

October 31, 1996

Mr. Mike Nelson  
Tanks and Spills Section  
Minnesota Pollution Control Agency  
520 Lafayette Road  
St. Paul, Minnesota 55155

**RECEIVED**  
NOV 06 1996  
MPCA, HAZARDOUS  
WASTE DIVISION

**Re: Excavation Report**  
**Site ID#: Leak00008810**

Dear Mr. Nelson:

Please find enclosed an excavation report for work conducted at the the Nuway Fertilizer Plant, located at State Highway 4 North, Trimont, MN. DAHL is recommending that the MPCA consider this site for closure status.

If you have any questions or need further information, please contact me at (612) 490- 3795.

Sincerely,

DAHL & ASSOCIATES, INC.



Paul D. Meadows  
Staff Scientist

pm/mf

enclosures      Excavation Report.

cc:                    Mr. Jim Lorenz, NuWay Cooperative  
                          File: 2495-5174, with enclosures

**DAHL & ASSOCIATES, INC.**  
Environmental Consultants, Contractors & Engineers

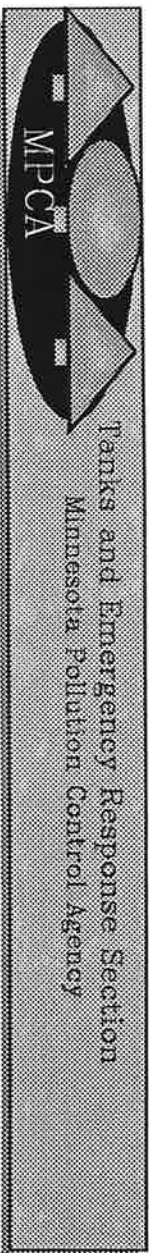
4390 McMENEMY ROAD  
SAINT PAUL, MINNESOTA 55127

**EXCAVATION REPORT**  
*for*  
**PETROLEUM RELEASE SITES**

NUWAY COOPERATIVE - FERTILIZER PLANT  
STATE HIGHWAY 4 NORTH  
TRIMONT, MINNESOTA 56176

Report #24955174-002  
October 31, 1996

*Report submitted to:*  
Mr. Jim Lorenz, Nuway Cooperative, Trimont  
Mr. Tony Hill, Minnesota Pollution Control Agency



# EXCAVATION REPORT WORKSHEET FOR RECEIVED PETROLEUM RELEASE SITES

Fact Sheet #3.7

April 1996

NOV 06 1996

MPCA, HAZARDOUS  
WASTE DIVISION

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: Nuway Fertilizer Plant, Trimont

Street: State Highway 4 North

City, Zip: Trimont, MN 56176

County: Martin

MPCA Site ID#: LEAK00008810

B. Tank Owner/Operator: Mr. Jim Lorenz

Mailing Address: Nuway Cooperative

Street/Box: P.O. Box Q

City, Zip: Trimont, MN 56176

Telephone: (507) 639-2311

C. Excavating Contractor:

Doug Carlson Drainage

Contact: Douglas Carlson

Telephone: PO Box 386, Trimont, MN 56176

Tank Contractor Certification Number:

D. Consultant: Dahl & Associates Inc.

Contact: Margery Free

Street/Box: 4390 McMenemy Road

City, Zip: St. Paul, MN 55127

Telephone: (612) 490-2905

E. Others on-site during site work (e.g., fire marshal, local officials, MPCA staff, etc.):  
**Paul Meadows, Dahl & Associates, Inc.**

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. NA

**PART II: DATES**

- A. Date release reported to MPCA: September 27, 1995
- B. Dates site work performed (tanks removed, soil excavation, soil borings, etc.):
- Work Performed
- Date

Advanced soil borings to determine extent and magnitude of September 28, 1995  
petroleum hydrocarbon release

Excavated approximately 155 cubic yards of petroleum August 29, 1996  
hydrocarbon impacted soil and stockpiled on site for later  
treatment. Soil removed from main area of excavation plus  
three test pits.

**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 area surrounding the site is used as farmland and railroad right-of-way (along the eastern property boundary). No residences, other businesses, or wetlands were evident in a visual survey of the area surrounding the site, nor were they evident on maps of the area. A drainage ditch runs along Highway 4, on the west side of the property.

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
1	AST	1,000	Diesel	unk	In Use	No rust, holes, or pitting
2	AST	500	Unleaded	unk	In Use	No rust, holes, or pitting

\*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.  
**Dispensing hoses appeared to be in good condition, no excessive wear evident.**
- D. Identify and describe the source or suspected source(s) of the release.

The release was the result of a spill which occurred subsequent to a theft of diesel fuel from the 1000 gallon AST located on the site. For further details please reference the September 27, 1995, correspondence written by Jim Lorenz of the Nuway Cooperative; the correspondence is included as an addendum to the November 9, 1995, correspondence from DAHL to the MPCA.

- E. What was the volume of the release? (if known): 400 gallons of fuel were unaccounted for; of this amount, approximately 70 gallons were retrieved by pumping pooled product from the ground, and an unknown amount was stolen.
- F. When did the release occur? (if known): The release was identified on September 27, 1995.
- G. Describe the source of on-site drinking water. The source of water for the site is a water well on-site, 128 feet deep. The water is very hard, therefore most of the workers bring water to work for drinking.

PART IV: EXCAVATION INFORMATION

- A. Dimensions of excavation:      Length 25 feet Width 19.6 feet Depth 5 feet  
    Length 12.7 feet Width 11.8 feet Depth 5 feet
- B. Original tank backfill material (sand, gravel, etc.): NA
- C. Native soil type (clay, sand, etc.): clay
- D. Quantity of contaminated soil removed for treatment (cubic yards):  
Approximately 155 cubic yards of petroleum impacted soil were removed and stockpiled on site for land application at a later date. Verbal approval for up to 200 yards was given by Tony Hill, MPCA, on August 29, 1996.

[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? No
- F. Was ground water encountered or was there evidence of a seasonally high ground water table? (yes/no) Yes      At what depth? 3.5'
- G. If ground water was not encountered during the excavation, what is the expected depth of ground water? NA
- 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 completed a year ago. Information already submitted to the MPCA in a letter report dated November 9, 1995.
- I. If no soil boring was required, explain. NA
- J. If ground water was encountered or if a soil boring was conducted, was there evidence of ground water contamination? (yes (not confirmed by laboratory analysis)/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.

A sheen was evident on groundwater which collected in the excavation basin.

[NOTE: If free product was observed, contact MPC A 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?  
Bedrock was not encountered at this site.

- L. Were other unique conditions associated with this site? (yes/no) If so, explain.

The area in which most of the spilled fuel collected is a drainage ditch located approximately 80 feet from the ASTs on site. Also, a drain tile on the site underlies the path of the spilled fuel as it ran from the AST to the drainage ditch. These conditions are further explained in DAHL's November 9, 1995, correspondence to Mr. Mike Nelson of the MPC A.

#### PART V: SAMPLING INFORMATION

- A. Briefly describe the field screening methods used to distinguish contaminated from uncontaminated soil:

Initial observations of each sample's appearance were recorded. Soil samples were then field screened for petroleum hydrocarbon content using a Foxboro Model OVA 108 GC flame-ionization detector. The Foxboro Modal OVA 108 Century Organic Vapor Analyzer, is sensitive to a range of volatile organic compounds (VOC's). The instrument, calibrated to methane, measures the concentration of certain VOC's by flame-ionization. Vapors from the headspace were drawn through the analyzer. The instrument yields a reading proportional to the concentration of VOC's.

The MPC A recommends the use of flame-ionization techniques in the field. However, it should be noted that the FID is used only as a qualitative instrument to give relative indications of hydrocarbon impact and does not quantify hydrocarbon levels in the soil.

- 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.

Sample Code	Soil Type	Reading ppm	Sample Depth	Sample Location
R-1	clay	32	1 feet BG	Center of ditch
R-2	clay	22	1 feet BG	Center of ditch
R-3	clay	40	2.5 feet BG	Center of ditch
R-4	clay	32	2.5 feet BG	Center of ditch
R-5	clay	80	6 feet BG	North end, center of ditch
S-6	clay	ND	2 feet BG	West side wall
R-7	clay	75	4 feet BG	West side wall
B-8	clay	ND	6 feet BG	Center of basin
R-9	clay	ND	2 feet BG	Soil away from area of impact
S-10	clay	70	3 feet BG	South sidewall
R-11	clay	120	3 feet BG	West sidewall
S-12	clay	20	4 feet BG	North sidewall
R-13	clay	250	3 feet BG	East sidewall
S-14	clay	10	3 feet BG	West sidewall
R-15	clay	310	3 feet BG	East sidewall
R-16	clay	500	3 feet BG	Northeast sidewall
R-17	clay	9	3 feet BG	Southeast sidewall

<u>R-18</u>	<u>clay</u>	<u>350</u>	<u>3 feet BG</u>	<u>Northeast sidewall</u>
<u>S-19</u>	<u>clay</u>	<u>80</u>	<u>3 feet BG</u>	<u>Northeast sidewall</u>
<u>S-20</u>	<u>clay</u>	<u>140</u>	<u>3 feet BG</u>	<u>Northeast sidewall</u>
<u>TP-1, S-1</u>	<u>clay</u>	<u>2</u>	<u>2 feet BG</u>	<u>Test Pit #1, (approximately 8' east of eastern edge of excavation)</u>
<u>TP-1, S-2</u>	<u>clay</u>	<u>25</u>	<u>3.5 feet BG</u>	<u>Test Pit #1</u>
<u>TP-1, S-3</u>	<u>clay</u>	<u>110</u>	<u>5 feet BG</u>	<u>Test Pit #1</u>
<u>TP-2, S-1</u>	<u>clay</u>	<u>1,000</u>	<u>2 feet BG</u>	<u>Test Pit #2 (approximately 10 feet west of the ASTs)</u>
<u>TP-2, S-1</u>	<u>clay</u>	<u>190</u>	<u>3.5 feet BG</u>	<u>Test Pit #2</u>
<u>TP-2, S-3</u>	<u>clay</u>	<u>8</u>	<u>5 feet BG</u>	<u>Test Pit #2</u>
<u>TP-3, S-1</u>	<u>clay</u>	<u>500</u>	<u>2 feet BG</u>	<u>Test Pit #3 (Approximately 10' West of the ASTs)</u>
<u>TP-3, S-2</u>	<u>clay</u>	<u>9</u>	<u>3.5 feet BG</u>	<u>Test Pit #3</u>
<u>TP-3, S-3</u>	<u>clay</u>	<u>4</u>	<u>5 feet BG</u>	<u>Test Pit #3</u>

C. Briefly describe the soil analytical sampling and handling procedures used:

Soil samples collected for laboratory analysis were packed in clean, laboratory-supplied 2 ounce glass jars equipped with nylon septums. Approximately 25 grams of soil was placed in each jar using a digital scale. Samples analyzed for gasoline range organics (GRO) were preserved in the field using 25 mls of methanol supplied by the laboratory. Samples were kept in a cooler on site until arrival at DAHL where they were placed in a refrigerator. Proper sample chain of custody was maintained.

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	DRO ppm	Benzene ppm	Ethyl-benzene ppm	Toluene ppm	Xylene ppm	MTBE ppm	Lead ppm
<u>R-16, 3'</u>	<u>700</u>	<u>0.220</u>	<u>0.370</u>	<u>&lt;0.1</u>	<u>1.10</u>	<u>NA</u>	<u>NA</u>
<u>B-8, 6'</u>	<u>&lt;4.8</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>NA</u>	<u>NA</u>
<u>TP-1, S-3, 5'</u>	<u>&lt;4.4</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>NA</u>	<u>NA</u>
<u>TP-2, S-1, 2'</u>	<u>&lt;4.9</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>NA</u>	<u>NA</u>
<u>TP-3, S-2, 3.5'</u>	<u>&lt;4.9</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>&lt;0.025</u>	<u>NA</u>	<u>NA</u>
<u>R-13, 3'</u>	<u>170</u>	<u>&lt;0.05</u>	<u>0.068</u>	<u>&lt;0.05</u>	<u>&lt;0.05</u>	<u>NA</u>	<u>NA</u>

NOTE: ATTACH COPIES OF LABORATORY REPORTS AND CHAIN OF CUSTODY FORMS.

#### 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-1or 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.

DAHL and Associates was retained on August 8, 1996, to excavate petroleum impacted soil resulting from a diesel fuel release at the Nuway cooperative Fertilizer Plant located in Timont, MN. Details of the cause as well as the extent and magnitude of this release are included in DAHL's November 5, 1995, letter report to the MPCA.

The DAHL letter report included the recommendation for excavation of the petroleum hydrocarbon impacted soil. On August 29, 1996, Mr. Douglas Carlson, under the direction of DAHL field personnel, excavated and stockpiled approximately 155 yards of soil. The soil was stockpiled onto and covered by 6 mil polyethylene sheeting in anticipation of land treatment at a later date.

All excavated soil had organic vapor concentrations greater than the MPCA action level of 10 parts per million (ppm) as determined by soil headspace analysis. Soil with organic vapor concentrations greater than the MPCA action level was identified in the ditch area of the site where some of the spilled diesel fuel was known to have pooled (near TB-2). Elevated levels of organic vapors were identified to a depth of 5 feet below grade (BG) and extended to two adjoining basins. These basins were approximately 25 feet by 20 feet and 15 feet by 13 feet in area.

Soil samples collected from the vertical extent of the excavation at a depth 6 feet BG, and the western extent of the excavation at a depth of 3 feet BG, and the southeastern extent of the excavation at a depth of 3 feet BG were determined to have organic vapor concentrations less than the MPCA action limit. Upon completion of the excavation, soil collected from the southern, northern and northeastern extents of the excavation at a depth of 3 feet BG was determined to have organic vapor concentrations of 70 ppm, 20 ppm, and 140 ppm, respectively. Although these vapor concentrations exceed the MPCA action limit it is DAHL's opinion that the majority of soil in this area with organic vapor concentrations in excess of the MPCA action limit has been removed. A buried telephone line to the south of the excavation and MPCA limits on the total volume of soil which can be excavated prevented removal of all soil with soil vapor concentrations greater than the MPCA action limit.

A soil sample collected from the vertical extent of the excavation and submitted to an independent laboratory (Enchem) for Diesel Range Organics (DRO) and analysis for Benzene/ Toluene/ Ethylbenzene/ Xylene (BTEX) revealed no compounds detected at concentrations greater than the analyte's method detection limit (MDL). Two stockpile samples were collected and submitted to Enchem for BTEX and DRO analyses, both samples (R-13 and R-16) were collected from approximately 3 feet BG. Laboratory analysis of the stockpile samples revealed DRO concentrations of 700 ppm and 170 ppm, respectively. BTEX compounds detected in the samples were negligible.

On August 30, 1996, Mr. Carlson, under the direction of DAHL field personnel, excavated 3 test pits measuring approximately 8 feet long by 3 feet wide by 5 feet deep. The first Test Pit

(TP-1) was initiated approximately 8 feet east of the eastern edge of the excavation basin. TP-2 was initiated 8 feet east of the ASTs. TP-3 was initiated 10 feet west of the ASTs. Soil samples from each of the test pits, collected from the soil/ groundwater interface or the depth from which the highest organic vapor concentration was detected were submitted to Enchem for DRO and BTEX analysis. Concentrations of all analytes in samples submitted from each of the test pits were below Enchem's method detection limits.

Soil collected from the impacted portion of the site has been identified by a DAHL geologist as a CL (clay) on the Unified Soil Classification System. For lack of quantitative data DAHL is acting under the assumption that the CL soil at the site has a low hydraulic conductivity and therefore a low permeability, allowing for negligible transport of petroleum hydrocarbons by groundwater flow.

The majority of petroleum impacted soil has been successfully removed and the source of the release, the AST, has been repaired. By repairing the apparent origination source for the impact at the site and removing approximately 155 cubic yards of petroleum impacted soil, DAHL believes that the potential source of further impact has been mitigated.

#### PART VIII: SOIL TREATMENT INFORMATION

- A. Soil treatment method used (thermal, land application, composting, other). If you choose "other" specify treatment method: Land application (proposed)
- B. Location of treatment site/facility: Floyd Olson Farm (proposed)
- C. Date MPC A approved soil treatment (if thermal treatment was used after May 1, 1991, indicate date that the MPC A permitted thermal treatment facility agreed to accept soil): To Be Determined
- D. Identify the location of stockpiled contaminated soil: The soil was excavated and stockpiled on the site for land application at a later date.

**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:
<i>Paul D Meadows, Site Scientist</i>	<i>Paul D Meadows</i>	<i>10 / 31 / 96</i>
<i>MARGERY FEE, PROJECT MANAGER</i>	<i>Margery Fee</i>	<i>10 / 31 / 96</i>
_____	_____	____ / ____ / ____
_____	_____	____ / ____ / ____

Company and mailing address:

DAHL & ASSOCIATES INC.

4390 McMenemy Road

St. Paul, MN 55127

Phone:

(612) 490-2905

Fax:

(612) 490-3777

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

Tony Hill, 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.

**FIGURES**

- Location Map
- Site Map
- Soil Sample Location Map

# PROJECT SITE LOCATION

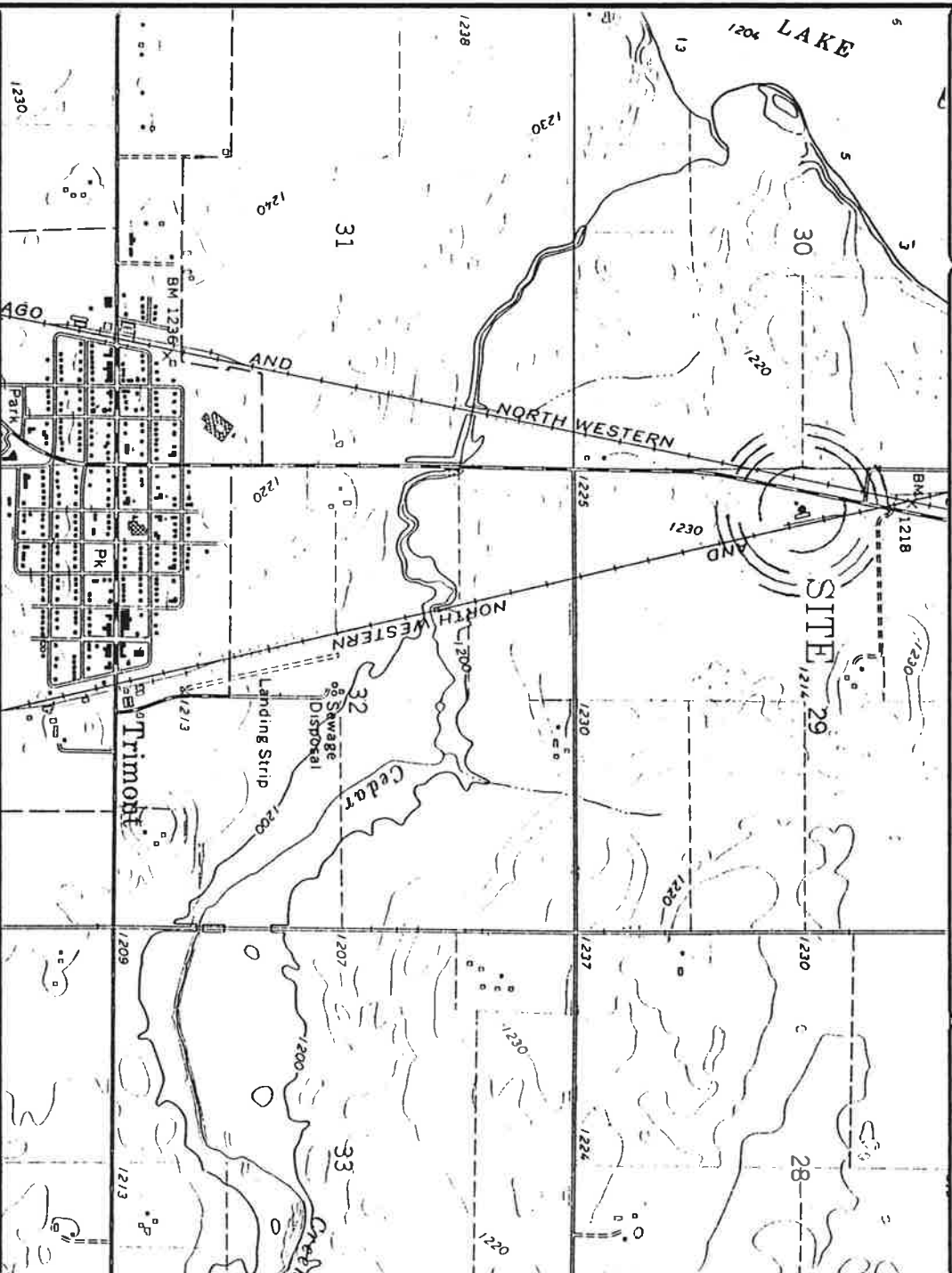


LAT. N. 43° 46' 57" T. 104N  
 LONG. W. 94° 42' 46" R. 32  
 SEC. 29

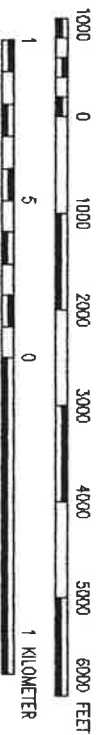
U.S.G.S. STANDARD NAME  
 TRIMONT, MINN.



QUADRANGLE LOCATION

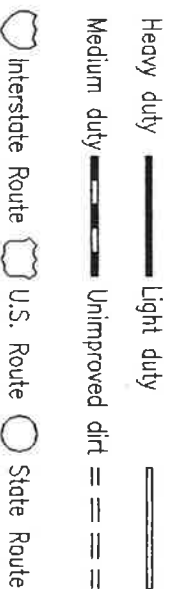


SCALE 1:24000



CONTOUR INTERVAL 10 FEET

BASED ON U.S.G.S. 7.5 MINUTE SERIES (TOPOGRAPHIC) MAP



4390 McMenemy Road  
 Saint Paul, MN. 55127  
 Phone (612)490-2905  
 FAX (612)490-3777

# DAHL

**& ASSOCIATES, INC.**  
 Environmental Consultants, Contractors & Engineers

## LOCATION MAP

NUWAY COOP  
 HWY 4  
 TRIMONT, MINNESOTA

PLOT DATE 10/23/95 AutoCAD FILE NAME 5/14-01A PLOT SCALE 1" = 2000'

DATE DRAWN	PROJECT NUMBER	DRAWN BY	DRAWING NUMBER	APPR. BY	FIGURE NUMBER
10/23/95	24955174	W. Pageler	A-01-A		1

FERTIL

**EXPLANATION**

NOTE :

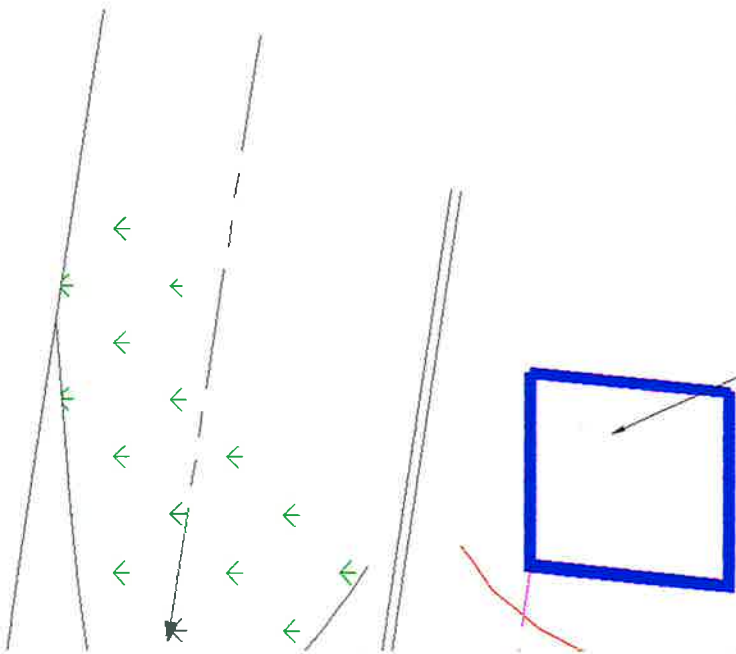
This drawing (including property lines, structures, and locations of buried utilities) is not exact. For precise locations, consult a registered land surveyor and appropriate utility company.

TANK#	VOLUME	CONTENTS
①	1000gal.	DIESEL
②	500gal.	UNLEADED
● TB-	TEST BORING	
⊕ R, S -	SOIL SAMPLE	
▨ TP-	TEST PIT	
— T —	TELEPHONE LINE	
— E —	ELECTRIC	

SCALE:



GARAGE



**TEST BORING & SOIL  
SAMPLE LOCATIONS  
NUWAY TRIMONT**

**DAHL**

& Associates, Inc.

Environmental Consultants, Contractors & Engineers

Offices: Santa Barbara, CA - Bettendorf, IA - Ann Arbor, MI  
St. Paul, MN - Ponca City, OK - Tulsa, OK - Fort Worth, TX

DATE DRAWN	10/10/96
DRAWN BY	ORICK
REVISION DATE	
DRAWING NUMBER	B-05-D
PROJECT NUMBER	24955174
FIGURE NUMBER	

PLOT DATE 10/31/96

AutoCAD FILE NAME 5174-05D

PLOT SCALE 1" = 40'

DAHL STD NO: N:\24955174\



### EXPLANATION

FERTIL

NOTE :  
 This drawing (including property lines, structures, and locations of buried utilities) is not exact. For precise locations, consult a registered land surveyor and appropriate utility company.

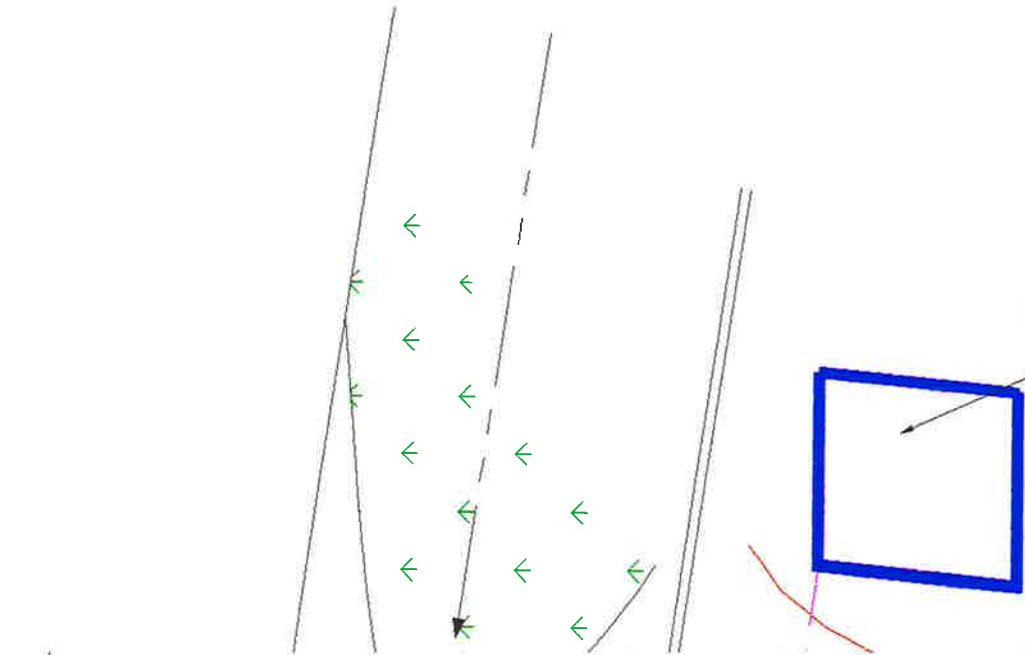
TANK #	VOLUME	CONTENTS
①	1000gall.	DIESEL
②	500gall.	UNLEADED

⊕ TB-- TEST BORING

— T — TELEPHONE LINE  
 — E — ELECTRIC



GARAGE



# DAHL

& Associates, Inc.

Environmental Consultants, Contractors & Engineers

Offices: Santa Barbara, CA - Bettendorf, IA - Ann Arbor, MI  
 St. Paul, MN - Ponca City, OK - Tulsa, OK - Fort Worth, TX

## TEST BORING LOCATIONS NUWAY TRIMONT

DATE DRAWN	10/10/96
DRAWN BY	Reich
REVISION DATE	
DRAWING NUMBER	B-05-C
PROJECT NUMBER	24955174
FIGURE NUMBER	

PLOT DATE 10/31/96

AutoCAD FILE NAME 5174-05C

PLOT SCALE 1" = 40'

DAHL STD NO: N:\24955174\

## **APPENDIX A**

Laboratory Analysis Reports and Chain of Custody

Company Name: *DHHL and Associates Inc.*  
 Branch or Location: *North Central*  
 Project Contact: *Marge Free*  
 Telephone: *(612) 490-2905*  
 Project Number: *24955174*  
 Project Name: *-*  
 Project Location: *-*  
 Sampled By (Print): *Paul D Meadows*

**EN CHEM INC.**

**CHAIN OF CUSTODY**

1241 Bellevue St., Suite 9  
Green Bay, WI 54302  
414-469-2436 • 1-800-736-2436  
FAX 414-469-8827

2231 Catlin Ave., Suite 420  
Superior, WI 54880  
715-392-5844 • 1-800-837-8238  
FAX 715-392-5843

802 Deming Way  
Madison, WI 53717  
608-827-5501 • 1-888-5 ENCHEM  
Fax: 608-827-5503

P.O. # \_\_\_\_\_ Quote # \_\_\_\_\_ Page \_\_\_\_\_ of \_\_\_\_\_

Mail Report To: *Marge Free*  
 Company: *DHHL & Associates Inc*  
 Address: *4390 McMenamy Rd  
St Paul MN 55127*  
 Invoice To: *DAHL*  
 Company: *Some A*  
 Address: \_\_\_\_\_  
 Mail Invoice To: \_\_\_\_\_

Regulatory Program (circle): UST RCRA CLP SDWA  
 NPDES/WPDES CAA NR \_\_\_\_\_ Other \_\_\_\_\_

NR720 Confirmation Analysis Required?  
 (En Chem will confirm unless otherwise instructed.)

**SHADED AREA FOR LABORATORY USE ONLY**

Field ID	Sample Description	Collection		Field Screen	Matrix	Filt'd Y/N	Preserv'	Analysis Requested	Good Cond.	Total Bottles	Comments	Laboratory Number
		Date	Time									
R-10	North-east corner of exc.	8/29	3:50		Soil			PRE BTEX	X	1-2021m 1-202		196480
B-8	Center of Lamin 6'	8/29	3:00		Soil							196481
TP/S-3	TP near exc.	8/30	9:00		Soil							196482
TP/S-1	TP near disp island 2'	8/30	9:15		Soil							196483
TP/S-2	TP in between exc. + disp island	8/30	9:45		Soil							196484
R-13	East side basin, 3' BG	8/30	4:30		Soil							196485
Blank	Methanol Trip Blank	8/30	5:00		Meth					2-2021m 1-202		196486

**\*Preservation Code**  
 A=None B=HCL C=H2SO4  
 D=HN03 E=EnCore F=Methanol\*\*  
 G=NaOH O=Other (Indicate)

\*\*If not using En Chem's methanol, indicate volume of methanol added and mark the appropriate samples.

Relinquished By: *Paul D Meadows*  
 Relinquished By: *Zabeke*  
 Relinquished By: *Paul D Meadows*

Date/Time: *9-3-96 10:54*  
 Date/Time: *9-5-96 10 AM*  
 Date/Time: *9-5-96 12:05*

Received By: *Zabeke*  
 Received By: *Phil L...*  
 Received By (En Chem): *Phil L...*

En Chem Project No. *3609054*  
 Sample Receipt Temp. (Must be rec'd at 4°C)  
*101*



*... chemistry for the environment*

1795 Industrial Drive  
Green Bay, WI 54302  
414-469-2436  
800-7-ENCHEM  
FAX: 414-469-8827

Lab Certification No. 405132750  
Location : PROJ. #24955174  
En Chem Proj# : 9609054  
Date Reported : 09/11/1996

Report to: DAHL & ASSOCIATES

Thank you for using En Chem! Samples were analyzed according to strict EPA or Wisconsin DNR methodology. Any comments or problems associated with the receipt of or analysis are reported below:

The PQL for the BTEX analysis is 60 ug/kg for those samples with a dilution factor of 50. Detection limits are corrected for percent solids for those parameters that were detected.

Sample nos. 196480 and 196485: Complex chromatogram on BTEX analysis with many late eluting peaks. This is indicative of DRO fuel contamination, heavy oils, or of weathered gasoline. Elevated detection limits reported for BTEX analysis due to the presence of heavy fuel.

Sample no





... chemistry for the environment

1795 Industrial Drive  
Green Bay, WI 54302  
414-469-2436  
800-7-ENCHEM  
FAX: 414-469-8827

Lab Certification No. 405132750  
Location : PROJ. #24955174  
Your Sample ID: R-16

Sample Desc. : NORTHEAST CORNER OF EXC., 3'  
Sample Matrix : SOIL  
En Chem Proj# : 9609054  
En Chem Lab # : 196480

Report to: DAHL & ASSOCIATES  
4390 MC MENEMY ROAD  
ST. PAUL, MN 55127-6004

Bill to: DAHL & ASSOCIATES

Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analized By
-----------	--------	-------	-----------------	-------------	-----------	-----------------	---------------	-------------

IOTSOLID	Total Solids	76 percent				SM2540G	09/09/1996	PHS
----------	--------------	------------	--	--	--	---------	------------	-----

URO-S	Diesel Range Organics(DRO)-Soil	700 mg/kg	30		09/06/1996	MDNR MOD DRO	09/07/1996	PHS
	Soil spike	78 % RECOV	50					
	Soil spike duplicate	82 % RECOV	50					

BTEX-S-ME	Benzene	220 ug/kg	130		09/09/1996	SM846 8020	09/10/1996	EGS
	Ethyl Benzene	370 ug/kg	130					
	Toluene	ND ug/kg	100					
	Xylenes, m + p	1100 ug/kg	130					
	Xylene, o	ND ug/kg	100					
	a,a,a-TriFluorotoluene (SS)	102 % recov	1					

"ND" indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

*J. Duracian*



... chemistry for the environment

1795 Industrial Drive  
Green Bay, WI 54302  
414-469-2436  
800-7-ENCHEM  
FAX: 414-469-8827

Lab Certification No. 405132750  
Location : PROJ. #24955174  
Your Sample ID: B-8  
Sample Desc. : CENTER OF BASIN 6'  
Sample Matrix : SOIL  
En Chem Proj# : 9609054  
En Chem Lab # : 196481

Date Collected: 08/29/1996  
Date Received : 09/05/1996  
Date Reported : 09/11/1996

Report to: DAHL & ASSOCIATES  
4390 MC MENEMY ROAD  
ST. PAUL, MN 55127-6004

Bill to: DAHL & ASSOCIATES

Analysis Parameter	Result Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analysed By
TOT SOLID	Total Solids	76 percent			SM2540G	09/09/1996	PHS
UKO-S	Diesel Range Organics(DRO)-Soil	ND mg/kg		09/06/1996	WDNR MOD DRO	09/06/1996	PHS
	Soil spike	78 % RECOV					
	Soil spike duplicate	82 % RECOV					
BTEX-S-ME	Benzene	ND ug/kg		09/09/1996	SM846 8020	09/10/1996	EGS
	Ethyl Benzene	ND ug/kg					
	Toluene	ND ug/kg					
	Xylenes, m + p	ND ug/kg					
	Xylene, o	ND ug/kg					
	a,a,a-Trifluorotoluene (SS)	102 % recov					

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Green Bay, WI 54302  
414-469-2436  
800-7-ENCHEM  
FAX: 414-469-8827

Lab Certification No. 405132750  
Location : PROJ. #24955174  
Your Sample ID: TP1, S-3  
Sample Desc. : TP NEAR EXC., 5' BG  
Sample Matrix : SOIL  
En Chem Proj# : 9609054  
En Chem Lab # : 196482

Date Collected: 08/30/1996  
Date Received : 09/05/1996  
Date Reported : 09/11/1996

Report to: DAHL & ASSOCIATES  
4390 MC MENEMY ROAD  
ST. PAUL, MN 55127-6004

Bill to: DAHL & ASSOCIATES

Analysis Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyzed By
TSOLID	Total Solids	84	percent			SM2540G	09/09/1996	PHS
DRO-S	Diesel Range Organics(DRO)-Soil	ND	mg/kg	4.4	09/06/1996	WDNR MOD DRO	09/06/1996	PHS
	Soil spike	78	% RECOV	50				
	Soil spike duplicate	82	% RECOV	50				
BTEX-S-ME	Benzene	ND	ug/kg	25	09/09/1996	SW846 8020	09/10/1996	EGS
	Ethyl Benzene	ND	ug/kg	25				
	Toluene	ND	ug/kg	25				
	Xylenes, m + p	ND	ug/kg	25				
	Xylene, o	ND	ug/kg	25				
	a,a,a-Trifluorotoluene (SS)	101	% recov	1				

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1795 Industrial Drive  
Green Bay, WI 54302  
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FAX: 414-469-8827

Lab Certification No. 405132750  
Location : PROJ. #24955174  
Your Sample ID: TP2,S-1  
Sample Desc. : TP NEAR DISP ISLAND, 2<sup>1</sup>BG  
Sample Matrix : SOIL  
En Chem Proj# : 9609054  
En Chem Lab # : 196483  
Date Collected: 08/30/1996  
Date Received : 09/05/1996  
Date Reported : 09/11/1996

Report to: DAHL & ASSOCIATES  
4390 MC MENEMY ROAD  
ST. PAUL, MN 55127-6004

Bill to: DAHL & ASSOCIATES

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyzed By
TOTSOLID	Total Solids	79	percent				SM2540G	09/09/1996	PHS
DRO-S	Diesel Range Organics(DRO)-Soil	ND	mg/kg	4.9		09/06/1996	WDNR MOD DRO	09/06/1996	PHS
	Soil spike	78	% RECOV	50					
	Soil spike duplicate	82	% RECOV	50					
BTEX-S-ME	Benzene	ND	ug/kg	25		09/09/1996	SM846 8020	09/10/1996	EGS
	Ethyl Benzene	ND	ug/kg	25					
	Toluene	ND	ug/kg	25					
	Xylenes, m + p	ND	ug/kg	25					
	Xylene, o	ND	ug/kg	25					
	a,a,a-Trifluorotoluene (SS)	101	% recov	1					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:







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Green Bay, WI 54302  
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FAX: 414-469-8827

Lab Certification No. 405132750  
Location : PROJ. #24955174  
Your Sample ID: TP3,S-2  
Sample Desc. : TP IN BETWEEN EXC. & D I ,3.5'BG  
Sample Matrix : SOIL  
En Chem Proj# : 9609054  
En Chem Lab # : 196484

Date Collected: 08/30/1996  
Date Received : 09/05/1996  
Date Reported : 09/11/1996

Report to: DAHL & ASSOCIATES  
4390 MC MENEMY ROAD  
ST. PAUL, MN 55127-6004

Bill to: DAHL & ASSOCIATES

Analysis Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyzed By
TOTSOLID Total Solids	80	percent				SM2540G	09/09/1996	PHS
URO-S Diesel Range Organics(DRO)-Soil	ND	mg/kg	4.9		09/06/1996	MDNR MOD DRO	09/06/1996	PHS
Soil spike	78	% RECOV	50					
Soil spike duplicate	82	% RECOV	50					
BTEX-S-ME Benzene	ND	ug/kg	25		09/09/1996	SM846 8020	09/10/1996	EGS
Ethyl Benzene	ND	ug/kg	25					
Toluene	ND	ug/kg	25					
Xylenes, m + p	ND	ug/kg	25					
Xylene, o	ND	ug/kg	25					
a,a,a-Trifluorotoluene (SS)	101	% recov	1					

"ND" indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:







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1795 Industrial Drive  
Green Bay, WI 54302  
414-469-2436  
800-7-ENCHEM  
FAX: 414-469-8827

Report to: DAHL & ASSOCIATES  
4390 MC HENEMY ROAD  
ST. PAUL, MN 55127-6004

Lab Certification No. 405132750  
Location : PROJ. #24955174  
Your Sample ID: R-13  
Sample Desc. : EAST SIDE BASIN, 3'BG  
Sample Matrix : SOIL  
En Chem Proj# : 9609054  
En Chem Lab # : 196485

Date Collected: 08/29/1996  
Date Received : 09/05/1996  
Date Reported : 09/11/1996

Bill to: DAHL & ASSOCIATES

Analysis Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyzed By
TOTALSOLID	Total Solids	79 percent				SM2540G	09/09/1996	PHS
DRO-S	Diesel Range Organics(DRO)-Soil	170 mg/kg	5.0		09/06/1996	MDNR MOD DRO	09/06/1996	PHS
	Soil spike	78 % RECOV	50					
	Soil spike duplicate	82 % RECOV	50					
BTEX-S-ME	Benzene	ND ug/kg	50		09/09/1996	SM846 8020	09/10/1996	EGS
	Ethyl Benzene	68 ug/kg	64					
	Toluene	ND ug/kg	50					
	Xylenes, m + p	94 ug/kg	64					
	Xylene, o	ND ug/kg	50					
	a,a,a-Trifluorotoluene (SS)	102 % recov	1					

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These results have been reviewed and their authenticity verified by:





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1795 Industrial Drive  
Green Bay, WI 54302  
414-469-2436  
800-7-ENCHEM  
FAX: 414-469-8827

Lab Certification No. 405132750  
Location : PROJ. #2495174  
Your Sample ID: BLANK  
Sample Desc. : METHANOL TRIP BLANK  
Sample Matrix : METHANOL  
En Chem Proj# : 9609054  
En Chem Lab # : 196486

Date Collected: 08/30/1996  
Date Received : 09/05/1996  
Date Reported : 09/09/1996

Report to: DAHL & ASSOCIATES  
4390 MC MENEMY ROAD  
ST. PAUL, MN 55127-6004

Bill to: DAHL & ASSOCIATES

Analysis Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyzed By
PTX-W Benzene	ND	ug/l	25	SM846 5030	09/06/1996	SM846 8020	09/06/1996	BSJ
Ethyl Benzene	ND	ug/l	25					
Toluene	ND	ug/l	25					
Xylenes, m + p	ND	ug/l	25					
Xylene, o	ND	ug/l	25					
a,a-Trifluorotoluene (SS)	99.9 % recov		1					

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