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PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT KENNETH JACOMET PROPERTY FORMER GASOLINE STATION USH 141, MARINETTE COUNTY MIDDLE INLET, WISCONSIN

WDOT PROJECT #1490-11-01

PREPARED FOR WISCONSIN DEPARTMENT OF TRANSPORTATION MADISON, WISCONSIN

> PREPARED BY RMT, INC. MADISON, WISCONSIN

> > **JUNE 1991**



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1. INTRODUCTION

1.1 Background

The Wisconsin Department of Transportation (WDOT) is planning to conduct highway improvements to United States Highway (USH) 141 from Crivitz to Wausaukee, in 1993. As a part of this improvement project (WDOT Project *#* 1490-11-01), the WDOT will be conducting work along the USH 141 right-of-way, located in Middle Inlet, Wisconsin, approximately 1,000 feet south of County Trunk Highway (CTH) X.

The USH 141 right-of-way borders the Kenneth Jacomet property (RR 4, Box 382, Crivitz, WI 54114). Figure 1-1 shows the approximate property location. Because the WDOT had information that indicated this property had formerly been the site of a gasoline station, the WDOT retained RMT, Inc. (RMT), to perform a Phase I and II Environmental Assessment of the WDOT right-of-way property adjacent to the Jacomet property.

1.2 Purpose and Scope

The objective of this Phase I and II Environmental Assessment was to provide the WDOT with information with respect to potential environmental liabilities associated with the WDOT right-of-way adjacent to the Jacomet property. The purpose of this report is to present the findings and conclusions of the environmental assessment.

The scope of services performed for this project included the following:

- Reviewed available site information supplied by the WDOT.
- Interviewed available persons who are knowledgeable about past and present activities at the site.
- Reviewed the WDOT site and the Jacomet site for evidence of spills or leaks, such as discolored soils, barren ground, vegetative stress, unusual odors, disturbed soils, surface debris; and for indications of the presence of underground storage tanks (USTs). Site photographs were taken to document the condition of the property at the time the investigation was conducted.
- Reviewed contiguous land uses to visually identify possible sources of surface migration of hazardous constituents onto the WDOT property.

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- Reviewed the National Priorities List (NPL) and available Comprehensive Environmental Response, Compensation, and Liability Index System (CERCLIS) listings for known or suspected contaminated sites within 1 mile of the subject property.
- Reviewed the Wisconsin Department of Industry, Labor and Human Relations (WDILHR) UST data base, the State of Wisconsin Spills Report, and the WDNR Leaking Underground Storage Tank (LUST) case tracking system listing for information on USTs on the Jacomet property.
- Contacted state and local agencies to obtain the following information (if available):
 - Correspondence regarding environmental issues at the Jacomet property (enforcement actions, compliance inspections, hazardous material/waste activities, spills, etc.).
 - List of active and inactive municipal waste landfills to determine if the Jacomet property was previously a known municipal waste disposal site.
 - Aerial photographs of the property.
- Subcontracted with Environmental and Foundation Drilling, Inc. (EFD), of Madison, Wisconsin, to drill and sample two soil borings.
- Coordinated the location and clearing of underground utilities and conduits.
- Prepared a site-specific Health and Safety plan.
- Observed and documented the drilling of two soil borings in the WDOT rightof-way adjacent to the Jacomet property, conducted field-screening of soil samples with an Hnu photoionization detector (PID), and collected soil samples for laboratory analysis.
- Described soil samples according to the Unified Soil Classification System, and prepared soil boring log forms.
- Laboratory-analyzed soil samples that had the highest PID reading for total petroleum hydrocarbons (TPH) as gasoline and TPH as diesel.
- Laboratory-analyzed one ground water sample for BTEX compounds.
- Evaluated the field and laboratory testing results.

2. FINDINGS AND CONCLUSIONS

- 1. The Jacomet property is located approximately 1,000 feet south of CTH "X" in Middle Inlet, Wisconsin, and currently consists of an approximately 75-foot by 150-foot lot which contains a building (former gasoline station and general store) with an attached home. The building is currently used as a private residence.
- The Jacomet property was operated as a general store and gasoline station from the 1930s until 1978. Aerial photographs of the site in 1958 and 1968 confirm the presence of the building.
- 3. Contiguous property uses are as follows:
 - To the immediate north is a vacant lot, further north is the Driftwood Tavern, owned by the Churka's.
 - To the south is the Garrett Eye Center, and further south are private residences.
 - To the west is a small residential area.
 - To the east are vacant wooded lots and private residences.
- At the time of the site visit, there was no visual evidence of spills or leaks on the Jacomet property.
- 5. At the time of the site visit, three USTs were identified. These include the following:
 - One 300-gallon premium leaded gasoline UST, to the east of the existing building.
 - One 500-gallon regular leaded gasoline UST, to the east of the existing building.
 - One 300-gallon fuel oil UST, to the north of the existing building.
- According to Mr. Ken Jacomet, the present owner, the site has not been used as a gasoline station since 1978. According to Mr. Jacomet, the USTs were filled with a slurry mix in 1984.
- 7. According to the Wisconsin Department of Industry, Labor and Human Relations (WDILHR) data base, there are no USTs registered for the Jacomet property.
- 8. A review of the WDNR spills data base indicated that no reported spills have occurred at the Jacomet or adjacent WDOT right-of-way properties, or in the immediate vicinity.
- 9. The Wisconsin Department of Natural Resources (WDNR) Area Office in Marinette, Wisconsin, does not have a file regarding environmental problems at the Jacomet property. Furthermore, the WDNR is not aware of any environmental problems in the vicinity of the Jacomet property.

- 10. The property is not an NPL, CERCLIS, EERP, LUST, or abandoned landfill site.
- 11. Based on available information, the closest known waste disposal site to the WDOT property is the Town of Middle Inlet Landfill, which is approximately 1.5 miles from the Jacomet property.
- 12. Two soil borings were drilled in the WDOT right-of-way. Borings were drilled to a depth of 18 feet, and ground water was encountered at approximately 15 feet below the ground surface.
- 13. Field-screening of soil samples while drilling two soil borings (B-1 and B-2) in the WDOT right-of-way bordering the Jacomet property revealed detected concentrations of volatile organic compounds (VOCs). Results of the field-screening were as follows:
 - Field-screening results from B-1 ranged from 0 to 230 parts per million by volume (ppmv).
 - Field-screening results from B-2 ranged from 0 to 180 ppmv.
- 14. Two soil samples from each of the two borings were analyzed for total petroleum hydrocarbons (TPH) as gasoline and diesel. Results of the analyses are as follows:
 - The TPH as diesel samples analyzed did not result in detected concentrations.
 - The TPH as gasoline samples analyzed from boring B-2 did not result in detected concentrations.
 - One of the two TPH as gasoline samples analyzed from boring B-1 had detected concentrations of TPH as gasoline of 7.4 mg/kg. Guidance from the WDNR specifies the remediation of TPH-contaminated soils associated with UST for concentrations above 10 mg/kg.
- 15. A ground water sample was collected and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX). The laboratory analyses revealed detected concentrations of 3,100 μ g/L (ppb), 19,000 μ g/L, 4,200 μ g/L, 22,000 μ g/L for benzene, toluene, ethylbenzene, and xylenes, respectively.
- 16. Based upon field observations and field-screening results, there is evidence that limited soil contamination may exist at or near the depth of ground water in soils in the WDOT right-of-way adjacent to the Jacomet property.
- 17. **Based** upon field observations and the results of laboratory analysis of a ground water sample, there is evidence of significant ground water contamination in the WDOT right-of-way adjacent to the Jacomet property.
- 18. A Phase I and II environmental site assessment was conducted concurrently by RMT under a separate Scope of Services at the Driftwood Tavern owned by Andrew Churka (located approximately 300 feet north of the Jacomet property). No contamination was identified in the samples analyzed along the WDOT right-of-way adjacent to the Driftwood Tavern.

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3. RECOMMENDATIONS

The results of the soil sampling and analysis do not indicate evidence of soil contamination exceeding WDNR enforcement standards. Based on field observations and the results of laboratory analyses, there is evidence of petroleum contamination in the ground water on the WDOT right-of-way at the Jacomet property. The exact orientation of the USTs is unknown; therefore, they may be located on or partially on the WDOT right-of-way. The USTs are approximately 40 feet from the centerline of USH 141. The WDOT has indicated that USH 141 improvement activities will not require excavation to a depth greater than 3 feet. Since evidence of contamination was observed at a depth greater than 6 feet, contamination would not be expected to be encountered in the WDOT right-of-way unless construction activities exceed those depths currently anticipated.

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4. **DISCUSSION**

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4.1 Phase | Activities

4.1.1 General Approach

In conducting the Phase I activities of the environmental assessment, RMT representatives reviewed USH 141 plan sets and other information supplied by the WDOT; visited the site; interviewed persons knowledgeable about the site; reviewed Wisconsin Department of Natural Resources (WDNR) files; and reviewed local, county, state, and federal information.

4.1.2 Site Visit

On March 28, 1991, RMT representatives visited the site and reviewed the property. The Jacomet property is located on the west side of USH 141, approximately 1,000 feet south of CTH "X" in Middle Inlet, Wisconsin.

The Jacomet property consists of approximately a 75-foot by 150-foot parcel. The property contains a building (the former gasoline station and general store) with an attached residence. Figure 4-1 contains a map of the Jacomet site, and Appendix A contains site photographs.

Contiguous property uses are residential and agricultural. To the north and east are vacant wooded lots. Approximately 300 feet north along USH 141 is the Driftwood Tavern, owned by Andrew Churka. To the south is the Garrett Eye Center, and further south are private residences. To the west is a small residential area. Overall land uses for the NESS ROAFIE surrounding area are agricultural and residential.

Concurrent with this investigation, but under a separate Scope of Services, RMT conducted a Phase I and II environmental site assessment at the Churka property (located approximately 300 feet north of the Jacomet property). No petroleum contamination was identified in the soil or ground water samples analyzed.

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Wadoms(sp?) boughtby CampbellBruce When purchased i'n 1964, KJ owned all <u>except</u> tanks. Tank ownership transferred from Campbell Bruce to Crivitz Dilz 1965. May be record of KJ not owning tanks. ≈ 15yrs fuel truck accident at Co. Rd X & 141. Up to several thousand gallons spilled, not in winder time. No produe 50% - 80% spilled, none recovered.



During the site visit, the RMT representatives viewed the subject property for indications of the presence of an UST, such as vent or fill pipes. The concrete base of the former pump island remains on the east side of the building. According to Mr. Ken Jacomet, the present owner, three USTs are located on the property. One 300-gallon premium leaded gasoline UST and one 500-gallon regular unleaded gasoline UST are located on the east side of the property, next to the building. The exact orientation of the USTs is unknown; therefore, they may be located on, or partially on, the WDOT right-of-way. One 300-gallon fuel oil UST is located on the northern side of the property, next to the building, approximately 8 feet from the WDOT right-of-way. The WDOT right-of-way ends approximately 4 feet from the existing building.

The property was also viewed for evidence of spills, leaks, and waste disposal. At the time of the site visit, there was no readily apparent evidence of spills or leaks on the Jacomet property or on the WDOT right-of-way.

4.1.3 Site History

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In an effort to investigate previous land uses of the Jacomet property, aerial photographs were reviewed by RMT from the years 1958, 1966, and 1985. A review of these photographs indicates that the site has not changed significantly in appearance since 1958. During an interview, Mr. Ken Jacomet, the current property owner, stated that he and his wife purchased the property in 1964. They operated a general store and sold gasoline from 1964 until 1978. In 1978, they sold the house and business under a land contract; and, due to default, they regained ownership of the property. The Jacomets have not operated the general store and gasoline station since 1978. In 1984, Mr. Jacomet stated that he had all three USTs filled with a slurry mix. Documentation of the in-place abandonment was not available.

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According to Mr. Jacomet, Mr. Henry Thode owned the property from approximately 1922 until 1934. In 1934, Mr. E.W. Dropp purchased the property from Mr. Thode. Mr. Dropp built the general store and sold gasoline from approximately 1934 until 1964. Mr. Jacomet stated that Mr. Dropp removed 4 feet from the front of his original building in 1941 due to a WDOT project which widened USH 141.

4.1.4 Regulatory Review

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On March 27, 1991, RMT representatives visited the WDNR Marinette Area Office in Marinette, Wisconsin, to review files for the Middle Inlet area. While at the Marinette office, RMT representatives spoke with Mr. Matt Hostak regarding known environmental problems in the subject area. At that time, Mr. Hostak indicated that he was unaware of any WDNR files or environmental problems at the Jacomet property.

A review of the Wisconsin Department of Industry, Labor and Human Relations (WDILHR) data base indicated that there are no USTs registered with WDILHR for the Jacomet property.

A review of available information indicated that neither the WDOT right-of-way property nor the Jacomet property is an NPL, CERCLIS, EERP, LUST, or abandoned landfill site.

A review of the WDNR spills data base indicated that no reported spills have occurred at the Jacomet or adjacent WDOT right-of-way properties, or in the immediate vicinity.

Based on a review of available information, the closest waste disposal site to the WDOT property is the Middle Inlet Landfill located in Middle Inlet, Wisconsin, which is approximately 1.5 miles from the Jacomet property.

4.2 Phase II Activities

4.2.1 Boring and Sampling Program

To investigate if there was evidence of petroleum contamination associated with the former gasoline station on the Jacomet property which could potentially be impacting the WDOT right-of-way, two soil borings (B-1 and B-2) were drilled in the WDOT right-of-way bordering the Jacomet property. Figure 4-1 and photographs provided in Appendix A show the approximate locations of the soil borings. During the drilling of these borings, soil samples were collected at 2.5-foot intervals and field-screened with an Hnu photoionization detector for the presence of volatile organic compounds (VOCs).

A description of the soil sampling procedure is contained in Appendix B. Appendix C contains the boring logs for borings B-1 and B-2, Appendix D contains boring abandonment forms, and Appendix E contains the soil sample chain-of-custody forms.

4.2.2 Geology

The soils underlying the Jacomet property from a depth of 0 to 18 feet generally consist of a dark yellowish-brown sand and silt. The soil was visually classified as poorly graded silty sand (SP-SM). Surface material from a depth of 0 to 1 foot at borings B-1 and B-2 is fill material consisting of concrete and asphalt used for construction of the highway. A fuel-like odor was detected in soil samples from a depth of 16 to 18 feet at borings B-1 and B-2.

Ground water was encountered in both borings at a depth of approximately 15.5 feet. Soil boring logs are included in Appendix C.

4.2.3 Sampling and Analysis Program

Soil and ground water samples were selected for laboratory analysis based upon fieldscreening results and visual observation. The two soil samples from each boring which had the highest field-screening result were laboratory-analyzed for TPH using USEPA Method 8015 (modified), and for TPH as diesel using USEPA Method 8100 (modified) according to the California Method. If no VOCs were detected during field-screening, the soil sample collected at the ground water interface was selected for analysis.

One ground water sample, collected from the boring which had the highest soil sample field-screening results, was laboratory-analyzed for BTEX according to USEPA Method 602/8020. Ground water samples were collected from within the hollow-stemmed augers using a clean bailer. $\frac{N^{oT}}{AM} = AS = AA = SAMPLE FROM$

4.2.4 Sampling and Analysis Results

The results of the laboratory analyses and field-screening are summarized in Table 4-1. The laboratory data sheets are contained in Appendix F.

The results of the field-screening revealed detected concentrations of VOCs. Samples collected from boring B-1 had readings below background concentrations with the exception of sample 7, from 16 to 18 feet, which had a detected concentration of 230 ppmv. Samples collected from boring B-2 had detected concentrations beginning at sample 3, from 6 to 8 feet, at 140 ppmv, through sample 7, from 16 to 18 feet, at 150 ppmv. A fuel-like odor was detected in the soil samples from a depth of 16 to 18 feet at borings B-1 and B-2. It should be noted that field-screening provides a qualitative evaluation of samples to be selected for laboratory analysis, and is not intended to provide a quantitative measure of the level of contamination.

Only one of the soil samples analyzed resulted in detected concentrations of TPH as gasoline; the concentration result was 7.4 mg/kg, which is less than the WDNR guidelines for remedial action. None of the samples analyzed for TPH as diesel resulted in detected concentrations.

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	TABLE 4-1											
	SUMM	IARY OF FIELD	-SCREENING A		ORY ANALYSES RE	ESULTS						
			£	Solls								
	Samı (Boring #,	ple ID Sample #)	Sample Depth (ft)	Hnu Reading (ppmv) ¹	TPH as Gasoline (mg/kg)	TPH as Diesel (mg/kg)						
	B-1,	S-1	1-3	ND]					
	B-1,	S-2	3.5-5.5	ND]					
	B-1,	S-3	6-8	ND								
10	B-1,	S-4	8.5-10.5	ND								
15.6	B-1,	S-5	11-13	ND								
-	B-1,	S-6	13.5-15.5	< 1.0	< 5.9	< 10						
	B-1,	S-7	16-18	230	7.4	< 10						
	B-2,	S-1	1-3	ND								
	B-2,	S-2	3.5-5.5	ND								
	B-2,	S-3	6-8	140	< 5.3	< 10						
0	B-2,	S-4	8.5-10.5	40								
561	B-2,	S-5	11-13	180	< 5.3	< 10						
15,0	B-2,	S-6	13.5-15.5	70								
	B-2,	S-7	16-18	150								
			Grou	nd Water			C. H.					
		Osmala			μg/L		6.54					
	Sample I.D.	Depth (ft)	Benzene	Toluene	Ethylbenzene	Xylenes	unte					
	B-2	15.3	1.300	19,000	4,200	22.000	8,2					

Results of the headspace analysis conducted during field-screening. Units are parts per million by volume, based on isobutylene calibration. 1

The ground water sample collected and analyzed revealed detected concentrations of 3,100 μ g/L (ppb), 19,000 μ g/L, 4,200 μ g/L, 22,000 μ g/L for benzene, toluene, ethylbenzene, and xylenes, respectively. It should be noted that, because the ground water sample was $\gamma \epsilon \leq \ell$ obtained from inside the auger after drilling, the sample may not be representative of ground water at the site. The results of the analyses provide a qualitative indication of the presence of potential contamination, and are not intended to provide a quantitative measure of the level of contamination.

Based upon the results of the field-screening and the laboratory analyses, it appears that soils which were sampled are not contaminated with the petroleum compounds analyzed above the WDNR actions limits. However, based on the laboratory analyses of ground water, there is evidence of petroleum-contaminated ground water in the WDOT right-of-way adjacent to the Jacomet property.

The WDOT has indicated that USH 141 improvement activities will not require excavation to a depth greater than 3 feet. Since evidence of contamination was observed at a depth greater than 6 feet, contamination would not be expected to be encountered in the WDOT right-of-way unless construction activities exceed those depths currently anticipated.

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5. DISCUSSION OF POTENTIAL FUTURE INVESTIGATION

The results of the Phase I and Phase II Environmental Assessment indicate that petroleum contamination is present in the soil and ground water on the WDOT right-of-way. Recommended follow-up investigative work is described below.

Phase III Investigation

NEARBY PRIVATE WELLS

3.

The vertical and areal extent of soil and ground water contamination within the WDOT right-of-way is not known. The contamination is suspected to have resulted from spills and/or releases associated with USTs present at the Jacomet property. If additional characterization is undertaken, either by the WDOT or by other parties, the following program is recommended:

- Installation of 3 to 8 soil borings in the area of contamination, and analysis of two soil samples from each boring for gasoline range organics, diesel range organics, petroleum VOCs (EPA Method 8020), and compositional concentrations of lead. The purpose of these borings would be to characterize the areal extent of contamination.
- 2. Installation of approximately four ground water monitoring wells to establish local ground water flow conditions and help determine the extent of impacts to ground water. One round of ground water samples would be analyzed for gasoline range organics, diesel range organics, petroleum VOCs (EPA Method 8020 and 8021), and compositional concentrations of lead.
 - It is recommended that private water supply wells located in areas of potential ground water contamination be identified, sampled, and analyzed for VOCs concurrent with the recommended investigation above. In light of potential access restrictions for private entities, and uncertainties regarding the location of the source of the contamination, the WDNR should consider conducting the recommended private well identification, sampling, and analysis.

Costs for the field, subcontract, analytical data evaluation, and report writing work

associated with this Phase III program (excluding the recommended private well survey) would

range from \$30,000 to \$35,000 (costs may be higher if bedrock drilling is necessary).

A Phase III investigation conducted solely in the WDOT right-of-way would likely limit

the adequacy of information necessary to determine local ground water flow direction and the

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extent of soil contamination. Therefore, should the WDOT choose to undertake the additional investigation, it may wish to consider obtaining the consent of area property owners for the installation of monitoring wells and soil borings on their property.

Owners and operators of underground petroleum products storage systems may be eligible for coverage under the Wisconsin Department of Industry, Labor and Human Relations (WDILHR) Petroleum Environmental Cleanup Fund Act (PECFA) for reimbursement of costs incurred in investigating, assessing, remediating, removing, and/or monitoring contamination caused by the discharge of a petroleum product. Owners of eligible leaking underground storage tanks may be provided coverage up to \$1,000,000, with a \$5,000 deductible. Information regarding PECFA eligibility and funding can be obtained from the WDILHR by calling (608) 267-4545 or (608) 267-7538.

5-2

6. REFERENCES

- USEPA. 1989. Comprehensive Environmental Response, Compensation, and Liability Index System (CERCLIS). November 14, 1989.
- USEPA. 1990. National Priorities List. <u>Federal Register</u>. Volume 55, No. 169. August 30, 1990.
- WDILHR. 1990. Underground Storage Tank (UST) Data Base. May 1990.
- WDNR. 1990. Registry of Waste Disposal Sites. February 1990.
- WDNR. 1990. Spills Data Base. March 6, 1990.
- WDNR. 1991. Emergency Environmental Response Project List (EERP). June 1991.
- WDNR. 1991. Leaking Underground Storage Tank (LUST) List. January 3, 1991.

APPENDIX A

SITE PHOTOGRAPHS



PHOTO 2 - LOCATION OF BORING B-1



PHOTO 1 - VIEW OF FORMER GAS STATION LOOKING SOUTH FROM USH 141



APPENDIX B

SOIL SAMPLING AND FIELD-SCREENING PROCEDURES

APPENDIX B

SOIL SAMPLING AND FIELD-SCREENING PROCEDURES

The soil borings were drilled and sampled by Environmental and Foundation Drilling, Inc. (EFD), of Madison, Wisconsin. Soil borings were advanced using 4 1/4-inch inside diameter (I.D.) hollow-stemmed augers. Soil was sampled at 2.5-foot intervals using ASTM Method 1584-84 for the split-barrel (2-inch I.D. split-spoons) sampling of soils. Split-spoons were washed with a phosphate-free soap and tap water solution, and subsequently rinsed with tap water prior to sampling. Augers were cleaned between boring locations using a pressurized spray of hot water. All soil borings were abandoned by backfilling with coarse granular bentonite.

All soil samples were removed from the split-spoon by the RMT field representative and immediately placed into appropriate containers for field-screening and laboratory analysis. Soil to be analyzed for TPH as gasoline was placed into two 60-mL glass jars. Soil to be analyzed for TPH as diesel was placed into a 500-mL amber glass jar.

Each soil sample collected was classified according to the Unified Soil Classification System (USCS), and sample descriptions were recorded on boring logs.

A soil sample from each split-spoon was screened for volatile organic compounds using an Hnu photoionization detector, with a 10.2 eV probe. The soil sample to be screened was transferred immediately from the split-spoon to a glass jar, to prevent the volatilization of organics. A piece of aluminum foil was quickly placed over the jar opening, and the lid was screwed onto the jar. The sample jar was thoroughly shaken; and, approximately 15 minutes after the sample was collected, the cap of the jar was removed and the probe of the Hnu was inserted through the foil and into the jar. The Hnu probe was inserted into the container for a minimum of 15 seconds, to allow for gas in the jar to enter the Hnu probe. The maximum reading from the analog meter was recorded.

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Sample containers for laboratory analysis were labeled with the boring and sample number, the date, the RMT project number, and the sample collector's name. All samples were placed on ice in a cooler. Chain-of-custody forms were completed and transported with the samples to RMT Laboratories in Madison, Wisconsin.

BORING LOGS

APPENDIX C



		7	LO	G OF TE	ST E	BORING	BORING NO.	B-2				
				F-203 (1	01-87)	SHEET NO	1_OF1				
		PROJE	CT N	AME	WDC	T Jacomet	PROJECT NO	. 10101.01				
		LOCAT	TION	M	ddle 1	Inlet, WI	_ INSTALLATIO	ON 04/24/91				
		CONTR	RACT	OR	E & 1	F Drilling SURFACE ELEV.						
		DRILL	ING N	METHOD]	HSA 2 1/4"	BOREHOLE I	DIA. <u>6 1/4 IN.</u>				
	SA	MPLING	g no	ΓES		VI	SUAL CLASSIFIC	CATION				
INTE	RVAL	RECO	VERY	MOISTURE	_	AND	GENERAL OBSE	RVATIONS				
NO.	TYPE	N	IN	DEPT	H		• •					
						ASPHALI, (FIL	<i>L</i>).					
1	SS	5	23			Eina SAND littl	ILL).	tich brown 10VD 4/4				
						poorly graded, lo	oose, moist, (SP).	1511 Drown 101K 4/4,				
	and the second se					poorty graded, i						
					-							
2	SS	18	20		10							
					一门	Fine SAND and	SIL I, little clay, $10VR 4/4$	trace fine gravel,				
	line. Its			5.	_11	graded, loose, so	ft. nonplastic. mo	ist. (SM).				
						g,,,	- ,,,					
3	SS	20	21			Little to some si	It below 6 ft.					
					-111							
4	SS	18	22		60							
					一副							
				10-								
5	SS	32	24		-11							
6	SS	43	24									
		15	2.		一拍							
				- 15-		Total Illes adapt h	-1 12 5 St					
				≚ 15		Fuel-like odor b	elow 13.5 ft.					
7	SS	41	24		一出							
	55	8-10										
					111							
						End of Boring a	t 18 Ft.					
	I H				-	0						
		GENER	AL N	OTES			WATER LEVEL (OBSERVATIONS				
DAT	E STAF	RTED	2	4 APR 91		WHILE DRILLI	NG ¥	15.3 Ft.				
DAT	E COM	PLETED		24 APR 91		AT COMPLETI	on ¥					
RIG		(CME-7	15		AFTER DRILL	ING					
CRE	W CHIE	EF	B .	Powers		CAVE-IN: DATE/TIME	DEP	тн				
LOG	GED <u>R</u> .	Vaughn	CHE	CKED		WATER: DATE/TIME	DEP	TH				

APPENDIX D

BORING ABANDONMENT FORMS

State of Wisconsin Department of Natural Resources

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All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION	(2) FACILITY NAME
Well/Drillhole/Borchole County	Original Well Owner (If Known)
Location B-1 Marinette	
Πε	Present Well Owner
1/4 of 1/4 of Sec. ; T. N; R.	Jacomet Property
(If applicable)	Street or Route
Gov't Lot Grid Number	1000 ft. S of CTH "X" & USH 141
Grid Location	City, State, Zip Code
f. [] N. [] S.,f. [] E. [] W.	Middle Inlet, WI 54148
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No.
Middle Inlet	
Street Address of Weil	Reason For Abandonment
1000 Ft. S of CTH "X" & USH 141	Stop potential ground water contamination
City, Village	Date of Abandonment
Middle Inlet	04-24-91
WELL/DRILLHOLE/BOREHOLE INFORMATION	· · · · · · · · · · · · · · · · · · ·
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) 15.6
(Dame) 04-24-91	Pump & Piping Removed? 🔲 Yes 🔲 No 🖾 Not Applicable
	Liner(s) Removed? Yes No No Not Applicable
Monitoring Well Construction Report Available?	Screen Removed? Yes No V Not Applicable
Water Well Yes No	Casing Left in Place? Yes No
Drillhole	If No, Explain This is a soil boring.
X Borehole	· · · · · · · · · · · · · · · · · · ·
	Was Casing Cut Off Below Surface? Yes 😠 No
Construction Type:	Did Sealing Material Rise to Surface? 😿 Yes 🗍 No
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes 🔀 No
Other (Specify)	If Yes, Was Hole Retopped? Yes 🔀 No
	(5) Required Method of Placing Sealing Material
Formation Type:	
☑ Unconsolidated Formation	Conductor Pipe-Gravity Conductor Pipe-Pumped
	Uniter Uther (Explain)
Total Well Depth (fr.) Casing Diameter (ins.)	(0) Sealing Materials For monitoring wells and
(From groundsurface)	Near Cement Grout monitoring well boreholes only
A D D I (A) NT/A	Sand-Cement (Concrete) Grout
Casing Depth (fL) N/A	
	Clay-Sand Slurry
Was Well Annular Space Grouted?	Bentonite-Sand Slurry
If Yes, To What Depth? N/A Feet	Chipped Bentonite
(7) Sacling Material Hand	No. Yards, Sacka Sachart Mix Patio or Mud Weight
Sealing Waterial Used	rrom (FL) 10 (FL) Sacks Sealant MIX Rand of Mud Weight
· · · · · · · · · · · · · · · · · · ·	Surface
Granular Bentonite	18.0 6-50# bass Dry
•	
(8) Comments: This is a soil boring, not a well.	
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
Environmental /& Foundation Drilling, Inc	Date Received/Inspected District/County
Signature of Person Doing Work Date Signed	
104-29-91	Kevnewer/Inspector
Street of Route Telephone Number	
2 <u>17 Raemisch Road</u> (608) 849-9896	Follow-up Necessary
City, State, Zip Code	
Waunakee, WI 53597	
DNR/CC	DUNTY

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• All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

T	GENERAL INFORMATION		(2) FACILITY NAME							
<u>\-/</u>	Well/Drillhale/Bombale	County		al Well Owne	r (If Known)					
	Location B_2	Marinetta	0							
	<u> </u>	Harriecce		Wall Ourses						
	1/1 .5 1/1 of Son		riese.			-				
		; 1N, K	Jacon	let Prope	rty					
	(If applicable)		Street	or Route						
	Gov't Lot	Grid Number	· 1000	ft. S of	CTH "X" &	USH 141				
	Grid Location		City,	State, Zip Coc	le					
	ft. [] N. [] S.,	ft. [] E. [] W	. Middl	e Inlet,	<u>WI 54148</u>					
	Civil Town Name		Facility	y Well No. and	i/or Name (If Ap	plicable) WI Unique Well No.				
	Middle Inlet									
	Street Address of Well		Reason	n For Abandon	iment					
	1000 Ft. S of CTH "X"	_& USH 141	Stop	potentia	1 ground w	ater contamination				
-	City, Village		Date o	f Abandonmer	nt					
1	Middle Inlet		04-24	-91						
WE	LL/DRILLHOLE/BOREHOLI	E INFORMATION				······································				
(3)	Original Well/Drillhole/Borehole (Construction Completed On	(4) Depth	to Water (Fee	0 15.3					
	- $0.4 - 2.4 - 0.1$	-	Pump	& Pining Rem	oved?	Yes No KI Not Applicable				
	(Dac) = 04-24-91		- Liner(s	Removed?						
1	Monitoring Well	Construction Report Available?	Screen	Removed?	H,					
			Casing	Left in Place	, 님(
			If No 1	Explain mus						
		1		h.m. <u>TUJ</u>	<u>15 15 a 50</u>	LI_DOTING				
l	Borehole		Was C	acing Cut Off	Dalaut Surface?					
	a		Was C	asing Cut Off.	Delow Surface:					
1	Construction Type:		Did Se	aung Material	Rise to Surface?					
	X Drilled Driven	(Sandpoint)	Did Ma	iterial Settle A	Iter 24 Hours?					
	Other (Specify)	······································	. 111e	s, was Hole R	etopped?	Yes X No				
			(5) Require	d Method of F	lacing Sealing N	laterial				
	Formation Type:			ductor Pipe-G		Conductor Pipe-Pumped				
	Lunconsolidated Formation	Bedrock		m Bailer)ther (Evolain)				
	Tetel Wall Denth (St.)	Casing Diameter (ins)	(6) Sealing	Materials		Eor monitoring wells and				
	(Emm mundauface)			t Coment Crow		monitoring well homholes only				
	(From groundsurace)		Sand Comment (Concrete) Conut							
	$r \to r \to$									
	Casing Depth (IL) N/A					Bentonite Pellets				
_				y-Sand Slurry		X Granular Bentonite				
`	Was Well Annular Space Grouted?		니 니 Ben	tonite-Sand SI	urry	Bentonite - Cement Grout				
	If Yes, To What Depth?	N/AFeet		pped Bentonite	•	·				
0		· · · · ·			No. Yards,					
	Sealing Mater	nal Used	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight				
		· · · · ·								
Gı	anular Bentonite		Surface	18 0	6-50# ba					
			+	10.0		<u>smy</u>				
	<u></u>		+		<u> </u>					
			1	1	1					
	· · · · · · · · · · · · · · · · · · ·		+	+						
	·			1						
81 0	omments:	······	.1	1	<u> </u>					
(4)	This is a s	soil boring, not a well	A			·····				
<u> </u>	Internet Destate of Firm Destate C	ling Works	6/10)			TINTY HOP ONEV				
ء (ج) _	vame of Person of Pum Doing Sea	mig work	(10)	rUK	DINK UK LI	Distant L COC ONEI				
En	virpnmental & Foundat	ion Drilling, Inc.	Date	. Kecelved/inst	ected	District/County				
	Signature of Rerson Doing Work	Date Signed								
4	My D. Kreh		Kev	ewer/Inspector	C					
- S	reet or Houte	I elephone Number								
2 <u>1</u>	7 Raemisch Road	608/849-9896	Folk	w-up Necessa	ury					
7	City, State, Zip Code									
Wa	unakee, WI 53597									

APPENDIX E

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CHAIN-OF-CUSTODY FORMS

		Madiso 744 He Phone	n, WI 537 artland Tr (608) 831	17 ail -4444	Washington, D.C.		Santa M	Aonica	a, CA			Grand Nashvi	Ledge, Ml lle, TN	Greenville, St Schaumburg,) IL	,	
LABUHAIC	UNIES		FAX (6)	98) 831-73	530		•			Samp	le Typ	0: (GV	ww.	SW Soil) Other)	Nº	021	237
(Use Black In	k Only)	С	HAIN C	DF CI	JSTOD	Y RECORD	I					$\overline{}$	N ZN	NITT	Filt	· ered (Ye	es /No)
Bottles Prep	ared by:		Date	/Time		Office Code:		1				Ē	ZA/	A///	Preser	ved (Co	de)
E.F.	TAAN)	4.	19-91	/	(State)					wit/	Y/	<u>Y/1</u>		Refrigerat	ed (Yes	/No)
Project No. 10/01.0 10/03.0 10/03.0	oject No. (U/O/. O/ U/O3. O/ U/O3. O/ U/O3. O/ U/O0 U/O3. O/ U/O0 U/O0 U/O0 U/O0 U/O0 U/O0 U/O0 U/O0 U/O0 U/O0 U/O0 U/O1		100T-	OT- CRIVITE			Number ontainers		oria	ine Inver		24194 	o/		C	ode:A - B - C -	None HNO3 H2SO4
RMT	Yr. 9/						otal Df C		6	1.0	~?)	/ /	/ /			D-	NaOH
Lab NO.	Date	Time Sample Station ID		F 0	10/6/6			¥[[[/ /		Comments: E = <u>HC/</u>		HC1			
	424		B-Z	±			3		I	Z				Hnu= ND (10101.01) <	x1L
	4-24	-	B-2	₫ Z			3	•	1	Z				HAU= ND (0101.01) :	5016
	4.24	-	B-2	3			3	-	1	2	7			Hnu= 140 (10101.01		501C
	4-24	-	B-2	±4			3	-	1	Z	:			HAN= 40 ((10101.0)	5012
	4.24	-	B-2	# 5			3	-	1	2				Hnu= 180 (10101.01)	5012
	4.24		8-2	# 6			3	-	1	Z				HAUT TO	(10101.0	1)	SOIL
	4-24	1	B-2	7			3	-	1	2				1JAU=15	(10101.0)	5012
	4-25	1	B-I	41			3		1	Z				HAN= 380	(10103.0) ·	SOIL
	425	1	B-) '	12			3		1	Ζ				HAU = 200	(10103.0	21)	5012
	4-25	-	B-1	#3			3	-	L	Z				HAN- 500	(10103.	01)	SOIL
	4-25	1	B-1	•4			3		l	Ζ				Hny = 400	(10103.0	21)	SAL
	4-25	-	B-1 "	5			_3_	-	1	2				HAN- 320	(101030	<i>i</i>)	SOIL
	4.25	-	B-2 '	#)			_ 3	-	1	2				11au = 720	(10103	00	SOIL
SAMPLER Relinquisher	7)	4-2:	Date/ 5-9/	Time 7:45 /	Received by (Sig. ② Shipper Name & #)			Dat	e/Tim)				I SAMPL	.ES
Relinquished by (Sig.) Date/Time Received by (Sig.) ③ ④ Shipper Name & 1) ¢	Date / Time				By MAL (For L	ab Use Only Beceiv) t nH						
Relinquished by (Sig.) Date/Time Received by (Sig.) (5) (5) (6) (6) Shipper Name & (7) (7) (7)					hal	m	4	Dat 1/25/0/	•/Time	5		Client P.O. Number - Subsequent Analysis:			(Check)		
		at chu t	<u>" U He</u>	cva, int a) 5081 #	at c	na by	\underline{O}	Ke	eva. In	tact t	y ()				

ABOBATOBIES FA		dison, WI 537 Heartland Tr ine (608) 831	17 ail -4444	Washington, D.C.	7Z	anta M	Monica	, CA			Grar Nasi	nd Ledge, Mi hville, TN	Schaumburg,	, IL		
	RIES		FAX	((608) 831-7	530					Samp	le Typ	•: (G	Ŋ. wy	W. SW. Soil, Dtheri	Nº	021244
(Use Black In)	c Only)	CI	HAIN	OF CU	JSTOD	Y RECORD		<u> </u>				\rightarrow	N/	ANT T	Filt	pred (Yes/No)
Bottles Prepa	ired by:	a.		Date/Time 4-19-51	1	Office Code: (State) いり					, st	Æ F	ZA Z	\$///	Preser	ved (Code) ed (Yes/No)
Project No. 10102.01	Project No. 10102.01 WDOT CRIVITZ			Number ontainers		mat	No Inver		A SP	./.		C	ode: A - None B - HNO3 C - HasO4			
RMT Lab NO.	Yr. <u>91</u> Date	Time		Sample	Station ID)	Total Of Co		Į,		·/				Comments:	
	4-24	10:10A	B-7	2			3	3	1-	-				· (10	102.01)	WATER
	424	ſ	B:- 2	2 21			3	-	1	Z				HAM=ND LIC	(10.201)	SOIL
	4-2A	ļ	B-7	. *Z			3	-	Ì	2				How = ND (10	(10, 2010	SOIL
	4.24	1	B-2	*3			3	-	1	Z				HAU: NO (10	0102.01)	5012
	4-24	1	B-2	e 4			3		1	2				How: DD (10	(10,201)	5016
	424 - B-2 *5				· ·	3	-	1	Z				HAN-ND C	10102.01)	soil	
	424	-	62	±6			3	-	1	2				Hnu= ND (1	0102.01)	SOIL
-			BH	#			ろ	_	1	2		<u>.</u>		How - NO C	(10101.01)	Soil
			8-1 1	*Z	·····	· · · · · · · · · · · · · · · · · · ·	3	_	1	Ζ				HM=ND ((10101.01)	Sole
			BI	*3			3		1	2				HA4 = NO (10181,01) sc.L
			B-1 *	4			3	-	1	2				HAVE NA ((10101.01)	Sril
			B-1 =	5	<u></u>		3	1=	++-	2				HALLE NO (10101.01	50.6
			8-1 -1	7		· · · · · · · · · · · · · · · · · · ·	- 3-	Ę	1	2				HAUT 230	0101	SOK
SAMPLER Relinquisher 1 R.C.	SAMPLER Date/Time Received by (Sig.) 1 R.C. 2:30P 2:30P 2 LANT Shipper Name & 1			ice (2 •.	4	Dai 24-54-5	te/Tiπ		d	HAZARDS AS	SOCIATED WIT	H SAMPLES			
Relinquished by (Sig.) Date/Time Received by (S 3 LANTER Co 9-25-5/ 4 Shinner Name		Received by (Sig. ④ Shipper Name &)			Dat	 ●/Tīṃ	8		(Fc	or Lab Use Only	()				
Relinguished by (Sig.) Date/Time Received by (Sig.) (5) (6) Shipper Name &			•			Da	te/Tim	10	-	Receipt Temp Client P.O. Number Subsequent Analys	Recei	pt pH (Check)				
Seal #		at chd t	γ O	Recvd, int	act by) Seal #	ať	chd t	۲) R	cvd, I	ntact	ьу (Date Resubmitted		

APPENDIX F

LABORATORY DATA SHEETS



CLIENT: WDOT - JACOMET PROJECT #: 10101.01 WORK ORDER #: 910426-1010101

1

REPORT DATE: 05/08/91 SAMPLE COLLECTOR: RHV

TOTAL PETROLEUM HYDROCARBONS

SAMPLE	DATE	STATION ID	GASOLINE	UNITS
65640	04/24/91	B-1 #6	<5.4	mg/kg dry wt.
65641	04/24/91	B-1 #7	7.4	mg/kg dry wt.

Mark Mieritz, Organic Supervisor



CLIENT: WDOT - JACOMET PROJECT #: 10101.01 WORK ORDER #: 910426-1010101

REPORT DATE: 05/02/91 SAMPLE COLLECTOR: RHV

TOTAL PETROLEUM HYDROCARBONS

SAMPLE	DATE	STATION ID	DIESEL	UNITS
=====				=====
65640	04/24/91	B-1 #6	<10.0	mg/kg dry wt
65641	04/24/91	B-1 #7	<10.0	mg/kg dry wt

6 A. 114

Mark Mieritz, Organic Supervisor



CLIENT: WDOT - CRIVITZ (JACOMET) PROJECT #: 10101.01 REPORT DATE: 05/0 WORK ORDER #: 910430-1010101 SAMPLE COLLECTOR: RHV REPORT DATE: 05/09/91

TOTAL PETROLEUM HYDROCARBONS

SAMPLE	DATE	STATION ID	GASOLINE	UNITS
	====			*****
65716 65718	04/24/91 04/24/91	B-2 #3 B-2 #5	<5.3 <5.3	mg/kg dry wt. mg/kg drv wt.

Mark Mieritz, Organic Supervisor



CLIENT: WDOT - JACOMET SAMPLE #: 65642 PROJECT #: 10101.01 WORK ORDER #: 910426-1010101

REPORT DATE: 05/15/91 COLLECTION DATE: 04/24/91 STATION ID: B-1 SAMPLE COLLECTOR: RHV

VOLATILE ORGANIC ANALYSIS REPORT

PARAMETER	RESULT	UNITS
	=====	****
BENZENE	3100	ug/1
TOLUENE	19000	ug/1
ETHYL BENZENE	4200	ug/1
XYLENES	22000	ug/1

Mark Mieritz, Organic Supervisor



CLIENT: WDOT - CRIVITZ (JACOMET) PROJECT #: 10101.01 WORK ORDER #: 910430-1010101 SAMPLE COLLECTOR: RHV

*

REPORT DATE: 05/14/91

TOTAL PETROLEUM HYDROCARBONS

SAMPLE	DATE	STATION ID	DIESEL	UNITS	
	====				
65716 65718	04/24/91 04/24/91	B-2 #3 B-2 #5	<10.0 <10.0	mg/kg mg/kg	dry wt. dry wt.

Mon X. Mark Mieritz, Organic Supervisor