

**Scope of Work for Canal Sediment Sampling
Portage Canal Restoration
City of Portage**

I. Introduction

Please refer to your attached proposal dated September 23, 2002 (hereinafter called "proposal") describing the methodology and unit costs for the Scope of Work requested herein.

II. Scope of Work - Canal Sediment Sampling

Canal bed sampling shall be performed in accordance with your proposal as modified below.

Canal bed sediment samples shall be obtained once the canal has frozen over to a safe thickness by augering through the ice and pushing a tube-type sediment sampler by hand. Sediment samples shall be taken from a total of 15 locations as shown in the attached Exhibits. Two samples shall be taken from six (6) locations (SS-1, SS-5, SS-6, SS-8, SS-9, SS-11) so that both geotechnical index testing and chemical analyses may be performed yielding a total of 21 tubes. The samples shall be taken starting at the canal bed down to a depth of at least 24 inches.

Geotechnical index testing including moisture content, sieve analysis and hydrometer, and Atterberg limits shall be performed on a total of 15 samples as follows. Organic contents (loss on ignition) are also desired and will be performed if the budget permits.

Geotechnical Testing

Sediment Sample	Canal Segment	Test Depth (inches)
SS-1a	Segment 1	0 - 24
SS-15	Segment 1	0 - 24
SS-2	Segment 1	0 - 24
SS-3	Segment 2	0 - 24
SS-4	Segment 2	0 - 24
SS-5a	Segment 2	0 - 24
SS-6a	Segment 2	0 - 24
SS-7	Segment 2	0 - 24
SS-8a	Segment 2	0 - 24

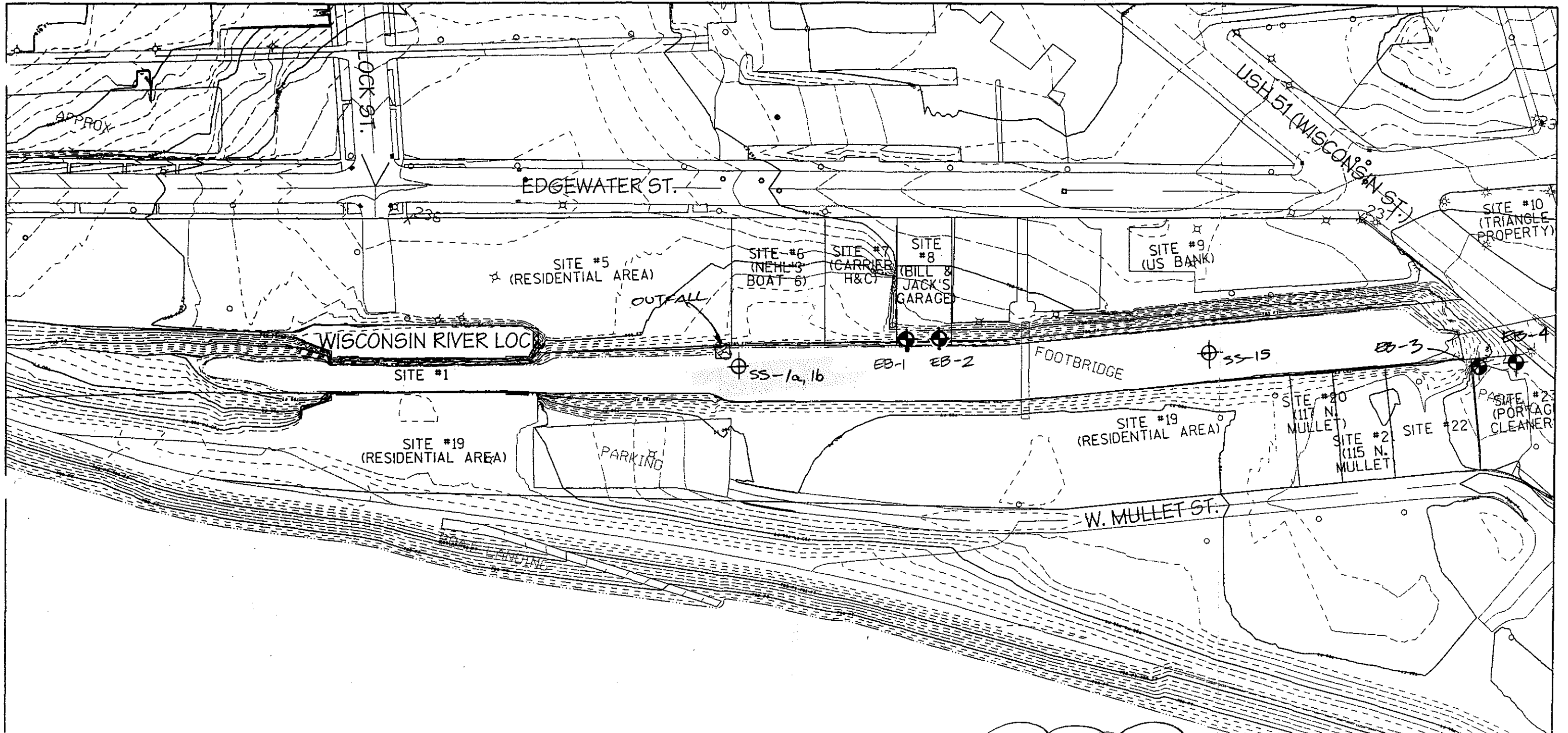
SS-9a	Segment 3	0 - 24
SS-10	Segment 3	0 - 24
SS-11a	Segment 3	0 - 24
SS-12	Segment 4	0 - 24
SS-13	Segment 4	0 - 24
SS-14	Segment 4	0 - 24

Chemical analyses shall be performed on tubes from six (6) locations for the NR 347 parameters for Inland Waters plus DRO, GRO, and PVOC. Two of these, SS-5 and SS-6, shall have samples from two depths tested, yielding a total of 8 samples to be tested. These samples are as follows:

Chemical Analyses

Sediment Sample	Canal Segment	Chemical Test Depth (inches below canal bed)
SS-1b	Segment 1	0 - 4"
SS-5b	Segment 2	0 - 4" and 24"
SS-6b	Segment 2	0 - 4" and 24"
SS-8b	Segment 2	24"
SS-9b	Segment 3	12"
SS-11b	Segment 3	0 - 4"

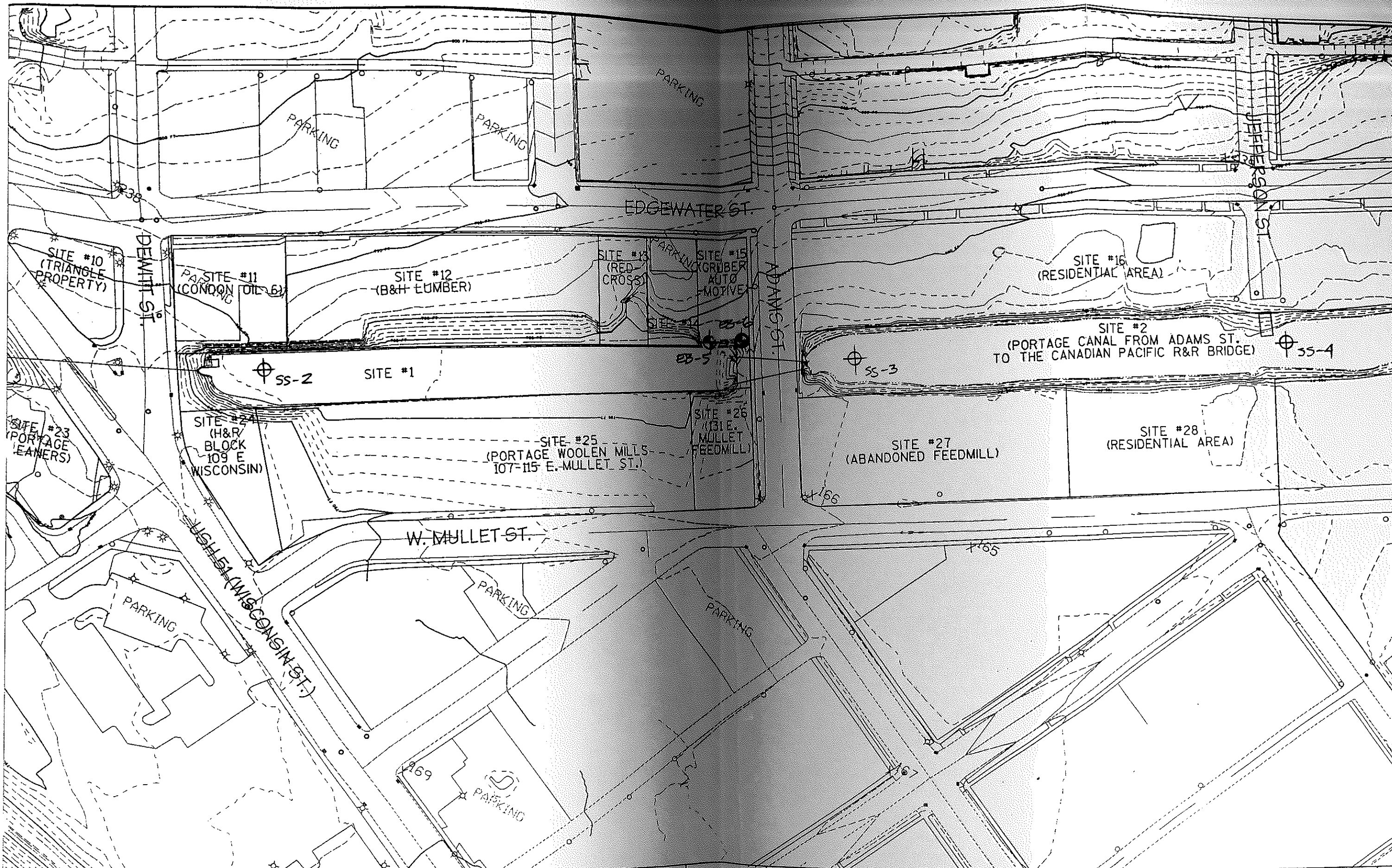
A summary report shall be prepared presenting the sample locations, depths, and results of geotechnical and chemical testing. For each sample location, please also record the depth to canal bed and probe the depth to bottom of soft sediments relative to the ice surface. If any of the tube samples has staining or other visible evidence of contamination, please record.



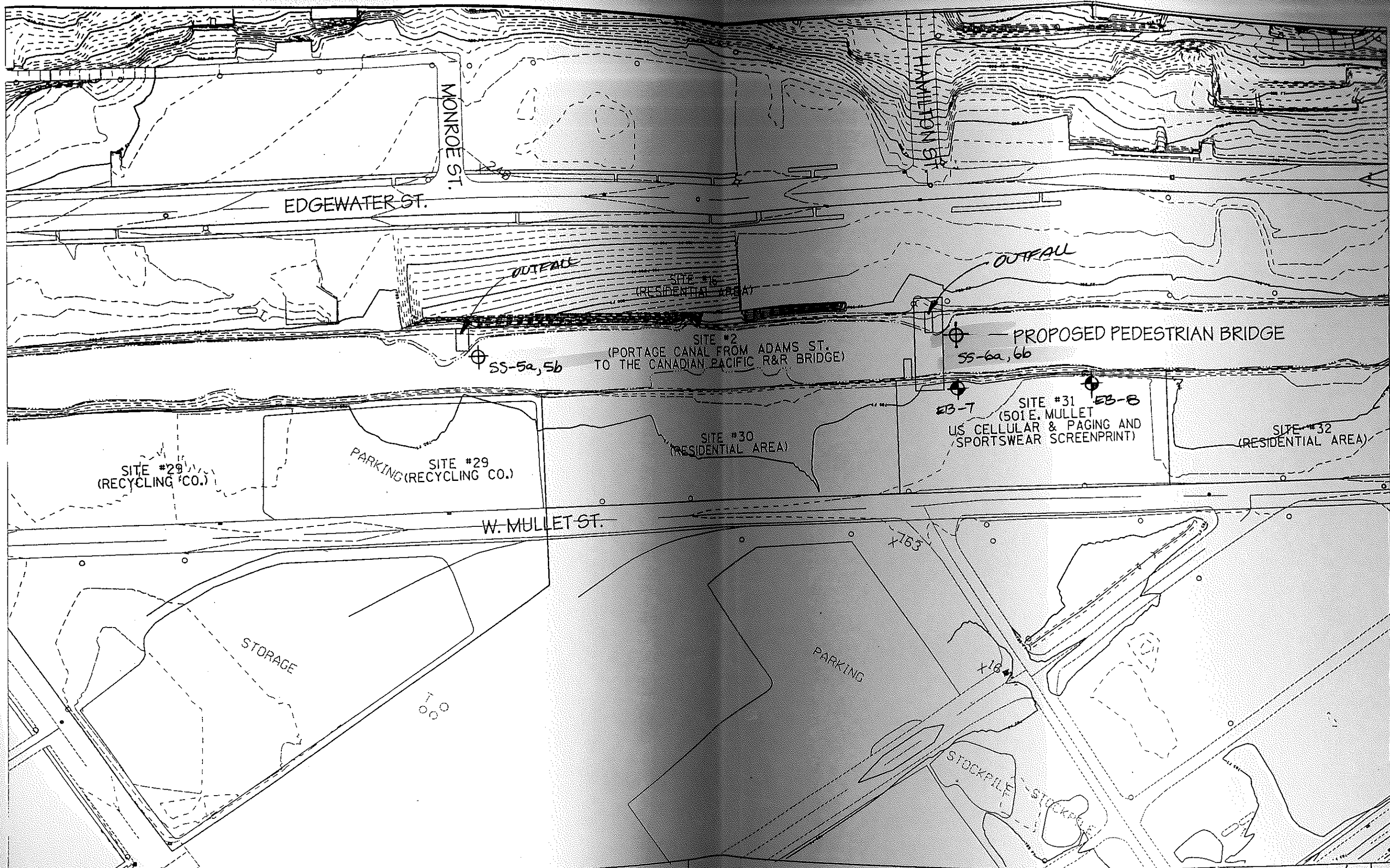
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STEVE:
 THE SEDIMENT SAMPLES
 W/ CHEMICAL ANALYSES
 ARE HIGHLIGHTED.

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PROJECT NUMBER:

HIGHWAY:

PORTAGE CANAL

COUNTY:

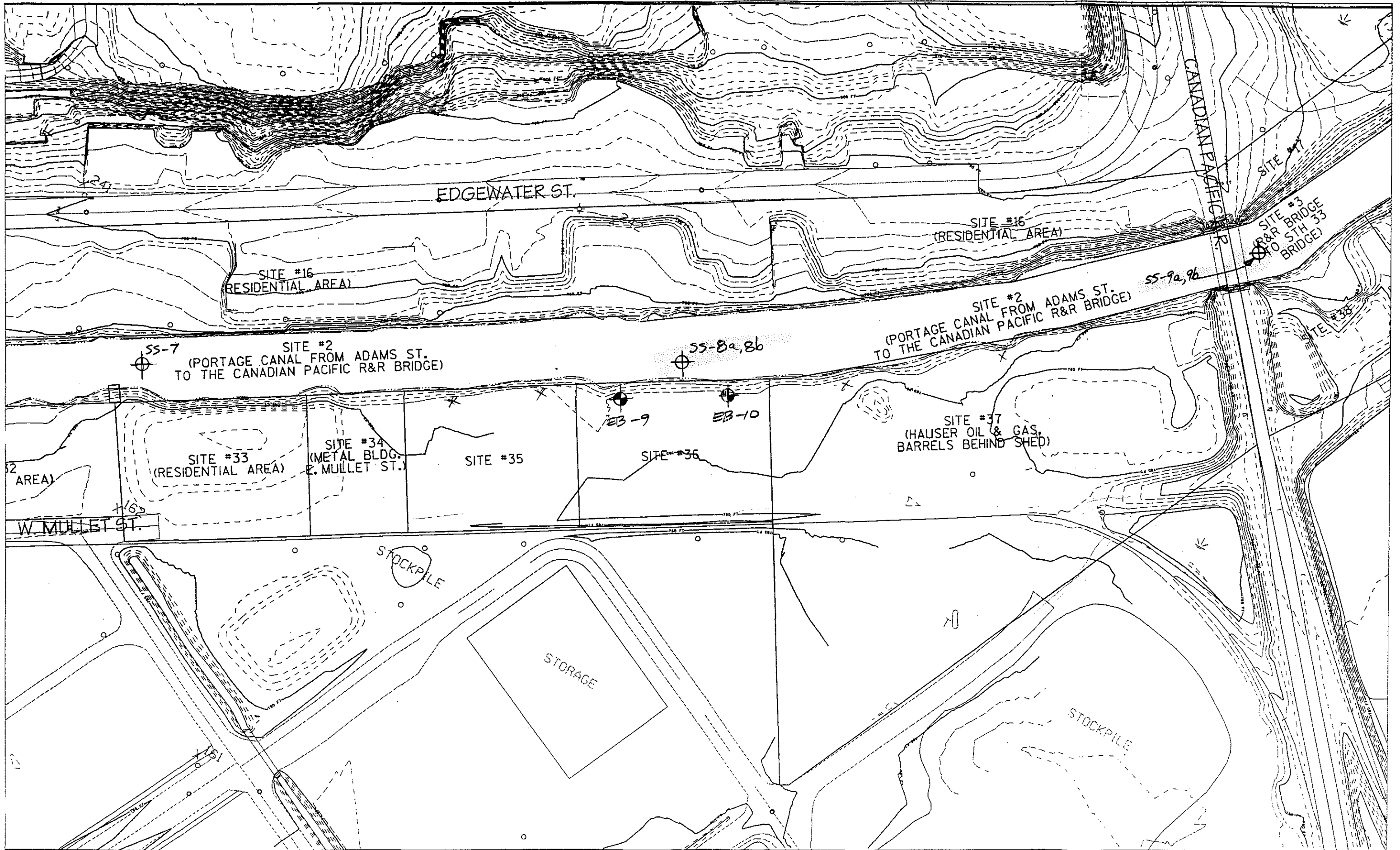
COLUMBIA

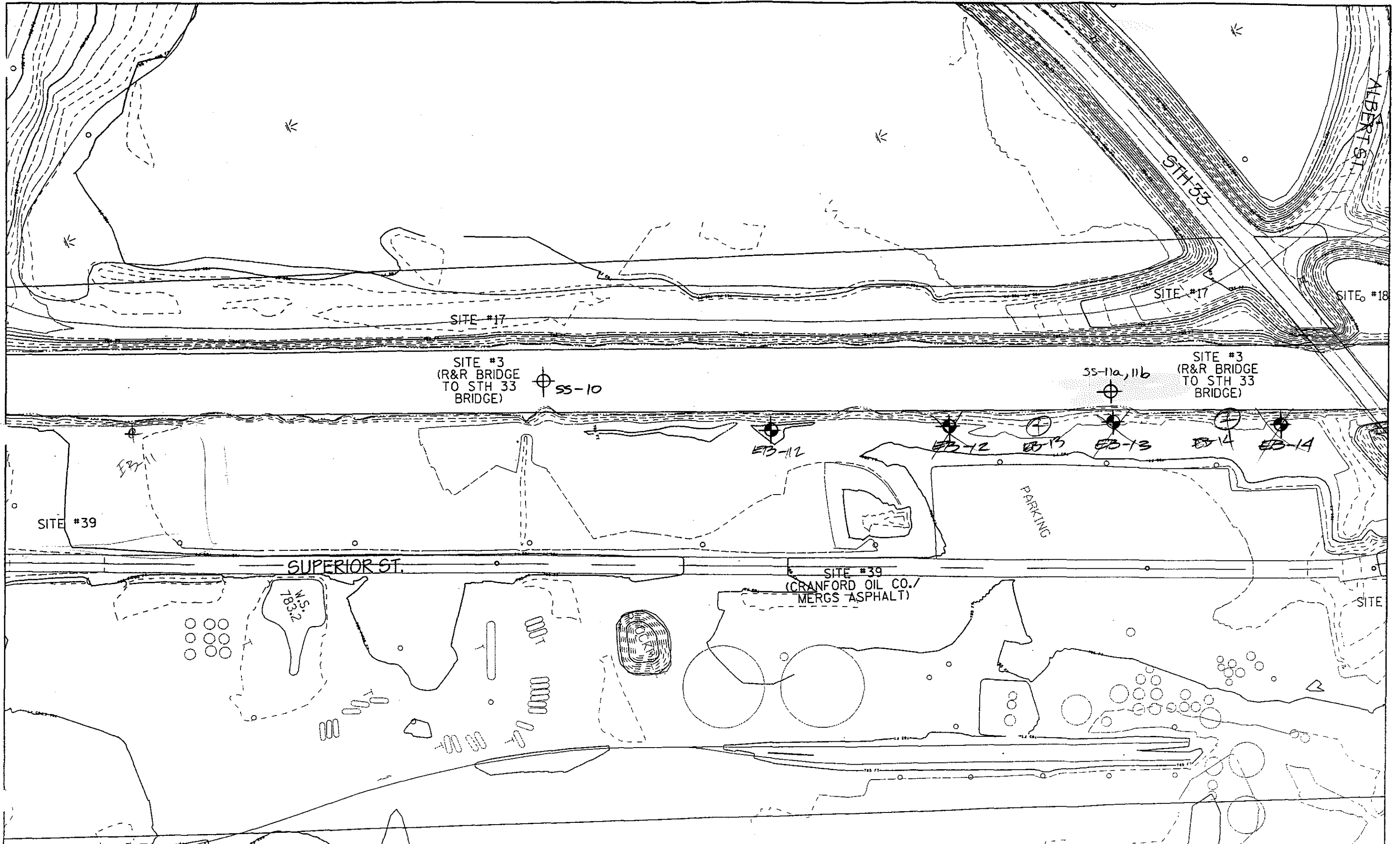
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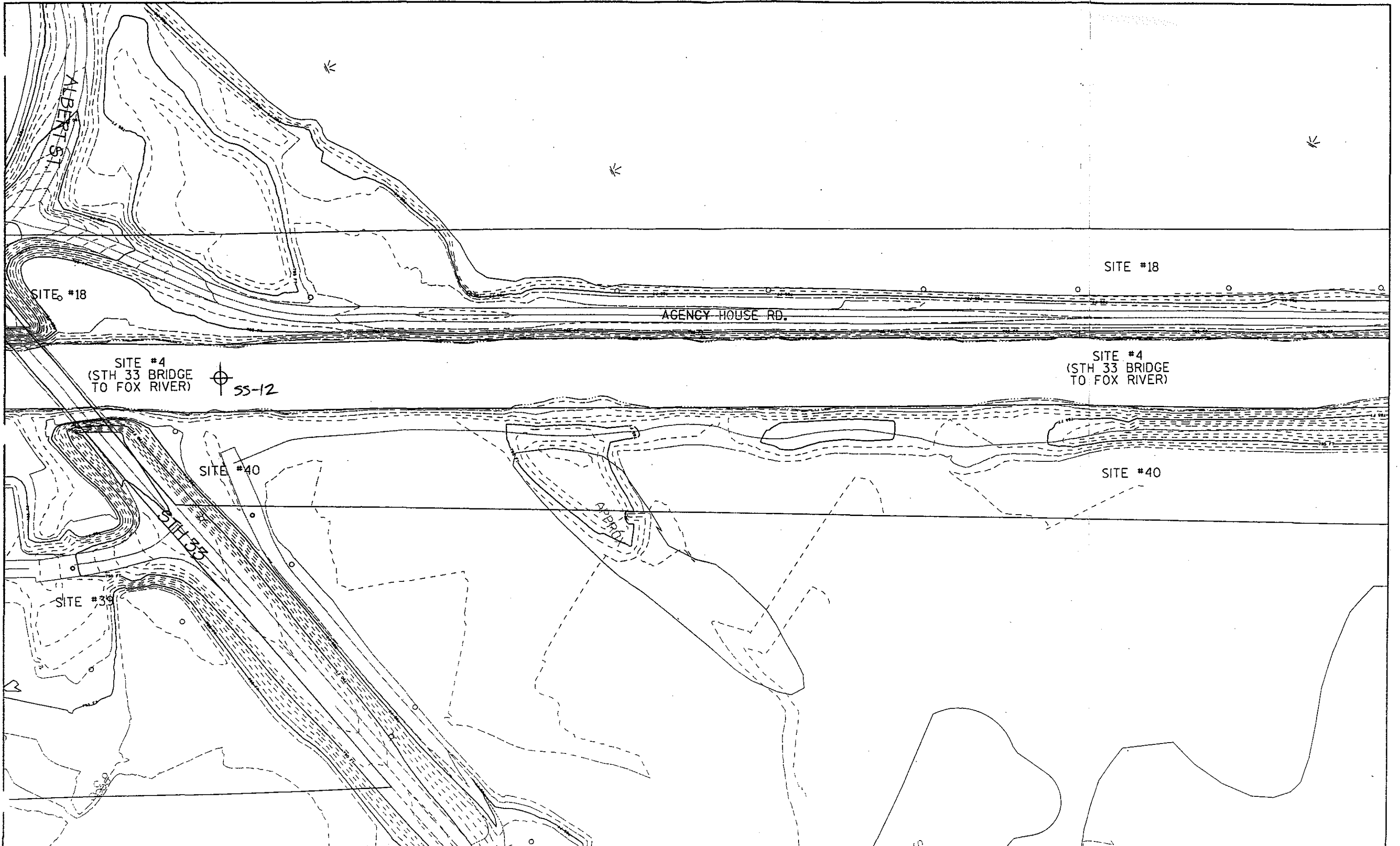
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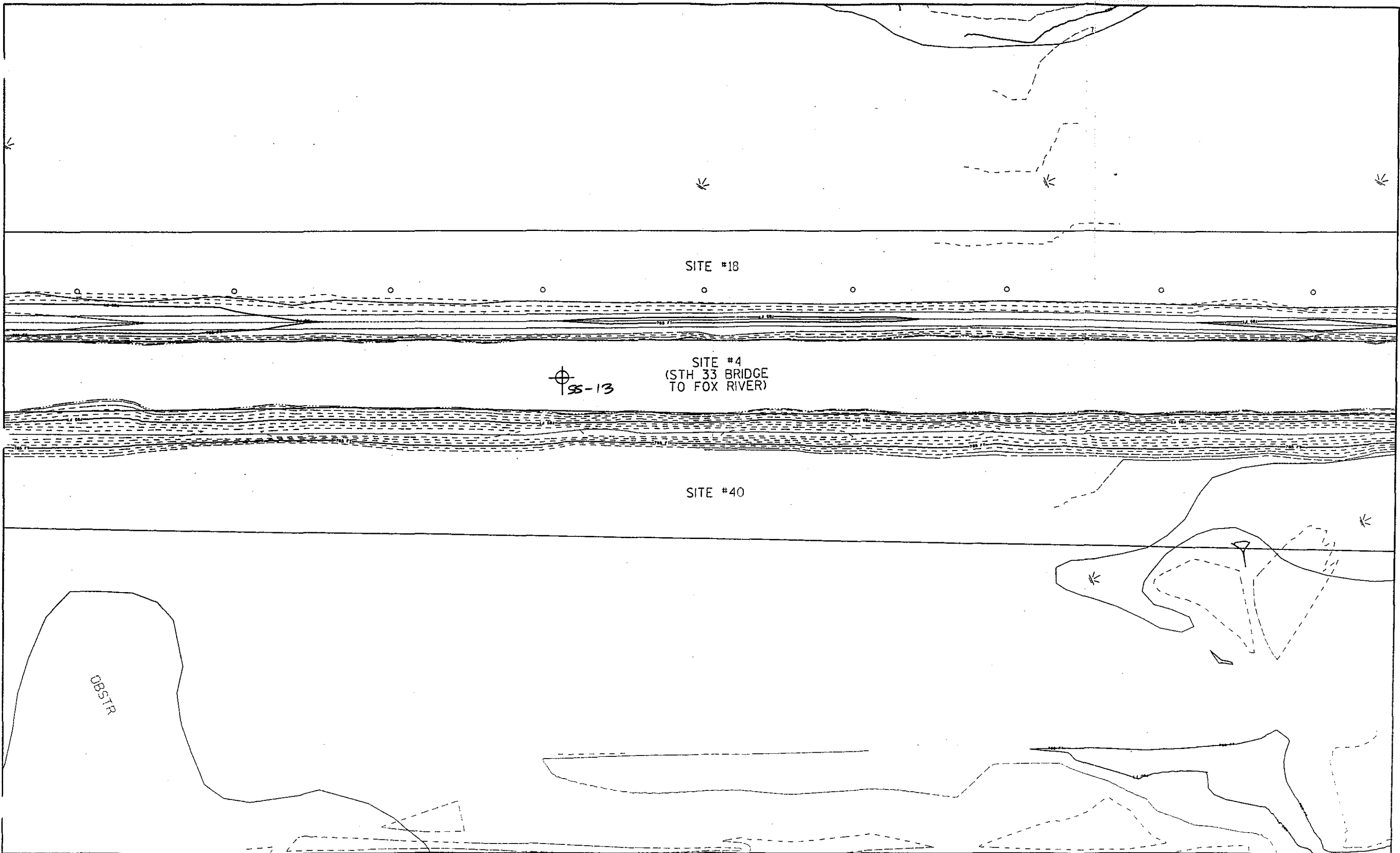


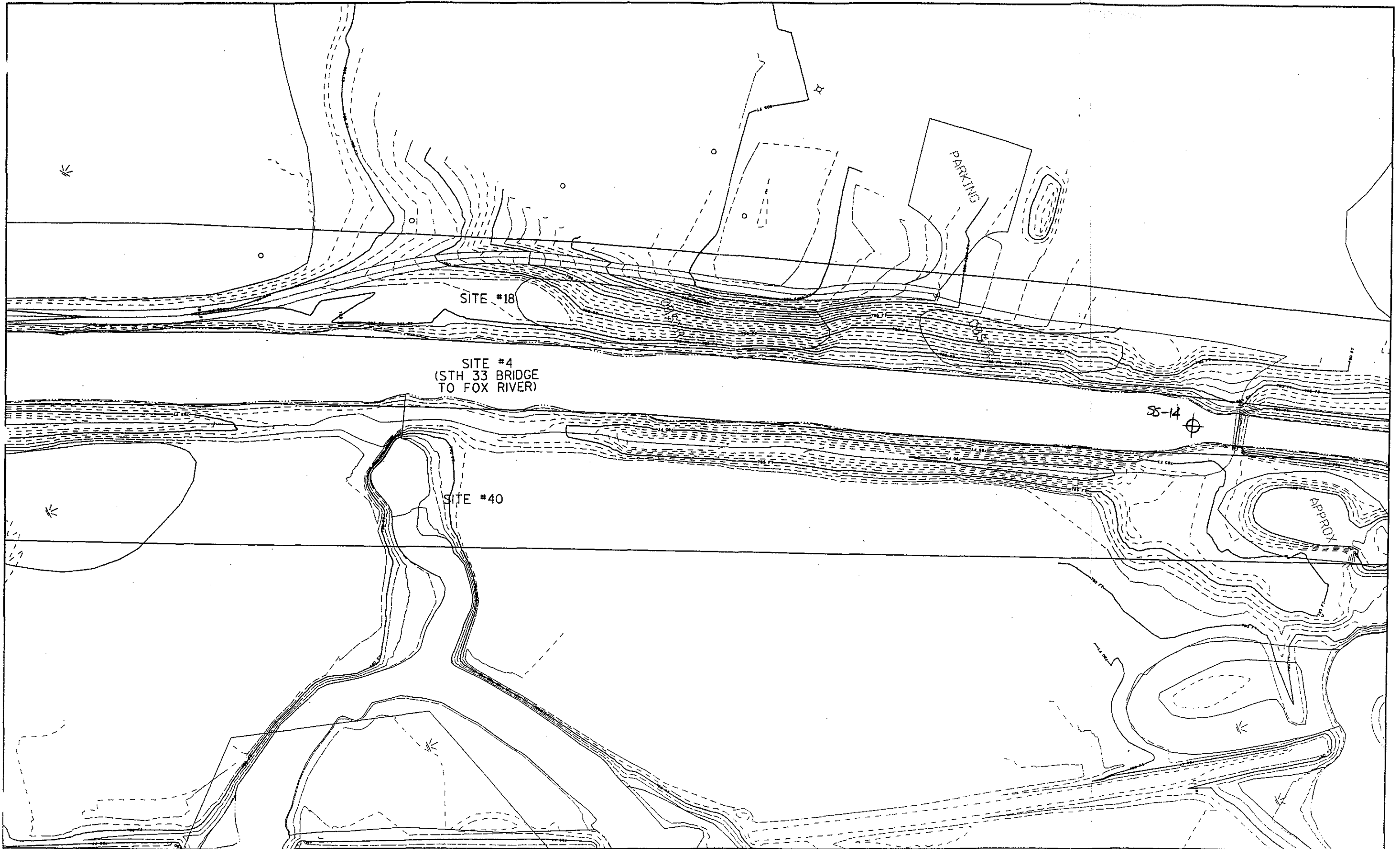


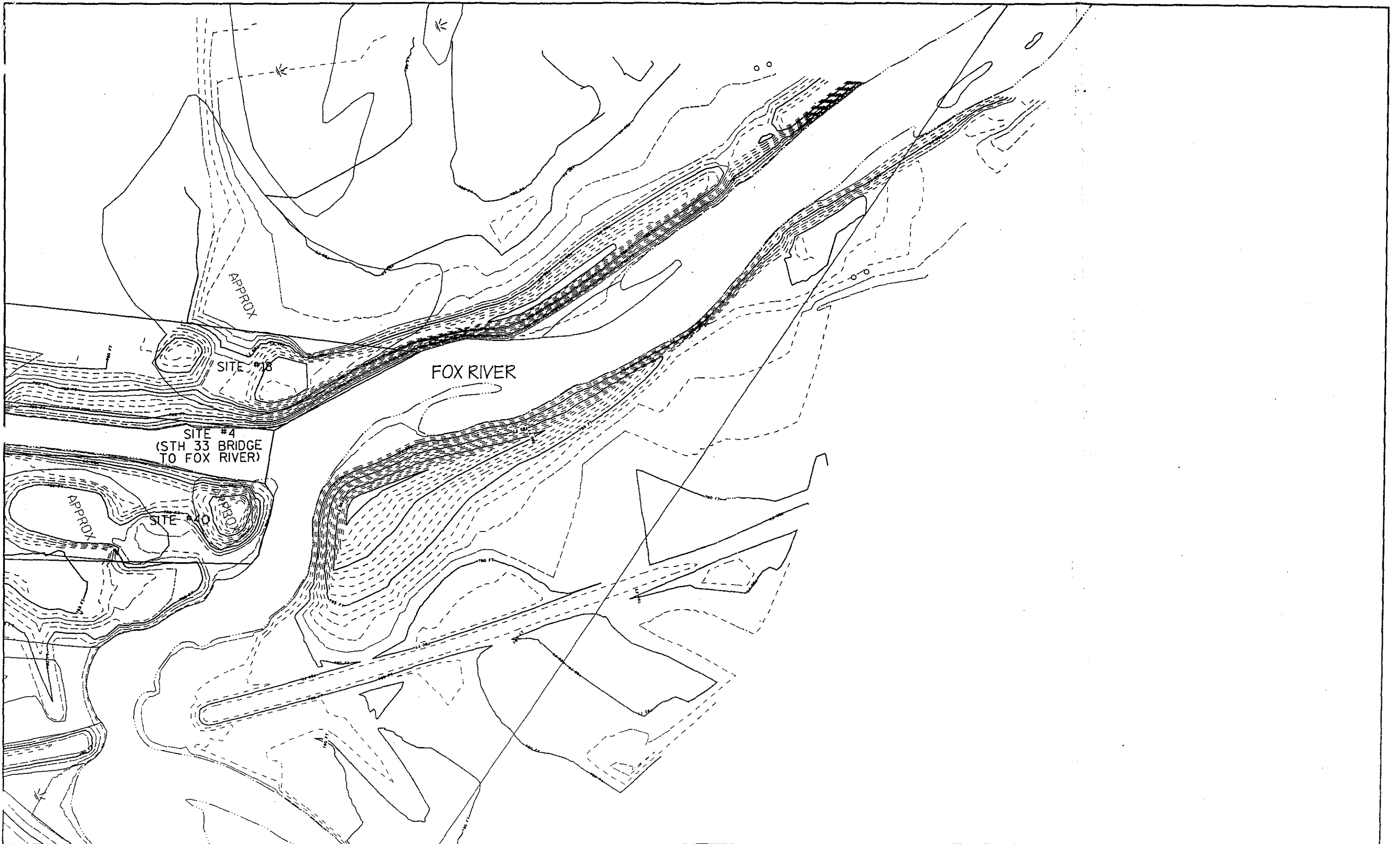
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Letter of Transmittal

5

6501 Watts Road
Madison, Wisconsin 53719-2700
Telephone: 608/273-6380
Facsimile: 608/273-6391

To:	KJohnson Engineers Attn: Karen Richardson 6510 Grand Teton Plaza, Suite 314 Madison, WI 53719	Date: 6/10/2003
		Project No.
		Reference:

We are sending you:

- Attached
 Under separate cover via _____ the following item(s):
 Shop drawings
 Prints
 Plans
 Samples
 Specifications
 Contracts
 Copy of letter
 Change order
 Other

Copies	Date	No.	Description
1	6-10-03	5 pages	Sediment sampling Portage Canal Restoration

These are transmitted as checked below:

- For approval
 Approved as submitted
 Resubmit _____ copies for approval
 For your use
 Approved as noted
 Submit _____ copies for distribution
 As requested
 Returned for corrections
 Return _____ corrected prints
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 Other _____
 For bids due _____ 20____
 Prints returned after loan to us

Remarks:

Signed: *Kesty Theamore*

cc:

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RECEIVED,

JUN 09 2003

MEAD and HUNT, INC.

Project 12297 L01

June 6, 2003

Mr. Rusty Chesmore, P.E.
Mead & Hunt, Inc.
6501 Watts Road, Suite 101
Madison, Wisconsin 53719-2700

Subject: Replacement Table 1
Sediment Sampling
Portage Canal Restoration
Portage, Wisconsin

Dear Mr. Chesmore:

As requested by you, we reviewed Table 1 in our *Sediment Sampling* report dated March 17, 2003. The units for the summary of polychlorinated biphenyls (PCB) analyses was presented incorrectly as mg/kg . The units for the PCB analyses should be $\mu\text{g}/\text{kg}$.

We have corrected Table 1 to reflect the correct units of the PCB analyses. Enclosed is one copy of Table 1 for replacement into the subject report. Please remove Table 1 from the report that you have and replace them with the enclosed Table 1. We apologize for any inconvenience this matter may have caused.

If you have any questions concerning this submittal, or if we can be of further assistance, please contact us.

Respectfully submitted,

SOILS & ENGINEERING SERVICES, INC.

Craig M. Bower, P.E.
CMB:cmb

enclosures

Table 1: Summary of the chemical analyses results of sediment samples.

Analytical Laboratory: US Filter				
CHEMICAL COMPOUND †	SAMPLE IDENTIFICATION NUMBER			
	SS-1B	SS-5B-1	SS-5B-2	SS-6B-1
Sample Acquisition Date	01/22/2003	01/22/2003	01/22/2003	01/22/2003
Laboratory Received Date	01/24/2003	01/24/2003	01/24/2003	01/24/2003
Miscellaneous analyses. Results in % dry weight.				
Total Solids	78.5	31.5	39.5	40.2
Moisture Content	21.5	68.5	60.5	59.8
Nitrogen and Phosphorous analyses. Results in mg/kg.				
Ammonia Nitrogen	37.5	375.	448.	294
Nitrogen Kjeldahl	177.	4,920.	5,220.	2,860.
Phosphorous	289.	524.	691.	296.
Total Metals analyses. Results in mg/kg.				
Arsenic	0.79	5.05	4.99	2.25
Barium	302.	57.5	91.4	33.3
Cadmium	0.121	1.67	2.76	1.65
Chromium	10.9 ^a	25.6	29.1	24.0
Copper	15.5	59.7	100	50.0
Iron	9,060.	15,100.	16,300.	14,200.
Lead	23.4	268	618	147
Manganese	108. ^{b,c}	441.	294.	264.
Nickel	7.41	13.1	15.9	12.9
Zinc	69.4	311.	418.	400.
Mercury	0.028	2.21	9.39	1.02
Polychlorinated Biphenyls (PCB) analyses. Results in µg/kg.				
Aroclor-1242	<63.7	<63.5	<127.	219.
Aroclor-1254	<57.3	<57.1	830.	281.

^aResults of duplicate analysis in this quality assurance batch exceeds the limits for precision.

^bSample matrix spike recovery was high. Sample result may be biased high.

^cSample matrix spike duplicate recovery was high. Sample result may be biased high.



Table 1: Summary of the chemical analyses results of sediment samples.
(continued)

Analytical Laboratory: US Filter

CHEMICAL COMPOUND †	SAMPLE IDENTIFICATION NUMBER			
	SS-1B	SS-5B-1	SS-5B-2	SS-6B-1
Volatile Organic Compounds (VOC) analyses. Results in ^{mg} / _{kg} .				
1,2,4-Trimethylbenzene	<0.025	<0.025	<0.025	<0.025
1,3,5-Trimethylbenzene	<0.025	<0.025	<0.025	<0.025
Benzene	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	<0.025	<0.025	<0.025	<0.025
m- & p-Xylene	<0.025	<0.025	<0.025	<0.025
Oil & Grease analysis. Results in ^{mg} / _{kg} .				
Oil & Grease	2,140.	6,600.	7,870.	4,100.
GRO and DRO analyses. Results in ^{mg} / _{kg} .				
GRO	<6.37	<15.9	<12.7	<12.4
DRO	141. ^{d, e}	135. ^{e, f}	258. ^{d, e}	55.2 ^{e, f}

^dThe chromatogram is not characteristic for diesel or any single petroleum product.

^eThe chromatogram contained significant peaks and a raised baseline outside the DRO window.

^fThe chromatogram is characteristic for a heavier petroleum product other than diesel. (i.e. motor oil, hydraulic oil, etc.).



Table 1: Summary of the chemical analyses results of sediment samples.
(continued)

Analytical Laboratory: US Filter				
CHEMICAL COMPOUND †	SAMPLE IDENTIFICATION NUMBER			
	SS-6B-2	SS-8B	SS-9B	SS-11B
Sample Acquisition Date	01/22/2003	01/22/2003	01/22/2003	01/22/2003
Laboratory Received Date	01/24/2003	01/24/2003	01/24/2003	01/24/2003
Miscellaneous analyses. Results in % dry weight.				
Total Solids	40.0	71.1	40.1	25.9
Moisture Content	60.0	28.9	59.9	74.1
Nitrogen and Phosphorous analyses. Results in mg/kg.				
Ammonia Nitrogen	443.	82.7	367.	568.
Nitrogen Kjeldahl	3,650.	805.	4,590.	6,020.
Phosphorous	508.	126.	653.	1,030.
Total Metals analyses. Results in mg/kg.				
Arsenic	9.48	0.394	5.51	7.68
Barium	73.3	22.2	93.5	201.
Cadmium	2.12	0.722	2.84	3.98
Chromium	40.0	7.86	44.1	63.7
Copper	74.0	17.4	105.	113.
Iron	29,300.	4,050.	23,400.	32,300.
Lead	278.	85.4	312.	452.
Manganese	238.	33.8	157.	405.
Nickel	19.4	4.95	22.8	25.9
Zinc	415.	53.4	397.	633.
Mercury	1.25	0.0774	1.56	3.05
Polychlorinated Biphenyls (PCB) analyses. Results in µg/kg.				
Aroclor-1242	<250.	<141.	<49.9	<193.
Aroclor-1254	<225.	<127.	<44.9	<174.



Table 1: Summary of the chemical analyses results of sediment samples.
(continued)

Analytical Laboratory: US Filter

CHEMICAL COMPOUND †	SAMPLE IDENTIFICATION NUMBER			
	SS-6B-2	SS-8B	SS-9B	SS-11B
Volatile Organic Compounds (VOC) analyses. Results in mg/kg.				
1,2,4-Trimethylbenzene	0.125	0.0608	<0.025	<0.025
1,3,5-Trimethylbenzene	<0.025	0.0533	<0.025	<0.025
Benzene	0.2	<0.025	<0.025	<0.025
Ethylbenzene	0.068	<0.025	<0.025	<0.025
m- & p-Xylene	0.063	<0.025	<0.025	<0.025
Oil & Grease analysis. Results in mg/kg.				
Oil & Grease	6,150.	816.	8,930.	14,900.
GRO and DRO analyses. Results in mg/kg.				
GRO	<12.5	10.0 ^{h, i}	<12.5	<19.3
DRO	81.5 ^{e, f, g}	16.6 ^{e, f}	1410. ^{e, f}	2470. ^{e, f}

^hThe chromatogram is not characteristic for either gas or aged gas. It has a reportable concentration of peaks/areas within the GRO window.

ⁱThe chromatogram contains a significant number of peaks and a raised baseline outside the GRO window.

^eThe chromatogram contained significant peaks and a raised baseline outside the DRO window.

^fThe chromatogram is characteristic for a heavier petroleum product other than diesel. (i.e. motor oil, hydraulic oil, etc.).

^gThe chromatogram is characteristic for a light petroleum product. (i.e. gasoline, aged or degrade gasoline, mineral spirits, etc.).



Table 1: Summary of the chemical analyses results of sediment samples.
(continued)

Analytical Laboratory: CT Laboratories

CHEMICAL COMPOUND †	SAMPLE IDENTIFICATION NUMBER			
	SS-1B	SS-5B-1	SS-5B-2	SS-6B-1
Sample Acquisition Date	01/22/2003	01/22/2003	01/22/2003	01/22/2003
Laboratory Received Date	01/27/2003	01/27/2003	01/27/2003	01/27/2003
Miscellaneous analyses. Results in % dry weight.				
Total Solids	78.2	29.1	40.0	33.8
Moisture Content	21.8	70.9	60.0	66.2
Pesticides analyses. Results in ^{mg} / _{kg} .				
4-4'-DDE	<0.0023 ^j	0.072 ^k	0.065 ^k	0.086 ^k
4-4'-DDT	<0.0029	0.42	<0.0058	<0.0068
Aldrin	<0.0026 ^{j,k}	<0.0045	<0.0033	<0.0038
Endosulfan II	<0.0019	0.052	<0.0038	<0.0044
Methoxychlor	<0.0029	0.027 ^k	0.023 ^k	0.033 ^k

Analytical Laboratory: CT Laboratories

CHEMICAL COMPOUND †	SAMPLE IDENTIFICATION NUMBER			
	SS-6B-2	SS-8B	SS-9B	SS-11B
Sample Acquisition Date	01/22/2003	01/22/2003	01/22/2003	01/22/2003
Laboratory Received Date	01/27/2003	01/27/2003	01/27/2003	01/27/2003
Miscellaneous analyses. Results in % dry weight.				
Total Solids	57.7	70.2	28.0	24.7
Moisture Content	42.3	29.8	72.0	75.3
Pesticides analyses. Results in ^{mg} / _{kg} .				
4-4'-DDE	0.040 ^k	<0.0026 ^{j,k}	0.20 ^k	0.13 ^k
4-4'-DDT	<0.0040	<0.0033	<0.0082	<0.0093
Aldrin	<0.0023	<0.0019	<0.0046	<0.0053
Endosulfan II	<0.0026	<0.0021	<0.0054	<0.0061
Methoxychlor	0.016 ^k	<0.0033	<0.0082	<0.0093

^jConcentration was between Limit of Detection and Limit of Quantitation.

^kConcentration of analyte differs more than 40% between primary and confirmation analysis.



Table 1: Summary of the chemical analyses results of sediment samples.
(continued)

Analytical Laboratory: Triangle Laboratories, Inc.

CHEMICAL COMPOUND †	SAMPLE IDENTIFICATION NUMBER			
	SS-1B	SS-5B-1	SS-5B-2	SS-6B-1
Sample Acquisition Date	01/22/2003	01/22/2003	01/22/2003	01/22/2003
Laboratory Received Date	01/24/2003	01/24/2003	01/24/2003	01/24/2003
Miscellaneous analyses. Results in % dry weight.				
Total Solids	80.2	24.9	37.6	30.3
Moisture Content	19.8	75.1	62.4	69.7

Analytical Laboratory: Triangle Laboratories, Inc.

CHEMICAL COMPOUND †	SAMPLE IDENTIFICATION NUMBER			
	SS-6B-2	SS-8B	SS-9B	SS-11B
Sample Acquisition Date	01/22/2003	01/22/2003	01/22/2003	01/22/2003
Laboratory Received Date	01/24/2003	01/24/2003	01/24/2003	01/24/2003
Miscellaneous analyses. Results in % dry weight.				
Total Solids	40.0	63.3	32.1	27.5
Moisture Content	60.0	36.7	67.9	72.5



APPENDIX
CHEMICAL LABORATORY REPORTS



Hand-
Auger
Boring

	Lithology	Depth	Notes
SS-1	WATER	0'-0" to 3'-1"	
	SEDIMENT Fine to Medium Sand, trace gravel, silt, and organics (SP) Chemical sample, 3'-1" to 3'-5" Sediment sample, 3'-1" to 3'-7" Too firm and sandy to push sampler further at 3'-7" ----- END OF HAND-AUGER BORING at 3'-7" -----	3'-1" to 3'-7"	
SS-2	ICE	0'-0" to 0'-5"	
	WATER	0'-5" to 3'-1"	
	SEDIMENT Silty Fine Sand, some gravel and little organics (SM) Sediment sample, 3'-1" to 5'-1" ----- END OF HAND-AUGER BORING at 5'-1" -----	3'-1" to 5'-1"	
SS-3	ICE	0'-0" to 0'-1"	
	WATER	0'-1" to 0'-6"	
	SEDIMENT Fine Sand With Silt, occasional gravel and trace organics (SP-SM) Sediment sample, 0'-6" to 1'-6" ----- END OF HAND-AUGER BORING at 1'-6" -----	0'-6" to 1'-6"	
SS-4	ICE	0'-0" to 1'-3"	
	WATER	1'-3" to 1'-4"	
	SEDIMENT Fine to Medium Sand, some gravel and trace silt and organics (SP) Sediment sample, 1'-4" to 5'-1" Too hard and rocky to push sampler further at 1'-9" ----- END OF HAND-AUGER BORING at 1'-9" -----	1'-4" to 1'-9"	
SS-5	ICE	0'-0" to 1'-2"	
	SEDIMENT Silty Fine Sand, trace gravel and little organics (SM) Chemical sample 1, 1'-2" to 1'-6" Sediment sample, 1'-2" to 3'-2" Chemical sample 2, 2'-0" to 2'-4" ----- END OF HAND-AUGER BORING at 4'-0" -----	1'-2" to 4'-0"	

Soils & Engineering Services, Inc.

102 STEWART STREET • MADISON, WISCONSIN 53713-4648
 Phone: 608-274-7600 • 888-866-SOIL (7645)
 Fax: 608-274-7511 • Email: soils@soils.ws

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HAND-AUGER BORING LITHOLOGY SUMMARY

Sediment Sampling
 Portage Canal Restoration
 Portage, Wisconsin



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 12297-1

Hand-
Auger
Boring

	Lithology	Depth	Notes
SS-6	ICE	0'-0" to 0'-4"	
	WATER	0'-4" to 2'-0"	
	SEDIMENT	2'-0" to 4'-0"	
	Silty Fine Sand, occasional gravel and little organics (SM) Chemical sample 1, 2'-0" to 2'-4" Sediment sample, 2'-0" to 4'-0" Chemical sample 2, 3'-8" to 4'-0"		
----- END OF HAND-AUGER BORING at 4'-0" -----			
SS-7	ICE	0'-0" to 0'-10"	
	WATER	0'-10" to 2'-3"	
	SEDIMENT	2'-3" to 2'-6"	
	Fine to Medium Sand With Silt, trace organics (SP-SM) Sediment sample, 2'-3" to 2'-6"		
SS-8	FINE SAND (SP)	2'-6" to 4'-3"	
	Brown		
----- END OF HAND-AUGER BORING at 4'-3" -----			
SS-8	ICE	0'-0" to 0'-10"	
	WATER	0'-10" to 1'-8"	
	SEDIMENT	1'-8" to 3'-8"	
	Sandy Organic Silt (OH) Sediment sample, 1'-8" to 3'-8" Chemical sample, 3'-4" to 3'-8"		
----- END OF HAND-AUGER BORING at 3'-8" -----			
SS-9	ICE	0'-0" to	
	WATER	0'-11 ¹ / ₂ "	
	SEDIMENT	0'-11 ¹ / ₂ " to 2'-5"	
	Organic Silt, some sand and occasional gravel (OH) Sediment sample, 2'-5" to 4'-5" Chemical sample, 3'-5" to 3'-9"		
----- END OF HAND-AUGER BORING at 4'-5" -----			

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CONSULTING CIVIL ENGINEERS SINCE 1966

HAND-AUGER BORING LITHOLOGY SUMMARY

Sediment Sampling
 Portage Canal Restoration
 Portage, Wisconsin



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12297-2

Hand-
Auger
Boring

	Lithology	Depth	Notes
SS-10	ICE	0'-0" to 0'-11"	
	WATER	0'-11" to 2'-6"	
	SEDIMENT	2'-6" to 4'-6"	
	Organic Silt, little sand and occasional gravel (OH) Sediment sample, 2'-6" to 4'-6"		
----- END OF HAND-AUGER BORING at 4'-5" -----			
SS-11	ICE	0'-0" to 0'-11"	
	WATER	0'-11" to 2'-6"	
	SEDIMENT	2'-6" to 4'-6"	
	Organic Silt, some sand and occasional gravel (OH) Chemical sample, 2'-6" to 2'-10" Sediment sample, 2'-6" to 4'-6"		
----- END OF HAND-AUGER BORING at 4'-6" -----			
SS-12	ICE	0'-0" to 0'-7"	
	WATER	0'-7" to 1'-11"	
	SEDIMENT	1'-11" to 2'-7"	
	Fine to Medium Sand, much gravel and trace silt and organics (SP) Sediment sample, 1'-11" to 2'-7" Too hard to push sampler further at 2'-7"		
----- END OF HAND-AUGER BORING at 2'-7" -----			
SS-13	ICE	0'-0" to 1'-6"	
	WATER	1'-6" to 2'-9"	
	SEDIMENT	2'-9" to 4'-9"	
	Organic Silt, little sand and occasional gravel (OH) Sediment sample, 2'-9" to 4'-9"		
----- END OF HAND-AUGER BORING at 4'-9" -----			
SS-14	ICE	0'-0" to 0'-6"	
	WATER	0'-6" to 1'-3"	
	SEDIMENT	1'-3" to 1'-7"	
	Silty Fine to Medium Sand, much gravel and occasional organics (SM) Very rocky, 1'-3" to 1'-5" Sediment sample, 1'-3" to 1'-7"		
----- END OF HAND-AUGER BORING at 1'-7" -----			

Soils & Engineering Services, Inc.

102 STEWART STREET • MADISON, WISCONSIN 53713-4648
Phone: 608-274-7600 • 888-866-SOIL (7645)
Fax: 608-274-7511 • Email: soils@soils.ws

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HAND-AUGER BORING LITHOLOGY SUMMARY

Sediment Sampling
Portage Canal Restoration
Portage, Wisconsin



DRAWING
12297-3

Hand-
Auger
Boring

	Lithology	Depth	Notes
SS-15	ICE	0'-0" to 0'-10"	
	WATER	0'-10" to 3'-8"	
	SEDIMENT	3'-8" to 5'-8"	
	Sandy Organic Silt, trace gravel (OL)		
	Sediment sample, 3'-8" to 5'-8"		
	----- END OF HAND-AUGER BORING at 5'-8" -----		

Soils & Engineering Services, Inc.

102 STEWART STREET • MADISON, WISCONSIN 53713-4648
Phone: 608-274-7600 • 888-866-SOIL (7645)
Fax: 608-274-7511 • Email: soils@soils.ws

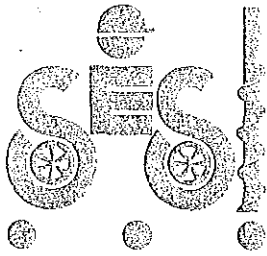
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HAND-AUGER BORING LITHOLOGY SUMMARY

Sediment Sampling
Portage Canal Restoration
Portage, Wisconsin



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SOILS & ENGINEERING SERVICES, INC.

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March 17, 2003

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MAR 19 2003

Project 12297 R01

MEAD and HUNT, INC.

Mr. Rusty Chesmore, P.E.
Mead & Hunt, Inc.
6501 Watts Road, Suite 101
Madison, Wisconsin

Subject: Sediment Sampling
Portage Canal Restoration
Portage Wisconsin

Dear Mr. Chesmore:

In accordance with your request, we have performed the 15 hand sampled borings to obtain samples of the sediment within the Portage Canal. The borings were located approximately as presented in the following table. For ease of locating the borings in the field, we assumed the canal was oriented in an east/west direction for Borings SS-1 through SS-9 and SS-15 and the canal was oriented in a north/south direction for Borings SS-10 through SS-14.

Boring	Location
SS-1	6' east and 10' south of center of outfall pipe for Site #5 near property line with Site #6.
SS-2	21' west and 56' north of the northwest building corner of Portage Woolen Mills.
SS-3	26' south and 52' east of the northeast corner of the sidewalk for the Adams Street bridge over the Portage Canal.
SS-4	61' south and 14' east of the access structure at the south end of Jefferson Street.

Boring	Location
SS-5	40' south and 32' east of the outfall pipe located approximately 300 feet south of the intersection of Monroe Street and Edgewater Street.
SS-6	52' south and 35' east of the outfall pipe located approximately 300 feet south of the intersection of Hamilton Street and Edgewater Street.
SS-7	31' north and 39' east of the outfall pipe located at the property line between Sites #32 and #33.
SS-8	69' south of chainlink fence on north shoreline and 175' east of property line between Sites #36 and #37.
SS-9	Centerline of canal and 44' east of the east edge of the Canadian Pacific Railroad.
SS-10	1800' south of the southeast corner of the STH 33 bridge over the Portage Canal and 34' west of the east shoreline.
SS-11	Centerline of canal and 595' south of the southeast corner of the STH 33 bridge over the Portage Canal.
SS-12	Centerline of canal and 300' north of the northeast corner of the STH 33 bridge over the Portage Canal.
SS-13	Centerline of canal and 3770' north of the northeast corner of the STH 33 bridge over the Portage Canal.
SS-14	Centerline of canal and 5890' north of the northeast corner of the STH 33 bridge over the Portage Canal.
SS-15	43' east and 66' south of southeast building corner of US Bank.

The borings were performed by pushing by hand a 2-inch-nominal-diameter Shelby tube sampler into the sediment in the canal. The stratigraphy encountered at the boring locations is presented on enclosed Drawings 12297-1 through 12297-3.

Sediment samples were obtained for physical and chemical laboratory analyses. The physical laboratory analyses consisted of the determination of natural moisture content (NM), Atterberg limits (liquid limit [LL] and plastic limit [PL]), loss on ignition (LI), and particle size distribution analysis including percentage of silt and clay particles. The chemical laboratory analyses consisted of the determination of the concentrations of pesticides, dioxins, polychlorinated biphenyls (PCBs), total metals, oil and grease, ammonia compounds, phosphorous, diesel range organics (DRO), gasoline range organics (GRO),



petroleum volatile organic compounds (PVOC), and percent solids. The physical and chemical laboratory analyses results are as follows:

Physical Laboratory Analyses Results

The NM, LL and PL, and LI results are as follows:

Id	Sample	NM (%)	LL (%)	PL (%)	LI (%)
	Depth				
SS-1a	3'-1" to 3'-6"	29.7	—	—	1.5
SS-2	3'-1" to 5'-1"	81.5	—	—	6.5
SS-3	0'-6" to 1'-6"	56.1	—	—	3.3
SS-4	1'-4" to 1'-9"	22.0	—	—	1.4
SS-5a	1'-2" to 3'-2"	148.9	NP	NP	10.3
SS-6a	2'-0" to 4'-0"	91.2	30	25	5.5
SS-7	2'-3" to 2'-6"	43.3	—	—	2.4
SS-8a	1'-8" to 2'-0"	264.9	64	45	12.1
SS-9a	2'-5" to 4'-5"	192.6	99	53	10.0
SS-10	2'-5" to 4'-5"	250.3	85	53	10.1
SS-11a	2'-6" to 4'-6"	219.2	75	60	10.7
SS-12	1'-11" to 2'-7"	29.5	—	—	1.4
SS-13	2'-9" to 4'-9"	286.0	119	77	14.1
SS-14	1'-3" to 1'-7"	15.7	—	—	0.4
SS-15	3'-8" to 5'-8"	190.1	NP	NP	10.5

The particle size distribution analyses results are presented on enclosed Data Sheets 12297-A through 12297-F.



Chemical Laboratory Analyses Results

Due to the complexity of the chemical laboratory analyses, three analytical laboratories, Triangle Laboratories, Inc., CT Laboratories, Inc., and US Filter, were utilized to complete the requested chemical laboratory analyses. The chemical laboratory analyses results are summarized on enclosed Table 1. The table presents the summary of those compounds where a concentration was detected on any sample submitted. Copies of the analytical reports from the laboratories are enclosed. We included only the sample results pages from the Triangle Laboratories, Inc. report.

If you have any questions concerning this submittal, or if we can be of further assistance, please contact us.

Respectfully submitted,

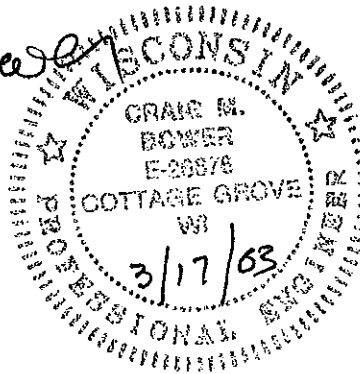
SOILS & ENGINEERING SERVICES, INC.

Craig M. Bower

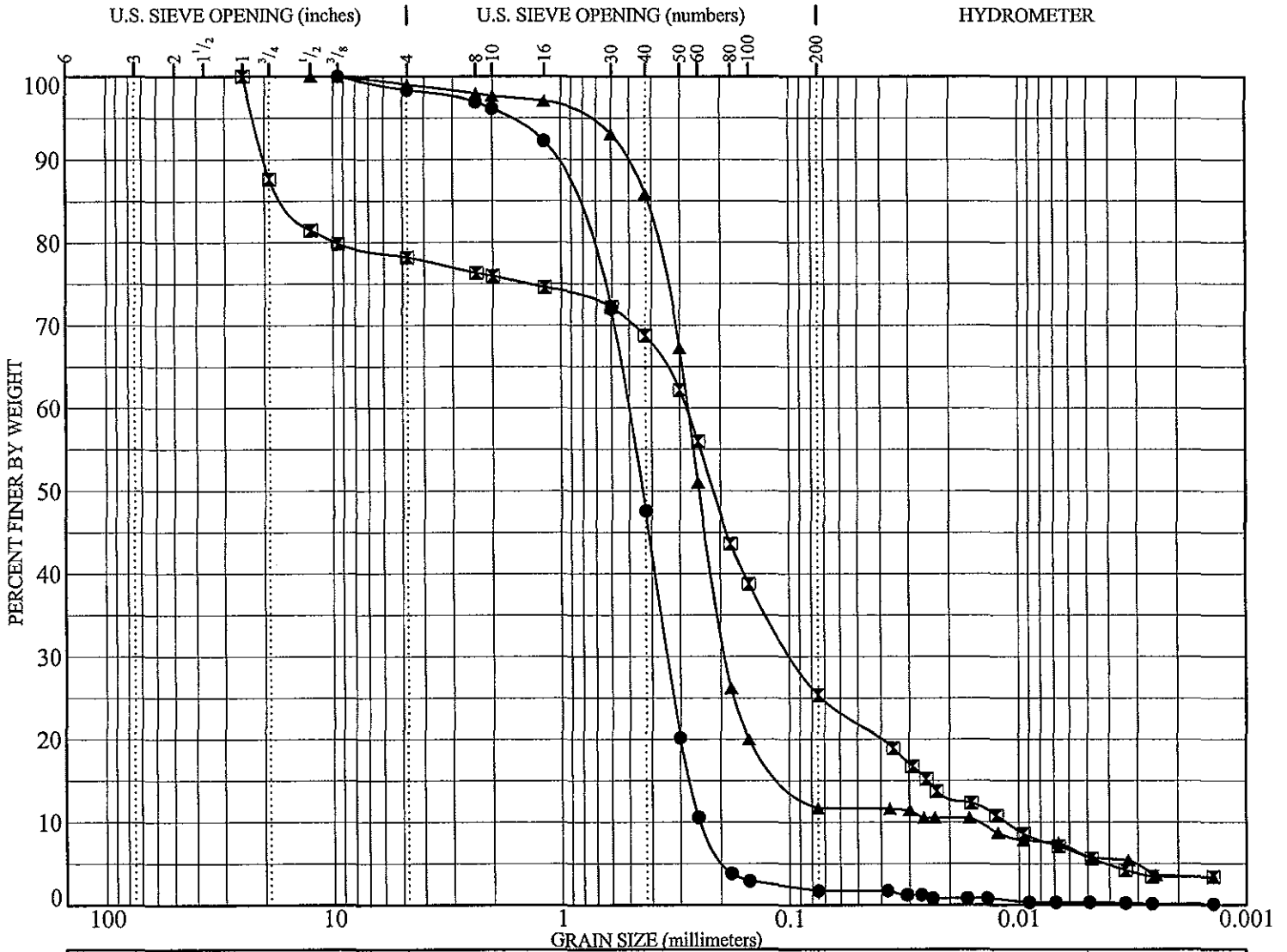
Craig M. Bower, P.E.

CMB:OTG:cmb

enclosures (11)



PARTICLE SIZE DISTRIBUTION ANALYSIS REPORT



COBBLES (%)	GRAVEL (%)		SAND (%)			SILT (%)	CLAY (%)
	coarse	fine	coarse	medium	fine		
● 0.0	1.6			96.7		1.4	0.3
☒ 0.0	21.8			52.8		19.6	5.8
▲ 0.0	1.0			87.3		5.8	5.9

Sieve (inches)	Percent Finer		
	●	☒	▲
1		100.0	
3/4		87.6	
1/2		81.5	100.0
3/8	100.0	79.8	99.9

Sieve (# size)	Percent Finer		
	●	☒	▲
#4	98.4	78.2	99.0
#8	96.9	76.3	97.9
#10	96.1	75.9	97.6
#16	92.3	74.6	97.0
#30	72.0	72.2	93.1
#40	47.6	68.7	85.8
#50	20.2	62.2	67.2
#60	10.6	56.0	51.0
#80	3.8	43.6	26.2
#100	2.9	38.8	20.0
#200	1.7	25.4	11.7

	Grain Size (mm)			Coefficients	
	D ₆₀	D ₃₀	D ₁₀	C _e	C _u
●	0.507	0.340	0.243	0.937	2.08
☒	0.281	0.0953	0.0113	2.86	24.9
▲	0.277	0.189	0.0151	8.56	18.3

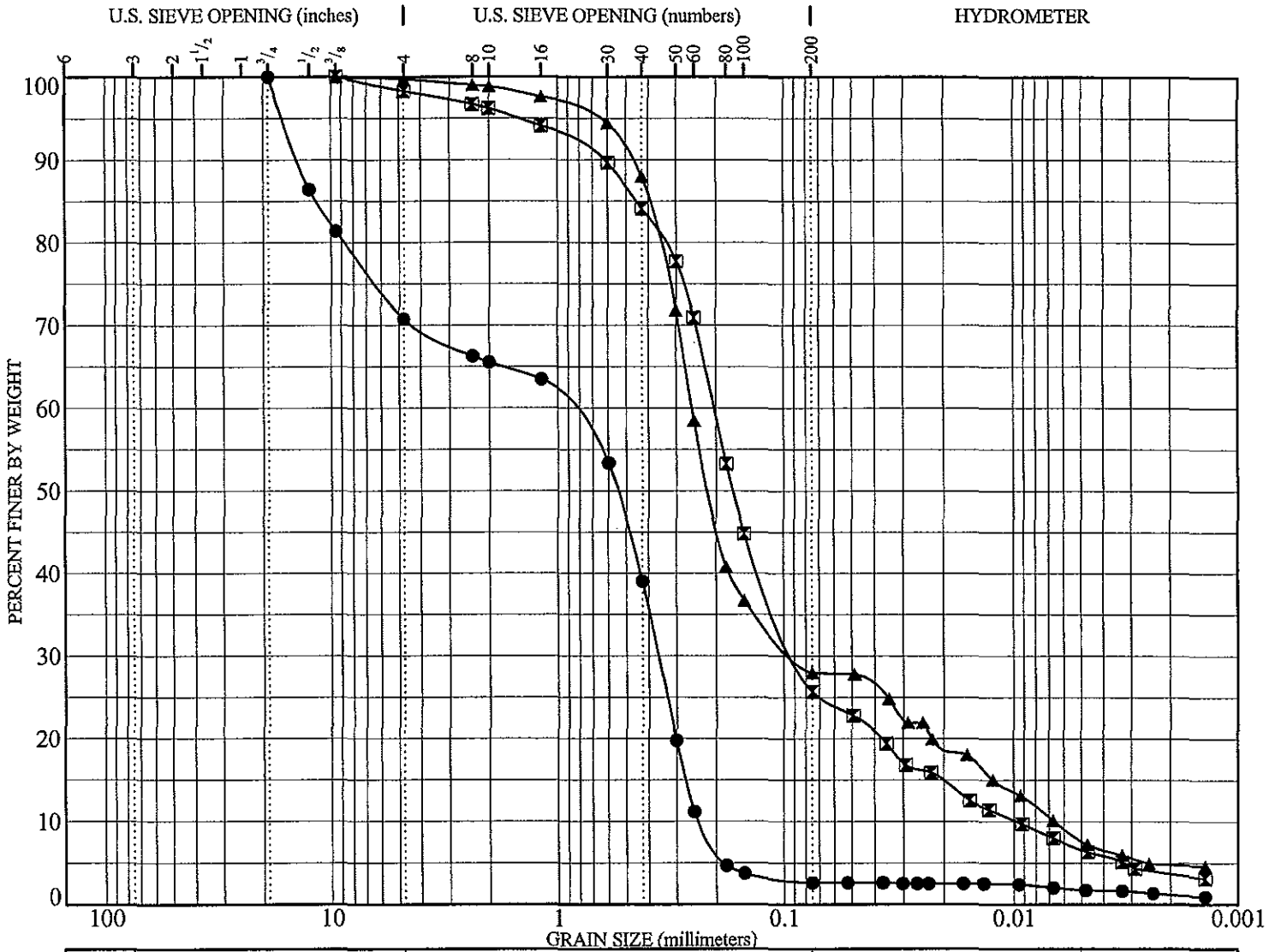
Sample Information	
●	SS-1a, 3'-1" to 3'-7" depth: Fine to Medium Sand, trace gravel, trace silt, and trace organics (SP)
☒	SS-2, 3'-1" to 5'-1" depth: Silty Fine Sand, some gravel and little organics (SM)
▲	SS-3, 0'-6" to 1'-6" depth: Fine Sand With Silt, occasional gravel and trace organics (SP-SM)

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 Fax: 608-274-7511 • Email: soils@soils.ws
 CONSULTING CIVIL ENGINEERS SINCE 1966

LABORATORY TEST RESULT RECORD
 Sediment Sampling
 Portage Canal Restoration
 Portage, Wisconsin



PARTICLE SIZE DISTRIBUTION ANALYSIS REPORT



COBBLES (%)	GRAVEL (%)		SAND (%)			SILT (%)	CLAY (%)
	coarse	fine	coarse	medium	fine		
● 0.0	29.2			68.2		0.9	1.7
☒ 0.0	1.7			72.6		19.1	6.6
▲ 0.0	0.3			71.8		20.2	7.7

Sieve (inches)	Percent Finer		
	●	☒	▲
3/4	100.0		
1/2	86.4		
3/8	81.4	100.0	100.0


Sieve (# size)	Percent Finer		
	●	☒	▲
#4	70.8	98.3	99.7
#8	66.3	96.7	99.0
#10	65.5	96.2	98.8
#16	63.5	94.1	97.6
#30	53.4	89.7	94.4
#40	39.0	84.1	88.0
#50	19.8	77.7	71.8
#60	11.1	70.9	58.4
#80	4.7	53.3	40.8
#100	3.7	44.8	36.7
#200	2.6	25.7	27.9

	Grain Size (mm)			Coefficients	
	D ₆₀	D ₃₀	D ₁₀	C _c	C _u
●	0.935	0.361	0.236	0.591	3.97
☒	0.204	0.0877	0.00975	3.86	20.9
▲	0.255	0.0884	0.00662	4.62	38.6

Sample Information	
●	SS-4, 1'-4" to 1'-9" depth: Fine to Medium Sand, some gravel, trace silt, and trace organics (SP)
☒	SS-5a, 1'-2" to 3'-2" depth: Silty Fine Sand, trace gravel and little organics (SM)
▲	SS-6a, 2'-0" to 4'-0" depth: Silty Fine Sand, occasional gravel and little organics (SM)

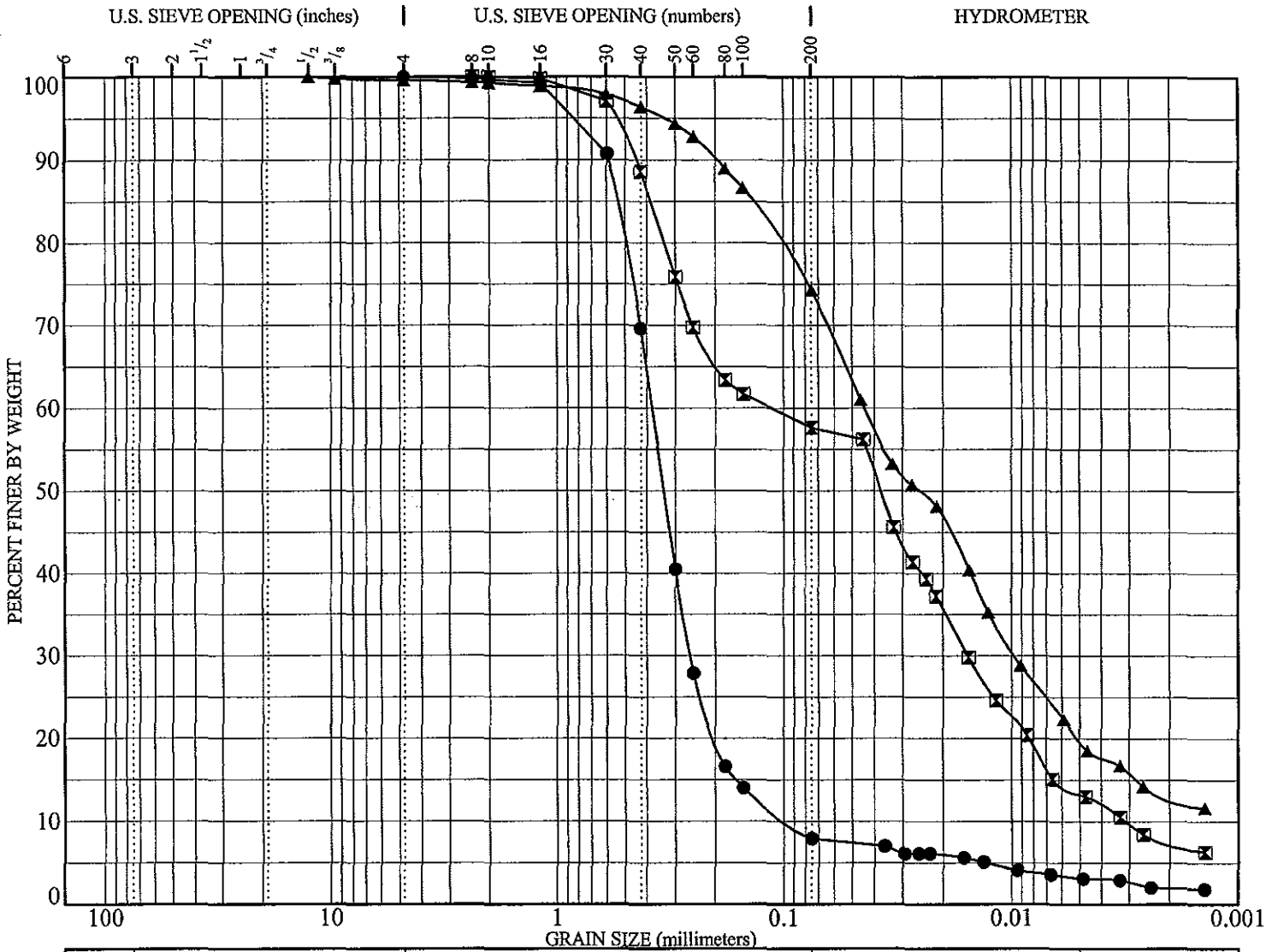
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LABORATORY TEST RESULT RECORD
 Sediment Sampling
 Portage Canal Restoration
 Portage, Wisconsin



DATA SHEET
12297-B

PARTICLE SIZE DISTRIBUTION ANALYSIS REPORT



COBBLES (%)	GRAVEL (%)		SAND (%)			SILT (%)	CLAY (%)
	coarse	fine	coarse	medium	fine		
● 0.0	0.0			92.1		4.7	3.2
☒ 0.0	0.0			42.4		44.2	13.4
▲ 0.0	0.4			25.4		54.4	19.8

Sieve (inches)	Percent Finer		
	●	☒	▲
1/2			100.0
3/8			99.8

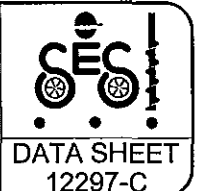
Sieve (# size)	Percent Finer		
	●	☒	▲
#4	100.0		99.6
#8	99.8	100.0	99.3
#10	99.7	100.0	99.2
#16	99.3	99.8	98.8
#30	90.8	97.1	97.9
#40	69.6	88.6	96.4
#50	40.5	75.9	94.3
#60	27.9	69.7	92.8
#80	16.6	63.4	89.0
#100	14.0	61.7	86.7
#200	7.9	57.6	74.2

	Grain Size (mm)			Coefficients	
	D ₆₀	D ₃₀	D ₁₀	C _c	C _u
●	0.379	0.258	0.0949	1.85	3.99
☒	0.112	0.0155	0.00312	0.688	36.1
▲	0.0439	0.00967			

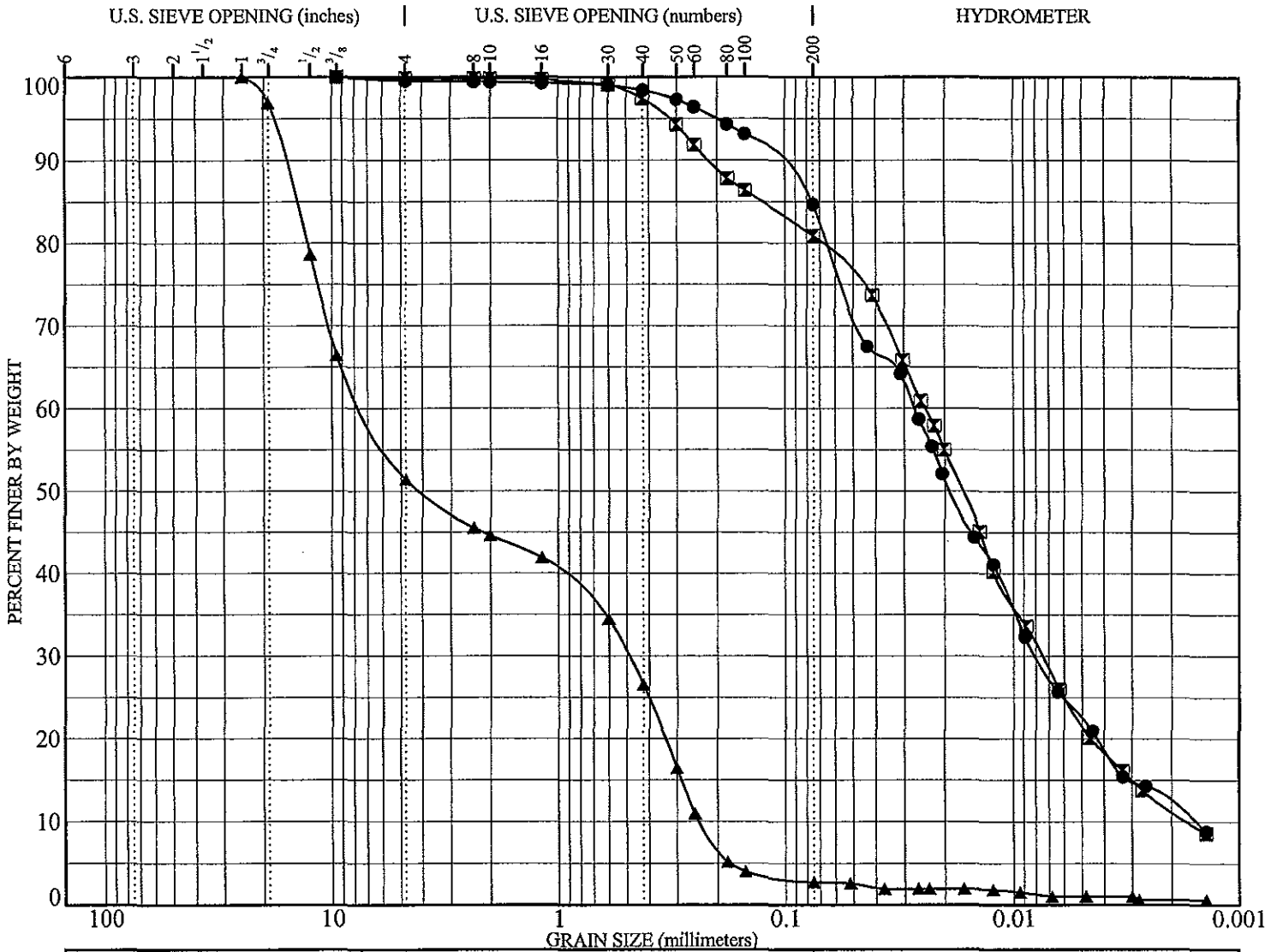
Sample Information	
●	SS-7, 2'-3" to 2'-6" depth: Fine to Medium Sand With Silt, trace organics (SP-SM)
☒	SS-8a, 1'-8" to 2'-0" depth: Sandy Organic Silt (OH)
▲	SS-9a, 2'-5" to 4'-5" depth: Organic Silt, some sand and occasional gravel (OH)

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LABORATORY TEST RESULT RECORD
 Sediment Sampling
 Portage Canal Restoration
 Portage, Wisconsin



PARTICLE SIZE DISTRIBUTION ANALYSIS REPORT



COBBLES (%)	GRAVEL (%)		SAND (%)			SILT (%)	CLAY (%)
	coarse	fine	coarse	medium	fine		
● 0.0	0.5			14.8		62.4	22.3
◻ 0.0	0.1			19.0		59.2	21.7
▲ 0.0	48.6			48.7		1.7	1.0

Sieve (inches)	Percent Finer		
	●	◻	▲
1			100.0
3/4			96.9
1/2			78.6
3/8	100.0	100.0	66.4

Sieve (# size)	Percent Finer		
	●	◻	▲
#4	99.5	99.9	51.4
#8	99.4	99.8	45.5
#10	99.4	99.8	44.6
#16	99.3	99.7	41.9
#30	99.0	99.1	34.5
#40	98.4	97.4	26.5
#50	97.3	94.3	16.4
#60	96.4	91.9	10.9
#80	94.3	87.8	5.2
#100	93.2	86.4	4.0
#200	84.7	80.9	2.7

	Grain Size (mm)			Coefficients	
	D ₆₀	D ₃₀	D ₁₀	C _c	C _u
●	0.0270	0.00793	0.00160	1.45	16.9
◻	0.0243	0.00751	0.00167	1.39	14.6
▲	7.06	0.494	0.237	0.146	29.8

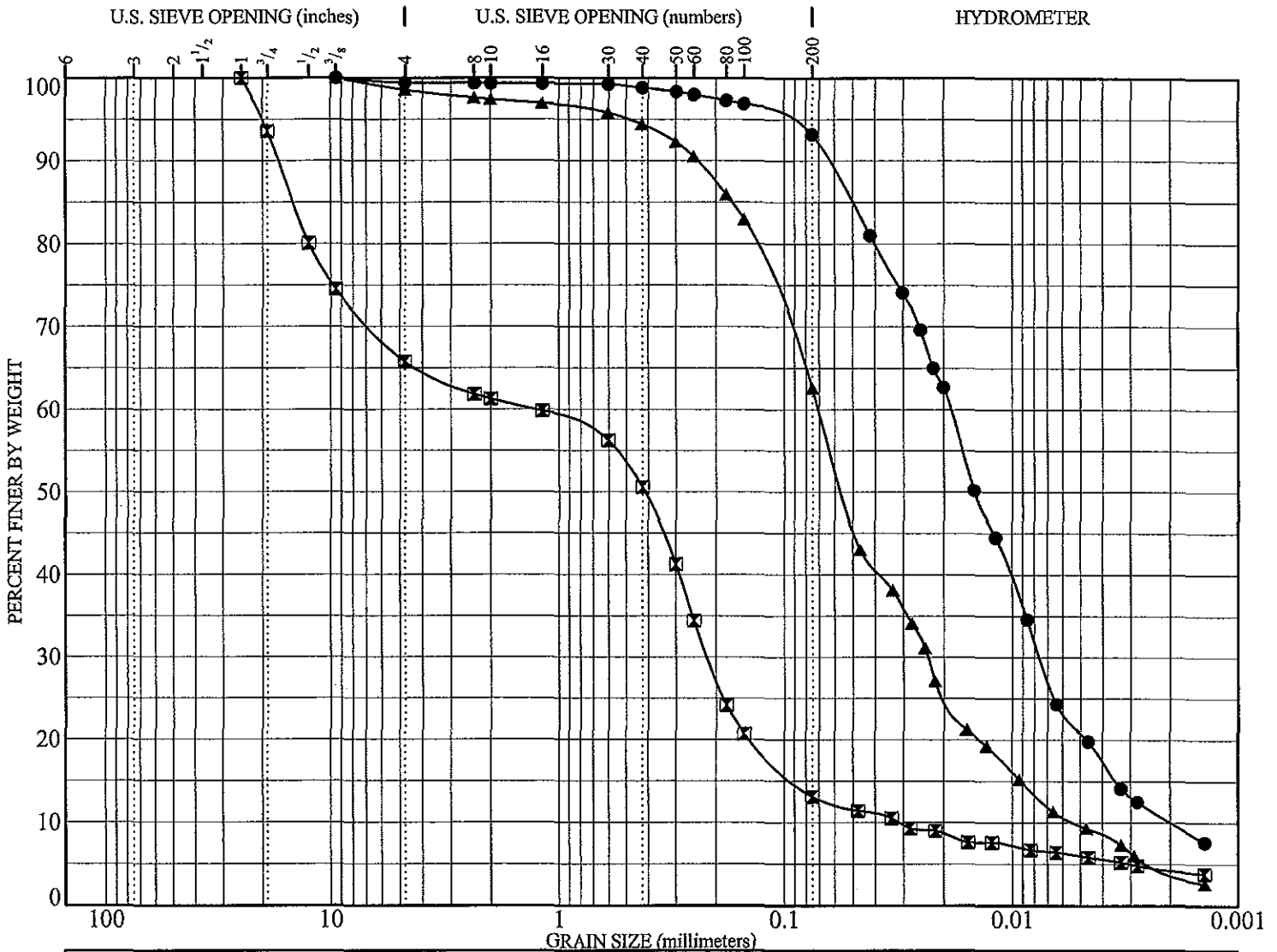
Sample Information	
●	SS-10, 2'-5" to 4'-5" depth: Organic Silt, little sand and occasional gravel (OH)
◻	SS-11a, 2'-6" to 4'-6" depth: Organic Silt, some sand and occasional gravel (OH)
▲	SS-12, 1'-11" to 2'-7" depth: Fine to Medium Sand, much gravel, trace silt, and trace organics (SP)

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LABORATORY TEST RESULT RECORD
 Sediment Sampling
 Portage Canal Restoration
 Portage, Wisconsin

DATA SHEET
12297-D

PARTICLE SIZE DISTRIBUTION ANALYSIS REPORT



COBBLES (%)	GRAVEL (%)		SAND (%)			SILT (%)	CLAY (%)
	coarse	fine	coarse	medium	fine		
● 0.0	0.6			6.2		72.3	20.9
☒ 0.0	34.2			52.7		7.1	6.0
▲ 0.0	1.4			36.0		52.9	9.7

Sieve (inches)	Percent Finer		
	●	☒	▲
1		100.0	
3/4		93.6	
1/2		80.1	
3/8	100.0	74.5	100.0

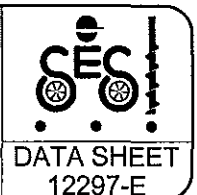
Sieve (# size)	Percent Finer		
	●	☒	▲
#4	99.4	65.8	98.6
#8	99.4	61.8	97.6
#10	99.3	61.3	97.4
#16	99.3	59.8	96.9
#30	99.3	56.2	95.8
#40	98.8	50.6	94.4
#50	98.3	41.2	92.3
#60	98.0	34.4	90.5
#80	97.3	24.1	85.9
#100	96.9	20.7	83.0
#200	93.2	13.1	62.6

	Grain Size (mm)			Coefficients	
	D ₆₀	D ₃₀	D ₁₀	C _c	C _u
●	0.0187	0.00754	0.00197	1.54	9.52
☒	1.26	0.217	0.0314	1.19	40.2
▲	0.0704	0.0235	0.00529	1.49	13.3

Sample Information	
●	SS-13, 2'-9" to 4'-9" depth: Organic Silt, little sand and occasional gravel (OH)
☒	SS-14, 1'-3" to 1'-7" depth: Silty Fine to Medium Sand, much gravel and occasional organics (SM)
▲	SS-15, 3'-8" to 5'-8" depth: Sandy Organic Silt, trace gravel (OL)

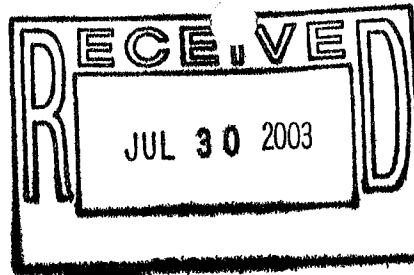
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LABORATORY TEST RESULT RECORD
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 Portage, Wisconsin





ENGINEERS
ARCHITECTS
SCIENTISTS
PLANNERS



Kim
f
LETTER OF

Transmittal

Mead & Hunt, Inc.
6501 Watts Road, Suite 101
Madison, Wisconsin 53719-2700
Telephone (608) 273-6380
Facsimile (608) 273-6391

TO: City of Portage 115 West Pleasant Street Portage, WI 53901	DATE 7/28/03	JOB NO.
	ATTENTION Jeff Grothman, Mayor	
	RE: Portage Canal	

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

Shop drawings Prints Plans Samples Specifications Contracts
 Copy of letter Change order _____

COPIES	DATE	NO.	DESCRIPTION
1			Results of sediment samples taken between Wisconsin St. and Adams St.

THESE ARE TRANSMITTED as checked below:

For approval Approved as submitted Resubmit _____ copies for approval
 For your use Approved as noted Submit _____ copies for distribution
 As requested Returned for corrections Return _____ corrected prints
 For review and comment
 FOR BIDS DUE _____ 20____ PRINTS RETURNED AFTER LOAN TO US

REMARKS
 Jeff,
 It looks like we have the same contamination at the east end of the Wis. St. to Adams St. segment that we have in segment 2.

SIGNED: Rusty Chesmore, P.E.

cc: Karen Richardson, KJohnson Engineers
 Steve Ales, Wisconsin Department of Natural Resources



SOILS & ENGINEERING SERVICES, INC.
CONSULTING CIVIL ENGINEERS SINCE 1966

RECEIVED

JUL 28 2003

July 25, 2003

MEAD and HUNT, INC

Project 12297 R02

Mr. Rusty Chesmore, P.E.
Mead & Hunt, Inc.
6501 Watts Road, Suite 101
Madison, Wisconsin

Subject: Sediment Sampling
Portage Canal Restoration
Portage Wisconsin

Dear Mr. Chesmore:

In accordance with your request, we have performed the two additional hand samplings to obtain samples of the sediment within the Portage Canal. The borings were located approximately as presented in the following table. For ease of locating the borings in the field, we assumed the canal was oriented in an east/west direction for this work.

Boring	Location
SS-16	73' east of end of culvert on east side of Dewitt Street and 12' south of north bank.
SS-17	93' west of centerline of Adams Street and 12' south of north bank.

The borings were performed by pushing by hand a 2-inch-nominal-diameter sediment sampler into the sediment in the canal. The stratigraphy encountered at the boring location consisted of black fine sand.

Mead & Hunt, Inc.
Portage Canal Restoration
July 25, 2003

SES Project 12297
Portage Wisconsin
Page 2

Sediment samples were obtained for chemical laboratory analyses. The chemical laboratory analyses consisted of the determination of the total concentrations of cadmium, chromium, copper, lead, zinc, and mercury. The chemical laboratory analyses results are summarized in enclosed Table 2. The table presents the summary of those compounds where a concentration was detected on any sample submitted. Copies of the analytical reports from the laboratories are enclosed.

If you have any questions concerning this submittal, or if we can be of further assistance, please contact us.

Respectfully submitted,

SOILS & ENGINEERING SERVICES, INC.



Craig M. Bower, P.E.

CMB:OTG:cmb

enclosures – Table 2
Appendix

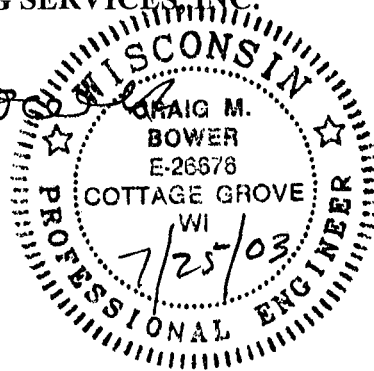


Table 2: Summary of the chemical analyses results of sediment samples.

Analytical Laboratory: CT Laboratories

CHEMICAL COMPOUND †	SAMPLE IDENTIFICATION NUMBER		
	STORM SEWER-16	STORM SEWER-17	
Sample Acquisition Date	07/15/2003	07/15/2003	
Laboratory Received Date	07/16/2003	07/16/2003	
Miscellaneous analyses. Results in % dry weight.			
Total Solids	83.2	38.8	
Moisture Content	16.8	61.2	
Total Metals analyses. Results in mg/kg.			
Cadmium	0.21	2.3	
Chromium	3.4	34.3	
Copper	4.9	65.9	
Lead	15.3	198	
Zinc	22.5	416	
Mercury	<0.0018	1.0	



APPENDIX

CHEMICAL LABORATORY REPORT



ANALYTICAL REPORT

Page 1 of 2

SOILS & ENGINEERING SERVICES

CRAIG BOWER
 1102 STEWART ST
 MADISON, WI 53713

Project Name: PORTAGE CANAL
 Contract #: 1560
 Project #: 12297
 Folder #: 35091
 Purchase Order #:
 Arrival Temperature: See COC
 Report Date: 7/22/2003
 Date Received: 7/16/2003
 Reprint Date:

CTI LAB#:	201388	Sample Description:	SS-16	Sampled:	7/15/2003
-----------	--------	---------------------	-------	----------	-----------

analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
organic Results										
solids, Percent	83.2	%	N/A	N/A	1			7/16/2003	TLH/	EPA 5030A
metals Results										
cadmium	0.21	mg/kg	0.060	0.20	1		7/17/2003	7/17/2003	NAH	EPA 6010B
chromium	3.4	mg/kg	0.28	0.91	1		7/17/2003	7/17/2003	NAH	EPA 6010B
copper	4.9	mg/kg	0.48	1.6	1		7/17/2003	7/17/2003	NAH	EPA 6010B
lead	15.3	mg/kg	0.29	0.96	1		7/17/2003	7/17/2003	NAH	EPA 6010B
zinc	22.5	mg/kg	0.49	1.7	1		7/17/2003	7/17/2003	NAH	EPA 6010B
mercury	<0.0018	mg/kg	0.0018	0.0056	1		7/19/2003	7/22/2003	NAH	EPA 7471

CTI LAB#:	201389	Sample Description:	SS-17	Sampled:	7/15/2003
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analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
organic Results										
solids, Percent	38.8	%	N/A	N/A	1			7/16/2003	TLH/	EPA 5030A
metals Results										
cadmium	2.3	mg/kg	0.12	0.41	1		7/17/2003	7/17/2003	NAH	EPA 6010B
chromium	34.3	mg/kg	0.56	1.8	1		7/17/2003	7/17/2003	NAH	EPA 6010B
copper	65.9	mg/kg	0.97	3.2	1		7/17/2003	7/17/2003	NAH	EPA 6010B
lead	198	mg/kg	0.58	1.9	1		7/17/2003	7/17/2003	NAH	EPA 6010B
zinc	416	mg/kg	1.0	3.4	1		7/17/2003	7/17/2003	NAH	EPA 6010B
mercury	1.0	mg/kg	0.036	0.12	10		7/19/2003	7/22/2003	NAH	EPA 7471

UST Chain of Custody

Company Name: SES

Project Contact: Craig Bower
 Telephone: 274-7600
 Project Name: Potage Canal
 Project Number: 12297
 Project Location:
 Sampled By: SJH

Folder #: 35091
 Company: SOILS & ENGINEERING

Project:
 Logged By: JLW PM: ETK

tories

1230 Lange Court, Baraboo, WI 53913
 608-356-2760 Tel. Fx 608-356-2766
 www.ctlaboratories.com

Present Yes No

Temperature 12.6 direct
 Initials JLW
 Date 7/14/03 Time 1445
 Cooler # 151

Mail Report To:

Company:
 Address:
 City/State/Zip:

Invoice To:
 Address:
 City/State/Zip:

PO No.

Contract No.

Regulatory Program:
 UST RCRA SDWA NPDES
 Solid Waste Other _____

Turnaround Time

Normal RUSH* Date Needed _____
 *Notify Lab prior to sending in RUSH
 Surcharges 24 hr 200% 2-3 days 100% 4-9 days 50%
 Surcharges subject to change without notice.

Landfill License Number _____

Collection		Field Screen	Field ID	Grab/Comp	Sample ID	Filt'd Y/N
Date	Time					

WDNR Well ID #

**Matrix:

DRO

GRO

GRO/PVOC

PVOC

LEAD

CADIUM

VOC 8021 LUST

PAH

%SOLIDS

Total No of Containers

Total No of Cont. Rec'd

Preservation*

Client Special Instructions:

Lab ID #

Collection		Field Screen	Field ID	Grab/Comp	Sample ID	Filt'd Y/N	Fill in Spaces with Bottles per Test										Lab ID #	
Date	Time						**Matrix	DRO	GRO	GRO/PVOC	PVOC	LEAD	CADIUM	VOC 8021 LUST	PAH	%SOLIDS		Total No of Containers
7-15-03				G	SS-16	N												201388
7-15-03				G	SS-17	N												201389
							* Cd, Cr, Cu, Pb, Hg, Zn											

Relinquished By:

Date/Time

Received by:

Date/Time

1455

Relinquished By:

Date/Time

Received by:

Date/Time

7/14/03, 125

**Matrix
 S - Soil A - Air Slg - Sludge M - Misc Waste
 GW - Groundwater SW - Surface Water
 WW - Wastewater DW - Drinking Water

* Preservation Code
 A=None B=HCL
 C=H2SO4
 D=HNO3 E=Encore
 F=Methanol
 G=NaOH
 O=Other _____

Table 1: Summary of the chemical analyses results of sediment samples.

Analytical Laboratory: US Filter

CHEMICAL COMPOUND †	SAMPLE IDENTIFICATION NUMBER			
	SS-1B	SS-5B-1	SS-5B-2	SS-6B-1
Sample Acquisition Date	01/22/2003	01/22/2003	01/22/2003	01/22/2003
Laboratory Received Date	01/24/2003	01/24/2003	01/24/2003	01/24/2003
Miscellaneous analyses. Results in % dry weight.				
Total Solids	78.5	31.5	39.5	40.2
Moisture Content	21.5	68.5	60.5	59.8
Nitrogen and Phosphorous analyses. Results in mg/kg.				
Ammonia Nitrogen	37.5	375.	448.	294
Nitrogen Kjeldahl	177.	4,920.	5,220.	2,860.
Phosphorous	289.	524.	691.	296.
Total Metals analyses. Results in mg/kg.				
Arsenic	0.79	5.05	4.99	2.25
Barium	302.	57.5	91.4	33.3
Cadmium	0.121	1.67	2.76	1.65
Chromium	10.9 ^a	25.6	29.1	24.0
Copper	15.5	59.7	100	50.0
Iron	9,060.	15,100.	16,300.	14,200.
Lead	23.4	268	618	147
Manganese	108. ^{b,c}	441.	294.	264.
Nickel	7.41	13.1	15.9	12.9
Zinc	69.4	311.	418.	400.
Mercury	0.028	2.21	9.39	1.02
Polychlorinated Biphenyls (PCB) analyses. Results in mg/kg.				
Aroclor-1242	<63.7	<63.5	<127.	219.
Aroclor-1254	<57.3	<57.1	830.	281.

3 1/2 inch
manhole
project

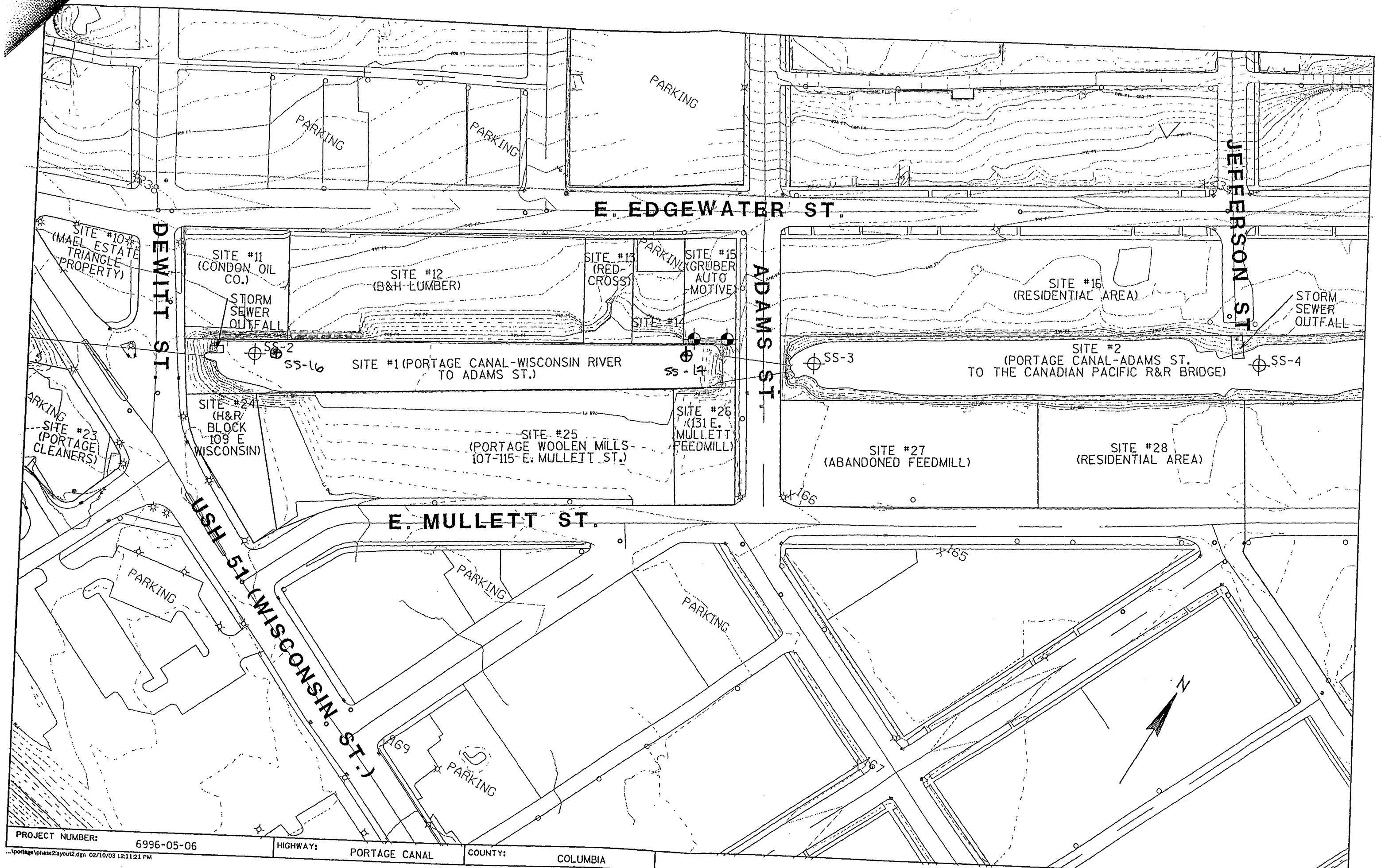
50000
cut off
1/11 89

^aResults of duplicate analysis in this quality assurance batch exceeds the limits for precision.

^bSample matrix spike recovery was high. Sample result may be biased high.

^cSample matrix spike duplicate recovery was high. Sample result may be biased high.





PROJECT NUMBER: 6996-05-06

HIGHWAY: PORTAGE CANAL COUNTY: COLUMBIA

SCALE, FT. 0 50 SHEET NUMBER: E

...portage\phase2\layout2.dgn 02/10/03 12:11:21 PM



ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

TELEPHONE 800-338-7226
FACSIMILE 715-355-3221
www.usfilter.com

February 17, 2003

Soils & Engineering Services Inc.
1102 Stewart Street
Madison, WI 53713

Attn: Duane Reichel

REPORT NO.: 122743

PROJECT NO.: 12297

Please find enclosed the analytical report, including the Sample Summary, Sample Narrative and Chain of Custody for your sample set received January 24, 2003.

All analyses were performed in accordance with approved methods as indicated on this report.

If you have any questions about the results, please call. Thank you for using USFilter, Enviroscan Services for your analytical needs.

Sincerely,

USFilter, Enviroscan Services

Yvonne M. Dobbertin
Project Manager

I certify that the data contained in this report has been generated and reviewed in accordance with the USFilter, Enviroscan Services Quality Assurance Program. Exceptions, if any, are discussed in the sample narrative. Samples will be retained for 30 days from the date of this report, then disposed in an appropriate manner. USFilter, Enviroscan Services reserves the right to return samples identified as hazardous. Release of this Final Report is authorized as verified by the following signature.

Approved by:



ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

TELEPHONE 800-338-7226
FACSIMILE 715-355-3221
www.usfilter.com

Soils & Engineering Services Inc.
1102 Stewart Street
Madison, WI 53713

PROJECT NO.: 12297
REPORT NO.: 122743.3
DATE REC'D : 01/24/03
REPORT DATE: 02/17/03
PREPARED BY: YMD

Attn: Duane Reichel

Sample ID: SS 1B	Matrix: SOIL	Sample Date/Time: 01/22/03	Lab No. 122743					
	Result	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 3050								
Metal Prep	COMP		-	-	-		01/29/03	JJP
EPA 350.2								
Total Ammonia as N	37.5	mg/kg	0.04	0.133	5		01/30/03	GAG
EPA 351.2								
Total Kjeldahl Nitrogen	177.	mg/kg	0.06	0.2	1000		02/06/03	GAG
EPA 365.4								
Total Phosphorus	289.	mg/kg	0.2	0.666	1000		02/07/03	GAG
EPA 413.1								
Total Oil & Grease-Grav.	2,140.	mg/kg	250.	833.	1		01/30/03	JEG
EPA 6010								
Total Arsenic	0.79	mg/kg	0.27	0.899	1		01/31/03	BMS
Total Barium	302.	mg/kg	0.07	0.233	1		01/31/03	BMS
Total Cadmium	0.121	mg/kg	0.037	0.123	1		01/31/03	BMS
Total Chromium	10.9	mg/kg	0.053	0.176	1	DUP	01/31/03	BMS
Total Copper	15.5	mg/kg	0.13	0.433	1		01/31/03	BMS
Total Iron	9,060.	mg/kg	-	0.33	10		02/03/03	BMS
Total Lead	23.4	mg/kg	0.33	1.1	1		01/31/03	BMS
Total Manganese	108.	mg/kg	0.067	0.223	1	S1H S2H	02/04/03	BMS
Total Nickel	7.41	mg/kg	0.1	0.333	1		01/31/03	BMS
Total Selenium	<0.764	mg/kg	0.6	2.0	1		01/31/03	BMS
Total Zinc	69.4	mg/kg	0.17	0.566	1		01/31/03	BMS
EPA 7471								
Total Mercury	0.028	mg/kg	0.014	0.0466	1		01/30/03	JCH
EPA 8021 (Only positively identified analytes are reported on a dry weight basis)								
Benzene	<0.025	mg/kg	0.008	0.0266	1		01/28/03	LMP
Ethylbenzene	<0.025	mg/kg	0.007	0.0233	1		01/28/03	LMP
Methyl t-Butyl Ether(MTBE)	<0.025	mg/kg	0.018	0.0599	1		01/28/03	LMP
Toluene	<0.025	mg/kg	0.007	0.0233	1		01/28/03	LMP
1,2,4-Trimethylbenzene	<0.025	mg/kg	0.012	0.04	1		01/28/03	LMP
1,3,5-Trimethylbenzene	<0.025	mg/kg	0.01	0.0333	1		01/28/03	LMP
m- & p-Xylene	<0.025	mg/kg	0.015	0.05	1		01/28/03	LMP
o-Xylene	<0.025	mg/kg	0.008	0.0266	1		01/28/03	LMP
PID Surrogate Recovery (S)	88.2	%	-	-	1		01/28/03	LMP
EPA 8082								
PCB-1016	<82.8	µg/kg	1.3	4.33	50		02/02/03	EAL
PCB-1221	<166.	µg/kg	2.6	8.66	50		02/02/03	EAL
PCB-1232	<287.	µg/kg	4.5	15.0	50		02/02/03	EAL
PCB-1242	<63.7	µg/kg	1.0	3.33	50		02/02/03	EAL
PCB-1248	<197.	µg/kg	3.1	10.3	50		02/02/03	EAL
PCB-1254	<57.3	µg/kg	0.9	3.0	50		02/02/03	EAL
PCB-1260	<89.2	µg/kg	1.4	4.66	50		02/02/03	EAL
Method 3550 Ultrasonic Ext.	COMP		-	-	-		01/30/03	CKV
EPA 9056								

All results calculated on a dry weight basis.



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301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

TELEPHONE 800-338-7226
FACSIMILE 715-355-3221
www.usfilter.com

Soils & Engineering Services Inc.
1102 Stewart Street
Madison, WI 53713

PROJECT NO.: 12297
REPORT NO.: 122743.5
DATE REC'D: 01/24/03
REPORT DATE: 02/17/03
PREPARED BY: YMD

Attn: Duane Reichel

Sample ID:	SS 5B 1	Matrix:	SOIL	Sample Date/Time:	01/22/03	Lab No.	122744	
	<u>Result</u>	<u>Units</u>	<u>LOD</u>	<u>LOQ</u>	<u>Dilution Factor</u>	<u>Qualifiers</u>	<u>Date Analyzed</u>	<u>Analyst</u>
EPA 3050								
Metal Prep	COMP		-	-	-		01/29/03	JJP
EPA 350.2								
Total Ammonia as N	375.	mg/kg	0.04	0.133	10		01/30/03	GAG
EPA 351.2								
Total Kjeldahl Nitrogen	4,920.	mg/kg	0.06	0.2	1000		02/06/03	GAG
EPA 365.4								
Total Phosphorus	524.	mg/kg	0.2	0.666	1000		02/07/03	GAG
EPA 413.1								
Total Oil & Grease-Grav.	6,600.	mg/kg	250.	833.	1		01/30/03	JEG
EPA 6010								
Total Arsenic	5.05	mg/kg	0.27	0.899	1		01/31/03	BMS
Total Barium	57.5	mg/kg	0.07	0.233	1		01/31/03	BMS
Total Cadmium	1.67	mg/kg	0.037	0.123	1		01/31/03	BMS
Total Chromium	25.6	mg/kg	0.053	0.176	1		01/31/03	BMS
Total Copper	59.7	mg/kg	0.13	0.433	1		01/31/03	BMS
Total Iron	15,100.	mg/kg	-	0.33	10		02/03/03	BMS
Total Lead	268.	mg/kg	0.33	1.1	1		01/31/03	BMS
Total Manganese	44.1.	mg/kg	0.067	0.223	1		02/04/03	BMS
Total Nickel	13.1	mg/kg	0.1	0.333	1		01/31/03	BMS
Total Selenium	<1.90	mg/kg	0.6	2.0	1		01/31/03	BMS
Total Zinc	311.	mg/kg	0.17	0.566	1		01/31/03	BMS
EPA 7471								
Total Mercury	2.21	mg/kg	0.014	0.0466	1		01/30/03	JCH
EPA 8021 (Only positively identified analytes are reported on a dry weight basis)								
Benzene	<0.025	mg/kg	0.008	0.0266	1		01/28/03	LMP
Ethylbenzene	<0.025	mg/kg	0.007	0.0233	1		01/28/03	LMP
Methyl t-Butyl Ether(MTBE)	<0.025	mg/kg	0.018	0.0599	1		01/28/03	LMP
Toluene	<0.025	mg/kg	0.007	0.0233	1		01/28/03	LMP
1,2,4-Trimethylbenzene	<0.025	mg/kg	0.012	0.04	1		01/28/03	LMP
1,3,5-Trimethylbenzene	<0.025	mg/kg	0.01	0.0333	1		01/28/03	LMP
m- & p-Xylene	<0.025	mg/kg	0.015	0.05	1		01/28/03	LMP
o-Xylene	<0.025	mg/kg	0.008	0.0266	1		01/28/03	LMP
PID Surrogate Recovery (S)	90.0	%	-	-	1		01/28/03	LMP
EPA 8082								
PCB-1016	<82.5	µg/kg	1.3	4.33	20		02/02/03	EAL
PCB-1221	<165.	µg/kg	2.6	8.66	20		02/02/03	EAL
PCB-1232	<286.	µg/kg	4.5	15.0	20		02/02/03	EAL
PCB-1242	<63.5	µg/kg	1.0	3.33	20		02/02/03	EAL
PCB-1248	<197.	µg/kg	3.1	10.3	20		02/02/03	EAL
PCB-1254	<57.1	µg/kg	0.9	3.0	20		02/02/03	EAL
PCB-1260	<88.9	µg/kg	1.4	4.66	20		02/02/03	EAL
Method 3550 Ultrasonic Ext.	COMP		-	-	-		01/30/03	CKV
EPA 9056								

All results calculated on a dry weight basis.



ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

TELEPHONE 800-338-7226
FACSIMILE 715-355-3221
www.usfilter.com

Soils & Engineering Services Inc.
1102 Stewart Street
Madison, WI 53713

PROJECT NO.: 12297
REPORT NO.: 122743.7
DATE REC'D: 01/24/03
REPORT DATE: 02/17/03
PREPARED BY: YMD

Attn: Duane Reichel

Sample ID:	SS 5B 2	Matrix:	SOIL	Sample Date/Time:	01/22/03	Lab No.	122745	
	Result	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 3050								
Metal Prep	COMP		-	-	-		01/29/03	JJP
EPA 350.2								
Total Ammonia as N	448.	mg/kg	0.04	0.133	10		01/30/03	GAG
EPA 351.2								
Total Kjeldahl Nitrogen	5,220.	mg/kg	0.06	0.2	1000		02/06/03	GAG
EPA 365.4								
Total Phosphorus	691.	mg/kg	0.2	0.666	1000		02/07/03	GAG
EPA 413.1								
Total Oil & Grease-Grav.	7,870.	mg/kg	250.	833.	1		01/30/03	JEG
EPA 6010								
Total Arsenic	4.99	mg/kg	0.27	0.899	1		01/31/03	BMS
Total Barium	91.4	mg/kg	0.07	0.233	1		01/31/03	BMS
Total Cadmium	2.76	mg/kg	0.037	0.123	1		01/31/03	BMS
Total Chromium	29.1	mg/kg	0.053	0.176	1		01/31/03	BMS
Total Copper	100.	mg/kg	0.13	0.433	1		01/31/03	BMS
Total Iron	16,300.	mg/kg	-	0.33	10		02/03/03	BMS
Total Lead	618.	mg/kg	0.33	1.1	1		01/31/03	BMS
Total Manganese	294.	mg/kg	0.067	0.223	1		02/04/03	BMS
Total Nickel	15.9	mg/kg	0.1	0.333	1		01/31/03	BMS
Total Selenium	<1.52	mg/kg	0.6	2.0	1		01/31/03	BMS
Total Zinc	418.	mg/kg	0.17	0.566	1		01/31/03	BMS
EPA 7471								
Total Mercury	9.39	mg/kg	0.014	0.0466	10		01/30/03	JCH
EPA 8021 (Only positively identified analytes are reported on a dry weight basis)								
Benzene	<0.025	mg/kg	0.008	0.0266	1		01/28/03	LMP
Ethylbenzene	<0.025	mg/kg	0.007	0.0233	1		01/28/03	LMP
Methyl t-Butyl Ether(MTBE)	<0.025	mg/kg	0.018	0.0599	1		01/28/03	LMP
Toluene	<0.025	mg/kg	0.007	0.0233	1		01/28/03	LMP
1,2,4-Trimethylbenzene	<0.025	mg/kg	0.012	0.04	1		01/28/03	LMP
1,3,5-Trimethylbenzene	<0.025	mg/kg	0.01	0.0333	1		01/28/03	LMP
m- & p-Xylene	<0.025	mg/kg	0.015	0.05	1		01/28/03	LMP
o-Xylene	<0.025	mg/kg	0.008	0.0266	1		01/28/03	LMP
PID Surrogate Recovery (S)	88.9	%	-	-	1		01/28/03	LMP
EPA 8082								
PCB-1016	<165.	µg/kg	1.3	4.33	50		02/02/03	EAL
PCB-1221	<329.	µg/kg	2.6	8.66	50		02/02/03	EAL
PCB-1232	<570.	µg/kg	4.5	15.0	50		02/02/03	EAL
PCB-1242	<127.	µg/kg	1.0	3.33	50		02/02/03	EAL
PCB-1248	<392.	µg/kg	3.1	10.3	50		02/02/03	EAL
PCB-1254	830.	µg/kg	0.9	3.0	50		02/02/03	EAL
PCB-1260	<177.	µg/kg	1.4	4.66	50		02/02/03	EAL
Method 3550 Ultrasonic Ext.	COMP		-	-	-		01/30/03	CKV
EPA 9056								

All results calculated on a dry weight basis.



ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

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FACSIMILE 715-355-3221
www.usfilter.com

Soils & Engineering Services Inc.
1102 Stewart Street
Madison, WI 53713

PROJECT NO.: 12297
REPORT NO.: 122743.9
DATE REC'D: 01/24/03
REPORT DATE: 02/17/03
PREPARED BY: YMD

Attn: Duane Reichel

Sample ID:	SS 6B 1	Matrix:	SOIL	Sample Date/Time:	01/22/03	Lab No.	122746	
	Result	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
<u>EPA 3050</u>								
Metal Prep	COMP		-	-	-		01/29/03	JJP
<u>EPA 350.2</u>								
Total Ammonia as N	294.	mg/kg	0.04	0.133	10		01/30/03	GAG
<u>EPA 351.2</u>								
Total Kjeldahl Nitrogen	2,860.	mg/kg	0.06	0.2	1000		02/06/03	GAG
<u>EPA 365.4</u>								
Total Phosphorus	296.	mg/kg	0.2	0.666	1000		02/07/03	GAG
<u>EPA 413.1</u>								
Total Oil & Grease-Grav.	4,100.	mg/kg	250.	833.	1		01/30/03	JEG
<u>EPA 6010</u>								
Total Arsenic	2.25	mg/kg	0.27	0.899	1		01/31/03	BMS
Total Barium	33.3	mg/kg	0.07	0.233	1		01/31/03	BMS
Total Cadmium	1.65	mg/kg	0.037	0.123	1		01/31/03	BMS
Total Chromium	24.0	mg/kg	0.053	0.176	1		01/31/03	BMS
Total Copper	50.0	mg/kg	0.13	0.433	1		01/31/03	BMS
Total Iron	14,200.	mg/kg	-	0.33	10		02/03/03	BMS
Total Lead	147.	mg/kg	0.33	1.1	1		01/31/03	BMS
Total Manganese	264.	mg/kg	0.067	0.223	1		02/04/03	BMS
Total Nickel	12.9	mg/kg	0.1	0.333	1		01/31/03	BMS
Total Selenium	<1.49	mg/kg	0.6	2.0	1		01/31/03	BMS
Total Zinc	400.	mg/kg	0.17	0.566	1		01/31/03	BMS
<u>EPA 7471</u>								
Total Mercury	1.02	mg/kg	0.014	0.0466	1		01/30/03	JCH
<u>EPA 8021</u> (Only positively identified analytes are reported on a dry weight basis)								
Benzene	<0.025	mg/kg	0.008	0.0266	1		01/29/03	LMP
Ethylbenzene	<0.025	mg/kg	0.007	0.0233	1		01/29/03	LMP
Methyl t-Butyl Ether(MTBE)	<0.025	mg/kg	0.018	0.0599	1		01/29/03	LMP
Toluene	<0.025	mg/kg	0.007	0.0233	1		01/29/03	LMP
1,2,4-Trimethylbenzene	<0.025	mg/kg	0.012	0.04	1		01/29/03	LMP
1,3,5-Trimethylbenzene	<0.025	mg/kg	0.01	0.0333	1		01/29/03	LMP
m- & p-Xylene	<0.025	mg/kg	0.015	0.05	1		01/29/03	LMP
o-Xylene	<0.025	mg/kg	0.008	0.0266	1		01/29/03	LMP
PID Surrogate Recovery (S)	89.5	%	-	-	1		01/29/03	LMP
<u>EPA 8082</u>								
PCB-1016	<32.3	µg/kg	1.3	4.33	10		02/02/03	EAL
PCB-1221	<64.7	µg/kg	2.6	8.66	10		02/02/03	EAL
PCB-1232	<112.	µg/kg	4.5	15.0	10		02/02/03	EAL
PCB-1242	219.	µg/kg	1.0	3.33	10		02/02/03	EAL
PCB-1248	<77.1	µg/kg	3.1	10.3	10		02/02/03	EAL
PCB-1254	281.	µg/kg	0.9	3.0	10		02/02/03	EAL
PCB-1260	<34.8	µg/kg	1.4	4.66	10		02/02/03	EAL
Tetrachloro-m-xylene (S)	74.1	%	-	-	10		02/02/03	EAL
Decachlorobiphenyl (S)	78.6	%	-	-	10		02/02/03	EAL
Method 3550 Ultrasonic Ext.	COMP		-	-	-		01/30/03	CKV

All results calculated on a dry weight basis.



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301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

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FACSIMILE 715-355-3221
www.usfilter.com

Soils & Engineering Services Inc.
1102 Stewart Street
Madison, WI 53713

PROJECT NO.: 12297
REPORT NO.: 122743.11
DATE REC'D : 01/24/03
REPORT DATE: 02/17/03
PREPARED BY: YMD

Attn: Duane Reichel

Sample ID: SS 6B 2	Matrix: SOIL	Sample Date/Time: 01/22/03				Lab No. 122747		
	Result	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 3050								
Metal Prep	COMP		-	-	-		01/29/03	JJP
EPA 350.2								
Total Ammonia as N	443.	mg/kg	0.04	0.133	10		01/30/03	GAG
EPA 351.2								
Total Kjeldahl Nitrogen	3,650.	mg/kg	0.06	0.2	1000		02/06/03	GAG
EPA 365.4								
Total Phosphorus	508.	mg/kg	0.2	0.666	1000		02/07/03	GAG
EPA 413.1								
Total Oil & Grease-Grav.	6,150.	mg/kg	250.	833.	1		01/30/03	JEG
EPA 6010								
Total Arsenic	9.48	mg/kg	0.27	0.899	1		01/31/03	BMS
Total Barium	73.3	mg/kg	0.07	0.233	1		01/31/03	BMS
Total Cadmium	2.12	mg/kg	0.037	0.123	1		01/31/03	BMS
Total Chromium	40.0	mg/kg	0.053	0.176	1		01/31/03	BMS
Total Copper	74.0	mg/kg	0.13	0.433	1		01/31/03	BMS
Total Iron	29,300.	mg/kg	-	0.33	10		02/03/03	BMS
Total Lead	278.	mg/kg	0.33	1.1	1		01/31/03	BMS
Total Manganese	238.	mg/kg	0.067	0.223	1		02/04/03	BMS
Total Nickel	19.4	mg/kg	0.1	0.333	1		01/31/03	BMS
Total Selenium	<1.50	mg/kg	0.6	2.0	1		01/31/03	BMS
Total Zinc	415.	mg/kg	0.17	0.566	1		01/31/03	BMS
EPA 7471								
Total Mercury	1.25	mg/kg	0.014	0.0466	1		01/30/03	JCH
EPA 8021 (Only positively identified analytes are reported on a dry weight basis)								
Benzene	0.2	mg/kg	0.008	0.0266	1		01/29/03	LMP
Ethylbenzene	0.068	mg/kg	0.007	0.0233	1		01/29/03	LMP
Methyl t-Butyl Ether(MTBE)	<0.025	mg/kg	0.018	0.0599	1		01/29/03	LMP
Toluene	<0.025	mg/kg	0.007	0.0233	1		01/29/03	LMP
1,2,4-Trimethylbenzene	0.125	mg/kg	0.012	0.04	1		01/29/03	LMP
1,3,5-Trimethylbenzene	<0.025	mg/kg	0.01	0.0333	1		01/29/03	LMP
m- & p-Xylene	0.063	mg/kg	0.015	0.05	1		01/29/03	LMP
o-Xylene	<0.025	mg/kg	0.008	0.0266	1		01/29/03	LMP
PID Surrogate Recovery (S)	90.2	%	-	-	1		01/29/03	LMP
EPA 8082								
PCB-1016	<325.	µg/kg	1.3	4.33	100		02/14/03	EAL
PCB-1221	<650.	µg/kg	2.6	8.66	100		02/14/03	EAL
PCB-1232	<1,130.	µg/kg	4.5	15.0	100		02/14/03	EAL
PCB-1242	<250.	µg/kg	1.0	3.33	100		02/14/03	EAL
PCB-1248	<775.	µg/kg	3.1	10.3	100		02/14/03	EAL
PCB-1254	<225.	µg/kg	0.9	3.0	100		02/14/03	EAL
PCB-1260	<350.	µg/kg	1.4	4.66	100		02/14/03	EAL
Tetrachloro-m-xylene (S)	92.1	%	-	-	10		02/03/03	EAL
Method 3550 Ultrasonic Ext.	COMP		-	-	-		01/30/03	CKV
EPA 9056								

All results calculated on a dry weight basis.



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1102 Stewart Street
Madison, WI 53713

PROJECT NO.: 12297
REPORT NO. : 122743.13
DATE REC'D : 01/24/03
REPORT DATE: 02/17/03
PREPARED BY: YMD

Attn: Duane Reichel

Sample ID: SS 88	Matrix: SOIL	Sample Date/Time: 01/22/03				Lab No. 122748		
	Result	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 3050								
Metal Prep	COMP		-	-	-		01/29/03	JJP
EPA 350.2								
Total Ammonia as N	82.7	mg/kg	0.04	0.133	10		01/30/03	GAG
EPA 351.2								
Total Kjeldahl Nitrogen	805.	mg/kg	0.06	0.2	1000		02/06/03	GAG
EPA 365.4								
Total Phosphorus	126.	mg/kg	0.2	0.666	1000		02/07/03	GAG
EPA 413.1								
Total Oil & Grease-Grav.	816.	mg/kg	250.	833.	1		01/30/03	JEG
EPA 6010								
Total Arsenic	0.394	mg/kg	0.27	0.899	1		01/31/03	BMS
Total Barium	22.2	mg/kg	0.07	0.233	1		01/31/03	BMS
Total Cadmium	0.722	mg/kg	0.037	0.123	1		01/31/03	BMS
Total Chromium	7.86	mg/kg	0.053	0.176	1		01/31/03	BMS
Total Copper	17.4	mg/kg	0.13	0.433	1		01/31/03	BMS
Total Iron	4,050.	mg/kg	-	0.33	10		02/03/03	BMS
Total Lead	85.4	mg/kg	0.33	1.1	1		01/31/03	BMS
Total Manganese	33.8	mg/kg	0.067	0.223	1		02/04/03	BMS
Total Nickel	4.95	mg/kg	0.1	0.333	1		01/31/03	BMS
Total Selenium	<0.844	mg/kg	0.6	2.0	1		01/31/03	BMS
Total Zinc	53.4	mg/kg	0.17	0.566	1		01/31/03	BMS
EPA 7471								
Total Mercury	0.0774	mg/kg	0.014	0.0466	1		01/30/03	JCH
EPA 8021 (Only positively identified analytes are reported on a dry weight basis)								
Benzene	<0.025	mg/kg	0.008	0.0266	1		01/29/03	LMP
Ethylbenzene	<0.025	mg/kg	0.007	0.0233	1		01/29/03	LMP
Methyl t-Butyl Ether(MTBE)	<0.025	mg/kg	0.018	0.0599	1		01/29/03	LMP
Toluene	<0.025	mg/kg	0.007	0.0233	1		01/29/03	LMP
1,2,4-Trimethylbenzene	0.0608	mg/kg	0.012	0.04	1		01/29/03	LMP
1,3,5-Trimethylbenzene	0.0533	mg/kg	0.01	0.0333	1		01/29/03	LMP
m- & p-Xylene	<0.025	mg/kg	0.015	0.05	1		01/29/03	LMP
o-Xylene	<0.025	mg/kg	0.008	0.0266	1		01/29/03	LMP
PID Surrogate Recovery (S)	92.4	%	-	-	1		01/29/03	LMP
EPA 8082								
PCB-1016	<183.	µg/kg	1.3	4.33	100		02/14/03	EAL
PCB-1221	<366.	µg/kg	2.6	8.66	100		02/14/03	EAL
PCB-1232	<633.	µg/kg	4.5	15.0	100		02/14/03	EAL
PCB-1242	<141.	µg/kg	1.0	3.33	100		02/14/03	EAL
PCB-1248	<436.	µg/kg	3.1	10.3	100		02/14/03	EAL
PCB-1254	<127.	µg/kg	0.9	3.0	100		02/14/03	EAL
PCB-1260	<197.	µg/kg	1.4	4.66	100		02/14/03	EAL
Tetrachloro-m-xylene (S)	97.0	%	-	-	10		02/03/03	EAL
Method 3550 Ultrasonic Ext.	COMP		-	-	-		01/30/03	CKV

EPA 9056

All results calculated on a dry weight basis.



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Soils & Engineering Services Inc.
1102 Stewart Street
Madison, WI 53713

PROJECT NO.: 12297
REPORT NO.: 122743.15
DATE REC'D : 01/24/03
REPORT DATE: 02/17/03
PREPARED BY: YMD

Attn: Duane Reichel

Sample ID: SS 98	Matrix: SOIL	Sample Date/Time: 01/22/03	Lab No. 122749					
	Result	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 3050								
Metal Prep	COMP		-	-	-		01/29/03	JJP
EPA 350.2								
Total Ammonia as N	367.	mg/kg	0.04	0.133	10		01/30/03	GAG
EPA 351.2								
Total Kjeldahl Nitrogen	4,590.	mg/kg	0.06	0.2	1000		02/06/03	GAG
EPA 365.4								
Total Phosphorus	653.	mg/kg	0.2	0.666	1000		02/07/03	GAG
EPA 413.1								
Total Oil & Grease-Grav.	8,930.	mg/kg	250.	833.	1		01/30/03	JEG
EPA 6010								
Total Arsenic	5.51	mg/kg	0.27	0.899	1		01/31/03	BMS
Total Barium	93.5	mg/kg	0.07	0.233	1		01/31/03	BMS
Total Cadmium	2.84	mg/kg	0.037	0.123	1		01/31/03	BMS
Total Chromium	44.1	mg/kg	0.053	0.176	1		01/31/03	BMS
Total Copper	105.	mg/kg	0.13	0.433	1		01/31/03	BMS
Total Iron	23,100.	mg/kg	-	0.33	10		02/03/03	BMS
Total Lead	312.	mg/kg	0.33	1.1	1		01/31/03	BMS
Total Manganese	157.	mg/kg	0.067	0.223	1		02/04/03	BMS
Total Nickel	22.8	mg/kg	0.1	0.333	1		01/31/03	BMS
Total Selenium	<1.50	mg/kg	0.6	2.0	1		01/31/03	BMS
Total Zinc	397.	mg/kg	0.17	0.566	1		01/31/03	BMS
EPA 7471								
Total Mercury	1.56	mg/kg	0.014	0.0466	1		01/30/03	JCH
EPA 8021	(Only positively identified analytes are reported on a dry weight basis)							
Benzene	<0.025	mg/kg	0.008	0.0266	1		01/29/03	LMP
Ethylbenzene	<0.025	mg/kg	0.007	0.0233	1		01/29/03	LMP
Methyl t-Butyl Ether(MTBE)	<0.025	mg/kg	0.018	0.0599	1		01/29/03	LMP
Toluene	<0.025	mg/kg	0.007	0.0233	1		01/29/03	LMP
1,2,4-Trimethylbenzene	<0.025	mg/kg	0.012	0.04	1		01/29/03	LMP
1,3,5-Trimethylbenzene	<0.025	mg/kg	0.01	0.0333	1		01/29/03	LMP
m- & p-Xylene	<0.025	mg/kg	0.015	0.05	1		01/29/03	LMP
o-Xylene	<0.025	mg/kg	0.008	0.0266	1		01/29/03	LMP
PID Surrogate Recovery (S)	89.4	%	-	-	1		01/29/03	LMP
EPA 8082								
PCB-1016	<64.8	µg/kg	1.3	4.33	20		02/03/03	EAL
PCB-1221	<130.	µg/kg	2.6	8.66	20		02/03/03	EAL
PCB-1232	<224.	µg/kg	4.5	15.0	20		02/03/03	EAL
PCB-1242	<49.9	µg/kg	1.0	3.33	20		02/03/03	EAL
PCB-1248	<155.	µg/kg	3.1	10.3	20		02/03/03	EAL
PCB-1254	<44.9	µg/kg	0.9	3.0	20		02/03/03	EAL
PCB-1260	<69.8	µg/kg	1.4	4.66	20		02/03/03	EAL
Method 3550 Ultrasonic Ext.	COMP		-	-	-		01/30/03	CKV
EPA 9056								

All results calculated on a dry weight basis.



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TELEPHONE 800-338-7226
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1102 Stewart Street
Madison, WI 53713

PROJECT NO.: 12297
REPORT NO.: 122743.17
DATE REC'D : 01/24/03
REPORT DATE: 02/17/03
PREPARED BY: YMD

Attn: Duane Reichel

Sample ID: SS 118	Matrix: SOIL	Sample Date/Time: 01/22/03				Lab No. 122750		
	Result	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 3050								
Metal Prep	COMP		-	-	-		01/29/03	JJP
EPA 350.2								
Total Ammonia as N	568.	mg/kg	0.04	0.133	10		01/30/03	GAG
EPA 351.2								
Total Kjeldahl Nitrogen	6,020.	mg/kg	0.06	0.2	1000		02/06/03	GAG
EPA 365.4								
Total Phosphorus	1,030.	mg/kg	0.2	0.666	1000		02/07/03	GAG
EPA 413.1								
Total Oil & Grease-Grav.	14,900.	mg/kg	250.	833.	1		01/30/03	JEG
EPA 6010								
Total Arsenic	7.68	mg/kg	0.27	0.899	1		01/31/03	BMS
Total Barium	201.	mg/kg	0.07	0.233	1		01/31/03	BMS
Total Cadmium	3.98	mg/kg	0.037	0.123	1		01/31/03	BMS
Total Chromium	63.7	mg/kg	0.053	0.176	1		01/31/03	BMS
Total Copper	113.	mg/kg	0.13	0.433	1		01/31/03	BMS
Total Iron	32,300.	mg/kg	-	0.33	10		02/03/03	BMS
Total Lead	452.	mg/kg	0.33	1.1	1		01/31/03	BMS
Total Manganese	405.	mg/kg	0.067	0.223	1		02/04/03	BMS
Total Nickel	25.9	mg/kg	0.1	0.333	1		01/31/03	BMS
Total Selenium	<2.32	mg/kg	0.6	2.0	1		01/31/03	BMS
Total Zinc	633.	mg/kg	0.17	0.566	1		01/31/03	BMS
EPA 7471								
Total Mercury	3.05	mg/kg	0.014	0.0466	1		01/30/03	JCH
EPA 8021 (Only positively identified analytes are reported on a dry weight basis)								
Benzene	<0.025	mg/kg	0.008	0.0266	1		01/29/03	LMP
Ethylbenzene	<0.025	mg/kg	0.007	0.0233	1		01/29/03	LMP
Methyl t-Butyl Ether(MTBE)	<0.025	mg/kg	0.018	0.0599	1		01/29/03	LMP
Toluene	<0.025	mg/kg	0.007	0.0233	1		01/29/03	LMP
1,2,4-Trimethylbenzene	<0.025	mg/kg	0.012	0.04	1		01/29/03	LMP
1,3,5-Trimethylbenzene	<0.025	mg/kg	0.01	0.0333	1		01/29/03	LMP
m- & p-Xylene	<0.025	mg/kg	0.015	0.05	1		01/29/03	LMP
o-Xylene	<0.025	mg/kg	0.008	0.0266	1		01/29/03	LMP
PID Surrogate Recovery (S)	90.5	%	-	-	1		01/29/03	LMP
EPA 8082								
PCB-1016	<251.	µg/kg	1.3	4.33	50		02/03/03	EAL
PCB-1221	<502.	µg/kg	2.6	8.66	50		02/03/03	EAL
PCB-1232	<869.	µg/kg	4.5	15.0	50		02/03/03	EAL
PCB-1242	<193.	µg/kg	1.0	3.33	50		02/03/03	EAL
PCB-1248	<598.	µg/kg	3.1	10.3	50		02/03/03	EAL
PCB-1254	<174.	µg/kg	0.9	3.0	50		02/03/03	EAL
PCB-1260	<270.	µg/kg	1.4	4.66	50		02/03/03	EAL
Method 3550 Ultrasonic Ext.	COMP		-	-	-		01/30/03	CKV
EPA 9056								

All results calculated on a dry weight basis.



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FACSIMILE 715-355-3221
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Soils & Engineering Services Inc.
1102 Stewart Street
Madison, WI 53713

PROJECT NO.: 12297
REPORT NO. : 122743.19
DATE REC'D : 01/24/03
REPORT DATE: 02/17/03
PREPARED BY: YMD

Attn: Duane Reichel

Sample ID: **NEOH BLANK-USF** Matrix: **SOIL** Sample Date/Time: **01/22/03** Lab No. **122751**

	<u>Result</u>	<u>Units</u>	<u>LOD</u>	<u>LOQ</u>	<u>Dilution Factor</u>	<u>Qualifiers</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<u>EPA 8021</u>								
Benzene	<0.025	mg/l	0.008	0.0266	1		01/29/03	LMP
Ethylbenzene	<0.025	mg/l	0.007	0.0233	1		01/29/03	LMP
Methyl t-Butyl Ether(MTBE)	<0.025	mg/l	0.018	0.0599	1		01/29/03	LMP
Toluene	<0.025	mg/l	0.007	0.0233	1		01/29/03	LMP
1,2,4-Trimethylbenzene	<0.025	mg/l	0.012	0.04	1		01/29/03	LMP
1,3,5-Trimethylbenzene	<0.025	mg/l	0.01	0.0333	1		01/29/03	LMP
m- & p-Xylene	<0.025	mg/l	0.015	0.05	1		01/29/03	LMP
o-Xylene	<0.025	mg/l	0.008	0.0266	1		01/29/03	LMP
PID Surrogate Recovery (S)	90.1	%	-	-	1		01/29/03	LMP
<u>WI DNR</u>								
Soil Gasoline Range Organic	<2.50	mg/l	-	5.0	1		01/29/03	LMP

Sample Narrative

Analytical No: 122743-122750

The above listed sample required a dilution to complete the analysis for PCB'S by EPA Method 808.2, thus resulting in an elevated limit of detection (LOD). The reason(s) for the dilution include:

- The physical nature (color, odor, phase separation, etc.) indicated a potential problem and a dilution was taken to protect the instrument.
- Sample matrix contains interfering concentrations of non-target compounds. A larger sample size would result in the non-target analytes masking over the target analytes.
- Insufficient sample volume. The sample may have been used for QC or multiple runs at a different dilution was attempted.
- Sample had a tendency to foam excessively during the purge cycle (VOC analysis only).
- Sample matrix competes with the internal standards and/or surrogates so that accurate quantitation is not possible at a lesser dilution.
- Sample dilution necessary due to high levels of non-target compounds observed during screening by GC/FID.
- Appropriate extract clean-up techniques were performed.
- Other (Explain): _____

Analysts: Eric A. Lage
(signature)

Date: 02/12/03

Approved by: J. Salkowski
(signature)

Date: 2/12/03

ANALYTICAL REPORT

Page 1 of 8

SOILS & ENGINEERING SERVICES

DUANE REICHEL
 1102 STEWART ST
 MADISON, WI 53713

Project Name: PORTAGE CANAL SED.
 Contract #: 1560
 Project #: 12297
 Folder #: 31912
 Purchase Order #:
 Arrival Temperature: See COC
 Report Date: 2/12/2003
 Date Received: 1/27/2003
 Reprint Date:

CTI LAB#:	174033	Sample Description:	SS-1B	Sampled:	1/22/2003
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	78.2	%	N/A	N/A	1			1/29/2003	TLH	EPA 5030A
Organic Results										
4,4'-DDD	<0.0020	mg/kg	0.0020	0.0069	1		1/31/2003	2/9/2003	JRC	EPA 8081
4,4'-DDE	0.0023	mg/kg	0.0018 *	0.0058	1		1/31/2003	2/9/2003	JRC	EPA 8081
4,4'-DDT	<0.0029	mg/kg	0.0029	0.010	1		1/31/2003	2/9/2003	JRC	EPA 8081
Aldrin	0.0026	mg/kg	0.0017 *	0.0054	1	P	1/31/2003	2/9/2003	JRC	EPA 8081
alpha-BHC	<0.00090	mg/kg	0.00090	0.0031	1		1/31/2003	2/9/2003	JRC	EPA 8081
alpha-Chlordane	<0.0012	mg/kg	0.0012	0.0040	1		1/31/2003	2/9/2003	JRC	EPA 8081
beta-BHC	<0.0022	mg/kg	0.0022	0.0072	1		1/31/2003	2/9/2003	JRC	EPA 8081
Chlordane (Technical)	<0.038	mg/kg	0.038	0.13	1		1/31/2003	2/9/2003	JRC	EPA 8081
delta-BHC	<0.0013	mg/kg	0.0013	0.0043	1		1/31/2003	2/9/2003	JRC	EPA 8081
Dieldrin	<0.0017	mg/kg	0.0017	0.0056	1		1/31/2003	2/9/2003	JRC	EPA 8081
Endosulfan I	<0.0019	mg/kg	0.0019	0.0066	1		1/31/2003	2/9/2003	JRC	EPA 8081
Endosulfan II	<0.0019	mg/kg	0.0019	0.0063	1		1/31/2003	2/9/2003	JRC	EPA 8081
Endosulfan sulfate	<0.0026	mg/kg	0.0026	0.0083	1		1/31/2003	2/9/2003	JRC	EPA 8081
Endrin	<0.0024	mg/kg	0.0024	0.0083	1		1/31/2003	2/9/2003	JRC	EPA 8081
Endrin aldehyde	<0.0018	mg/kg	0.0018	0.0061	1		1/31/2003	2/9/2003	JRC	EPA 8081
Endrin ketone	<0.0018	mg/kg	0.0018	0.0058	1		1/31/2003	2/9/2003	JRC	EPA 8081
gamma-Chlordane	<0.0015	mg/kg	0.0015	0.0050	1		1/31/2003	2/9/2003	JRC	EPA 8081
Heptachlor	<0.0019	mg/kg	0.0019	0.0061	1		1/31/2003	2/9/2003	JRC	EPA 8081
Heptachlor epoxide	<0.0029	mg/kg	0.0029	0.0096	1		1/31/2003	2/9/2003	JRC	EPA 8081

WI DNR Lab Certification Number: 15-7066030
 DATCP Certification Number: 105-000289

CTI LAB#:	174034	Sample Description:	SS-5B-1	Sampled:	1/22/2003
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
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CTI LAB#:	174035	Sample Description:	SS-5B-2	Sampled:	1/22/2003
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
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Inorganic Results

Solids, Percent	40.0	%	N/A	N/A	1			1/29/2003	TLH	EPA 5030A
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Organic Results

4,4'-DDD	<0.0040	mg/kg	0.0040	0.014	1		1/31/2003	2/10/2003	JRC	EPA 8081
4,4'-DDE	0.065	mg/kg	0.0035	0.011	1	P	1/31/2003	2/10/2003	JRC	EPA 8081
4,4'-DDT	<0.0058	mg/kg	0.0058	0.020	1		1/31/2003	2/10/2003	JRC	EPA 8081
Aldrin	<0.0033	mg/kg	0.0033	0.011	1		1/31/2003	2/10/2003	JRC	EPA 8081
alpha-BHC	<0.0018	mg/kg	0.0018	0.0060	1		1/31/2003	2/10/2003	JRC	EPA 8081
alpha-Chlordane	<0.0023	mg/kg	0.0023	0.0078	1		1/31/2003	2/10/2003	JRC	EPA 8081
beta-BHC	<0.0043	mg/kg	0.0043	0.014	1		1/31/2003	2/10/2003	JRC	EPA 8081
Chlordane (Technical)	<0.075	mg/kg	0.075	0.25	1		1/31/2003	2/10/2003	JRC	EPA 8081
delta-BHC	<0.0025	mg/kg	0.0025	0.0085	1		1/31/2003	2/10/2003	JRC	EPA 8081
Dieldrin	<0.0033	mg/kg	0.0033	0.011	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endosulfan I	<0.0038	mg/kg	0.0038	0.013	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endosulfan II	<0.0038	mg/kg	0.0038	0.012	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endosulfan sulfate	<0.0050	mg/kg	0.0050	0.016	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endrin	<0.0048	mg/kg	0.0048	0.016	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endrin aldehyde	<0.0035	mg/kg	0.0035	0.012	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endrin ketone	<0.0035	mg/kg	0.0035	0.011	1		1/31/2003	2/10/2003	JRC	EPA 8081
gamma-Chlordane	<0.0030	mg/kg	0.0030	0.0098	1		1/31/2003	2/10/2003	JRC	EPA 8081
Heptachlor	<0.0038	mg/kg	0.0038	0.012	1		1/31/2003	2/10/2003	JRC	EPA 8081
Heptachlor epoxide	<0.0058	mg/kg	0.0058	0.019	1		1/31/2003	2/10/2003	JRC	EPA 8081
lindane	<0.0040	mg/kg	0.0040	0.014	1		1/31/2003	2/10/2003	JRC	EPA 8081
Methoxychlor	0.023	mg/kg	0.0058	0.019	1	P	1/31/2003	2/10/2003	JRC	EPA 8081
Toxaphene	<0.075	mg/kg	0.075	0.25	1		1/31/2003	2/10/2003	JRC	EPA 8081

WI DNR Lab Certification Number: 15-7066030
 DATCP Certification Number: 105-000289

CTI LAB#:	174037	Sample Description:	SS-6B-2	Sampled:	1/22/2003
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
4,4'-DDE	0.040	mg/kg	0.0024	0.0078	1	P	1/31/2003	2/10/2003	JRC	EPA 8081
4,4'-DDT	<0.0040	mg/kg	0.0040	0.014	1		1/31/2003	2/10/2003	JRC	EPA 8081
Aldrin	<0.0023	mg/kg	0.0023	0.0073	1		1/31/2003	2/10/2003	JRC	EPA 8081
alpha-BHC	<0.0012	mg/kg	0.0012	0.0042	1		1/31/2003	2/10/2003	JRC	EPA 8081
alpha-Chlordane	<0.0016	mg/kg	0.0016	0.0054	1		1/31/2003	2/10/2003	JRC	EPA 8081
beta-BHC	<0.0029	mg/kg	0.0029	0.0097	1		1/31/2003	2/10/2003	JRC	EPA 8081
Chlordane (Technical)	<0.052	mg/kg	0.052	0.17	1		1/31/2003	2/10/2003	JRC	EPA 8081
delta-BHC	<0.0017	mg/kg	0.0017	0.0059	1		1/31/2003	2/10/2003	JRC	EPA 8081
Dieldrin	<0.0023	mg/kg	0.0023	0.0076	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endosulfan I	<0.0026	mg/kg	0.0026	0.0090	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endosulfan II	<0.0026	mg/kg	0.0026	0.0085	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endosulfan sulfate	<0.0035	mg/kg	0.0035	0.011	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endrin	<0.0033	mg/kg	0.0033	0.011	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endrin aldehyde	<0.0024	mg/kg	0.0024	0.0083	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endrin ketone	<0.0024	mg/kg	0.0024	0.0078	1		1/31/2003	2/10/2003	JRC	EPA 8081
gamma-Chlordane	<0.0021	mg/kg	0.0021	0.0068	1		1/31/2003	2/10/2003	JRC	EPA 8081
Heptachlor	<0.0026	mg/kg	0.0026	0.0083	1		1/31/2003	2/10/2003	JRC	EPA 8081
Heptachlor epoxide	<0.0040	mg/kg	0.0040	0.013	1		1/31/2003	2/10/2003	JRC	EPA 8081
Lindane	<0.0028	mg/kg	0.0028	0.0094	1		1/31/2003	2/10/2003	JRC	EPA 8081
Methoxychlor	0.016	mg/kg	0.0040	0.013	1	P	1/31/2003	2/10/2003	JRC	EPA 8081
Toxaphene	<0.052	mg/kg	0.052	0.17	1		1/31/2003	2/10/2003	JRC	EPA 8081

CTI LAB#:	174038	Sample Description:	SS-8B	Sampled:	1/22/2003
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
norganic Results										
Solids, Percent	70.2	%	N/A	N/A	1			1/29/2003	TLH	EPA 5030A
Organic Results										
4,4'-DDD	<0.0023	mg/kg	0.0023	0.0077	1		1/31/2003	2/10/2003	JRC	EPA 8081
4,4'-DDE	0.0026	mg/kg	0.0020 *	0.0064	1	P	1/31/2003	2/10/2003	JRC	EPA 8081
4,4'-DDT	<0.0033	mg/kg	0.0033	0.011	1		1/31/2003	2/10/2003	JRC	EPA 8081
Aldrin	<0.0019	mg/kg	0.0019	0.0060	1		1/31/2003	2/10/2003	JRC	EPA 8081

WI DNR Lab Certification Number: 15-7066030
 DATCP Certification Number: 105-000289

Solid sample results reported on a Dry Weight Basis

CTI LAB#:	174039	Sample Description:	SS-9B	Sampled:	1/22/2003
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Chlordane (Technical)	<0.11	mg/kg	0.11	0.36	1		1/31/2003	2/10/2003	JRC	EPA 8081
delta-BHC	<0.0036	mg/kg	0.0036	0.012	1		1/31/2003	2/10/2003	JRC	EPA 8081
Dieldrin	<0.0046	mg/kg	0.0046	0.016	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endosulfan I	<0.0054	mg/kg	0.0054	0.019	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endosulfan II	<0.0054	mg/kg	0.0054	0.018	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endosulfan sulfate	<0.0071	mg/kg	0.0071	0.023	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endrin	<0.0068	mg/kg	0.0068	0.023	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endrin aldehyde	<0.0050	mg/kg	0.0050	0.017	1		1/31/2003	2/10/2003	JRC	EPA 8081
Endrin ketone	<0.0050	mg/kg	0.0050	0.016	1		1/31/2003	2/10/2003	JRC	EPA 8081
gamma-Chlordane	<0.0043	mg/kg	0.0043	0.014	1		1/31/2003	2/10/2003	JRC	EPA 8081
Heptachlor	<0.0054	mg/kg	0.0054	0.017	1		1/31/2003	2/10/2003	JRC	EPA 8081
Heptachlor epoxide	<0.0082	mg/kg	0.0082	0.027	1		1/31/2003	2/10/2003	JRC	EPA 8081
Lindane	<0.0057	mg/kg	0.0057	0.019	1		1/31/2003	2/10/2003	JRC	EPA 8081
Methoxychlor	<0.0082	mg/kg	0.0082	0.028	1		1/31/2003	2/10/2003	JRC	EPA 8081
Toxaphene	<0.11	mg/kg	0.11	0.36	1		1/31/2003	2/10/2003	JRC	EPA 8081

CTI LAB#:	174040	Sample Description:	SS-11B	Sampled:	1/22/2003
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	24.7	%	N/A	N/A	1			1/29/2003	TLH	EPA 5030A
Organic Results										
4,4'-DDD	<0.0065	mg/kg	0.0065	0.022	1		1/31/2003	2/10/2003	JRC	EPA 8081
4,4'-DDE	0.13	mg/kg	0.0057	0.018	1	P	1/31/2003	2/10/2003	JRC	EPA 8081
4,4'-DDT	<0.0093	mg/kg	0.0093	0.032	1		1/31/2003	2/10/2003	JRC	EPA 8081
Aldrin	<0.0053	mg/kg	0.0053	0.017	1		1/31/2003	2/10/2003	JRC	EPA 8081
alpha-BHC	<0.0028	mg/kg	0.0028	0.0097	1		1/31/2003	2/10/2003	JRC	EPA 8081
alpha-Chlordane	<0.0036	mg/kg	0.0036	0.013	1		1/31/2003	2/10/2003	JRC	EPA 8081
beta-BHC	<0.0069	mg/kg	0.0069	0.023	1		1/31/2003	2/10/2003	JRC	EPA 8081
Chlordane (Technical)	<0.12	mg/kg	0.12	0.40	1		1/31/2003	2/10/2003	JRC	EPA 8081
delta-BHC	<0.0040	mg/kg	0.0040	0.014	1		1/31/2003	2/10/2003	JRC	EPA 8081
Dieldrin	<0.0053	mg/kg	0.0053	0.018	1		1/31/2003	2/10/2003	JRC	EPA 8081

WI DNR Lab Certification Number: 15-7066030
 DATCP Certification Number: 105-000289

QC Qualifiers

<u>Code</u>	<u>Description</u>
A	Analyte averaged calibration criteria within acceptable limits.
B	Analyte detected in associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Calibration criteria exceeded.

WI DNR Lab Certification Number: 15-7066030
DATCP Certification Number: 105-000289

Soils & Engineering Services, Inc.

TLI Project: 59495
 Client Sample: SS-6b-2

Method 8280-A TCDD/TCDF Analysis (b)
 Analysis File: ZX98400

Client Project:	SEDIMENT TESTING		
Sample Matrix:	SEDIMENT	Date Received:	01/24/2003
TLI ID:	346-92-5	Date Extracted:	01/27/2003
		Date Analyzed:	01/30/2003
		Spike File:	SP828A50
		ICal:	Z85D03A
		ConCal:	ZX97500
Sample Size:	10.030 g	Dilution Factor:	n/a
Dry Weight:	4.012 g	Blank File:	ZX97700
GC Column:	DB-5	Analyst:	LAG
		% Moisture:	60.0
		% Lipid:	n/a
		% Solids:	40.0

Analytes	Conc. (ppb)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.04				---
2,3,7,8-TCDF	ND	0.03				---

Totals	Conc. (ppb)	Number	DL	EMPC	Ratio	RT	Flags
Total TCDD		0		4.8			---
Total TCDF	ND	0	0.03				---

Internal Standards	Conc. (ppb)	% Recovery	Ratio	RT	Flags	
¹³ C ₁₂ -2,3,7,8-TCDF	13.0	104	25%-150%	0.78	21:34	---
¹³ C ₁₂ -2,3,7,8-TCDD	12.7	102	25%-150%	0.84	22:23	---

Clean-Up Standard	Conc. (ppb)	% Recovery	Ratio	RT	Flags
³⁷ Cl ₄ -2,3,7,8-TCDD	6.2	98.9	25%-150%	22:23	---

Recovery Standard	Conc. (ppb)	% Recovery	Ratio	RT	Flags
¹³ C ₁₂ -1,2,3,4-TCDD			0.84	22:10	---

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Data Reviewer: _____ 01/31/2003

TLI Project: **59495**
 Client Sample: **SS-9b**

Method 8280-A TCDD/TCDF Analysis (b)
 Analysis File: **ZX98600**

Client Project:	SEDIMENT TESTING		
Sample Matrix:	SEDIMENT	Date Received:	01/24/2003
TLI ID:	346-92-7	Date Extracted:	01/27/2003
		Date Analyzed:	01/30/2003
		Spike File:	SP828A50
		ICal:	Z85D03A
		ConCal:	ZX97500
Sample Size:	10.030 g	Dilution Factor:	n/a
Dry Weight:	3.220 g	Blank File:	ZX97700
GC Column:	DB-5	Analyst:	LAG
		% Moisture:	67.9
		% Lipid:	n/a
		% Solids:	32.1


Analytes	Conc. (ppb)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.07				---
2,3,7,8-TCDF	ND	0.05				---

Totals	Conc. (ppb)	Number	DL	EMPC	Ratio	RT	Flags
Total TCDD		0		6.1			---
Total TCDF	3.0	1		3.8			---

Internal Standards	Conc. (ppb)	% Recovery	Ratio	RT	Flags	
¹³ C ₁₂ -2,3,7,8-TCDF	15.6	100	25%-150%	0.77	21:36	---
¹³ C ₁₂ -2,3,7,8-TCDD	15.4	99.0	25%-150%	0.84	22:25	---

Clean-Up Standard	Conc. (ppb)	% Recovery	Ratio	RT	Flags
³⁷ Cl ₄ -2,3,7,8-TCDD	7.4	95.1	25%-150%	22:25	---

Recovery Standard	Conc. (ppb)	% Recovery	Ratio	RT	Flags
¹³ C ₁₂ -1,2,3,4-TCDD			0.84	22:12	---


 Data Reviewer: _____ 01/31/2003

Soils & Engineering Services, Inc.

TLI Project: 59495
 Client Sample: SS-11b

Method 8280-A TCDD/TCDF Analysis (b)
 Analysis File: ZX98700

Client Project: SEDIMENT TESTING			
Sample Matrix: SEDIMENT	Date Received: 01/24/2003	Spike File: SP828A.50	
TLI ID: 346-92-8	Date Extracted: 01/27/2003	ICal: Z85D03.A	
	Date Analyzed: 01/30/2003	ConCal: ZX97500	
Sample Size: 10.000 g	Dilution Factor: n/a	% Moisture: 72.5	
Dry Weight: 2.750 g	Blank File: ZX97700	% Lipid: n/a	
GC Column: DB-5	Analyst: LAG	% Solids: 27.5	

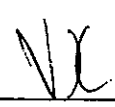
Analytes	Conc. (ppb)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.07				---
2,3,7,8-TCDF	ND	0.05				---

Totals	Conc. (ppb)	Number	DL	EMPC	Ratio	RT	Flags
Total TCDD		0		7.8			---
Total TCDF	ND	0	0.05				---

Internal Standards	Conc. (ppb)	% Recovery	Ratio	RT	Flags	
¹³ C ₁₂ -2,3,7,8-TCDF	18.6	103	25%-150%	0.77	21:34	---
¹³ C ₁₂ -2,3,7,8-TCDD	17.4	95.9	25%-150%	0.84	22:22	---

Clean-Up Standard	Conc. (ppb)	% Recovery	Ratio	RT	Flags
³⁷ Cl ₄ -2,3,7,8-TCDD	8.5	94.0	25%-150%	22:24	---

Recovery Standard	Ratio	RT	Flags
¹³ C ₁₂ -1,2,3,4-TCDD	0.84	22:10	---

Data Reviewer:  01/31/2003