

Report

PROJECT

ASSESSMENT REPORT
KEWAUNEE MARSH ARSENIC IMPACT SITE
KEWAUNEE COUNTY, WISCONSIN

CLIENT

QUARLES & BRADY
411 EAST WISCONSIN AVENUE
MILWAUKEE, WISCONSIN 53202-4497

Project No. 20716XA

Date MAY 1995



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**ASSESSMENT REPORT
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1.0 INTRODUCTION

1.1 Location

The Wisconsin Department of Natural Resources (WDNR) was notified in August 1993 of an impacted site in the C.D. Besadny Wildlife Area, which is located in the SW1/4, S7, T23N, R25E, Township of Pierce, Kewaunee County, Wisconsin. The site is approximately 1 mile northwest of State Highway 42 along trackage previously known as the "ferry yard lead." The approximate location is indicated on Figure 1. Aerial photographs illustrating the site are provided in Appendix A.

1.2 Background

The site was visited by WDNR personnel in October 1993. At that time, the site was devoid of vegetation and visibly stressed. Sediment samples (Field #1 and Field #2) were recovered from the railroad right-of-way and submitted to the State Laboratory of Hygiene. The results received by the WDNR in January 1994 indicated arsenic concentrations of 1,100 milligrams per kilogram (mg/kg) and 68,000 mg/kg in samples Field #1 and Field #2, respectively.

Historical data obtained by the WDNR suggested that sodium arsenite had been used in the region for grasshopper control. The WDNR requested that sodium analysis be conducted on samples Field #1 and Field #2 in an attempt to further identify the source material. Verbal results received by the WDNR indicated sodium concentrations of 156 mg/kg and 108 mg/kg were detected in samples Field #1 and Field #2, respectively.

On January 23, 1994, WDNR personnel, accompanied by representatives from Fox Valley & Western Ltd., and STS Consultants, Ltd., (STS), returned to the site. During this site visit, the area of stressed vegetation was measured. The stressed area extended approximately 100 to 120 feet along the railroad right-of-way in a southwest to northeast line. The stressed area extended approximately 110 feet into the marsh from the southwest end of the line and 200 feet into the marsh from the northeast end of the line. The stressed area appeared to be approximately 1/2-acre in size. The WDNR posted "Do Not Enter" signs surrounding this area. "No Trespassing" signs were posted at access points north and south of the site along the railroad right-of-way.

In March 1994, an STS two-man drill crew conducted 17 borings (15 were advanced in the area of stressed vegetation and 2 background borings were advanced southeast of the tracks). Sample locations are illustrated on Figure 2. Surficial sediment samples were collected from these borings and analyzed for arsenic content. Results obtained from this round of sampling indicated that arsenic was present in all samples collected. The highest arsenic concentration of 15,900 mg/kg was detected at Boring B-5. The lowest arsenic concentration of 85.9 mg/kg was detected at Boring B-1. Arsenic concentrations in Background Borings BG-1 and BG-2 were 93.4 and 112 mg/kg, respectively.

circled
15,900
previous report (July 94)

Fox Valley & Western Ltd. installed a 900-foot security fence to limit public access from the right-of-way to the impacted area during November 1994. Hazard identification signs were posted on the security fence as per OSHA Standard 29 CFR 1910.1018. Photographs illustrating fence and sign installation are included in Appendix A.

Also during November 1994, an STS four-man sampling crew collected 10 surface water samples. Six surface water samples were collected in the area of stressed vegetation and four background surface water samples were collected from outlying areas. Photographs illustrating

sampling techniques are provided in Appendix A. Sample locations are identified on Figure 3. Surface water samples were analyzed for arsenic, pH and total alkalinity. Results of analyses are presented in Table 1.

On December 1, 1994, a meeting was held with WDNR personnel to discuss preliminary assessment results. During this meeting, it was decided that additional subsurface characterization, including delineation of the horizontal and vertical extent of arsenic impact would be required. It was also agreed that the WDNR would provide the necessary services required to conduct an Ecological Assessment of the marsh.

Based upon the information shared during the December 1 meeting, STS submitted a Draft Work Plan on December 29, 1994, for WDNR review. WDNR comments and recommendations were received in correspondence dated January 19, 1995. STS modified the Draft Work Plan to incorporate WDNR recommendations and a Final Work Plan was submitted to the WDNR on January 31, 1995.

2.0 PROCEDURES

2.1 Site Characterization

On January 30, 1995, STS mobilized a three-man crew to the site. Boring locations were marked and the site was surveyed utilizing total station surveying techniques. Approximately 4 inches of snow cover were present.

Borings were conducted through the frost layer in the impacted area to determine frost thickness. The frost layer was observed to extend from 1.5 to 2.0 feet below the surface of the marsh. Sediments under the frost layer were manually disturbed and arsine gas concentrations were monitored. Although gas was displaced, arsine gas was not observed above the method detection limit of 0.1 parts per million (ppm).

2.2 Water Sample Collection

2.2.1 Pore Water Collection - Pore water samples were collected in the impacted area and upgradient of the site from a depth of 2 feet. Pore water sampling locations are illustrated in Figure 3. With the exception of Sample P-5, all samples were passed through a 0.45 micrometer (μm) filter prior to collection. Sample P-5 was not filtered. Samples were transferred to 250 milliliter (mL) sample bottles provided by an analytical laboratory and were immediately preserved with nitric acid. Sample bottles were placed in an ice-filled cooler and submitted to HES, Inc., of Madison, Wisconsin, under Chain of Custody control for arsenic analysis. Collection of filtered and unfiltered samples was conducted to allow for a comparison of dissolved versus suspended solids associated arsenic in marsh pore water.

2.2.2 River Water Collection - River water samples were collected upgradient and downgradient of the site. River water sampling locations are indicated on Figure 2. River water samples were collected over the entire water column. After collection, samples were transferred to 250 mL sample bottles provided by an analytical laboratory and were immediately preserved with nitric acid. Sample bottles were placed in an ice-filled cooler and submitted to HES, Inc., of Madison, Wisconsin, under Chain of Custody control for arsenic analysis.

2.3 Sediment Sample Collection

2.3.1 Hydraulically-Pushed Shelby-Tube Techniques - On February 6, 1995, STS mobilized a four-wheel drive mounted hydraulic soil probe to complete 40 soil borings. Sediment samples were collected in acetate tubes utilizing hydraulically-pushed Shelby-tube sampling techniques. Photographs illustrating sampling techniques are provided in Appendix A. Boring locations are illustrated on Figure 1. Due to low solids content of organic sediments, sample recovery was poor and this method was abandoned.

Samples were recovered at depth from several boring locations to characterize mineral soils below organic marsh sediments. Shelby-tubes were pushed through soft sediments until more cohesive materials were encountered. Samples were then recovered from the more cohesive material.

2.3.2 Modified Piston Sampling Techniques - On February 13, 1995, STS mobilized a two-man sampling crew to the site. The two-man sampling crew utilized modified piston sampling techniques to collect sediment samples from below the frost layer. After coring through the frost layer (1.5 to 2.0 feet), modified piston sampling techniques allowed collection of continuous sediment samples to 8 feet. Sediment samples were removed from the piston sampling tube in

the field and transferred to quart-sized sample containers. Photographs illustrating sampling techniques are provided in Appendix A. Piston sampling locations corresponded with Shelby-tube boring locations and are illustrated on Figure 4.

2.3.3 River Channel Sampling - Sediment samples were collected both upgradient and downgradient of the impacted area from the Kewaunee River channel. River sediment sampling locations are illustrated on Figure 4. Sample R-2 was collected using hydraulically-pushed Shelby-tube sampling techniques. Due to depth of water, Sample R-1 was collected using a mini-Ponar dredge.

2.4 Sediment Sample Preparation

Sediment samples were returned to STS prior to chemical analysis. Acetate sample tubes were cut into sections and samples were transferred to quart-sized containers. Sediment and soil samples were classified using the USDA Soil Classification System as directed by the WDNR. Classifications of sediments are included in Table 2. Sediment pH values were measured during classification. Sediment pH values were recorded to be between 6 to 7 standard units.

For chemical analysis, sediment subsamples were transferred to 4-ounce sample jars provided by an analytical laboratory. Sample jars were placed in an ice-filled cooler and submitted to HES, Inc., of Madison, Wisconsin, under Chain of Custody control for arsenic analysis. In addition, total organic carbon (TOC) and percent solids analyses were requested for selected samples.

Sediment samples collected from a depth of 0 to 2 feet from all 40 borings were submitted to characterize the horizontal distribution of arsenic in the marsh. Samples collected at 2-foot intervals from a depth of 0 to 8 feet from borings B-6, B-7, B-10, B-13, B-16, B-17, B-19, B-21, B-22, B-23, B-24, B-29, B-32, B-34, B-38, and B-39 were submitted to characterize the vertical distribution of arsenic.

2.5 Laboratory Analysis

Sediment and water samples were analyzed for arsenic as per EPA Method SW-846, Second Edition, Methods 3030, 3040, or 3050, and 7060. Selected sediment samples were analyzed for TOC and percent solids content as per Official Methods of Analysis (1984) 14th edition, Method 16.259, 14.002, 7.003, AOAC, Arlington, VA (Modified) and LLoyd, USEPA, Region II, Edison, NJ 08837, respectively. Results of water analysis are indicated on Table 1. Results of sediment analysis are indicated on Table 2.

2.6 Decontamination Procedures

Drilling and sampling devices were rinsed and washed between collection of samples. A phosphate and additive-free soap and clean potable water were used for washing all equipment.

2.7 Exploration Derived Waste

Soil cuttings and rinse water were not retained. All rinsing was done in the stressed area. Waste generated from processing laboratory samples was containerized and prepared for disposal.

3.0 RESULTS

3.1 Water Quality

3.1.1 Marsh Surface Water - Results of surface water analysis are presented in Table 1. The highest concentration of arsenic, 920,000 micrograms per Liter ($\mu\text{g/L}$), was detected at sample location H-4. The lowest concentration of arsenic 35.5 $\mu\text{g/L}$ was detected at sample location BKG-1, across the Kewaunee River from the impacted area.

3.1.2 Pore Water - Results of pore water analysis are presented in Table 1. The highest concentration of arsenic in filtered pore water, 800,000 $\mu\text{g/L}$, was detected at sample location P-2, in the impacted area. The lowest concentration in filtered pore water, <1.0 $\mu\text{g/L}$, was detected at sample location P-5, more than 1/4 mile to the northeast of the impacted area.

An unfiltered sample of pore water (Sample P-4) recovered in the same location as Sample P-5 contained 6.6 $\mu\text{g/L}$. Comparison of concentrations observed in the filtered versus unfiltered sample suggests that pore water arsenic is associated with suspended solids.

3.1.3 River Water - Results of river water analysis are presented in Table 1. The highest concentration of arsenic, 4.1 $\mu\text{g/L}$, was detected upstream in the river channel at sample location R-2, more than 1/4 mile to the northeast of the impacted area. The lowest concentration of arsenic, <1.0 $\mu\text{g/L}$, was detected downstream in the river channel at sample location R-1, approximately 1/4 mile from the impacted area. Arsenic was detected at 1.2 $\mu\text{g/L}$ in sample R-3 collected from the Highway 42 bridge in the City of Kewaunee, Wisconsin.

Weekly sampling of surface water from the Kewaunee River was initiated on March 14, 1995. Sampling was conducted at sample location R-1 to monitor the effects of the Spring thaw and/or overland flow on arsenic loading into the Kewaunee River. Analysis of samples collected on March 14, March 20, and March 27, 1995, indicate that arsenic concentrations were below the method detection limit of 1.0 µg/L.

3.2 Sediment Quality

3.2.1 Soil Profile - Results of sample classification indicate that the site soils consist of peat and mucky peat to a depth of at least 8 feet. Results of analysis indicate that sediment samples contained greater than 16% TOC. Sample solids content ranged from 12.4% to 28.2%. The mean percent solids value was 16.6%. Results of physical analysis of samples are presented on Table 2.

Samples collected at depth from borings B-13, B-20, B-26, B-29, B-32, B-36, B-37, B-38, and B-39 provided information on mineral soils underlying the organic sediments within the marsh. Classification of samples recovered from Borings B-20, B-38, and B-39 indicate that organic sediments are underlain by coarse sand and gravel at a depth of 15 to 18 feet. Silty clay and clay loam were encountered at a depth of 16 to 19 feet in Borings B-36 and B-37. Silty clay and clay were encountered at a depth of 20 to 22 feet in Borings B-26 and B-29. Silty clay was encountered at a depth of 26 to 28 feet in Boring B-13.

3.2.2 Horizontal Delineation - Results of sediment analysis are presented in Table 2. Arsenic was detected in all sediment samples collected. The highest concentration of 10,700 mg/kg was detected at Boring B-39. The lowest concentration of 1.7 mg/kg was detected at Boring B-8. Arsenic isoconcentrations within surficial sediments (0 to 2 feet) are illustrated on Figure 3.

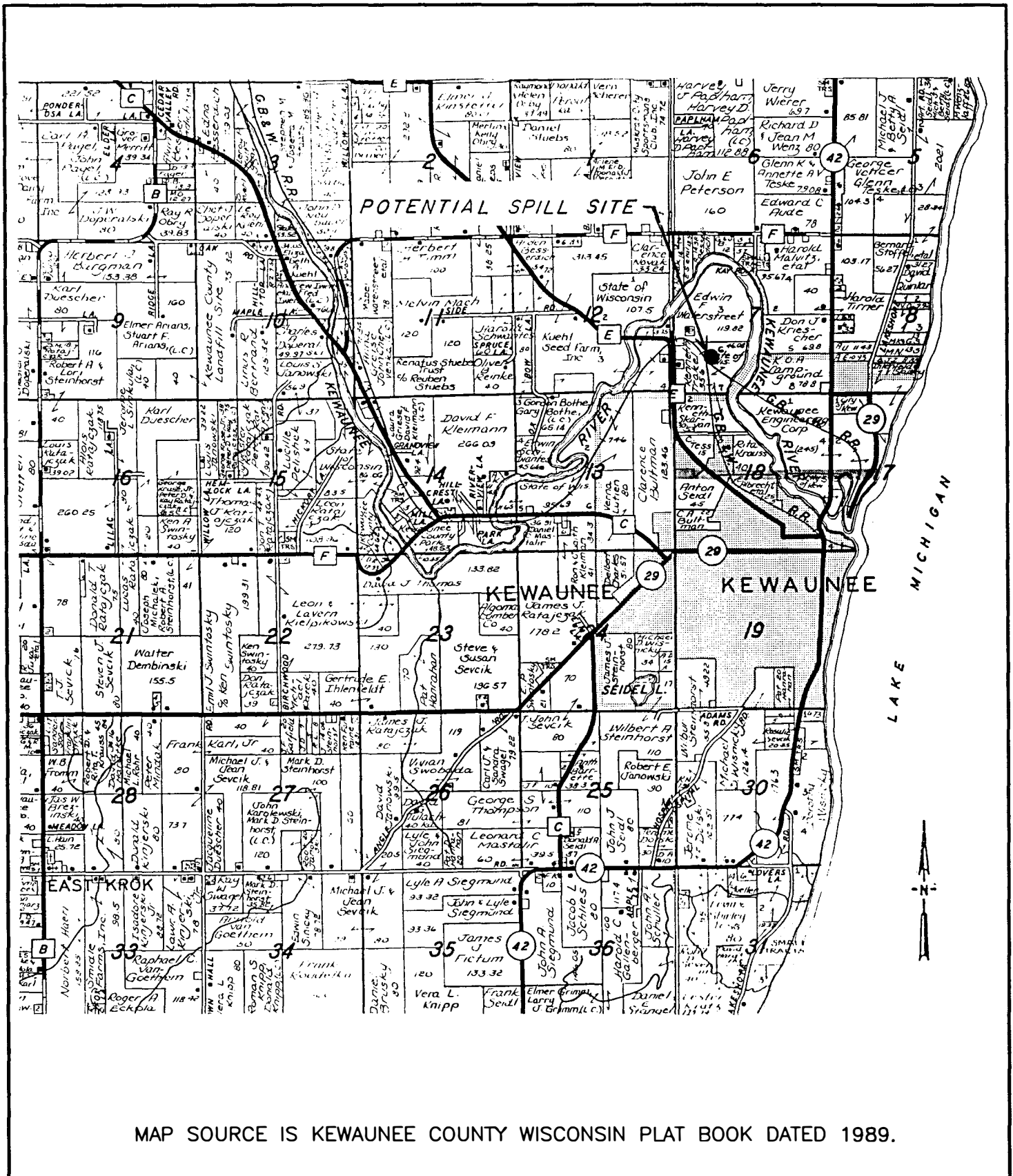
3.2.3 Vertical Delineation - Results of vertical profiling of arsenic impact are presented on Table 2. These results suggest that, with the exception of sediments near boring B-39, arsenic-impacted materials are contained by a mucky peat layer at a depth of 6 to 8 feet across the entire site. Near Boring B-39, impacted materials appear to have penetrated the mucky peat layer. Results also suggest that the highest concentrations of arsenic are associated with surface sediments and that arsenic concentrations decrease with depth.

4.0 GENERAL QUALIFICATIONS

Conclusions presented in this report are based on site conditions as revealed through sample collection, surface conditions noted at the time of the study, subcontract laboratory analysis, and our professional interpretation of this information. The scope of this report is limited to the specific project and location described herein. Our interpretation of results and recommendations represents our professional judgment based on the available information, no other warranties are expressed or implied.

FIGURES

- Figure 1 Site Location Diagram
- Figure 2 Existing Site Conditions (2/19/95)
- Figure 3 Water Quality
- Figure 4 Sediment Quality



MAP SOURCE IS KEWAUNEE COUNTY WISCONSIN PLAT BOOK DATED 1989.



STS Consultants Ltd.
Consulting Engineers

PROJECT/CLIENT

SITE LOCATION DIAGRAM
FOX VALLEY & WESTERN LTD.
POTENTIAL SPILL SITE
KEWAUNEE MARSH
KEWAUNEE, WISCONSIN

DRAWN BY D.J.M. 2-10-94

CHECKED BY MTB 2-10-94

APPROVED BY MTB 5/5/95

SCALE 1-1/4" = 1 MILE

FIGURE NO. 1

STS DRAWING NO. 20716XF

TABLE 1

Water Quality

TABLE 1.
WATER QUALITY

Sample	Date	Source	Arsenic Concentration (ug/L)	pH	Alkalinity (mg/L)
BKG-1	Nov. 94	marsh surface water	35.5	7.43	385
BKG-2	Nov. 94	marsh surface water	398	7.15	271
BKG-3	Nov. 94	marsh surface water	690	7.03	702
BKG-4	Nov. 94	marsh surface water	64.1	7.15	631
H-1	Nov. 94	marsh surface water	19300	7.39	650
H-2	Nov. 94	marsh surface water	5660		
H-3	Nov. 94	marsh surface water	148000	7.64	8010
H-4	Nov. 94	marsh surface water	920000		
H-5	Nov. 94	marsh surface water	24800		
H-6	Nov. 94	marsh surface water	19100	6.96	679
R-1	Feb. 13, 95	river water	<1.0		
R-1A	Mar. 14, 95	river water	<1.0		
R-1B	Mar. 20, 95	river water	<1.0		
R-1C	Mar. 27, 95	river water	<1.0		
R-1D	Apr. 3, 95	river water	2.7		
R-1E	Apr. 10, 95	river water	<1.0		
R-2	Feb. 95	river water	4.1		
R-3	Feb. 95	river water	1.2		
P-1*	Feb. 95	marsh pore water	17200		
P-2*	Feb. 95	marsh pore water	800000		
P-3*	Feb. 95	marsh pore water	21000		
P-4	Feb. 95	marsh pore water	6.6		
P-5*	Feb. 95	marsh pore water	<1.0		
NR 105 Human Cancer Criteria			50		
NR 140 Enforcement Standard			50		

* = Sample Passed Through 0.45 Micrometer Filter Before Collection
 mg/L = Milligrams per Liter
 ug/L = Micrograms per Liter

TABLE 2

Sediment Quality

TABLE 2.
SEDIMENT QUALITY

Boring	Depth	Textural Description	Munsel Color Description	Arsenic(mg/kg)
B-1 ^A	15-16	Mucky Peat, few medium roots	Dark brown, 7.5YR 3/2	2
B-2 ^B	4-6	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	2
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2	
B-3	0-2	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	5.5
B-4	0-2	Peat	Black, 5YR 2.5/1	4
	2-4	Peat, common fine roots		
B-5	0-2	Peat, few fine roots	Black, 5YR 2.5/1	4.1
	2-4	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	
B-6	0-2 ^C	no recovery		
	2-4	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	4.3
	4-6	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	4.95
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2	7.15
B-7	0-2 ^C	no recovery		
	2-4	Peat, common fine roots	Dark reddish brown, 5YR 3/2	4.65
	4-6	Fine Sandy Loam, few fine roots	Dark grayish brown, 10YR 4/2	16.1
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2	0.81
B-8	0-2 ^C	no recovery		
	2-4	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	1.7
	4-6	Peat, common fine roots	Dark brown, 10YR 3/3	
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2	
B-9	0-2	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	249
	2-4	Peat, common fine to medium roots	Dark reddish brown, 5YR 2.5/2	
	4-6	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	
B-10	0-2	Peat, common to many fine to coarse roots	Dark reddish brown, 5YR 2.5/2	897
	2-4	Peat, common to many fine roots	Dark reddish brown, 5YR 2.5/2	290
	4-6	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	85.6
Proposed NR 720 Standard (Non-Industrial)				0.4

A: 15 Feet Below Water Surface in River Channel
 B: 4 Feet Below Water Surface in River Channel
 C: 2 Feet Below Ice on River Bank
 mg/kg = Milligrams per Kilogram
 * = Submitted for Analysis

TABLE 2.
SEDIMENT QUALITY

Boring	Depth	Textural Description	Munsell Color Description	Arsenic (mg/kg)
B-11	0-2	Peat, many fine roots	Dark reddish brown, 5YR 2.5/2	943
	2-4	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	
	4-6	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	
	6-8	Mucky Peat	Very dark grayish brown, 10YR 3/2	
B-12	0-2	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	324
B-13	0-2	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	3290
	2-4	Peat, few fine to medium roots	Dark reddish brown, 5YR 2.5/2	23.7
	4-6	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	32.7
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2	<0.72
	26-28	Silty Clay	Gray, 5YR 5/1	
B-14	0-2	Peat, common to many fine to coarse roots	Dark reddish brown, 5YR 3/2	858
	2-4	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	
B-15	0-2	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	1660
	2-4	Peat, common fine to medium roots	Dark reddish brown, 5YR 2.5/2	
B-16	0-2	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	1220
	2-4	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	390
	4-6	Mucky Peat, few fine to coarse roots	Dark reddish brown, 5YR 2.5/2	12.2
	6-8	Mucky Peat, few fine roots	Dark brown, 10YR 3/3	0.93
B-17	0-2	sample not retained		
	2-4	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	29
	4-6	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	15.1
	6-8	Mucky Peat, few very fine roots	Dark reddish brown, 5YR 3/2	1.46
B-18	0-2	Peat, common to many fine to coarse roots	Dark reddish brown, 5YR 2.5/2	1400
	2-4	Peat, few fine to coarse roots	Dark reddish brown, 5YR 2.5/2	
	4-6	Peat, few fine to coarse roots	Dark reddish brown, 5YR 2.5/2	
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2	
B-19	0-2	Peat, common to many fine to medium roots	Dark reddish brown, 5YR 2.5/2	768
	2-4	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	874
	4-6	Peat, few fine to coarse roots	Dark reddish brown, 5YR 2.5/2	181
	6-8	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	29.5
B-20	0-2	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	2440
	16-18	Gravelly Loam	Red brown, 5YR 4/3	
Proposed NR 720 Standard (Non-Industrial)				0.4

A: 15 Feet Below Water Surface in River Channel

B: 4 Feet Below Water Surface in River Channel

C: 2 Feet Below Ice on River Bank

mg/kg = Milligrams per Kilogram

* = Submitted for Analysis

TABLE 2.
SEDIMENT QUALITY

Boring	Depth	Textural Description	Munsell Color Description	Arsenic (mg/kg)
B-21	0-2	Peat, common to many fine roots	Dark reddish brown, 5YR 2.5/2	705
	2-4	Peat, common fine to medium roots	Dark reddish brown, 5YR 2.5/2	2.37
B-22	0-2	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	808
	2-4	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	411
	4-6	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	116
	6-8	Mucky Peat, few fine roots	Dark grayish brown, 10YR 3/3	2.63
B-23	0-2	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	636
	2-4	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	17.9
	4-6	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	<2.0
	6-8	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	<2.1
B-24	0-2	Peat, common to many coarse to fine roots	Dark reddish brown, 5YR 2.5/2	386
	2-4	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	1.71
	4-6	Peat, few fine to medium roots	Dark reddish brown, 5YR 2.5/2	2.12
	6-8	Mucky Peat, few fine to medium roots	Very dark grayish brown, 10YR 3/2	1.32
B-25	0-2	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	422
	2-4	Peat, common to many fine roots	Dark reddish brown, 5YR 2.5/2	
B-26	0-2	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	3220
	2-4	Peat, common to many fine roots	Dark reddish brown, 5YR 2.5/2	
	4-6	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	723
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2	2.45
	20-22	Clay, few fine roots	Red brown, 5YR 4/3	
B-27	0-2	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	1880
	2-4	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	
	4-6	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	
	6-8	Mucky Peat, few very fine roots	Very dark grayish brown, 10YR 3/2	
B-28	0-2	Peat, many fine to coarse roots	Dark reddish brown, 5YR 2.5/2	1470
	2-4	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	
	4-6	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	
	6-8	Mucky Peat	Very dark grayish brown, 10YR 3/2	
B-29	0-2	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	4500
	2-4	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	360
	4-6	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2	202
	6-8	Mucky Peat, few very fine roots	Very dark grayish brown, 10YR 3/2	2.35
	20-22	Silty Clay	Red brown, 5YR 4/3	
B-30	0-2	Peat, common to many coarse to fine roots	Dark reddish brown, 5YR 2.5/2	1240
	2-4	Peat, common to many fine roots	Dark reddish brown, 5YR 2.5/2	
Proposed NR 720 Standard (Non-Industrial)				0.4

A: 15 Feet Below Water Surface in River Channel

B: 4 Feet Below Water Surface in River Channel

C: 2 Feet Below Ice on River Bank

mg/kg = Milligrams per Kilogram

* = Submitted for Analysis

TABLE 2.
SEDIMENT QUALITY

Boring	Depth	Textural Description	Munsell Color Description	Arsenic (mg/kg)	% solids	TOC
B-31	0-2	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	610		
	2-4	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2			
	4-6	Peat, few fine to medium roots	Dark reddish brown, 5YR 2.5/2			
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2			
B-32	0-2	Peat, common to few fine roots	Dark reddish brown, 5YR 2.5/2	5480		
	2-4	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	88.9		
	4-6	Peat, common to fine roots	Dark reddish brown, 5YR 2.5/2	194		
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2	1.62		
	20-22	Clay	Red brown, 5YR 4/3			
B-33	0-2	Peat, common to many fine to medium roots	Dark reddish brown, 5YR 2.5/2	738		
	2-4	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2			
	4-6	Peats, few fine roots	Dark reddish brown, 5YR 2.5/2			
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2			
B-34	0-2	Peat, common fine to medium roots	Dark reddish brown, 5YR 2.5/2	2660		
	2-4	Peat, few to common fine roots	Dark reddish brown, 5YR 2.5/2	946	13.5	>16000
	4-6	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2	1020	12.4	>16000
	6-8	Mucky Peat, few very fine roots	Dark reddish brown, 5YR 2.5/2	4.3	14.1	>16000
B-35	0-2	Peat, common fine to medium roots	Dark reddish brown, 5YR 2.5/2	22.1		
	2-4	Peat, few fine to medium roots	Dark reddish brown, 5YR 2.5/2			
	4-6	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2			
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2			
B-36	0-2	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	917		
	2-4	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2			
	4-6	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2			
	6-8	Peat, few fine roots	Dark reddish brown, 5YR 2.5/2			
	17-19	Silty Clay	Red brown, 5YR 4/3			
B-37	0-2	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	4600		
	16-18	Clay Loam, few fine roots	Red brown, 5YR 4/3			
B-38	0-2	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2	2030		
	2-4	Peat, few fine to medium roots	Dark reddish brown, 5YR 2.5/2	816	15.5	>16000
	4-6	Peat, few fine to coarse roots	Dark reddish brown, 5YR 2.5/2	313	13.7	>16000
	6-8	Mucky Peat, few fine roots	Dark grayish brown, 10YR 4/2	4.1	16.5	>16000
	15-17	Gravelly Loam	Red brown, 5YR 4/4			
B-39	0-2	Peat, common to few fine roots	Dark reddish brown, 5YR 2.5/2	10700		
	2-4	Peat, few fine to coarse roots	Dark reddish brown, 5YR 2.5/2	3980	19.9	>16000
	4-6	Peat, few fine to coarse roots	Dark reddish brown, 5YR 2.5/2	4470	15.5	>16000
	6-8	Mucky Peat, few fine roots	Dark grayish brown, 10YR 4/2	852	28.2	>16000
	15-17	Coarse Sand	Red brown, 5YR 4/3			
B-40	0-2	Peat, common to many fine to medium roots	Dark reddish brown, 5YR 2.5/2	652		
	2-4	Peat, common fine roots	Dark reddish brown, 5YR 2.5/2			
	4-6	Peat, common fine to coarse roots	Dark reddish brown, 5YR 2.5/2			
	6-8	Mucky Peat, few fine roots	Very dark grayish brown, 10YR 3/2			
Proposed NR 720 Standard (Non-Industrial)				0.4		

A: 15 Feet Below Water Surface in River Channel

B: 4 Feet Below Water Surface in River Channel

C: 2 Feet Below Ice on River Bank

mg/kg = Milligrams per Kilogram

* = Submitted for Analysis

APPENDIX A

Photograph Log



Photo 1: Aerial Photograph of Site (March 1995)



Photo 2: Security Fence and Hazard Warning Signs



Photo 3: Surface Water Sample Collection



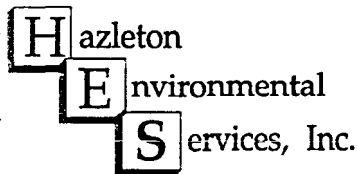
Photo 4: Four-Wheel Drive Mounted Hydraulic Soil Probe



Photo 5: Modified Piston Sampling Technique

APPENDIX B

Analytical Laboratory Reports



525 SCIENCE DRIVE • MADISON, WISCONSIN 53711

HES, Inc.

Wednesday, December 28, 1994

Mike Berger
STS Consultants Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Re: STS Project #20716XF
HES Batch Number 41201015

Dear Mr. Berger:

Enclosed are the results for the reanalysis of samples BKG1, BKG2, and BKG4 from the Kewaunee Marsh project. The original samples were received 11/15/94 (HES batch number 41100625).

If I can be of assistance, or provide additional information, please call me at (608) 232-3335.

Sincerely,

A handwritten signature in cursive script that reads 'Peggy'.

Peggy Popp
Account Executive

Wisconsin Laboratory Certification Number 113172950

encl:

c: Central File



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 41201015
DATE ENTERED: 12/17/94
REPORT PRINTED: 12/28/94

WATER: BKG1; 11/14; 900; RE-ENTRY OF LIMS #41100625
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	35.5	MCG/L

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS 3020 AND 7060, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 41201016
DATE ENTERED: 12/17/94
REPORT PRINTED: 12/28/94

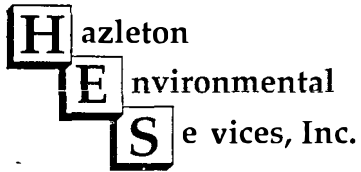
WATER: BKG2; 11/14; 910; RE-ENTRY OF LIMS #41100626
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	398.	MCG/L

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/
4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND
EDITION, METHODS 3020 AND 7060, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 41201017

DATE ENTERED: 12/17/94

REPORT PRINTED: 12/28/94

WATER: BKG4; 11/14; 950; RE-ENTRY OF LIMS #41100628
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	64.1	MCG/L

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS 3020 AND 7060, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)

Terms and Conditions

1. Reports are submitted to clients on a confidential basis. No reference to the work, the results, or HES, Inc., in any form of advertising, news release, or other public announcements may be made without written authorization from HES.
2. The term "Less Than" or the symbol (<) is used to signify the lower limit of quantitation of the procedure under the conditions employed. The use of the term "Less Than" or (<) does not imply that traces of analyte were present.

The term "None Detected" is used to report assay results where detection limits have been established for the method but acceptable residue levels have not been defined by the industry or by federal law or when the method does not define detection limits. The term will specify the fixed amount of sample employed in the analysis and does not imply that traces of the analyte were present.
3. Samples submitted to HES for routine analysis will be retained for a minimum of sixty (60) days after the report of analysis is issued. Extended storage requirements must be brought to the attention of HES prior to or at the time of sample submission. HES, at its discretion, may charge for such extended storage. Records and specimens from all government regulated studies will be maintained in accordance with federal regulations.
4. Analytical Method Summaries will be supplied to the client upon request. Detailed copies of in-house laboratory procedures may be reviewed by the client or his agent during a site visit, but may not be copied without the expressed consent of HES.
5. All work performed by HES will be conducted in accordance with the HES Quality Assurance Program. Specific documentation requirements of the client for work performed by HES must be made known to HES prior to the start of the requested work.
6. Records of the raw data, reports, etc., will be maintained by HES in its data archives for a minimum of five (5) years unless otherwise specified by government regulations after the completion of the requested work. One (1) duplicate report will be made available free of charge for a period of one (1) year. HES reserves the right to charge for copies made after one (1) year and to charge for any and all copies of raw data requested.
7. Raw data, chromatograms, calibration data, etc., are the sole property of HES. Copies will be made available upon request when the quality of the original document is such that duplication is possible.
8. Clients and/or their agents may, with prior notice, inspect/audit the records, facilities, etc., of HES pertinent to their study. All data not pertinent to the specific study is confidential and will not be made available.
9. Routine inquiry concerning work performed by HES should be made to the Client Service Center. The client is also encouraged to bring any concerns or questions to the attention of management, technical staff, or the facility Quality Assurance Unit.



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 41100625

DATE ENTERED: 11/15/94

REPORT PRINTED: 11/28/94

WATER: BKG1; 11/14; 900
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ALKALINITY	385.	MG/L

ICP SPECTROSCOPY

<u>ELEMENTS</u>	<u>MG/L</u>
ARSENIC	< 0.400

PH

<u>ELEMENT</u>	<u>RESULTS</u>
PH	7.43

THE EPA RECOMMENDS THAT THE MEASUREMENT OF PH BE DETERMINED IMMEDIATELY AT THE TIME OF SAMPLE COLLECTION. THE VALUE FOR PH PRESENTED IN THIS REPORT REPRESENTS A LABORATORY MEASUREMENT PERFORMED OUTSIDE THE RECOMMENDED HOLDING TIME.

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ALKALINITY
STANDARD METHODS FOR THE EXAMINATION OF WATERS AND WASTEWATER, 17TH EDITION, METHOD 2320B, APHA, AWWA, WPCF, WASHINGTON, D.C. (1989).



SAMPLE NUMBER: 41100625

WATER: BKG1; 11/14; 900
PROJECT NAME: KEWAUNEE MARSH

METHOD REFERENCES (CONTINUED)

ICP SPECTROSCOPY

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METHOD 200.7, U.S. EPA, CINCINNATI, OH (ADDED DECEMBER 1982)
TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, SECOND EDITION, METHOD 6010, EDITION, METHOD 6010, U.S. EPA, WASHINGTON DC (REVISED APRIL 1984)

PH

- 1.) WATERS: "METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES", METHOD 150.1, ENVIRONMENTAL PROTECTION AGENCY, EPA-600/4-79-020, REVISED MARCH 1983.
- 2.) SOILS: "METHODS OF SOIL ANALYSIS, PART 2 - CHEMICAL AND MICROBIOLOGICAL PROPERTIES", 2ND ED., AGRONOMY NO. 9, PART 2, AMERICAN SOCIETY OF AGRONOMY, INC.; SOIL SCIENCE SOCIETY OF AMERICA, INC., MADISON 1982, METHOD 12-26.

EDIT MNEMONIC-INORGANICS

SIGNATURE BLOCK FOR INORGANIC ANALYSIS



REPORT OF ANALYSIS

MIKE BERGER
 STS CONSULTANTS, LTD
 1035 KEPLER DRIVE
 GREEN BAY, WI 54311

SAMPLE NUMBER: 41100626
 DATE ENTERED: 11/15/94
 REPORT PRINTED: 11/28/94

WATER: BKG2; 11/14; 910
 PROJECT NAME: KEWAUNEE MARSH
 PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ALKALINITY	271.	MG/L

ICP SPECTROSCOPY

<u>ELEMENTS</u>	<u>MG/L</u>
ARSENIC	< 0.400

PH

<u>ELEMENT</u>	<u>RESULTS</u>
PH	7.15

THE EPA RECOMMENDS THAT THE MEASUREMENT OF PH BE DETERMINED IMMEDIATELY AT THE TIME OF SAMPLE COLLECTION. THE VALUE FOR PH PRESENTED IN THIS REPORT REPRESENTS A LABORATORY MEASUREMENT PERFORMED OUTSIDE THE RECOMMENDED HOLDING TIME.

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
 JOHN C. WALTON
 SUPERVISOR, INORGANICS

METHOD REFERENCES

ALKALINITY
 STANDARD METHODS FOR THE EXAMINATION OF WATERS AND WASTEWATER, 17TH EDITION, METHOD 2320B, APHA, AWWA, WPCF, WASHINGTON, D.C. (1989).



SAMPLE NUMBER: 41100626

WATER: BKG2; 11/14; 910
PROJECT NAME: KEWAUNEE MARSH

METHOD REFERENCES (CONTINUED)

ICP SPECTROSCOPY

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METHOD 200.7, U.S. EPA, CINCINNATI, OH (ADDED DECEMBER 1982)
TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, SECOND EDITION, METHOD 6010, EDITION, METHOD 6010, U.S. EPA, WASHINGTON DC (REVISED APRIL 1984)

PH

- 1.) WATERS: "METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES", METHOD 150.1, ENVIRONMENTAL PROTECTION AGENCY, EPA-600/4-79-020, REVISED MARCH 1983.
- 2.) SOILS: "METHODS OF SOIL ANALYSIS, PART 2 - CHEMICAL AND MICROBIOLOGICAL PROPERTIES", 2ND ED., AGRONOMY NO. 9, PART 2, AMERICAN SOCIETY OF AGRONOMY, INC.; SOIL SCIENCE SOCIETY OF AMERICA, INC., MADISON 1982, METHOD 12-26.

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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 41100627
DATE ENTERED: 11/15/94
REPORT PRINTED: 11/28/94

WATER: BKG3; 11/14; 930
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ALKALINITY	702.	MG/L

ICP SPECTROSCOPY

<u>ELEMENTS</u>	<u>MG/L</u>
ARSENIC	0.690

PH

<u>ELEMENT</u>	<u>RESULTS</u>
PH	7.03

THE EPA RECOMMENDS THAT THE MEASUREMENT OF PH BE DETERMINED IMMEDIATELY AT THE TIME OF SAMPLE COLLECTION. THE VALUE FOR PH PRESENTED IN THIS REPORT REPRESENTS A LABORATORY MEASUREMENT PERFORMED OUTSIDE THE RECOMMENDED HOLDING TIME.

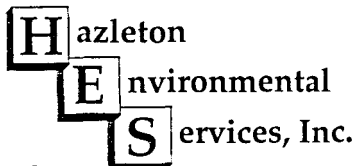
EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ALKALINITY
STANDARD METHODS FOR THE EXAMINATION OF WATERS AND WASTEWATER, 17TH EDITION, METHOD 2320B, APHA, AWWA, WPCF, WASHINGTON, D.C. (1989).



SAMPLE NUMBER: 41100627

PAGE 2

WATER: BKG3; 11/14; 930
PROJECT NAME: KEWAUNEE MARSH

METHOD REFERENCES (CONTINUED)

ICP SPECTROSCOPY

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METHOD 200.7, U.S. EPA, CINCINNATI, OH (ADDED DECEMBER 1982)
TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, SECOND EDITION, METHOD 6010, EDITION, METHOD 6010, U.S. EPA, WASHINGTON DC (REVISED APRIL 1984)

PH

- 1.) WATERS: "METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES", METHOD 150.1, ENVIRONMENTAL PROTECTION AGENCY, EPA-600/4-79-020, REVISED MARCH 1983.
- 2.) SOILS: "METHODS OF SOIL ANALYSIS, PART 2 - CHEMICAL AND MICROBIOLOGICAL PROPERTIES", 2ND ED., AGRONOMY NO. 9, PART 2, AMERICAN SOCIETY OF AGRONOMY, INC.; SOIL SCIENCE SOCIETY OF AMERICA, INC., MADISON 1982, METHOD 12-26.

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SAMPLE NUMBER: 41100628

PAGE 2

WATER: BKG4; 11/14; 950
PROJECT NAME: KEWAUNEE MARSH

METHOD REFERENCES (CONTINUED)

ICP SPECTROSCOPY

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METHOD 200.7, U.S. EPA, CINCINNATI, OH (ADDED DECEMBER 1982)
TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, SECOND EDITION, METHOD 6010, EDITION, METHOD 6010, U.S. EPA, WASHINGTON DC (REVISED APRIL 1984)

PH

- 1.) WATERS: "METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES", METHOD 150.1, ENVIRONMENTAL PROTECTION AGENCY, EPA-600/4-79-020, REVISED MARCH 1983.
- 2.) SOILS: "METHODS OF SOIL ANALYSIS, PART 2 - CHEMICAL AND MICROBIOLOGICAL PROPERTIES", 2ND ED., AGRONOMY NO. 9, PART 2, AMERICAN SOCIETY OF AGRONOMY, INC.; SOIL SCIENCE SOCIETY OF AMERICA, INC., MADISON 1982, METHOD 12-26.

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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 41100628
DATE ENTERED: 11/15/94
REPORT PRINTED: 11/28/94

WATER: BKG4; 11/14; 950
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY ANALYSIS UNITS
ALKALINITY 631. MG/L

ICP SPECTROSCOPY

ELEMENTS MG/L
ARSENIC < 0.400

PH

ELEMENT RESULTS
PH 7.15

THE EPA RECOMMENDS THAT THE MEASUREMENT OF PH BE DETERMINED IMMEDIATELY AT THE TIME OF SAMPLE COLLECTION. THE VALUE FOR PH PRESENTED IN THIS REPORT REPRESENTS A LABORATORY MEASUREMENT PERFORMED OUTSIDE THE RECOMMENDED HOLDING TIME.

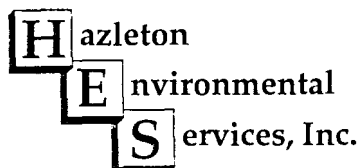
EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED [Signature]
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ALKALINITY
STANDARD METHODS FOR THE EXAMINATION OF WATERS AND WASTEWATER, 17TH EDITION, METHOD 2320B, APHA, AWWA, WPCF, WASHINGTON, D.C. (1989).



REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 41100629
DATE ENTERED: 11/15/94
REPORT PRINTED: 11/28/94

WATER: HOT1; 11/14; 1200
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ALKALINITY	650.	MG/L

ICP SPECTROSCOPY

<u>ELEMENTS</u>	<u>MG/L</u>
ARSENIC	19.3

PH

<u>ELEMENT</u>	<u>RESULTS</u>
PH	7.39

THE EPA RECOMMENDS THAT THE MEASUREMENT OF PH BE DETERMINED IMMEDIATELY AT THE TIME OF SAMPLE COLLECTION. THE VALUE FOR PH PRESENTED IN THIS REPORT REPRESENTS A LABORATORY MEASUREMENT PERFORMED OUTSIDE THE RECOMMENDED HOLDING TIME.

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ALKALINITY
STANDARD METHODS FOR THE EXAMINATION OF WATERS AND WASTEWATER, 17TH EDITION, METHOD 2320B, APHA, AWWA, WPCF, WASHINGTON, D.C. (1989).



SAMPLE NUMBER: 41100629

PAGE 2

WATER: HOT1; 11/14; 1200
PROJECT NAME: KEWAUNEE MARSH

METHOD REFERENCES (CONTINUED)

ICP SPECTROSCOPY

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METHOD 200.7, U.S. EPA, CINCINNATI, OH (ADDED DECEMBER 1982)
TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, SECOND EDITION, METHOD 6010, EDITION, METHOD 6010, U.S. EPA, WASHINGTON DC (REVISED APRIL 1984)

PH

- 1.) WATERS: "METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES", METHOD 150.1, ENVIRONMENTAL PROTECTION AGENCY, EPA-600/4-79-020, REVISED MARCH 1983.
- 2.) SOILS: "METHODS OF SOIL ANALYSIS, PART 2 - CHEMICAL AND MICROBIOLOGICAL PROPERTIES", 2ND ED., AGRONOMY NO. 9, PART 2, AMERICAN SOCIETY OF AGRONOMY, INC.; SOIL SCIENCE SOCIETY OF AMERICA, INC., MADISON 1982, METHOD 12-26.

EDIT MNEMONIC-INORGANICS

SIGNATURE BLOCK FOR INORGANIC ANALYSIS



REPORT OF ANALYSIS

MIKE BERGER
 STS CONSULTANTS, LTD
 1035 KEPLER DRIVE
 GREEN BAY, WI 54311

SAMPLE NUMBER: 41100630

DATE ENTERED: 11/15/94

REPORT PRINTED: 11/28/94

WATER: HOT2; 11/14; 1230
 PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ICP SPECTROSCOPY

<u>ELEMENTS</u>	<u>MG/L</u>
ARSENIC	5.66

EDIT MNEMONIC-INORGANICS

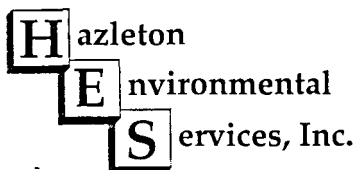
WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED *John C. Walton*
 JOHN C. WALTON
 SUPERVISOR, INORGANICS

METHOD REFERENCES

ICP SPECTROSCOPY
 METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/
 4-79-020, METHOD 200.7, U.S. EPA, CINCINNATI, OH (ADDED DECEMBER 1982)
 TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, SECOND EDITION, METHOD 6010,
 EDITION, METHOD 6010, U.S. EPA, WASHINGTON DC (REVISED APRIL 1984)

EDIT MNEMONIC-INORGANICS
 SIGNATURE BLOCK FOR INORGANIC ANALYSIS



REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 41100631
DATE ENTERED: 11/15/94
REPORT PRINTED: 11/28/94

WATER: HOT3; 11/14; 200
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ALKALINITY	8010.	MG/L

ICP SPECTROSCOPY

<u>ELEMENTS</u>	<u>MG/L</u>
ARSENIC	148.

PH

<u>ELEMENT</u>	<u>RESULTS</u>
PH	7.64

THE EPA RECOMMENDS THAT THE MEASUREMENT OF PH BE DETERMINED IMMEDIATELY AT THE TIME OF SAMPLE COLLECTION. THE VALUE FOR PH PRESENTED IN THIS REPORT REPRESENTS A LABORATORY MEASUREMENT PERFORMED OUTSIDE THE RECOMMENDED HOLDING TIME.

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ALKALINITY
STANDARD METHODS FOR THE EXAMINATION OF WATERS AND WASTEWATER, 17TH EDITION, METHOD 2320B, APHA, AWWA, WPCF, WASHINGTON, D.C. (1989).



SAMPLE NUMBER: 41100631

PAGE 2

WATER: HOT3; 11/14; 200
PROJECT NAME: KEWAUNEE MARSH

METHOD REFERENCES (CONTINUED)

ICP SPECTROSCOPY

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METHOD 200.7, U.S. EPA, CINCINNATI, OH (ADDED DECEMBER 1982)
TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, SECOND EDITION, METHOD 6010, EDITION, METHOD 6010, U.S. EPA, WASHINGTON DC (REVISED APRIL 1984)

PH

- 1.) WATERS: "METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES", METHOD 150.1, ENVIRONMENTAL PROTECTION AGENCY, EPA-600/4-79-020, REVISED MARCH 1983.
- 2.) SOILS: "METHODS OF SOIL ANALYSIS, PART 2 - CHEMICAL AND MICROBIOLOGICAL PROPERTIES", 2ND ED., AGRONOMY NO. 9, PART 2, AMERICAN SOCIETY OF AGRONOMY, INC.; SOIL SCIENCE SOCIETY OF AMERICA, INC., MADISON 1982, METHOD 12-26.

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 41100632

DATE ENTERED: 11/15/94

REPORT PRINTED: 11/28/94

WATER: HOT4; 11/14; 220
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ICP SPECTROSCOPY

<u>ELEMENTS</u>	<u>MG/L</u>
ARSENIC	920.

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ICP SPECTROSCOPY
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METHOD 200.7, U.S. EPA, CINCINNATI, OH (ADDED DECEMBER 1982)
TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, SECOND EDITION, METHOD 6010, EDITION, METHOD 6010, U.S. EPA, WASHINGTON DC (REVISED APRIL 1984)

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



REPORT OF ANALYSIS

MIKE BERGER
 STS CONSULTANTS, LTD
 1035 KEPLER DRIVE
 GREEN BAY, WI 54311

SAMPLE NUMBER: 41100633

DATE ENTERED: 11/15/94

REPORT PRINTED: 11/28/94

WATER: HOT5; 11/14; 240
 PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ICP SPECTROSCOPY

<u>ELEMENTS</u>	<u>MG/L</u>
ARSENIC	24.8

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED *John C. Walton*
 JOHN C. WALTON
 SUPERVISOR, INORGANICS

METHOD REFERENCES

ICP SPECTROSCOPY
 METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METHOD 200.7, U.S. EPA, CINCINNATI, OH (ADDED DECEMBER 1982)
 TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, SECOND EDITION, METHOD 6010, EDITION, METHOD 6010, U.S. EPA, WASHINGTON DC (REVISED APRIL 1984)

EDIT MNEMONIC-INORGANICS
 SIGNATURE BLOCK FOR INORGANIC ANALYSIS



REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 41100634
DATE ENTERED: 11/15/94
REPORT PRINTED: 11/28/94

WATER: HOT6; 11/14; 300
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ALKALINITY	679.	MG/L

ICP SPECTROSCOPY

<u>ELEMENTS</u>	<u>MG/L</u>
ARSENIC	19.1

PH

<u>ELEMENT</u>	<u>RESULTS</u>
PH	6.96

THE EPA RECOMMENDS THAT THE MEASUREMENT OF PH BE DETERMINED IMMEDIATELY AT THE TIME OF SAMPLE COLLECTION. THE VALUE FOR PH PRESENTED IN THIS REPORT REPRESENTS A LABORATORY MEASUREMENT PERFORMED OUTSIDE THE RECOMMENDED HOLDING TIME.

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ALKALINITY
STANDARD METHODS FOR THE EXAMINATION OF WATERS AND WASTEWATER, 17TH EDITION,
METHOD 2320B, APHA, AWWA, WPCF, WASHINGTON, D.C. (1989).



SAMPLE NUMBER: 41100634

PAGE 2

WATER: HOT6; 11/14; 300
PROJECT NAME: KEWAUNEE MARSH

METHOD REFERENCES (CONTINUED)

ICP SPECTROSCOPY

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METHOD 200.7, U.S. EPA, CINCINNATI, OH (ADDED DECEMBER 1982)
TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, SECOND EDITION, METHOD 6010, EDITION, METHOD 6010, U.S. EPA, WASHINGTON DC (REVISED APRIL 1984)

PH

- 1.) WATERS: "METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES", METHOD 150.1, ENVIRONMENTAL PROTECTION AGENCY, EPA-600/4-79-020, REVISED MARCH 1983.
- 2.) SOILS: "METHODS OF SOIL ANALYSIS, PART 2 - CHEMICAL AND MICROBIOLOGICAL PROPERTIES", 2ND ED., AGRONOMY NO. 9, PART 2, AMERICAN SOCIETY OF AGRONOMY, INC.; SOIL SCIENCE SOCIETY OF AMERICA, INC., MADISON 1982, METHOD 12-26.

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS

Terms and Conditions

1. Reports are submitted to clients on a confidential basis. No reference to the work, the results, or HES, Inc., in any form of advertising, news release, or other public announcements may be made without written authorization from HES.
2. The term "Less Than" or the symbol (<) is used to signify the lower limit of quantitation of the procedure under the conditions employed. The use of the term "Less Than" or (<) does not imply that traces of analyte were present.

The term "None Detected" is used to report assay results where detection limits have been established for the method but acceptable residue levels have not been defined by the industry or by federal law or when the method does not define detection limits. The term will specify the fixed amount of sample employed in the analysis and does not imply that traces of the analyte were present.
3. Samples submitted to HES for routine analysis will be retained for a minimum of sixty (60) days after the report of analysis is issued. Extended storage requirements must be brought to the attention of HES prior to or at the time of sample submission. HES, at its discretion, may charge for such extended storage. Records and specimens from all government regulated studies will be maintained in accordance with federal regulations.
4. Analytical Method Summaries will be supplied to the client upon request. Detailed copies of in-house laboratory procedures may be reviewed by the client or his agent during a site visit, but may not be copied without the expressed consent of HES.
5. All work performed by HES will be conducted in accordance with the HES Quality Assurance Program. Specific documentation requirements of the client for work performed by HES must be made known to HES prior to the start of the requested work.
6. Records of the raw data, reports, etc., will be maintained by HES in its data archives for a minimum of five (5) years unless otherwise specified by government regulations after the completion of the requested work. One (1) duplicate report will be made available free of charge for a period of one (1) year. HES reserves the right to charge for copies made after one (1) year and to charge for any and all copies of raw data requested.
7. Raw data, chromatograms, calibration data, etc., are the sole property of HES. Copies will be made available upon request when the quality of the original document is such that duplication is possible.
8. Clients and/or their agents may, with prior notice, inspect/audit the records, facilities, etc., of HES pertinent to their study. All data not pertinent to the specific study is confidential and will not be made available.
9. Routine inquiry concerning work performed by HES should be made to the Client Service Center. The client is also encouraged to bring any concerns or questions to the attention of management, technical staff, or the facility Quality Assurance Unit.

Chain of Custody Record and Analysis Request

Enclose with samples and send to:
HES, Inc.
Attn: Sample Entry
515 Science Drive, Madison, Wisconsin 53711

Project No. 20716XF
Project Name Kewanna Marsh
Samplers (signature): *[Signature]*

For HES use only
Condition Cold Storage WIR
Acct. # 4320 Abbrev. STSG
Smpl Rec'd NOV 15 1994 lml
Init. lml

Company Name and Address (Please Type or Print)
STS Consultants
1035 Kepler Drive
Green Bay, WI 54301

Name of Submitter
MTB
Phone No. 414-468-1778

Send Reports To:
Mike Berger
Date Sent 11/14

Send Invoice To:
STS
Purchase Order No. 20719XF

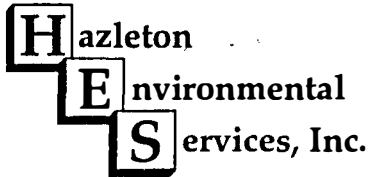
Date Entered 11-15-94
LIMS# 41100625-634

Sample Code	Date	Time	Matrix ¹	Sample Description ²	Number of Containers	Analysis Requested	Remarks
BKG 1	11/14	9:00	SW	As cont Surface	1	ICP-Arsenic	41100625 Possible Arsenic
BKG 2		9:10		water	1	on 208	41100626 impacts
BKG 3		9:30			1	sample	41100627
BKG 4		9:50			1		41100628.
Hot-1		12:00			1		41100629.
Hot-2		12:30			1		41100630
Hot-3		2:00			1		41100631.
Hot-4		2:20			1		41100632
Hot-5		2:40			1		41100633
Hot-6		3:00			1		41100634.

I hereby certify that I received, properly handled, and disposed of these samples as noted above:

Relinquished By (Signature)	Date/Time	Received By (Signature)
Relinquished By (Signature)	Date/Time	Received By (Signature)
Relinquished By (Signature)	Date/Time 11-15-94 9:45 A	Received By (Signature) Ryan Koller

Remarks (HES use only)
Ice had melted - temp of samples 6°C - lml



525 Science Drive
Madison, Wisconsin 53711
Telephone 608-232-3300
Facsimile 608-233-0502

Chain of Custody Record and Analysis Request

Enclose with samples and send to: HES, Inc. Attn: Sample Entry 515 Science Drive, Madison, Wisconsin 53711		For HES use only
Project No. 20716XF	Project Name Arsenic Park	
Samplers (signature): 		

Company Name and Address (Please Type or Print)
 STS Consultants
 1035 Kepler Drive
 Green Bay, WI 54311

Name of Submitter Mike Berger	Phone No. 414-468-1978
Send Reports To: Mike Berger	Send Invoice To: STS
Date Sent 11/14/94	Purchase Order No. 20716XF

Sample Code	Date	Time	Matrix ¹	Sample Description ²	Number of Containers	Analysis Requested	Remarks
BKG-1	11/14	9:0	SW	As impacted	1	PH Alkalinity	41100625 Arsenic impacted
BKG-2	1	9:10		Surface	1		41100626
BKG-3		9:30		Water	1		41100627
BKG-4		9:50			1		41100628
Hot-1		12:00			1		41100629
Hot 3		2:00			1		41100631
Hot 6		3:20			1		41100634

I hereby certify that I received, properly handled, and disposed of these samples as noted above:

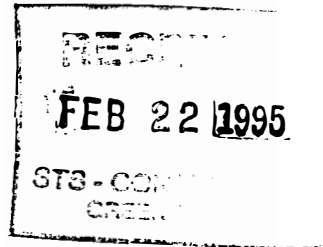
Relinquished By (Signature)	Date/Time	Received By (Signature)
Relinquished By (Signature)	Date/Time	Received By (Signature)
Relinquished By (Signature)	Date/Time 11-25-94 9:45A	Received By (Signature) Lynn Kollen

Remarks (HES use only)
 Rec'd with ice - 6°C UNK

1 Specify groundwater, surface water, soil, leachate, sludge, etc.
 2 Sample description must clearly correlate the sample ID to the sampling location.



525 SCIENCE DRIVE • MADISON, WISCONSIN 53711



HES, Inc.

2/20/95

Mike Berger
STS Consultants Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Re: STS Project #20717XF (Kewaunee Marsh)
HES Batch Number 50200020

Dear Mr. Berger:

Enclosed are the analytical results for the water samples received by HES, Inc. on 02/01/95 (HES sample numbers 50200020 - 50200025). The original chain of custody form for these samples is included with this report.

If I can be of assistance, or provide additional information, please call me at (608) 232-3335.

Sincerely,

Peggy Popp
Account Executive

Wisconsin Laboratory Certification Number 113172950

encl:

c: Central File



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200020
DATE ENTERED: 02/01/95
REPORT PRINTED: 02/20/95

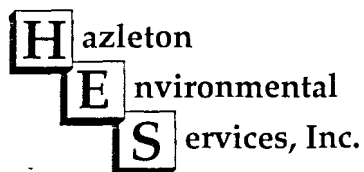
WATER: RIVER 1; 1/30/95
PROJECT NAME: KEWAUNEE MARSH ARSENIC SITE

PURCHASE ORDER NUMBER: 20717XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	< 1.0	MCG/L ($\mu\text{g/L}$)

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS 3020 AND 7060, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200021

DATE ENTERED: 02/01/95

REPORT PRINTED: 02/20/95

WATER: RIVER 2; 1/30/95
PROJECT NAME: KEWAUNEE MARSH ARSENIC SITE

PURCHASE ORDER NUMBER: 20717XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	4.1	MCG/L

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS 3020 AND 7060, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200022
DATE ENTERED: 02/01/95
REPORT PRINTED: 02/20/95

WATER: 42 BRIDGE; 1/30/95
PROJECT NAME: KEWAUNEE MARSH ARSENIC SITE

PURCHASE ORDER NUMBER: 20717XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	1.2	MCG/L

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS 3020 AND 7060, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200023
DATE ENTERED: 02/01/95
REPORT PRINTED: 02/20/95

WATER: P-1; 1/30/95
PROJECT NAME: KEWAUNEE MARSH ARSENIC SITE

PURCHASE ORDER NUMBER: 20717XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	17200.	MCG/L

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/
4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND
EDITION, METHODS 3020 AND 7060, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200024
DATE ENTERED: 02/01/95
REPORT PRINTED: 02/20/95

WATER: P-2; 1/30/95
PROJECT NAME: KEWAUNEE MARSH ARSENIC SITE

PURCHASE ORDER NUMBER: 20717XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	800000.	MCG/L

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200025

DATE ENTERED: 02/01/95

REPORT PRINTED: 02/20/95

WATER: P-3; 1/30/95
PROJECT NAME: KEWAUNEE MARSH ARSENIC SITE

PURCHASE ORDER NUMBER: 20717XF

ASSAY
ARSENIC

ANALYSIS
21000.

UNITS
MCG/L

METHOD REFERENCES

ARSENIC

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200463

DATE ENTERED: 02/14/95

REPORT PRINTED: 03/09/95

^{P-4}
WATER: ~~BKG-5~~; 2/7
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	6.6	MCG/L

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED: *John C. Walton*
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
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EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200464

DATE ENTERED: 02/14/95

REPORT PRINTED: 03/09/95

WATER: ^{B P-5} BKG-5F; 2/7
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	< 1.0	MCG/L

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED *John C. Walton*
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
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EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS

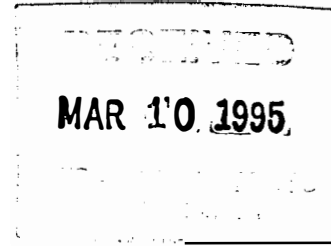
Terms and Conditions

1. Reports are submitted to clients on a confidential basis. No reference to the work, the results, or HES, Inc., in any form of advertising, news release, or other public announcements may be made without written authorization from HES.
2. The term "Less Than" or the symbol (<) is used to signify the lower limit of quantitation of the procedure under the conditions employed. The use of the term "Less Than" or (<) does not imply that traces of analyte were present.

The term "None Detected" is used to report assay results where detection limits have been established for the method but acceptable residue levels have not been defined by the industry or by federal law or when the method does not define detection limits. The term will specify the fixed amount of sample employed in the analysis and does not imply that traces of the analyte were present.
3. Samples submitted to HES for routine analysis will be retained for a minimum of sixty (60) days after the report of analysis is issued. Extended storage requirements must be brought to the attention of HES prior to or at the time of sample submission. HES, at its discretion, may charge for such extended storage. Records and specimens from all government regulated studies will be maintained in accordance with federal regulations.
4. Analytical Method Summaries will be supplied to the client upon request. Detailed copies of in-house laboratory procedures may be reviewed by the client or his agent during a site visit, but may not be copied without the expressed consent of HES.
5. All work performed by HES will be conducted in accordance with the HES Quality Assurance Program. Specific documentation requirements of the client for work performed by HES must be made known to HES prior to the start of the requested work.
6. Records of the raw data, reports, etc., will be maintained by HES in its data archives for a minimum of five (5) years unless otherwise specified by government regulations after the completion of the requested work. One (1) duplicate report will be made available free of charge for a period of one (1) year. HES reserves the right to charge for copies made after one (1) year and to charge for any and all copies of raw data requested.
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525 SCIENCE DRIVE • MADISON, WISCONSIN 53711



HES, Inc.

3/9/95

Mike Berger
STS Consultants Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Re: STS Project #20716XF (Kewaunee Marsh)
HES Batch Number 50200463

Dear Mr. Berger:

Enclosed are the analytical results for the samples received by HES, Inc. on 02/14/95# (HES sample numbers 50200463 - 50200503). The original chain of custody form is included with this report.

If I can be of assistance, or provide additional information, please call me at (608) 232-3335.

Sincerely,

Peggy Popp
Account Executive

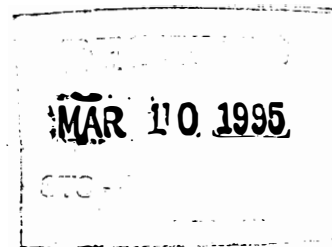
Wisconsin Laboratory Certification Number 113172950

encl:

c: Central File



525 SCIENCE DRIVE • MADISON, WISCONSIN 53711



HES, Inc.

3/9/95

Mike Berger
STS Consultants Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Re: STS Project #20716XF
HES Batch Number 50200803

Dear Mr. Berger:

Enclosed are the analytical results for the soil samples received by HES, Inc. on 02/21/95 (HES sample numbers 50200803 - 50200816). The original chain of custody form is included with this report.

If I can be of assistance, or provide additional information, please call me at (608) 232-3335.

Sincerely,

A handwritten signature in cursive script that reads 'Peggy'.

Peggy Ropp
Account Executive

Wisconsin Laboratory Certification Number 113172950

encl:

c: Central File



REPORT OF ANALYSIS

STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200803

DATE ENTERED: 02/22/95

REPORT PRINTED: 03/09/95

SOIL: B-39(2-4');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	3980.	MG/KG
MOISTURE	80.1	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

EDIT MNEMONIC-INORGANICS

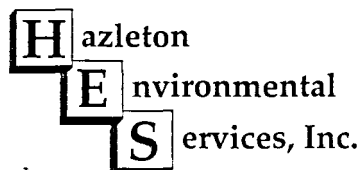
WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

MOISTURE
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 16.259, 14.002, 7.003, AOAC, ARLINGTON, VA. (MODIFIED).



HES, Inc.

SAMPLE NUMBER: 50200803

PAGE 2

SOIL: B-39(2-4');2/20

PROJECT NAME: KEWAUNEE MARSH AS SPILL

METHOD REFERENCES (CONTINUED)

TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION
II, EDISON, NJ 08837. 7/27/88

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SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200804
DATE ENTERED: 02/22/95
REPORT PRINTED: 03/09/95

SOIL: B-39(4-6');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	4470.	MG/KG
MOISTURE	84.5	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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SAMPLE NUMBER: 50200804

PAGE 2

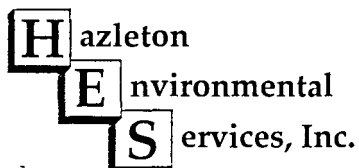
SOIL: B-39(4-6');2/20

PROJECT NAME: KEWAUNEE MARSH AS SPILL

METHOD REFERENCES (CONTINUED)

TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION
II, EDISON, NJ 08837. 7/27/88

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SAMPLE NUMBER: 50200805

PAGE 2

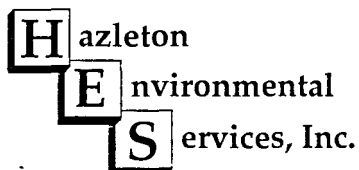
SOIL: B-39(6-8');2/20

PROJECT NAME: KEWAUNEE MARSH AS SPILL

METHOD REFERENCES (CONTINUED)

TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION
II, EDISON, NJ 08837. 7/27/88

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HES, Inc.

REPORT OF ANALYSIS

STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200806

DATE ENTERED: 02/22/95

REPORT PRINTED: 03/09/95

SOIL: B-34(2-4');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	946.	MG/KG
MOISTURE	86.5	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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MOISTURE
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HES, Inc.

SAMPLE NUMBER: 50200806

PAGE 2

SOIL: B-34(2-4');2/20

PROJECT NAME: KEWAUNEE MARSH AS SPILL

METHOD REFERENCES (CONTINUED)

TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION
II, EDISON, NJ 08837. 7/27/88

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REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200807

DATE ENTERED: 02/22/95

REPORT PRINTED: 03/09/95

SOIL: B-34(4-6');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	1020.	MG/KG
MOISTURE	87.6	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

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SAMPLE NUMBER: 50200807

PAGE 2

SOIL: B-34(4-6');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

METHOD REFERENCES (CONTINUED)

TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION
II, EDISON, NJ 08837. 7/27/88

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HES, Inc.

REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200808
DATE ENTERED: 02/22/95
REPORT PRINTED: 03/09/95

SOIL: B-34(6-8');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	4.3	MG/KG
MOISTURE	85.9	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

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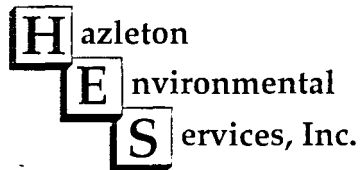
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HES, Inc.

SAMPLE NUMBER: 50200808

PAGE 2

SOIL: B-34(6-8');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

METHOD REFERENCES (CONTINUED)

TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION
II, EDISON, NJ 08837. 7/27/88

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HES, Inc.

REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200809
DATE ENTERED: 02/22/95
REPORT PRINTED: 03/09/95

SOIL: B-38 (2-4'); 2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	816.	MG/KG
MOISTURE	84.5	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

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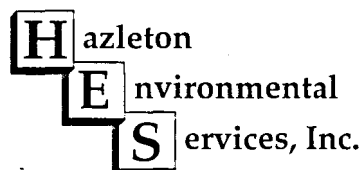
WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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MOISTURE
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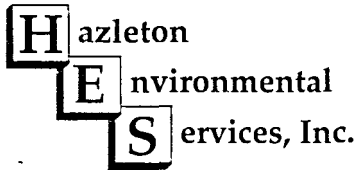
PAGE 2

SOIL: B-38(2-4');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

METHOD REFERENCES (CONTINUED)

TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION
II, EDISON, NJ 08837. 7/27/88

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HES, Inc.

REPORT OF ANALYSIS

STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200810

DATE ENTERED: 02/22/95

REPORT PRINTED: 03/09/95

SOIL: B-38(4-6');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	313.	MG/KG
MOISTURE	86.3	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED *John C. Walton*
JOHN C. WALTON
SUPERVISOR, INORGANICS

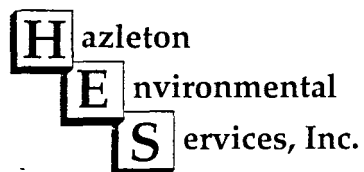
METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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MOISTURE

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 16.259, 14.002, 7.003, AOAC, ARLINGTON, VA. (MODIFIED).



HES, Inc.

SAMPLE NUMBER: 50200810

PAGE 2

SOIL: B-38 (4-6'); 2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

METHOD REFERENCES (CONTINUED)

TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION
II, EDISON, NJ 08837. 7/27/88

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HES, Inc.

REPORT OF ANALYSIS

STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200811

DATE ENTERED: 02/22/95

REPORT PRINTED: 03/09/95

SOIL: B-38(6-8');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	4.1	MG/KG
MOISTURE	83.5	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

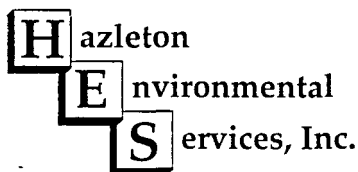
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JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION II, EDISON, NJ 08837. 7/27/88



HES, Inc.

REPORT OF ANALYSIS

STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200816

DATE ENTERED: 02/22/95

REPORT PRINTED: 03/09/95

SOIL: B-1(0-1');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	2.0	MG/KG
MOISTURE	70.6	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION II, EDISON, NJ 08837. 7/27/88



HES, Inc.

REPORT OF ANALYSIS

STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200815
DATE ENTERED: 02/22/95
REPORT PRINTED: 03/09/95

SOIL: PS-2(5-7');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	1.8	MG/KG
MOISTURE	72.2	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

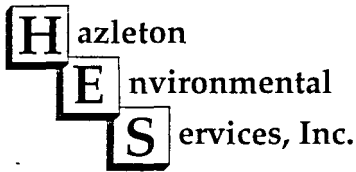
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JOHN C. WALTON
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METHOD REFERENCES

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MOISTURE
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TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION II, EDISON, NJ 08837. 7/27/88



HES, Inc.

REPORT OF ANALYSIS

STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200814

DATE ENTERED: 02/22/95

REPORT PRINTED: 03/09/95

SOIL: PS-2(2-5');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

Table with 3 columns: ASSAY, ANALYSIS, UNITS. Rows include ARSENIC (2230.0 MG/KG), MOISTURE (85.0 %), and TOTAL ORGANIC CARBON - SOILS (> 16000.0 PPM).

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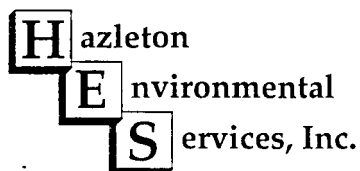
SIGNED [Signature]
JOHN C. WALTON
SUPERVISOR, INORGANICS

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TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION II, EDISON, NJ 08837. 7/27/88



HES, Inc.

REPORT OF ANALYSIS

STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200813

DATE ENTERED: 02/22/95

REPORT PRINTED: 03/09/95

SOIL: PS-1(4-6');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	90.9	MG/KG
MOISTURE	83.0	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

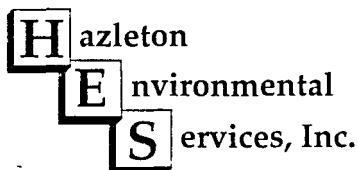
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MOISTURE
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TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION II, EDISON, NJ 08837. 7/27/88



HES, Inc.

REPORT OF ANALYSIS

STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200812

DATE ENTERED: 02/22/95

REPORT PRINTED: 03/09/95

SOIL: PS-1(2-4');2/20
PROJECT NAME: KEWAUNEE MARSH AS SPILL

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	140.	MG/KG
MOISTURE	85.5	%
TOTAL ORGANIC CARBON - SOILS)	> 16000.	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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TOTAL ORGANIC CARBON - SOILS)
DETERMINATION OF TOTAL ORGANIC CARBON IN SEDIMENT. LLOYD KAHN, USEPA, REGION II, EDISON, NJ 08837. 7/27/88



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200465
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-2; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	2.0	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200466

DATE ENTERED: 02/14/95

REPORT PRINTED: 03/09/95

SOIL: B-3; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	5.5	MG/KG

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200467
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-4; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	4.0	MG/KG

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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REPORT OF ANALYSIS

MIKE BERGER
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200468
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-5; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	4.1	MG/KG

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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MIKE BERGER
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200469
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-6; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	4.3	MG/KG

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JOHN C. WALTON
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METHOD REFERENCES

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MIKE BERGER
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200470
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-7; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	2.9	MG/KG

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METHOD REFERENCES

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MIKE BERGER
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200471
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-8; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	1.7	MG/KG

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JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200472
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-9; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	249.	MG/KG

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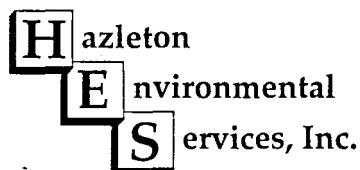
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200473
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-10; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	897.	MG/KG

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JOHN C. WALTON
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METHOD REFERENCES

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MIKE BERGER
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200474

DATE ENTERED: 02/14/95

REPORT PRINTED: 03/09/95

SOIL: B-11; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	943.	MG/KG

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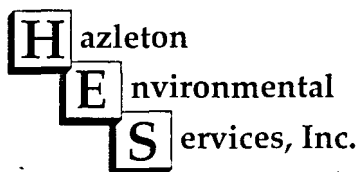
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REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200475
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-12; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	324.	MG/KG

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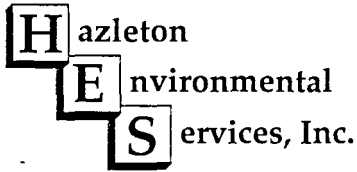
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200476

DATE ENTERED: 02/14/95

REPORT PRINTED: 03/09/95

SOIL: B-13; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	3290.	MG/KG

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JOHN C. WALTON
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METHOD REFERENCES

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MIKE BERGER
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200477
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-14; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	858.	MG/KG

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SUPERVISOR, INORGANICS

METHOD REFERENCES

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REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200478
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-15; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	1660.	MG/KG

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JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200479
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-16; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	1220.	MG/KG

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JOHN C. WALTON
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REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200480
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-18; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	1400.	MG/KG

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JOHN C. WALTON
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REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200481
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-19; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	768.	MG/KG

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JOHN C. WALTON
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200482
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-20; 2/12
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	2440.	MG/KG

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SIGNED *John C. Walton*
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200483
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-21; 2/12
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	705.	MG/KG

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REPORT OF ANALYSIS

MIKE BERGER
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200484
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-22; 2/12
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	808.	MG/KG

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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200485
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-23; 2/12
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	636.	MG/KG

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REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200486
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-24; 2/12
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	386.	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200487
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-25; 2/12
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	422.	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200488

DATE ENTERED: 02/14/95

REPORT PRINTED: 03/09/95

SOIL: B-26; 2/12
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	3220.	MG/KG

EDIT MNEMONIC-INORGANICS

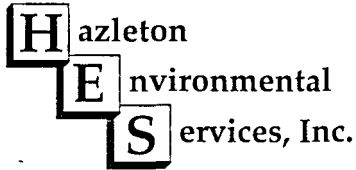
WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200489
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-27; 2/12
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	1880.	MG/KG

EDIT MNEMONIC-INORGANICS

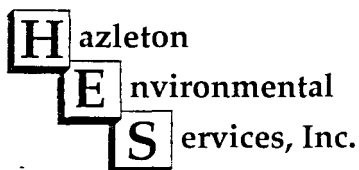
WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
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EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200490
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-28; 2/12
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	1470.	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200491
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-29; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	4500.	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200492
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-30; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	1240.	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200493
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-31; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	610.	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200494
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-32; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	5480.	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200495
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-33; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	738.	MG/KG

EDIT MNEMONIC-INORGANICS

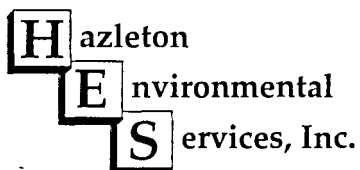
WISCONSIN DNR CERTIFICATION NUMBER: 113172950

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JOHN C. WALTON
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METHOD REFERENCES

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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200496

DATE ENTERED: 02/14/95

REPORT PRINTED: 03/09/95

SOIL: B-34; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	2660.	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200497
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-35; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	22.1	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200498

DATE ENTERED: 02/14/95

REPORT PRINTED: 03/09/95

SOIL: B-36; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	917.	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200499
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-37; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	4600.	MG/KG

EDIT MNEMONIC-INORGANICS

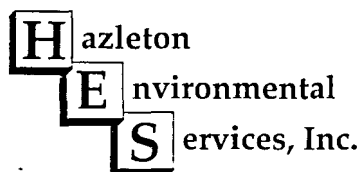
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METHOD REFERENCES

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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 5020050C
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-38; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	2030.	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

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SUPERVISOR, INORGANICS

METHOD REFERENCES

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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200501

DATE ENTERED: 02/14/95

REPORT PRINTED: 03/09/95

SOIL: B-39; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	10700.	MG/KG

EDIT MNEMONIC-INORGANICS

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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50200502
DATE ENTERED: 02/14/95
REPORT PRINTED: 03/09/95

SOIL: B-40; 2/13
PROJECT NAME: KEWAUNEE MARSH/20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	652.	MG/KG

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



CHAIN OF CUSTODY RECORD

No 20318

Contact Person Mike Berger
 Phone No. 414-468-1978 Office GB
 Project No. 20716XF PO No. _____
 Project Name Kawarnee Marsh

Special Handling Request	
<input type="checkbox"/>	Rush
<input type="checkbox"/>	Verbal
<input type="checkbox"/>	Other

RECORD NUMBER _____ THROUGH _____

Laboratory HES
 Contact Person Peggy
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Special Cond.		
									Ambient	Sample				
B29	2/13					Soil							Arsenic by	50200491 Possible
B30													GFAA	50200492 Arsenic
B31														50200493 Impact
B32													on all	50200494
B33													Samples	50200495
B34														50200496
B35														50200497
B36														50200498
B37														50200499

Collected by: <u>MTB</u>	Date	Time	Delivery by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Lynn Kaden</u>	Date <u>2-14-95</u>	Time <u>1030</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition:	Comments (Weather Conditions, Precautions, Hazards): <u>Temp 10°C - 12°C No ice LMK 2-14-95</u>
--------------------	--



CHAIN OF CUSTODY RECORD

No 20317

Contact Person Mike Berger
 Phone No. 414-468-1978 Office 6B
 Project No. 20716XF PO No. _____
 Project Name Keweenaw Marsh

Special Handling Request	
<input type="checkbox"/>	Rush
<input type="checkbox"/>	Verbal
<input type="checkbox"/>	Other

RECORD NUMBER _____ THROUGH _____

Laboratory _____
 Contact Person _____
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data			Analysis Request	Comments on Sample (Include Major Contaminants)	
							Y	N	PID/FID		PH			Special Cond.
									Ambient	Sample				
B20	2/12					Soil								
B21														
B22														
B23														
B24														
B25														
B26														
B27														
B28														

Collected by:	Date	Time	Delivery by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Lynn Kodon</u>	Date <u>2-14-95</u>	Time <u>1030</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition:	Comments (Weather Conditions, Precautions, Hazards): <u>Temp 10°C - 12°C No ice LMK 2-14-95</u>
--------------------	--

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
 Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

CHAIN OF CUSTODY RECORD

No 20319



Contact Person Mike Berger
 Phone No. 414-468-1978 Office GB
 Project No. 20716XF PO No. _____
 Project Name Keweenaw Marsh

Special Handling Request	
<input type="checkbox"/>	Rush
<input type="checkbox"/>	Verbal
<input type="checkbox"/>	Other

RECORD NUMBER _____ THROUGH _____
 Laboratory HES
 Contact Person Peggy
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Special Cond.		
									Ambient	Sample				
B38	2/13		1			Soil								50200500 Possible
B39	1		1			/								50200501 Arsenic
B40	1		1			/								50200502 Impact
														on all samples

Collected by: <u>MTB</u>	Date	Time	Delivery by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Lynn Kollen</u>	Date <u>2-14-95</u>	Time <u>1030</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition:	Comments (Weather Conditions, Precautions, Hazards): <u>temp 10°C - 12°C NO ICE LMK 2-14-95</u>
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Distribution: Original and Green - Laboratory Yellow -As needed Pink - Transporter Goldenrod - STS Project File
 Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.



CHAIN OF CUSTODY RECORD

No 20316

Contact Person Mike Berger
 Phone No. 414-468-1975 Office GB
 Project No. 20716KF PO No. _____
 Project Name Keweenaw Marsh

Special Handling Request

Rush
 Verbal
 Other

RECORD NUMBER _____ THROUGH _____
 Laboratory HES
 Contact Person Peggy
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data			Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		Special Cond.		
									Ambient	Sample			
B-11	2/13					Soil						Arsenic by GFAA	50200474
B-12	1												50200475 Possible
B-13												on all	50200476 Arsenic
B-14													50200477 Impact
B-15												Samples	50200478
B-16													50200479
B-17												No SAMPLE SENT PER	Mike Berger - LMK 2-14-95
B-18													50200480
B-19													50200481

Collected by: <u>MTB</u>	Date: <u>2/13</u>	Time: _____	Delivery by: _____	Date: _____	Time: _____
Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____
Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____
Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____
Received for lab by: <u>Lynn Kollen</u>	Date: <u>2-14-95</u>	Time: <u>1030</u>	Relinquished by: _____	Date: _____	Time: _____

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition: _____	Comments (Weather Conditions, Precautions, Hazards): <u>Temp 10-12°C No ice LMK 2-14-95</u>
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Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
 Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.



CHAIN OF CUSTODY RECORD

No 20315

Contact Person Mike Berger
 Phone No. 414-468-1978 Office GB
 Project No. 20716XF PO No. _____
 Project Name Kawarnee Marsh

Special Handling Request	
<input type="checkbox"/>	Rush
<input type="checkbox"/>	Verbal
<input type="checkbox"/>	Other

RECORD NUMBER _____ THROUGH _____

Laboratory HES
 Contact Person Roggy
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Special Cond.		
									Ambient	Sample				
B-2	2/13		X			Soil							Arsenic by GFAA	50200465
B-3														50200466 possible
B-4													on all	50200467 Arsenic
B-5														50200468 impact
B-6													Samples	50200469
B-7														50200470
B-8														50200471
B-9														50200472
B10														50200473

Collected by: <u>MTB</u>	Date <u>2/13</u>	Time	Delivery by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Lynn Kodin</u>	Date <u>2-14-95</u>	Time <u>1030</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition:	Comments (Weather Conditions, Precautions, Hazards): <u>Temp. 10°C - 12°C No ice LMK</u> <u>2-14-95</u>
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Distribution: Original and Green - Laboratory Yellow -As needed Pink - Transporter Goldenrod - STS Project File
 Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

CHAIN OF CUSTODY RECORD

No 20325



Contact Person Mike Berger
 Phone No. 414-468-1978 Office 6B
 Project No. 20716XF PO No. _____
 Project Name Kewanna Marsh As spill

Special Handling Request	
<input type="checkbox"/>	Rush
<input type="checkbox"/>	Verbal
<input type="checkbox"/>	Other

RECORD NUMBER _____ THROUGH _____
 Laboratory HES
 Contact Person Peggy
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data			Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		Special Cond.		
									Ambient	Sample			
B-39 (2-4')	2/20					soil	X					Arsenic - GFAA	50200803
B-39 (4-6')												+	50200804 Possible Arsenic
B-39 (6-8')												TOC	50200805 impact.
B-38 (2-4')												+	50200806
B-38 (4-6')												% Solids	50200807 RT
B-38 (6-8')												on all	50200808 Cold Storage
B-38 (2-4')												Samples	50200809 Acct. # 1162 Abbrev. FVAW
B-38 (4-6')													50200810 Init. LMK
B-38 (6-8')													50200811 FEB 21 1995 Recd. LMK

Collected by: <u>MTB</u>	Date	Time	Delivery by:	Date Entered	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Lynn Kodler</u>	Date <u>2-21-95</u>	Time <u>1000</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):

Sample rec'd @ 18°C -

Not rec'd with ice/ice packs - LMK

CHAIN OF CUSTODY RECORD

No 20326



Contact Person Mike Berger
 Phone No. 414-468-1978 Office GB
 Project No. 20716XF PO No. _____
 Project Name Kewanna Marsh As Spill

Special Handling Request	
<input type="checkbox"/>	Rush
<input type="checkbox"/>	Verbal
<input type="checkbox"/>	Other

RECORD NUMBER _____ THROUGH _____
 Laboratory HES
 Contact Person REGGY
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Special Cond.		
									Ambient	Sample				
PS-1(2-4)	2/20					S-1							Arsenic - GFAA	50200812 Possible Arsenic
PS-1(4-6)													+	50200813 Impacts
PS-2(2-5)													TOC	50200814
PS-2(5-7)													+	50200815
B-1(0-1)													% Solids	50200816
													on all samples	Only rec'd 1 container called client do everything out of As jar - LMK 2-21-95

Collected by: <u>MTB</u>	Date	Time	Delivery by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Lynn Kollar</u>	Date <u>2-21-95</u>	Time <u>1000</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition:	Comments (Weather Conditions, Precautions, Hazards):
	<u>Sample rec'd @ 19°C (no cooling packaged)</u> <u>LMK 2-21-95</u>

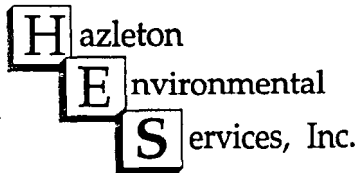
Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
 Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

9/94cp10k

Terms and Conditions

1. Reports are submitted to clients on a confidential basis. No reference to the work, the results, or HES, Inc., in any form of advertising, news release, or other public announcements may be made without written authorization from HES.
2. The term "Less Than" or the symbol (<) is used to signify the lower limit of quantitation of the procedure under the conditions employed. The use of the term "Less Than" or (<) does not imply that traces of analyte were present.

The term "None Detected" is used to report assay results where detection limits have been established for the method but acceptable residue levels have not been defined by the industry or by federal law or when the method does not define detection limits. The term will specify the fixed amount of sample employed in the analysis and does not imply that traces of the analyte were present.
3. Samples submitted to HES for routine analysis will be retained for a minimum of sixty (60) days after the report of analysis is issued. Extended storage requirements must be brought to the attention of HES prior to or at the time of sample submission. HES, at its discretion, may charge for such extended storage. Records and specimens from all government regulated studies will be maintained in accordance with federal regulations.
4. Analytical Method Summaries will be supplied to the client upon request. Detailed copies of in-house laboratory procedures may be reviewed by the client or his agent during a site visit, but may not be copied without the expressed consent of HES.
5. All work performed by HES will be conducted in accordance with the HES Quality Assurance Program. Specific documentation requirements of the client for work performed by HES must be made known to HES prior to the start of the requested work.
6. Records of the raw data, reports, etc., will be maintained by HES in its data archives for a minimum of five (5) years unless otherwise specified by government regulations after the completion of the requested work. One (1) duplicate report will be made available free of charge for a period of one (1) year. HES reserves the right to charge for copies made after one (1) year and to charge for any and all copies of raw data requested.
7. Raw data, chromatograms, calibration data, etc., are the sole property of HES. Copies will be made available upon request when the quality of the original document is such that duplication is possible.
8. Clients and/or their agents may, with prior notice, inspect/audit the records, facilities, etc., of HES pertinent to their study. All data not pertinent to the specific study is confidential and will not be made available.
9. Routine inquiry concerning work performed by HES should be made to the Client Service Center. The client is also encouraged to bring any concerns or questions to the attention of management, technical staff, or the facility Quality Assurance Unit.



HES, Inc.

525 SCIENCE DRIVE • MADISON, WISCONSIN 53711

March 31, 1994

Mark A. Bergeon
STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Re: STS Project No. 20716XF
HES, Inc. Batch No. 40300231

Dear Mr. Bergeon:

Enclosed are the analytical results for the soil samples received by HES, Inc. on March 11, 1994 (HES sample numbers 40300231-40300249, and 40300699-40300700), associated with STS Project No. 20716XF. The original Chain-of-Custody for these samples has been included with this report.

As requested, samples B-5,S#1, B-8,S#1, and B-11,S#1 (HES sample numbers 40300238/40300699, 40300241, and 40300245/40300700) have been analyzed for lead and sodium in addition to compounds originally requested.

If you have any questions regarding these results, or if I can be of assistance in any way, please call me at (608) 232-3335.

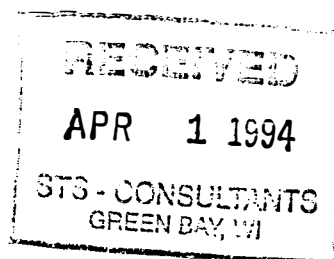
Sincerely,

A handwritten signature in cursive script that reads 'Peggy'.

Peggy Popp
Account Executive

Wisconsin Laboratory Certification Number: 113172950

cc: Central File





HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300231
DATE ENTERED: 03/11/94
REPORT PRINTED: 03/31/94

SOIL: BG-1; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY
ARSENIC

ANALYSIS	UNITS
93.4	MG/KG

GC/MS SEMI-VOLATILE FRACTION

SEMIVOLATILE COMPOUNDS

COMPOUND NAME	UG/KG
PHENOL	91 J
BIS (-2-CHLOROETHYL) ETHER	< 580
2-CHLOROPHENOL	< 580
1,3-DICHLOROBENZENE	< 580
1,4-DICHLOROBENZENE	< 580
1,2-DICHLOROBENZENE	< 580
2-METHYLPHENOL	< 580
2,2'-OXYBIS (1-CHLOROPROPANE)	< 580
4-METHYLPHENOL	76 J
N-NITROSO-DI-N-PROPYLAMINE	< 580
HEXACHLOROETHANE	< 580
NITROBENZENE	< 580
ISOPHORONE	< 580
2-NITROPHENOL	< 580
2,4-DIMETHYLPHENOL	< 580
BIS (2-CHLOROETHOXY) METHANE	< 580
2,4-DICHLOROPHENOL	< 580
1,2,4-TRICHLOROBENZENE	< 580
NAPHTHALENE	16 J
4-CHLOROANILINE	< 580
HEXACHLOROBUTADIENE	< 580
4-CHLORO-3-METHYLPHENOL	< 580
2-METHYLNAPHTHALENE	23 J
HEXACHLOROCYCLOPENTADIENE	< 580
2,4,6-TRICHLOROPHENOL	< 580
2,4,5-TRICHLOROPHENOL	<1400
2-CHLORONAPHTHALENE	< 580

SAMPLE NUMBER: 40300231

PAGE 2

SOIL: BG-1; 3-9

PROJECT NUMBER: 20716XF

GC/MS SEMI-VOLATILE FRACTION

(CONTINUED)

2-NITROANILINE	<1400
DIMETHYL PHTHALATE	< 580
ACENAPHTHYLENE	29 J
2,6-DINITROTOLUENE	< 580
3-NITROANILINE	<1400
ACENAPHTHENE	< 580
2,4-DINITROPHENOL	<1400
4-NITROPHENOL	<1400
DIBENZOFURAN	< 580
2,4-DINITROTOLUENE	< 580
DIETHYLPHTHALATE	< 580
4-CHLOROPHENYL-PHENYLEETHER	< 580
FLUORENE	< 580
4-NITROANILINE	<1400
4,6-DINITRO-2-METHYLPHENOL	<1400
N-NITROSODIPHENYLAMINE*(1)	< 580
4-BROMOPHENYL-PHENYLEETHER	< 580
HEXACHLOROBENZENE	< 580
PENTACHLOROPHENOL	<1400
PHENANTHRENE	93 J
ANTHRACENE	24 J
CARBAZOLE	< 580
DI-N-BUTYLPHTHALATE	320 BJ (110J)
FLUORANTHENE	230 J
PYRENE	230 J
BUTYLBENZYLPHTHALATE	110 J
3,3'-DICHLOROBENZIDINE	< 580
BENZO (A) ANTHRACENE	170 J
CHRYSENE	150 J
BIS (2-ETHYLHEXYL) PHTHALATE	< 580
DI-N-OCTYL PHTHALATE	710
BENZO (B) FLUORANTHENE	320 J
BENZO (K) FLUORANTHENE	< 580
BENZO (A) PYRENE	120 J
INDENO (1,2,3-CD) PYRENE	100 J
DIBENZO (A,H) ANTHRACENE	< 580
BENZO (G,H,I) PERYLENE	< 580

*(1) CANNOT BE SEPARATED FROM DIPHENYLAMINE.

'J' INDICATES AN ESTIMATED VALUE. MASS SPECTRAL DATA INDICATED THE PRESENCE OF A COMPOUND THAT MEETS THE IDENTIFICATION CRITERIA BUT THE RESULT IS LESS THAN THE SPECIFIED DETECTION LIMIT BUT GREATER THAN ZERO.

'B' INDICATES THE ANALYTE WAS FOUND IN THE BLANK AS WELL AS THE SAMPLE. THE CONCENTRATION SHOWN IN PARENTHESIS WAS DETECTED IN THE METHOD BLANK.



SAMPLE NUMBER: 40300231

PAGE 3

SOIL: BG-1; 3-9

PROJECT NUMBER: 20716XF

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).

CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

GC/MS SEMI-VOLATILE FRACTION

U.S. EPA METHOD 625 (FEDERAL REGISTER, VOLUME 49, NO. 209, PG. 43385-43406, OCTOBER 26, 1984).

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHOD 8270, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300232

DATE ENTERED: 03/11/94

REPORT PRINTED: 03/31/94

SOIL: BG-2; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	112.	MG/KG

GC/MS SEMI-VOLATILE FRACTION

SEMIVOLATILE COMPOUNDS

COMPOUND NAME	UG/KG
PHENOL	1100 J
BIS(-2-CHLOROETHYL) ETHER	< 4100
2-CHLOROPHENOL	< 4100
1,3-DICHLOROBENZENE	< 4100
1,4-DICHLOROBENZENE	< 4100
1,2-DICHLOROBENZENE	< 4100
2-METHYLPHENOL	< 4100
2,2'-OXYBIS(1-CHLOROPROPANE)	< 4100
4-METHYLPHENOL	850 J
N-NITROSO-DI-N-PROPYLAMINE	< 4100
HEXACHLOROETHANE	< 4100
NITROBENZENE	< 4100
ISOPHORONE	< 4100
2-NITROPHENOL	< 4100
2,4-DIMETHYLPHENOL	< 4100
BIS(2-CHLOROETHOXY) METHANE	< 4100
2,4-DICHLOROPHENOL	< 4100
1,2,4-TRICHLOROBENZENE	< 4100
NAPHTHALENE	< 4100
4-CHLOROANILINE	< 4100
HEXACHLOROBUTADIENE	< 4100
4-CHLORO-3-METHYLPHENOL	< 4100
2-METHYLNAPHTHALENE	< 4100
HEXACHLOROCYCLOPENTADIENE	< 4100
2,4,6-TRICHLOROPHENOL	< 4100
2,4,5-TRICHLOROPHENOL	<10000
2-CHLORONAPHTHALENE	< 4100

SAMPLE NUMBER: 40300232

PAGE 2

SOIL: BG-2; 3-9

PROJECT NUMBER: 20716XF

GC/MS SEMI-VOLATILE FRACTION

(CONTINUED)

2-NITROANILINE	<10000
DIMETHYL PHTHALATE	< 4100
ACENAPHTHYLENE	< 4100
2,6-DINITROTOLUENE	< 4100
3-NITROANILINE	<10000
ACENAPHTHENE	< 4100
2,4-DINITROPHENOL	<10000
4-NITROPHENOL	<10000
DIBENZOFURAN	< 4100
2,4-DINITROTOLUENE	< 4100
DIETHYLPHTHALATE	< 4100
4-CHLOROPHENYL-PHENYLETHER	< 4100
FLUORENE	< 4100
4-NITROANILINE	<10000
4,6-DINITRO-2-METHYLPHENOL	<10000
N-NITROSODIPHENYLAMINE* (1)	< 4100
4-BROMOPHENYL-PHENYLETHER	< 4100
HEXACHLOROBENZENE	< 4100
PENTACHLOROPHENOL	<10000
PHENANTHRENE	< 4100
ANTHRACENE	< 4100
CARBAZOLE	< 4100
DI-N-BUTYLPHTHALATE	2000 BJ (110J)
FLUORANTHENE	< 4100
PYRENE	< 4100
BUTYLBENZYLPHTHALATE	450 J
3,3'-DICHLOROBENZIDINE	< 4100
BENZO (A) ANTHRACENE	< 4100
CHRYSENE	< 4100
BIS (2-ETHYLHEXYL) PHTHALATE	< 4100
DI-N-OCTYL PHTHALATE	4100 J
BENZO (B) FLUORANTHENE	< 4100
BENZO (K) FLUORANTHENE	< 4100
BENZO (A) PYRENE	< 4100
INDENO (1,2,3-CD) PYRENE	< 4100
DIBENZO (A,H) ANTHRACENE	< 4100
BENZO (G,H,I) PERYLENE	< 4100

* (1) CANNOT BE SEPARATED FROM DIPHENYLAMINE.

'J' INDICATES AN ESTIMATED VALUE. MASS SPECTRAL DATA INDICATED THE PRESENCE OF A COMPOUND THAT MEETS THE IDENTIFICATION CRITERIA BUT THE RESULT IS LESS THAN THE SPECIFIED DETECTION LIMIT BUT GREATER THAN ZERO.

'B' INDICATES THE ANALYTE WAS FOUND IN THE BLANK AS WELL AS THE SAMPLE. THE CONCENTRATION SHOWN IN PARENTHESIS WAS DETECTED IN THE METHOD BLANK.



SAMPLE NUMBER: 40300232

PAGE 3

SOIL: BG-2; 3-9
PROJECT NUMBER: 20716XF

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).

CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

GC/MS SEMI-VOLATILE FRACTION

U.S. EPA METHOD 625 (FEDERAL REGISTER, VOLUME 49, NO. 209, PG. 43385-43406, OCTOBER 26, 1984).

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHOD 8270, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300233
DATE ENTERED: 03/11/94
REPORT PRINTED: 03/31/94

SOIL: B-1 S#1; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	85.9	MG/KG

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
 STS CONSULTANTS, LTD
 1035 KEPLER DRIVE
 GREEN BAY, WI 54311

SAMPLE NUMBER: 40300241

DATE ENTERED: 03/11/94

REPORT PRINTED: 03/31/94

SOIL: B-8 S#1; 3-10
 PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY
 ARSENIC

ANALYSIS	UNITS
9910.	MG/KG

ICP-ACID EXTRACTION

ELEMENTS	PPM
LEAD	< 56.4
SODIUM	<1130.

GC/MS SEMI-VOLATILE FRACTION

SEMIVOLATILE COMPOUNDS

COMPOUND NAME	UG/KG
PHENOL	< 1400
BIS (-2-CHLOROETHYL) ETHER	< 1400
2-CHLOROPHENOL	< 1400
1,3-DICHLOROBENZENE	< 1400
1,4-DICHLOROBENZENE	< 1400
1,2-DICHLOROBENZENE	< 1400
2-METHYLPHENOL	< 1400
2,2'-OXYBIS(1-CHLOROPROPANE)	< 1400
4-METHYLPHENOL	1500
N-NITROSO-DI-N-PROPYLAMINE	< 1400
HEXACHLOROETHANE	< 1400
NITROBENZENE	< 1400
ISOPHORONE	< 1400
2-NITROPHENOL	< 1400
2,4-DIMETHYLPHENOL	< 1400
BIS(2-CHLOROETHOXY) METHANE	< 1400
2,4-DICHLOROPHENOL	< 1400
1,2,4-TRICHLOROBENZENE	< 1400
NAPHTHALENE	190 J
4-CHLOROANILINE	< 1400
HEXACHLOROBUTADIENE	< 1400

SAMPLE NUMBER: 40300241

PAGE 2

SOIL: B-8 S#1; 3-10
 PROJECT NUMBER: 20716XF

GC/MS SEMI-VOLATILE FRACTION (CONTINUED)

4-CHLORO-3-METHYLPHENOL	< 1400
2-METHYLNAPHTHALENE	290 J
HEXACHLOROCYCLOPENTADIENE	< 1400
2,4,6-TRICHLOROPHENOL	< 1400
2,4,5-TRICHLOROPHENOL	< 3500
2-CHLORONAPHTHALENE	< 1400
2-NITROANILINE	< 3500
DIMETHYL PHTHALATE	< 1400
ACENAPHTHYLENE	< 1400
2,6-DINITROTOLUENE	< 1400
3-NITROANILINE	< 3500
ACENAPHTHENE	< 1400
2,4-DINITROPHENOL	< 3500
4-NITROPHENOL	< 3500
DIBENZOFURAN	67 J
2,4-DINITROTOLUENE	< 1400
DIETHYLPHTHALATE	< 1400
4-CHLOROPHENYL-PHENYLETHER	< 1400
FLUORENE	< 1400
4-NITROANILINE	< 3500
4,6-DINITRO-2-METHYLPHENOL	< 3500
N-NITROSODIPHENYLAMINE* (1)	< 1400
4-BROMOPHENYL-PHENYLETHER	< 1400
HEXACHLOROBENZENE	< 1400
PENTACHLOROPHENOL	< 3500
PHENANTHRENE	180 J
ANTHRACENE	< 1400
CARBAZOLE	< 1400
DI-N-BUTYLPHTHALATE	700 BJ (110J)
FLUORANTHENE	100 J
PYRENE	99 J
BUTYLBENZYLPHTHALATE	170 J
3,3'-DICHLOROBENZIDINE	< 1400
BENZO (A) ANTHRACENE	< 1400
CHRYSENE	< 1400
BIS (2-ETHYLHEXYL) PHTHALATE	< 1400
DI-N-OCTYL PHTHALATE	< 1400
BENZO (B) FLUORANTHENE	120 J
BENZO (K) FLUORANTHENE	< 1400
BENZO (A) PYRENE	< 1400
INDENO (1,2,3-CD) PYRENE	< 1400
DIBENZO (A,H) ANTHRACENE	< 1400
BENZO (G,H,I) PERYLENE	< 1400

*(1) CANNOT BE SEPARATED FROM DIPHENYLAMINE.

'J' INDICATES AN ESTIMATED VALUE. MASS SPECTRAL DATA INDICATED THE PRESENCE



SAMPLE NUMBER: 40300241

PAGE 3

SOIL: B-8 S#1; 3-10
PROJECT NUMBER: 20716XF

GC/MS SEMI-VOLATILE FRACTION (CONTINUED)

OF A COMPOUND THAT MEETS THE IDENTIFICATION CRITERIA BUT THE RESULT IS LESS THAN THE SPECIFIED DETECTION LIMIT BUT GREATER THAN ZERO.

'B' INDICATES THE ANALYTE WAS FOUND IN THE BLANK AS WELL AS THE SAMPLE. THE CONCENTRATION SHOWN IN PARENTHESIS WAS DETECTED IN THE METHOD BLANK.

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

ICP-ACID EXTRACTION

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040 OR 3050) AND 6010, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)

GC/MS SEMI-VOLATILE FRACTION

U.S. EPA METHOD 625 (FEDERAL REGISTER, VOLUME 49, NO. 209, PG. 43385-43406, OCTOBER 26, 1984).
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHOD 8270, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984).



REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300235
DATE ENTERED: 03/11/94
REPORT PRINTED: 03/31/94

SOIL: B-2 S#2; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	3000.	MG/KG

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300236

DATE ENTERED: 03/11/94

REPORT PRINTED: 03/31/94

SOIL: B-3 S#1; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY
ARSENIC

<u>ANALYSIS</u>	<u>UNITS</u>
1740.	MG/KG

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).

CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300237
DATE ENTERED: 03/11/94
REPORT PRINTED: 03/31/94

SOIL: B-4 S#1; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	136.	MG/KG

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300238

DATE ENTERED: 03/11/94

REPORT PRINTED: 03/31/94

SOIL: B-5 S#1; 3-10
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	15900.	MG/KG

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300699
DATE ENTERED: 03/29/94
REPORT PRINTED: 03/31/94

RE-ENTRY OF LIMS #40300238; SOIL: B-5 S#1; 3/10
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ICP-ACID EXTRACTION

<u>ELEMENTS</u>	<u>PPM</u>
LEAD	44.0
SODIUM	< 850.

METHOD REFERENCES

ICP-ACID EXTRACTION
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND
EDITION, METHODS (3030, 3040 OR 3050) AND 6010, U.S. EPA, WASHINGTON, DC
(REVISED APRIL 1984)



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REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300239

DATE ENTERED: 03/11/94

REPORT PRINTED: 03/31/94

SOIL: B-6 S#1; 3-10
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	1130.	MG/KG

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



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REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300240
DATE ENTERED: 03/11/94
REPORT PRINTED: 03/31/94

SOIL: B-7 S#1; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	1360.	MG/KG

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300234
DATE ENTERED: 03/11/94
REPORT PRINTED: 03/31/94

SOIL: B-2 S#1; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	1940.	MG/KG

GC/MS SEMI-VOLATILE FRACTION

SEMIVOLATILE COMPOUNDS

<u>COMPOUND NAME</u>	<u>UG/KG</u>
PHENOL	< 660
BIS (-2-CHLOROETHYL) ETHER	< 660
2-CHLOROPHENOL	< 660
1,3-DICHLOROBENZENE	< 660
1,4-DICHLOROBENZENE	< 660
1,2-DICHLOROBENZENE	< 660
2-METHYLPHENOL	< 660
2,2'-OXYBIS (1-CHLOROPROPANE)	< 660
4-METHYLPHENOL	340 J
N-NITROSO-DI-N-PROPYLAMINE	< 660
HEXACHLOROETHANE	< 660
NITROBENZENE	< 660
ISOPHORONE	< 660
2-NITROPHENOL	< 660
2,4-DIMETHYLPHENOL	< 660
BIS (2-CHLOROETHOXY) METHANE	< 660
2,4-DICHLOROPHENOL	< 660
1,2,4-TRICHLOROBENZENE	< 660
NAPHTHALENE	16 J
4-CHLOROANILINE	< 660
HEXACHLOROBUTADIENE	< 660
4-CHLORO-3-METHYLPHENOL	< 660
2-METHYLNAPHTHALENE	< 660
HEXACHLOROCYCLOPENTADIENE	< 660
2,4,6-TRICHLOROPHENOL	< 660
2,4,5-TRICHLOROPHENOL	<1600
2-CHLORONAPHTHALENE	< 660

SAMPLE NUMBER: 40300234

PAGE 2

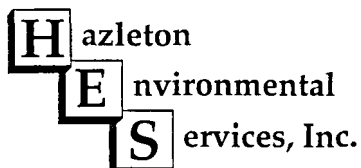
SOIL: B-2 S#1; 3-9
 PROJECT NUMBER: 20716XF

GC/MS SEMI-VOLATILE FRACTION (CONTINUED)

2-NITROANILINE	<1600
DIMETHYL PHTHALATE	< 660
ACENAPHTHYLENE	< 660
2, 6-DINITROTOLUENE	< 660
3-NITROANILINE	<1600
ACENAPHTHENE	< 660
2, 4-DINITROPHENOL	<1600
4-NITROPHENOL	<1600
DIBENZOFURAN	< 660
2, 4-DINITROTOLUENE	< 660
DIETHYLPHTHALATE	23 J
4-CHLOROPHENYL-PHENYLETHER	< 660
FLUORENE	< 660
4-NITROANILINE	<1600
4, 6-DINITRO-2-METHYLPHENOL	<1600
N-NITROSODIPHENYLAMINE* (1)	< 660
4-BROMOPHENYL-PHENYLETHER	< 660
HEXACHLOROBENZENE	< 660
PENTACHLOROPHENOL	<1600
PHENANTHRENE	93 J
ANTHRACENE	< 660
CARBAZOLE	< 660
DI-N-BUTYLPHTHALATE	290 BJ (110J)
FLUORANTHENE	48 J
PYRENE	40 J
BUTYLBENZYLPHTHALATE	90 J
3, 3'-DICHLOROBENZIDINE	< 660
BENZO (A) ANTHRACENE	< 660
CHRYSENE	66 J
BIS (2-ETHYLHEXYL) PHTHALATE	900 B (46J)
DI-N-OCTYL PHTHALATE	< 660
BENZO (B) FLUORANTHENE	150 J
BENZO (K) FLUORANTHENE	< 660
BENZO (A) PYRENE	< 660
INDENO (1, 2, 3-CD) PYRENE	< 660
DIBENZO (A, H) ANTHRACENE	< 660
BENZO (G, H, I) PERYLENE	< 660

* (1) CANNOT BE SEPARATED FROM DIPHENYLAMINE.
 'J' INDICATES AN ESTIMATED VALUE. MASS SPECTRAL DATA INDICATED THE PRESENCE OF A COMPOUND THAT MEETS THE IDENTIFICATION CRITERIA BUT THE RESULT IS LESS THAN THE SPECIFIED DETECTION LIMIT BUT GREATER THAN ZERO.

'B' INDICATES THE ANALYTE WAS FOUND IN THE BLANK AS WELL AS THE SAMPLE. THE CONCENTRATION SHOWN IN PARENTHESIS WAS DETECTED IN THE METHOD BLANK.



SAMPLE NUMBER: 40300234

PAGE 3

SOIL: B-2 S#1; 3-9
PROJECT NUMBER: 20716XF

MOISTURE

REPORT TO BE GENERATED MANUALLY

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).

CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

GC/MS SEMI-VOLATILE FRACTION

U.S. EPA METHOD 625 (FEDERAL REGISTER, VOLUME 49, NO. 209, PG. 43385-43406, OCTOBER 26, 1984).

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHOD 8270, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984).

MOISTURE

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 16.259, 14.002, 7.003, AOAC, ARLINGTON, VA. (MODIFIED).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300242
DATE ENTERED: 03/11/94
REPORT PRINTED: 03/31/94

SOIL: B-8 S#2; 3-10
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY
ARSENIC

ANALYSIS	UNITS
8210.	MG/KG

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300243

DATE ENTERED: 03/11/94

REPORT PRINTED: 03/31/94

SOIL: B-9 S#1; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY
ARSENIC

ANALYSIS

1080.

UNITS

MG/KG

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300244

DATE ENTERED: 03/11/94

REPORT PRINTED: 03/31/94

SOIL: B-10 S#1; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY
ARSENIC

<u>ANALYSIS</u>	<u>UNITS</u>
774.	MG/KG

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).

CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300245
DATE ENTERED: 03/11/94
REPORT PRINTED: 03/31/94

SOIL: B-11 S#1; 3-10
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY
ARSENIC

<u>ANALYSIS</u>	<u>UNITS</u>
6440.	MG/KG

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300700
DATE ENTERED: 03/29/94
REPORT PRINTED: 03/31/94

RE-ENTRY OF LIMS #40300245; SOIL: B-11 S#1; 3/10
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ICP-ACID EXTRACTION

<u>ELEMENTS</u>	<u>PPM</u>
LEAD	< 61.5
SODIUM	<1230.

METHOD REFERENCES

ICP-ACID EXTRACTION
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND
EDITION, METHODS (3030, 3040 OR 3050) AND 6010, U.S. EPA, WASHINGTON, DC
(REVISED APRIL 1984)



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300246

DATE ENTERED: 03/11/94

REPORT PRINTED: 03/31/94

SOIL: B-12 S#1; 3-10
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY
ARSENIC

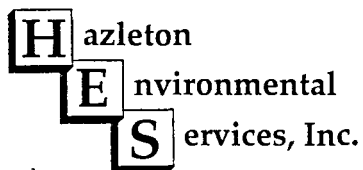
ANALYSIS
2090.

UNITS
MG/KG

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300247

DATE ENTERED: 03/11/94

REPORT PRINTED: 03/31/94

SOIL: B-13 S#1; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY
ARSENIC

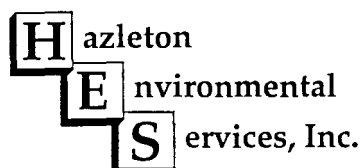
<u>ANALYSIS</u>	<u>UNITS</u>
1010.	MG/KG

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).

CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



REPORT OF ANALYSIS

MARK BERGEON
 STS CONSULTANTS, LTD
 1035 KEPLER DRIVE
 GREEN BAY, WI 54311

SAMPLE NUMBER: 40300248

DATE ENTERED: 03/11/94

REPORT PRINTED: 03/31/94

SOIL: B-14 S#1; 3-9
 PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

ASSAY
 ARSENIC

<u>ANALYSIS</u>	<u>UNITS</u>
1010.	MG/KG

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
 CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



HES, Inc.

REPORT OF ANALYSIS

MARK BERGEON
STS CONSULTANTS, LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 40300249
DATE ENTERED: 03/11/94
REPORT PRINTED: 03/31/94

SOIL: B-15 S#1; 3-9
PROJECT NUMBER: 20716XF

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	1540.	MG/KG

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).



STS CHAIN OF CUSTODY RECORD

No 17522 RECORD NO. _____ THROUGH _____

Contact Person Mark Bergen
 Phone No. 414 468 1998
 Project No. 20716XF PO No. 20716XF
 STS Office Green Bay

SPECIAL HANDLING REQUEST

- RUSH
 VERBAL
 OTHER

Laboratory Hazleton
 Contact Person Peggy Popp
 Phone No. 608 232 3335
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Spec. Cond.		
									Ambient	Sample				
B-1 S#1 <small>40300233</small>	3-9		X		1	Soil	X							
B-2 S#1 <small>40300234</small>	3-9				2									
B-2 S#2 <small>40300235</small>	3-9				1									
B3 S#1 <small>40300236</small>	3-9				1									
B-4 S#1 <small>40300237</small>	3-9				1									
B-5 S#1 <small>40300238</small>	3-10				1									
B-6 S#1 <small>40300239</small>	3-10				1									
B-7 S#1 <small>40300240</small>	3-9		X		1	Soil	X							

Collected by: <u>[Signature]</u>	Date <u>3-9, 3-10-94</u>	Time	Delivery by:	Date	Time
Received by: <u>[Signature]</u>	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Lynn Kollen</u>	Date <u>3-11-94</u>	Time <u>1000A</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt Yes No N/A

Final disposition:

Comments (Weather Conditions, Precautions, Hazards):

add Pb+Na for conversation with U. Bergen 3/29/94
PLP

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File

Instruction to Laboratory: Forward completed original to STS with analytical results. Retain green copy.



STS CHAIN OF CUSTODY RECORD

No 17525 RECORD NO. _____ THROUGH _____

Contact Person Mark Bergeron
 Phone No. 414 468 1978
 Project No. 20716XF PO No. 20716XF
 STS Office Green Bay

SPECIAL HANDLING REQUEST

- RUSH
 VERBAL
 OTHER

Laboratory Hazleton
 Contact Person Peggy Papp
 Phone No. 608 232 3335
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Spec. Cond.		
									Ambient	Sample				
BG-1 ⁴⁰³⁰⁰²³¹	3-9			X	2	soil	X						Arsenic + Semi-VOCs (B270)	
BG-2 ⁴⁰³⁰⁰²³²	3-9			X	2	soil	X						Arsenic + Semi-VOCs (B270)	
														Condition <u>Cold</u> Storage <u>WIR</u>
														Acct. # <u>4320</u> Abbrev. <u>STG</u>
														Smpl Recd <u>MAR 11 1994</u> Init <u>UMK</u>
														Date Entered <u>3-11-94</u>
														LIMS # <u>40300231 210</u>
														<u>19</u>

Collected by: <u>[Signature]</u>	Date <u>3-9-94</u>	Time <u>9:00 A.M.</u>	Delivery by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Lynn Keller</u>	Date <u>3-11-94</u>	Time <u>1000A</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt Yes No N/A

Final disposition:

Comments (Weather Conditions, Precautions, Hazards):

Rec'd with ice - UMK

STS CHAIN OF CUSTODY RECORD

No 17523 RECORD NO. _____ THROUGH _____

Contact Person Mark Bergeon
 Phone No. 414 468 1978
 Project No. 20716XF PO No. 20716XF
 STS Office Green Bay

SPECIAL HANDLING REQUEST

- RUSH
- VERBAL
- OTHER

Laboratory Hazleton
 Contact Person Peggy Popp
 Phone No. 608 232 3335
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Spec. Cond.		
									Ambient	Sample				
B-8 ⁴⁰³⁰⁰²⁴¹ S#1	3-10		X		2	soil	X						Arsenic + Semi VOCs (2270) + Pb, Na [Ⓛ]	
B-8 ⁴⁰³⁰⁰²⁴² S#2	3-10				1								Arsenic	
B-9 ⁴⁰³⁰⁰²⁴³ S#1	3-9				1									
B-10 ⁴⁰³⁰⁰²⁴⁴ S-1	3-9				1									
B-11 ⁴⁰³⁰⁰²⁴⁵ S-1	3-10				1								+ Pb, Na [Ⓛ]	
B-12 ⁴⁰³⁰⁰²⁴⁶ S-1	3-10				1									
B-13 ⁴⁰³⁰⁰²⁴⁷ S-1	3-9				1									
B-14 ⁴⁰³⁰⁰²⁴⁸ S-1	3-9				1									
B-15 ⁴⁰³⁰⁰²⁴⁹ S-1	3-9				1	↓	X						Arsenic	

Arsenic may be present in concentrations as high as 68,000 mg/kg

Collected by: <u>[Signature]</u>	Date <u>3-9, 3-10-94</u>	Time	Delivery by:	Date	Time
Received by: <u>[Signature]</u>	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Lynn Koller</u>	Date <u>3-11-94</u>	Time <u>1000A</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt Yes No N/A

Final disposition:	Comments (Weather Conditions, Precautions, Hazards):
	<u>Ⓛ Add lead + sodium per conversation w/ M Bergeon 3/29/94 JHP</u>



525 SCIENCE DRIVE • MADISON. WISCONSIN 53711

HES, Inc.

4/5/95

Mike Berger
STS Consultants Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Re: STS Project #20716XF (Kewaunee Marsh)
HES Batch Number 50300459

Dear Mr. Berger:

Enclosed are the analytical results for the water sample received by HES, Inc. on 03/14/95 (HES sample number 50300459). The original chain of custody form is included with this report.

If I can be of assistance, or provide additional information, please call me at (608) 232-3335.

Sincerely,

A handwritten signature in cursive script that reads 'Peggy'.

Peggy Ropp
Account Executive

Wisconsin Laboratory Certification Number 113172950

encl:

c: Central File

Terms and Conditions

1. Reports are submitted to clients on a confidential basis. No reference to the work, the results, or HES, Inc., in any form of advertising, news release, or other public announcements may be made without written authorization from HES.
2. The term "Less Than" or the symbol (<) is used to signify the lower limit of quantitation of the procedure under the conditions employed. The use of the term "Less Than" or (<) does not imply that traces of analyte were present.

The term "None Detected" is used to report assay results where detection limits have been established for the method but acceptable residue levels have not been defined by the industry or by federal law or when the method does not define detection limits. The term will specify the fixed amount of sample employed in the analysis and does not imply that traces of the analyte were present.
3. Samples submitted to HES for routine analysis will be retained for a minimum of sixty (60) days after the report of analysis is issued. Extended storage requirements must be brought to the attention of HES prior to or at the time of sample submission. HES, at its discretion, may charge for such extended storage. Records and specimens from all government regulated studies will be maintained in accordance with federal regulations.
4. Analytical Method Summaries will be supplied to the client upon request. Detailed copies of in-house laboratory procedures may be reviewed by the client or his agent during a site visit, but may not be copied without the expressed consent of HES.
5. All work performed by HES will be conducted in accordance with the HES Quality Assurance Program. Specific documentation requirements of the client for work performed by HES must be made known to HES prior to the start of the requested work.
6. Records of the raw data, reports, etc., will be maintained by HES in its data archives for a minimum of five (5) years unless otherwise specified by government regulations after the completion of the requested work. One (1) duplicate report will be made available free of charge for a period of one (1) year. HES reserves the right to charge for copies made after one (1) year and to charge for any and all copies of raw data requested.
7. Raw data, chromatograms, calibration data, etc., are the sole property of HES. Copies will be made available upon request when the quality of the original document is such that duplication is possible.
8. Clients and/or their agents may, with prior notice, inspect/audit the records, facilities, etc., of HES pertinent to their study. All data not pertinent to the specific study is confidential and will not be made available.
9. Routine inquiry concerning work performed by HES should be made to the Client Service Center. The client is also encouraged to bring any concerns or questions to the attention of management, technical staff, or the facility Quality Assurance Unit.

CHAIN OF CUSTODY RECORD

No 20442



Contact Person MIKE BERGER
 Phone No. 414-468-1978 Office G.B.
 Project No. 207168F PO No. _____
 Project Name KEWUNEE MARSH

Special Handling Request	
<input type="checkbox"/>	Rush
<input type="checkbox"/>	Verbal
<input type="checkbox"/>	Other

RECORD NUMBER _____ THROUGH _____
 Laboratory HAZELTON
 Contact Person _____
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Special Cond.		
									Ambient	Sample				
<u>PNEP</u>	<u>1995</u> <u>03/13</u>		<u>X</u>		<u>1</u>	<u>WATER</u>	<u>X</u>						<u>ARSENIC ANALYSIS</u>	<u>50300459</u> Condition <u>Cold</u> Storage <u>2118-2</u> Acct. # <u>1162</u> Abbrev. <u>FVAW</u> Smpl Rec'd <u>MAR 14 1995</u> <u>KAB</u> Date Entered <u>3-14-95</u> LIMS # <u>50300459</u>

Collected by: <u>Jim Calvey</u>	Date <u>03-13-95</u>	Time	Delivery by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Kristie Brommy</u>	Date <u>3-14-95</u>	Time <u>9:55 am</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition: _____
 Comments (Weather Conditions, Precautions, Hazards):
Sample held on ice (8°C) and in good condition. KAB 3-14-95
- HNO₃ PRESERVE
- BILL TO FOX VALLEY & WESTERN

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
 Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy. 9/94cp10k



525 SCIENCE DRIVE • MADISON, WISCONSIN 53711

HES, Inc.

4/5/95

Mike Berger
STS Consultants Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Re: STS Project #20716XF (Kewaunee Marsh)
HES Batch Number 50301216

Dear Mr. Berger:

Enclosed are the analytical results for the water samples received by HES, Inc. on 03/28/95 (HES sample numbers 50301216 - 50301217). The original chain of custody form is included with this report.

If I can be of assistance, or provide additional information, please call me at (608) 232-3335.

Sincerely,

A handwritten signature in cursive script that reads 'Peggy Popp'.

Peggy Popp
Account Executive

Wisconsin Laboratory Certification Number 113172950

encl:

c: Central File



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50301216
DATE ENTERED: 03/28/95
REPORT PRINTED: 04/05/95

WATER: 1, KEWAUNEE RIVER, 3/20
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	< 1.0	MCG/L

EDIT MNEMONIC-INORGANICS

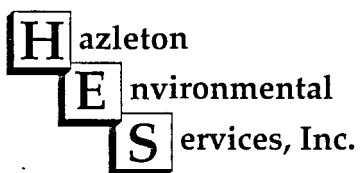
WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED *John C. Walton*
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS 3020 AND 7060, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50301217
DATE ENTERED: 03/28/95
REPORT PRINTED: 04/05/95

WATER: 2, KEWAUNEE RIVER, 3/27
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	< 1.0	MCG/L

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS 3020 AND 7060, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS

Terms and Conditions

1. Reports are submitted to clients on a confidential basis. No reference to the work, the results, or HES, Inc., in any form of advertising, news release, or other public announcements may be made without written authorization from HES.
2. The term "Less Than" or the symbol (<) is used to signify the lower limit of quantitation of the procedure under the conditions employed. The use of the term "Less Than" or (<) does not imply that traces of analyte were present.

The term "None Detected" is used to report assay results where detection limits have been established for the method but acceptable residue levels have not been defined by the industry or by federal law or when the method does not define detection limits. The term will specify the fixed amount of sample employed in the analysis and does not imply that traces of the analyte were present.
3. Samples submitted to HES for routine analysis will be retained for a minimum of sixty (60) days after the report of analysis is issued. Extended storage requirements must be brought to the attention of HES prior to or at the time of sample submission. HES, at its discretion, may charge for such extended storage. Records and specimens from all government regulated studies will be maintained in accordance with federal regulations.
4. Analytical Method Summaries will be supplied to the client upon request. Detailed copies of in-house laboratory procedures may be reviewed by the client or his agent during a site visit, but may not be copied without the expressed consent of HES.
5. All work performed by HES will be conducted in accordance with the HES Quality Assurance Program. Specific documentation requirements of the client for work performed by HES must be made known to HES prior to the start of the requested work.
6. Records of the raw data, reports, etc., will be maintained by HES in its data archives for a minimum of five (5) years unless otherwise specified by government regulations after the completion of the requested work. One (1) duplicate report will be made available free of charge for a period of one (1) year. HES reserves the right to charge for copies made after one (1) year and to charge for any and all copies of raw data requested.
7. Raw data, chromatograms, calibration data, etc., are the sole property of HES. Copies will be made available upon request when the quality of the original document is such that duplication is possible.
8. Clients and/or their agents may, with prior notice, inspect/audit the records, facilities, etc., of HES pertinent to their study. All data not pertinent to the specific study is confidential and will not be made available.
9. Routine inquiry concerning work performed by HES should be made to the Client Service Center. The client is also encouraged to bring any concerns or questions to the attention of management, technical staff, or the facility Quality Assurance Unit.



525 SCIENCE DRIVE • MADISON, WISCONSIN 53711

HES, Inc.

4/5/95

Mike Berger
STS Consultants Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Re: STS Project #20716XF (Kewaunee Marsh)
HES Batch Number 50300488

Dear Mr. Berger:

Enclosed are the analytical results for the soil samples received by HES, Inc. on 03/15/95 (HES sample numbers 50300488 - 50300524). The original chain of custody form is included with this report.

If I can be of assistance, or provide additional information, please call me at (608) 232-3335.

Sincerely,

A handwritten signature in cursive script that reads 'Peggy'.

Peggy Popp
Account Executive

Wisconsin Laboratory Certification Number 113172950

encl:

c: Central File



REPORT OF ANALYSIS

MIKE BERGER
 STS CONSULTANTS LTD
 1035 KEPLER DRIVE
 GREEN BAY, WI 54311

SAMPLE NUMBER: 50300488

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL; B-6(2-4); 03/14/95
 PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY
 ARSENIC

<u>ANALYSIS</u>	<u>UNITS</u>
4.95	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED *John C. Walton*
 JOHN C. WALTON
 SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC

TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).

CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300489

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL; B-6(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	7.15	PPM

EDIT MNEMONIC-INORGANICS

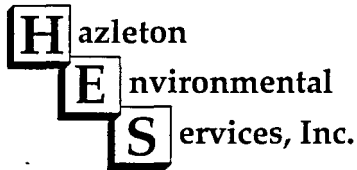
WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300490
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-7(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	16.1	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300491
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-7(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	.81	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300492

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL: B-7(6-8); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	3.17	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

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HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300493

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL: B-21(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	2.37	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300494

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL: B-32(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	88.9	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED *John C. Walton*
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300495

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL: B-32(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY
ARSENIC

ANALYSIS UNITS
194. PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300497
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-16(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	390.	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300498
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-16(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	12.2	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300499
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-16(6-8); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	.93	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

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JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

MIKE BERGER
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300500
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-17(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	29.0	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

MIKE BERGER
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300501
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-17(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	15.1	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

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JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300502
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-17(6-8); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	1.46	PPM

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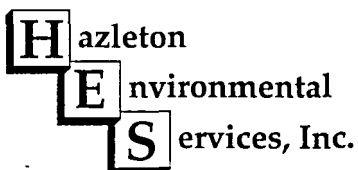
WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

MIKE BERGER
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300503
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-19(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	874.	PPM

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JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300504

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL: B-19(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	181.	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

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JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300505
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-19(6-8); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	29.5	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

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JOHN C. WALTON
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METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300506
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-22(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	411.	PPM

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SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300507

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL: B-22(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY
ARSENIC

ANALYSIS
116.

UNITS
PPM

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JOHN C. WALTON
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METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300508
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-22(6-8); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	2.63	PPM

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JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300509
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-23(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	17.9	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300510
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-23(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	< 2.0	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300511
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-23(6-8); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	< 2.1	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

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JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300512

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL: B-24(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	1.71	PPM

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JOHN C. WALTON
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METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300513

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL: B-24(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	2.12	PPM

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JOHN C. WALTON
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METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300514
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-24(6-8); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	1.32	PPM

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METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300515

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL: B-29(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	360.	PPM

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METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300516
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-29(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	202.	PPM

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SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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REPORT OF ANALYSIS

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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300517
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-29(6-8); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	2.35	PPM

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WISCONSIN DNR CERTIFICATION NUMBER: 113172950

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JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300518
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-13(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	23.7	PPM

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METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300519

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL: B-13(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	32.7	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300520
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-13(6-8); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY	ANALYSIS	UNITS
ARSENIC	< .72	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300522
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-10(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	85.6	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED *John C. Walton*
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
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EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300521

DATE ENTERED: 03/15/95

REPORT PRINTED: 04/05/95

SOIL: B-10(2-4); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	290.	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300523
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-26(4-6); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	723.	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED John C. Walton
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

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CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50300524
DATE ENTERED: 03/15/95
REPORT PRINTED: 04/05/95

SOIL: B-26(6-8); 03/14/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	2.45	PPM

EDIT MNEMONIC-INORGANICS

WISCONSIN DNR CERTIFICATION NUMBER: 113172950

SIGNED *John C. Walton*
JOHN C. WALTON
SUPERVISOR, INORGANICS

METHOD REFERENCES

ARSENIC
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS (3030, 3040, OR 3050) AND 7060, U.S. EPA, WASHINGTON, D.C. (REVISED APRIL 1984).
CONTRACT LABORATORY PROGRAM STATEMENT OF WORK NO. 785, METHOD 206.2 CLP-M, U.S. EPA, WASHINGTON, D. C. (JULY 1985).

EDIT MNEMONIC-INORGANICS
SIGNATURE BLOCK FOR INORGANIC ANALYSIS

Terms and Conditions

1. Reports are submitted to clients on a confidential basis. No reference to the work, the results, or HES, Inc., in any form of advertising, news release, or other public announcements may be made without written authorization from HES.
2. The term "Less Than" or the symbol (<) is used to signify the lower limit of quantitation of the procedure under the conditions employed. The use of the term "Less Than" or (<) does not imply that traces of analyte were present.

The term "None Detected" is used to report assay results where detection limits have been established for the method but acceptable residue levels have not been defined by the industry or by federal law or when the method does not define detection limits. The term will specify the fixed amount of sample employed in the analysis and does not imply that traces of the analyte were present.
3. Samples submitted to HES for routine analysis will be retained for a minimum of sixty (60) days after the report of analysis is issued. Extended storage requirements must be brought to the attention of HES prior to or at the time of sample submission. HES, at its discretion, may charge for such extended storage. Records and specimens from all government regulated studies will be maintained in accordance with federal regulations.
4. Analytical Method Summaries will be supplied to the client upon request. Detailed copies of in-house laboratory procedures may be reviewed by the client or his agent during a site visit, but may not be copied without the expressed consent of HES.
5. All work performed by HES will be conducted in accordance with the HES Quality Assurance Program. Specific documentation requirements of the client for work performed by HES must be made known to HES prior to the start of the requested work.
6. Records of the raw data, reports, etc., will be maintained by HES in its data archives for a minimum of five (5) years unless otherwise specified by government regulations after the completion of the requested work. One (1) duplicate report will be made available free of charge for a period of one (1) year. HES reserves the right to charge for copies made after one (1) year and to charge for any and all copies of raw data requested.
7. Raw data, chromatograms, calibration data, etc., are the sole property of HES. Copies will be made available upon request when the quality of the original document is such that duplication is possible.
8. Clients and/or their agents may, with prior notice, inspect/audit the records, facilities, etc., of HES pertinent to their study. All data not pertinent to the specific study is confidential and will not be made available.
9. Routine inquiry concerning work performed by HES should be made to the Client Service Center. The client is also encouraged to bring any concerns or questions to the attention of management, technical staff, or the facility Quality Assurance Unit.



CHAIN OF CUSTODY RECORD

No 20363

Contact Person Mike Berger
 Phone No. 414-468-1978 Office Green Bay
 Project No. 207HGXF PO No. _____
 Project Name Kewaunee Marsh

Special Handling Request	
<input type="checkbox"/>	Rush
<input type="checkbox"/>	Verbal
<input type="checkbox"/>	Other

RECORD NUMBER _____ THROUGH _____
 Laboratory HES
 Contact Person PEGGY
 Phone No. _____
 Results Due _____ Condition 7 Temp Storage W19-2
 Acct. # 1162 Abbrev. FVALL

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Smp'l Rec'd (Include Major Contaminants)	Date Entered	LIMS #	
							Y	N	PID/FID		PH	Special Cond.					Comments on Sample
									Ambient	Sample							
B-6 (2-4)	3/11					Soil										50300488	
B-6 (4-6)																	50300489
B-7 (2-4)																	50300490
B-7 (4-6)																	50300491
B-7 (6-8)																	50300492
B-21 (2-4)																	50300493
B-32 (2-4)																	50300494
B-32 (4-6)																	50300495
B-32 (6-8)																	50300496

Collected by: <u>MTB</u>	Date <u>3/14</u>	Time	Delivery by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Kristie Bruner</u>	Date <u>3-15-95</u>	Time <u>9:55am</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition: _____
 Comments (Weather Conditions, Precautions, Hazards):
Samples rec'd with no ice, (19°C) and in good condition. HES 3-15-95

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
 Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.



CHAIN OF CUSTODY RECORD

No 20362

Contact Person Mike Berger
 Phone No. 414 468 1978 Office GB
 Project No. 20716XF PO No. _____
 Project Name Kewanna Marsh

Special Handling Request

Rush
 Verbal
 Other

RECORD NUMBER _____ THROUGH _____
 Laboratory HES
 Contact Person PEGGY
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Special Cond.		
									Ambient	Sample				
B16 (2-4)	3/14					Soil								
B16 (4-6)														
B16 (6-8)														
B17 (2-4)														
B17 (4-6)														
B17 (6-8)														
B19 (2-4)														
B19 (4-6)														
B19 (6-8)														

Collected by: <u>MTB</u>	Date <u>3/14</u>	Time	Delivery by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Kristi Beneman</u>	Date <u>3-15-95</u>	Time <u>9:53am</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition: _____
 Comments (Weather Conditions, Precautions, Hazards):
Samples rec'd with no ice (19°C) and in good cond. per lab 3-15-95

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
 Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

Bill to Fox Valley & Western

CHAIN OF CUSTODY RECORD

No 20364



Contact Person Mike Burger
 Phone No. 414 468 1178 Office Green Bay
 Project No. 20716XF PO No. _____
 Project Name Keweenaw Marsh

Special Handling Request

Rush
 Verbal
 Other

RECORD NUMBER _____ THROUGH _____
 Laboratory HES
 Contact Person Peggy
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Special Cond.		
									Ambient	Sample				
B22 (2-4)	3/14					Soil							Arsenic by	50300506
B22 (4-6)													GFAA	50300507 Arsenic
B22 (6-8)													m	50300508 Impact
B23 (2-4)													all	50300509
B23 (4-6)													samples	50300510
B23 (6-8)														50300511
B24 (2-4)														50300512
B-24 (4-6)														50300513
B24 (6-8)														50300514

Collected by: <u>MTB</u>	Date <u>3/14</u>	Time	Delivery by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by: <u>H</u>	Date	Time	Relinquished by:	Date	Time
Received for lab by: <u>Kurtie Dummer</u>	Date <u>3-15-95</u>	Time <u>9:55 AM</u>	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition: _____

Comments (Weather Conditions, Precautions, Hazards):
Samples sent with no ice (19°C) and in good condition. Feb 3-15-95

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
 Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

Bill to Fox Valley & Western

CHAIN OF CUSTODY RECORD

No 20365



Contact Person Mike Berger
 Phone No. 414-468 1978 Office Green Bay
 Project No. 20716XF PO No. _____
 Project Name Kewaunee Marsh

Special Handling Request	
<input type="checkbox"/>	Rush
<input type="checkbox"/>	Verbal
<input type="checkbox"/>	Other

RECORD NUMBER _____ THROUGH _____
 Laboratory HES
 Contact Person PEBBY
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Special Cond.		
									Ambient	Sample				
B29 (2-4)	3/14					soil								50300515
B29 (4-6)														50300516
B29 (6-8)														50300517
B13 (2-4)														50300518
B13 (4-6)														50300519
B13 (6-8)														50300520
B10 (2-4)														50300521
B10 (4-6)														50300522

Collected by: <u>MTB</u>	Date: <u>3/14</u>	Time: _____	Delivery by: _____	Date: _____	Time: _____
Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____
Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____
Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____
Received for lab by: <u>Kristie Penney</u>	Date: <u>3-15-95</u>	Time: <u>9:30am</u>	Relinquished by: _____	Date: _____	Time: _____

Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition: _____
 Comments (Weather Conditions, Precautions, Hazards):
samples rec'd with no ice and in good condition. KMB 3-15-95

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
 Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

Bill to Fox Valley & Western

CHAIN OF CUSTODY RECORD

No 20366



Contact Person Mike Berger
 Phone No. 414 468 1978 Office Green Bay
 Project No. 20716 XF PO No. _____
 Project Name Keweenaw Marsh

Special Handling Request	
<input type="checkbox"/>	Rush
<input type="checkbox"/>	Verbal
<input type="checkbox"/>	Other

RECORD NUMBER _____ THROUGH _____
 Laboratory HES
 Contact Person Peggy
 Phone No. _____
 Results Due _____

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
							Y	N	PID/FID		PH	Special Cond.		
									Ambient	Sample				
B26 (4-6)	3/14		↓			soil								50300523 Arsenic
B26 (6-8)	↓		↓			↓								50300524 Impact

Collected by: <u>MTB</u>	Date: <u>3/14</u>	Time: _____	Delivery by: _____	Date: _____	Time: _____
Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____
Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____
Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____
Received for lab by: <u>Christie Breckenridge</u>	Date: <u>3-15-95</u>	Time: <u>9:55am</u>	Relinquished by: _____	Date: _____	Time: _____

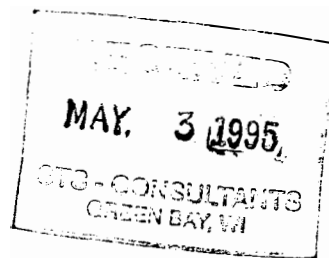
Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A

Final Disposition: _____
 Comments (Weather Conditions, Precautions, Hazards):
Samples rec'd in ice (19°C) and in good condition. LAB 3-15-95



525 SCIENCE DRIVE • MADISON, WISCONSIN 53711

HES, Inc.



5/1/95

Mike Berger
STS Consultants Ltd.
1035 Kepler Drive
Green Bay, WI 54311

Re: STS Project #20716XF (Kewaunee Marsh)
HES Batch Number 50400716

Dear Mr. Berger:

Enclosed are the arsenic results for the water samples received by HES, Inc. on 4/11/95 (HES sample numbers 50400716 - 50400717). The original chain of custody form is included with this report.

If I can be of assistance, or provide additional information, please call me at (608) 232-3335.

Sincerely,

A handwritten signature in cursive script that reads "Peggy".

Peggy Popp
Account Executive

Wisconsin Laboratory Certification Number 113172950

encl:

c: Central File



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50400716
DATE ENTERED: 04/11/95
REPORT PRINTED: 05/01/95

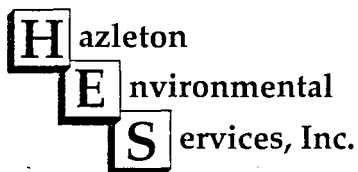
WATER: 1; KEWUANEER RIVER; 04/03/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ARSENIC	2.7	MCG/L

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS 3020 AND 7060, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)



HES, Inc.

REPORT OF ANALYSIS

MIKE BERGER
STS CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY, WI 54311

SAMPLE NUMBER: 50400717
DATE ENTERED: 04/11/95
REPORT PRINTED: 05/01/95

WATER: 2; KEWAUNEE RIVER; 04/10/95
PROJECT NAME: KEWAUNEE MARSH

PURCHASE ORDER NUMBER: 20716XF

ASSAY
ARSENIC

<u>ANALYSIS</u>	<u>UNITS</u>
< 1.0	MCG/L

METHOD REFERENCES

ARSENIC
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, EPA PUBLICATION NO. 600/4-79-020, METALS 1-19 AND METHOD 206.2, U.S. EPA, CINCINNATI, OH
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHODS 3020 AND 7060, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)

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2. The term "Less Than" or the symbol (<) is used to signify the lower limit of quantitation of the procedure under the conditions employed. The use of the term "Less Than" or (<) does not imply that traces of analyte were present.

The term "None Detected" is used to report assay results where detection limits have been established for the method but acceptable residue levels have not been defined by the industry or by federal law or when the method does not define detection limits. The term will specify the fixed amount of sample employed in the analysis and does not imply that traces of the analyte were present.
3. Samples submitted to HES for routine analysis will be retained for a minimum of sixty (60) days after the report of analysis is issued. Extended storage requirements must be brought to the attention of HES prior to or at the time of sample submission. HES, at its discretion, may charge for such extended storage. Records and specimens from all government regulated studies will be maintained in accordance with federal regulations.
4. Analytical Method Summaries will be supplied to the client upon request. Detailed copies of in-house laboratory procedures may be reviewed by the client or his agent during a site visit, but may not be copied without the expressed consent of HES.
5. All work performed by HES will be conducted in accordance with the HES Quality Assurance Program. Specific documentation requirements of the client for work performed by HES must be made known to HES prior to the start of the requested work.
6. Records of the raw data, reports, etc., will be maintained by HES in its data archives for a minimum of five (5) years unless otherwise specified by government regulations after the completion of the requested work. One (1) duplicate report will be made available free of charge for a period of one (1) year. HES reserves the right to charge for copies made after one (1) year and to charge for any and all copies of raw data requested.
7. Raw data, chromatograms, calibration data, etc., are the sole property of HES. Copies will be made available upon request when the quality of the original document is such that duplication is possible.
8. Clients and/or their agents may, with prior notice, inspect/audit the records, facilities, etc., of HES pertinent to their study. All data not pertinent to the specific study is confidential and will not be made available.
9. Routine inquiry concerning work performed by HES should be made to the Client Service Center. The client is also encouraged to bring any concerns or questions to the attention of management, technical staff, or the facility Quality Assurance Unit.

Hazleton Environmental Services, Inc.

525 Science Drive
Madison, Wisconsin 53711
Telephone 608-232-3300
Facsimile 608-233-0502

ATTN: GEOFFREY NIXES

Company Name and Address

Phone No. 414-468-1978	Name of Submitter JIM CALAWAY
Send Invoice To FOX VALLEY WEST	Send Reports To MIKE BERGER
Purchase Order No. EANR	Date Sent 04-10-95
Project No. 20716XF	Project Name KEWAUNEE MARSH

CHAIN OF CUSTODY RECORD
LUST PROGRAM

For HES Use Only	
Condition Cold	Storage WIR-2
Acct. # 1147	Abbrev. EVALW
Smpl Rec'd APR 11 1995	KAB
Date Entered 4-11-95	KAB
LIMS #	5040016-0117

Note: Use of this form is voluntary but is requested by the Department pursuant to ch. NR 149, NR 500-540, NR 158 and NR 419, Wis. Adm. Code. Personally identifiable information will be used for no other purpose.

Sample Collector(s) Jim Calaway	Title/Work Station/Company TECHNICIAN / S.T.S. CONSULTANTS LTD.	Telephone Number (include area code) 414-468-1978
Property Owner	Property Address	Telephone Number (include area code)

I hereby certify that I received, properly handled, and disposed of these samples as noted below:

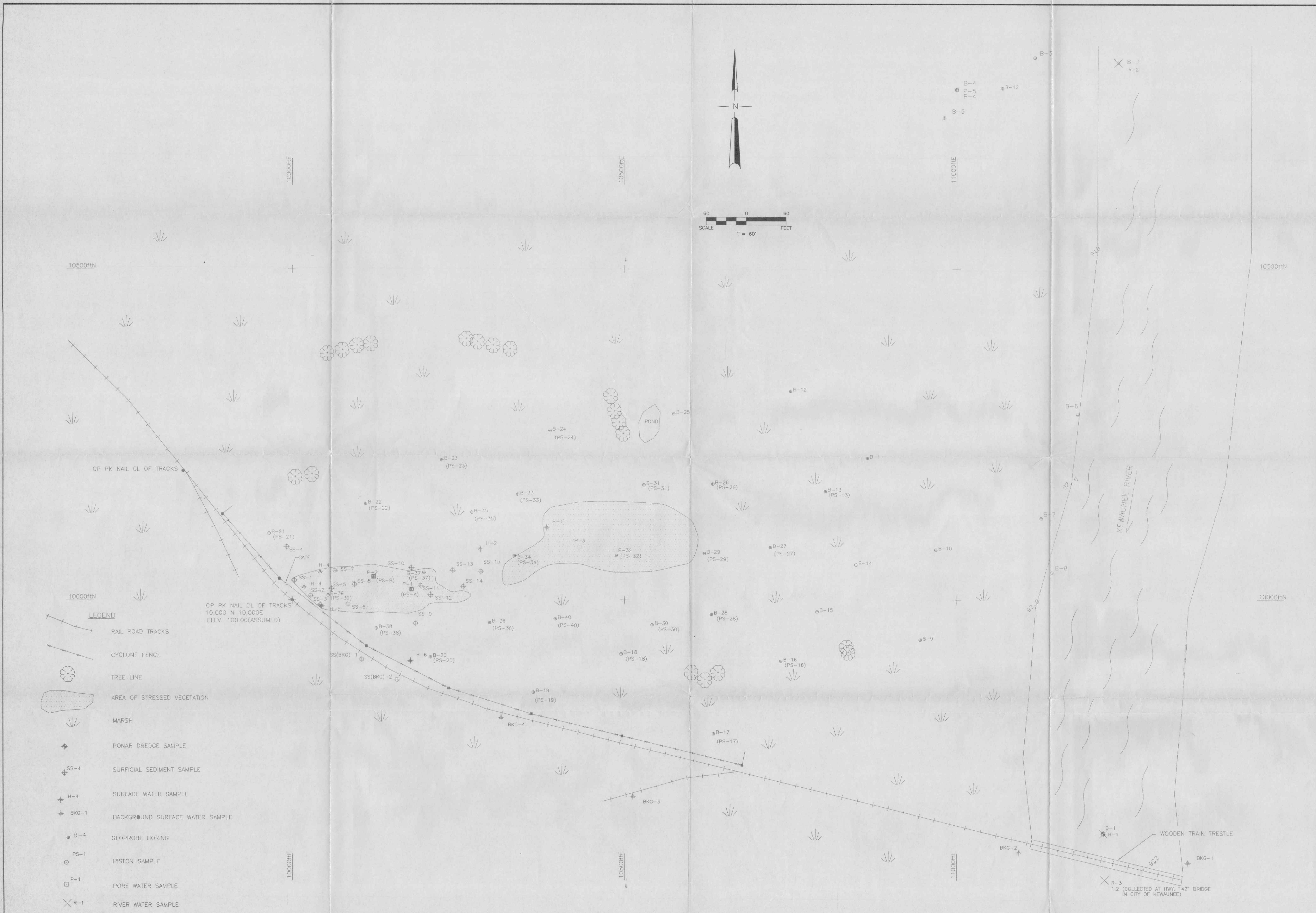
Relinquished By (Signature) Jim Calaway	Date/Time 04/10/95	Received By (Signature)
Relinquished By (Signature)	Date/Time	Received By (Signature)
Relinquished By (Signature)	Date/Time 4-11-95 9:30am	Received for Laboratory By (Signature) Kristie Breneman


Sample Condition on Receipt by Laboratory
LABORATORY USE ONLY

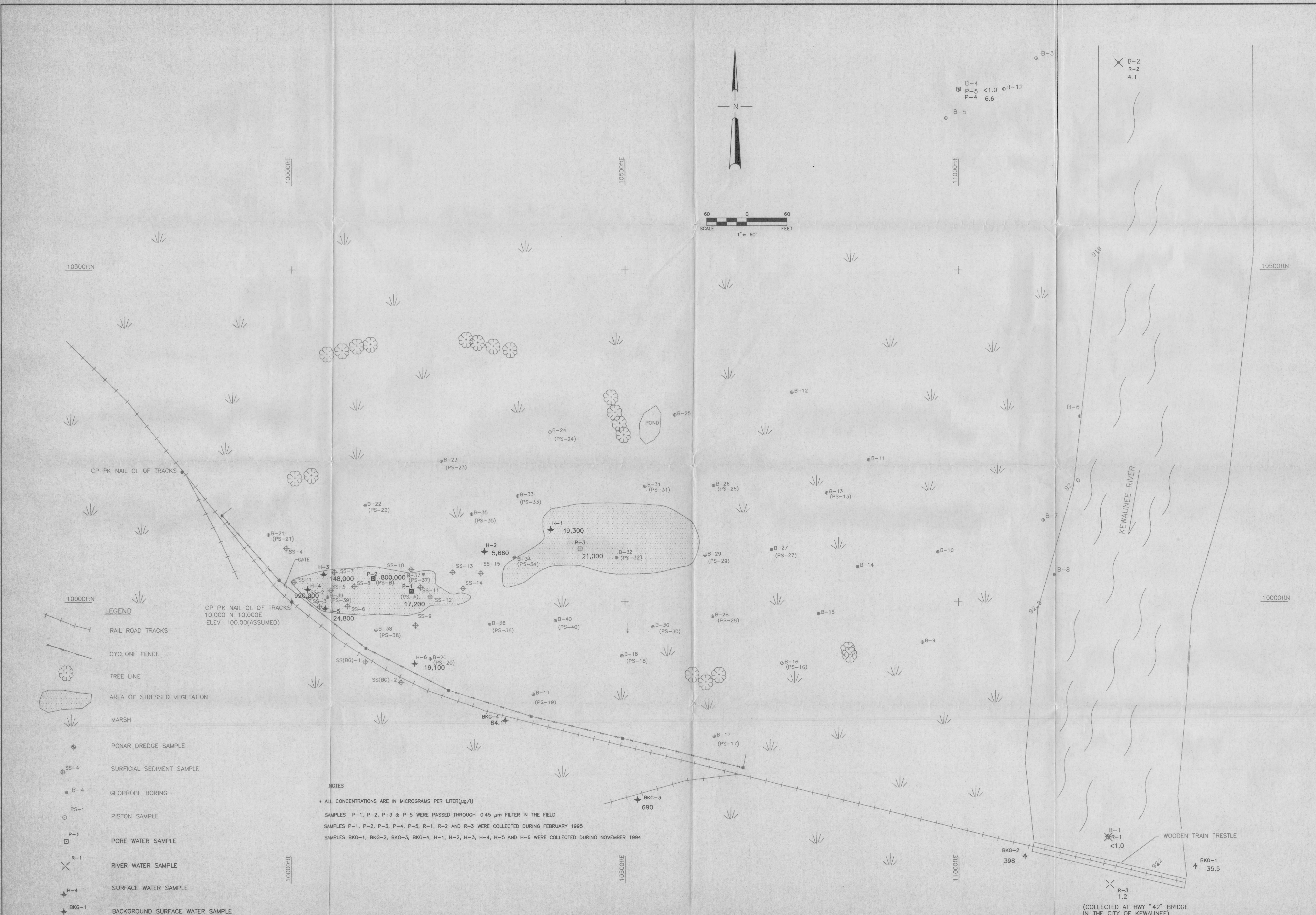
Temperature of temperature blank: 20°C
If samples were received on ice and there was ice remaining, you may report the temperature as "received on ice". If all of the ice was melted, the temperature of the melt may be substituted for a temperature blank.
Samples received on ice in good condition. KAB 4-11-95

Field ID Number ¹	Date Collected	Time Collected	Sample		Preserv. Type	Field Screening	Field Description	Analysis Type	Lab ID Number	No./Type of Containers	Cracked /Broken	Improperly Sealed	Good Condition	Other Comments
			Type 2	Device 3										
①	04-03-95		W		HN03		KEWAUNEE RIVER	ARSENIC *	5040716	1			X	ARSENIC -
②	04-10-95		W		HN03		KEWAUNEE RIVER	ARSENIC *	5040717	1			Y	- IMPACT

¹ Sample description must clearly correlate the sample ID to the sampling location shown on a map. ³ Type of sampling device; split spoon, hand auger, metal spatula, soil syringe, etc.
² Specify groundwater, surface water, soil, leachate, sludge, etc.
* ARSENIC BY GFAA IN BOTH SAMPLES



REVISION			
BY			
DATE			
DATE	3-17-95	DATE	5-23-95
D.T.B.		CHECKED BY	MTB
APPROVED BY	MTB	DATE	5-23-95
CADFILE	C:\DTB\20716XF\SITE.DWG		
FOX VALLEY & WESTERN LTD. Kewaunee Marsh Arsenic Impact Site Kewaunee, Wisconsin EXISTING SITE CONDITIONS (2/19/95)			
 STS Consultants Ltd. Consulting Engineers			
STS PROJECT NUMBER		20716XF	
STS PROJECT FILE			
SCALE		1" = 60'	
SHEET NUMBER		20716XF-2	



- LEGEND**
- RAIL ROAD TRACKS
 - CYCLONE FENCE
 - TREE LINE
 - AREA OF STRESSED VEGETATION
 - MARSH
 - POND DREDGE SAMPLE
 - SURFICIAL SEDIMENT SAMPLE
 - GEOPROBE BORING
 - PISTON SAMPLE
 - PORE WATER SAMPLE
 - RIVER WATER SAMPLE
 - SURFACE WATER SAMPLE
 - BACKGROUND SURFACE WATER SAMPLE

NOTES

- ALL CONCENTRATIONS ARE IN MICROGRAMS PER LITER ($\mu\text{g}/\text{l}$)
- SAMPLES P-1, P-2, P-3 & P-5 WERE PASSED THROUGH 0.45 μm FILTER IN THE FIELD
- SAMPLES P-1, P-2, P-3, P-4, P-5, R-1, R-2 AND R-3 WERE COLLECTED DURING FEBRUARY 1995
- SAMPLES BKG-1, BKG-2, BKG-3, BKG-4, H-1, H-2, H-3, H-4, H-5 AND H-6 WERE COLLECTED DURING NOVEMBER 1994

REVISION					
BY					
DATE					
DATE	3-15-95	DATE	5-23-95	DATE	5-23-95
D.T.B.	MTB	APPROVED BY	MMS	CADFILE	C:\DTEV\20716\F\3DWG.DWG
FOX VALLEY & WESTERN LTD. KEWAUNEE MARSH ARSENIC IMPACT SITE KEWAUNEE, WISCONSIN WATER QUALITY					
 STS Consultants Ltd. Consulting Engineers					
STS PROJECT NUMBER					
20716XF					
STS PROJECT FILE					
SCALE					
1" = 60'					
SHEET NUMBER					
20716XF-3					

(COLLECTED AT HWY "42" BRIDGE IN THE CITY OF KEWAUNEE)

02-31-000008 5/23/95 51

