ESE Earth Science Engineering, P.C.

• Civil • Geotechnical • Environmental • Zebra Mussel Controls •

August 30, 2004

Mr. Daniel J. Eaton
Engineering Geologist
New York State Department of
Environmental Conservation (NYSDEC)
Division of Environmental Remediation
Remedial Bureau A, 11th Floor
625 Broadway
Albany, N.Y. 12233-7015

Re: Black Ash Pond: Environmental Restoration Project, E516009
Response to SI/RAR Workplan Review

Dear Mr. Eaton:

We have completed a review of your comment letter dated August 2, 2004 regarding the referenced project. We respectfully submit the following revisions, supplements and modifications to our July 2004 Workplan. Consistent with our previous conversation, we intend to finalize this letter document with you so that it may serve as an addendum to the referenced project Workplan.

Response to Comments 1 and 2:

Revised River Sediment Sampling Plan and Procedures

River sediment samples will be collected from a total of two (2) upstream locations and four downstream locations. Upstream sediment sampling locations will include one remote upstream location (upstream of the existing dam) and one location slightly upstream of the Black Ash Pond. The six (6) total upstream and downstream river sediment sampling locations have been revised and are shown in Figure 2.

River sediment samples will be collected at each of the six sediment sampling locations from depth intervals including: 1) 0 to 6-inch depth, and; 2) 12 to 18-inch depth. During the collection of sediment samples, emphasis for sample collection will be given to representative sediments within these depth ranges that exhibit obvious color and texture change (including the black ash media). The river sediment samples will be collected using stainless steel hand-coring tools, equipped with removable teflon core sleeves. Upon hand-core collection, the sediment samples will be decanted into parameter specific sampling containers. The hand-core tool and teflon sleeves will then be decontaminated

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using a soap wash/scrub, potable water rinse, nitric acid rinse, followed by a deionized water rinse.

Response to Comment 3

Soil and Waste Media Investigation Intent

As part of the subsurface soil and waste media investigation tasks, a reasonable allotment of 15 soil/black ash samples and 7 waste media (offsite materials) samples will be collected for TCL parameter analysis to assess the characteristics, nature, and extent of contamination at the site. During the field investigation, it is expected that certain soil and waste media specific irregularities, appearance, staining, or characteristics will be identified. When encountered, these conditions would represent reasonable cause for sample collection and analysis.

As the field investigation progresses, the need to collect more of one sample media, as compared to another, may be realized. Under these circumstances, representatives of the NYSDEC will be contacted to make the applicable field changes or supplements regarding the number and type of samples to be collected. Consistent with the planned total number of samples to be collected as part of the SI, it is anticipated that site specific contaminants of concern will be identified within a number of the samples collected. In the event contaminants of concern are identified at several Phase I SI locations, plans for supplemental sample collection will be developed as part of subsequent Phase 2 Site Investigations.

Response to Comment 4

Revised Subsurface Soil and Waste Media Sample Collection Criteria

A critical objective of the Waste Media Investigation task of the SI will be to identify the contaminants related specifically to the black ash media (and any other media encountered within the Black Ash Pond Site). During the completion of test trenching and test boring efforts, emphasis will be given to collect soil/black ash samples that are 1) encountered immediately above or below the water table and/or 2) exhibit obvious discoloration/color change and/or texture change as compared to soils and/or waste media in close horizontal or vertical proximity (as described in the Response to Comment 3).

Response to Comment 5

Revised Soils (including Black Ash) Investigation Plan

As part of SI, a total of nIne (9) black ash samples will collected. As part of this task, black ash samples will be collected from locations including 1) at grade; 2) just above the water table; and 3) just below the water table. Six (6) additional black ash samples will be collected based on the above or other conditions encountered in the field.

Response to Comment 6

Site Investigation Intent and Background Soil Sampling

It is agreed that a primary intent objective of the SI is to collect media samples to assess/delineate the nature and extent of contamination, if any, at the subject site. It is our intention to collect 15 soil/black ash samples, 8 waste media samples, and 7 groundwater samples to characterize the nature and extent of contamination at the site, while 11 river sediment/seep samples will be collected to assess potential river impacts from the site. As you are aware, it is also our intent to collect a limited number of remote off-site and nearby industrial (Paper Mill) off-site background media samples in order to characterize remote background soil conditions and industrial off-site background conditions as related to potential black ash contaminants identified, respectively. Since all media samples collected as part of the SI will be analyzed for TCL parameters, it is our opinion that background media sampling should be completed as part of the Phase 1 SI in order to concurrently identify background conditions which may or may not be related to the black ash site. In addition to maximizing project efficiency and economy, as you are aware, the results of background media sampling and analysis are typically interpreted and/or referenced as part of the qualitative human health risk assessment, completed as part of the SI/RAR. Accordingly, unless otherwise directed by the NYSDEC, ESE proposes to implement background media sampling as part of the Phase 1 SI in accordance with the requirements listed within the December 2002 NYSDEC DER-10 guidance/reference.

Response to Comment 7

Inclusion of Community Air Monitoring Plan (CAMP)

During excavation efforts, a Community Air Monitoring Plan (CAMP) will be followed in accordance with the New York State Department of Health Generic Community Air Monitoring Plan (herein referenced as "the Plan"). Consistent with the recommendations listed on page 1 of 3 of "the Plan," since VOC contamination is not likely prevalent at the subject site, ESE proposes to implement only particulate monitoring at the site during the completion of the subsurface test trench investigation task. Consistent with the remote setting of the site, it is our opinion that particulate monitoring should not be warranted during the completion of less-invasive test boring or other media sampling activities.

Accordingly, ESE proposes to incorporate the "Particulate Monitoring, Response Levels, and Actions," listed on page 3 of 3 of the "the plan" as part of the subsurface test trench investigation task. As part of this effort, ESE will continuously monitor particulates (using real-time monitoring equipment) at one upwind and two downwind locations (to be determined daily based on wind rose interpretation and prevailing wind directions) for the duration of subsurface test trench investigations (expected to be no more than 5 days field time). A copy of the NYSDOH Generic Community Air Monitoring Plan will be included as an appendix to this addendum.

Response to Comments 8 and 9

Figure Revisions

- Figure 1 revised to emphasize the 25-acre site.
- Skull and cross bone designations deleted.
- Figure 2 revised to specifically differentiate on and off-site sampling.
- Figure 2 revised to include road, boat launch, and nearby buildings.
- Figure 2 revised to include all symbols in legend.
- Figure 2 revised to include approximate scale and north arrow.

Response to Comment 10

It is recognized and understood that the Potsdam Sandstone originated in the Cambrian Period. Future reference to the Potsdam Sandstone (i.e., SI/RA Report) will include reference to the Cambrian Period.

Response to Comment 11

Off-site Waste Samples

The number of off-site waste samples will be increased to include samples collected with depth for a total of eight (8) off-site waste bed samples.

Response to Comment 12

Groundwater Investigations (Supplemental and Revised Monitoring Well Locations)

As part of the groundwater investigation task, the number of shallow groundwater monitoring wells to be installed will be increased from five (5) to seven (7). As shown on Figure 2 (Revised), additional monitoring wells will be installed at the boring B-9 location (MW-6) and at a supplemental boring location completed in between test trenches TT-9 and TT-10 (MW-7).

Black Ash Pond groundwater monitoring wells will be installed (as originally planned) at locations MW-3 and MW-4, while downgradient monitoring wells will be installed (as originally planned) at locations MW-1 and MW-5. A site specific upgradient monitoring well will be installed at location MW-2.

Response to Comment 13

Groundwater Investigations (Monitoring Well Screens)

Groundwater monitoring well screens will be installed to straddle the encountered water table. Typically, 10 or 15 foot length well screens are installed to accomplish this objective.
In the case of the Black Ash Pond site (if requested by the NYSDEC), a 20 foot length well screen could be utilized to straddle not only the water table but also the black ash-soil interface. Implementation of this alternative would likely maximize the ability to detect/identify the migration of potential contaminants to the local shallow groundwaters. Accordingly, ESE would support this concept if specifically requested by the NYSDEC.

Response to Comment 14

Groundwater Investigations (well purging and sampling using low-flow pumps)

The procedure for well purging and sampling will be changed to incorporate the use of QED low-flow pumps and dedicated tygon tubing.

In addition to a revised Table 1 – Sampling and Analysis Matrix, we have also enclosed, for your review and acceptance, a supplemental cost spreadsheet itemizing anticipated supplemental costs incurred relative to requested Workplan revisions and revised cost tables from the March 24, 2004 funding application. After you have reviewed the above and enclosed, please contact us to indicate your acceptance or exceptions to the responses. Thank you for your time, consideration, and efficiency.

Sincerely,

Earth Science Engineering, P.C.
Douglas R. Ferris, P.E.

Attachments
Figure 1 – Site Location Map (Revised 8/24/04)
Figure 2 – Site Plan (Revised 8/24/04)
Table 1 – Sampling and Analysis Matrix (Revised 8/24/04)
Supplemental Cost Spreadsheet
Estimated Project Costs (Revised 8/24/04)

cc: Mr. Robert A. Ashline, Supervisor, Town of Willsboro
Mr. Victor J. Putman, Essex County Planning Office
Mr. Ian Ushe, NYSDOH
Mr. Richard L. Wagner, P.E., NYSDEC Region 5 Ray Brook Office
Town of Willsboro Board Members

FIGURE 1

SITE LOCATION MAP
(Revised 8/24/04)

SITE LOCATION MAP (Revised 8/24/04)

Name: WILLSBORO
Date: 8/24/104
Scale: 1 inch equals 1000 feet

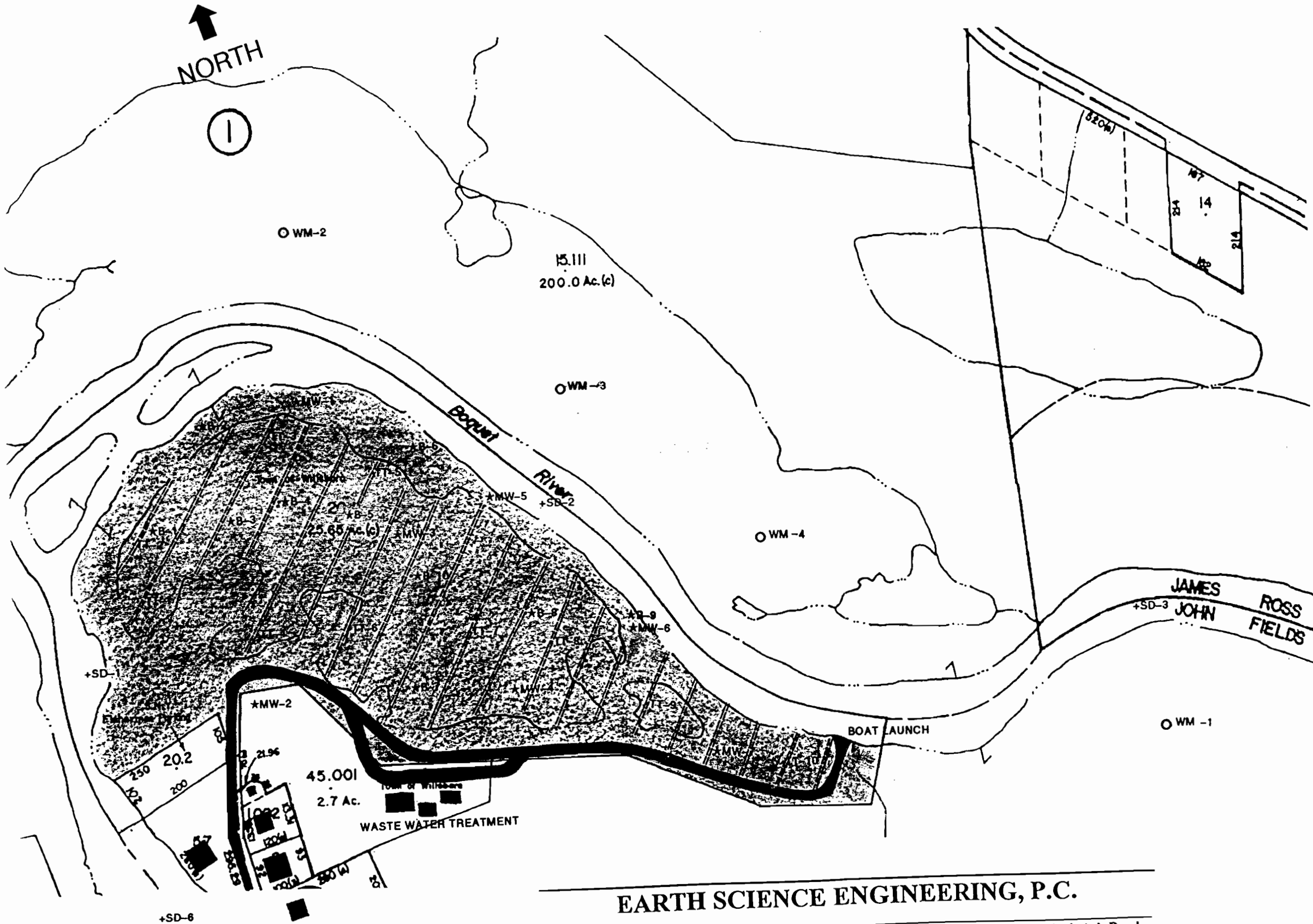
Location: 044° 21' 52.8" N 073° 23' 30.9" W

FIGURE 2

SITE PLAN
(Revised 8/24/04)

SITE PLAN WITH SI SAMPLING LOCATIONS

Revised 8/24/04



LEGEND

Proposed Test Trench Location	==
Soil Boring Location / Number	★E
Soil Boring Location Number / Sampling Location	•★E
Soil Boring/Monitoring Well Location / Number	★MW
Test Trench Sample Location / Number	•TT
River Sediment Sample Location / Number	+SD
Waste Sample Location / Number	○ WM
Roads/Buildings Location	
On-Site Sampling Location	

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Town of Willsboro-Black Ash Pond
Environmental Restoration Project

SCALE: 1 in = 200 ft

TABLE 1

SAMPLING AND ANALYSIS MATRIX
(Revised 8/24/04)

TABLE - 1: SAMPLING AND ANALYSIS MATRIX
TOWN OF WILLSBORO - BLACK ASH POND ENVIRONMENTAL RESTORATION PROJECT

MATRIX	SAMPLING EVENT	# OF SAMPLES	LOCATIONS	QA/QC SAMPLES	PARAMETERS AND ANALYTICAL METHODS
SOILS AND BLACK ASH	1 (SDG #1)	10	Various Subsurface (Test Trench) Locations (TT-#) and Background Soil Samples	1 matrix spike (MS), 1 matrix spike duplicate (MSD), 1 trip blank	Organic Compounds (Including VOCs, Semi-VOCs, PCBs, Pesticides, and Tentitively Identifiable Compounds) via Method CLP-OLM 4.2 Metals, Mercury, Cyanide via Method CLP-ILM 4.0
	2 (SDG #2)	5	Various Subsurface (Test Boring) Locations (TB-#)	1 matrix spike (MS), 1 matrix spike duplicate (MSD), 1 trip blank	Organic Compounds (Including VOCs, Semi-VOCs, PCBs, Pesticides, and Tentitively Identifiable Compounds) via Method CLP-OLM 4.2 Metals, Mercury, Cyanide via Method CLP-ILM 4.0
GROUNDWATER	3 (SDG #3)	7	Monitoring Wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, and MW-7	1 matrix spike (MS), 1 matrix spike duplicate (MSD), 1 trip blank	Organic Compounds (Including VOCs, Semi-VOCs, PCBs, Pesticides, and Tentitively Identifiable Compounds) via Method CLP-OLM 4.2 Metals, Mercury, Cyanide via Method CLP-ILM 4.0
RIVER SEDIMENT AND SEEP	2 (SDG #4)	11	River Sediment Locations SD-1, SD-2, SD-3, SD-4, SD-5, and SD-6 (SD-2 will be a seep sample)	1 matrix spike (MS), 1 matrix spike duplicate (MSD), 1 trip blank	Organic Compounds (Including VOCs, Semi-VOCs, PCBs, Pesticides, and Tentitively Identifiable Compounds) via Method CLP-OLM 4.2 Metals, Mercury, Cyanide via Method CLP-ILM 4.0
WASTE MEDIA & WASTE RELATED RESIDUE	2 (to be incl. as part of SDG #5)	8	Various waste and waste residue media encountered during completion of Site Investigations	1 trip blank MS/MSD Not Applicable due to variable matrix and sample heterogeneity	Organic Compounds (Including VOCs, Semi-VOCs, PCBs, Pesticides, and Tentitively Identifiable Compounds) via Method CLP-OLM 4.2 Metals, Mercury, Cyanide via Method CLP-ILM 4.0

NOTES: SDG = sample delivery group; All media samples to be analyzed in accordance with NYSDEC 2000 Analytical Services Protocol, Category B protocols via listed CLP organic laboratory methods (OLM) and CLP inorganic laboratory methods

SUPPLEMENTAL COST

SPREADSHEET

SITE INVESTIGATION SUPPLEMENTAL COSTS
(Based on 8/2/04 NYSDEC Comments)

NYSDEC Comment	Task Description and Substantiation	Supplemental Costs
1	**Additional River Sediment Sampling and Analysis** • Collect 2 additional sediment samples at one remote upstream location • Engineering Labor: 2 hrs x $60.50/hr. = $121.00 • Samples for TCL Analysis: 2 ea. x $635 = $1,270	**$1,391.00**
2	**River Sediment Sampling – Change of Procedure** • Propose to sample 0-6" and 12-18" depth intervals at 6 locations. Subject change in sampling depth (now includes sample depth range), however, no additional sampling labor or testing will be incurred, thus no addition costs added as per this change/NYSDEC comment.	**$ 0**
3	**Soil and Waste Media Investigation Intent** • Provided additional definition of soil and waste media investigation intent. No additional labor or testing, thus no additional costs incurred as per this NYSDEC comment.	**$ 0**
4	**Revised Soil and Waste Media Sample Collection Criteria** • Slight revision pertaining to soil and waste media investigation tasks. No additional labor or testing, thus no additional costs incurred as per this NYSDEC comment.	**$ 0**
5	**Black Ash Media Sampling Locations** • Clarified Black Ash media sampling locations. No additional labor or testing, thus no additional costs incurred as per this NYSDEC comment.	**$0**
6	**Soil Investigation Intent/Background Media Sampling** • Added details relating to the intent of media sampling and analysis intent and the need to collect background soil samples as part of the Phase 1 SI. • No additional labor or testing, thus no additional costs incurred as per this NYSDEC comment.	**$ 0**
7	**Community Air Monitoring During Excavation** • Agreed w/ NYSDEC to employ particulate monitoring (1 upwind and 2 downwind locations) during the completion of subsurface excavation investigations (estimated 11 day effort). • Engineering Labor (setup, monitoring) : 27 hrs x $60.50/hr. = $1,633.50 • Direct Expenses: Rental of Equipment: 3 weeks x $225.00/wk. = $675.00	**$2,308.50**

SITE INVESTIGATION SUPPLEMENTAL COSTS (cont.)
(Based on 8/2/04 NYSDEC Comments)

8 & 9 **SI/RAR Figure Revisions** **$ 0**

- No additional labor or testing, thus no additional costs incurred as per this NYSDEC comment.

10 **Reference Information Change re: Geology** **$ 0**

- No additional labor or testing, thus no additional costs incurred as per this NYSDEC comment.

11 **Additional Off-Site Soil/Waste Media Sampling Analysis** **$2,721.50**

- Collect additional media samples (w/ depth) from off-site waste- bed locations (4 additional subsurface soil/waste media samples)
- Engineering Labor: 3 hrs x $60.50/hr. = $181.50
- Samples for TCL Analysis: 4 ea. x $635 = $2,540

12 **Additional Groundwater Monitoring Wells** **$5,228.00**

- Install/Sample Two (2) Additional Monitoring Wells as per NYSDEC request
- Engineering Labor: 24 hours x $60.50/hr. = $1,452.00
- Samples for TCL Analysis: 2 ea. x $635 = $1,270
- Supplemental Drilling Services ($2,506)
    - Split Spoon Drilling; 2 loc. x 25 l.f. x $4/spoon = $200
    - HSA: 2 loc. x 25 l.f. x $16/ft = $736
    - Well Screen: 2 loc. x 20 l.f. x $14/ft = $560
    - Well Riser: 50 l.f. x $13/ft. = $650
    - Protective Casing: 2 wells x $120/ea. = $240
    - Steam Generator 1 days x $70/day = $70
    - Moving bet. Wells = $50

13 **Monitoring Well Screen Placement/Length** **$700.00**

- Discussed/re-defined well screen placement as pertaining to water table and black ash/subsurface soil interface
- Additional cost will include 10 feet of additional PVC well Screen for each monitoring well
- Drilling Cost: 5 wells x 10 add. feet of screen x $14/ft = $700

14 **Revision to Well Purging/Sampling** **$934.00**

- Change well purging/sampling to use low-flow (QED) pumps
- Engineering Labor: 8 hours x $60.50/hr. = $484.00
- Rental of QED low-flow pumps: 3 days x $150/day = $450

ESTIMATED PROJECT COSTS
(Revised 8/24/04)

ESTIMATED PROJECT COST
(Revised 8/24/04)

Project :	TOWN OF WILLSBORO - BLACK ASH POND	**Date:**	08/30/04
Project Description :	SITE INVESTIGATION & REMEDIAL ALTERNATIVES REPORT	**Engineering Firm:**	ESE
Client :	TOWN OF WILLSBORO	**Project Number:**	P-01-0021
Client Contact :	TBD	**Project Manager**	Douglas R. Ferris, P.E.

	Man-hours																
Task	**Tech. Typist**		CADD **Draft**		**Env. Scient.**		**Asst. Engr.**		**Eng.**		**Proj. Eng.**		**Sen. Proj. Eng./ Hyd.**		**Pres. Man. Eng.**	**Direct Costs**	**SBO**	**Totals**
1. Project Scoping and Workplan Preparation	8		8								24		20		8			$4,686.00
2. Site Investigations . IRM. and Reporting																		
a. Subcontractor Procurement and Admin.	6										20		20		8			$3,993.00
b. Prelim. Reconnaissance, Research, and Survey											8		8		8		$6,000.00	$7,980.00
c. Prelim. Subsurface Investigations							16				40		4		4	$200.00	$9,970.00	$14,427.00
d. Subsurface Borings/Groundwater Investigations							16		35		52		4		4	$750.00	$22,301.00	$30,250.50
e. River Sediment and Seep Investigations							16		2		18		4		4		$12,700.00	$15,565.50
f. Prep./Implement IRM (to be determined)																		$0.00
g. Phase 2 Site Investigations (to be determined)																		$0.00
h. Qualitative Health Risk Assessment									27		8		48		8	$675.00	$2,109.00	$9,697.50
i Data Usability and SI Reporting	12		32		34		8				40		60		16	$100.00		$13,877.50
3. Remedial Alternative Evaluation and Report	12		16		22				36		24		48		24	$100.00		$12,810.50
4. Administration and Meetings											16		20		48			$7,370.00
Totals	**38**	**0**	**56**	**0**	**56**	**0**	**56**	**0**	**100**	**0**	**250**	**0**	**236**	**0**	**132**	**$1,825.00**	**$53,080.00**	**$120,658**

ESTIMATED PROJECT COST
(Revised 8/24/04)

Project :	TOWN OF WILLSBORO - BLACK ASH POND	Date:	08.30.04
Project Descripti	SITE INVESTIGATION & REMEDIAL ALTERNATIVES REPOF	Engineering Firm:	ESE
Client :	TOWN OF WILLSBORO	Project Number:	P-01-0021
Client Contact :	TBD	Project Manager:	Douglas R. Ferris, P.E.

	Title	Avg. Hourly Direct Salary ($/hour)	Hours		Cost
A.	President/Managing Engineer	$35.00	132	=	$4,620.00
		$0.00	0	=	$0.00
B.	Senior Project Engineer/Hydrogeologist	$30.00	236	=	$7,080.00
		$0.00	0	=	$0.00
C.	Project Engineer	$25.00	250	=	$6,250.00
		$0.00	0	=	$0.00
D.	Engineer/Environmental Technician	$22.00	100	=	$2,200.00
		$0.00	0	=	$0.00
E.	Assistant Engineer	$18.00	56	=	$1,008.00
		$0.00	0	=	$0.00
F.	Environmental Scientist	$25.00	56	=	$1,400.00
		$0.00	0	=	$0.00
G.	CADD Operator /Draftsman	$16.00	56	=	$896.00
		$0.00	0	=	$0.00
H.	Technical Typist	$12.00	38	=	$456.00

I. Total Personnel Billings: **$23,910.00**

II. Multiplier **2.750** = **$65,752.50**

III. Estimate of Direct Expenses

A	Travel by Auto	0 miles @	$0.37	=	$0.00
B	Reproduction (Xerox)	3000 Pages @	$0.05	=	$150.00
C	Reproduction (Prints)	50 Pages @	$1.00	=	$50.00
D	Cadd Time	Days @	$125.00	=	$0.00
E	PID Rental	5 Days @	$100.00	=	$500.00
F	Camp Equip.	3 Weeks @	$225.00	=	$675.00
G	QED Pump	3 Days @	$150.00	=	$450.00
	Subtotal				$1,825.00
II	Services by Others (SBOs)				
	1. Laboratory Analyses				$30,054.00
	2. Drilling/Subsurface Borings/Well Installation				$14,256.00
	3. Test Trench Excavation				$2,770.00
	4. Survey and Base Mapping				$6,000.00
	Subtotal				$53,080.00

Total Estimate of Direct Expenses & SBOs $54,905.00

III. Total Cost (I. + II.) **$120,658**

CALCULATION OF COSTS FOR SERVICES-BY-OTHERS (SBOs)

TASK			COST
1. Field Survey and Base Mapping (incl. boundaries)			**$6,000**
2. Test Pit/Trench Excavations			**total $2,770**
a. Mob/Demob		$ 250	
b. Test Pit Excavation	4 days x 9 hrs x $70/hr.	$2,520	
3. Subsurface Drilling via Geoprobe			**total $3,800**
a. Mob/Demob		$ 500	
b. Geoprobe Drilling	2 days x $1,650/day	$3,300	
4. Monitoring Well Drilling and Well Installation			**total $10,456**
a. Mob/Demob		$ 350	
b. Split Spoon Drilling	7 loc. x 25 l.f. x $4/spoon	$ 700	
c. HSA	7 loc. x 23 l.f. x $16/ft.	$2,576	
d. Well Screen	7 loc. x 20 l.f. x $14/ft.	$1,960	
e. Well Riser	130 l.f. x $13/ft.	$1,690	
f. NX-Core	20 l.f. x $55/ft.	$1,100	
g. Protective Casing	7 wells x $120/ea.	$ 840	
h. Drums	6 drums x $60/ea.	$ 360	
i. Steam Generator	6 days x $70/day	$ 420	
j. Decon Pad		$ 110	
k. Moving bet. Wells		$ 350	
5. Analytical Services			**total $30,054**
a. Test Trench Soil Samples	10 samples x $635*	$7,200	
b. Boring Soil Samples	5 samples x $635*	$3,600	
c. Groundwater Samples	7 samples x $635*	$4,445	
d. Sediment/Seep Samples	12 samples x $635*	$7,620	
e. Waste Media Samples	8 samples x $635*	$5,080	
f. Background Samples	3 samples x $703*	$2,109	

Note: * Includes costs for matrix spike/matrix spike (MS/MSD) duplicate samples