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CNC CHARLESTON
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NO FURTHER ACTION (NFA) THIRD QUARTER 2001 MONITORING REPORT RECEIVED 3
OCTOBER 2001 FOR ZONE G FUEL DISTRIBUTION SYSTEM (FDS) AREAS 12 THRU 14
CNC CHARLESTON SC
11/14/2001
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL



14 November 2001

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Columbia, SC 29201-1708

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NAVFACENGCOM Southern Division
Attn: Code ES24 (Gabriel Magwood)
P.O. Box 190010
North Charleston, SC 29419-9010

Re: CNB - Zone G, FDS; Areas 12-14
Site Identification # 01186
Third Quarter 2001 Monitoring Report received 3 October 2001
No Further Action
Charleston County

Dear Mr. Magwood:

The Department has reviewed the referenced assessment report. As submitted, the report documents current and historical efforts to monitor soil and groundwater for hydrocarbon contamination at the subject site. Based on this review, it appears that maximum contaminant levels are not currently exceeded in soil and/or groundwater at the site.

Based on the information and analytical data submitted, the Department recognizes that the Department of the Navy has adequately addressed the known environmental contamination identified on the property to date in accordance with the approved scope of work. Consequently, no further investigation is required at this time. Please note, this statement pertains only to the portion of the site addressed in the referenced report and does not apply to other areas of the site and/or any other potential regulatory violations. Furthermore, the Department retains the right to request further investigation if deemed necessary.

The monitoring well(s) may be permanently abandoned by a certified well driller licensed in South Carolina in accordance with the South Carolina Well Standards and Regulations, R.61-71 or properly maintained. Should you choose to abandon the well, please submit a well abandonment record to my attention within 30 days of abandonment. Should you choose to properly maintain the monitoring well, please notify me within 14 days of this correspondence.

Should you have any questions, please contact me at 803-898-3553 (office phone), 803-898-3795 (fax) or bishopma@columb32.dhec.state.sc.us.

Sincerely,

Michael Bishop, Hydrogeologist
Groundwater Quality Section
Bureau of Water

Tom Knight, Manager
Groundwater Quality Section
Bureau of Water

cc: Trident District EQC
Technical File
Paul Bergstrand, SCDHEC-BLWM
Brian Crawford, 1849 Ave. F, N. Charleston SC, 29405

**Third Quarter 2001 Monitoring Report
Zone G, Fuel Distribution System (FDS); Areas 12-14
Charleston Naval Complex
North Charleston, South Carolina
SCDHEC NO. 01186**

Prepared by:

**CH2M-Jones, LLC.
Charleston Naval Complex
1849 Avenue F
North Charleston, South Carolina 29405
September 27, 2001**

Prepared For:

**Southern Division Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, South Carolina 29419-9010**

*Assessment of
Contamination*

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FDS Areas 12-14
Charleston Naval Complex
North Charleston, South Carolina

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1.0 INTRODUCTION

1.1 Background

The Charleston Naval Complex is located on the banks of the Cooper River in Charleston County, South Carolina, and lies within the corporate boundaries of the city of North Charleston, approximately 5 miles north of the city of Charleston. The Complex is bounded on the east by the Cooper River and on the north, south, and west by the city of North Charleston.

1.2 General Site Description

The CNC is located in the city of North Charleston, on the west bank of the Cooper River in Charleston County, South Carolina as shown in Figure 1. This installation consists of two major areas: an undeveloped dredge materials area on the east bank of the Cooper River on Daniel Island in Berkley County, and a developed area on the west bank of the Cooper River. The developed portion of the base is on the peninsula bounded on the west by the Ashley River and on the east by the Cooper River. The site is located within the developed portion of the base (Tetra Tech, NUS [TTNUS], 2000).

A Corrective Action Plan (CAP) was completed and approved in April of 2001, which presented a plan to monitor the groundwater from existing monitoring wells for up to a period six months. The CAP stated that if after two rounds of quarterly sampling analytical data shows that there are no contamination in the areas above the RBSLs; CH2M-Jones, LLC may request to the department a No Further Action. If groundwater analytical results indicate that levels of contaminants are above the RBSLs, active remediation may be recommended .

1.3 Groundwater monitoring results- Second Quarter (June 2001)

Groundwater samples were collected from groundwater monitoring wells FDS14B, FDS13B, and FDS13C by CH2M-Jones, LLC on May 23, 2001 (Second Quarter 2001). In addition to VOCs one trip blank and one equipment blank were collected for quality assurance. Groundwater samples were analyzed by a certified Laboratory (see figure 3-3 for sample locations).

Laboratory analytical results for monitoring wells FDS14B, FDS13B, and FDS13C are shown in Table 2-2.

Groundwater samples were all below the Risk Based Screening Levels for VOCs. The results illustrate that there are no contaminants in the groundwater at this time.

1.4 Groundwater monitoring results- Third Quarter (September 2001)

Groundwater samples were collected from groundwater monitoring wells FDS14B, FDS13B, and FDS13C by CH2M-Jones, LLC on September 6, 2001 (Third Quarter 2001). In addition to VOCs, one trip blank and one equipment blank were collected for quality assurance. Groundwater samples were analyzed by a certified Laboratory (see figure 3-3 for sample locations).

Laboratory analytical results for monitoring wells FDS14B, FDS13B, and FDS13C are shown in Table 2-1.

Groundwater samples were all below the Risk Based Screening Levels for VOCs. The results illustrate that there are no contaminants in the groundwater at this time.

1.5 Conclusion

The June and September 2001 analytical results were below the Risk Based Screening Levels for VOCs. Analytical results present no evidence that COC's have leached into the groundwater. CH2M-Jones, LLC recommends No Further Action for Zone G; FDS Areas 12-14 (SCDHEC No: 01186).

TABLES

Table 2.1
 Summary of Groundwater Laboratory Analyses
 September 2001
 Zone G FDS Area 12-14
 Charleston Naval Complex
 North Charleston, South Carolina

Parameters	FDS14B	FDS13B	FDS13C	RBSLs (1998)
Benzene	Below RBSLs	Below RBSLs	Below RBSLs	5 ppb
Toluene	Below RBSLs	Below RBSLs	Below RBSLs	1000 ppb
Ethyl-Benzene	Below RBSLs	Below RBSLs	Below RBSLs	700 ppb
Xylene	Below RBSLs	Below RBSLs	Below RBSLs	10000ppb

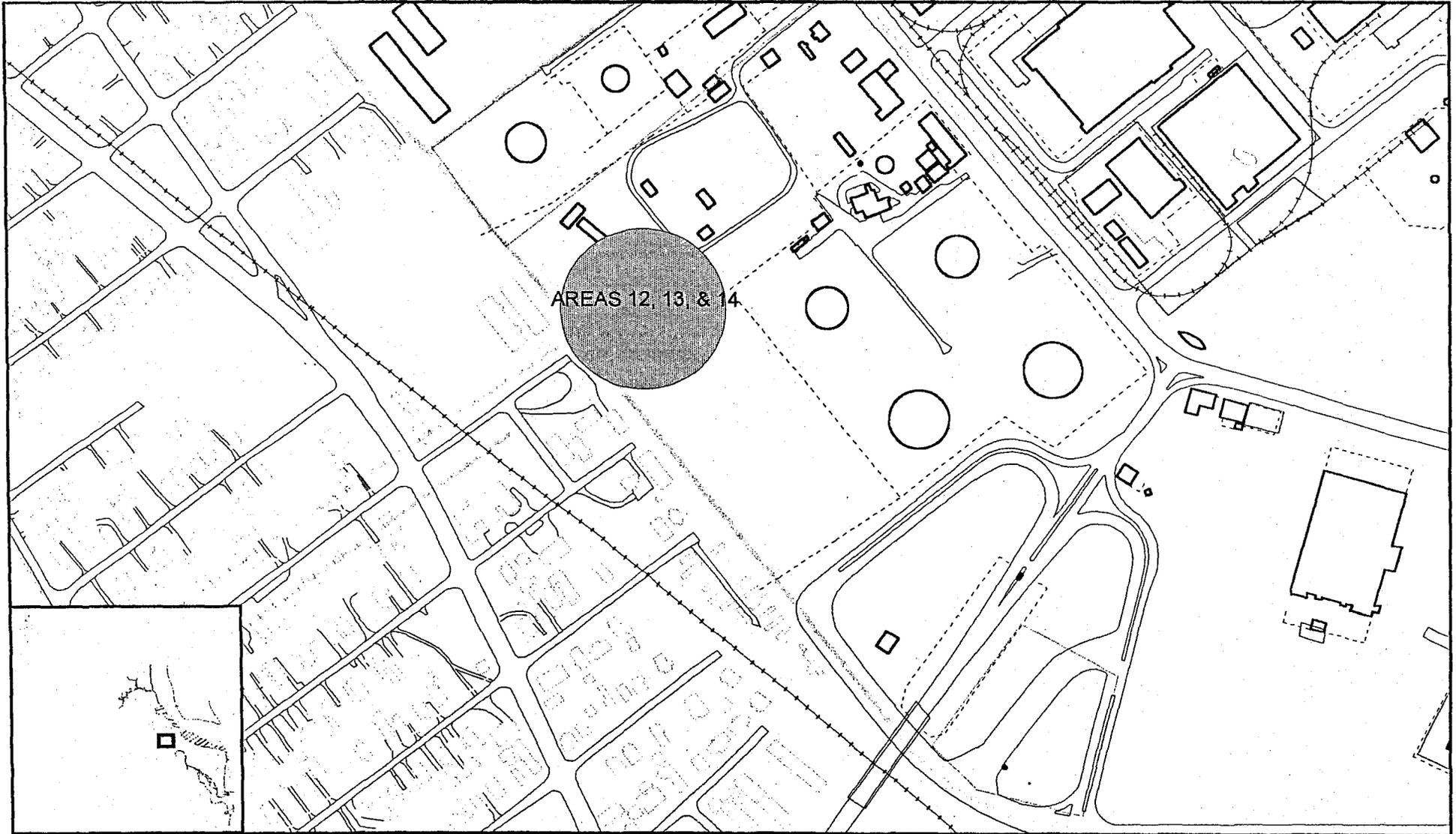
NS= Not Sampled
 Below RBSL= Below the Risk Based Screening Levels

Table 2.2
 Summary of Groundwater Laboratory Analyses
 June 2001
 Zone G FDS Area 12-14
 Charleston Naval Complex
 North Charleston, South Carolina

Parameters	FDS14B	FDS13B	FDS13C	RBSLs (1998)
Benzene	Below RBSLs	Below RBSLs	Below RBSLs	5 ppb
Toluene	Below RBSLs	Below RBSLs	Below RBSLs	1000 ppb
Ethyl-Benzene	Below RBSLs	Below RBSLs	Below RBSLs	700 ppb
Xylene	Below RBSLs	Below RBSLs	Below RBSLs	10000ppb

NS= Not Sampled
 Below RBSL= Below the Risk Based Screening Levels

FIGURES



AREAS 12, 13, & 14

- | | |
|---------------------|-----------------|
| ∩∩ Fence | □ AOC Boundary |
| ∩∩ Railroads | □ SWMU Boundary |
| ∩∩ Roads - Lines | □ Buildings |
| ∩∩ Bridges | □ Zone Boundary |
| ∩∩ Surrounding Area | |
| ∩∩ Shoreline | |

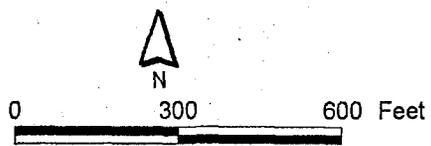


Figure 1
 Site Location Map
 Zone G
 Charleston Naval Complex

CH2MHILL



- ∨ DRAIN-LABEL
- ∨ DRAIN-BASIN
- ∨ DRAIN-LINE
- ∨ STORM-OUTFALL-ID
- ∨ STORM-LINE/MANHOLE
- ∨ STORM-LINE/MANHOLE-NS

- ∨ STORM-FLOW-ARROW
- ∨ SEWER-LINE/MANHOLE-NS
- ∨ SEWER-LINE/MANHOLE
- ∨ SEWER-FLOW-ARROW

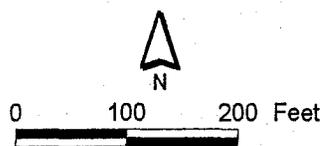
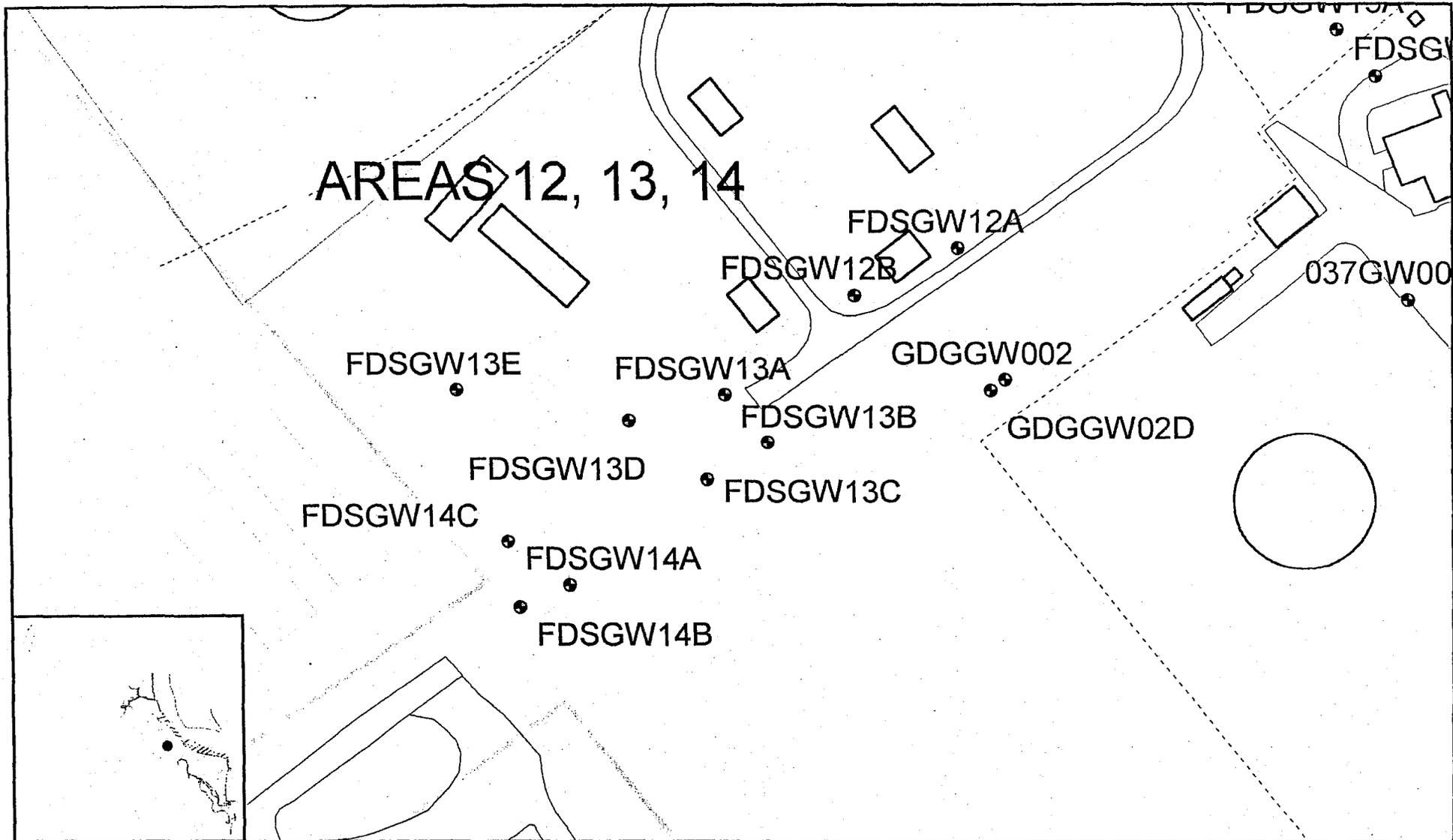


Figure 2
 Site Vicinity Map
 Zone G; Areas 12-14
 Charleston Naval Complex

CH2MHILL



AREAS 12, 13, 14

- Groundwater Well
- ▤ Fence
- ▤ Railroads
- ▤ Roads - Lines
- ▤ Bridges
- ▤ Surrounding Area
- Shoreline

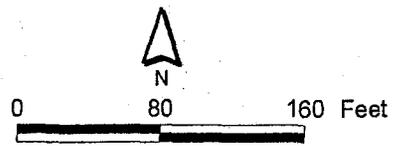


Figure 3
 Groudwater Well Location
 Zone G
 Charleston Naval Complex

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FIELD NOTES

FIELD NOTES

Zone G FDS Area 12-14

LOCATION: CNC, Zone G FDS Area 12-14				DATE: 09/06/01			
JOB No: 093				WELL No: FDSGW13B			
PROJECT NAME: Charleston Naval Complex							
WELL No: FDSGW13B							
WEATHER CONDITIONS: Partly Cloudy and 80°							
REVIEWED BY: BRC							
PURGING DEVICE				SAMPLING DEVICE			
TYPE DEVICE: P. Pump				TYPE DEVICE: P. Pump			
WHICH WELL WAS PREVIOUSLY PURGED? na							
INITIAL WELL VOLUME				PURGING			
WELL DIAMETER: 2"				START: 0942			
TYPE: Flush Mount				STOP: 1035			
DEPTH TO BOTTOM OF WELL: 16.17				VOLUME PURGED: 10.0 gallons			
DEPTH TO WATER SURFACE: 3.04				COMMENTS: had to purge 5WVs			
LENGTH OF WATER: 13.13				COMPLETION: yes			
VOLUME OF WATER (1WV): 2.10				SAMPLE COLLECTED: 1040			
3 VOLUMES OF WATER (3WV): 6.30							
IN SUTU TESTING							
TIME:	WELL VOLUME PURGED	pH	CONDUCTIVITY	TURBIDITY	DO	WATER TEMP.	ORP
0950	1WV	6.65	8.89	0.1	3.45	26.11	-177
1000	2WV	6.81	8.44	-3.2	2.28	25.8	-202
1012	3WV	6.78	14.4	0.0	6.78	23.9	-203
1024	4WV	6.74	16.9	6.1	6.96	23.0	-157
1035	5WV	6.76	16.0	20	9.74	22.7	-183

Zone G FDS Area 12-14

LOCATION: CNC, Zone G FDS Area 12-14				DATE: 09/06/01			
JOB No: 093				WELL No: FDSGW13C			
PROJECT NAME: Charleston Naval Complex							
WELL No: FDSGW13C							
WEATHER CONDITIONS: Partly Cloudy and 80°							
REVIEWED BY: BRC							
PURGING DEVICE				SAMPLING DEVICE			
TYPE DEVICE: P. Pump				TYPE DEVICE: P. Pump			
WHICH WELL WAS PREVIOUSLY PURGED? 13B							
INITIAL WELL VOLUME				PURGING			
WELL DIAMETER: 2"				START: 1050			
TYPE: Flush Mount				STOP: 1140			
DEPTH TO BOTTOM OF WELL: 15.97				VOLUME PURGED: 7.0 gallons			
DEPTH TO WATER SURFACE: 1.0				COMMENTS: Collected Equipment Blank @ 1150			
LENGTH OF WATER: 14.97				COMPLETION: yes			
VOLUME OF WATER (1WV): 2.4				SAMPLE COLLECTED: 1145			
3 VOLUMES OF WATER (3WV): 7.20							
IN SUTU TESTING							
TIME:	WELL VOLUME PURGED	pH	CONDUCTIVITY	TURBIDITY	DO	WATER TEMP.	ORP
1105	1WV	4.58	8.06	9.0	14.5	26.8	121
1120	2WV	4.60	8.14	2.9	14.01	26.7	123
1140	3WV	4.63	8.25	8.5	13.90	26.7	121

Zone G FDS Area 12-14

LOCATION: CNC, Zone G FDS Area 12-14				DATE: 09/06/01			
JOB No: 093				WELL No: FDSGW14B			
PROJECT NAME: Charleston Naval Complex							
WELL No: FDSGW14B							
WEATHER CONDITIONS: Partly Cloudy and 80°							
REVIEWED BY: BRC							
PURGING DEVICE				SAMPLING DEVICE			
TYPE DEVICE: P. Pump				TYPE DEVICE: P. Pump			
WHICH WELL WAS PREVIOUSLY PURGED? 13B							
INITIAL WELL VOLUME				PURGING			
WELL DIAMETER: 2"				START: 1330			
TYPE: Flush Mount				STOP: 1405			
DEPTH TO BOTTOM OF WELL: 16.25				VOLUME PURGED: 6.0 gallons			
DEPTH TO WATER SURFACE: 2.94				COMMENTS:			
LENGTH OF WATER: 13.31				COMPLETION: yes			
VOLUME OF WATER (1WV): 2.40				SAMPLE COLLECTED: 1410			
3 VOLUMES OF WATER (3WV): 7.20							
IN SUTU TESTING							
TIME:	WELL VOLUME PURGED	pH	CONDUCTIVITY	TURBIDITY	DO	WATER TEMP.	ORP
1340	1WV	6.84	9.5	94.7	4.40	25.1	-173
1350	2WV	6.87	9.3	14.4	6.66	24.9	-187
1405	3WV	6.84	10.5	0.4	8.11	24.1	-193

ANALYTICAL RESULTS

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZGFDS12_14-083101-01 page 1 of 2

48685%

7

Laboratory: GEL, Charleston, SC		Project Name: Charleston Navy Complex		Site Name: Q Area 2/ Zone G, FDS Area 12-14		3-40 ml vial, HCl 2-1 liter Amber # of containers VOCs (SW8260) SVOC (SW8270)	Lab Batch/SDG:												
Project Number:		TAT: 21 day		Level: Level 3															
Project Manager: Gary Foster/ATL/CCI		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 2nd page of COC		EDD: CNC format																	
Sample ID	Station ID	Depth		Date & Time			Matrix	# of containers	VOCs (SW8260)	SVOC (SW8270)	Comments								
		Begin	End	Collected															
FDSGW14BL 2	GFDSGW14B			9-6-01/1410		WG	3	X											
FDSGW13BL 2	GFDSGW13B			9-6-01/1040		WG	3	X	X										
FDSGW13CL 2	GFDSGW13C			9-6-01/1145		WG	3	X											
FDSEW13CL 2	GFDSEW13C			9-6-01/1150		WQ	3	X	X	EB									
FDSTW13CL 2	GFDSTW13C			Lab Supplied		WQ	3	X		TB									
FDSGW11AL 3	H FDSGW11A			9-6-01/1505		WG	5	X	X										
FDSHW11AL 3	H FDS GW11A			9-6-01/1510		WG	5	X	X										
FDSGW15CL 3	H FDS GW15C			9-6-01/1555		WG	5	X	X										
FDSGW08AL	H FDSGW08A			NOT Sampled						8A was sampled on Aug 24, 2001..									

Sampled By Chris Blundy Date/Time 9-6-01 Relinquished by: Chris Blundy Date/Time 9-7-01/10

Additional Samplers:
 Received By Lab: Paulette Weir Date/Time 9/7/01 0915 Relinquished by: _____ Date/Time _____

Received By _____ Date/Time _____ Shipped Via: UPS FedEx Hand Other Tracking#: _____
 Remarks: _____ Temperature: _____

Receipt Exceptions: _____

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FDSGW13BL2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 48685

Matrix: (soil/water) WATER Lab Sample ID: 48685001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1A319

Level: (low/med) LOW Date Received: 09/07/01

% Moisture: not dec. _____ Date Analyzed: 09/12/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2-----	Benzene	1.0	U
108-88-3-----	Toluene	1.0	U
100-41-4-----	Ethylbenzene	1.0	U
-----	m,p-Xylenes	2.0	U
95-47-6-----	o-Xylene	1.0	U
1330-20-7-----	Xylenes (total)	3.0	U
91-20-3-----	Naphthalene	1.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FDSGW13CL2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 48685

Matrix: (soil/water) WATER Lab Sample ID: 48685007

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1A333

Level: (low/med) LOW Date Received: 09/07/01

% Moisture: not dec. _____ Date Analyzed: 09/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2-----	Benzene	1.0	U
108-88-3-----	Toluene	1.0	U
100-41-4-----	Ethylbenzene	1.0	U
-----	m,p-Xylenes	2.0	U
95-47-6-----	o-Xylene	1.0	U
1330-20-7-----	Xylenes (total)	3.0	U
91-20-3-----	Naphthalene	1.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FDSGW14BL2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 48685

Matrix: (soil/water) WATER Lab Sample ID: 48685006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1A332

Level: (low/med) LOW Date Received: 09/07/01

% Moisture: not dec. _____ Date Analyzed: 09/12/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2-----	Benzene	1.0	U
108-88-3-----	Toluene	1.0	U
100-41-4-----	Ethylbenzene	1.0	U
-----	m, p-Xylenes	2.0	U
95-47-6-----	o-Xylene	1.0	U
1330-20-7-----	Xylenes (total)	3.0	U
91-20-3-----	Naphthalene	1.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FDSTW13CL2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 48685

Matrix: (soil/water) WATER Lab Sample ID: 48685008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1A334

Level: (low/med) LOW Date Received: 09/07/01

% Moisture: not dec. _____ Date Analyzed: 09/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2-----	Benzene	1.0	U
108-88-3-----	Toluene	1.0	U
100-41-4-----	Ethylbenzene	1.0	U
-----	m, p-Xylenes	2.0	U
95-47-6-----	o-Xylene	1.0	U
1330-20-7-----	Xylenes (total)	3.0	U
91-20-3-----	Naphthalene	1.0	U