

## Meridian Environmental Consulting, LLC

RECEIVED

JUN 0 3 2010

ERS DIVISION STEVENS POINT

June 2, 2010

Pat Collins
Wisconsin Department of Natural Resources
890 Spruce St.
Baldwin, Wisconsin 54002

Subject:

Site Investigation Work Plan

Corner Store

100 Tonnar St (Hwy. 25) Ridgeland, Wisconsin BRRTS No. 03-17-223007 Commerce No. 54763-96-2302

Meridian No. 05F761

Dear Pat:

Meridian Environmental Consulting, LLC (Meridian) has been retained by Jason Foster (site owner) to complete Site Investigation work at the above referenced site. This letter describes our Work Plan to complete this work.

The objectives of the Site Investigation are:

- 1) characterize current soil and ground water conditions
- 2) define the extent of impacted soil and ground water
- 3) prepare a Site Investigation Report summarizing our work and recommendations

#### **BACKGROUND INFORMATION**

The site is located in the Village of Ridgeland, Section 6, T31N, R12W, Dunn County, Wisconsin (Figure 1). The Village of Ridgeland is a small agricultural community located near the border of Dunn County and Barron County on Highway 25.

The landscape is hilly with limestone ridges and valleys underlain by sandstone (Eau Claire Sandstone). Surface drainage from Ridgeland is to the north into the South Fork of Lower Pine Creek. Based on well records from the site well and a nearby well (Appendix A), the site is underlain by approximately 45 feet of sandy soils overlying Eau Claire Sandstone bedrock.

Residents of the Village rely on private wells for their water supply. The wells tend to be relatively shallow (under 100 feet deep). Ground water is typically found less than 10 feet deep.

Site Investigation Work Plan Page 2

Based on surface topography and surface drainage, we speculate that ground water flow is northerly at the site.

The site is a small gasoline/convenience store located at 100 Tonnar Street (Highway 25) on the south edge of Ridgeland (Figure 2). The site has a building, single dispenser island, and one underground storage tank (4,000 gallon gasoline).

The current tank was installed in 1999 when two former tanks were removed. The former tanks were 1000 gallon tanks containing gasoline. The age of the former tanks is unknown. The Tank Closure Assessment report is provided in Appendix B. Soil samples were collected from beneath the tanks, piping, and dispenser island (Appendix B: Figure 2 and Table 1). The sample (P1) collected from beneath the north end of the dispenser contained 5,130 mg/kg GRO (gasoline range organics). This concentration indicated a petroleum release. The samples from beneath the tanks did not contain GRO.

The petroleum release was reported to the Wisconsin Department of Natural Resources June 21, 1999. No further work was completed until April 2008 when Cedar Corporation installed a single soil boring in approximately the same location as the Closure Assessment sample P1 (above). Their report is provided in Appendix C. The boring encountered sand to a depth of 8 feet where ground water was encountered. Petroleum impacts were measured in soil samples and a ground water sample.

No further work has been completed at the property.

#### PLANNED WORK

Based on the information presented above, the site is underlain by sandy soils to at least 40 feet below grade. We expect ground water to be found at about 8 feet depth with a northerly flow direction. Our Work Plan is based on this initial analysis. The Scope will change as needed as more information becomes available during the Site Investigation.

#### Soil Investigation

We plan to install four soil borings in and around the former tank basin to characterize the soil conditions and determine the horizontal extent of impacted soil. Figure 3 illustrates the planned locations for these borings. The borings will be installed with a Geoprobe to the water table (about 10 feet). Soil samples will be collected continuously and screened with a PID. Selected samples of soil (3 feet and 7 feet) will be collected from the unsaturated zone and analyzed for PVOC (petroleum volatile organic chemicals). More soil borings may be needed to define the extent of impacted soil.

#### **Monitoring Wells**

We plan to install monitoring wells in the locations shown on Figure 3 to evaluate the ground water quality and determine ground water flow direction. Based on Cedar's report (AppendixC), we expect to encounter ground water at a depth of about 8 feet. Therefore, we are planning on installing the monitoring wells to a depth of about 15 feet. The wells will be 2-inch dia. PVC with 10 feet long screens which intersect the water table.

Site Investigation Work Plan Page 3

We will collect ground water samples and analyze them for VOC (first round only; subsequent sampling will be for PVOC+Naphthalene). The well locations and elevations will be surveyed so that ground water flow can be determined.

Additional monitoring wells will be installed as needed to determine the extent of impacted ground water. A piezometer may be necessary in the future.

We will sample the onsite well and analyze it for PVOC+naphthalene.

#### **Potable Well Survey**

The site is on public sewer with a private well. A potable well survey will be conducted to locate other potable wells in the vicinity of the site. Well construction logs will be obtained if available. The well locations will be shown on a map relative to the site. We will evaluate the potential for impacts to these wells from the site.

#### Reporting

When the Site Investigation has been completed or before \$20,000 in costs are incurred, a Soil and Ground Water Investigation report will be prepared which documents the data collected and includes our recommendations for further work.

#### SITE HEALTH AND SAFETY PLAN

Appendix D contains the Site Health and Safety Plan. A Safety Meeting is conducted onsite prior to beginning any field work. The Site Health and Safety Plan is kept onsite during the field work.

#### FIELD PROCEDURES

Appendix E contains general field procedures that are used to complete Site Investigations. Alterations to these procedures will be conducted if necessary for site-specific objectives.

#### **SCHEDULE**

We plan to begin work immediately. The initial soil borings are scheduled to be installed in early June 2010. Followup work will be conducted based on the findings of the initial phase of work.

Please contact us with any comments or questions.

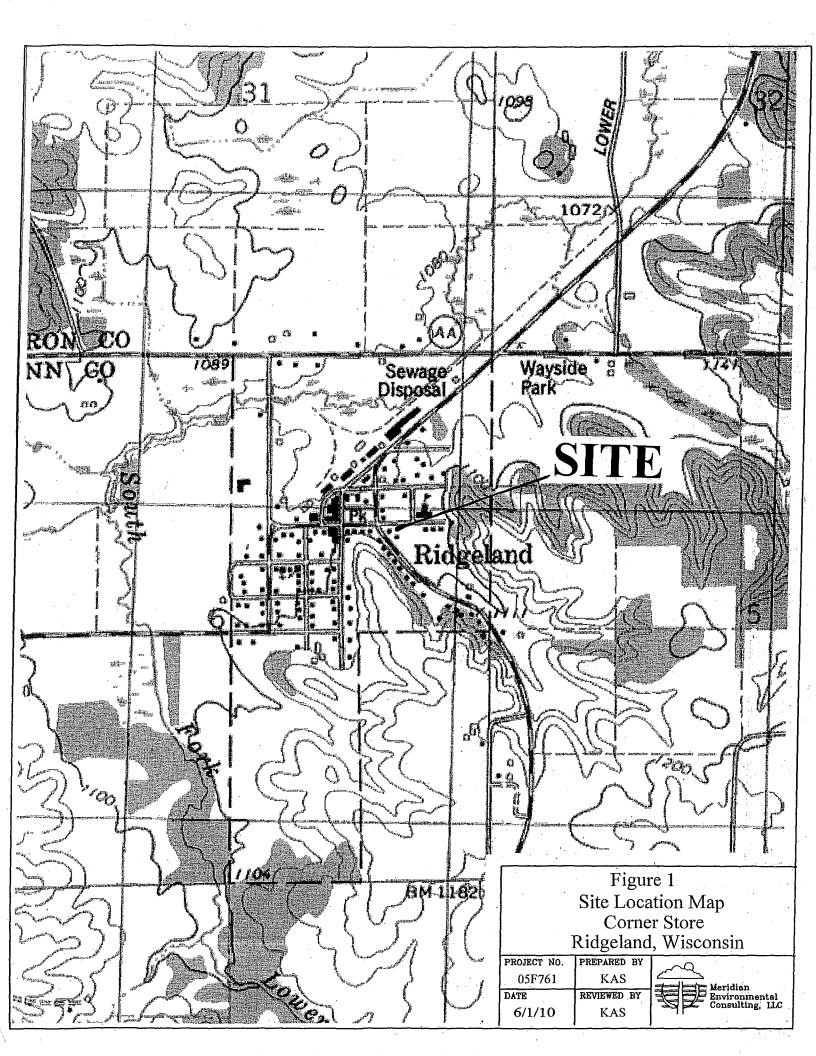
Sincerely,

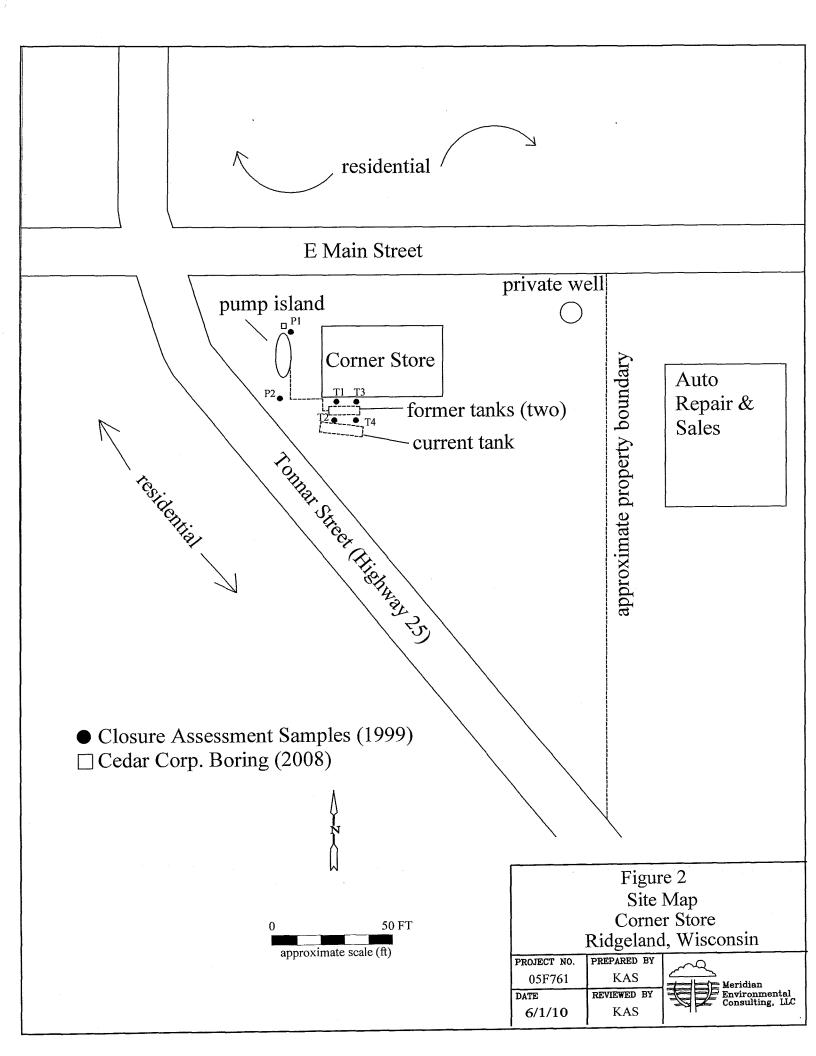
MERIDIAN ENVIRONMENTAL CONSULTING, LLC

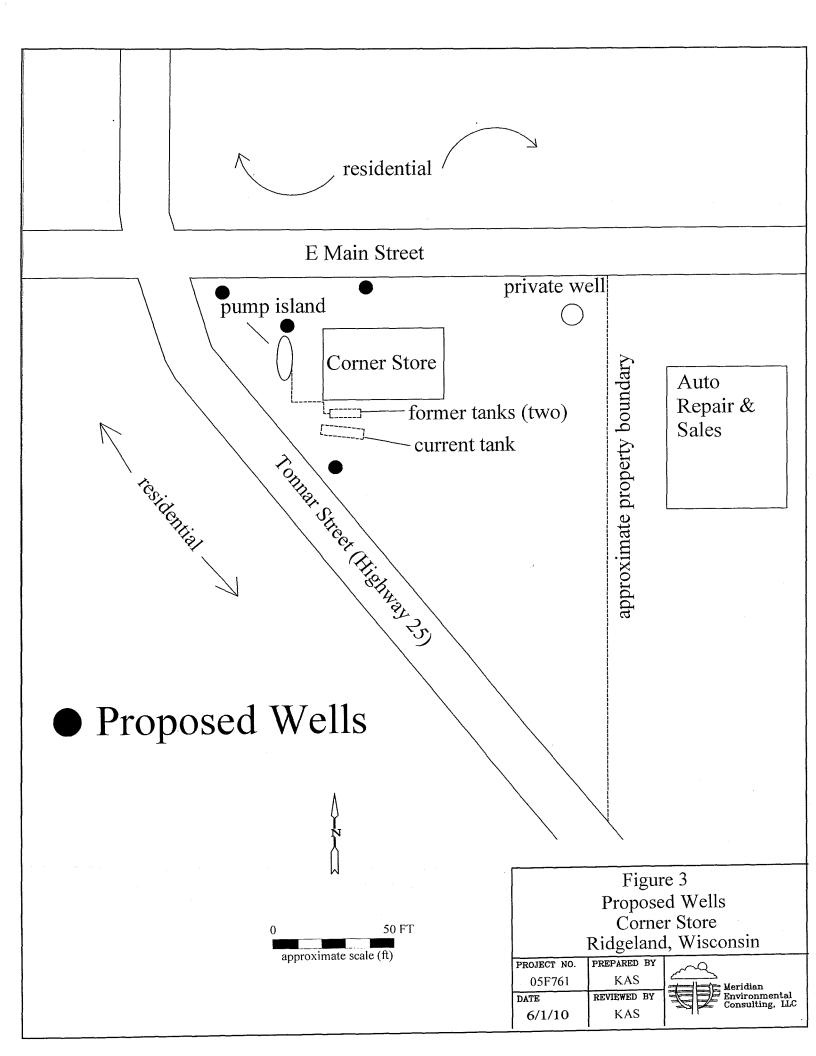
Kenneth Shimko, PG Project Manager

C: Jason Foster- site owner Tim Zeichert – Commerce









APPENDIX A
WELL LOGS

Source		STRUCTIO	R DN		MY57		State of Wi-Private Wat Department Of Natural Madison, WI 53707		s, Box 7921	Form 3 (Rev 02		w
	IOCH, CRAIG/THE CORI	NER STORE		Teleph Numb	one 715 <b>–</b> 9	949 <b></b> 1230	1. Well Location T=Town C=City V=V	/illage	De	pth 39		FT
Mailing   Address	IWY 25						T of WILSON		100	1 11011		
City RID	GELAND	Sta	ite W	Zip C	ode	54763	Street Address or Road HWY 25	Name an	d Number			
	Well Location DUNN	Co Well Peri	mit No	Well	Completion May 3, 1		Subdivision Name		Lot#	Block	#	
Well Cons DAVID M	tructor BEECROFT		242	Facility ID 6170551	20		Gov't Lot <b>or</b> SW 1/4		1/4 of Section 6 Min. 12.2		N;R 1	ļ2 \
Address 3142 15T	H ST			Public We	ll Plan Appro	oval#	Longitude De	g 91	Min. 53.6	<del>3</del> 913		
City FREDER		State Zip Co WI 5483		Date Of A	pproval		2. Well Type 1=New 2=Replace	_	See item 12 belo	<i>′</i>	Long N GPS0	
Hicap Pern	nanent Well#	Common Well #		Specific C .5	apacity gpm/ft		of previous unique well	#_ <b>GV</b> 3	93 constructed		_	
. Well Ser N		GAS STATIO		ıstry, etc.)	High Cap Well?	acity: N	Reason for replaced or r OLD WELL TO CLOS			·		
	TM N=NonCom P=Private Z=Other				Property?		1 1=Drilled 2=Driven		Jetted 4=Other			
	located upslope or sideslope ed in floodplain? Neet from well to nearest: (incl		pe from	•		rces, including ard Hydrant	g those on neighboring pr	•	Y Wastewater Sum <sub>l</sub>			
	1. Landfill			10. I	•				Paved Animal Ba			
25	2. Building Overhang					rain to Cleary rain to Sewer		19 20. :	Animal Yard or S	helter		
	3. 1=Septic 2= Holdi	-			Building Drai				Barn Gutter			
	<ol> <li>Sewage Absorption Ur</li> </ol>	nit			1=Cast 1	ron or Plastic				l=Gravity	2=Pres	cure
	5. Nonconforming Pit			<b>50</b> 14. E	-		ity 2=Pressure astic 2=Other		1=Cast iron	or Plastic	2=Oth	ег
	6. Buried Home Heating			15. C		er: units		23. Q 24. I	Other manure Sto	rage		
	7. Buried Petroleum Tanl				learwater Su				Other NR 812 Wa	ste Source		
	3. 1=Shoreline 2= Sw	-		10.	icai water be	<u>.</u>						
		o <b>n Method</b> Enlarged Drillhol ary - Mud Circula			en Bedrock	Geology Codes	Type, Caving/Noncav	Geology ing, Colo	r, Hardness, etc	From (ft.	) :	To (ft.)
	2. Rot	ary - Air			•	c_ c			····	0	· '	3 📥
6.0 surfa		ary - Air and Foar			-	s_ s				3	2	<u> </u>
	1	ill-Through Casin verse Rotary	ig Hamr	ner		Y_ S	AND & GRAVEL	<del></del>		25	39	<u>}</u>
	X - 6. Cat	ole-tool Bit _6										4
	7. Ten	np. Outer Casing moved?	-	in. dia	depth ft.	<u> </u>	***************************************					_
	Other	inoved :					·					_
Casing Li	ner Screen Material, Weigh			From	To							4
Dia. (in.) 6.0	Manufacturer & M IPSCO BLACK STEEL		T	(ft.)	(ft.)	<u> </u>			·			+
0.0	.280 WALL WELDED	MOTIVI A-55 16.8	9'	surface	. 54	:			<del></del>	· · · · · · · · · · · · · · · · · · ·		+
		•									-	1
				[						,	<del></del>	+
				Į.		9. Static W	ater Level		11. Well Is:	24 in.	A G	rade
			]	]		<b>4.0</b> fe	et <b>B</b> ground surface A=Above B=Be				A=Ab	
						10. Pump T		10W	1	Y	B=Be	low
Dia.(in.)	Screen type, material &			From	To	Pumping			Disinfected?			
4.0	TELESCOPE STAINL	ESS 20 SEUT		34	39			1.0 Hrs	**	Υ	. 11	
Grout or O	ther Sealing Material				#		notify the owner of the notify the property?	eea to per	manentiy abando	n and fill a	ui	
Method	•		Fro		Sacks	If no, expla						
*	Kind of Sealing Material		(ft.)		Cement	13. Initials of	f Well Constructor or Sup	ervisory l		Date Si		
			surfa	ace		Initials of D	nill Dia Onavetas (Mass 4-4	Omr. 1:1	DMB	D : 61	5/3/99	<u> </u>
			T			muais of D	rill Rig Operator (Mandat	ory unles:	s same as above)	Date Sig	gned	

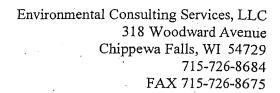
WELL NO. 2, SANNA DAIRIES, RIDGELAND, WIS.

Mead, Ward and Hunt, Engineers Milaeger Well Drilling Co., NW, SE, NW, NE, Sec. 6, T. 31 N., R. 12 W. Contractors, 1946
Samples examined by F. T. Thwaites, Nos. 127059-127126

	D		0-20	20		Drift, no samples	11:11	18 water
	R	45	20-45	25	0.0000	Gravel, glacial, very sandy		24 pipe
	T		45-65	20		Sandstone, silty to fine, light gray, dolomiti	c -	cemented
			65-90	25		Sandstone, medium to silty, light gray		
- 1,			90-100			Sandstone, medium-coarse to fine, lt.gray	] ,	15" hole
'	^		100-110	10		Sandstone, coarse to medium, very lt. gray		
i	U		110-140	30		Sandstone, medium-coarse to fine, light gray		1
1	3		1.40-160	20		Sandstone, medium to fine, gray		
]	L		160-180	20		Sandstone, silty to fine, gray	1	<b>!</b>
	r		180-195	15		Shale, silty, gray	1	
1			195-205 205-210	10		Sandstone, silty to medium, gray	<del>-                                   </del>	- 1 200
7	-	ŀ		2		Shale, gray	i	
12	3	- 1	210-230	20		Sa ndstone, medium to silty, light gray	1	
			230-240 240-250	10		Siltstone, sandy, light gray	1	
	1	ŀ	250-270	20		Sandstone, eilty to medium, light gray Sandstone, medium to fine, gray	1	
1		1	270-275	<u>-</u> ₹√	<u>'                                     </u>	Sandstone, coarse to medium, gray	1.	
	١.	20	275-285	10		Sandstone. medium to silty. light gray		1
Ļ	1	245	285-290	_5_h		Shale, silty, light gray	. !	12 <sup>m</sup> hole
M	9	L	290-315	25		Sandstone, fine to coarse, white	1	
T	1		3 15-320	5		Sandstrone, silty to fine, white	t	
ĺ		L	320-335	15:		Sandstone, fine to medium, white	t	
S	7	70	33 <i>5</i> <b>-</b> 360	25		Sandstone, medium to fine, light gray	1	•

Formations: Drift; Eau Claire; Mt. Simon
Tes ted at 800 g.p.m. specific capacity = 14 g.p.m./ft,

# APPENDIX B TANK CLOSURE ASSESSMENT REPORT





June 24, 1999

Re: Gerry's Corner Store Tank Closure Assessment Ridgeland, Wisconsin ECS No. GERRY991

Pat Collins
Wisconsin Department of Natural Resources
Suite 104, 990 Hillcrest
Baldwin, WI 54002

Dear Pat:

On behalf of Gerry's Corner Store, Environmental Consulting Services, LLC (ECS) is submitting this report titled "Tank Closure Assessment", dated June 1999. Two 1,000 gallon gasoline USTs were removed from the above referenced site in May 1998 Analytical results indicated that two soil samples contained gasoline range organic (GRO) compounds above the WDNR action level of 10 ppm. Samples P1 and P2 collected near the dispenser island contained GRO at 5,130 and 45.3 ppm respectively. If you have any questions regarding the results of the tank closure assessment, please contact me at 715-726-8684.

Sincerely,

David McDaniel, P.E.

David Michaniel

RECEIVED AT DNR - BALDWIN JUN 29 1999

### **Distribution List**

## No. of Copies

1

#### Sent to

Pat Collins
Wisconsin Department of Natural Resources
Suite 104, 990 Hillcrest
Baldwin, WI 54002

Craig Moen Gerry's Corner Store 102 Highway 25 Ridgeland, Wisconsin 54763

#### Tank Closure Assessment

Gerry's Corner Store Ridgeland, Wisconsin

Prepared for: Gerry's Corner Store

Prepared by: Environmental Consulting Services, LLC 318 Woodward Avenue Chippewa Falls, WI 54729 (715) 726-8684

I, David A. McDaniel, hereby certify that I have complied with ch. ILHR 10, Wis. Adm. Code, and I am authorized to conduct tank closure assessments in the State of Wisconsin, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in ch. ILHR 10, Wis. Adm. Code.

David McDaniel

•

Certification Number

Date

Certified Site Assessor

## **Table of Contents**

Page

Cover Letter
Distribution List
Certification Page
Table of Contents

	COLC	Ontones	
1.0	Int	roduction	
2.0	Sit	e Background	******************
3.0		• • •	sment
4.0			******
5.0	•		Documentation
6.0		· · · · · · · · · · · · · · · · · · ·	commendations
		· .	
			List of Tables
Table	1	Analytical Results	
			List of Figures
Figure	1	Site Location Map	
Figure	2	Site Plan	
			List of Appendices
Appen	dix A	Project Personnel	
		Closure Documenta	
		Standard Operating	Procedures
Appen	dix D	Laboratory Reports	

Vendor	To St	tal pent		ount naining
	\$	1,744.08		124.40
	\$	27.14	\$	134.16
	\$	1,163,72	\$	(27.14)
	\$	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	\$	<del></del> -
	\$	-	\$	-
	\$	126.99	\$	
	\$		\$	
	\$		\$	38.94
	\$	600.90	\$	0.00
	\$	266.47	\$	-
	\$	-	\$	
	\$	935,00	\$	27.71
	\$		\$	
··	\$		\$	
	\$		\$	
	\$	408.08	\$	
	\$	-	\$	
	\$	-	\$	-
	\$	-	\$	-
	\$	191.76	\$	•
	\$	467.90	\$	
	\$		\$	-
	\$	1,496,00	\$	-
	\$		\$	
	\$		\$	
	\$	250,60	\$	
	\$	85.00	\$	
	\$	-	\$	
	\$	1,605.76	\$	
	\$	410.01	\$	136,67
	\$	508,16	\$	-
	\$		\$	-
	\$		\$	-
	\$	892.37	\$	-
	\$	750.76 306.00	\$	
	\$	188,31	\$	
	\$	150.30	\$	
	\$	-	\$	29.52
	\$	-	\$	
	\$	227.92	\$	•
	\$	-	\$	-
	_			·
	\$	<u> </u>	\$	•
	-	105.00	-	
	\$	105.28	\$	<del></del> -
<del></del> -	\$	730.08	\$	56 1C
	\$	130.08	\$	56.16
	s	353,60	\$	<del></del>
\$ -	\$	13,992.19	\$	396.02

in July put on Nov 08 budget

\$ 14,703.10

# Tank Closure Assessment Gerry's Corner Store

#### 1.0 Introduction

This report describes the tank closure assessment conducted by Environmental Consulting Services, LLC (ECS) at Gerry's Corner Store in the Village of Ridgeland, Wisconsin. The gasoline underground storage tank (UST) system was upgraded and tanks were removed in May 1999. The purpose of the tank closure assessment was to determine if obvious petroleum releases had occurred as a result of petroleum storage or usage at the location of the UST system. Tanks were removed and an upgraded system was installed prior to arrival onsite by ECS. Tank closure information and former tank locations described in this report are based on information provided by the tank removal contractor and personnel of Gerry's Corner Store.

#### 2.0 Site Background

The site is located at 102 STH 25 in the SE 1/4 of the NE 1/4 of Section 6, T31N, R12W as shown in Figure 1, "Site Location Map." The site is bounded by STH 25 to the west. Groundwater is reportedly located at a depth of less than 15 feet. Regional groundwater maps indicate the groundwater flow to be north-northwest.

The site is occupied by a gas station and grocery store. The pump island is located west of the store, and tanks were located south of the building. The site layout is shown on Figure 2, "Site Plan." Tanks were replaced with two new USTs that are located immediately south of the former UST locations.

#### 3.0 Tank Closure Assessment

The USTs were removed by McDonald Petroleum Service on May 20, 1999. Personnel involved with tank closure at the site are listed in Appendix A, "Project Personnel." The tank closure checklist is included in Appendix B, "Closure Documentation." Prior to excavation of the USTs, oxygen content and explosive levels in the interior of the tanks were monitored to determine if an explosion hazard was present. Soil was excavated to expose the tops of the tanks. The tanks were removed and cleaned on site and the tank excavation was backfilled to the original surface elevation with clean sand following tank closure.

ECS collected assessment samples using a hand auger on May 27, 1999. Weather conditions during the assessment included temperatures ranging from approximately 65 to 75 degrees F. No precipitation was noted during completion of the tank closure assessment.

ECS observed slight odors in sample P1. Remaining samples contained no obvious odors.. Samples were collected beneath both ends of the USTs, beneath the pump island and along piping. Samples were collected in accordance with procedures detailed in Appendix C, "Standard Operating Procedures. The sample locations are shown on Figure 2, "Site Plan." The samples were stored on ice for shipment to US Filter/Enviroscan for analysis of GRO.

Soil consisted of brown silty sand with some gravel. Hand auger borings extended to a maximum depth of about six feet. Groundwater, was not encountered in the borings.

#### 4.0 Results

Samples collected at the dispenser (P1) and along piping (P2) contained GRO at 5,130 and 45.3 ppm respectively. Samples collected at the USTs (T1-T4) contained no detectable concentrations of GRO compounds. Analytical results are summarized in Table 1, "Analytical Results" and laboratory reports are included in Appendix D, "Laboratory Reports."

#### 5.0 Waste Handling and Documentation

Sludge and waste liquids generated as a result of tank closure were drummed and will be transported offsite for disposal. Following tank cleaning, scrap metal including the tank

and piping was removed from the site by McDonald Petroleum and transported to Max Phillips & Sons in Eau Claire, Wisconsin.

#### 6.0 Conclusions and Recommendations

The tank closure assessment identified contaminated soil adjacent to the dispenser island at concentrations exceeding the WDNR action level. Based on these results, Wisconsin Department of Natural Resources personnel should be notified that a release has occurred. A site investigation will be required by the WDNR to determine the extent of contamination.

T. 31N. - R.12 W. WILSON COUNTY BARRON Irvin hompson 178 13.14 Wallace Clark NĎ Ellefson - 1 layne R. Istophe Son Harlan Peter IF & æ -5 Tudith Ronald Bechard William Edstrom Christoph 193.99 Dennis Dawn Hartung Dennis 4 21 Rumon 118.83 Glase dis 180 Gordon Christoph erson 116 Mittlestadt Matter James D. Robert & Ervin Skjerly Charles G. Howe ı<u>5</u>8.5 160 Randy Janice y. Richard 80 Imogene 1 G. Micheels Micheels Allan D Caryl Ericksor 160 Welso Panicey Vine I Gere I Micheel IZO Roger W. & Richard G. Micheels Robert Larry L Sherman R. Lee Ieo . 6 Ronald R. Christopherso Joneas Micheels, Irvin Ralph Lames Keener 80 ctal Gwenson Family Trust Thompson 158.8G 160 (207) Roger imothy s Deborah Rudie 177.90 Thompson 155 60 Stephen Lygn Berg Glaser Robert Robert & Theresa Dennis Christopherson etal Rogers 79.CG Curtis E. Knutson Randall San Shipley Mickelson Stephen Berg Mich 25 157 Daniel H. 2 1 Rogers ORobert Kirby H. Clementson E.Rogers 0 RO. Curtis A Delegar s pio 2 4 E S Orland Lee Stephen Berg Rex B. Shafer W Varnes 8e Carroll & Ada Lee Victor Delegard 30 William Lero. Woldbucas 252 David Hialmer Tohnson Mrs. Gaylen Burton Johnson 160 160 Miller Roaney & Maxf Gordon Christoph Christoph Gilbert H. Vernon (g) 3 Florence E. Lynch 60 Richard Klablunde Melvin Amble 40 183.67 Leslie C. Peterson 68 1 Robert A. Merle E. Gayhart Gayhart Knutson @ 1990 Rockford Map Publs., Inc. Dunn County, Wis.

**ECS** 

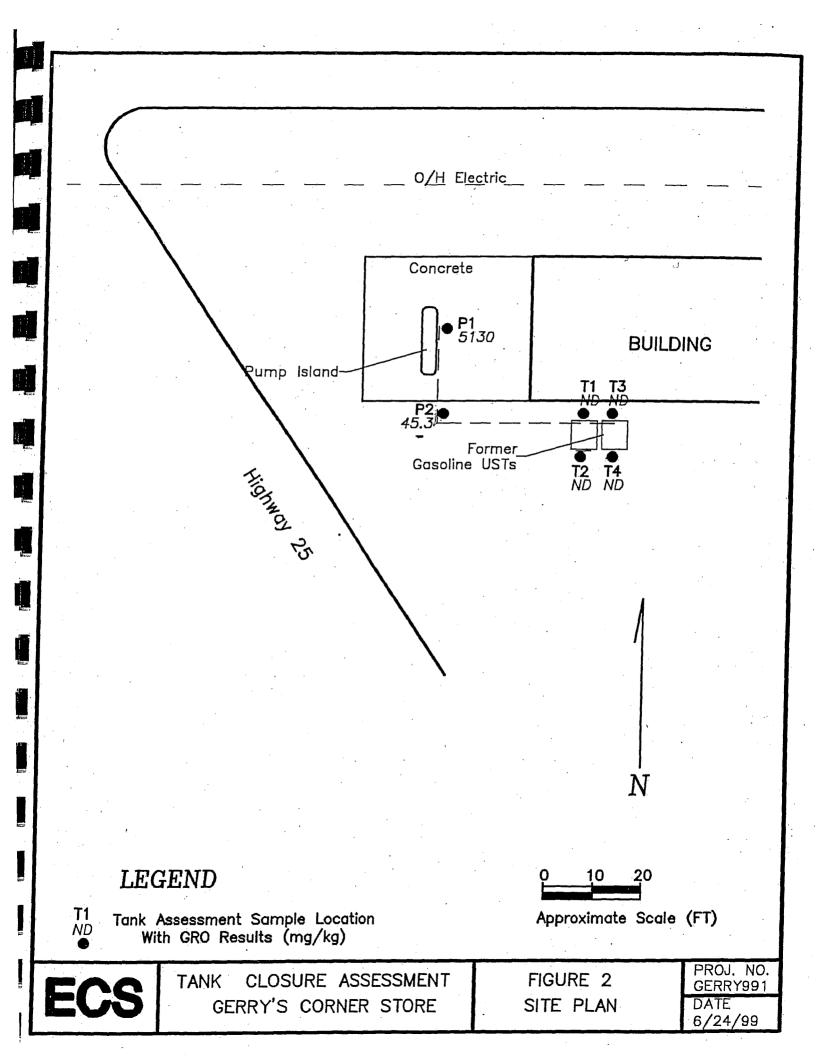
TANK CLOSURE ASSESSMENT GERRY'S CORNER STORE

FIGURE 1
SITE LOCATION

PROJ. NO. GERRY991 DATE 6/1/99

Table 1 Analytical Results

Sample ID	Depth(ft)	GRO (mg/kg)
P1	3	5,130 \
P2	3	45.3
T1	6	ND
T2	6	ND
Т3	6	ND
<b>T</b> 4	6	ND
ND - Indicates compounds n	ot detected above laboratory dete	ction limits



#### 1. Owner

Gerry's Corner Store 102 STH 25 Ridgeland, Wisconsin 54763 Contact: Craig Moen Phone: (715)949-1230

#### 2. Tank Assessor

Environmental Consulting Services, LLC 318 Woodward Avenue Chippewa Falls, WI 54729 Contact: Dave McDaniel (Cert. No. 45960) Phone: (715) 726-8684

#### 3. Certified Remover/Cleaner

McDonald Petroleum Service Route 3, Box 311 Chippewa Falls, WI 54729 Contact: Pat McDonald (Cert

Contact: Pat McDonald (Cert. No. 0623)

Phone: (715) 723-2059

#### 4. Inspector

Western Wisconsin Inspection 919 Fairfax Street Altoona, WI 54720 Contact: Bruce Getten (Cert. No.5504) Phone: (715) 833-7671

#### 5. Analytical Laboratory

US Filter/Enviroscan 301 West Military Road Rothschild, Wisconsin, WI 54474 Wisconsin Lab Certification No. 737053130 Phone: (800) 338-7226

#### Wisconsin Department of Industry, Labor and Human Relations

# UNDERGROUND

PETROLEUM PRODUCT TANK INVENTORY

Send Completed Form To: Safety & Buildings Division P.O. Box 7969 Madison, WI 53707

For Office Use Only:

Tank ID # Telephone: (608) 267-5280 Information Required By Sec. 102.142, Wis. Stats. Underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances must be registered. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (included piping) located below ground level. A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner. Have you previously registered this tank by submitting a form? X YES NO If yes, are you correcting/updating information only? Yes No The information you provide may be used/by other government agency programs (Privacy Law, s. 15.04 (1) (m)). This registration applies to a tank that is (check one): Fire Department Providing Fire Coverage 1A. 🔲 In Use or 1B. 🔲 Newly Installed 🔠 4. 🐹 Closed - Tank Removed 🔞 📋 Changed Ownership Where Tank Located: 5. Closed - Filled With Ridgeland / Wilson 2. 

Abandoned With Product (Indicate new owner. 3. 

Abandoned No Product (empty) Inert Material below) or With Water 7. Out of Service - Provide Date: IDENTIFICATION: (Please Print) 1. Tank Site Name Site Address Site Telephone No OMMEN 17157 949-12 ☐ City ☐ Town of: State Zip Code County <u>54763</u> 2. Owner-Name (mail sent here unless indicated otherwise in #3 below) Owner Mailing Address (mail sent here unless indicated otherwise in #3) 102 County [X,Village Zip Code ☐ City ☐ Town of: State 54 idge land 3. Alternate Mailing Name If Different Than #2 Alternate Mailing Street Address If Different From #2 ☐ Town of: State ☐ City ☐ Village Zip Code County Tank Age (date installed, if known: or years old) 5. Tank Capacity (gallons) 6. Tank Manufacturer's Name (if known) 1000 TYPE OF USER (check one): 1. 🛣 Gas Station 2. Bulk Storage 3. Utility 4. Mercantile 6. Government
10. Other (specify): S. | Industrial 7. School 8. Residential Agricultural TANK CONSTRUCTION: 1. Bare Steel 2. Cathodically Protected and Coated Steel ( A. ) Sacrificial Anodes or B. | Impressed Current) 5. Other (specify):
9. Unknown ☐ Fiberglass
☐ Steel - Fiberglass Reinforced Plastic Composite Coated Steel Relined - Date Approval: 1. | Nat'l Std. 2. | UL 3. Other: is Tank Double Walled? Yes No Overfill Protection Provided? Spill Containment? ☐ Yes ☐ Yes ☐ No If yes, identify type: Tank leak detection method: 1. 

Automatic tank gauging 2. Vapor monitoring 3. Groundwater monitoring tightness testing 5. Interstitial monitoring 6. Not required at present 7. Manual Tank Gauging (only for tanks of 1,000 gallons or less) PIPING CONSTRUCTION 9. 🗍 Unknown Piping System Type: 1. Pressurized piping with: A. auto shutoff; B. alarm; or C. I flow restrictor 2. Suction piping with check valve at tank 3. 

Suction piping with check valve at pump and inspectable Piping leak detection method: used if pressurized or check valve at tank: 1. | Vapor monitoring 2. Interstitial monitoring 3. Groundwater monitoring 4. Tightness testing 6. Not Required 5. Line Leak Detector Approval: □ No Double Walled: 1. Nat'l Std 2. UL 3. Other: ☐ Yes TANK CONTENTS 3. Dunleaded 7. Empty 1. Diesel 2. 🔲 Leaded 4. 🔲 Fuel Oil 5. Gasohol 6. DOther 8. Sand/Gravel/Slurry 9. 🔲 Unknown 12. Propane 10. 🔲 Premix 11. Waste Oil 13. [] Chemical \* 15. Aviation 14. T Kerosene \* If # 13 is checked, indicate the chemical name(s) or number(s) of the chemical or waste. If Tank Closed, Give Date (mo/day/yr): Has a site assessment been completed? (see reverse side for details) Yes No - 10-99 If installation of a new tank is being reported, indicate who performed the installation inspection: 3. Other (identify). 1. 
Fire Department 2. 

DILHR Indicate Whether: Name of Owner or Operator (please print):

raig signature of Owder or Operator: 🖬 Owner or 🗌 Operator

#### Wisconsin Department of Industry, Labor and Human Relations

ame of Ownes, or Operator (please print):

vner of Operator

raig

gnature of

### UNDERGR PETROLEUM 6

OUND	Send Co
PRODUCT	Safety &
NTORY	P.O. Box

mpleted Form To: **Buildings** Division 7969 on. WI 53707

For Office Use Only:

TANK INVE Tank ID # Telephone: (608) 267-5280 Information Required By Sec. 102.142, Wis. Stats. Underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances must be registered. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (included piping) located below ground level. A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner. Have you previously registered this tank by submitting a form? TOYES INO If yes, are you correcting/updating information only? IN Yes INO The information you provide may be used by other government agency programs [Privacy Law, s. 15.04 (1) (m)]. This registration applies to a tank that is (check one): Fire Department Providing Fire Coverage 1A. 🗍 In Use or 18. 🗍 Newly Installed 💹 4. 💢 Closed - Tank Removed 🔞 . 📋 Changed Ownership Where Tank Located: 2. Abandoned With Product 6. Closed - Filled With (Indicate new owner Ridgeland/Wilson 3. 

Abandoned No Product (empty) belowl or With Water 7. Out of Service - Provide Date: IDENTIFICATION: (Please Print) Tank Site Name Site Telephone No. City ☐ Town of: Owner Name (mail sent here unless indicated otherwise in #3 below) Owner Mailing Address (mail sent here unless indicated otherwise in #3) youn ma i Lev ☐ City ∇ Viljage Zip Code ☐ Town of: State County uis 776 1 and 3. Alternate Mailing Name of Different Than #2 Alternate Mailing Street Address If Different From #2 ☐ City ☐ Village Town of: State Zip Code County 4. Tank Age (date installed, if known; or years old) 5. Tank Capacity (gallons) 6. Tank Manufacturer's Name (if known) 1000 TYPE OF USER (check one): Gas Station Industrial 3. 🔲 Utility 2. Bulk Storage 4. Mercantile 6. Government 7. 🔲 School 8. Residential ☐ Agricultural 10. Other (specify): TANK CONSTRUCTION: 1. Bare Steel 2. Cathodically Protected and Coated Steel (A. Sacrificial Anodes or B. Impressed Current) Coated Steel
Relined - Date 4. Fiberglass
7. Steel - Fiberglass Reinforced Plastic Composite Other (specify): 9. ☐ Unknown Approval: 1. | Nat'l Std. 2. | UL 3. Other: is Tank Double Walled? ☐ Yes ☐ No Yes No **Overfill Protection Provided?** Yes No If yes, identify type: Soil Containment? Tank leak detection method: 1. 

Automatic tank gauging 2. 🗌 Vapor monitoring 3. 🗍 Groundwater monitoring 4. 🗎 Inventory control and tightness testing 5. Interstitial monitoring 6. Not required at present 7. Manual Tank Gauging (only for tanks of 1,000 gallons or less) PIPING CONSTRUCTION ☐ Bare Steel 2. ☐ Cathodically Protected and Coated or Wrapped Steel (A. ☐ Sacrificial Anodes or B. ☐ Impressed Current) 3. Coated Steel 5. Other (specify): 4. Fiberglass 9. Unknown Piping System Type: 1. ☐ Pressurized piping with: A. ☐ auto shutoff; B. ☐ alarm; or C. ☐ flow restrictor 2. ☐ Suction piping with check valve at tank 3. 

Suction piping with check valve at pump and inspectable Piping leak detection method: used if pressurized or check valve at tank: 1. 🔲 Vapor monitoring 2 Interstitial monitoring 3. Groundwater monitoring 5. Line Leak Detector 6. Not Required 4. Tightness testing Approval: 1. Nat'l Std 2. [] UL 3. ☐ Other: Double Walled: **∏No** ☐ Yes TANK CONTENTS 3. 🔽 Unleaded 1. Diesel 2. Leaded 4. Fuel Oil 6. 
Other 1 Empty 5. Gasohol 8. Sand/Gravel/Slurry Unknown 10. | Premix 11. Waste Oil 12. Propane 13. 🔲 Chemical \* ☐ Kerosene 15. Aviation If # 13 is checked, indicate the chemical name(s) or number(s) of the chemical or waste. Tank Closed, Give Date (mo/day/yr): Has a site assessment been completed? (see reverse side for details) X Yes □No -10-29 installation of a new tank is being reported, indicate who performed the installation inspection: 3. Other (identify) 1. The Department 2. DILHR

> -13-99 Complete as many items on this form as possible. Failure to provide sufficient IMPORTANT:

information may cause you to fall under additional regulations.

Indicate Whether:

Date Signed:

Owner or 🗍 Operator .

Wisconsin Department of Industry, Labor and Human Relations

Complete one form for each site closure.

# CHECKLIST FOR UNDERGROUND TANK CLOSURE

The information you provide may be used by other government agency programs [Privacy Law, s. 15.04 (1) (m)].

RETURN COMPLETED CHECKLIST TO: Safety & Buildings Division Fire Prevention & Underground Storage Tank Section P. O. Box 7969, Madison, WI 53707

A. IDENTIFICATION: (P. 1. Site Name	ease Print)	Indicate whet	her closur	e is for: 2		☐ Tank	Only	Pipin	g Only
Barrys (	2000ac	Store			ria Muen	<u>\</u>			
Site Street Address (not P.O.	Box) a5	. '		Owner Stre	- 1	<u></u>		•	-
102 Hwy		Town of:	<del>:-</del>			n of: Sta	ite	Zip Code	· · · · · ·
Ridgeland					reland		WF	5474	<i>i</i> ろ
State	Cip Code 54763	County	`	County	Telepi	none No. (incl 15) 94		• •	
3. Closure Company Name (	Print)	,	Closure Com	pany Street A	\ddress,	<del> </del>			
- McDonalde	tetro		8449	·					
Closure Company Telephone N (115) 723-20		code)	$\sim$ 1	pany City, Sta		17II 5	449	a	
4. Name of Company Perform		essment			et Address, City, Sta	V-T	2-10	-	<del></del>
ECS			318		and Ad 1	hipaul			5422
Telephone # (include aréa co ( 7/5)726868 4		~	/	Day	r Signature LIMADAN	ūl_		isor Certificat 5960	on No.
Tank ID #	Closure	Temp. Closur	e Closu	re In Place	Tank Capacity	Contents	* Clo	sure Asse	ssment
1. 382479	Ø	.0			1000	03		ØY D	N
2. 382478	Ø				1000	03		X) Y D	4
3.									٧
4.								0 Y 0 I	4
5.						•		YI	1
6.								OY 01	1
* Indicate which product by 11-Waste oil; 13-Chemical	numeric code:	01-Diesel; 02-L	eaded; 03-l	Jnleaded; 0	4-Fuel Oil; 05-Gas	ohol; 06-Oth	er; 09-Uı 14-Kero	nknown; 10- sene; 15-Av	Premix;
Written notification was provi	<del> </del>	<del></del>	<del></del>		date		XΙΥ	Пи	□ NA
All local permits were obtained	d before begi	nning closure.						[] N	☐ NA
Check applicable box at			atements	in Section	s B - E.		emover	Inspector	
B. TEMPORARILY OUT Written inspector approve			ed, which		•	, <u>v</u>	erified	Verified	
is effective until (provide							Y 🗆 N	$\Box$	
<ol> <li>Product Removed         <ul> <li>a. Product lines draine</li> </ul> </li> </ol>	ed into tank (o	r other container	) and result	ina liquid re	moved AND	·	Y. 🗆 N	$\sqrt{\Box}$	$\Box$
b. All product remove c. All product remove							YON		
<ul><li>c. All product remove</li><li>2. Fill pipe, gauge pipe, t</li></ul>							YON		
3. All product lines at the									
4. Dispensers/pumps left							Y DN		
<ul><li>5. Vent lines left open.</li><li>6. Inventory form filed inc</li></ul>							Y   И		
C. CLOSURE BY REMOV			·						
Product from piping dr	•	· (or other contai	ner)			N	Y 🗆 N		
<ol><li>Piping disconnected from the pipeling of the pipeling disconnected from the pipeling of the pipeling o</li></ol>	diriod line tain	(or other contain				· · · · · ŁX			
<ol><li>All liquid and residue r</li></ol>	om tank and re	emoved				···· 🗷	ΥΠΝ		
4. All nump motors and s	om tank and re emoved from t	emovedank using explos	sion proof p	umps or ha	nd pumps	🗷	Y	- 0	
<ul><li>4. All pump motors and s</li><li>5. Fill pipes, gauge pipes</li></ul>	om tank and re emoved from t uction hoses b , vapor recove	emoved. ank using explose conded to tank or ry connections, s	sion proof p r otherwise submersible	umps or hai grounded. pumps and	nd pumps	図 图 图	ΥΠΝ		
<ol> <li>Fill pipes, gauge pipes</li> <li>NOTE: DROP TUBE S</li> </ol>	om tank and re emoved from t uction hoses b , vapor recove HOULD NOT	emoved. ank using explose conded to tank or ry connections, s	sion proof p r otherwise submersible	umps or hai grounded. pumps and	nd pumps	図 图 图	И П У П И У П И У П И У П И И И И И И И		
<ul> <li>5. Fill pipes, gauge pipes</li> <li>NOTE: DROP TUBE S</li> <li>THE USE OF AN EDUCE</li> <li>6. Vent lines left connected</li> </ul>	om tank and re emoved from to uction hoses be vapor recoved HOULD NOT CTOR. ed until tanks p	emoved.  ank using explosionded to tank or connections, see REMOVED I	sion proof p r otherwise submersible F THE TAN	umps or hai grounded. pumps and K IS TO BE	nd pumps.  Jother fixtures ren	·····································	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y		
<ul> <li>5. Fill pipes, gauge pipes</li> <li>NOTE: DROP TUBE S</li> <li>THE USE OF AN EDUCE</li> <li>6. Vent lines left connected</li> <li>7. Tank openings tempora</li> </ul>	om tank and re emoved from to uction hoses to vapor recoventhould NOT CTOR. ed until tanks parily plugged s	emoved.  ank using explosion of the transfer o	sion proof proof protherwise submersible FTHE TAN	umps or had grounded. pumps and K IS TO BE	nd pumps.  d other fixtures ren PURGED THROL	·····································	Y		
<ul> <li>5. Fill pipes, gauge pipes</li> <li>NOTE: DROP TUBE S</li> <li>THE USE OF AN EDUCE</li> <li>6. Vent lines left connected</li> <li>7. Tank openings tempora</li> <li>8. Tank atmosphere reduce</li> <li>9. Tank removed from except</li> </ul>	om tank and re emoved from to uction hoses to vapor recove SHOULD NOT CTOR. ed until tanks parily plugged so ced to 10% of cavation after to	emoved.  ank using explosionded to tank or ry connections, s BE REMOVED I  burged.  o vapors exit thr the lower flamm PURGING/INERT	sion proof protest of the submersible FTHE TAN ough ventable range	umps or had grounded. pumps and K IS TO BE  (LEL) - see d on level gi	nd pumps.  I other fixtures ren PURGED THROL  Section F. round and blocked	·····································	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y		
<ul> <li>5. Fill pipes, gauge pipes</li> <li>NOTE: DROP TUBE S</li> <li>THE USE OF AN EDUCE</li> <li>6. Vent lines left connected</li> <li>7. Tank openings tempora</li> <li>8. Tank atmosphere reduce</li> </ul>	om tank and reemoved from to uction hoses by vapor recovers thould NOT CTOR. The defended and the total tanks parily plugged seed to 10% of cavation after the common tanks.	emoved.  ank using explosionded to tank or connections, see REMOVED In the course of the lower flammer of the lowe	sion proof protest of the submersible FTHE TAN cough ventable range	umps or hai grounded. pumps and K IS TO BE (LEL) - see d on level gi	nd pumps.  I other fixtures ren PURGED THROL  Section F.  round and blocked	·····································	Y		

	C. CLOSURE BY REMOVAL (continued)  11. Tank labeled in 2" high letters after removal but before being moved from site  NOTE: COMPLETE TANK LABELING SHOULD INCLUDE WARNING AGAINST REUSE; FORMER CONTENTS; VAPOR STATE; VAPOR FREEING TREATMENT; DATE.	Remover Verified XY N	Verified	_
	<ul> <li>12. Tank vent hole (1/8 th " in uppermost part of tank) installed prior to moving the tank from site.</li> <li>13. Inventory form filed by owner with Safety and Buildings Division indicating closure by removal.</li> <li>14. Site security is provided while the excavation is open.</li> </ul>	⊠Y 🗖 N		=
1	<ul> <li>D. CLOSURE IN PLACE</li> <li>NOTE: CLOSURES IN PLACE ARE ONLY ALLOWED WITH THE PRIOR WRITTEN APPROVAL</li> <li>OF THE DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS OR LOCAL AGENT</li> <li>1. Product from piping drained into tank (or other container).</li> </ul>	L r.		
	<ol> <li>Piping disconnected from tank and removed.</li> <li>All liquid and residue removed from tank using explosion proof pumps or hand pumps.</li> <li>All pump motors and suction hoses bonded to tank or otherwise grounded.</li> <li>Fill pipes, gauge pipes, vapor recovery connections, submersible pumps and other fixtures removed.</li> <li>NOTE: DROP TUBE SHOULD NOT BE REMOVED IF THE TANK IS TO BE PURGED THROUGH THE USE OF AN EDUCTOR - EDUCTOR OUTPUT 12 FT ABOVE GRADE.</li> </ol>	Y   N   Y   N ved.   Y   N		
	<ul> <li>6. Vent lines left connected until tanks purged.</li> <li>7. Tank openings temporarily plugged so vapors exit through vent.</li> <li>8. Tank atmosphere reduced to 10% of the lower flammable range (LEL) - see Section F.</li> <li>9. Tank properly cleaned to remove all sludge and residue.</li> <li>10. Solid inert material (sand, cyclone boiler slag, pea gravel recommended) introduced and tank filler</li> <li>11. Vent line disconnected or removed.</li> </ul>	DY DN d. DY DN d. DY DN		
-	12. Inventory form filed by owner with Safety and Buildings Division indicating closure in place	□Y □ N		j
E	<ul> <li>CLOSURE ASSESSMENTS NOTE: DETERMINE IF A CLOSURE ASSESSMENT IS REQUIRED BY REFERRING TO ILHR 10</li> <li>Individual conducting the assessment has a closure assessment plan (written) which is used as the basis for their work on the site.</li> <li>Do points of obvious contamination exist?</li> <li>Are there strong odors in the soils?</li> <li>Was a field screening instrument used to pre-screen soil sample locations?</li> <li>Was a closure assessment omitted because of obvious contamination?</li> </ul>			<b>!</b>
	<ul> <li>6. Was the DNR notified of suspected or obvious contamination?</li> <li>Agency, office and person contacted:</li> <li>7. Contamination suspected because of: ☐ Odor ☐ Soil Staining ☐ Free Product☐ Sheen On Groun</li> </ul>	<u>П</u> Л <u>Б</u> и	nstrument Test	
F.	<ul> <li>METHOD OF ACHIEVING 10% LEVEL DESCRIPTION</li> <li>Educator Or Diffused Air Blower</li> <li>Eductor driven by compressed air, bonded and drop tube left in place; vapors discharged minimu Diffused air blower bonded and drop tube removed. Air pressure not exceeding 5 psig.</li> <li>Dry Ice</li> </ul>		<i>r</i> e ground.	
	Dry ice introduced at 1.5 pounds per 100 gallons of tank capacity. Dry ice crushed and distribute area. Dry ice evaporated before proceeding.  Inert Gas (CO/2 or N/2) NOTE: INERT GASSES PRODUCE AN OXYGEN DEFICIENT ATMOSPHENTERED IN THIS STATE WITHOUT SPECIAL EQUIPMENT			
	Gas introduced through a single opening at a point near the bottom of the tank at the end of the tank. Gas introduced under low pressure not to exceed 5 psig to reduce static electricity. Gas introduced a static electricity electricity electricity. Gas introduced a static electricity electricity electricity. Gas introduced a static electricity electricity electricity electricity electricity electricity electricity. Gas introduced electricity electricity electricity electricity	cing device ground ace monitored at	ded. bottom, middle	
_	ground.			
3.	NOTE SPECIFIC PROBLEMS OR NONCOMPLIANCE ISSUES BELOW			÷
		<u> </u>		
I.	REMOVER/CLEANER INFORMATION			
	Pat McDonald (2000) Enol 4120	, · · ·	5-20-99	
	Remover Name (print) Remover Signature Remover Ce INSPECTOR INFORMATION	rtification No. Da	ite Signed	
		•	•	
	Inspector Name (print)  Inspector Signature	Inspector Certifi	cation No.	
	FDID # For Location Where Inspection Performed Inspector Telephone Number	Date Signed	•	

# APPENDIX C CEDAR CORPORATION REPORT



715-235-9081 800-472-7372 Fax • 715-235-2727 www.cedarcorp.com

April 30, 2008

WDNR Attn: Pat Collins 890 Spruce Street Baldwin, WI 54002

SUBJECT:

Update of soil and groundwater sampling completed for the Corner Store site.

PECFA ID #54763-96-2302 BRRTS #03-17-223007

Dear Mr. Collins:

The following letter is a summary of the work completed for the Corner Store Site located at 100 Tonnar Street, Ridgeland, WI on April 1, 2008. The amended scope of the project consisted of:

- 1. Conduct one soil boring sampling at depths of 4-5 feet below surface and just above the water table.
- 2. Collect one groundwater sample from this same soil boring
- 3. Prepare a letter report including, as attachments, a map showing the boring location, the soil boring log for the boring completed on the property, the laboratory analytical reports for the soil samples collected from the boring, a synopsis of the observation during the proceedings, if necessary, and a brief discussion of the results.

#### Sampling Event

The Corner Store site in Ridgeland, WI was sampled on April 1, 2008. The soil boring was completed by Geiss Soils & Samples, LLC using a direct push soil probe (geoprobe). A location map of the boring and a log of the boring are attached. Two soil samples were taken from this boring; one at 4-5 feet (P-3 4-5') and the other just above the groundwater at 7 feet (P-3 7'). A water sample was also analyzed from this boring as well. The analytical reports for these samples are attached. All soil and water samples were sent to a DNR Certifies Laboratory (Test America, Watertown, WI certification number – 128053530) for analysis. All shipping, sampling, and handling protocols as required by EPA were followed.

#### Soil Samples

The soil samples results are summarized on Table 1. These results indicate that the concentration for benzene, ethylbenzene, tolune, and xylenes exceed the regulatory acceptable levels (Wis. Adm. Code NR720 Table 1 and 2) in both samples.

#### **Groundwater Sample**

A groundwater sample was collected from 8 feet below surface through the push probe sampling device using a peristaltic pump. The ground water sample results are included on Table 2. The analytical report indicates that the regulatory acceptable concentrations for dissolved petroleum contamination in groundwater have been exceeded for benzene and tolune (Wis. Adm. Code NR 140 Table 1, Enforcement Standard) and ethylbenzene, 1,2,4 and 1,3,5-trimethylbenzenes (Wis. Adm. Code NR 140 Table 1, Preventative Action Limit).

This scope of work has been completed as requested by Pat Collins of the Wisconsin Department of Natural Resources. Please do not hesitate to contact me or Scott McCurdy at 800-472-7372 if we can be of service or answer questions on this project.

Yours truly,

CEDAR CORPORATION

Ryon Stope

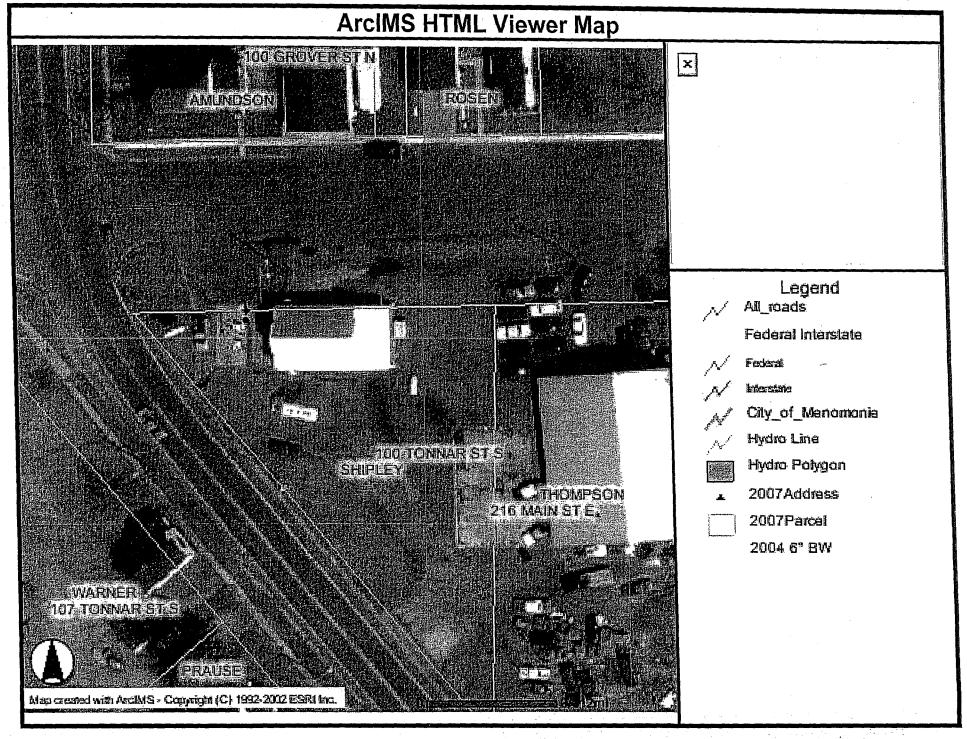
Ryan Stafne

**Environmental Specialist** 

Enclosure

cc: Brad Shipley, N13544 530<sup>th</sup> Street, Ridgeland, WI 54763

Jason Foster, 102 Tonnar Street, Ridgeland, WI 54763



Rev. 7-98

•	Борс		01,100		Route to: Watershed/ Remediation/Red	Wastewater ☐ Waste levelopment 🛣	Management Other □	· 🗆		·				_			,
	Facili	ty/Proje	ct Nan	ne /		<i>c.1</i>		License	/Permit	/Monitoring	Ņumb	er	Borin	Page g Numb	<del></del>	1 of 2~3	
	Borin	g Drille	d By: N	lame of	crew chief (first, last) and	Firm		Date D				Drilling			Drillin	ig Meth	od
	Firm:	ime: J		۲ <u>د ک</u>	Last Name: Ahri.			MM	DD	2008 YYY	Y M	4 <u>0</u>	<u> </u>	908 YYY		Popu	
		ique We	ll No.		DNR Well ID No.	Common Well Name	447	Final St		ter Level t MSL		urface l	Feet M		Boreh 2	nole Dia - inche	ameter s
	Local State	Grid O Plane		] (esti		Boring Location⊟ E_S/C/N		l			Local	Grid Lo					
	SE	1/4 of	NE	1/4 of	Section 66 ,T	3 / N. R. /2 E	Ø	Lat Long			<u> </u>		l D S		Fee	U V	
	Facili	ty ID			County Dar	M	DNR Cou	Inty Code	Civi	il Town/Ci R3	y/ or V	illage	, w	L			
	Sa	mple			race)								So	oil Prope	ties	T	
	Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	And And	il/Rock Description Geological Origin For Each Major Unit		USCS	Graphic Log	Well Diagram	PID / FID	Compressive Strength	Moisture Content	Liquid	Plasticity Index	P 200	RQD/ Comments
-		36"			4" concrete	-											
	ι	36			BIK-BAN	Sandy S:1+							M				Pet
	. !			E													odo
					5	1		_									0.1
		34"		E	Brown 5 &n	el .							W				Petod
					¥ 420 @ 8'								W				
			·	1	o l											: /	
	. :																
						·											
	:			18													
			.														
									ŀ								
•			ŀ	 												-	
			. }	_													•
			-		·		•					.					
			-														
	•		F	25 	,												
			þ													1	¥,.
			F	30	· · ·												
Th	ereby	certify	hat the	inform	ation on this form is true a	nd correct to the best of	my knowledg	je.									

Signature

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this report is mandatory. Failure to file this form may results in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the form should be sent.

# TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS CORNER STORE RIDGELAND, WI

						Resu	ılts reported in	ug/Kg		
				Benzene	E - Benzene	MTBE	Toluene	1,2,4 TMB	1,3,5 TMB	Xylenes
Wis Adm. Code	NR720, Tab	ole 1 & 2, Residua	al Contaminant Levels	5.5	2,900	NS	1,500	NS	NS	4,100
Wis Adm. Code	NR746.06	Table 1, Residua	Petroleum Product	8,500	4,600	NS	38,000	83,000	11,000	42,000
Wis Adm. Code NR746.06 Table 2, Direct Contact				1,100	NS	NS	NS	NS	NS	NS
Sample Location	Sample Depth	Sample Date	Laboratory ID							
P-3	4-5'	10/25/2007	WRD0042-01	120,000	190,000	<2700	730,000	350,000	99,000	980,000
P-3	7'	10/25/2007	WRD0042-02	12,000	40,000	<550	110,000	100,000	28,000	220,000
					1			<del> </del>		<u> </u>

MTBE = Methyl tert butyl ether

TMB = Trimethylbenzene

E-Benzene = Ethylbenzene

ug/Kg=ppb=parts per billion

NS = No Standard Established

Values in Bold Typeface exceed listed table value

TABLE 2 **PVOC - GROUNDWATER ANALYTICAL RESULTS CORNER STORE** RIDGELAND, WI

Sample	Sample Date	Ben	Ethylh-	Mrs.	Toluc	1,2,4.T.	T.3 E.	XVIC.	(papp)
ES		5	700	60	1,000	480	480	10,000	
PAL		0.5	140	12	200	96	96	1,000	
P-3	04/01/08	1900	500	<9.2	3200	430	120	2700	·
		-						1	l

Italic Numbers indicate a concentration above PAL outlined in NR 140.10

Bold Numbers indicate a concentration above ES outlined in NR



April 09, 2008

Client:

CEDAR CORPORATION

604 Wilson Avenue

Menomonie, WI 54751

Work Order:

WRD0042

Project Name:

Shipley-Corner Store

Project Number:

Ridgeland, WI

Attn:

Mr. Scott McCurdy

Date Received:

04/02/08

An executed copy of the chain of custody is also included as an addendum to this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-800-833-7036

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
P-3 4-5'	WRD0042-01	04/01/08 11:00
P-3 7'	WRD0042-02	04/01/08 11:15
P-3	WRD0042-03	04/01/08 11:30

Samples were received into laboratory at a temperature of 2 °C.

Wisconsin Certification Number: 128053530

The Chain of Custody, 1 page, is included and is an integral part of this report.

Unless subcontracted, volatiles analyses (including VOC, PVOC, GRO, BTEX, and TPH gasoline) performed by TestAmerica Watertown at 1101 Industrial Drive, Units 9&10. All other analyses performed at the address shown in the heading of this report.

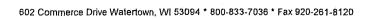
Approved By:

TestAmerica Watertown

Brian DeJong For Dan F. Milewsky

Project Manager

Page 1 of 8





CEDAR CORPORATION

604 Wilson Avenue

Menomonie, WI 54751 Mr. Scott McCurdy

Work Order:

WRD0042

Shipley-Corner Store

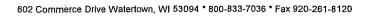
Project:

Received: 04/02/08

Reported: 04/09/08 11:26

Project Number: Ridgeland, WI

Analyte	Sample Result	Data Qualifiers	Units	MDL	MRL	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: WRD0042-03RE1 (P-3 - Ground Water) 3C VOLATILES						Sampled: 04/01/08 11:30			•	
Benzene	1900		ug/L	10	33	40	04/07/08 18:03	EML	8040182	SW 8021
Ethylbenzene	500		ug/L	8.8	29	40	04/07/08 18:03	EML	8040182	SW 8021
Methyl tert-Butyl Ether	<9.2		ug/L	9.2	31	40	04/07/08 18:03	EML	8040182	SW 8021
Toluene	3200		ug/L	4.4	15	40	04/07/08 18:03	EML	8040182	SW 8021
1,2,4-Trimethylbenzene	430	-	ug/L	10	33	40	04/07/08 18:03	<b>EML</b>	8040182	SW 8021
1,3,5-Trimethylbenzene	120		ug/L	7.6	25	40	04/07/08 18:03	EML	8040182	SW 8021
Xylenes, total	2700		ug/L	16	52	40	04/07/08 18:03	<b>EML</b>	8040182	SW 8021
Surr: 4-Bromofluorobenzene (80-200%)	105 %									





CEDAR CORPORATION 604 Wilson Avenue Menomonie, WI 54751

Mr. Scott McCurdy

Work Order: Project:

WRD0042

Received: 04/02/08

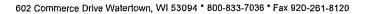
Shipley-Corner Store

Reported: 04/09/08 11:26

Project Number: Ridgeland, WI

# CCV OC DATA

		C.	JY QU	ואעי	. <b>A</b>					
Analyte	Seq/ Batch	Source Spike Result Level Units	MDI	MDY	Dogult	Dup	% DEC	Dup % REC %REC Limits RPD	RPD Limit	•
	Daten	Result Level Units	MIDE	WIKL	Resuit	Kesuit	NEC	70KEC LIMITS KPD	Dillit	Q
GC VOLATILES	8D07008	2000 0	N1/'A	N/A	1800		90	85-115	2.77	
Benzene	8D07008	2000.0 ug/kg wet 2000.0 ug/kg wet	N/A N/A	N/A	1810		90	85-115		
Ethylbenzene Methyl tert-Butyl Ether	8D07008	2000.0 ug/kg wet	N/A	N/A	1780		89	85-115		
Toluene	8D07008	2000.0 ug/kg wet	N/A	N/A	1780		90	85-115		
1,2,4-Trimethylbenzene	8D07008	2000.0 ug/kg wet	N/A	N/A	1790		90	85-115 85-115		
1,3,5-Trimethylbenzene	8D07008	2000.0 ug/kg wet	N/A	N/A	1800		90	85-115		
Xylenes, total	8D07008	6000.0 ug/kg wet	N/A	N/A	5430		90	85-115 85-115		
Surrogate: 4-Bromofluorobenzene	8D07008	ug/kg wet	NA	14/74	3430		101	85-115 85-115		
Benzene	8D07013	20.000 ug/L	N/A	N/A	19.0		95	85-115		
Ethylbenzene	8D07012		N/A N/A	N/A	18.8		93 94	85-115		•
· ·	8D07012		N/A	N/A	19.0		95	85-115		
Methyl tert-Butyl Ether	8D07012	<b>U</b> ,	N/A	N/A	19.0		95	85-115 85-115		
Toluene	8D07012	20.000 ug/L 20.000 ug/L	N/A N/A	N/A N/A	18.6		93	85-115 85-115		
1,2,4-Trimethylbenzene	8D07012	20.000 ug/L 20.000 ug/L	N/A	N/A	18.7		93	85-115 85-115		
1,3,5-Trimethylbenzene	8D07012	•	N/A N/A	N/A N/A	56.4		93 94	85-115 85-115		
Xylenes, total	8D07012	60.000 ug/L	IN/A	IN/A	30.4		106	85-115 85-115		
Surrogate: 4-Bromofluorobenzene	8D08006	ug/L 2000.0 ug/kg wet	N/A	N/A	1900		95	85-115		
Benzene	8D08006	2000.0 ug/kg wet	N/A	N/A	1910		96	85-115		
Ethylbenzene	8D08006	2000.0 ug/kg wet	N/A	N/A	1870		94	85-115	1	
Methyl tert-Butyl Ether	8D08006	2000.0 ug/kg wet	N/A	N/A	1900		95	85-115		
Toluene			N/A	N/A	1900		95	85-115 85-115		
1,2,4-Trimethylbenzene	8D08006	2000.0 ug/kg wet	N/A	N/A	1910		95 95	85-115		
1,3,5-Trimethylbenzene	8D08006	2000.0 ug/kg wet					93 96	85-115		
Xylenes, total Surrogate: 4-Bromofluorobenzene	8D08006 8D08006	6000.0 ug/kg wet ug/kg wet	N/A	N/A	5760		105	85-115		





CEDAR CORPORATION

604 Wilson Avenue Menomonie, WI 54751 Mr. Scott McCurdy

Work Order:

WRD0042

Received: 04/02/08

Project:

Shipley-Corner Store

Reported: 04/09/08 11:26

Project Number: Ridgeland, WI

	~ ·	LCS/LCS D	-									
	Seq/	Source Spike		- 11		Dup	%		% REC		RPD	
Analyte	Batch	Result Level Units	MDL	MRL	Result	Result	REC	%REC	Limits	RPD	Limit	Q
GC VOLATILES												
Benzene	8040177	5000.0 ug/kg wet	N/A	N/A	4910	5080	98	102	80-120	3	20	
Ethylbenzene	8040177	5000.0 ug/kg wet	N/A	N/A	5000	5110	100	102	80-120	2	20	
Methyl tert-Butyl Ether	8040177	5000.0 ug/kg wet	N/A	N/A	4970	5510	99	110	80-120	10	20	
Toluene	8040177	5000.0 ug/kg wet	N/A	N/A	4960	5120	99	102	80-120	. 3	20	
1,2,4-Trimethylbenzene	8040177	5000.0 ug/kg wet	N/A	N/A	5010	5100	100	102	80-120	2	20	
1,3,5-Trimethylbenzene	8040177	5000.0 ug/kg wet	N/A	N/A	5010	5080	100	102	80-120	1	20	
Xylenes, total	8040177	15000 ug/kg wet	N/A	N/A	14900	15300	99	102	80-120	2	20	
Surrogate: 4-Bromofluorobenzene	8040177	ug/kg wet		1			104	107	80-200			
Benzene	8040182	20.000 ug/L	N/A	N/A	18.5	19.4	92	97	80-120	5	20	
Ethylbenzene	8040182	20.000 ug/L	N/A	N/A	18.4	19.1	92	95	80-120	4	20	
Methyl tert-Butyl Ether	8040182	20.000 ug/L	N/A	N/A	18.7	19.2	94	. 96	80-120	3	20	
Toluene .	8040182	20.000 ug/L	N/A	N/A	18.5	19.4	93	97	80-120	4	20	
1,2,4-Trimethylbenzene	8040182	20.000 ug/L	N/A	N/A	18.4	18.6	92	93	80-120	1	20	
1,3,5-Trimethylbenzene	8040182	20.000 ug/L	N/A	N/A	18.2	18.6	91	93	80-120	2	20	
Kylenes, total	8040182	60.000 ug/L	N/A	N/A	55.3	57.1	92	- 95	80-120	3	20	
Surrogate: 4-Bromofluorobenzene	8040182	ug/L					107	112	80-200			
Benzene	8040211	5000.0 ug/kg wet	N/A	N/A	4880	4860	98	97	80-120	ī	20	
Ethylbenzene	8040211	5000.0 ug/kg wet	N/A	N/A	4980	4940	100	99	80-120	I	20	
Methyl tert-Butyl Ether	8040211	5000.0 ug/kg wet	N/A	N/A	4850	5160	97	103	80-120	6	20	
Coluene	8040211	5000.0 ug/kg wet	N/A	N/A	4950	4920	99	98	80-120	1	20	
,2,4-Trimethylbenzene	8040211	5000.0 ug/kg wet	N/A	N/A	4980	4920	100 -	98	80-120	1	20	
,3,5-Trimethylbenzene	8040211	5000,0 ug/kg wet	N/A	N/A	4990	4920	100	98	80-120	1	20	
Kylenes, total	8040211	15000 ug/kg wet	N/A	N/A	14900	14700	99	98	80-120	1	20	
urrogate: 4-Bromofluorobenzene	8040211	ug/kg wet					104	111	80-200			

Watertown Division 602 Commerce Drive Watertown, WI 53094

Phone 920-261-1660 or 800-833-7036 920-261-8120

 $\label{eq:wrong} \omega RD oo 42.$  To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes? Compliance Monitoring

Client Name	Cap	m !	Con	npi	male	<b>~</b>			Cli	ent	#:														
Address:			-	7	~ A										-	Project I	vame:		SL	lala	<b>,</b> (	CONN	م	Store	
City/State/Zip Code:								5	4	7 5	~	/					ject#:			1-1					_
Project Manager:					4.C										Sit		•	R;	dea	Jan	1	, ,	State:	WI	
Telephone Number.	715	) - Z	35	`~`	3081		Fa	ax:	7	15	`_	23	5-	272			ort To:		-	Cad	10-2		-		
Sampler Name: (Print Name)			_	129		X		,						,		Invoi	ce To:			ad	·				
Sampler Signature:			7	11	25	Ž	_	•							-		.# etou	P	60	FA	-	PO#:			
			3		Matrix	Pres	erval	ion 8	3.# of	Cor	ntair	ners					Analyz					_			
	Date Sampled	<del></del>	G = Grab, C = Composite		SL - Studge DW - Drinking Water SL - Studge DW - Drinking Water S - Soil/Solld WW - Wastewater Specify Other	HNO3						Other ( Specify)	12 4	7,000										QC Deliverable None Level 2 (Batch QC) Level 3 Level 4 Other: REMARKS	-
P-3 7'	1	1115	T	N	3					1	1		7			-								2-8	
P-3 Hz0	1	1130	J	N	Gw		3						1												
																	<u> </u>			]					
								_	Ш							<u> </u>		].							
		<u> </u>	<u> </u>	<u> </u>		L				_							<u> </u>		ļ		ļ				
	<u> </u>	<u> </u>	4	<u> </u>	<u> </u>	_	_	_						<u> </u>				ļ	ļ		ļ				
· · · · · · · · · · · · · · · · · · ·		<u> </u>	1_	1_	<b> </b>	_	_	_				<u> </u>		<u> </u>	<del> </del>	<u> </u>	<u> </u>	ļ	<u> </u>		ļ				
	<b></b>	<u> </u>	4	↓_	<u> </u>	_	_	_			<u> </u>	-		<u> </u>	<del> </del>	<b> </b>	<b> </b> -	<del> </del>	<u> </u>	<b>}</b>	<b> </b>	<u> </u>			
Canada Instructions	<u> 1</u>		<u> </u>	<u> </u>	<u> </u>						<u> </u>			<u> </u>		<u> </u>	<u> </u>	<u> </u>	d° A DC	DATO	DV:00	3484-AIT		rate delegation and delegation and	Desile.
Special instructions:										\										nit Lab Rec Lal	Temp	,	s: ک		
Relinquished By: W	_	Date/	45	Tim	400 e:	Re	ceive	Į B	X:	)(C	0	<u>~</u>	Qe		Dale.	lox	Tinge:	44						//A a: (Y-) N	
Relinquished By:	· ·	Date:		Tin	ne:	Re	ceive	ed B	у:	٧					Date:		Time:		mou	es sup	plied b	y lest /	meric	a: (Y) N	
Relinquished By:		Date:		Tin	ne:	  -	-coh	ad E	200						Date		Time		Moth	ad af C	hinma				

# APPENDIX D HEALTH AND SAFETY PLAN

# Site Health & Safety Plan

# POST THIS DOCUMENT ON THE WORK SITE

Project Name/No.: Corner Store

Site Address: 100 Tonnar Street (Highway 25), Ridgeland, Wisconsin 54761

Project Manager: Ken Shimko

Client Contact: Jason Foster Phone: 715/949-1230

Beginning & Ending Dates of Field Activities: June 2010 - ongoing

# **EMERGENCY PHONE NUMBERS**

# LOCAL EMERGENCY TELEPHONE NUMBERS:

Ambulance 911

Hospital Emergency Room 911

Poison Control Center 1-800-222-1222

Fire Department 911

Police Department 911

Hazardous Materials Response Unit 911

Project Manager: Ken Shimko

**Client Contact:** 

Jason Foster

Home:

Cell:

**Regulatory Agency:** 

Department of Commerce/Tim Zeichert Department of Natural Resources/Pat Collins 715-345-5307 715/684-2914 ext. 117

# MEDICAL EMERGENCY ROUTE

Hospital: Barron Medical Center

Phone number: <u>715/537-3186</u>

Hospital address: 122 East Woodland Ave, Barron, Wisconsin

Directions to nearest hospital:

Take Highway 25 north to Barron (about 15 miles). Follow hospital signs (blue 'H') to hospital. Turn Right on LaSalle Avenue. Go about 11 blocks to Memorial Drive; turn right onto Memorial Drive. Go about 1 block to hospital.

Distance & driving time to hospital: \_\_\_\_ Approximately 15 miles (20 minutes)

# SITE INFORMATION

# PLANNED SITE ACTIVITIES:

Investigation of petroleum - impacted soil and ground water

# RESOURCES AVAILABLE ON-SITE:

Telephone Yes Restrooms Yes

Water supply Yes

If unavailable, identify alternatives:

# SITE HISTORICAL INFORMATION:

Site is an operating retail gasoline/convenience store.

# **POTENTIAL HAZARDS:**

Chemical Contaminants:

Hydrocarbons Yes Metals No Asbestos No

Other:

Yes

Benzene and petroleum vapors. Avoid odors by standing

upwind or away from contaminated

soil/ground water, if present.

Electrical Yes No x Radiation Yes No x

Noise Yes x No Site machinery/equipment

Fall & slip Yes \_ No \_x

Construction Equip. Yes x No Excavation equipment

Biological Hazards Yes Nox
Heat Stress Yes Nox
Cold Stress Yes Nox
Confined spaces Yes Nox
Engulfment Hazards Yes Nox

# REQUIRED HEALTH & SAFETY EQUIPMENT

First Aid Kit Yes x No Hard Hat Yes x No Safety Glasses Yes No x

Hearing Protection Yes<u>x</u> No \_ As needed

Safety Boots Yes x No

Protective Gloves Yes<u>x</u>No\_ When sampling

Protective Suits Yes \_\_ No\_x

Respirator:

SCBA Yes No x

Other:

Site Health	and	Safety	Plan
Page 4			

# REQUIRED SITE MONITORING EQUIPMENT:

hNU/Photoionization Detector Oxygen Detector/Explosimeter Organic Vapor Analyzer Detector Tubes Other:	Yes $\underline{x}$ (during soil work such as drilling or excavation) Yes $\underline{No}\underline{x}$ Yes $\underline{No}\underline{x}$ Yes $\underline{No}\underline{x}$
S	SIGNATURES
Plan Prepared By:	Date: 6-1-10
	D BY ALL ON-SITE PERSONNEL BEFORE
<del>-</del>	ORK (print name, initial & date):
Date:	Date:

# APPENDIX E FIELD PROCEDURES

The appendix describes field work procedures for this project. Where applicable, these procedures are performed in accordance with Wisconsin Department of Natural Resources (WDNR), Wisconsin Administrative Code requirements, American Society for Testing and Materials (ASTM) standards, or accepted engineering or geologic standards.

# SOIL PROBE INSTALLATION

The contractor installed soil probes in accordance with the procedures described in Wisconsin Administrative Code, Chapter NR 141. Soil probe sampling consists of installing a hydraulically driven steel 2-inch diameter rod. The steel sampling device at the end of the rods is 4 feet long and assembled with a disposable plastic liner for sample collection. Samples are collected continuously using the following method:

When the rod is positioned at the top of the desired sampling interval, the piston stop pin is removed, and the sampler is driven the desired sample interval to encase the soil sample in the plastic liner. The rods are then retracted from the hole and brought to the surface. The plastic liner is removed from the sample rod that contains the undisturbed soil sample. The liner is split open with a clean utility knife and the soil is classified and then transferred to laboratory and field screening containers as described in the soil sample collection section in this appendix.

Meridian personnel are present during the field work to establish soil probe locations, determine soil sample intervals, classify soils using the Unified Soil Classification System (USCS), log soil probes, and collect and screen soil samples. Soil classification information is recorded on the soil borings logs (WDNR Form 4400-122) and copies are included in the site investigation report.

Sampling and soil probe equipment is decontaminated as described under the decontamination section in this appendix. Plastic liners are disposable and are not reused.

When the sampling is completed, soil probe holes are filled with bentonite and the surface material restored. Soil probe abandonment details are described on WDNR Form 3300-5W, and copies are included in the site investigation report. Soil cuttings generated during drilling are containerized in 5-gallon buckets. Because of the small quantity, these cuttings are typically disposed of in a dumpster.

# HOLLOW STEM AUGER BORING INSTALLATION

Hollow stem auger borings are installed by the contractor in accordance with the procedures described in Wisconsin Administrative Code, Chapter NR141. The contractor installs borings using a mobile drill rig equipped with 4 1/4-inch hollow stem augers. In general, soil samples are collected at 2.5-foot sample intervals from the surface to the boring terminus. Soil samples are obtained using a split spoon sampler (1 3/8 inches in diameter by 2 feet long) driven by a 140-pound hammer in accordance with the procedures described in ASTM D-1586.

Meridian personnel are present during the field work to establish soil boring locations, determine soil sample intervals, classify soils using the Unified Soil Classification System (USCS), log soil borings, and collect and field screen soil samples. Soil classification information is recorded on soil boring logs (WDNR Form 4400-122) and copies are included in the site investigation report.

The split spoons are decontaminated as described under the decontamination section in this appendix. Clean augers are used in each boring. All augers are steam cleaned before reuse.

# Page 2

When the sampling is completed, soil boreholes that were not converted into ground water monitoring wells were filled with bentonite and the surface restored. Soil boring abandonment details are described on WDNR Form 3300-5W, and copies are included in the site investigation report. Soil cuttings generated during drilling are containerized in 55-gallon drums on site and are labeled with the date and the soil's origin. The drums have been picked up for proper disposal of the cuttings.

# **SOIL SAMPLE COLLECTION**

Meridian personnel retrieve soil samples from the sampling equipment using a clean nitrile gloves and avoid collecting slough materials.

At each sampling point, we collect two groups of soil samples: headspace samples and samples for potential laboratory analysis. We place samples for headspace screening in clean 8-ounce glass jars with screw caps and lids, and fill the jars approximately one-quarter to one third full. We use the headspace screening results to determine which soil samples should be preserved and/or sent to the laboratory. Soil collection methods used are in accordance with WDNR's *Leaking Underground Storage Tank and Petroleum Analytical and Quality Assurance Guidance*, July 1993, PUBL SW-130 93.

During collection of laboratory grade samples, we remove the soil from the sampling equipment and place it directly into a sample jar which is capped with a Teflon lined slip cap to prevent volatilization. These jars are temporarily stored on ice in a cooler. After field screening is done and within the prescribed 2 hours, the required sample amount is transferred to the correct laboratory container and a preservative is added if needed. For diesel range organic (DRO), gasoline range organic (GRO), volatile organic compound (VOC), or petroleum VOC (PVOC) samples, we weigh the jar on a scale before adding soil and again after the soils are added to verify that approximately 25 grams is contained. We then place the selected laboratory samples on ice in a cooler immediately after collection, and keep samples cool until analysis by the laboratory.

The specific collection method, including the size and type of containers used, are dependent on the type of analysis to be conducted. Within two hours of sample collection, we preserve samples chosen for laboratory analysis, based on field screening results, using the following procedure:

- GRO, VOC, and PVOC samples- Place approximately 25 grams soil into a 60-milliliter tared glass jar with a septum lid then add 20-milliters of methanol as a field preservative.
- Metals-Fill a 125-milliliter plastic jar with soil. No preservative is added to these samples.
- Percent solids (moisture analysis)-Fill a 125-milliliter plastic jar with soil.

We prepare a methanol blank (one for each day of sampling) during preservation of the first soil sample. A methanol blank is prepared by filling a 60-milliliter jar with a single 25-milliliter vial of methanol supplied by the laboratory.

A chain-of-custody log, WDNR Form 4400-151 or equivalent, is completed when the samples are collected. We record the project name and number, sampler's names(s), sample location and depth, sample number, date and time of collection, type of sample, method of sample collection, number of containers, type of preservation, type of chemical analyses to be performed, field screening results (soils only), and additional remarks about the sample if needed on the chain-of—custody log. The individual(s) handling the samples signs and dates the log. Shipment arrangements are made so the samples arrive within the appropriate shipping time allowed by WDNR guidance.

# **SOIL LABORATORY ANALYSIS**

Samples are analyzed by a laboratory certified by the WDNR. Analytical methods used are as follows:

<u>PARAMETER</u>	METHOD	MDL .
GRO	WDNR Modified GRO	1.2 mg/kg
VOC's	EPA Method 8021	25μg/kg
PVOC's	EPA METHOD 8020	25μg/kg
Lead	EPA Method 6010B	0.1 mg/kg

# **HEADSPACE SCREENING (FID)**

Headspace screening samples are qualitatively screened for organic vapors using a flame ionization detector (FID).

The FID is factory calibrated annually with three methane gas standards. The accuracy of the FID instrument is checked daily by adjusting the instrument to a "Zero Air" standard (<1 part per million [ppm] total hydrocarbons) and then using a 95 ppm methane gas standard to verify factory calibration. According to the manufacturer, the operation of the FID is acceptable if the response to the methane gas is within 20% of the 95-ppm standard. This equates to meter readings between 76 and 114. The FID response to the calibration gas is documented in the site investigation report.

After the soil sample to equilibrate in accordance with WDNR guidance, we screen the total organic vapors in the jar by piercing the lid and then immediate inserting the FID probe. Meter responses are recorded as instrument units (i.u.s) methane gas equivalents. The highest meter response is recorded in the field notes and/or on the soil boring logs. The FID responses are a relative indication of total ionizable volatile organic compounds present in the atmosphere surrounding the sample and do not necessarily represent the concentration of any specific compound in the sample.

# **HEADSPACE SCREENING (PID)**

Headspace screening samples are qualitatively screened for organic vapors using a photo ionization detector (PID) equipped with a 10.6 eV lamp. Before we use the PID, we calibrate it using 100-ppm isobutylene gas.

After allowing the soil sample to equilibrate in accordance with WENR guidance, we screen the total organic vapors in the jar by piercing the lid and then immediately inserting the PID probe. Meter response are recorded as i.u.s isobutylene gas equivalents. The highest meter response is recorded in the field notes and/or on the soil boring logs. The PID responses are a relative indication of total ionizable volatile organic compounds present in the atmosphere surrounding the sample and do not necessarily represent the concentration of any specific compound.

# MONITORING WELL CONSTRUCTION AND DEVELOPMENT

If monitoring wells are needed, they are installed by the contractor in accordance with the procedures described in Wisconsin Administrative Code NR 141. Monitoring well construction consists of 2-inch diameter PVC casing with a 0.010-inch slotted well screen. A 10-foot long well screen intercepting the water table is used for the wells. Filter packs for the monitoring wells consist of No. 30 sand installed from the base of the boring to 2 feet above the well screen.

A filter pack seal, consisting of 2 feet of No. 70 silica sand is installed above the filter pack. The remainder of the well has an annular space seal, consisting of 3/8-inch bentonite chips installed from the top of the fine sand to within

# Page 4

1 foot of the ground surface. A 1-foot concrete surface seal is placed around the well's protective cover. Monitoring wells are provided with a watertight well cap and either an aboveground or flush mount protective casing. All wells have locking caps. A blue Wisconsin Unique Well Number (WUWN) label is attached to the inside of the protective cover or flush mount manhole. Well construction details for wells are included in the site investigation report on Form 4400-113A. Ground water monitoring well information for the site is summarized on Form 4400-89.

Meridian personnel develop each monitoring well after installation in accordance with the procedures described in Wisconsin Administrative Code NR 141. We develop each well using a combination of surging and purging with a disposable bailer and a submersible pump. Approximately 10 well volumes are removed from each well. Each well is then allowed to stabilize for at least 3 days before it is sampled. Well development water is containerized and disposed of by a licensed facility. During well development, we document out observations of odor, color, and turbidity. A monitoring well development Form 4400-113B is included in the site investigation report for each well installed.

# **GROUND WATER SAMPLE COLLECTION**

We conduct ground water sampling using the procedures described in the *Groundwater Sampling Field Manual* (PUBL-DG 038 96), the *Groundwater Sampling Desk Reference* (PUBL-DG-037 96), and in-house sampling memorandums. Before they are sampled, the wells are allowed to stabilize at least 3 days after they are developed. Before purging the monitoring wells, we take static water level measurements with an electronic water level indicator.

To obtain representative samples, we purge approximately three well casing volumes from each well. The actual volume pumped is determined in the field and is dependent on the diameter of the well casing and the depth of the water in the well. We check the purged water for signs of contamination. If there is evidence of contamination, we store the purged water in containers on site for later disposal at a WDNR-approved facility. If there is no evidence of contamination, we dispose of the purged water by thinspreading the water next to the well. We collect samples from the next bailer of water after the well recharges.

We obtain the samples by lowering a disposable plastic bailer into the well using dedicated rope and collect samples directly from the bailer into laboratory-provided sample containers. Between sample locations, we decontaminate the water level indicator using the decontamination procedures describe in this appendix.

If relevant to the project, we may also measure natural attenuation parameters such as dissolved oxygen, redox or pH.

- Dissolved oxygen is measured using a colormetric ampule.
- Redox-Obtain a sample from the bailer and transfer it to a jar. Insert the redox probe in the sample, stir the probe until the meter stabilizes, then record the reading.
- pH-Connect the pH probe to the redox probe and insert it into the same sample used for the redox reading (no stirring required), then record the reading.

We collect the analytical samples using the following procedures:

- GRO, VOC, and PVOC samples-Fill a 4 milliliter vial that has a cap and septum, and preserve the sample with 0.5 milliliter of dilute 1:1 hydrochloric acid.
- Dissolved lead and iron-Collect 250 milliliters in a disposable plastic container and store on ice. Filter sample through a 0.45-micron disposable filter within 2 hours of collection. Pour the filtrate into a polyethylene jar and preserve the sample with nitric acid. Store sample in an ice slurry.

# Page 5

- Nitrate+Nitrite as N-Fill a 250 milliliter polyethylene jar and preserve the sample with sulfuric acid. Store sample in an ice slurry.
- Sulfate-Fill a 250-milliliter polyethylene jar and store sample in an ice slurry. No preservative is added.

One trip blank is also analyzed for each sampling event. We place the sample on ice in a cooler; enclose a completed WDNR chain-of-custody record, Form 4400-151 or equivalent; and ship the cooler to the laboratory so it arrives within the shipping time allowed by WDNR.

Meridian initiates a chain-of-custody log, WDNR Form 4400-151 or equivalent, at the time of collection of ground water samples. We record the project name and number, sampler's name(s), sample location and depth, sample number, date and time of collection, type of sample, method of sample collection, number of containers, type of preservation, type of chemical analyses to be performed, method of shipment, and additional remarks about the sample if needed on the chain-of custody log.

In addition to a chain-of-custody, we complete a field sampling report for water sample collection. We record the type of monitoring well; depth to well bottom; depth to water; sampling method; well purging date, time, and volume; time of sample collection; sample filtering, if applicable; and observations, such as color, odor, and turbidity of samples.

# **GROUND WATER LABORATORY ANALYSIS**

Samples are analyzed by a laboratory certified by the WDNR. Analytical methods used are as follows:

PARAMETER	METHOD	LOD	LOQ
GRO	WDNR Modified GRO	. 30 μg/L	81 μg/L
VOC's	EPA Method 8021	0.2 to 1.2 μg/L	0.5 to 4.0μg/L
PVOC's	EPA Method 8020	0.2 to 1.7 μg/L	0.5 to 5.5 μg/L
Lead	EPA Method 3020/7421	1.6 μg/L	5.1 μg/L
Nitrate+Nitrite	EPA Method 353.2	0.14 mg/L	0.43 mg/L
Sulfate	EPA Method 325.2	1 mg/L	4 mg/L
Dissolved Iron	EPA Method 236.1	0.020 mg/L	0.064 mg/L

## GROUND WATER SAMPLE COLLECTION FROM SOIL PROBES

Meridian personnel conducts ground water sampling in accordance with the procedures described in the *Groundwater Sampling Field Manual* (PUBL-DG-038 96) and the *Groundwater Sampling Desk Reference* (PUBL-DG-037 96).

Following soil probe installation, a slotted rod with a sampling point (no plastic liner) is driven to the water table. The sample collector is opened allowing ground water to enter the collection tube. A 1/8-inch-diameter plastic hose is inserted through the steel rods to the water table. A vacuum pump is used to siphon the ground water through the hose and the ground water is drained into sample containers. We continue this process until enough volume is retrieved to fill all sample containers.

# Page 6

Samples are collected for analysis of the following parameters:

- GRO, VOC, and PVOC samples-Fill a 40- milliliter vial with cap that has a septum and preserve with 0.5 milliliter of dilute 1:1 hydrochloric acid.
- Dissolved lead and iron-Collect 250 milliliters in a disposable plastic container and store on ice Filter sample through a 0.45-micron disposable filter within 2 hours of collection. Pour the filtrate into a polyethylene jar and preserve the sample with nitric acid. Store sample in an ice slurry.

We place the samples on ice in a cooler; enclose a completed WDNR chain-of-custody record, Form 4400-151 or equivalent; and ship the cooler to the laboratory so it arrives within the shipping time allowed by WDNR.

# **SAMPLING EQUIPMENT DECONTAMINATION**

To reduce the potential for cross-contamination of samples, Meridian cleans reusable sampling equipment between each sampling interval using the following three-step procedure:

- 1. Soap and water wash-Remove visible soil by hand with a scrub brush using Alconox soap and tap water
- 2. Water rinse-Use tap water with a scrub brush to remove soap and left-over soil
- 3. Deionized water rinse-Use deionized water to rinse off any remaining soil, soap residue, or possible contaminants

The cleaning solution and rinse water was changed regularly during sampling. Tap water is obtained from a municipal water supply.