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MAY 13 1999

MPCA, Metro District
Site Remediation

May 10, 1999

8151

Ms. Stacey Hendry-Van Patten
Minnesota Pollution Control Agency
Site Remediation Section
520 Lafayette Road North
Saint Paul, MN 55155-4194

**RE: Beaudry Oil - Elk River, MN
MPCA Leak #10983**

Dear Ms. Hendry-Van Patten:

Regarding the above referenced site, you are correct in that some "typos" exist in the Remedial Investigation (RI) report. After briefly reviewing the report, I found the following:

1. Table 1 on page four of the RI report form (MPCA Fact Sheet 3.24) is correct in that the USTs were removed in 1997. In the text, the report writer mistakenly used 11/24/98 as the removal date; it should read 11/24/97.
2. On page two of the Excavation Report form (MPCA Fact Sheet 3.7), which is located in Appendix A of the RI report, Table 1 should read USTs removed, upgraded, and out of service on 11/24/97, not 11/24/98.

* Regarding the vapor survey notes and the adjacent house site (321 Lowell), I attached the field notes for the work that was done last year. The home is about 50 feet away from the source and about five feet above grade (UST site grade as the basis). There was no answer at the time of the initial vapor survey.

* I personally stopped at 321 Lowell Avenue in Elk River, MN on Friday, May 7, 1999 in order to perform a vapor survey of the basement. Readings using a photo ionization detector (PID) and explosimeter were non-detect and 0% LEL, respectively, at floor drains and along the walls of the basement. I also took a photograph of the house site to add to the Leak #10983 file. The site appears to have at one time been a residence, but has been converted to office work space; the company inhabiting the house is called Cretex Companies, Inc. The contact name/telephone number is Peg at 612-241-8224; the main office of Cretex is located in the building to the south of the house, and that telephone number is 612-441-2121

Ms. Stacey Hendry-Van Patten
Minnesota Pollution Control Agency
May 10, 1999
Page 2

I hope this clarifies some of the aspects of the Remedial Investigation report for the Beaudry Oil site in Elk River. If you have any questions or other concerns, please contact me at (651) 257-5545 or e-mail at Agassiz@isd.net. Thank you.

Respectfully,



James M. Blumke, E.I.T.
Environmental Engineer
Project Manager

AGASSIZ ENVIRONMENTAL SYSTEMS, INC.

encl.
cc: Mr. Leon Beaudry, Beaudry Oil - Elk River, MN



PREVIOUS FIELD NOTES

PETROLEUM VAPOR RISK ASSESSMENT AND SURVEY

8151

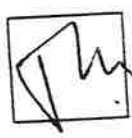
JOB NAME & NUMBER: Beardy Oil Elk Run

DATE: _____



CONTACT THE CITY UTILITY DEPARTMENT AND/OR MANAGEMENT TO OBTAIN INFORMATION ON SEWER & UTILITIES:

- LOCATION OF ALL UNDERGROUND UTILITIES
- "AS BUILT" MAPS OF STREET AND UTILITIES
- DIRECTION OF SEWER FLOW
- OBTAIN ASSISTANCE, IF DEEMED NECESSARY WITH OPENING MANHOLES, TRAFFIC CONTROL, ETC.
- NAMES, TITLES, PHONE NUMBERS OF ALL PERTAINENT CITY PERSONNEL

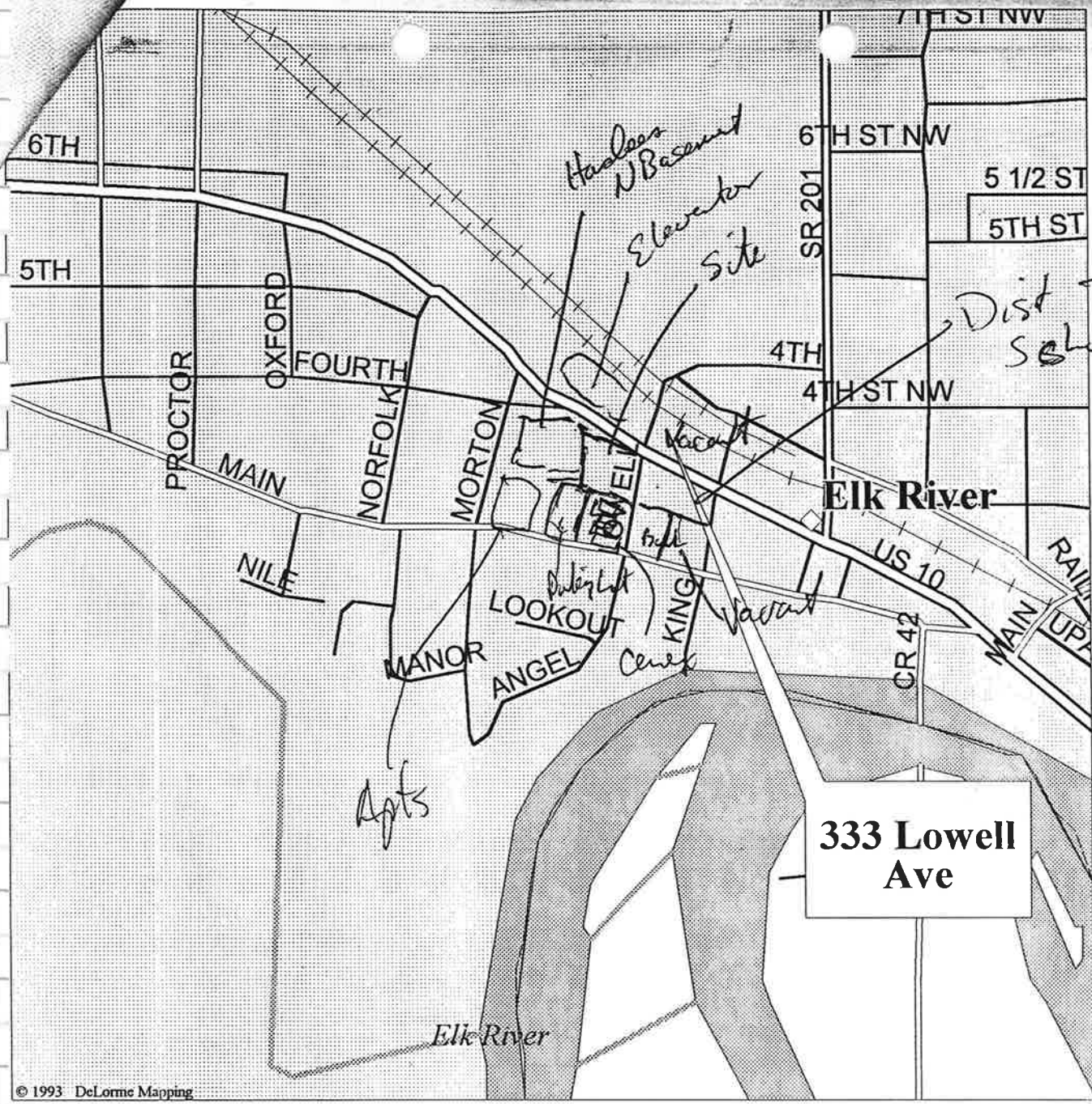


CONDUCT VAPOR SURVEY

- MAP ALL UNDERGROUND UTILITIES; SITE LAYOUT, BUILDINGS, PROPERTY ADJACENT PROPERTIES, DIRECTION OF FLOW, VAPOR READINGS AND OBSERVATIONS
- USING BOTH EXPLOSIMETER AND PID TAKE VAPOR READINGS; START FROM THE SITE AND WORK UPSTREAM & DOWNSTREAM. CHECK ALL THE INCOMING BRANCHES AND LIFT STATIONS
- MAP ADJACENT PROPERTIES AND NOTE PRESENCE OR ABSENCE OF BASEMENTS AND SUBSURFACE STRUCTURES; INCLUDE NAME, ADDRESS & PHONE NUMBER
- INTERVIEW THE BUILDING OWNER AND/OR OCCUPANT TO DETERMINE THE FREQUENCY AND OCCURRENCE OF PETROLEUM ODORS. DOCUMENT INTERVIEW, NAME, ADDRESS & PHONE NUMBERS
- CONDUCT VAPOR SURVEY, USING BOTH EXPLOSIMETER AND PID, OF ALL BASEMENTS; MEASURE AMBIENT AIR, BASEMENT SEWER DRAINS AND NEAR ANY CRACKS IN FOUNDATION

EMPLOYEE SIGNATURE: Steve Miller

#8151
BEAVER



© 1993 DeLorme Mapping

- LEGEND
- Population Center
 - Town, Small City
 - County Boundary
 - Street, Road
 - Major Street/Road
 - State Route
 - US Highway
 - Railroad
 - River
 - Land Mass
 - Open Water

Scale 1:7,813 (at center)

500 Feet

200 Meters

PROJECT #8151
Mag 15.00
Wed Jul 29 09:42:50 1998

South of Site
321 Lowell
No answer 5' above grade

Conex on Corner

(N) (N) (N) (N)



Tanks and Emergency Response Section
Minnesota Pollution Control Agency

Remedial Investigation Report Form

Fact Sheet #3.24

April 1996

=

This form must be completed for all sites in which a remedial investigation (RI) is conducted--this includes either a *Limited Site Investigation (LSI)* or a *full RI*. Completing this form will provide the MPCA with the minimum amount of information necessary for a *full RI*. Additional information should be included if deemed important for making a site cleanup decision. If the consultant has concluded that a *Limited Site Investigation* is applicable to this site, Section 6 and Section 7 may be deleted from this report.

Refer to MPCA fact sheet #3.19 "Leaking Underground Storage Tank Investigation and Cleanup Policy" for guidance for the overall objectives of an RI and other MPCA fact sheets regarding investigations.

When a tank has been excavated, refer to fact sheets #3.6 "Excavation of Petroleum Contaminated Soil" and #3.7 "Excavation Report Worksheet for Petroleum Release Sites" for reporting requirements.

If free product is discovered the initial reporting should be done in accordance with fact sheet #3.3 "Free Product: Evaluation and Recovery" and factsheet #3.4 "Free Product Recovery Report Worksheet."

=

Leak Number: LEAK0000 10983

Date: October 30, 1998

Responsible Party: Beaudry Oil / Leon Beaudry

R.P. phone #: (612) 441-2383

Facility Name: Beaudry Express #3

Facility Address: 335 Lowell Avenue

City: Elk River

County: Sherburne

Zip Code: 55330

Location of site: LAT: N45⁰ 18' 16" LONG: W93⁰ 34' 14" Circle one: UTM/State

TABLE OF CONTENTS

SECTION 1: Emergency and High Priority Sites

SECTION 2: Site and Release Information

SECTION 3: Excavated Soil Information

SECTION 4: Extent and Magnitude of Soil Contamination

SECTION 5: Aquifer Characteristics/Ground Water Contamination Assessment

SECTION 6: Extent and Magnitude of Groundwater Contamination

SECTION 7: Evaluation of Natural Biodegradation

SECTION 8: Well Receptor Information/Assessment

SECTION 9: Surface Water Risk Assessment

SECTION 10: Vapor Risk Assessment/Survey

SECTION 11: Discussion Section

SECTION 12: Conclusions and Recommendations

SECTION 13: Required Figures

SECTION 14: Appendices

SECTION 15: Consultant (or other) information

Section 1: Emergency and High Priority Sites

1. Is an existing drinking water well impacted? YES NO
2. Are there existing vapor impacts? YES NO
3. Is there an existing surface water impact as indicated by 1) a product sheen on the surface water or 2) a product sheen or volatile organic compounds in the part per million range in ground water in a well located close to the surface water. YES NO
4. Has the release occurred in the last 30 days? YES NO
5. Has free product been detected at the site? YES NO
6. Is sand or gravel aquifer impacted which is tapped by water wells within or potentially within 500 feet from the edge of the plume or does impacted soil overlie a karsted limestone or fractured bedrock? If yes, explain: YES NO

If you answered *YES* to any of questions 1 through 6 above describe below the actions taken to date to reduce or eliminate the risk posed by the release.

Section 2: Site and Release Information

2.1 Describe the land use and pertinent geographic features within 1000 feet of the site. The site is on the south side of US Highway 10 within the city limits of Elk River. To the north of the site, across Highway 10 is a agricultural elevator and ware house, rail road tracks and commercial properties beyond. To the east and southeast is downtown Elk River with commercial/retail properties. To the south and west are some businesses and residential properties.

Table 1.

Provide the following for all tanks that have been at the site:

Tank #	UST or AST	Capacity	Contents	Age	Status*	Condition
001	UST	12,000	Gasoline	Unknown	Removed 11/24/97	Fair
002	UST	6,000	Premium Gasoline	Unknown	Removed 11/24/97	Fair
003	UST	4,000	Diesel	Unknown	Out of Service 11/97	Fair
004	UST	1,000	Racing Gasoline	Unknown	Upgraded 11/97-active	Good
005	UST	1,000	Kerosene	Unknown	Upgraded 11/97-active	Good
006	UST	12,000	Gasoline	Installed 1/98	Active	New Tank Fiberglass
007	UST	6,000	Premium Gasoline	Installed 1/98	Active	New Tank Fiberglass
008	UST	4,000	Diesel	Installed 1/98	Active	New Tank Fiberglass

*Indicate: removed (date), abandoned in place (date), or currently used

Notes:

2.2 Describe the status of the other components of the tank system(s), (i.e., piping and dispensers) for those tanks listed above. **Piping and dispensers were replaced.**

2.3 Identify and describe the source or suspected source(s) of the release.
Unknown

2.4 What was the volume of the release? (if known): **Unknown** gallons

2.5 When did the release occur? (if known): **Unknown**

Section 3: Excavated Soil Information

3.1 Was soil excavated for off-site treatment?

YES
NO

If **YES** then complete the fact sheet #3.7 "Excavation Report Worksheet for Petroleum Release Sites" and include it as an appendix.

Date excavated:

11/24/98

Volume removed:

400 cubic yards

3.2 Indicate soil treatment type:

- land treatment
 thermal treatment
 composting/biopiling
 other (_____)

Name and location of treatment facility:

C.S. McCrossan
Maple Grove, Minnesota

Section 4: Extent and Magnitude of Soil Contamination

- 4.1 Were soil borings conducted in or immediately adjacent to all likely source areas (e.g., UST basins, AST areas, piping, dispensers, remote fill pipes, known spill areas)? YES
NO
- 4.2 To adequately define the vertical extent of contamination soil borings should be completed at least five feet below the water table or ten feet below the deepest measurable (field screening and visual observation) contamination, whichever is deeper. Were all soil borings completed to the required depth? YES
NO
- 4.3 To adequately evaluate site stratigraphy at least one boring should be completed 20 feet below the water table, unless a confining layer is present. Was this done? YES
NO

If you answered *NO* to any of the three previous questions, explain why the borings were not conducted in the required locations or to the required depths (see fact sheet #3.19 "Soil and Ground Water Investigations Performed During Remedial Investigations" regarding exceptions and MPCA approval for depth of drilling):

In Geoprobe boring GP-2, a tight silt unit was encountered between 30 and 40 feet below grade. Drilling ceased at 40 feet bg so that a potentially confining layer would not be completely penetrated.

4.4 Indicate the drilling method:

- hollow-stem auger
 sonic drilling
 push probes
 other (_____)

Note: contact MPCA staff hydro before use of flight augers)

Table 4.

Indicate other notable contaminants (either petroleum or non-petroleum derived) detected in soil samples. Indicate contaminant and list in reported units mg/kg. NA

Well/Boring, Depth (ft)	Date Analyzed						

Notes:

4.5 If any non-petroleum compounds were detected list them below and identify possible sources of these compounds.

4.6 Describe the vertical and horizontal extent and magnitude of soil contamination. **Based on the results of the Limited Site Investigation, it appears that petroleum impacts have not migrated out of the basin area. Analytical results from the UST Removal Assessment suggest that some residual petroleum may remain beneath the basin, however it does not appear to be in contact with groundwater. The majority of the impacted soil was removed from the site at the time of the tank removal.**

Section 5: Aquifer Characteristics/Ground Water Contamination Assessment

5.1 Indicate the hydraulic conductivity and the method used to determine it. Attach all supporting information for the determination in the Methodologies appendix:

10⁻⁴ cm/sec estimate from reference
 slug test
 permeability test
 Hazen approximation from grain-size distribution

5.2 Indicate the thickness of the aquifer. If the investigation does not provide enough information to determine the aquifer thickness, assume the aquifer is greater than 20 feet thick:

less than 10 feet
 between 10 and 20 feet
 20 feet or greater

Table 2.

Complete the following table indicating jar headspace results (in ppm) for soil samples from soil borings.

ASTM soil classification	Depth (ft)	Soil Boring								
		1	2	3	4	5	6	7	8	9
	4	0	0	0	0	0				
	8	8*	0	0	0	0				
	12	0*	0	0	0	0				
	15					0				
	16	3*	0	0	0					
	20	0	0	0	0	0				
	24	0	0	0	0	0				
	28		0		0					
	30		0							
	32		0							
	34-36		0							
	38-40		0							

Notes: (type of PID/FID) A Thermo Environmental 580-B PID with a 10.2 eV lamp was used to screen soils. *A tanker was filling USTs at the time these samples were screened.

Table 3.

Indicate the laboratory analytical results for soil samples in mg/kg.

Well/Boring, Depth(ft)	Date Analyzed	Benzene	Toluene	Ethylbenzene	Xylene	GRO	DRO
GP-1 (24')	8/10/98	0.060	0.314	<0.050	0.155	<10.0	<10.0
GP-2 (28')	8/10/98	<0.050	0.233	<0.050	<0.150	<10.0	<10.0
GP-3 (24')	8/10/98	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0
GP-4 (24')	8/10/98	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0
GP-5 (28')	8/10/98	<0.050	0.077	<0.050	<0.150	<10.0	<10.0

Notes: (use less than symbols to show detection limits)

5.3 Describe in detail the geology underlying the site including confining layers, bedrock formations and the lateral extent of these formations: **The site is within the Anoka Sand Plain region. The City of Elk River sits along the banks of the Mississippi River and the site is covered by terraced sand and gravel deposits from the river. These deposits are estimated to be 200 feet deep. These deposits are underlain by undivided sedimentary rocks including the Jordan Sandstone and St. Lawrence Formation. Drilling at the site indicated sand deposits to 30 feet below grade underlain by tight silt to 40 feet below grade.**

The impacted aquifer or the aquifer that is likely to be impacted at the site is considered a resource aquifer if one of the following situations exist:

- The aquifer is a current water supply source.
- The water bearing unit has a hydraulic conductivity greater than 1×10^{-2} cm/sec and a minimum thickness of 10 feet.
- The water bearing unit has a hydraulic conductivity between 1×10^{-4} cm/sec and 1×10^{-2} cm/sec and a minimum thickness of 20 feet.
- The water bearing unit has a hydraulic conductivity less than 1×10^{-4} cm/sec and no other viable source of water supply is available. (*Bedrock may be considered a resource aquifer if it is the only water supply available.*)

5.4 Based on the aquifer characteristics and water supply availability, is the aquifer at the site a resource aquifer? YES
NO

5.5 If other water supplies are available, explain.

Deeper Quaternary and bedrock aquifers are available.

5.6 Are there any other reasons the impacted aquifer should not be considered a resource aquifer? **The near surface aquifer due to its depth is not a resource aquifer.**

Table 5.

Indicate the water level measured in all of the soil borings.

	Soil Boring									
	1	2	3	4	5	6	7	8	9	10
Water level depth, ft	NE	28	NE	27	28					

Notes: NE - Not Encountered

5.7 Is contaminated soil in contact with ground water? YES NO

If YES or if ground water contamination appears likely then complete tables 6 and 7 below.

Table 6.

Indicate the laboratory analytical results for water samples collected from the borings, temporary wells or push probes.

Well/Boring Number	Date Analyzed	Benzene	Toluene	Ethylbenzene	Xylene	GRO	DRO
GP-2	8/10/98	<1.0	3.6	<1.0	<3.0	<0.1	<0.1
GP-4	8/10/98	<1.0	<1.0	<1.0	<3.0	<0.1	0.80
GP-5	8/10/98	<1.0	<1.0	<1.0	<3.0	<0.1	<0.1

Notes: BTEX compounds reported as ug/L. GRO and DRO reported as mg/L.

Table 7.

Indicate other notable contaminants (either petroleum or non-petroleum derived) detected in water samples collected from the borings, temporary wells or push probes. Indicate contaminant and report in units of ug/l (ppb). NA

Well/Boring Number	Date Analyzed						

Notes:

5.8 If any non-petroleum compounds were detected list them below and indicate whether they exceed the HRLs. Also, identify possible sources of these compounds.

5.9 If contaminated soil is not in contact with ground water, what is the distance separating the deepest contamination from the surface of the water table? Was this distance measured during site activities, referenced from geologic information, or estimated based on professional opinion during a site visit?

<10 feet

Based on the results of the UST removal assessment conducted by Mateffy Engineering, it appears that impacts beneath the UST basin extend to approximately 18 to 20 feet below grade. The results of the Limited Site Assessment indicated that groundwater was approximately 28 feet below grade.

5.10 Describe observations of any evidence of a fluctuating water table and a seasonal high water table (e.g., mottling). Also, from other sources of information describe the range of natural water table fluctuations in the area.

Soil mottling was observed between approximately 18 to 22 feet below grade. At the time of the investigation, the water table was observed at approximately 28 feet below grade.

5.11 In your judgment, is there a sufficient distance separating the petroleum contaminated soil (or an impacted non-resource aquifer) from the underlying resource aquifer to prevent petroleum contamination of the resource aquifer? Please explain in detail. In your explanation consider the data and information of this section as well as the nature of the petroleum release (i.e., volume, when it occurred, petroleum product).

YES
NO

The receptor well survey indicated that the resource aquifer used in this area is over 100 feet deep. The investigation found very minimal impacts at the water table, and the site is underlain by a very tight, hard silt unit. Based on this information it appears that the separation between impacts and the resource aquifer should be sufficient to prevent contamination of the resource aquifer.

Section 11: Discussion

11.1 Discuss the risks associated with the remaining soil contamination?

Approximately 400 cubic yards of soil were removed from the site. Some remaining impacts are in the soil above the water table. The risk of vapor migration and the risk to a resource aquifer are very low.

11.2 Discuss the risks associated with the impacted ground water?

Groundwater at the site was minimally impacted at concentrations below HRLs. This is not a resource aquifer, and it is very unlikely that a resource aquifer will be impacted. Based on this information, the risks to human health or the environment associated with the impacted groundwater are very low.

11.3 Discuss other concerns not mentioned above:

Section 12: Conclusions and Recommendations

Recommendation for site:

- site closure
- additional vapor monitoring
- additional ground water monitoring
- active cleanup

The recommendation above should be based on fact sheet #3.1 "Leaking Underground Storage Tank Investigation and Cleanup Policy." Describe below how you applied the policy to support your recommendation.

The UST Removal Assessment indicated that the majority of impacted soil was removed from the site and that some impacted soil did remain in the basin area above the water table. Soil borings showed that soil impacts do not exist outside of the basin and that groundwater is only minimally impacted at concentrations below the HRLs in a non-resource aquifer. Vapor migration does not appear to be occurring. Based on these results, this site appears to be a very low risk to human health or the environment.

If additional monitoring is recommended, indicate the proposed monitoring schedule and frequency:

If active cleanup is proposed then MPCA staff will review this remedial investigation report at a higher than normal priority to determine if active cleanup is required. We will respond with either a request for proposal for additional monitoring or a corrective action design report. Please indicate below what cleanup technology you are considering at this time.

Section 13: Required Figures

Indicate attached figures:

- Figure 1, 1a:* Site location map (*approximate scale is not acceptable*) and a large scale site map show all potential receptors within 300 feet of the site. The large scale site map should show those properties with basements and wells.
- Figure 2, 2a, 2b, etc.:* One or more site map showing: structures; all past and present petroleum storage tanks, piping, and dispensers; extent of soil excavation; boring and well locations (including any drinking water wells on site); horizontal extent of soil contamination; horizontal extent of ground water contamination; and location of end points for all geologic cross sections.
- Figure 3, 3a:* Ground water gradient contour maps (for sites with monitoring wells).
- Figure 4* Well receptor survey map showing 1/2 mile radius, 500 foot radius, water supply wells, other potential sources of contamination.
- Figure 5:* Vapor survey map showing utilities and buildings with basements and monitoring locations (if a survey was required).
- Figure 6:* Geologic cross sections.

Section 14: Appendices

Indicate attached appendices.

- Appendix A* Excavation Report Worksheet for Petroleum Release Sites.
- Appendix B* Laboratory analytical reports for soil and ground water.
- Appendix C* Methodologies and procedures, including field screening of soil, other field analyses, soil boring, soil sampling, well installation, and water sampling.
- Appendix D* Geologic logs for each well or boring using attached template.
- Appendix E* Well construction diagrams and copies of the Minnesota Department of Health Well Record using attached template.
- Appendix F* Copies of water supply well logs with legible unique numbers.
- Appendix G* A list of addresses within 500 feet from the edge of the plume and confirmation of status of water supply from the city utility billing department.

Section 15: Consultant (or other) information

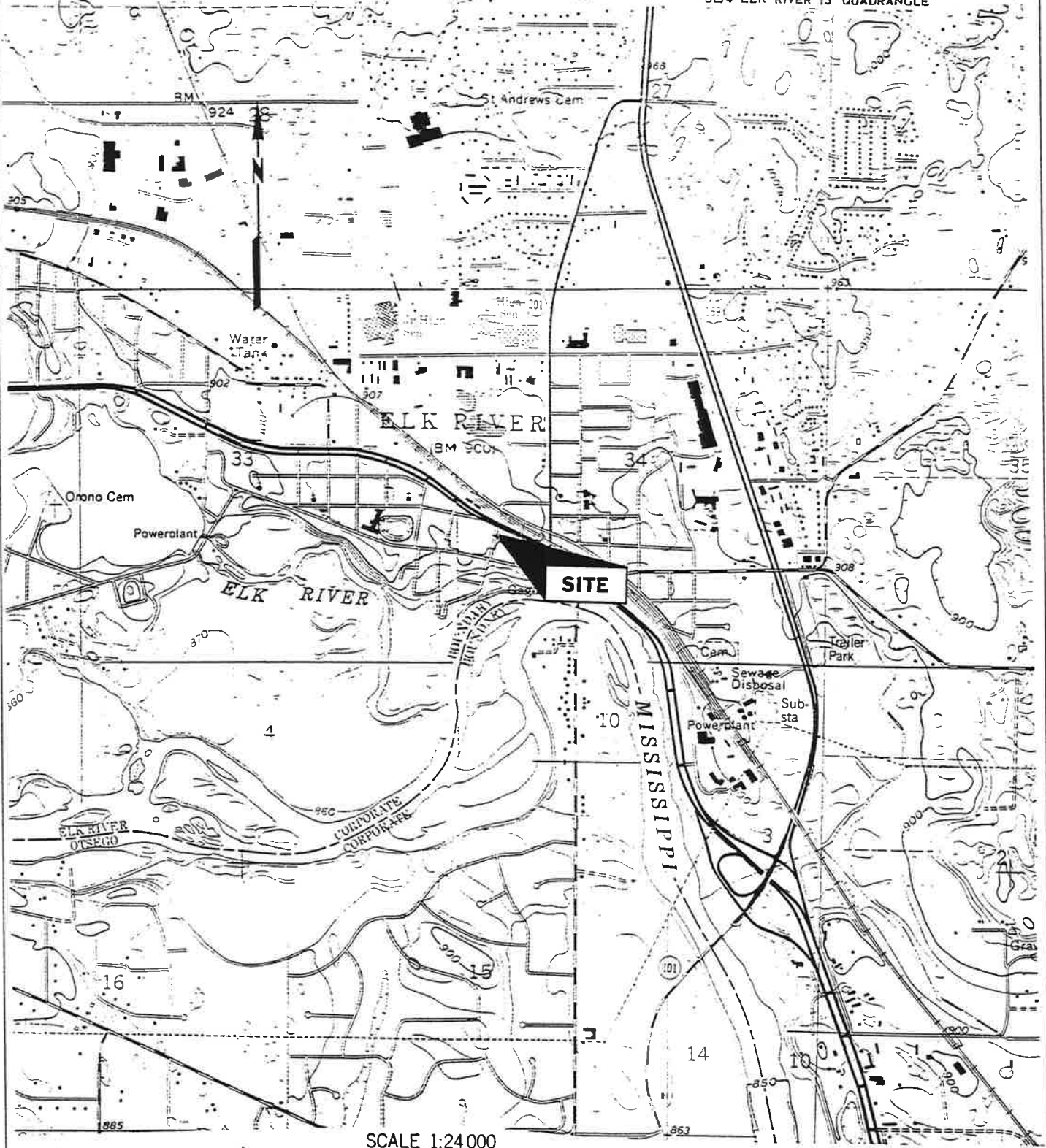
By signing this document, I/we acknowledge that we are submitting this document on behalf of and as agents of the responsible person or volunteer for this leaksite. I/we acknowledge that if information in this document is inaccurate or incomplete, it will delay the completion of remediation and may harm the environment and may result in reduction of reimbursement awards. In addition, I/we acknowledge on behalf of the responsible person or volunteer for this leaksite that if this document is determined to contain a false material statement, representation, or certification, or if it omits material information, the responsible person or volunteer may be found to be in violation of Minn. Stat. § 115.075 (1994) or Minn. Rules 7000.0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties.

Name and Title:	Signature:	Date signed:
<u>Terrace Muller, Project Manager</u>		<u>10/30/98</u>
_____	_____	____/____/____
_____	_____	____/____/____
_____	_____	____/____/____

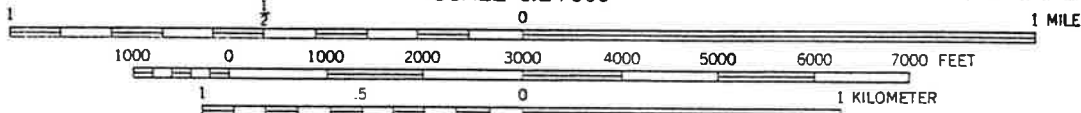
Company and mailing address: Agassiz Environmental Systems, Inc.
29385 Isabel Street
P.O. Box 412
Chisago City, MN 55013

Phone: (651) 257-5545
 Fax: (651) 257-1661

Upon request, this document can be made available in other formats, including Braille, large print and audio tape. TTY users call 612/282-5332 or Greater Minnesota 1-800-657-3864.



SCALE 1:24 000



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

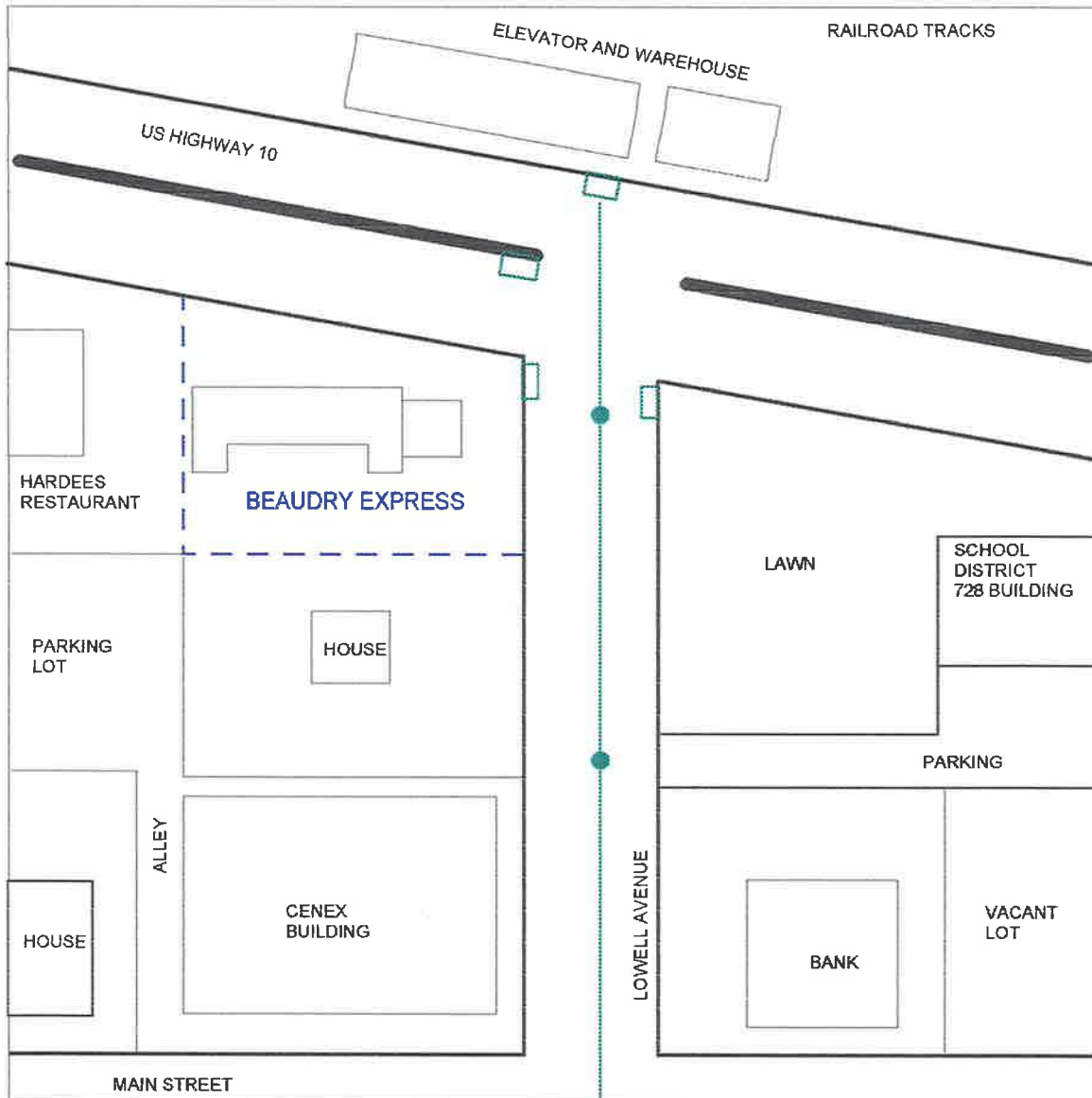


BEAUDRY OIL - ELK RIVER
LEAK #10983
PROJECT #8151

FIGURE 1 - SITE LOCATION MAP

DRAWN BY: TMM DATE: 10/1/98

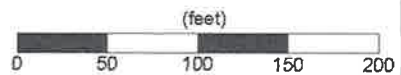
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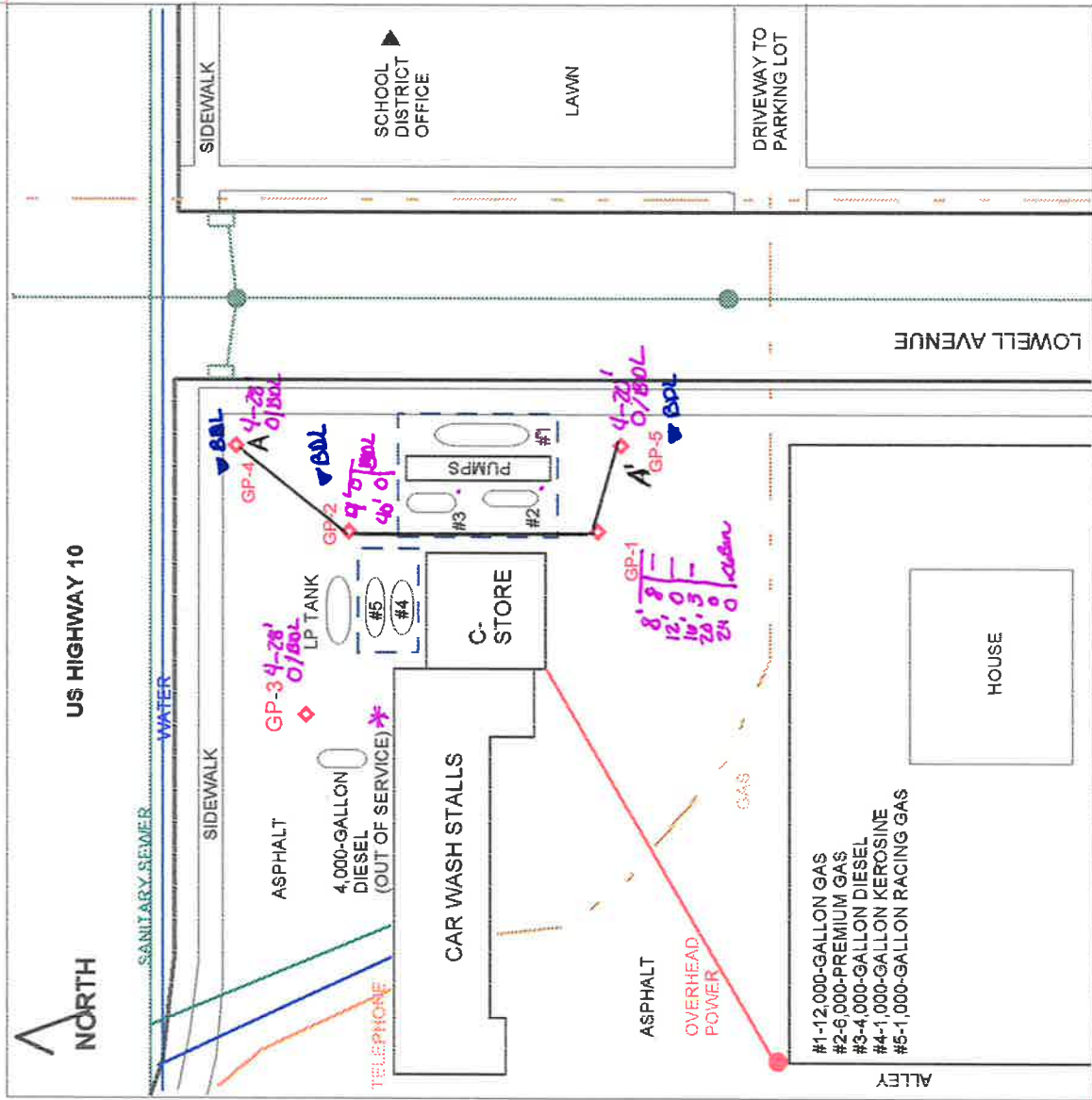
BEAUDRY OIL - ELK RIVER
 LEAK #10983
 PROJECT #8151

FIGURE 1a - LARGE SCALE SITE MAP

DRAWN BY: TMM
 DATE: 10/22/98



AGASSIZ ENVIRONMENTAL SYSTEMS, INC.



BEAUDRY OIL - ELK RIVER | **FIGURE 2 - SITE MAP**

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DATE: 10/1/98

LEAK #10983
PROJECT #8151

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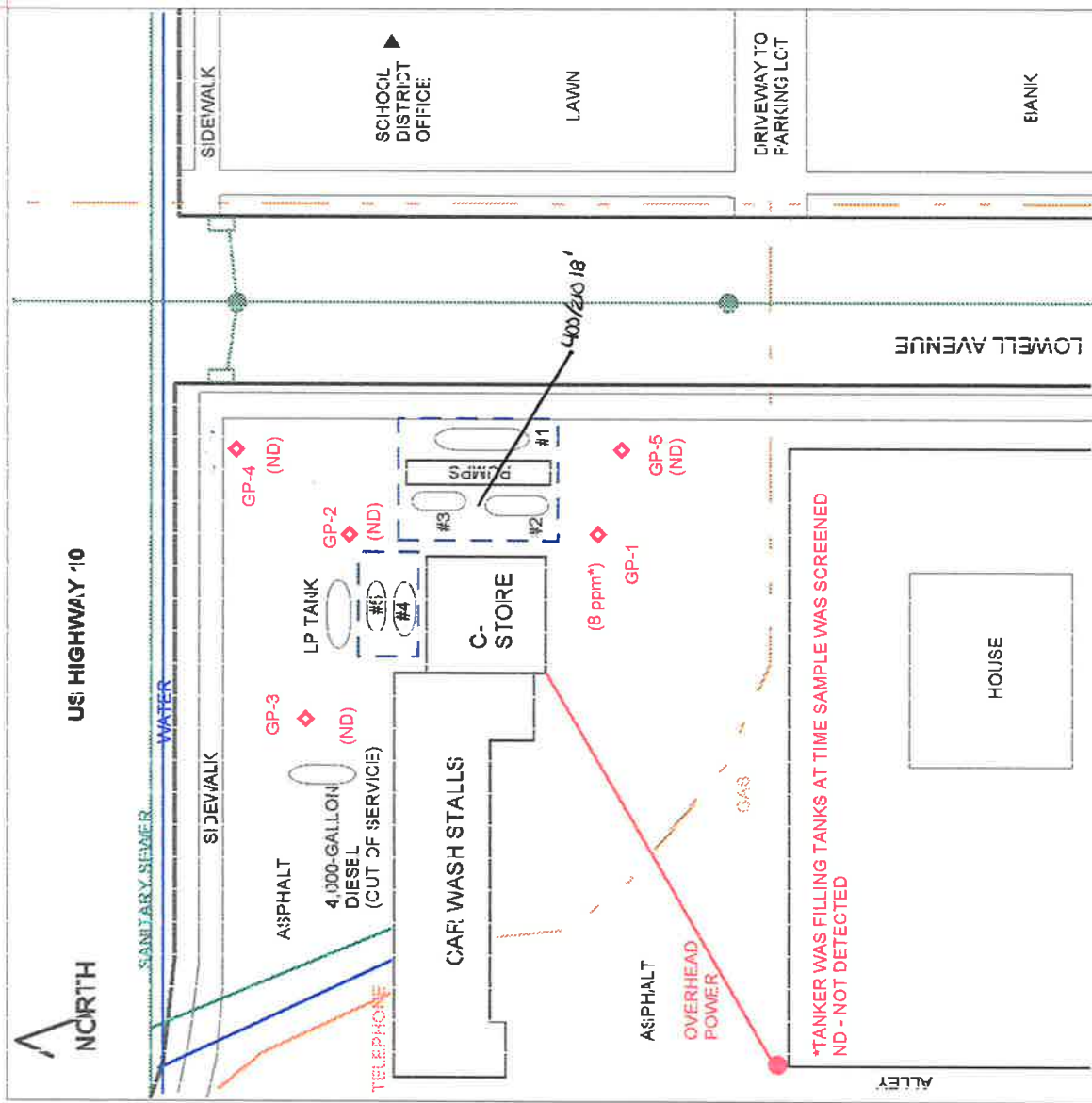


FIGURE 2a - MAXIMUM SOIL VAPOR MAP

DRAWN BY: TMM

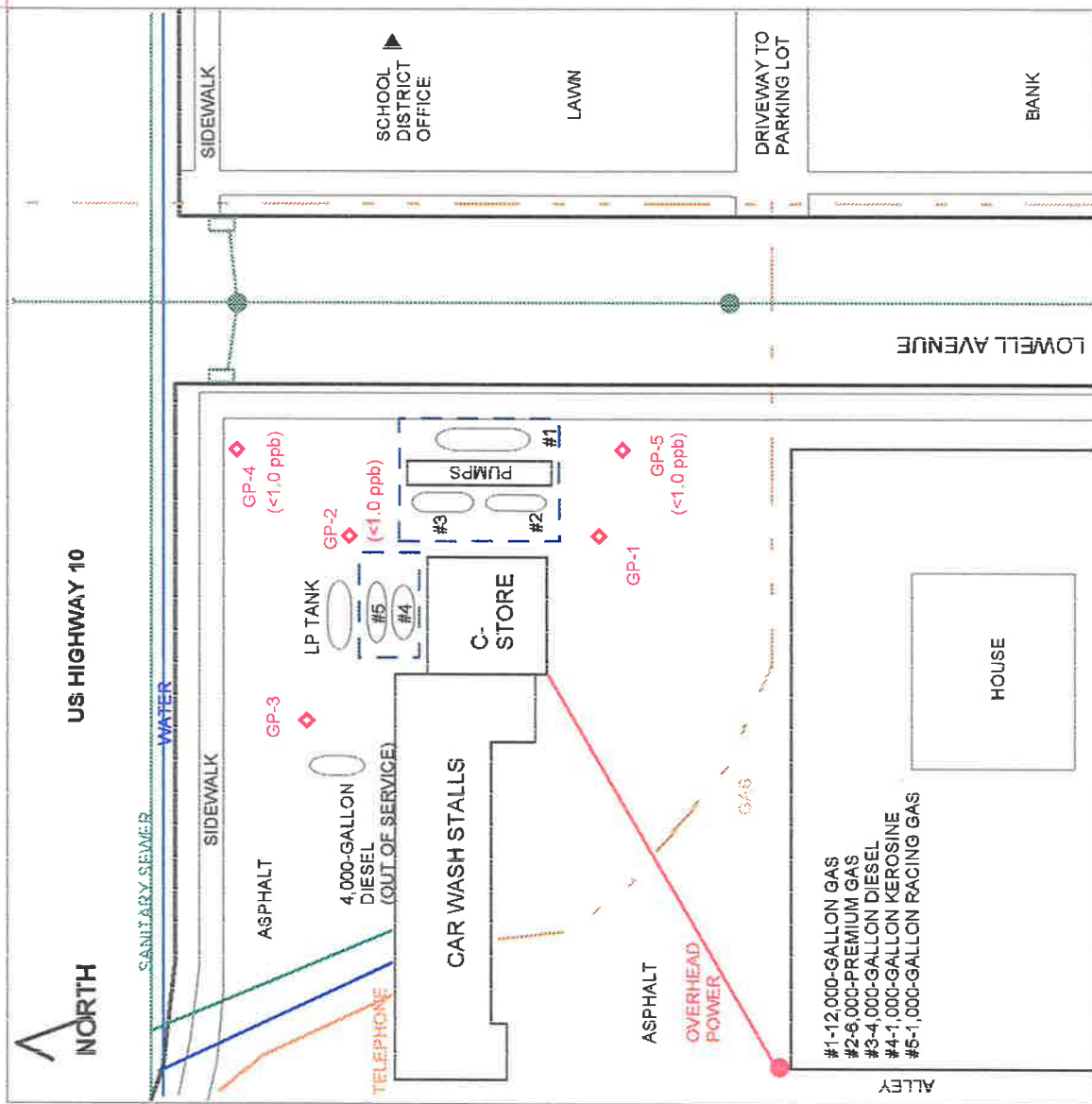
DATE: 10/22/98

BEAUDRY OIL - ELK RIVER

LEAK #10983

PROJECT #8151

AGASSIZ ENVIRONMENTAL SYSTEMS, INC.



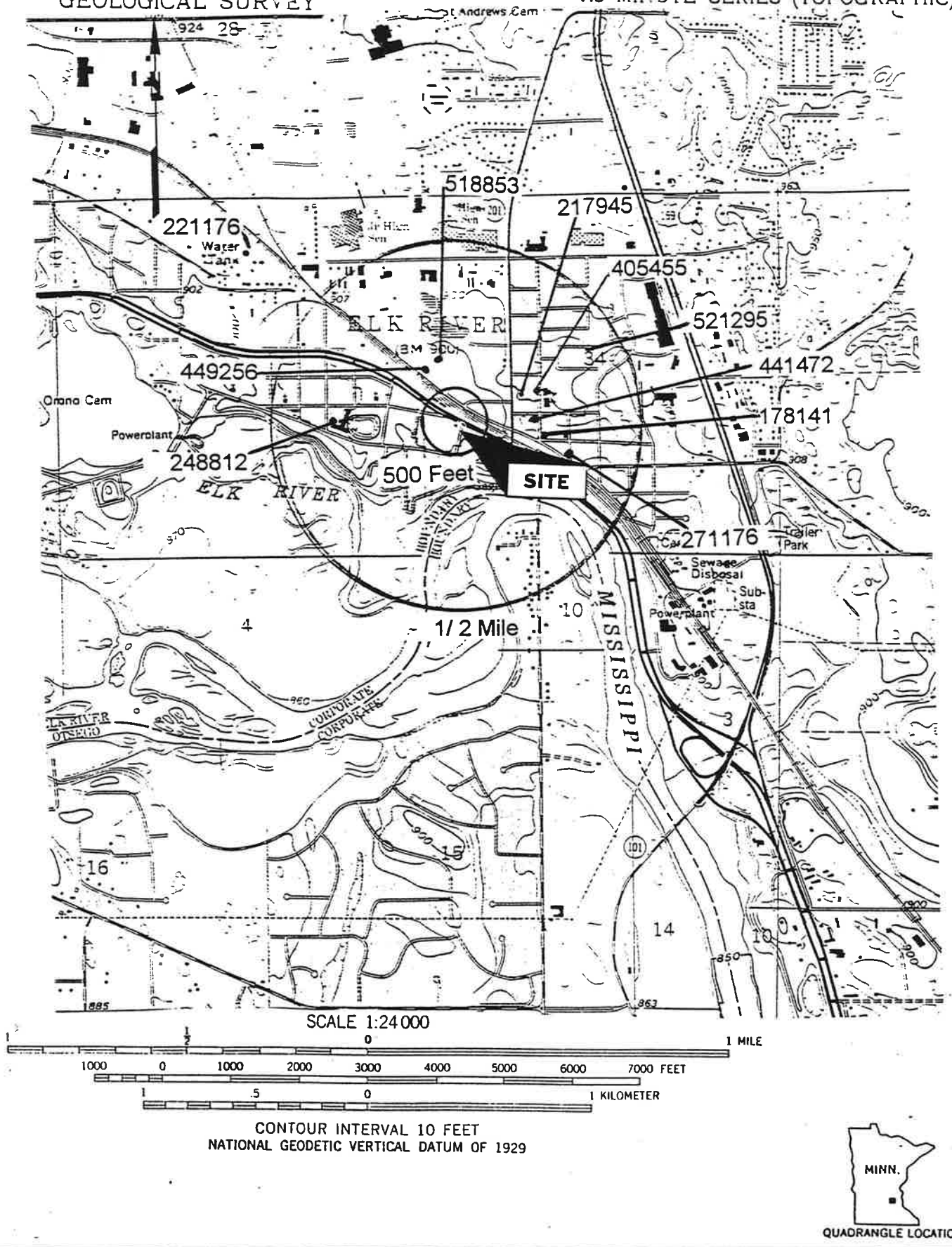
BEAUDRY OIL - ELK RIVER LEAK #10983

FIGURE 2b - GROUNDWATER BENZENE MAP

DRAWN BY: TMM

DATE: 10/22/98

PROJECT #8151

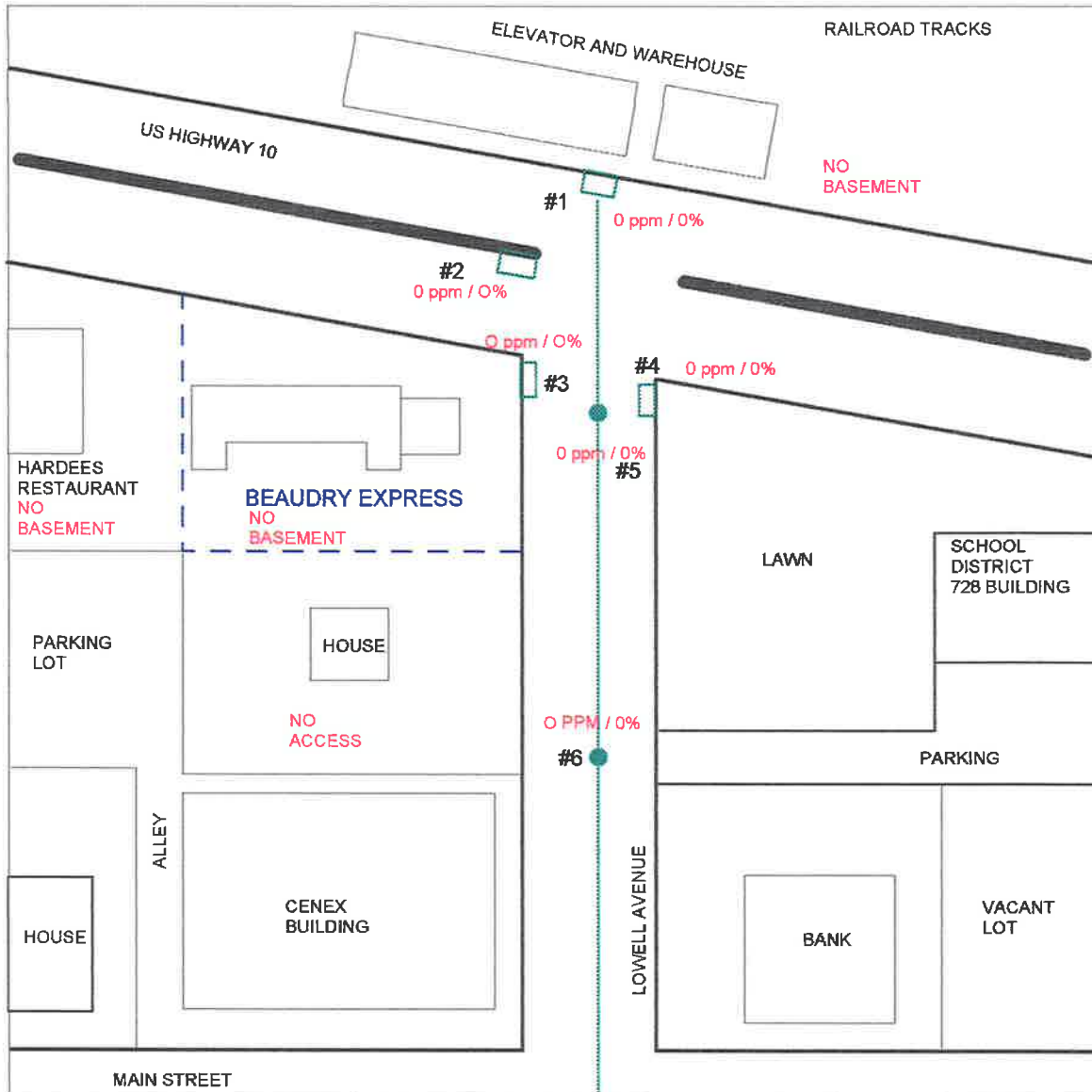


BEAUDRY OIL - ELK RIVER
LEAK #10983
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FIGURE 4 - RECEPTOR WELL SURVEY MAP

DRAWN BY: TMM DATE: 10/1/98

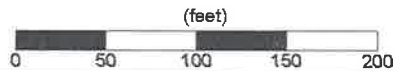
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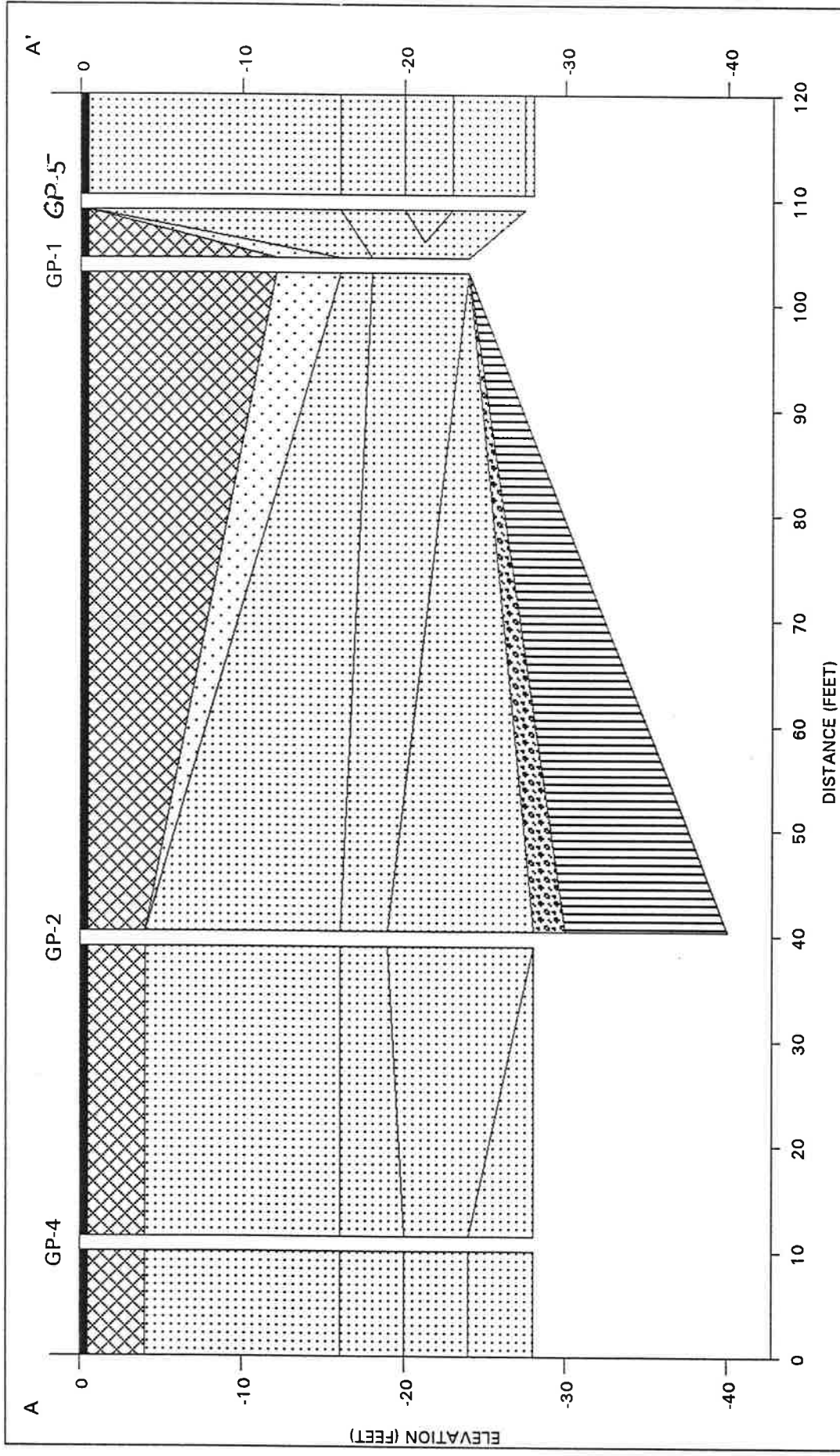


BEAUDRY OIL - ELK RIVER
 LEAK #10983
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FIGURE 5 - VAPOR SURVEY MAP

DRAWN BY: TMM
 DATE: 10/23/98





<p>Beauty Oil 333 Lowell Avenue Elk River, Minnesota Leak #10983</p>	<p>FIGURE 6</p> <p>GEOLOGIC CROSS SECTION SECTION A-A' GEOLOGIC CROSS SECTION NORTH (A) - SOUTH (A')</p>	<p>LEGEND</p> <p>Asphalt</p> <p>Fill</p> <p>Well Sorted Sand</p> <p>Poorly Sorted Sand</p> <p>Poorly Sorted Gravel</p> <p>Silt</p>
<p>Agassiz Environmental Systems 29385 Isabel Street Chisago City, Minnesota</p>		<p>10-27-1998 a:\B161sb\B161xs.cro</p>

APPENDIX A
EXCAVATION REPORT WORKSHEET



Tanks and Emergency Response Section
Minnesota Pollution Control Agency

EXCAVATION REPORT WORKSHEET FOR PETROLEUM RELEASE SITES

Fact Sheet #3.7
April 1996

Complete the information below and submit to the Minnesota Pollution Control Agency (MPCA) Tanks and Emergency Response Section to document excavation and treatment of petroleum contaminated soil. Conduct excavations in accordance with "Excavation of Petroleum Contaminated Soil" (fact sheet #3.6). Please attach any available preliminary site investigation reports to this excavation report.

Attach additional pages if necessary. Please type or print clearly.

The excavation reporting deadline is 10 months from the date of receipt of the standard letter. A shorter deadline may be established by MPCA staff for high priority sites.

PART I: BACKGROUND

A. Site: **Beaudry Express #3**

Street: **335 Lowell Avenue**
City, Zip: **Elk River, MN 55330**
County: **Sherburne**
MPCA Site ID#: **LEAK 10983**

B. Tank Owner/Operator: **Beaudry Oil**

Contact: **Leon Beaudry**
Mailing Address:
Street/Box: **630 Proctor Avenue**
City, Zip: **Elk River, MN 55330**
Telephone: **(612) 441-2383**

C. Excavating Contractor: **Westside Equip.**

Contact: **Joe Schmidt**
Telephone: **478-9572**
Tank Contractor Certification Number: **011**

D. Consultant: **Mateffy Engineering**

Contact: **Dennis McComas**
Street/Box: **663 Old Highway 8**
City, Zip: **New Brighton, MN**
Telephone: **636-6166**

E. Others on-site during site work (e.g., fire marshal, local officials, MPCA staff, etc.):

Note: If person other than tank owner and/or operator is conducting the cleanup, provide name, address, and relationship to site on a separate attached sheet.

PART II: DATESA. Date release reported to MPCA: 11/24/97

B. Dates site work performed (tanks removed, soil excavation, soil borings, etc.):

	Work Performed	Date
UST Removal		11/24/97
Geoprobe Borings		8/4/98

PART III: SITE AND RELEASE INFORMATION

A. Describe the land use and pertinent geographic features within 1000 feet of the site.
 (i.e. residential property, industrial, wetlands, etc.) **The site is on the south side of US Highway 10 within the city limits of Elk River. To the north of the site, across Highway 10 is a agricultural elevator and ware house, rail road tracks and commercial properties beyond. To the east and southeast is downtown Elk River with commercial/retail properties. To the south and west are some businesses and residential properties.**

Table 1.B. Provide the following information for all tanks at the site at the time of the release:

Tank #	UST or AST	Capacity (gallons)	Contents (product type)	Age	Status*	Condition of Tank
001	UST	12,000	Gasoline	Unknown	Removed 11/24/98	Fair
002	UST	6,000	Premium Gasoline	Unknown	Removed 11/24/98	Fair
003	UST	4,000	Diesel	Unknown	Out of Service 11/24/98	Fair
004	UST	1,000	Kerosene	Unknown	Upgraded 11/98	Good
005	UST	1,000	Racing Gas	Unknown	Upgraded 11/98	Good

*Indicate: removed (date), abandoned in place (date), or currently used

Notes:

C. Describe the status of the other components of the tank system(s), (i.e., piping and dispensers) for those tanks listed above. **Piping and pumps were replaced**

D. Identify and describe the source or suspected source(s) of the release. **Unknown**

E. What was the volume of the release? (if known): Unknown gallons

F. When did the release occur? (if known): Unknown

G. Describe source of on-site drinking water. **City of Elk River.**

PART IV: EXCAVATION INFORMATION

A. Dimensions of excavation: Length 30 feet Width 25 feet Depth 10 feet

B. Original tank backfill material (sand, gravel, etc.): Sand

C. Native soil type (clay, sand, etc.): Sand *

D. Quantity of contaminated soil removed for treatment (cubic yards): 400 cubic yards

[Note: If more than 150 cubic yards removed, please attach copy of written approval from MPCA.]

E. Were new tanks installed at the site? (yes/no) If yes, how much soil was excavated to accommodate the installation of the new tanks?

Due to sidewall collapse, approximately 400 yards of impacted soil were removed. ✂

F. Was ground water encountered or was there evidence of a seasonally high ground water table? (yes/no) At what depth? _____

G. If ground water was not encountered during the excavation, what is the expected depth of ground water? **Groundwater is approximately 28-30 feet below grade.** ✂

- H. If a soil boring was required (see fact sheet #3.6 "Excavation of Petroleum Contaminated Soil," Part VI Additional Investigation) describe the soil screening and analytical results. Attach the boring logs and laboratory results to this report. **Soil Borings were advanced as part of an Initial Site Assessment. Minimal impacts were detected during the ISA. Please refer to the Remedial Investigation Report for results.**
- I. If no soil boring was required, explain.
- J. If ground water was encountered or if a soil boring was conducted, was there evidence of ground water contamination? (**yes/no**) Describe this evidence of contamination, e.g., free product (specify thickness), product sheen, ground water in contact with petroleum contaminated soil, water analytical results, etc. **No groundwater was encountered during the UST removal, but groundwater samples collected during the ISA indicated very low concentrations of toluene (3.6 ppb), ethyl benzene (1.0 ppb) and DRO (0.80 ppm)**

[NOTE: If free product was observed, contact MPCA staff immediately as outlined in fact sheet #3.3 "Free Product: Evaluation and Recovery"].

- K. Was bedrock encountered in the excavation? (**yes/no**) At what depth?
- L. Were other unique conditions associated with this site? (**yes/no**) If so, explain.

PART V: SAMPLING INFORMATION

- A. Briefly describe the field screening methods used to distinguish contaminated from uncontaminated soil: **Agassiz is no aware of the methods used by Mateffy Engineering.**
- B. List all soil vapor headspace analysis results. Indicate all sampling locations using sample codes (with sampling depths in parentheses), e.g. R-1 (2 feet), R-2 (10 feet), etc. "R" stands for "removed." Samples collected at different depths at the same location should be labeled R-1A (2 feet), R-1B (4 feet), R-1C (6 feet), etc. If the sample was collected from the sidewall or bottom after excavation was complete, label it S-1 (for sidewall) or B-1 (for "bottom"). Be sure the sample codes correspond with the site map required in part VI, below. **Mateffy Engineering did not supply Agassiz with the soil screening data.**

Sample Code	Soil Type	Reading ppm	Sample Code	Soil Type	Reading ppm

C. Briefly describe the soil analytical sampling and handling procedures used:
Agassiz is not aware of the sample handling procedures used by Mateffy.

D. List below all soil sample analytical results from bottom and sidewall samples (i.e., soils left in place when excavation is complete). Code the samples with sampling depths in parentheses as follows: sidewall samples S-1 (8 feet), S-2 (4 feet), etc.; bottom samples B-1 (13 feet), B-2 (14 feet), etc. Be sure the sample codes correspond to the site map required in part VI. Do not include analyses from the stockpiled soils.

Sample Code	GRO/DRO	Benzene ppm	Ethyl-benzene ppm	Toluene ppm	Xylene ppm	MTBE ppm	Lead ppm
TP-1 (18')	400/210	<0.2	1.8	<0.2	9.8	<0.2	7.5
TP-2 (18')	<2/<1.0	<0.2	<0.2	<0.2	<0.3	<0.2	<5.0
No. SW	<2/<1.0	<0.2	<0.2	<0.2	<0.3	<0.2	7.2
So. SW	<2/1.7	<0.2	<0.2	<0.2	<0.3	<0.2	6.7
East SW	<2/2.9	<0.2	<0.2	<0.2	<0.3	<0.2	<5.0
West SW	<2/1.1	<0.2	<0.2	<0.2	<0.3	<0.2	<5.0
ENE SW	<2/<1.0	<0.2	<0.2	<0.2	<0.3	<0.2	5.6
WNW SW	<2/<1.0	<0.2	<0.2	<0.2	<0.3	<0.2	8.4

NOTE: ATTACH COPIES OF LABORATORY REPORTS AND CHAIN OF CUSTODY FORMS. NA-Not Analyzed

PART VI: FIGURES

Attach the following figures to this report:

1. Site location map.
2. Site map(s) drawn to scale illustrating the following:
 - a. Location (or former location) of all present and former tanks, lines, and dispensers;
 - b. Location of other structures (buildings, canopies, etc.);
 - c. Adjacent city, township, or county roadways;
 - d. Final extent and depth of excavation;
 - e. Location of soil screening samples (e.g. R-1), soil analytical samples (e.g., S-1 or B-1), (e.g. SB-1). Also, attach all boring logs.
 - f. North arrow, bar scale and map legend.
 - g. Provide location of any on-site water wells. If on-site water wells exist please provide well logs and/or construction diagrams.

PART VII: SUMMARY

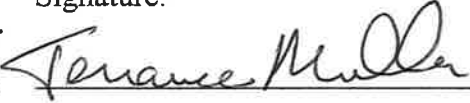
Briefly summarize evidence indicating whether additional investigation is necessary at the site, as discussed in parts VI and VII of "Excavation of Petroleum Contaminated Soil" (fact sheet #3.6). If no further action is recommended, the MPCA staff will review this report following notification of soil treatment. **Based on the results of the UST Removal Assessment, a Limited Site Assessment is necessary to fully delineate the extent of petroleum impacts.**

PART VIII: SOIL TREATMENT INFORMATION

- A. Soil treatment method used (thermal, land application, composting, other). If you choose "other" specify treatment method: thermal
- B. Location of treatment site/facility: CS McCrossan, Maple Grove MN
- C. Date MPCA approved soil treatment (if thermal treatment was used after May 1, 1991, indicate date that the MPCA permitted thermal treatment facility agreed to accept soil):
September 30 1998
- D. Identify the location of stockpiled contaminated soil:
Beaudry Oil Bulk Facility, 600 feet north of site until moved for treatment

PART IX: CONSULTANT (OR OTHER) PREPARING THIS REPORT

By signing this document, I/we acknowledge that we are submitting this document on behalf of and as agents of the responsible person or volunteer for this leaksite. I/we acknowledge that if information in this document is inaccurate or incomplete, it will delay the completion of remediation and may harm the environment and may result in reduction of reimbursement awards. In addition, I/we acknowledge on behalf of the responsible person or volunteer for this leaksite that if this document is determined to contain a false material statement, representation, or certification, or if it omits material information, the responsible person or volunteer may be found to be in violation of Minn. Stat. § 115.075 (1994) or Minn. Rules 7000.0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties.

Name and Title:	Signature:	Date signed:
Terrance Muller , Project Manager		<u>10/30/98</u>
_____	_____	____/____/____
_____	_____	____/____/____
_____	_____	____/____/____

Company and mailing address: **Agassiz Environmental Systems, Inc.**

29385 Isabel Street

P.O. Box 412

Chisago City, MN 55013

Phone: **(651) 257-5545**

Fax: **(651) 257-1661**

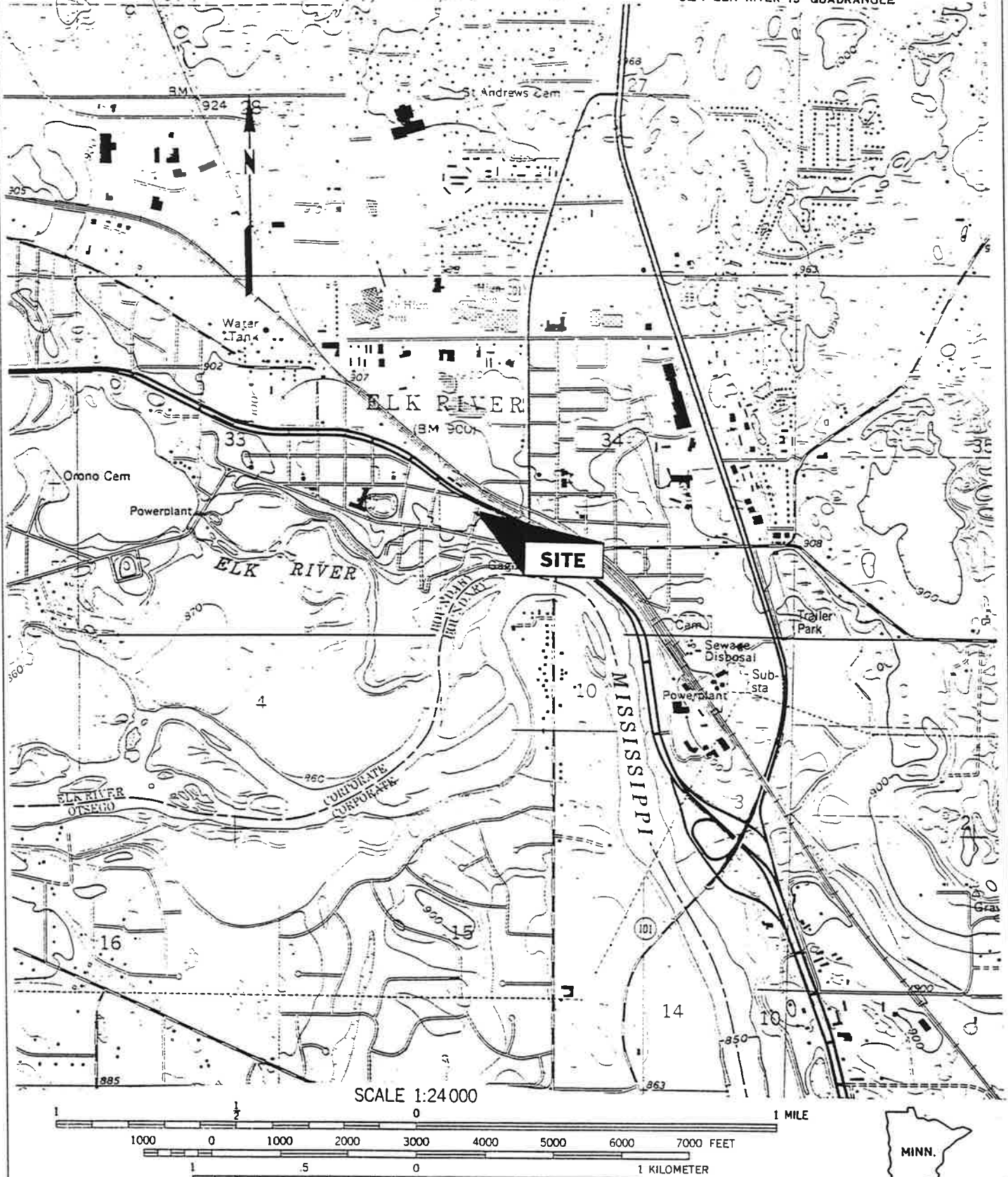
If additional investigation is not required at the site, please mail this form and all necessary attachments to:

(Project Manager)
Minnesota Pollution Control Agency
Hazardous Waste Division
Tanks and Emergency Response Section
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

If additional investigation is required at the site, include this form as an appendix to the "Remedial Investigation Report Form." **Excavation reports indicating a limited site investigation (LSI) is necessary will not be reviewed by MPCA staff until the LSI has been completed.**

Upon request, this document can be made available in other formats, including Braille, large print and audio tape. TTY users call 612/282-5332 or 1-800-657-3864 (voice/TTY).

Printed on recycled paper containing at least 10 percent fibers from paper recycled by consumers.



BEAUDRY OIL - ELK RIVER
LEAK #10983
PROJECT #8151

FIGURE 1 - SITE LOCATION MAP

DRAWN BY: TMM DATE: 10/1/98

AGASSIZ ENVIRONMENTAL SYSTEMS, INC.

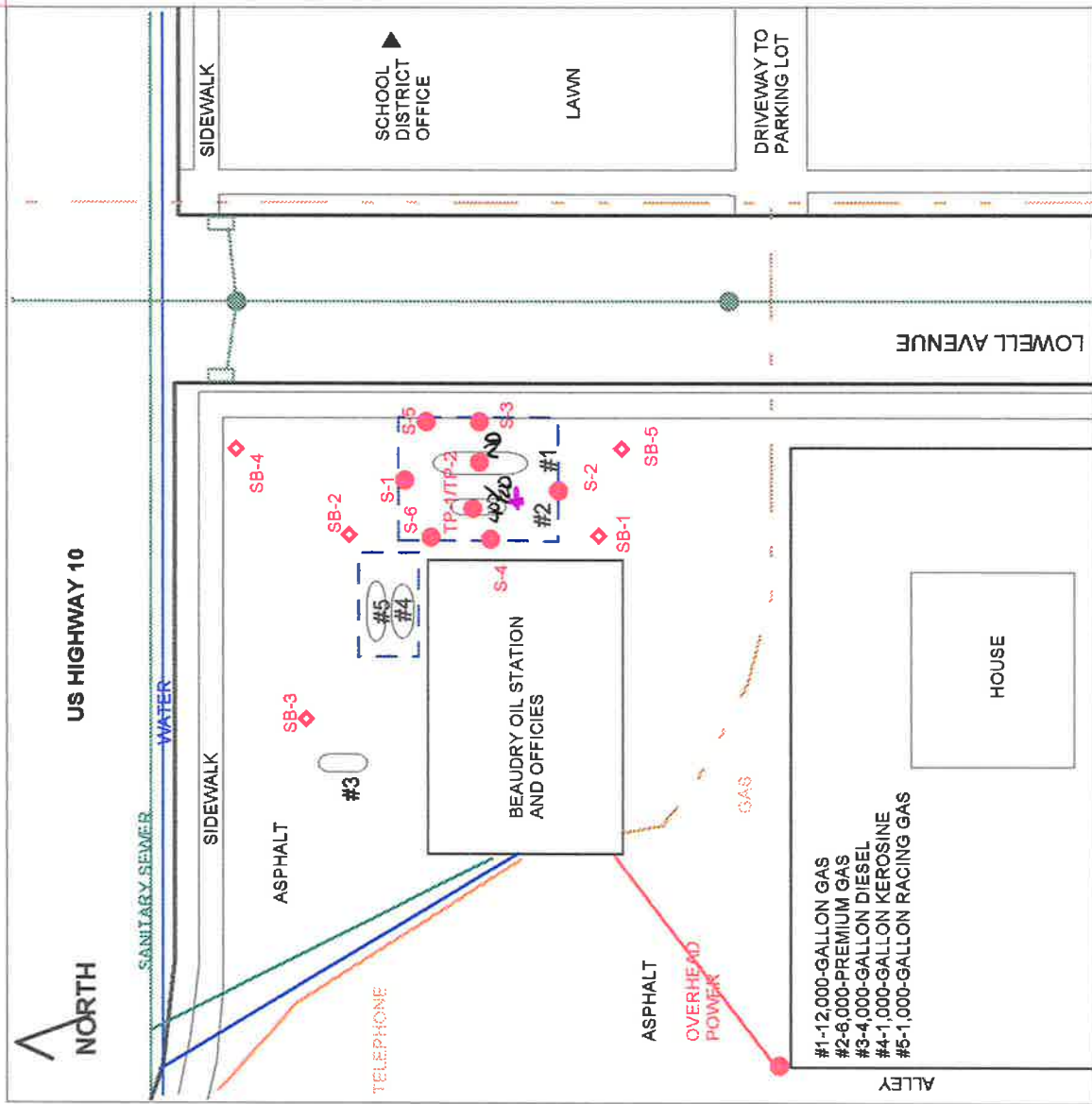


FIGURE 2 - EXCAVATION SITE MAP

DRAWN BY: TMM
DATE: 10/1/98

BEAUDRY OIL - ELK RIVER
LEAK #10983
PROJECT #8151



LABORATORY REPORT

Project	Date	# of pages
Fax No.	5/28	11
To	Celia	
Fax	441-1688	
Print	Wendy	
Phone	633-0101	

LABORATORY ANALYSIS REPORT

DATE: December 9, 1997
CLIENT: Mateffy Engineering
 663 Old Hwy 8
 New Brighton, MN 55112
CONTACT: Dennis McComas

PAGE: 1 Of 11
PROJECT NO.: 112597-200181
COLLECTION DATE: 11/24/97
COLLECTED BY: Mateffy Eng.
RECEIVED DATE: 11/25/97
PROJECT DESCRP.: Beauty Oil

<u>ANALYSIS</u>	<u>UNITS</u>
EPA 8021/GRH	
Date Analyzed: 12/03/97	
Methyl tert butyl ether	mg/kg
Benzene	mg/kg
Toluene	mg/kg
Ethylbenzene	mg/kg
m,p-Xylene*	mg/kg
o-Xylene	mg/kg
Gasoline Range Hydrocarbons	mg/kg

<u>Sample No.:</u>	L978332-1		
<u>Sample ID.:</u>	TP-1 18'		
<u>MDL</u>	<u>POL</u>	<u>RESULT</u>	
0.2	1.0	ND	
0.2	1.0	ND	
0.2	1.0	ND	
0.2	1.0	1.8	
0.3	1.0	4.7	
0.2	1.0	5.1	
10	20	(dd)(p) 400	

<u>Surrogate Recovery</u>	<u>Detector</u>
4-Fluorochlorobenzene	FID
4-Fluorochlorobenzene	PID

<u>11/26 % Rec.</u>	<u>12/03 % Rec.</u>
(s) 140%	(s) 389%
109%	(s) 282%

<u>ANALYSIS</u>	<u>UNITS</u>
WIS DNR DRO	
Date Preserved: 11/26/97	
Date Extracted: 12/02/97	
Date Analyzed: 12/06/97	
Diesel Range Organics	mg/kg
Moisture Content	%

<u>MDL</u>	<u>POL</u>	<u>RESULT</u>
2	10	(o) 210
0.1	—	2.9

<u>Surrogate Recovery</u>	<u>Detector</u>
n-Nonane (C-9)	FID
n-Triacontane (C-30)	FID

<u>% Recovery</u>
50.4%
91.9%

<u>ANALYSIS</u>	<u>UNITS</u>
Lead (6010A)	mg/kg

<u>MDL</u>	<u>RESULT</u>	<u>ANALYSIS DATE</u>
5.0	7.5	12/05/97

(dd) A dilution was necessary due to sample matrix; therefore, detection limits were raised.
 (p) Significant peaks detected outside GRO window.
 (o) Significant peaks detected outside DRO window.
 (s) High surrogate recovery due to matrix interference.
 * means Coeluting Compounds
 ND means Not Detected or below reported MDL
 MDL means Method Detection Limit
 POL means Practical Quantification Limit
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

DATE: December 9, 1997

PAGE: 2 Of 11

CLIENT: Mateffy Engineering
663 Old Hwy 8
New Brighton, MN 55112

PROJECT NO.: 112597-200181
COLLECTION DATE: 11/24/97
COLLECTED BY: Mateffy Eng.
RECEIVED DATE: 11/25/97
PROJECT DESCRP.: Beaudry Oil

CONTACT: Dennis McComas

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>POL</u>	<u>L978332-2</u> <u>TP-2 18'</u> <u>RESULT</u>
EPA 8021/GRH				
Date Analyzed: 11/26/97				
Methyl tert butyl ether	mg/kg	0.2	1.0	ND
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND
Gasoline Range Hydrocarbons	mg/kg	1.0	2.0	ND

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
4-Fluorochlorobenzene	FID	93.9%
4-Fluorochlorobenzene	PID	88.2%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>POL</u>	<u>RESULT</u>
WIS DNR DRO				
Date Preserved: 11/26/97				
Date Extracted: 12/02/97				
Date Analyzed: 12/06/97				
Diesel Range Organics	mg/kg	2	10	ND
Moisture Content	%	0.1	---	3.2

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
n-Nonane (C-9)	FID	49.9%
n-Triacontane (C-30)	FID	85.8%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>RESULT</u>	<u>ANALYSIS</u> <u>DATE</u>
Lead (6010A)	mg/kg	5.0	ND	12/05/97

* means Coeluting Compounds
 ND means Not Detected or below reported MDL
 MDL means Method Detection Limit
 POL means Practical Quantification Limit
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

DATE: December 9, 1997 PAGE: 3 Of 11
 CLIENT: Mateffy Engineering PROJECT NO.: 112597-200181
 663 Old Hwy 8 COLLECTION DATE: 11/24/97
 New Brighton, MN 55112 COLLECTED BY: Mateffy Eng.
 RECEIVED DATE: 11/25/97
 CONTACT: Dennis McComas PROJECT DESCRP.: Beauty Oil

<u>ANALYSIS</u>	<u>UNITS</u>	Sample No.: Sample ID.: <u>MDL</u>	<u>POL</u>	L978332-3 Soil Pile 1 <u>RESULT</u>
EPA 8021/WIS DNR GRO				
Date Analyzed: 11/26/97, 12/03/97				
Methyl tert butyl ether	mg/kg	0.2	1.0	ND
Benzene	mg/kg	0.2	1.0	(r) 0.5
Toluene	mg/kg	1.0	5.0	7.8
Ethylbenzene	mg/kg	0.2	1.0	3.6
m,p-Xylene*	mg/kg	1.5	5.0	19
o-Xylene	mg/kg	1.0	5.0	12
Gasoline Range Hydrocarbons	mg/kg	5.0	10	(p) 670
Surrogate Recovery				
4-Fluorochlorobenzene	Detector	11/26 % Rec		12/03 % Rec
	FID	(s) 503%		(s) 219%
4-Fluorochlorobenzene	PID	(s) 318%		(s) 155%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>POL</u>	<u>RESULT</u>
WIS DNR DRO(d)				
Date Preserved: 11/26/97				
Date Extracted: 12/02/97				
Date Analyzed: 12/08/97				
Diesel Range Organics	mg/kg	40	200	(o) 6700
Moisture Content	%	0.1	—	5.1
Surrogate Recovery				
n-Nonane (C-9)	Detector		% Recovery	
	FID		diluted out	
n-Triacontane (C-30)	FID		diluted out	

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>RESULT</u>	<u>ANALYSIS DATE</u>
Lead (6010A)	mg/kg	5.0	26	12/05/97

(r) Result is above MDL, but below POL.
 (p) Significant peaks detected outside GRO window.
 (o) Significant peaks detected outside DRO window.
 (s) High surrogate recovery due to matrix interference.
 * means Coeluting Compounds
 ND means Not Detected or below reported MDL
 MDL means Method Detection Limit
 POL means Practical Quantification Limit
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

DATE: December 9, 1997

PAGE:

4 Of 11

CLIENT: Mateffy Engineering
663 Old Hwy 8
New Brighton, MN 55112PROJECT NO.: 112597-200181
COLLECTION DATE: 11/24/97
COLLECTED BY: Mateffy Eng.
RECEIVED DATE: 11/25/97
PROJECT DESCRP.: Bacudry Oil

CONTACT: Dennis McComas

<u>ANALYSIS</u>	<u>UNITS</u>	Sample No.: Sample ID.: <u>MDL</u>	<u>PQL</u>	L978332-4 Soil Pile 2 <u>RESULT</u>
Date Analyzed: 11/26/97				
Methyl tert butyl ether	mg/kg	0.2	1.0	ND
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	(r) 0.4
Gasoline Range Hydrocarbons	mg/kg	1.0	2.0	(p) 48
Surrogate Recovery				
4-Fluorochlorobenzene	Detector	% Recovery		
	FID	(s) 145%		
4-Fluorochlorobenzene	PID	110%		

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
Date Preserved: 11/26/97				
Date Extracted: 12/02/97				
Date Analyzed: 12/06/97				
Diesel Range Organics	mg/kg	2	10	(o) 48
Moisture Content	%	0.1	---	1.7
Surrogate Recovery				
n-Nonane (C-9)	Detector	% Recovery		
	FID	53.6%		
n-Triacontane (C-30)	FID	94.8%		

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>RESULT</u>	<u>ANALYSIS</u> <u>DATE</u>
Lead (6010A)	mg/kg	5.0	10	12/05/97

(r) Result is above MDL, but below PQL.
 (p) Significant peaks/baseline rise detected outside GRO window.
 (s) High surrogate recovery due to matrix interference.
 (o) Significant peaks detected outside DRO window.
 * means Coeluting Compounds
 ND means Not Detected or below reported MDL
 MDL means Method Detection Limit
 PQL means Practical Quantification Limit
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

DATE: December 9, 1997 **PAGE:** 5 Of 11

CLIENT: Mateffy Engineering **PROJECT NO.:** 112597-200181
663 Old Hwy 8 **COLLECTION DATE:** 11/24/97
New Brighton, MN 55112 **COLLECTED BY:** Mateffy Eng.
RECEIVED DATE: 11/25/97
PROJECT DESCRP.: Beaudry Oil

CONTACT: Dennis McComas

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>L978332-5</u> <u>N-SW</u> <u>RESULT</u>
EPA 8021/GRH				
Date Analyzed: 11/26/97				
Methyl tert butyl ether	mg/kg	0.2	1.0	ND
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND
Gasoline Range Hydrocarbons	mg/kg	1.0	2.0	ND

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
4-Fluorochlorobenzene	FID	96.9%
4-Fluorochlorobenzene	PID	91.2%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
WIS DNR DRO				
Date Preserved: 11/26/97				
Date Extracted: 12/02/97				
Date Analyzed: 12/06/97				
Diesel Range Organics	mg/kg	2	10	ND
Moisture Content	%	0.1	---	3.7

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
n-Nonane (C-9)	FID	51.5%
n-Triacontane (C-30)	FID	96.6%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>RESULT</u>	<u>ANALYSIS</u> <u>DATE</u>
Lead (6010A)	mg/kg	5.0	7.2	12/05/97

* means Coeluting Compounds
 ND means Not Detected or below reported MDL
 MDL means Method Detection Limit
 PQL means Practical Quantification Limit
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

DATE: December 9, 1997 **PAGE:** 6 Of 11

CLIENT: Mateffy Engineering **PROJECT NO.:** 112597-200181
663 Old Hwy 8 **COLLECTION DATE:** 11/24/97
New Brighton, MN 55112 **COLLECTED BY:** Mateffy Eng.
RECEIVED DATE: 11/25/97
PROJECT DESCRP.: Beauty Oil

CONTACT: Dennis McComas

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>L978332-6</u> <u>S-SW</u> <u>RESULT</u>
EPA 8021/GRH				
<i>Date Analyzed: 11/26/97</i>				
Methyl tert butyl ether	mg/kg	0.2	1.0	ND
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND
Gasoline Range Hydrocarbons	mg/kg	1.0	2.0	(r) 1.7
Surrogate Recovery				
4-Fluorochlorobenzene	Detector	% Recovery		
	FID	95.1%		
4-Fluorochlorobenzene	PID	89.0%		

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
WIS DNR DRO				
<i>Date Preserved: 11/26/97</i>				
<i>Date Extracted: 12/02/97</i>				
<i>Date Analyzed: 12/06/97</i>				
Diesel Range Organics	mg/kg	2	10	ND
Moisture Content	%	0.1	—	3.5
Surrogate Recovery				
n-Nonane (C-9)	Detector	% Recovery		
	FID	50.6%		
n-Triacontane (C-30)	FID	106%		

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>RESULT</u>	<u>ANALYSIS</u> <u>DATE</u>
Lead (6010A)	mg/kg	5.0	6.7	12/05/97

(r) Result is above MDL, but below PQL.
* means Coeluting Compounds
ND means Not Detected or below reported MDL
MDL means Method Detection Limit
PQL means Practical Quantification Limit
mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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301 West County Road E2 • St. Paul, MN 55112
(612) 633-0101 • FAX (612) 633-1402

LABORATORY ANALYSIS REPORT

DATE: December 9, 1997

PAGE: 7 Of 11

CLIENT: Mateffy Engineering
663 Old Hwy 8
New Brighton, MN 55112

PROJECT NO.: 112597-200181
COLLECTION DATE: 11/24/97
COLLECTED BY: Mateffy Eng.
RECEIVED DATE: 11/25/97
PROJECT DESCRP.: Beauty Oil

CONTACT: Dennis McComas

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>POL</u>	<u>L978352-7</u> <u>E-SW</u> <u>RESULT</u>
EPA 8021/GRH				
Date Analyzed: 11/26/97				
Methyl tert butyl ether	mg/kg	0.2	1.0	ND
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND
Gasoline Range Hydrocarbons	mg/kg	1.0	2.0	2.9

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
4-Fluorochlorobenzene	FID	103%
4-Fluorochlorobenzene	PID	99.2%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>POL</u>	<u>RESULT</u>
WIS DNR DRO				
Date Preserved: 11/26/97				
Date Extracted: 12/02/97				
Date Analyzed: 12/06/97				
Diesel Range Organics	mg/kg	2	10	ND
Moisture Content	%	0.1	—	4.0

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
n-Nonane (C-9)	FID	46.7%
n-Triacontane (C-30)	FID	100%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>RESULT</u>	<u>ANALYSIS</u> <u>DATE</u>
Lead (6010A)	mg/kg	5.0	ND	12/05/97

* means Coeluting Compounds
ND means Not Detected or below reported MDL
MDL means Method Detection Limit
POL means Practical Quantification Limit
mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

DATE: December 9, 1997 PAGE: 8 Of 11
 CLIENT: Mateffy Engineering PROJECT NO.: 112597-200181
 663 Old Hwy 8 COLLECTION DATE: 11/24/97
 New Brighton, MN 55112 COLLECTED BY: Mateffy Eng.
 RECEIVED DATE: 11/25/97
 CONTACT: Dennis McCamas PROJECT DESCRP.: Beauty Oil

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>L978332-8</u> <u>W-SW</u> <u>RESULT</u>
EPA 8021/WIS DNR GRO				
Date Analyzed: 11/26/97				
Methyl tert butyl ether	mg/kg	0.2	1.0	ND
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND
Gasoline Range Organics	mg/kg	1.0	2.0	(r)1.1

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
4-Fluorochlorobenzene	FID	101%
4-Fluorochlorobenzene	PID	96.3%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
WIS DNR DRO				
Date Preserved: 11/26/97				
Date Extracted: 12/02/97				
Date Analyzed: 12/06/97				
Diesel Range Organics	mg/kg	2	10	ND
Moisture Content	%	0.1	—	4.5

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
n-Nonane (C-9)	FID	52.1%
n-Triacontane (C-30)	FID	102%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>RESULT</u>	<u>ANALYSIS</u> <u>DATE</u>
Lead (6010A)	mg/kg	5.0	ND	12/05/97

* means Coeluting Compounds
 ND means Not Detected or below reported MDL
 MDL means Method Detection Limit
 PQL means Practical Quantification Limit
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

DATE: December 9, 1997

PAGE: 9 Of 11

CLIENT: Mateffy Engineering
663 Old Hwy 8
New Brighton, MN 55112PROJECT NO.: 112597-200181
COLLECTION DATE: 11/24/97
COLLECTED BY: Mateffy Eng.
RECEIVED DATE: 11/25/97
PROJECT DESCRP.: Beauty Oil

CONTACT: Dennis McComas

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>POL</u>	L978332-9 <u>ENE-SW</u> <u>RESULT</u>
EPA 8021/GRH				
Date Analyzed: 11/26/97				
Methyl tert butyl ether	mg/kg	0.2	1.0	ND
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND
Gasoline Range Hydrocarbons	mg/kg	1.0	2.0	ND

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
4-Fluorochlorobenzene	FID	96.5%
4-Fluorochlorobenzene	PID	91.7%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>POL</u>	<u>RESULT</u>
WIS DNR DRO				
Date Preserved: 11/26/97				
Date Extracted: 12/02/97				
Date Analyzed: 12/06/97				
Diesel Range Organics	mg/kg	2	10	ND
Moisture Content	%	0.1	—	2.3

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
n-Nonane (C-9)	FID	46.3%
n-Triacontane (C-30)	FID	86.5%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>RESULT</u>	<u>ANALYSIS</u> <u>DATE</u>
Lead (6010A)	mg/kg	5.0	5.6	12/05/97

* means Coeluting Compounds

ND means Not Detected or below reported MDL

MDL means Method Detection Limit

POL means Practical Quantification Limit

mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

DATE: December 9, 1997

PAGE: 10 Of 11

CLIENT: Mateffy Engineering
663 Old Hwy 8
New Brighton, MN 55112PROJECT NO.: 112597-200181
COLLECTION DATE: 11/24/97
COLLECTED BY: Mateffy Eng.
RECEIVED DATE: 11/25/97
PROJECT DESCRP.: Beauty Oil

CONTACT: Dennis McComas

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>POL</u>	<u>L978332-10</u> <u>WNW-SW</u> <u>RESULT</u>
EPA 8021/GRH				
Date Analyzed: 11/26/97				
Methyl tert butyl ether	mg/kg	0.2	1.0	ND
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND
Gasoline Range Hydrocarbons	mg/kg	1.0	2.0	ND

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
4-Fluorochlorobenzene	FID	98.0%
4-Fluorochlorobenzene	PID	93.4%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>POL</u>	<u>RESULT</u>
WIS DNR DRO				
Date Preserved: 11/26/97				
Date Extracted: 12/02/97				
Date Analyzed: 12/06/97				
Diesel Range Organics	mg/kg	2	10	ND
Moisture Content	%	0.1	—	4.2

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
n-Nonane (C-9)	FID	47.9%
n-Triacontane (C-30)	FID	102%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>RESULT</u>	<u>ANALYSIS</u> <u>DATE</u>
Lead (6010A)	mg/kg	5.0	8.4	12/05/97

* means Coeluting Compounds
 ND means Not Detected or below reported MDL
 MDL means Method Detection Limit
 POL means Practical Quantification Limit
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

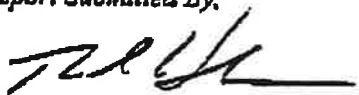
DATE: December 9, 1997 **PAGE:** 11 Of 11

CLIENT: Mateffy Engineering **PROJECT NO.:** 112597-200181
663 Old Hwy 8 **COLLECTION DATE:** 11/24/97
New Brighton, MN 55112 **COLLECTED BY:** Mateffy Eng.
RECEIVED DATE: 11/25/97
PROJECT DESCRP.: Remedry Oil

CONTACT: Dennis McComas

This report has been reviewed by me for technical accuracy and completeness. The analyses were performed using EPA or other approved methodologies and the results were reported on an "as received" basis unless otherwise noted. Organic soil analyses were reported on a dry weight basis. The results reported relate only to the items tested. Please contact me if you have any questions or comments regarding this report. Spectrum Labs, Inc. appreciates the opportunity to provide this analytical service for you.

Report Submitted By,


Thomas L. Halverson
Laboratory Manager

TLH:wmc
me343-1

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APPENDIX B
LABORATORY REPORT

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METRO (612) 444-9270
FAX (612) 689-3660



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MIDWEST ANALYTICAL SERVICES

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NUMBER 027-059-156



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SUITE 105
DULUTH, MN 55802
LAB (218) 722-9884
FAX (218) 722-9964

Analytical Report

August 20, 1998

Terry Muller
Agassiz Environmental Systems, Inc.
29385 Isabel Street
Chisago City, MN 55013

RECEIVED SEP - 3 1998

Chain of Custody

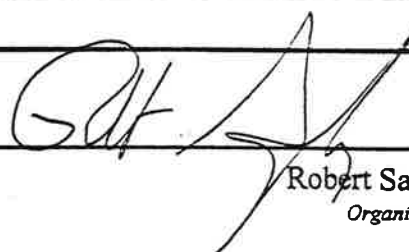
Project ID: 8151-Elk River
Chain of Custody: 26405
Date Received: 8/7/98 2:27:10 PM by Katie Christenson

Sample Information

SampleID	Description	Date	Matrix
32775	GP-1 24'	8/4/98	Soil
32776	GP-2 28'	8/4/98	Soil
32777	GP-3 24'	8/4/98	Soil
32778	GP-4 24' 27' <i>Th</i>	8/4/98	Soil
32779	GP-5 28'	8/4/98	Soil
32780	Trip Blank	8/4/98	Other
32781	GP-2	8/4/98	Water
32782	GP-4	8/4/98	Water
32783	GP-5	8/4/98	Water

Analytical results are listed on the following page(s).

Reviewed By


8/24
Robert Sagarsky
Organic Chemist

August 20, 1998

Page 2

COC 26045

Date Analyzed: 08-10-98

Parameter:	MTBE	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as		Percent Moisture
						GRO	DRO	
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(%)
MDL:	0.500	0.050	0.050	0.050	0.150	10.0	10.0	
32775 GP-1 24'	BDL	0.060	0.314	BDL	0.155	BDL*	BDL	5.5
32776 GP-2 28'	BDL	BDL	0.233	BDL	BDL	BDL	BDL	6.1
32777 GP-3 24'	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3.1
32778 GP-4 24' 27' <i>per</i>	BDL	BDL	BDL	BDL	BDL	BDL	BDL	4.9
32779 GP-5 28'	BDL	BDL	0.077	BDL	BDL	BDL	BDL	9.4
32780 Trip Blank	BDL	BDL	BDL	BDL	BDL	BDL		

Date Analyzed: 08-10-98

Parameter:	MTBE	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as	
						GRO	DRO
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)
MDL:	10.0	1.0	1.0	1.0	3.0	0.1	0.1
32781 GP-2	BDL	BDL	3.6	BDL	BDL	BDL	BDL
32782 GP-4	BDL	BDL	BDL	BDL	BDL	BDL	0.80
32783 GP-5	BDL	BDL	BDL	1.0	BDL	BDL	BDL

BDL = Below Detection Limit, MDL = Method Detection Limit

Agassiz Environmental Systems
 29385 Isabel Street
 Chisago City, Minnesota

LOG OF BORING GP-1

(Page 1 of 1)

Beaudry Oil
 333 Lowell Avenue
 Elk River, Minnesota
 Leak #10983

Boring Location : See Site Map
 Project # : 8151
 Driller : JA

Logged : TM
 Date : 8/4/98
 Water Depth : Not Encountered

Depth in Feet	SV-#	SS-#	PID (ppm)	GRAPHIC	USCS	DESCRIPTION	Well Construction Information
0						Asphalt	
						Brown, Dry, Fine, Sand FILL	
5	SV-1a		ND				NOTES *Tanker unloading while screen
	SV-1b		8*				
10							
	SV-1c		ND*			Brown, Moist, Medium, SAND	
15					SW		
	SV-1d		3*			Brown, Dry, Medium to Coarse, SAND with gravel	
20							
	SV-1e		ND			Red/Brown, Mottled, Medium to Coarse, SAND with a little gravel	
					SP		
	SV-1f	SS-1a	ND			EOB	

10-1-1998 a:\8151\lab1.ge3

Agassiz Environmental Systems
 29385 Isabel Street
 Chisago City, Minnesota

LOG OF BORING GP-2

(Page 1 of 1)

Beaudry Oil
 333 Lowell Avenue
 Elk River, Minnesota
 Leak #10983

Boring Location : See Site Map
 Project # : 8151
 Driller : JA

Logged : TM
 Date : 8/4/98
 Water Depth : 28 Feet

Depth in Feet	SV-#	SS-#	PID (ppm)	GRAPHIC	USCS	DESCRIPTION
0						Asphalt
						Brown, Dry, Fine, Sand FILL
5	SV-2a		ND			Light Brown, Dry, Fine to Medium, SAND
	SV-2b		ND		SP	
10	SV-2c		ND			
15	SV-2d		ND		SP	Red/Brown, Moist, Medium to Coarse, SAND
20	SV-2e		ND			Light Gray, Moist, Coarse SAND/Small Gravel
25	SV-2f		ND		SP	
30	SV-2g	SS-2a	ND		GP	WATER; Dark Brown, Wet, Small to Medium GRAVEL
	SV-2h		ND			Dark Brown, Wet, Tight, SILT
	SV-2i		ND			
	SV-2j		ND		ML	
	SV-2j		ND			
	SV-2k		ND			
40	SV-2k		ND			EOB

10-1-1998 e:\8151\isab2.ge3

Agassiz Environmental Systems
 29385 Isabel Street
 Chisago City, Minnesota




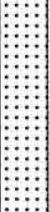
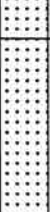





LOG OF BORING GP-3

(Page 1 of 1)

Beaudry Oil
 333 Lowell Avenue
 Elk River, Minnesota
 Leak #10983

Boring Location : See Site Map
 Project # : 8151
 Driller : JA

Logged : TM
 Date : 8/4/98
 Water Depth : Not Encountered

Depth in Feet	SV-#	SS-#	PID (ppm)	GRAPHIC	USCS	DESCRIPTION
0						Asphalt
						Brown, Dry, Fine, Sand FILL
5	SV-3a		ND			Brown, Moist, Fine to Medium, SAND
	SV-3b		ND		SP	
10	SV-3c		ND			Dark Brown, Slightly Moist, Fine to Medium SAND
	SV-3d		ND		SP	
15	SV-3e		ND			Red, Medium Grain, SAND
	SV-3f		ND		SP	
20	SV-3e		ND			Red, Moist, Medium to Coarse, SAND
	SV-3f	SS-3a	ND		SP	
25						Brown, Moist, Medium, SAND
						EOB

10-1-1998 e:\8151\ab\ab3.ge3

Agassiz Environmental Systems
 29385 Isabel Street
 Chisago City, Minnesota



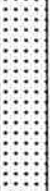
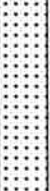


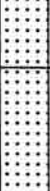
LOG OF BORING GP-4

(Page 1 of 1)

Beaudry Oil
 333 Lowell Avenue
 Elk River, Minnesota
 Leak #10983

Boring Location : See Site Map
 :
 Project # : 8151
 Driller : JA

Logged : TM
 Date : 8/4/98
 Water Depth : 27 Feet
 :

Depth in Feet	SV-#	SS-#	PID (ppm)	GRAPHIC	USCS	DESCRIPTION
0						Asphalt Brown, Dry, Fine, Sand FILL
5	SV-4a		ND			Light Brown, Dry, Fine to Medium, SAND
10	SV-4b		ND		SP	
15	SV-4c		ND			
20	SV-4d		ND		SP	Red/Brown, Medium to Coarse, SAND with trace gravel
25	SV-4e		ND		SP	Brown, Moist, Coarse Grain, SAND with some gravel Mottling
25	SV-4f		ND		SP	Red, Moist, Coarse, SAND
	SV-4g	SS-4a	ND			Water
						EOB

10-1-1998 e:\8151\sb\sb4.gse3

Agassiz Environmental Systems
 29385 Isabel Street
 Chisago City, Minnesota

LOG OF BORING GP-5

(Page 1 of 1)

Beaudry Oil
 333 Lowell Avenue
 Elk River, Minnesota
 Leak # 10983

Boring Location : See Site Map
 Project # : 8151
 Driller : JA

Logged : TM
 Date : 8/4/98
 Water Depth : 28 Feet

Depth in Feet	SV-#	SS-#	PID (ppm)	GRAPHIC	USCS	DESCRIPTION
0						Asphalt
						Brown, Dry, Fine to Medium, SAND
5	SV-5a		ND			
10	SV-5b		ND		SP	
15	SV-5c		ND			
20	SV-5d		ND			
						Red, Moist, Coarse, SAND with some gravel
25	SV-5e		ND		SP	
						Yellow/Orange, Moist, Coarse, SAND with gravel
30	SV-5f		ND		SP	
						Brown, Slightly Moist, Medium Grain, SAND
35	SV-5g	SS-5a	ND		SP	WATER: Dark Brown, Coarse, SAND with gravel; EQB.

10-1-1998 e:\8151\isab56.ge3