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**MPCA, HAZARDOUS  
WASTE DIVISION**

# **Response Action Report**

**Underground Storage Tank Removal,  
and Remedial Exploration/Corrective Action Plan**

**Hallock High School**

**Hallock, MN**

**MECC Project No. 1023J1-0489**

**MPCA Tanks and Spills Leak No. 00001318**



**MIDWEST ENVIRONMENTAL  
CONTROL CORPORATION**

**m e c c**  
3901 University Ave. N.E.  
Minneapolis, MN 55421  
(612) 781-1647

May 18, 1990

781-1710

Mr. Jerry Scott  
Hallock High School  
44 North Ash Street  
Hallock, MN 56728

MECC Project No. 1023J1-0489

Re: Response Action Report  
UST Removal, Soil Excavation Observation  
and Remedial Exploration  
Hallock High School  
Hallock, Minnesota

Dear Mr. Scott:

We have completed our environmental engineering assessment of the underground storage tank removal, soil excavation observation and Remedial Exploration and Corrective Action Plan at the above-mentioned site. This report contains a summary of our test results and our environmental evaluation for the existing conditions encountered.

If you have any questions or wish to discuss any particular aspect of the project, please contact us at (612) 781-1647. We look forward to being of continued service to you.

Sincerely,

**MIDWEST ENVIRONMENTAL CONTROL CORPORATION**

*Craig F. Diekvoss*

Craig F. Diekvoss  
Environmental Geologist

*Philip N. Cavendor*

Philip N. Cavendor, Director  
Environmental Engineering Services

CFD/lh

**RESPONSE ACTION REPORT/  
CORRECTIVE ACTION PLAN**

**UNDERGROUND STORAGE TANK REMOVAL AND SOIL  
EXCAVATION OBSERVATION**

**Hallock High School**

**Hallock, MN**

**MPCA Leak 00001318**

**Prepared For:**

**Hallock Schools**

**School District No. 351**

**44 North Ash Street**

**Hallock, MN 56728**

**Prepared By:**

**MIDWEST ENVIRONMENTAL CONTROL CORPORATION**

**3901 University Avenue N E**

**Minneapolis, Minnesota 55421**

**(612) 781-1647**

**May 18, 1990**

## TABLE OF CONTENTS

|   | Page      |
|---|-----------|
| <b>1.0 INTRODUCTION</b>                                 | <b>1</b>  |
| <b>1.1 General</b>                                      |           |
| <b>1.2 Authorization</b>                                |           |
| <b>1.3 Scope of Services</b>                            | <b>2</b>  |
| <b>2.0 SITE BACKGROUND</b>                              | <b>3</b>  |
| <b>2.1 Site Location and Description</b>                |           |
| <b>2.2 Tank Background Information</b>                  |           |
| <b>3.0 SITE CHARACTERIZATION/EXPLORATION</b>            | <b>4</b>  |
| <b>3.1 Soil Boring Advancement</b>                      |           |
| <b>3.2 Soil Boring Results</b>                          |           |
| <b>4.0 UNDERGROUND STORAGE TANK REMOVAL</b>             | <b>6</b>  |
| <b>4.1 Underground Storage Tank Removal Observation</b> |           |
| <b>4.2 Petroleum Impact Evaluation</b>                  | <b>7</b>  |
| <b>4.3 Soil Excavation Results</b>                      | <b>9</b>  |
| <b>5.0 CONCLUSIONS AND RECOMMENDATIONS</b>              | <b>10</b> |
| <b>6.0 PETROFUND REIMBURSEMENT</b>                      | <b>11</b> |
| <b>7.0 QUALIFICATIONS</b>                               | <b>12</b> |

### APPENDICES

|                   |  |
|-------------------|--|
| <b>Appendix A</b> | <b>Underground Storage Tank Removal Information Form</b> |
| <b>Appendix B</b> | <b>Underground Storage Tank Notification Form</b>        |
| <b>Appendix C</b> | <b>Analytical Results</b>                                |
| <b>Appendix D</b> | <b>Technical Methods and Procedures</b>                  |
| <b>Appendix E</b> | <b>Soil Boring Logs</b>                                  |

**Response Action Report**  
**Underground Storage Tank Site Characterization/Exploration and**  
**Excavation Observation**

**1.0 Introduction**

**1.1 General**

The purpose of this report is to present the results of the underground petroleum storage tank removal and excavation observations conducted for Hallock High School, at 44 North Ash, Hallock, MN. This report is designed to provide adequate and detailed information as specified in the Minnesota Pollution Control Agency (MPCA) "Excavation of Petroleum Contaminated Soils," guidelines dated 12/12/88 and in Title 40 Code of Federal Regulations (CFR).

This report also addresses eligibility for reimbursement of funds from the Minnesota Petroleum Tank Release Compensation (Petrofund) Board. The Petrofund program partially reimburses persons for costs incurred in cleaning up a petroleum release for up to \$1,000,000.

**1.2 Authorization**

Midwest Environmental Control Corporation (MECC) was authorized by Mr. Jerry Scott on behalf of Hallock Schools to proceed with and undertake the explorative and interim response activities regarding the underground storage tank removal at the Hallock High School on November 2, 1989.

### **1.3 Scope of Services**

The scope of services performed by our personnel in relation to this underground storage tank site included:

- o Background information collection;
- o An on-site exploration by an Environmental Geologist;
- o Removal observation of the underground storage tanks;
- o Sampling of soils within the tank basin and analyzing samples for Benzene, Toluene, Ethyl Benzene, Xylenes, and Total Hydrocarbons as gasoline and fuel oil, and lead.
- o The placement of soil borings adjacent to the tank site for soil sampling, VOC vapor detection, and soil classification;
- o Evaluation of selected soil samples from soil borings for evidence of hydrocarbon contamination based on visual appearances, odor, and photoionization detection (HNU Model 101);
- o Preparation of a report presenting data, methodologies, results and conclusions of the work performed at this site; and
- o Preparation of an application to ~~land~~ apply petroleum contaminated soils.

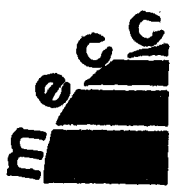
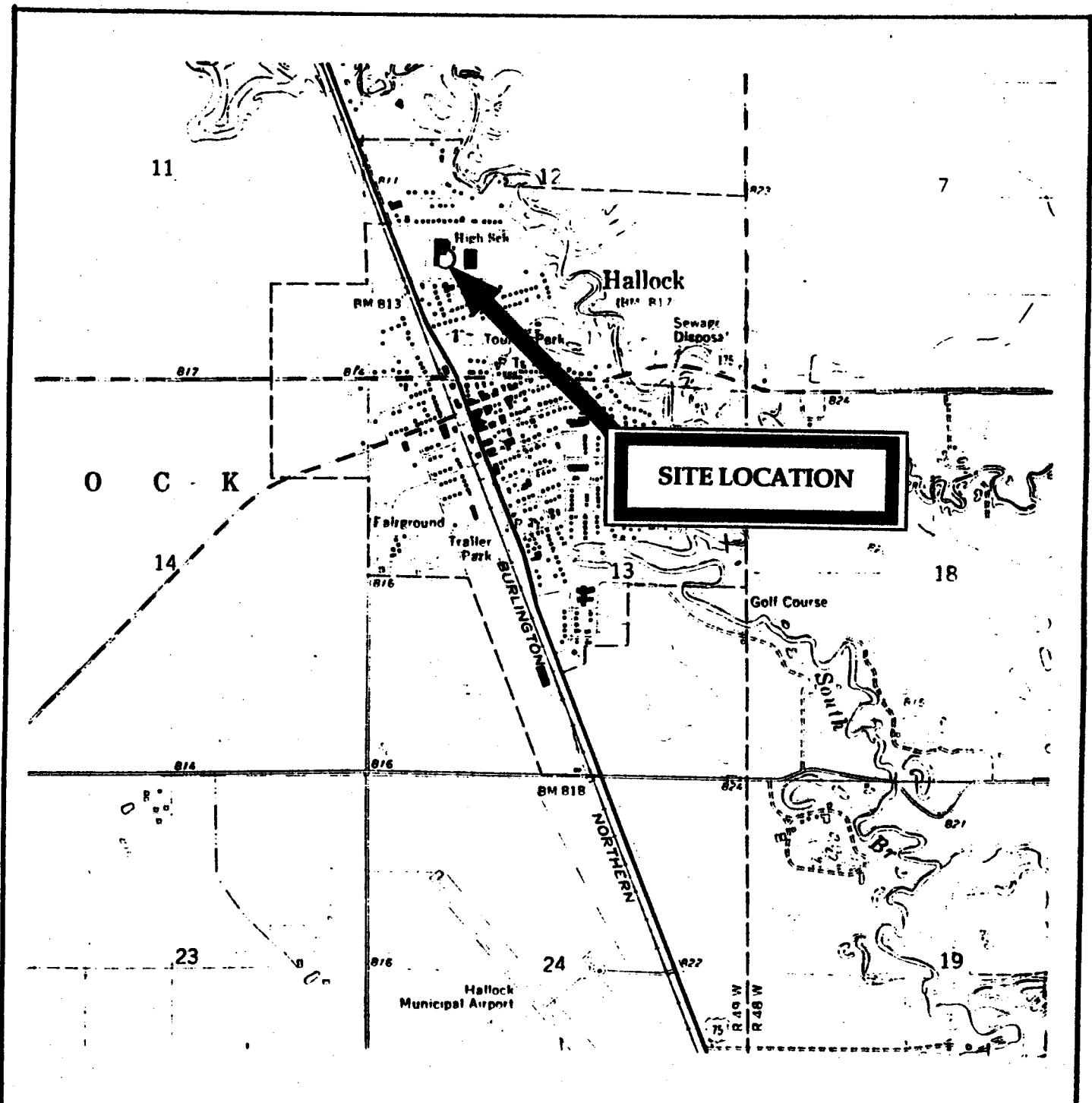
## **2.0 Site Background**

### **2.1 Site Location and Description**

The tank site is located at 44 North Ash Street, Hallock, MN (Figure 1). The surface elevation of the site is approximately 815 feet National Geodetic Vertical Datum (NGVD). This site consists of a single-story, brick and masonry school building. The surrounding area consists of flat farmland and residential housing.

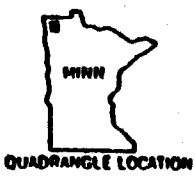
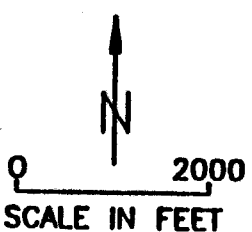
### **2.2 Tank Background Information**

One underground storage tank (UST) existed at the site prior to any tank removal. The tank was a 10,000 gallon asphalt coated, steel UST utilized for the storage of #2 fuel oil. The tank was located adjacent to the southeast side of the building near the boiler room (Figure 2). The tank was installed in June 1957 and registered with the MPCA. The exploration of this site was initiated by Mr. Scott due to the current and upcoming Minnesota State UST regulations.



**MIDWEST ENVIRONMENTAL  
CONTROL CORPORATION**

Hallock Quadrangle



**FIGURE 1**

**SITE LOCATION MAP**

**Hallock High School**

**Hallock, Minnesota**

**PROJECT NO.**  
1023J1-0489

**PREPARED BY:**  
CED

**DATE:**  
4/27/90

**REVIEWED BY:**



Hallock High School

Water Line

Electrical Utility

Fill Pipe

Vent Pipe

12,000 Gallon  
#2 Fuel Oil Tank

N

## Figure 2

### Tank Location

Hallock High School  
MECC Project # 1023J1-0489



**MIDWEST ENVIRONMENTAL  
CONTROL CORPORATION**

3901 University Avenue NE  
Minneapolis, Minnesota 55421  
(612) 781-1647

Date:  
5-1-1990

Prepared By:  
CFD

Scale:  
1" = 30'

Reviewed By:  
PNC

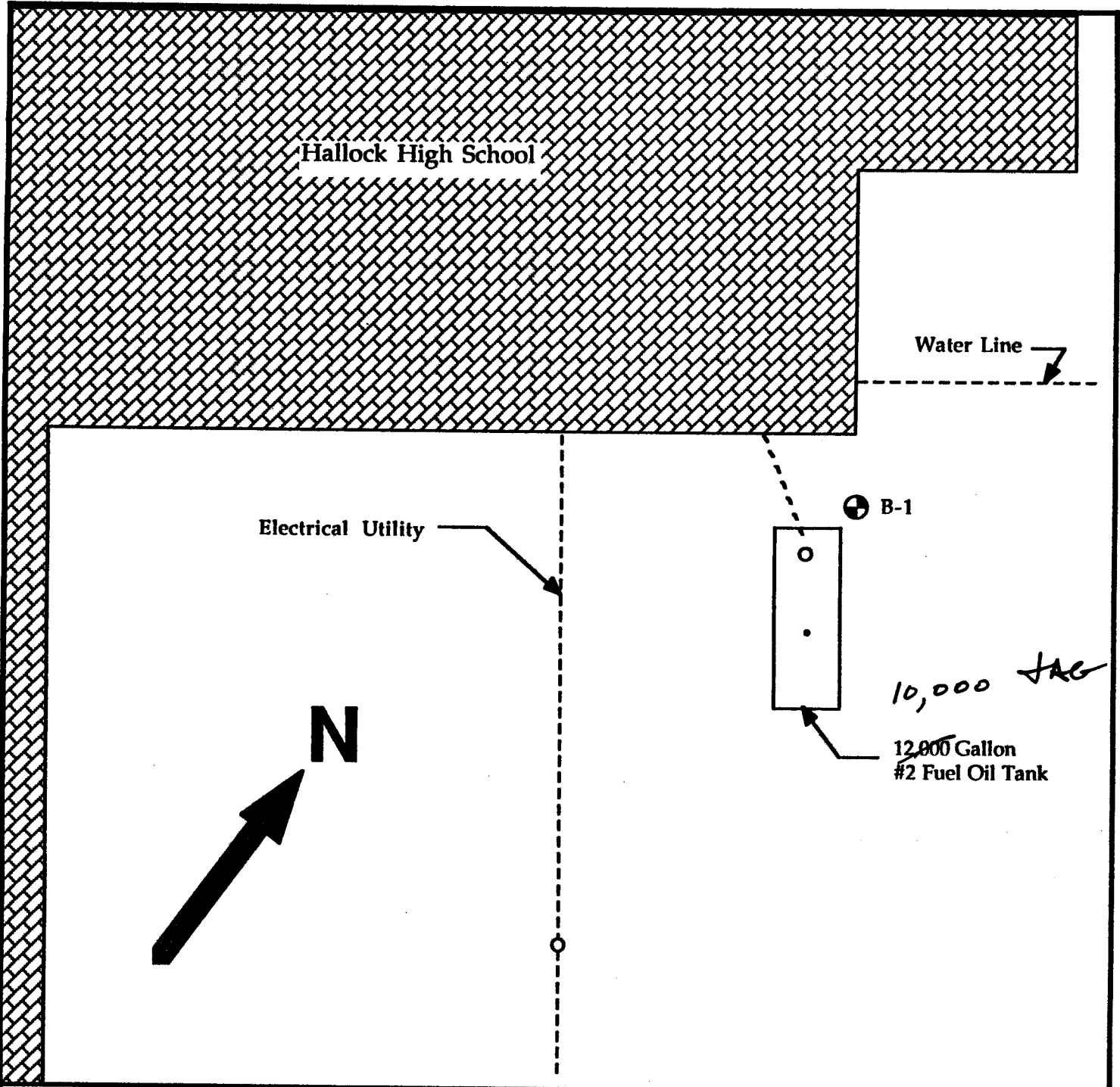
### **3.0 Site Characterization/Exploration**

#### **3.1 Soil Boring Advancement**

On July 17, 1989, MECC field personnel performed the advancement of a soil boring adjacent to the existing underground storage tank to test for evidence of any petroleum product in the soils (Figure 3). This was completed in order to update the tank to meet upcoming Minnesota State Tank regulations. The soil boring was advanced to a depth of 12 feet utilizing a 4" diameter solid stem flight auger. Soil samples were collected at 2 foot intervals, beginning at 2 feet below the ground surface, to characterize the geologic soil conditions and to quantify any petroleum contamination identified. Headspace screening was performed on all soil samples collected using a Photovac Tip II with a 11.6 eV lamp. All soil borings were grouted with concrete to the ground surface at the completion of each soil boring.

#### **3.2 Soil Boring Results**

Soil boring B-1 was advanced in the soils on the northeast end of the tank basin adjacent to the tank. The soil profile consisted of a 1.5-foot layer of sand and gravel underlain by 8.5 feet of grey silty clay. At 10 feet below the ground surface the silty clay graded into a grey clay. The soils became moist at 6 feet below the ground and visible petroleum contamination was also observed at this depth. Photovac Tip headspace yielded readings between 102 parts per million (ppm) at 2 feet and 608 ppm at 6 feet below the ground surface (See Soil Boring B-1).



**Figure 3**

**Soil Boring Location**  
 Hallock High School  
 MECC Project # 1023J1-0489



**MIDWEST ENVIRONMENTAL CONTROL CORPORATION**

3901 University Avenue NE  
 Minneapolis, Minnesota 55421  
 (612) 781-1647

Date:  
 5-1-1990

Prepared By:  
 CFD

Scale:  
 1" = 20'

Reviewed By:  
 PNC

# MECC LOG OF EXPLORATION / MONITORING WELL BORING

Project Name: Hallock High School Boring Number: B-1

Project Number: 1023J1-0489 Date: 7/17/89

| Depth in Feet | Description of Material<br>ASTM D2488                             | Symbol<br>ASTM D2487 | Rel. Density | Moisture | Sample |      | PID Inst. in (ppm): Tip II |        | Odor Detection |   |   |   | UVI Fluorescence |    |   |   |   |  |  |  |  |
|---------------|---|----------------------|--------------|----------|--------|------|----------------------------|--------|----------------|---|---|---|------------------|----|---|---|---|--|--|--|--|
|               |   |                      | N            | WL       | No.    | Type | Bkgnd                      | Hd Spc | N              | W | M | S | N                | VW | W | M | S |  |  |  |  |
| 5             | SAND and GRAVEL,<br>Brown, Dry                                    | SW                   |              |          |        |      |                            |        |                |   |   |   |                  |    |   |   |   |  |  |  |  |
|               | Silty CLAY, Grey,<br>Dry to Moist, Visible<br>contamination at 6' | CL                   |              | D        | 1      | SS   | 0.6                        | 102.1  |                |   |   |   | X                |    |   |   |   |  |  |  |  |
|               |   |                      | D            | 2        | SS     | 0.5  | 495.0                      |        |                |   |   | X |                  |    |   |   |   |  |  |  |  |
|               |   |                      | D            | 3        | SS     | 0.6  | 608.0                      |        |                |   |   |   |                  | X  |   |   |   |  |  |  |  |
|               |   |                      | D            | 4        | SS     | 0.6  | 278.0                      |        |                |   |   |   |                  |    | X |   |   |  |  |  |  |
| 10            |   |                      | D            | 5        | SS     | 0.7  | 175.0                      |        |                |   |   |   |                  |    | X |   |   |  |  |  |  |
|               | CLAY, Grey, Moist   | CL                   |              | D        | 6      | SS   | 0.4                        | 287.0  |                |   |   |   |                  |    |   |   |   |  |  |  |  |
|               | End of Boring,<br>No refusal                                      |                      |              |          |        |      |                            |        |                |   |   |   |                  |    |   |   |   |  |  |  |  |

Drilling Contractor: MECC  
 Driller/Crew Chief: C. Diekvoss  
 Drill Rig Type: B.Rogers Model 160

Drilling Method: 4" Diameter Flight Auger  
 Surface Elevation (NGVD): \_\_\_\_\_

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CONTROL CORPORATION**  
 Engineering and Environmental Services

| Soil Boring Measurements |       |             |               |             |
|--------------------------|-------|-------------|---------------|-------------|
| Boring Time              |       | Total Depth | Cave-in Depth | Water Level |
| Begin                    | End   |             |               |             |
| 10:00                    | 10:30 | 12.5'       | 6'            | -           |

**Soil Boring Results (Cont.)**

The evidence from the soil boring suggested that petroleum contamination exists throughout the tank basin. Based on these results, MECC recommended the removal of the 10,000 gallon tank and the excavation of the surrounding petroleum contaminated soils.

The MPCA was informed of the petroleum contamination on July 17, 1989 and was also given notification of the upcoming tank removal. The tank was then taken out of service and on November 2, 1989, the UST and surrounding contaminated soils were removed.

#### **4.0 Underground Storage Tank Removal**

##### **4.1 Underground Storage Tank Removal Observation**

On November 2, 1989, an MECC field personnel was on site to observe and document the removal of the 10,000 gallon underground storage tank by Weleske Improvements of Hallock, Minnesota.

Upon removal, the tank appeared to be uniformly pitted and corroded with several 1/8" holes near the base of the tank. Petroleum soil contamination appeared to be caused by both piping failure and tank leakage.

The tank and associated dispensing piping were transported to Mr. Raymond Carlson in Hallock, MN where it was cleaned and dismantled for scrap metal. The results of the tank removal are presented on the completed "Underground Storage Tank Removal Form" in Appendix A. The MPCA "Underground Storage Tank Notification Forms" are included in Appendix B.

#### **4.2 Petroleum Impact Evaluation**

Low to moderate levels of hydrocarbon soil contamination were detected in the sand backfill surrounding the tanks. An HNu Model 101 equipped with a 10.2 eV lamp, calibrated to a benzene referral, was utilized to screen the soil samples.

Approximately 400 yards of petroleum contaminated soils were removed and produced photoionization readings ranging from 15.8 to 19.7 ppm with background readings of 0.6 ppm (See Table 1). No groundwater was observed in the tank basin during or after the soil excavation.

Soil samples were collected from the sidewalls at a depth of 12-13 feet and from the base of the tank basin. Sample locations are illustrated in Figure 4. HNu headspace results for these samples ranged from 1.9 ppm to 3.0 ppm. The soil samples were submitted to Serco Laboratories to be analyzed for Benzene, Ethylbenzene, Toluene, Xylenes (BETX), and Total Hydrocarbons (THC) as fuel oil. The laboratory results indicated non-detectable levels from these samples. These results are presented in Table 2. The laboratory report is included in Appendix C.

An additional soil sample was obtained from the excavation sidewall at 3 feet below the ground surface. The soils here showed evidence of a petroleum impact from surface spillage and overfill to a depth of 5 feet. HNu headspace results indicated 10.9 ppm. Soil borings were recommended to define the horizontal extent of the surface contamination.

# TABLE 1

## SOIL SCREENING RESULTS

MECC Project No: 1023J1-0489

MECC Project Name: Hallock High School

| Sample I.D. No. | Sample Location | Sample Depth | Visual Detection |   | *Odor Detection |   |   |   | Soil Type | HNu Readings in ppm |            | *UVI Fluorescence |    |   |   |   |   |   |
|-----------------|-----------------|--------------|------------------|---|-----------------|---|---|---|-----------|---------------------|------------|-------------------|----|---|---|---|---|---|
|                 |                 |              | Y                | N | N               | W | M | S |           | Back-ground         | Head-space | N                 | VW | W | M | S |   |   |
| SP-1            | Soil Pile       | NA           | X                |   |                 |   |   | X |           | CLAY                | 0.6        | 15.8              |    |   |   |   | X |   |
| SP-2            | Soil Pile       | NA           | X                |   |                 |   |   | X |           | CLAY                | 0.6        | 19.7              |    |   |   |   |   | X |
| BS-3            | South Base      | 13'          |                  | X | X               |   |   |   |           | CLAY                | 0.3        | 3.0               | X  |   |   |   |   |   |
| BS-4            | North Base      | 13'          |                  | X | X               |   |   |   |           | CLAY                | 0.6        | 2.6               | X  |   |   |   |   |   |
| SW-5            | North Sidewall  | 11'-12'      |                  | X | X               |   |   |   |           | CLAY                | 0.6        | 2.6               | X  |   |   |   |   |   |
| SW-6            | West Sidewall   | 11'-12'      |                  | X | X               |   |   |   |           | CLAY                | 0.6        | 2.4               | X  |   |   |   |   |   |
| SW-7            | South Sidewall  | 11'-12'      |                  | X | X               |   |   |   |           | CLAY                | 0.6        | 1.9               | X  |   |   |   |   |   |
| SW-8            | East Sidewall   | 11'-12'      |                  | X | X               |   |   |   |           | CLAY                | 0.6        | 2.9               | X  |   |   |   |   |   |
| SW-9            | West Sidewall   | 2'-3'        | X                |   |                 | X |   |   |           | CLAY                | 0.6        | 10.9              |    |   |   |   | X |   |
|                 |                 |              |                  |   |                 |   |   |   |           |                     |            |                   |    |   |   |   |   |   |
|                 |                 |              |                  |   |                 |   |   |   |           |                     |            |                   |    |   |   |   |   |   |

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* N - Non-Detect  
 VW - Very Weak  
 W - Weak  
 M - Medium  
 S - Strong



Hallock High School

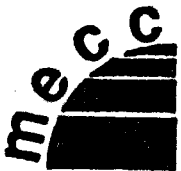
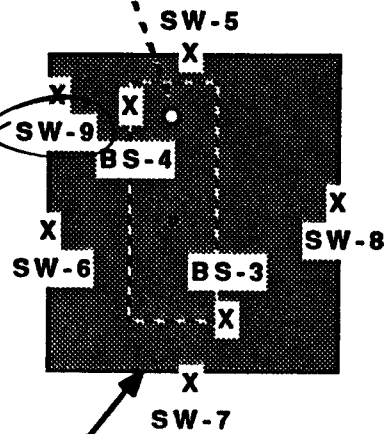
Water Line

Electrical Utility

N

*No soil analysis done. JAG*

Extent of Excavation



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CONTROL CORPORATION**

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Minneapolis, Minnesota 55421  
(612) 781-1847

## Figure 4

Soil Excavation and Soil  
Sample Locations

Hallock High School  
MECC Project # 1023J1-0489

Date:  
5-1-1990

Prepared By:  
CFD

Scale:  
1" = 20'

Reviewed By:  
PNC

**TABLE 2**

**RESULTS OF CHEMICAL ANALYSES  
HALLOCK HIGH SCHOOL**

| <b><u>Parameter</u></b>                          | <b><u>Sample ID</u></b> |                    |                    |                    |                    |                    |                    |                    |
|--|-------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|  | <b><u>SP-1</u></b>      | <b><u>SP-2</u></b> | <b><u>BS-3</u></b> | <b><u>BS-4</u></b> | <b><u>SW-5</u></b> | <b><u>SW-6</u></b> | <b><u>SW-7</u></b> | <b><u>SW-8</u></b> |
| <b><u>Benzene</u></b>                            | <0.005                  | 0.062              | <0.005             | <0.005             | <0.005             | <0.005             | <0.005             | <0.005             |
| <b><u>Toluene</u></b>                            | <0.005                  | 0.0063             | <0.005             | <0.005             | <0.005             | <0.005             | <0.005             | <0.005             |
| <b><u>Ethylbenzene</u></b>                       | 0.044                   | 0.12               | <0.005             | <0.005             | <0.005             | <0.005             | <0.005             | <0.005             |
| <b><u>Xylenes</u></b>                            | 0.022                   | 0.57               | <0.005             | <0.005             | <0.005             | <0.005             | <0.005             | <0.005             |
| <b><u>Total Hydrocarbons<br/>as Fuel Oil</u></b> | 8.3                     | 56.0               | <2.0               | <2.0               | <2.0               | <2.0               | <2.0               | <2.0               |

---

**INDEX:**

**SP** Soil pile  
**BS-3** South base  
**BS-4** North base  
**SW-5** North sidewall  
**SW-6** West sidewall  
**SW-7** South sidewall  
**SW-8** East sidewall  
**<** Less Than

- o All Units Reported In Parts Per Million (PPM)
- o Analyses Conducted By Serco Laboratories, Inc., St. Paul, MN

**Petroleum Impact Evaluation (Cont.)**

On November 18, 1989, MECC field personnel directed the advancement of three soil borings about the known point of the petroleum release (Figure 5). The soil borings were advanced with a 4" diameter solid stem flight auger to a depth of 10 feet. Soils were classified in accordance with ASTM D2487 "Unified Soil Classification System" and ASTM D2488 "Recommended Practice for Visual and Manual Description of Soils". The solid stem auger was cleaned between each soil boring to minimize cross contamination. Technical drilling, sampling and decontamination methods and procedures are outlined in Appendix D. Soil boring logs are illustrated in Appendix E. The soil samples were retracted utilizing the pulling method. Soil samples were obtained at 3 foot and 7.5 foot depths. Headspace readings of the soil samples were performed with an HNu Model 101 photoionization analyzer equipped with a 10.2 eV lamp. HNu results for these samples ranged from 0.4 ppm to 0.7 ppm with background readings of 0.2 ppm. Analytical laboratory results were obtained from the 2-3 foot samples on all test borings.

The test boring soil sample analytical results indicated trace levels of total hydrocarbons as gasoline and no detection of THC as fuel oil within analytical limits (See Table 3). According to available information, the UST that was located on site never contained gasoline product at any time. There is also no known sources of gasoline in the immediate area. The area east of the electrical utility (See Figure 5) is a gravel parking lot used for student parking, so it is difficult at this time to speculate where the gasoline contamination originated. However, the levels of gasoline type contamination indicated at very low levels and poses no health or vapor risks to the surrounding area.

**TABLE 3**

**RESULTS OF CHEMICAL ANALYSES  
OF TEST BORINGS AT 2'-3'  
HALLOCK HIGH SCHOOL**

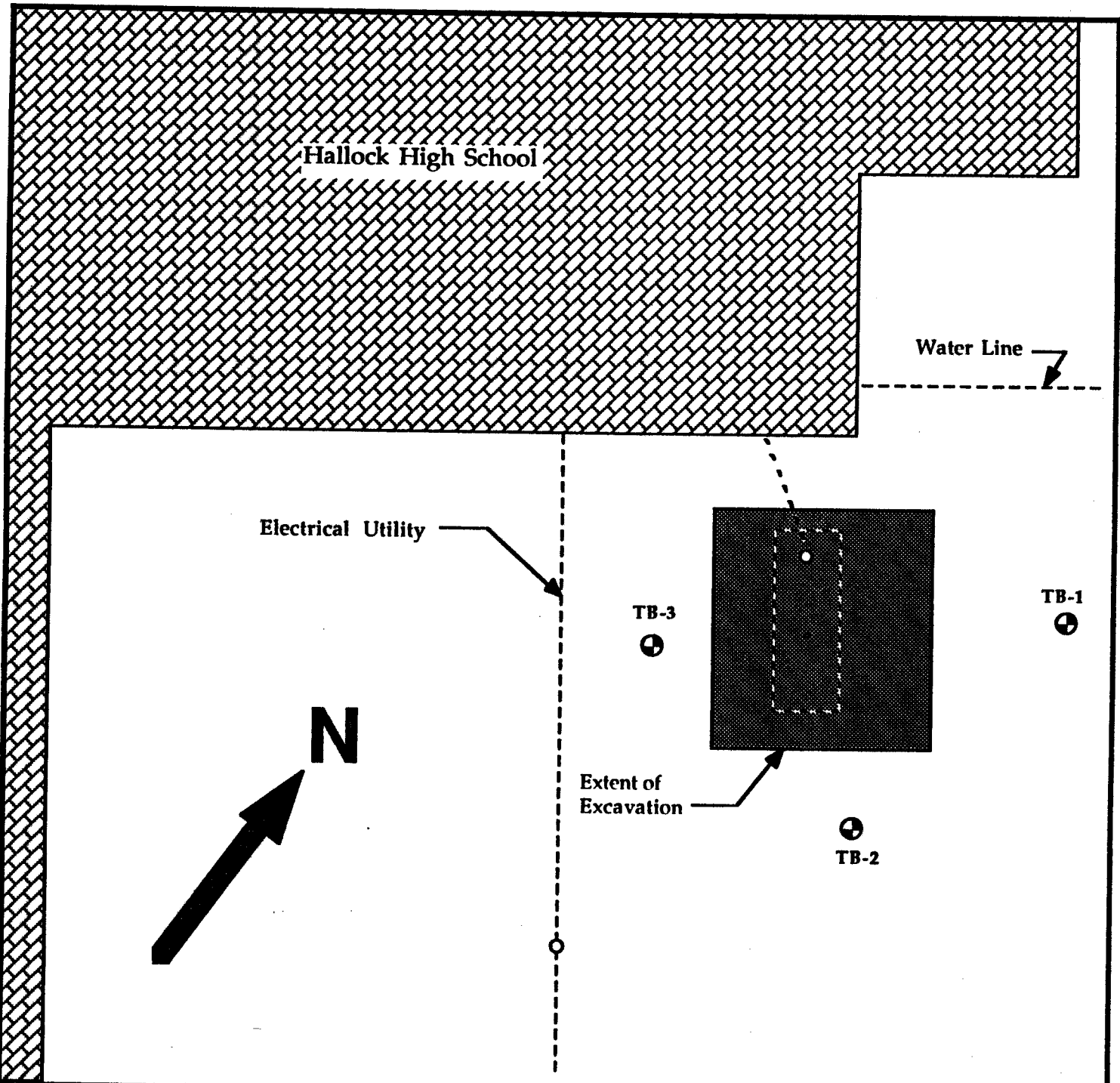
| <b><u>Parameter</u></b>                          | <b><u>Sample ID</u></b> |                    |                    |
|--|-------------------------|--------------------|--------------------|
|  | <b><u>TB-1</u></b>      | <b><u>TB-2</u></b> | <b><u>TB-3</u></b> |
| <b><u>Benzene</u></b>                            | 0.055                   | 0.023              | 0.036              |
| <b><u>Toluene</u></b>                            | 0.031                   | 0.006              | 0.015              |
| <b><u>Ethylbenzene</u></b>                       | <0.005                  | <0.005             | <0.005             |
| <b><u>Xylenes</u></b>                            | 0.007                   | <0.005             | 0.005              |
| <b><u>Total Hydrocarbons<br/>as Fuel Oil</u></b> | <2.0                    | <2.0               | <2.0               |
| <b><u>as Gasoline</u></b>                        | 0.78                    | <0.50              | <0.50              |

---

**INDEX:**

TP      Test Boring  
<      Less Than

- o All Units Reported In Parts Per Million (PPM)
- o Analyses Conducted By Serco Laboratories, Inc., St. Paul, MN



**MIDWEST ENVIRONMENTAL  
CONTROL CORPORATION**

3901 University Avenue NE  
Minneapolis, Minnesota 55421  
(612) 781-1647

### Figure 5

#### Test Boring Locations

Hallock High School  
MECC Project # 1023J1-0489

Date:  
5-1-1990

Prepared By:  
CFD

Scale:  
1" = 20'

Reviewed By:  
PNC

### 4.3 Soil Excavation Results

The approximately 400 cubic yards of removed soils has been temporarily stockpiled on site until MPCA approval is obtained to land apply the petroleum contaminated soils. The soil was placed on and covered with continuous polysheeting. The excavation was backfilled with clean imported fill.

### **5.0 Conclusions and Recommendations**

MECC found limited amounts of petroleum product impacted soils associated with the removal of the UST. This contaminated soil was located in the tank backfill envelope immediately adjacent to the USTs. Based on the available information, we conclude that the petroleum hydrocarbon contaminated soil appears to be the result of leakage caused by piping failure, tank failure and spillage. Elevated HNu readings, olfactory detection and UVI responses recorded in the soil samples adjacent to the tank basin is evidence to support this conclusion.

Laboratory results of the soil samples collected from the excavation ~~limits~~ indicate no detectable limits of hydrocarbon contamination as fuel oil within the soils remaining in the sidewalls or in the base of the excavation, except for an area about 3 feet deep from the ground surface just outside the tank basin. The failure to identify any petroleum contamination remaining in the tank basin indicates that all detectable petroleum contaminated soils have been adequately excavated. Therefore, based on the available information and the small amount of contaminated soils remaining, we recommend that no further remediation be conducted at this site.

## **6.0 Petrofund Reimbursement**

The Petrofund Board was established by the 1987 Minnesota State Legislature for the purpose of administering the Petroleum Tank Release Cleanup Fund. The objective of the program is to partially reimburse responsible persons (RPs) for costs associated in responding to a petroleum release. To be eligible for reimbursement, a Corrective Action Plan (CAP) must be approved of by the MPCA for the site. The corrective action must adequately address the release in terms of public health, welfare and the environment. This includes defining the full extent of the petroleum release, which may involve additional exploratory soil borings and/or groundwater monitoring wells. Also, the tank must have been in compliance with applicable state and federal tank regulations at the time of the petroleum release and the MPCA received proper notification of the release. It must also be shown the operation of the tank was performed properly including maintenance of inventory control procedures. Once these items have been addressed and a cooperative effort has been maintained between the responsible person and the MPCA, application for reimbursement may at that time be prepared.



## 7.0 Qualifications

Environmental services performed by our engineers, hydrogeologists and geotechnicians for this project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by environmental professionals currently practicing in this area under similar budget and time constraints. Recommendations or opinions contained in this report represent our professional judgement and are generally based upon available information and currently accepted hydrogeologic and engineering practices at the present time and location. Other than this, no warranty is implied nor is it expressed.

This report was prepared by:

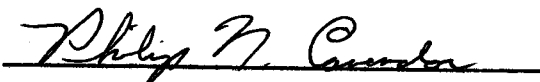


Craig F. Diekvoss

Environmental Geologist

Date: May 18, 1990

This report was reviewed by:



Philip N. Cavendor, Director

Environmental Engineering Services

Date: May 18, 1990

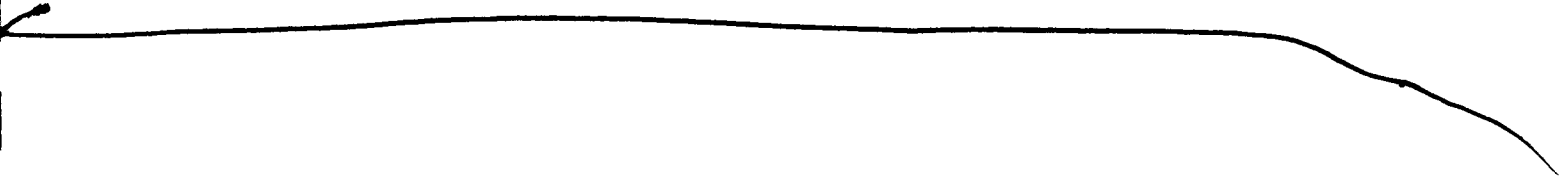
**APPENDIX A**

**UNDERGROUND STORAGE TANK REMOVAL  
INFORMATION FORM**



**APPENDIX B**

**UNDERGROUND STORAGE TANK  
NOTIFICATION FORM**





MINNESOTA POLLUTION CONTROL AGENCY  
 HAZARDOUS WASTE DIVISION  
 TANKS AND SPILLS SECTION  
 520 LAFAYETTE ROAD NORTH  
 ST. PAUL, MINNESOTA 55155

MPCA USE

(READ INSTRUCTIONS ON REVERSE BEFORE STARTING)

A. CHOOSE APPROPRIATE TRANSACTION TYPE(S)

- Initial Notification
- Change in Tank Ownership (Date \_\_\_/\_\_\_/\_\_\_)
- Install New Tank
- Remove Tank (Date 11/2/89)
- Upgrade Tank (Date \_\_\_/\_\_\_/\_\_\_)
- Other Changes (Please Specify) \_\_\_\_\_
- Close in Place (Date \_\_\_/\_\_\_/\_\_\_)

|   |   |                                     |   |
|---|---|-------------------------------------|---|
| B. Name of Tank Site<br>Hallock High School |   | C. Name of Owner<br>Hallock Schools |   |
| Tank Site Address<br>44 North Ash           |   | Mailing Address<br>PO Box L         |   |
| City<br>Hallock                             | County<br>Kittson                           | City<br>Hallock                     | State<br>MN                                 |
| Zip<br>56728                                | Phone (Include Area Code)<br>(218) 843-3682 | Zip<br>56728                        | Phone (Include Area Code)<br>(218) 843-2555 |

| D. Tank Number                       | E. Date Tank Installed | 2. Capacity (Gallons) | 3. Material of Construction (Tank) | 4. Corrosion Protection  |                      |
|--------------------------------------|------------------------|-----------------------|------------------------------------|--------------------------|----------------------|
| H23                                  | 6/10/57                | 10,000                | Asphalt coated steel               | Internal<br>YES / NO     | External<br>YES / NO |
| 5. Material of Construction (Piping) | Corrosion Protection   | 6. Dispenser Type     | 7. Substance Stored                | 8. Secondary Containment |                      |
| Wrapped steel                        | YES / NO               | Suction               | #2 fuel oil                        | None                     |                      |

F. RELEASE DETECTION (CHOOSE ALL THAT APPLY)

|   |  |
|---|--|
| <input type="checkbox"/> Tank Tightness Testing & Inventory Controls<br><input type="checkbox"/> Interstitial Monitoring (Double Wall Tank)<br><input type="checkbox"/> Interstitial Monitoring (Sec. Containment)<br><input type="checkbox"/> Manual Tank Gauging (Less than 550 gal.)<br><input type="checkbox"/> Manual Tank Gauging & Tank Tightness Test (551 to 2000 ga.) | <input type="checkbox"/> Vapor Monitoring<br><input type="checkbox"/> Automatic Line Leak Det<br><input type="checkbox"/> Automatic Tank Gauging<br><input type="checkbox"/> Ground-Water Monitoring<br><input type="checkbox"/> Line Tightness Test<br><input type="checkbox"/> Other Method(s)-Specify _____ |
|---|--|

G. COMMENTS

I certify under penalty of law that I have personally examined & am familiar with the information submitted in this & all attached documents, & that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name & Official Title of owner or owner's authorized representative  
James A. Smith Eng 11-2-89

Owner/Representative Signature Date

Q-00410-01 (7/89)

**APPENDIX C**  
**ANALYTICAL RESULTS**





# SERCO Laboratories

1931 West County Road C2, St. Paul, Minnesota 55113 (612) 636 7173

LABORATORY ANALYSIS REPORT NO: 2933  
12/11/89

PAGE 1

Midwest Environmental Control  
Corporation  
3901 University Avenue N.E.  
Minneapolis, MN 55421

DATE COLLECTED: 11/18/89  
DATE RECEIVED: 11/22/89  
COLLECTED BY : CLIENT  
DELIVERED BY : CLIENT  
SAMPLE TYPE : SOIL

Attn: Craig Diekvoss

| SERCO SAMPLE NO:                | 83849    | 83859    | 83869    |
|---------------------------------|----------|----------|----------|
| SAMPLE DESCRIPTION:             | TB-1     | TB-2     | TB-3     |
|                                 | 10230489 | 10230489 | 10230489 |
|                                 | J1-A     | J1-A     | J1-A     |
|                                 | Hallock  | Hallock* | Hallock* |
| Benzene, mg/kg                  | 0.055    | 0.023    | 0.036    |
| Toluene, mg/kg                  | 0.031    | 0.006    | 0.015    |
| Ethylbenzene, mg/kg             | <0.005   | <0.005   | <0.005   |
| Xylene, mg/kg                   | 0.007    | <0.005   | 0.005    |
| FID Scan, mg/kg, as #2 fuel oil | <2.0     | <2.0     | <2.0     |
| FID Scan, mg/kg, as gasoline    | 0.78     | <0.50    | <0.50    |

ANALYSIS:

\* Sample may contain a trace amount of gasoline below the detection limit.

All analyses were performed using EPA or other accepted methodologies. Samples that may be of an environmentally hazardous nature will be returned to you. Other samples will be stored for 30 days from the date of this report, then disposed of by SERCO LABORATORIES. Please contact me if other arrangements are needed.

Report submitted by,

Diane J. Anderson  
Project Manager



Member



# SERCO Laboratories

1931 West County Road C2 St. Paul, Minnesota 55113 (612) 636 7173

LABORATORY ANALYSIS REPORT NO: 2718  
11/09/89

PAGE 2

All analyses were performed using EPA or other accepted methodologies. Samples that may be of an environmentally hazardous nature will be returned to you. Other samples will be stored for 30 days from the date of this report, then disposed of by SERCO LABORATORIES. Please contact me if other arrangements are needed.

Report submitted by,

Diane J. Anderson  
Project Manager

< means "not detected at this level". 1 mg = 1000 ug.



Member





# SERCO Laboratories

1931 West County Road C2, St. Paul, Minnesota 55113 (612) 636-7173

LABORATORY ANALYSIS REPORT NO: 2719 PAGE 1  
11/14/89

Midwest Environmental Control Corporation  
3901 University Avenue N.E.  
Minneapolis, MN 55421

DATE COLLECTED: 11/02/89  
DATE RECEIVED: 11/06/89  
COLLECTED BY: CLIENT  
DELIVERED BY: CLIENT  
SAMPLE TYPE: SOIL

Attn: Craig Diekvoss

SERCO SAMPLE NO: 78339 78349 78359 78369

| SAMPLE DESCRIPTION: | SP-1     | SP-2     | BS3-SW   | BS4-NE   |
|---------------------|----------|----------|----------|----------|
|                     | 10230489 | 10230489 | 10230489 | 10230489 |
|                     | J-1A     | J-1A     | J-1A     | J-1A     |
| ANALYSIS:           | Hallock  | Hallock  | Hallock  | Hallock  |

|                                 |        |       |        |        |
|---------------------------------|--------|-------|--------|--------|
| Benzene, mg/kg                  | <0.005 | 0.062 | <0.005 | <0.005 |
| Toluene, mg/kg                  | <0.005 | 0.063 | <0.005 | <0.005 |
| Ethylbenzene, mg/kg             | 0.014  | 0.12  | <0.005 | <0.005 |
| Xylene, mg/kg                   | 0.022  | 0.57  | <0.005 | <0.005 |
| FID Scan, mg/kg, as #2 fuel oil | 8.3    | 56    | <2.0   | <2.0   |

SERCO SAMPLE NO: 78379 78389 78399

| SAMPLE DESCRIPTION: | SW6-W    | SW7-S    | SW8-E    |
|---------------------|----------|----------|----------|
|                     | 10230489 | 10230489 | 10230489 |
|                     | J-1A     | J-1A     | J-1A     |
| ANALYSIS:           | Hallock  | Hallock  | Hallock  |

|                                 |        |        |        |
|---------------------------------|--------|--------|--------|
| Benzene, mg/kg                  | <0.005 | <0.005 | <0.005 |
| Toluene, mg/kg                  | <0.005 | <0.005 | <0.005 |
| Ethylbenzene, mg/kg             | <0.005 | <0.005 | <0.005 |
| Xylene, mg/kg                   | <0.005 | <0.005 | <0.005 |
| FID Scan, mg/kg, as #2 fuel oil | <2.0   | <2.0   | <2.0   |





# SERCO Laboratories

1931 West County Road C2, St. Paul, Minnesota 55113 (612) 636-7173

LABORATORY ANALYSIS REPORT NO: 2719  
11/14/89

PAGE 2

All analyses were performed using EPA or other accepted methodologies. Samples that may be of an environmentally hazardous nature will be returned to you. Other samples will be stored for 30 days from the date of this report, then disposed of by SERCO LABORATORIES. Please contact me if other arrangements are needed.

Report submitted by,

Diane J. Anderson  
Project Manager





# SERCO Laboratories

1931 West County Road C2, St. Paul, Minnesota 55113 (612) 636-7173

LABORATORY ANALYSIS REPORT NO: 2725  
11/09/89

PAGE 1

Midwest Environmental Control  
Corporation  
3901 University Avenue N.E.  
Minneapolis, MN 55421

DATE COLLECTED: 11/02/89  
DATE RECEIVED: 11/06/89  
COLLECTED BY: CLIENT  
DELIVERED BY: CLIENT  
SAMPLE TYPE: SOIL

Attn: Craig Diekvoss

SERCO SAMPLE NO: 78509

SAMPLE DESCRIPTION: SWS-N  
10230489  
J1A  
Hallock

ANALYSIS:

|                                 |        |
|---------------------------------|--------|
| Benzene, mg/kg                  | <0.005 |
| Toluene, mg/kg                  | <0.005 |
| Ethylbenzene, mg/kg             | <0.005 |
| Xylene, mg/kg                   | <0.005 |
| FID Scan, mg/kg, as #2 fuel oil | <2.0   |

All analyses were performed using EPA or other accepted methodologies. Samples that may be of an environmentally hazardous nature will be returned to you. Other samples will be stored for 30 days from the date of this report, then disposed of by SERCO LABORATORIES. Please contact me if other arrangements are needed.

Report submitted by.

Diane J. Anderson  
Project Manager





**MIDWEST ENVIRONMENTAL CONTROL CORPORATION**  
 3901 University Ave. N.E.  
 Minneapolis, MN 55421

# CHAIN OF CUSTODY RECORD

NO. 2619

RECORD NO. 2619 THROUGH 2619

Project Manager Craig F. Diehl  
 Phone No. 781-1647  
 Project No. 1033-0489J-1A Hallowell High  
 MECC Office Mpls

Special Handling Request  
 RUSH VERBAL (NORMAL)  
 OTHER: For the soil

Laboratory Sacco  
 Contact Person Diane Anderson  
 Phone No. 626-7173  
 Results Due Nov. 15 1989

| Sample I.D.       | Date            | Time            | Grab         | Composite | No. Of Containers | Sample Type (water, soil, air, sludge, etc.) | Preservation | Field Data     |                |    |                      | Laboratory Analysis Request | Comments on Samples (Included Major Type of Contaminants) |
|-------------------|-----------------|-----------------|--------------|-----------|-------------------|--|--------------|----------------|----------------|----|----------------------|-----------------------------|---|
|                   |                 |                 |              |           |                   |  |              | PID/FID        |                | PH | Specific Conductance |                             |   |
|                   |                 |                 |              |           |                   |  |              | Ambient        | Sample         |    |                      |                             |   |
| SP-1              | 11/2            | 1:15            | X            |           | 1                 | Soil   | Y            | 0.6            | 9.7            |    |                      |                             |   |
| SP-2              | 11/2            | 2:00            | X            |           | 1                 |  | X            | 0.6            | 2.6            |    |                      |                             |   |
| RS-3-SW           | 11/2            | 3:30            | X            |           |                   |  | X            | 0.7            | 2.0            |    |                      |                             |   |
| RS-4-NE           | 11/2            | 3:45            | X            |           |                   |  | X            | 0.6            | 2.6            |    |                      |                             |   |
| <del>SW-5-W</del> | <del>11/2</del> | <del>3:50</del> | <del>X</del> |           |                   |  | <del>X</del> | <del>0.6</del> | <del>2.6</del> |    |                      |                             |   |
| SW-6-W            | 11/2            | 3:35            | X            |           | 1                 |  | X            | 0.6            | 2.4            |    |                      |                             | Missing   |
| SW-7-S            | 11/2            | 3:40            | X            |           | 1                 |  | X            | 0.6            | 1.9            |    |                      |                             |   |
| SW-8-E            | 11/2            | 4:00            | X            |           | 1                 |  | X            | 0.6            | 2.9            |    |                      |                             |   |

Collected by: Craig F. Diehl Date 11/2/89 Time 4:00 Delivery by: Craig F. Diehl Date 11/6 Time 12:30  
 Received by: [Signature] Date 11-6-89 Time 11:30 AM Relinquished 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: \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Relinquished by: \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Laboratory Comments Only: **Seals Intact Upon Receipt**  YES  NO  N/A

Final Sample(s) Disposition: \_\_\_\_\_  
 Comments (Weather Conditions, Precautions, Hazards): \_\_\_\_\_

Distribution: Original and Yellow - Laboratory Pink - MECC Project File Blue - As Needed  
 Instruction to Laboratory: Forward completed original with analytical results. Retain yellow copy.



**MIDWEST ENVIRONMENTAL CONTROL CORPORATION**  
 3901 University Ave. N.E.  
 Minneapolis, MN 55421

# CHAIN OF CUSTODY RECORD

NO. 2890

RECORD NO. 2890 THROUGH 2890

Project Manager Craig F. Johnson  
 Phone No. 91-1147  
 Project No. 42-049 T-1-A Walker High  
 MECC Office \_\_\_\_\_

Special Handling Request  
 RUSH VERBAL NORMAL  
 OTHER: \_\_\_\_\_

Laboratory \_\_\_\_\_  
 Contact Person Dave Anderson  
 Phone No. 6-1-1173  
 Results Due 12-1-89

| Sample I.D. | Date  | Time | Grab | Composite | No. Of Containers | Sample Type (water, soil, air, sludge, etc.) | Preservation Y/N | Field Data |        |    |                      | Laboratory Analysis Request | Comments on Samples (Included Major Type of Contaminants) |  |
|-------------|-------|------|------|-----------|-------------------|--|------------------|------------|--------|----|----------------------|-----------------------------|---|--|
|             |       |      |      |           |                   |  |                  | PID/FID    |        | PH | Specific Conductance |                             |   |  |
|             |       |      |      |           |                   |  |                  | Ambient    | Sample |    |                      |                             |   |  |
| TB-1        | 11/18 | am   | Y    |           | 1                 | Water  |                  |            |        |    |                      |                             |   |  |
| TB-2        | 11/18 | am   | Y    |           | 1                 | Water  |                  |            |        |    |                      |                             |   |  |
| TB-3        | 11/18 | am   | Y    |           | 1                 | Water  |                  |            |        |    |                      |                             |   |  |
|             |       |      |      |           |                   |  |                  |            |        |    |                      |                             |   |  |
|             |       |      |      |           |                   |  |                  |            |        |    |                      |                             |   |  |
|             |       |      |      |           |                   |  |                  |            |        |    |                      |                             |   |  |
|             |       |      |      |           |                   |  |                  |            |        |    |                      |                             |   |  |
|             |       |      |      |           |                   |  |                  |            |        |    |                      |                             |   |  |
|             |       |      |      |           |                   |  |                  |            |        |    |                      |                             |   |  |
|             |       |      |      |           |                   |  |                  |            |        |    |                      |                             |   |  |
|             |       |      |      |           |                   |  |                  |            |        |    |                      |                             |   |  |

|  |   |
|--|---|
| Collected by: <u>Craig F. Johnson</u> Date <u>11/18/89</u> Time <u>12:30</u> | Delivery by: <u>P. Gustafson</u> Date <u>11-22-89</u> Time <u>4:30 PM</u> |
| Received by: <u>Dave Anderson</u> Date <u>11/20/89</u> Time <u>4:30 PM</u>   | Relinquished 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: _____ Date _____ Time _____                             | Relinquished by: _____ Date _____ Time _____                              |

**Laboratory Comments Only:** Seals Intact Upon Receipt  YES  NO  N/A

Final Sample(s) Disposition: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Comments (Weather Conditions, Precautions, Hazards):  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Distribution: Original and Yellow - Laboratory Pink - MECC Project File Blue - As Needed  
 Instruction to Laboratory: Forward completed original with analytical results. Retain yellow copy.



**MIDWEST ENVIRONMENTAL  
CONTROL CORPORATION**  
3901 University Ave. N.E.  
Minneapolis, MN 55421

# CHAIN OF CUSTODY RECORD

NO. 2103

RECORD NO. 2103 THROUGH 2107

Project Manager [Signature]  
Phone No. 754449  
Project No. [Signature]  
MECC Office [Signature]

**Special Handling Request**

RUSH VERBAL NORMAL  
OTHER: [Signature]

Laboratory [Signature]  
Contact Person [Signature]  
Phone No. [Signature]  
Results Due [Signature]

| Sample I.D. | Date | Time | Grab | Composite | No. Of Containers | Sample Type (water, soil, air, sludge, etc.) | Preservation<br>Y/N | Field Data |        |    |                      | Laboratory Analysis Request | Comments on Samples<br>(Included Major Type of Contaminants) |
|-------------|------|------|------|-----------|-------------------|--|---------------------|------------|--------|----|----------------------|-----------------------------|--|
|             |      |      |      |           |                   |  |                     | PID/FID    |        | PH | Specific Conductance |                             |  |
|             |      |      |      |           |                   |  |                     | Ambient    | Sample |    |                      |                             |  |
|             |      |      |      |           |                   |  |                     |            |        |    |                      |                             |  |
|             |      |      |      |           |                   |  |                     |            |        |    |                      |                             |  |
|             |      |      |      |           |                   |  |                     |            |        |    |                      |                             |  |
|             |      |      |      |           |                   |  |                     |            |        |    |                      |                             |  |
|             |      |      |      |           |                   |  |                     |            |        |    |                      |                             |  |
|             |      |      |      |           |                   |  |                     |            |        |    |                      |                             |  |
|             |      |      |      |           |                   |  |                     |            |        |    |                      |                             |  |
|             |      |      |      |           |                   |  |                     |            |        |    |                      |                             |  |

|   |  |
|---|--|
| Collected by: <u>[Signature]</u> Date <u>11/1/99</u> Time <u>4:00</u> | Delivery by: <u>[Signature]</u> Date <u>11/1/99</u> Time <u>4:00</u> |
| Received by: <u>[Signature]</u> Date <u>11/1/99</u> Time <u>11:20</u> | Relinquished by: <u>[Signature]</u> 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: _____ Date _____ Time _____                      | Relinquished by: _____ Date _____ Time _____                         |

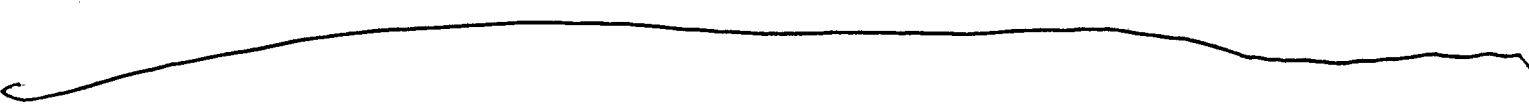
**Laboratory Comments Only: Seals Intact Upon Receipt**  YES  NO  N/A

|                              |  |
|------------------------------|--|
| Final Sample(s) Disposition: | Comments (Weather Conditions, Precautions, Hazards): |
|                              |  |
|                              |  |
|                              |  |

Distribution: Original and Yellow - Laboratory      Pink - MECC Project File      Blue - As Needed  
Instruction to Laboratory: Forward completed original with analytical results. Retain yellow copy.

**APPENDIX D**


**TECHNICAL METHODS  
AND PROCEDURES**



## TECHNICAL METHODS AND PROCEDURES

### **Soil Sampling**

Sampling of the borings was completed in general accordance with ASTM 1452-80 "Standard Practice for Soil Investigation and Sampling by Auger Borings." Using this method, we advanced the spiral-flute, solid-stem powered auger to the desired depth and then retracted the soil sample using the pulling method. In the pulling procedures, the auger is drilled into the ground and then withdrawn to above the ground surface. The general soil profile can be observed, and samples of the soil material adhering to the auger are collected for field screening of petroleum hydrocarbons. The HNu was calibrated with a benzene standard before sample screening was performed. Soil samples for chemical analyses will be collected in laboratory cleaned, 100 milliliter (ml), glass jars with Teflon lid liners.






### **Soil Classification**

Soils encountered during soil boring operations were visually and manually classified in general accordance with ASTM D2487 "Unified Soil Classification System" and ASTM D2488 "Recommended Practice For Visual and Manual Description of Soils". Representative portions of the sample will be returned to the laboratory for further examination and for verification of the field classification. Logs of the soil boring were prepared for each soil boring and will include boring depths, identification of the various geologic strata, water level information and pertinent information regarding the method of maintaining and advancing the drill holes.

### **Contamination Reduction**

The solid stem auger was cleaned between each soil boring to minimize cross contamination. The cleaning procedure consisted of a soap and tap water wash using a brush and tap water rinse. The soap and water was changed regularly during the sampling. Additionally, all downhole drilling equipment and associated tools were steam cleaned prior to the first boring and between subsequent borings if significant contamination was encountered. The cleaning between borings was performed on site.



## **Soil Screening**

Soils will be screened with an HNu model 101 photoionization analyzer equipped with a 10.2 eV lamp and an Ultraviolet Illuminator (UVI).

The HNu was calibrated for direct reading in ppm volume/volume of benzene. A fresh soil surface was exposed along selected portions of the solid stem auger and the HNu probe immediately placed within 1 to 2 inches of the soil surface to obtain a reading. The selected soil samples were then put into a clean, dedicated and sealable plastic soil sample bag for headspace analysis.

The Ultraviolet Illuminator (UVI) is used to indicate total volatile and sub-volatile petroleum hydrocarbons in the collected soil samples. The UVI utilizes an ultraviolet radiation source of specific wavelengths to detect subtle varying intensities of fluorescence for both soil and water samples. Based on the ultraviolet fluorescence characteristics of the target hydrocarbon compound in the sample, the qualitative degree of contamination can be determined.

---

**APPENDIX E**  
**SOIL BORING LOGS**



# MECC LOG OF EXPLORATION / MONITORING WELL BORING

Project Name: Hallock High School Boring Number: TB-1

Project Number: 1023J1-0489 Date: 11/18/89

| Depth<br>in Feet | Description<br>of Material<br>ASTM<br>D2488 | Symbol<br>ASTM<br>D2487 | Rel. Density |    | Moisture |      | Sample |        | PID Inst. in<br>(ppm): HNu |   |   |   | Odor<br>Detection |    |   |   | UVI<br>Fluorescence |  |  |  |
|------------------|---|-------------------------|--------------|----|----------|------|--------|--------|----------------------------|---|---|---|-------------------|----|---|---|---------------------|--|--|--|
|                  |   |                         | N            | WL | No.      | Type | Bkgnd  | Hd Spc | N                          | W | M | S | N                 | VW | W | M | S                   |  |  |  |
| 5                | SAND and GRAVEL,<br>Brown, Dry              | SW                      |              |    |          |      |        |        |                            |   |   |   |                   |    |   |   |                     |  |  |  |
| 5                | Silty CLAY, Brown,<br>Dry                   | CL                      |              |    | D        | 1    | SS     | 0.2    | 0.7                        | X |   |   |                   |    |   |   |                     |  |  |  |
| 10               | End of Boring<br>No refusal                 |                         |              |    | D        | 2    | SS     | 0.2    | 0.4                        | X |   |   |                   |    |   |   |                     |  |  |  |

Drilling Contractor: MECC

Drilling Method: 4" Diameter Flight Auger

Driller/Crew Chief: C. Diekvoss

Surface Elevation (NGVD): \_\_\_\_\_

Drill Rig Type: B.Rogers Model 160

**MIDWEST ENVIRONMENTAL  
CONTROL CORPORATION**  
Engineering and Environmental Services

| Soil Boring Measurements |       |                |                  |                |
|--------------------------|-------|----------------|------------------|----------------|
| Boring Time              |       | Total<br>Depth | Cave-in<br>Depth | Water<br>Level |
| Begin                    | End   |                |                  |                |
| 10:40                    | 11:10 | 20.0'          | 19.0'            | -              |

# MECC LOG OF EXPLORATION / MONITORING WELL BORING

Project Name: Hallock High School Boring Number: TB-2

Project Number: 102311-0489 Date: 11/18/89

| Depth in Feet | Description of Material<br>ASTM D2488 | Symbol<br>ASTM D2487 | Rel. Density | Moisture | Sample |      | PID Inst. in (ppm): HNu |        | Odor Detection |   |   |   | UVI Fluorescence |    |   |   |   |  |  |
|---------------|---------------------------------------|----------------------|--------------|----------|--------|------|-------------------------|--------|----------------|---|---|---|------------------|----|---|---|---|--|--|
|               |                                       |                      | N            | WL       | No.    | Type | Bkgnd                   | Hd Spc | N              | W | M | S | N                | VW | W | M | S |  |  |
| 0             | SAND and GRAVEL,<br>Brown, Dry        | S W                  |              |          |        |      |                         |        |                |   |   |   |                  |    |   |   |   |  |  |
| 5             | Silty CLAY, Brown,<br>Dry             | CL                   |              | D        | 1      | SS   | 0.2                     | 0.5    | X              |   |   |   |                  |    |   |   |   |  |  |
| 10            | End of Boring<br>No refusal           |                      |              | D        | 2      | SS   | 0.2                     | 0.5    | X              |   |   |   |                  |    |   |   |   |  |  |
| 15            |                                       |                      |              |          |        |      |                         |        |                |   |   |   |                  |    |   |   |   |  |  |

Drilling Contractor: MECC

Drilling Method: 4" Diameter Flight Auger

Driller/Crew Chief: C. Diekvoss

Surface Elevation (NGVD): \_\_\_\_\_

Drill Rig Type: B.Rogers Model 160

**MIDWEST ENVIRONMENTAL  
CONTROL CORPORATION**  
Engineering and Environmental Services

| Soil Boring Measurements |       |             |               |             |
|--------------------------|-------|-------------|---------------|-------------|
| Boring Time              |       | Total Depth | Cave-in Depth | Water Level |
| Begin                    | End   |             |               |             |
| 10:40                    | 11:10 | 20.0'       | 19.0'         | -           |

