

**PHASE II ENVIRONMENTAL  
SITE ASSESSMENT**

Mobil Station  
308 Ash Avenue N  
Mayer, Minnesota

Prepared for

Matt Coran  
American Heritage National Bank  
2915 - 2<sup>nd</sup> Street South  
St. Cloud, Minnesota 56302

Prepared by

West Central Environmental Consultants, Inc.  
14 Green River Road  
Morris, Minnesota 56267

WCEC Project No. 11-8565-30

January 12, 2012

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## 1.0 INTRODUCTION

### 1.1 Purpose and Scope

West Central Environmental Consultants, Inc. (WCEC) was authorized by Matt Coran of American Heritage National Bank, to conduct a Phase II Environmental Site Assessment (ESA) at the Mobil Station at 308 Ash Avenue North, Mayer, Minnesota.

The purpose of this Phase II ESA was to determine the presence or absence of petroleum constituents in the subsurface soils or groundwater at the subject property. A total of five test holes were advanced on the subject property near the former underground storage tank basin and near the existing gas station pump islands and underground storage tanks. Soil samples from each test hole were field screened for volatile organic compounds. Confirmation soil samples were collected from each test hole and submitted for laboratory analysis. The samples were analyzed for diesel range organics (DRO), gasoline range organics (GRO), and benzene, toluene, ethyl benzene, and xylene (BTEX).

### 1.2 Site Location

A site location map using the DeLorme Street Atlas USA is provided as Figure 1. The subject property is located at 308 Ash Avenue North, Mayer, Minnesota. The subject property is situated east of the intersection of Ash Avenue North and 3<sup>rd</sup> Street NW, in Mayer, Minnesota.

Richard Cohrs presently owns the car wash, Mobil gas station, and warehouse. Mr. Cohrs is selling a portion of his property (the gas station and car wash) to Tom Schmidt. The purpose of this investigation is to determine the presence or absence of petroleum constituents for that portion of the property involved in the Cohrs-Schmidt transaction. Therefore, the subject property is generally defined as the area south of the existing warehouse.

A detailed site map depicting the layout of the gas station and the approximate test hole locations is provided as Figure 2. Figures 1 and 2 are provided as Attachment 1.

### 1.3 Site Historical Information

A Phase I ESA was not conducted prior to completing the Phase II ESA. However, WCEC completed a review of the Minnesota Pollution Control Agency's petroleum leaksite (Leak # 10324) for the subject property and property to the north. The MPCA leaksite file is provided as Attachment 2.

Phase II Environmental Site Assessment  
Mobil Station  
Mayer, Minnesota  
WCEC Project No. 11-8565-30

The petroleum leaksite was identified on the subject property in 1997, during a tank removal/upgrade project. The underground tanks were formerly located on the north portion of the subject property. During the project, the tank basin was moved to the existing location (west of the convenience store). The highest petroleum contamination noted in the tank basin was reported at 34 parts per million. The MPCA required additional investigation to determine the extent and magnitude of the petroleum release. In August 1997, Nova Environmental advanced four soil borings in the tank basin and to the south of the tank basin. The field and laboratory results indicated that the contamination was limited to the former tank basin. Based on the findings of the investigation, the MPCA closed the leaksite file, requiring no further investigation or cleanup.

## 2.0 SITE INVESTIGATION

The purpose of this Phase II ESA was to determine the presence or absence of petroleum constituents in the subsurface soils, near the former tank basin and the existing pump islands and underground storage tanks.

### 2.1 Field Analysis

On December 28, 2011, utilizing a Geoprobe™, WCEC advanced five test holes on the subject property. WCEC used the Geoprobe Systems™ macro-core soil sampling method. The macro-core sampler (4' long x 2" OD) uses a clear plastic liner and can be used to perform continuous sampling by connecting probe rods together until the bottom of the sampler reaches the desired sampling interval. Below is a brief summary of the test holes advanced:

- Test Hole #1: Located adjacent to the underground fuel oil tank on the east side of the building. Test hole was advanced to a depth of 8-feet. A soil sample was collected and analyzed for DRO, GRO, and BTEX.
- Test Hole #2: Located on the north side of the existing tank basin and east of the former tank basin. Test hole advanced to a depth of 16-feet. One soil sample was collected at approximately 14-feet and analyzed for DRO, GRO, and BTEX.
- Test Hole #3: Located in the former tank basin. Test hole advanced to a depth of 12-feet. One soil sample was collected at approximately 8-feet and analyzed for DRO, GRO, and BTEX.
- Test Hole #4: Located southwest of the pump islands. Test hole was advanced to a depth of 12-feet. One soil sample was collected at approximately 12-feet and analyzed for DRO, GRO, and BTEX.
- Test Hole #5: Located on the south side of the existing tank basin (southeast of pump islands). Test hole advanced to a depth of 12-feet. One soil sample was collected at approximately 10-feet and analyzed for DRO, GRO, and BTEX.

Soil samples from each test hole were collected continuously to the terminal depth of the test hole. WCEC examines soil from each test hole for the presence of staining, odors, or other apparent signs of contamination. In addition, soil samples from each test hole were collected at 2-foot intervals and field screened with a photo-ionization detector (PID) to determine the presence or absence of volatile organic compounds (VOCs). Soil samples for on-site screening are placed in plastic, "Ziplock"-style

bags. Each bag is half-filled with soil and sealed. Headspace development proceeds for a minimum of 10 minutes; each bag is shaken for 15 seconds before and after this period. To perform the field headspace analysis, the PID probe is inserted through the plastic bag to a depth of approximately one-half of the total headspace, and maximum meter response over a period of 5 seconds is recorded. When temperatures are below the operating range of the instrument, headspace development and analysis is performed in a heated vehicle or building.

A summary of the PID results, presented in parts per million (ppm), are included in Table 1.

**Table 1**  
**Summary of Soil Test Hole Data**

PID Result (ppm)					
Depth Interval (Feet)	Test Hole #1	Test Hole #2	Test Hole #3	Test Hole #4	Test Hole #5
2-4	0	0	22.2	0	0
6-8	0	0	50.4	0	0
10-12	NA	0	55.7	0	4.1
14-16	NA	0	NA	NA	NA

NA - Not Analyzed

WCEC encountered native soils consisting of silty clay dominated glacial till. Fill materials were encountered in Test Hole #3 and organic silty sand or silt material was identified from 6 to 12-feet in Test Hole #5. Evidence of groundwater was encountered at approximately 9-feet below grade on the subject property.

WCEC made visual and olfactory observations of the soil samples collected from each test hole. Petroleum odors and soil staining were noted in Test Hole #3. Low level petroleum odors were noted in Test Hole #5.

## **2.2 Laboratory Analysis**

WCEC collected soil samples from each test hole on the property. Samples from each test hole were analyzed for DRO, GRO, and BTEX. The complete laboratory report is included as Attachment 3. All results are presented in parts per million (ppm).

**Table 2**  
**Summary of Laboratory Results**

Sample Location	Matrix	Depth (feet)	DRO	GRO	Benzene	Toluene	Ethyl Benzene	Total Xylenes
TH-1	Soil	8	BDL	BDL	BDL	BDL	BDL	BDL
TH-2	Soil	14	BDL	BDL	BDL	BDL	BDL	BDL
TH-3	Soil	8	762	1910	BDL	BDL	23.1	129
TH-4	Soil	12	BDL	BDL	BDL	BDL	BDL	BDL
TH-5	Soil	10	11.4	BDL	0.65	BDL	0.18	BDL

TH- Test Hole  
BDL - Below Detection Limits  
Concentration Levels in ppm

Laboratory results confirmed field findings as low concentration levels of petroleum compounds were identified in the soil at Test Hole #5 and higher concentration levels of petroleum in the former tank basin (Test Hole #3).

The concentration levels of petroleum contamination were higher in the former tank basin than previously identified in the soil samples collected during the tank removal and subsequent test holes completed during the Limited Site Investigation in 1997.

The MPCA closed the leaksite file based on the information received from the previous investigations. However, the MPCA reserves the right to reopen the investigation if new information is made available.

### 3.0 SUMMARY AND CONCLUSION

The purpose of this Phase II ESA was to determine the presence or absence of petroleum constituents in the subsurface soils or groundwater, near the former tank basin and near the existing pump islands and underground storage tanks. No attempt to determine the extent of contamination was made.

The subject property is a petroleum leaksite, previously closed by the MPCA in December 1997. WCEC identified petroleum contamination in the former tank basin at concentration levels above previously identified levels on the property. In addition, low concentration levels of petroleum were identified to the south of the existing tank basin. WCEC recommends forwarding the results of this investigation to Richard Cohrs, so that he may inform the MPCA regarding the existing levels of contamination on the property. The MPCA may consider this information as new information and require additional investigation.

This Phase II ESA has been prepared for American Heritage National Bank, for specific application to the Mobil station property in Mayer, Minnesota, as earlier described in this report. The services performed by WCEC for this project have been conducted in a manner consistent with the level of skill and care ordinarily exercised by other members of the profession currently practicing in this area. No other warranty, expressed or implied, is made.

This Phase II ESA was prepared by:



Jeffrey McCoy  
Project Manager



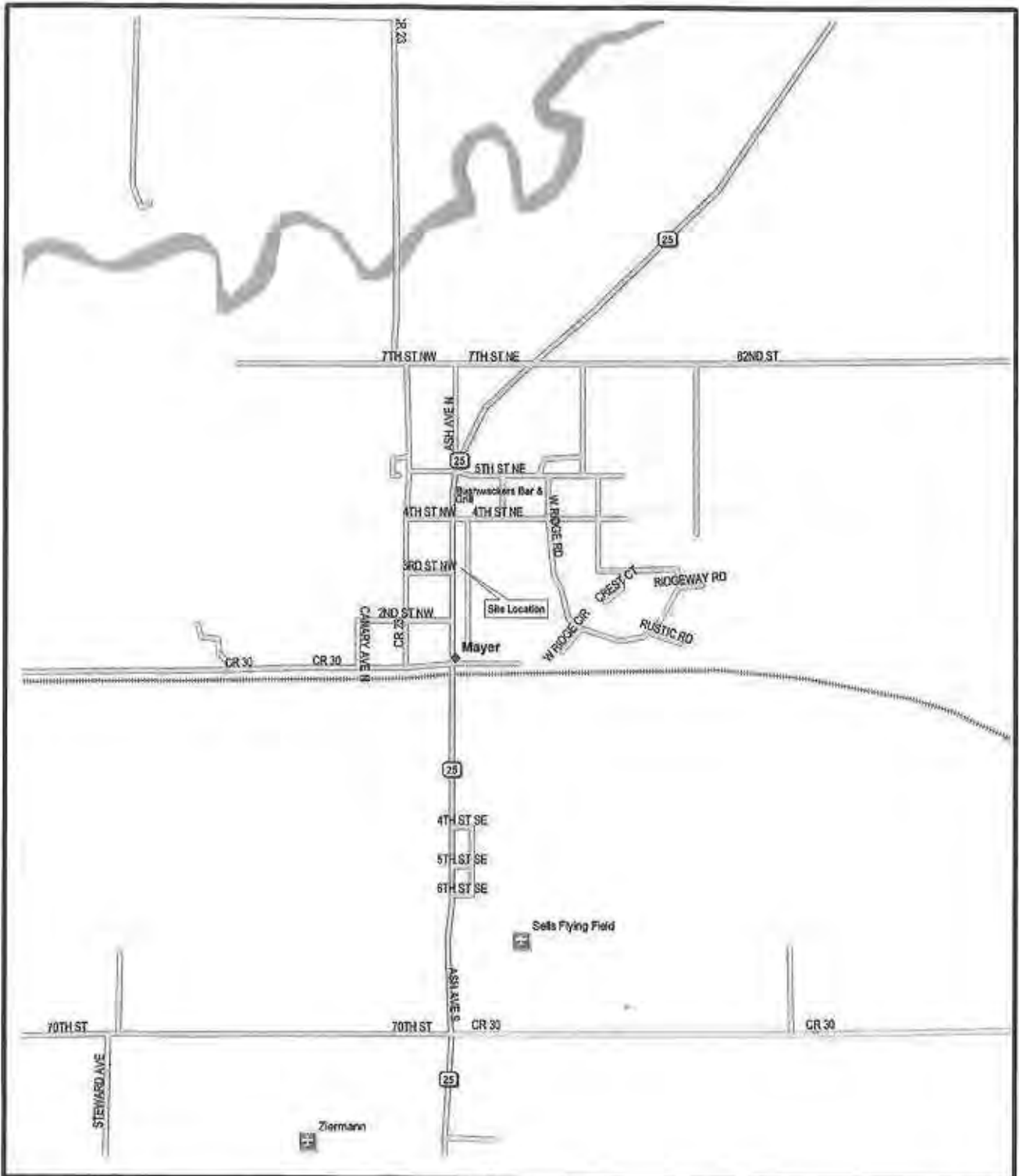
Ross Haugen, P.E.  
Environmental Engineer



Phase II Environmental Site Assessment  
Mobil Station  
Mayer, Minnesota  
WCEC Project No. 11-8565-30

## ATTACHMENT 1

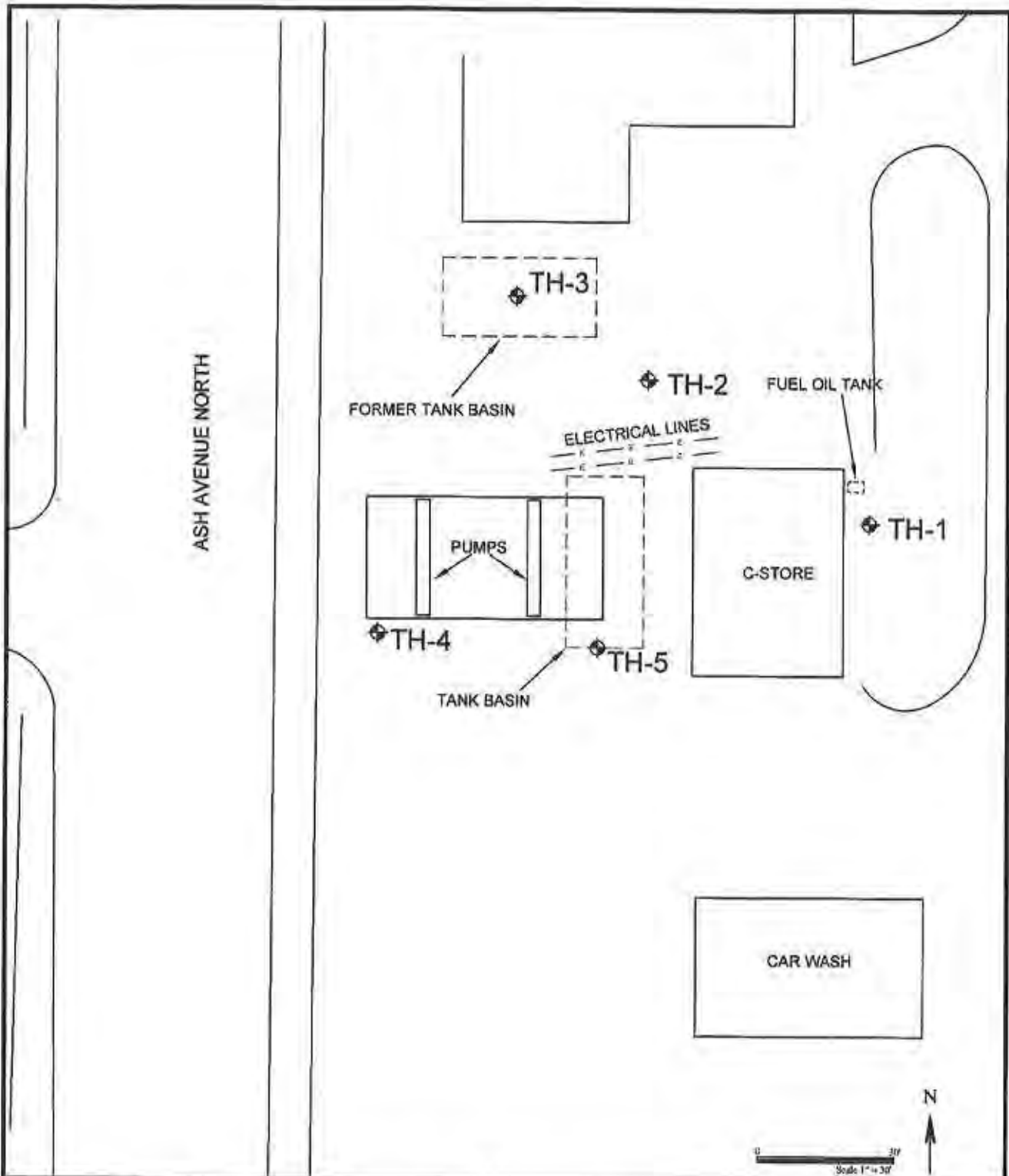
Figures 1 and 2



**WCEC**  
 ENVIRONMENTAL CONSULTANTS

14 Green River Road, Morris, Minnesota 56267

**FIGURE 1**  
**Site Location Map**  
 Mobil Station  
 Mayer, Minnesota  
 WCEC Project No. 11-8565-30



**WCEC**  
 ENVIRONMENTAL CONSULTANTS

14 Green River Road, Morris, Minnesota 56267

**FIGURE 2**  
**Detailed Site Location Map**  
 Mobil Station  
 Mayer, Minnesota  
 WCEC PROJECT No. 11-8565-30

Phase II Environmental Site Assessment  
Mobil Station  
Mayer, Minnesota  
WCEC Project No. 11-8565-30

ATTACHMENT 2  
MPCA Leaksite File

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## **Minnesota Pollution Control Agency**

December 30, 1997

Mr. Rich Cohrs  
Mayer Mobil  
308 Ash Avenue  
Mayer, Minnesota 55360

RE: Petroleum Tank Release Site File Closure  
Site: Mayer Mobil, 308 Ash Avenue, Mayer  
Site ID#: LEAK00010324

Dear Mr. Cohrs:

We are pleased to let you know that the Minnesota Pollution Control Agency (MPCA) Tanks and Emergency Response Section (TERS) staff has determined that your investigation and/or cleanup has adequately addressed the petroleum tank release at the site listed above. Based on the information provided, the TERS staff has closed the release site file.

Closure of the file means that the TERS staff does not require any additional investigation and/or cleanup work at this time or in the foreseeable future. Please be aware that file closure does not necessarily mean that all petroleum contamination has been removed from this site. However, the TERS staff has concluded that any remaining contamination, if present, does not appear to pose a threat to public health or the environment.

The MPCA reserves the right to reopen this file and to require additional investigation and/or cleanup work if new information or changing regulatory requirements make additional work necessary. If you or other parties discover additional contamination (either petroleum or nonpetroleum) that was not previously reported to the MPCA, Minnesota law requires that the MPCA be immediately notified.

You should understand that this letter does not release any party from liability for the petroleum contamination under Minn. Stat. ch. 115C (1997) or any other applicable state or federal law. In addition, this letter does not release any party from liability for nonpetroleum contamination, if present, under Minn. Stat. ch. 115B (1996), the Minnesota Superfund Law.

Because you performed the requested work, the state may reimburse you for a major portion of your costs. The Petroleum Tank Release Cleanup Act establishes a fund which may provide partial reimbursement for petroleum tank release cleanup costs. This fund is administered by the Department of Commerce Petro Board. Specific eligibility rules are available from the Petro Board at 612/297-1119 or 612/297-4203.

520 Lafayette Rd. N.; St. Paul, MN 55155-4194; (612) 296-6300 (Voice); (612) 282-5332 (TTY)

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Mr. Rich Cohrs  
Page 2  
December 30, 1997

If future development of this property or the surrounding area is planned, it should be assumed that petroleum contamination may still be present. If petroleum contamination is encountered during future development work, the MPCA staff should be notified immediately.

For specific information regarding petroleum contamination that may remain at this leak site, please call the TERS File Request Program at 612/297-8499. The MPCA fact sheet #3.35 *Leak/Spill and Underground Storage Tank File Request Form* (April 1996) must be completed prior to arranging a time for file review.

Thank you for your response to this petroleum tank release and for your cooperation with the MPCA to protect public health and the environment. If you have any questions regarding this letter, please call me 612/297-297-8366.

Sincerely,

  
Elizabeth Clysdale

For Project Manager  
Cleanup Unit II  
Tanks and Emergency Response Section

EC:lh

cc: Lois Maetzold, City Clerk, Mayer  
Rod Maetzold, Fire Chief, Mayer  
Joe Enfield, Carver County Solid Waste Officer  
Artie Dworak, Nova Environmental Services Incorporated, Chaska  
Minnesota Department of Commerce, Petrofund Staff



# Minnesota Pollution Control Agency

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July 17, 1997

Mr. Rich Cohrs  
Mayer Mobil  
308 Ash Avenue  
Mayer, Minnesota 55360

RE: Petroleum Storage Tank Release Investigation and Corrective Action  
Site: Mayer Mobil, 308 Ash Avenue, Mayer  
Site ID#: LEAK00010324

Dear Mr. Cohrs:

## Notice of Release

The Minnesota Pollution Control Agency (MPCA) has been informed that a release of petroleum has occurred from storage tank facilities which you own and/or operate. We appreciate your timely notification so this site can be handled in an efficient manner.

## Legal Obligations

Federal and state laws require that persons legally responsible for storage tank releases notify the MPCA of the release, investigate the release and, if necessary, clean up the release. A person is considered legally responsible for a tank release if the person owned or operated the tank either during or after the release, unless specifically exempted under the law. If you believe that you are not legally responsible for this storage tank release, please contact the project manager listed below.

If you are not legally responsible for the release, but hold legal or equitable title to the property where the release occurred, you may volunteer to take corrective action. Responsible persons and volunteers who take corrective action may be eligible for reimbursement for a major portion of the costs of corrective action. The legislature has established the Petroleum Tank Release Cleanup Account to reimburse responsible persons and volunteers. The account is administered by the Petro Board which is part of the Minnesota Department of Commerce. Final decisions regarding the amount of reimbursement are made by the Petro Board. All questions about eligibility and reimbursement should be directed to the Petrofund staff at 612/297-1119 or 612/297-4203.

## Request to Take Corrective Action

The MPCA staff requests that you take steps to investigate and, if necessary, clean up the release in accordance with the enclosed MPCA fact sheets. The site investigation must fully define the extent and magnitude of the soil and/or ground water contamination caused by the release. A report (excavation report and/or remedial investigation/corrective action design (RI/CAD)) which details the results of the investigation or concludes that excavation was sufficient to clean up the release must be submitted to this office within 10 months of the date of this letter. Please refer to MPCA fact sheets for information pertaining to the amount of work needed at the petroleum release site(s).

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Mr. Cohrs  
Page 2  
July 17, 1997

Sites with free product (free-floating petroleum), drinking water supply impacts, surface water impacts, indoor vapor impacts, fire or explosion hazards, or ground water impacts which pose a significant threat to public health or the environment, are considered high priority for staff review. If one or more of these situations apply to your site, an RI/CAD report must be submitted within 90 days. In addition, if you know or discover that there is free-product from a well, excavation, or borehole, you must notify the MPCA within 24 hours and IMMEDIATELY begin interim free product recovery.

If you have not already done so, the MPCA recommends that you hire a qualified consulting firm registered with the Petrofund staff that has experience in conducting petroleum release site investigations and in proposing and implementing appropriate corrective actions. A list of registered contractors and consultants is available from the Petrofund staff. The MPCA reserves the right to reject proposed corrective actions if the requirements of the site investigation have not been fulfilled. Please note that, under Minn. R. 2890.0075, subp. 2, you must solicit a minimum of two competitive proposals on a form prescribed by the Petro Board to ensure that the consulting costs are reasonable. Questions about bidding requirements should be directed to Petrofund staff.

#### Required Response

MPCA staff requests a response to this letter within 30 days. Please tell us whether you intend to proceed with the requested work. If you do not respond within this time frame, the MPCA staff will assume that you do not intend to comply, in which case the MPCA Commissioner may order you to take corrective action. Failure to cooperate with the MPCA in a timely manner may result in reduced reimbursement from the Petro Board. See Minn. R. 2890.0065, subp. 1, item C. The enclosed fact sheets will provide you with the information necessary to complete a successful investigation and cleanup. If you have any questions concerning this letter or need additional information, please contact me at 612/297-8366. Please reference the above LEAK # in all correspondence. If you are calling long distance, you may reach the MPCA St. Paul office by calling 1/800-657-3864.

Sincerely,



ori Elizabeth Clysdale  
Project Manager  
Cleanup Unit II  
Tanks and Emergency Response Section

EC:kt

Enclosures

cc: Lois Maetzold, City Clerk, Mayer  
Rod Maetzold, Fire Chief, Mayer  
Joe Enfield, Carver County Solid Waste Officer  
Tom Marchessault, Boilen Services Incorporated, Fridley



# BOILER SERVICES, INC.

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July 15, 1997

Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, MN 55155

ATTN: Elizabeth Clysdale

7570 NE Hwy. 65  
Fridley, MN 55432  
(612) 784-8178

**RECEIVED**

JUL 21 1997

MPCA, HAZARDOUS  
WASTE DIVISION

MPCA Tank Site #830  
Mayer Mobil  
308 Ash Avenue  
Mayer, MN 55360

Date: June 10, 1997  
1- 8,000 Gal UST Diesel  
1- 6,000 Gal UST Gasoline  
1- 2,000 Gal UST Gasoline  
1- 1,000 Gal UST Diesel

Tanks were removed by Boiler Services, Inc. MPCA#0012  
Supervised by Tom Marchessault, Sup#1134  
Transported and disposed of by Solberg Enterprises, Clearwater, MN

Soil samples were taken for analysis under each tank.  
Strong gasoline odor and dark stained soil was discovered under the 2,000 Gallon gasoline  
UST. See attached site map.  
MPCA Duty officer was notified on 6/11/97.

The 2,000 Gallon tank seemed to be sound. However, this facility has been an automotive  
repair garage since 1931. The contamination was found in an area that was used for a  
repair pit until the mid 1980's.

MPCA Leak ID#10324  
MPCA Project Manager: Elizabeth Clysdale

Sincerely,



Tom Marchessault  
**BOILER SERVICES, INC.**

cc Mayer Mobile  
MPCA



Maxim Technologies, Inc.  
801 East 46th Street North  
Sioux Falls, South Dakota 57104-0898  
(605) 332-6371  
Fax: (605) 332-8488

REPORT OF: CHEMICAL ANALYSIS

PROJECT: BOILER SERVICES INC.

DATE: June 23, 1997

REPORTED TO: Maxim Technologies, Inc.  
Attn: Kate Kleiter  
662 Cromwell Avenue  
St. Paul, MN 55114

LABORATORY NO: 3009713211.G3

Date Received: 6-12-97  
Date Sampled: 6-10-97  
Authorization: 3009713211.G3

The results of the gasoline analysis are listed in Table 1. The results of the total petroleum hydrocarbons as diesel analysis are listed in Table 2.

TABLE 1  
VOLATILE ANALYSIS

Client Sample ID	6,000 Gasoline UST 061097130	2,000 Gas UST 061097430	PQL
Parameter	97-5961	97-5964	
Total Petroleum Hydrocarbons as Gasoline	<25	34,000	25
Benzene	<2.0	1,600	2.0
Toluene	<2.0	500	2.0
Ethylbenzene	<2.0	500	2.0
Xylenes	<2.0	330	2.0
<b>SURROGATE RECOVERY:</b>			
$\alpha, \alpha, \alpha$ -Trifluorotoluene	88%	97%	

All values are in ug/kg. ug/kg is equal to parts per billion (ppb).

PQL - Practical Quantitation Limit

Date Analyzed: 6-12-97

USEPA SW846 Method 8020

Technical Review: SVH



**LABORATORY QUALITY CONTROL**

ACCURACY DATA

PRECISION DATA

<u>Parameter</u>	<u>Sample #</u>	<u>Matrix Spike Percent Recovery</u>	<u>Matrix Spike Duplicate Percent Recovery</u>	<u>Relative Percent Difference</u>
Benzene	97-5820	91%	86%	4.9%
Toluene	97-5820	98%	93%	5.9%
Ethylbenzene	97-5820	101%	95%	6.4%
Xylene	97-5820	101%	95%	6.4%

**TABLE 2  
TOTAL PETROLEUM  
HYDROCARBONS AS DIESEL ANALYSIS**

<u>Sample Identification</u>	<u>Client Sample ID</u>	<u>Total Petroleum Hydrocarbons as Diesel</u>	<u>SURROGATE RECOVERY: Triacotane</u>
97-5962	1,000 Diesel UST, 0610971100	<4	103%
97-5963	8,000 Diesel UST, 061097230	<4	99%
PQL		4	

Samples were quantified as #2 diesel fuel.  
 All values are in mg/kg which is equal to parts per million (ppm).  
 PQL - Practical Quantitation Limit  
 Date Extracted: 6-16-97  
 Date Analyzed: 6-16-97  
 USGS/California Method

Technical Review: SVH

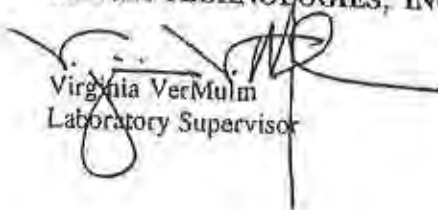
**LABORATORY QUALITY CONTROL**

ACCURACY DATA

PRECISION DATA

<u>Parameter</u>	<u>Matrix Spike Percent Recovery</u>	<u>Matrix Spike Duplicate Percent Recovery</u>	<u>Relative Percent Difference</u>
TPH-D	118%	124%	5.0%
Surrogate Recovery	116%	118%	--

**MAXIM TECHNOLOGIES, INC.**

  
 Virginia VerMum  
 Laboratory Supervisor

  
 Dan T. Hanson  
 Chemistry Manager

# SOLBERG ENTERPRISES

2004 Daisy Circle  
Clearwater, MN 55320  
320/558-2880

-1891

Certified by:  
MN PCA #00602, #00552 and #0033  
EPA #MND985685429  
PR #1086

## Tank Receipt

Date 6-10-97

TO: Boiler Services Inc  
7570 N.E. Hwy 65  
Friday, MN 55432


Tanks received for disposal become the property of Solberg Enterprises.

Tank(s) received from Major Mobil Major, MN

on 6-10-97

Received four <sup>1-1,000</sup> <sup>1-3,500 gal</sup> <sup>1-6,000 gal</sup> <sup>1-8,000</sup> (4) tank(s): For disposal of tanks(s) and

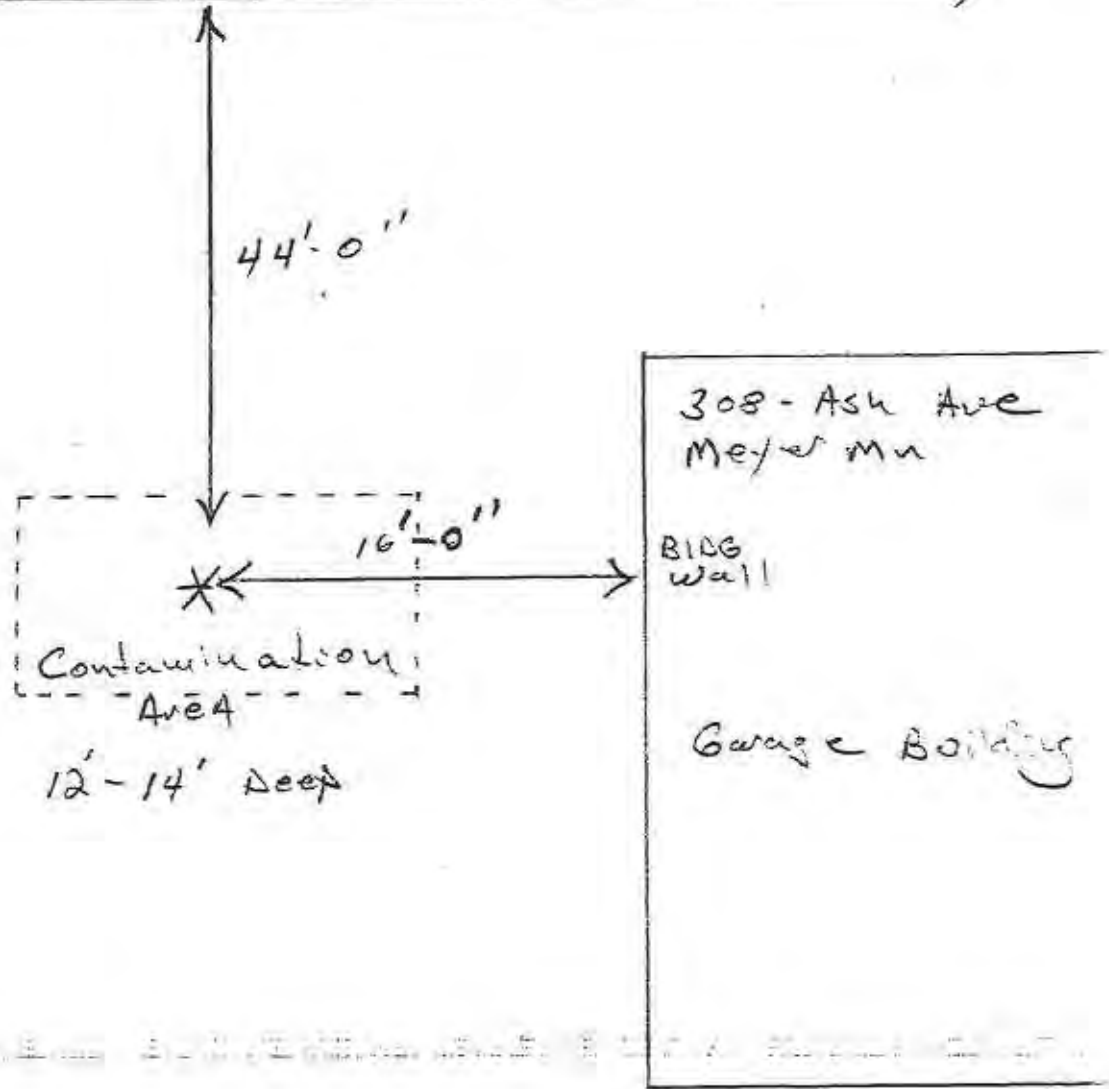
sludge. Tank(s) will be opened, cleaned, and cut for scrap.

  
\_\_\_\_\_  
Solberg Enterprises

MN Hwy 25

North  
→

↳ Curb Line



RECEIVED

DEC 15 1997

MPCA, HAZARDOUS  
WASTE DIVISION

**REMEDIAL INVESTIGATION  
REPORT FORM  
FACT SHEET #3.24  
MAYER OIL COMPANY  
MAYER, MINNESOTA**

**NOVA PROJECT NO.: M7M-049  
MPCA LEAK NO.: 10324**

**December 10, 1997**

**Prepared for:**

**MR. RICHARD COHRS  
308 ASH AVENUE  
MAYER, MINNESOTA**

**Prepared by:**

**NOVA ENVIRONMENTAL SERVICES, INC.  
1107 HAZELTINE BOULEVARD, SUITE 400  
CHASKA, MINNESOTA 55318  
(612) 448-9393**

## SUMMARY

A petroleum release was detected at the Mayer Oil Company in Mayer, Minnesota during the removal of four underground storage tanks (USTs). A 1,000 gallon diesel UST, an 8,000 gallon diesel UST, a 6,000 gallon gasoline UST, and a 2,000 gallon gasoline UST were removed from the site by Boiler Services, Inc. of Fridley, Minnesota on June 10, 1997. The release was attributed to spills or overfills of the 2,000 gallon gasoline UST.

Based on current Minnesota Pollution Control Agency (MPCA) guidance documents, a limited site investigation was required to assess the extent and potential risks associated with the release. The MPCA requires a limited site investigation (LSI) to be performed at sites where contaminated soil remains and ground water is suspected to be impacted. Total Petroleum Hydrocarbons (TPH) as gasoline were detected at a concentration of 34 parts per million (ppm) in the soil sample collected beneath the 2,000 gallon UST. Ground water was not observed in the excavation; however, the depth to the water table was estimated to be 20 to 25 feet below ground surface (BGS). The horizontal and vertical extent of the soil contamination could not be determined at the time of the UST removal project.

As part of the limited site investigation, soil borings were advanced on August 27, 1997. A Geoprobe was used to advance two soil borings through the center of the former tank basin and two soil borings around the former tank basin. Boring depths ranged from 21 to 31 feet. Two soil samples and two ground water samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX), gasoline range organic (GRO) compounds and methyl tert butyl ether (MTBE).

A water sample analyzed from boring GP-1 contained low levels of BTEX and GRO compounds. The water sample from GP-2 contained only toluene at a concentration of 0.50 parts per billion (ppb). The concentrations of petroleum compounds detected in the water samples from borings GP-1 and GP-2 were below the Minnesota Department of Health's (MDH's) Health Risk Limits (HRLs). No detectable concentrations of petroleum compounds were detected in the soil samples from borings GP-3 and GP-4.

A potential receptor survey was performed to assess the risks associated with the release. No structures or utilities were identified to be at risks of petroleum vapor impacts. All property owners within 500 feet of the site were contacted to identify potential ground water receptors. One well was identified within 500 feet of the site. This well is the City of Mayer Public Water supply well. This municipal supply well is cased in the Jordan Aquifer, and approximately 200 feet of clay-rich glacial till separate the petroleum contamination from the well intake.

Based on the fact that the petroleum-contaminant levels in the ground water did not exceed established MDH HRLs, and that no receptors of petroleum vapors or impacted ground water were identified, the release does not pose a significant threat to human health or the environment.

The MPCA requires that data obtained during the limited site investigation be presented on MPCA fact sheet #3.24. The following fact sheet/report includes our data and interpretation and requests MPCA site closure.

## Remedial Investigation Report Form

Fact Sheet #3.24

January 1997

---

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

Refer to Minnesota Pollution Control Agency (MPCA) fact sheet #3.1, "Leaking Underground Storage Tank Investigation and Cleanup Policy" for guidance for the overall objectives of an RI and other MPCA fact sheets regarding investigations.

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

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

---

Leak Number: LEAK0000 10324

Date: December 5, 1997

Responsible Party: Richard Cohrs

R.P. phone #: (612) 657-2273

Facility Name: Mayer Oil Company

Facility Address: 308 Ash Avenue City: Mayer

County: Carver Zip Code: 55360

Location of site: LAT: 93°54'16" LONG: 44°53'14" Circle one: UTM/State



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- SECTION 1: Emergency and High Priority Sites
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- SECTION 6: Extent and Magnitude of Ground Water Contamination
- SECTION 7: Evaluation of Natural Biodegradation
- SECTION 8: Well Receptor Information/Assessment
- SECTION 9: Surface Water Risk Assessment
- SECTION 10: Vapor Risk Assessment/Survey
- SECTION 11: Discussion Section
- SECTION 12: Conclusions and Recommendations
- SECTION 13: Required Figures
- SECTION 14: Appendices
- SECTION 15: Consultant (or other) Information

Note: Sections 6 and 7 have been omitted because a resource aquifer has not been significantly impacted.

## Section 1: Emergency and High Priority Sites

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

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

## Section 2: Site and Release Information

2.1 Describe the land use and pertinent geographic features within 1,000 feet of the site.

The principal land use is for residential dwellings with some commercial buildings interspersed. The topography is flat to gently rolling and drops off east of the site to a low flat area, which is used as a park.

**Table 1.**

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

Tank #	UST or AST	Capacity	Contents	Age	Status*	Condition
1	UST	1,000	Diesel	12 yrs	Removed 6/10/97	Good Condition
2	UST	8,000	Diesel	12 yrs	Removed 6/10/97	Good Condition
3	UST	6,000	Gasoline	12 yrs	Removed 6/10/97	Good Condition
4	UST	2,000	Gasoline	12 yrs	Removed 6/10/97	Good Condition

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

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

The piping and dispensers were removed with the USTs.

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

The release has been attributed to spills and overfills of the 2,000 gallon gasoline UST.

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

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

### Section 3: Excavated Soil Information

3.1 Was soil excavated for off-site treatment? Yes No

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

Date excavated: \_\_\_\_\_

Volume removed: \_\_\_\_\_ cubic yards

3.2 Indicate soil treatment type: \_\_\_\_\_ land treatment  
\_\_\_\_\_ thermal treatment  
\_\_\_\_\_ composting/biopiling  
\_\_\_\_\_ other ( \_\_\_\_\_ )  
Name and location of treatment facility:  
\_\_\_\_\_  
\_\_\_\_\_

### Section 4: Extent and Magnitude of Soil Contamination

4.1 Were soil borings conducted in or immediately adjacent to all likely source areas (e.g., underground storage tank basins, above ground storage tank areas, piping, dispensers, remote fill pipes, known spill areas)? YES NO

4.2 To adequately define the vertical extent of contamination soil borings should be completed at least five feet below the water table or ten feet below the deepest measurable (field screening and visual observation) contamination, whichever is deeper. Were all soil borings completed to the required depth? YES NO

4.3 To adequately evaluate site stratigraphy at least one boring should be completed 20 feet below the water table, unless a confining layer is present. Was this done? YES NO

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

4.4 Indicate the drilling method:  hollow-stem auger  
 sonic drilling  
 push probes  
 other ( \_\_\_\_\_ )  
*Note: contact MPCA staff hydro before use of flight augers)*

**Table 2.**

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

ASTM soil classification	Depth (ft)	Soil Boring								
		GP-1	GP-2	GP-3	GP-4	5	6	7	8	9
	4-6	9	ND	9	7					
	9-11	2	9	ND	ND					
	14-16	ND	ND	ND	ND					
	19-21	ND	ND	3	ND					
	24-26	ND								
	29-31	ND								

*Notes:(type of PID/FID)*

Hnu equipped with a 10.2 eV lamp.

**Table 3.**

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

Well/Boring, Depth(ft)	Date Analyzed	Benzene	Toluene	Ethylbenzene	Xylene	GRO	MTBE
GP-3 (19-21)	9/9/97	<0.010	<0.0095	<0.020	<0.069	<1.0	<0.018
GP-4 (19-21)	9/9/97	<0.010	<0.0095	<0.020	<0.069	<1.0	<0.018

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

**Table 4.**

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

None

Well/Boring, Depth (ft)	Date Analyzed						

Notes:

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

N/A

4.6 Describe the vertical and horizontal extent and magnitude of soil contamination.

Low level soil contamination was observed in three soil borings at a depth of 4 to 6 feet below ground surface (BGS) and in two soil borings (GP-1 and GP-2) at a depth of 9 to 11 feet BGS. The highest measurable level of contamination was 9 ppm with the HNu PID.

## Section 5: Aquifer Characteristics/Ground Water Contamination Assessment

5.1 Hydraulic conductivity is used to evaluate risk to present or potential ground water receptors. The level of potential risk determines the level of confidence required of the hydraulic conductivity values. Indicate average hydraulic conductivity and methods used for measurement and estimation.

### Measurement

Methods of measuring aquifer parameters are *aquifer* and *permeameter* tests. Aquifer tests such as pumping and slug tests are necessary to evaluate parameters of the actual undisturbed aquifer material. Pumping tests evaluate the largest volume of aquifer material, providing the best measurement of *in situ* aquifer parameters. Slug tests provide *in situ* parameters representing a smaller portion of the aquifer. Permeameter tests are laboratory methods used for the evaluation of discrete samples collected from the aquifer. Permeameter tests require an adequate number of representative field samples, and, inherent sampling and analysis technique limitations must be considered when evaluating results.

### Estimation

Methods of estimating hydraulic conductivity may involve grain size analysis or correlating a field description with a reference range of values. As with laboratory measurements, estimation methods require an adequate number of representative field samples. Use the most conservative value of a range when using estimates. If there is any question that sediments may be permeable enough to comprise a resource aquifer, confirm by conducting test(s).

*Provide hydraulic conductivity values that support the level of investigation based on risk and remediation potential.* Be sure to have tests and estimations performed and analyzed by personnel trained and/or experienced in hydrogeologic investigations. Improperly performed or analyzed tests may be returned as incomplete. Attach all supporting information for the determination in the Methodologies appendix:

10<sup>-7</sup> cm/sec

Indicate the measurement or estimation used:

Pumping test analysis by \_\_\_\_\_ method(s).

Slug tests by \_\_\_\_\_ method(s).

Permeability tests by \_\_\_\_\_ method(s).

Grain-size distribution approximations by \_\_\_\_\_ method(s).

\*Reference from . (Freeze and Cherry, 1979, Groundwater, Prentice-Hall, Table 2.2)

\*provide author(s), year published, title, publisher and page(s).

- 5.2 Indicate the thickness of the aquifer. If the investigation does not provide enough information to determine the aquifer thickness, assume the aquifer is greater than 20 feet thick:
- \_\_\_\_\_ less than 10 feet  
\_\_\_\_\_ between 10 and 20 feet  
X 20 feet or greater

- 5.3 Describe in detail the geology underlying the site including confining layers, bedrock formations and the lateral extent of these formations:

Evaluation of area well logs revealed that the area is underlain by clay to a depth of approximately 150 to 200 feet. The site boring logs confirmed that clay is present to 31 feet at boring GP-1. The uppermost bedrock is the Jordan sandstone, at a depth of 150 to 200 feet.

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

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

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

5.5 If other water supplies are available, explain.

5.6 Are there any other reasons the impacted aquifer should not be considered a resource aquifer?



**Table 5.**

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

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

Notes:

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

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

There was a water-bearing sand seam encountered at 25 feet and 20 feet in borings GP-1 and GP-2, respectively.

**Table 6.**

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

Well/Boring Number	Date Analyzed	Benzene	Toluene	Ethylbenzene	Xylene	GRO	MTBE
GP-1	9/5/97	6.9	0.67	5.6	33	380	<.68
GP-2	9/4/97	<0.47	0.50	<0.33	<1.4	<17	<0.68

Notes:

Units are µg/L or parts per billion (ppb).

**Table 7.**

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

None

Well/Boring Number	Date Analyzed						

Notes:

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

N/A

5.9 If contaminated soil is not in contact with ground water, what is the 0 feet distance separating the deepest contamination from the surface of the water table? Was this distance measured during site activities, referenced from geologic information, or estimated based on professional opinion during a site visit?

This distance was based on the low-level impact to groundwater at GP-1.

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

Mottling was observed in clayey soil samples in all soil borings at depths ranging from approximately 9 to 20 feet below ground surface.

5.11 In your judgment, is there a sufficient distance separating the petroleum contaminated soil (or an impacted non-resource aquifer) from the underlying resource aquifer to prevent petroleum contamination of the resource aquifer? Please explain in detail. In your explanation consider the data and information of this section as well as the nature of the petroleum release (i.e., volume, when it occurred, petroleum product). YES NO

Over 100 feet of clay-rich glacial drift separate the impacted soil from the nearest resource aquifer.

### Section 8: Well Receptor Information/Assessment

Include in the appendices of this report: 1) A list of addresses within 500 feet from the edge of the plume and confirmation of status of water supply from the city utility billing department; 2) well logs; and 3) map showing ½ mile radius, 500 foot radius, water supply wells, other potential petroleum sources, and addresses for properties within 500 feet.

**Table 13.**

Complete the following table for all water supply wells located within 500 feet of the edge of the plume and any municipal or industrial wells found within ½ mile.

Unique Well #	Ground Elevation	Total Depth (ft)	Base of Casing (ft)	Static Elevation	Aquifer	Use	Owner	Distance & Direction from site
220954	972	280	202	52	Jordan	M	City of Mayer	400 ft. east

Notes:  
 M = Municipal

- 8.1 Is municipal water available in the area? YES NO
- 8.2 Were all property owners within 500 feet of the nearest edge of the contaminant plume successfully contacted to determine if water wells are present? If No, please explain. YES NO

- 8.3 Discuss the results of the ground water receptor survey and any analytical results from sampling conducted at nearby water wells. Comment on the risks to water supply wells identified within 500 feet from the edge of the plume as well as the risk posed by or to any municipal or industrial wells found within 1/2 mile. Specifically indicate whether water supply wells identified utilize the impacted aquifer. (Note: an impacted aquifer separated from another aquifer by a clay lens is not considered a separate aquifer.)

The County Well Index (CWI) identified one well within a 500 foot radius of the site. This well is the City of Mayer municipal water supply well. It is cased to 202 feet within the Jordan sandstone. The 202 feet of overlying Quaternary Drift consists of clay-rich glacial till. No other wells were identified within a 500 foot radius of the site and no other municipal or industrial wells were identified within a half-mile radius of the site.

- 8.4 Are there any plans for ground water development in the impacted aquifer within 1/2 mile of the site, or one mile down gradient of the site if the aquifer is fractured? Please give the name, title and telephone number of the person that was contacted for this information. YES NO

The City of Mayer intends to install an additional well in the near future.

Greg Kliver Telephone (612) 657-2527

### Section 9: Surface Water Risk Assessment

- 9.1 Are there any surface waters or wetlands located within 1/4 mile of the site? YES NO

If YES, indicate its name: \_\_\_\_\_

- 9.2 If surface water is present downgradient of the site, is there a clean down gradient soil boring or monitoring well located between the site and the surface water? YES  
NO  
N/A

If NO, we assume that contamination discharges to surface water. Therefore, complete the following information:

Name of receiving water:	_____
Plume width, (W):	_____ feet
Plume thickness, (H):	_____ feet
Hydraulic conductivity, (K):	_____ gal/day/ft <sup>2</sup>
Horizontal gradient, (dh/dl):	_____ (unitless)
Discharge, (Q) = H*W*K*(dh/dl)/1440	_____ gal/min

If *YES*, identify them and indicate the distance to these features and discuss the contamination risk potential.

### Section 10: Vapor Risk Assessment/Survey

10.1 Is there a history of vapor impacts in the vicinity of the site? *YES* *NO*

If *YES*, describe:

10.2 Is there any indication that free product or highly contaminated ground water may be traveling offsite within the utility corridors? If *YES*, have they been investigated with borings or push probes? *YES* *NO*

10.3 Discuss the potential for vapor migration/accumulation near the site. In your discussion consider: Soil types, product type, presence and distribution of free product or high concentrations of dissolved product. Also, compare the depth of contamination with the location of underground utility lines, location and depth of storm and sanitary sewers and location of nearby basements.

Due to the presence of clayey soils, the potential for vapor migration is high. An underground basement/mechanical room for the Mayer Oil Company and a storm sewer grate were accessed for measurement of organic and explosive vapors. An inaccessible utility trench, housing vent and electrical pipes for existing USTs, is in close proximity to the former 2,000 gallon UST.

If the vapor risk assessment indicated a risk of vapor impacts to buildings or utilities, complete the following table with vapor monitoring data collected. Location numbers should be mapped on an accompanying figure of the surveyed area.

Table 14.

Location #	Date	PID reading (ppm)	Percent of the LEL
VS-1	11/12/97	0 ppm	0%
VS-2	11/12/97	0 ppm	0%

Notes: See Figure 2 for vapor survey locations.

#### 10.4 Describe and interpret the results of the vapor survey

No organic or explosive vapors were detected during the vapor survey.

### Section 11: Discussion

#### 11.1 Discuss the risks associated with the remaining soil contamination?

The only identifiable risk associated with the remaining soil contamination is contact with soil if it were excavated. No significant soil vapor risks were identified.

#### 11.2 Discuss the risks associated with the impacted ground water?

The impacted ground water is in a non-resource aquifer consisting of clayey glacial till with occasional sand seams. The contaminant levels are below MDH HRLs. No risks associated with the impacted ground water were identified.

#### 11.3 Discuss other concerns not mentioned above:

### Section 12: Conclusions and Recommendations

Recommendation for site:

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

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

A low level soil impact was observed in the 4 to 6 foot depth at borings GP-1, GP-3, and GP-4 and in the 9 to 11 foot depth at borings GP-1 and GP-2. The impact to ground water is minimal. Ground water contaminant levels are below the MDH HRLs. The remaining soil contamination is not expected to impact the ground water above current levels. No significant risks to human health or the environment have been identified.

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

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

### Section 13: Required Figures

Indicate attached figures:

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

## Section 14: Appendices


Indicate attached appendices.

- Appendix A*      Excavation Report Worksheet for Petroleum Release Sites.
- Appendix B*      Laboratory Analytical Reports for Soil and Ground Water.
- Appendix C*      Methodologies and Procedures, Including Field Screening of Soil, Other Field Analyses, Soil Boring, Soil Sampling, Well Installation, and Water Sampling.
- Appendix D*      Geologic Logs for Each Well or Boring, Including Well As-Builts on Log.
- Appendix*          Well Construction Diagrams and Copies of the Minnesota Department of Health Well Record.
- Appendix E*      Copies of Water Supply Well Logs With Legible Unique Numbers.
- Appendix*          A List of Addresses Within 500 Feet From the Edge of the Plume and Confirmation of Status of Water Supply From the City Utility Billing department.



### Section 15: Consultant (or other) Information

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

Name and Title:	Signature:	Date signed:
<u>Artie Dworak, Project Manager</u>	<u></u>	<u>12 / 10 / 97</u>
_____	_____	<u> / /</u>
_____	_____	<u> / /</u>
_____	_____	<u> / /</u>

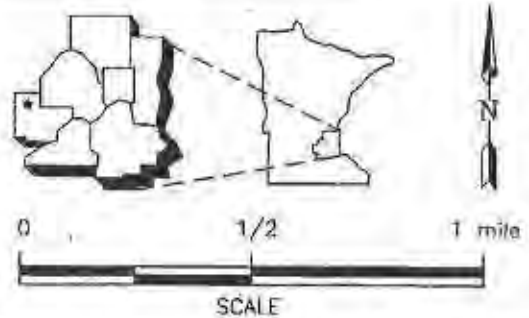
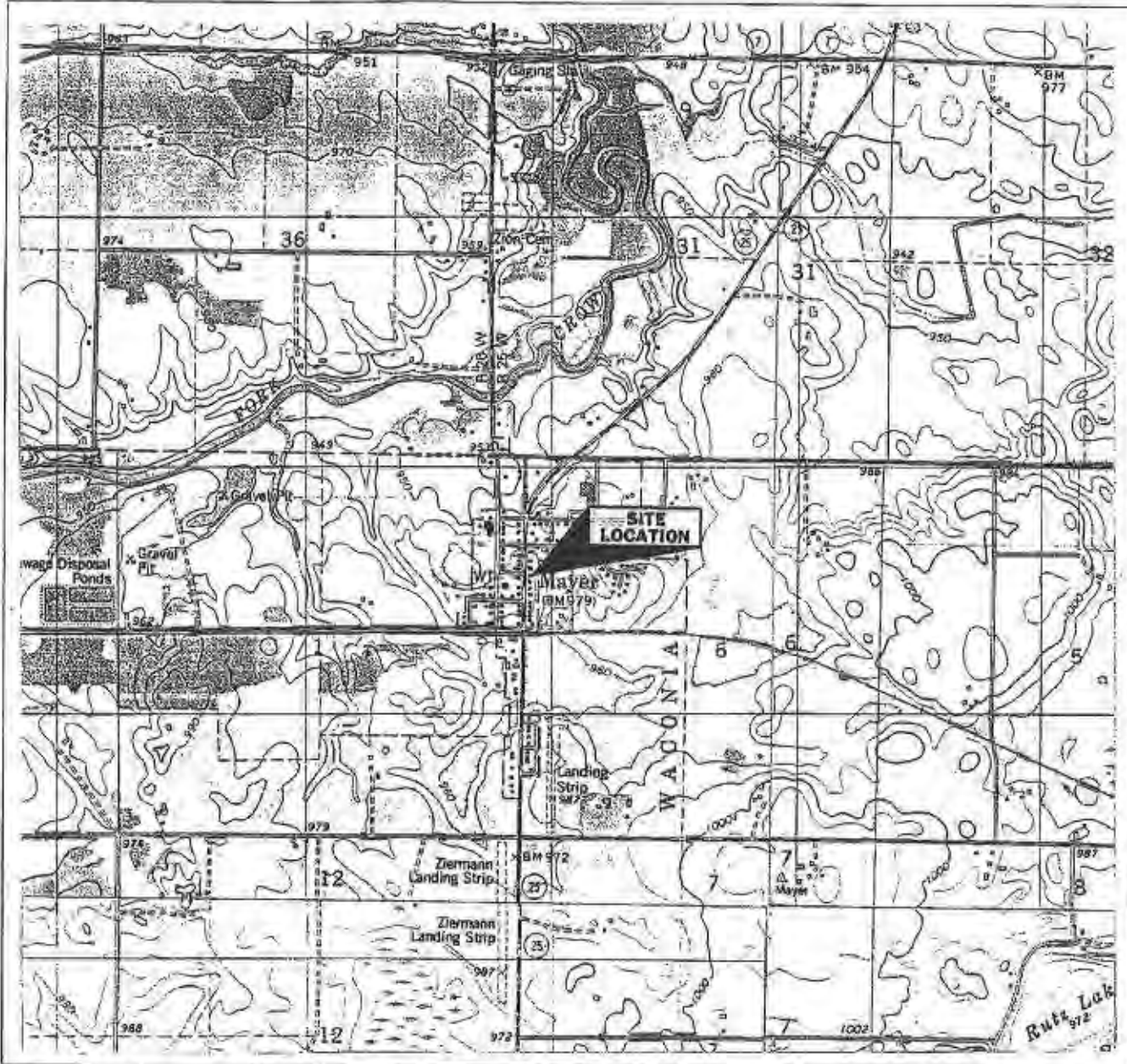
Company and mailing address: Nova Environmental Services, Inc.  
1107 Hazeltine Boulevard, Suite 400  
Chaska, Minnesota 55318

Phone: (612) 448-9393  
Fax: (612) 448-9393

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FIGURES



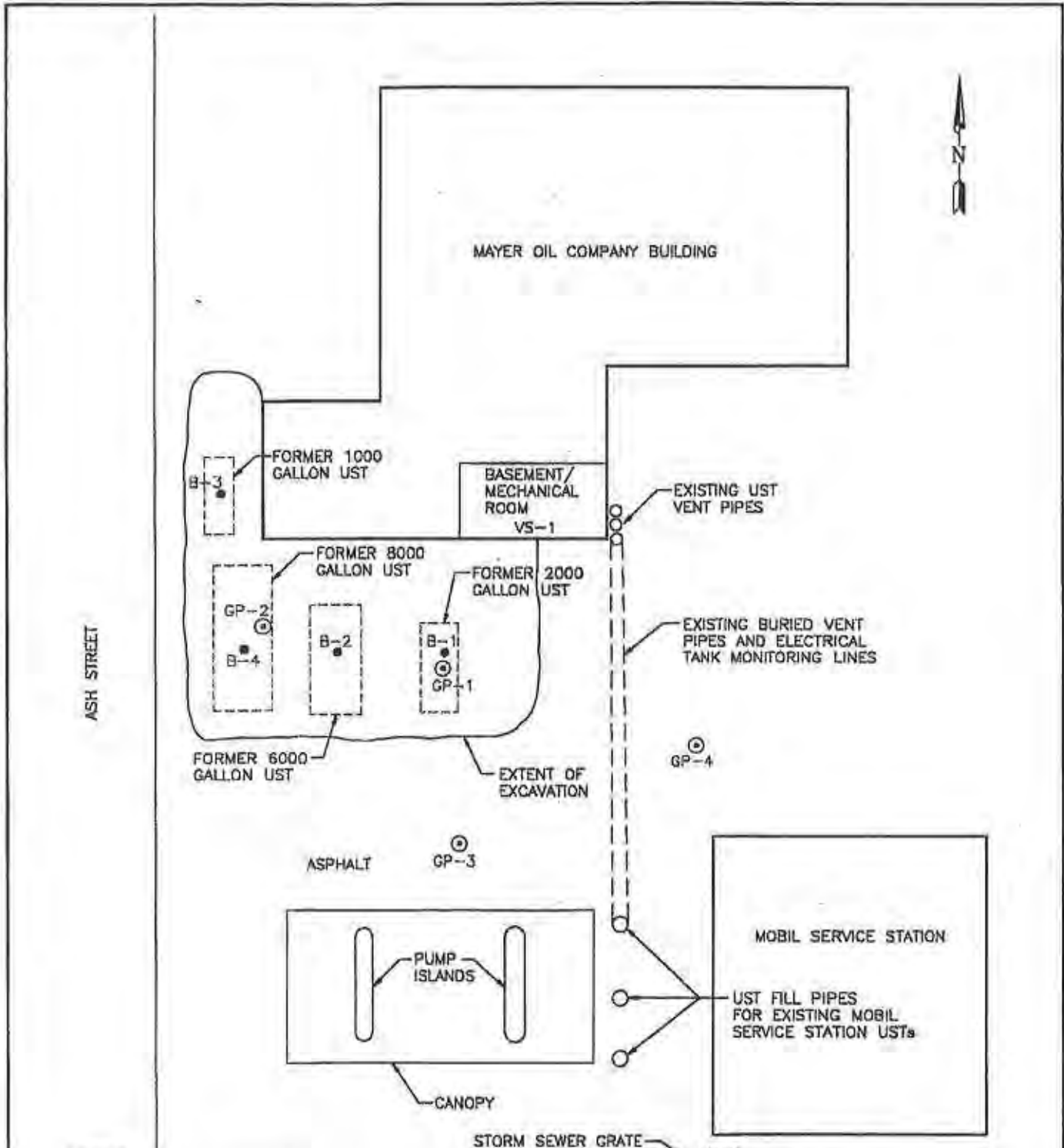
SITE LOCATION MAP  
 MAYER OIL COMPANY  
 308 ASH STREET  
 MAYER, MINNESOTA

M265/M7M-049



OCT - 97

1

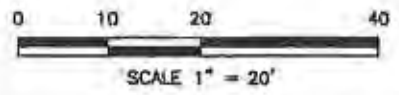


ASH STREET



**LEGEND**

- SOIL SAMPLE LOCATION (6/10/97)
- ⊙ SOIL BORING LOCATION (8/27/97)
- VS-1 VAPOR SURVEY LOCATION



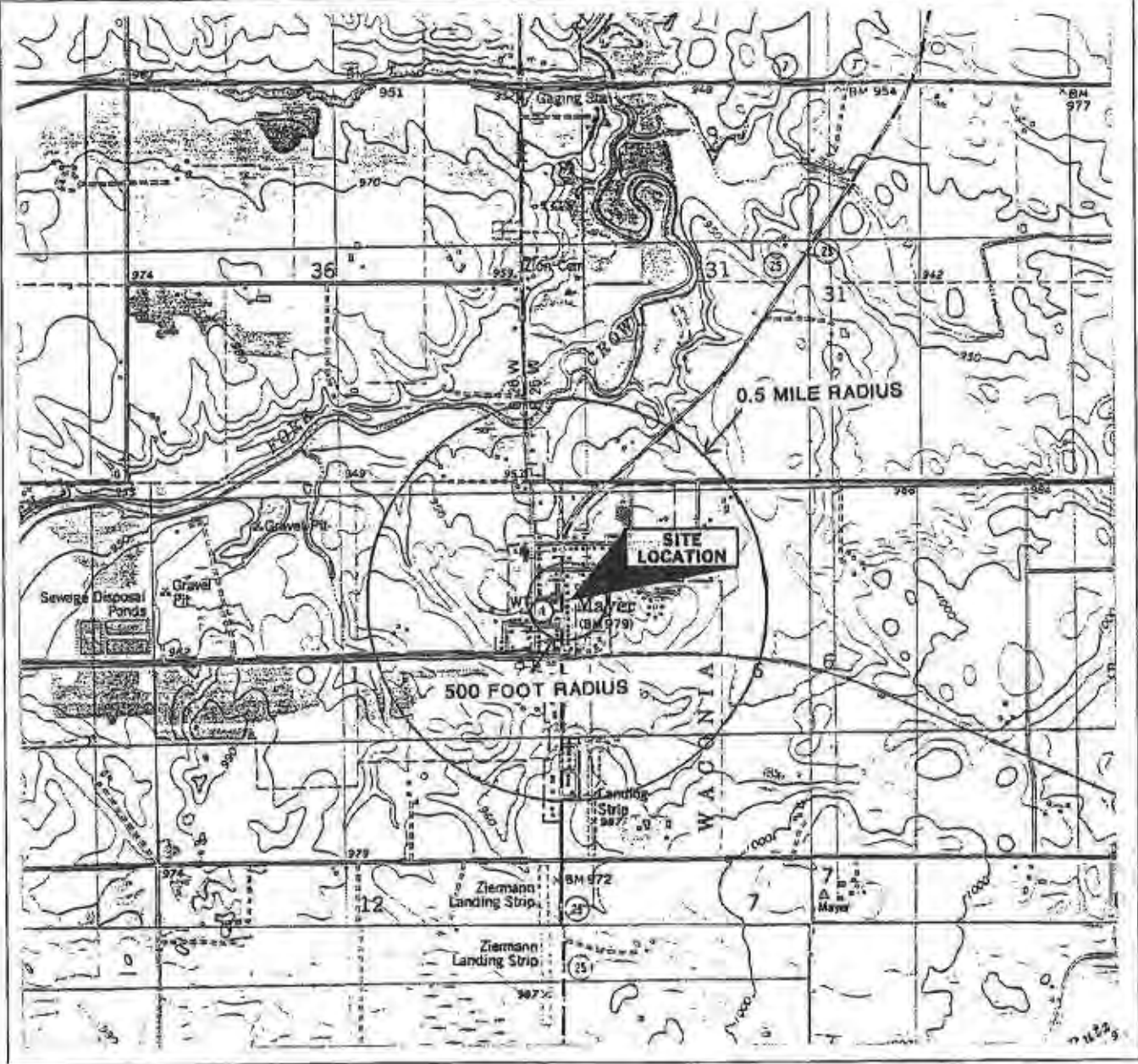
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 MAYER OIL COMPANY  
 308 ASH STREET  
 MAYER, MINNESOTA

M265/M7M-049



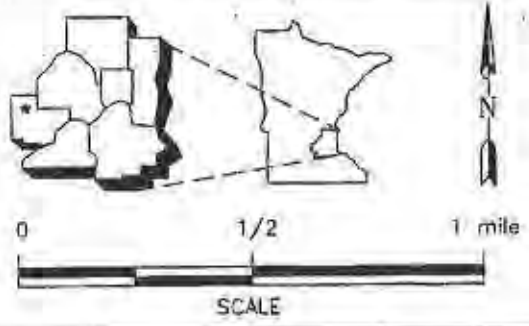
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2



UNIQUE WELL NUMBER

i 220954



WELL RECEPTOR SURVEY MAP  
 MAYER OIL COMPANY  
 308 ASH STREET  
 MAYER, MINNESOTA

M265/M7M-049



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APPENDIX A

EXCAVATION REPORT WORKSHEET –  
MPCA FACT SHEET 3.7



## EXCAVATION REPORT WORKSHEET FOR PETROLEUM RELEASE SITES

Fact Sheet #3.7  
April 1997

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: Mayer Oil Company

Street: 308 Ash Avenue  
City, Zip: Mayer 55360  
County: Carver

MPCA Site ID#: LEAK0000 10324

B. Tank Owner/Operator: Richard Cohrs

Mailing Address: 308 Ash Avenue

Street/Box:  
City, Zip: Mayer, 55360  
Telephone: (612) 657-2273

C. Excavating Contractor: Boiler Service, Inc.

Contact: Tom Marchessault  
Telephone: (612) 784-8178  
Tank Contractor Certification Number: 0012

D. Consultant: None

Contact:  
Street/Box:  
City, Zip:  
Telephone:





**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	UST	1,000	Diesel	12 yrs	Removed 6/10/97	Good
2	UST	8,000	Diesel	12 yrs	Removed 6/10/97	Good
3	UST	6,000	Gasoline	12 yrs	Removed 6/10/97	Good
4	UST	2,000	Gasoline	12 yrs	Removed 6/10/97	Good

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

Notes:

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

Piping and dispensers were removed along with the tanks.

D. Identify and describe the source or suspected source(s) of the release and how the release was discovered.

Spills and overfills of the 2,000 gallon gasoline UST.

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

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

G. Describe source of on-site drinking water.

City of Mayer Municipal Water Supply

**PART IV: EXCAVATION INFORMATION**

- A. Dimensions of excavation: Length 20 feet Width 12 feet Depth 12 feet
- B. Original tank backfill material (sand, gravel, etc.): Sand
- C. Native soil type (clay, sand, etc.): Clay
- D. Quantity of contaminated soil removed for treatment (cubic yards): N/A

---

[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?
- 
- F. Was ground water encountered or a suspected perched water layer or was there evidence of a seasonally high ground water table (i.e. mottling)? (yes/no) At what depth?
- 
- G. If ground water was not encountered during the excavation, what is the expected depth of ground water? 20 - 25 feet
- H. If a soil boring was required (Additional investigation is required at sites that have visual or other evidence of contamination remaining in the suspected source area, with sandy or silty sand soil [Unified Soil Classification System/American Society for Testing Materials] and where the water table is within 25 feet of the ground surface. 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.
- See RI Report Form, Fact Sheet 3.24.
- I. If no soil boring was required, explain.

- J. If ground water was encountered or if a soil boring was conducted, was there evidence of ground water contamination? (yes/no) Describe this evidence of contamination, e.g., free product (specify thickness), product sheen, ground water in contact with petroleum contaminated soil, water analytical results, etc.

Please see RI Report Form, Fact Sheet 3.24.

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

- K. Was bedrock encountered in the excavation? (yes/no) At what depth?

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

#### PART V: SAMPLING INFORMATION

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

Visual and olfactory observations were used by Boiler Service, Inc. to determine that a release had occurred. The laboratory analytical results, for the soil sample collected under each tank, were used by Boiler Service to confirm their field screening procedures.

E. 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), stockpile samples SP-1, etc. Be sure the sample codes correspond to the site map required in part VI. Do not include analyses from the stockpiled soil.

Sample Code	TPH as Gas ppm	TPH as Diesel ppm	Benzene ppm	Ethyl-benzene ppm	Toluene ppm	Xylene Ppm	MTBE ppm	Lead ppm
B-1 (12')	<0.025	--	<0.002	<0.002	<0.002	<0.002	--	--
B-2 (11')	34	--	1.6	0.5	0.5	0.33	--	--
B-3 (9')	--	<4	--	--	--	--	--	--
B-4 (12')	--	<4	--	--	--	--	--	--
---	---	---	---	---	---	---	---	---

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

- See Figure 2 for Sample Locations
- See Appendix B for Laboratory Analytical Report.

**PART VI: FIGURES**

Attach the following figures to this report:

1. Site location map.
2. Site map(s) drawn to scale illustrating the following:
  - a. Location (or former location) of all present and former tanks, lines, and dispensers;
  - b. Location of other structures (buildings, canopies, etc.);
  - c. Adjacent city, township, or county roadways;
  - d. Final extent and depth of excavation;
  - e. Location of soil screening samples (e.g. R-1), soil analytical samples (e.g., S-1 or B-1), and any soil borings (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.

A release was confirmed by laboratory analyses of the soil sample collected under the 2,000 gallon gasoline UST. The release was reported to the State Duty Officer on June 11, 1997.

## PART VIII: SOIL TREATMENT INFORMATION

- A. Soil treatment method used (thermal, land application, composting, other). If you choose "other" specify treatment method: N/A
- B. Location of treatment site/facility: N/A
- C. Date MPCA approved soil treatment (if thermal treatment was used after May 1, 1991, indicate date that the MPCA permitted thermal treatment facility agreed to accept soil):

N/A

- D. Identify the location of stockpiled contaminated soil: N/A

**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 leak site. 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 leak site 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. 7000.0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties.*

Name and Title:	Signature:	Date signed:
<u>Artie Dworak, Project Manager</u>	_____	___/___/___
_____	_____	___/___/___
_____	_____	___/___/___

Company and mailing address: Nova Environmental Services, Inc.  
1107 Hazeltine Boulevard, Suite 400  
Chaska, Minnesota 55318

Telephone (612) 448-9393

Fax: (612) 448-9572

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

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

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

APPENDIX B

LABORATORY ANALYTICAL REPORTS





Maxim Technologies, Inc.  
601 East 48th Street North  
Sioux Falls, South Dakota 57104-0608  
(605) 332-6371  
Fax (605) 332-0488

### REPORT OF: CHEMICAL ANALYSIS

PROJECT: BOILER SERVICES INC.

DATE: June 23, 1997

REPORTED TO: Maxim Technologies, Inc.  
Attn: Kate Kleiter  
662 Cromwell Avenue  
St. Paul, MN 55114

LABORATORY NO: 3009713211.G3

Date Received: 6-12-97  
Date Sampled: 6-10-97  
Authorization: 3009713211.G3

The results of the gasoline analysis are listed in Table 1. The results of the total petroleum hydrocarbons as diesel analysis are listed in Table 2.

TABLE 1  
VOLATILE ANALYSIS

Client Sample ID	6,000 Gasoline UST 061097130 97-5961	2,000 Gas UST 061097430 97-5964	PQL
Total Petroleum Hydrocarbons as Gasoline	<25	34,000	25
Benzene	<2.0	1,600	2.0
Toluene	<2.0	500	2.0
Ethylbenzene	<2.0	500	2.0
Xylenes	<2.0	330	2.0
<b>SURROGATE RECOVERY:</b>			
$\alpha, \alpha, \alpha$ -Trifluorotoluene	88%	97%	

All values are in ug/kg. ug/kg is equal to parts per billion (ppb).

PQL - Practical Quantitation Limit

Date Analyzed: 6-12-97

USEPA SW846 Method 8020

Technical Review: SVH

LABORATORY QUALITY CONTROL

ACCURACY DATA

PRECISION DATA

Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Relative Percent Difference
Benzene	97-5820	91%	86%	4.9%
Toluene	97-5820	98%	93%	5.9%
Ethylbenzene	97-5820	101%	95%	6.4%
Xylene	97-5820	101%	95%	6.4%

TABLE 2  
TOTAL PETROLEUM  
HYDROCARBONS AS DIESEL ANALYSIS

Sample Identification	Client Sample ID	Total Petroleum Hydrocarbons as Diesel	SURROGATE RECOVERY: Triacontane
97-5962	1,000 Diesel UST, 0610971100	<4	103%
97-5963	3,000 Diesel UST, 061097230	<4	99%
PQL		4	

Samples were quantified as #2 diesel fuel.

All values are in mg/kg which is equal to parts per million (ppm).

PQL - Practical Quantitation Limit

Date Extracted: 6-16-97

Date Analyzed: 6-16-97

USOS/California Method

Technical Review: SVH

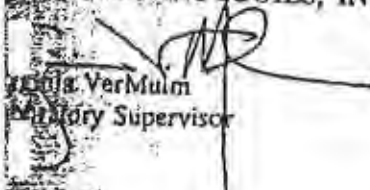
LABORATORY QUALITY CONTROL

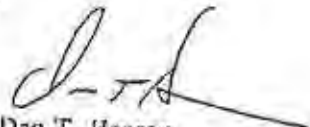
ACCURACY DATA

PRECISION DATA

Parameter	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Relative Percent Difference
PPFD	118%	124%	5.0%
Surrogate Recovery	116%	118%	---

MAXIM TECHNOLOGIES, INC.

  
Dana Vermulen  
Laboratory Supervisor

  
Dan T. Hanson  
Chemistry Manager

**MAXIM**

# MAXIM

TECHNOLOGIES INC

ENGINEERING & ENVIRONMENTAL CONSULTANTS  
547 CROWN ST  
ST PAUL, MN 55114  
PHONE 612-445-4201

## CHAIN-OF-CUSTODY RECORD

### LAB No. 10809

**Boiler Services, INC.**  
CLIENT NAME  
7570 NE HWY 65  
CLIENT ADDRESS (STREET NUMBER, SUITE, ETC.)  
FRIDLEY MN 55432  
CLIENT ADDRESS (CITY, STATE, ZIP)

**Kate**  
MAXIM CONTACT  
**MAYER MOBIL**  
PROJECT NAME  
308 Ash Ave, Mayer.  
CLIENT P.O. #/PROJECT NO.  
3009713211  
BILL TO (CO. NAME, ADDRESS)

LAB USE ONLY	
PROJECT NO.	
PRIORITY	
TEMPERATURE OF CONTAINER	
SAMPLE CONDITION	

CLIENT CONTACT/ADDRESS IF DIFFERENT FROM ABOVE: PHONE  
**Tom Marchessault** / **Tom Marchessault**  
SAMPLED BY (PRINT NAME/SIGNATURE)

REPORT TO **Client / Copy to Kate**

MAXIM PROJECT NO.
3009713211 .63

POSSIBLE HAZARD: YES \_\_\_ NO \_\_\_ UNKNOWN P (COMMENT BELOW)

ANALYSES REQUESTED
THU-G/BLTX
THC-FO

EXPECTED TURNAROUND TIME
2 weeks

SAMPLE DISPOSAL: RETURN TO CLIENT \_\_\_ DISPOSAL BY LAB P  
(ADDITIONAL CHARGES MAY BE ASSESSED)

LAB SAMPLE NO.	ITEM NO.	CLIENT SAMPLE ID.	MATRIX					DATE SAMPLED	TIME SAMPLED	NO. & TYPE OF CONTAINERS
92596	1	6000 Gasoline UST	SOIL	X				6/10/97	1:30P	4 02 JAR
5962	2	1000 Diesel UST			X				11:00A	
5963	3	8000 Diesel UST			X				2:30P	
5964	4	2000 Gas UST		X					4:30P	
	5									
	6									
	7									
	8									
	9									
	10									

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
<b>Tom Marchessault</b>		<b>Kate Kleckley/Max</b>	6/11 11:30 AM			<b>Sam Perry</b>	6/11 1445

ADDITIONAL COMMENTS:  
**@ \$50/sample**

Interpoll Laboratories, Inc.  
4500 Ball Road N.E.  
Circle Pines, Minnesota 55014-1819

TEL: (612) 786-6020  
FAX: (612) 786-7854

ANALYTICAL RESULTS  
FOR NOVA ENVIRONMENTAL SERVICES, INC.  
PROJECT #M7M-049

Submitted to:

Nova Environmental Services, Inc.  
1107 Hazeltine Blvd., Suite 420  
Chaska, Minnesota 55318

Attention: Artie Dworak

Respectfully submitted,



David J. Schneider, Manager  
Chemistry Department

Laboratory Report #9962  
September 10, 1997

## PROJECT SUMMARY

The following laboratory report contains the analytical results for three water and two soil samples submitted to Interpoll Laboratories, Inc. (ILI) by Nova Environmental Services, Inc. for Nova's Project #M7M-049. The samples were received on August 28, 1997 according to Interpoll Labs documented sample acceptance procedures and were analyzed for the parameters requested on the Nova Environmental Services Chain-of-Custody forms which accompanied the samples.

<u>Nova Sample Identification</u>	<u>ILI Sample #</u>
GP-1	9962-01
GP-2	9962-02
GP-3 (19-21)	9962-03
GP-4 (19-21)	9962-04
Trip Blank	9962-05

Results for the water samples are reported on an as received basis. Results for the soil sample are reported on a dry weight basis.

Surrogates are reported as percent (%) recovery.

<u>Surrogate</u>	<u>Method</u>	<u>Control Limits</u>
Bromobenzene-PID	SW-846, 8020	80 - 120
Bromobenzene-FID	GRO	80 - 120

DJS/cg

BDL = below detection limit

Invoice Enclosed

Sample Identification: GP-1  
Sample Type: Water  
Laboratory Log Number: 9962-01

Interpoll Laboratories, Inc.  
Laboratory Report #9962  
Nova Environmental Services, Inc.

	<u>Target Detection Limit (ug/L)</u>	<u>Analytical Result (ug/L)</u>	<u>Method Blank</u>
<b>EPA Method SW-846, 8020,</b>			
Preparation Date: 9/5/97			
Analysis Date: 9/5/97			
MTBE	0.68	BDL	BDL
Benzene	0.47	6.9	BDL
Toluene	0.50	0.67	BDL
Ethylbenzene	0.33	5.6	BDL
Xylenes	1.4	33	BDL
<b>Wisconsin DNR Method GRO,</b>			
Preparation Date: 9/5/97			
Analysis Date: 9/5/97			
Gasoline range organics	17	380	BDL
<b>Method 8020/GRO Surrogates:</b>			
Bromobenzene (PID)		102%	96.2%
Bromobenzene (FID)		97.0%	95.7%

**Sample Identification: GP-2**  
**Sample Type: Water**  
**Laboratory Log Number: 9962-02**

Interpoll Laboratories, Inc.  
 Laboratory Report #9962  
 Nova Environmental Services, Inc.

	Target Detection Limit (ug/L)	Analytical Result (ug/L)	Method Blank
<b>EPA Method SW-846, 8020,</b>			
<b>Preparation Date: 9/4/97</b>			
<b>Analysis Date: 9/4/97</b>			
MTBE	0.68	BDL	BDL
Benzene	0.47	BDL	BDL
Toluene	0.50	0.50	BDL
Ethylbenzene	0.33	BDL	BDL
Xylenes	1.4	BDL	BDL
<b>Wisconsin DNR Method GRO,</b>			
<b>Preparation Date: 9/4/97</b>			
<b>Analysis Date: 9/4/97</b>			
Gasoline range organics	17	BDL	BDL
<b>Method 8020/GRO Surrogates:</b>			
Bromobenzene (PID)		96.6%	96.2%
Bromobenzene (FID)		94.6%	95.7%

Sample Identification: GP-3 (19-21)  
Sample Type: Soil  
Laboratory Log Number: 9962-03

Interpoll Laboratories, Inc.  
Laboratory Report #9962  
Nova Environmental Services, Inc.

	<u>Achieved Detection Limit (mg/Kg)</u>	<u>Analytical Result (mg/Kg)</u>	<u>Method Blank</u>
<b>EPA Method 160.3,</b>			
Analysis Date: 8/29/97			
Total solids, %	0.1	84.9	
<b>EPA Method SW-846, 8020,</b>			
Preparation Date: 9/8/97			
Analysis Date: 9/9/97			
MTBE	0.018	BDL	BDL
Benzene	0.010	BDL	BDL
Toluene	0.0095	BDL	BDL
Ethylbenzene	0.020	BDL	BDL
Xylenes	0.069	BDL	BDL
<b>Wisconsin DNR Method GRO,</b>			
Preparation Date: 9/8/97			
Analysis Date: 9/9/97			
Gasoline range organics	1.0	BDL	BDL
<b>Method 8020/GRO Surrogates:</b>			
Bromobenzene (PID)		90.5%	89.6%
Bromobenzene (FID)		93.3%	90.1%



**Sample Identification: GP-4 (19-21)**  
**Sample Type: Soil**  
**Laboratory Log Number: 9962-04**

Interpoll Laboratories, Inc.  
 Laboratory Report #9962  
 Nova Environmental Services, Inc.

	Achieved Detection Limit (mg/Kg)	Analytical Result (mg/Kg)	Method Blank
<b>EPA Method 160.3,</b> <b>Analysis Date: 8/29/97</b>			
Total solids, %	0.1	85.3	
<b>EPA Method SW-846, 8020,</b> <b>Preparation Date: 9/8/97</b> <b>Analysis Date: 9/9/97</b>			
MTBE	0.018	BDL	BDL
Benzene	0.010	BDL	BDL
Toluene	0.0095	BDL	BDL
Ethylbenzene	0.020	BDL	BDL
Xylenes	0.069	BDL	BDL
<b>Wisconsin DNR Method GRO,</b> <b>Preparation Date: 9/8/97</b> <b>Analysis Date: 9/9/97</b>			
Gasoline range organics	1.0	BDL	BDL
<b>Method 8020/GRO Surrogates:</b>			
Bromobenzene (PID)		92.4%	89.6%
Bromobenzene (FID)		92.8%	90.1%

Sample Identification: Trip Blank  
Sample Type: Water  
Laboratory Log Number: 9962-05

Interpoll Laboratories, Inc.  
Laboratory Report #9962  
Nova Environmental Services, Inc.

	<u>Target Detection Limit (ug/L)</u>	<u>Analytical Result (ug/L)</u>	<u>Method Blank</u>
<b>EPA Method SW-846, 8020,</b>			
Preparation Date: 9/5/97			
Analysis Date: 9/5/97			
MTBE	0.68	BDL	BDL
Benzene	0.47	BDL	BDL
Toluene	0.50	BDL	BDL
Ethylbenzene	0.33	BDL	BDL
Xylenes	1.4	BDL	BDL
<b>Wisconsin DNR Method GRO,</b>			
Preparation Date: 9/5/97			
Analysis Date: 9/5/97			
Gasoline range organics	17	BDL	BDL
<b>Method 8020/GRO Surrogates:</b>			
Bromobenzene (PID)		98.2%	96.2%
Bromobenzene (FID)		96.4%	95.7%



APPENDIX C  
METHODS AND PROCEDURES

## METHODS AND PROCEDURES

### SOIL SAMPLING

Soil samples will be obtained using a truck mounted, hydraulically driven Geoprobe sampler. Soil samples will be collected in a 1 inch diameter by 24 inch long sampling probe. The leading end of the soil sampling probe is sealed with a piston while it is pushed or driven to the desired sampling depth. A piston stop pin at the trailing end of the sampling probe is removed by means of extension rods inserted down the inside of the probe rods after the sampler has been driven to the desired sampling depth. The sealing piston is then driven into the sampling probe as it is displaced by soil while the probe is being driven through the sampling depth interval. Soil samples can be collected at specific depth intervals or continuously. Soil samples are collected in plastic liners inside the sampling probe. The liners can then be capped and sent to the laboratory or soil can be removed from the liners and placed in appropriate containers.

### GROUND WATER SAMPLING

Ground water samples can be collected using various technologies with the Geoprobe. The most effective method will be used and will depend on site specific factors such as site geology and depth to ground water. Methods used will consist of one or more of the following;

#### Slotted probe point

A 1 inch diameter by 36 inch long steel slotted probe point is used for this method. The slotted probe point is driven into the water table using hollow probe extensions. Ground water enters the probe point through the slots. An inner tubing or smaller diameter bailer is inserted down the inside diameter of the probe rods to collect a water sample. This method of water sampling works best in sandy soils.

#### Screen point sampler

The screen point sampler consists of a 0.5 inch diameter by 19 inch long stainless steel screen encased in a perforated stainless steel sleeve. While the screen point sampler is being driven to the desired sampling depth, it is kept sealed by "O" ring connections at the leading and trailing ends of the sampling assembly. The screen section remains totally enclosed in a sheath until it is pushed out into the formation at the desired depth. When the desired sampling depth is reached, the sampler is pulled up 2 feet which disengages the o ring sealed expendable drive point and created an open borehole from which to sample. The screen section is then pushed out into the borehole and water enters the sampler. Water samples can be bailed from the rod bore using tubing or a small bailer.

## ORGANIC VAPOR MONITORING

A portion of each sample is field screened for the presence of organic vapors. The field screening procedure consists of placing soil into a quart size self sealing plastic bag, agitating the sample before and after a headspace development period of approximately 10 minutes. After the headspace development, a photoionization detector (PID) probe is inserted into the plastic bag. The maximum needle deflection is recorded as the result. Field screening results are recorded in units of parts per million (ppm) total organic vapors. An HNU P-101 PID equipped with a 10.2 eV lamp is used to field screen soil samples. The PID is calibrated to read total organic vapors referenced to benzene.

APPENDIX D  
BORING LOGS

# BORING LOG

PROJECT: Mayer Oil Company - ISA 308 Ash Avenue Mayer, Minnesota  Nova Project No.: M7M-049		DATE: 8/27/97		BORING: GP-1	
		SURFACE ELEVATION:		SCALE:  1" = 6'	
SAMPLE NO.	DEPTH FEET	ASTM	DESCRIPTION - ASTM D2488	PID ppm	NOTES
1	5	SW	SILTY SAND, brownish-gray, fine to coarse, wet.	9	
2	10	CL	SANDY CLAY, yellow/brown, some gravel moist, mottling.	2	
3	15	CL	SANDY CLAY, yellow/brown, some gravel moist, mottling.	ND	
4	20	CL	SANDY CLAY, yellow/brown, some gravel moist, mottling. Silty clay, dark gray, trace gravel, moist.	ND	
5	25	SW	SILTY SAND, brown, fine to coarse, WET, some gravel.	ND	
6	30	CL	SILTY SANDY CLAY, dark gray, trace gravel, moist.	ND	
	35		END OF BORING AT 31 FEET.		
	40				



# BORING LOG

PROJECT: Mayer Oil Company - ISA 308 Ash Avenue Mayer, Minnesota  Nova Project No.: M7M-049		DATE: 8/27/97		BORING: GP-2	
		SURFACE ELEVATION:		SCALE:  1" = 6'	
SAMPLE NO.	DEPTH FEET	ASTM	DESCRIPTION - ASTM D2488	PID ppm	NOTES
1	5	SW	SILTY SAND, brown, fine to medium, trace gravel, some thin layer of clay	ND	
2	10	CL	SANDY CLAY, yellow/brown, trace of gravel, moist.	9	
3	15	CL	SANDY CLAY, yellow/brown, trace of gravel, moist.	ND	
4	20	SP	SAND, brown, fine to medium, wet.	ND	
	25		END OF BORING AT 21 FEET.		
	30				
	35				
	40				

# BORING LOG

PROJECT: Mayer Oil Company - ISA 308 Ash Avenue Mayer, Minnesota			DATE: 8/27/97	BORING: GP-3	
Nova Project No.: M7M-049			SURFACE ELEVATION:	SCALE: 1" = 6'	
SAMPLE NO.	DEPTH FEET	ASTM	DESCRIPTION - ASTM D2488	PID ppm	NOTES
1	5	SW	SILTY SAND, brown, fine to medium, dry some thin lenses of sandy clay.	9	Slight odor
2	10	CL	SANDY CLAY, yellow/brown, moist, gray mottling.	ND	
3	15	CL	SANDY CLAY, yellow/brown, moist, gray mottling.	ND	
4	20	CL	SANDY CLAY, dark brown to gray, moist gray mottling.	3	
	25		END OF BORING AT 21 FEET.		
	30				
	35				
	40				

# BORING LOG

PROJECT: Mayer Oil Company - ISA 308 Ash Avenue Mayer, Minnesota			DATE: 8/27/97	BORING: GP-4	
Nova Project No.: M7M-049			SURFACE ELEVATION:	SCALE:  1" = 6'	
SAMPLE NO.	DEPTH FEET	ASTM	DESCRIPTION - ASTM D2488	PID ppm	NOTES
1	5	ML	SANDY SILT, tan, few gravel, dry.	7	Lab sample
2	10		SANDY CLAY, yellow/brown, trace gravel, moist, stiff, mottling.	ND	
3	15		SANDY CLAY, yellow/brown, trace gravel, moist, stiff, mottling.	ND	
4	20		SANDY CLAY, dark gray, trace gravel, moist.	ND	
			END OF BORING AT 21 FEET.		
	25				
	30				
	35				
	40				

APPENDIX E

GROUND WATER RECEPTOR SURVEY WELL LOG



Phase II Environmental Site Assessment  
Mobil Station  
Mayer, Minnesota  
WCEC Project No. 11-8565-30

## ATTACHMENT 3

### Laboratory Report



Pace Analytical Services, Inc.  
1700 Elm Street - Suite 200  
Minneapolis, MN 55414  
(612)607-1700

January 09, 2012

Jeff McCoy  
West Central Env. Consultants  
14 Green River Road  
PO Box 594  
Morris, MN 56267

RE: Project: 8565 Mayer  
Pace Project No.: 10179649

Dear Jeff McCoy:

Enclosed are the analytical results for sample(s) received by the laboratory on December 30, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Diane J. Anderson

diane.anderson@pacelabs.com  
Project Manager

Enclosures



#### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc.

Page 1 of 13

1 of 15



Pace Analytical Services, Inc.  
1700 Elm Street - Suite 200  
Minneapolis, MN 55414  
(612)607-1700

### CERTIFICATIONS

Project: 8555 Mayer  
Pace Project No.: 10179649

#### Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414  
A2LA Certification #: 2926.01  
Alaska Certification #: UST-078  
Alaska Certification #MN00064  
Arizona Certification #: AZ-0014  
Arkansas Certification #: 88-0680  
California Certification #: 01155CA  
EPA Region 8 Certification #: Pace  
Florida/NELAP Certification #: E87605  
Georgia Certification #: 959  
Idaho Certification #: MN00064  
Illinois Certification #: 200011  
Iowa Certification #: 368  
Kansas Certification #: E-10167  
Louisiana Certification #: 03086  
Louisiana Certification #: LA080009  
Maine Certification #: 2007029  
Maryland Certification #: 322  
Michigan DEQ Certification #: 9909  
Minnesota Certification #: 027-063-137

Mississippi Certification #: Pace  
Montana Certification #: MT CERT0092  
Nevada Certification #: MN\_00064  
Nebraska Certification #: Pace  
New Jersey Certification #: MN-002  
New Mexico Certification #: Pace  
New York Certification #: 11647  
North Carolina Certification #: 530  
North Dakota Certification #: R-036  
North Dakota Certification #: R-036A  
Ohio VAP Certification #: CL101  
Oklahoma Certification #: D9921  
Oklahoma Certification #: 9507  
Oregon Certification #: MN200001  
Pennsylvania Certification #: 68-00563  
Puerto Rico Certification  
Tennessee Certification #: 02818  
Texas Certification #: T1047D4192  
Washington Certification #: C754  
Wisconsin Certification #: 999407970

### REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.  
1700 Elm Street - Suite 200  
Minneapolis, MN 55414  
(812)607-1700

### SAMPLE SUMMARY

Project: 8565 Mayer  
Paca Project No.: 10179649

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10179649001	TH1-8'	Solid	12/28/11 11:00	12/30/11 13:00
10179649002	TH2-14'	Solid	12/28/11 12:00	12/30/11 13:00
10179649003	TH3-8'	Solid	12/28/11 12:45	12/30/11 13:00
10179649004	TH4-12'	Solid	12/28/11 14:00	12/30/11 13:00
10179649005	TH5-10'	Solid	12/28/11 14:45	12/30/11 13:00

### REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, Inc.



**SAMPLE ANALYTE COUNT**

Project: 8585 Mayer  
 Pace Project No.: 10179649

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10179649001	TH1-8'	WI MOD DRO	MT	2
		WI MOD GRO	MJH	6
		% Moisture	JDL	1
10179649002	TH2-14'	WI MOD DRO	MT	2
		WI MOD GRO	MJH	6
		% Moisture	JDL	1
10179649003	TH3-8'	WI MOD DRO	MT	2
		WI MOD GRO	MJH	6
		% Moisture	JDL	1
10179649004	TH4-12'	WI MOD DRO	MT	2
		WI MOD GRO	MJH	6
		% Moisture	JDL	1
10179649005	TH5-10'	WI MOD DRO	MT	2
		WI MOD GRO	MJH	6
		% Moisture	JDL	1

**REPORT OF LABORATORY ANALYSIS**

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**ANALYTICAL RESULTS**

Project: 8565 Mayer  
 Pace Project No.: 10179649

Sample: TH1-8 Lab ID: 10179649001 Collected: 12/28/11 11:00 Received: 12/30/11 13:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>WIDRO GCS</b>		Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO						
Diesel Range Organics	ND	mg/kg	9.8	1	01/03/12 08:44	01/04/12 12:56		
<i>Surrogates</i>								
n-Triscontane (S)	83	%	50-150	1	01/03/12 08:44	01/04/12 12:56		
<b>WIGRO GCV</b>		Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.						
Benzene	ND	mg/kg	0.062	1	12/31/11 15:54	01/01/12 18:07	71-43-2	
Ethylbenzene	ND	mg/kg	0.062	1	12/31/11 15:54	01/01/12 18:07	100-41-4	
Gasoline Range Organics	ND	mg/kg	6.2	1	12/31/11 15:54	01/01/12 18:07		
Toluene	ND	mg/kg	0.062	1	12/31/11 15:54	01/01/12 18:07	108-88-3	
Xylena (Total)	ND	mg/kg	0.19	1	12/31/11 15:54	01/01/12 18:07	1330-20-7	
<i>Surrogates</i>								
a,a,a-Trifluorotoluene (S)	99	%	80-125	1	12/31/11 15:54	01/01/12 18:07	98-08-8	
<b>Dry Weight</b>		Analytical Method: % Moisture						
Percent Moisture	16.8	%	0.10	1		01/03/12 00:00		



**ANALYTICAL RESULTS**

Project: 8565 Mayar  
 Pace Project No.: 10179649

Sample: TH2-1A Lab ID: 10179649002 Collected: 12/28/11 12:00 Received: 12/30/11 13:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>WIDRO GCS</b>								
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	ND	mg/kg	9.8	1	01/03/12 08:44	01/04/12 13:04		
<i>Surrogates</i>								
n-Triacontane (S)	78	%	50-150	1	01/03/12 08:44	01/04/12 13:04		
<b>WIGRO GCV</b>								
Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.								
Benzene	ND	mg/kg	0.061	1	12/31/11 15:54	01/01/12 18:30	71-43-2	
Ethylbenzene	ND	mg/kg	0.061	1	12/31/11 15:54	01/01/12 18:30	100-41-4	
Gasoline Range Organics	ND	mg/kg	6.1	1	12/31/11 15:54	01/01/12 18:30		
Toluene	ND	mg/kg	0.061	1	12/31/11 15:54	01/01/12 18:30	108-88-3	
Xylene (Total)	ND	mg/kg	0.18	1	12/31/11 15:54	01/01/12 18:30	1330-20-7	
<i>Surrogates</i>								
a,a,a-Trifluorotoluene (S)	100	%	80-126	1	12/31/11 15:54	01/01/12 18:30	98-08-8	
<b>Dry Weight</b>								
Analytical Method: % Moisture								
Percent Moisture	16.1	%	0.10	1		01/03/12 00:00		



**ANALYTICAL RESULTS**

Project: 8555 Mayer  
 Pace Project No.: 10179649

Sample: TH3-8' Lab ID: 10179649003 Collected: 12/28/11 12:45 Received: 12/30/11 13:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>WIDRO GCS</b>		Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO						
Diesel Range Organics	762	mg/kg	99.0	10	01/03/12 08:44	01/05/12 10:17		T8,T7
<i>Surrogates</i>								
n-Triacontane (S)	175	%	50-150	10	01/03/12 08:44	01/05/12 10:17		S5
<b>WIGRO GCV</b>		Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.						
Benzene	ND	mg/kg	0.61	10	12/31/11 15:54	01/01/12 15:50	71-43-2	
Ethylbenzene	23.1	mg/kg	0.61	10	12/31/11 15:54	01/01/12 15:50	100-41-4	
Gasoline Range Organics	1910	mg/kg	51.4	10	12/31/11 15:54	01/01/12 15:50		
Toluene	ND	mg/kg	0.61	10	12/31/11 15:54	01/01/12 15:50	108-88-3	
Xylene (Total)	129	mg/kg	1.8	10	12/31/11 15:54	01/01/12 15:50	1330-20-7	
<i>Surrogates</i>								
a,a,a-Trifluorotoluene (S)	120	%	80-125	10	12/31/11 15:54	01/01/12 15:50	98-08-8	
<b>Dry Weight</b>		Analytical Method: % Moisture						
Percent Moisture	16.9	%	0.10	1		01/03/12 00:00		

### ANALYTICAL RESULTS

Project: 8565 Mayer  
Pace Project No.: 10179849

Sample: TH4-12<sup>1</sup> Lab ID: 10179649004 Collected: 12/28/11 14:00 Received: 12/30/11 13:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>WIDRO GCS</b>								
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	ND	mg/kg	10	1	01/03/12 08:44	01/04/12 13:58		
<i>Surrogates</i>								
n-Triacortane (S)	83	%	50-150	1	01/03/12 08:44	01/04/12 13:58		
<b>WIGRO GCV</b>								
Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI axt.								
Benzene	ND	mg/kg	0.058	1	12/31/11 15:54	01/01/12 18:53	71-43-2	
Elhylbenzene	ND	mg/kg	0.059	1	12/31/11 15:54	01/01/12 18:53	100-41-4	
Gasoline Range Organics	ND	mg/kg	5.9	1	12/31/11 15:54	01/01/12 18:53		
Toluene	ND	mg/kg	0.059	1	12/31/11 15:54	01/01/12 18:53	108-88-3	
Xylene (Total)	ND	mg/kg	0.18	1	12/31/11 15:54	01/01/12 18:53	1330-20-7	
<i>Surrogates</i>								
a,a,a-Trifluorotoluene (S)	99	%	80-125	1	12/31/11 15:54	01/01/12 18:53	98-08-8	
<b>Dry Weight</b>								
Analytical Method: % Moisture								
Percent Moisture	16.0	%	0.10	1		01/03/12 00:00		



**ANALYTICAL RESULTS**

Project: 8585 Mayer  
 Pace Project No.: 10179849

Sample: TH5-10' Lab ID: 10179849005 Collected: 12/28/11 14:45 Received: 12/30/11 13:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>WIDRO GCS</b>								
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	11.4	mg/kg	10.2	1	01/03/12 08:44	01/04/12 14:37		TB
<i>Surrogates</i>								
n-Triacontane (S)	84	%	80-150	1	01/03/12 08:44	01/04/12 14:37		
<b>WIGRO GCV</b>								
Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.								
Benzene	0.65	mg/kg	0.065	1	12/31/11 15:54	01/01/12 19:16	71-43-2	
Ethylbenzene	0.18	mg/kg	0.065	1	12/31/11 15:54	01/01/12 19:16	100-41-4	
Gasoline Range Organics	ND	mg/kg	6.5	1	12/31/11 15:54	01/01/12 19:16		
Toluene	ND	mg/kg	0.065	1	12/31/11 15:54	01/01/12 19:16	108-88-3	
Xylene (Total)	ND	mg/kg	0.19	1	12/31/11 15:54	01/01/12 19:16	1330-20-7	
<i>Surrogates</i>								
a,a,a-Trifluorotoluene (S)	98	%	80-125	1	12/31/11 15:54	01/01/12 19:16	98-08-8	
<b>Dry Weight</b>								
Analytical Method: % Moisture								
Percent Moisture	24.4	%	0.10	1		01/03/12 00:00		



**QUALITY CONTROL DATA**

Project: 8585 Mayer  
 Pace Project No.: 10179649

QC Batch: GCV/8812 Analysis Method: WI MOD GRO  
 QC Batch Method: TPH GRO/PVOC WI ext. Analysis Description: WIGRO Solid GCV  
 Associated Lab Samples: 10179649001, 10179649002, 10179649003, 10179649004, 10179649005

METHOD BLANK: 1122812 Matrix: Solid  
 Associated Lab Samples: 10179649001, 10179649002, 10179649003, 10179649004, 10179649005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	mg/kg	ND	0.050	01/01/12 15:05	
Ethylbenzene	mg/kg	ND	0.050	01/01/12 15:05	
Gasoline Range Organics	mg/kg	ND	5.0	01/01/12 15:05	
Toluene	mg/kg	ND	0.050	01/01/12 15:05	
Xylene (Total)	mg/kg	ND	0.15	01/01/12 15:05	
a,a,a-Trifluorotoluene (S)	%	100	80-125	01/01/12 15:05	

LABORATORY CONTROL SAMPLE & LCSD: 1122813 1122814

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	mg/kg	5	4.8	4.4	92	87	80-120	5	20	
Ethylbenzene	mg/kg	5	5.0	4.7	99	93	80-120	6	20	
Gasoline Range Organics	mg/kg	50	48.4	48.5	97	97	80-120	3	20	
Toluene	mg/kg	5	4.8	4.5	95	90	80-120	6	20	
Xylene (Total)	mg/kg	15	14.9	14.1	99	94	80-120	5	20	
a,a,a-Trifluorotoluene (S)	%				101	98	80-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1122815 1122816

Parameter	Units	10179648001		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	MS Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Benzene	mg/kg	ND	5.7	5.9	5.3	5.7	93	96	80-120	6	20	
Ethylbenzene	mg/kg	ND	5.7	5.9	5.9	5.1	103	103	80-120	4	20	
Gasoline Range Organics	mg/kg	ND	57.1	58.9	59.0	59.9	103	102	80-120	1	20	
Toluene	mg/kg	ND	5.7	5.9	5.8	5.9	99	100	80-120	4	20	
Xylene (Total)	mg/kg	ND	17.1	17.7	17.5	18.2	102	103	80-120	4	20	
a,a,a-Trifluorotoluene (S)	%						99	100	80-125			





**QUALITY CONTROL DATA**

Project: 8585 Mayer  
 Pace Project No.: 10179649

QC Batch: MPRP/30467 Analysis Method: % Moisture  
 QC Batch Method: % Moisture Analysis Description: Dry Weight/Percent Moisture  
 Associated Lab Samples: 10179649001, 10179649002, 10179649003, 10179649004, 10179649005

SAMPLE DUPLICATE: 1122943

Parameter	Units	10179657001 Result	Dup. Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	3.7	3.1	17	30	

SAMPLE DUPLICATE: 1122944

Parameter	Units	10179648007 Result	Dup. Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	5.3	5.4	.7	30	

**QUALITY CONTROL DATA**

Project: 8565 Mayer  
Pace Project No.: 10179649

QC Batch: OEXT117577 Analysis Method: WI MOD DRO  
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS  
Associated Lab Samples: 10179649001, 10179649002, 10179649003, 10179649004, 10179649005

METHOD BLANK: 1122995 Matrix: Solid  
Associated Lab Samples: 10179649001, 10179649002, 10179649003, 10179649004, 10179649005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	mg/kg	ND	5.0	01/04/12 12:41	
n-Triacontane (S)	%	89	50-150	01/04/12 12:41	

LABORATORY CONTROL SAMPLE & LCSD: 1122996

1122997

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/kg	80	72.7	75.3	91	94	70-120	4	20	
n-Triacontane (S)	%				92	98	50-150			

## QUALIFIERS

Project: 8865 Mayer  
Pace Project No.: 10179849

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

### ANALYTE QUALIFIERS

- |    |   |
|----|---|
| S5 | Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis). |
| T6 | High boiling point hydrocarbons are present in the sample.  |
| T7 | Low boiling point hydrocarbons are present in the sample.   |



**RU017**  
NB 12-30-11

**CHAIN-OF-CUSTODY / Analytical Request Document**

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1124  
10179649  
14 of 15

Page: **1499747**

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: <b>WPEC</b>		Report To: <b>Jeff Miley</b>		Alteration: <b>Same</b>	
Address: <b>Morris Hill</b>		Copy To:		Company Name:	
Email To: <b>MICHAEL@WPEC.COM</b>		Purchase Order No.:		Address:	
Phone: Fax:		Project Name: <b>Mayer</b>		Face Quote Reference:	
Requested Due Date/EAT: <b>1-week</b>		Project Number: <b>4565</b>		Face Project Manager:	
				Face Profit %:	
				REGULATORY AGENCY	
				<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
				Site Location STATE: <b>PW</b>	

ITEM #	SAMPLE ID (A-Z, 0-9, -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE	MAYX CODE (see yield codes to left)	SAMPLE TYPE (G=GRAB Q=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test Y/N	Residual Chlorine (Y/N)	Face Project No./ Lab I.D.	
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub>	Merchand				Other
					DATE	TIME	DATE	TIME													
1	TH1-8'		SL		12-29-11	11:00			3												
2	TH2-14'					12:00			3												001
3	TH3-8'					12:45			3												002
4	TH4-12'					2:00			3												003
5	TH5-16'					2:45			3												004
6									3												005

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	<i>Jeff Miley</i>	12/29/11	9:00	<i>Char Norlien</i>	12/29/11	11:00				
	<i>Char Norlien</i>	12/29/11	11:30	<i>Jeff Miley</i>	12-30-11	1300	4.3	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on file (Y/N)	Custody Fulfilled (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: <i>Jeff Miley</i>					
SIGNATURE of SAMPLER: <i>Jeff Miley</i>					
DATE Signed (MM/DD/YY): <i>12/28/11</i>					

\*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.0% per month for any invoices not paid within 30 days.



Document Name:  
**Sample Condition Upon Receipt Form**  
 Document Number:  
 F-L-213 Rev.01

Revised Date: 02Jun2011  
 Page 1 of 1  
 Issuing Authority:  
 Pace Minnesota Quality Office

Sample Condition  
 Upon Receipt

Client Name: WCEC Project # 10179649

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
 Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_ Temp Blank: Yes  No

Thermometer Used 80344042 or 80512447 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 4.3 Biological Tissue Is Frozen: Yes  No  Comments: \_\_\_\_\_  
 Temp should be above freezing to 8°C

Date and Initials of person examining contents: 12-30-11 AAS

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7. <u>5day</u>
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>SL</u>	
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Exceptions: VOA, Coliform, TOC, Oil and Grease, W-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: \_\_\_\_\_ Field Data Required? Y / N  
 Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Comments/ Resolution: \_\_\_\_\_

Project Manager Review: Duane Anderson Date: 12/30/11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)