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CNC CHARLESTON
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INITIAL GROUNDWATER ASSESSMENT REPORT FOR SITE 37 BUILDING 681 ZONE I CNC CHARLESTON SC

2/1/2000

TETRA TECH

Rev.1
12/14/00

Initial Ground-Water Assessment Report for Site 37, Building 681

Zone I
Charleston Naval Complex
North Charleston, South Carolina

Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order 0103

February 2000

Rev.1
02/14/00

INITIAL GROUND-WATER ASSESSMENT REPORT
FOR
SITE 37, BUILDING 681

ZONE I, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29406

Submitted by:
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, Pennsylvania 15220

CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0103

FEBRUARY 2000

PREPARED UNDER THE SUPERVISION OF:

Paul E. Calligan

PAUL CALLIGAN, P.G.
TASK ORDER MANAGER
TETRA TECH NUS, INC.
TALLAHASSEE, FLORIDA

APPROVED FOR SUBMITTAL BY:

Debra Wroblewski

DEBBIE WROBLEWSKI
PROGRAM MANAGER
TETRA TECH NUS, INC.
PITTSBURGH, PENNSYLVANIA

EXECUTIVE SUMMARY

Tetra Tech NUS, Inc. (TtNUS) has completed a Rapid Assessment for Site 37 which includes one underground storage tank (UST) system for Buildings 681 and 680 at Charleston Naval Complex (CNC) Zone I, in North Charleston, South Carolina. The UST supplied fuel oil to the boilers of Buildings 681 and 680 (the former Shore Intermediate Maintenance Activity shop and administration building that now serve as a Vessel Support Facility for the U.S. Coast Guard). The 20,000-gallon steel UST was removed in April 1997. The assessment was performed under the direction of the South Carolina Department of Health and Environmental Control Rapid Assessment guidance dated June 20, 1997, and approval letter dated June 3, 1999. After determining all laboratory analytical results were below the risk-based screening levels (RBSLs), the reporting format was reduced from a Rapid Assessment Report to an Initial Ground-Water Assessment (IGWA) report format.

TtNUS performed the following actions during the Rapid Assessment:

- Reviewed available Navy documents to identify potential sources and receptors for petroleum hydrocarbons in the vicinity, to evaluate public and private potable wells, to locate utility line areas, to locate nearby surface water bodies, and to determine surface hydrology and drainage.
- Reviewed the previously prepared Underground Storage Tank Assessment Report for UST 681-2 to determine boring locations and monitoring well placement.
- Conducted site survey to identify utilities and to construct a site plan.
- Installed six shallow soil borings 8 feet below land surface (bls) and one deep vertical delineation soil boring to a depth of 30 feet bls using direct push technology (DPT).
- Collected soil samples for field screening using an organic vapor analyzer.
- Installed a temporary piezometer inside a selected soil boring.
- Collected soil and groundwater samples from DPT borings for on-site mobile laboratory screening analysis for benzene, toluene, ethylbenzene, and total xylenes (BTEX); naphthalene; and diesel range organics.
- Collected and analyzed four soil samples at a fixed-base analytical laboratory for BTEX and naphthalene using U.S. Environmental Protection Agency (USEPA) Method 8260 and polynuclear aromatic hydrocarbons (PAHs) using USEPA Method 8270.
- Collected and analyzed one soil sample for total organic carbon using USEPA Method 415.1, total recoverable petroleum hydrocarbons using USEPA Method 9071, and grain size analysis using sieve and hydrometer methods.

- Installed two shallow permanent monitoring wells to a depth 15 feet bls using hollow stem auger.
- Collected groundwater samples from newly installed, permanent monitoring wells for laboratory analysis at a fixed-base analytical laboratory.
- Analyzed groundwater samples for BTEX, methyl tert-butyl ether, and naphthalene using USEPA Method 8260 and PAHs using USEPA Method 8270.
- Surveyed monitoring well and top of casing elevation and collected depth to groundwater measurement (to evaluate regional groundwater flow direction).

Conclusions

On-site mobile laboratory screening results of soil and groundwater samples collected during the DPT investigation did not reveal the need for a full Rapid Assessment. Therefore, additional soil borings and monitoring wells were not installed. However, soil samples were collected from four confirmation soil borings on June 22, 1999, and analyzed for BTEX and PAHs by a fixed-base laboratory. No chemicals of concern (CoCs) were detected in any soil boring sampled.

A groundwater sample was collected from the newly installed monitoring well on July 14, 1999. No dissolved CoCs were detected in the well.

Recommendation

No further action is requested for Site 37, UST 681-2, Building 681, of Zone I, CNC because no CoCs were detected in any of the fixed-base soil or groundwater samples collected during the Rapid Assessment performed in 1999 and reported in the following IGWA.

INITIAL GROUND-WATER ASSESSMENT REPORT

Facility Name: Charleston Naval Base, Zone I, Site 37, UST 681-2, Building 681

Site ID Number: 00967

UST Owner or Operator's Name: U.S. Navy Southern Division (SouthDiv) Naval Facilities Engineering Command (NAVFAC)

Address: 2155 Eagle Drive, North Charleston, South Carolina 29406

Phone Number: 843-820-7307

Contractor: Tetra Tech NUS, Inc., Gregory D. Swanson, P.E. Cert. # 24

Address: 800 Oak Ridge Turnpike, Oak Ridge, TN 37830

Phone Number: (423) 483-9900

Well Driller: Rod Fuller, Custom Drilling – Hollow Stem Auger. Cert. # 1240
Randolph Brand, Columbia Technologies- Direct Push. 1485

Receptor and Site Data
Please place a check in the appropriate answer block for each question:

Receptor Survey Questions	No	Yes*
Is there a drinking water supply well (public or private) or surface water supply intake within 1,000 feet of the UST?	X	
Are irrigation or other non-drinking water wells located within 1,000 feet of the UST?		X
Are there other potential receptors (i.e., utilities, surface waters, wetlands) less than 500 feet from the UST?		X

* If "yes" provide additional information:

There are monitoring wells within 1,000 feet of the site.

Underground utilities within 500 feet of the site can be seen on the Site Vicinity Map provided in Appendix D. Water and sanitary sewer appear to be the only utilities adjacent to the site. The electric lines are aboveground.

The Cooper River is approximately 500 feet northeast from the site.

Were any water wells within 250 ft radius sampled? _____ Yes **X** No

Is the current use of the site and surrounding properties commercial, residential, agricultural, or industrial?

Site: Commercial & Industrial Adjacent Properties: Commercial & Industrial

Soil and Monitoring Well Data

Primary Soil Type: Silty clay

Well Installation Method and Date: Hollow-stem auger; July 11, 1999

Development Method: Surge and purge using centrifugal pump

Soil Samples Obtained at 3 to 4 feet

NOTE: ***Five soil samples were collected from four soil borings. A duplicate sample was collected from one of the borings. The results for the samples collected are provided in Appendix B.***

SOIL ANALYTICAL DATA

Sample	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Xylenes (ug/kg)	Naphthalene (ug/kg)
CNC37-B01/ 37SLB010607	<6	<6	<6	<6	<6
CNC37-B01/ 37SLB010607D	<6	<6	<6	<6	<6
CNC37-B02/ 37SLB020607	<6	<6	<6	<6	<6
CNC37-B05/ 37SLB050305	<7	<7	<7	<7	<7
CNC37-B07/ 37SLB070304	<6	<6	<6	<6	<6

Sample	Benzo(a)-anthracene (ug/kg)	Benzo(b)-fluoranthene (ug/kg)	Benzo(k)-fluoranthene (ug/kg)	Chrysene (ug/kg)	Dibenz(a,h)-anthracene (ug/kg)
CNC37-B01/ 37SLB010607	<360	<360	<360	<360	<360
CNC37-B01/ 37SLB010607D	<360	<360	<360	<360	<360
CNC37-B02/ 37SLB020607	<400	<400	<400	<400	<400
CNC37-B05/ 37SLB050305	<500	<500	<500	<500	<500
CNC37-B07/ 37SLB070304	<430	<430	<430	<430	<430

Ground-Water Data

Depth to Ground Water: Ranges from 4.25 to 5.22 feet below top of casing

Well Purging/Sampling Method: Low flow using peristaltic pump

Date Sampled: 7/14/99

Free Product Thickness: None

Soil/Water Disposal Method: All soil cuttings and purge water were containerized, the containers labeled, and the containers moved to a staging area for final disposal by Charleston Naval Complex.

GROUND-WATER ANALYTICAL DATA

Sample	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	EDB (ug/L)	Naphthalene (ug/L)
CNC37M-01/ 37GLM0101	<5	<5	<5	<5	<5	<10
CNC37M-02/ 37GLM0201	<5	<5	<5	<5	<5	<10

Sample	Benzo(a)-anthracene (ug/L)	Benzo(b)-fluoranthene (ug/L)	Benzo(k)-fluoranthene (ug/L)	Chrysene (ug/L)	Dibenz(a,h)-anthracene (ug/L)
CNC37M-01/ 37GLM0101	<10	<10	<10	<10	<10
CNC37M-02/ 37GLM0201	<10	<10	<10	<10	<10

Appendices

The appendices required for this report are as follows:

Appendix A. Well Construction and Soil Boring Logs

Appendix B. Laboratory Data

Appendix C. Topographic Map With Site Location

Appendix D. Site Base Maps

NOTE: ***Appendices E, F, and G are not required.***

Report Completed By: Gregory D. Swanson (signature) Cert. # 24

Date: 1/26/00

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 17132 GREGORY D. SWANSON

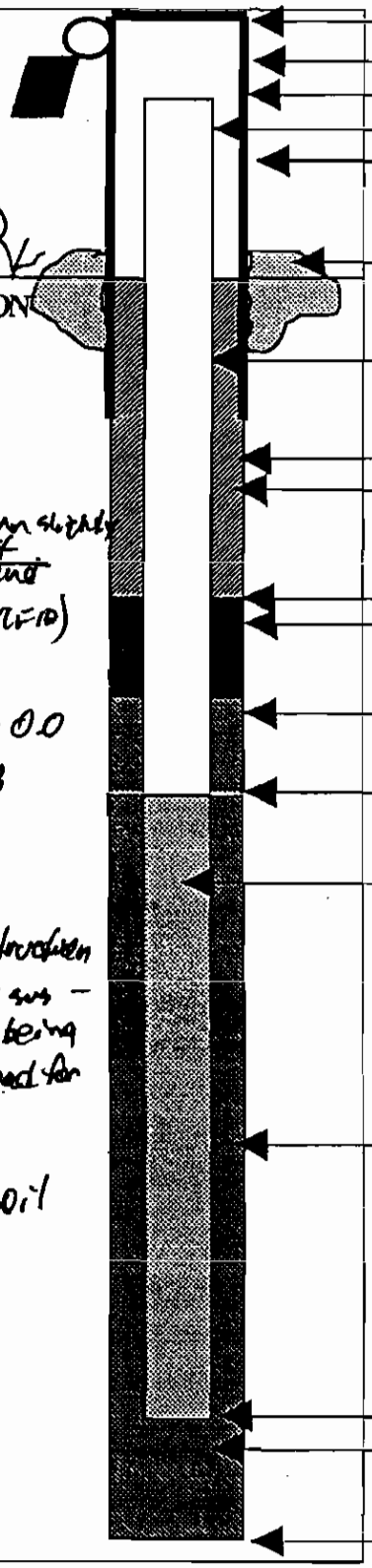
APPENDIX A

WELL CONSTRUCTION AND SOIL BORING LOGS

BORING NO. CNC37-MW01 (@ UST Basin)

OVERBURDEN MONITORING WELL SHEET

PROJECT CNC Site 37 Bldg. 68	LOCATION: Site 37/Zone I	DRILLER Costan Drilling
PROJECT NO. 0270	BORING CNC37-MW01	METHOD: ~~BPT~~ 4.25 ID HSA
ELEVATION	DATE 7/11/99	DRILLING Rod Fulton
FIELD GEOLOGIST Mark Dorrington		DEVELOPMENT: NA



(Asphalt)
GROUND ELEVATION

@ 10' - Brown slightly sandy, silt ~~to lty sand~~ (2.8ppm w/FID)

FID
Driller B.Z. = 0.0
Inhole = 0.8
Sample = 2.8

(4) Hard obstruction @ 15.8' bls - suspected at being concrete pad for for USTs.

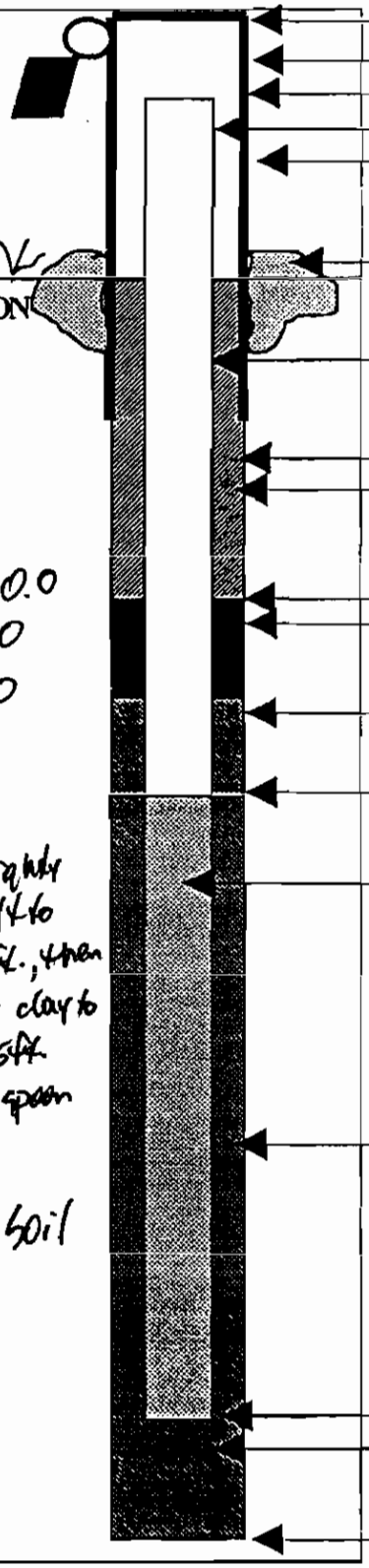
(1) Drum of soil cuttings

ELEVATION OF TOP OF SURFACE CASING:
ELEVATION OF TOP OF RISER PIPE:
STICK-UP TOP OF SURFACE CASING: Flush
STICK-UP RISER PIPE: Flush
I.D. OF SURFACE CASING: 8" ID x 10" OD
TYPE OF SURFACE CASING: Steel cover w/ Bolt-on lid / Flush (PEMCO)
TYPE OF SURFACE SEAL: Concrete Pad (Quickcrete) 2x2x6"
RISER PIPE I.D.: 2 in.
TYPE OF RISER PIPE: PVC, Sch. 40, Flush Thread (F.T.)
BOREHOLE DIAMETER: 8.25 (4.25 ID HSA)
TYPE OF SEAL: Portland Cement Type I
ELEVATION / DEPTH OF SEAL: 12.5
TYPE OS SEAL: "Choke Sand" (30/65) UF Qtz. sand
DEPTH TOP OF SAND PACK: 3.5
ELEVATION / DEPTH TOP OF SCREEN: 14.5
TYPE OF SCREEN: PVC, Sch. 40, F.T.
SLOT SIZE X LENGTH: 0.010 in x 10 ft.
I.D. OF SCREEN: 2 in.
TYPE OF SAND PACK: (20/30) Standard Sand Qtz. sand
ELEVATION / DEPTHBOTTOM OF SCREEN: 114.5
ELEVATION / DEPTH BOTTOM OF SAND PACK: 114.5
TYPE OF BACKFILL BELOW OBSERVATION WELL: (20/30) Qtz. Sand
ELEVATION / DEPTH OF HOLE: 114.5

BORING NO. CNC 37-MW02 (@ former dispens.)

OVERBURDEN MONITORING WELL SHEET

PROJECT CNC Site 37 Building 681	LOCATION: S. Ave 37/Zone I	DRILLER Custom Drilling
PROJECT NO. 0270	BORING CNC 37-MW02	METHOD ~~DPT~~ 4.25 in HSAs
ELEVATION	DATE 7/12/99	DRILLING Rod Fuller
FIELD GEOLOGIST Mark Darrington		DEVELOPMENT NA



ELEVATION OF TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: Flush

STICK-UP RISER PIPE: Flush

I.D. OF SURFACE CASING: 8" ID x 10" OD

TYPE OF SURFACE CASING: Steel Cover w/ Bolt on lid/Flush (PEMCO)

TYPE OF SURFACE SEAL: Concrete Pad (Quick crete) 2'x2'x6"

RISER PIPE I.D.: 2 in.

TYPE OF RISER PIPE: PVC, Sch. 40, Flush Thread (F.T.)

BOREHOLE DIAMETER: 8.25 in (w/ 4.25 in HSA)

TYPE OF SEAL: Portland Cement Type I

ELEVATION / DEPTH OF SEAL: 13'

TYPE OS SEAL: "Choke Sand" VF Qtz sand (30/65)

DEPTH TOP OF SAND PACK: 41'

ELEVATION / DEPTH TOP OF SCREEN: 15'

TYPE OF SCREEN: PVC, Sch. 40, F.T.

SLOT SIZE X LENGTH: 0.010 in x 10 ft.

I.D. OF SCREEN: 2 in.

TYPE OF SAND PACK: (20/30) F Qtz Sand (Standard Sand Co)

ELEVATION / DEPTHBOTTOM OF SCREEN: 115'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 115'

TYPE OF BACKFILL BELOW OBSERVATION WELL: (20/30) Qtz. Sand.

ELEVATION / DEPTH OF HOLE: 115'

FID

Driller B.Z. = 0.0
In Hole = 0.0
Bkgrnd = 0.0

(4) Brown slightly sandy silt to approx 10 ft., then Olive silty clay to clay to 15 ft. No spl. 4 spoon samples.

(1) Drum of Soil Cuttings.

BORING LOG

Page ___ of ___

PROJECT NAME: CNC Site 37 Bldg. 681 BORING NUMBER: CNC37B#1
PROJECT NUMBER: N0270 zone I CTO 0103 DATE: 6 15 99
DRILLING COMPANY: Columbia GEOLOGIST: Roger Franklin
DRILLING RIG: Stratoprobe DRILLER: Randy Brand

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	1						1-2" asphalt						
	2				ltbr.		silty Sand		dry				
	3						↓		dry				
	4		2/4						moist	Ø			
	5			▼			—						
X	6			5.8			—		moist				
X	7				br.		silty clayey sand		saturated	Ø			
	8		2.1/4		dk gr		large gravel/rocks		"				
	9			EOB									
	10												

*When rock coring, enter rock brokeness

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read

Drilling Area Background (ppm): Ø

Remarks:

Converted to Well: Yes , ____ No ____ Well I.D. #: ____

BORING LOG

Page ___ of ___

PROJECT NAME: Zone I CTO 0103
PROJECT NUMBER: N0270 Site 37 Bldg. 681
DRILLING COMPANY: Columbia
DRILLING RIG: Stratoprobe
BORING NUMBER: 37B02
DATE: 6 15 95
GEOLOGIST: Roger Franklin
DRILLER: Randy Brand

Sample No. and Type or RQD	Depth (Ft.) or Run No	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler B.Z.	Borehole**	Deeper B.Z.**
	1						2" asphalt						
	2				lt br		silty sand						
	3				lt br.		silty sand		moist				
0840	4		1.3/4'				↓		↓	Ø			
	5				ltbr.		silty clayey sand		moist				
X	6			5.85			silty sandy clay		moist				
X	7						↓		saturated				
0843	8		2.4/4				gravel		↓				
	9			GB									
	10												

* When rock coring, enter rock brokeness

** Include monitor reading in 5 foot intervals @ borehole. Increase reading frequency if elevated reponse read

Drilling Area Background (ppm): Ø

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #. ____

BORING LOG

Page ___ of ___

PROJECT NAME: Zone I CTO 0103 BORING NUMBER: CNC37B03
PROJECT NUMBER: N0270 Site 37 Bldg. 681 DATE: 6/15/99
DRILLING COMPANY: Columbia GEOLOGIST: Roger Franklin
DRILLING RIG: Stratoprobe DRILLER: Randy Brand

	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS.	Remarks	PID/FID Reading (ppm): Sample	Sampler Blz	Borehole	Drilling Blz
		1						2-3" asphalt						
		2				Hard		silty sand		dry				
		3						some gravel		moist	Ø			
085Ø		4		2.1/4										
		5						silty clay						
	X	6			6.25			w/gravel		saturated				
	X	7									8			
085Ø		8		1/4										
					EOB									

When rock coring, enter rock brokenness

Include monitor reading in 5 foot intervals @ borehole. Increase reading frequency if elevated reponse read

Remarks:

Drilling Area Background (ppm): Ø

Converted to Well: Yes ____ No ____ Well I.D. #: ____

BORING LOG

Page ___ of ___

PROJECT NAME: Zone I CTO 0103
PROJECT NUMBER: ND270 Site 37 Bldg. 681
DRILLING COMPANY: Columbia
DRILLING RIG: Strato probe
BORING NUMBER: CNC37-B04
DATE: 6 15 99
GEOLOGIST: Roger Franklin
DRILLER: Randy Brand

	Sample No. and Type or RQD	Depth (Ft.) or Run No	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Drilling BZ**
		1						2" asphalt						
		2						sandy clay /w/gravel		moist				
	X	3				dense	olive	silty clay						
0925	X	4		4/4		↓	↓	↓	33	wet/saturate	33			
		5				dk gray		silty sand						
		6						—						
		7						—						
0930		8		8/4				~~silty~~			90			

* When rock coring, enter rock brokeness

** Include monitor reading in 5 foot intervals @ borehole. Increase reading frequency if elevated reponse read

Remarks: _____

Drilling Area Background (ppm): Ø

Converted to Well: Yes _____ No _____ Well I.D. #: _____

BORING LOG

Page ___ of ___

PROJECT NAME: Zone I CTO 0103
PROJECT NUMBER: ND270 · Site 37 Bldg. 681
DRILLING COMPANY: Columbia
DRILLING RIG: Strato probe
BORING NUMBER: CNC37B05
DATE: 6 15 95
GEOLOGIST: Roger Franklin
DRILLER: Randy

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sample Bag	Headspace	Sample Bag
	1						2" asphalt		dry				
	2						sand w/ gravel		dry				
X	3					olive	silty clay		moist				
0940 X	4		4/4	4.5		olive	↓		moist	5			
	5					olive	↓		saturated				
	6					olive	silty clay		saturated				
	7					↓	↓		↓				
	8		4/4			↓	↓ w/ sand		↓	11			
				EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): Ø

Remarks: _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

BORING LOG

Page ___ of ___

PROJECT NAME: Zone I CTO 0103 BORING NUMBER: CNC 37 B06
PROJECT NUMBER: N0270 Site 37 Bldg. 681 DATE: 6 15 99
DRILLING COMPANY: Columbia GEOLOGIST: Roger Franklin
DRILLING RIG: Stratoprobe DRILLER: Randy Brand

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sample Bz	Background	Drill Bz
	1						asphalt 2"						
	2						sand and gravel		dry				
X	3					ol	silty clay						
X	4		4/4			ol	↓		moist	16			
	5						silty clay		saturated				
	6			▼ 1.0		ol	↓		↓				
	7					↓	↓		↓				
	8		4/4							18			
				EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: _____

Drilling Area Background (ppm): 0

Converted to Well: Yes _____ No _____ Well I.D. #: _____

BORING LOG

PROJECT NAME: Zone I CTO 0103 BORING NUMBER: CNC37B07
PROJECT NUMBER: N0270 Site 37 Building 681 DATE: 6 15 99
DRILLING COMPANY: Columbia GEOLOGIST: Roger Franklin
DRILLING RIG: Strat. DRILLER: Randy Brand

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sample	Sample	Drilling**
	1						2" asphalt						
	2						base sand/gravel		dry				
X	3					olive	silty clay		moist				
1010 X	4		2.9/4		stiff	ol	silty clay		moist	60			
	5				gray		silty clayey sand		wet				
	6				olive		silty clay		wet				
	7								wet				
1012	8		3.9/4						saturated	37			
	9				olive		silty clay		saturated				
	10				loose		sand						
	11					ol							
	12		4/4		medstiff	ol	silty clay						
	13					ol	silty sandy clay		saturated				
	14						w/ coarse sand						
	15												
	16		4/4				silty clay		wet				
	17						clayey sand		sat.				
	18						some gravel		sat.				
	19								sat.				
	20		4/4			dkgr	silty clay		wet				
	21					ol	clayey sand		sat.				
	22					dkg	(prob. sluff)		sat.				
	23								sat				
	24		4/4			dkgr	silty clay		wet				
	25												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): Ø

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

BORING LOG

PROJECT NAME: Zone I CTD 0103 BORING NUMBER: CNC37B07
PROJECT NUMBER: N0270 Site 37 Bldg. 681 DATE: 6/5/99
DRILLING COMPANY: Columbia GEOLOGIST: R. Franklin
DRILLING RIG: Strat. DRILLER: Randy Brand

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/Consistency or Rock Hardness	Color	Material Description	USCS *	Remarks	PID/FID Reading (ppm): Cuttings	Breathing Zone	Borehole	Drilling Rig
	26												
	27					dkgr	silty clay		wet				
	28		4/4			olive	↓		wet				
	29					dk	silty clay		wet				
	30		2/2			gr	↓		wet				
	~~31~~												
	~~32~~												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No ____ Well I.D. #:

APPENDIX B

LABORATORY DATA

Katahdin
ANALYTICAL SERVICES

August 23, 1999

Mr. Paul Calligan
Tetra Tech NUS
1401 Oven Park Drive, Suite 102
Tallahassee, FL 32308

RE: Katahdin Lab Number: WP-3277
Project ID: CNC Charleston
Project Manager: Ms. Andrea J. Colby
Sample Receipt Date: July 15, 1999

Dear Mr. Calligan:

Please find enclosed the following information:

* Report of Analysis
* Quality Control Data Summary
* Confirmation
* Chain of Custody

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. This cover letter is an integral part of the ROA.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

Sincerely,

KATAHDIN ANALYTICAL SERVICES

Maria Crouch
Authorized Signature

08/23/99
Date

000001

340 County Road No. 5
P.O. Box 720, Westbrook, ME 04098
Tel: (207) 874-2400 Fax: (207) 775-4029

http://katahdinlab.com

210 West Road No. 5, Portsmouth, NH 03801
Tel: (603) 431-5777 Fax: (603) 436-3356

Katahdin
ANALYTICAL SERVICES

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
CASE CNC CHARLESTON

Sample Receipt

The following samples were received on July 15, 1999 and were logged in under Katahdin Analytical Services work order number WP3277 for a hardcopy due date of August 14, 1999.

KATAHDIN Sample No.	TTNUS Sample Identification
WP3277-1	35GLM0101
WP3277-2	37GLM0201
WP3277-3	37GLM0101
WP3277-4	2IRL00101
WP3277-5	37TL00301

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

Sample analyses have been performed by the methods as noted herein.

Volatile Organic Analysis

Five aqueous samples were received by the Katahdin Analytical Services, Inc. GC/MS laboratory on July 15, 1999 and were specified to be analyzed by USEPA method 8260B for the analytes benzene, toluene, ethylbenzene, xylenes, MTBE, naphthalene, and EDB.

Analyses for this workorder were performed on the 5972-M instrument. A VSTD050 (50 ppb standard) was used for the continuing calibration standard. Internal standard and surrogate compounds were also spiked at 50 ug/l.

Batch QC (VBLK, and LCS) was performed in each twelve-hour window. Results are included in this data package. The LCS QC samples were spiked with the entire list of compounds quantitated for at 50 ppb. No matrix spike/matrix spike duplicate was performed on any sample in this workorder.

Method 8000B, section 7.5.1.2.1 (Revision 2, 12/96) states, "in those instances where the RSD for one or more analytes exceeds 20%, the initial calibration curve may still be acceptable if the mean of the RSD values for all analytes in the calibration is less than or equal to 20%." Method 8260B narrows this 20% maximum to 15%.

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Tel: (603) 431-5777 Fax: (603) 436-3356

In the calibration curve analyzed in this SDG, the average %RSD for all analytes was 14.7%, making the curve acceptable.

Several manual integrations were performed due to split peaks; all have been flagged with a "M" (software-generated) on the pertinent quantitation reports. All "M" flags have been dated and initialed by the analyst performing the integration. In addition, all "M" flags have been reviewed and approved by the GC/MS supervisor. Copies of each manual integration are included in the pertinent quantitation reports.

No other protocol deviations were noted by the volatile organics staff.

Semivolatile Organic Analysis

Four aqueous samples were received by Katahdin Analytical Services laboratory on July 15, 1999 for analysis in accordance with 8270C for a client specified PAH list of analytes.

Extraction of the samples occurred following USEPA method 3510 on July 19, 1999. A laboratory control spike consisting of all PAH analytes spiked into organic free water, was extracted in the batch.

The initial calibration curve analyzed in this SDG had some of the target analyte %RSD values exceeding 15 %.

Method 8000B, section 7.5.1.2.1 (Revision 2, 12/96) states, "in those instances where the RSD for one or more analytes exceeds 20%, the initial calibration curve may still be acceptable if the mean of the RSD values for all analytes in the calibration is less than or equal to 20%." Section 7.3.7.1 of method 8270C (revision 3, 12/96) narrows this 20% maximum to 15%.

In the calibration curve analyzed in this SDG, the average %RSD for all analytes was 10.1%, making the curve acceptable.

Several manual integrations were performed due to split peaks; all have been flagged with a "M" by the data system. All manual integrations have been dated and initialed by the responsible analyst. Copies of each manual integration are included in the data package. All manual integrations have been reviewed and approved by the GC/MS supervisor.

No other protocol deviations were noted by the semivolatiles organics staff.

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210 West Road No. 5, Portsmouth, NH 03801
Tel: (603) 431-5777 Fax: (603) 436-3356

KATAHDIN ANALYTICAL SERVICES, INC.
SAMPLE RECEIPT CONDITION REPORT
Tel. (207) 874-2400
Fax (207) 775-4029

LAB (WORK ORDER) # WP 3277

PAGE: 1 OF 1

COOLER: 1 OF 1

CLIENT: Tetra Tech

PROJECT: CNC Charleston

COC# —
SDG#
DATE / TIME RECEIVED: 7-15-99 1000
DELIVERED BY: FedEx
RECEIVED BY: SA
LIMS ENTRY BY: AJC
LIMS REVIEW BY / PM: AJC

	YES	NO	EXCEPTIONS	COMMENTS	RESOLUTION
1. CUSTODY SEALS PRESENT / INTACT?	☐	☑	☐		
2. CHAIN OF CUSTODY PRESENT IN THIS COOLER?	☑	☐	☐		
3. CHAIN OF CUSTODY SIGNED BY CLIENT?	☑	☐	☐		
4. CHAIN OF CUSTODY MATCHES SAMPLES?	☑	☐	☐		
5. TEMPERATURE BLANKS PRESENT?	☑	☐	☐	TEMP BLANK TEMP (°C)= 5.6	
6. SAMPLES RECEIVED AT 4°C +/- 2? ICE / ICE PACKS PRESENT (Y) or N?	☑	☐	☐	COOLER TEMP (°C)= NA (RECORD COOLER TEMP ONLY IF TEMP BLANK IS NOT PRESENT)	
7. VOLATILES FREE OF HEADSPACE?	☑	☐	☐		
8. TRIP BLANK PRESENT IN THIS COOLER	☑	☐	☐		
9. PROPER SAMPLE CONTAINERS AND VOLUME?	☑	☐	☐		
10. SAMPLES WITHIN HOLD TIME UPON RECEIPT?	☑	☐	☐		
11. SAMPLES PROPERLY PRESERVED[1]?	☐	☐	☑		
12. CORRECTIVE ACTION REPORT FILED?	☐	☑	N/A		

13. ANALYTICAL PROGRAMS (CIRCLE ONE) COMMERCIAL CLP HAZWRAP (NFESC) ACOE AFCEE OTHER (STATE OF ORIGIN):

LOG - IN NOTES[1]:

(1) Use this space (and additional sheets if necessary) to document samples that are received broken or compromised, C-O-C discrepancies, radiation checks, residual chlorine check, results of pH chec quired. If samples required pH adjustment, record volume and type of preservati ded.

Katahdin
ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04098
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE PRINT IN PEN

Page ____ of ____

Client	Contact	Phone #	Fax #
Tetra Tech NUS	Bryne Howze	(843) 814-9080	( )

Address	City	State	Zip Code
NH21 Ave. H	N. Charleston	SC	29405

Purchase Order #

Proj. Name / No.

Katahdin Quote #

Bill (if different than above)

Address

Sampler (Print / Sign) Emily Harrison Emily Harrison

Copies To:

LAB USE ONLY

WORK ORDER #: WP3277

KATAHDIN PROJECT MANAGER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Filt. ☐Y☒N PAH	Filt. ☐Y☒N BTEX/naph/MTBE present. - HCl	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N
	35GLM0101	7/14/99/1420	GW	5	2	3								
	37GLM0201	7/14/99/1135	GW	5	2	3								
	37GLM0101	7/14/99/0930	GW	5	2	3								
	27TL00301	7/14/99/ —	AQ	2		2								
	27RL00101	7/14/99/1515	AQ	5	2	3								
		/												
		/												
		/												
		/												
		/												
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		/												
		/												
		/												
		/												

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Emily Harrison	7/14/99 1800	813402904613	SC	7-15-99 1000	Shelby Wilkins
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
					0000021

KATAHDIN ANALYTICAL SERVICES, INCORPORATED
New England-ME Laboratory (207) 874-2400
CONFIRMATION

ORDER NO WP-3277

Project Manager: Andrea J. Colby
ORDER DATE: 07/15/99
PHONE: 850/385-98
FAX: 850/385-96
DUE: 14 AUG
FAC.ID: CNC CHARLESTON

REPORT TO: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr., Suite 102
Tallahassee, FL 32308

INVOICE: ACCOUNTS PAYABLE
TETRA TECH NUS, INC.
FOSTER PLAZA 7, 661 ANDERSEN DR.
PITTSBURGH, PA 15220

PHONE: 412/921-7090
PO: N7912-P99264

PROJECT: CTO #68

SAMPLED BY: CLIENT DELIVERED BY: FEDEX DISPOSE: AFTER 13 SEP

ITEM	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
1	WP3277-1	35GLM0101	14 JUL 1420	15 JUL	AQ
	WP3277-2	37GLM0201	14 JUL 1135		
	WP3277-3	37GLM0101	14 JUL 0930		
	WP3277-4	2IRL00101	14 JUL 1515		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	4	75.00	300.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	4	125.00	500.00
TOTALS		4	200.00	800.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
2	WP3277-5	37TL00301	14 JUL	15 JUL	

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	1	75.00	75.00

ORDER NOTE: QC-IV NFESC
DD(KAS007QC-DB3)
CNC CHARLESTON

REPORT COPY: MS. LEE LECK
TETRA TECH NUS
FOSTER PLAZA 7
661 ANDERSEN DR.
PITTSBURGH,PA 15220
REPORT & DISK

FINAL PAGE

INVOICE: With Report

TOTAL ORDER AMOUNT $875.0
This is NOT an Invo.

AJC
07-15Please contact KATAHDIN ANALYTICAL SERVICES promptly if you have any questi

0000022

Ao 7/16/99

KATAHDIN ANALYTICAL SERVICES

Summary of Report Notes

Report Note	Note Text
J	'J' flag denotes an estimated value less than the Laboratory'a Practical Quantitation Level.

000004

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3277-2
SDG: WP3277
Report Date: 8/12/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/2/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37GLM0201	AQ	7/14/99	7/15/99	7/19/99	DPD	SW3510	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<10	ug/L	1.0	10	10
2-METHYLNAPHTHALENE	<10	ug/L	1.0	10	10
ACENAPHTHYLENE	<10	ug/L	1.0	10	10
ACENAPHTHENE	<10	ug/L	1.0	10	10
FLUORENE	<10	ug/L	1.0	10	10
PHENANTHRENE	<10	ug/L	1.0	10	10
ANTHRACENE	<10	ug/L	1.0	10	10
FLUORANTHENE	<10	ug/L	1.0	10	10
PYRENE	<10	ug/L	1.0	10	10
BENZO[A]ANTHRACENE	<10	ug/L	1.0	10	10
CHRYSENE	<10	ug/L	1.0	10	10
BENZO[B]FLUORANTHENE	<10	ug/L	1.0	10	10
BENZO[K]FLUORANTHENE	<10	ug/L	1.0	10	10
BENZO[A]PYRENE	<10	ug/L	1.0	10	10
INDENO[1,2,3-CD]PYRENE	<10	ug/L	1.0	10	10
DIBENZ[A,H]ANTHRACENE	<10	ug/L	1.0	10	10
BENZO[G,H,I]PERYLENE	<10	ug/L	1.0	10	10
NITROBENZENE-D5	58	%	1.0		
2-FLUOROBIPHENYL	55	%	1.0		
TERPHENYL-D14	56	%	1.0		

Report Notes:

000007

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3277-2
SDG: WP3277
Report Date: 8/12/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/20/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37GLM0201	AQ	7/14/99	7/15/99	7/20/99	DJP	5030	DJP

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<5	ug/L	1.0	5	5
TOLUENE	<5	ug/L	1.0	5	5
1,2-DIBROMOETHANE	<5	ug/L	1.0	5	5
ETHYLBENZENE	<5	ug/L	1.0	5	5
NAPHTHALENE	<5	ug/L	1.0	5	5
MTBE	<5	ug/L	1.0	5	5
TOTAL XYLENES	<5	ug/L	1.0	5	5
DIBROMOFLUOROMETHANE	109	%	1.0		
1,2-DICHLOROETHANE-D4	108	%	1.0		
OLUENE-D8	104	%	1.0		
P-BROMOFLUOROBENZENE	94	%	1.0		

Report Notes:

000008

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3277-3
SDG: WP3277
Report Date: 8/12/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/2/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37GLM0101	AQ	7/14/99	7/15/99	7/19/99	DPD	SW3510	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<10	ug/L	1.0	10	10
2-METHYLNAPHTHALENE	<10	ug/L	1.0	10	10
ACENAPHTHYLENE	<10	ug/L	1.0	10	10
ACENAPHTHENE	<10	ug/L	1.0	10	10
FLUORENE	<10	ug/L	1.0	10	10
PHENANTHRENE	<10	ug/L	1.0	10	10
ANTHRACENE	<10	ug/L	1.0	10	10
FLUORANTHENE	<10	ug/L	1.0	10	10
PYRENE	<10	ug/L	1.0	10	10
BENZO[A]ANTHRACENE	<10	ug/L	1.0	10	10
CHRYSENE	<10	ug/L	1.0	10	10
BENZO[B]FLUORANTHENE	<10	ug/L	1.0	10	10
BENZO[K]FLUORANTHENE	<10	ug/L	1.0	10	10
BENZO[A]PYRENE	<10	ug/L	1.0	10	10
INDENO[1,2,3-CD]PYRENE	<10	ug/L	1.0	10	10
DIBENZ[A,H]ANTHRACENE	<10	ug/L	1.0	10	10
BENZO[G,H,I]PERYLENE	<10	ug/L	1.0	10	10
NITROBENZENE-D5	78	%	1.0		
2-FLUOROBIPHENYL	75	%	1.0		
TERPHENYL-D14	41	%	1.0		

Report Notes:

000009

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3277-3
SDG: WP3277
Report Date: 8/12/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/20/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37GLM0101	AQ	7/14/99	7/15/99	7/20/99	DJP	5030	DJP

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<5	ug/L	1.0	5	5
TOLUENE	<5	ug/L	1.0	5	5
1,2-DIBROMOETHANE	<5	ug/L	1.0	5	5
ETHYLBENZENE	<5	ug/L	1.0	5	5
NAPHTHALENE	<5	ug/L	1.0	5	5
MTBE	<5	ug/L	1.0	5	5
TOTAL XYLENES	<5	ug/L	1.0	5	5
DIBROMOFLUOROMETHANE	108	%	1.0		
1,2-DICHLOROETHANE-D4	105	%	1.0		
TOLUENE-D8	104	%	1.0		
P-BROMOFLUOROBENZENE	90	%	1.0		

Report Notes:

0000010

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3277-4
SDG: WP3277
Report Date: 8/12/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/3/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
2IRL00101	AQ	7/14/99	7/15/99	7/19/99	DPD	SW3510	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<10	ug/L	1.0	10	10
2-METHYLNAPHTHALENE	<10	ug/L	1.0	10	10
ACENAPHTHYLENE	<10	ug/L	1.0	10	10
ACENAPHTHENE	<10	ug/L	1.0	10	10
FLUORENE	<10	ug/L	1.0	10	10
PHENANTHRENE	<10	ug/L	1.0	10	10
ANTHRACENE	<10	ug/L	1.0	10	10
FLUORANTHENE	<10	ug/L	1.0	10	10
PYRENE	<10	ug/L	1.0	10	10
BENZO[A]ANTHRACENE	<10	ug/L	1.0	10	10
CHRYSENE	<10	ug/L	1.0	10	10
BENZO[B]FLUORANTHENE	<10	ug/L	1.0	10	10
BENZO[K]FLUORANTHENE	<10	ug/L	1.0	10	10
BENZO[A]PYRENE	<10	ug/L	1.0	10	10
INDENO[1,2,3-CD]PYRENE	<10	ug/L	1.0	10	10
DIBENZ[A,H]ANTHRACENE	<10	ug/L	1.0	10	10
BENZO[G,H,I]PERYLENE	<10	ug/L	1.0	10	10
NITROBENZENE-D5	59	%	1.0		
2-FLUOROBIPHENYL	61	%	1.0		
TERPHENYL-D14	78	%	1.0		

Report Notes:

00000 11

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3277-4
SDG: WP3277
Report Date: 8/12/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/20/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
2IRL00101	AQ	7/14/99	7/15/99	7/20/99	DJP	5030	DJP

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<5	ug/L	1.0	5	5
TOLUENE	J2	ug/L	1.0	5	5
1,2-DIBROMOETHANE	<5	ug/L	1.0	5	5
ETHYLBENZENE	<5	ug/L	1.0	5	5
NAPHTHALENE	<5	ug/L	1.0	5	5
MTBE	<5	ug/L	1.0	5	5
TOTAL XYLENES	<5	ug/L	1.0	5	5
DIBROMOFLUOROMETHANE	109	%	1.0		
1,2-DICHLOROETHANE-D4	107	%	1.0		
OLUENE-D8	104	%	1.0		
P-BROMOFLUOROBENZENE	91	%	1.0		

Report Notes: J

000012

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3277-5
SDG: WP3277
Report Date: 8/12/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/20/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37TL00301	AQ	7/14/99	7/15/99	7/20/99	DJP	5030	DJP

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<5	ug/L	1.0	5	5
TOLUENE	<5	ug/L	1.0	5	5
1,2-DIBROMOETHANE	<5	ug/L	1.0	5	5
ETHYLBENZENE	<5	ug/L	1.0	5	5
NAPHTHALENE	<5	ug/L	1.0	5	5
MTBE	<5	ug/L	1.0	5	5
TOTAL XYLENES	<5	ug/L	1.0	5	5
DIBROMOFLUOROMETHANE	102	%	1.0		
1,2-DICHLOROETHANE-D4	101	%	1.0		
TOLUENE-D8	102	%	1.0		
P-BROMOFLUOROBENZENE	91	%	1.0		

Report Notes:

0000013

4B
SEMIVOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK;071999

Lab Name: Katahdin Analytical Services SDG No.: WP3277

Lab File ID: Z1600 Lab Sample ID: SBLK;071999

Instrument ID: 5972-Z Date Extracted: 7/19/99

GC Column: RTX-624 ID: 0.18 (mm) Date Analyzed: 08/02/99

Matrix: (soil/water) WATER Time Analyzed: 17:43

Level: (low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS'S, MS AND MSD'S

Client Sample ID	Lab Sample ID	Lab Data File	Date Injected	Time Injected
LCS;071999	LCS;071999	Z1601	8/2/99	6:31:00 PM
35GLM0101	WP3277-1	Z1602	8/2/99	7:18:00 PM
37GLM0201	WP3277-2	Z1603	8/2/99	8:06:00 PM
37GLM0101	WP3277-3	Z1604	8/2/99	8:52:00 PM
2IRL00101	WP3277-4	Z1608	8/3/99	11:27:00 AM

0000014

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: SBLK;071999
SDG: WP3277
Report Date: 8/12/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/2/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
SBLK;071999	AQ	-	-	7/19/99	DPD	SW3510	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<10	ug/L	1.0	10	10
2-METHYLNAPHTHALENE	<10	ug/L	1.0	10	10
ACENAPHTHYLENE	<10	ug/L	1.0	10	10
ACENAPHTHENE	<10	ug/L	1.0	10	10
FLUORENE	<10	ug/L	1.0	10	10
PHENANTHRENE	<10	ug/L	1.0	10	10
ANTHRACENE	<10	ug/L	1.0	10	10
FLUORANTHENE	<10	ug/L	1.0	10	10
PYRENE	<10	ug/L	1.0	10	10
BENZO[A]ANTHRACENE	<10	ug/L	1.0	10	10
CHRYSENE	<10	ug/L	1.0	10	10
BENZO[B]FLUORANTHENE	<10	ug/L	1.0	10	10
BENZO[K]FLUORANTHENE	<10	ug/L	1.0	10	10
BENZO[A]PYRENE	<10	ug/L	1.0	10	10
INDENO[1,2,3-CD]PYRENE	<10	ug/L	1.0	10	10
DIBENZ[A,H]ANTHRACENE	<10	ug/L	1.0	10	10
BENZO[G,H,I]PERYLENE	<10	ug/L	1.0	10	10
NITROBENZENE-D5	68	%	1.0		
2-FLUOROBIPHENYL	68	%	1.0		
TERPHENYL-D14	83	%	1.0		

Report Notes:

00000015

Katahdin Analytical Services
8270 LCS Recovery Sheet

Lab File: Z1601 **Sample ID: LCS;071999** **Date Run: 8/2/99**

Analyst: KRT **Time Injected 6:31:00 PM** **Matrix: AQ**

Compound Name	Spike Amt (ug/L)	Result (ug/L)	Rec (%)	Limits (%)
2-METHYLNAPHTHALENE	50	36.5	73	70-130
ACENAPHTHENE	50	37.7	75	70-130
ACENAPHTHYLENE	50	38.2	76	70-130
ANTHRACENE	50	45.1	90	70-130
BENZO[A]ANTHRACENE	50	41.5	83	70-130
BENZO[A]PYRENE	50	40.6	81	70-130
BENZO[B]FLUORANTHENE	50	38.8	78	70-130
BENZO[G,H,I]PERYLENE	50	39.4	79	70-130
BENZO[K]FLUORANTHENE	50	44.3	88	70-130
CHRYSENE	50	43.0	86	70-130
DIBENZ[A,H]ANTHRACENE	50	40.0	80	70-130
FLUORANTHENE	50	47.0	94	70-130
FLUORENE	50	39.4	79	70-130
INDENO[1,2,3-CD]PYRENE	50	42.3	84	70-130
NAPHTHALENE	50	34.6	*69	70-130
PHENANTHRENE	50	43.1	86	70-130
PYRENE	50	37.4	75	70-130

*** Out of Limits**

4A

VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKM20B

Lab Name: Katahdin Analytical Services SDG No.: WP3277

Lab File ID: M1061 Lab Sample ID: VBLKM20B

Date Analyzed: 07/20/99 Time Analyzed: 10:17

GC Column: RTX-624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972-M

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS'S, MS AND MSD'S

Client Sample ID	Lab Sample ID	Lab Data File	Date Injected	Time Injected
LCSM20A	LCSM20A	M1059	7/20/99	8:58:00 AM
37TL00301	WP3277-5	M1063	7/20/99	11:37:00 AM
35GLM0101	WP3277-1	M1069	7/20/99	3:29:00 PM
37GLM0201	WP3277-2	M1070	7/20/99	4:07:00 PM
37GLM0101	WP3277-3	M1071	7/20/99	4:45:00 PM
2IRL00101	WP3277-4	M1072	7/20/99	5:22:00 PM

0000017

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client:	Paul Calligan Tetra Tech NUS 1401 Oven Park Dr. Suite 102 Tallahassee, FL 32308	Lab Number:	VBLKM20B
		SDG:	WP3277
		Report Date:	8/12/99
		PO No. :	N7912-P99264
		Project:	CTO #68
Proj. ID:	CNC CHARLESTON	% Solids:	N/A
		Method:	SW8260
		Date Analyzed:	7/20/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKM20B	AQ	-	-	7/20/99	DJP	5030	DJP

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<5	ug/L	1.0	5	5
TOLUENE	<5	ug/L	1.0	5	5
1,2-DIBROMOETHANE	<5	ug/L	1.0	5	5
ETHYLBENZENE	<5	ug/L	1.0	5	5
NAPHTHALENE	<5	ug/L	1.0	5	5
MTBE	<5	ug/L	1.0	5	5
TOTAL XYLENES	<5	ug/L	1.0	5	5
DIBROMOFLUOROMETHANE	101	%	1.0		
1,2-DICHLOROETHANE-D4	100	%	1.0		
TOLUENE-D8	99	%	1.0		
P-BROMOFLUOROBENZENE	90	%	1.0		

Report Notes:

00000018

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: M1059 **Sample ID: LCSM20A** **Date Run: 7/20/99**

Analyst: DJP **Time Injected 8:58:00 AM** **Matrix: AQ**

Compound Name	Spike Amt (ug/L)	Result (ug/L)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	51.7	103	60-140
BENZENE	50	50.1	100	60-140
ETHYLBENZENE	50	55.0	110	60-140
MTBE	50	48.1	96	60-140
NAPHTHALENE	50	63.8	128	60-140
TOLUENE	50	54.2	108	60-140
TOTAL XYLENES	150	164	109	60-140

*** Out of Limits**

Katahdin
ANALYTICAL SERVICES

August 18, 1999

Mr. Paul Calligan
Tetra Tech NUS
1401 Oven Park Drive, Suite 102
Tallahassee, FL 32308

RE: Katahdin Lab Number: WP-3016
Project ID: CTO #68
Project Manager: Ms. Andrea J. Colby
Sample Receipt Date: June 23, 1999

Dear Mr. Calligan:

Please find enclosed the following information:

* Report of Analysis
* Quality Control Data Summary
* Confirmation
* Chain of Custody

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. This cover letter is an integral part of the ROA.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

Sincerely,

KATAHDIN ANALYTICAL SERVICES

Maria Crouch
Authorized Signature

08/18/99
Date

340 County Road No. 5
P.O. Box 720, Westbrook, ME 04098
Tel: (207) 874-2400 Fax: (207) 775-4029

http://katahdinlab.com

210 West Road No. 5, Portsmouth, NH 03801
Tel: (603) 431-5777 Fax: (603) 436-3356

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
CASE CNC CHARLESTON

Sample Receipt

The following samples were received on June 23, 1999 and were logged in under Katahdin Analytical Services work order number WP3016 for a hardcopy due date of July 23, 1999.

KATAHDIN Sample No.	TTNUS Sample Identification	GEL Sample No.
WP3016-1	41SLB090708	
WP3016-2	41SLB100708	
WP3016-3	41SLB050708	
WP3016-4	41SLB040506	
WP3016-5	41SLB010405	9906759-02
WP3016-6	37SLB070304	
WP3016-7	37SLB050305	
WP3016-8	37SLB020607	
WP3016-9	41SLB030506	9906759-01
WP3016-10	41SLB030506D	9906759-06
WP3016-11	37SLB010607D	9906759-04
WP3016-12	41SLB020405	
WP3016-13	37SLB010607	9906759-03
WP3016-14	37TL00101	
WP3016-15	41SLB010405D	9906759-05

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

Sample analyses have been performed by the methods as noted herein.

Volatile Organic Analysis

One aqueous and thirteen soil samples were received by the Katahdin Analytical Services, Inc. GC/MS laboratory on June 23, 1999 and were specified to be analyzed by USEPA method 8260B for the analytes benzene, toluene, ethylbenzene, xylenes, MTBE, naphthalene, and EDB.

Analyses for this workorder were performed on the 5972-S (aqueous) and 5972-F (low level soil) instruments. A VSTD050 (50 ppb standard) was used for the continuing calibration standard. Internal standard and surrogate compounds were also spiked at 50 ppb.

Batch QC (VBLK, and LCS) was performed in each twelve-hour window. Results are included in this data package. The LCS QC samples were spiked with the entire list of compounds quantitated for at 50 ppb. A soil matrix spike/matrix spike duplicate was performed on sample WP3016-12. Analysis of the QC sample WP3016-12MSD yielded both internal standard area and surrogate recovery deviations. No action was taken with this QC sample in accordance with the method.

Method 8000B, section 7.5.1.2.1 (Revision 2, 12/96) states, "in those instances where the RSD for one or more analytes exceeds 20%, the initial calibration curve may still be acceptable if the mean of the RSD values for all analytes in the calibration is less than or equal to 20%." Method 8260B narrows this 20% maximum to 15%.

Two initial calibration curves are reported in this workorder. Both calibrations had several analytes exceeding the maximum allowable 15% RSD. Since the average %RSD values were 8.5% and 11.2%, respectively, the curves were acceptable.

Initial analyses of samples WP3016-4, -6, -7, -9, and -10 yielded either surrogate recovery deviations and/or internal standard area recovery deviations. Reanalyses yielded similar results, confirming matrix interference. Both sets of data are included in the data package for each sample.

Several manual integrations were performed due to split peaks; all have been flagged with a "M" (software-generated) on the pertinent quantitation reports. All "M" flags have been dated and initialed by the analyst performing the integration. In addition, all "M" flags have been reviewed and approved by the GC/MS supervisor. Copies of each manual integration are included in the pertinent quantitation reports.

No other protocol deviations were noted by the volatile organics staff.

Semivolatile Organic Analysis

Thirteen soil/sediment samples were received by Katahdin Analytical Services laboratory on June 23, 1999 for analysis in accordance with 8270C for a client specified PAH list of analytes.

Extraction of the samples occurred following USEPA method 3550 on July 25, 1999. A laboratory control spike consisting of all PAH analytes spiked into organic free water, was extracted in the batch, along with a site specific MS/MSD pair on sample WP3016-13.

The initial calibration curve analyzed in this SDG had some of the target analyte %RSD values exceeding 15 %.

Method 8000B, section 7.5.1.2.1 (Revision 2, 12/96) states, "in those instances where the RSD

for one or more analytes exceeds 20%, the initial calibration curve may still be acceptable if the mean of the RSD values for all analytes in the calibration is less than or equal to 20%." Section 7.3.7.1 of method 8270C (revision 3, 12/96) narrows this 20% maximum to 15%.

In the calibration curve analyzed in this SDG, the average %RSD for all analytes was 9.6%, making the curve acceptable.

Several manual integrations were performed due to split peaks; all have been flagged with a "M" by the data system. All manual integrations have been dated and initialed by the responsible analyst. Copies of each manual integration are included in the data package. All manual integrations have been reviewed and approved by the GC/MS supervisor.

No other protocol deviations were noted by the semivolatiles organics staff.

Wet Chemistry Analysis

For work order WP3016 the analyses for Total Combustible Organics (TCO) have been performed in accordance with the "Annual Book of ASTM Standards", 1987. Analyses for Solids-Total Residue (TS) for work order WP3016 samples have been performed in accordance with "Contract Laboratory Program Statement of Work for Inorganic Analysis".

All analyses were performed within analytical hold time. No protocol deviations were noted by the Wet Chemistry laboratory staff.

Subcontracted Analysis

Analyses for Total Organic Carbon and Grain size were subcontracted to outside laboratories.

KATAHDIN ANALYTICAL SERVICES, INC.
SAMPLE RECEIPT CONDITION REPORT
Tel. (207) 874-2400
Fax (207) 775-4029

LAB (WORK ORDER) # WP3016

PAGE: 1 OF 1

COOLER: 1 OF 1

CLIENT: Tetratech SC

PROJECT: CNC Charleston

COC# —
SDG# —
DATE / TIME RECEIVED: 06-23-99 ~~0840~~ 0940 (BR)
DELIVERED BY: FEDEX
RECEIVED BY: BKR
LIMS ENTRY BY: SAW
LIMS REVIEW BY / PM: ADC

	YES	NO	EXCEPTIONS	COMMENTS	RESOLUTION
1. CUSTODY SEALS PRESENT / INTACT?	✓				
2. CHAIN OF CUSTODY PRESENT IN THIS COOLER?	✓				
3. CHAIN OF CUSTODY SIGNED BY CLIENT?	✓				
4. CHAIN OF CUSTODY MATCHES SAMPLES?	✓				
5. TEMPERATURE BLANKS PRESENT?	✓			TEMP BLANK TEMP (°C)= 2.2	
6. SAMPLES RECEIVED AT 4°C +/- 2? ICE/ICE PACKS PRESENT (Y) or N?	✓			COOLER TEMP (°C)= NA (RECORD COOLER TEMP ONLY IF TEMP BLANK IS NOT PRESENT)	
7. VOLATILES FREE OF HEADSPACE?	✓				
8. TRIP BLANK PRESENT IN THIS COOLER	✓				
9. PROPER SAMPLE CONTAINERS AND VOLUME?	✓				
10. SAMPLES WITHIN HOLD TIME UPON RECEIPT?	✓				
11. SAMPLES PROPERLY PRESERVED[1]?	✓				
12. CORRECTIVE ACTION REPORT FILED?		✓	N/A		

13. ANALYTICAL PROGRAMS (CIRCLE ONE) COMMERCIAL CLP HAZWRAP (NFESC) ACOE AFCEE OTHER (STATE OF ORIGIN):

LOG - IN NOTES[1]:

(1) Use this space (and additional sheets if necessary) to document samples that are received broken or compromised, C-O-C discrepancies, radiation checks, residual chlorine check, results of pH check if required. If samples required pH adjustment, record volume and type of preservative added.

000074

Katahdin Analytical Services
P.O. Box 720
Westbrook, ME 04098
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE PRINT IN PEN

Client: TetraTech NUS
Contact: Bryan Howze
Phone #: (843) 554 4925
Fax #: ( )
Address: NH21 Ave H
City: N. Charleston
State: SC
Zip Code: 2940
Purchase Order #:
Proj. Name / No.:
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Jeff Alexander
Copies To:

LAB USE ONLY
WORK ORDER #: WP3016
KATAHDIN PROJECT MANAGER:
REMARKS:
SHIPPING INFO: ☑ FED EX ☐ UPS ☐ CLIENT
AIRBILL NO: 8134029046779
TEMP°C: ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	BTEX/EDB	PAH Naphthalene	PCC	Grain Size						FD
	415LB0907 08	6/22/1140	Soil	5	X	X								6
	415LB1007 08	6/22/1125	Soil	5	X	X								2
	415LB0507 08	6/22/1110	"	5	X	X								6
	415LB0405 06	6/22/1050	"	5	X	X								3
	415LB0305 06	6/22/1020	"	5	X	X	X							0
	415LB0305 06D	6/22/1020	"	5	X	X	X							0
	415LB0204 05	6/22/1000	"	6	X	X		X						0
	415LB0104 05	6/22/0935	"	5	X	X								4
	375LB0703 04	6/22/1535	"	5	X	X								6
	375LB0503 05	6/22/1525	"	5	X	X								0
	375LB0206 07	6/22/1515	"	5	X	X								0
	375LB0106 07	6/22/1440	"	6	X	X	X	X						0
	375LB0106 07D	6/22/1440	"	5	X	X	X							0
	37TL0001	6/22/—	H_2O	2	X									
		/												
		/												

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	6/22/1800	8134029046779		6-23-99 0940	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

FORMSOURCE INC. ☎ (207) 782-3311
FORM # CHN-OF-CSTDY

ORIGINAL

ORDER NO WP-3016

Project Manager: Andrea J. Colby
ORDER DATE: 06/23/99
PHONE: 850/385-9899
FAX: 850/385-9860
DUE: 23 JUL
FAC.ID: CNC CHARLESTON

REPORT TO: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr., Suite 102
Tallahassee, FL 32308

INVOICE: ACCOUNTS PAYABLE
TETRA TECH NUS, INC.
FOSTER PLAZA 7, 661 ANDERSEN DR.
PITTSBURGH, PA 15220

PHONE: 412/921-7090
PO: N7912-P99264

PROJECT: CTO #68

SAMPLED BY: J. ALEXANDER DELIVERED BY: FEDEX DISPOSE: AFTER 22 AUG

ITEM	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
1	WP3016-1	41SLB090708	22 JUN 1140	23 JUN	SL
	WP3016-2	41SLB100708	22 JUN 1125		
	WP3016-3	41SLB050708	22 JUN 1110		
	WP3016-4	41SLB040506	22 JUN 1050		
	WP3016-6	37SLB070304	22 JUN 1535		
	WP3016-7	37SLB050305	22 JUN 1525		
	WP3016-8	37SLB020607	22 JUN 1515		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	7	85.00	595.00
Solids-Total Residue (TS)	CLP/CIP SO	7	0.00	0.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	7	135.00	945.00
TOTALS		7	220.00	1540.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
2	WP3016-9	41SLB030506	22 JUN 1020	23 JUN	SL
	WP3016-10	41SLB030506D	22 JUN 1020		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	2	85.00	170.00
Solids-Total Residue (TS)	CLP/CIP SO	2	0.00	0.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	2	135.00	270.00
Total Combustible Organics	ASTM D2974	2	30.00	60.00
Wet Lab Subcontract		2	60.00	120.00
TOTALS		2	310.00	620.00

LABORATORY ORDER CONTINUED ON PAGE 2

ORDER NO WP-3016

Project Manager: Andrea J. Colby
ORDER DATE: 06/23/99
PHONE: 850/385-9899
FAX: 850/385-9
DUE: 23 JUL
FAC.ID: CNC CHARLESTON

REPORT TO: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr., Suite 102
Tallahassee, FL 32308

INVOICE: ACCOUNTS PAYABLE
TETRA TECH NUS, INC.
FOSTER PLAZA 7, 661 ANDERSEN DR.
PITTSBURGH, PA 15220

PHONE: 412/921-7090
PO: N7912-P99264

PROJECT: CTO #68

SAMPLED BY: J. ALEXANDER DELIVERED BY: FEDEX DISPOSE: AFTER 22 AUG

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
3	WP3016-12	41SLB020405	22 JUN 1000	23 JUN	SL

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	1	85.00	85.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	1	135.00	135.00
Solids-Total Residue (TS)	CLP/CIP SO	1	0.00	0.00
Wet Lab Subcontract		1	110.00	110.00
TOTALS		1	330.00	330.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
4	WP3016-13	37SLB010607	22 JUN 1440	23 JUN	SL

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	1	85.00	85.00
Solids-Total Residue (TS)	CLP/CIP SO	1	0.00	0.00
Total Combustible Organics	ASTM D2974	1	30.00	30.00
Wet Lab Subcontract		1	245.00	245.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	1	135.00	135.00
TOTALS		1	495.00	495.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
5	WP3016-14	37TL00101	22 JUN	23 JUN	SL

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	1	85.00	85.00

LABORATORY ORDER CONTINUED ON PAGE 3

ORDER NO WP-3016

Project Manager: Andrea J. Colby
ORDER DATE: 06/23/99
PHONE: 850/385-9899
FAX: 850/385-9860
DUE: 23 JUL
FAC.ID: CNC CHARLESTON

REPORT TO: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr., Suite 102
Tallahassee, FL 32308

INVOICE: ACCOUNTS PAYABLE
TETRA TECH NUS, INC.
FOSTER PLAZA 7, 661 ANDERSEN DR.
PITTSBURGH, PA 15220

PHONE: 412/921-7090
PO: N7912-P99264

PROJECT: CTO #68

SAMPLED BY: J. ALEXANDER DELIVERED BY: FEDEX DISPOSE: AFTER 22 AUG

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
6	WP3016-15	41SLB010405D	22 JUN 0935	23 JUN	SL

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Wet Lab Subcontract		1	75.00	75.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
7	WP3016-5	41SLB010405	22 JUN 0935	23 JUN	SL

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	1	85.00	85.00
Solids-Total Residue (TS)	CLP/CIP SO	1	0.00	0.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	1	135.00	135.00
Wet Lab Subcontract		1	75.00	75.00
TOTALS		1	295.00	295.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
8	WP3016-11	37SLB010607D	22 JUN 1440	23 JUN	SL

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	1	85.00	85.00
Solids-Total Residue (TS)	CLP/CIP SO	1	0.00	0.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	1	135.00	135.00
Wet Lab Subcontract		1	135.00	135.00
Total Combustible Organics	ASTM D2974	1	30.00	30.00
TOTALS		1	385.00	385.00

LABORATORY ORDER CONTINUED ON PAGE 4

ORDER NO WP-3016

Project Manager: Andrea J. Colby
ORDER DATE: 06/23/99
PHONE: 850/385-9
FAX: 850/385-9
DUE: 23 JUL
FAC.ID: CNC CHARLESTON

REPORT TO: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr., Suite 102
Tallahassee, FL 32308

INVOICE: ACCOUNTS PAYABLE
TETRA TECH NUS, INC.
FOSTER PLAZA 7, 661 ANDERSEN DR.
PITTSBURGH, PA 15220

PHONE: 412/921-7090
PO: N7912-P99264

PROJECT: CTO #68

SAMPLED BY: J. ALEXANDER DELIVERED BY: FEDEX DISPOSE: AFTER 22 AUG

ORDER NOTE: QC-IV NFESC-D
DD (KAS007QC-DB3)
CNC CHARLESTON

REPORT COPY: MS. LEE LECK
TETRA TECH NUS
FOSTER PLAZA 7
661 ANDERSEN DR.
PITTSBURGH,PA 15220

INVOICE: With Report

TOTAL ORDER AMOUNT $3,825.00
This is NOT an Invo.

AJC/BKR
06-23Please contact KATAHDIN ANALYTICAL SERVICES promptly if you have any questi

KATAHDIN ANALYTICAL SERVICES

Summary of Report Notes

Report Note	Note Text
J	'J' flag denotes an estimated value less than the Laboratory's Practical Quantitation Level.

KATAHDIN ANALYTICAL SERVICES

Summary of Report Notes

Report Note	Note Text
$	'$' flag denotes surrogate compound recovery is out of criteria. Re-extraction or re-analysis confirmed matrix interference.

Katahdin
ANALYTICAL SERVICES

CLIENT: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr., Suite 102
Tallahassee, FL 32308

Lab Number : WP-3016-6
Report Date: 08/18/99
PO No. : N7912-P99264
Project : CTO #68

WIC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
37SLB070304	Solid	J. ALEXANDER	06/22/99	06/23/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	77.	wt %	1.0	0.10	CLP/CIP SOW	06/25/99	JF	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/24/99 by JF

08/18/99

LJO/baeajc(dw)/djn/msm
PF24TSS0
CC: MS. LEE LECK
TETRA TECH NUS
FOSTER PLAZA 7
661 ANDERSEN DR.

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Perk Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-6
SDG: WP3016
Report Date: 8/9/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 76
Method: EPA 8270
Date Analyzed: 7/24/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB070304	SL	6/22/99	6/23/99	6/25/99	DAS	SW3550	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<430	ug/Kg	1.3	430	330
2-METHYLNAPHTHALENE	<430	ug/Kg	1.3	430	330
ACENAPHTHYLENE	<430	ug/Kg	1.3	430	330
ACENAPHTHENE	<430	ug/Kg	1.3	430	330
FLUORENE	<430	ug/Kg	1.3	430	330
PHENANTHRENE	<430	ug/Kg	1.3	430	330
ANTHRACENE	<430	ug/Kg	1.3	430	330
FLUORANTHENE	<430	ug/Kg	1.3	430	330
PYRENE	<430	ug/Kg	1.3	430	330
BENZO[A]ANTHRACENE	<430	ug/Kg	1.3	430	330
CHRYSENE	<430	ug/Kg	1.3	430	330
BENZO[B]FLUORANTHENE	<430	ug/Kg	1.3	430	330
BENZO[K]FLUORANTHENE	<430	ug/Kg	1.3	430	330
BENZO[A]PYRENE	<430	ug/Kg	1.3	430	330
INDENO[1,2,3-CD]PYRENE	<430	ug/Kg	1.3	430	330
DIBENZ[A,H]ANTHRACENE	<430	ug/Kg	1.3	430	330
BENZO[G,H,I]PERYLENE	<430	ug/Kg	1.3	430	330
NITROBENZENE-D5	65	%	1.3		
2-FLUOROBIPHENYL	66	%	1.3		
TERPHENYL-D14	103	%	1.3		

Report Notes:

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-6
SDG: WP3016
Report Date: 8/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 76
Method: SW8260
Date Analyzed: 6/23/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB070304	SL	6/22/99	6/23/99	6/23/99	KRT	5030	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<6	ug/Kg	1.3	6	5
TOLUENE	<6	ug/Kg	1.3	6	5
1,2-DIBROMOETHANE	<6	ug/Kg	1.3	6	5
ETHYLBENZENE	<6	ug/Kg	1.3	6	5
NAPHTHALENE	<6	ug/Kg	1.3	6	5
MTBE	<6	ug/Kg	1.3	6	5
TOTAL XYLENES	<6	ug/Kg	1.3	6	5
DIBROMOFLUOROMETHANE	73	%	1.3		
1,2-DICHLOROETHANE-D4	71	%	1.3		
TOLUENE-D8	$54	%	1.3		
P-BROMOFLUOROBENZENE	$34	%	1.3		

Report Notes: $

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-6RE
SDG: WP3016
Report Date: 8/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 76
Method: SW8260
Date Analyzed: 6/24/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB070304	SL	6/22/99	6/23/99	6/24/99	KMC	5030	KMC

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<6	ug/Kg	1.2	6	5
TOLUENE	<6	ug/Kg	1.2	6	5
1,2-DIBROMOETHANE	<6	ug/Kg	1.2	6	5
ETHYLBENZENE	<6	ug/Kg	1.2	6	5
NAPHTHALENE	<6	ug/Kg	1.2	6	5
MTBE	<6	ug/Kg	1.2	6	5
TOTAL XYLENES	<6	ug/Kg	1.2	6	5
DIBROMOFLUOROMETHANE	$49	%	1.2		
1,2-DICHLOROETHANE-D4	$51	%	1.2		
TOLUENE-D8	$36	%	1.2		
P-BROMOFLUOROBENZENE	$25	%	1.2		

Report Notes: $

Katahdin
ANALYTICAL SERVICES

CLIENT: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr., Suite 102
Tallahassee, FL 32308

Lab Number : WP-3016-7
Report Date: 08/18/99
PO No. : N7912-P99264
Project : CTO #68

WIC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
37SLB050305	Solid	J. ALEXANDER	06/22/99	06/23/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	67.	wt %	1.0	0.10	CLP/CIP SOW	06/25/99	JF	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/24/99 by JF

08/18/99

LJO/baeajc(dw)/djn/msm
PF24TSS0
CC: MS. LEE LECK
TETRA TECH NUS
FOSTER PLAZA 7
661 ANDERSEN DR.

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-7
SDG: WP3016
Report Date: 8/9/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 67
Method: EPA 8270
Date Analyzed: 7/24/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB050305	SL	6/22/99	6/23/99	6/25/99	DAS	SW3550	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<500	ug/Kg	1.5	500	330
2-METHYLNAPHTHALENE	<500	ug/Kg	1.5	500	330
ACENAPHTHYLENE	<500	ug/Kg	1.5	500	330
ACENAPHTHENE	<500	ug/Kg	1.5	500	330
FLUORENE	<500	ug/Kg	1.5	500	330
PHENANTHRENE	<500	ug/Kg	1.5	500	330
ANTHRACENE	<500	ug/Kg	1.5	500	330
FLUORANTHENE	<500	ug/Kg	1.5	500	330
PYRENE	<500	ug/Kg	1.5	500	330
BENZO[A]ANTHRACENE	<500	ug/Kg	1.5	500	330
CHRYSENE	<500	ug/Kg	1.5	500	330
BENZO[B]FLUORANTHENE	<500	ug/Kg	1.5	500	330
BENZO[K]FLUORANTHENE	<500	ug/Kg	1.5	500	330
BENZO[A]PYRENE	<500	ug/Kg	1.5	500	330
INDENO[1,2,3-CD]PYRENE	<500	ug/Kg	1.5	500	330
DIBENZ[A,H]ANTHRACENE	<500	ug/Kg	1.5	500	330
BENZO[G,H,I]PERYLENE	<500	ug/Kg	1.5	500	330
NITROBENZENE-D5	64	%	1.5		
2-FLUOROBIPHENYL	68	%	1.5		
TERPHENYL-D14	92	%	1.5		

Report Notes:

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-7
SDG: WP3016
Report Date: 8/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 67
Method: SW8260
Date Analyzed: 6/23/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB050305	SL	6/22/99	6/23/99	6/23/99	KRT	5030	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<7	ug/Kg	1.4	7	5
TOLUENE	<7	ug/Kg	1.4	7	5
1,2-DIBROMOETHANE	<7	ug/Kg	1.4	7	5
ETHYLBENZENE	<7	ug/Kg	1.4	7	5
NAPHTHALENE	<7	ug/Kg	1.4	7	5
MTBE	<7	ug/Kg	1.4	7	5
TOTAL XYLENES	<7	ug/Kg	1.4	7	5
DIBROMOFLUOROMETHANE	84	%	1.4		
1,2-DICHLOROETHANE-D4	79	%	1.4		
TOLUENE-D8	$67	%	1.4		
P-BROMOFLUOROBENZENE	$45	%	1.4		

Report Notes: $

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-7RE
SDG: WP3016
Report Date: 8/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 67
Method: SW8260
Date Analyzed: 6/24/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB050305	SL	6/22/99	6/23/99	6/24/99	KMC	5030	KMC

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<7	ug/Kg	1.5	7	5
TOLUENE	<7	ug/Kg	1.5	7	5
1,2-DIBROMOETHANE	<7	ug/Kg	1.5	7	5
ETHYLBENZENE	<7	ug/Kg	1.5	7	5
NAPHTHALENE	<7	ug/Kg	1.5	7	5
MTBE	<7	ug/Kg	1.5	7	5
TOTAL XYLENES	<7	ug/Kg	1.5	7	5
DIBROMOFLUOROMETHANE	83	%	1.5		
1,2-DICHLOROETHANE-D4	94	%	1.5		
TOLUENE-D8	$60	%	1.5		
P-BROMOFLUOROBENZENE	$39	%	1.5		

Report Notes: $

Katahdin
ANALYTICAL SERVICES

CLIENT: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr., Suite 102
Tallahassee, FL 32308

Lab Number : WP-3016-8
Report Date: 08/18/99
PO No. : N7912-P99264
Project : CTO #68

WIC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
37SLB020607	Solid	J. ALEXANDER	06/22/99	06/23/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	85.	wt %	1.0	0.10	CLP/CIP SOW	06/25/99	JF	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/24/99 by JF

08/18/99

LJO/baeajc(dw)/djn/msm
PF24TSS0
CC: MS. LEE LECK
TETRA TECH NUS
FOSTER PLAZA 7
661 ANDERSEN DR.

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-8
SDG: WP3016
Report Date: 8/9/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 85
Method: EPA 8270
Date Analyzed: 7/26/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB020607	SL	6/22/99	6/23/99	6/25/99	DAS	SW3550	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<400	ug/Kg	1.2	400	330
2-METHYLNAPHTHALENE	<400	ug/Kg	1.2	400	330
ACENAPHTHYLENE	<400	ug/Kg	1.2	400	330
ACENAPHTHENE	<400	ug/Kg	1.2	400	330
FLUORENE	<400	ug/Kg	1.2	400	330
PHENANTHRENE	<400	ug/Kg	1.2	400	330
ANTHRACENE	<400	ug/Kg	1.2	400	330
FLUORANTHENE	<400	ug/Kg	1.2	400	330
PYRENE	<400	ug/Kg	1.2	400	330
BENZO[A]ANTHRACENE	<400	ug/Kg	1.2	400	330
CHRYSENE	<400	ug/Kg	1.2	400	330
BENZO[B]FLUORANTHENE	<400	ug/Kg	1.2	400	330
BENZO[K]FLUORANTHENE	<400	ug/Kg	1.2	400	330
BENZO[A]PYRENE	<400	ug/Kg	1.2	400	330
INDENO[1,2,3-CD]PYRENE	<400	ug/Kg	1.2	400	330
DIBENZ[A,H]ANTHRACENE	<400	ug/Kg	1.2	400	330
BENZO[G,H,I]PERYLENE	<400	ug/Kg	1.2	400	330
NITROBENZENE-D5	59	%	1.2		
2-FLUOROBIPHENYL	63	%	1.2		
TERPHENYL-D14	94	%	1.2		

Report Notes:

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-8
SDG: WP3016
Report Date: 6/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 85
Method: SW8260
Date Analyzed: 6/23/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB020607	SL	6/22/99	6/23/99	6/23/99	KRT	5030	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<6	ug/Kg	1.1	6	5
TOLUENE	<6	ug/Kg	1.1	6	5
1,2-DIBROMOETHANE	<6	ug/Kg	1.1	6	5
ETHYLBENZENE	<6	ug/Kg	1.1	6	5
NAPHTHALENE	<6	ug/Kg	1.1	6	5
MTBE	<6	ug/Kg	1.1	6	5
TOTAL XYLENES	<6	ug/Kg	1.1	6	5
DIBROMOFLUOROMETHANE	92	%	1.1		
1,2-DICHLOROETHANE-D4	94	%	1.1		
TOLUENE-D8	112	%	1.1		
P-BROMOFLUOROBENZENE	101	%	1.1		

Report Notes:

Katahdin
ANALYTICAL SERVICES

Lab Number : WP-3016-11
Report Date: 08/18/99
PO No. : N7912-P99264
Project : CTO #68

CLIENT: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr., Suite 102
Tallahassee, FL 32308

WIC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
37SLB010607D	Solid	J. ALEXANDER	06/22/99	06/23/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	94.	wt %	1.0	0.10	CLP/CIP SOW	06/25/99	JF	1
Total Combustible Organics	0.74	wt %	1.0	0.1	ASTM D2974-8	06/25/99	JF	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/24/99 by JF

08/18/99

LJO/baeajc(dw)/msm
PF24VSS1
CC: MS. LEE LECK
TETRA TECH NUS
FOSTER PLAZA 7
661 ANDERSEN DR.

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-11
SDG: WP3016
Report Date: 8/9/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 94
Method: EPA 8270
Date Analyzed: 7/28/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB010607D	SL	6/22/99	6/23/99	6/25/99	DAS	SW3550	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<360	ug/Kg	1.1	360	330
2-METHYLNAPHTHALENE	<360	ug/Kg	1.1	360	330
ACENAPHTHYLENE	<360	ug/Kg	1.1	360	330
ACENAPHTHENE	<360	ug/Kg	1.1	360	330
FLUORENE	<360	ug/Kg	1.1	360	330
PHENANTHRENE	<360	ug/Kg	1.1	360	330
ANTHRACENE	<360	ug/Kg	1.1	360	330
FLUORANTHENE	<360	ug/Kg	1.1	360	330
PYRENE	<360	ug/Kg	1.1	360	330
BENZO[A]ANTHRACENE	<360	ug/Kg	1.1	360	330
CHRYSENE	<360	ug/Kg	1.1	360	330
BENZO[B]FLUORANTHENE	<360	ug/Kg	1.1	360	330
BENZO[K]FLUORANTHENE	<360	ug/Kg	1.1	360	330
BENZO[A]PYRENE	<360	ug/Kg	1.1	360	330
INDENO[1,2,3-CD]PYRENE	<360	ug/Kg	1.1	360	330
DIBENZ[A,H]ANTHRACENE	<360	ug/Kg	1.1	360	330
BENZO[G,H,I]PERYLENE	<360	ug/Kg	1.1	360	330
NITROBENZENE-D5	56	%	1.1		
2-FLUOROBIPHENYL	60	%	1.1		
TERPHENYL-D14	88	%	1.1		

Report Notes:

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-11
SDG: WP3016
Report Date: 8/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 94
Method: SW8260
Date Analyzed: 6/25/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB010607D	SL	6/22/99	6/23/99	6/25/99	KMC	5030	KMC

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<6	ug/Kg	1.1	6	5
TOLUENE	<6	ug/Kg	1.1	6	5
1,2-DIBROMOETHANE	<6	ug/Kg	1.1	6	5
ETHYLBENZENE	<6	ug/Kg	1.1	6	5
NAPHTHALENE	<6	ug/Kg	1.1	6	5
MTBE	<6	ug/Kg	1.1	6	5
TOTAL XYLENES	<6	ug/Kg	1.1	6	5
DIBROMOFLUOROMETHANE	101	%	1.1		
1,2-DICHLOROETHANE-D4	102	%	1.1		
TOLUENE-D8	98	%	1.1		
P-BROMOFLUOROBENZENE	83	%	1.1		

Report Notes:

Katahdin
ANALYTICAL SERVICES

Lab Number : WP-3016-13
Report Date: 08/18/99
PO No. : N7912-P99264
Project : CTO #68

CLIENT: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr., Suite 102
Tallahassee, FL 32308

WIC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
37SLB010607	Solid	J. ALEXANDER	06/22/99	06/23/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	93.	wt %	1.0	0.10	CLP/CIP SOW	06/25/99	JF	1
Total Combustible Organics	1.0	wt %	1.0	0.1	ASTM D2974-8	06/25/99	JF	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/24/99 by JF

08/18/99

LJO/baeajc(dw)/msm
PF24VSS1
CC: MS. LEE LECK
TETRA TECH NUS
FOSTER PLAZA 7
661 ANDERSEN DR.

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-13
SDG: WP3016
Report Date: 8/9/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 93
Method: EPA 8270
Date Analyzed: 7/28/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB010607	SL	6/22/99	6/23/99	6/25/99	DAS	SW3550	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<360	ug/Kg	1.1	360	330
2-METHYLNAPHTHALENE	<360	ug/Kg	1.1	360	330
ACENAPHTHYLENE	<360	ug/Kg	1.1	360	330
ACENAPHTHENE	<360	ug/Kg	1.1	360	330
FLUORENE	<360	ug/Kg	1.1	360	330
PHENANTHRENE	<360	ug/Kg	1.1	360	330
ANTHRACENE	<360	ug/Kg	1.1	360	330
FLUORANTHENE	<360	ug/Kg	1.1	360	330
PYRENE	<360	ug/Kg	1.1	360	330
BENZO[A]ANTHRACENE	<360	ug/Kg	1.1	360	330
CHRYSENE	<360	ug/Kg	1.1	360	330
BENZO[B]FLUORANTHENE	<360	ug/Kg	1.1	360	330
BENZO[K]FLUORANTHENE	<360	ug/Kg	1.1	360	330
BENZO[A]PYRENE	<360	ug/Kg	1.1	360	330
INDENO[1,2,3-CD]PYRENE	<360	ug/Kg	1.1	360	330
DIBENZ[A,H]ANTHRACENE	<360	ug/Kg	1.1	360	330
BENZO[G,H,I]PERYLENE	<360	ug/Kg	1.1	360	330
NITROBENZENE-D5	51	%	1.1		
2-FLUOROBIPHENYL	56	%	1.1		
TERPHENYL-D14	76	%	1.1		

Report Notes:

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-13
SDG: WP3016
Report Date: 8/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 93
Method: SW8260
Date Analyzed: 6/25/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37SLB010607	SL	6/22/99	6/23/99	6/25/99	KMC	5030	KMC

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<6	ug/Kg	1.3	6	5
TOLUENE	<6	ug/Kg	1.3	6	5
1,2-DIBROMOETHANE	<6	ug/Kg	1.3	6	5
ETHYLBENZENE	<6	ug/Kg	1.3	6	5
NAPHTHALENE	<6	ug/Kg	1.3	6	5
MTBE	<6	ug/Kg	1.3	6	5
TOTAL XYLENES	<6	ug/Kg	1.3	6	5
DIBROMOFLUOROMETHANE	96	%	1.3		
1,2-DICHLOROETHANE-D4	99	%	1.3		
TOLUENE-D8	97	%	1.3		
4-BROMOFLUOROBENZENE	74	%	1.3		

Report Notes:

0000050

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: WP3016-14
SDG: WP3016
Report Date: 8/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: -
Method: SW8260
Date Analyzed: 6/23/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
37TL00101	SL	6/22/99	6/23/99	6/23/99	KMC	5035	KMC

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<5	ug/Kgdrywt	1.0	5	5
TOLUENE	<5	ug/Kgdrywt	1.0	5	5
1,2-DIBROMOETHANE	<5	ug/Kgdrywt	1.0	5	5
ETHYLBENZENE	<5	ug/Kgdrywt	1.0	5	5
NAPHTHALENE	<5	ug/Kgdrywt	1.0	5	5
MTBE	<5	ug/Kgdrywt	1.0	5	5
TOTAL XYLENES	<5	ug/Kgdrywt	1.0	5	5
DIBROMOFLUOROMETHANE	100	%	1.0		
1,2-DICHLOROETHANE-D4	93	%	1.0		
TOLUENE-D8	106	%	1.0		
P-BROMOFLUOROBENZENE	111	%	1.0		

Report Notes:

Method Blank and Laboratory Control Sample Results

Client:	Tetra Tech NUS
Work Order:	WP3016

			METHOD BLANK RESULTS						LABORATORY CONTROL SAMPLE RESULTS					
Parameter	Date of Prep	Date of Analysis	Units		Concentration Measured in Blank		Acceptance Range	Practical Quantitation Level**	Units	True Value	Measured Value	Percent Recovered	Acceptance Range (%)	Acceptance Range (mg/kg)
TS -Total Residue	24-Jun-99	25-Jun-99	wt %	<	0.10	<	0.10	0.10	wt %	90	89.4	99	80-120	
	24-Jun-99	25-Jun-99	wt %	<	0.10	<	0.10	0.10			NA		80-120	
TCO-Total Combustible Organics	24-Jun-99	25-Jun-99	wt %	<	0.10	<	0.10	0.10			NA		80-120	

** Practical quantitation level is the lowest concentration measurable for samples with normal chemical and physical composition during routine laboratory operations.

DATA QUALITY COMMENTS:

Results of all quality control measurements are within the laboratory and method specified acceptance range except as noted.

0000052

[redacted]

Duplicate and Matrix Spike/Matrix Spike Duplicate Results

Client:	Tetra Tech NUS
Work Order:	WP3016

			DUPLICATE RESULTS					*MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS*									
			Sample Measurements				Acceptance		Concentration or Quantity				Matrix Spike Recovery (%)				
Parameter	Sample No	Units	Rep 1	Rep 2	Mean Conc	RPD (%)	Range for RPD (%)	Units	Sampl Only	Spike Added	Sample +Spike Dup 1	Sample +Spike Dup 2	Sample +Spike Dup 1	Sample +Spike Dup 2	Acceptance Range (%)	RPD (%)	Acceptance Range (%)
TS	WP3016-1	wt %	74.0	73.8	73.9	0.3	0-20	wt %		NA					75-125		0-20
	WP3016-9	wt %	83.6	83.6	83.6	0.0	0-20	wt %		NA					75-125		0-20
TCO	WP3016-9	wt %	5.76	5.74	5.75	0.3	0-20	wt %		NA					75-125		0-20

RPD = Relative percent difference, which is the absolute value of the difference between two replicate results divided by the mean concentration then multiplied by 100%.

NA = Not applicable.

DATA QUALITY COMMENTS:

Results of all quality control measurements are within the laboratory or contract specified acceptance range except as noted. The laboratory does not use the sample duplicate and matrix spike acceptance ranges as acceptance criteria for a specific analysis. Sample duplicate and matrix spike data are used to evaluate method performance in the environmental sample matrix only. Please refer to LCS data for assessment of quality control for each parameter.

4B
SEMIVOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK;062599

Lab Name: Katahdin Analytical Services SDG No.: WP3016

Lab File ID: X2366 Lab Sample ID: SBLK;062599

Instrument ID: 5970-X Date Extracted: 6/25/99

GC Column: RTX-5 ID: 0.25 (mm) Date Analyzed: 07/24/99

Matrix: (soil/water) SOIL Time Analyzed: 13:00

Level: (low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS'S, MS AND MSD'S

Client Sample ID	Lab Sample ID	Lab Data File	Date Injected	Time Injected
LCS;062599	LCS;062599	X2367	7/24/99	1:45:00 PM
41SLB040506	WP3016-4	X2369	7/24/99	3:14:00 PM
41SLB090708	WP3016-1	X2370	7/24/99	3:59:00 PM
41SLB100708	WP3016-2	X2371	7/24/99	4:44:00 PM
41SLB050708	WP3016-3	X2372	7/24/99	5:28:00 PM
41SLB010405	WP3016-5	X2373	7/24/99	6:12:00 PM
37SLB070304	WP3016-6	X2374	7/24/99	6:57:00 PM
37SLB050305	WP3016-7	X2375	7/24/99	7:42:00 PM
37SLB020607	WP3016-8	X2391	7/26/99	7:36:00 PM
41SLB030506	WP3016-9	X2404	7/27/99	8:07:00 PM
41SLB030506D	WP3016-10	X2409	7/28/99	9:58:00 AM
37SLB010607D	WP3016-11	X2410	7/28/99	10:42:00 AM
41SLB020405	WP3016-12	X2411	7/28/99	11:27:00 AM
37SLB010607	WP3016-13	X2412	7/28/99	12:11:00 PM
37SLB010607MSD	WP3016-13MSD	X2414	7/28/99	1:41:00 PM
37SLB010607MS	WP3016-13MS	X2443	7/30/99	9:12:00 AM

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: SBLK;062599
SDG: WP3016
Report Date: 8/9/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 100
Method: EPA 8270
Date Analyzed: 7/24/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
SBLK;062599	SL	-	-	6/25/99	DAS	SW3550	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<330	ug/Kg	1.0	330	330
2-METHYLNAPHTHALENE	<330	ug/Kg	1.0	330	330
ACENAPHTHYLENE	<330	ug/Kg	1.0	330	330
ACENAPHTHENE	<330	ug/Kg	1.0	330	330
FLUORENE	<330	ug/Kg	1.0	330	330
PHENANTHRENE	<330	ug/Kg	1.0	330	330
ANTHRACENE	<330	ug/Kg	1.0	330	330
FLUORANTHENE	<330	ug/Kg	1.0	330	330
PYRENE	<330	ug/Kg	1.0	330	330
BENZO[A]ANTHRACENE	<330	ug/Kg	1.0	330	330
CHRYSENE	<330	ug/Kg	1.0	330	330
BENZO[B]FLUORANTHENE	<330	ug/Kg	1.0	330	330
BENZO[K]FLUORANTHENE	<330	ug/Kg	1.0	330	330
BENZO[A]PYRENE	<330	ug/Kg	1.0	330	330
INDENO[1,2,3-CD]PYRENE	<330	ug/Kg	1.0	330	330
DIBENZ[A,H]ANTHRACENE	<330	ug/Kg	1.0	330	330
BENZO[G,H,I]PERYLENE	<330	ug/Kg	1.0	330	330
NITROBENZENE-D5	61	%	1.0		
2-FLUOROBIPHENYL	68	%	1.0		
TERPHENYL-D14	65	%	1.0		

Report Notes:

Katahdin Analytical Services
8270 LCS Recovery Sheet

Lab File: X2367 **Sample ID: LCS;062599** **Date Run: 7/24/99**

Analyst: KRT **Time Injected 1:45:00 PM** **Matrix: SL**

Compound Name	Spike Amt (ug/Kg)	Result (ug/Kg)	Rec (%)	Limits (%)
2-METHYLNAPHTHALENE	1667	1360	81	60-140
ACENAPHTHENE	1667	1260	75	60-140
ACENAPHTHYLENE	1667	1300	78	60-140
ANTHRACENE	1667	1430	86	60-140
BENZO[A]ANTHRACENE	1667	1290	77	60-140
BENZO[A]PYRENE	1667	1220	73	60-140
BENZO[B]FLUORANTHENE	1667	1380	83	60-140
BENZO[G,H,I]PERYLENE	1667	1070	64	60-140
BENZO[K]FLUORANTHENE	1667	1350	81	60-140
CHRYSENE	1667	1330	80	60-140
DIBENZ[A,H]ANTHRACENE	1667	1120	67	60-140
FLUORANTHENE	1667	1560	94	60-140
FLUORENE	1667	1410	85	60-140
INDENO[1,2,3-CD]PYRENE	1667	1060	64	60-140
NAPHTHALENE	1667	1270	76	60-140
PHENANTHRENE	1667	1430	86	60-140
PYRENE	1667	1240	75	60-140

*** Out of Limits** *1*

Katahdin Analytical Services

MS/MSD Report

Sample	File Name	Date Acquired	Time inj	Analyst	Matrix	Method
WP3016-13	X2412	7/28/99	12:11:00 PM	KRT	SL	8270_99
WP3016-13MS	X2443	7/30/99	9:12:00 AM	KRT	SL	8270_99
WP3016-13MSD	X2414	7/28/99	1:41:00 PM	KRT	SL	8270_99

Compound Name	Native (ug/Kg)	MS Spk Amount (ug/Kg)	MSD Spk Amount (ug/Kg)	MS Result (ug/Kg)	MSD Result (ug/Kg)	MS REC (%)	MSD REC (%)	Recovery Limits (%)	RPD (%)	RPD Limit (%)
CHRYSENE	0	1790	1790	1080	1210	60	68	60-140	11	50
ACENAPHTHENE	0	1790	1790	1090	1170	61	65	60-140	7.1	50
ACENAPHTHYLENE	0	1790	1790	1040	1130	*58	63	60-140	8.3	50
ANTHRACENE	0	1790	1790	1220	1280	68	71	60-140	4.8	50
BENZO[A]ANTHRACENE	0	1790	1790	1090	1150	61	64	60-140	5.4	50
BENZO[A]PYRENE	0	1790	1790	1060	1150	*59	64	60-140	8.1	50
BENZO[B]FLUORANTHENE	0	1790	1790	1140	1160	63	65	60-140	1.7	50
2-METHYLNAPHTHALENE	0	1790	1790	1020	1110	*57	62	60-140	8.4	50
BENZO[K]FLUORANTHENE	0	1790	1790	1070	1140	60	64	60-140	6.3	50
PYRENE	0	1790	1790	1300	1840	72	103	60-140	34	50
DIBENZ[A,H]ANTHRACENE	0	1790	1790	1060	1250	*59	70	60-140	16	50
FLUORANTHENE	0	1790	1790	1140	1110	64	62	60-140	2.7	50
FLUORENE	0	1790	1790	1060	1240	*59	70	60-140	16	50
INDENO[1,2,3-CD]PYRENE	0	1790	1790	988	936	*55	*52	60-140	5.4	50
NAPHTHALENE	0	1790	1790	1030	1050	*58	*58	60-140	1.9	50
PHENANTHRENE	0	1790	1790	1190	1290	67	72	60-140	8.1	5(
BENZO[G,H,I]PERYLENE	0	1790	1790	1100	1280	62	72	60-140	15	50

RPD =[(ms res - msd res) / (ms res + msd res)/2] * 100

*** Out of Limits**

4A
VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKF23A

Lab Name: Katahdin Analytical Services SDG No.: WP3016

Lab File ID: F1068 Lab Sample ID: VBLKF23A

Date Analyzed: 06/23/99 Time Analyzed: 9:05

GC Column: RTX-624 ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5972-F

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS'S, MS AND MSD'S

Client Sample ID	Lab Sample ID	Lab Data File	Date Injected	Time Injected
LCSF23A	LCSF23A	F1067	6/23/99	8:17:00 AM
41SLB090708	WP3016-1	F1072	6/23/99	11:49:00 AM
41SLB050708	WP3016-3	F1074	6/23/99	1:01:00 PM
41SLB040506	WP3016-4	F1075	6/23/99	1:38:00 PM
37SLB070304	WP3016-6	F1077	6/23/99	2:51:00 PM
37SLB050305	WP3016-7	F1078	6/23/99	3:27:00 PM
37SLB020607	WP3016-8	F1079	6/23/99	4:04:00 PM
41SLB030506	WP3016-9	F1080	6/23/99	4:40:00 PM

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: VBLKF23A
SDG: WP3016
Report Date: 8/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 100
Method: SW8260
Date Analyzed: 6/23/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKF23A	SL	-	-	6/23/99	KRT	5030	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<5	ug/Kg	1.0	5	5
TOLUENE	<5	ug/Kg	1.0	5	5
1,2-DIBROMOETHANE	<5	ug/Kg	1.0	5	5
ETHYLBENZENE	<5	ug/Kg	1.0	5	5
NAPHTHALENE	<5	ug/Kg	1.0	5	5
MTBE	<5	ug/Kg	1.0	5	5
TOTAL XYLENES	<5	ug/Kg	1.0	5	5
DIBROMOFLUOROMETHANE	100	%	1.0		
1,2-DICHLOROETHANE-D4	94	%	1.0		
TOLUENE-D8	99	%	1.0		
P-BROMOFLUOROBENZENE	93	%	1.0		

Report Notes:

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: F1067 **Sample ID: LCSF23A** **Date Run: 6/23/99**

Analyst: KRT **Time Injected 8:17:00 AM** **Matrix: SL**

Compound Name	Spike Amt (ug/Kg)	Result (ug/Kg)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	51.5	103	60-140
BENZENE	50	50.8	102	60-140
ETHYLBENZENE	50	53.2	106	60-140
MTBE	50	51.7	103	60-140
NAPHTHALENE	50	52.4	105	60-140
TOLUENE	50	50.6	101	60-140
TOTAL XYLENES	150	159	106	60-140

*** Out of Limits** *1*

4A

VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKS23A

Lab Name: Katahdin Analytical Services SDG No.: WP3016

Lab File ID: S5172 Lab Sample ID: VBLKS23A

Date Analyzed: 06/23/99 Time Analyzed: 9:19

GC Column: RTX-624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972-S

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS'S, MS AND MSD'S

Client Sample ID	Lab Sample ID	Lab Data File	Date Injected	Time Injected
LCSS23A	LCSS23A	S5171	6/23/99	8:34:00 AM
37TL00101	WP3016-14	S5183	6/23/99	4:23:00 PM

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: VBLKS23A
SDG: WP3016
Report Date: 8/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 6/23/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKS23A	AQ	-	-	6/23/99	KMC	5030	KMC

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<5	ug/L	1.0	5	5
TOLUENE	<5	ug/L	1.0	5	5
1,2-DIBROMOETHANE	<5	ug/L	1.0	5	5
ETHYLBENZENE	<5	ug/L	1.0	5	5
NAPHTHALENE	<5	ug/L	1.0	5	5
MTBE	<5	ug/L	1.0	5	5
TOTAL XYLENES	<5	ug/L	1.0	5	5
DIBROMOFLUOROMETHANE	101	%	1.0		
1,2-DICHLOROETHANE-D4	94	%	1.0		
TOLUENE-D8	109	%	1.0		
P-BROMOFLUOROBENZENE	113	%	1.0		

Report Notes:

0000061

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: S5171 **Sample ID: LCSS23A** **Date Run: 6/23/99**

Analyst: KMC **Time Injected 8:34:00 AM** **Matrix: AQ**

Compound Name	Spike Amt (ug/L)	Result (ug/L)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	51.3	102	60-140
BENZENE	50	51.2	102	60-140
ETHYLBENZENE	50	56.9	114	60-140
MTBE	50	49.2	98	60-140
NAPHTHALENE	50	60.0	120	60-140
TOLUENE	50	54.7	109	60-140
TOTAL XYLENES	150	170	113	60-140

*** Out of Limits** *1*

4A

VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKF24A

Lab Name: Katahdin Analytical Services SDG No.: WP3016

Lab File ID: F1086 Lab Sample ID: VBLKF24A

Date Analyzed: 06/24/99 Time Analyzed: 10:27

GC Column: RTX-624 ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5972-F

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS'S, MS AND MSD'S

Client Sample ID	Lab Sample ID	Lab Data File	Date Injected	Time Injected
LCSF24A	LCSF24A	F1085	6/24/99	9:42:00 AM
41SLB100708	WP3016-2	F1087	6/24/99	11:20:00 AM
41SLB040506	WP3016-4RE	F1088	6/24/99	11:57:00 AM
41SLB010405	WP3016-5	F1089	6/24/99	12:33:00 PM
37SLB070304	WP3016-6RE	F1090	6/24/99	1:10:00 PM
37SLB050305	WP3016-7RE	F1091	6/24/99	1:47:00 PM
41SLB030506	WP3016-9RE	F1092	6/24/99	2:23:00 PM
41SLB030506D	WP3016-10	F1093	6/24/99	3:00:00 PM
41SLB020405	WP3016-12	F1095	6/24/99	4:12:00 PM

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: VBLKF24A
SDG: WP3016
Report Date: 6/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 100
Method: SW8260
Date Analyzed: 6/24/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKF24A	SL	-	-	6/24/99	KMC	5030	KMC

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<5	ug/Kg	1.0	5	5
TOLUENE	<5	ug/Kg	1.0	5	5
1,2-DIBROMOETHANE	<5	ug/Kg	1.0	5	5
ETHYLBENZENE	<5	ug/Kg	1.0	5	5
NAPHTHALENE	<5	ug/Kg	1.0	5	5
MTBE	<5	ug/Kg	1.0	5	5
TOTAL XYLENES	<5	ug/Kg	1.0	5	5
DIBROMOFLUOROMETHANE	111	%	1.0		
1,2-DICHLOROETHANE-D4	123	%	1.0		
TOLUENE-D8	98	%	1.0		
P-BROMOFLUOROBENZENE	104	%	1.0		

Report Notes:

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: F1085 **Sample ID: LCSF24A** **Date Run: 6/24/99**

Analyst: KMC **Time Injected 9:42:00 AM** **Matrix: SL**

Compound Name	Spike Amt (ug/Kg)	Result (ug/Kg)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	50.1	100	60-140
BENZENE	50	40.9	82	60-140
ETHYLBENZENE	50	48.3	96	60-140
MTBE	50	48.8	98	60-140
NAPHTHALENE	50	63.8	128	60-140
TOLUENE	50	43.3	86	60-140
TOTAL XYLENES	150	146	98	60-140

*** Out of Limits** *1*

4A
VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKF25A

Lab Name: Katahdin Analytical Services SDG No.: WP3016

Lab File ID: F1101 Lab Sample ID: VBLKF25A

Date Analyzed: 06/25/99 Time Analyzed: 9:33

GC Column: RTX-624 ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5972-F

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS'S, MS AND MSD'S

Client Sample ID	Lab Sample ID	Lab Data File	Date Injected	Time Injected
LCSF25A	LCSF25A	F1100	6/25/99	8:42:00 AM
41SLB030506D	WP3016-10RE	F1108	6/25/99	2:13:00 PM
37SLB010607D	WP3016-11	F1109	6/25/99	2:49:00 PM
37SLB010607	WP3016-13	F1110	6/25/99	3:26:00 PM
41SLB020405MS	WP3016-12MS	F1111	6/25/99	4:03:00 PM
41SLB020405MSD	WP3016-12MSD	F1112	6/25/99	4:39:00 PM

KATAHDIN ANALYTICAL SERVICES
REPORT OF ANALYTICAL RESULTS

Client: Paul Calligan
Tetra Tech NUS
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

Proj. ID: CNC CHARLESTON

Lab Number: VBLKF25A
SDG: WP3016
Report Date: 8/17/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: 100
Method: SW8260
Date Analyzed: 6/25/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKF25A	SL	-	-	6/25/99	KMC	5030	KMC

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<5	ug/Kg	1.0	5	5
TOLUENE	<5	ug/Kg	1.0	5	5
1,2-DIBROMOETHANE	<5	ug/Kg	1.0	5	5
ETHYLBENZENE	<5	ug/Kg	1.0	5	5
NAPHTHALENE	<5	ug/Kg	1.0	5	5
MTBE	<5	ug/Kg	1.0	5	5
TOTAL XYLENES	<5	ug/Kg	1.0	5	5
DIBROMOFLUOROMETHANE	107	%	1.0		
1,2-DICHLOROETHANE-D4	112	%	1.0		
TOLUENE-D8	105	%	1.0		
4-BROMOFLUOROBENZENE	102	%	1.0		

Report Notes:

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: F1100 **Sample ID: LCSF25A** **Date Run: 6/25/99**

Analyst: KMC **Time Injected 8:42:00 AM** **Matrix: SL**

Compound Name	Spike Amt (ug/Kg)	Result (ug/Kg)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	51.8	104	60-140
BENZENE	50	45.9	92	60-140
ETHYLBENZENE	50	49.6	99	60-140
MTBE	50	49.1	98	60-140
NAPHTHALENE	50	52.8	106	60-140
TOLUENE	50	45.6	91	60-140
TOTAL XYLENES	150	149	99	60-140

*** Out of Limits** *1*

Katahdin Analytical Services

MS/MSD Report

Sample	File Name	Date Acquired	Time inj	Analyst	Matrix	Method
WP3016-12	F1095	6/24/99	4:12:00 PM	KMC	SL	8260_99
WP3016-12MS	F1111	6/25/99	4:03:00 PM	KMC	SL	8260_99
WP3016-12MSD	F1112	6/25/99	4:39:00 PM	KMC	SL	8260_99

Compound Name	Native (ug/Kg)	MS Spk Amount (ug/Kg)	MSD Spk Amount (ug/Kg)	MS Result (ug/Kg)	MSD Result (ug/Kg)	MS REC (%)	MSD REC (%)	Recovery Limits (%)	RPD (%)	RPD Limit (%)
TOTAL XYLENES	0	237	190	184	88.6	78	*47	60-140	*70	30
TOLUENE	0	79.0	63.5	65.4	31.6	83	*50	60-140	*70	30
NAPHTHALENE	0	79.0	63.5	52.2	42.0	66	66	60-140	22	30
MTBE	0	79.0	63.5	74.0	69.8	94	110	60-140	5.8	30
ETHYLBENZENE	0	79.0	63.5	61.8	28.5	78	*45	60-140	*74	30
BENZENE	0	79.0	63.5	66.8	32.6	84	*51	60-140	*69	30
1,2-DIBROMOETHANE	0	79.0	63.5	74.3	67.9	94	107	60-140	9.0	30

RPD =[(ms res - msd res) / (ms res + msd res)/2] * 100

*** Out of Limits**

CASE NARRATIVE
for
Katahdin Analytical
Westbrook, ME
Former Charleston Naval Complex Site
SDG #96759

July 12, 1999

Laboratory Identification:

General Engineering Laboratories, Inc. (GEL)

Mailing Address:

P.O. Box 30712
Charleston, SC 29417

Express Mail Delivery and Shipping Address:

2040 Savage Rd
Charleston, SC 29414

Telephone Number:

(843) 556-8171

Summary:

Sample receipt

The samples from the former Charleston Naval Complex site arrived at General Engineering Laboratories, Inc., Charleston, SC on June 22, 1999, for environmental analyses. All sample containers arrived without any visible signs of tampering or breakage. The samples were delivered with chain of custody documentation and signatures.

The following samples were received by the laboratory:

Laboratory Identification	Sample Description
9906759-01	41SLB030506
9906759-02	41SLB010405
9906759-03	37SLB010607
9906759-04	37SLB010607D
9906759-05	41SLB010405D

Case Narrative

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are listed below by analytical parameter.

Internal Chain of Custody:

Custody was maintained for all samples.

Data Package:

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, and General Chemistry.

The following are definitions of reporting limits used at General Engineering Laboratories:

DL — Detection Limit: The minimum level of an analyte that can be determined (identified not quantified) with 99% confidence. The values are normally achieved by preparing and analyzing seven aliquots of laboratory water spiked 1 to 5 times the estimated MDL, taking the standard deviation and multiplying it against the one-tailed t-statistic at 99%. This computed value is then verified for reasonableness by repeating the study using the concentration found in the initial study, calculating an F-ratio, and computing the final limit. Sample specific preparation and dilution factors are applied to these limits when they are reported.

The detection limit is the minimum concentration of a substance that can be identified, measured, and reported with 99% confidence that the analyte concentration is above zero. It answers the question "Is It Present."

QL — Quantitation Limit: The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. The QL is generally 5 to 10 times the MDL. However, it may be nominally chosen within these guidelines to simplify data reporting. For many analytes the QL analyte concentration is selected as the lowest non-zero standard in the calibration curve.

Sample QL's are highly matrix-dependent. Sample specific preparation and dilution factors are applied to these limits when they are reported.

The QL is always $\geq$ DL.

This data package, to the best of my knowledge, is in compliance with technical and administrative requirements.

Allyson Gin for Val Davis

Valerie S. Davis
Project Manager

fc:saic9906759%

GENERAL ENGINEERING LABORATORIES
PO Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(803) 556-8171 • Fax (803) 766-1178

Printed on recycled paper.

General Engineering Laboratories, Inc.
2040 Savage Road
Charleston, South Carolina 29407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

9906759/

Page_____ of _____

Client Name/Facility Name: Katahdin

Collected by/Company: Tetra Tech

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method Required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	TPH		Remarks	
01	415LB03506	6/22/99	1020		X			1		1																	.1
02	415LB01405	6/22/99	0935		X			1																1			.2
03	375LB01607	"	1440		X			2		1														1			.3
04	375LB01607D	"	1440		X			2		1														1			.3
05	415LB01405D	"	0935		X			1																1			.2
06	415LB03506D	"	1020					1		1																	.1

40980

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature]	6/22/99	1730					
Relinquished by:	Date:	Time:	Received by lab by: [signature]	Date: 6/22/99	Time: 1730	Remarks:	

White = sample collector Yellow = file Pink = with report

FEDERAL SAMPLE RECEIPT REVIEW

Client KATA Received by [illegible] Date 6/22/99

GEL COOLER ✓ GEL POLY COOLER ___ CLIENT COOLER ___ OTHER ___

SAMPLE REVIEW CRITERIA	YES	NO	COMMENTS/QUALIFIERS
1. Were shipping containers received intact and sealed? If no, notify Project Manager	✓		
2. Was the Shipment screened following the radiochemistry survey procedure (EPI SOP S-007)?	✓		
Were the survey results negative? If no, notify Project Manager	✓		
Are any of the samples identified by the client as radioactive? If yes, did client provide RAD activity?		✓	
3. Were chain of custody documents included?	✓		
4. Were chain of custody documents completed correctly? (Ink, signed, match containers)	✓		
5. Were all sample containers properly labeled?	✓		
6. Were proper sample containers received?	✓		
7. Preserved samples checked for pH?		—	Soil
8. Were samples preserved correctly? If no, list samples & tests		—	
9. Shipping container temperature checked?	✓		
10. Was shipping conatiner temperature within specifications (4°± 2° C) If no, notify Project Manager	✓		4°C
11. Is temperature documented on the Chain of Custody?		—	
12. Were samples received within holding time? if No, notify Project Manger	✓		
13. Were VOA vials free of headspace?		—	
14. ARCOC# IF REQUIRED		—	
15. SDG# IF REQUIRED	✓		

REVIEW [illegible] DATE 6/23/99 SA - SEALS ATTACHED NSA - NO SEALS ATTACHED

Case Narrative for
KATA
SDG# 96759

TOTAL ORGANIC CARBON

Analytical Batch Number: 152551

Analytical Method: SW846 9060 Modified

Laboratory Number	Sample Description
9906759-01	41SLB030506
9906759-03	37SLB010607
9906759-04	37SLB010607D
9906759-06	41SLB030506D
QC624957	Blank
QC624958	Duplicate of 9906925-03
QC624959	Post Spike of 9906925-03
QC624960	Laboratory Control Sample

Sample Preparation:

All samples were prepared in accordance with accepted procedures. The method quoted is only for liquid samples. It is modified to handle soils analysis.

Instrument Calibration:

The instrument used was a Dohrmann DC-190 high temperature combustion TOC analyzer with a Dohrmann solids boat sampler. The instrument was properly calibrated on the day of the analysis.

Holding Time:

All samples were analyzed within the required holding time.

Blanks:

No target analytes were detected in the method blank above the required acceptance limit.

Spike Analyses:

The post spike was run on the following Sample Number from another SDG.

9906925-03

All analyte recoveries in the post spike was within the required acceptance limits.

Laboratory Control Samples:

All analyte recoveries in the laboratory control sample were within the required acceptance limits.

Sample Duplicates:

All sample duplicate results were within the required acceptance limits.

Dilutions:

None of the samples were diluted.

Non Conformance Reports:

There were no Nonconformance Reports associated with this batch.

Additional Comments:

TOC solid samples are are tested to determine if inorganic carbon such as carbonates and bicarbonates are present in the sample. If so, the sample is acidified to remove the inorganic carbon, then dried in a low temperature oven. Because the sample portion is dried before analysis, the percent moisture correction is not applied to the TOC solid result.

TOTAL PETROLEUM HYDROCARBONS

Analytical Batch Number: 152814

Analytical Method: SW846 9071A

Laboratory Number	Sample Description
9906759-02	41SLB010405
9906759-03	37SLB010607
9906759-04	37SLB010607D
9906759-05	41SLB010405D
QC625958	Blank
QC625959	Laboratory Control Sample
QC625960	Matrix Spike of 9906759-04
QC625961	Duplicate of 9906759-04

Instrument Calibration:

The instrument was properly calibrated.

Holding Time:

All samples were analyzed within the required holding time.

Blanks:

No target analytes were detected in the method blank above the required acceptance limit.

Spike Analyses:

The matrix spike was run on the following Sample Number.

9906759-04

All analyte recoveries in the matrix spike were within the required acceptance limits.

Laboratory Control Samples:

All analyte recoveries in the laboratory control sample were within the required acceptance limits.

Sample Duplicates:

All sample duplicate results were within the required acceptance limits.

Dilutions:

None of the samples were diluted.

Non Conformance Reports:

There were no Nonconformance Reports associated with this batch.

The preceding narratives have been reviewed by: [signature] Date: 07/15/99

Client:	Katahdin Analytical 340 County Road Westbrook, Maine 04092
Contact:	Ms. Andrea Colby
Project Description:	Former Naval Complex

cc: KATA00199 Report Date: July 14, 1999

Sample ID	: 37SLB010607
Lab ID	: 9906759-03
Matrix	: Soil
Date Collected	: 06/22/99
Date Received	: 06/22/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons		299	105	210	mg/kg	1.0	AAT	07/13/99	1300	152814	1
Evaporative Loss @ 105 C		5.00	1.00	1.00	wt%	1.0	GJ	06/23/99	1600	152029	2
Total Organic Carbon		2540	43.1	100	mg/kg	1.0	LJB	07/07/99	1718	152551	3

M = Method	Method-Description
M 1	SW846 9071A
M 2	EPA 3550
M 3	SW846 9060 Modified

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

Client:	Katahdin Analytical 340 County Road Westbrook, Maine 04092
Contact:	Ms. Andrea Colby
Project Description:	Former Naval Complex

cc: KATA00199 Report Date: July 14, 1999

Sample ID	: 37SLB010607D
Lab ID	: 9906739-04
Matrix	: Soil
Date Collected	: 06/22/99
Date Received	: 06/22/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons		244	106	212	mg/kg	1.0	AAT	07/13/99	1300	152814	1
Evaporative Loss @ 105 C		6.00	1.00	1.00	wt%	1.0	GJ	06/23/99	1600	152029	2
Total Organic Carbon		1610	43.1	100	mg/kg	1.0	LIB	07/07/99	1743	152551	3

M = Method	Method-Description
M 1	SW846 9071A
M 2	EPA 3550
M 3	SW846 9060 Modified

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

QC Summary Report

Project Description: Former Naval Complex

cc: KATA00199 Lab. Sample ID: 99067759% Report Date: July 14, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
General Chemistry													
QC625958	BLANK	152814											
Total Rec. Petro. Hydrocarbons						145	mg/kg				AAT	07/13/99	1300
QC625961	9906759-04DUP	152814											
Total Rec. Petro. Hydrocarbons				245		266	mg/kg	8.33					
QC625959	LCS	152814											
Total Rec. Petro. Hydrocarbons			10800			10900	mg/kg		101	(70.0 - 116.)			
QC625960	9906759-04MS	152814											
Total Rec. Petro. Hydrocarbons			12800	245		12900	mg/kg		98.3	(70.0 - 130.)			
QC622956	BLANK	152029											
Evaporative Loss @ 105 C						0.00	wt%				GJ	06/23/99	1600
QC622952	9906769-08DUP	152029											
Evaporative Loss @ 105 C				12.0		14.0	wt%	15.4					
QC622953	9906728-03DUP	152029											
Evaporative Loss @ 105 C				23.0		24.0	wt%	4.26					
QC622955	9906759-06DUP	152029											
Evaporative Loss @ 105 C				13.0		15.0	wt%	14.3					
QC624957	BLANK	152551											
Total Organic Carbon						7.21	mg/kg				LIB	07/07/99	1414
QC624958	9906925-03DUP	152551											
Total Organic Carbon				6410		6280	mg/kg	1.91			LIB	07/07/99	1457
QC624960	LCS	152551											
Total Organic Carbon			3750			4730	mg/kg		126	(88.0 - 130.)	LIB	07/07/99	1400
QC624959	9906925-03PS	152551											
Total Organic Carbon			8890	6410		15200	mg/kg		98.4	(73.0 - 129.)	LIB	07/07/99	1507

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte < RL (Report Limit)
U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when
sample concentration exceeds spike conc by a factor of 4 or more

S. W. COLE ENGINEERING, INC.

REPORT OF GRADATION
ASTM C-117, C-136

Project No. 99008
Date 06/24/1999

Project MISCELLANEOUS

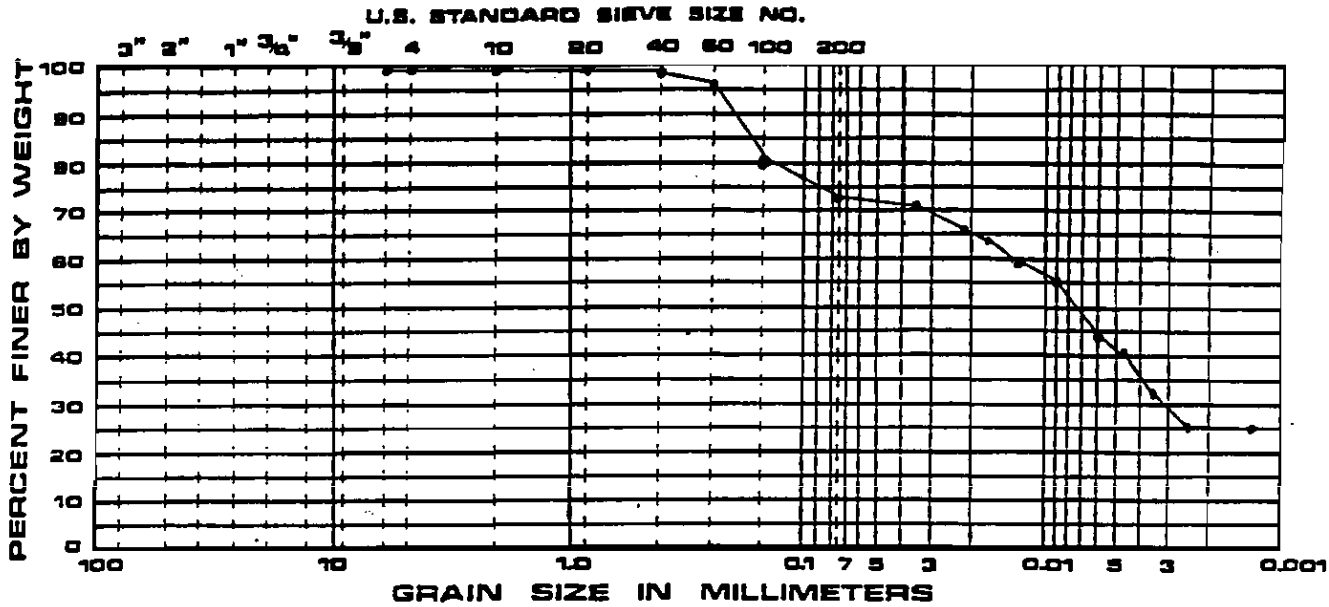
Client KATAHDIN ANALYTICAL

Sample No. 29, SILTY SAND, WP3016-13

Sieve Size	Percent Passing	PROJECT Specifications %
3/4 "	100.0	
1/2 "	97.0	
1/4 "	94.9	
# 4	94.4	
# 10	92.9	
# 20	90.7	
# 40	88.5	
# 60	82.8	
# 100	24.2	
# 200	11.1	

GRAIN SIZE ANALYSIS

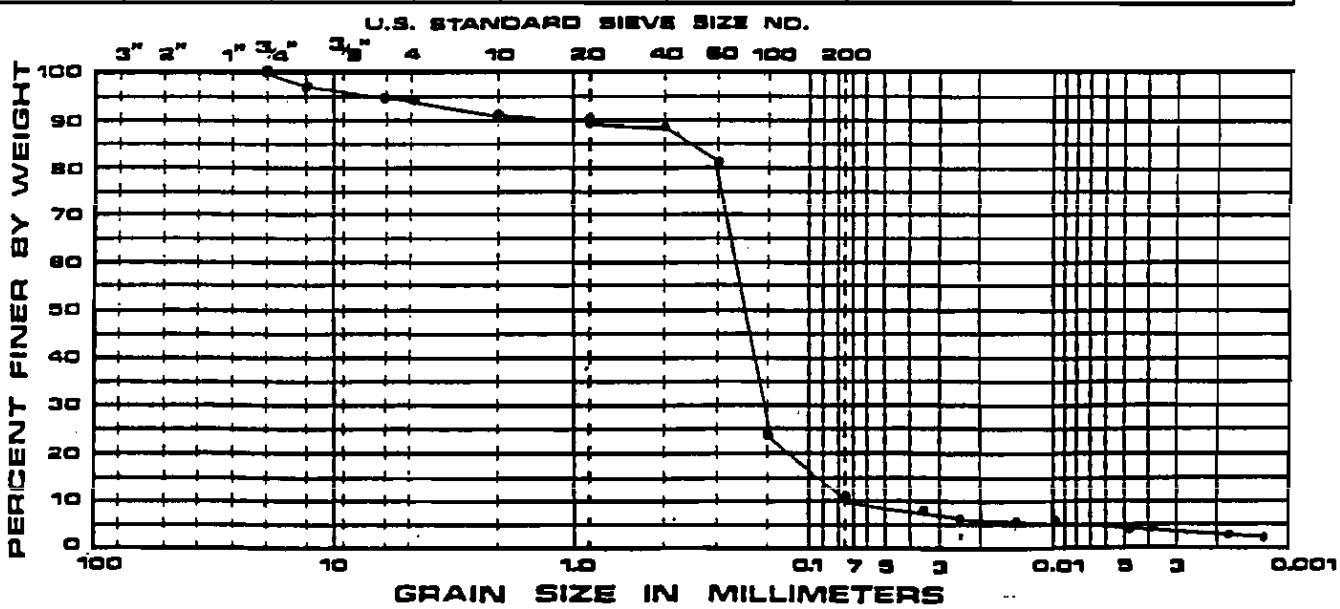
COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION		W
•	WR3011-72	28				

GRAIN SIZE ANALYSIS

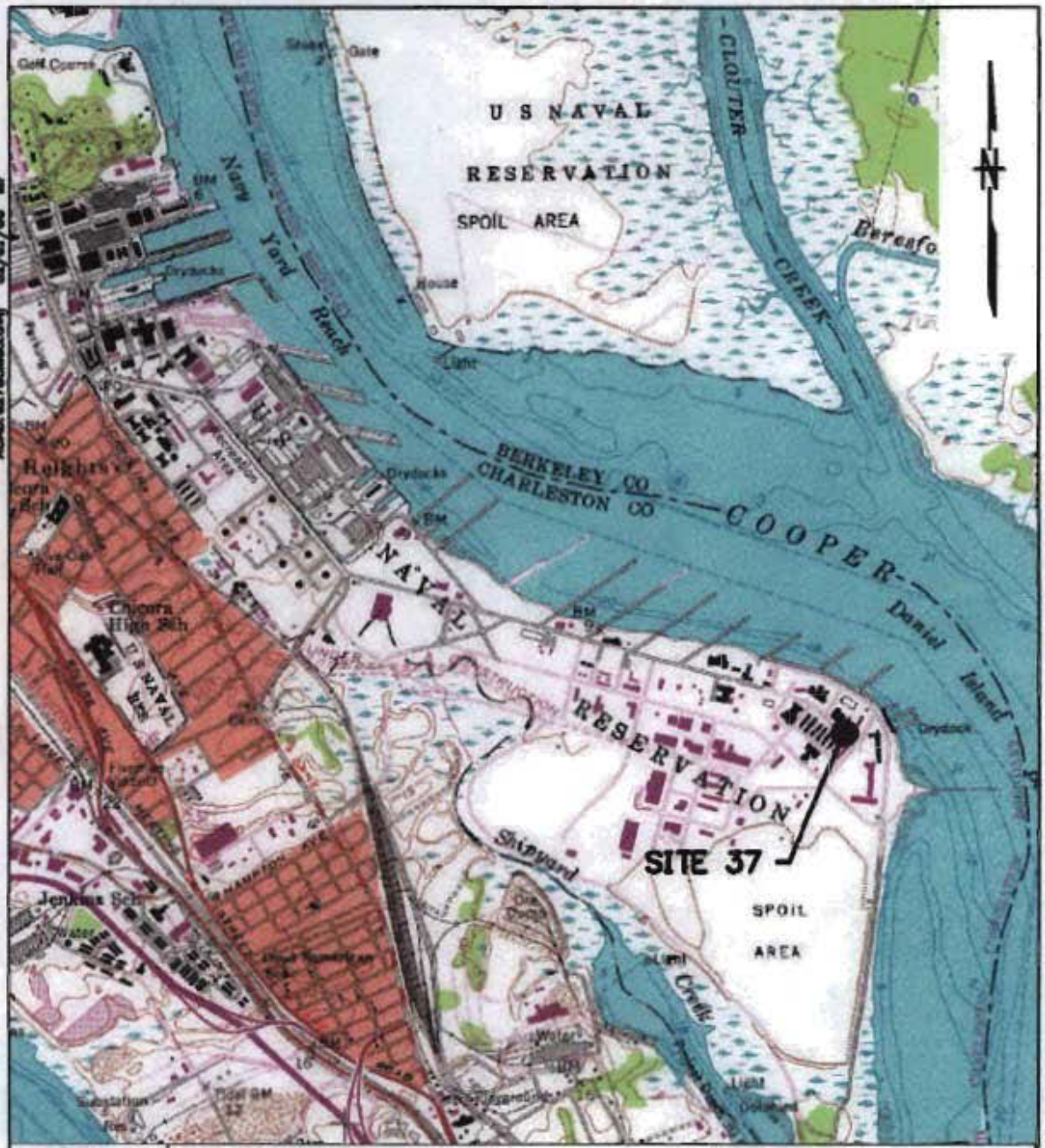
COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION		W
•	WR3011-19	29				

APPENDIX C

TOPOGRAPHIC MAP WITH SITE LOCATION



SOURCE: QUADRANGLE MAP SOUTH CAROLINA, REVISED 1979
QUADRANGLE MAP NORTH CHARLESTON REVISED, 1979

0 2000 4000
SCALE IN FEET

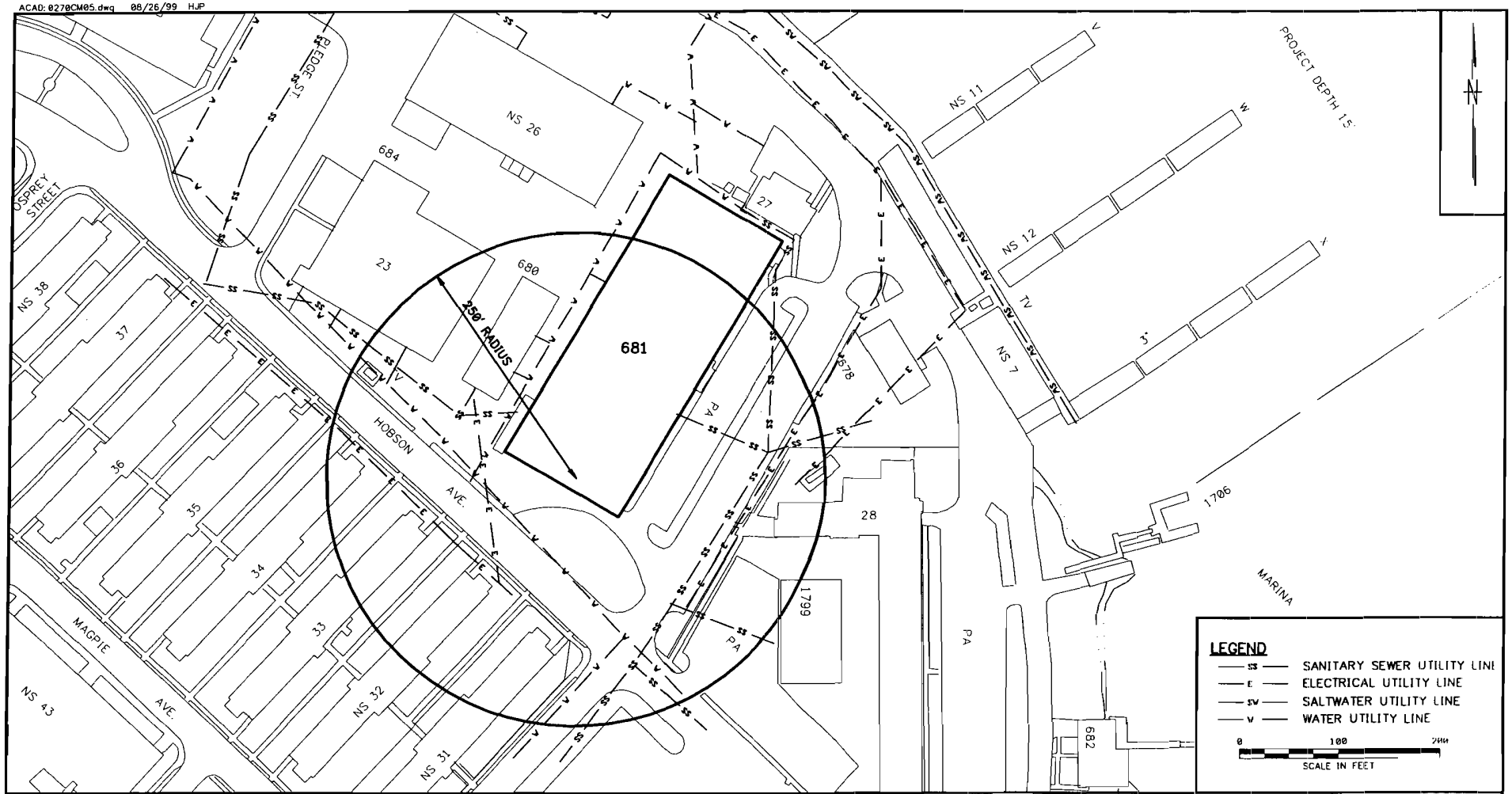
DRAWN BY HJP	DATE 8/24/99	SITE LOCATION MAP SITE 37, BUILDING 681-2, ZONE I CHARLESTON NAVAL COMPLEX NORTH CHARLESTON, SC	CONTRACT NO. N0270
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1 / REV. 0

FORM CADD NO. 5001_AVJ2V2 - REV 6 - 1/28/98

APPENDIX D

SITE BASE MAPS

ACAD: 0270CM05.dwg 08/26/99 HJP



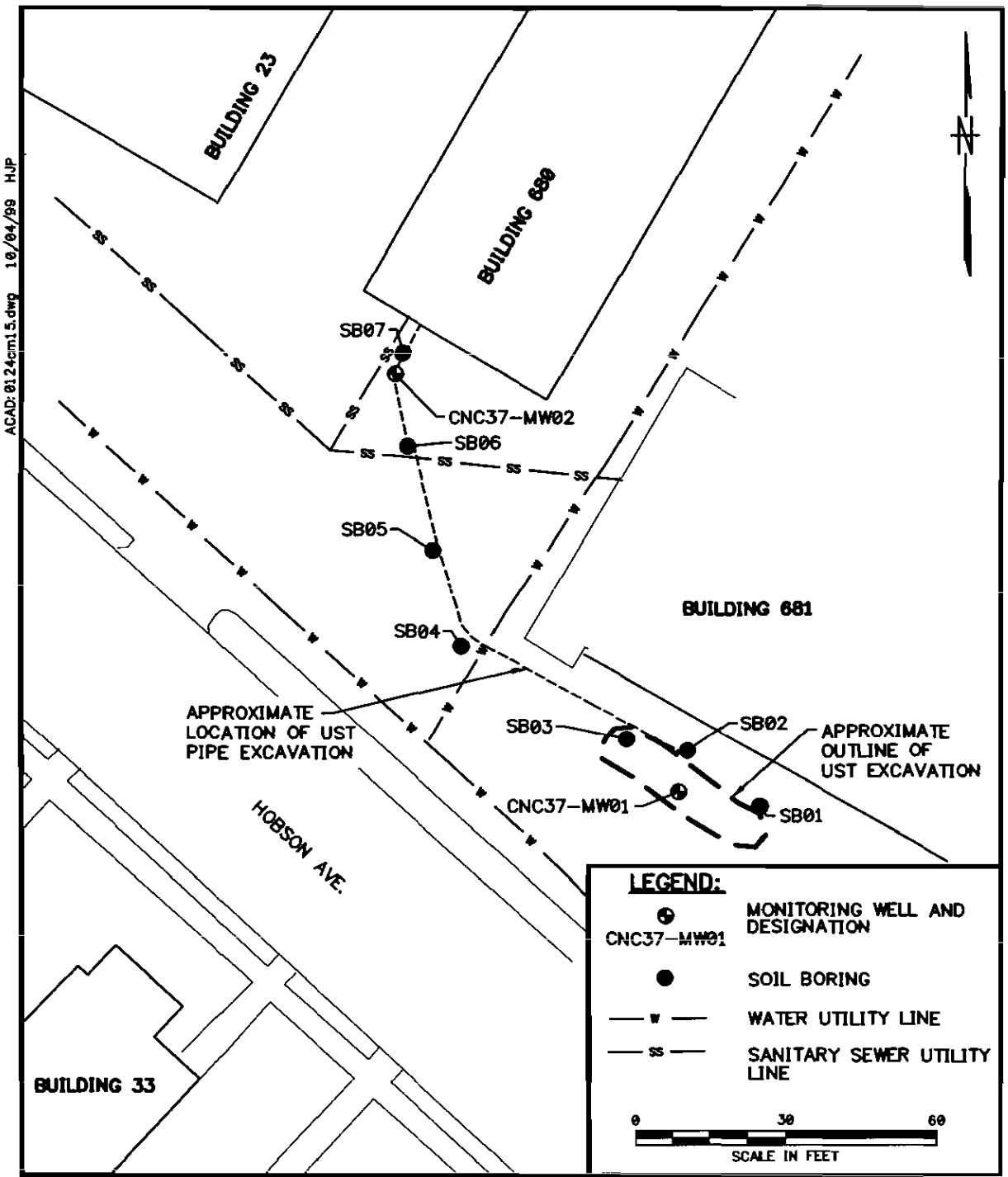
NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY HJP DATE 8/24/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

SITE VICINITY MAP
SITE 37, BUILDING 681
ZONE I, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO 0270
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 1
REV 0

FORM CADD NO. SDIV_BH.DWG - REV 0 - 1/20/98



ACAD: 0124cm15.dwg 10/04/99 HJP

DRAWN BY HJP DATE 10/4/99		SITE MAP SITE 37, BUILDING 681 ZONE I, CHARLESTON NAVAL COMPLEX NORTH CHARLESTON, SOUTH CAROLINA	CONTRACT NO. 0124
CHECKED BY DATE			APPROVED BY DATE
COST/SCHED-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 2 REV. 0

FORM CADD NO. SDIV_AV.DWG – REV 0 – 1/20/98