TANK EXCAVATION ASSESSMENT

1132 NORTH BROADWAY

MENOMONIE, WISCONSIN

TERRACON PROJECT NO. 41895080

January 17, 1990

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Terracon

ENVIRONMENTAL, INC.

Terracon
ENVIRONMENTAL, INC.
3584 Hoffman Road East
White Bear Lake, Minnesota 55110
(612) 770-1500

James A. Cunningham, P.E.
John F. Hartwell, P.E.
Robert L. Sholar
Tom Gapinske
William J. Breitzman
Thomas E. Harvey

January 17, 1990

Kerr McGee Corporation
Kerr McGee Center
P.O. Box 25861, MT-1505
Oklahoma City, Oklahoma 73125

Attn: Mr. Mike Logan

Re: Tank Excavation
Kerr McGee Service Station
1132 North Broadway
Menomonie, Wisconsin
Terracon No. 41895080

Dear Mr. Logan:

Enclosed is our report which presents the data obtained during tank and distribution line removal at the above referenced site. This report presents data collected during field activities conducted on December 5 through 7, 1989. Soil screening and chemical analyses detected the presence of petroleum related hydrocarbons in the subsurface at this site. Please refer to the report for specific details.

Terracon will forward copies of this report to the Wisconsin Department of Natural Resources (WDNR) and the Department of Industry Labor and Human Relations (DILHR) upon your authorization.

We appreciate the opportunity to be of service on this project. Should you have any questions or comments, do not hesitate to contact this office.

Very truly yours,

Kimberly M. Bradley

Kimberly M. Bradley
Geological Engineer

KMB/ck

TABLE OF CONTENTS

Introduction.....1
Project Activities.....2
  Subsurface Conditions.....2
  Tank Conditions.....2
  Contamination Observations.....3
  Soil Sampling and Analysis.....3
Discussion and Conclusions.....5
Recommendations.....6
General Comments.....7

Appendix A - Figures
  Figure 1 - Site Location Map
  Figure 2 - Tank Excavation

Appendix B - Tables
  Table 1 - Summary of Organic Vapor Monitoring
  Table 2 - Summary of Organic Vapor Monitoring/Stockpile Samples
  Table 3 - Results of Chemical Analysis

Appendix C - Methods

Appendix D - Laboratory Results

TANK EXCAVATION ASSESSMENT
1132 NORTH BROADWAY
MENOMONIE, WISCONSIN
TERRACON PROJECT NO. 41895080

INTRODUCTION

Terracon Environmental, Inc. (Terracon) was contracted by Kerr McGee Corporation to evaluate soil during the excavation of two underground storage tank (UST's) for the presence of petroleum related hydrocarbons. The site is located at 1132 North Broadway in Menomonie, Wisconsin (Figure 1). One 10,000 gallon capacity leaded gasoline UST and one 6,000 gallon capacity unleaded gasoline UST and the associated dispensing lines were exhumed by Cook and Sons Construction on December 5 through December 7, 1989. The two UST's were located within one common excavation. Mr. F.A. Maxwell with Kerr McGee Refining Corporation was present during the excavation of the UST's and lines.

The scope of services performed by Terracon consisted of the following:

* Evaluate soil samples recovered from the base and sidewalls of the tank excavation for the presence of organic vapors using an hNu photoionization detector.

* Collect soil samples from the base of the excavation and along the piping.

* Analyze the soil samples for the presence of benzene, toluene, xylenes, ethyl benzene and total hydrocarbons as gasoline.

* Collect a groundwater sample from within the tank excavation.

* Analyze the groundwater sample for the presence of benzene, toluene, xylenes, ethyl benzene and total hydrocarbons as gasoline.

* Collect a composite soil sample from the stockpile of contaminated soil excavated from the excavation.

* Analyze the composite soil sample for the presence of benzene, toluene, xylenes, ethyl benzene and total hydrocarbons as gasoline.

PROJECT ACTIVITIES

Subsurface Conditions

The dimensions of the tank excavation were approximately 25 feet by 30 feet by 12 to 13 feet deep. Soil encountered throughout the excavation consisted of a sand backfill material. The natural soil encountered in the base of the excavation was silty clay with sand laminations. Groundwater was encountered during the excavation at a depth of approximately 13 feet below surface grade.

Tank Conditions

Both of the underground storage tanks appeared to be in good condition. There were no apparent holes and there was minimal corrosion and pitting.

Contamination Observations

Soil samples X-1 through X-17 were obtained from the base and sidewalls of the excavation and along the piping (Figure 2). Soil samples X- 9 and X-10 were obtained from a test pit excavated within the tank excavation. Soil samples X-18 through X-30 were obtained from the stockpile of excavated soil. The soil samples were screened for the presence of organic vapors using an hNu photoionization detector (PID). The samples were obtained and screened using methods described in Appendix C.

Organic vapor levels ranged from non-detectable to 380 parts per million (ppm) in samples collected from the sidewalls of the excavation. Organic vapor levels ranged from 5 ppm to 300 ppm in soil samples collected from the base of the excavation. An organic vapor reading of 280 ppm was detected in the soil sample collected from the test pit at a depth of approximately 13 feet below surface grade and a reading of 300 ppm was detected in the soil sample collected from the test pit at a depth of approximately 14 feet below surface grade. Organic vapor readings ranged from 1 ppm to 310 ppm in the 13 soil samples collected form the stockpile of excavated soil. A summary of the organic vapor readings is presented in Table 1.

Soil Sampling and Analysis

Four soil samples, S-1, S-1A, S-2 and S-2A were collected from the base of the excavation, beneath both ends of each tank. The soil samples were collected from a depth of approximately 12 feet below surface grade.

Groundwater entered the excavation subsequent to the excavation of the test pit. A groundwater sample, S-3, was collected using the technique described in Appendix C.

A composite soil sample, S-4, was collected from the stockpile of contaminated soil.

Two soil samples, S-5 and S-6 were collected along the distribution lines and two soil samples, S-7 and S-8 were collected near the east and west pump islands, respectively.

The composite soil sample, the groundwater sample, the soil sample exhibiting the highest organic vapor reading from the base of the excavation, the two soil samples collected along the product lines and the two soil samples collected near the pump islands were analyzed for the presence of benzene, toluene, xylenes, ethyl benzene and total hydrocarbons as gasoline.

Results of the chemical analyses indicate hydrocarbon related contamination in the composite soil sample collected from the stockpile, the soil sample collected from the base of the excavation, the groundwater sample collected from the base of the excavation, one of the soil samples collected along the piping and in the soil sample collected from near the west pump island. Concentrations of 7 parts per billion (ppb) benzene, 29 ppb toluene, 150 ppb xylenes, 69 ppb ethyl benzene and 12,000 ppb total hydrocarbons as gasoline were detected in composite soil sample, S-4, collected from the stockpile.

Concentrations of 40 ppb benzene, 24 ppb toluene, 83 ppb xylenes, 26 ppb ethyl benzene and 2,100 ppb total hydrocarbons as gasoline were detected in soil sample S-1A, collected from the base of the excavation.

Concentrations of 5,000 ppb benzene, 16,000 ppb toluene, 15,000 ppb xylenes, 1,800 ppb ethyl benzene and 71,000 ppb total hydrocarbons as gasoline were detected in the groundwater sample collected from the base of the excavation.

Concentrations of 1 ppb toluene, 5 ppb xylenes, 1 ppb ethyl benzene and 110 ppb total hydrocarbons as gasoline were detected in the soil sample S-6, collected along the piping. Benzene was not detected at or above the method detection limit in soil sample S-6.

A concentration of 17 ppb total hydrocarbons as gasoline was detected in soil sample S-8, collected near the west pump island. Benzene, toluene, xylenes, and ethyl benzene were not detected at or above the method detection limit in soil sample S-8.

Discussion & Conclusions

Two UST's which had contained gasoline and the associated piping were excavated at the former Kerr McGee gasoline station in Menomonie, Wisconsin. Organic vapor readings ranged form 1 ppm to 310 ppm in thirteen composite soil samples collected from the stockpile, although ten of the thirteen organic vapor reading were 30 ppm or less. Approximately 250 cubic yards of soil is currently stockpiled on-site, on asphalt and covered with plastic for the winter.

Organic vapor monitoring and chemical analyses detected hydrocarbon related contamination in soil samples collected from the tank excavation, chemical analyses detected hydrocarbon contamination in a groundwater sample collected from the base of the excavation.

Organic vapor monitoring detected low levels of hydrocarbon contamination along the piping and near the pump islands.

Wilson Creek is approximately 500 feet west and approximately 800 feet southwest of the site and flows south toward Lake Menomon which is approximately 1/4 mile east of the site.

Recommendations

Terracon recommends that a remedial assessment including the advancement of soil borings, installation of monitoring wells, analyses of groundwater quality samples, determination of the principal groundwater flow direction and survey of downgradient receptors be conducted. The remedial assessment should define the extent of the vadose and groundwater contamination plumes.

Terracon recommends the following:

* Advance a total of up to 9 soil borings and complete up to 6 of the soil borings as groundwater monitoring wells.

* Screen the soil samples recovered from the soil borings for the presence of organic vapors using an hNu photoionization detector.

* Collect select soil samples for chemical analysis.

* Analyze the soil samples for the presence of benzene, toluene, xylenes, ethyl benzene and total hydrocarbons as gasoline.

* Develop and sample the monitoring wells.

* Analyze the groundwater quality samples for the presence of benzene, toluene, xylenes, ethyl benzene and total hydrocarbons as gasoline.

* Survey the monitoring well elevations.

* Calculate the principal groundwater flow direction.

* Perform a risk assessment which would identify downgradient receptors.

General Comments

The analysis and opinions expressed in this report are based upon data obtained from the soil evaluation and chemical analysis at the indicated location or from other information discussed in this report. This report does not reflect any variations in subsurface stratigraphy, hydrogeology, and contaminant distribution which may occur across the site. Actual subsurface conditions may vary and may not become evident without further assessment.

This report is prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted environmental engineering practices. No other warranty, expressed or implied, is made. In the event any changes in the nature or location of suspected sources of contamination as outlined in this report are observed, the conclusions and recommendations contained in this report shall not be valid unless these changes are reviewed and the opinions of this report are modified or verified in writing by Terracon Environmental, Inc.

TERRACON ENVIRONMENTAL, INC.

Kimberly M. Bradley

Kimberly M. Bradley
Geological Engineer

John F. Hartwell

John F. Hartwell, P.E.
Principal

KMB/JFH:ck

Appendix A

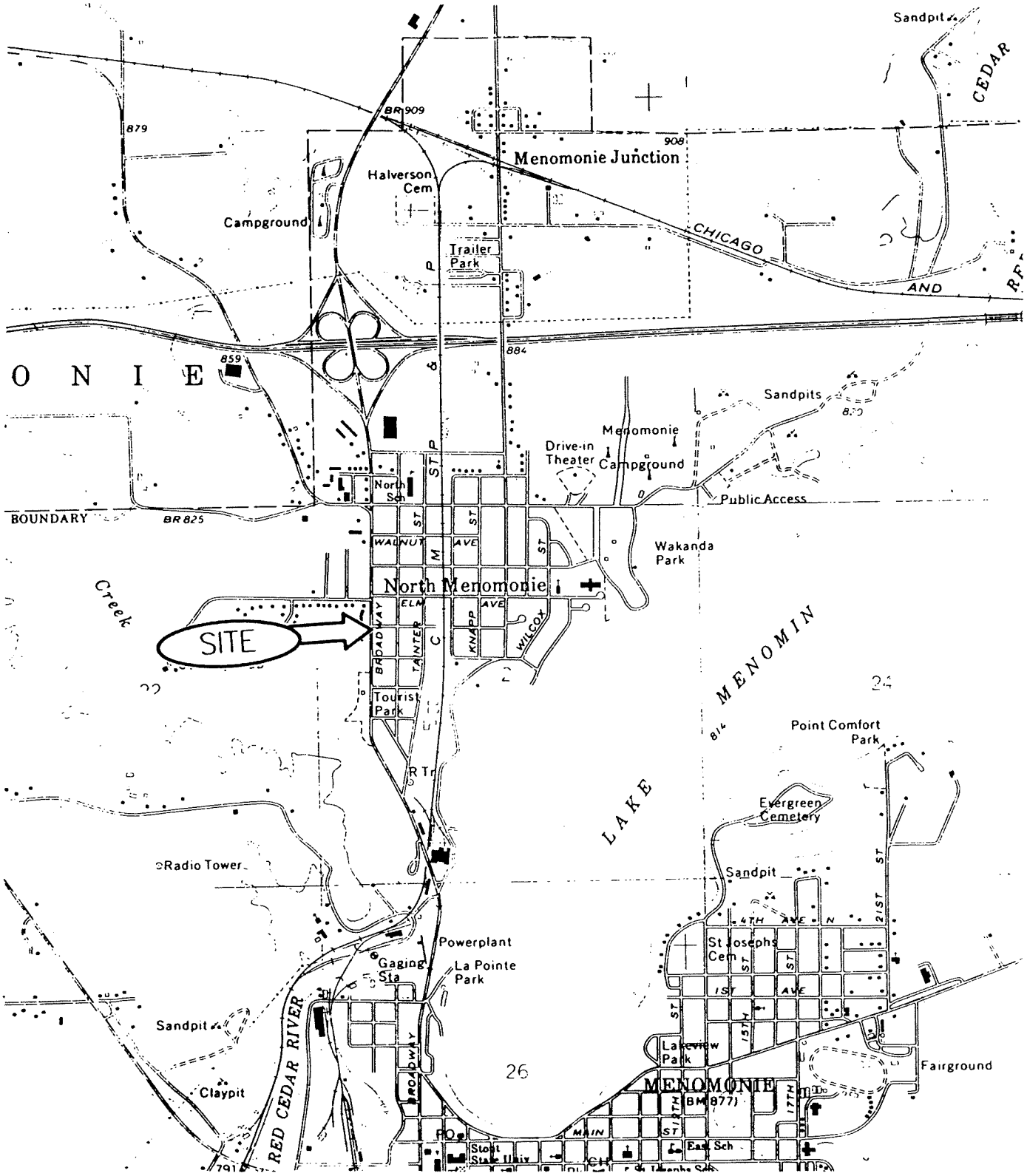


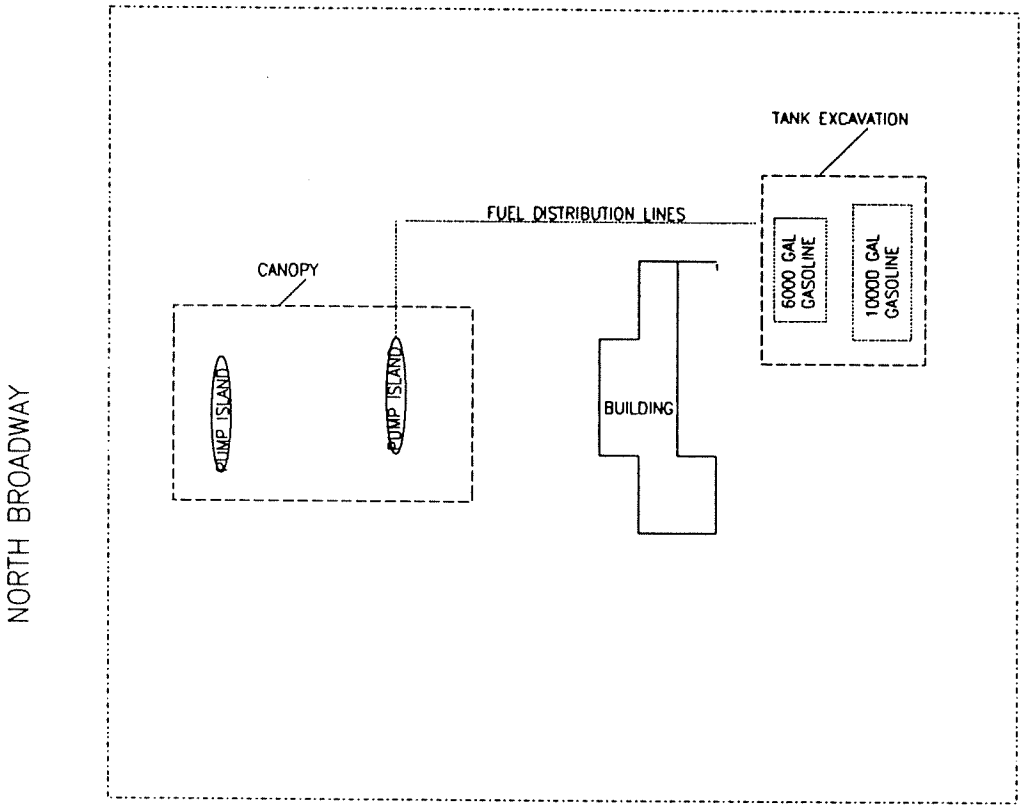
FIGURE 1
U.S.G.S. SITE LOCATION MAP
KERR MCGEE STATION
1132 NORTH BROADWAY
MENOMONIE, WISCONSIN
TERRACON PROJECT NO. 41895080
JANUARY 10, 1990

QUADRANGLE LOCATION

Terracon

Form 101—1-87

CHERRY AVENUE



N

FIGURE 2
KERR MCGEE TANK EXCAVATION
1132 NORTH BROADWAY
MENOMONIE, WISCONSIN
TERRACON PROJECT NO. 41895080
JANUARY 15, 1990

APPROXIMATE SCALE:
1 INCH = 30 FEET

0 30

Terracon

Form 101—1-87

Appendix B

TABLE 1

KERR MCGEE SERVICE STATION
1132 NORTH BROADWAY
MENOMONIE, WISCONSIN
TERRACON PROJECT NO. 41895080

SUMMARY OF ORGANIC VAPOR MONITORING
DECEMBER 5, 6 AND 7, 1989

Sample No.	Sample Location	Organic Vapor Reading (ppm)
X-1	South Sidewall	380
X-2	East Sidewall	ND
X-3	West Sidewall	2
X-4, X-4A	North Sidewall	12, ND
X-5	Base of Excavation Northeast Corner	5
X-6	Base of Excavation Southeast Corner	290
X-7	Base of Excavation Southwest Corner	300
X-8	Base of Excavation Northwest Corner	45
X-9	Test Pit (13 ft)	280
X-10	Test Pit (14 ft)	300
X-11	Along piping	1.4
X-12	Along piping	7.4
X-13	Along piping	1.2
X-14	Along piping	3.0
X-15	Along piping	2.4
X-16	Near East Pump Island	1.0
X-17	Near West Pump Island	7.0

TABLE 2

KERR MCGEE SERVICE STATION
1132 NORTH BROADWAY
MENOMONIE, WISCONSIN
TERRACON PROJECT NO. 41895080

SUMMARY OF ORGANIC VAPOR MONITORING
STOCKPILE SAMPLES

Sample No.	Organic Vapor Reading (ppm)
X-18	2
X-19	1
X-20	1
X-21	310
X-22	20
X-23	65
X-24	100
X-25	30
X-26	3
X-27	25
X-28	3
X-29	6
X-30	14

ppm - parts per million

TABLE 3

KERR MCGEE SERVICE STATION
1132 NORTH BROADWAY
MENOMONIE, WISCONSIN
TERRACON PROJECT NO. 41895080

RESULTS OF CHEMICAL ANALYSIS

Sample No.	Benzene	Toluene	Xylenes	Ethyl Benzene	Total Hydrocarbons as Gasoline
S-1A	40	24	83	26	2,100
S-3	5,000	16,000	15,000	1,800	71,000
S-4	7	29	150	69	12,000*
S-5	ND	ND	ND	ND	ND
S-6	ND	1	5	1	110*
S-7	ND	ND	ND	ND	ND
S-8	ND	ND	ND	ND	17*

Values are expressed in ug/kg. Ug/kg is equal to parts per billion (ppb).
ND - Not detected at or above the method detection limit.
* - Higher boiling hydrocarbons present, non-typical of fresh gasoline.

Sample Locations

S-1A: Base of Excavation, southwest corner, approximately 13 feet below surface grade

S-3: Groundwater sample collected from within the excavation

S-4: Composite stockpile sample

S-5: Along piping

S-6: Along piping

S-7: Near east pump island

S-8: Near west pump island

Appendix C

METHODS

Organic Vapor Monitoring

Soil samples were recovered from the tank excavation using a backhoe. Soil was transferred directly from the bucket on the backhoe to a glass mason jar lined with aluminum foil. The cover was subsequently placed on the mason jar. After 15 minutes the cover was removed and the probe on the hNu inserted through the aluminum foil liner. The organic vapor levels were recorded on the field notes.

An hNu photoionization detector equipped with a 10.2 eV lamp was employed for organic vapor monitoring. The hNu calibrated to a benzene standard prior to mobilization to the site. The hNu provides a direct reading in parts per million (ppm) as referenced to the benzene standard.

Groundwater from the test pit was collected in a laboratory clean glass jar then transferred to 40 ml vials.

Appendix D

twin city testing
corporation
662 CROMWELL AVENUE
ST. PAUL MN 55114
PHONE 612/645-3601

RECEIVED
-5 1990

REPORT OF: CHEMICAL ANALYSIS

PROJECT: KERR MCGEE MENOMONIE, 41895080

DATE: December 28, 1989

REPORTED TO: Terracon Consultants
Attn: Kimberly M. Bradley
3584 Hoffman Road East
White Bear Lake, MN 55110

LABORATORY NO. 4410 90-1753

INTRODUCTION

This report presents the results of the analyses of seven samples received on December 7, 1989, from a representative of Terracon Consultants. The scope of our work was the determination of total hydrocarbons as gasoline, benzene, toluene, xylenes, and ethyl benzene using gas chromatographic techniques.

SAMPLE IDENTIFICATION

S-1A	- TCT #166985
S-3	- TCT #166996
COMPOSITE STOCKPILE	- TCT #167002
PUMP LINE #1	- TCT #167005
PUMP LINE #2	- TCT #167006
EAST PUMP ISLAND	- TCT #167008
WEST PUMP ISLAND	- TCT #167010

METHODOLOGY

Gasoline concentrations were determined using methods similar to EPA Method 8020 with a Tekmar Liquid Sample Concentrator on an HP5890A gas chromatograph equipped with a flame ionization detector. Compounds were identified by column retention time and quantified by peak area comparisons to those of known standards using a VG Laboratory data system.

RESULTS

The results are listed in the following tables.

REMARKS

The samples were taken December 5, 1989. The samples were analyzed December 18, 1989. The samples were consumed in the analyses.

TWIN CITY TESTING CORPORATION

Jamie Ryan
Jamie Ryan
GC Analyst

Chris Bremer
Chris Bremer, Manager
Chromatography Section

JR/CB/ss

AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS OR EXTRACTS FROM OR REGARDING OUR REPORTS IS RESERVED PENDING OUR WRITTEN APPROVAL

TABLE 1

VOLATILE ANALYSIS

Parameter	S-1A	Composite Stockpile	MDL (ug/kg)
Total Hydrocarbons as Gasoline	2,100	12,000*	1
Benzene	40	7	1
Toluene	24	29	1
Xylenes	83	150	1
Ethyl Benzene	26	69	1

*Higher hydrocarbons present, non-typical of fresh gasoline.

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

MDL = Method Detection Limit

Laboratory No. 4410 90-1753

TABLE 1 (CONTINUED)

VOLATILE ANALYSIS

Parameter	Pump Line #1	Pump Line #2	East Pump Island	West Pump Island	MDL (ug/kg)
Total Hydrocarbons as Gasoline	ND	110*	ND	17*	1
Benzene	ND	ND	ND	ND	1
Toluene	ND	1	ND	ND	1
Xylenes	ND	5	ND	ND	1
Ethyl Benzene	ND	1	ND	ND	1

*Higher boiling hydrocarbons, non-typical of fresh gasoline.

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

ND = Not Detected

MDL = Method Detection Limit

Laboratory No. 4410 90-1753

TABLE 2

VOLATILE ANALYSIS

Parameter	S-3	MDL (ug/L)
Total Hydrocarbons as Gasoline	71,000	1
Benzene	5,000	1
Toluene	16,000	1
Xylenes	15,000	1
Ethyl Benzene	1,800	1

All values are in ug/L. ug/L is equivalent to parts-per-billion (ppb).

MDL = Method Detection Limit

Laboratory No. 4410 90-1753

REV. 10/89

DEPARTMENT OF NATURAL RESOURCES
LEAKING UNDERGROUND STORAGE TANK

COMPUTER TRACKING
FORM 4400

43

PMN#: _____ FID#: _____

PROJECT MGR: _____

SUPPORT PERSON: _____

DISTRICT: WD COUNTY: DUNN HNDI: ____

SITE NAME: KERR MCGEE-BROADWAY

ADDRESS: 1132 N. BROADWAY

MENOMONIE, WI 54751 __TN X CITY __VIL

LEGAL DESC: NW 1/4 NW 1/4 SEC 35 T 28 R 13 E (W)

DATE OF INITIAL CONTACT: 12/15/89 (mo day yr)

DATE OF RP LETTER: 12/6/89 (mo day yr)

DATE SITE CLOSURE APPROVED: __/__/__ (mo day yr)

LUST TRUST ELIGIBLE: (x)
X 1 = FEDERAL
__ 2 = NON-FEDERAL

STATUS: (X)
__ 1 = STATE LEAD
X 2 = RP LEAD

PRIORITY SCREENING: (X)
X 1 = HIGH SCORE: 40
X 2 = MEDIUM
__ 3 = LOW
__ 4 = UNKNOWN

(see worksheet on back)

FUNDING SOURCE: (X)
X 1 = RESPONSIBLE PARTY
__ 2 = LUST TRUST FUND
__ 3 = ENVIRONMENTAL RESPONSE FUND
__ 4 = SUPER FUND
__ 5 = NONE
__ 6 = OTHER _____

(X AS APPROPRIATE)	DATE INITIATED (MO DAY YR)	DATE COMPLETED (MO DAY YR)
__ NO ACTION TAKEN		
__ EMERGENCY	__/__/__	__/__/__
__ EMERGENCY RESPONSE	__/__/__	__/__/__
X FIELD INVESTIGATION	12/3/89	__/__/__
__ REMEDIAL ACTION	__/__/__	__/__/__
__ LONG TERM MONITORING	__/__/__	__/__/__

COMMENTS:
TERRACON DOING SA, RI/RA

FIRM OR PERSON RESPONSIBLE: KERR MCGEE REFINING CORP

CONTACT: FOREST MAXWELL

ADDRESS: 201 W. TRAVELERS TRL.
BURNSVILLE, MN. 55337

PHONE: 612 / 890-4426

(list additional on separate list & attach)

CONSULTANT: FOTH + VAN DYKE

CONTACT: LYNETTE ALTENBACH

ADDRESS: 2737 S. RIDGE RD. P.O. BOX 19012
GREEN BAY, WI 54307-9012

PHONE: 414 / 497-2500

AMOUNT COMMITTED: $_____.__ AMOUNT SPENT: $_____.__

(list additional on separate list & attach)

PECFA REVIEW REQUESTED: (X) __YES X NO

DATE PECFA REQUEST RECEIVED: (mo day yr) __/__/__

	KNOWN IMPACTS: (x)	POTENTIAL IMPACTS: (X)
FIRE/EXPLOSION THREAT		
CONTAMINATED PRIVATE WELL		
CONTAMINATED PUBLIC WELL		
GROUNDWATER CONTAMINATION	X	
SOIL CONTAMINATION	X	
OTHER: _____		

SUBSTANCES: (X) QUANTITY DISCHARGED: (gals) _____
X LEADED GAS
X UNLEADED GAS
__ DIESEL
__ FUEL OIL
__ UNKNOWN HYDROCARBONS
__ OTHER _____
__ VOCS
__ PESTICIDE

ENFORCEMENT ACTION TAKEN

01=INF. CONTACT, RESP INITIATED
02=RP LETTER, RESP INITIATED
03=NTC OF NON COMPLIANCE
06=INSPECTION LETTER
07=RESPONSE RECEIVED
11=CLOSE OUT
14=NOTICE OF VIOLATION
18=ADMIN. ORDER FINAL
20=ADMIN. ORDER CANCELLED
23=REFERRAL TO DOJ
25=REFERRAL TO EPA
99=OTHER ACTION: _____

ACTION (code from above)	DATE (mo/day/yr)	COMMENT:
99	12/6/89	RP LETTER, SPILL REPORT COMPLETED.
02	12/18/89	RP hired Consultant
99	8/27/90	Granted approval for RI workplan
99	1/17/90	Rec'vd Tank excavation assessment.
99	11/14/90	Rec'vd GRO+BO Analysis.

(for additional action codes see instructions/list additional on separate list and attach)

OVER ALL CASE COMMENT: IMED HIGH SCREENING. GW AT ≈ 14' DEPTH. HEAVY SILTY + CLAYEY SOILS. RI TO INCLUDE GW MONITORING. CONSULTANT WILL SEND RI FINDINGS + RECOMMENDATIONS AS THEY BECOME AVAILABLE.

LUST CASE PRIORITY SCREENING WORKSHEET

HIGH FACTORS: (DEFINITION: Any case which presents an actual threat to human health, or has a high potential of causing a threat to human health and property; and/or any case which has caused or has a high potential of causing substantial impacts to the soil waters and air of the State of Wisconsin)

HIGH FACTORS:

____ Contaminated private or public well >NR140 enf. std.
____ Explosive or toxic vapors in structures
____ Threat of fire

HIGH OR MEDIUM FACTORS: (write in choice of high or medium)

____ Floating product (medium if no receptors within 1 mile)
X Known gw contamination (private or public well <140 enf. std.
____ Impacted surface water--wetland, trout stream, etc. impacted
____ saturated soil contamination

MEDIUM FACTORS: (DEFINITION: Any case which does not appear to be an immediate threat to human health or vital natural resources but which shows levels of contamination that may cause substantial environmental impacts if left unaddressed.)

____ Moderate soil contamination with moderate potential for impacting groundwater.
____ Impacted surface water--no critical habitat threats.

LOW FACTORS: (DEFINITION: Any case where contamination has been documented, but which presents limited potential for any immediate threat to human health and vital natural resources.)

____ Soil contamination which appears to have a limited potential for impacting groundwater.
____ Initial remedial action has substantially reduced environmental threat.

UNKNOWN FACTOR: (DEFINITION: Any case where some indication of contamination is present, but due to incomplete or inaccurate information the level of threat to human health or the environment can not be assessed at this time.)

____ Inadequate information to assign a high, medium, or low ranking.

OVERALL RANKING: The screening rank for the site along with the date of ranking. This may be updated when additional information is received. Special circumstances for a particular case may be taken into account in the comment section. The District LUST coordinator may independently set the ranking of a site based upon "special circumstances."

Circle one & date, indicate in priority screening box opposite side ____HIGH 12/6/88 MEDIUM____LOW____UNKNOWN

COMMENT: MED → HIGH SCREENING. HEAVY SILTY + CLAYEY SOILS APPEAR TO HAVE HELPED LIMIT SOIL MIGRATION. AWAITING RI/RA RESULTS FROM TERRACON.

NUMERICAL LUST SCORING WORKSHEET (complete for LUST cases ranked HIGH)

1. GROUNDWATER & SOILS: (circle one)

POINTS	Documented Petroleum Contamination:	POINTS	
20	Municipal well	8	Soil & gw within 1200' of a public well
18	>6 private wells	6	Soil & gw within 1200' of one or more private wells
16	4 - 6 private wells	4	GW contamination, no wells within 1200'
14	2 - 3 private wells	2	Soil contamination
12	1 private well		

2. EXPLOSIVE OR TOXIC VAPORS: (circle one)

POINTS CONFIRMED	POTENTIAL	
20	10	Explosive levels in a residence or building
16	8	Explosive levels in a sewer or structure
12	6	Toxic levels in a residence or building

Note: Explosive levels determined to be >20% LEL as per an explosivity meter; toxicity levels are based on OSHA permissible exposure limits (PEL)

3. HYDROGEOLOGIC SETTING: (circle one)

POINTS	
12	Highly permeable sub-soils (gravel, well sorted sand, fractured bedrock or utilities capable of intercepting and directing flow) and groundwater within 25 feet of the ground surface.
10	Highly permeable sub-soils and groundwater more than 25 feet below ground surface.
8	Moderately permeable sub-soils (silty sands, silty gravel, clayey sands) and groundwater within 25 feet of ground surface
6	Moderately permeable sub-soils and groundwater greater than 25 feet below ground surface.
4	Low permeability sub-soils (silt, clayey silt, sand clays) and groundwater within 25 feet of ground surface.
2	Low permeability sub-soils and groundwater greater than 25 feet below ground surface.

4. TYPE OF PRODUCT: (circle one)

POINTS	NOTE: Add 4 points if free product is present. (score in parentheses)
8 (12)	Gasoline, mixture of gasoline and other products, other light petroleum products.
6 (10)	Diesel, fuel oil
2 (6)	Bunker oil, other heavy oils or crude fractions

____ TOTAL SCORE (indicate score in priority screening box on opposite side)