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CNC CHARLESTON
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INITIAL GROUNDWATER ASSESSMENT REPORT FOR SITE 12 QUARTERS B ZONE B

CNC CHARLESTON SC

3/1/2000

TETRA TECH

Rev.1
03/07/00

Initial Ground-Water Assessment Report for Site 12, Quarters B

Zone B
Charleston Naval Complex
North Charleston, South Carolina

Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order 0092

March 2000

Rev.1
03/07/00

INITIAL GROUND-WATER ASSESSMENT REPORT
FOR
SITE 12, QUARTERS B

ZONE B, 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 0092

MARCH 2000

PREPARED UNDER THE SUPERVISION OF:

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TALLAHASSEE, FLORIDA

APPROVED FOR SUBMITTAL BY:

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PROGRAM MANAGER
TETRA TECH NUS, INC.
PITTSBURGH, PENNSYLVANIA

EXECUTIVE SUMMARY

Tetra Tech NUS, Inc. (TtNUS) has completed a Rapid Assessment for Site 12 which includes two underground storage tank (UST) systems for Quarters B1 and B2 at Charleston Naval Complex (CNC) Zone B, in North Charleston, South Carolina. The USTs provided fuel oil to the building's boiler for heating purposes. The 280- and 550-gallon steel USTs were removed in November 1996. The Rapid 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 April 7, 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 USTs B1 and B2 to determine boring locations and monitoring well placement.
- Conducted site survey to identify utilities and to construct a site plan.
- Installed 11 shallow soil borings (8 to 16 feet below land surface [bls]) and one deep soil boring (30 feet bls) using direct push technology (DPT).
- Collected soil samples for field screening using an organic vapor analyzer.
- Installed three temporary piezometers inside selected soil borings.
- 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 soil samples from five DPT borings for laboratory analysis at a fixed-base analytical laboratory. Analyzed the five soil samples for BTEX and naphthalene using U.S. Environmental Protection Agency (USEPA) Method 8260 and polynuclear aromatic hydrocarbons (PAHs) using USEPA Method 8270.
- Collected soil samples from one boring for grain size analysis, total organic carbon analysis using USEPA Method 415.1, and total recoverable petroleum hydrocarbon analysis using USEPA Method 9071

- Installed six shallow, permanent monitoring wells to 16 to 22 feet bls and one vertical delineation well to 41 feet bls using hollow stem auger.
- Collected groundwater samples from seven newly installed, permanent monitoring wells for laboratory analysis at a fixed-base analytical laboratory.
- Collected groundwater samples for natural attenuation parameters from three monitoring wells.
- 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 elevations and collected depth to groundwater measurements to evaluate the groundwater flow direction.

Conclusions

Groundwater samples were collected from seven monitoring wells on July 24 and 25, 1999. No dissolved chemicals of concern (CoCs) were detected in any well sampled.

Soil samples were collected from five confirmation soil borings on August 17, 1999, and analyzed for BTEX and PAHs by a fixed-base laboratory. No CoCs were detected in any soil boring sampled.

No soil or groundwater RBSLs were exceeded based on laboratory analysis of samples collected during the Rapid Assessment field effort. Because no RBSLs were exceeded, a site conceptual model or a Tier 2 evaluation was not required, thereby greatly reducing the reporting requirements. The IGWA was chosen as the method for reporting the findings of the Rapid Assessment field effort. It allows the necessary presentation for a site with no CoC concentrations in soil and groundwater exceeding the RBSLs.

Recommendation

No further action is requested for Site 12, Quarters B1 and B2, of Zone B, 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 B, Site 12, Quarters B

Site ID Number: 00941

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 at additional sites within 1,000 feet of the former UST locations.

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

The Cooper River is approximately 1,050 feet east of the site and Noisette Creek is approximately 850 feet north of the site.

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

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

Site: Commercial & Industrial (Possible Residential use)

Adjacent Properties: Commercial & Industrial (Possible Residential use)

Soil and Monitoring Well Data

Primary Soil Type: Silty fine sand to ~ 10 feet bls.

Well Installation Method and Date: MW-01 to MW-06 on 6/17/99, MW-07D on 7/7/99. Hollow-stem auger

Development Method: Surge and purge using centrifugal pump

Soil Samples Obtained at 8-10, 10-11, 11-12, 13-14, and 14-15 feet

NOTE: Six soil samples were collected from five soil borings. The results for the samples collected are provided in Appendix B. A duplicate sample was collected from Soil Boring CNC12-B01.

SOIL ANALYTICAL DATA					
Sample	Benzene (ug/kg)	Toluene (ug/kg)	Ethyl-benzene (ug/kg)	Xylenes (ug/kg)	Naphthalene (ug/kg)
RBSL[1]	5	1,622	1,260	42,471	210
CNC12-B01 / 12SLB011415	< 6	< 6	< 6	< 6	< 6
CNC12-B01 / 12SLB011415D	< 5	< 5	< 5	< 5	< 5
CNC12-B02 / 12SLB021314	< 5	< 5	< 5	< 5	< 5
CNC12-B03 / 12SLB031112	< 6	< 6	< 6	< 6	< 6
CNC12-B05 / 12SLB051011	< 6	< 6	< 6	< 6	< 6
CNC12-B07 / 12SLB070810	< 6	< 6	< 6	< 6	< 6

Sample	Benzo(a)-anthracene (ug/kg)	Benzo(b)-fluoranthene (ug/kg)	Benzo(k)-fluoranthene (ug/kg)	Chrysene (ug/kg)	Dibenzo(a,h)-anthracene (ug/kg)
RBSL[1]	73,084	29,097	231,109	12,998	87,866
CNC12-B01 / 12SLB011415	< 360	< 360	< 360	< 360	< 360
CNC12-B01 / 12SLB011415D	< 400	< 400	< 400	< 400	< 400
CNC12-B02 / 12SLB021314	< 400	< 400	< 400	< 400	< 400
CNC12-B03 / 12SLB031112	< 330	< 330	< 330	< 330	< 330
CNC12-B05 / 12SLB051011	< 330	< 330	< 330	< 330	< 330
CNC12-B07 / 12SLB070810	< 330	< 330	< 330	< 330	< 330

[1] South Carolina Department of Health and Environmental Control Risk-Based Screening Levels for sandy soils; depth to groundwater less than 5 feet.

Ground-Water Data

Depth to Ground Water: Ranged from 9.43 to 14.25 feet below top of casing

Well Purging/Sampling Method: Low flow using peristaltic pump

Date Sampled: 7/24-25/99

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)	Naphthalene (ug/L)
RBSL[1]	5	700	1,000	10,000	10 [2]
CNC12M-01 / 12GLM0101	< 5	< 5	< 5	< 5	< 5
CNC12M-02 / 12GLM0201	< 5	< 5	< 5	< 5	< 5
CNC12M-03 / 12GLM0301	< 5	< 5	< 5	< 5	< 5
CNC12M-04 / 12GLM0401	< 5	< 5	< 5	< 5	< 5
CNC12M-04 / 12GLM0401D	< 5	< 5	< 5	< 5	< 5
CNC12M-05 / 12GLM0501	< 5	< 5	< 5	< 5	< 5
CNC12M-06 / 12GLM0601	< 5	< 5	< 5	< 5	< 5
CNC12M-07 / 12GLM0701	< 5	< 5	< 5	< 5	< 5

Sample	Benzo(a)-anthracene (ug/L)	Benzo(b)-fluoranthene (ug/L)	Benzo(k)-fluoranthene (ug/L)	Chrysene (ug/L)	Dibenzo(a,h) - anthracene (ug/L)
RBSL[1]	10 [2]	10 [2]	10 [2]	10 [2]	10 [2]
CNC12M-01 / 12GLM0101	< 10	< 10	< 10	< 10	< 10
CNC12M-02 / 12GLM0201	< 10	< 10	< 10	< 10	< 10
CNC12M-03 / 12GLM0301	< 10	< 10	< 10	< 10	< 10
CNC12M-04 / 12GLM0401	< 10	< 10	< 10	< 10	< 10
CNC12M-04 / 12GLM0401D	< 10	< 10	< 10	< 10	< 10
CNC12M-05 / 12GLM0501	< 10	< 10	< 10	< 10	< 10
CNC12M-06 / 12GLM0601	< 10	< 10	< 10	< 10	< 10
CNC12M-07 / 12GLM0701	< 10	< 10	< 10	< 10	< 10

Sample	EDB (ug/L)
RBSL[1]	5 [2]
CNC12M-01 / 12GLM0101	< 5
CNC12M-02 / 12GLM0201	< 5
CNC12M-03 / 12GLM0301	< 5
CNC12M-04 / 12GLM0401	< 5
CNC12M-04 / 12GLM0401D	< 5
CNC12M-05 / 12GLM0501	< 5
CNC12M-06 / 12GLM0601	< 5
CNC12M-07 / 12GLM0701	< 5

[1] South Carolina Department of Health and Environmental Control Risk-Based Screening Levels for ground water.
[2] The risk-based screening level for individual PAH CoC is 10 ug/L or 25 ug/L for total PAHs.

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

Appendices E, F, and G are not required for this report.

Report Completed By: _____ Cert. # 24
(signature)

Date: 1/26/00

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

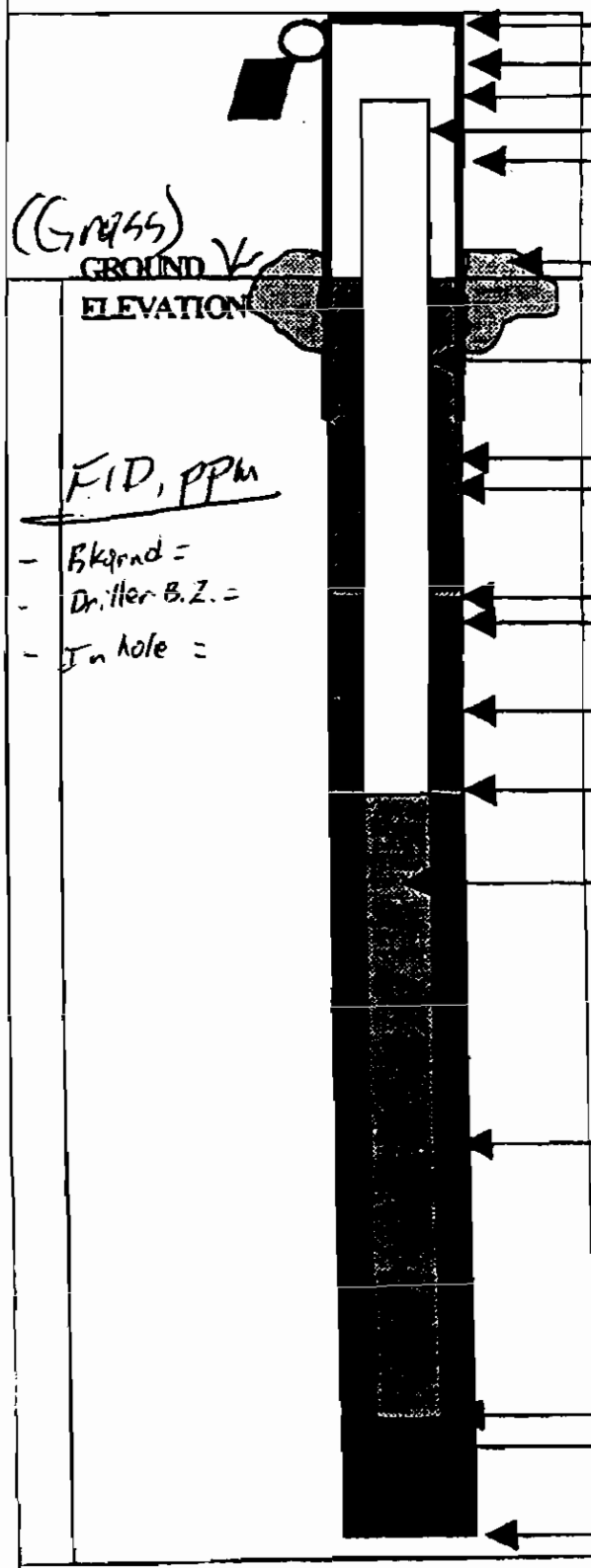
APPENDIX A

WELL CONSTRUCTION AND SOIL BORING LOGS

BORING NO.: CNC12-MW01

OVERBURDEN MONITORING WELL SHEET

PROJECT Chas. Naval Complex	LOCATION: Site 12/Zone B	DRILLER Custom Drilling
PROJECT NO. 0141	BORING CNC12-MW01	METHOD: ~~DPT~~ 4.25-in HSA
ELEVATION	DATE 6/17/99	DRILLING Darrell Martin
FIELD GEOLOGIST Mark Darrington		DEVELOPMENT ~~NA~~



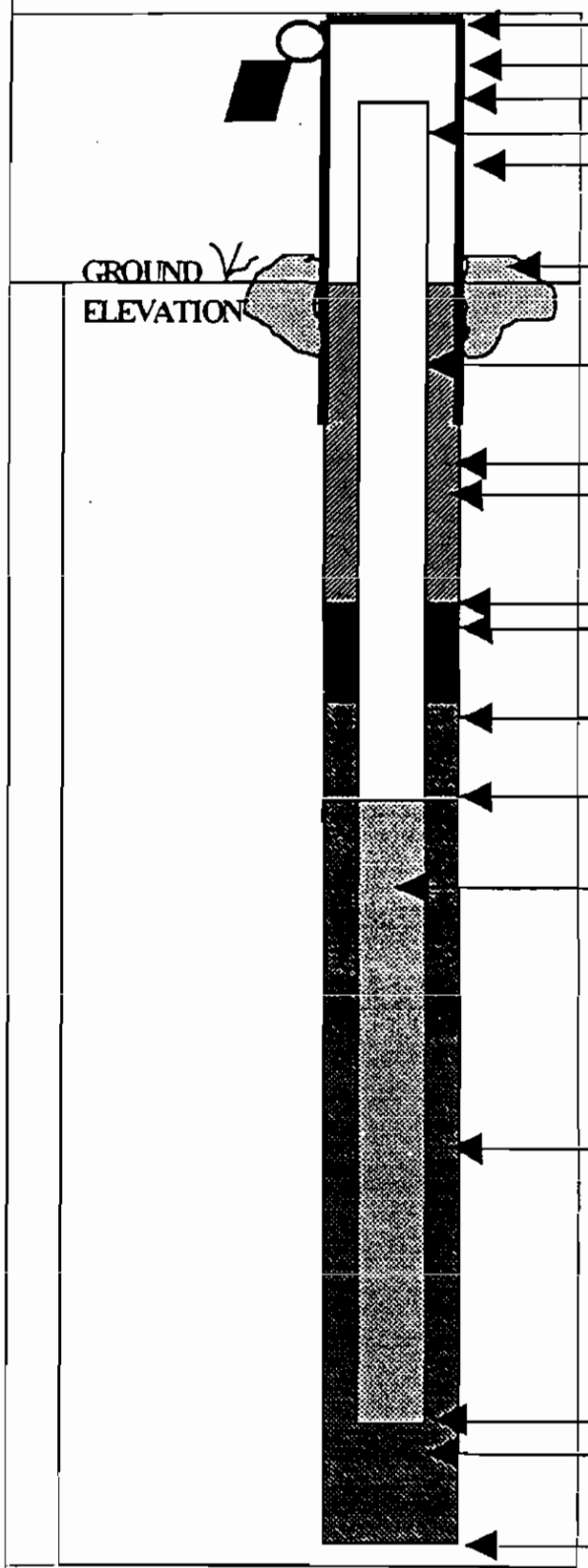
FID, PPM
- Bkgrnd =
- Driller B.Z. =
- In hole =

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)
TYPE OF SURFACE SEAL: Concrete Pad (Quickcrete) 2 ft. x 2 ft. x 6 in
RISER PIPE I.D.: 2-in.
TYPE OF RISER PIPE: PVC, Sch. 40, Flush Threaded (F.T.)
BOREHOLE DIAMETER: 8.25-in
TYPE OF SEAL: Portland Cement Type I to 8' bls
ELEVATION / DEPTH OF SEAL: 8' 00
TYPE OS SEAL: "Choke Sand" Very Fine Qtz. sand (30/65)
DEPTH TOP OF SAND PACK: 10' 0"
ELEVATION / DEPTH TOP OF SCREEN: 11' 10"
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: Standard Sand Qtz sand (20/30)
ELEVATION / DEPTH BOTTOM OF SCREEN: 21' 0"
ELEVATION / DEPTH BOTTOM OF SAND PACK: 21' 6"
TYPE OF BACKFILL BELOW OBSERVATION WELL: Sand (20/30)
ELEVATION / DEPTH OF HOLE: 21' 6"

BORING NO.: CNC12-MW0

OVERBURDEN MONITORING WELL SHEET

PROJECT	CNC	LOCATION:	CNC12-MW02	DRILLER	Rod
PROJECT NO.	CNC12	BORING	CNC12-MW02	METHOD: ~~DPT~~	
ELEVATION		DATE	6/18/99	DRILLING	HSA
FIELD GEOLOGIST	Marty Ray			DEVELOPMENT: NA	



ELEVATION OF TOP OF SURFACE CASING: Flush

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING:

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: 8"

TYPE OF SURFACE CASING: Steel manhole

TYPE OF SURFACE SEAL: concrete pad 2'x2'x6"

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch 40 PVC

BOREHOLE DIAMETER:

TYPE OF SEAL: grout to 8" b/s

ELEVATION / DEPTH OF SEAL: 3'10"

TYPE OS SEAL: 30/65 choke sand

DEPTH TOP OF SAND PACK: 5'0"

ELEVATION / DEPTH TOP OF SCREEN: 6'0"

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE X LENGTH: 10 slot

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20/30 sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 16'8"

ELEVATION / DEPTH BOTTOM OF SAND PACK: 16'6"

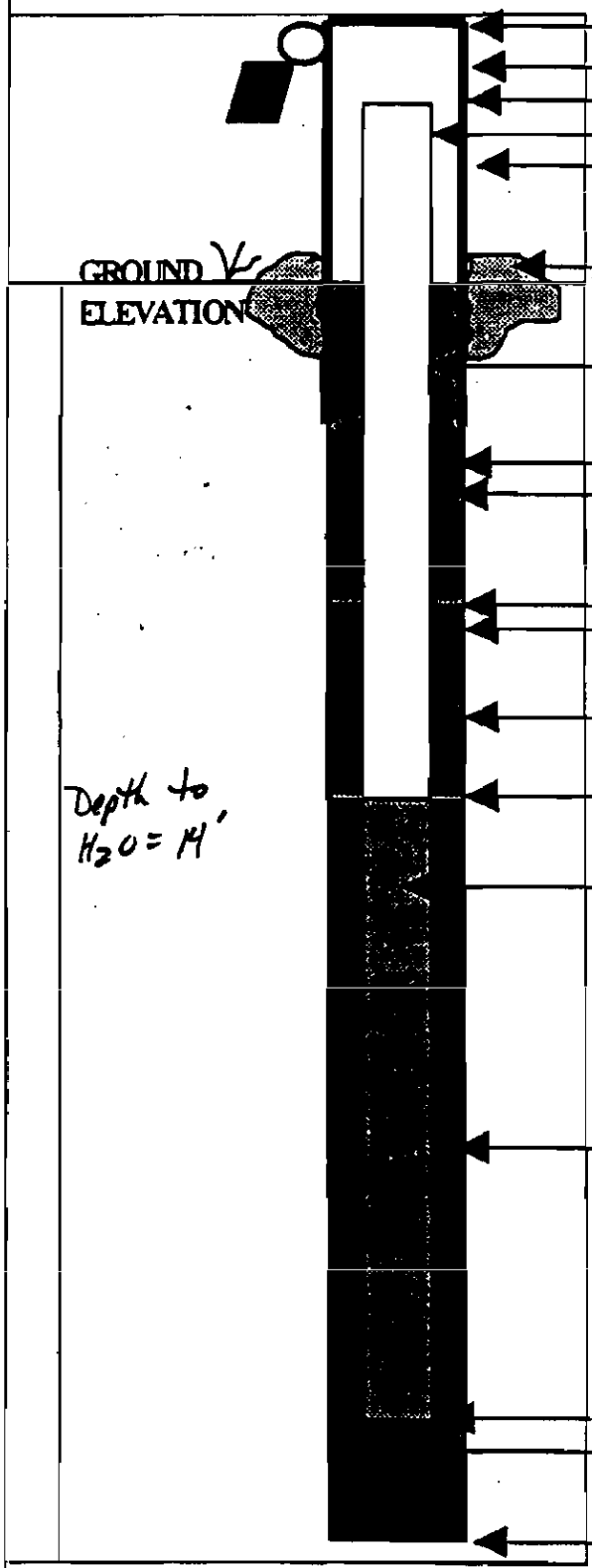
TYPE OF BACKFILL BELOW OBSERVATION WELL: 20/30 sand

ELEVATION / DEPTH OF HOLE: 16'6"

BORING NO.: CNC12-MW6

OVERBURDEN MONITORING WELL SHEET

PROJECT	CNC	LOCATION:	CNC12-MW03	DRILLER	Rod
PROJECT NO.	CNC12	BORING	CNC12-MW03	METHOD:	~~DPT~~
ELEVATION		DATE	6/18/99	DRILLING	HSA
FIELD GEOLOGIST	Marty Ray			DEVELOPMENT:	NA



ELEVATION OF TOP OF SURFACE CASING: Flush

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING:

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING:

TYPE OF SURFACE CASING: Steel Flush

TYPE OF SURFACE SEAL: concrete Pad 2'x2'x6"

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch 40 PVC

BOREHOLE DIAMETER:

TYPE OF SEAL: ~~30/65 choke sand~~ grout to 8" b/s

ELEVATION / DEPTH OF SEAL: 7'0

TYPE OS SEAL: 30/65 choke sand

DEPTH TOP OF SAND PACK: 9'0

ELEVATION / DEPTH TOP OF SCREEN: 10'0

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE X LENGTH: 10 slot

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20/30

ELEVATION / DEPTHBOTTOM OF SCREEN: 20'0'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 20'4"

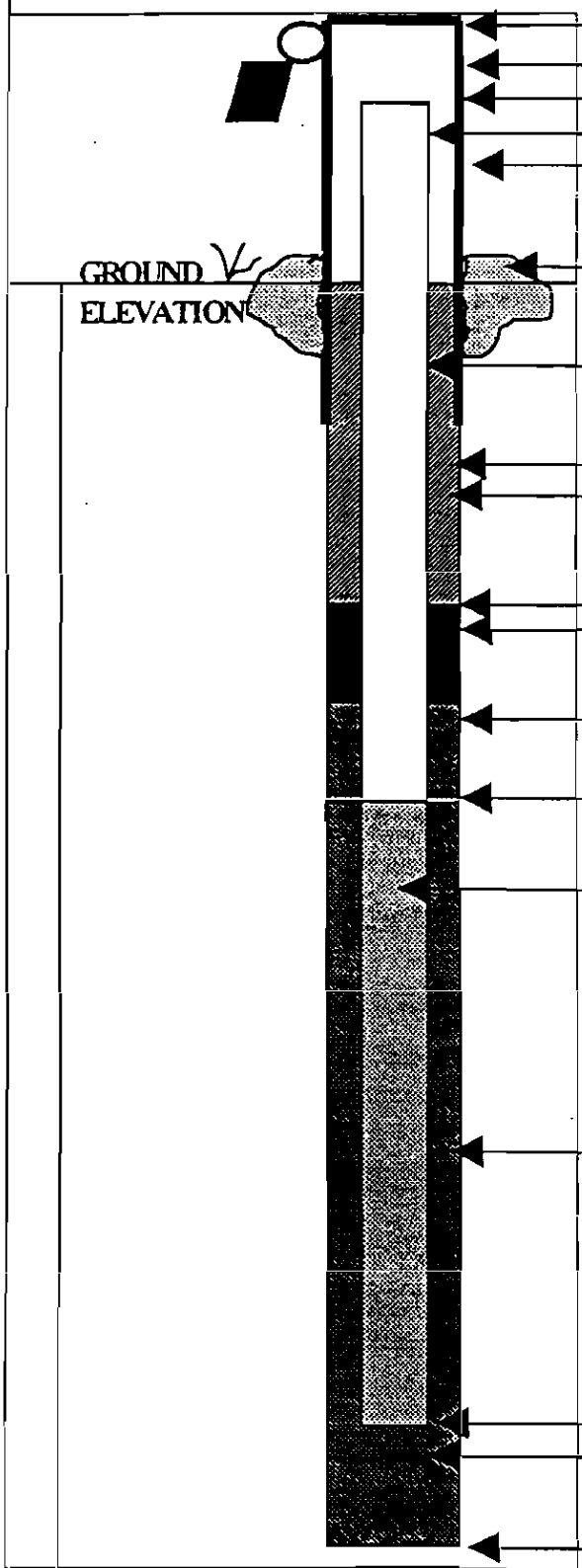
TYPE OF BACKFILL BELOW OBSERVATION WELL: 20/30 Sand

ELEVATION / DEPTH OF HOLE: 20'4"

BORING NO.: CNC12-MW04

OVERBURDEN MONITORING WELL SHEET

PROJECT	CNC	LOCATION:	CNC12-MW04	DRILLER	Rod
PROJECT NO.	CNC12	BORING	CNC12-MW04	METHOD:	~~DPT~~
ELEVATION		DATE	6/18/99	DRILLING	HSA
FIELD GEOLOGIST	Marty Ray			DEVELOPMENT: NA	



ELEVATION OF TOP OF SURFACE CASING: Flush

ELEVATION OF TOP OF RISER PIPE:

STICK -UP TOP OF SURFACE CASING:

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING:

TYPE OF SURFACE CASING: steel

TYPE OF SURFACE SEAL: concrete Pad 2'x2'x6"

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: sch 40 PVC

BOREHOLE DIAMETER:

TYPE OF SEAL: grout to 8" bls

ELEVATION / DEPTH OF SEAL: 4'

TYPE OS SEAL: 30/65 choke sand

DEPTH TOP OF SAND PACK: 6'

ELEVATION / DEPTH TOP OF SCREEN: 7'0"

TYPE OF SCREEN: sch 40 PVC

SLOT SIZE X LENGTH: 10 slot

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20/30 sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 17'0"

ELEVATION / DEPTH BOTTOM OF SAND PACK: 17'6"

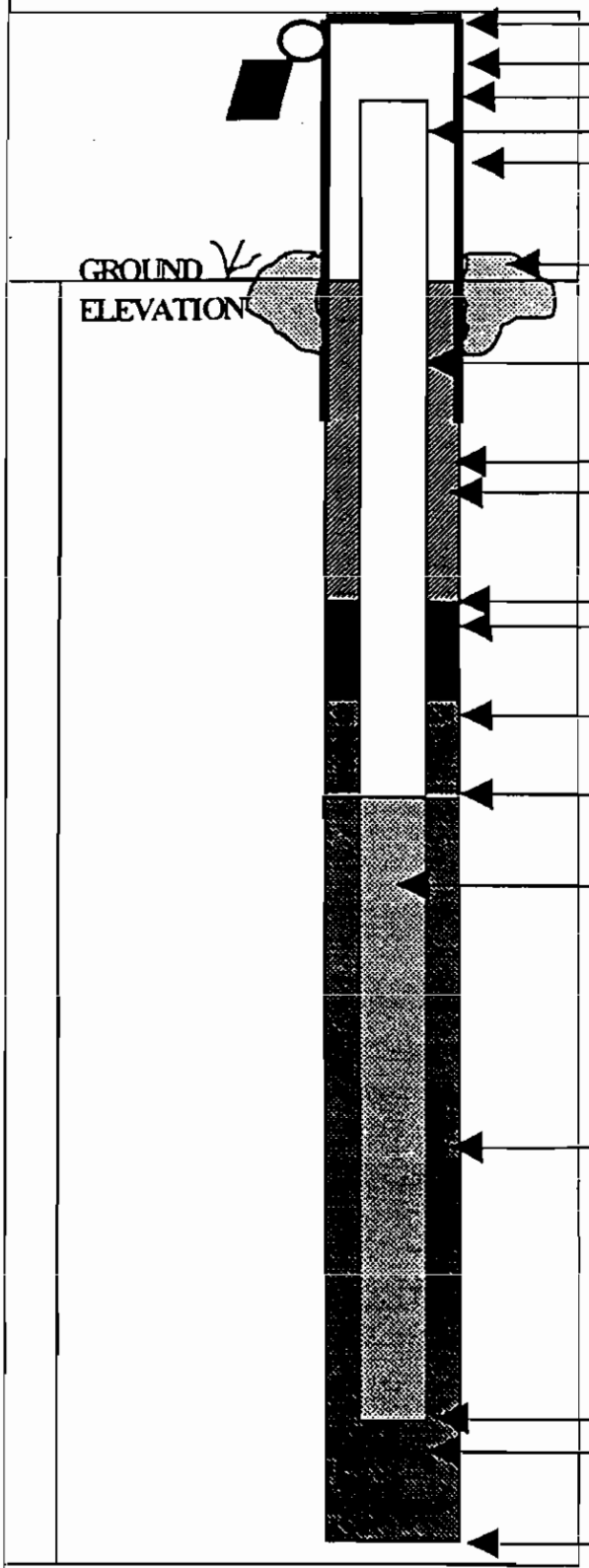
TYPE OF BACKFILL BELOW OBSERVATION WELL: 20/30 sand

ELEVATION / DEPTH OF HOLE: 17'6"

BORING NO.: CNC12-MW05

OVERBURDEN MONITORING WELL SHEET

PROJECT	CNC	LOCATION:	CNC12-MW05	DRILLER	Rod
PROJECT NO.	CNC12	BORING	CNC12-MW05	METHOD: ~~DPT~~	
ELEVATION		DATE	6/18/99	DRILLING	HSA
FIELD GEOLOGIST	Marty Ray			DEVELOPMENT: NA	



ELEVATION OF TOP OF SURFACE CASING: Flush

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING:

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: 8"

TYPE OF SURFACE CASING: Steel manhole

TYPE OF SURFACE SEAL: concrete pad 2'x2'x6"

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch 40 PVC

BOREHOLE DIAMETER:

TYPE OF SEAL: grout to 8" b/s

ELEVATION / DEPTH OF SEAL: 4'0

TYPE OS SEAL: 30/65 choke sand

DEPTH TOP OF SAND PACK: 6'0

ELEVATION / DEPTH TOP OF SCREEN: 7'0

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE X LENGTH: 10 slot

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20/30 sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 17'0

ELEVATION / DEPTH BOTTOM OF SAND PACK: 17'6"

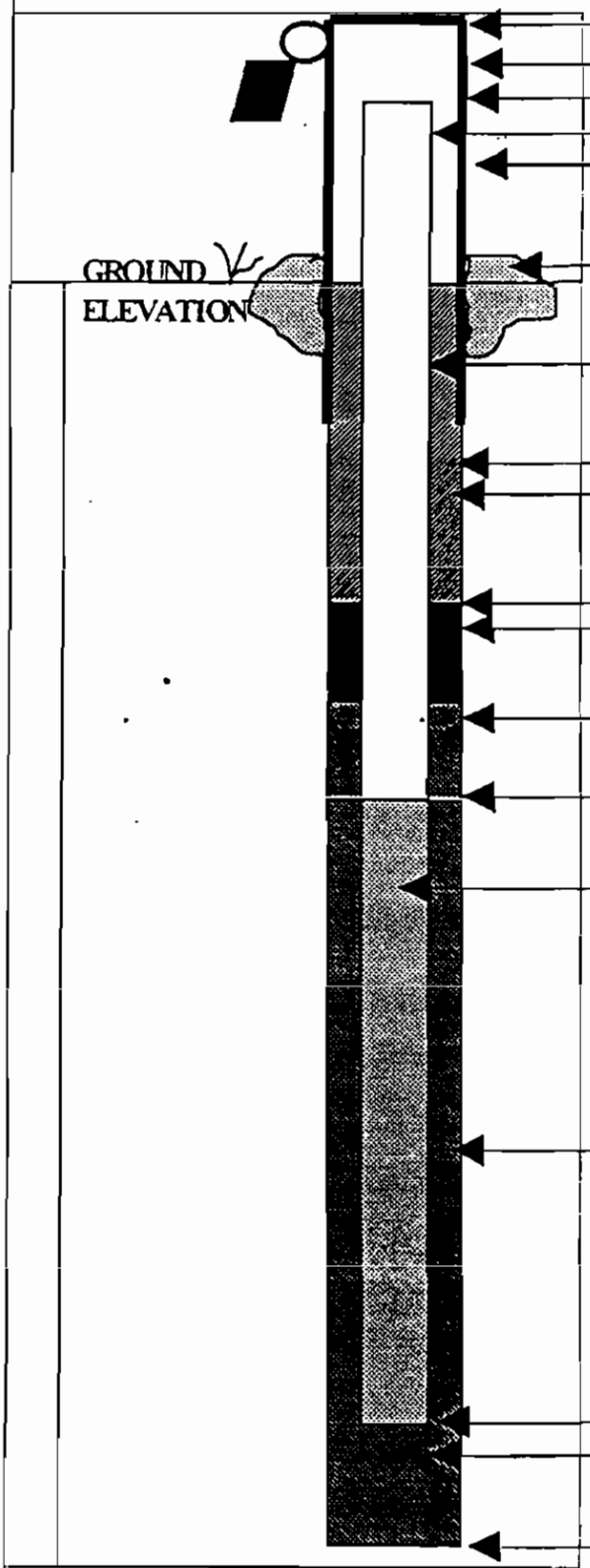
TYPE OF BACKFILL BELOW OBSERVATION WELL: 20/30 sand

ELEVATION / DEPTH OF HOLE: 17'6"

BORING NO.: CNC12-MW06

OVERBURDEN MONITORING WELL SHEET

PROJECT	CNC	LOCATION:	CNC12	DRILLER	Rod
PROJECT NO.	CNC12	BORING	CNC12-MW06	METHOD:	~~DPT~~
ELEVATION		DATE	6/18/99	DRILLING	HSA
FIELD GEOLOGIST	Marty Ray			DEVELOPMENT:	NA



ELEVATION OF TOP OF SURFACE CASING: Flush

ELEVATION OF TOP OF RISER PIPE:

STICK -UP TOP OF SURFACE CASING:

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: 8"

TYPE OF SURFACE CASING: steel man hole

TYPE OF SURFACE SEAL: concrete pad 2'x2'x6"

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch 40 PVC

BOREHOLE DIAMETER:

TYPE OF SEAL: grout to 8" bls

ELEVATION / DEPTH OF SEAL: 8'10"

TYPE OS SEAL: 30/65 choke sand

DEPTH TOP OF SAND PACK: 11'0"

ELEVATION / DEPTH TOP OF SCREEN: 12'10"

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE X LENGTH: 10 slot

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20/30 sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 22'0"

ELEVATION / DEPTH BOTTOM OF SAND PACK: 22'6"

TYPE OF BACKFILL BELOW OBSERVATION WELL: 20/30 sand

ELEVATION / DEPTH OF HOLE: 22'6"

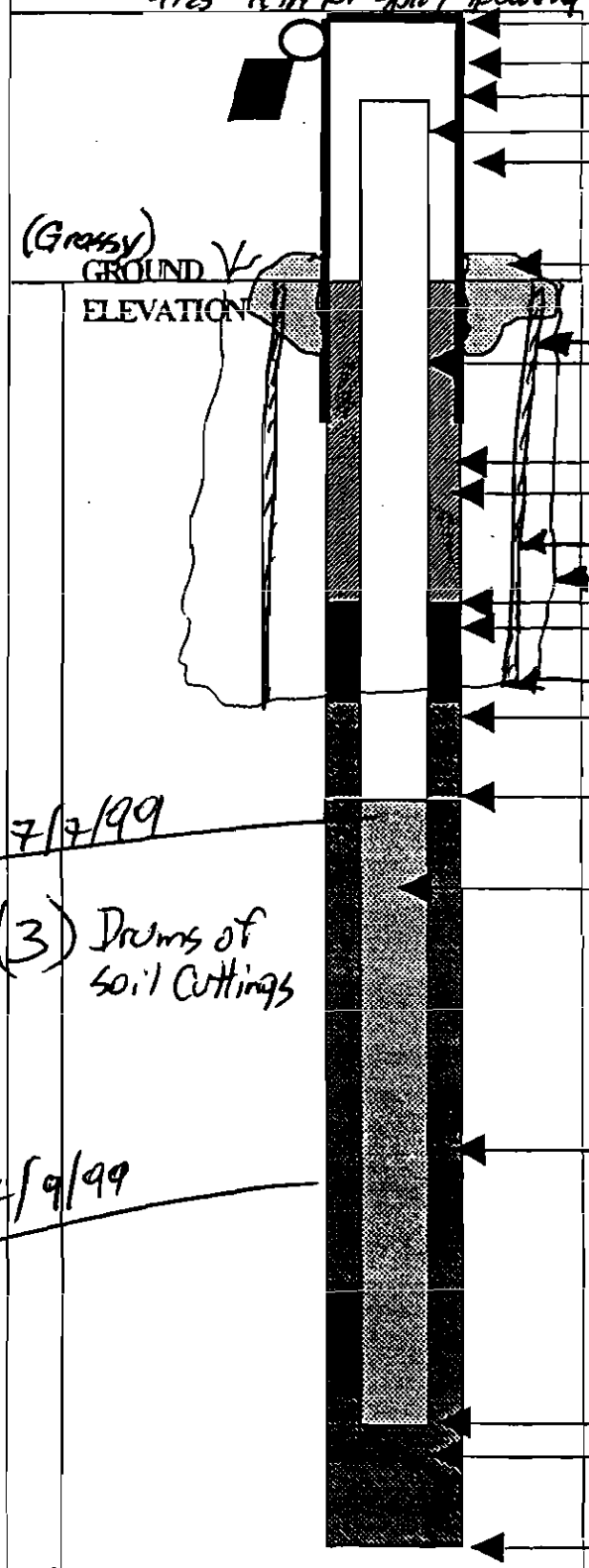
BORING NO.: CNC-MWC 12

OVERBURDEN MONITORING WELL SHEET

Quarters B

PROJECT CNC - Site 13 @ 12	LOCATION Site 12/Zone B	DRILLER Custom Drilling
PROJECT NO. 0141	BORING CNC 12 MW070	METHOD: HSA 8.25
ELEVATION	DATE 7/7/99	DRILLING Rod
FIELD GEOLOGIST Mark Darrington		DEVELOPMENT: NA

Method: 8.25" HSA for 6" Surface Case
4.25" HSA for Split Spooning



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) 2 ft x 2 ft x 6 in.
Surface Casing ID: 6 in.
RISER PIPE I.D.: 2-inch
TYPE OF RISER PIPE: PVC, Sch. 40, Flush Threaded (F.T.)
BOREHOLE DIAMETER: /
TYPE OF SEAL: Portland Cement Type I
Type of Surface Casing: PVC, Sch. 40, F.T.
Borehole D.a. 12.25 inch.
ELEVATION / DEPTH OF SEAL: 132
TYPE OS SEAL: "Choke Sand" (35/60) Very Fine Sand
Depth of Surface Casing 20.0'
DEPTH TOP OF SAND PACK: 34
ELEVATION / DEPTH TOP OF SCREEN: 136
TYPE OF SCREEN: PVC, Sch. 40, F.T.
SLOT SIZE X LENGTH: 0.010 in x 5 ft.
I.D. OF SCREEN: 2-inch
TYPE OF SAND PACK: 20/30 Fine Sand Standard sand to Qtz. sand.
ELEVATION / DEPTHBOTTOM OF SCREEN: 141
ELEVATION / DEPTH BOTTOM OF SAND PACK: 141
TYPE OF BACKFILL BELOW OBSERVATION WELL: (20/30) Qtz. sand
ELEVATION / DEPTH OF HOLE: 141

BORING LOG

PROJECT NAME: Site 12
PROJECT NUMBER: N0141
DRILLING COMPANY:
DRILLING RIG: Geoprobe

BORING NUMBER: ~~B01~~ CNC12B01
DATE: 5-25-99
GEOLOGIST:
DRILLER: B.L

	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**	
					1.0			Tan Silty f. Sand			0	0		0	
S-1 @ 1018								w/Roots.			0				
								Tan silty fine Sand		Rec 3.0'	0				
		4									0				
					5.0'			Tan & Gray Silty f. Sand			0				
											0	0		0	
S-2 @ 1022											0				
		8								Rec. 3.6'	0				
											0				
											0				
					11.0			Orange, Brown f. sandy			0				
S-3 @ 1030		12						clay Tr. of Silt.			0				
					13.0			Orange & Gray sandy		Rec. 3.5'	0				Soil
								clay Trace of Silt		Soil Sample 14-15	0				Sample Time 1
					15.0'			Tan f. Sand (Wet)		ID# 125FB0141415	0				
S-4 @ 1040		16			16.0'			Orange & Tan Sandy Clay			0				
										Set screen					Water
										from 15.0'-18.0'					Sample Time: 1
								W/L @ 15.8'							

* 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):

Remarks:

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

BORING LOG

PROJECT NAME: Site 12
PROJECT NUMBER: N0141
DRILLING COMPANY:
DRILLING RIG: Geoprobe

BORING NUMBER: ~~B02~~ CNC12B02
DATE: 5-25-99
GEOLOGIST:
DRILLER: BL

Sample No. and Type or RQD	Depth (FL) 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**
				1.0'			Topsoil				0	0	0
							Tan & Orange silty						
							fine sand Tr. clay						
S-1 @ 1133	4								Rec. 2.2'	0			
S-2 @ 1138	8								Rec. 3.0'	0	0	0	0
				11.0			Orange, Tan clayey						
S-3 @	12						f. sand.		Rec. 3.4	0	0	0	0
				14.0'			Orange & Gray sandy		Soil sample				
				15.0'			clay (Moist.)		14.0'-15.0'				
							Clay & Sand, Orange		ID# 125FB02Y1/5				
S-4 @	16						& Gray (Moist)		Rec. 2.6'	0	0	0	0
									Set Screen				
							W/L = 16.7'		@ 16-19				

Soil Sample Time 1150

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):

Remarks:

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

BORING LOG

PROJECT NAME: Site 12
PROJECT NUMBER: N0141
DRILLING COMPANY:
DRILLING RIG: Geoprobe

BORING NUMBER: B03 CNC12B03
DATE: 5-25-99
GEOLOGIST:
DRILLER: B. L.

	Sample No. and Type or RQD	Depth (FL) 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**
					0.6			Topsoil, Br. Silt & Sand				0		0
								Tan & gr. fine sand						
S-1 @ 1338								Tr. of silt		Rec. 3.0'	0	0	0	0
		4												
					5.5			Tan & Gray f. sand						
					6.5			Yellow to Tan f. sand						
								Tr. of silt (Moist)						
S-2 @ 1347		8								Rec. 3.6'	0	0	0	0
					11.0			Orange, Br. clayey						
		12			12.0			f. sand (Moist)						
								Orange & Gray sandy		Rec. 2.6'				
								clay		Sampled Soil				
					15			Tan fine sand (Wet)		ID 12SFB03M15				
S-4 @ 1400		16			16			Tan & Gray sand &		Rec. 2.7'	0	0	0	0
								clay (Very Moist)						
										Set Screen				
										16.0'-19.0'				
								W/L = 11.6'						
										sampled water				
										@ 14/4				
										ID 12GFB031619				

Time: 1400

* 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. #:

BORING LOG

PROJECT NAME: Site 12
PROJECT NUMBER: N0141
DRILLING COMPANY:
DRILLING RIG: Geoprobe

BORING NUMBER: GNC12B04
DATE: 5-25-99
GEOLOGIST:
DRILLER: BL

	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**
					0.6			Topsoil, Brown silt						
								& Sand w/ Roots						
								Tan f. sand tr. of						
S-1 @ 1454		4						silt.		Rec. 3.0'	0	0	0	0
S-2 @ 1456		8								Rec. 3.6'	0	0		0
					10.0			Moist.		soil sample from				
										11.0' – 12.0'				
S-3 @ 1500		12			11			Brown sand & c/a		Rec. 3.2	0	0	0	0
								(Moist)						
										Set screen				
										@ 12.0' – 15.0'				
								W/L = 11.3'						

Time @ 1500
ID# 12SFB041119

Water Sample ID# 12GFB04121

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):

Remarks:

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

BORING LOG

PROJECT NAME: site 12
PROJECT NUMBER: N0141
DRILLING COMPANY:
DRILLING RIG: Geoprobe

BORING NUMBER: CNC12B05
DATE: 5-25-96
GEOLOGIST:
DRILLER: B.L

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**
				1.0			Brown silty sand						
							w/Roots						
							Tan gray f. sand						
S-1 @ 1553	4						Tr. of silt.		Rec. 3.4'	0	0	0	0
S-2 @ 1557							Moist						
	8								Rec 3.4'				
									sample Soil	0	0	0	0
									10.0'-11.0'				
				11.0			Gray f. sand		Time 1607				
S-3 @ 1602	12						very moist		Rec. 3.2'				
							Red & Gray sandy			0	0	0	0
							clay (Moist)						
									Set Screen				
									from 12'-15'				
							W/L = 11.3'						

Sampled with @ 1615 ID# ~~12GFB12A~~ 12GFB05121

* 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):

Remarks:

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

BORING LOG

PROJECT NAME: Site 12
PROJECT NUMBER:
DRILLING COMPANY:
DRILLING RIG: Geoprobe

BORING NUMBER: SUS/12B06
DATE: 5-25-99
GEOLOGIST:
DRILLER: BL

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	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
				0.5			Topsoil Brown silt						
							& sand w/ Roots						
							Tan & Gray f. silty						
S-1 @ 1643	4						sand.		Rec 3.2'	0	0	0	0
							Moist						
S-2 @ 1646	8								Rec 2.5	0	0	0	0
				11.0			11.0' Very Moist						
S-3 @ 1657	12						Orange & Gray		Rec 2.8'				
							sandy clay						
									set well				
							W/L = 11.64'		Screen 2				
									10.0'-13.0'				

Soil Sample from 10.0-12.0 @ 1655 ID# 12SFB06101

Well Screen ID # 12GFB0512

When rock coring, enter rock brokeness.

** Include monitor reading in 8 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

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

BORING LOG

PROJECT NAME: Site 12
PROJECT NUMBER:
DRILLING COMPANY: Columbia
DRILLING RIG: Stratagraphe

BORING NUMBER: CNC 12 B07
DATE: 5/25/99
GEOLOGIST:
DRILLER:

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	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
					loose	tan	Sand, f. grnd, silty		sl. moist	0/0			
S-1 @ 1353		4	2.9'/4'										
										0/1			
			3.1'/4'										
S-2 @ 1355		8							12SFB070810				
			3.9'/4'						moist	0/2			
				9.2'	firm	yellow brn	Clay, sandy becomes more sandy @ base		sl moist				
S-3 @ 1404		12		~13'									
			3.9/4'			tan	Sand, f. grnd, sl clayey becoming more clayey		wet	0			
S-4 @ 1608		16			firm	dk gray to yellow brn	Clay, sandy, mottled		sl. moist	0			
							TD						

* 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):

Remarks:

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

BORING LOG

PROJECT NAME: Site 12
PROJECT NUMBER:
DRILLING COMPANY: Columbia
DRILLING RIG: Stratoprobe

BORING NUMBER: CNCB08
DATE: 5/26/99
GEOLOGIST: BDH
DRILLER: RB

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	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
				0.6'	loose	~~Brd~~ Dn ~~Brn~~	Silt w/ rootlets		sl. moist	0/0			0
S-1 @ 1445			4'/4'			~~to~~ ~~mottled~~ Dn	Sand, silty		sl. moist				
	4												
			4'/4'							0/0			
S-2 @ 1447													
	8												
			1.4'/4'						145FB080810	0/			
S-3 @ 1450													
	12												
			3.8'/4			~~Brn~~	Sand becoming stiff clayey	V.	moist	0/0			
S-4 @ 1455									Wet @ ~14'				
				15'									
	16				firm	blue gray ~~to~~ ~~yellow~~ Dn	Clay, silty, mottled		sl. moist to moist				
							TD 16'						

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):

Remarks:

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

BORING LOG

PROJECT NAME: Site 12
PROJECT NUMBER:
DRILLING COMPANY: Columbia
DRILLING RIG: Stratoprobe

BORING NUMBER: CNC12B09
DATE: 5/26/99
GEOLOGIST: BDH
DRILLER: RB

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	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
				1.1'	loose	med brn	Silt, w/ rootlets		dry to sl moist	0/0			0
S1 @ 1525			2.9/4										
						tan	Sand to silt, v.f.		dry to sl. moist	0			
	4												
			3.7/4'										
S2 @ 1529				6.5'		tan	Sand, silty, sl clayey		moist	0/1			
	8												
			3.9/4.0'										
S3 @ 1535									BSFB090911	0/1			0
	12			11.4'	firm	med brn	Clay, sandy		sl. moist	0			
			3.9/4	13.1'									
S4 @ 1540				14.0'		tan	Sand, f. grnd, sl. clayey		wet	0			
					~~firm~~				sl. moist	0/0			
	16				firm	med brn	Clay, silty becoming sandy, mottled						
						tan							
						yellow brn							
							TD 16'						

* 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):

Remarks:

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

BORING LOG

PROJECT NAME: Site 12
PROJECT NUMBER:
DRILLING COMPANY: Columbia
DRILLING RIG: Stratoprobe

BORING NUMBER: CNC12B10
DATE: 5/26/99
GEOLOGIST: BDH
DRILLER: RB

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	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
				0.4'	loose	med brn			dry to sl. moist	0			0
S-1 @ 1620	4		2.4'/4'		loose	tan	Sand, f. grnd, silty		sl. moist to moist				
S-2 @ 1622	8		3.2'/4'						moist				
			3.9'/4'	9.3'					125FB100910	0			
S-3 @ 1626	12			10.4'	firm	rdish brn to mottled grnish gray	clay, silty, sandy		sl moist to moist				
				13'		tan	Sand, f. grnd, clayey becoming more clayey		wet	0			
				14'		tan	Sand, silty		moist				
S-4 @ 1630	16				firm	rdish brn to mottled dkgray	clay, sandy,		moist	0			
							TD 16'						

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):

Remarks:

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

BORING LOG

PROJECT NAME: CNC
PROJECT NUMBER:
DRILLING COMPANY: Colum Sia
DRILLING RIG: Stratoprobe
BORING NUMBER: 12B11
DATE: 6/8/99
GEOLOGIST:
DRILLER: B. 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	Soil Density/ Consistancy or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
		1					Dk Gray	Sandy Overburden		Dry				
		2					Tan	Silty Fine Sand		↓				
		3					↓	↓		Moist				
1600		4		3.8/4			↓	↓		↓				
		5					↓	↓		↓				
		6					↓	↓		↓				
		7					↓	↓		↓				
1606		8		3.6/4			↓	↓		↓				
		9					↓	↓		↓				
		10					↓	↓		↓				
	X	11					↓	↓		↓				
1611		12		4.5/4			Red	Silty Clay - Stiff		↓				
		13					Brn	Silty Sand		Saturated				
		14					Red	Silty Clay		↓				
		15					Gray	Silty Sand		↓				
1616		16					Dkgrn Brn	Silty Clay		↓				

* 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):

Remarks:

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

BORING LOG

PROJECT NAME: CNC
PROJECT NUMBER:
DRILLING COMPANY: Columbia
DRILLING RIG: Stratoprobe
BORING NUMBER: 12B12
DATE: 6/8/99
GEOLOGIST:
DRILLER: K 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	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
		1					Brn	Sandy Top Soil		Dry				
		2					Tan	Silty Sand		Dry				
		3								Moist				
		4		3.75/4										
1632		5		3.										
		6					Reddish Brn	Silty Clay						
		7												
1644	X	8		3.7/4			Tan	Silty Sand						
		9					Red Brn	Silty Clay						
		10												
		11					Brn	Clayey Silty Sand		Saturated				
1654		12		4/4			Red Brn	Silty Clay		moist				
		13								Saturated				
		14					Tan	Silty Sand						
		15												
1652		16		4/4										
		17					Br.	Fine Sand						
		18					Grey	Silty Sand						
		19												
1711		20		2.5/4										
		21					Red	Clayey Sand						
		22					Reddish Brown	Sandy Clayey Sand						
		23					Gray	Silty Med. Sand						
1779		24		4/4										
		25					Tan	Silty Sand						

* 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):

Converted to Well: Yes Temp/ Piezometer No Well I.D. #:

BORING LOG

PROJECT NAME: CWC
PROJECT NUMBER:
DRILLING COMPANY: Columbia
DRILLING RIG: Stratoprobe

BORING NUMBER: 12B12
DATE: 6/8/99
GEOLOGIST:
DRILLER: P. 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	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	PID/FID Reading (ppm) Sample	Sampler B.Z.	Borehole**	Drilller B.Z.**
	26					Brn.	Silty Sand		Saturated				
	27					↓	↓		↓				
	28		4/4			↓	↓		↓				
17.8	29					↓	↓		↓				
	30		1/2										

* 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):

Remarks:

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

BORING LOG

PROJECT NAME: CNC Site 12/Orks B
PROJECT NUMBER: 0141
DRILLING COMPANY: Custom Drilling Services
DRILLING RIG: Mobile B-57

BORING NUMBER: CNC12-MW07D
DATE: 7/7/99
GEOLOGIST: Mark Dorrington
DRILLER: Rod Fuller

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			USCS*	Remarks	PID Reading (ppm)			
0	0						No Split Spoon (SS)						
							soil samples collected						
17	17			17'						0	0	0	0
1	17	3/3	12"		Red/Orange		sandy clay, plastic,	CL	No odors/or				
	17.5	6/7	24"				cohesive, moist.		discolor				
	18.0			18.5	Tan/Lt. Brown		slightly silty to sand,	SD	No odors/or	0			
	18.5			19.0			VF-F sand, well sorted		discolor				
2	19.0	2/5	18"				saturated, no odors.						
	19.5	6/4		19.5	Tan/Br.		M-C grain sand, poor	SD	No odor/or	0			0
	20						sorting, saturated		discolor				
				21	Tan/Br		Sand, VF-F, well sort, sat.	SD	No odor/discolor	0			0
3	21	3/3	24/24		Tan/Br		Sand, VFF, well sort,	SD	No odor/discolor	0			0
		7/10					saturated.						
	23			*	4.25		HSA Boring Term. @		23 ft.				
4	23												
				*	To		set 6" PVC Surface casing		to				
					20		ft bls. using 8.25-in HSA.						
5	25												
6	27												

Photovac microFIC

Background = 0

* When rock coring, enter rock brokenness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area Background (ppm): 0.0

Converted to Well: Yes ✓ No ____ Well I.D. #: CNC12-MW07D

BORING LOG

PROJECT NAME: CNC
PROJECT NUMBER: 0141
DRILLING COMPANY: Custom Drilling Services
DRILLING RIG: Mobile B-57
BORING NUMBER: CNC12-MW07D
DATE: 7/9/99
GEOLOGIST: Mark Darrington
DRILLER: Rod Fuller

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): Background	Breathing Zone	Borehole	Collar BZ
0	17-23'			→	see Boring Log on 7/7/99 by M. Darrington					—	—	—	—
(1)	21	2/2	10/24		Orange/tan		Sand - VF - F grain, well sorted, Qtz, friable, saturated, no shells or fossils	SD	No petro. odors or discolor.	4.3	0	0	29
	↓	9/10											
	23												
(2)	23	6/10	12/24		Orange/tan		Sand - (as above)	SD	(as above)	4.2	0	0	29
	↓	11/12											
	25												
(3)	25	6/7	12/24		Orange/tan		Sand - (as above)	SD	(as above)	3.7	0	0	29
	↓	8/13											
	27												
(4)	27	4/7	0/24	(MW) 7/9/99	~~No recovery / No sample~~				(MW) 7/9/99				
	↓	8/9	10/24		Orange/tan		Sand - (as above)	SD	(as above)	3.5	0	0	28
	29												
(5)	29	9/10	12/24		Orange/tan		Sand - (as above)	SD	(as above)	5.4	—	—	29
	↓	12/20											
	31												
(6)	31-33	6/9/12/13	12/24		Orange/tan		Sand - (as above)	SD	(as above)	4.4	—	—	27
(7)	33-35	6/7/9/10	12/24		Tan		Sand - (as above)	SD	(as above)	3.2	—	—	27
	(R)		NO	sample	collected from 35'-39'								
(8)	39-41	4/5/8/10	12/24		Tan/wet		sand - (as above) Clay/shell hash bottom 2'	SD CL	(as above) slightly cohesive	3.1	—	—	27

* When rock coring, enter rock brokeness. EOB @ 41'

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

Drilling Area (Diesel motor on R

Remarks: @ 27 ft. bls drilling mud being added due to borehole collapse. (25 lbs to 50 total)

Background (ppm): 2.9

Converted to Well: Yes ✓ No _____ Well I.D. #: CNC12-MW07D

APPENDIX B

LABORATORY DATA

Katahdin
ANALYTICAL SERVICES

August 31, 1999

Mr. Paul Calligan
Tetra Tech Nus
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

RE: Katahdin Lab Number: WP3417
Project ID: CNC Charleston
Project Manager: Ms. Andrea J.Colby
Sample Receipt Date(s): 7/28/99

Dear Mr. Calligan:

Please find enclosed the following information:

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

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

Mary S. Morrill
Authorized Signature

8·31·99
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 July 28, 1999 and were logged in under Katahdin Analytical Services work order number WP3417 for a hardcopy due date of August 27, 1999.

KATAHDIN Sample No.	TTNUS Sample Identification
WP3417-1	31GLM0201
WP3417-2	29GLM0301
WP3417-3	31GLM0101D
WP3417-4	30GLM1201
WP3417-5	12GLM0401
WP3417-6	29TL00901
WP3417-7	31GLM0101
WP3417-8	29GLM0701

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

Six aqueous samples were received by the Katahdin Analytical Services, Inc. GC/MS laboratory on July 28, 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 work order were performed on the 5972-S and 5970-Q instruments. 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 of the samples in this work order.

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%.

In the calibration curves analyzed in this SDG, the average %RSD for all analytes was 13.7% and 15.0%, making the curves 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

Six aqueous samples were received by Katahdin Analytical Services laboratory on July 28, 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 29, 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 WP3417-8.

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.

Initial analysis of sample WP3417-3 yielded a low recovery of the surrogate 2-fluorobiphenyl. Reanalysis yielded two low base-neutral surrogate recoveries. Both sets of data for this sample are included in the data package.

Initial analysis of sample WP3417-8 yielded internal standard area recovery deviations. Reanalysis yielded similar results, confirming matrix interference. Both sets of data are included in this data package.

Analysis of the QC sample WP3417-8MS yielded a low recovery of the surrogate terphenyl-d14.

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 WP3417 analyses for Nitrate (E300) and Sulfate (E300) were performed according to the U.S. EPA "Methods for the Determination of Inorganic Substances in Environmental Samples", EPA 600/R-93/100, August 1993. All samples were run within laboratory hold time. The wet chemistry staff noted no protocol deviations.

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

LAB (WORK ORDER) #: WP 3417

PAGE: 1 OF 2

COOLER: 1 OF 2

COC#: —
SDG#: —
DATE / TIME RECEIVED: 7-28-99 0905
DELIVERED BY: FedEx
RECEIVED BY: Sw
LIMS ENTRY BY: SAW
LIMS REVIEW BY / PM: AJC

CLIENT: Tetra Tech

PROJECT: CNC

	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?	☑	☐	☐	COC not signed by sampler	
4. CHAIN OF CUSTODY MATCHES SAMPLES?	☐	☑	☐		
5. TEMPERATURE BLANKS PRESENT?	☑	☐	☐	TEMP BLANK TEMP (°C)= 1.2	AJC notified Paul Calvin by fax 7/28/99
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]:

Sample I.D.s:
- 31GLMØ1Ø1
- 29GLMØ7Ø1
- 29GLMØ7Ø1M (MSMSD

} VOA VIALS NOT RECEIVED

→ CLIENT NOTIFIED PROJ. MNGR. ~ LOG-IN NOTIFIED PRJ. MNGR UPON RECEIPT.

(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.

0000037

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

LAB (WORK ORDER) # WP3417

PAGE: 2 OF 2

COOLER: 2 OF 2

CLIENT: TetraTech

PROJECT: CNC

COC# —
SDG# —
DATE / TIME RECEIVED: 7.28.99 0905
DELIVERED BY: FedEx
RECEIVED BY: Sam
LIMS ENTRY BY: SAW
LIMS REVIEW BY / PM: ASC

	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)= 0.8	ASC notified Vonl Collig by fax 7/28/99
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 [illegible] (and additional sheets if necessary) to document samples that are received bro[illegible] compromised, C-O-C discrepancies, radiation checks, residual chlorine check, re[illegible] of pH check if i[illegible] ed. If samples required pH adjustment, record volume and type of preservative ad[illegible]

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

Page ____ of ____

Client: Tetra Tech NUS Inc
Contact:
Phone #: (843)814-9080
Fax #: ( )
Address: NH 21 Ave H
City: N. Charleston
State: S.C.
Zip Code: 29405
Purchase Order #:
Proj. Name / No.:
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign):
Copies To:

LAB USE ONLY
WORK ORDER #: WP 3417 - *
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.	BTEX, MTBE EDB, Naph (Filt. ☐Y☐N)	Dissolved Methane (Filt. ☐Y☐N)	PAH (Filt. ☐Y☐N)	Anions (Nitrate, Sulfate) (Filt. ☐Y☐N)	(Filt. ☐Y☐N)	(Filt. ☐Y☐N)	(Filt. ☐Y☐N)	(Filt. ☐Y☐N)	(Filt. ☐Y☐N)	(Filt. ☐Y☐N)
·	31GLMØ1Ø1	7-27-99/1055	GW	9	3	3	2	1						
	31GLMØ2Ø1	/1050		9	3	3	2	1						
	31GLMØ1Ø1D	/1055		5	3		2							
	29GLMØ3Ø1	/1010		9	3	3	2	1						
	9GLMØ7Ø1	/1245		5	3		2							
-	29GLMØ7Ø1M	/1245		5	3		2			← MS/MSD				
	22GLMØ4Ø1	7/24/99/1605		3	3									
	3ØGLM12Ø1	7/27/99/1721		5	3		2							
	29TLØØ9Ø1	7/27/99/0720		3	3									
		/												
		/												
		/												
		/												
		/												
		/												
		/												

COMMENTS
* Sample #29GLMØ7Ø1M is an MS/MSD

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[signature]	7/29/99	813402904543		7-28-990905	Shelly Wilkins
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

ORDER NO WP-3417

Project Manager: Andrea J. Colby
ORDER DATE: 07/28/99
PHONE: 850/385-9[illegible]
FAX: 850/385-9[illegible]
DUE: 27 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 27 AUG

ITEM	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
1	WP3417-1	31GLM0201	27 JUL 1050	28 JUL	AQ
	WP3417-2	29GLM0301	27 JUL 1010		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	2	75.00	150.00
GC Subcontract		2	95.00	190.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	2	125.00	250.00
Nitrogen, Nitrate (as N)	E300	2	30.00	60.00
Sulfate (as SO4)	E300	2	0.00	0.00
TOTALS		2	325.00	650.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MAT
2	WP3417-3	31GLM0101D	27 JUL 1055	28 JUL	AQ
	WP3417-4	30GLM1201	27 JUL 1721		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	2	75.00	150.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	2	125.00	250.00
TOTALS		2	200.00	400.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
3	WP3417-5	12GLM0401	24 JUL 1605	28 JUL	AQ
	WP3417-6	29TL00901	27 JUL 0730		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	2	75.00	150.00

LABORATORY ORDER CONTINUED ON PAGE 2

[illegible]

ORDER NO WP-3417

Project Manager: Andrea J. Colby
ORDER DATE: 07/28/99
PHONE: 850/385-9899
FAX: 850/385-9860
DUE: 27 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 27 AUG

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
4	WP3417-7	31GLM0101	27 JUL 1055	28 JUL	AQ

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
GC Subcontract		1	95.00	95.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	1	125.00	125.00
Nitrogen, Nitrate (as N)	E300	1	30.00	30.00
Sulfate (as SO4)	E300	1	0.00	0.00
TOTALS		1	250.00	250.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
5	WP3417-8	29GLM0701	27 JUL 1245	28 JUL	AQ

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Polynuclear Aromatic Hydrocarbons	EPA 8270	1	125.00	125.00

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

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

INVOICE: With Report

TOTAL ORDER AMOUNT $1,575.00
This is NOT an Invoice

/BKR
07-28Please contact KATAHDIN ANALYTICAL SERVICES promptly if you have any questi

9009041

KATAHDIN ANALYTICAL SERVICES

Summary of Report Notes

Report Note	Note Text
#	'#' flag denotes surrogate compound recovery is out of criteria.
O-13	Internal standard area(s) are out of criteria. Reanalysis confirmedmatrix interference.

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: WP3417-5
SDG: WP3417
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 8/3/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0401	AQ	7/24/99	7/28/99	8/3/99	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	114	%	1.0		
1,2-DICHLOROETHANE-D4	112	%	1.0		
TOLUENE-D8	113	%	1.0		
³-BROMOFLUOROBENZENE	97	%	1.0		

eport Notes:

4A

VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKS02B

Lab Name: Katahdin Analytical Services SDG No.: WP3417

Lab File ID: S5790 Lab Sample ID: VBLKS02B

Date Analyzed: 08/02/99 Time Analyzed: 23:51

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
LCSS02B	LCSS02B	S5788	8/2/99	10:36:00 PM
12GLM0401	WP3417-5	S5791	8/3/99	12:29:00 AM
29TL00901	WP3417-6	S5792	8/3/99	1:06:00 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: VBLKS02B
SDG: WP3417
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 8/2/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKS02B	AQ	-	-	8/2/99	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	111	%	1.0		
1,2-DICHLOROETHANE-D4	112	%	1.0		
TOLUENE-D8	111	%	1.0		
BROMOFLUOROBENZENE	92	%	1.0		

Report Notes:

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: S5788 **Sample ID: LCSS02B** **Date Run: 8/2/99**

Analyst: KMC **Time Injected 10:36:00 PM** **Matrix: AQ**

Compound Name	Spike Amt (ug/L)	Result (ug/L)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	49.9	100	60-140
BENZENE	50	53.1	106	60-140
ETHYLBENZENE	50	64.8	130	60-140
MTBE	50	53.2	106	60-140
NAPHTHALENE	50	61.4	123	60-140
TOLUENE	50	56.1	112	60-140
TOTAL XYLENES	150	196	131	60-140

*** Out of Limits** *1*

Katahdin
ANALYTICAL SERVICES

August 27, 1999

Mr. Paul Calligan
Tetra Tech Nus
1401 Oven Park Dr.
Suite 102
Tallahassee, FL 32308

RE: Katahdin Lab Number: WP3395
Project ID: CNC Charleston
Project Manager: Ms. Andrea J.Colby
Sample Receipt Date(s): 7/27/99

Dear Mr. Calligan:

Please find enclosed the following information:

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

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

08/27/99
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

Katahdin
ANALYTICAL SERVICES

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
CASE CNC CHARLESTON

Sample Receipt

The following samples were received on July 27, 1999 and were logged in under Katahdin Analytical Services work order number WP3395 for a hardcopy due date of August 26, 1999.

KATAHDIN Sample No.	TTNUS Sample Identification
WP3395-1	12TL00801
WP3395-2	12GLM0401
WP3395-3	12GLM0401D
WP3395-4	12GLM0501
WP3395-5	12GLM0301
WP3395-6	12GLM0701
WP3395-7	13GLM0201
WP3395-8	13GLM0201D
WP3395-9	13GLM0401
WP3395-10	29GLM0201
WP3395-11	29GLM0401
WP3395-12	29GLM0401D
WP3395-13	29GLM0501
WP3395-14	ZBR00101
WP3395-15	12GLM0101
WP3395-16	12GLM0201
WP3395-17	12GLM0601

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 Organics Analysis

Seventeen aqueous samples were received by the Katahdin Analytical Services, Inc. GC/MS laboratory on July 27, 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 and 5973-U instruments. 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 of the samples 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%.

In the calibration curves analyzed in this SDG, the average %RSD for all analytes was 10.4% and 15.0%, making the curves 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 Organics Extraction and Analysis

Sixteen aqueous samples were received by Katahdin Analytical Services laboratory on July 27, 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 28, 1999. A laboratory control spike/laboratory control spike duplicate pair, 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.

Wet Chemistry Analysis

Samples for work order WP3395 were analyzed for nitrate and sulfate in accordance with "Methods for Chemical Analysis of Water and Wastes", EPA 600/4-79-020, 1979, Revised 1983. No deviations were noted by the Wet Chemistry group.

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

LAB (WORK ORDER) # WP 3395

PAGE: 1 OF 4

COOLER: 1 OF 4

COC# —
SDG# —
DATE / TIME RECEIVED: 7-27-99 0850
DELIVERED BY: FedEx
RECEIVED BY: Sa
LIMS ENTRY BY: Sa
LIMS REVIEW BY / PM: AJC

CLIENT: Tetra Tech

PROJECT: CNC

	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?	☐	☑ *	☐	NO VOAs for 12GLM0401	AJC contacted Paul Callighan. was decided that since sample not a field dup - vials can be shared between 2 samples
5. TEMPERATURE BLANKS PRESENT?	☑	☐	☐	TEMP BLANK TEMP (°C)= 1.9	
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]: no VOAs for 12GLM0401
1 PAH bottle for each 13GLM0301, 13GLM0401, 29GLM0501 arrived broken (extra volume avail.)

[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.

000055

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

LAB (WORK ORDER) #: WP 3395

PAGE: 2 OF 4

COOLER: 2 OF 4

CLIENT: Tetra Tech

PROJECT: CNC

COC#: —
SDG#: —
DATE / TIME RECEIVED: 7-27-99 0850
DELIVERED BY: FedEx
RECEIVED BY: San
LIMS ENTRY BY: San
LIMS REVIEW BY / PM: AJC

	YES	NO	EXCEPTIONS	COMMENTS	RESOLUTION
1. CUSTODY SEALS PRESENT / INTACT?	☑	☐	☐		
2. CHAIN OF CUSTODY PRESENT IN THIS COOLER?	☑ San	☑	☐		
3. CHAIN OF CUSTODY SIGNED BY CLIENT?	☑	☐	☐		
4. CHAIN OF CUSTODY MATCHES SAMPLES?	☑	☐	☐		
5. TEMPERATURE BLANKS PRESENT?	☐	☑	☐	TEMP BLANK TEMP (°C)=	
6. SAMPLES RECEIVED AT 4°C +/- 2? ICE / ICE PACKS PRESENT (Y) or N?	☑	☐	☐	COOLER TEMP (°C)= 5.5 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 s[illegible] and additional sheets if necessary) to document samples that are received broke[illegible] ompromised, C-O-C discrepancies, radiation checks, residual chlorine check, resu[illegible] of pH check if req[illegible]d. If samples required pH adjustment, record volume and type of preservative added.

0000056

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

LAB (WORK ORDER) #: WP3395

PAGE: 3 OF 4

COOLER: 3 OF 4

COC#: —
SDG#: —
DATE / TIME RECEIVED: 7-27-99 0850
DELIVERED BY: Fed Ex
RECEIVED BY: Sam
LIMS ENTRY BY: Sam
LIMS REVIEW BY / PM: AC

CLIENT: Tetra Tech

PROJECT: CNC

	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)= 3.0	
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

0000057

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

LAB (WORK ORDER) # WP3395

PAGE: 4 OF 4

COOLER: 4 OF 4

CLIENT: Tetra Tech

PROJECT: CNC

COC# —
SDG# —
DATE / TIME RECEIVED: 7.27.99 0850
DELIVERED BY: Fed Ex
RECEIVED BY: Sam
LIMS ENTRY BY: Sam
LIMS REVIEW BY / PM: AOC

	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)= 2.7	
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 sp[illegible]nd additional sheets if necessary) to document samples that are received broken [illegible]ompromised, 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.

0000058

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

Page ____ of ____

Client: Tetra Tech NUS Inc.
Contact:
Phone #: (843) 554-4925
Fax #: ( )
Address: NH-21 Ave H
City: N. Charleston
State: S.C.
Zip Code: 29405
Purchase Order #:
Proj. Name / No.:
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): James R. Hill / James R. Hill / Jeff Alexander
Copies To:

LAB USE ONLY
WORK ORDER #: WP3395
KATAHDIN PROJECT MANAGER:

REMARKS:

SHIPPING INFO: ☒ FED EX ☐ UPS ☐ CLIENT
AIRBILL NO: 8134029045 54
TEMP °C: ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE / PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	BTEX, Naph, MTBE, EDB (Filt. ☐Y☐N)	PAH (Filt. ☐Y☐N)	Dissolved Methane (Filt. ☐Y☐N)	Anions (NO3, SO4) (Filt. ☐Y☐N)	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N
	12TL0081	7/24/99 0730	GW	7	3	2								
	12GLM041	/1005		5	3	2								
	12GLM041D	/1005		5	3	2								
	12GLM051	/1008		5	3	2								
	12GLM031	/1014		5	3	2								
	12GLM071	/1223		5	3	2								
	13GLM021	/1521		5	3	2								
	13GLM021D	/1521		5	3	2								
	13GLM041	/1510		5	3	2								
	12GLM011	7/25/99 /1205		9	3	2	3	1						
	12GLM021	/1210		9	3	2	3	1						
	12GLM061	/1215		9	3	2	3	1						
	29GLM021	7/26/99 /1105		5	3	2								
	29GLM041	/1125		5	3	2								
	29GLM041D	/1125		5	3	2								
	29GLM051	/1130		5	3	2								
	ZBRL0011	" 1450		5	3	2								

COMMENTS: RINSATE

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[signature]	7/26/99 1600	8134029045 54		7-27-99 0850	Shelby Wilburn
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

ORDER NO WP-3395

Project Manager: Andrea J. Colby
ORDER DATE: 07/27/99
PHONE: 850/385-9[illegible]
FAX: 850/385-9[illegible]
DUE: 26 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: J. HILL, J. ALEXANDER DELIVERED BY: FEDEX DISPOSE: AFTER 26 AUG

ITEM	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
1	WP3395-1	12TL00801	24 JUL 0730	27 JUL	AQ

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

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
2	WP3395-2	12GLM0401	24 JUL 1005	27 JUL	AQ
	WP3395-3	12GLM0401D	24 JUL 1005		
	WP3395-4	12GLM0501	24 JUL 1008		
	WP3395-5	12GLM0301	24 JUL 1014		
	WP3395-6	12GLM0701	24 JUL 1223		
	WP3395-7	13GLM0201	24 JUL 1521		
	WP3395-8	13GLM0201D	24 JUL 1521		
	WP3395-9	13GLM0401	24 JUL 1510		
	WP3395-10	29GLM0201	26 JUL 1105		
	WP3395-11	29GLM0401	26 JUL 1125		
	WP3395-12	29GLM0401D	26 JUL 1125		
	WP3395-13	29GLM0501	26 JUL 1130		
	WP3395-14	ZBRL00101	26 JUL 1450		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	13	75.00	975.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	13	125.00	1625.00
TOTALS		13	200.00	2600.00

LABORATORY ORDER CONTINUED ON PAGE 2

ORDER NO WP-3395

Project Manager: Andrea J. Colby
ORDER DATE: 07/27/99
PHONE: 850/385-9899
FAX: 850/385-9860
DUE: 26 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: J. HILL, J. ALEXANDER DELIVERED BY: FEDEX DISPOSE: AFTER 26 AUG

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
3	WP3395-15	12GLM0101	25 JUL 1205	27 JUL	AQ
	WP3395-16	12GLM0201	25 JUL 1210		
	WP3395-17	12GLM0601	25 JUL 1215		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	3	75.00	225.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	3	125.00	375.00
Nitrogen, Nitrate (as N)	E300	3	30.00	90.00
Sulfate (as SO4)	E300	3	0.00	0.00
GC Subcontract		3	95.00	285.00
TOTALS		3	325.00	975.00

ER 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

INVOICE: With Report

TOTAL ORDER AMOUNT $3,650.00
This is NOT an Invoice

A/BKR
07-27Please contact KATAHDIN ANALYTICAL SERVICES promptly if you have any questi

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: WP3395-2
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/5/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0401	AQ	7/24/99	7/27/99	7/28/99	DS	EPA 3510	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	57	%	1.0		
2-FLUOROBIPHENYL	55	%	1.0		
TERPHENYL-D14	68	%	1.0		

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: WP3395-2
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0401	AQ	7/24/99	7/27/99	7/31/99	JSS	5030	JSS

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	119	%	1.0		
1,2-DICHLOROETHANE-D4	117	%	1.0		
TOLUENE-D8	116	%	1.0		
P-BROMOFLUOROBENZENE	101	%	1.0		

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: WP3395-3
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/5/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0401D	AQ	7/24/99	7/27/99	7/28/99	DS	EPA 3510	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	52	%	1.0		
2-FLUOROBIPHENYL	50	%	1.0		
TERPHENYL-D14	74	%	1.0		

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: WP3395-3
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0401D	AQ	7/24/99	7/27/99	7/31/99	JSS	5030	JSS

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	118	%	1.0		
1,2-DICHLOROETHANE-D4	118	%	1.0		
TOLUENE-D8	116	%	1.0		
BROMOFLUOROBENZENE	100	%	1.0		

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: WP3395-4
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/5/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0501	AQ	7/24/99	7/27/99	7/28/99	DS	EPA 3510	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<10	ug/L	1.1	10	10
2-METHYLNAPHTHALENE	<10	ug/L	1.1	10	10
ACENAPHTHYLENE	<10	ug/L	1.1	10	10
ACENAPHTHENE	<10	ug/L	1.1	10	10
FLUORENE	<10	ug/L	1.1	10	10
PHENANTHRENE	<10	ug/L	1.1	10	10
ANTHRACENE	<10	ug/L	1.1	10	10
FLUORANTHENE	<10	ug/L	1.1	10	10
PYRENE	<10	ug/L	1.1	10	10
BENZO[A]ANTHRACENE	<10	ug/L	1.1	10	10
CHRYSENE	<10	ug/L	1.1	10	10
BENZO[B]FLUORANTHENE	<10	ug/L	1.1	10	10
BENZO[K]FLUORANTHENE	<10	ug/L	1.1	10	10
BENZO[A]PYRENE	<10	ug/L	1.1	10	10
INDENO[1,2,3-CD]PYRENE	<10	ug/L	1.1	10	10
DIBENZ[A,H]ANTHRACENE	<10	ug/L	1.1	10	10
BENZO[G,H,I]PERYLENE	<10	ug/L	1.1	10	10
NITROBENZENE-D5	53	%	1.1		
2-FLUOROBIPHENYL	53	%	1.1		
TERPHENYL-D14	74	%	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: WP3395-4
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0501	AQ	7/24/99	7/27/99	7/31/99	JSS	5030	JSS

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	123	%	1.0		
1,2-DICHLOROETHANE-D4	120	%	1.0		
TOLUENE-D8	114	%	1.0		
-BROMOFLUOROBENZENE	98	%	1.0		

eport 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: WP3395-5
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/6/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0301	AQ	7/24/99	7/27/99	7/28/99	DS	EPA 3510	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	51	%	1.0		
2-FLUOROBIPHENYL	53	%	1.0		
TERPHENYL-D14	83	%	1.0		

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: WP3395-5
SDG: WP3395
Report Date: 8/26/99
PO No.: N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0301	AQ	7/24/99	7/27/99	7/31/99	JSS	5030	JSS

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	124	%	1.0		
1,2-DICHLOROETHANE-D4	121	%	1.0		
TOLUENE-D8	117	%	1.0		
P-BROMOFLUOROBENZENE	100	%	1.0		

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: WP3395-6
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/6/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0701	AQ	7/24/99	7/27/99	7/28/99	DS	EPA 3510	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	54	%	1.0		
2-FLUOROBIPHENYL	54	%	1.0		
TERPHENYL-D14	74	%	1.0		

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: WP3395-6
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0701	AQ	7/24/99	7/27/99	7/31/99	JSS	5030	JSS

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	124	%	1.0		
1,2-DICHLOROETHANE-D4	124	%	1.0		
TOLUENE-D8	116	%	1.0		
4-BROMOFLUOROBENZENE	97	%	1.0		

Report Notes:

Katahdin
ANALYTICAL SERVICES

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

Lab Number : WP-3395-15
Report Date: 08/27/99
PO No. : N7912-P99264
Project : CTO #68

WIC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
12GLM0101	Aqueous	J. HILL, J. ALEXANDER	07/25/99	07/27/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Nitrogen, Nitrate (as N)	0.068	mg/L	1.0	0.050	E300	07/27/99	CF	
Sulfate (as SO4)	45.	mg/L	4.0	1.0	E300	08/24/99	CF	

* 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.

08/27/99

LJO/baeajc(dw)/msm
PG27N3W1
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: WP3395-15
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/6/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0101	AQ	7/25/99	7/27/99	7/28/99	DS	EPA 3510	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	49	%	1.0		
2-FLUOROBIPHENYL	50	%	1.0		
TERPHENYL-D14	64	%	1.0		

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: WP3395-15
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0101	AQ	7/25/99	7/27/99	7/31/99	JSS	5030	JSS

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	98	%	1.0		
1,2-DICHLOROETHANE-D4	106	%	1.0		
TOLUENE-D8	103	%	1.0		
P-BROMOFLUOROBENZENE	102	%	1.0		

Report Notes:

Katahdin
ANALYTICAL SERVICES

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

Lab Number : WP-3395-16
Report Date: 08/27/99
PO No. : N7912-P99264
Project : CTO #68

WIC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
12GLM0201	Aqueous	J. HILL, J. ALEXANDER	07/25/99	07/27/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Nitrogen, Nitrate (as N)	<0.050	mg/L	1.0	0.050	E300	07/27/99	CF	
Sulfate (as SO4)	25.	mg/L	4.0	1.0	E300	08/24/99	CF	

* 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.

08/27/99

LJO/baeajc(dw)/msm
PG27N3W1
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: WP3395-16
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/6/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0201	AQ	7/25/99	7/27/99	7/28/99	DS	EPA 3510	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	60	%	1.0		
TERPHENYL-D14	53	%	1.0		

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: WP3395-16
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0201	AQ	7/25/99	7/27/99	7/31/99	JSS	5030	JSS

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	100	%	1.0		
1,2-DICHLOROETHANE-D4	108	%	1.0		
TOLUENE-D8	103	%	1.0		
P-BROMOFLUOROBENZENE	102	%	1.0		

Report Notes:

Katahdin
ANALYTICAL SERVICES

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

Lab Number : WP-3395-17
Report Date: 08/27/99
PO No. : N7912-P99264
Project : CTO #68

WIC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
12GLM0601	Aqueous	J. HILL, J. ALEXANDER	07/25/99	07/27/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Nitrogen, Nitrate (as N)	<0.050	mg/L	1.0	0.050	E300	07/27/99	CF	
Sulfate (as SO4)	37.	mg/L	4.0	1.0	E300	08/24/99	CF	

* 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.

08/27/99

LJO/baeajc(dw)/msm
PG27N3W1
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: WP3395-17
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/6/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0601	AQ	7/25/99	7/27/99	7/28/99	DS	EPA 3510	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	57	%	1.0		
2-FLUOROBIPHENYL	56	%	1.0		
TERPHENYL-D14	58	%	1.0		

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: WP3395-17
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12GLM0601	AQ	7/25/99	7/27/99	7/31/99	JSS	5030	JSS

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	97	%	1.0		
1,2-DICHLOROETHANE-D4	108	%	1.0		
TOLUENE-D8	102	%	1.0		
P-BROMOFLUOROBENZENE	103	%	1.0		

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: WP3395-1
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12TL00801	AQ	7/24/99	7/27/99	7/31/99	JSS	5030	JSS

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	121	%	1.0		
1,2-DICHLOROETHANE-D4	117	%	1.0		
TOLUENE-D8	117	%	1.0		
-BROMOFLUOROBENZENE	98	%	1.0		

eport Notes:

0000005

Katahdin Analytical Services, Inc.
Quality Control Report

Method Blank and Laboratory Control Sample Results

Client:	Tetra Tech NUS
Work Order:	WP3395

			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)
Nitrate-Nitrogen	27-Jul-99	27-Jul-99	mg/L	<	0.050	<	0.050	0.050	mg/L	2.5	2.35	94.0	80-120	
Sulfate	24-Aug-99	24-Aug-99	mg/L	<	1.0	<	1.0	1.0	mg/L	10	11.7	117.0	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.

00000041

Katahdin Analytical Services, Inc.
Quality Control Report

Duplicate and Matrix Spike/Matrix Spike Duplicate Results

Client:	Tetra Tech NUS
Work Order:	WP3395

			DUPLICATE RESULTS					*MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS*									
			Sample Measurements				Acceptance	Concentration or Quantity				Matrix Spike Recovery (%)					
Parameter	Katahdin 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 (%)
Nitrate - N	WP3395-17	mg/L	<0.050	<0.050	<0.050	0.0	0-20	mg/L	<0.050	2.0	1.68		84.0		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%.

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;072899

Lab Name: Katahdin Analytical Services SDG No.: WP3395

Lab File ID: Z1645 Lab Sample ID: SBLK;072899

Instrument ID: 5972-Z Date Extracted: 7/28/99

GC Column: RTX-624 ID: 0.18 (mm) Date Analyzed: 08/05/99

Matrix: (soil/water) WATER Time Analyzed: 13:28

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;072899	LCS;072899	Z1646	8/5/99	2:16:00 PM
LCSD;072899	LCSD;072899	Z1647	8/5/99	3:03:00 PM
12GLM0401	WP3395-2	Z1651	8/5/99	6:09:00 PM
12GLM0401D	WP3395-3	Z1652	8/5/99	6:56:00 PM
12GLM0501	WP3395-4	Z1653	8/5/99	7:43:00 PM
12GLM0301	WP3395-5	Z1656	8/6/99	11:14:00 AM
12GLM0701	WP3395-6	Z1657	8/6/99	12:00:00 PM
13GLM0201	WP3395-7	Z1658	8/6/99	12:45:00 PM
13GLM0201D	WP3395-8	Z1659	8/6/99	1:32:00 PM
29GLM0201	WP3395-10	Z1661	8/6/99	3:04:00 PM
29GLM0401	WP3395-11	Z1662	8/6/99	3:51:00 PM
29GLM0401D	WP3395-12	Z1663	8/6/99	4:38:00 PM
29GLM0501	WP3395-13	Z1664	8/6/99	5:25:00 PM
ZBRL00101	WP3395-14	Z1665	8/6/99	6:13:00 PM
12GLM0101	WP3395-15	Z1666	8/6/99	7:00:00 PM
12GLM0201	WP3395-16	Z1667	8/6/99	7:47:00 PM
12GLM0601	WP3395-17	Z1668	8/6/99	8:35:00 PM
13GLM0401	WP3395-9	Z1676	8/9/99	1:57:00 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: SBLK;072899
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: EPA 8270
Date Analyzed: 8/5/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
SBLK;072899	AQ	-	-	7/28/99	DS	EPA 3510	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	60	%	1.0		
2-FLUOROBIPHENYL	57	%	1.0		
TERPHENYL-D14	78	%	1.0		

Report Notes:

Katahdin Analytical Services

LCS/LCSD Report

Sample	File Name	Date Acquired	Time inj	Analyst	Matrix	Method
LCS;072899	Z1646	8/5/99	14:16	KRT	AQ	8270
LCSD;072899	Z1647	8/5/99	15:03	KRT	AQ	8270

Compound Name	Spk Amt ug/L	LCS Result ug/L	LCSD Result ug/L	LCS Rec (%)	LCSD Rec (%)	Rec. Limits (%)	RPD (%)	RPD Limit (%)
2-METHYLNAPHTHALENE	50	22.6	33.5	*45	*67	70-130	*39	30
ACENAPHTHENE	50	26.3	35.2	*53	70	70-130	28	30
ACENAPHTHYLENE	50	26.1	35.3	*52	71	70-130	*31	30
ANTHRACENE	50	33.7	40.7	*67	81	70-130	19	30
BENZO[A]ANTHRACENE	50	29.7	36.7	*59	73	70-130	21	30
BENZO[A]PYRENE	50	29.7	35.9	*59	72	70-130	20	30
BENZO[B]FLUORANTHENE	50	27.0	34.3	*54	*69	70-130	24	30
BENZO[G,H,I]PERYLENE	50	28.2	31.5	*56	*63	70-130	12	30
BENZO[K]FLUORANTHENE	50	35.4	42.8	71	86	70-130	19	30
CHRYSENE	50	32.2	37.6	*64	75	70-130	16	30
DIBENZ[A,H]ANTHRACENE	50	26.6	30.0	*53	*60	70-130	12	30
FLUORANTHENE	50	32.0	37.4	*64	75	70-130	16	30
FLUORENE	50	27.3	34.0	*55	*68	70-130	21	30
INDENO[1,2,3-CD]PYRENE	50	24.7	25.8	*49	*52	70-130	5.9	30
NAPHTHALENE	50	21.9	33.3	*44	*67	70-130	*41	30
PHENANTHRENE	50	30.6	38.3	*61	77	70-130	23	30
PYRENE	50	31.7	41.2	*63	82	70-130	26	30

RPD = (lcs rec - lcsd rec) /[(lcsd rec +lcsd rec)/2] * 100

*** Out of Limits**

1

4A

VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKS31A

Lab Name: Katahdin Analytical Services SDG No.: WP3395

Lab File ID: S5732 Lab Sample ID: VBLKS31A

Date Analyzed: 07/31/99 Time Analyzed: 10:16

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
LCSS31A	LCSS31A	S5731	7/31/99	9:19:00 AM
12TL00801	WP3395-1	S5737	7/31/99	1:51:00 PM
12GLM0401	WP3395-2	S5738	7/31/99	2:28:00 PM
12GLM0401D	WP3395-3	S5739	7/31/99	3:05:00 PM
12GLM0501	WP3395-4	S5740	7/31/99	3:42:00 PM
12GLM0301	WP3395-5	S5741	7/31/99	4:20:00 PM
12GLM0701	WP3395-6	S5742	7/31/99	4:57:00 PM
13GLM0201	WP3395-7	S5743	7/31/99	5:35:00 PM
13GLM0201D	WP3395-8	S5744	7/31/99	6:12:00 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: VBLKS31A
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKS31A	AQ	-	-	7/31/99	JSS	5030	JSS

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	103	%	1.0		
1,2-DICHLOROETHANE-D4	101	%	1.0		
TOLUENE-D8	112	%	1.0		
P-BROMOFLUOROBENZENE	103	%	1.0		

Report Notes:

4A

VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKS02A

Lab Name: Katahdin Analytical Services SDG No.: WP3395

Lab File ID: S5770 Lab Sample ID: VBLKS02A

Date Analyzed: 08/02/99 Time Analyzed: 9:50

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
LCSS02A	LCSS02A	S5769	8/2/99	9:02:00 AM
13GLM0401	WP3395-9	S5771	8/2/99	10:45:00 AM
29GLM0201	WP3395-10	S5772	8/2/99	11:22:00 AM
29GLM0401	WP3395-11	S5773	8/2/99	12:00:00 PM
29GLM0401D	WP3395-12	S5774	8/2/99	12:37:00 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: VBLKS02A
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 8/2/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKS02A	AQ	-	-	8/2/99	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	104	%	1.0		
1,2-DICHLOROETHANE-D4	102	%	1.0		
TOLUENE-D8	112	%	1.0		
P-BROMOFLUOROBENZENE	98	%	1.0		

Report Notes:

4A
VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKU31A

Lab Name: Katahdin Analytical Services SDG No.: WP3395

Lab File ID: U0270 Lab Sample ID: VBLKU31A

Date Analyzed: 07/31/99 Time Analyzed: 9:57

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

Instrument ID: 5973-U

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
LCSU31A	LCSU31A	U0269	7/31/99	9:21:00 AM
29GLM0501	WP3395-13	U0279	7/31/99	3:25:00 PM
ZBRL00101	WP3395-14	U0280	7/31/99	4:00:00 PM
12GLM0101	WP3395-15	U0281	7/31/99	4:36:00 PM
12GLM0201	WP3395-16	U0282	7/31/99	5:11:00 PM
12GLM0601	WP3395-17	U0283	7/31/99	5:46:00 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: VBLKU31A
SDG: WP3395
Report Date: 8/26/99
PO No. : N7912-P99264
Project: CTO #68
% Solids: N/A
Method: SW8260
Date Analyzed: 7/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKU31A	AQ	-	-	7/31/99	JSS	5030	JSS

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	98	%	1.0		
1,2-DICHLOROETHANE-D4	100	%	1.0		
TOLUENE-D8	101	%	1.0		
P-BROMOFLUOROBENZENE	99	%	1.0		

Report Notes:

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: S5731 **Sample ID: LCSS31A** **Date Run: 7/31/99**

Analyst: JSS **Time Injected 9:19:00 AM** **Matrix: AQ**

Compound Name	Spike Amt (ug/L)	Result (ug/L)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	50.1	100	60-140
BENZENE	50	53.0	106	60-140
ETHYLBENZENE	50	60.0	120	60-140
MTBE	50	53.9	108	60-140
NAPHTHALENE	50	62.2	124	60-140
TOLUENE	50	58.1	116	60-140
TOTAL XYLENES	150	187	124	60-140

*** Out of Limits** *1*

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: S5769 **Sample ID: LCSS02A** **Date Run: 8/2/99**

Analyst: KMC **Time Injected 9:02:00 AM** **Matrix: AQ**

Compound Name	Spike Amt (ug/L)	Result (ug/L)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	48.4	97	60-140
BENZENE	50	50.6	101	60-140
ETHYLBENZENE	50	59.4	119	60-140
MTBE	50	52.3	104	60-140
NAPHTHALENE	50	62.6	125	60-140
TOLUENE	50	54.4	109	60-140
TOTAL XYLENES	150	186	124	60-140

*** Out of Limits** *1*

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: U0269 **Sample ID: LCSU31A** **Date Run: 7/31/99**

Analyst: JSS **Time Injected 9:21:00 AM** **Matrix: AQ**

Compound Name	Spike Amt (ug/L)	Result (ug/L)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	47.1	94	60-140
BENZENE	50	50.1	100	60-140
ETHYLBENZENE	50	50.6	101	60-140
MTBE	50	45.5	91	60-140
NAPHTHALENE	50	40.3	80	60-140
TOLUENE	50	48.8	98	60-140
TOTAL XYLENES	150	143	95	60-140

*** Out of Limits** *1*

ENSR
Air Toxics Specialty Laboratory
42 Nagog Park
Acton, MA 01720

DATE: August 24, 1999

TO: Andrea Colby
Katahdin Analytical
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04098

Re: Organic Analyses of Aqueous Samples by Gas Chromatography Flame Ionization Detection (GC/FID)

PROJECT #: **8601-008-200**

LAB ID #: **990121**

ANALYTICAL PROCEDURE:

Three (3) aqueous samples were analyzed under the guidelines of EPA SW846 Method 3810.

A Hewlett Packard 5890 series II gas chromatograph (GC) equipped with a Hewlett Packard flame ionization detector (FID) was used for the analysis. A 1.0 mL headspace aliquot of each sample was injected into the column for analysis. The operating conditions of the GC/FID are listed in Table 1. A five point calibration was performed for the target analyte, methane.

No problems occurred during sample receipt or log-in.

QUALITY CONTROL:

1. A laboratory blank was analyzed daily in the same manner as the samples. Methane was present in levels below the detection limit in the laboratory blank. Sample data has not been qualified.

2. A Matrix Spike was performed on the following sample:
   WP3395-16(B)

   All recoveries were within QC limits.

Date Samples Received by the Laboratory: 7/28/99

Date Analysis Started: 8/4/99

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ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: ENSR Contract: WP3395-15(I)

Lab Code: Case No.: SAS NO.: SDG NO.:

Matrix: (soil/water) water Lab Sample ID: 990121-1

Sample wt / vol: 32.5 ml (g/ml) Lab File ID: KTH_020

Level: (low/med) low Date Received: 7/28/99

% Moisture: NA Date Analyzed: 8/4/99

GC Column: Carboxen 1004 OD: 1/16" Dilution Factor: 1

Soil Extract Volume: NA (µl) Soil Aliquot Volume: NA (µl)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or PPMv) µg/L	Q
74-82-8	Methane	5.3	

ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: ENSR Contract: WP3395-16(A)

Lab Code: Case No.: SAS NO.: SDG NO.:

Matrix: (soil/water) water Lab Sample ID: 990121-2

Sample wt / vol: 32.5 ml (g/ml) Lab File ID: KTH_021

Level: (low/med) low Date Received: 7/28/99

% Moisture: NA Date Analyzed: 8/4/99

GC Column: Carboxen 1004 OD: 1/16" Dilution Factor: 1

Soil Extract Volume: NA (µl) Soil Aliquot Volume: NA (µl)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or PPMv) µg/L	Q
74-82-8	Methane	5.2	U

ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: _____ ENSR _____ Contract: _____ WP3395-17(A)

Lab Code: _____ Case No.: _____ SAS NO.: _____ SDG NO.: _____

Matrix: (soil/water) _____ water _____ Lab Sample ID: 990121-3

Sample wt / vol: ____ 32.5 ml _____ (g/ml) Lab File ID: ___KTH_022_____

Level: (low/med) _____ low _____ Date Received:___7/28/99 _____

% Moisture: _____ NA _____ Date Analyzed:__8/4/99 _____

GC Column: _ Carboxen 1004 __ OD: ___ 1/16" ___ Dilution Factor:_____ 1 _____

Soil Extract Volume: _____ NA ____ (µl) Soil Aliquot Volume: ____ NA ____ (µl)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or PPMv) __ µg/L __	Q
74-82-8	Methane	5.2	U

ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: ____ ENSR _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS NO.: _____ SDG NO.: _____

Matrix: (soil/water) _____ water _____ Lab Sample ID: MB990119

Sample wt / vol: ____ 32.5 ml _____ (g/ml) Lab File ID: ___KTH_006_____

Level: (low/med) _____ low _____ Date Received:___NA _____

% Moisture: _____ NA _____ Date Analyzed:___8/4/99 _____

GC Column: _ Carboxen 1004 __ OD: ___ 1/16" ___ Dilution Factor:_____ 1 _____

Soil Extract Volume: _____ NA ____ (µl) Soil Aliquot Volume: ____ NA ____ (µl)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or PPMv) __ µg/L __	Q
74-82-8	Methane	2.7	J

ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: _____ ENSR _____ Contract: _____ LCS01

Lab Code: _____ Case No.: _____ SAS NO.: _____ SDG NO.: _____

Matrix: (soil/water) _____ water _____ Lab Sample ID: LCS990119

Sample wt / vol: ____ 32.5 ml _____ (g/ml) Lab File ID: ___KTH_007_____

Level: (low/med) _____ low _____ Date Received:___NA _____

% Moisture: _____ NA _____ Date Analyzed:__8/4/99 _____

GC Column: _ Carboxen 1004 __ OD: ___ 1/16" ___ Dilution Factor:_____ 1_____

Soil Extract Volume: _____ NA ____ (µl) Soil Aliquot Volume: ____ NA ____ (µl)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or PPMv) __ µg/L __	Q
74-82-8	Methane	48	

ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WP3395-16(B) MS

Lab Name: ENSR Contract:

Lab Code: Case No.: SAS NO.: SDG NO.:

Matrix: (soil/water) water

Lab Sample ID: 990121-2 MS

Sample wt / vol: 32.5 ml (g/ml)

Lab File ID: KTH_023

Level: (low/med) low

Date Received: 7/28/99

% Moisture: NA

Date Analyzed: 8/4/99

GC Column: Carboxen 1004 OD: 1/16"

Dilution Factor: 1

Soil Extract Volume: NA (µl)

Soil Aliquot Volume: NA (µl)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or PPMv) µg/L	Q
74-82-8	Methane	330	

LABORATORY CONTROL SPIKE RECOVERY

Lab Name: ____ ENSR _____ Contract: _____

Lab Code: _____ Case NO.: _____ SAS NO.: _____ SDG NO.: _____

Laboratory Control Sample No: _____ LCS01 _____

COMPOUND	SPIKE ADDED (µg/L)	LCS CONCENTRATION (µg/L)	LCS % REC #	QC LIMITS REC.
Methane	41.0	48.23	118%	50 - 150

* - Values outside of QC limits.

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ____ ENSR _____ Contract: _____

Lab Code: _____ Case NO.: _____ SAS NO.: _____ SDG NO.: _____

Matrix Spike - EPA Sample NO.: __WP3395-16(B) _____

COMPOUND	SPIKE ADDED (µg/L)	SAMPLE CONCENTRATION (µg/L)	MS CONCENTRATION (µg/L)	MS % REC #	QC LIMITS REC.
Methane	410.3	0	327.2	80%	50-150

Spike recovery: _____ 0 _____ out of ____ 1 ___ outside limits.

Comments:

METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK01

Lab Name: _____ ENSR _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS NO.: _____ SDG NO.: _____

Lab File ID: __KTH_006_____ Lab Sample I MB990119

Instrument ID: _____ HPGC#3_____ Date Analyzed:__8/4/99_____

Matrix: (soil/water) _____ water _____ Level: (low/med) _____ low _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES; MS AND MSD

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS01	LCS990119	KTH_008	08/04/99
02	WP3395-15(I)	990121-1	KTH_020	08/04/99
03	WP3395-16(A)	990121-2	KTH_021	08/04/99
04	WP3395-17(A)	990121-3	KTH_022	08/04/99
05	WP3395-16(B) MS	990121-2 MS	KTH_023	08/04/99
06				
07				
08				
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COMMENTS:

Katahdin
ANALYTICAL SERVICES

September 22, 1999

Mr. Paul Calligan

Tetra Tech Nus

1401 Oven Park Dr., Suite 102

Tallahassee, FL 32308

RE: Katahdin Lab Number: WP3654

Project ID: CNC Charleston

Project Manager: Ms. Andrea J.Colby

Sample Receipt Date(s): 8/18/99

Dear Mr. Calligan:

Please find enclosed the following information:

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

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

Hana Crouch
Authorized Signature

09/22/99
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

Katahdin
ANALYTICAL SERVICES

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
CASE CNC CHARLESTON

Sample Receipt

The following samples were received on August 18, 1999 and were logged in under Katahdin Analytical Services work order number WP3654 for a hardcopy due date of September 17, 1999.

KATAHDIN Sample No.	TTNUS Sample Identification	GEL Sample Identification
WP3654-1	12SLB070810	
WP3654-2	12SLB051011	
WP3654-3	12SLB021314	
WP3654-4	12SLB011415	9908592-01
WP3654-5	12SLB011415D	9908592-02
WP3654-6	12SLB031112	
WP3654-7	12TL00101	

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 six soil/sediment samples were received by the Katahdin Analytical Services, Inc. GC/MS laboratory on August 18, 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 5970-Q (aqueous) and 5972-M (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. No matrix spike/matrix spike duplicate was performed on any sample in this workorder.

Initial analysis of sample WP3654-6 yielded internal standard area and surrogate recovery

deviations. Reanalysis yielded similar results, confirming matrix interference. Both sets of data for this sample are included in the data package.

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

Six soil/sediment samples were received by Katahdin Analytical Services laboratory on August 18, 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 August 19, 1999. A laboratory control spike, consisting of all PAH analytes spiked into organic free sand, was extracted in the batch, along with a site specific MS/MSD pair on sample WP3654-1.

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 WP3654 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 WP3654 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, Total Petroleum Hydrocarbons, 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) # WP3654

PAGE: 1 OF 1

COOLER: 1 OF 1

COC# —
SDG#
DATE / TIME RECEIVED: 8-18-99 0850
DELIVERED BY: FedEx
RECEIVED BY: SAW
LIMS ENTRY BY: SAW
LIMS REVIEW BY / PM: AJC

CLIENT: Tetra Tech

PROJECT: CNC

	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)= 2.6	
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 th[illegible] ace (and additional sheets if necessary) to document samples that are received b[illegible]en or compromised, C-O-C discrepancies, radiation checks, residual chlorine check [illegible]sults of pH check [illegible] uired. If samples required pH adjustment, record volume and type of preservativ [illegible]d.

0000040

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

Page 1 of 1

Client	Contact	Phone #	Fax #
Tetra Tech	Bryan Howze	(843) 554-4725	( )

Address	City	State	Zip Code
NH 61 Ave H	N. Charleston	S.C.	29405

Purchase Order # | Proj. Name / No. | Katahdin Quote #

Bill (if different than above) | Address

Sampler (Print / Sign) James F. Hill / [signature] | Copies To:

LAB USE ONLY WORK ORDER #: WP 3654
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.	BTEX, EDB Naph.	PAH	FOC/TOC	Grain Size						
	12SLE07021Ø	8/17/99 1550	Soil	5	4	1								Ø ppm
	12SLBØ51Ø11	1410		5	4	1								Ø ppm
	12SLBØ31112	1455		6	4	1		1						Ø ppm
	12SLEØ2314	1525		5	4	1								Ø ppm
	SLBØ11415	1550		6	4	1	1							Ø ppm
	12SLBØ114150	1550		6	4	1	1							Ø ppm
	12TLØØ1Ø1	1330		2	2									
		/												
		/												
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		/												
		/												

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[signature]	8/17/99 1830	# 8134026217 21		8-18-99 0850	Shelby Wilkinson
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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

ORDER NO WP-3654

Project Manager: Andrea J. Colby
ORDER DATE: 08/18/99
PHONE: 850/385-9[illegible]
FAX: 850/385-98[illegible]
DUE: 17 SEP
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: JR HILL DELIVERED BY: FEDEX DISPOSE: AFTER 17 OCT

ITEM	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
1	WP3654-1	12SLB070810	17 AUG 1350	18 AUG	SL
	WP3654-2	12SLB051011	17 AUG 1410		
	WP3654-3	12SLB021314	17 AUG 1525		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Volatile Organics by 8260B	SW8260	3	85.00	255.00
Polynuclear Aromatic Hydrocarbons	EPA 8270	3	135.00	405.00
Solids-Total Residue (TS)	CLP/CIP SO	3	0.00	0.00
TOTALS		3	220.00	660.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
2	WP3654-4	12SLB011415	17 AUG 1550	18 AUG	
	WP3654-5	12SLB011415D	17 AUG 1550		

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
TOC Subcontract		2	60.00	120.00
TPH Subcontract		2	75.00	150.00
TOTALS		2	385.00	770.00

LABORATORY ORDER CONTINUED ON PAGE 2

ORDER NO WP-3654

Project Manager: Andrea J. Colby
ORDER DATE: 08/18/99
PHONE: 850/385-9899
FAX: 850/385-9860
DUE: 17 SEP
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: JR HILL DELIVERED BY: FEDEX DISPOSE: AFTER 17 OCT

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
3	WP3654-6	12SLB031112	17 AUG 1455	18 AUG	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
Grain Size Subcontract		1	110.00	110.00
Solids-Total Residue (TS)	CLP/CIP SO	1	0.00	0.00
TOTALS		1	330.00	330.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
4	WP3654-7	12TL00101	17 AUG 1330	18 AUG	SL

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

ORDER NOTE: QC-II+ W/NARRATIVE
DD(KAS007QC-DB3)
CNC CHARLESTON

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

INVOICE: With Report

TOTAL ORDER AMOUNT $1,845.00
This is NOT an Invoice

A/BKR/WEST.AJC(dw)
08-18Please contact KATAHDIN ANALYTICAL SERVICES promptly if you have any questi

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.
J	'J' flag denotes an estimated value less than the Laboratory's Practical Quantitation Level.
O-13	Internal standard area(s) are out of criteria. Reanalysis confirmedmatrix interference.

Katahdin
ANALYTICAL SERVICES

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

Lab Number : WP-3654-1
Report Date: 09/22/99
PO No. : N7912-P99264
Project : CTO#68

WIC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
12SLB070810	Solid	JR HILL	08/17/99	08/18/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	95.	wt %	1.0	0.10	CLP/CIP SOW	08/20/99	BD	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 08/19/99 by JMF

09/22/99

LJO/baeajc(dw)/msm
PH19TSS3
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: WP3654-1
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 95
Method: EPA 8270
Date Analyzed: 8/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB070810	SL	8/17/99	8/18/99	8/19/99	LAP	EPA 3550	KRT

Compound	Result	Units	DF	Sample PQL	Method PQL
NAPHTHALENE	<330	ug/Kg	1.1	330	330
2-METHYLNAPHTHALENE	<330	ug/Kg	1.1	330	330
ACENAPHTHYLENE	<330	ug/Kg	1.1	330	330
ACENAPHTHENE	<330	ug/Kg	1.1	330	330
FLUORENE	<330	ug/Kg	1.1	330	330
PHENANTHRENE	<330	ug/Kg	1.1	330	330
ANTHRACENE	<330	ug/Kg	1.1	330	330
FLUORANTHENE	<330	ug/Kg	1.1	330	330
PYRENE	<330	ug/Kg	1.1	330	330
BENZO[A]ANTHRACENE	<330	ug/Kg	1.1	330	330
CHRYSENE	<330	ug/Kg	1.1	330	330
BENZO[B]FLUORANTHENE	<330	ug/Kg	1.1	330	330
BENZO[K]FLUORANTHENE	<330	ug/Kg	1.1	330	330
BENZO[A]PYRENE	<330	ug/Kg	1.1	330	330
INDENO[1,2,3-CD]PYRENE	<330	ug/Kg	1.1	330	330
DIBENZ[A,H]ANTHRACENE	<330	ug/Kg	1.1	330	330
BENZO[G,H,I]PERYLENE	<330	ug/Kg	1.1	330	330
NITROBENZENE-D5	65	%	1.1		
2-FLUOROBIPHENYL	68	%	1.1		
TERPHENYL-D14	85	%	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: WP3654-1
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 95
Method: SW8260
Date Analyzed: 8/25/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB070810	SL	8/17/99	8/18/99	8/25/99	DJP	5030	DJP

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	112	%	1.3		
1,2-DICHLOROETHANE-D4	104	%	1.3		
TOLUENE-D8	119	%	1.3		
-BROMOFLUOROBENZENE	129	%	1.3		

Report Notes:

Katahdin
ANALYTICAL SERVICES

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

Lab Number : WP-3654-2
Report Date: 09/22/99
PO No. : N7912-P99264
Project : CTO#68

WIC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
12SLB051011	Solid	JR HILL	08/17/99	08/18/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	96.	wt %	1.0	0.10	CLP/CIP SOW	08/20/99	BD	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 08/19/99 by JMF

09/22/99

LJO/baeajc(dw)/msm
PH19TSS3
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: WP3654-2
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 96
Method: EPA 8270
Date Analyzed: 8/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB051011	SL	8/17/99	8/18/99	8/19/99	LAP	EPA 3550	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	54	%	1.0		
2-FLUOROBIPHENYL	56	%	1.0		
TERPHENYL-D14	45	%	1.0		

port Notes:

0000009

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: WP3654-2
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 96
Method: SW8260
Date Analyzed: 8/25/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB051011	SL	8/17/99	8/18/99	8/25/99	DJP	5030	DJP

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	118	%	1.2		
1,2-DICHLOROETHANE-D4	111	%	1.2		
TOLUENE-D8	115	%	1.2		
P-BROMOFLUOROBENZENE	100	%	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-3654-3
Report Date: 09/22/99
PO No. : N7912-P99264
Project : CTO#68

WIC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
12SLB021314	Solid	JR HILL	08/17/99	08/18/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	82.	wt %	1.0	0.10	CLP/CIP SOW	08/20/99	BD	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 08/19/99 by JMF

09/22/99

LJO/baeajc(dw)/msm

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: WP3654-3
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 82
Method: EPA 8270
Date Analyzed: 8/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB021314	SL	8/17/99	8/18/99	8/19/99	LAP	EPA 3550	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	48	%	1.2		
2-FLUOROBIPHENYL	53	%	1.2		
TERPHENYL-D14	48	%	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: WP3654-3
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 82
Method: SW8260
Date Analyzed: 8/25/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB021314	SL	8/17/99	8/18/99	8/25/99	DJP	5030	DJP

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	96	%	1.0		
TOLUENE-D8	112	%	1.0		
-BROMOFLUOROBENZENE	93	%	1.0		

port Notes:

Katahdin
ANALYTICAL SERVICES

Lab Number : WP-3654-4
Report Date: 09/22/99
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
12SLB011415	Solid	JR HILL	08/17/99	08/18/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	88.	wt %	1.0	0.10	CLP/CIP SOW	08/26/99	JF	1
Total Combustible Organics	6.0	wt %	1.0	0.1	ASTM D2974-8	08/26/99	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 08/23/99 by JF

09/22/99

LJO/baeajc(dw)/msm

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: WP3654-4
SDG: WP3654
Report Date: 9/21/99
PO No.: N7912-P99264
Project: CTO#68
% Solids: 88
Method: EPA 8270
Date Analyzed: 8/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB011415	SL	8/17/99	8/18/99	8/19/99	LAP	EPA 3550	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	65	%	1.1		
2-FLUOROBIPHENYL	68	%	1.1		
TERPHENYL-D14	55	%	1.1		

eport 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: WP3654-4
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 88
Method: SW8260
Date Analyzed: 8/26/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB011415	SL	8/17/99	8/18/99	8/26/99	DJP	5030	DJP

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	93	%	1.1		
1,2-DICHLOROETHANE-D4	93	%	1.1		
TOLUENE-D8	94	%	1.1		
P-BROMOFLUOROBENZENE	88	%	1.1		

Report Notes:

Katahdin
ANALYTICAL SERVICES

Lab Number : WP-3654-5
Report Date: 09/22/99
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
12SLB011415D	Solid	JR HILL	08/17/99	08/18/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	82.	wt %	1.0	0.10	CLP/CIP SOW	08/26/99	JF	1
Total Combustible Organics	3.1	wt %	1.0	0.1	ASTM D2974-8	08/26/99	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 08/23/99 by JF

09/22/99

LJO/baeajc(dw)/msm

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: WP3654-5
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 82
Method: EPA 8270
Date Analyzed: 8/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB011415D	SL	8/17/99	8/18/99	8/19/99	LAP	EPA 3550	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	55	%	1.2		
2-FLUOROBIPHENYL	69	%	1.2		
TERPHENYL-D14	61	%	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: WP3654-5
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 82
Method: SW8260
Date Analyzed: 8/25/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB011415D	SL	8/17/99	8/18/99	8/25/99	DJP	5030	DJP

Compound	Result	Units	DF	Sample PQL	Method PQL
BENZENE	<5	ug/Kg	0.98	5	5
TOLUENE	<5	ug/Kg	0.98	5	5
1,2-DIBROMOETHANE	<5	ug/Kg	0.98	5	5
ETHYLBENZENE	<5	ug/Kg	0.98	5	5
NAPHTHALENE	<5	ug/Kg	0.98	5	5
MTBE	<5	ug/Kg	0.98	5	5
TOTAL XYLENES	<5	ug/Kg	0.98	5	5
DIBROMOFLUOROMETHANE	110	%	0.98		
1,2-DICHLOROETHANE-D4	105	%	0.98		
TOLUENE-D8	104	%	0.98		
-BROMOFLUOROBENZENE	98	%	0.98		

Report Notes:

Katahdin
ANALYTICAL SERVICES

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

Lab Number : WP-3654-6
Report Date: 09/22/99
PO No. : N7912-P99264
Project : CTO#68

WTC#: CNC CHARLESTON

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
12SLB031112	Solid	JR HILL	08/17/99	08/18/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	96.	wt %	1.0	0.10	CLP/CIP SOW	08/20/99	BD	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits a

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: WP3654-6
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 96
Method: EPA 8270
Date Analyzed: 9/1/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB031112	SL	8/17/99	8/18/99	8/19/99	LAP	EPA 3550	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	35	%	1.0		
2-FLUOROBIPHENYL	52	%	1.0		
TERPHENYL-D14	63	%	1.0		

port 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: WP3654-6
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 96
Method: SW8260
Date Analyzed: 8/25/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB031112	SL	8/17/99	8/18/99	8/25/99	DJP	5030	DJP

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	<8	ug/Kg	1.1	6	5
DIBROMOFLUOROMETHANE	118	%	1.1		
1,2-DICHLOROETHANE-D4	$182	%	1.1		
TOLUENE-D8	$58	%	1.1		
P-BROMOFLUOROBENZENE	85	%	1.1		

Report Notes: $, O-13

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: WP3654-7
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: -
Method: SW8260
Date Analyzed: 8/26/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12TL00101	SL	8/17/99	8/18/99	8/26/99	HMP	5035	HMP

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	94	%	1.0		
1,2-DICHLOROETHANE-D4	89	%	1.0		
TOLUENE-D8	100	%	1.0		
-BROMOFLUOROBENZENE	101	%	1.0		

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: WP3654-6RE
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 96
Method: SW8260
Date Analyzed: 8/26/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
12SLB031112	SL	8/17/99	8/18/99	8/26/99	DJP	5030	DJP

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	$18	%	1.2		
1,2-DICHLOROETHANE-D4	$21	%	1.2		
TOLUENE-D8	$12	%	1.2		
P-BROMOFLUOROBENZENE	$14	%	1.2		

Report Notes: $

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SEMIVOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK;081999

Lab Name: Katahdin Analytical Services SDG No.: WP3654

Lab File ID: X2690 Lab Sample ID: SBLK;081999

Instrument ID: 5970-X Date Extracted: 8/19/99

GC Column: RTX-5 ID: 0.25 (mm) Date Analyzed: 08/31/99

Matrix: (soil/water) SOIL Time Analyzed: 18:37

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 Date File	Date Injected	Time Injected
12SLB070810	WP3654-1	X2691	8/31/99	7:21:00 PM
12SLB051011	WP3654-2	X2692	8/31/99	8:04:00 PM
12SLB021314	WP3654-3	X2693	8/31/99	8:48:00 PM
12SLB011415	WP3654-4	X2694	8/31/99	9:32:00 PM
12SLB011415D	WP3654-5	X2695	8/31/99	10:16:00 PM
12SLB031112	WP3654-6	X2700	9/1/99	1:01:00 PM
12SLB070810MS	WP3654-1MS	X2701	9/1/99	1:45:00 PM
12SLB070810MSD	WP3654-1MSD	X2702	9/1/99	2:30:00 PM
LCS-A;081999	LCS-A;081999	X2703	9/1/99	3:13:00 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: SBLK;081999
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 100
Method: EPA 8270
Date Analyzed: 8/31/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
SBLK;081999	SL	-	-	8/19/99	LAP	EPA 3550	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	63	%	1.0		
2-FLUOROBIPHENYL	76	%	1.0		
TERPHENYL-D14	66	%	1.0		

Report Notes:

Katahdin Analytical Services
8270 LCS Recovery Sheet

Lab File: X2703 **Sample ID: LCS-A;081999** **Date Run: 9/1/99**

Analyst: KRT **Time Injected 3:13:00 PM** **Matrix: SL**

Compound Name	Spike Amt (ug/Kg)	Result (ug/Kg)	Rec (%)	Limits (%)
2-METHYLNAPHTHALENE	1667	1150	69	60-140
ACENAPHTHENE	1667	1260	75	60-140
ACENAPHTHYLENE	1667	1280	77	60-140
ANTHRACENE	1667	1260	76	60-140
BENZO[A]ANTHRACENE	1667	1190	71	60-140
BENZO[A]PYRENE	1667	1140	69	60-140
BENZO[B]FLUORANTHENE	1667	1180	71	60-140
BENZO[G,H,I]PERYLENE	1667	1050	63	60-140
BENZO[K]FLUORANTHENE	1667	1250	75	60-140
CHRYSENE	1667	1410	84	60-140
DIBENZ[A,H]ANTHRACENE	1667	1080	65	60-140
FLUORANTHENE	1667	1270	76	60-140
FLUORENE	1667	1260	76	60-140
INDENO[1,2,3-CD]PYRENE	1667	1180	71	60-140
NAPHTHALENE	1667	1170	70	60-140
PHENANTHRENE	1667	1330	80	60-140
PYRENE	1667	1130	68	60-140

*** Out of Limits** *1*

Katahdin Analytical Services

MS/MSD Report

Sample	File Name	Date Acquired	Time inj	Analyst	Matrix	Method
WP3654-1	X2691	8/31/99	7:21:00 PM	KRT	SL	8270_99
WP3654-1MS	X2701	9/1/99	1:45:00 PM	KRT	SL	8270_99
WP3654-1MSD	X2702	9/1/99	2:30:00 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	1750	1750	1460	1420	84	81	60-140	2.8	50
ACENAPHTHENE	0	1750	1750	1290	1230	74	70	60-140	4.8	50
ACENAPHTHYLENE	0	1750	1750	1270	1250	72	71	60-140	1.6	50
ANTHRACENE	0	1750	1750	1260	1260	72	72	60-140	0	50
BENZO[A]ANTHRACENE	0	1750	1750	1240	1240	71	70	60-140	0	50
BENZO[A]PYRENE	0	1750	1750	1200	1210	69	69	60-140	0.83	50
BENZO[B]FLUORANTHENE	0	1750	1750	1120	1150	64	66	60-140	2.6	50
2-METHYLNAPHTHALENE	0	1750	1750	980	1040	*56	60	60-140	5.9	50
BENZO[K]FLUORANTHENE	0	1750	1750	1270	1220	72	70	60-140	4.0	50
PYRENE	0	1750	1750	1190	1260	68	72	60-140	5.7	50
DIBENZ[A,H]ANTHRACENE	0	1750	1750	1150	1230	66	70	60-140	6.7	50
FLUORANTHENE	0	1750	1750	1290	1230	74	70	60-140	4.8	50
FLUORENE	0	1750	1750	1250	1280	72	73	60-140	2.4	50
INDENO[1,2,3-CD]PYRENE	0	1750	1750	1340	1490	76	85	60-140	11	50
NAPHTHALENE	0	1750	1750	890	907	*51	*52	60-140	1.9	50
PHENANTHRENE	0	1750	1750	1280	1340	73	76	60-140	4.6	50
BENZO[G,H,I]PERYLENE	0	1750	1750	1220	1280	70	73	60-140	4.8	50

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

*** Out of Limits**

4A
VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKM25A

Lab Name: Katahdin Analytical Services SDG No.: WP3654

Lab File ID: M1613 Lab Sample ID: VBLKM25A

Date Analyzed: 08/25/99 Time Analyzed: 9:00

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

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
LCSM25A	LCSM25A	M1612	8/25/99	8:08:00 AM
12SLB070810	WP3654-1	M1616	8/25/99	11:02:00 AM
12SLB021314	WP3654-3	M1618	8/25/99	12:22:00 PM
12SLB011415D	WP3654-5	M1620	8/25/99	1:41:00 PM
12SLB031112	WP3654-6	M1621	8/25/99	2:19:00 PM
12SLB051011	WP3654-2	M1622	8/25/99	2:59:00 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: VBLKM25A
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 100
Method: SW8260
Date Analyzed: 8/25/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKM25A	SL	-	-	8/25/99	DJP	5030	DJP

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	114	%	1.0		
1,2-DICHLOROETHANE-D4	103	%	1.0		
TOLUENE-D8	128	%	1.0		
P-BROMOFLUOROBENZENE	117	%	1.0		

Report Notes:

4A

VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKM26B

Lab Name: Katahdin Analytical Services SDG No.: WP3654

Lab File ID: M1632 Lab Sample ID: VBLKM26B

Date Analyzed: 08/26/99 Time Analyzed: 10:17

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

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
LCSM26B	LCSM26B	M1631	8/26/99	9:33:00 AM
12SLB011415	WP3654-4	M1633	8/26/99	11:06:00 AM
12SLB031112	WP3654-6RE	M1634	8/26/99	11:45:00 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: VBLKM26B
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: 100
Method: SW8260
Date Analyzed: 8/26/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKM26B	SL	-	-	8/26/99	DJP	5030	DJP

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	J3	ug/Kg	1.0	5	5
MTBE	<5	ug/Kg	1.0	5	5
TOTAL XYLENES	<5	ug/Kg	1.0	5	5
DIBROMOFLUOROMETHANE	104	%	1.0		
1,2-DICHLOROETHANE-D4	95	%	1.0		
TOLUENE-D8	116	%	1.0		
P-BROMOFLUOROBENZENE	114	%	1.0		

Report Notes: J

4A
VOLATILE ORGANICS METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKQ26A

Lab Name: Katahdin Analytical Services SDG No.: WP3654

Lab File ID: Q6490 Lab Sample ID: VBLKQ26A

Date Analyzed: 08/26/99 Time Analyzed: 10:57

GC Column: RTX-502 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: 5970-Q

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
LCSQ26A	LCSQ26A	Q6489	8/26/99	10:10:00 AM
12TL00101	WP3654-7	Q6491	8/26/99	11:55:00 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: VBLKQ26A
SDG: WP3654
Report Date: 9/21/99
PO No. : N7912-P99264
Project: CTO#68
% Solids: N/A
Method: SW8260
Date Analyzed: 8/26/99

Sample Description	Matrix	Sampled Date	Rec'd Date	Ext. Date	Ext'd By	Ext. Method	Analyst
VBLKQ26A	AQ	-	-	8/26/99	HMP	5030	HMP

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	94	%	1.0		
1,2-DICHLOROETHANE-D4	90	%	1.0		
TOLUENE-D8	101	%	1.0		
P-BROMOFLUOROBENZENE	106	%	1.0		

Report Notes:

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: M1612 **Sample ID: LCSM25A** **Date Run: 8/25/99**

Analyst: DJP **Time Injected 8:08:00 AM** **Matrix: SL**

Compound Name	Spike Amt (ug/Kg)	Result (ug/Kg)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	47.4	95	60-140
BENZENE	50	53.2	106	60-140
ETHYLBENZENE	50	58.7	117	60-140
MTBE	50	47.8	96	60-140
NAPHTHALENE	50	42.1	84	60-140
TOLUENE	50	51.8	104	60-140
TOTAL XYLENES	150	171	114	60-140

*** Out of Limits** *1*

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: M1631 **Sample ID: LCSM26B** **Date Run: 8/26/99**

Analyst: DJP **Time Injected 9:33:00 AM** **Matrix: SL**

Compound Name	Spike Amt (ug/Kg)	Result (ug/Kg)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	51.6	103	60-140
BENZENE	50	52.1	104	60-140
ETHYLBENZENE	50	53.9	108	60-140
MTBE	50	55.2	110	60-140
NAPHTHALENE	50	61.5	123	60-140
TOLUENE	50	50.8	102	60-140
TOTAL XYLENES	150	161	107	60-140

*** Out of Limits** *1*

Katahdin Analytical Services
8260 LCS Recovery Sheet

Lab File: Q6489 **Sample ID: LCSQ26A** **Date Run: 8/26/99**

Analyst: HMP **Time Injected 10:10:00 AM** **Matrix: AQ**

Compound Name	Spike Amt (ug/L)	Result (ug/L)	Rec (%)	Limits (%)
1,2-DIBROMOETHANE	50	53.1	106	60-140
BENZENE	50	49.9	100	60-140
ETHYLBENZENE	50	54.8	110	60-140
MTBE	50	38.8	78	60-140
NAPHTHALENE	50	43.3	86	60-140
TOLUENE	50	51.8	104	60-140
TOTAL XYLENES	150	153	102	60-140

*** Out of Limits** *1*

S. W. COLE ENGINEERING, INC.

REPORT OF GRADATION
ASTM C-117, C-136

Project No. 99008
Date 08/23/1999

Project MISCELLANEOUS

Client KATAHDIN ANALYTICAL

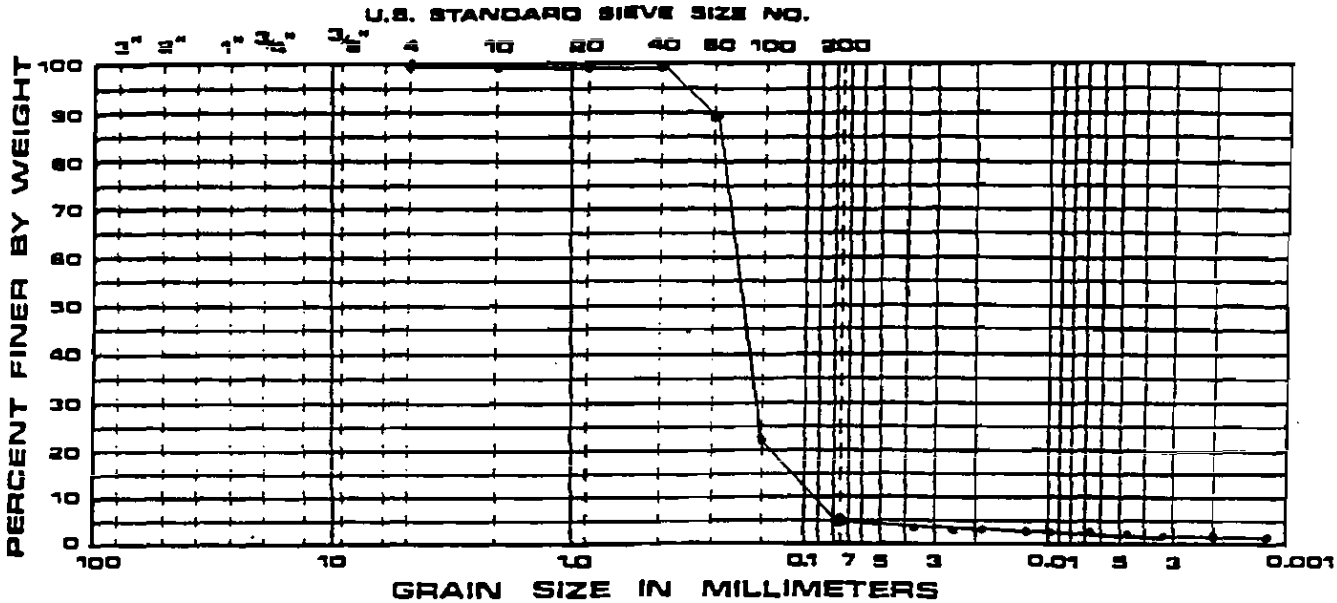
Sample No. 36, SILTY SAND, WP3654-6

Sieve Size	Percent Passing	PROJECT Specifications %
# 4	100.0	
# 10	99.9	
# 20	99.9	
# 40	99.3	
# 60	89.9	
# 100	22.5	
# 200	5.0	

JOB NO: 44008

GRAIN SIZE ANALYSIS

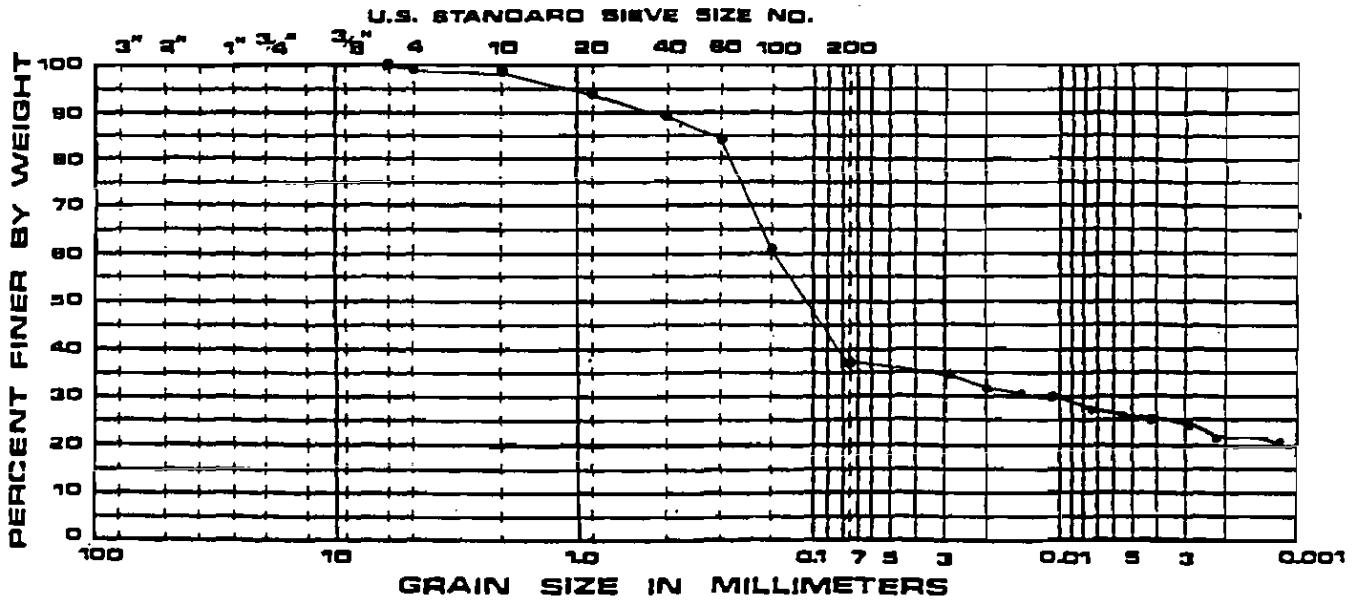
COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION		W
•	WP8646-46	1 3/0		SILTY SAND		

GRAIN SIZE ANALYSIS

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



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION		W
•	WP8622-12	37		CLAY		

CASE NARRATIVE
for
Katahdin Analytical
Westbrook, ME
Former Charleston Naval Complex Site
SDG #98592S

September 9, 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 August 17 and 19, 1999, for environmental analyses. The 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
9908592-01	12SLB011415
9908592-02	12SLB01I415D
9908592-03	22SLB110708
9908592-04	22SLB110708D
9908592-05	28SLB030102

9908592-06	28SLB030102D
9908592-07	28SLB030102M

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 the samples.

Data Package:

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

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.

Valerie Davis

Valerie S. Davis
Project Manager

fc:kata9908592%

GENERAL ENGINEERING LABORATORIES

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

General Engineering Laboratories, Inc.

DATA QUALIFIERS FOR INORGANIC ANALYSES

Data Qualifiers used on Form 1s or Certificates of Analysis (C Of A) follow the specifications set forth in the technical specifications of the most current CLP Statement of Work and are defined as follows.

Section	Explanation	Location
E	The qualifier that is used when the percent difference between the parent sample and its serial dilution's concentrations exceeds 10%. The sample's concentration must be greater than 50 times the IDL/MDL for ICP (6010B/ILMO 3.0) or 100 times the absolute value of the preparation blank's concentration (6020). However, if analyzing ILMO 4.0 (ICP-MS), the parent sample's concentration must be 20 times the CRDL before the "E" flag is applied.	Form 1, and EDD
*	The qualifier that is used to indicate that the duplicate sample analysis for an analyte is out of control.	Form 1, and EDD
÷	Correlation coefficient the Method of Standard Addition (MSA) is less than 0.095.	Form 2, and EDD
B	The qualifier is used to indicate that the reported result fell above the IDL/MDL but below the CRDL.	Form 1, and EDD
M	The qualifier is used to indicate that the replicate injection readings of the GFAA sample analysis do not agree within 20% relative standard deviation (RSD) or coefficient of variation (CV).	Form 1, and EDD
N	This qualifier is used to indicate that the matrix or pre-digested spike sample recovery for an analyte is not within the specified control limit.	Form 1, and EDD
S	The reported value was determined by the Method of Standard Addition (MSA).	Form 1, and EDD
U	The analyte's result was less than the IDL/MDL.	C of A, Form 1, and EDD
W	Post-digestion spike for GFAA analysis is out of control limits (85%-115%), while sample results are less than 50% of the spike absorbance.	EDD, and Form 5, part 2
X	Other reporting flag as defined in report narrative.	Form 1, and EDD
**	This qualifier is used to indicate that the Laboratory Control Sample (LCS) recovery for an analyte is outside of the specified limits.	QC Summary Report

All surrogate recoveries and acceptance ranges are reported at the bottom of Form 2 or C of A.
Any recoveries falling outside the acceptance range will be flagged with a **.
All flags do not apply to QC Summary and Certificate of Analysis packages.

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

9908592/.

Page 1 of 1

Client Name/Facility Name: Katahdin Analytical

Collected by/Company: J.R. Hill 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	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	125LB011415	8/17/99	1550		X		X			1														1		0 ppm
02	125LB011415D	↓	1550		X		X			1														1		0 ppm

4206

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
James R Hill	8/17/99	1815					

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
			Franco	1815	8/17/99	

White = sample collector Yellow = file Pink = with report

8

Katahdin ANALYTICAL SERVICES

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

9908592
~~9908507~~

CHAIN of CUSTODY

42003

PLEASE PRINT IN PEN

Page ____ of ____

Client	Contact	Phone #	Fax #
Katahdin analytical		(207) [illegible]	(207) [illegible]

Address	City	State	Zip Code
[illegible] County Rd No 5	Westbrook	ME	[illegible]

Purchase Order #	Proj. Name / No.	Katahdin Quote #

Bill (if different than above)	Address

Sampler (Print / Sign)	Copies To:
[illegible]	

LAB USE ONLY

WORK ORDER #:

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 TPH	Filt. ☐Y☐N TPH	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N
03	225LB/190708	9/[illegible]/00	Soil	2	1	1								
04	225LB/190708D	✓ / 800	"	2	1	1								
		/												
		/												
		/												
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COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[illegible]	[illegible]				
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

FILE COPY

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

99085927

Client Name/Facility Name: Katahdin Analytical

Collected by/Company: Tetra Tech NUS

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/~~BOG~~	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
05	28SLB030102	8/19/99	1410		X			2		1														1		- 0 ppm
06	28SLB030102D	8/19/99	1410		X			2		1														1		0 ppm
07	28SLB030102M	8/19/99	1410		X			2		1														1		- MS/MSD 0 ppm

4206
4229

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
James R. Hall	8/19/99	1731	[illegible]				

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
			Francis	8/19/99	1731	

White = sample collector Yellow = file Pink = with report

10

FEDERAL SAMPLE RECEIPT REVIEW

Client KATA Received by [illegible] Date 8/17/99

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	✓		985925

REVIEW [illegible] DATE 8/17/99 SA - SEALS ATTACHED NSA - NO SEALS ATTACHED

FEDERAL SAMPLE RECEIPT REVIEW

Client KATA Received by [illegible] Date 8/19/99

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 container 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 8/19/99 SA - SEALS ATTACHED NSA - NO SEALS ATTACHED

FEDERAL SAMPLE RECEIPT REVIEW

Client KATA Received by [illegible] Date 8/19/99

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 constiner 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	✓		985925

REVIEW [illegible] DATE 8/19/99 SA - SEALS ATTACHED NSA - NO SEALS ATTACHED

Case Narrative for
KATA
SDG# 98592S

TPH

Analytical Batch Number: 157244

Analytical Method: SW846 9071A

Laboratory Number	Sample Description
9908592-01	12SLB011415
9908592-02	12SLB011415D
9908592-03	22SLB110708
9908592-04	22SLB110708D
9908592-05	28SLB030102
9908592-06	28SLB030102D
9908592-07	28SLB030102M
QC643700	Blank
QC643701	Laboratory Control Sample
QC643702	Matrix Spike of 9908592-05
QC643703	Duplicate of 9908592-05

Instrument Calibration:

The balance 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.

9908592-05

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.

General Comments:

The extract from sample 9908592-03 was yellow. QC was run on Sample 908592-05 instead of 9908592-07. The project manager was notified.

TOTAL ORGANIC CARBON

Analytical Batch Number: 156799

Analytical Method: SW846 9060 Modified

Laboratory Number	Sample Description
9908592-01	12SLB011415
9908592-02	12SLB011415D
9908592-03	22SLB110708
9908592-04	22SLB110708D
9908592-05	28SLB030102
9908592-06	28SLB030102D
9908592-07	28SLB030102M
QC641913	Blank
QC641914	Post Spike of 9908592-07
QC641915	Post Spike of Duplicate of 9908592-07
QC641916	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 spikes were run on the following Sample Number.

9908592-07

All analyte recoveries in the post spike were within the required acceptance limits. All analytes in the post spike duplicate were within the required acceptance limits for relative percent difference.

Laboratory Control Samples:

All analyte recoveries in the laboratory control sample 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 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.

The preceding narratives have been reviewed by: [signature] Date: 09/07/99

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

cc: KATA00199 Report Date: September 02, 1999

Sample ID	: 12SLB011415
Lab ID	: 9908392-01
Matrix	: Soil
Date Collected	: 08/17/99
Date Received	: 08/17/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons	J	204	120	240	mg/kg	1.0	AAT	08/30/99	1030	157244	1
Evaporative Loss @ 105 C		17.0	1.00	1.00	wt%	1.0	GJ	08/24/99	1700	156819	2
Total Organic Carbon		853	43.1	100	mg/kg	1.0	LS	08/26/99	1116	156799	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: September 02, 1999

Sample ID	: 12SLB011415D
Lab ID	: 9908592-02
Matrix	: Soil
Date Collected	: 08/17/99
Date Received	: 08/17/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons	J	138	115	230	mg/kg	1.0	AAT	08/30/99	1030	157244	1
Evaporative Loss @ 105 C		13.0	1.00	1.00	wt%	1.0	GJ	08/24/99	1700	156819	2
Total Organic Carbon		794	43.1	100	mg/kg	1.0	LS	08/26/99	1138	156799	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: September 02, 1999

Sample ID	: 22SLB110708
Lab ID	: 9908592-03
Matrix	: Soil
Date Collected	: 08/18/99
Date Received	: 08/19/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons		493	128	256	mg/kg	1.0	AAT	08/30/99	1030	157244	1
Evaporative Loss @ 105 C		22.0	1.00	1.00	wt%	1.0	GJ	08/24/99	1700	156819	2
Total Organic Carbon		4470	43.1	100	mg/kg	1.0	LS	08/26/99	1202	156799	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: September 02, 1999

Sample ID	: 22SLB110708D
Lab ID	: 9908592-04
Matrix	: Soil
Date Collected	: 08/18/99
Date Received	: 08/19/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons	U	121	127	254	mg/kg	1.0	AAT	08/30/99	1030	157244	1
Evaporative Loss @ 105 C		21.0	1.00	1.00	wt%	1.0	GJ	08/24/99	1700	156819	2
Total Organic Carbon		2850	43.1	100	mg/kg	1.0	LS	08/26/99	1258	156799	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: September 02, 1999

Sample ID	: 28SLB030102
Lab ID	: 9908592-05
Matrix	: Soil
Date Collected	: 08/19/99
Date Received	: 08/19/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons	U	60.0	120	240	mg/kg	1.0	AAT	08/30/99	1030	157244	1
Evaporative Loss @ 105 C		17.0	1.00	1.00	wt%	1.0	GJ	08/26/99	1650	156926	2
Total Organic Carbon		5870	43.1	100	mg/kg	1.0	LS	08/26/99	1327	156799	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: September 02, 1999

Sample ID	: 28SLB030102D
Lab ID	: 9908592-06
Matrix	: Soil
Date Collected	: 08/19/99
Date Received	: 08/19/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons	U	49.2	123	245	mg/kg	1.0	AAT	08/30/99	1030	157244	1
Evaporative Loss @ 105 C		19.0	1.00	1.00	wt%	1.0	GJ	08/26/99	1650	156926	2
Total Organic Carbon		6110	43.1	100	mg/kg	1.0	LS	08/26/99	1355	156799	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: September 02, 1999

Sample ID	: 28SLB030102M
Lab ID	: 9908592-07
Matrix	: Soil
Date Collected	: 08/19/99
Date Received	: 08/19/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons	J	186	120	240	mg/kg	1.0	AAT	08/30/99	1030	157244	1
Evaporative Loss @ 105 C		17.0	1.00	1.00	wt%	1.0	GJ	08/26/99	1650	156926	2
Total Organic Carbon		6230	43.1	100	mg/kg	1.0	LS	08/26/99	1422	156799	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: 9908592% Report Date: September 02, 1999

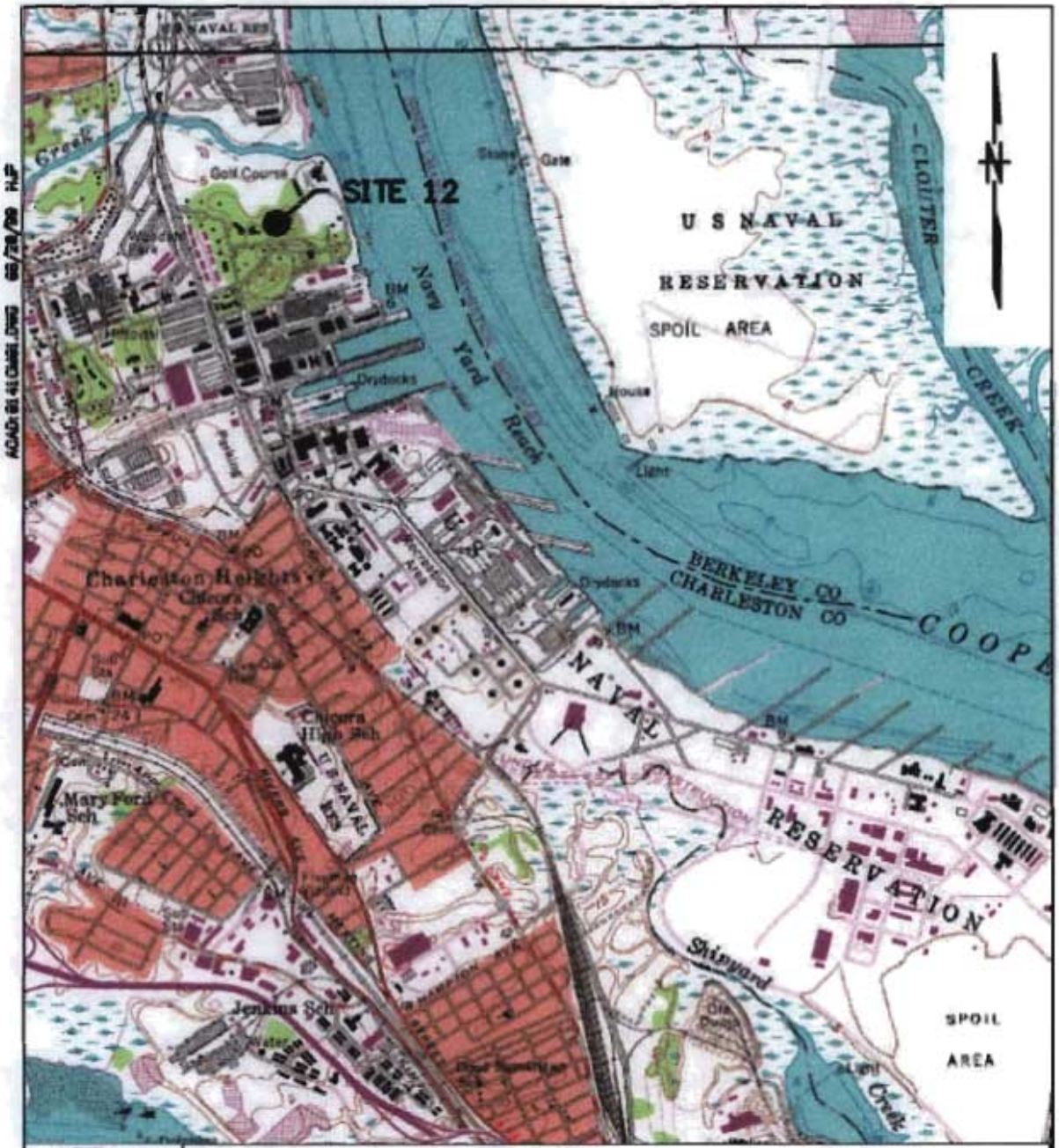
Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
General Chemistry													
QC643700	BLANK	157244											
Total Rec. Petro. Hydrocarbons						5.00	mg/kg				AAT	08/30/99	1030
QC643703	9908592-05DUP	157244											
Total Rec. Petro. Hydrocarbons				60.2		60.2	mg/kg	0.00					
QC643701	LCS	157244											
Total Rec. Petro. Hydrocarbons			10200			11500	mg/kg		113	(70.0 - 116.)			
QC643702	9908592-05MS	157244											
Total Rec. Petro. Hydrocarbons			14100	60.2		13500	mg/kg		95.6	(70.0 - 130.)			
QC641995	BLANK	156819											
Evaporative Loss @ 105 C						0.00	wt%				GJ	08/24/99	1700
QC642411	BLANK	156926											
Evaporative Loss @ 105 C						0.00	wt%				GJ	08/26/99	1650
QC641994	9908592-01DUP	156819											
Evaporative Loss @ 105 C				17.0		16.0	wt%	6.06			GJ	08/24/99	1700
QC641913	BLANK	156799											
Total Organic Carbon						11.0	mg/kg				LS	08/26/99	1050
QC641916	LCS	156799											
Total Organic Carbon			4000			4950	mg/kg		124	(88.0 - 130.)	LS	08/26/99	1044
QC641914	9908592-07PS	156799											
Total Organic Carbon			9410	6230		16400	mg/kg		108	(73.0 - 129.)	LS	08/26/99	1431
QC641915	9908592-07PSD	156799											
Total Organic Carbon			10000	6230		16500	mg/kg	4.69	103	(0.00 - 30.0)	LS	08/26/99	1531

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

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

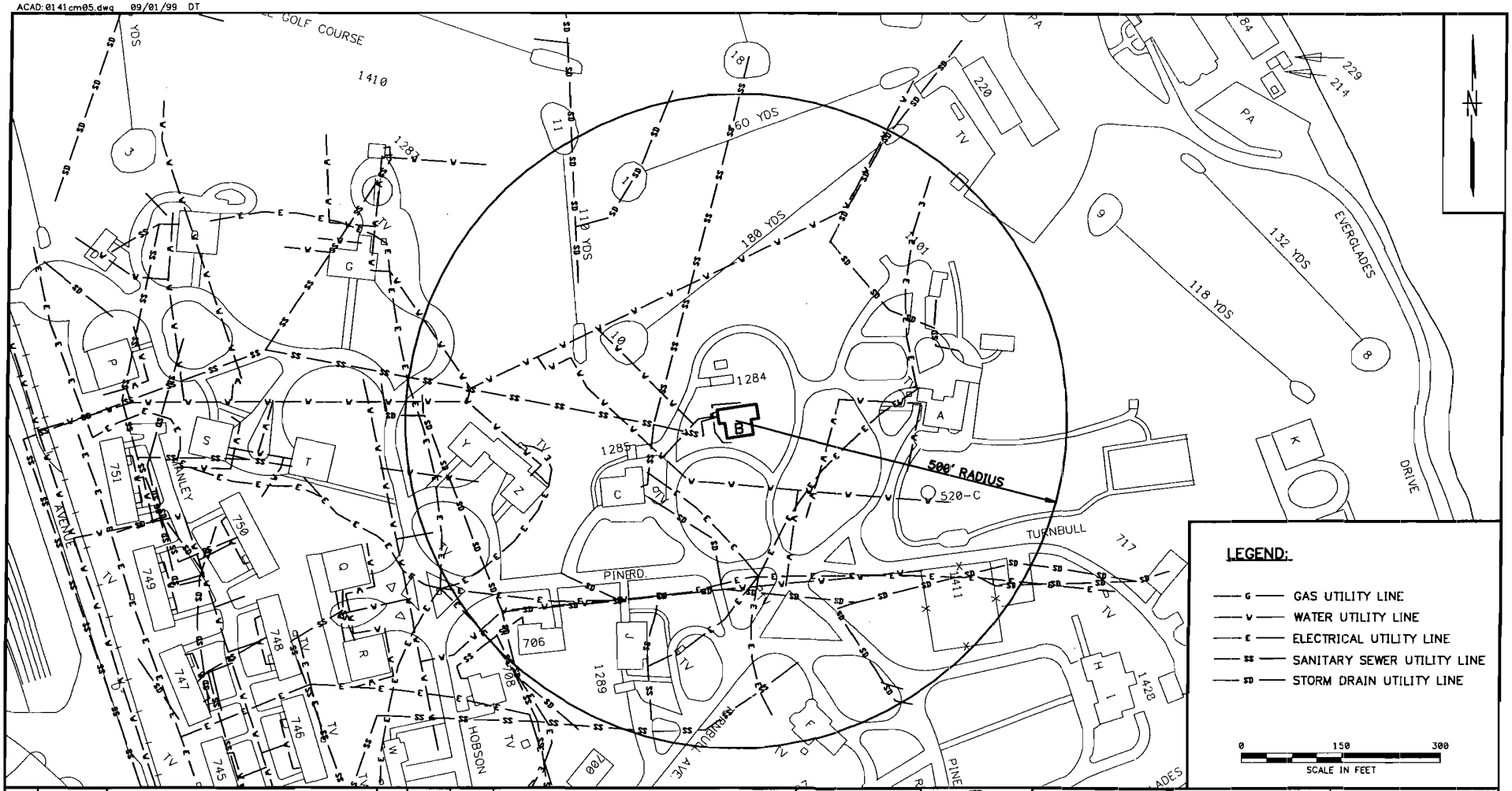
DRAWN BY HJP	DATE 8/20/99	SITE LOCATION MAP SITE 12, BUILDING B1 & B2, ZONE B CHARLESTON NAVAL COMPLEX NORTH CHARLESTON, SC	CONTRACT NO. N0141
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1 / REV. 0

FORM CADD NO. SSEV_AV.DWG - REV 0 - 1/28/98

APPENDIX D

SITE BASE MAPS

ACAD: 0141cm05.dwg 09/01/99 DT



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

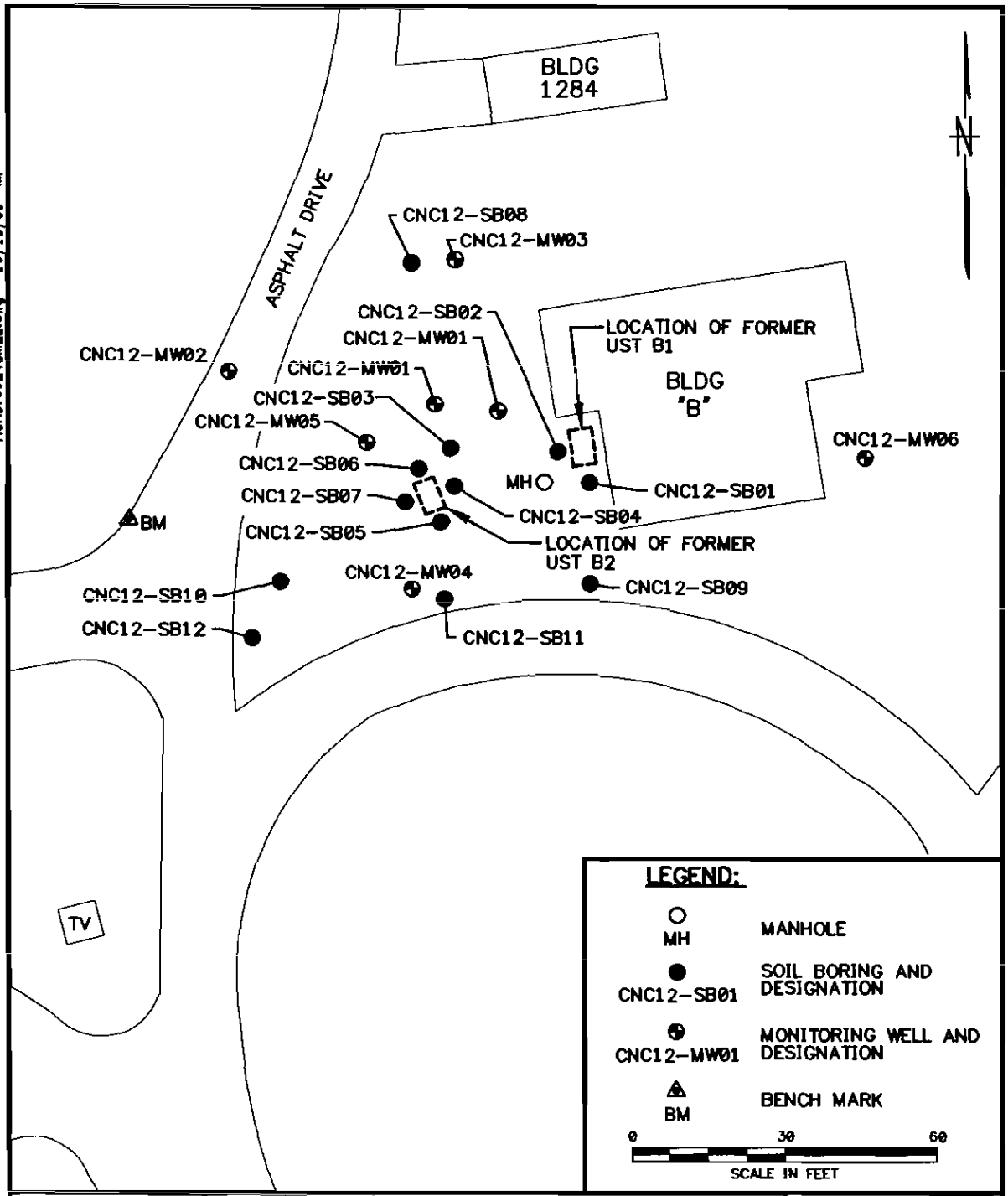
DRAWN BY DLT DATE 9/1/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION

SITE VICINITY MAP
SITE 12, QUARTERS B
ZONE B, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO. 0141
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 1
REV. 0

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



ACAD:0124CM22.dwg 10/19/99 MF

DRAWN BY MF DATE 10/19/99		MONITORING WELL AND SOIL BORING LOCATION MAP SITE 12 QUARTERS B ZONE B, 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