample ID	Lab Sample ID	Unit	Lab Result	Lab Qual	Lab Result	Lab Qual	Unit	Reason
ETAL	SW6010B	ALUMINUM	64538	006GW005M5	64538001	WG	596	E	596	J	ug/L	SD
ETAL	SW6010B	ALUMINUM	64538	006GW001M5	64538002	WG	156	BE	156	J	ug/L	SD
ETAL	SW6010B	ALUMINUM	64538	006GW002M5	64538003	WG	6.19	UE	6.19	UJ	ug/L	SD
ETAL	SW6010B	ALUMINUM	64538	006GW003M5	64538004	WG	44.9	BE	44.9	UJ	ug/L	BL,SD
ETAL	SW6010B	ALUMINUM	64538	006GW004M5	64538005	WG	40.2	BE	40.2	UJ	ug/L	BL,SD
ETAL	SW6010B	ALUMINUM	64538	006GW006M5	64538006	WG	44.1	BE	44.1	UJ	ug/L	BL,SD
ETAL	SW6010B	ALUMINUM	64538	006GW007M5	64538007	WG	30.1	BE	30.1	UJ	ug/L	BL,SD
ETAL	SW6010B	ANTIMONY	64538	006GW001M5	64538002	WG	8.42	B	8.42	J	ug/L	IB
ETAL	SW6010B	ANTIMONY	64538	006GW006M5	64538006	WG	9.16	B	9.16	J	ug/L	IB
ETAL	SW6010B	ARSENIC	60278	006SB03301	60278001	SO	1.47	B	1.47	J	mg/kg	IB
ETAL	SW6010B	ARSENIC	64538	006GW005M5	64538001	WG	6.33	B	6.33	J	ug/L	IB
ETAL	SW6010B	BARIUM	64538	006GW005M5	64538001	WG	33	B	33	J	ug/L	IB
ETAL	SW6010B	BARIUM	64538	006GW001M5	64538002	WG	27.9	B	27.9	J	ug/L	IB
ETAL	SW6010B	BARIUM	64538	006GW002M5	64538003	WG	69.2	B	69.2	J	ug/L	IB
ETAL	SW6010B	BARIUM	64538	006GW006M5	64538006	WG	41	B	41	J	ug/L	IB
ETAL	SW6010B	BARIUM	64538	006GW007M5	64538007	WG	26	B	26	J	ug/L	IB
ETAL	SW6010B	CADMIUM	64538	006GW005M5	64538001	WG	0.262	B	0.262	U	ug/L	BL
ETAL	SW6010B	CADMIUM	64538	006GW001M5	64538002	WG	0.53	B	0.53	U	ug/L	BL
ETAL	SW6010B	CADMIUM	64538	006GW006M5	64538006	WG	0.346	B	0.346	U	ug/L	BL
ETAL	SW6010B	CHROMIUM, TOTAL	64538	006GW001M5	64538002	WG	0.774	B	0.774	U	ug/L	BL
ETAL	SW6010B	CHROMIUM, TOTAL	64538	006GW004M5	64538005	WG	0.57	B	0.57	U	ug/L	BL
ETAL	SW6010B	CHROMIUM, TOTAL	64538	006GW006M5	64538006	WG	0.877	B	0.877	U	ug/L	BL
ETAL	SW6010B	LEAD	64538	006GW004M5	64538005	WG	1.89	B	1.89	U	ug/L	BL
ETAL	SW6010B	LEAD	64538	006GW007M5	64538007	WG	1.64	B	1.64	U	ug/L	BL
ETAL	SW7470A	MERCURY	64538	006GW005M5	64538001	WG	0.04	UN*	0.04	R	ug/L	MS
ETAL	SW7470A	MERCURY	64538	006GW001M5	64538002	WG	0.04	UN*	0.04	R	ug/L	MS
ETAL	SW7470A	MERCURY	64538	006GW002M5	64538003	WG	0.04	UN*	0.04	R	ug/L	MS
ETAL	SW7470A	MERCURY	64538	006GW003M5	64538004	WG	0.04	UN*	0.04	R	ug/L	MS
ETAL	SW7470A	MERCURY	64538	006GW004M5	64538005	WG	0.04	UN*	0.04	R	ug/L	MS
ETAL	SW7470A	MERCURY	64538	006GW006M5	64538006	WG	0.04	UN*	0.04	R	ug/L	MS
ETAL	SW7470A	MERCURY	64538	006GW007M5	64538007	WG	0.04	UN*	0.04	R	ug/L	MS
ETAL	SW6010B	SELENIUM	64538	006GW003M5	64538004	WG	3.4	B	3.4	J	ug/L	IB
ETAL	SW6010B	THALLIUM	64538	006GW001M5	64538002	WG	7.53	B	7.53	J	ug/L	IR

Attachment 1 - Changed Qualifiers and Results
 Zone G, SW 6 - Data Validation

Parameter Class	Analysis Method	Parameter	Site	Sample ID	Lab Sample ID	Matrix	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
METAL	SW6010B	THALLIUM	64538	006GW003M5	64538004	WG	5.24	B	5.24	J	ug/L	IB
METAL	SW6010B	THALLIUM	64538	006GW004M5	64538005	WG	6.12	B	6.12	J	ug/L	IB
METAL	SW6010B	THALLIUM	64538	006GW006M5	64538006	WG	6.79	B	6.79	J	ug/L	IB
METAL	SW6010B	VANADIUM	64538	006GW005M5	64538001	WG	5.63	B	5.63	J	ug/L	IB
METAL	SW6010B	VANADIUM	64538	006GW001M5	64538002	WG	5.38	B	5.38	J	ug/L	IB
METAL	SW6010B	VANADIUM	64538	006GW004M5	64538005	WG	1.82	B	1.82	J	ug/L	IB
METAL	SW6010B	VANADIUM	64538	006GW006M5	64538006	WG	2.68	B	2.68	J	ug/L	IB
METAL	SW6010B	VANADIUM	64538	006GW007M5	64538007	WG	3.81	B	3.81	J	ug/L	IB
PAH	SW8270C	1-Methyl naphthalene	CNC63A	006SB00901	S240386A*1	SO	1.8	J	1.8	J	ug/kg	HT
PAH	SW8270C	1-Methyl naphthalene	CNC63A	006SB01101	S240386A*2	SO	5	J	5	J	ug/kg	HT
PAH	SW8270C	1-Methyl naphthalene	CNC63A	006SB01101DL	S240386A*2*DL	SO	10	DJ	10	R	ug/kg	DL
PAH	SW8270C	1-Methyl naphthalene	CNC63A	006SB01102	S240386A*3	SO	22	J	22	J	ug/kg	HT
PAH	SW8270C	1-Methyl naphthalene	CNC63A	006SB01301	S240386A*4	SO	4.3	J	4.3	J	ug/kg	HT
PAH	SW8270C	1-Methyl naphthalene	CNC63A	006SB01302	S240386A*5	SO	1.7	J	1.7	J	ug/kg	HT
PAH	SW8270C	1-Methyl naphthalene	CNC63A	006CB01302	S240386A*6	SO	8.9	U	8.9	UJ	ug/kg	HT
PAH	SW8270C	2,4-DIMETHYLPHENOL	64538	006GW005M5	64538001	WG	9.7	U	9.7	UJ	ug/L	IC
PAH	SW8270C	2,4-DIMETHYLPHENOL	64538	006GW001M5	64538002	WG	10	U	10	UJ	ug/L	IC
PAH	SW8270C	2,4-DIMETHYLPHENOL	64538	006GW002M5	64538003	WG	10	U	10	UJ	ug/L	IC
PAH	SW8270C	2,4-DIMETHYLPHENOL	64538	006GW003M5	64538004	WG	10.2	U	10.2	UJ	ug/L	IC
PAH	SW8270C	2,4-DIMETHYLPHENOL	64538	006GW004M5	64538005	WG	9.8	U	9.8	UJ	ug/L	IC
PAH	SW8270C	2,4-DIMETHYLPHENOL	64538	006GW006M5	64538006	WG	9.8	U	9.8	UJ	ug/L	IC
PAH	SW8270C	2,4-DINITROPHENOL	64538	006GW005M5	64538001	WG	48.5	U	48.5	UJ	ug/L	IC
PAH	SW8270C	2,4-DINITROPHENOL	64538	006GW001M5	64538002	WG	50	U	50	UJ	ug/L	IC
PAH	SW8270C	2,4-DINITROPHENOL	64538	006GW002M5	64538003	WG	50	U	50	UJ	ug/L	IC
PAH	SW8270C	2,4-DINITROPHENOL	64538	006GW003M5	64538004	WG	51	U	51	UJ	ug/L	IC
PAH	SW8270C	2,4-DINITROPHENOL	64538	006GW004M5	64538005	WG	49	U	49	UJ	ug/L	IC
PAH	SW8270C	2,4-DINITROPHENOL	64538	006GW006M5	64538006	WG	49	U	49	UJ	ug/L	IC
PAH	SW8270C	2,4-DINITROPHENOL	64538	006GW007M5	64538007	WG	50	U	50	UJ	ug/L	IC
PAH	SW8270C	2-METHYLNAPHTHALENE	CNC63A	006SB00901	S240386A*1	SO	1.6	J	1.6	J	ug/kg	HT
PAH	SW8270C	2-METHYLNAPHTHALENE	CNC63A	006SB01101	S240386A*2	SO	22	=	22	J	ug/kg	HT
PAH	SW8270C	2-METHYLNAPHTHALENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	27	DJ	27	R	ug/kg	DL
PAH	SW8270C	2-METHYLNAPHTHALENE	CNC63A	006SB01102	S240386A*3	SO	32	J	32	J	ug/kg	HT
PAH	SW8270C	2-METHYLNAPHTHALENE	CNC63A	006SB01301	S240386A*4	SO	3.9	J	3.9	J	ug/kg	HT

Attachment 1 - Changed Qualifiers and Results
 Zone G, SWMU 6 - Data Validation

Sample ID	SWMU	Contaminant	Sample ID	Sample ID	Sample ID	Unit	Value	Qualifier	Value	Qualifier	Unit	Reason
SW8270C	2-METHYLNAPHTHALENE	CNC63A	006SB01302	S240386A*5	SO	1.7	J	1.7	J	ug/kg	HT	
SW8270C	2-METHYLNAPHTHALENE	CNC63A	006CB01302	S240386A*6	SO	1.3	J	1.3	J	ug/kg	HT	
SW8270C	2-NITROPHENOL	64538	006GW007M5	64538007	WG	10	U	10	UJ	ug/L	IC	
SW8270C	ACENAPHTHENE	60279	006EB001M2RE	60279001	WQ	0.1	J	0.1	R	ug/L	RE	
SW8270C	ACENAPHTHENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE	
SW8270C	ACENAPHTHENE	CNC63A	006SB00901	S240386A*1	SO	13	=	13	J	ug/kg	HT	
SW8270C	ACENAPHTHENE	CNC63A	006SB01101	S240386A*2	SO	12	=	12	J	ug/kg	HT	
SW8270C	ACENAPHTHENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	13	DJ	13	R	ug/kg	DL	
SW8270C	ACENAPHTHENE	CNC63A	006SB01102	S240386A*3	SO	91	=	91	J	ug/kg	HT	
SW8270C	ACENAPHTHENE	CNC63A	006SB01301	S240386A*4	SO	7.7	U	7.7	UJ	ug/kg	HT	
SW8270C	ACENAPHTHENE	CNC63A	006SB01302	S240386A*5	SO	8.7	U	8.7	UJ	ug/kg	HT	
SW8270C	ACENAPHTHENE	CNC63A	006CB01302	S240386A*6	SO	8.9	U	8.9	UJ	ug/kg	HT	
SW8270C	ACENAPHTHYLENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE	
SW8270C	ACENAPHTHYLENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE	
SW8270C	ACENAPHTHYLENE	CNC63A	006SB00901	S240386A*1	SO	5.5	J	5.5	J	ug/kg	HT	
SW8270C	ACENAPHTHYLENE	CNC63A	006SB01101	S240386A*2	SO	180	=	180	J	ug/kg	HT	
SW8270C	ACENAPHTHYLENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	170	D	170	R	ug/kg	DL	
SW8270C	ACENAPHTHYLENE	CNC63A	006SB01102	S240386A*3	SO	59	=	59	J	ug/kg	HT	
SW8270C	ACENAPHTHYLENE	CNC63A	006SB01301	S240386A*4	SO	12	=	12	J	ug/kg	HT	
SW8270C	ACENAPHTHYLENE	CNC63A	006SB01302	S240386A*5	SO	13	=	13	J	ug/kg	HT	
SW8270C	ACENAPHTHYLENE	CNC63A	006CB01302	S240386A*6	SO	8.8	J	8.8	J	ug/kg	HT	
SW8270C	ANTHRACENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE	
SW8270C	ANTHRACENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE	
SW8270C	ANTHRACENE	CNC63A	006SB00901	S240386A*1	SO	27	=	27	J	ug/kg	HT	
SW8270C	ANTHRACENE	CNC63A	006SB01101	S240386A*2	SO	170	=	170	J	ug/kg	HT	
SW8270C	ANTHRACENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	200	D	200	R	ug/kg	DL	
SW8270C	ANTHRACENE	CNC63A	006SB01102	S240386A*3	SO	370	=	370	J	ug/kg	HT	
SW8270C	ANTHRACENE	CNC63A	006SB01301	S240386A*4	SO	8	=	8	J	ug/kg	HT	
SW8270C	ANTHRACENE	CNC63A	006SB01302	S240386A*5	SO	12	=	12	J	ug/kg	HT	
SW8270C	ANTHRACENE	CNC63A	006CB01302	S240386A*6	SO	5.5	J	5.5	J	ug/kg	HT	
SW8270C	BENZO(a)ANTHRACENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE	
SW8270C	BENZO(a)ANTHRACENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE	
SW8270C	BENZO(a)ANTHRACENE	CNC63A	006SB00901	S240386A*1	SO	200	=	200	J	ug/kg	HT	

Attachment 1 - Changed Qualifiers and Results
 Zone G, SW 5 - Data Validation

Parent Compound	Sample ID	Compound Name	Site	Sample ID	Lab Sample ID	Unit	Lab Result	Qualifier	Final Result	Qualifier	Unit	Reason
PAH	SW8270C	BENZO(a)ANTHRACENE	CNC63A	006SB01101	S240386A*2	SO	1000	E	1000	R	ug/kg	LR
PAH	SW8270C	BENZO(a)ANTHRACENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	1300	D	1300	J	ug/kg	HT
PAH	SW8270C	BENZO(a)ANTHRACENE	CNC63A	006SB01102	S240386A*3	SO	1300	=	1300	J	ug/kg	HT
PAH	SW8270C	BENZO(a)ANTHRACENE	CNC63A	006SB01301	S240386A*4	SO	33	=	33	J	ug/kg	HT
PAH	SW8270C	BENZO(a)ANTHRACENE	CNC63A	006SB01302	S240386A*5	SO	42	=	42	J	ug/kg	HT
PAH	SW8270C	BENZO(a)ANTHRACENE	CNC63A	006CB01302	S240386A*6	SO	22	=	22	J	ug/kg	HT
PAH	SW8270C	BENZO(a)PYRENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE
PAH	SW8270C	BENZO(a)PYRENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
PAH	SW8270C	BENZO(a)PYRENE	CNC63A	006SB00901	S240386A*1	SO	210	=	210	J	ug/kg	HT
PAH	SW8270C	BENZO(a)PYRENE	CNC63A	006SB01101	S240386A*2	SO	460	=	460	J	ug/kg	HT
PAH	SW8270C	BENZO(a)PYRENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	920	D	920	R	ug/kg	DL
PAH	SW8270C	BENZO(a)PYRENE	CNC63A	006SB01102	S240386A*3	SO	800	=	800	J	ug/kg	HT
PAH	SW8270C	BENZO(a)PYRENE	CNC63A	006SB01301	S240386A*4	SO	52	=	52	J	ug/kg	HT
PAH	SW8270C	BENZO(a)PYRENE	CNC63A	006SB01302	S240386A*5	SO	52	=	52	J	ug/kg	HT
PAH	SW8270C	BENZO(a)PYRENE	CNC63A	006CB01302	S240386A*6	SO	33	=	33	J	ug/kg	HT
PAH	SW8270C	BENZO(b)FLUORANTHENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE
PAH	SW8270C	BENZO(b)FLUORANTHENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
PAH	SW8270C	BENZO(b)FLUORANTHENE	CNC63A	006SB00901	S240386A*1	SO	280	=	280	J	ug/kg	HT
PAH	SW8270C	BENZO(b)FLUORANTHENE	CNC63A	006SB01101	S240386A*2	SO	680	=	680	J	ug/kg	HT
PAH	SW8270C	BENZO(b)FLUORANTHENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	660	D	660	R	ug/kg	DL
PAH	SW8270C	BENZO(b)FLUORANTHENE	CNC63A	006SB01102	S240386A*3	SO	1100	=	1100	J	ug/kg	HT
PAH	SW8270C	BENZO(b)FLUORANTHENE	CNC63A	006SB01301	S240386A*4	SO	79	=	79	J	ug/kg	HT
PAH	SW8270C	BENZO(b)FLUORANTHENE	CNC63A	006SB01302	S240386A*5	SO	78	=	78	J	ug/kg	HT
PAH	SW8270C	BENZO(b)FLUORANTHENE	CNC63A	006CB01302	S240386A*6	SO	35	=	35	J	ug/kg	HT
PAH	SW8270C	BENZO(g,h,i)PERYLENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE
PAH	SW8270C	BENZO(g,h,i)PERYLENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
PAH	SW8270C	BENZO(g,h,i)PERYLENE	61956	006SB04401	61956001	SO	372	=	372	J	ug/kg	CC
PAH	SW8270C	BENZO(g,h,i)PERYLENE	61956	006SB04403	61956002	SO	101	=	101	J	ug/kg	CC
PAH	SW8270C	BENZO(g,h,i)PERYLENE	61956	006SB04402	61956003	SO	69.8	=	69.8	J	ug/kg	CC
PAH	SW8270C	BENZO(g,h,i)PERYLENE	61956	006SB04502	61956004	SO	510	=	510	J	ug/kg	CC
PAH	SW8270C	BENZO(g,h,i)PERYLENE	61956	006CB04502	61956005	SO	1980	=	1980	J	ug/kg	CC
PAH	SW8270C	BENZO(g,h,i)PERYLENE	61956	006SB04601	61956006	SO	229	=	229	J	ug/kg	CC
PAH	SW8270C	BENZO(g,h,i)PERYLENE	61956	006SB04603	61956007	SO	33.8	J	33.8	J	ug/kg	CC

Attachment 1 - Changed Qualifiers and Results
 Zone G, SWMU 6 - Data Validation

Sample ID	Location	Contaminant	State	Sample ID	Lab Sample ID	Unit	Result	Qualifier	Result	Qualifier	Unit	Reference
AH	SW8270C	BENZO(g,h,i)PERYLENE	61956	006SB04703	61956009	SO	91.3	=	91.3	J	ug/kg	CC
AH	SW8270C	BENZO(g,h,i)PERYLENE	CNC63A	006SB00901	S240386A*1	SO	160	=	160	J	ug/kg	HT
AH	SW8270C	BENZO(g,h,i)PERYLENE	CNC63A	006SB01101	S240386A*2	SO	220	=	220	J	ug/kg	HT
AH	SW8270C	BENZO(g,h,i)PERYLENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	330	D	330	R	ug/kg	DL
AH	SW8270C	BENZO(g,h,i)PERYLENE	CNC63A	006SB01102	S240386A*3	SO	520	=	520	J	ug/kg	HT
AH	SW8270C	BENZO(g,h,i)PERYLENE	CNC63A	006SB01301	S240386A*4	SO	28	=	28	J	ug/kg	HT
AH	SW8270C	BENZO(g,h,i)PERYLENE	CNC63A	006SB01302	S240386A*5	SO	32	=	32	J	ug/kg	HT
AH	SW8270C	BENZO(g,h,i)PERYLENE	CNC63A	006CB01302	S240386A*6	SO	20	=	20	J	ug/kg	HT
AH	SW8270C	BENZO(k)FLUORANTHENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE
AH	SW8270C	BENZO(k)FLUORANTHENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
AH	SW8270C	BENZO(k)FLUORANTHENE	CNC63A	006SB00901	S240386A*1	SO	150	=	150	J	ug/kg	HT
AH	SW8270C	BENZO(k)FLUORANTHENE	CNC63A	006SB01101	S240386A*2	SO	580	=	580	J	ug/kg	HT
AH	SW8270C	BENZO(k)FLUORANTHENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	840	D	840	R	ug/kg	DL
AH	SW8270C	BENZO(k)FLUORANTHENE	CNC63A	006SB01102	S240386A*3	SO	790	=	790	J	ug/kg	HT
AH	SW8270C	BENZO(k)FLUORANTHENE	CNC63A	006SB01301	S240386A*4	SO	46	=	46	J	ug/kg	HT
AH	SW8270C	BENZO(k)FLUORANTHENE	CNC63A	006SB01302	S240386A*5	SO	50	=	50	J	ug/kg	HT
AH	SW8270C	BENZO(k)FLUORANTHENE	CNC63A	006CB01302	S240386A*6	SO	34	=	34	J	ug/kg	HT
AH	SW8270C	bis(2-ETHYLHEXYL) PHTHALATE	64538	006GW005M5	64538001	WG	3.6	JB	9.7	U	ug/L	BL
AH	SW8270C	bis(2-ETHYLHEXYL) PHTHALATE	64538	006GW001M5	64538002	WG	3.9	JB	10	U	ug/L	BL
AH	SW8270C	bis(2-ETHYLHEXYL) PHTHALATE	64538	006GW002M5	64538003	WG	4.4	JB	10	U	ug/L	BL
AH	SW8270C	bis(2-ETHYLHEXYL) PHTHALATE	64538	006GW003M5	64538004	WG	7	JB	10.2	U	ug/L	BL
AH	SW8270C	bis(2-ETHYLHEXYL) PHTHALATE	64538	006GW004M5	64538005	WG	3.5	JB	9.8	U	ug/L	BL
AH	SW8270C	bis(2-ETHYLHEXYL) PHTHALATE	64538	006GW006M5	64538006	WG	3.8	JB	9.8	U	ug/L	BL
AH	SW8270C	bis(2-ETHYLHEXYL) PHTHALATE	64538	006GW007M5	64538007	WG	3.7	JB	10	U	ug/L	BL
AH	SW8270C	CHRYSENE	60279	006EB001M2RE	60279001	WQ	0.12	J	0.12	R	ug/L	RE
AH	SW8270C	CHRYSENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
AH	SW8270C	CHRYSENE	CNC63A	006SB00901	S240386A*1	SO	220	=	220	J	ug/kg	HT
AH	SW8270C	CHRYSENE	CNC63A	006SB01101	S240386A*2	SO	760	=	760	J	ug/kg	HT
AH	SW8270C	CHRYSENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	980	D	980	R	ug/kg	DL
AH	SW8270C	CHRYSENE	CNC63A	006SB01102	S240386A*3	SO	1000	=	1000	J	ug/kg	HT
AH	SW8270C	CHRYSENE	CNC63A	006SB01301	S240386A*4	SO	55	=	55	J	ug/kg	HT
AH	SW8270C	CHRYSENE	CNC63A	006SB01302	S240386A*5	SO	57	=	57	J	ug/kg	HT
AH	SW8270C	CHRYSENE	CNC63A	006CB01302	S240386A*6	SO	30	=	30	J	ug/kg	HT

Attachment 1 - Changed Qualifiers and Results
 Zone G, SW 6 - Data Validation

Parental Class	Method	Contaminant	SPC	Sample ID	Lab Sample ID	Unit	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
PAH	SW8270C	DIBENZ(a,h)ANTHRACENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE
PAH	SW8270C	DIBENZ(a,h)ANTHRACENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
PAH	SW8270C	DIBENZ(a,h)ANTHRACENE	CNC63A	006SB00901	S240386A*1	SO	44	=	44	J	ug/kg	HT
PAH	SW8270C	DIBENZ(a,h)ANTHRACENE	CNC63A	006SB01101	S240386A*2	SO	180	=	180	J	ug/kg	HT
PAH	SW8270C	DIBENZ(a,h)ANTHRACENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	180	D	180	R	ug/kg	DL
PAH	SW8270C	DIBENZ(a,h)ANTHRACENE	CNC63A	006SB01102	S240386A*3	SO	210	=	210	J	ug/kg	HT
PAH	SW8270C	DIBENZ(a,h)ANTHRACENE	CNC63A	006SB01301	S240386A*4	SO	12	=	12	J	ug/kg	HT
PAH	SW8270C	DIBENZ(a,h)ANTHRACENE	CNC63A	006SB01302	S240386A*5	SO	14	=	14	J	ug/kg	HT
PAH	SW8270C	DIBENZ(a,h)ANTHRACENE	CNC63A	006CB01302	S240386A*6	SO	8.6	J	8.6	J	ug/kg	HT
PAH	SW8270C	FLUORANTHENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE
PAH	SW8270C	FLUORANTHENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
PAH	SW8270C	FLUORANTHENE	CNC63A	006SB00901	S240386A*1	SO	400	=	400	J	ug/kg	HT
PAH	SW8270C	FLUORANTHENE	CNC63A	006SB01101	S240386A*2	SO	1200	E	1200	R	ug/kg	LR
PAH	SW8270C	FLUORANTHENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	1600	D	1600	J	ug/kg	HT
PAH	SW8270C	FLUORANTHENE	CNC63A	006SB01102	S240386A*3	SO	2300	=	2300	J	ug/kg	HT
PAH	SW8270C	FLUORANTHENE	CNC63A	006SB01301	S240386A*4	SO	57	=	57	J	ug/kg	HT
PAH	SW8270C	FLUORANTHENE	CNC63A	006SB01302	S240386A*5	SO	69	=	69	J	ug/kg	HT
PAH	SW8270C	FLUORANTHENE	CNC63A	006CB01302	S240386A*6	SO	34	=	34	J	ug/kg	HT
PAH	SW8270C	FLUORENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE
PAH	SW8270C	FLUORENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
PAH	SW8270C	FLUORENE	CNC63A	006SB00901	S240386A*1	SO	8.6	=	8.6	J	ug/kg	HT
PAH	SW8270C	FLUORENE	CNC63A	006SB01101	S240386A*2	SO	50	=	50	J	ug/kg	HT
PAH	SW8270C	FLUORENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	56	D	56	R	ug/kg	DL
PAH	SW8270C	FLUORENE	CNC63A	006SB01102	S240386A*3	SO	130	=	130	J	ug/kg	HT
PAH	SW8270C	FLUORENE	CNC63A	006SB01301	S240386A*4	SO	7.7	U	7.7	UJ	ug/kg	HT
PAH	SW8270C	FLUORENE	CNC63A	006SB01302	S240386A*5	SO	2	J	2	J	ug/kg	HT
PAH	SW8270C	FLUORENE	CNC63A	006CB01302	S240386A*6	SO	1.6	J	1.6	J	ug/kg	HT
PAH	SW8270C	INDENO(1,2,3-c,d)PYRENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE
PAH	SW8270C	INDENO(1,2,3-c,d)PYRENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
PAH	SW8270C	INDENO(1,2,3-c,d)PYRENE	CNC63A	006SB00901	S240386A*1	SO	150	=	150	J	ug/kg	HT
PAH	SW8270C	INDENO(1,2,3-c,d)PYRENE	CNC63A	006SB01101	S240386A*2	SO	180	=	180	J	ug/kg	HT
PAH	SW8270C	INDENO(1,2,3-c,d)PYRENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	370	D	370	R	ug/kg	DL
PAH	SW8270C	INDENO(1,2,3-c,d)PYRENE	CNC63A	006SB01102	S240386A*3	SO	420	=	420	J	ug/kg	HT

Attachment 1 - Changed Qualifiers and Results
Zone G, SWMU 6 - Data Validation

Client	Location	Contaminant	Lab	Sample ID	Lab Sample ID	Unit	Req. Form	Req. Qua	Test Result	Test Qual	Unit	Reasons
AH	SW8270C	INDENO(1,2,3-c,d)PYRENE	CNC63A	006SB01301	S240386A*4	SO	25	=	25	J	ug/kg	HT
AH	SW8270C	INDENO(1,2,3-c,d)PYRENE	CNC63A	006SB01302	S240386A*5	SO	26	=	26	J	ug/kg	HT
AH	SW8270C	INDENO(1,2,3-c,d)PYRENE	CNC63A	006CB01302	S240386A*6	SO	18	=	18	J	ug/kg	HT
AH	SW8270C	NAPHTHALENE	60279	006EB001M2RE	60279001	WQ	10	U	10	R	ug/L	RE
AH	SW8270C	NAPHTHALENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
AH	SW8270C	NAPHTHALENE	CNC63A	006SB00901	S240386A*1	SO	1.5	J	1.5	J	ug/kg	HT
AH	SW8270C	NAPHTHALENE	CNC63A	006SB01101	S240386A*2	SO	13	=	13	J	ug/kg	HT
AH	SW8270C	NAPHTHALENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	15	DJ	15	R	ug/kg	DL
AH	SW8270C	NAPHTHALENE	CNC63A	006SB01102	S240386A*3	SO	34	=	34	J	ug/kg	HT
AH	SW8270C	NAPHTHALENE	CNC63A	006SB01301	S240386A*4	SO	2.2	J	2.2	J	ug/kg	HT
AH	SW8270C	NAPHTHALENE	CNC63A	006SB01302	S240386A*5	SO	2.1	J	2.1	J	ug/kg	HT
AH	SW8270C	NAPHTHALENE	CNC63A	006CB01302	S240386A*6	SO	1.4	J	1.4	J	ug/kg	HT
AH	SW8270C	PHENANTHRENE	60279	006EB001M2RE	60279001	WQ	0.14	J	0.14	R	ug/L	RE
AH	SW8270C	PHENANTHRENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
AH	SW8270C	PHENANTHRENE	CNC63A	006SB00901	S240386A*1	SO	160	=	160	J	ug/kg	HT
AH	SW8270C	PHENANTHRENE	CNC63A	006SB01101	S240386A*2	SO	390	=	390	J	ug/kg	HT
AH	SW8270C	PHENANTHRENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	460	D	460	R	ug/kg	DL
AH	SW8270C	PHENANTHRENE	CNC63A	006SB01102	S240386A*3	SO	970	=	970	J	ug/kg	HT
AH	SW8270C	PHENANTHRENE	CNC63A	006SB01301	S240386A*4	SO	19	=	19	J	ug/kg	HT
AH	SW8270C	PHENANTHRENE	CNC63A	006SB01302	S240386A*5	SO	18	=	18	J	ug/kg	HT
AH	SW8270C	PHENANTHRENE	CNC63A	006CB01302	S240386A*6	SO	7.6	J	7.6	J	ug/kg	HT
AH	SW8270C	PYRENE	60279	006EB001M2RE	60279001	WQ	4.4	J	4.4	R	ug/L	RE
AH	SW8270C	PYRENE	60279	006EB017M2RE	60279002	WQ	9.7	U	9.7	R	ug/L	RE
AH	SW8270C	PYRENE	CNC63A	006SB00901	S240386A*1	SO	320	=	320	J	ug/kg	HT
AH	SW8270C	PYRENE	CNC63A	006SB01101	S240386A*2	SO	990	E	990	R	ug/kg	LR
AH	SW8270C	PYRENE	CNC63A	006SB01101DL	S240386A*2*DL	SO	1400	D	1400	J	ug/kg	HT
AH	SW8270C	PYRENE	CNC63A	006SB01102	S240386A*3	SO	2500	=	2500	J	ug/kg	HT
AH	SW8270C	PYRENE	CNC63A	006SB01301	S240386A*4	SO	52	=	52	J	ug/kg	HT
AH	SW8270C	PYRENE	CNC63A	006SB01302	S240386A*5	SO	67	=	67	J	ug/kg	HT
AH	SW8270C	PYRENE	CNC63A	006CB01302	S240386A*6	SO	35	=	35	J	ug/kg	HT
CB	SW8082	PCB-1016 (AROCHLOR 1016)	60277	006MB00101	60277001	SO	6.1	U	6.1	UJ	ug/kg	MD
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB04901	S244399*1	SO	46	U	46	UJ	ug/kg	CC, SS
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB04901RE	S244399*1*RE	SO	46	U	46	R	ug/kg	RE

Attachment 1 - Changed Qualifiers and Results
 Zone G, SW - Data Validation

Class	Method	Contaminant	SIR	Sample ID	Lab Sample ID	Matrix	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05701	S244399*10	SO	46	U	46	UJ	ug/kg	SS
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05701RE	S244399*10*RE	SO	46	U	46	R	ug/kg	RE
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05803RE	S244399*11*RE	SO	210	U	210	R	ug/kg	RE
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05001RE	S244399*2*RE	SO	40	U	40	R	ug/kg	RE
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05901	S244399*3	SO	41	U	41	UJ	ug/kg	SS
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05901RE	S244399*3*RE	SO	41	U	41	R	ug/kg	RE
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05201	S244399*4	SO	46	U	46	UJ	ug/kg	SS
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05201RE	S244399*4*RE	SO	46	U	46	R	ug/kg	RE
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006CB05201	S244399*5	SO	40	U	40	UJ	ug/kg	SS
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006CB05201RE	S244399*5*RE	SO	40	U	40	R	ug/kg	RE
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05301	S244399*6	SO	42	U	42	UJ	ug/kg	SS
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05301RE	S244399*6*RE	SO	42	U	42	R	ug/kg	RE
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05401	S244399*7	SO	39	U	39	UJ	ug/kg	SS
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05401RE	S244399*7*RE	SO	39	U	39	R	ug/kg	RE
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05501	S244399*8	SO	43	U	43	UJ	ug/kg	SS
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05501RE	S244399*8*RE	SO	43	U	43	R	ug/kg	RE
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC119	006SB05601RE	S244399*9*RE	SO	190	U	190	R	ug/kg	RE
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC63	006SB00601DL	S240386*18*DL	SO	930	U	930	R	ug/kg	DL
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC63	006SB01401DL	S240386*7*DL	SO	1900	U	1900	R	ug/kg	DL
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC63	006SB01402DL	S240386*8*DL	SO	800	U	800	R	ug/kg	DL
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC63	006GW004M1	S240414*1	WG	1	U	1	UJ	ug/l	CC, SS
CB	SW8082	PCB-1016 (AROCHLOR 1016)	CNC63	006EW004M1	S240414*2	WQ	1	U	1	R	ug/l	RE
CB	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB04901	S244399*1	SO	46	U	46	UJ	ug/kg	SS
CB	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB04901RE	S244399*1*RE	SO	46	U	46	R	ug/kg	RE
CB	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05701	S244399*10	SO	46	U	46	UJ	ug/kg	SS
CB	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05701RE	S244399*10*RE	SO	46	U	46	R	ug/kg	RE
CB	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05803RE	S244399*11*RE	SO	210	U	210	R	ug/kg	RE
CB	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05001RE	S244399*2*RE	SO	40	U	40	R	ug/kg	RE
CB	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05901	S244399*3	SO	41	U	41	UJ	ug/kg	SS
CB	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05901RE	S244399*3*RE	SO	41	U	41	R	ug/kg	RE
CB	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05201	S244399*4	SO	46	U	46	UJ	ug/kg	SS
CB	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05201RE	S244399*4*RE	SO	46	U	46	R	ug/kg	RE
CB	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006CB05201	S244399*5	SO	40	U	40	UJ	ug/kg	SS

Attachment 1 - Changed Qualifiers and Results
 Zone G, SWMU 6 - Data Validation

Sample ID	Location	Contaminant	Method	Sample ID	Unit	Result	Qualifier	Result	Qualifier	Unit	Reasons	
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006CB05201RE	S244399*5*RE	SO	40	U	40	R	ug/kg	RE
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05301	S244399*6	SO	42	U	42	UJ	ug/kg	SS
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05301RE	S244399*6*RE	SO	42	U	42	R	ug/kg	RE
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05401	S244399*7	SO	39	U	39	UJ	ug/kg	SS
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05401RE	S244399*7*RE	SO	39	U	39	R	ug/kg	RE
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05501	S244399*8	SO	43	U	43	UJ	ug/kg	SS
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05501RE	S244399*8*RE	SO	43	U	43	R	ug/kg	RE
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC119	006SB05601RE	S244399*9*RE	SO	190	U	190	R	ug/kg	RE
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC63	006SB00601DL	S240386*18*DL	SO	930	U	930	R	ug/kg	DL
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC63	006SB01401DL	S240386*7*DL	SO	1900	U	1900	R	ug/kg	DL
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC63	006SB01402DL	S240386*8*DL	SO	800	U	800	R	ug/kg	DL
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC63	006GW004M1	S240414*1	WG	1	U	1	UJ	ug/l	SS
B	SW8082	PCB-1221 (AROCHLOR 1221)	CNC63	006EW004M1	S240414*2	WQ	1	U	1	R	ug/l	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB04901	S244399*1	SO	46	U	46	UJ	ug/kg	SS
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB04901RE	S244399*1*RE	SO	46	U	46	R	ug/kg	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05701	S244399*10	SO	46	U	46	UJ	ug/kg	SS
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05701RE	S244399*10*RE	SO	46	U	46	R	ug/kg	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05803RE	S244399*11*RE	SO	210	U	210	R	ug/kg	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05001RE	S244399*2*RE	SO	40	U	40	R	ug/kg	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05901	S244399*3	SO	41	U	41	UJ	ug/kg	SS
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05901RE	S244399*3*RE	SO	41	U	41	R	ug/kg	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05201	S244399*4	SO	46	U	46	UJ	ug/kg	SS
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05201RE	S244399*4*RE	SO	46	U	46	R	ug/kg	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006CB05201	S244399*5	SO	40	U	40	UJ	ug/kg	SS
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006CB05201RE	S244399*5*RE	SO	40	U	40	R	ug/kg	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05301	S244399*6	SO	42	U	42	UJ	ug/kg	SS
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05301RE	S244399*6*RE	SO	42	U	42	R	ug/kg	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05401	S244399*7	SO	39	U	39	UJ	ug/kg	SS
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05401RE	S244399*7*RE	SO	39	U	39	R	ug/kg	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05501	S244399*8	SO	43	U	43	UJ	ug/kg	SS
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05501RE	S244399*8*RE	SO	43	U	43	R	ug/kg	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC119	006SB05601RE	S244399*9*RE	SO	190	U	190	R	ug/kg	RE
B	SW8082	PCB-1232 (AROCHLOR 1232)	CNC63	006SB00601DL	S240386*18*DL	SO	930	U	930	R	ug/kg	DL

Attachment 1 - Changed Qualifiers and Results
 Zone G, SW 6 - Data Validation

Sample Class	Site	Sample ID	SP4	Sample ID	Lab Sample ID	Unit	Lab Result	Lab Qual	Final Result	Final Qual	Unit	Reasons
PCB	SW8082	PCB-1232 (AROCHLOR 1232)	CNC63	006SB01401DL	S240386*7*DL	SO	1900	U	1900	R	ug/kg	DL
PCB	SW8082	PCB-1232 (AROCHLOR 1232)	CNC63	006SB01402DL	S240386*8*DL	SO	800	U	800	R	ug/kg	DL
PCB	SW8082	PCB-1232 (AROCHLOR 1232)	CNC63	006GW004M1	S240414*1	WG	1	U	1	UJ	ug/l	SS
PCB	SW8082	PCB-1232 (AROCHLOR 1232)	CNC63	006EW004M1	S240414*2	WQ	1	U	1	R	ug/l	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB04901	S244399*1	SO	46	U	46	UJ	ug/kg	SS
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB04901RE	S244399*1*RE	SO	46	U	46	R	ug/kg	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05701	S244399*10	SO	46	U	46	UJ	ug/kg	SS
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05701RE	S244399*10*RE	SO	46	U	46	R	ug/kg	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05803RE	S244399*11*RE	SO	210	U	210	R	ug/kg	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05001RE	S244399*2*RE	SO	40	U	40	R	ug/kg	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05901	S244399*3	SO	41	U	41	UJ	ug/kg	SS
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05901RE	S244399*3*RE	SO	41	U	41	R	ug/kg	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05201	S244399*4	SO	46	U	46	UJ	ug/kg	SS
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05201RE	S244399*4*RE	SO	46	U	46	R	ug/kg	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006CB05201	S244399*5	SO	40	U	40	UJ	ug/kg	SS
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006CB05201RE	S244399*5*RE	SO	40	U	40	R	ug/kg	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05301	S244399*6	SO	42	U	42	UJ	ug/kg	SS
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05301RE	S244399*6*RE	SO	42	U	42	R	ug/kg	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05401	S244399*7	SO	39	U	39	UJ	ug/kg	SS
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05401RE	S244399*7*RE	SO	39	U	39	R	ug/kg	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05501	S244399*8	SO	43	U	43	UJ	ug/kg	SS
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05501RE	S244399*8*RE	SO	43	U	43	R	ug/kg	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC119	006SB05601RE	S244399*9*RE	SO	190	U	190	R	ug/kg	RE
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC63	006SB00601DL	S240386*18*DL	SO	930	U	930	R	ug/kg	DL
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC63	006SB01401DL	S240386*7*DL	SO	1900	U	1900	R	ug/kg	DL
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC63	006SB01402DL	S240386*8*DL	SO	800	U	800	R	ug/kg	DL
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC63	006GW004M1	S240414*1	WG	1	U	1	UJ	ug/l	SS
PCB	SW8082	PCB-1242 (AROCHLOR 1242)	CNC63	006EW004M1	S240414*2	WQ	1	U	1	R	ug/l	RE
PCB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB04901	S244399*1	SO	46	U	46	UJ	ug/kg	SS
PCB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB04901RE	S244399*1*RE	SO	46	U	46	R	ug/kg	RE
PCB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05701	S244399*10	SO	46	U	46	UJ	ug/kg	SS
PCB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05701RE	S244399*10*RE	SO	46	U	46	R	ug/kg	RE
PCB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05803RE	S244399*11*RE	SO	210	U	210	R	ug/kg	RE

Attachment 1 - Changed Qualifiers and Results
Zone G, SWMU 6 - Data Validation

Sample ID	Analysis Method	Sample ID	Site	Sample ID	Lab Sample ID	Matrix	Units	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05001RE	S244399*2*RE	SO	40	U	40	R	ug/kg	RE	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05901	S244399*3	SO	41	U	41	UJ	ug/kg	SS	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05901RE	S244399*3*RE	SO	41	U	41	R	ug/kg	RE	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05201	S244399*4	SO	46	U	46	UJ	ug/kg	SS	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05201RE	S244399*4*RE	SO	46	U	46	R	ug/kg	RE	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006CB05201	S244399*5	SO	40	U	40	UJ	ug/kg	SS	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006CB05201RE	S244399*5*RE	SO	40	U	40	R	ug/kg	RE	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05301	S244399*6	SO	42	U	42	UJ	ug/kg	SS	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05301RE	S244399*6*RE	SO	42	U	42	R	ug/kg	RE	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05401	S244399*7	SO	39	U	39	UJ	ug/kg	SS	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05401RE	S244399*7*RE	SO	39	U	39	R	ug/kg	RE	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05501	S244399*8	SO	43	U	43	UJ	ug/kg	SS	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05501RE	S244399*8*RE	SO	43	U	43	R	ug/kg	RE	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC119	006SB05601RE	S244399*9*RE	SO	190	U	190	R	ug/kg	RE	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC63	006SB00601DL	S240386*18*DL	SO	930	U	930	R	ug/kg	DL	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC63	006SB01401DL	S240386*7*DL	SO	1900	U	1900	R	ug/kg	DL	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC63	006SB01402DL	S240386*8*DL	SO	800	U	800	R	ug/kg	DL	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC63	006GW004M1	S240414*1	WG	1	U	1	UJ	ug/l	SS	
CB	SW8082	PCB-1248 (AROCHLOR 1248)	CNC63	006EW004M1	S240414*2	WQ	1	U	1	R	ug/l	RE	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	60277	006SB01901	60277004	SO	8.1	P	8.1	=	ug/kg	OT	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB04901	S244399*1	SO	93	U	93	UJ	ug/kg	SS	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB04901RE	S244399*1*RE	SO	93	U	93	R	ug/kg	RE	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05701	S244399*10	SO	94	U	94	UJ	ug/kg	SS	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05701RE	S244399*10*RE	SO	94	U	94	R	ug/kg	RE	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05803RE	S244399*11*RE	SO	420	U	420	R	ug/kg	RE	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05001RE	S244399*2*RE	SO	81	U	81	R	ug/kg	RE	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05901	S244399*3	SO	83	U	83	UJ	ug/kg	SS	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05901RE	S244399*3*RE	SO	83	U	83	R	ug/kg	RE	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05201	S244399*4	SO	94	U	94	UJ	ug/kg	SS	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05201RE	S244399*4*RE	SO	94	U	94	R	ug/kg	RE	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006CB05201	S244399*5	SO	82	U	82	UJ	ug/kg	SS	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006CB05201RE	S244399*5*RE	SO	82	U	82	R	ug/kg	RE	
CB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05301	S244399*6	SO	85	U	85	UJ	ug/kg	SS	

Attachment 1 - Changed Qualifiers and Results
 Zone G, SW 6 - Data Validation

Parameter Class	Analytical Method	Location	SUC	Sample ID	Lab Sample ID	Unit	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
PCB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05301RE	S244399*6*RE	SO	85	U	85	R	ug/kg	RE
PCB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05401	S244399*7	SO	79	U	79	UJ	ug/kg	SS
PCB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05401RE	S244399*7*RE	SO	79	U	79	R	ug/kg	RE
PCB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05501	S244399*8	SO	87	U	87	UJ	ug/kg	SS
PCB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05501RE	S244399*8*RE	SO	87	U	87	R	ug/kg	RE
PCB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC119	006SB05601RE	S244399*9*RE	SO	380	U	380	R	ug/kg	RE
PCB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC63	006SB00601DL	S240386*18*DL	SO	1900	U	1900	R	ug/kg	DL
PCB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC63	006SB01401DL	S240386*7*DL	SO	3900	U	3900	R	ug/kg	DL
PCB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC63	006SB01402DL	S240386*8*DL	SO	1600	U	1600	R	ug/kg	DL
PCB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC63	006GW004M1	S240414*1	WG	2.1	U	2.1	UJ	ug/l	SS
PCB	SW8082	PCB-1254 (AROCHLOR 1254)	CNC63	006EW004M1	S240414*2	WQ	2	U	2	R	ug/l	RE
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB04901	S244399*1	SO	61	J	61	J	ug/kg	CC, SS
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB04901RE	S244399*1*RE	SO	190	=	190	R	ug/kg	RE
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05701	S244399*10	SO	210	=	210	J	ug/kg	CC,SS
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05701RE	S244399*10*RE	SO	300	=	300	R	ug/kg	RE
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05803	S244399*11	SO	2000	=	2000	J	ug/kg	CC
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05803RE	S244399*11*RE	SO	2700	=	2700	R	ug/kg	RE
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05001	S244399*2	SO	84	=	84	J	ug/kg	CC
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05001RE	S244399*2*RE	SO	120	=	120	R	ug/kg	RE
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05901	S244399*3	SO	270	=	270	J	ug/kg	CC, SS
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05901RE	S244399*3*RE	SO	270	=	270	R	ug/kg	RE
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05201	S244399*4	SO	94	U	94	UJ	ug/kg	SS
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05201RE	S244399*4*RE	SO	29	JP	29	R	ug/kg	RE
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006CB05201	S244399*5	SO	82	U	82	UJ	ug/kg	SS
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006CB05201RE	S244399*5*RE	SO	82	U	82	R	ug/kg	RE
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05301	S244399*6	SO	96	=	96	J	ug/kg	CC,SS
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05301RE	S244399*6*RE	SO	220	=	220	R	ug/kg	RE
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05401	S244399*7	SO	79	U	79	UJ	ug/kg	SS
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05401RE	S244399*7*RE	SO	79	U	79	R	ug/kg	RE
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05501	S244399*8	SO	22	J	22	J	ug/kg	CC,SS
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05501RE	S244399*8*RE	SO	120	=	120	R	ug/kg	RE
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05601	S244399*9	SO	3000	=	3000	J	ug/kg	CC
PCB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC119	006SB05601RE	S244399*9*RE	SO	3900	=	3900	R	ug/kg	RE

Attachment 1 - Changed Qualifiers and Results
 Zone G, SWMU 6 - Data Validation

Parameter Class	Analytical Method	Sample ID	Site	Sample ID	Lab Sample ID	Matrix	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB00701	S240386*1	SO	190	U	190	UJ	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB00901	S240386*10	SO	1600	U	1600	UJ	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01101	S240386*11	SO	81	U	81	UJ	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01102	S240386*12	SO	85	U	85	UJ	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01301	S240386*13	SO	38	U	38	UJ	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01302	S240386*14	SO	170	U	170	UJ	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006CB01302	S240386*15	SO	45	U	45	UJ	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB00501	S240386*16	SO	95	J	95	J	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB00502	S240386*17	SO	1600	U	1600	UJ	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB00601	S240386*18	SO	18000	E	18000	R	ug/kg	LR
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB00601DL	S240386*18*DL	SO	13000	D	13000	J	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006CB00701	S240386*2	SO	90	=	90	J	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB00702	S240386*3	SO	400	U	400	UJ	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB00801	S240386*4	SO	390	U	390	UJ	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01001	S240386*5	SO	260	=	260	J	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01201	S240386*6	SO	200	JP	200	J	ug/kg	CC,2C
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01401	S240386*7	SO	1600	U	1600	UJ	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01401DL	S240386*7*DL	SO	3900	U	3900	R	ug/kg	DL
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01402	S240386*8	SO	900	=	900	J	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01402DL	S240386*8*DL	SO	990	DJ	990	R	ug/kg	DL
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01501	S240386*9	SO	49	=	49	J	ug/kg	CC
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006GW004M1	S240414*1	WG	2.1	U	2.1	UJ	ug/l	CC, SS
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006EW004M1	S240414*2	WQ	2	U	2	R	ug/l	RE
CB	SW8082	PCB-1260 (AROCHLOR 1260)	CNC63	006SB01602	S240473*1	SO	190	U	190	UJ	ug/kg	CC
EST	SW8081A	ALDRIN	60277	006SB01801RE	60277003	SO	2.8	U	2.8	R	ug/kg	DL
EST	SW8081A	ALDRIN	60277	006SB01901	60277004	SO	0.46	JP	0.46	J	ug/kg	2C
EST	SW8081A	ALDRIN	60277	006SB02101RE	60277014	SO	286	U	286	R	ug/kg	DL
EST	SW8081A	ALDRIN	61956	006SB04401	61956001	SO	0.51	JP	0.51	J	ug/kg	CC,2C
EST	SW8081A	ALDRIN	61956	006SB04403	61956002	SO	15.4	U	15.4	UJ	ug/kg	CC
EST	SW8081A	ALDRIN	61956	006SB04402	61956003	SO	3.4	U	3.4	UJ	ug/kg	CC
EST	SW8081A	ALDRIN	61956	006SB04502	61956004	SO	8.9	U	8.9	UJ	ug/kg	CC
EST	SW8081A	ALDRIN	61956	006CB04502	61956005	SO	9.8	U	9.8	UJ	ug/kg	CC
EST	SW8081A	ALDRIN	61956	006SB04601	61956006	SO	19.1	U	19.1	UJ	ug/kg	CC

Attachment 1 - Chagned Qualifiers and Results
 Zone G, SW 6 - Data Validation

Parent Compound	Analyte	Parent Compound	SPC	Substrate	Sample ID	Matrix	Lab Result	Lab Qual	Parent Result	Parent Qual	Units	Reasons
PEST	SW8081A	ALDRIN	61956	006SB04603	61956007	SO	2.1	U	2.1	UJ	ug/kg	CC
PEST	SW8081A	ALDRIN	61956	006SB04701	61956008	SO	1.7	U	1.7	UJ	ug/kg	CC
PEST	SW8081A	ALDRIN	61956	006SB04703	61956009	SO	1.6	U	1.6	UJ	ug/kg	CC
PEST	SW8081A	ALDRIN	CNC63	006SB01401DL	S240386*7*DL	SO	76	U	76	R	ug/kg	DL
PEST	SW8081A	ALDRIN	CNC63	006SB01402DL	S240386*8*DL	SO	32	U	32	R	ug/kg	DL
PEST	SW8081A	ALPHA BHC	60277	006SB01801RE	60277003	SO	2.8	U	2.8	R	ug/kg	DL
PEST	SW8081A	ALPHA BHC	60277	006SB02101RE	60277014	SO	286	U	286	R	ug/kg	DL
PEST	SW8081A	ALPHA BHC	CNC63	006SB01302	S240386*14	SO	0.88	JP	0.88	J	ug/kg	2C
PEST	SW8081A	ALPHA BHC	CNC63	006SB00702	S240386*3	SO	0.87	JP	0.87	J	ug/kg	2C
PEST	SW8081A	ALPHA BHC	CNC63	006SB01401DL	S240386*7*DL	SO	76	U	76	R	ug/kg	DL
PEST	SW8081A	ALPHA BHC	CNC63	006SB01402DL	S240386*8*DL	SO	32	U	32	R	ug/kg	DL
PEST	SW8081A	ALPHA-CHLORDANE	60277	006SB01701	60277002	SO	0.5	JP	0.5	J	ug/kg	2C
PEST	SW8081A	ALPHA-CHLORDANE	60277	006SB01801	60277003	SO	0.76	JP	0.76	J	ug/kg	2C
PEST	SW8081A	ALPHA-CHLORDANE	60277	006SB01801RE	60277003	SO	2.8	U	2.8	R	ug/kg	DL
PEST	SW8081A	ALPHA-CHLORDANE	60277	006SB01901	60277004	SO	1.3	JP	1.3	J	ug/kg	2C
PEST	SW8081A	ALPHA-CHLORDANE	60277	006CB01901	60277005	SO	1.5	P	1.5	=	ug/kg	OT
PEST	SW8081A	ALPHA-CHLORDANE	60277	006SB02101RE	60277014	SO	286	U	286	R	ug/kg	DL
PEST	SW8081A	ALPHA-CHLORDANE	61956	006SB04401	61956001	SO	5.8	=	5.8	J	ug/kg	CC
PEST	SW8081A	ALPHA-CHLORDANE	61956	006SB04403	61956002	SO	13.1	JP	13.1	J	ug/kg	CC
PEST	SW8081A	ALPHA-CHLORDANE	61956	006SB04402	61956003	SO	4.9	=	4.9	J	ug/kg	CC
PEST	SW8081A	ALPHA-CHLORDANE	61956	006SB04502	61956004	SO	6.7	J	6.7	J	ug/kg	CC
PEST	SW8081A	ALPHA-CHLORDANE	61956	006CB04502	61956005	SO	24	=	24	J	ug/kg	CC
PEST	SW8081A	ALPHA-CHLORDANE	61956	006SB04601	61956006	SO	58.3	=	58.3	J	ug/kg	CC
PEST	SW8081A	ALPHA-CHLORDANE	61956	006SB04603	61956007	SO	5.3	=	5.3	J	ug/kg	CC
PEST	SW8081A	ALPHA-CHLORDANE	61956	006SB04701	61956008	SO	1.7	U	1.7	UJ	ug/kg	CC
PEST	SW8081A	ALPHA-CHLORDANE	61956	006SB04703	61956009	SO	1.6	U	1.6	UJ	ug/kg	CC
PEST	SW8081A	ALPHA-CHLORDANE	CNC63	006SB00701	S240386*1	SO	7	P	7	J	ug/kg	2C
PEST	SW8081A	ALPHA-CHLORDANE	CNC63	006SB01101	S240386*11	SO	3.5	P	3.5	J	ug/kg	2C, MD
PEST	SW8081A	ALPHA-CHLORDANE	CNC63	006CB00701	S240386*2	SO	4.5	P	4.5	J	ug/kg	2C
PEST	SW8081A	ALPHA-CHLORDANE	CNC63	006SB00801	S240386*4	SO	26	P	26	J	ug/kg	2C
PEST	SW8081A	ALPHA-CHLORDANE	CNC63	006SB01001	S240386*5	SO	4.4	P	4.4	J	ug/kg	2C
PEST	SW8081A	ALPHA-CHLORDANE	CNC63	006SB01201	S240386*6	SO	24	P	24	J	ug/kg	2C
PEST	SW8081A	ALPHA-CHLORDANE	CNC63	006SB01401	S240386*7	SO	200	P	200	J	ug/kg	2C

Attachment 1 - Changed Qualifiers and Results
 Zone G, SWMU 6 - Data Validation

EST	SW	Contaminant	Site	Sample ID	Depth	SO	Flow	DP	Flow	DP	Unit	Reason
EST	SW8081A	ALPHA-CHLORDANE	CNC63	006SB01401DL	S240386*7*DL	SO	190	DP	190	R	ug/kg	DL
EST	SW8081A	ALPHA-CHLORDANE	CNC63	006SB01402	S240386*8	SO	9.6	JP	9.6	J	ug/kg	2C
EST	SW8081A	ALPHA-CHLORDANE	CNC63	006SB01402DL	S240386*8*DL	SO	15	DJ	15	R	ug/kg	DL
EST	SW8081A	BETA BHC	60277	006SB01801	60277003	SO	1	JP	1	J	ug/kg	2C
EST	SW8081A	BETA BHC	60277	006SB01801RE	60277003	SO	2.8	U	2.8	R	ug/kg	DL
EST	SW8081A	BETA BHC	60277	006CB01901	60277005	SO	1.2	JP	1.2	J	ug/kg	2C
EST	SW8081A	BETA BHC	60277	006SB02101	60277014	SO	176	P	176	=	ug/kg	OT
EST	SW8081A	BETA BHC	60277	006SB02101RE	60277014	SO	286	U	286	R	ug/kg	DL
EST	SW8081A	BETA BHC	60277	006SB02803	60277016	SO	172	JP	172	J	ug/kg	2C
EST	SW8081A	BETA BHC	61956	006SB04401	61956001	SO	2.2	JP	2.2	J	ug/kg	2C
EST	SW8081A	BETA BHC	61956	006SB04603	61956007	SO	0.84	JP	0.84	J	ug/kg	2C
EST	SW8081A	BETA BHC	CNC63	006SB01401DL	S240386*7*DL	SO	76	U	76	R	ug/kg	DL
EST	SW8081A	BETA BHC	CNC63	006SB01402DL	S240386*8*DL	SO	32	U	32	R	ug/kg	DL
EST	SW8081A	Chlordane	60277	006SB01801RE	60277003	SO	28.5	U	28.5	R	ug/kg	DL
EST	SW8081A	Chlordane	60277	006SB01901	60277004	SO	9.6	JP	9.6	J	ug/kg	2C
EST	SW8081A	Chlordane	60277	006CB01901	60277005	SO	13.2	JP	13.2	J	ug/kg	OT
EST	SW8081A	Chlordane	60277	006SB02101RE	60277014	SO	2860	U	2860	R	ug/kg	DL
EST	SW8081A	Chlordane	CNC63	006SB00701	S240386*1	SO	36	U	36	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB00901	S240386*10	SO	300	U	300	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB01101	S240386*11	SO	16	U	16	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB01102	S240386*12	SO	16	U	16	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB01301	S240386*13	SO	7.5	U	7.5	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB01302	S240386*14	SO	34	U	34	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006CB01302	S240386*15	SO	8.7	U	8.7	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006CB00701	S240386*2	SO	14	U	14	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB00702	S240386*3	SO	77	U	77	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB00801	S240386*4	SO	270	=	270	J	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB01001	S240386*5	SO	14	U	14	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB01201	S240386*6	SO	150	U	150	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB01401	S240386*7	SO	2400	=	2400	J	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB01401DL	S240386*7*DL	SO	1800	D	1800	R	ug/kg	DL
EST	SW8081A	Chlordane	CNC63	006SB01402	S240386*8	SO	160	U	160	UJ	ug/kg	CC
EST	SW8081A	Chlordane	CNC63	006SB01402DL	S240386*8*DL	SO	320	U	320	R	ug/kg	DL

Attachment 1 - Chemical Qualifiers and Results
 Zone G, SW 6 - Data Validation

Parameter Class	Well ID	Chemical	Site	Sample ID	Lab Sample ID	Unit	Lab Result	Lab Unit	Reg. Result	Reg. Unit	Unit	Reasons
PEST	SW8081A	Chlordane	CNC63	006SB01501	S240386*9	SO	7.6	U	7.6	UJ	ug/kg	CC
PEST	SW8081A	Chlordane	CNC63	006SB01602	S240473*1	SO	36	U	36	UJ	ug/kg	CC
PEST	SW8081A	DELTA BHC	60277	006SB01801RE	60277003	SO	2.8	U	2.8	R	ug/kg	DL
PEST	SW8081A	DELTA BHC	60277	006SB02101RE	60277014	SO	286	U	286	R	ug/kg	DL
PEST	SW8081A	DELTA BHC	60277	006SB02803	60277016	SO	162	JP	162	J	ug/kg	2C
PEST	SW8081A	DELTA BHC	61956	006SB04401	61956001	SO	3.6	P	3.6	J	ug/kg	2C
PEST	SW8081A	DELTA BHC	61956	006SB04502	61956004	SO	3.4	JP	3.4	J	ug/kg	2C
PEST	SW8081A	DELTA BHC	CNC63	006SB01101	S240386*11	SO	2.5	P	2.5	J	ug/kg	2C
PEST	SW8081A	DELTA BHC	CNC63	006SB01301	S240386*13	SO	0.13	JP	0.13	J	ug/kg	2C
PEST	SW8081A	DELTA BHC	CNC63	006SB01302	S240386*14	SO	2.4	JP	2.4	J	ug/kg	2C
PEST	SW8081A	DELTA BHC	CNC63	006SB01401	S240386*7	SO	8	JP	8	J	ug/kg	2C
PEST	SW8081A	DELTA BHC	CNC63	006SB01401DL	S240386*7*DL	SO	76	U	76	R	ug/kg	DL
PEST	SW8081A	DELTA BHC	CNC63	006SB01402DL	S240386*8*DL	SO	5.5	DJ	5.5	R	ug/kg	DL
PEST	SW8081A	DIELDRIN	60277	006SB01701	60277002	SO	0.79	JP	0.79	J	ug/kg	2C
PEST	SW8081A	DIELDRIN	60277	006SB01801RE	60277003	SO	5.5	U	5.5	R	ug/kg	DL
PEST	SW8081A	DIELDRIN	60277	006SB02101RE	60277014	SO	552	U	552	R	ug/kg	DL
PEST	SW8081A	DIELDRIN	CNC63	006SB01301	S240386*13	SO	1.2	JP	1.2	J	ug/kg	2C
PEST	SW8081A	DIELDRIN	CNC63	006SB01302	S240386*14	SO	3	JP	3	J	ug/kg	2C
PEST	SW8081A	DIELDRIN	CNC63	006CB01302	S240386*15	SO	0.45	JP	0.45	J	ug/kg	2C
PEST	SW8081A	DIELDRIN	CNC63	006SB01201	S240386*6	SO	4.6	JP	4.6	J	ug/kg	2C
PEST	SW8081A	DIELDRIN	CNC63	006SB01401DL	S240386*7*DL	SO	70	DJ	70	R	ug/kg	DL
PEST	SW8081A	DIELDRIN	CNC63	006SB01402DL	S240386*8*DL	SO	14	DJP	14	R	ug/kg	DL
PEST	SW8081A	ENDOSULFAN I	60277	006SB01801RE	60277003	SO	2.8	U	2.8	R	ug/kg	DL
PEST	SW8081A	ENDOSULFAN I	60277	006SB02101RE	60277014	SO	286	U	286	R	ug/kg	DL
PEST	SW8081A	ENDOSULFAN I	61956	006SB04403	61956002	SO	15.4	U	15.4	UJ	ug/kg	CC
PEST	SW8081A	ENDOSULFAN I	61956	006SB04402	61956003	SO	3.4	U	3.4	UJ	ug/kg	CC
PEST	SW8081A	ENDOSULFAN I	61956	006SB04502	61956004	SO	8.9	U	8.9	UJ	ug/kg	CC
PEST	SW8081A	ENDOSULFAN I	61956	006CB04502	61956005	SO	9.8	U	9.8	UJ	ug/kg	CC
PEST	SW8081A	ENDOSULFAN I	61956	006SB04601	61956006	SO	19.1	U	19.1	UJ	ug/kg	CC
PEST	SW8081A	ENDOSULFAN I	61956	006SB04603	61956007	SO	2.1	U	2.1	UJ	ug/kg	CC
PEST	SW8081A	ENDOSULFAN I	61956	006SB04701	61956008	SO	1.7	U	1.7	UJ	ug/kg	CC
PEST	SW8081A	ENDOSULFAN I	61956	006SB04703	61956009	SO	1.6	U	1.6	UJ	ug/kg	CC
PEST	SW8081A	ENDOSULFAN I	CNC63	006SB01401DL	S240386*7*DL	SO	76	U	76	R	ug/kg	DL

Attachment 1 - Changed Qualifiers and Results
 Zone G, SWMU 6 - Data Validation

EST	SW8081A	ENDOSULFAN I	CNC63	006SB01402DL	S240386*8*DL	SO	32	U	32	R	ug/kg	DL
EST	SW8081A	ENDOSULFAN II	60277	006SB01801RE	60277003	SO	5.5	U	5.5	R	ug/kg	DL
EST	SW8081A	ENDOSULFAN II	60277	006SB02101RE	60277014	SO	552	U	552	R	ug/kg	DL
EST	SW8081A	ENDOSULFAN II	61956	006SB04403	61956002	SO	29.7	U	29.7	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN II	61956	006SB04402	61956003	SO	6.6	U	6.6	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN II	61956	006SB04502	61956004	SO	17.1	U	17.1	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN II	61956	006CB04502	61956005	SO	19	U	19	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN II	61956	006SB04601	61956006	SO	7.4	J	7.4	J	ug/kg	CC
EST	SW8081A	ENDOSULFAN II	61956	006SB04603	61956007	SO	4.1	U	4.1	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN II	61956	006SB04701	61956008	SO	3.3	U	3.3	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN II	61956	006SB04703	61956009	SO	3.1	U	3.1	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN II	CNC63	006SB01301	S240386*13	SO	0.4	JP	0.4	J	ug/kg	2C
EST	SW8081A	ENDOSULFAN II	CNC63	006SB01401DL	S240386*7*DL	SO	140	U	140	R	ug/kg	DL
EST	SW8081A	ENDOSULFAN II	CNC63	006SB01402DL	S240386*8*DL	SO	61	U	61	R	ug/kg	DL
EST	SW8081A	ENDOSULFAN SULFATE	60277	006SB01801RE	60277003	SO	5.5	U	5.5	R	ug/kg	DL
EST	SW8081A	ENDOSULFAN SULFATE	60277	006SB02101RE	60277014	SO	552	U	552	R	ug/kg	DL
EST	SW8081A	ENDOSULFAN SULFATE	61956	006SB04403	61956002	SO	29.7	U	29.7	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN SULFATE	61956	006SB04402	61956003	SO	6.6	U	6.6	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN SULFATE	61956	006SB04502	61956004	SO	17.1	U	17.1	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN SULFATE	61956	006CB04502	61956005	SO	19	U	19	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN SULFATE	61956	006SB04601	61956006	SO	36.8	U	36.8	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN SULFATE	61956	006SB04603	61956007	SO	4.1	U	4.1	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN SULFATE	61956	006SB04701	61956008	SO	3.3	U	3.3	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN SULFATE	61956	006SB04703	61956009	SO	3.1	U	3.1	UJ	ug/kg	CC
EST	SW8081A	ENDOSULFAN SULFATE	CNC63	006SB01401DL	S240386*7*DL	SO	140	U	140	R	ug/kg	DL
EST	SW8081A	ENDOSULFAN SULFATE	CNC63	006SB01402DL	S240386*8*DL	SO	61	U	61	R	ug/kg	DL
EST	SW8081A	ENDRIN	60277	006SB01801RE	60277003	SO	5.5	U	5.5	R	ug/kg	DL
EST	SW8081A	ENDRIN	60277	006SB02101RE	60277014	SO	552	U	552	R	ug/kg	DL
EST	SW8081A	ENDRIN	CNC63	006SB01401DL	S240386*7*DL	SO	140	U	140	R	ug/kg	DL
EST	SW8081A	ENDRIN	CNC63	006SB01402DL	S240386*8*DL	SO	61	U	61	R	ug/kg	DL
EST	SW8081A	ENDRIN ALDEHYDE	60277	006SB01801RE	60277003	SO	5.5	U	5.5	R	ug/kg	DL
EST	SW8081A	ENDRIN ALDEHYDE	60277	006SB02101RE	60277014	SO	552	U	552	R	ug/kg	DL
EST	SW8081A	ENDRIN ALDEHYDE	61956	006SB04403	61956002	SO	29.7	U	29.7	UJ	ug/kg	CC

Attachment 1 - Changed Qualifiers and Results
 Zone G, SW - Data Validation

PEST	SW	NAME	61956	006SB	61956	SO	6.6	U	6.6	UJ	ug/kg	CC
PEST	SW8081A	ENDRIN ALDEHYDE	61956	006SB04402	61956003	SO	6.6	U	6.6	UJ	ug/kg	CC
PEST	SW8081A	ENDRIN ALDEHYDE	61956	006SB04502	61956004	SO	17.1	U	17.1	UJ	ug/kg	CC
PEST	SW8081A	ENDRIN ALDEHYDE	61956	006CB04502	61956005	SO	19	U	19	UJ	ug/kg	CC
PEST	SW8081A	ENDRIN ALDEHYDE	61956	006SB04601	61956006	SO	36.8	U	36.8	UJ	ug/kg	CC
PEST	SW8081A	ENDRIN ALDEHYDE	61956	006SB04603	61956007	SO	4.1	U	4.1	UJ	ug/kg	CC
PEST	SW8081A	ENDRIN ALDEHYDE	61956	006SB04701	61956008	SO	3.3	U	3.3	UJ	ug/kg	CC
PEST	SW8081A	ENDRIN ALDEHYDE	61956	006SB04703	61956009	SO	3.1	U	3.1	UJ	ug/kg	CC
PEST	SW8081A	ENDRIN ALDEHYDE	CNC63	006SB01201	S240386*6	SO	5.1	JP	5.1	J	ug/kg	2C
PEST	SW8081A	ENDRIN ALDEHYDE	CNC63	006SB01401DL	S240386*7*DL	SO	140	U	140	R	ug/kg	DL
PEST	SW8081A	ENDRIN ALDEHYDE	CNC63	006SB01402DL	S240386*8*DL	SO	61	U	61	R	ug/kg	DL
PEST	SW8081A	ENDRIN KETONE	60277	006SB01801RE	60277003	SO	5.5	U	5.5	R	ug/kg	DL
PEST	SW8081A	ENDRIN KETONE	60277	006SB02101RE	60277014	SO	552	U	552	R	ug/kg	DL
PEST	SW8081A	ENDRIN KETONE	CNC63	006SB01401DL	S240386*7*DL	SO	140	U	140	R	ug/kg	DL
PEST	SW8081A	ENDRIN KETONE	CNC63	006SB01402DL	S240386*8*DL	SO	61	U	61	R	ug/kg	DL
PEST	SW8081A	GAMMA BHC (LINDANE)	60277	006SB01801RE	60277003	SO	2.8	U	2.8	R	ug/kg	DL
PEST	SW8081A	GAMMA BHC (LINDANE)	60277	006SB02101RE	60277014	SO	286	U	286	R	ug/kg	DL
PEST	SW8081A	GAMMA BHC (LINDANE)	61956	006SB04403	61956002	SO	12.7	JP	12.7	J	ug/kg	2C
PEST	SW8081A	GAMMA BHC (LINDANE)	CNC63	006SB01101	S240386*11	SO	3.4	=	3.4	J	ug/kg	MS
PEST	SW8081A	GAMMA BHC (LINDANE)	CNC63	006SB01302	S240386*14	SO	2.2	JP	2.2	J	ug/kg	2C
PEST	SW8081A	GAMMA BHC (LINDANE)	CNC63	006SB01401DL	S240386*7*DL	SO	76	U	76	R	ug/kg	DL
PEST	SW8081A	GAMMA BHC (LINDANE)	CNC63	006SB01402DL	S240386*8*DL	SO	32	U	32	R	ug/kg	DL
PEST	SW8081A	GAMMA-CHLORDANE	60277	006SB01701	60277002	SO	0.76	JP	0.76	J	ug/kg	OT
PEST	SW8081A	GAMMA-CHLORDANE	60277	006SB01801RE	60277003	SO	2.8	U	2.8	R	ug/kg	DL
PEST	SW8081A	GAMMA-CHLORDANE	60277	006SB01901	60277004	SO	1.9	P	1.9	=	ug/kg	OT
PEST	SW8081A	GAMMA-CHLORDANE	60277	006SB02101RE	60277014	SO	286	U	286	R	ug/kg	DL
PEST	SW8081A	GAMMA-CHLORDANE	61956	006SB04401	61956001	SO	8.7	P	8.7	J	ug/kg	CC,2C
PEST	SW8081A	GAMMA-CHLORDANE	61956	006SB04403	61956002	SO	25.7	P	25.7	J	ug/kg	CC
PEST	SW8081A	GAMMA-CHLORDANE	61956	006SB04402	61956003	SO	7.3	P	7.3	J	ug/kg	CC,2C
PEST	SW8081A	GAMMA-CHLORDANE	61956	006SB04502	61956004	SO	10	P	10	J	ug/kg	CC,2C
PEST	SW8081A	GAMMA-CHLORDANE	61956	006CB04502	61956005	SO	24.4	P	24.4	J	ug/kg	CC,2C
PEST	SW8081A	GAMMA-CHLORDANE	61956	006SB04601	61956006	SO	65.2	P	65.2	J	ug/kg	CC,2C
PEST	SW8081A	GAMMA-CHLORDANE	61956	006SB04603	61956007	SO	7.5	P	7.5	J	ug/kg	CC,2C
PEST	SW8081A	GAMMA-CHLORDANE	61956	006SB04701	61956008	SO	1.7	U	1.7	UJ	ug/kg	CC

Attachment 1 - Changed Qualifiers and Results
 Zone G, SWMU 6 - Data Validation

EST	SW	Chemical	Site	Sample ID	Lab Sample ID	Method	Result	Qual	Field	Unit	Reason	
EST	SW8081A	GAMMA-CHLORDANE	61956	006SB04703	61956009	SO	1.6	U	1.6	UJ	ug/kg	CC
EST	SW8081A	GAMMA-CHLORDANE	CNC63	006SB00901	S240386*10	SO	36	P	36	J	ug/kg	2C
EST	SW8081A	GAMMA-CHLORDANE	CNC63	006SB00801	S240386*4	SO	30	P	30	J	ug/kg	2C
EST	SW8081A	GAMMA-CHLORDANE	CNC63	006SB01201	S240386*6	SO	38	P	38	J	ug/kg	2C
EST	SW8081A	GAMMA-CHLORDANE	CNC63	006SB01401	S240386*7	SO	330	P	330	J	ug/kg	2C
EST	SW8081A	GAMMA-CHLORDANE	CNC63	006SB01401DL	S240386*7*DL	SO	270	D	270	R	ug/kg	DL
EST	SW8081A	GAMMA-CHLORDANE	CNC63	006SB01402DL	S240386*8*DL	SO	16	DJP	16	R	ug/kg	DL
EST	SW8081A	GAMMA-CHLORDANE	CNC63	006SB01501	S240386*9	SO	3	P	3	J	ug/kg	2C
EST	SW8081A	HEPTACHLOR	60277	006SB01801RE	60277003	SO	2.8	U	2.8	R	ug/kg	DL
EST	SW8081A	HEPTACHLOR	60277	006SB02101	60277014	SO	63	JP	63	J	ug/kg	2C
EST	SW8081A	HEPTACHLOR	60277	006SB02101RE	60277014	SO	286	U	286	R	ug/kg	DL
EST	SW8081A	HEPTACHLOR	61956	006SB04402	61956003	SO	6.2	P	6.2	J	ug/kg	2C
EST	SW8081A	HEPTACHLOR	61956	006CB04502	61956005	SO	6.9	JP	6.9	J	ug/kg	2C
EST	SW8081A	HEPTACHLOR	CNC63	006SB00701	S240386*1	SO	3.6	U	3.6	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB00901	S240386*10	SO	30	U	30	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB01101	S240386*11	SO	1.6	U	1.6	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB01102	S240386*12	SO	1.6	U	1.6	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB01301	S240386*13	SO	0.75	U	0.75	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB01302	S240386*14	SO	3.4	U	3.4	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006CB01302	S240386*15	SO	0.87	U	0.87	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006CB00701	S240386*2	SO	1.4	U	1.4	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB00702	S240386*3	SO	7.7	U	7.7	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB00801	S240386*4	SO	7.6	U	7.6	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB01001	S240386*5	SO	1.4	U	1.4	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB01201	S240386*6	SO	15	U	15	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB01401	S240386*7	SO	52	P	52	J	ug/kg	CC,2C
EST	SW8081A	HEPTACHLOR	CNC63	006SB01401DL	S240386*7*DL	SO	63	DJ	63	R	ug/kg	DL
EST	SW8081A	HEPTACHLOR	CNC63	006SB01402	S240386*8	SO	16	U	16	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB01402DL	S240386*8*DL	SO	32	U	32	R	ug/kg	DL
EST	SW8081A	HEPTACHLOR	CNC63	006SB01501	S240386*9	SO	0.76	U	0.76	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR	CNC63	006SB01602	S240473*1	SO	3.6	U	3.6	UJ	ug/kg	CC
EST	SW8081A	HEPTACHLOR EPOXIDE	60277	006SB01801RE	60277003	SO	2.8	U	2.8	R	ug/kg	DL
EST	SW8081A	HEPTACHLOR EPOXIDE	60277	006SB01901	60277004	SO	0.3	JP	0.3	J	ug/kg	2C

Attachment 1 - Changed Qualifiers and Results
 Zone G, SW 6 - Data Validation

Sample No.	Location	Contaminant	Site	Sample ID	Sub Sample ID	Matrix	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
PEST	SW8081A	HEPTACHLOR EPOXIDE	60277	006SB02101RE	60277014	SO	286	U	286	R	ug/kg	DL
PEST	SW8081A	HEPTACHLOR EPOXIDE	61956	006SB04403	61956002	SO	15.4	U	15.4	UJ	ug/kg	CC
PEST	SW8081A	HEPTACHLOR EPOXIDE	61956	006SB04402	61956003	SO	3.4	U	3.4	UJ	ug/kg	CC
PEST	SW8081A	HEPTACHLOR EPOXIDE	61956	006SB04502	61956004	SO	8.9	U	8.9	UJ	ug/kg	CC
PEST	SW8081A	HEPTACHLOR EPOXIDE	61956	006CB04502	61956005	SO	9.8	U	9.8	UJ	ug/kg	CC
PEST	SW8081A	HEPTACHLOR EPOXIDE	61956	006SB04601	61956006	SO	4.6	JP	4.6	J	ug/kg	CC,2C
PEST	SW8081A	HEPTACHLOR EPOXIDE	61956	006SB04603	61956007	SO	2.1	U	2.1	UJ	ug/kg	CC
PEST	SW8081A	HEPTACHLOR EPOXIDE	61956	006SB04701	61956008	SO	1.7	U	1.7	UJ	ug/kg	CC
PEST	SW8081A	HEPTACHLOR EPOXIDE	61956	006SB04703	61956009	SO	1.6	U	1.6	UJ	ug/kg	CC
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB00701	S240386*1	SO	2	JP	2	J	ug/kg	2C
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB00901	S240386*10	SO	27	JP	27	J	ug/kg	2C
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB01102	S240386*12	SO	0.44	JP	0.44	J	ug/kg	2C
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB01301	S240386*13	SO	0.24	JP	0.24	J	ug/kg	2C
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006CB00701	S240386*2	SO	1.4	JP	1.4	J	ug/kg	2C
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB00801	S240386*4	SO	14	P	14	J	ug/kg	2C
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB01001	S240386*5	SO	3.4	P	3.4	J	ug/kg	2C
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB01201	S240386*6	SO	7.4	JP	7.4	J	ug/kg	2C
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB01401	S240386*7	SO	33	P	33	J	ug/kg	2C
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB01401DL	S240386*7*DL	SO	62	DJ	62	R	ug/kg	DL
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB01402	S240386*8	SO	9.5	JP	9.5	J	ug/kg	2C
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB01402DL	S240386*8*DL	SO	11	DJP	11	R	ug/kg	DL
PEST	SW8081A	HEPTACHLOR EPOXIDE	CNC63	006SB01501	S240386*9	SO	0.78	P	0.78	J	ug/kg	2C
PEST	SW8081A	METHOXYCHLOR	60277	006SB01801RE	60277003	SO	28.5	U	28.5	R	ug/kg	DL
PEST	SW8081A	METHOXYCHLOR	60277	006SB02101RE	60277014	SO	2860	U	2860	R	ug/kg	DL
PEST	SW8081A	METHOXYCHLOR	CNC63	006SB00701	S240386*1	SO	36	U	36	UJ	ug/kg	CC
PEST	SW8081A	METHOXYCHLOR	CNC63	006SB00901	S240386*10	SO	300	U	300	UJ	ug/kg	CC
PEST	SW8081A	METHOXYCHLOR	CNC63	006SB01101	S240386*11	SO	16	U	16	UJ	ug/kg	CC, MD
PEST	SW8081A	METHOXYCHLOR	CNC63	006SB01102	S240386*12	SO	16	U	16	UJ	ug/kg	CC
PEST	SW8081A	METHOXYCHLOR	CNC63	006SB01301	S240386*13	SO	7.5	U	7.5	UJ	ug/kg	CC
PEST	SW8081A	METHOXYCHLOR	CNC63	006SB01302	S240386*14	SO	34	U	34	UJ	ug/kg	CC
PEST	SW8081A	METHOXYCHLOR	CNC63	006CB01302	S240386*15	SO	8.7	U	8.7	UJ	ug/kg	CC
PEST	SW8081A	METHOXYCHLOR	CNC63	006CB00701	S240386*2	SO	14	U	14	UJ	ug/kg	CC
PEST	SW8081A	METHOXYCHLOR	CNC63	006SB00702	S240386*3	SO	77	U	77	UJ	ug/kg	CC

Attachment 1 - Changed Qualifiers and Results
Zone G, SWMU 6 - Data Validation

Sample ID	SWID	Contaminant	Lab	Sample ID	Sample ID	Unit	Pr	U	Pr	U	Unit	Reason
EST	SW8081A	METHOXYCHLOR	CNC63	006SB00801	S240386*4	SO	76	U	76	UJ	ug/kg	CC
EST	SW8081A	METHOXYCHLOR	CNC63	006SB01001	S240386*5	SO	14	U	14	UJ	ug/kg	CC
EST	SW8081A	METHOXYCHLOR	CNC63	006SB01201	S240386*6	SO	150	U	150	UJ	ug/kg	CC
EST	SW8081A	METHOXYCHLOR	CNC63	006SB01401	S240386*7	SO	300	U	300	UJ	ug/kg	CC
EST	SW8081A	METHOXYCHLOR	CNC63	006SB01401DL	S240386*7*DL	SO	760	U	760	R	ug/kg	DL
EST	SW8081A	METHOXYCHLOR	CNC63	006SB01402DL	S240386*8*DL	SO	320	U	320	R	ug/kg	DL
EST	SW8081A	METHOXYCHLOR	CNC63	006SB01501	S240386*9	SO	7.6	U	7.6	UJ	ug/kg	CC
EST	SW8081A	METHOXYCHLOR	CNC63	006SB01602	S240473*1	SO	36	U	36	UJ	ug/kg	CC
EST	SW8081A	p,p'-DDD	60277	006SB01801RE	60277003	SO	5.5	U	5.5	R	ug/kg	DL
EST	SW8081A	p,p'-DDD	60277	006SB02101	60277014	SO	11000	EB	11000	R	ug/kg	LR
EST	SW8081A	p,p'-DDD	60277	006SB02703	60277015	SO	0.45	JBP	2.6	U	ug/kg	BL
EST	SW8081A	p,p'-DDD	61956	006SB04502	61956004	SO	55.6	P	55.6	J	ug/kg	2C
EST	SW8081A	p,p'-DDD	61956	006CB04502	61956005	SO	148	P	148	J	ug/kg	2C
EST	SW8081A	p,p'-DDD	61956	006SB04601	61956006	SO	521	P	521	J	ug/kg	2C
EST	SW8081A	p,p'-DDD	61956	006SB04603	61956007	SO	50.4	P	50.4	J	ug/kg	CC
EST	SW8081A	p,p'-DDD	CNC63	006SB00701	S240386*1	SO	72	=	72	J	ug/kg	CC
EST	SW8081A	p,p'-DDD	CNC63	006SB00901	S240386*10	SO	980	=	980	J	ug/kg	CC
EST	SW8081A	p,p'-DDD	CNC63	006SB01101	S240386*11	SO	36	P	36	J	ug/kg	CC, 2C, MS, MD
EST	SW8081A	p,p'-DDD	CNC63	006SB01102	S240386*12	SO	6.6	P	6.6	J	ug/kg	CC, 2C
EST	SW8081A	p,p'-DDD	CNC63	006SB01301	S240386*13	SO	6.2	P	6.2	J	ug/kg	CC, 2C
EST	SW8081A	p,p'-DDD	CNC63	006SB01302	S240386*14	SO	40	P	40	J	ug/kg	CC, 2C
EST	SW8081A	p,p'-DDD	CNC63	006CB01302	S240386*15	SO	3	P	3	J	ug/kg	CC, 2C
EST	SW8081A	p,p'-DDD	CNC63	006CB00701	S240386*2	SO	64	=	64	J	ug/kg	CC
EST	SW8081A	p,p'-DDD	CNC63	006SB00702	S240386*3	SO	92	=	92	J	ug/kg	CC
EST	SW8081A	p,p'-DDD	CNC63	006SB00801	S240386*4	SO	170	=	170	J	ug/kg	CC
EST	SW8081A	p,p'-DDD	CNC63	006SB01001	S240386*5	SO	20	P	20	J	ug/kg	2C
EST	SW8081A	p,p'-DDD	CNC63	006SB01201	S240386*6	SO	510	=	510	J	ug/kg	CC
EST	SW8081A	p,p'-DDD	CNC63	006SB01401	S240386*7	SO	720	=	720	J	ug/kg	CC
EST	SW8081A	p,p'-DDD	CNC63	006SB01401DL	S240386*7*DL	SO	390	D	390	R	ug/kg	DL
EST	SW8081A	p,p'-DDD	CNC63	006SB01402	S240386*8	SO	490	=	490	J	ug/kg	CC
EST	SW8081A	p,p'-DDD	CNC63	006SB01402DL	S240386*8*DL	SO	300	D	300	R	ug/kg	DL
EST	SW8081A	p,p'-DDD	CNC63	006SB01501	S240386*9	SO	5.6	=	5.6	J	ug/kg	CC
EST	SW8081A	p,p'-DDD	CNC63	006SB01602	S240473*1	SO	7	U	7	UJ	ug/kg	CC

Attachment 1 - Changed Qualifiers and Results
 Zone G, SW 6 - Data Validation

Parent Compound	SWID	Contaminant	Site	Sample ID	Lab Sample ID	Unit	Lab Result	Qual	Lab Result	Qual	Unit	Reasons
PEST	SW8081A	p,p'-DDE	60277	006SB01801RE	60277003	SO	5.5	U	5.5	R	ug/kg	DL
PEST	SW8081A	p,p'-DDE	60277	006SB02101RE	60277014	SO	552	U	552	R	ug/kg	DL
PEST	SW8081A	p,p'-DDE	61956	006SB04401	61956001	SO	41.4	=	41.4	J	ug/kg	CC
PEST	SW8081A	p,p'-DDE	61956	006SB04403	61956002	SO	37	=	37	J	ug/kg	CC
PEST	SW8081A	p,p'-DDE	61956	006SB04402	61956003	SO	25.6	=	25.6	J	ug/kg	CC
PEST	SW8081A	p,p'-DDE	61956	006SB04502	61956004	SO	15.2	JP	15.2	J	ug/kg	CC,2C
PEST	SW8081A	p,p'-DDE	61956	006CB04502	61956005	SO	36.4	P	36.4	J	ug/kg	CC,2C
PEST	SW8081A	p,p'-DDE	61956	006SB04601	61956006	SO	283	=	283	J	ug/kg	CC
PEST	SW8081A	p,p'-DDE	61956	006SB04603	61956007	SO	25.2	=	25.2	J	ug/kg	CC
PEST	SW8081A	p,p'-DDE	61956	006SB04701	61956008	SO	1	J	1	J	ug/kg	CC
PEST	SW8081A	p,p'-DDE	61956	006SB04703	61956009	SO	1.4	J	1.4	J	ug/kg	CC
PEST	SW8081A	p,p'-DDE	CNC63	006SB01101	S240386*11	SO	12	=	12	J	ug/kg	MS, MD
PEST	SW8081A	p,p'-DDE	CNC63	006SB00702	S240386*3	SO	20	P	20	J	ug/kg	2C
PEST	SW8081A	p,p'-DDE	CNC63	006SB01001	S240386*5	SO	47	=	47	J	ug/kg	CC
PEST	SW8081A	p,p'-DDE	CNC63	006SB01401DL	S240386*7*DL	SO	360	D	360	R	ug/kg	DL
PEST	SW8081A	p,p'-DDE	CNC63	006SB01402DL	S240386*8*DL	SO	170	D	170	R	ug/kg	DL
PEST	SW8081A	p,p'-DDT	60277	006SB01701	60277002	SO	14	P	14	J	ug/kg	2C
PEST	SW8081A	p,p'-DDT	60277	006SB01801	60277003	SO	97.1	EP	97.1	R	ug/kg	LR
PEST	SW8081A	p,p'-DDT	60277	006SB02101	60277014	SO	8530	E	8530	R	ug/kg	LR
PEST	SW8081A	p,p'-DDT	61956	006SB04401	61956001	SO	97.8	=	97.8	J	ug/kg	CC
PEST	SW8081A	p,p'-DDT	61956	006SB04403	61956002	SO	352	=	352	J	ug/kg	CC
PEST	SW8081A	p,p'-DDT	61956	006SB04502	61956004	SO	99	=	99	J	ug/kg	CC
PEST	SW8081A	p,p'-DDT	61956	006CB04502	61956005	SO	317	P	317	J	ug/kg	CC
PEST	SW8081A	p,p'-DDT	61956	006SB04601	61956006	SO	605	=	605	J	ug/kg	CC
PEST	SW8081A	p,p'-DDT	61956	006SB04603	61956007	SO	60.7	=	60.7	UJ	ug/kg	CC
PEST	SW8081A	p,p'-DDT	61956	006SB04701	61956008	SO	2.4	JP	2.4	J	ug/kg	CC,2C
PEST	SW8081A	p,p'-DDT	61956	006SB04703	61956009	SO	2.2	JP	2.2	J	ug/kg	CC,2C
PEST	SW8081A	p,p'-DDT	64538	006GW005M5	64538001	WG	0.011	JP	0.08	U	ug/L	BL
PEST	SW8081A	p,p'-DDT	64538	006GW001M5	64538002	WG	0.016	J	0.08	U	ug/L	BL
PEST	SW8081A	p,p'-DDT	CNC63	006SB00901	S240386*10	SO	1000	=	1000	J	ug/kg	CC
PEST	SW8081A	p,p'-DDT	CNC63	006SB01101	S240386*11	SO	65	=	65	J	ug/kg	CC
PEST	SW8081A	p,p'-DDT	CNC63	006SB01102	S240386*12	SO	19	=	19	J	ug/kg	CC
PEST	SW8081A	p,p'-DDT	CNC63	006SB01301	S240386*13	SO	18	=	18	J	ug/kg	CC

Attachment 1 - Changed Qualifiers and Results
 Zone G, SWMU 6 - Data Validation

WELL ID	WELL LOCATION	ANALYTE	DATE	SAMPLE ID	LAB/CONTRACT #	UNIT	TEST RESULT	UCL	LLC	FINAL RESULT	QUAL	UNIT	REASON
EST	SW8081A	p,p'-DDT	CNC63	006SB01302	S240386*14	SO	82	=	82	J		ug/kg	CC
EST	SW8081A	p,p'-DDT	CNC63	006CB01302	S240386*15	SO	7.1	=	7.1	J		ug/kg	CC
EST	SW8081A	p,p'-DDT	CNC63	006CB00701	S240386*2	SO	58	=	58	J		ug/kg	CC
EST	SW8081A	p,p'-DDT	CNC63	006SB00702	S240386*3	SO	43	=	43	J		ug/kg	CC
EST	SW8081A	p,p'-DDT	CNC63	006SB00801	S240386*4	SO	250	=	250	J		ug/kg	CC
EST	SW8081A	p,p'-DDT	CNC63	006SB01001	S240386*5	SO	73	=	73	J		ug/kg	CC
EST	SW8081A	p,p'-DDT	CNC63	006SB01201	S240386*6	SO	180	=	180	J		ug/kg	CC
EST	SW8081A	p,p'-DDT	CNC63	006SB01401	S240386*7	SO	2900	E	2900	R		ug/kg	LR
EST	SW8081A	p,p'-DDT	CNC63	006SB01402	S240386*8	SO	930	E	930	R		ug/kg	LR
EST	SW8081A	p,p'-DDT	CNC63	006SB01501	S240386*9	SO	21	P	21	J		ug/kg	CC, 2C
EST	SW8081A	p,p'-DDT	CNC63	006SB01602	S240473*1	SO	7	U	7	UJ		ug/kg	CC
EST	SW8081A	TOXAPHENE	60277	006SB01801RE	60277003	SO	182	U	182	R		ug/kg	DL
EST	SW8081A	TOXAPHENE	60277	006SB02101RE	60277014	SO	18300	U	18300	R		ug/kg	DL
EST	SW8081A	TOXAPHENE	CNC63	006SB01401DL	S240386*7*DL	SO	4800	U	4800	R		ug/kg	DL
EST	SW8081A	TOXAPHENE	CNC63	006SB01402DL	S240386*8*DL	SO	2000	U	2000	R		ug/kg	DL

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZG006-010902-01 Page 2 of 3 ¹⁰¹⁻ CB

Laboratory: <u>STL</u>	Project Name: <u>Charleston Navy Complex</u>	Site Name: <u>Zone G, SWMU 6/7 and AOC 635</u>
Project Number: <u>158814.PM.04</u>	TAT: <u>1-QTAT-14</u>	
Project Manager: <u>Tom Beisel</u>	QA Level: <u>level 3</u>	
Address: <u>GNV: 3011 SW Williston Rd., Gainesville, FL 32605</u>		
<u>ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278</u>		
Send Report To: <u>see last page of COC</u>	EDD: <u>CNC format</u>	

Lab Batch/SDG: _____

Sample ID	Station ID	Sample Description	Depth		Date & Time Collected	Matrix	# of containers	Analytes						Comments
			Begin	End				PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	
006SB01501	G006SB015		0	1	1-17-02/1235	SO	1	X	X	X	005			
006EB005M1	G006EB005				1-17-02/1240	SQ	4				X	X	X	EB - CB
006GW004M1	G006GW004	1-18-02/1000 AD			1-18-02/1000	WG	4				X		X	ACB
006EW004M1	G006EW004				1-18-02/1010	WQ	4				X		X	EB
														RCRA Site
														Sampling Complete

Sampled By: A. O'CONNOR Date/Time: 1-18-02 Relinquished by: Ch. Blay Date/Time: 1-18-02/1600

Additional Samplers: _____

Received By Lab: J Swafford Date/Time: 1/19/02 10:44 Relinquished by: _____ Date/Time: _____

Received By: _____ Date/Time: _____ Shipped Via: UPS FedEx Hand Other Tracking#: _____

Remarks: Fax results to Bill Elliott 352-333-7886 & Herb Kelly 352-271-4811 Temperature: _____

Receipt Exceptions: _____ 5240414

Laboratory: GEL		Project Name: Charleston Navy Complex		Site Name: Zone G, SWMU 6		# of containers	1 - 4 ounce jar	1 - 4 ounce jar	2 - 1L amber	2 - 1L amber	1 - 4 ounce jar	1 - 0.5L HDPE, HMO3	Lab Batch/SDG:		
Project Number: 158814.PM.04		TAT: 1-QTAT-14		QA Level: level 3			PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)		Arsenic (SW6010B)	Arsenic (SW6010B)
Project Manager: Tom Beisel		Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605		Address: ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278			PAHs (SW8270C)	Arsenic (SW6010B)	Arsenic (SW6010B)						
Send Report To: see last page of COC		EDD: CNC format													
Sample ID	Station ID	Sample Description	Depth		Date & Time Collected		Matrix	PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	PCBs (SW8082)	Pesticides (SW8081A)		PAHs (SW8270C)	Arsenic (SW6010B)
006MB00101	G006MB001	Migration to sediment	0	1	5-8-02/1200	SO	X	X	X						
006MB00101MS	G006MB001		0	1	5-8-02/1200	SO	X	X	X						MS
006MB00101SD	G006MB001		0	1	5-8-02/1200	SO	X	X	X						MSD
006SB01701	G006SB017	Confirm fill is ND	0	1	5-8-02/1510	SO	X	X	X						
006SB01801	G006SB018	Confirm fill is ND	0	1	5-8-02/1500	SO	X	X	X						RCRA
006SB01901	G006SB019	Delineate	0	1	5-8-02/1415	SO	X	X	X						
006CB01901	G006SB019	Delineate	0	1	5-8-02/1415	SO	X	X	X						samples complete
006SB01902	G006SB019	Delineate	3	5	5-8-02/1430	SO			X						
006SB02001	G006SB020	Delineate on bank of ditch.	0	1	5-8-02/1400	SO		X	X						
006SB02002	G006SB020	Delineate on bank of ditch.	3	5	5-8-02/1405	SO			X						
006SB02101	G006SB021	Delineate on bank of ditch.	0	1	5-8-02/1345	SO		X	X						
006SB02102	G006SB021	Delineate on bank of ditch.	3	5	5-8-02/1350	SO			X						
006SB02201	G006SB022	Delineate SS PCB.	0	1	5-9-02/0840	SO	X								
006SB02301	G006SB023	Delineate SS PCB.	0	1	5-9-02/0830	SO	X								
006SB02401	G006SB024	Confirm exceedance S06SB02	0	1	5-9-02/0850	SO			X						
006SB02402	G006SB024	Confirm exceedance S06SB02	3	5	5-9-02/0900	SO			X						
006CB02402	G006SB024	Confirm exceedance S06SB02	3	5	5-9-02/0905	SO			X						
006SB02503	G006SB025	Confirm excavation depth.	0	1	5-8-02/1530	SO	X								
006SB02603	G006SB026	Confirm excavation depth.	0	1	5-8-02/1140	SO			X						
006SB02703	G006SB027	Confirm excavation depth.	0	1	5-8-02/1145	SO		X	X						

Sampled By: ANDREW O'CONNOR Date/Time: 5-8-02 Relinquished by: R. Garcia Date/Time: 5/10/02 1730

Additional Samplers: C. Deas

Received By Lab: Mike Kumbur Date/Time: 5/10/02 1730 Relinquished by: _____ Date/Time: _____

Received By: _____ Date/Time: _____ Shipped Via: UPS FedEx Hand Other Tracking#: _____

Remarks: Fax results to David Lane 352-271-4846. Temperature: _____

Receipt Exceptions: _____

CH2M HILL Chain of Custody/ Laboratory Analysis Form

Laboratory: GEL		Project Name: Charleston Navy Complex		Site Name: Zone G, SWMU 6		# of containers	1 - 4 ounce jar	1 - 4 ounce jar	2 - 1L amber	2 - 1L amber	1 - 4 ounce jar	1 - 0.5L HDPE, HINC3	Lab Batch/SDG:	
Project Number: 158814.PM.04		TAT: 1-QTAT-14		QA Level: level 3			Pesticides (SW8081A)	PAHs (SW8270C)	PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	Arsenic (SW6010B)		Arsenic (SW6010B)
Project Manager: Tom Beisel		Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605		ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278			PCBs (SW8082)	PAHs (SW8270C)	PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	Arsenic (SW6010B)		Arsenic (SW6010B)
Send Report To: see last page of COC		EDD: CNC format					PCBs (SW8082)	PAHs (SW8270C)	PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	Arsenic (SW6010B)		Arsenic (SW6010B)
Sample ID	Station ID	Sample Description	Depth		Date & Time Collected		Matrix							
006SB02803	G006SB028	Confirm excavation depth.	0	1	5-8-02/1410	SO	2	X	X					
006SB02903	G006SB029	Confirm excavation depth.	0	1	5-8-02/1150	SO	2	X	X					
006EB001M2	G006EB001	sediment EB			5-8-02/1210	SQ	4			X	X	X	EB	
006EB017M2	G006EB017	soil EB			5-8-02/1535	SQ	4			X	X	X	EB	
006SB03001	G006SB030	5-9-02/0925	0	1	5-9-02/0925	SO	1				X		RCRA	
006SB03002	G006SB030		3	5	5-9-02/0930	SO	1				X			
006SB03102	G006SB031		3	5	5-9-02/1100	SO	1				X		Sampled complete	
006CB03102	G006SB031		3	5	5-9-02/1105	SO	1				X			
006SB03202	G006SB032		3	5	5-9-02/1035	SO	1				X			
006SB03301	G006SB033		0	1	5-9-02/1000	SO	1				X			
006SB03301MS	G006SB033		0	1	5-9-02/1000	SO	1				X		MS	
006SB03301SD	G006SB033		0	1	5-9-02/1000	SO	1				X		MSD	
006SB03302	G006SB033		3	5	5-9-02/1015	SO	1				X			
006SB03402	G006SB034		3	5	5-9-02/0910	SO	1				X			
006EB030M2	G006EB030				5-9-02/1110	SQ	1					X	EB	

Sampled By: Andrew O'Leary Date/Time: 5-8-02 Relinquished by: _____ Date/Time: _____

Additional Samplers: C. Davis

Received By Lab: Mike Condon Date/Time: 5/10/12 1730 Relinquished by: _____ Date/Time: _____

Received By: _____ Date/Time: _____ Shipped Via: UPS FedEx Hand Other Tracking#: _____

Remarks: F results to David Lane 352-271-4846. Temperature: ()

Receipt Exceptions: _____

CH2M HILL Chain of Custody/ Laboratory Analysis Form

Laboratory: GEL		Project Name: Charleston Navy Complex		Site Name: Zone G, SWMU 6		# of containers	1 - 4 ounce jar	1 - 4 ounce jar	2 - 1L amber	2 - 1L amber	1 - 4 ounce jar	1 - 0.5L HDPE, HNO3	Lab Batch/SDG: 61902		
Project Number: 158814.PM.04		TAT: 1-QTAT-7		QA Level: level 3			PCBs (SW8082)	Pesticides (SW8081A)	PCBs (SW8270C)	Pesticides (SW8081A)	PAHs (SW8270C)	Arsenic (SW6010B)		Arsenic (SW6010B)	
Project Manager: Tom Beisel		Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605		Address: ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278			PAHs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	Arsenic (SW6010B)	Arsenic (SW6010B)				
Send Report To: see last page of COC		EDD: CNC format													
Sample ID	Station ID	Sample Description	Depth		Date & Time Collected		Matrix	PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	PCBs (SW8082)	Pesticides (SW8081A)		PAHs (SW8270C)	Arsenic (SW6010B)
006SB04701	G006SB047	delineate & confirm	0	1		SO		X	X						
006SB04703	G006SB047	delineate & confirm	1	2		SO		X	X						
006SB04703MS	G006SB047	delineate & confirm	1	2		SO		X	X						MS
006SB04703SD	G006SB047	delineate & confirm	1	2		SO		X	X						MSD
006EB035M3	G006EB035					SQ				X	X	X		X	EB
006SA001M3	G006SA001	TCLP			6-11-02/1620	SQ	X	X							
	G006SB049					SO									
	G006SB049					SO									
	G006SB050					SO									
	G006SB050					SO									
	G006SB052					SO									
	G006SB052					SO									
	G006SB053					SO									
	G006SB053					SO									
	G006SB054					SO									
	G006SB054					SO									

Sampled By: _____	Date/Time: _____	Relinquished by: <i>[Signature]</i>	Date/Time: 1745 6-11-02
Additional Samplers: _____		Relinquished by: _____	Date/Time: _____
Received By Lab: <i>[Signature]</i>	Date/Time: 6-11-02 1745	Shipped Via: UPS FedEx Hand Other Tracking#:	Temperature: ()
Received By: _____	Date/Time: _____		
Remarks: results to David Lane 352-271-4846.			

CH₂M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZG006-060702-01

page 2 of 3

Lab Batch/SDG:

61902

Laboratory: GEL		Site Name: Zone G, SWMU 6																
Project Name: Charleston Navy Complex		TAT: 1-QTAT-7																
Project Number: 158814.PM.04		QA Level: level 3																
Project Manager: Tom Beisel		Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605																
Send Report To: see last page of COC		EDD: CNC format																
Address: ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278																		
Sample ID	Station ID	Sample Description	Depth		Date & Time Collected	Matrix	# of containers								Comments			
			Begin	End				PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	Arsenic (SW6010B)		Arsenic (SW6010B)		
006SB04701	G006SB047	delineate & confirm	0	1		SO			X	X								
006SB04703	G006SB047	delineate & confirm	1	2		SO			X	X								
006SB04703MS	G006SB047	delineate & confirm	1	2		SO			X	X								MS
006SB04703SD	G006SB047	delineate & confirm	1	2		SO			X	X								MSD
006EB035M3	G006EB035					SQ					X	X	X		X			EB
006SA001M3	G006SA001	TCLP			6-11-02/1620	SO	1	X	X									
	G006SB049					SO												
	G006SB049					SO												
	G006SB050					SO												
	G006SB050					SO												
	G006SB052					SO												
	G006SB052					SO												
	G006SB053					SO												
	G006SB053					SO												
	G006SB054					SO												
	G006SB054					SO												

RUSH!

Sampled By: _____ Date/Time: _____ Relinquished by: [Signature] Date/Time: 1745 6-11-02

Additional Samplers: _____

Received By Lab: [Signature] Date/Time: 6-11-02 1745 Relinquished by: [Signature] Date/Time: 6-13-02 1126

Received By: [Signature] Date/Time: 6-14-02 9:03 Shipped Via: UPS FedEX Hand Other Tracking#: _____

Remarks: Fax results to David Lane 352-271-4846. Temperature: _____

5244146

Receipt Exceptions: _____

Laboratory: **GEL**

Project Name: **Charleston Navy Complex** Site Name: **Zone G, SWMU 6**

Project Number: **158814.PM.04** TAT: **1-QTAT-7**

Project Manager: **Tom Beisel** QA Level: **level 3**

Address: **GNV: 3011 SW Williston Rd., Gainesville, FL 32605**

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: **see last page of COC** EDD: **CNC format**

Lab Batch/SDG: **61956%, 619577**

Sample ID	Station ID	Sample Description	Depth		Date & Time Collected	Matrix	# of containers	# of containers							Comments		
			Begin	End				PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	PCBs (SW8082)	Pesticides (SW8081A)	PAHs (SW8270C)	Arsenic (SW6010B)		Arsenic (SW6010B)	
006SB04701	G006SB047	delineate & confirm	0	1	6-12-02/0920	SO	1		X	X							
006SB04703	G006SB047	delineate & confirm	1	2	6-12-02/0925	SO	1		X	X							
006SB04703MS	G006SB047	delineate & confirm	1	2	6-12-02/0925	SO	1		X	X							MS
006SB04703SD	G006SB047	delineate & confirm	1	2	6-12-02/0925	SO	1		X	X							MSD
006EB035M3	G006EB035				6-12-02/0935	SQ	1				X	X	X		X		EB
006SA001M3	GDC6SA001	TCLP			6-11-02/1120	SO	1	X	X								
	G006SB049					SO											
	G006SB049					SO											
	G006SB050					SO											
	G006SB050					SO											
	G006SB052					SO											
	G006SB052					SO											
	G006SB053					SO											
	G006SB053					SO											
	G006SB054					SO											
	G006SB054					SO											

Sampled By: **A.O. i.C.D.** Date/Time: **6-12-02**; **6-11-02** Relinquished by: *[Signature]* Date/Time: **6-12-02/1225**

Additional Samplers: **J.D.**

Received By Lab: *[Signature]* Date/Time: **6/12/02 1225** Relinquished by: _____ Date/Time: _____

Received By: _____ Date/Time: _____ Shipped Via: **UPS FedEx Hand Other** Tracking#: _____

Remarks: **Fax results to David Lane 352-271-4846.** Temperature: _____

Receipt Exceptions: _____

CH2M HILL Chain of Custody/ Laboratory Analysis Form

Laboratory: STL	Site Name: Zone G, SWMU 3
Project Name: Charleston Navy Complex	Lab Batch/SDG:
Project Number: 158814.PM.04	TAT: 1-QTAT-3
Project Manager: Tom Beisel	QA Level: level 3
Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605	
Address: ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278	
Send Report To: see last page of COC	EDD: CNC format

Sample ID	Station ID	Sample Description	Depth		Date & Time Collected	Matrix	# of containers	Containers							Comments	
			Begin	End				1 - 4 ounce jar	2 - 1L amber	2 - 1L amber	1 - 4 ounce jar	1 - 0.5L HDPE HNO3				
*006SB04901	G006SB049		0	1	6-21-02/1300	SO	1	X								
*006SB05001	G006SB050		0	1	6-21-02/1315	SO	1	X								* Samples complete
*006SB05901	G006SB059		0	1	6-21-02/1330	SO	1	X								
*006SB05201	G006SB052		0	1	6-21-02/1345	SO	1	X								
*006CB05201	G006SB052		0	1	6-21-02/1345	SO	1	X								* RCRA
*006SB05301	G006SB053		0	1	6-21-02/1400	SO	1	X								
*006SB05401	G006SB054		0	1	6-21-02/1415	SO	1	X								
*006SB05501	G006SB055		0	1	6-21-02/1430	SO	1	X								
*006SB05601	G006SB056		0	1	6-21-02/1445	SO	1	X								
*006SB05701	G006SB057		0	1	6-21-02/1500	SO	1	X								
*006SB05803	G006SB058		1	2	6-21-02/1515	SO	1	X								
006SB05803MS	G006SB058		1	2	6-21-02/1515	SO	1	X								MS
006SB05803SD	G006SB058		1	2	6-21-02/1515	SO	1	X								MSD
*006EB049M4	G006EB049				6-21-02/1530	SQ	2				X					EB

Sampled By: Jefferson Stokes Date/Time: 6-21-02/1530 Relinquished by: _____ Date/Time: _____

Additional Samplers: Charlie Deas

Received By Lab: _____ Date/Time: 6-22-02 10:14 Relinquished by: _____ Date/Time: _____

Receipt Exceptions: _____ (3244399)

Laboratory: GEL
 Site Name: Zone G, SWMU 6
 Project Name: Charleston Navy Complex
 Project Number: 158814.PM.04 TAT: STANDARD
 Project Manager: Tom Beisel QA Level: level 3
 Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605
ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
 Send Report To: see last page of COC EDD: CNC format

Lab Batch/SDG:
64538%

Sample ID	Station ID	Sample Description	Depth		Date & Time Collected	Matrix	# of containers	PCBs (SW8082)	Pesticides (SW8081A)	SVOCs (SW6270C)	Metals (SW6010B/7000)	1-1L amber	2-1L amber	1-0.5L HDPE, HNO3								Comments	
			Begin	End																			
6GW001M5	G006GW001				7-31-02/1025	WG	4	X	X	X	X												RCRA
6GW002M5	G006GW002				7-31-02/1110	WG	4	X	X	X	X												
6GW003M5	G006GW003				7-31-02/1425	WG	4	X	X	X	X												samples complete
6GW004M5	G006GW004				7-31-02/1450	WG	4	X	X	X	X												
6GW005M5	G006GW005				7-31-02/1315	WG	4	X	X	X	X												
6GW005M5SD	G006GW005				7-31-02/1325	WG	4	X	X	X	X												
6GW005M5MS	G006GW005				7-31-02/1320	WG	4	X	X	X	X												MS
6GW006M5SD	G006GW006				7-31-02/1410	WG	4	X	X	X	X												MSD
6GW007M5	G006GW007				7-31-02/1125	WG	4	X	X	X	X												
6EW001M5	G006EW001				7-31-02/1445	WQ	4	X	X	X	X												EB

Collected By: ANDREW O'NEVER Date/Time: 7-31-02

Relinquished by: [Signature] Date/Time: 7-31-02/1630

Initial Samplers: C. DEAS ; J. DEAS

Received By Lab: [Signature] Date/Time: 7-31-02 1630

Relinquished by: _____ Date/Time: _____

Receipt Exceptions: _____

Appendix D-1
 Summary of PCB UCL95 Calculations

Site: SWMU 6
 Media: Surface Soil
 Units: ug/Kg
 Chemical: Aroclor-1254
 Notes: w/o SB051

STATISTICS

N	66
Detects	3
FOD	5%
Mean of Detect	79.533
Min of Detect	8.1000
Max of Detect	174.00
Best Estimate of Mean (arithmetic)	38.5
Best Estimate of Mean (geometric)	31.0
Nondetects at 1/2 DL	YES

95% UPPER CONFIDENCE LIMITS FOR MEAN

UCL95 Normal	38.6
<i>t</i> -statistic	1.66
UCL95 Lognormal	39.9
<i>H</i> -statistic	1.84
UCL95 Nonparametric	34.5
UCL95 Bootstrap	38.5

95% UPPER TOLERANCE INTERVAL

UTL95 Normal	67.35579382
<i>coverage</i>	95%
UTL95 Lognormal	73.01765589
<i>coverage</i>	95%
UTL95 Nonparametric	#N/A
<i>coverage</i>	

DISTRIBUTION TESTING

Population is best described as:	Unknown
W_{normal}	--
W_{log}	--
$W_{\alpha = 0.05}$	--

Notes:

1. If population does not fit normal or lognormal distribution, check Q-Q plots and W-test values. The population may be close enough to one of those distributions
2. For site data, if the selected UCL95 exceeds the Max Detect, the Max Detect should be chosen as the EPC.
3. Lognormal UCL or UTL values calculated for less than 30 samples may be widely inflated.
4. If there is >90% nondetection, it is generally impossible to calculate a UTL or UCL with any level of confidence.

Appendix D-2
Summary of PCB UCL95 Calculations

Site: SWMU 6
Media: Surface Soil
Units: ug/Kg

Chemical: Aroclor-1254
Notes: w/ SB051

STATISTICS

N	75
Detects	4
FOD	5%
Mean of Detect	6559.650
Min of Detect	8.1000
Max of Detect	26000.00
Best Estimate of Mean (arithmetic)	975.5
Best Estimate of Mean (geometric)	41.0
Nondetects at 1/2 DL	YES

95% UPPER CONFIDENCE LIMITS FOR MEAN

UCL95 Normal	972.9
<i>t-statistic</i>	1.66
UCL95 Lognormal	94.4
<i>H-statistic</i>	2.25
UCL95 Nonparametric	34.5
UCL95 Bootstrap	975.5

95% UPPER TOLERANCE INTERVAL

UTL95 Normal	5409.035947
<i>coverage</i>	95%
UTL95 Lognormal	239.6831417
<i>coverage</i>	95%
UTL95 Nonparametric	#N/A
<i>coverage</i>	

DISTRIBUTION TESTING

Population is best described as:	Unknown
W_{normal}	--
W_{log}	--
$W_{\alpha = 0.05}$	--

Notes:

1. If population does not fit normal or lognormal distribution, check Q-Q plots and W-test values. The population may be close enough to one of those distributions
2. For site data, if the selected UCL95 exceeds the Max Detect, the Max Detect should be chosen as the EPC.
3. Lognormal UCL or UTL values calculated for less than 30 samples may be widely inflated.
4. If there is >90% nondetection, it is generally impossible to calculate a UTL or UCL with any level of confidence.

Appendix D-3
 Summary of PCB UCL95 Calculations

Site: SWMU 6
 Media: Surface Soil
 Units: ug/Kg

Chemical: Aroclor-1260
 Notes: non-detects above max detect eliminated

STATISTICS

N	74
Detects	19
FOD	26%
Mean of Detect	329.768
Min of Detect	10.8000
Max of Detect	2400.00
Best Estimate of Mean (arithmetic)	170.0
Best Estimate of Mean (geometric)	51.5
Nondetects at 1/2 DL	YES

95% UPPER CONFIDENCE LIMITS FOR MEAN

UCL95 Normal	171.5
<i>t</i> -statistic	1.66
UCL95 Lognormal	106.2
<i>H</i> -statistic	2.16
UCL95 Nonparametric	34.5
UCL95 Bootstrap	170.0

95% UPPER TOLERANCE INTERVAL

UTL95 Normal	611.0659809
coverage	95%
UTL95 Lognormal	263.7233474
coverage	95%
UTL95 Nonparametric	#N/A
coverage	

DISTRIBUTION TESTING

Population is best described as:	Unknown
W_{normal}	--
W_{log}	--
$W_{\alpha = 0.05}$	--

Notes:

1. If population does not fit normal or lognormal distribution, check Q-Q plots and W-test values. The population may be close enough to one of those distributions
2. For site data, if the selected UCL95 exceeds the Max Detect, the Max Detect should be chosen as the EPC.
3. Lognormal UCL or UTL values calculated for less than 30 samples may be widely inflated.
4. If there is >90% nondetection, it is generally impossible to calculate a UTL or UCL with any level of confidence.

Appendix D-5
 Summary of PCB UCL95 Calculations

Site: SWMU 6
 Media: Surface Soil
 Units: ug/Kg

Chemical	Notes	Samples	Detects	Non-Detects	FOD	Min	Max	Avg Detect	Mean	Min	Max	W-Test	t-Statistic	UCL95			UCL95 nonparm	UCL95 bootstrap
						Detect	Detect			nondetect	nondetect			norm	H-statistic	UCL96 log		
Aroclor-1254	w/o SB051	66	3	63	5%	8.1	174	79.5	34.6	1.85	47	Unknown	1.7	38.6	1.84	39.8	34.5	38.5
Aroclor-1254	w/ SB051	75	4	71	5%	8.1	26000	6559.7	398.1	1.85	400	Unknown	1.7	972.9	2.25	94.4	34.5	975.5
Aroclor-1260		74	19	55	26%	10.8	2400	329.8	114.1	18	195	Unknown	1.7	171.5	2.16	106.2	34.5	170.0
p,p'-DDT		68	21	47	31%	2.4	4200	385.3	130.3	1.3	550	Unknown	1.7	243.9	3.38	143.7	4.7	240.3

Appendix D-5a

Aroclor-1254 Data for UCL95 Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID		Date Collected	Concentration (ug/Kg)	Qualifier
G006SB051	006SB05101		09/22/93	30	
G006SB012	006SB01201		01/17/02	800	U
G006SB035	006SB03501		06/11/02	465	U
G006SB005	006SB00501		01/17/02	390	U
G006SB071	006SB07101		09/22/93	390	U
G006SB061	006SB06101		09/22/93	380	U
G006SB037	006SB03701		06/11/02	360	U
G007SB311	007SB31101		10/13/93	190	U
G006SB041	006SB04101		09/21/93	180	U
G006SB018	006SB01801		05/08/02	174	=
G006SB052	006SB05201		06/21/02	94	UJ
G006SB049	006SB04901		05/08/02	93	UJ
G006SB004	006SB00401		09/19/96	88	U
G006SB055	006SB05501		06/21/02	87	UJ
G006SB053	006SB05301		06/21/02	85	UJ
G006SB059	006SB05901		06/21/02	83	UJ
G007SB001	007SB00101		10/03/96	83	U
G006SB050	006SB05001		06/21/02	81	U
G006SB054	006SB05401		06/21/02	79	UJ
G006SB010	006SB01001		01/17/02	74	U
G006SB001	006SB00101	Removed-DET	09/19/96	69	U
G006SB002	006SB00201	Removed-Jones	09/19/96	69	U
G006SB003	006SB00301	Removed-DET	09/19/96	69	U
G006SB006	006SB00601	Removed-Jones	01/17/02	69	U
G006SB007	006SB00701	Removed-Jones	01/17/02	69	U
G006SB008	006SB00801	Removed-Jones	01/17/02	69	U
G006SB009	006SB00901	Removed-Jones	01/17/02	69	U
G006SB011	006SB01101	Removed-Jones	01/17/02	69	U
G006SB014	006SB01401	Removed-Jones	01/17/02	69	U
G006SB022	006SB02201	Removed-Jones	05/09/02	69	U
G006SB025	006SB02503	Removed-Jones	05/08/02	69	U
G006SB036	006SB03601	Removed-Jones	06/11/02	69	U
G006SB038	006SB03801	Removed-Jones	06/11/02	69	U
G006SB039	006SB03901	Removed-Jones	06/11/02	69	U
G006SB040	006SB04001	Removed-Jones	06/11/02	69	U
G006SB048	006SB04801	Removed-Jones	06/11/02	69	U
G006SB056	006SB05601	Removed-Jones	06/21/02	69	U
G006SB057	006SB05701	Removed-Jones	06/21/02	69	U
G006SB151	006SB15101	Removed-DET	10/27/93	69	U
G006SB251	006SB25101	Removed-DET	10/27/93	69	U
G007SB041	007SB04101	Removed-DET	10/09/93	69	U
G007SB051	007SB05101	Removed-DET	10/09/93	69	U
G007SB081	007SB08101	Removed-DET	10/09/93	69	U
G007SB091	007SB09101	Removed-DET	10/09/93	69	U
G007SB101	007SB10101	Removed-DET	10/09/93	69	U
G007SB111	007SB11101	Removed-Jones	10/09/93	69	U
G007SB121	007SB12101	Removed-DET	10/09/93	69	U

Appendix D-5a

Aroclor-1254 Data for UCL95 Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID		Date Collected	Concentration (ug/Kg)	Qualifier
G007SB131	007SB13101	Removed-DET	10/09/93	69	U
G007SB161	007SB16101	Removed-DET	10/11/93	69	U
G007SB171	007SB17101	Removed-Jones	10/11/93	69	U
G007SB191	007SB19101	Removed-Jones	10/11/93	69	U
G007SB211	007SB21101	Removed-DET	10/11/93	69	U
G007SB221	007SB22101	Removed-DET	10/11/93	69	U
G007SB231	007SB23101	Removed-DET	10/11/93	69	U
G007SB241	007SB24101	Removed-DET	10/11/93	69	U
G007SB271	007SB27101	Removed-DET	10/11/93	69	U
G007SB281	007SB28101	Removed-DET	10/13/93	69	U
G007SB291	007SB29101	Removed-Jones	10/13/93	69	U
G007SB301	007SB30101	Removed-Jones	10/13/93	69	U
G635SB001	635SB00101	Removed-DET	10/03/96	69	U
G006SB023	006SB02301		05/09/02	56.5	=
G006SB141	006SB14101		10/27/93	43	U
G007SB061	007SB06101		10/09/93	43	U
G006SB031	006SB03101		09/21/93	41	U
G007SB071	007SB07101		10/09/93	41	U
G007SB031	007SB03101		10/09/93	40	U
G006SB015	006SB01501		01/17/02	39	U
G006SB201	006SB20101		10/27/93	39	U
G006SB261	006SB26101		10/27/93	39	U
G007SB321	007SB32101		10/13/93	39	U
G007SB331	007SB33101		10/13/93	39	U
G006SB013	006SB01301		01/17/02	38	U
G007SB181	007SB18101		10/11/93	36	U
G006SB019	006SB01901		05/08/02	8.1	=
G006SB017	006SB01701		05/08/02	3.7	U



Appendix D-4

Summary of p,p'-DDT UCL95 Calculations

Site: SWMU 6
 Media: Surface Soil
 Units: ug/Kg
 Chemical: p,p'-DDT
 CASRN:

STATISTICS

N	68
Detects	21
FOD	31%
Mean of Detect	385.305
Min of Detect	2.4000
Max of Detect	4200.00
Best Estimate of Mean (arithmetic)	240.3
Best Estimate of Mean (geometric)	6.2
Nondetects at 1/2 DL	YES

95% UPPER CONFIDENCE LIMITS FOR MEAN

UCL95 Normal	243.9
<i>t-statistic</i>	1.66
UCL95 Lognormal	143.7
<i>H-statistic</i>	3.38
UCL95 Nonparametric	4.7
UCL95 Bootstrap	240.3

95% UPPER TOLERANCE INTERVAL

UTL95 Normal	1074.221111
<i>coverage</i>	95%
UTL95 Lognormal	217.2772376
<i>coverage</i>	95%
UTL95 Nonparametric	#N/A
<i>coverage</i>	

DISTRIBUTION TESTING

Population is best described as:	Unknown
W_{normal}	--
W_{log}	--
$W_{\alpha = 0.05}$	--

Notes:

1. If population does not fit normal or lognormal distribution, check Q-Q plots and W-test values. The population may be close enough to one of those distributions
2. For site data, if the selected UCL95 exceeds the Max Detect, the Max Detect should be chosen as the EPC.
3. Lognormal UCL or UTL values calculated for less than 30 samples may be widely inflated.
4. If there is >90% nondetection, it is generally impossible to calculate a UTL or UCL with any level of confidence.

Appendix D-5b

Aroclor-1260 Data for UCL95 Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID		Date Collected	Concentration (ug/Kg)	Qualifier
G006SB051	006SB05101		09/22/93	380	
G006SB061	006SB06101		09/22/93	2400	=
G007SB071	007SB07101		10/09/93	780	=
G007SB031	007SB03101		10/09/93	550	J
G006SB201	006SB20101		10/27/93	420	=
G006SB071	006SB07101		09/22/93	390	U
G006SB018	006SB01801		05/08/02	270	=
G006SB059	006SB05901		06/21/02	270	J
G006SB023	006SB02301		05/09/02	265	=
G006SB010	006SB01001		01/17/02	260	J
G006SB141	006SB14101		10/27/93	240	U
G006SB037	006SB03701		06/11/02	207	J
G006SB012	006SB01201		01/17/02	200	J
G006SB035	006SB03501		06/11/02	199	J
G007SB311	007SB31101		10/13/93	190	U
G006SB041	006SB04101		09/21/93	180	U
G006SB053	006SB05301		06/21/02	96	J
G006SB005	006SB00501		01/17/02	95	J
G006SB052	006SB05201		06/21/02	94	UJ
G006SB050	006SB05001		06/21/02	84	J
G007SB001	007SB00101		10/03/96	83	U
G006SB054	006SB05401		06/21/02	79	UJ
G006SB001	006SB00101	Removed-DET	09/19/96	69	U
G006SB002	006SB00201	Removed-Jones	09/19/96	69	U
G006SB003	006SB00301	Removed-DET	09/19/96	69	U
G006SB006	006SB00601DL	Removed-Jones	01/17/02	69	U
G006SB007	006SB00701	Removed-Jones	01/17/02	69	U
G006SB008	006SB00801	Removed-Jones	01/17/02	69	U
G006SB009	006SB00901	Removed-Jones	01/17/02	69	U
G006SB011	006SB01101	Removed-Jones	01/17/02	69	U
G006SB014	006SB01401	Removed-Jones	01/17/02	69	U
G006SB022	006SB02201	Removed-Jones	05/09/02	69	U
G006SB025	006SB02503	Removed-Jones	05/08/02	69	U
G006SB036	006SB03601	Removed-Jones	06/11/02	69	U
G006SB038	006SB03801	Removed-Jones	06/11/02	69	U
G006SB039	006SB03901	Removed-Jones	06/11/02	69	U
G006SB040	006SB04001	Removed-Jones	06/11/02	69	U
G006SB048	006SB04801	Removed-Jones	06/11/02	69	U
G006SB056	006SB05601	Removed-Jones	06/21/02	69	U
G006SB057	006SB05701	Removed-Jones	06/21/02	69	U
G006SB151	006SB15101	Removed-DET	10/27/93	69	U
G006SB251	006SB25101	Removed-DET	10/27/93	69	U
G007SB041	007SB04101	Removed-DET	10/09/93	69	U
G007SB051	007SB05101	Removed-DET	10/09/93	69	U
G007SB081	007SB08101	Removed-DET	10/09/93	69	U
G007SB091	007SB09101	Removed-DET	10/09/93	69	U
G007SB101	007SB10101	Removed-DET	10/09/93	69	U

Appendix D-5b
 Aroclor-1260 Data for UCL95 Concentration Calculations
 SWMU 6, Zone G, CNC

Station ID	Sample ID		Date Collected	Concentration (ug/Kg)	Qualifier
G007SB111	007SB11101	Removed-Jones	10/09/93	69	U
G007SB121	007SB12101	Removed-DET	10/09/93	69	U
G007SB131	007SB13101	Removed-DET	10/09/93	69	U
G007SB161	007SB16101	Removed-DET	10/11/93	69	U
G007SB171	007SB17101	Removed-Jones	10/11/93	69	U
G007SB191	007SB19101	Removed-Jones	10/11/93	69	U
G007SB211	007SB21101	Removed-DET	10/11/93	69	U
G007SB221	007SB22101	Removed-DET	10/11/93	69	U
G007SB231	007SB23101	Removed-DET	10/11/93	69	U
G007SB241	007SB24101	Removed-DET	10/11/93	69	U
G007SB271	007SB27101	Removed-DET	10/11/93	69	U
G007SB281	007SB28101	Removed-DET	10/13/93	69	U
G007SB291	007SB29101	Removed-Jones	10/13/93	69	U
G007SB301	007SB30101	Removed-Jones	10/13/93	69	U
G635SB001	635SB00101	Removed-DET	10/03/96	69	U
G006SB004	006SB00401		09/19/96	65	U
G006SB049	006SB04901		05/08/02	61	J
G006SB015	006SB01501		01/17/02	49	J
G007SB061	007SB06101		10/09/93	43	U
G006SB031	006SB03101		09/21/93	41	U
G006SB261	006SB26101		10/27/93	39	U
G007SB321	007SB32101		10/13/93	39	U
G007SB331	007SB33101		10/13/93	39	U
G006SB013	006SB01301		01/17/02	38	UJ
G007SB181	007SB18101		10/11/93	36	U
G006SB017	006SB01701		05/08/02	26.8	=
G006SB055	006SB05501		06/21/02	22	J
G006SB019	006SB01901		05/08/02	10.8	=



Appendix D-5c
 DDT Data for UCL95 Concentration Calculations
 SWMU 6, Zone G, CNC

Station ID	Sample ID		Date Collected	Concentration (ug/Kg)	Qualifier
G006MB001	006MB00101		08-May-02	4.6	U
G006SB001	006SB00101	Removed _{DET}	19-Sep-96	2.6	U
G006SB002	006SB00201	Removed _{Jones}	19-Sep-96	2.6	U
G006SB003	006SB00301	Removed _{DET}	19-Sep-96	2.6	U
G006SB004	006SB00401		19-Sep-96	23	=
G006SB007	006SB00701	Removed _{Jones}	17-Jan-02	2.6	U
G006SB008	006SB00801	Removed _{Jones}	17-Jan-02	2.6	U
G006SB009	006SB00901	Removed _{Jones}	17-Jan-02	2.6	U
G006SB010	006SB01001		17-Jan-02	73	J
G006SB011	006SB01101	Removed _{Jones}	17-Jan-02	2.6	U
G006SB012	006SB01201		17-Jan-02	180	J
G006SB013	006SB01301		17-Jan-02	18	J
G006SB014	006SB01401DL	Removed _{Jones}	17-Jan-02	2.6	U
G006SB015	006SB01501		17-Jan-02	21	J
G006SB017	006SB01701		08-May-02	14	J
G006SB018	006SB01801RE		08-May-02	110	=
G006SB019	006SB01901		08-May-02	42.5	=
G006SB020	006SB02001		08-May-02	28.5	U
G006SB021	006SB02101RE	Removed _{Jones}	08-May-02	2.6	U
G006SB027	006SB02703	Removed _{Jones}	08-May-02	2.6	U
G006SB028	006SB02803	Removed _{Jones}	08-May-02	2.6	U
G006SB029	006SB02903	Removed _{Jones}	08-May-02	2.6	U
G006SB031	006SB03101		21-Sep-93	11	=
G006SB041	006SB04101		21-Sep-93	200	=
G006SB044	006SB04401		12-Jun-02	97.8	J
G006SB046	006SB04601	Removed _{Jones}	12-Jun-02	2.6	U
G006SB047	006SB04701		12-Jun-02	2.4	J
G006SB051	006SB05101		22-Sep-93	4200	=
G006SB061	006SB06101		22-Sep-93	290	=
G006SB061	006SB06101LR		22-Sep-93	600	=
G006SB071	006SB07101		22-Sep-93	2000	=
G006SB141	006SB14101		27-Oct-93	7.7	U
G006SB151	006SB15101		27-Oct-93	3.8	U
G006SB201	006SB20101		27-Oct-93	3.9	U
G006SB251	006SB25101	Removed _{DET}	27-Oct-93	2.6	U
G006SB261	006SB26101		27-Oct-93	3.9	U
G007SB001	007SB00101		03-Oct-96	3.1	U
G007SB031	007SB03101		09-Oct-93	20	JD
G007SB041	007SB04101	Removed _{DET}	09-Oct-93	2.6	U
G007SB051	007SB05101	Removed _{DET}	09-Oct-93	2.6	U
G007SB061	007SB06101		09-Oct-93	120	JD
G007SB071	007SB07101		09-Oct-93	65	DJ
G007SB081	007SB08101	Removed _{DET}	09-Oct-93	2.6	U
G007SB091	007SB09101	Removed _{DET}	09-Oct-93	2.6	U
G007SB101	007SB10101	Removed _{DET}	09-Oct-93	2.6	U
G007SB111	007SB11101	Removed _{Jones}	09-Oct-93	2.6	U
G007SB121	007SB12101	Removed _{DET}	09-Oct-93	2.6	U

Appendix D-5c

DDT Data for UCL95 Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID		Date Collected	Concentration (ug/Kg)	Qualifier
G007SB131	007SB13101	Removed _{DET}	09-Oct-93	2.6	U
G007SB161	007SB16101	Removed _{DET}	11-Oct-93	2.6	U
G007SB171	007SB17101	Removed _{Jones}	11-Oct-93	2.6	U
G007SB181	007SB18101		11-Oct-93	79	JD
G007SB191	007SB19101	Removed _{Jones}	11-Oct-93	2.6	U
G007SB211	007SB21101	Removed _{DET}	11-Oct-93	2.6	U
G007SB221	007SB22101	Removed _{DET}	11-Oct-93	2.6	U
G007SB231	007SB23101	Removed _{DET}	11-Oct-93	2.6	U
G007SB241	007SB24101	Removed _{DET}	11-Oct-93	2.6	U
G007SB271	007SB27101	Removed _{DET}	11-Oct-93	2.6	U
G007SB281	007SB28101	Removed _{DET}	13-Oct-93	2.6	U
G007SB291	007SB29101	Removed _{Jones}	13-Oct-93	2.6	U
G007SB301	007SB30101	Removed _{Jones}	13-Oct-93	2.6	U
G007SB311	007SB31101		13-Oct-93	1100	D
G007SB321	007SB32101		13-Oct-93	26	=
G007SB331	007SB33101		13-Oct-93	4.7	J
G007SB341	007SB34101		13-Oct-93	140	=
G007SB351	007SB35101		18-Oct-93	7.5	U
G007SB361	007SB36101		13-Oct-93	16	J
G007SB371	007SB37101		13-Oct-93	22	J
G635SB001	635SB00101	Removed _{DET}	03-Oct-96	2.6	U

Appendix D-6

Mean Surface Soil Gamma-BHC (Lindane) Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID		Date Collected	Concentration (ug/Kg)	Qualifier	Adjusted Concentration	SSL (ug/Kg)	Mean Residual Concentration
G006SB001	006SB00101	Removed-DET	09/19/96	1.3	U	0.65	4.5	3.47
G006SB002	006SB00201	Removed-Jones	09/19/96	1.3	U	0.65		
G006SB003	006SB00301	Removed-DET	09/19/96	1.3	U	0.65		
G006SB004	006SB00401		09/19/96	1.7	U	0.85		
G006SB007	006SB00701	Removed-Jones	01/17/02	1.3	U	0.65		
G006SB008	006SB00801	Removed-Jones	01/17/02	1.3	U	0.65		
G006SB009	006SB00901	Removed-Jones	01/17/02	1.3	U	0.65		
G006SB010	006SB01001		01/17/02	0.97	J	0.97		
G006SB011	006SB01101	Removed-Jones	01/17/02	1.3	U	0.65		
G006SB012	006SB01201		01/17/02	24	=	24		
G006SB013	006SB01301		01/17/02	0.75	U	0.375		
G006SB014	006SB01401	Removed-Jones	01/17/02	1.3	U	0.65		
G006SB015	006SB01501		01/17/02	0.76	U	0.38		
G006SB017	006SB01701		05/08/02	1.4	U	0.7		
G006SB018	006SB01801		05/08/02	3.1	=	3.1		
G006SB019	006SB01901		05/08/02	1.3	J	1.3		
G006SB020	006SB02001		05/08/02	14.8	U	7.4		
G006SB021	006SB02101	Removed-Jones	05/08/02	1.3	U	0.65		
G006SB027	006SB02703	Removed-Jones	05/08/02	1.3	U	0.65		
G006SB028	006SB02803	Removed-Jones	05/08/02	1.3	U	0.65		
G006SB029	006SB02903	Removed-Jones	05/08/02	1.3	U	0.65		
G006SB031	006SB03101		09/21/93	2.1	U	1.05		
G006SB041	006SB04101		09/21/93	9.4	U	4.7		
G006SB044	006SB04401		06/12/02	5.2	=	5.2		
G006SB046	006SB04601	Removed-Jones	06/12/02	1.3	U	0.65		
G006SB047	006SB04701		06/12/02	1.7	U	0.85		
G006SB051	006SB05101		09/22/93	200	U	100		
G006SB061	006SB06101		09/22/93	20	U	10		
G006SB071	006SB07101		09/22/93	26	=	26		
G006SB141	006SB14101		10/27/93	2.2	U	1.1		
G006SB151	006SB15101		10/27/93	2	U	1		
G006SB201	006SB20101		10/27/93	2	U	1		

Appendix D-6

Mean Surface Soil Gamma-BHC (Lindane) Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID		Date Collected	Concentration (ug/Kg)	Qualifier	Adjusted Concentration	SSL (ug/Kg)	Mean Residual Concentration
G006SB251	006SB25101	Removed-DET	10/27/93	1.3	U	0.65		
G006SB261	006SB26101		10/27/93	2	U	1		
G007SB001	007SB00101		10/03/96	1.6	U	0.8		
G007SB031	007SB03101		10/09/93	2.1	U	1.05		
G007SB041	007SB04101	Removed-DET	10/09/93	1.3	U	0.65		
G007SB051	007SB05101	Removed-DET	10/09/93	1.3	U	0.65		
G007SB061	007SB06101		10/09/93	2.2	U	1.1		
G007SB071	007SB07101		10/09/93	2.1	U	1.05		
G007SB081	007SB08101	Removed-DET	10/09/93	1.3	U	0.65		
G007SB091	007SB09101	Removed-DET	10/09/93	1.3	U	0.65		
G007SB101	007SB10101	Removed-DET	10/09/93	1.3	U	0.65		
G007SB111	007SB11101	Removed-Jones	10/09/93	1.3	U	0.65		
G007SB121	007SB12101	Removed-DET	10/09/93	1.3	U	0.65		
G007SB131	007SB13101	Removed-DET	10/09/93	1.3	U	0.65		
G007SB161	007SB16101	Removed-DET	10/11/93	1.3	U	0.65		
G007SB171	007SB17101	Removed-Jones	10/11/93	1.3	U	0.65		
G007SB181	007SB18101		10/11/93	1.9	U	0.95		
G007SB191	007SB19101	Removed-Jones	10/11/93	1.3	U	0.65		
G007SB211	007SB21101	Removed-DET	10/11/93	1.3	U	0.65		
G007SB221	007SB22101	Removed-DET	10/11/93	1.3	U	0.65		
G007SB231	007SB23101	Removed-DET	10/11/93	1.3	U	0.65		
G007SB241	007SB24101	Removed-DET	10/11/93	1.3	U	0.65		
G007SB271	007SB27101	Removed-DET	10/11/93	1.3	U	0.65		
G007SB281	007SB28101	Removed-DET	10/13/93	1.3	U	0.65		
G007SB291	007SB29101	Removed-Jones	10/13/93	1.3	U	0.65		
G007SB301	007SB30101	Removed-Jones	10/13/93	1.3	U	0.65		
G007SB311	007SB31101		10/13/93	10	U	5		
G007SB321	007SB32101		10/13/93	2	U	1		
G007SB331	007SB33101		10/13/93	2	U	1		
G007SB341	007SB34101		10/13/93	3.8	U	1.9		
G007SB351	007SB35101		10/18/93	3.9	U	1.95		
G007SB361	007SB36101		10/13/93	2	U	1		

Appendix D-6

Mean Surface Soil Gamma-BHC (Lindane) Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID		Date Collected	Concentration (ug/Kg)	Qualifier	Adjusted Concentration	SSL (ug/Kg)	Mean Residual Concentration
G007SB371	007SB37101		10/13/93	1.9	U	0.95		
G635SB001	635SB00101	Removed-DET	10/03/96	1.3	U	0.65		

Appendix D-7

Mean Surface Soil Dieldrin Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID		Date Collected	Concentration (ug/Kg)	Qualifier	Adjusted Concentration	SSL (ug/Kg)	Mean Residual Concentration
G006SB017	006SB01701		08-May-02	0.79	J	0.79	2	0.81
G006SB013	006SB01301		17-Jan-02	1.2	J	1.2		
G006SB015	006SB01501		17-Jan-02	1.5	U	0.75		
G006SB001	006SB00101	Removed _{DET}	19-Sep-96	2.6	U	1.3		
G006SB002	006SB00201	Removed _{Jones}	19-Sep-96	2.6	U	1.3		
G006SB003	006SB00301	Removed _{DET}	19-Sep-96	2.6	U	1.3		
G006SB007	006SB00701	Removed _{Jones}	17-Jan-02	2.6	U	1.3		
G006SB008	006SB00801	Removed _{Jones}	17-Jan-02	2.6	U	1.3		
G006SB009	006SB00901	Removed _{Jones}	17-Jan-02	2.6	U	1.3		
G006SB011	006SB01101	Removed _{Jones}	17-Jan-02	2.6	U	1.3		
G006SB014	006SB01401	Removed _{Jones}	17-Jan-02	2.6	U	1.3		
G006SB021	006SB02101	Removed _{Jones}	08-May-02	2.6	U	1.3		
G006SB027	006SB02703	Removed _{Jones}	08-May-02	2.6	U	1.3		
G006SB028	006SB02803	Removed _{Jones}	08-May-02	2.6	U	1.3		
G006SB029	006SB02903	Removed _{Jones}	08-May-02	2.6	U	1.3		
G006SB046	006SB04601	Removed _{Jones}	12-Jun-02	2.6	U	1.3		
G006SB251	006SB25101	Removed _{DET}	27-Oct-93	2.6	U	1.3		
G007SB041	007SB04101	Removed _{DET}	09-Oct-93	2.6	U	1.3		
G007SB051	007SB05101	Removed _{DET}	09-Oct-93	2.6	U	1.3		
G007SB081	007SB08101	Removed _{DET}	09-Oct-93	2.6	U	1.3		
G007SB091	007SB09101	Removed _{DET}	09-Oct-93	2.6	U	1.3		
G007SB101	007SB10101	Removed _{DET}	09-Oct-93	2.6	U	1.3		
G007SB111	007SB11101	Removed _{Jones}	09-Oct-93	2.6	U	1.3		
G007SB121	007SB12101	Removed _{DET}	09-Oct-93	2.6	U	1.3		
G007SB131	007SB13101	Removed _{DET}	09-Oct-93	2.6	U	1.3		
G007SB161	007SB16101	Removed _{DET}	11-Oct-93	2.6	U	1.3		
G007SB171	007SB17101	Removed _{Jones}	11-Oct-93	2.6	U	1.3		
G007SB191	007SB19101	Removed _{Jones}	11-Oct-93	2.6	U	1.3		
G007SB211	007SB21101	Removed _{DET}	11-Oct-93	2.6	U	1.3		
G007SB221	007SB22101	Removed _{DET}	11-Oct-93	2.6	U	1.3		
G007SB231	007SB23101	Removed _{DET}	11-Oct-93	2.6	U	1.3		
G007SB241	007SB24101	Removed _{DET}	11-Oct-93	2.6	U	1.3		

Appendix D-7

Mean Surface Soil Dieldrin Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID		Date Collected	Concentration (ug/Kg)	Qualifier	Adjusted Concentration	SSL (ug/Kg)	Mean Residual Concentration
G007SB271	007SB27101	Removed _{DET}	11-Oct-93	2.6	U	1.3		
G007SB281	007SB28101	Removed _{DET}	13-Oct-93	2.6	U	1.3		
G007SB291	007SB29101	Removed _{Jones}	13-Oct-93	2.6	U	1.3		
G007SB301	007SB30101	Removed _{Jones}	13-Oct-93	2.6	U	1.3		
G635SB001	635SB00101	Removed _{DET}	03-Oct-96	2.6	U	1.3		
G006SB019	006SB01901		08-May-02	2.7	U	1.35		
G006SB010	006SB01001		17-Jan-02	2.8	U	1.4		
G006SB018	006SB01801		08-May-02	2.8	U	1.4		
G007SB001	007SB00101		03-Oct-96	3.1	U	1.55		
G006SB004	006SB00401		19-Sep-96	3.3	U	1.65		
G006SB047	006SB04701		12-Jun-02	3.3	U	1.65		
G007SB181	007SB18101		11-Oct-93	3.6	U	1.8		
G007SB371	007SB37101		13-Oct-93	3.7	U	1.85		
G006SB151	006SB15101		27-Oct-93	3.8	U	1.9		
G007SB361	007SB36101		13-Oct-93	3.8	U	1.9		
G006SB201	006SB20101		27-Oct-93	3.9	U	1.95		
G006SB261	006SB26101		27-Oct-93	3.9	U	1.95		
G007SB321	007SB32101		13-Oct-93	3.9	U	1.95		
G007SB331	007SB33101		13-Oct-93	3.9	U	1.95		
G007SB031	007SB03101		09-Oct-93	4	U	2		
G006SB031	006SB03101		21-Sep-93	4.1	U	2.05		
G007SB071	007SB07101		09-Oct-93	4.1	U	2.05		
G006SB141	006SB14101		27-Oct-93	4.3	U	2.15		
G007SB061	007SB06101		09-Oct-93	4.3	U	2.15		
G006SB012	006SB01201		17-Jan-02	4.6	J	4.6		

Appendix D-7

Mean Surface Soil Dieldrin Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID	Date Collected	Concentration (ug/Kg)	Qualifier	Adjusted Concentration	SSL (ug/Kg)	Mean Residual Concentration
Data not included in mean calculation (non-detect reporting limit greater than maximum detected concentration)							
G006SB044	006SB04401	12-Jun-02	5.8	U	2.9		
G007SB341	007SB34101	13-Oct-93	7.3	U	3.65		
G007SB351	007SB35101	18-Oct-93	7.5	U	3.75		
G006SB041	006SB04101	21-Sep-93	18	U	9		
G007SB311	007SB31101	13-Oct-93	19	U	9.5		
G006SB020	006SB02001	08-May-02	28.5	U	14.25		
G006SB061	006SB06101	22-Sep-93	38	U	19		
G006SB071	006SB07101	22-Sep-93	39	U	19.5		
G006SB051	006SB05101	22-Sep-93	380	U	190		

Appendix D-8

Mean Subsurface Soil Benzo(a)anthracene Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID	Date Collected	Concentration (ug/Kg)	Qualifier	SSL (ug/Kg)	Mean Residual Concentration
G006SB001	006SB00102	09/19/96	190	J	1000	463.7
G006SB004	006SB00402	09/19/96	140	J		
G006SB007	006SB00702	01/17/02	2100	=		
G006SB011	006SB01102	01/17/02	1300	J		
G006SB013	006SB01302	01/17/02	42	J		
G006SB014	006SB01402	01/17/02	52	=		
G006SB016	006SB01602	01/22/02	1200	=		
G006SB019	006SB01902	05/08/02	78.8	J		
G006SB020	006SB02002	05/08/02	30.8	J		
G006SB021	006SB02102	05/08/02	61.5	J		
G006SB022	006SB02202	09/21/93	140	J		
G006SB024	006SB02402	05/09/02	38.9	J		
G006SB026	006SB02603	05/08/02	760	J		
G006SB044	006SB04402	06/12/02	44.3	U		
G006SB044	006SB04403	06/12/02	39.6	U		
G006SB045	006SB04502	06/12/02	2160	=		
G006SB046	006SB04603	06/12/02	55	U		
G006SB047	006SB04703	06/12/02	40.9	U		
G006SB072	006SB07202	10/27/93	690	U		
G006SB092	006SB09202	10/27/93	720	U		
G006SB122	006SB12201	10/26/93	720	=		
G006SB142	006SB14202	10/27/93	350	J		
G006SB152	006SB15202	10/27/93	2700	=		
G006SB172	006SB17202	10/27/93	210	J		
G006SB202	006SB20202	10/27/93	660	U		
G006SB212	006SB21201	10/26/93	120	=		
G006SB252	006SB25202	10/27/93	680	U		
G006SB262	006SB26202	10/27/93	590	U		
G006SB272	006SB27202	10/27/93	640	J		
G006SB292	006SB29202	10/27/93	590	U		
G006SB312	006SB31202	10/27/93	710	U		
G006SB322	006SB32202	10/27/93	780	=		
G006SB332	006SB33202	10/27/93	610	=		
G007SB032	007SB03202	10/09/93	140	J		
G007SB112	007SB11202	10/09/93	630	U		
G007SB132	007SB13202	10/09/93	690	U		
G007SB182	007SB18202	10/11/93	230	J		
G007SB222	007SB22202	10/11/93	84	J		
G007SB242	007SB24202	10/11/93	670	=		
G007SB302	007SB30202	10/13/93	720	U		
G007SB342	007SB34202	10/13/93	580	U		
G007SB362	007SB36202	10/13/93	670	U		
G007SB363	007SB36203	10/14/93	671	U		

Appendix D-9

Mean Subsurface Soil Benzo(b)fluoranthene Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID	Date Collected	Concentration (ug/Kg)	Qualifier	SSL (ug/Kg)	Mean Residual Concentration
G006SB001	006SB00102	09/19/96	190	J	2500	459.2
G006SB004	006SB00402	09/19/96	650	U		
G006SB007	006SB00702	01/17/02	790	J		
G006SB011	006SB01102	01/17/02	1100	J		
G006SB013	006SB01302	01/17/02	78	J		
G006SB014	006SB01402	01/17/02	8.2	U		
G006SB016	006SB01602	01/22/02	1300	=		
G006SB019	006SB01902	05/08/02	151	J		
G006SB020	006SB02002	05/08/02	43.1	J		
G006SB021	006SB02102	05/08/02	81.7	J		
G006SB022	006SB02202	09/21/93	240	J		
G006SB024	006SB02402	05/09/02	57.4	J		
G006SB026	006SB02603	05/08/02	5270	=		
G006SB044	006SB04402	06/12/02	44.3	U		
G006SB044	006SB04403	06/12/02	39.6	U		
G006SB045	006SB04502	06/12/02	45.7	U		
G006SB046	006SB04603	06/12/02	55	U		
G006SB047	006SB04703	06/12/02	251	=		
G006SB072	006SB07202	10/27/93	690	U		
G006SB092	006SB09202	10/27/93	720	U		
G006SB122	006SB12201	10/26/93	64	=		
G006SB142	006SB14202	10/27/93	450	J		
G006SB152	006SB15202	10/27/93	2800	=		
G006SB172	006SB17202	10/27/93	330	J		
G006SB202	006SB20202	10/27/93	660	U		
G006SB212	006SB21201	10/26/93	140	=		
G006SB252	006SB25202	10/27/93	210	J		
G006SB262	006SB26202	10/27/93	110	J		
G006SB272	006SB27202	10/27/93	1100	=		
G006SB292	006SB29202	10/27/93	590	U		
G006SB312	006SB31202	10/27/93	710	U		
G006SB322	006SB32202	10/27/93	780	=		
G006SB332	006SB33202	10/27/93	390	=		
G007SB032	007SB03202	10/09/93	200	J		
G007SB112	007SB11202	10/09/93	86	J		
G007SB132	007SB13202	10/09/93	89	J		
G007SB182	007SB18202	10/11/93	320	J		
G007SB222	007SB22202	10/11/93	120	J		
G007SB242	007SB24202	10/11/93	100	=		
G007SB302	007SB30202	10/13/93	160	J		
G007SB342	007SB34202	10/13/93	190	J		
G007SB362	007SB36202	10/13/93	360	J		
G007SB372	007SB37202	10/13/93	86	J		

Appendix D-10

Mean Subsurface Soil Gamma-BHC (Lindane) Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID	Date Collected	Concentration (ug/Kg)	Qualifier	Adjusted Concentration	SSL (ug/Kg)	Mean Residual Concentration
G006SB001	006SB00102	19-Sep-96	2.3	U	2.3	4.5	3.58
G006SB004	006SB00402	19-Sep-96	2.5	U	2.5		
G006SB007	006SB00702	17-Jan-02	7.7	U	7.7		
G006SB011	006SB01102	17-Jan-02	1.6	U	1.6		
G006SB013	006SB01302	17-Jan-02	2.2	J	2.2		
G006SB014	006SB01402	17-Jan-02	16	U	16		
G006SB016	006SB01602	22-Jan-02	3.6	U	3.6		
G006SB022	006SB02202	21-Sep-93	3.3	U	3.3		
G006SB044	006SB04402	12-Jun-02	21.1	=	21.1		
G006SB044	006SB04403	12-Jun-02	12.7	J	12.7		
G006SB045	006SB04502	12-Jun-02	10.7	=	10.7		
G006SB046	006SB04603	12-Jun-02	1.8	J	1.8		
G006SB047	006SB04703	12-Jun-02	1.6	U	1.6		
G006SB072	006SB07202	27-Oct-93	3.6	U	3.6		
G006SB092	006SB09202	27-Oct-93	3.7	U	3.7		
G006SB122	006SB12201	Removed(DET)	26-Oct-93	=	1.3		
G006SB142	006SB14202	27-Oct-93	3.6	U	3.6		
G006SB152	006SB15202	27-Oct-93	2.7	U	2.7		
G006SB172	006SB17202	27-Oct-93	3.5	U	3.5		
G006SB202	006SB20202	27-Oct-93	3.4	U	3.4		
G006SB212	006SB21201	Removed(DET)	26-Oct-93	=	1.3		
G006SB252	006SB25202	27-Oct-93	3.5	U	3.5		
G006SB262	006SB26202	27-Oct-93	3.1	U	3.1		
G006SB272	006SB27202	27-Oct-93	24	J	24		
G006SB292	006SB29202	27-Oct-93	3	U	3		
G006SB312	006SB31202	27-Oct-93	3.7	U	3.7		
G006SB322	006SB32202	27-Oct-93	4	=	4		
G006SB332	006SB33202	27-Oct-93	3.2	=	3.2		
G007SB032	007SB03202	09-Oct-93	3	U	3		
G007SB112	007SB11202	09-Oct-93	3.3	U	3.3		
G007SB132	007SB13202	09-Oct-93	3.5	U	3.5		
G007SB182	007SB18202	11-Oct-93	5.2	U	5.2		

Appendix D-10

Mean Subsurface Soil Gamma-BHC (Lindane) Concentration Calculations

SWMU 6, Zone G, CNC

Station ID	Sample ID	Date Collected	Concentration (ug/Kg)	Qualifier	Adjusted Concentration	SSL (ug/Kg)	Mean Residual Concentration
G007SB222	007SB22202	11-Oct-93	3.5	U	3.5		
G007SB242	007SB24202	11-Oct-93	3.5	=	3.5		
G007SB302	007SB30202	13-Oct-93	3.7	U	3.7		
G007SB342	007SB34202	13-Oct-93	3	U	3		
G007SB362	007SB36202	13-Oct-93	3.5	U	3.5		
G007SB372	007SB37202	13-Oct-93	1.9	U	1.9		

Table 10.12.7
 Zone G
 SWMU 6, SWMU 7, AOC 635
 Analytes Detected in Surface and Subsurface Soil

Parameters	Location	Surface Conc.	Residential RBC* (THQ=0.1)	Surface Background	Subsurface Conc.	Soil to Groundwater SSL* (DAF=20)	Subsurface Background
Aroclor-1260	S06B06	2400	320	NA	NT	1000	NA
	S06B15	970			120		
	S06B20	420			ND		
	S06B21	NT			440		
	006SB001	8600			930		
	006SB003	240			NT		
	S07B03	410			ND		
	S07B05	330			NT		
	S07B07	780			NT		
	S07B08	1400			NT		
	S07B09	270			NT		
	S07B10	290			NT		
	S07B11	1500			ND		
	S07B12	130			NT		
	S07B16	5800			NT		
	S07B17	100			NT		
	S07B19	910			NT		
	S07B21	510000			NT		
	S07B23	1565			NT		
	S07B28	200			NT		
S07B34	120	ND					
S07B36	110	NT					
S07B37	110	ND					
Dioxins (ng/kg)							
Dioxin (2,3,7,8-TCDD TEQs) ¹	006SB002	0.138	1000	NA	ND	1900	NA
	007SB001	1021			NT		

CHARLESTON - ZONE G
CHARLESTON ZONE G SOIL (ONLY)
SITE 006 SOIL SAMPLES

446-DIOX		SAMPLE ID ----->	006-C-8002-01				
		ORIGINAL ID ----->	006C800201				
		LAB SAMPLE ID ---->	27017.01				
		ID FROM REPORT -->	006C800201				
		SAMPLE DATE ----->	09/19/96				
		DATE EXTRACTED -->	09/26/96				
		DATE ANALYZED ---->	09/30/96				
		MATRIX ----->	Soil				
		UNITS ----->	NG/KG				
CAS #	Parameter	27016	VAL				
746-01-6	2378-TCDD	15.7					
321-76-4	12378-PeCDD	32.1					
227-28-6	123478-HxCDD	530.					
653-85-7	123678-HxCDD	901.					
408-74-3	123789-HxCDD	299.					
822-46-9	1234678-HpCDD	23200.					
268-87-9	OCDD	145000.					
207-31-9	2378-TCDF	25.					
117-41-6	12378-PeCDF	24.7					
117-31-4	23478-PeCDF	6.53	U				
648-26-9	123478-HxCDF	1020.	J				
117-44-9	123678-HxCDF	68.4					
918-21-9	123789-HxCDF	1.66	U				
851-34-5	234678-HxCDF	218.					
562-39-4	1234678-HpCDF	24400.					
673-89-7	1234789-HpCDF	860.					
001-02-0	OCDF	52200.					
903-57-5	Total Tetra-Dioxins	19.3					
088-22-9	Total Penta-Dioxins	32.					
465-46-8	Total Hexa-Dioxins	5520.					
871-00-4	Total Hepta-Dioxins	42500.					
722-27-5	Total Tetra-Furans	25.					
502-15-4	Total Penta-Furans	1540.					
584-94-1	Total Hexa-Furans	23200.					
798-75-3	Total Hepta-Furans	25300.					

CHARLES A - ZONE G
CHARLESTON ZONE G SOIL (ONLY)
SITE 007 SOIL SAMPLES

SW846-DIOX		SAMPLE ID ----->	007-C-8001-01				
		ORIGINAL ID ----->	007C800101				
		LAB SAMPLE ID ----->	27203.01				
		ID FROM REPORT ----->	007C800101				
		SAMPLE DATE ----->	10/03/96				
		DATE EXTRACTED ----->	10/10/96				
		DATE ANALYZED ----->	10/15/96				
		MATRIX ----->	Soil				
		UNITS ----->	NG/KG				
CAS #	Parameter	27202	VAL				
1746-01-6	2378-TCDD	0.141	U				
40321-76-4	12378-PeCDD	0.105	U				
39227-28-6	123478-HxCDD	0.295	U				
57653-85-7	123678-HxCDD	0.214	U				
19408-74-3	123789-HxCDD	0.223	U				
35822-46-9	1234678-HpCDD	1.74	U				
3268-87-9	OCDD	138.					
51207-31-9	2378-TCDF	0.19	U				
57117-41-6	12378-PeCDF	0.094	U				
57117-31-4	23478-PeCDF	0.09	U				
70648-26-9	123478-HxCDF	0.165	U				
57117-44-9	123678-HxCDF	0.12	U				
72918-21-9	123789-HxCDF	0.162	U				
60851-34-5	234678-HxCDF	0.153	U				
67562-39-4	1234678-HpCDF	0.432	U				
55673-89-7	1234789-HpCDF	0.119	U				
39001-02-0	OCDF	0.362	U				
41903-57-5	Total Tetra-Dioxins	0.141	U				
36088-22-9	Total Penta-Dioxins	0.105	U				
34465-48-8	Total Hexa-Dioxins	0.596					
37871-00-4	Total Hepta-Dioxins	4.89					
55722-27-5	Total Tetra-Furans	0.19	U				
30602-15-4	Total Penta-Furans	0.09	U				
55684-94-1	Total Hexa-Furans	0.12	U				
38998-75-3	Total Hepta-Furans	0.103	U				

*** Validation Complete ***

SCDHEC Comment 33:

Section 10.12 SWMU 6, SWMU 7, and AOC 635, Page 10.12.1

This section provides a description of SWMUs 6, 7, and AOC 635, however the dates of operation for SWMU 6 are not provided. Please revise this section to include the dates of operation of SWMU 6.

CH2M-Jones Response 33:

The RFIRA/IMCR, Section 1, includes the dates of operation of the area encompassing SWMU 6. The general area (which includes SWMU 6) is reported to have been used for storage from 1942 to 1987.

SCDHEC Comment 34:

Figure 10.12-1 Sampling Locations SWMU 6, 7, and AOC 635

This figure shows a structure north east of Building 3902, however, this structure is not labeled. It appears that this structure is the paint and oil storehouse (AOC 635). If this is AOC 635 please revise the figure to include this designation.

CH2M-Jones Response 34:

The structure formerly located northwest of the former Building 3902 site was a concrete slab. SWMUs 6 and 7 and AOC 635 are labeled on all figures in the RFIRA/IMCR.

SCDHEC Comment 35:

Figures 10.12-4 through 10.12-19

These figures represent the soil contamination at SWMUs 6, 7, and AOC 635. The figures are unacceptable due to the lack of detail. In order to maintain consistency and allow the Department to interpret the figures, more detail is needed. Please revise the figure to include, at a minimum, Building 3902 and the paint and oil storehouse.

CH2M-Jones Response 35:

Detailed figures showing location of soil borings representing contamination are presented in the RFIRA/IMCR.



OAKRIDGE LANDFILL

2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

6-27-02
SMWU-6
0715
Truck 19
10001

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX

Account Number: 490-439

Location / Address: 1849 AVENUE E N CHARLESTON SC (10)

Telephone Number: 8437402780 Contact: JED HEAMES

Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# BWR

Date: 6-27-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA

Ticket Number: 090053 Tonnage: 21.10

Received by: [Signature] Date: 6/27/02

TOTAL 434.11



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

6-27-02
SWMB-6
0720
Truck 21
Wood 2

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740,2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 21
Date: 6-27-02 Driver Signature: Vion CRAUN

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 9901050 Tonnage: 23.931
Received by: ncarter Date: 6/27/02



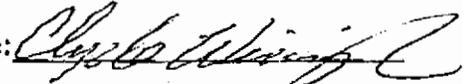
OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

6-27-02
0840
Truck 12
load 3

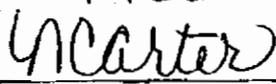
SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: 

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# BW12
Date: 6-27-02 Driver Signature: 

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 990623 Tonnage: 2438
Received by:  Date: 6/27/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

6-27-02
Truck 19
Load #4

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# BWA19
Date: 6-27-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: ^{SOI} Oakridge Landfill DWP 130
Description of Waste: ~~RES~~ SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: _____ Tonnage: 21.78
Received by: [Signature] Date: 6/27/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

~~4027~~ 6-27-02
Truck# 21
1035
load 5

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 21
Date: 6-27-02 Driver Signature: Vion Craven

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 090004 Tonnage: 23.13
Received by: W Carter Date: 6/27/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

SMWU-0
6-27-02
load 6
1120 *Truck*
12

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX

Account Number: 490-439

Location / Address: 1849 AVENUE E N CHARLESTON SC (10)

Telephone Number: 843740.2780 Contact: JED HEAMES

Generator Signature: *[Signature]*

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 12

Date: *6-27-02* Driver Signature: *[Signature]*

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA

Ticket Number: *990724* Tonnage: *24.4*

Received by: *NC* Date: *6/27/02*



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

TRUCK # 19
LOAD # 7
Sumu 6
6-27-02
1300

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK#
Date: 6-27-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 990750 Tonnage: 22.64
Received by: [Signature] Date: 6/27/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

TRUCK #21
LOAD #8
Sum 6/7
1315

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature:

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 21
Date: 6-27-02 Driver Signature: KION CRAVEN

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 990757 990758 Tonnage: 21.20 24.48
Received by: ncarter Date: 6/27/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

TRUCK # 12
LOAD # 9
6-27-02
1420

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX

Account Number: 490-439

Location / Address: 1849 AVENUE E N CHARLESTON SC (10)

Telephone Number: 843740.7780 Contact: JED HEAMES

Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 12

Date: 6-27-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA

Ticket Number: 9410783

Tonnage: 20.76

Received by: unc

Date: 6/27/02



OAKRIDGE LANDFILL
2163 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-1375

6-28-02
0705
truck # 21
load 10

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 21
Date: 6-28-02 Driver Signature: Kion Crauen

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: SO Oakridge Landfill DWP 130
Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 99082A Tonnage: 24.19
Received by: U Carter Date: 6/28/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

6-28-02
0730
Truck 19
11 10th load

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# BW19
Date: 6-28-02 Driver Signature: Leroy

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: SO2 Oakridge Landfill DWP 130
Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 990827 Tonnage: 53.30
Received by: W Carter Date: 6/28/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

6-28-02 Trussc 18
080755
load 12

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

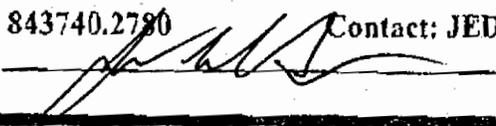
Generator: CHARLESTON NAVAL COMPLEX

Account Number: 490-439

Location / Address: 1849 AVENUE E N CHARLESTON SC (10)

Telephone Number: 843740.2780

Contact: JED HEAMES

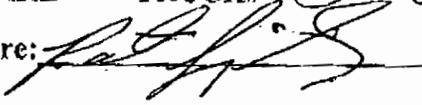
Generator Signature: 

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE

TRUCK# BW18

Date: _____

Driver Signature: 

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA

Ticket Number: 090842

Tonnage: 19.34

Received by: MC

Date: 6/28/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

6-28-02
Truck 15
0810
load 13

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# BW15
Date: 6-28-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 992840 Tonnage: 20.24
Received by: [Signature] Date: 6/28/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

6-28-02
Truck 12
Load 14
0825

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 12
Date: 6-28-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 990844 Tonnage: 2426
Received by: [Signature] Date: 6/28/02



OAKRIDGE LANDFILL

2184 Highway 78, Dorchester, SC 29437

Tel 843-563-2607, Fax 843-563-3375

TRUCK # ~~21~~ 21

6-28-02

TM= 1005

LOAD # 15

SPECIAL WASTE MANIFEST

APPROVAL # OR 0206024

EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX

Account Number: 490-439

Location / Address: 1849 AVENUE E N CHARLESTON SC (10)

Telephone Number: 843740.2780 Contact: JED HEAMES

Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 21

Date: 6-28-02 Driver Signature: Vion CRAVEN

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: RES/SIWU 6-PUBLIC WORKS STORAGE AREA

Ticket Number: 990870

Tonnage: 25.17

Received by: [Signature]

Date: 6/28/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

6-28-02
Truck 19
Load #16
1005

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# BW19
Date: 6-28-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: SOL/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 990821 Tonnage: 22.80
Received by: [Signature] Date: 6/28/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

TRUCK # 12
LOAD # 17
6-28-02
1120

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 12
Date: 6-28-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: SOL/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 0910885 Tonnage: 2397
Received by: Mcarter Date: 6/28/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

6-28-02 / 1135
TRUCK 15
Lump # 18

**SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003**

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740,2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# BLW15
Date: 6-28-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: SOL/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 990896 Tonnage: 24.06
Received by: [Signature] Date: 6/28/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607, Fax 843-563-3375

6-28-02 / 1150
TRUCK # 18
Load = 19

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740;2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# #18
Date: 6-28-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: SOL/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 090001 Tonnage: 50.43
Received by: unc Date: 6/28/02



OAKRIDGE LANDFILL
2150 Highway 78, Dorchester, SC 29537
Tel 843-563-2607, Fax 843-563-3375

TRUCK NO: 21
LOPP NO: 20
6-28-02 1245 Time
Summer 6

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 21
Date: 6-28-02 Driver Signature: VION CRAVAN

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: SOL/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 990913 Tonnage: ~~21.79~~ 25.08
Received by: RR- Date: 6/28/02



OAKRIDGE LANDFILL
2153 Highway 7N, Durheim, NC 27437
Tel 843-563-2607, Fax 843-563-3375

Truck # 19
Lump NO. 21
6-28-02 7M= 13000
SMWU 657

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK#
Date: 6-28-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: SOL/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 990921 Tonnage: 25.09
Received by: [Signature] Date: 6/28/02



OAKRIDGE LANDFILL
2181 Highway 78, Dorchester, SC 29437
Tel: 843-563-2407 Fax: 843-563-3375

TRUCK # 12
LOAD NO: 22
TIME: 1410
6-28-02

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX
Account Number: 490-439
Location / Address: 1849 AVENUE E N CHARLESTON SC (10)
Telephone Number: 843740.2780 Contact: JED HEAMES
Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 12
Date: 6-28-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA
Ticket Number: 490935 Tonnage: 20.28
Received by: [Signature] Date: 6/28/02



OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-663-2607 Fax 843-563-3374

TRUCK NO: 18

LOAD # 23

6-28-02

1445
Summu 6

SPECIAL WASTE MANIFEST
APPROVAL # OR 0206024
EXPIRATION 6/24/2003

Generator: CHARLESTON NAVAL COMPLEX

Account Number: 490-439

Location / Address: 1849 AVENUE E N CHARLESTON SC (10)

Telephone Number: 843740.2780 Contact: JED HEAMES

Generator Signature: [Signature]

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLERWARE TRUCK# 18
Date: 6-28-02 Driver Signature: [Signature]

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: RES/SMWU 6-PUBLIC WORKS STORAGE AREA

Ticket Number: 990943 Tonnage: 22.43

Received by: RR Date: 6/28/02

* Please FAX copy to 2985
843 740 2780
ATTN: BRIAN CRAWFORD



Sold To: 976159
 BUTLER WARE TRUCKING INC
 P O BOX 1558
 MONCK'S CORNER SC 29461

Ticket#: 424496
 Sold From: 2658 BERKELEY QUARRY

Date: 2/27/2002 Time: 9:33 PO No:
 Owner: 0000 Truck: BW19 BUTLER WARE TRUC
 Name: FOB HaulRate
 Address:

SCN/Project Shipment Information: 500
 REQUIREMENTS
 NAVY YARD

Lot# *CHM2 Hill*

SCN	Lds	Today Quantity	To Date Quantity	Weight Measurements		Cash Sale	
				Gross: Lbs	Tons	Matl \$	Tax \$
500	1	20.68	255.07	67,800	33.90		SC
				Tare: Scale 1			
				Net: 26,440	13.22		
				Scale 1			
				41,360	20.68		
							Payment Recvd By:

Max GVW: 69,840.00

Additional Information:

Weighperson:
 ALICE GAVIN
 HOURS 5:30AM-5:00PM M-F
 RENEW TARE WGT. EVERY 60 DAYS

57 stone

Driver: *[Signature]*

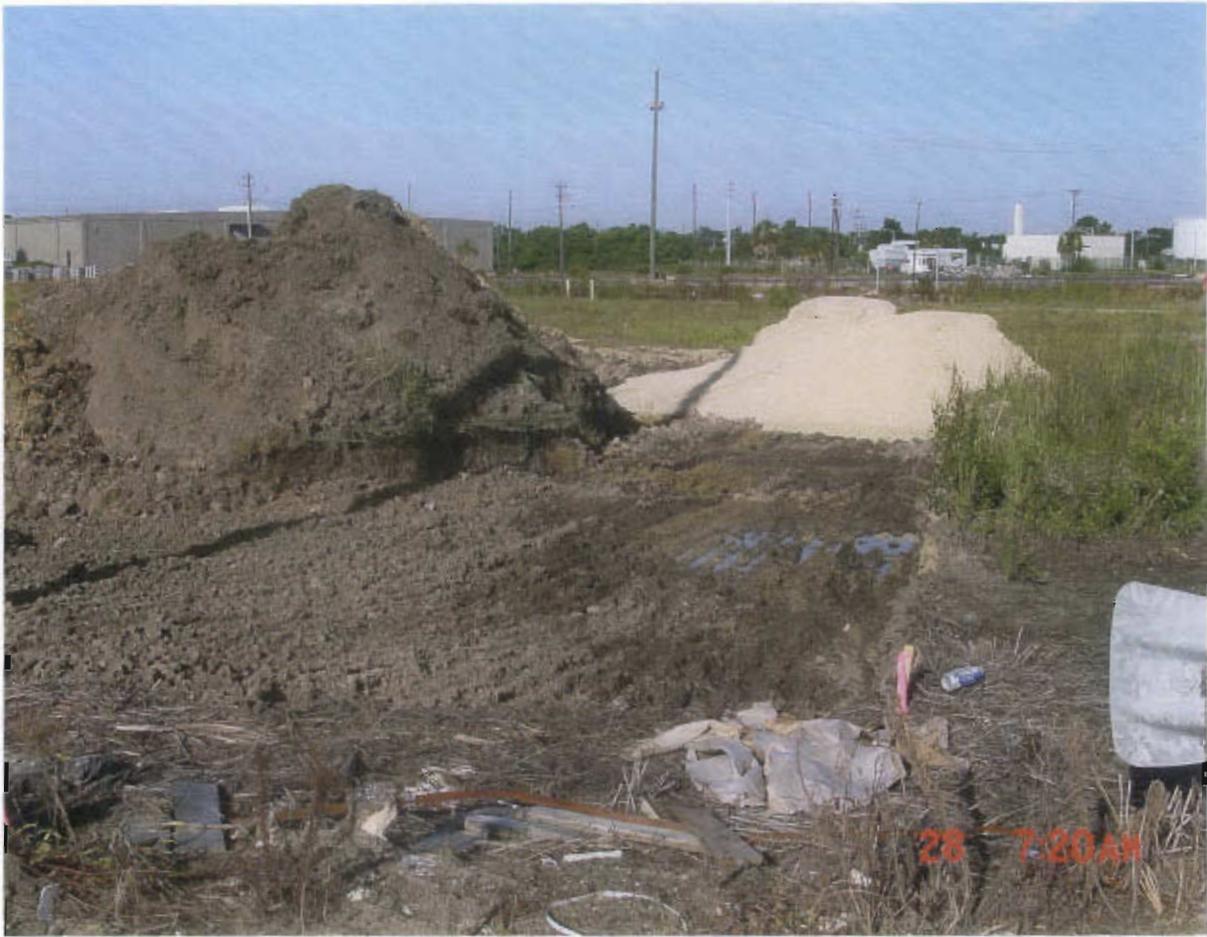
Customer: *BB JA Jones*



26 9:50 AM



28 7:02 AM



Comments Prepared by Susan Byrd:

1. Subsection 2.2.3, Groundwater Results, Page 2-6

The text states that no pesticides or PCBs were detected in shallow groundwater; however, page 1-3 states that groundwater samples from two monitoring wells at SWMU 7 presented detections of DDT, BHC, and PCBs. Please clarify.

CH2M-Jones Response:

The pesticide and PCB detections discussed on Page 1-3 of the RFIRA were from a 1987 report for work conducted prior to the Zone G RFI. The discussion in section 2.2.3 refers to the results of sampling during the RFI.

2. Subsection 4.2, Sediment Investigation, Page 4-5

The text references Table 4-5 for a summary of compounds detected in the ditch sediment sample. Only organic compounds are listed in the table. Due to the close proximity of the Cooper River and the possibility of historical contaminant migration, please include a full list in Table 4-5 of all contaminants detected in the sediment sample compared to ecological screening values.

CH2M-Jones Response:

The potential impacts to the Cooper River from sediment samples, via stormwater runoff, are being evaluated by the Navy/EnSafe team. The process for doing this was described in a memorandum prepared by EnSafe for the CNC BCT, dated June 5, 2002. This evaluation is based on analytical results for stormwater runoff samples collected from outfalls to the water bodies around the Charleston Naval Complex (e.g., Cooper River, Shipyard Creek, Noisette Creek).

SWMU 6 is located within Drainage Basin 43 and stormwater runoff samples from this basin have been collected and analyzed. These data were presented in the Zone J RFI Storm Water Effluent Evaluation Report Addendum (EnSafe, 2002). An excerpt from this report describing the sampling related to DB 43 is included with these responses. It can be seen in Figure 4-26 from this report, attached herewith, that a stormwater runoff sample (EFF035) was collected directly from the ditch at SWMU 6 approximately 100 ft downstream from where sediment sample G006M0001 was collected. No pesticides or PCBs were detected in the analyses for EFF035, indicating that migration of pesticides and PCBs from this site is not occurring. No COPCs were identified for DB 43.

3. Subsection 5.2, Soil COCs

Based on the CNC Project Team Notebook, the UCL95 and RBC comparisons should only be conducted at sites where a single compound exceeds screening criteria. At SWMU 6, UCL95 comparisons are made for Aroclor-1254, Aroclor-1260, and DDT. The Department concurs with retaining Aroclor-1254 as a COC; however, the cumulative risk of Aroclor-1254, Aroclor-1260, and DDT will have to be presented unless an acceptable method of COC refinement is presented.

CH2M-Jones Response:

We agree with the above comment regarding the comparison of UCL95 concentrations and RBCs being applicable to single chemicals when the chemicals are carcinogens. The following additional clarification regarding cumulative risk is offered.

The only chemicals identified above their respective residential RBC and background levels at SWMU 6 after the IM implementation of 2002 are Aroclor-1254 and Aroclor-1260, which are both carcinogens. One of the historically higher detections of Aroclor-1254 in surface soil was at the 1993 boring S06-B05, where monitoring well G006GW005 is currently located, and it is unclear if this area was remediated prior to installation of the well. Table 1 below presents the potential cumulative risks from the presence of carcinogenic COPCs at the site. All other chemicals are below RBC levels, and thus are not COPCs. Because of the uncertainty associated with whether or not the highest Aroclor-1254 area (S06-B05) was remediated or not prior to well installation, it was retained as the COC for the sites. As can be noted from the table below, the cumulative risks are nearer to the 1 in a million risk levels, under the residential land use scenario.

We have been conservative in the risk evaluation by retaining Aroclor-1254 for the time being as a COC, assuming under Scenario 2 (see below) that the elevated detection is still present at the site. Additional sampling during the CMS will reveal whether this assumption is valid or not.

TABLE 1
 Residual Risks from Remaining COPCs in Surface Soils at Combined SWMU 6

Scenario 1: The highest Aroclor-1254 was removed							
COPC	Units	UCL95%	Residential RBC	Industrial RBC	Residential ELCR	Industrial ELCR	Industrial ELCR
Aroclor-1254	mg/kg	63.9	320	2900	2.00E-07		2.20E-08
Aroclor-1260	mg/kg	170	320	2900	5.31E-07		5.86E-08
DDT	mg/kg	240	1900	17000	1.26E-07		1.41E-08
Total ELCR					8.6E-07		9E-08
Scenario 2: Highest Aroclor-1254 is remaining at the site							
Aroclor-1254	mg/kg	975.5	320	2900	3.05E-06		3.36E-07
Aroclor-1260	mg/kg	170	320	2900	5.31E-07		5.86E-08
DDT	mg/kg	240	1900	17000	1.26E-07		1.41E-08
Total ELCR					3.7E-06		4E-07

4. Section 6.6, Potential Migration Pathways to Surface Water Bodies at the CNC, Page 6-2:
 Due to the historical elevated concentrations of contaminants in surface soil, the potential existed for contaminant migration to the Cooper River. One drainage ditch sample does not provide enough information to conclude that this pathway is not significant. Please provide additional supporting information to eliminate this pathway or revise the text to include migration of surface water as a potential pathway needing further investigation.

CH2M-Jones Response:

See response to comment 2 above. The potential for migration to the Cooper River from this portion of the CNC has been evaluated in the Zone J RFI Storm Water Effluent Evaluation Report Addendum and found to not be a concern.

5. The report is unclear regarding the complete delineation of PCB contamination in soil. The CMS Work Plan discussion seems to focus on the soil contamination around sample S06-B05 even though the Navy is unsure if this contamination has been removed. Please keep in mind that it is not clear if other areas of PCB contamination have been fully remediated. For example no information was provided regarding confirmation samples after the removal of the 10 ft diameter circle of soil (to a 2 foot depth) around samples G006SB056 and G006SB058. Uncertainties associated with the nomenclature in the RFI data also lends question to whether the contamination is fully delineated. The Department requests that CH2M-Jones include a thorough discussion of the nature and extent of the remaining PCB contamination in site soils in the upcoming CMS Report. If additional sampling is warranted, the Department recommends that it be conducted during the CMS.

CH2M-Jones Response:

See responses to comments 3 and 4 above. The question of residual PCB (Aroclor-1254) contamination in surface soil at boring S06-B05 will be addressed with additional sampling during the CMS. As discussed in Section 5.2.1 of the RFIRA, all Aroclor-1254 in surface soils has been remediated to meet cleanup criteria with the exception of this one location in question. Residual Aroclor-1260 remaining in surface soils after the IM does not pose an unacceptable risk, based upon the UCL₉₅ calculation performed and presented in Appendix D-3 of the RFIRA.

Regarding the PCBs in surface soil removed around soil sample locations G006SB056 and G006SB058, excavations were terminated when the excavation footprint was within 10 feet or less of an adjacent sample location with PCB results below criteria, such as at S06-B07, G006SB052, G006SB053, and G006SB057 (see Figure 5-2). We believe these samples adequately define the extent of contamination in the vicinity of samples locations G006SB056 and G006SB058.

Comments Prepared by Mansour Malik:

1. Arsenic at G006GW003 has consistently shown concentrations above MCL ranging between 154–560 µg/L in five rounds of sampling. These elevated concentrations do not show in any of the other wells. Arsenic shows low concentrations in surface and subsurface soil. It is not clear whether those wells tap similar geological horizons. The well logs should be presented in this document. Attributing high concentrations of arsenic to turbidity is understandable but low flow pumping would have resolved that issue. Iron concentrations are comparatively high for the same samples. As turbidity might contribute to the noted high arsenic concentrations, it is evident that the geochemical relationship was not quite established and it is not supportive enough to eliminate arsenic as a COC. Plotting an As-Fe graphic relationship does not support this argument (note figures attached). The fact that arsenic is not related to site activities also is not sufficient evidence because the site was a public works hazardous waste storage yard and materials being stored there once were not categorized. The reviewer thinks that more work is required to investigate the highly elevated concentration of arsenic at the site. The Navy should retain arsenic as a COC that needs to be addressed in the subsequent CMS.

CH2M-Jones Response:

Copies of the geologic logs for well G006GW003 and nearby wells are provided in Attachment 1. The logs indicate that the wells are screened in the same lithologic interval as well G006GW003. Therefore, well construction differences can be ruled out as a possible explanation for elevated arsenic concentrations in well G006GW003.

As discussed in Section 5.3 of the RFIRA, soil sampling results around well G006GW003 and SWMU 6 in general do not indicate a contaminant source of arsenic in soils at this location or at SWMU 6, which could be leaching arsenic to groundwater. Arsenic was not identified as a soil COC for either surface or subsurface soils.

Iron-reducing conditions are undeniably present in the shallow aquifer with iron concentrations ranging from 36,500 to 77,500 µg/L in this well. We continue to believe that arsenic detections in this well are due to natural iron-reducing aquifer conditions at this location, rather than a release of contaminants to the environment from Navy activities.

The basis used by CH2M-Jones to conclude that arsenic at this site is likely related to natural geochemical conditions was presented in the Technical Memorandum "A Discussion of the Occurrence of Arsenic in Background Groundwater at the CNC," dated November 25, 2002. Several peer-reviewed articles that describe the process of dissimilatory iron reduction were included with that memorandum. It should be noted that none of these articles indicate that a linear relationship between arsenic and iron in groundwater must be shown in order for dissimilatory iron reduction to be a probable cause of the arsenic in groundwater. Thus, a plot of arsenic versus iron in groundwater for this well does not indicate that the arsenic occurrence is not due to dissimilatory iron reduction.

CH2M Jones is not opposed to periodic (e.g., annual or biannual) monitoring of arsenic in well G006GW003 during the CMS and CMI phases for other groundwater COCs at the site. Based on the lack of data indicating any source of arsenic was disposed at the site and given the clear

indications of significant iron reducing conditions, which provides conditions under which elevated arsenic is highly feasible, it is not clear to us why arsenic should be considered a site-related COC. The lack of a linear relationship between arsenic and iron in groundwater samples does not provide a technically justified basis for identifying arsenic as a site-related COC, as noted above. We propose that arsenic be included for monitoring along with the pesticide COCs in groundwater that is planned for the CMS and CMI phases.

2. Thallium at G006GW001, 02, 03, 04, and 06 is consistently showing concentration values above MCL. A Zone G background value for Thallium was not established. A background range value of 2 to 105 :g/L was suggested based upon data from surrounding zones E, F, H, and I besides G. The reviewer does not recognize this background value. It is unclear whether the BCT has adopted such a value. Integrating Zone E grid data in this regard is unacceptable. The text identifies thallium as being naturally occurring and therefore was not considered a COC. The contention that no thallium source was identified or linked to the site activities is not sufficient to eliminate it as a COC. The Navy should establish a better argument in eliminating thallium as a COC. The Division of Hydrogeology request that thallium be retained as a COC. The subsequent CMS must address the thallium in shallow groundwater at combined SWMU 6.

CH2M-Jones Response:

A thallium background value for Zone G groundwater was not established because only two grid wells were installed for Zone G, and thallium was not detected in these wells. No evidence was found of former operations which could have released thallium at SWMU 6. Because there is no indication that thallium is site-related, CH2M-Jones did not consider it a COC requiring remediation. However, as for arsenic, we are not opposed to periodic monitoring of groundwater (filtered and unfiltered) as part of the long-term monitoring expected to be conducted at SWMU 6 for pesticides in groundwater. We agree to add thallium to the analyte list for key wells at the site as part of the CMS and CMI phases.

3. Conclusion:

In addition to the DDE, DDT, antimony, and nickel in the shallow groundwater, the Navy should include arsenic and thallium otherwise the Navy must establish a better geochemical argument to eliminate those constituents.

CH2M-Jones Response:

See responses to the two previous comments.

Comments by Gil Rennhack:

This RFIRA has a request for a No Further Investigation (NFI) for SWMU 6. The request is premature to be granted an NFI status until the following issue has been resolved.

1. PCBs in surface soil are identified as COCs and a CMS is recommended to address the PCBs in surface soil. No location of the contaminated soil has been identified. Please provide the specific location(s), depth, approximate area(s) to be delineated, and the approximate excavated volume.

CH2M-Jones Response:

The residual PCBs detected in surface soils at 1993 soil boring S06-B05 may or may not still be present at the site. Because a groundwater monitoring well is co-located with the former soil boring location, the soil cannot be re-sampled to confirm the presence of PCBs. However, soil close to this location can be resampled and will be resampled as part of the CMS phase.

The soils containing PCBs may have been removed as investigation-derived waste during the S06-B05 soil boring or G006GW005 monitoring well installation processes.

NFI can be approved at this time because the overall nature and extent of contamination has been adequately defined. The amount of sampling required as part of the CMS phase is minimal and not unusual for a CMS. Overall site risks are well within acceptable limits (see response to Susan Byrd comment 3 above), and PCBs have not been detected in subsurface soils or groundwater at the same location. Aroclor-1254 is retained as COC because of this one potential "hot spot", but not as a COC for human health protection levels based on statistical average of the exposure (UCL₉₅ calculation in Appendix D-2 of RFIRA).

A Sampling and Analysis Plan (SAP) will be prepared as part of the CMS for addressing Aroclor-1254 concentrations in surface soil at this location, and any additional corrective measures required for surface soil (0 to 1 foot below land surface) at this location will be summarized in the SWMU 6 Corrective Measures Implementation Plan.

CH2MHILL TRANSMITTAL

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

From: Dean Williamson/CH2M-Jones

Date: Oct. 10, 2003

Re: CH2M-Jones' Response to Comments by SCDHEC regarding the *RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Revision 0* – Originally Submitted on December 5, 2002

We Are Sending You:

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

Quantity	Description
2	CH2M-Jones' Response to Comments by SCDHEC regarding the <i>RFI Report Addendum/IM Completion Report/CMS Work Plan, SWMU 6, Zone G, Revision 0</i> – Originally Submitted on December 5, 2002

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

Copy To:

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

Response to SCDHEC Comment
RFI Report Addendum/IM Completion Report/CMS Work Plan, Revision 0
SWMU 6, Zone G
Charleston Naval Complex
Dated August 14, 2003

Comment Prepared by Susan Byrd

The Department has reviewed the following response to comments but still has concerns regarding the responses to Comments 2 and 4. The BCT agreed that all RFI's or RFI Addendums would address the potential off-site migration of contamination to specific areas identified as closeout issues such as the water bodies, sewers, railroads, etc. In accordance with these closeout issues, the Department requests additional information regarding the potential migration of contamination to the nearby Cooper River via the drainage ditch. Comment 2 requests that Table 4-5 include a full data summary of all contamination detected instead of summarizing only the organic data. Referencing the Zone J effluent water sample EFF035 located 100 feet downstream of ditch sediment G006M0001 does not fully address the potential contaminant migration from SWMU 6 to the drainage ditch sediment. Response to Comment 4 states that the Zone J Storm Water Evaluation Report Addendum evaluated the potential for contaminant migration to the Cooper River from this portion of the CNC and was found to not be a concern. To date, the Storm Water Evaluation Report has been submit and reviewed; however, no conclusions have currently been made at this stage of the investigation to eliminate areas of the various water bodies.

CH2M-Jones Response:

A revised Section 6.6, Potential Migration Pathways to Surface Water Bodies at the CNC, is included with this response to comments. This revised section discusses the offsite migration pathway in more detail, per a recent teleconference between Susan Byrd/SCDHEC, Jerry Stamps/SCDHEC, and Dean Williamson/CH2M-Jones.

With regard to the request to include data for other detected chemicals (i.e., inorganics) in Table 4-5, it should be noted that no inorganic analyses were performed on this sediment sample. Per the sampling work plan, this sediment sample was analyzed for the key surface soil COCs (pesticides, PCBs, and PAHs). Table 4-5 lists all detections of chemicals that were analyzed for.

With regard to the data for the Storm Water Evaluation Report, an excerpt from this report is attached, which contains the analytical data for sample EFF035, collected at the northern (downgradient) end of the stormwater ditch adjacent to SWMU 6. While this stormwater

report may not have been approved, these data are still relevant to considering whether runoff from SWMU 6 (which contributes surface water runoff to this ditch) contains contaminants that could be migrating offsite. No SWMU 6 surface soil COCs (pesticides, PCBs, or PAHs) were detected in this stormwater sample. No inorganic chemicals were detected in this sample above the ecological COPC screening criteria.

Because the site soil has been remediated, the source of contaminants have been removed, and the sediment and stormwater samples from the drainage ditch do not indicate that contamination is present and migrating via the stormwater pathway, CH2M-Jones does not believe that this migration pathway is of concern.

6.6 Potential Migration Pathways to Surface Water Bodies at the CNC

The nearest surface water body to Combined SWMU 6 is the Cooper River, which lies approximately 200 feet northeast of the site. A drainage ditch along the southeast side of the site receives stormwater runoff from SWMU 6 during large storm events. This drainage ditch is part of the CNC storm water system and discharges into the underground storm sewer adjacent to the site. The outfall for this part of the storm sewer is the Cooper River adjacent to Pier L.

The excavation and removal of contaminated surface soil from the site, as described in this report, has eliminated the source of contaminated soil that migrate offsite via the stormwater runoff pathway. However, because of the historic surface soil contamination at SWMU 6, the potential for migration of contamination from the site to the Cooper River via the stormwater pathway (particulate or sediment transport) existed prior to conducting the various soil removal interim measures. In order to assess the degree to which runoff of contaminated soil may have impacted the existing drainage ditch, a sediment sample (G006M001) was collected from the drainage ditch as part of the investigation at SWMU 6. The sediment sample location, shown in Figure 5-1, was located downstream of the location where soil contamination was found closest to the ditch; thus, this location would be most likely contaminated if offsite contaminant migration via stormwater runoff was a significant pathway. The sediment sample was analyzed for pesticides, PCBs, and PAHs, since these were the key surface soil COPCs identified at SWMU 6.

The results of the sediment analysis were discussed in Section 4.0 of this RFI Report Addendum/IM Completion Report/CMS Work Plan. Analytical results for detected compounds in the sample were all below RBCs and SSVs, indicating that contamination of the ditch has not occurred and that this migration pathway is not significant.

In addition, the Navy/EnSafe team collected a stormwater sample from the northern (downstream) end of this ditch to assess the potential for contamination to be migrating into the Cooper River. Stormwater runoff from the southern and central portions of SWMU 6 enters this ditch during significant rainfall events. The stormwater sample was analyzed for metals, VOCs, SVOCS, pesticides, and PCBs. No organic chemicals were detected in the stormwater sample and no detected inorganic chemicals exceeded the ecological COPC screening criteria. These data further confirm that the surface water runoff pathway is not of concern at this site.

Table 4.26.6
Summary of AOC 633 Investigations
Charleston Naval Complex, Charleston, South Carolina

Activity	Date	Description/Samples/Locations	
Interim Measure (Navy)	2000	Round 6 Soil: Removal of PCB-impacted soils	Round 6 Groundwater: No Groundwater Samples Collected.

Nature and Extent of Contaminants

Approximately 25 sample locations associated with AOC 633 were evaluated for the presence of contaminants between 1996 and 2000. Of those 25 samples, approximately five are within the boundaries of Drainage Basin 43. Surface, subsurface, and sediment samples were collected and analyzed for various constituents in order to delineate the nature and extent of potential contamination at the site. No detections of any compound were of particular interest in soil. Groundwater was not sampled as a part of this investigation.

4.26.2 Storm Water Effluent Evaluation

Two storm water effluent samples were collected to determine if constituents are migrating from the SWMUs/AOCs associated with Drainage Basin 43 into the Cooper River. Storm water effluent sample EFF034 was collected at catch basin 43/3-C on March 2, 2002. Storm water effluent sample EFF035 was collected from an open ditch near 43/2-A on March 2, 2002. Analytical detections for both EFF034 and EFF035 are presented in Table 4.26.7.

Table 4.26.7
Storm Water Effluent Sampling Results
Drainage Basin 43

Drainage Basin	Catch Basin/ Manhole ID	Sample ID	Parameter	Concentration (µg/L)	Screening Value (µg/L)		
					Reference Concentration	Chronic Saltwater Screening Value	Potential COPC

Table 4.26.7
Storm Water Effluent Sampling Results
Drainage Basin 43

Drainage Basin	Catch Basin/ Manhole ID	Sample ID	Parameter	Concentration (µg/L)	Screening Value (µg/L)		
					Reference Concentration	Chronic Saltwater Screening Value	Potential COPC
			Arsenic	4.80	6.88	NL	No
			Calcium*	23,000	53,455	NL	No
			Copper	5.00	41.98	2.90	No
			Lead	2.50	33.63	8.50	No
			Manganese	13	74.52	NL	No
			Sodium*	59,000	395,333	NL	No
			Zinc	35	307.83	86	No
			Barium	20	60.31	NL	No
			Chromium	2.30	13.00	50	No
			Iron	710	4,134	NL	No
			Magnesium*	36,000	49,255	NL	No
			Potassium*	18,000	23,678	NL	No
			Vanadium	4.00	15.59	NL	No

Table 4.26.7
Storm Water Effluent Sampling Results
Drainage Basin 43

Drainage Basin	Catch Basin/ Manhole ID	Sample ID	Parameter	Concentration (µg/L)	Screening Value (µg/L)		Potential COPC
					Reference Concentration	Chronic Saltwater Screening Value	

Notes:

* = Parameter is considered an essential nutrient; therefore, it will not be evaluated as a potential COPC.

4.26.3 Pathway Evaluation

Data collected during the investigative activities summarized above were used to evaluate the contaminant migration pathway scenarios described in Section 2.1.2 of the *Storm Water Effluent Evaluation Report* and to determine the applicability of each scenario to Drainage Basin 43. Table 4.26.8 summarizes the migration pathway scenarios.

Table 4.26.8
Storm Water Contaminant Migration Pathway Scenario Summary
Drainage Basin 43

Scenario	Pathway Description	Is Pathway Complete?
1b	waste in sheet flow catch basin storm water drainage pipeline Zone J	No
1d	cross connect exists from the sanitary sewer system to the storm sewer system Zone J	No

4.26.3.1 Scenario 1a

Scenario 1a evaluates the direct release of waste into a catch basin which subsequently travels through the storm water drainage pipeline into Zone J water bodies. The EBS for Facility 3902, the old Paint and Oil Storehouse within the boundaries of the "Old Corral" off of Hobson Ave., stated that in the early 1980's PCBs from used transformers have been released to the environment and may have impacted the Cooper River via storm water runoff.

Though past practices make this scenario complete, a review of historical information, RFI data, current site use, and the storm water effluent data from EFF034 and EFF035 do not presently identify contaminants that may be associated with past practices relating to direct releases of waste at these facilities.

There were no potential storm water effluent COPCs identified for Drainage Basin 43 that require further characterization; therefore contaminant migration pathway scenarios 1b through 1d do not require further evaluation.