TO: Eric Sandin, GEF II, Geo/8

Groundwater Use Registry Buckslip

Site Name Bruce School District - Bus Garage

Address 304 East Railroad Avenue

Bruce, WI

BRRTS # 03-55-000453 PDF

GPS Location: _____ latitude _____ longitude

Date of Closure Decision 1/09/99

Required

- [x] **Closure Letter**
- [ ] **Deeds for all properties with ES exceedance in Groundwater** (Recorded GWUR)
- [ ] **GPS location (latitude and longitude)**
- [x] **Location map**
- [x] **Detailed Site Map**
- [x] **Groundwater Flow Direction Diagram including location of monitoring wells and all drinking water wells**
- [ ] **Latest Groundwater Plume Map with Groundwater Flow Direction**
- [x] **Latest Table of Analytical Results for Groundwater**

If Available, include the following:

- [ ] **Metes and Bounds Legal Description**
- [x] **Tax Parcel Number** # 106-58-000, 106-59-000, 106-60-000
- [ ] **Geologic cross sections showing soil and groundwater contaminant source extent and location, isoconcentrations for all groundwater contaminants that exceed NR 140 enforcement standards, water table and piezometric elevations, and the extent, location and elevation of geologic units, bedrock, and confining unites**

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William H. Smith, Regional Director

Northern Region Headquarters
107 Sutliff Ave.
Rhinelander, Wisconsin 54501-0818
Telephone 715-365-8900
FAX 715-365-8932
TDD 715-365-8957

January 13, 1999

Ms. Deborah Brown
Bruce School District
PO Box 308
Bruce, WI 54819

Subject: Bruce School Bus Garage, 304 E Railroad Ave, Bruce, WI,
BRRTS # 03-55-000453

Dear Ms. Brown:

The Department of Natural Resources provided a notice to you that the degree and extent of diesel fuel and gasoline contamination at the above-named site was required to be investigated and remediated. We have since been informed that the required investigation and remediation has been accomplished.

On January 4, 1999, the above-named site was reviewed by the Northern Region Closeout Committee for a determination as to whether or not the case qualified for close out under ch. NR 726, Wis. Adm. Code.

Based on the investigative and remedial documentation provided to the Department, it appears that the diesel fuel and gasoline contamination at the above-named site has been remediated in compliance with the requirements of chs. NR 700 to 724, Wis. Adm. Code. Therefore, the Department considers the case "closed," having determined that no further action is necessary at the site at this time. However, due to the presence of residual contamination remaining in the groundwater, a condition of the closeout of the case is that the owner sign and record a Groundwater Use Restriction for the property.

Enclosed is an example of a Groundwater Use Restriction. Please draft a specific Groundwater Use Restriction for this site and submit the draft to me. Department of Natural Resources attorneys will review the draft and return it to you with revisions. After you have made the revisions, you should sign and record the restriction with the Rusk County Register of Deeds. To document that this condition has been complied with, the property owner must submit to the Department a copy of the recorded Groundwater Use Restriction, with the recording information stamped on it, within 15 days after the Register of Deeds returns the Groundwater Use Restriction to the property owner. The Groundwater Use Restriction may be amended in the future with the approval of DNR is conditions

change at the site and the residual contamination is remediated.

Please note that this case closure is contingent upon proper documentation of proper abandonment of the monitoring wells on site. If monitoring wells remain at this site, please provide the documentation that this action has been completed, or have your consultant do so. The documentation can be sent to my attention at the above address.

If you have any additional information which was not formerly provided to the Department, and which you feel would significantly impact this closure decision, you may submit that information for our re-evaluation of case closure."

If you have any questions, please call me at 715-365-8990.

Sincerely,
NORTHERN REGION

Janet Kazda

Janet Kazda
Case Closeout Committee

cc: File
Steve Karklins, RR/3
Dale Ziege, RR/3
Sally Kefer, RR/3
Chuck Fitzgerald, Rhinelander
Parke Ruesch, Park Falls

John Bhend
Midwest Engineering Services, Inc
1692 State Hwy 53, Suite 2
Chippewa Falls, WI 54729

262227

Rec'd 4/5/99 jlr
03-55-000453

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Document Number | GROUNDWATER USE RESTRICTION

[Legal Description of the Property as it Appears on the Most Recent Deed]
SE ¼, NW ¼, Sec 5; T34N, R7 W
Village of Bruce
Lots 6, 7, and 8, Block 2

STATE OF WISCONSIN
COUNTY OF RUSK

I hereby certify that this document is a full, true and correct copy of the original on file and of record in the Register of Deeds office and has been compared by me.

Attest: Linda Ann Effertz
Register of Deeds
Rusk County, Wisconsin

REGISTER'S OFFICE } ss.
RUSK COUNTY

Received for Record the 30th
day of March AD 1999
at 2:30 o'clock P.M. and
recorded in Vol. 354 of
Records on page 376-378

Linda A. Effertz
Linda Ann Effertz
Register of Deeds

INDEXED

Recording Area

Name and Return Address
School District of Bruce
104 W. Washington Ave.
Bruce, WI 54819

Parcel ID Number
106-58-0000
106-59-0000
106-60-0000

Declaration of Restrictions

STATE OF WISCONSIN)
ss
COUNTY OF RUSK)

WHEREAS, The School District of Bruce is the owner of the above described property.

WHEREAS, one or more diesel fuel and unleaded gasoline discharges have occurred at this property. Benzene, 1, 2-Dibromoethane, and total lead contaminated groundwater above ch. NR 140, Wis. Adm. Code enforcement standards exists on this property at the following location(s): Benzene – 21 ppb, surrounding RW1; 1,2-Dibromoethane – 5.8 ppb, surrounding RW1; total lead – 18 ppb, surrounding PZ1 (See Exhibit 1--site map.)

WHEREAS, it is the desire and intention of the property owner to impose on the property restrictions which will make it unnecessary to conduct additional groundwater or soil remediation activities on the property at the present time.

WHEREAS, natural attenuation has been approved by the Department of Natural Resources to remediate groundwater exceeding ch. NR 140, Wis. Adm. Code groundwater standards within the boundaries of this property.

WHEREAS, construction of wells where the water quality exceeds the drinking water standards in ch. 809, Wis. Adm. Code is restricted by ch. NR 811, Wis. Adm. Code and ch. NR 812, Wis. Adm. Code. Special well construction standards or water treatment requirements, or both, or well construction prohibitions may apply.

NOW THEREFORE, the owner hereby declares that all of the property described above is held and shall be held, conveyed or encumbered, leased, rented, used, occupied and improved subject to the following limitation and restrictions:

> Anyone who proposes to construct or reconstruct a well on this property is required to contact the Department of Natural Resources' Bureau of Drinking Water and Groundwater, or its successor agency, to determine what specific prohibitions or requirements are applicable and to obtain Department approval, prior to constructing or reconstructing a well on this property. No well may be constructed or reconstructed on this property unless applicable requirements are met.

This restriction is hereby declared to be a covenant running with the land and shall be fully binding upon all persons acquiring the above-described property whether by descent, devise, purchase or otherwise. This restriction benefits and is enforceable by, the Wisconsin Department of Natural Resources, its successors and assigns. The Department, its successors or assigns, may initiate proceedings at law or in equity against any person or persons who violate or are proposing to violate this covenant, to prevent the proposed violation or to recover damages for such violation.

Any person who is or becomes owner of the property described above may request that the Wisconsin Department of Natural Resources or its successor issue a determination that the restrictions set forth in this covenant are no longer required. Upon receipt of such a request, the Wisconsin Department of Natural Resources shall determine whether or not the restrictions contained herein can be extinguished. If the Department determines that the restrictions can be extinguished, an affidavit, with a copy of the Department's written determination, may be recorded to give notice that this groundwater use restriction is no longer binding.

IN WITNESS WHEREOF, the owner of the property has executed this Declaration of Restrictions, this ____ day of _____ 1999.

By signing this document, William McDougall, acknowledges that he is duly authorized to sign this document on behalf of The Bruce School District.

Signature: Wm McDougall

Printed Name: William McDougall

Title: School Board President

Subscribed and sworn to before me

This 30th day of March, 1999

Valerie A. Coder
Notary Public, State of Wisconsin

My commission expires Feb. 4, 2001

This document was drafted by the Wisconsin Department of Natural Resources

STATE OF WISCONSIN

262227

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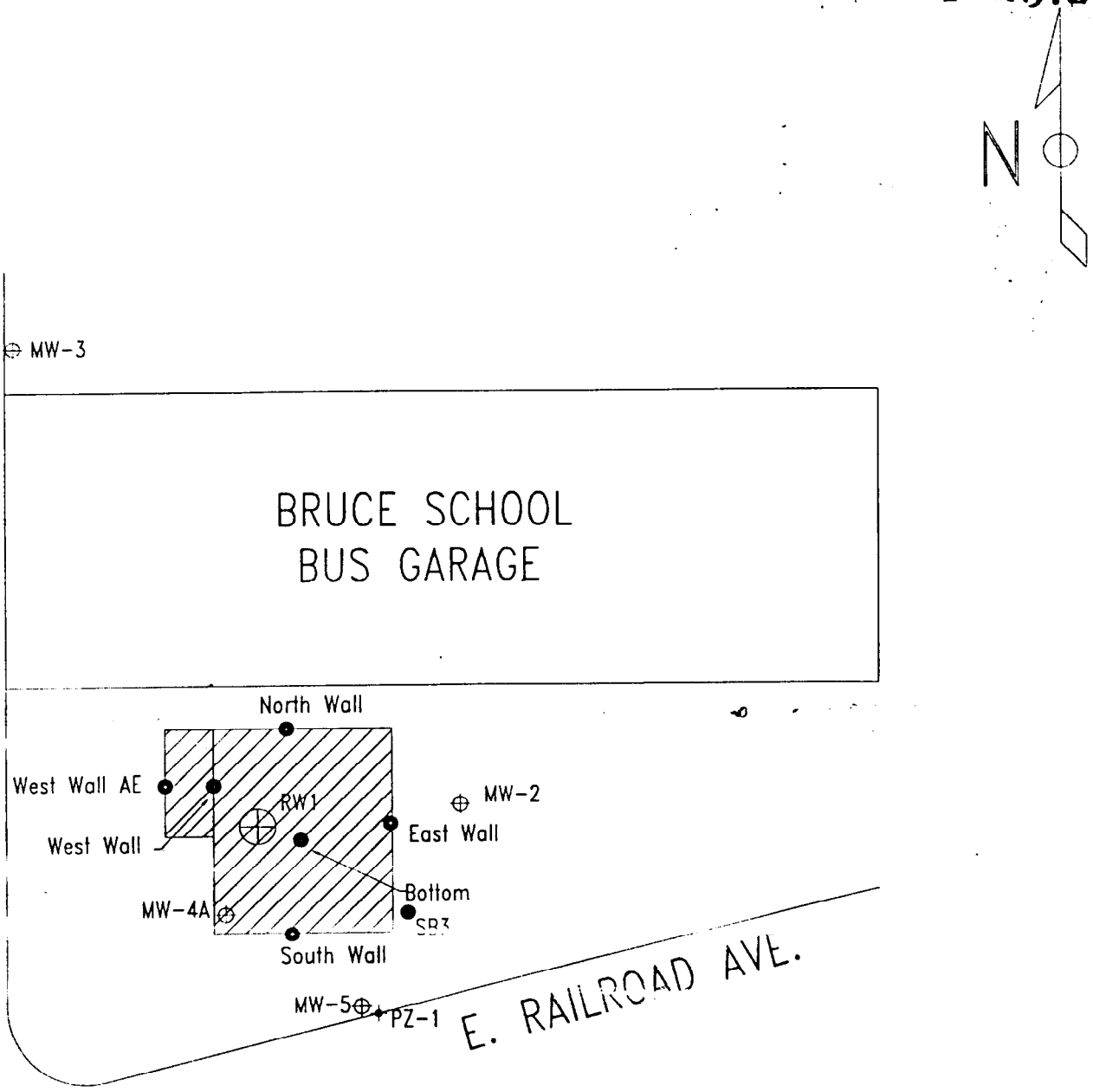


FIGURE 6

BRUCE BUS GARAGE
EXTENT OF SOIL EXCAVATION
304 N. RAILROAD AVE.
BRUCE, WISCONSIN

SCALE: 1" = 20'

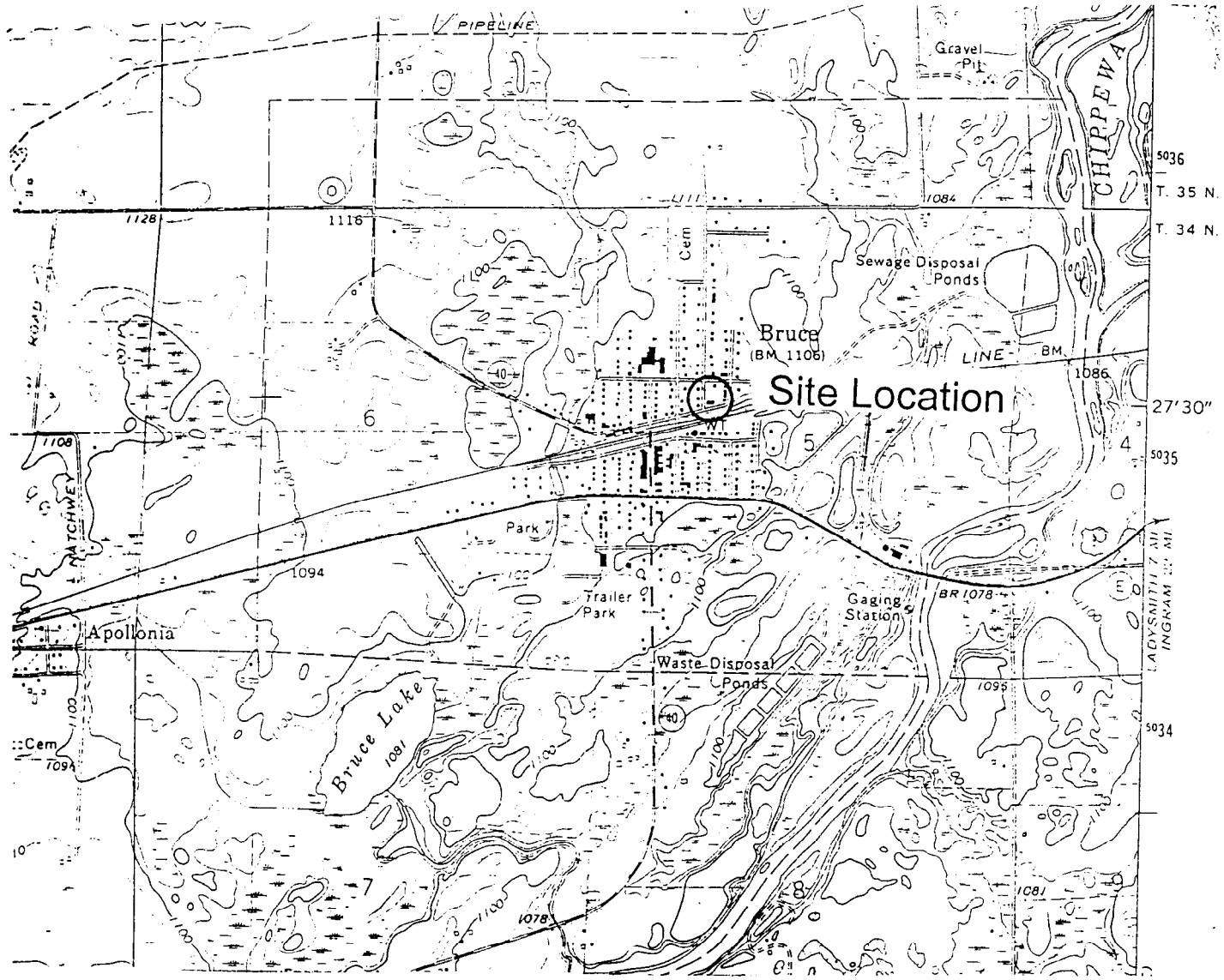
PROJECT NUMBER: 4-41002

DATE: 10/28/97

Drawn By: jtb

DES

est engineering services, inc.



BRUCE, WIS.

NE/4 WEYERHAUSER 15' QUADRANGLE

N4522.5—W9115/7.5

1972

AMS 2774 IV NE SERIES V861

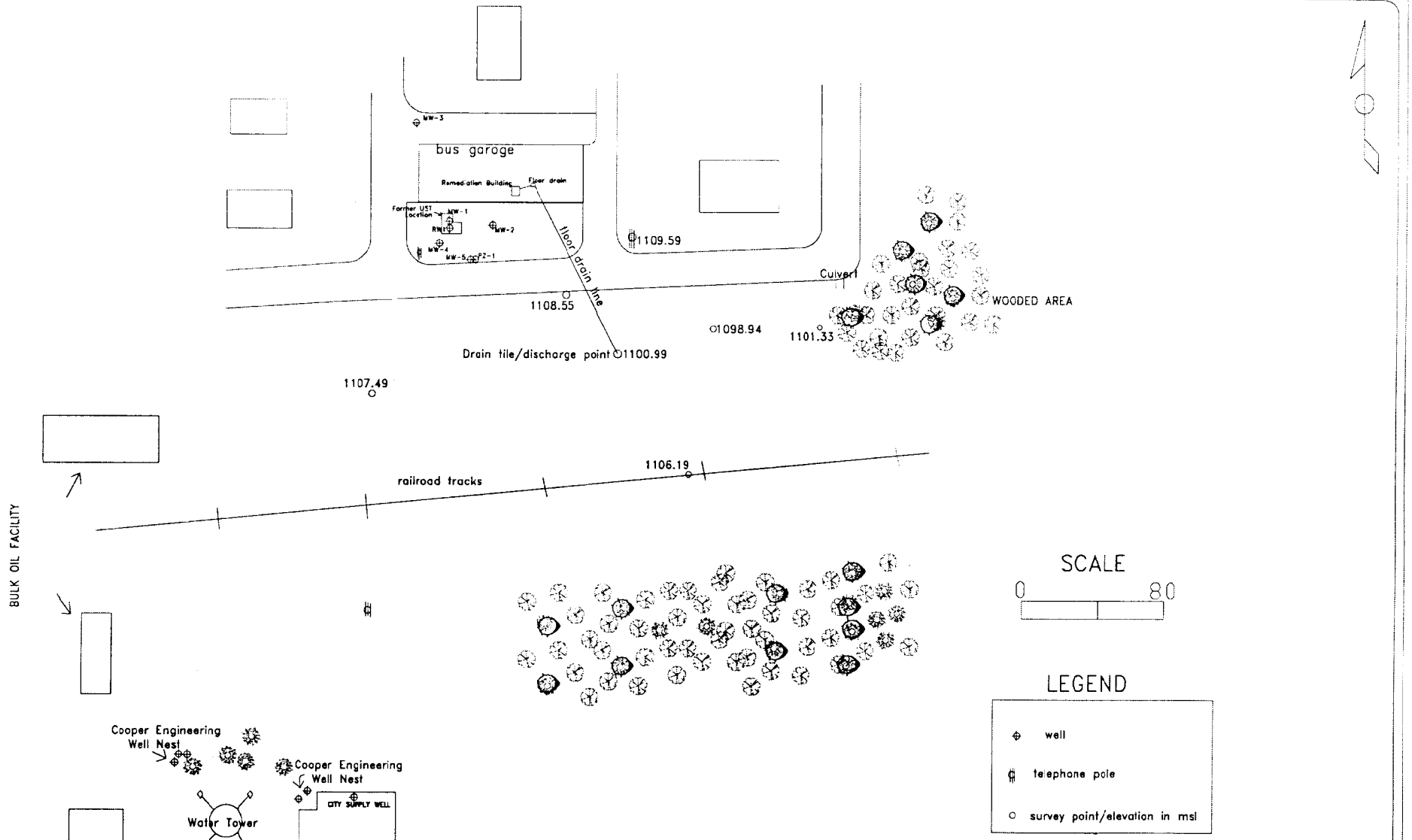
midwest engineering services, inc.

Figure 1
Site Vicinity Map
Bruce School Bus Garage
304 N. Railroad Ave.
Bruce, Wisconsin

PROJECT NUMBER: 4-41002

DATE: 6/8/98

Drawn By: jtb

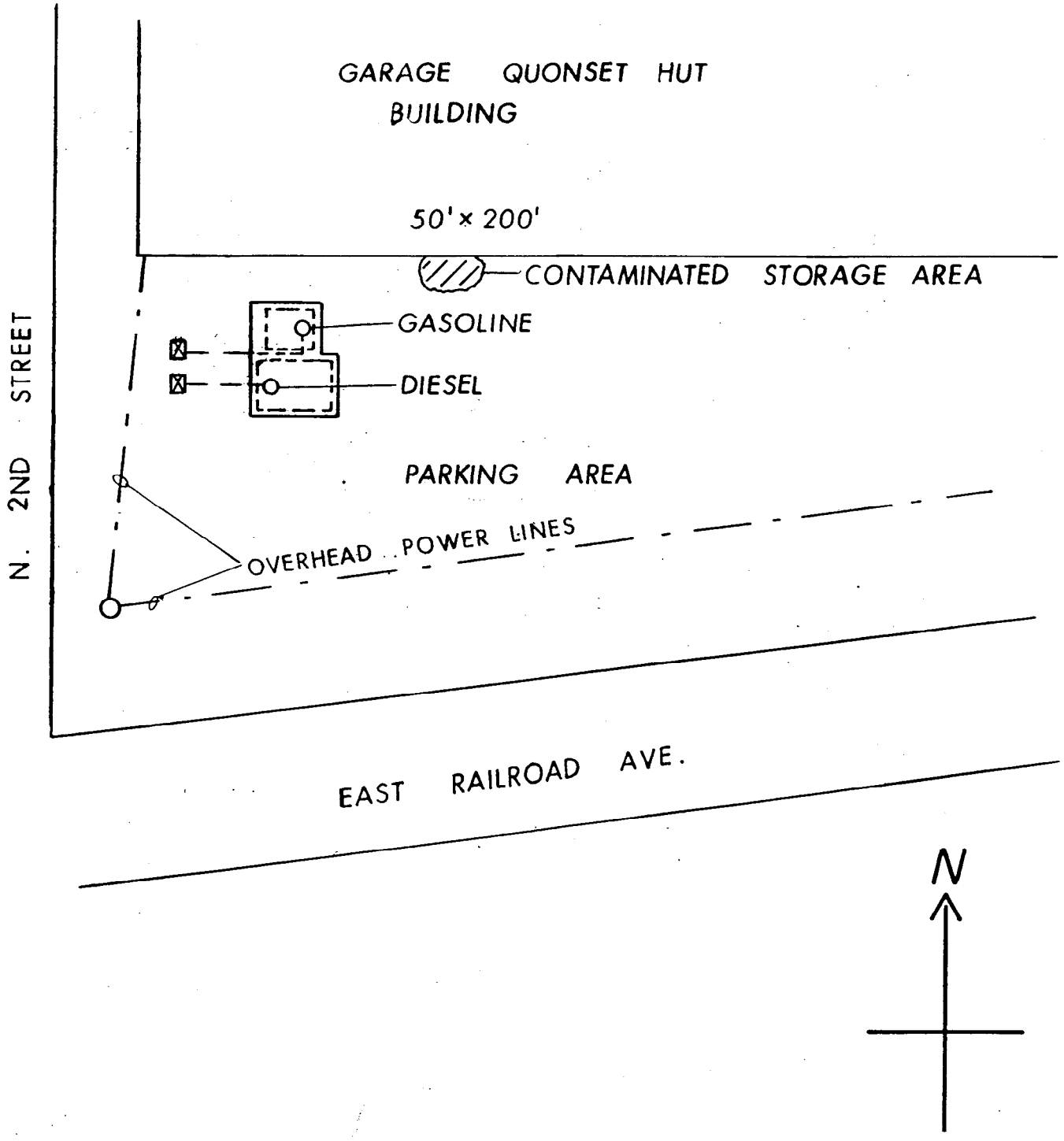


midwest engineering services, inc.

Figure 1
Site and Surrounding Properties Map
Bruce School Bus Garage
304 N. Railroad Ave.
Bruce, Wisconsin

PROJECT NUMBER:
4-41002

DATE:
11/24/98



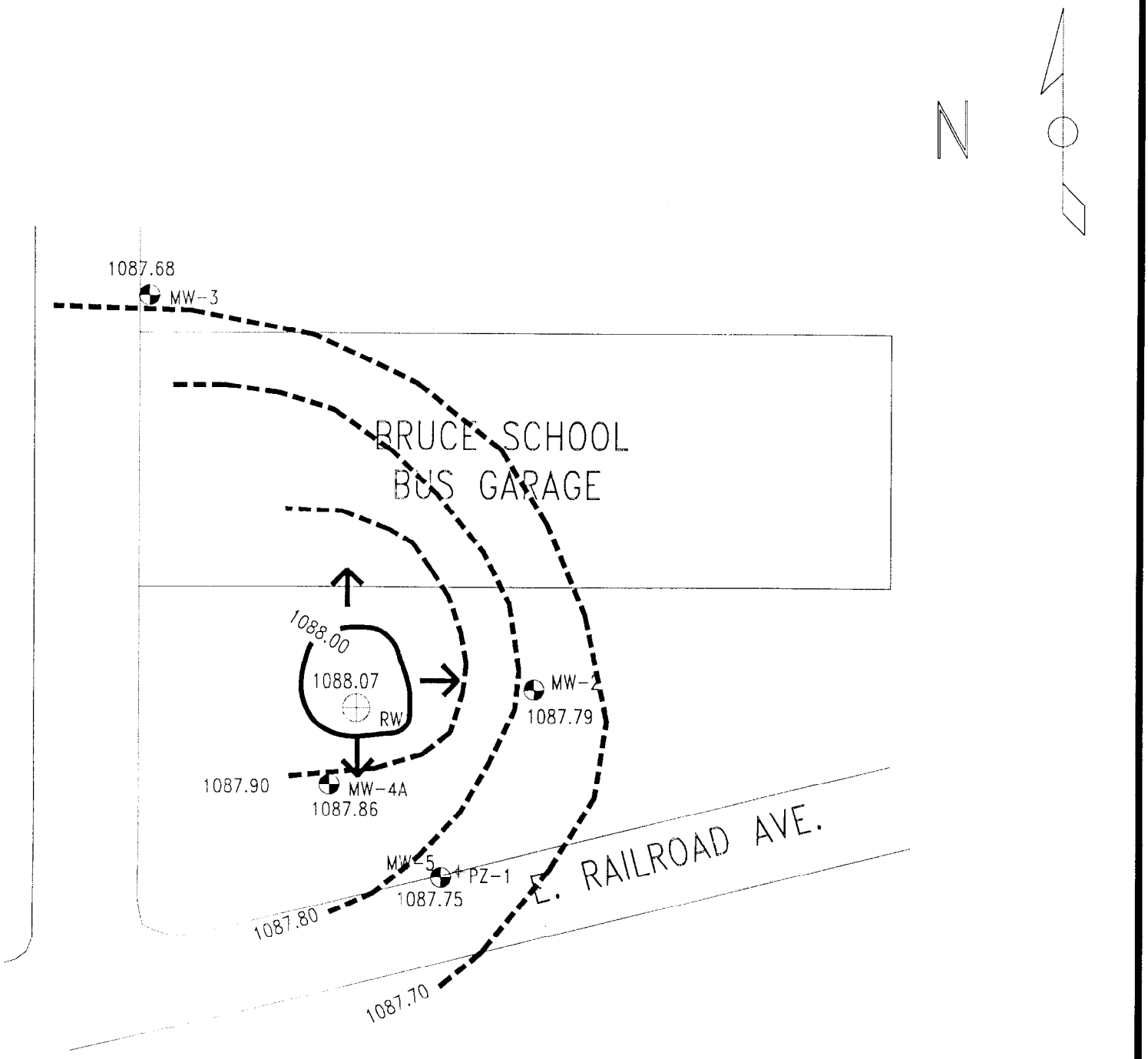
BRUCE SCHOOL BUS GARAGE

BRUCE, WISCONSIN

FIGURE # 2-2

SITE PLAN

SCALE: 1" = 20'-0"



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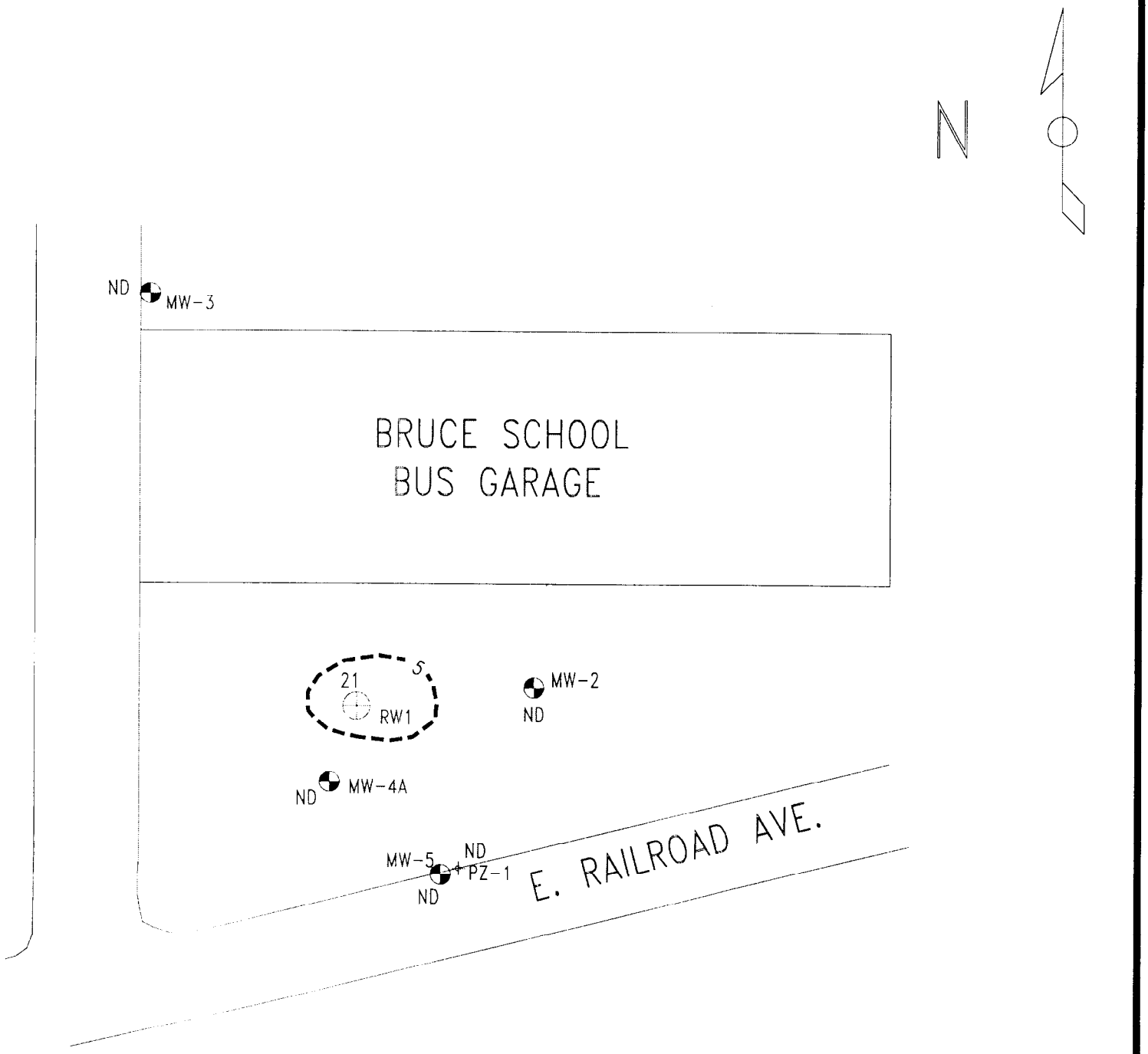
midwest engineering services, inc.

Figure 7
Groundwater Contour Map (8/24/98)
Bruce School Bus Garage
304 N. Railroad Ave.
Bruce, Wisconsin

SCALE:	1" = 20
PROJECT NUMBER:	4-41002
DATE:	11/25/98
Drawn By:	jtb



LEGEND

Benzene Concentrations Reported in µg/l (ppb)

- Groundwater Monitoring Well
- Piezometer
- Groundwater Recovery Well

SCALE

0' 10' 20'

c:\environmental\projects\4-41002\cadd\1998\cl2-f6.dwg

midwest engineering services, inc.

Figure 6
Estimated Extent of Benzene Contamination in Groundwater (8/24/98)
Bruce School Bus Garage
304 N. Railroad Ave.
Bruce, Wisconsin

SCALE:	1" = 20
PROJECT NUMBER:	4-41002
DATE:	11/25/98
Drawn By:	jtb

Table 2
Summary of Groundwater Analytical Results
Bruce School Bus Garage
Bruce, Wisconsin

Parameter	ES	PAL	Units	MW1 / MW1A											
				3/27/92	8/20/92	12/16/92	4/1/93	8/3/93	4/25/95	8/9/95	10/17/96	3/31/97	8/21/97	5/7/98	8/24/98
GRO			µg/l	36,000	28,000	70,000	NA	25,000	NA	NA	NA	NA	NA	NA	NA
DRO			µg/l	4,100	11,000	7,100	NA	5,200	NA	NA	NA	NA	NA	NA	NA
VOC Parameters															
Benzene	5	0.5	µg/l	3,000	690	1,400	95	200	NA	NA	NA	NA	NA	NA	NA
Toluene	343	68.5	µg/l	13,800	5,600	19,000	4,100	4,800	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	140	µg/l	2,780	1,700	4,000	1,700	1,100	NA	NA	NA	NA	NA	NA	NA
Total Xylenes	620	124	µg/l	6,230	9,500	16,100	11,000	7,500	NA	NA	NA	NA	NA	NA	NA
Methyl-Tert-Butyl-Ether	60	12	µg/l	X	X	X	X	X	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene			µg/l	X	2,400	3,900	X	1,500	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene			µg/l	X	940	1,200	X	510	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene			µg/l	X	570	520	X	270	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene			µg/l	X	85	X	X	X	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	0.005	µg/l	94	93	53	X	47	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	5	0.5	µg/l	37	X	X	X	2	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene			µg/l	X	92	X	X	17	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene			µg/l	140	180	210	X	70	NA	NA	NA	NA	NA	NA	NA
Naphthalene	40	8	µg/l	X	440	680	X	260	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene			µg/l	X	390	520	X	110	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5	0.5	µg/l	X	X	X	X	X	NA	NA	NA	NA	NA	NA	NA
Trichloroethane	5	0.5	µg/l	X	X	X	X	X	NA	NA	NA	NA	NA	NA	NA
Metals															
Lead (total)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (dissolved)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Iron			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics															
Sulfate			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters															
Dissolved Oxygen			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ORP			mV	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity			µs/cm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Temperature			°C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
ES = NR140.10 Enforcement Standard
PAL = NR140.10 Preventive Action Limit
Monitoring well MW1A was destroyed in August 1994

X = Not Detected
NA = Not Analyzed

Exceeds ES
Exceed PAL

Table 2 (Continued)

Summary of Groundwater Analytical Results
Bruce School Bus Garage
Bruce, Wisconsin

Parameter	ES	PAL	Units	MW2											
				4/4/92	8/20/92	12/16/92	4/1/93	8/3/93	4/25/95	8/9/95	10/17/96	3/31/97	8/21/97	5/7/98	8/24/98
GRO			µg/l	X	50	X	X	X	NA	NA	NA	NA	NA	NA	NA
DRO			µg/l	X	37	X	X	X	NA	NA	NA	NA	NA	NA	NA
VOC Parameters															
Benzene	5	0.5	µg/l	X	X	X	X	X	X	X	X	X	X	X	X
Toluene	343	68.6	µg/l	6.8	X	X	X	X	X	X	X	X	X	X	X
Ethylbenzene	700	140	µg/l	X	X	X	X	X	X	X	X	X	X	X	X
Total Xylenes	620	124	µg/l	X	X	X	X	X	X	X	X	X	X	X	X
Methyl-Tert-Butyl-Ether	60	12	µg/l	X	X	X	X	X	X	X	X	X	0.14	X	X
1,2,4-Trimethylbenzene			µg/l	X	X	X	X	X	X	X	X	X	X	X	X
1,3,5-Trimethylbenzene			µg/l	X	X	X	X	X	X	X	X	X	0.13	X	X
n-Butylbenzene			µg/l	NA	X	X	X	NA	X	NA	NA	NA	0.11	X	X
sec-Butylbenzene			µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	0.005	µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	5	0.5	µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene			µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA
Isopropylbenzene			µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA
Naphthalene	40	8	µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA
n-Propylbenzene			µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5	0.5	µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA
Trichloroethane	5	0.5	µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA
Metals															
Lead (total)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	8.58	1.95	3	2
Lead (dissolved)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	4.32	X	X	NA
Dissolved Iron			mg/l	NA	NA	NA	NA	NA	NA	NA	0.1	0.14	0.09	NA	NA
Total Iron			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	120
Inorganics															
Sulfate			mg/l	NA	NA	NA	NA	NA	NA	NA	28	38.25	21.36	X	X
Nitrate			mg/l	NA	NA	NA	NA	NA	NA	NA	2.7	X	3.8	3.7	3
Field Parameters															
Dissolved Oxygen			mg/l	NA	NA	NA	NA	NA	NA	NA	3.5	7.5	5.95	5.5	5.8
ORP			mV	NA	NA	NA	NA	NA	NA	NA	-443	-453	204	NA	215
Conductivity			µs/cm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,070	2,780
pH				NA	NA	NA	NA	NA	NA	NA	6.9	7.8	7.6	7.4	6.7
Temperature			°C	NA	NA	NA	NA	NA	NA	NA	NA	18.3	10.7	8.5	12.5

Notes:

ES = NR140.10 Enforcement Standard
PAL = NR140.10 Preventive Action Limit

X = Not Detected
NA = Not Analyzed

Exceeds ES
Exceed PAL

Table 2 (Continued)
Summary of Groundwater Analytical Results
Bruce School Bus Garage
Bruce, Wisconsin

Parameter	ES	PAL	Units	MW3										
				12/16/92	4/1/93	8/3/93	12/28/94	4/25/95	8/9/95	10/16/96	3/31/97	8/21/97	5/7/98	8/24/98
GRO			µg/l	X	X	X	NA	NA	NA	NA	NA	NA	NA	NA
DRO			µg/l	X	X	520	NA	NA	NA	NA	NA	NA	NA	NA
VOC Parameters														
Benzene	5	0.5	µg/l	X	X	X	X	X	X	X	X	X	X	X
Toluene	343	68.6	µg/l	X	X	X	X	X	X	X	X	X	X	X
Ethylbenzene	700	140	µg/l	X	X	X	X	X	X	X	X	X	X	X
Total Xylenes	620	124	µg/l	X	X	X	X	X	X	X	X	0.08	X	X
Methyl-Tert-Butyl-Ether	60	12	µg/l	X	1.3	2.6	X	1.3	X	X	X	X	X	X
1,2,4-Trimethylbenzene			µg/l	X	X	X	X	X	X	X	X	X	X	X
1,3,5-Trimethylbenzene			µg/l	X	X	X	X	X	X	X	X	X	X	X
n-Butylbenzene			µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene			µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	0.005	µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	5	0.5	µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene			µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene			µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Naphthalene	40	8	µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene			µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5	0.5	µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Trichloroethane	5	0.5	µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Metals														
Lead (total)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	X	2	3
Lead (dissolved)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	X	X	NA
Dissolved Iron			mg/l	NA	NA	NA	NA	NA	NA	0.1	0.44	0.14	NA	NA
Total Iron			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	760
Inorganics														
Sulfate			mg/l	NA	NA	NA	NA	NA	NA	18	30.42	24.01	18	X
Nitrate			mg/l	NA	NA	NA	NA	NA	NA	5.4	X	5.4	3.8	4.5
Field Parameters														
Dissolved Oxygen			mg/l	NA	NA	NA	NA	NA	NA	5.5	7.8	7.7	8.3	6.2
ORP			mV	NA	NA	NA	NA	NA	NA	-448	-464	172	NA	205
Conductivity			µs/cm	NA	NA	NA	NA	NA	NA	NA	NA	NA	210	595
pH				NA	NA	NA	NA	NA	NA	6.8	7.6	7.3	7.5	7.3
Temperature			°C	NA	NA	NA	NA	NA	NA	NA	5.6	10.4	8.2	12.8

Notes:
ES = NR140.10 Enforcement Standard
PAL = NR140.10 Preventive Action Limit
X = Not Detected
NA = Not Analyzed
Exceeds ES
Exceed PAL

Table 2 (Continued)
Summary of Groundwater Analytical Results
Bruce School Bus Garage
Bruce, Wisconsin

Parameter	ES	PAL	Units	MW4 / MW4A												
				4/4/92	8/20/92	12/16/92	4/1/93	8/3/93	12/28/94	4/25/95	8/9/95	10/17/96	3/31/97	8/21/97	5/7/98	8/24/98
GRO			µg/l	82	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA	NA
DRO			µg/l	X	71	170	NA	41	NA	NA	NA	NA	NA	NA	NA	NA
VOC Parameters																
Benzene	5	0.5	µg/l	X	X	X	X	X	X	X	X	X	X	X	X	X
Toluene	343	68.6	µg/l	5.8	X	1.3	X	X	X	X	X	X	X	X	X	X
Ethylbenzene	700	140	µg/l	X	X	X	X	X	X	X	X	X	X	X	X	X
Total Xylenes	620	124	µg/l	X	X	X	X	X	X	X	X	X	X	X	X	X
Methyl-Tert-Butyl-Ether	60	12	µg/l	9.7	X	5.5	X	1	X	X	X	X	X	X	X	X
1,2,4-Trimethylbenzene			µg/l	X	X	X	X	X	X	X	X	X	X	X	X	X
1,3,5-Trimethylbenzene			µg/l	X	X	X	X	X	X	X	X	X	X	X	X	X
n-Butylbenzene			µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene			µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	0.005	µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	5	0.5	µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene			µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene			µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Naphthalene	40	8	µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene			µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5	0.5	µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Trichloroethane	5	0.5	µg/l	NA	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Metals																
Lead (total)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.14	4.47	2	7
Lead (dissolved)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.11	X	1	NA
Dissolved Iron			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	X	0.1	0.51	NA	NA
Total Iron			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,800
Inorganics																
Sulfate			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	44	56.89	19.35	21	X
Nitrate			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	7.9	20.24	15.4	1.5	1.1
Field Parameters																
Dissolved Oxygen			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	2.8	4	5.6	3	6
ORP			mV	NA	NA	NA	NA	NA	NA	NA	NA	-453	-459	152	NA	216
Conductivity			µs/cm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	300	695
pH				NA	NA	NA	NA	NA	NA	NA	NA	6.6	7.2	7.3	7.2	7.0
Temperature			°C	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.2	10.7	8.3	13.3

Notes:
ES = NR140.10 Enforcement Standard
PAL = NR140.10 Preventive Action Limit
X = Not Detected
NA = Not Analyzed
Exceeds ES
Exceed PAL

Table 2 (Continued)
Summary of Groundwater Analytical Results
Bruce School Bus Garage
Bruce, Wisconsin

Parameter	ES	PAL	Units	MW5										
				12/16/92	4/1/93	8/3/93	12/28/94	4/25/95	8/9/95	10/17/96	3/31/97	8/21/97	5/7/98	8/24/98
GRO			µg/l	X	X	X	NA	NA	NA	NA	NA	NA	NA	NA
DRO			µg/l	X	X	X	NA	NA	NA	NA	NA	NA	NA	NA
VOC Parameters														
Benzene	5	0.5	µg/l	X	X	X	X	X	X	NA	NA	X	X	X
Toluene	343	68.6	µg/l	5	X	X	X	X	X	NA	NA	X	X	X
Ethylbenzene	700	140	µg/l	X	X	X	X	X	X	NA	NA	X	X	X
Total Xylenes	620	124	µg/l	X	X	X	X	X	X	NA	NA	X	X	X
Methyl-Tert-Butyl-Ether	60	12	µg/l	X	X	X	X	X	X	NA	NA	X	X	X
1,2,4-Trimethylbenzene			µg/l	X	X	X	X	X	X	NA	NA	X	X	X
1,3,5-Trimethylbenzene			µg/l	X	X	X	X	X	X	NA	NA	X	X	X
n-Butylbenzene			µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene			µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	0.005	µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	5	0.5	µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene			µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene			µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Naphthalene	40	8	µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene			µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5	0.5	µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Trichloroethane	5	0.5	µg/l	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Metals														
Lead (total)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	X	1	NA
Lead (dissolved)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	3.34	2	NA
Dissolved Iron			mg/l	NA	NA	NA	NA	NA	NA	0.2	NA	0.08	NA	NA
Total Iron			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics														
Sulfate			mg/l	NA	NA	NA	NA	NA	NA	37	NA	36.83	21	NA
Nitrate			mg/l	NA	NA	NA	NA	NA	NA	3.1	NA	3.2	5.4	NA
Field Parameters														
Dissolved Oxygen			mg/l	NA	NA	NA	NA	NA	NA	0.6	NA	8.03	7.3	6.6
ORP			mV	NA	NA	NA	NA	NA	NA	-435	-456	182	NA	202
Conductivity			µs/cm	NA	NA	NA	NA	NA	NA	NA	NA	NA	900	1,471
pH				NA	NA	NA	NA	NA	NA	7.3	NA	7.2	7.3	6.9
Temperature			°C	NA	NA	NA	NA	NA	NA	NA	NA	11.2	8	14.8

Notes:
ES = NR140.10 Enforcement Standard
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X = Not Detected
NA = Not Analyzed
Exceeds ES
Exceed PAL

Table 2 (Continued)
Summary of Groundwater Analytical Results
Bruce School Bus Garage
Bruce, Wisconsin

Parameter	ES	PAL	Units	PZ1											
				7/2/92	12/16/92	4/1/93	8/3/93	12/28/94	4/25/95	8/9/95	10/17/96	3/31/97	8/21/97	5/7/98	8/24/98
GRO			µg/l	X	X	X	X	NA	NA	NA	NA	NA	NA	NA	NA
DRO			µg/l	19	30	X	13	NA	NA	NA	NA	NA	NA	NA	NA
VOC Parameters															
Benzene	5	0.5	µg/l	X	X	X	X	X	X	X	X	X	X	X	X
Toluene	343	68.6	µg/l	1.1	X	0.72	1.5	X	X	X	X	X	X	X	X
Ethylbenzene	700	140	µg/l	X	X	X	X	X	X	X	X	X	X	X	X
Total Xylenes	620	124	µg/l	X	X	X	X	X	X	X	X	X	X	X	X
Methyl-Tert-Butyl-Ether	60	12	µg/l	X	X	X	X	X	X	X	X	X	X	X	X
1,2,4-Trimethylbenzene			µg/l	X	X	X	X	X	X	X	X	X	X	X	X
1,3,5-Trimethylbenzene			µg/l	X	X	X	X	X	X	X	X	X	X	X	X
n-Butylbenzene			µg/l	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene			µg/l	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	0.005	µg/l	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	5	0.5	µg/l	1.2	X	X	NA	1.6	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene			µg/l	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene			µg/l	X	X	X	NA	0.34	NA	NA	NA	NA	NA	NA	NA
Naphthalene	40	8	µg/l	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene			µg/l	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5	0.5	µg/l	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Trichloroethane	5	0.5	µg/l	X	X	X	NA	X	NA	NA	NA	NA	NA	NA	NA
Metals															
Lead (total)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	2.15	28	X	18
Lead (dissolved)	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	X	X	4	NA
Dissolved Iron			mg/l	NA	NA	NA	NA	NA	NA	NA	0.1	0.05	NA	NA	NA
Total Iron			mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,100
Inorganics															
Sulfate			mg/l	NA	NA	NA	NA	NA	NA	NA	36	47.25	NA	30	21
Nitrate			mg/l	NA	NA	NA	NA	NA	NA	NA	0.2	6.6	NA	0.66	0.89
Field Parameters															
Dissolved Oxygen			mg/l	NA	NA	NA	NA	NA	NA	NA	5.7	4.2	NA	2.6	5.9
ORP			mV	NA	NA	NA	NA	NA	NA	NA	-442	-452	NA	NA	204
Conductivity			µs/cm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	920	1,493
pH				NA	NA	NA	NA	NA	NA	NA	6.9	7.8	8.3	7.8	7.4
Temperature			°C	NA	NA	NA	NA	NA	NA	NA	NA	8.9	NA	8.4	12.4

Notes:
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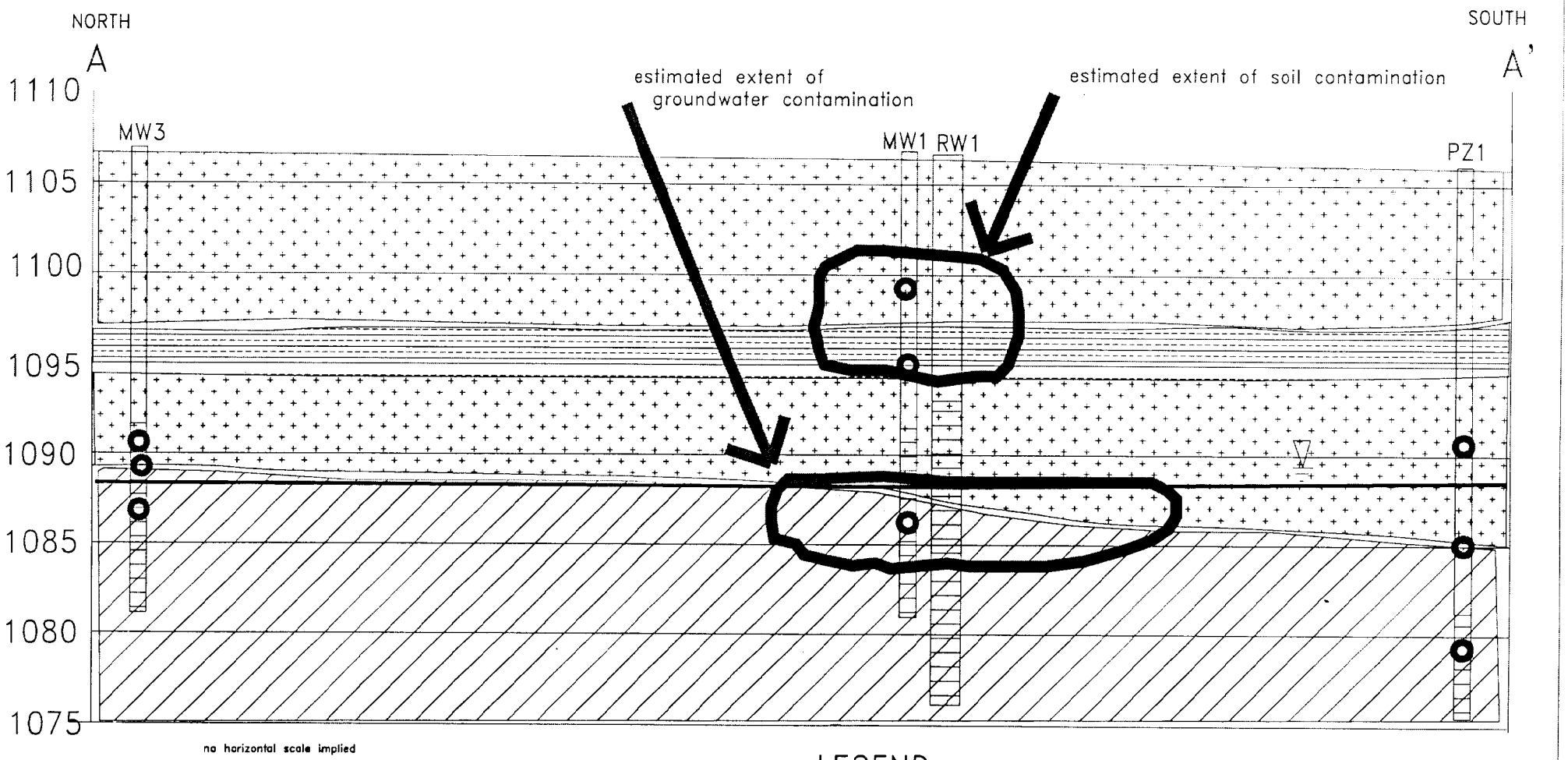
PAL = NR140.10 Preventive Action Limit
X = Not Detected
NA = Not Analyzed
Exceeds ES
Exceed PAL

Table 2 (Continued)
Summary of Groundwater Analytical Results
Bruce School Bus Garage
Bruce, Wisconsin

Parameter	ES	PAL	Units	RW1				
				12/28/94	3/31/97	8/21/97	5/7/98	8/24/98
GRO			µg/l	NA	NA	NA	NA	NA
DRO			µg/l	NA	NA	NA	NA	NA
VOC Parameters								
Benzene	5	0.5	µg/l	230	2.37	6.9	37	21
Toluene	343	68.6	µg/l	270	10.8	4.62	20	26
Ethylbenzene	700	140	µg/l	370	22.1	15.8	69	74
Total Xylenes	620	124	µg/l	900	51.6	23.52	96	92.5
Methyl-Tert-Butyl-Ether	60	12	µg/l	X	X	NA	X	NA
1,2,4-Trimethylbenzene			µg/l	340	18.7	8.74	23	19
1,3,5-Trimethylbenzene			µg/l	130	8.2	2.56	15	5.2
n-Butylbenzene			µg/l	48	NA	4.28	1.1	4
sec-Butylbenzene			µg/l	12	NA	0.55	X	X
1,2-Dibromoethane	0.05	0.005	µg/l	44	NA	2.04	5.6	5.6
1,2-Dichloroethane	5	0.5	µg/l	38	NA	0.46	1.4	1.7
p-Isopropyltoluene			µg/l	7.1	NA	0.62	X	X
Isopropylbenzene			µg/l	31	NA	1.97	4.9	5.2
Naphthalene	40	8	µg/l	90	NA	5.64	14	18
n-Propylbenzene			µg/l	X	NA	1.97	9.5	9
1,1,2-Trichloroethane	5	0.5	µg/l	X	NA	X	X	X
Trichloroethane	5	0.5	µg/l	X	NA	X	X	X
Metals								
Lead (total)	15	1.5	µg/l	NA	6.95	5.44	2	9
Lead (dissolved)	15	1.5	µg/l	NA	6.1	3.05	2	NA
Dissolved Iron			mg/l	NA	2.94	5.47	NA	NA
Total Iron			mg/l	NA	NA	NA	NA	29,000
Inorganics								
Sulfate			mg/l	NA	51.98	6.54	X	X
Nitrate			mg/l	NA	7.92	16	0.34	0.3
Field Parameters								
Dissolved Oxygen			mg/l	NA	2.7	0.24	0.4	2.5
ORP			mV	NA	-454	-158	NA	-150
Conductivity			µs/cm	NA	NA	NA	330	261
pH				NA	7.4	7	7	7.2
Temperature			°C	NA	11.1	10.4	8.7	12.7

Notes:
ES = NR140.10 Enforcement Standard
PAL = NR140.10 Preventive Action Limit
X = Not Detected
NA = Not Analyzed
Exceeds ES
Exceed PAL



midwest engineering services, inc.

Figure 3
Pre-remedial Crosss Section
Bruce School Bus Garage
304 North Railroad Avenue
Bruce, Wisconsin

PROJECT NUMBER: 4-41002

DATE: 11/24/98

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