DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207-3199

MAY 2 1 2010

REPLY TO
ATTENTION OF

Special Projects Branch

SUBJECT: NYSDEC Spill No. 08-06523, Supplemental Sampling Report, Former Lake Ontario Ordnance Works (LOOW) Underground Storage Tank Removal, Niagara County, New York

Mr. Salvatore Calandra
NYSDEC, Region 9
270 Michigan Avenue
Buffalo, New York 14203

Dear Mr. Calandra:

The US Army Corps of Engineers (USACE), Buffalo District is pleased to provide the following supplemental sampling report related to the Underground Storage Tank (UST) Removal Action for the Former Lake Ontario Ordnance Works (LOOW) Site, Niagara County, New York. The sampling was performed on March 3, 2010 and in accordance with the NYSDEC approved work plan, dated December 22, 2009. The work plan was provided in response to your correspondence, dated November 18, 2009, that requested further work due to confirmatory analytical sample results exceeding NYSDEC soil guidance levels for semi-volatile organic compounds (SVOCs) in the following areas:

1. Tank 2.4 – West Wall
2. Tank 2.6 – North Wall
3. Tank 2.6 – East Wall

To determine the full extent of impacts, USACE performed one soil boring west of the former Tank 2.4 location and one soil boring east of the former Tank 2.6 location. Each boring was located approximately 2-feet outside the former excavation limit and within the center of the former excavation wall. See the enclosed figures for soil boring locations and the former UST excavation dimensions.

USACE reanalyzed the field notes and photos from the UST removal actions performed during 2008 and determined that the Tank 2.6 figure presented in the UST Removal Closure Report, dated May 29, 2009, was inaccurate. The former UST excavation was much closer to the Barracks building than originally depicted. The matter was discussed with you and the LOOW Project Engineer, Jeff Hall, on March 3, 2010.

During the discussion it was decided that it was impractical to install a soil boring between the North Wall of the former Tank 2.6 excavation and the Barracks Building.

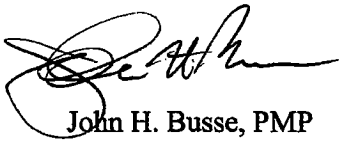
A tractor-mounted Geoprobe® rig was used to advance a 4-foot macro-corer, with acetate sleeves, into the subsurface to perform the soil borings and collect soil samples. Continuous soil samples were collected to at least the depth of the former excavations (9-feet below grade surface (bgs) for Tank 2.4 and 7-feet bgs for Tank 2.6) and examined for staining, discoloration, odors, and debris indicative of contamination. Field screening analysis was performed with a photoionization detector to detect possible organic vapors. No evidence of impacted soil was encountered at either boring location. Geologic descriptions of the soil and field screening results are presented in the enclosed boring logs. Additionally, radiation screening instruments were utilized for health and safety purposes during the entire sampling event. No radiological readings were above background levels.

Since no impacts were observed, one sample for laboratory analysis was collected from the bottom 1-foot interval of each soil boring, the depth of the former excavations. Each sample was submitted to Waste Stream Technology, Inc. and analyzed for SVOCs utilizing USEPA Method 8270 (Spill Technology and Remediation Series Compound List). As shown on the enclosed laboratory report, no SVOCs were detected in either soil sample.

The results of this supplemental sampling event indicate the extent at which soil exceeds the NYSDEC soil guidance levels for SVOCs for former Tanks 2.4 and 2.6 is less than 2-feet from the former excavation limits. Therefore, USACE respectfully requests "no further work – inactive" status for NYSDEC Spill Number 08-06523.

Please contact Jeff Hall at 716-879-4272 if you have any technical questions about the project or the supplemental sampling results. A copy of this report is also being forwarded to Mr. Kent Johnson in your Albany office.

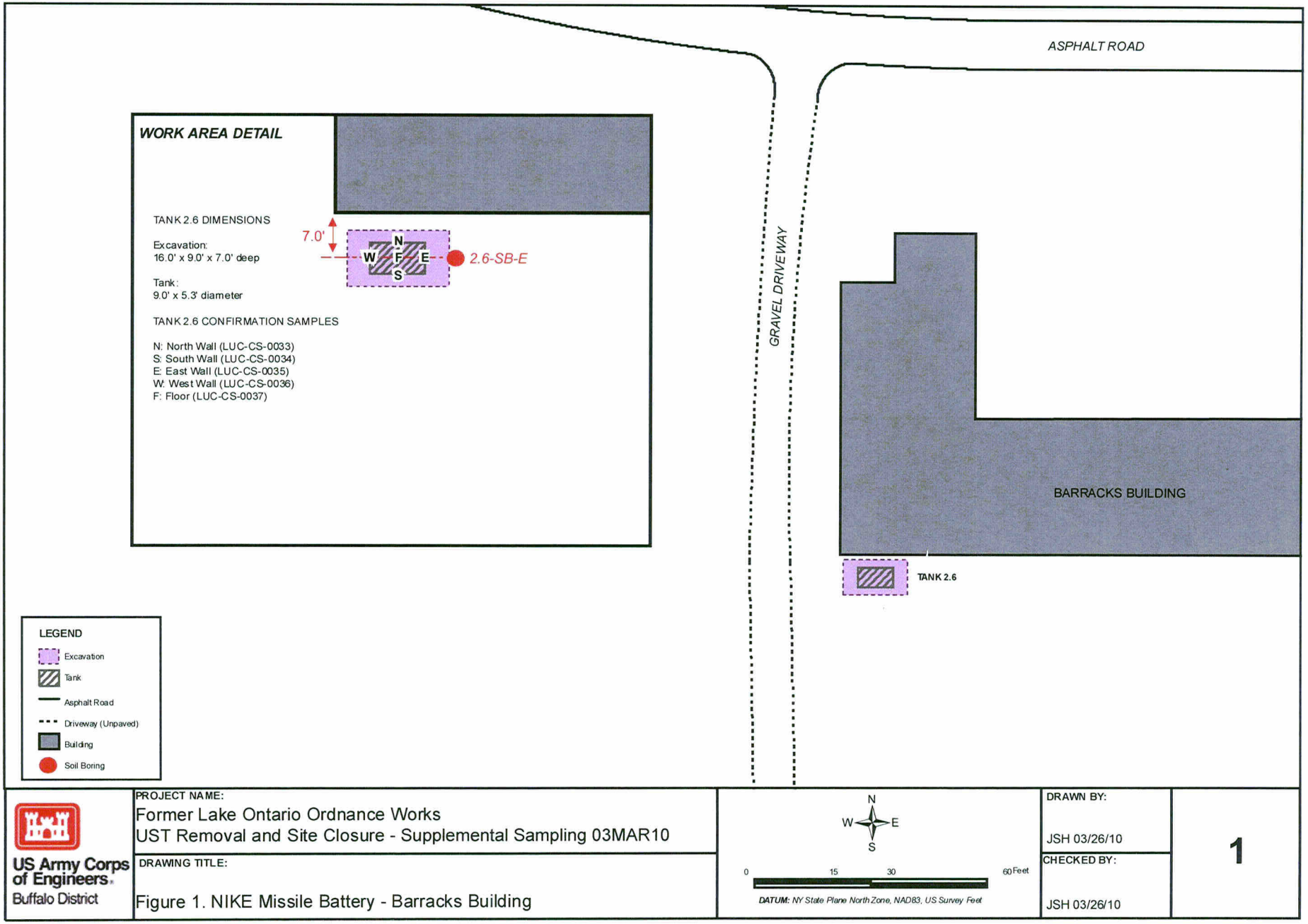
Sincerely,



John H. Busse, PMP
LOOW/NFSS Program Manager

Enclosures

FIGURES



US Army Corps of Engineers
Buffalo District

PROJECT NAME:
Former Lake Ontario Ordnance Works
UST Removal and Site Closure - Supplemental Sampling 03MAR10

DRAWING TITLE:
Figure 1. NIKE Missile Battery - Barracks Building

N
W E
S

0 15 30 60 Feet

DATUM: NY State Plane North Zone, NAD83, US Survey Feet

DRAWN BY:
JSH 03/26/10

CHECKED BY:
JSH 03/26/10

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WORK AREA DETAIL

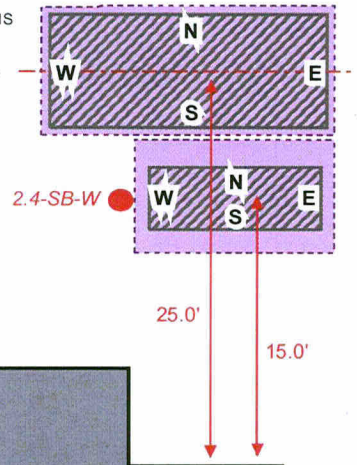
TANK 2.5 CONFIRMATION SAMPLES

N: North Wall (LUC-CS-0019/0024)
S: South Wall (LUC-CS-0020)
E: East Wall (LUC-CS-0021)
W: West Wall (LUC-CS-0022)

TANK 2.5 DIMENSIONS

Excavation:
18.0' x 8.0' x 8.5' deep

Tank:
17.8' x 7.0' diameter



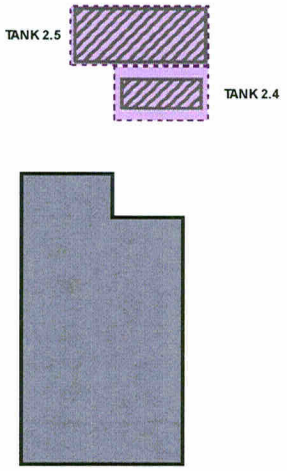
TANK 2.4 DIMENSIONS

Excavation:
12.5' x 7.5' x 9.0' deep

Tank:
10.7' x 4.0' diameter

TANK 2.4 CONFIRMATION SAMPLES

N: North Wall (LUC-CS-0014)
S: South Wall (LUC-CS-0015)
E: East Wall (LUC-CS-0016)
W: West Wall (LUC-CS-0017)



LEGEND
- Excavation
- Tank
- Asphalt Road
- Driveway (Unpaved)
- Building
- Soil Boring

US Army Corps of Engineers
Buffalo District

PROJECT NAME:
Former Lake Ontario Ordnance Works
UST Removal and Site Closure - Supplemental Sampling 03MAR10

DRAWING TITLE:
Figure 2. NIKE Missile Battery - Southern Generator Building

N
W E
S

0 12.5 25 50 Feet

DATUM: NY State Plane North Zone, NAD83, US Survey Feet

DRAWN BY:
JSH 03/26/10

CHECKED BY:
JSH 03/26/10

2

BORING LOGS

US Army Corps of Engineers.
Buffalo District

BORING LOG:
2.4-SB-W

SHEET 1 OF 1

PROJECT NAME: LOOW CON/HTRW	PROJECT NUMBER: NA	DATE: 03MAR10
LOCATION: South. Gen. Bldg., NIKE Base, WM Prop	ADDRESS: Town of Lewiston, Niagara County, New York	
DRILLING CONTRACTOR: Parratt-Wolff, Inc.	DRILLER: Mickey Marshall	
DRILL RIG TYPE: Geoprobe Model 54TR	DRILLING METHOD: Direct Push	
DRILLING FLUID: NA	SAMPLE METHOD: 4-FT Macro-Core	
BORING: 10-FT BGS DIAMETER: 2-IN	RISER INTERVAL NA TO	FT BGS
WELL DEPTH: NA	SCREEN INTERVAL NA TO	FT BGS
WELL DIAMETER: NA	GEOLOGIST: Jeff Hall	

DEPTH	Geologic Description and Observations	Photoionization Detector Measurements (PPM)	Recovery (inches)
2	Dark Brown SILT, Saturated, No Apparent Impacts	0.8	24
	Dark Brown SILT and CLAY, Saturated, No Apparent Impacts	0.7	
	Dark Brown SILT and CLAY, Saturated, No Apparent Impacts	0.8	
4	Dark Brown SILT and CLAY, Saturated, No Apparent Impacts	0.8	
	No Recovery	-	No Recovery
6	No Recovery	-	
	Dark Brown SILT and CLAY, Saturated, No Apparent Impacts	0.5	36
8	Reddish Brown CLAY and SILT, Saturated, No Apparent Impacts	0.4	
	Reddish Brown CLAY and SILT, Saturated, No Apparent Impacts, Sample 8'-9', Depth of Former Excavation = 9'	0.5	
10	Reddish Brown CLAY and SILT, Saturated, No Apparent Impacts, Refusal at 10 feet bls	0.7	
12			
14			

US Army Corps of Engineers.
Buffalo District

BORING LOG: 2.6-SB-E

SHEET 1 OF 1

PROJECT NAME: LOOW CON/HTRW	PROJECT NUMBER: NA	DATE: 03MAR10
LOCATION: Barracks Bldg., NIKE Base, WM Prop	ADDRESS: Town of Lewiston, Niagara County, New York	
DRILLING CONTRACTOR: Parratt-Wolff, Inc.	DRILLER: Mickey Marshall	
DRILL RIG TYPE: Geoprobe Model 54TR	DRILLING METHOD: Direct Push	
DRILLING FLUID: NA	SAMPLE METHOD: 4-FT Macro-Core	
BORING: 9-FT BGS DIAMETER: 2-IN	RISER INTERVAL NA TO FT BGS	
WELL DEPTH: NA	SCREEN INTERVAL NA TO FT BGS	
WELL DIAMETER: NA	GEOLOGIST: Jeff Hall	

DEPTH	Geologic Description and Observations	Photo Ionization Detector Measurements (PPM)	Recovery (inches)
	Medium GRAVEL some Brown SILT some Peat, Saturated, No Apparent Impacts	1.2	12
2	Medium GRAVEL and Brown SILT, Saturated, No Apparent Impacts	1.2	48
	Brown SILT and CLAY, Saturated, No Apparent Impacts	1.1	
4	Brown SILT and CLAY, Saturated, No Apparent Impacts	1.2	
	Brown SILT and CLAY, Saturated, No Apparent Impacts	0.9	
6	Brown CLAY, Saturated, No Apparent Impacts	0.7	24
	Brown CLAY, Saturated, No Apparent Impacts, Sample Obtained 6'-7', Depth of Former Excavation = 7'	2.3	
8	Brown CLAY, Saturated, No Apparent Impacts	0.9	
	Brown CLAY, Saturated, No Apparent Impacts	0.9	
10			
12			
14			

LABORATORY REPORT

WASTE STREAM TECHNOLOGY, INC.
302 Grote Street
Buffalo, NY 14207
(716) 876-5290

Analytical Data Report
Report Date: 03/16/10
Work Order Number: 0C03023

Prepared For
Jeff Hall
USACE-Buffalo District
1776 Niagara Street
Buffalo, NY 14207
Fax: (716) 879-4355

Site: LOOW GON HTRW

Enclosed are the results of analyses for samples received by the laboratory on 03/03/10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brian S. Schepart, Ph.D., Laboratory Director

ENVIRONMENTAL LABORATORY ACCREDITATION CERTIFICATION NUMBERS
NYSDOH ELAP #11179 NJDEPE #73977 PADEP #68757 CTDPH #PH-0306 MADEP #M-NY068 FLDOH #E87662

USACE-Buffalo District	Project: Env. Projects - Soil/Solid	
1776 Niagara Street	Project Number: LOOW GON HTRW	**Reported:**
Buffalo NY, 14207	Project Manager: Jeff Hall	03/16/10 14:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
2.4-SB-W-(8-9)	0C03023-01	Soil	03/03/10 12:00	03/03/10 15:18
2.6-SB-E-(6-7)	0C03023-02	Soil	03/03/10 13:00	03/03/10 15:18

USACE-Buffalo District	Project: Env. Projects - Soil/Solid	
1776 Niagara Street	Project Number: LOOW GON HTRW	**Reported:**
Buffalo NY, 14207	Project Manager: Jeff Hall	03/16/10 14:53

Semivolatile Organic Compounds by EPA Method 8270C

Waste Stream Technology

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2.4-SB-W-(8-9) (0C03023-01) Soil Sampled: 03/03/10 12:00 Received: 03/03/10 15:18									
naphthalene	ND	98	ug/kg dry	1	AC00805	03/08/10	03/11/10	8270	U
Acenaphthylene	ND	98	"	"	"	"	"	"	U
acenaphthene	ND	98	"	"	"	"	"	"	U
fluorene	ND	98	"	"	"	"	"	"	U
phenanthrene	ND	98	"	"	"	"	"	"	U
anthracene	ND	98	"	"	"	"	"	"	U
fluoranthene	ND	98	"	"	"	"	"	"	U
pyrene	ND	98	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	98	"	"	"	"	"	"	U
chrysene	ND	98	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	98	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	98	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	98	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	98	"	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	98	"	"	"	"	"	"	U
Benzo (g,h,i) perylene	ND	98	"	"	"	"	"	"	U
Surrogate: Nitrobenzene-d5		*80.3 %*	*58-105*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*80.7 %*	*67-101*		"	"	"	"	
Surrogate: Terphenyl-d14		*100 %*	*38-133*		"	"	"	"	
2.6-SB-E-(6-7) (0C03023-02) Soil Sampled: 03/03/10 13:00 Received: 03/03/10 15:18									
naphthalene	ND	99	ug/kg dry	1	AC00805	03/08/10	03/11/10	8270	U
Acenaphthylene	ND	99	"	"	"	"	"	"	U
acenaphthene	ND	99	"	"	"	"	"	"	U
fluorene	ND	99	"	"	"	"	"	"	U
phenanthrene	ND	99	"	"	"	"	"	"	U
anthracene	ND	99	"	"	"	"	"	"	U
fluoranthene	ND	99	"	"	"	"	"	"	U
pyrene	ND	99	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	99	"	"	"	"	"	"	U
chrysene	ND	99	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	99	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	99	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	99	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	99	"	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	99	"	"	"	"	"	"	U
Benzo (g,h,i) perylene	ND	99	"	"	"	"	"	"	U
Surrogate: Nitrobenzene-d5		*80.6 %*	*58-105*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*83.1 %*	*67-101*		"	"	"	"	
Surrogate: Terphenyl-d14		*99.8 %*	*38-133*		"	"	"	"	

USACE-Buffalo District	Project: Env. Projects - Soil/Solid	
1776 Niagara Street	Project Number: LOOW GON HTRW	**Reported:**
Buffalo NY, 14207	Project Manager: Jeff Hall	03/16/10 14:53

Conventional Chemistry Parameters by EPA Methods

Waste Stream Technology

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2.4-SB-W-(8-9) (0C03023-01) Soil	**Sampled: 03/03/10 12:00**		**Received: 03/03/10 15:18**						
% Solids	**78.4**	0.1	%	1	AC00903	03/08/10	03/09/10	% calculation	
2.6-SB-E-(6-7) (0C03023-02) Soil	**Sampled: 03/03/10 13:00**		**Received: 03/03/10 15:18**						
% Solids	**83.6**	0.1	%	1	AC00903	03/08/10	03/09/10	% calculation	

Notes and Definitions

U	Analyte included in the analysis, but not detected at or above the reporting limit.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

US Army Corps of Engineers
Buffalo District

Chain of Custody Record

COC No.: 030310

Page 1 of 1   Date: 03/03/10

Name: USACE - Buffalo District
Address: 1776 Niagara Street
Phone Number: (716) 879-4272
Project Manager: JEFF HALL
Project Name: LOOW HTRW
Job/Contract/P.O. #:
Sampler (Signature)   (Printed Name) JEFFREY S. HALL

Laboratory Name: Wst Stream
Address: 302 Grote St
Phone: Bflo NY 14207
Contact: 716 876-5290

Requested Parameters

Field Sample #	Container Type	# Jars	Date	Time	Matrix	Metals	PAHs	Pesticides/PCBs	TOC	Dioxin/Furan	Mirex	Elutriate	Elutraite Water	Particle Size	*Hyalella azteca*	*Chironomus tentans*	*Lumbriculus variegatus*	SVOCs 8270 STARS		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
2.4-SB-W-(8-9)	Glass	1	03-03-10	1200	Soil													X		01
2.6-SB-E-(6-7)	Glass	1	03-03-10	1300	Soil													X		02

Relinquished by	Date	Received by	Date
Signature: [signature]	03-03-10	Signature: [signature]	3/3/10
Printed Name: JEFFREY S. HALL	Time: 1518	Printed Name: Nicole O'Sullivan	Time: 15:18
Company: USACE		Company:	

Relinquished by	Date	Received by	Date
Signature:		Signature:	
Printed Name:	Time:	Printed Name:	Time:
Company:		Company:	

Subtotal Number of Containers:

Preservatives for above requested parameters:
A.   C.
B.   D.

Methods for above requested parameters:

Shipment Method:
Airbill No.:

USACE Location